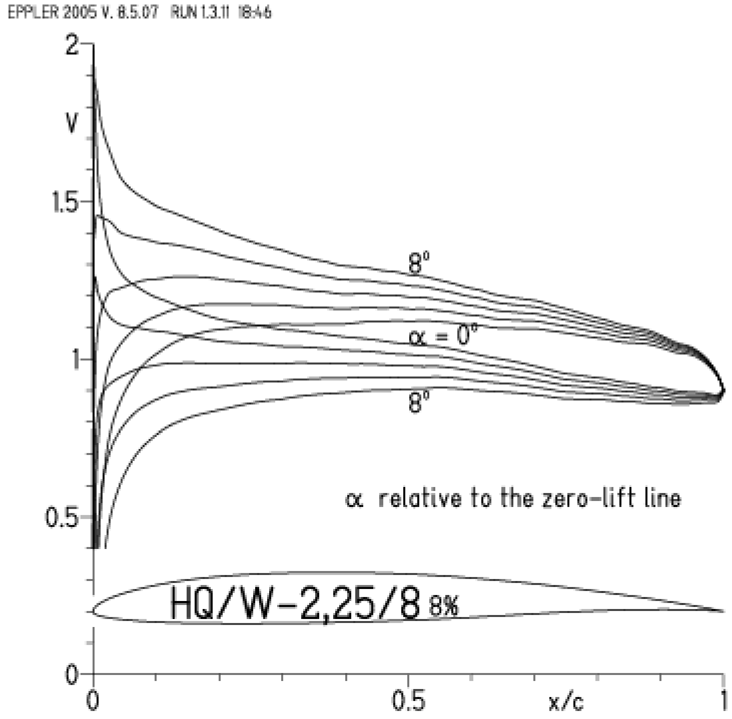
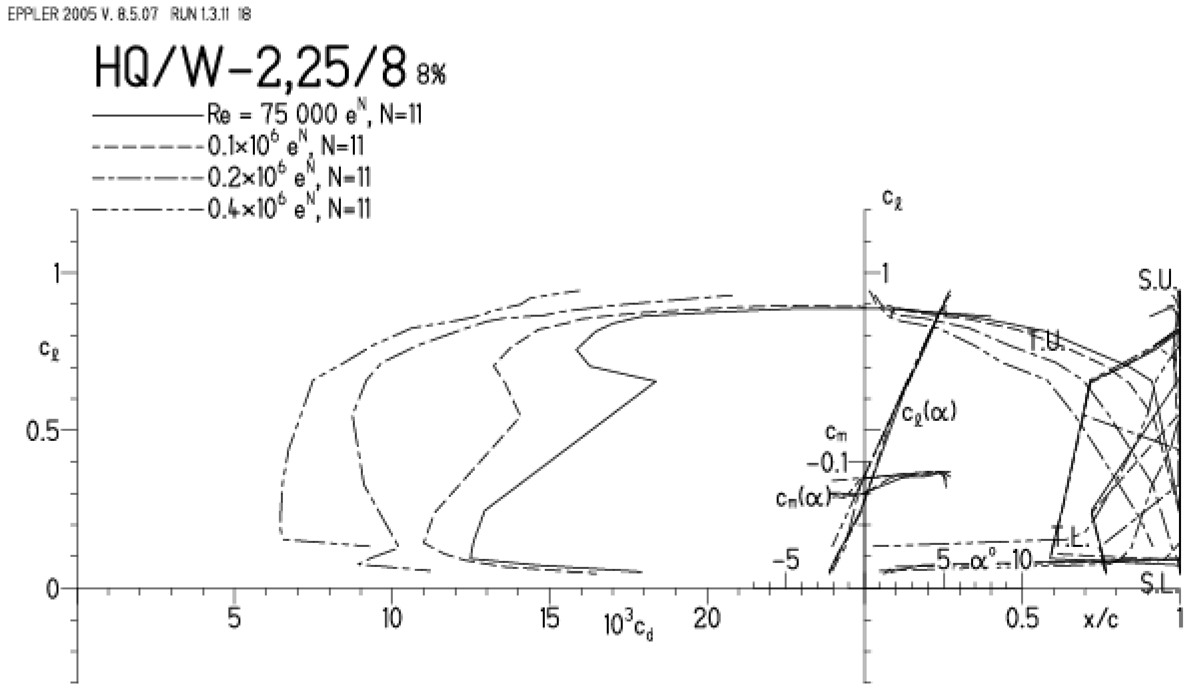
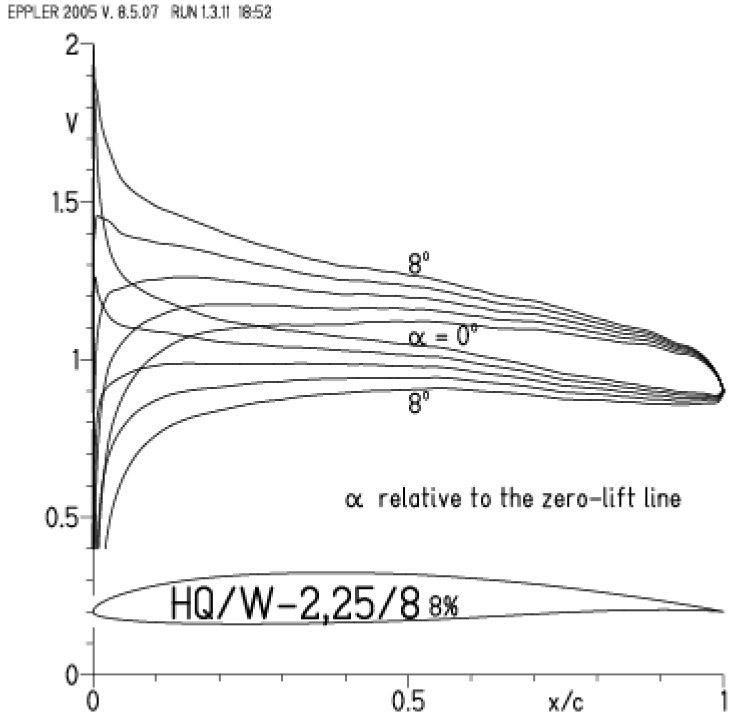
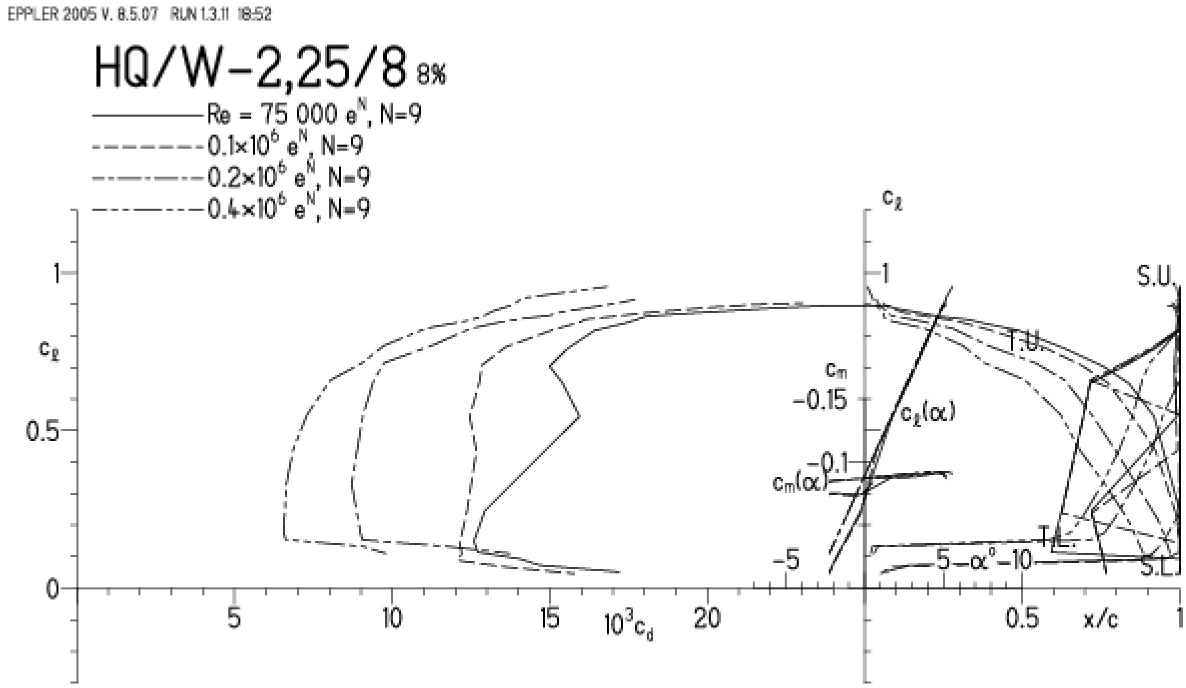
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

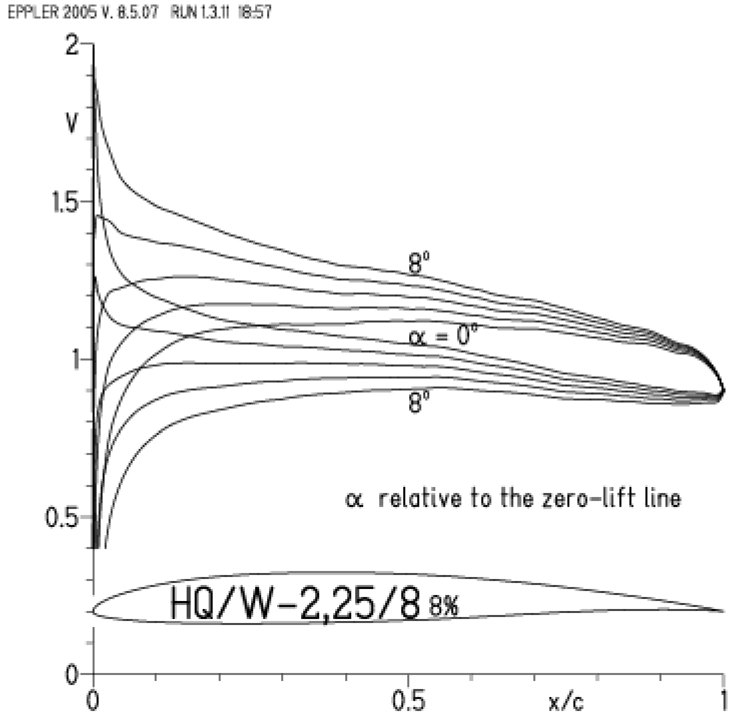

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

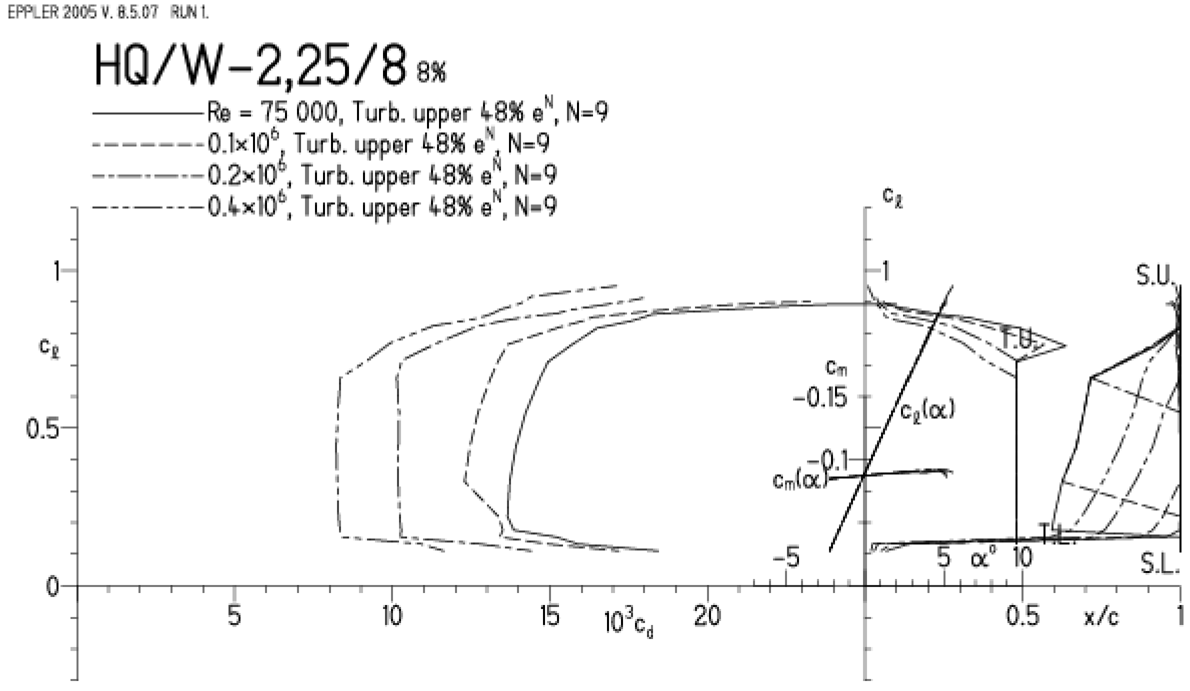
<u>HQ/W-2,25/8</u>, N=9





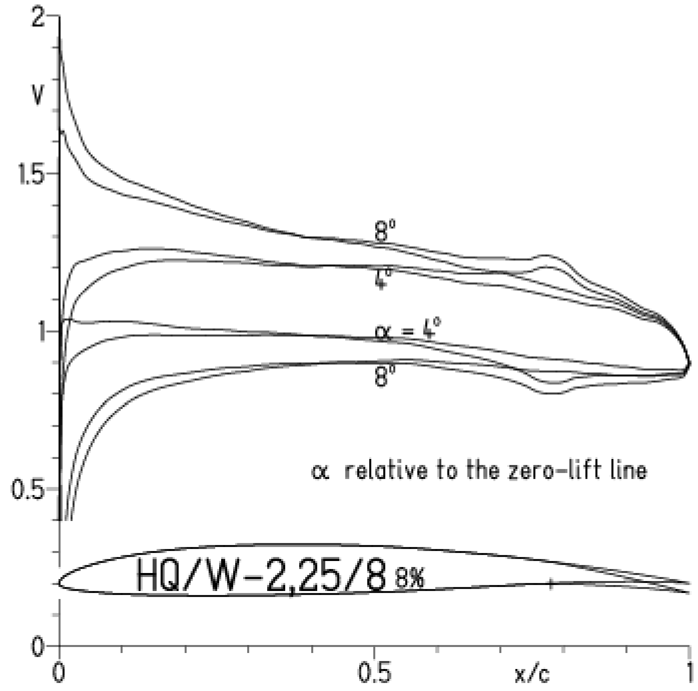
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



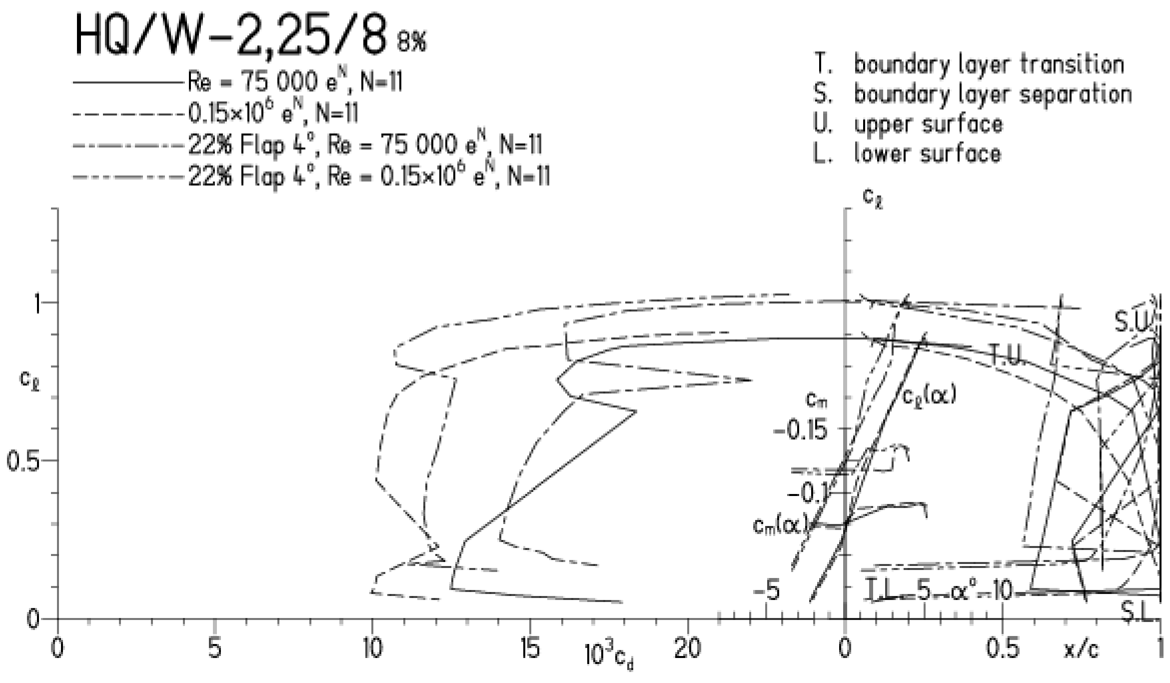


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

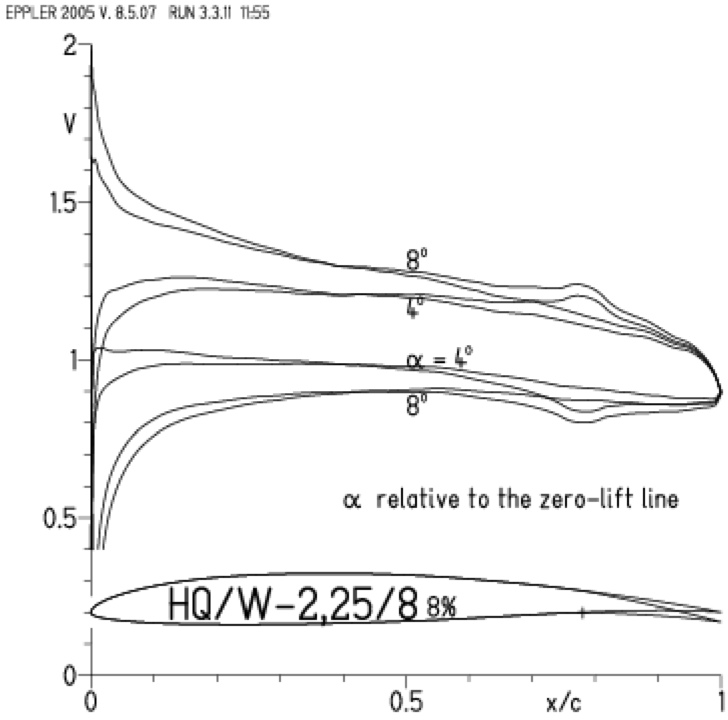
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

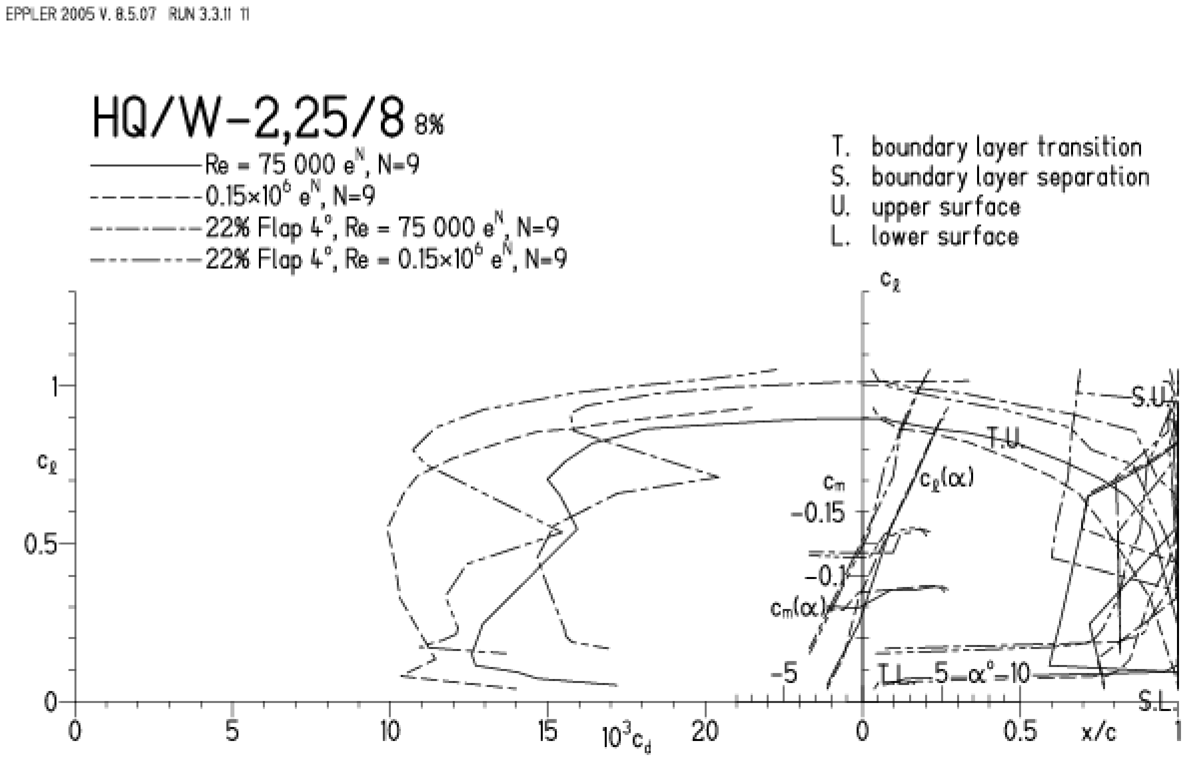


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

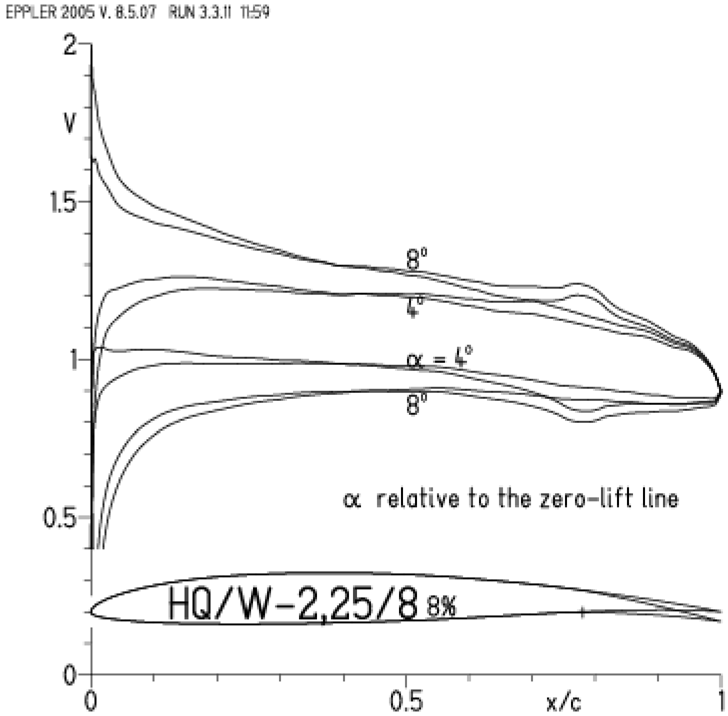


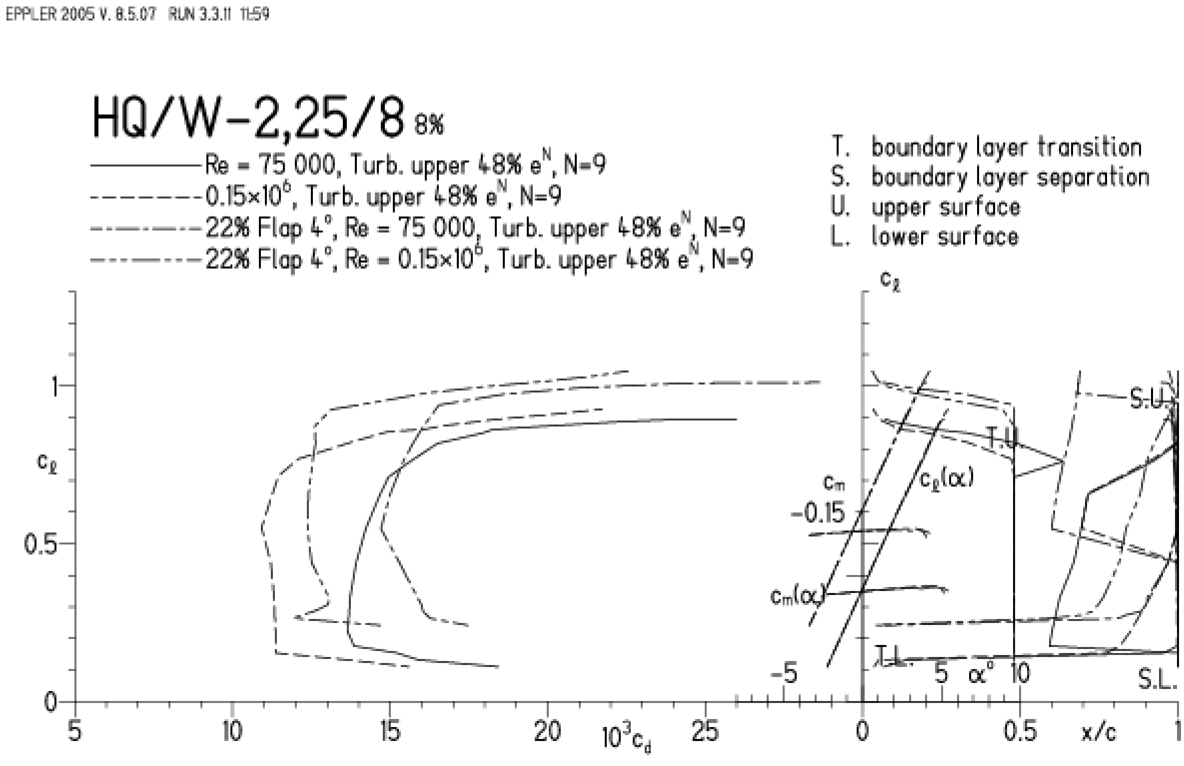
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





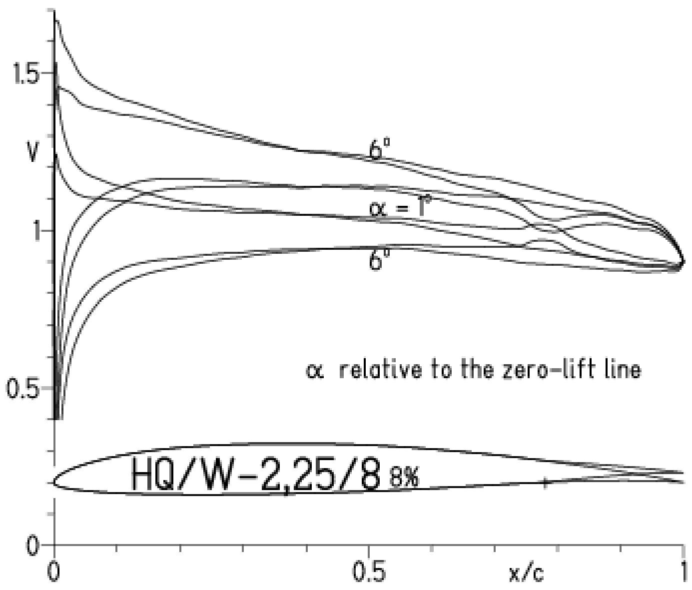
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



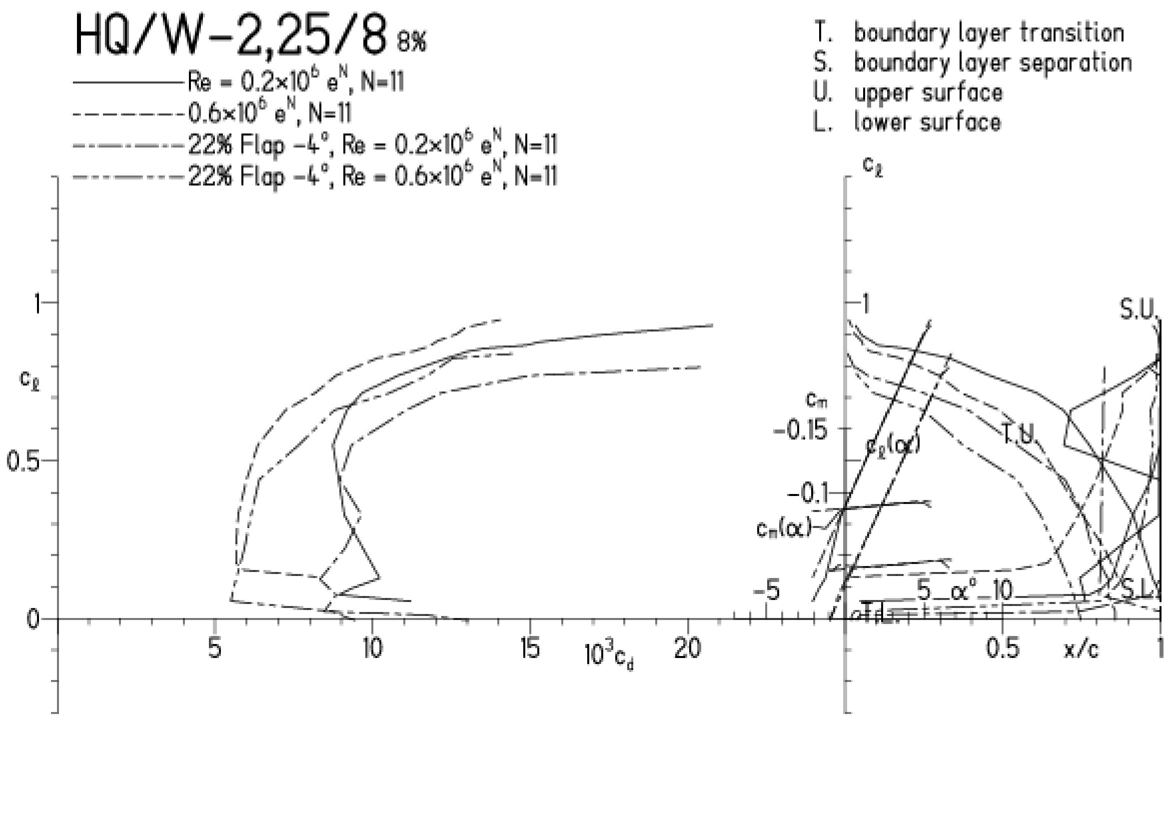


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

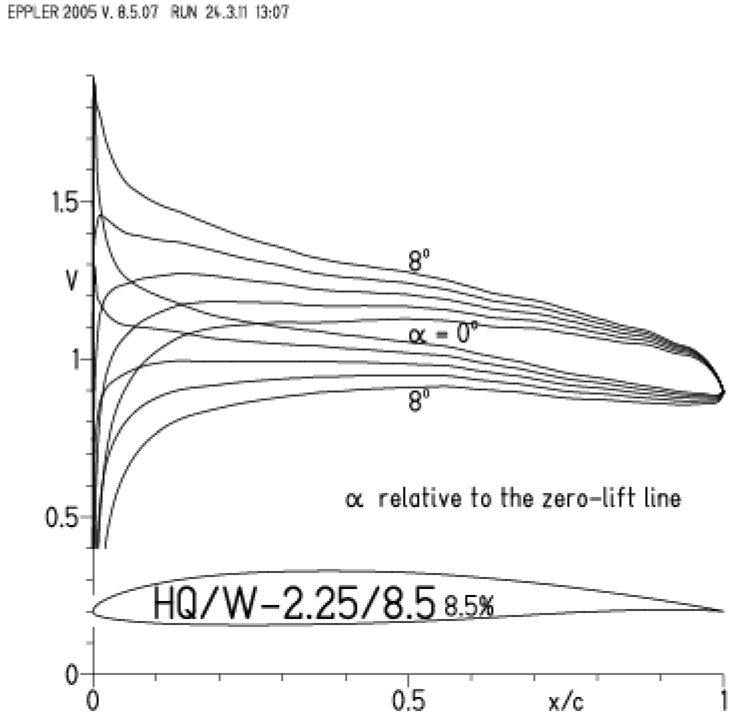
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

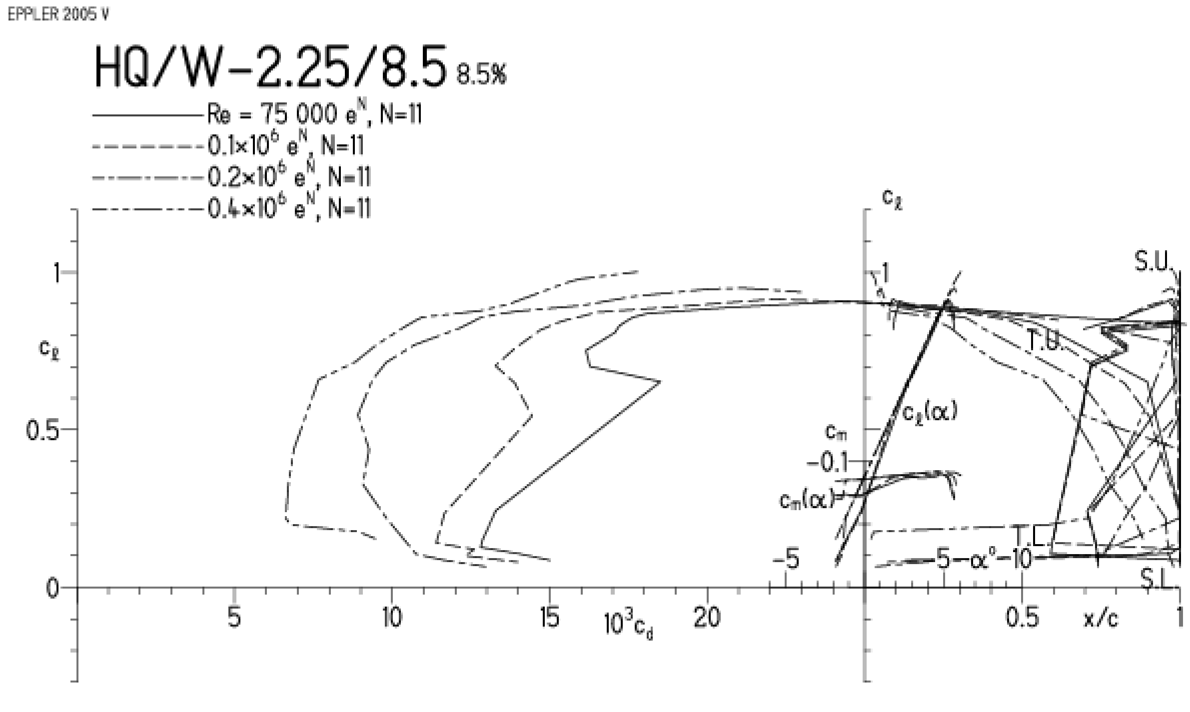


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

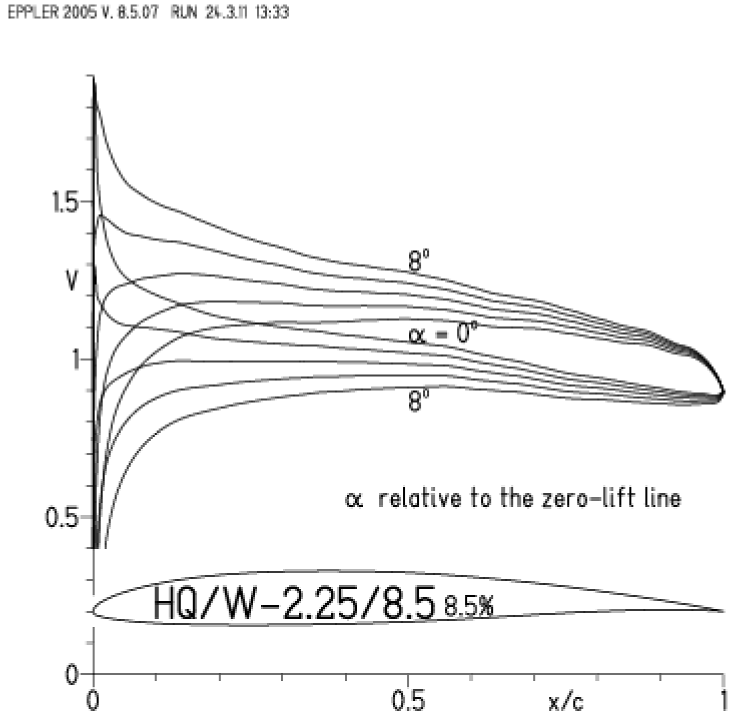


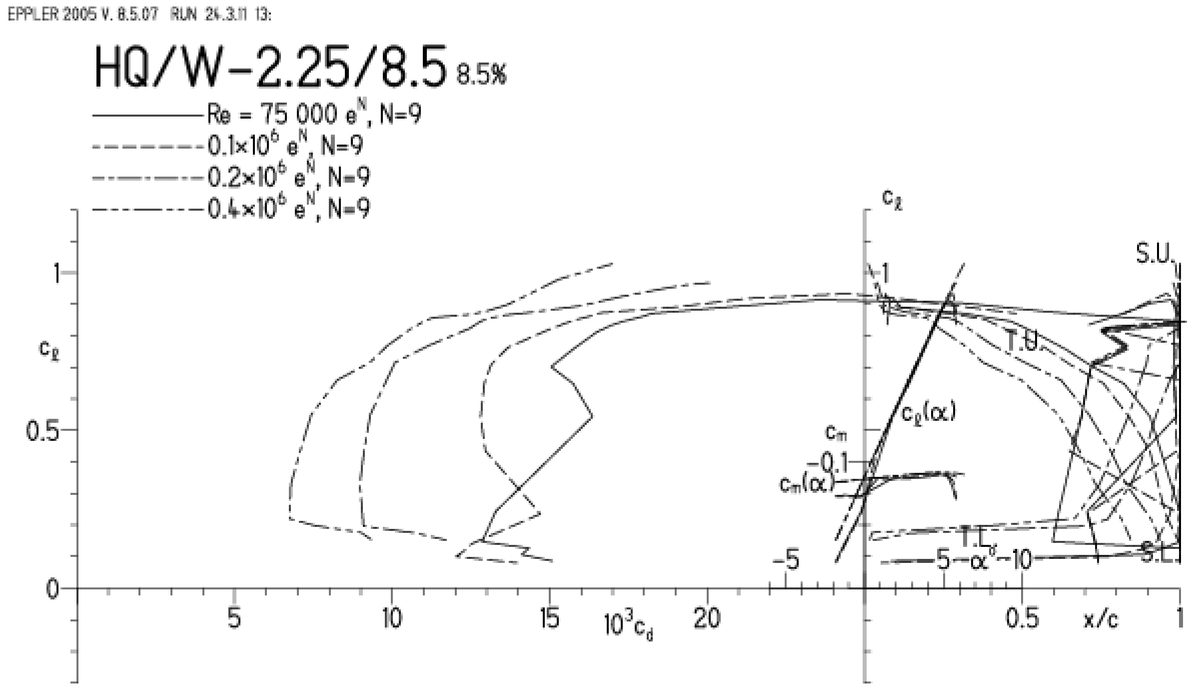
HQ/W-2,25/8,5, N=11



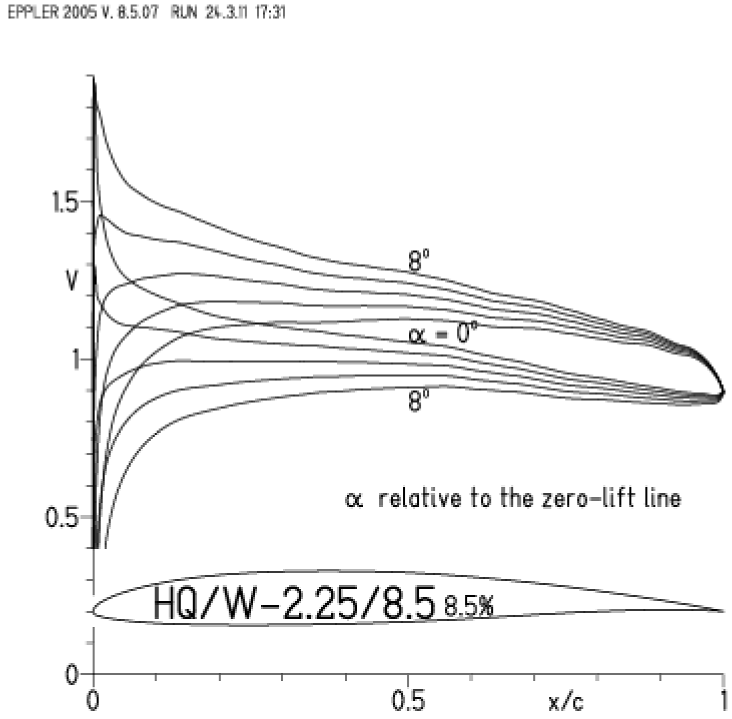


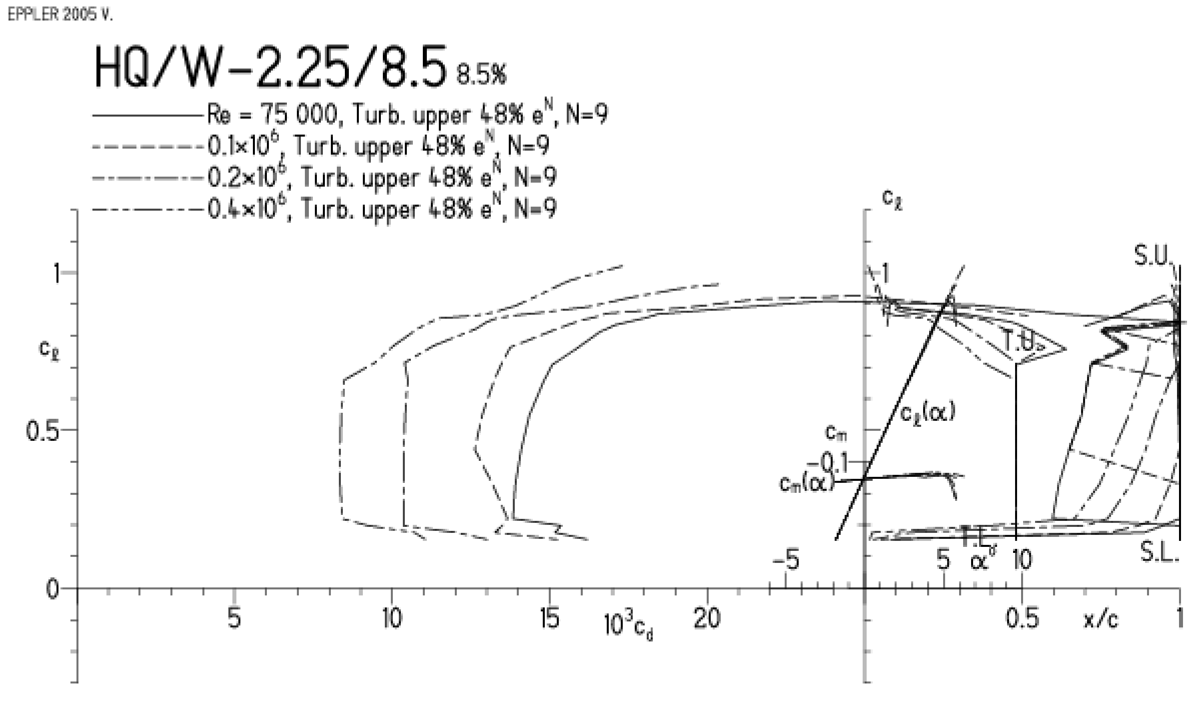
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

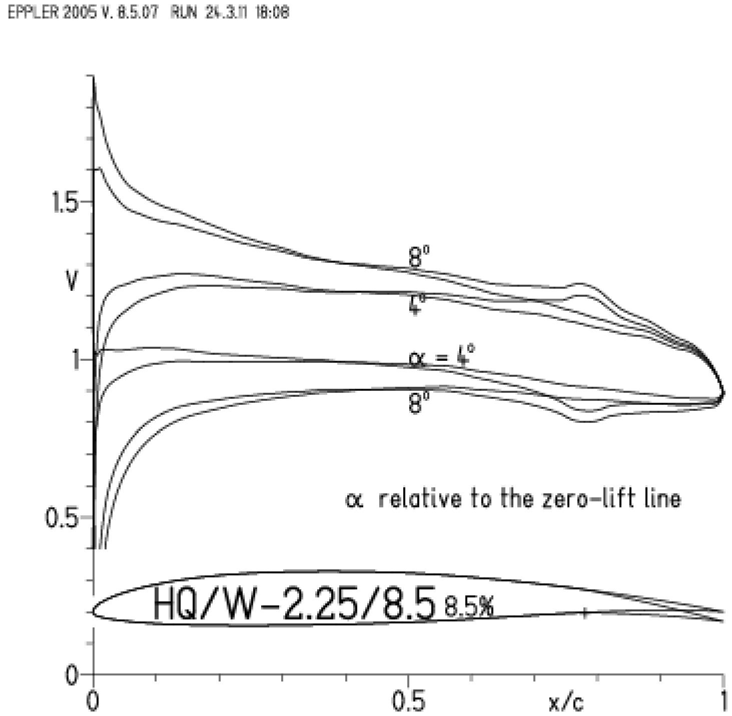

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_ℓ(α)
c_m
−0.1
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

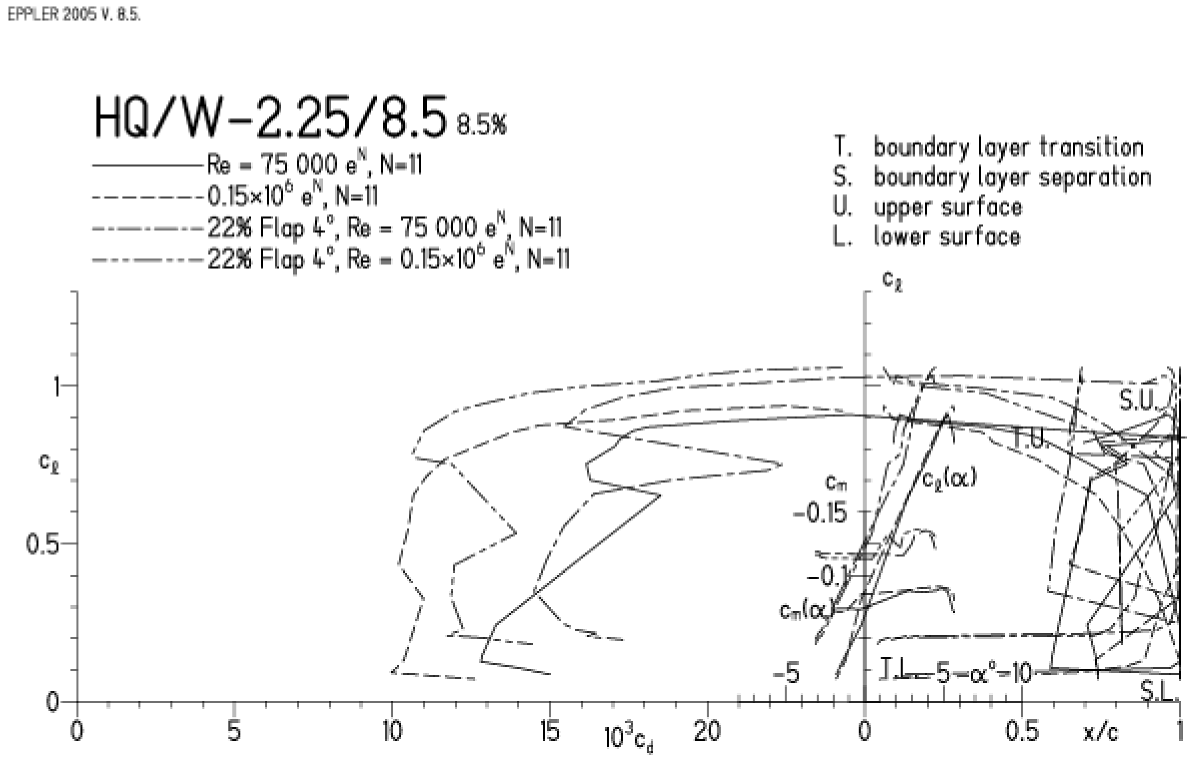
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



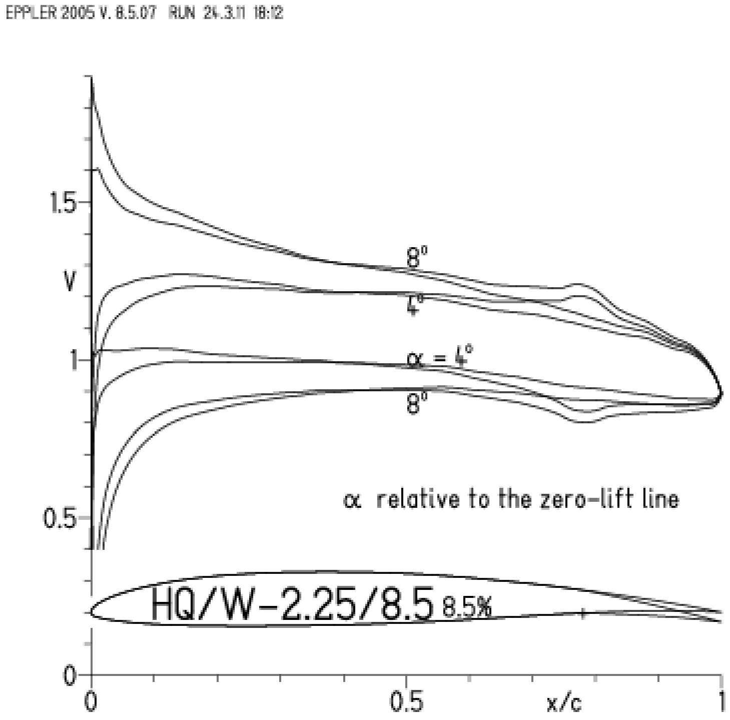


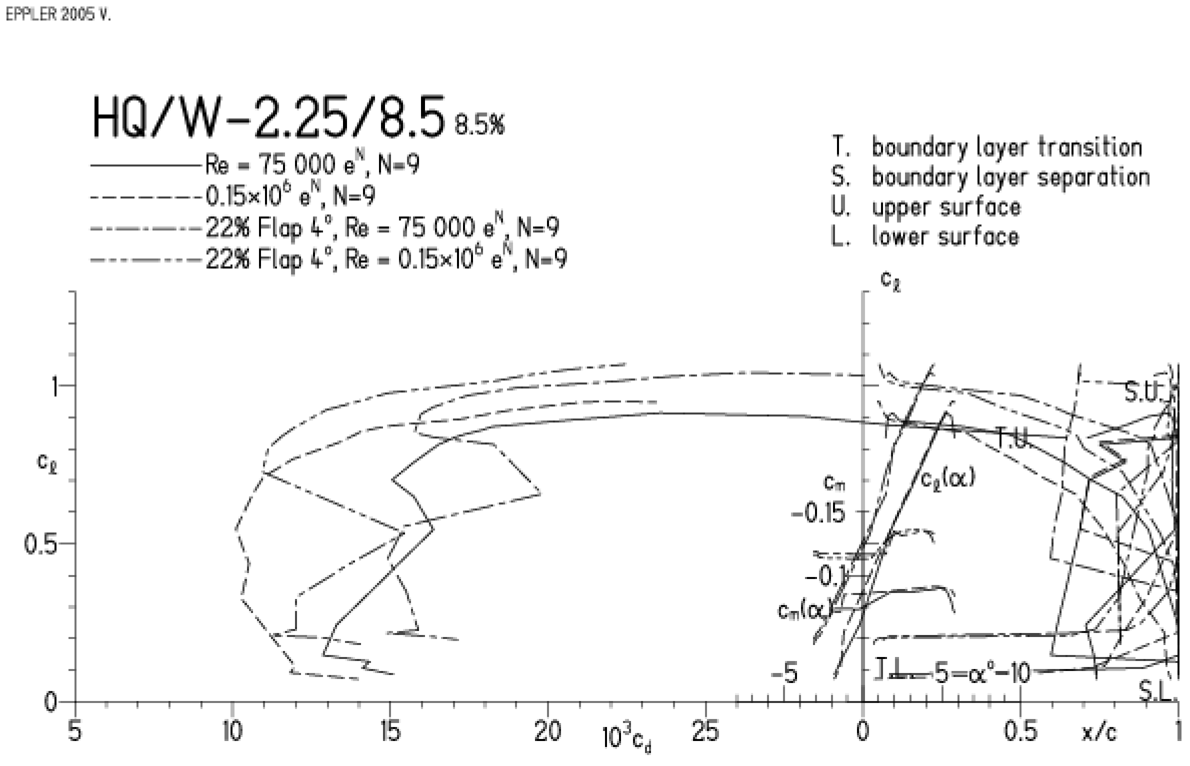
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag





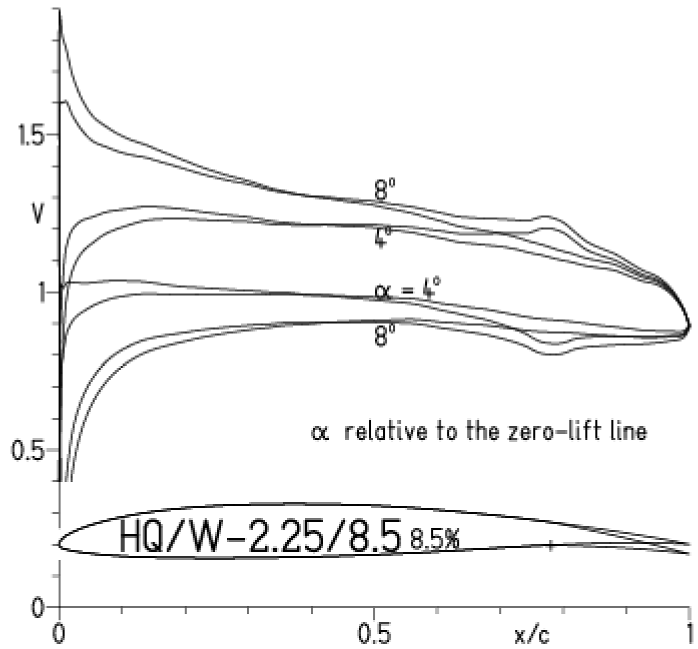
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



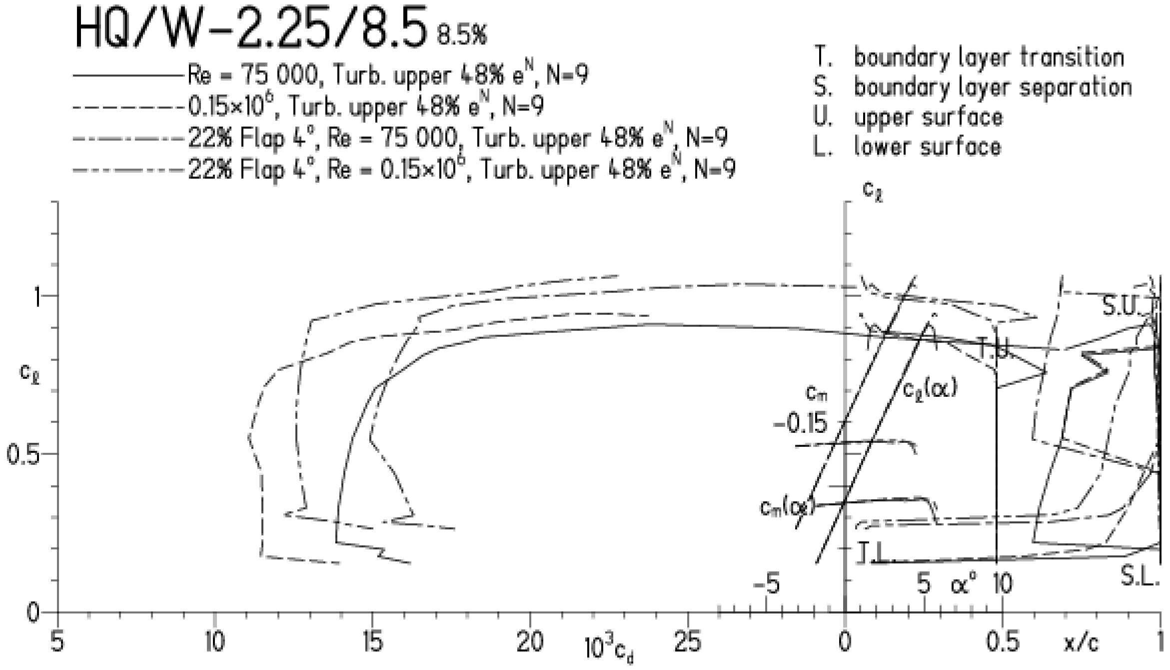


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

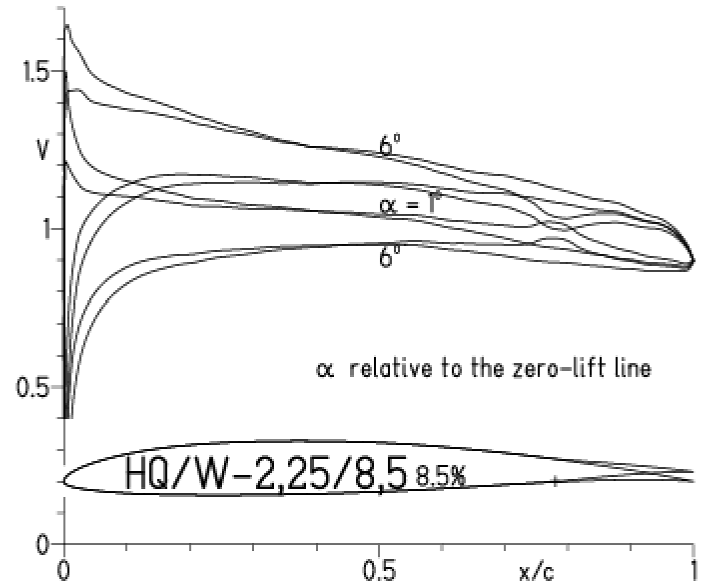


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

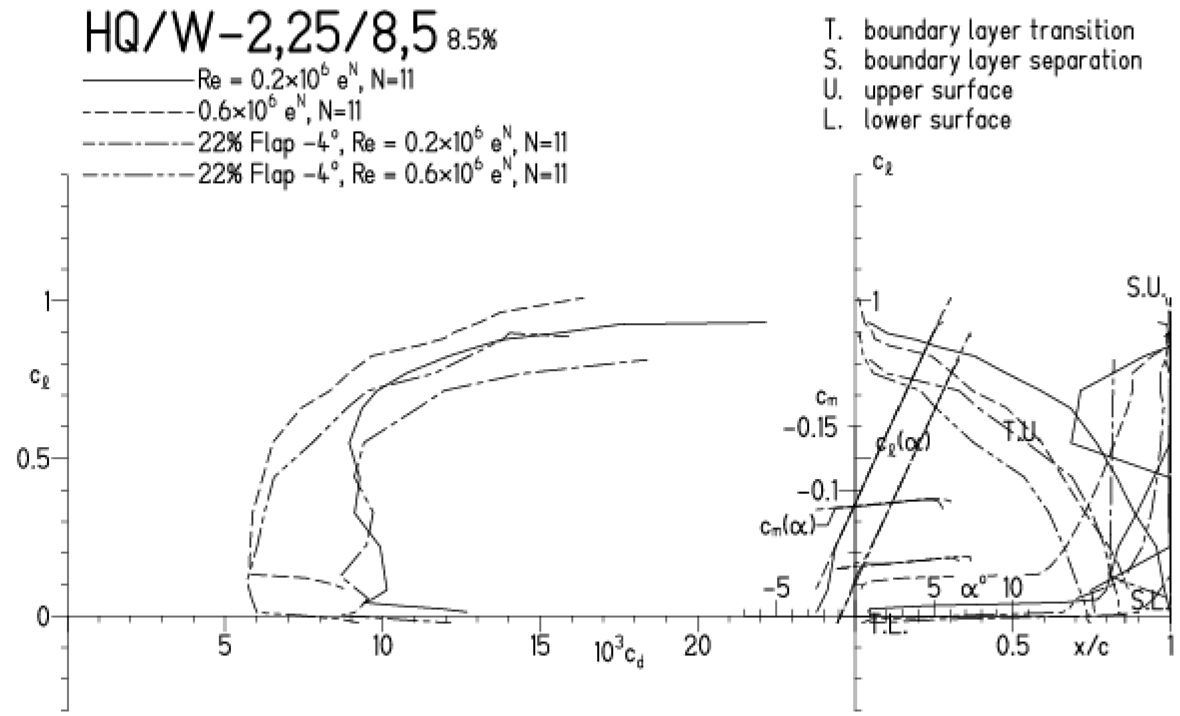


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

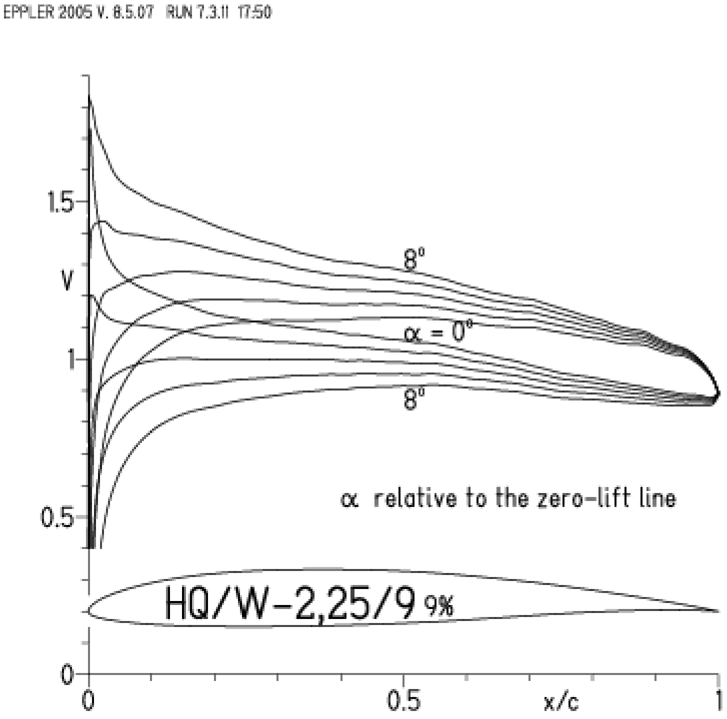
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

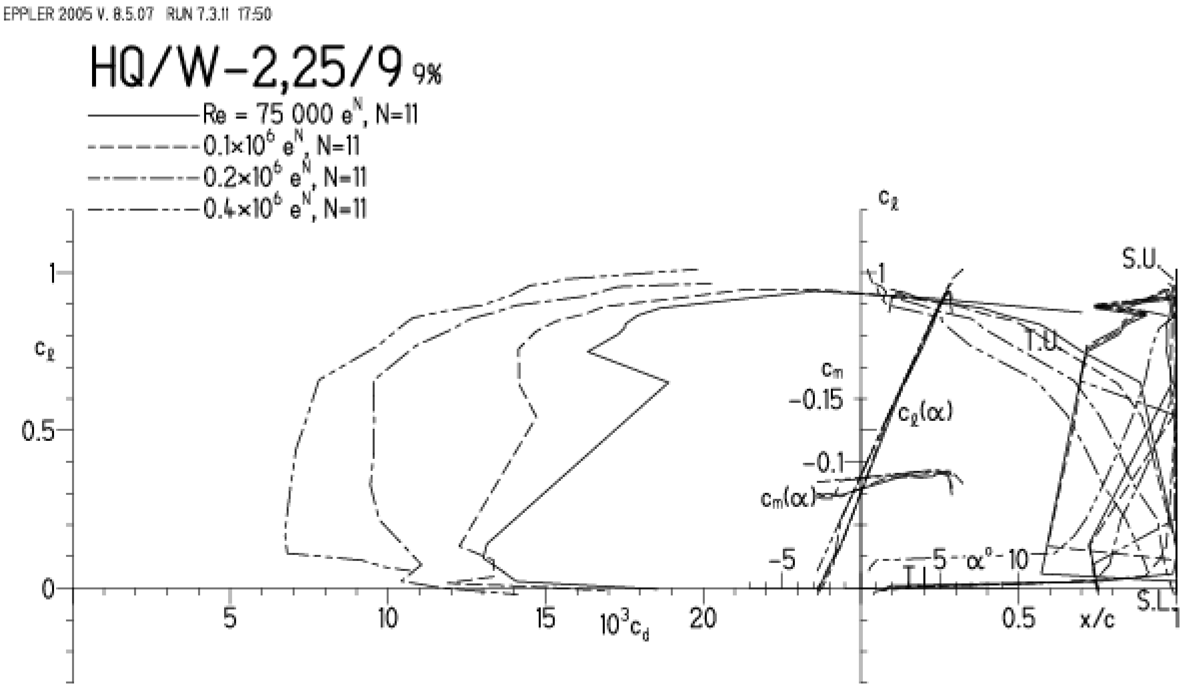


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

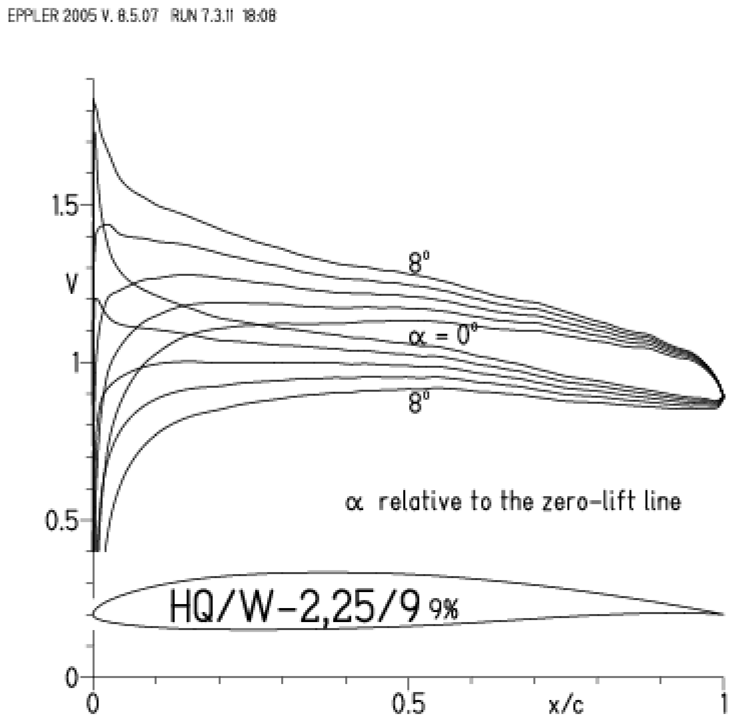


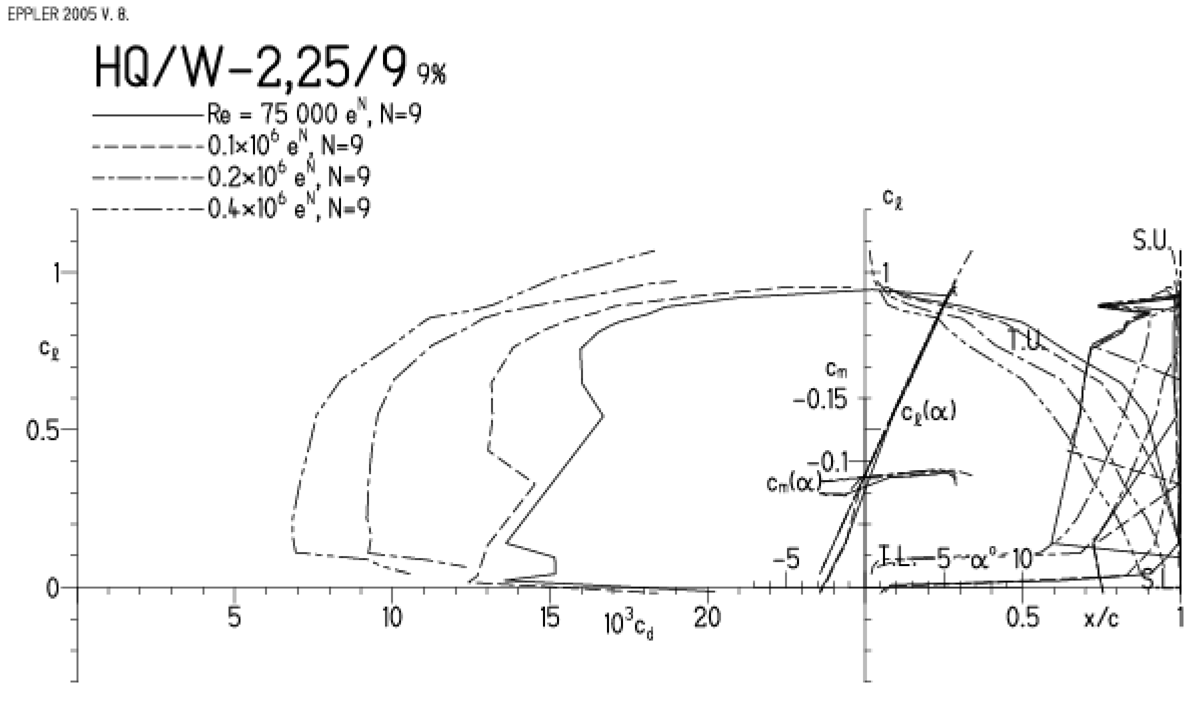
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

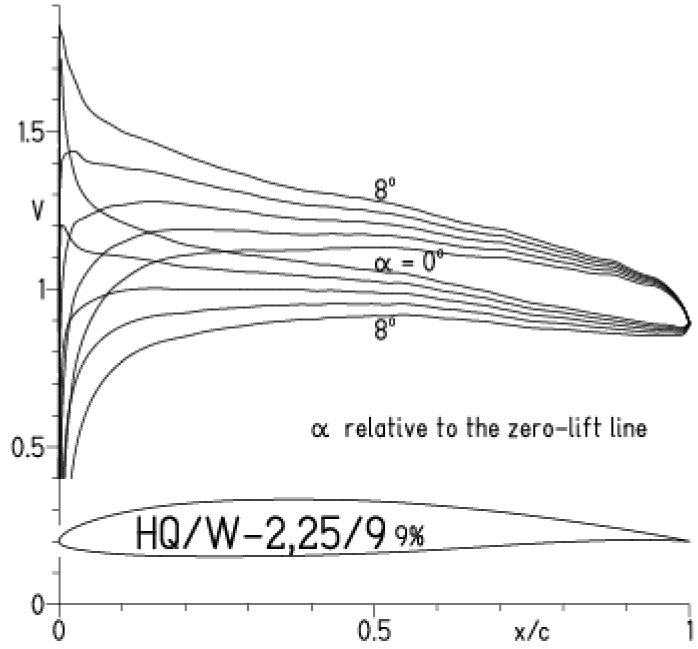
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

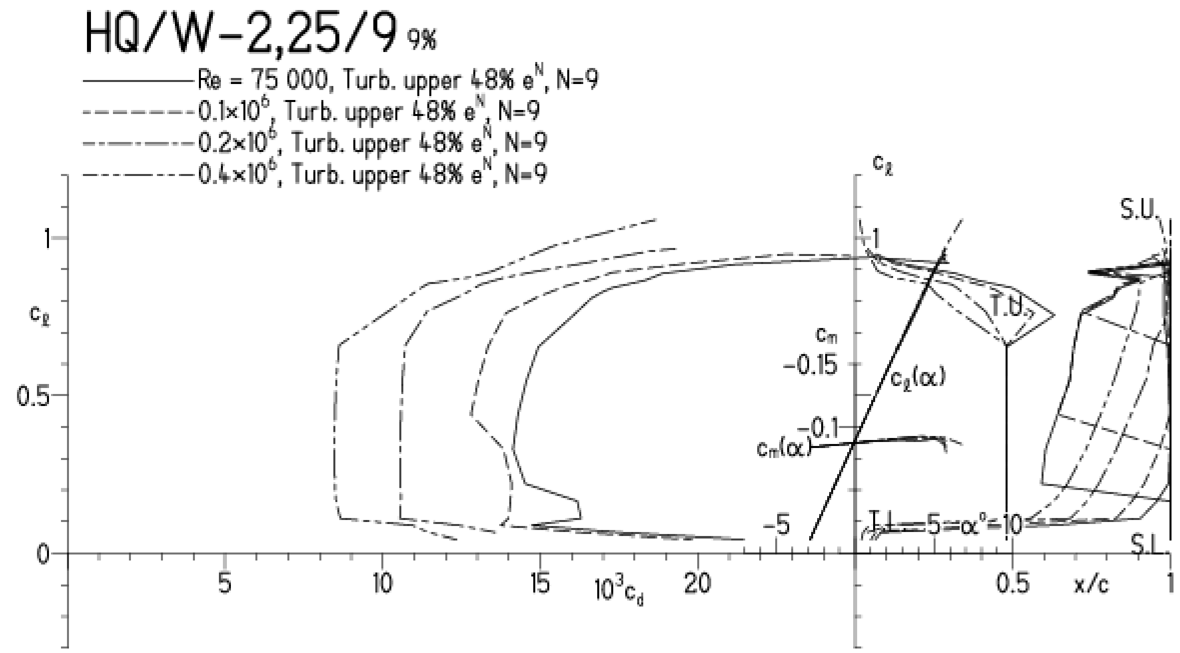

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

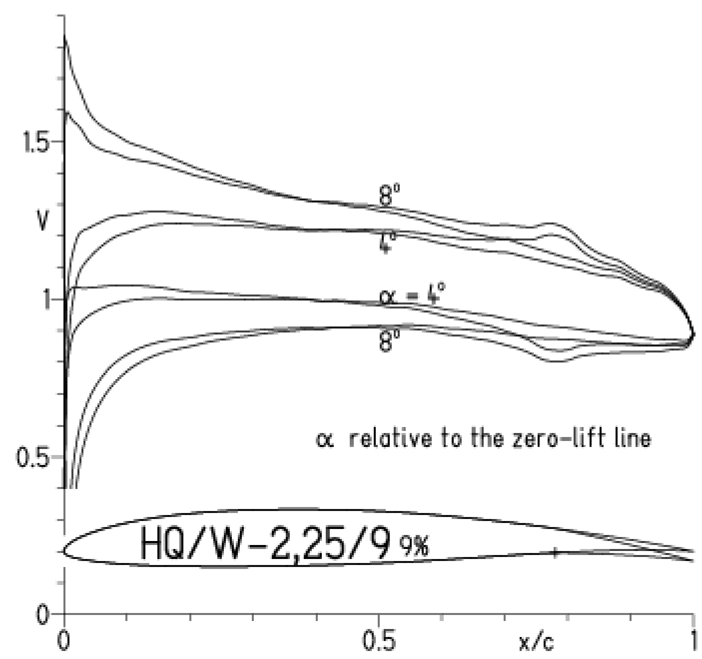


EPPLER 2005 V. 8.5.07 RUN 7

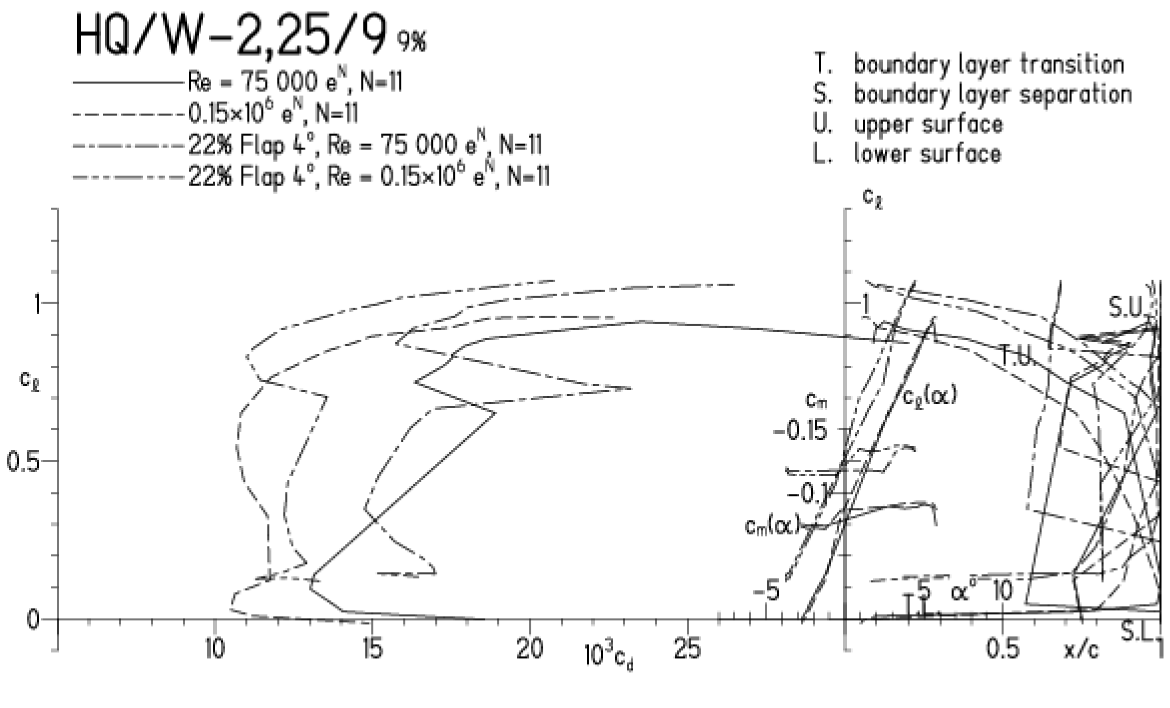


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

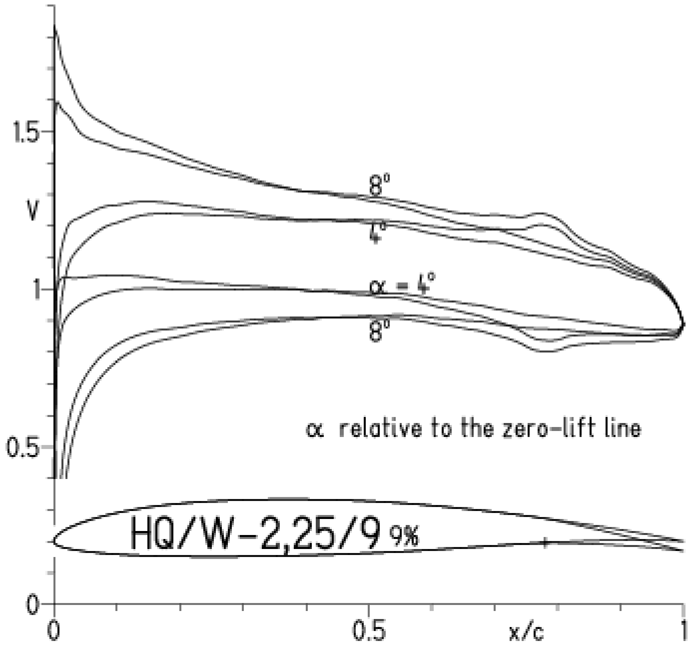


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

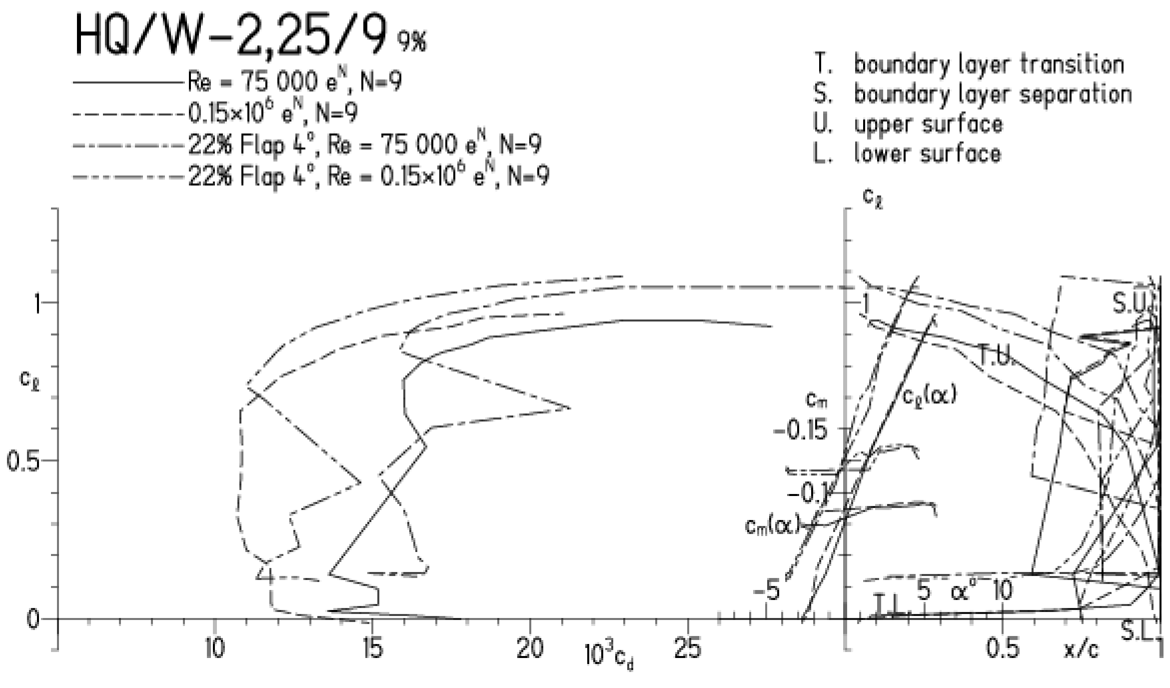


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

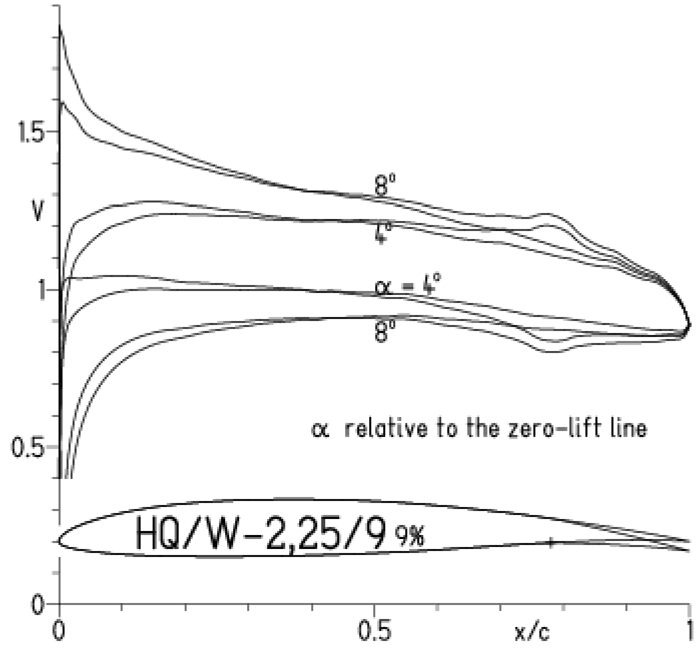


EPPLER 2005 V. 8.5.07 RUN 8.3.1

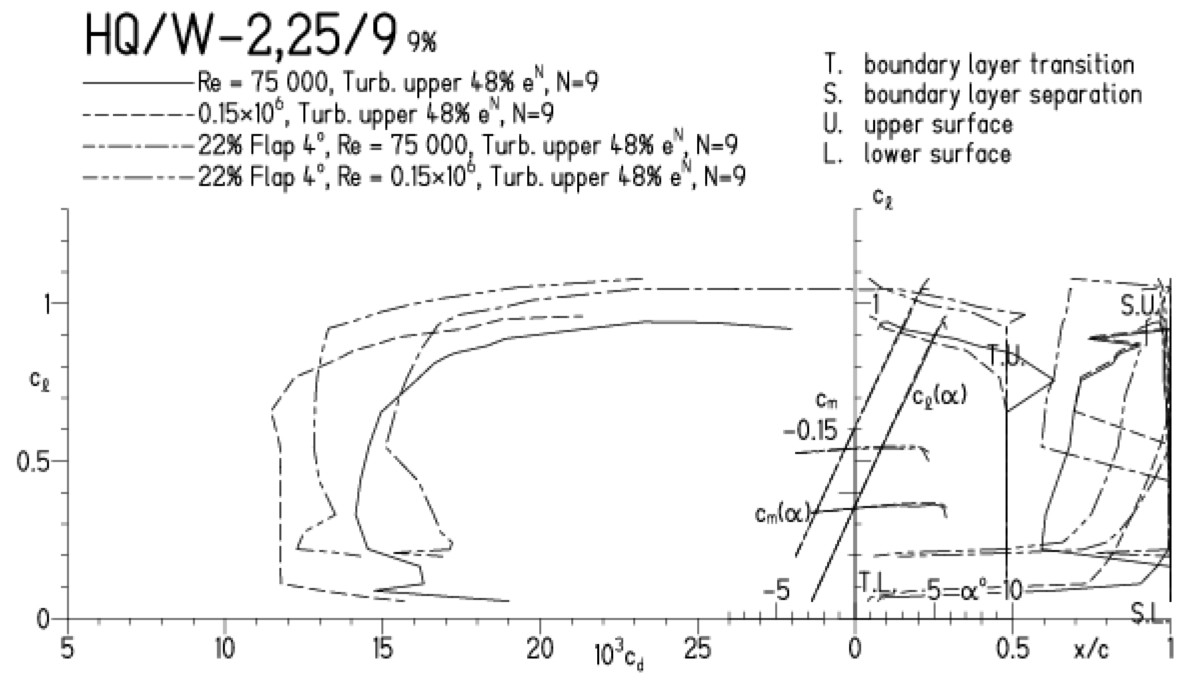


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

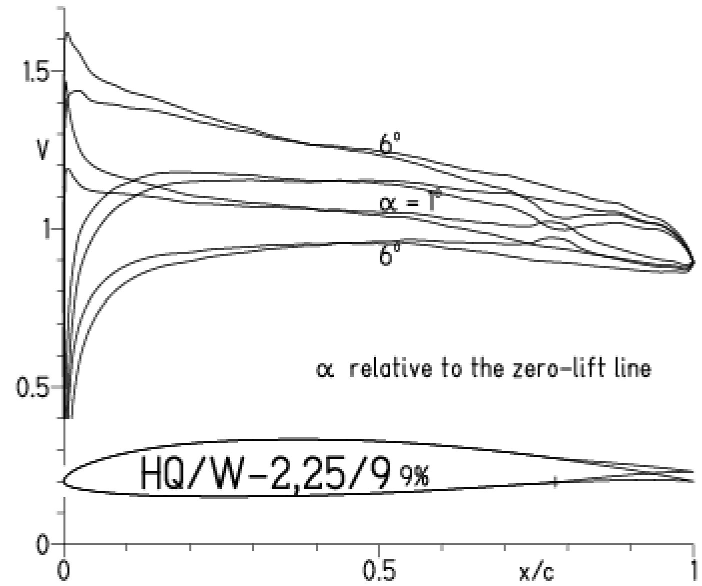


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

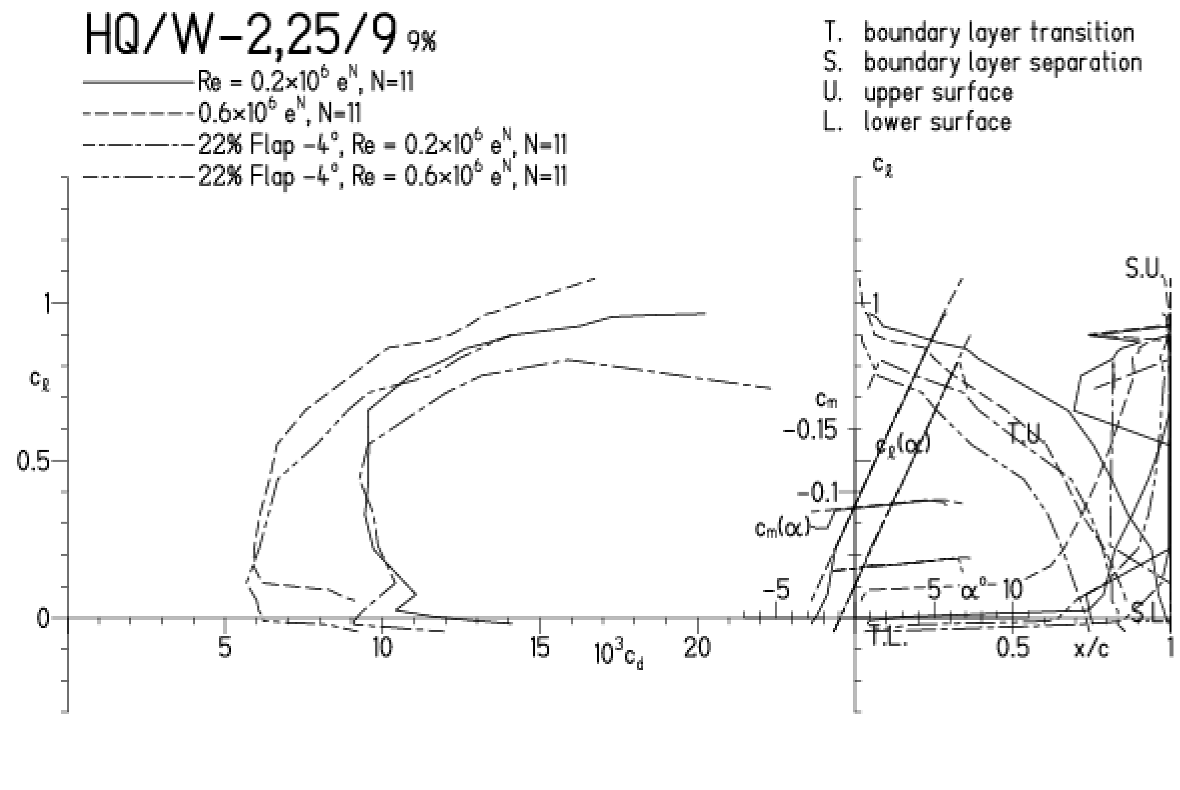


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

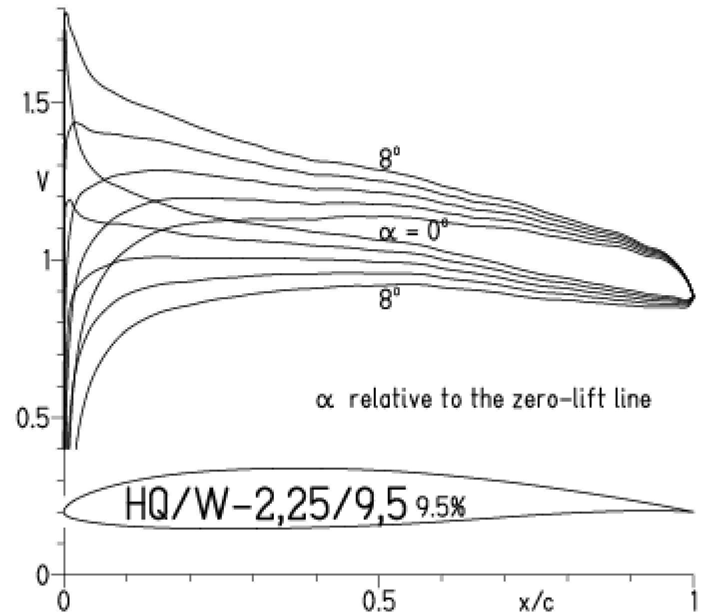


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

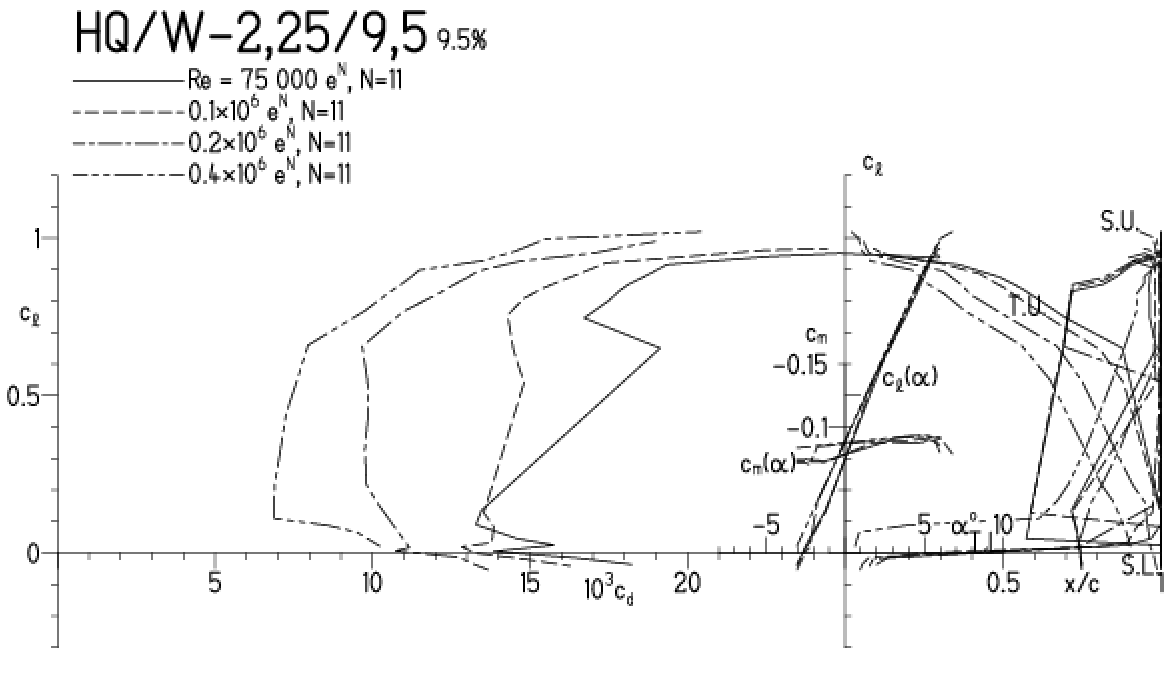


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

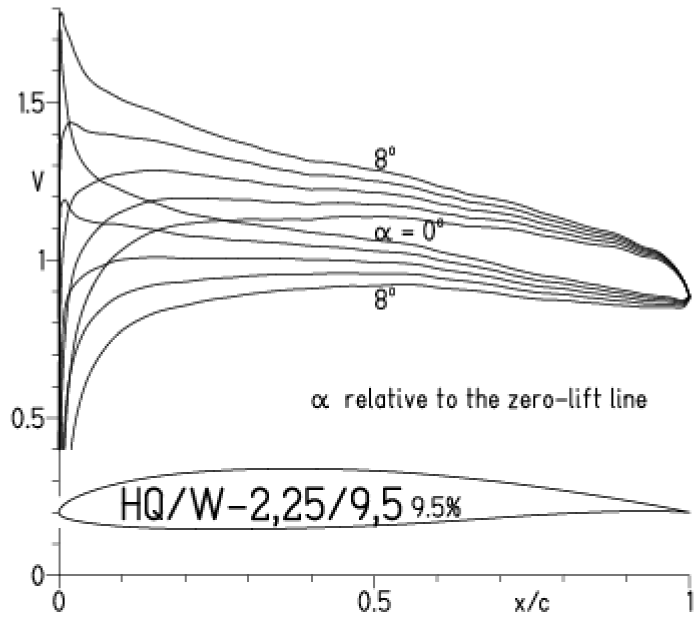


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

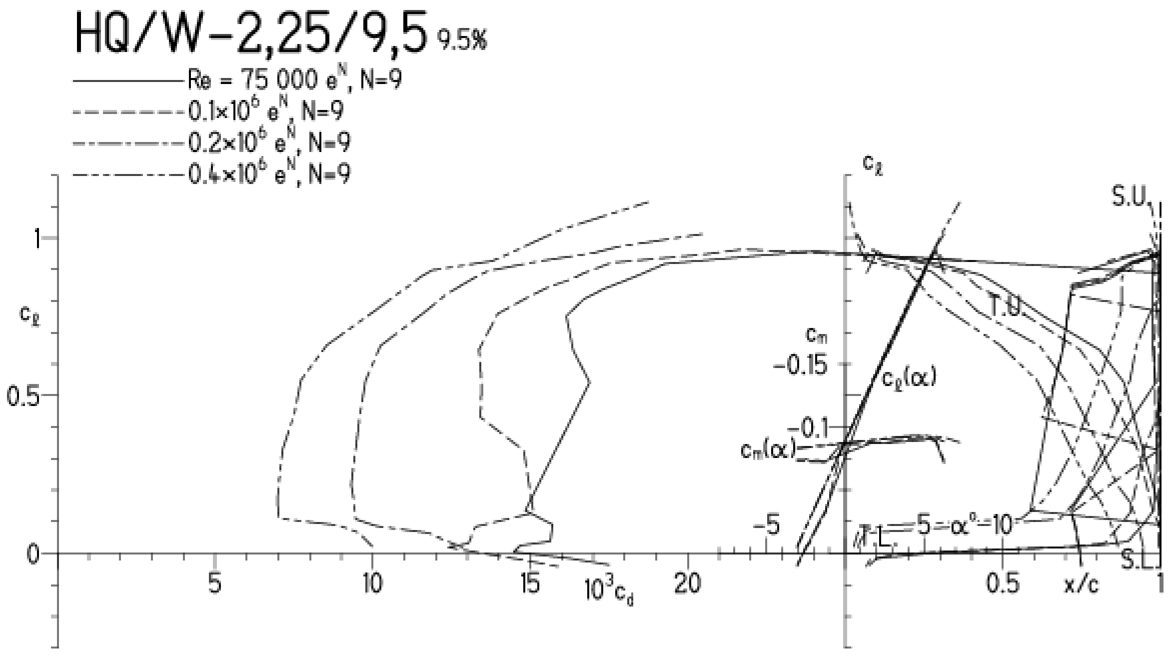


HQ/W-2,25/9,5, N=9

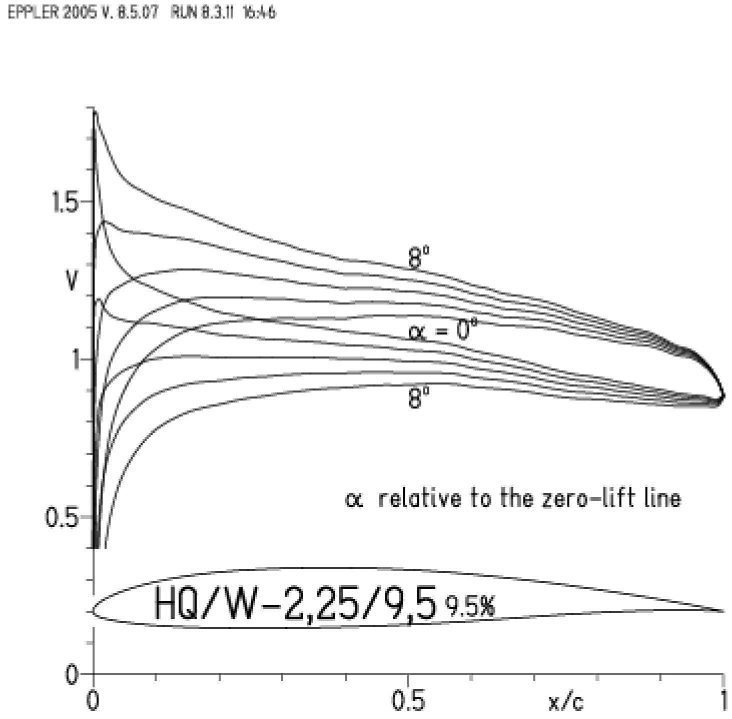
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

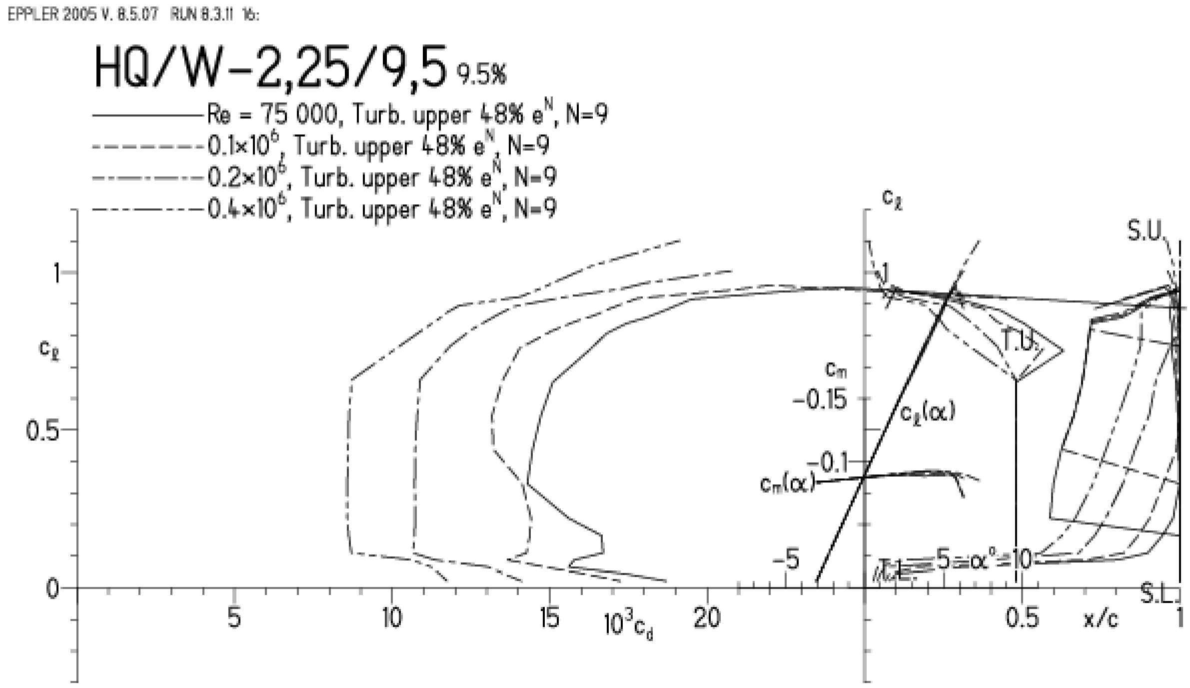


EPPLER 2005 V. 8.5.07 RUN 8.3.



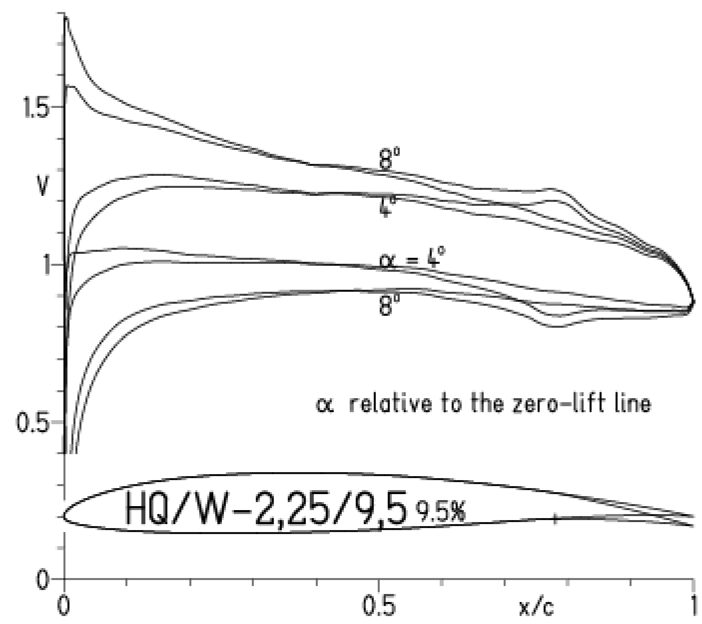
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



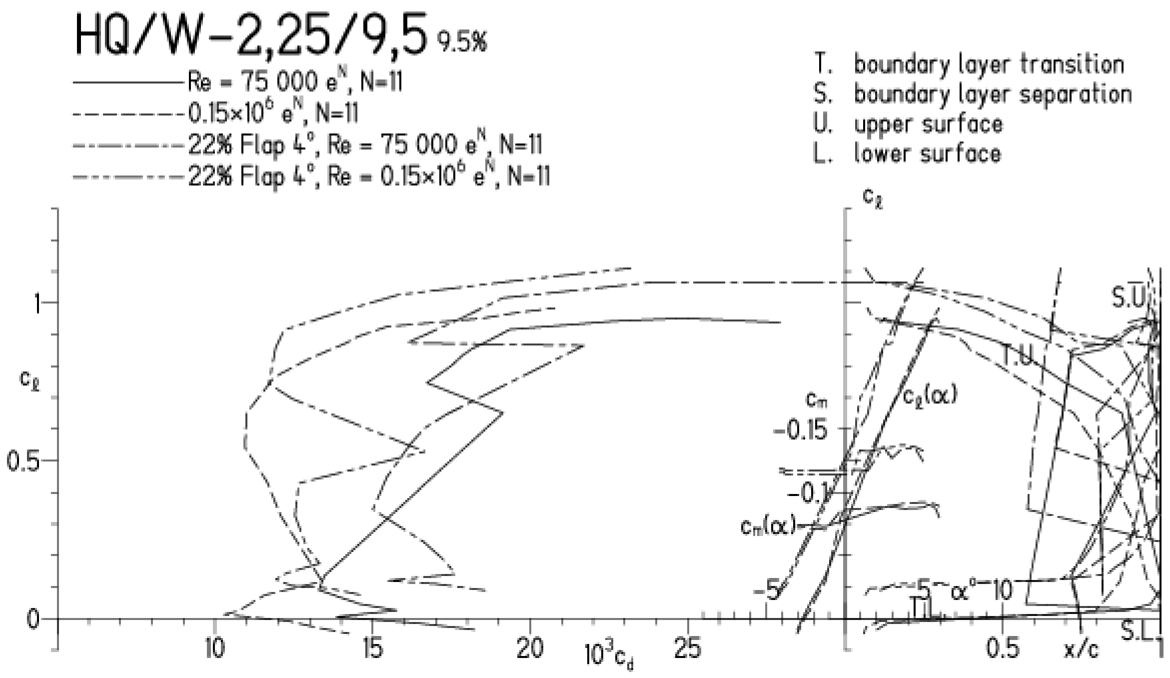


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

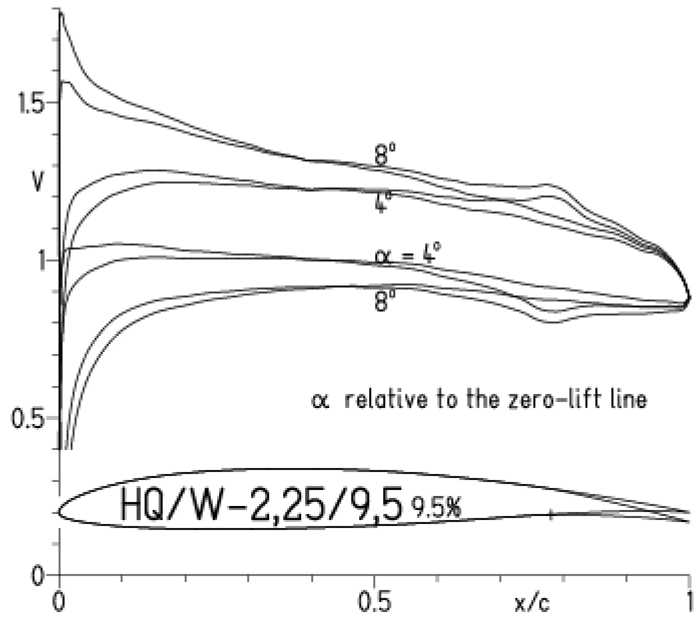


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

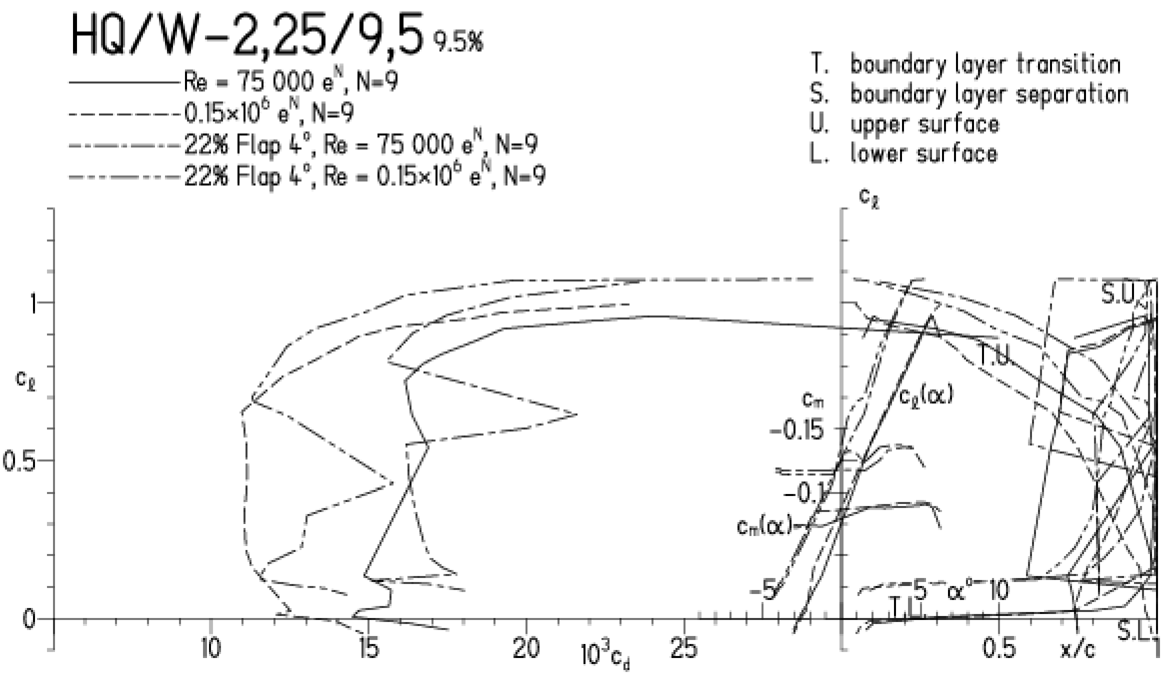


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

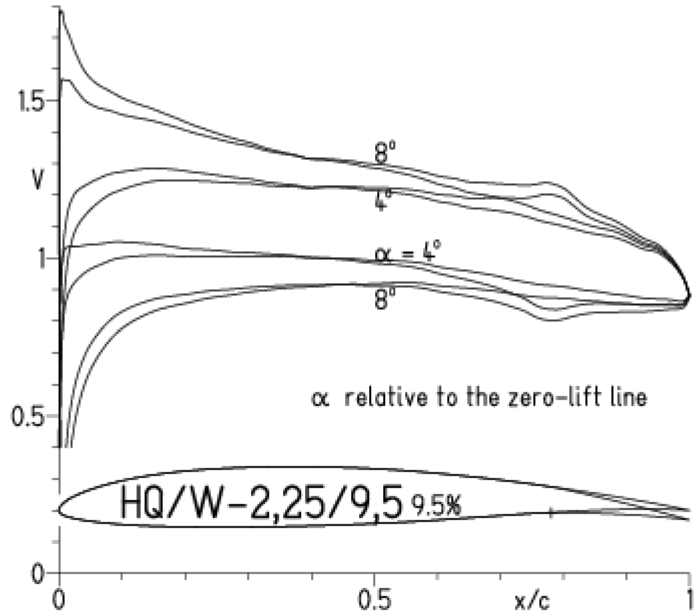


EPPLER 2005 V. 8.5.07 R

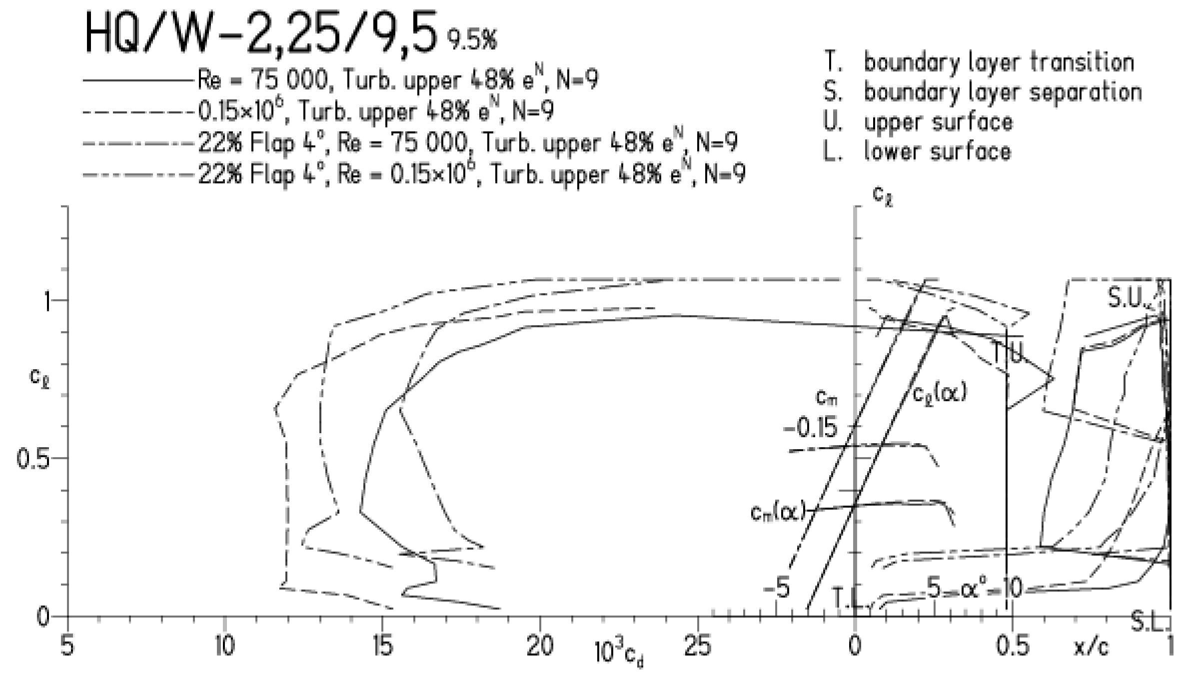


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

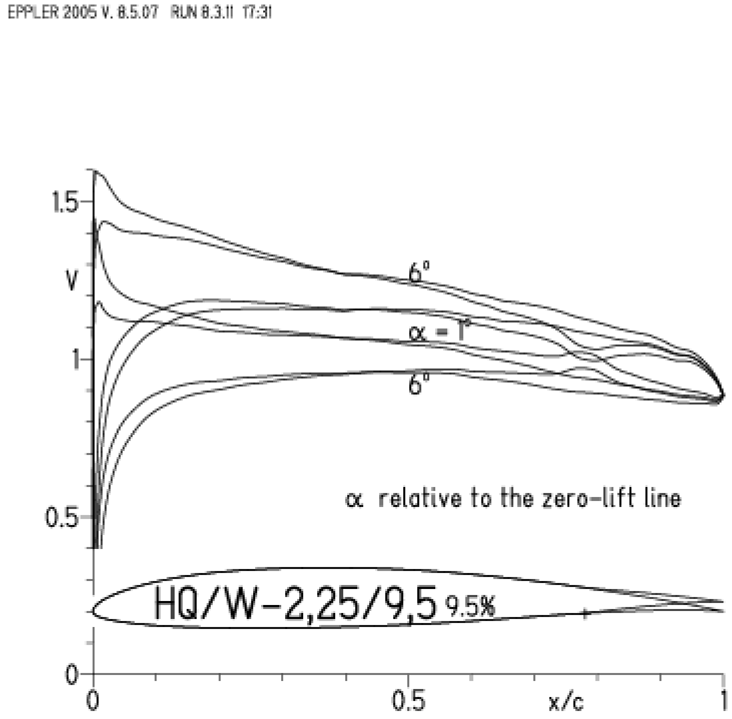
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

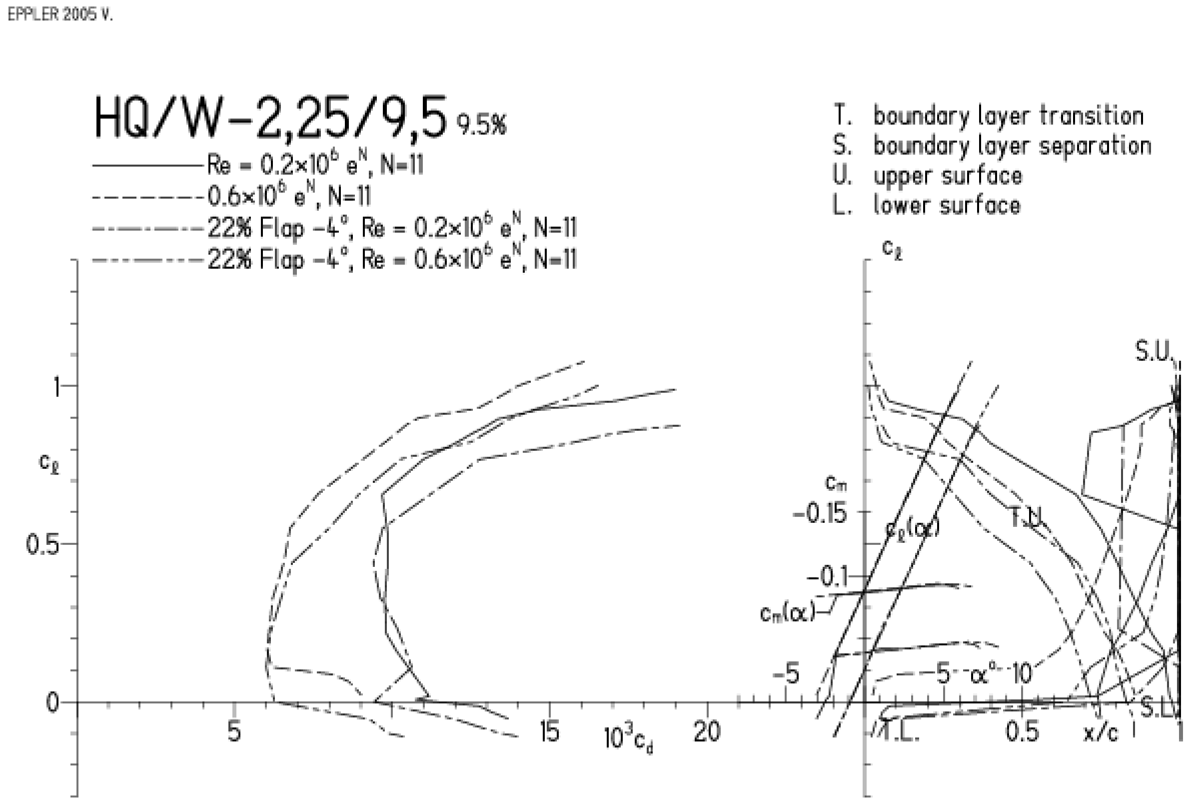


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



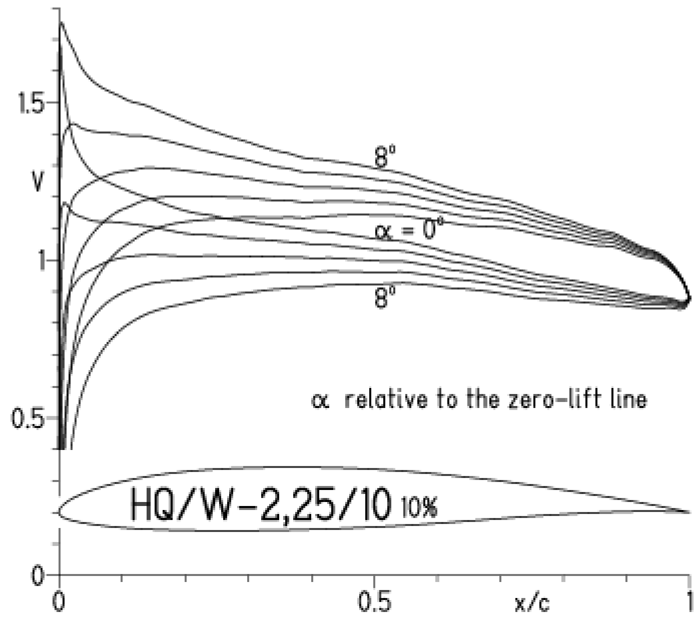
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



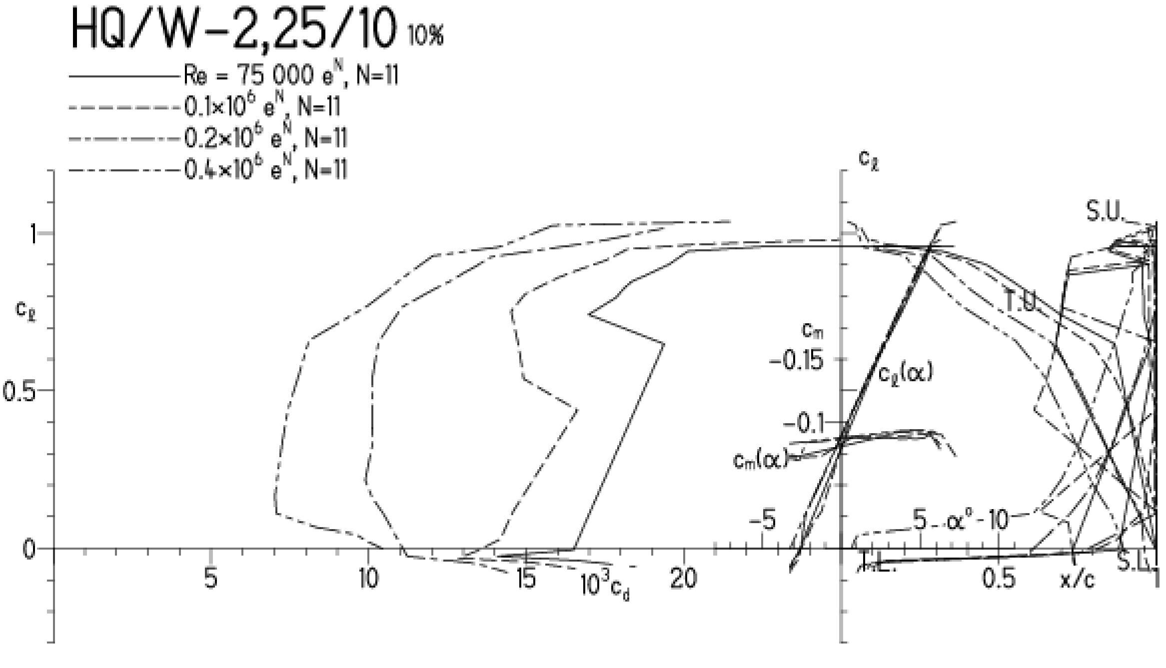


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

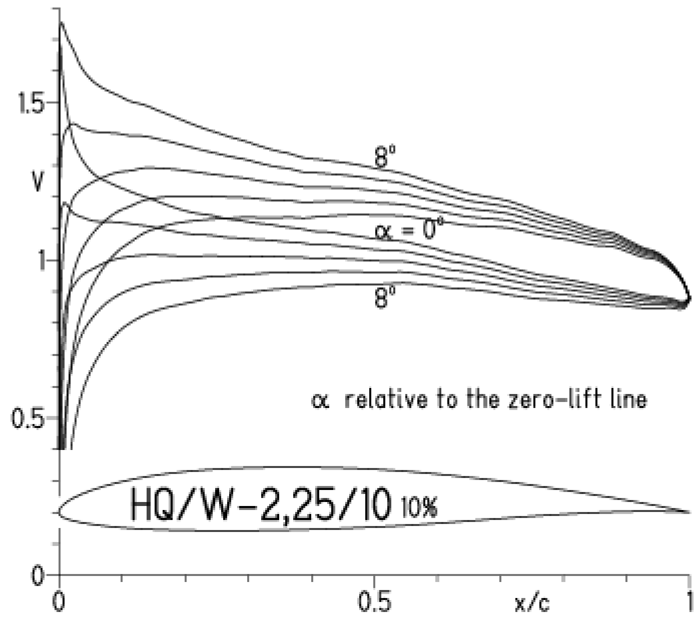


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

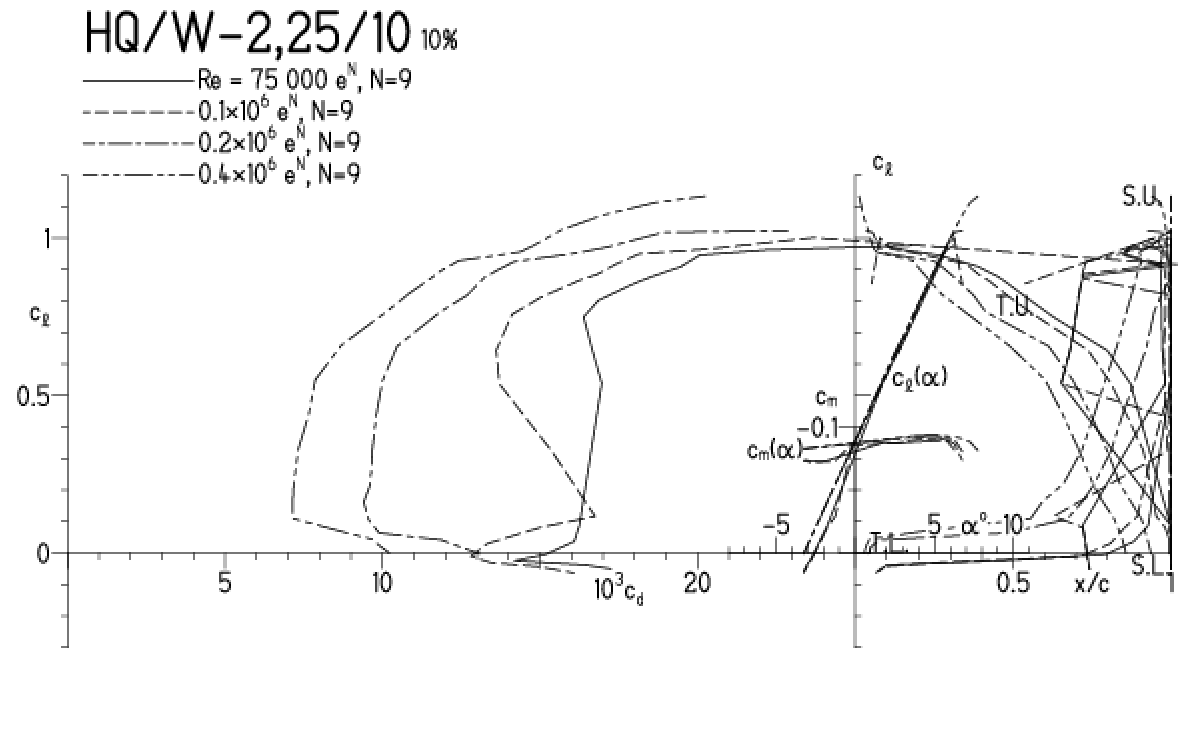


HQ/W-2,25/10, N=9

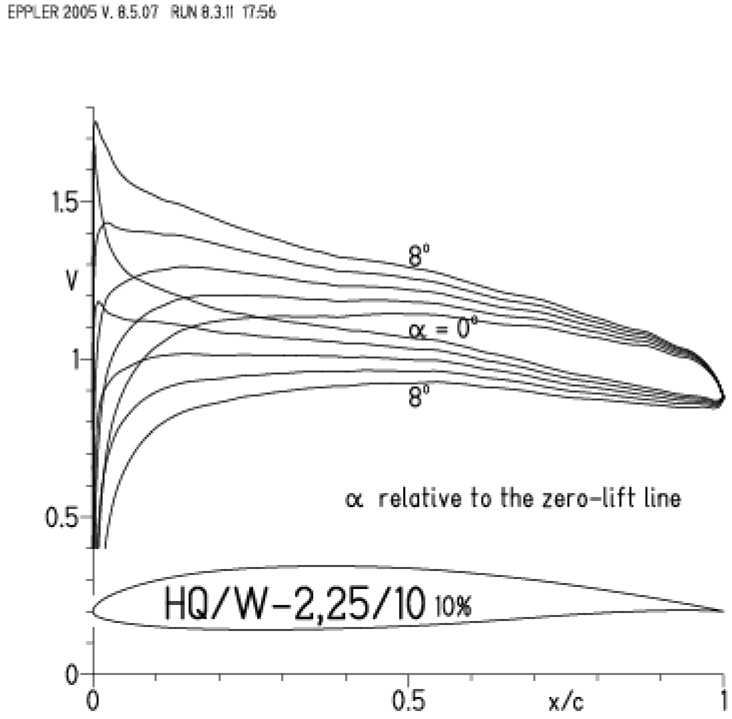
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

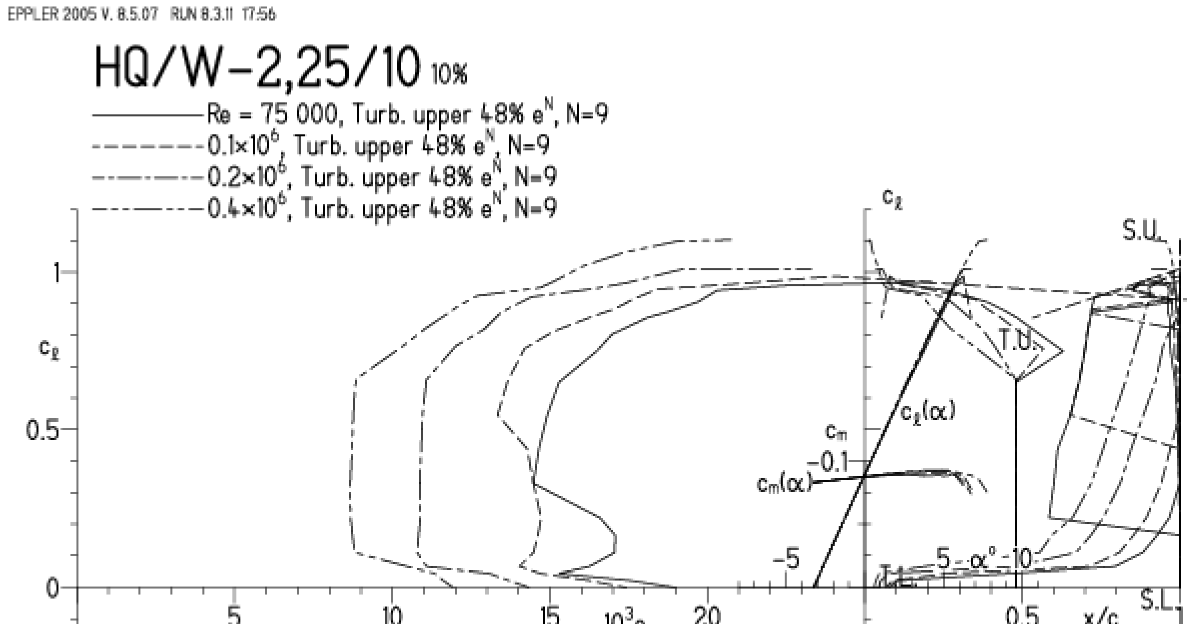


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



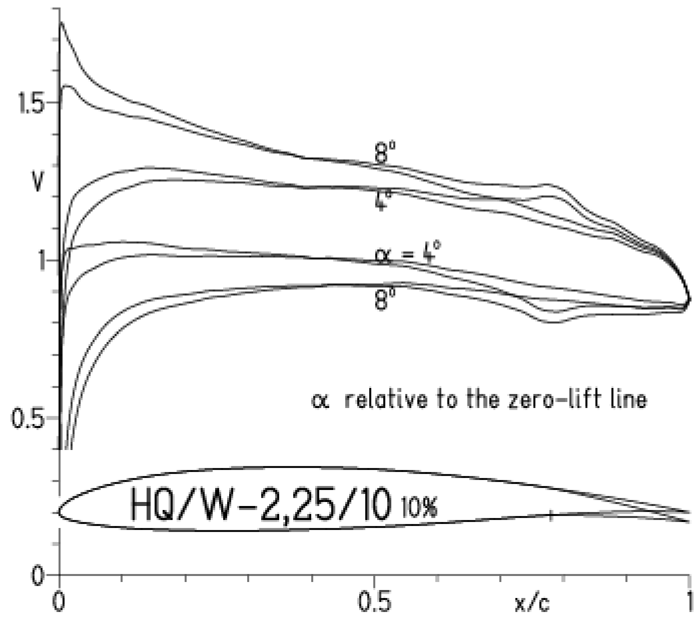
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



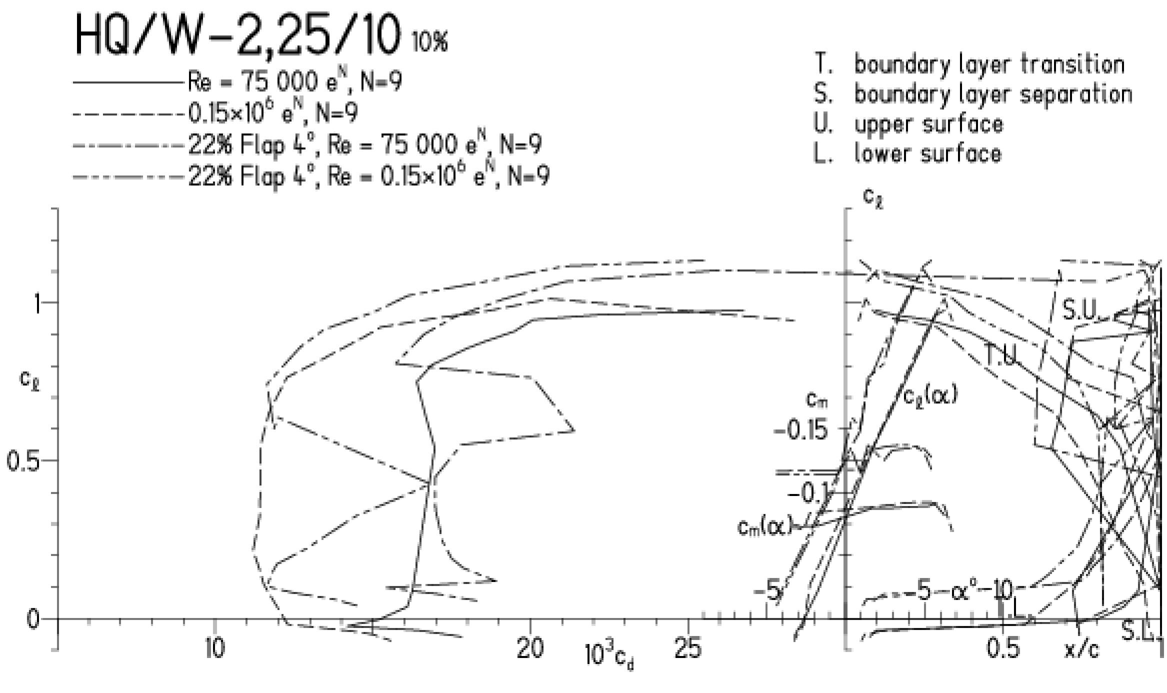


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

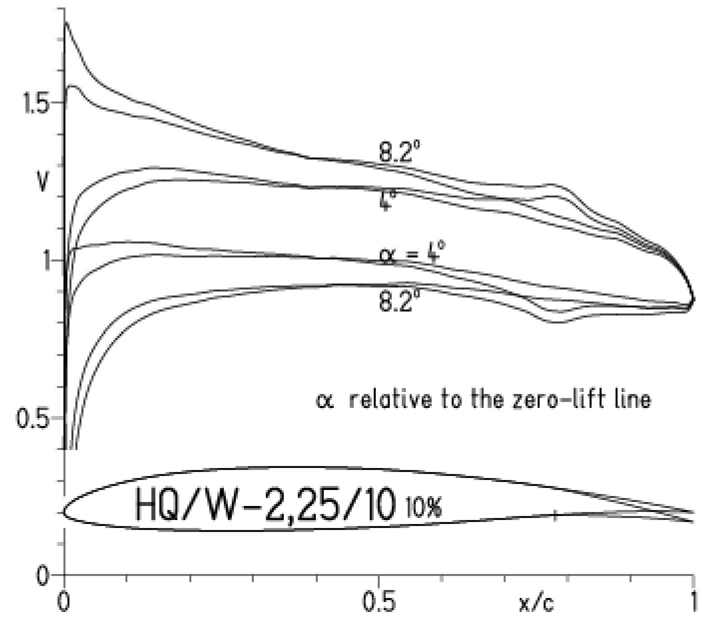


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

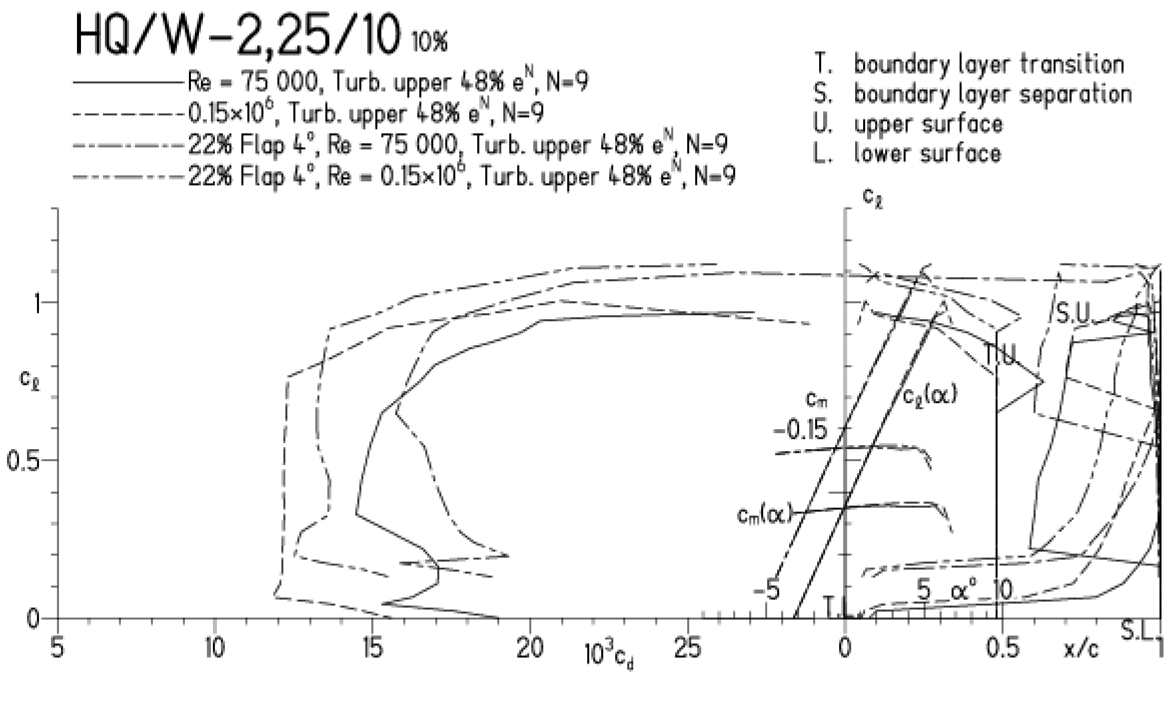


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

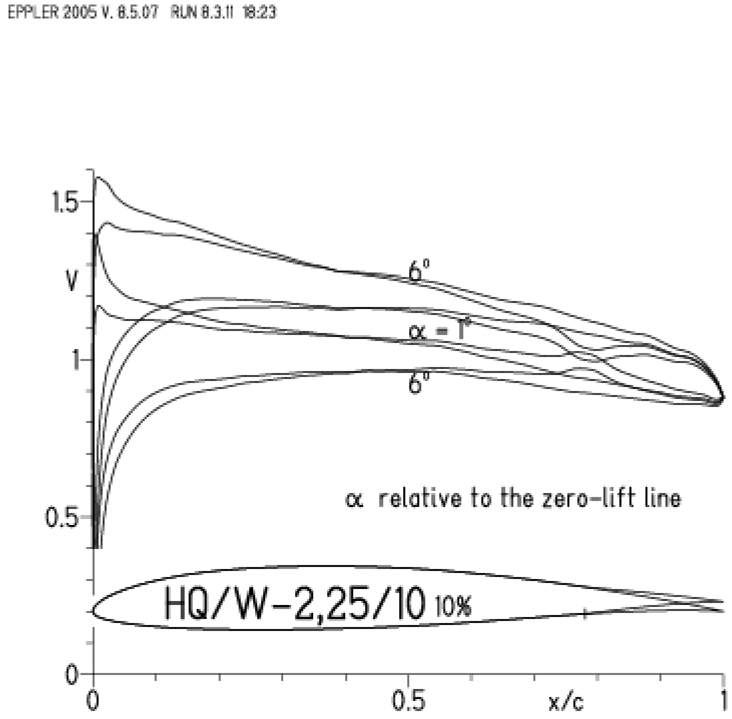
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

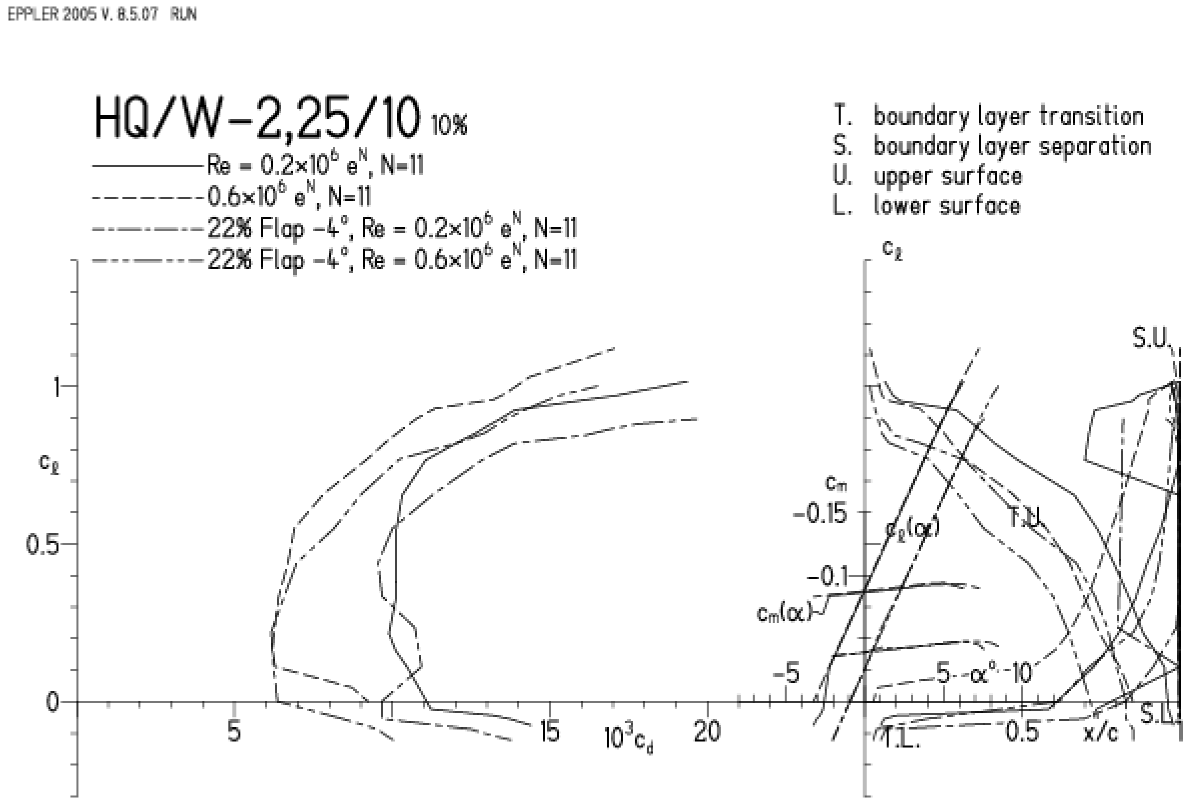


EPPLER 2005 V. 8.5.07 RUN 8.3



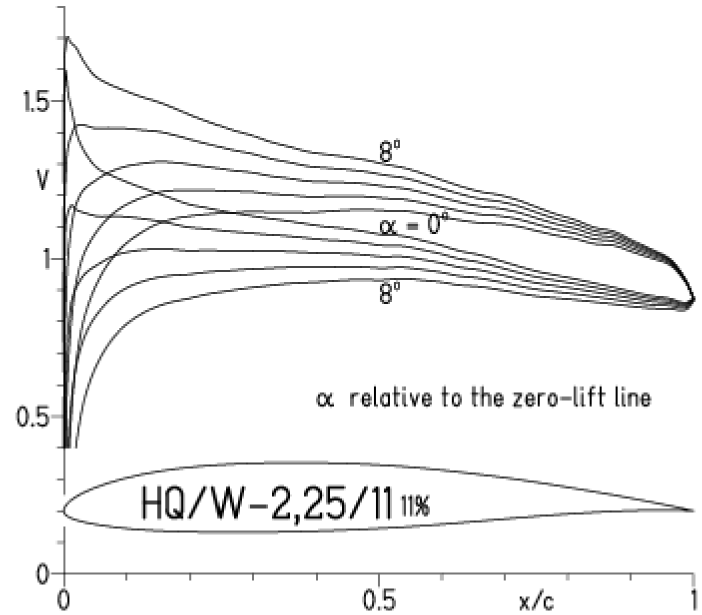
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



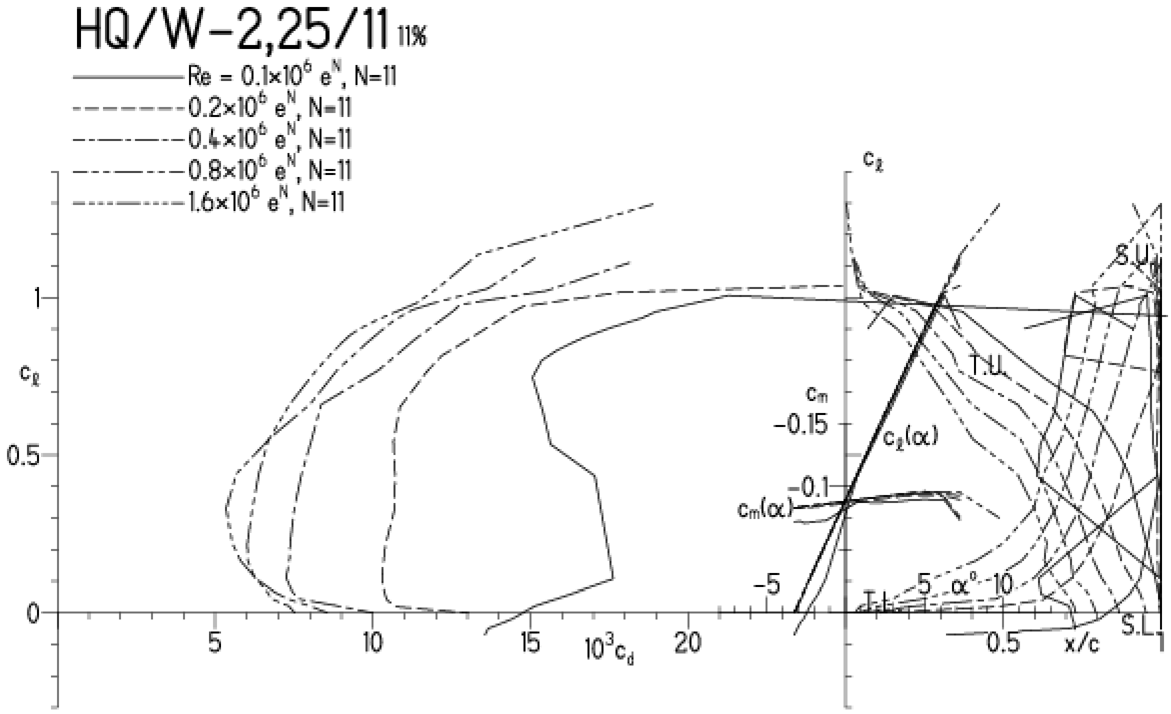


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

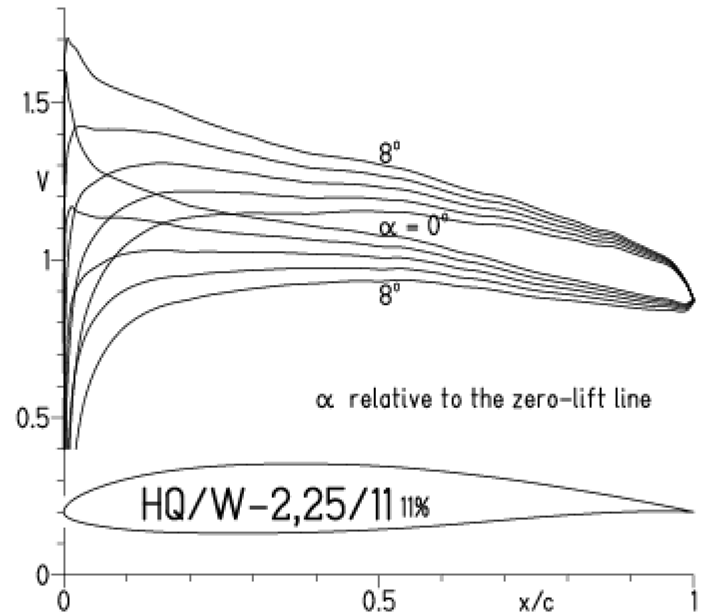


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

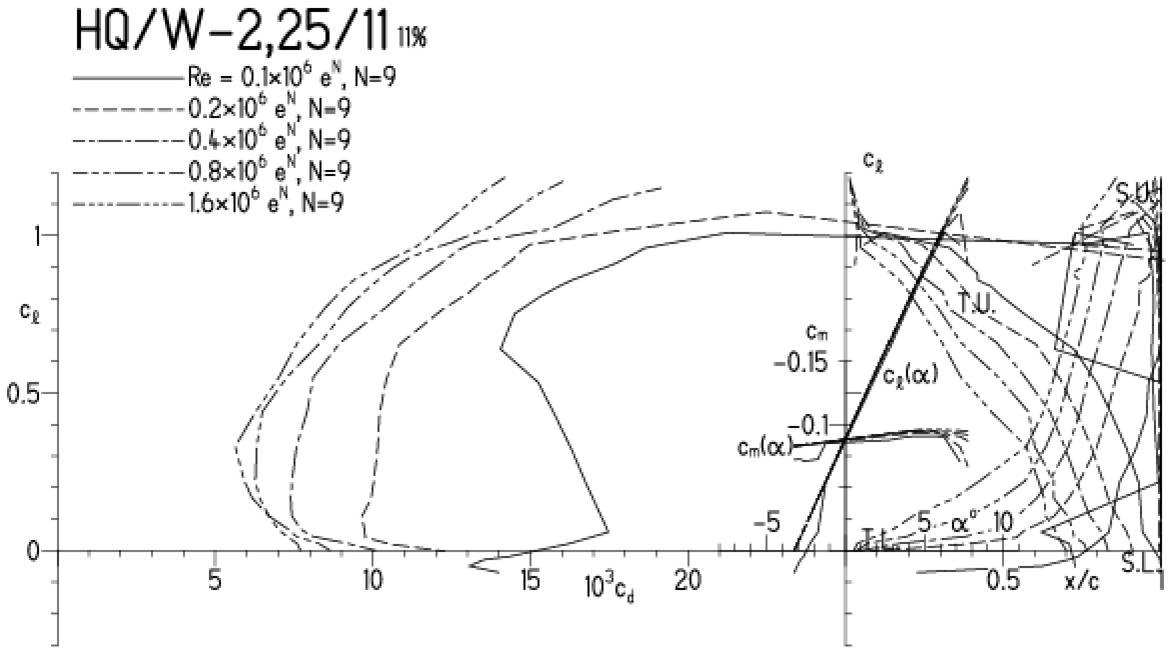


<u>HQQ/W-2,25/11</u>, N=9

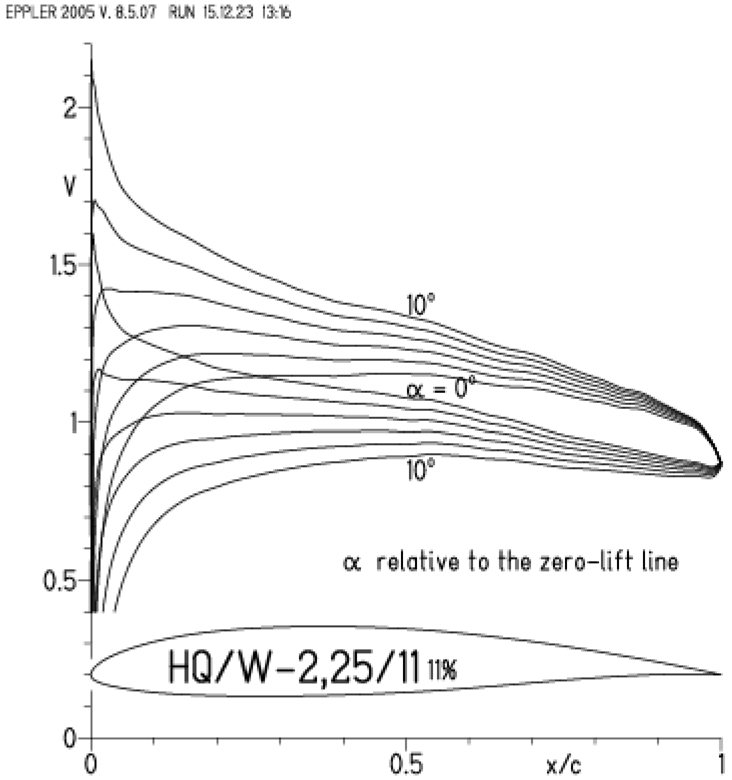
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

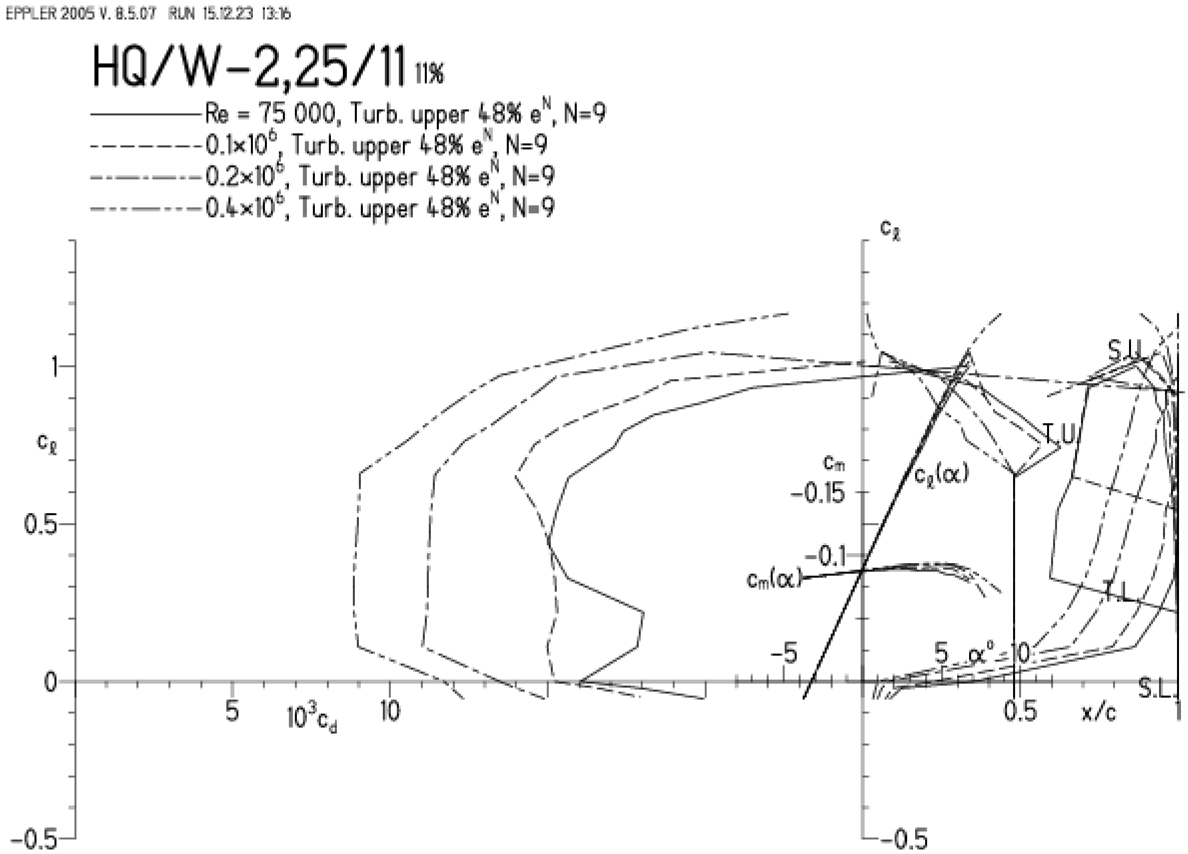


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

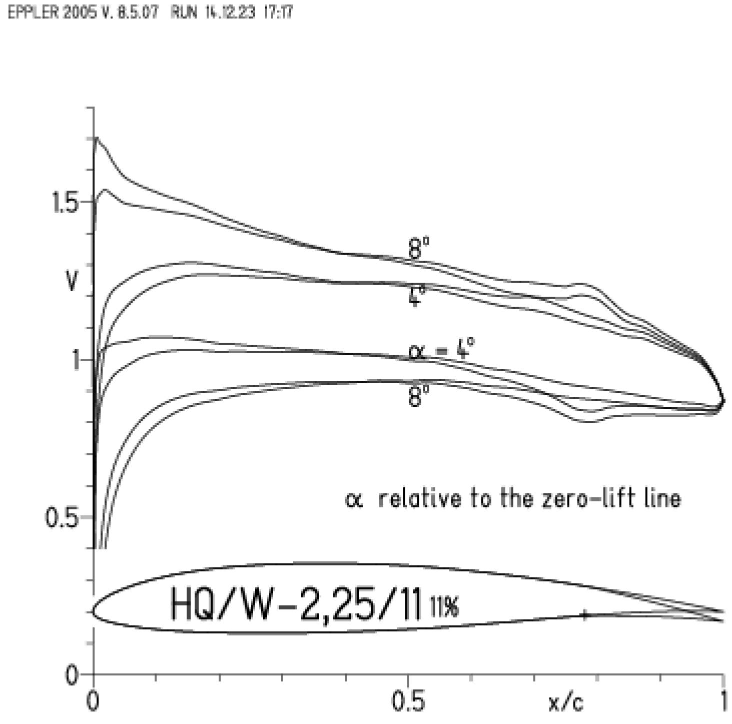


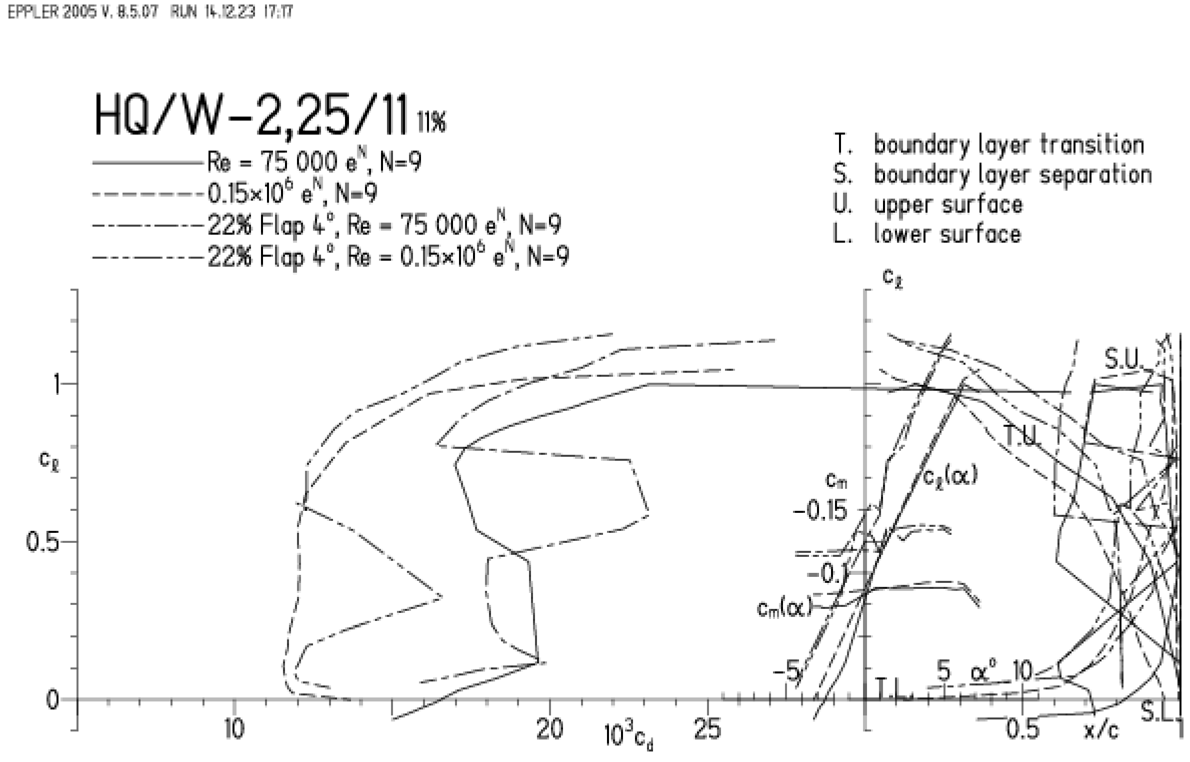
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





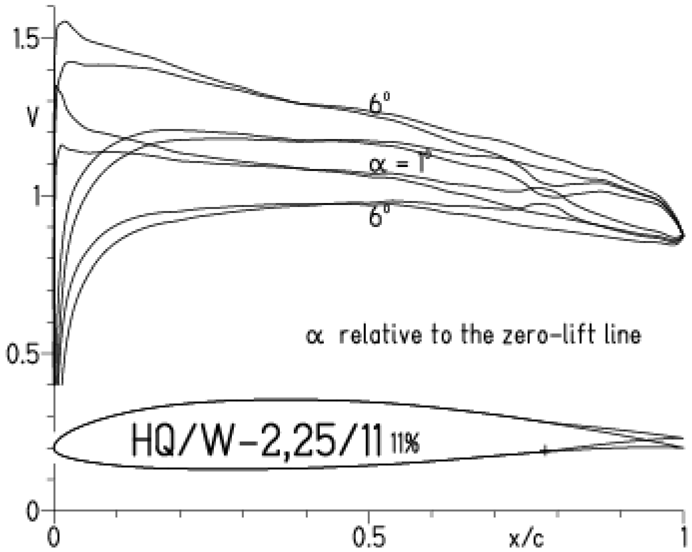
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



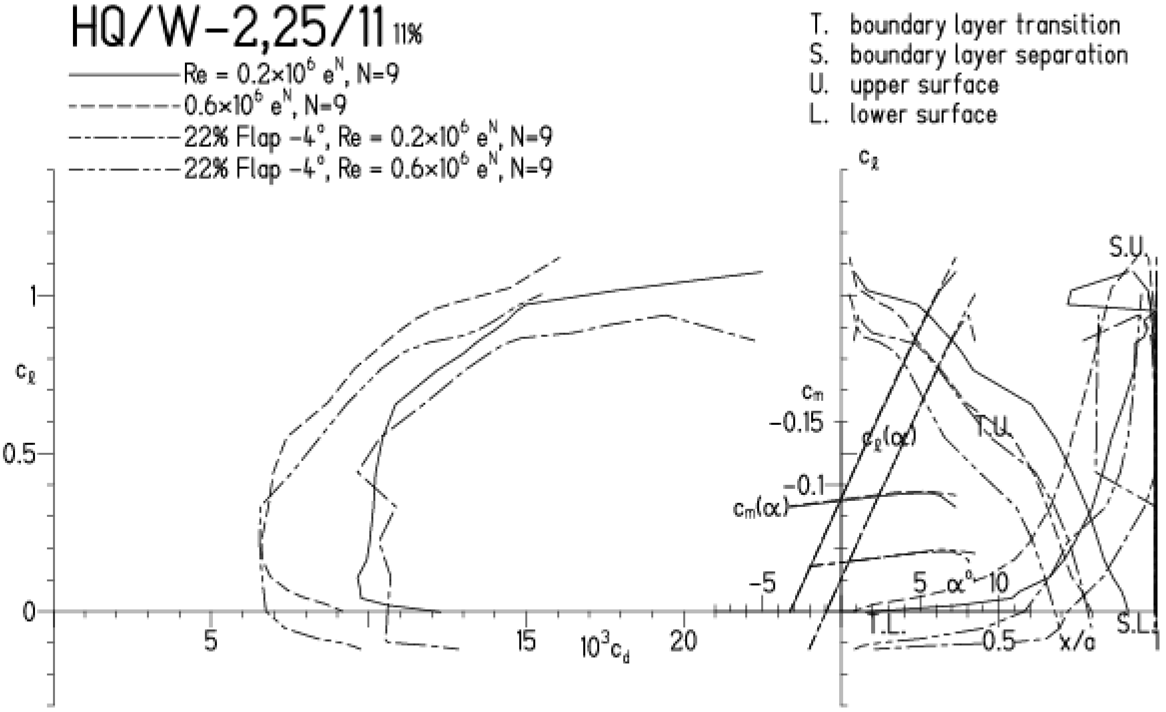


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

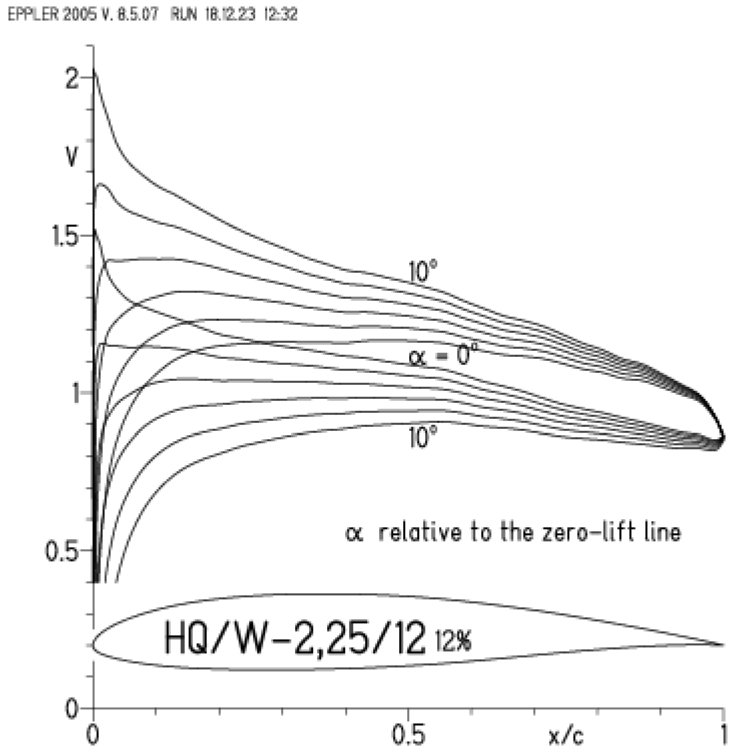
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

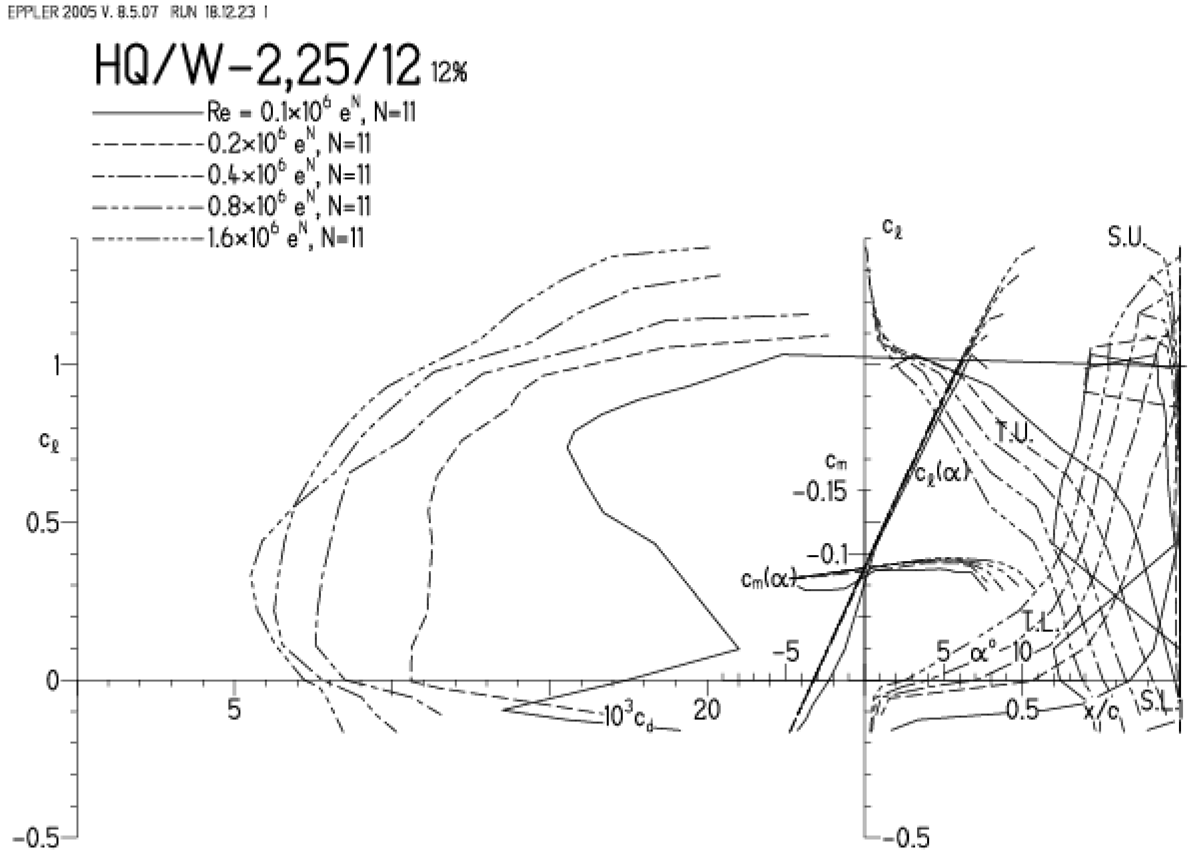


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

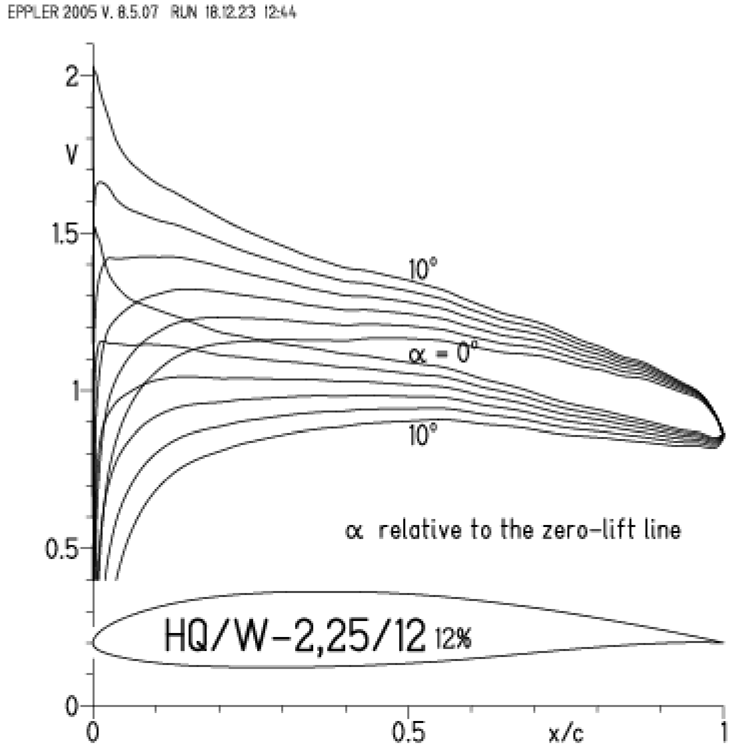


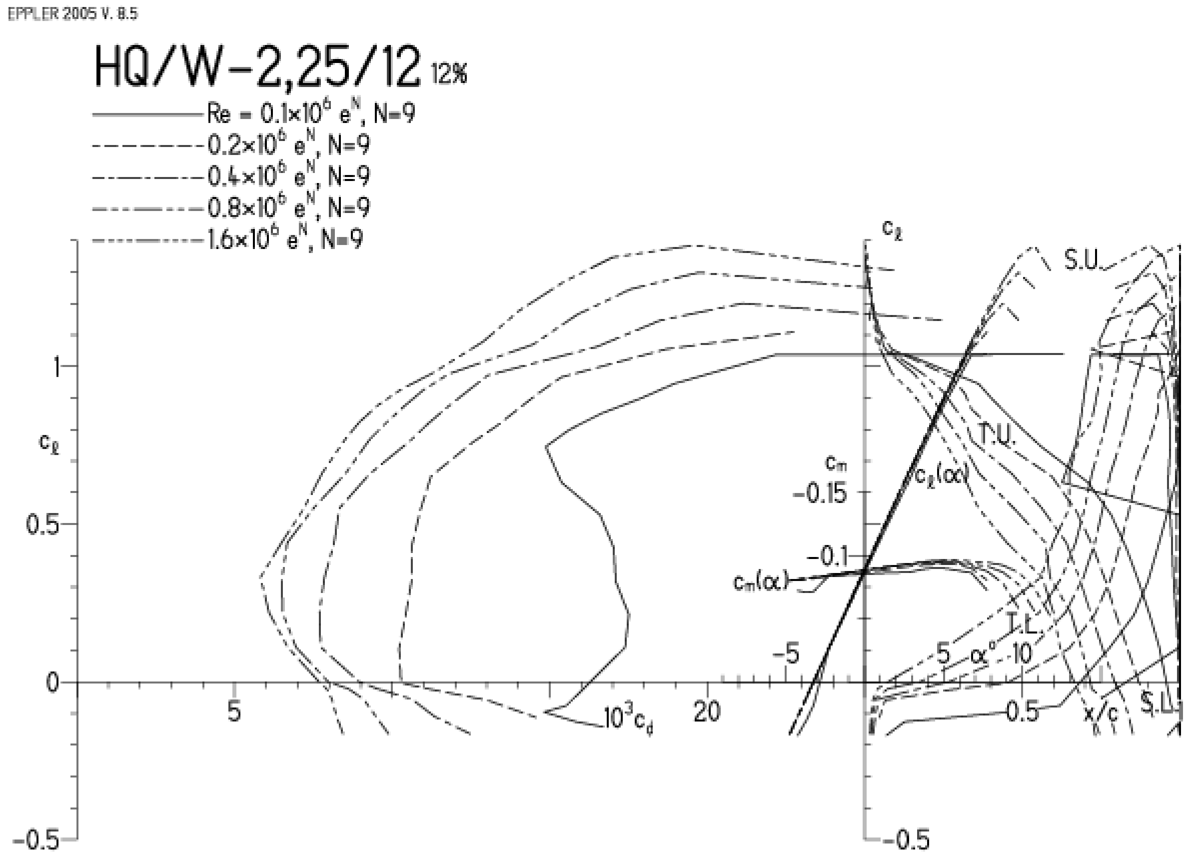
HQ/W-2,25/12, N=11



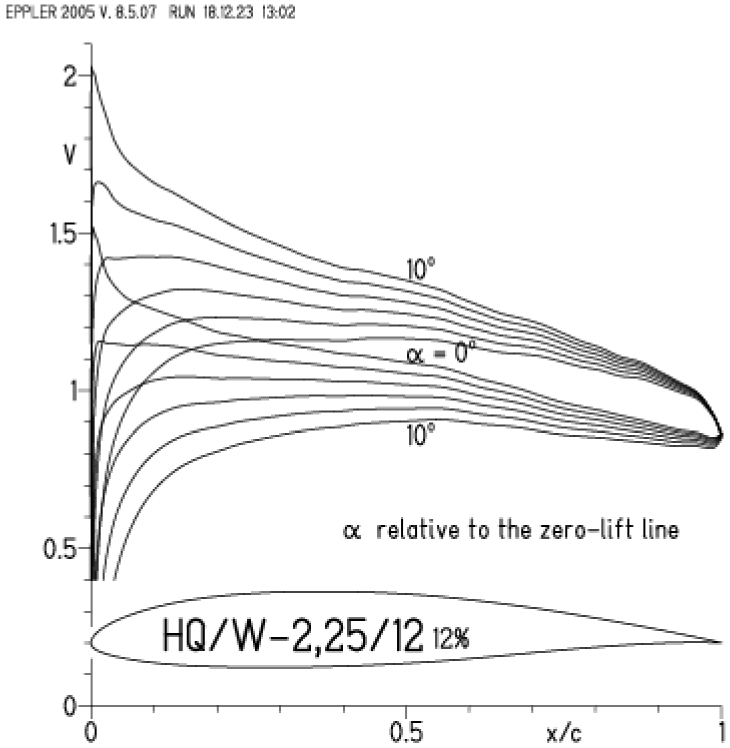


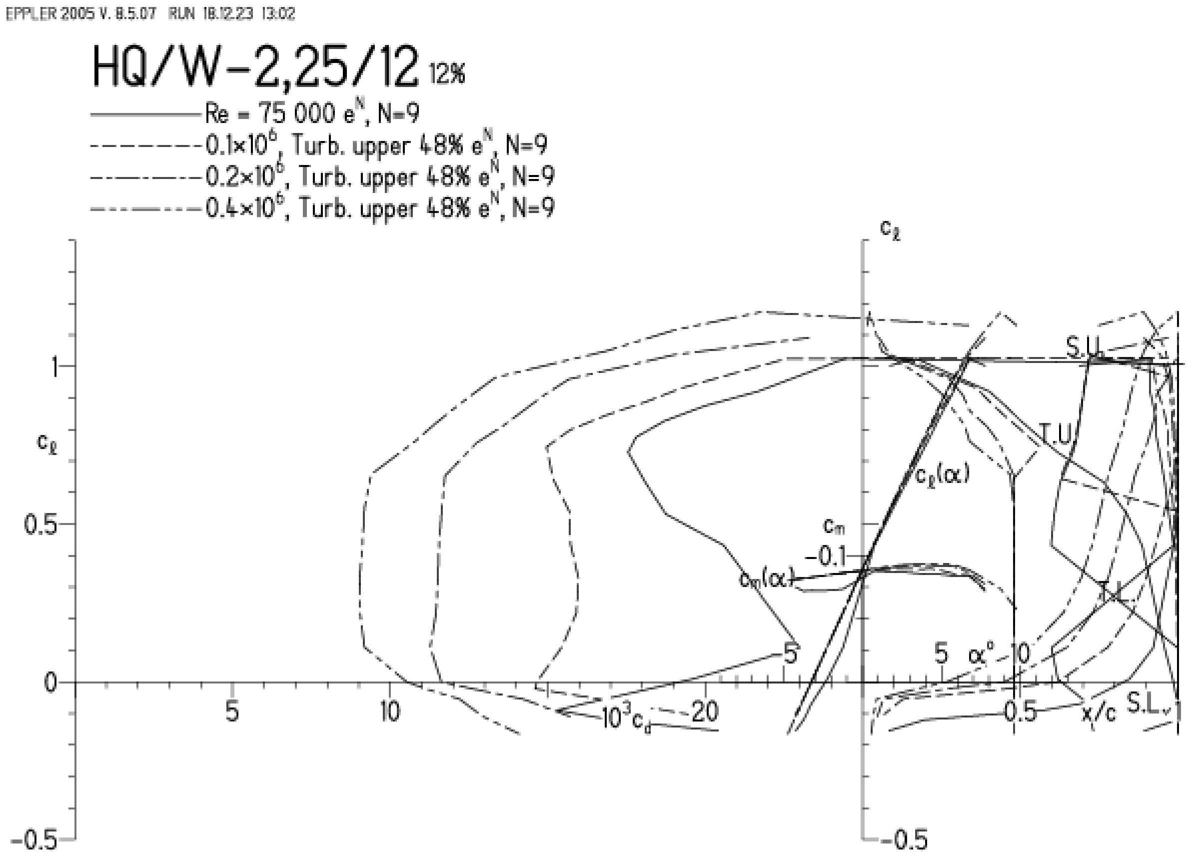
<u>HQ/W-2,25/12</u>, N=9





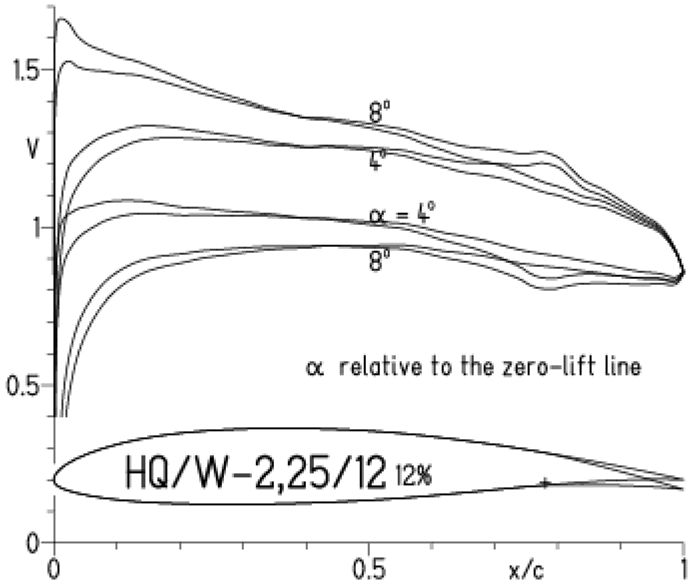
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



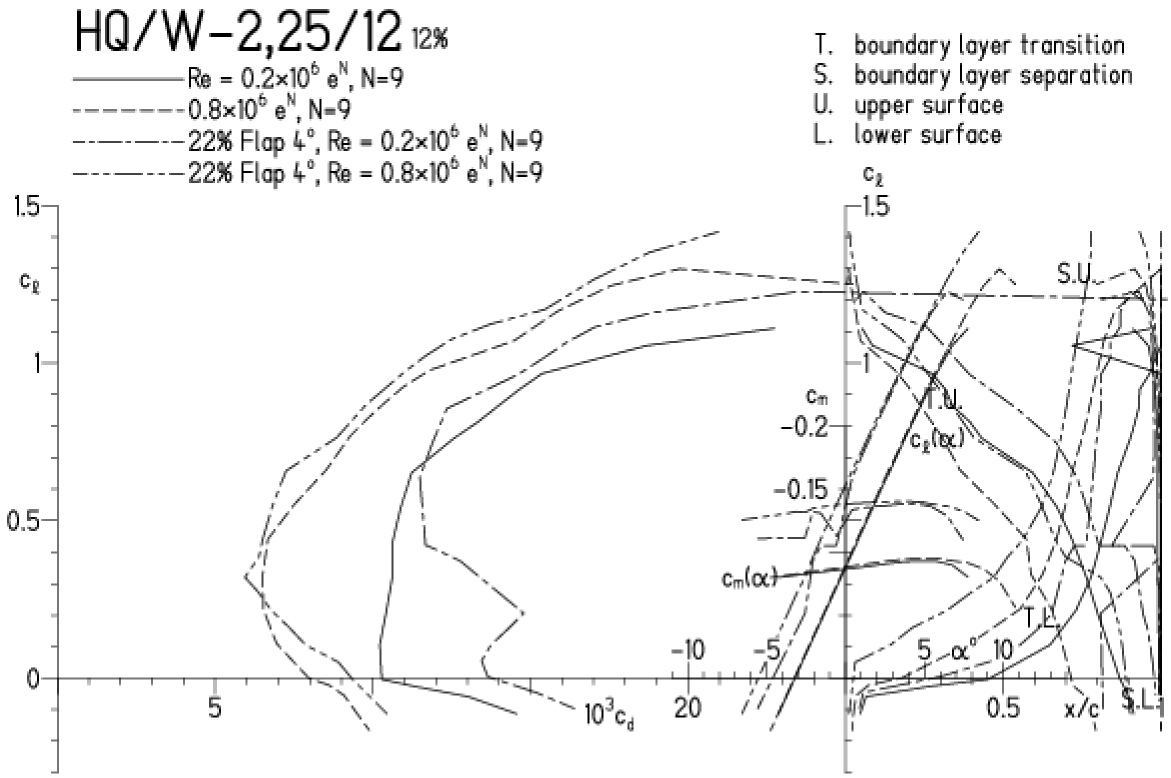


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

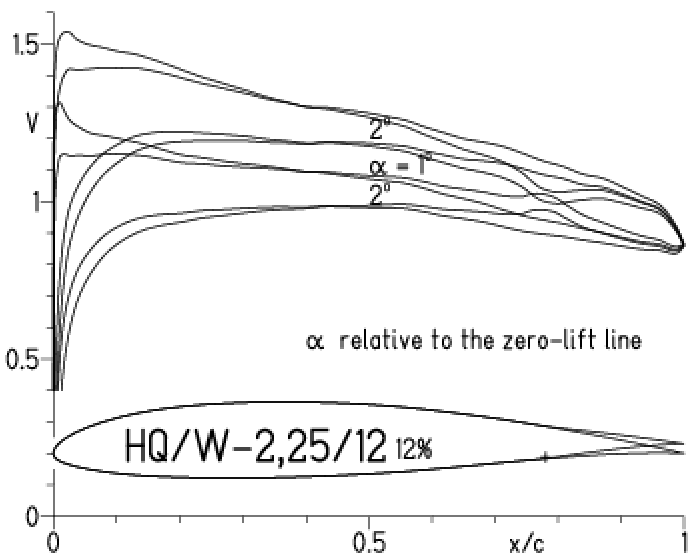


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

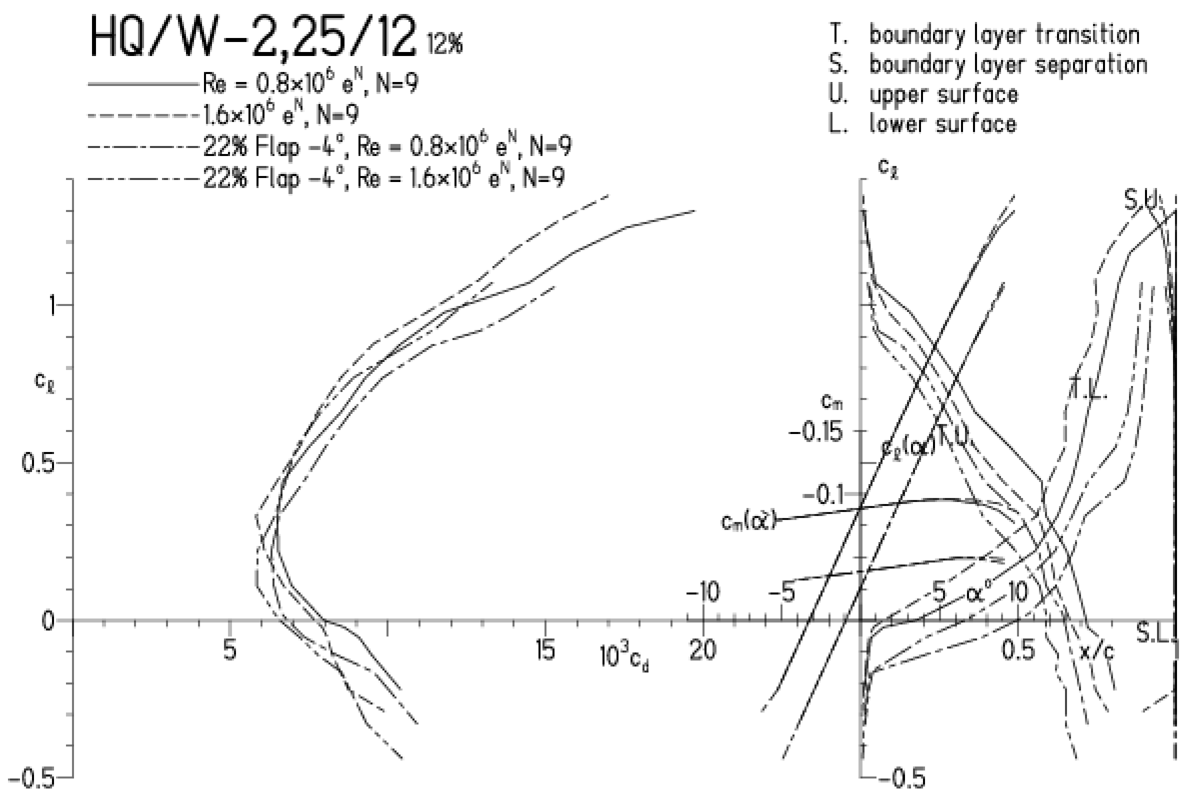


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

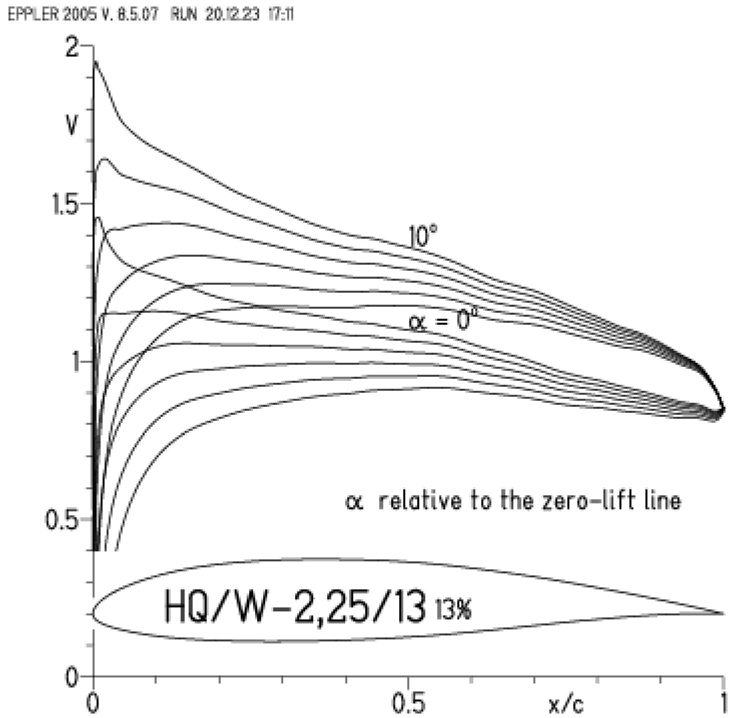
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

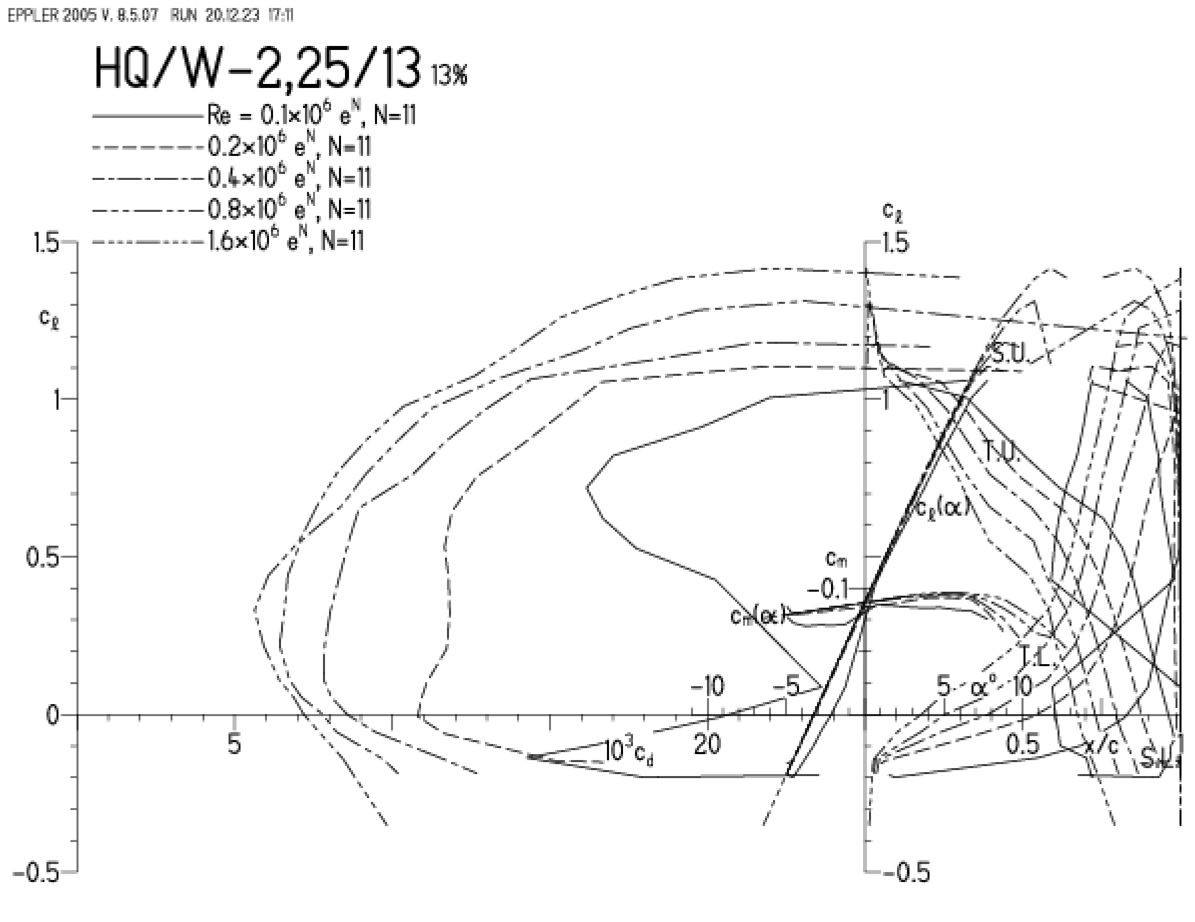


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

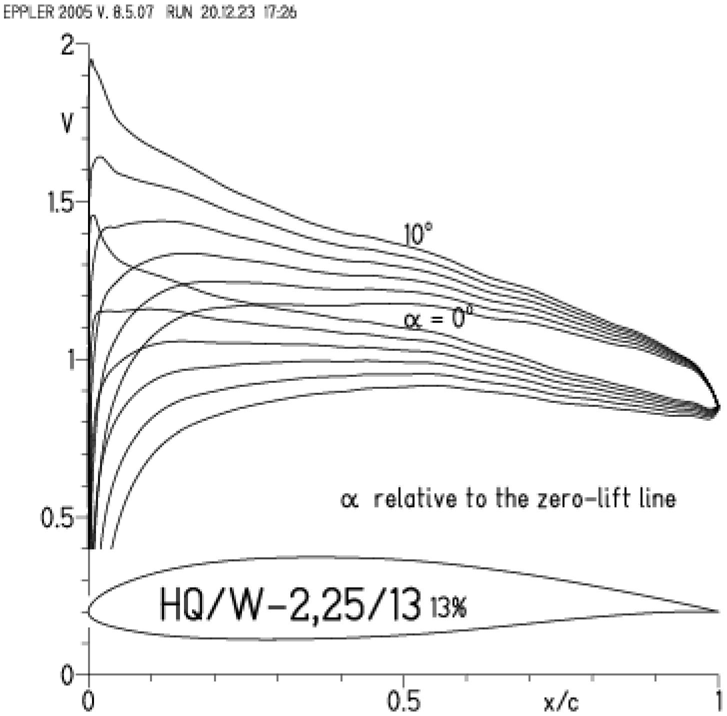


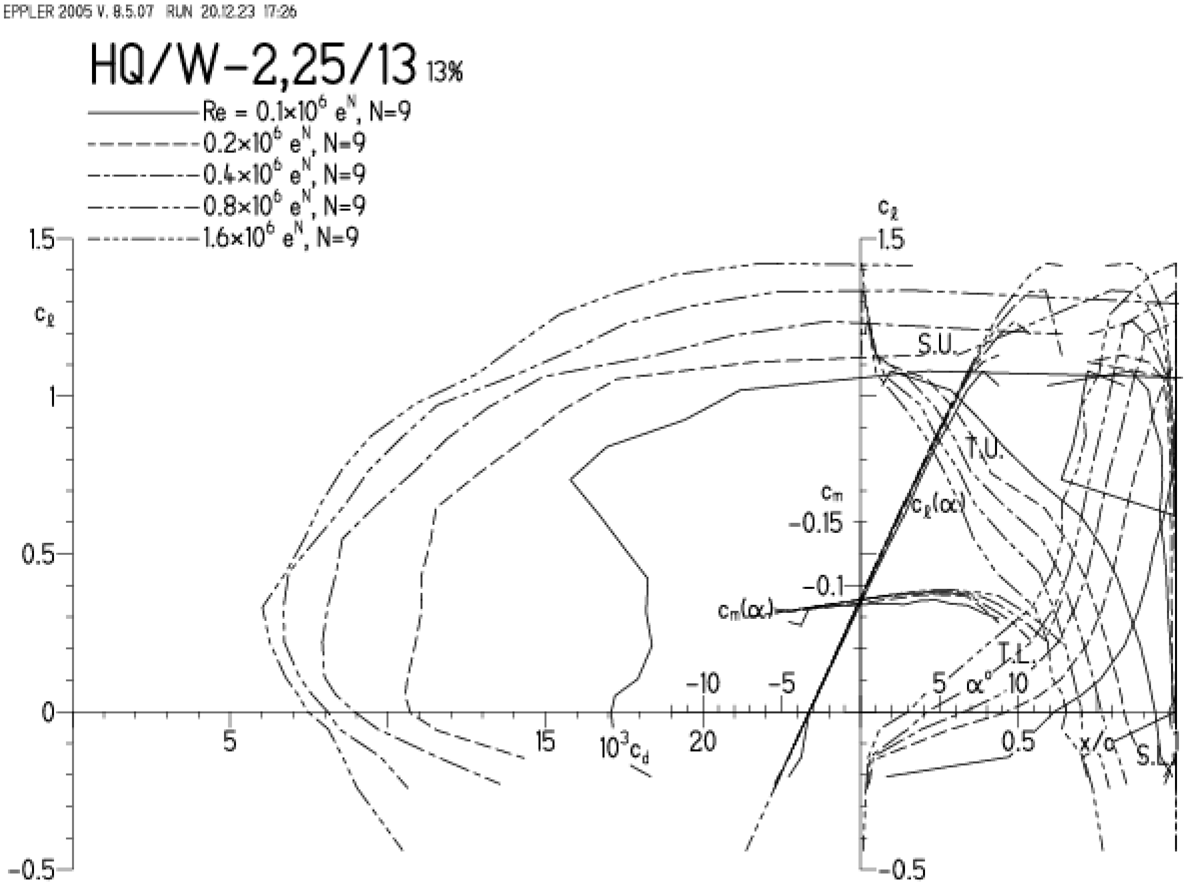
HQ/W-2,25/13, N=11



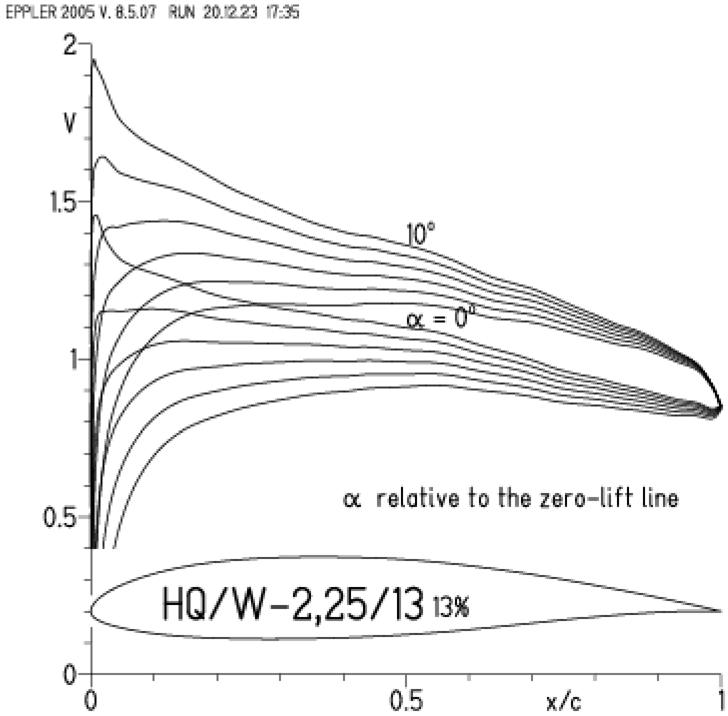


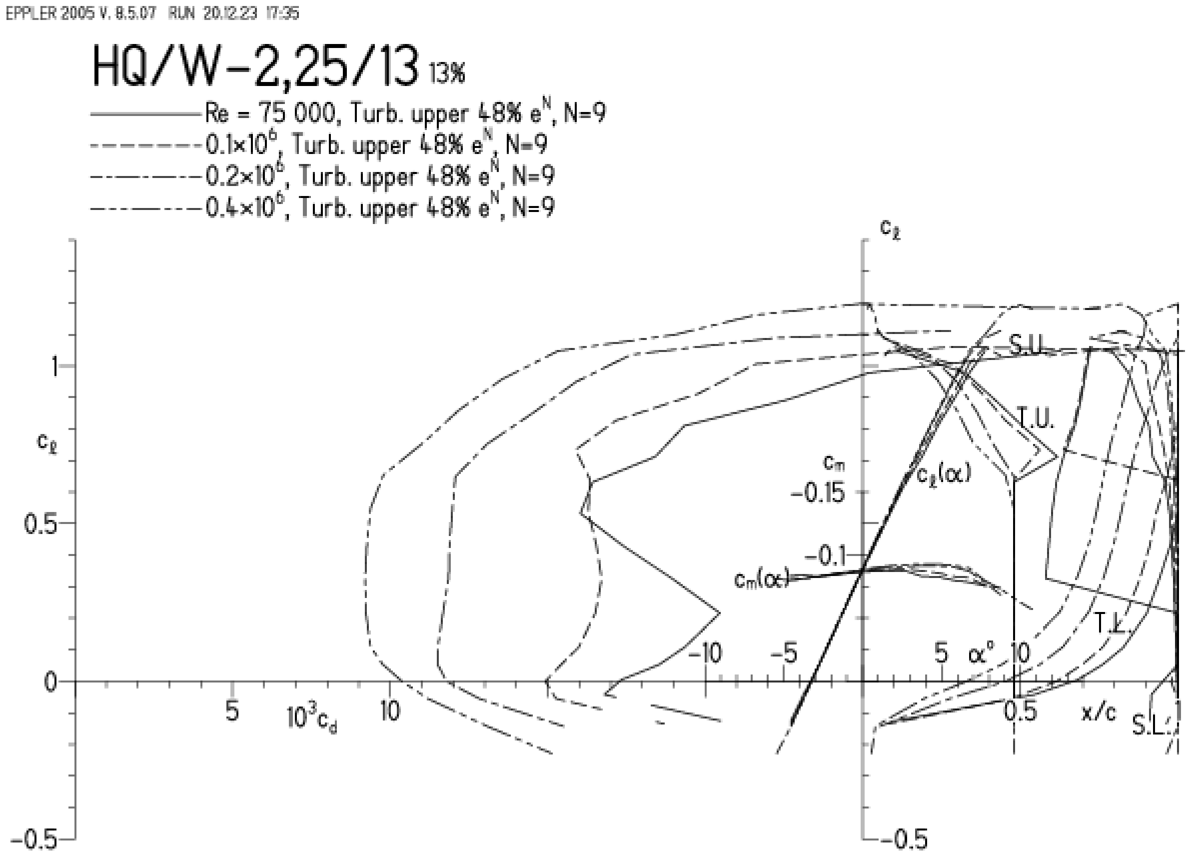
<u>HQ/W-2,25/13</u>, N=9





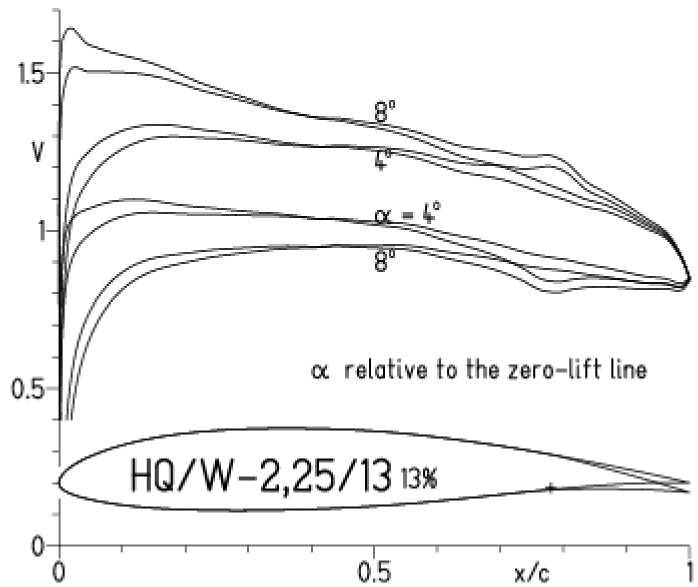
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



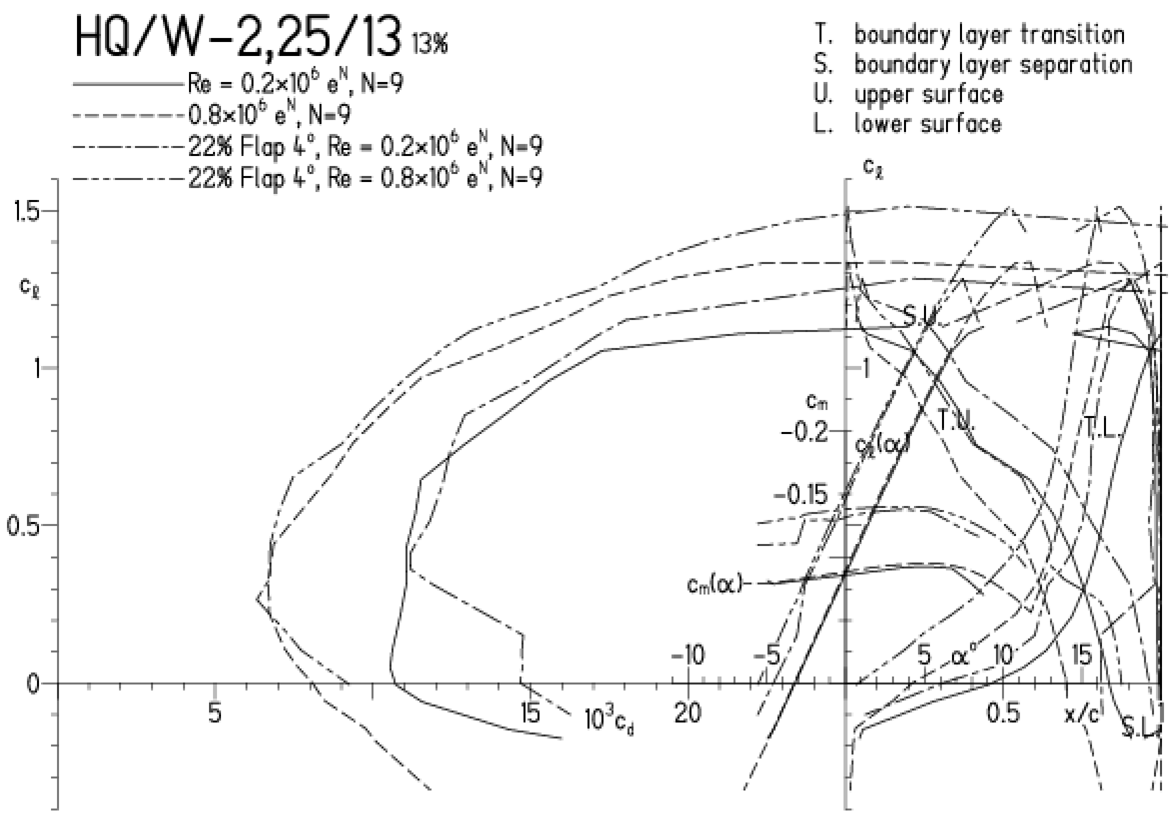


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

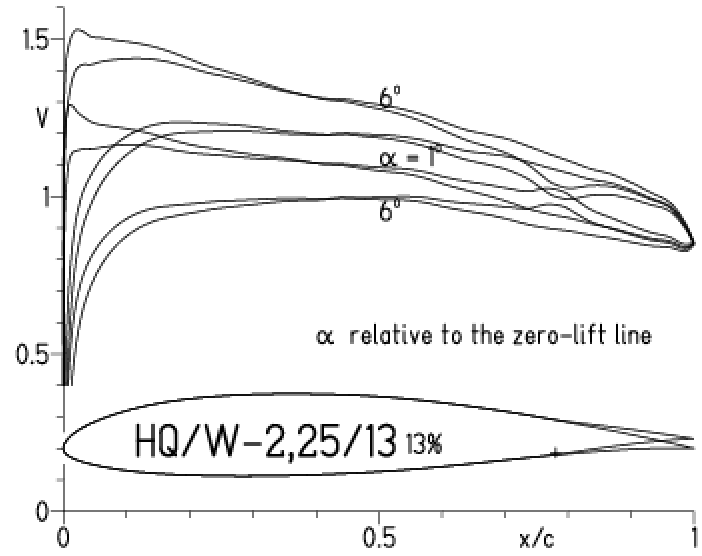


EPPLER 2005 V.

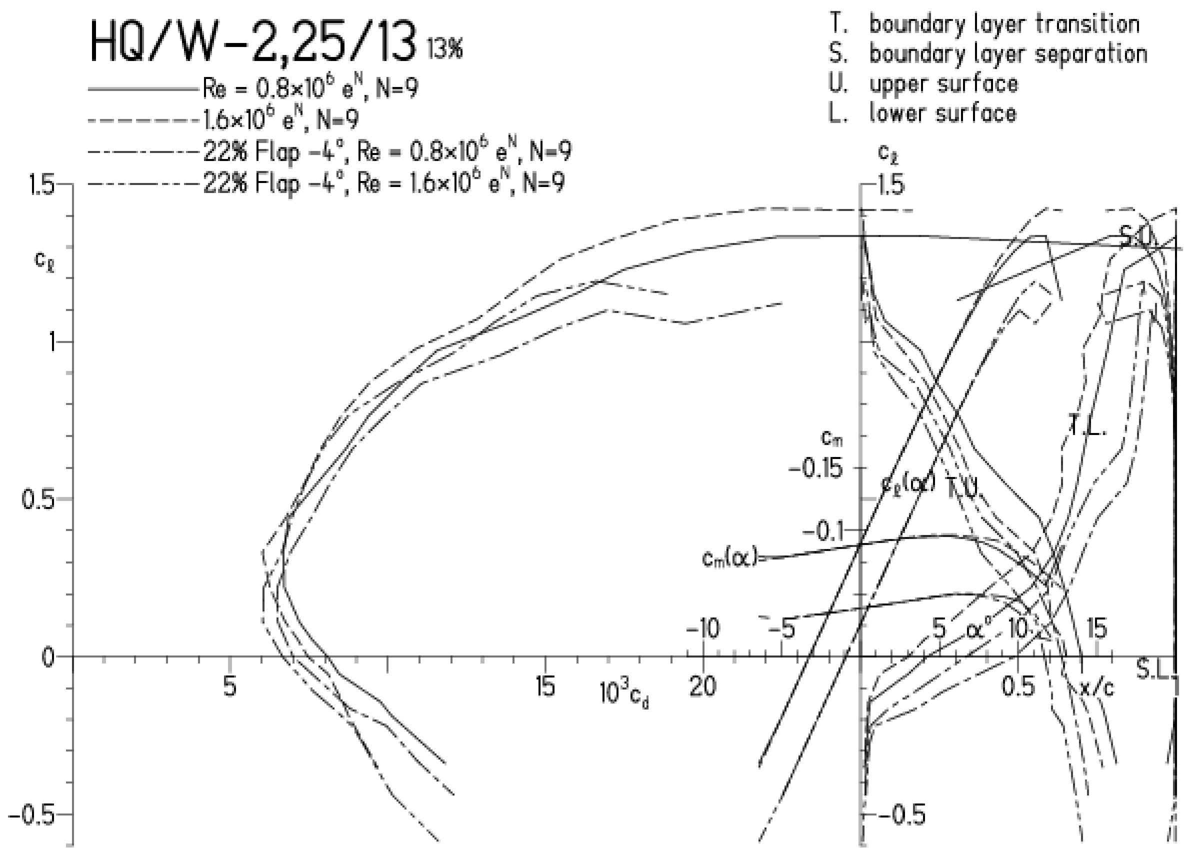


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

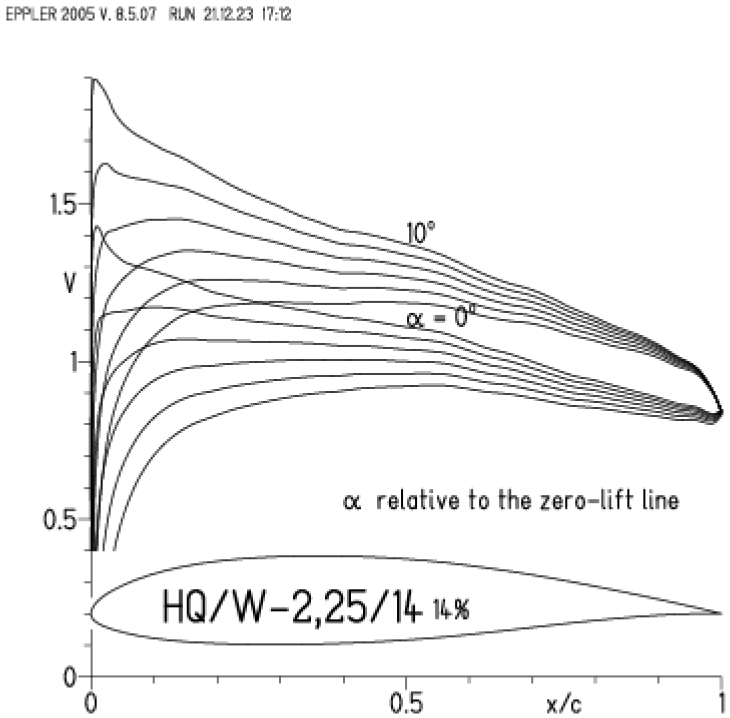
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

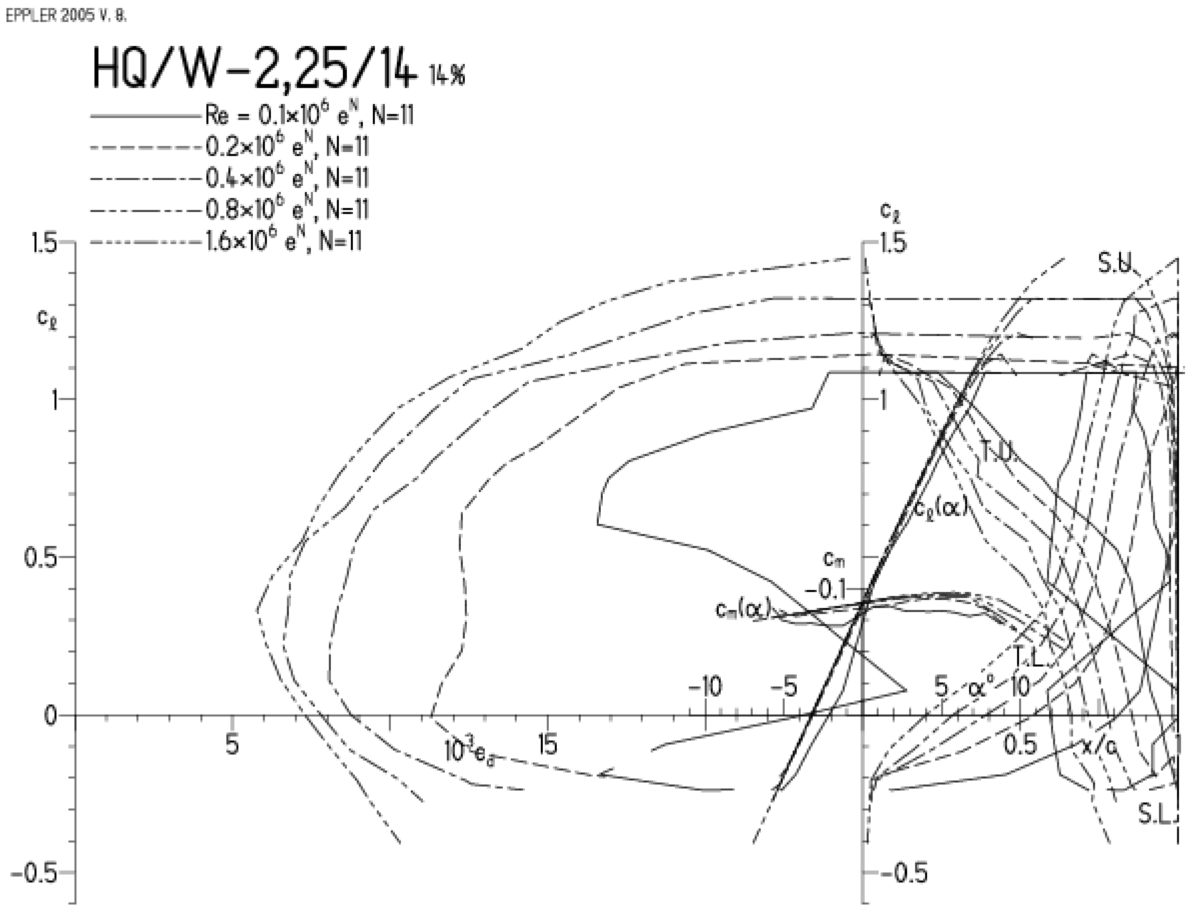


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

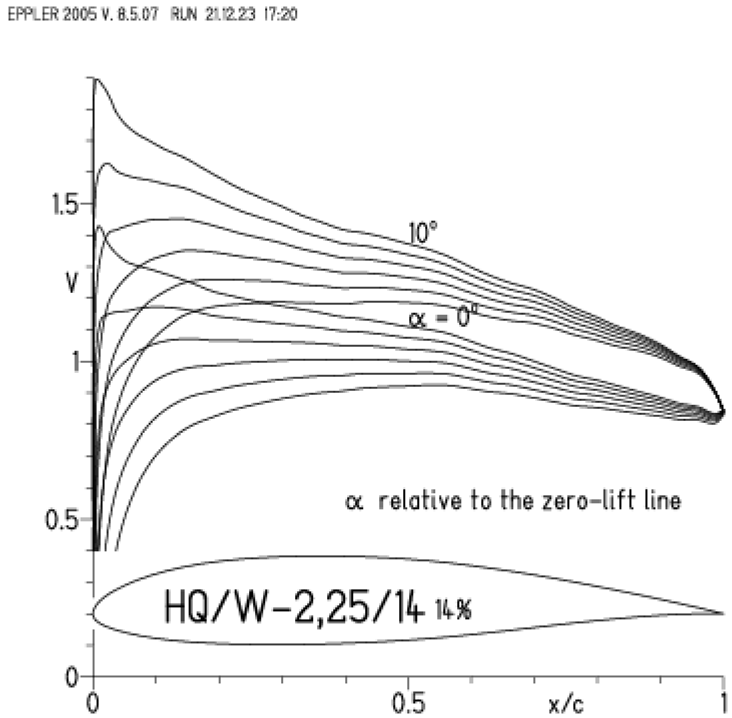


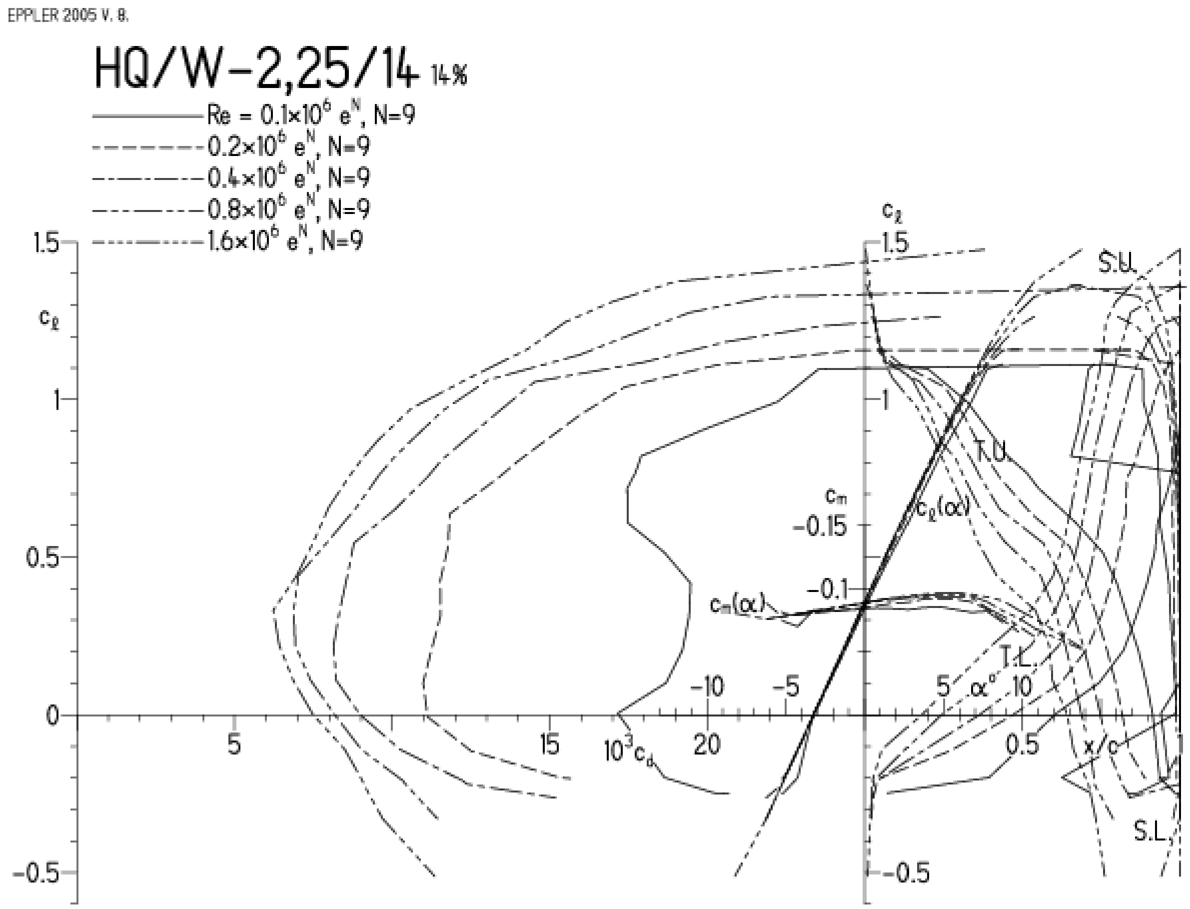
HQ/W-2,25/14, N=11



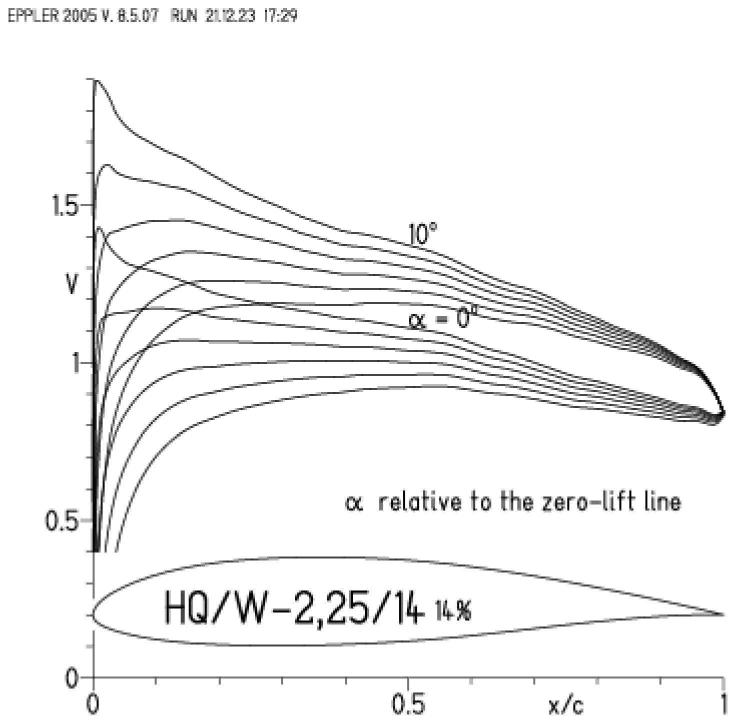


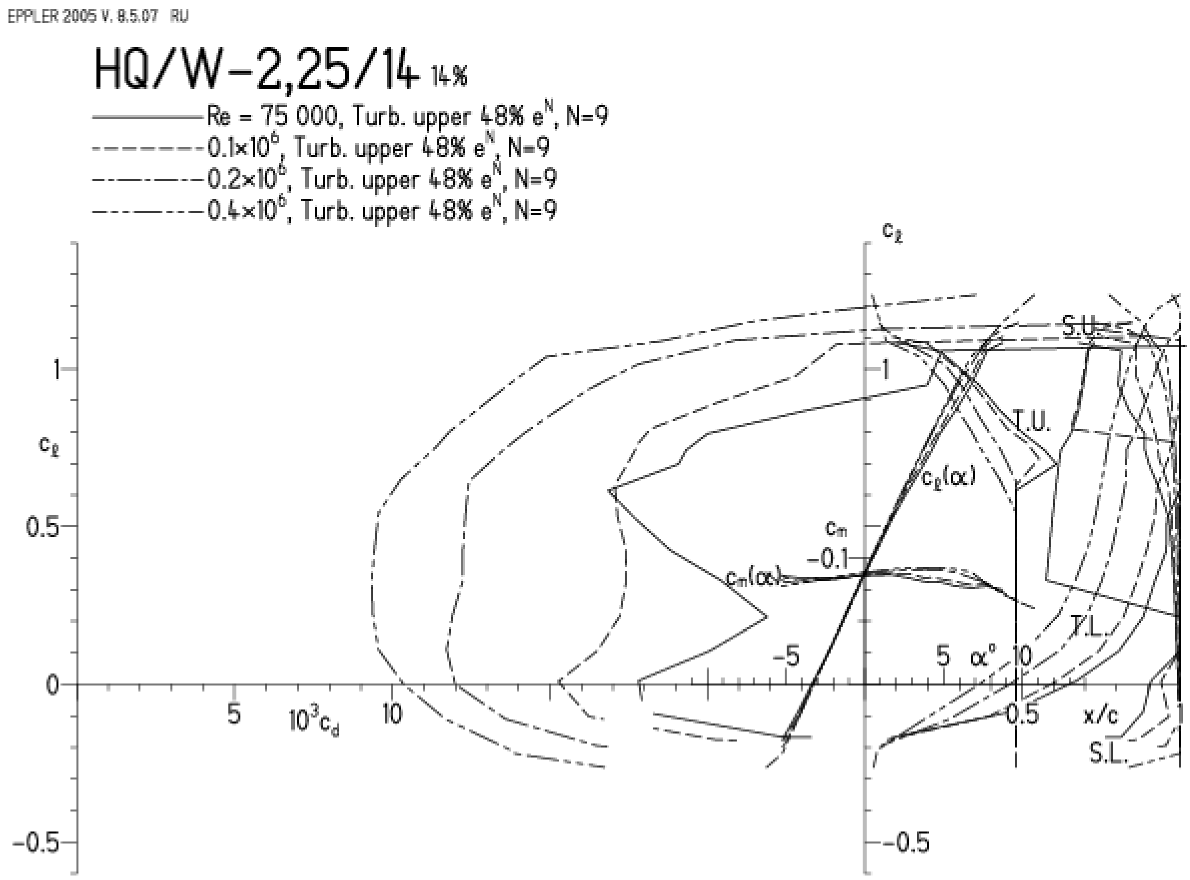
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−10
−5
5
α°
10
−0.5
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

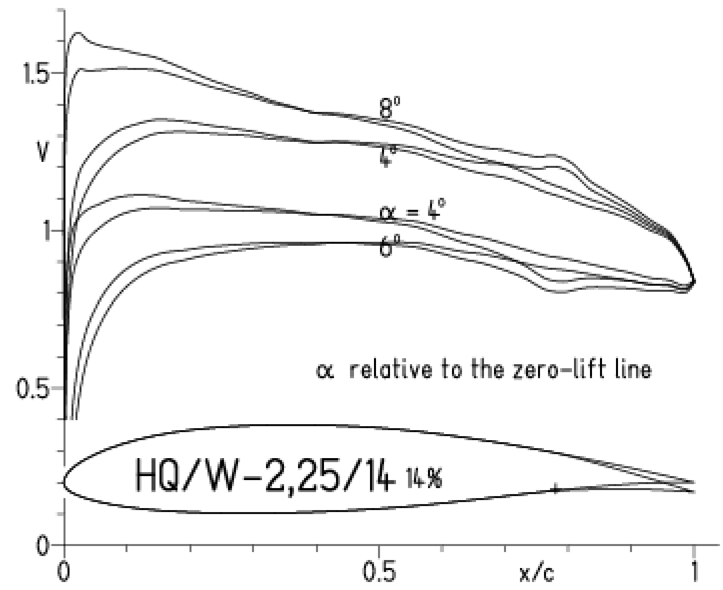
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



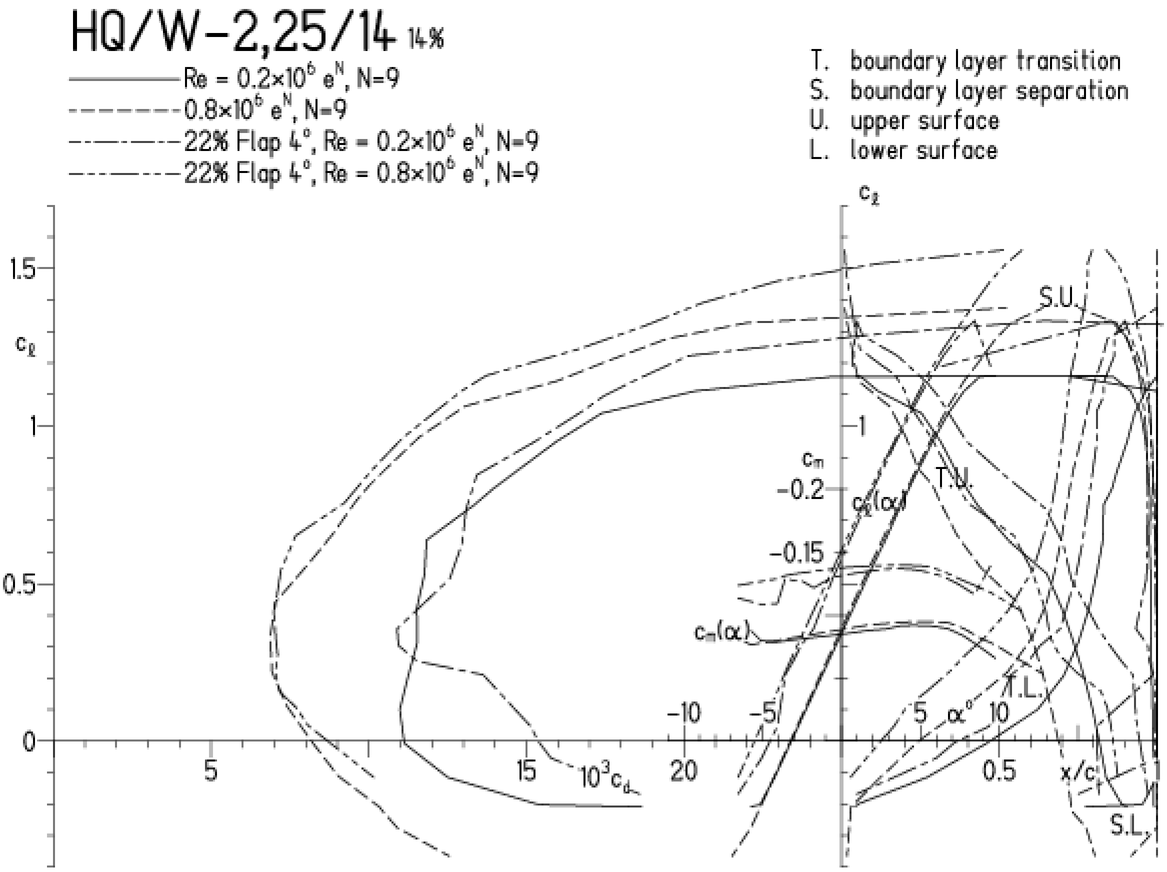


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

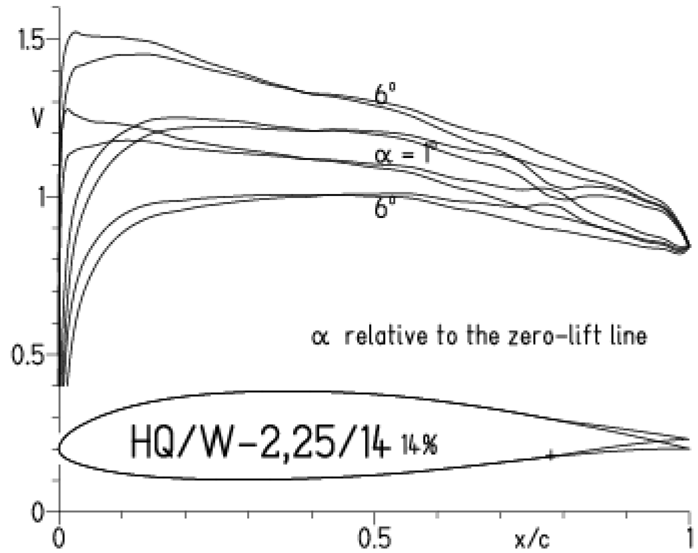


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

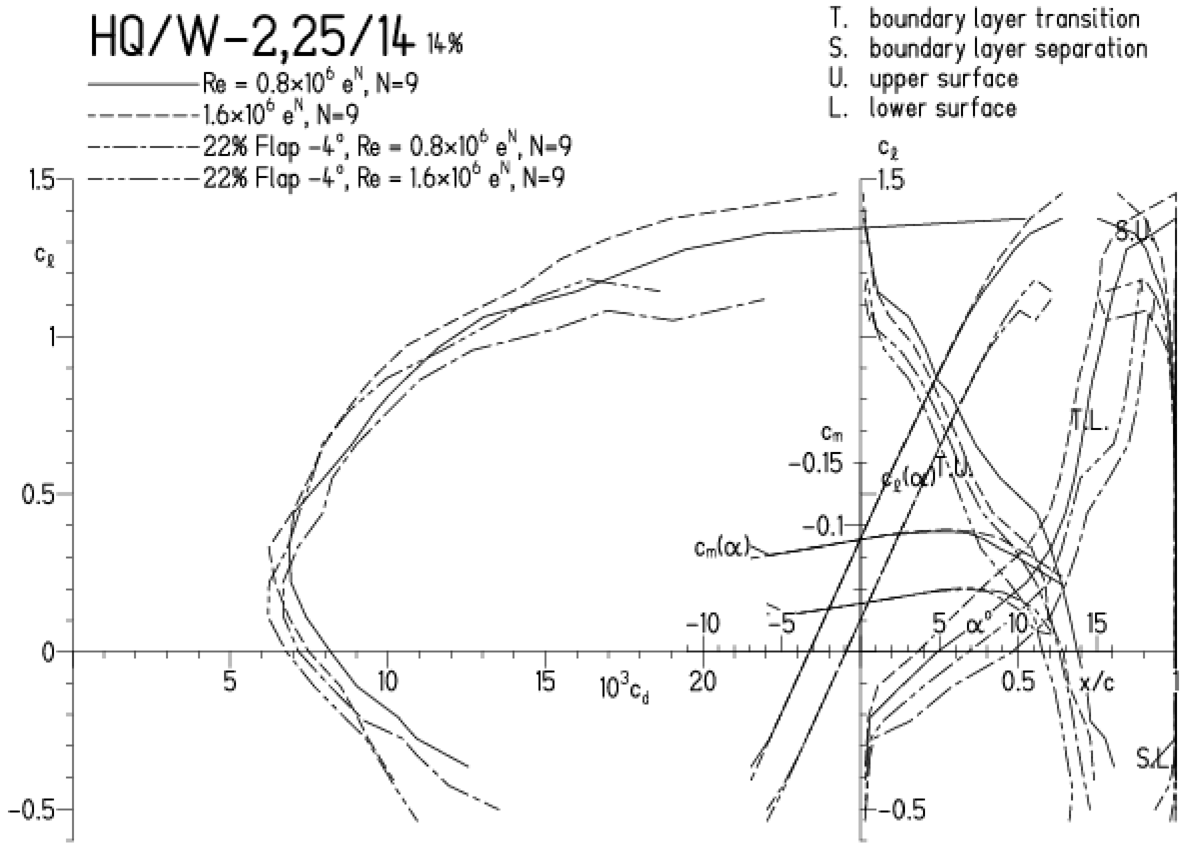


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

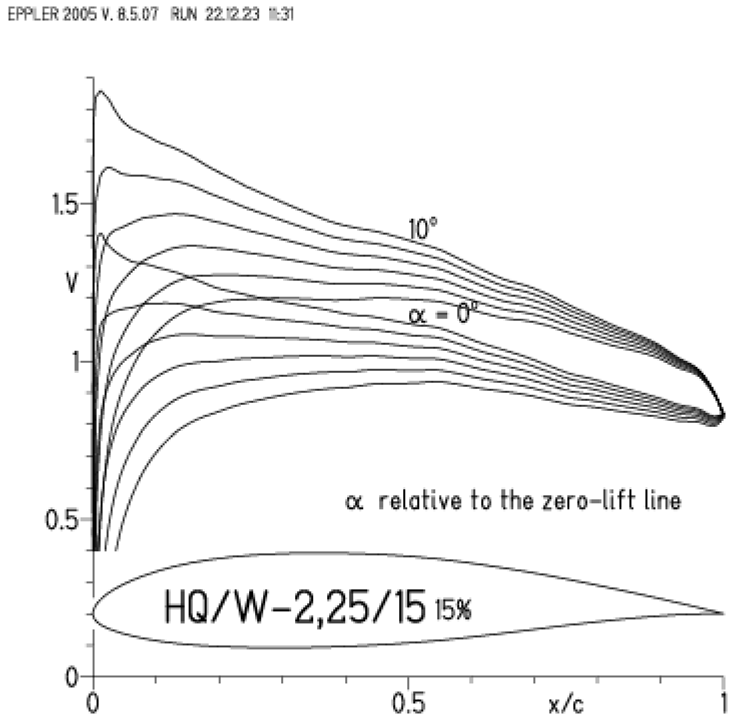
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

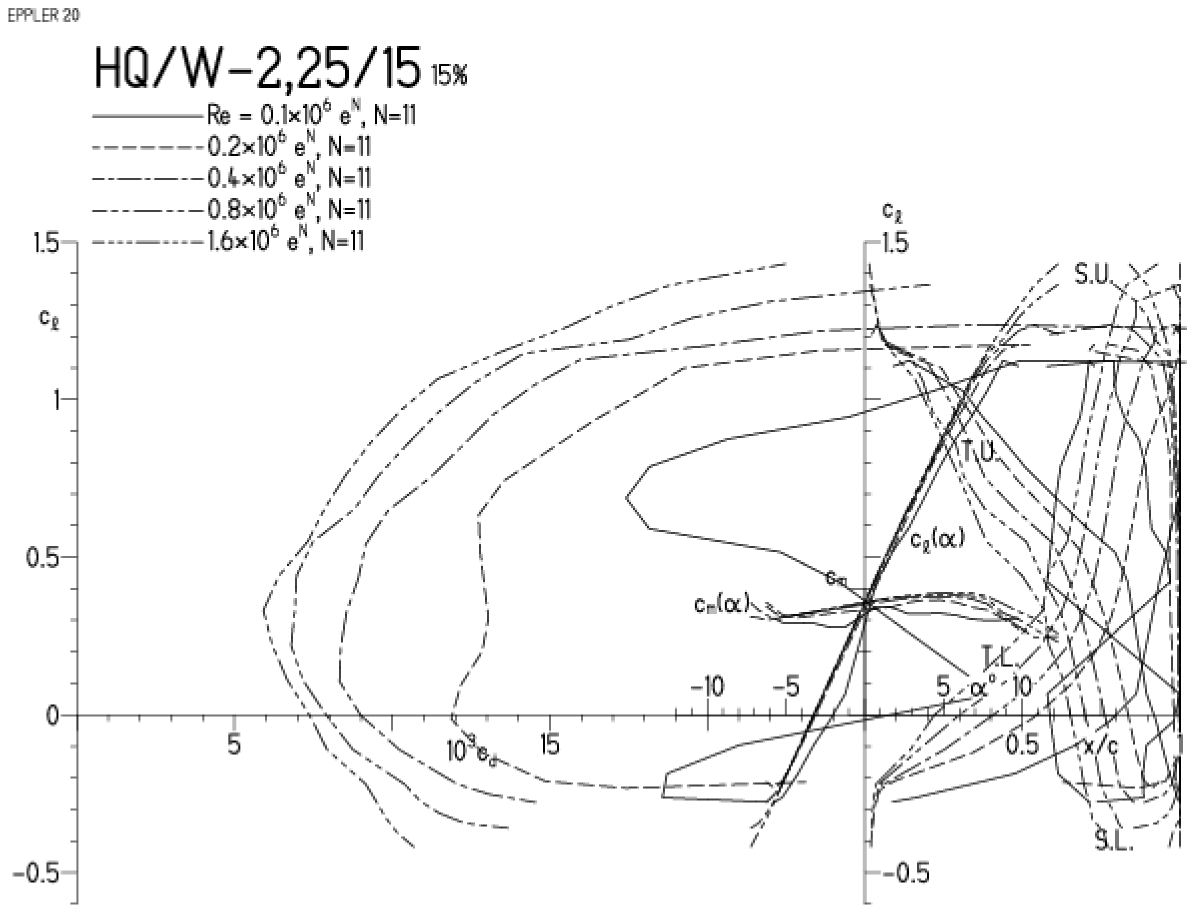


EPPLER 2005 V. 8.5.07

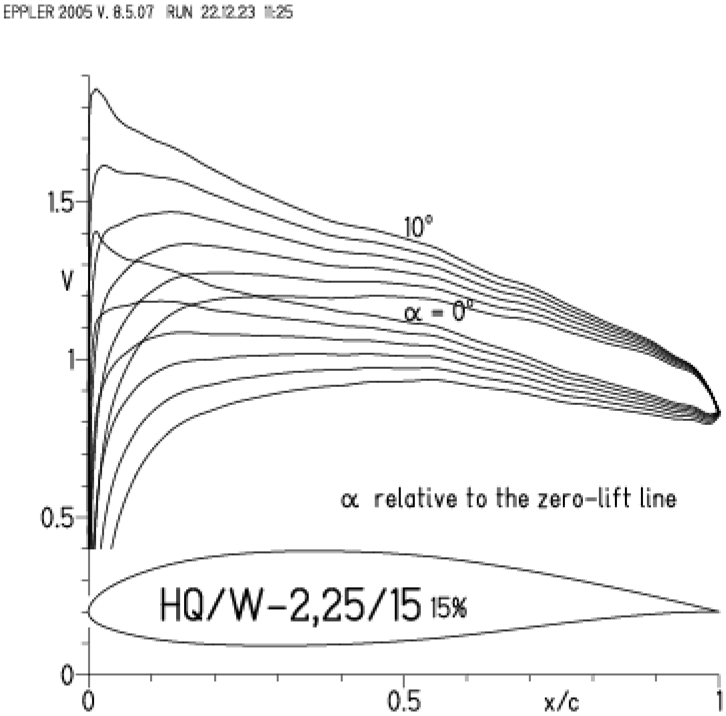


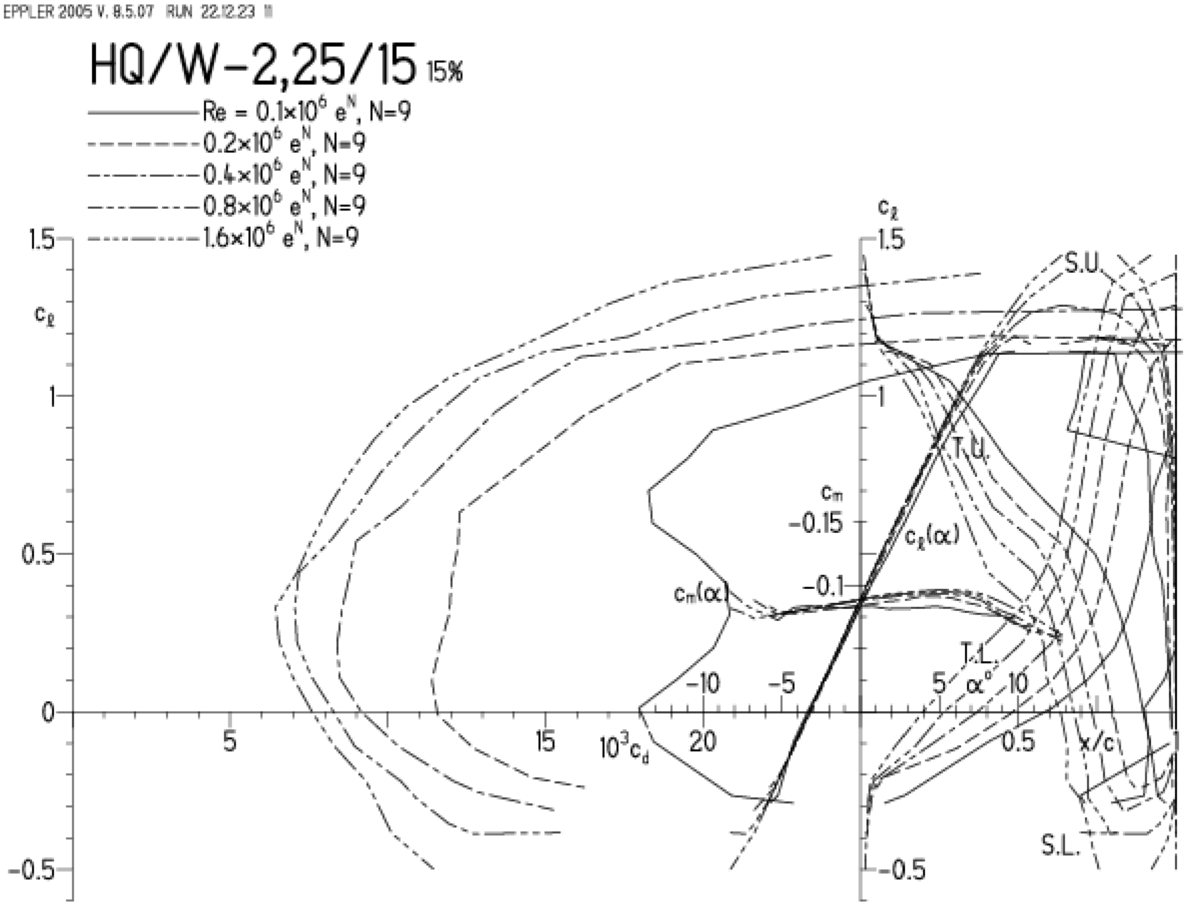
HQ/W-2,25/15, N=11



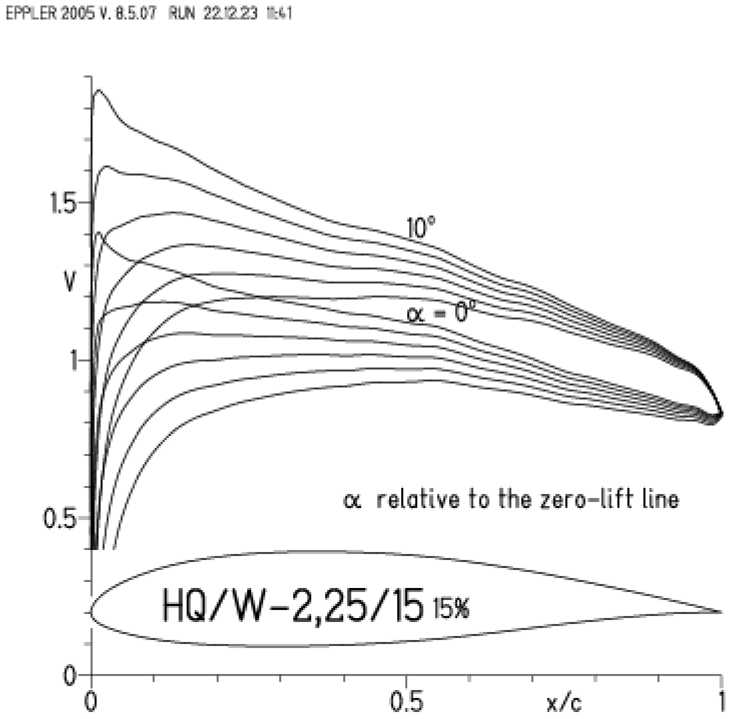


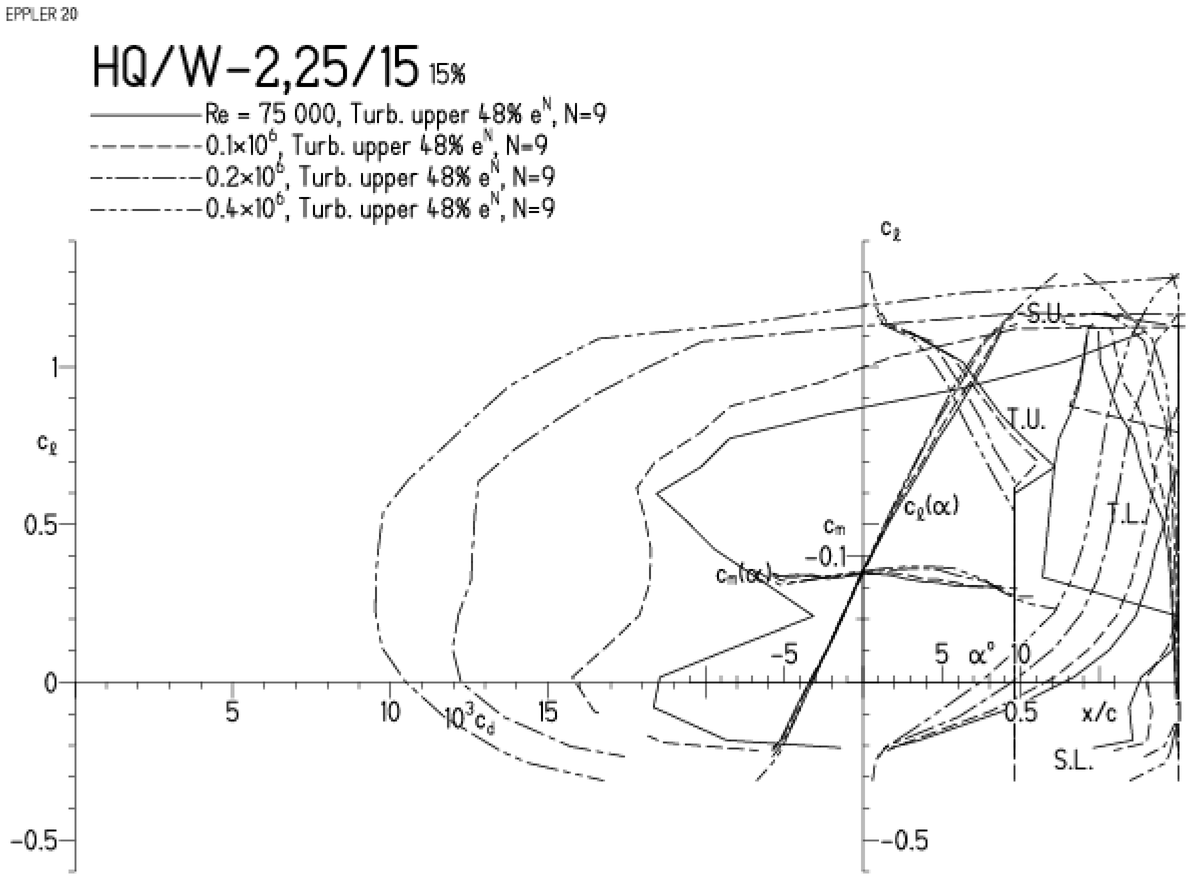
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
cℓ
1
0.5
0
-0.5
5
15
10³cd
20
cm
-0.15
-0.1
cℓ(α)
cm(α)
-10
-5
5
α°
10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.
-0.5

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



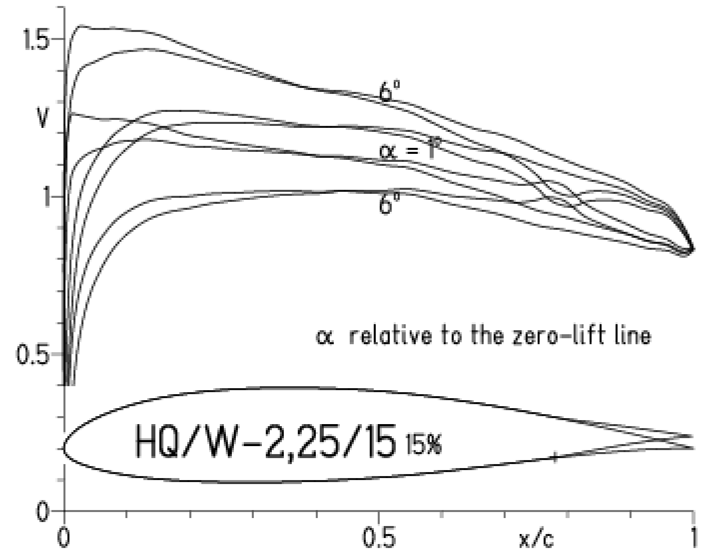


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

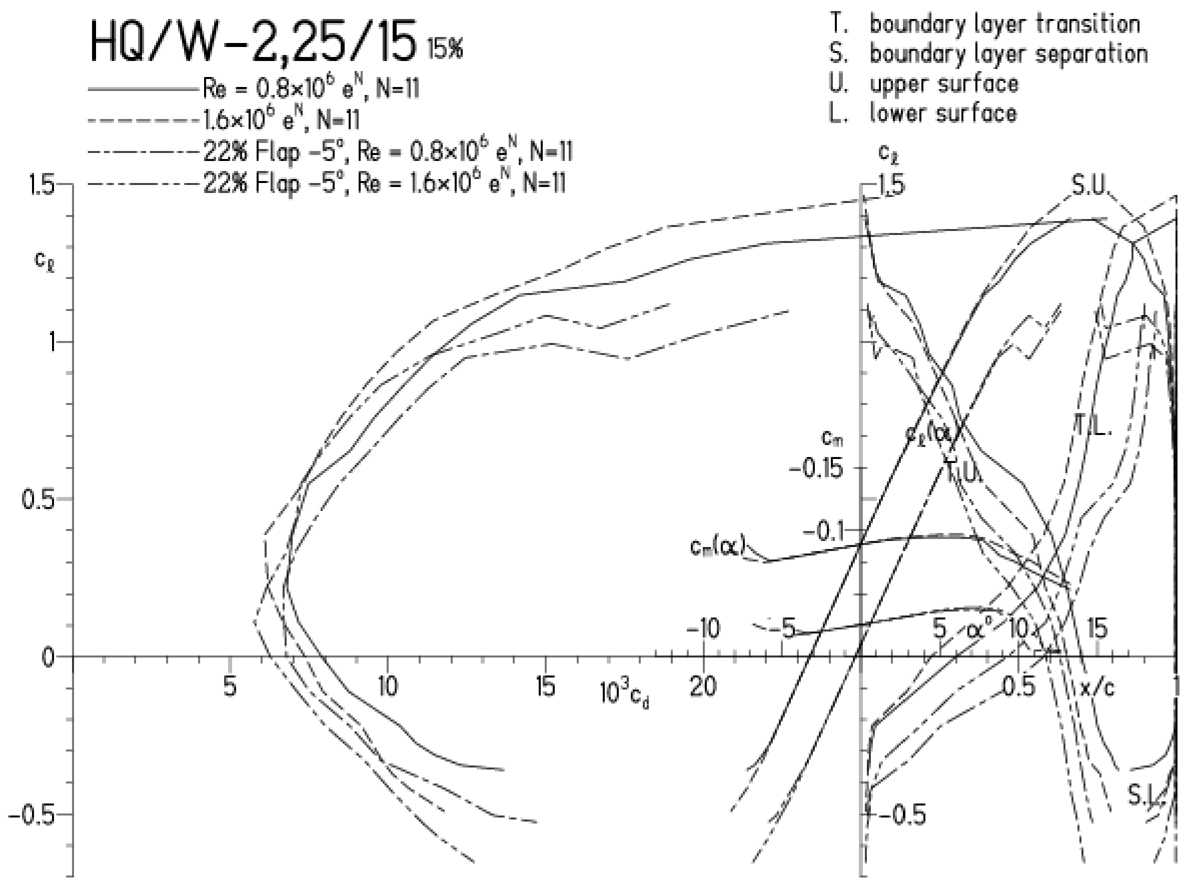
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

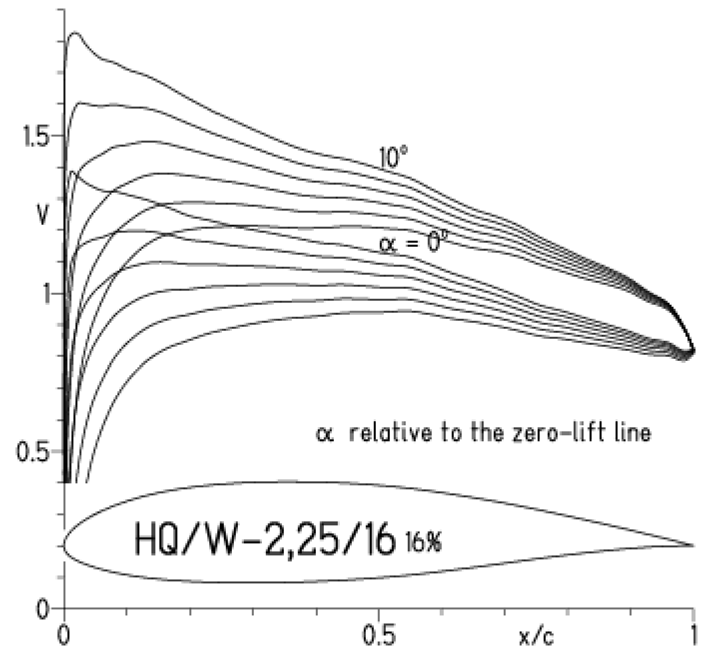


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

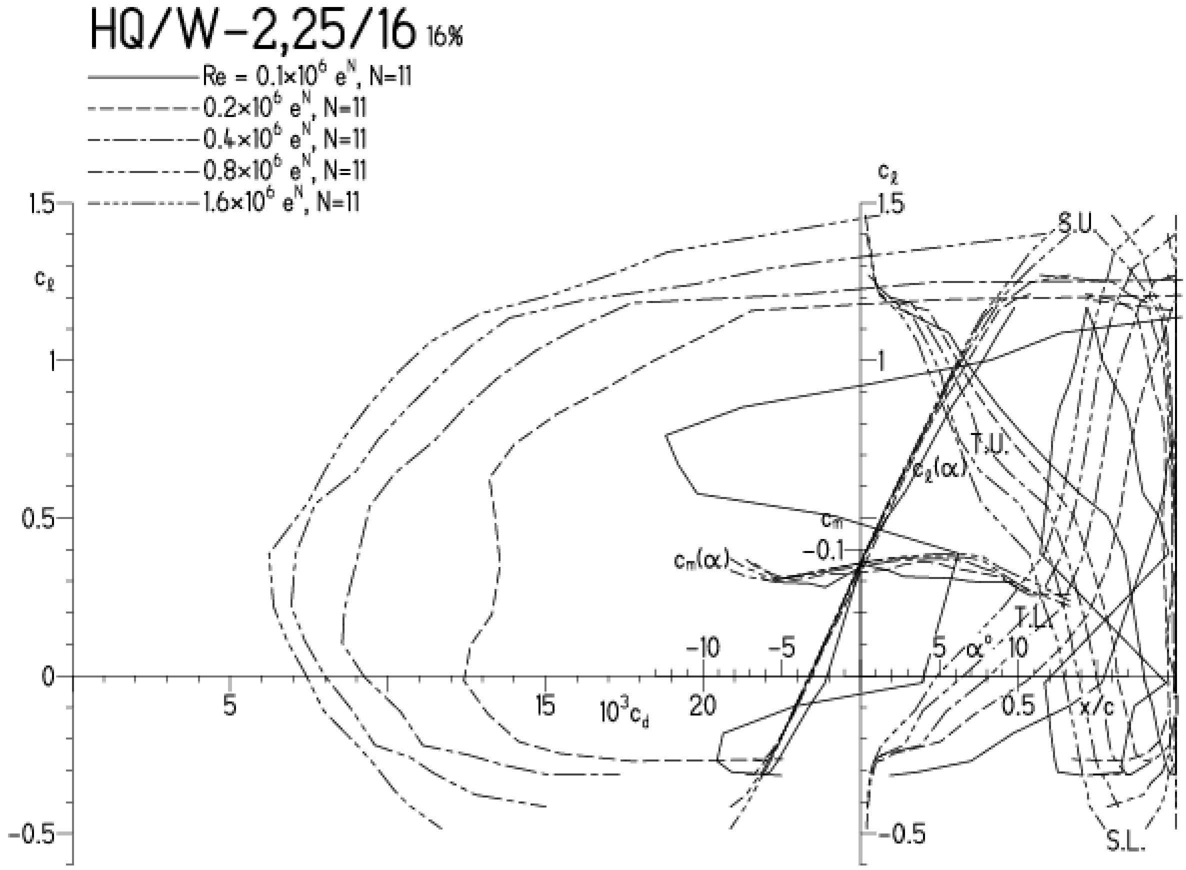


<u>HQ/W-2,25/16</u>, N=11

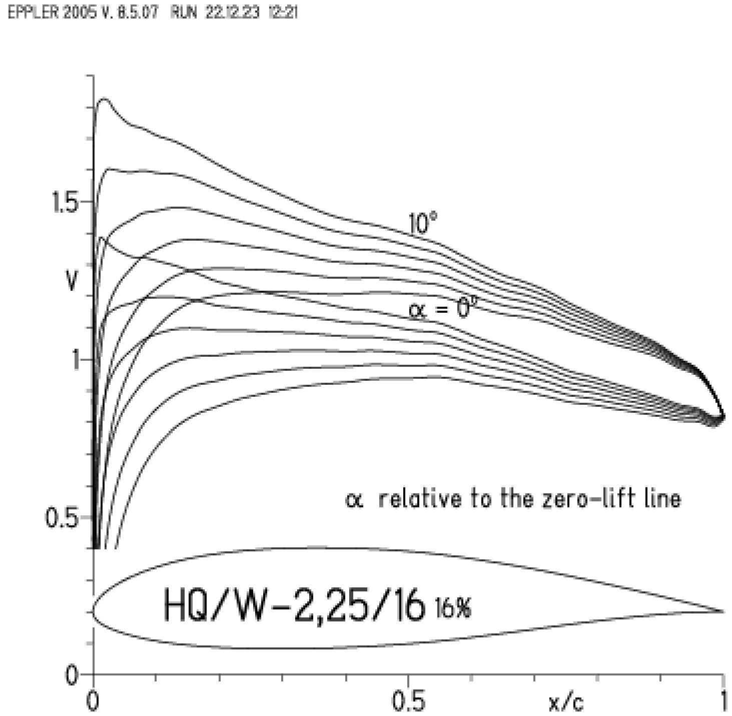
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

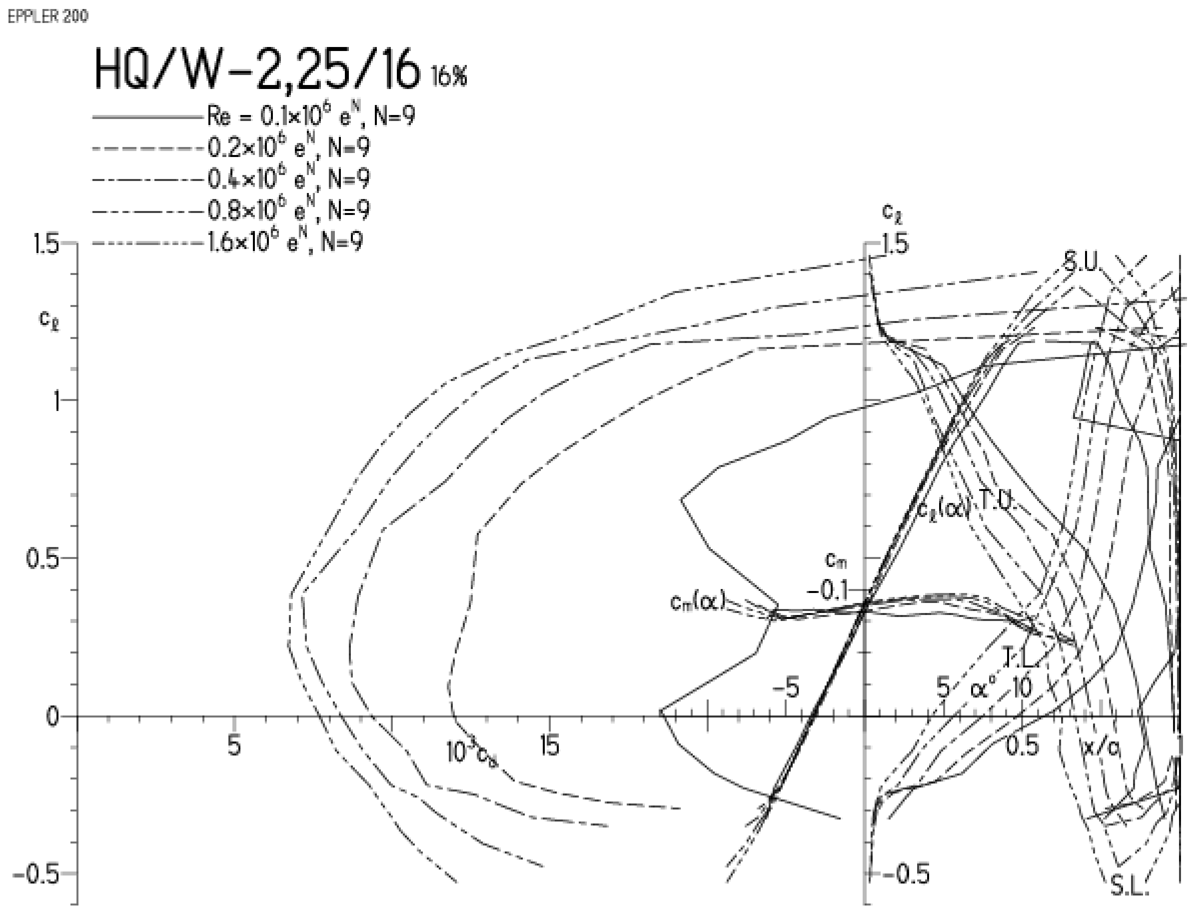


EPPLER 200

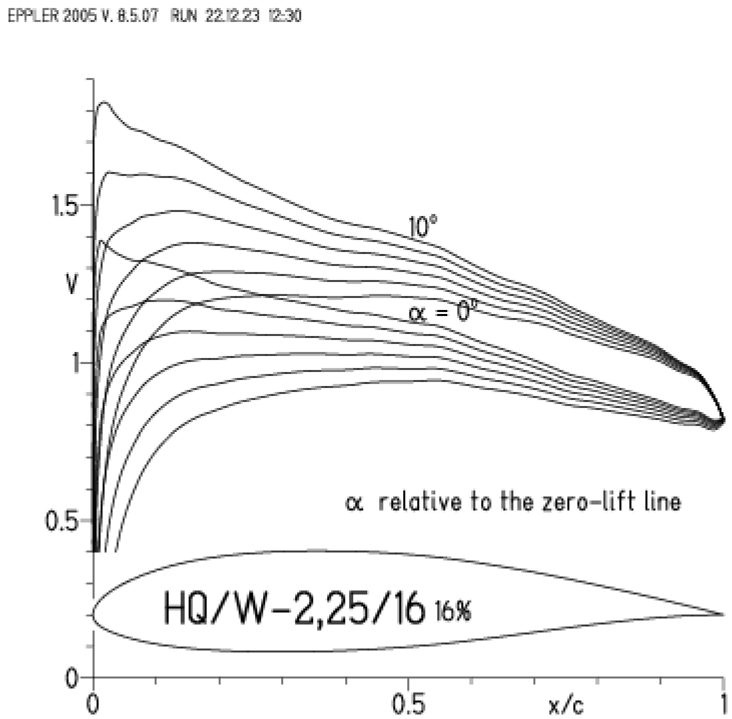


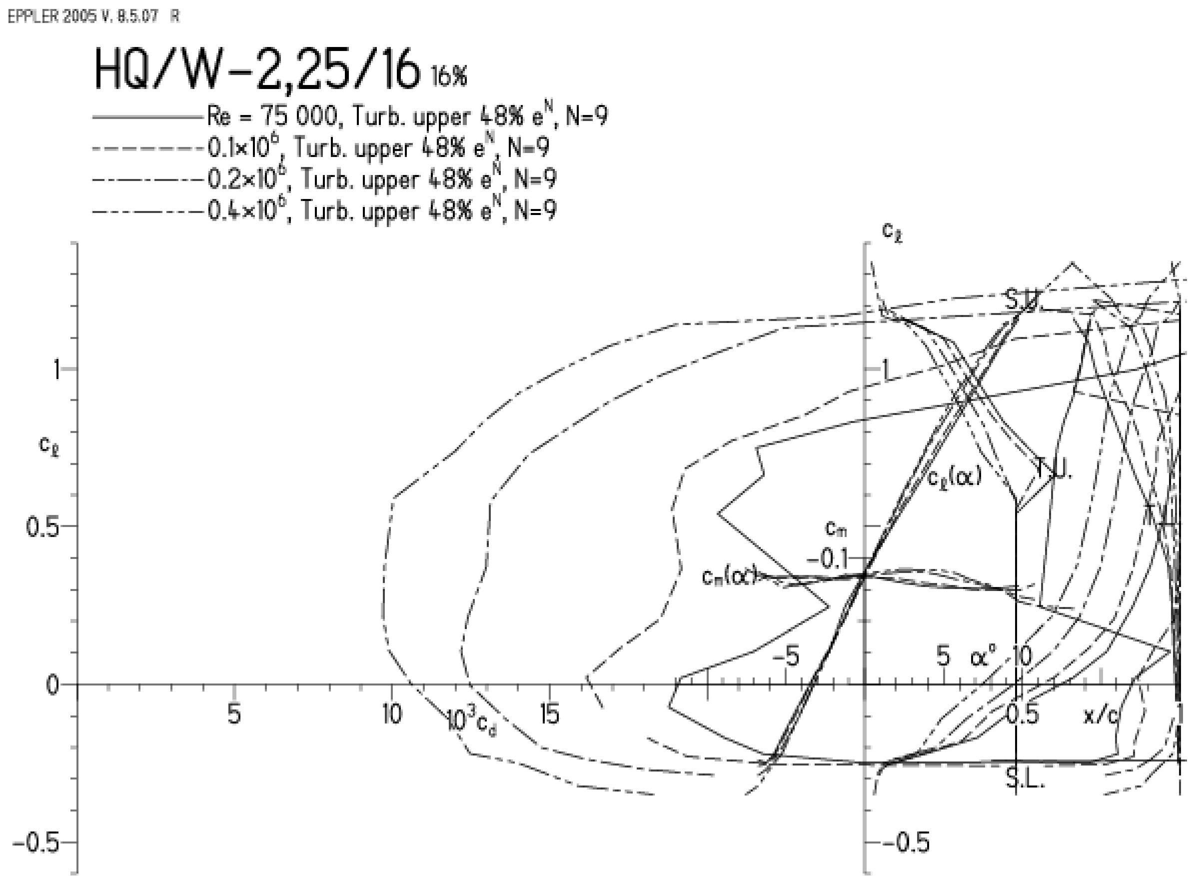
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^-3 c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α) T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



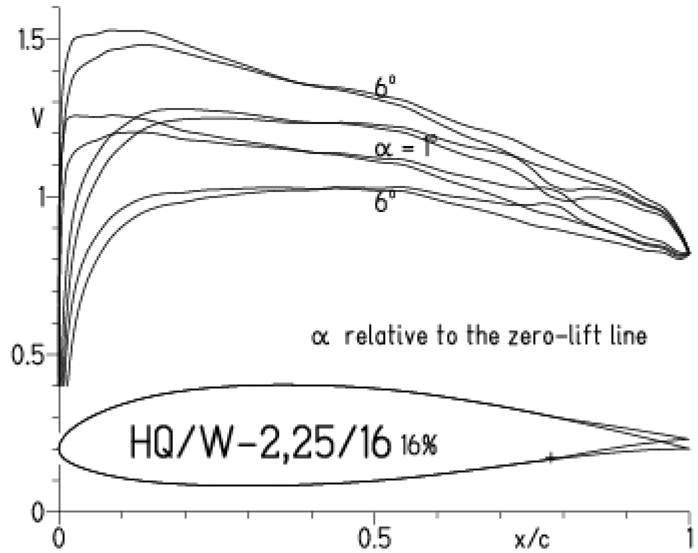


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

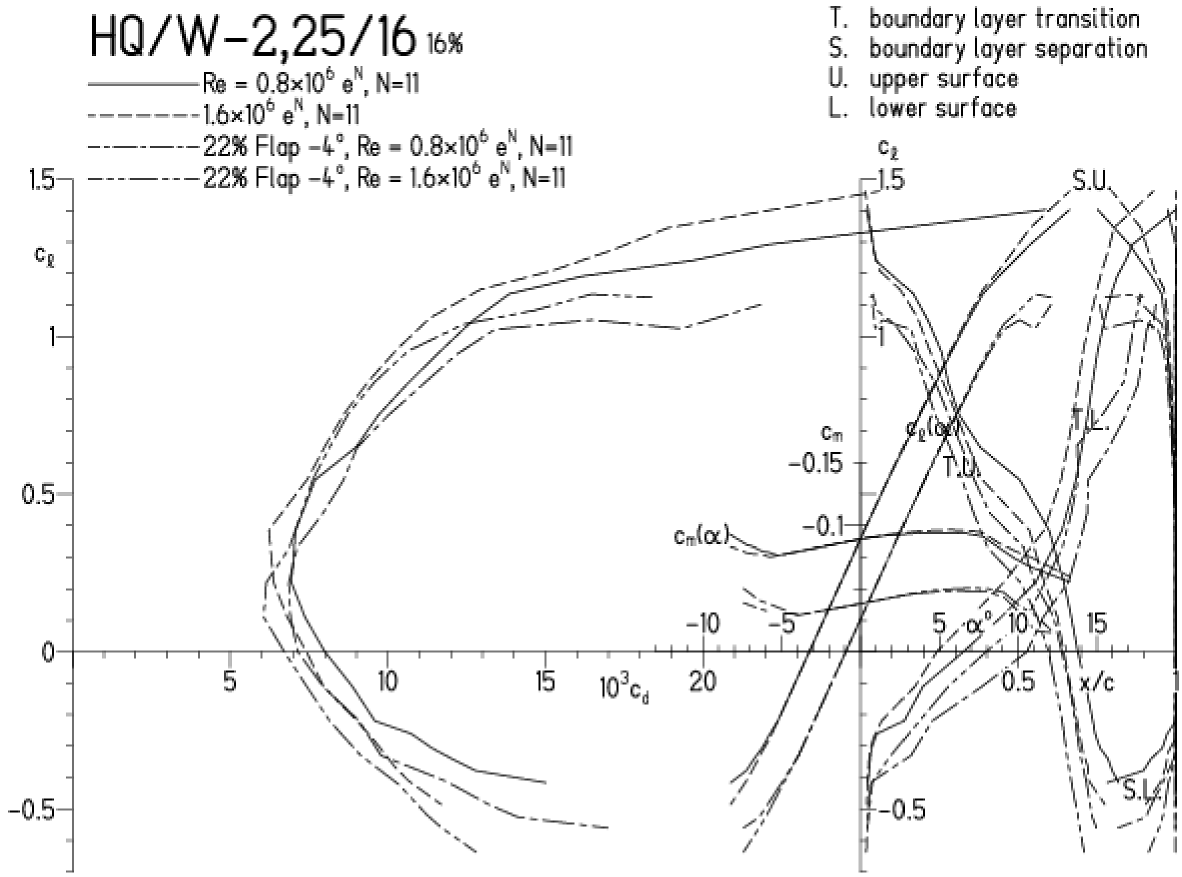
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

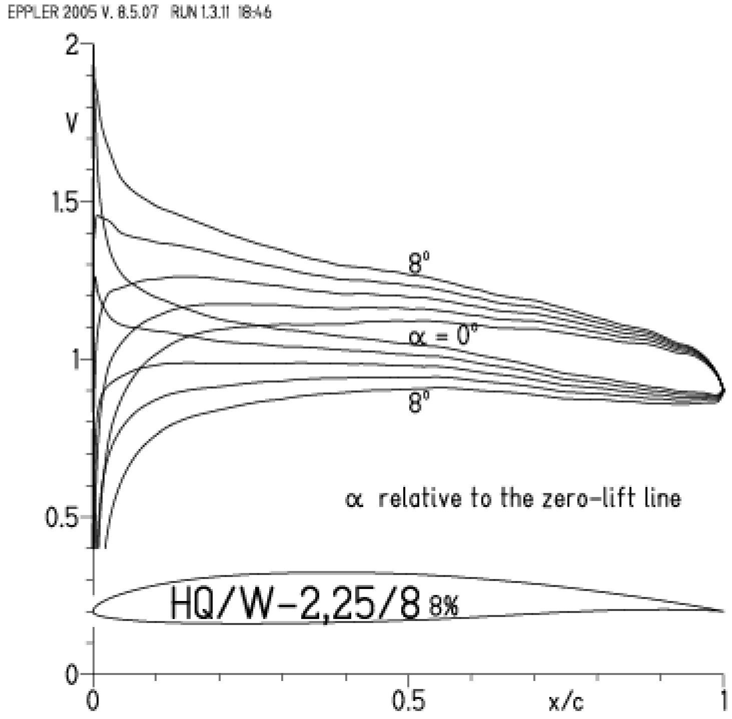
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

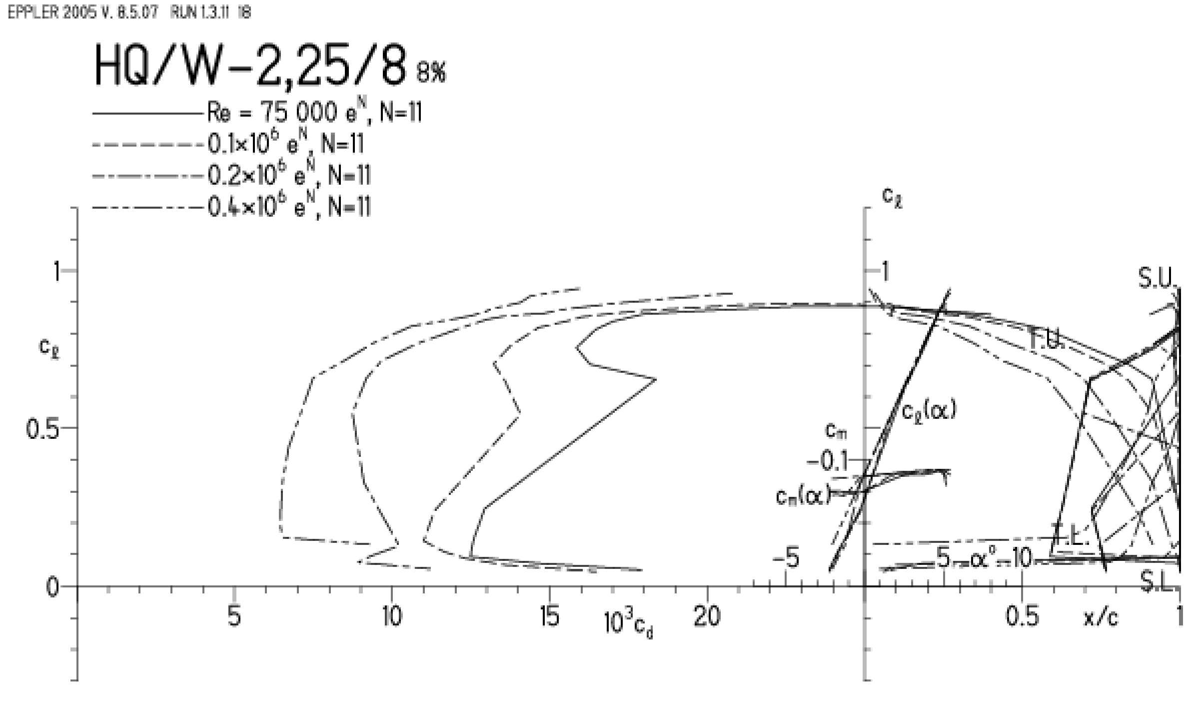


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



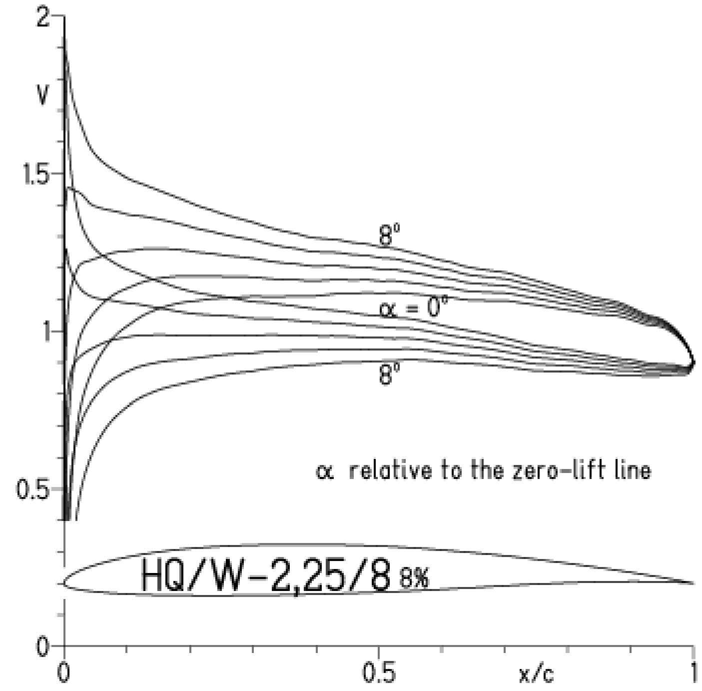
<u>HQ/W-2,25/8</u>, N=11



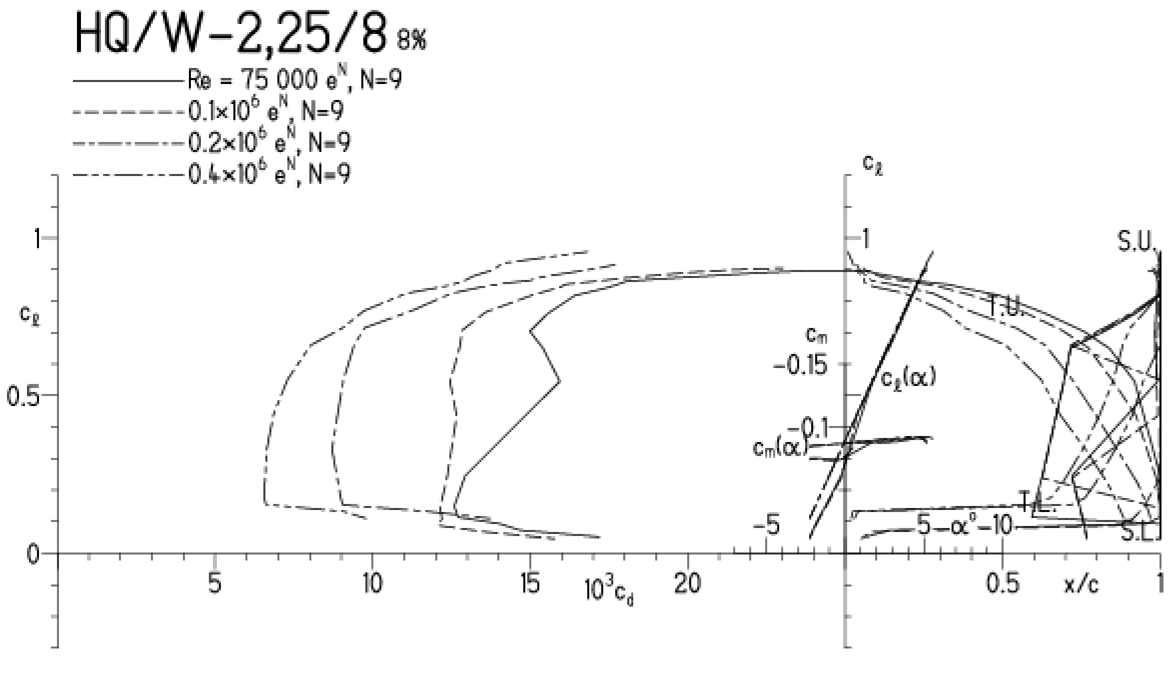


HQ/W-2,25/8, N=9

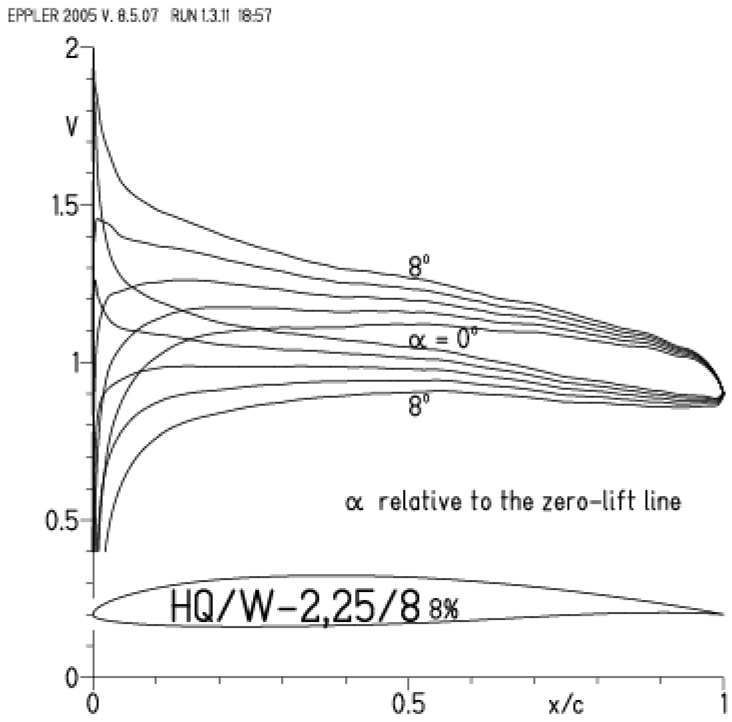
EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

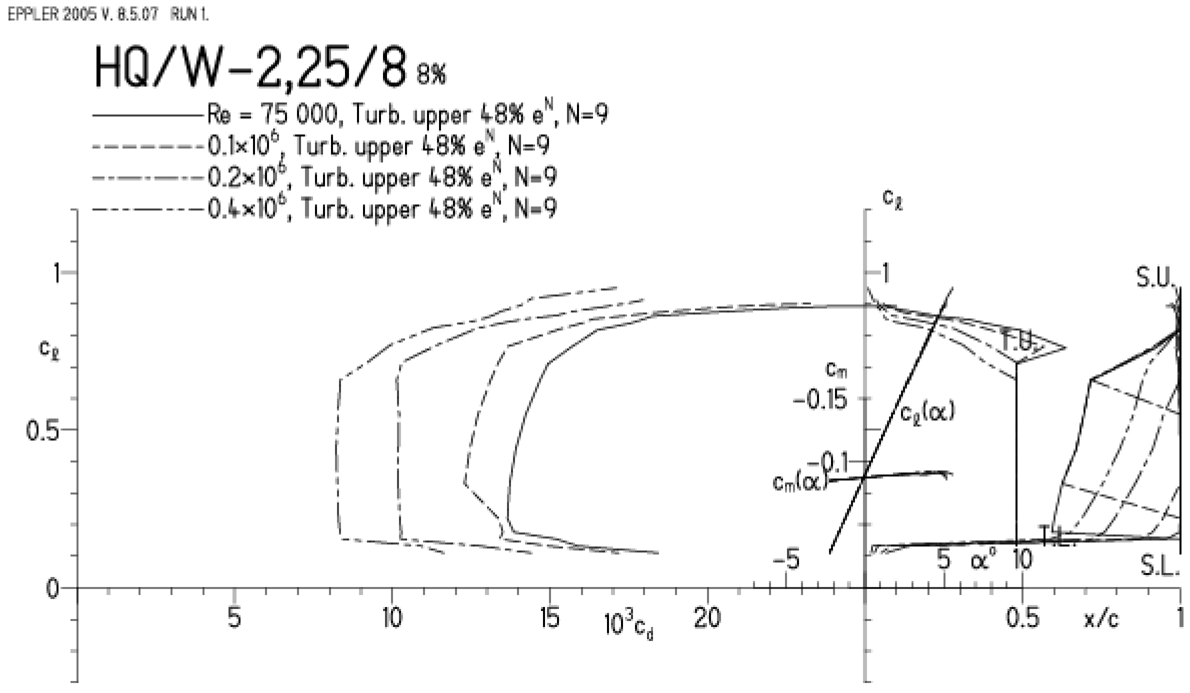


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

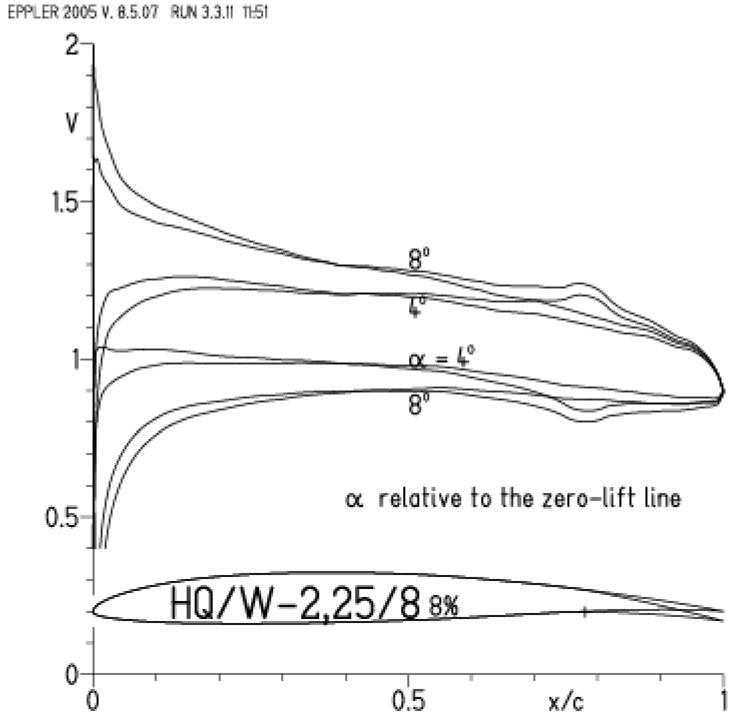


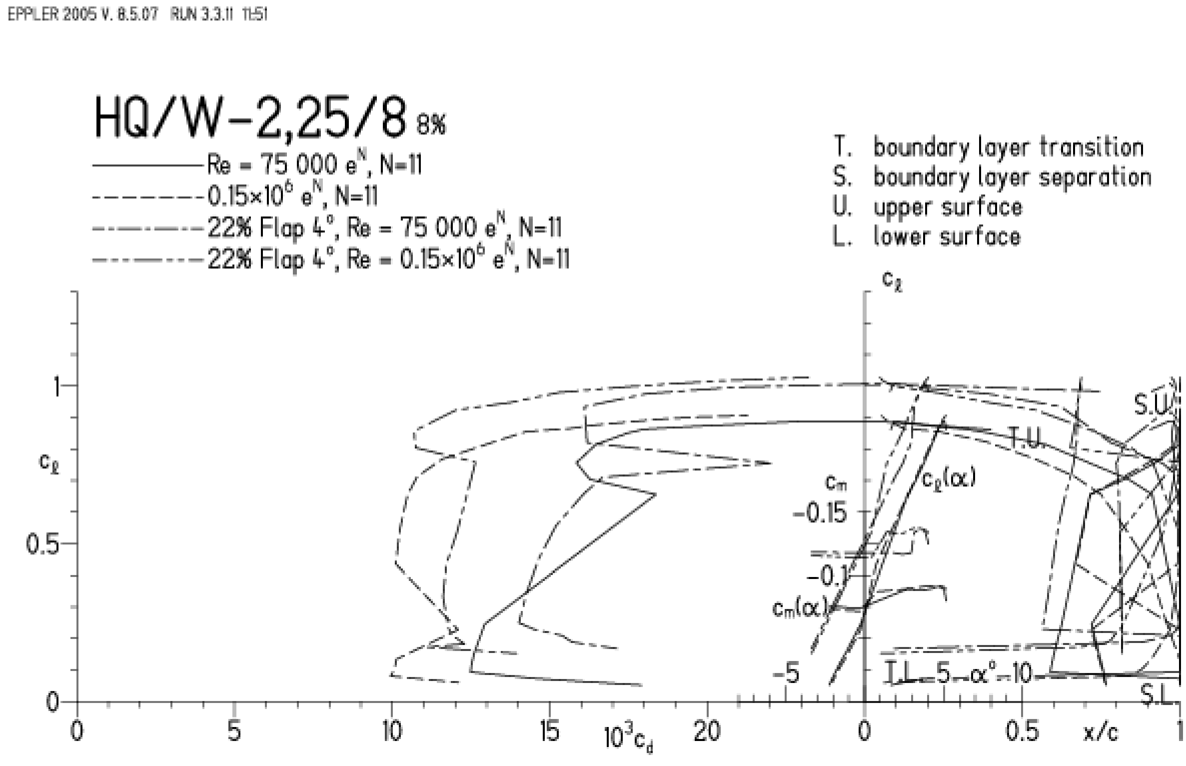
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



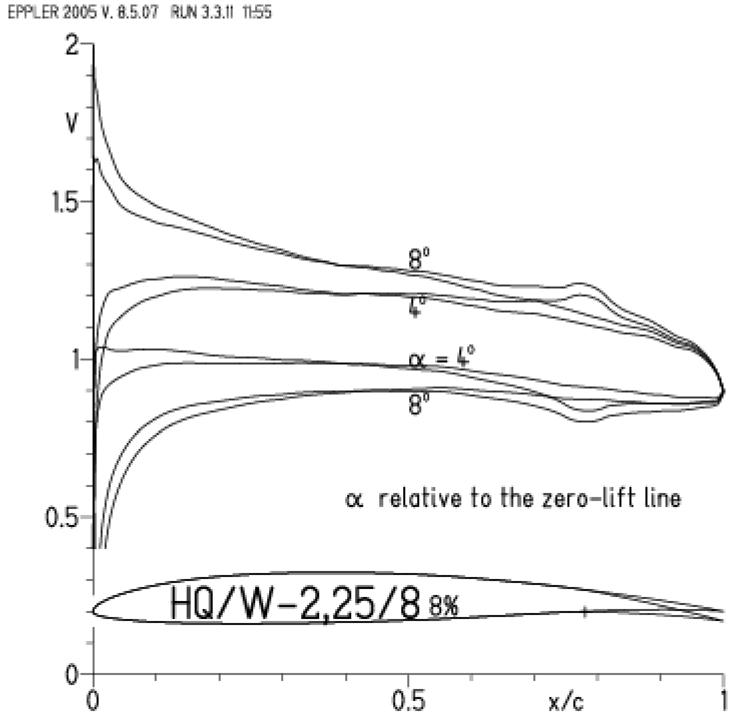


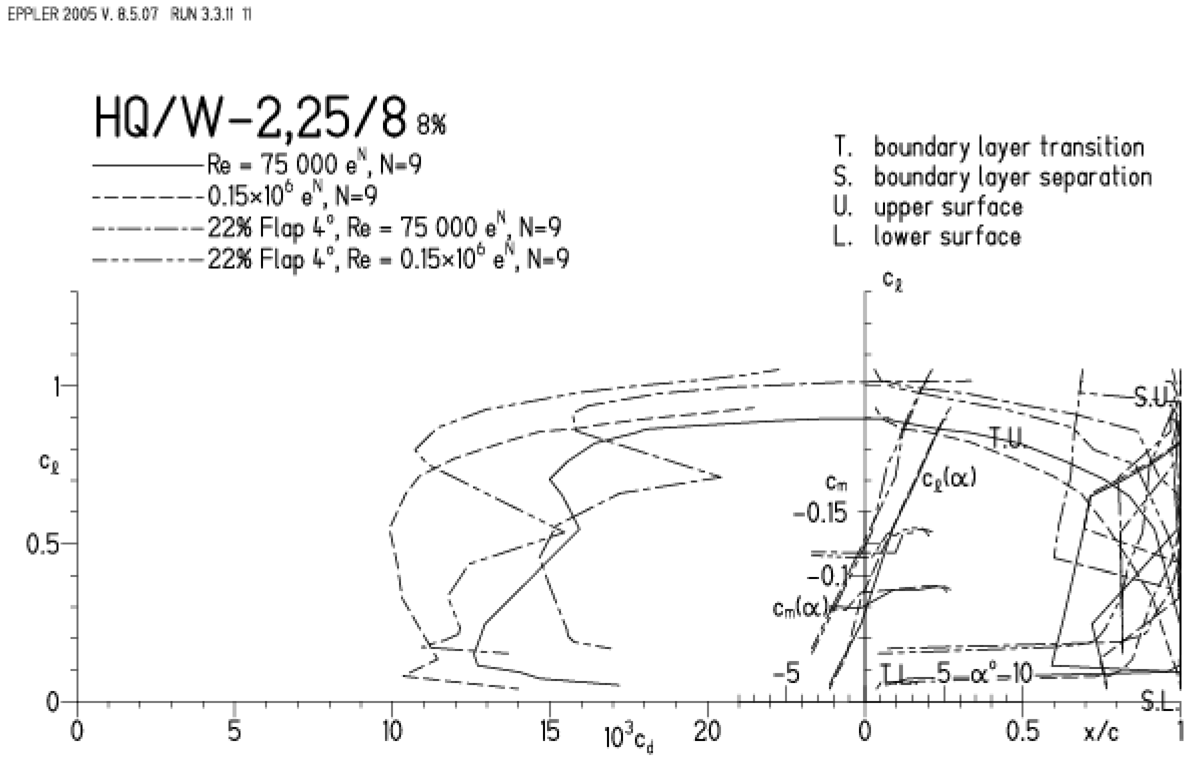
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



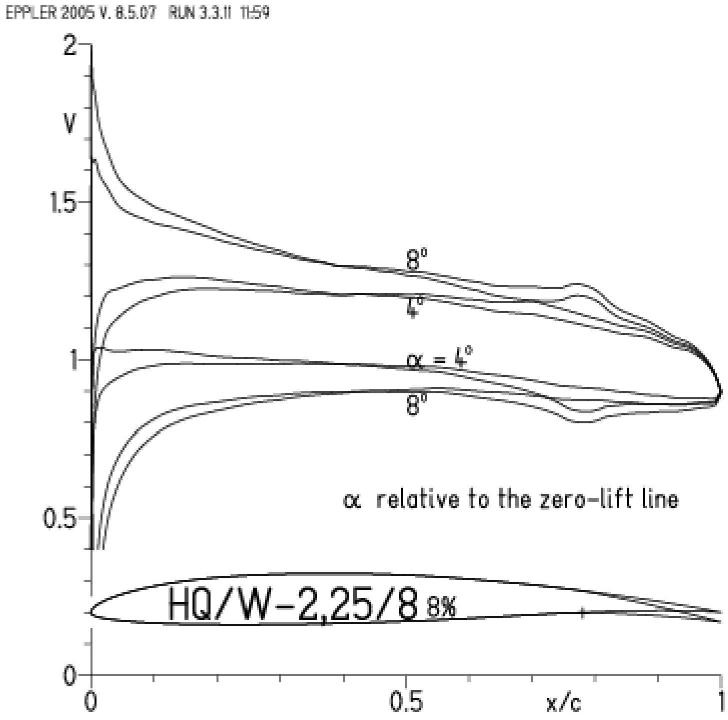


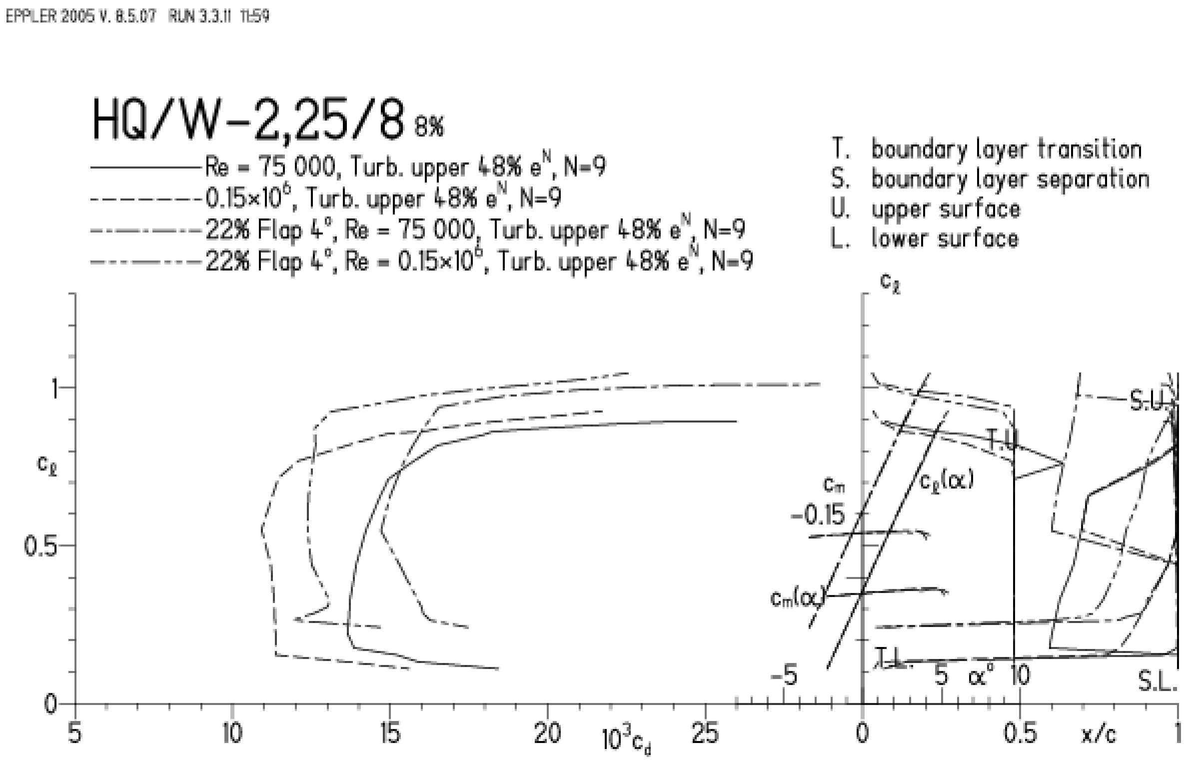
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





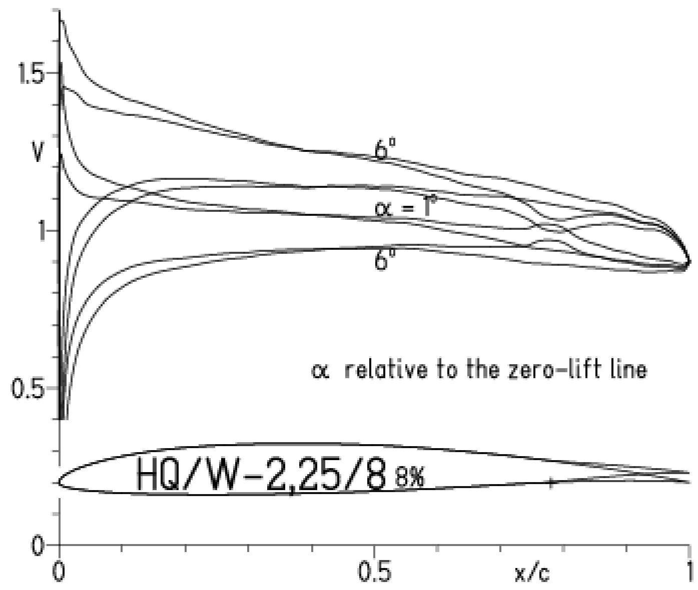
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



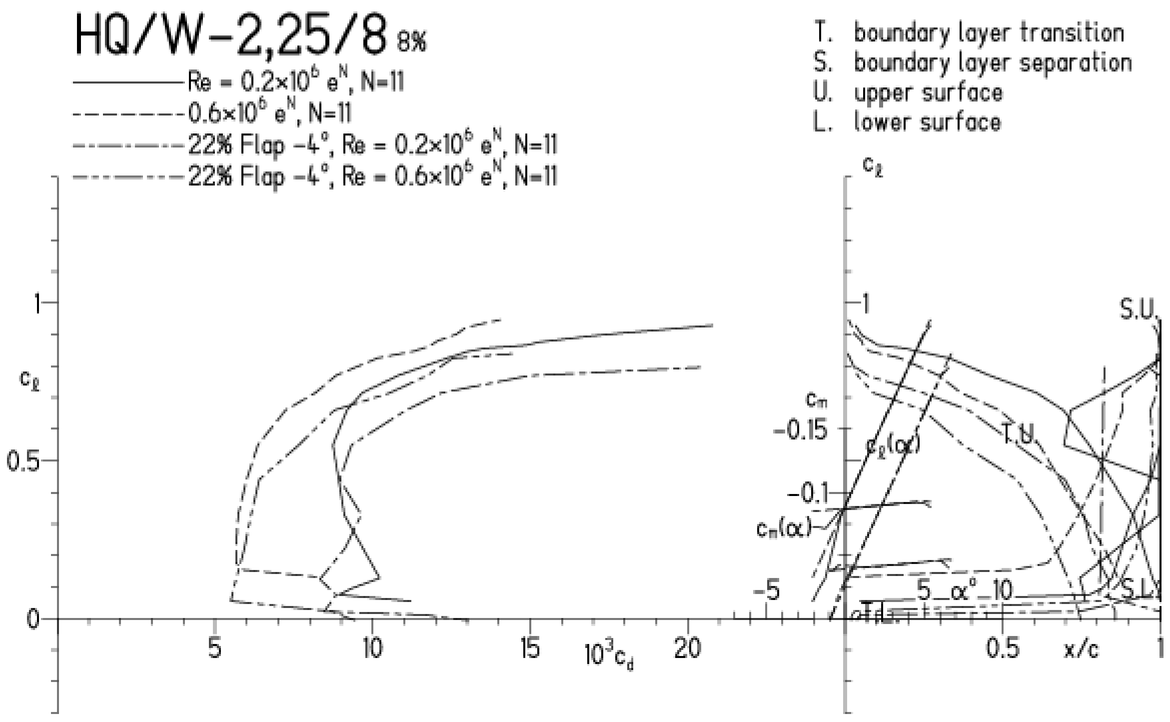


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

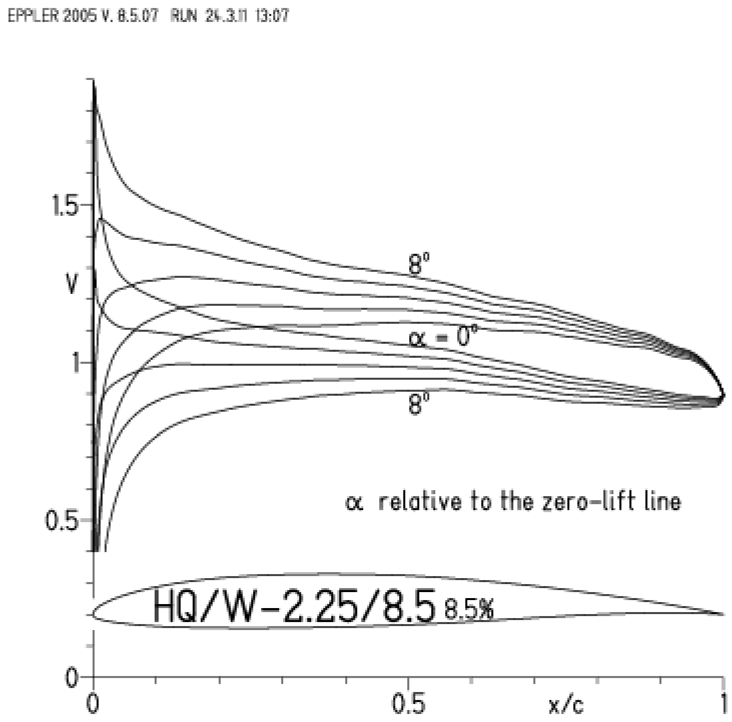
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

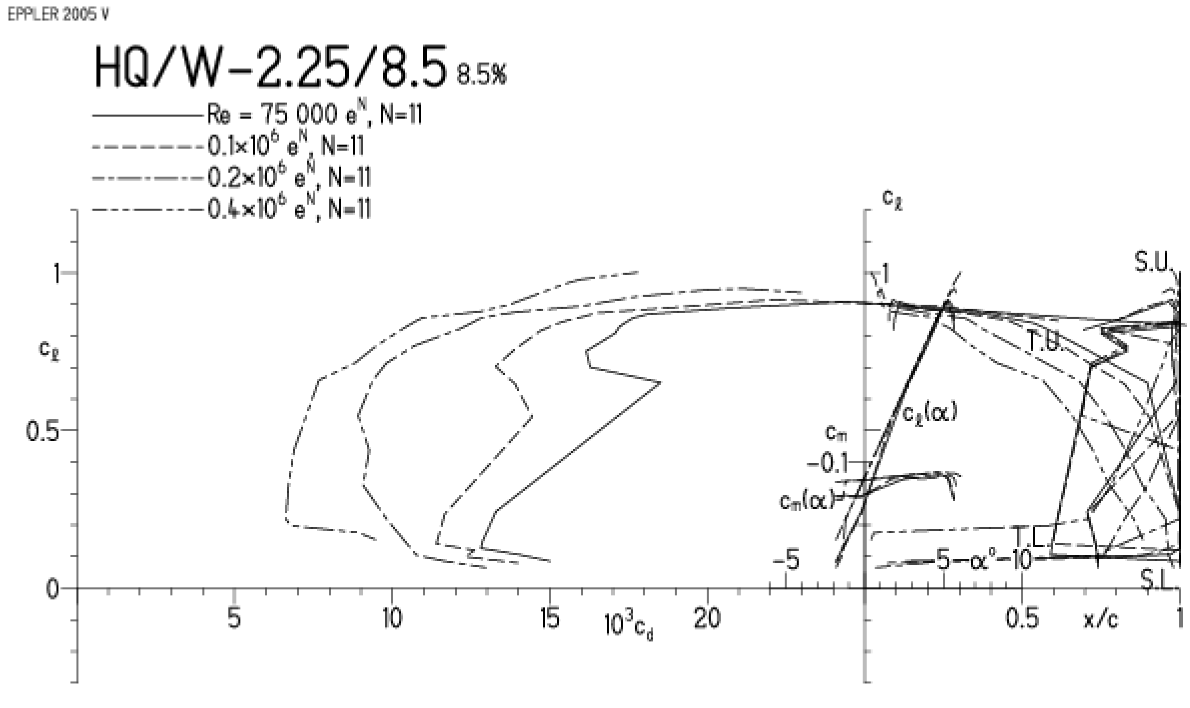


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



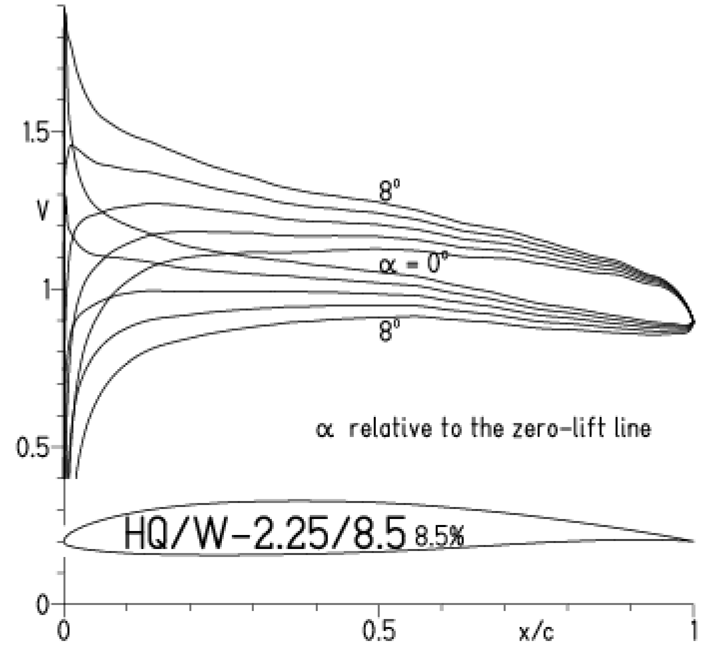
HQ/W-2,25/8,5, N=11



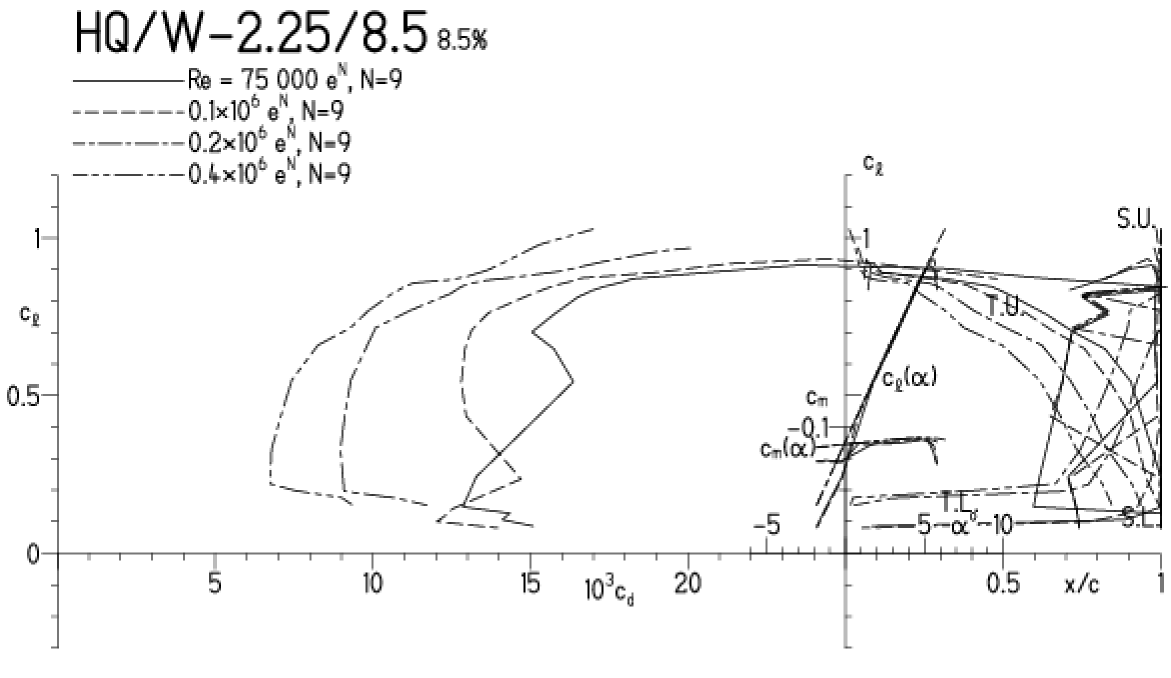


HQ/W-2,25/8,5, N=9

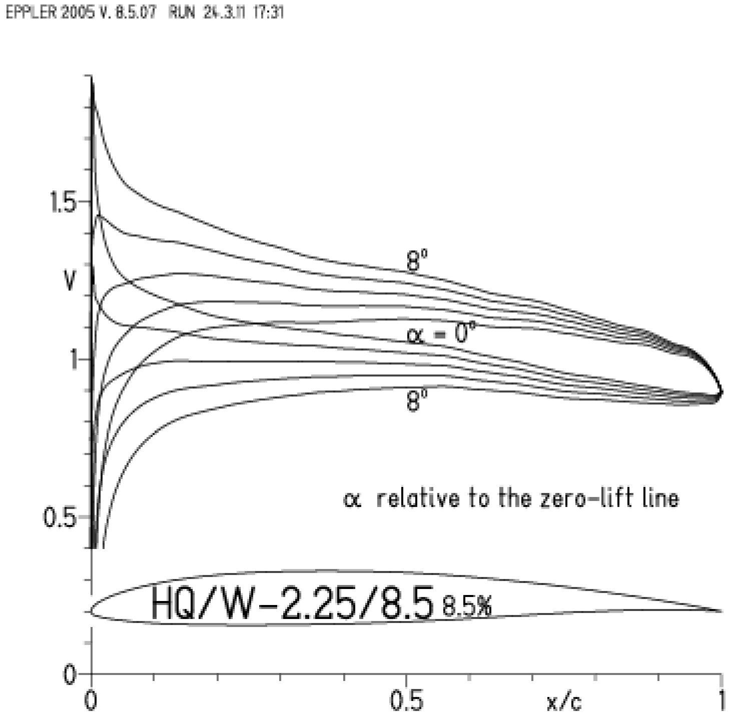
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

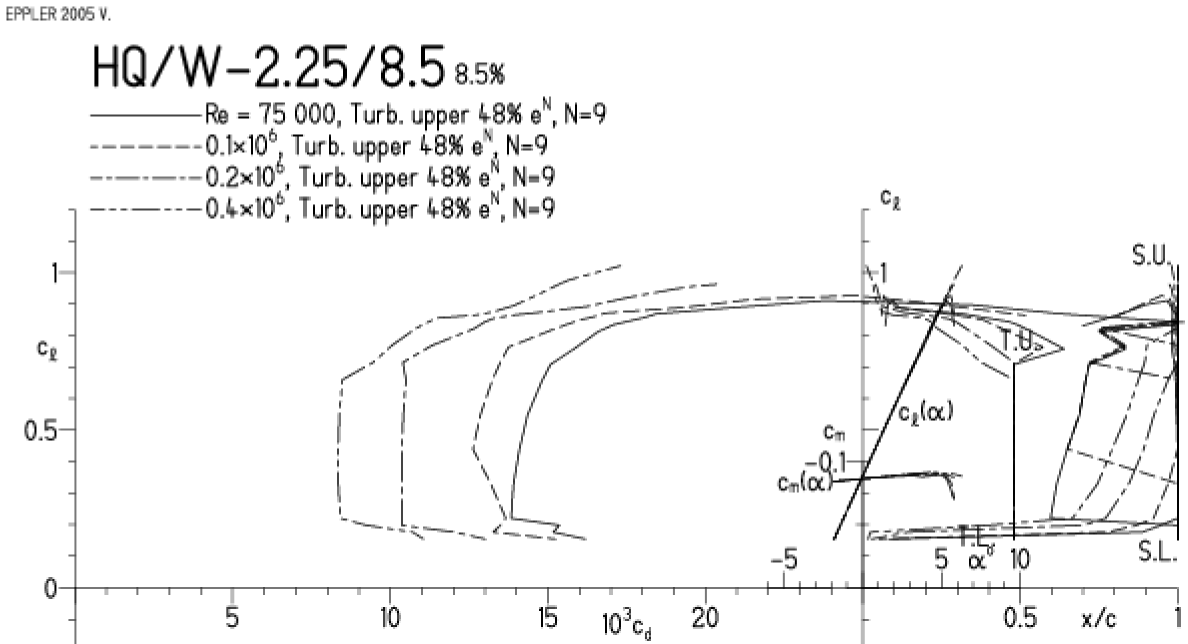


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



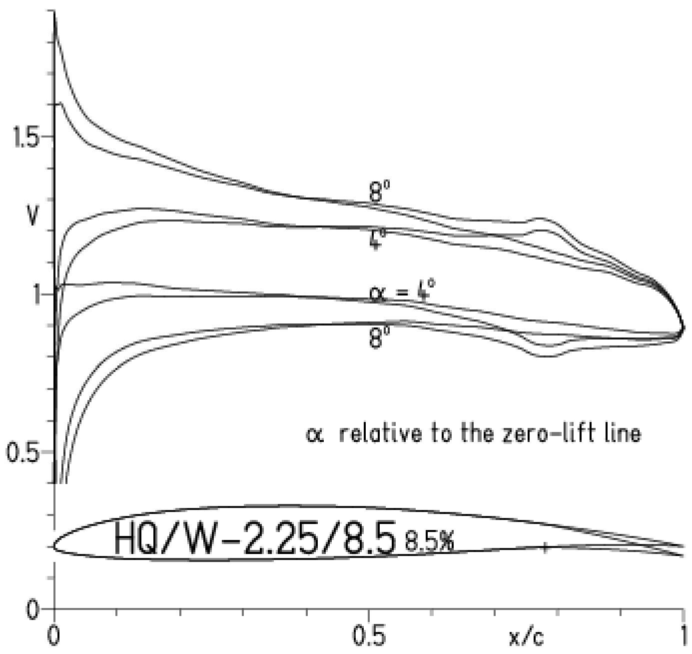
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



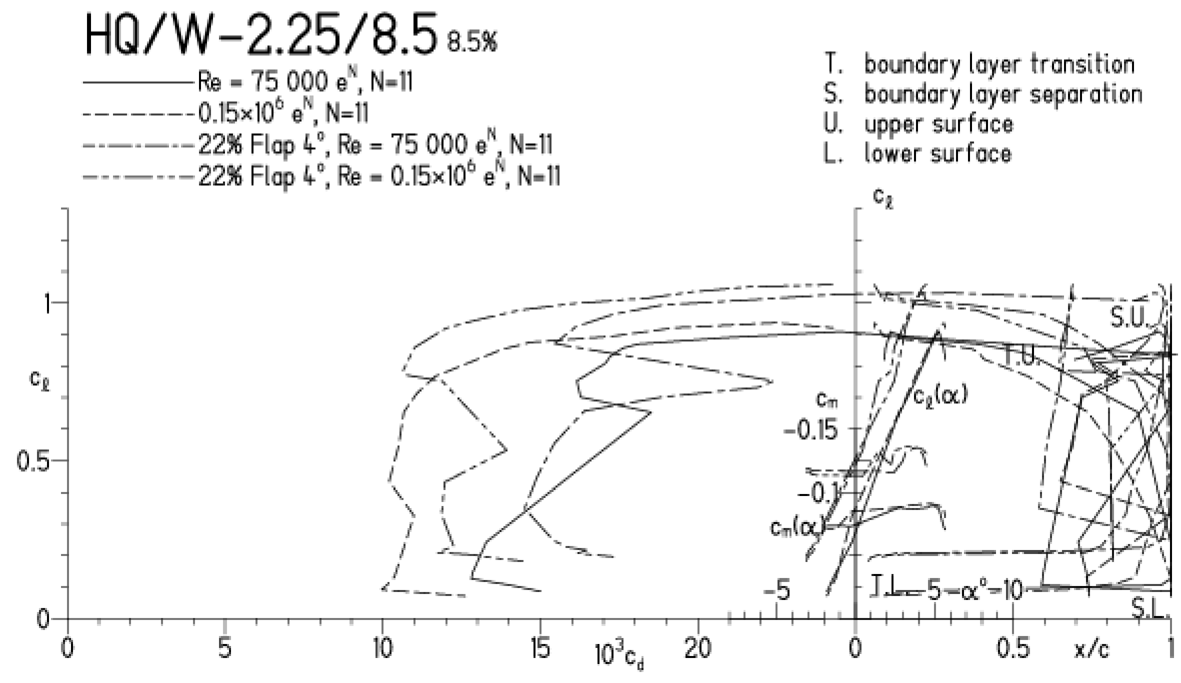


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

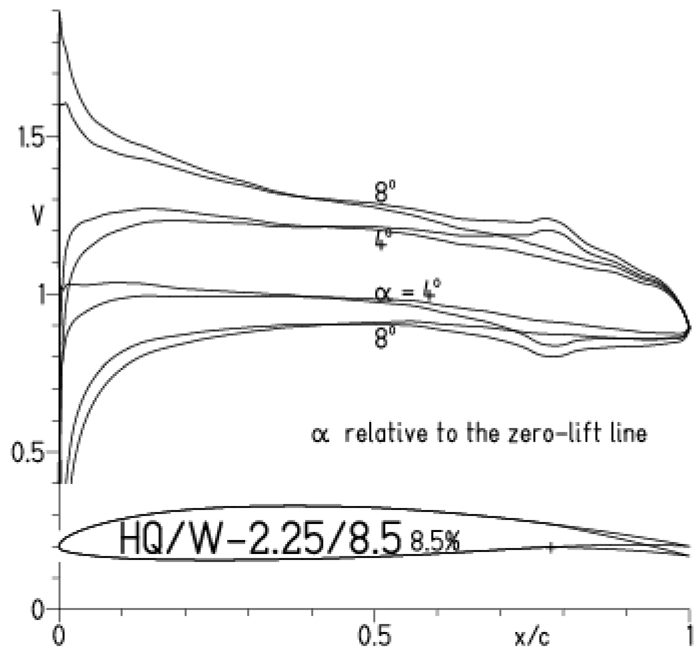


EPPLER 2005 V. 8.5.

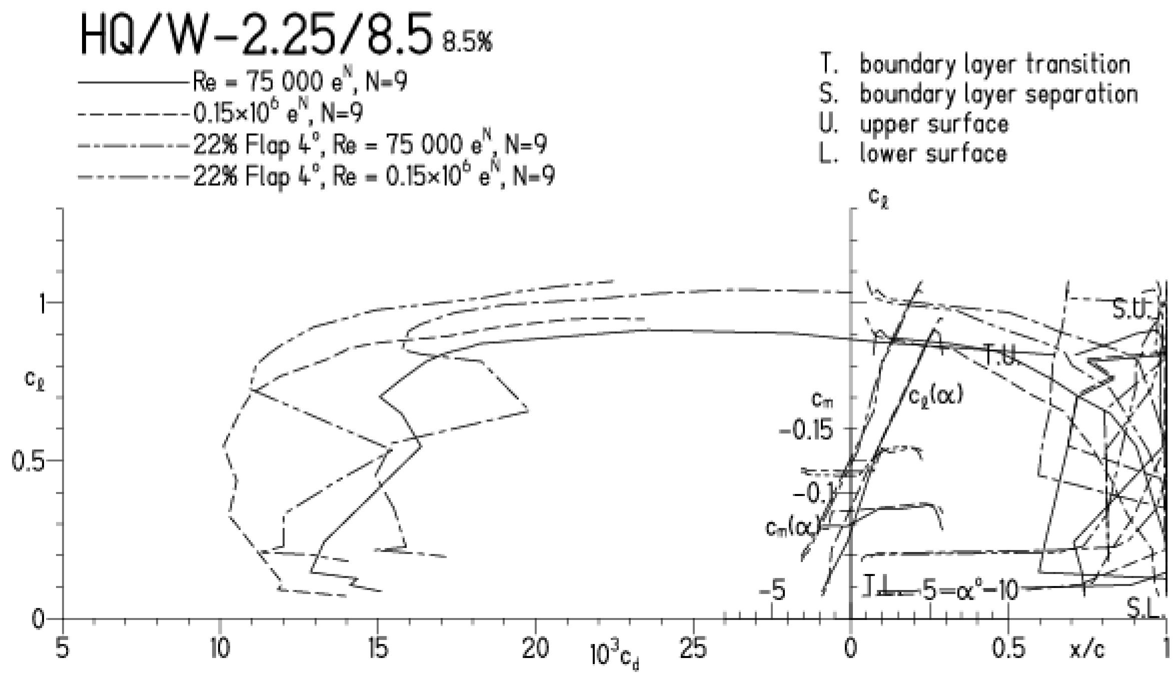


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

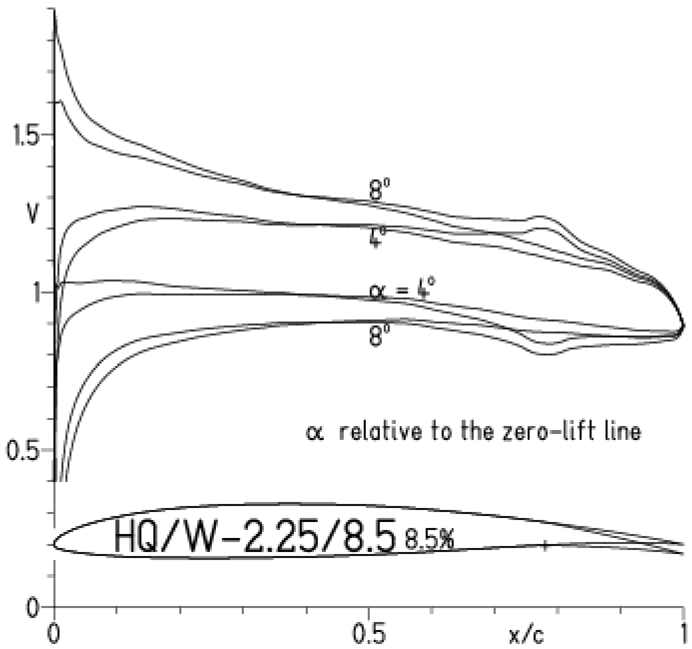


EPPLER 2005 V.

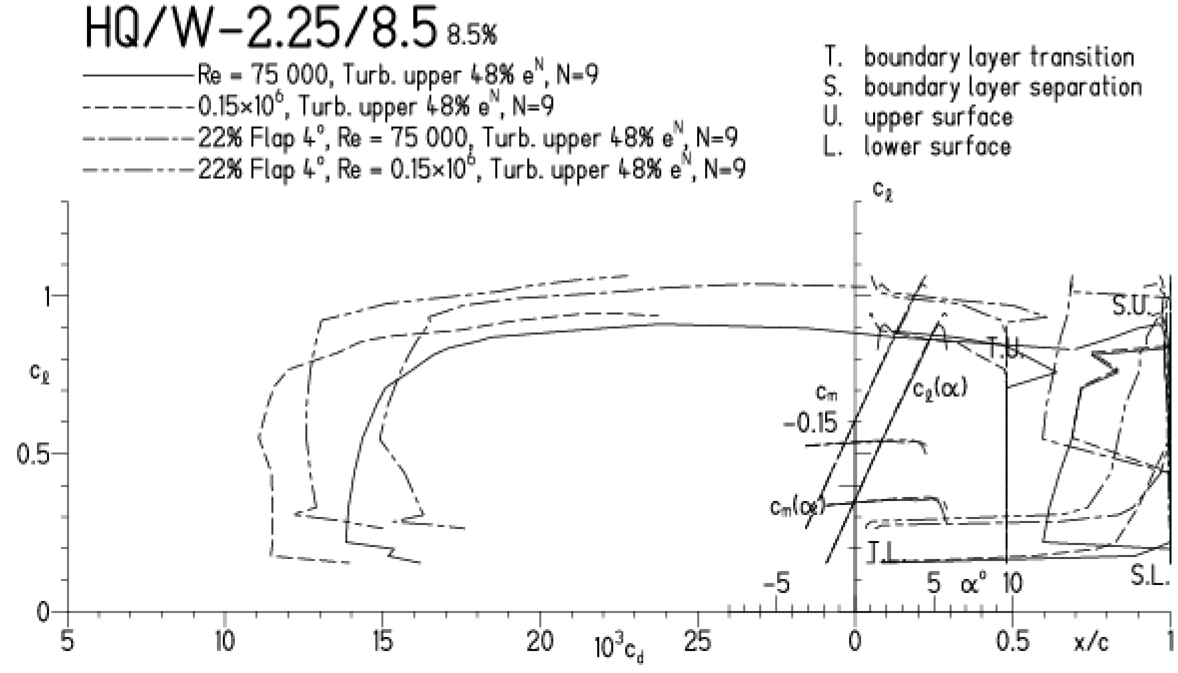


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

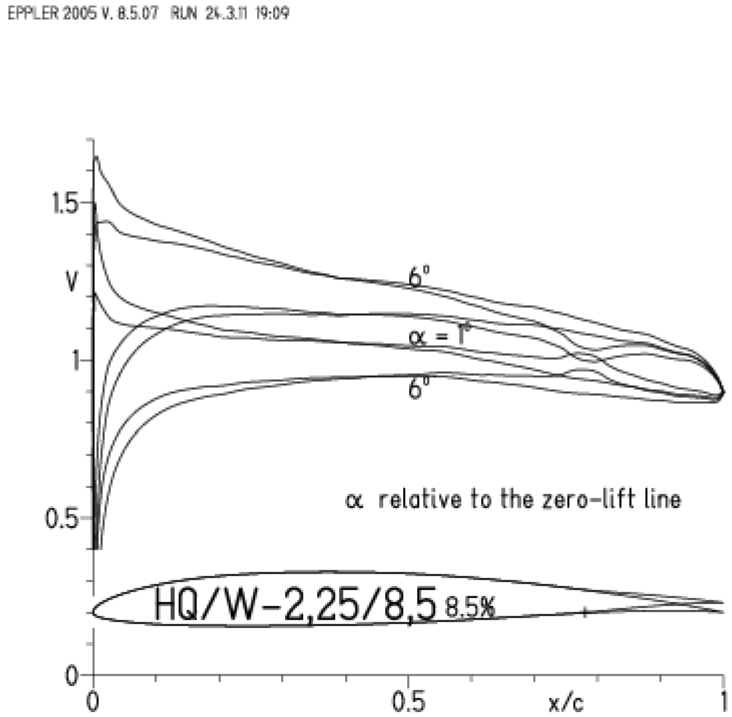
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

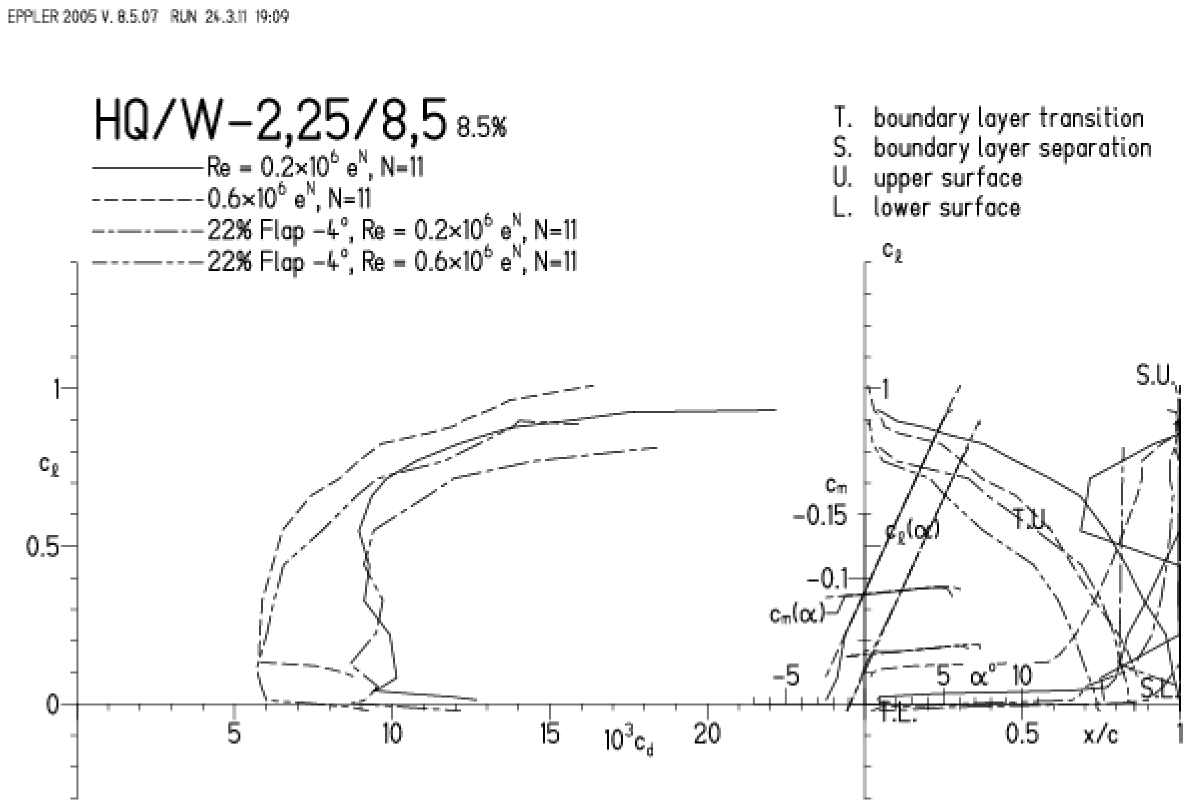


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



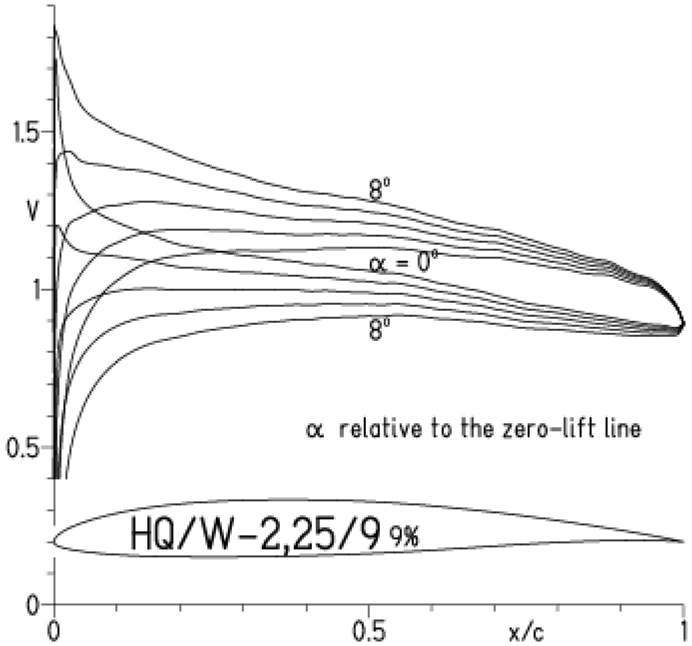
HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



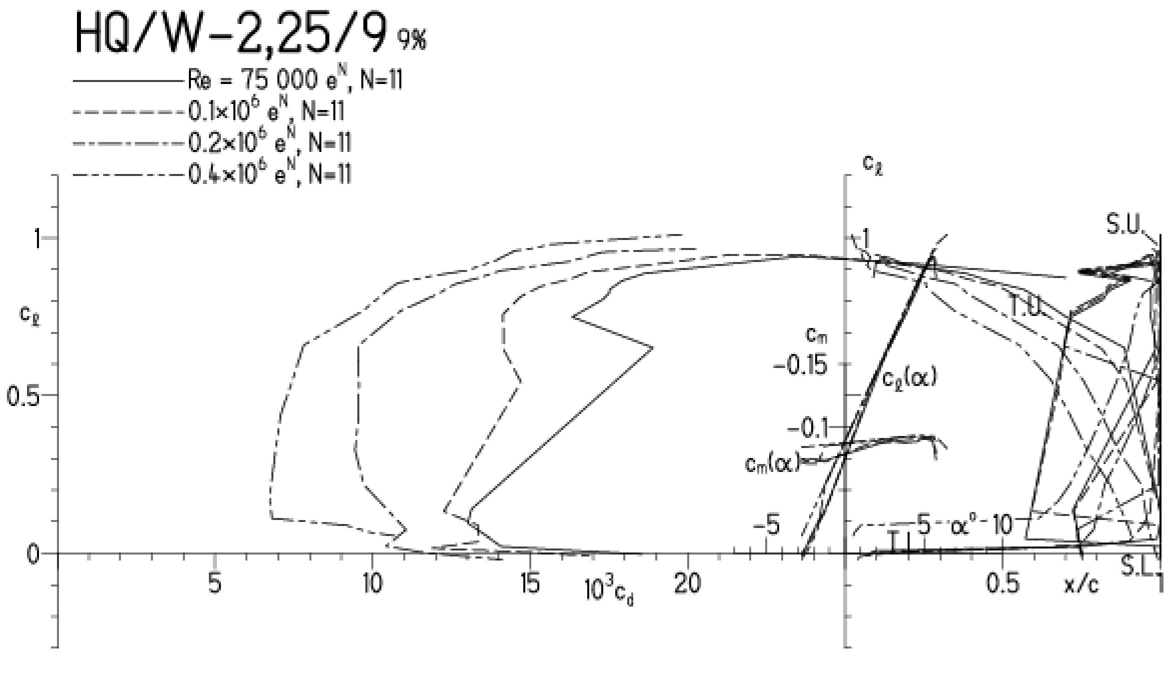


HQ/W-2,25/9, N=11

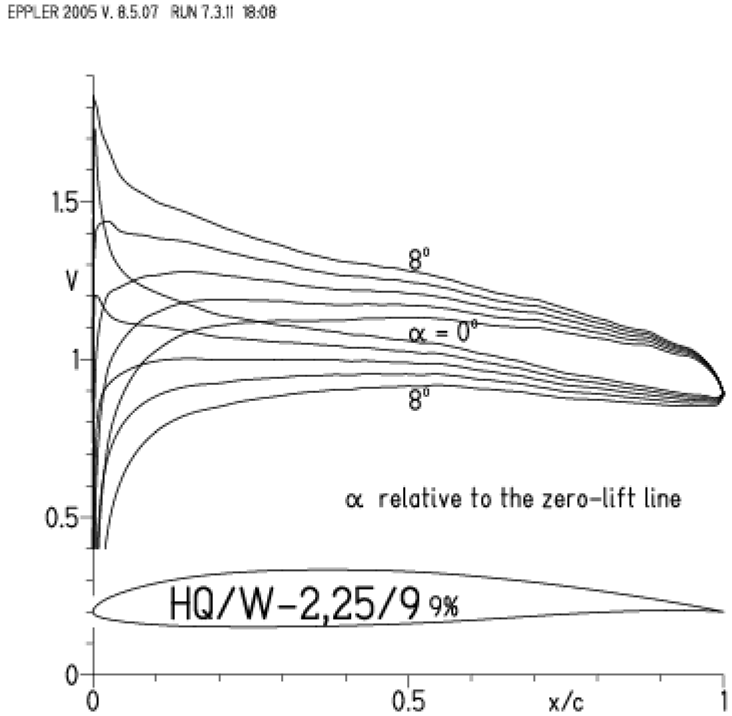
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

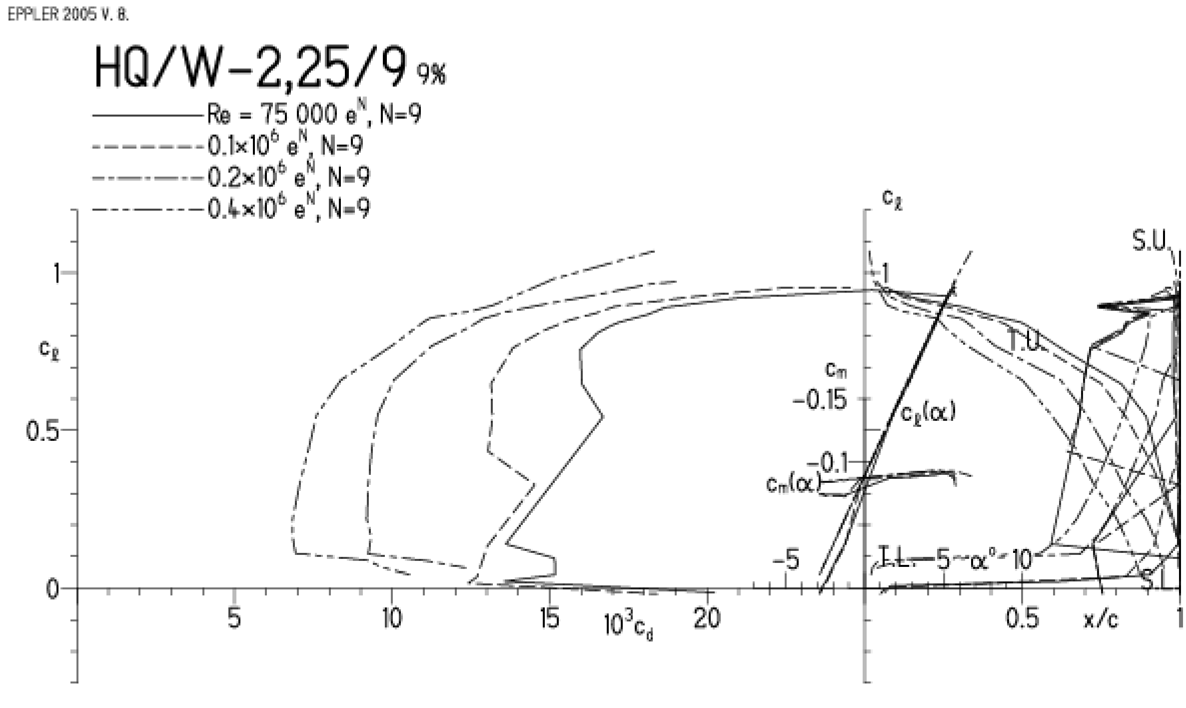


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

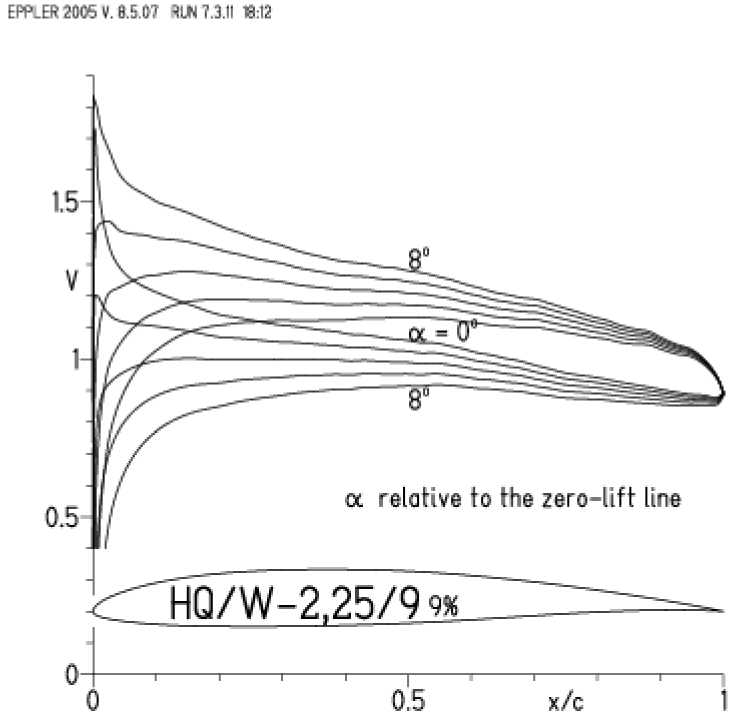


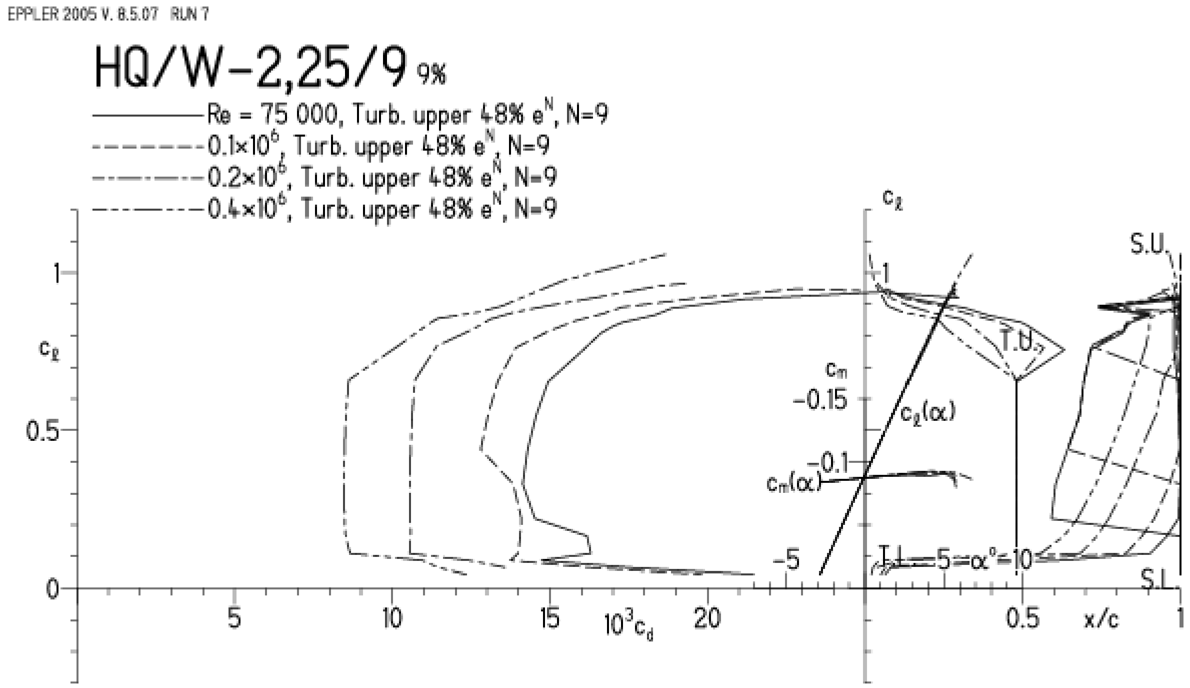
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
S.U.
T.U.
c_m(α)
c_l(α)
T.L.
S.L.
10^3 c_d
x/c

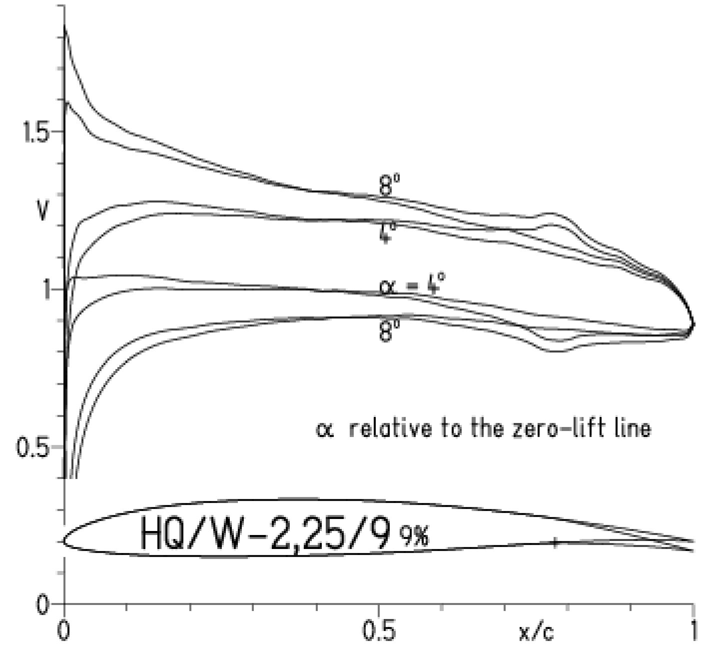
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



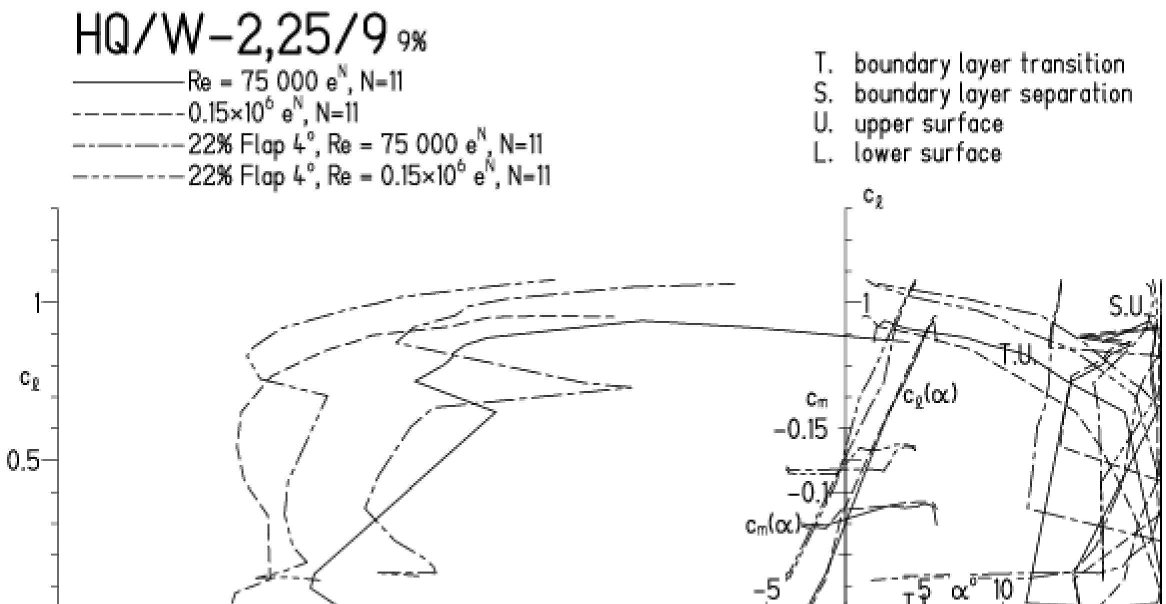


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

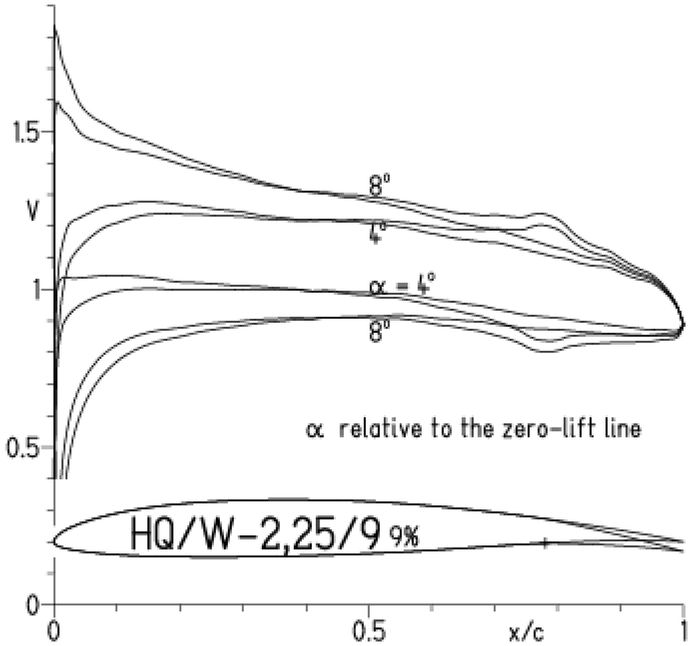


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

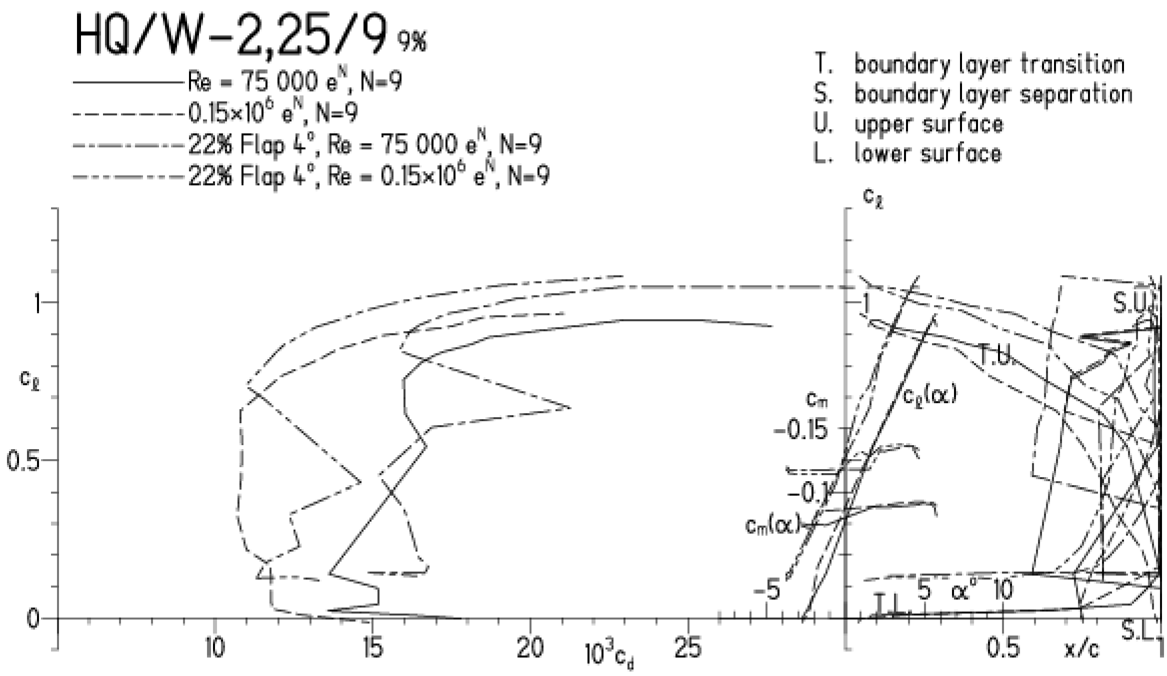


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

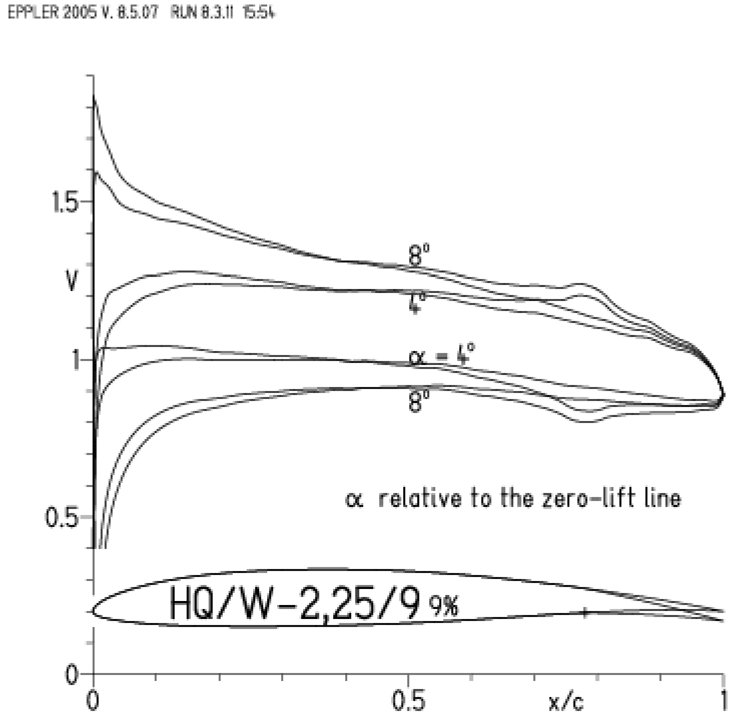
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

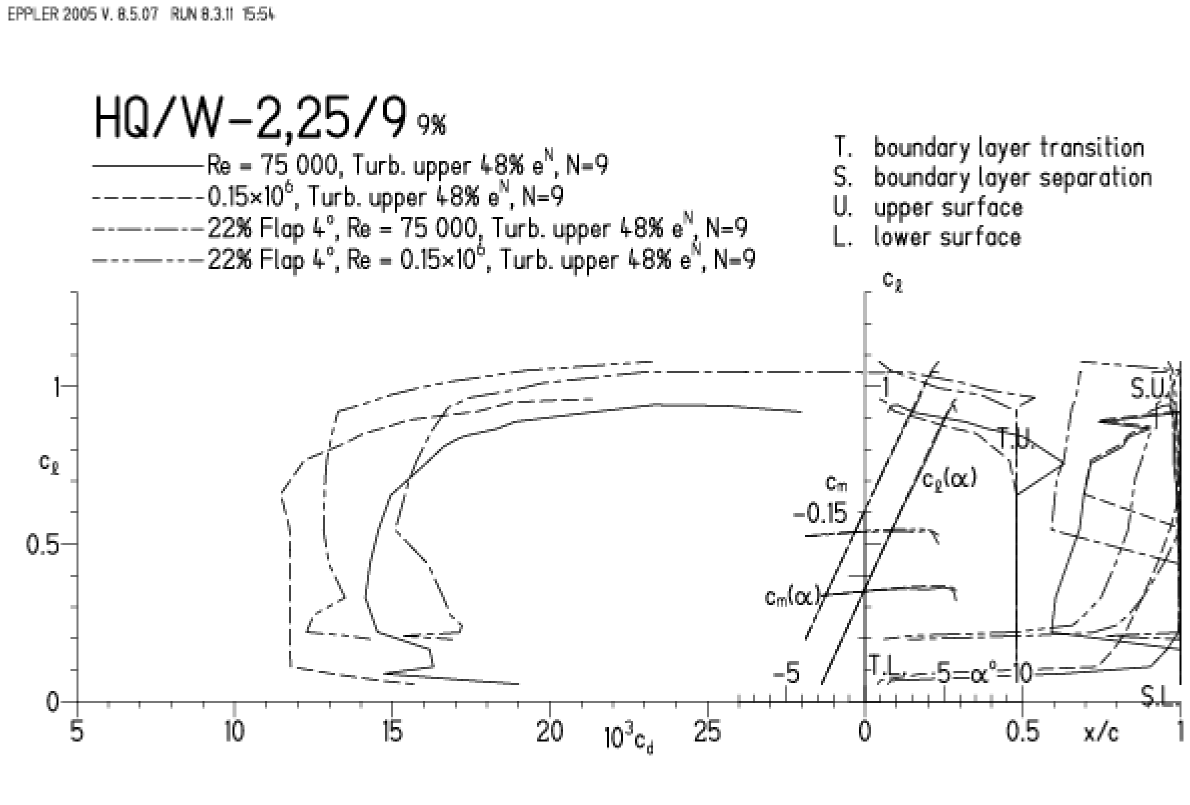


EPPLER 2005 V. 8.5.07 RUN 8.3.1



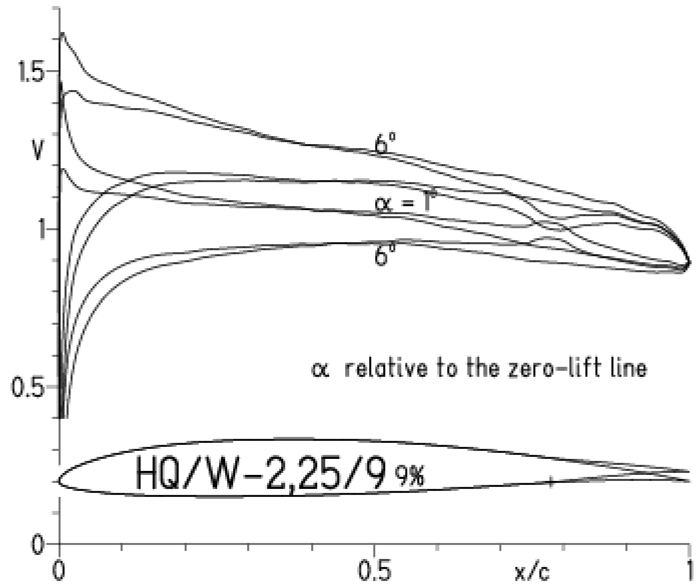
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



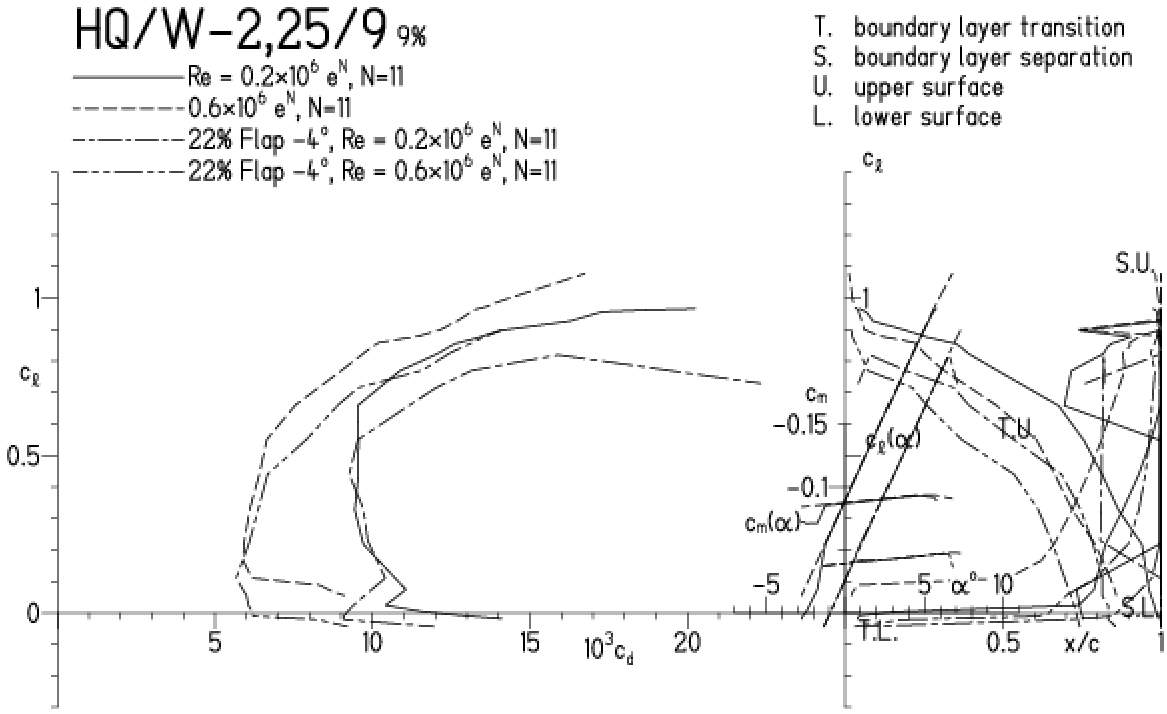


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

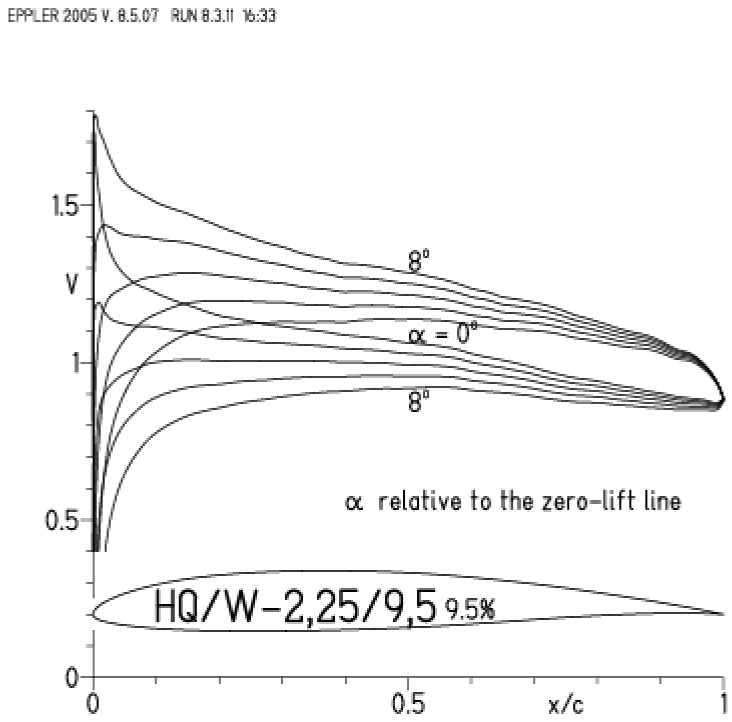
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

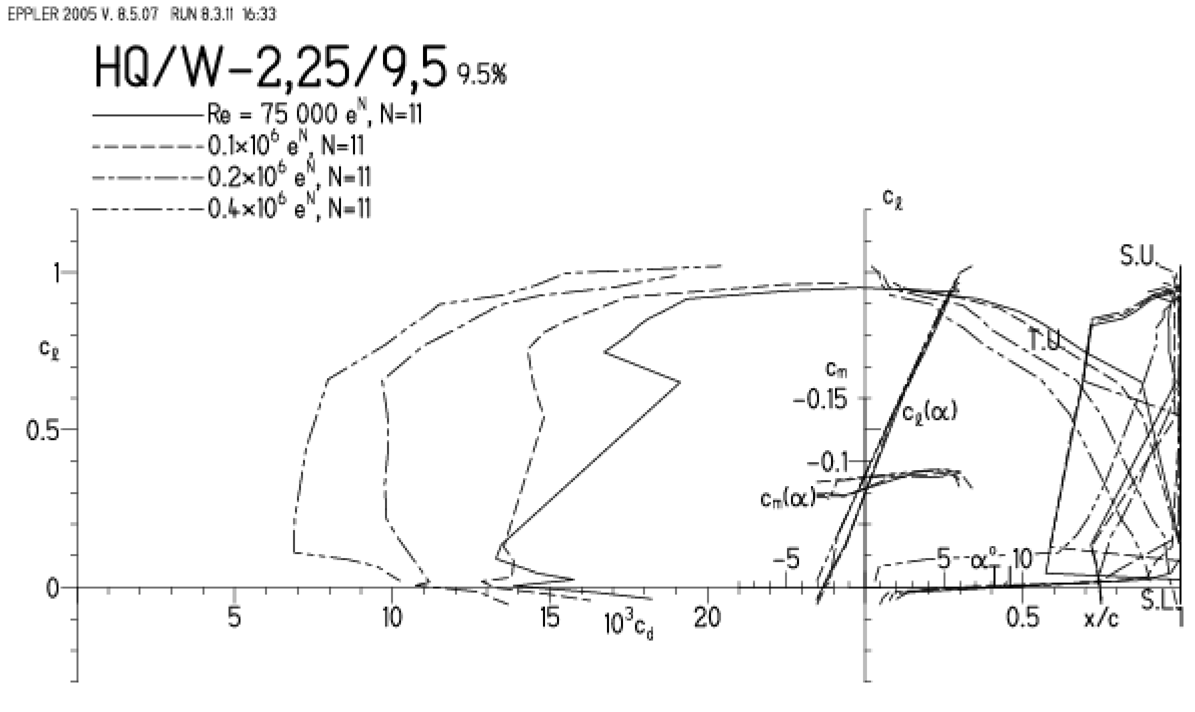


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

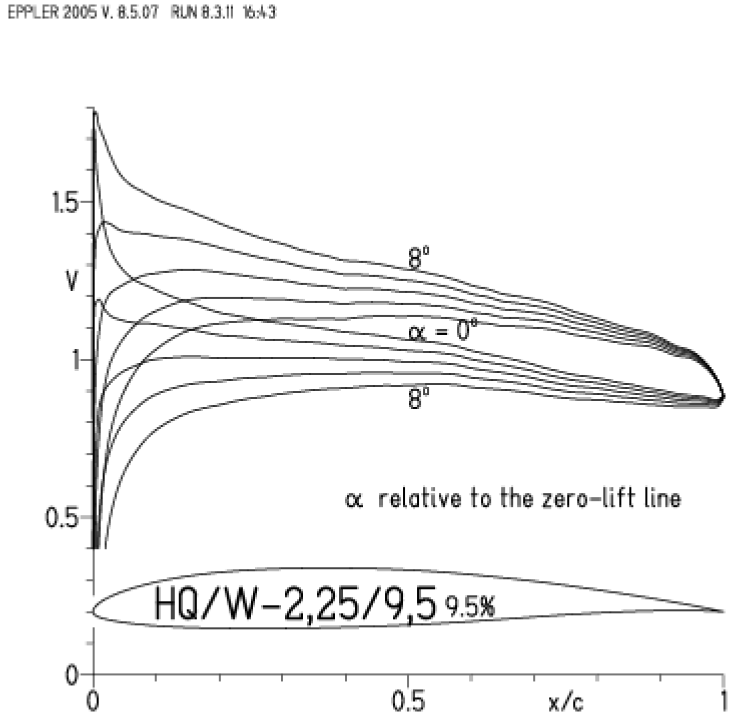


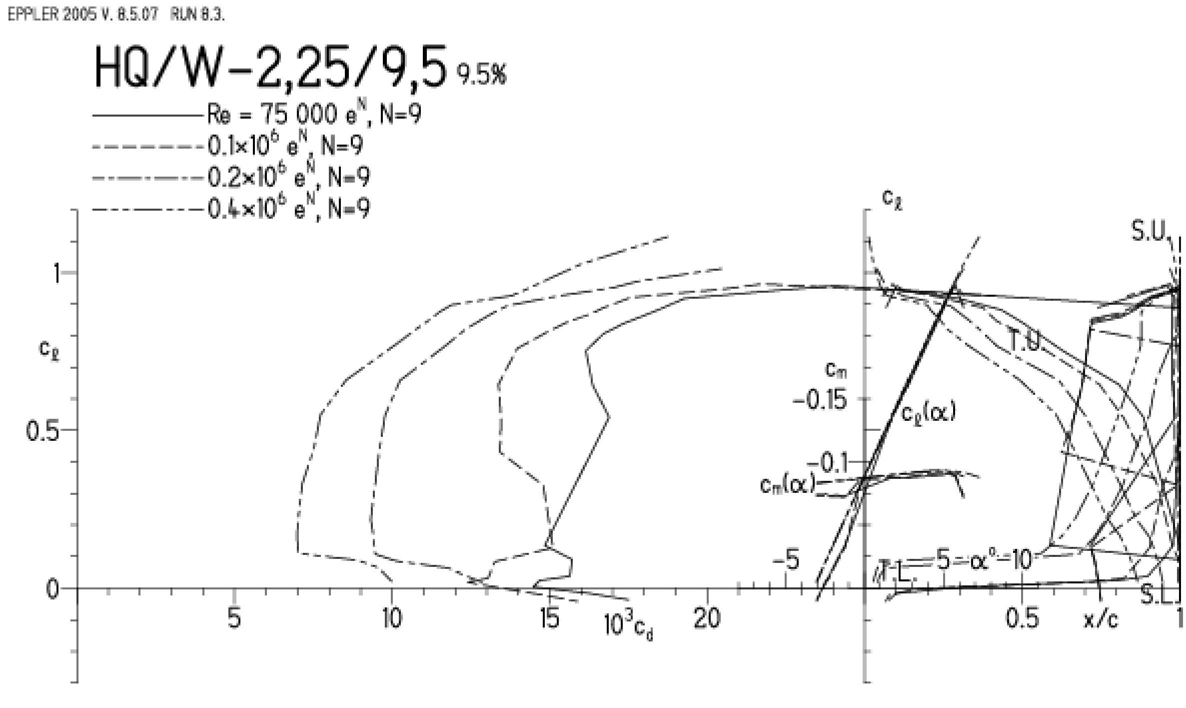
<u>HQ/W-2,25/9,5</u>, N=11





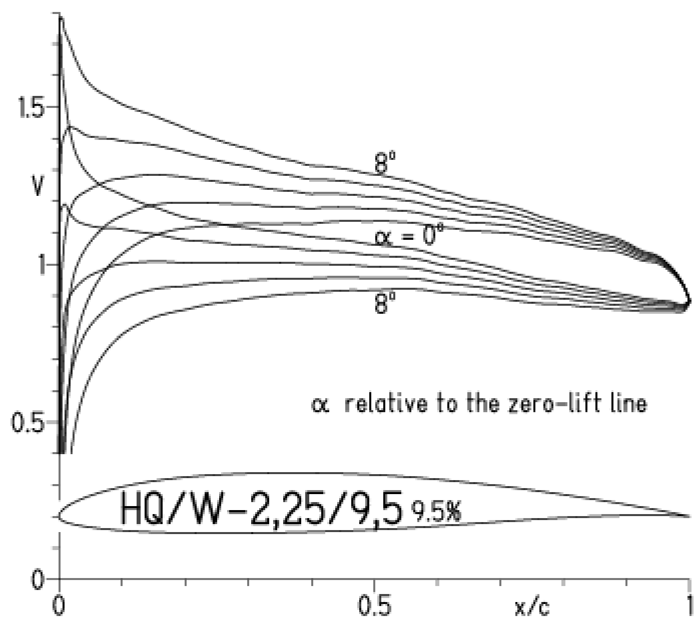
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

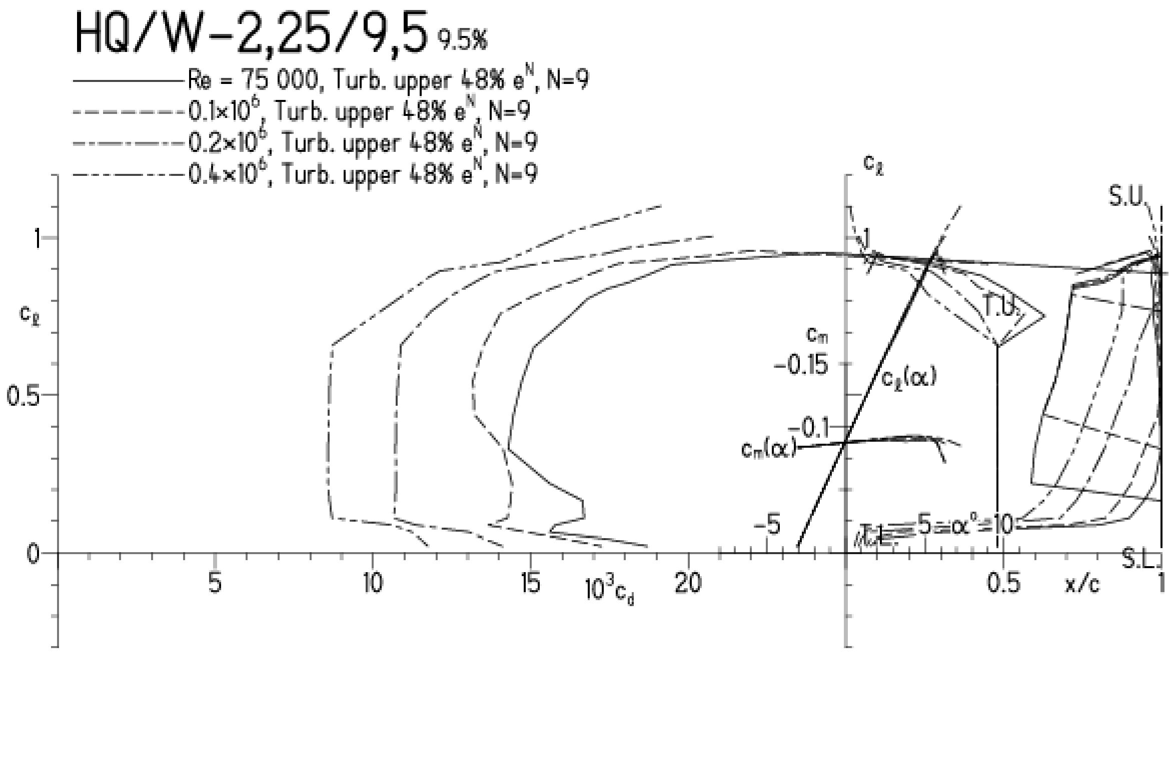

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
S.U.
T.U.
c_m
-0.15
c_ℓ(α)
-0.1
c_m(α)
-5
T.L.
5
α°
10
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

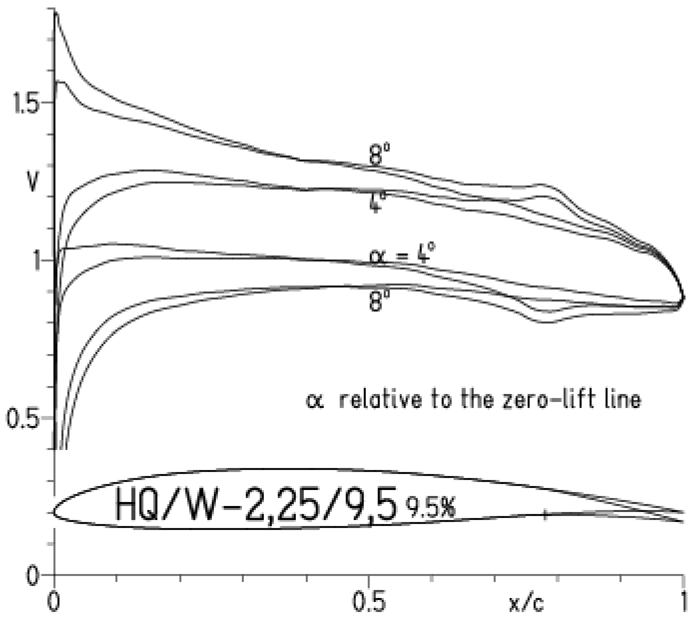


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

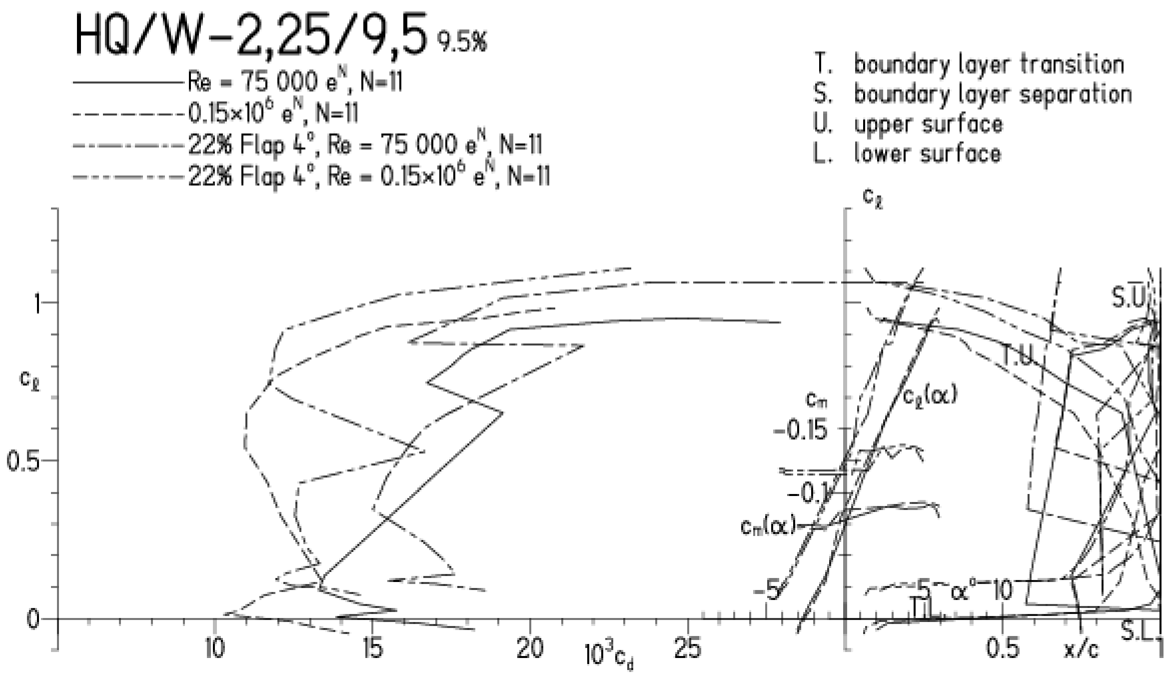


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

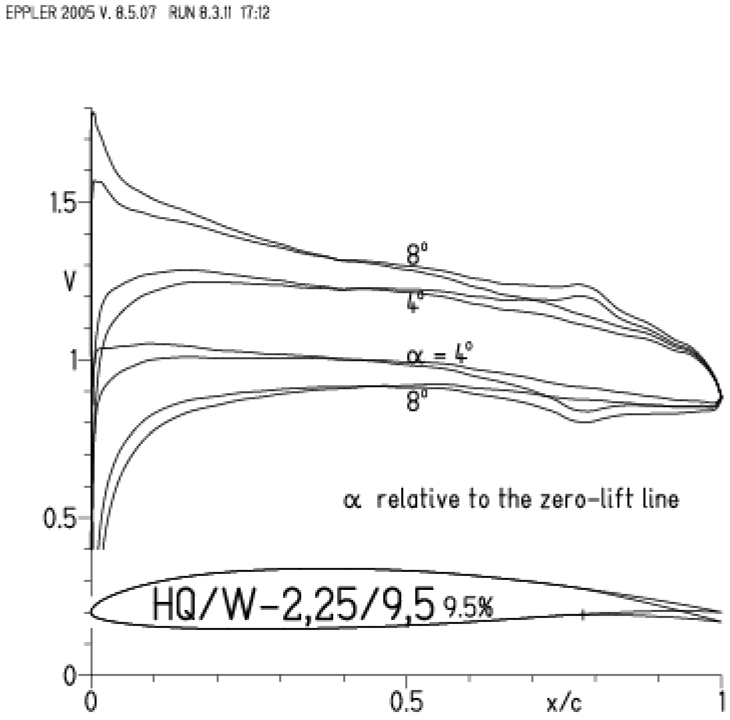
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

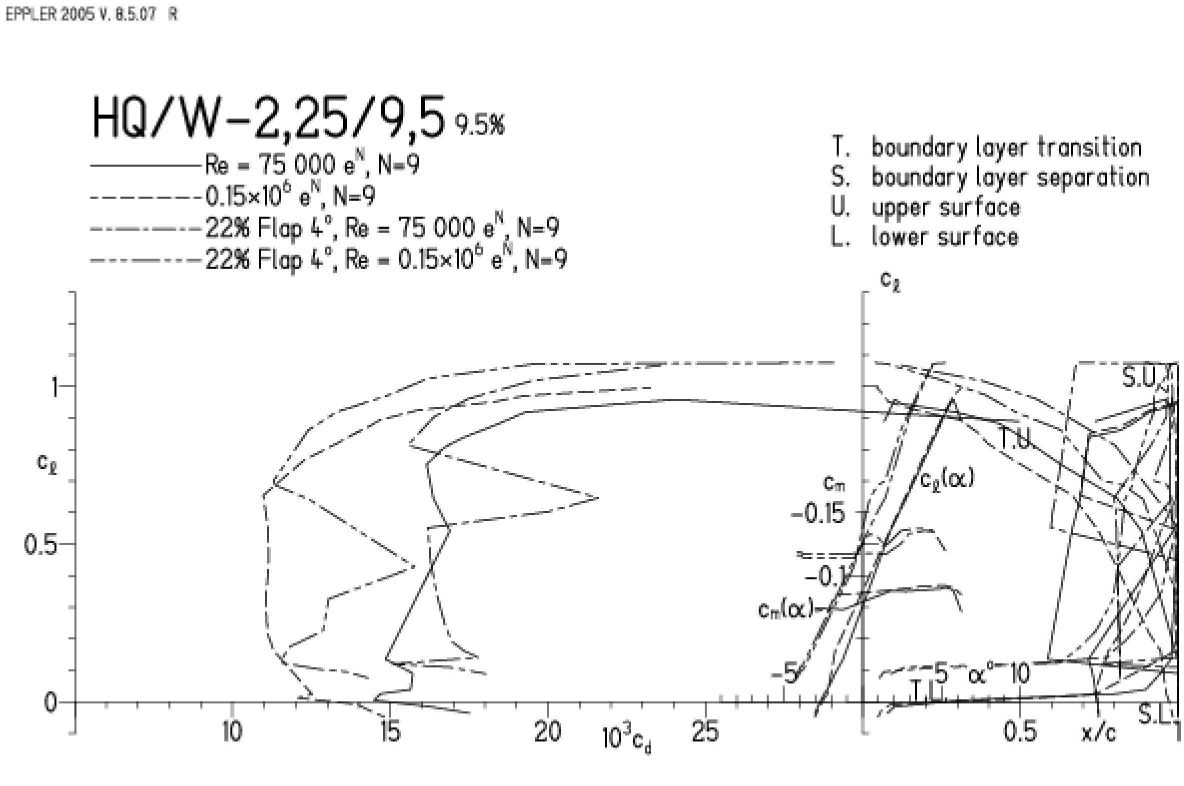


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



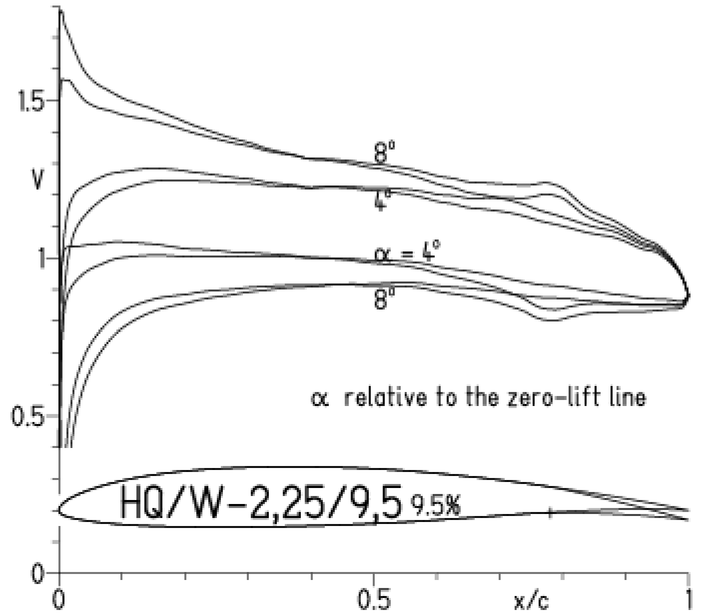
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



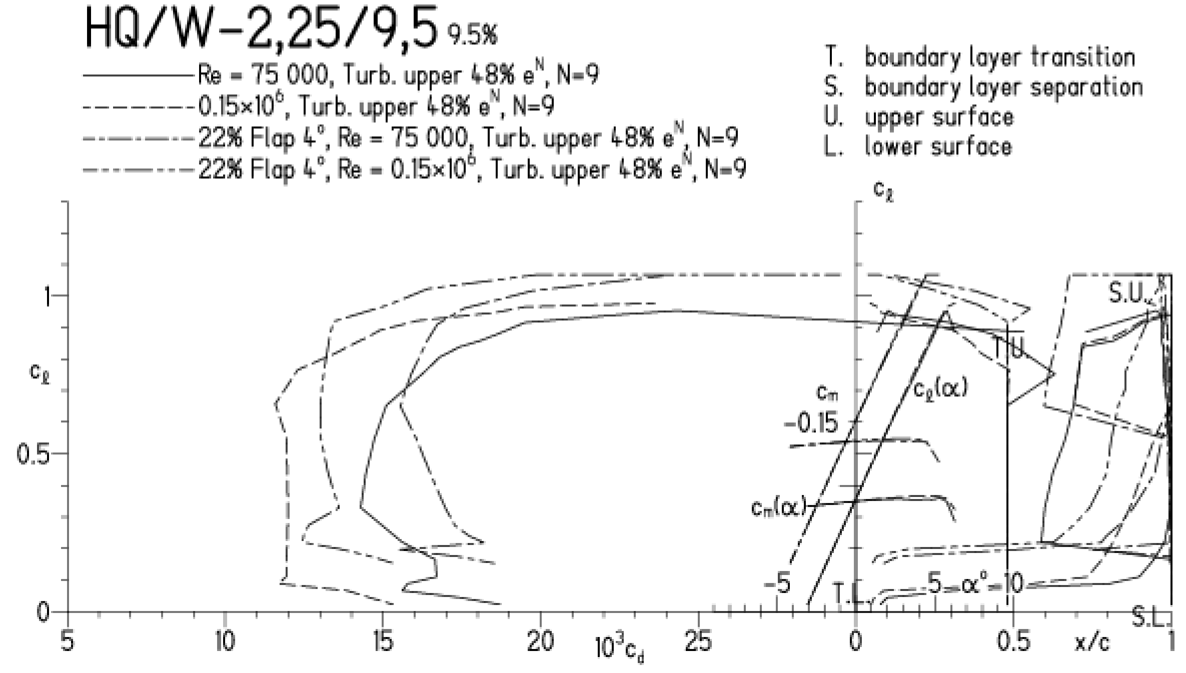


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

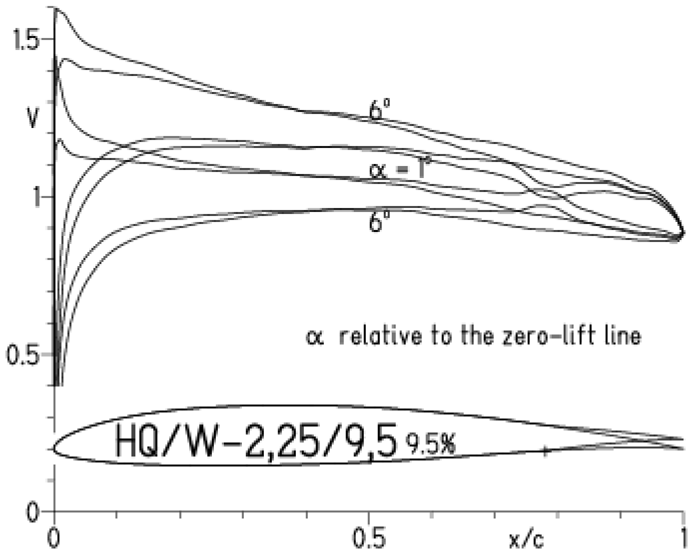


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

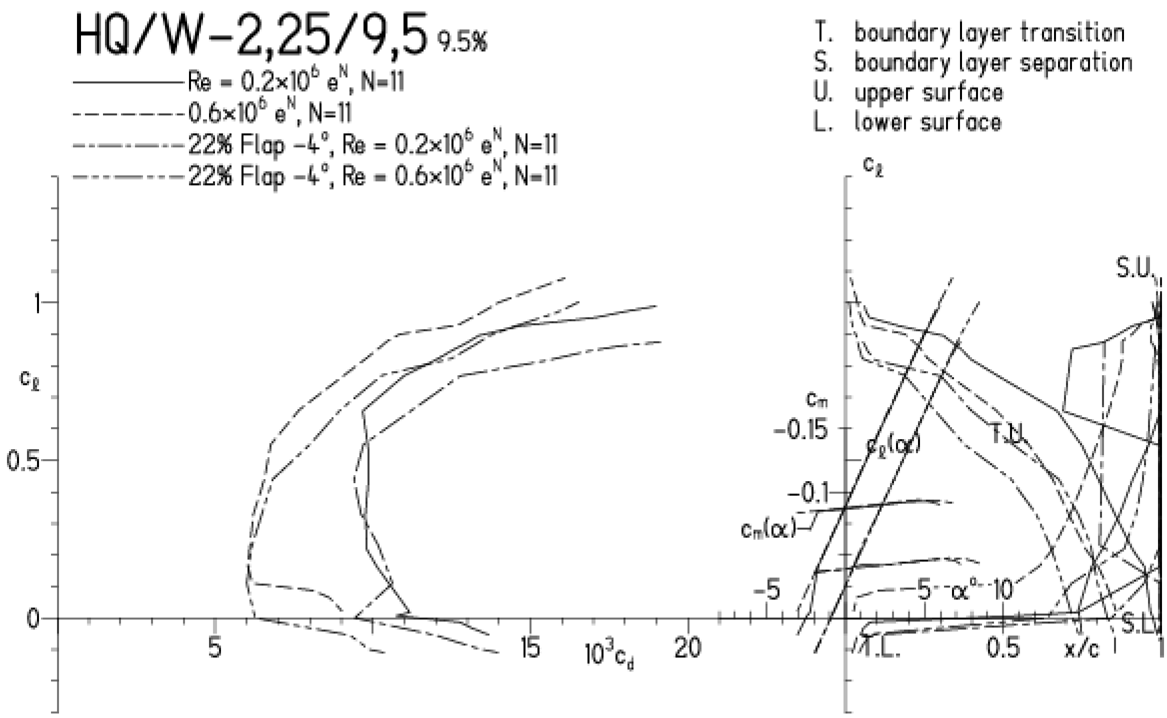


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

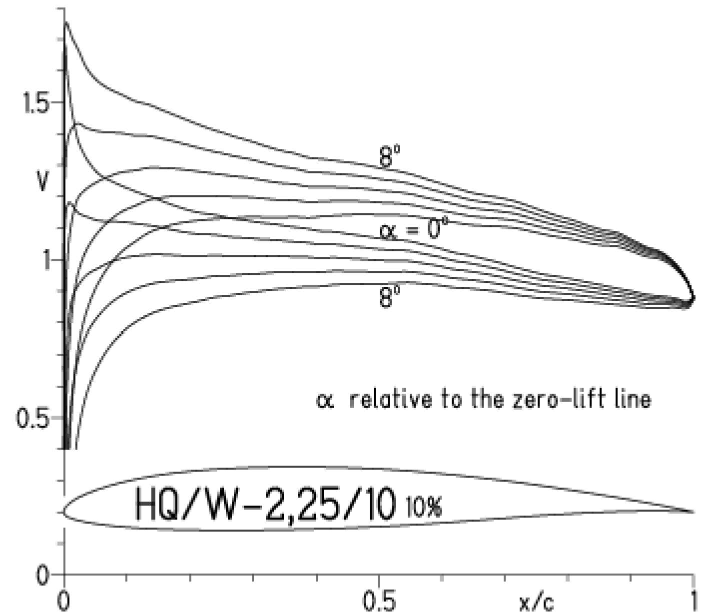


EPPLER 2005 V.

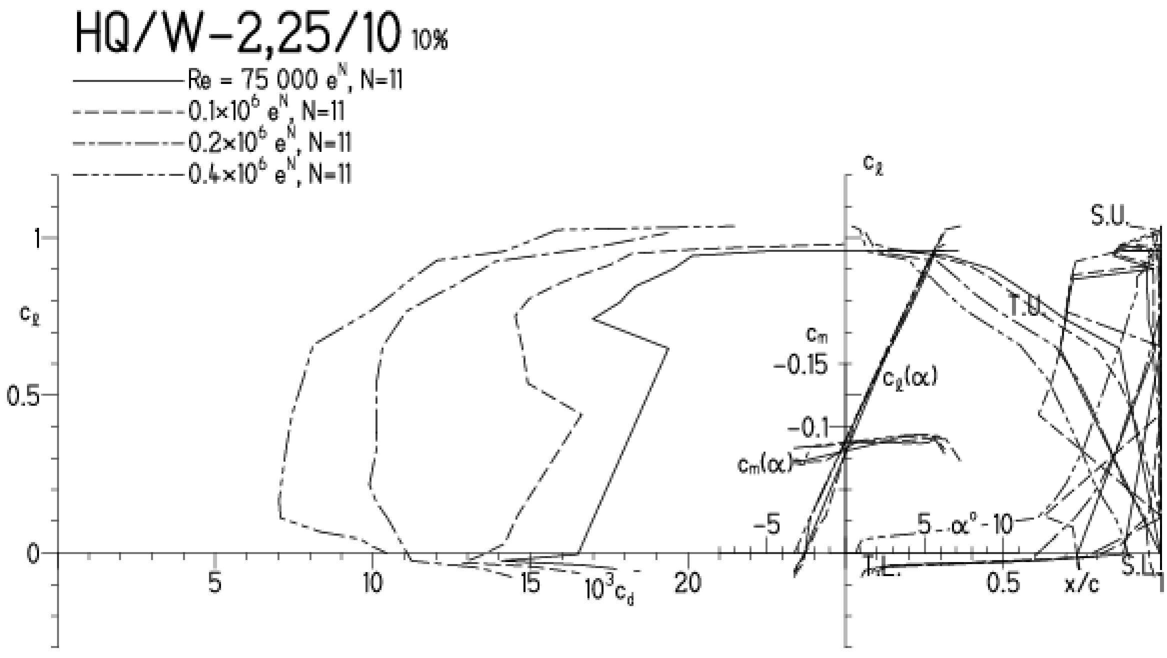


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

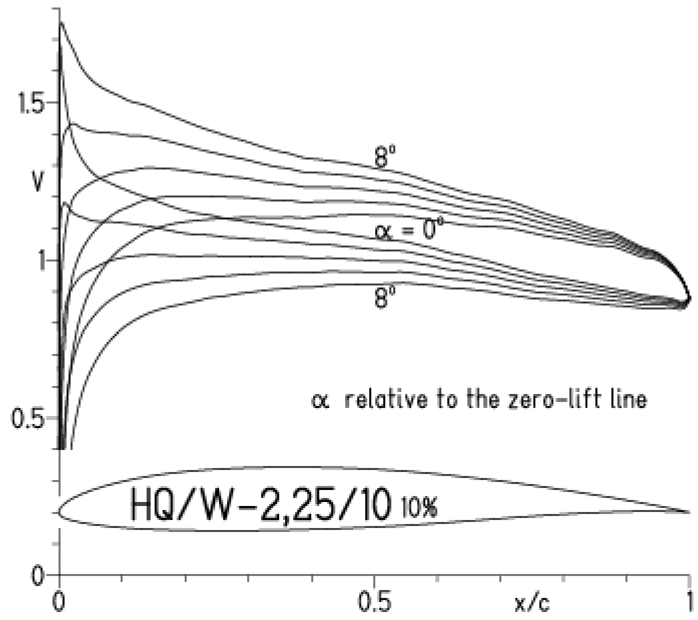


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

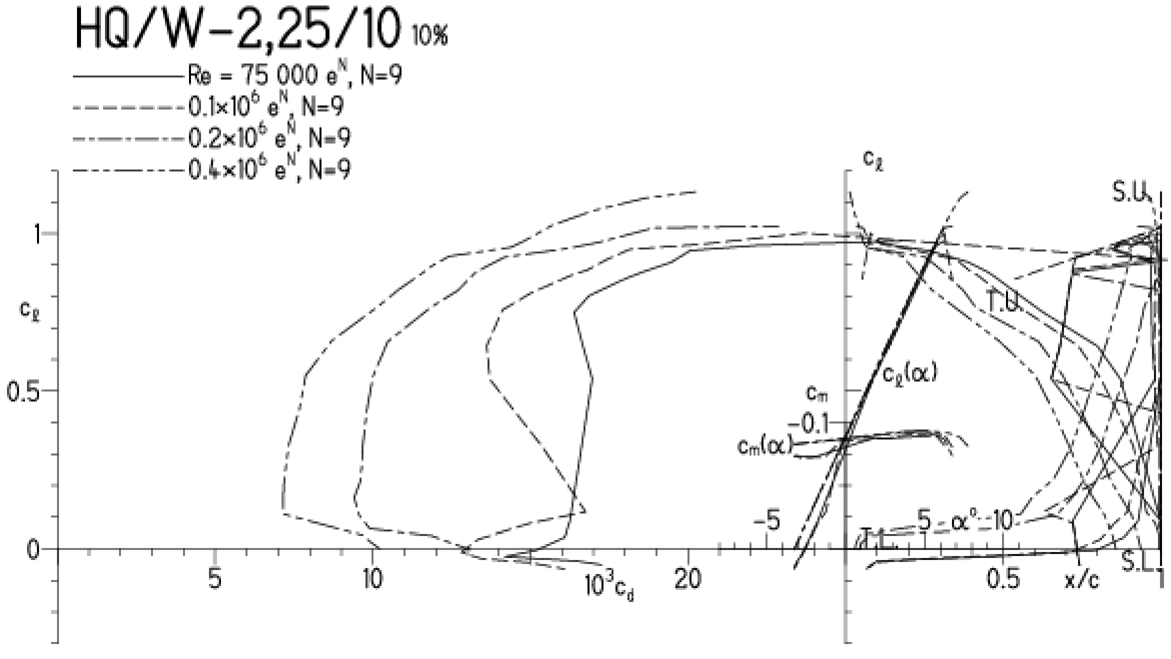


<u>HQ/W-2,25/10</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

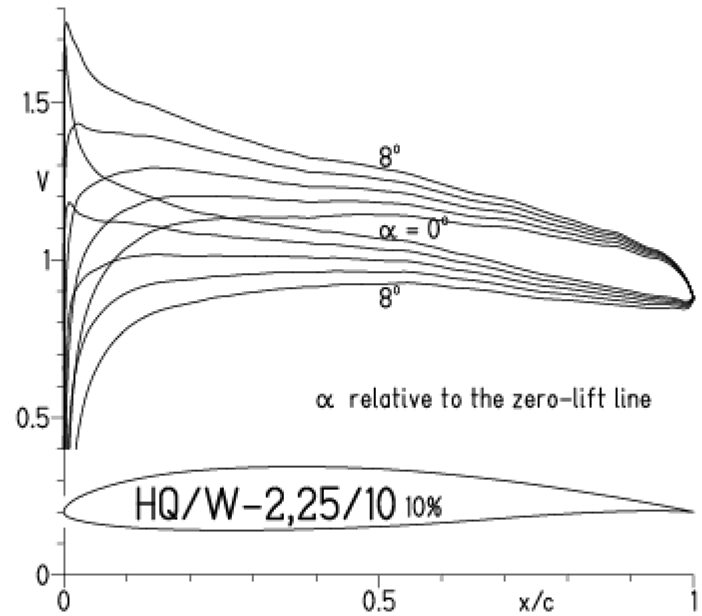


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

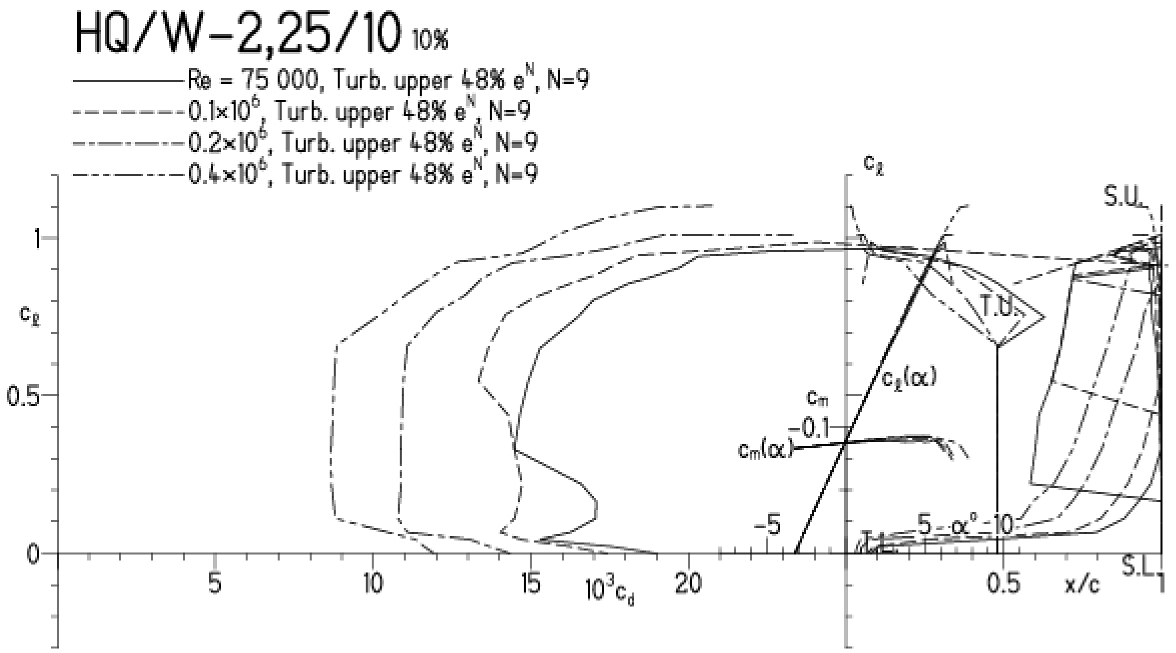


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

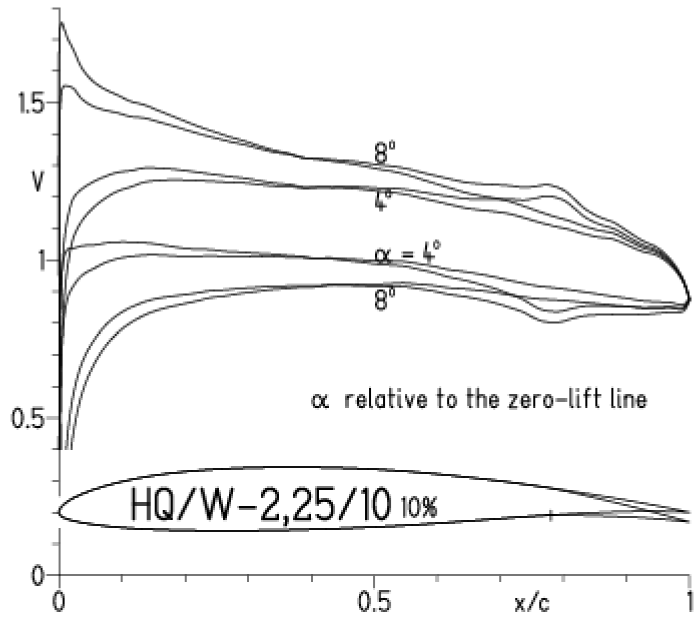


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

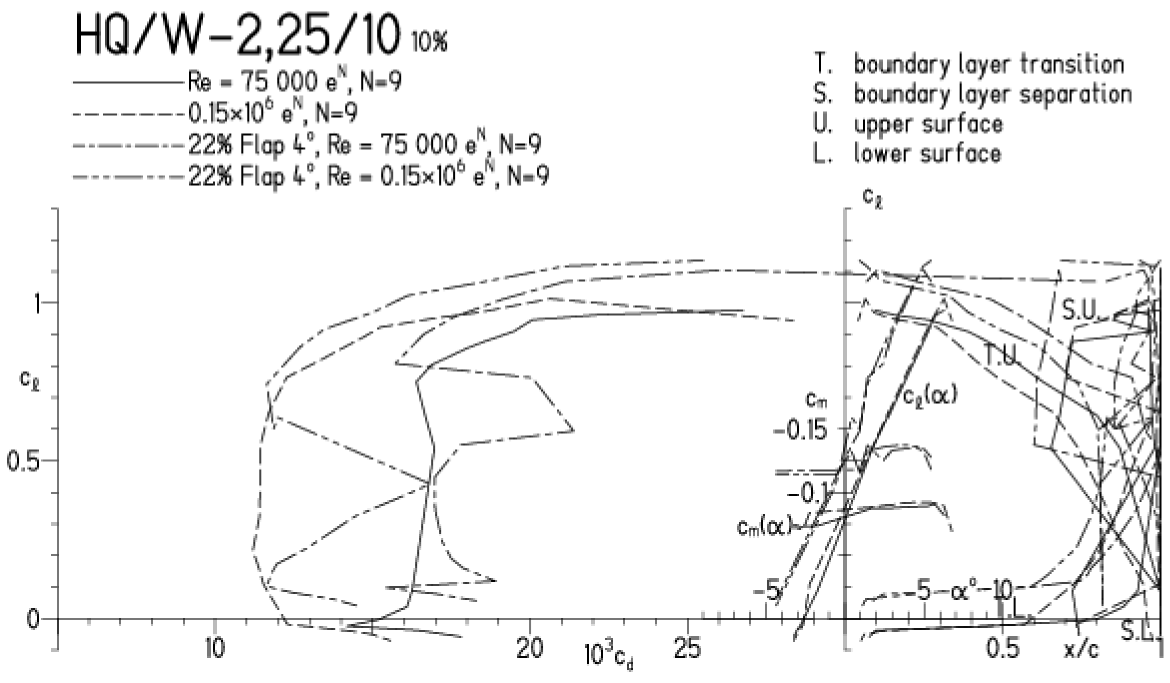


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

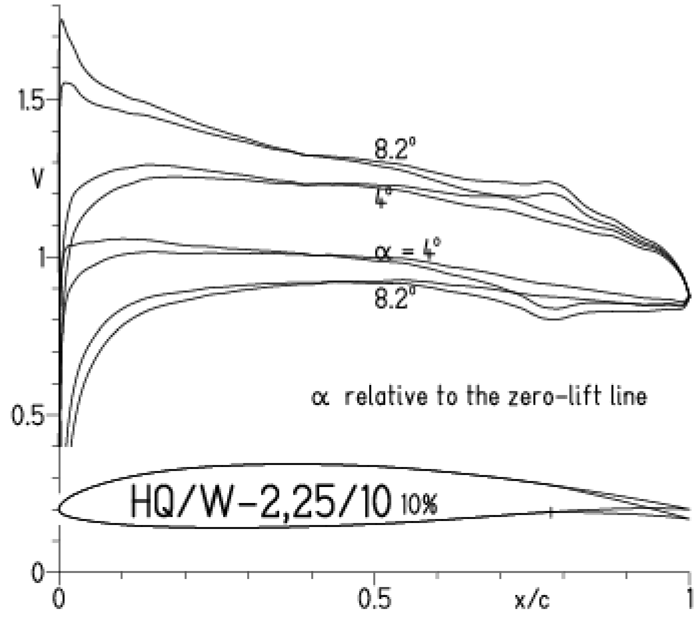


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

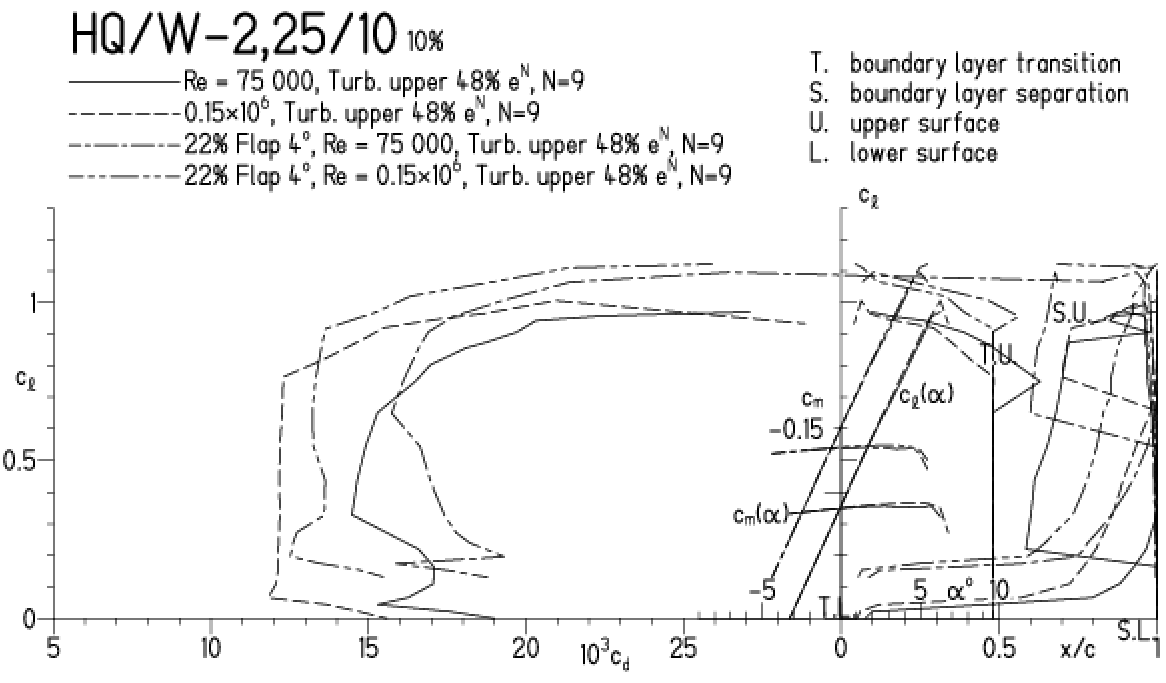


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

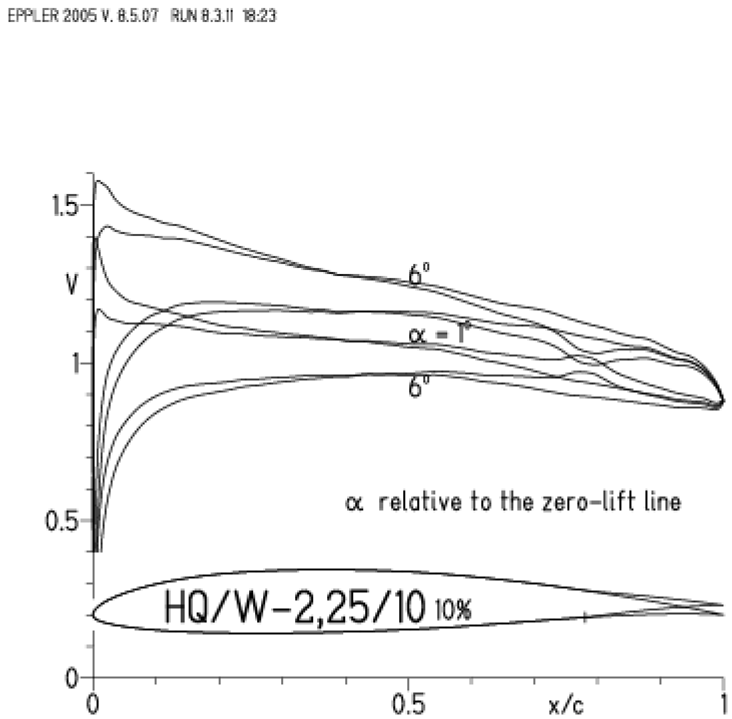
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

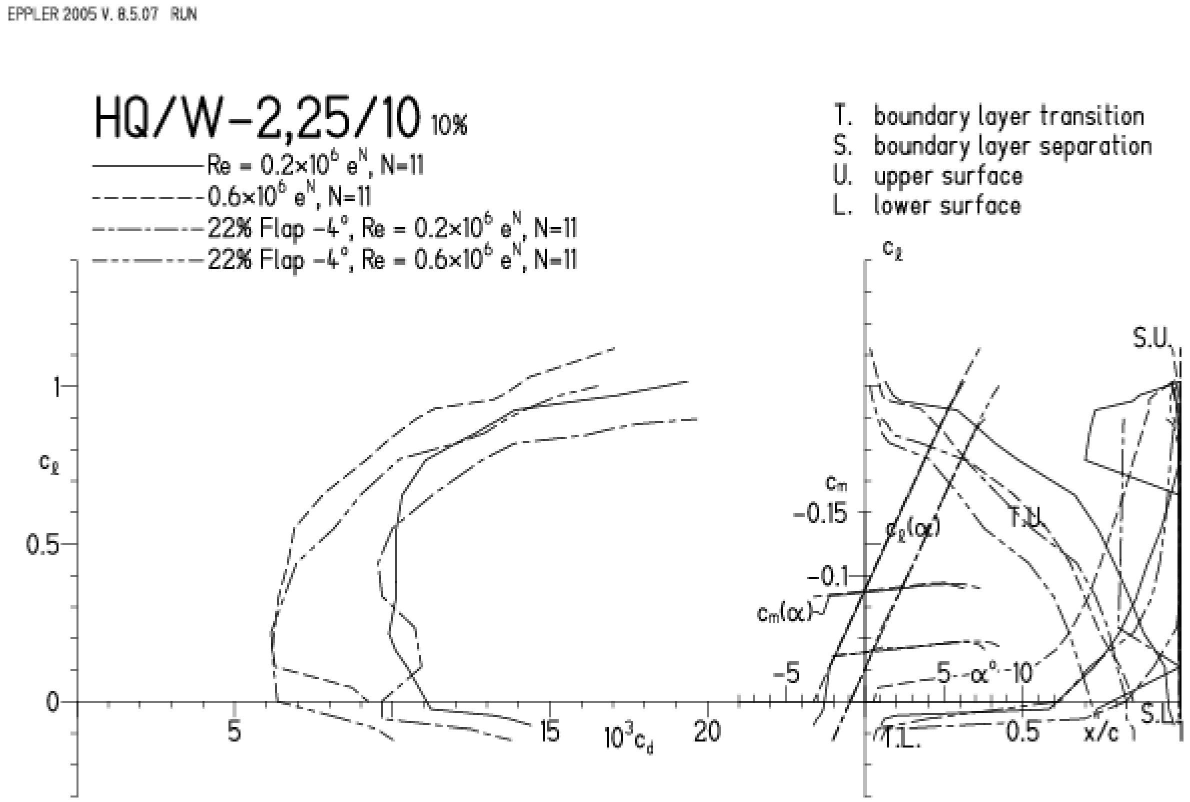


EPPLER 2005 V. 8.5.07 RUN 8.3

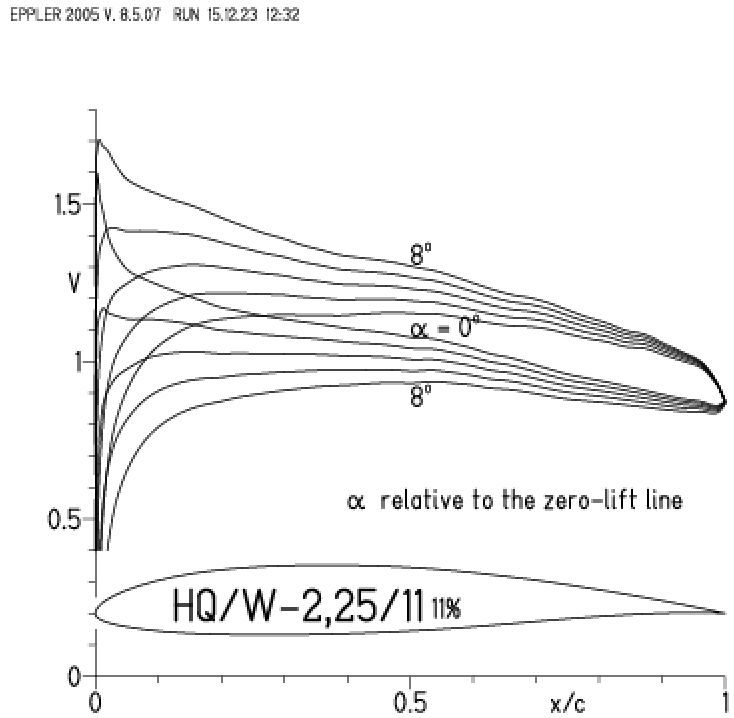


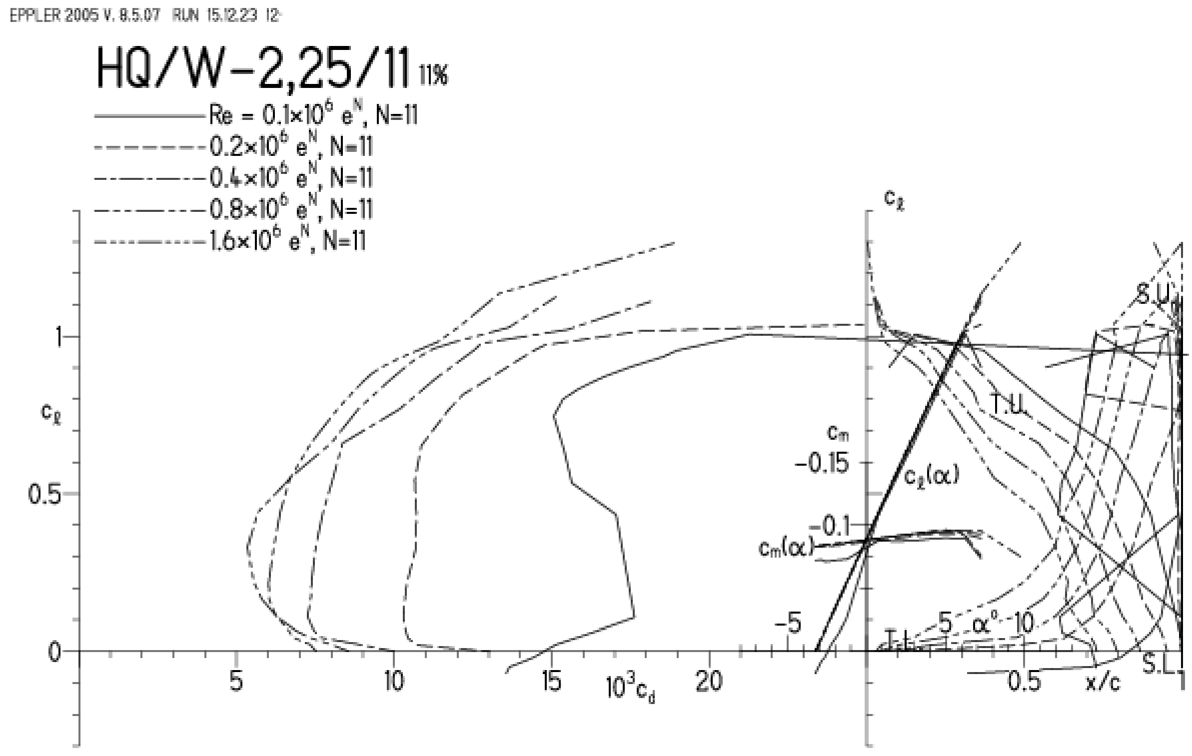
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



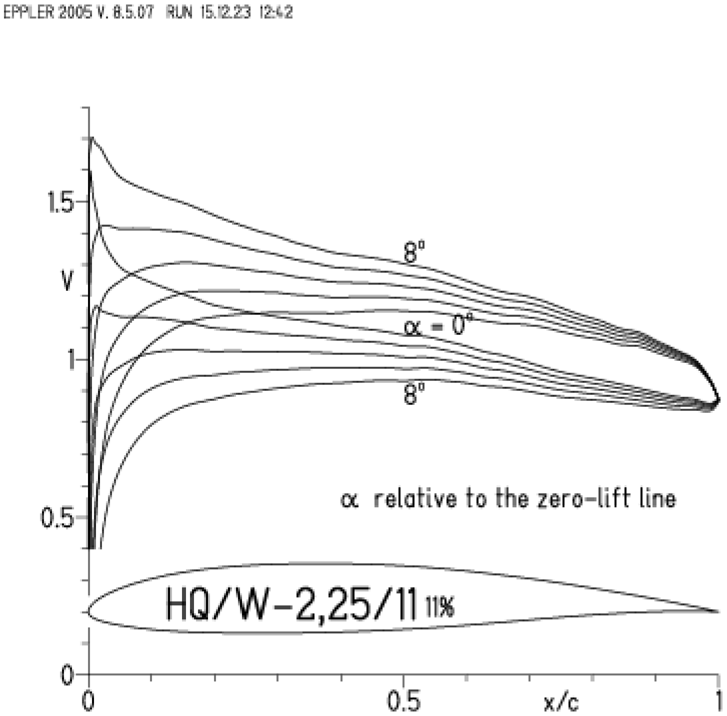


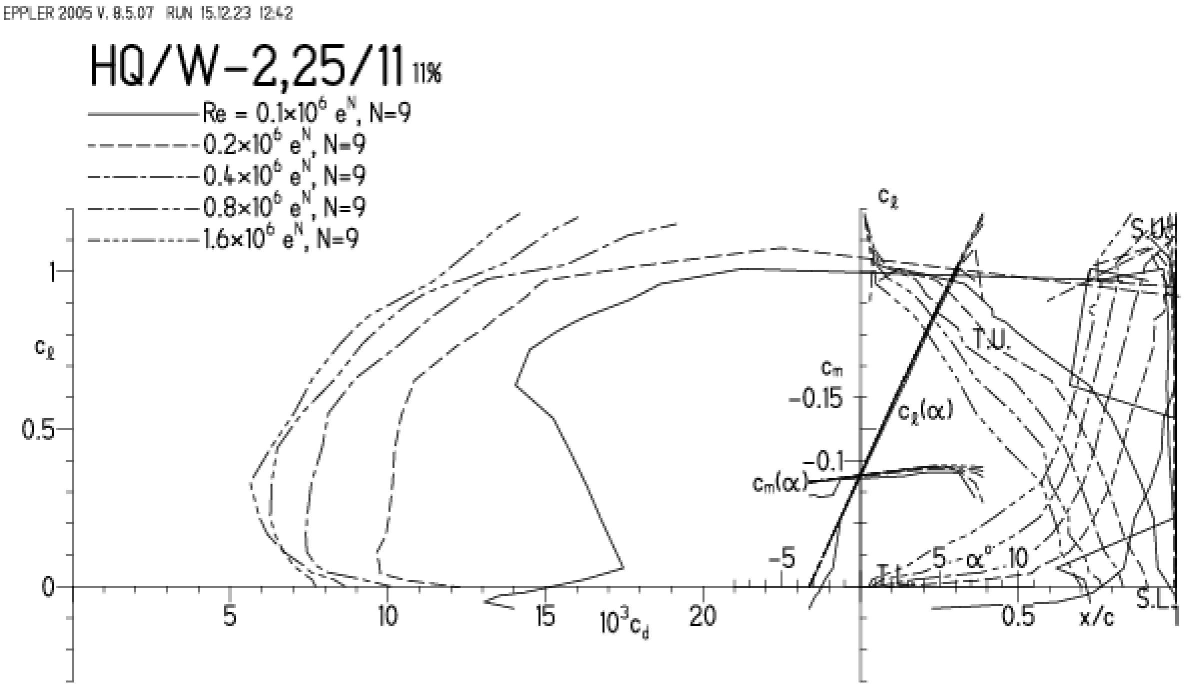
<u>HQ/W-2,25/11</u>, N=11



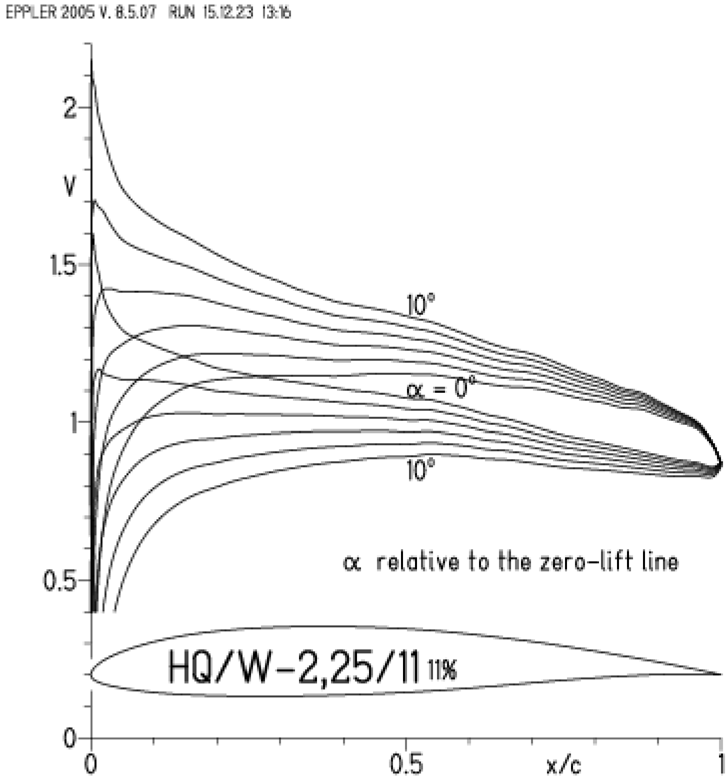


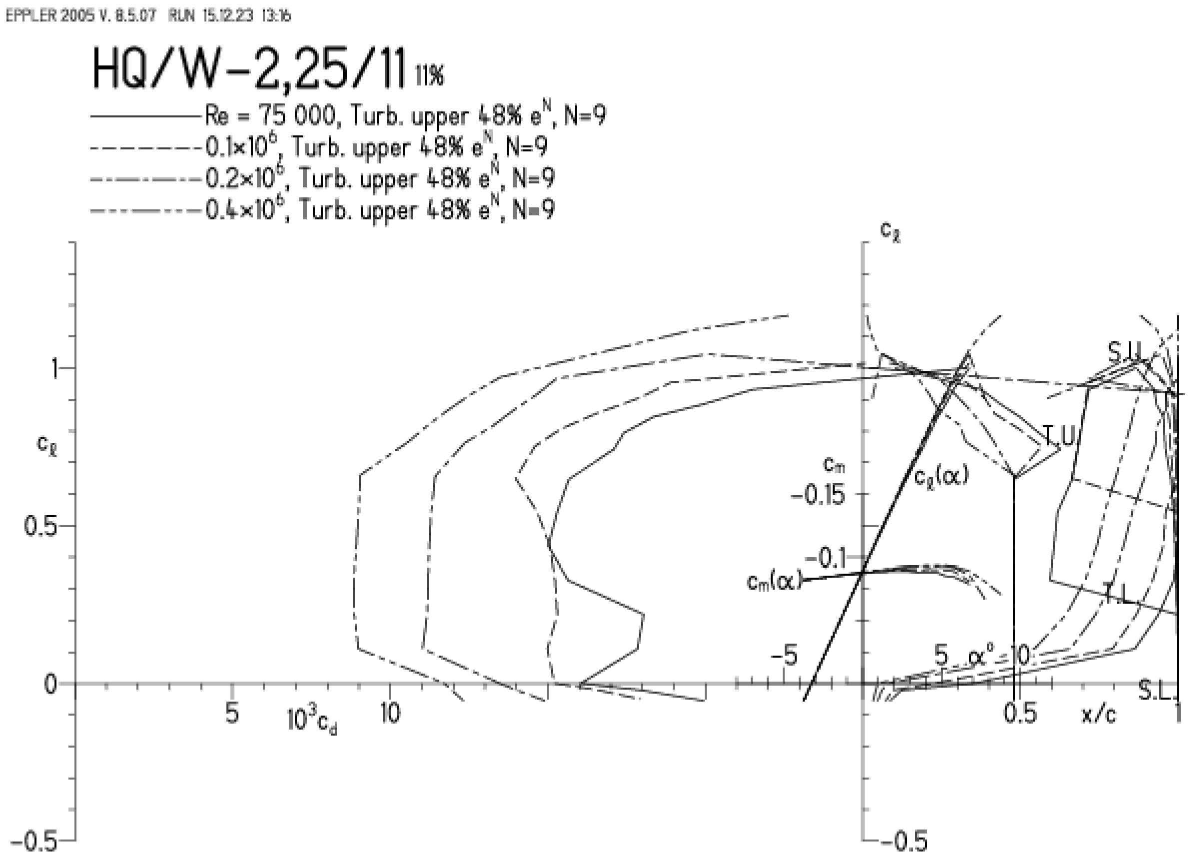
HQQ/W-2,25/11, N=9





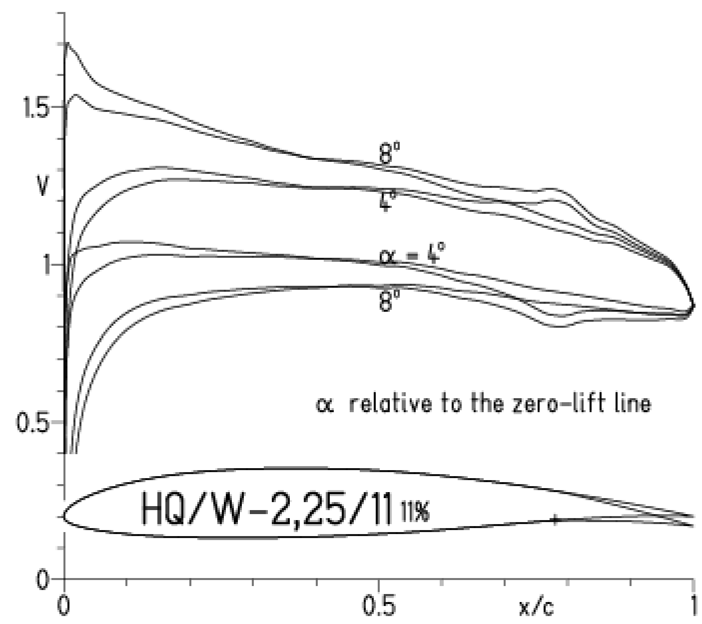
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



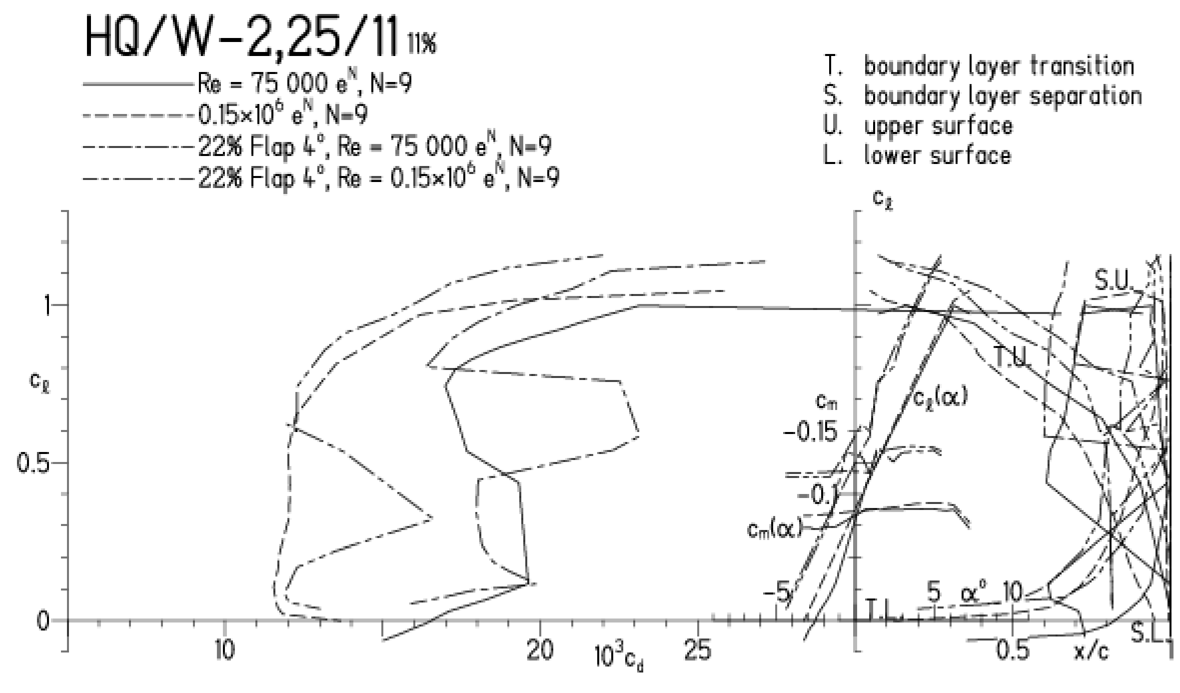


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

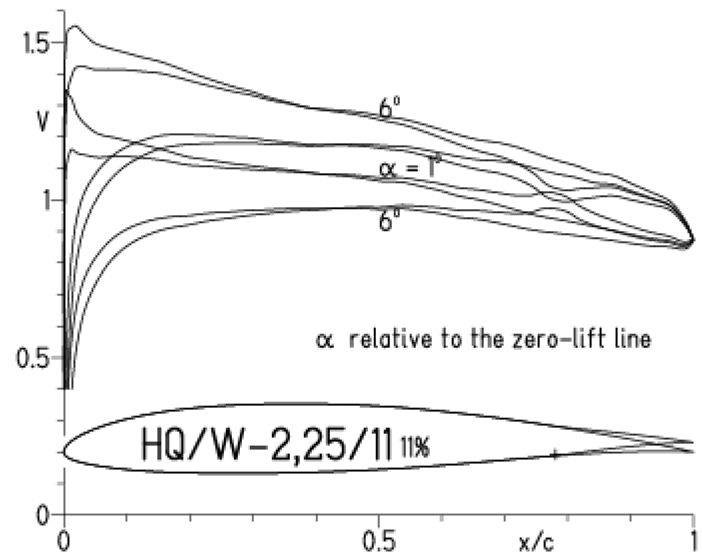


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

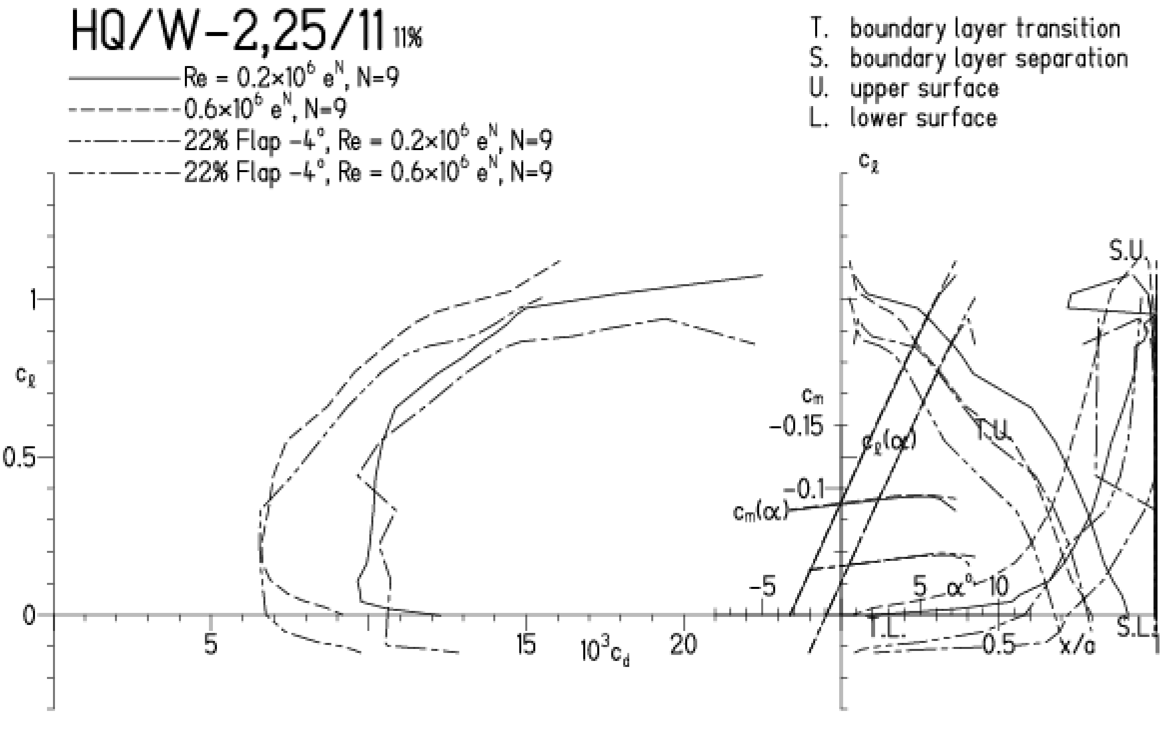


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

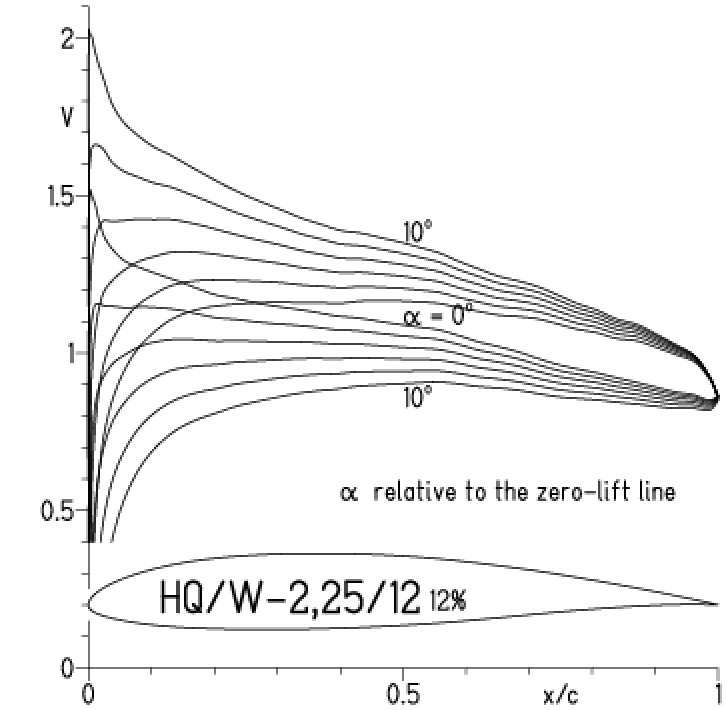
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

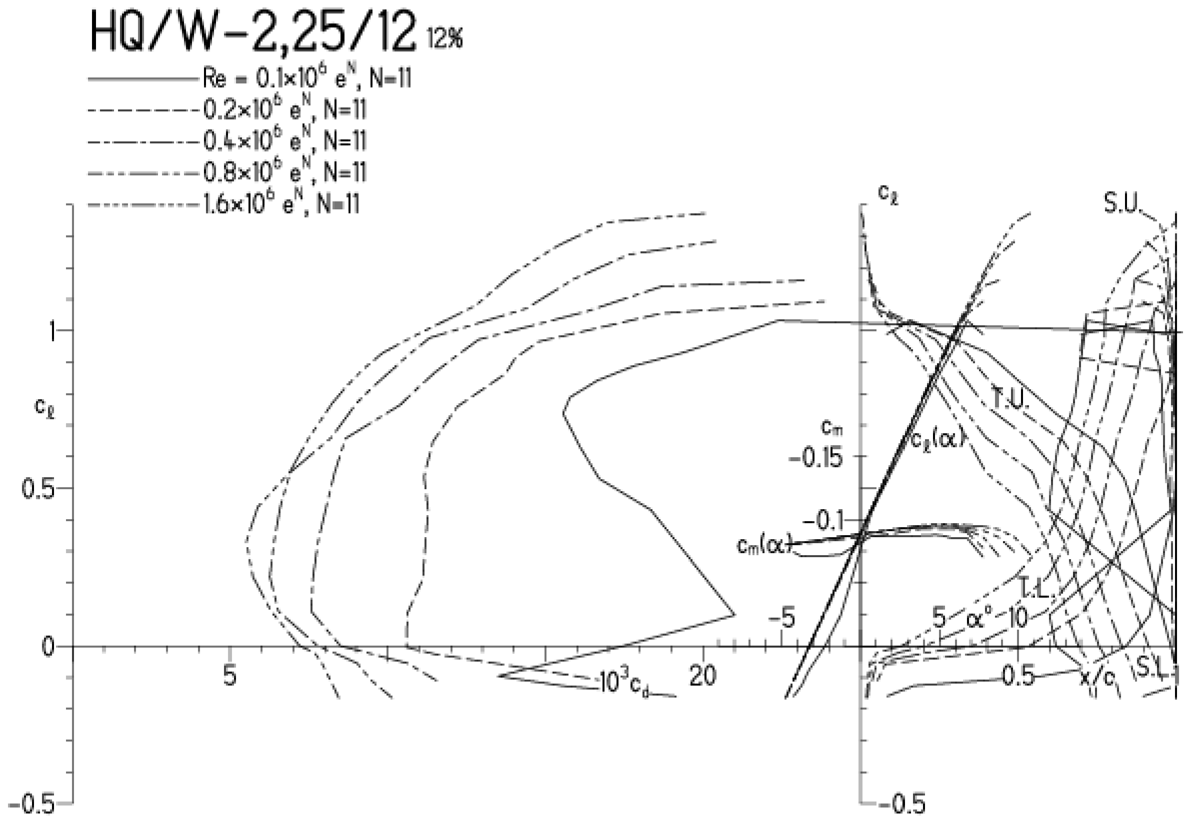


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



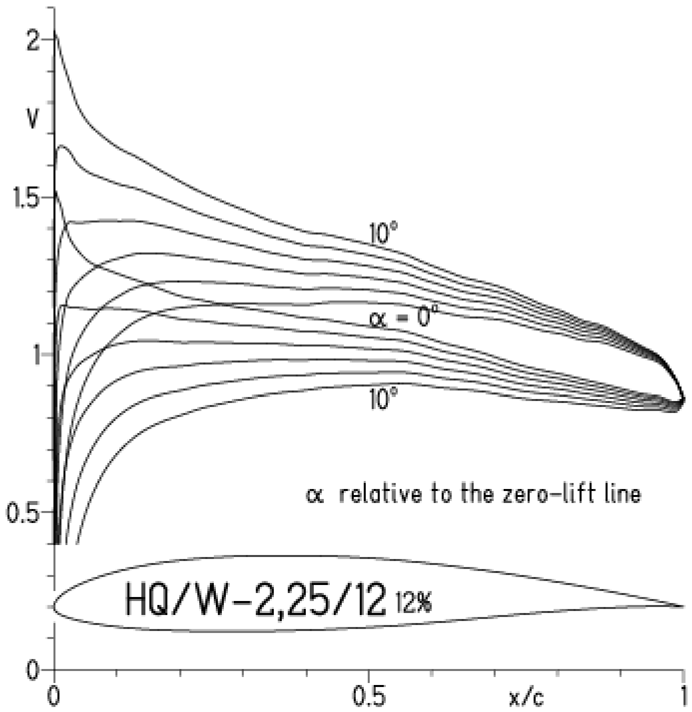
HQ/W-2,25/12, N=11



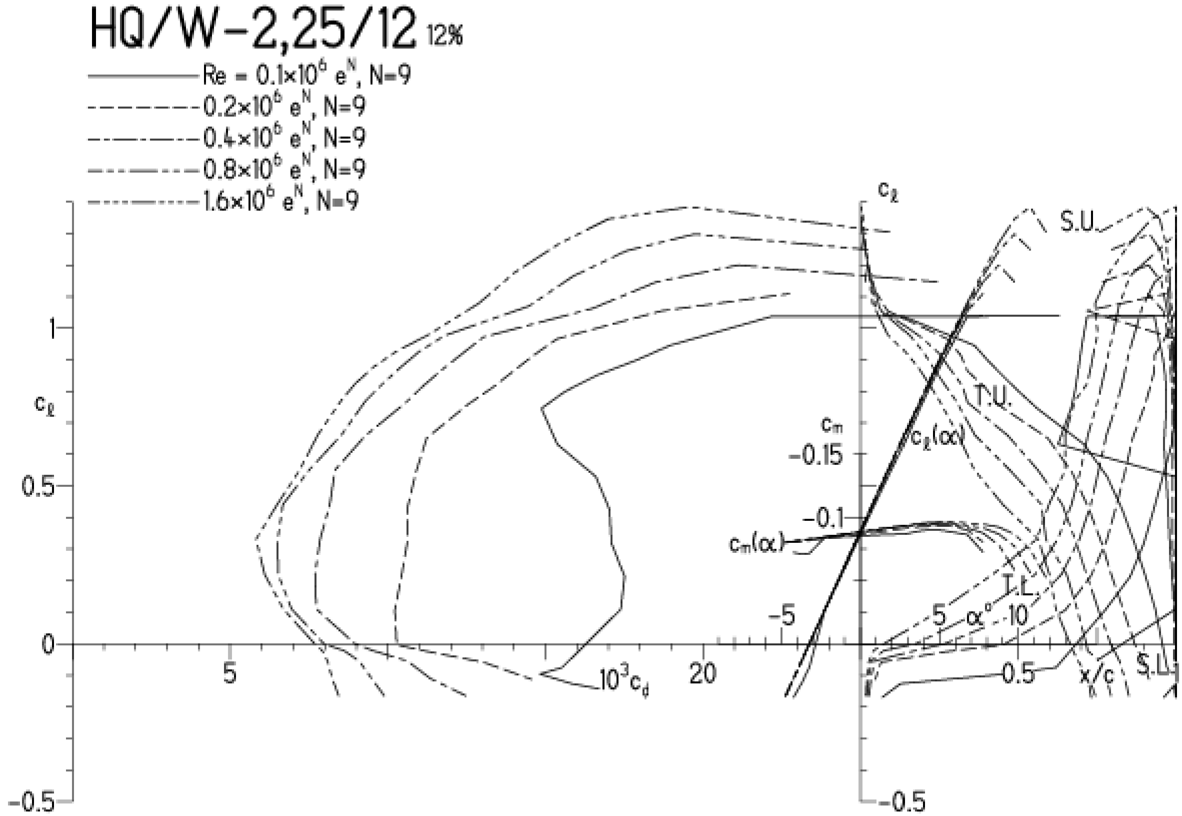


HQ/W-2,25/12, N=9

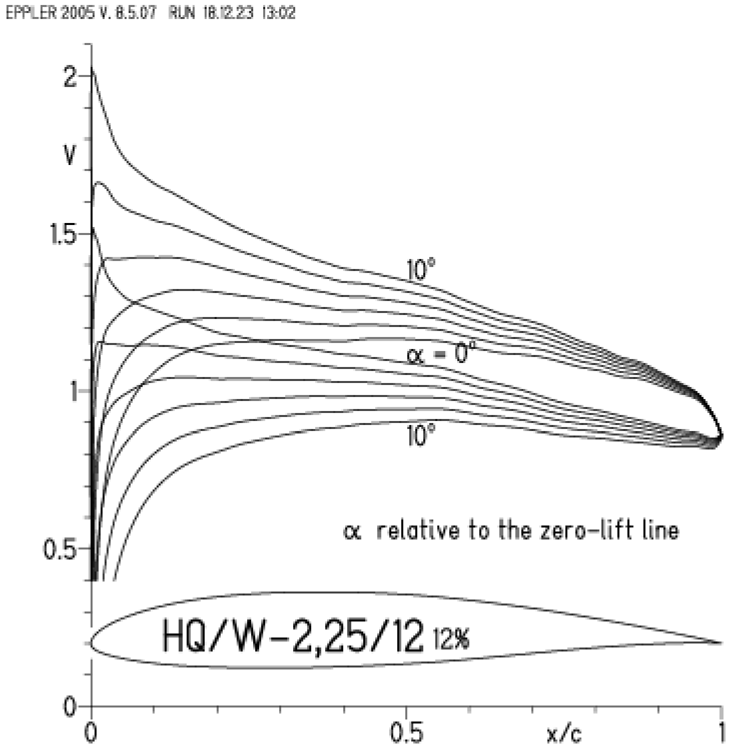
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

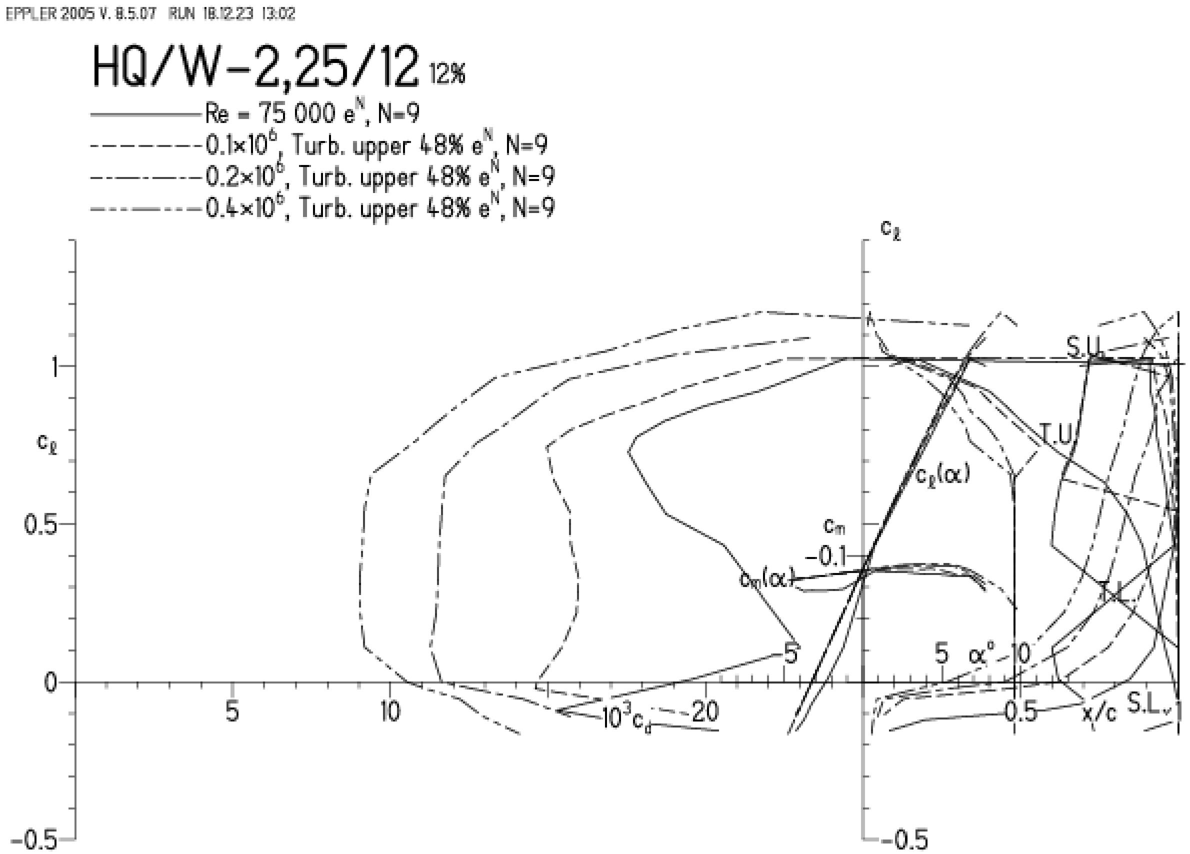


EPPLER 2005 V. 8.5



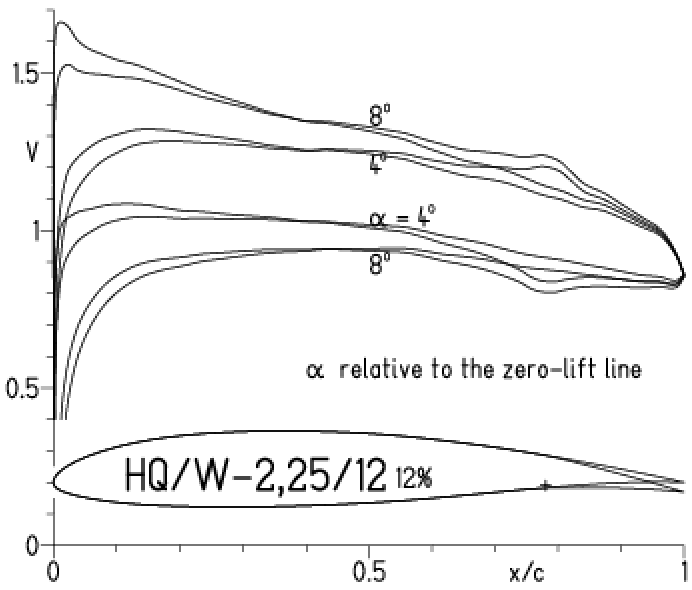
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



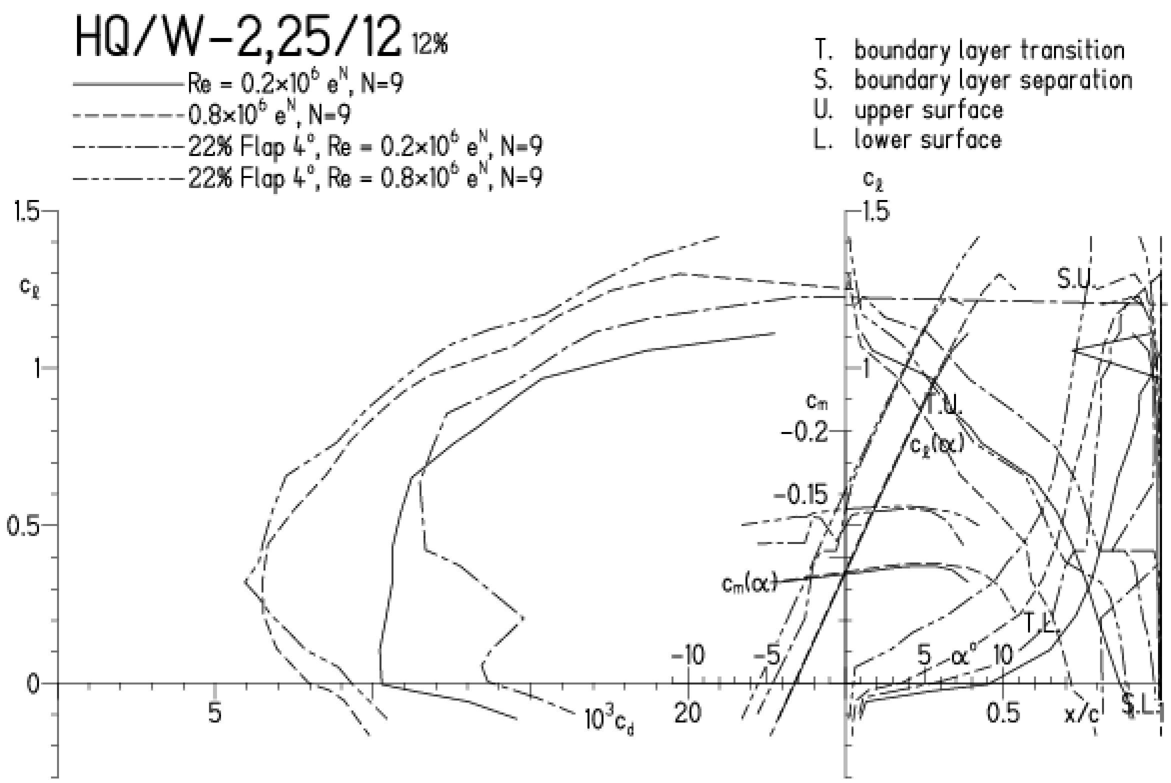


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

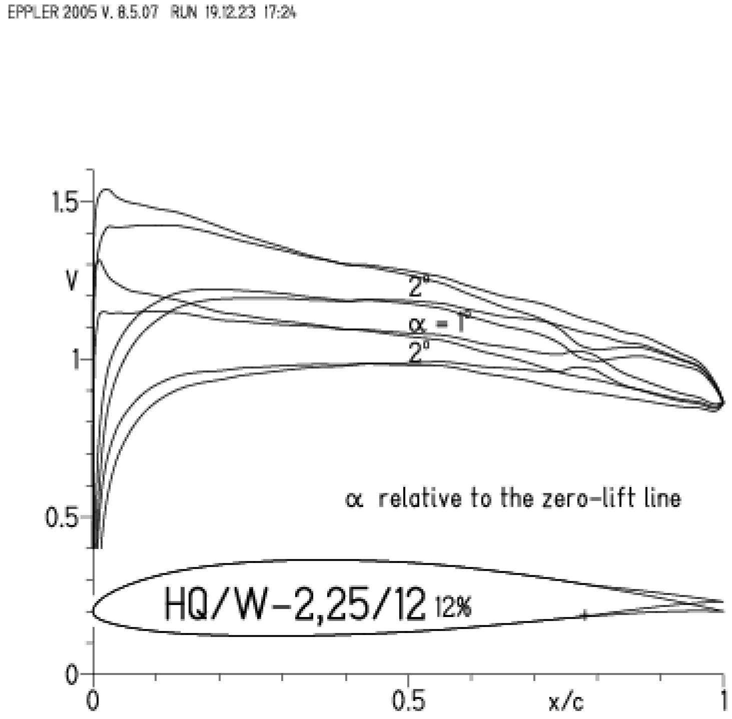
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

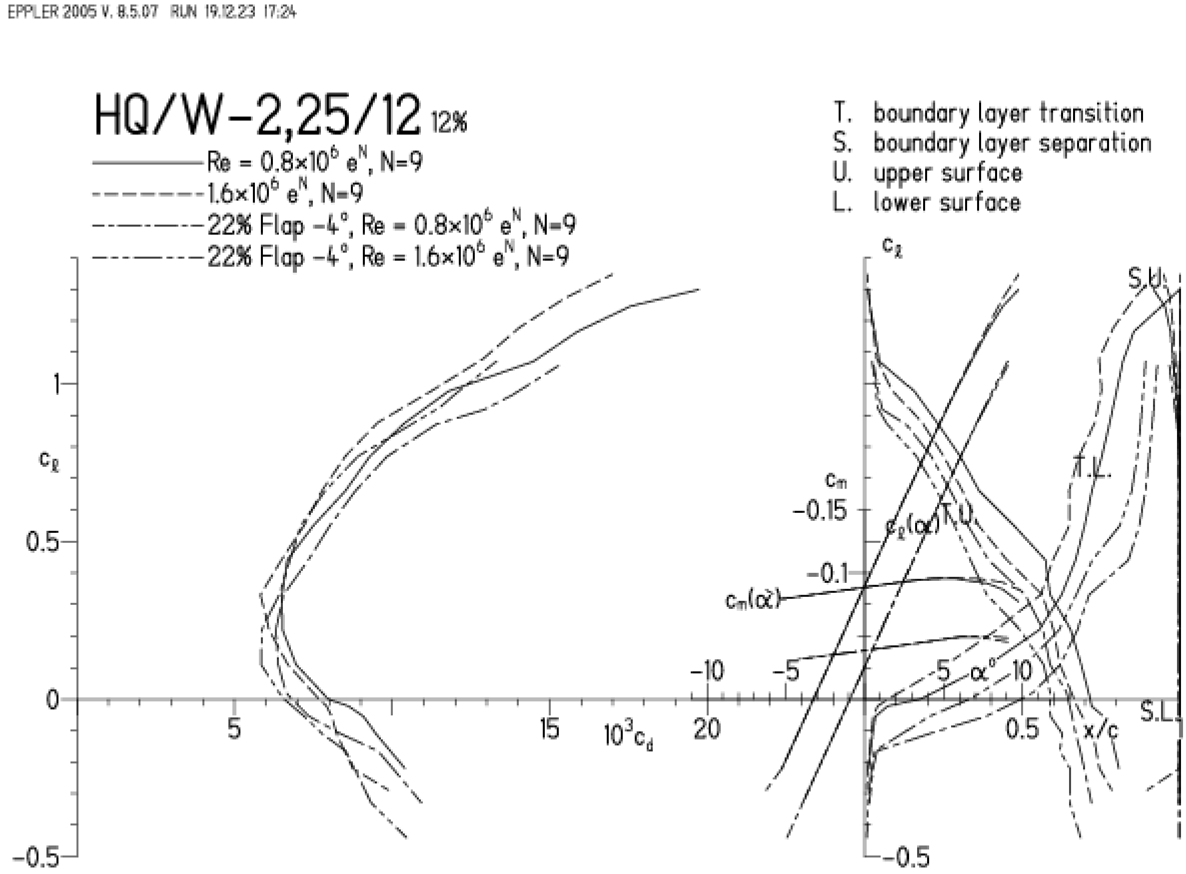


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

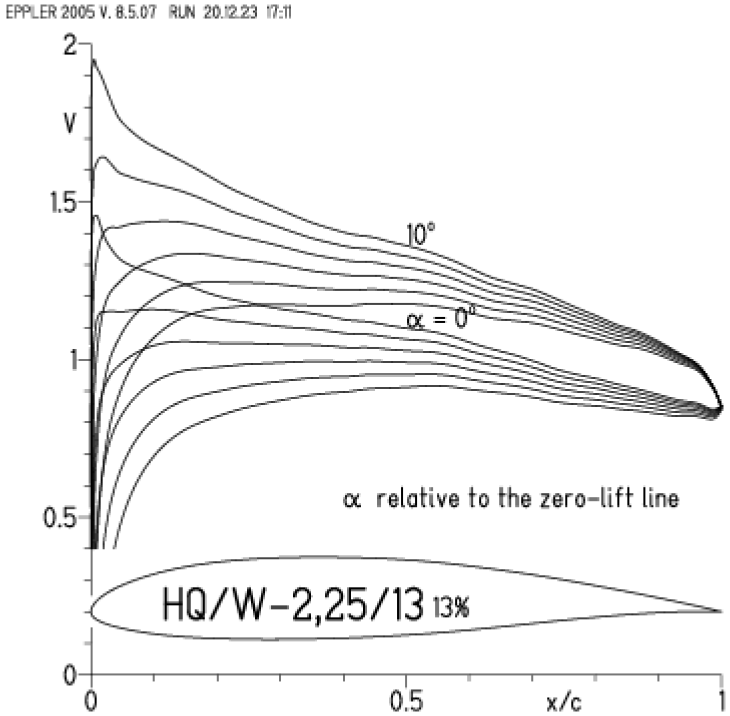


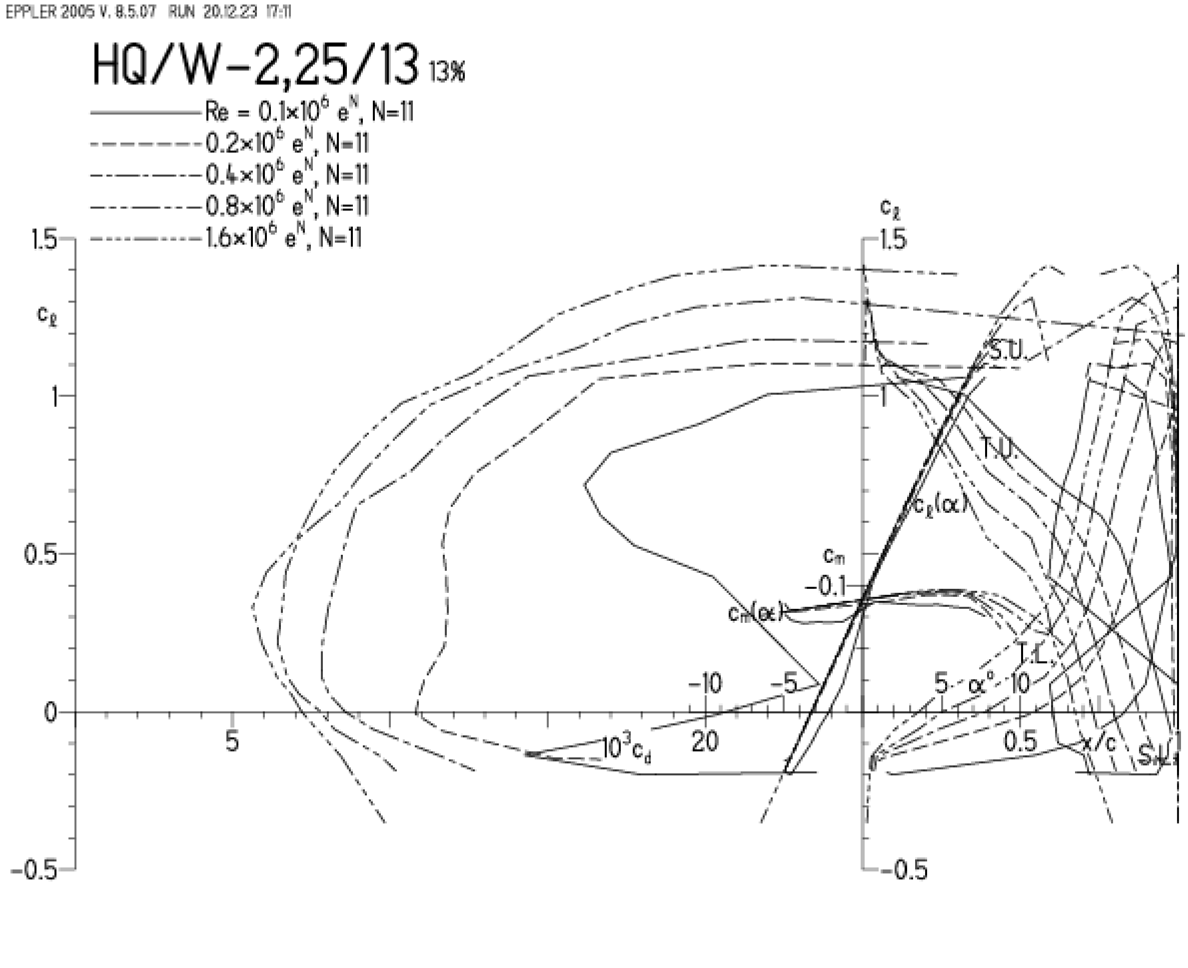
<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag



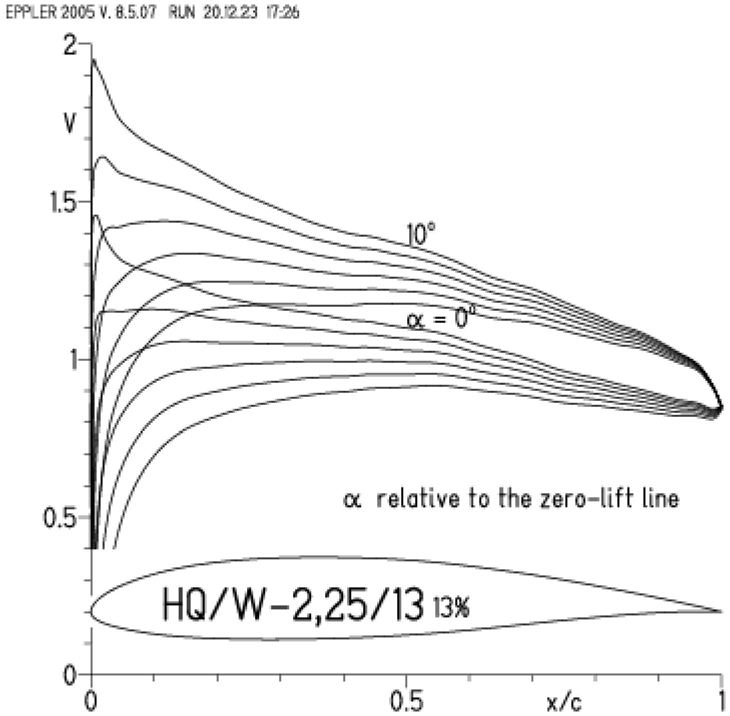


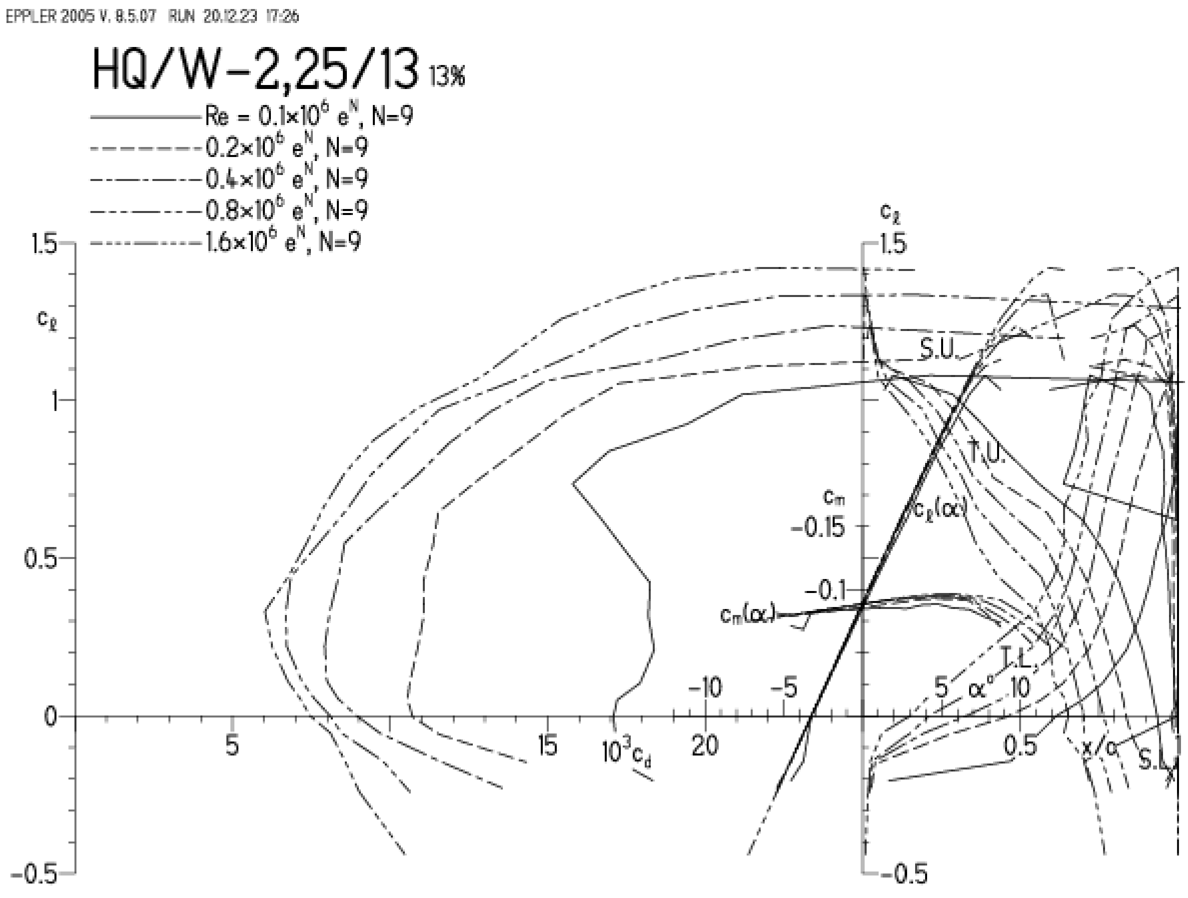
<u>HQ/W-2,25/13</u>, N=11



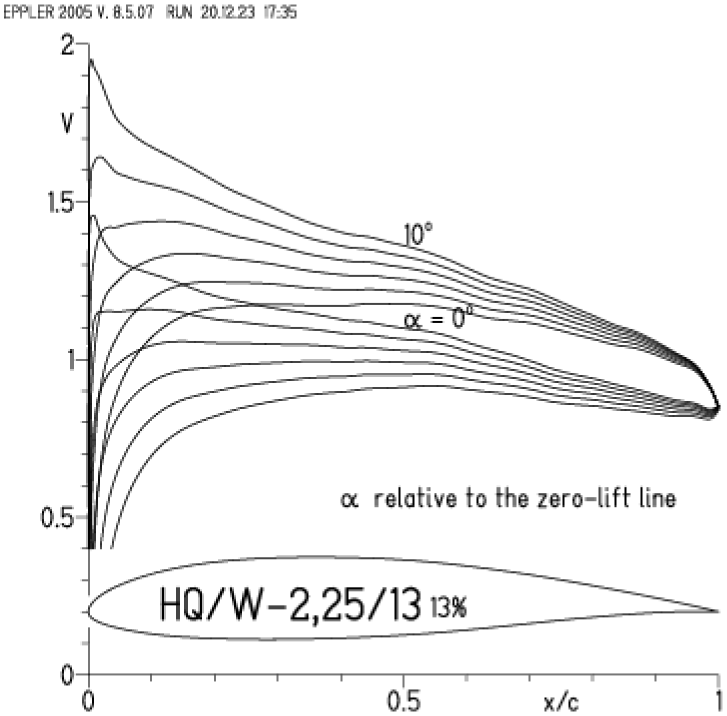


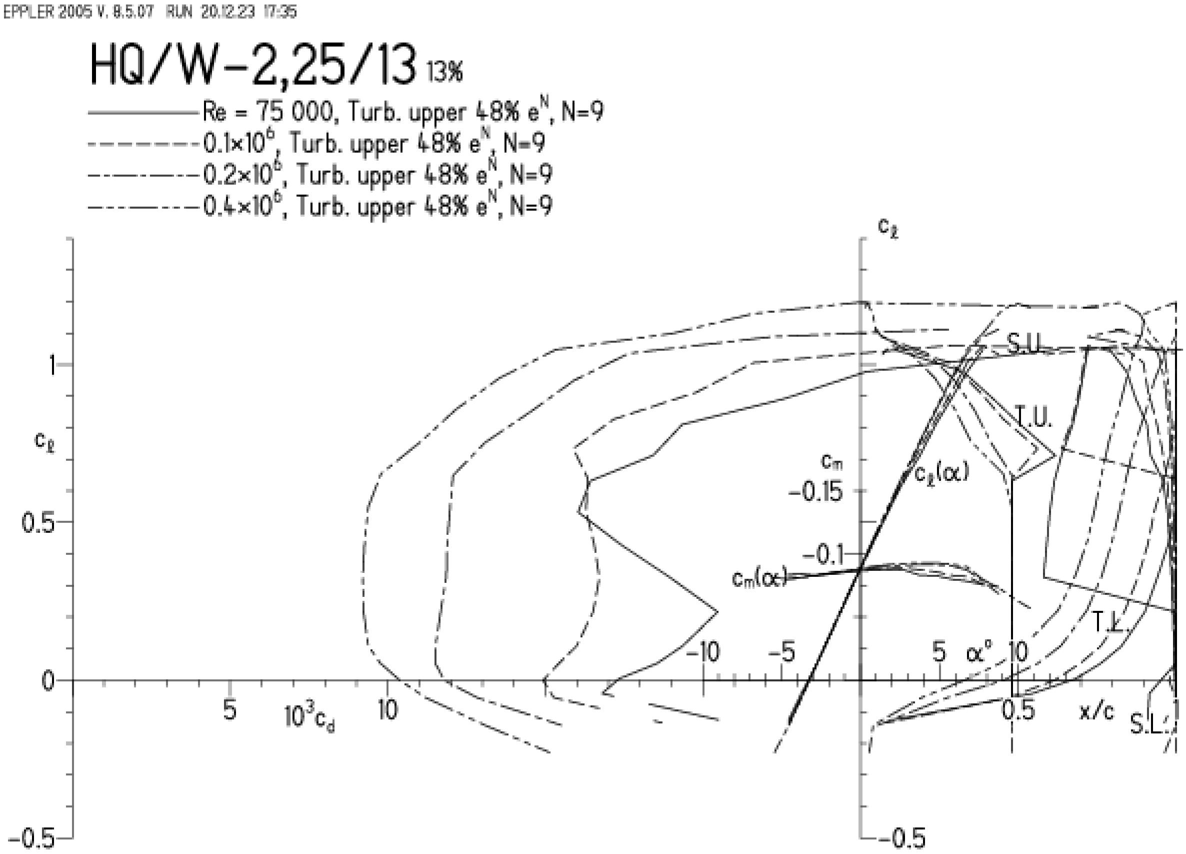
<u>HQ/W-2,25/13</u>, N=9





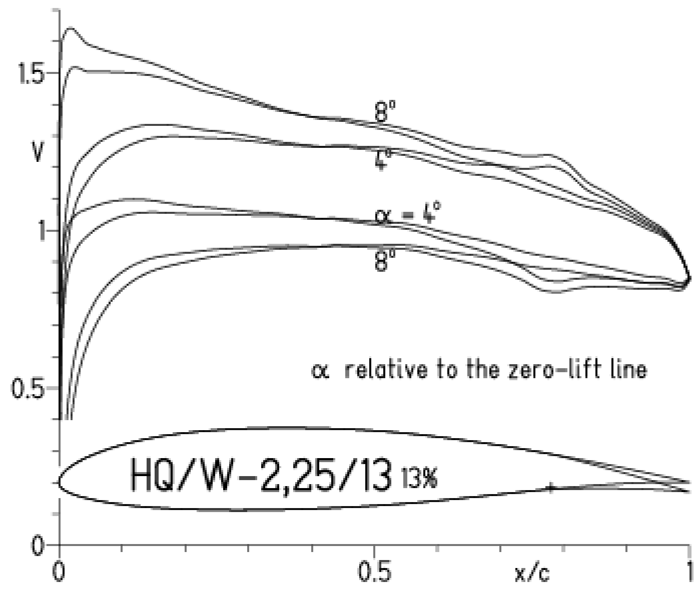
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



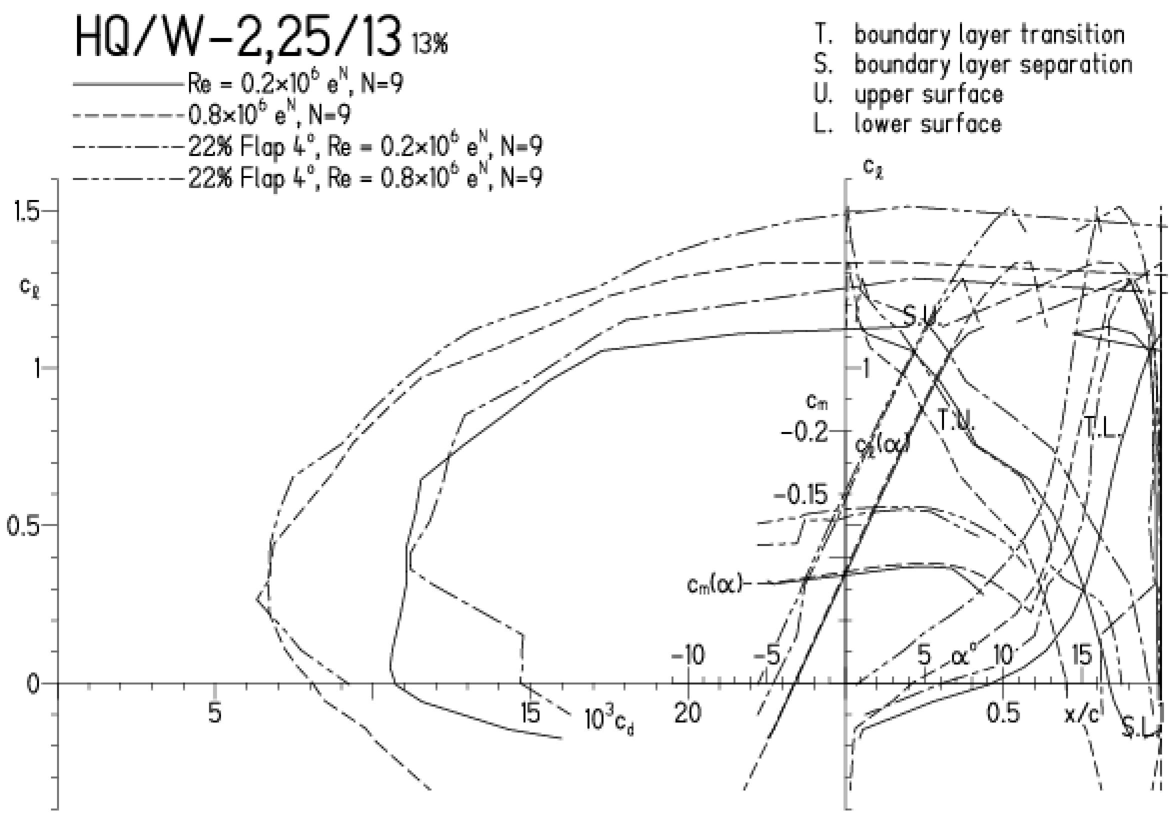


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

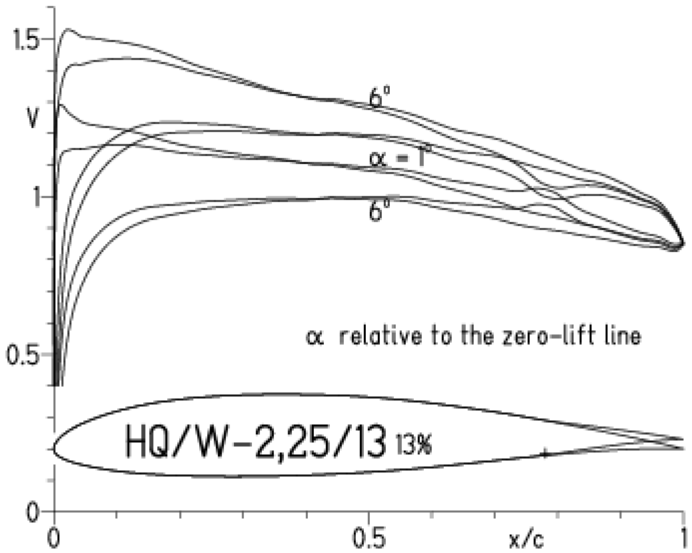


EPPLER 2005 V.

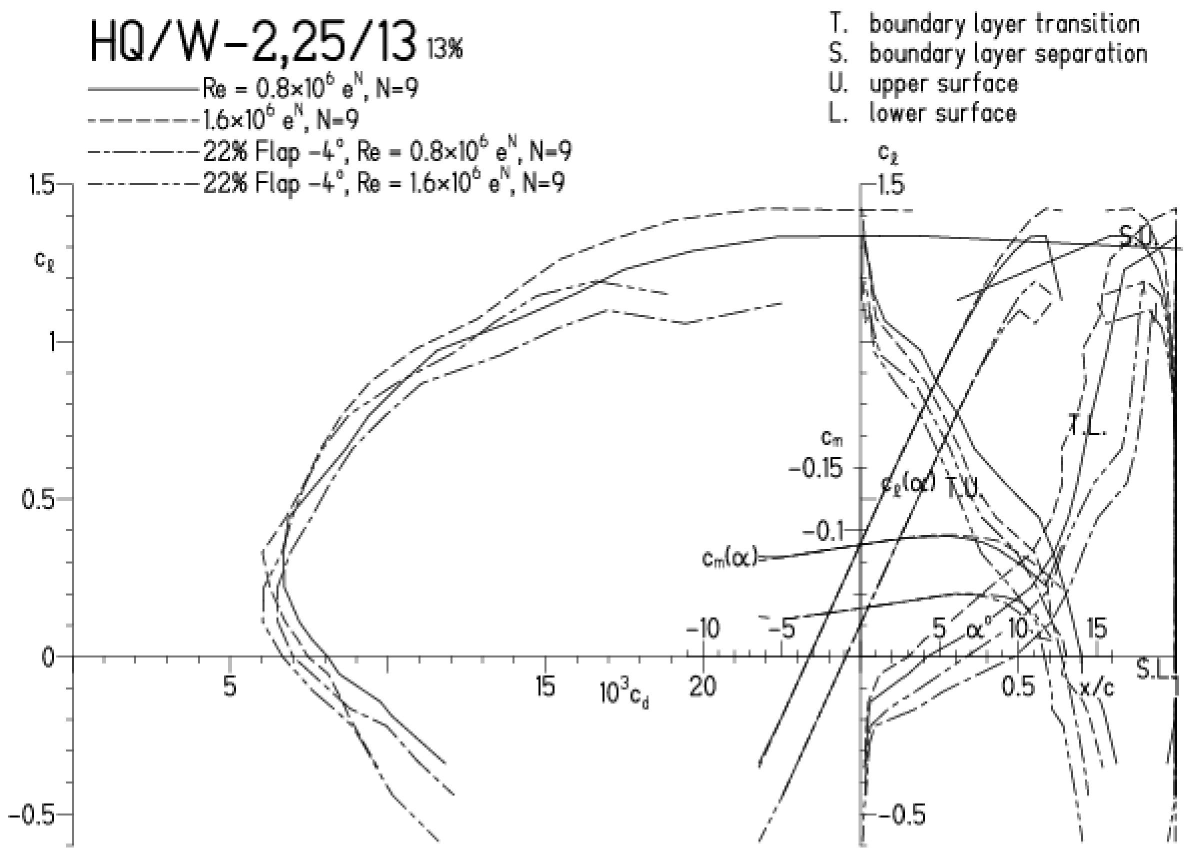


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

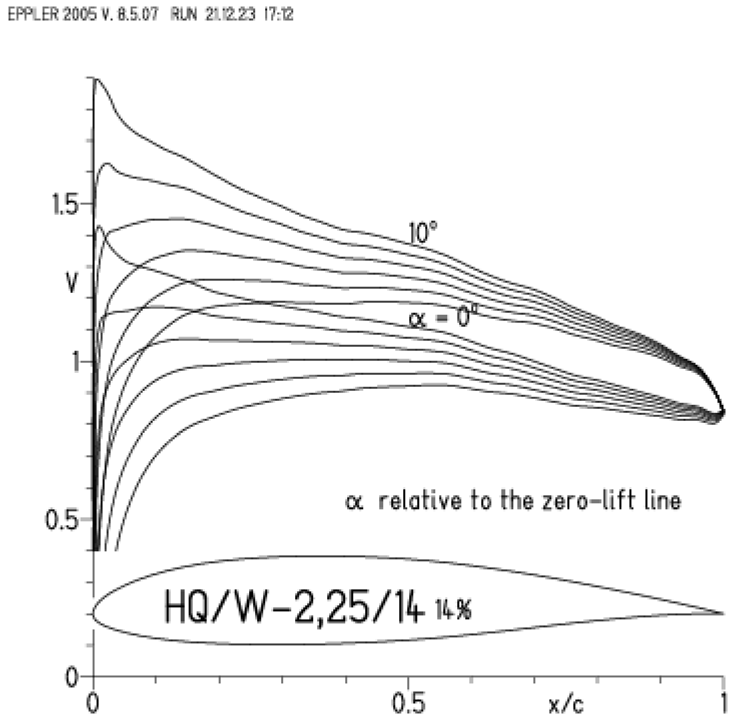
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

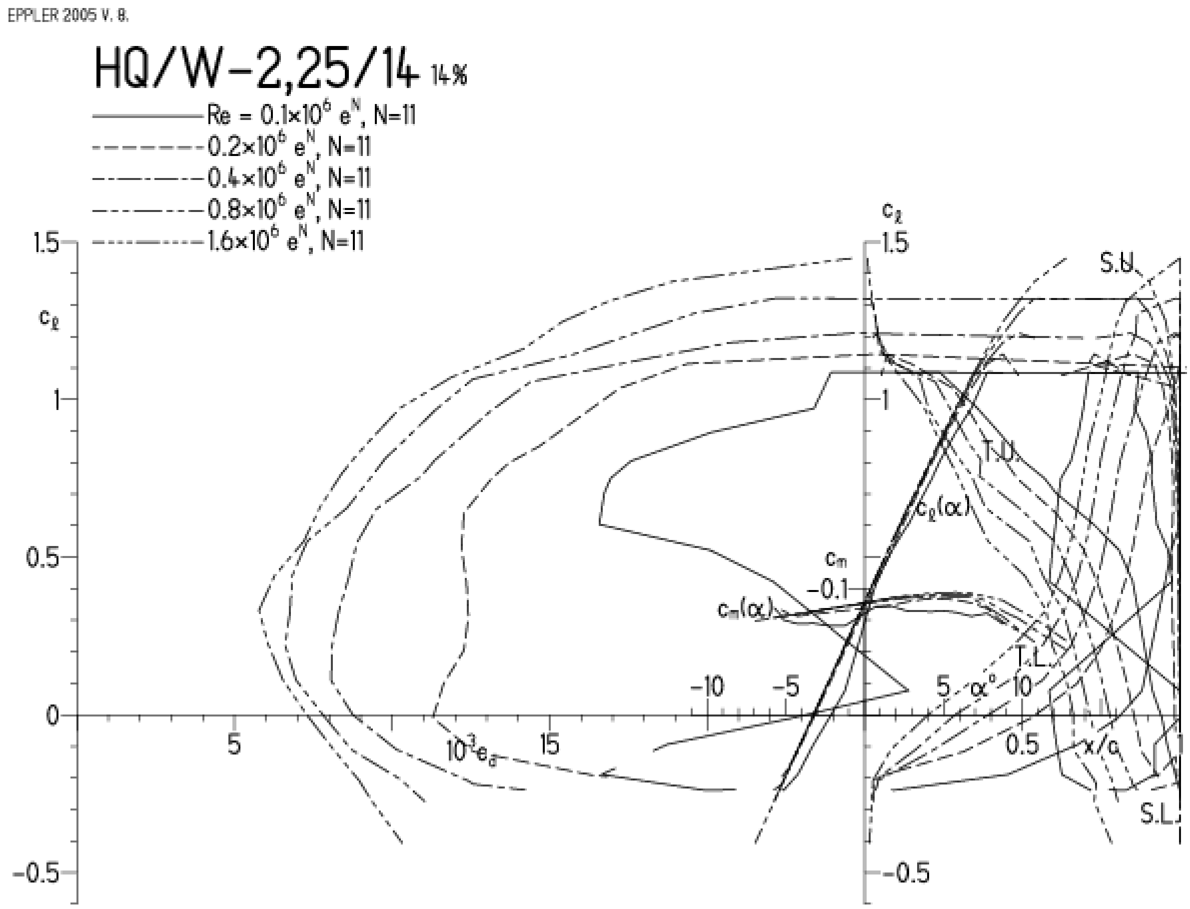


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

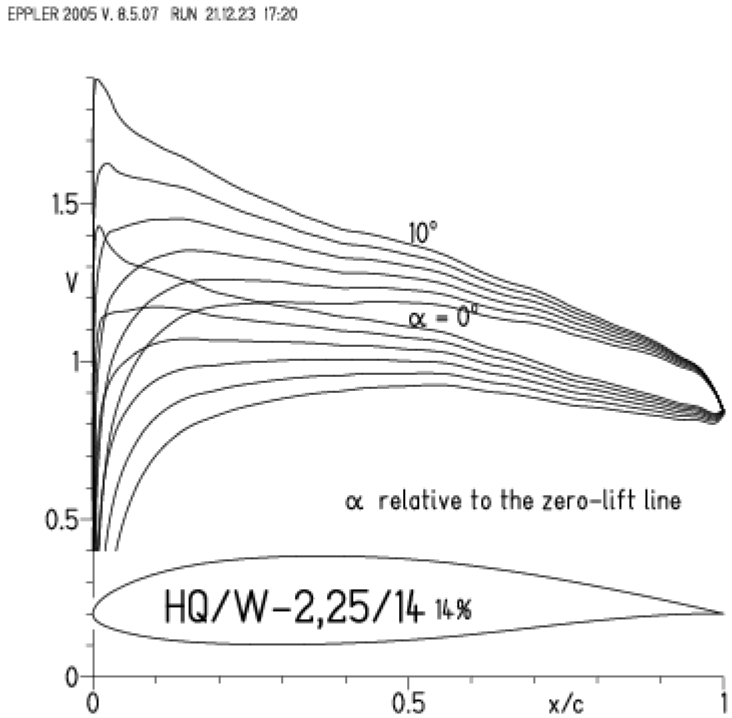


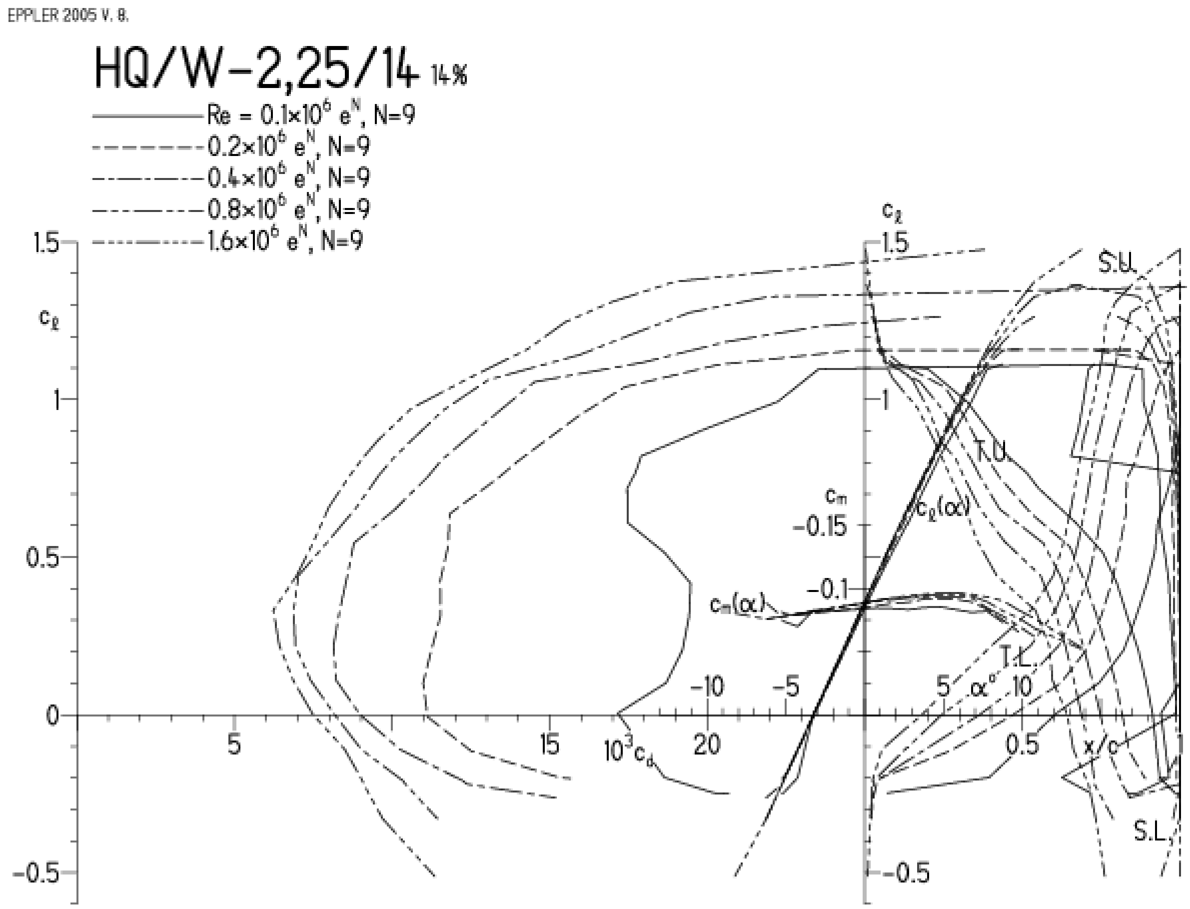
HQ/W-2,25/14, N=11



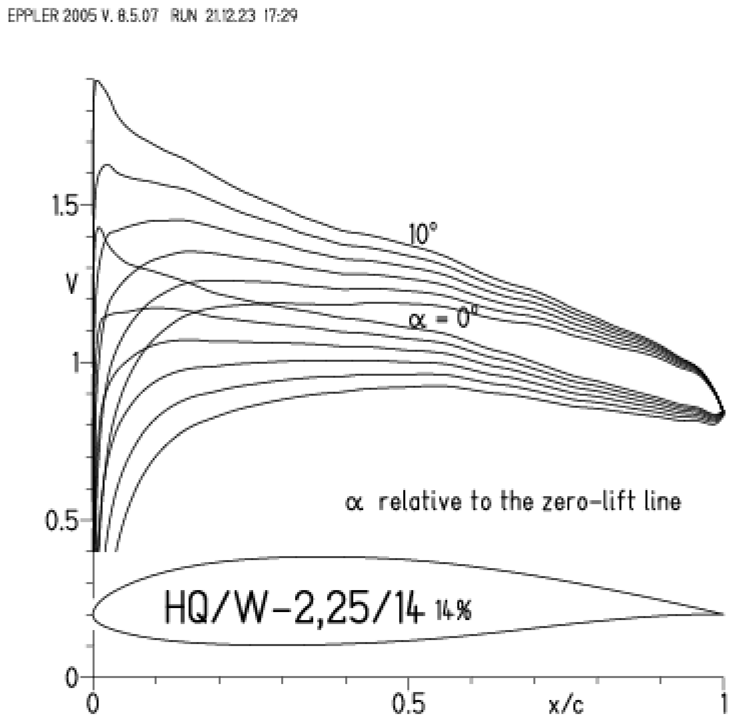


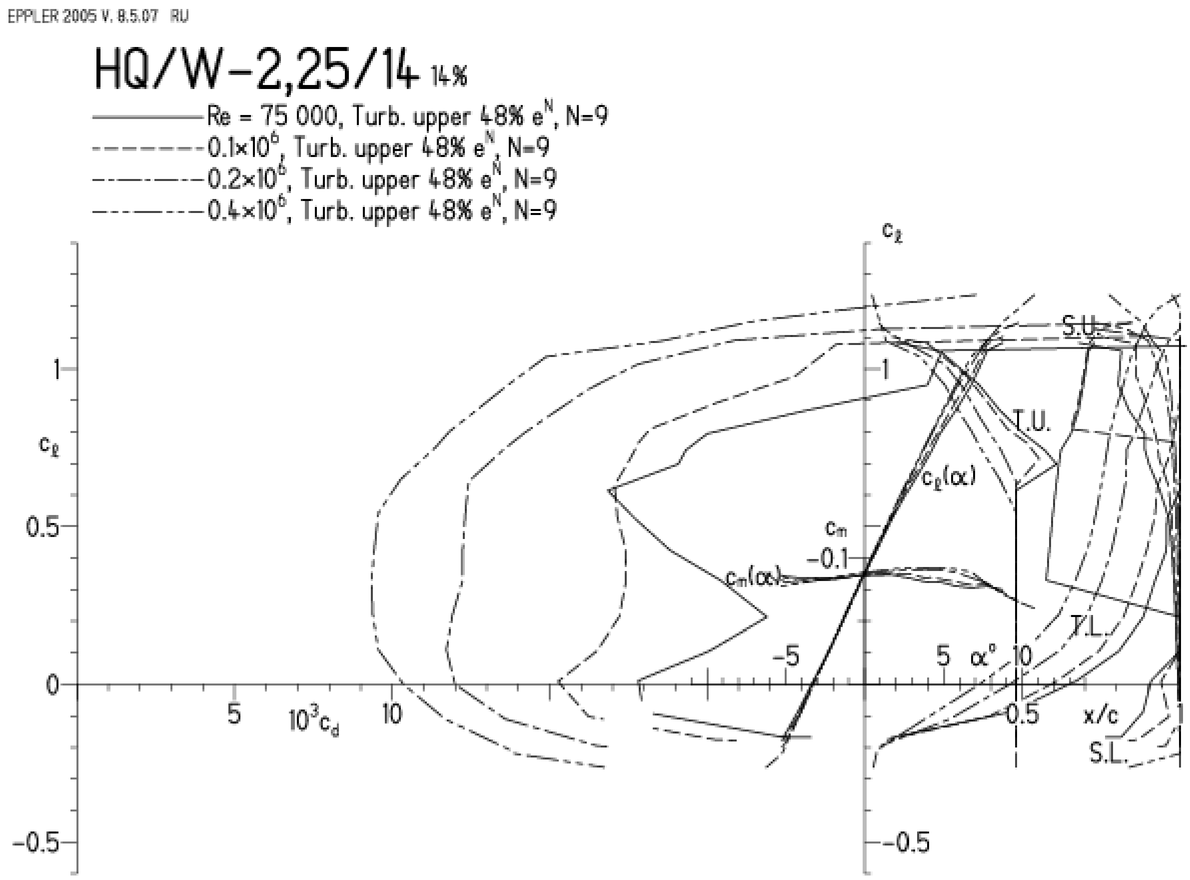
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
V
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cl(α)
cm(α)
10³cd
α°
x/c

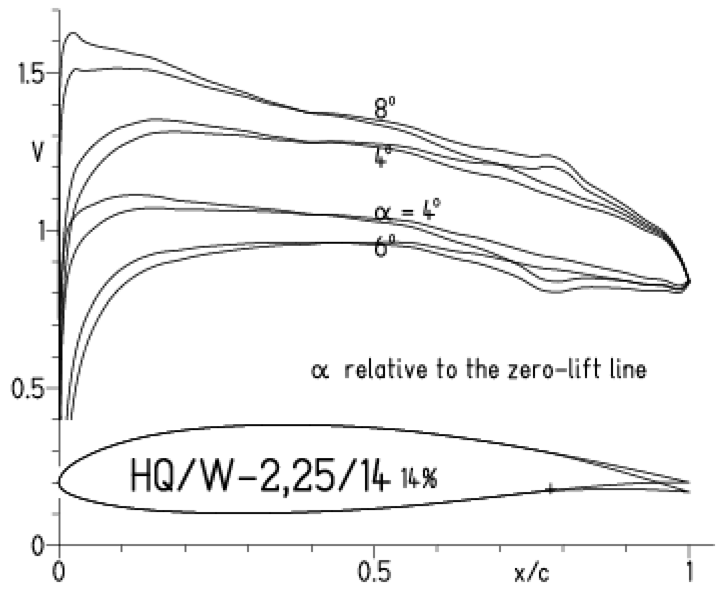
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



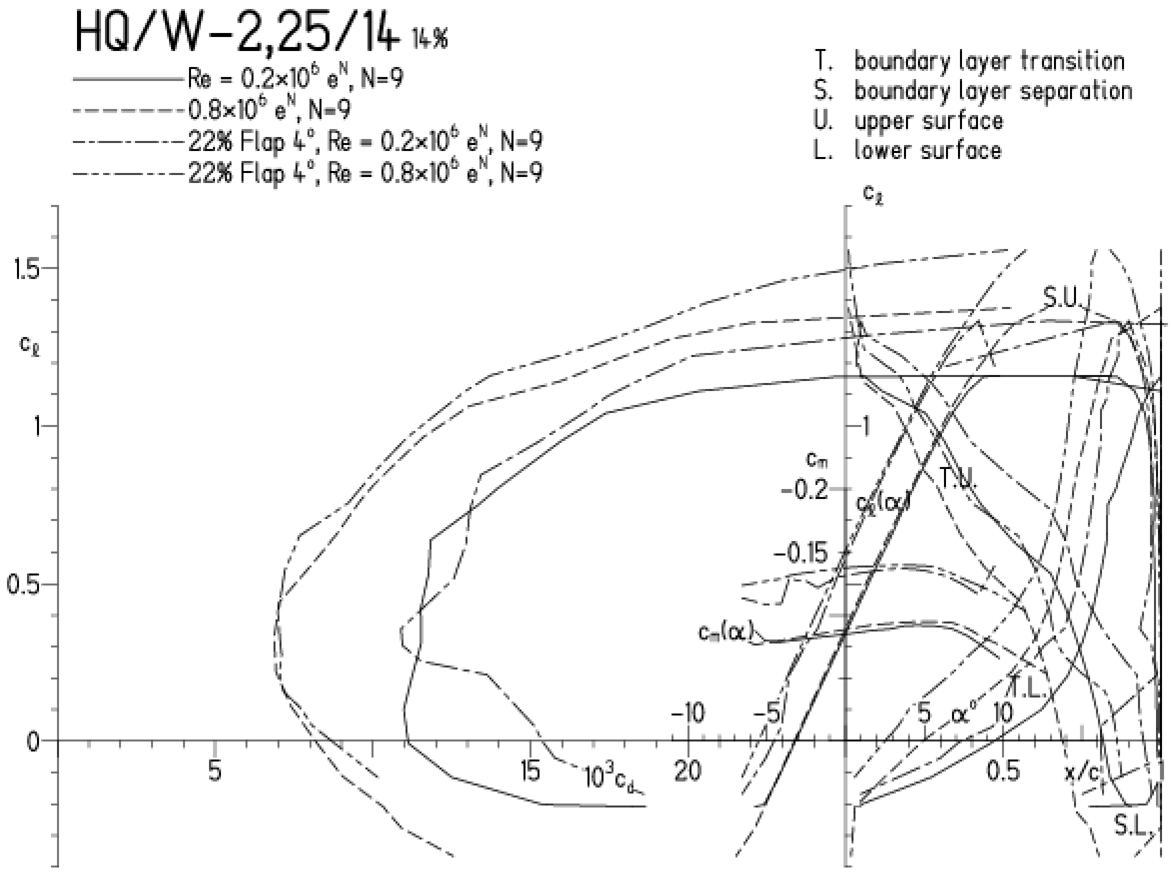


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

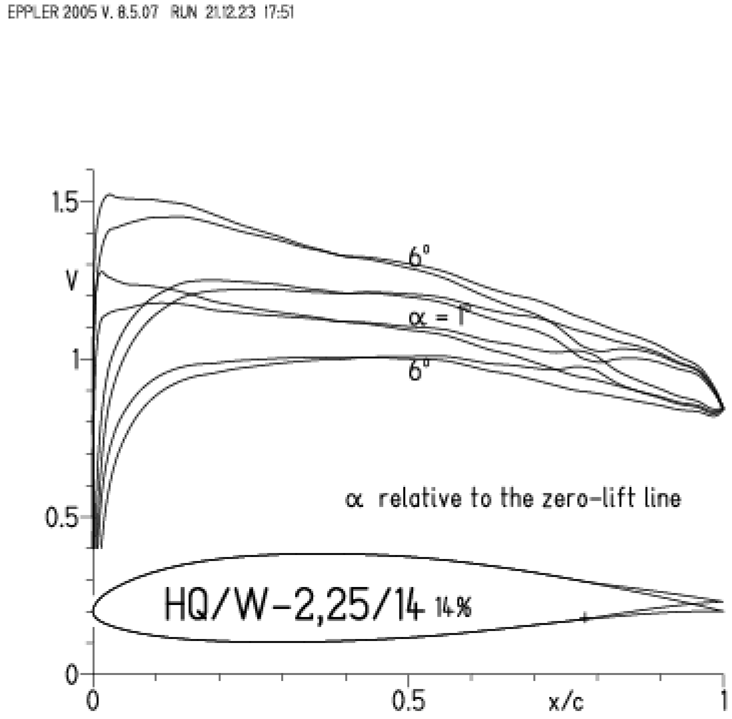
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

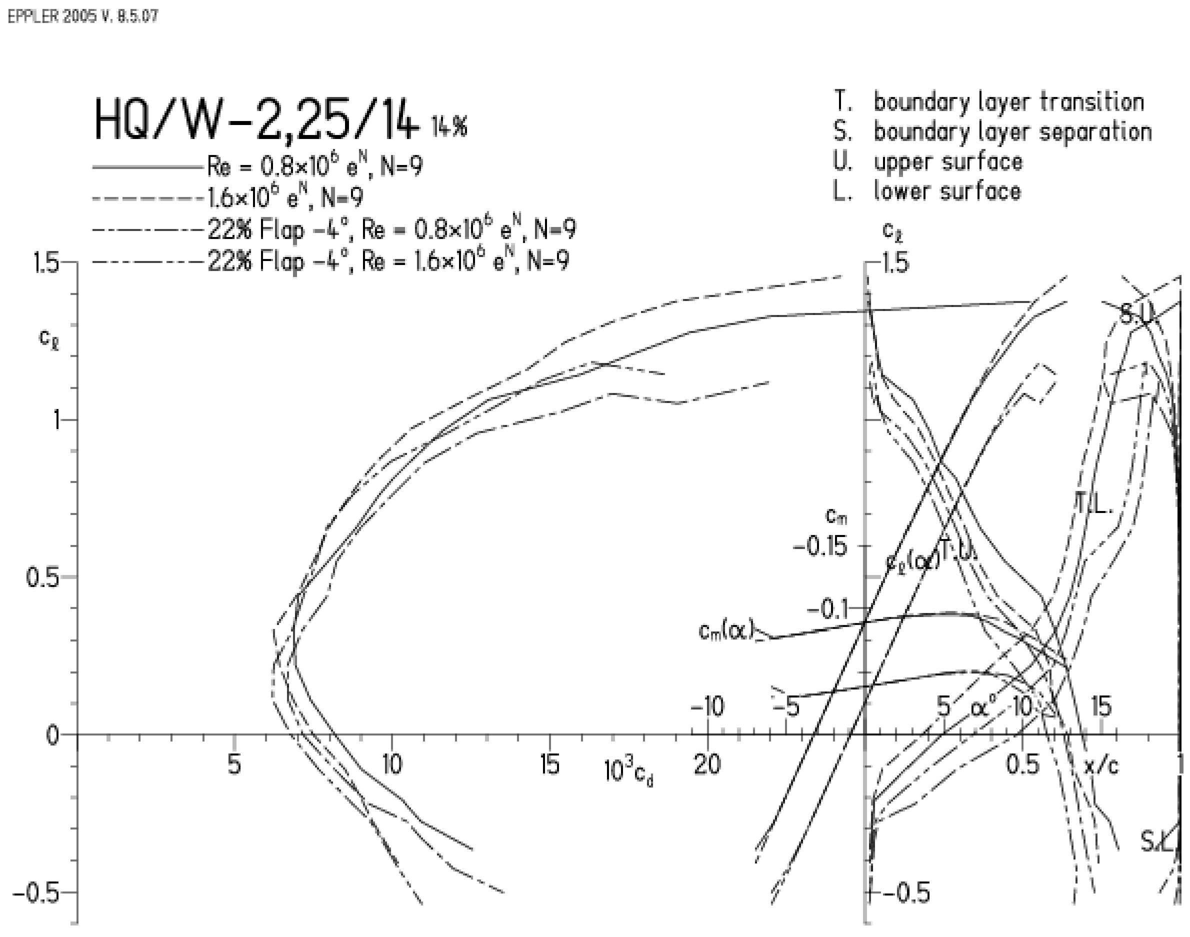


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

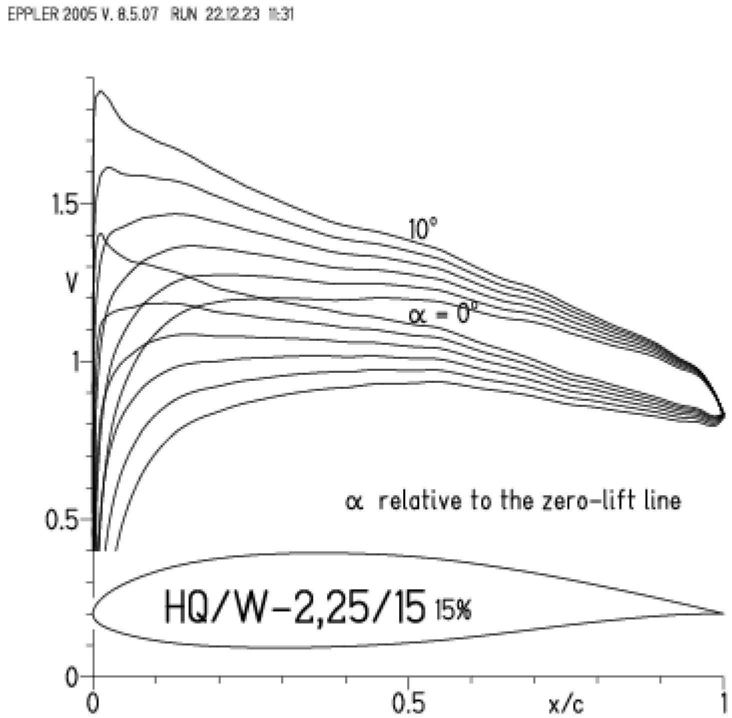


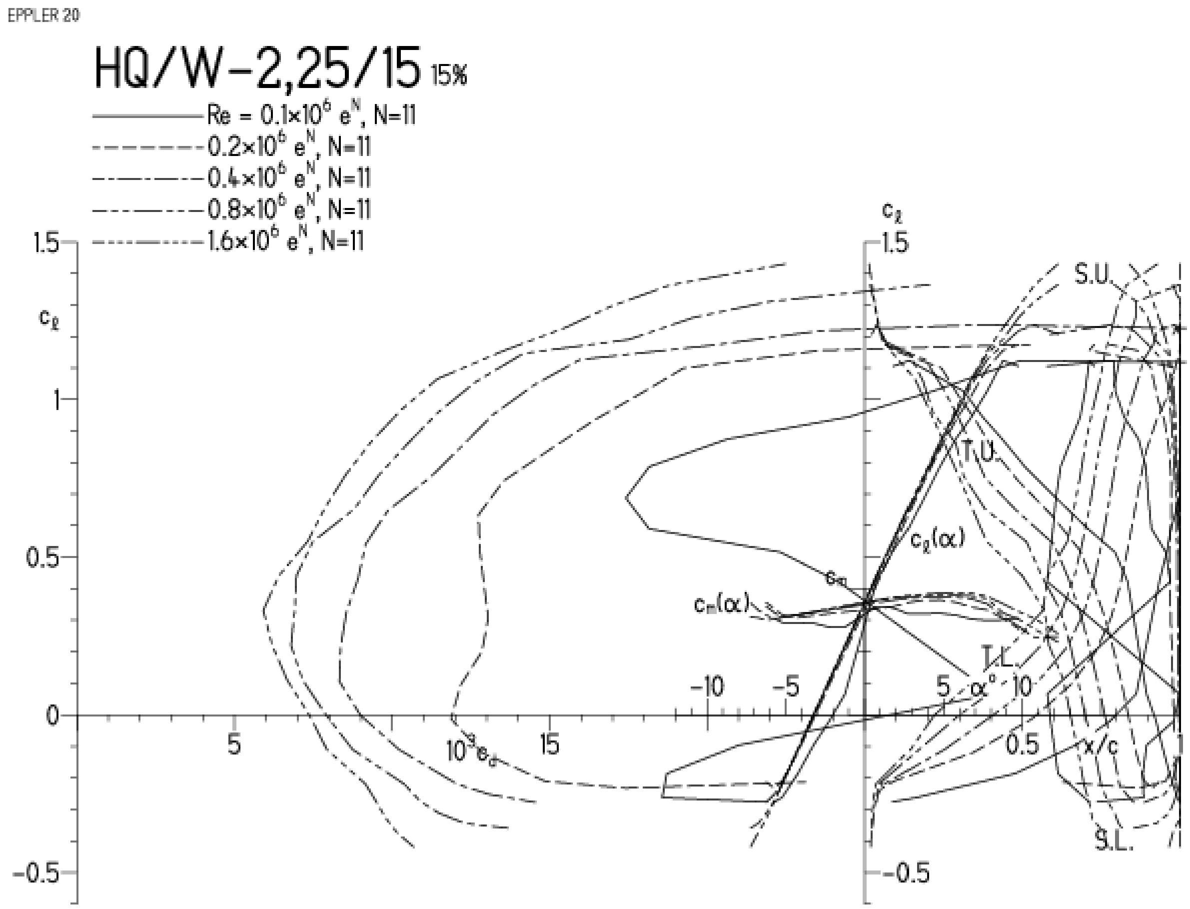
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



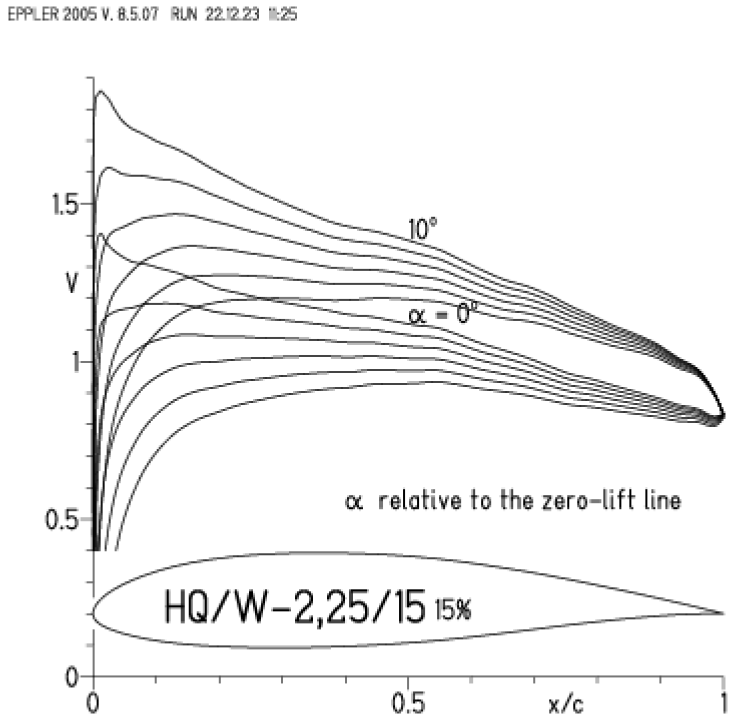


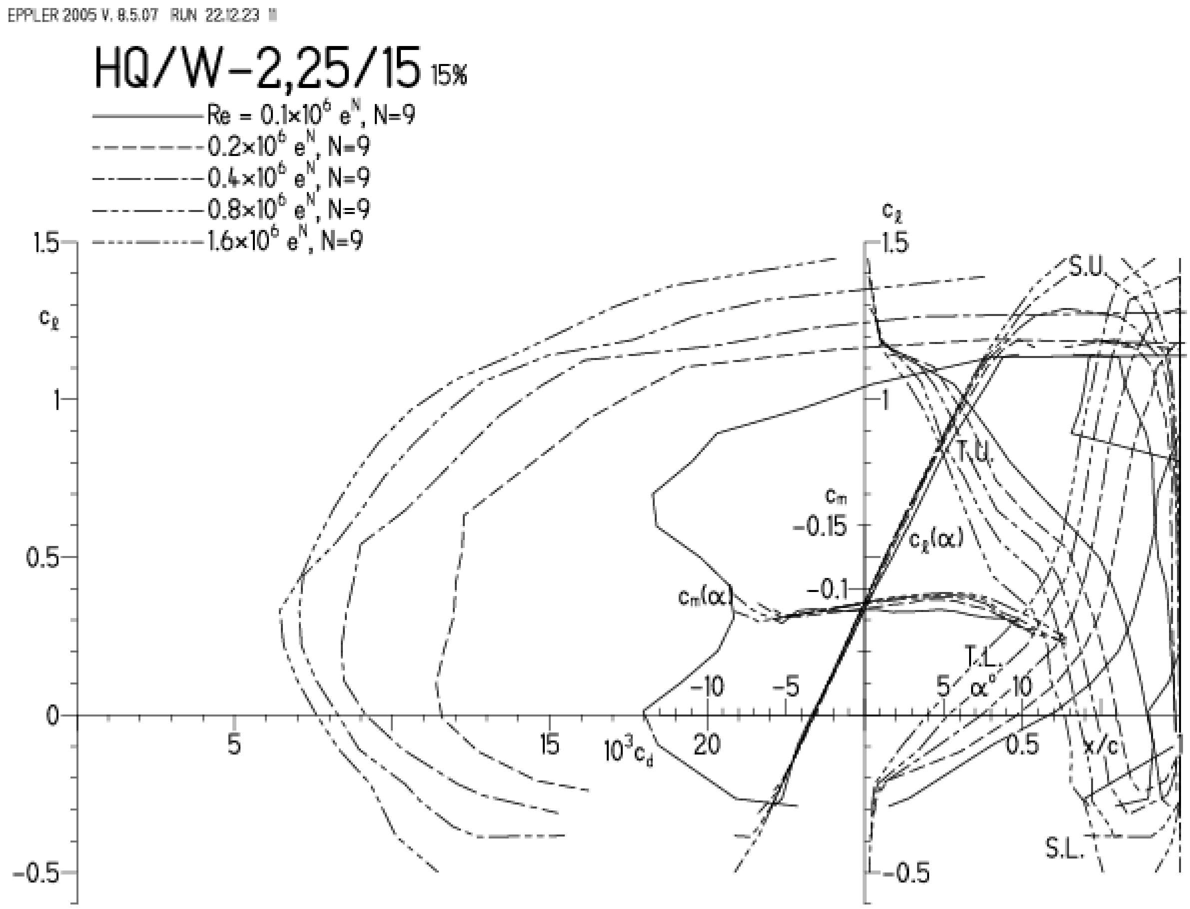
<u>HQ/W-2,25/15</u>, N=11



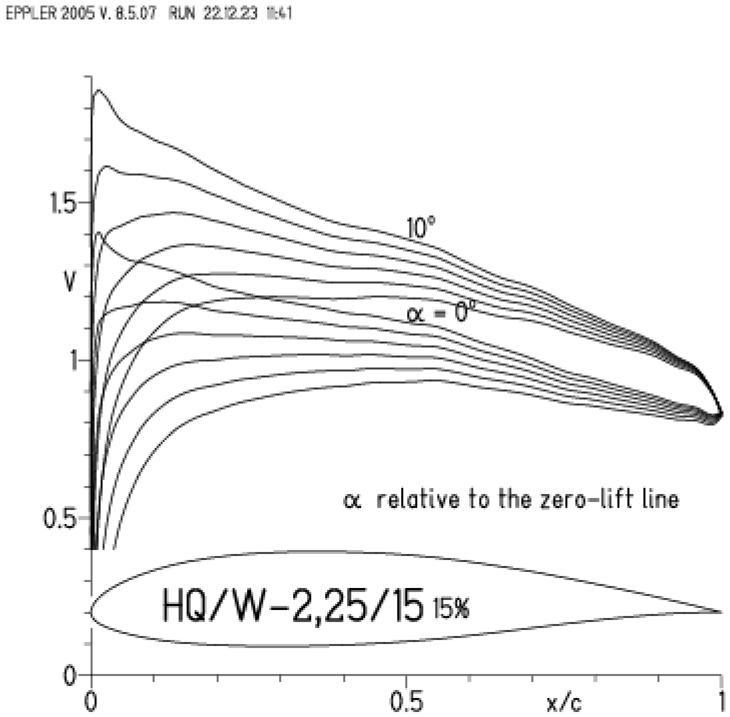


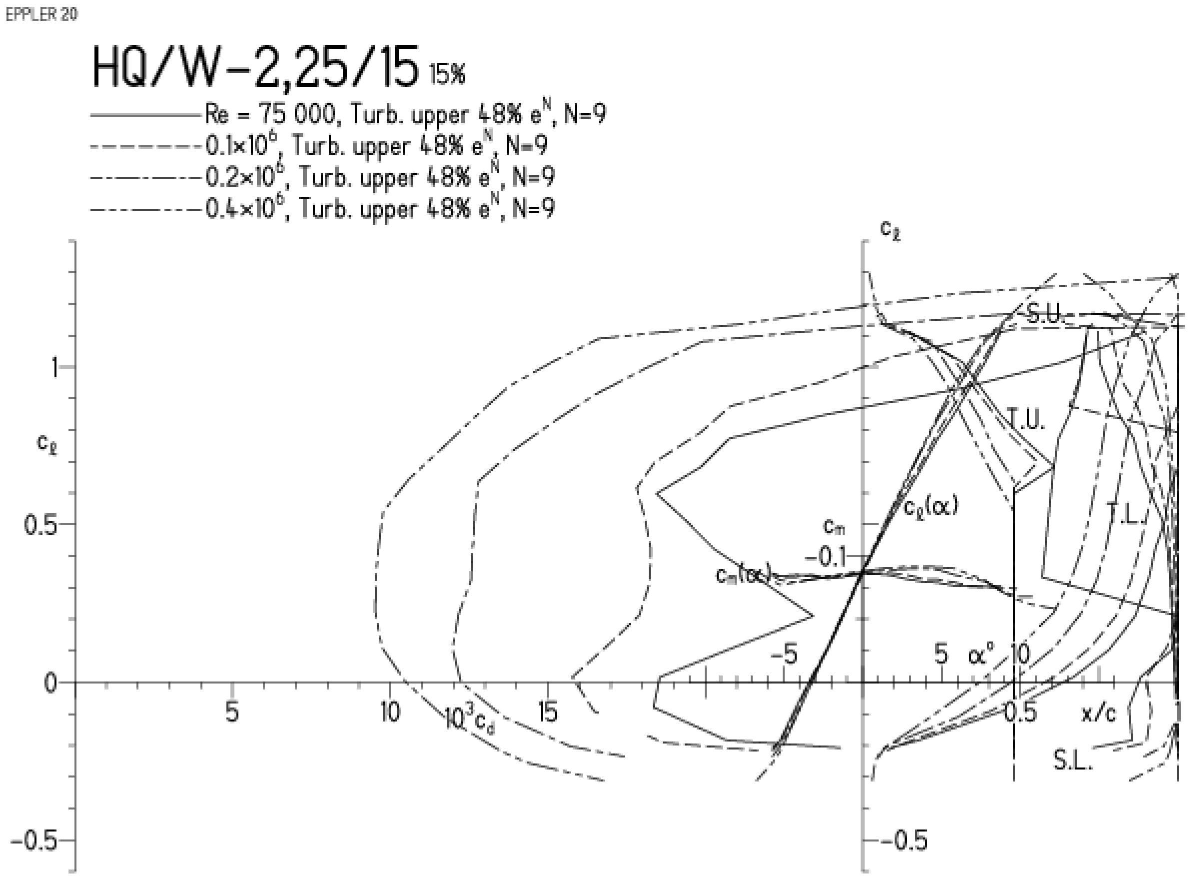
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

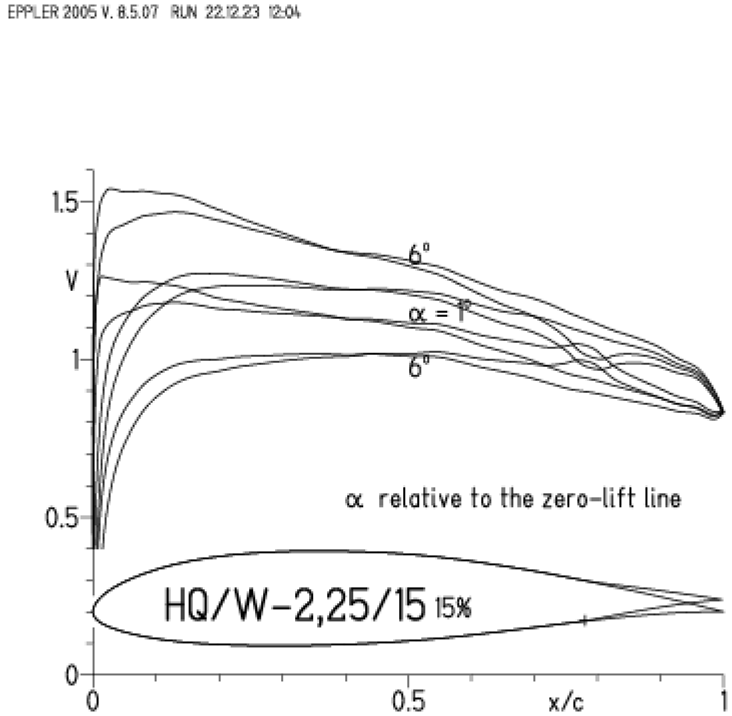


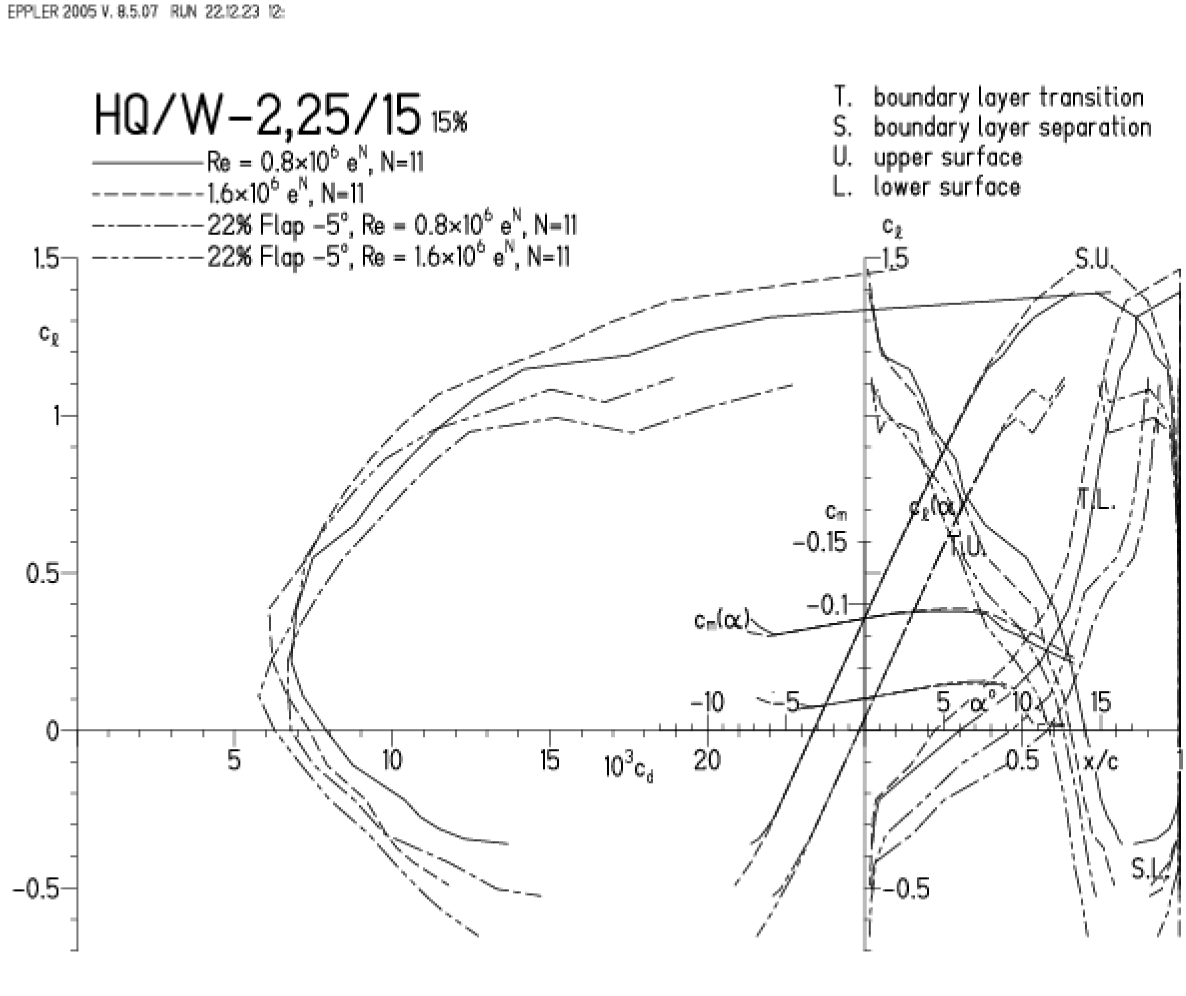


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

Bringt keine merkliche Verbesserung im Langsamflug.

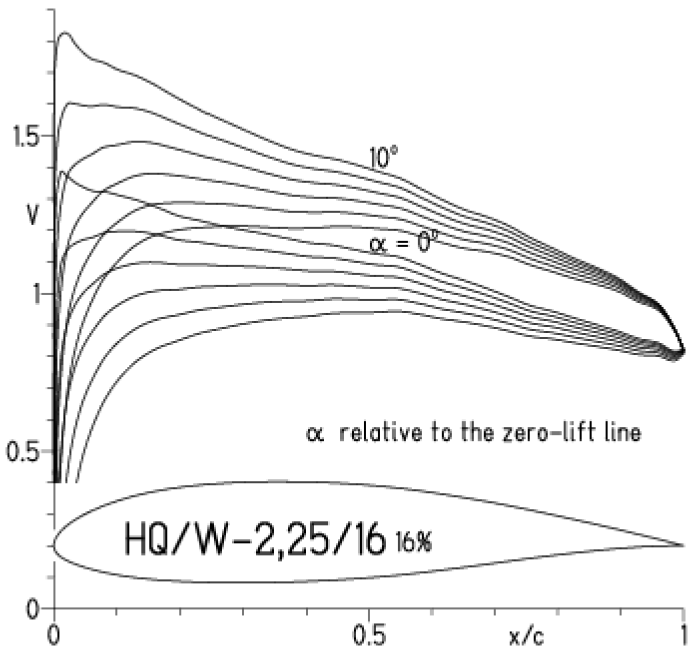
HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag



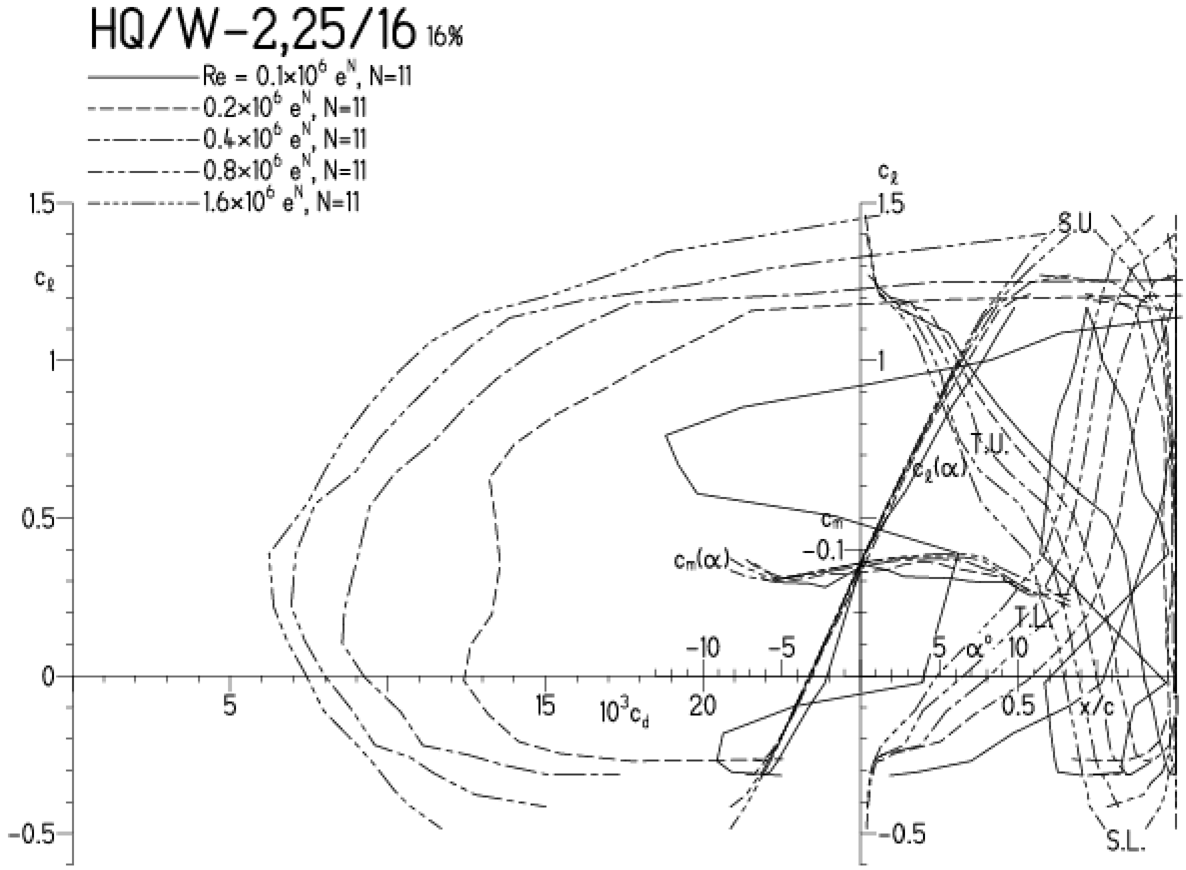


HQ/W-2,25/16, N=11

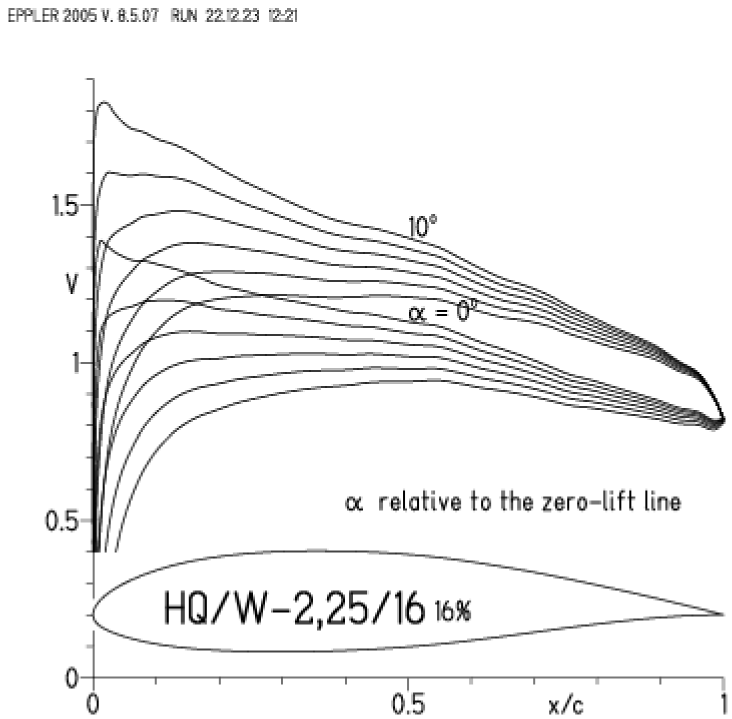
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

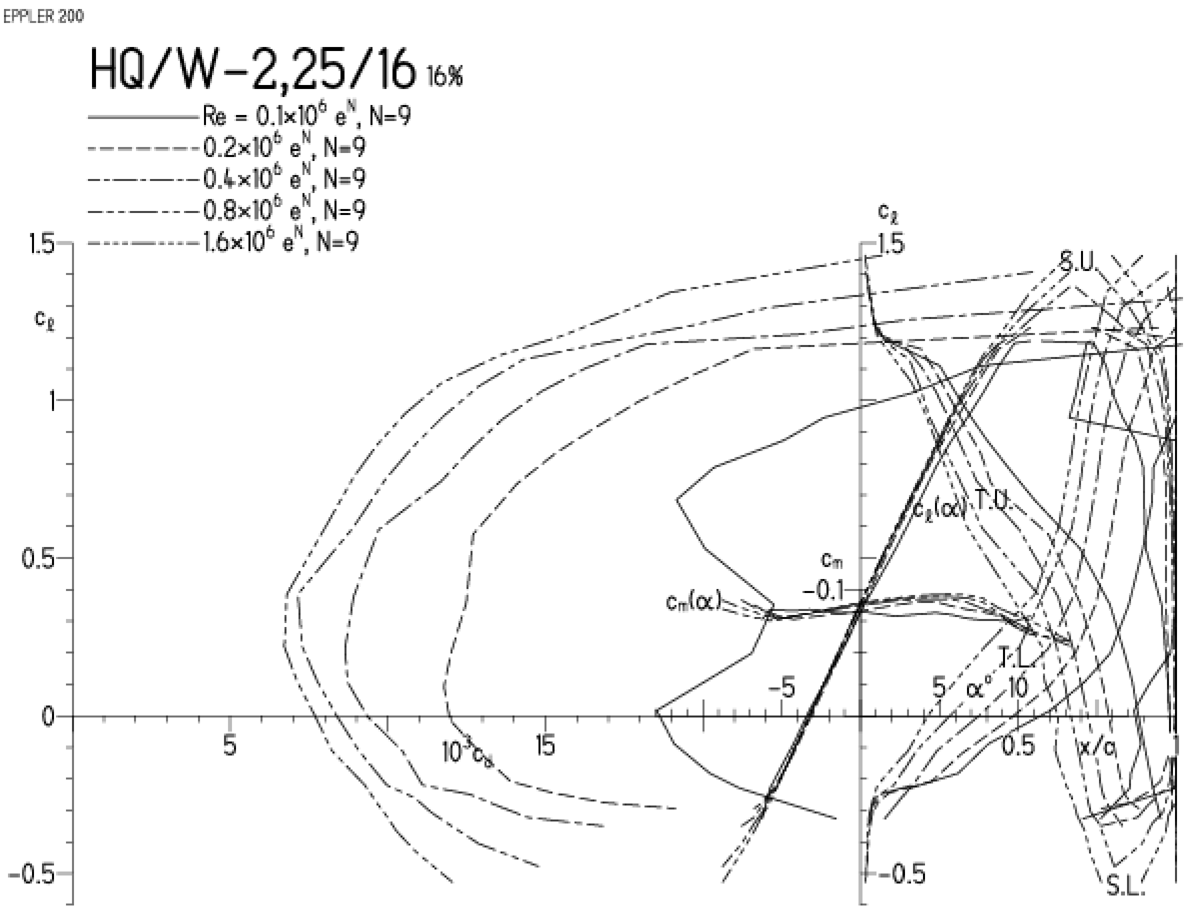


EPPLER 200

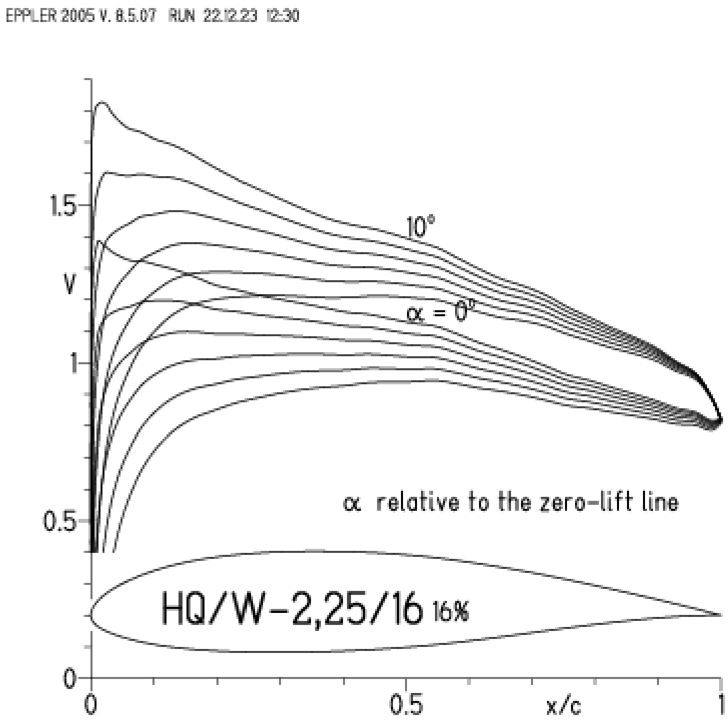


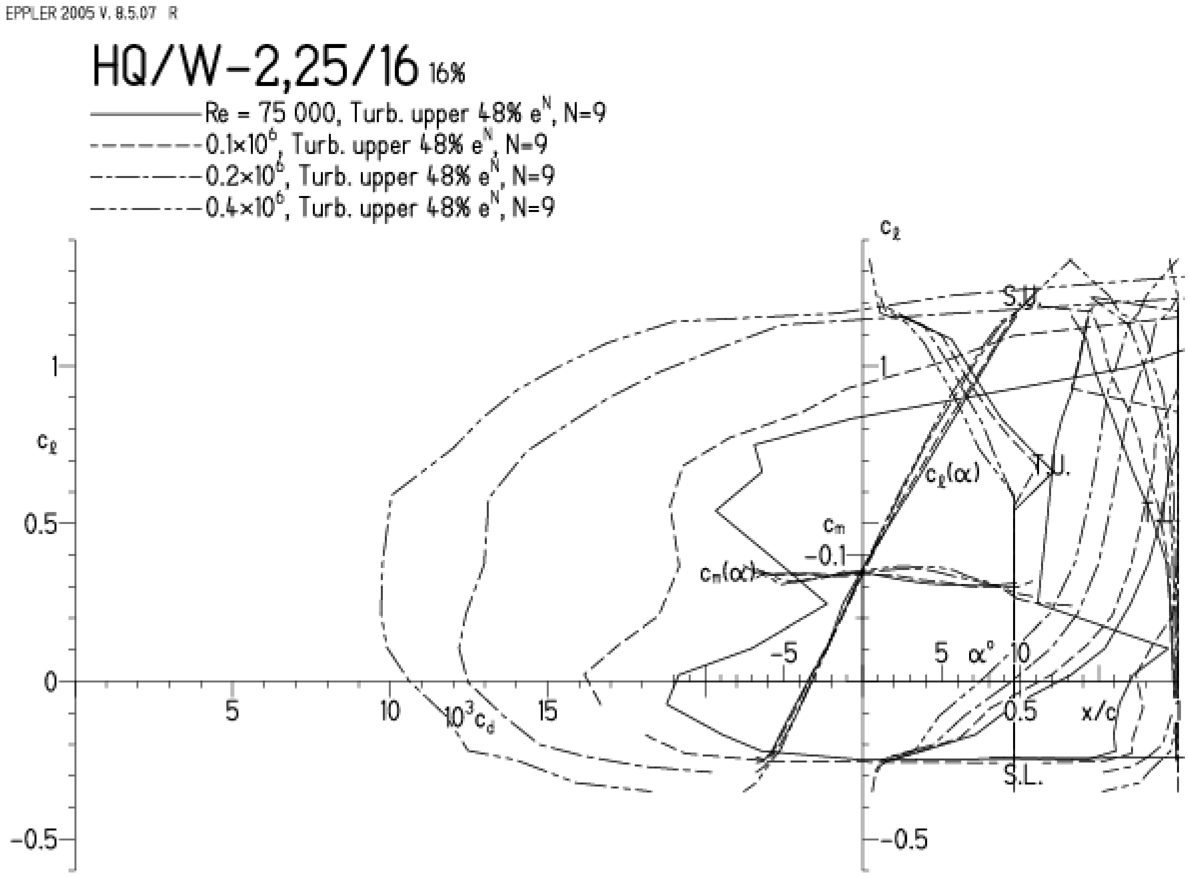
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



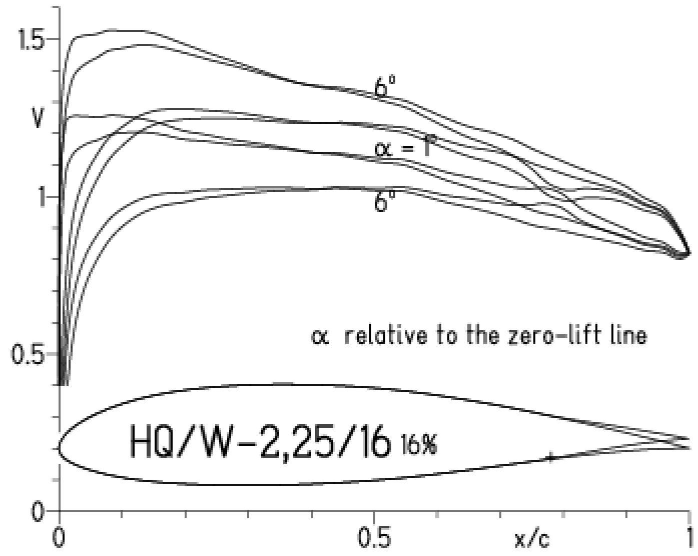


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

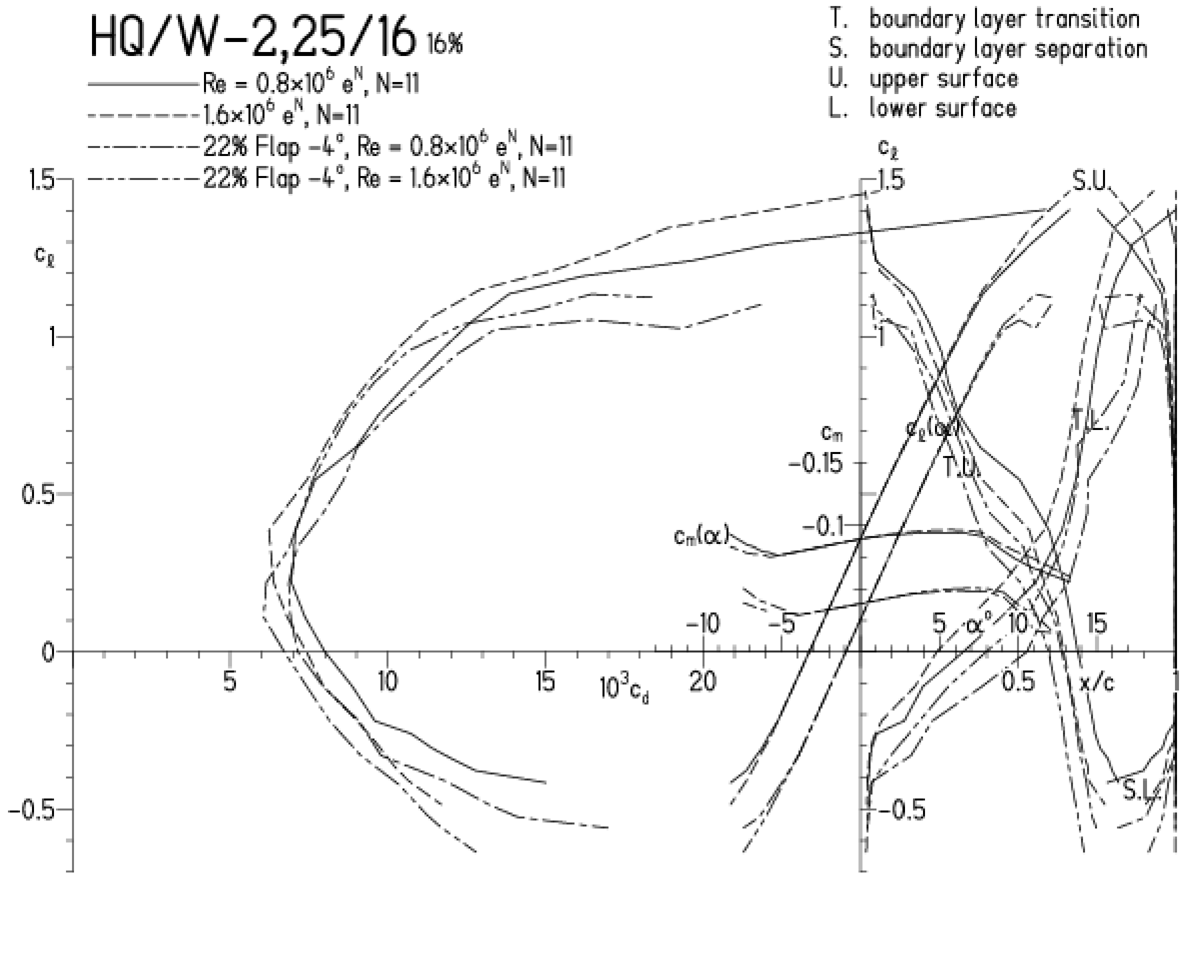
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

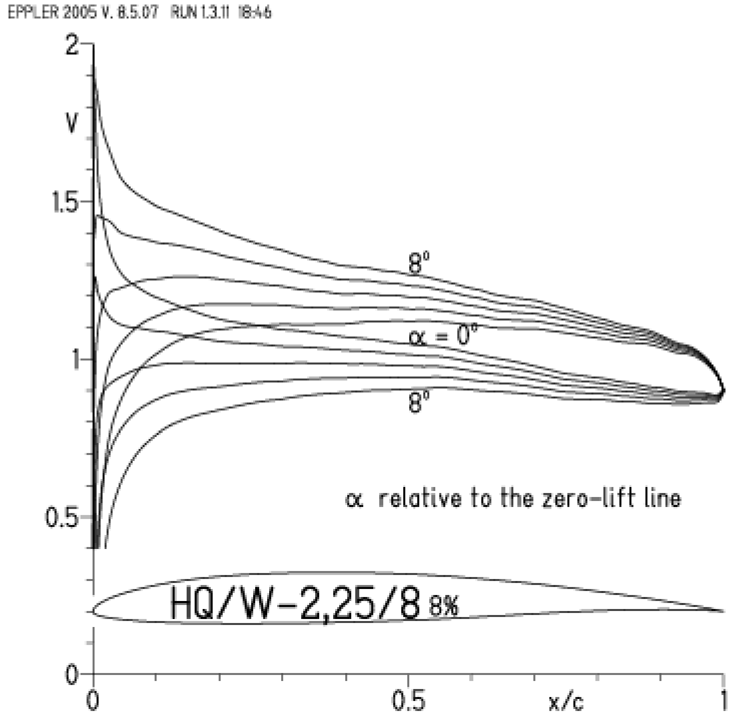
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

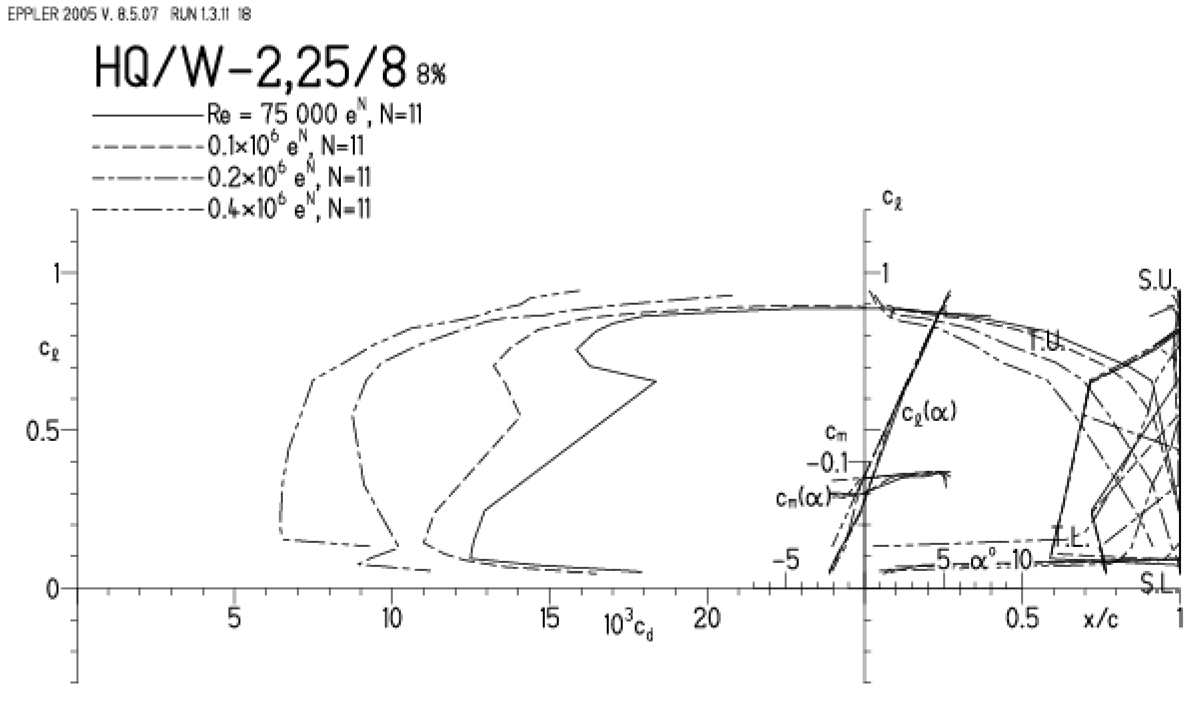


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



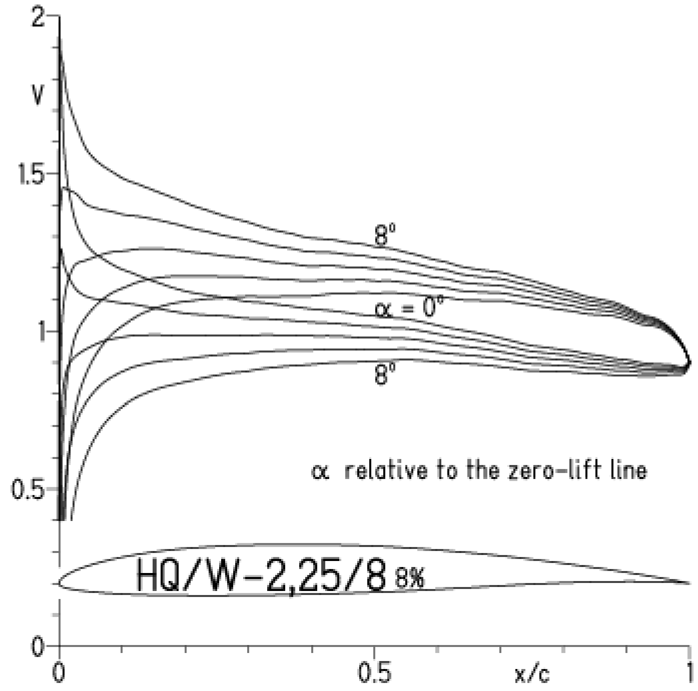
<u>HQ/W-2,25/8</u>, N=11



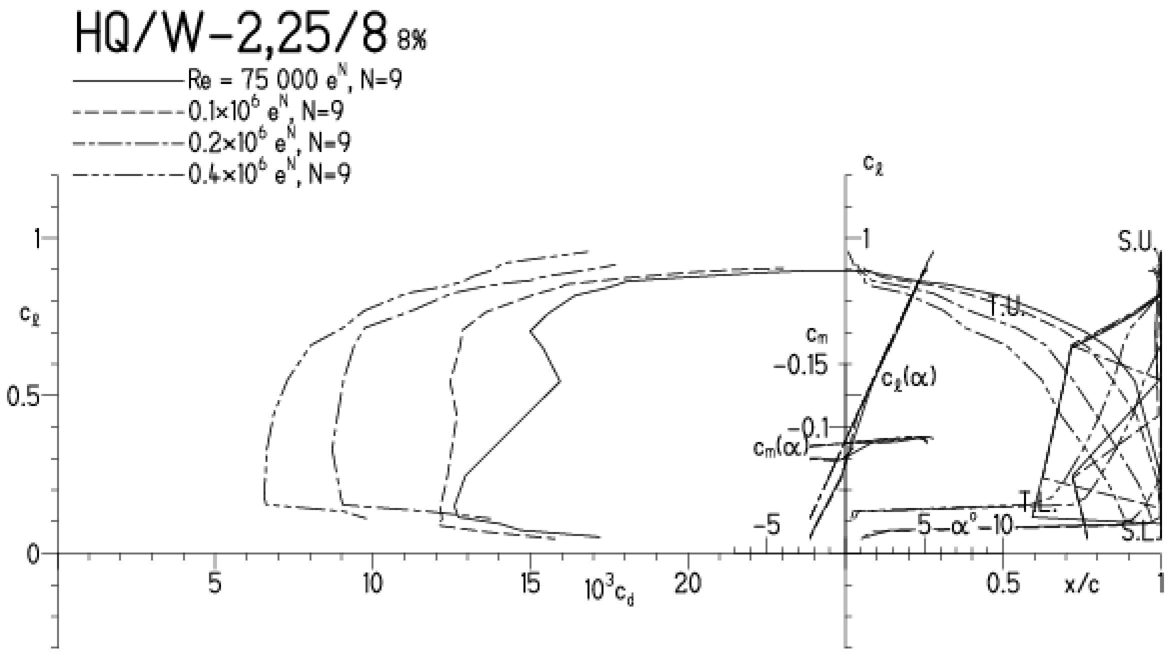


HQ/W-2,25/8, N=9

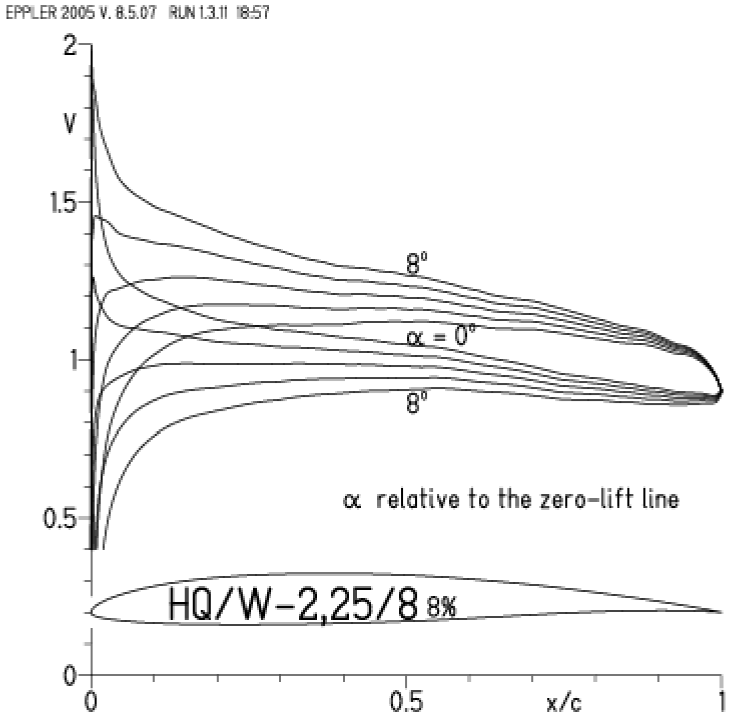
EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

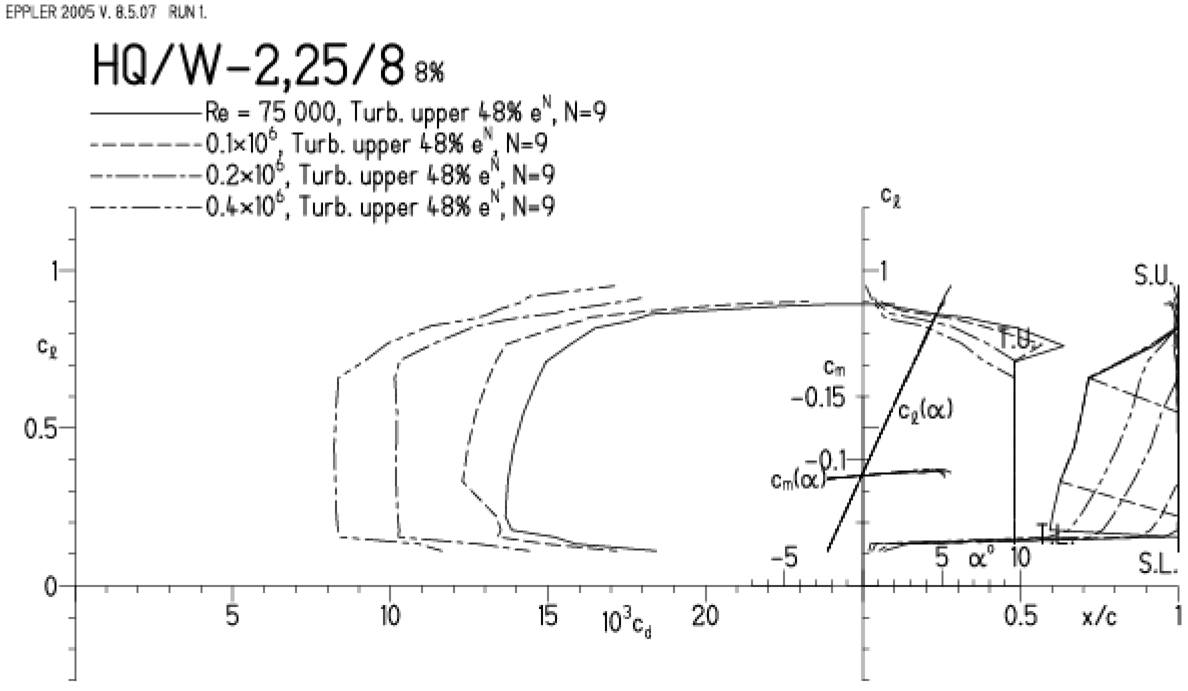


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

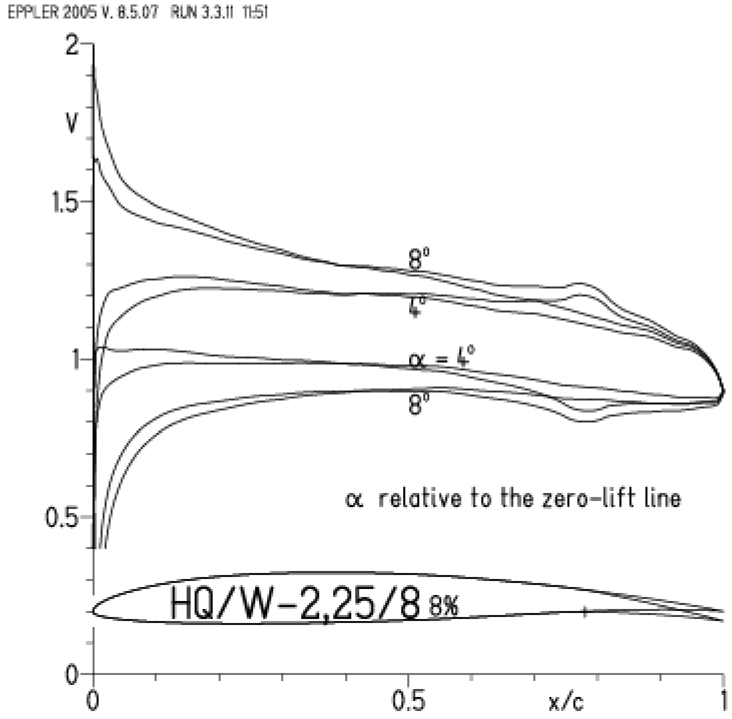


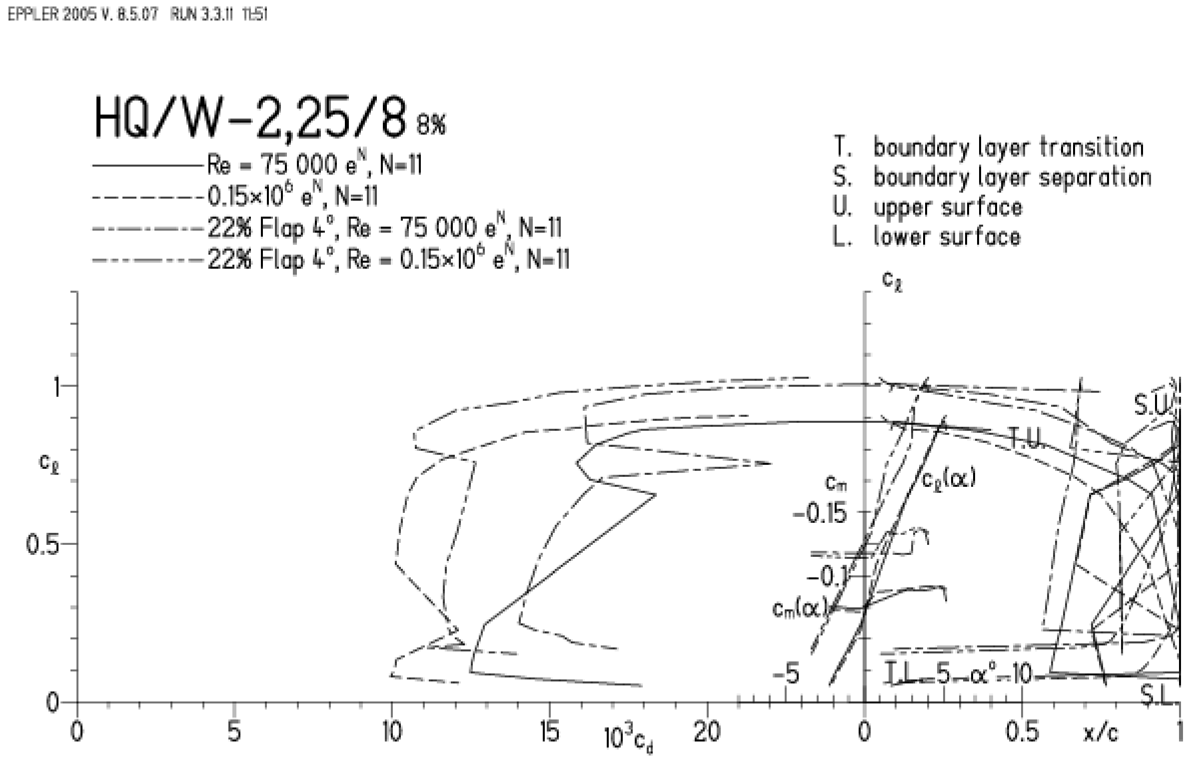
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



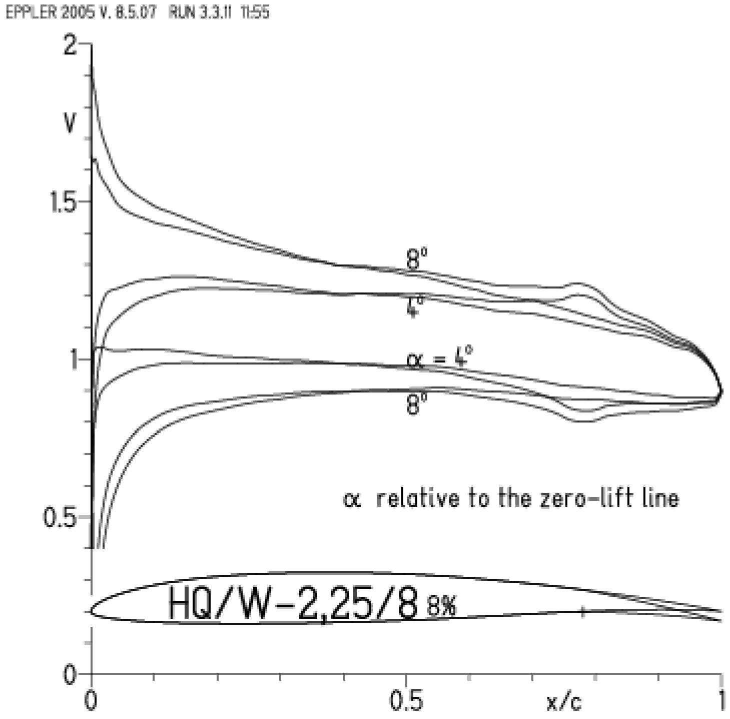


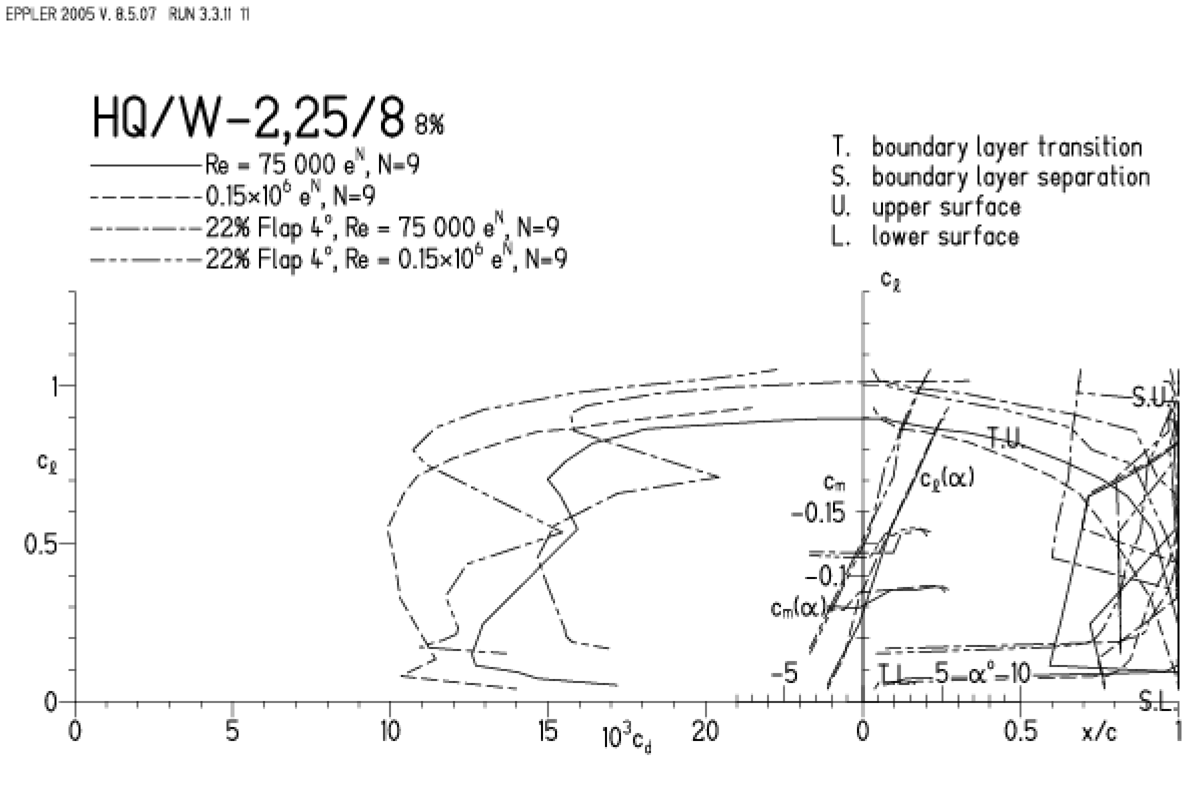
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



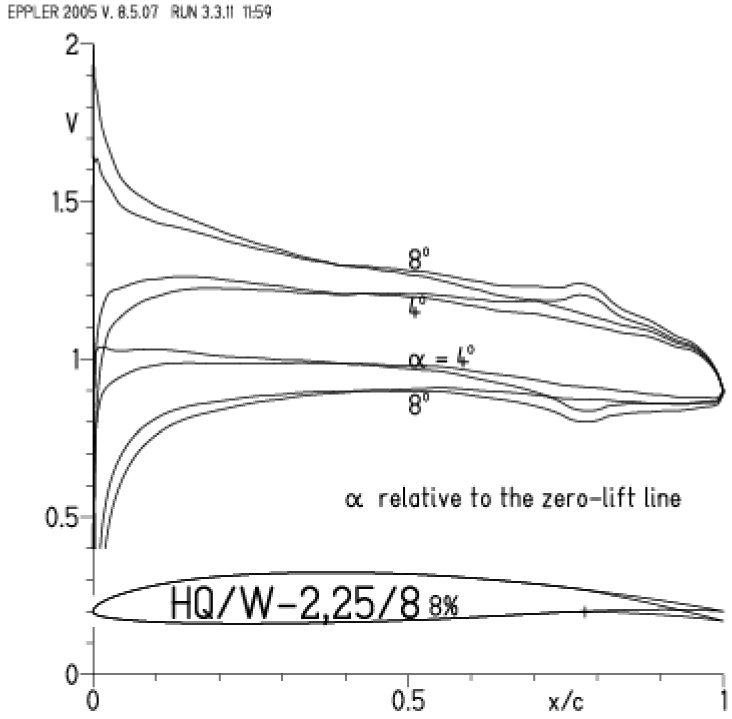


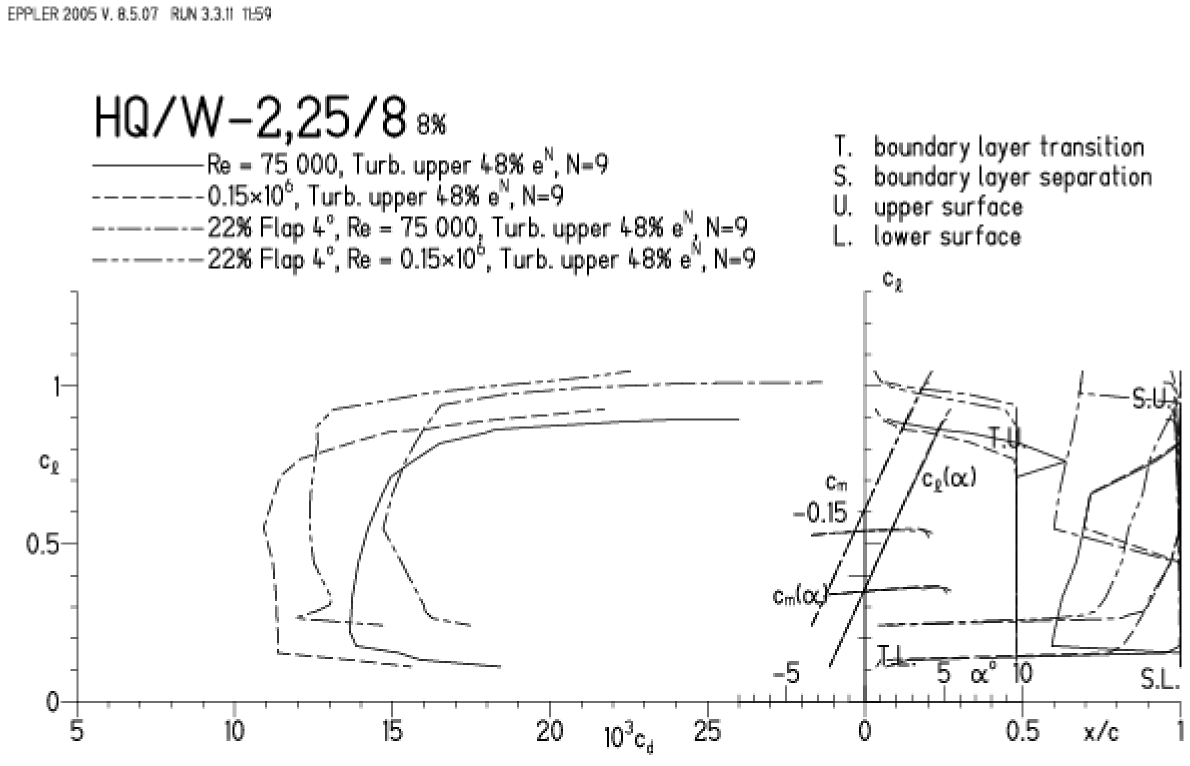
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





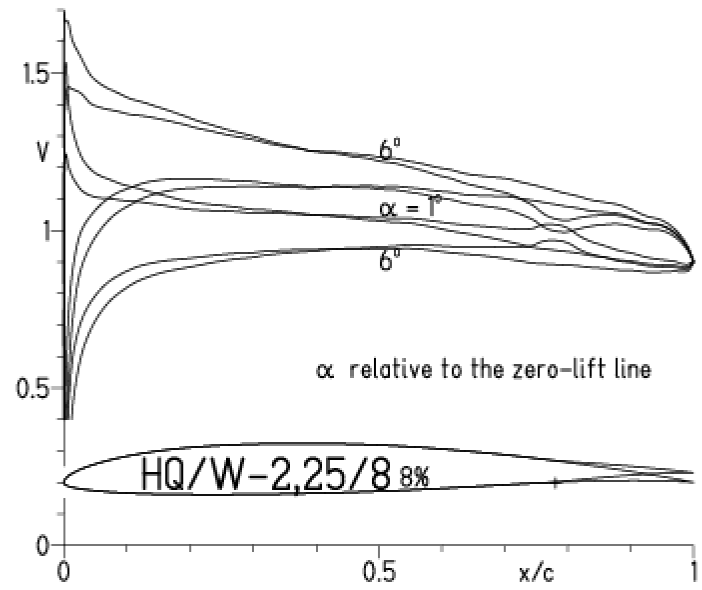
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



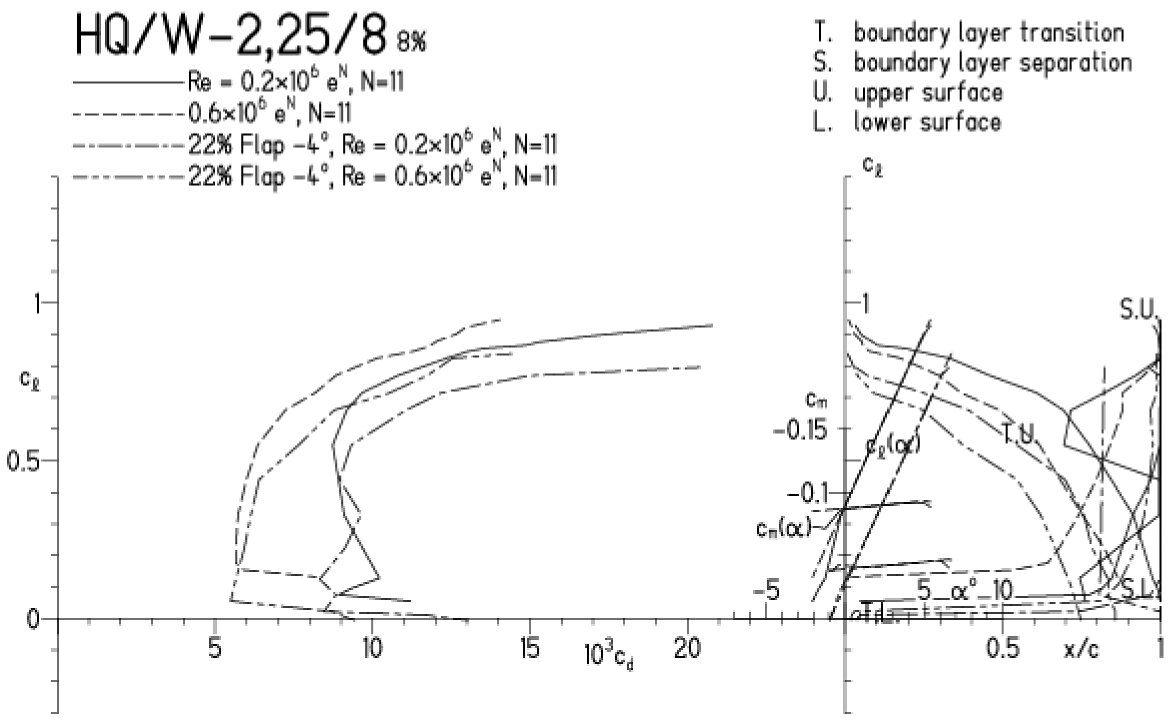


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

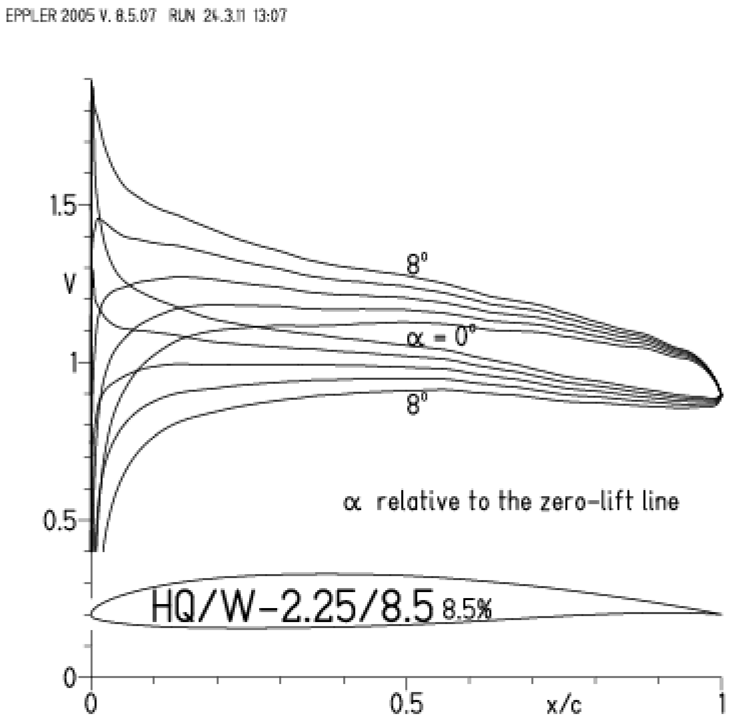
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

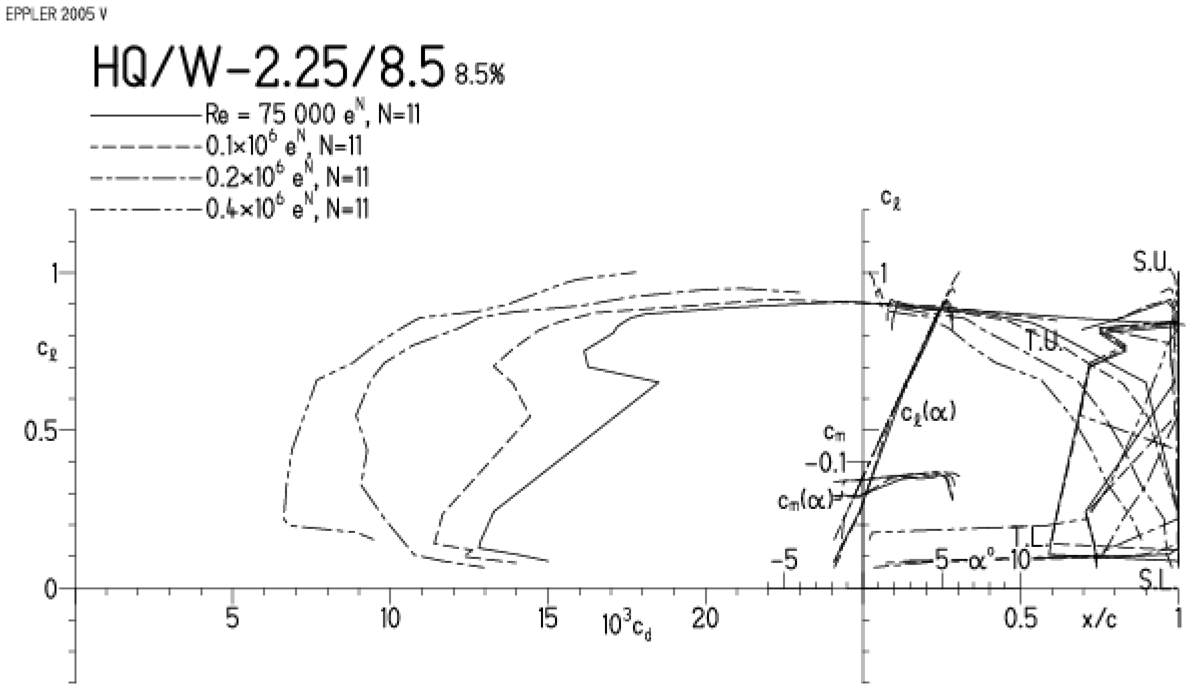


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



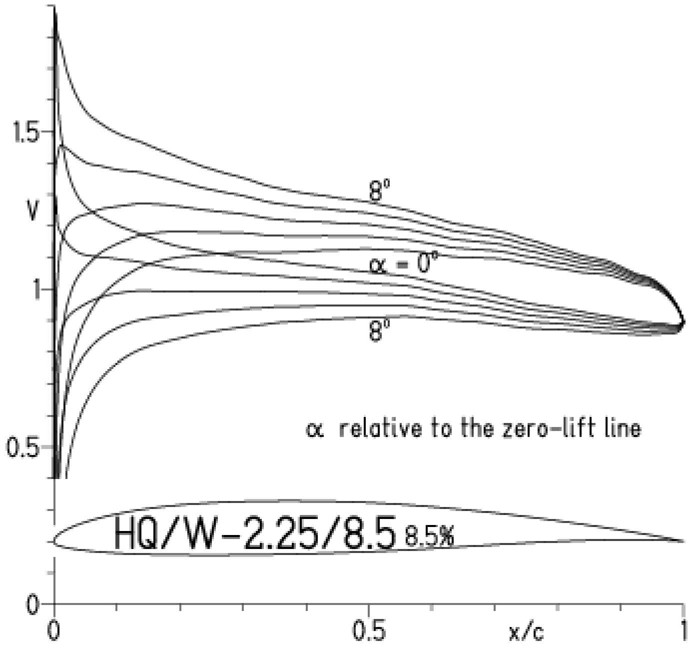
<u>HQ/W-2,25/8,5</u>, N=11



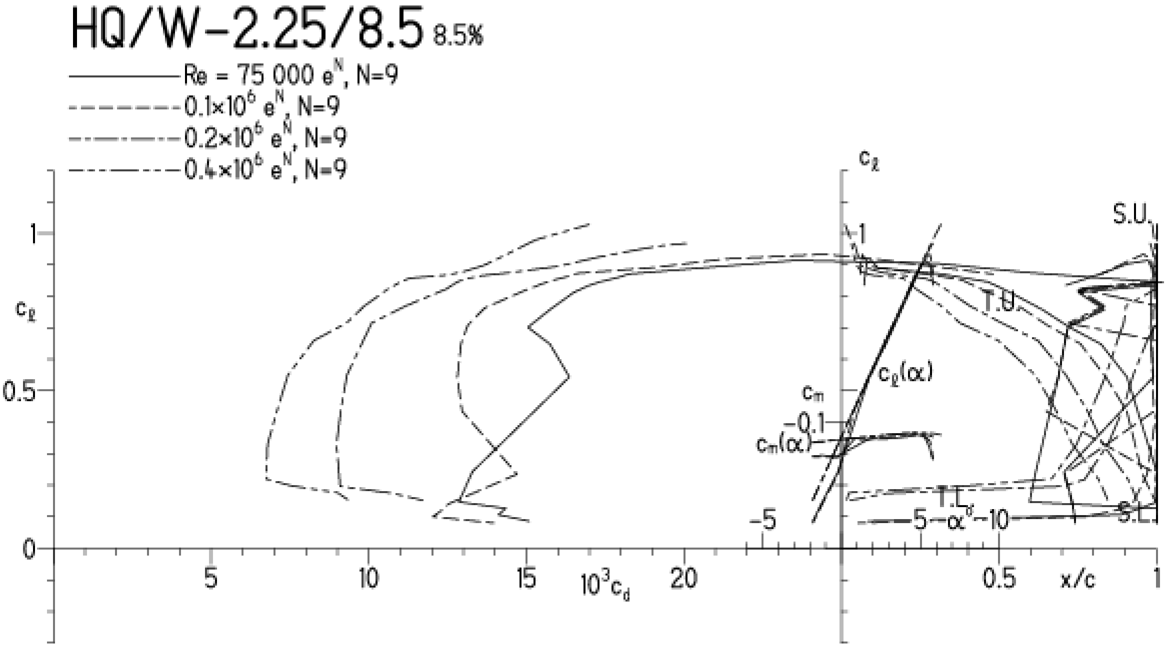


HQ/W-2,25/8,5, N=9

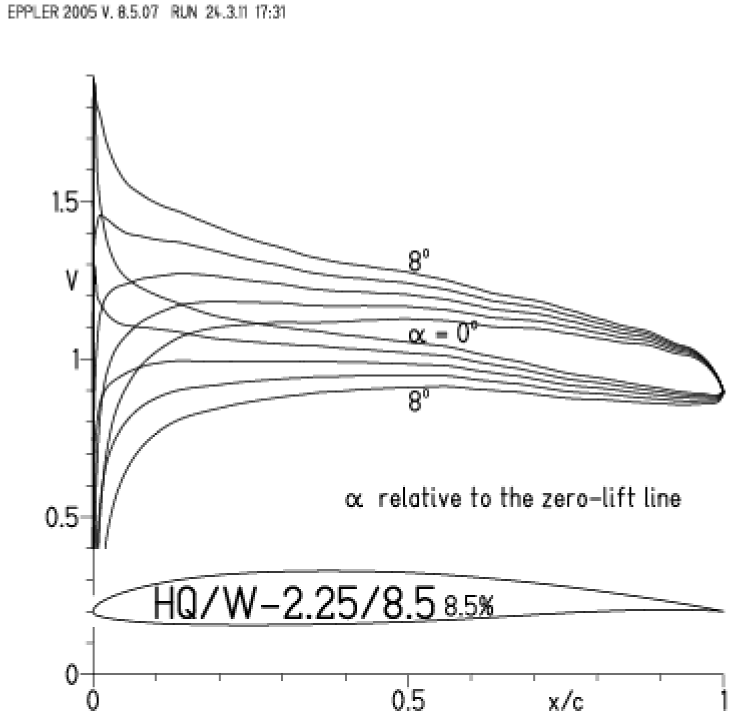
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

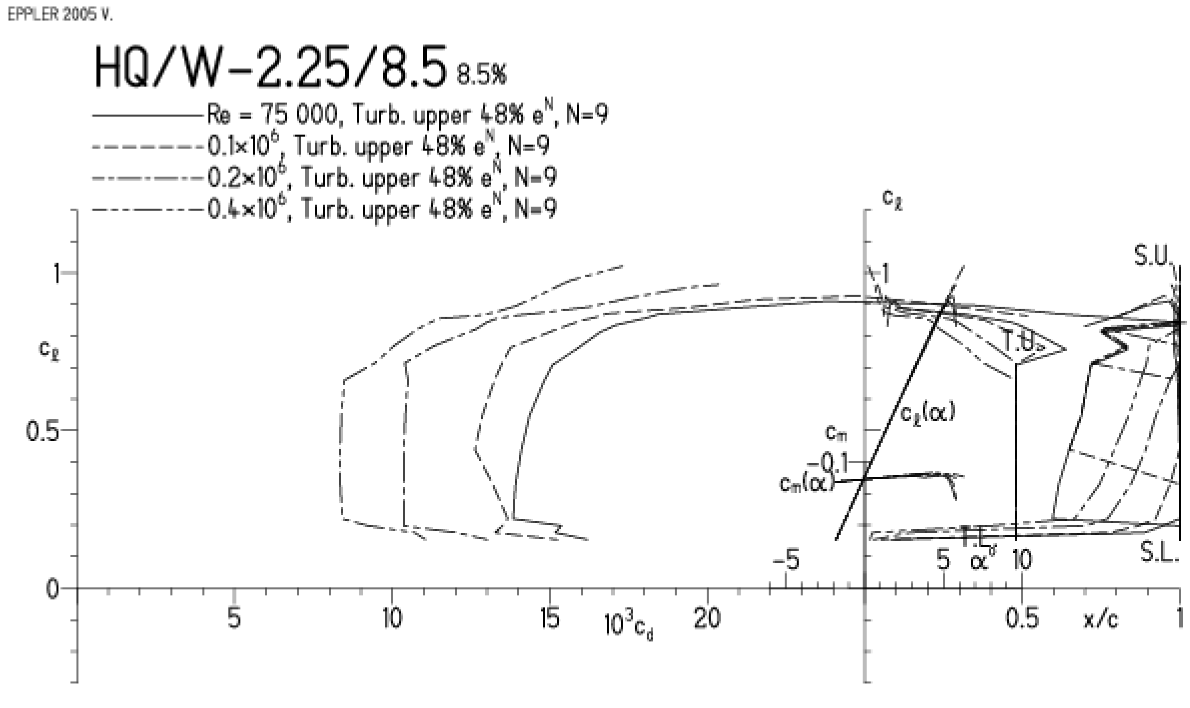


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

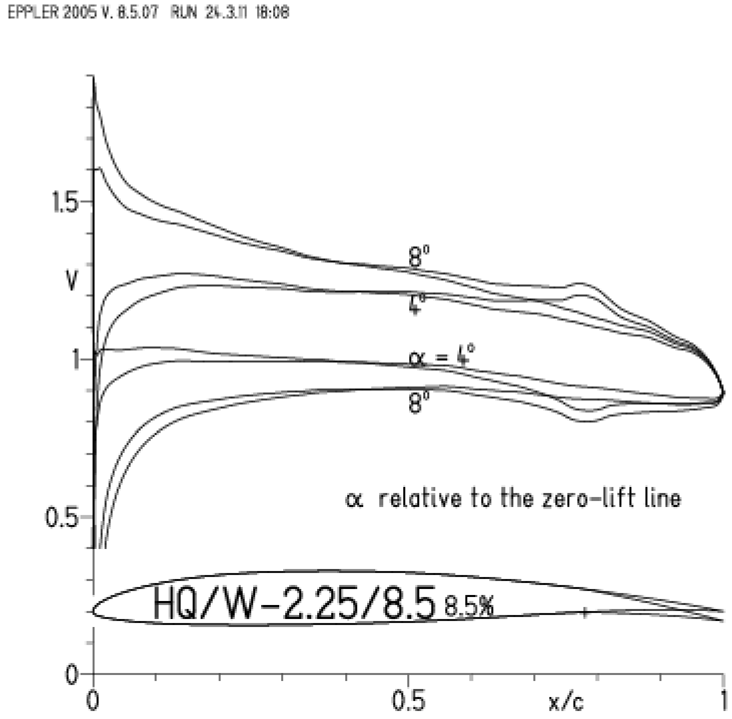


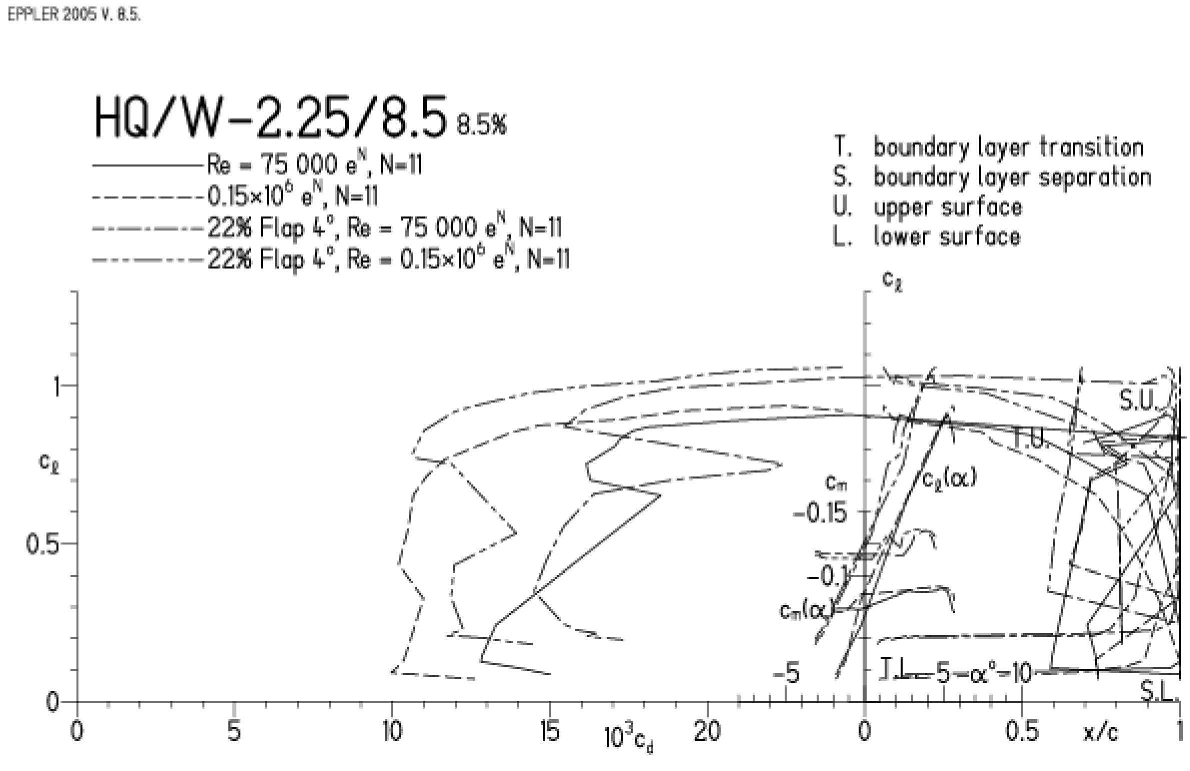
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



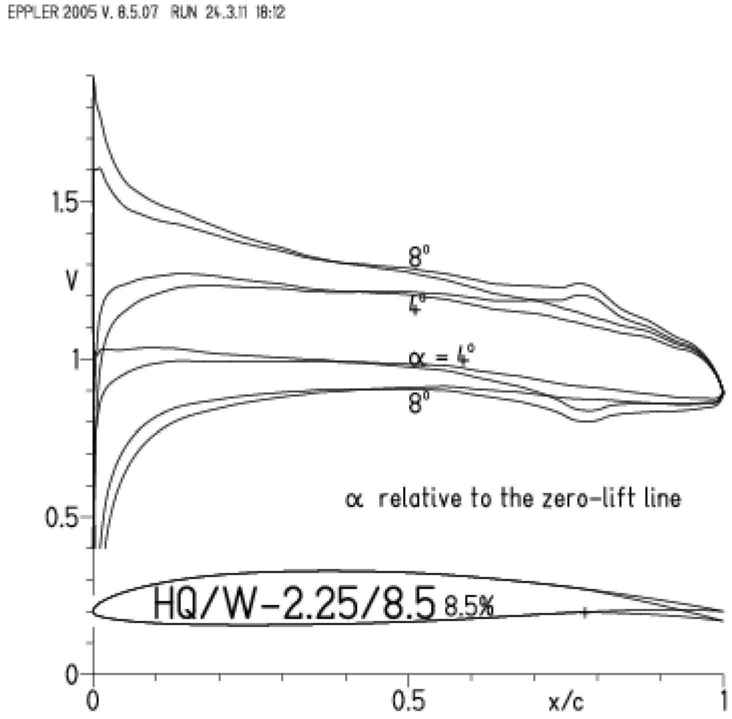


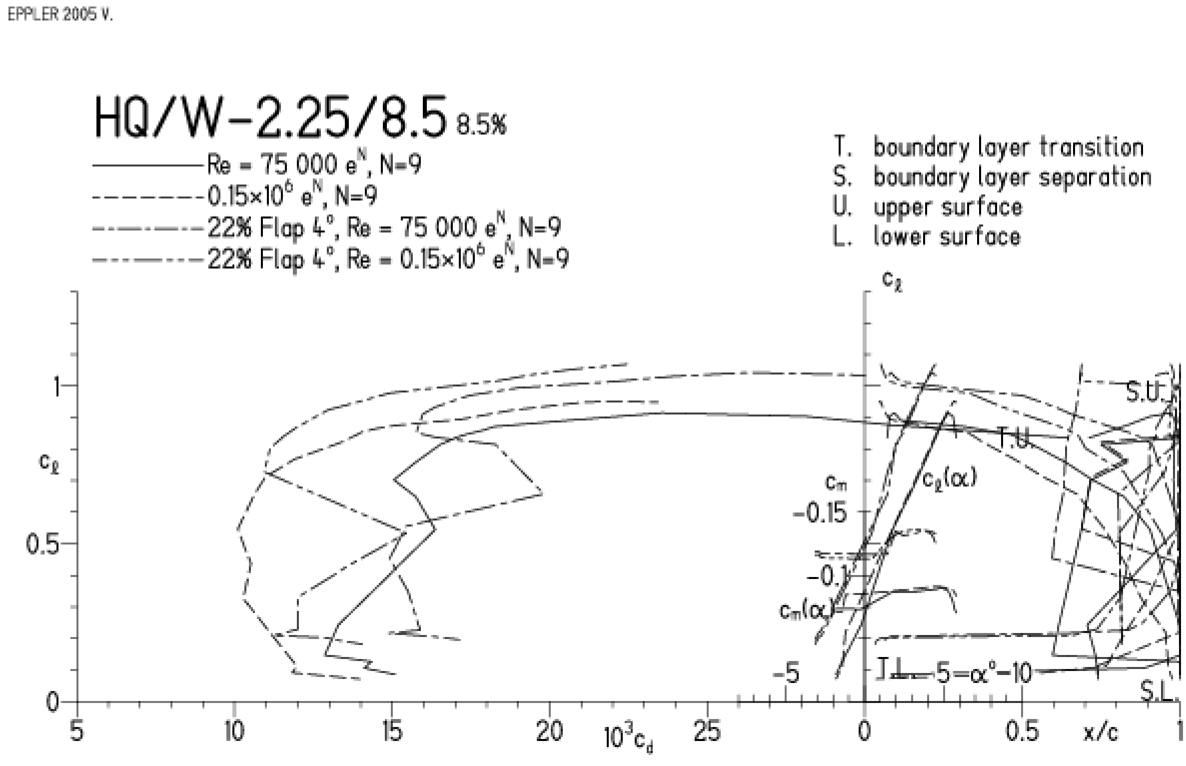
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



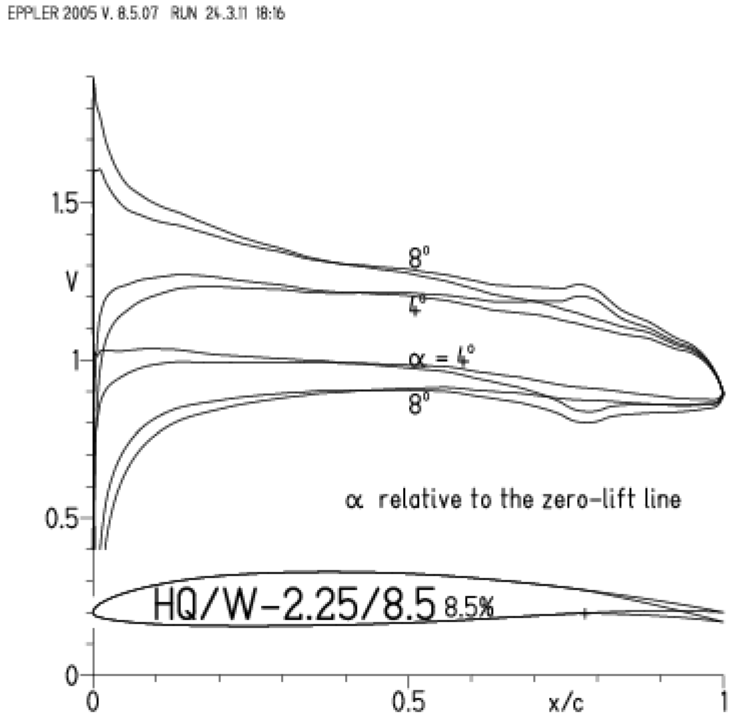


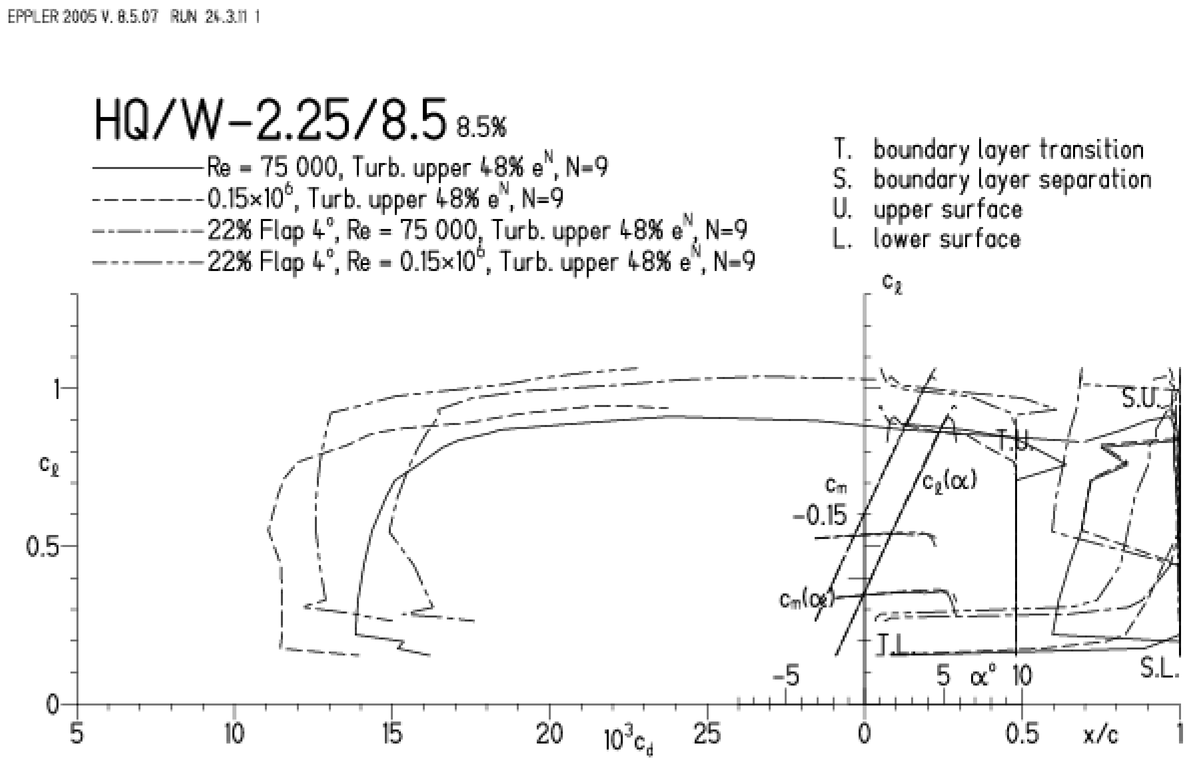
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag





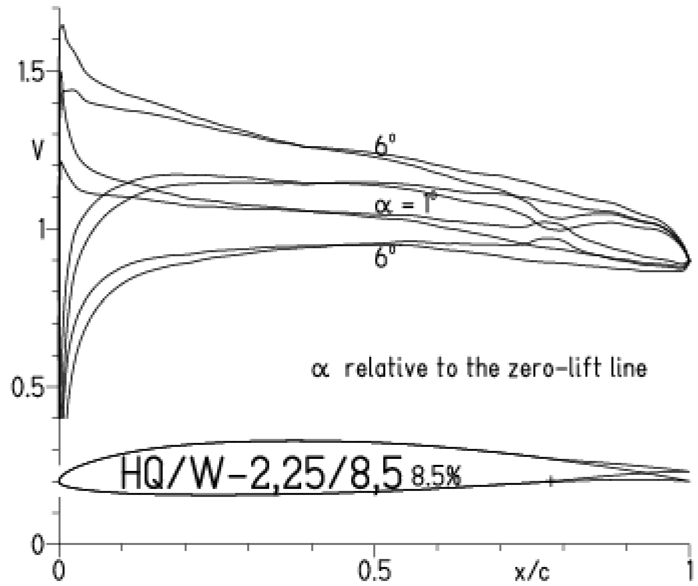
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



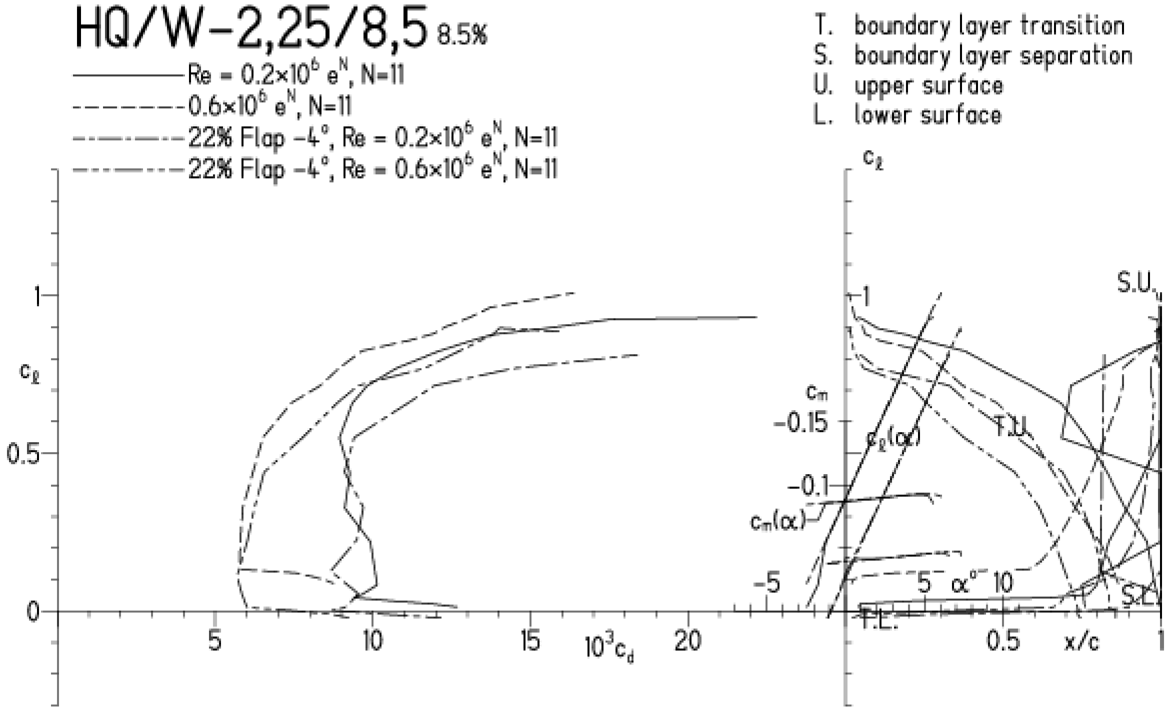


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

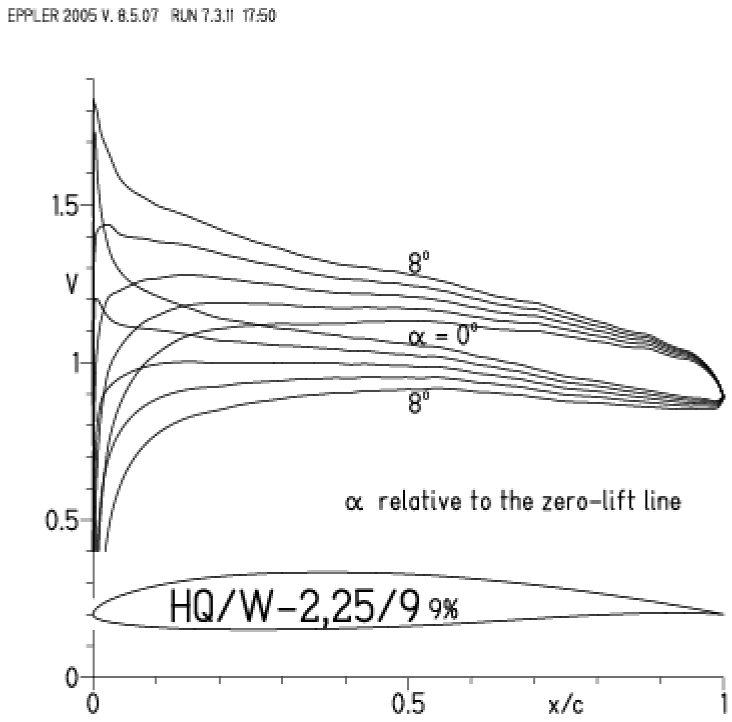
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

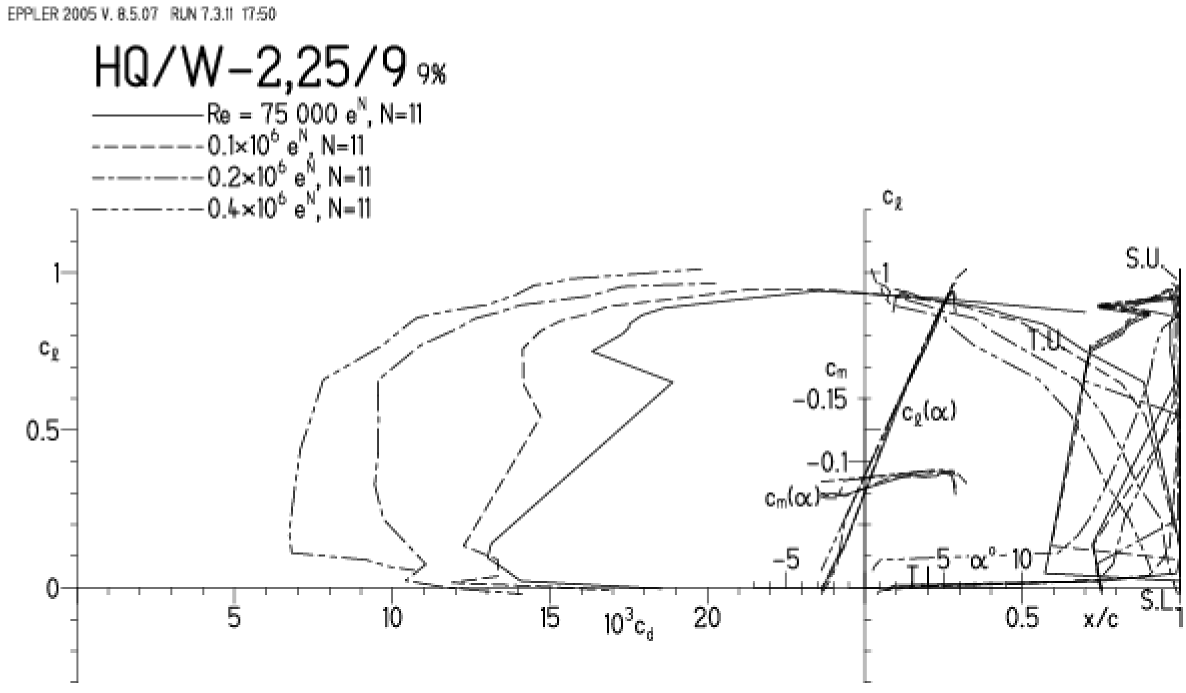


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



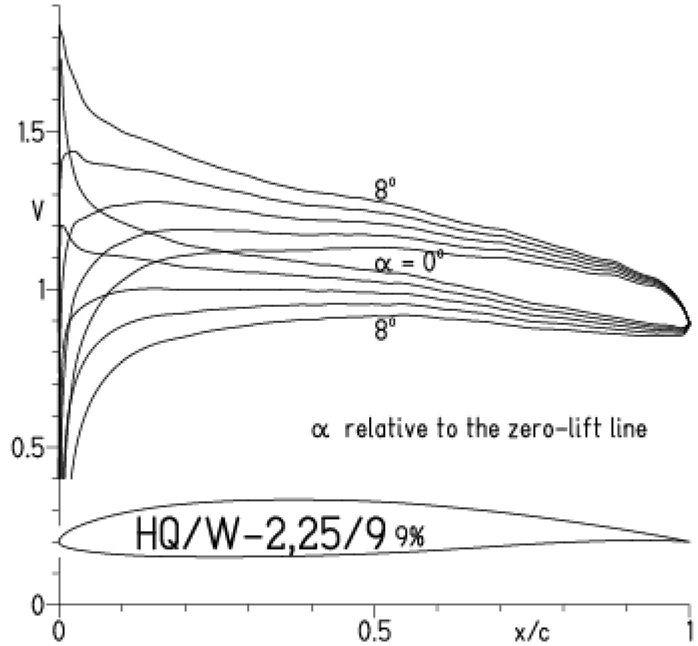
<u>HQ/W-2,25/9</u>, N=11



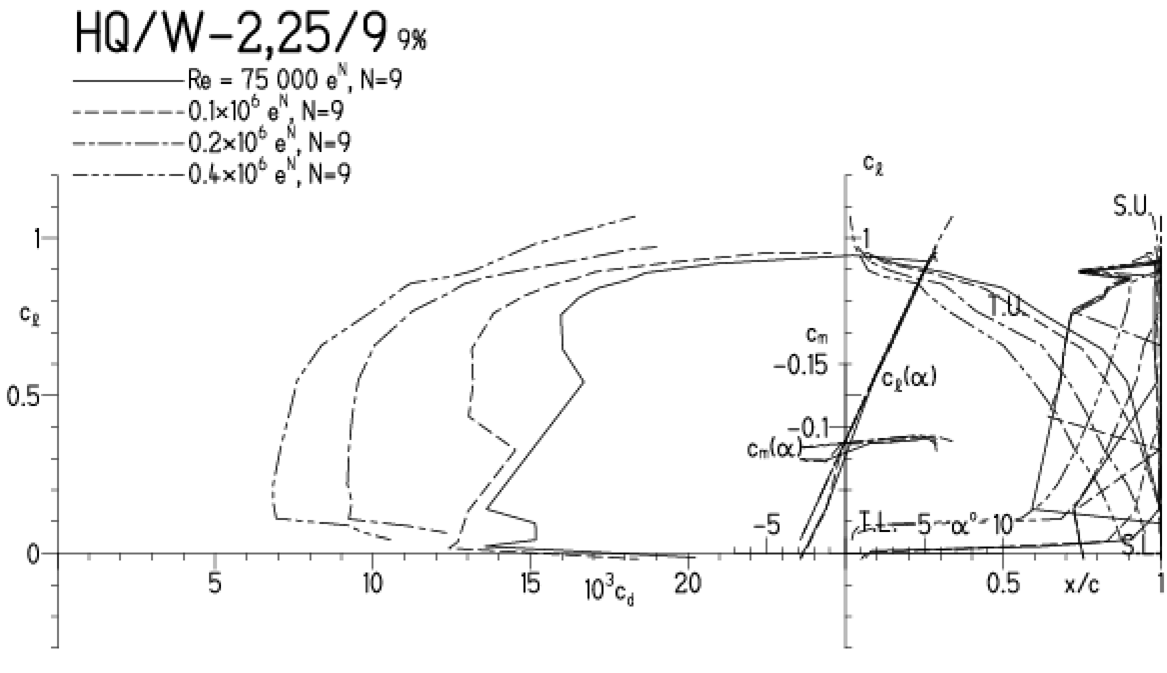


<u>HQ/W-2,25/9</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

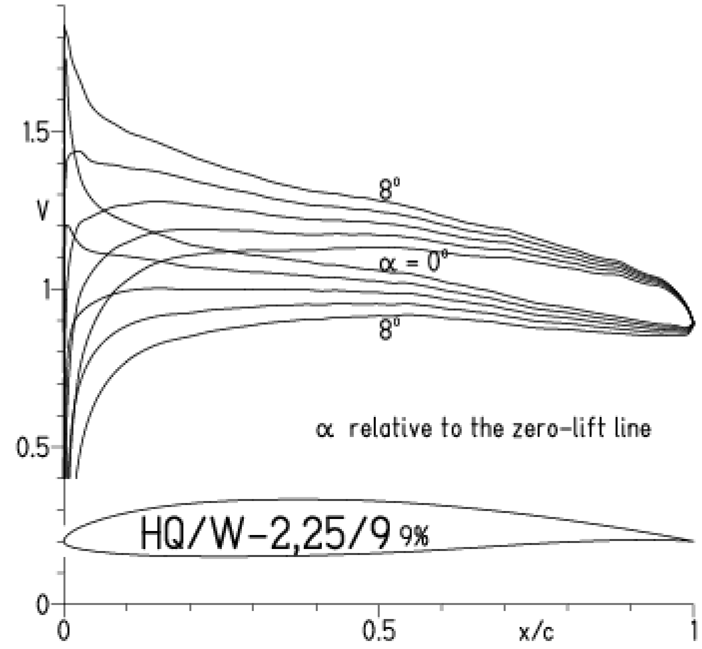


EPPLER 2005 V. 8.

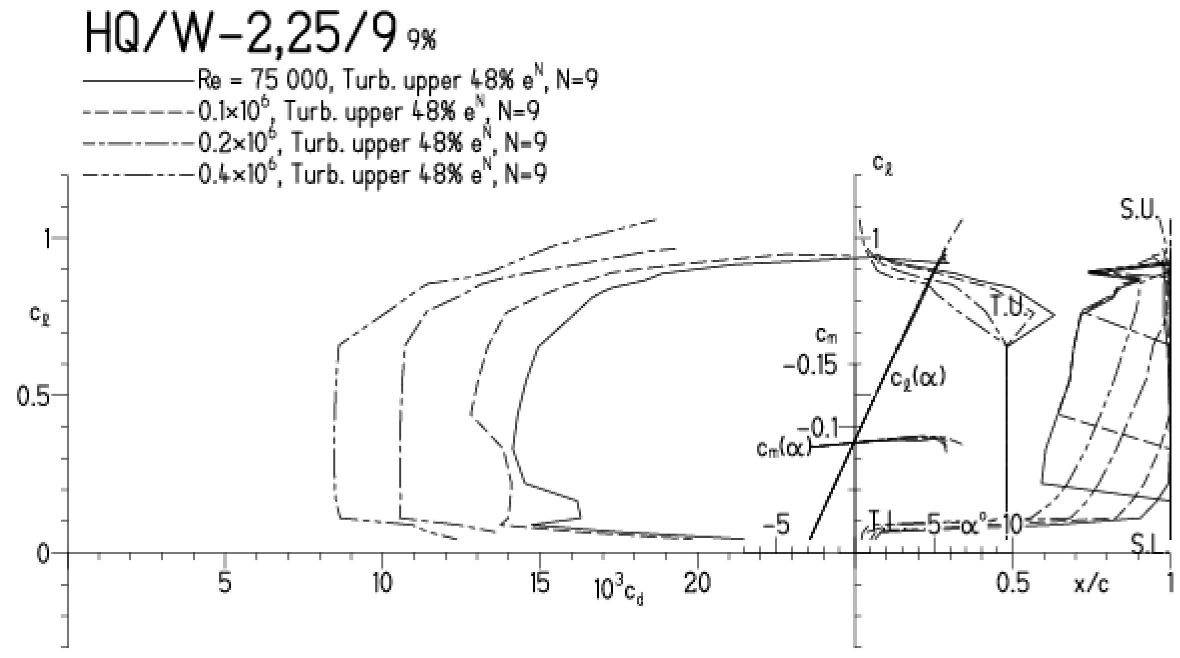


<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

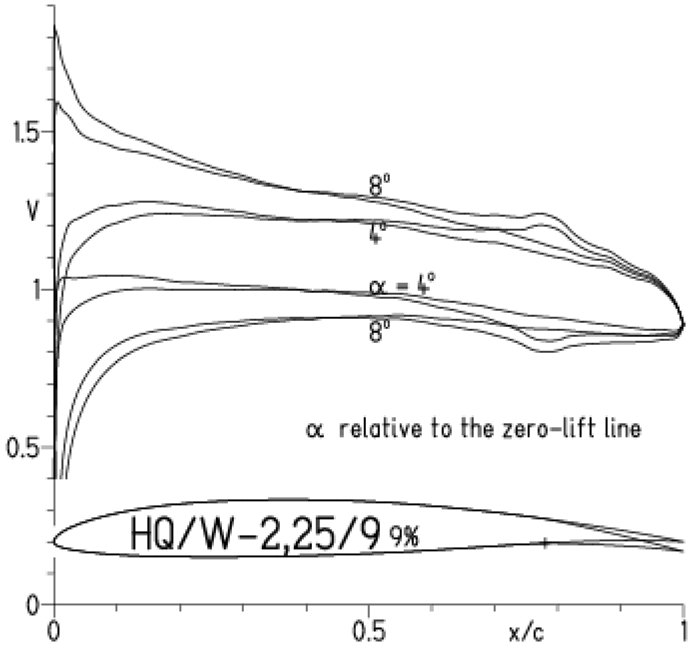


EPPLER 2005 V. 8.5.07 RUN 7

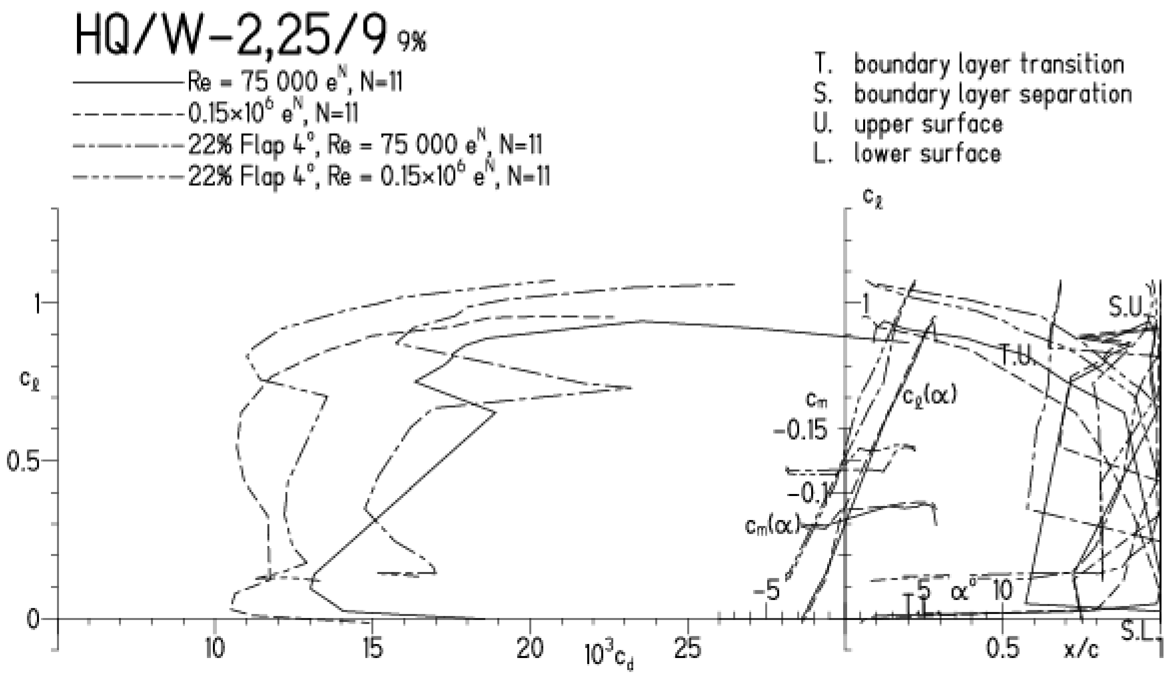


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

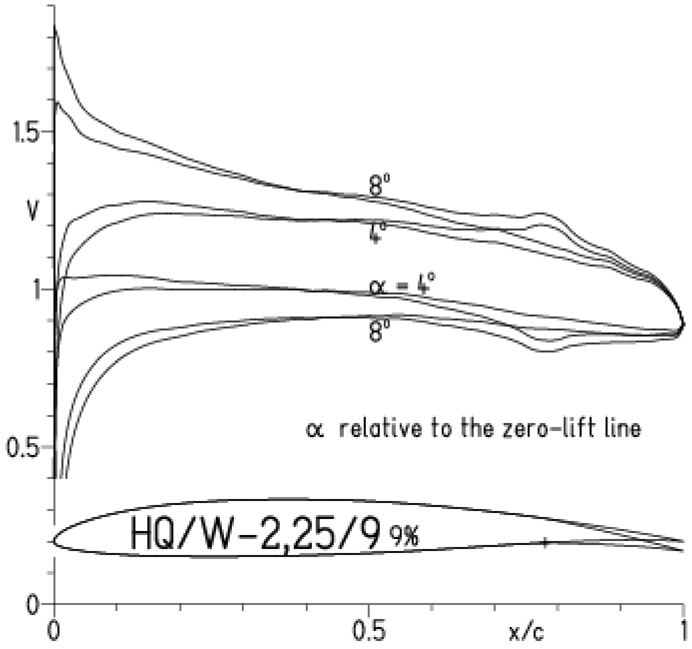


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

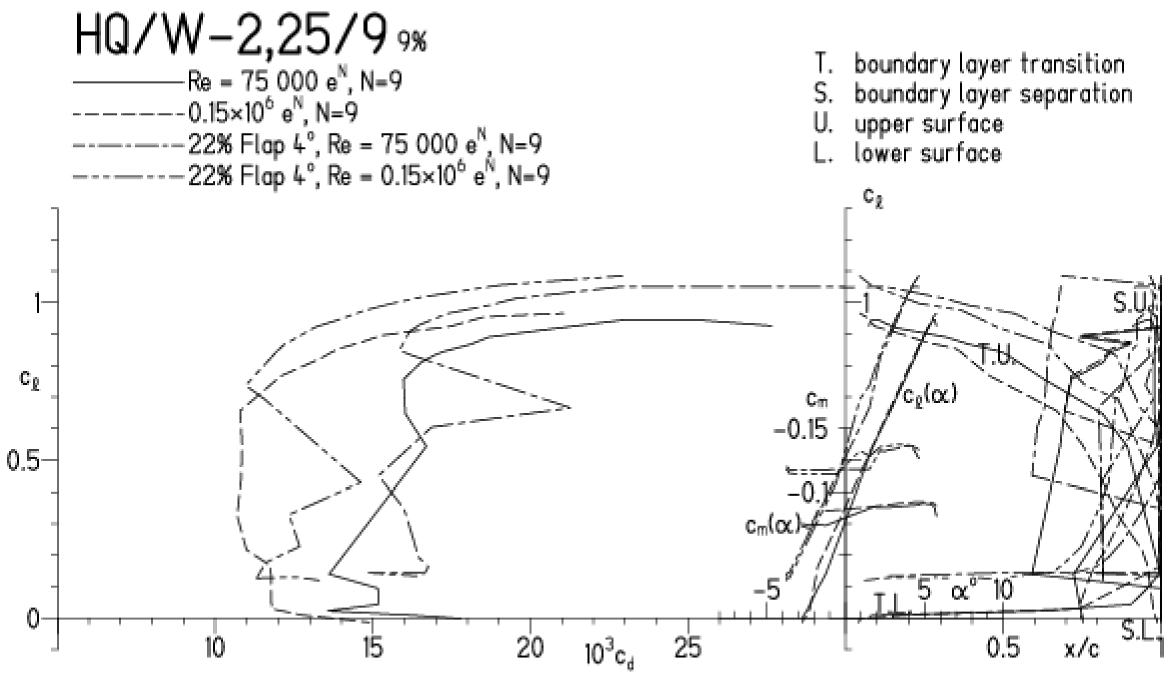


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

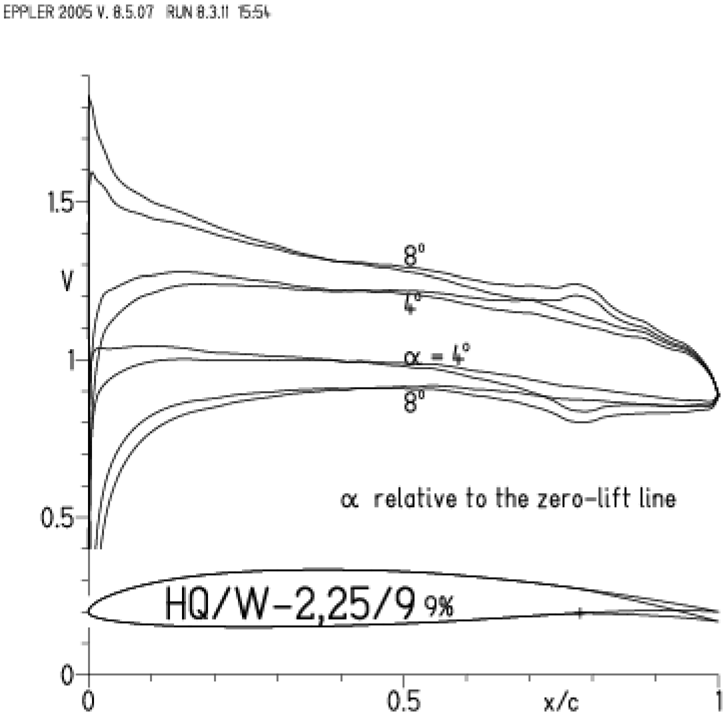
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

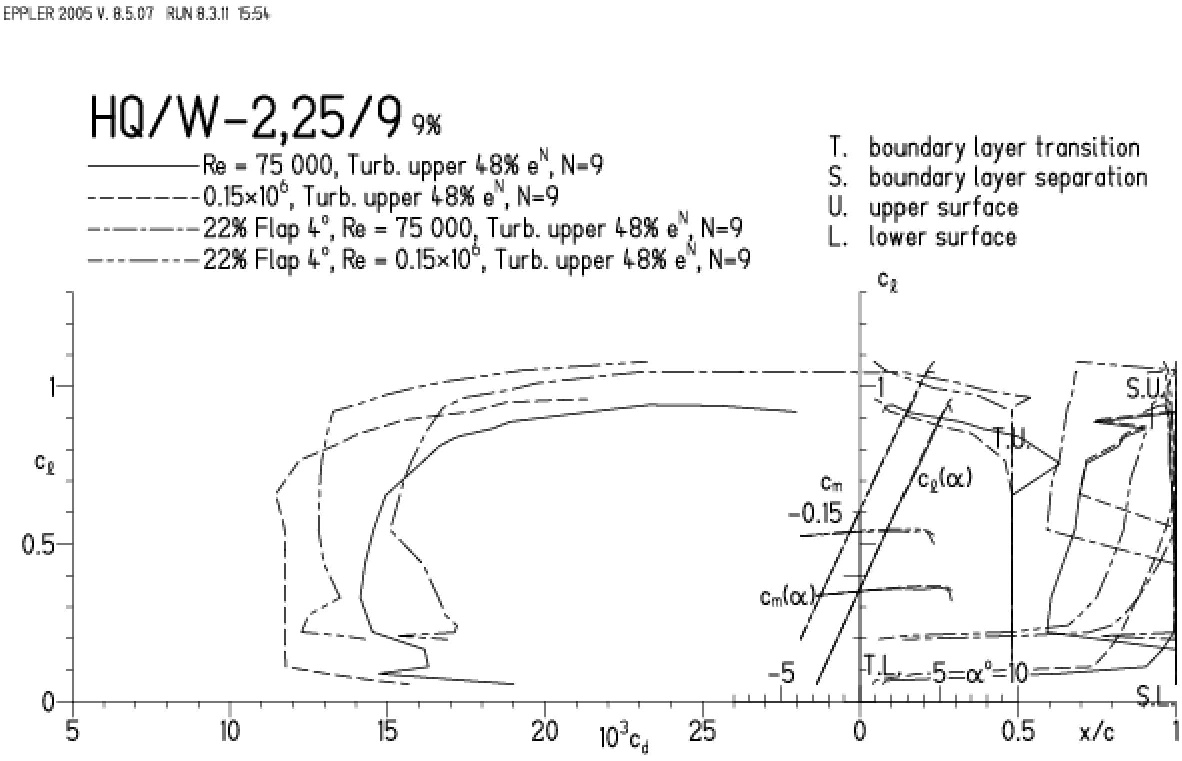


EPPLER 2005 V. 8.5.07 RUN 8.3.1

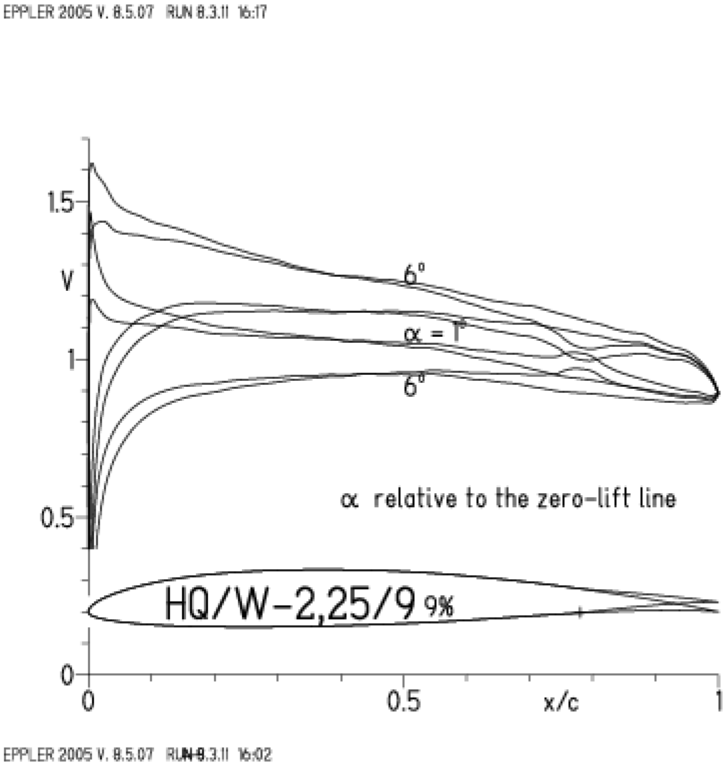


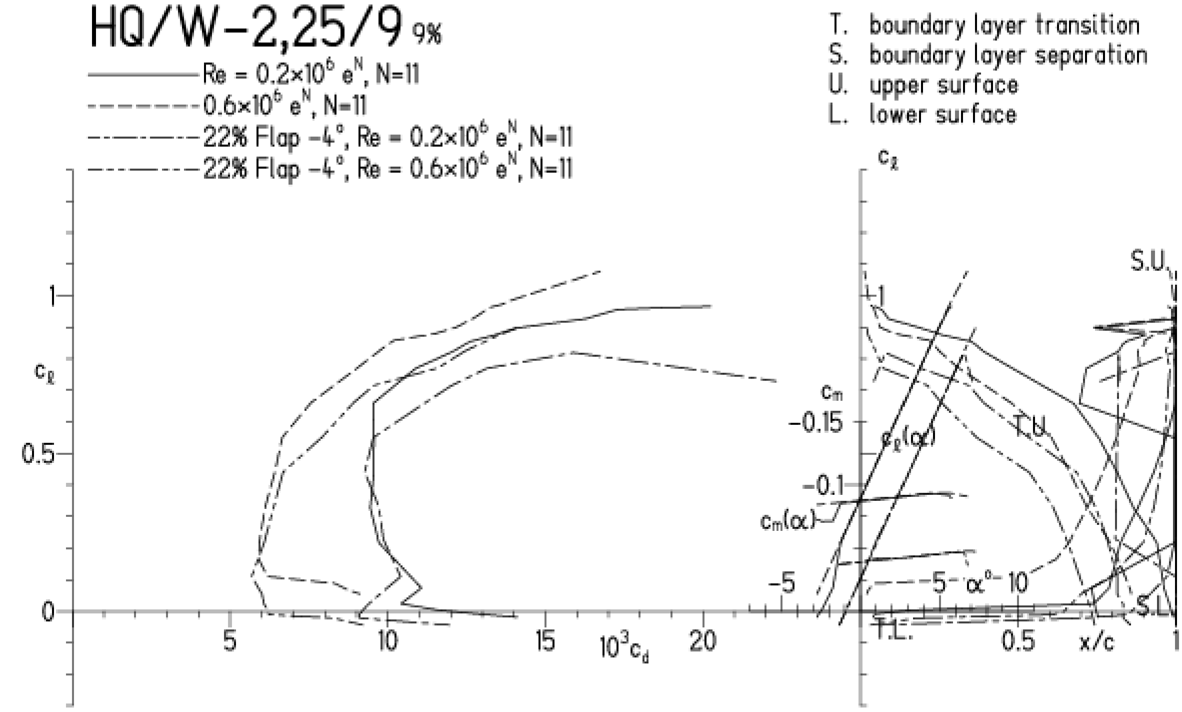
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



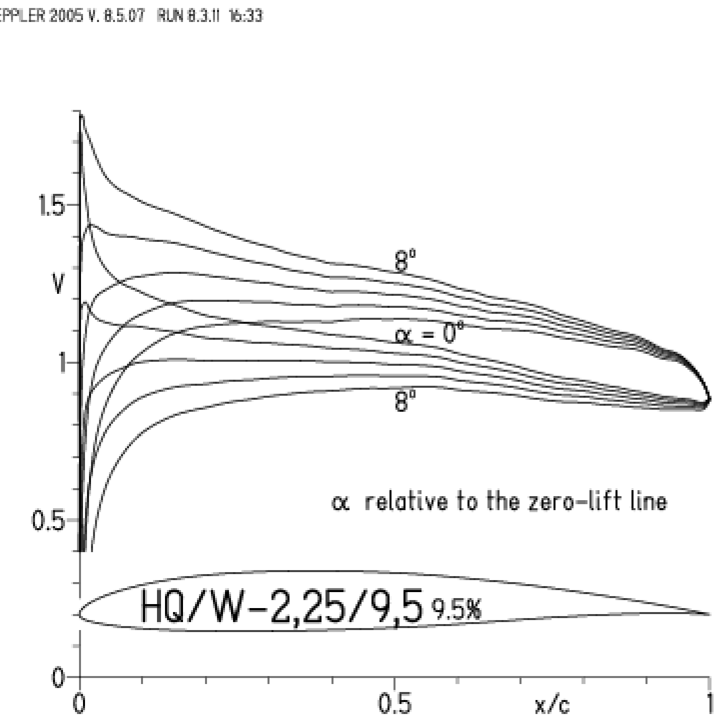


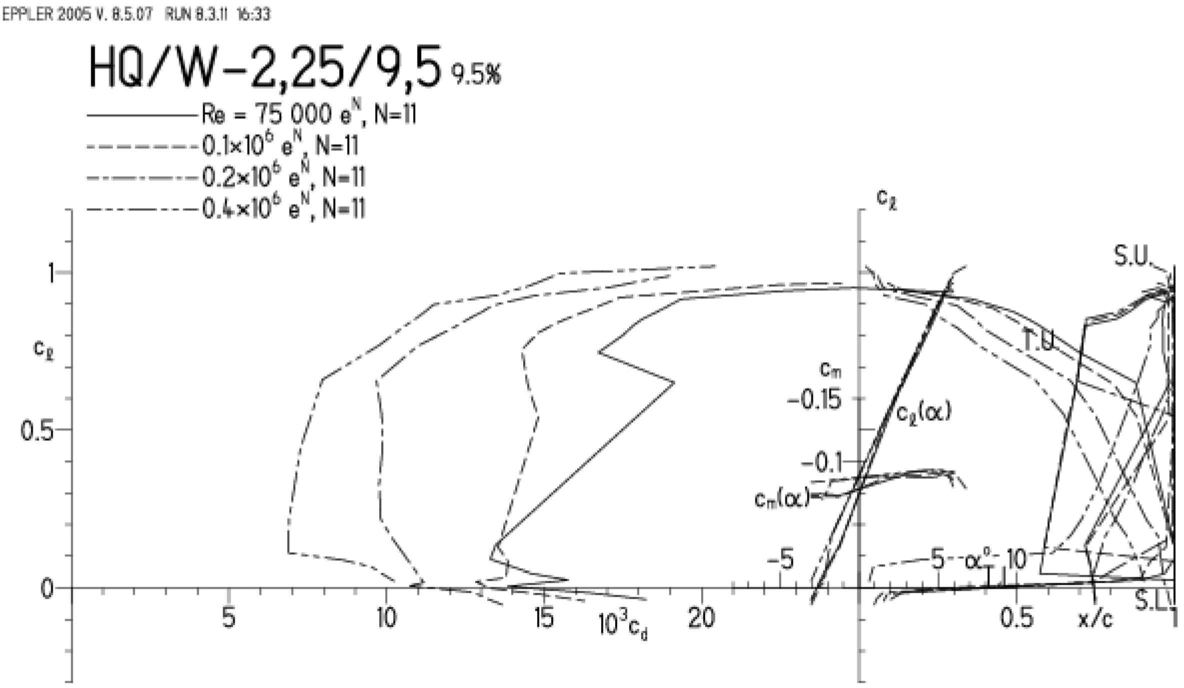
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





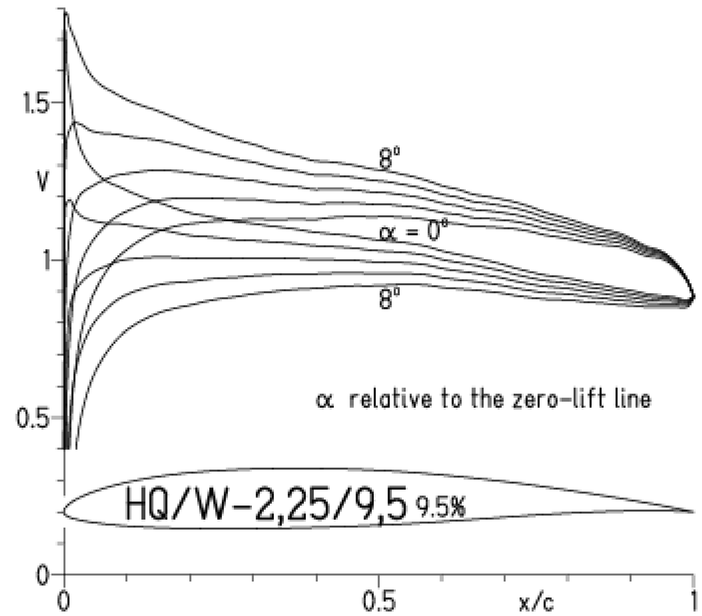
HQ/W-2,25/9,5, N=11



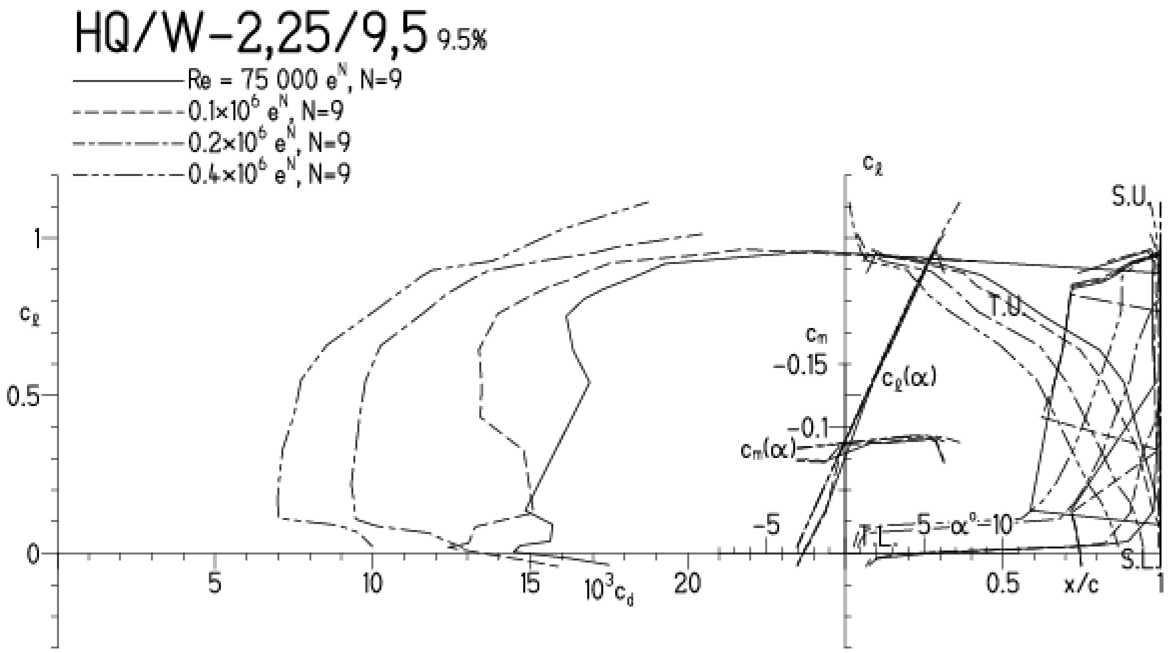


<u>HQ/W-2,25/9,5</u>, N=9

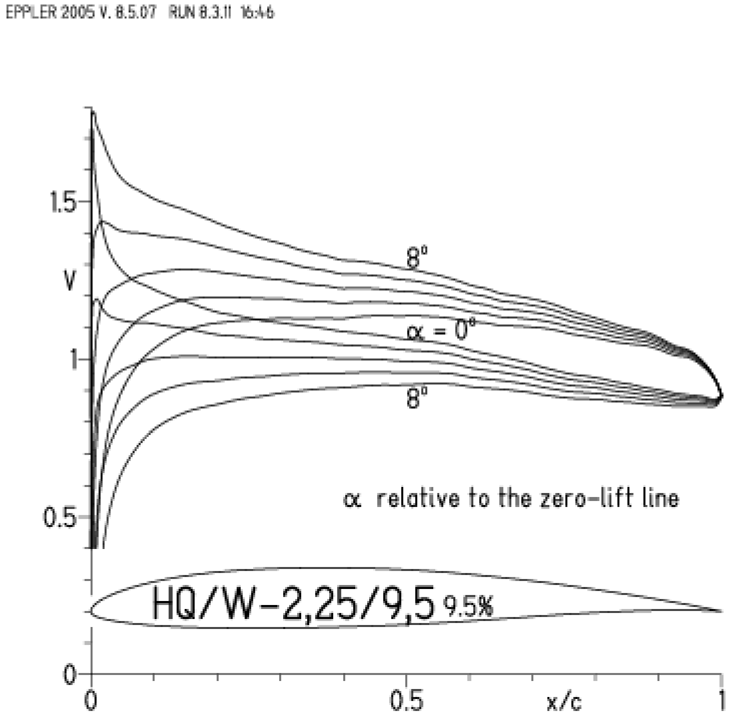
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

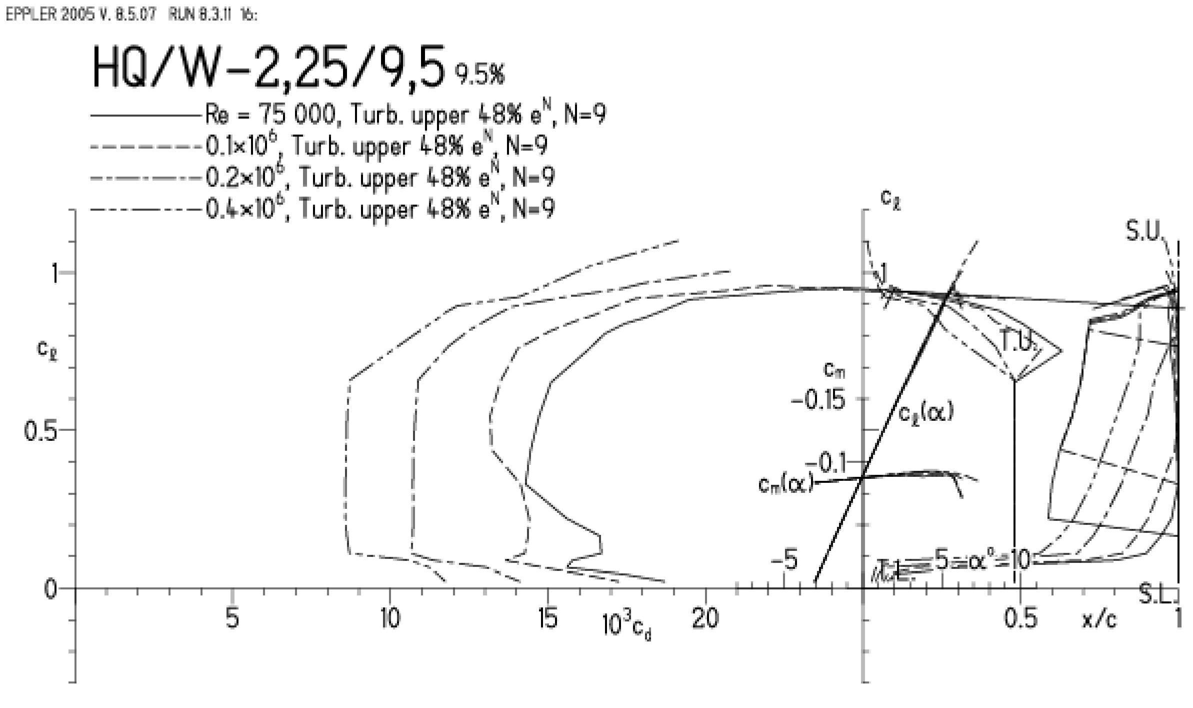


EPPLER 2005 V. 8.5.07 RUN 8.3.



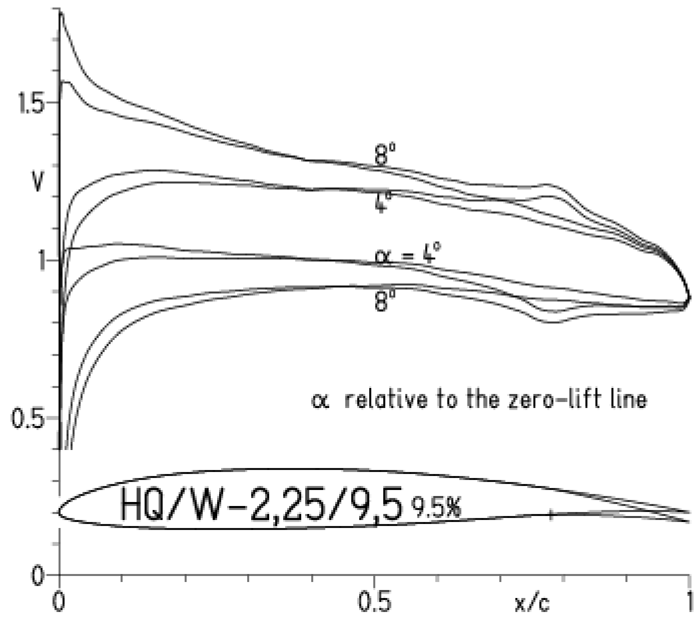
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



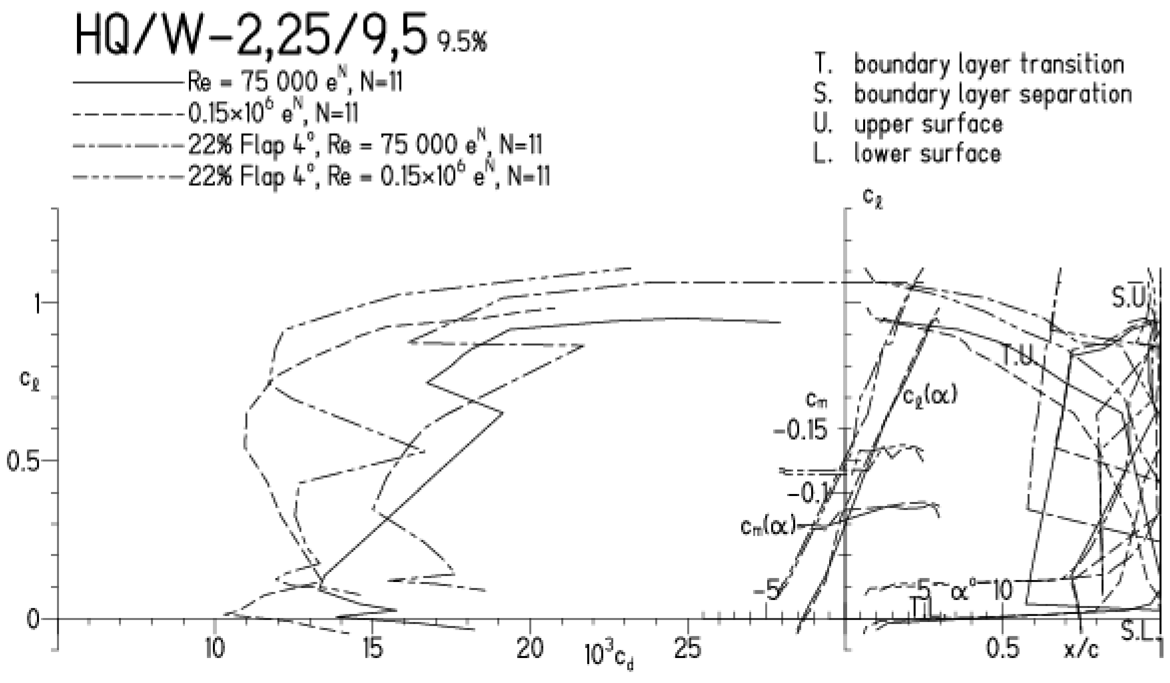


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

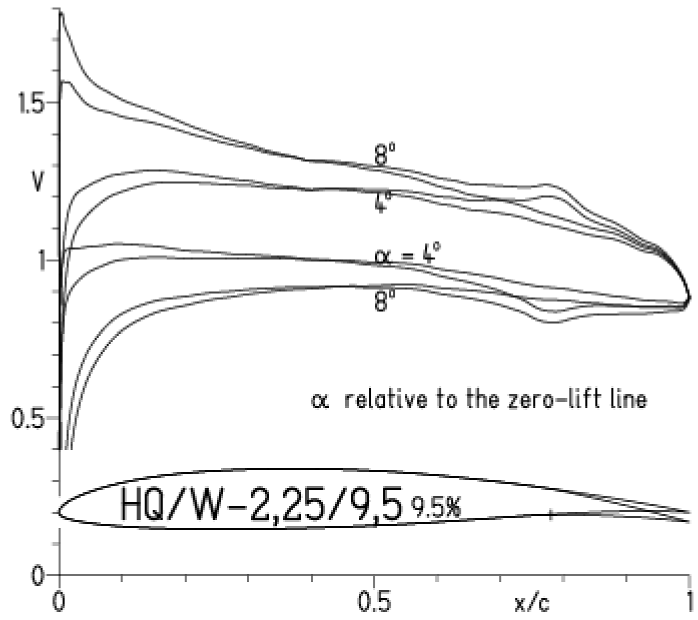


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

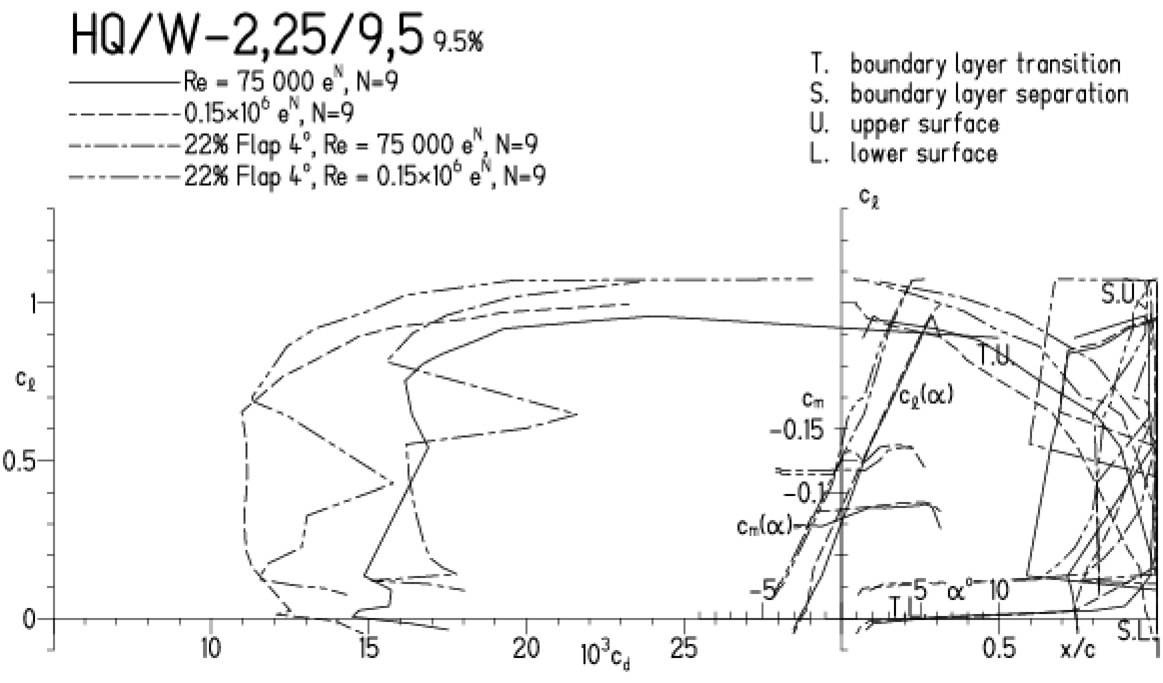


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

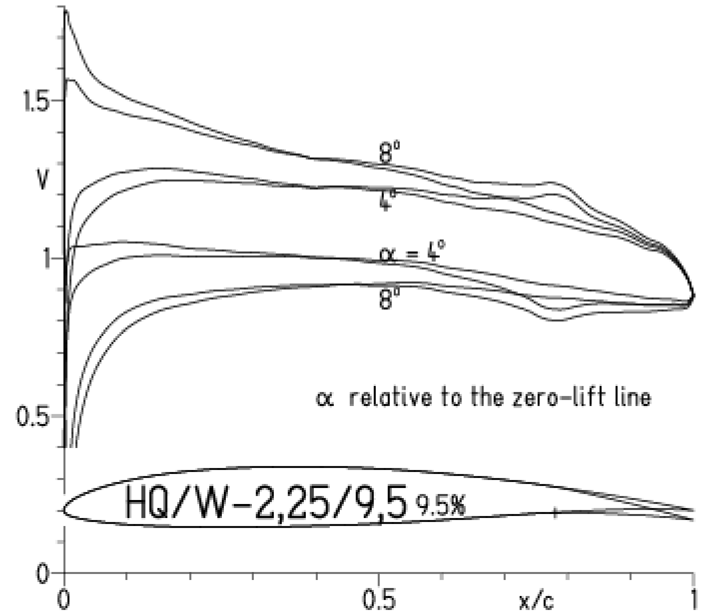


EPPLER 2005 V. 8.5.07 R

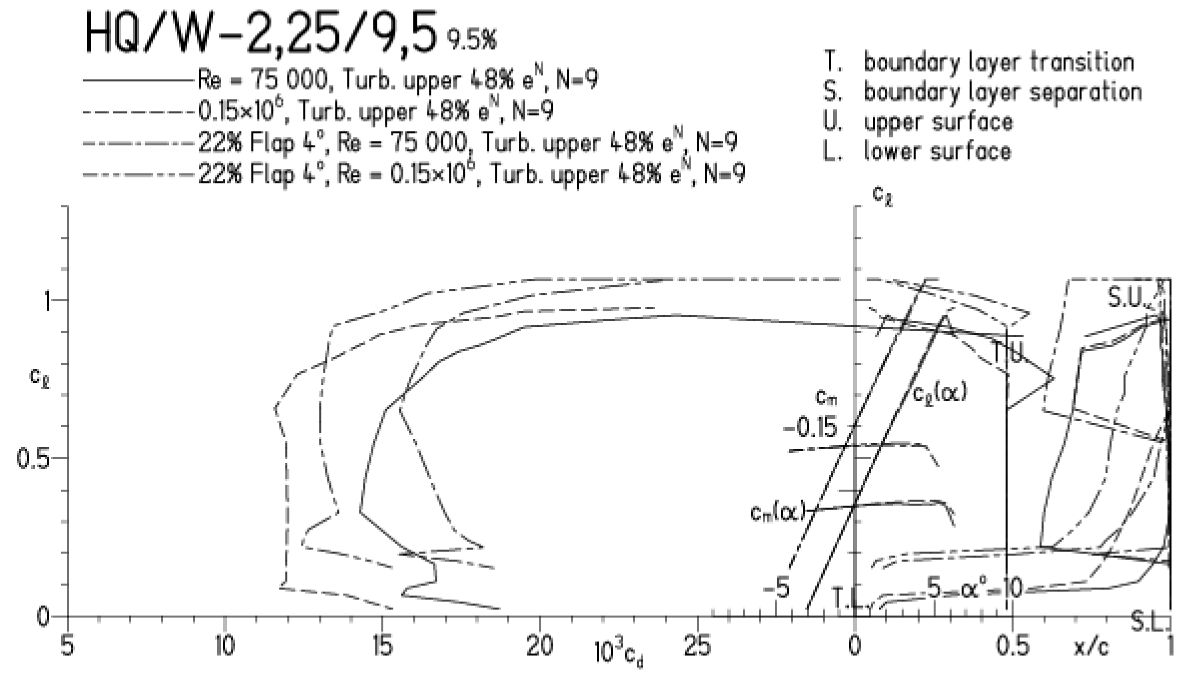


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

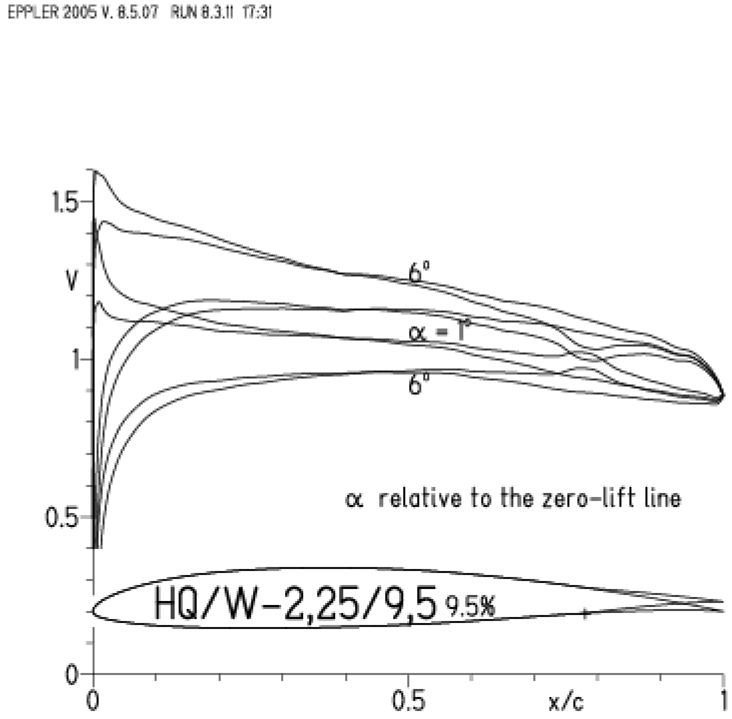
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

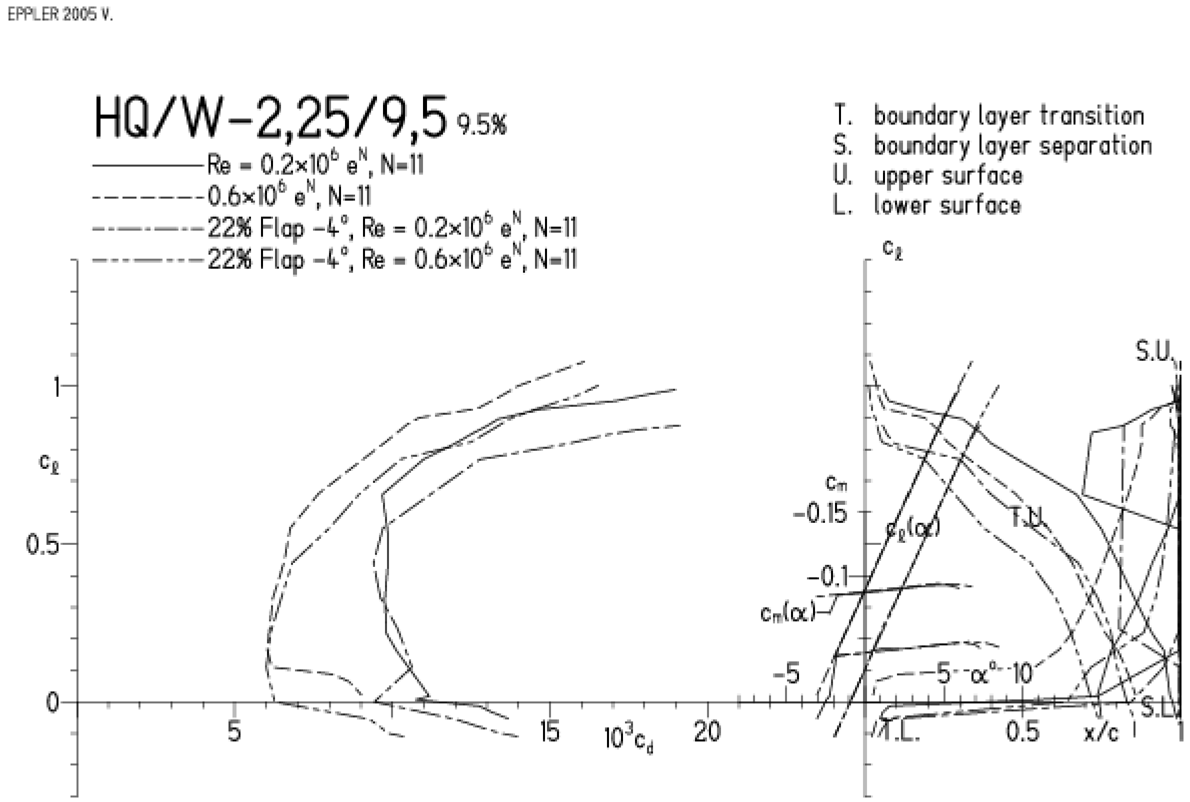


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



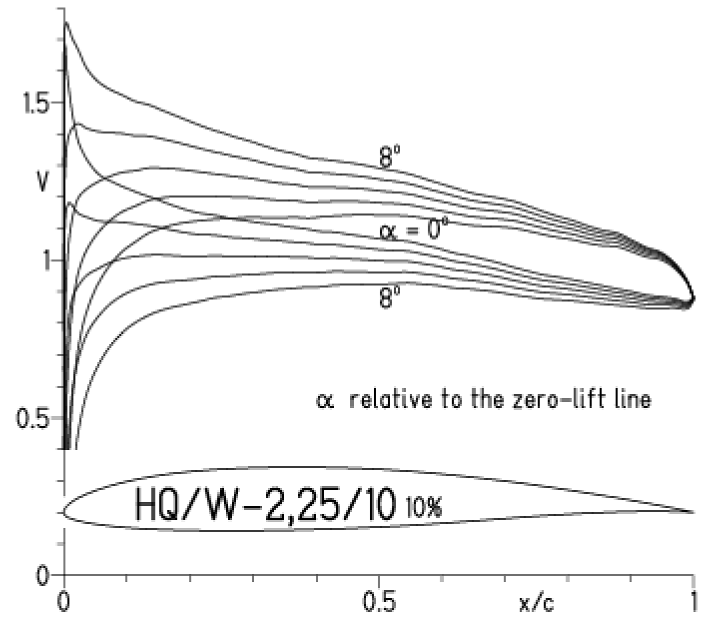
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



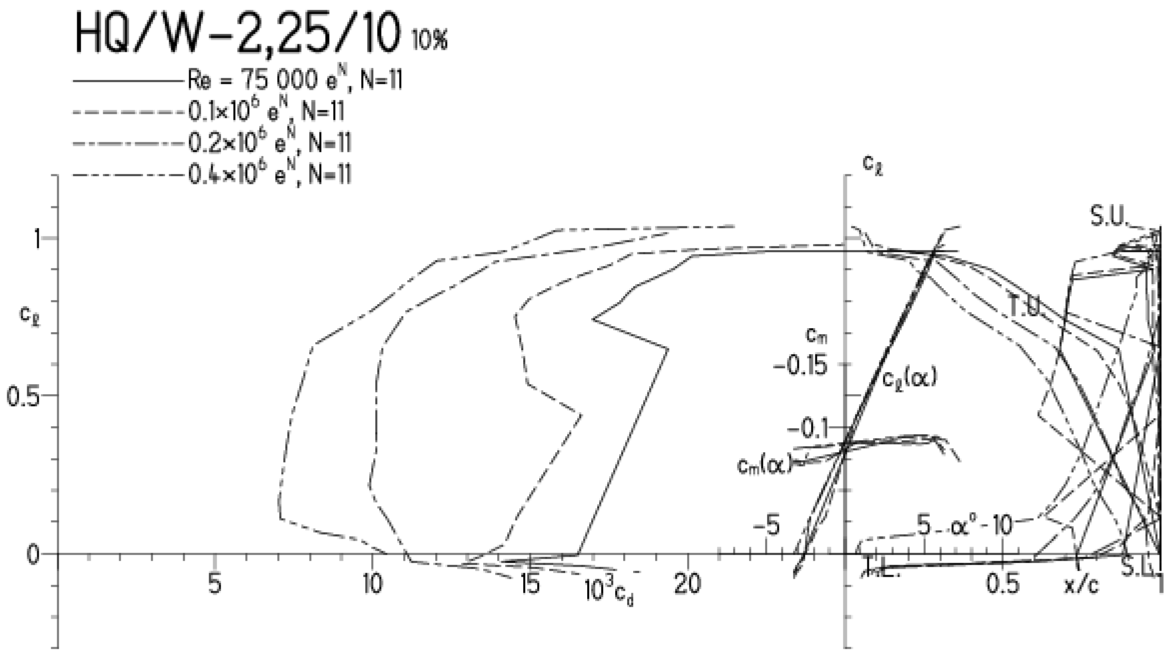


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

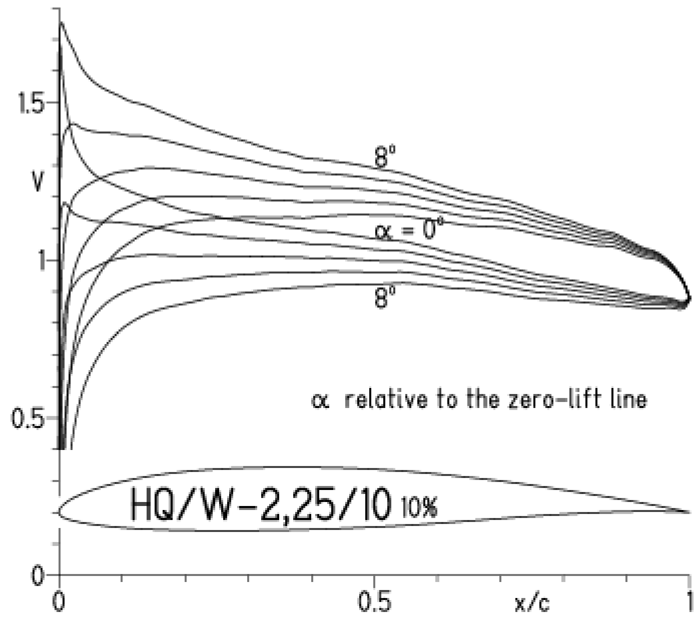


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

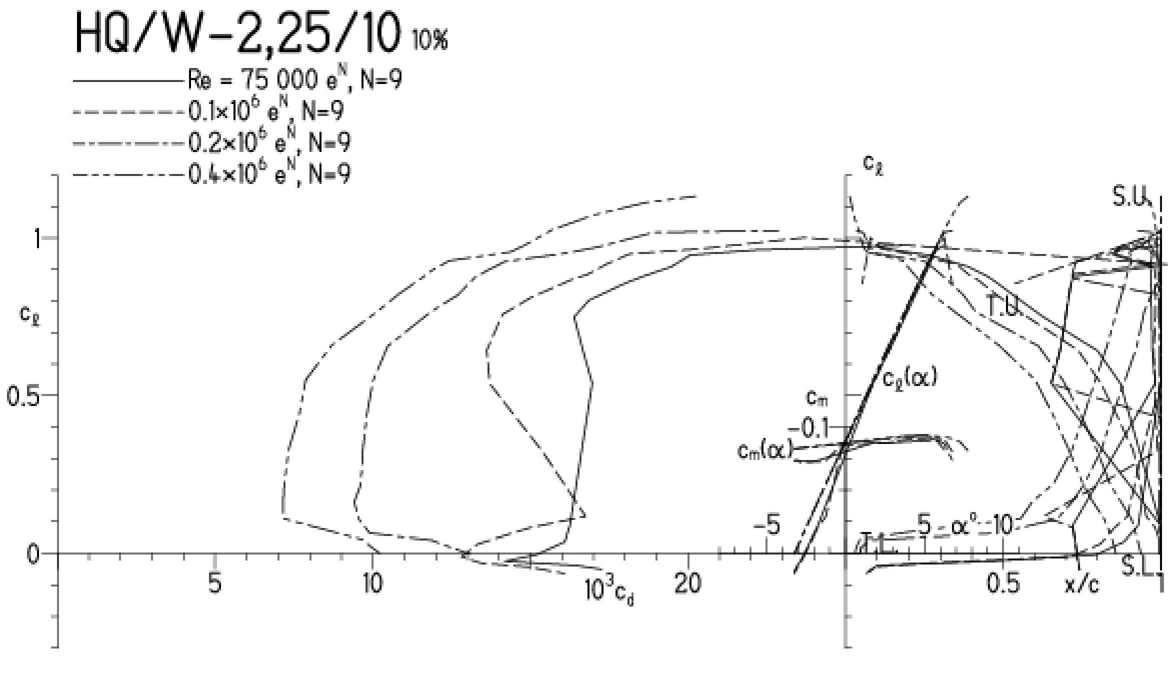


<u>HQ/W-2,25/10</u>, N=9

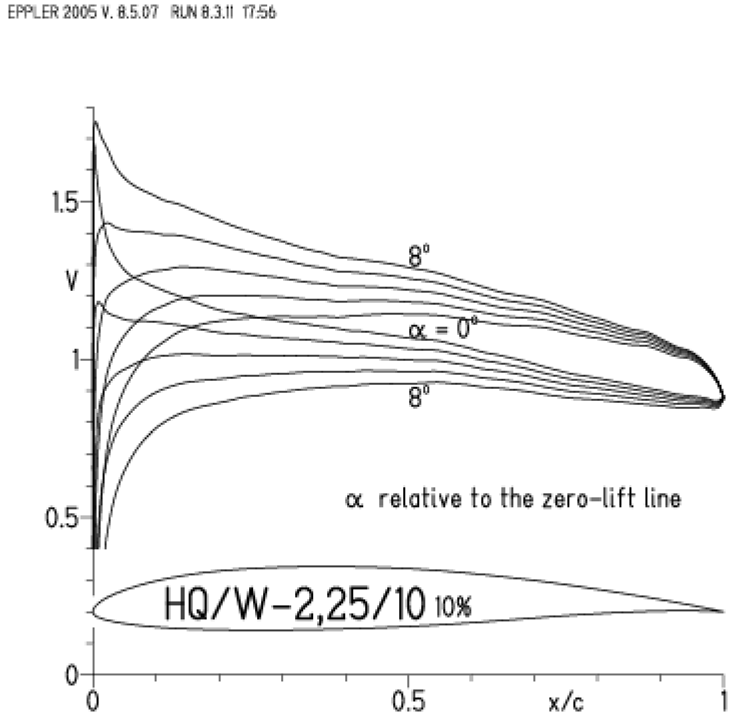
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

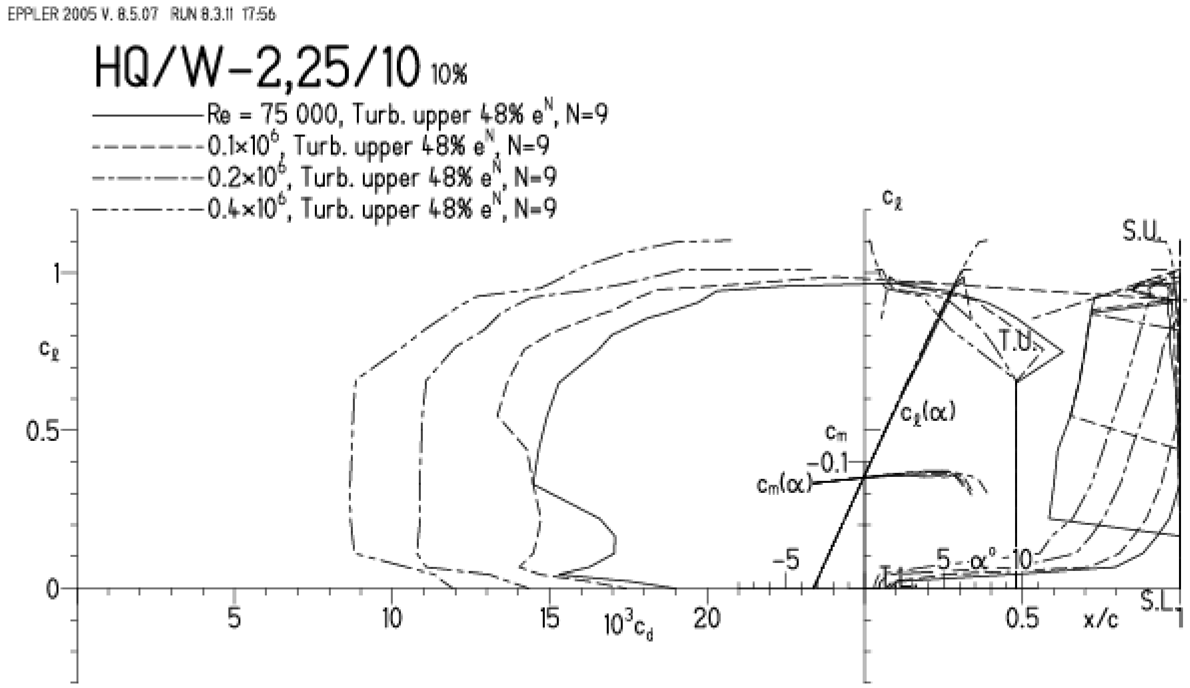


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



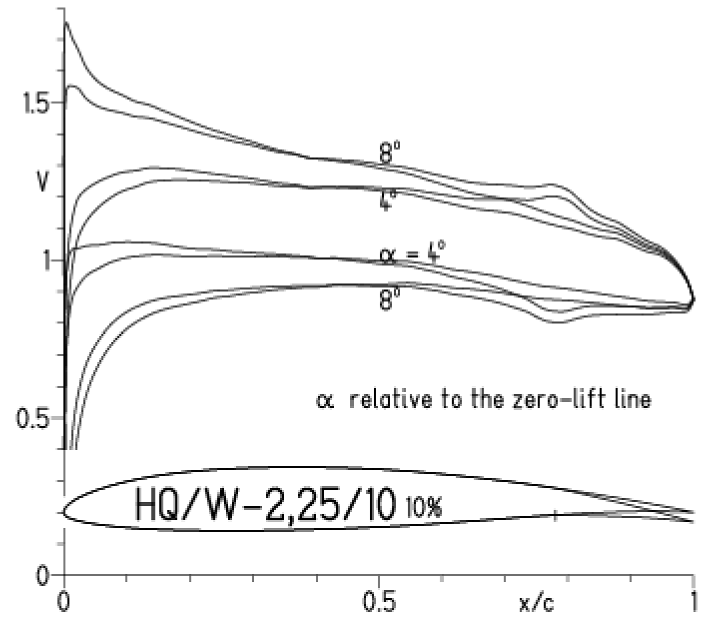
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



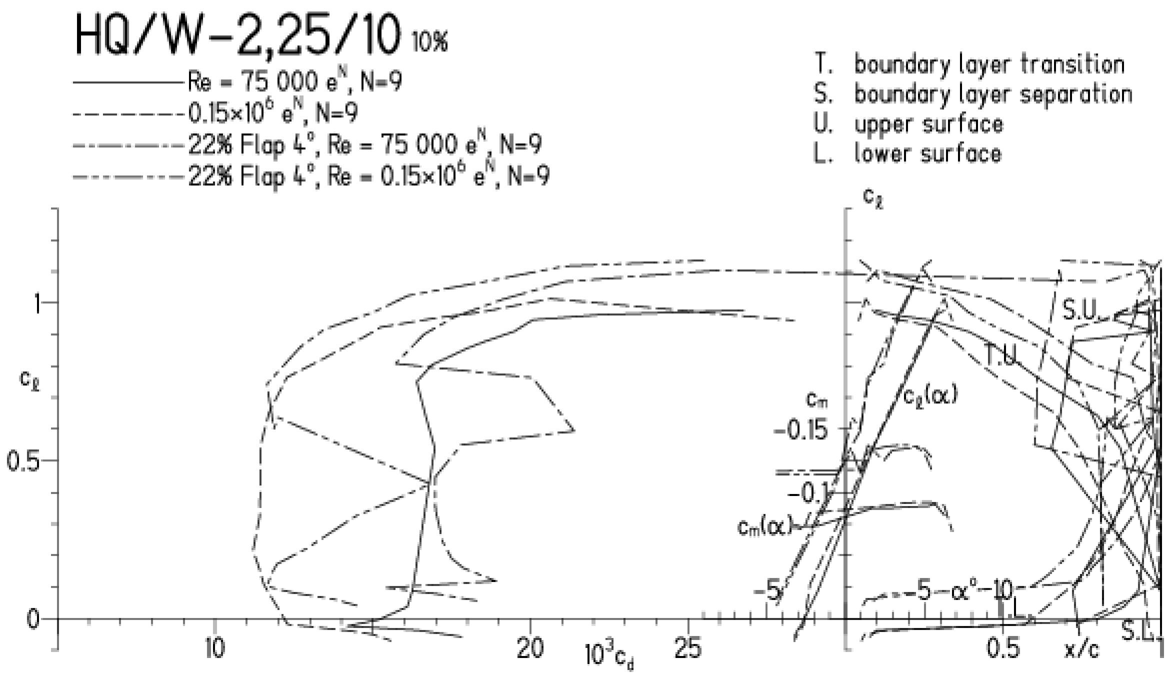


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

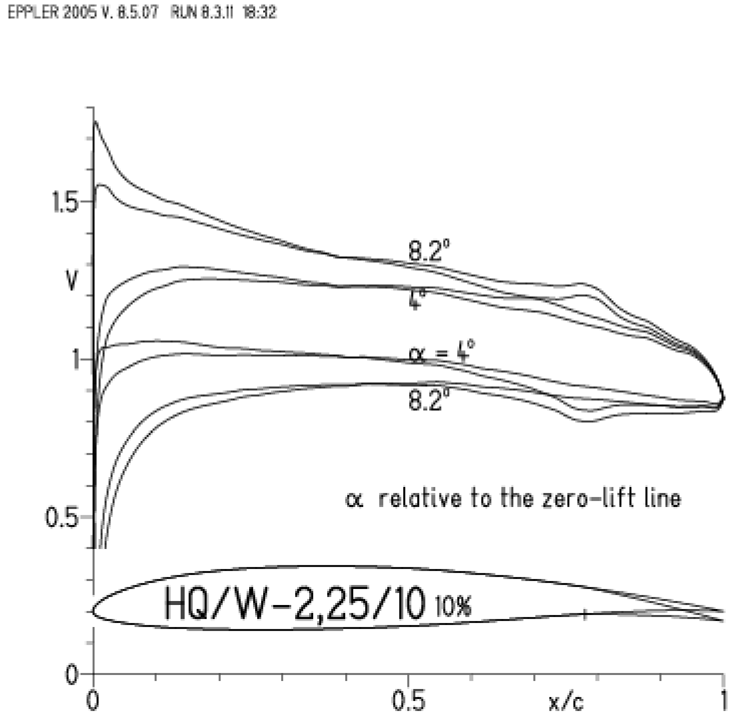
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

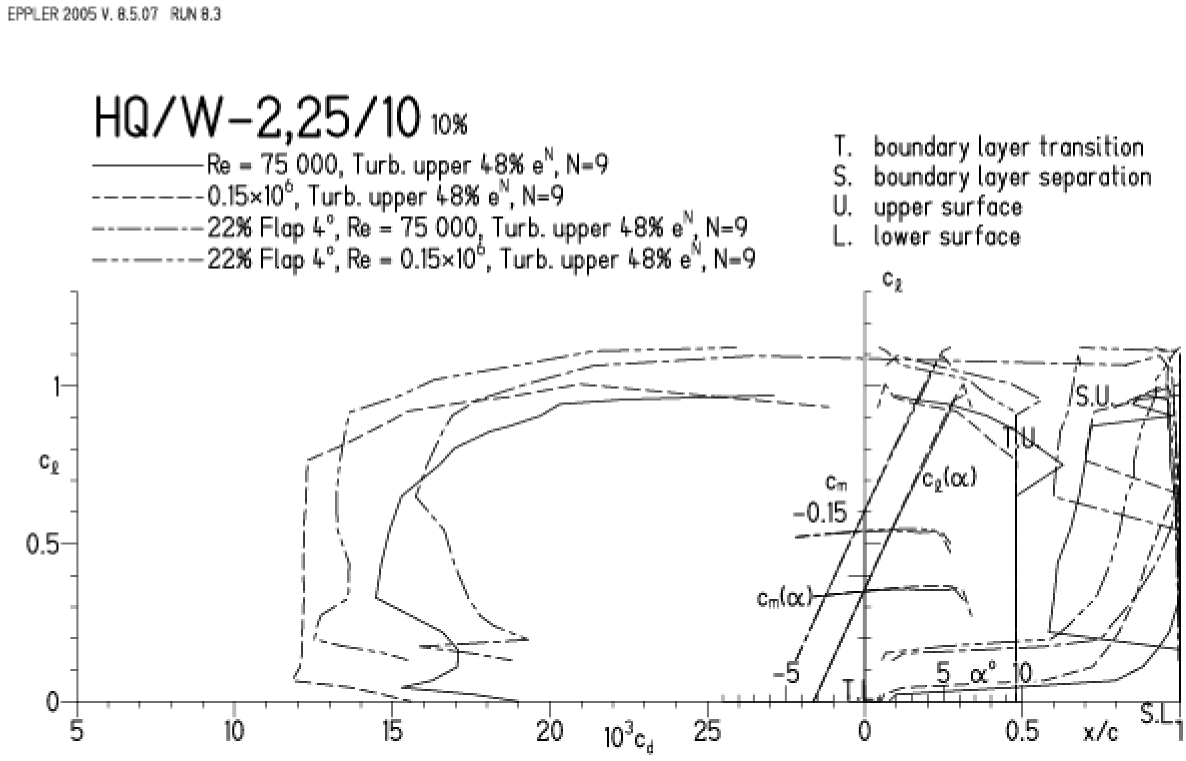


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



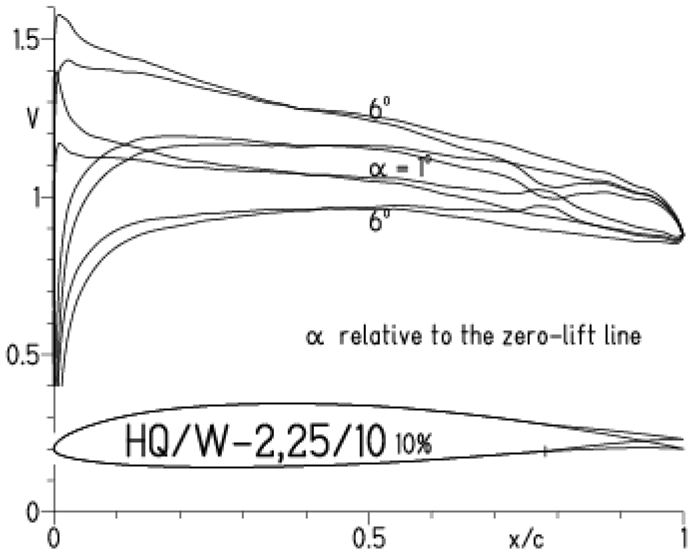
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



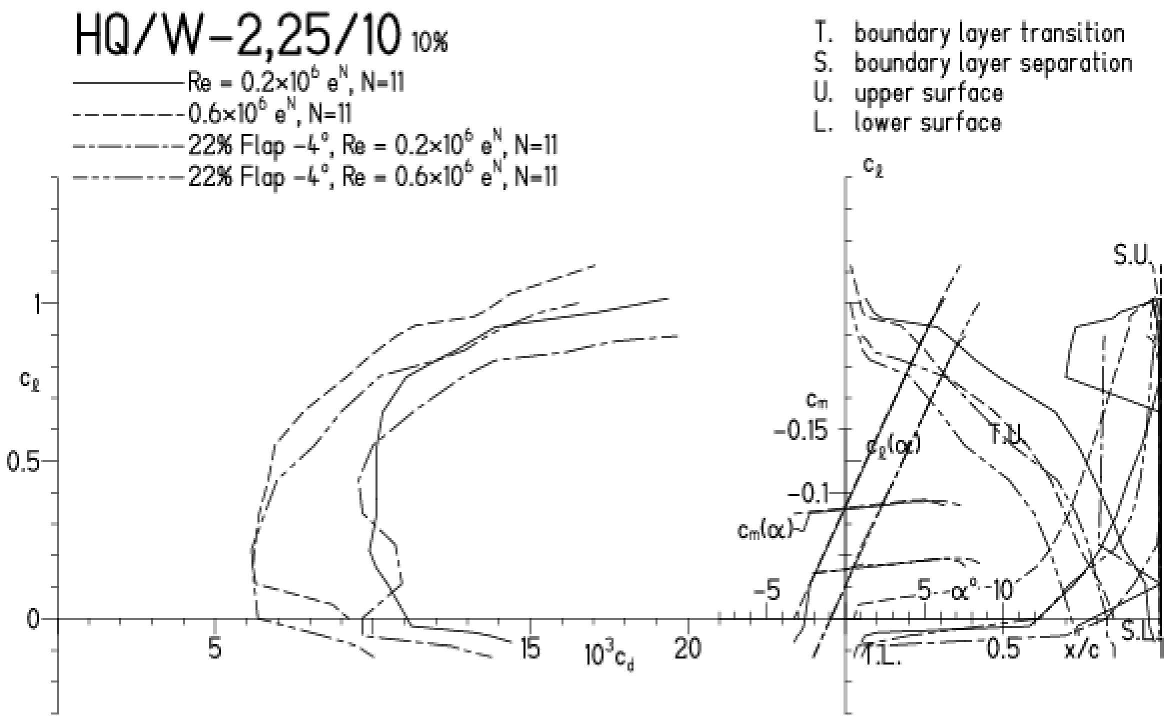


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

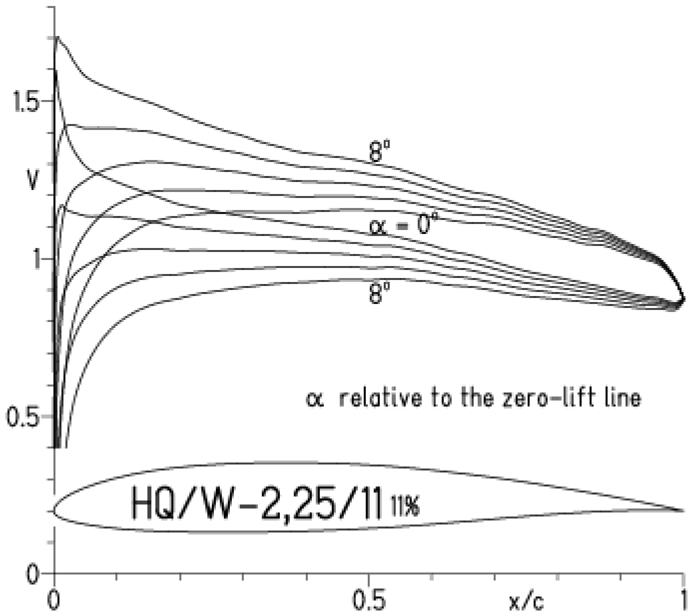


EPPLER 2005 V. 8.5.07 RUN

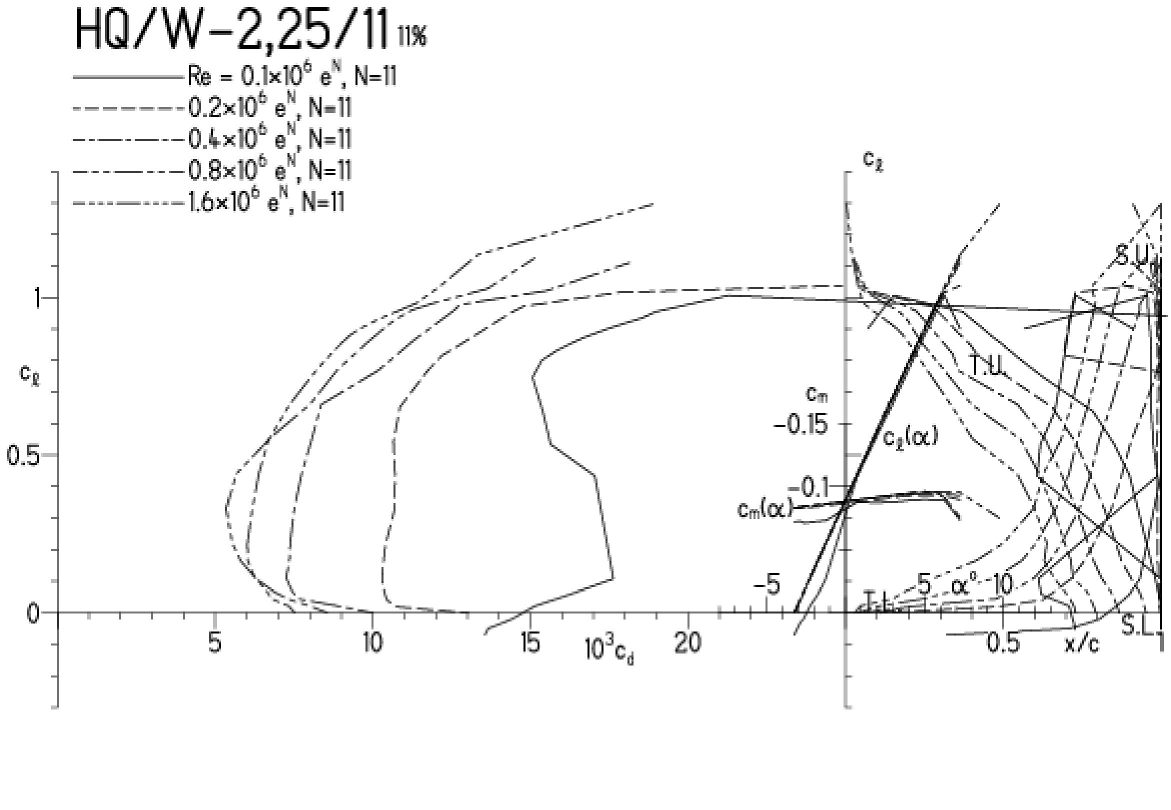


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

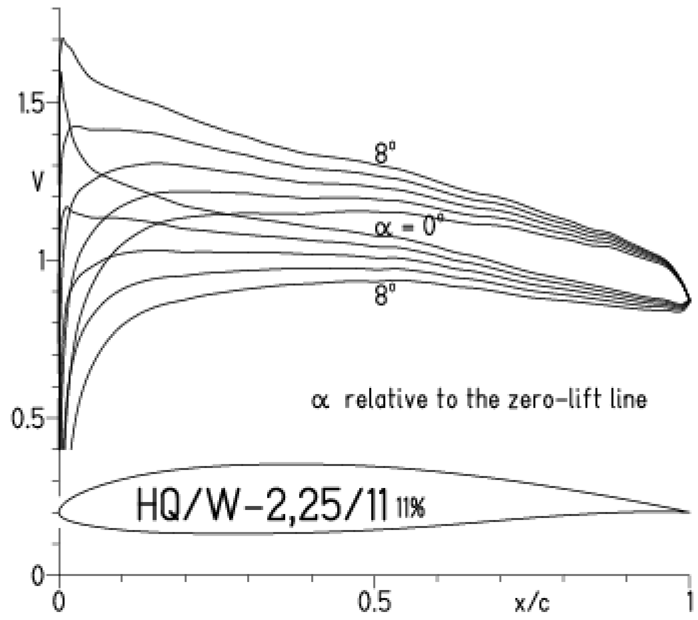


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

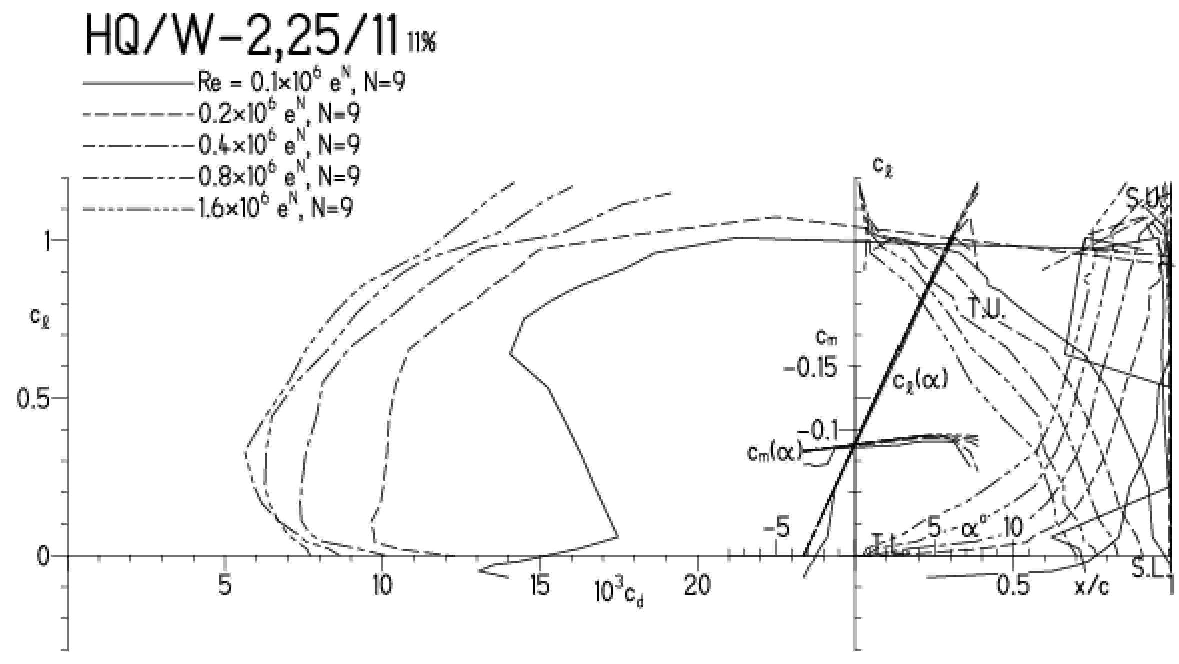


<u>HQQ/W-2,25/11</u>, N=9

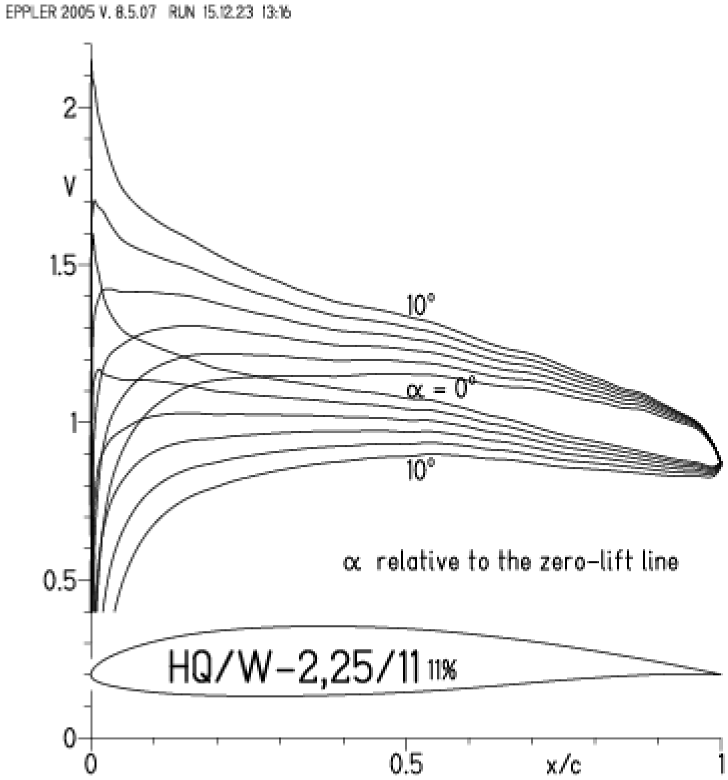
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

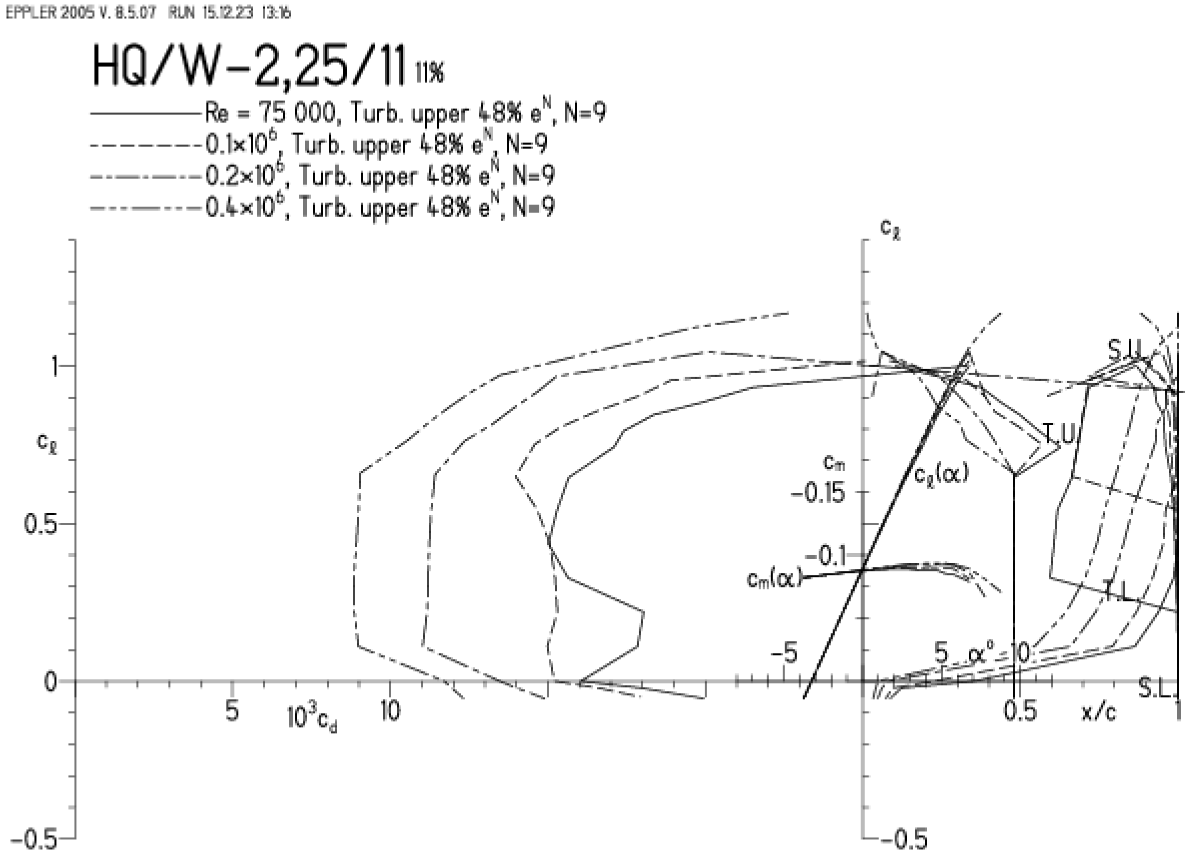


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



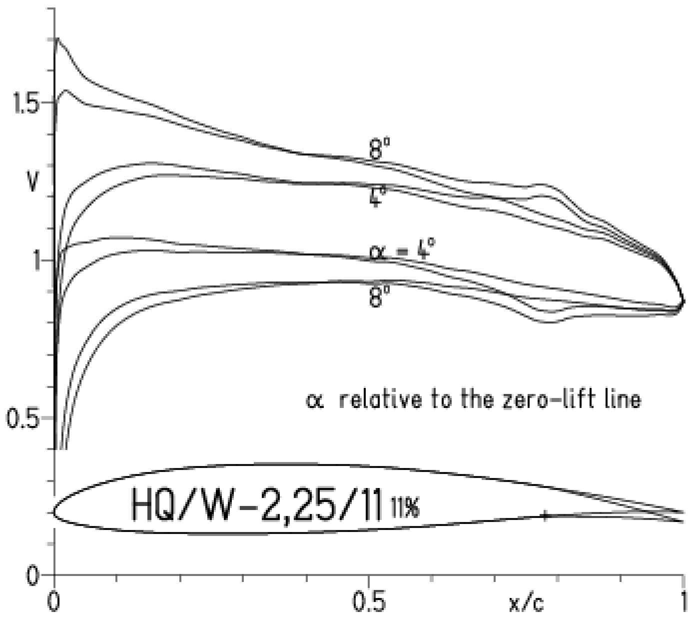
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



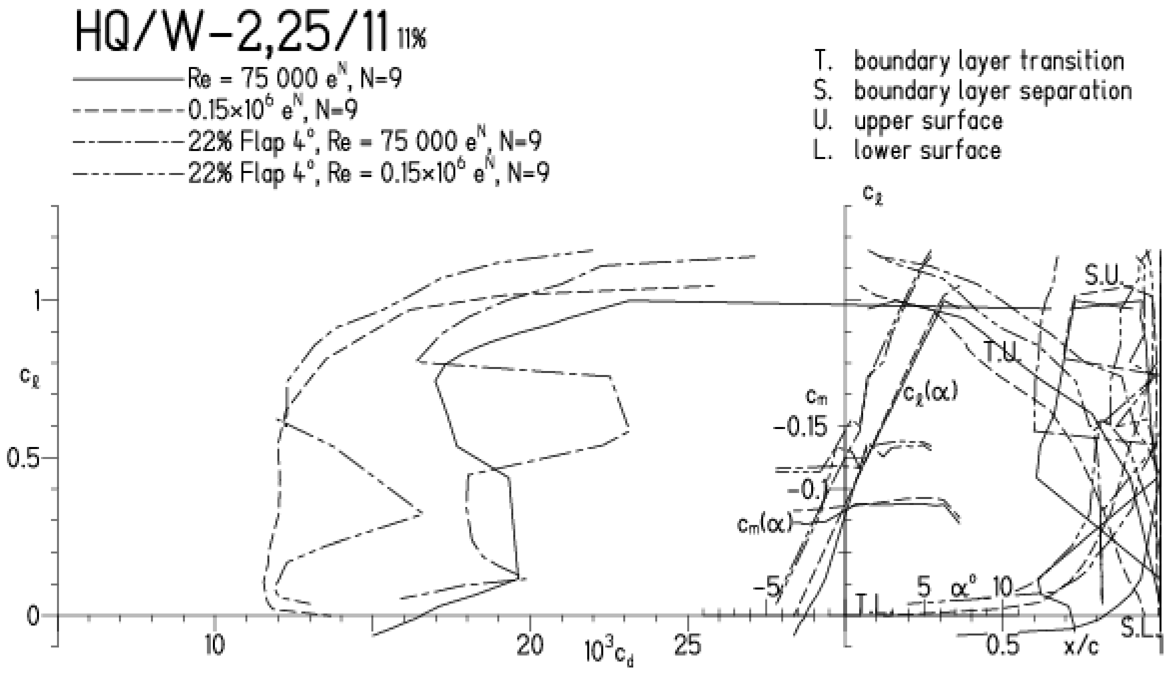


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

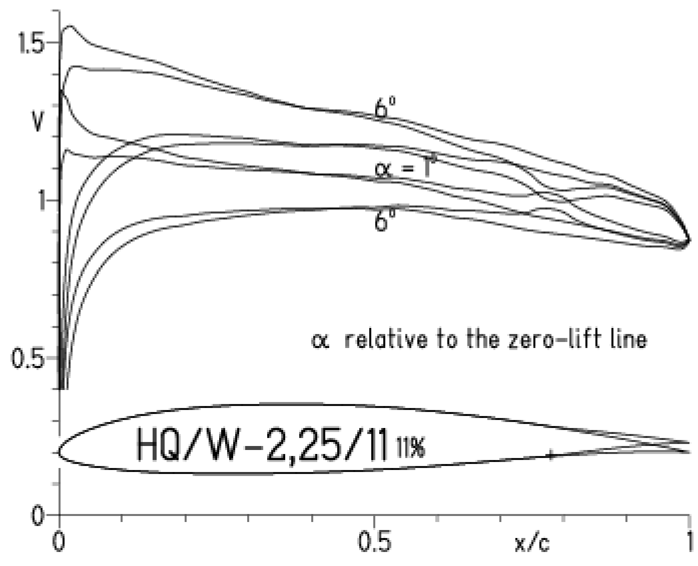


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

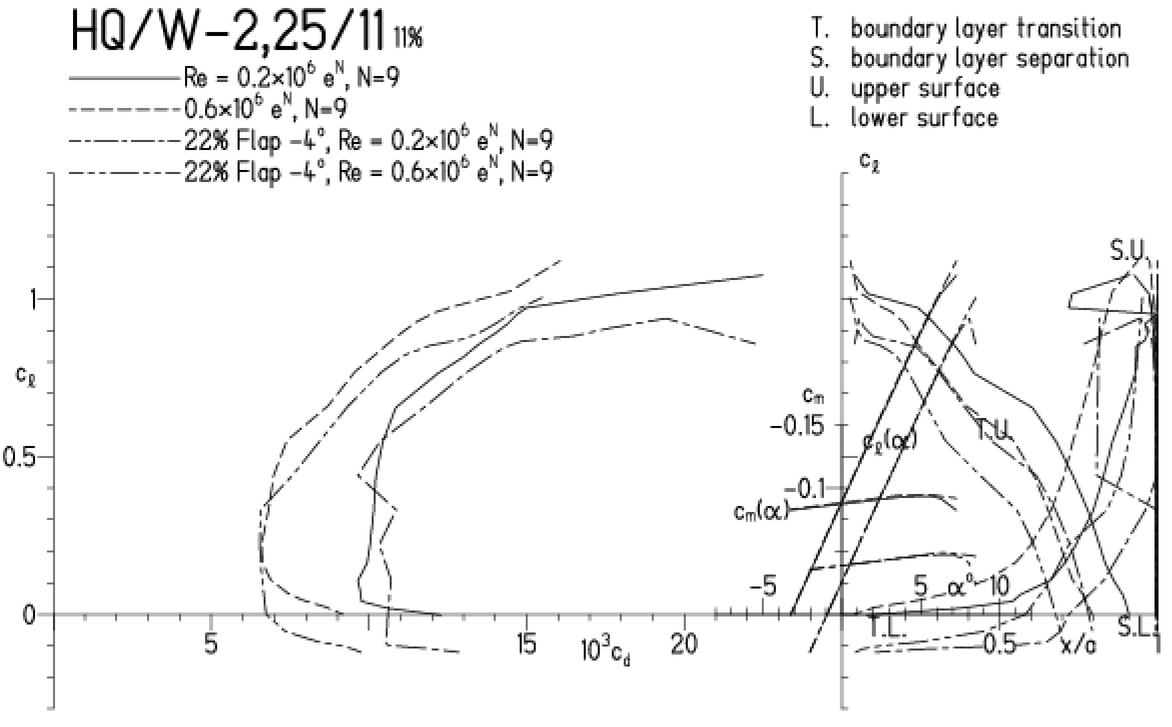


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

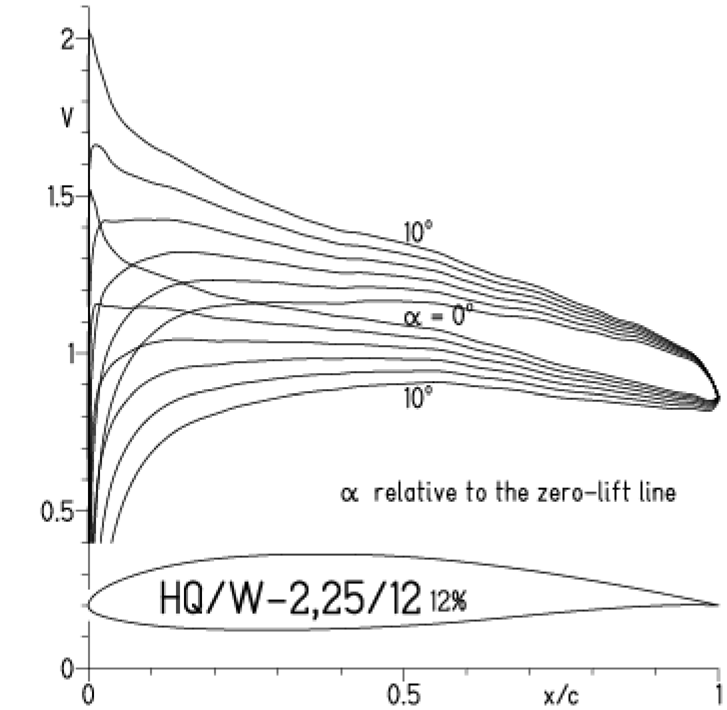


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

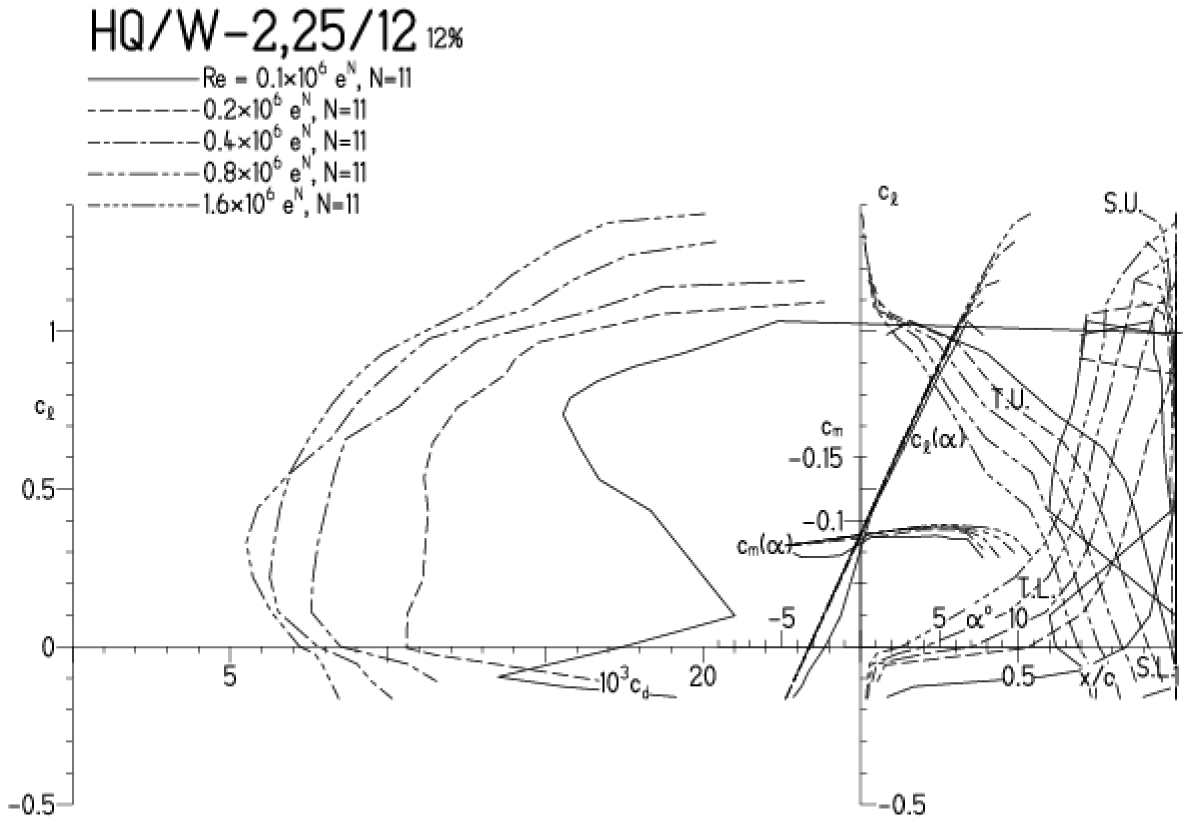


HQ/W-2,25/12, N=11

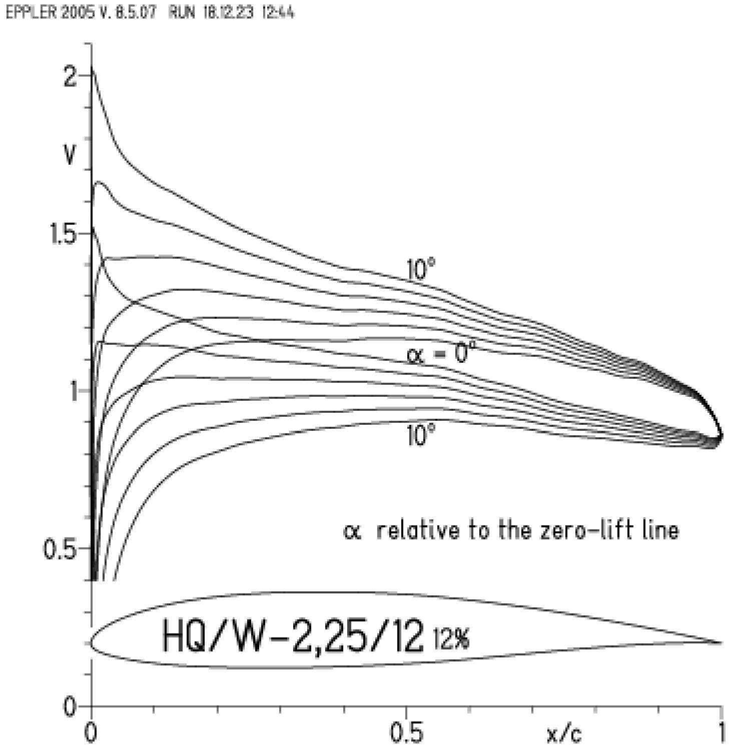
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

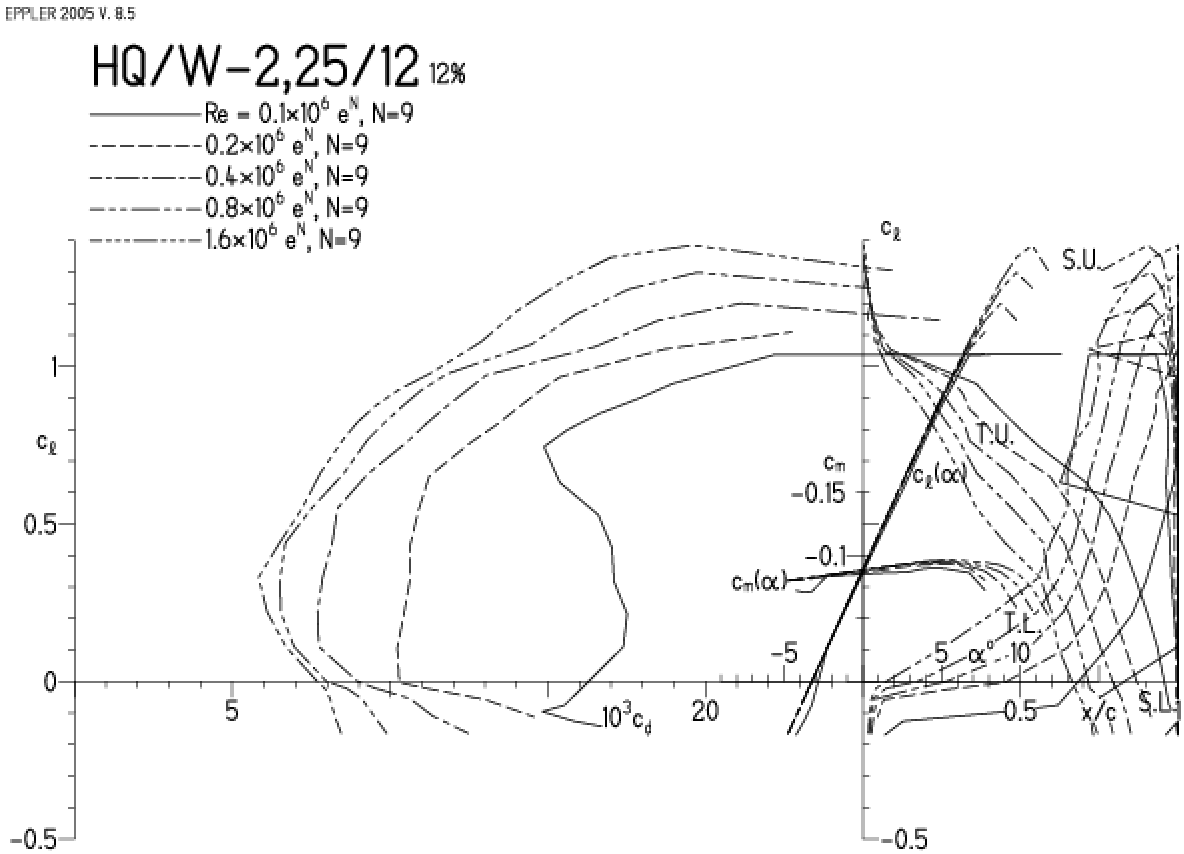


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

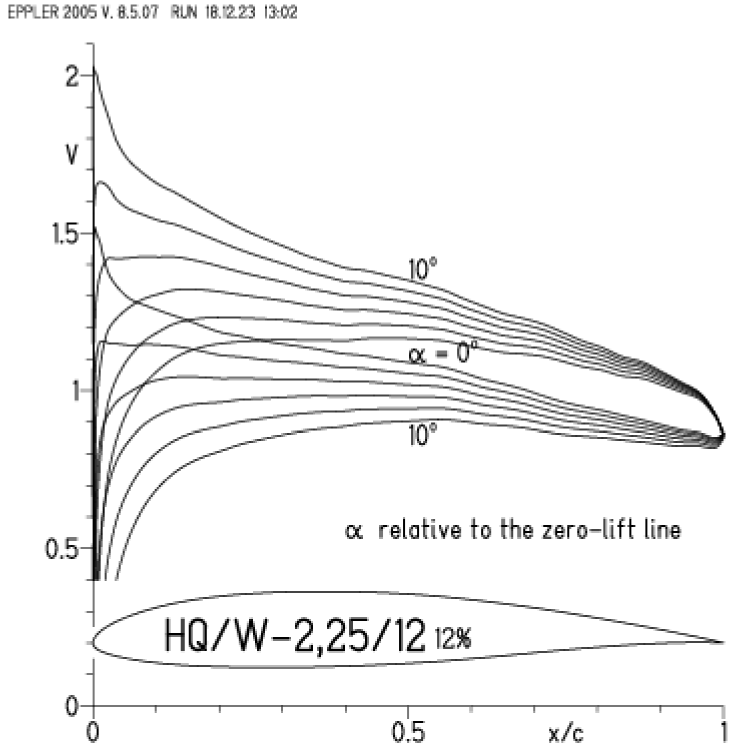


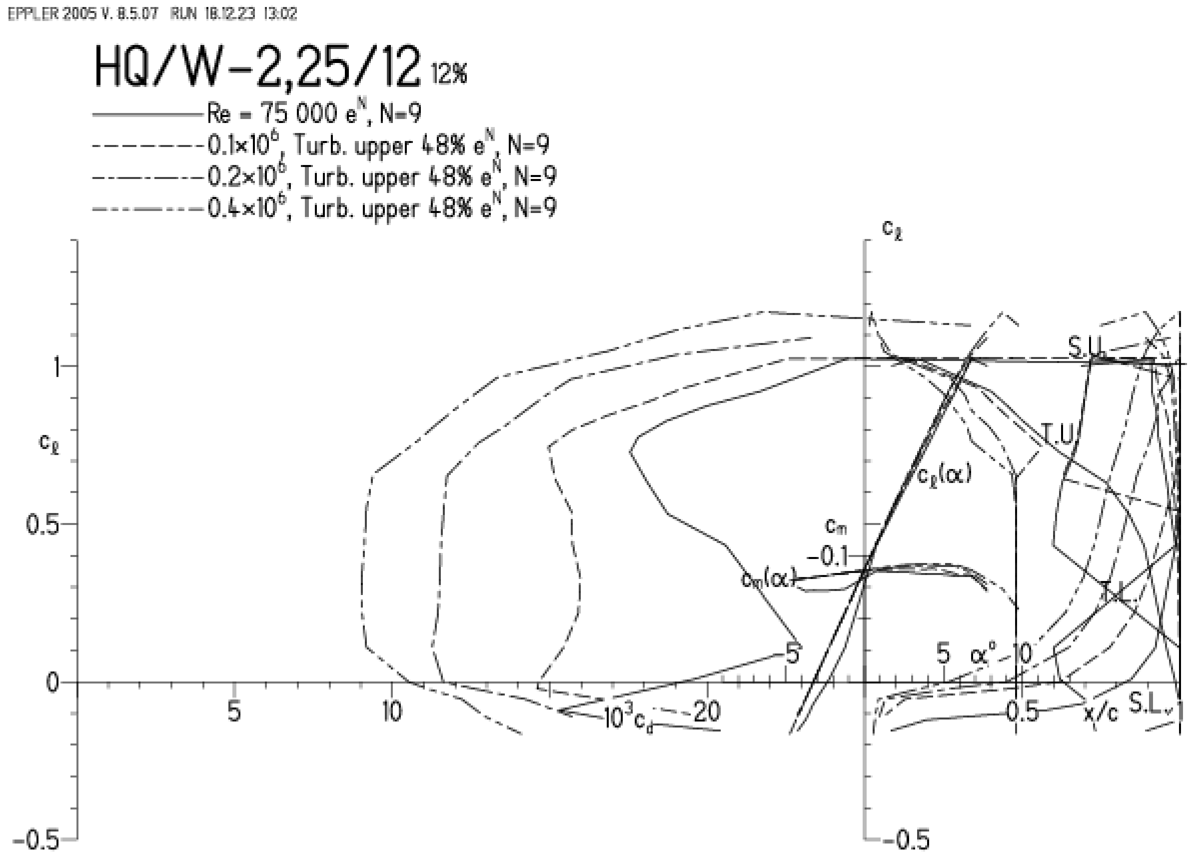
<u>HQ/W-2,25/12</u>, N=9





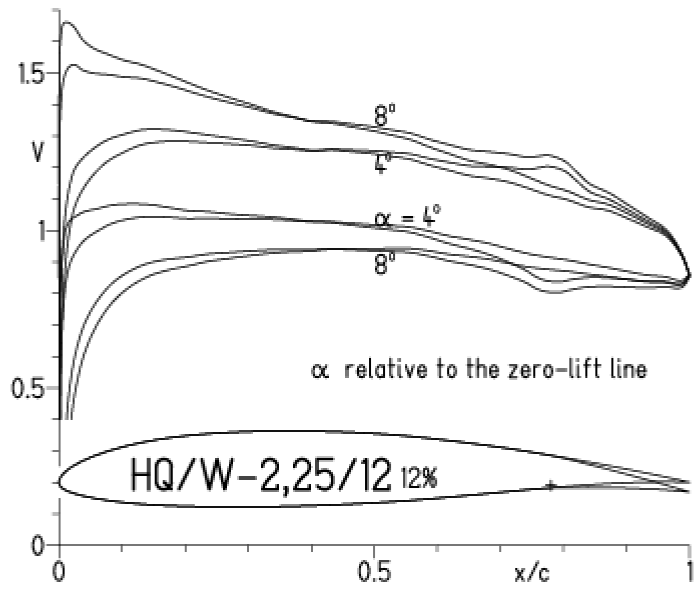
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



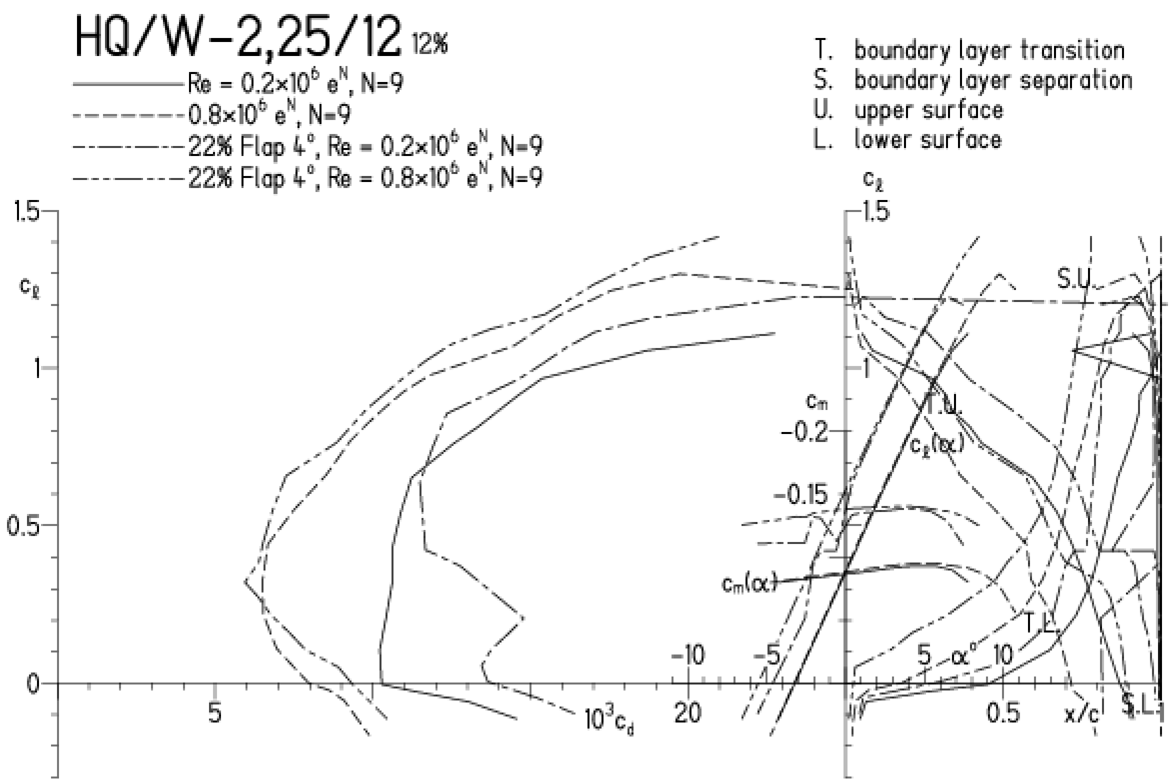


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

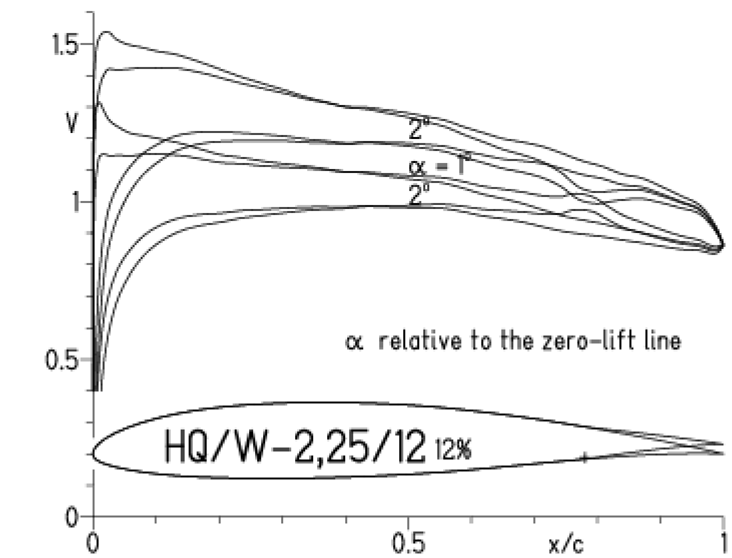


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

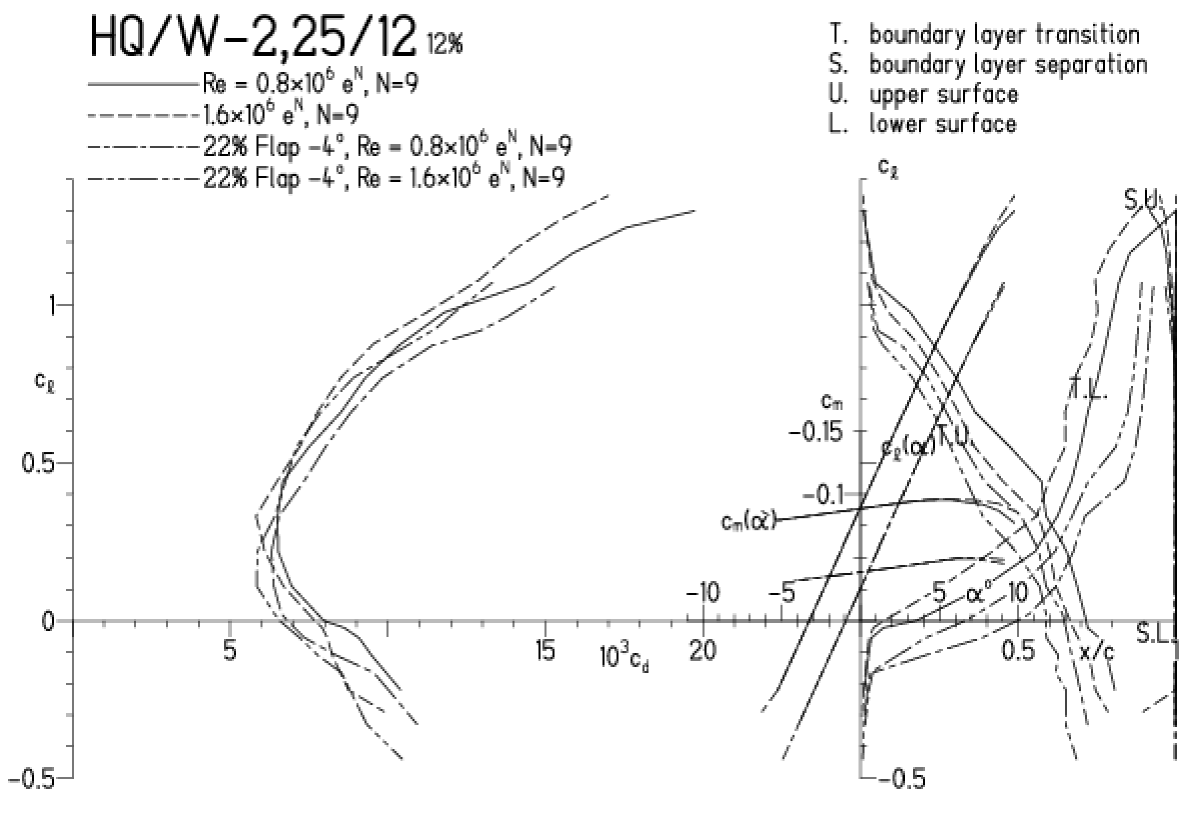


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

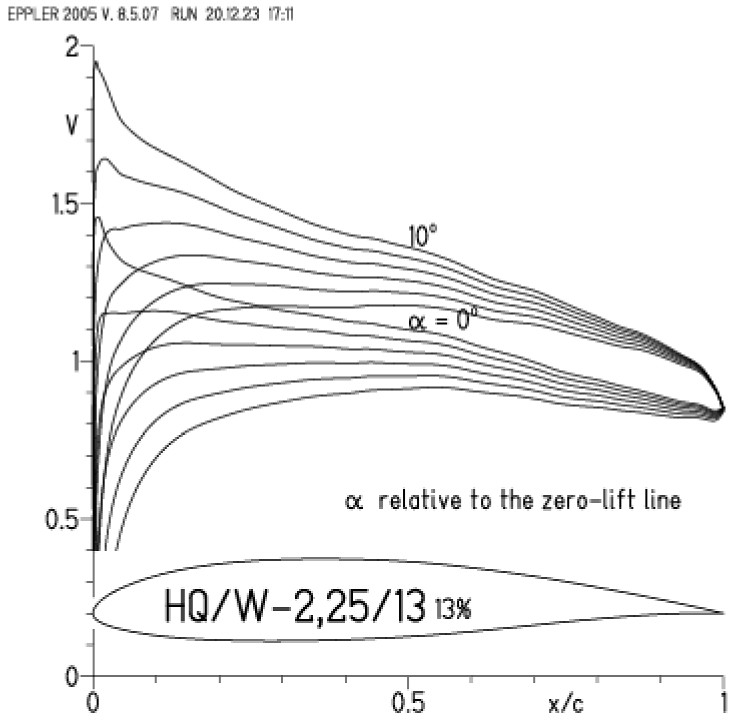
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

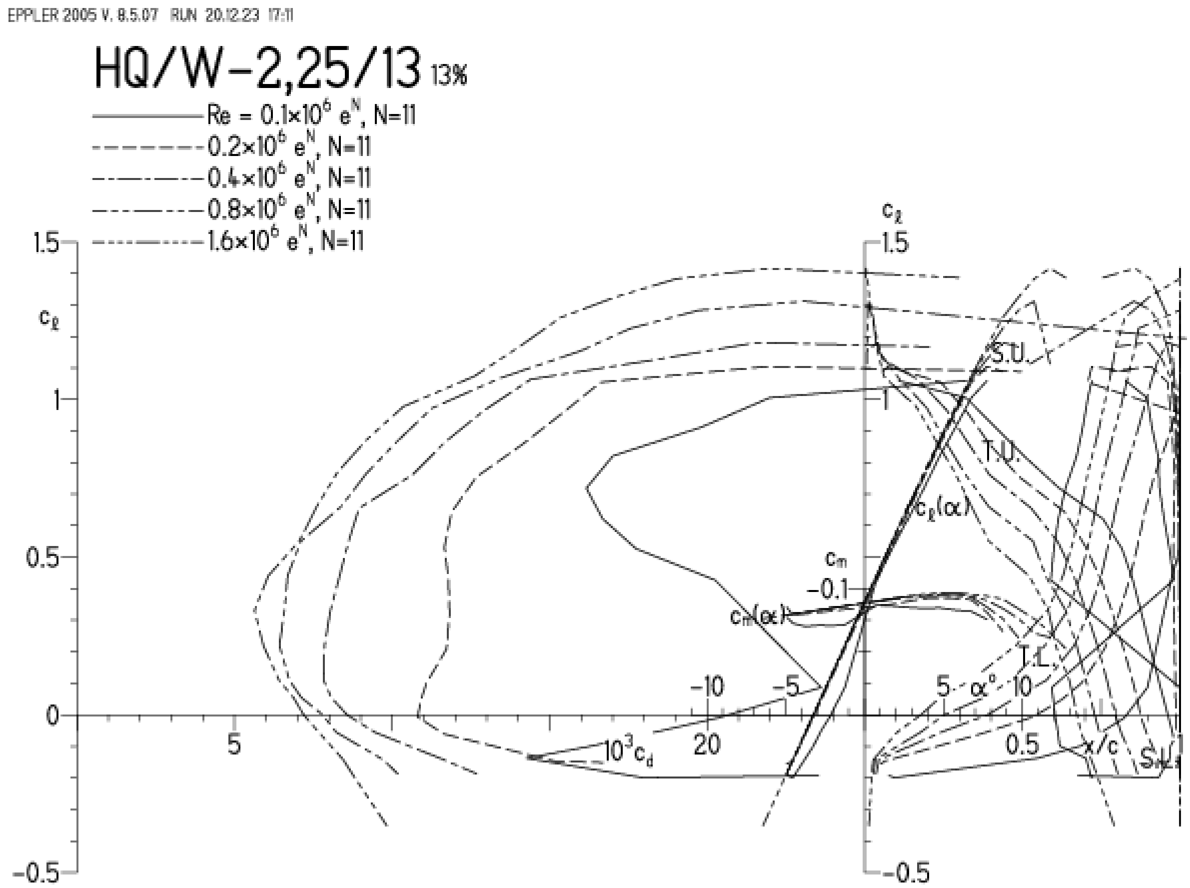


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

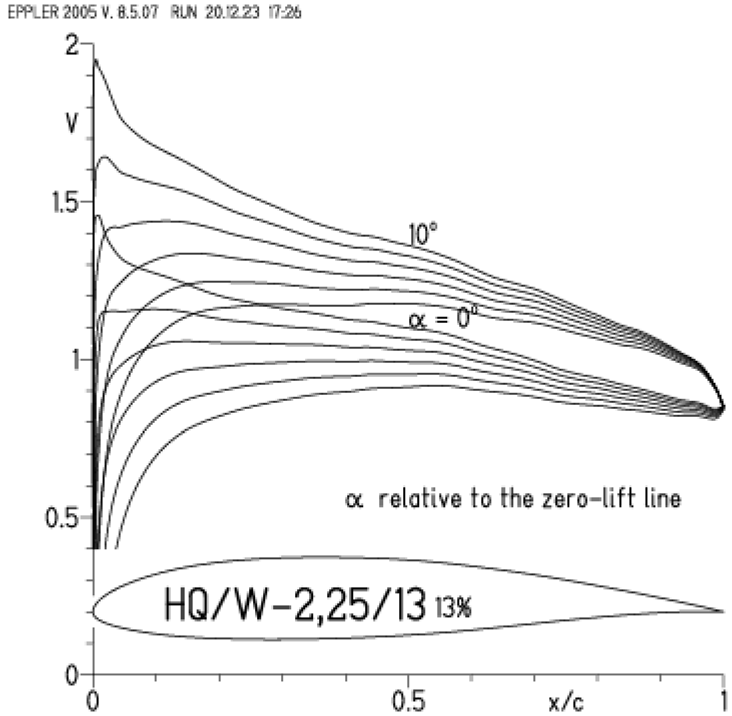


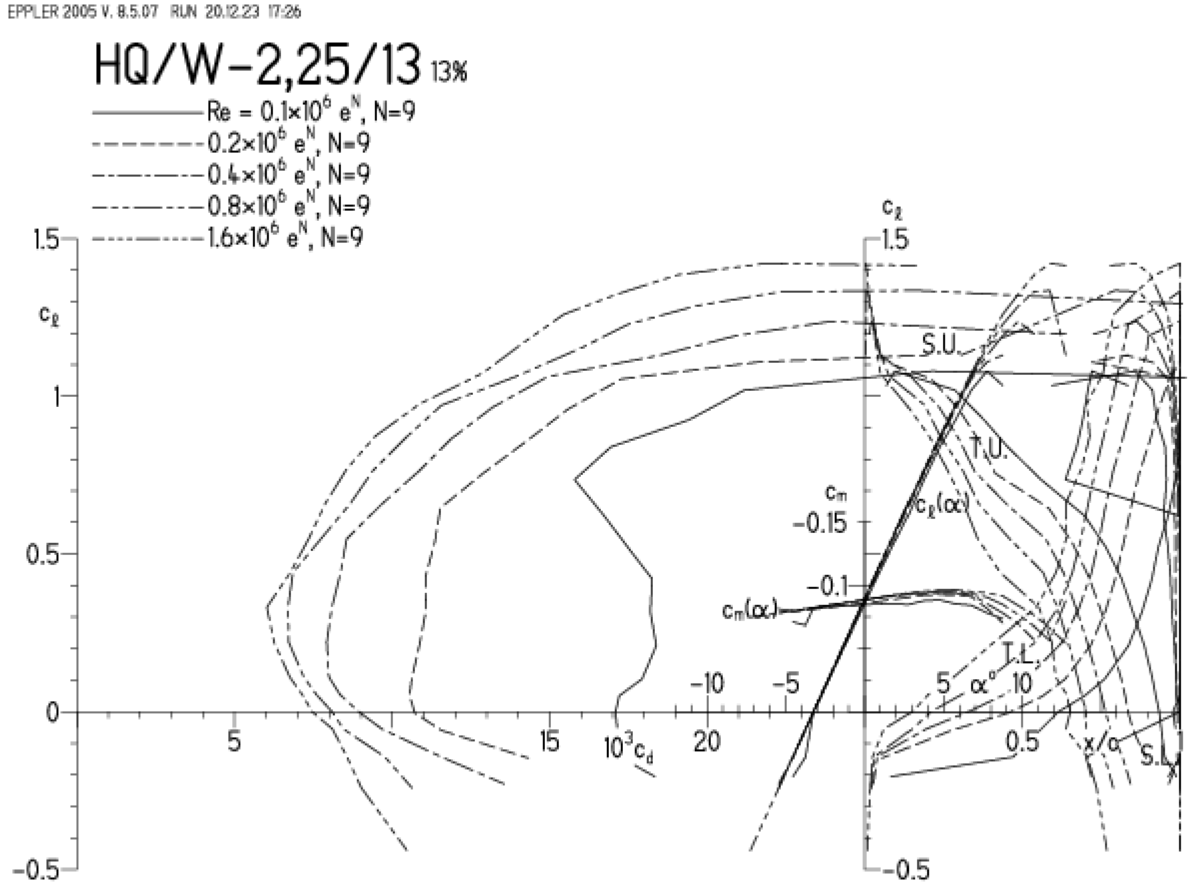
<u>HQ/W-2,25/13</u>, N=11



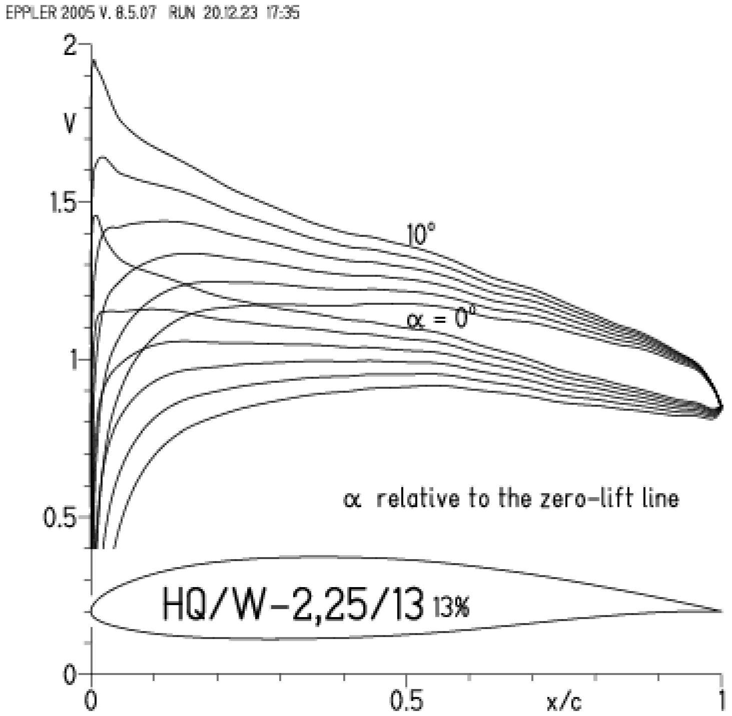


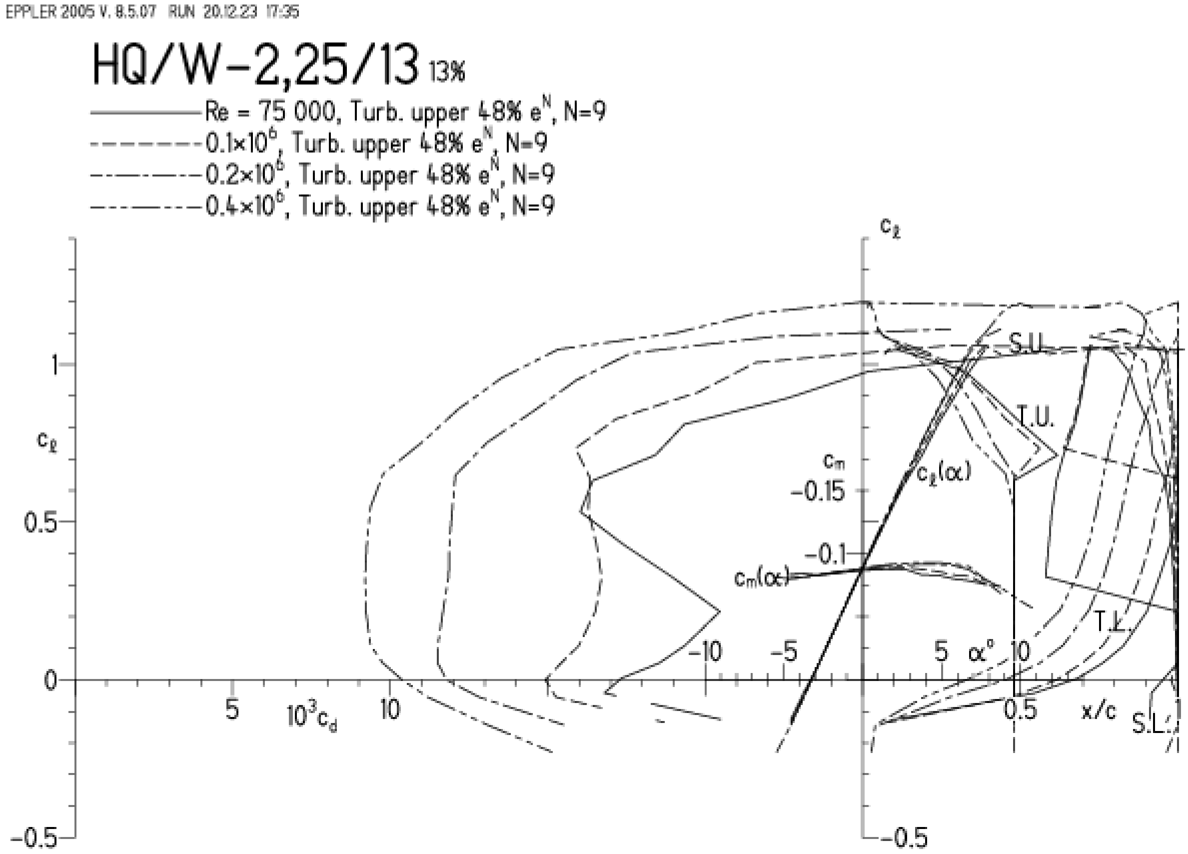
<u>HQ/W-2,25/13</u>, N=9





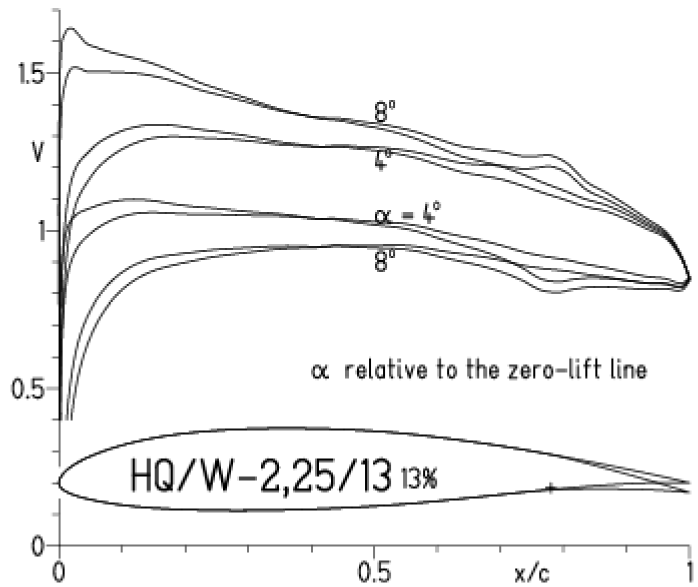
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



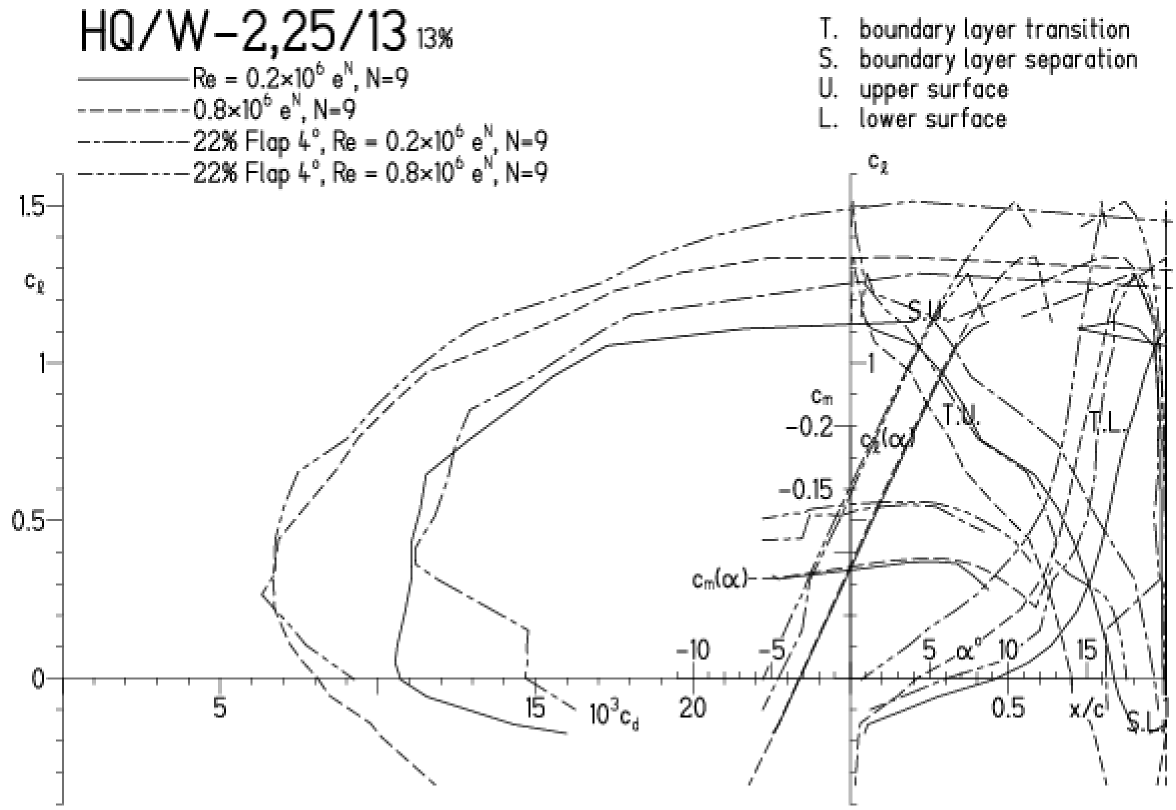


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

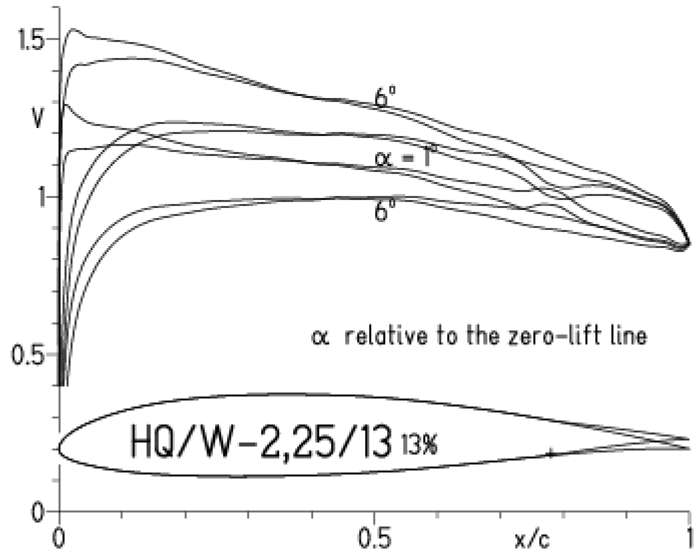


EPPLER 2005 V.

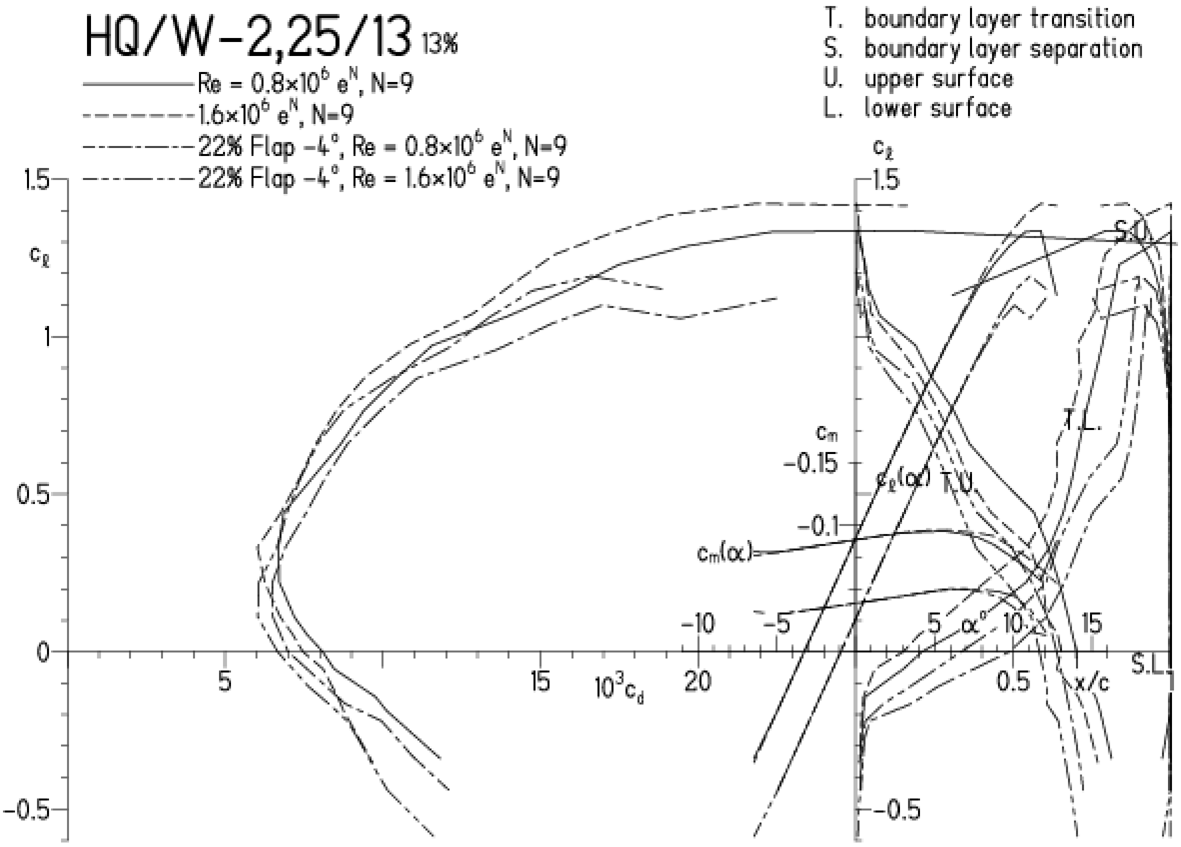


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

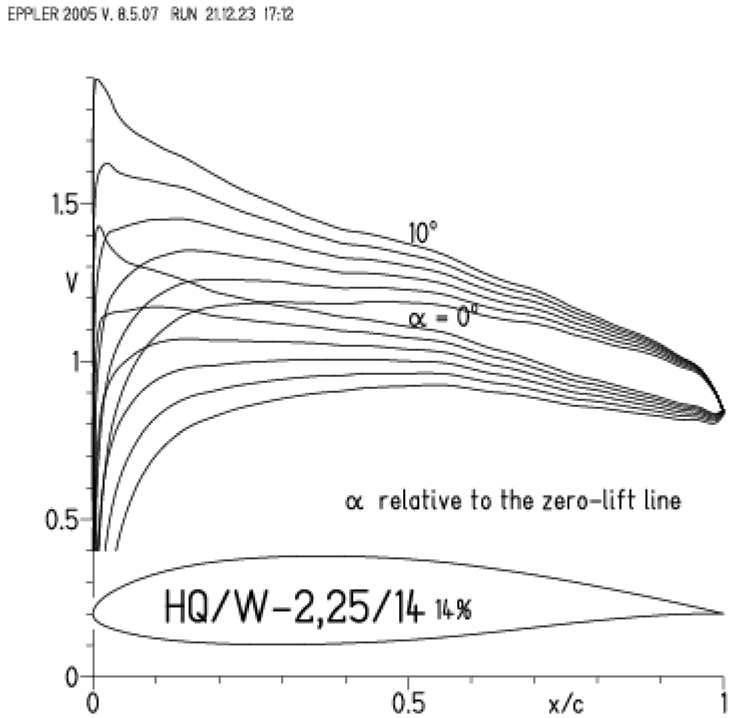
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

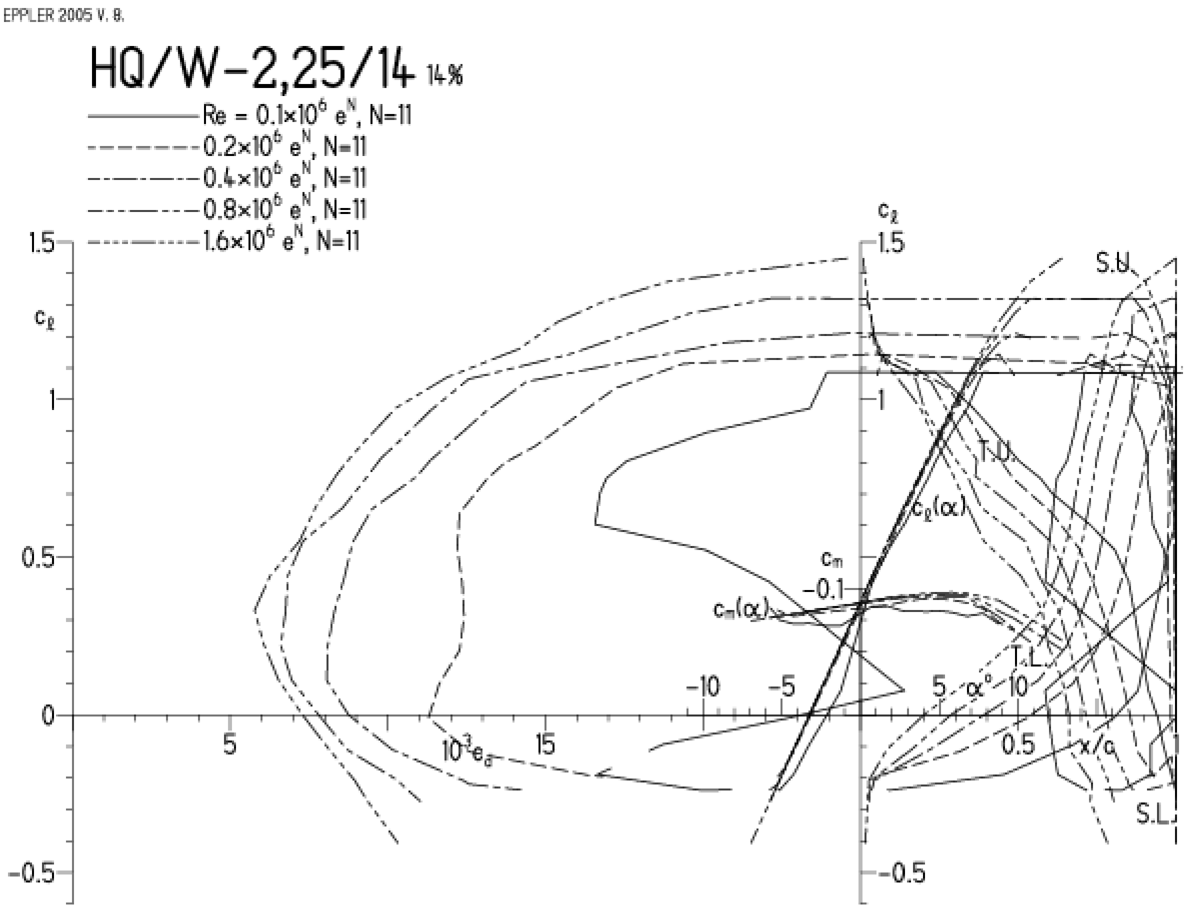


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

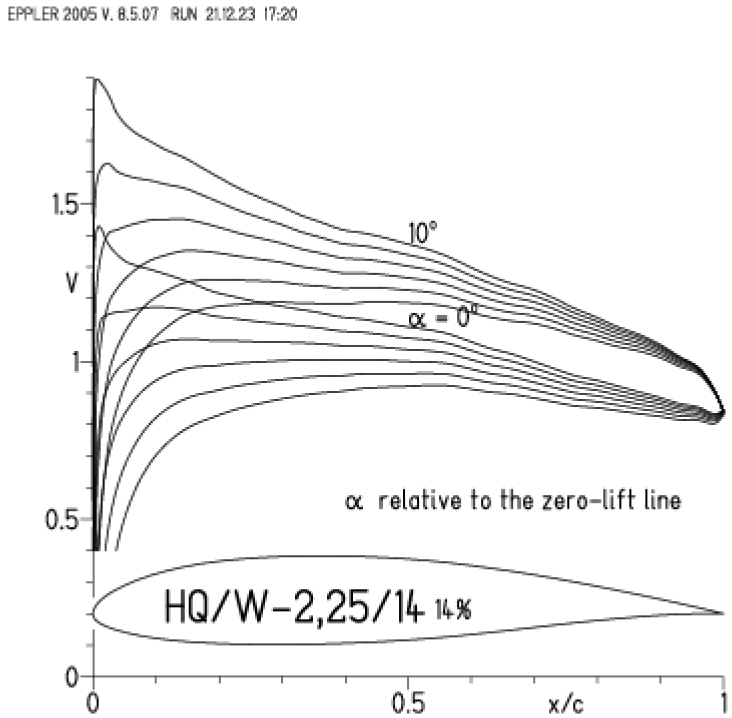


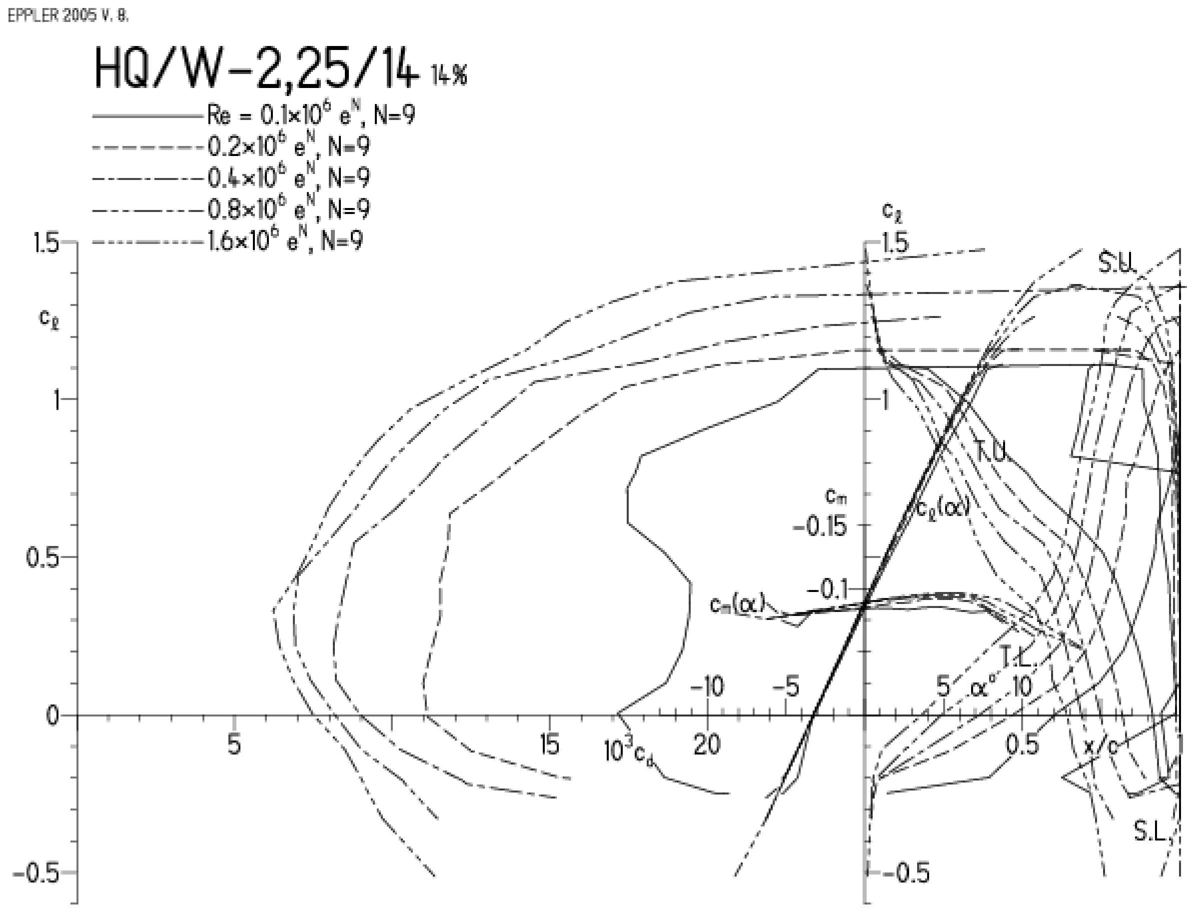
HQ/W-2,25/14, N=11





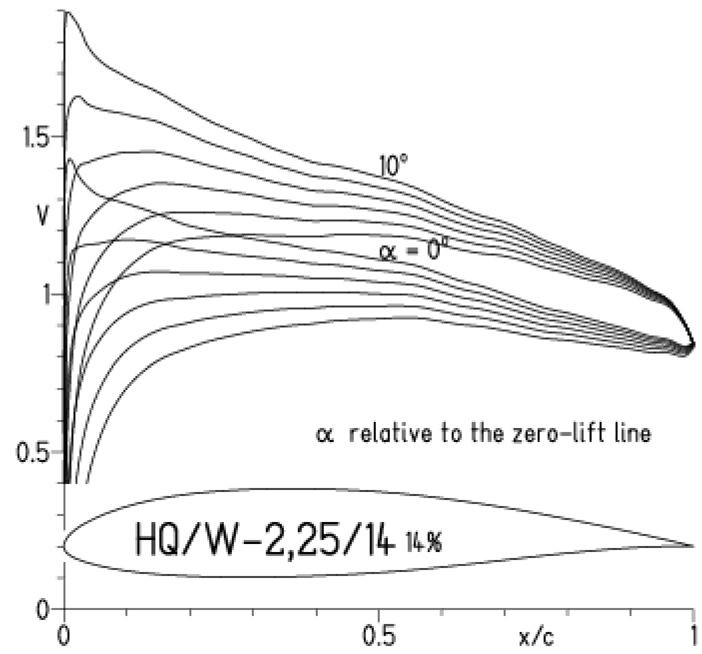
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
0
0.5
x/c
1
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%

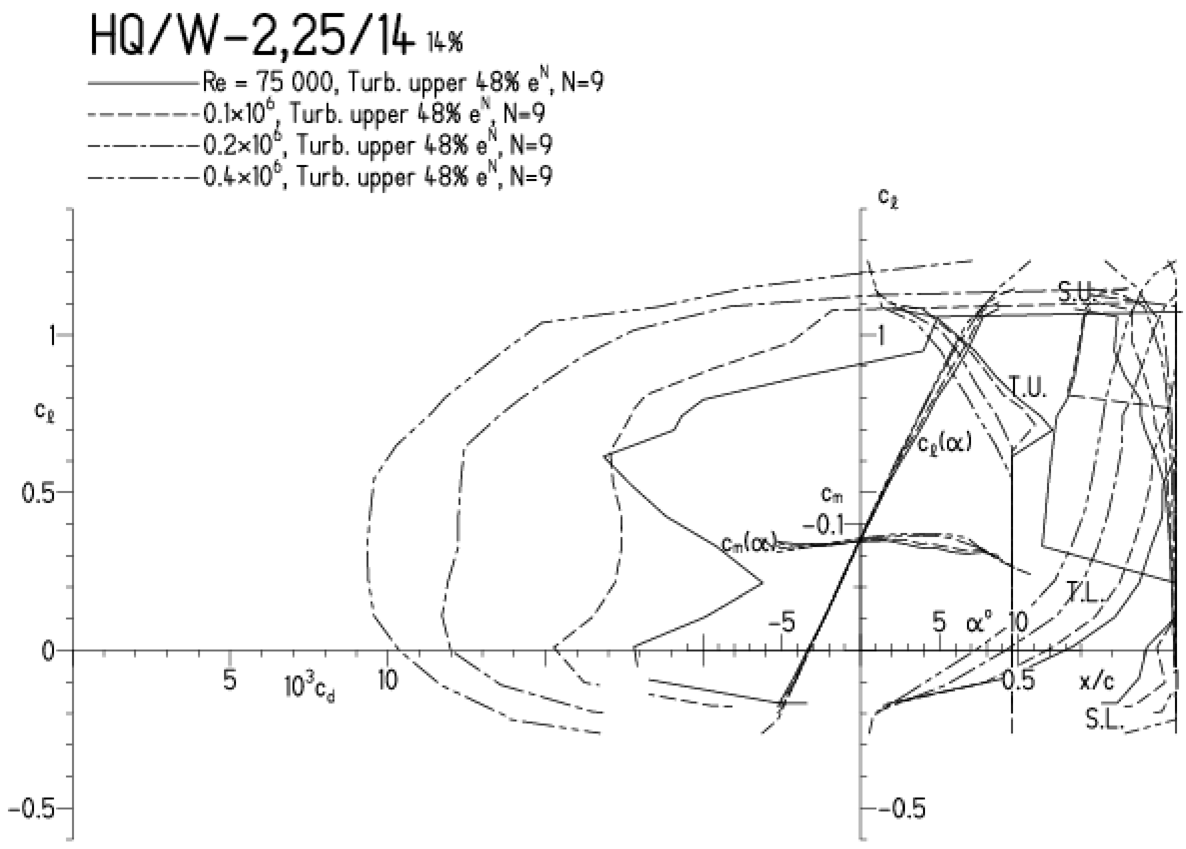

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10³c_d
20
−10
−5
5
α°
10
0.5
x/c
1
c_m
−0.15
−0.1
c_m(α)
c_l(α)
−0.5
S.U.
T.U.
T.L.
S.L.

HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

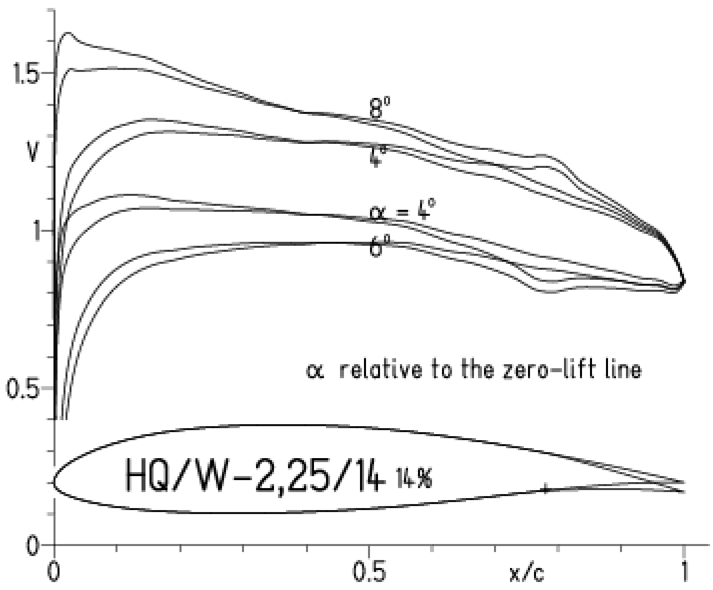


EPPLER 2005 V. 8.5.07 RU

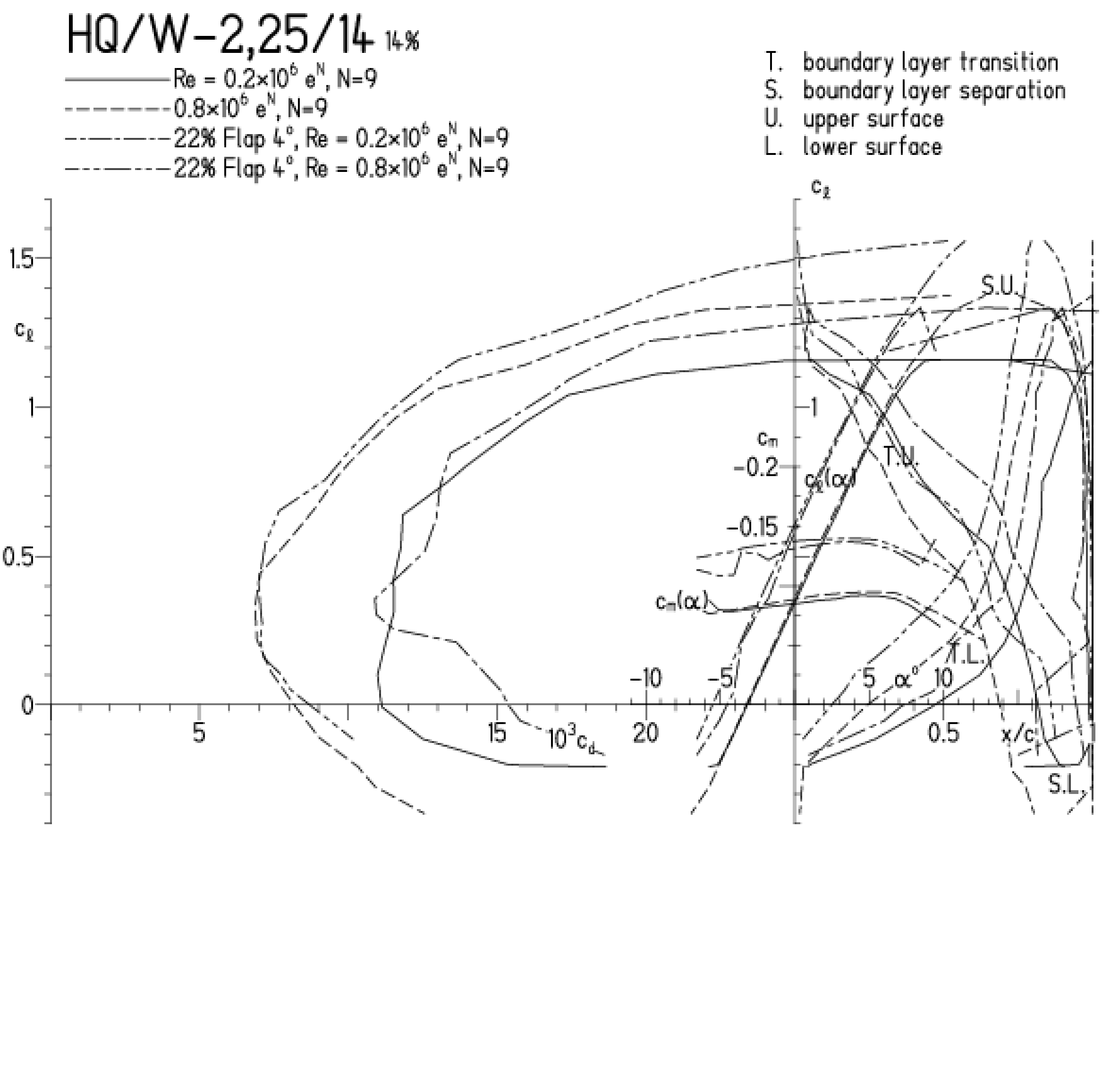


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

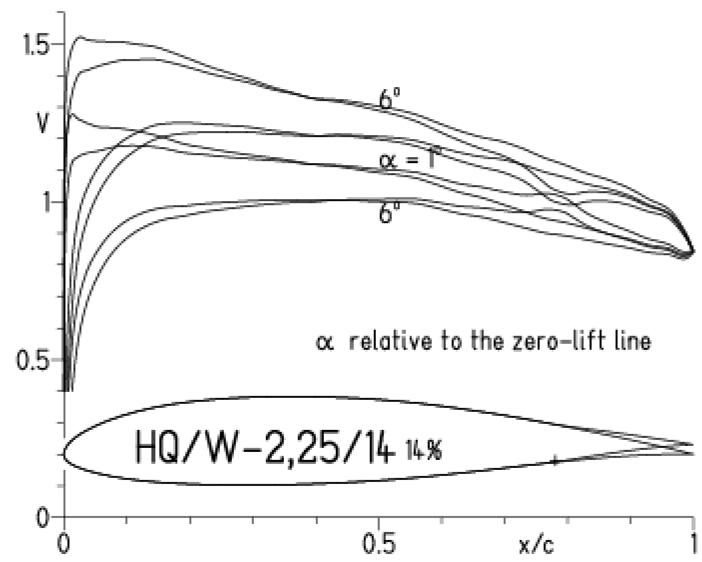


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

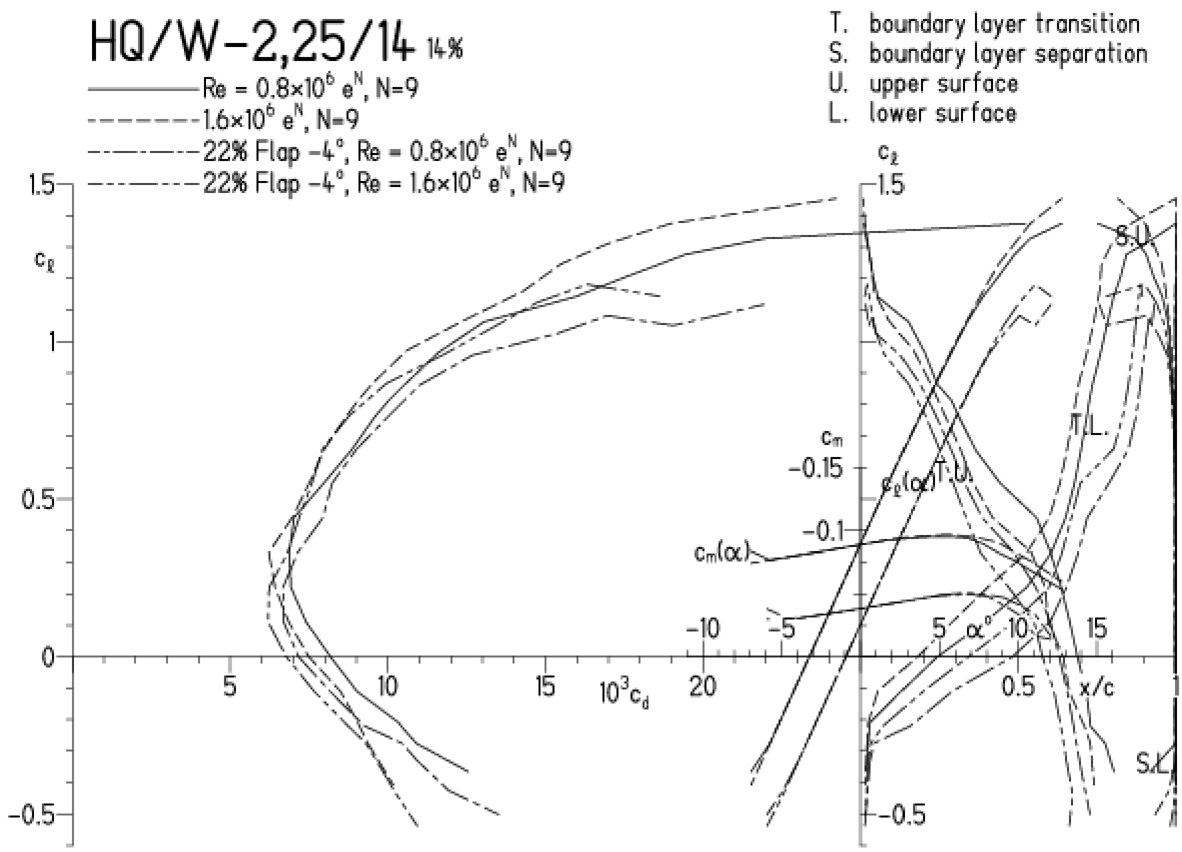


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

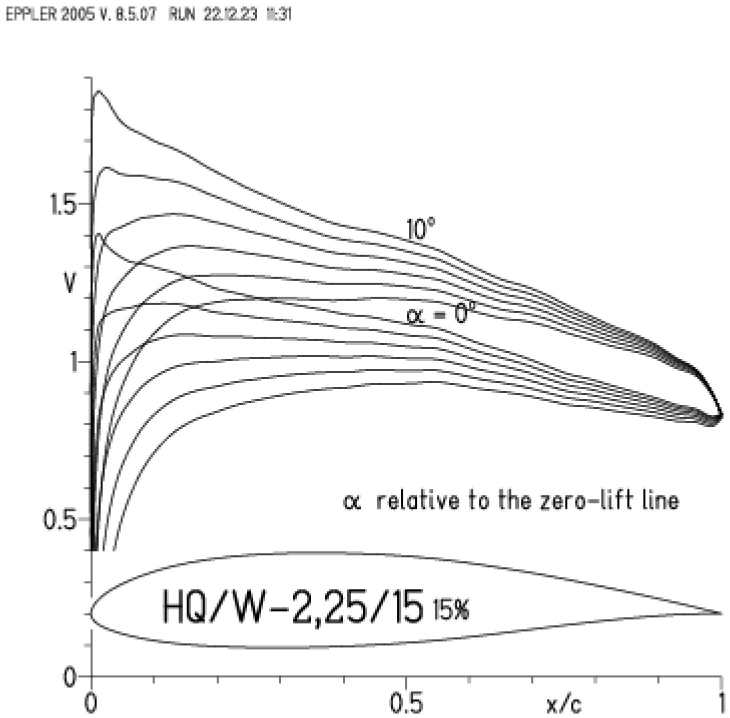
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

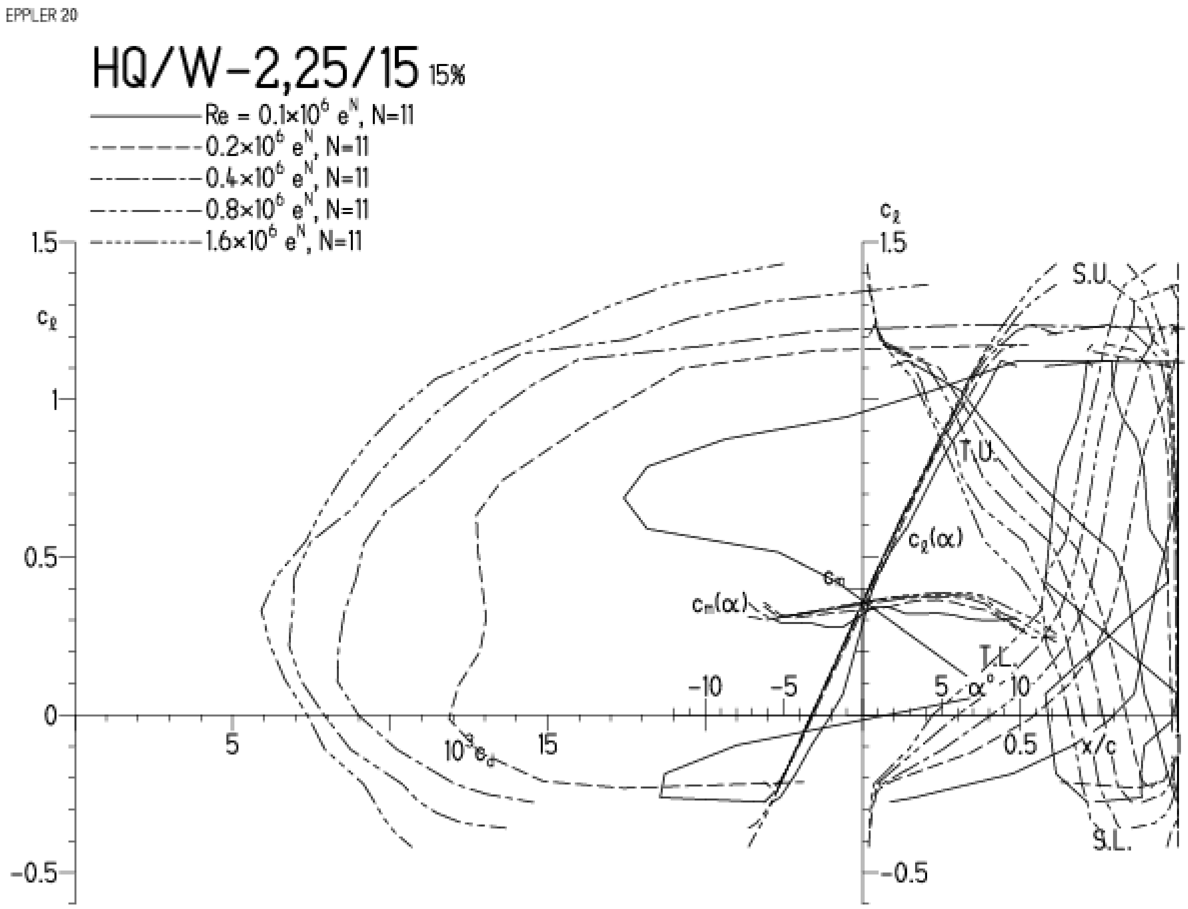


EPPLER 2005 V. 8.5.07

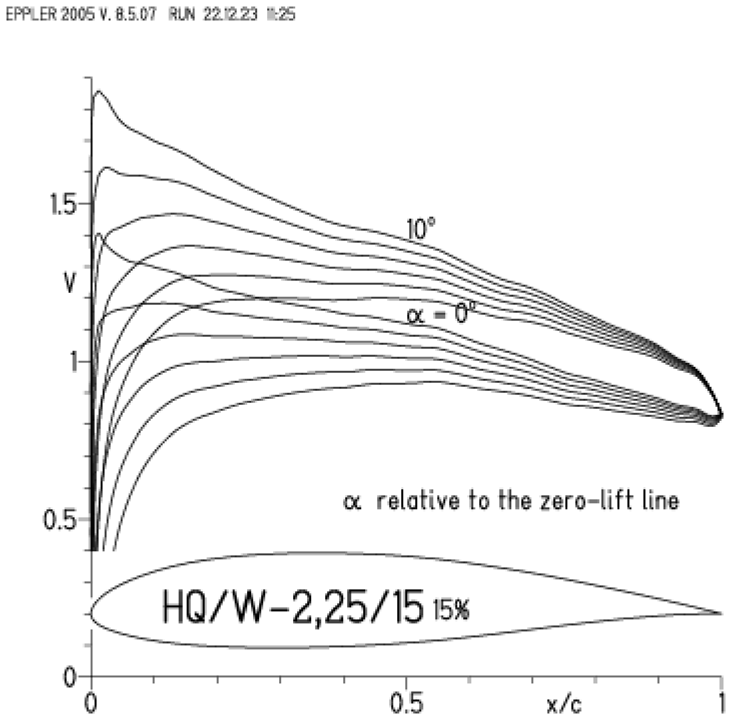


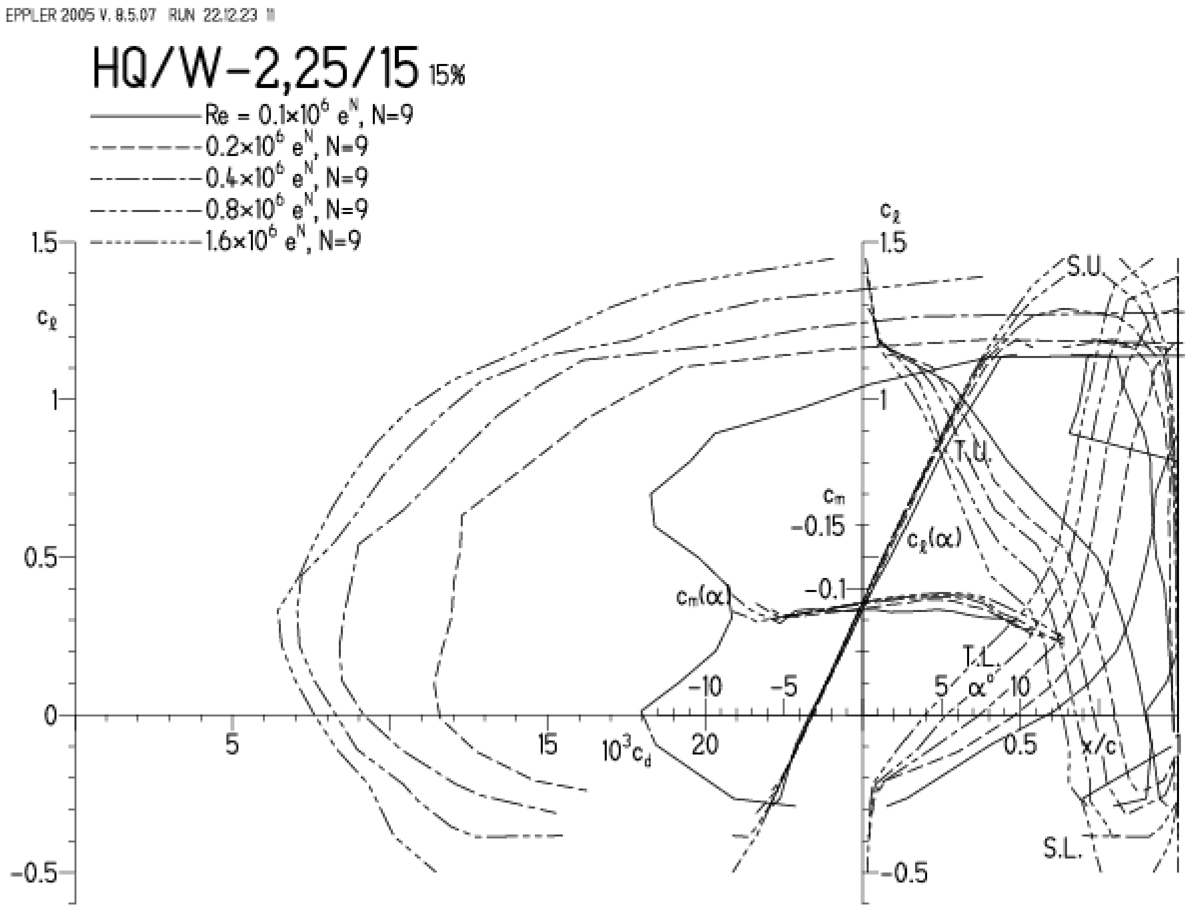
<u>HQ/W-2,25/15</u>, N=11



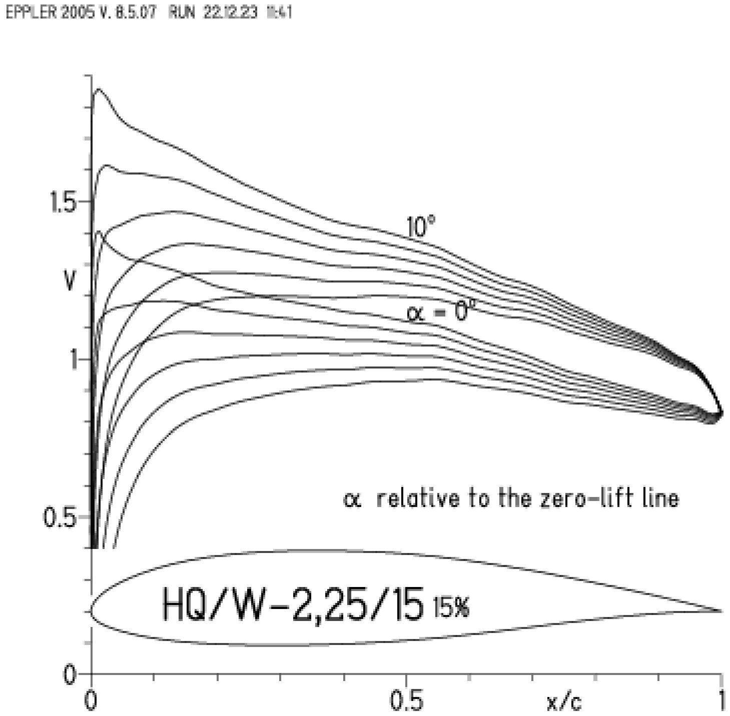


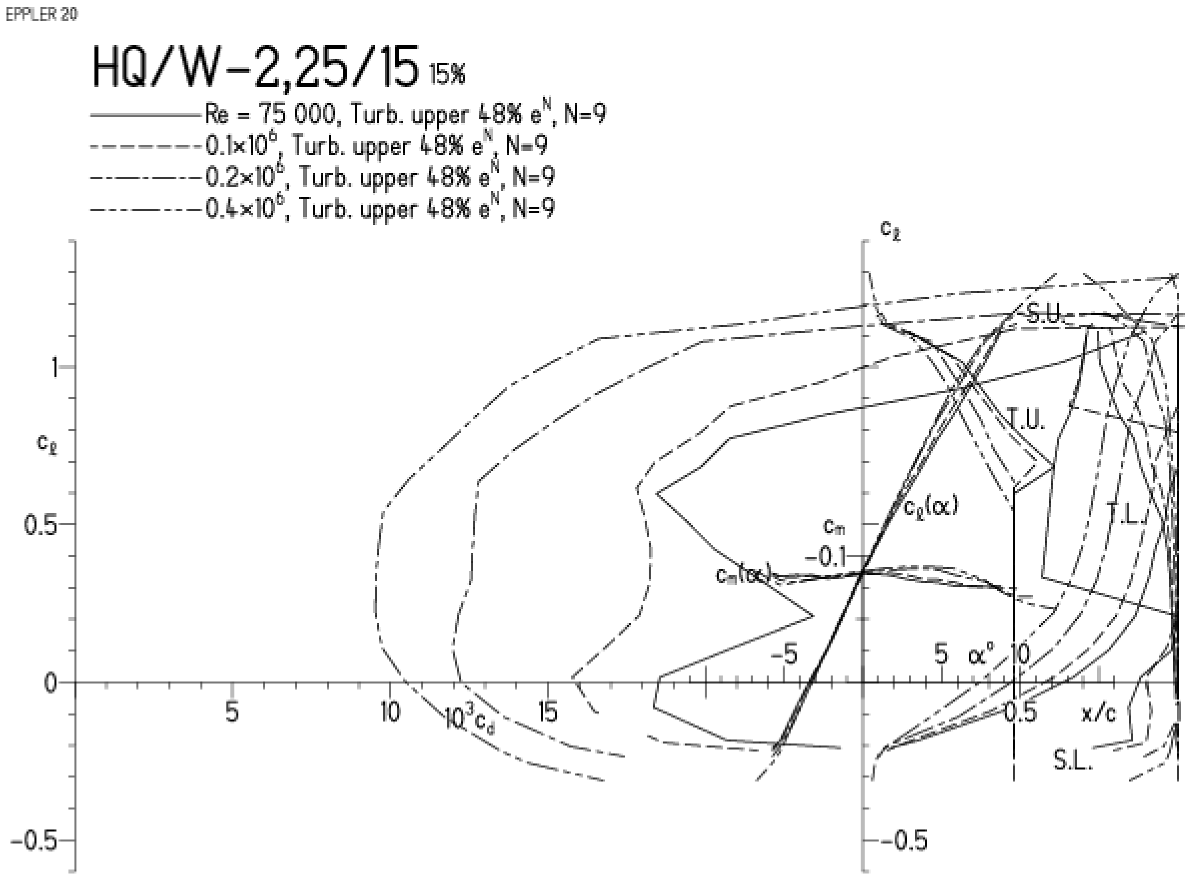
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



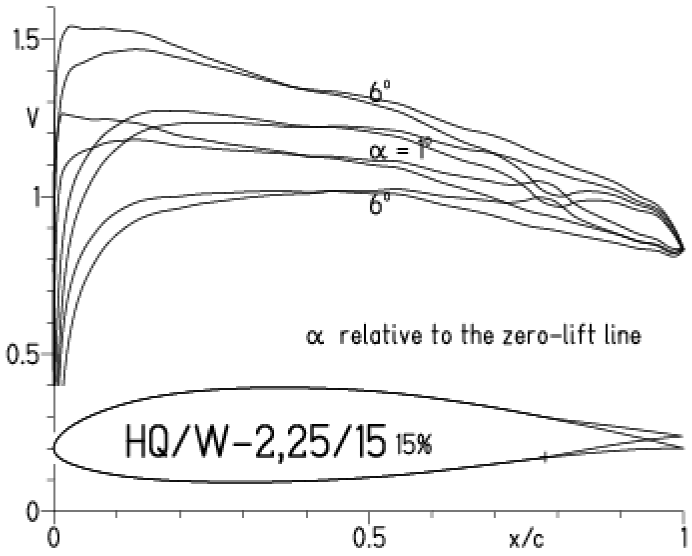


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

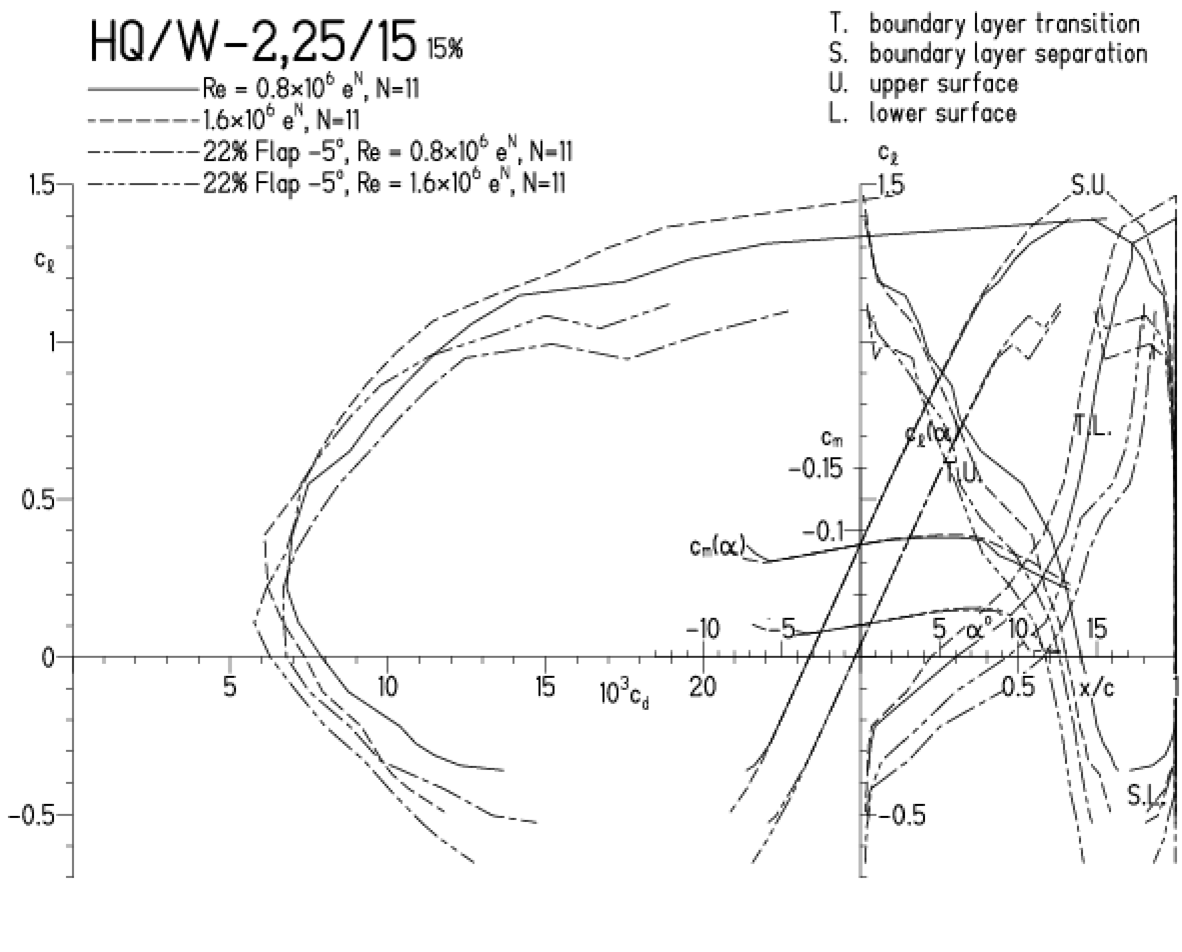
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

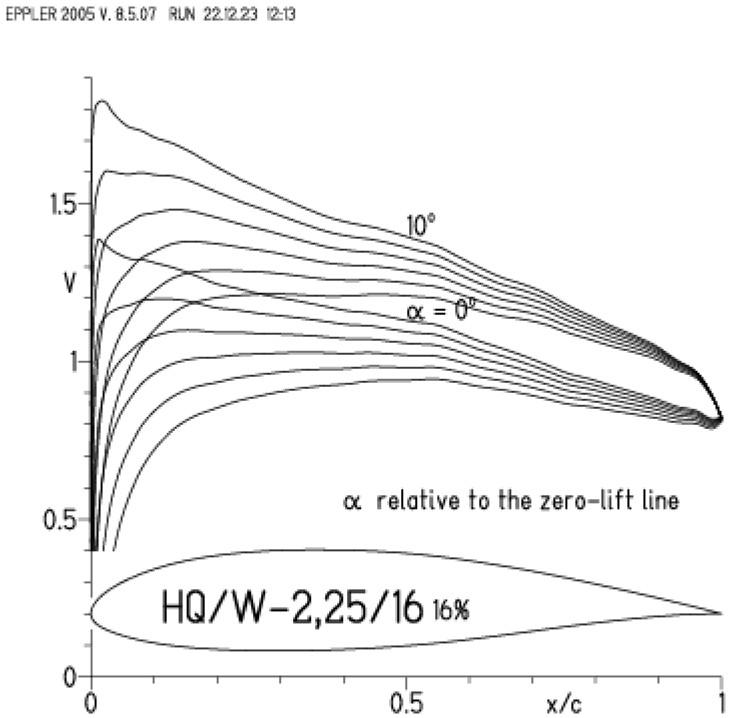
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

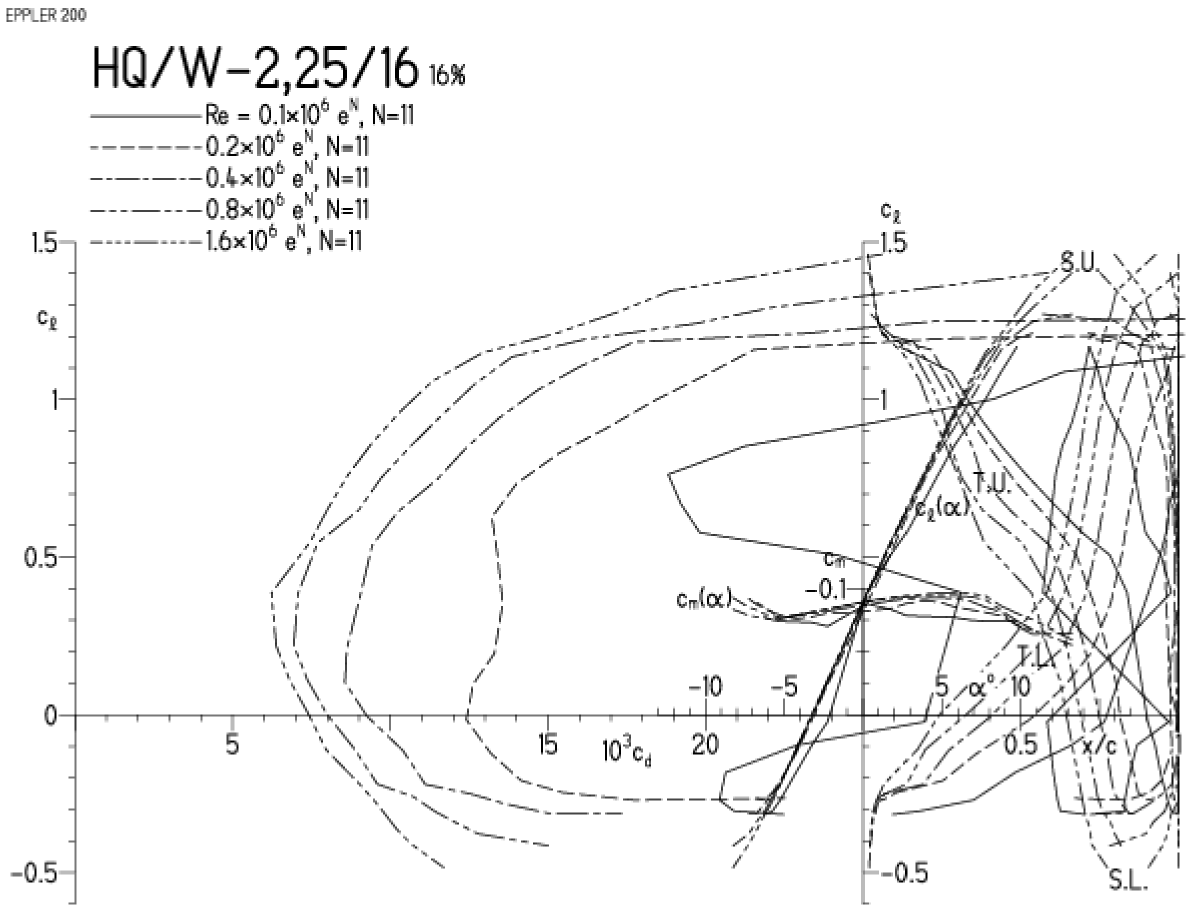


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



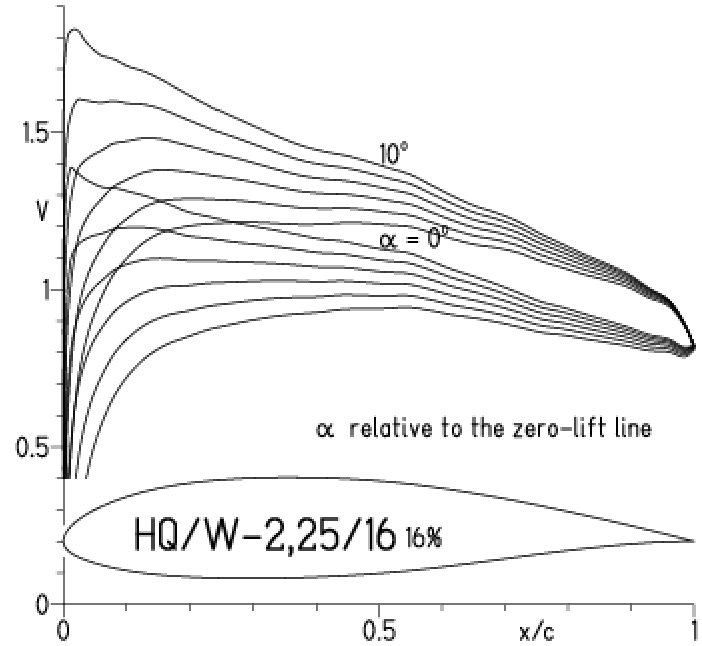
HQ/W-2,25/16, N=11



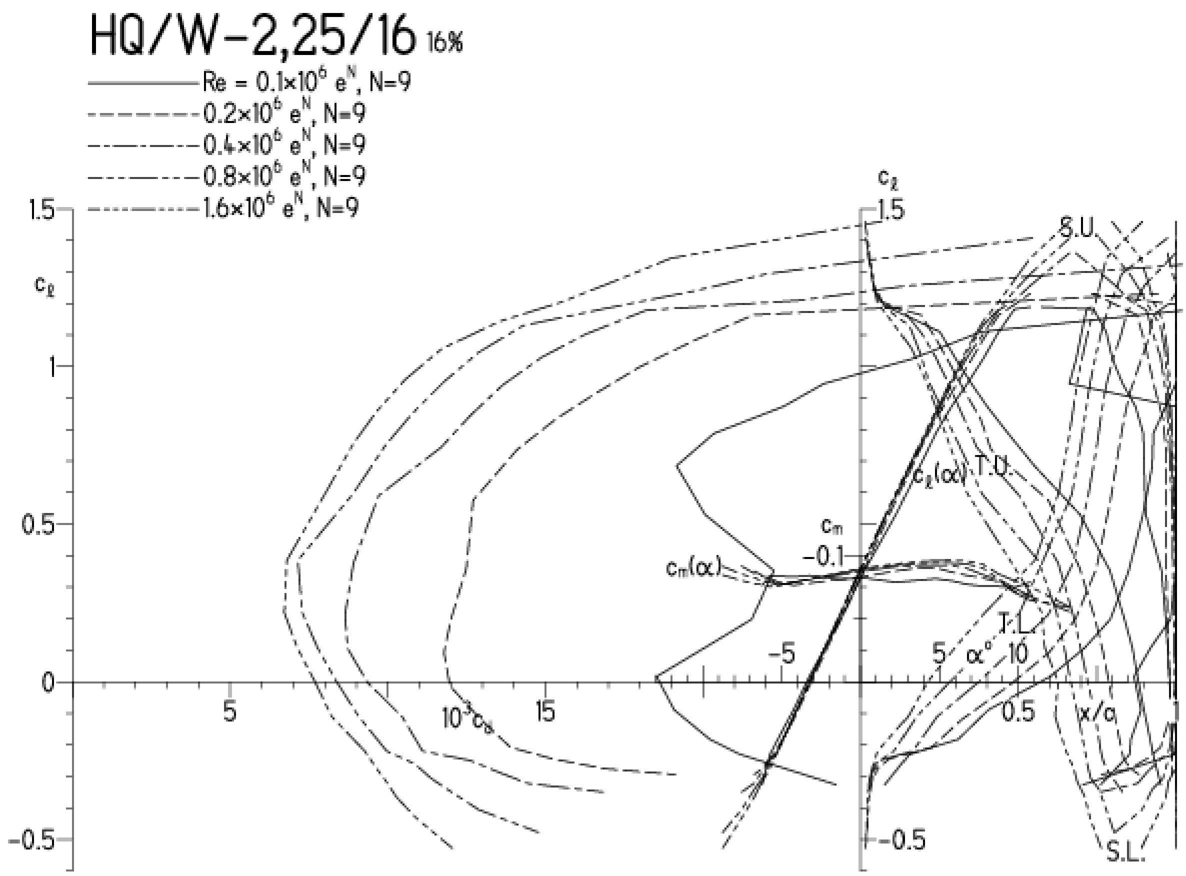


HQ/W-2,25/16, N=9

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

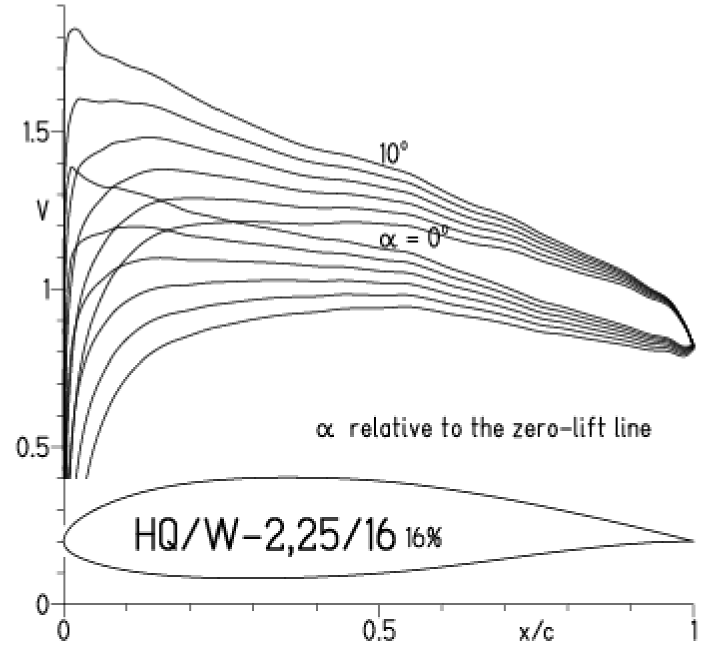


EPPLER 200

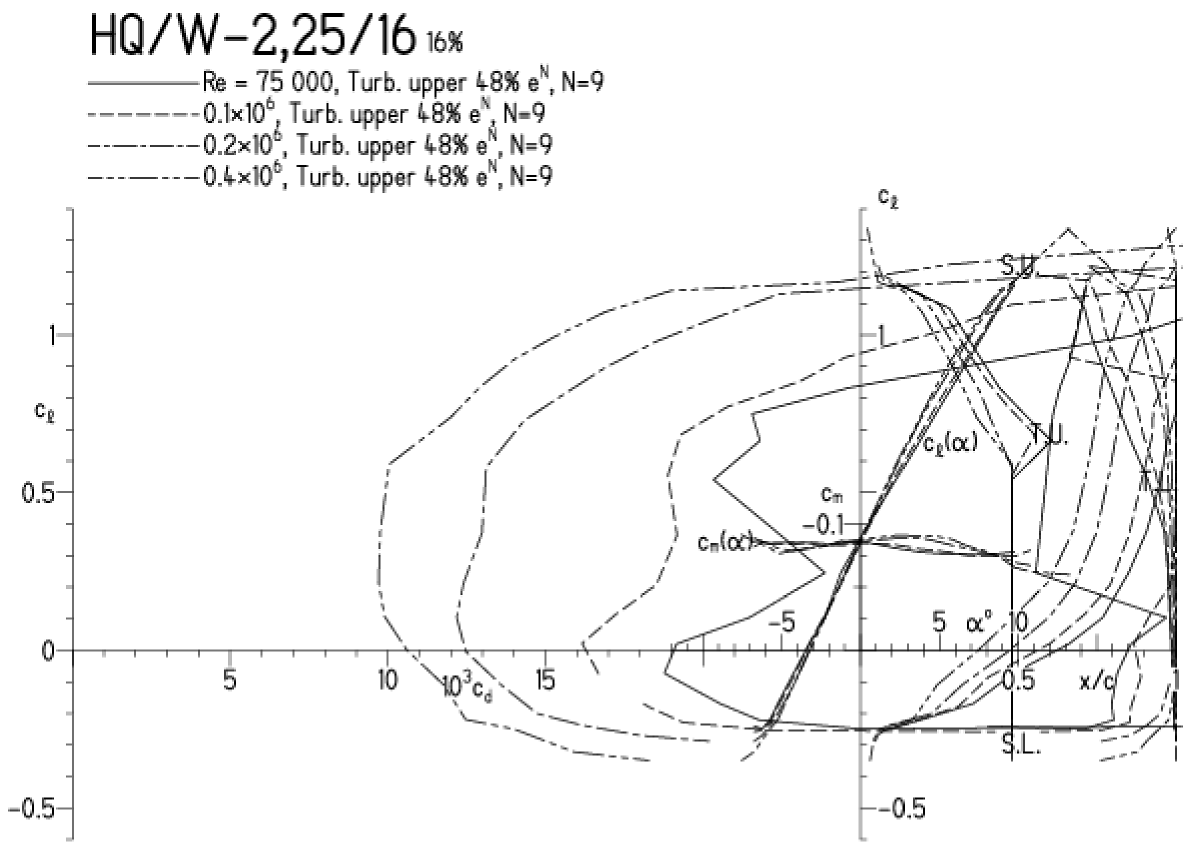


HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



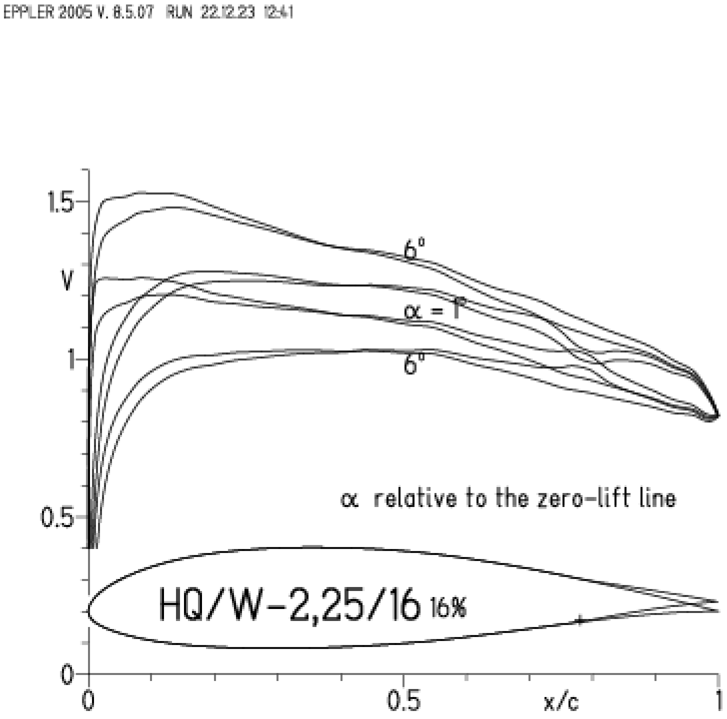
EPPLER 2005 V. 8.5.07 R

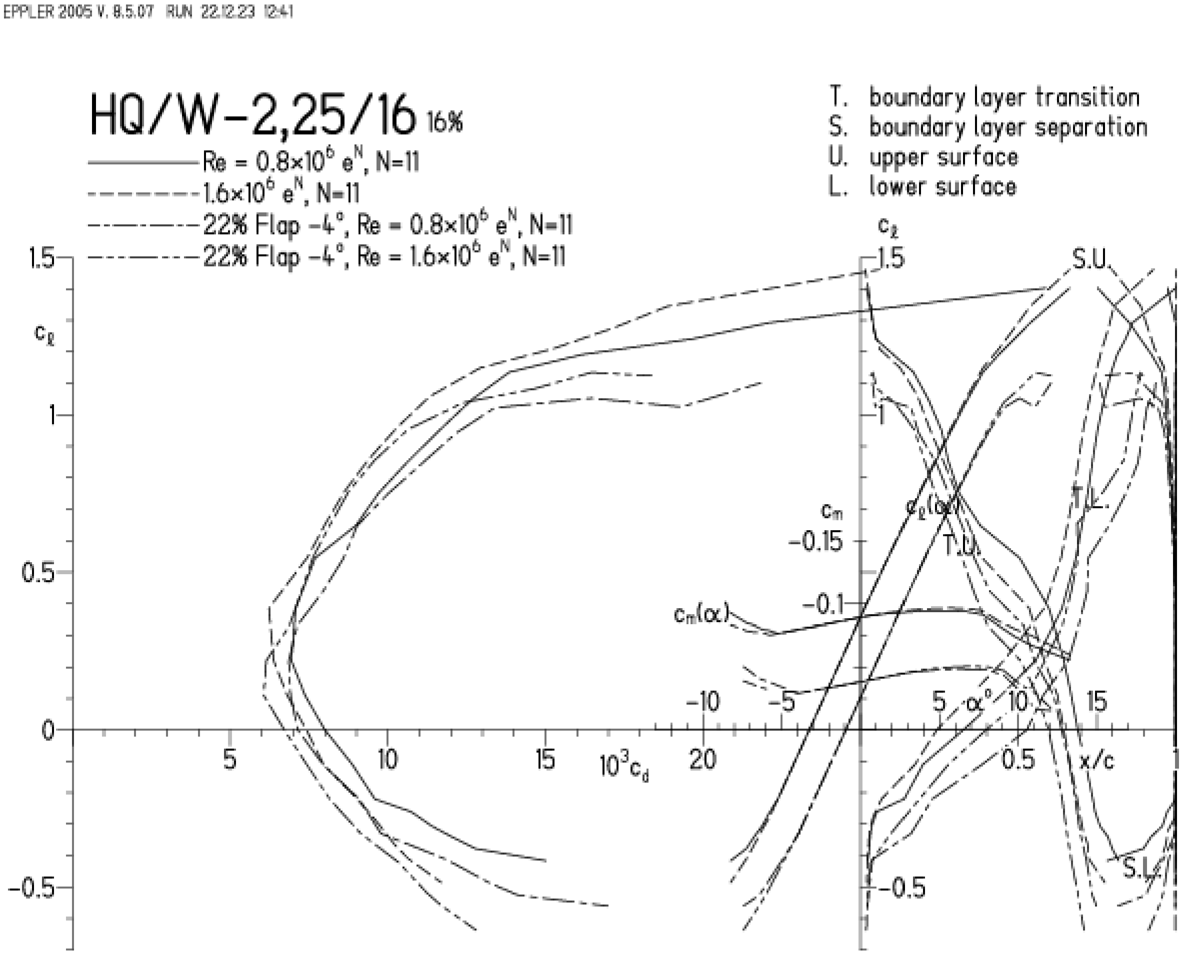


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

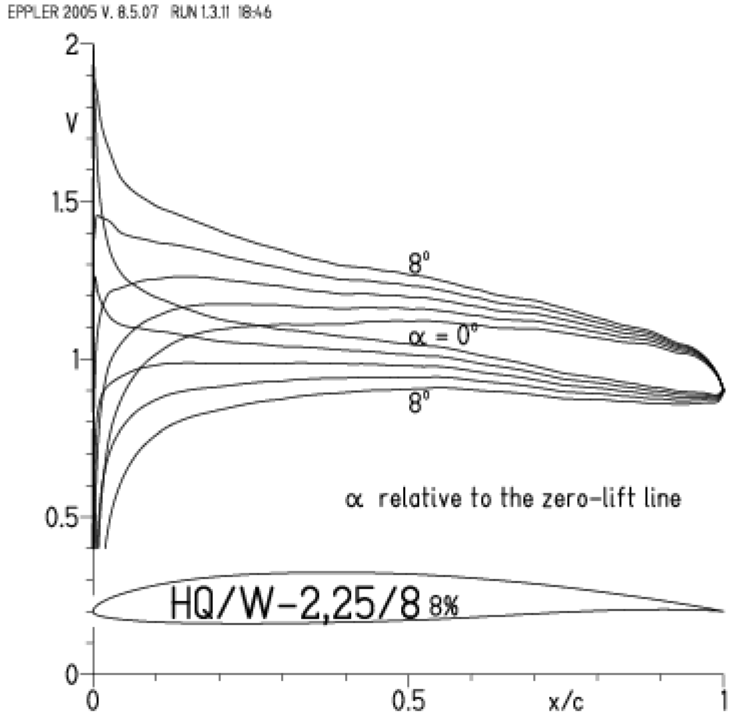
Bringt keine merkliche Verbesserung im Langsamflug.

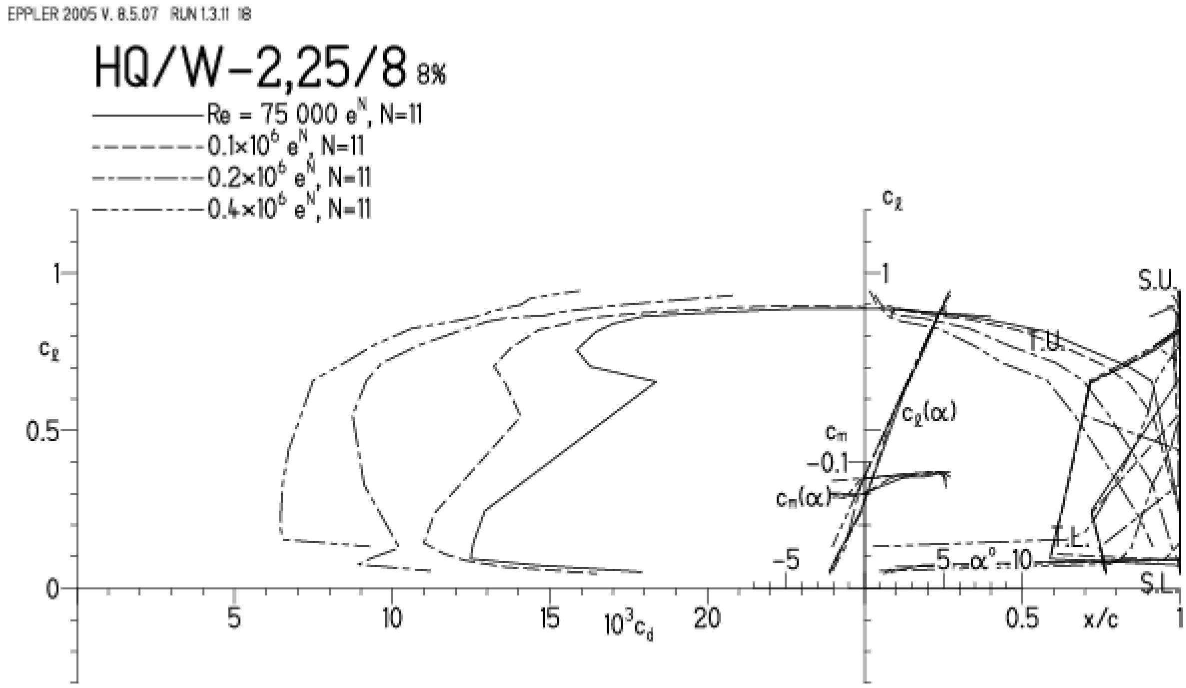
HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag



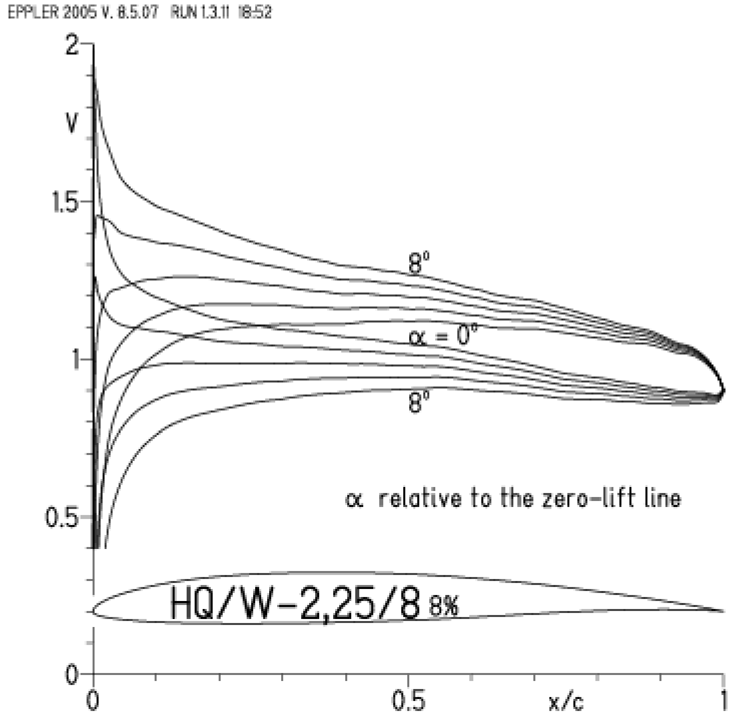


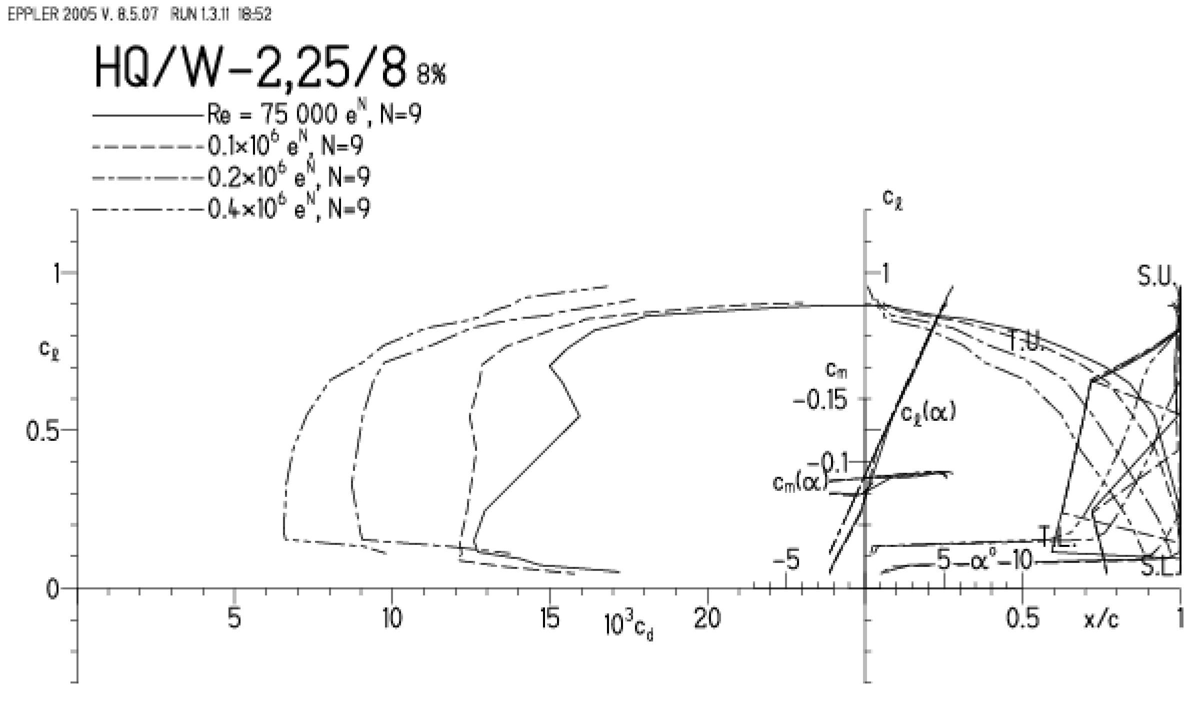
<u>HQ/W-2,25/8</u>, N=11



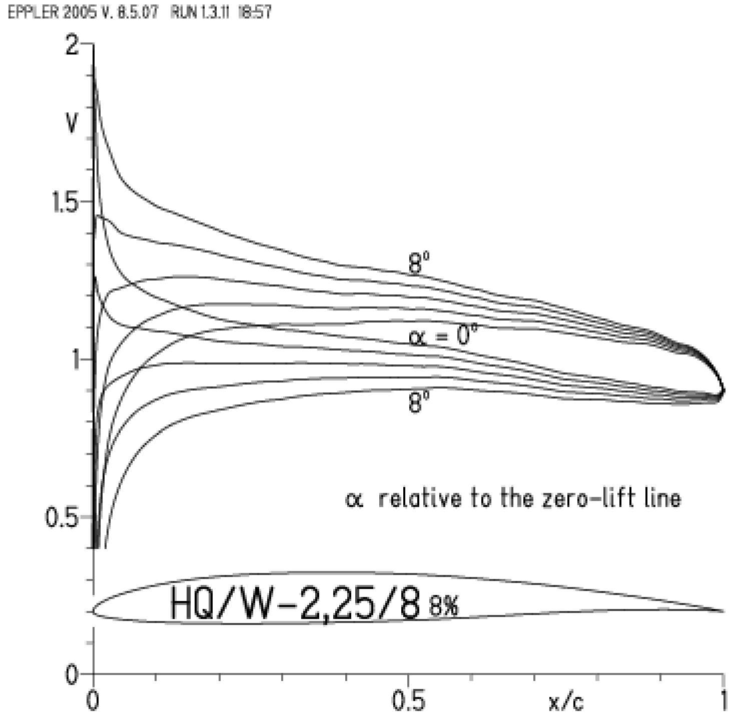


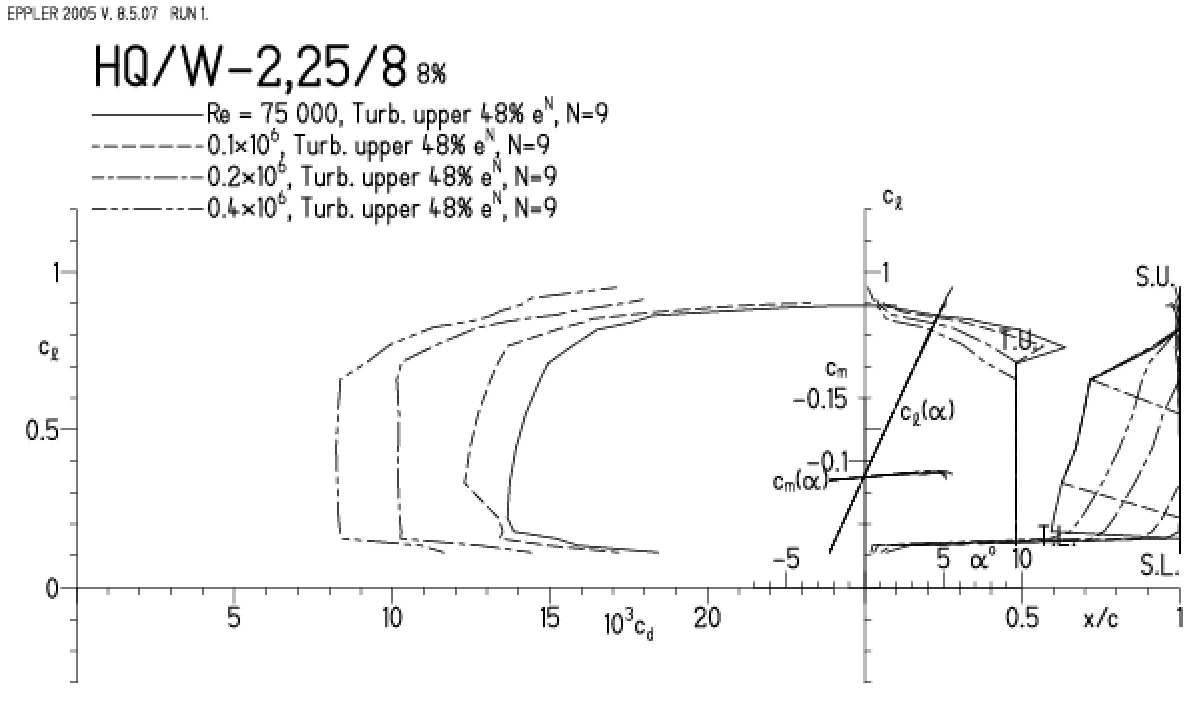
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

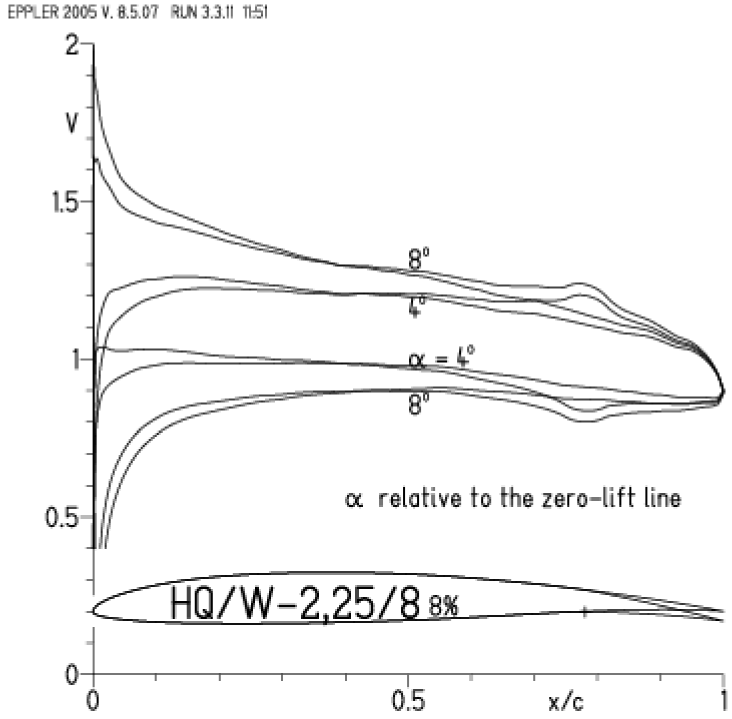

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
5 — α° — 10
10^3 c_d
x/c

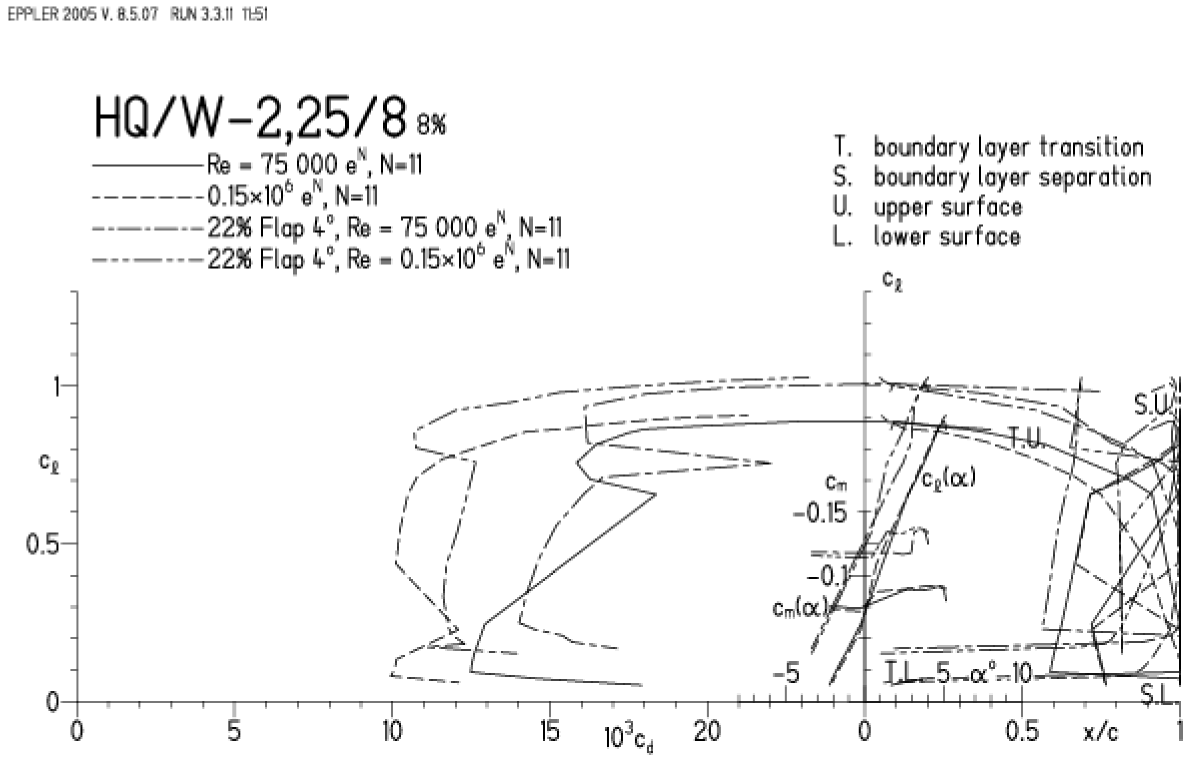
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



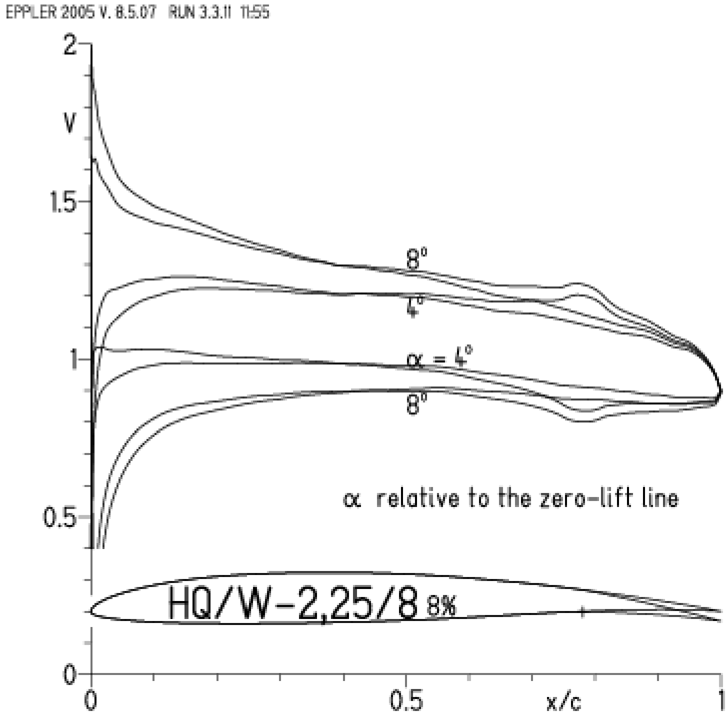


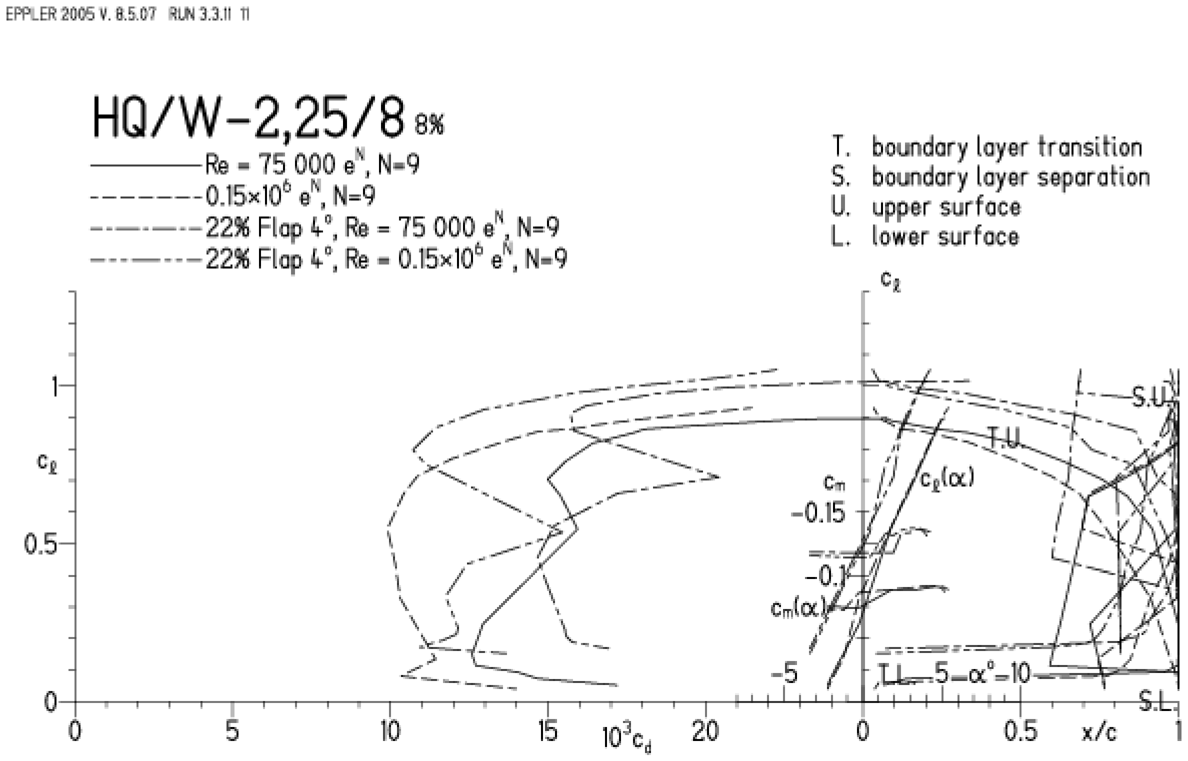
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



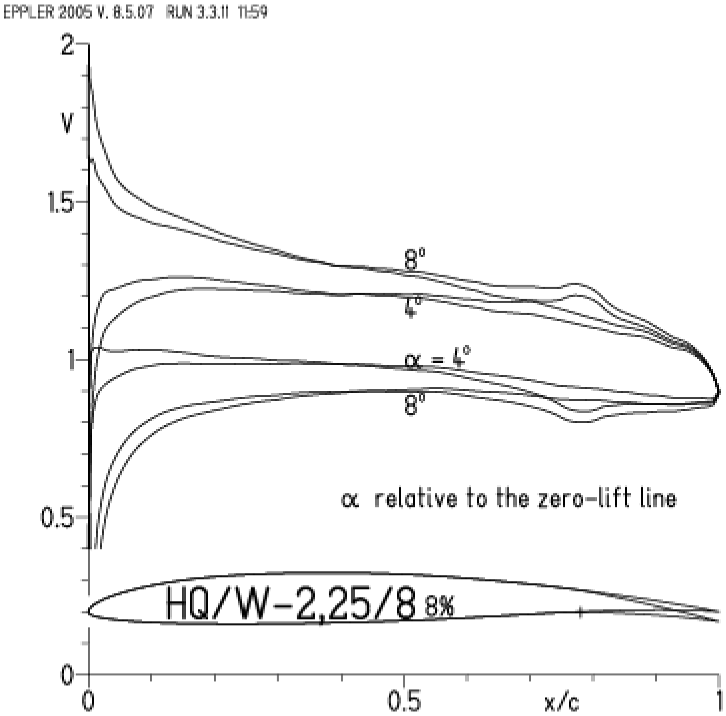


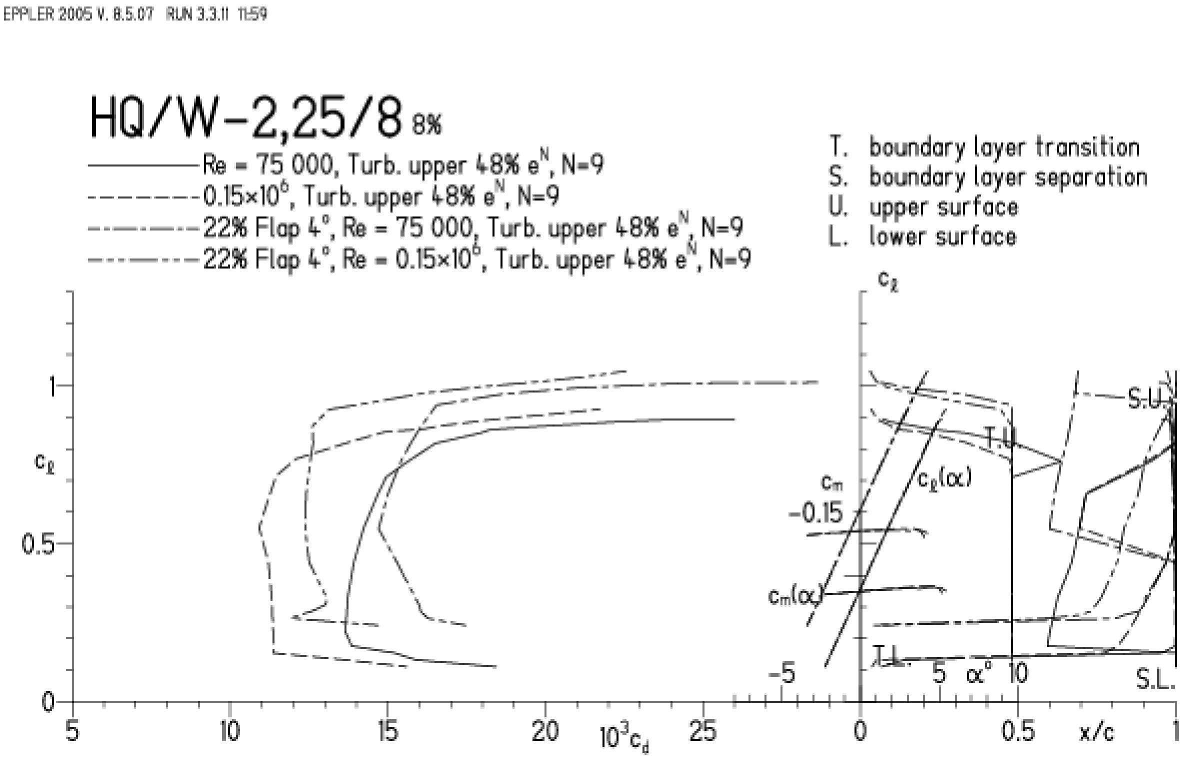
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





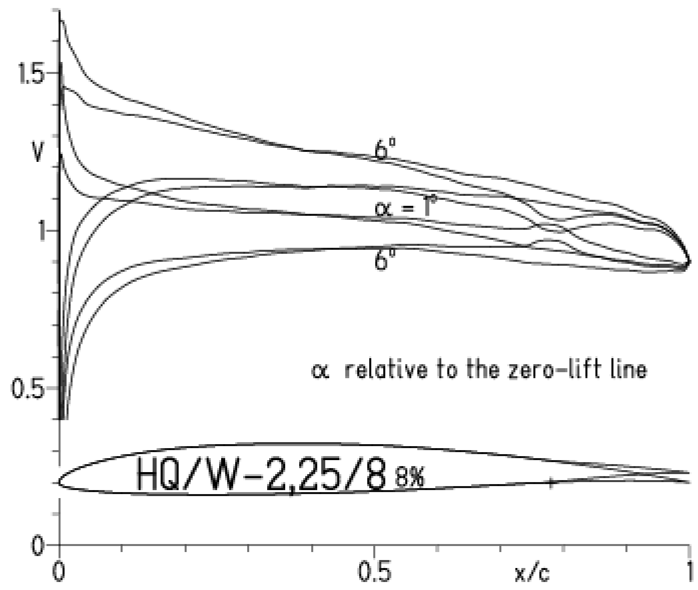
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



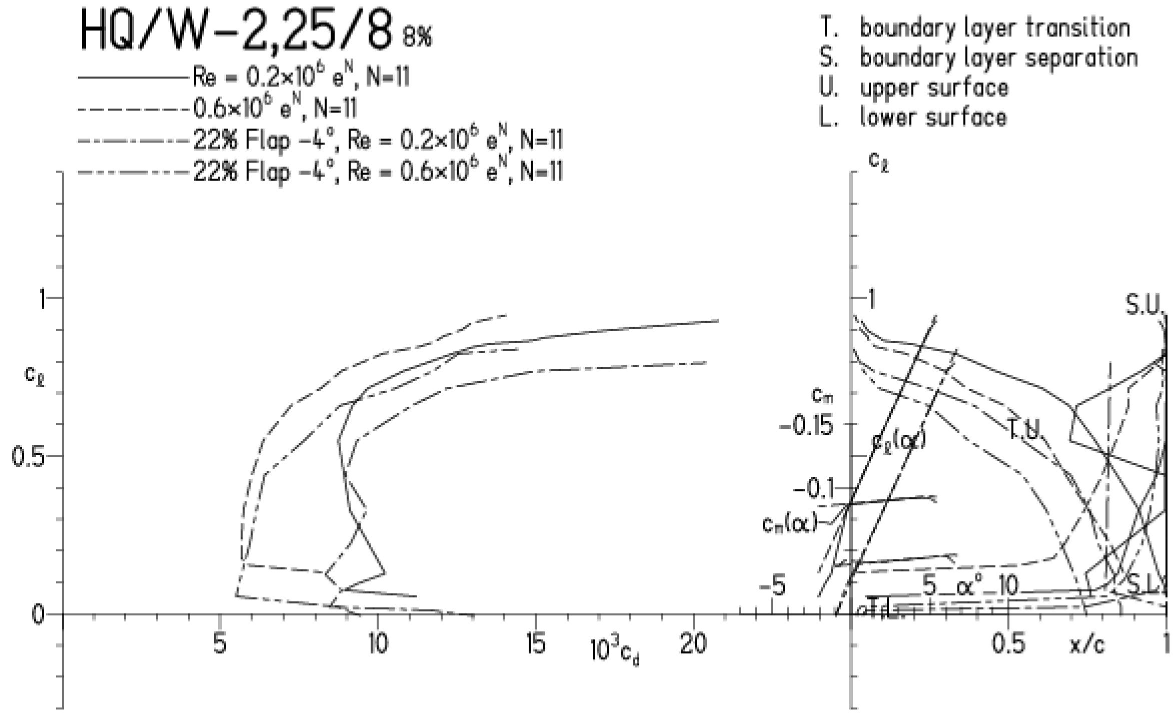


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

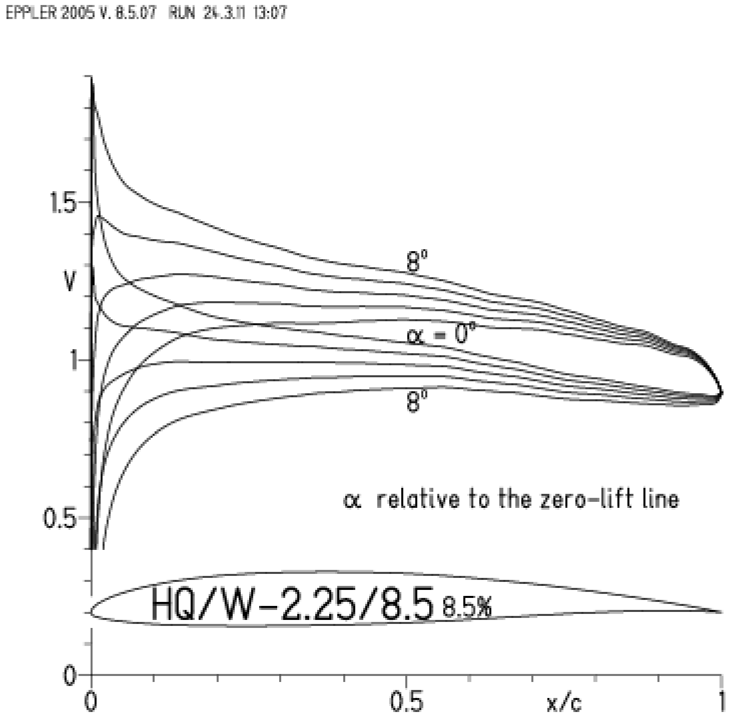
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

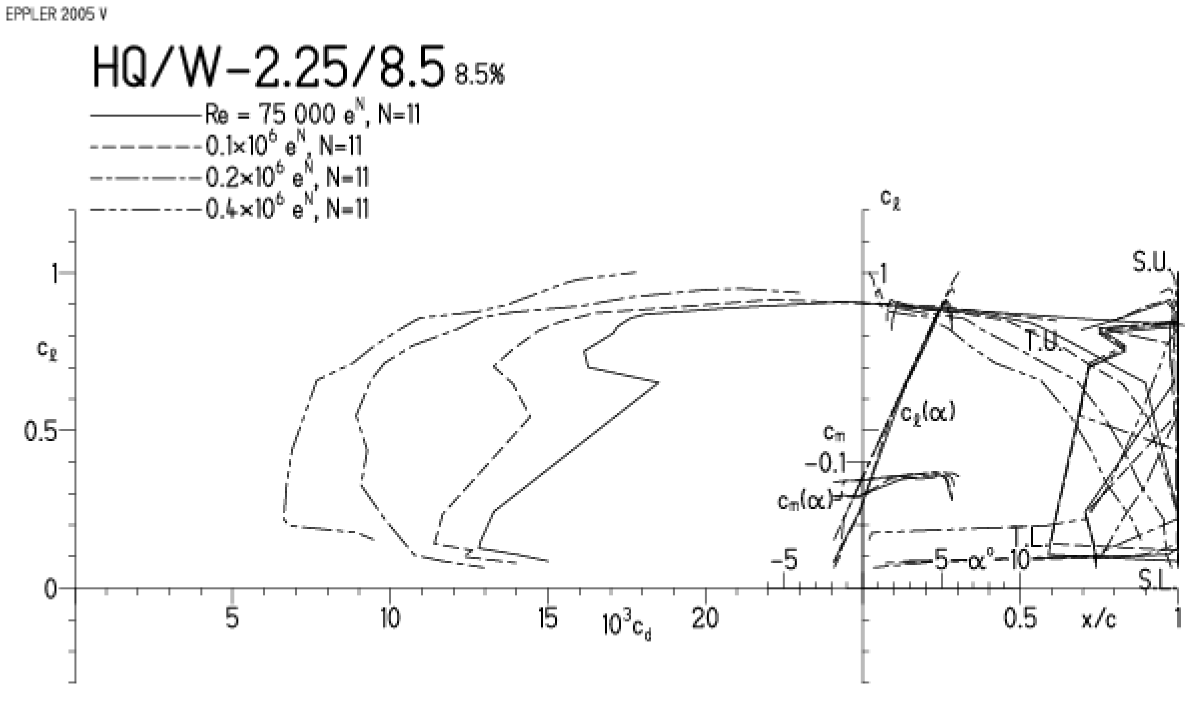


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



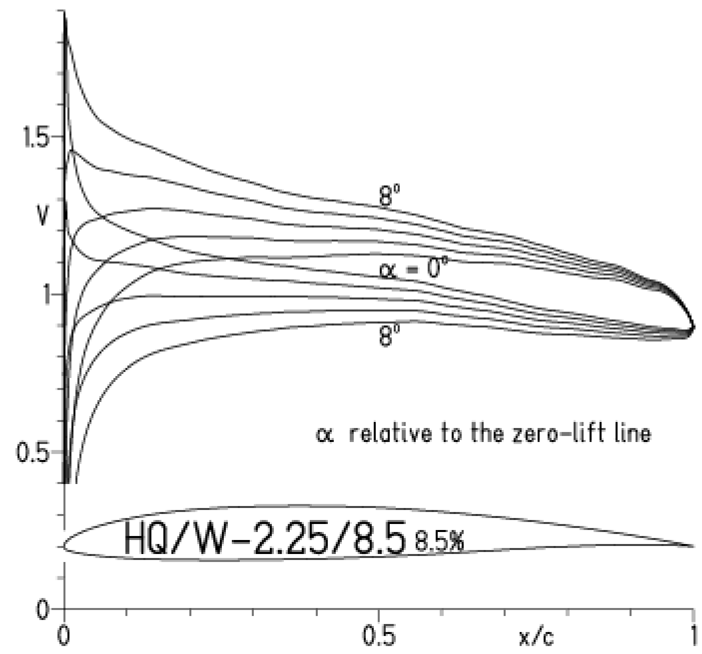
<u>HQ/W-2,25/8,5</u>, N=11



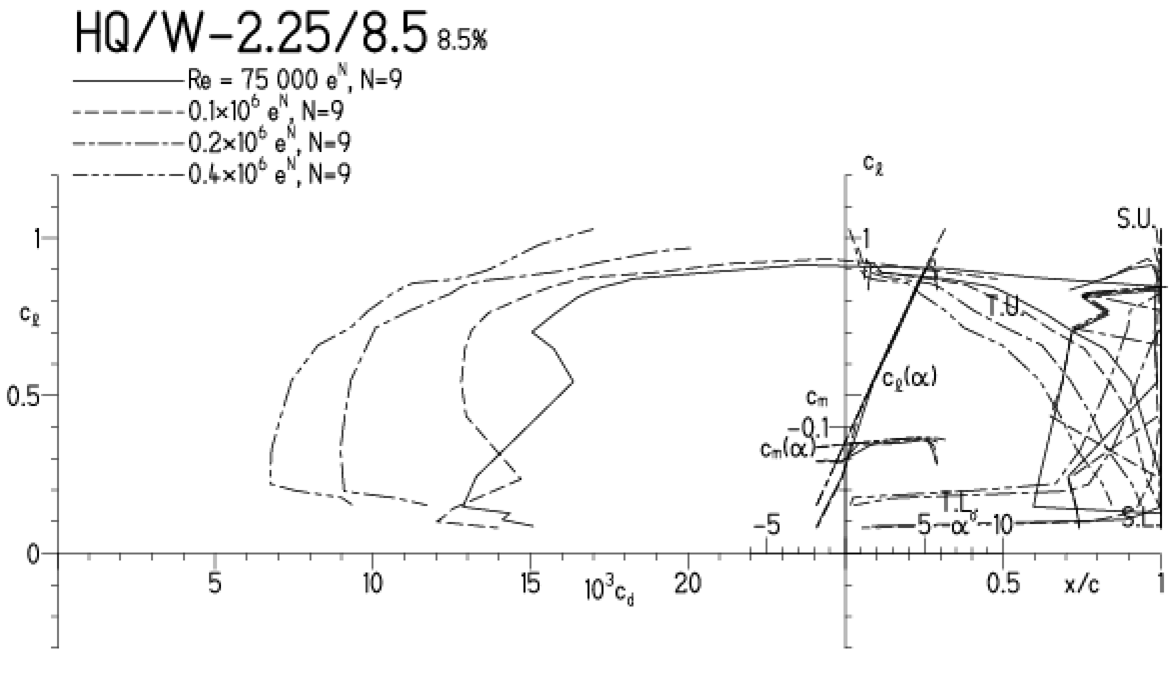


HQ/W-2,25/8,5, N=9

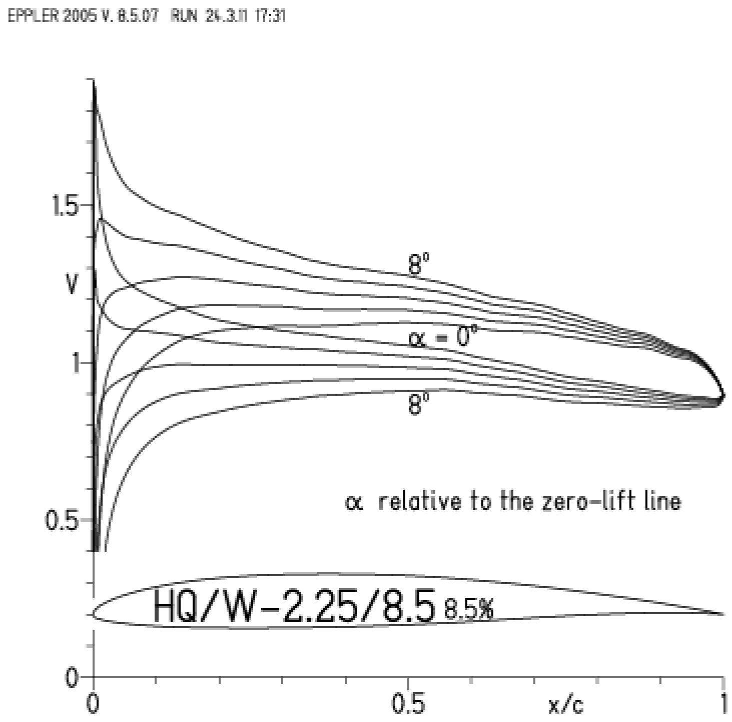
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

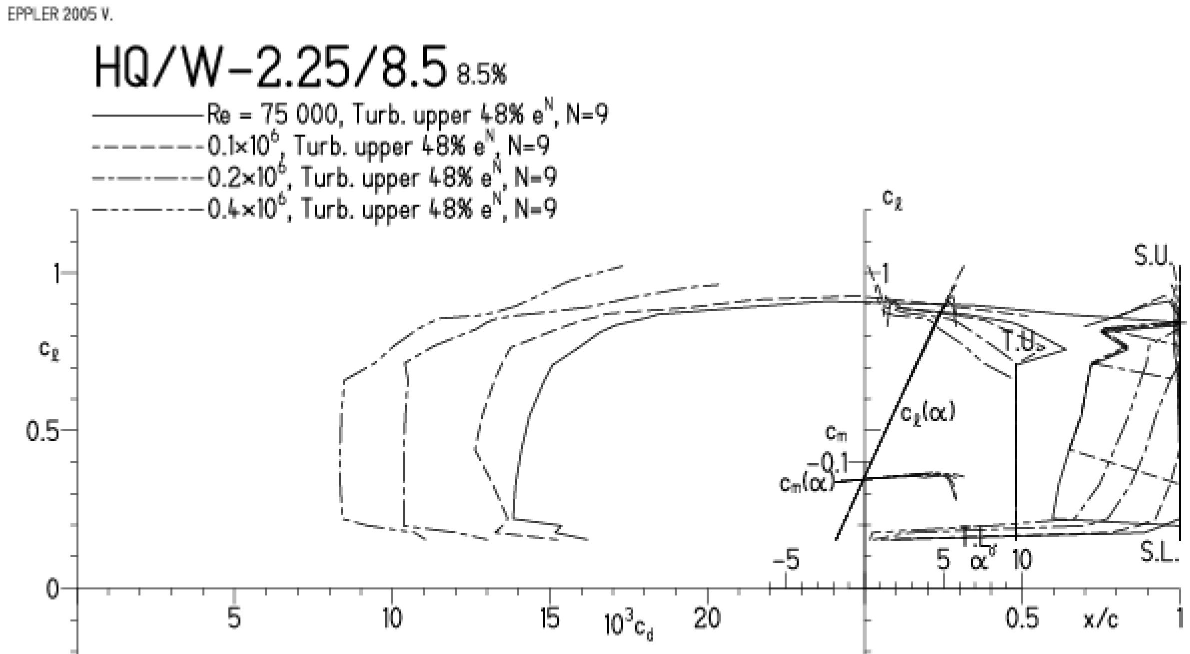


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

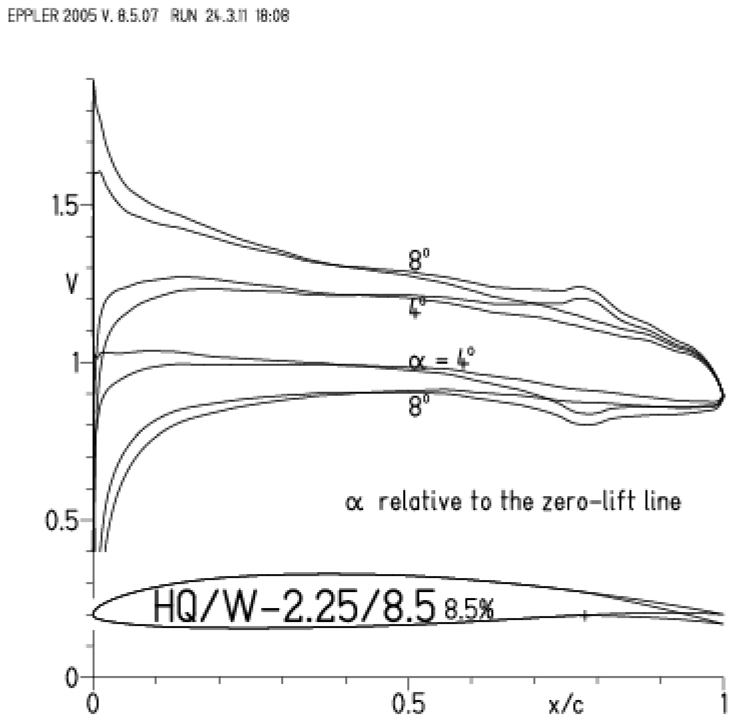


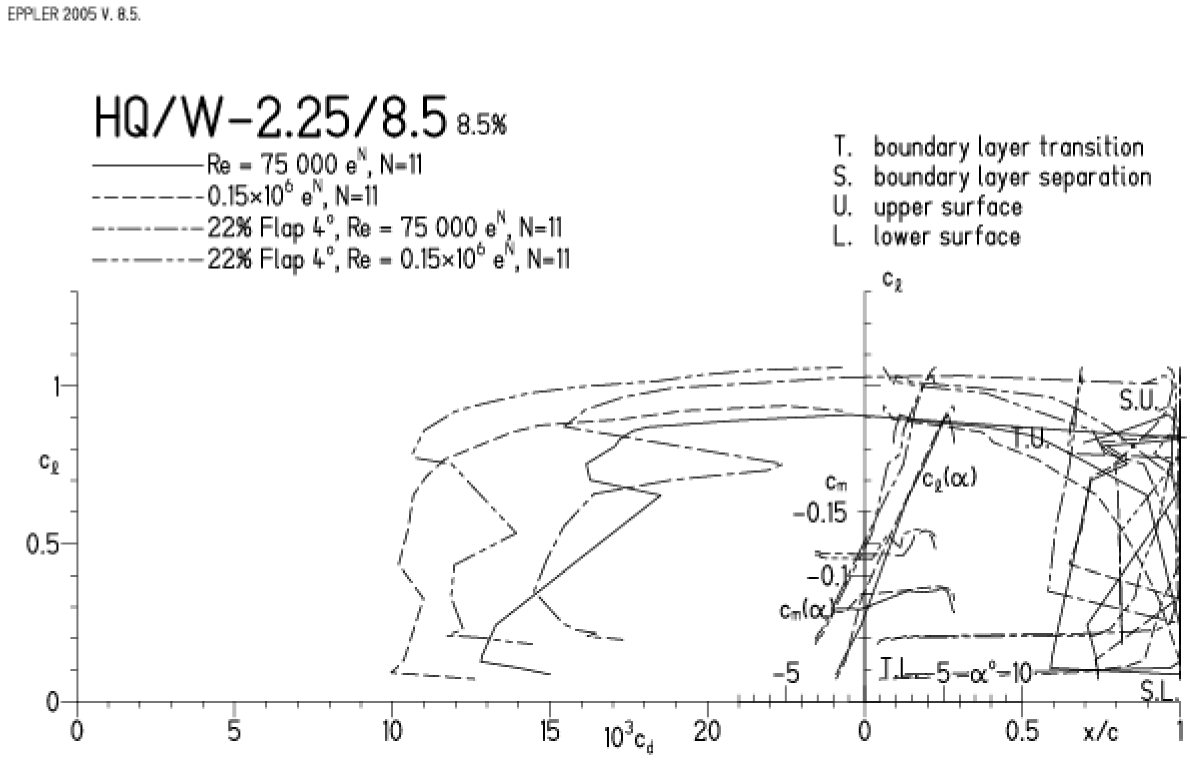
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



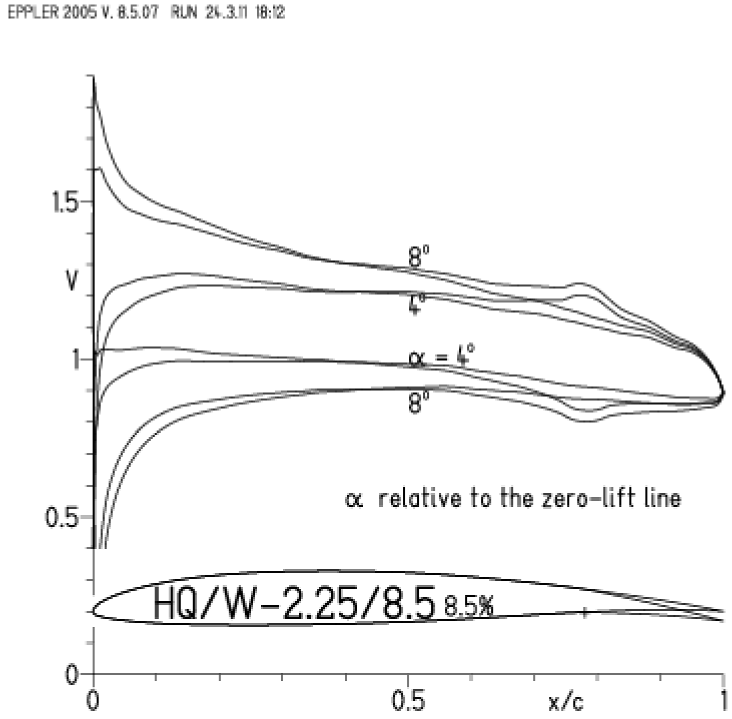


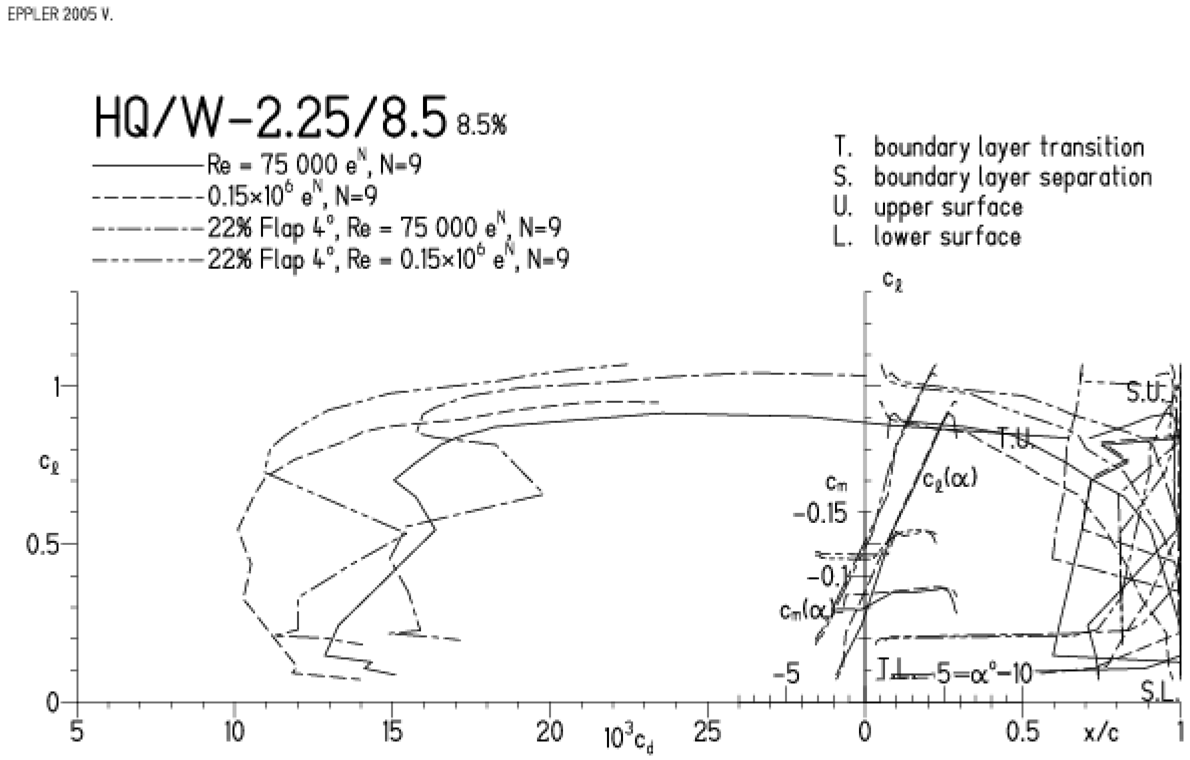
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag





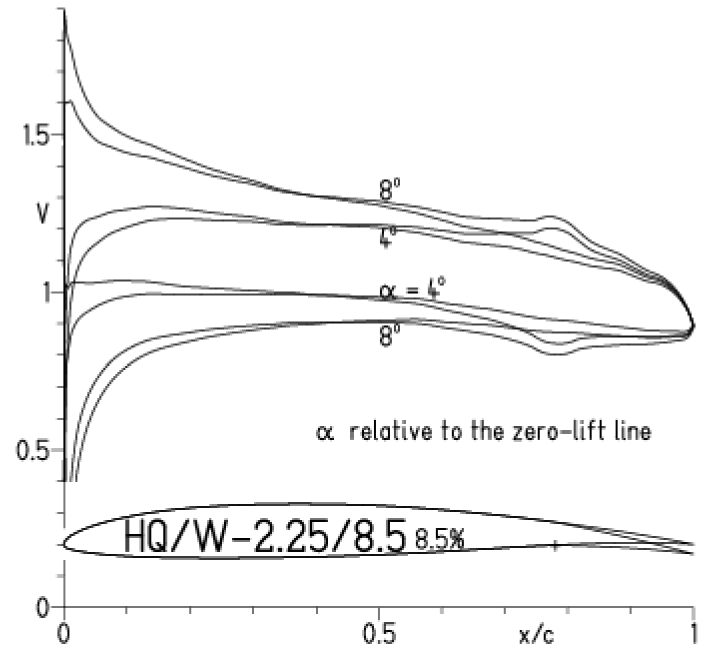
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



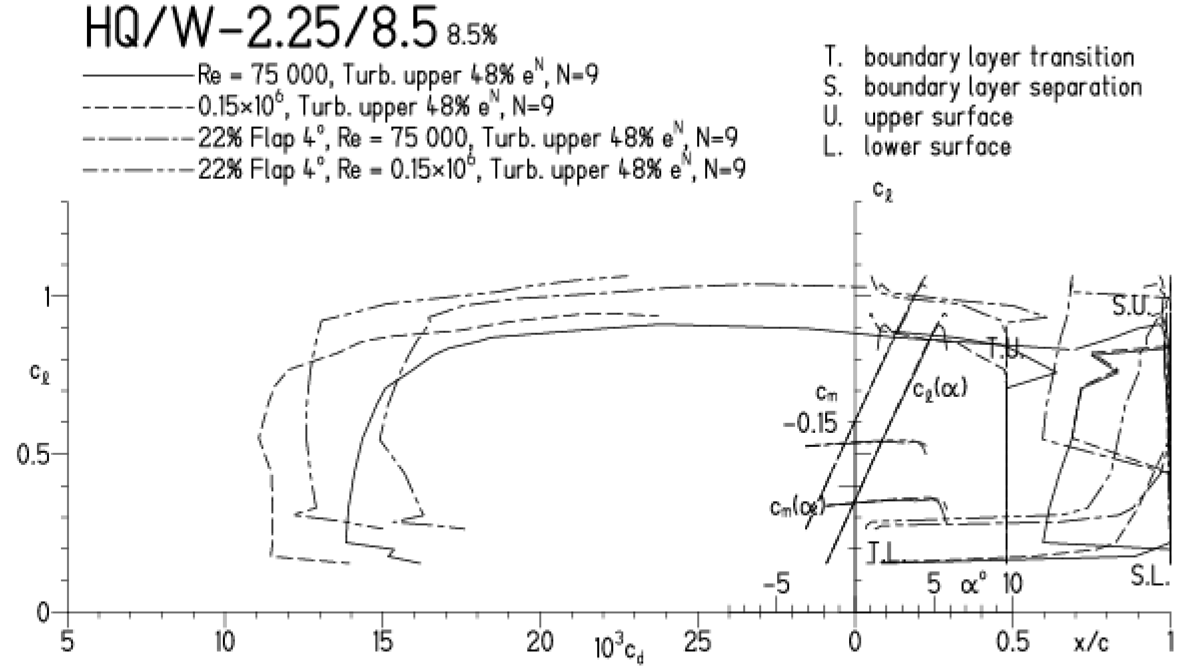


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

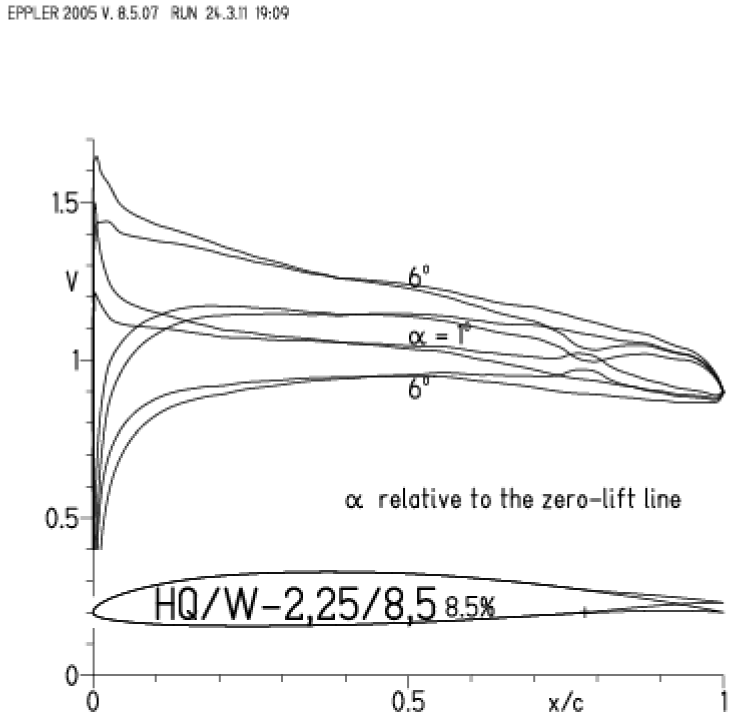
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

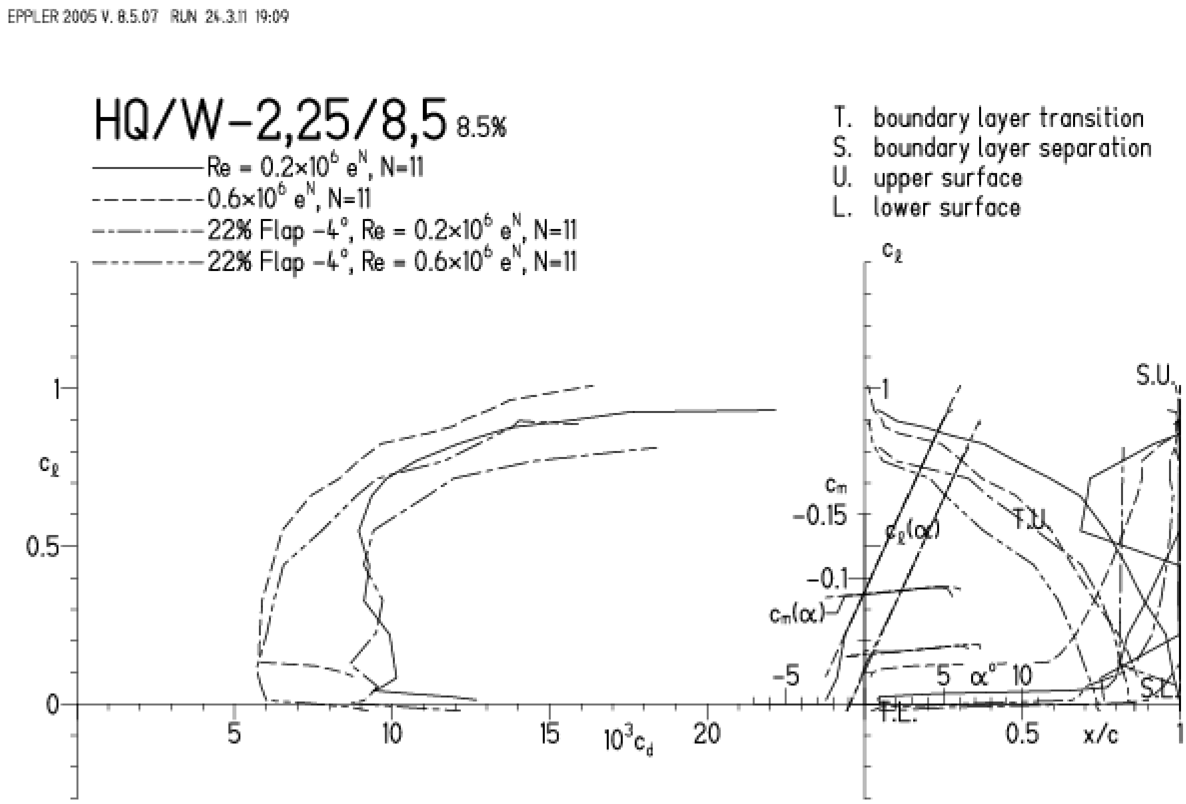


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

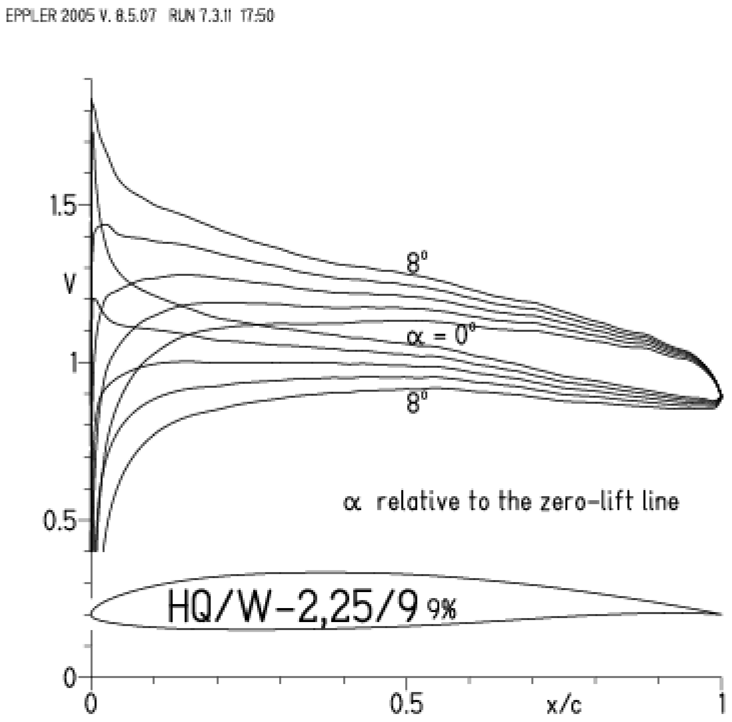


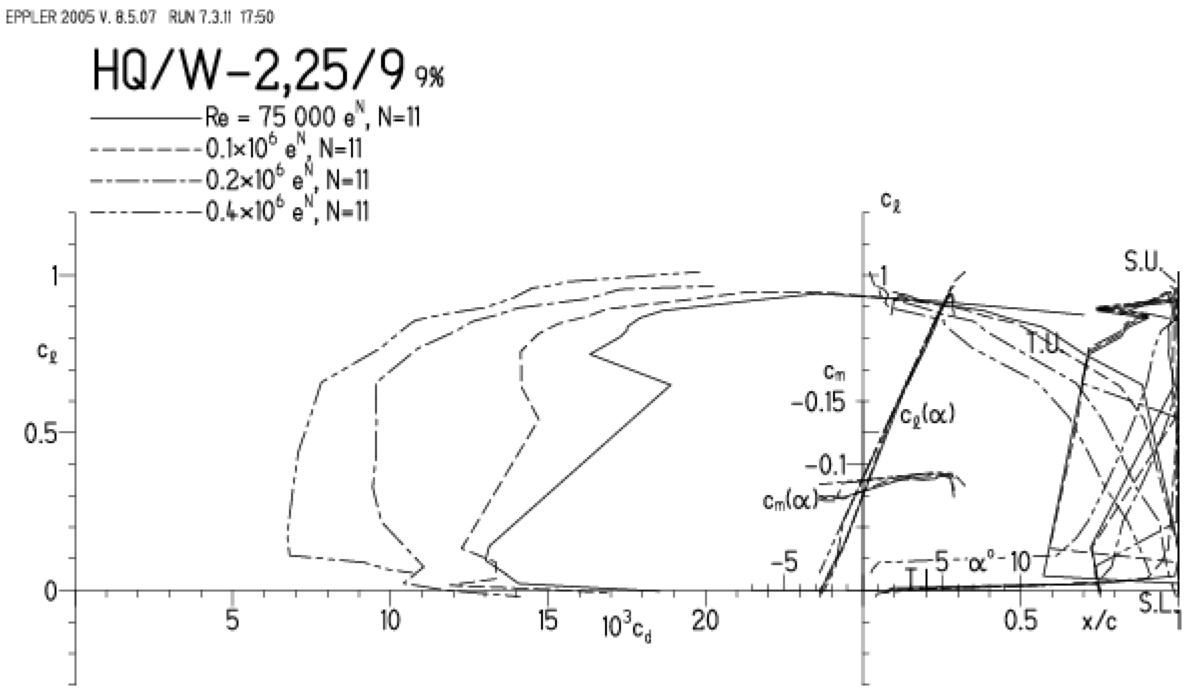
HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



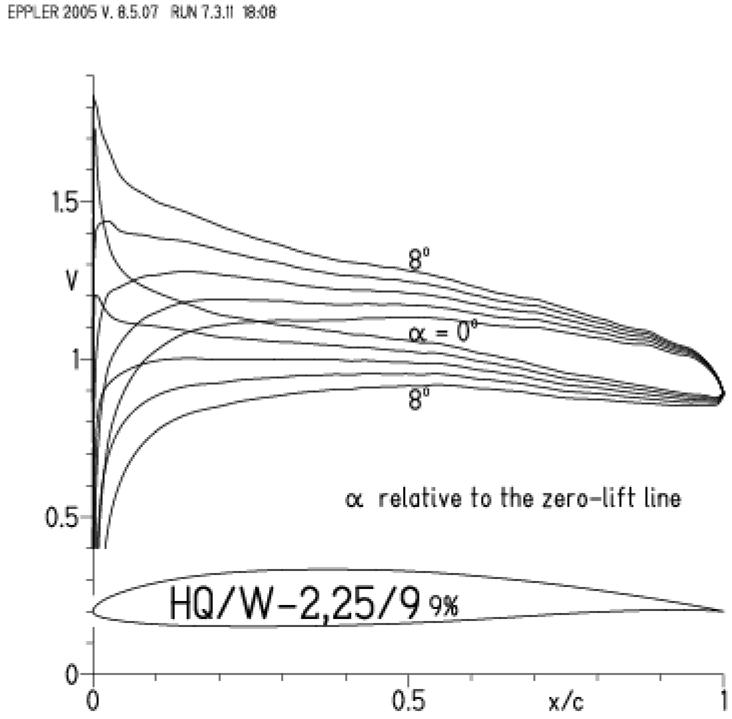


HQ/W-2,25/9, N=11

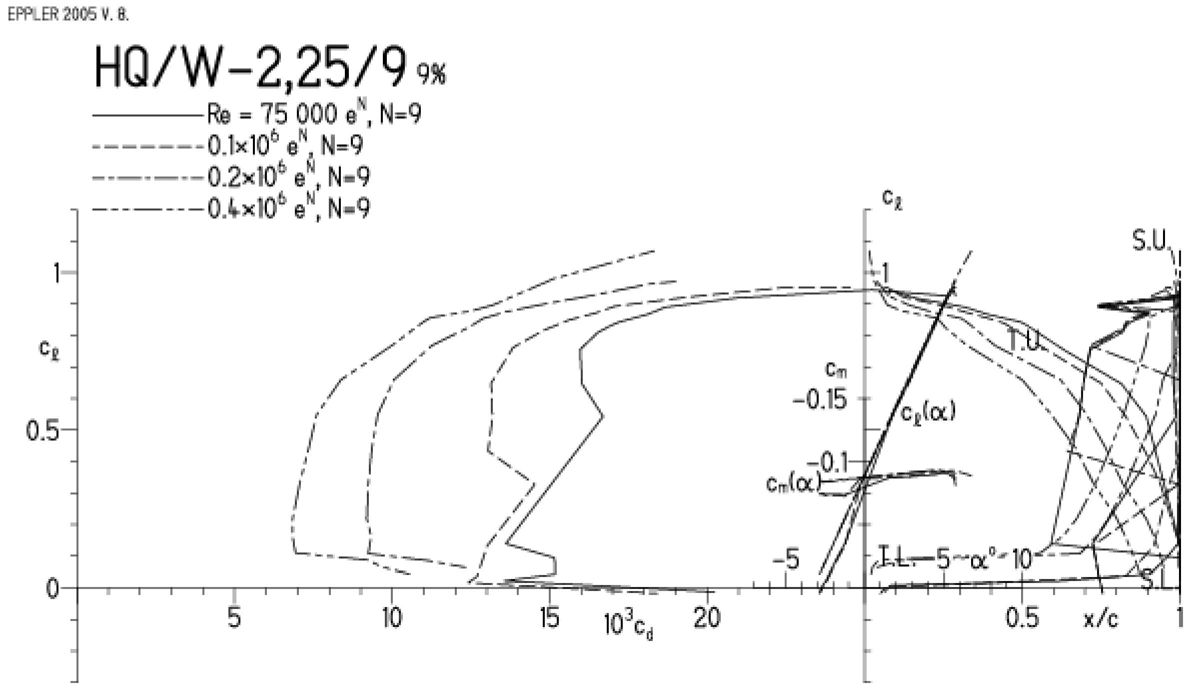

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5
α°
10
T.U.
S.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

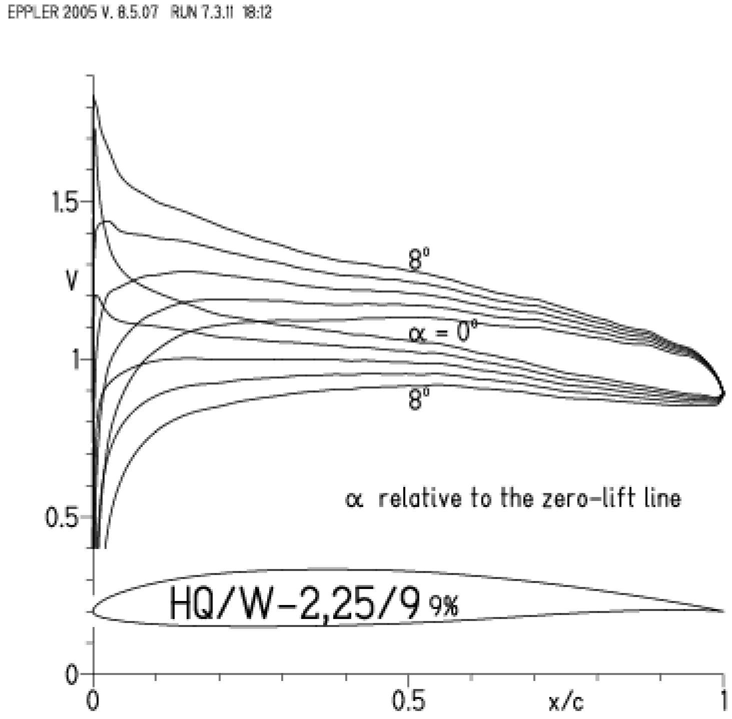


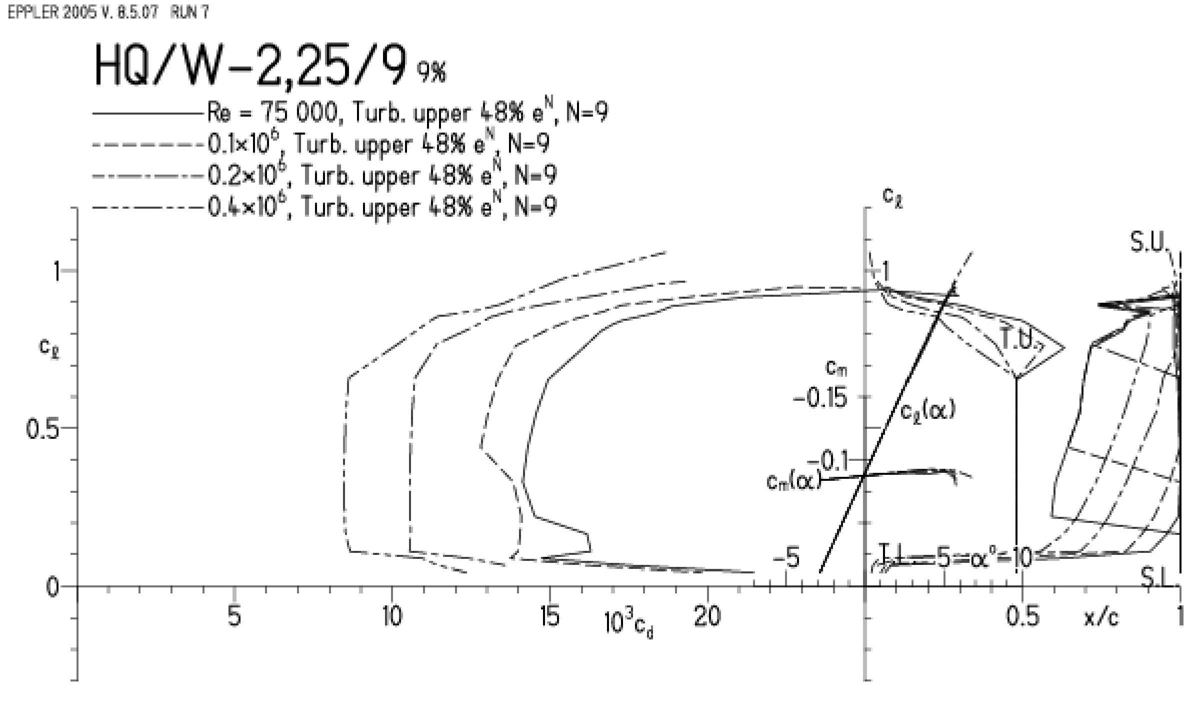
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1



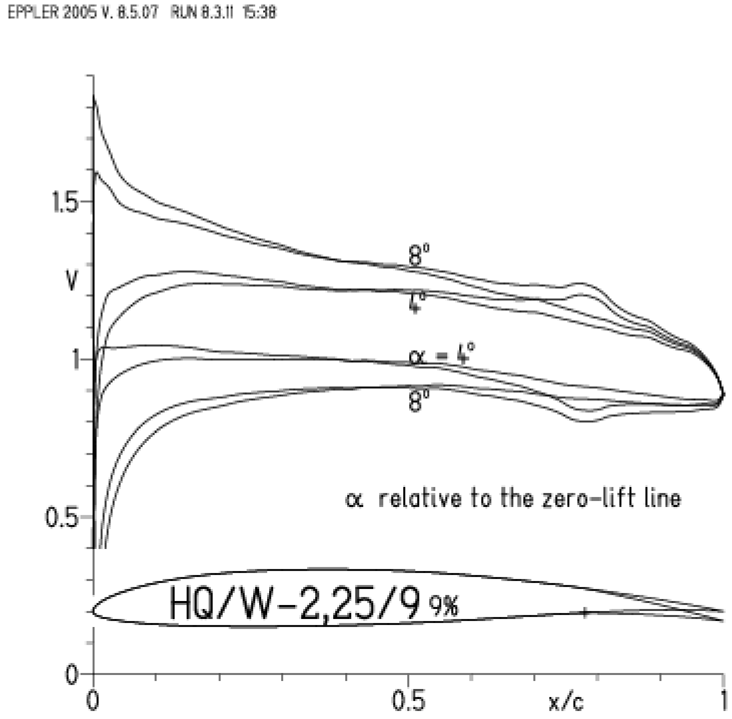
EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

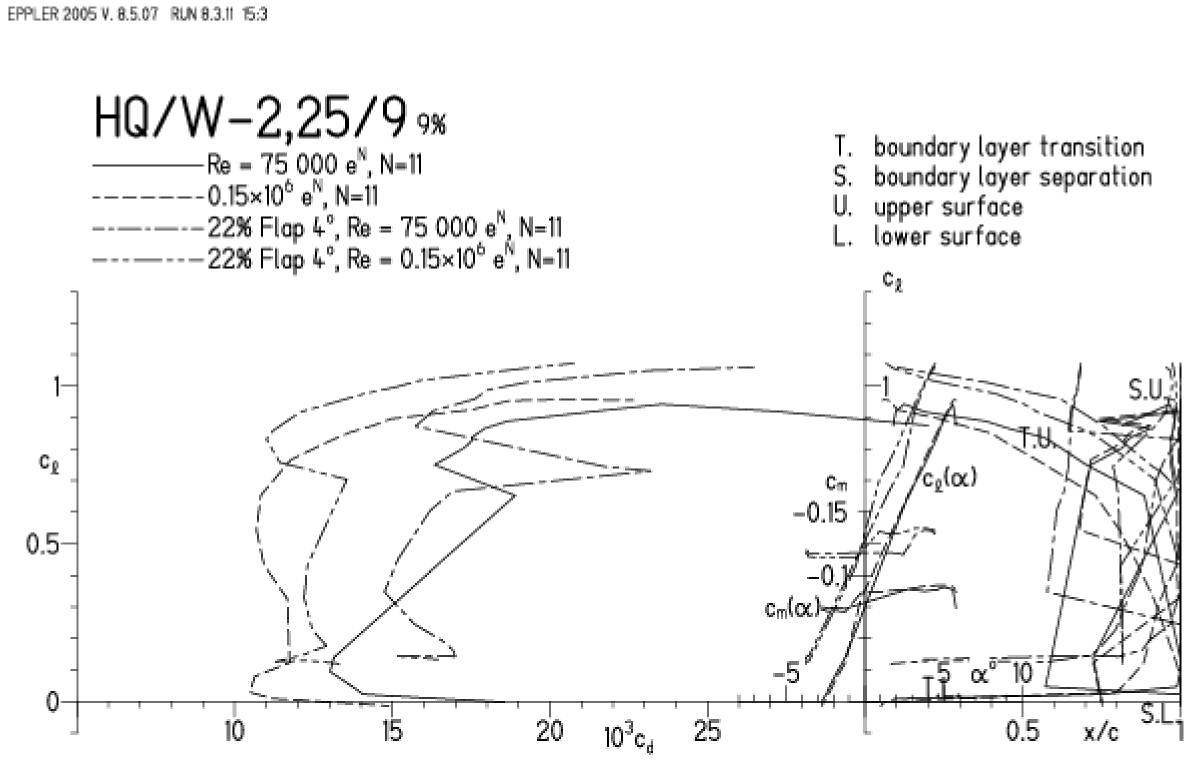
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



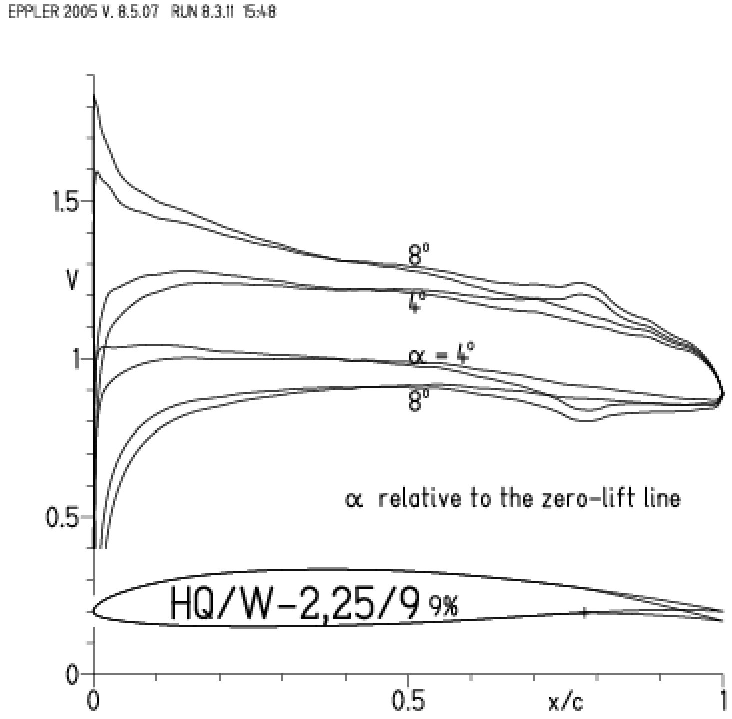


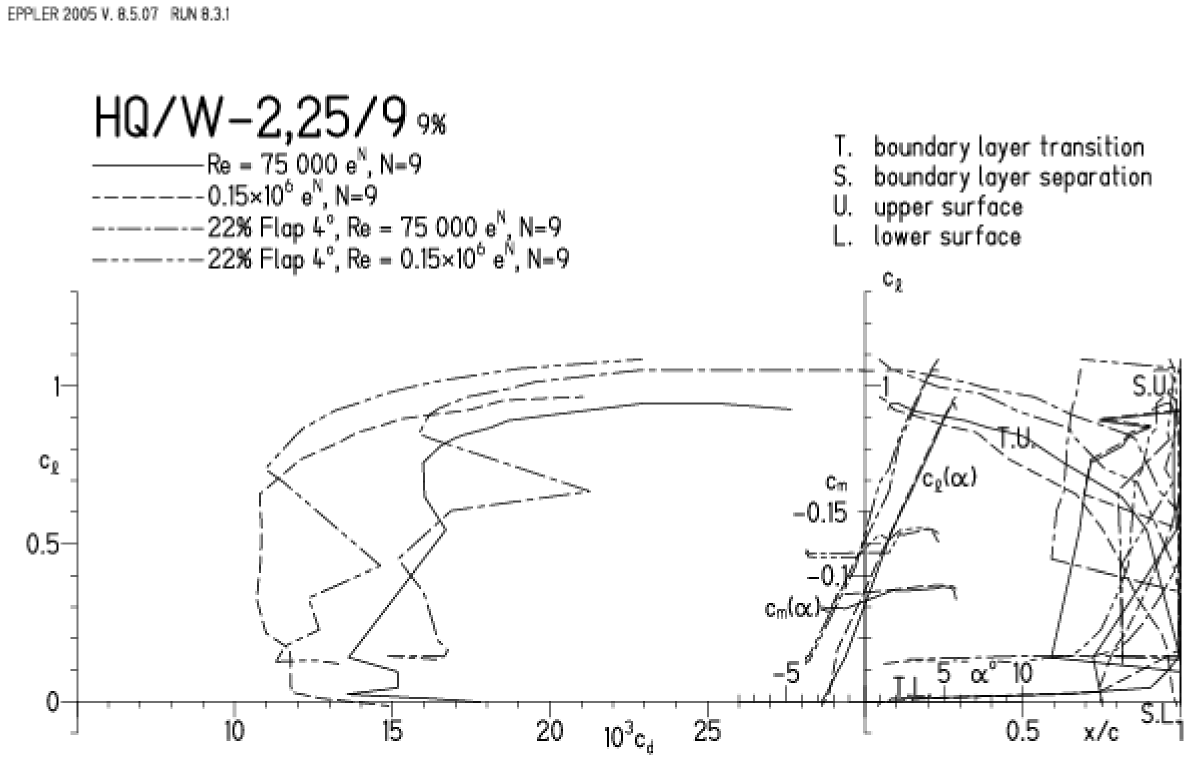
<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag





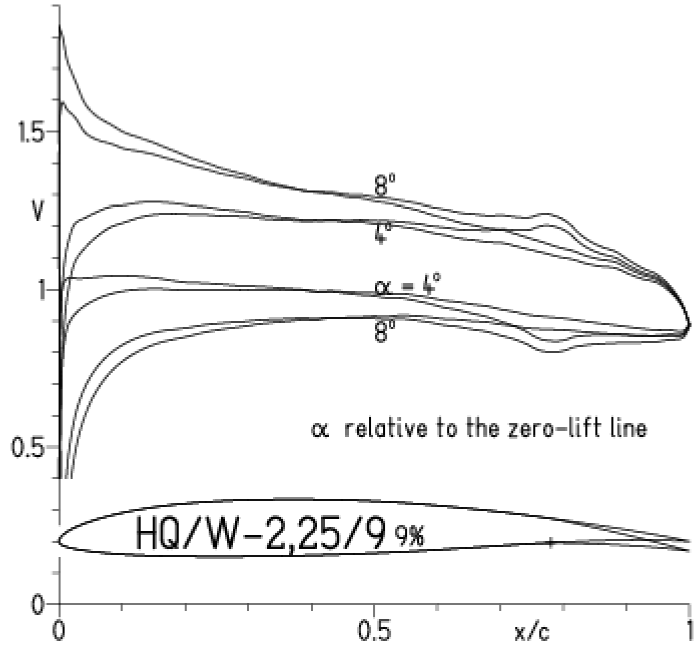
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag



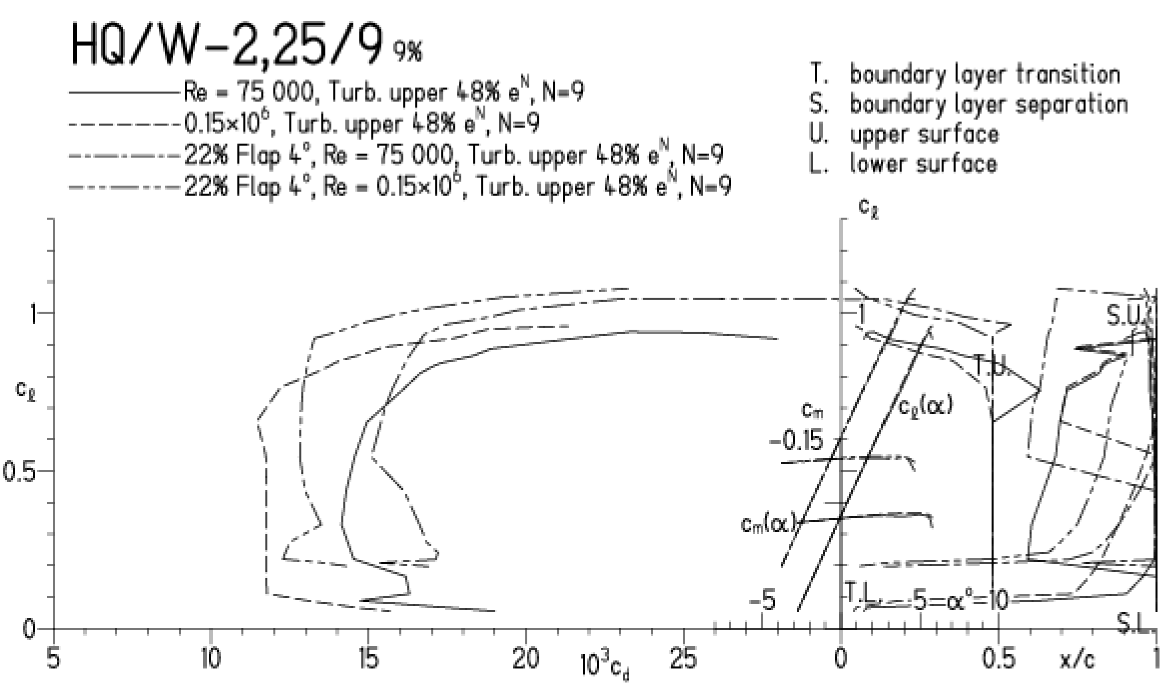


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

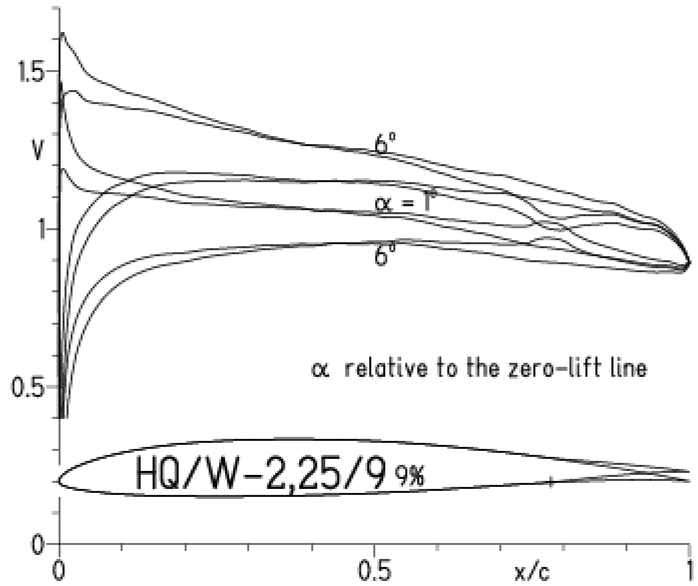


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

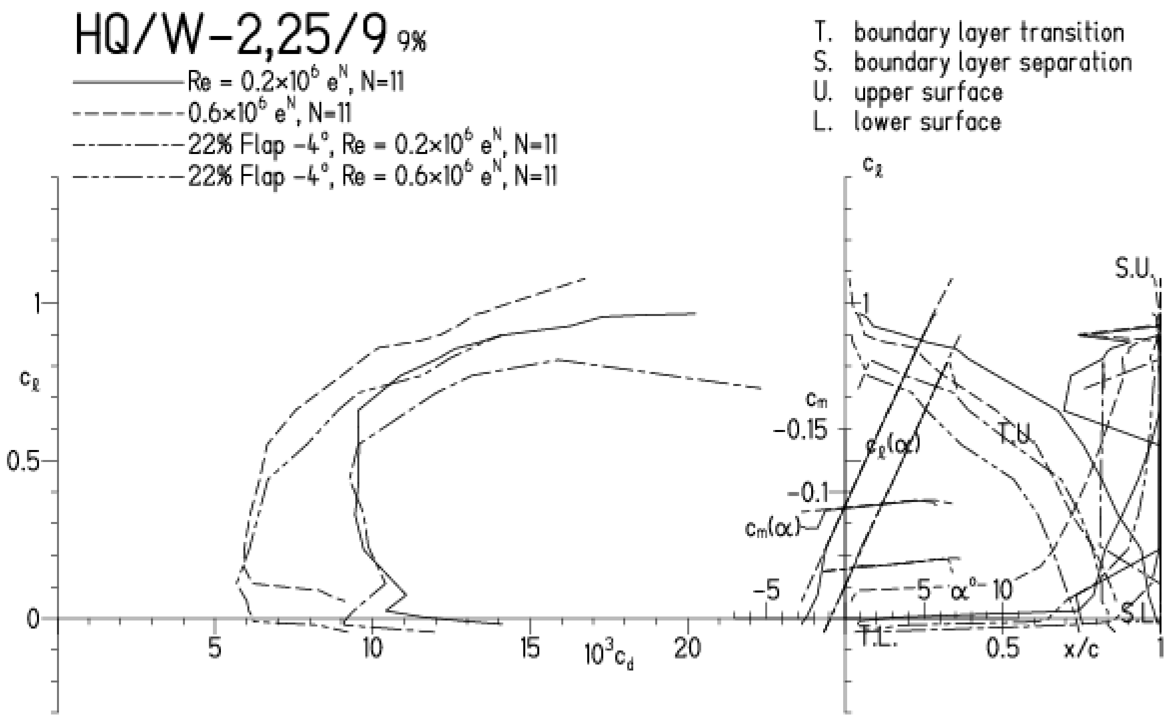


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

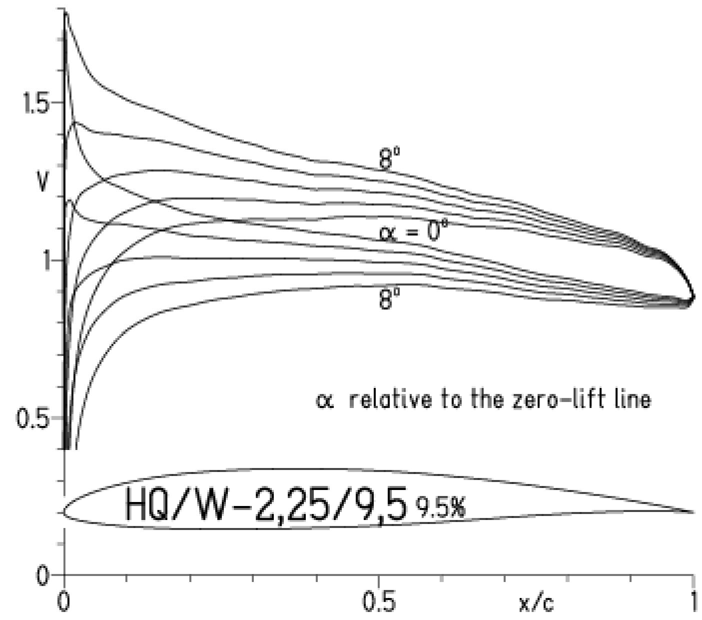


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

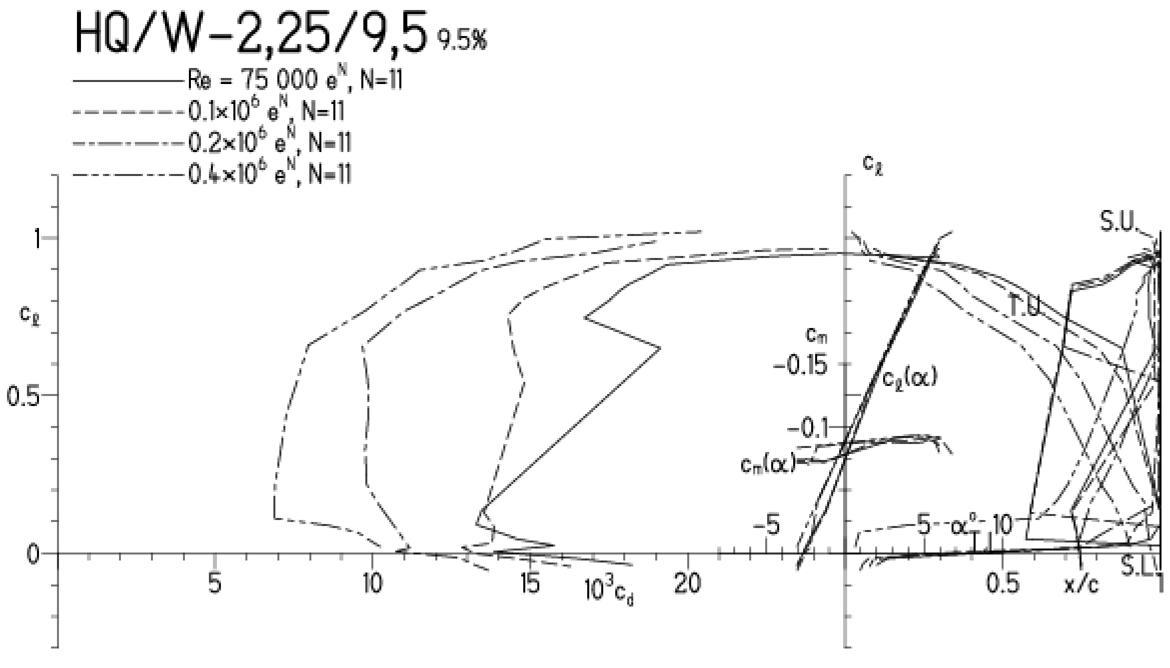


HQ/W-2,25/9,5, N=11

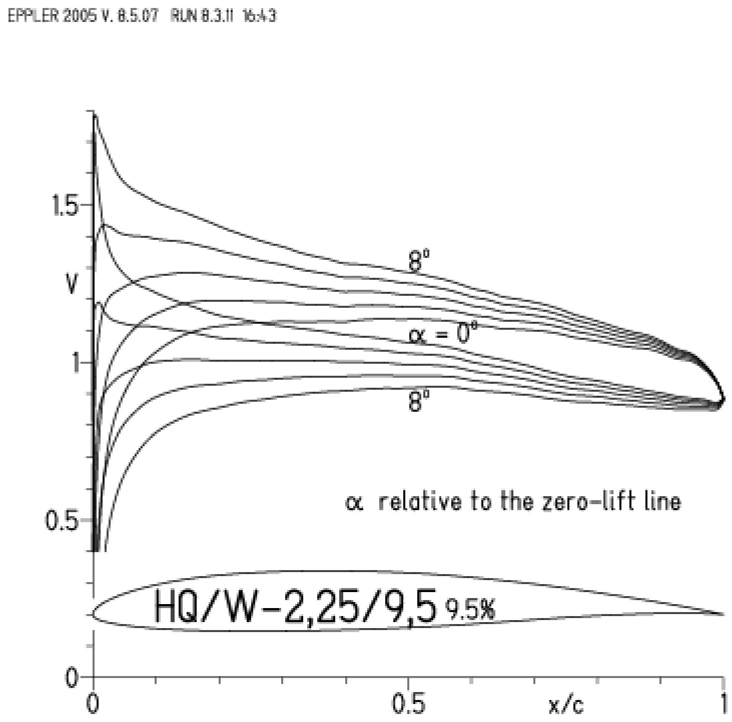
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

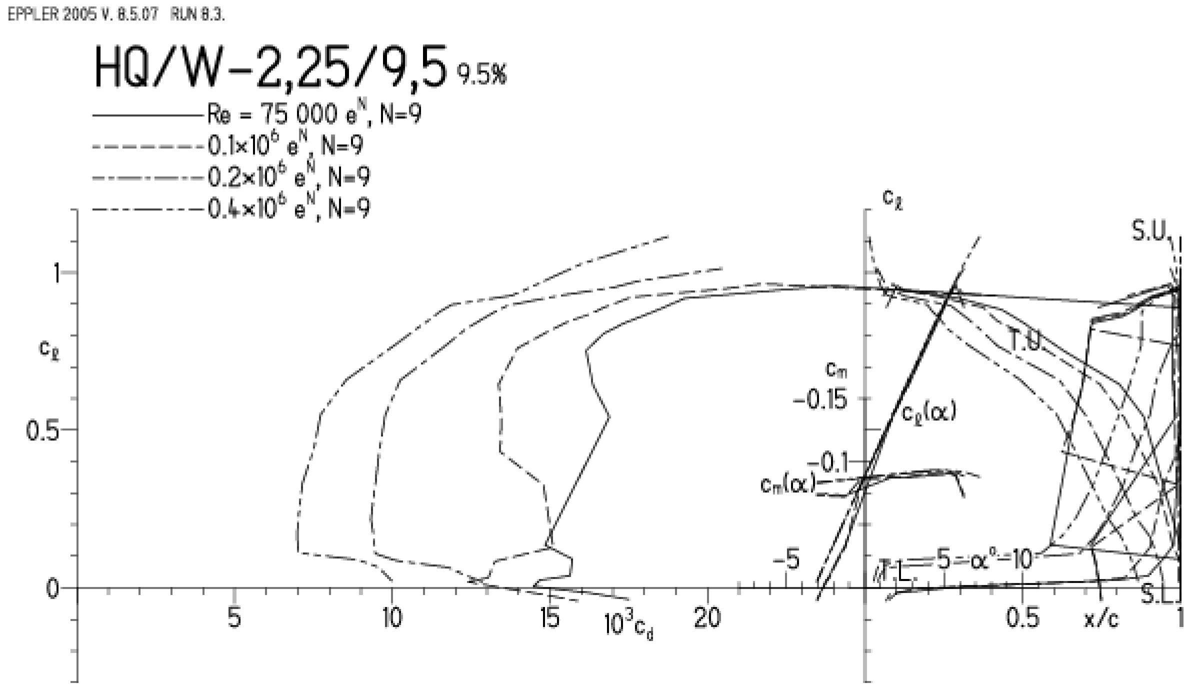


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

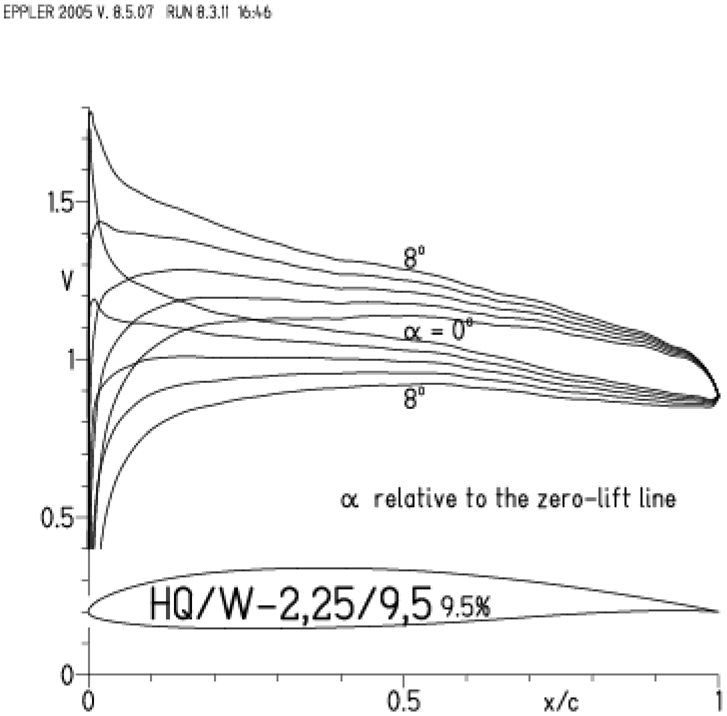


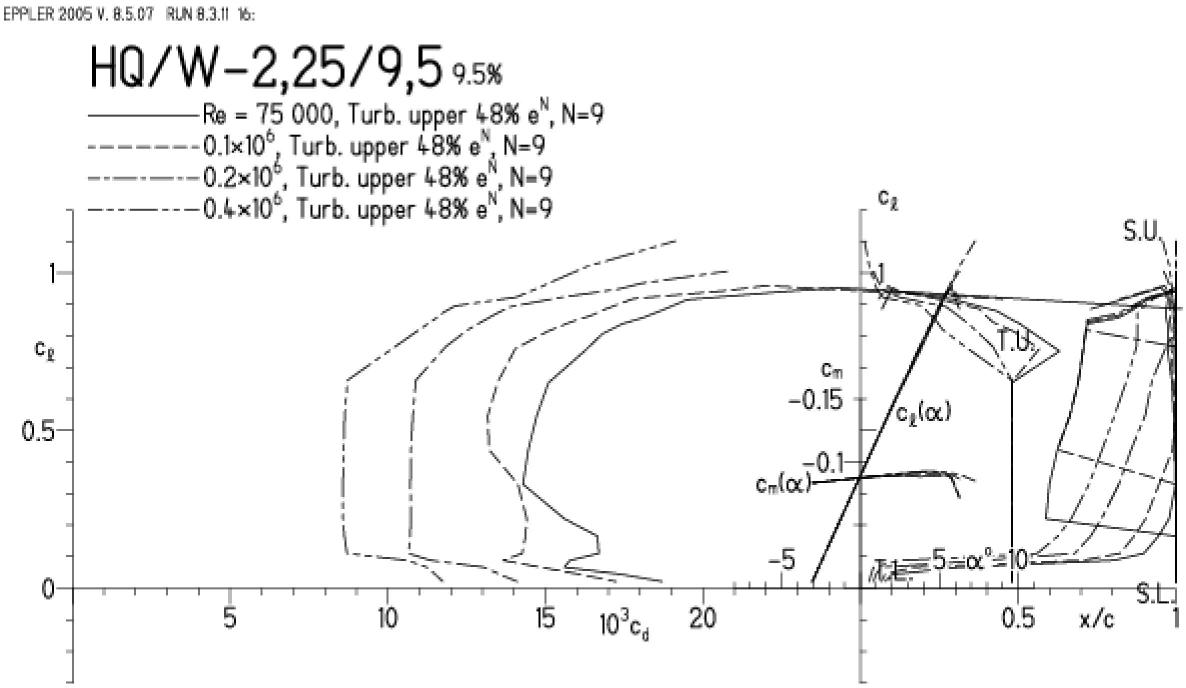
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

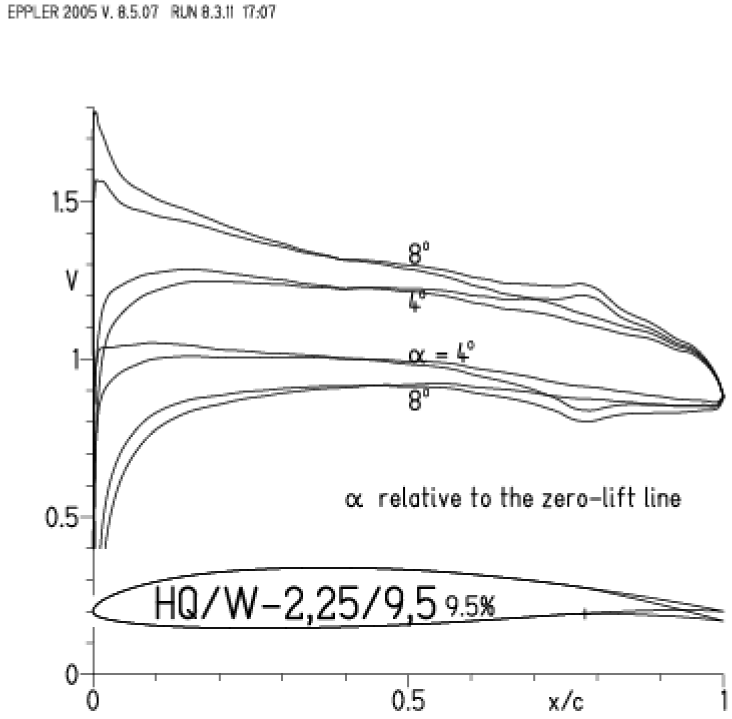

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
−5
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
5 α° 10
S.L.
0.5
x/c
1

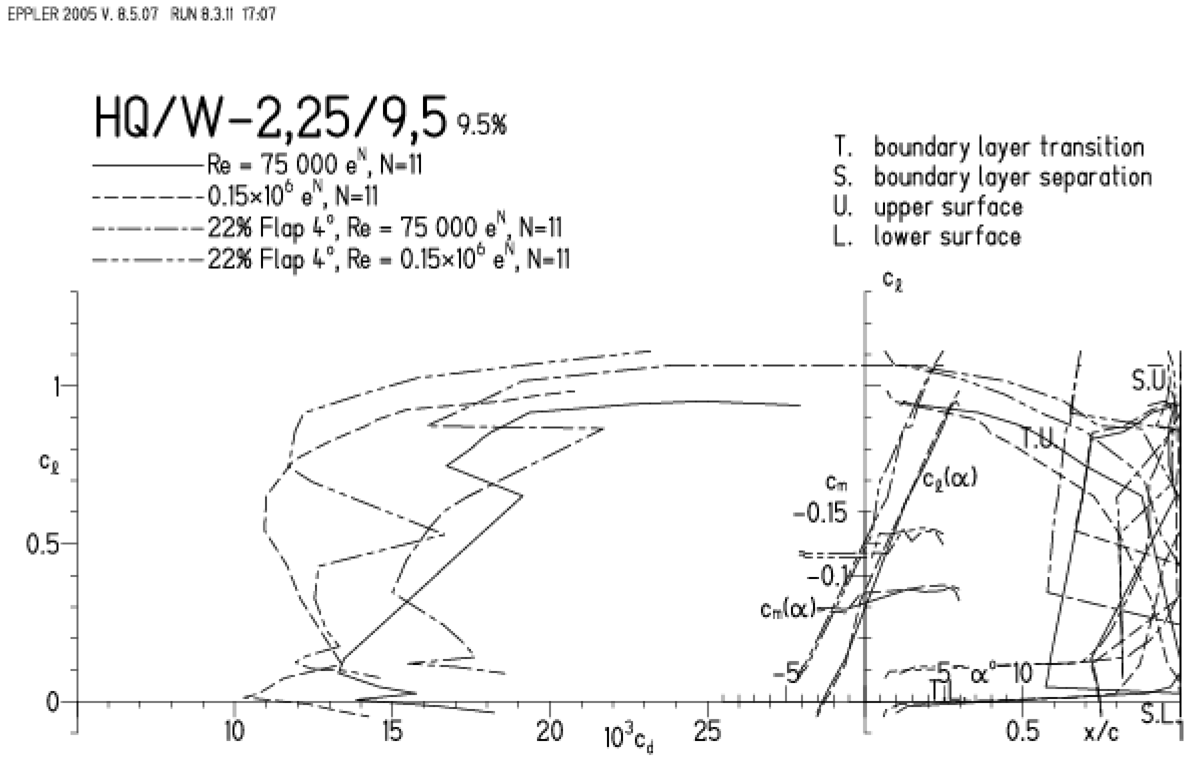
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



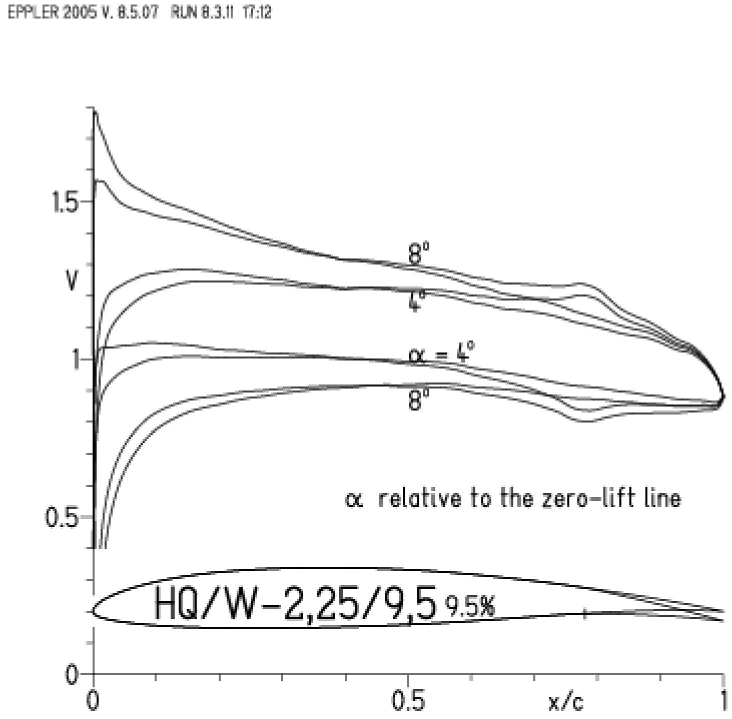


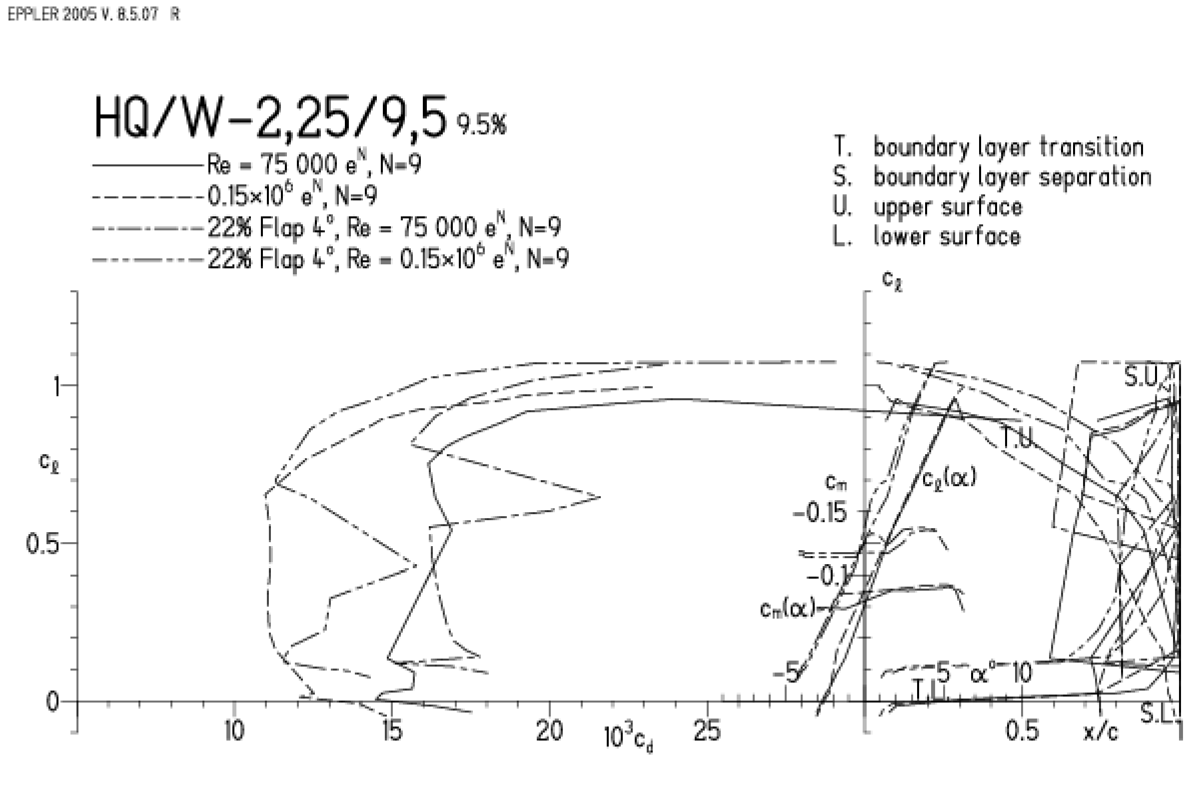
<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag





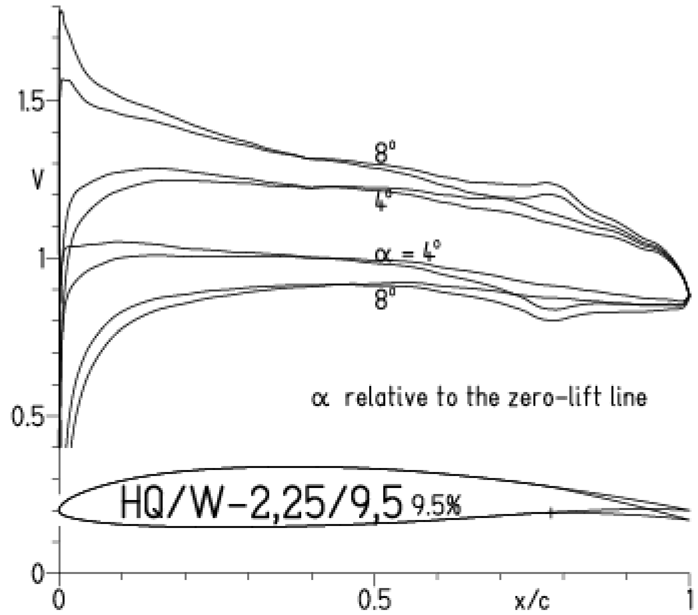
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



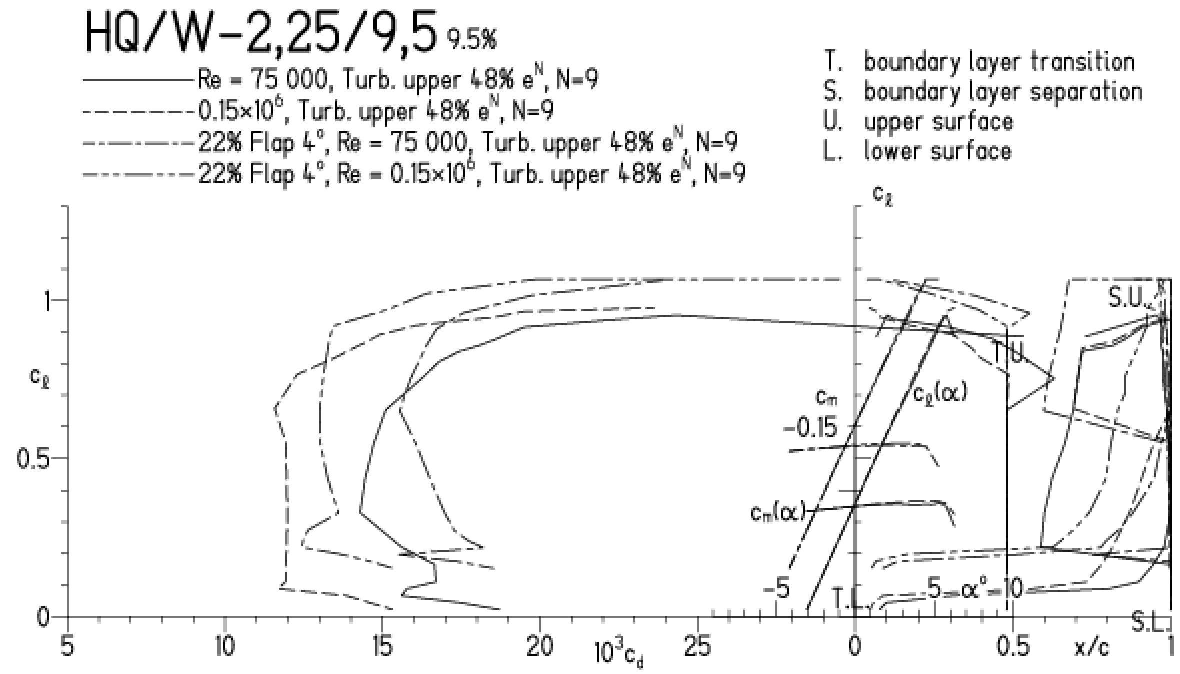


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

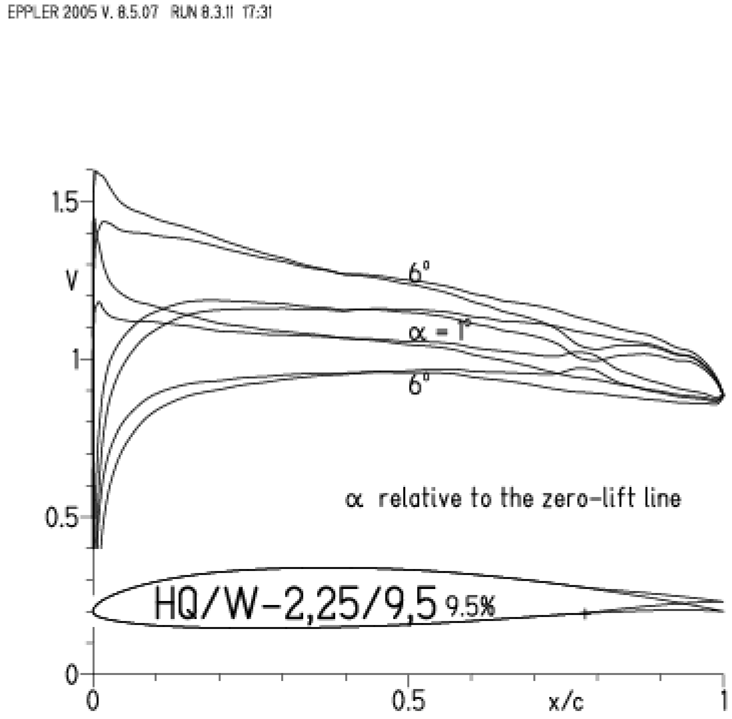
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

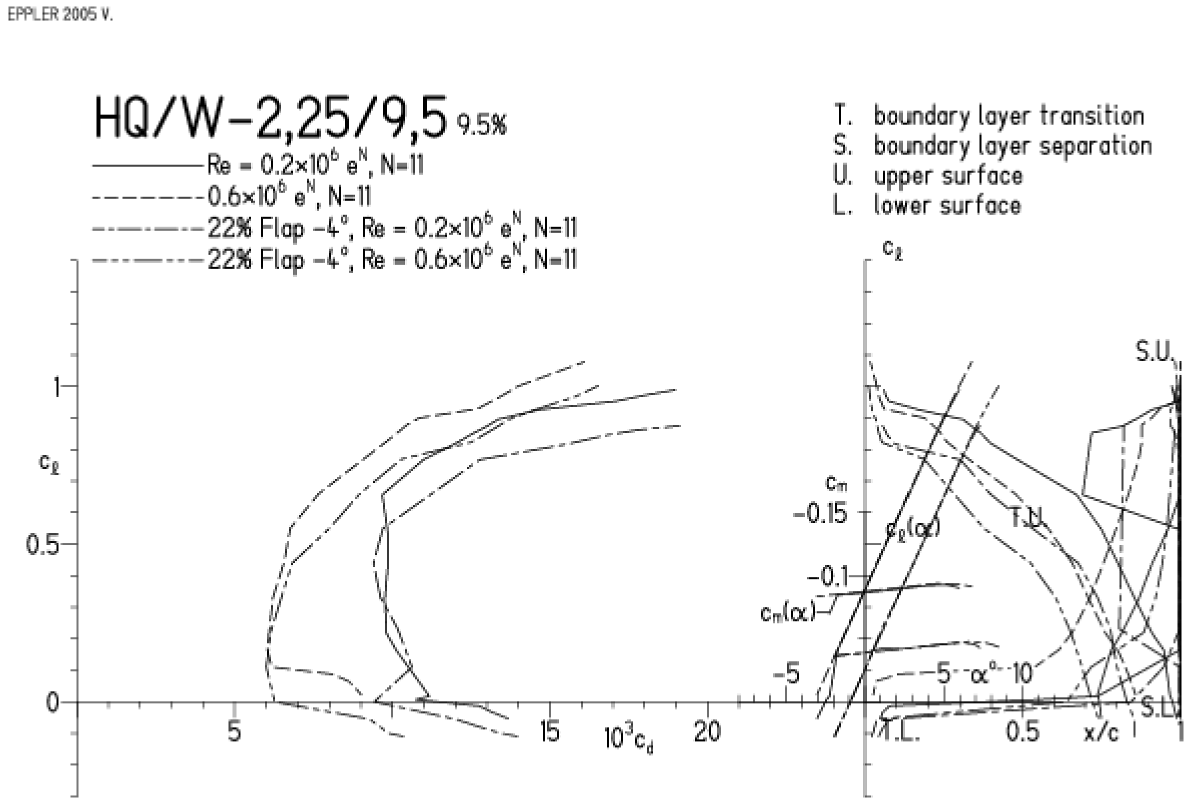


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



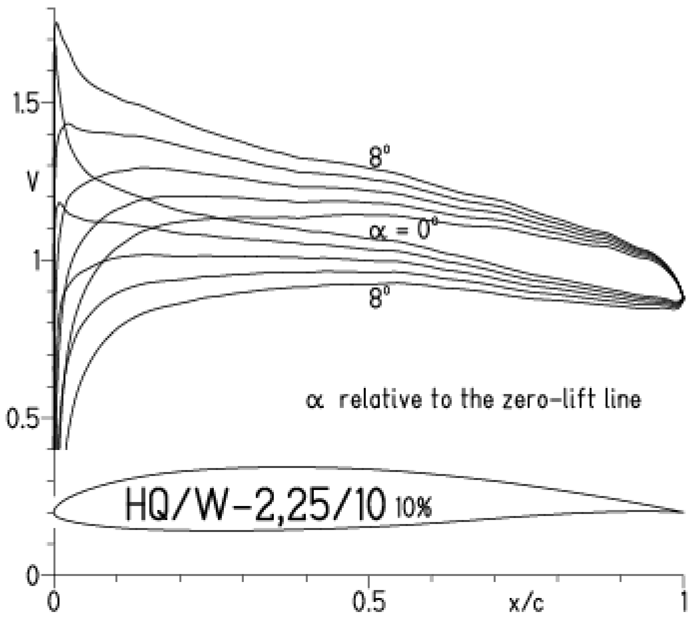
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



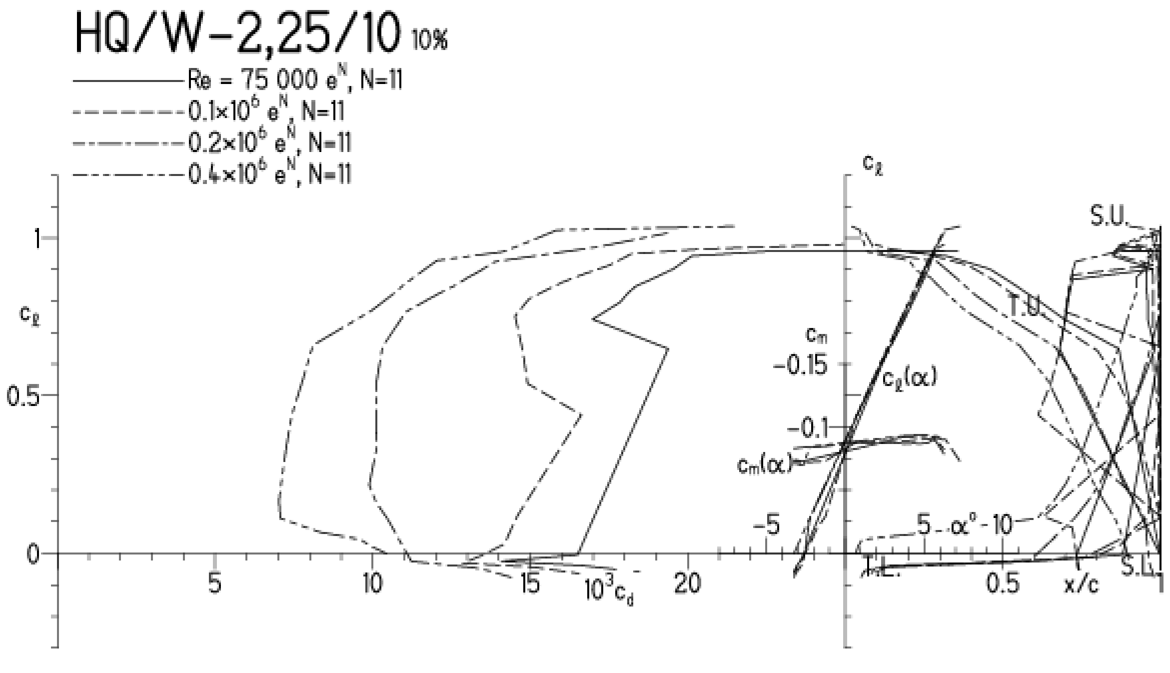


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

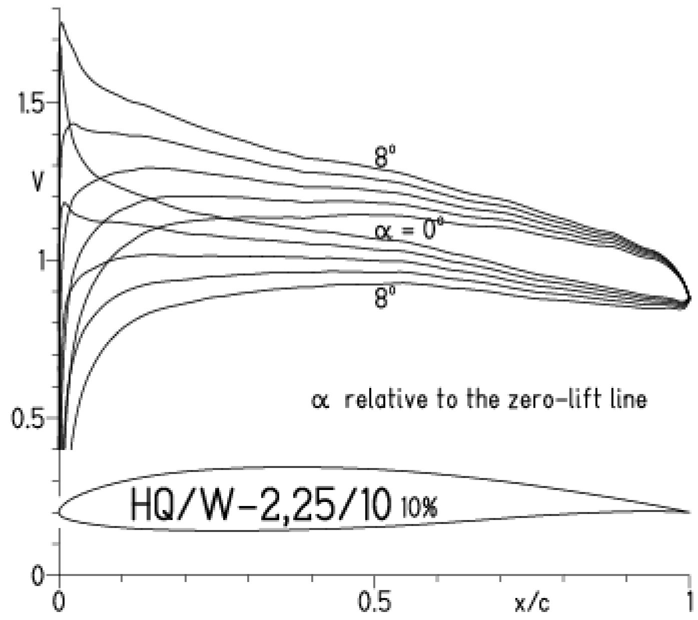


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

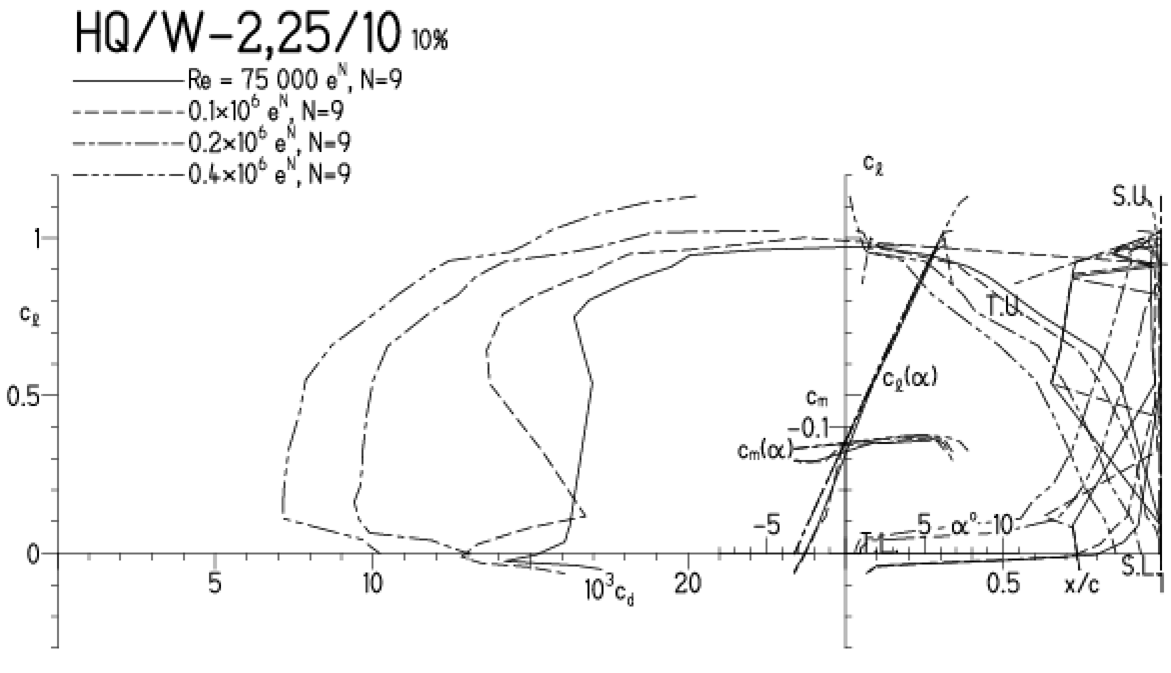


<u>HQ/W-2,25/10</u>, N=9

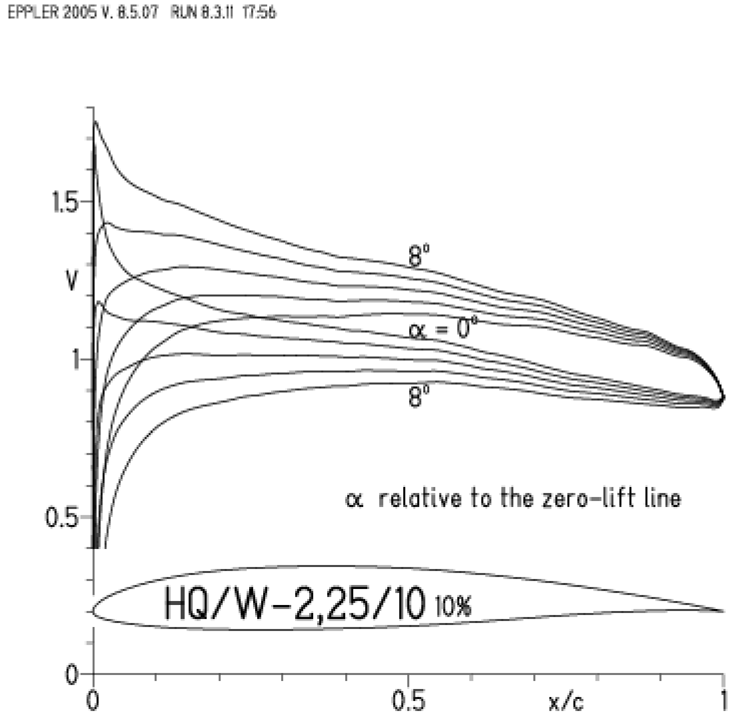
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

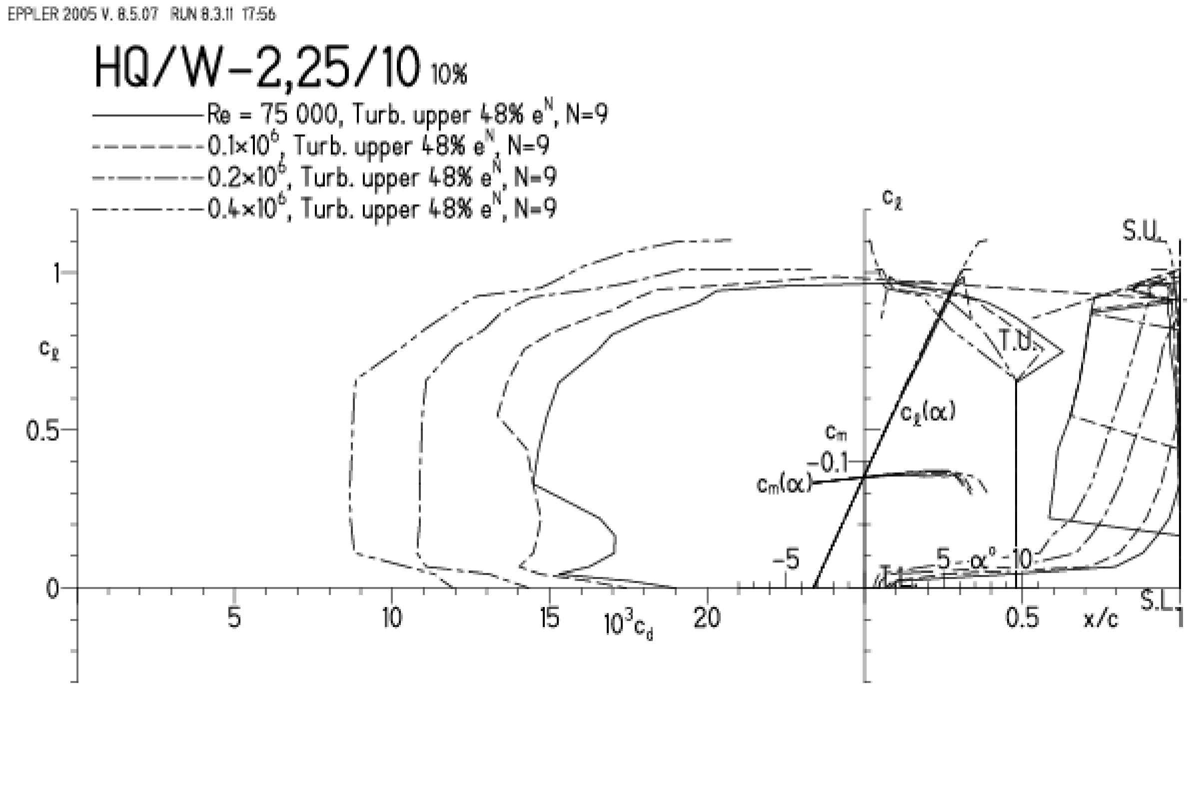


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

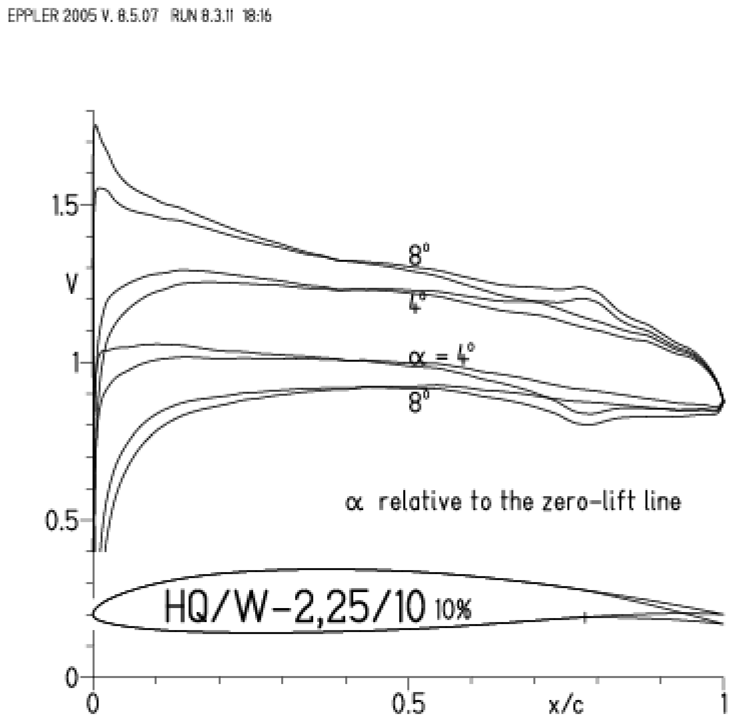


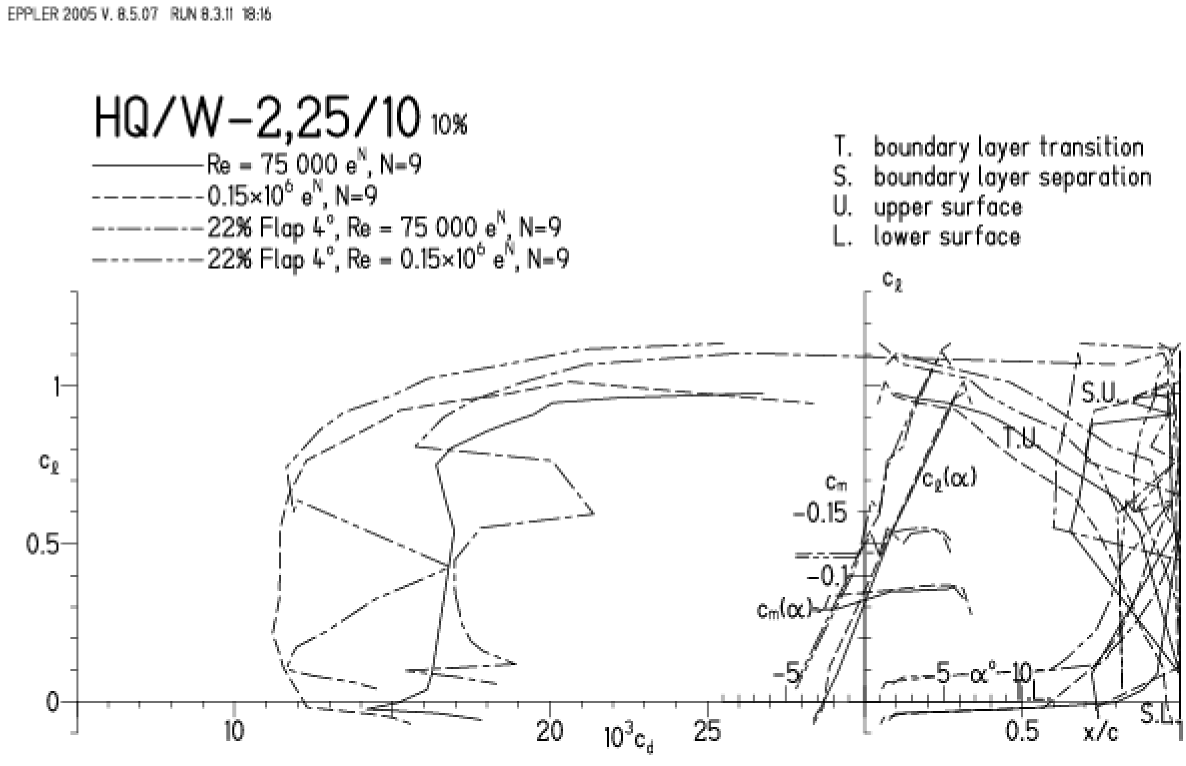
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





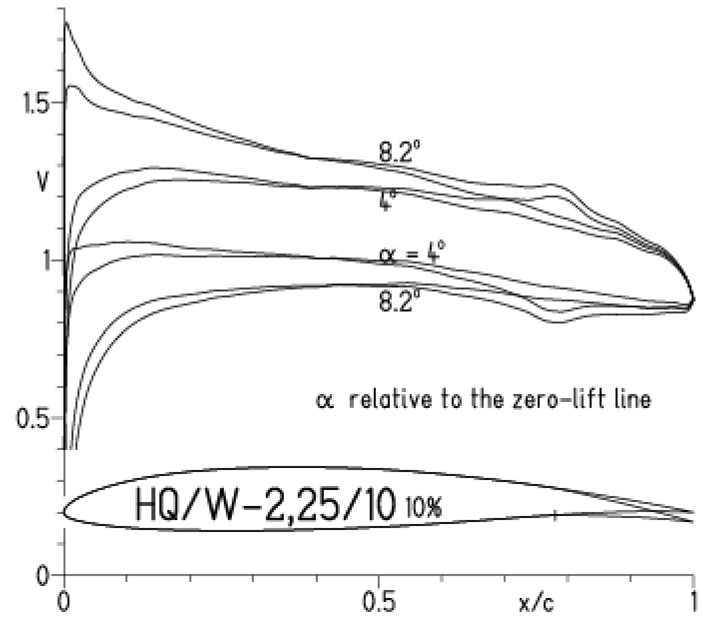
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag



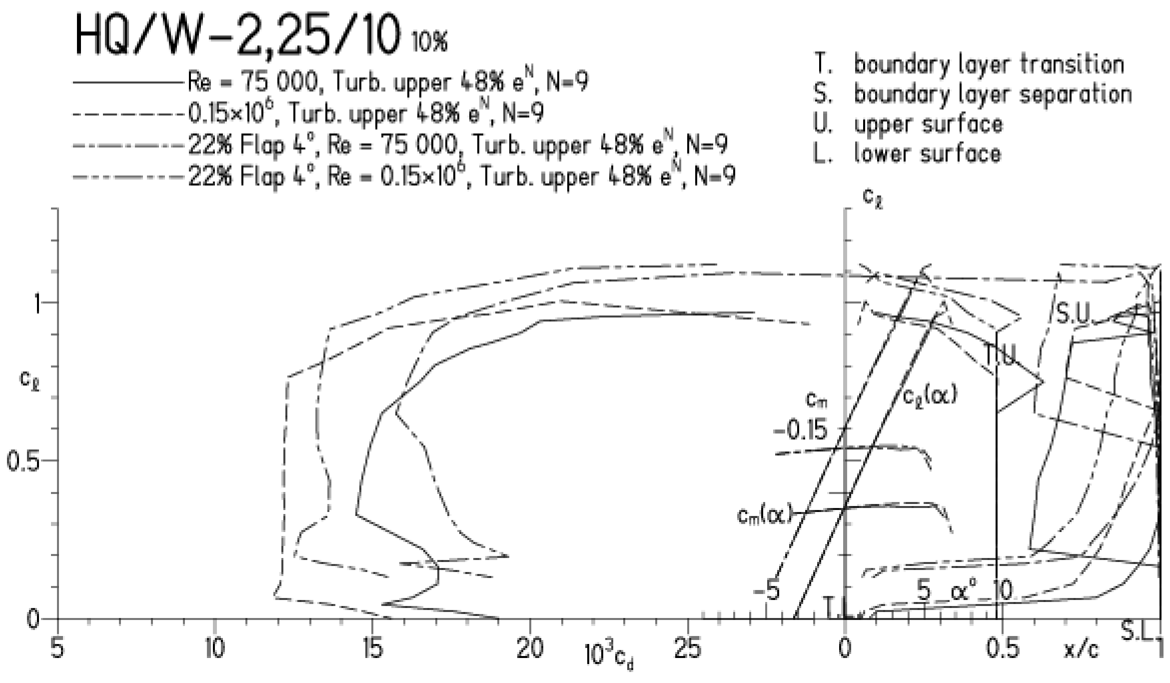


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

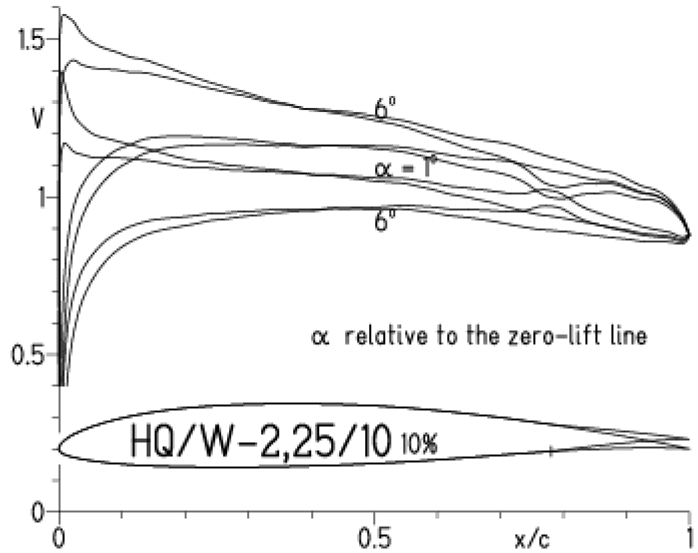


EPPLER 2005 V. 8.5.07 RUN 8.3

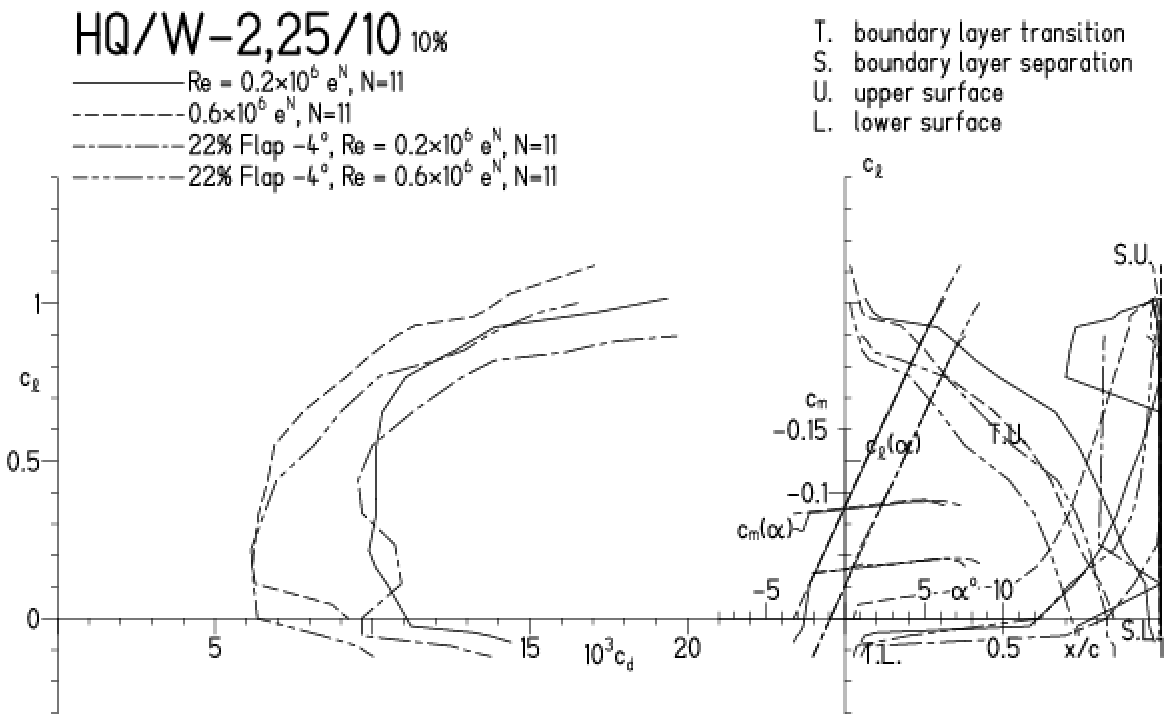


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

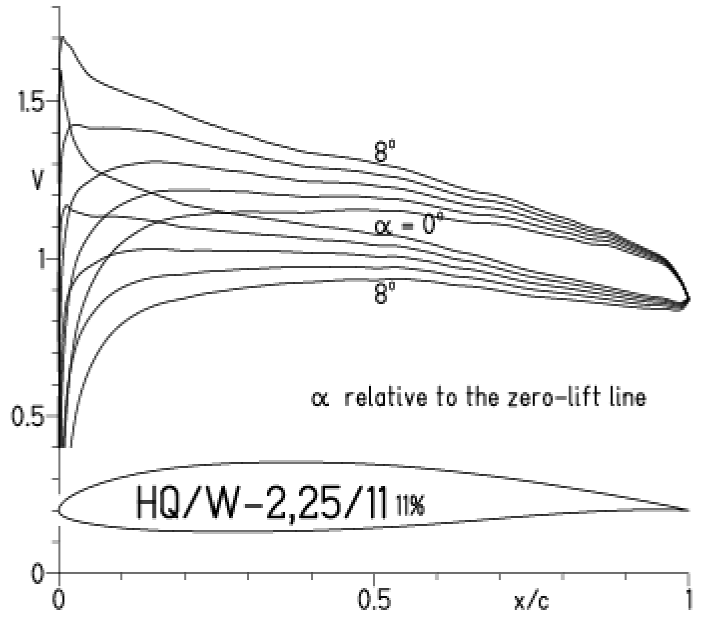


EPPLER 2005 V. 8.5.07 RUN

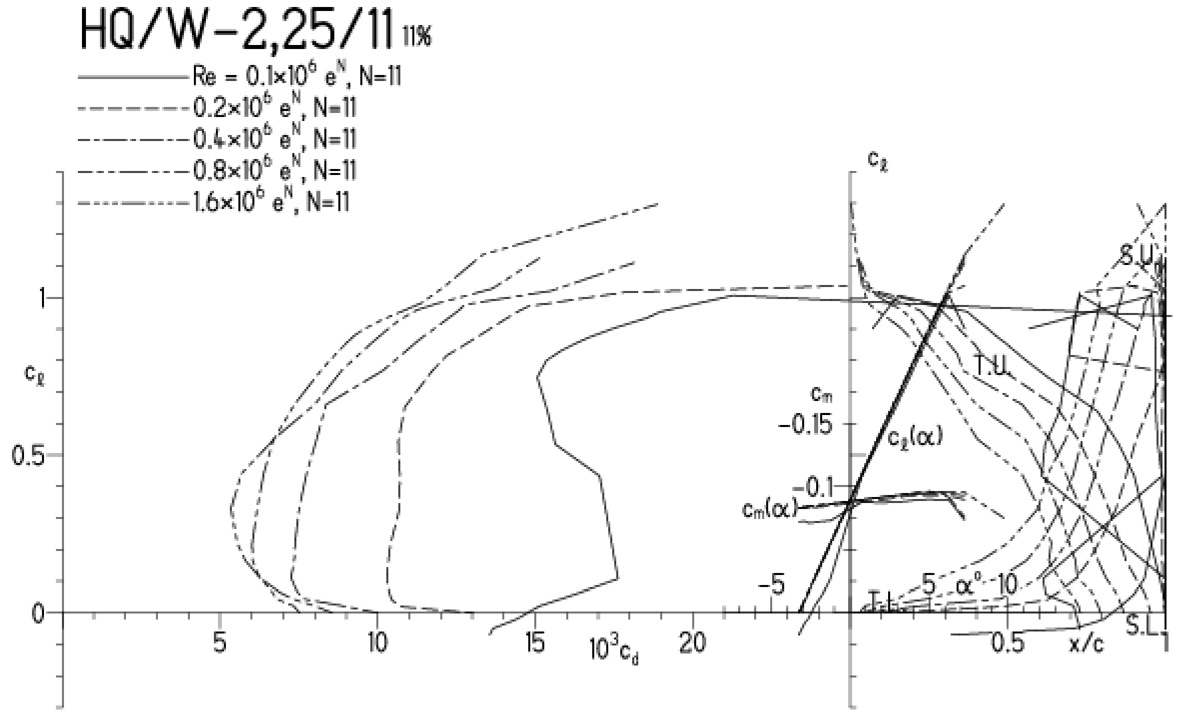


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

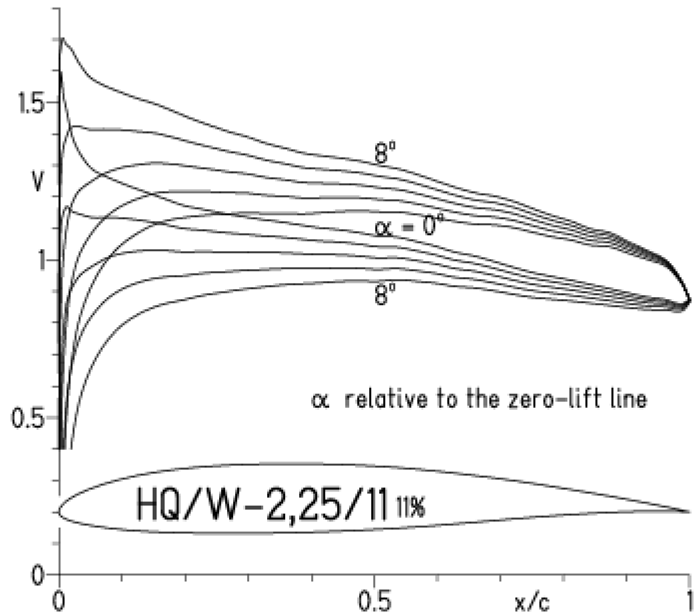


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

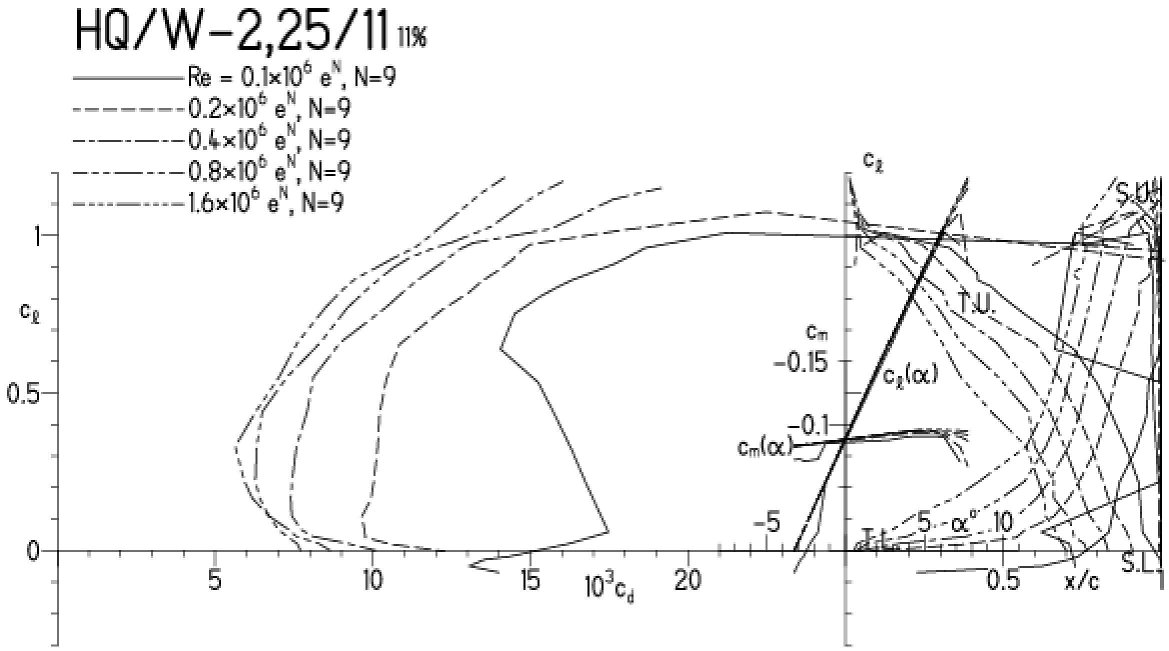


HQQ/W-2,25/11, N=9

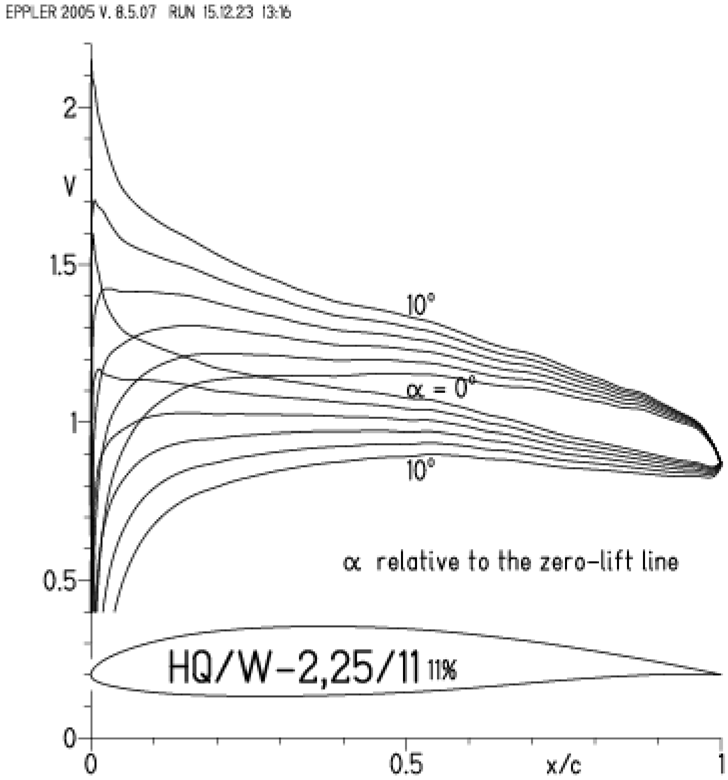
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

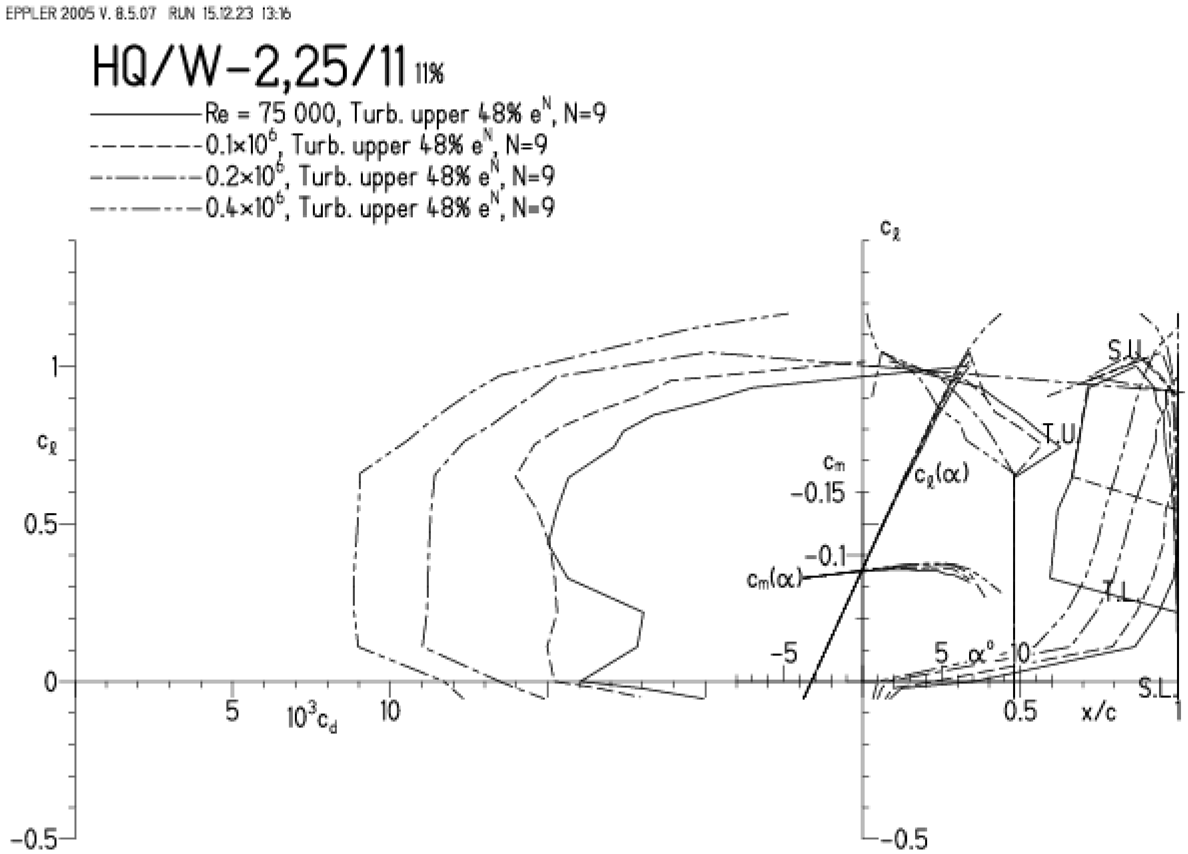


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



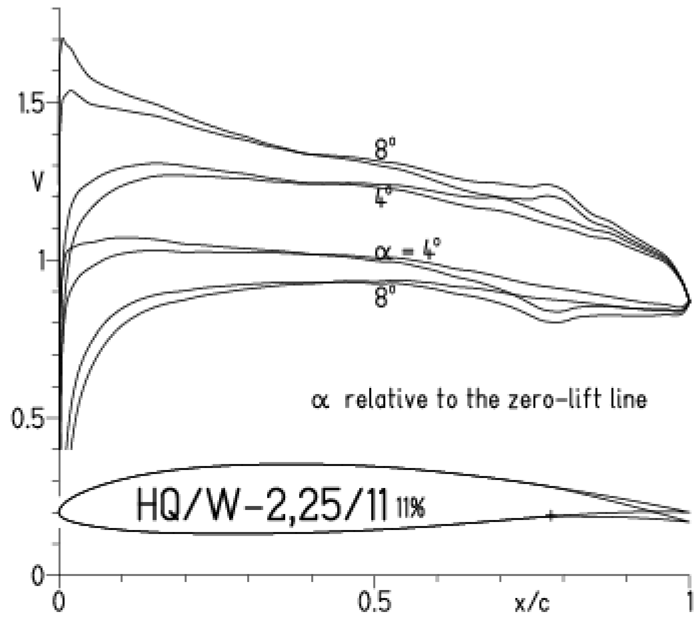
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



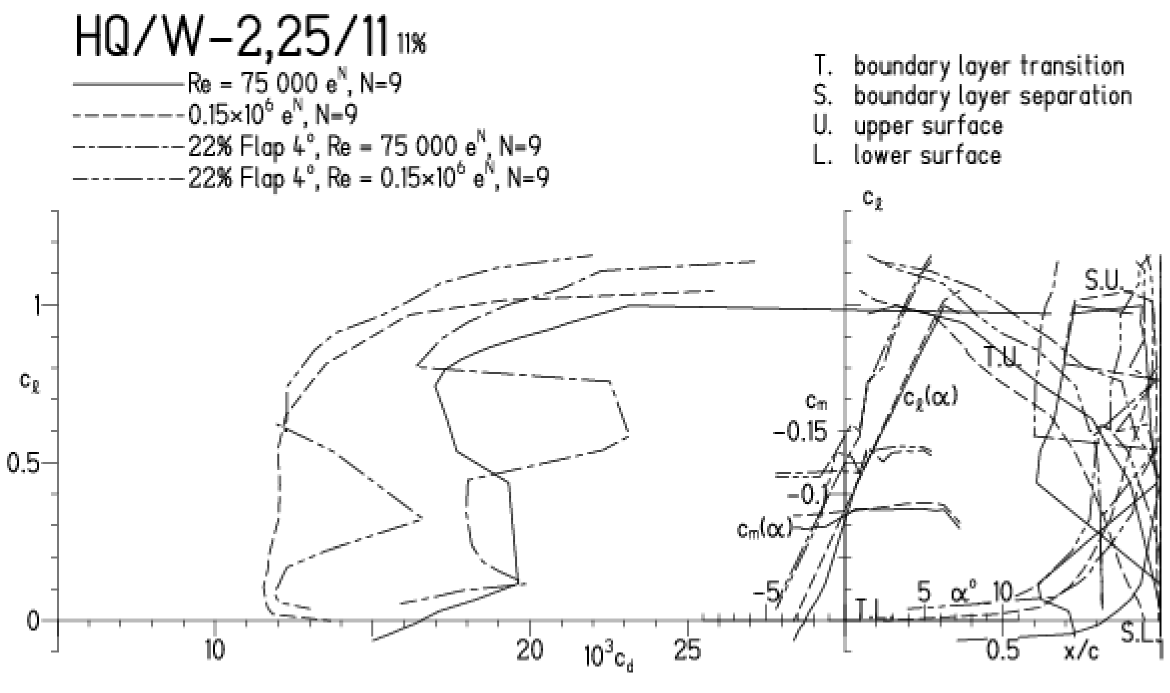


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

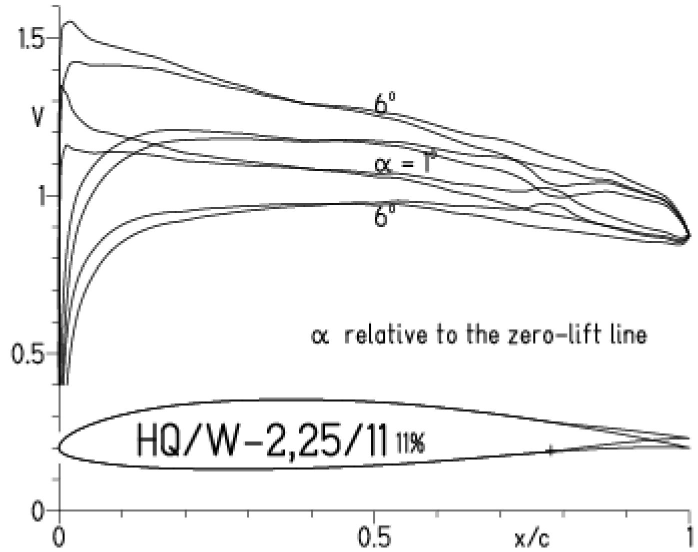


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

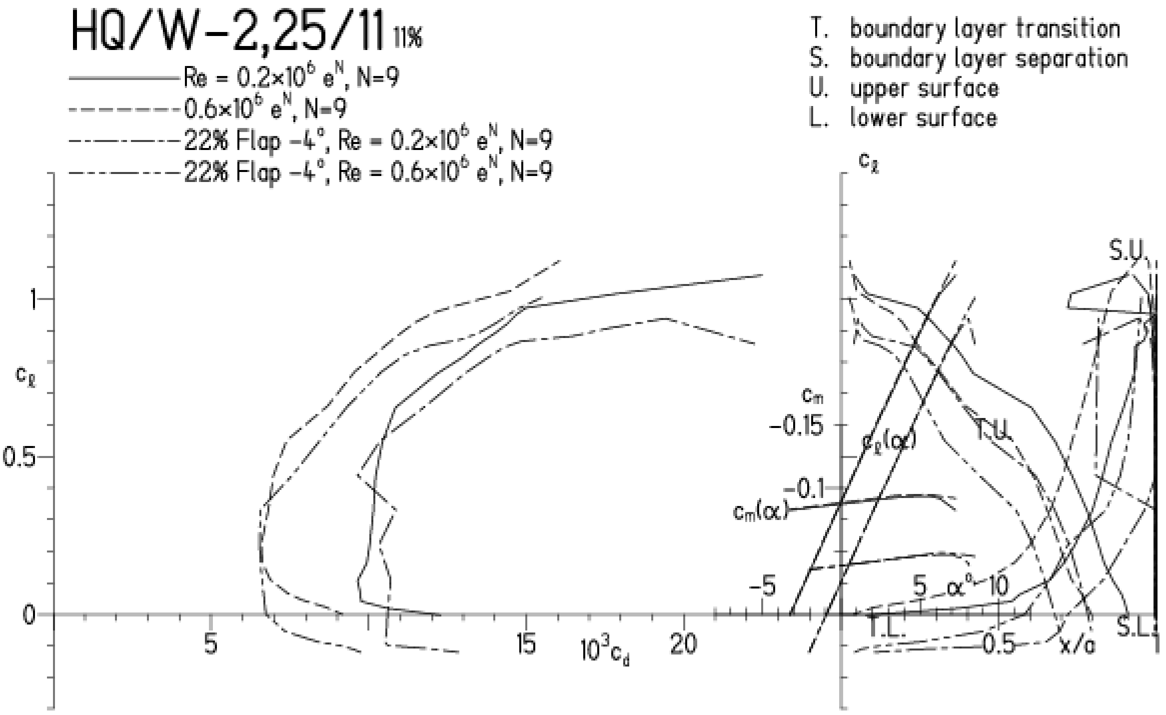


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

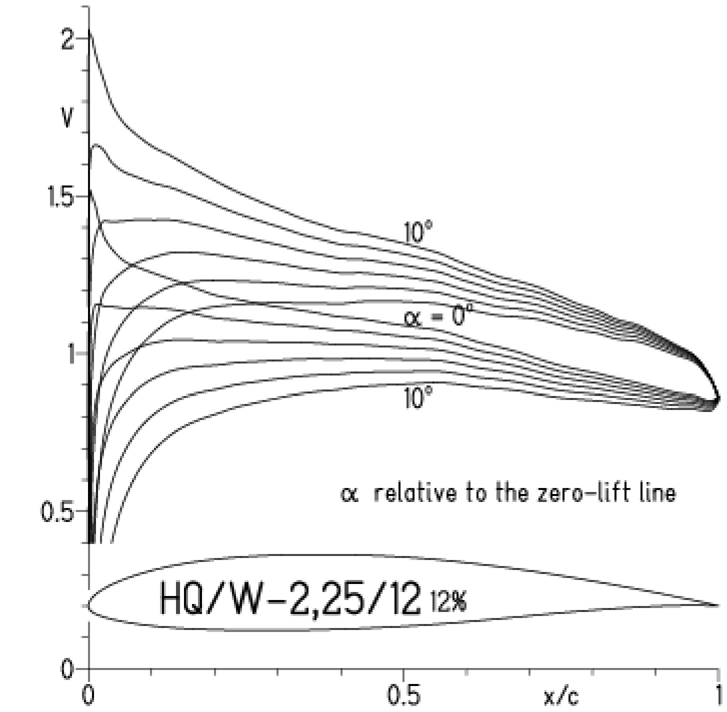


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

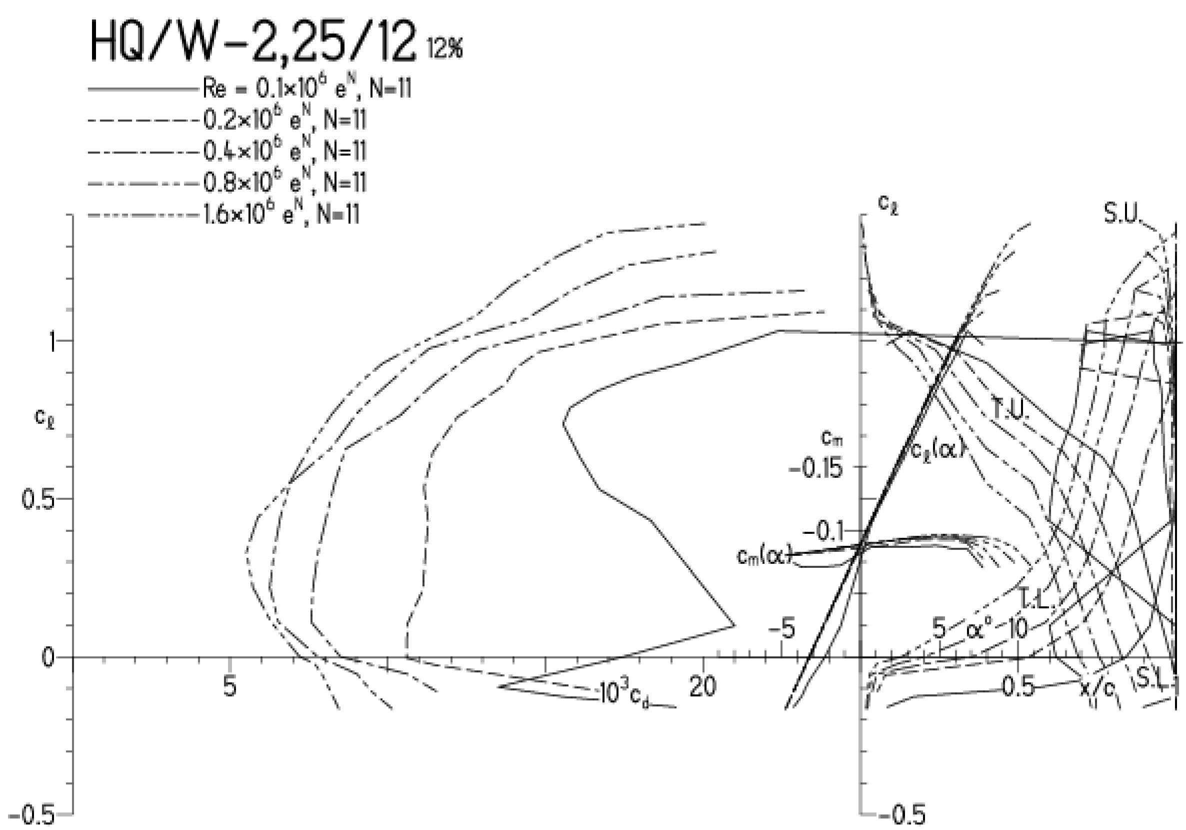


HQ/W-2,25/12, N=11

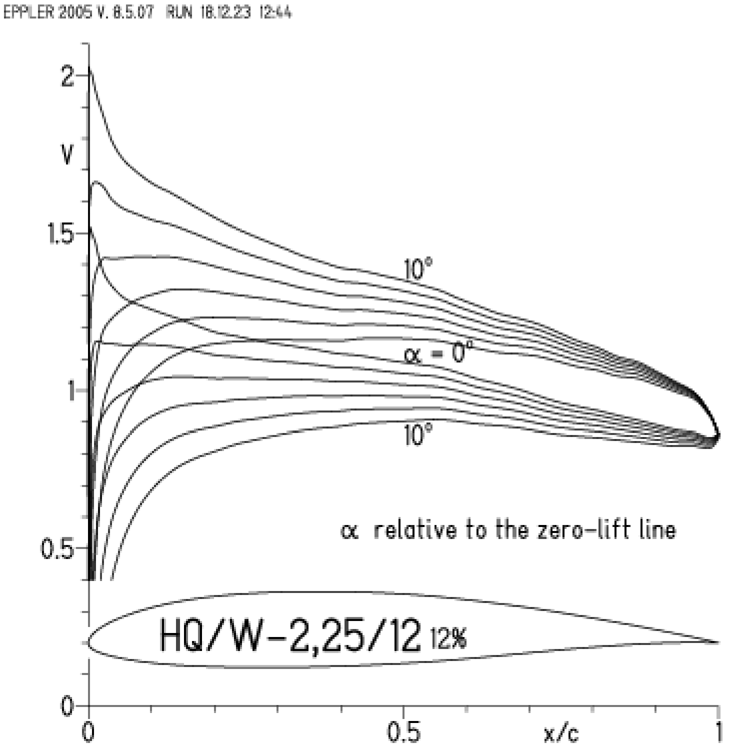
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

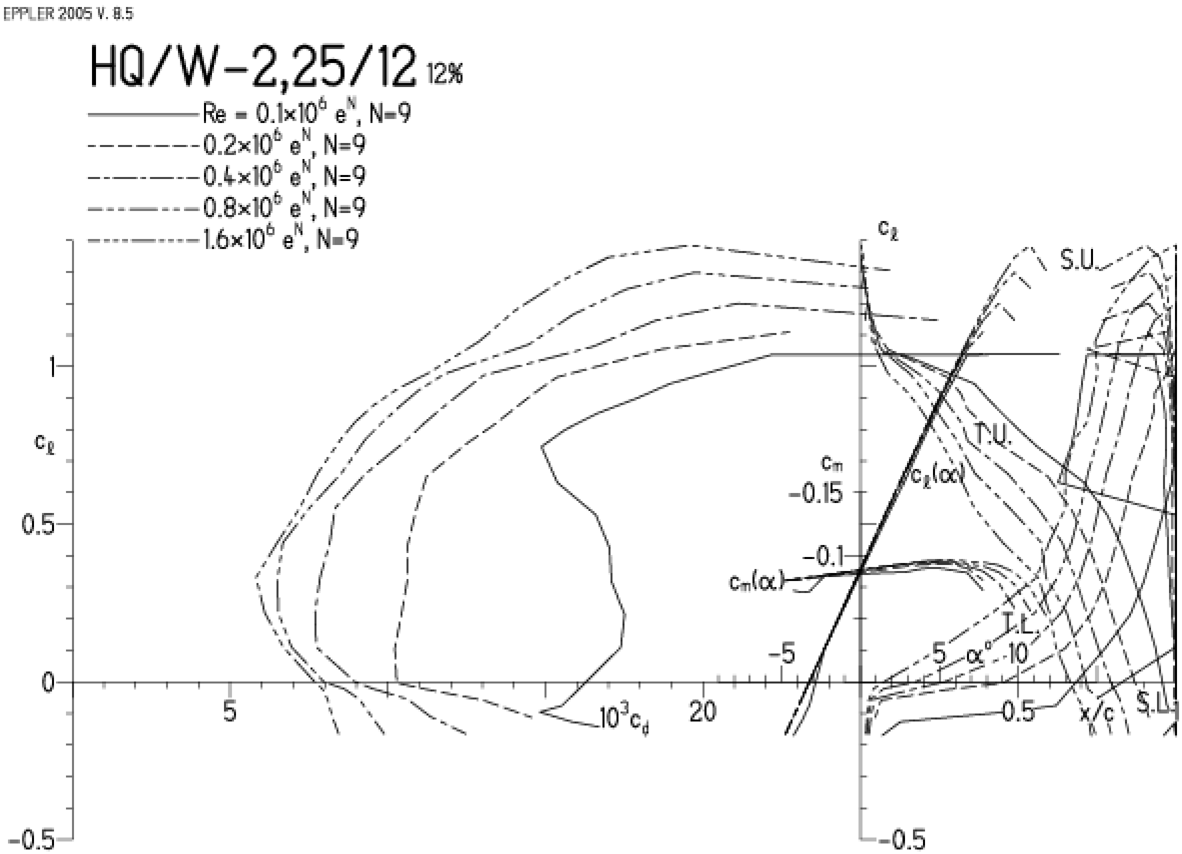


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

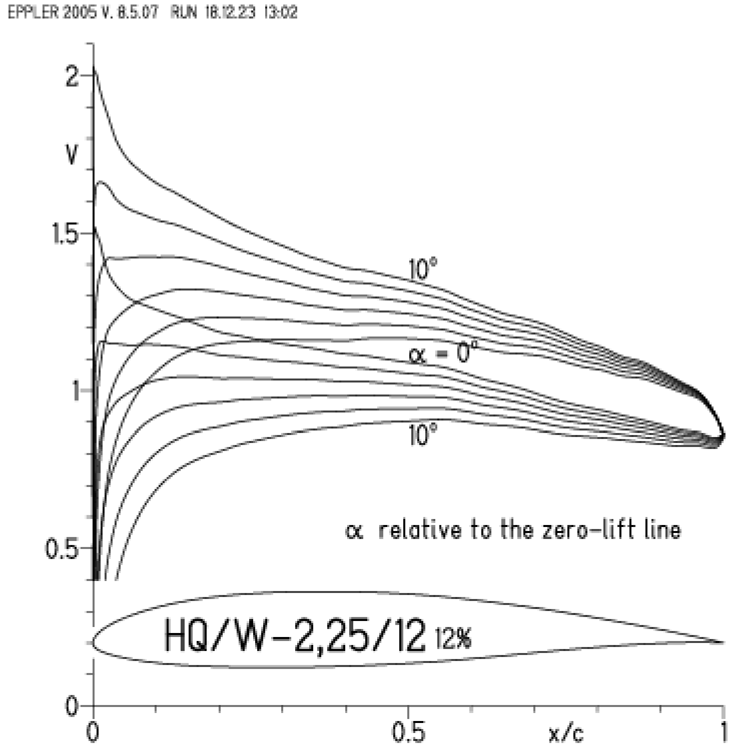


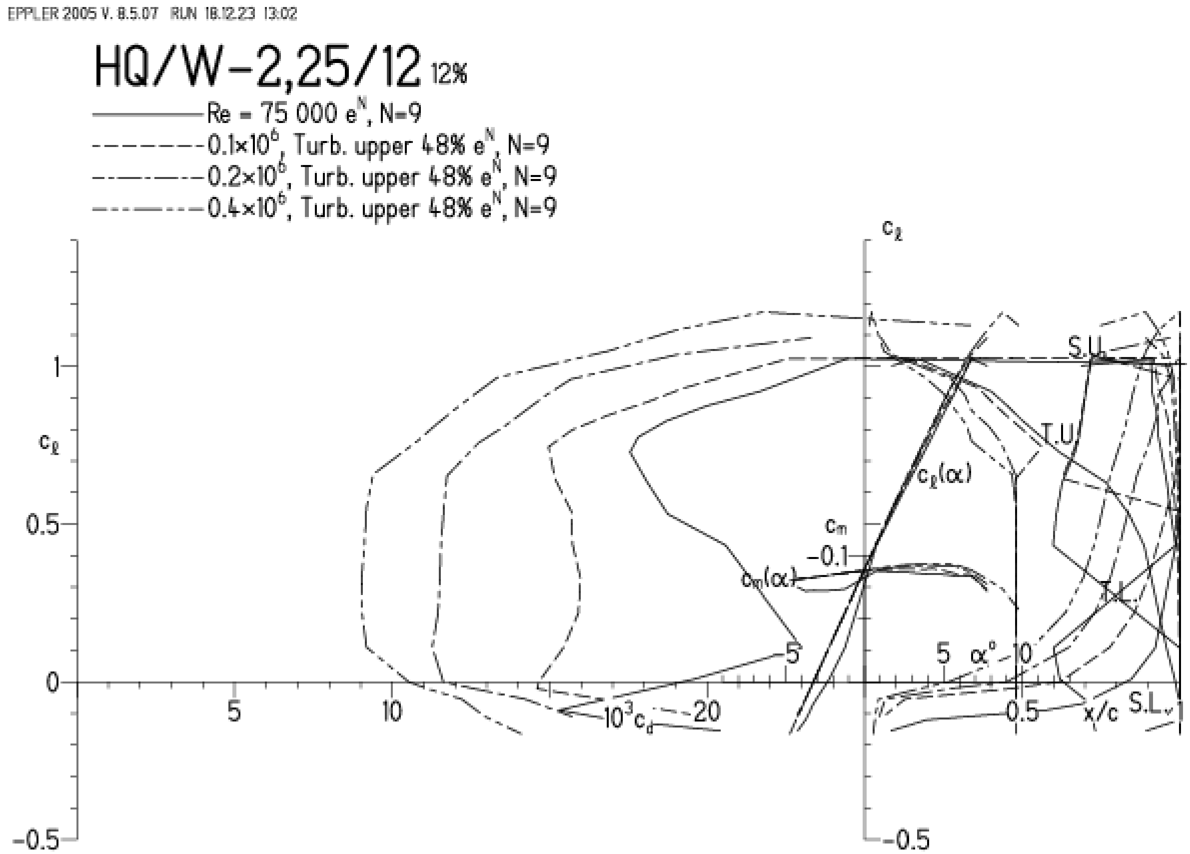
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c
10^3 c_d

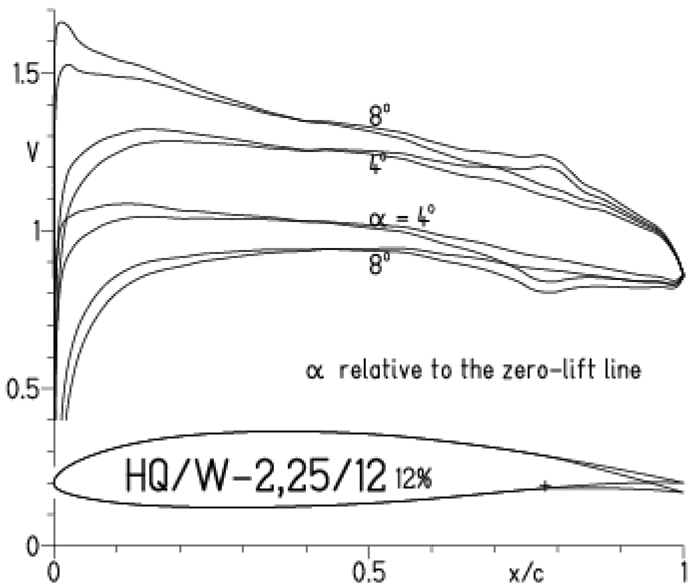
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



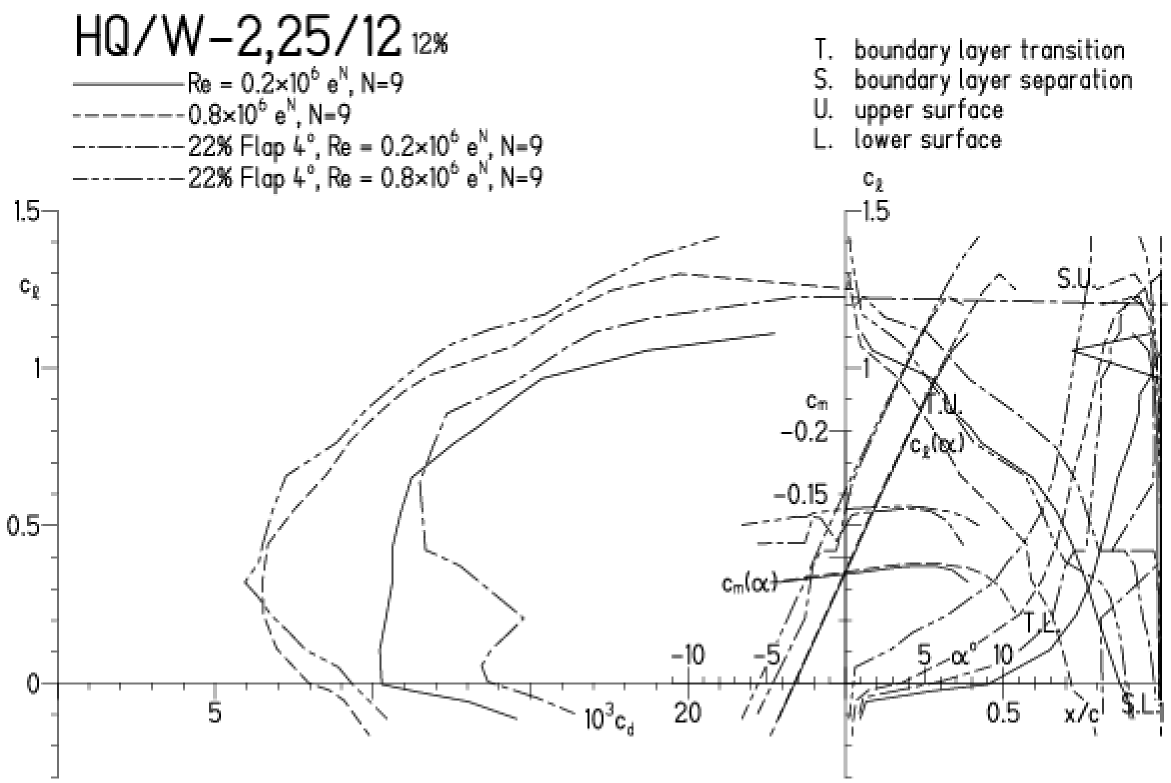


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

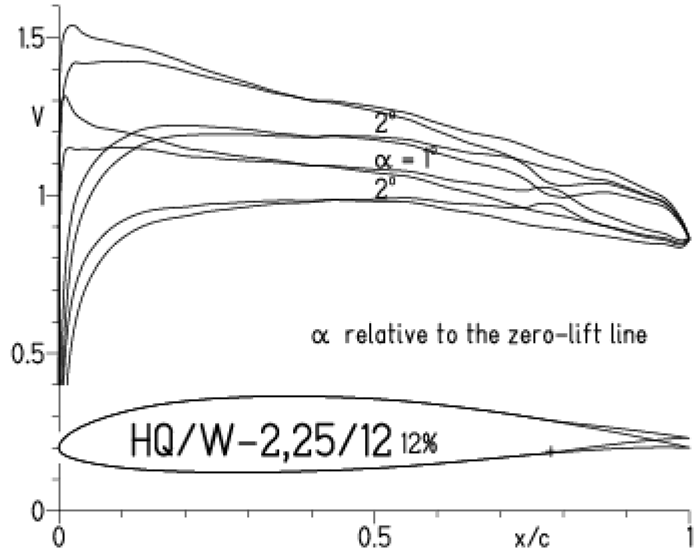


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

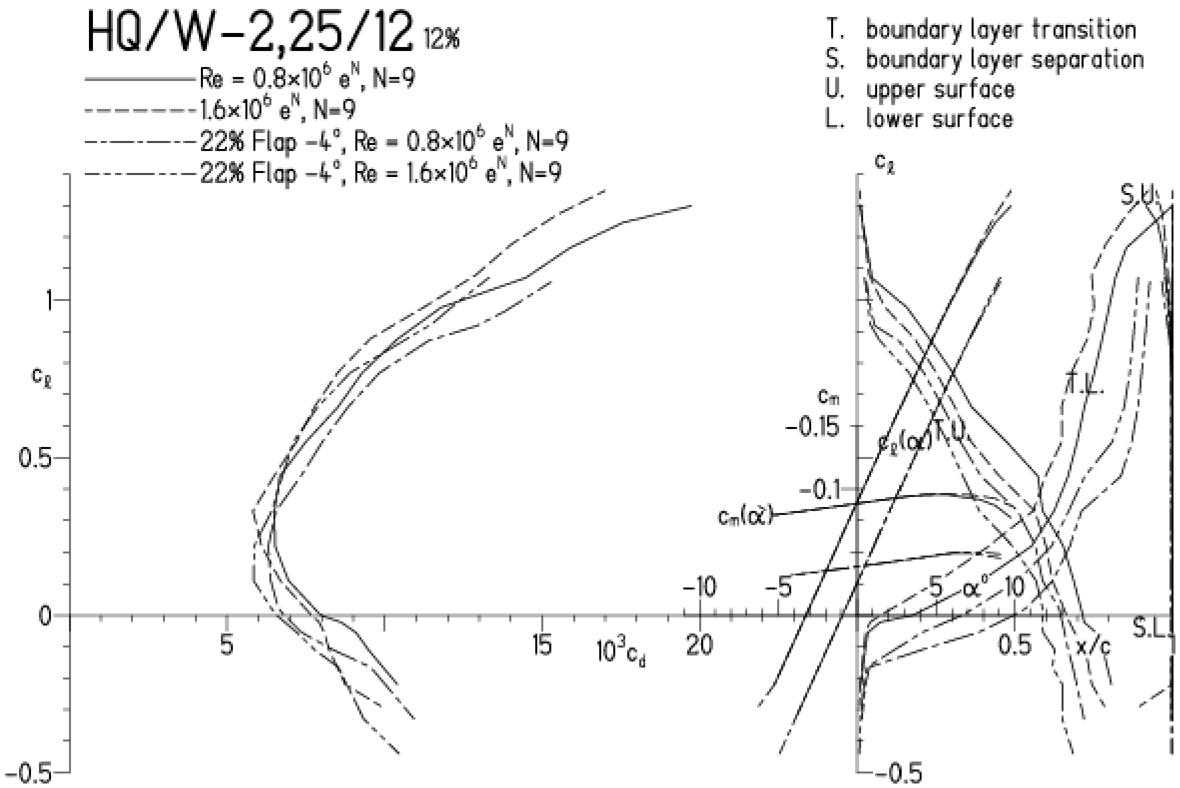


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

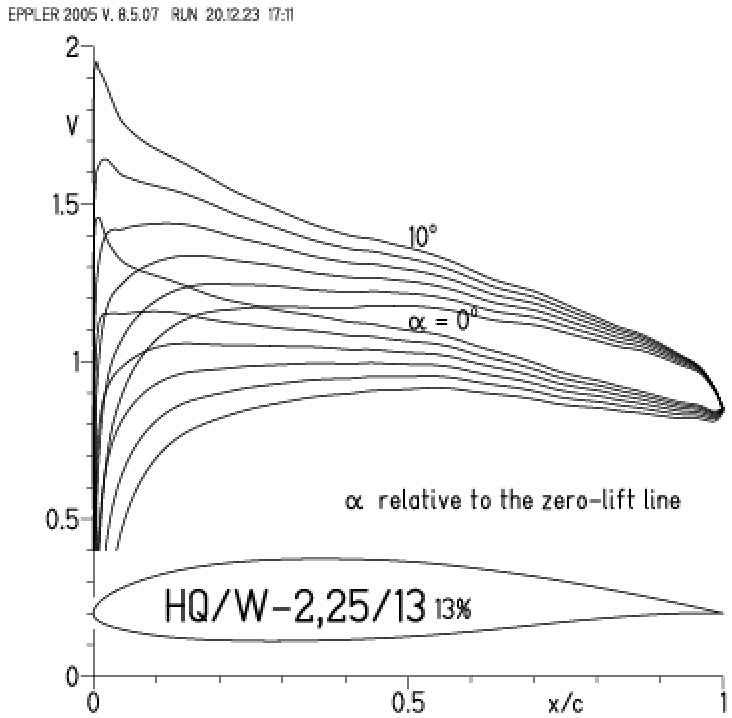
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

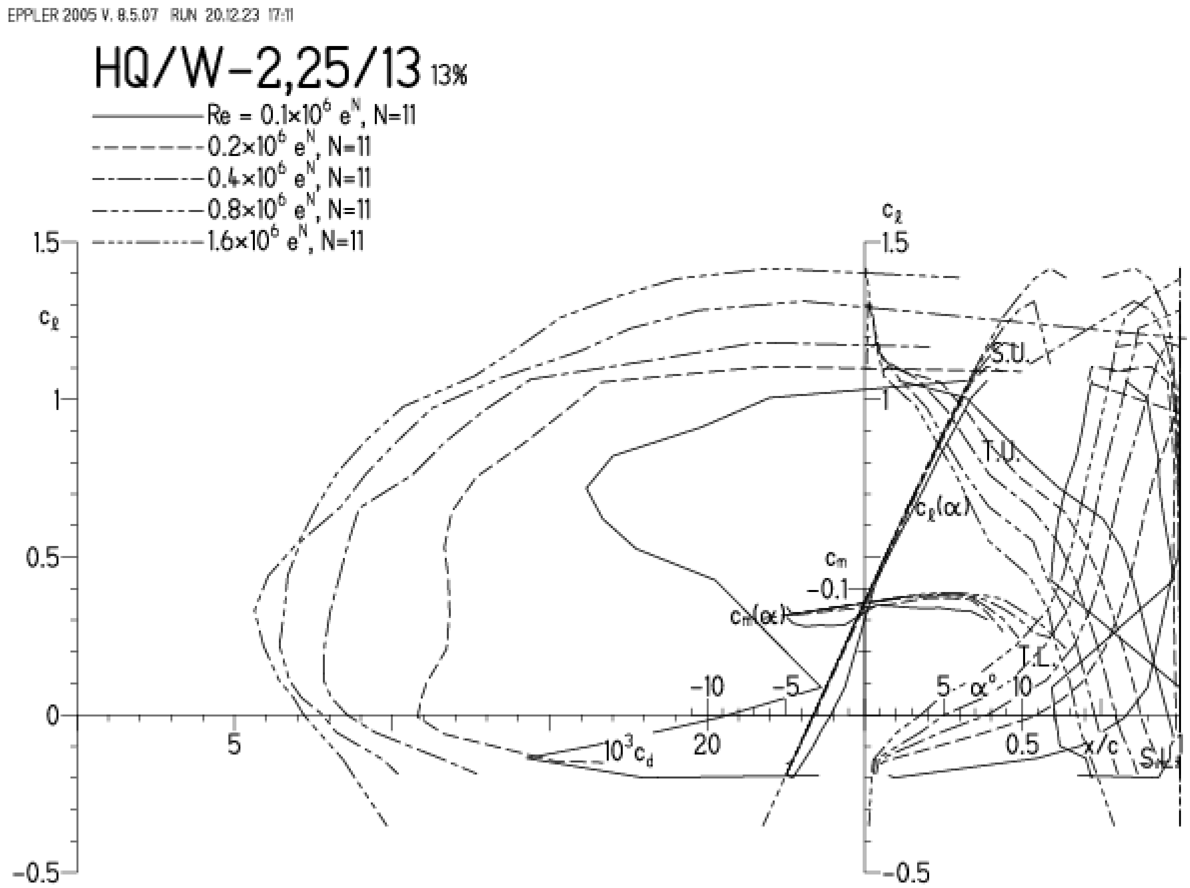


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

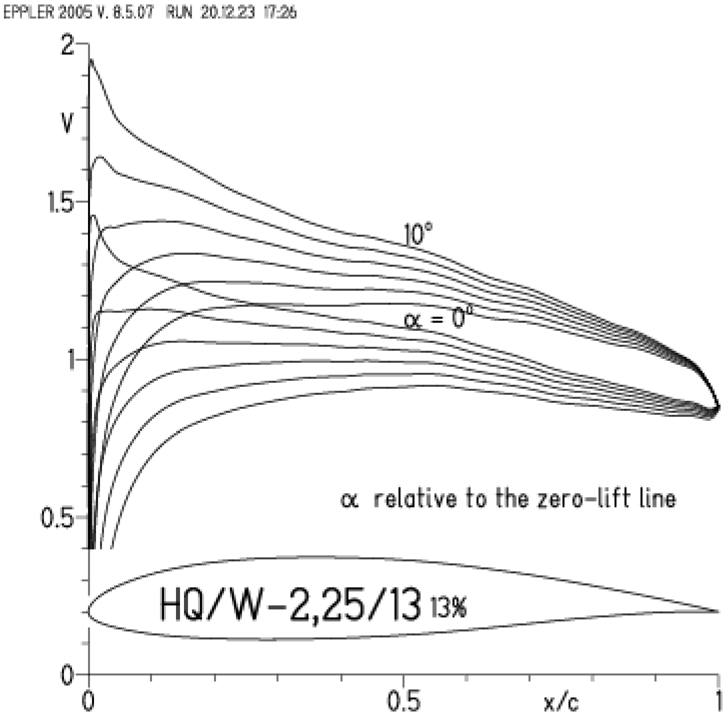


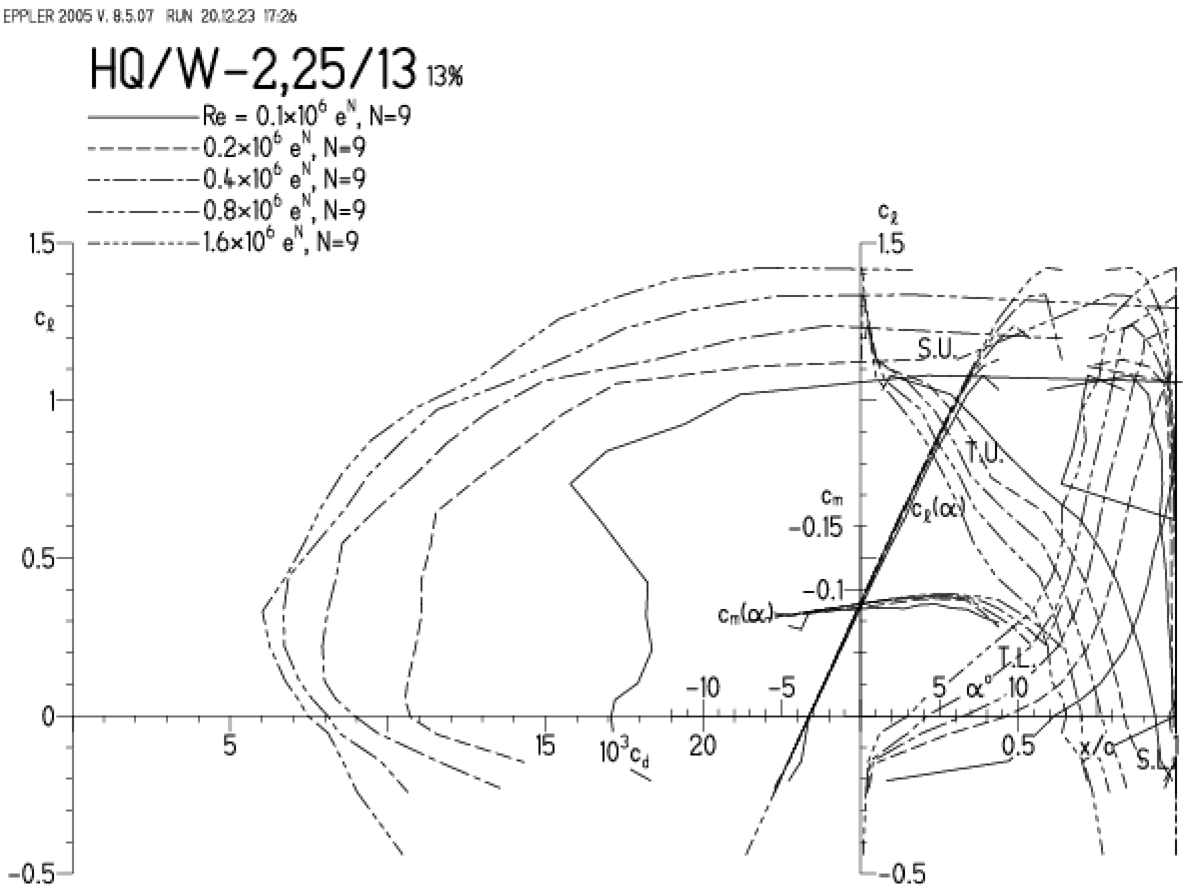
<u>HQ/W-2,25/13</u>, N=11



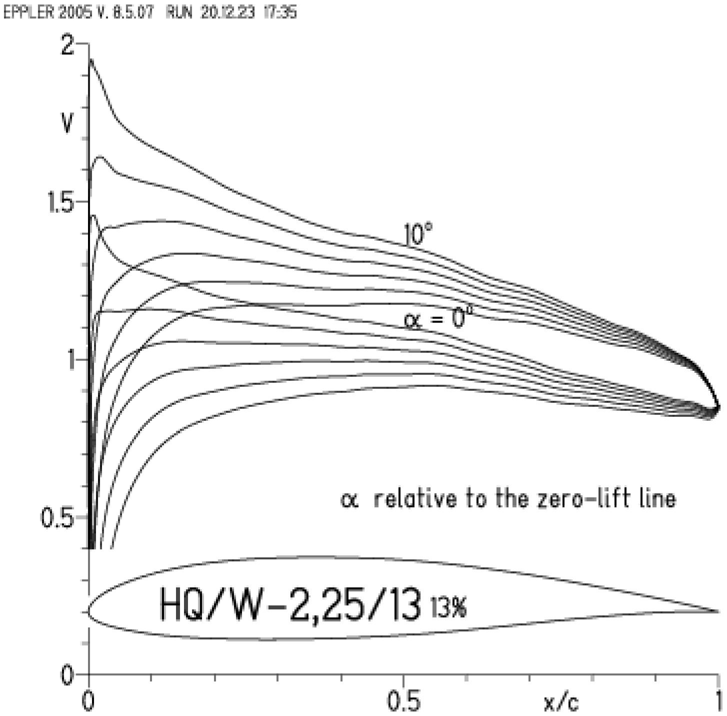


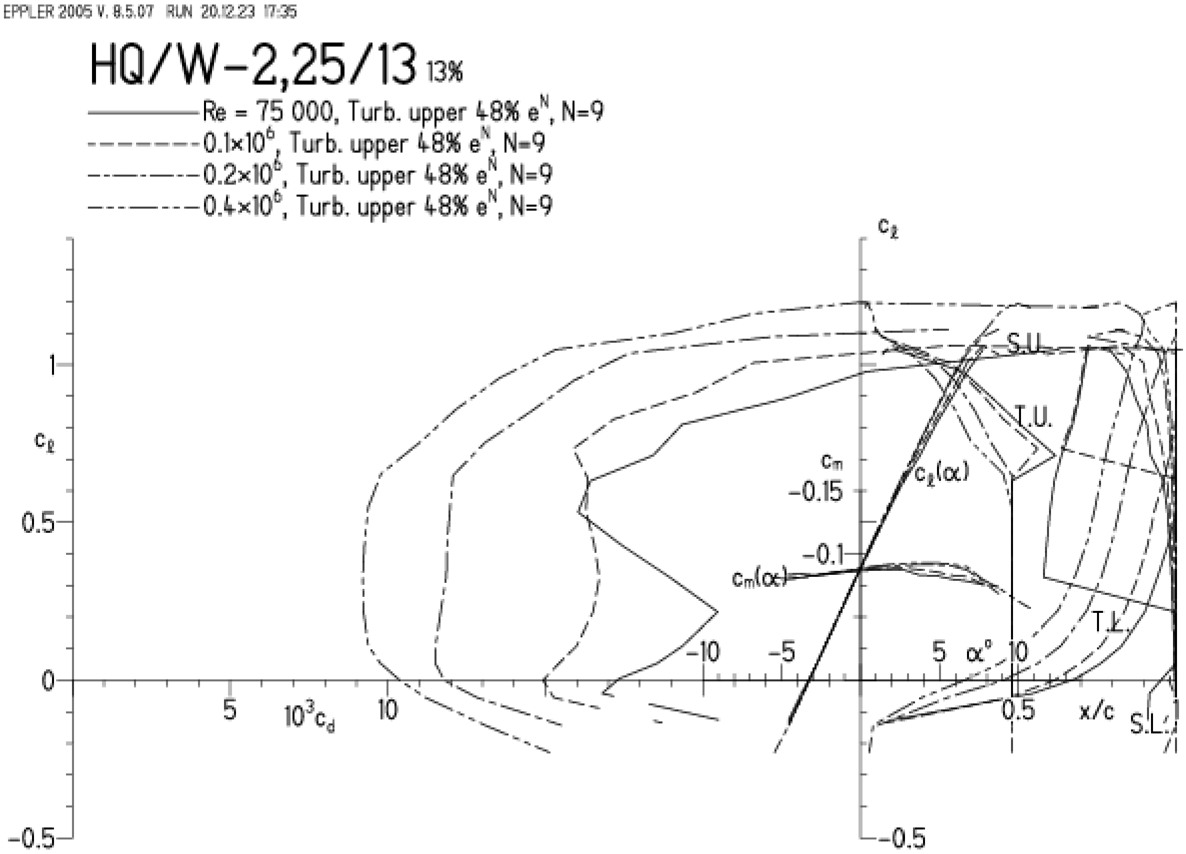
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
α°
x/c
S.L.
10^3 cd

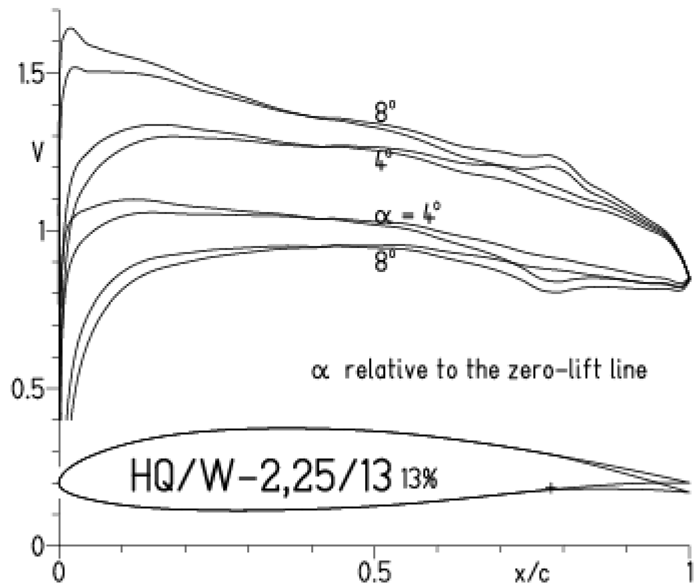
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



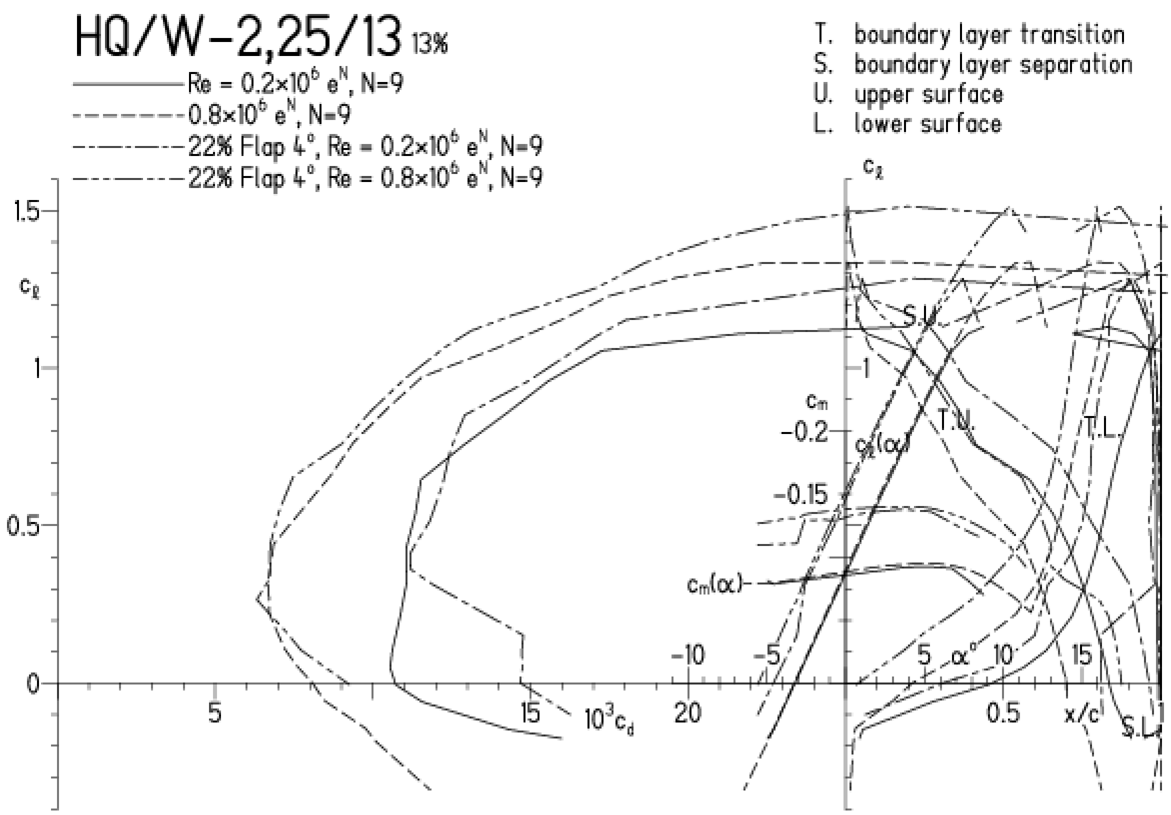


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

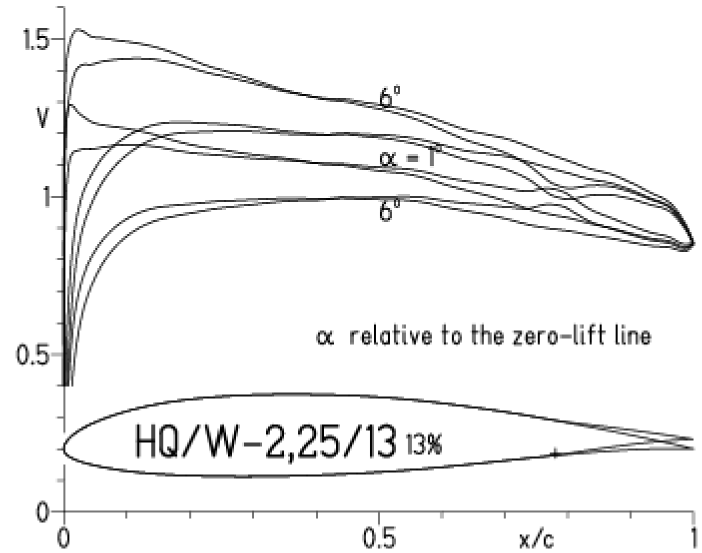


EPPLER 2005 V.

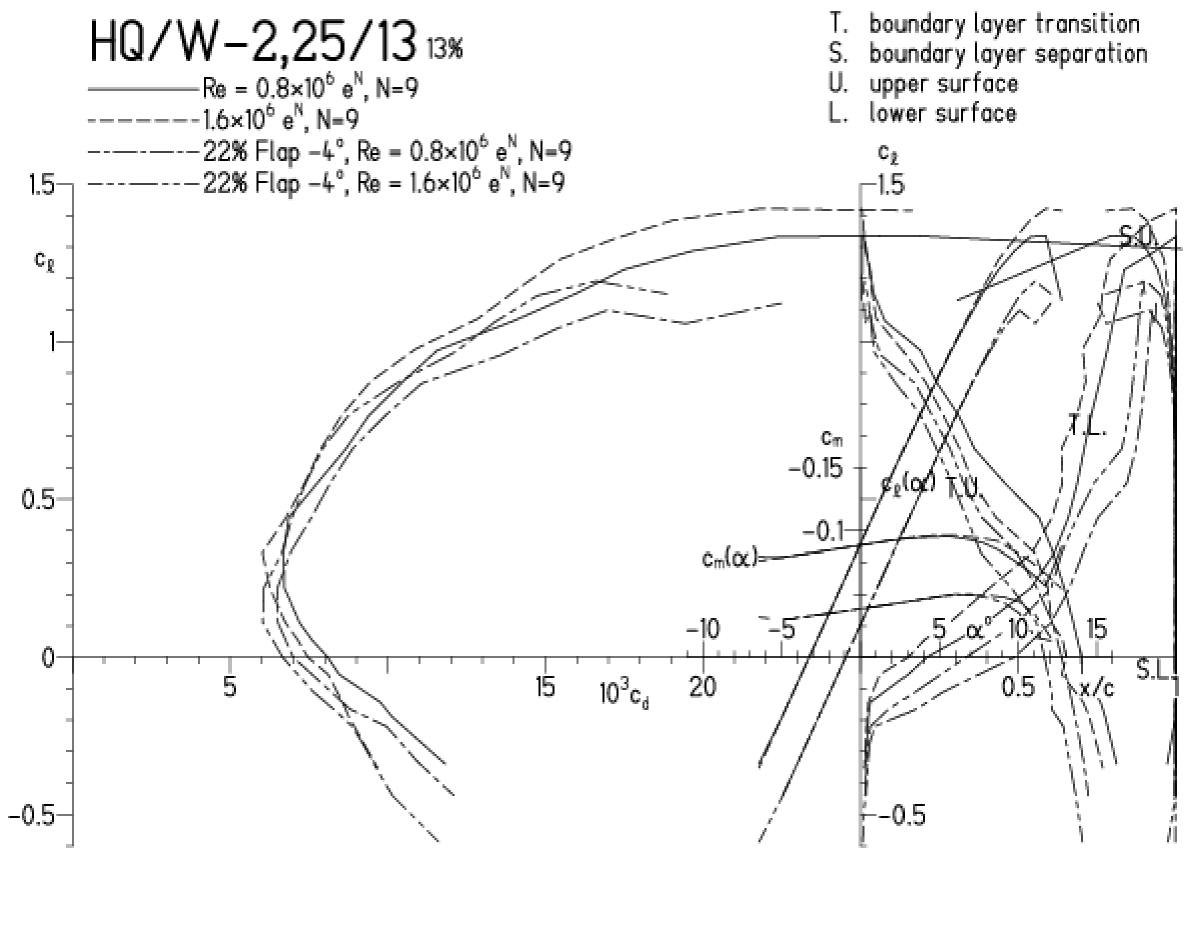


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

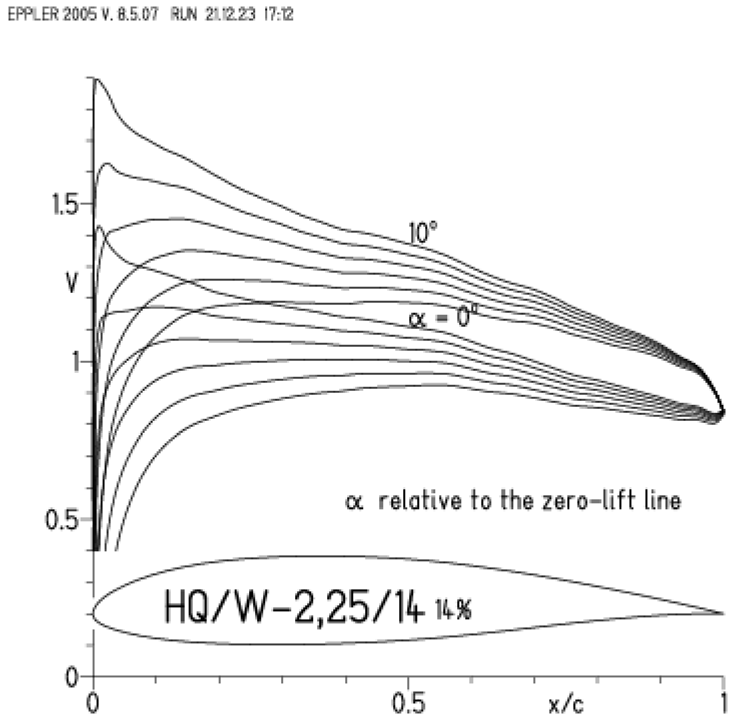
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

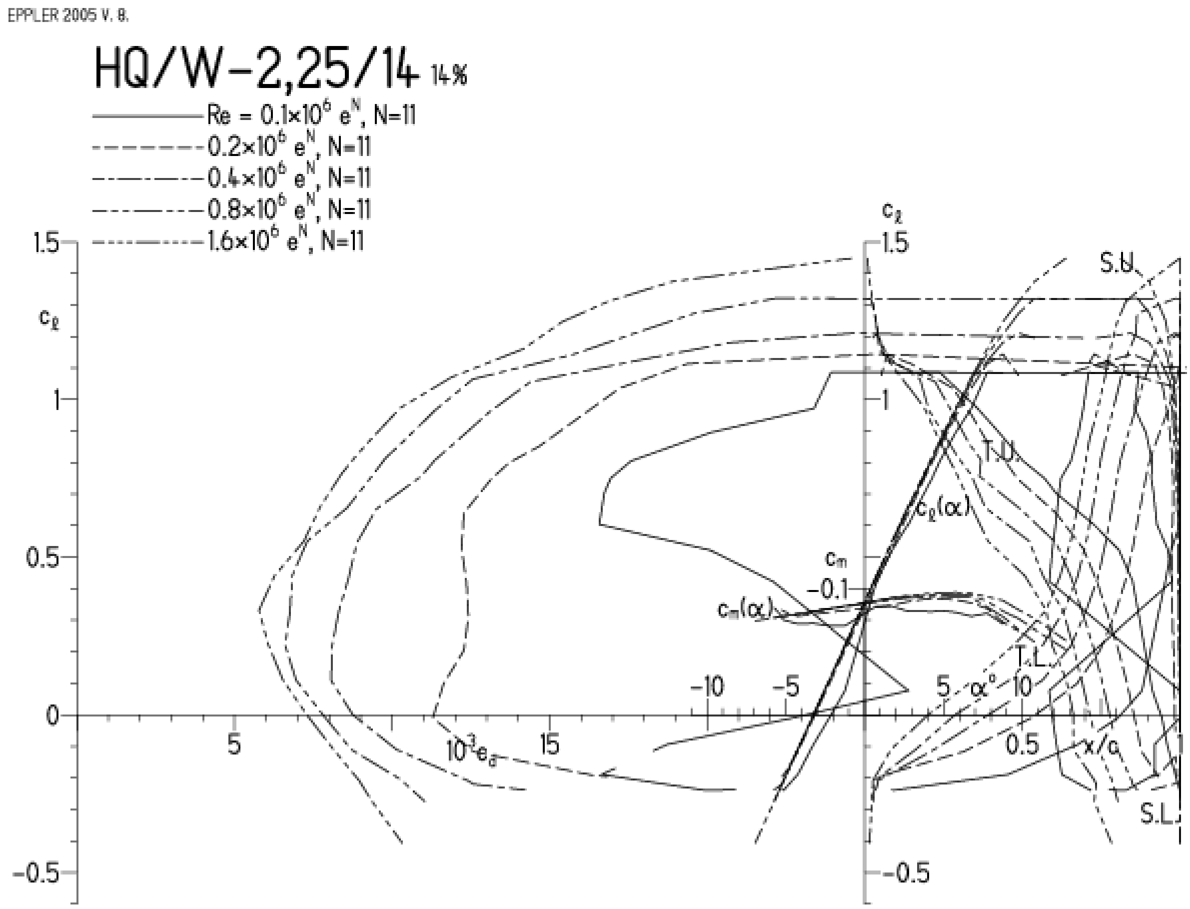


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

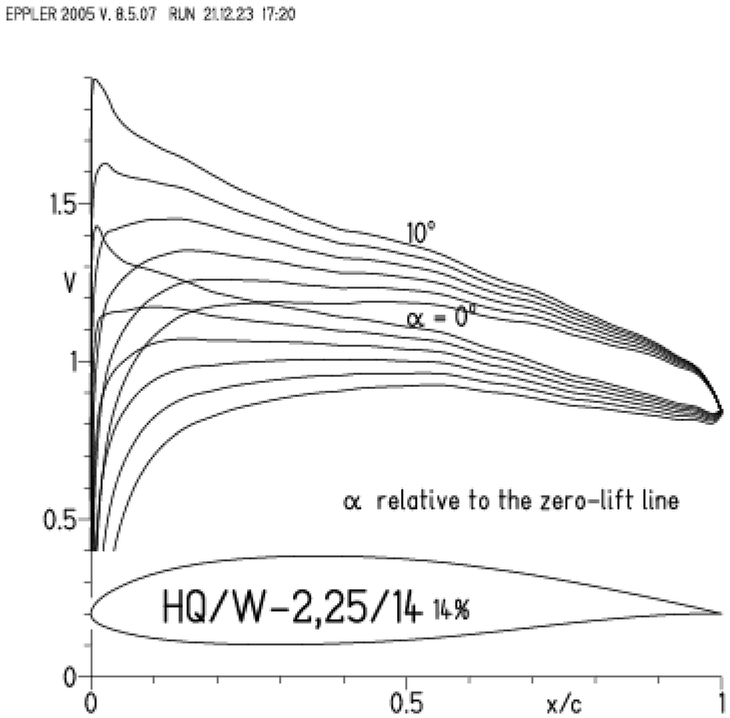


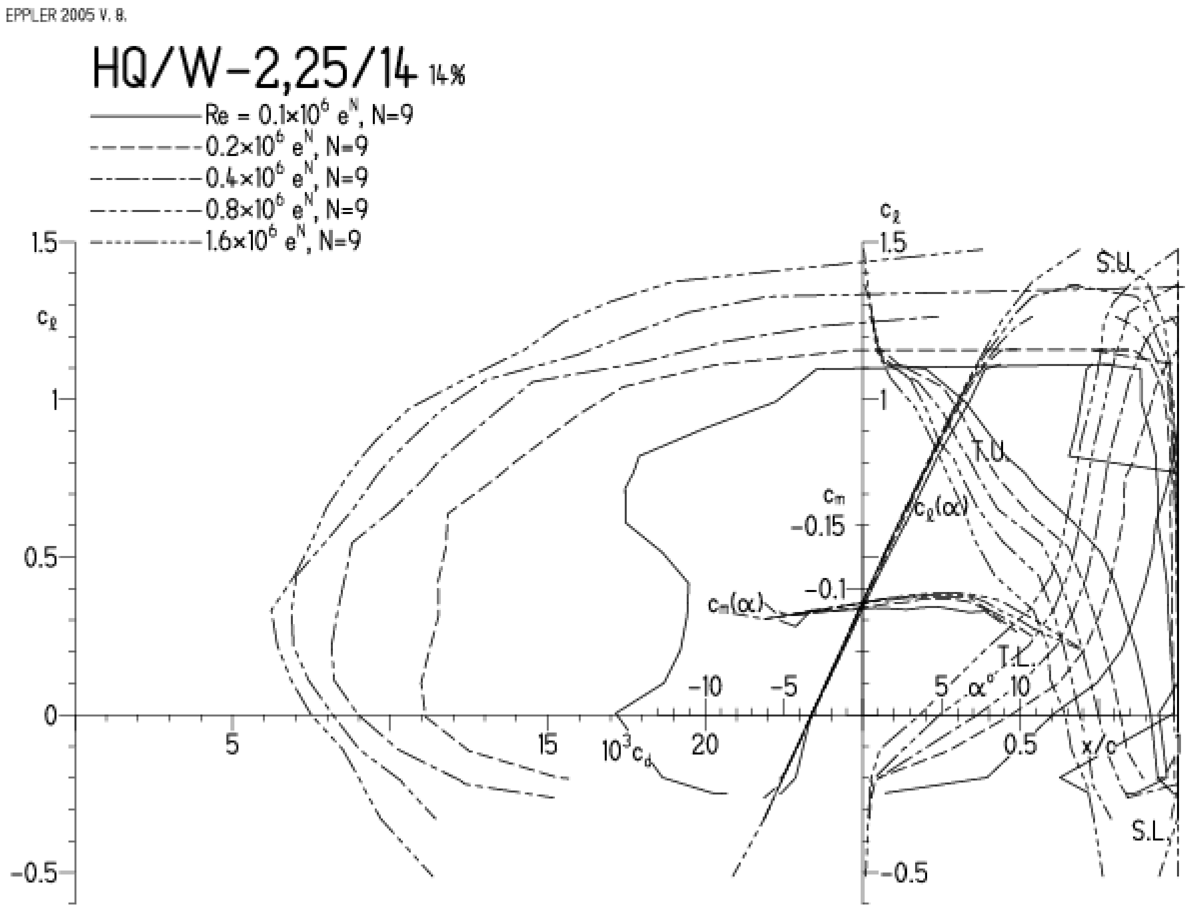
HQ/W-2,25/14, N=11



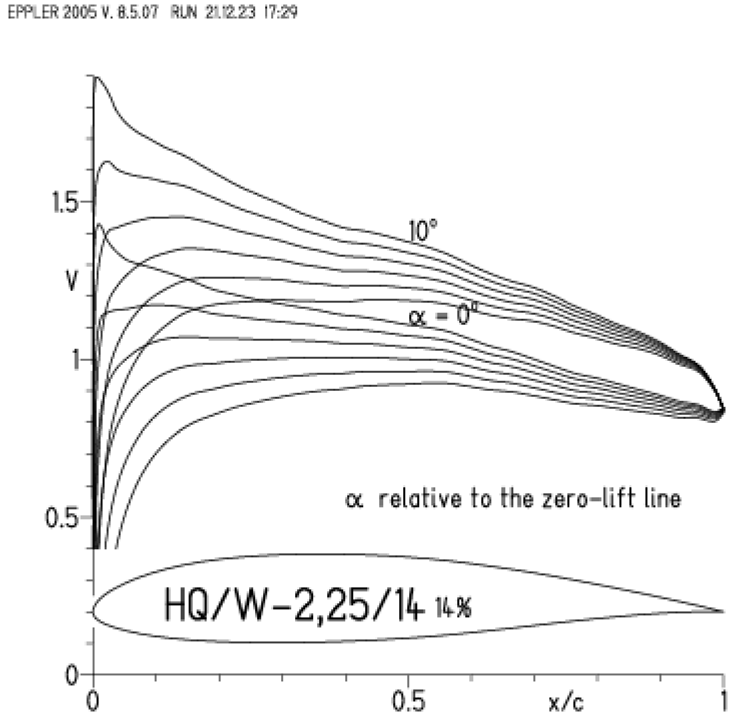


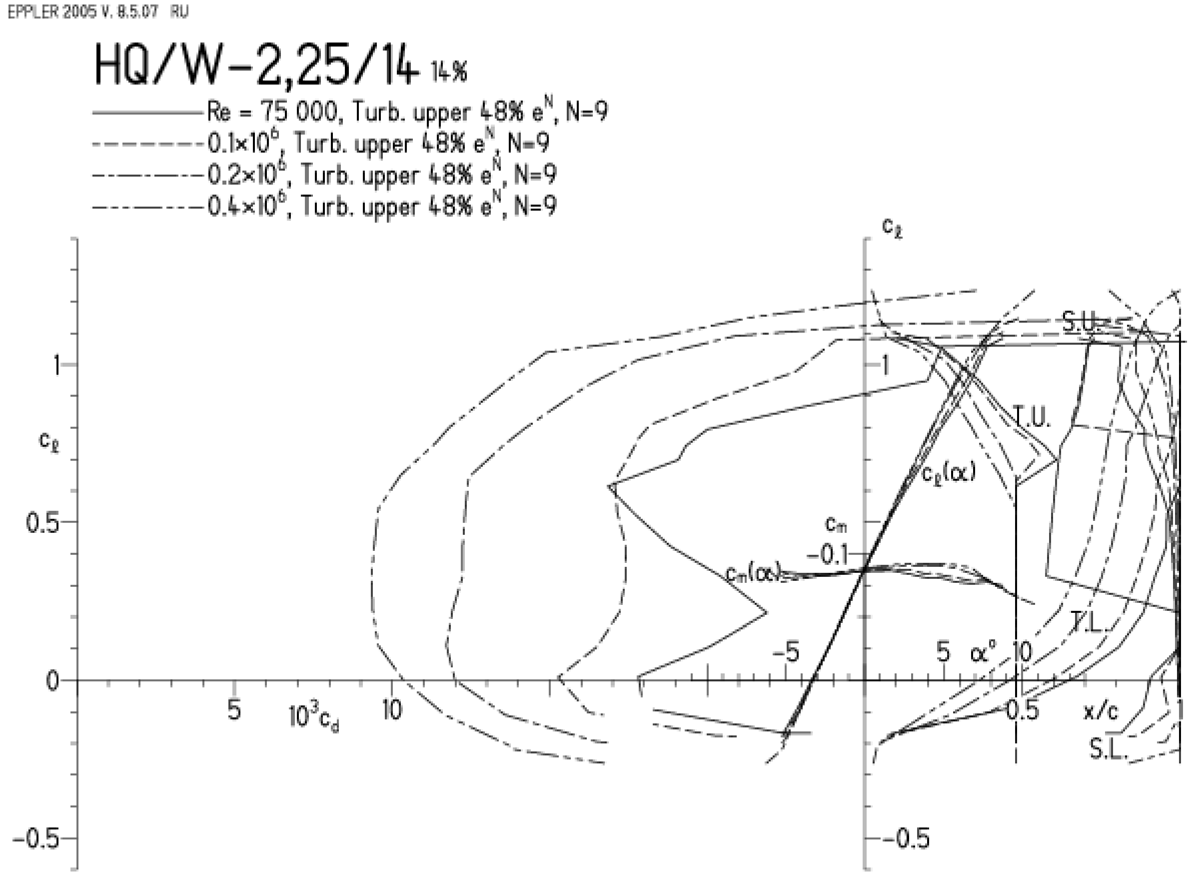
<u>HQ/W-2,25/14</u>, N=9





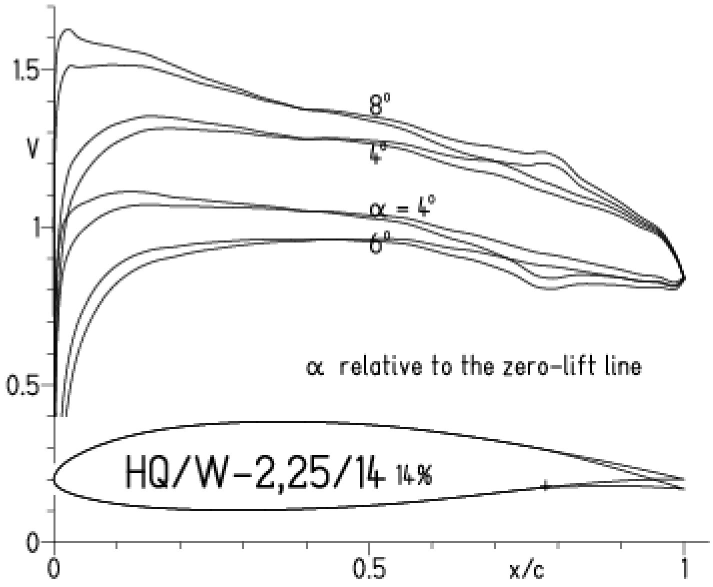
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



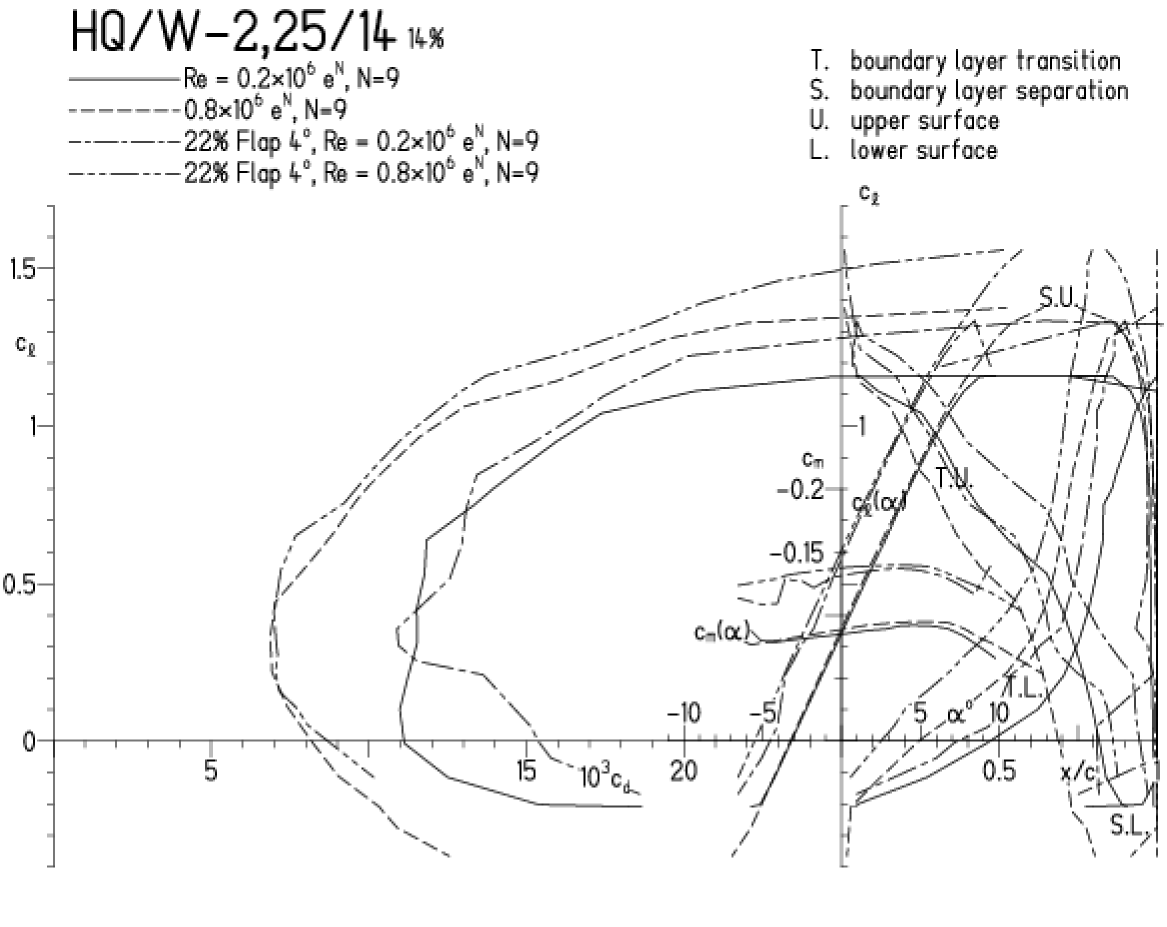


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

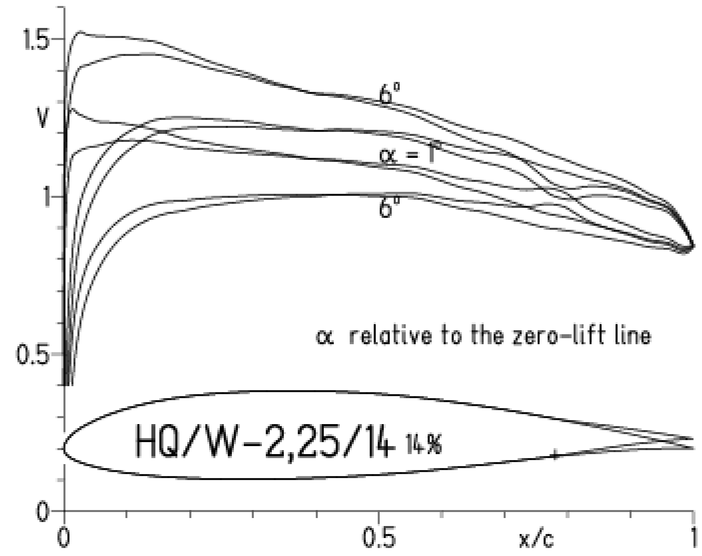


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

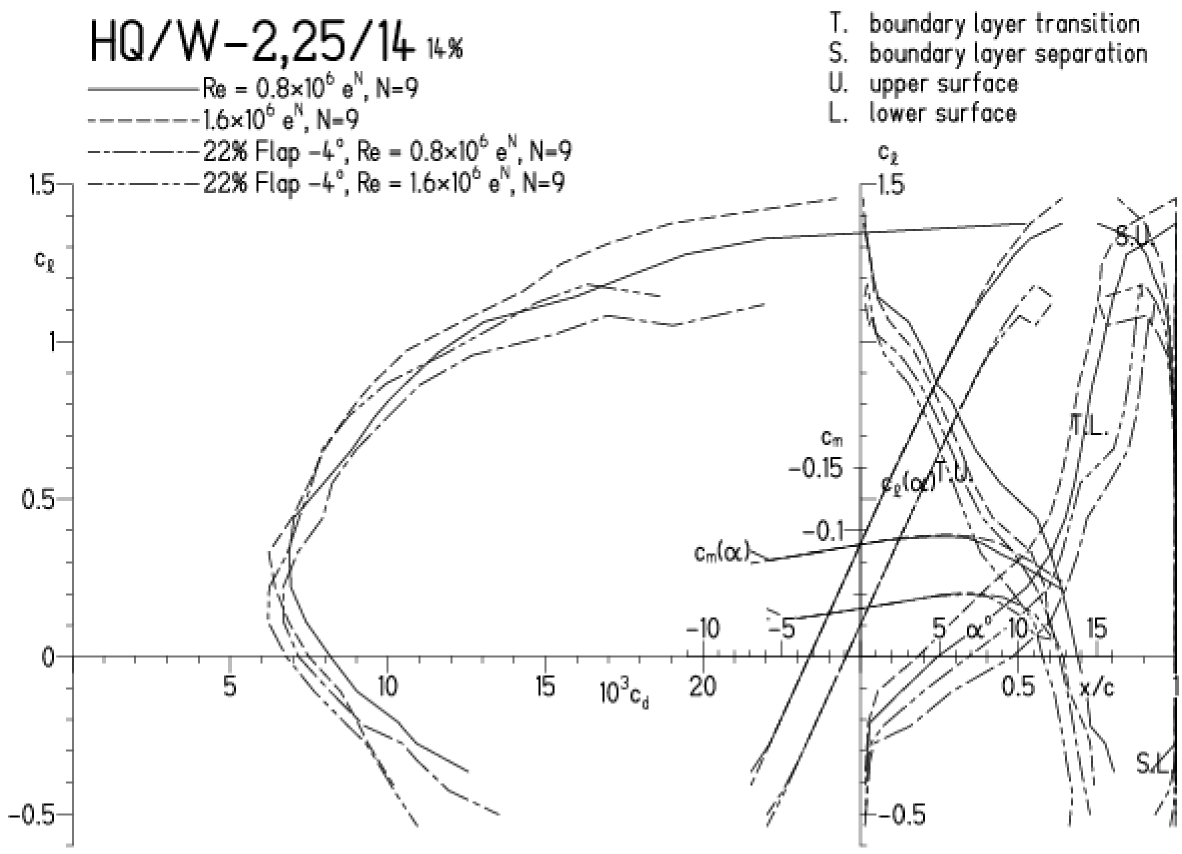


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

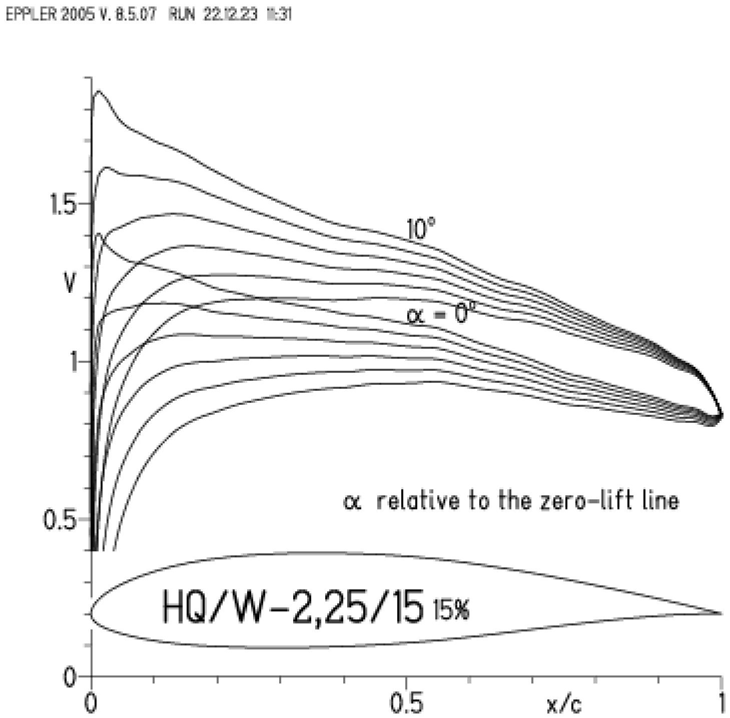
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

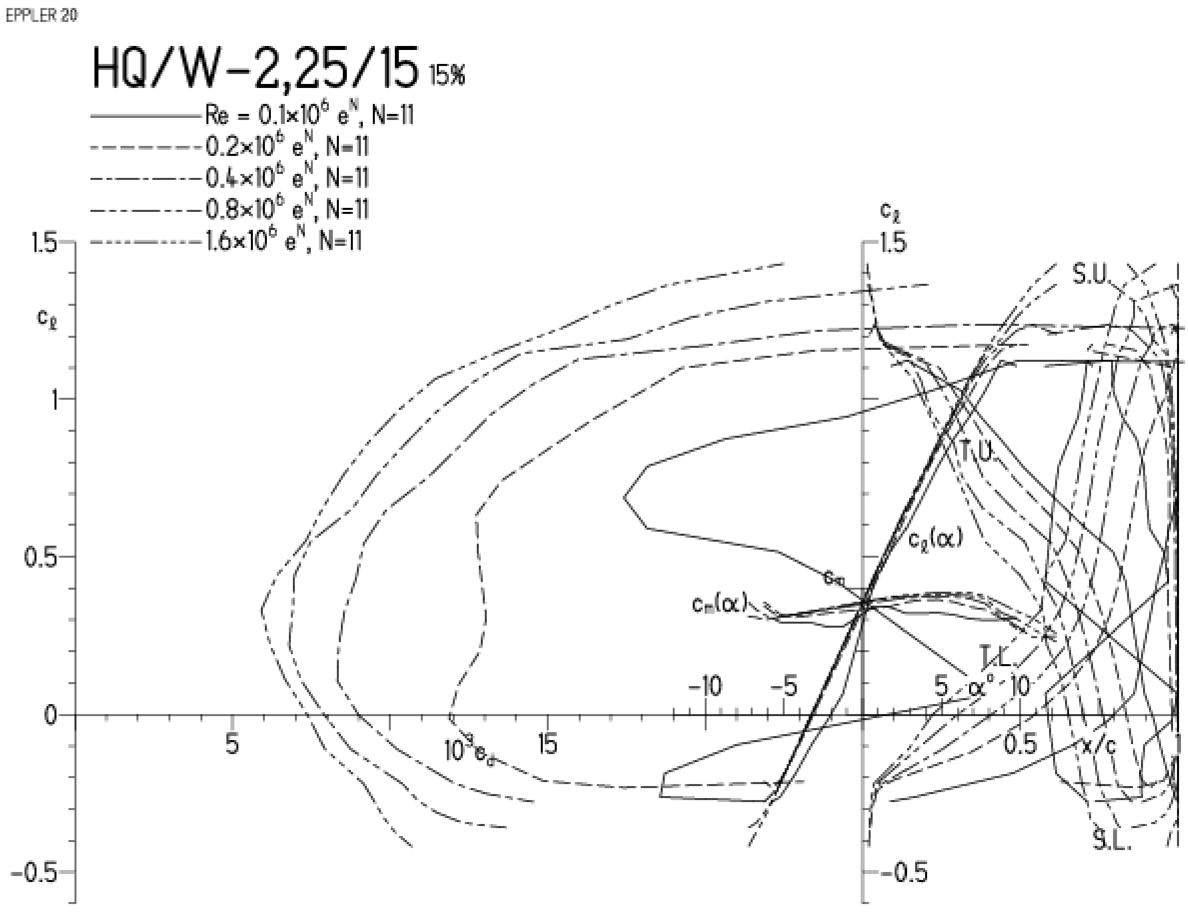


EPPLER 2005 V. 8.5.07



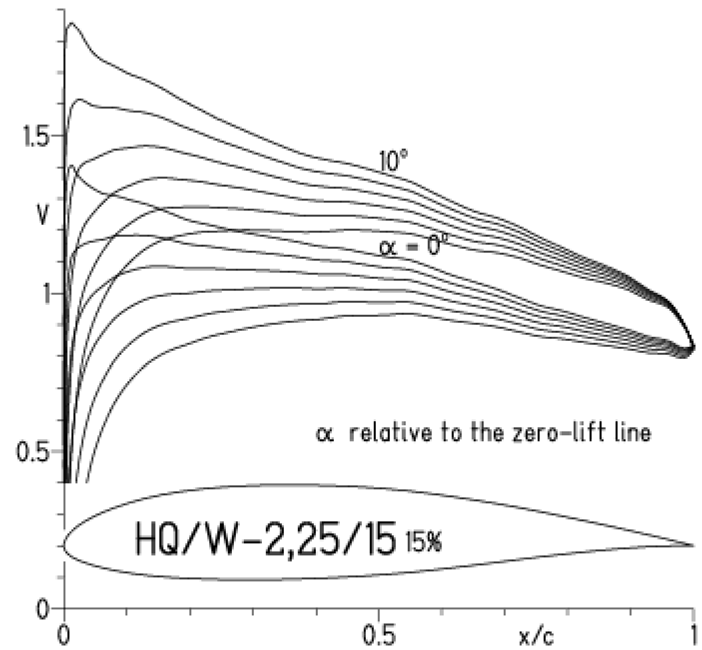
<u>HQ/W-2,25/15</u>, N=11



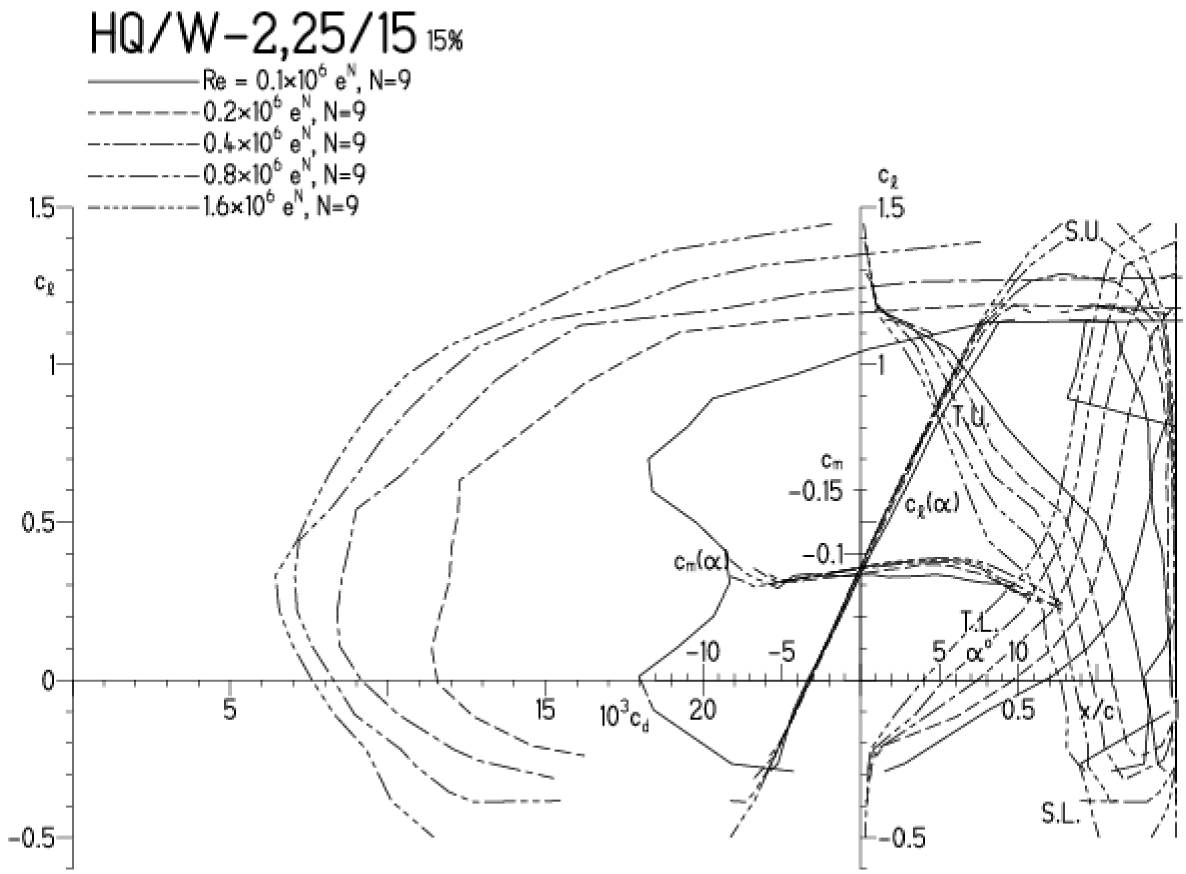


<u>HQ/W-2,25/15</u>, N=9

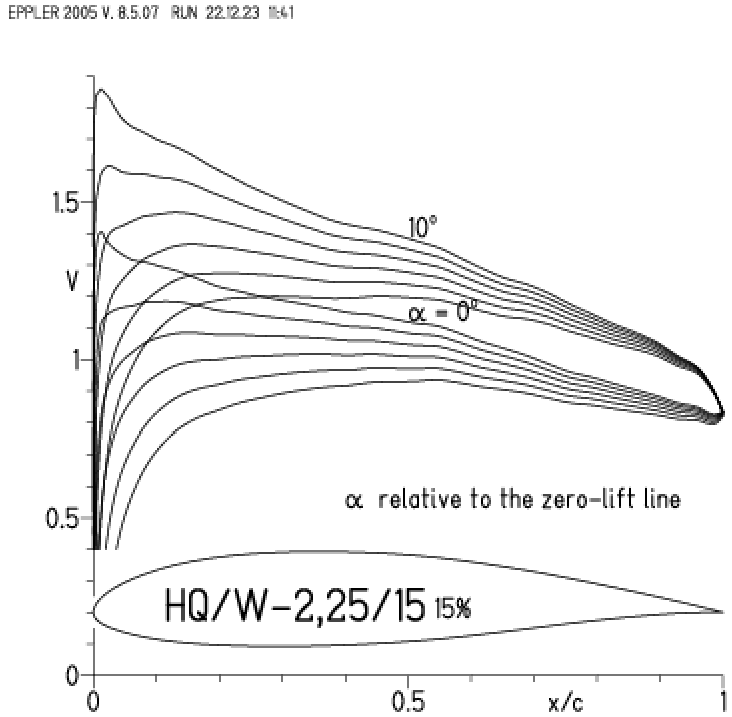
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

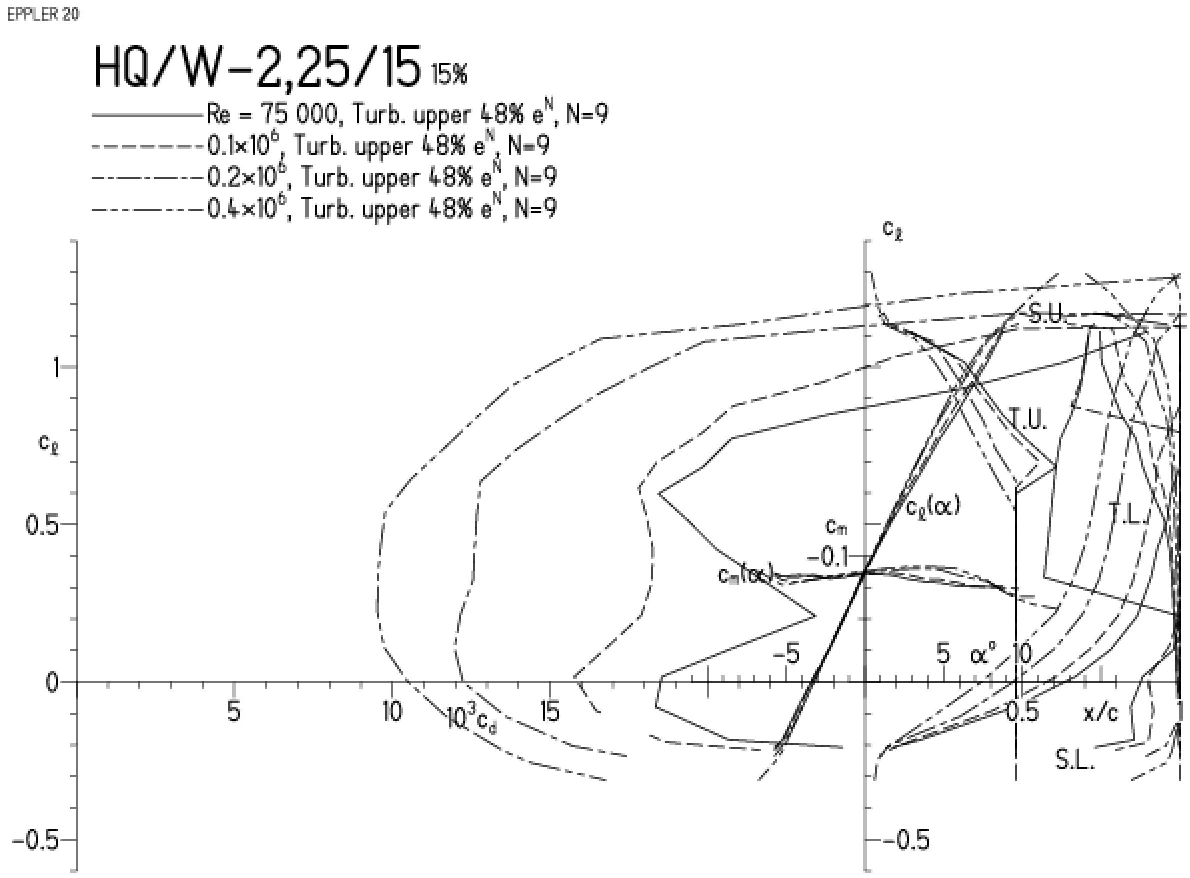


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



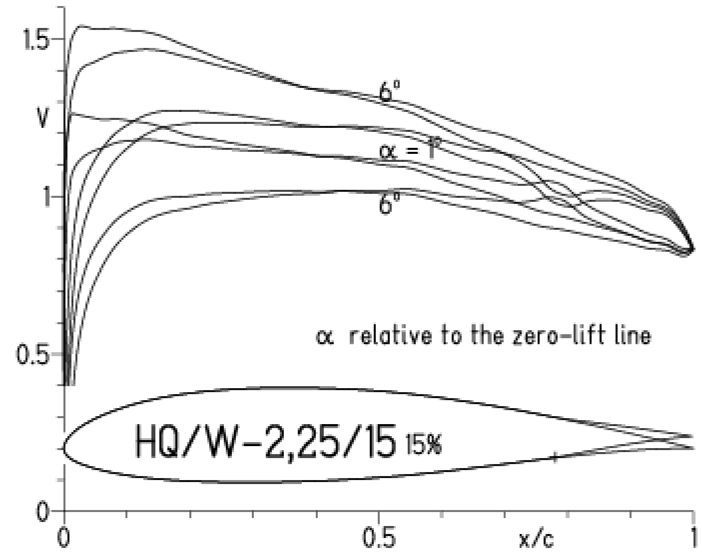


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

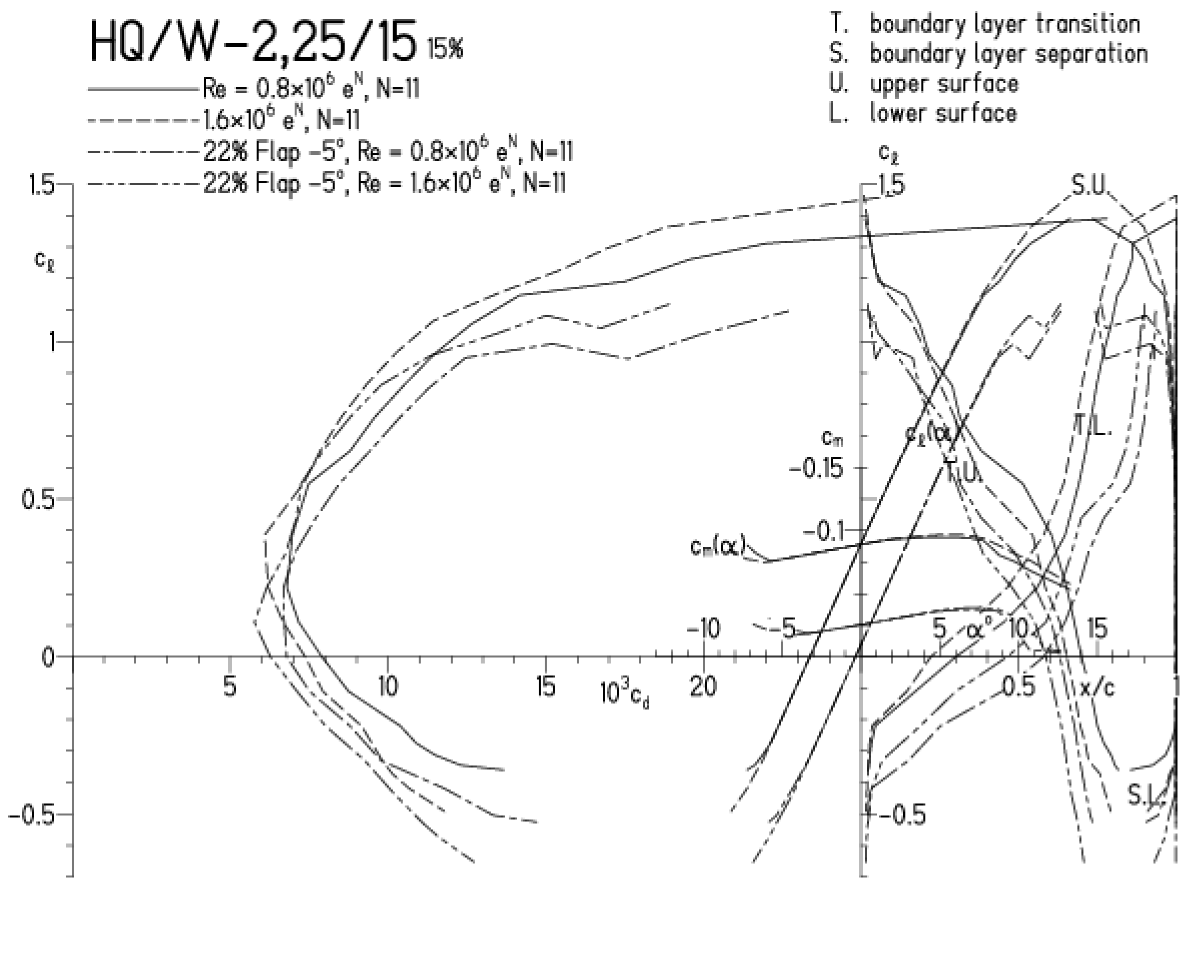
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

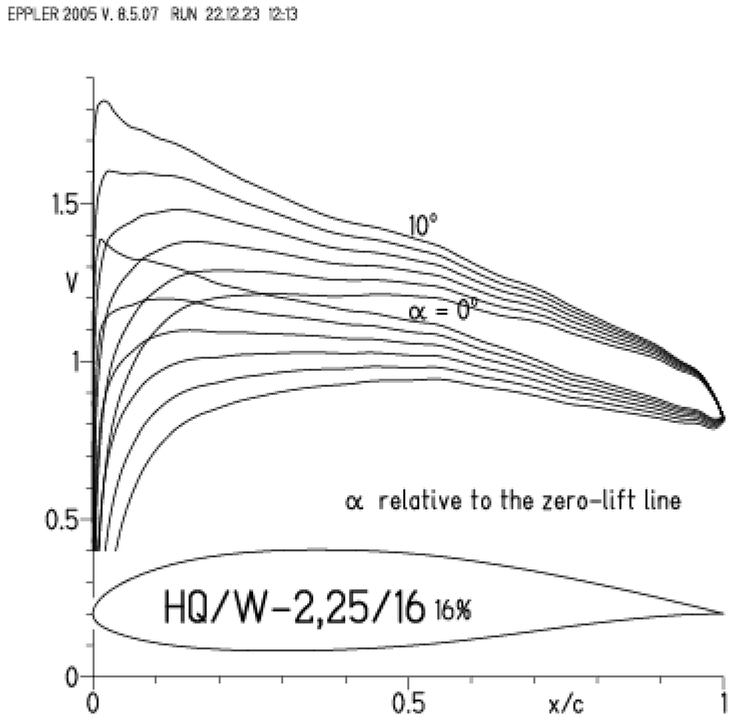
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

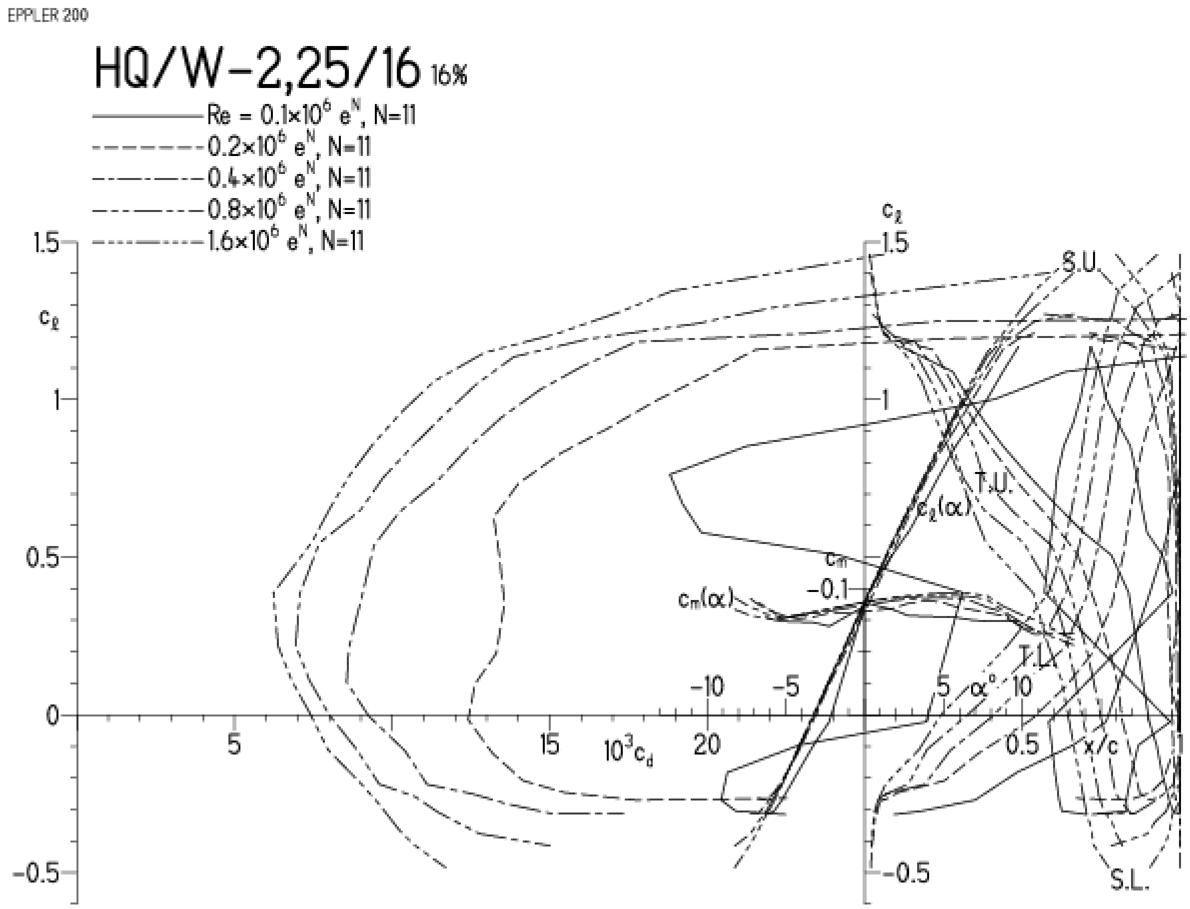


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

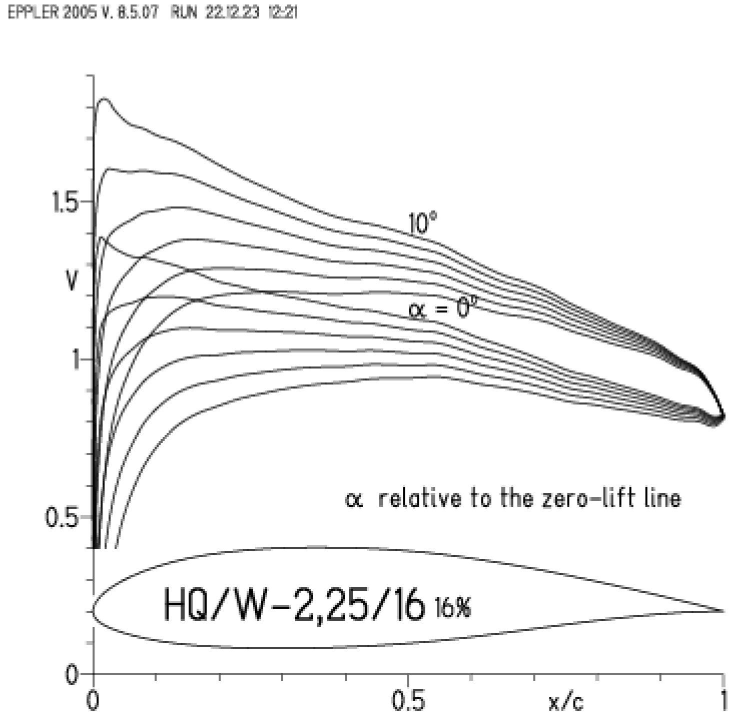


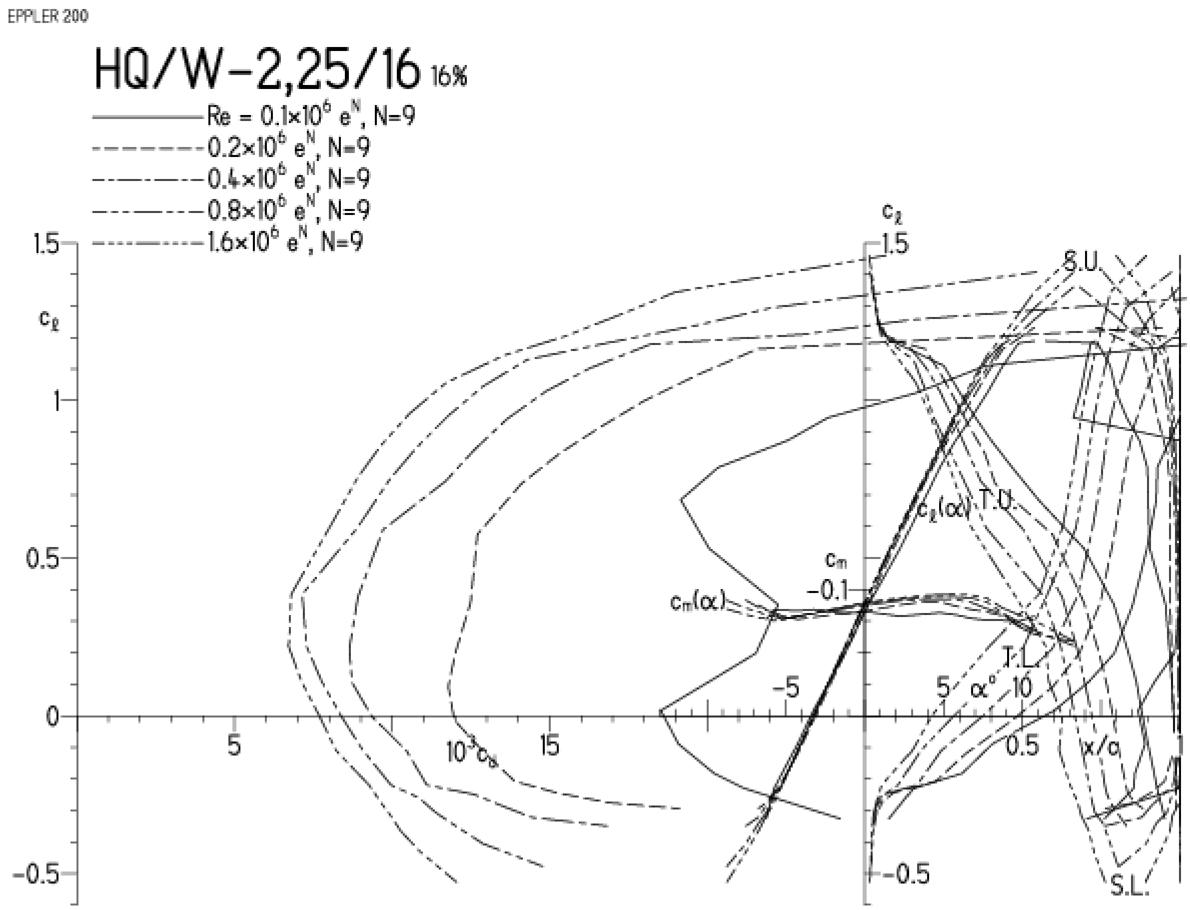
<u>HQ/W-2,25/16</u>, N=11





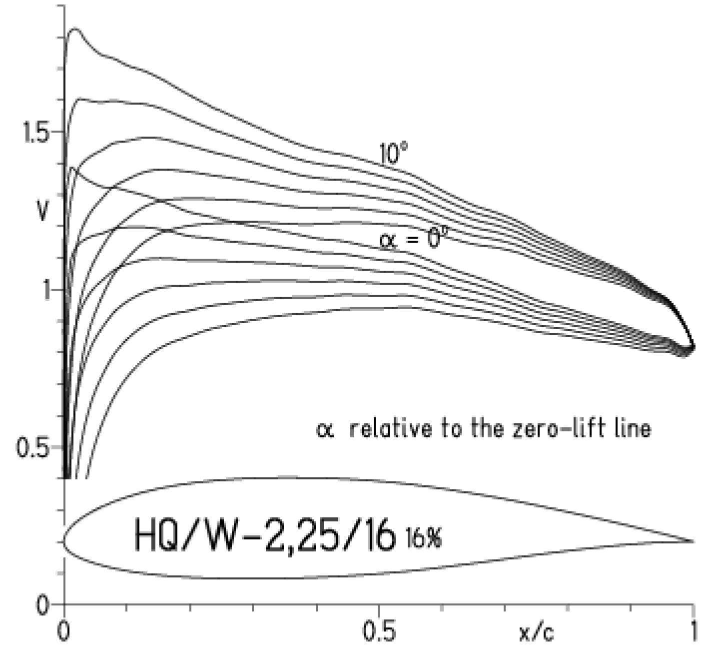
<u>HQ/W-2,25/16</u>, N=9



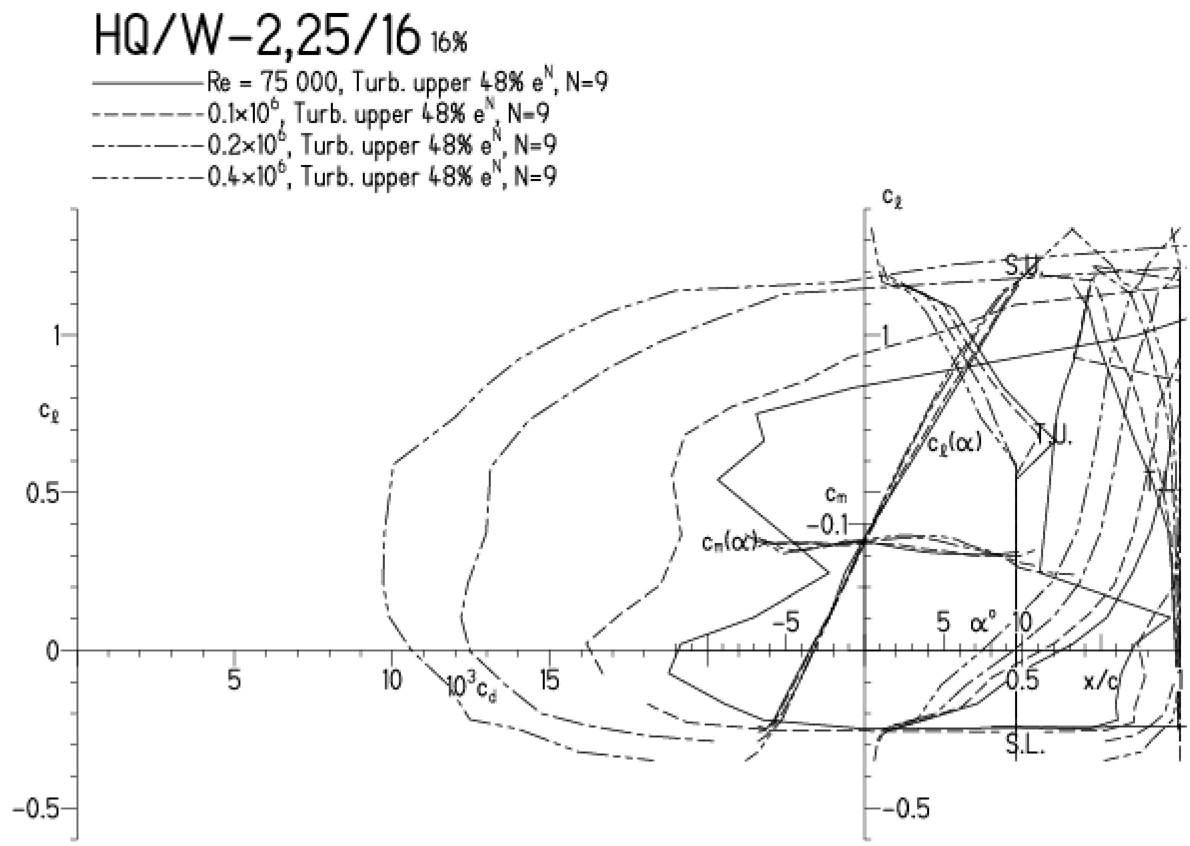


HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

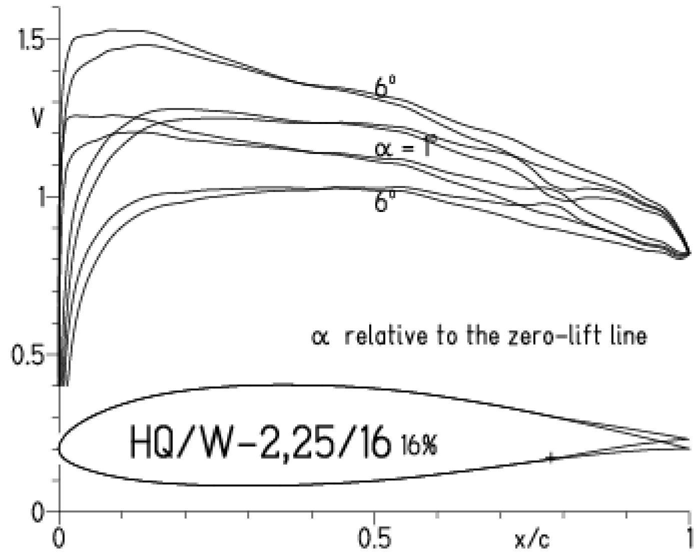


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

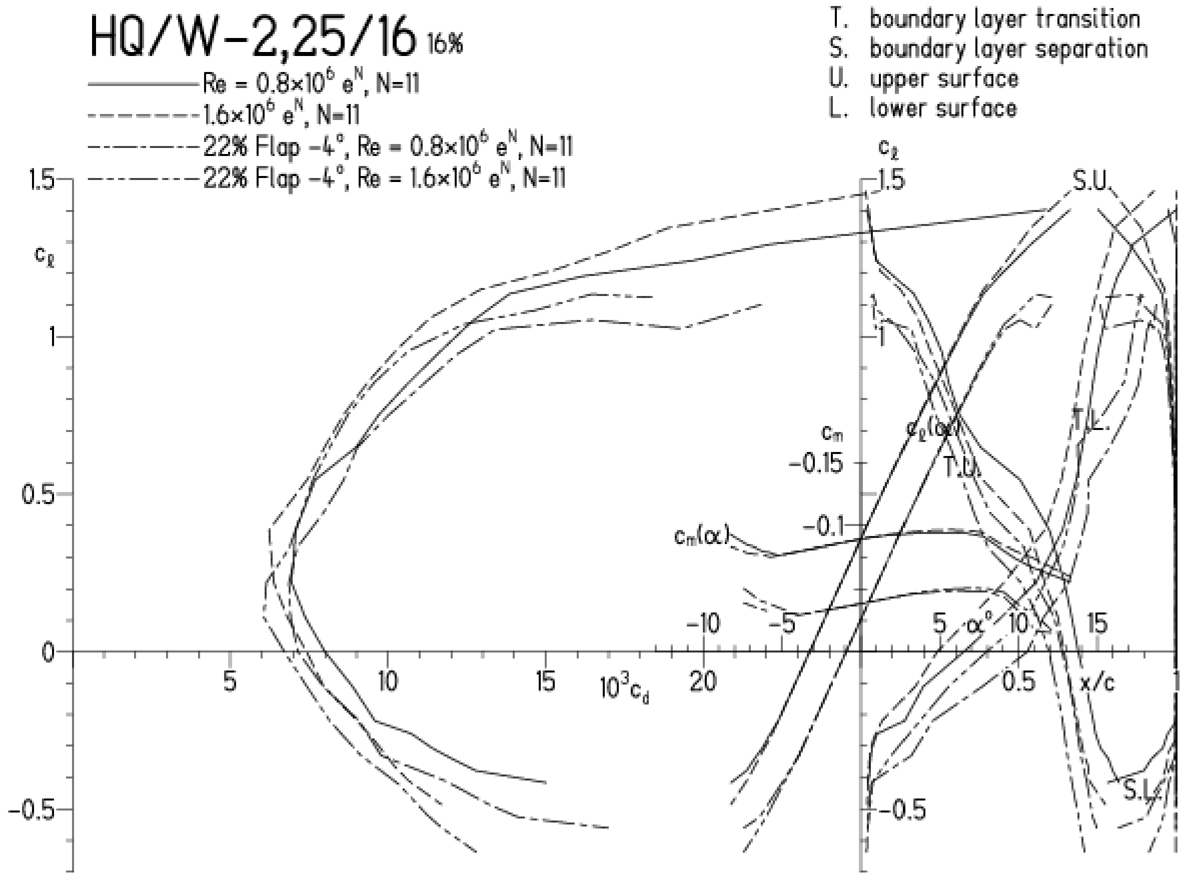
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

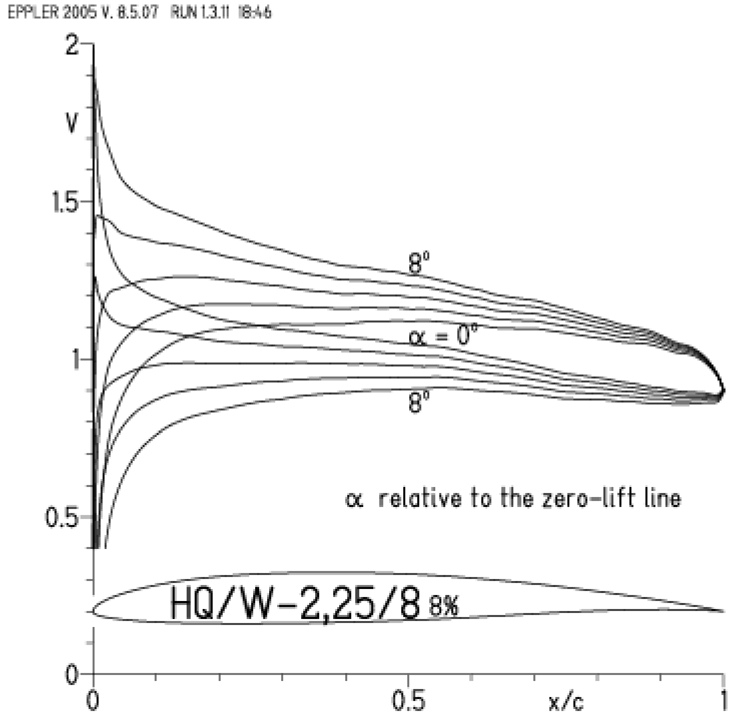
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

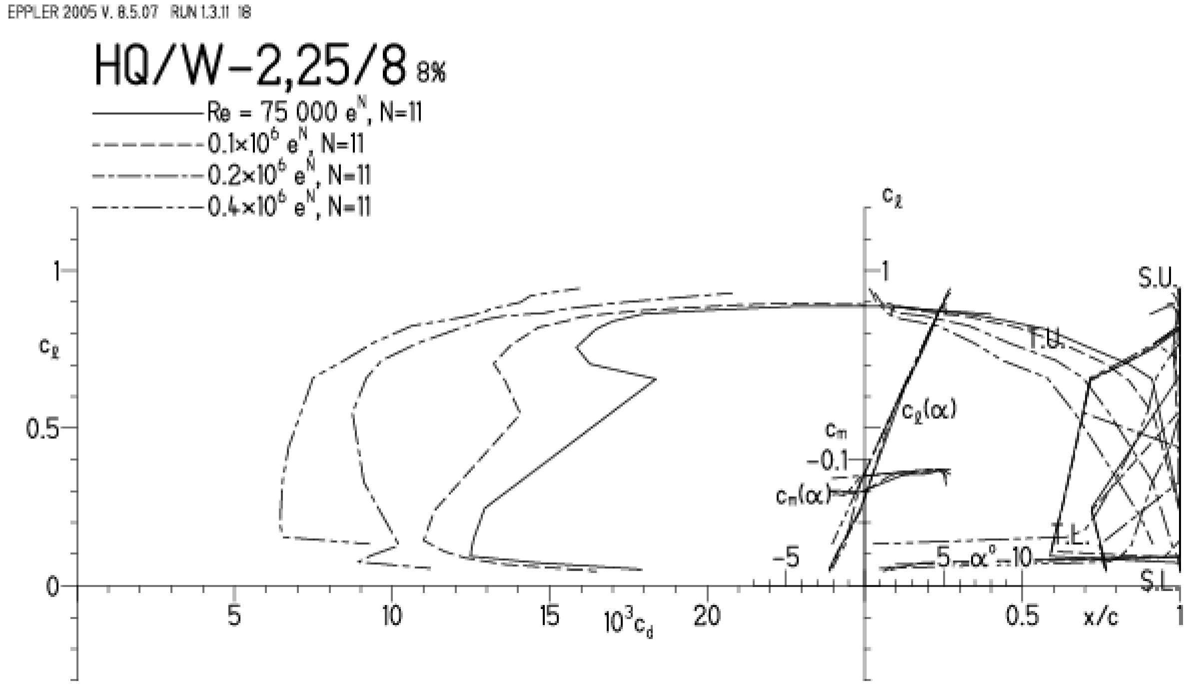


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

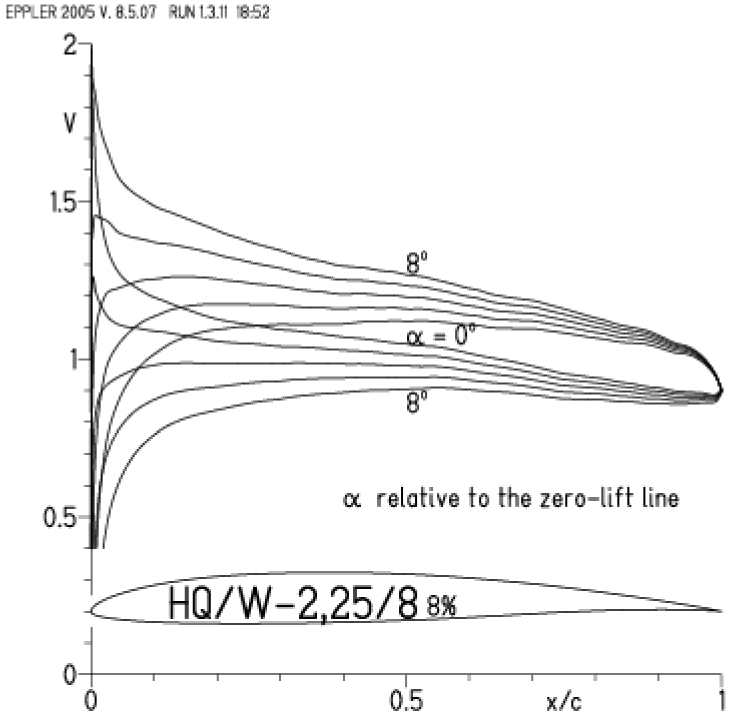


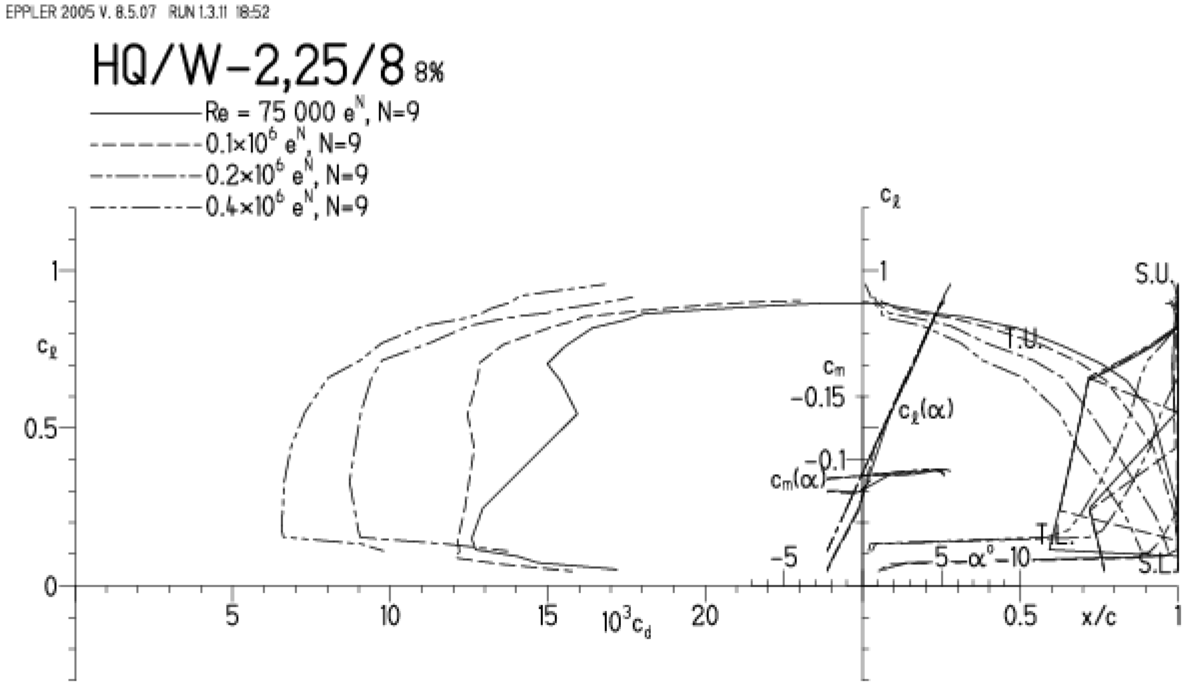
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

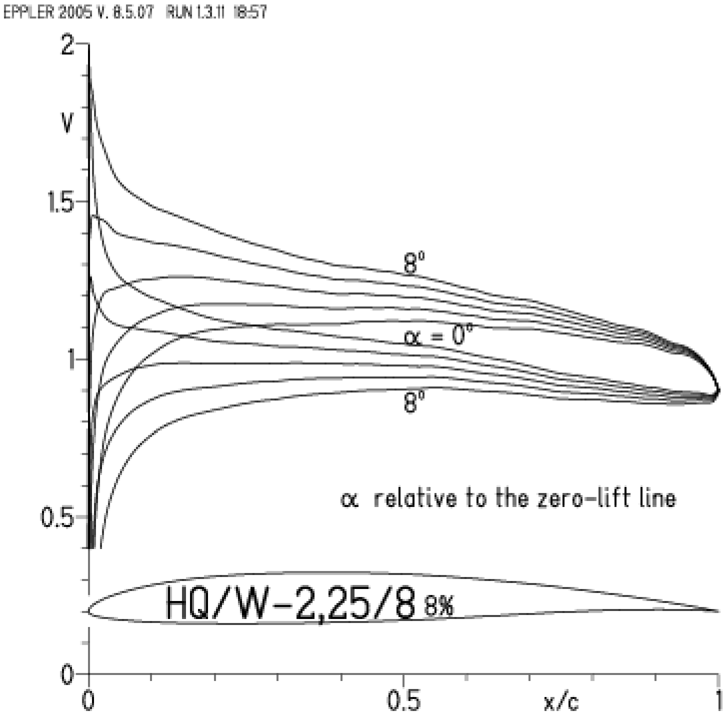

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
T.U.
S.U.
T.L.
S.L.
10^3 c_d
x/c
α°

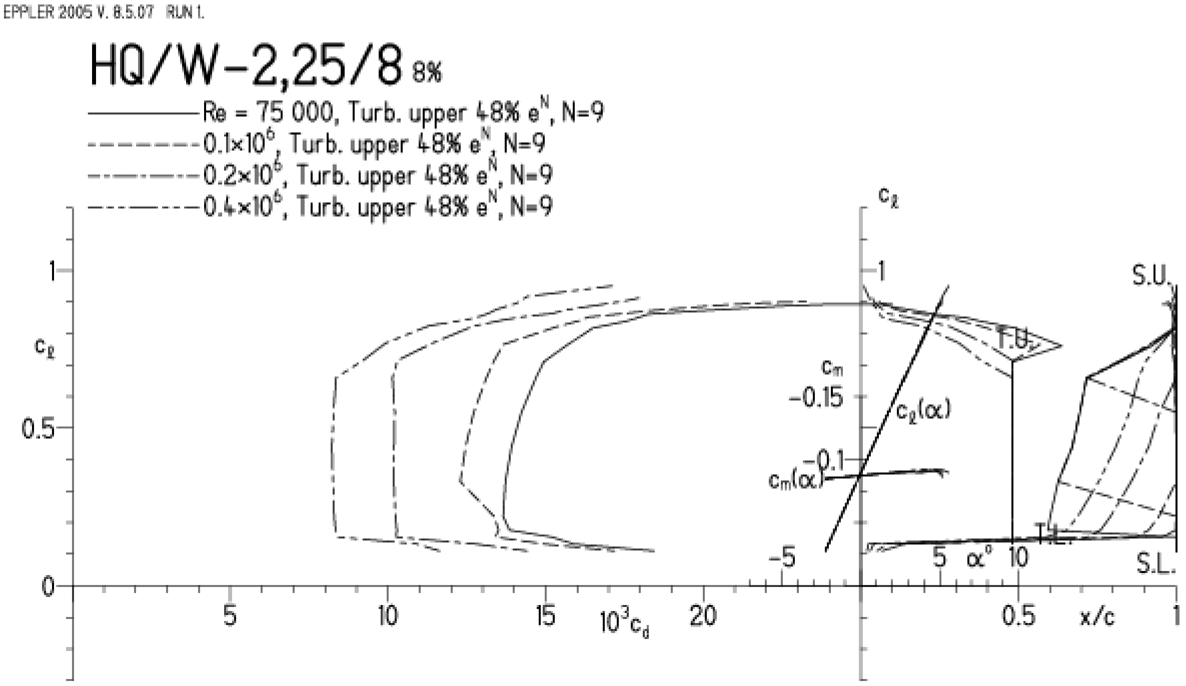
<u>HQ/W-2,25/8</u>, N=9





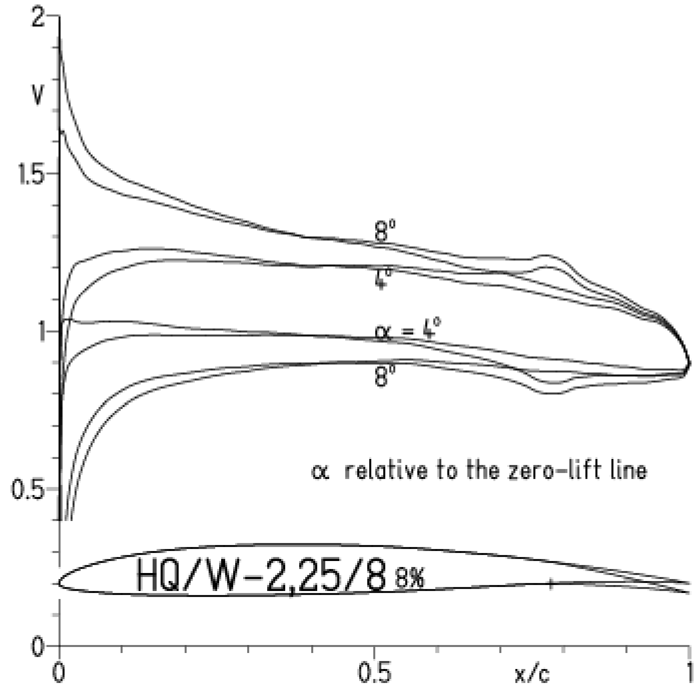
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



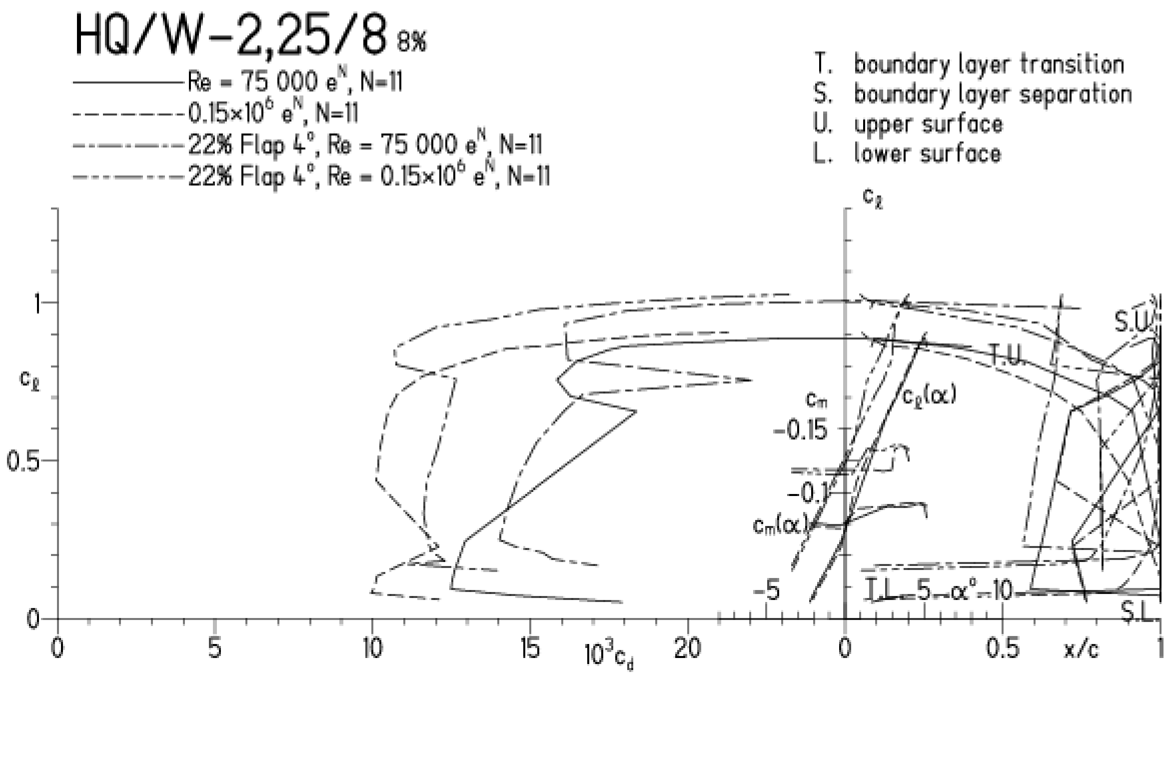


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

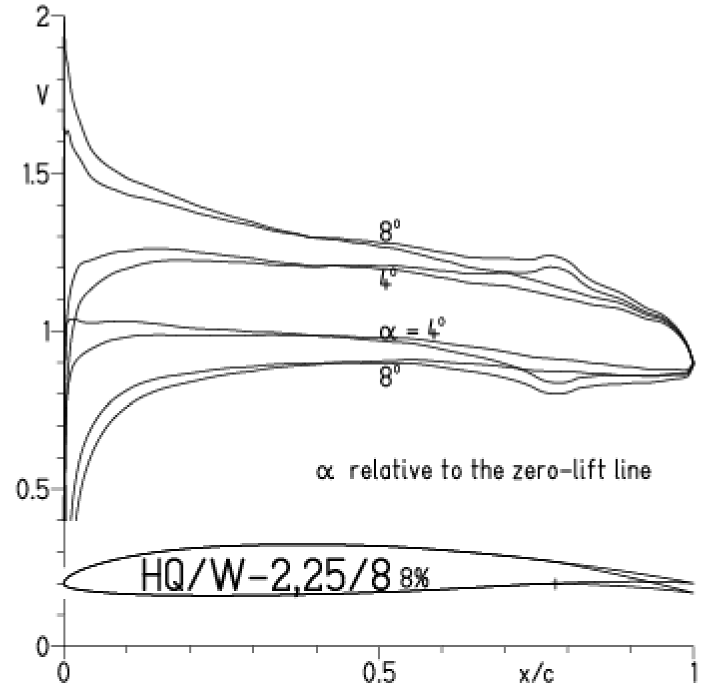


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

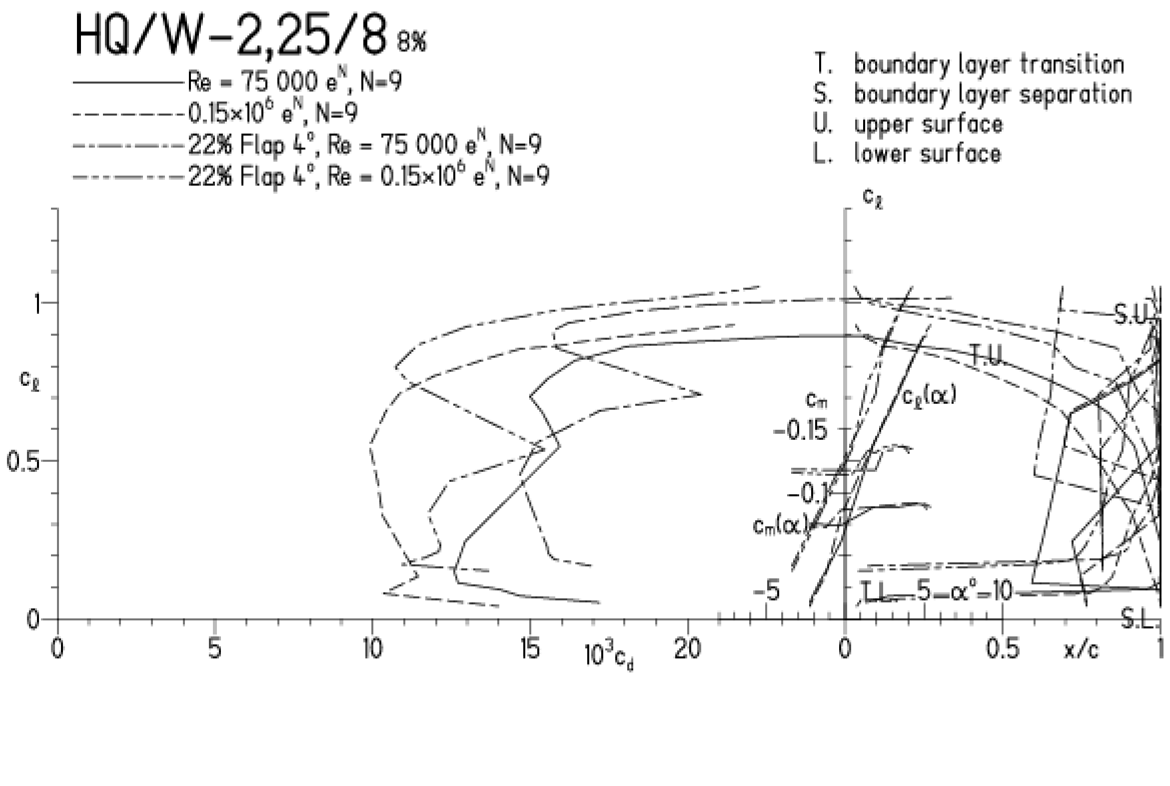


<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag

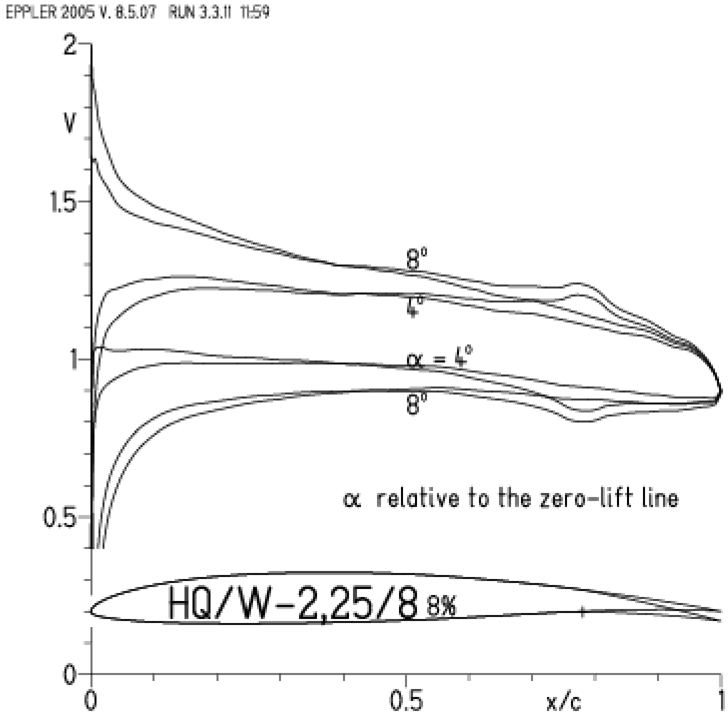
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

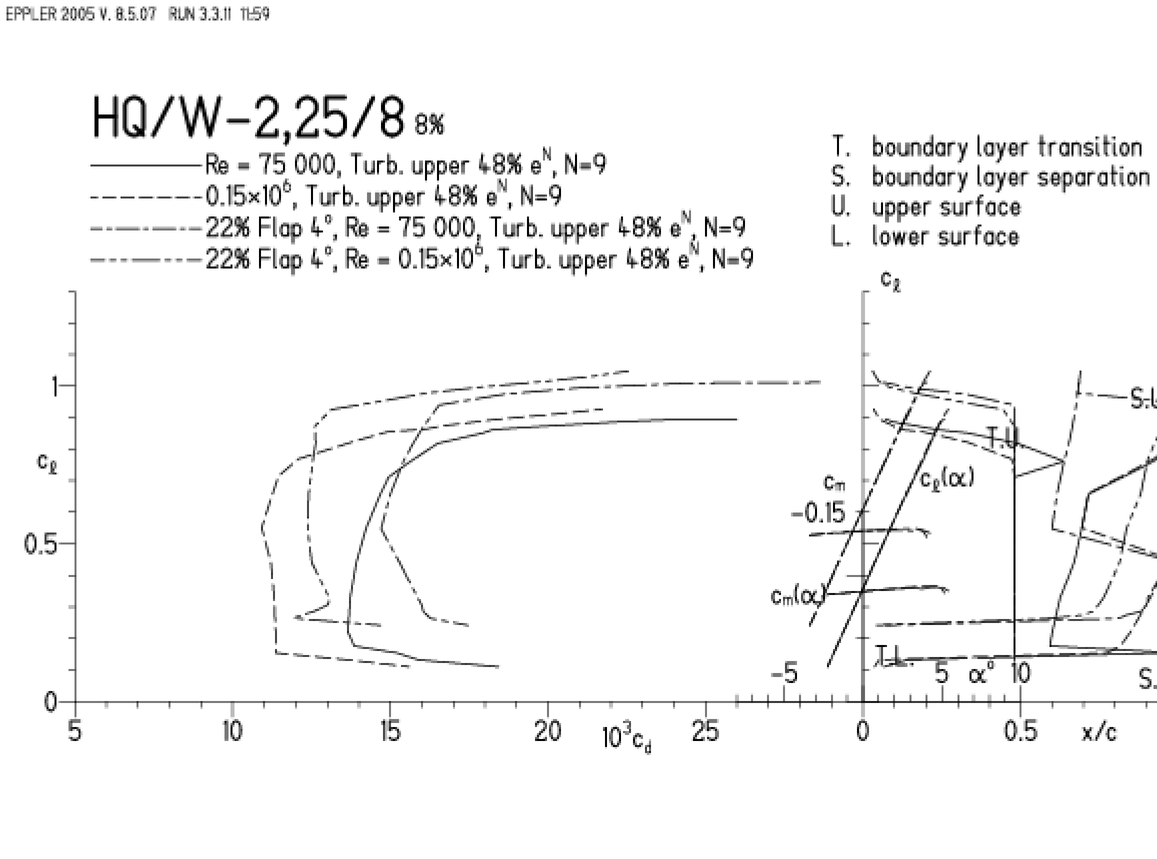


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



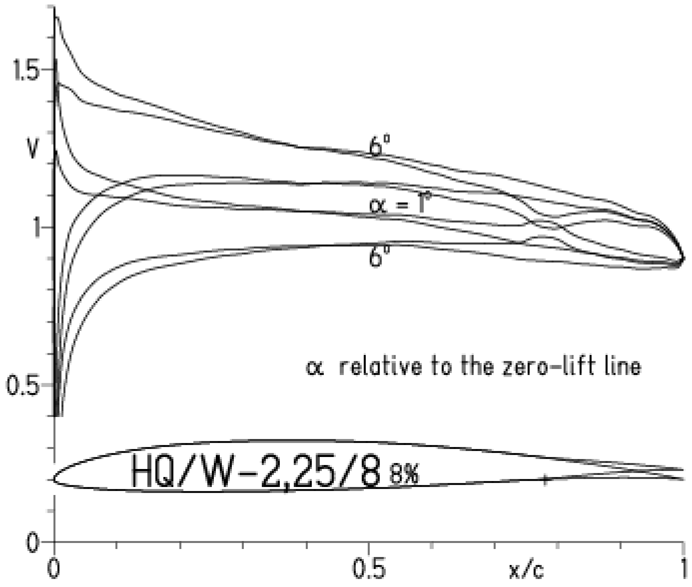
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



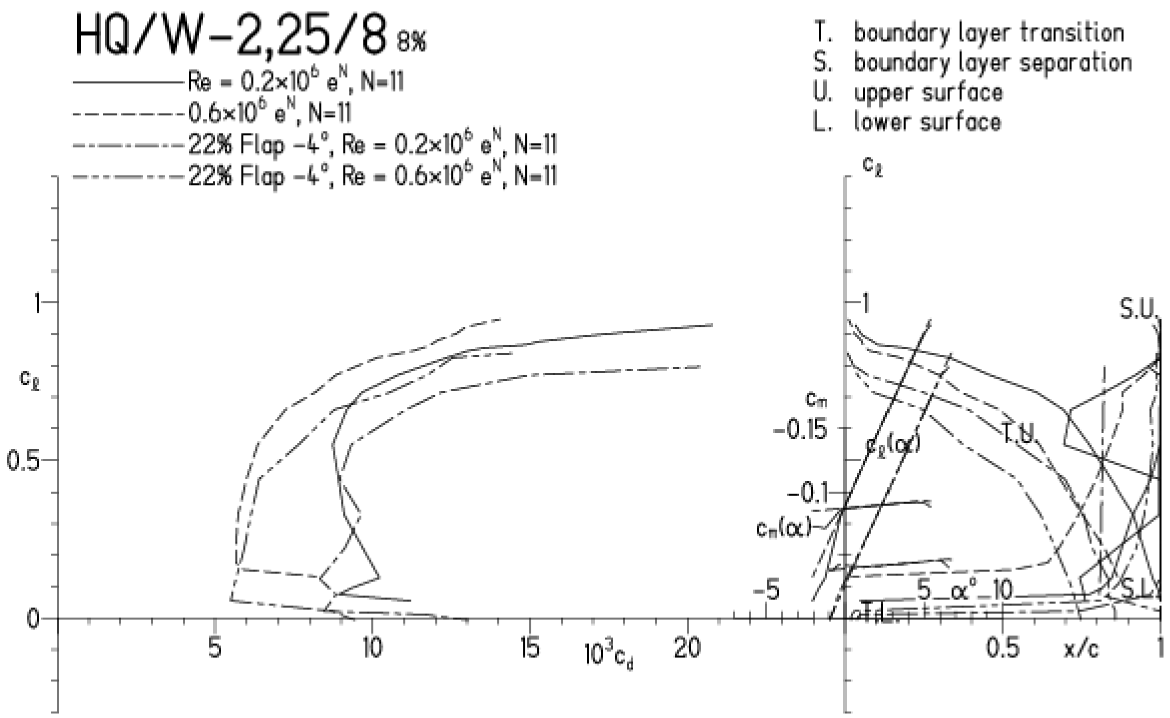


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

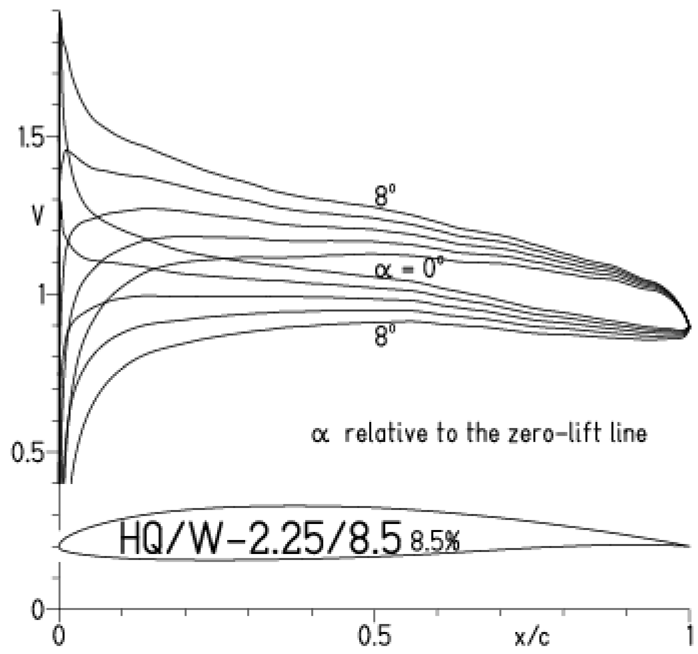


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

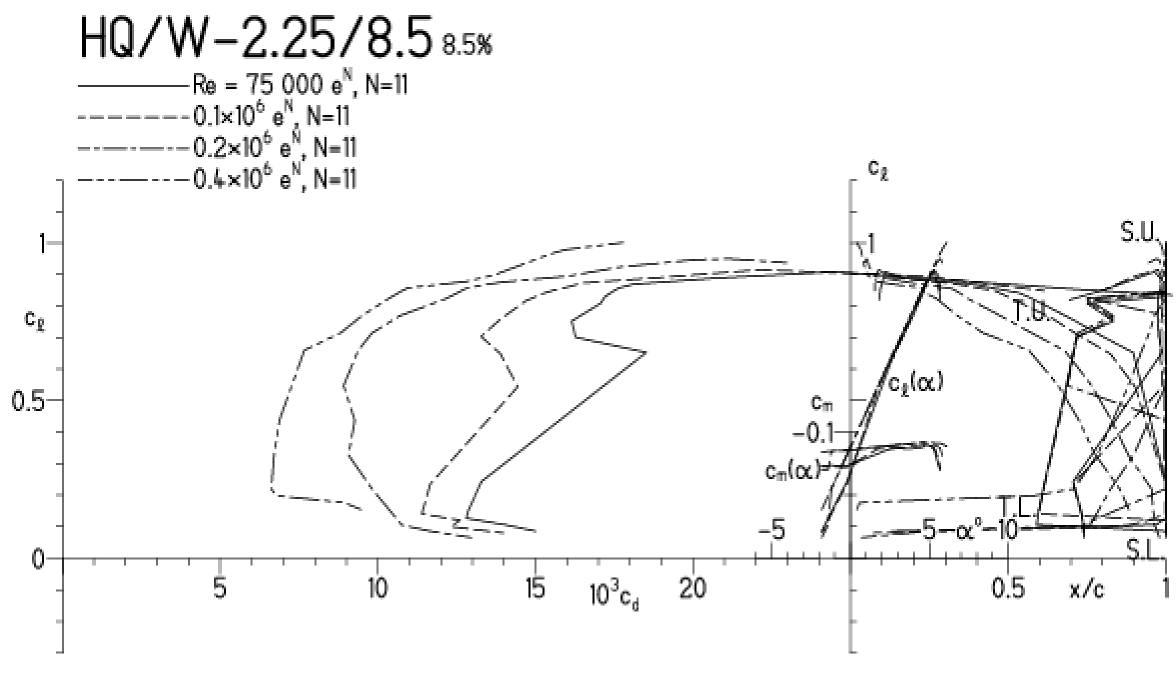


HQ/W-2,25/8,5, N=11

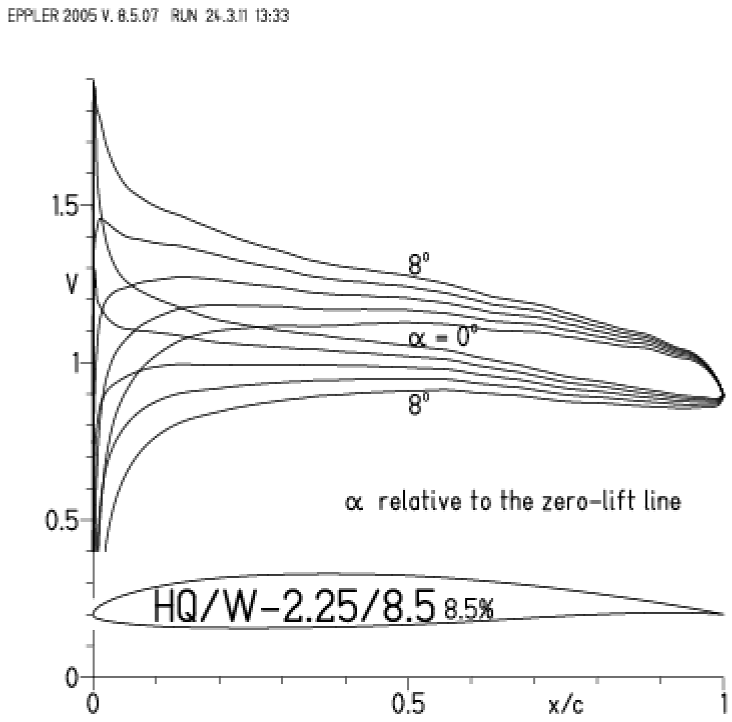
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

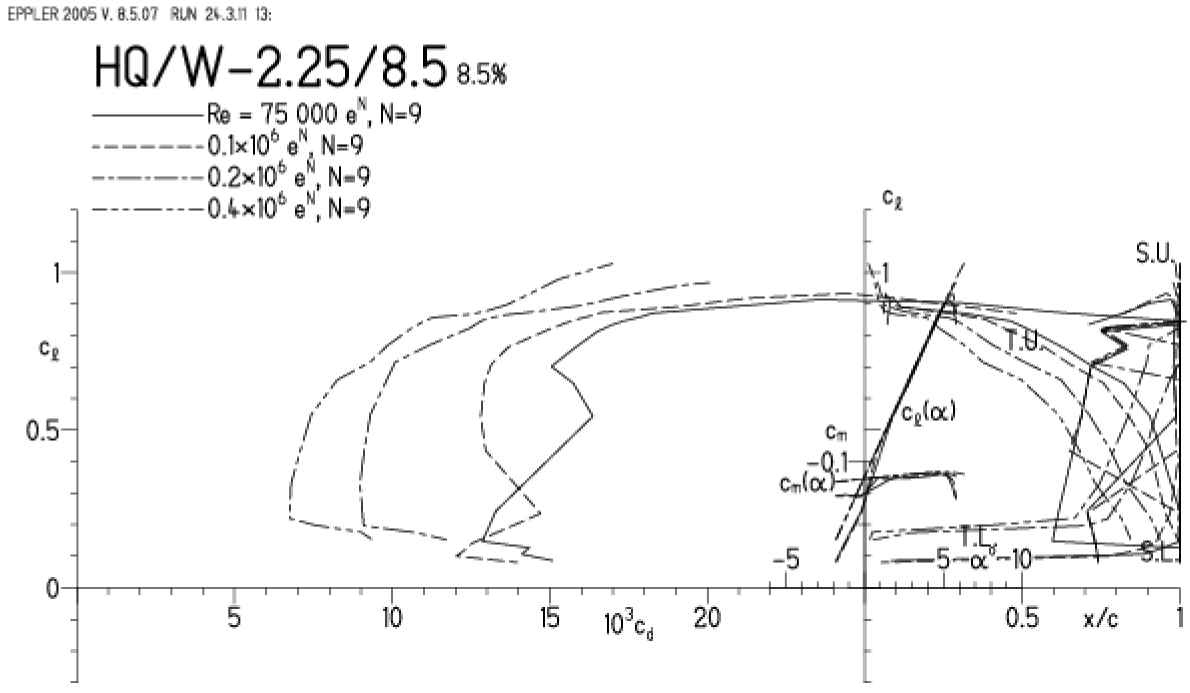


EPPLER 2005 V

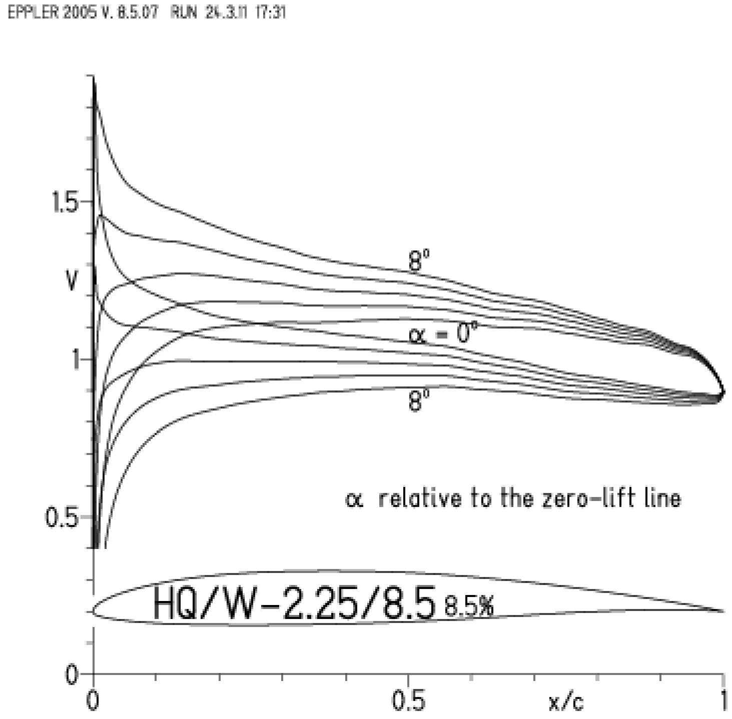


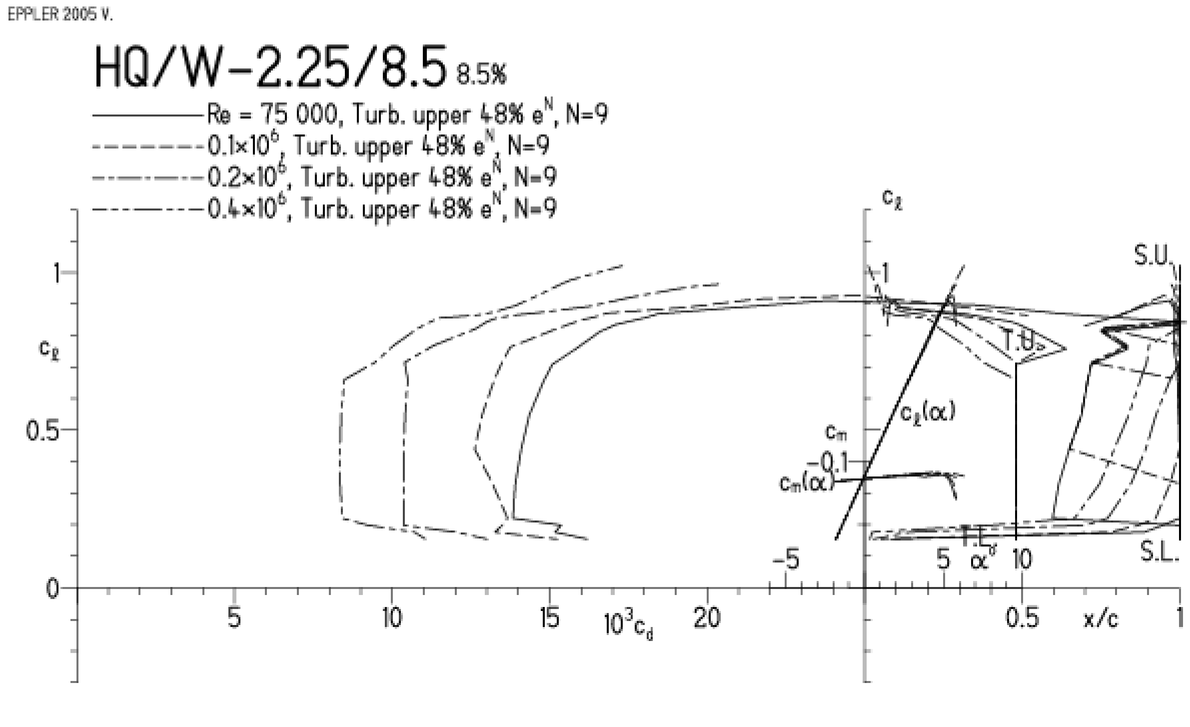
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

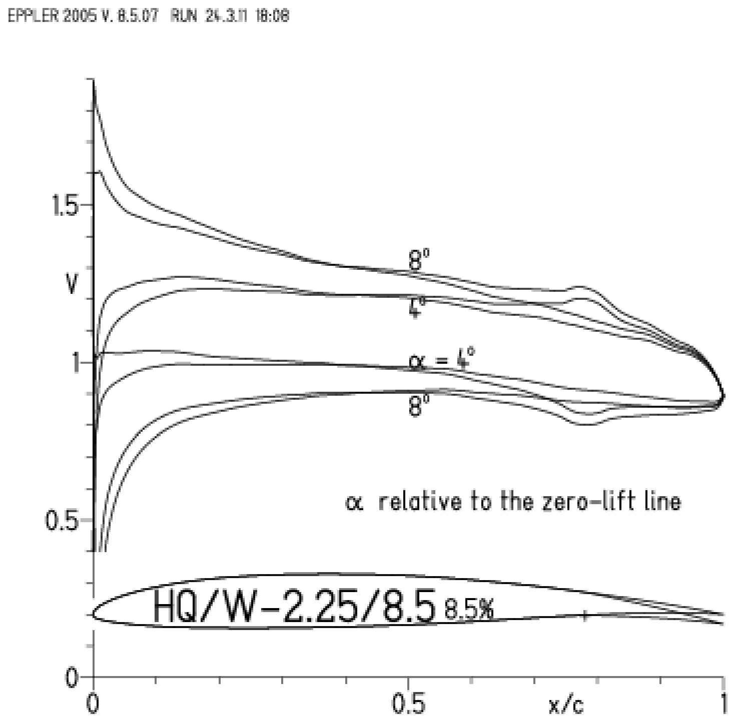

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

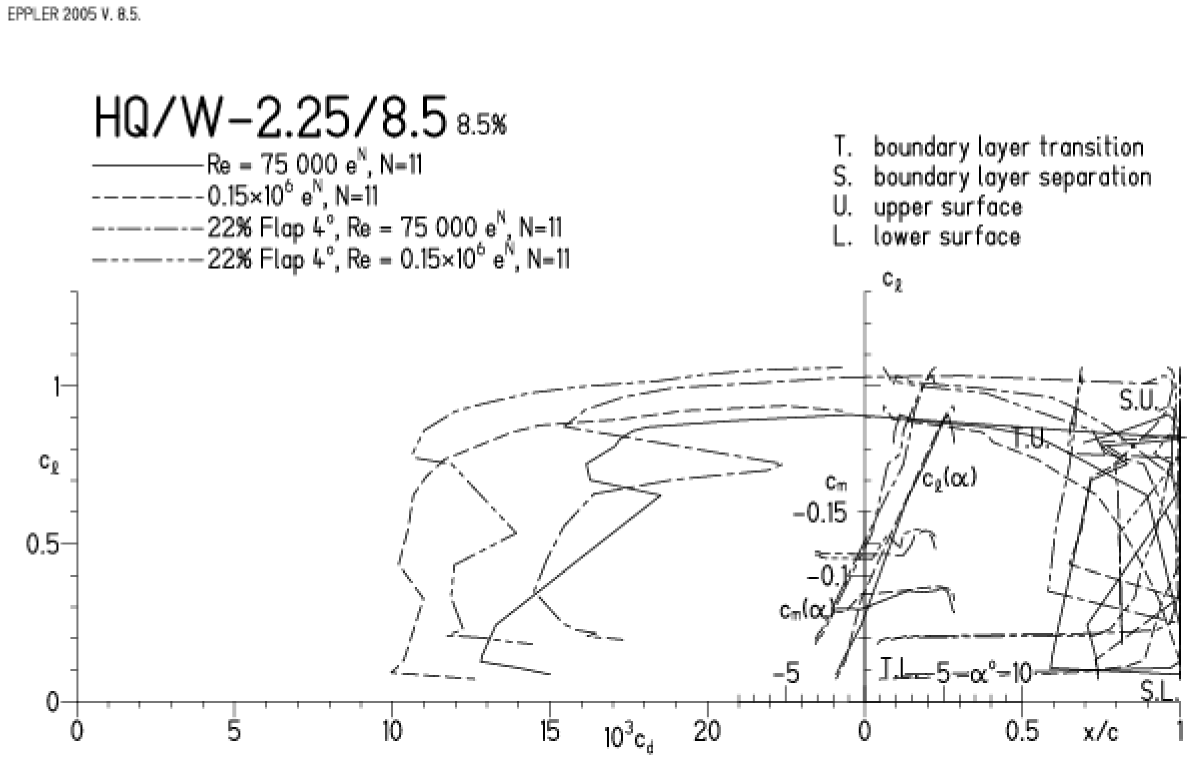
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





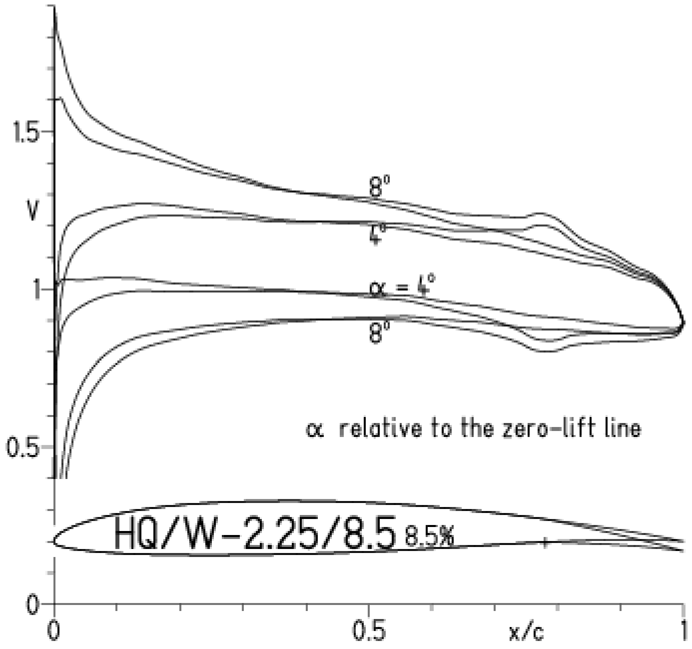
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



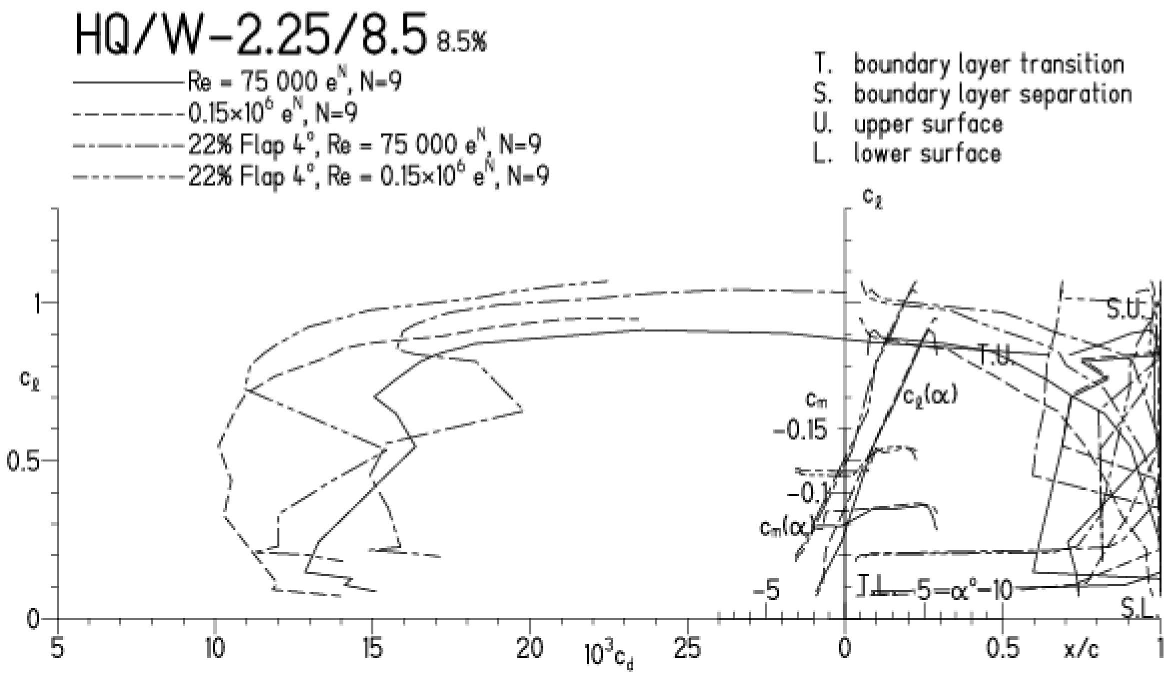


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

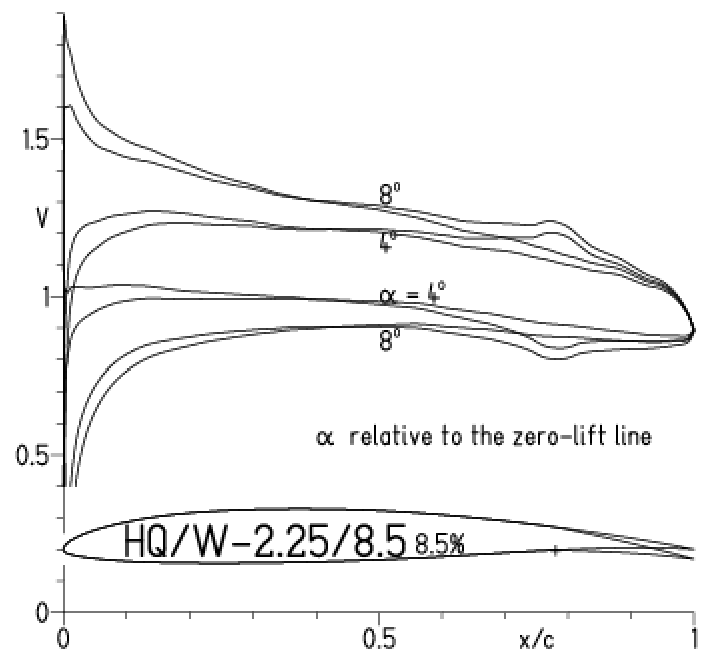


EPPLER 2005 V.

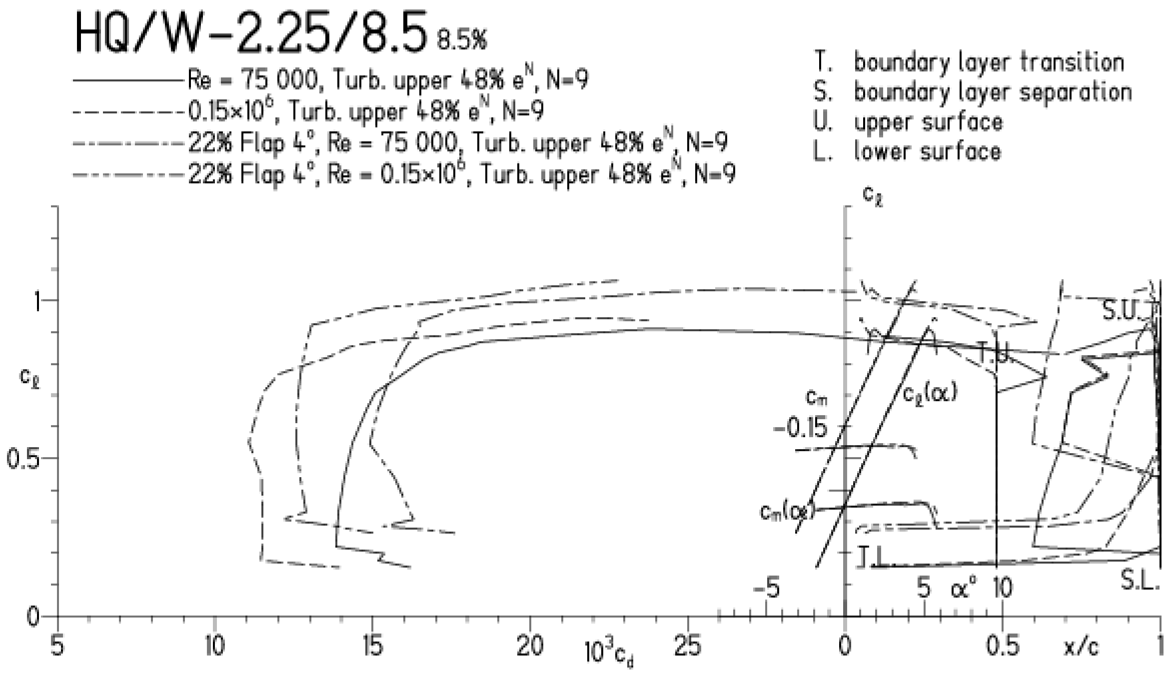


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

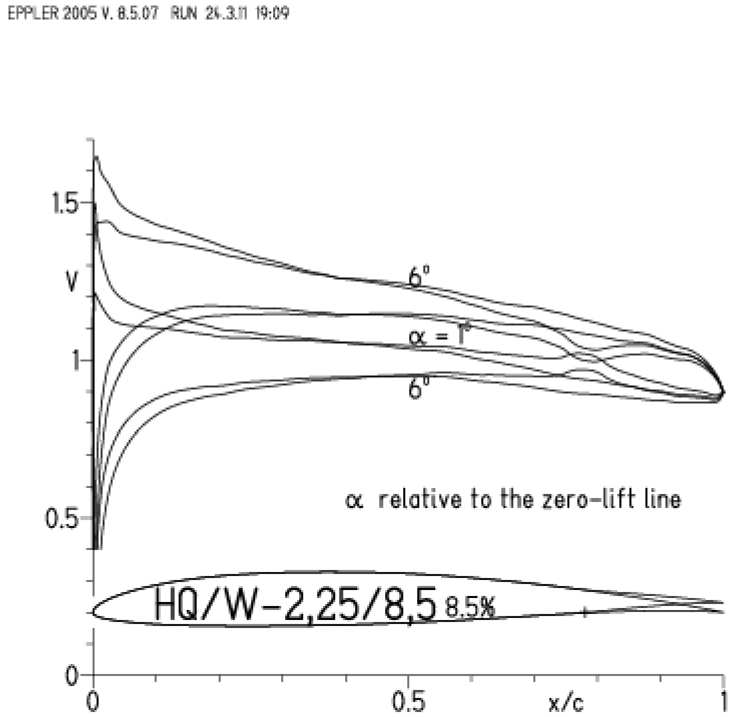
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

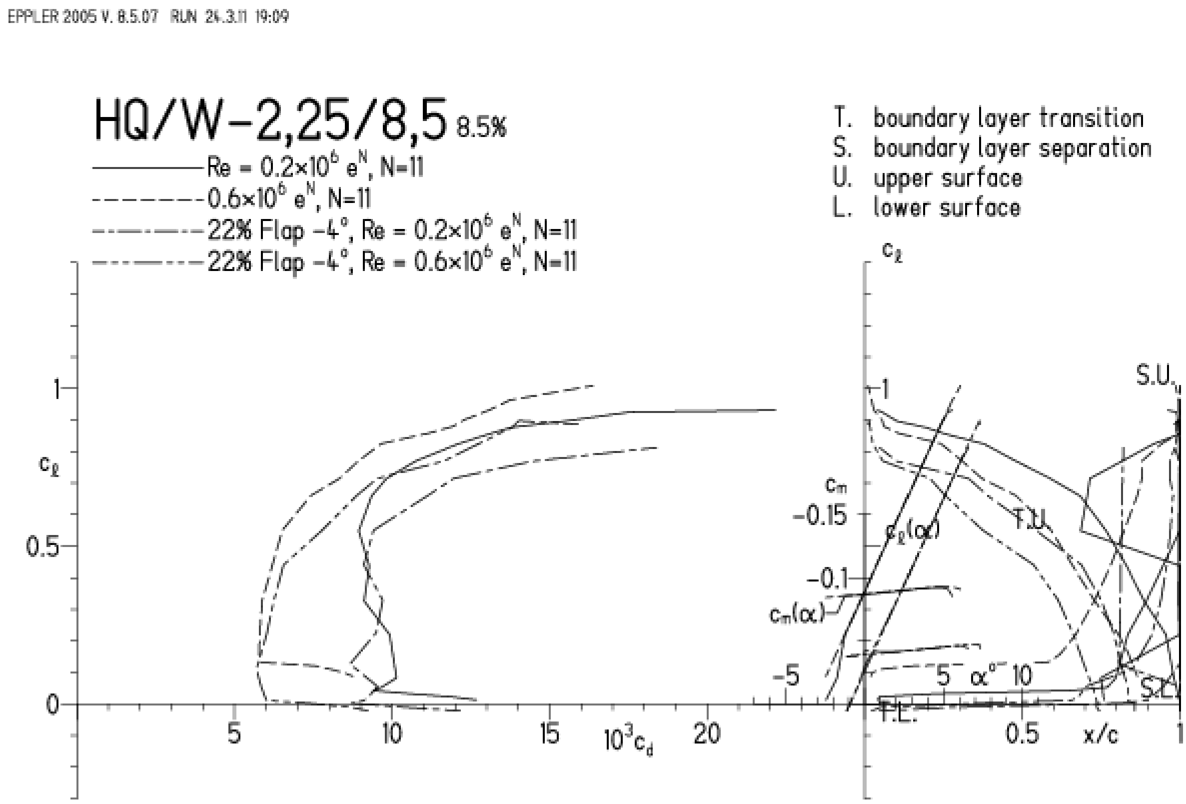


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

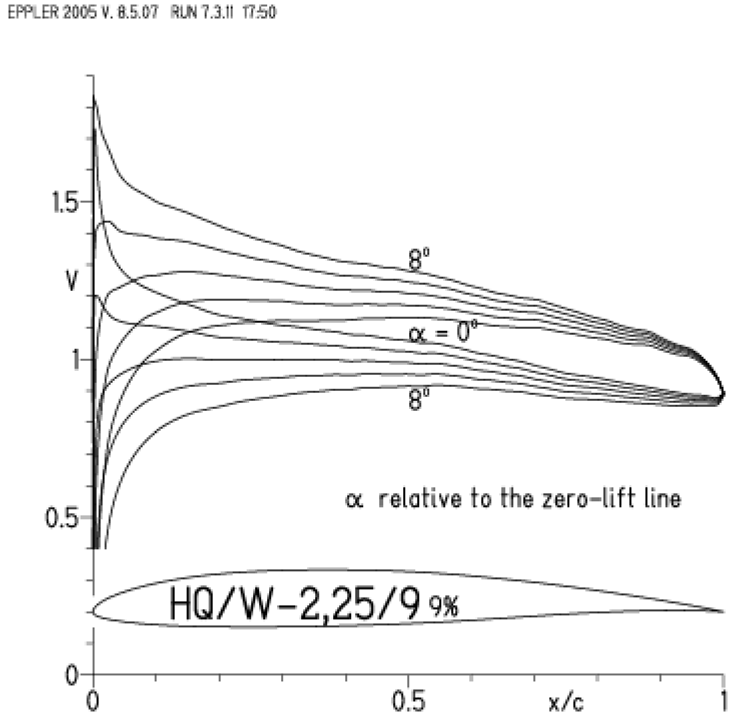


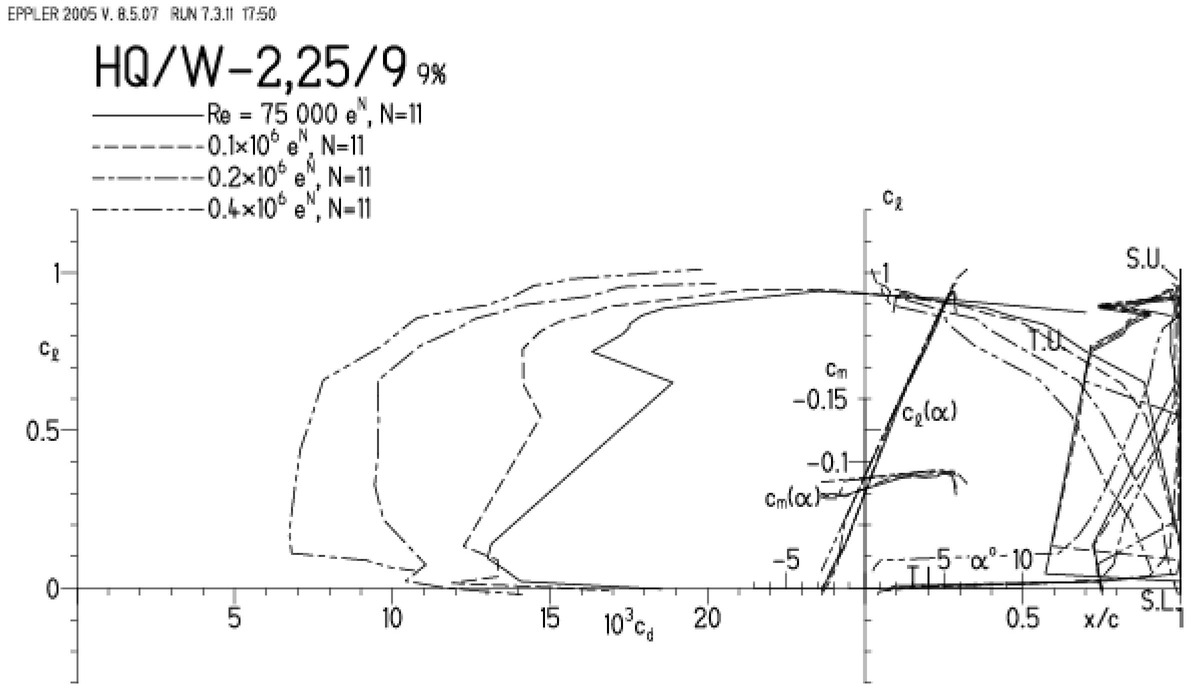
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





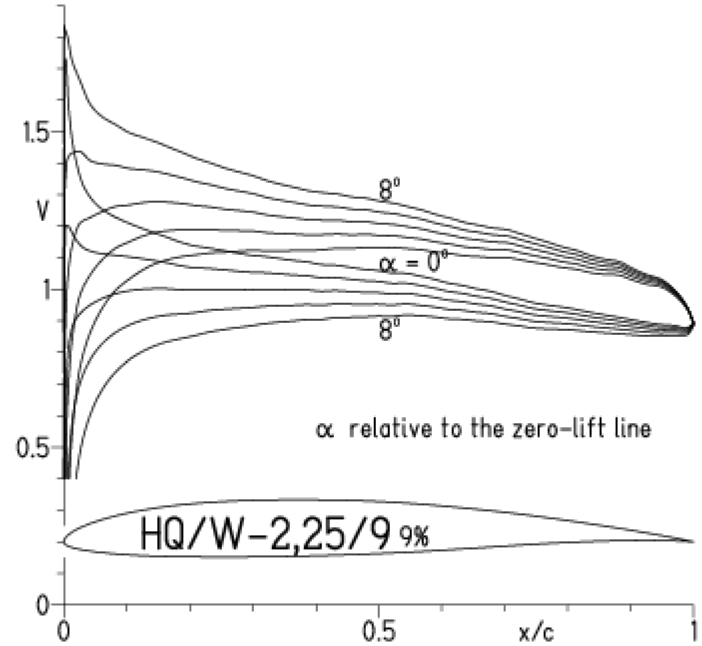
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

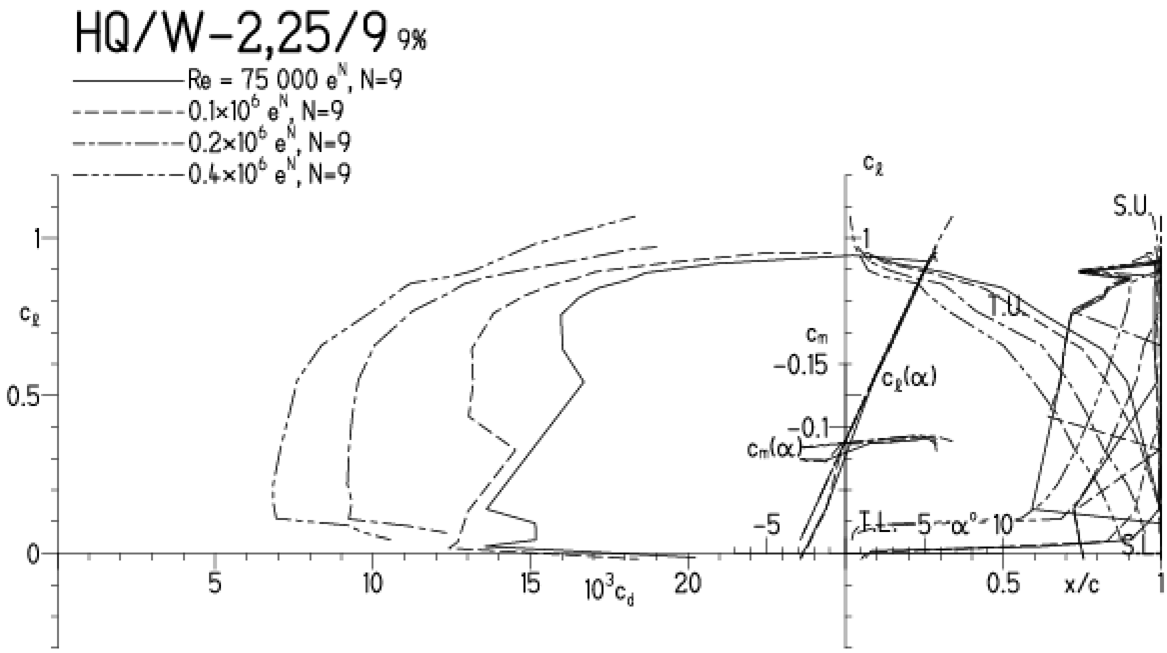

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

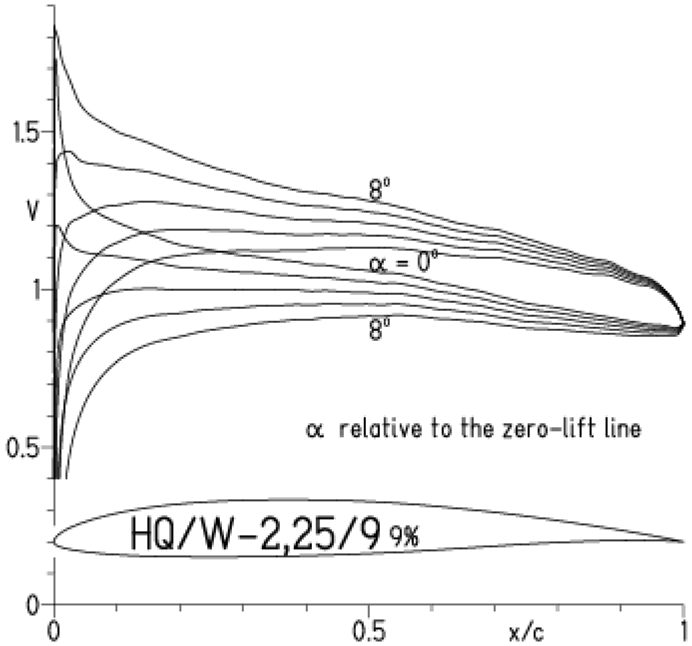


EPPLER 2005 V. 8.

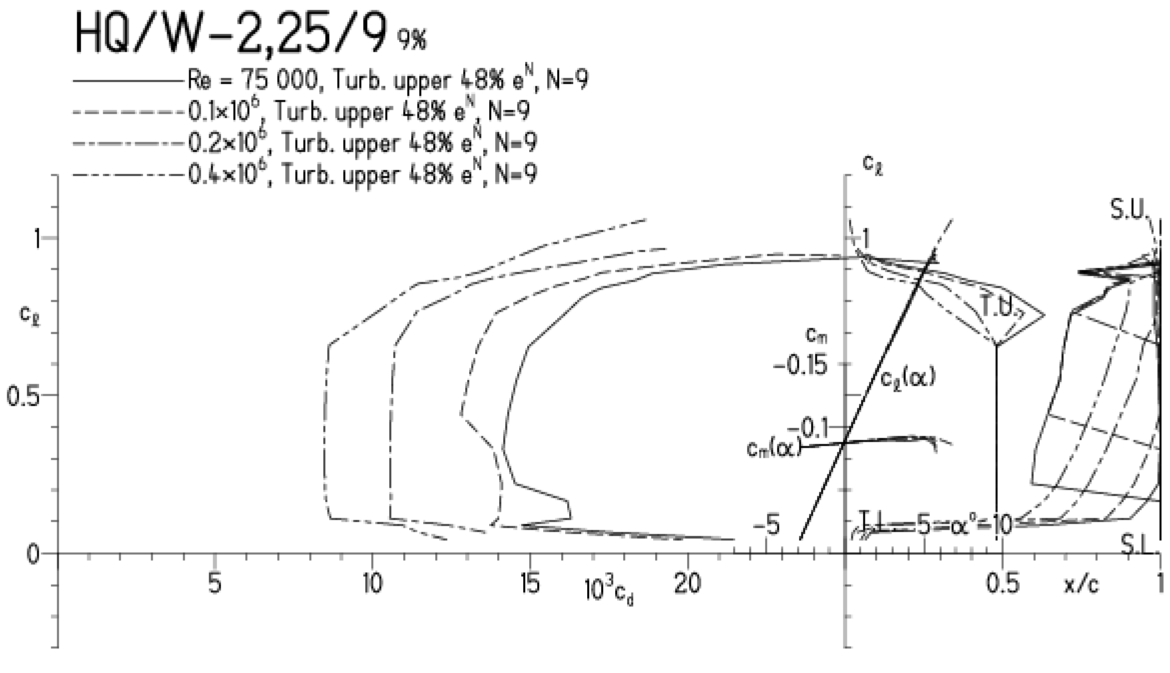


HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

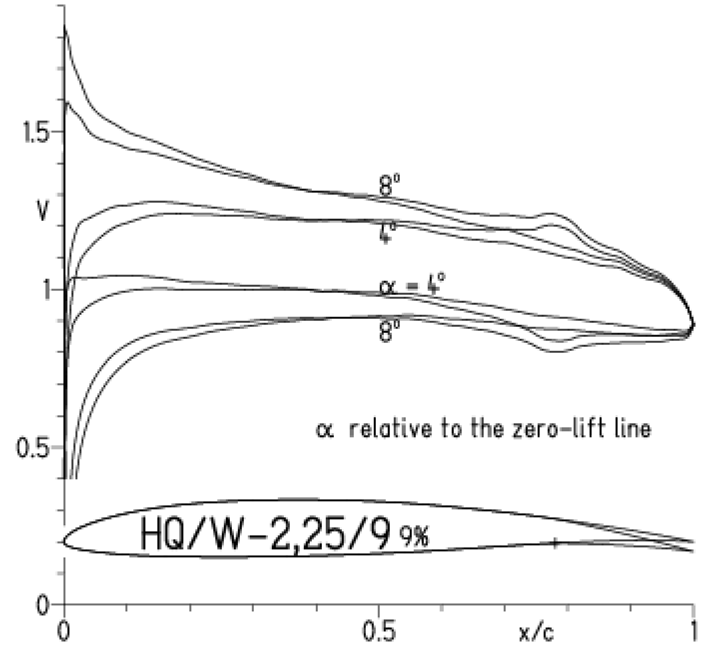


EPPLER 2005 V. 8.5.07 RUN 7

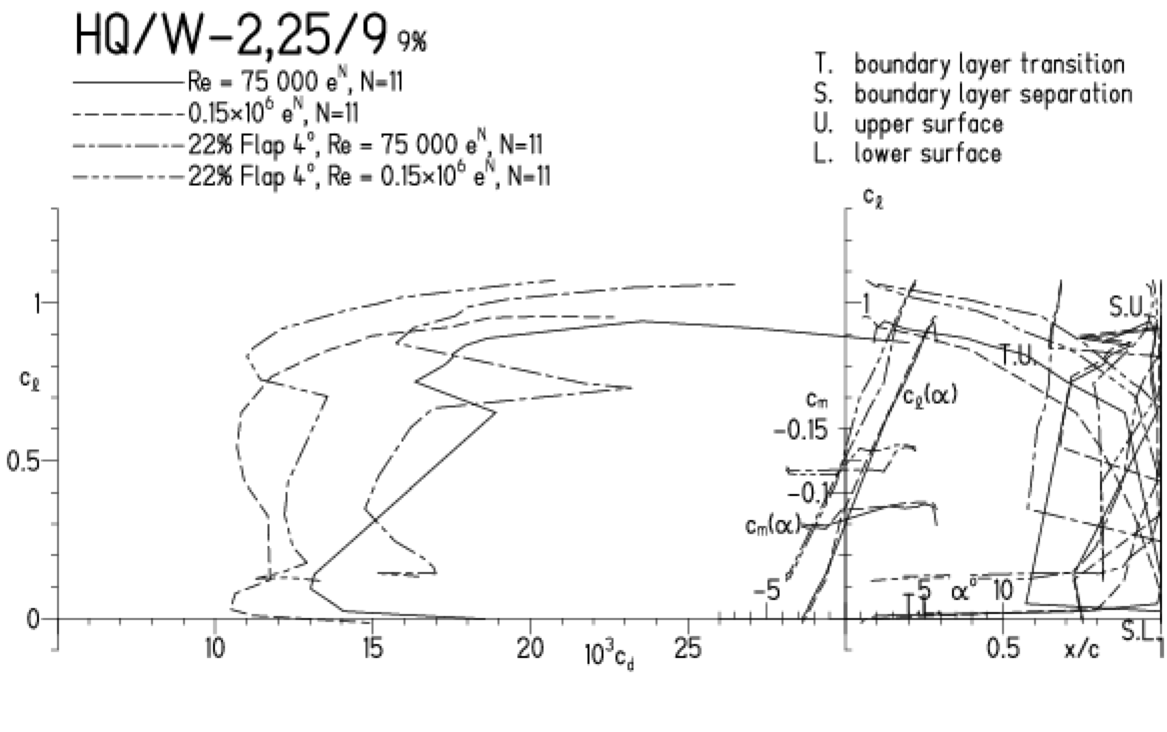


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

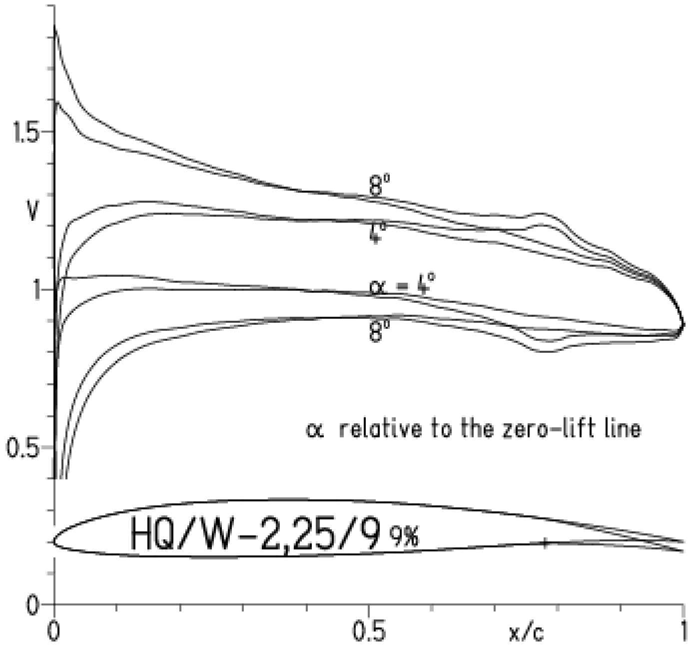


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

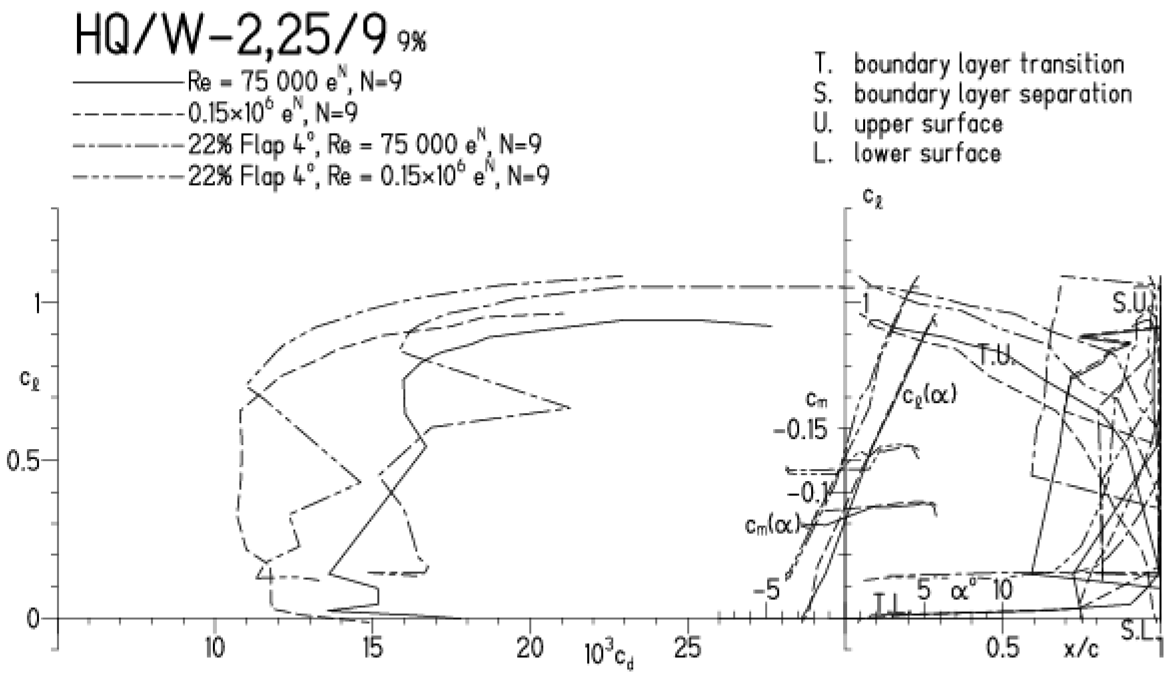


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

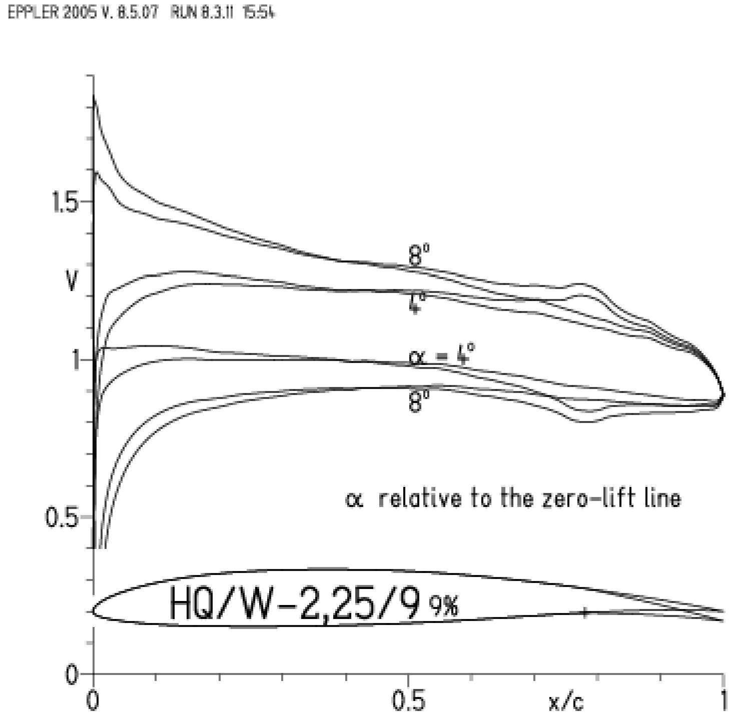
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

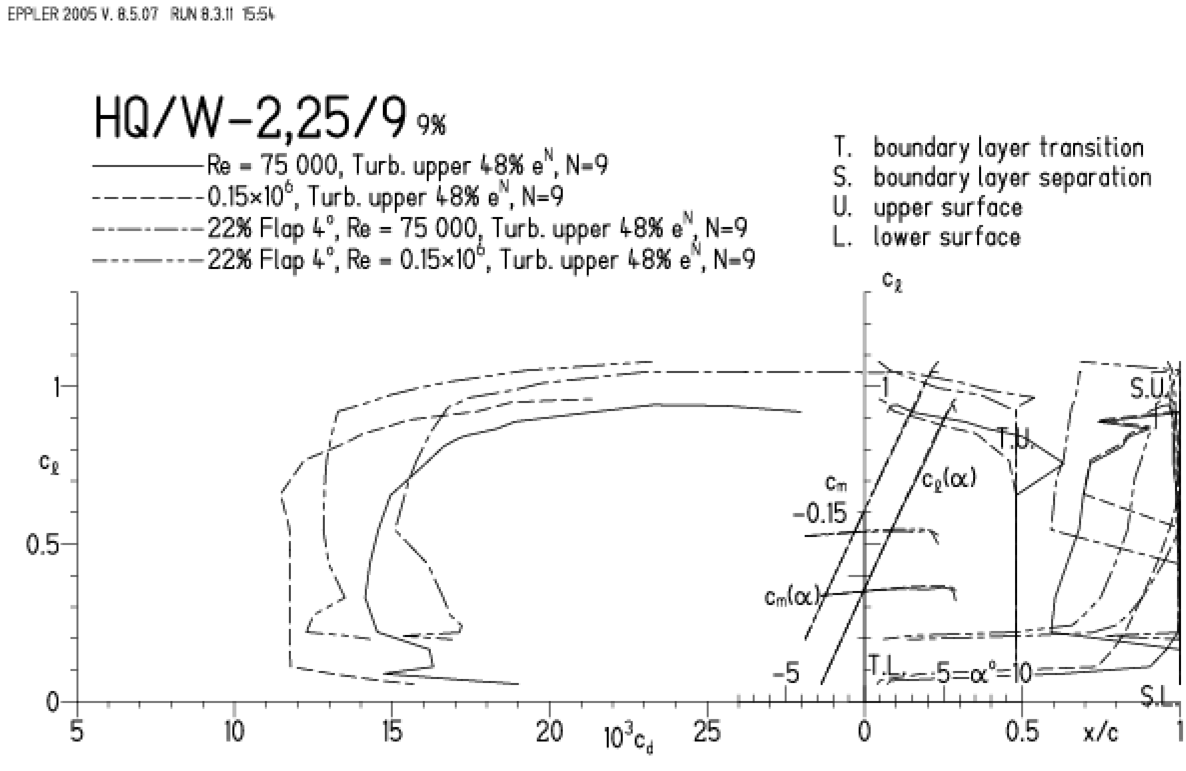


EPPLER 2005 V. 8.5.07 RUN 8.3.1

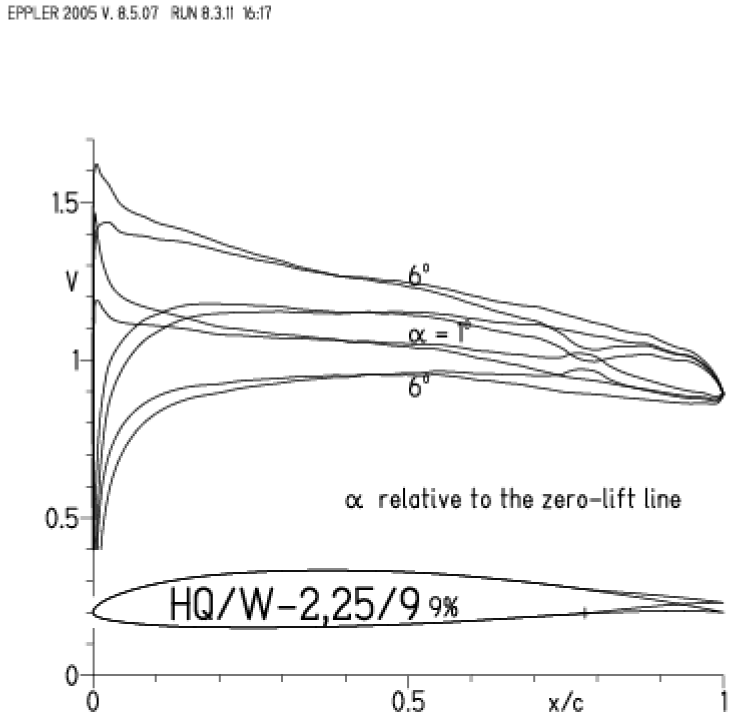


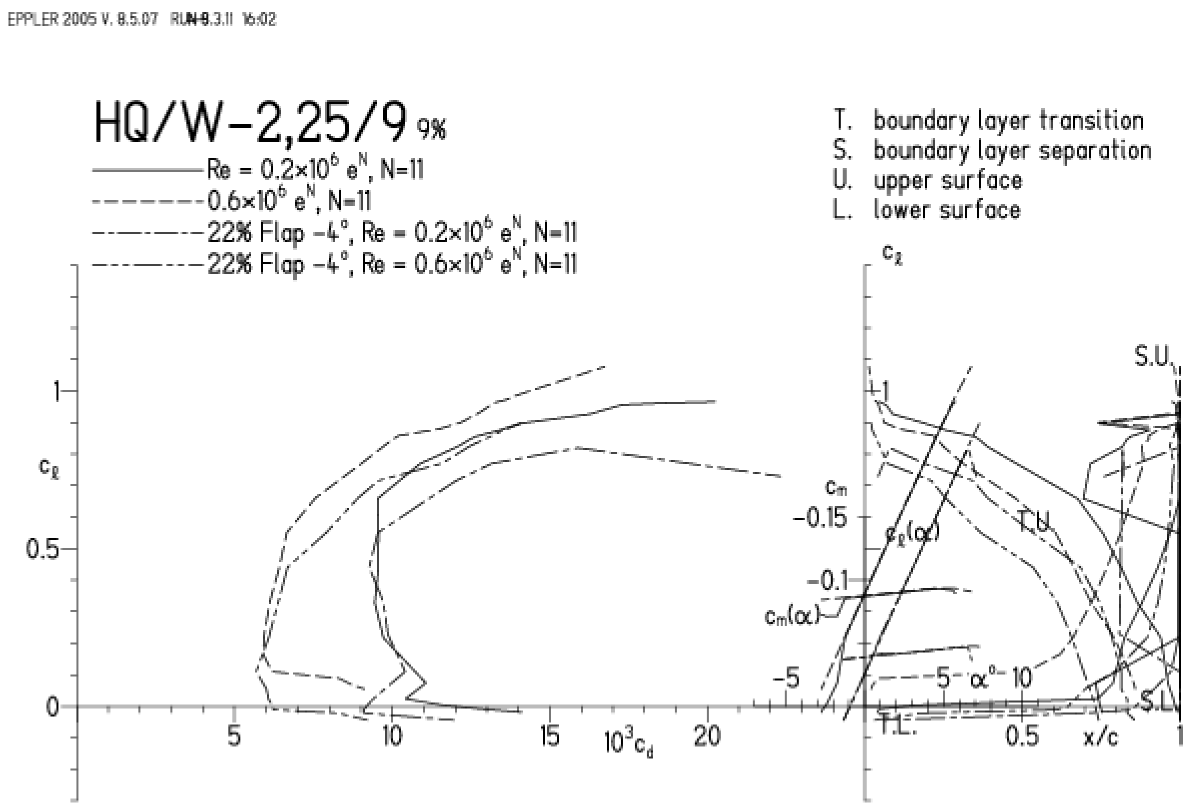
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





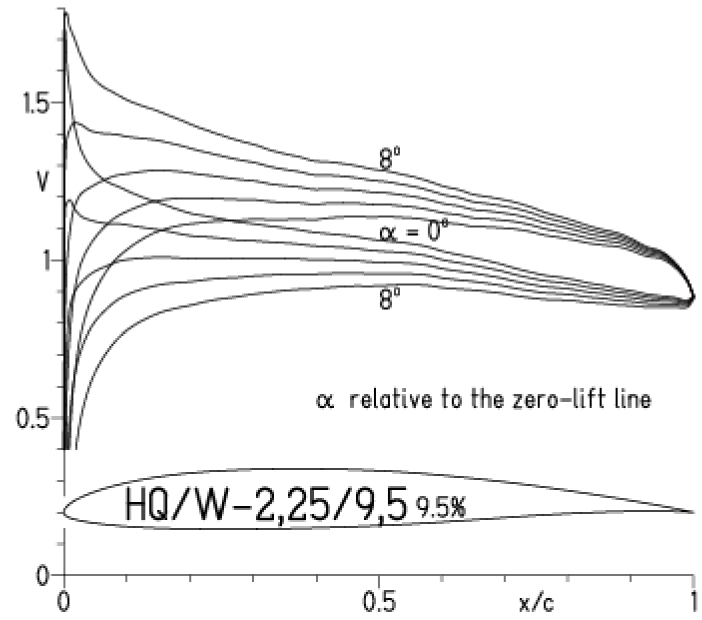
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



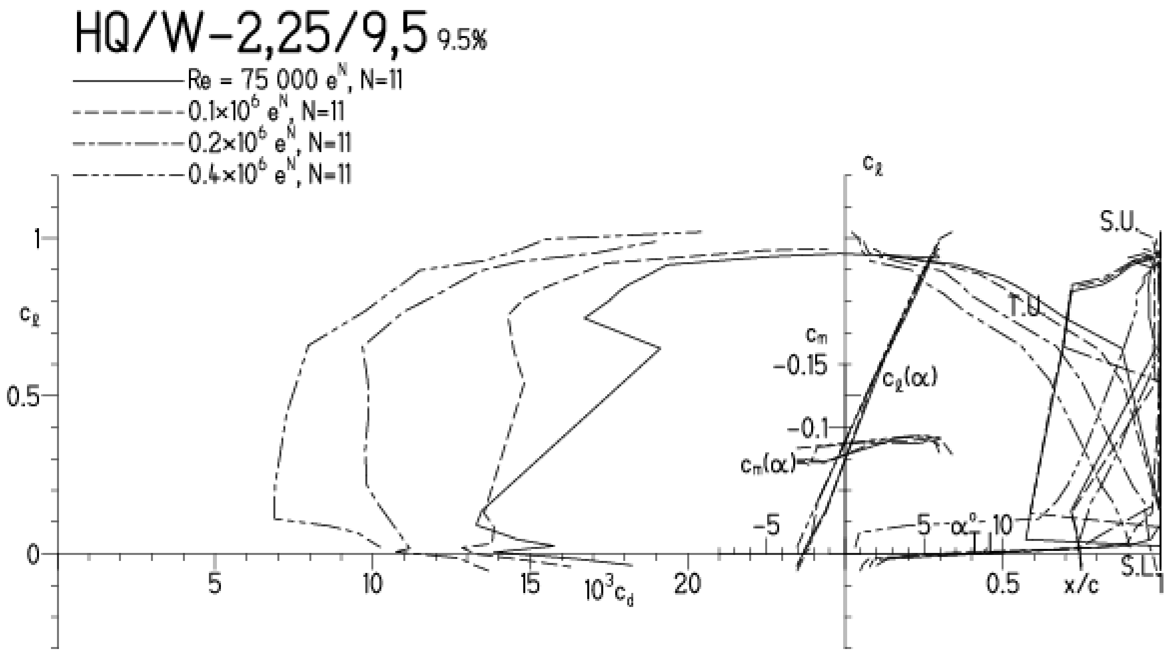


<u>HQ/W-2,25/9,5</u>, N=11

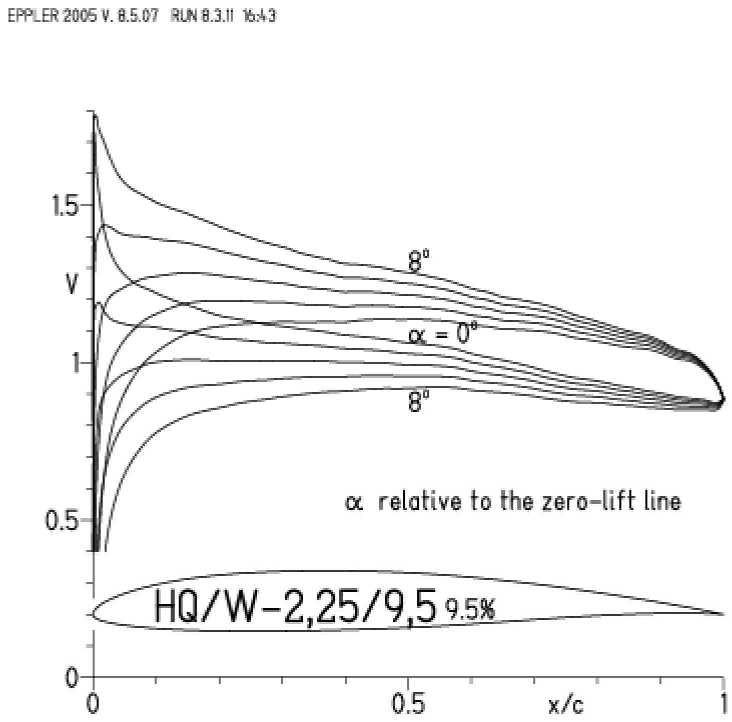
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

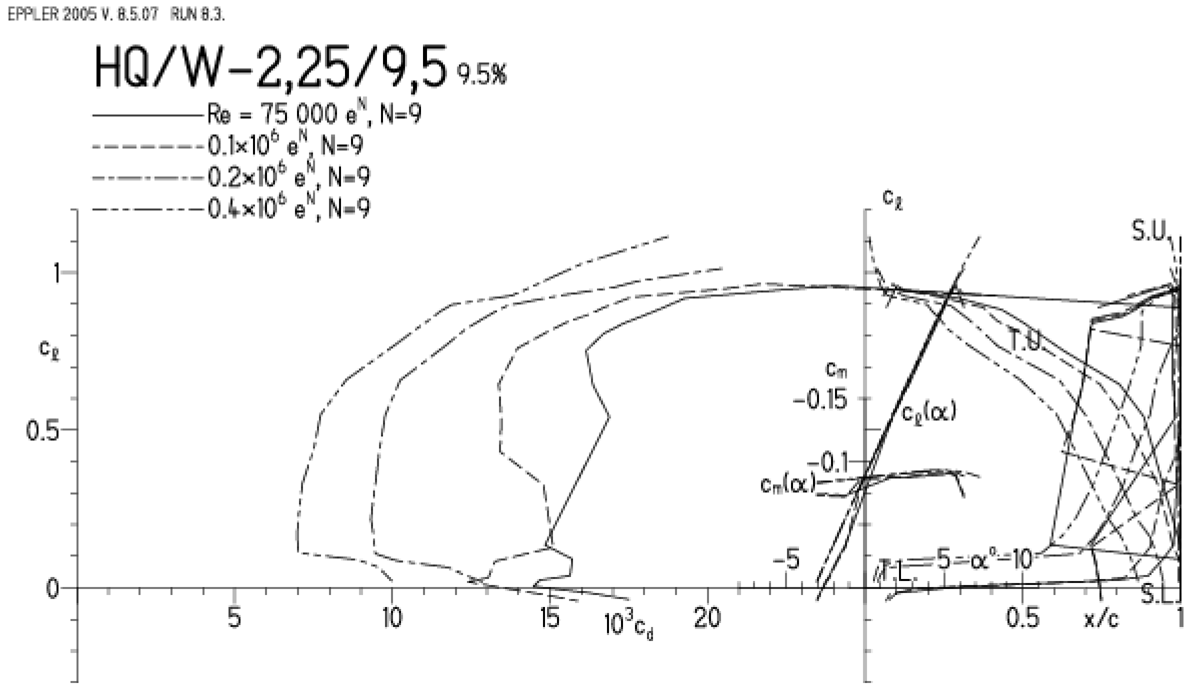


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

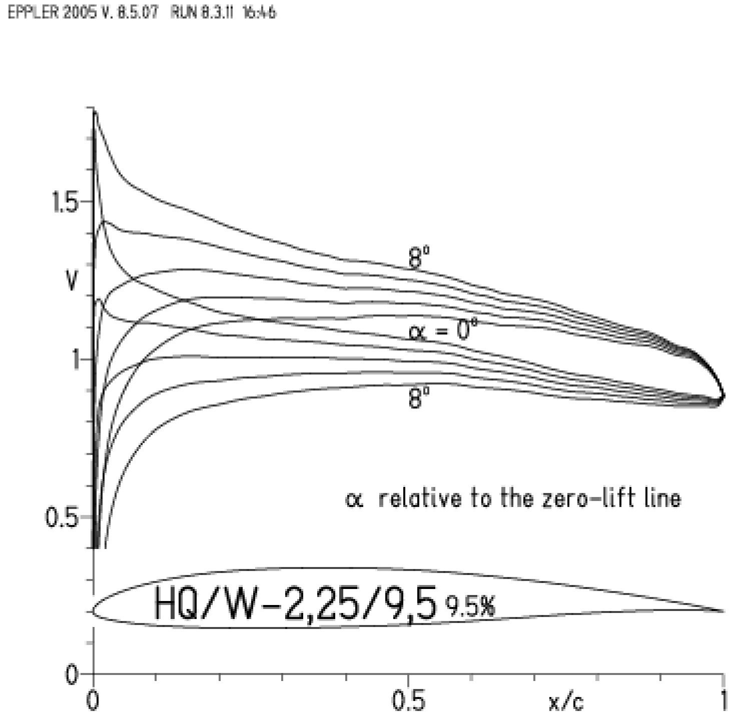


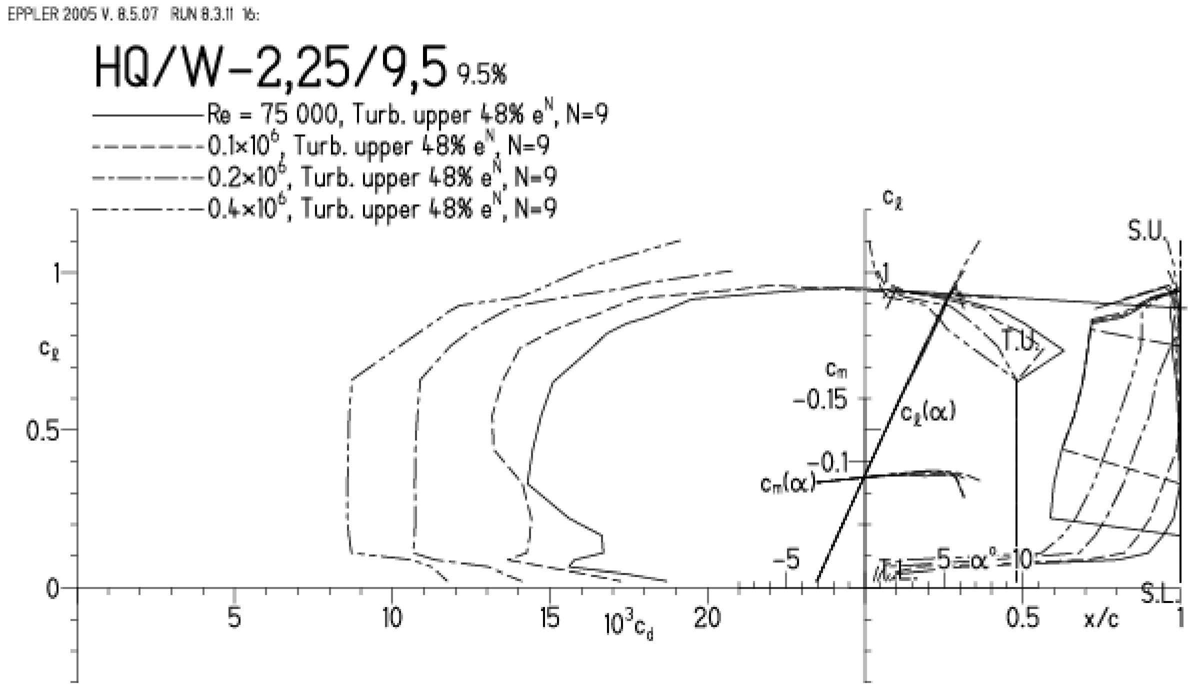
<u>HQ/W-2,25/9,5</u>, N=9





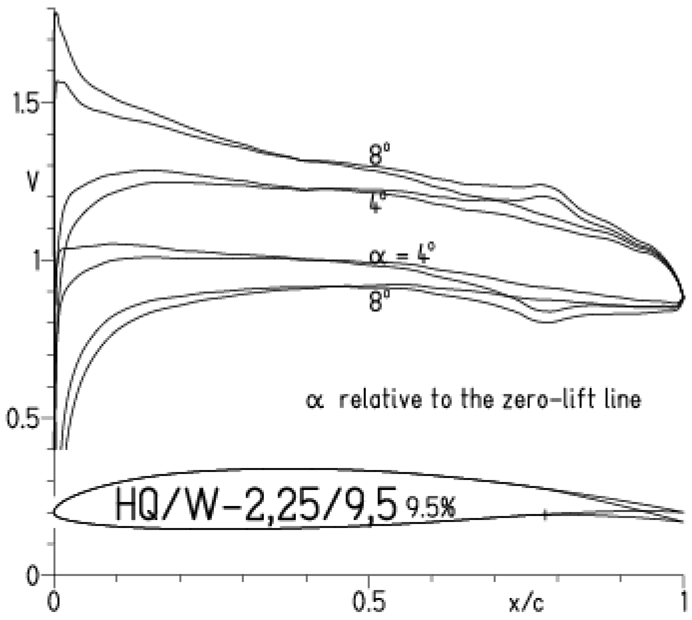
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



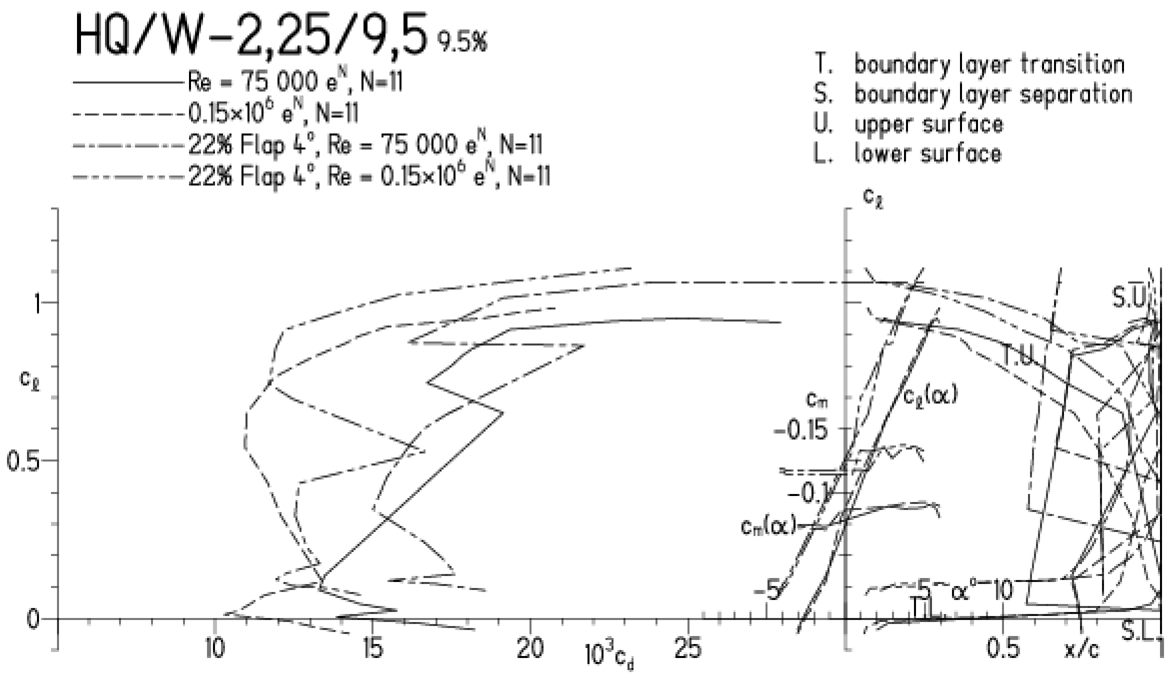


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

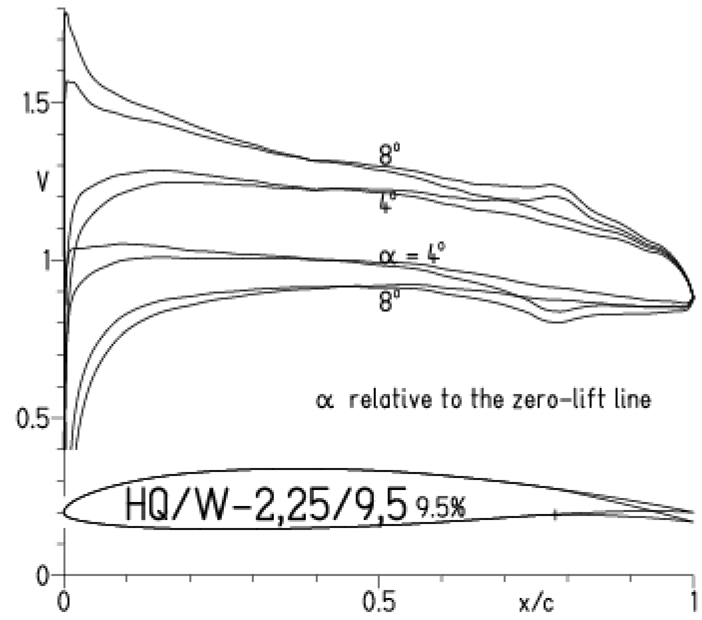


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

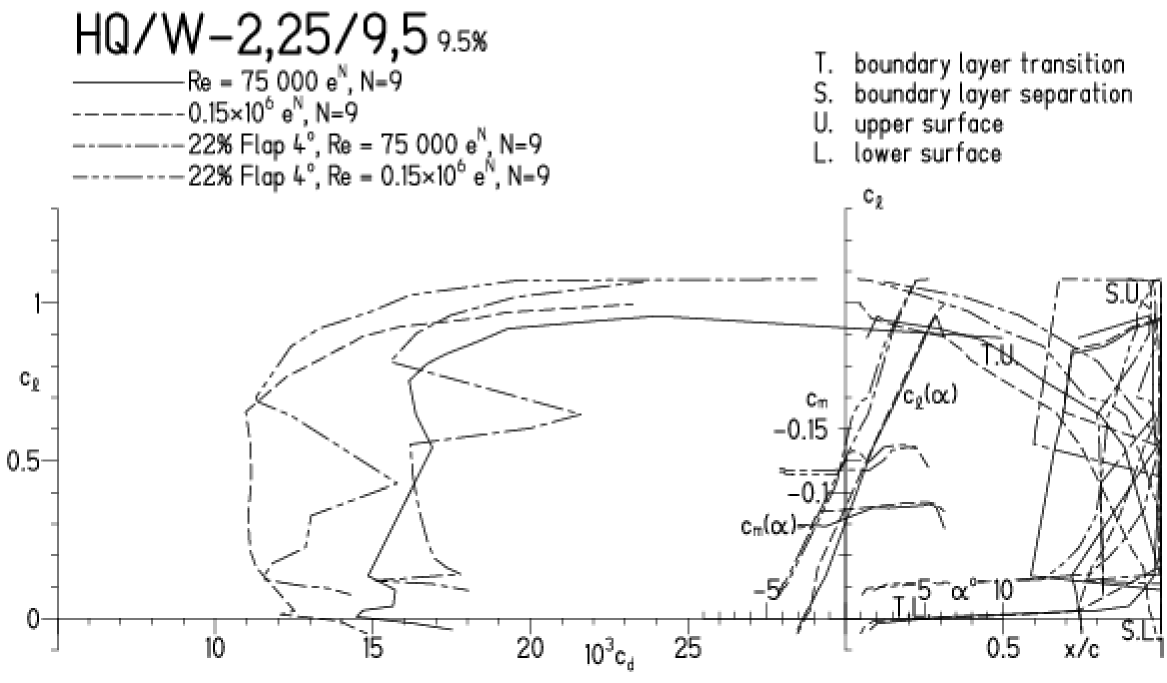


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

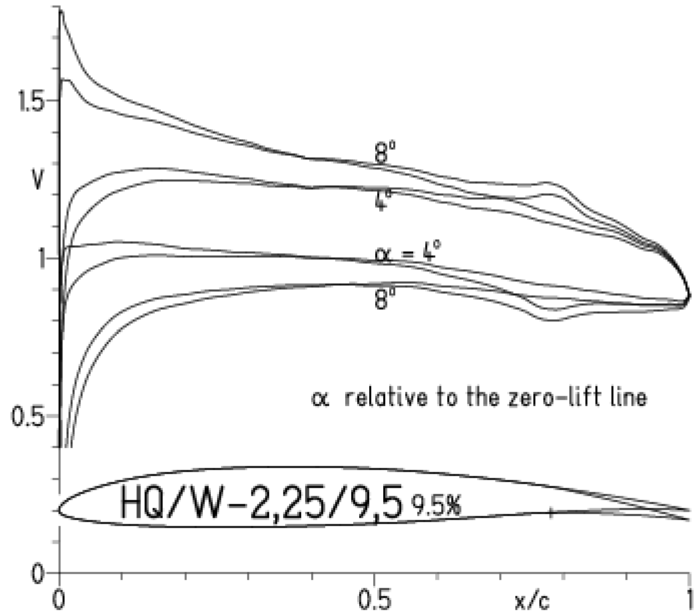


EPPLER 2005 V. 8.5.07 R

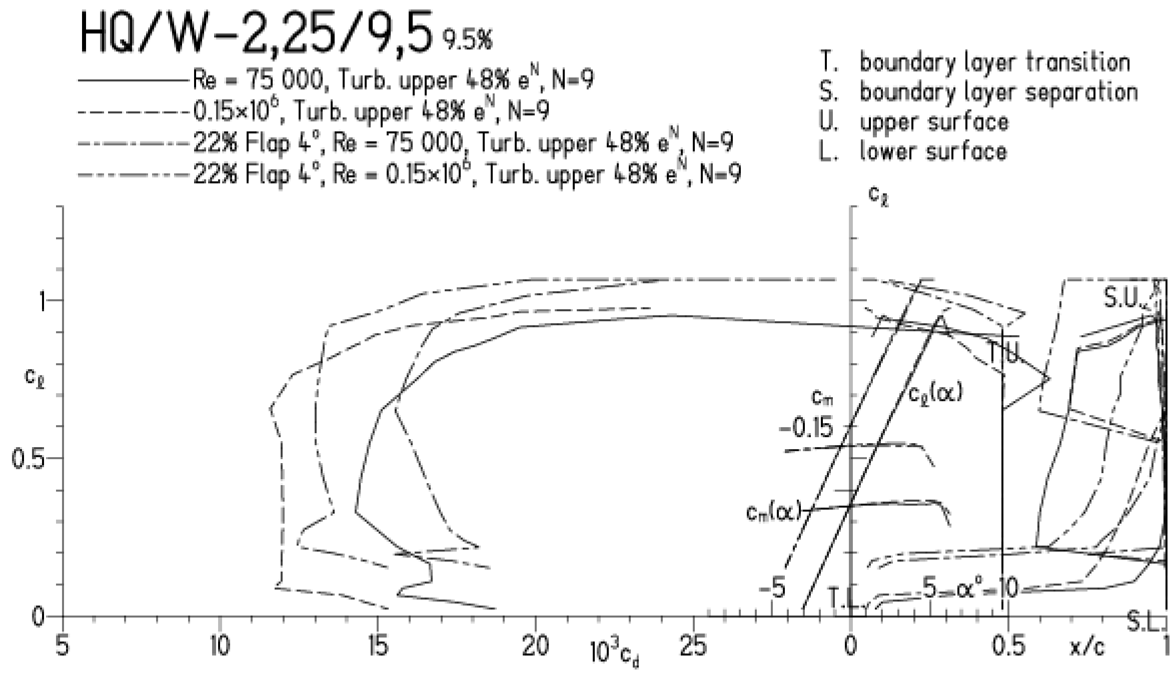


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

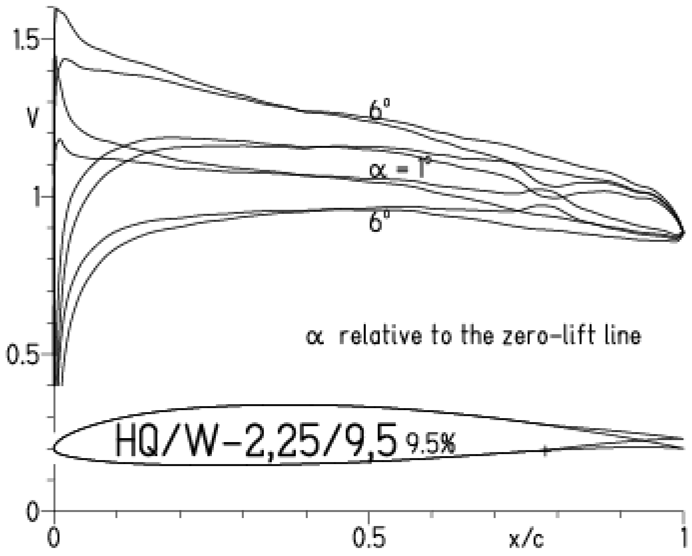


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

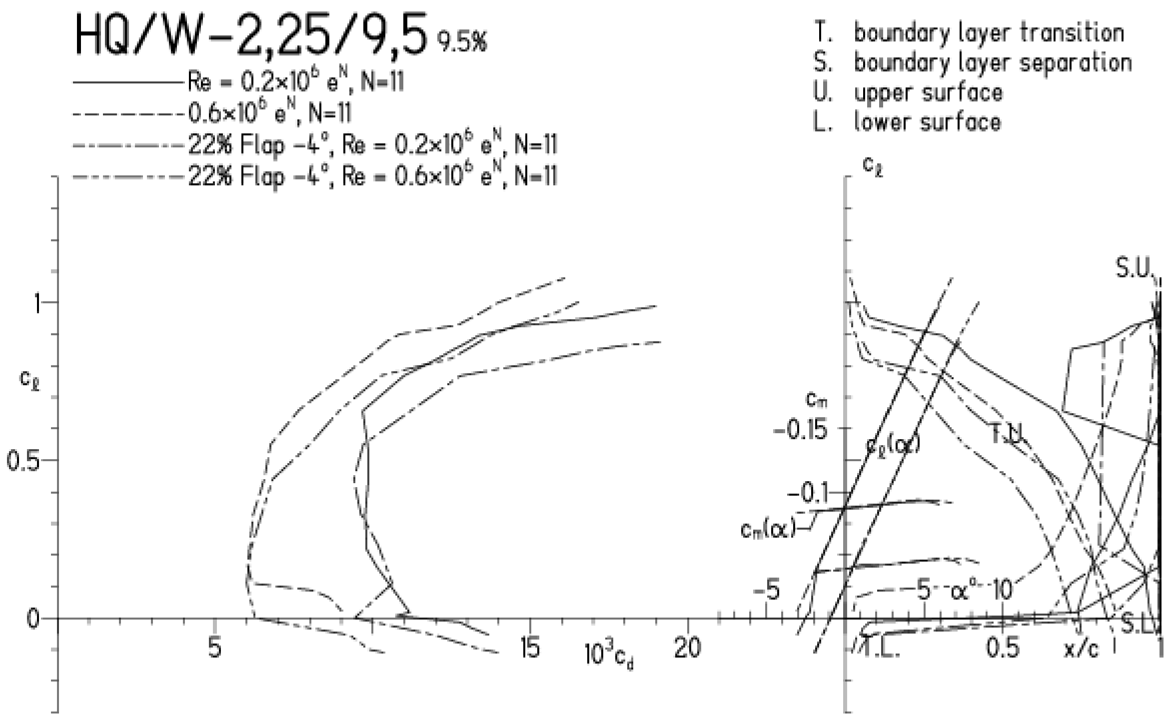


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

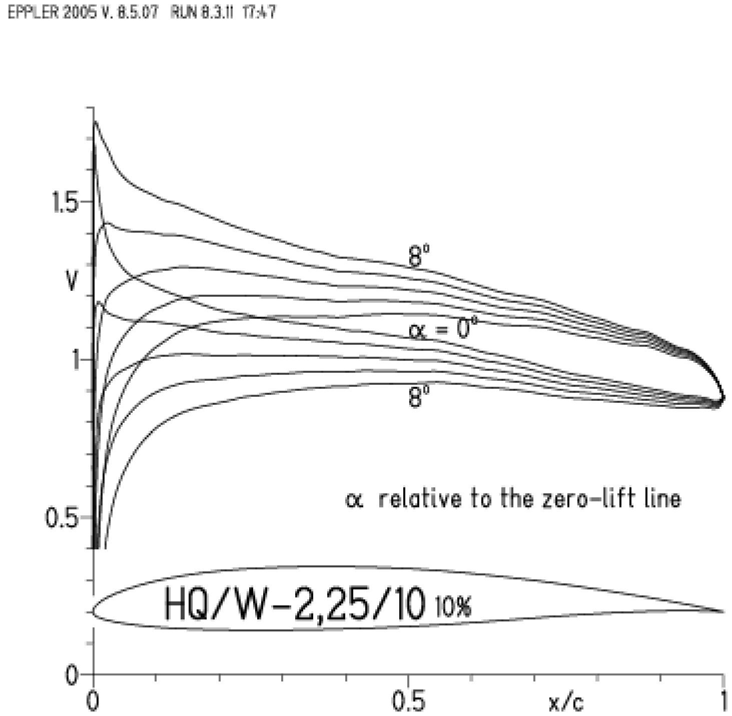
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

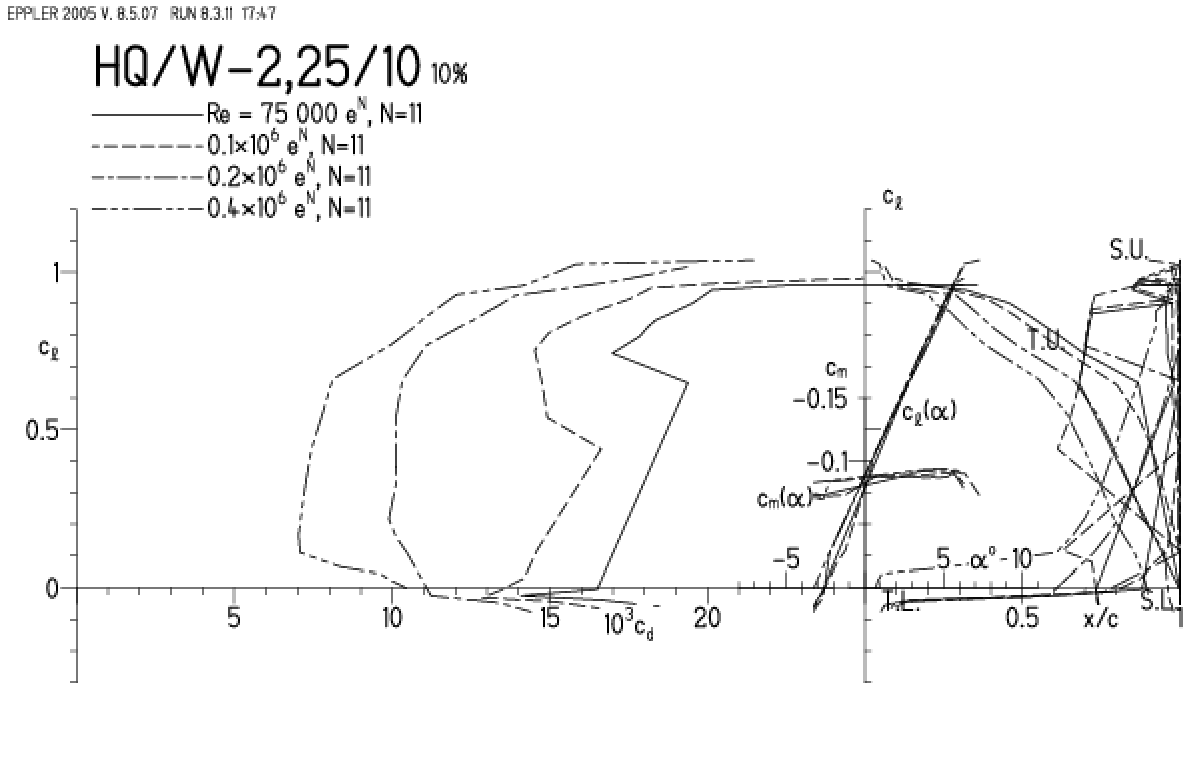


EPPLER 2005 V.



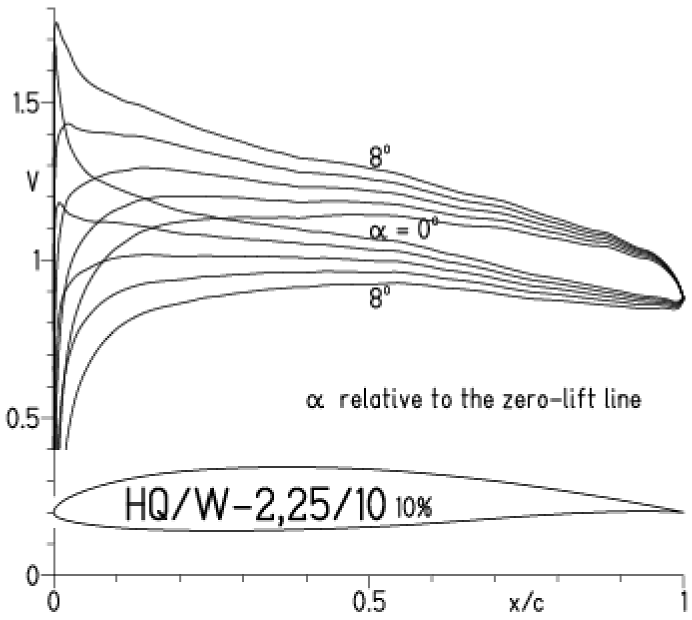
<u>HQ/W-2,25/10</u>, N=11



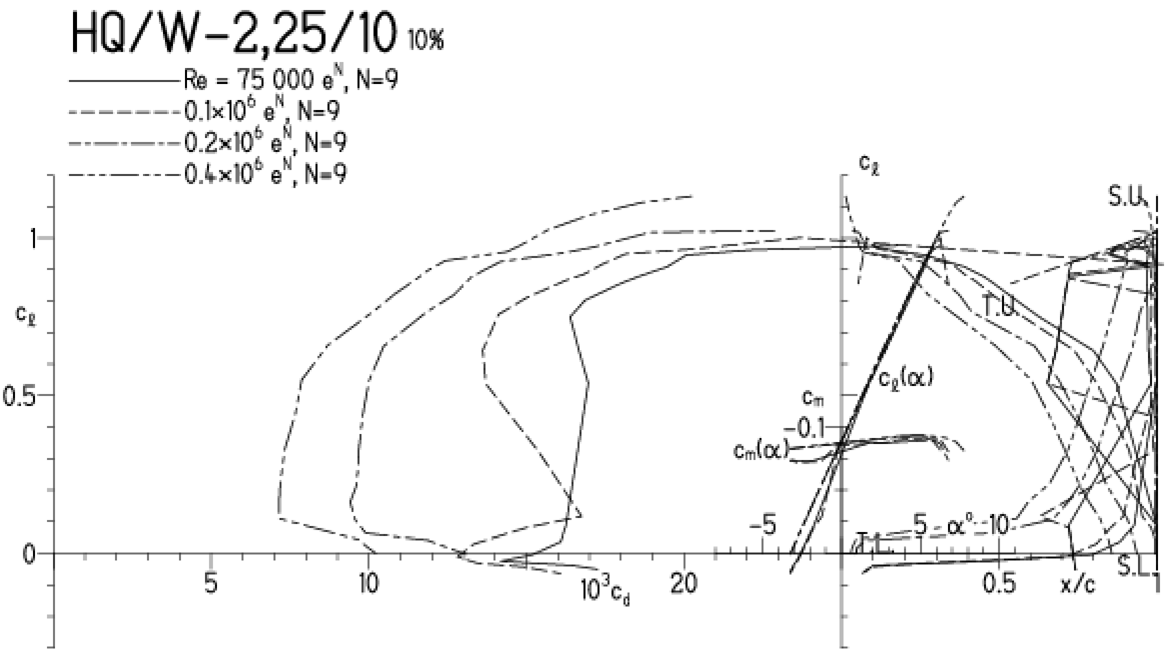


HQ/W-2,25/10, N=9

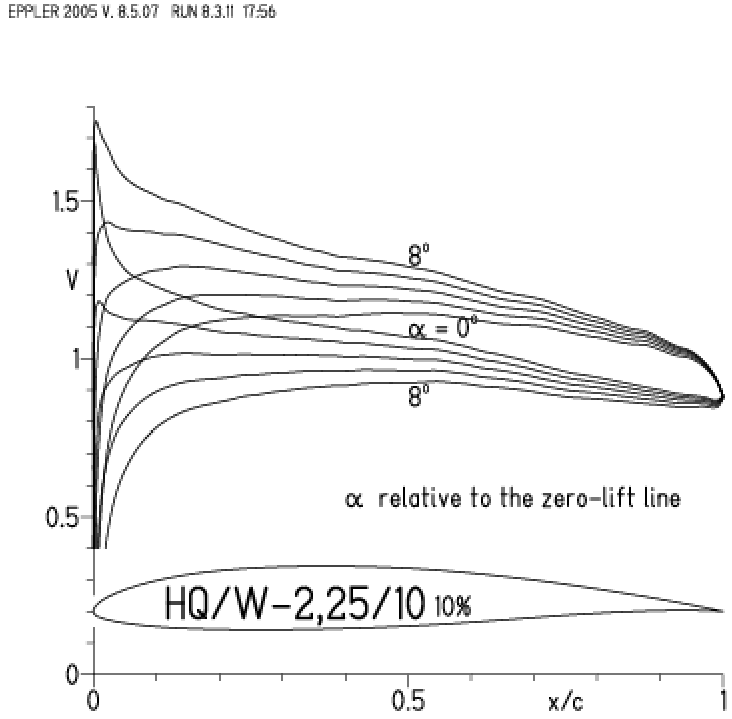
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

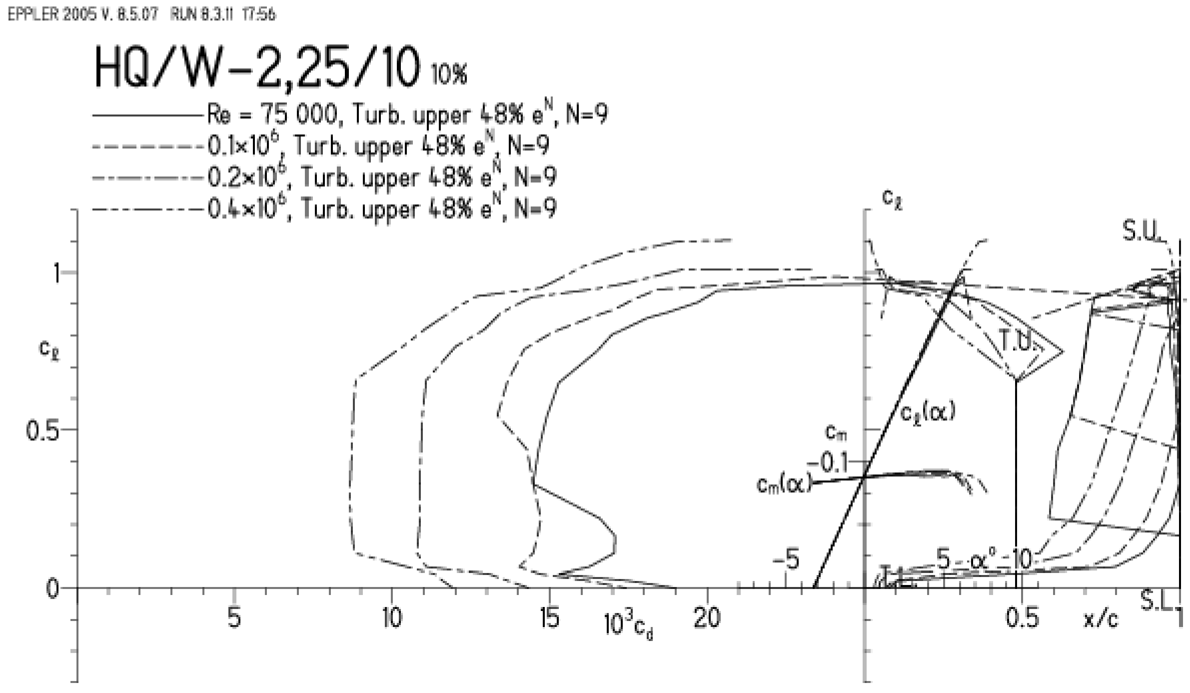


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

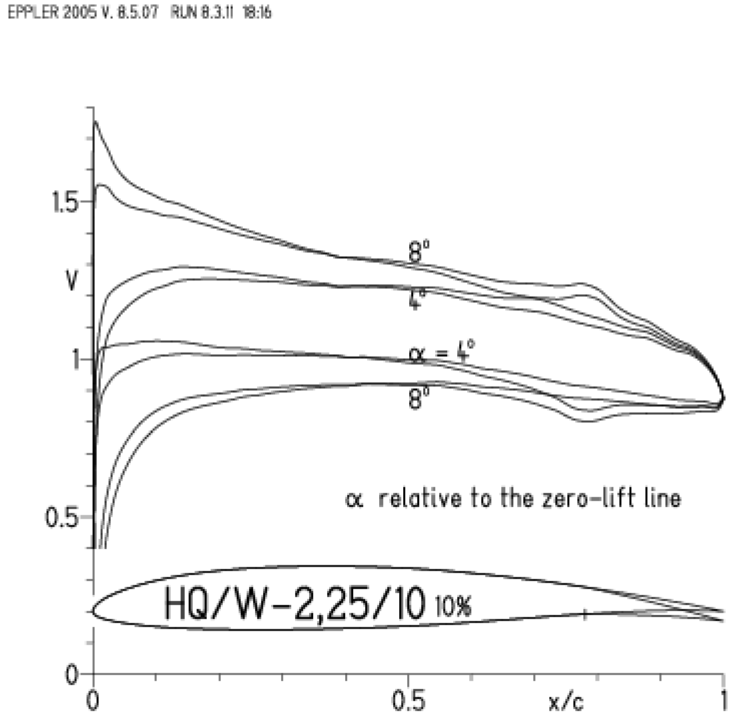


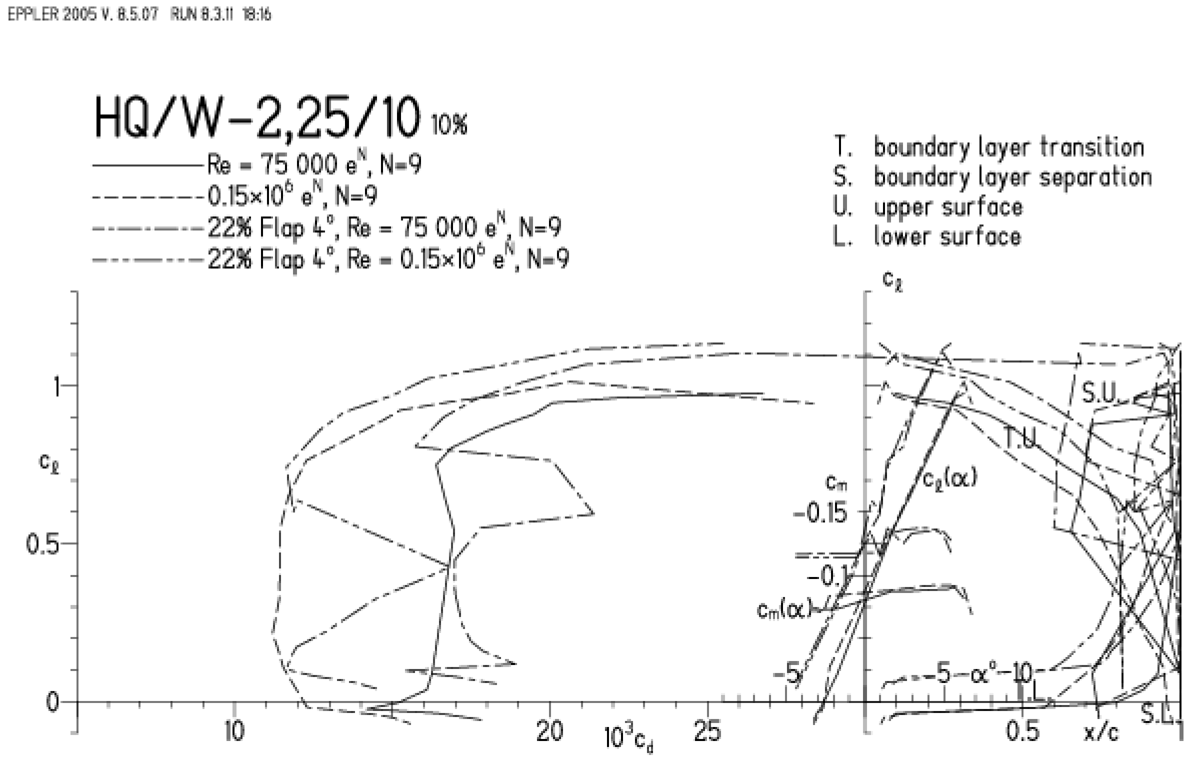
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





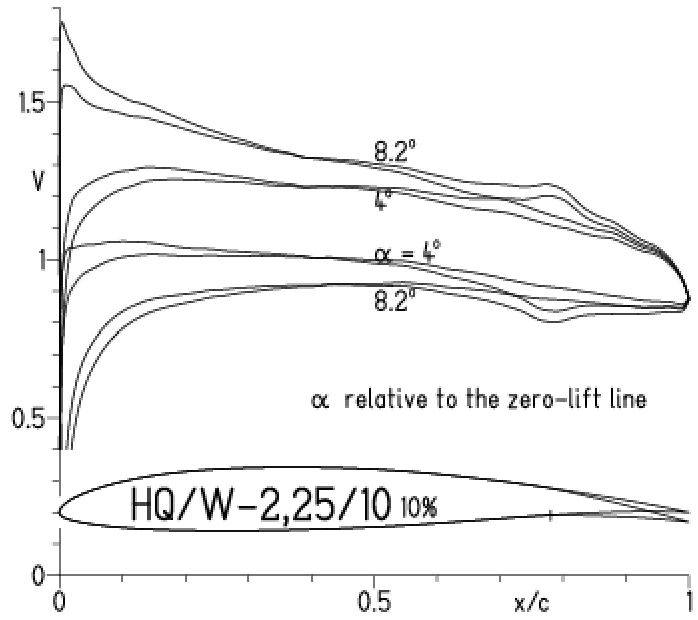
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag



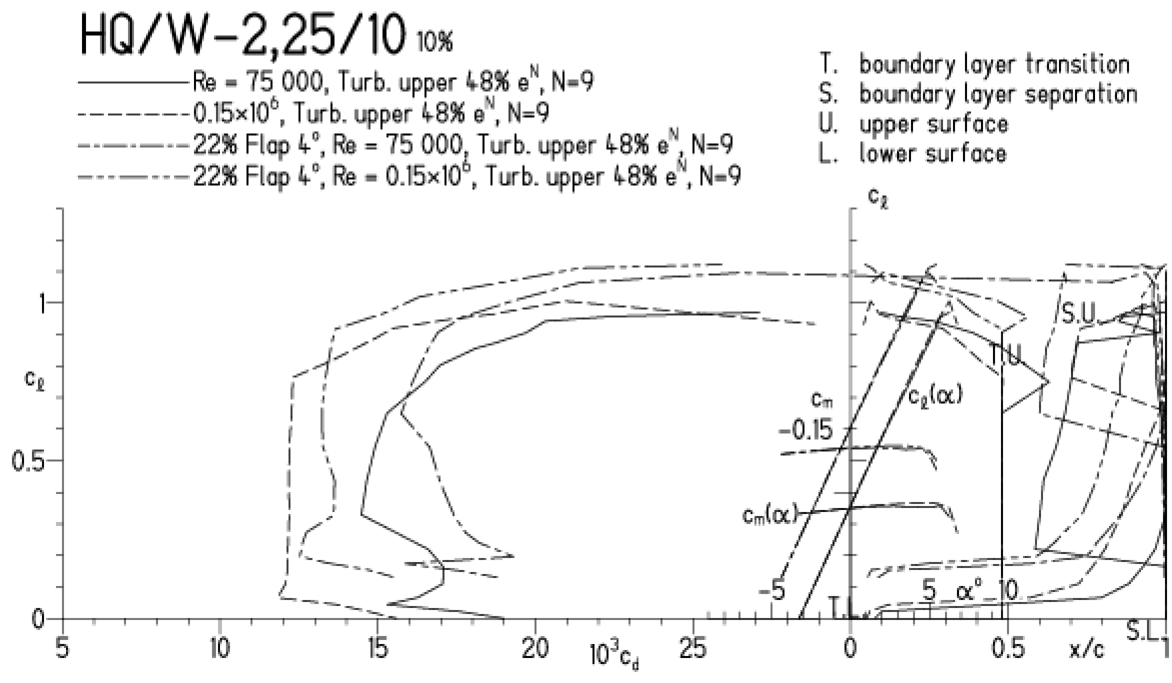


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

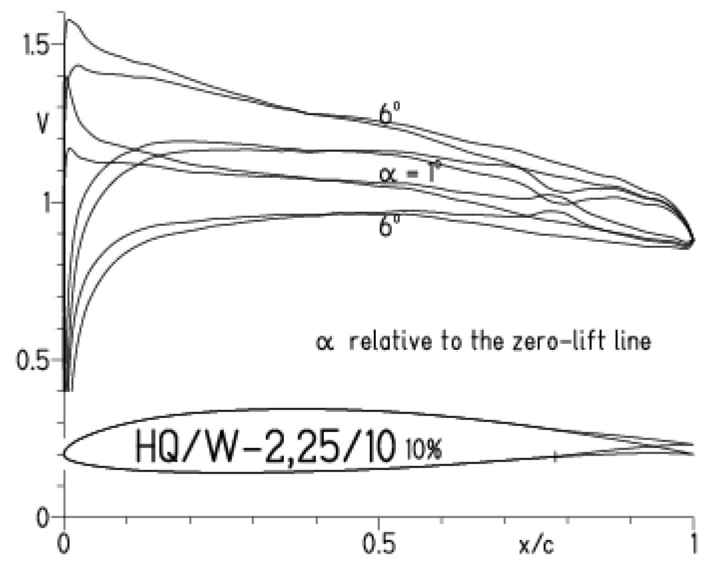


EPPLER 2005 V. 8.5.07 RUN 8.3

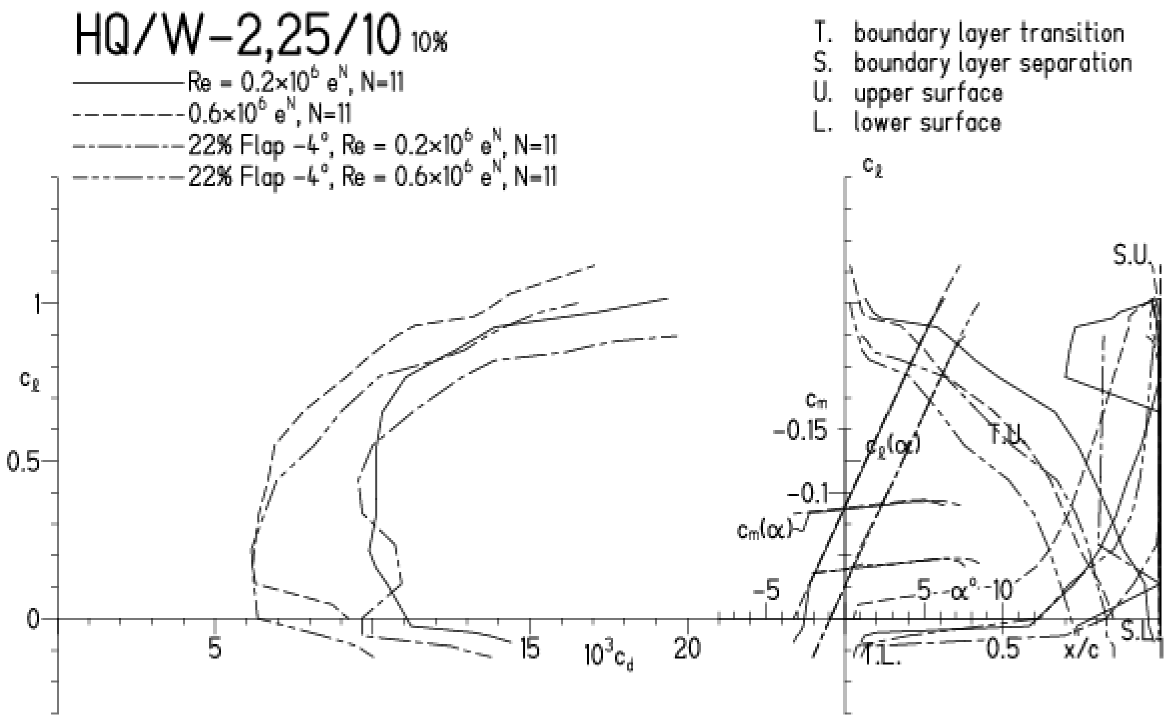


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

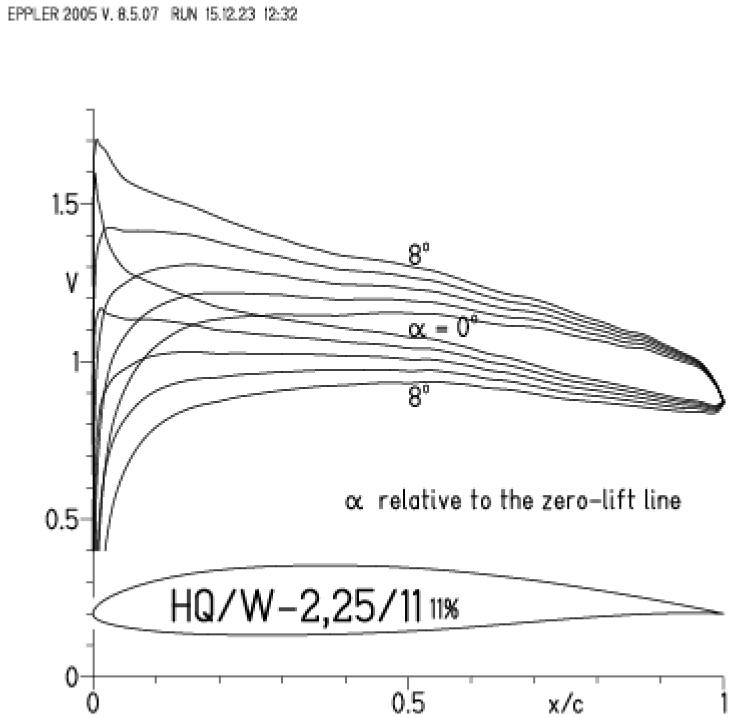
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

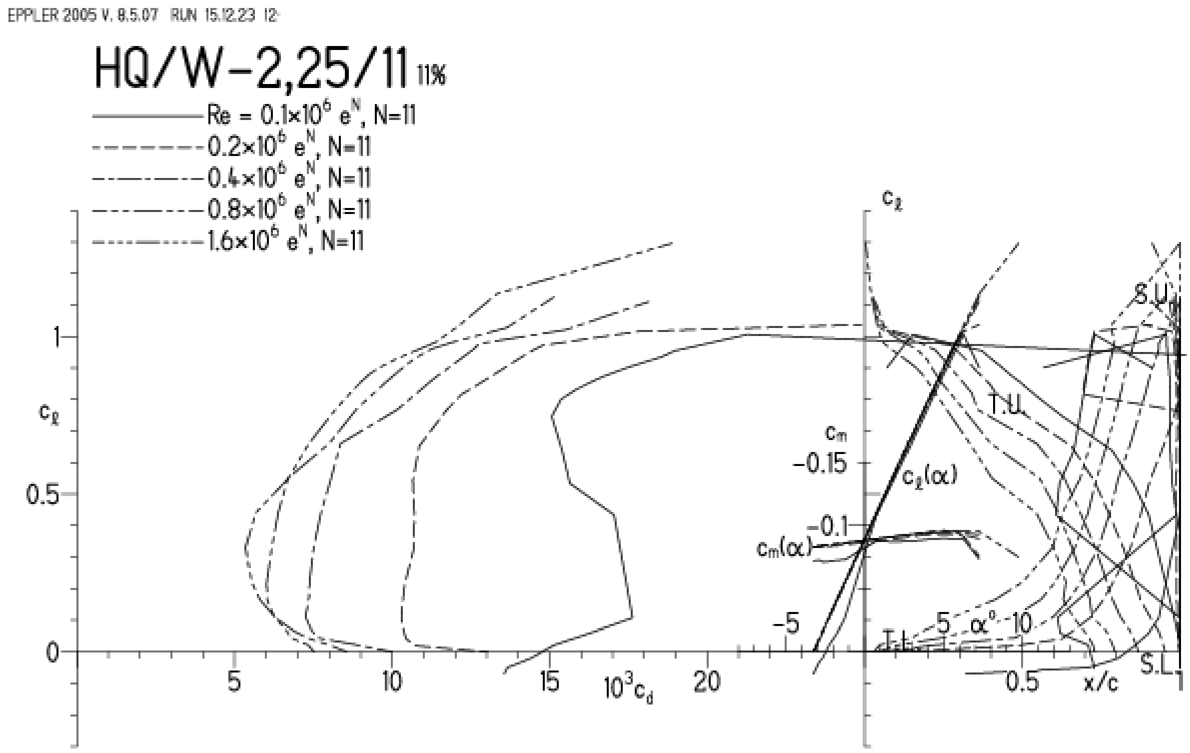


EPPLER 2005 V. 8.5.07 RUN

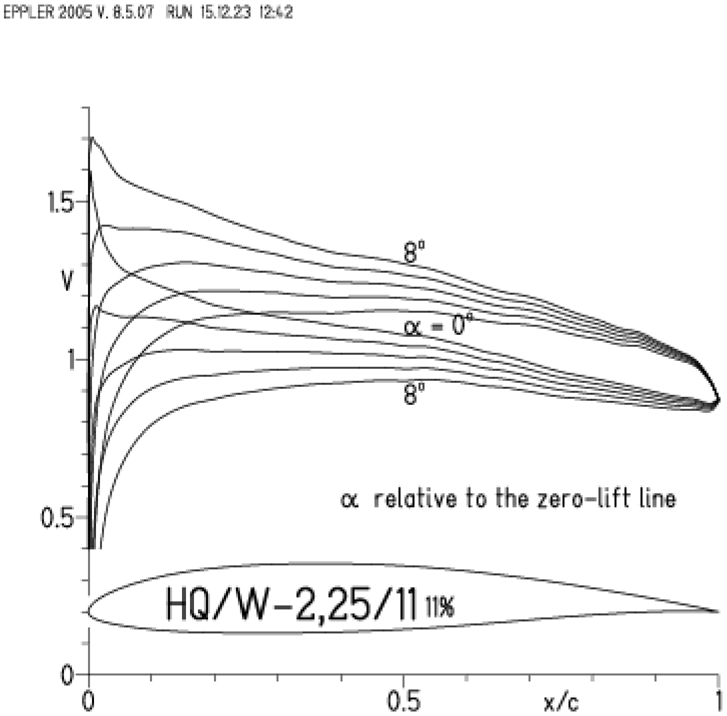


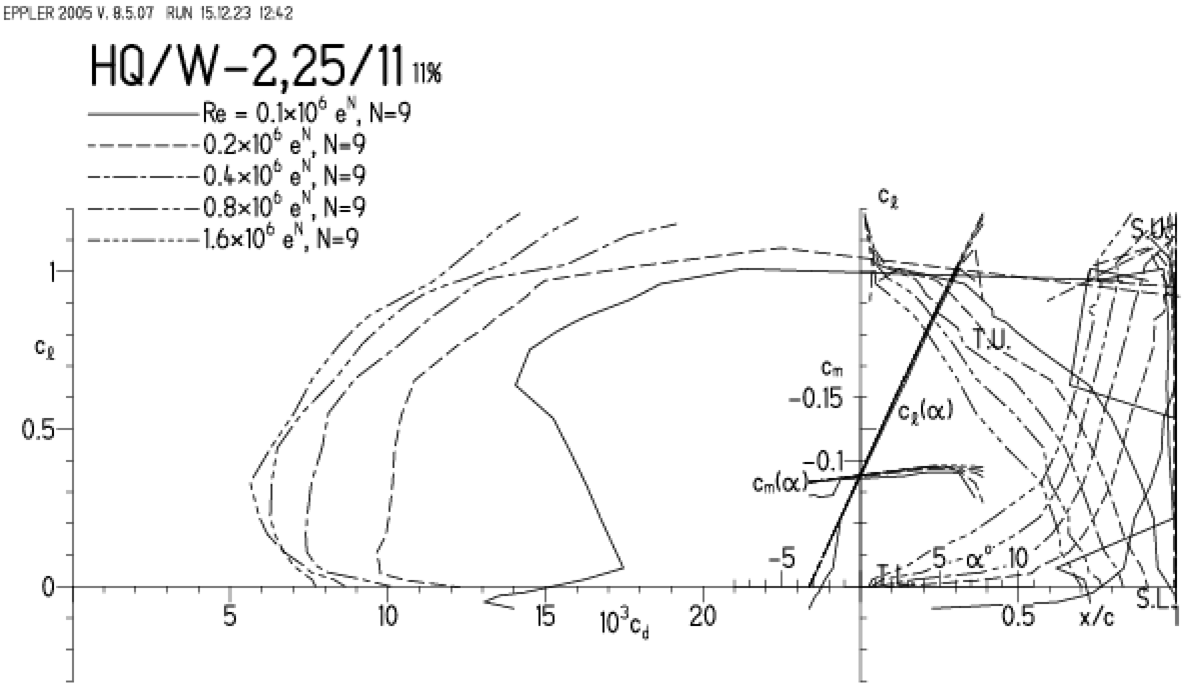
<u>HQ/W-2,25/11</u>, N=11



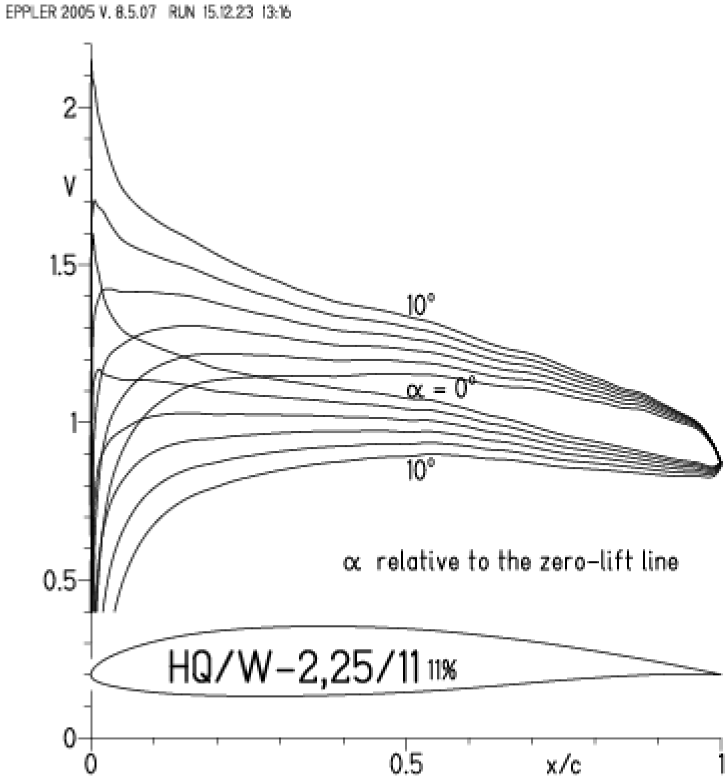


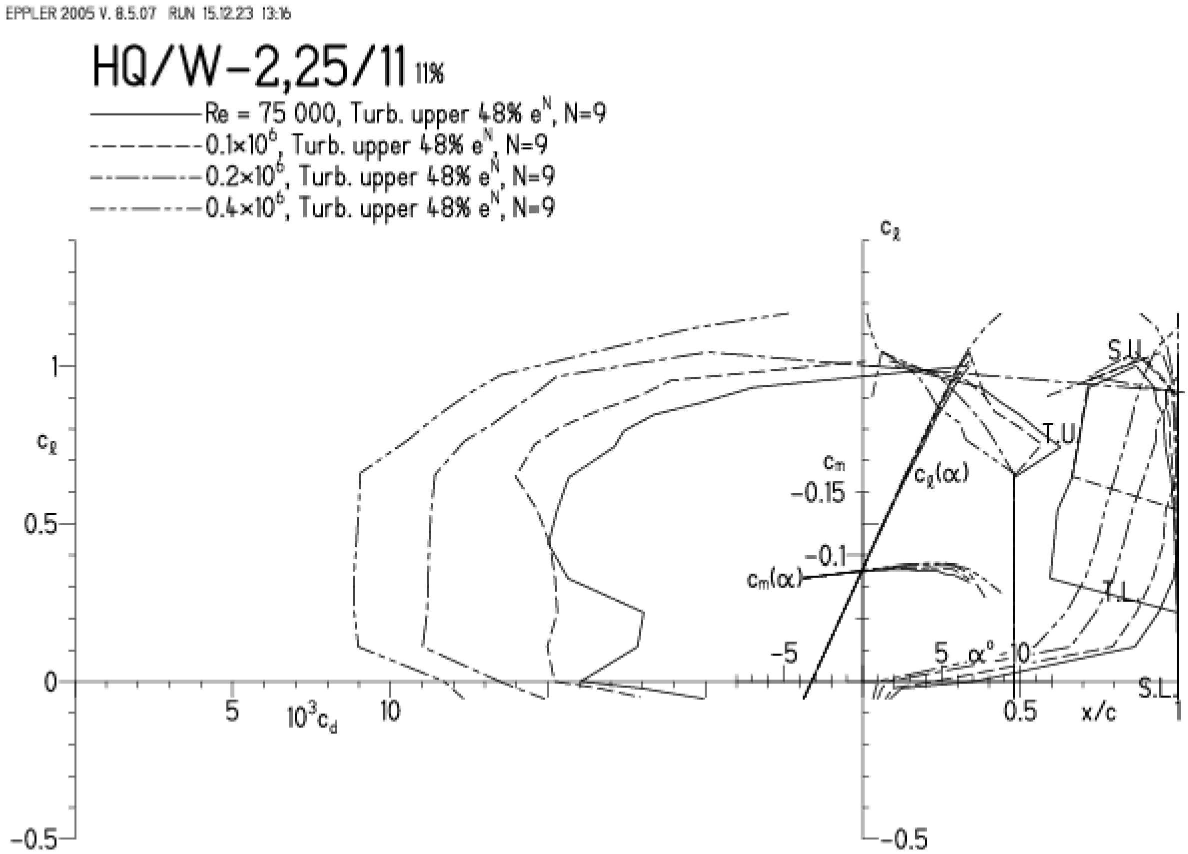
HQQ/W-2,25/11, N=9



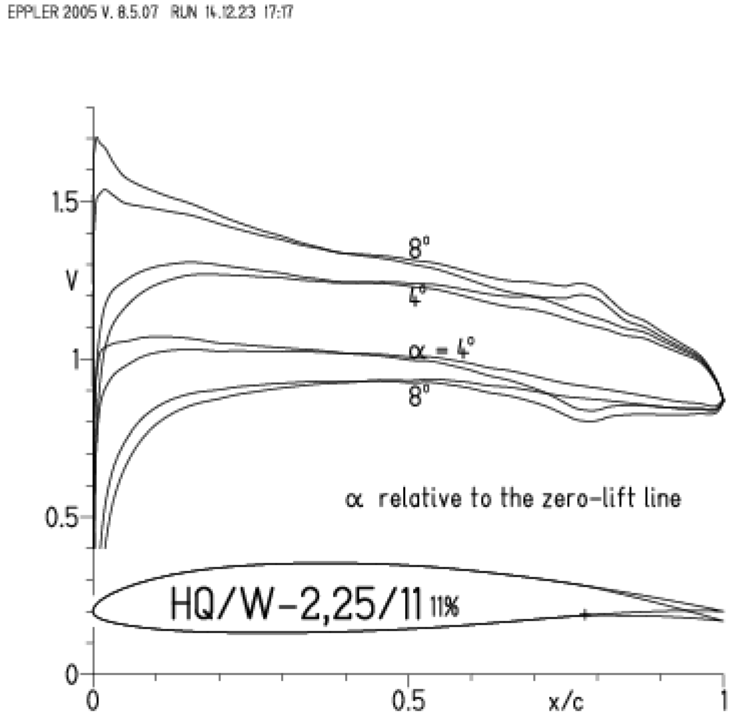


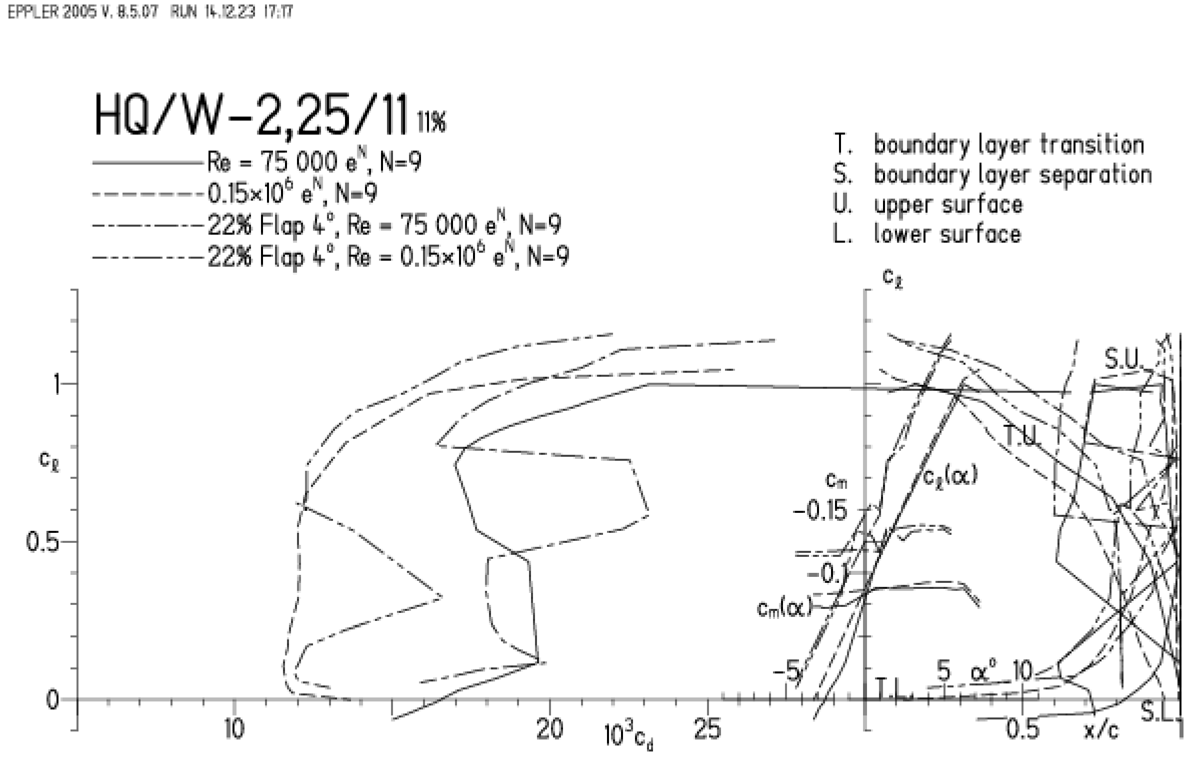
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



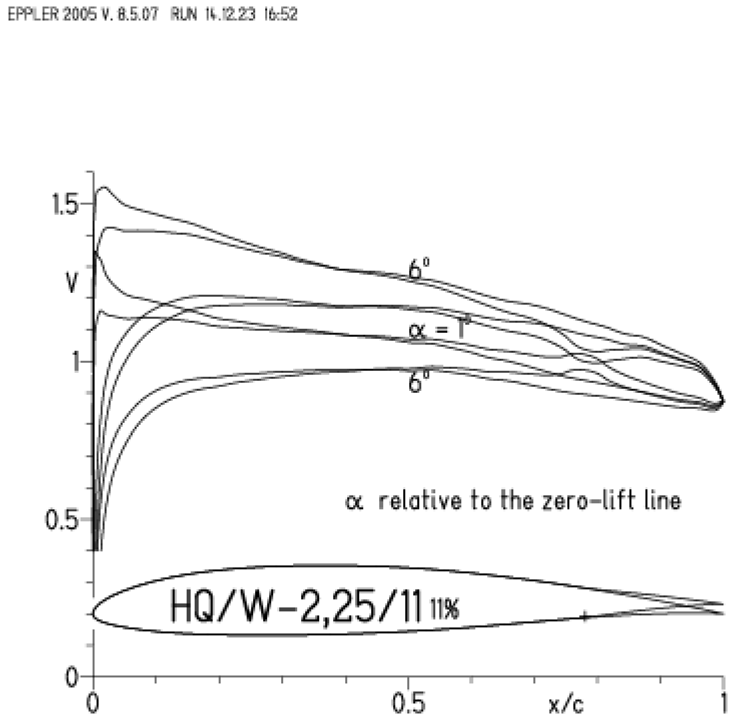


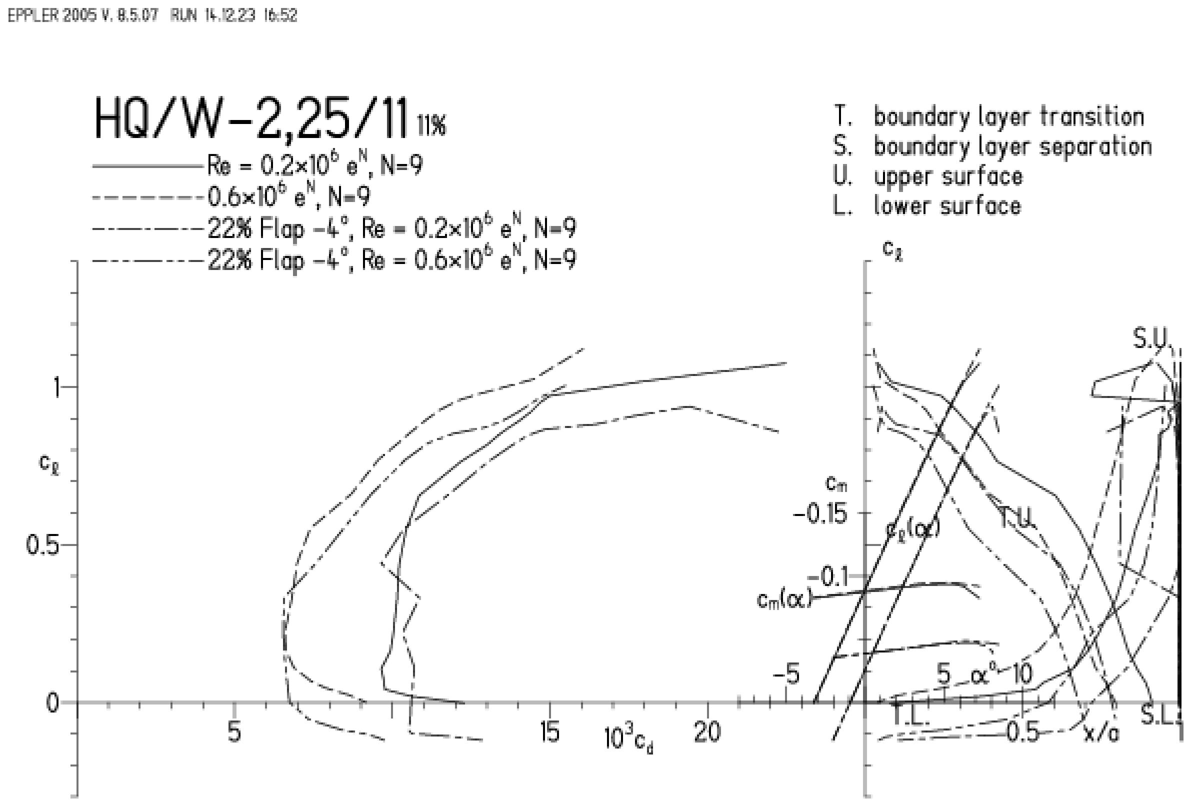
HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag



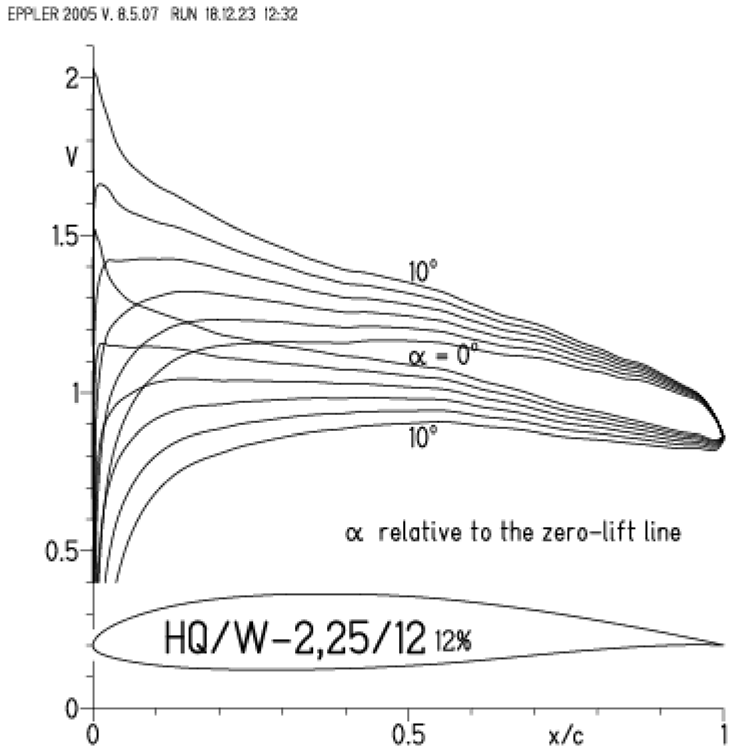


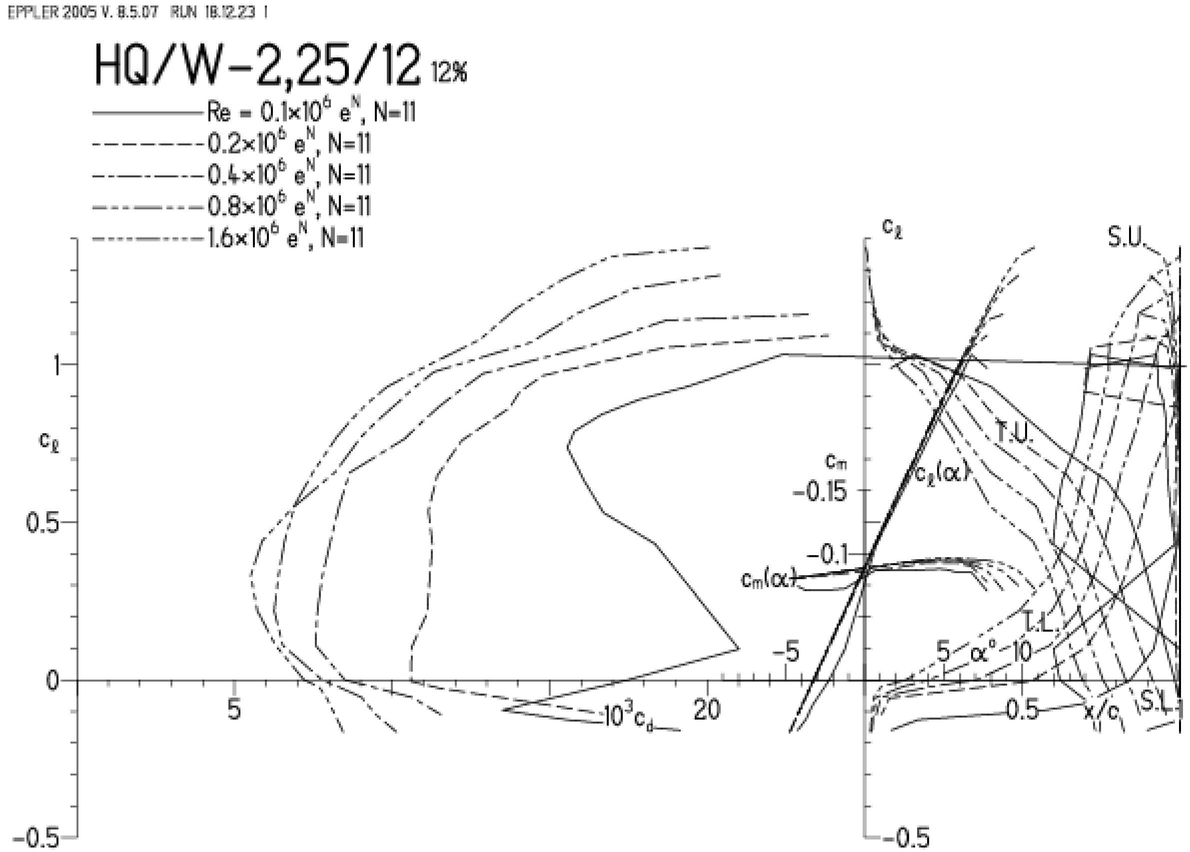
HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag



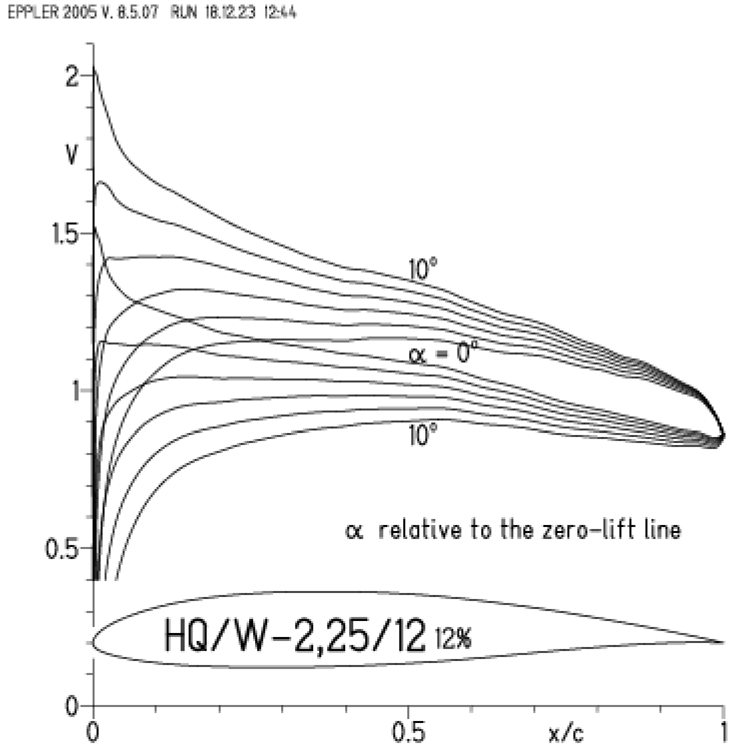


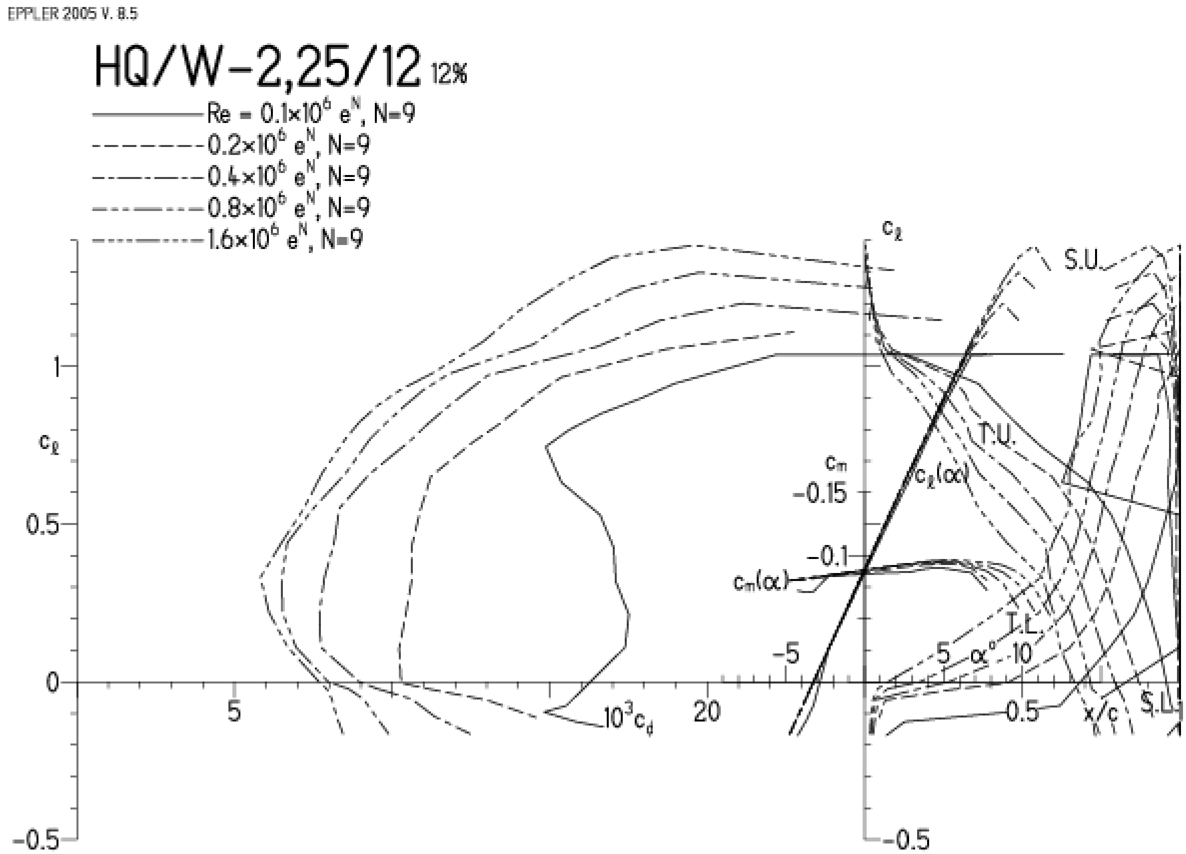
<u>HQ/W-2,25/12</u>, N=11



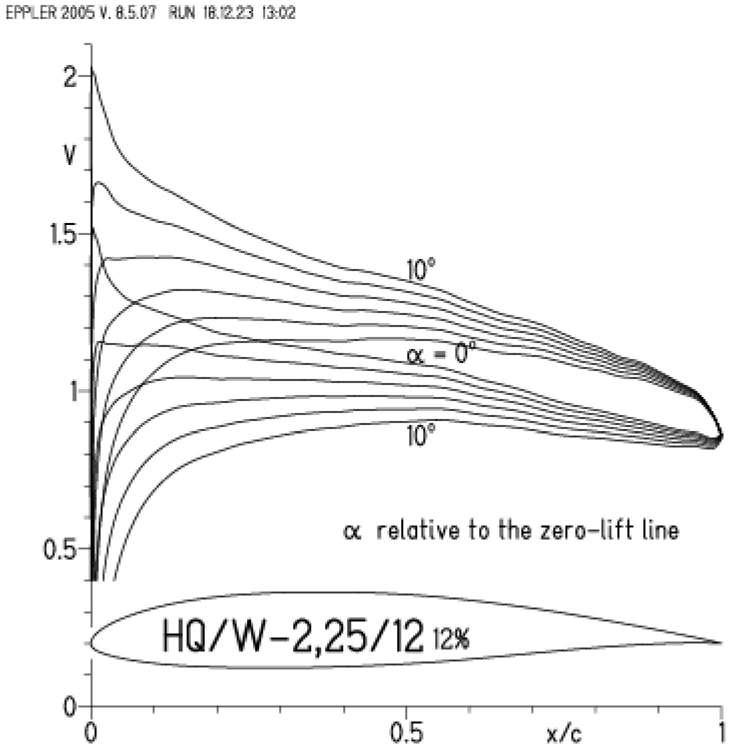


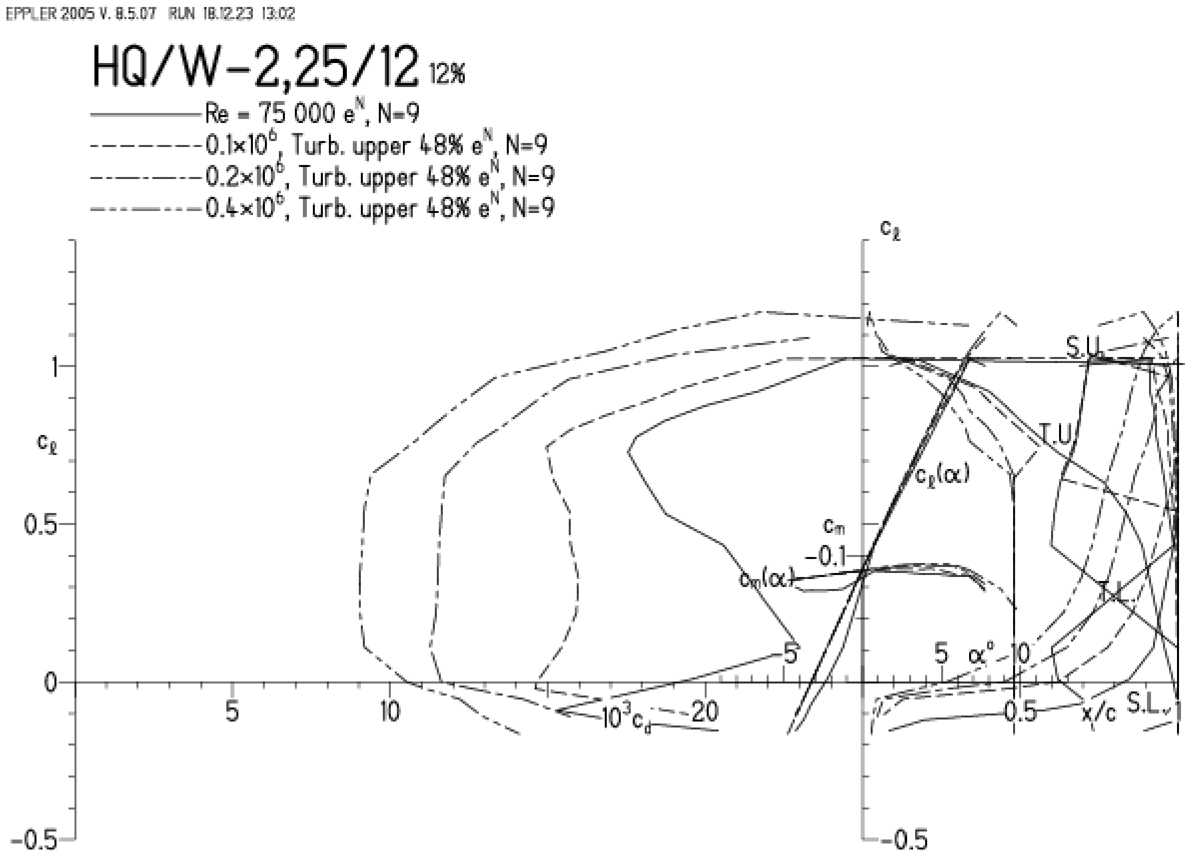
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
cℓ
cm
cℓ(α)
cm(α)
S.U.
T.U.
T.L.
S.L.
α°
10³cd
x/c

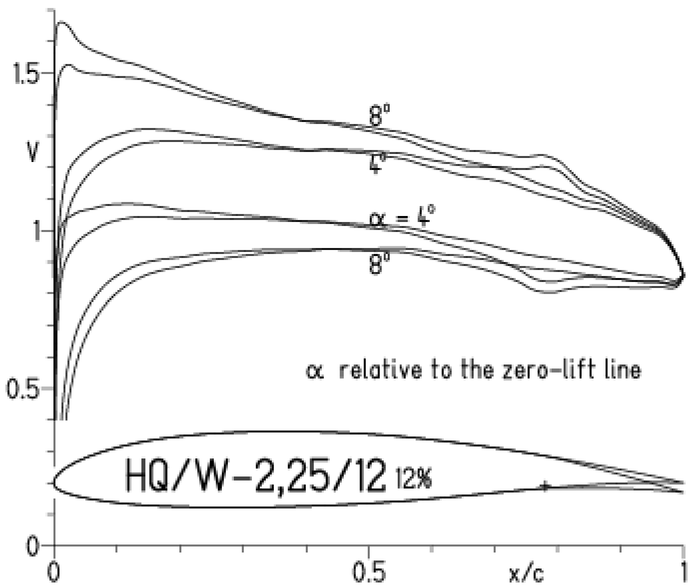
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



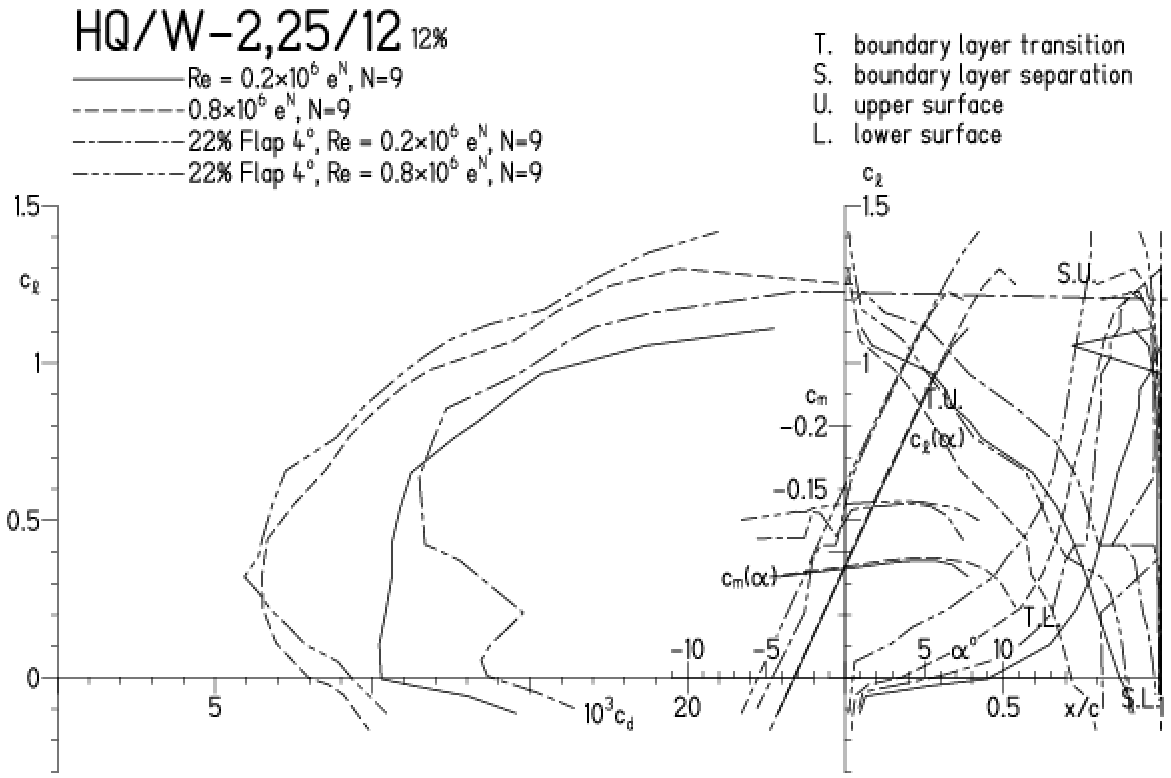


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

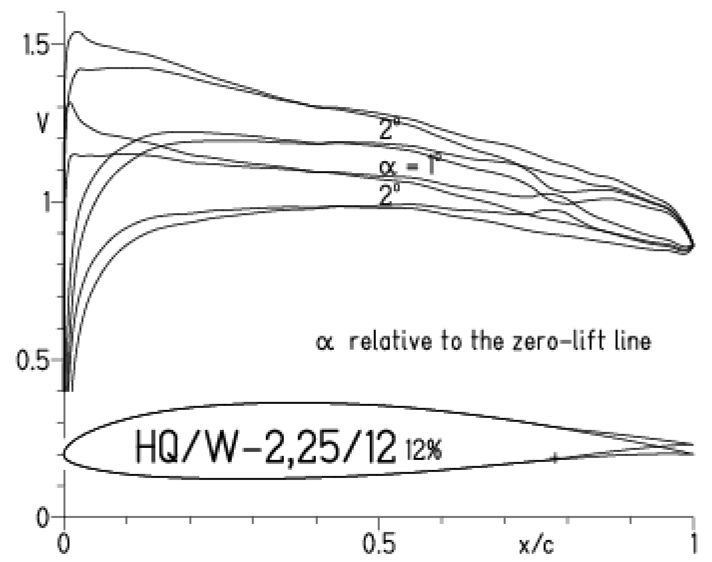


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

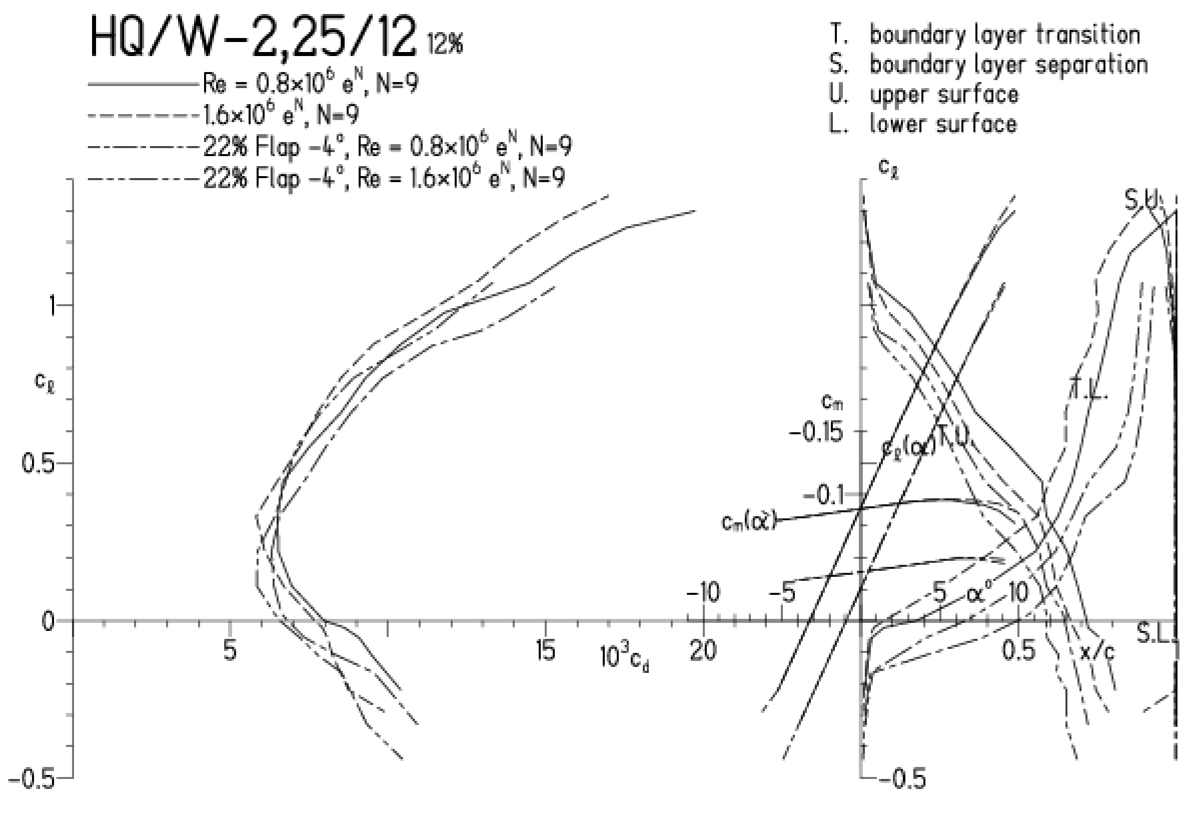


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

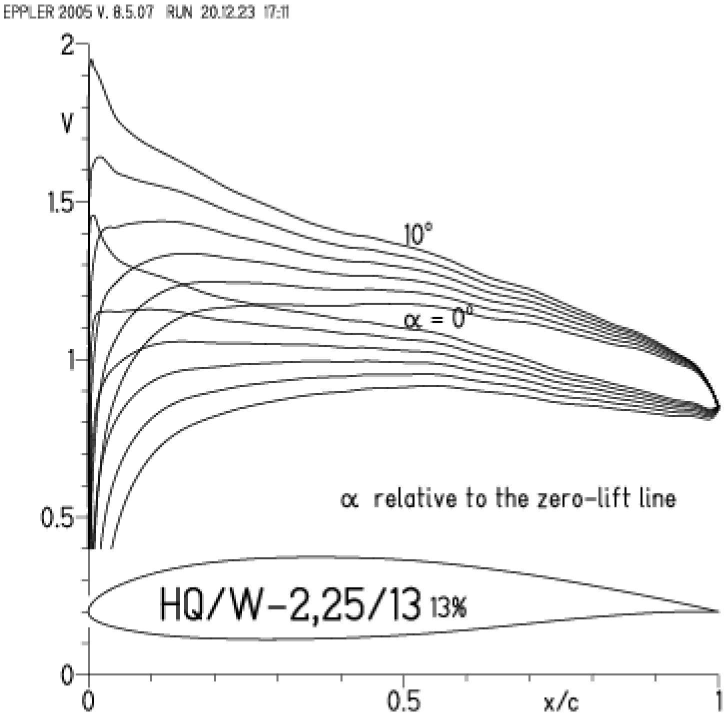
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

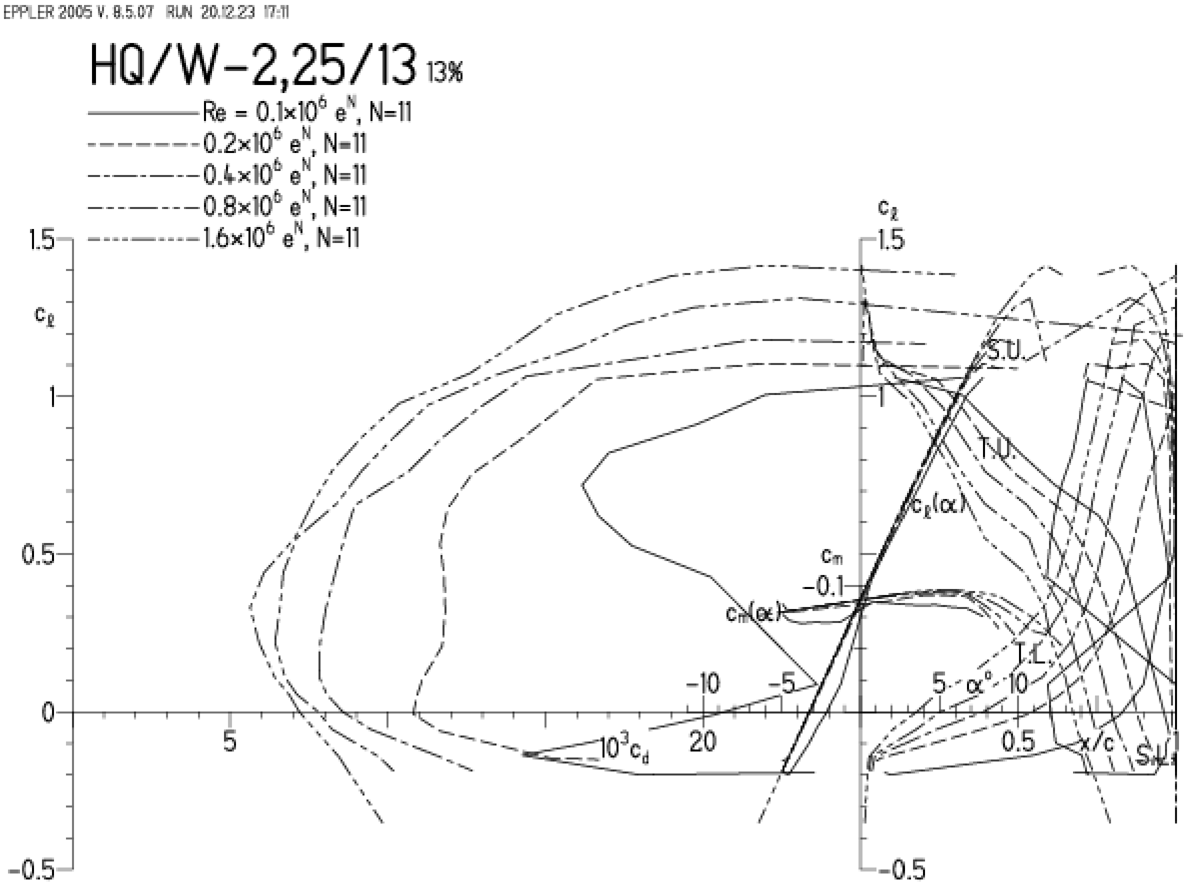


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

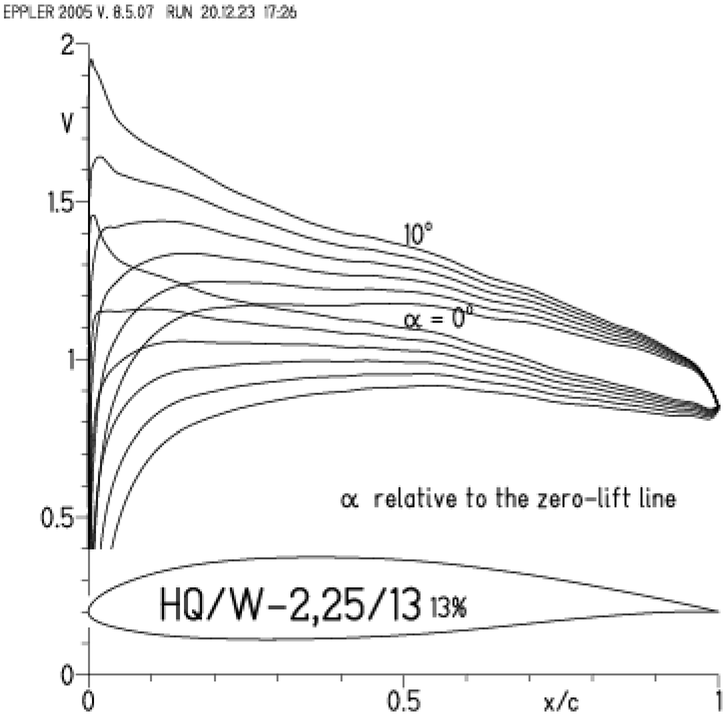


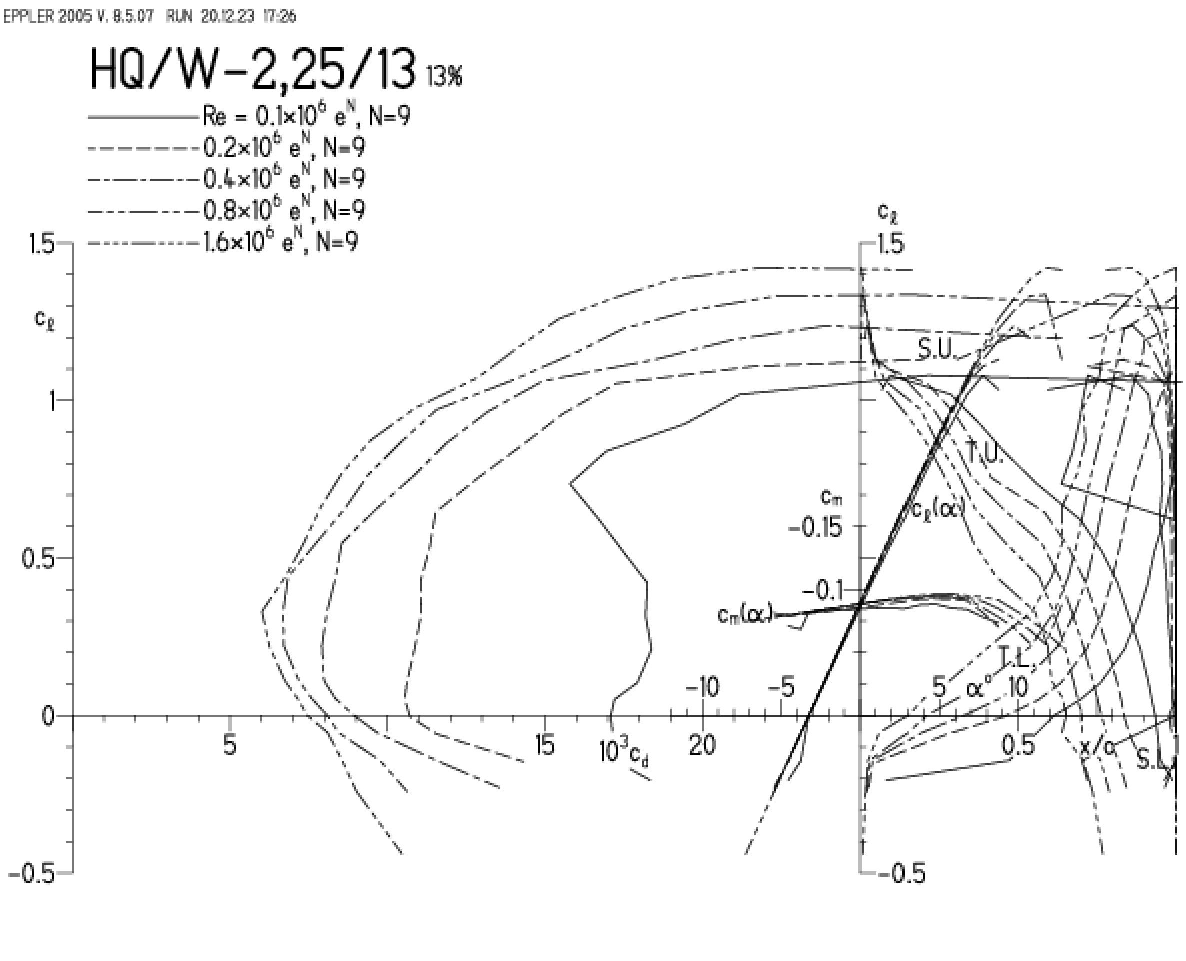
<u>HQ/W-2,25/13</u>, N=11



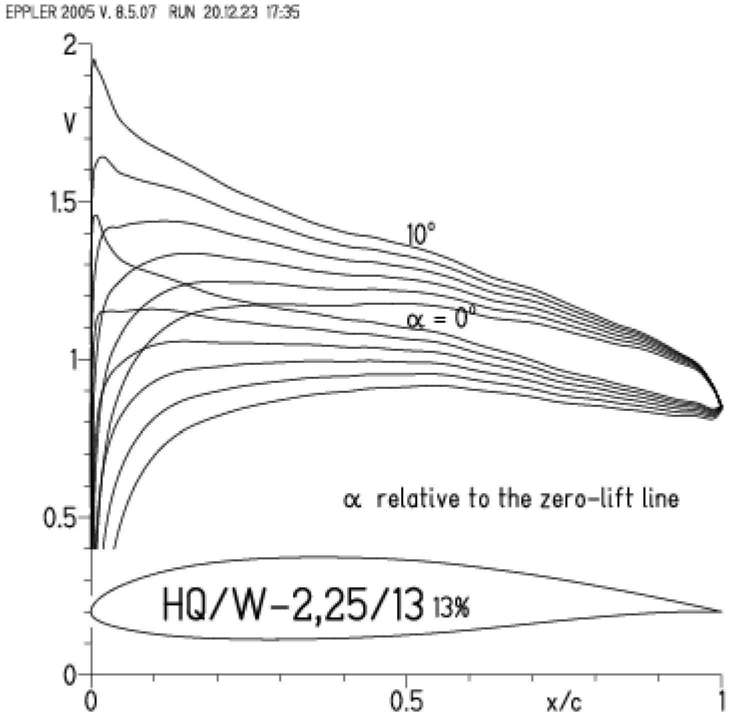


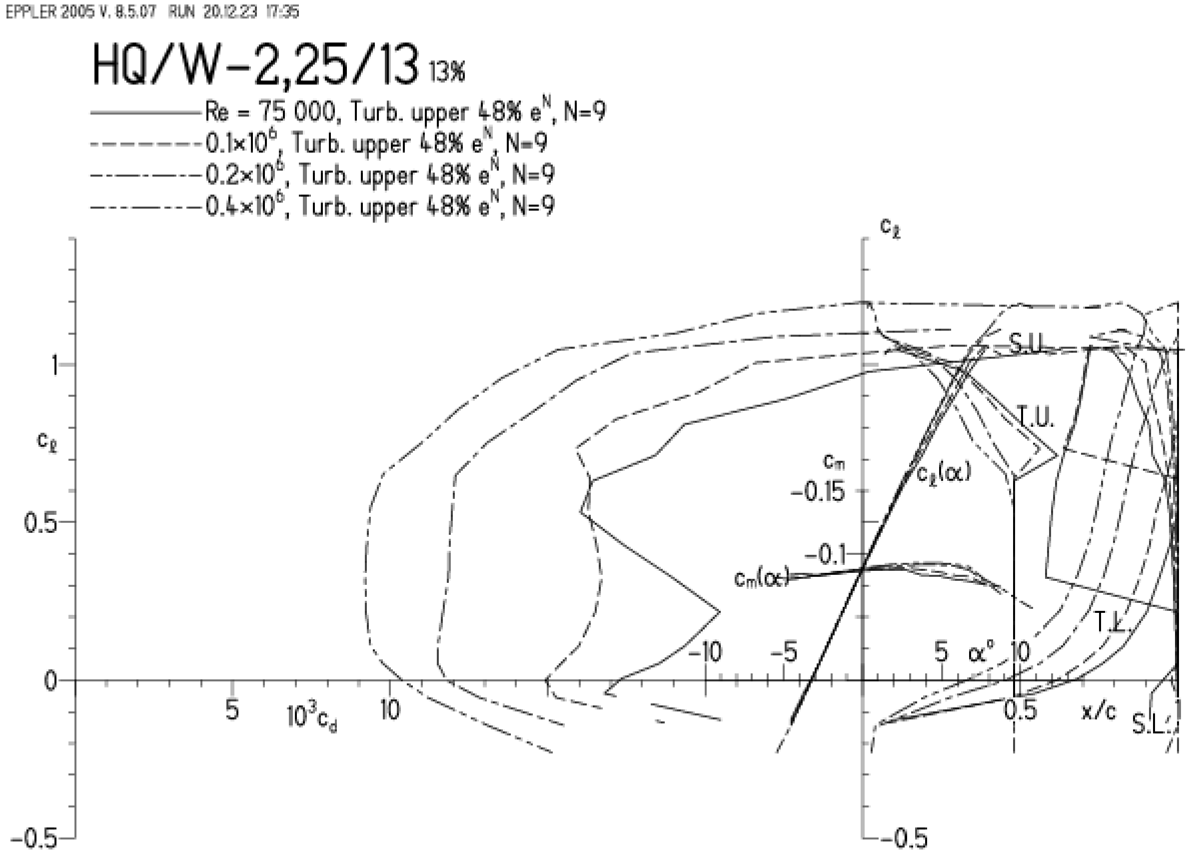
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

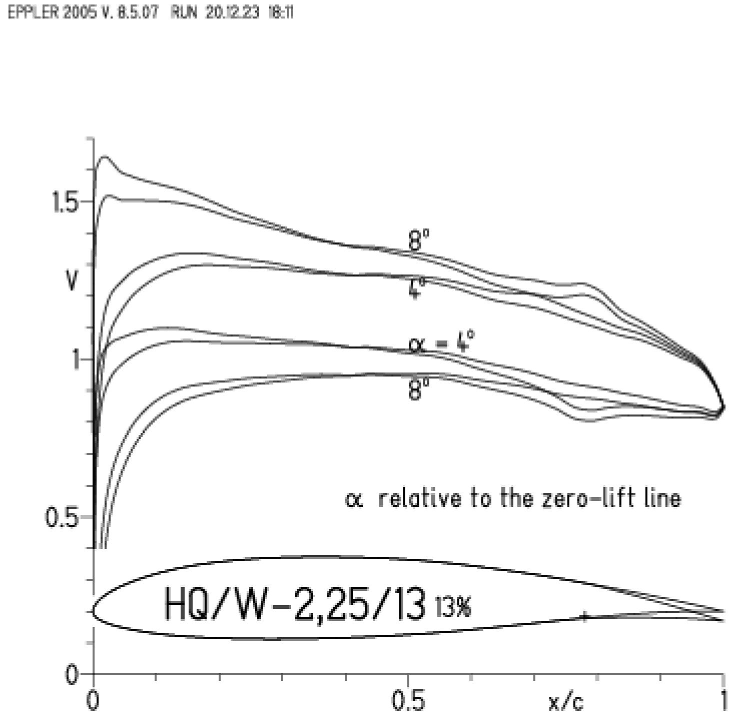

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
x/c
10^3 c_d

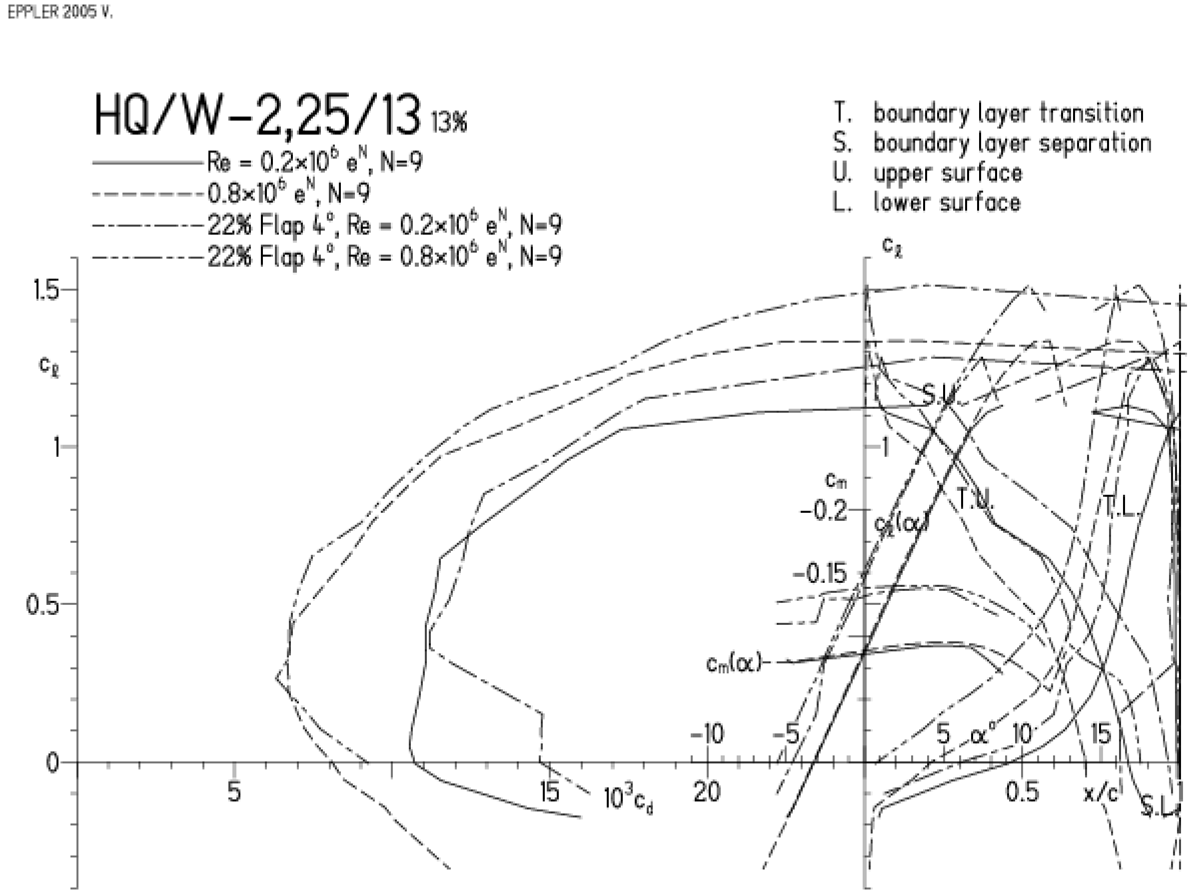
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





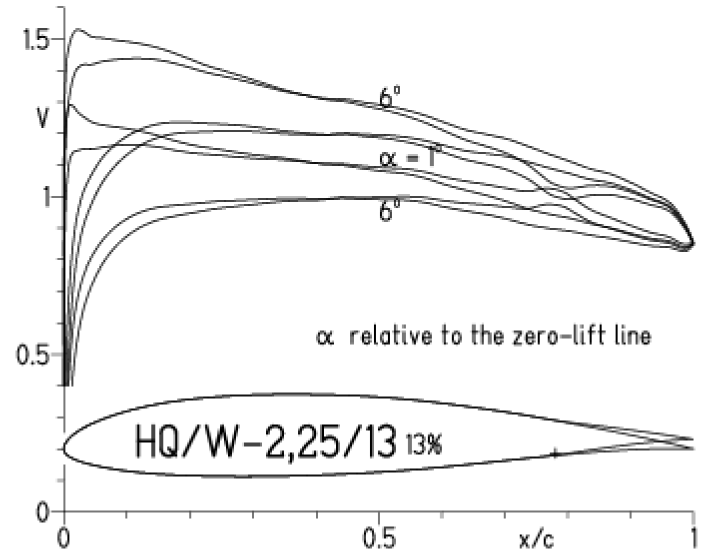
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



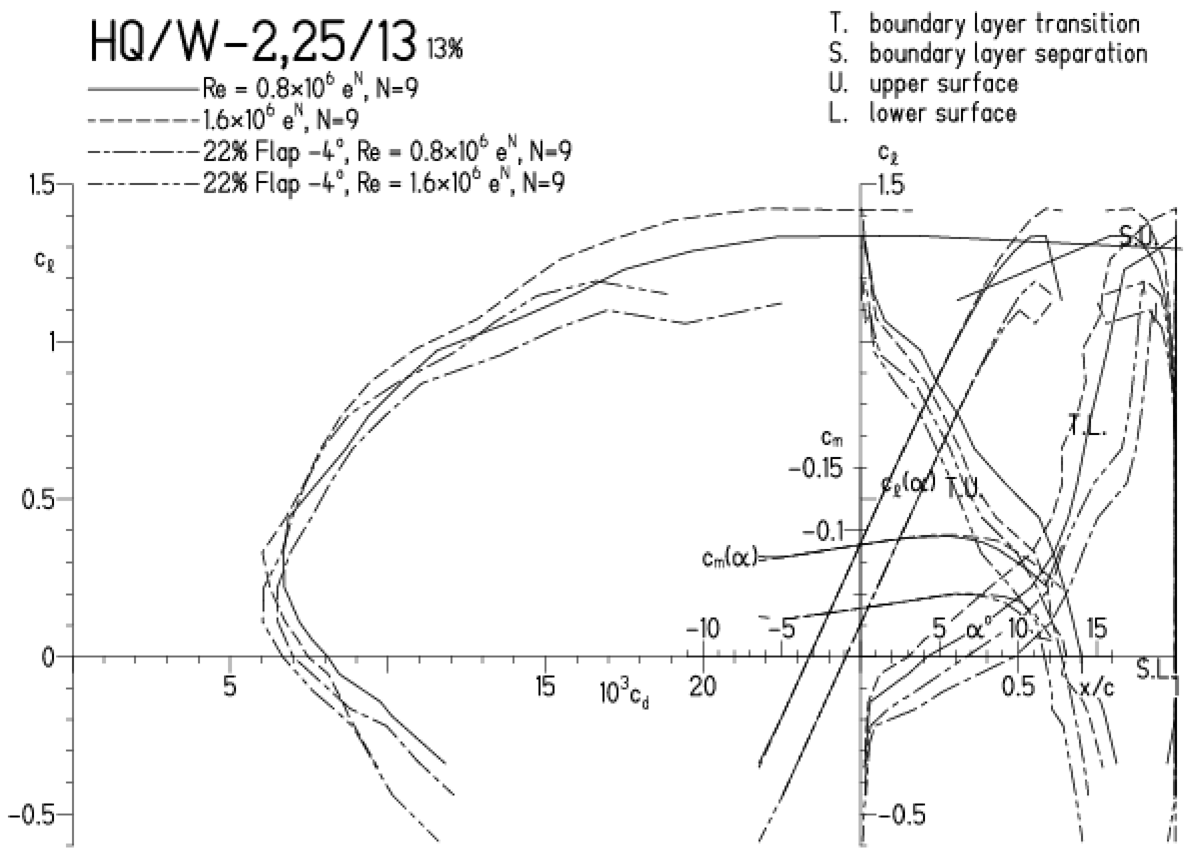


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

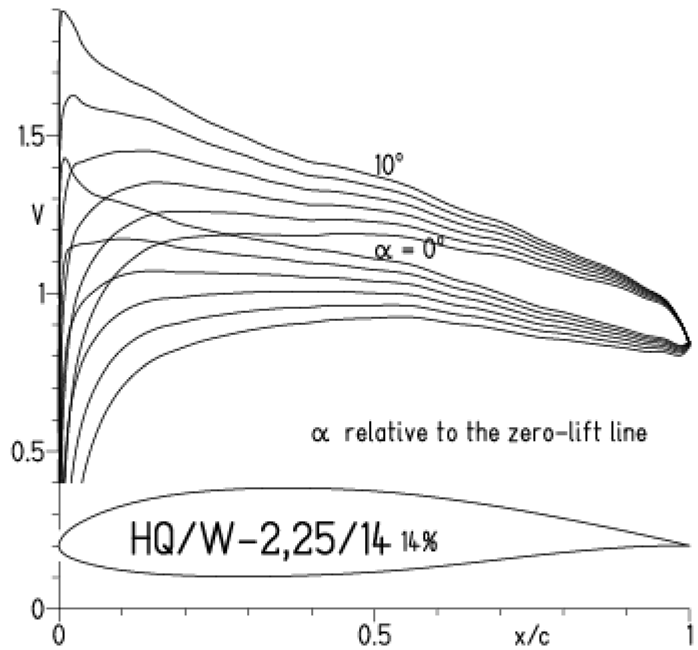


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

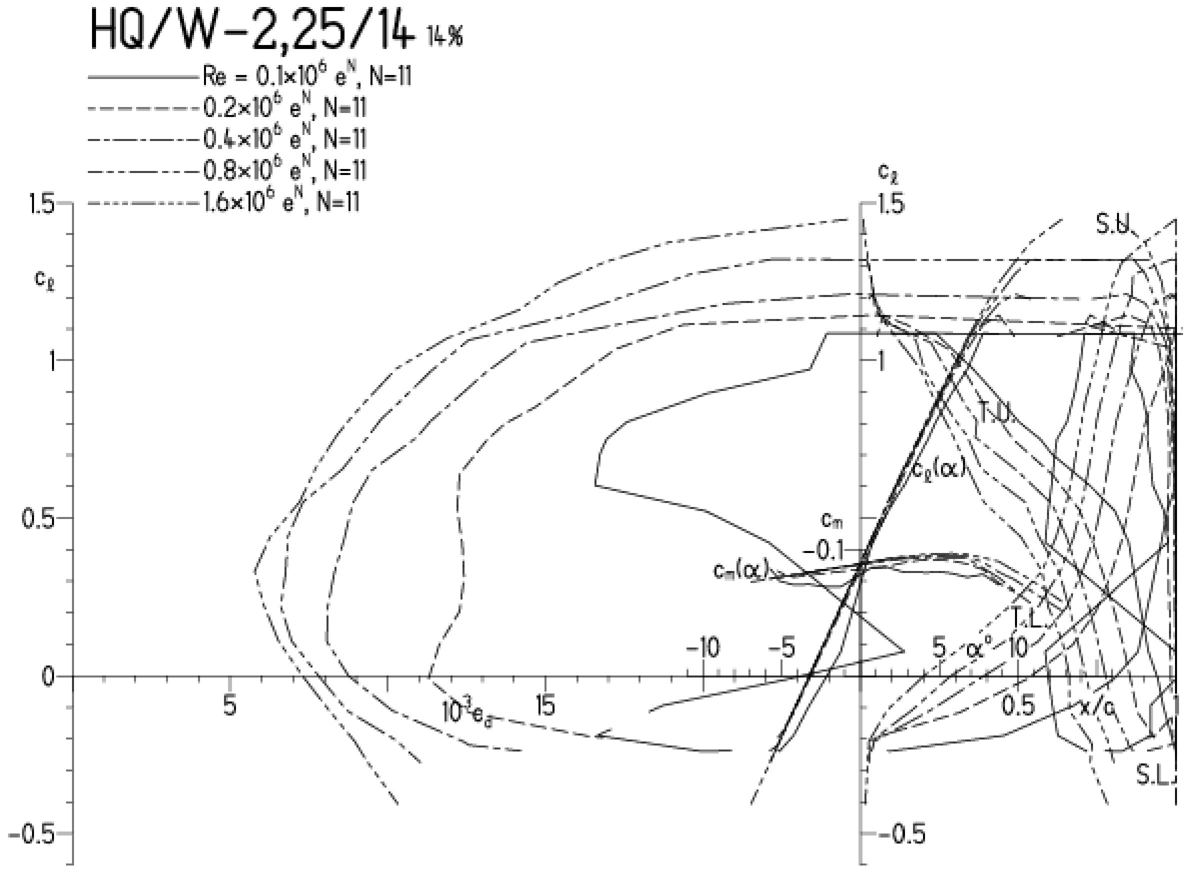


<u>HQ/W-2,25/14</u>, N=11

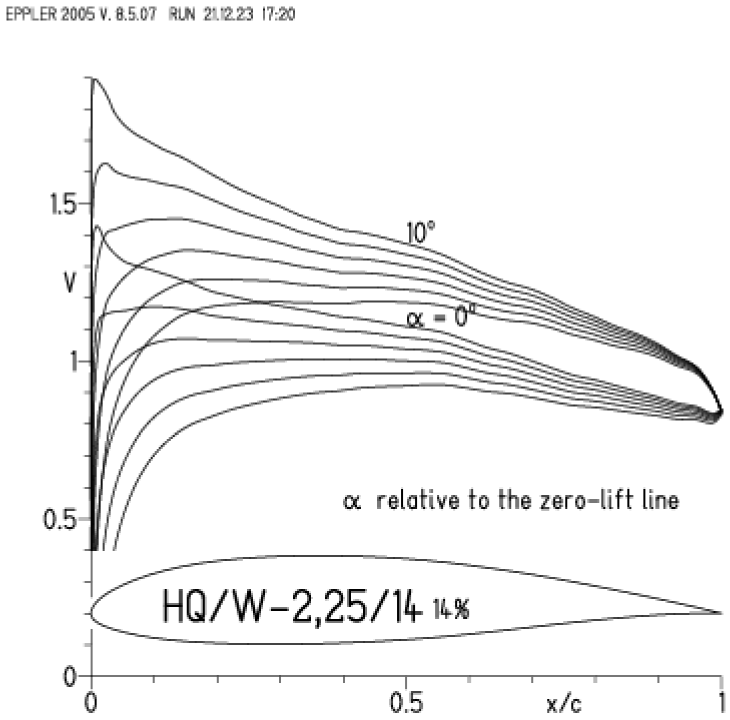
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

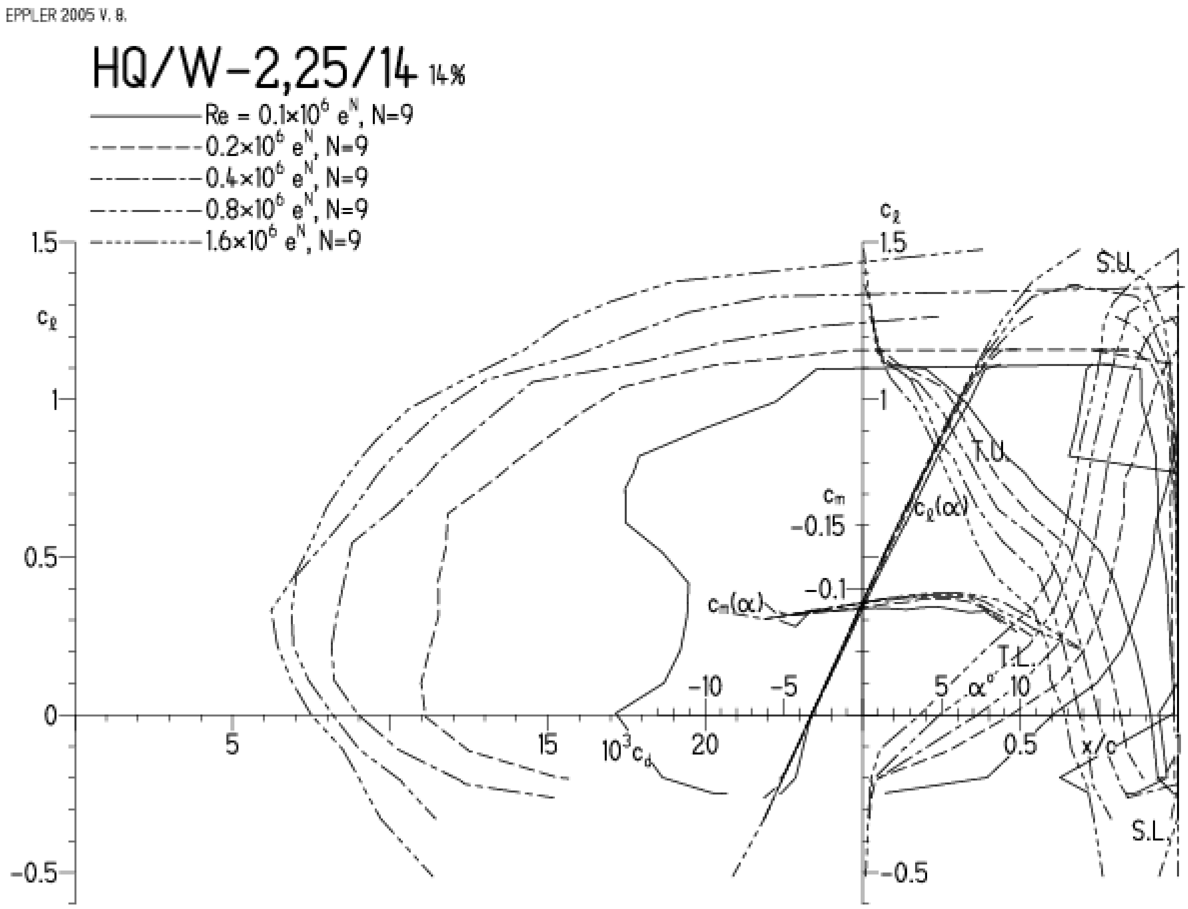


EPPLER 2005 V. 8.



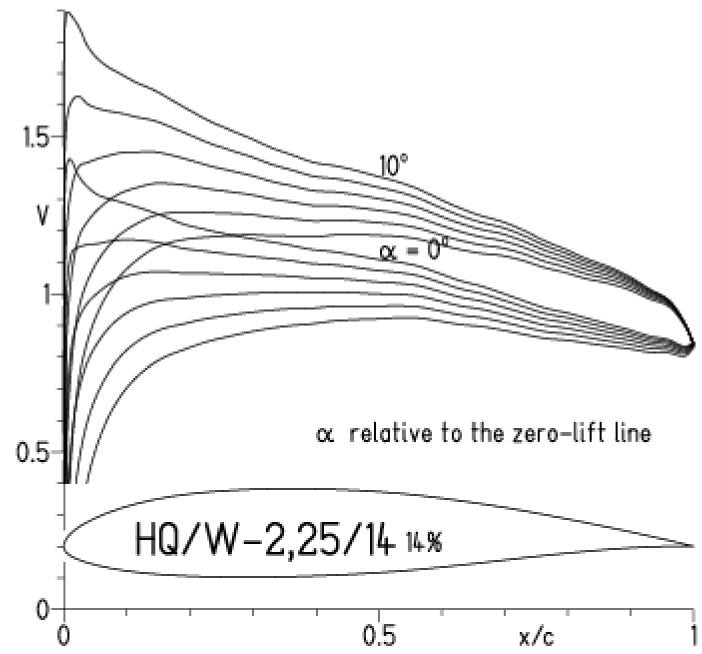
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

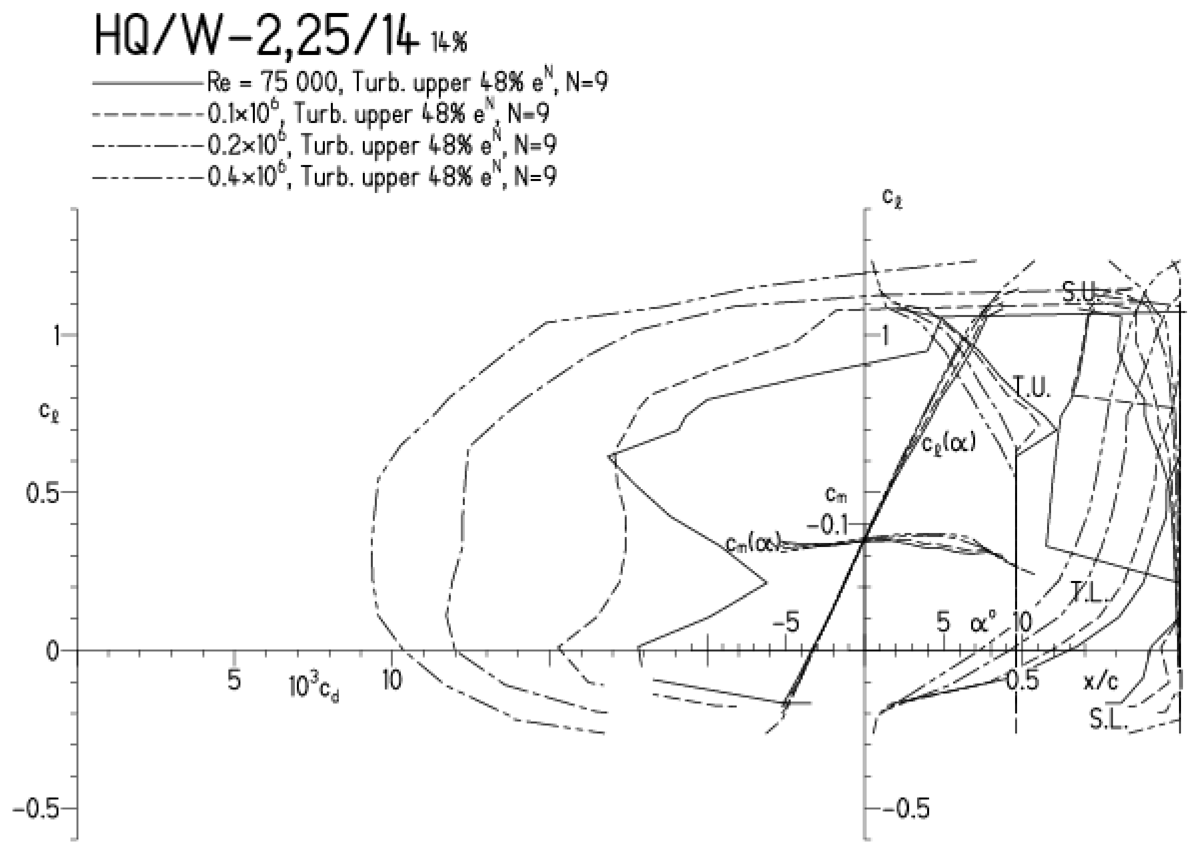

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−10
−5
5
α°
10
−0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

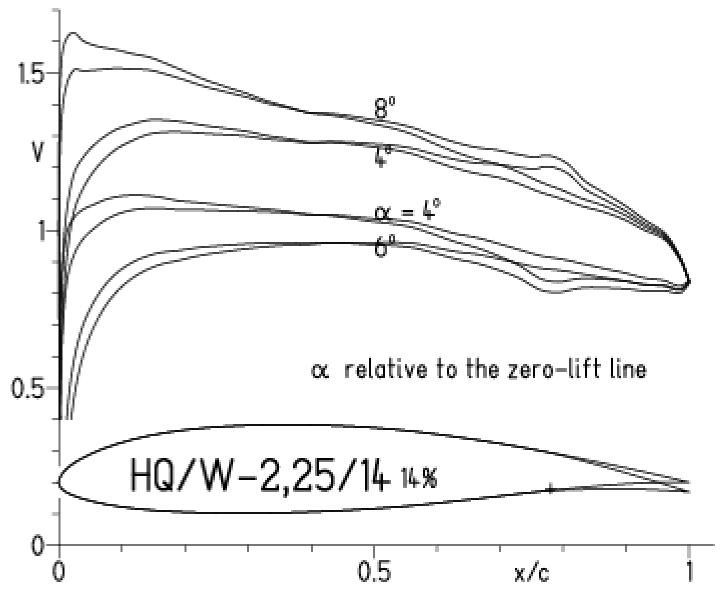


EPPLER 2005 V. 8.5.07 RU

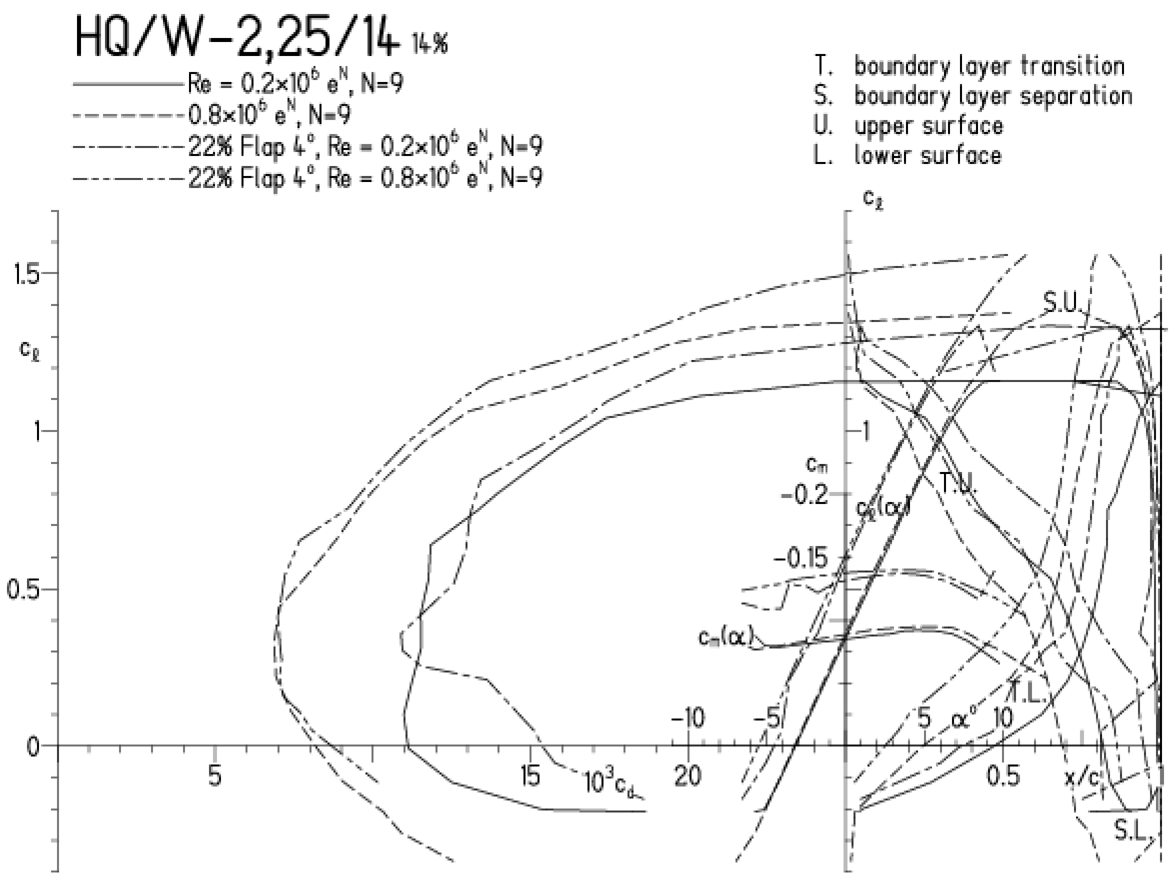


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

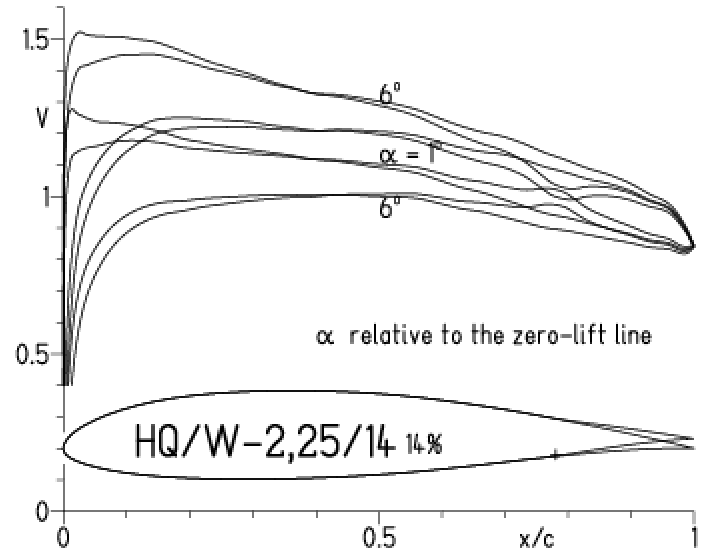


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

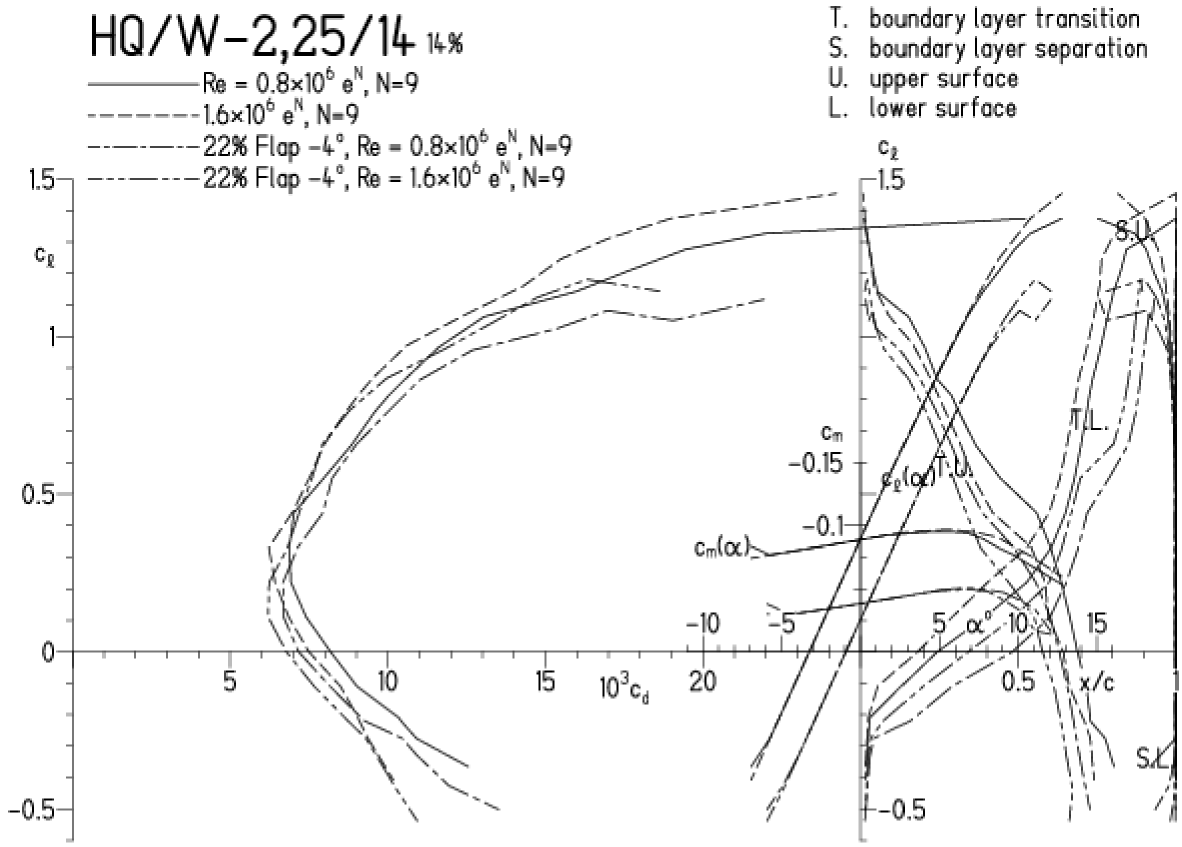


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

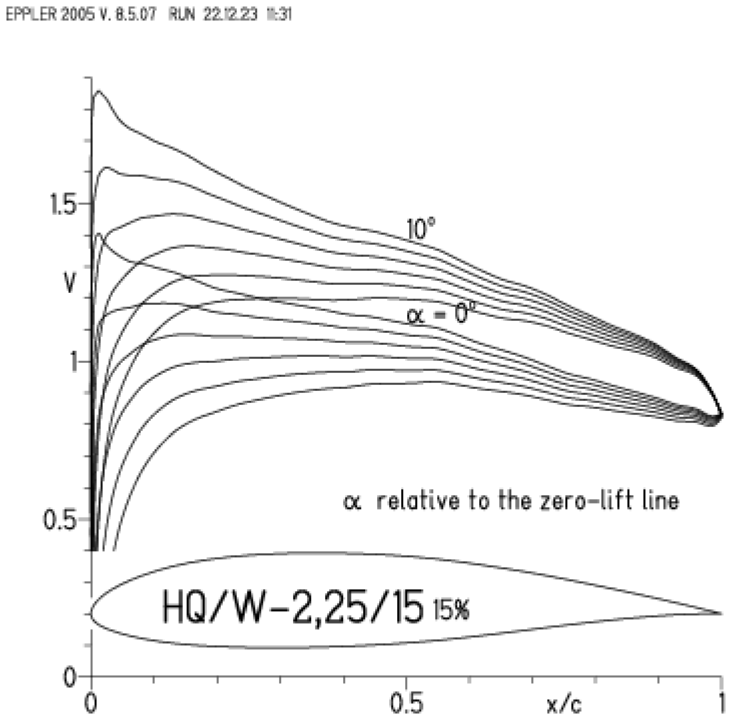
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

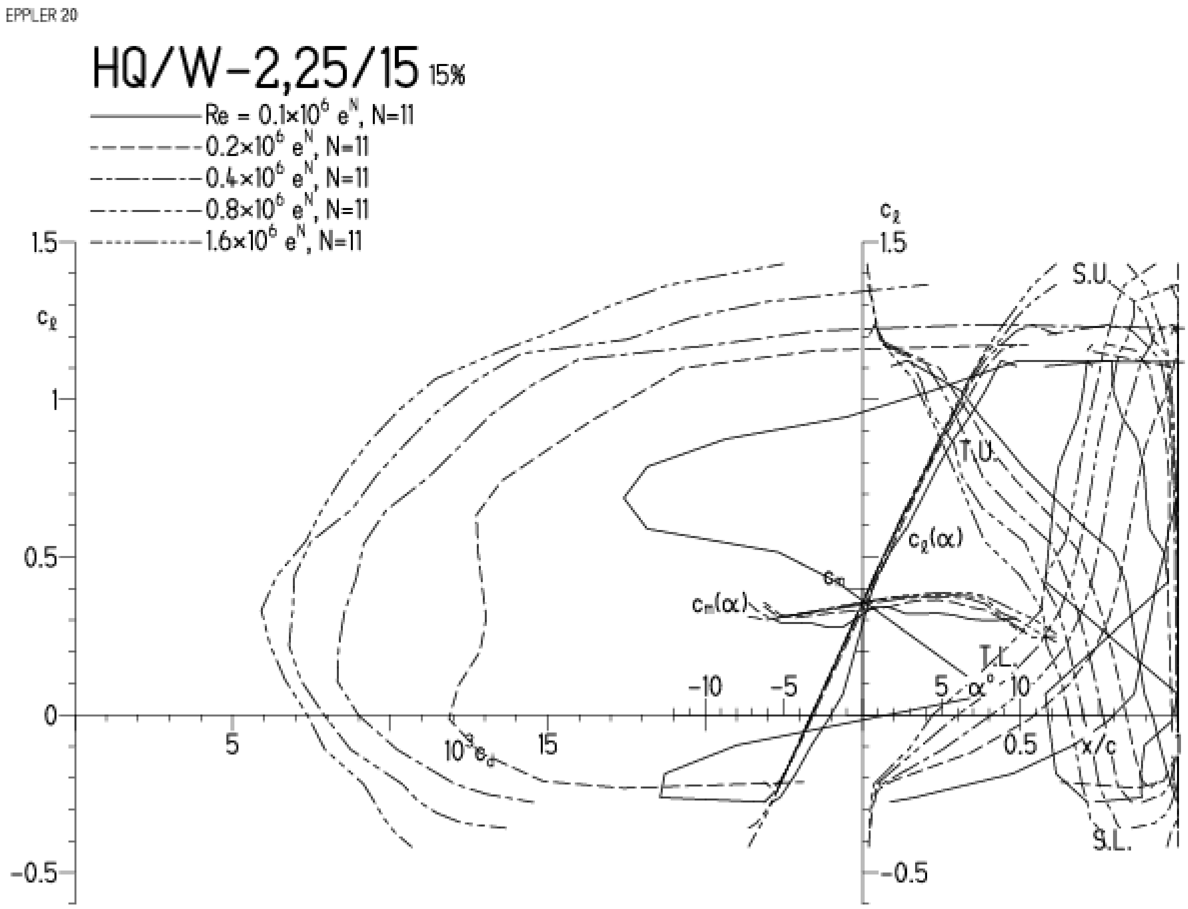


EPPLER 2005 V. 8.5.07



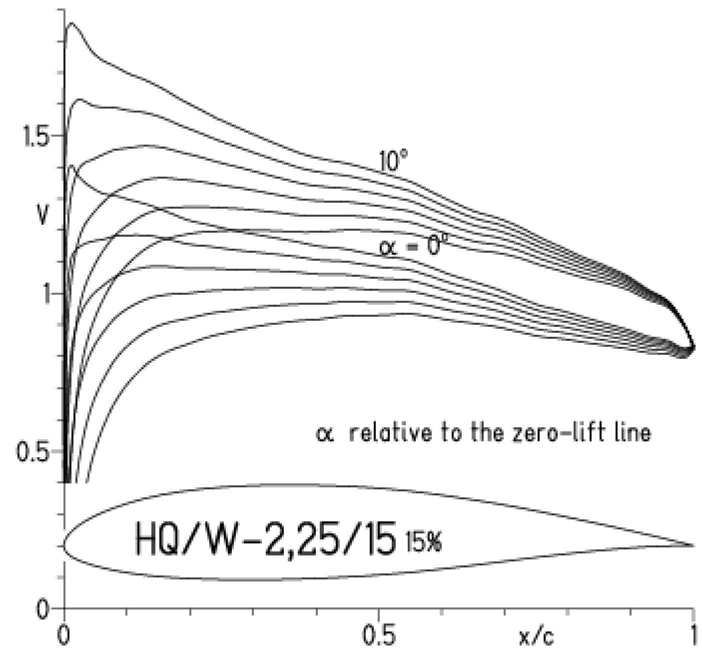
HQ/W-2,25/15, N=11



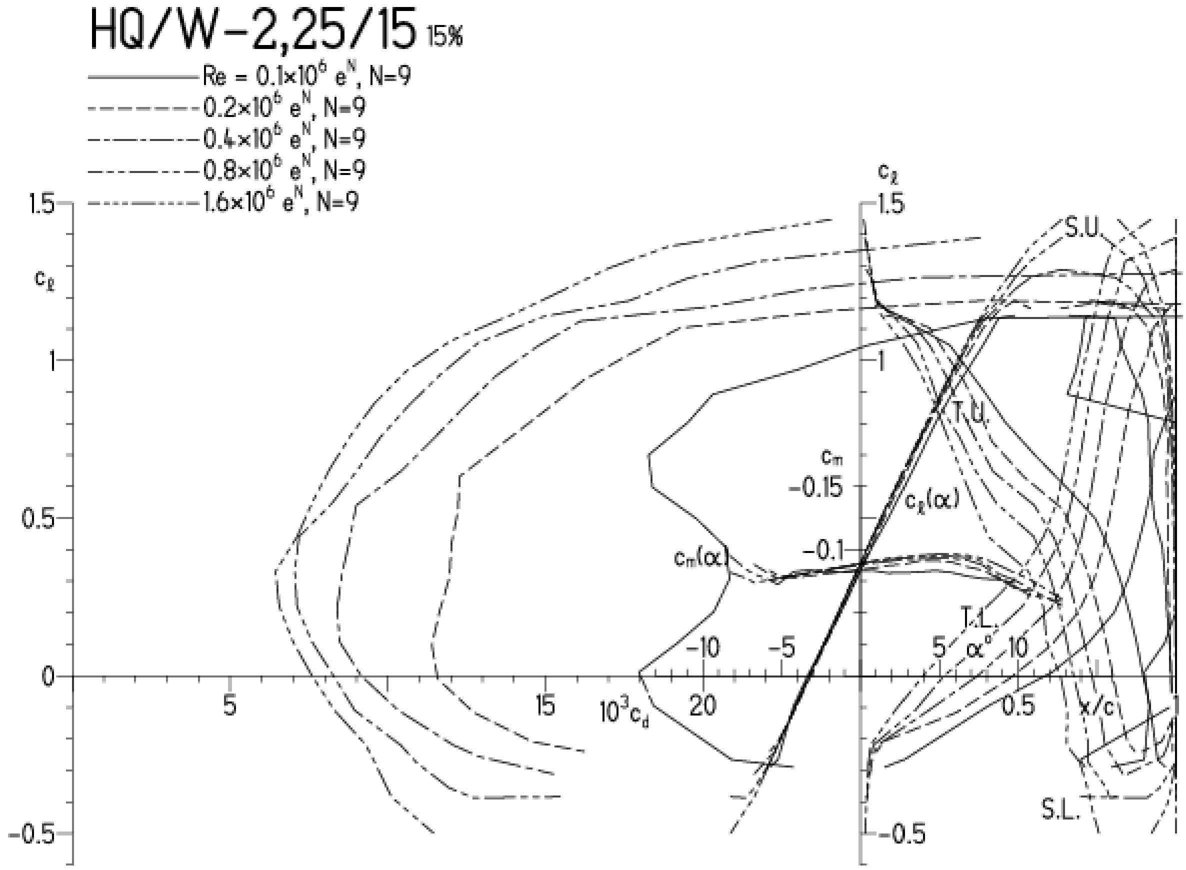


<u>HQ/W-2,25/15</u>, N=9

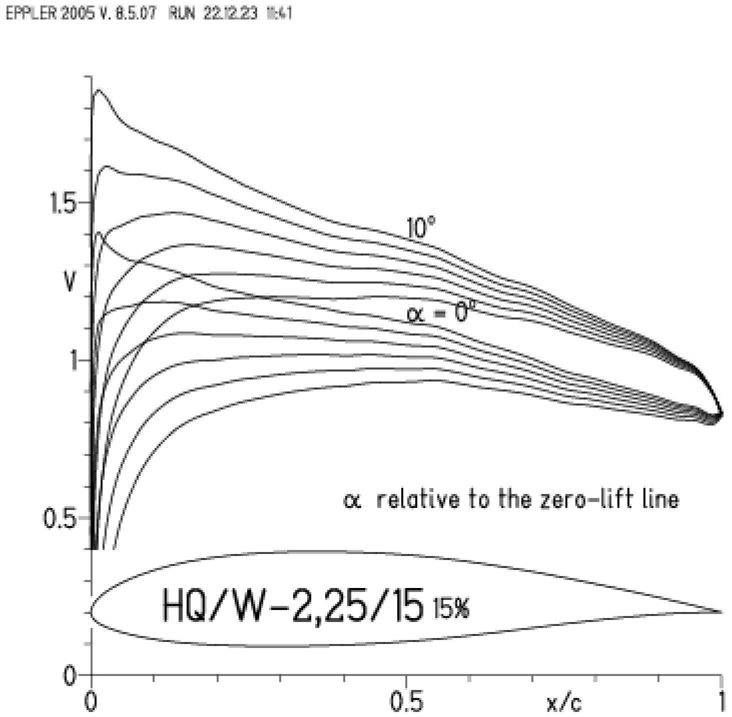
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

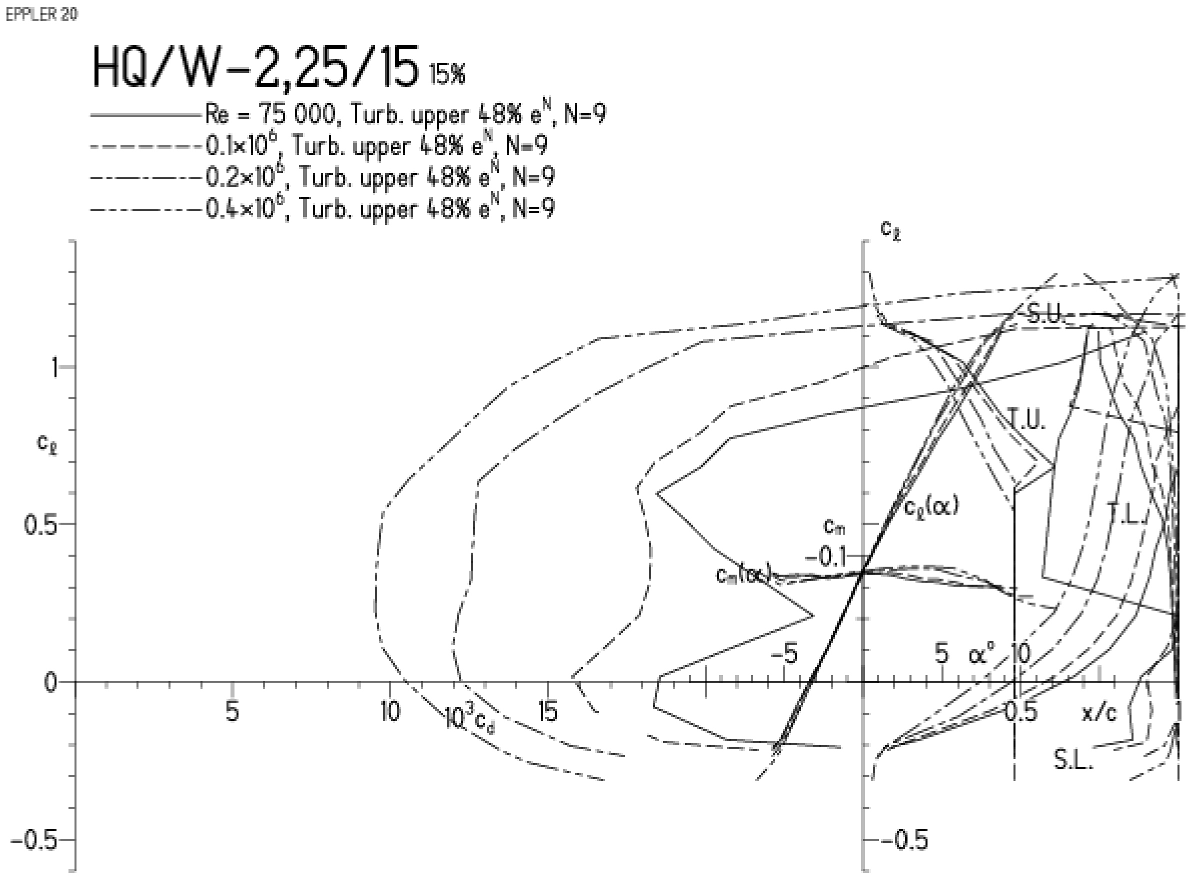


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

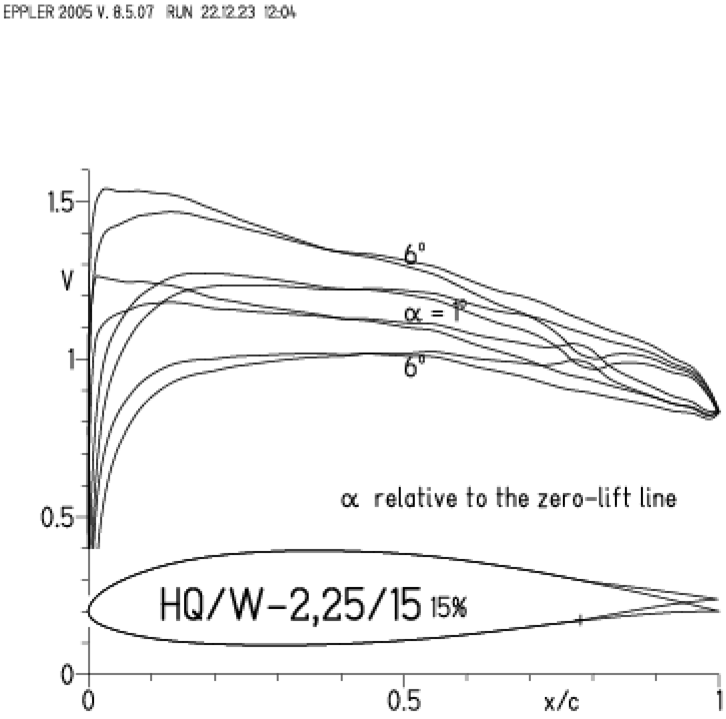


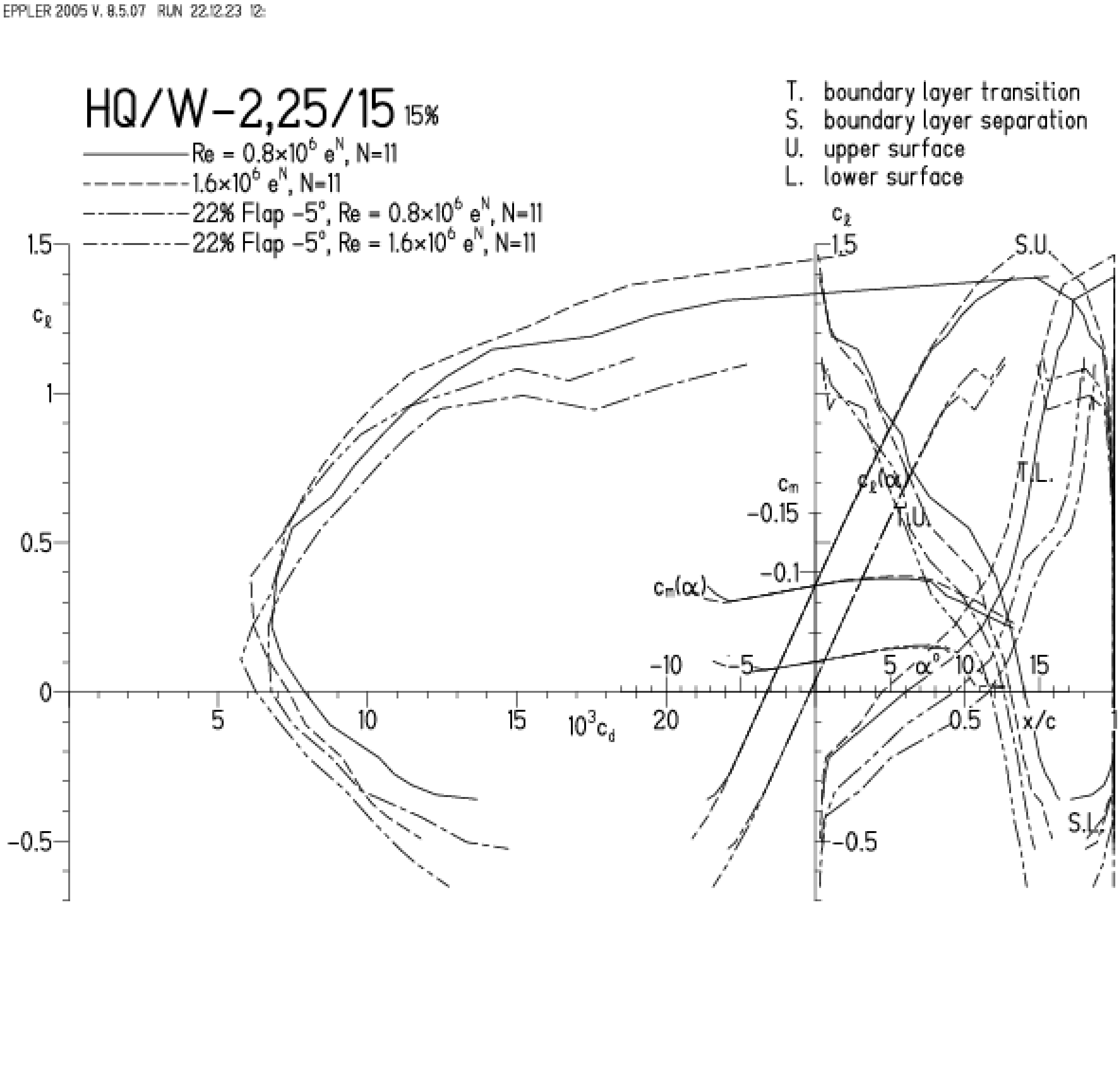


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

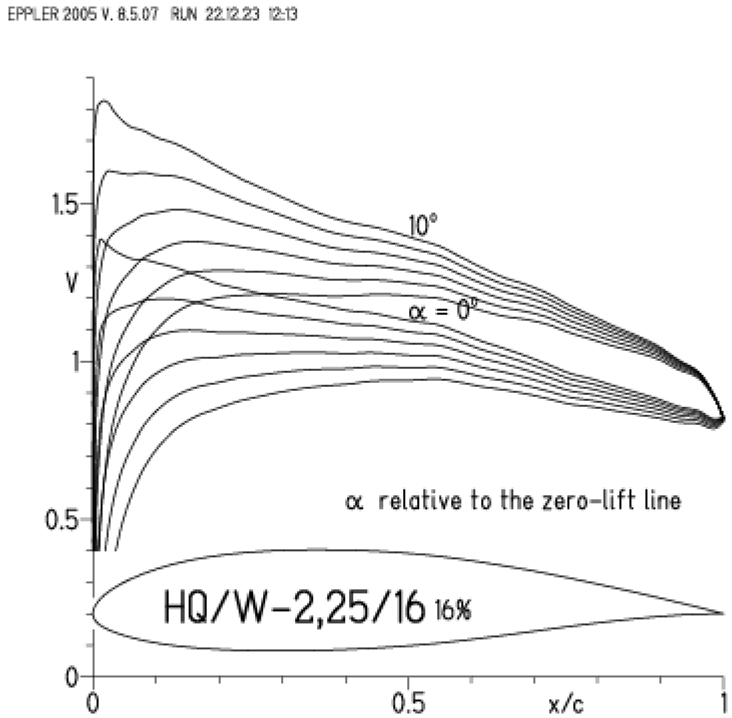
Bringt keine merkliche Verbesserung im Langsamflug.

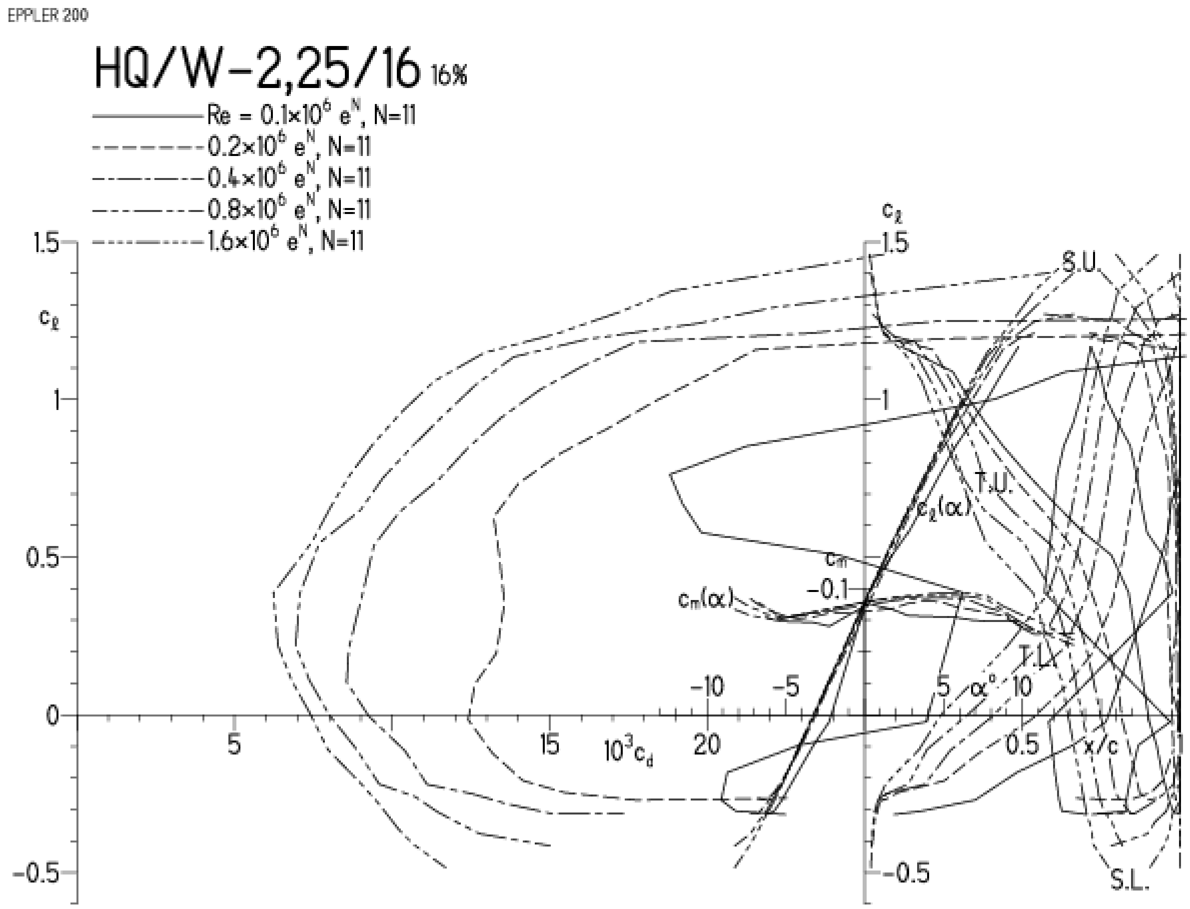
<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag





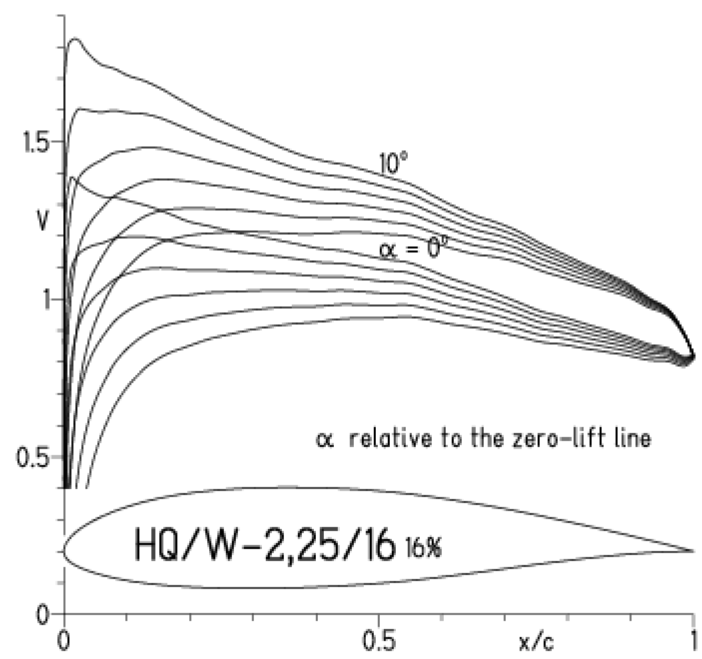
HQ/W-2,25/16, N=11



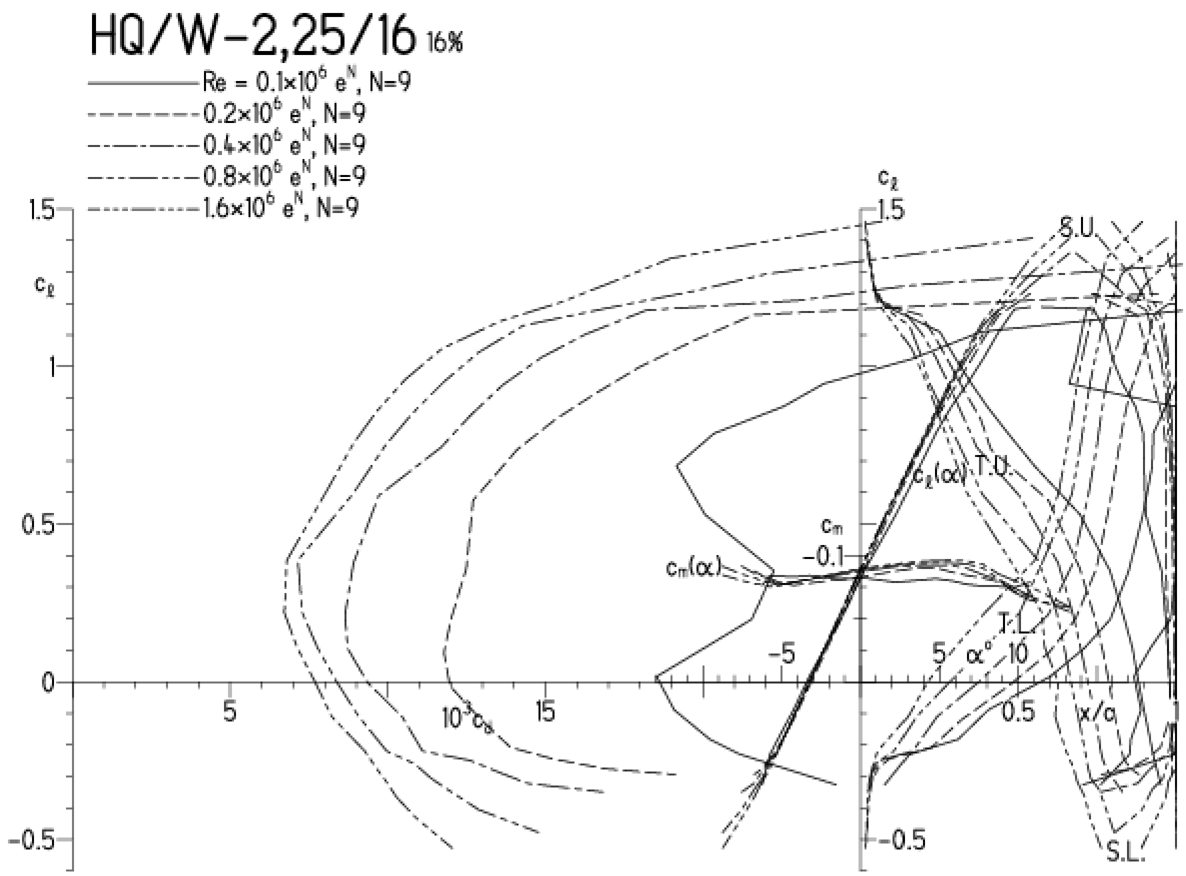


HQ/W-2,25/16, N=9

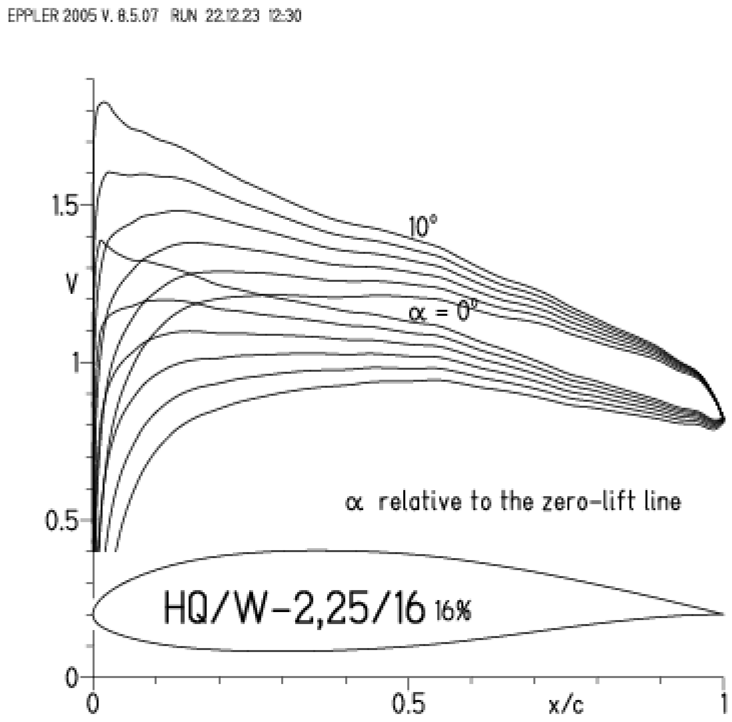
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

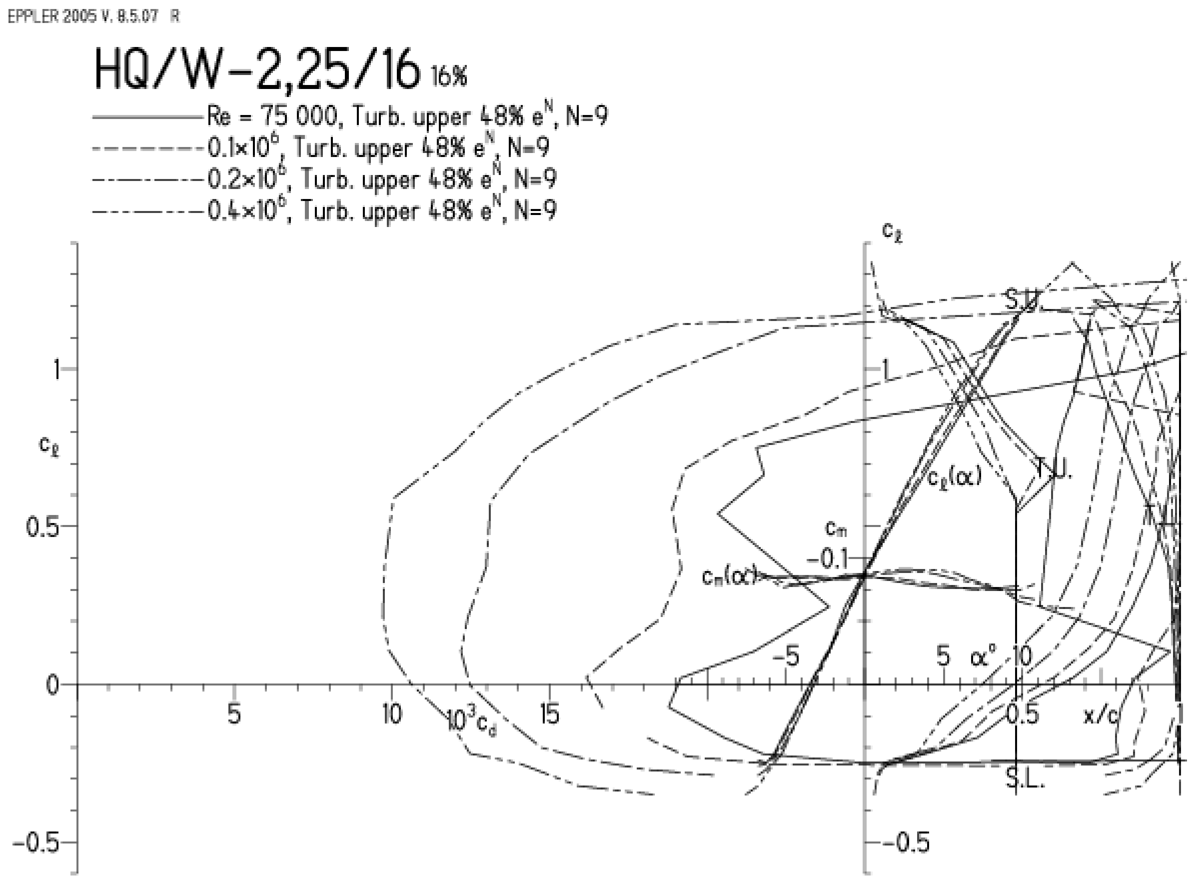


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



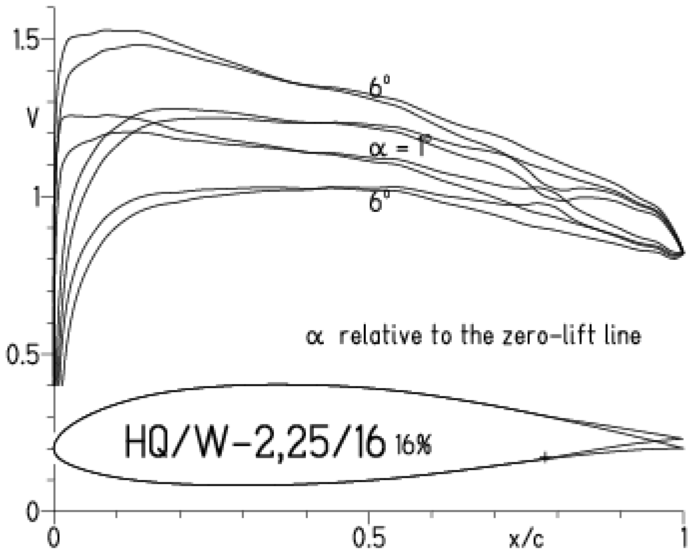


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

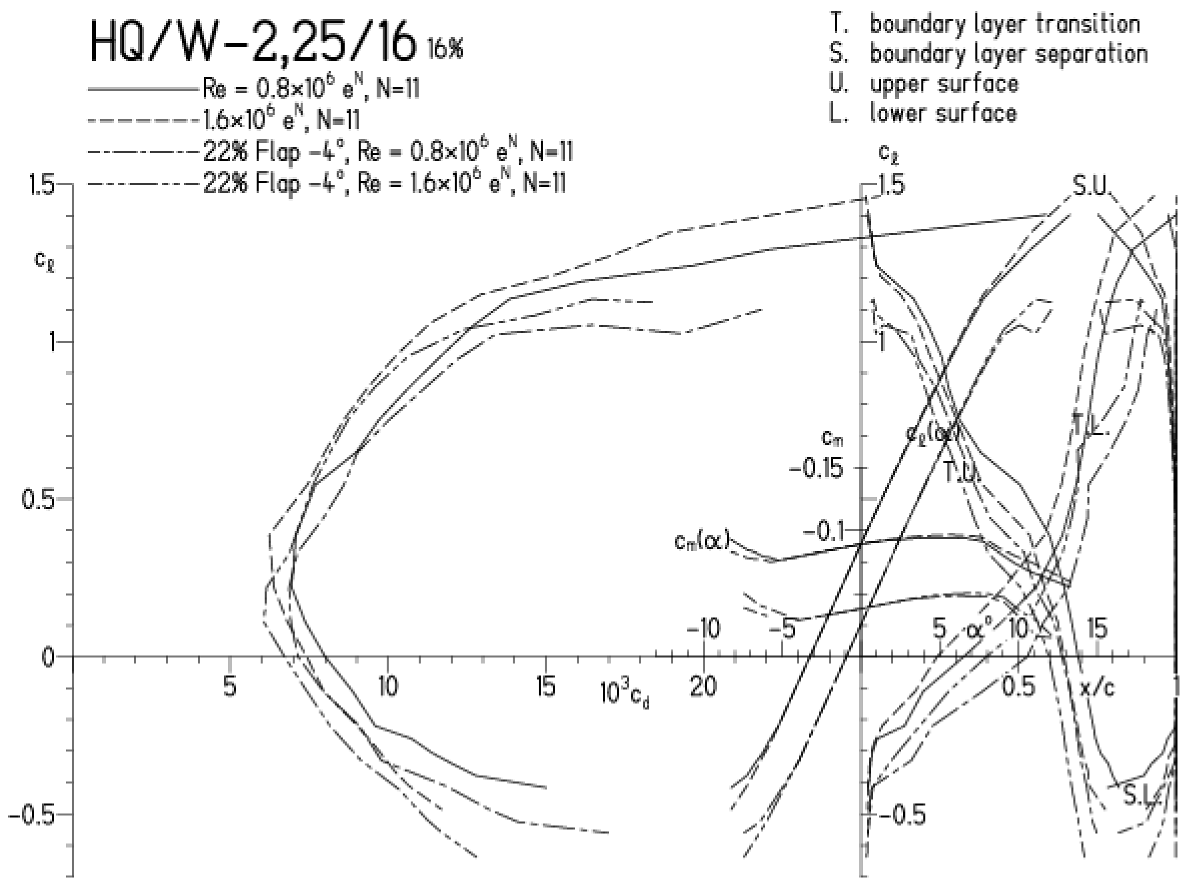
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

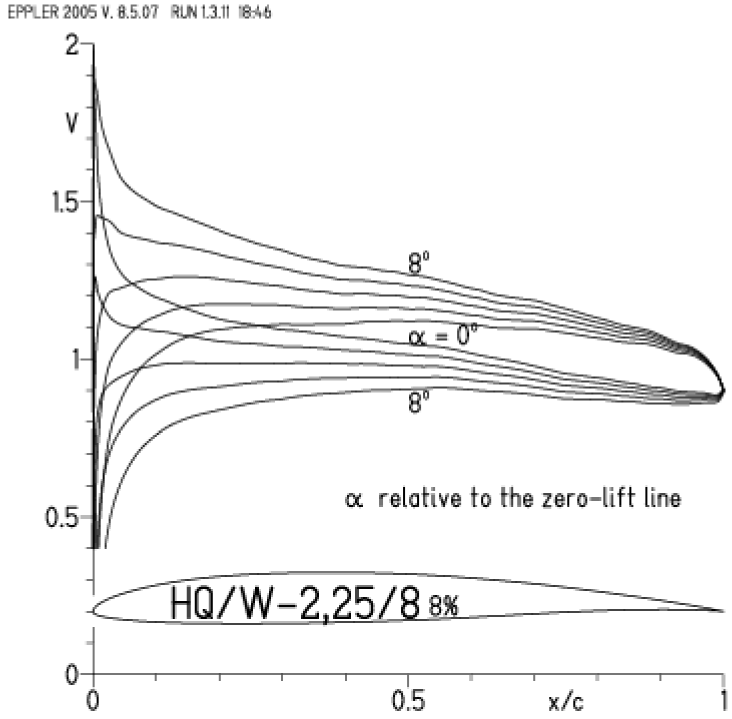
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

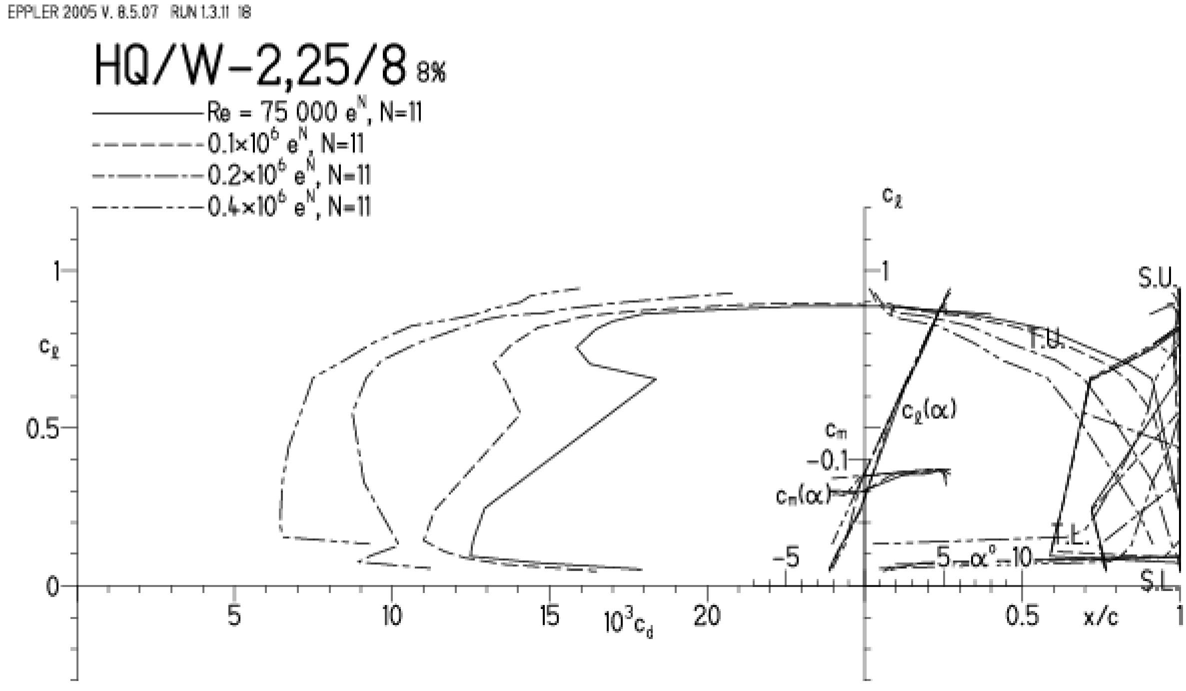


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

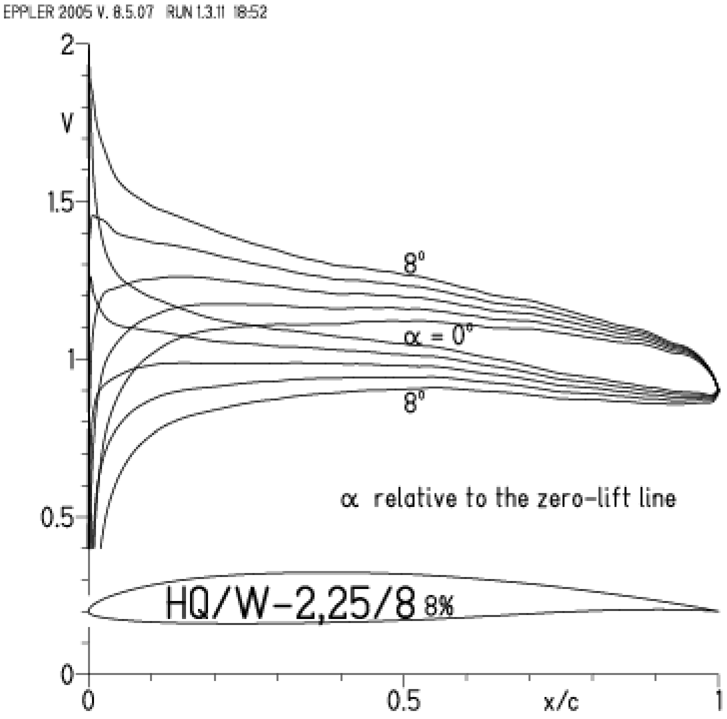


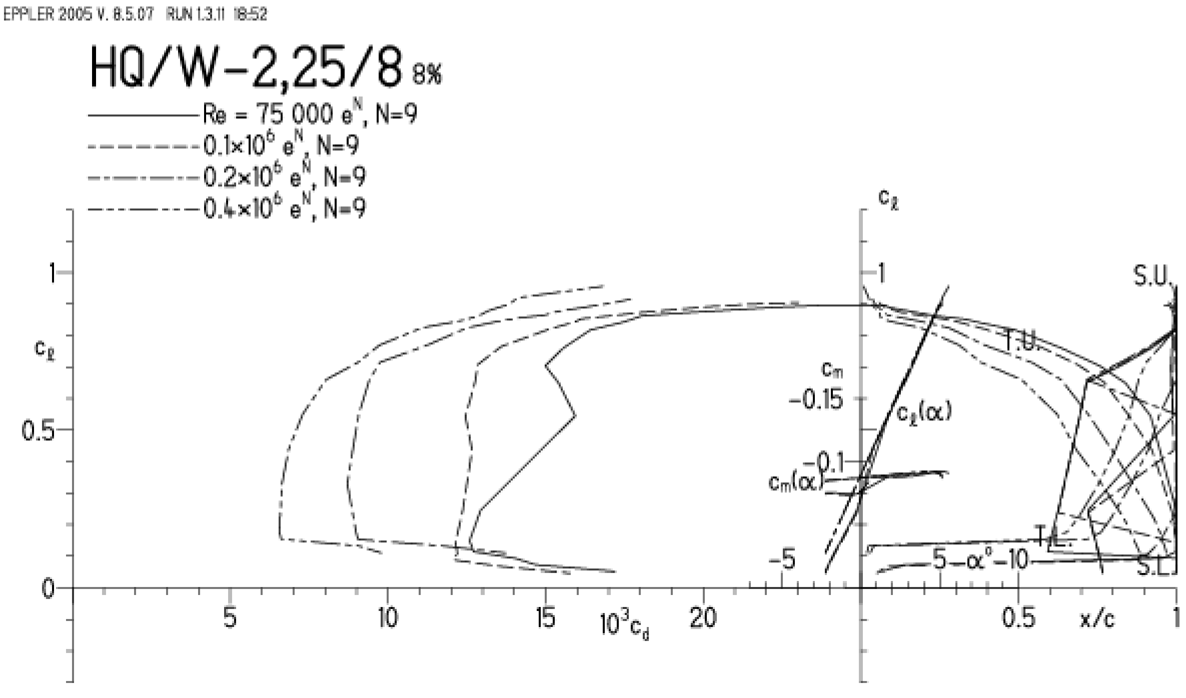
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

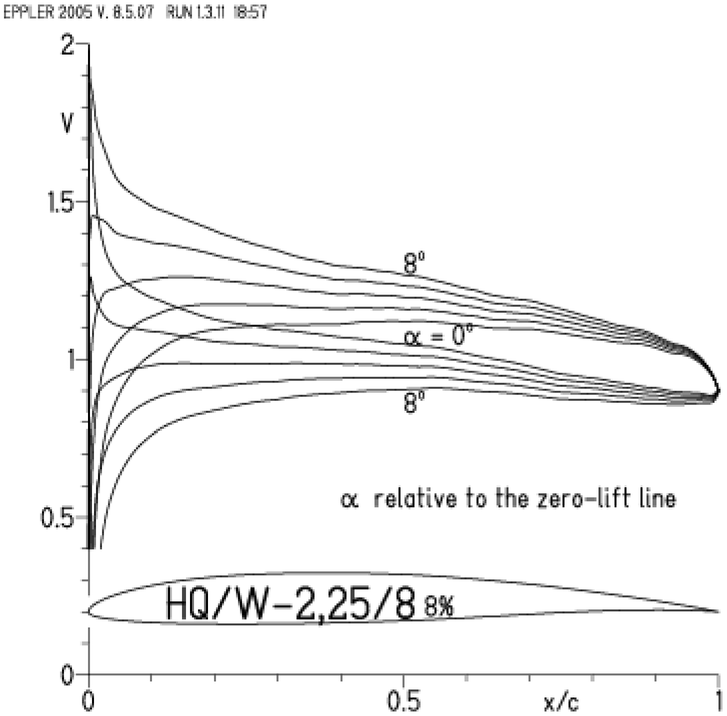

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

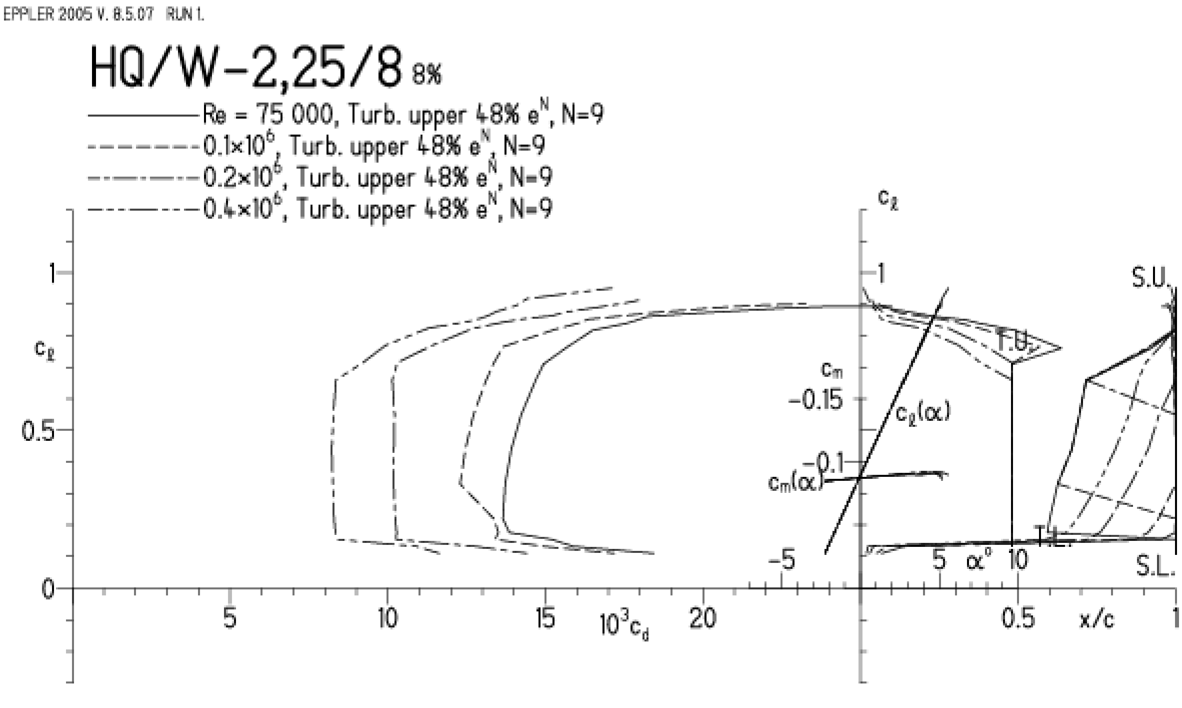
<u>HQ/W-2,25/8</u>, N=9





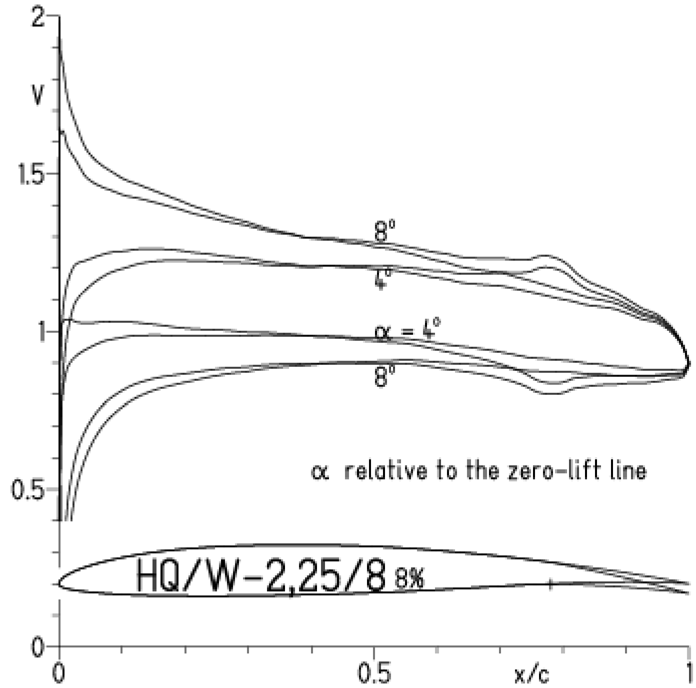
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



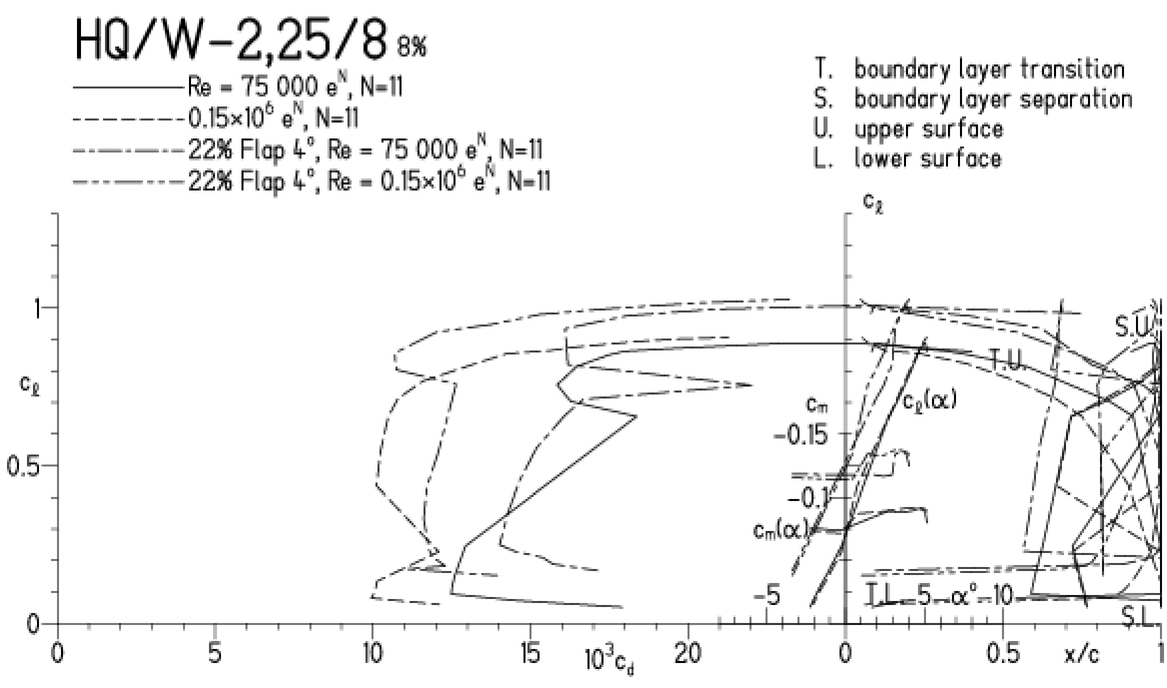


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

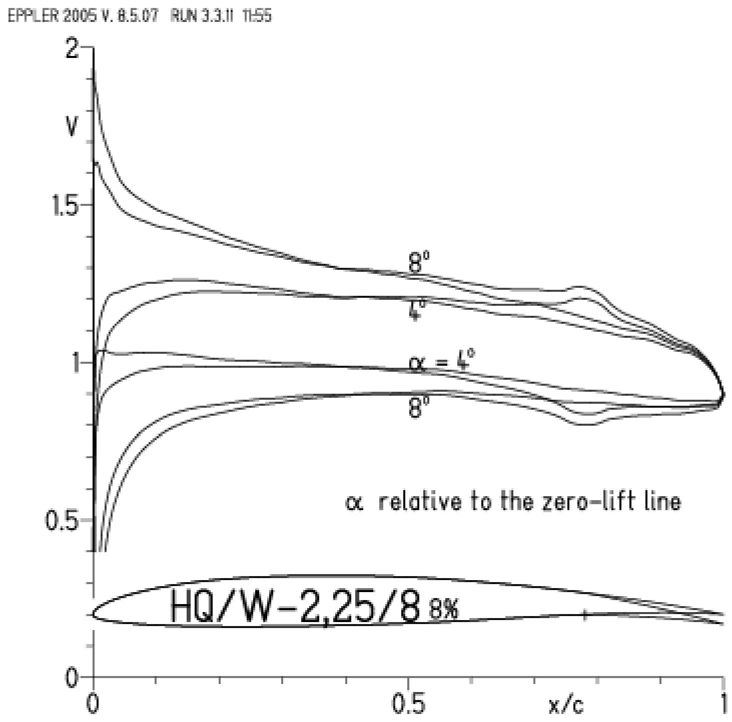
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

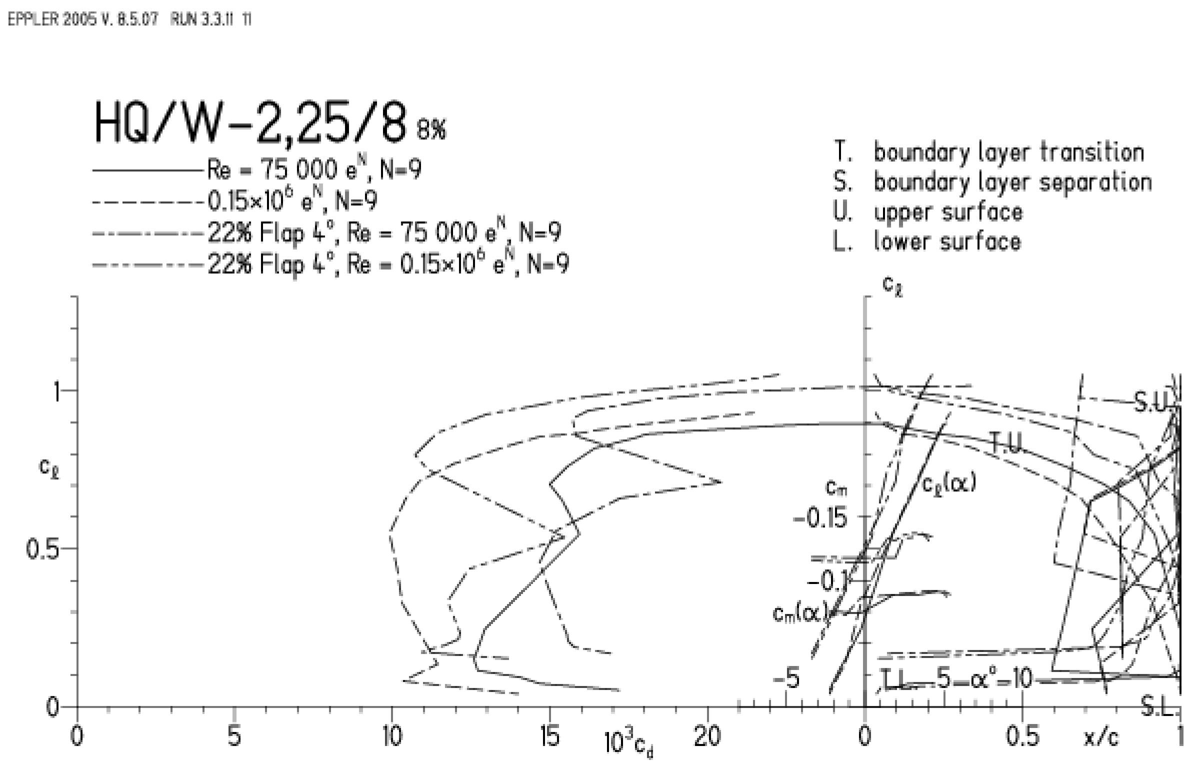


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

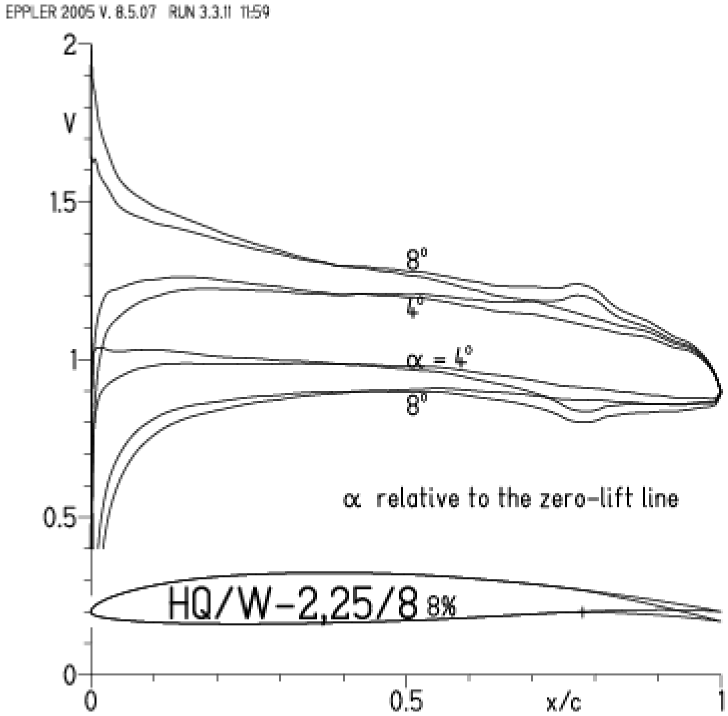


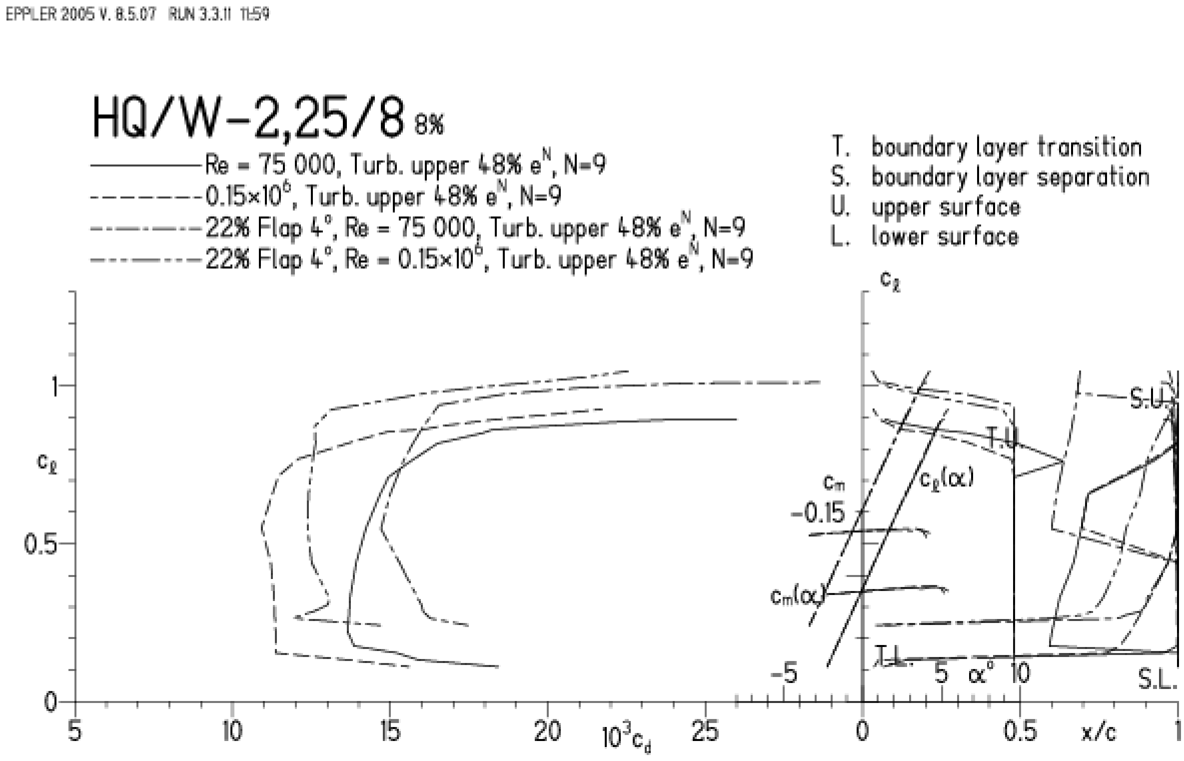
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





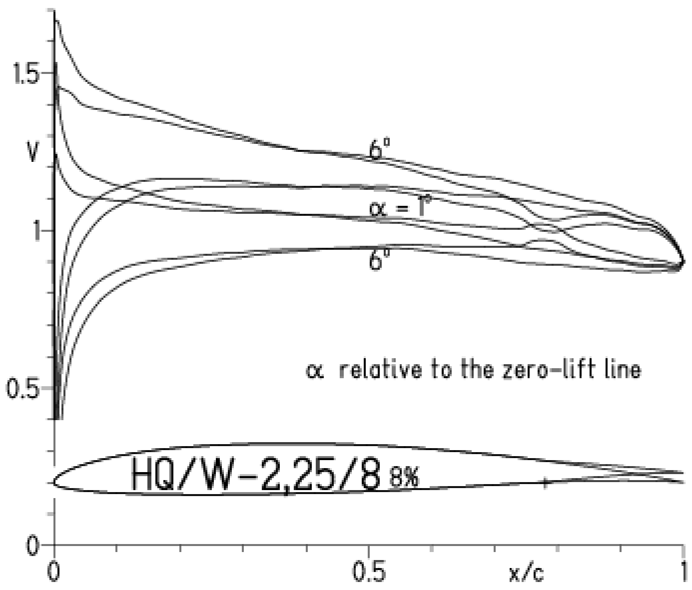
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



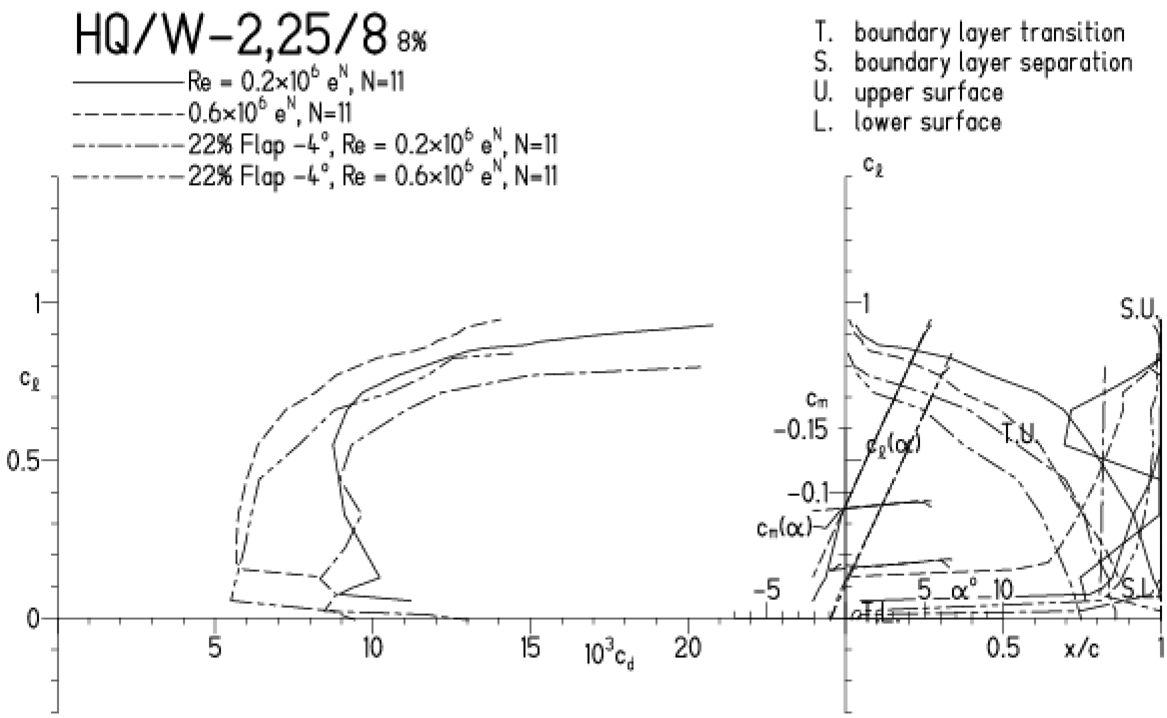


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

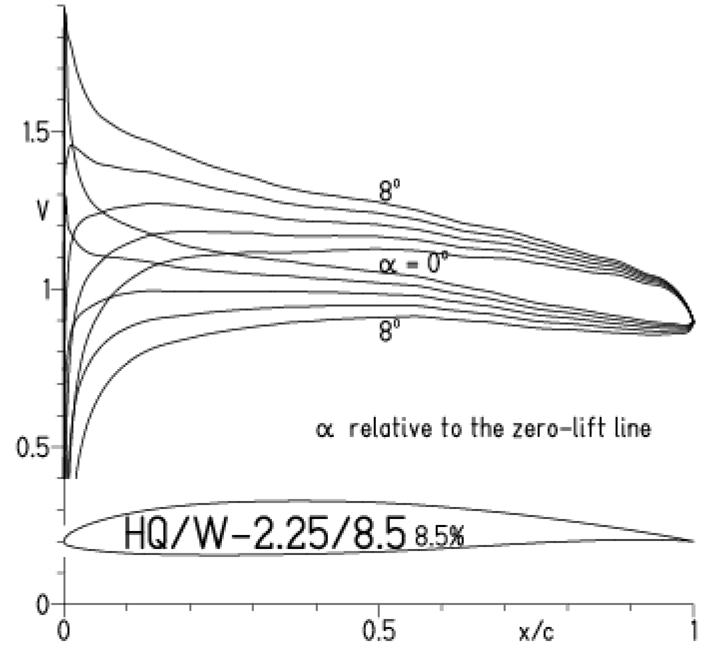


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

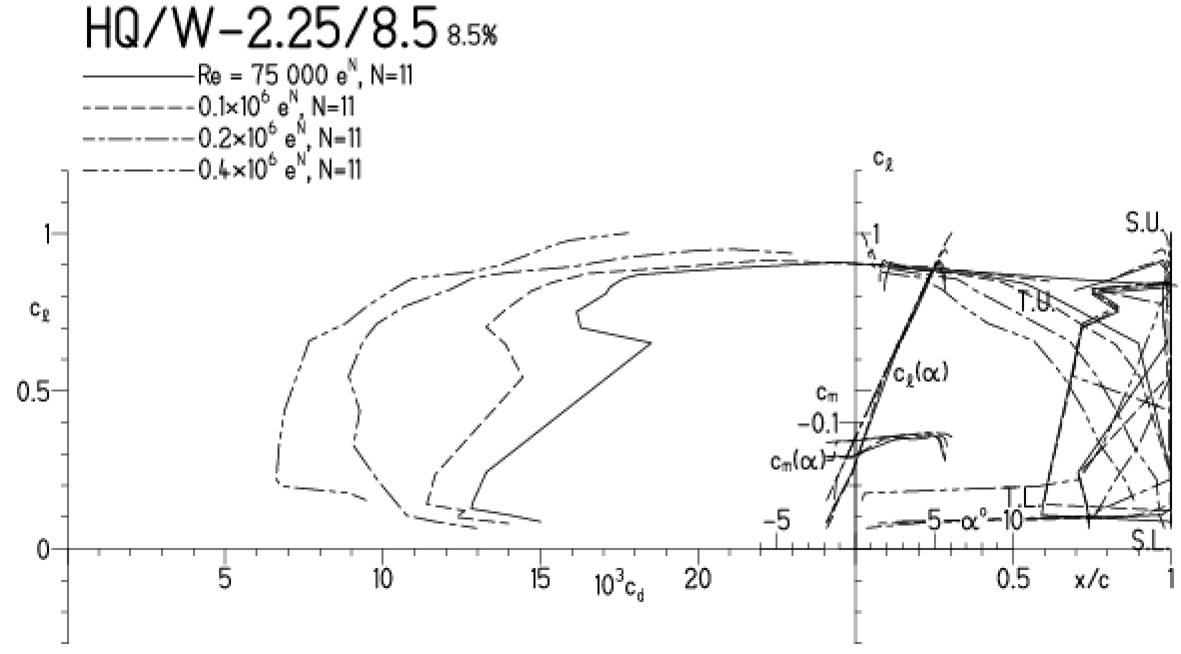


HQ/W-2,25/8,5, N=11

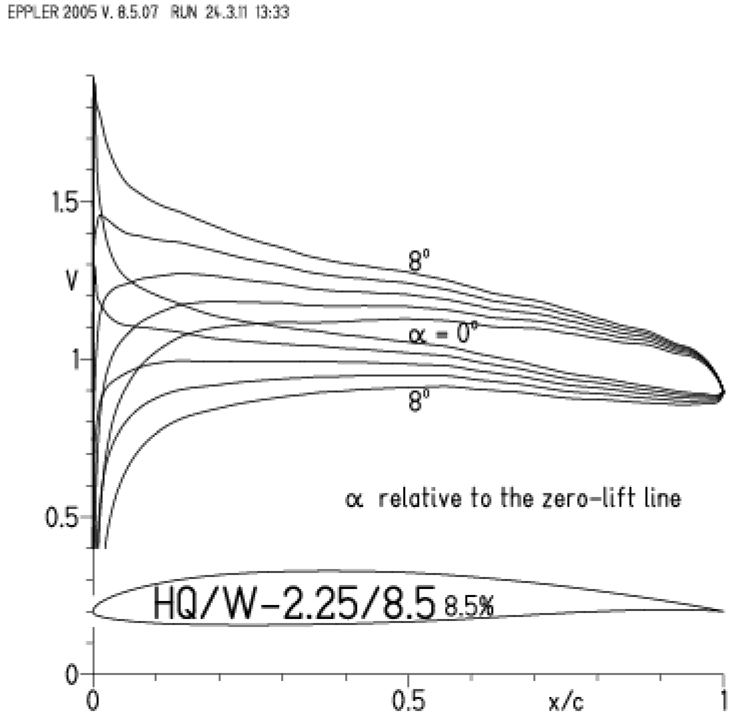
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

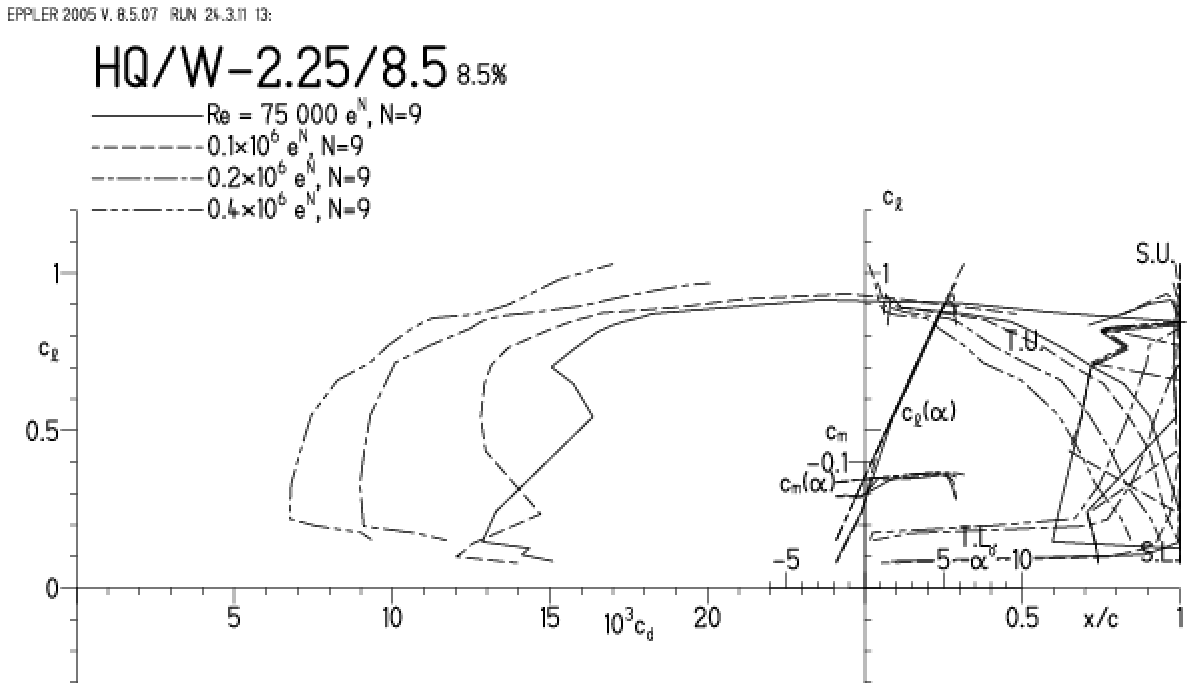


EPPLER 2005 V

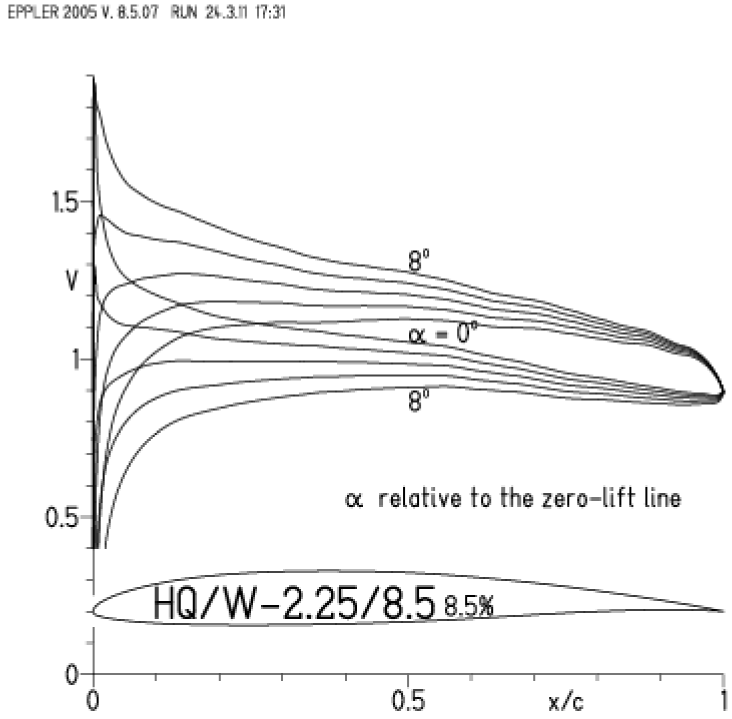


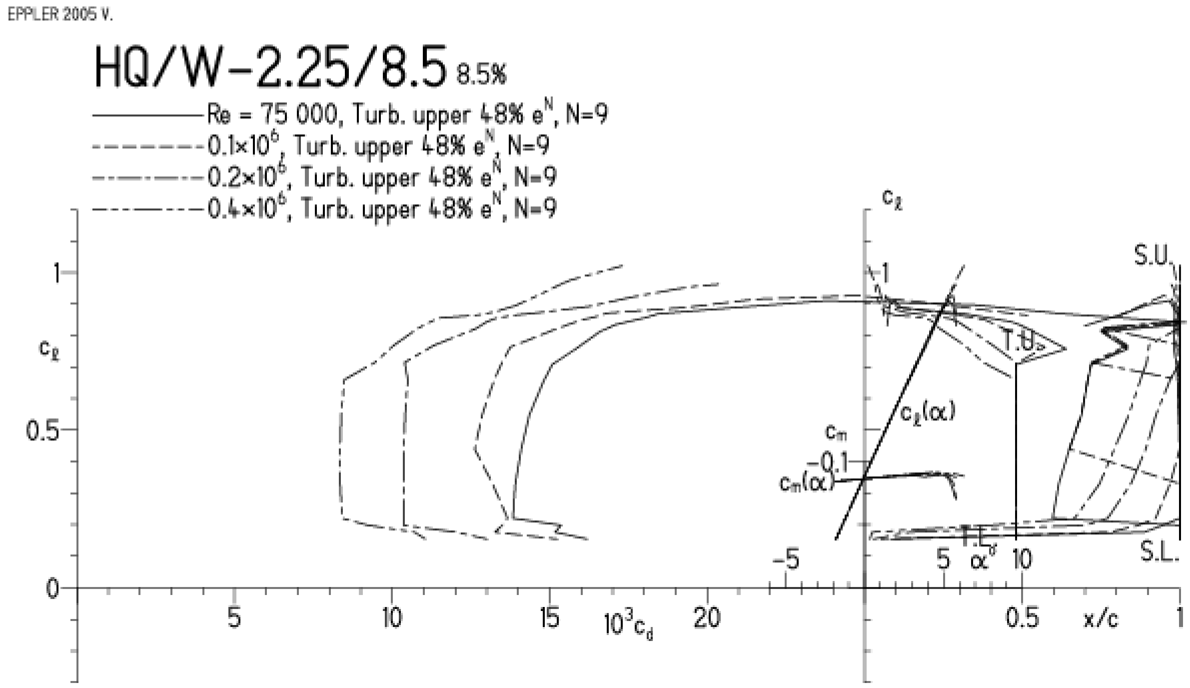
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

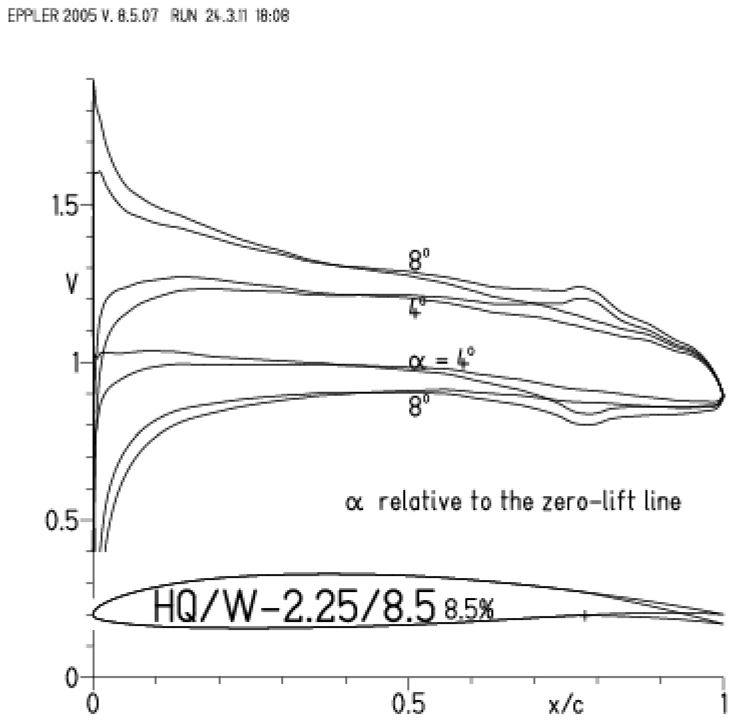

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

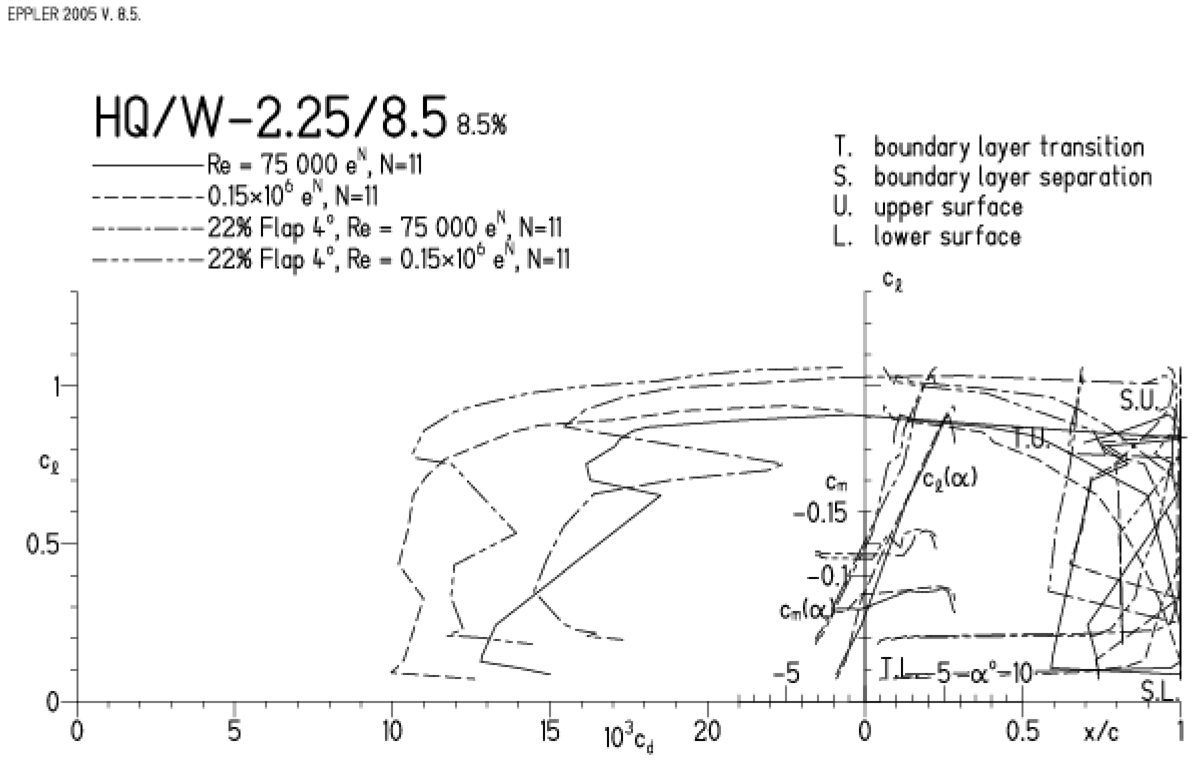
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



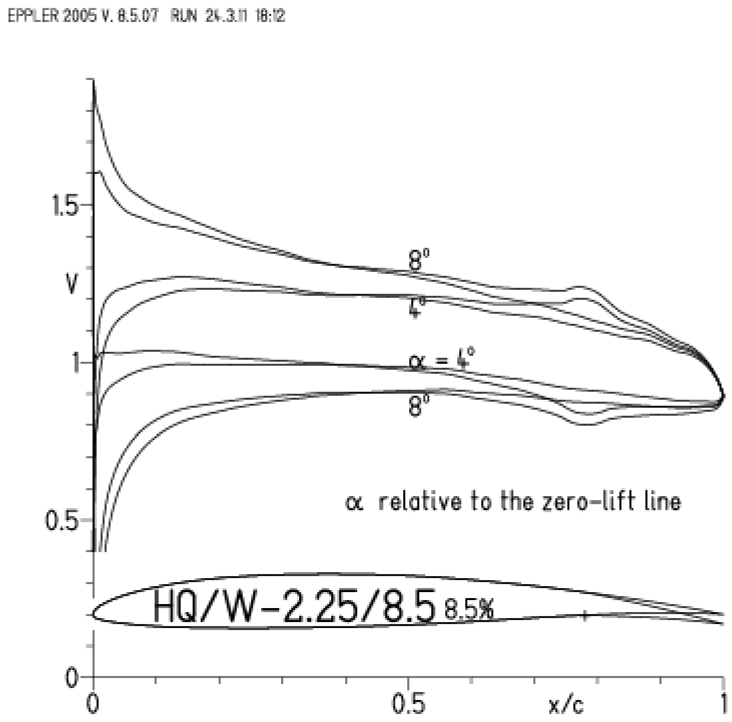


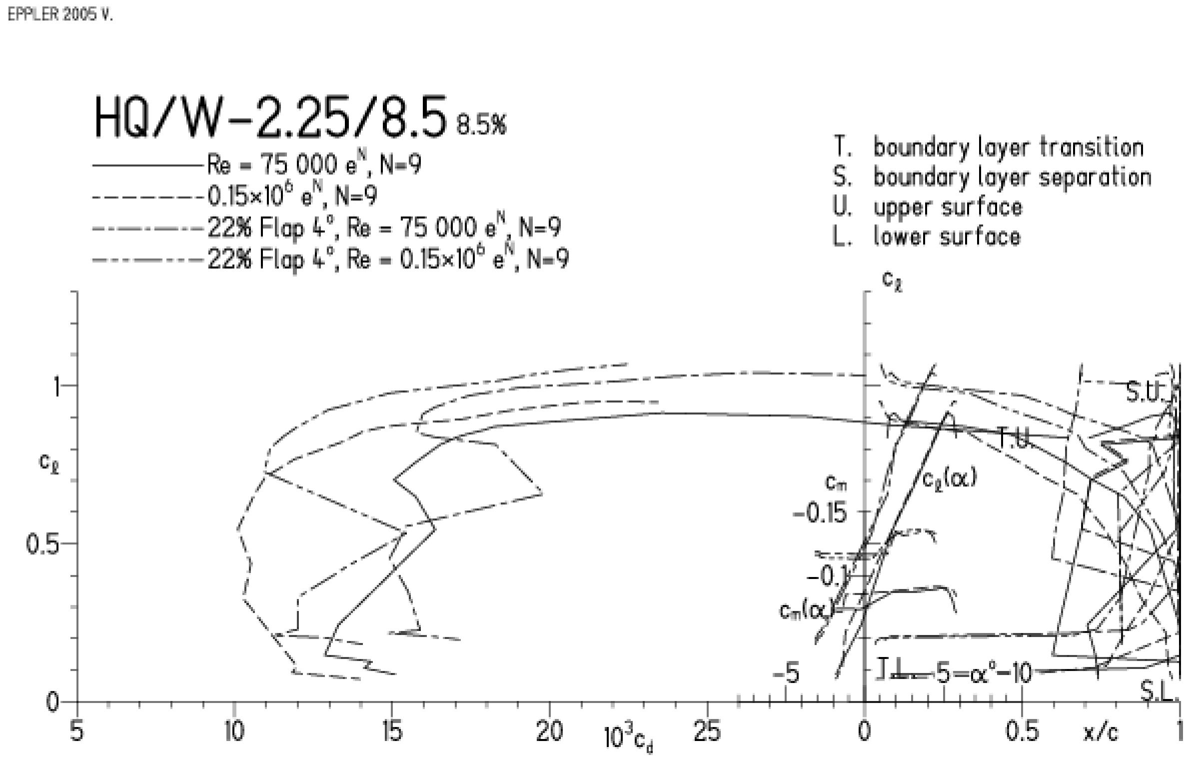
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



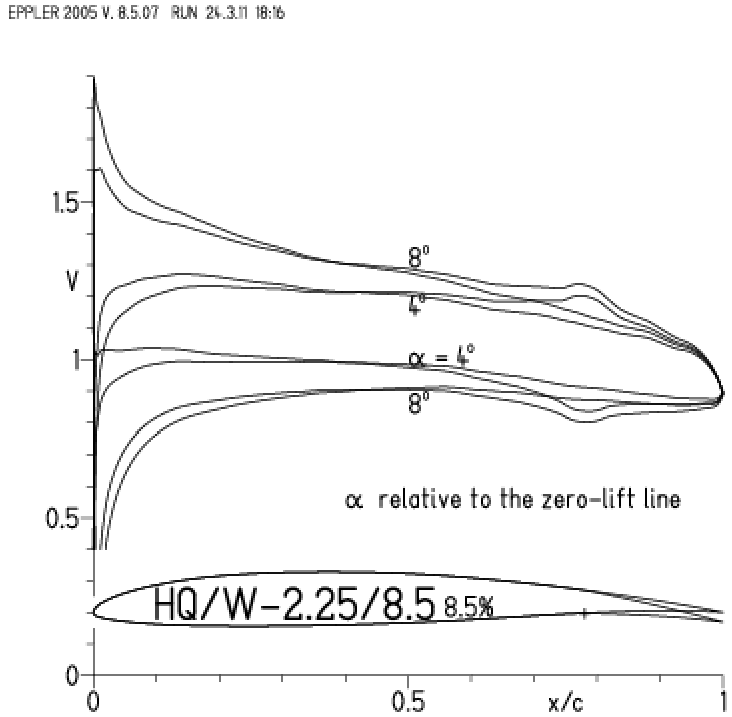


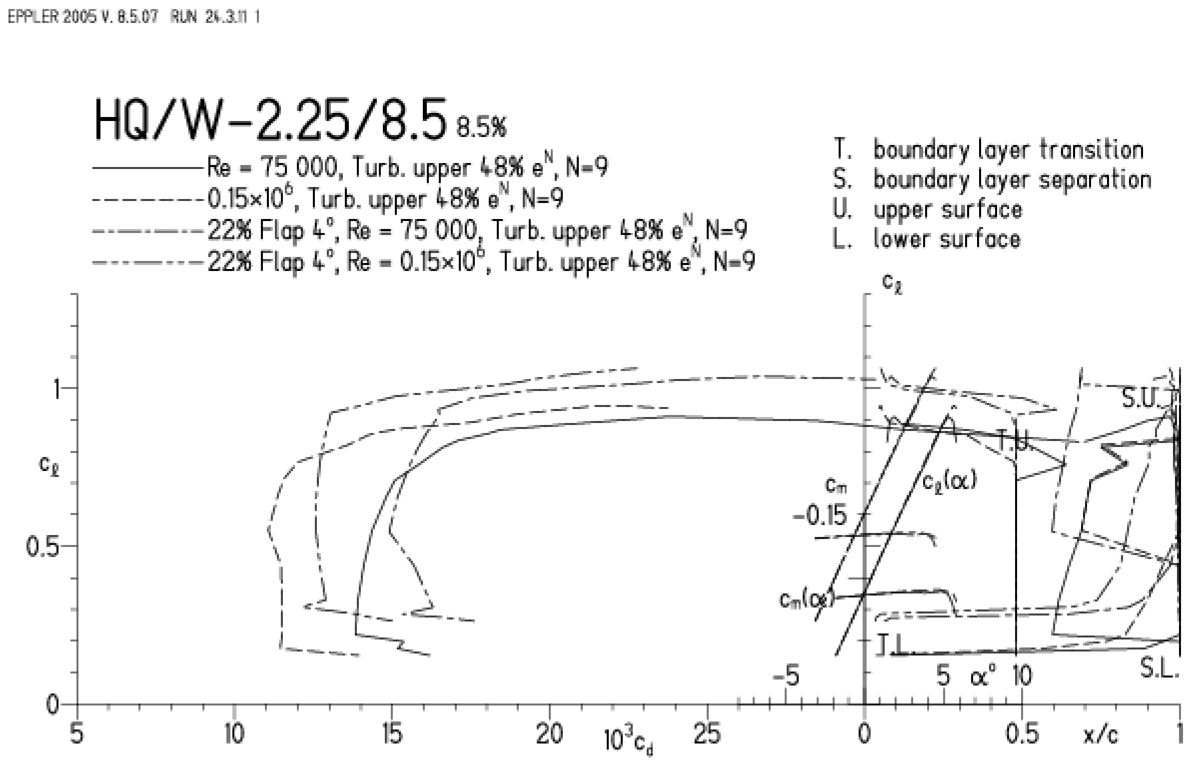
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag





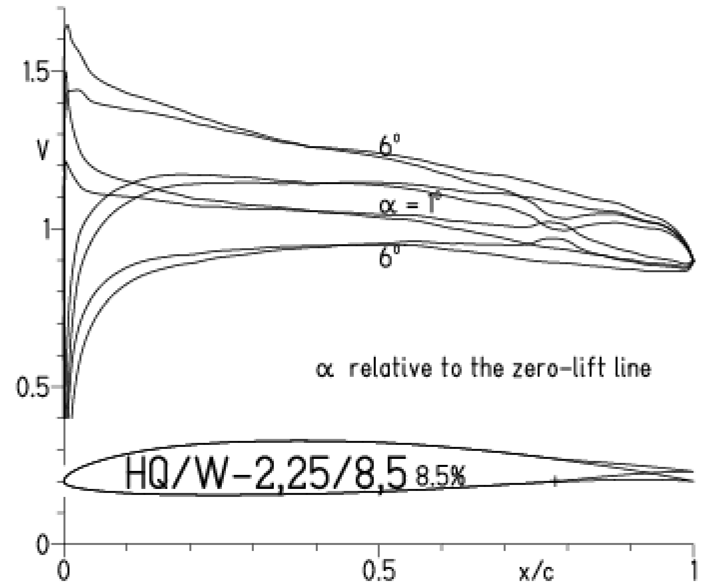
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



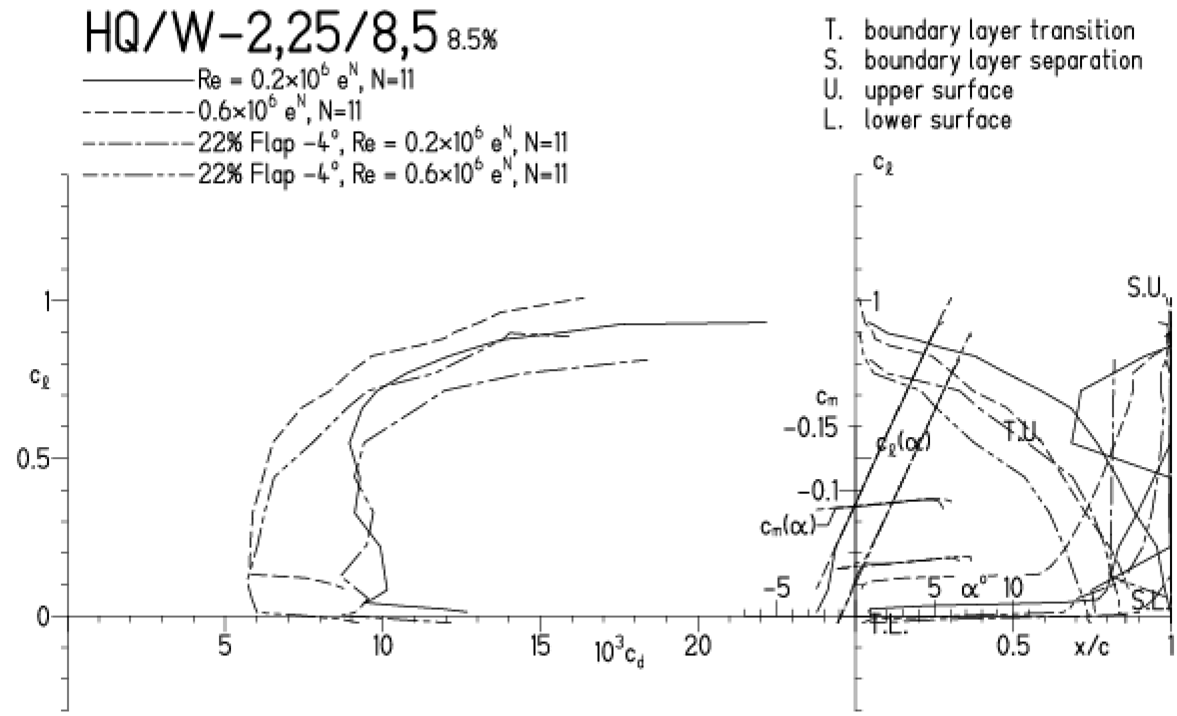


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

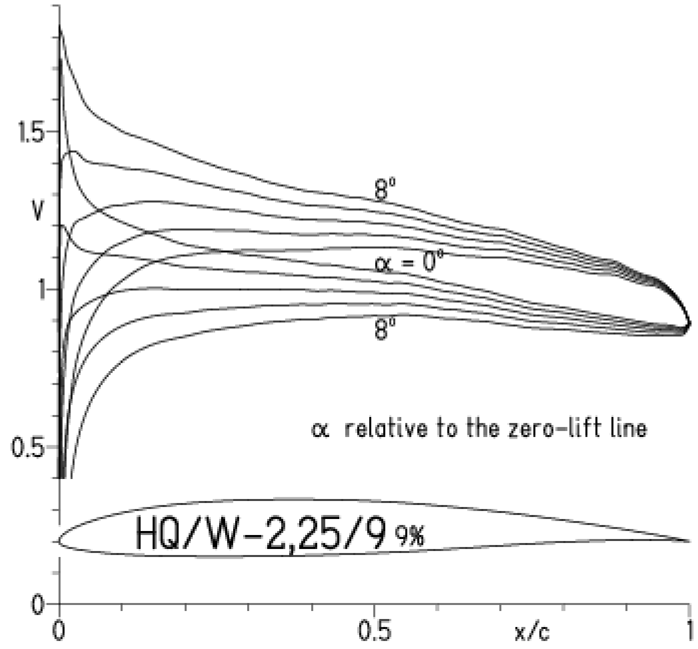


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

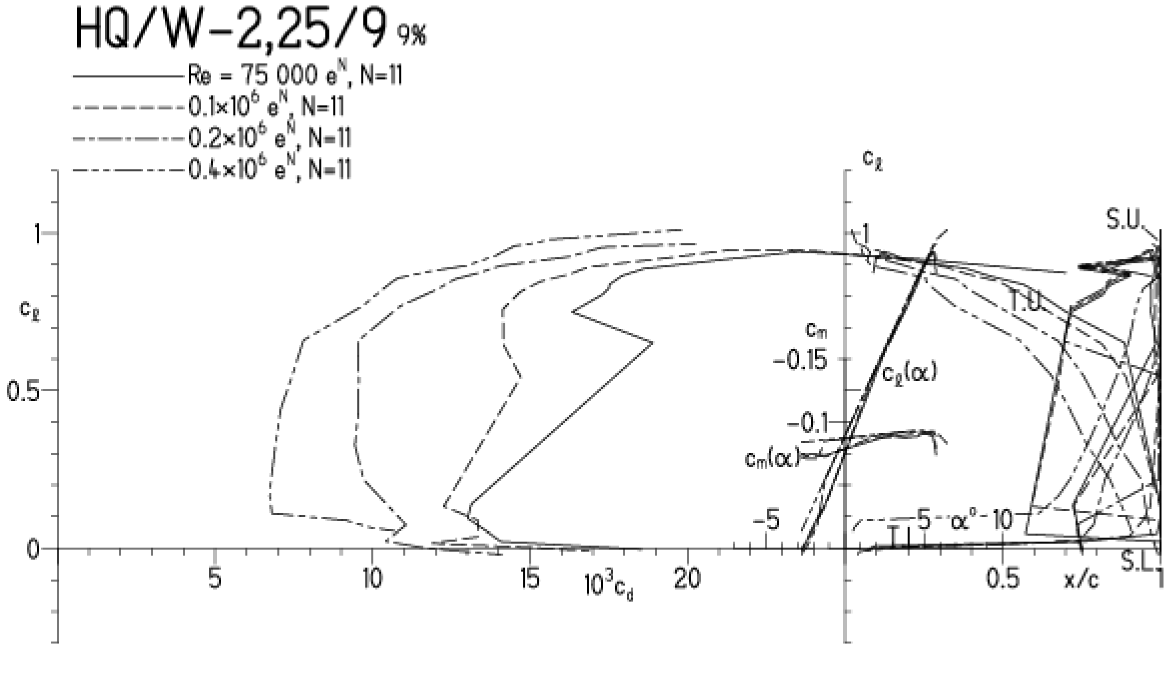


HQ/W-2,25/9, N=11

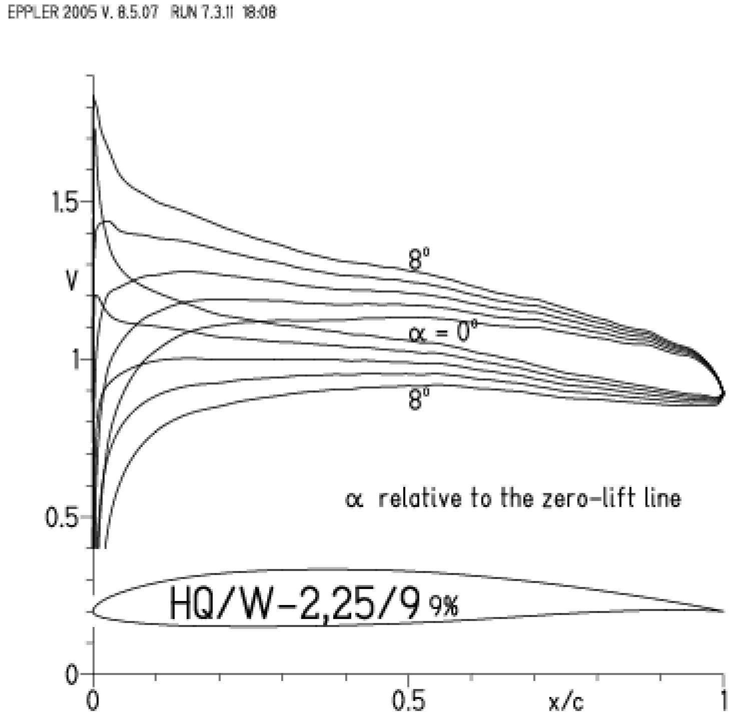
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

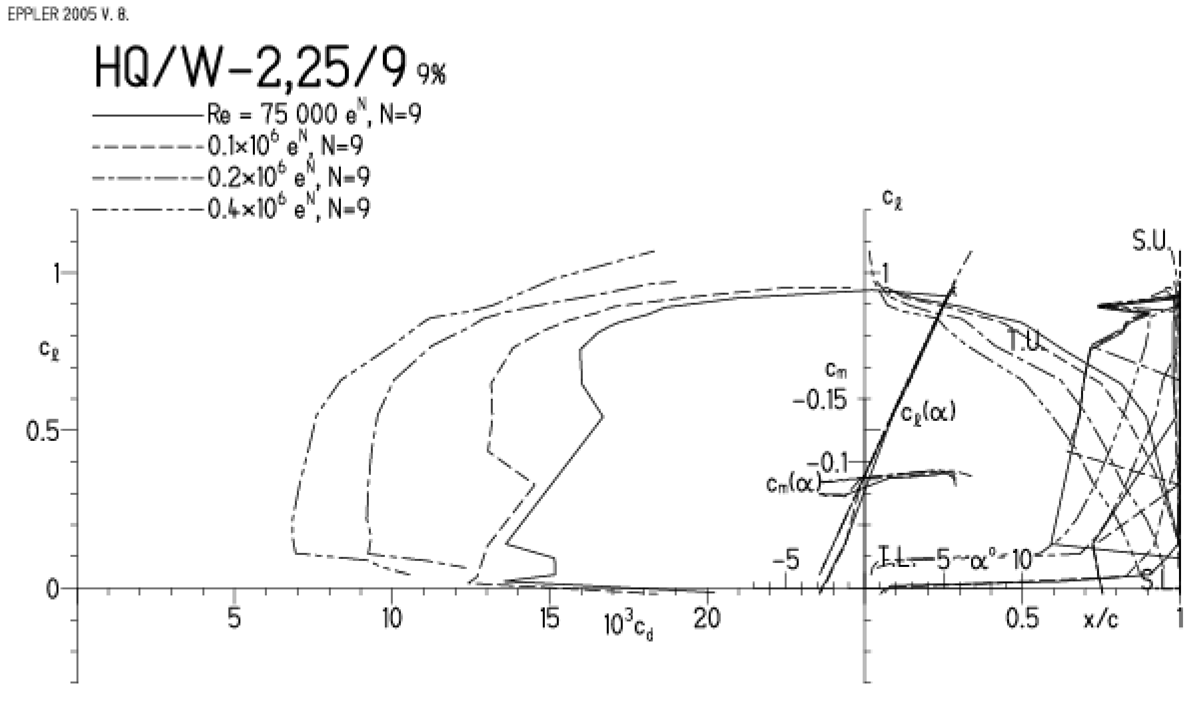


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

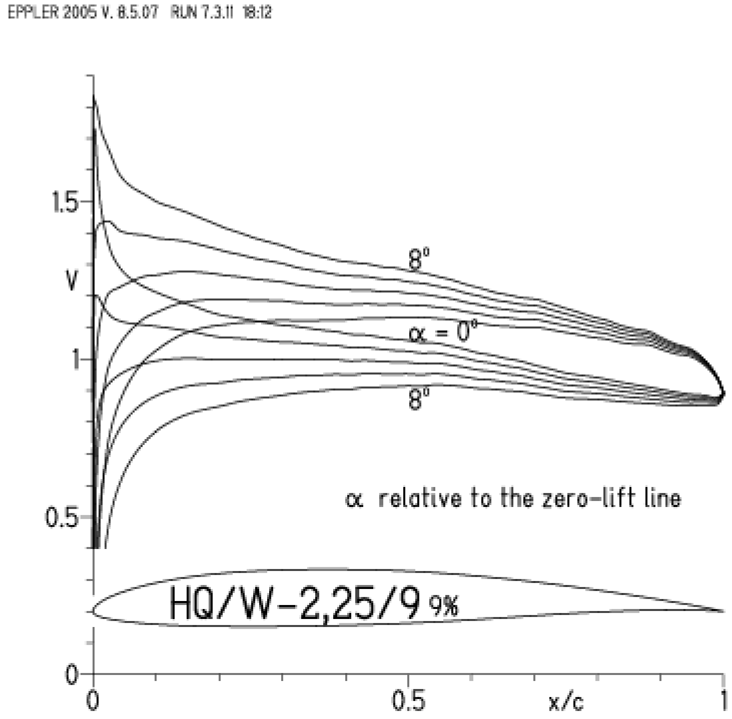


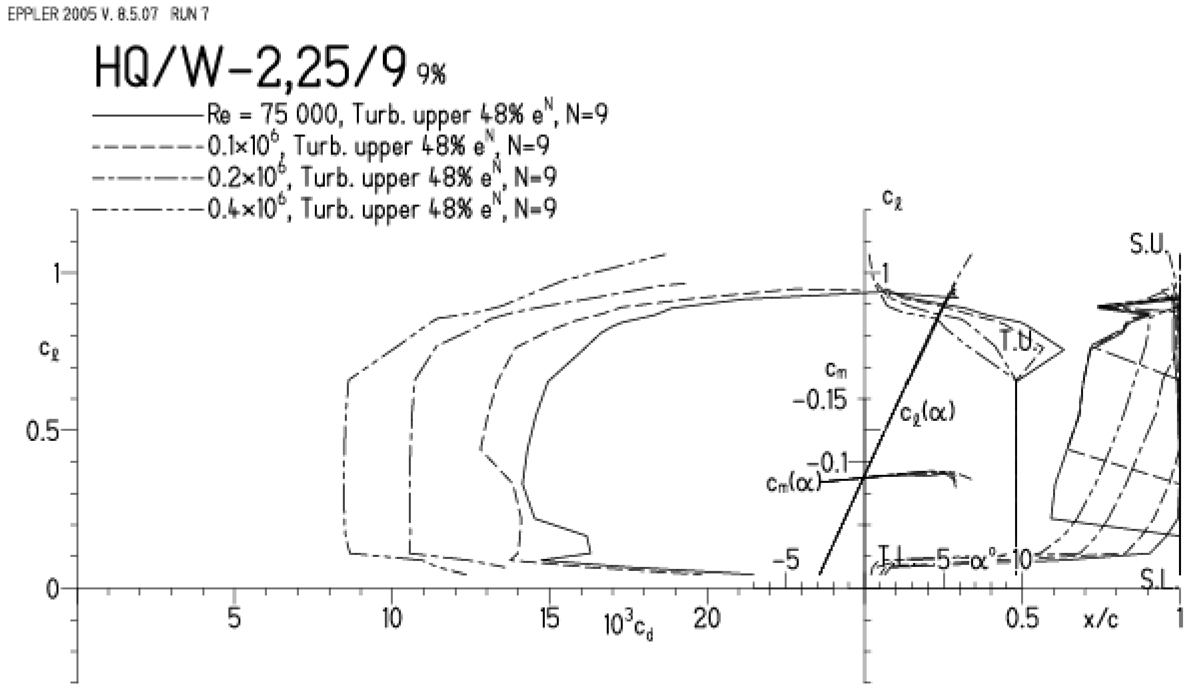
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10³c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

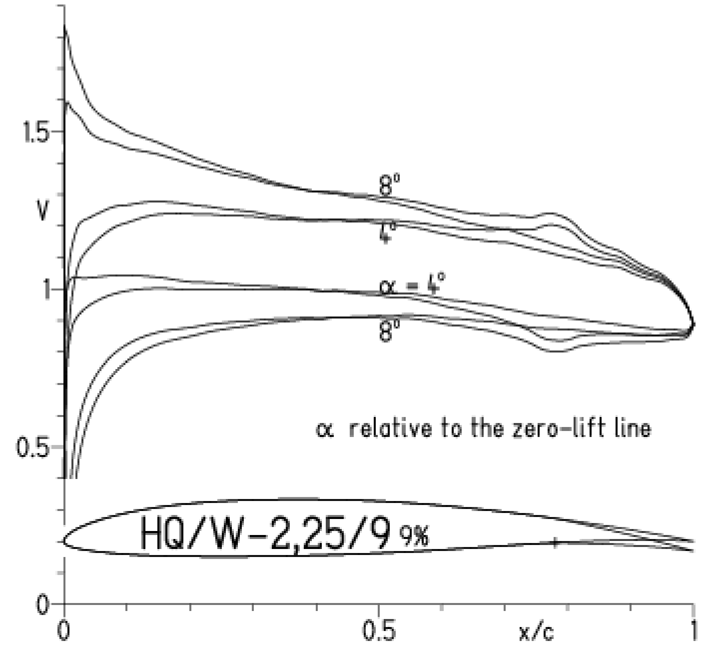
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



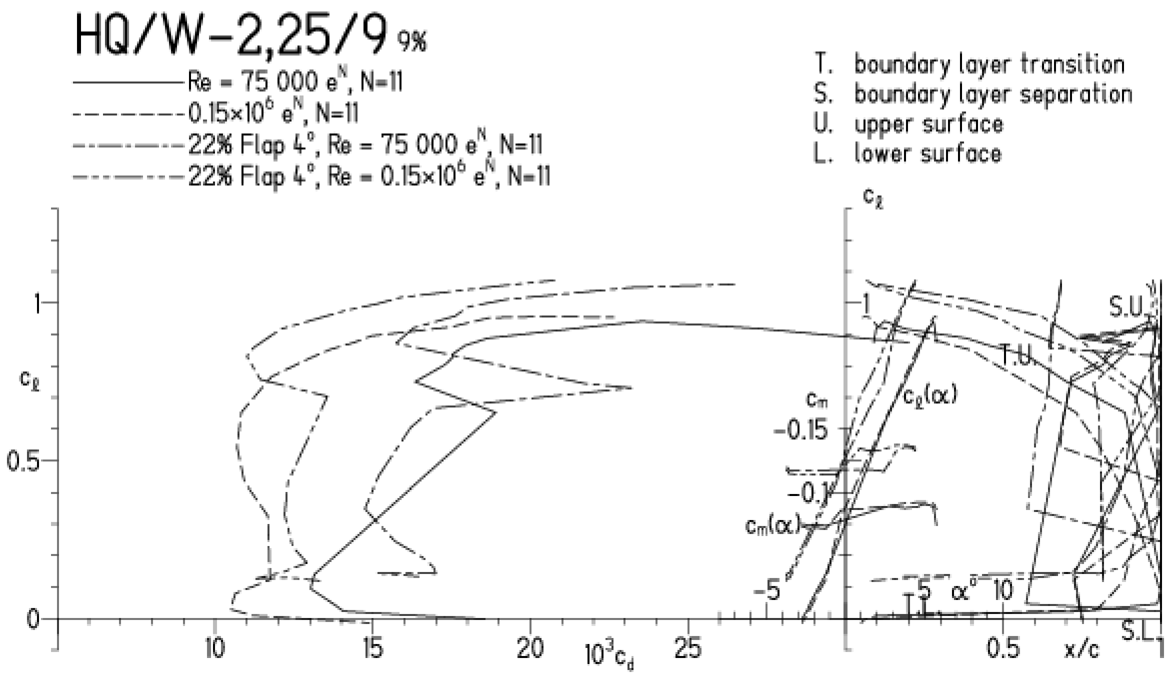


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

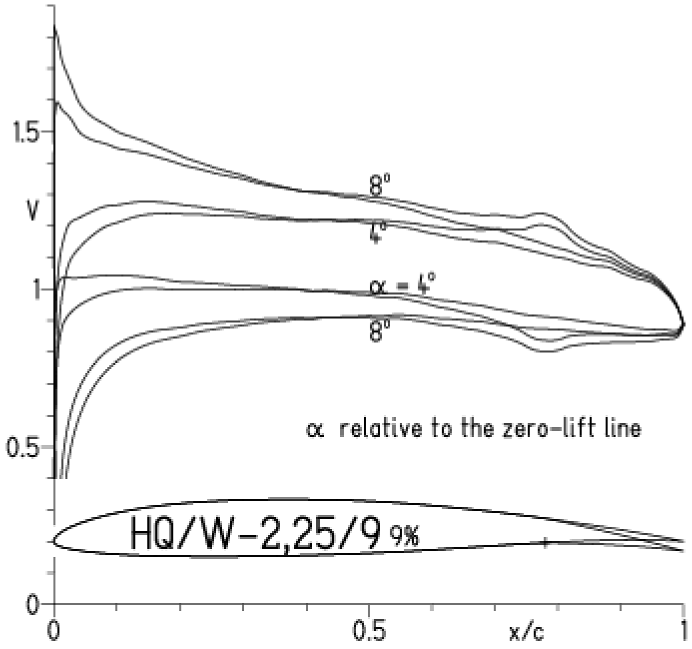


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

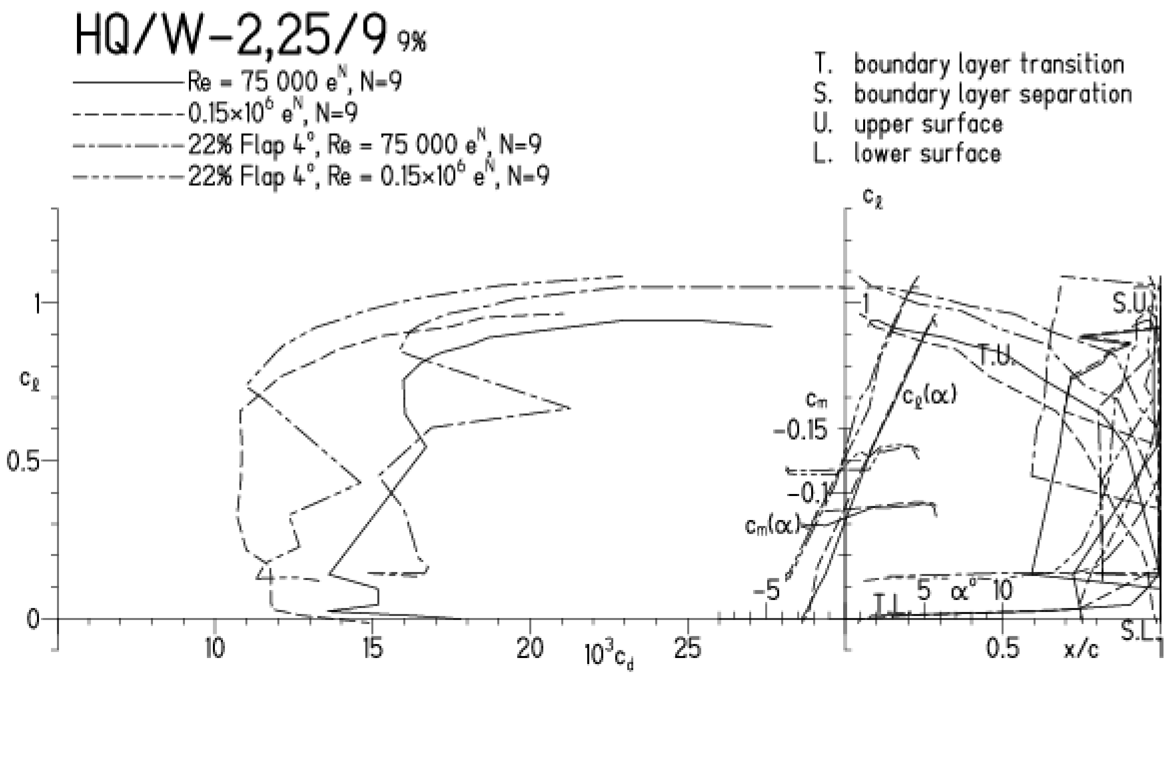


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

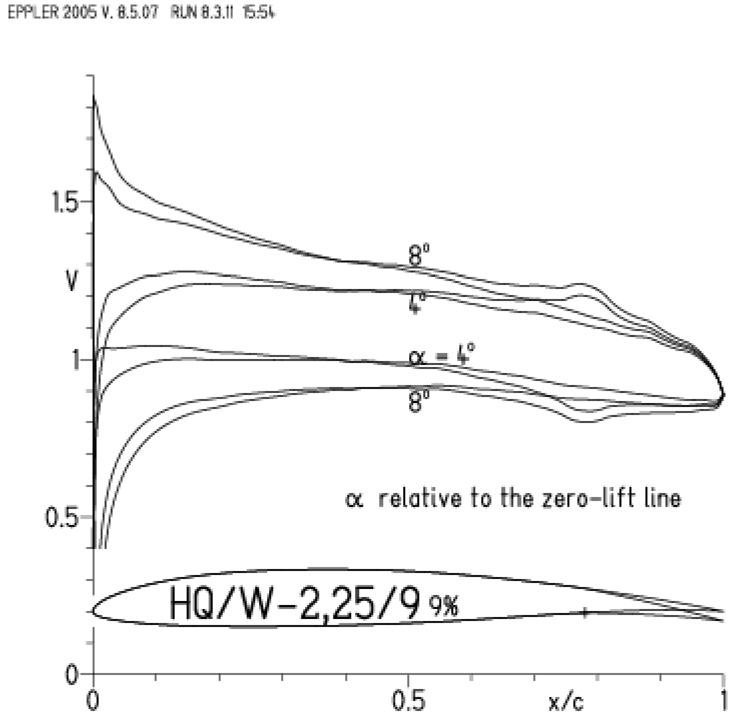
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

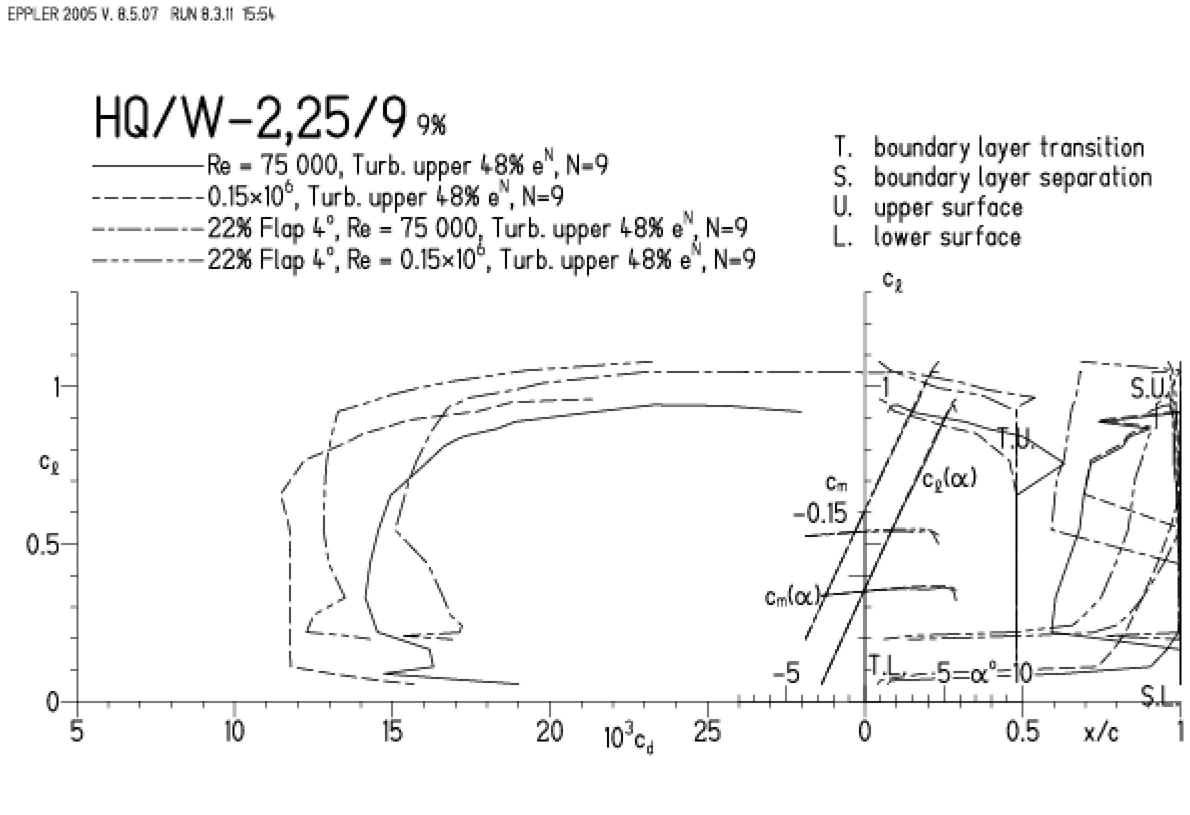


EPPLER 2005 V. 8.5.07 RUN 8.3.1



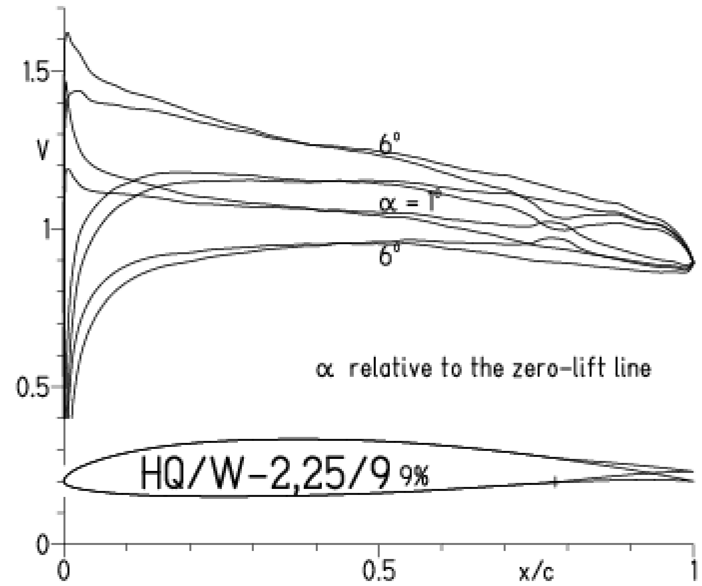
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



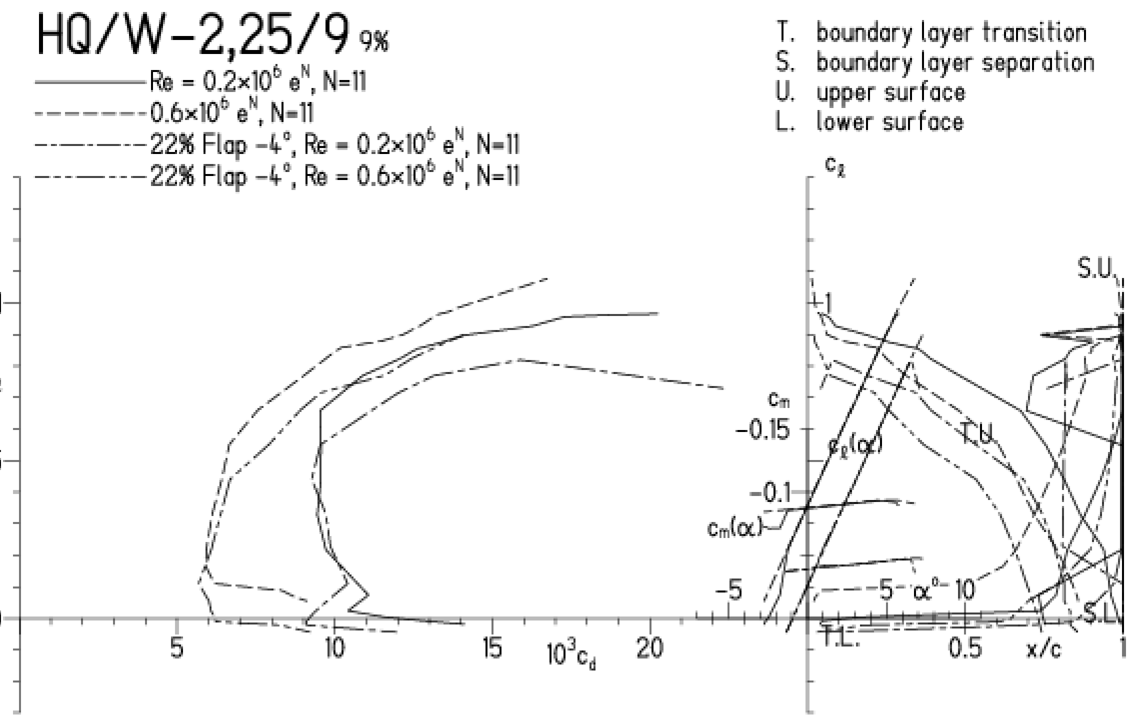


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

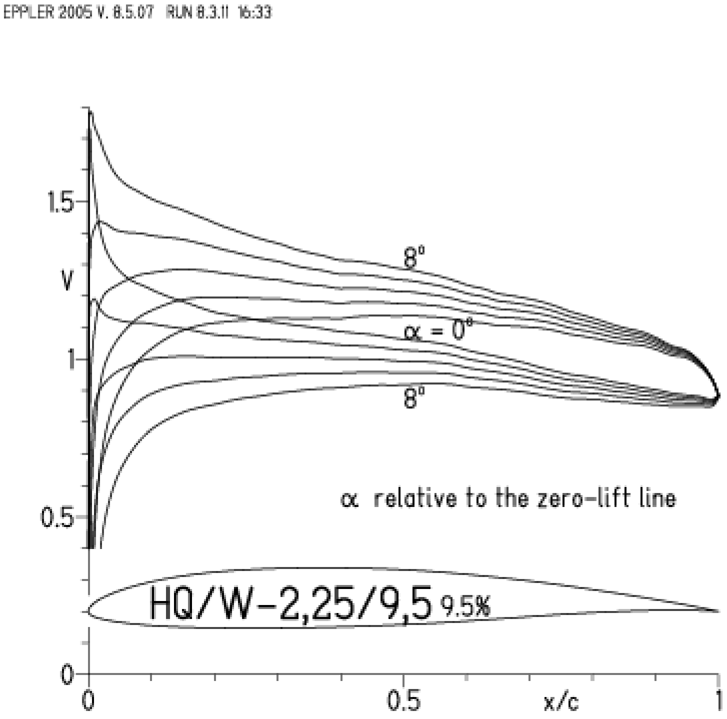
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

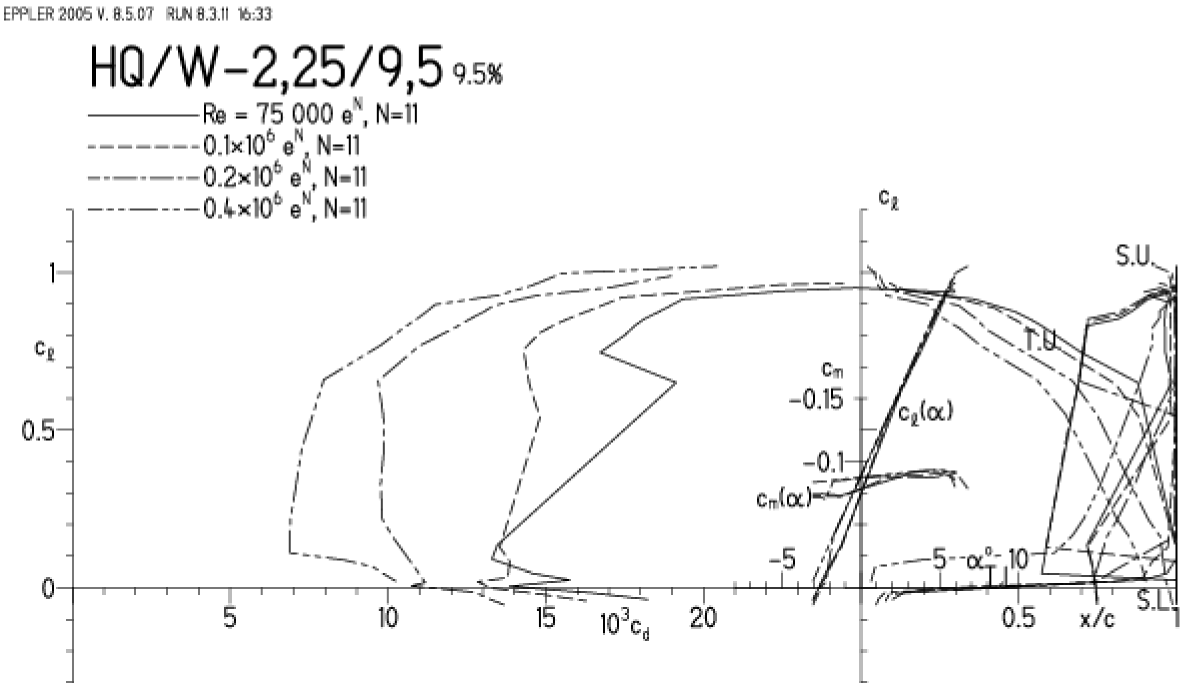


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

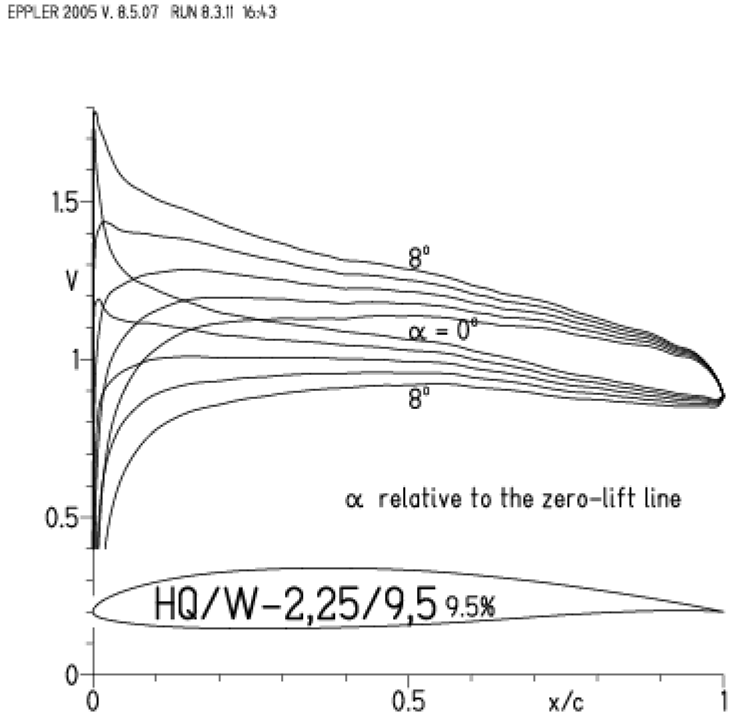


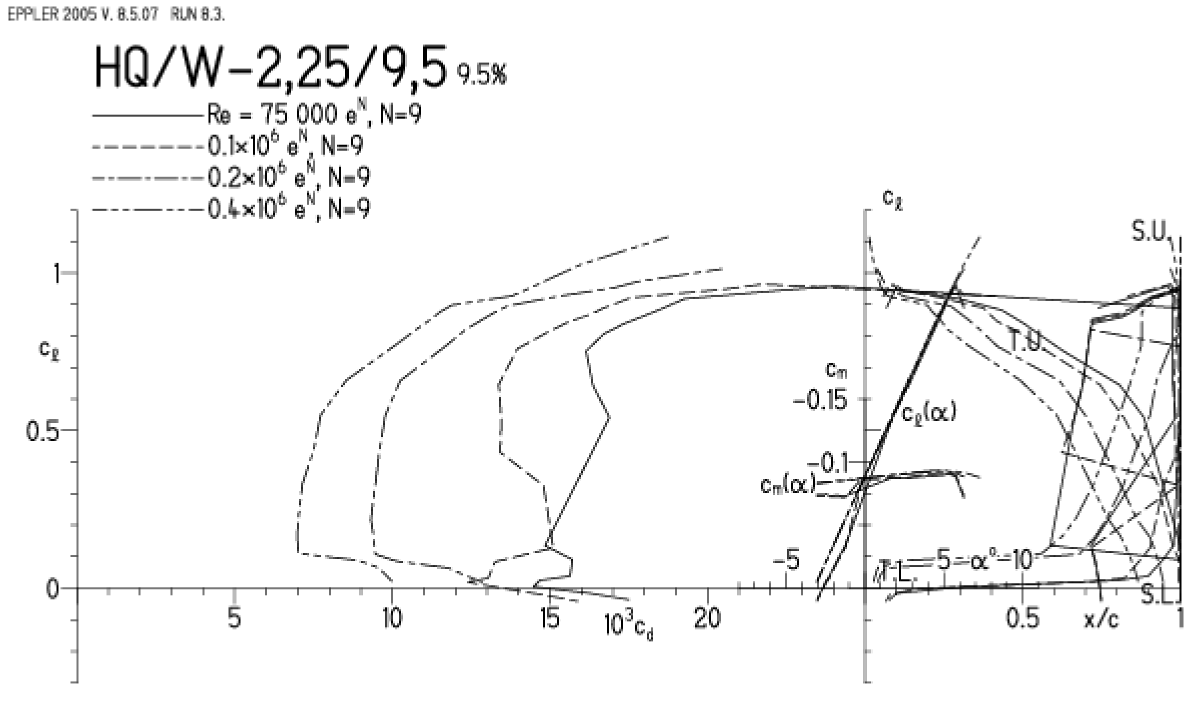
HQ/W-2,25/9,5, N=11



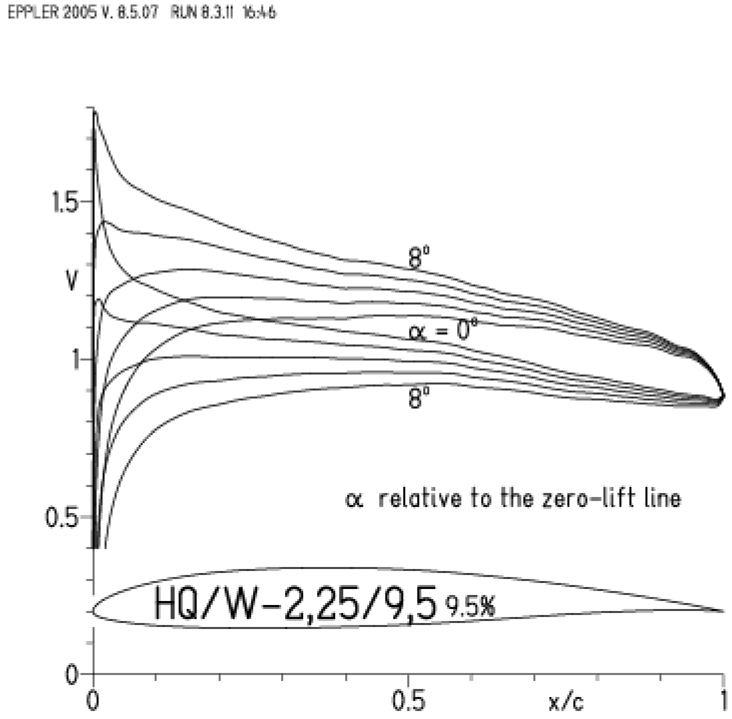


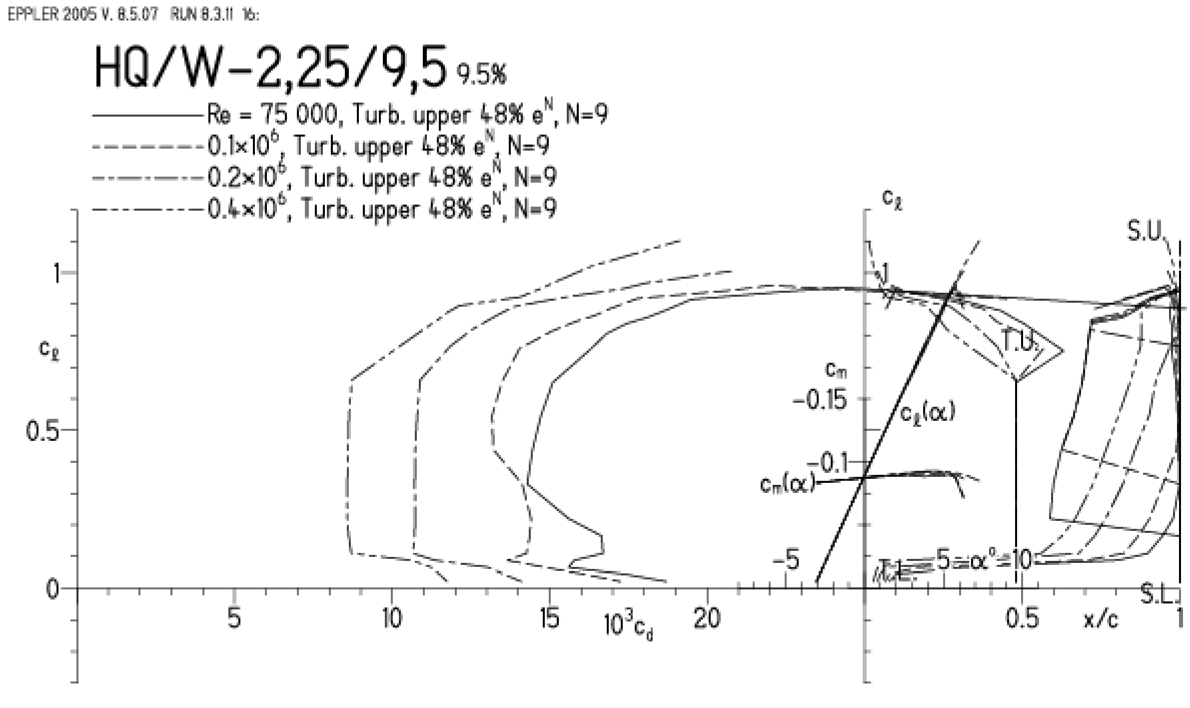
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

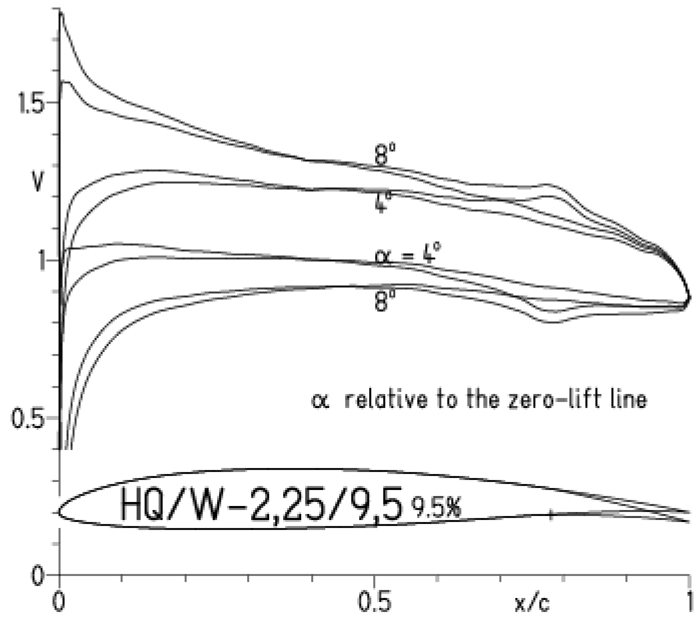
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



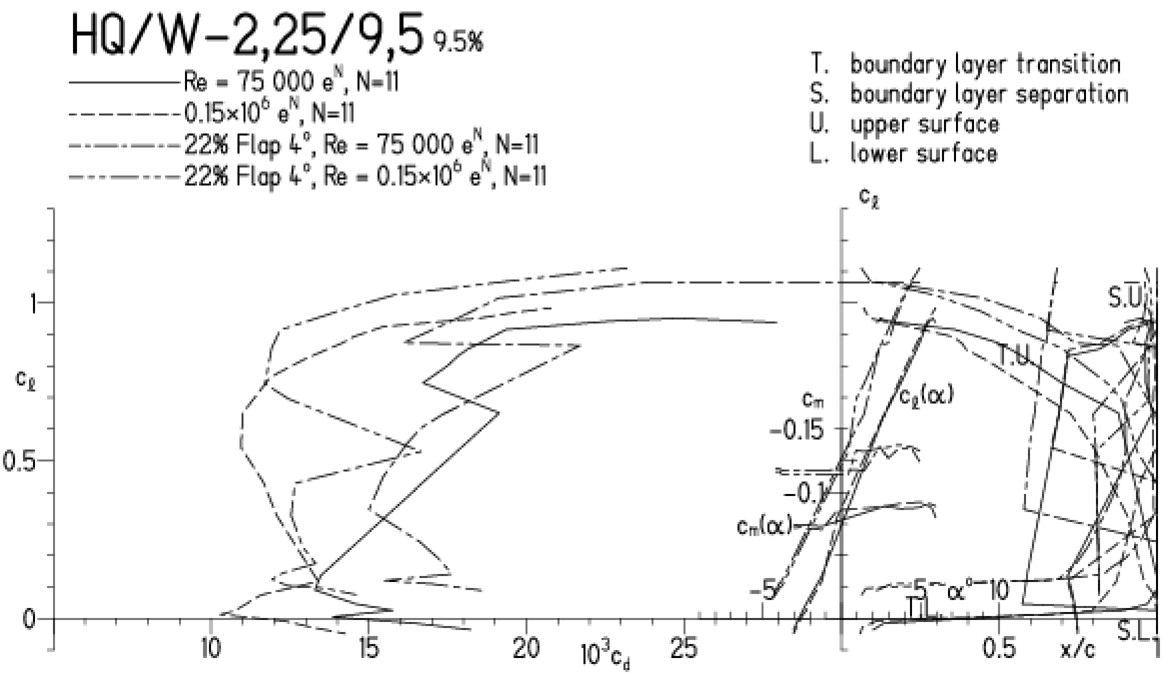


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

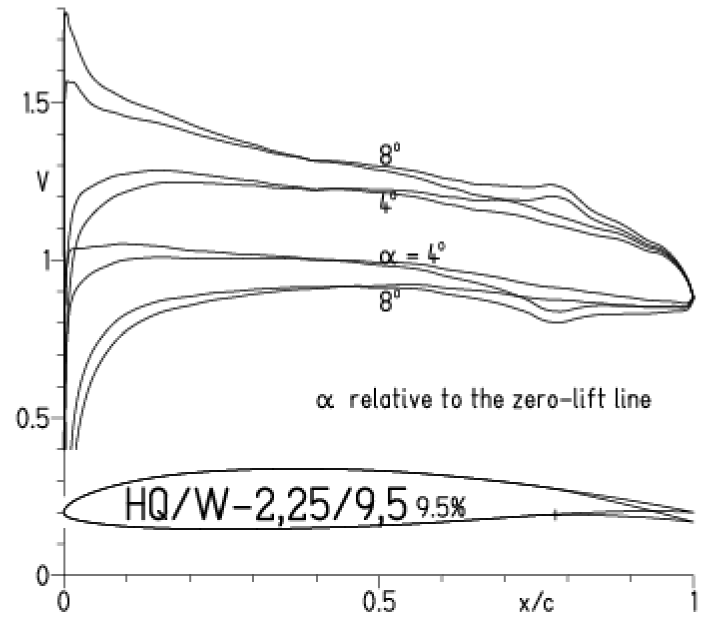


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

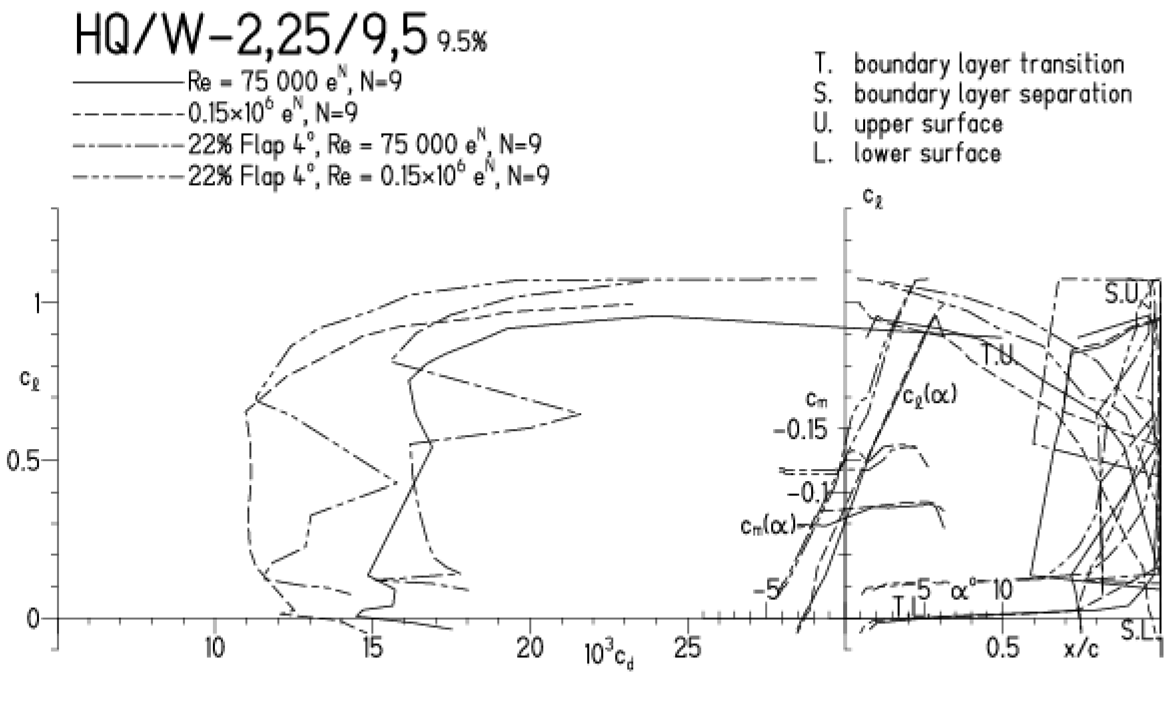


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

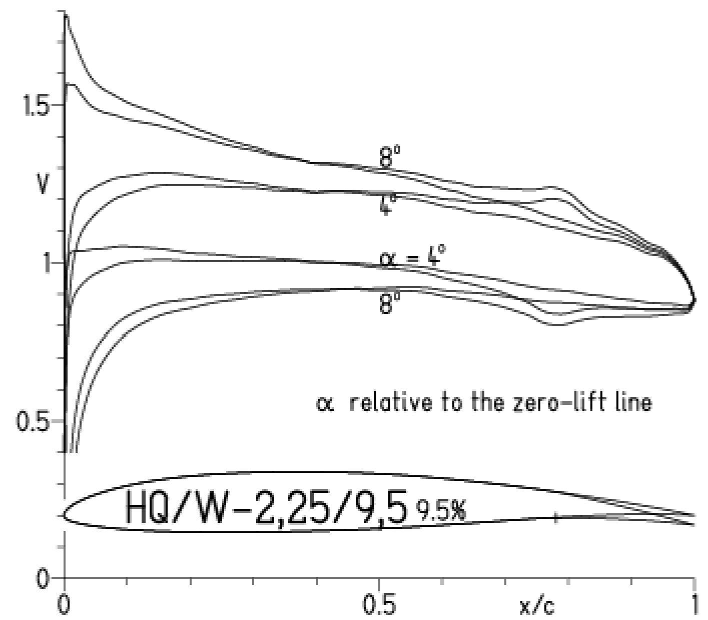


EPPLER 2005 V. 8.5.07 R

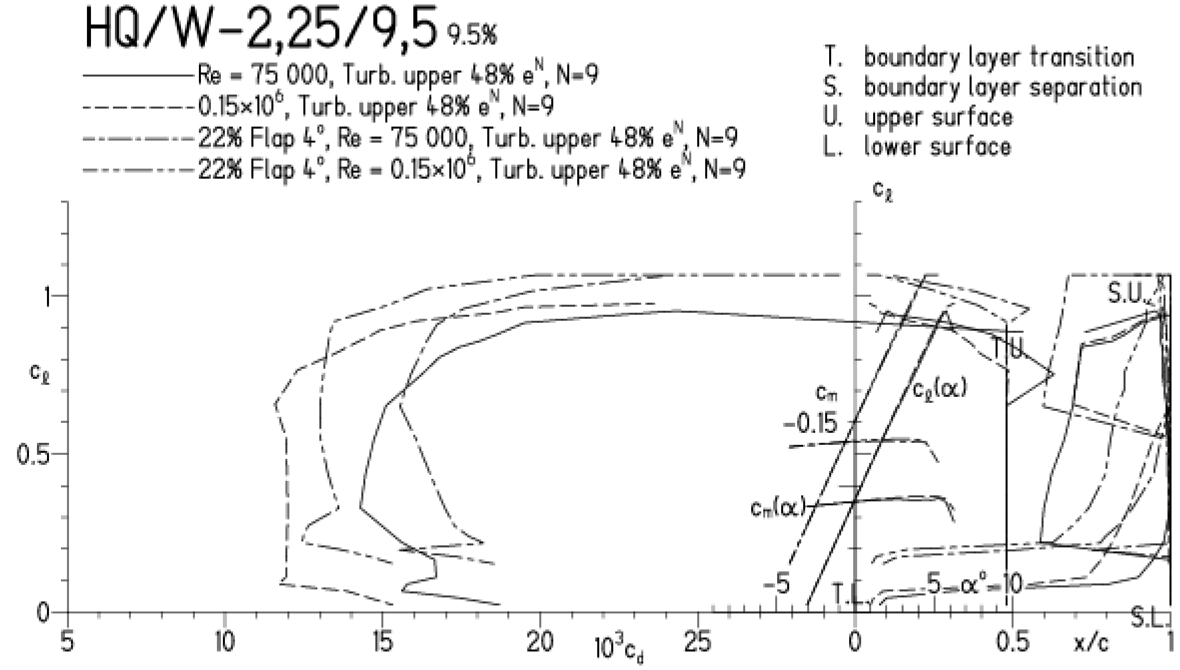


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

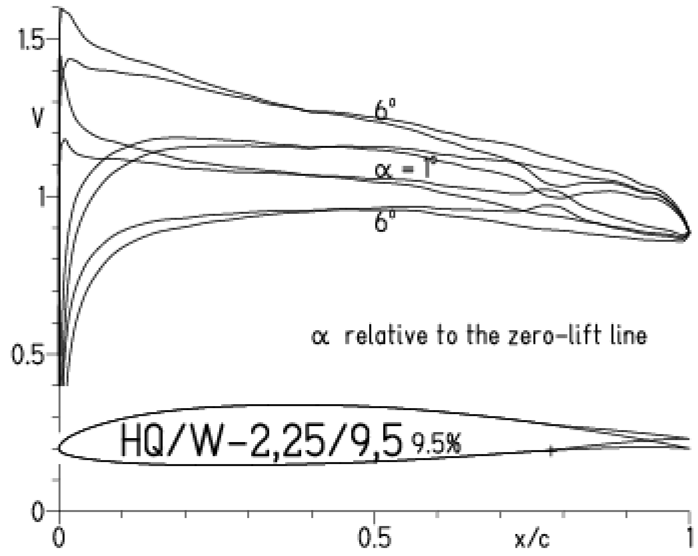


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

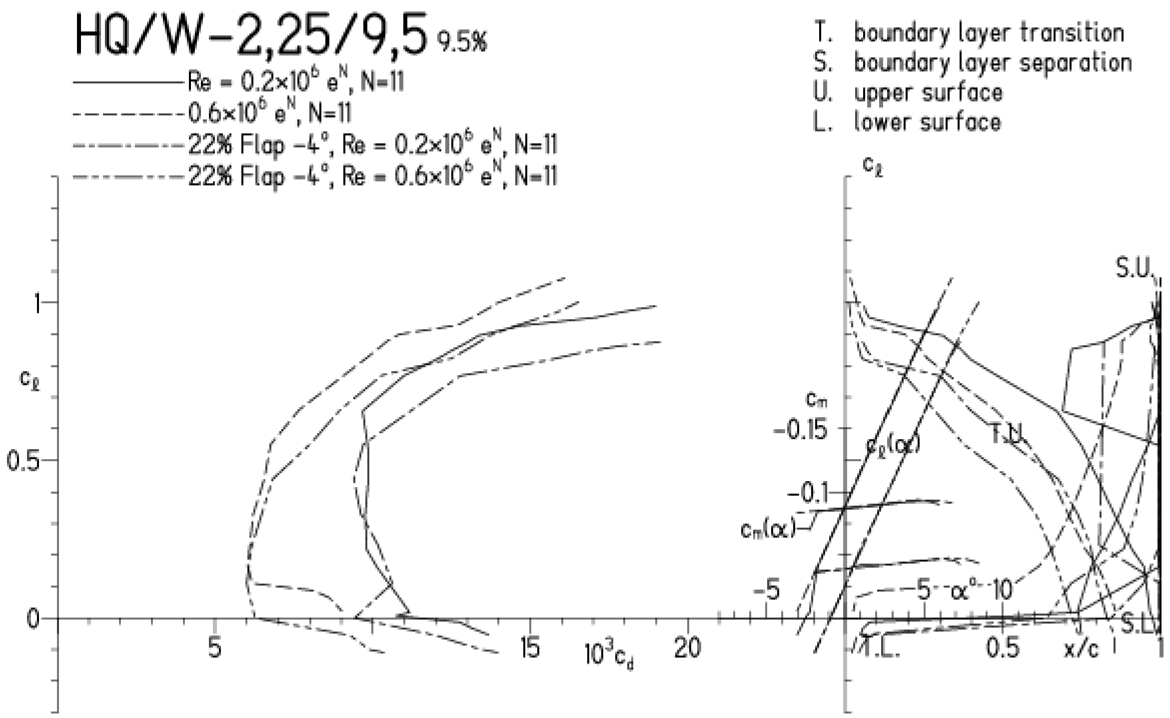


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

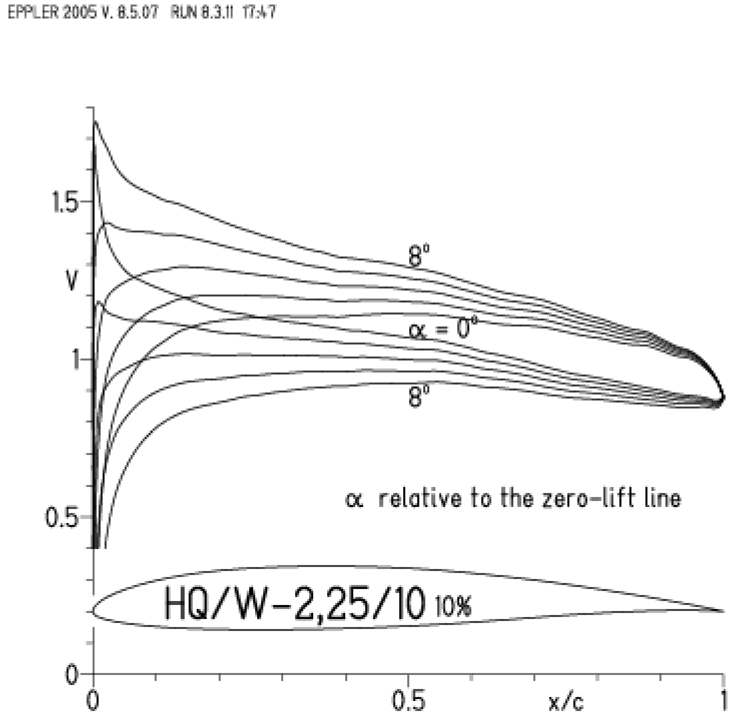
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

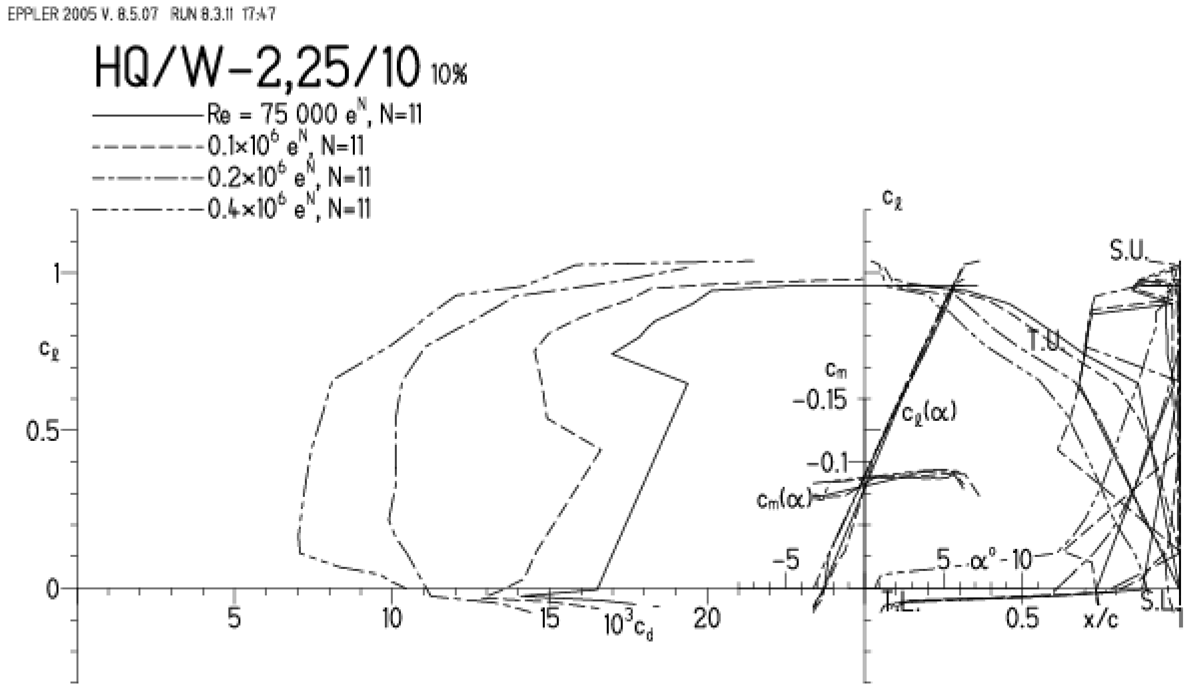


EPPLER 2005 V.

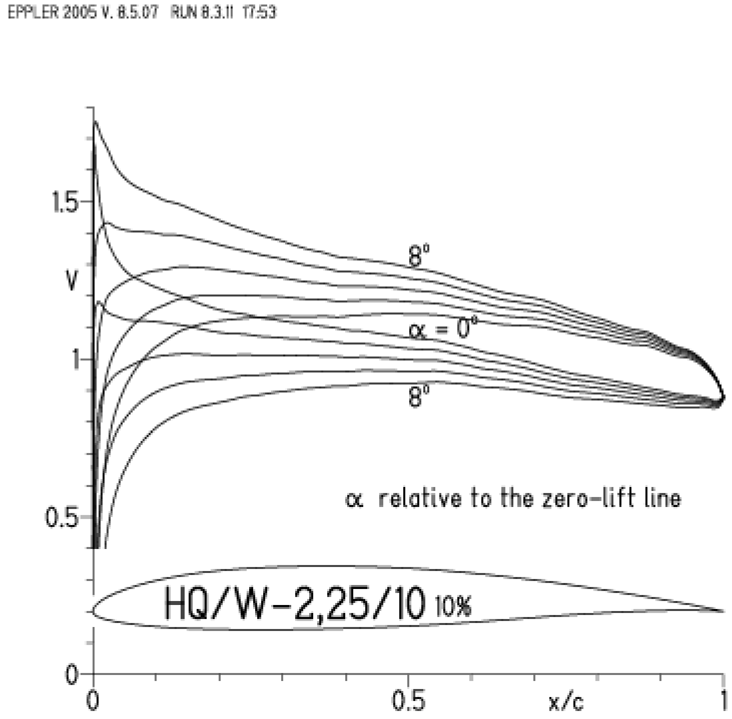


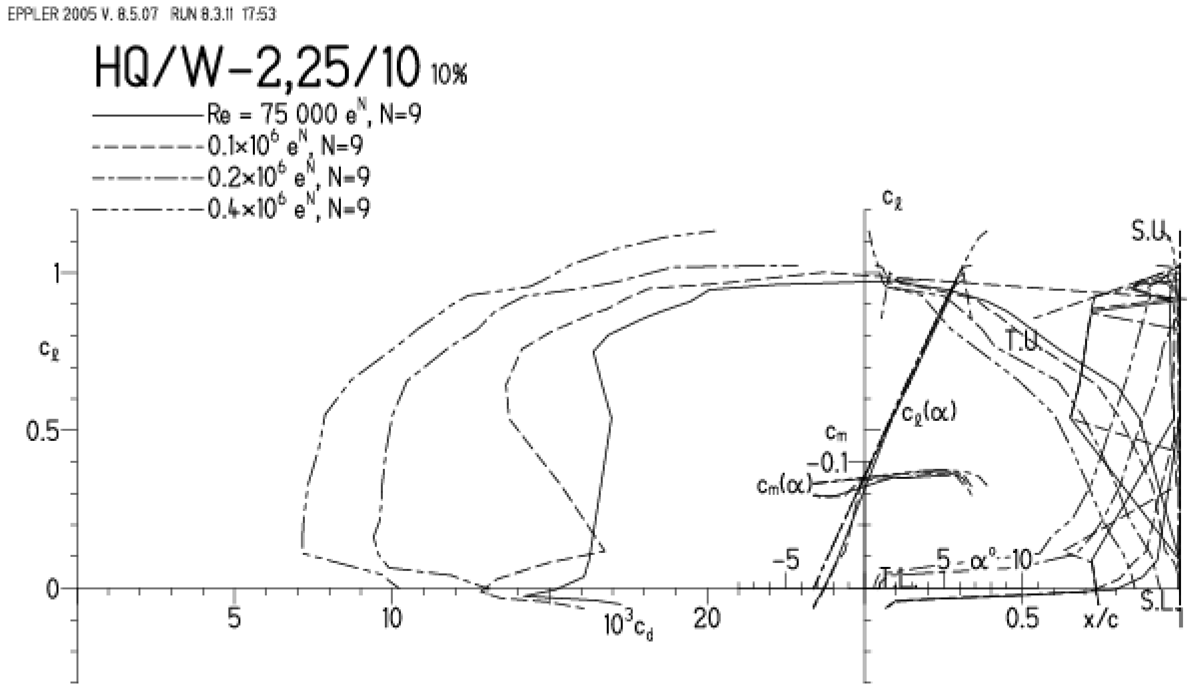
HQ/W-2,25/10, N=11



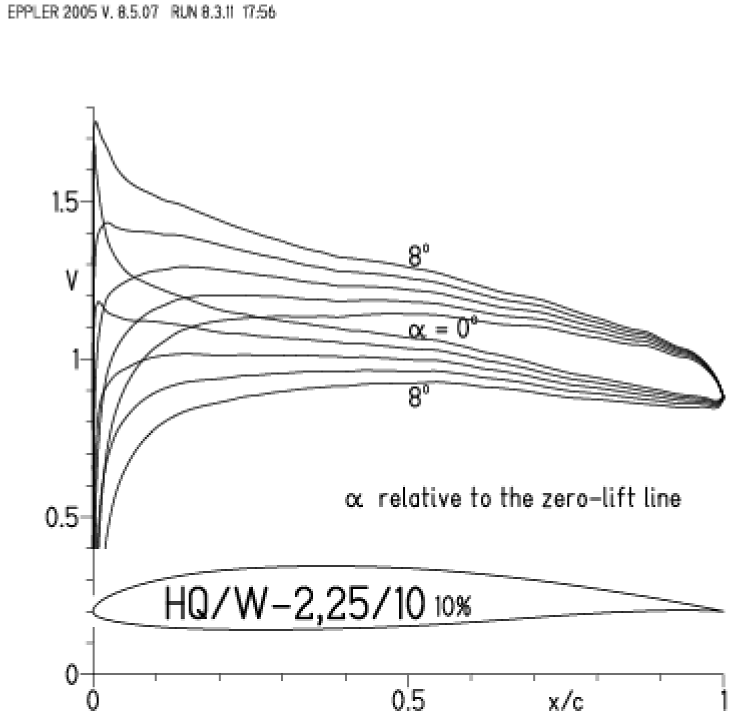


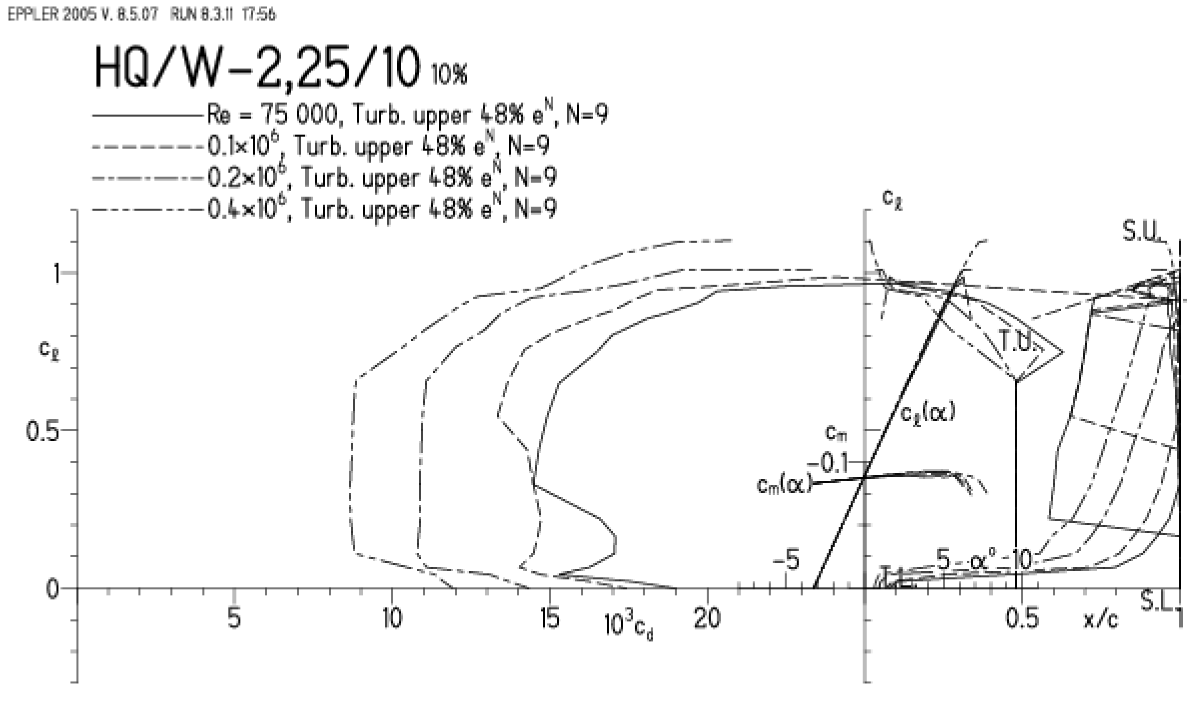
<u>HQ/W-2,25/10</u>, N=9





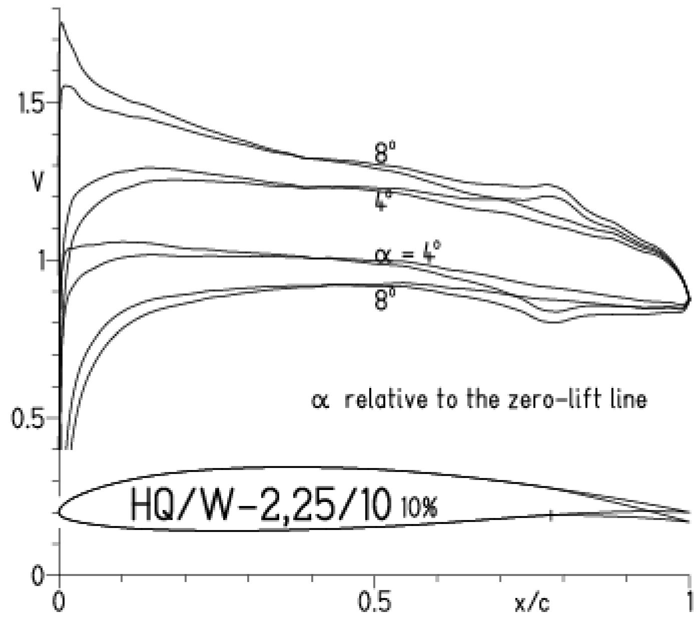
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



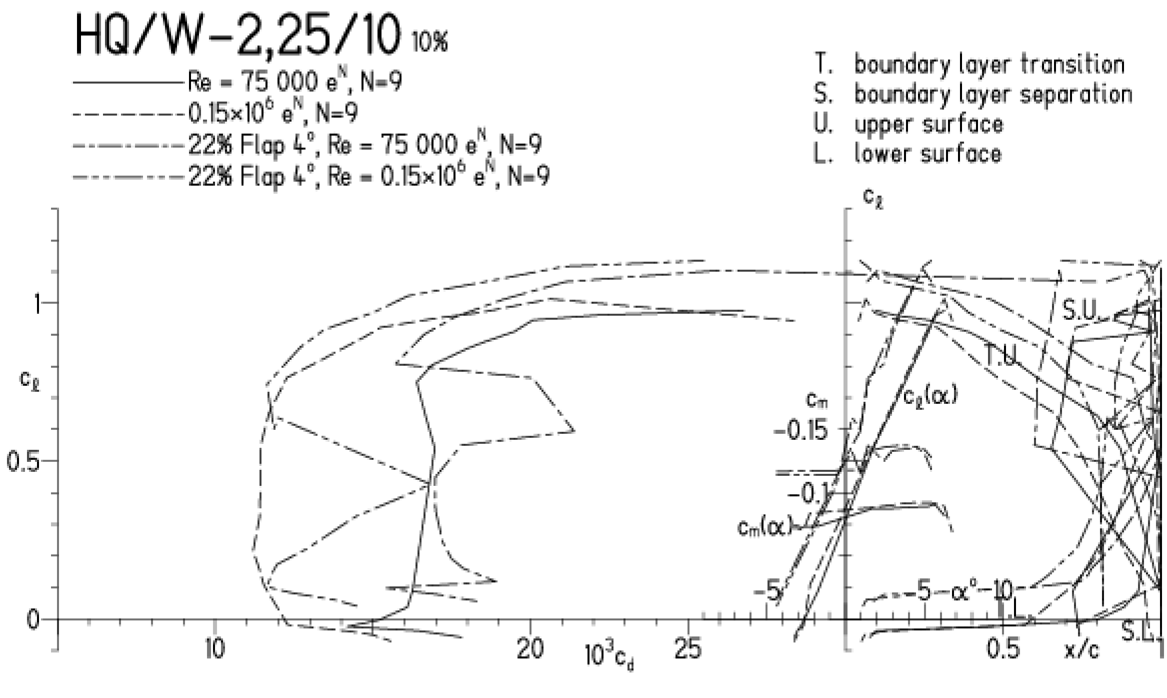


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

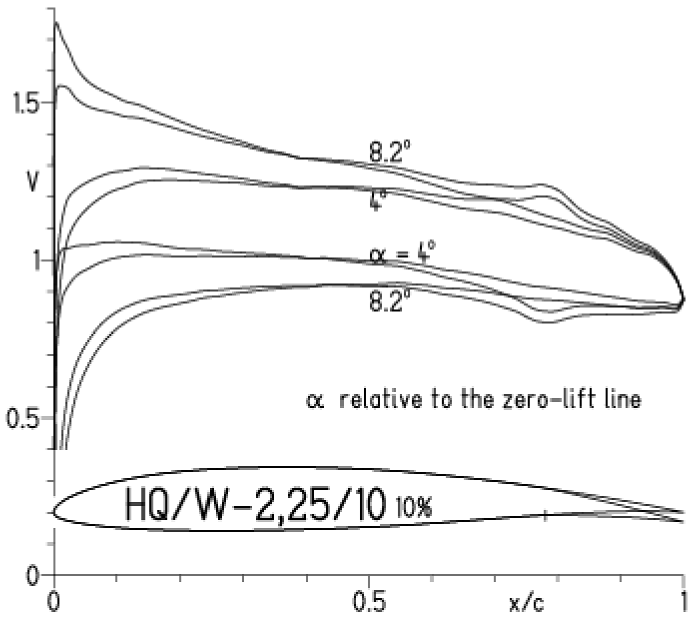


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

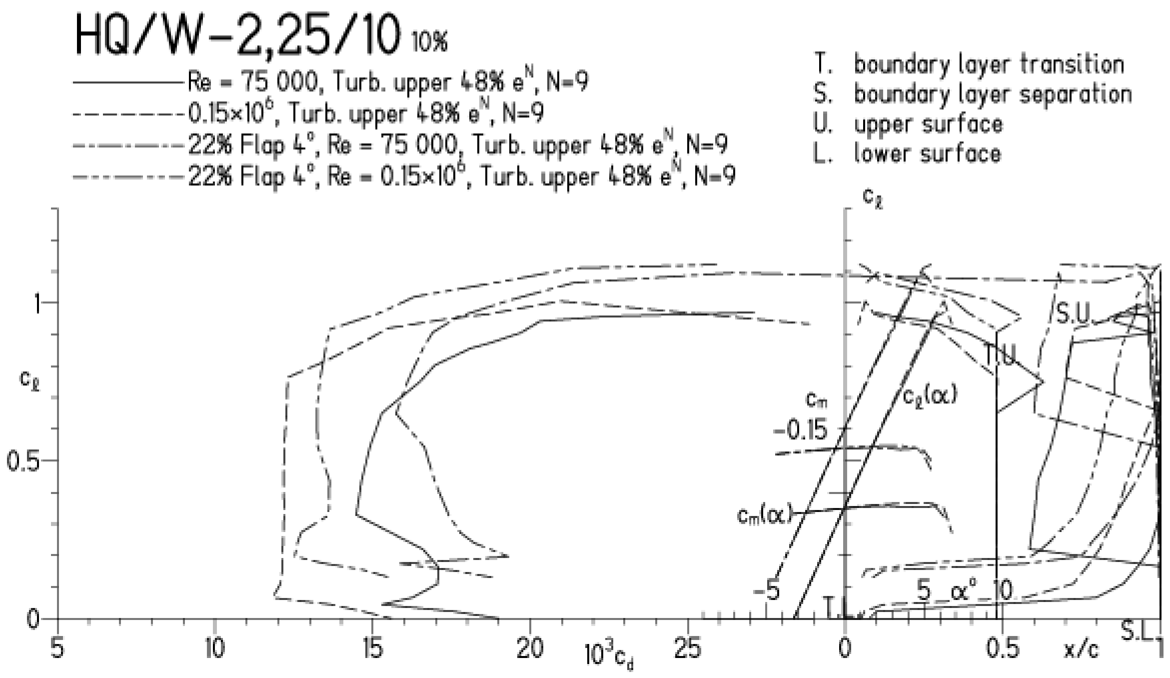


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

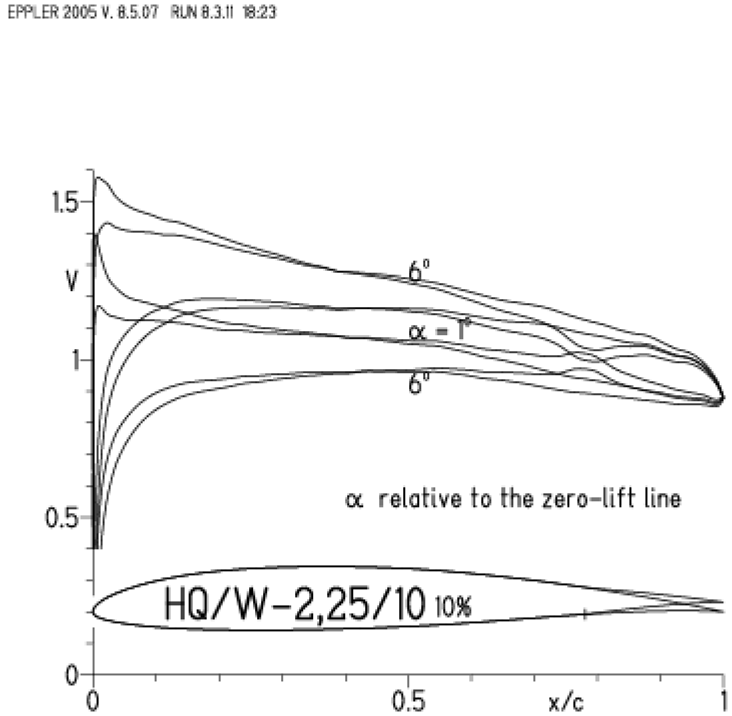
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

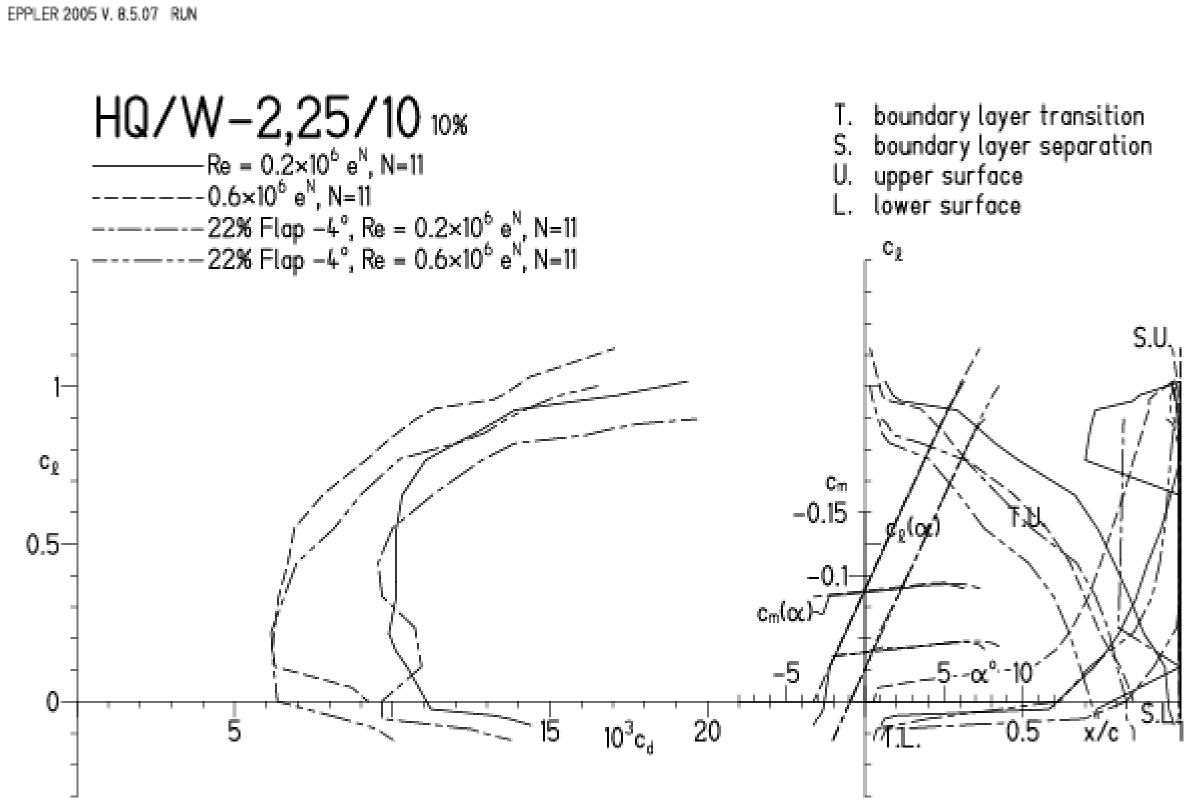


EPPLER 2005 V. 8.5.07 RUN 8.3



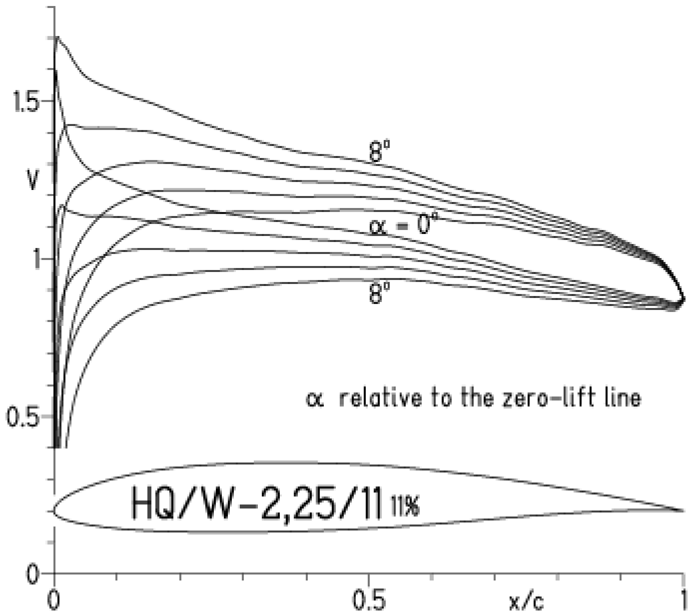
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



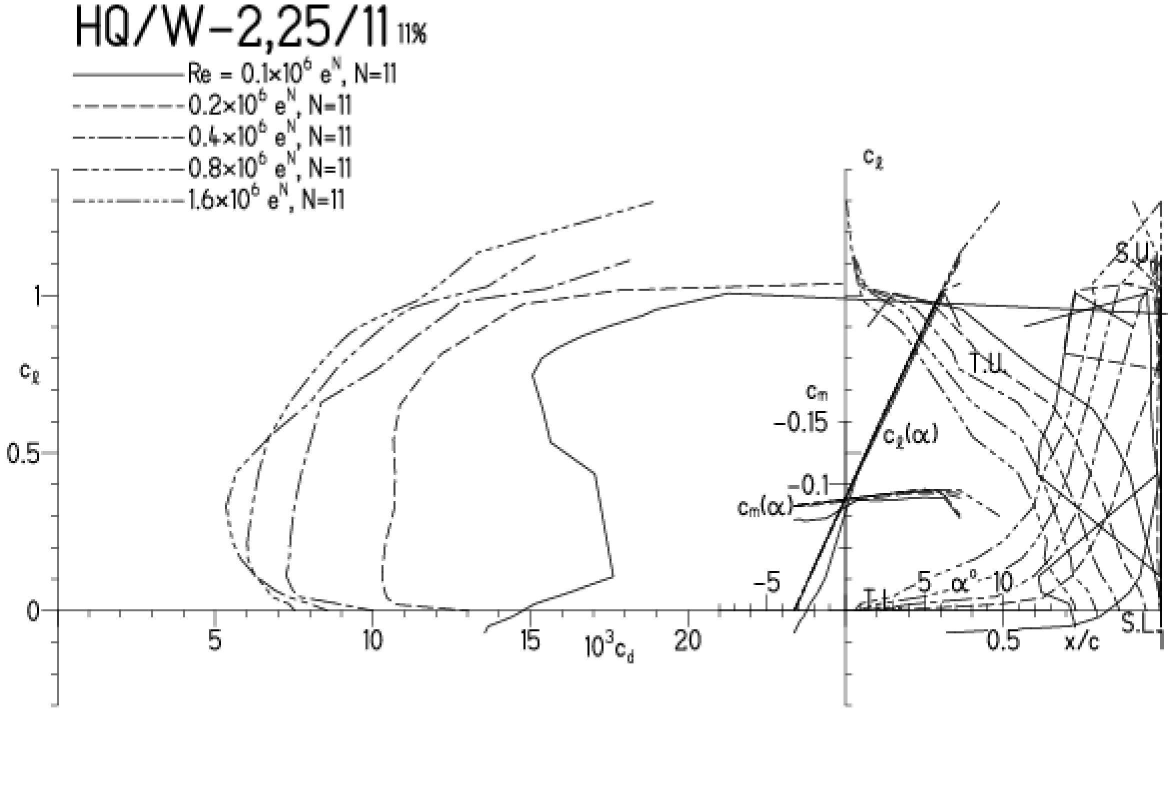


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

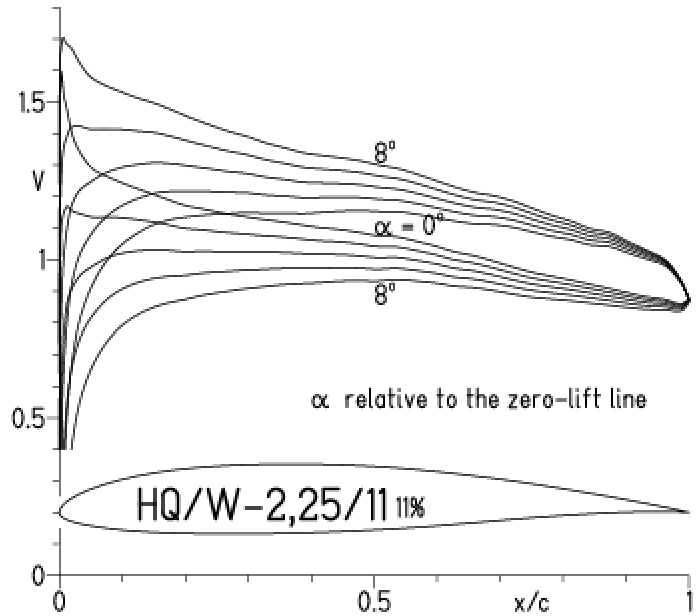


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

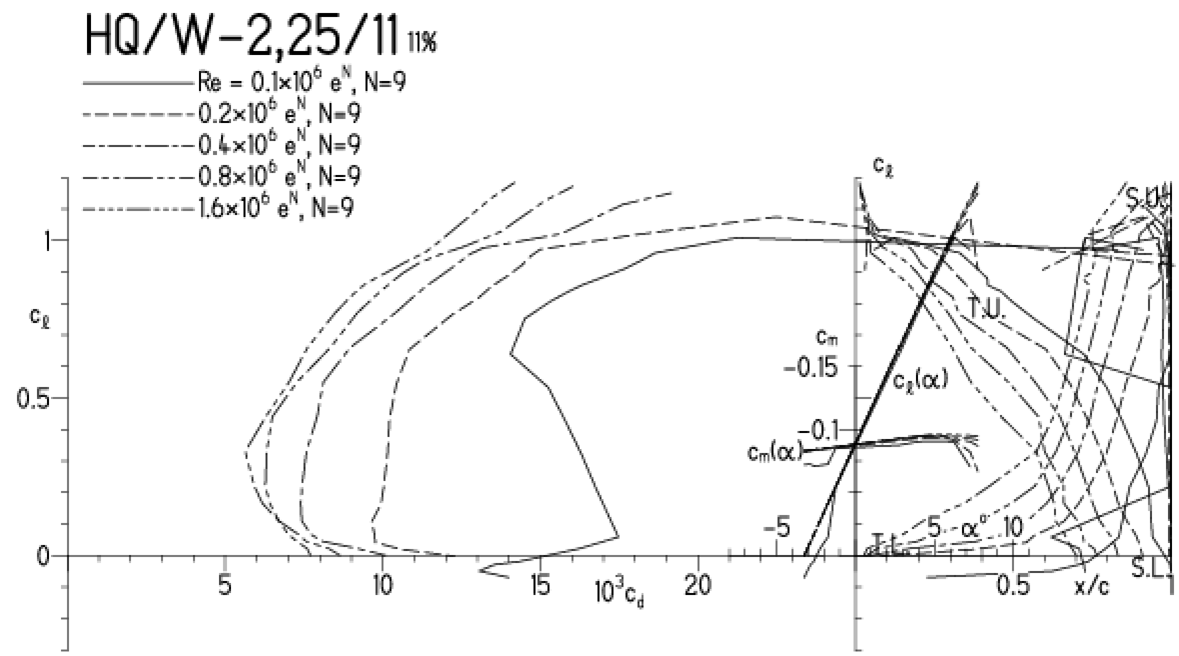


<u>HQQ/W-2,25/11</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

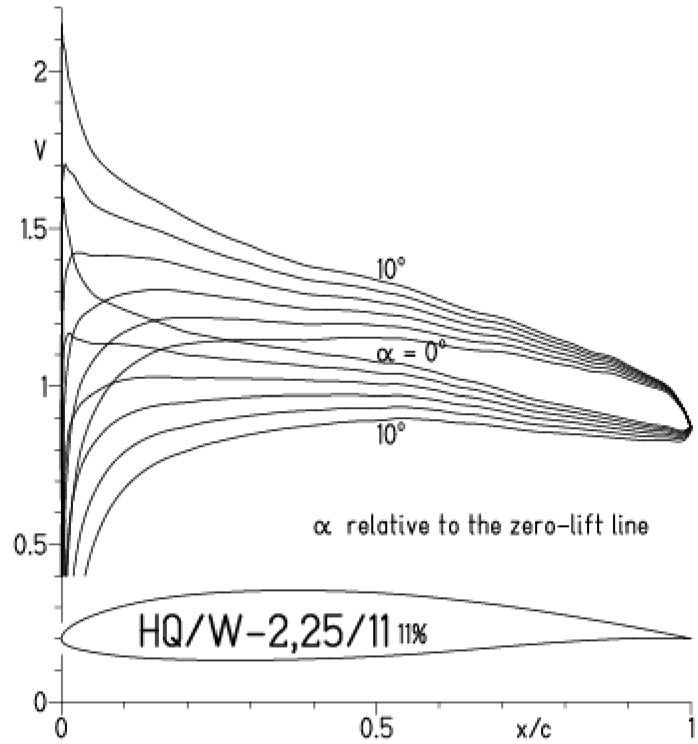


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

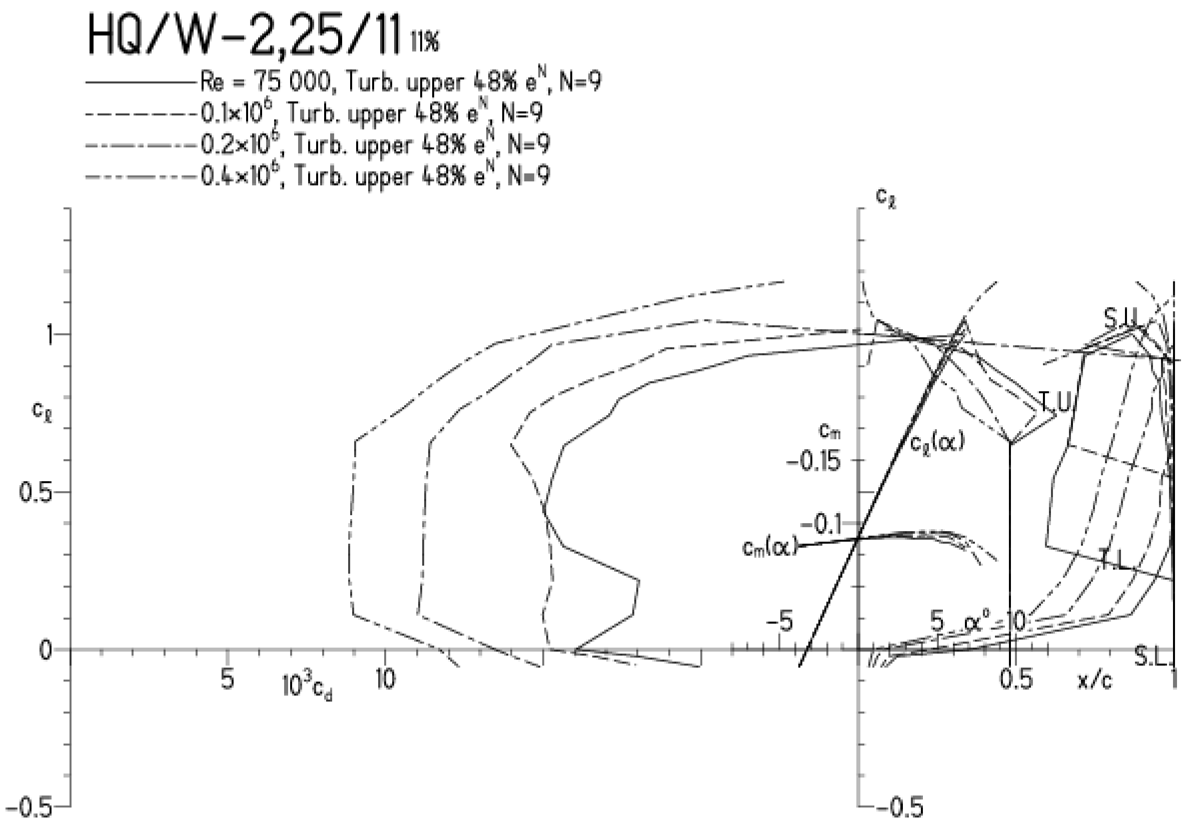


HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

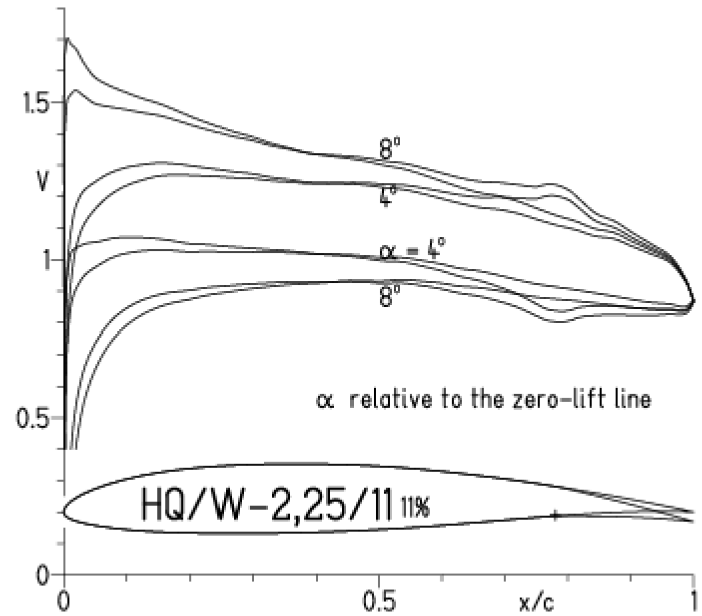


EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

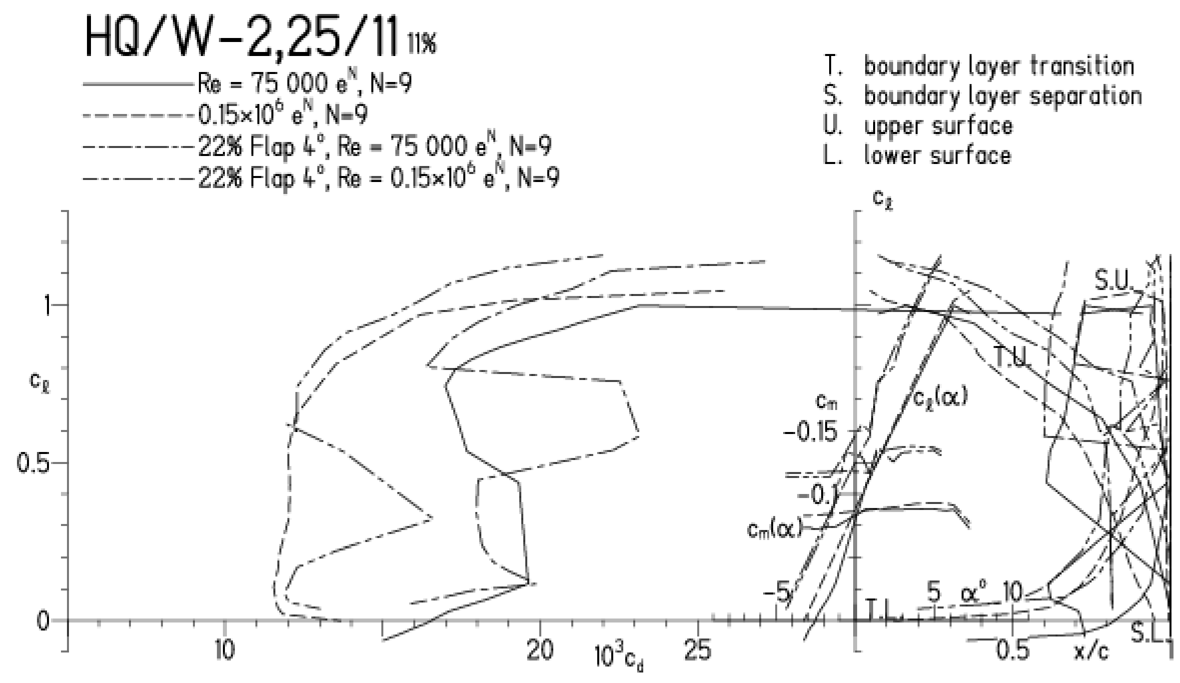


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

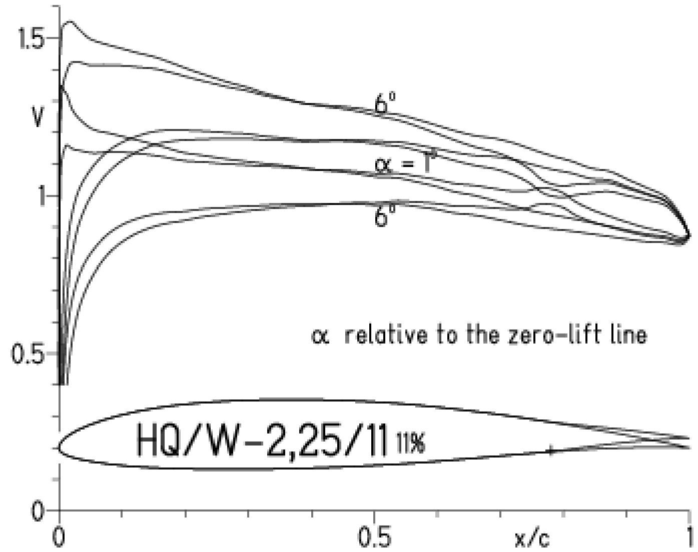


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

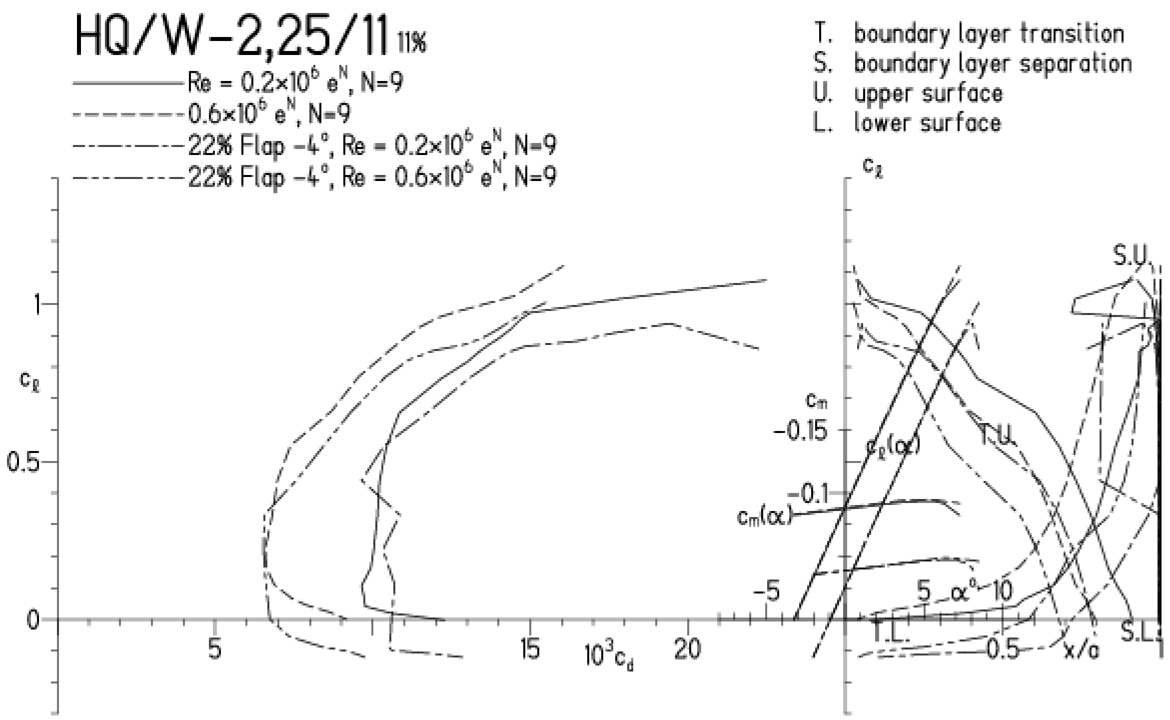


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

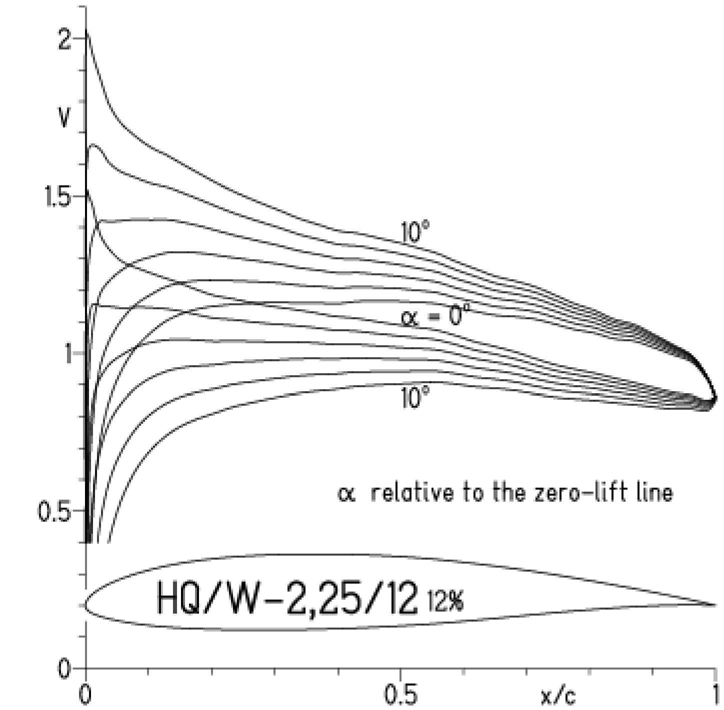


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

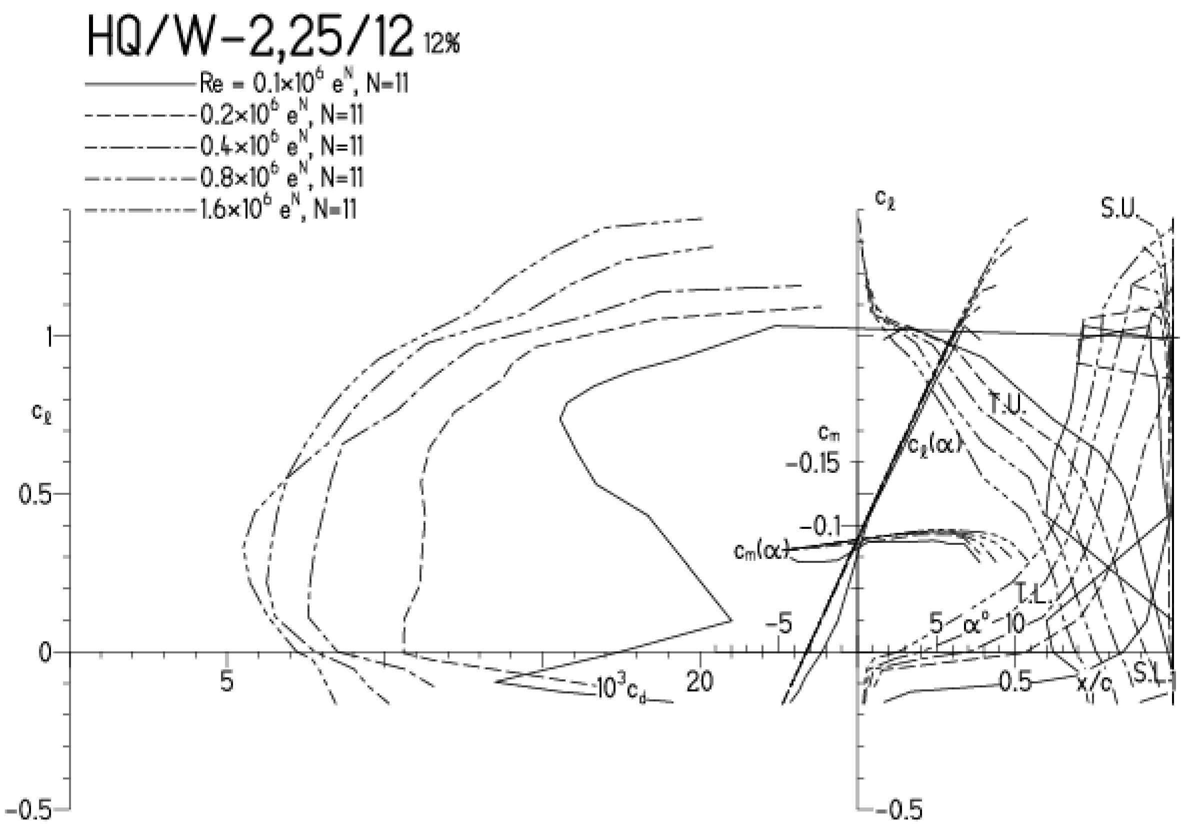


<u>HQ/W-2,25/12</u>, N=11

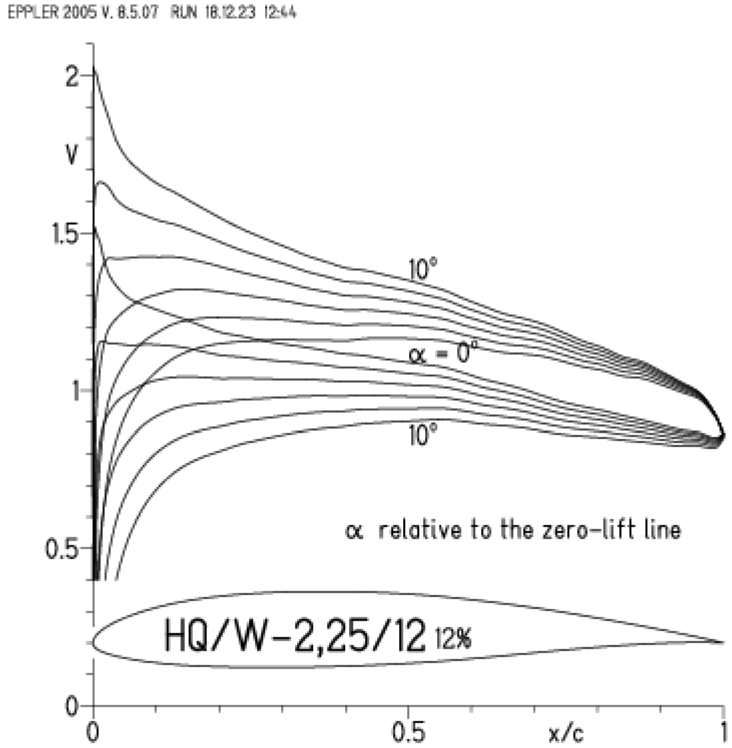
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32



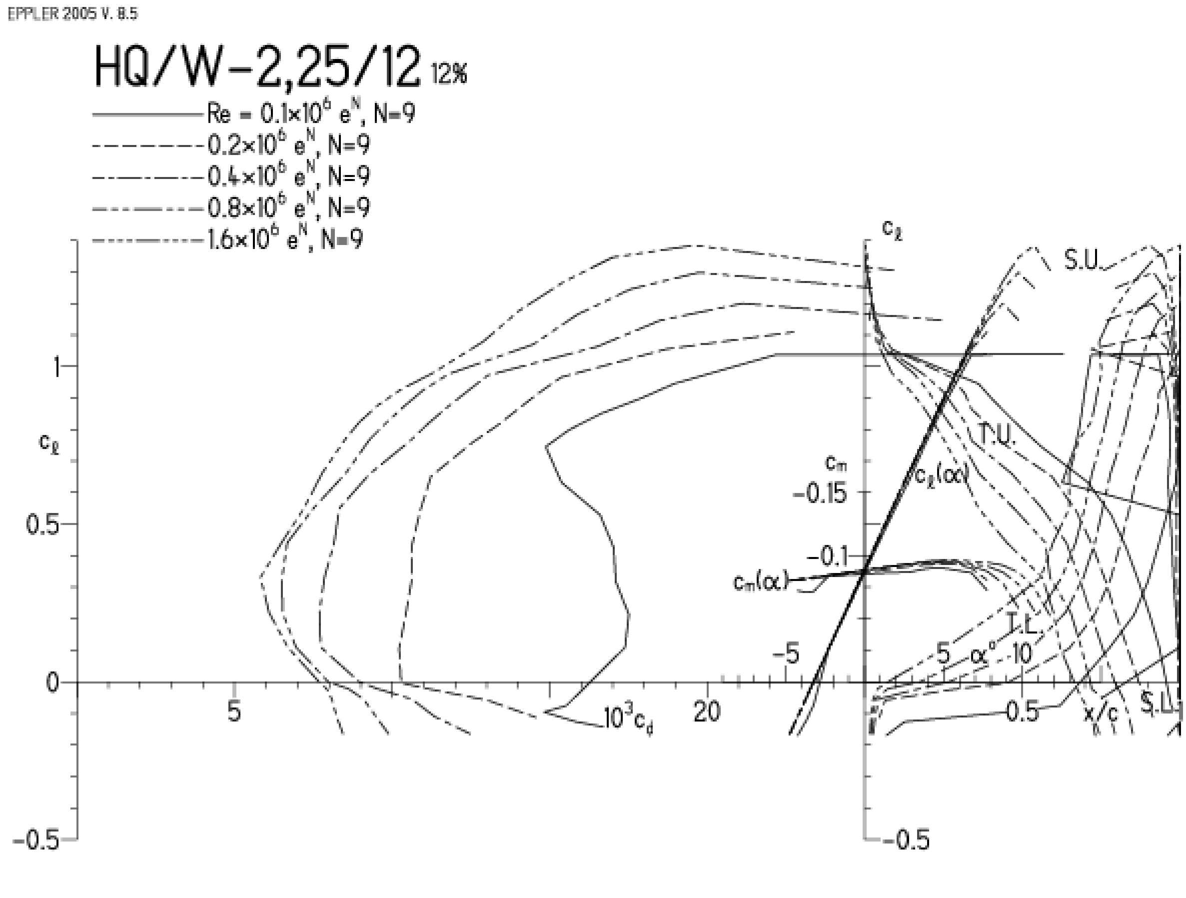
EPPLER 2005 V. 8.5.07 RUN 18.12.23 1



HQ/W-2,25/12, N=9

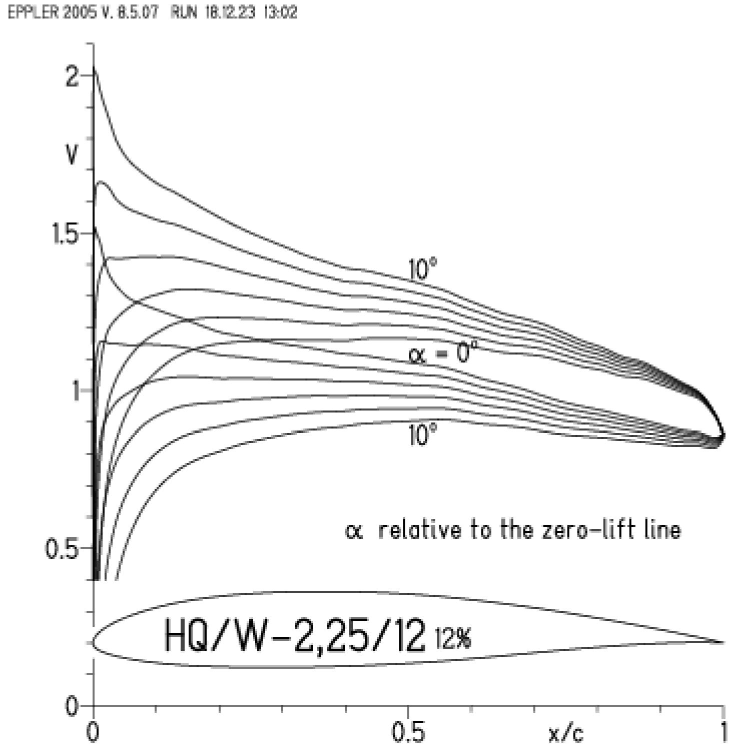


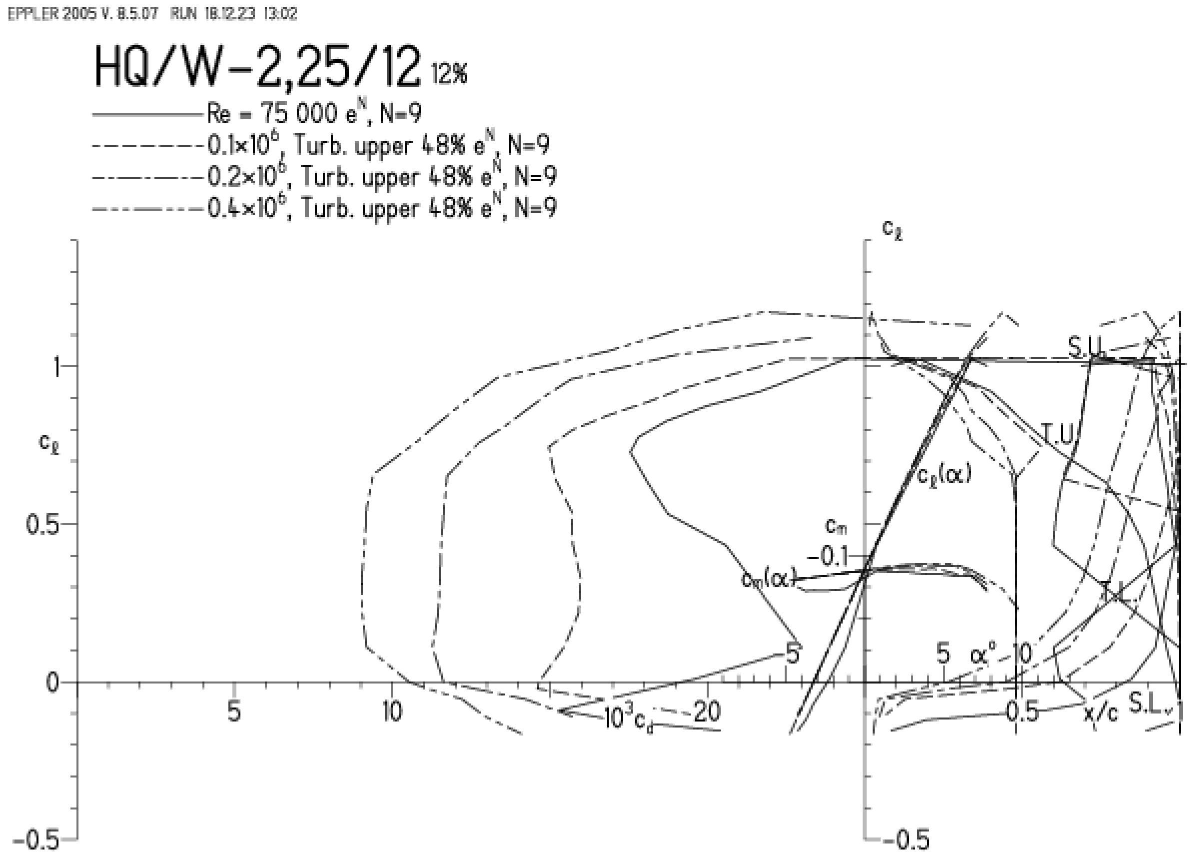
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c



EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c
10³c_d

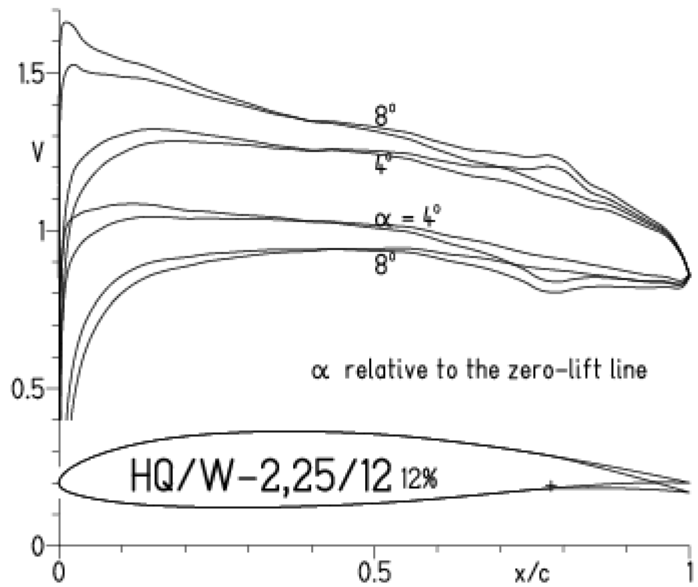
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



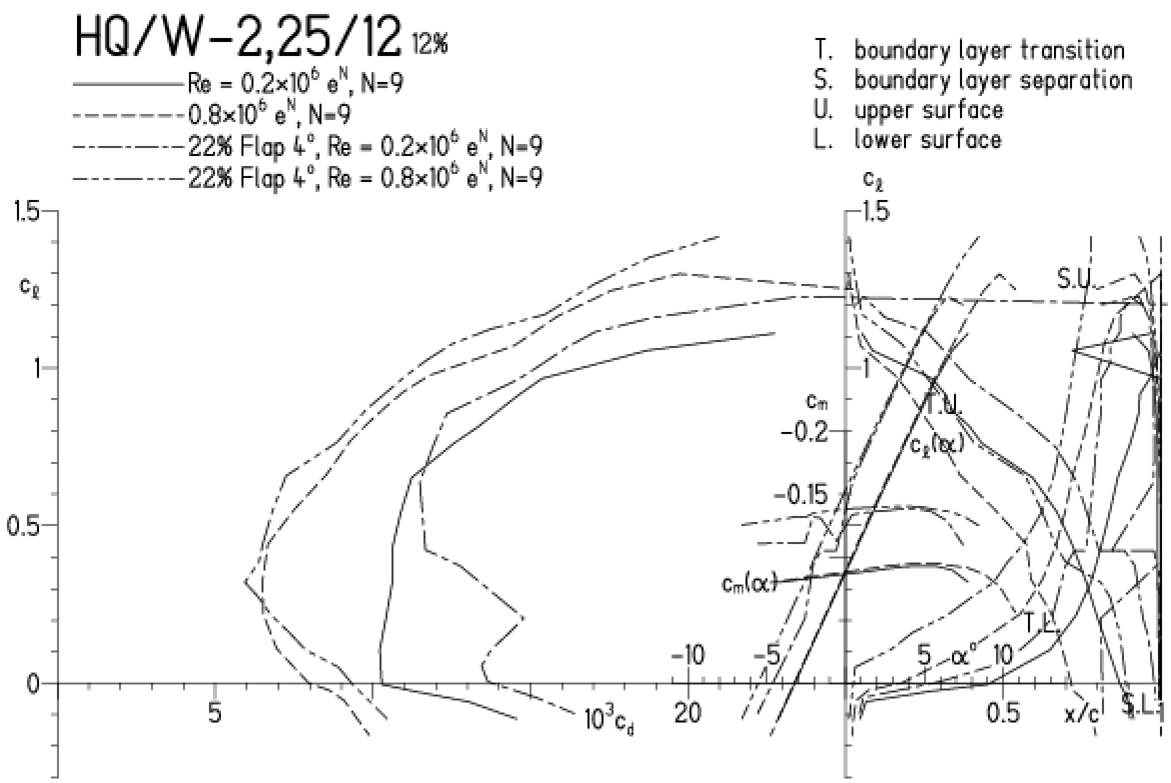


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

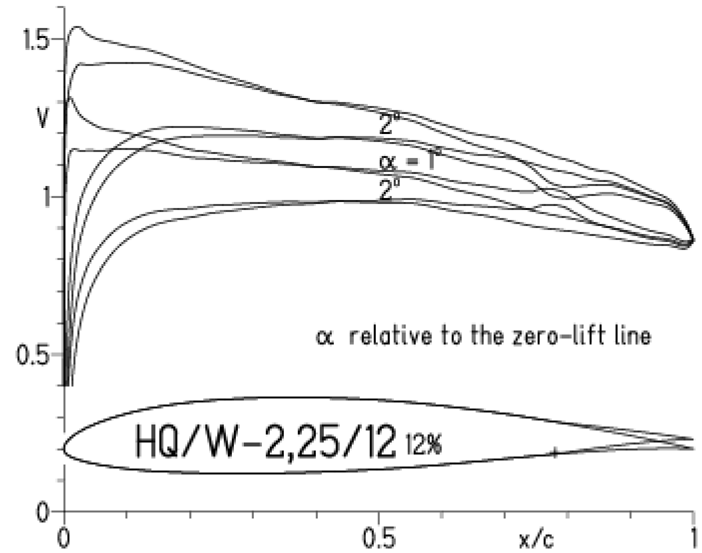


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

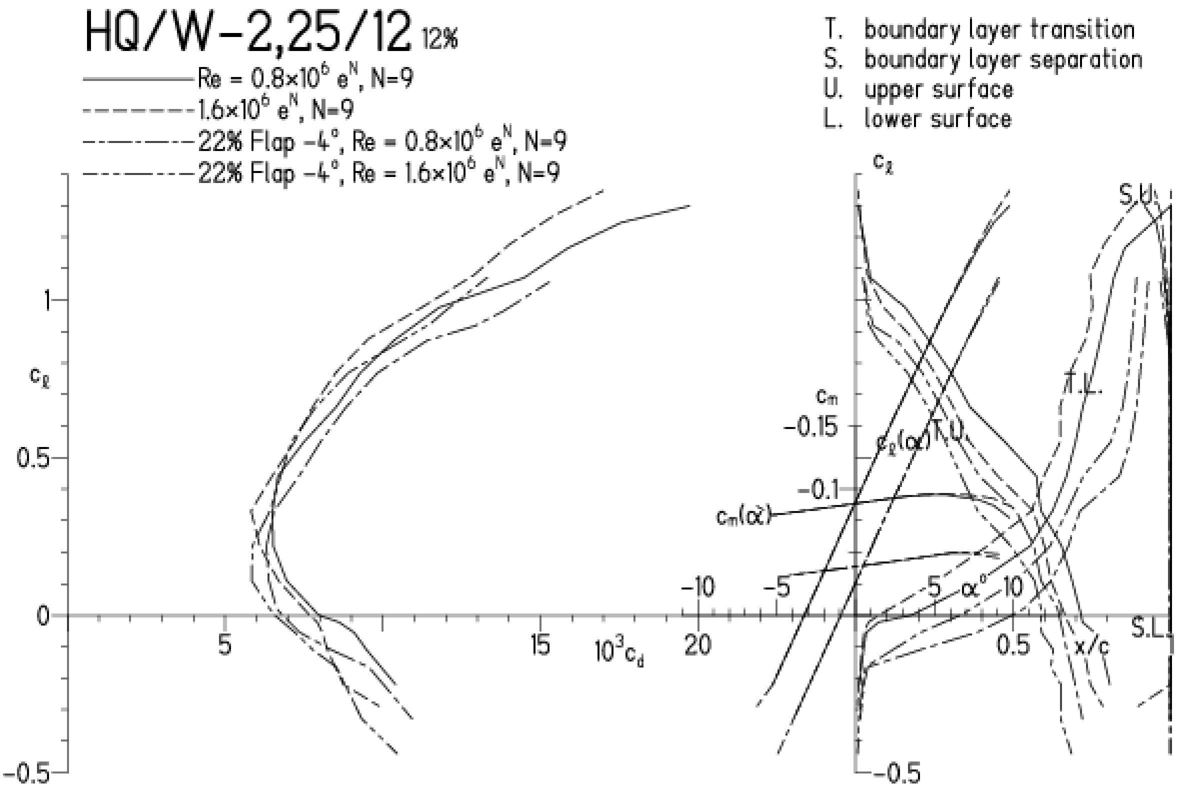


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

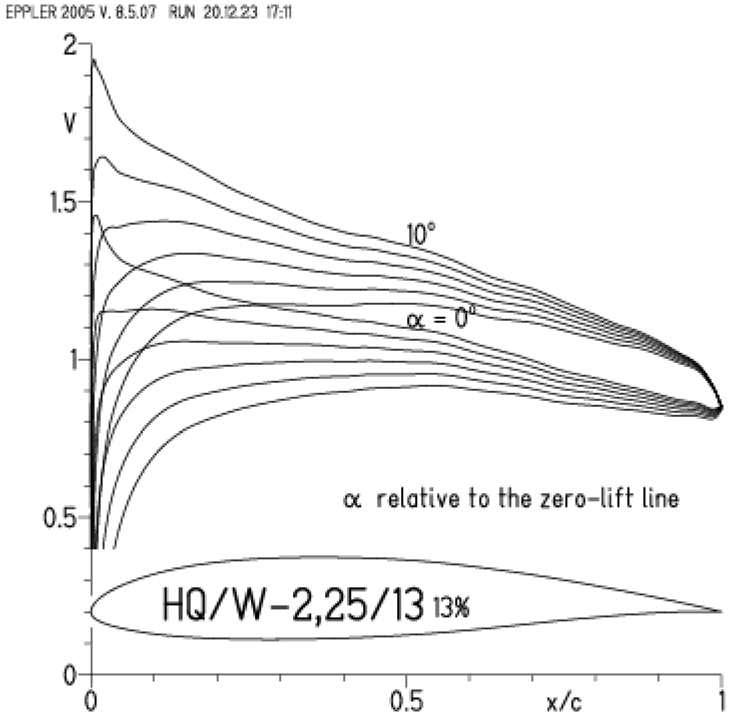
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

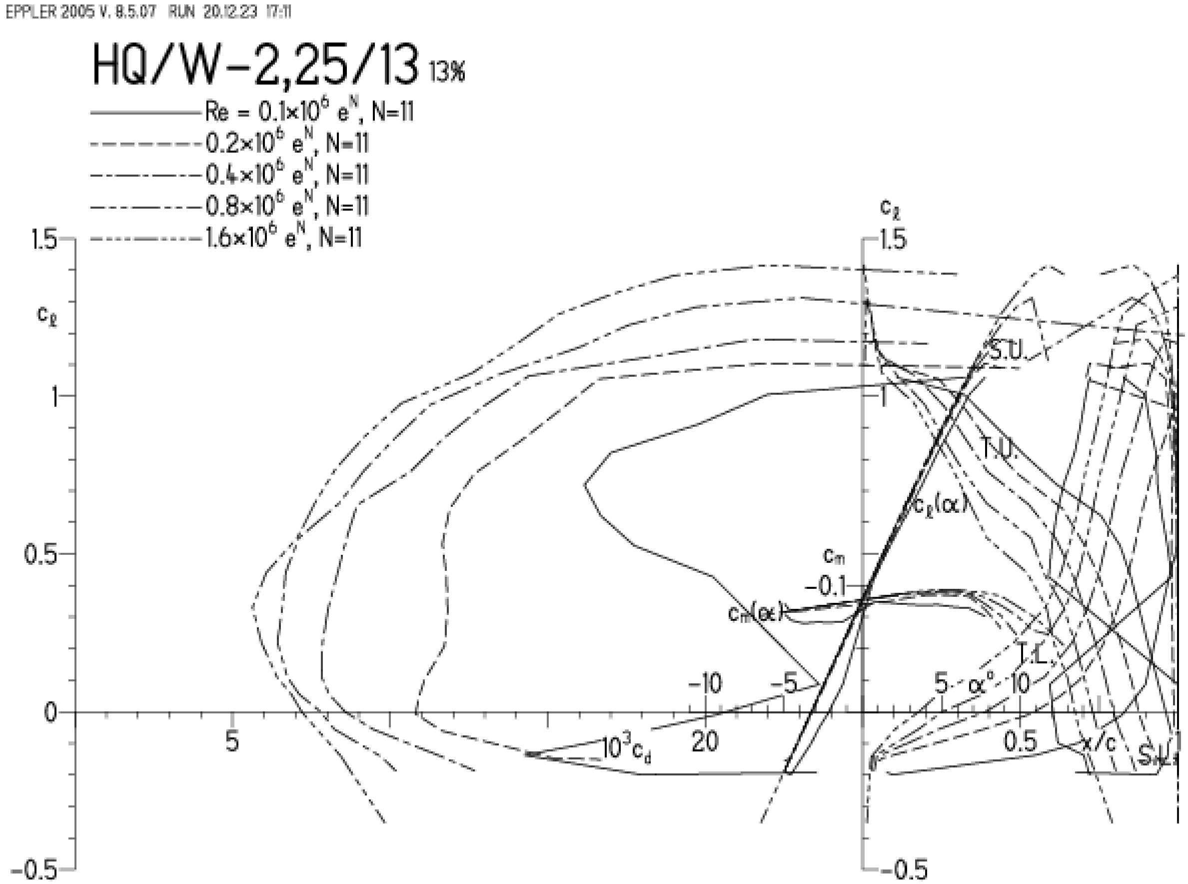


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

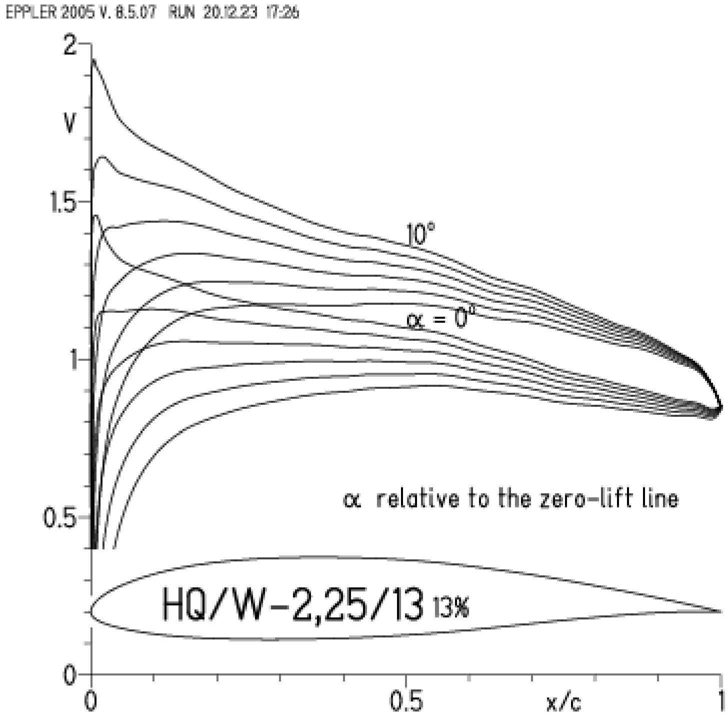


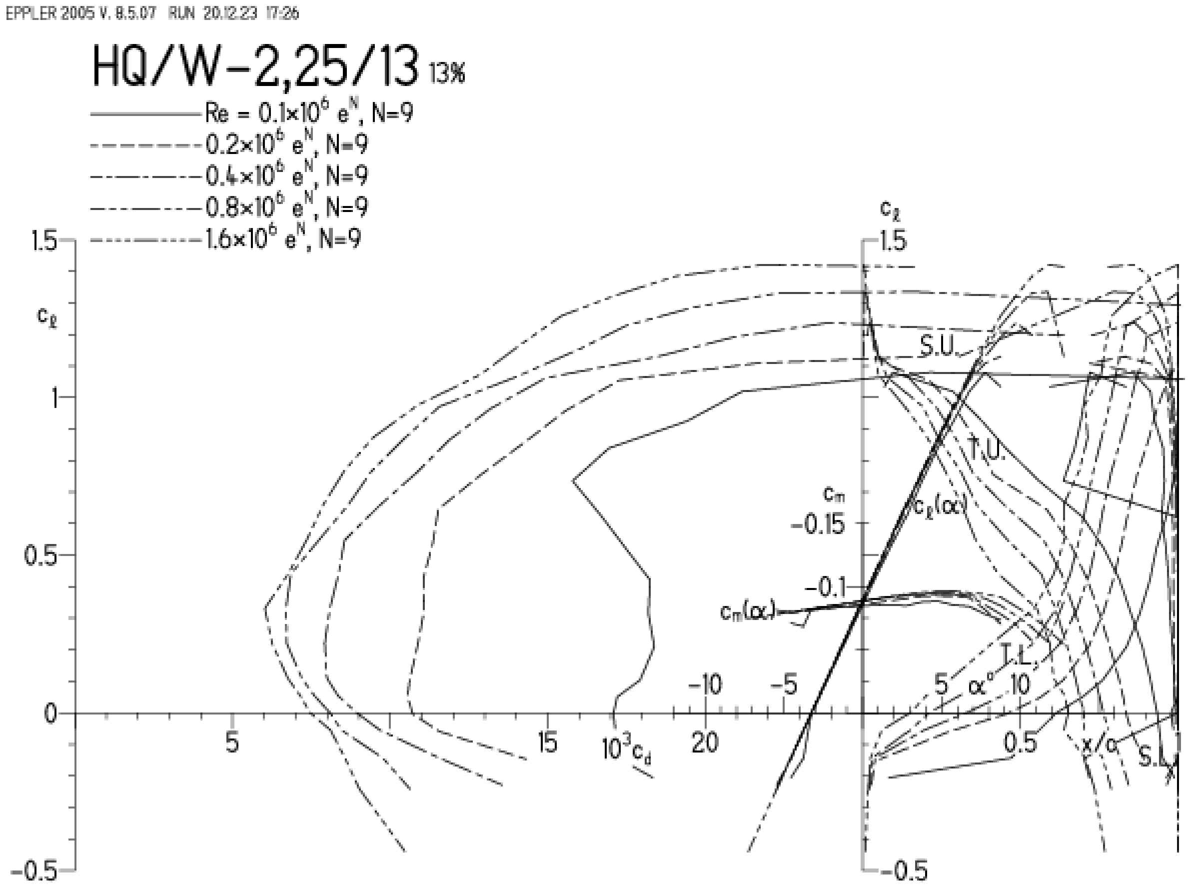
HQ/W-2,25/13, N=11



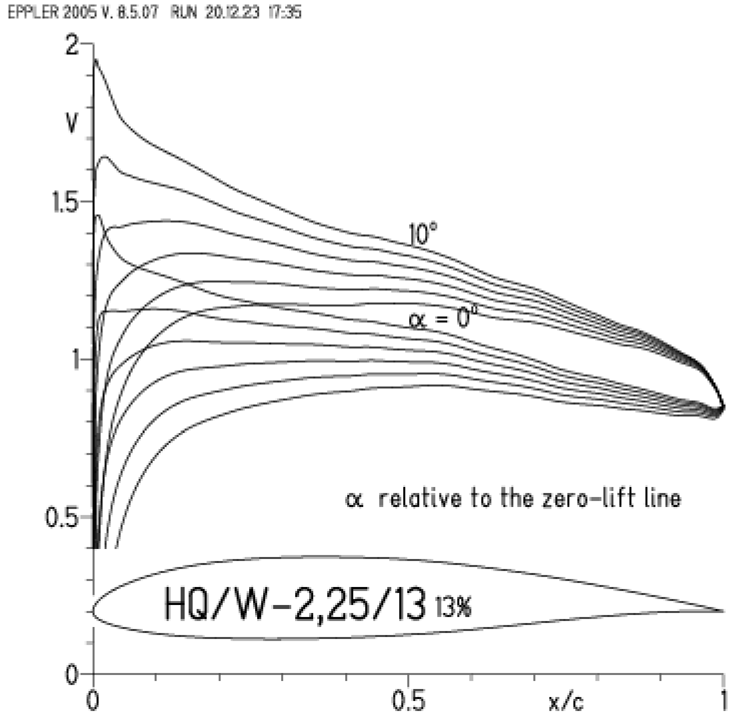


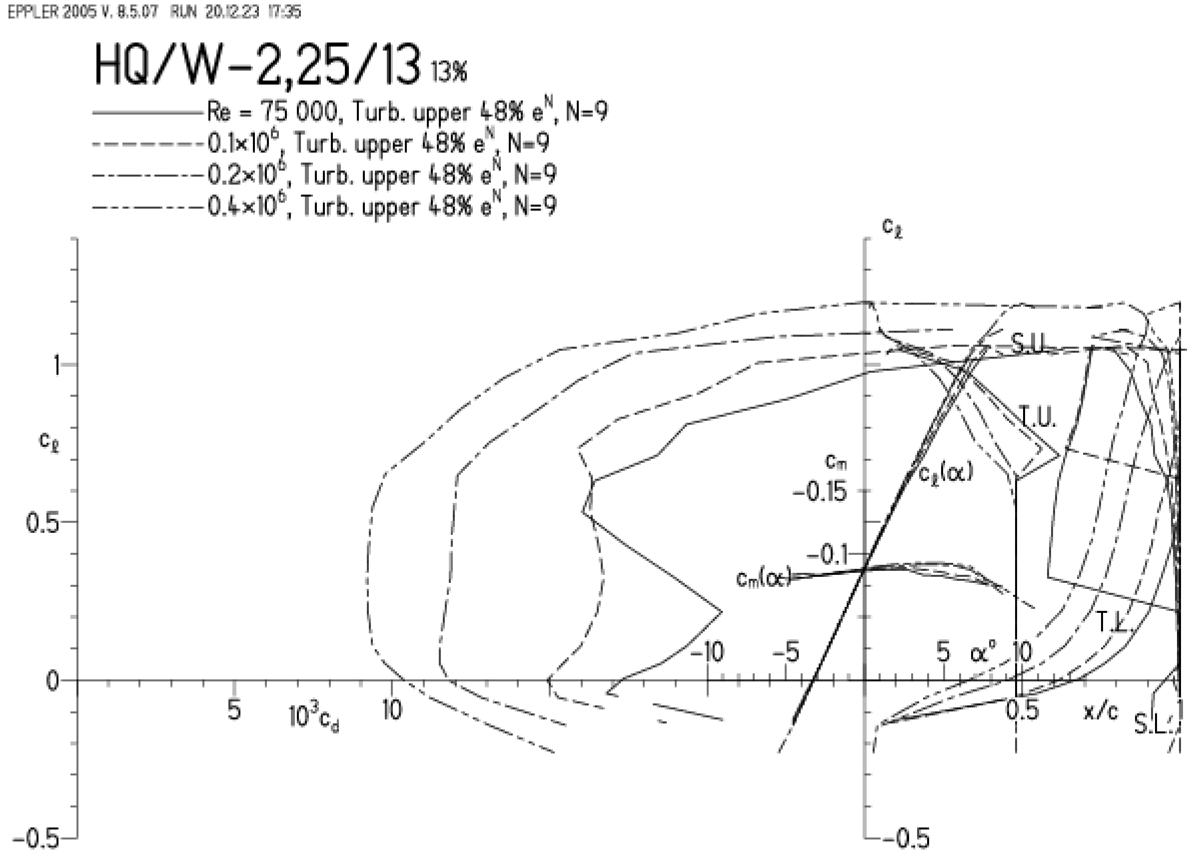
<u>HQ/W-2,25/13</u>, N=9





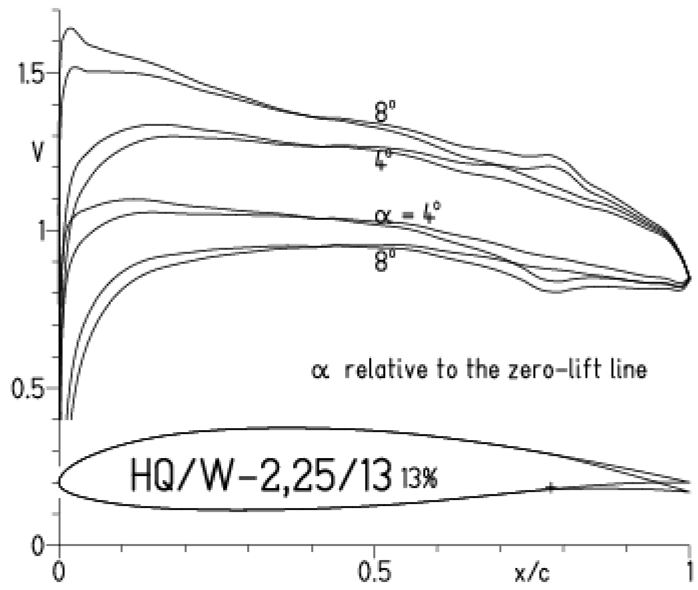
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



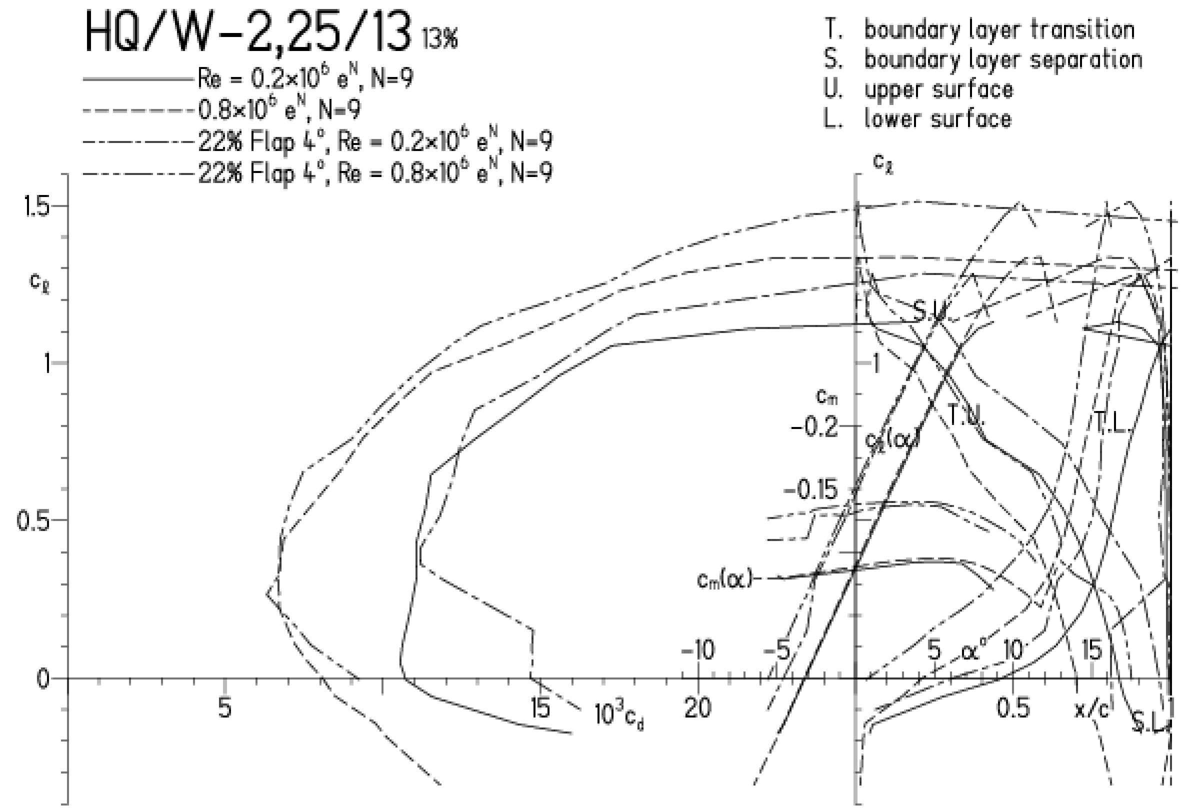


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

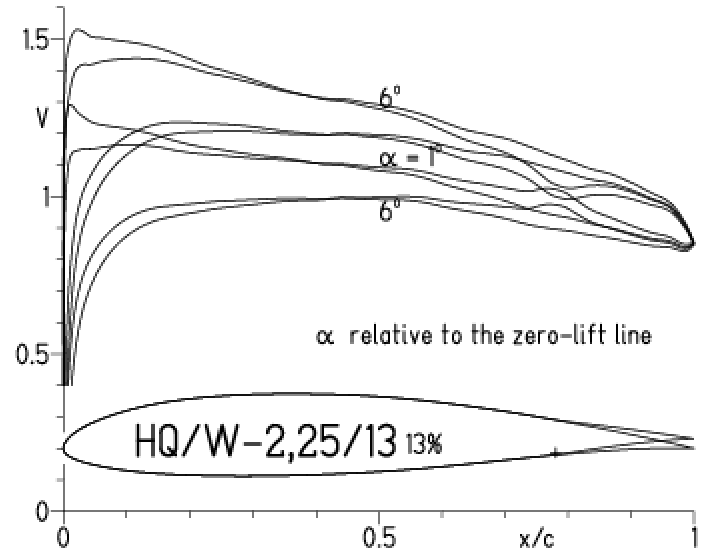


EPPLER 2005 V.

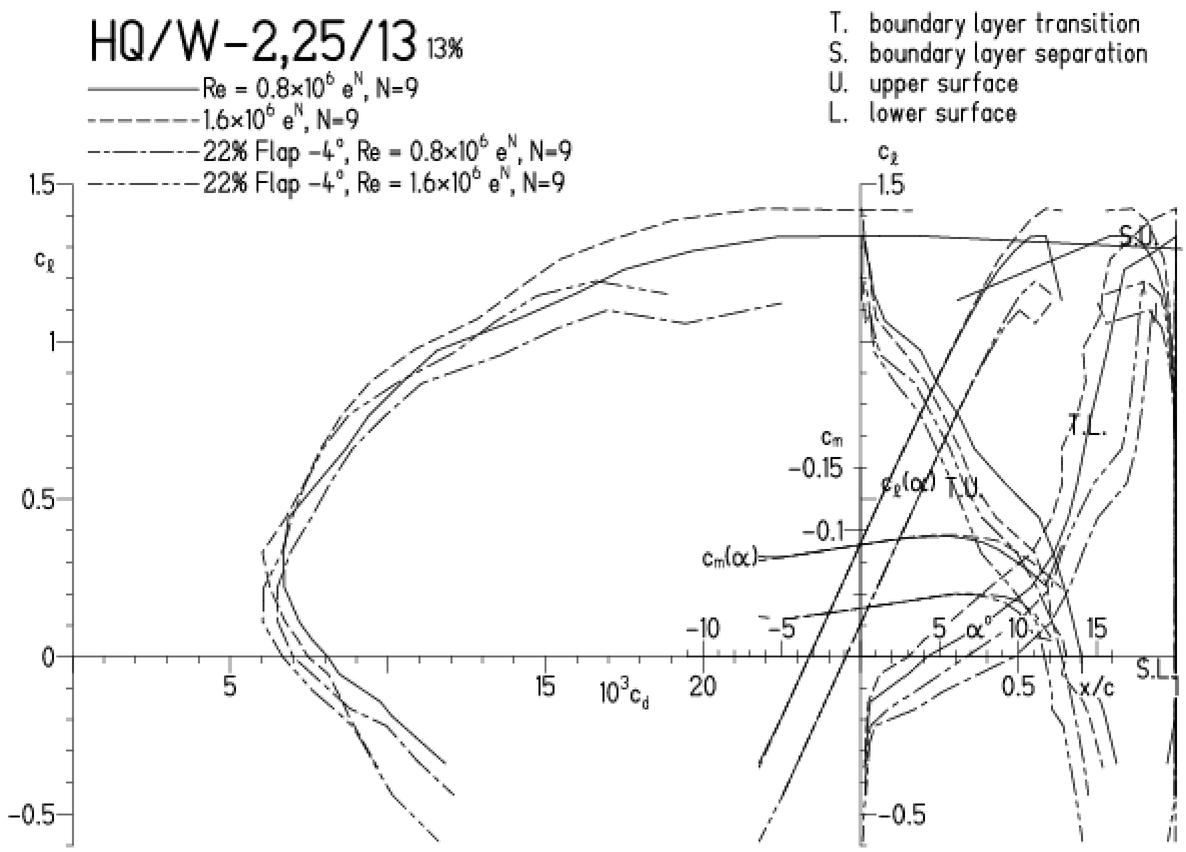


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

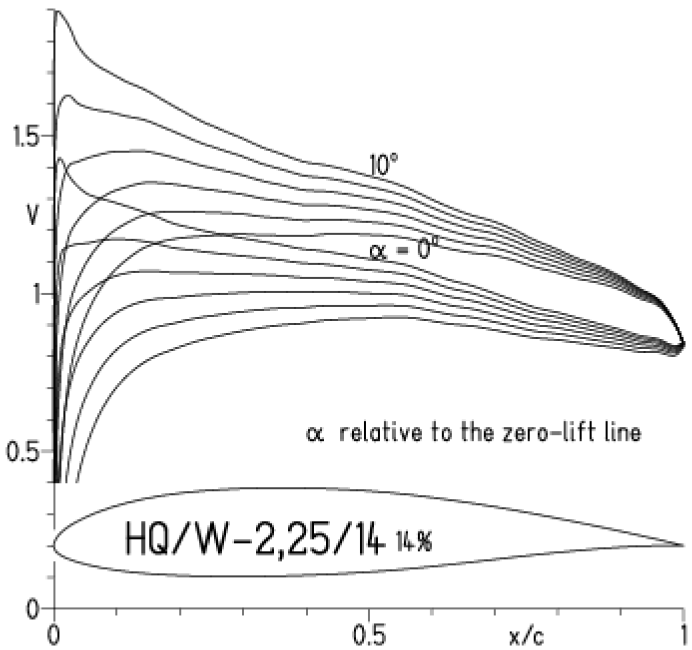


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

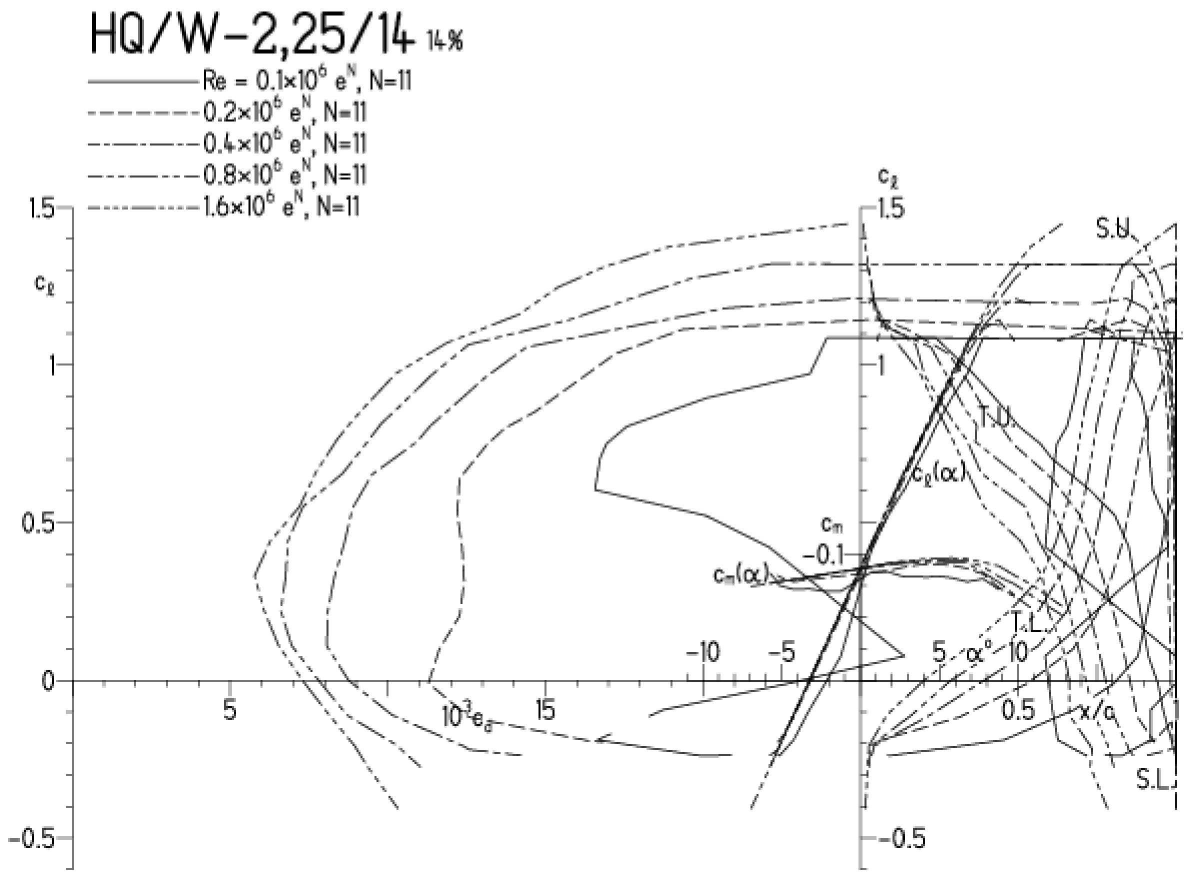


HQ/W-2,25/14, N=11

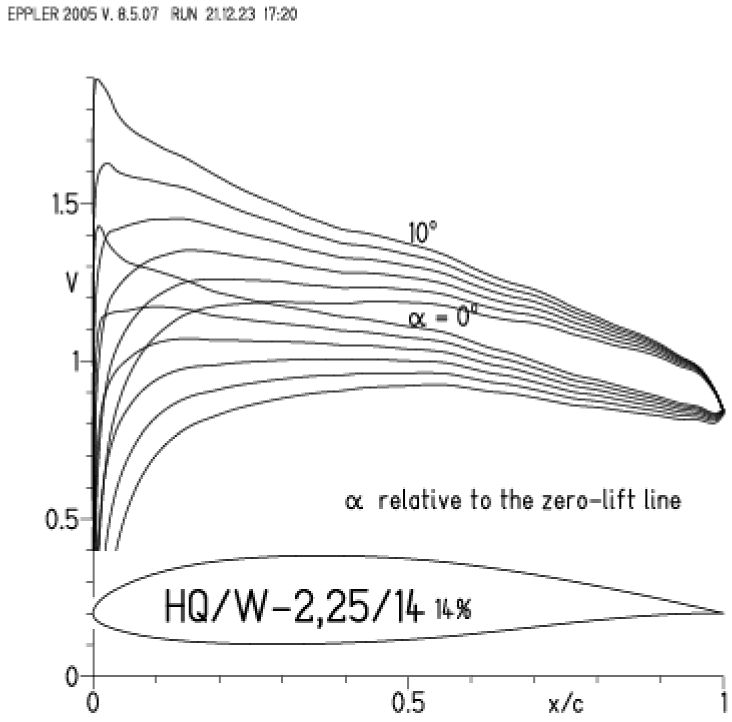
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12



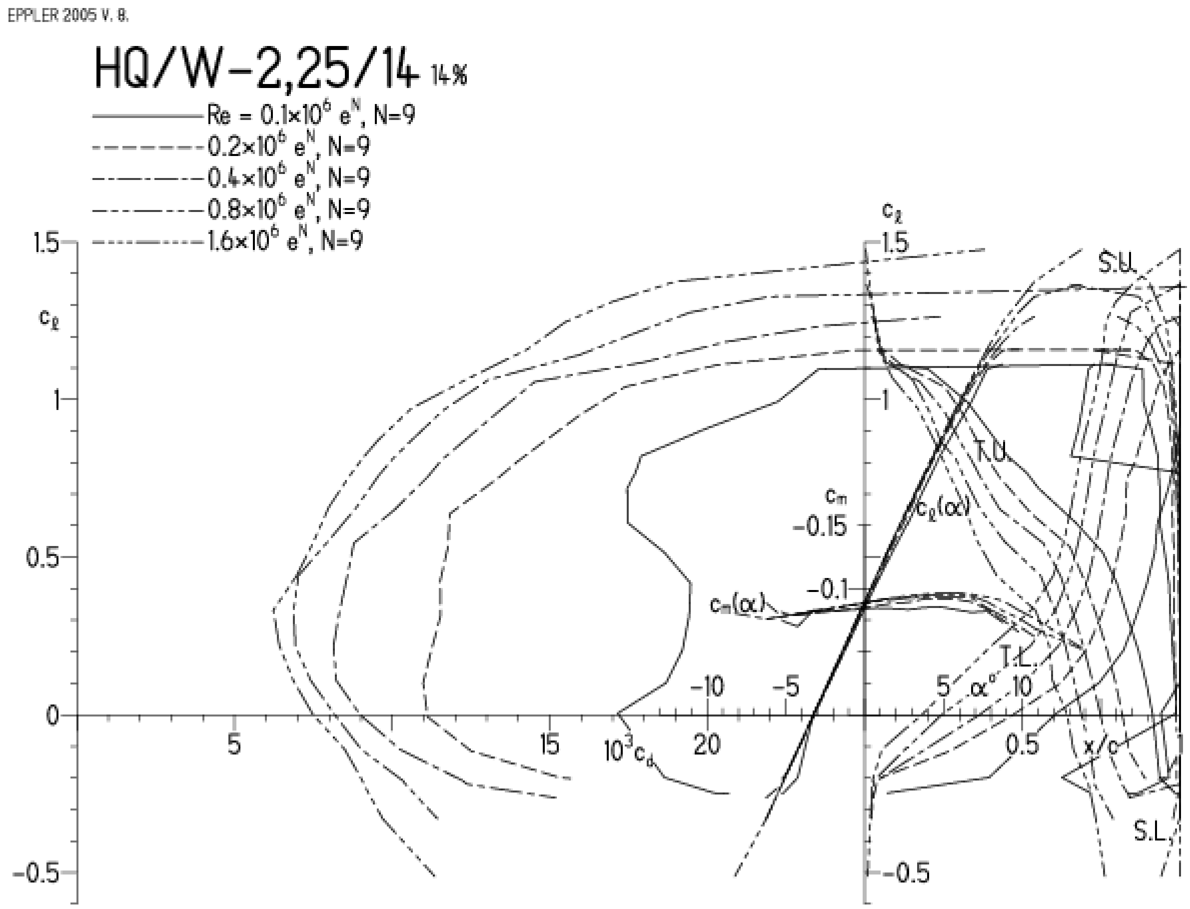
EPPLER 2005 V. 8.



HQ/W-2,25/14, N=9

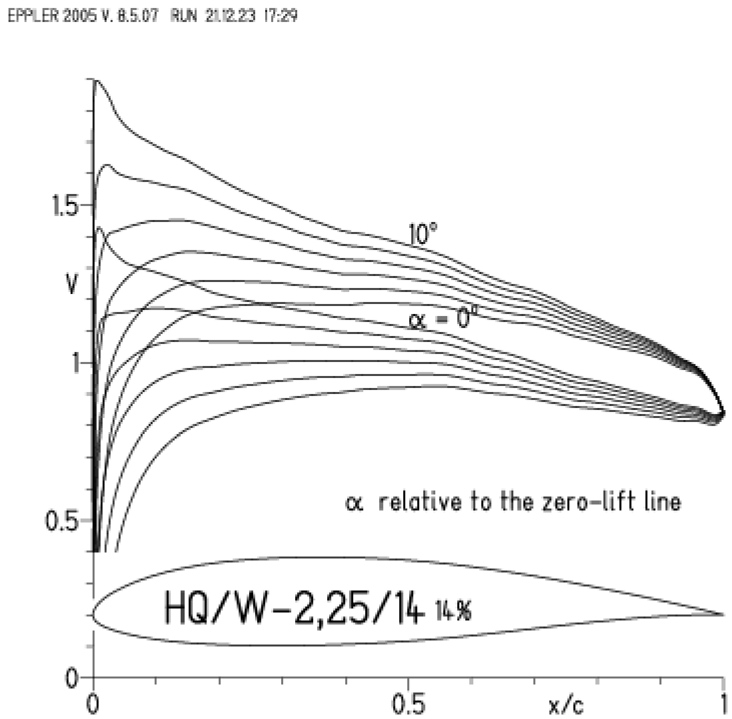


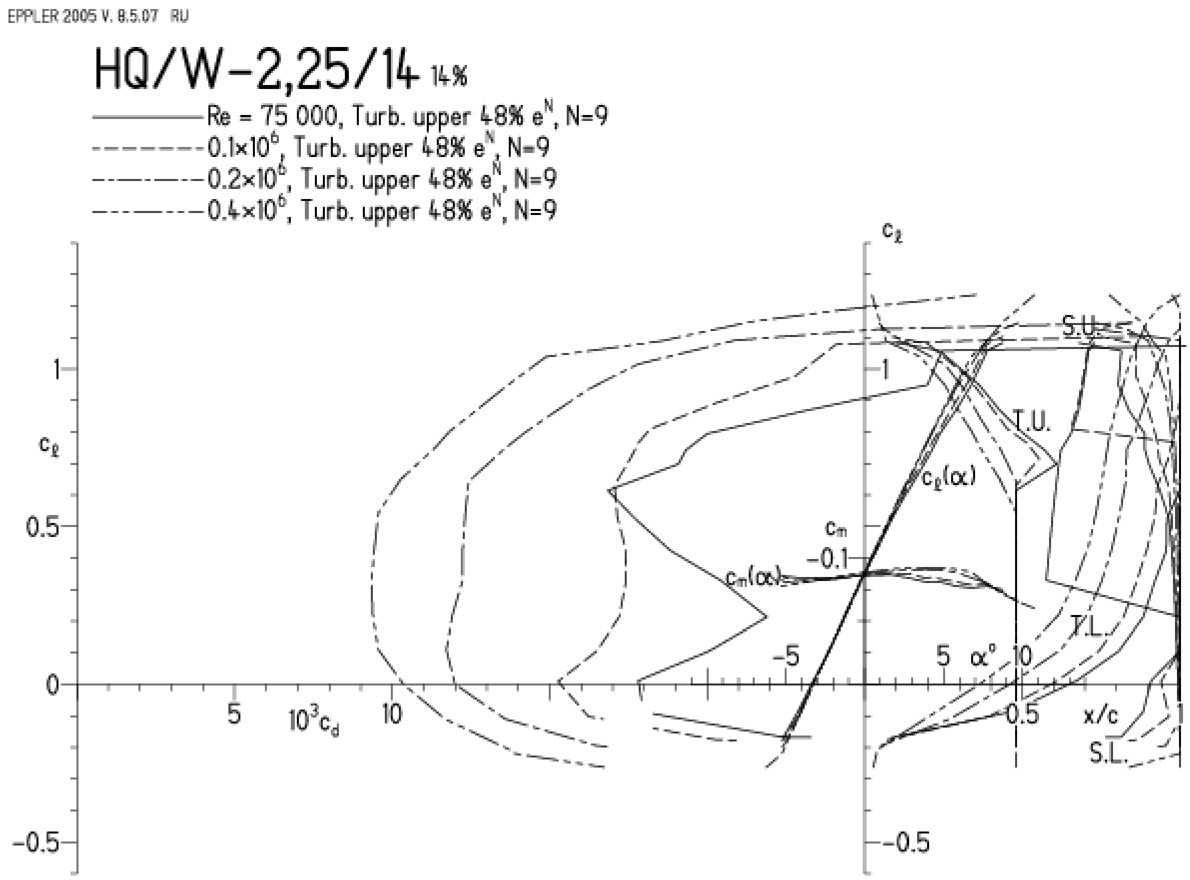
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1



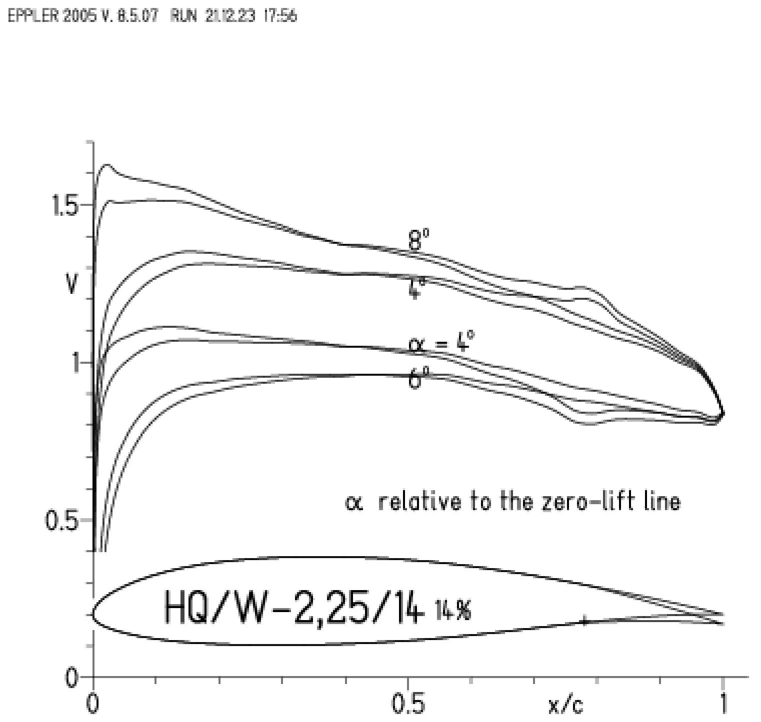
EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.
−0.5

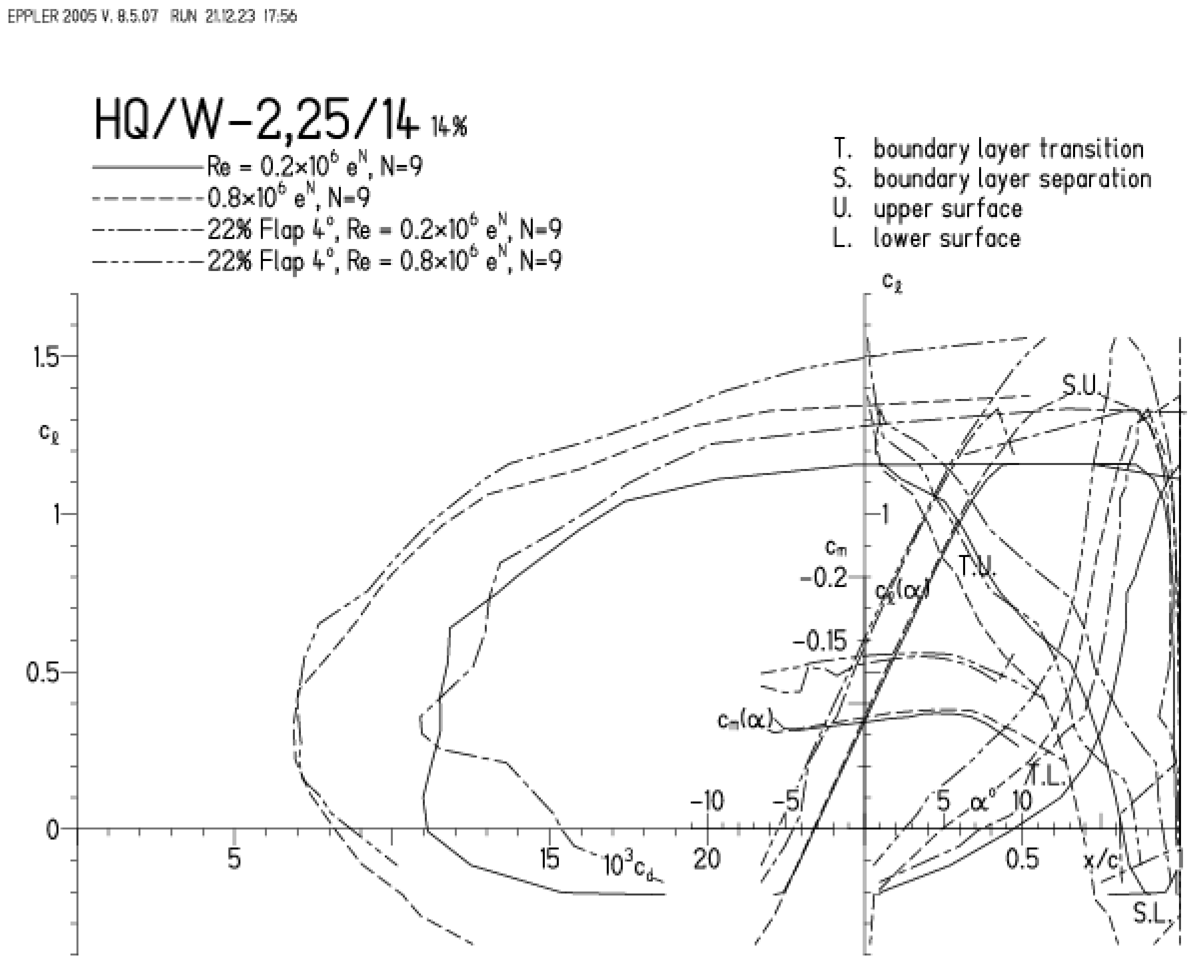
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





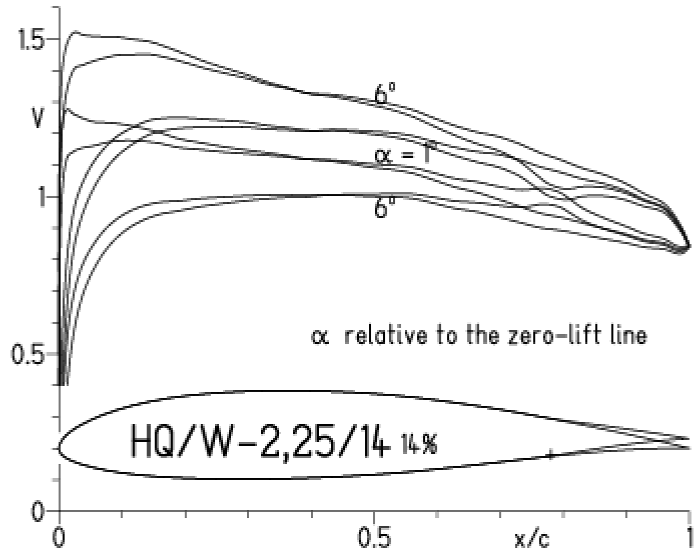
HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag



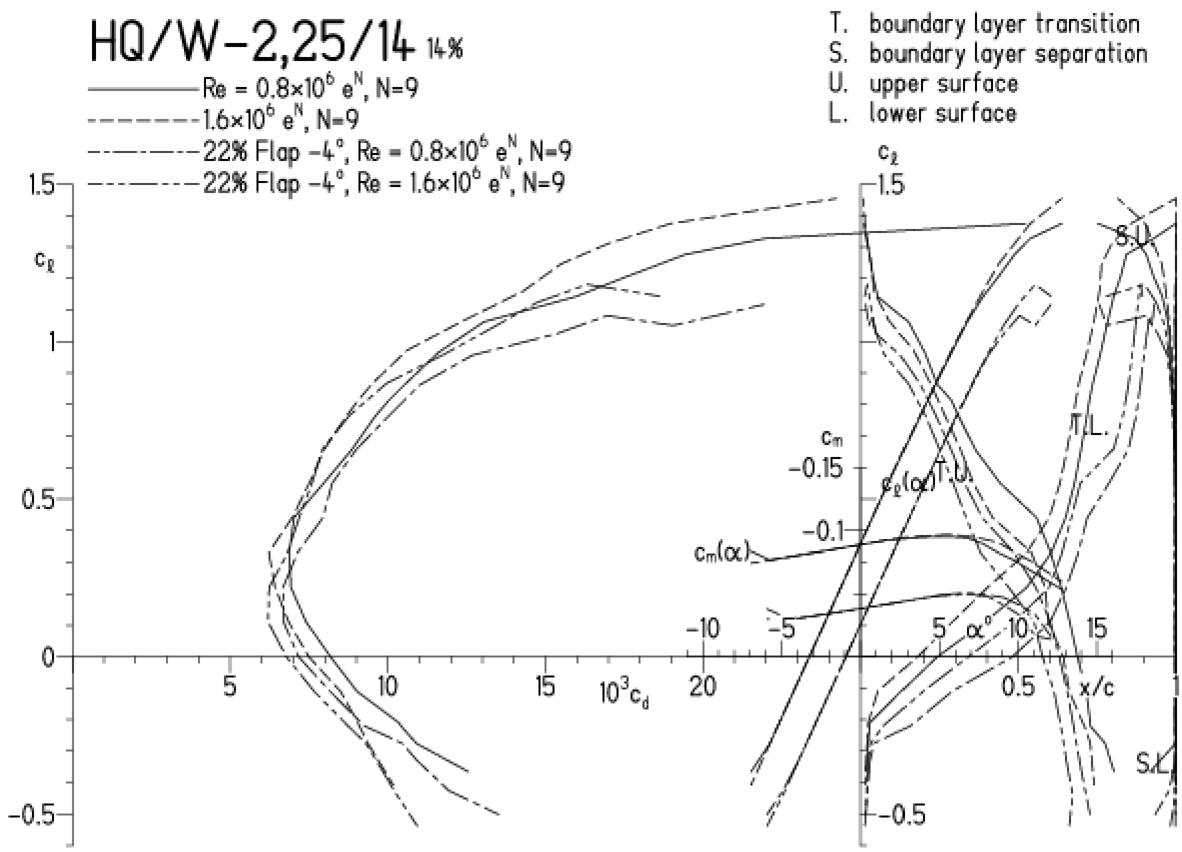


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

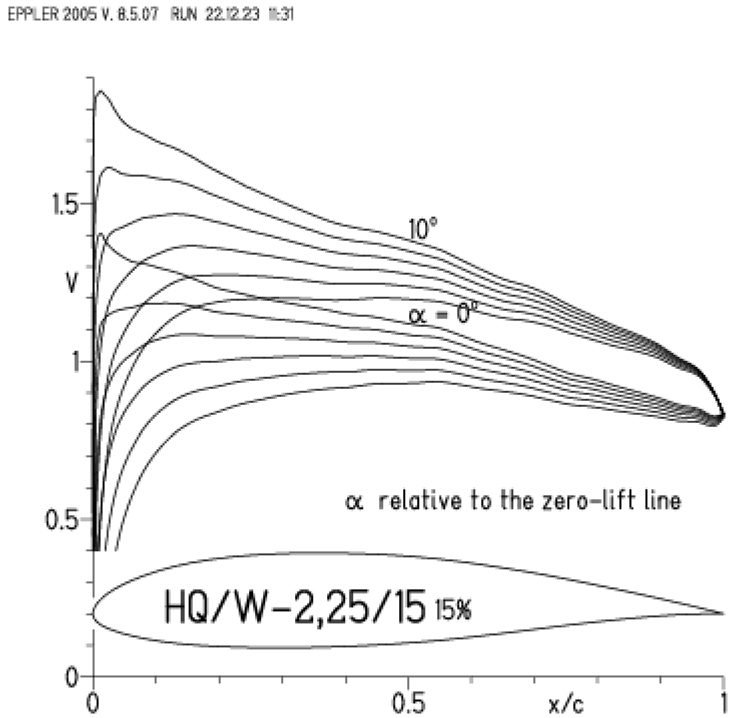
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

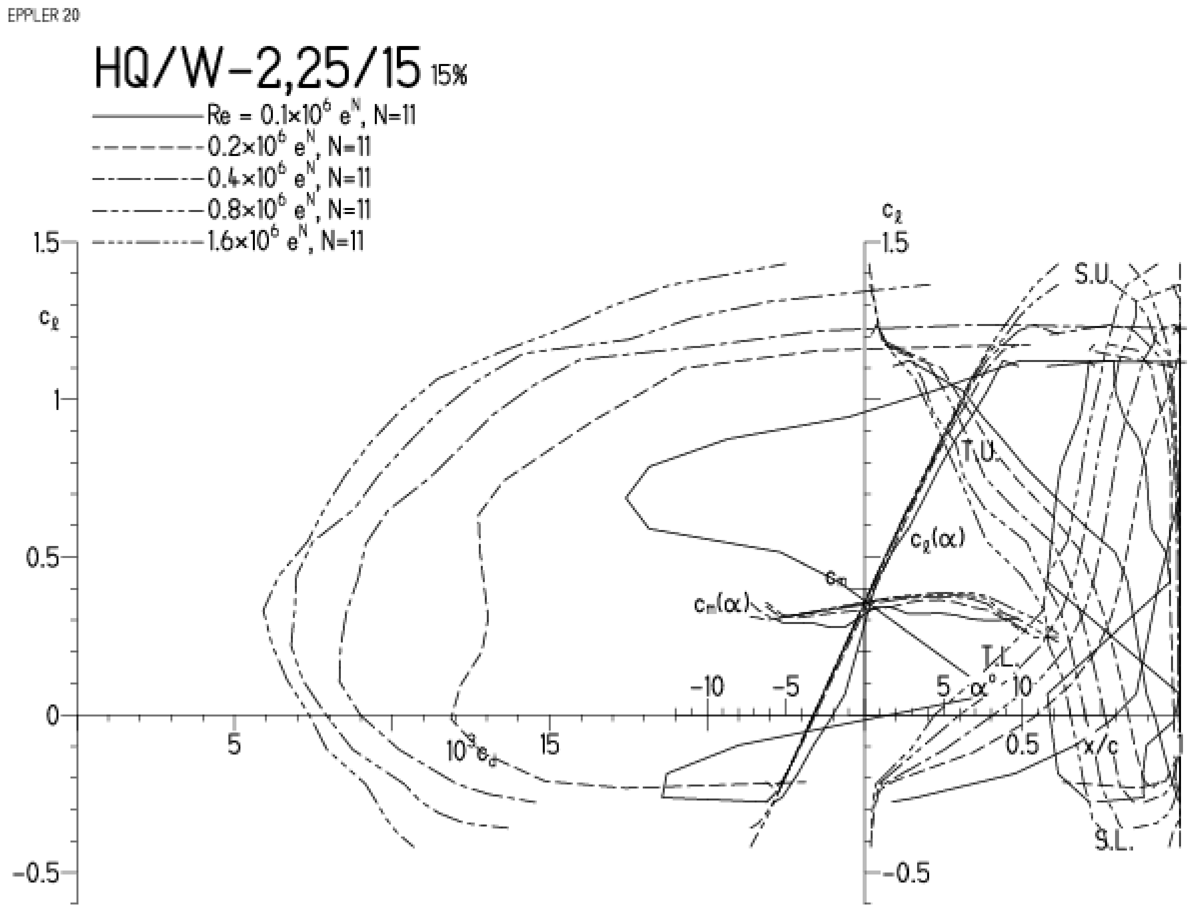


EPPLER 2005 V. 8.5.07



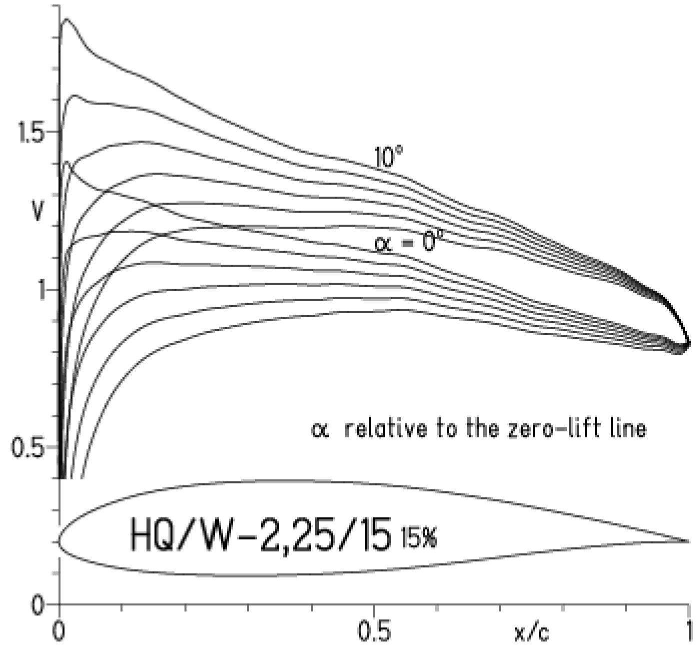
<u>HQ/W-2,25/15</u>, N=11



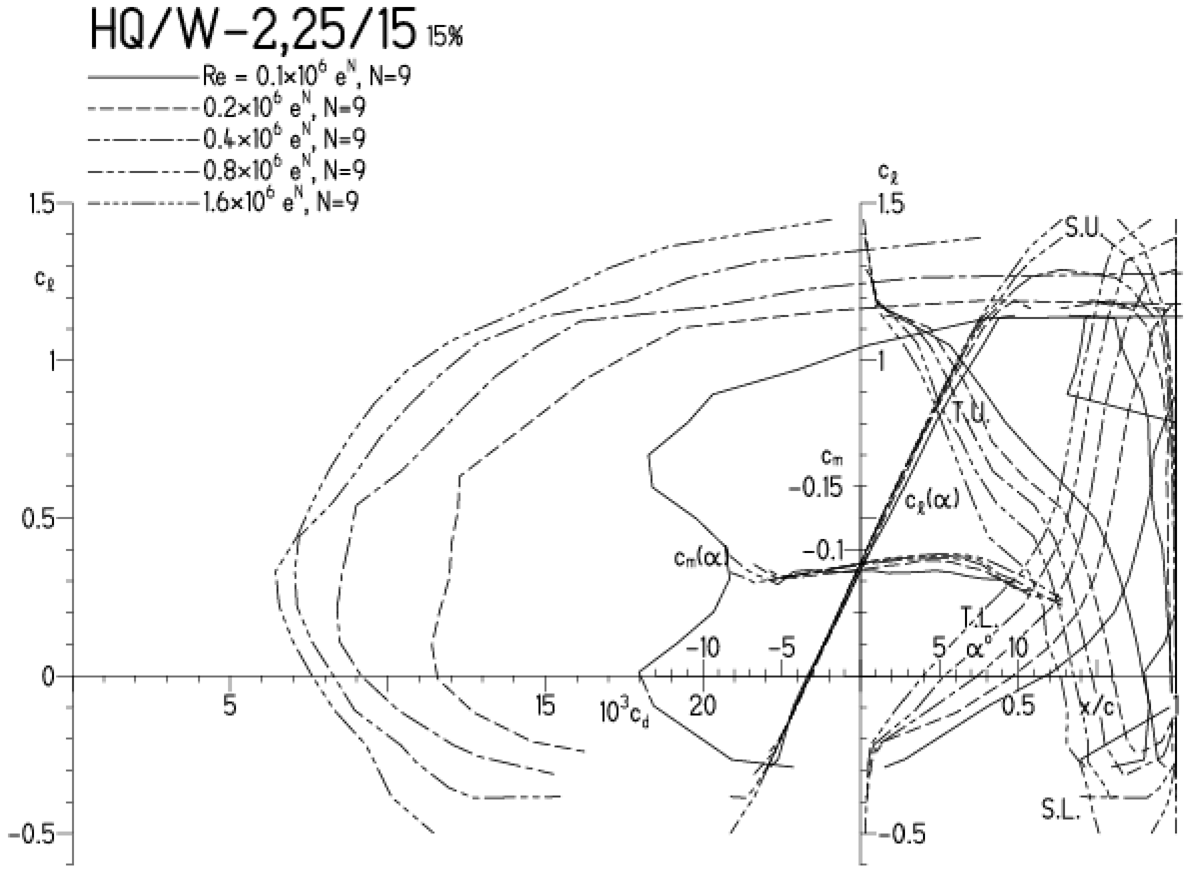


HQ/W-2,25/15, N=9

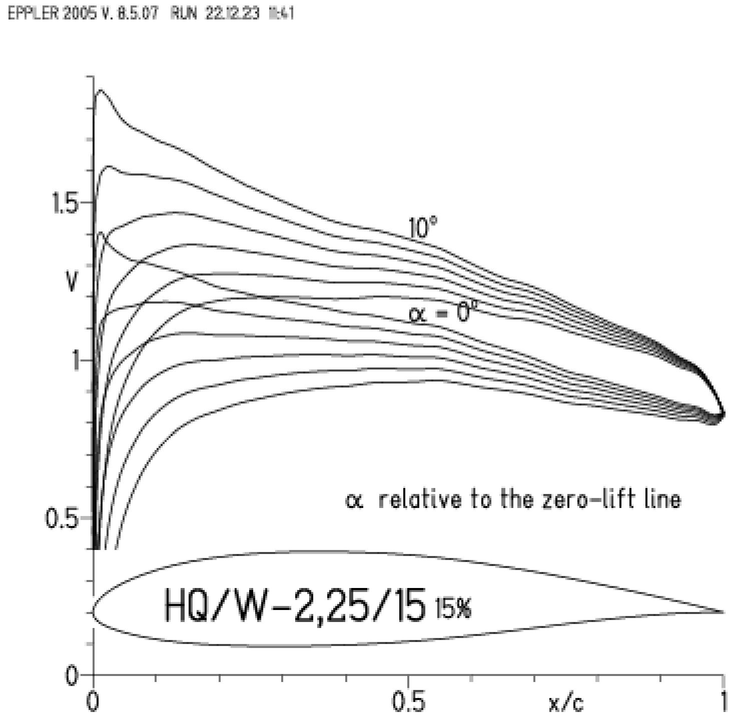
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

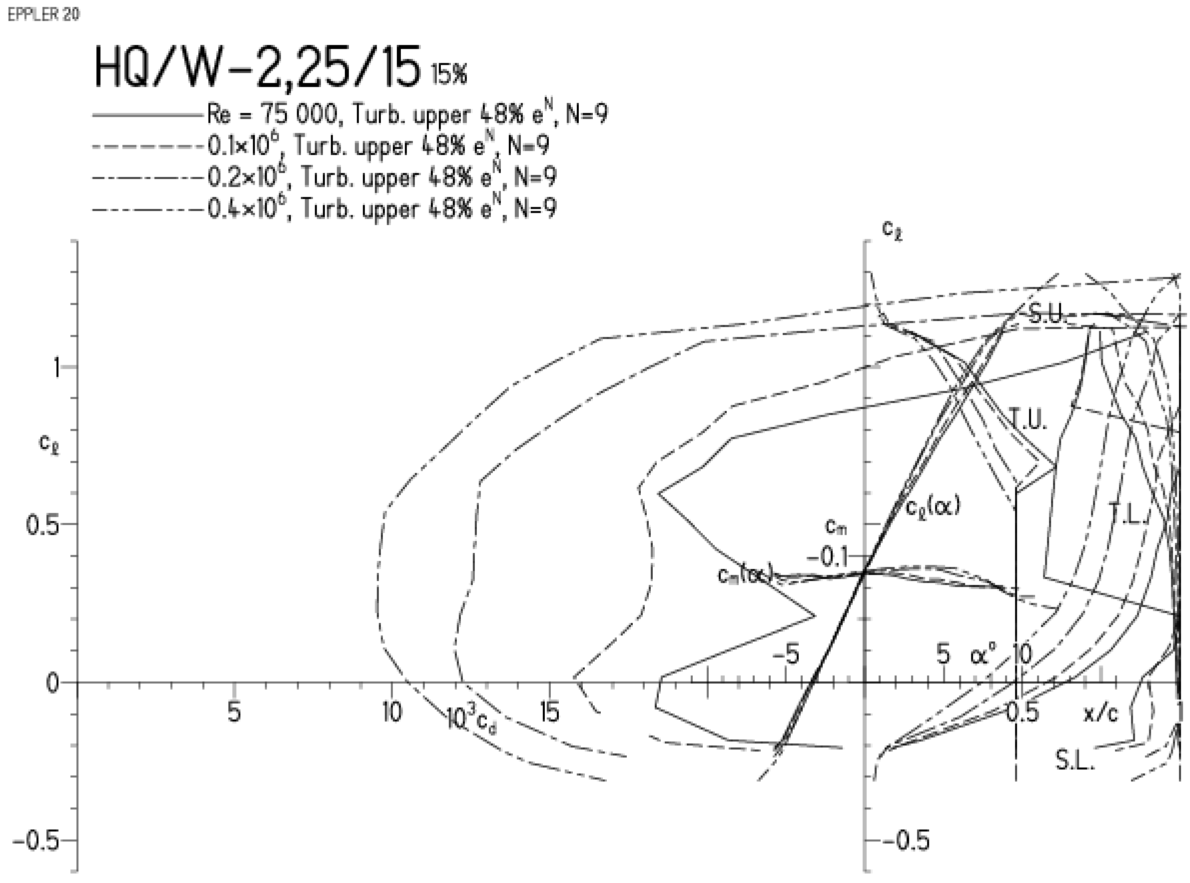


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



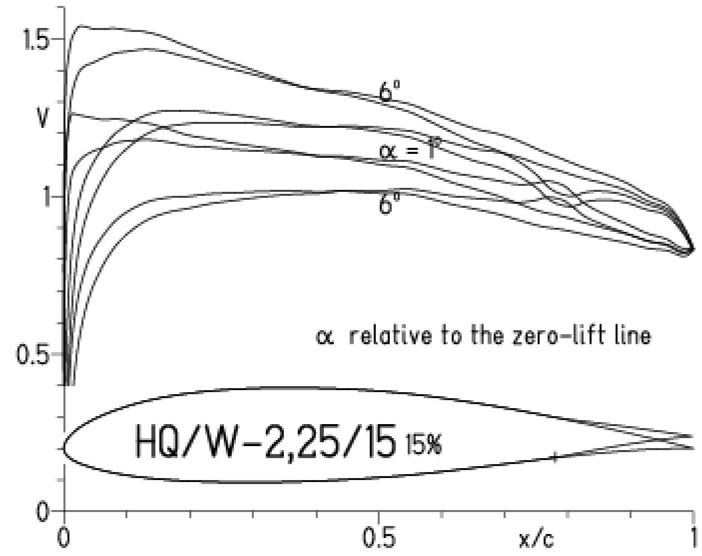


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

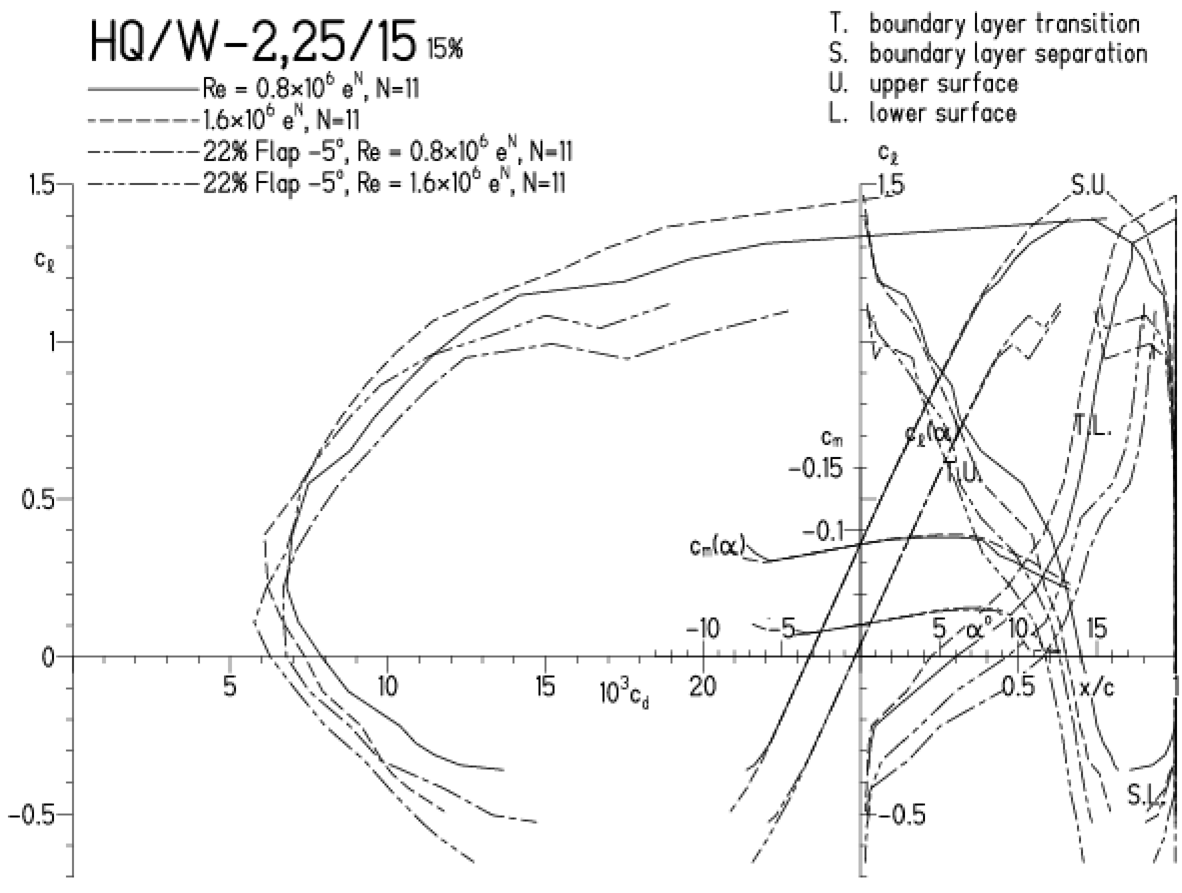
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

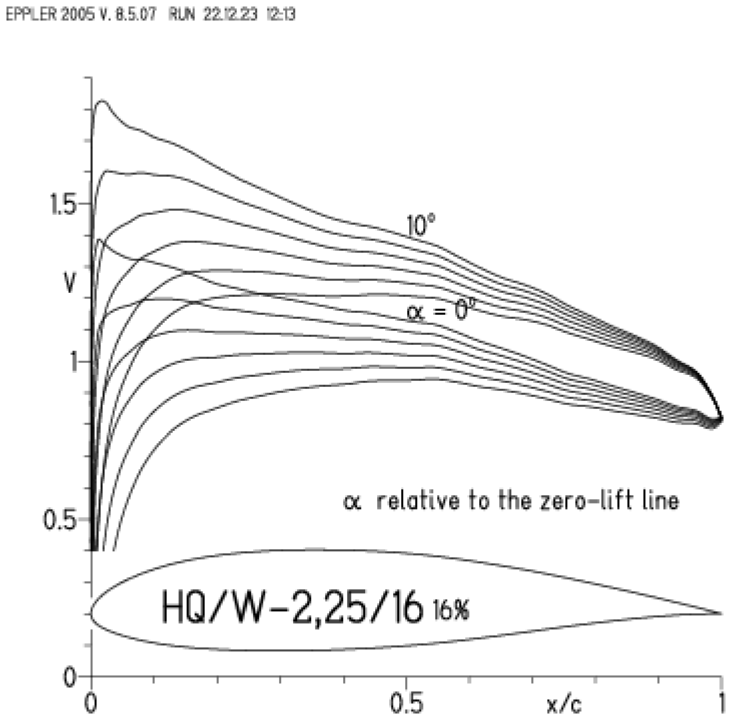
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

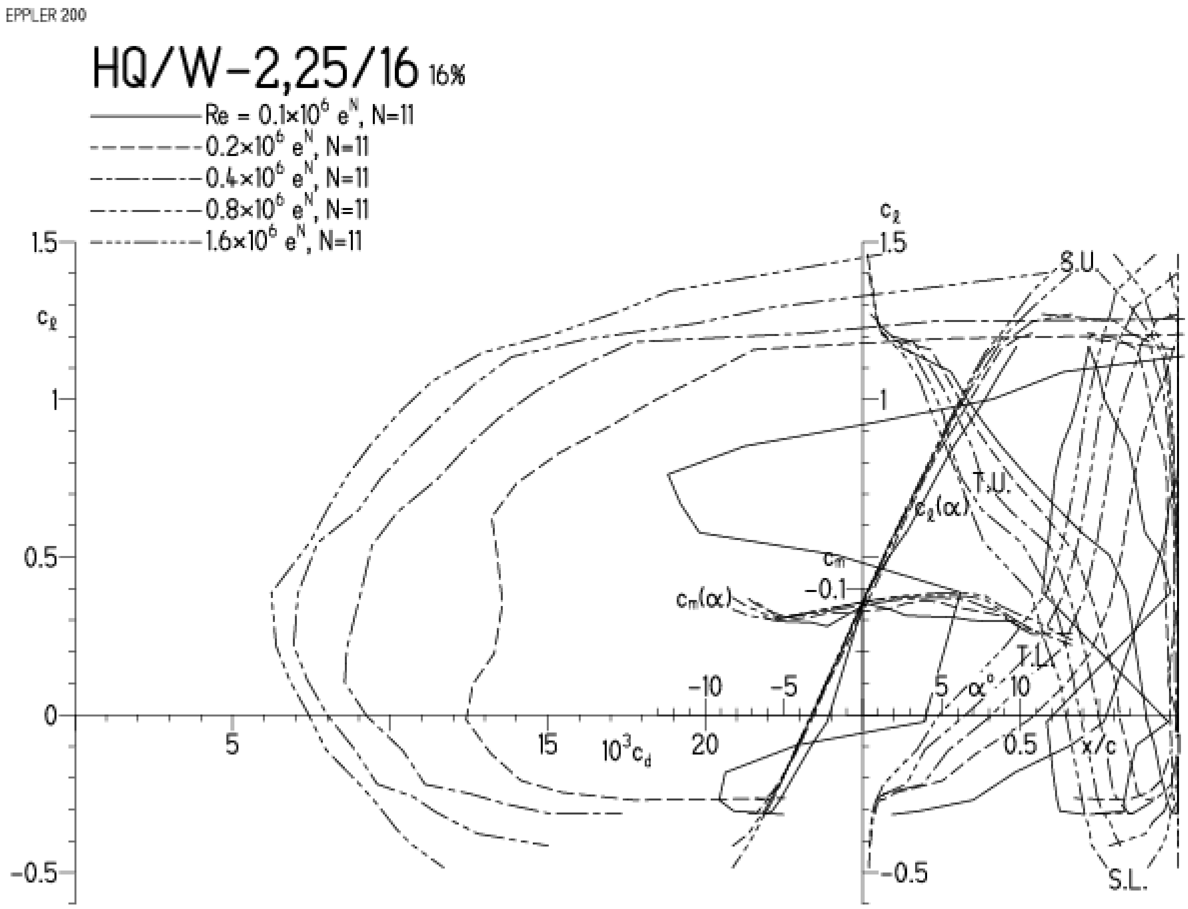


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

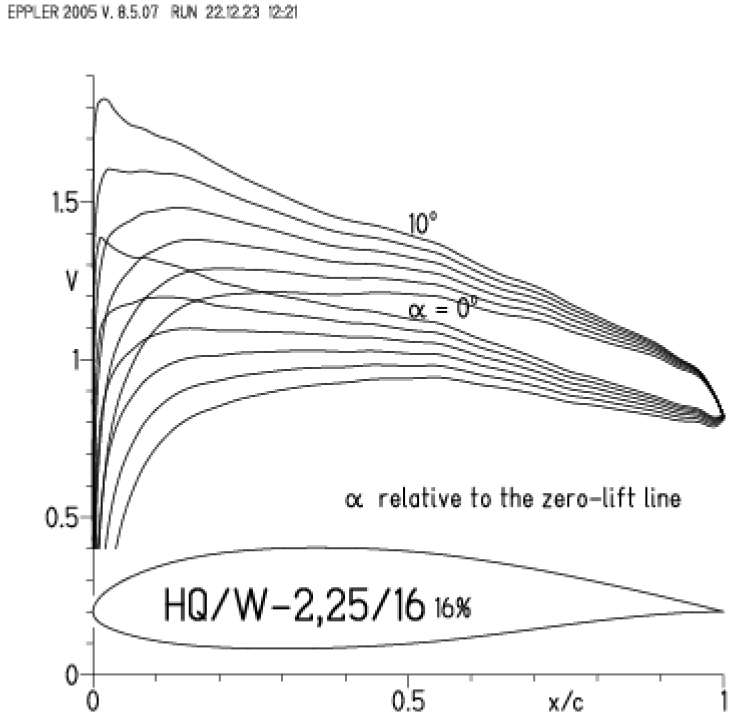


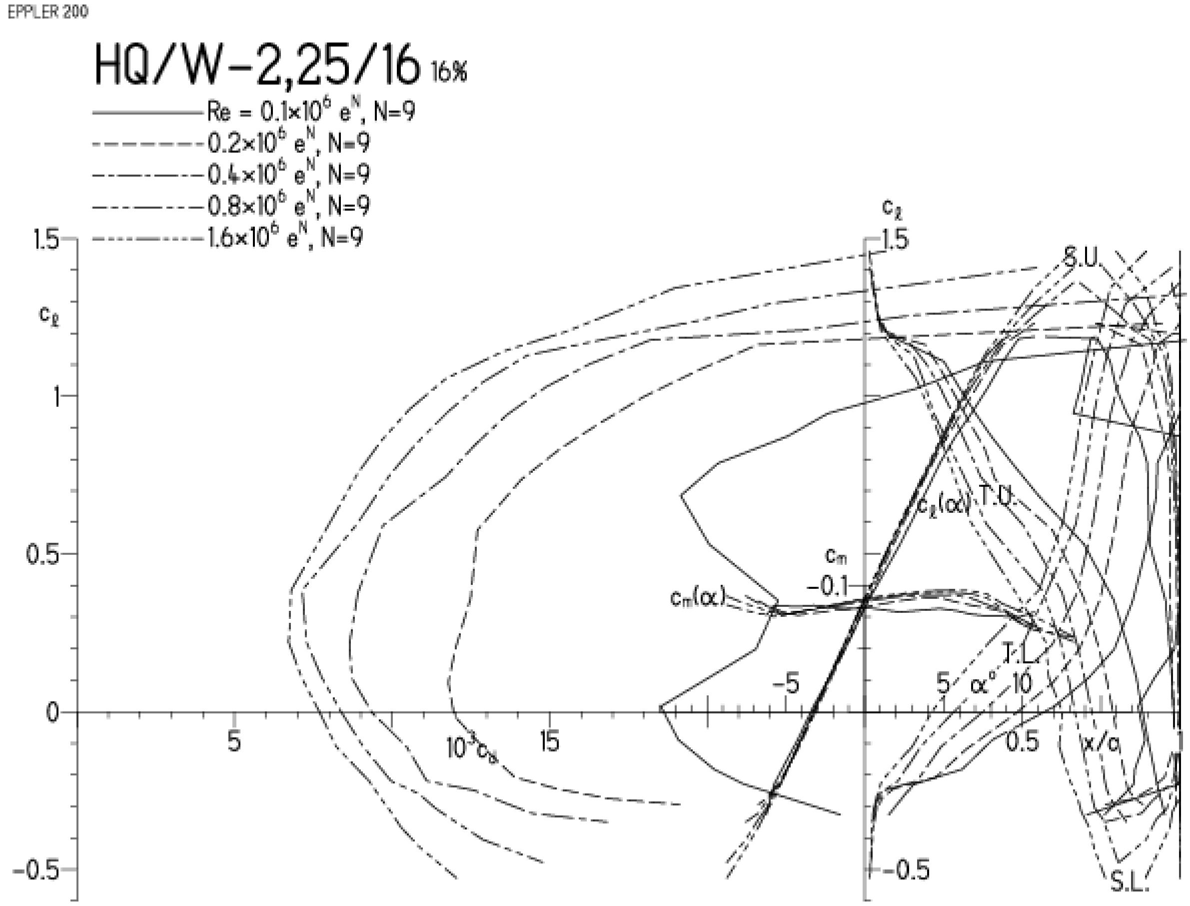
<u>HQ/W-2,25/16</u>, N=11



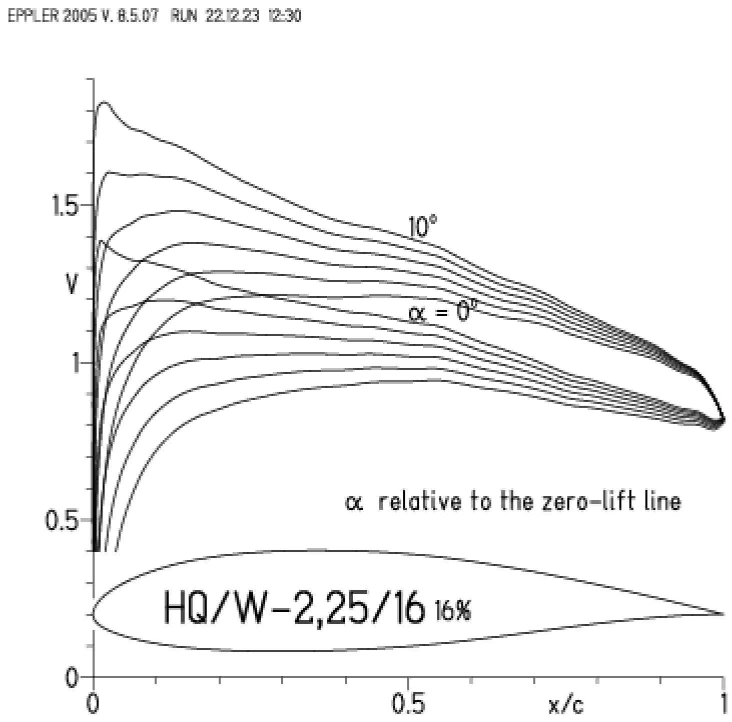


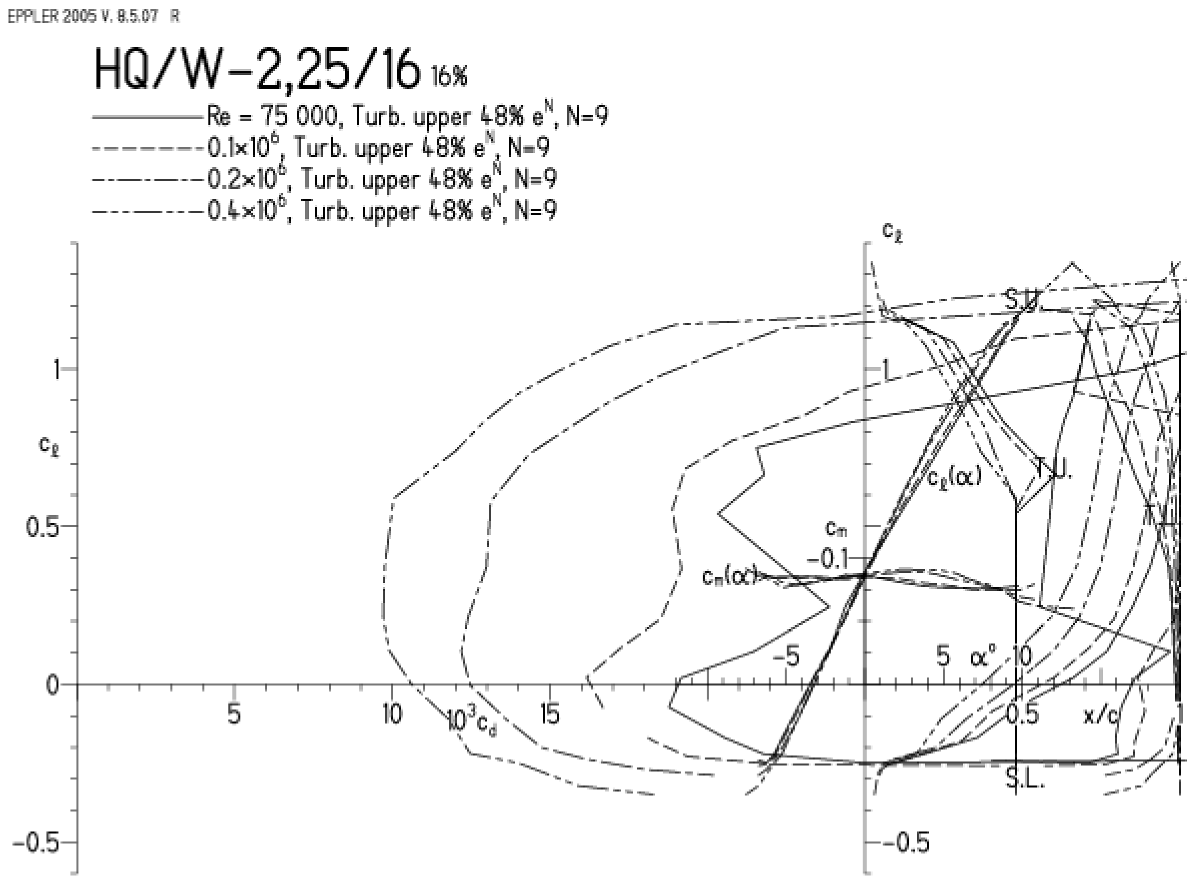
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
V
x/c


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_ℓ(α)
c_m(α)
10^3 c_d
α°
x/c

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



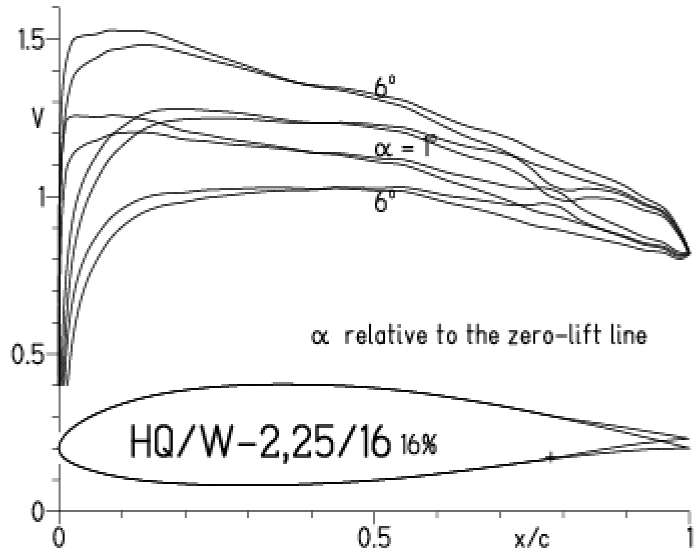


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

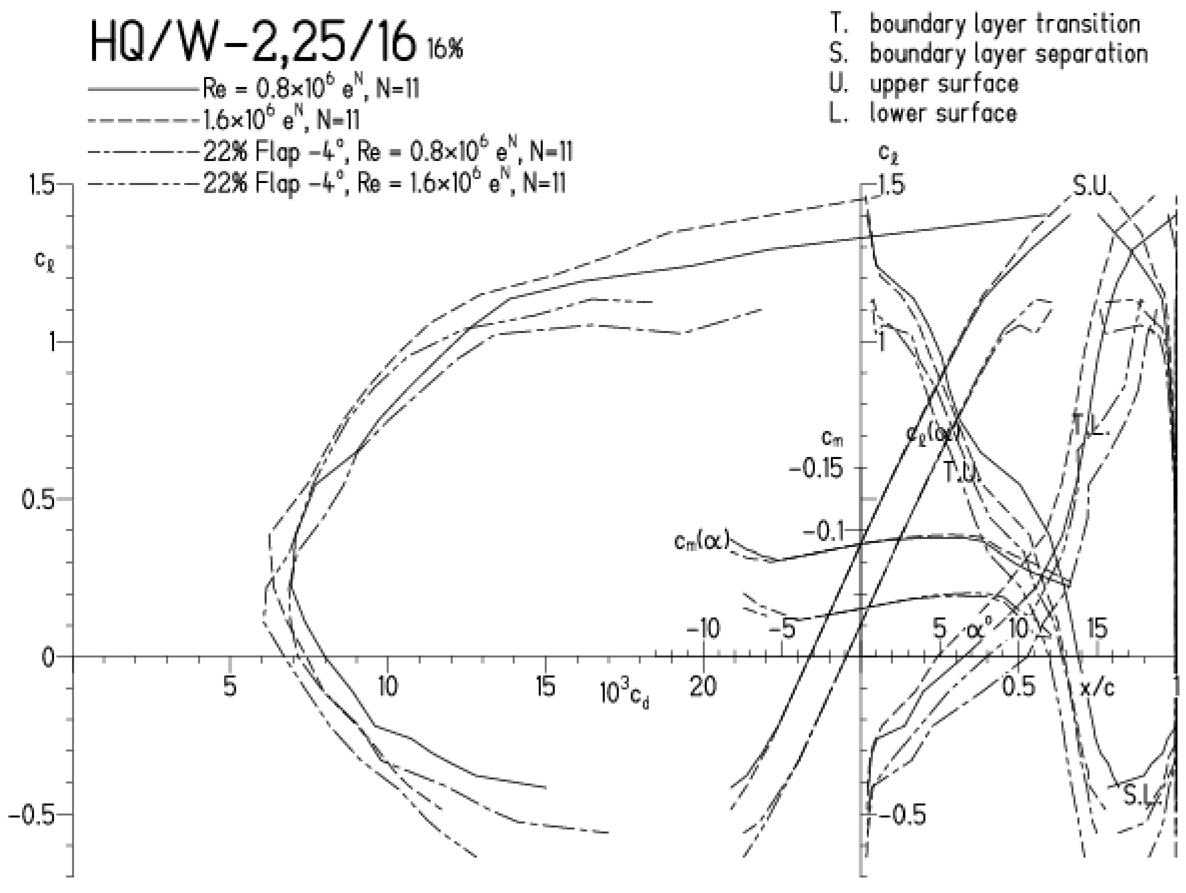
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

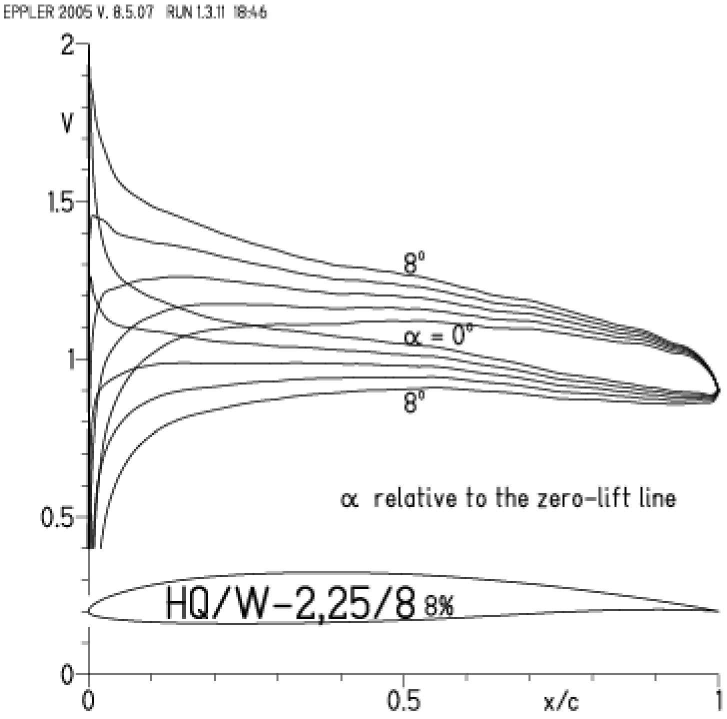
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

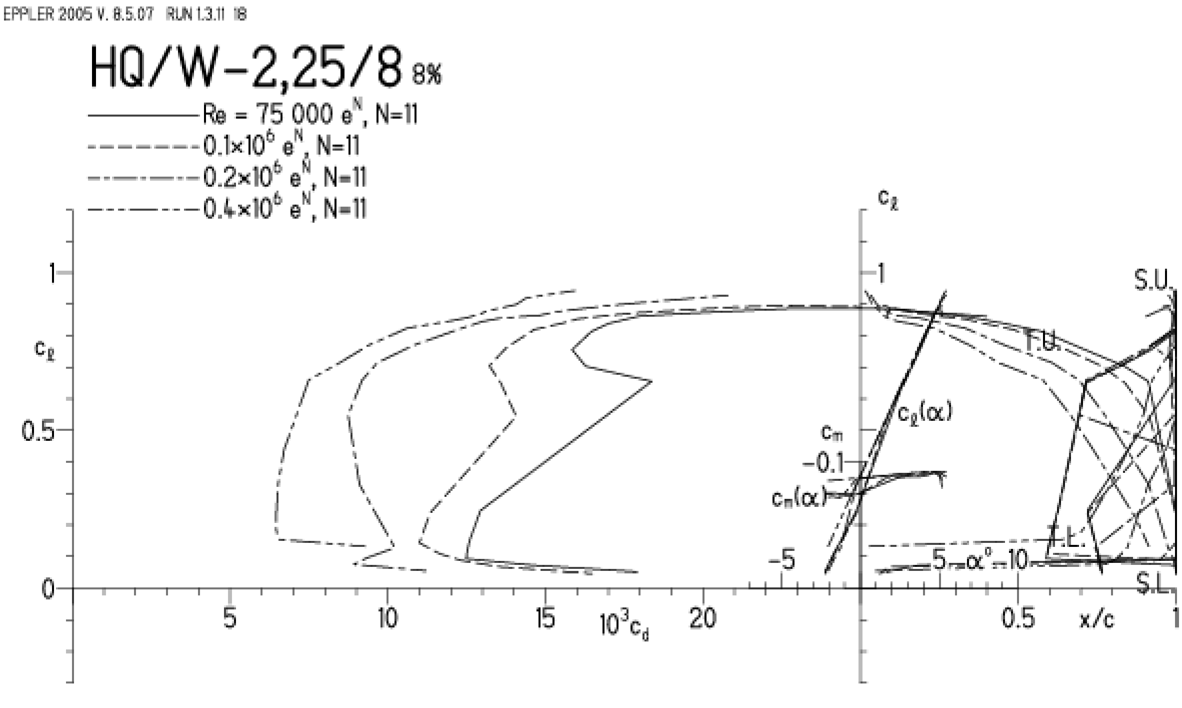


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

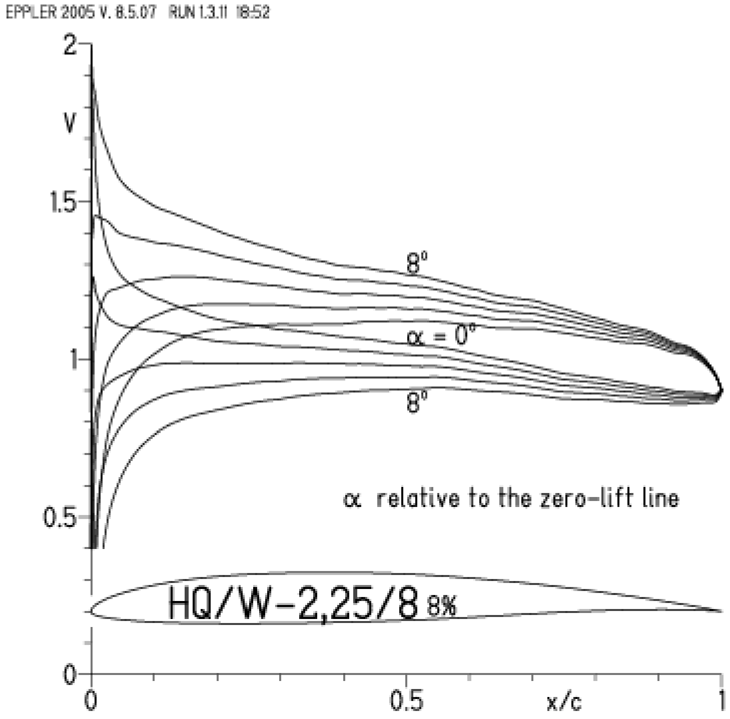


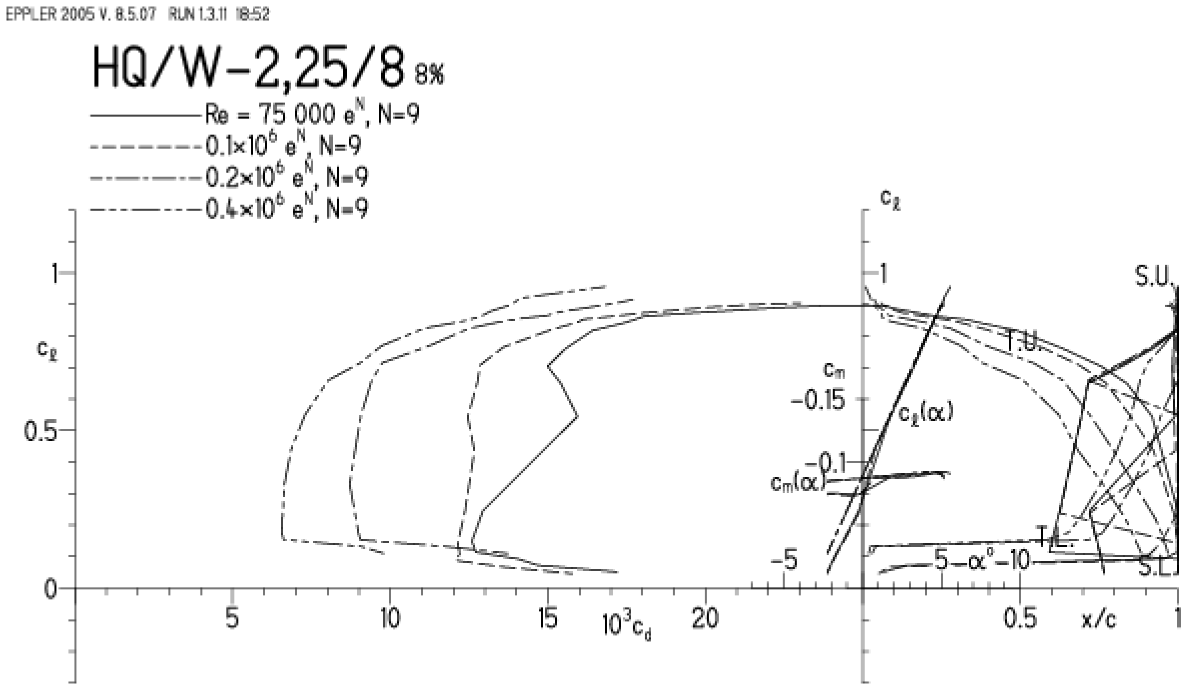
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

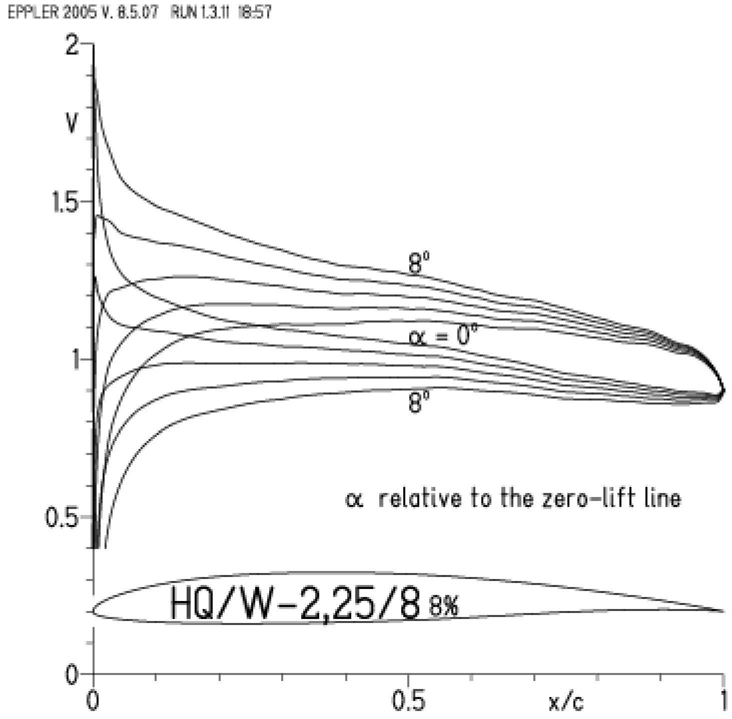

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

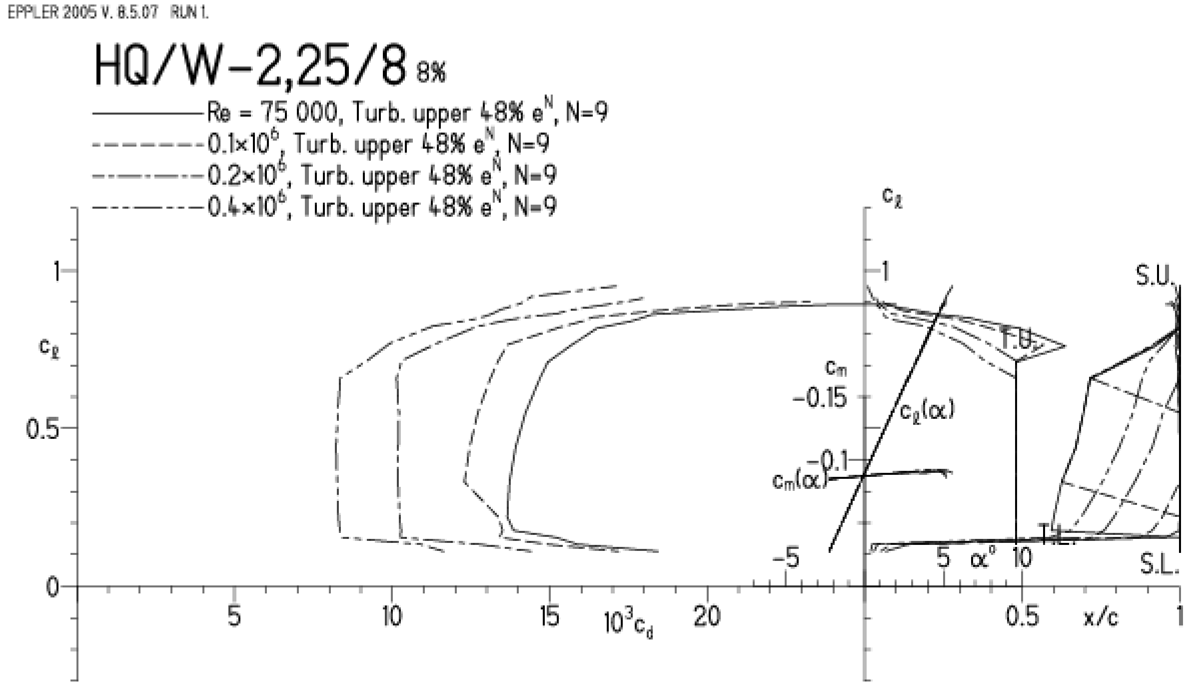
<u>HQ/W-2,25/8</u>, N=9



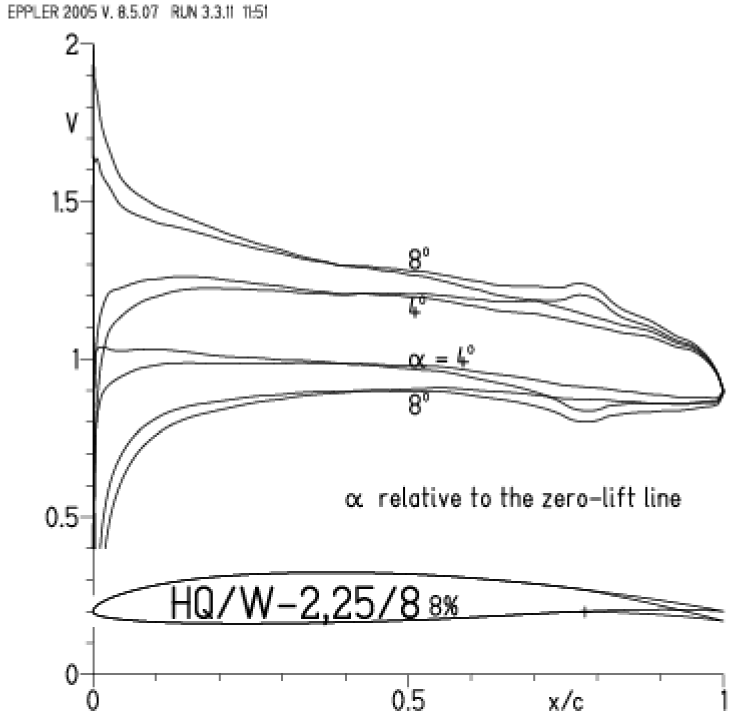


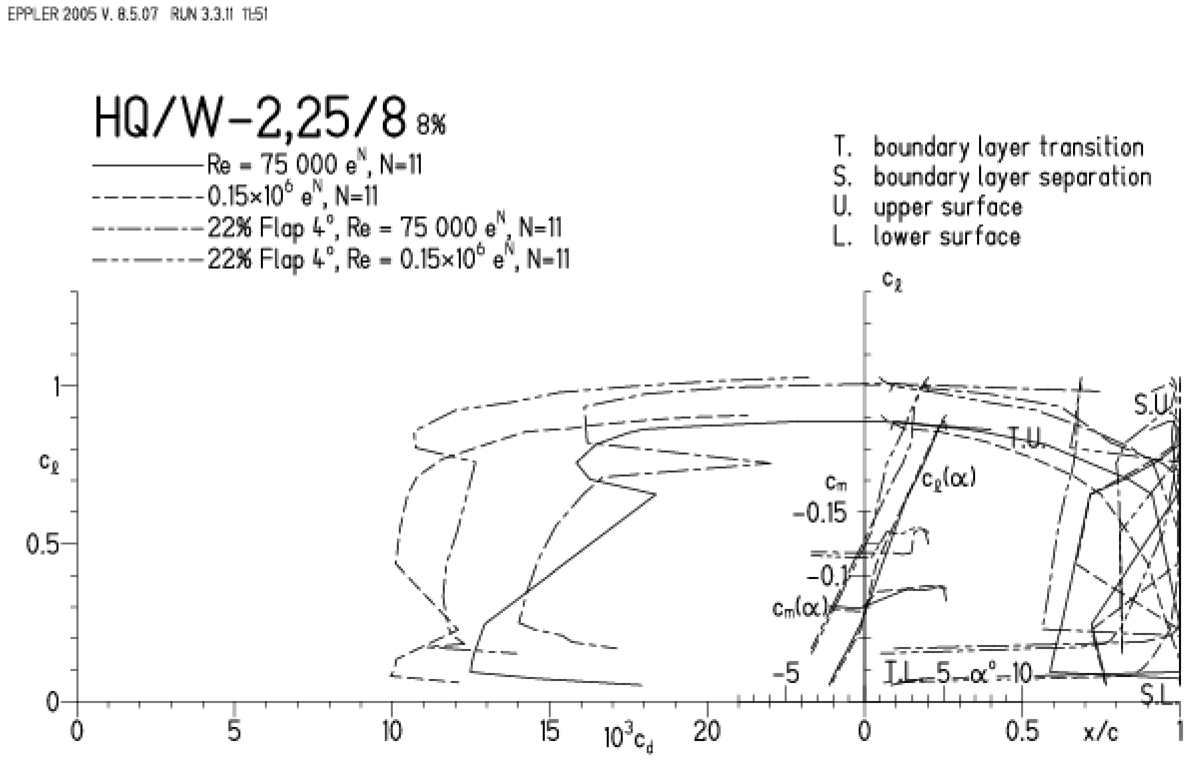
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



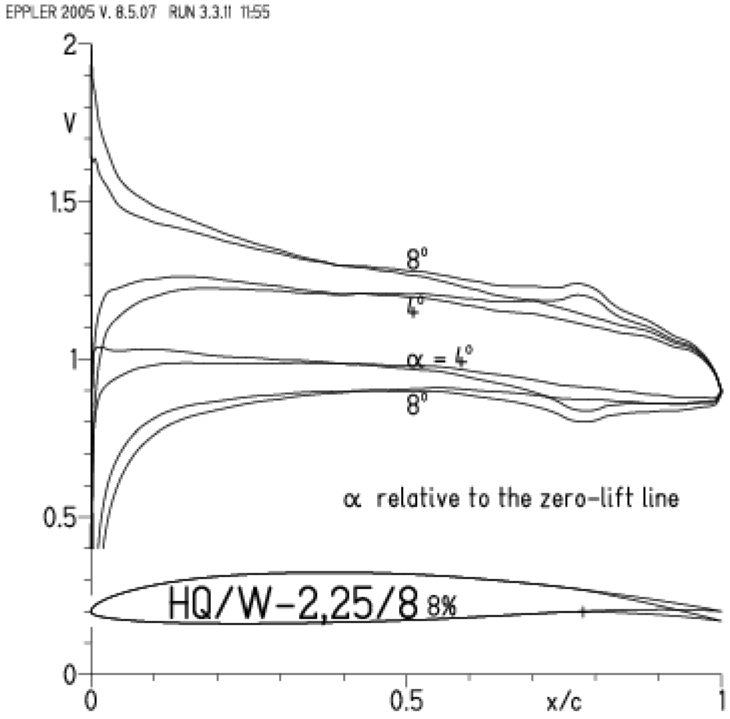


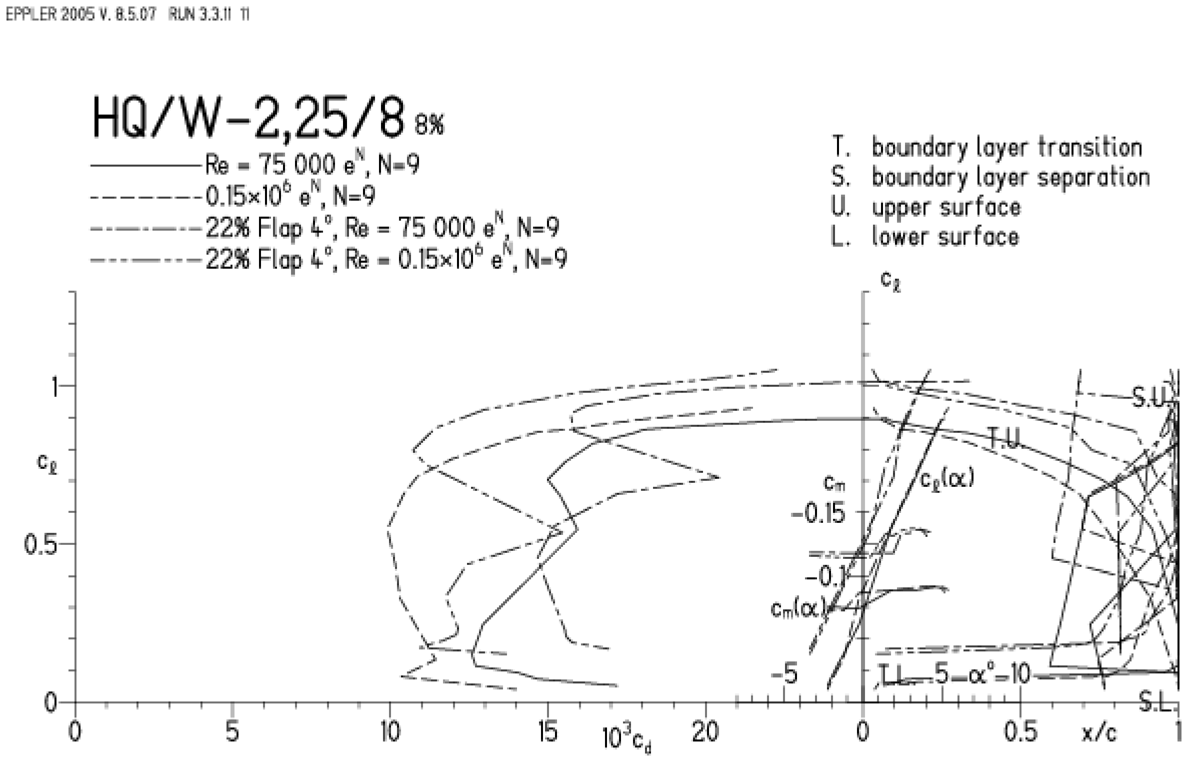
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



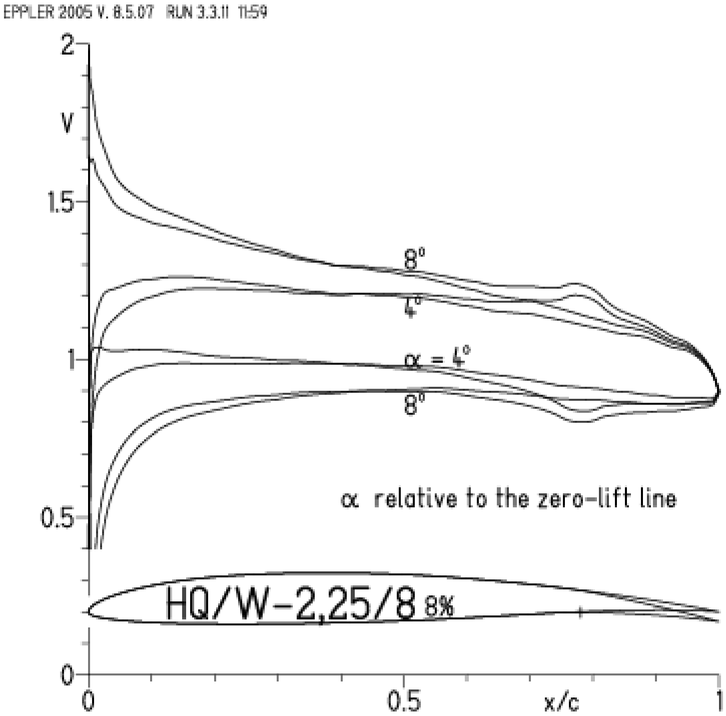


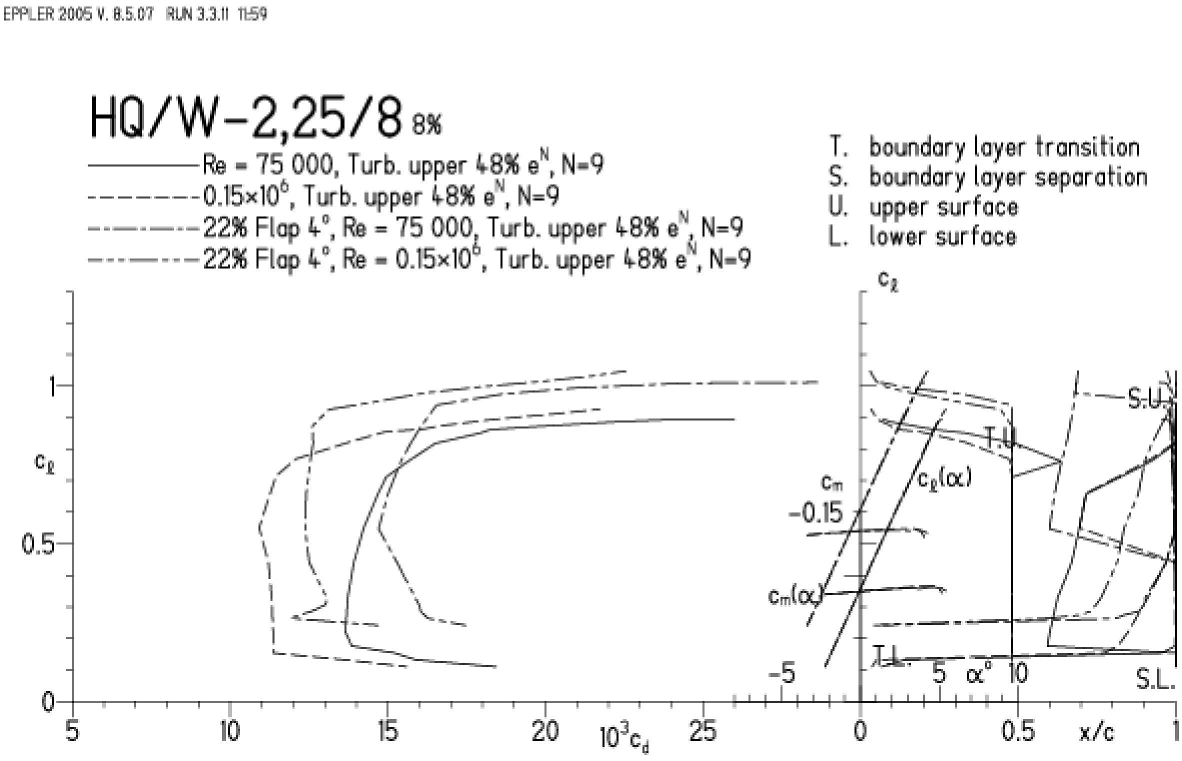
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





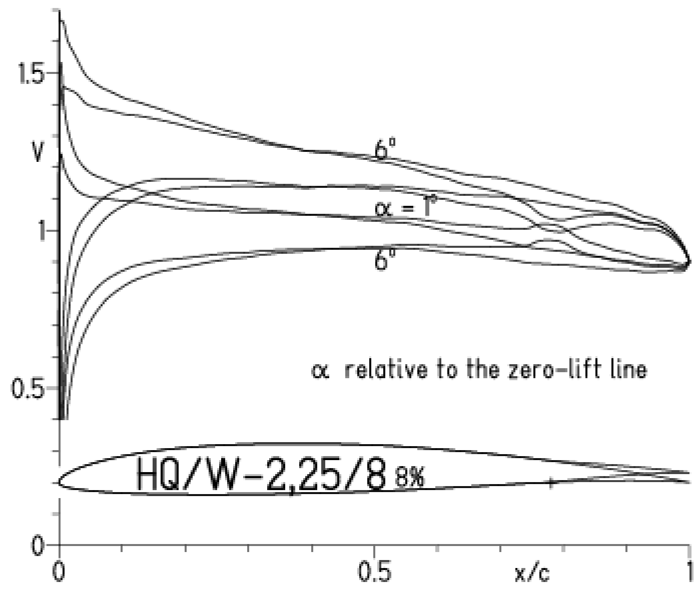
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



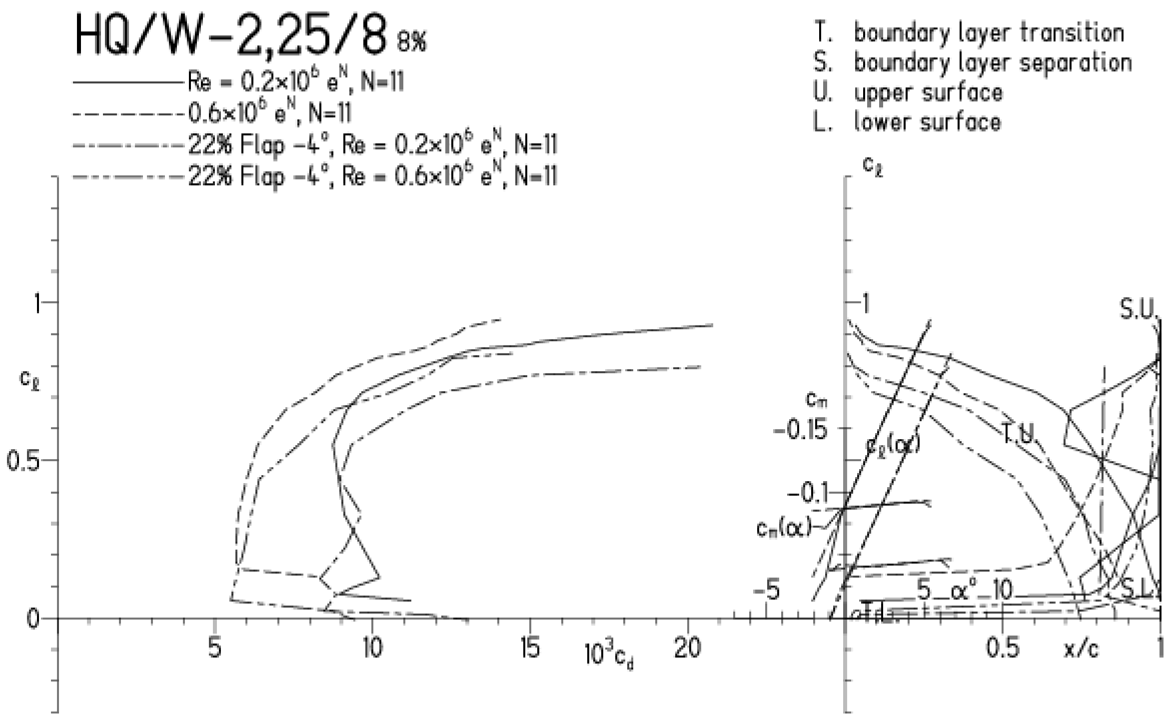


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

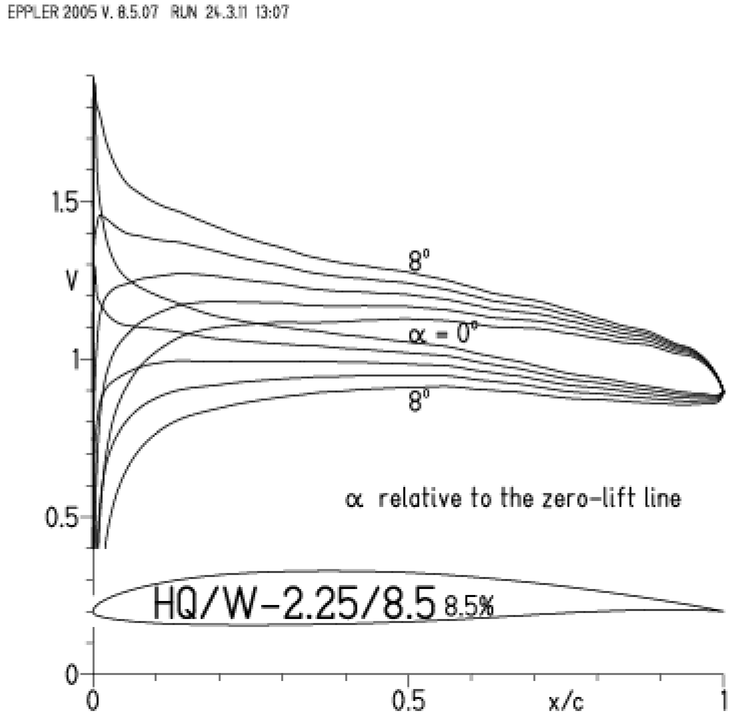
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

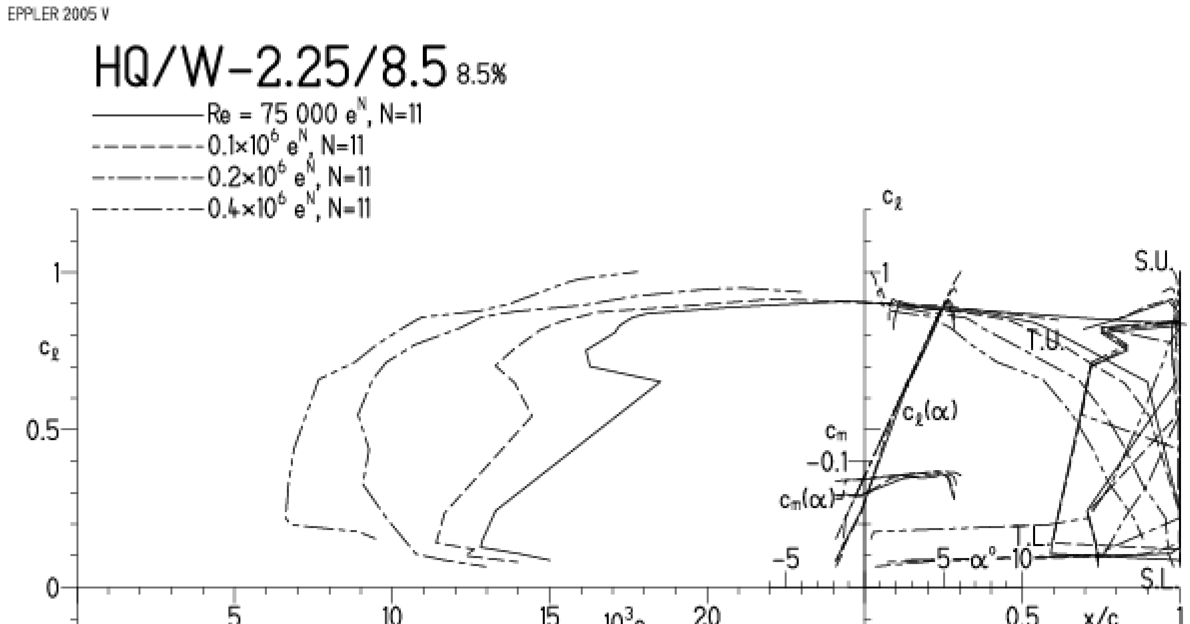


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

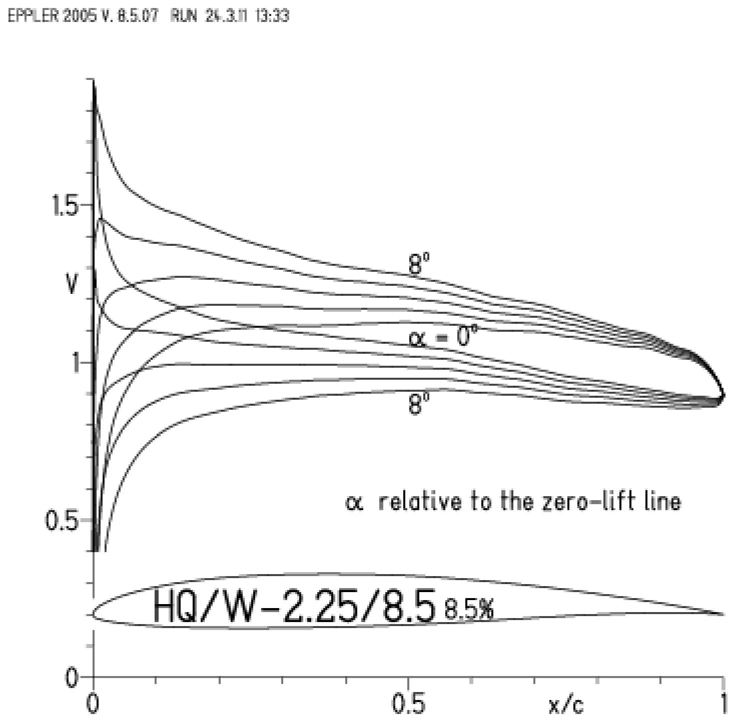


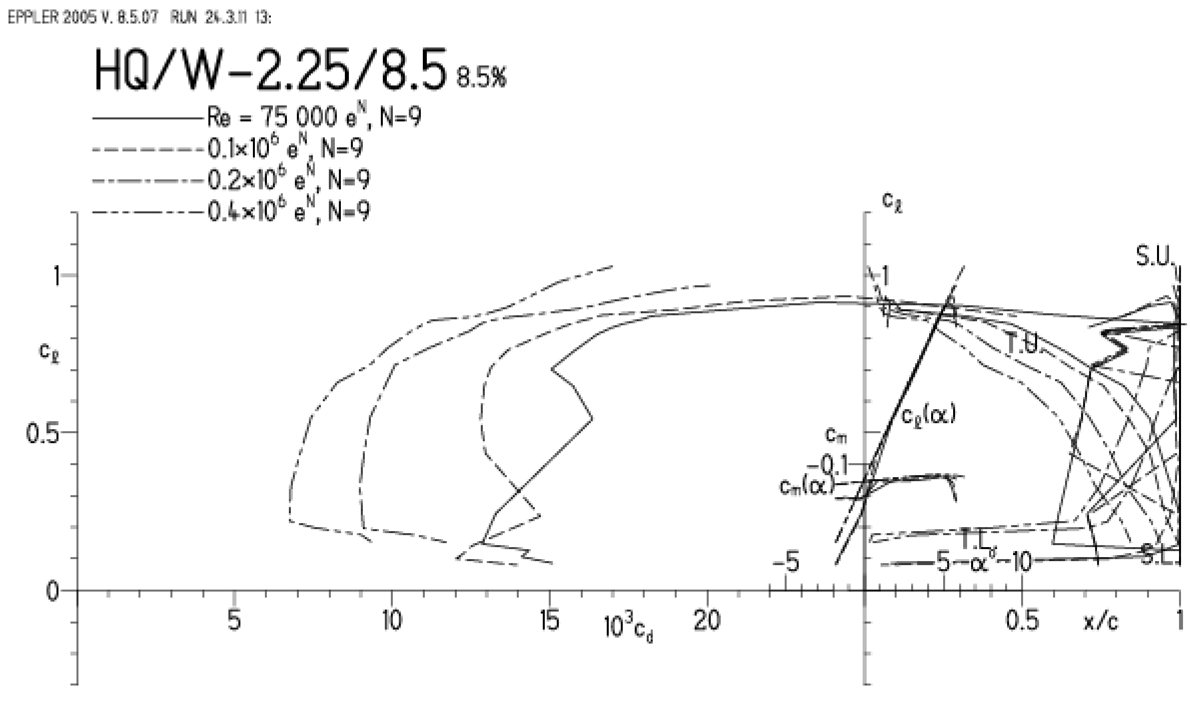
HQ/W-2,25/8,5, N=11



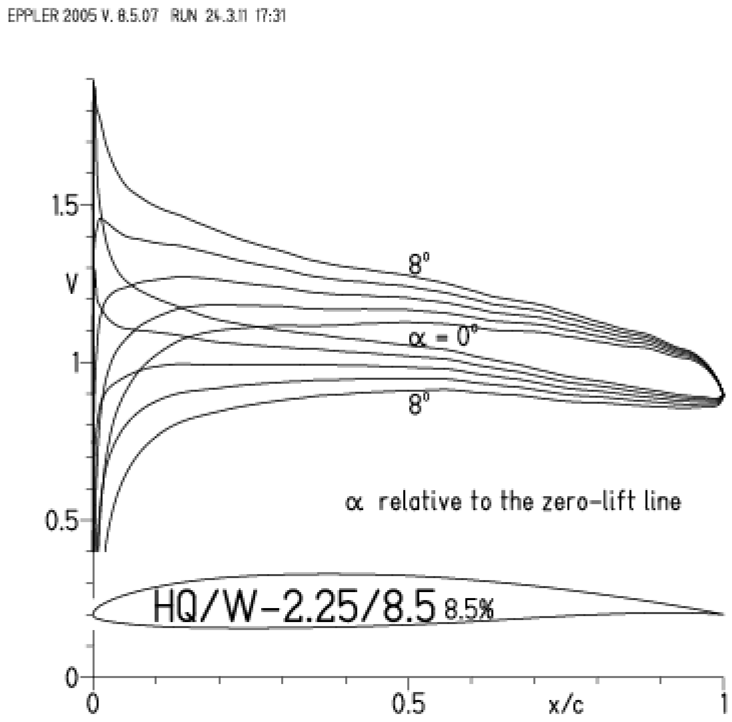


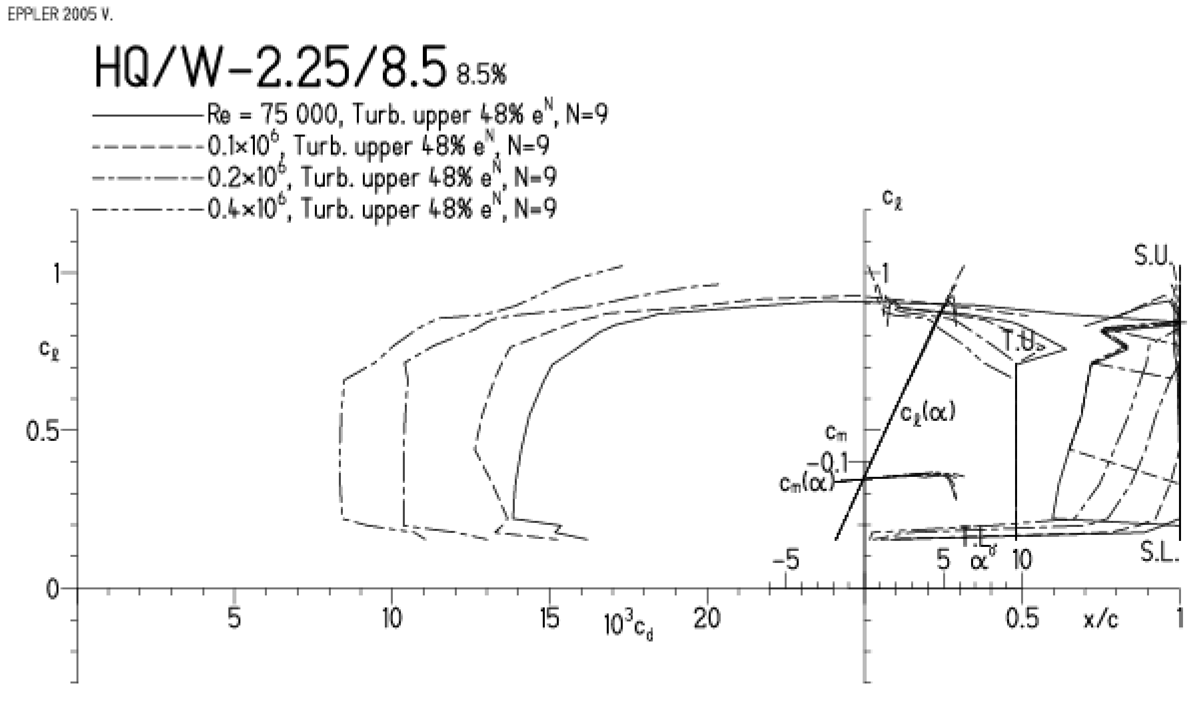
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
S.U.
T.U.
c_l(α)
c_m
−0.1
c_m(α)
−5
T.L.
5 α° 10
S.L.
0.5
x/c
1

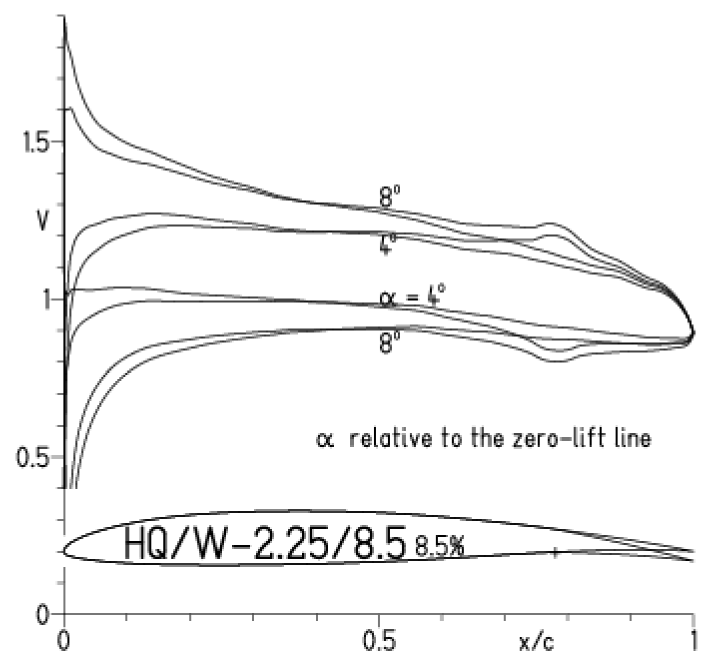
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



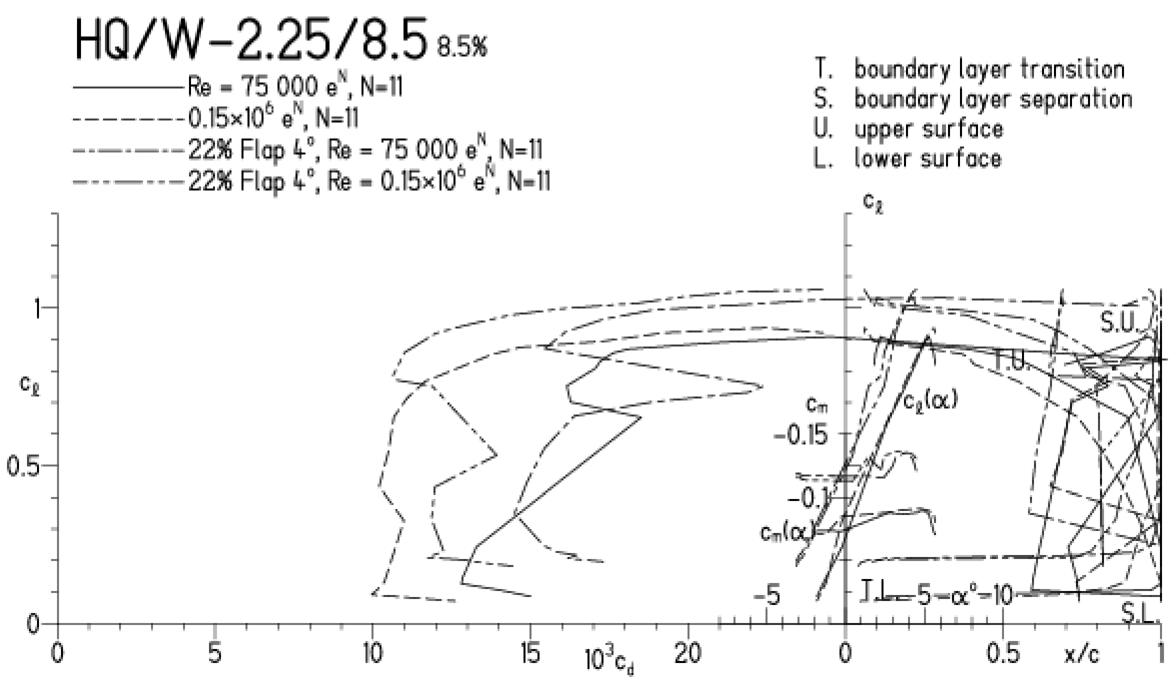


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

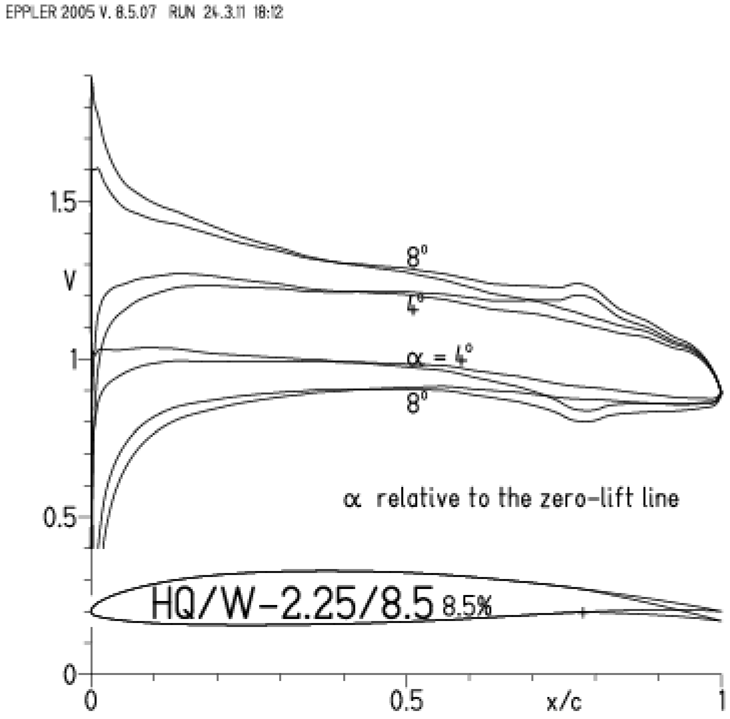
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

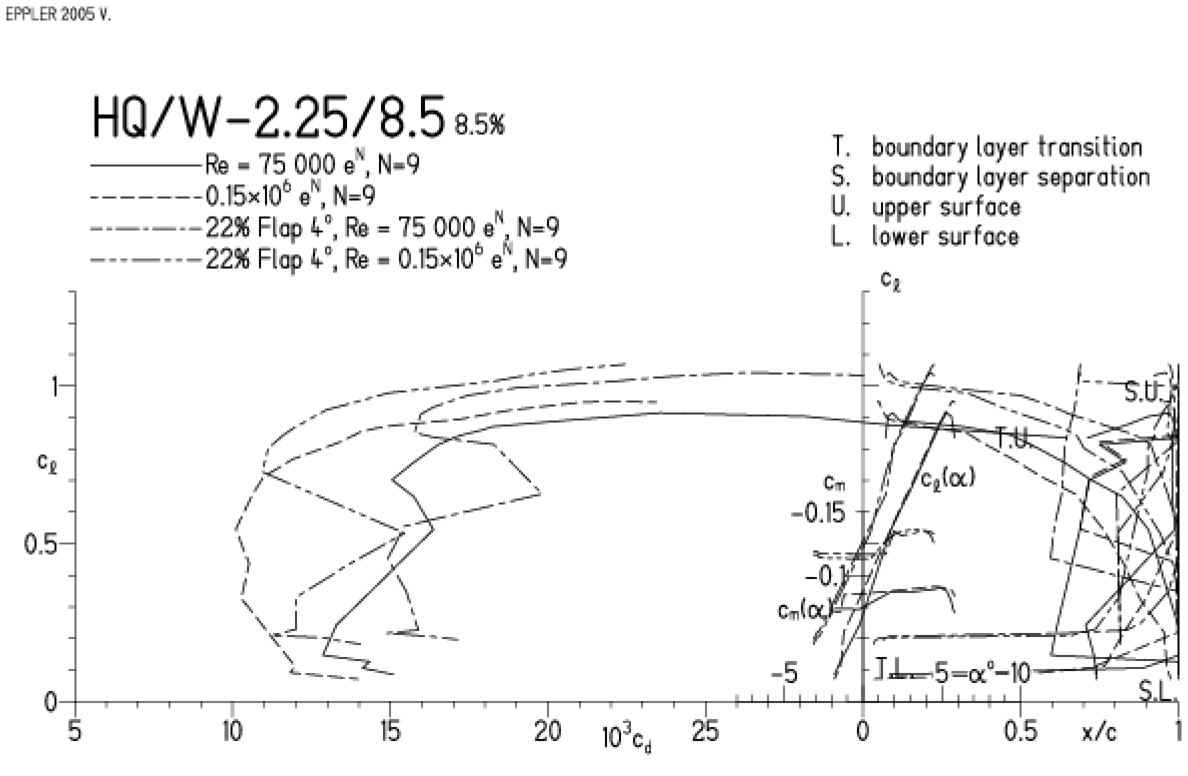


EPPLER 2005 V. 8.5.



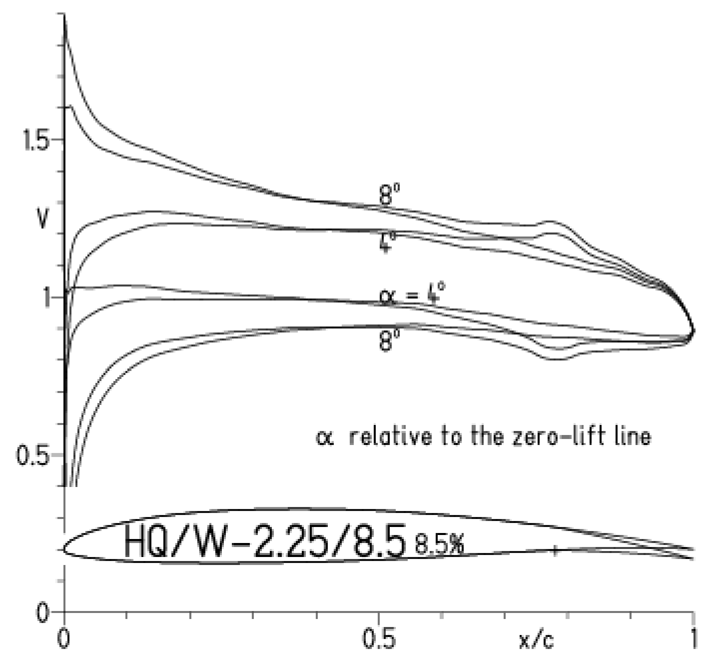
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



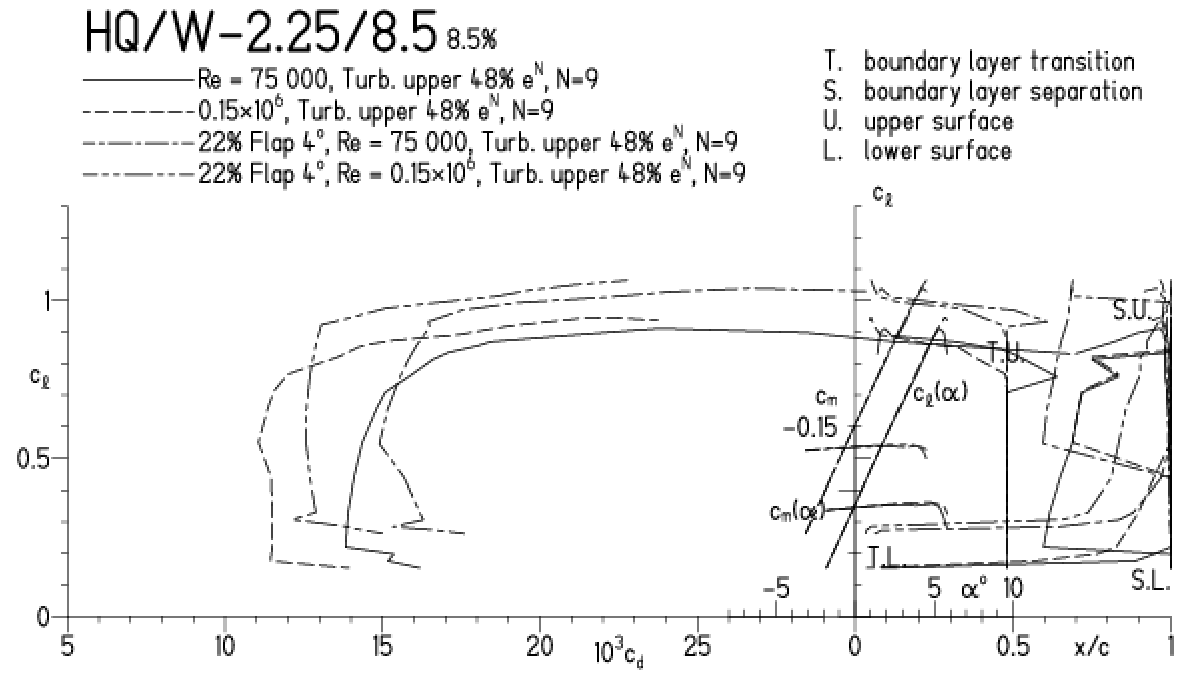


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

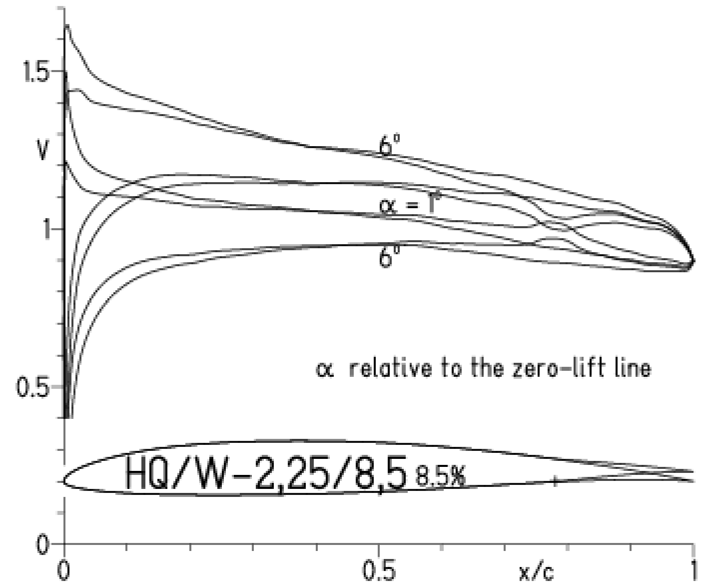


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

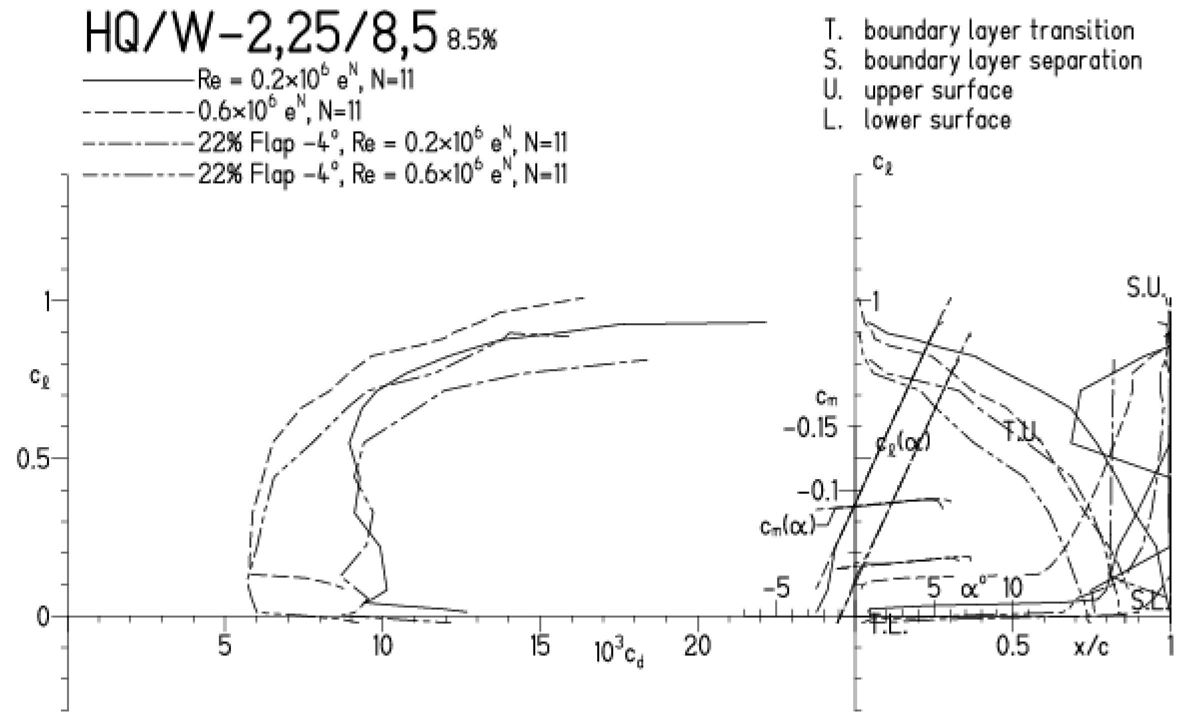


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

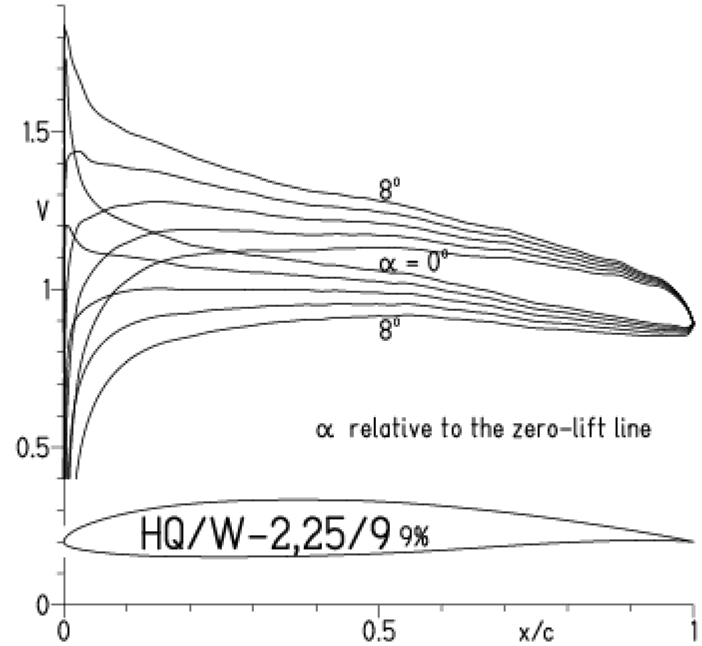


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

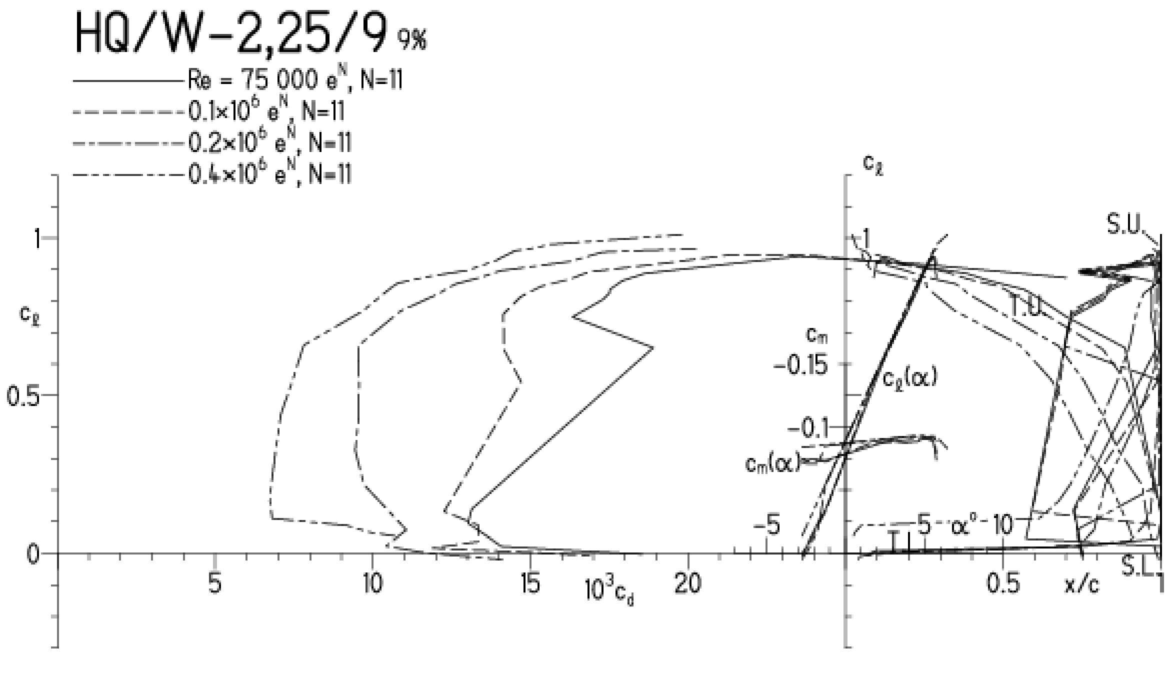


HQ/W-2,25/9, N=11

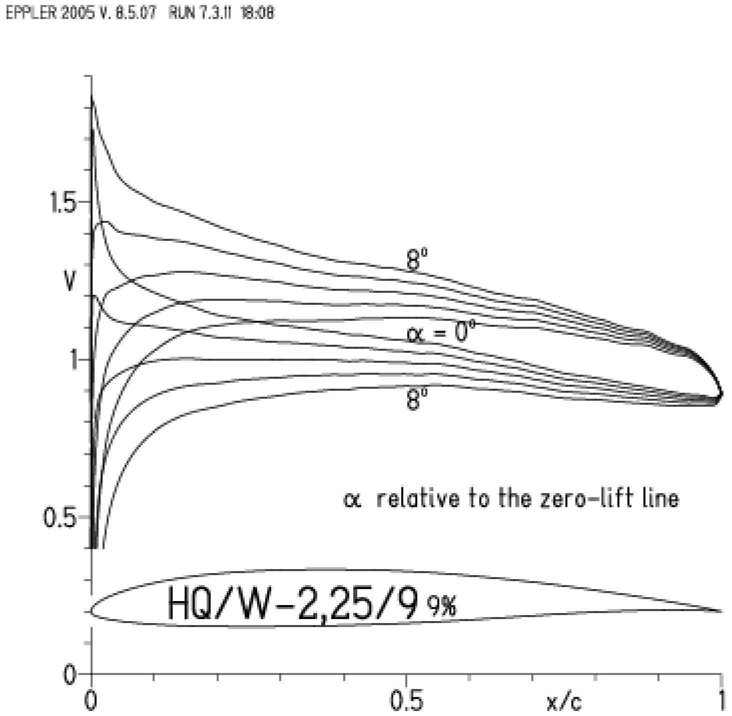
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

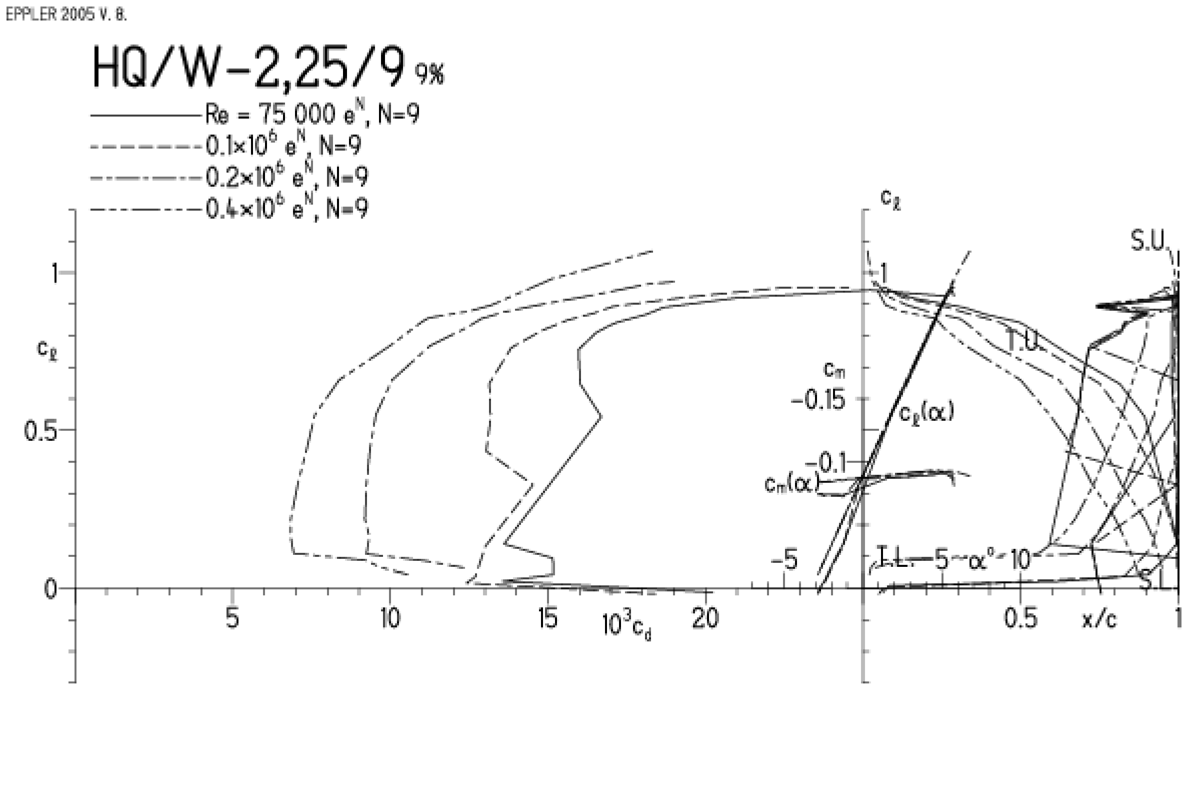


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

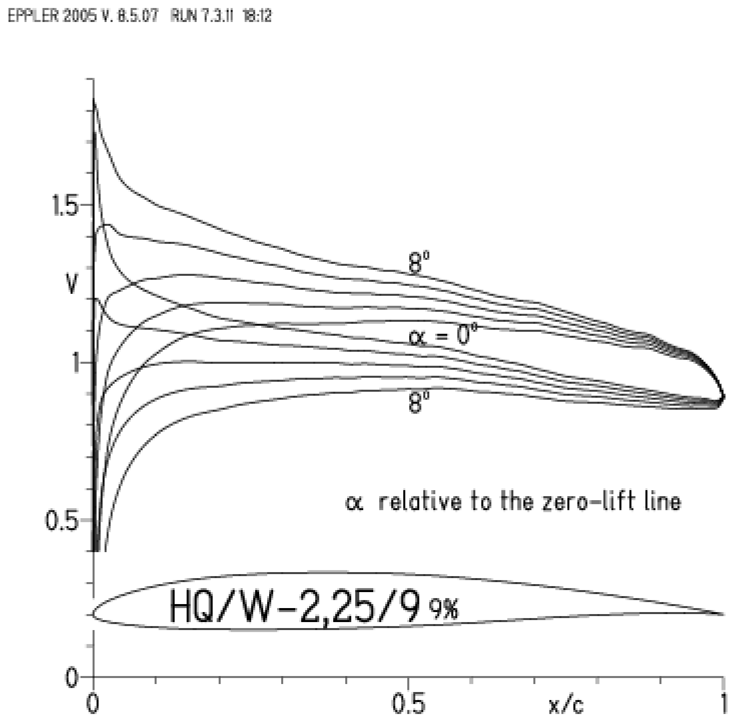


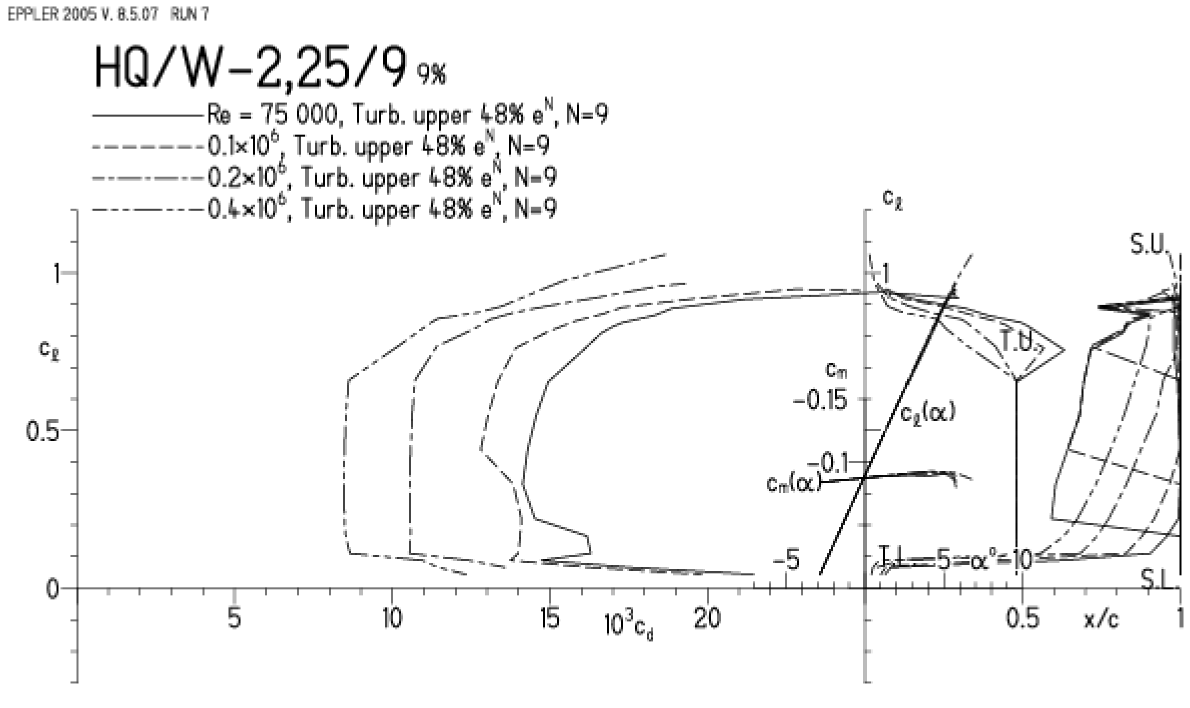
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

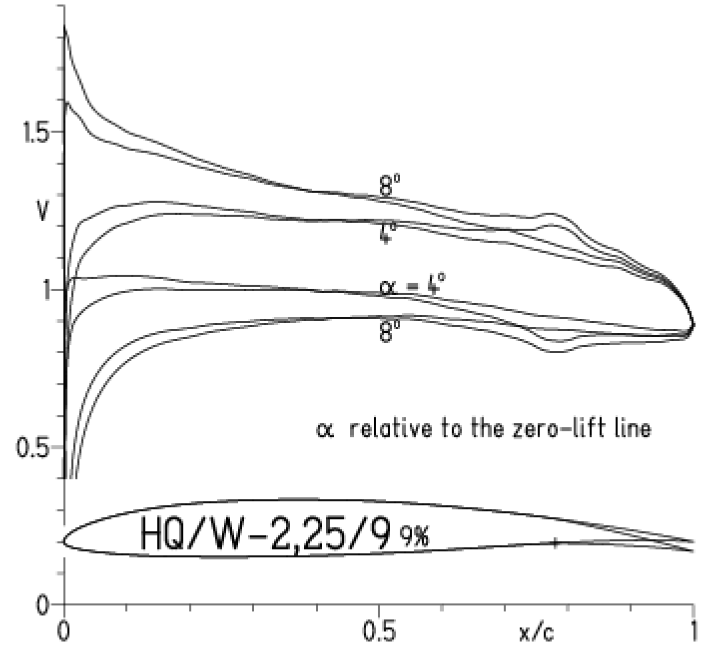
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



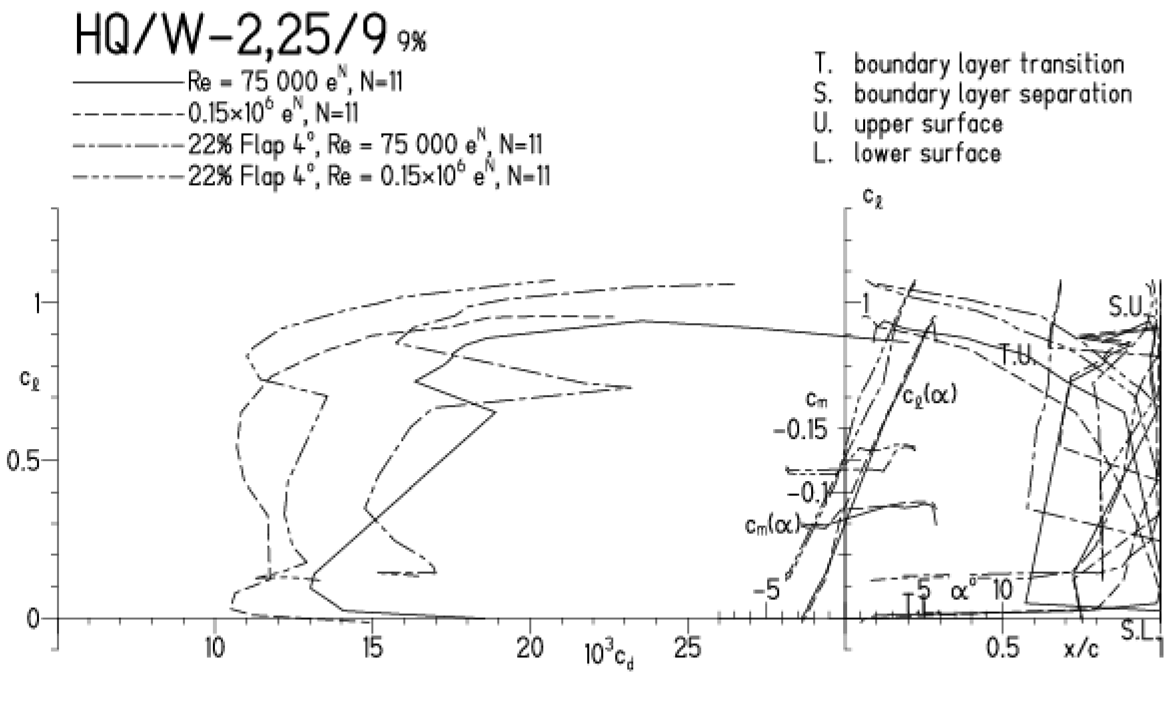


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

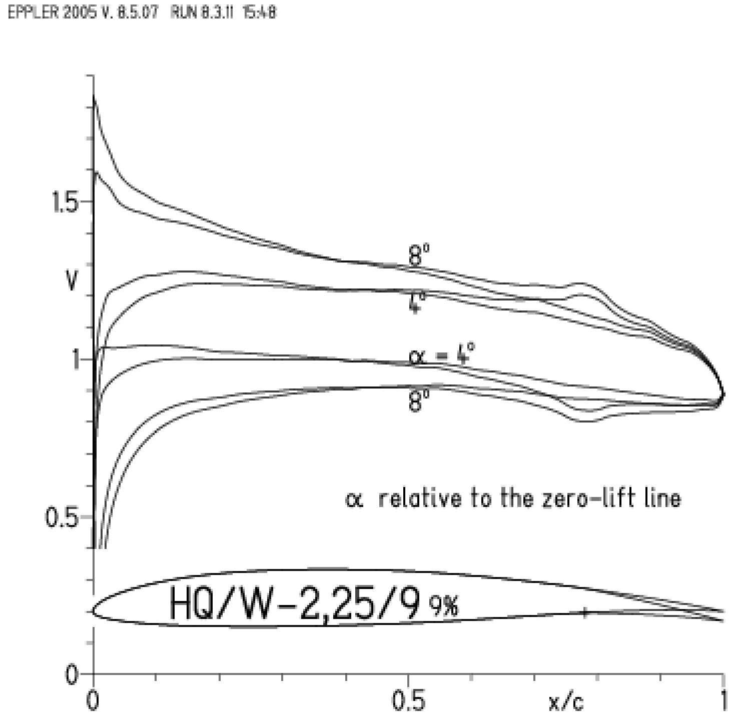
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

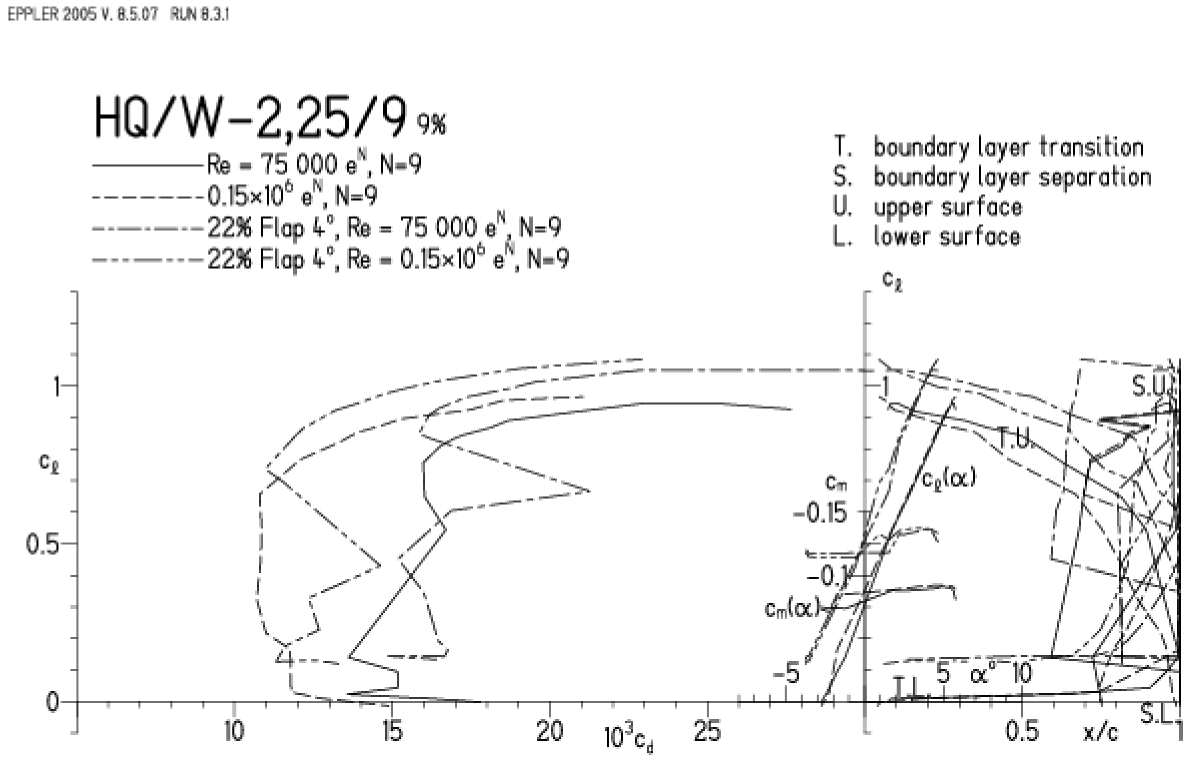


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

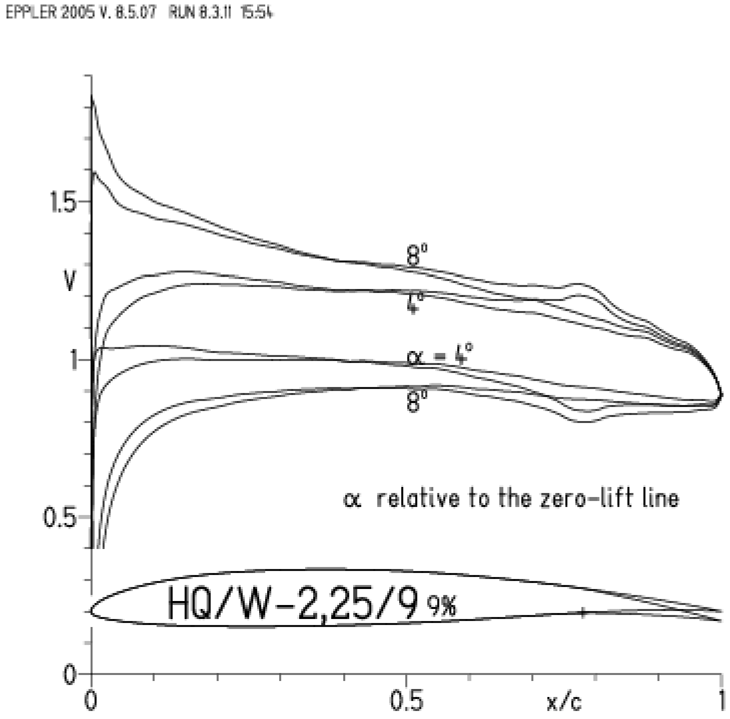


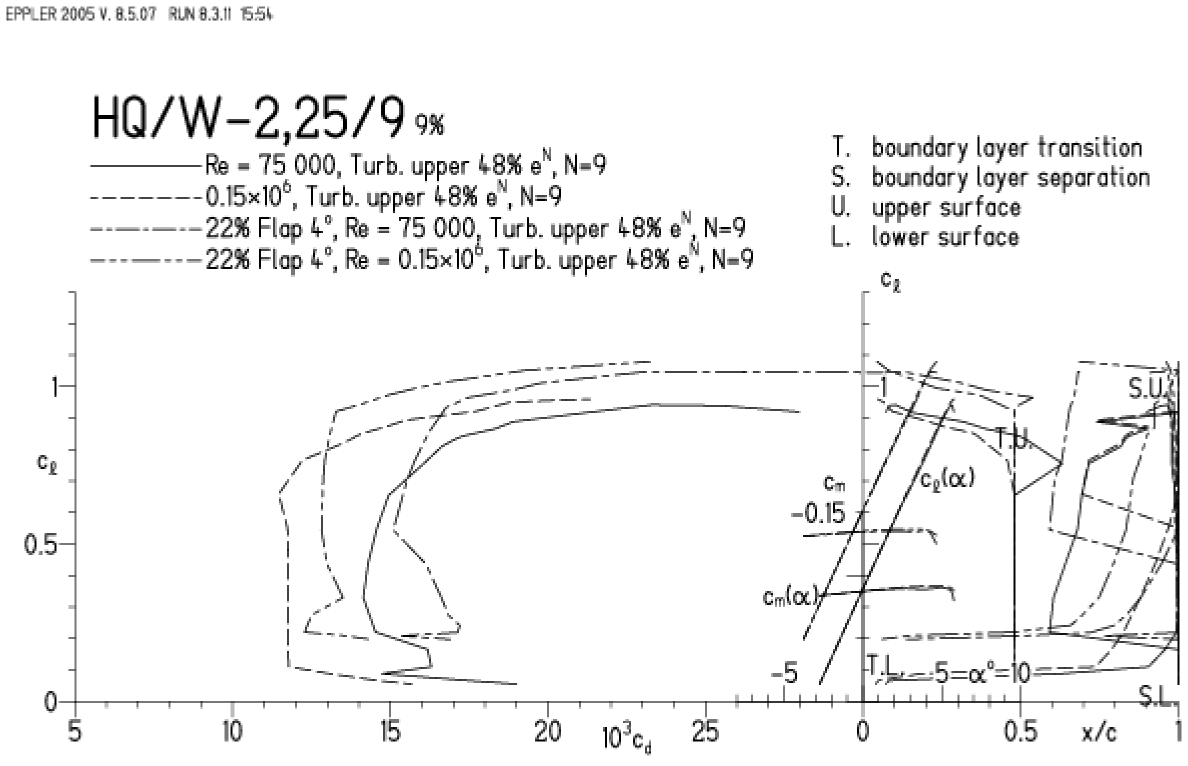
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag



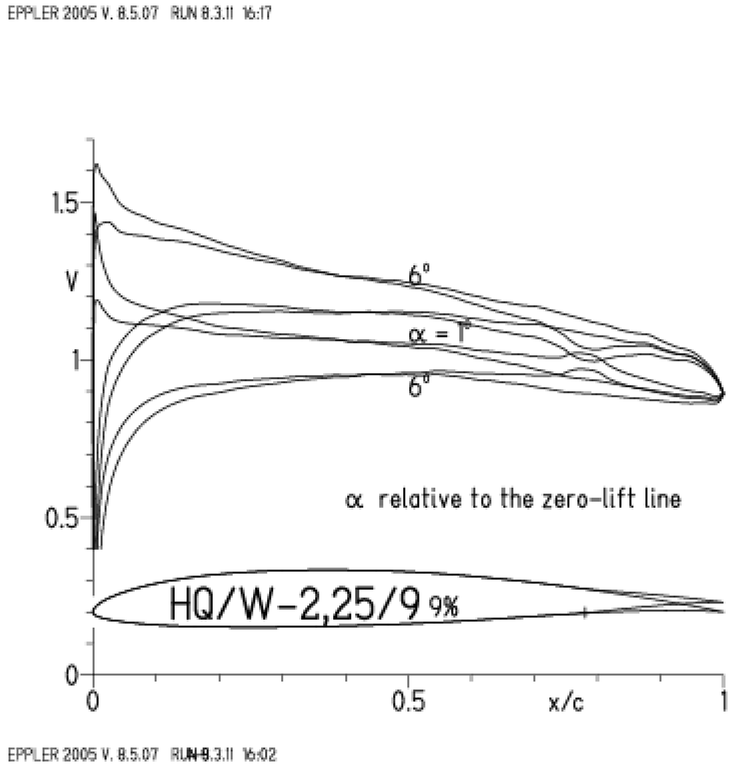


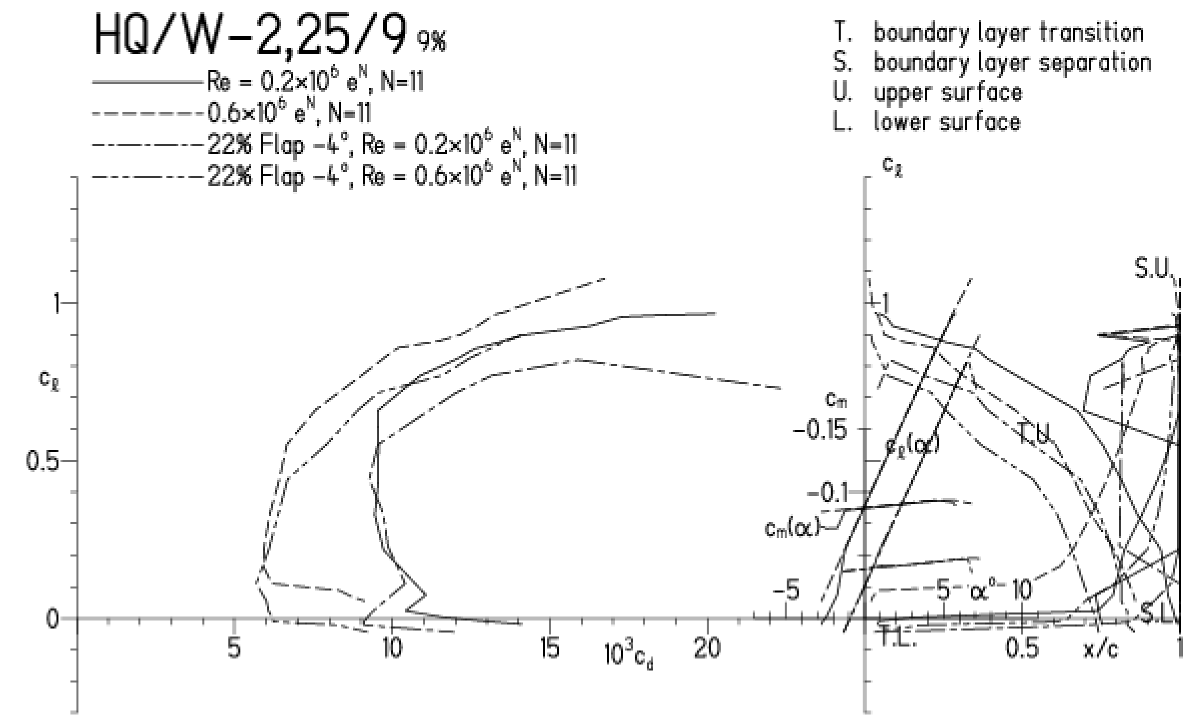
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





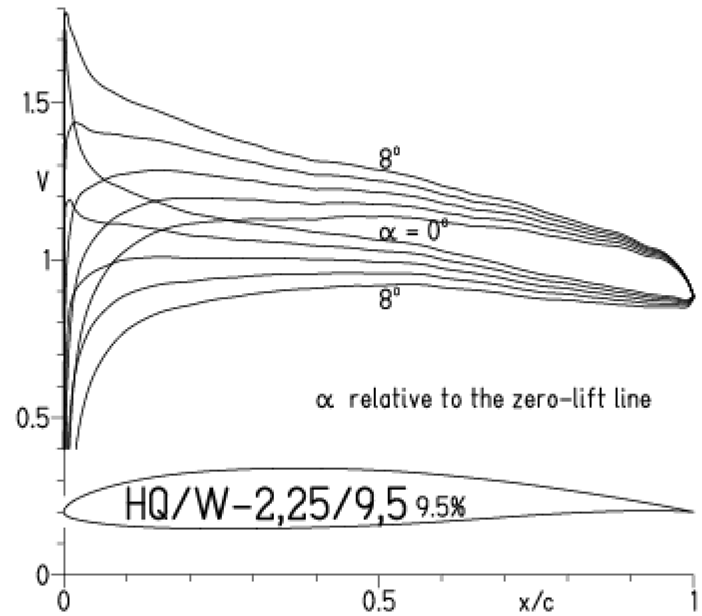
<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



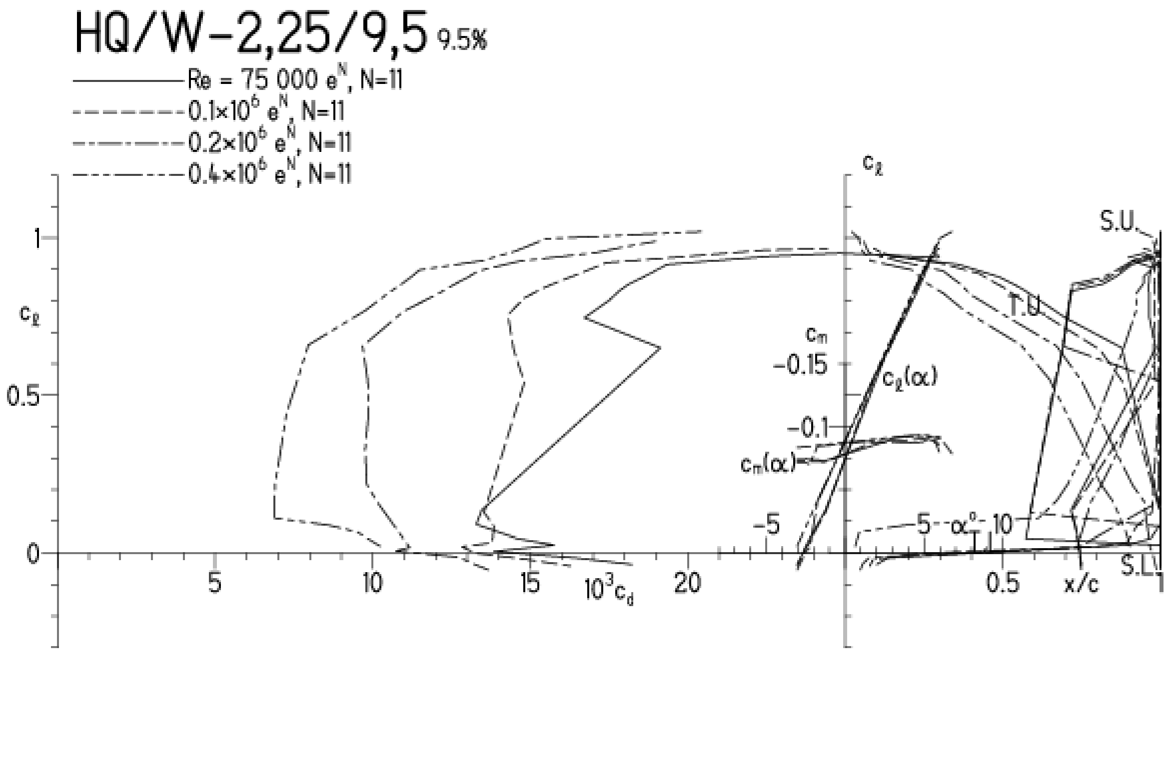


HQ/W-2,25/9,5, N=11

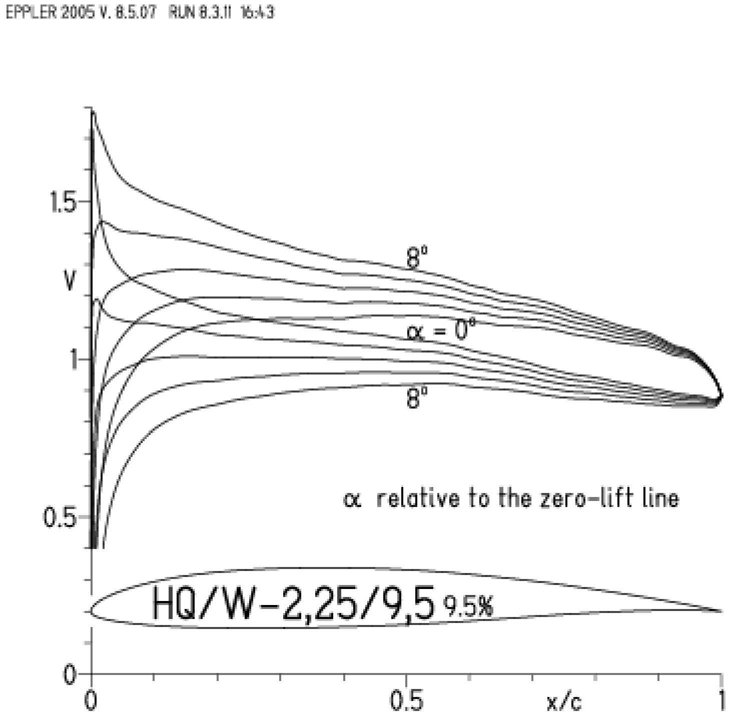
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

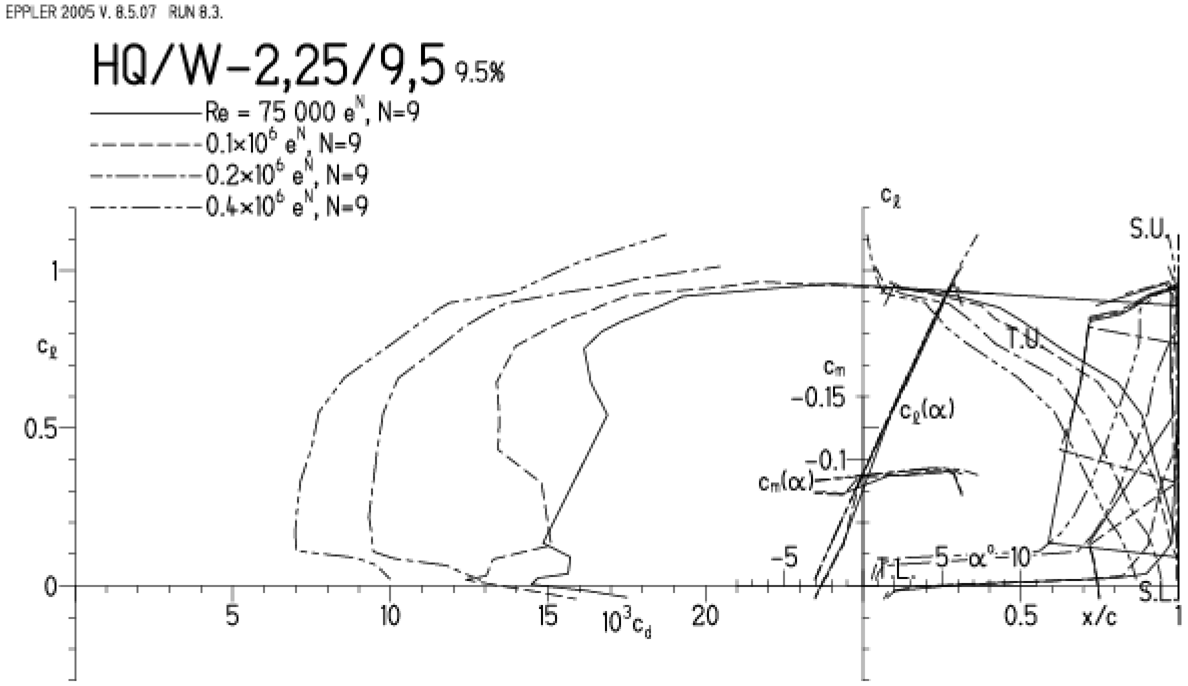


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

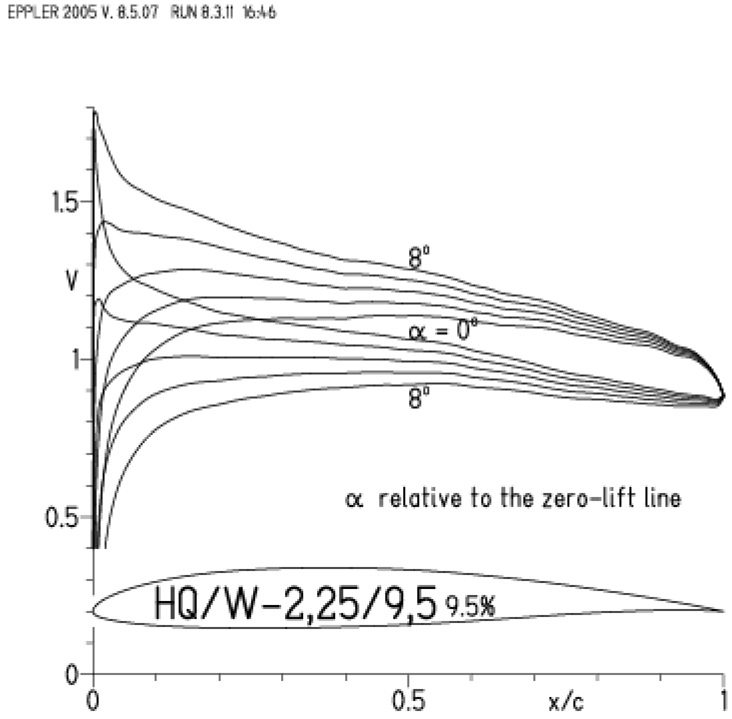


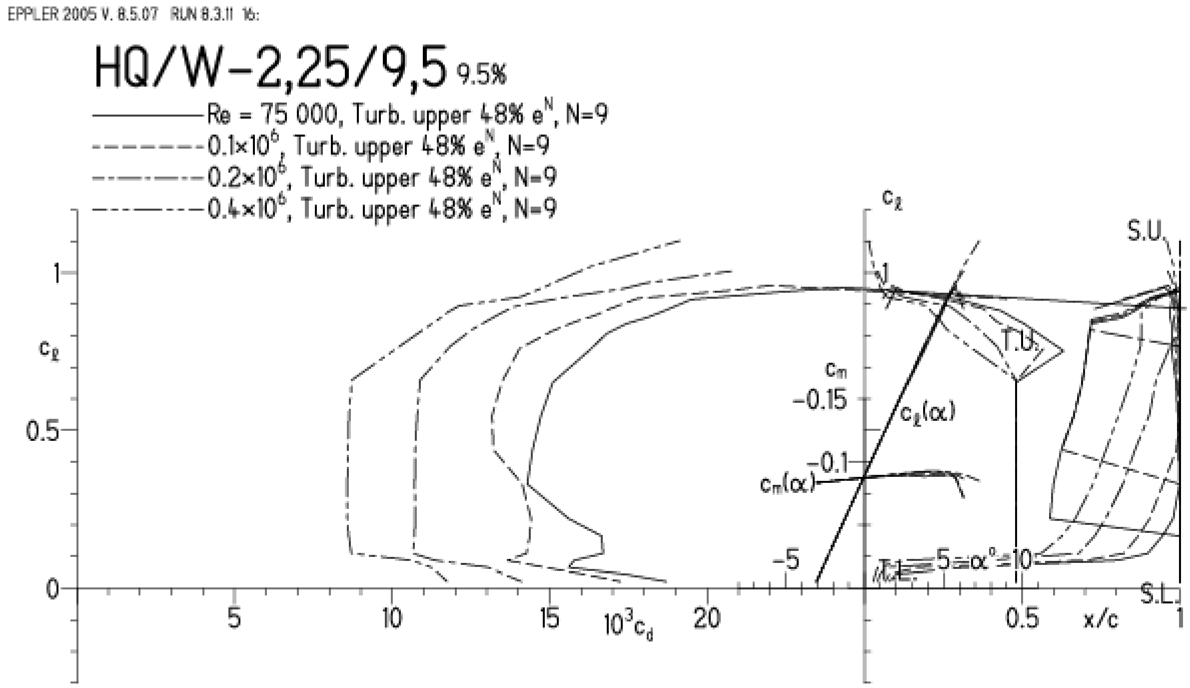
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

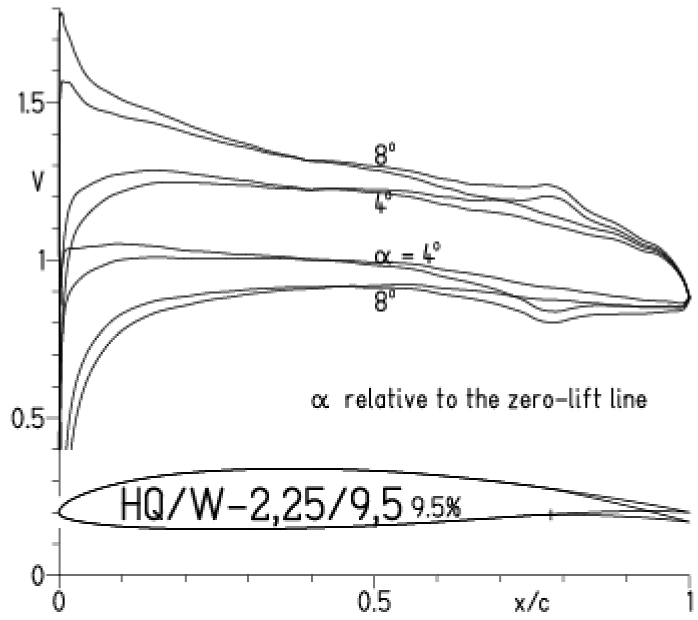
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



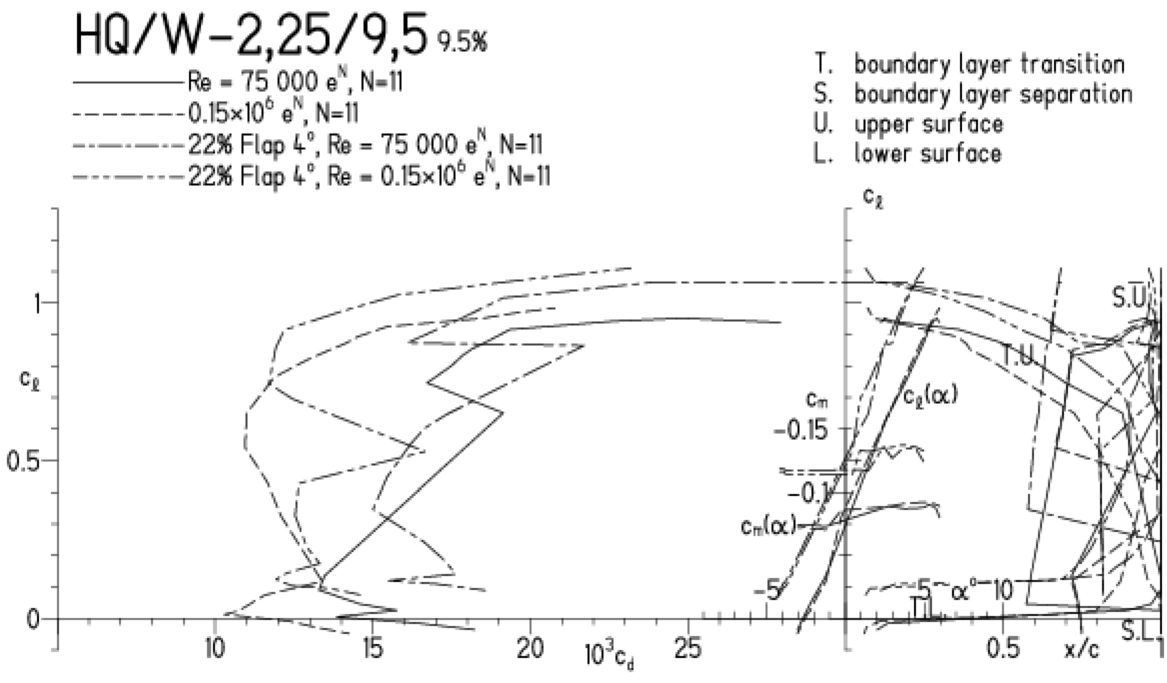


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

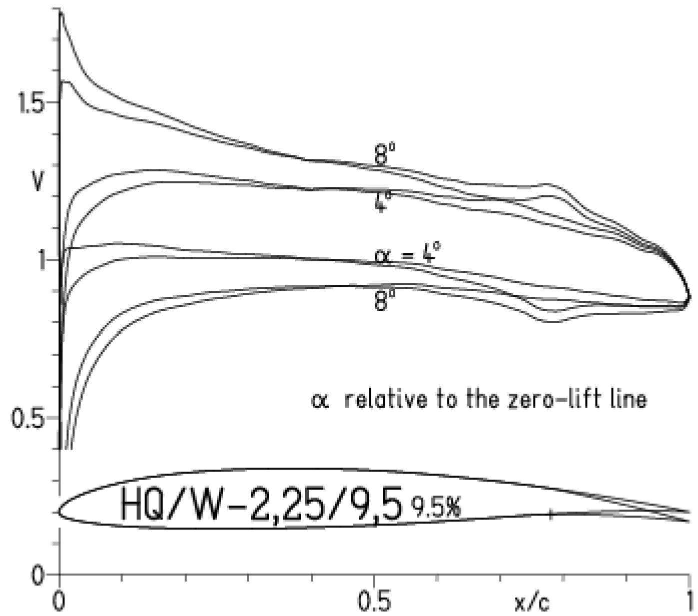


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

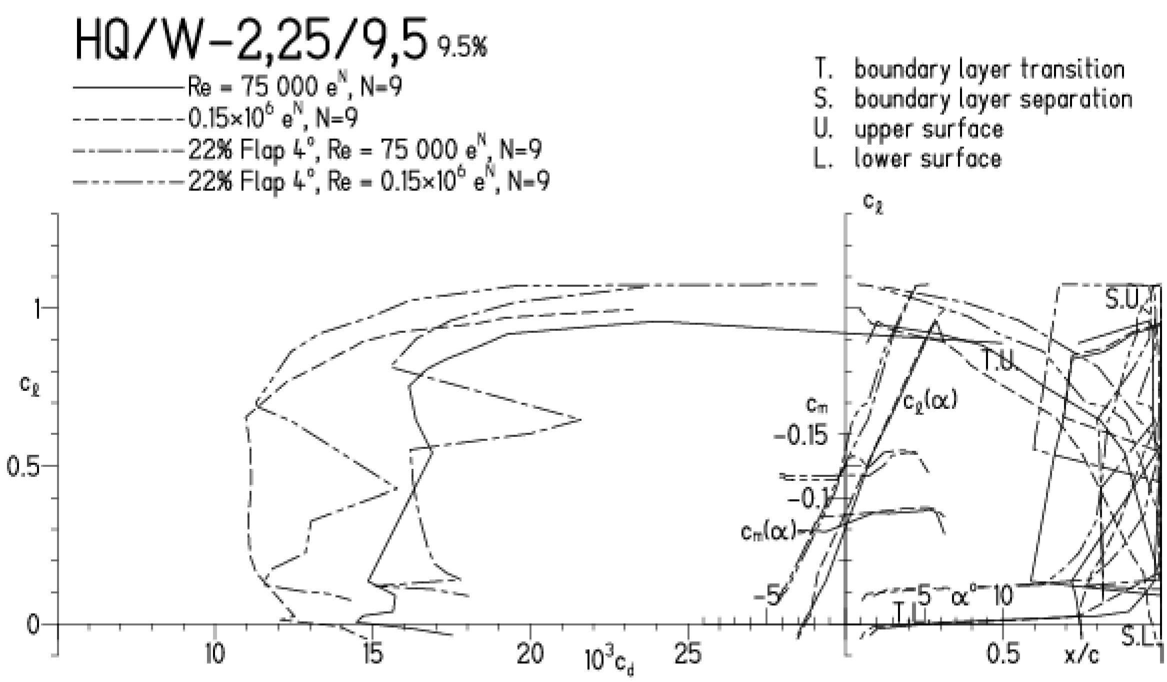


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

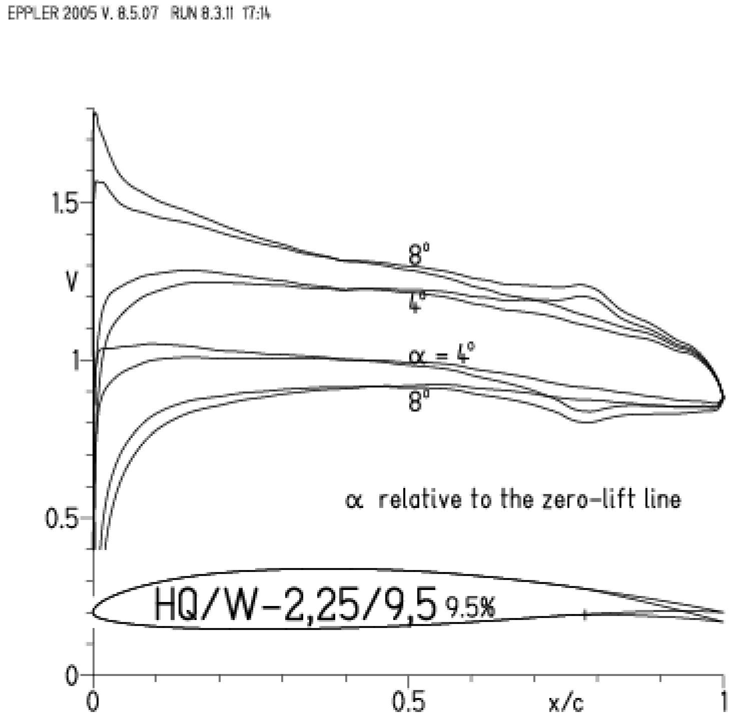
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

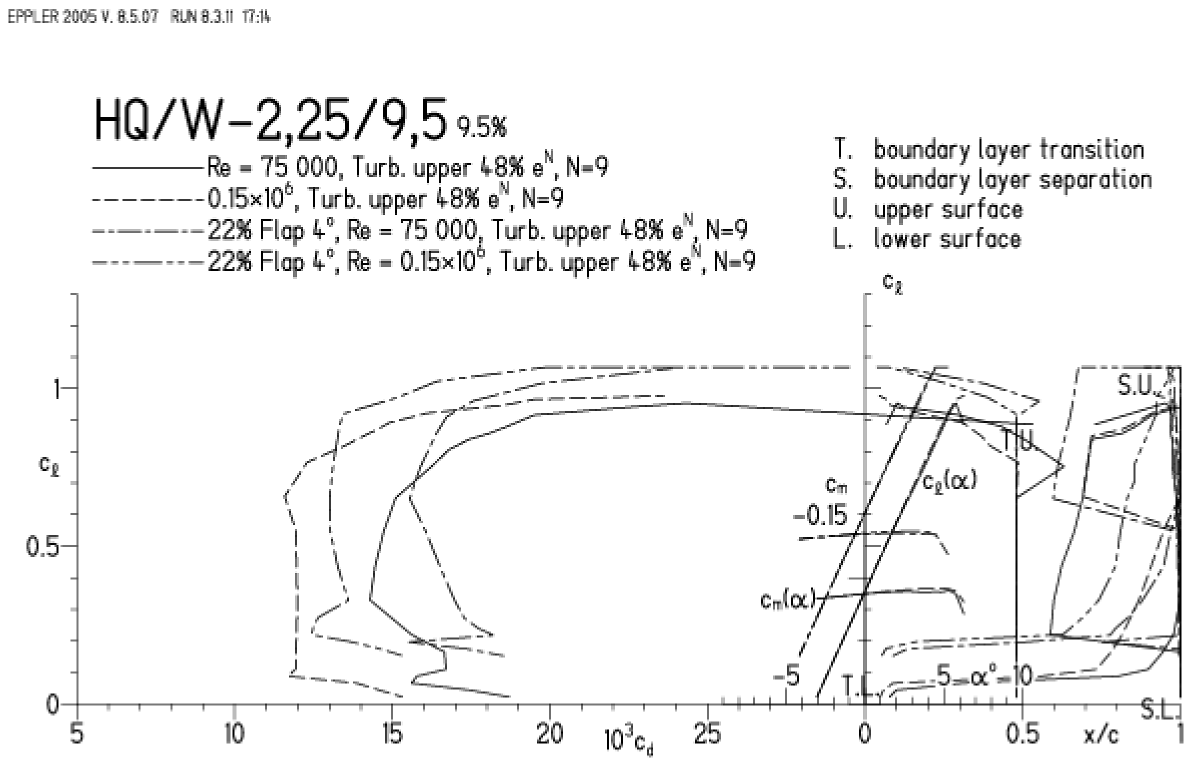


EPPLER 2005 V. 8.5.07 R



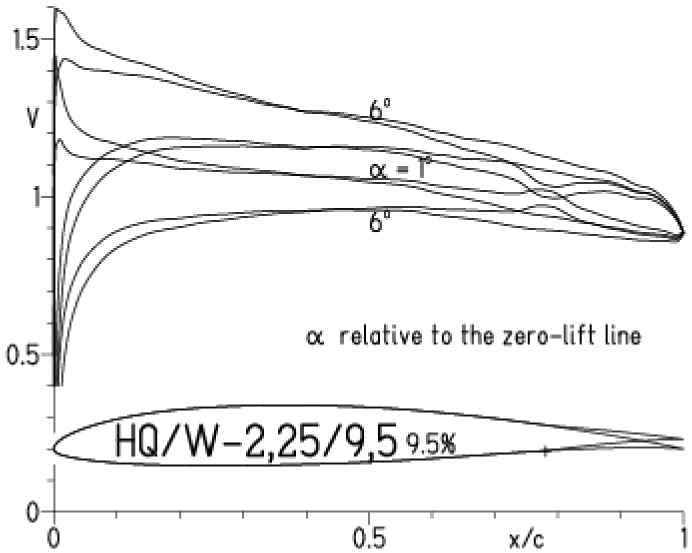
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



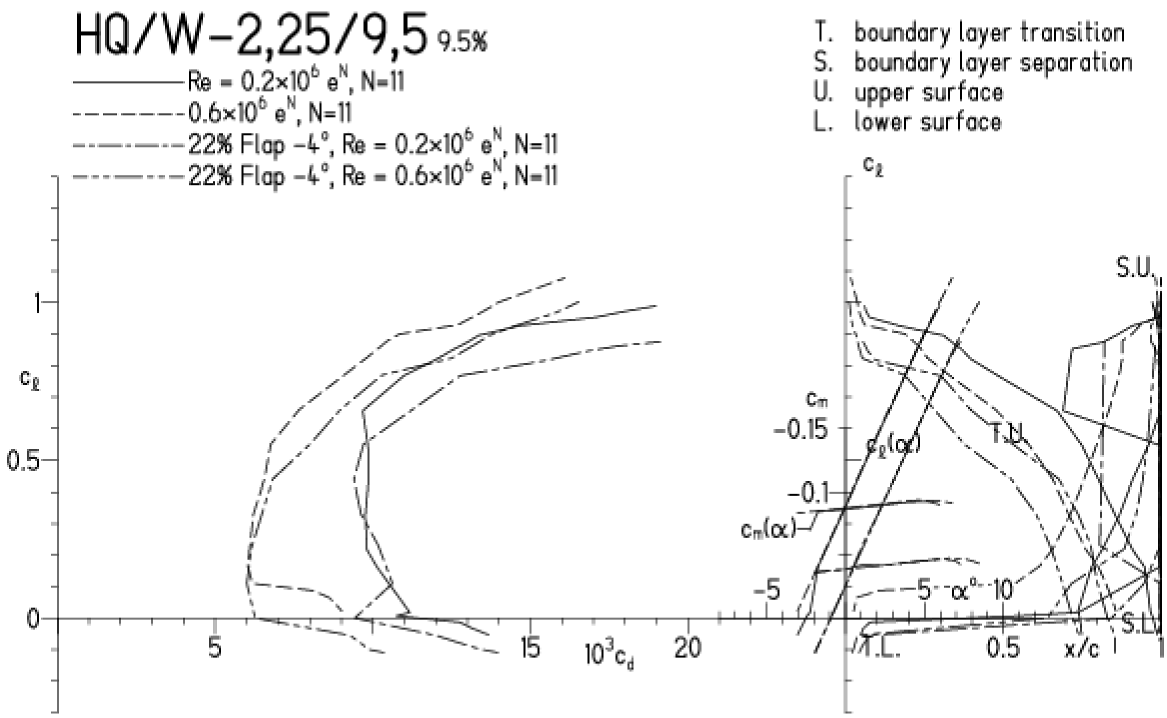


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

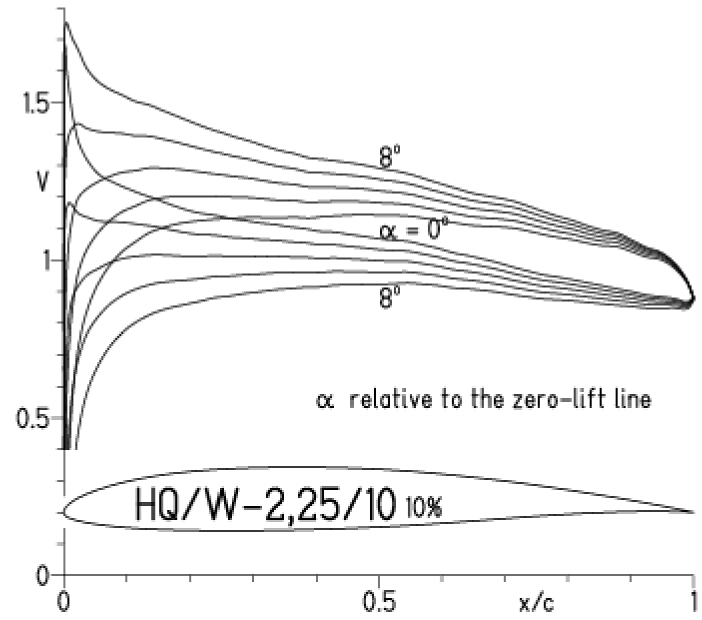


EPPLER 2005 V.

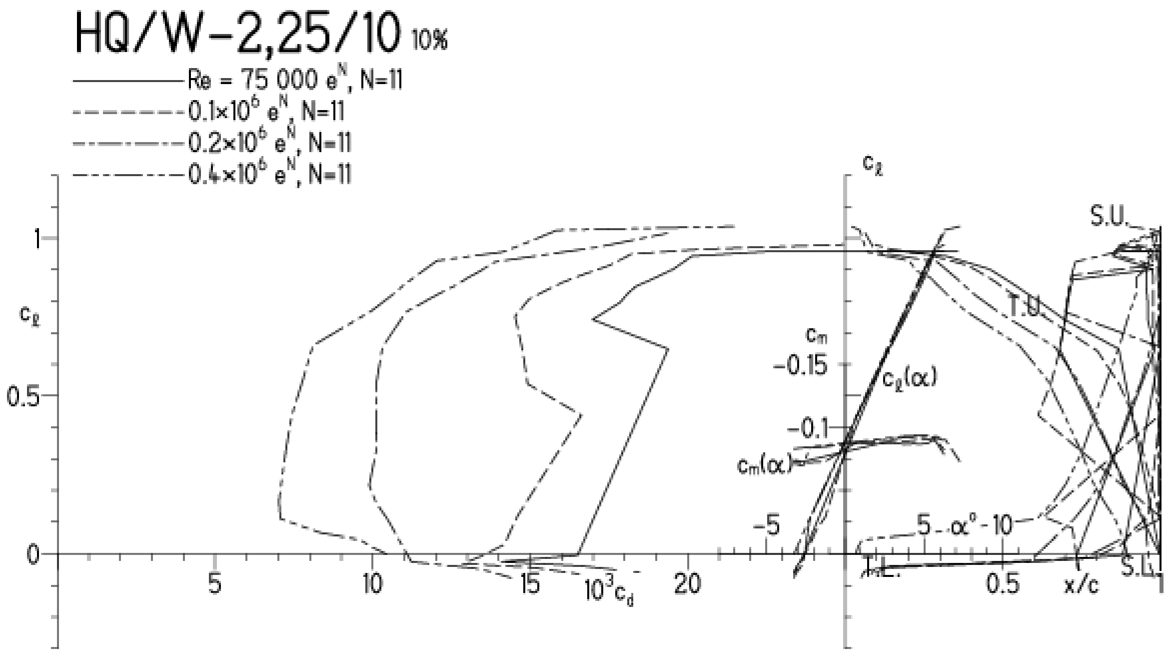


HQ/W-2,25/10, N=11

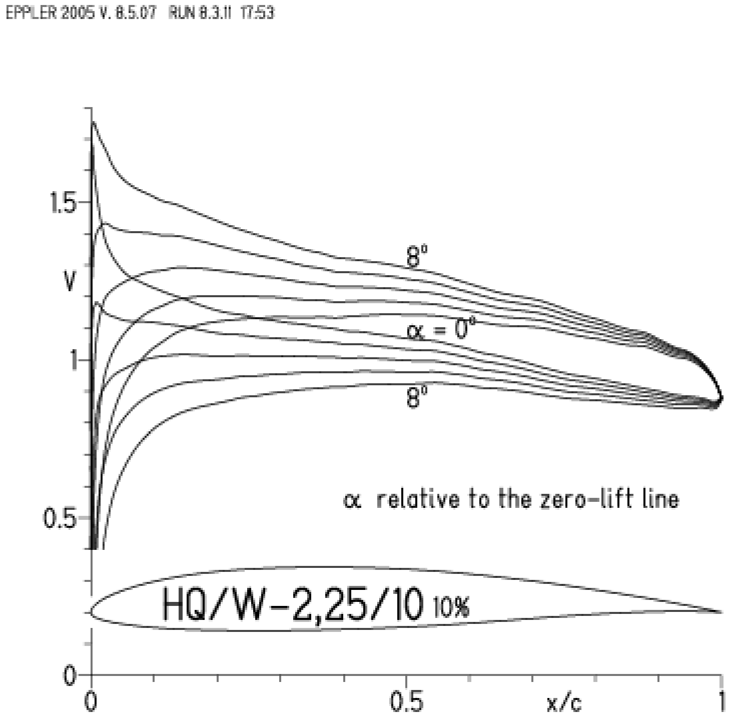
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

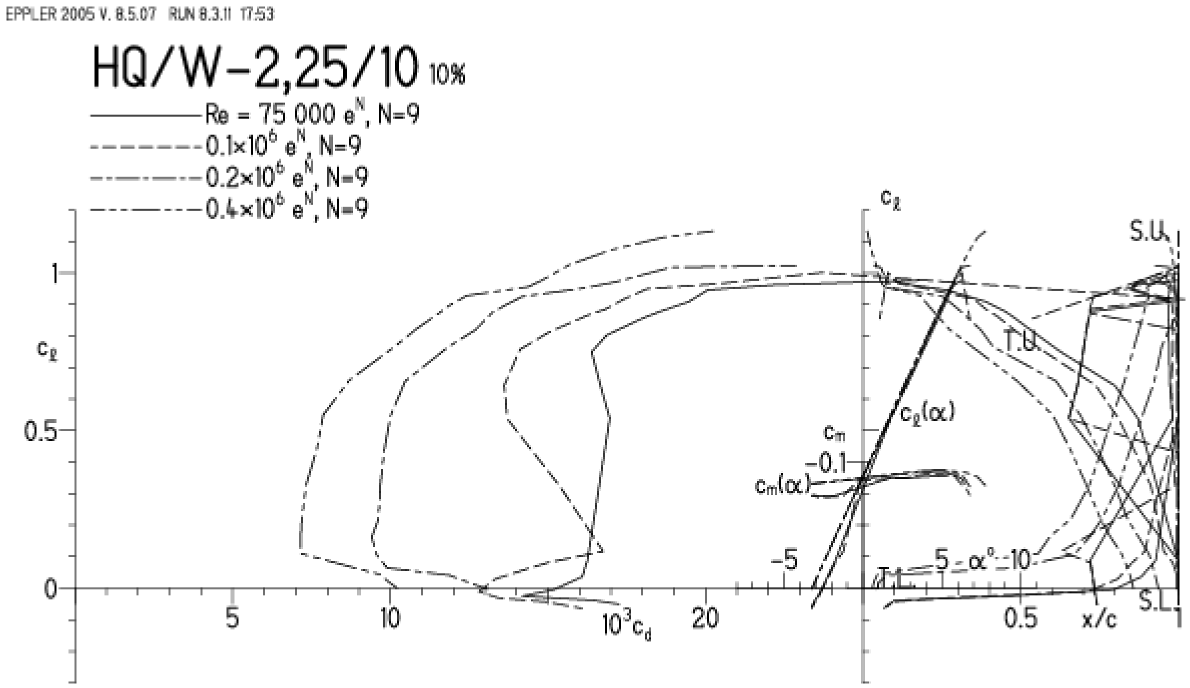


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

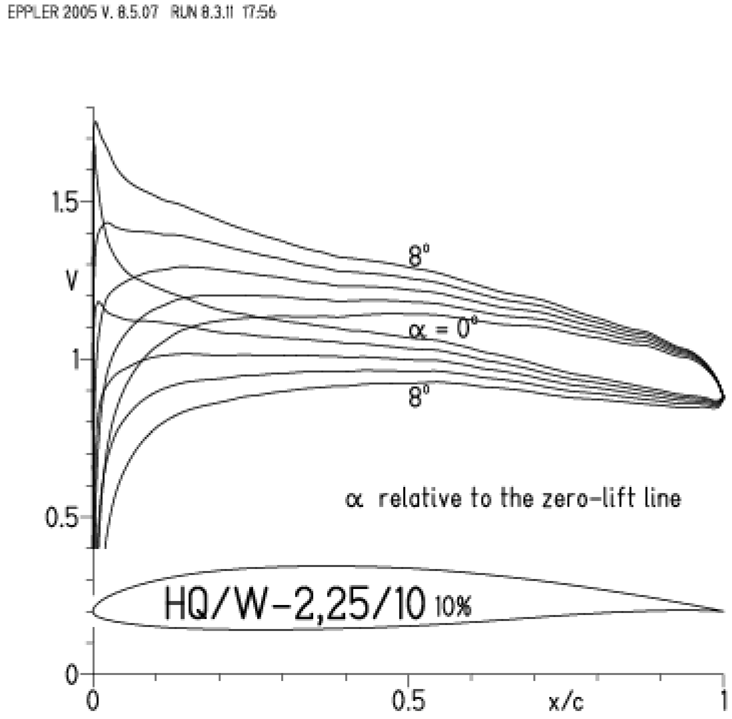


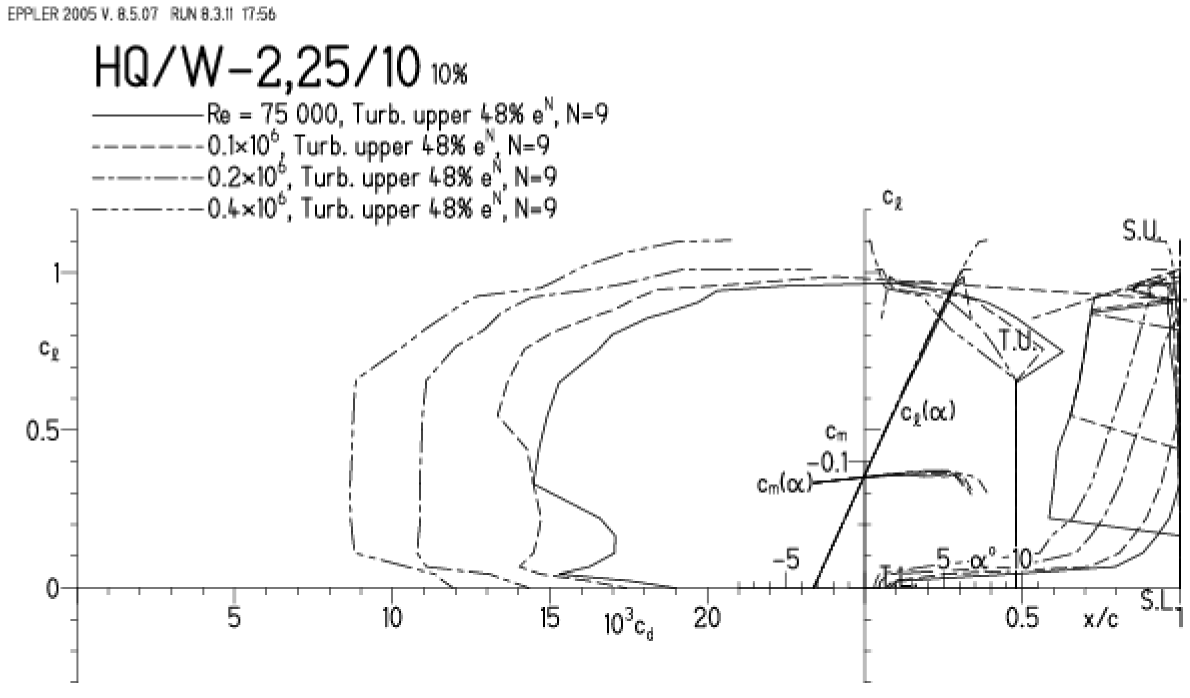
HQ/W-2,25/10, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/10 10%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
HQ/W-2,25/10 10%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

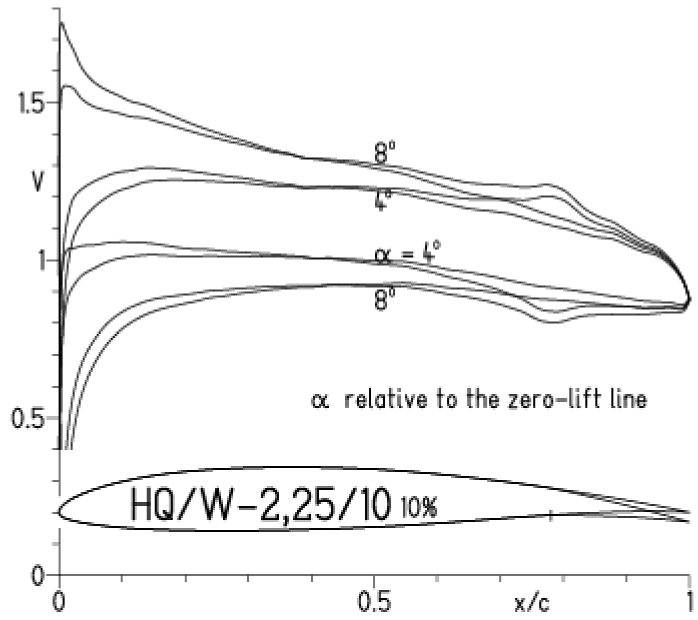
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



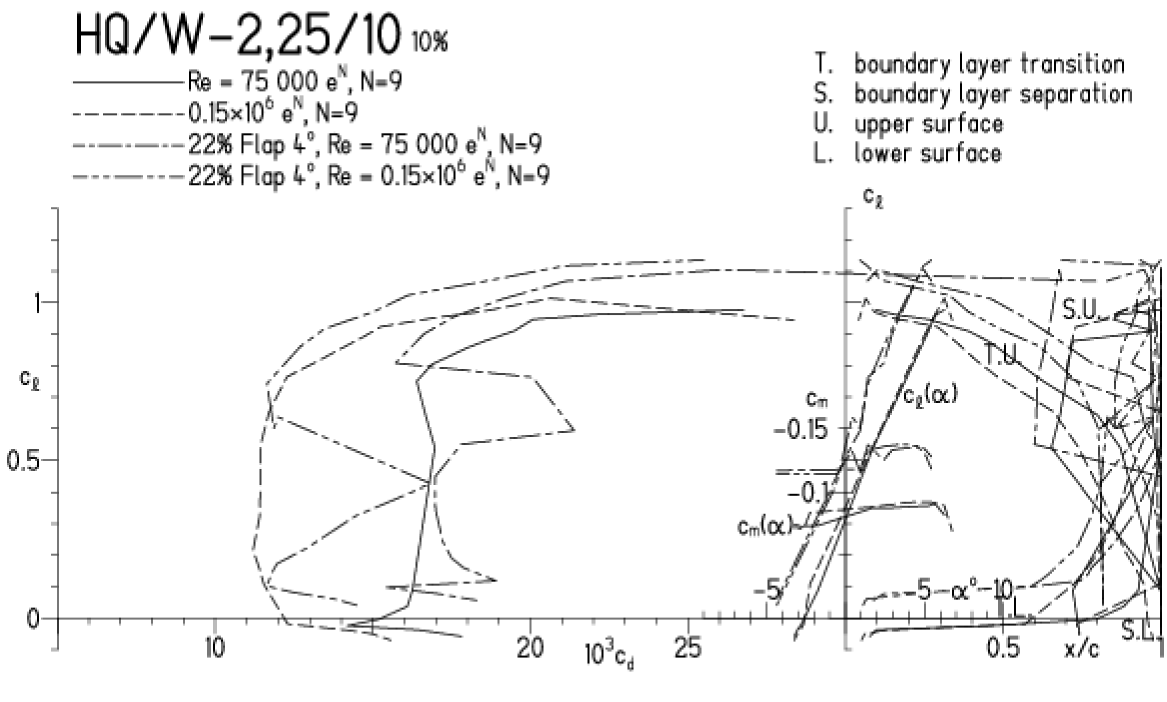


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

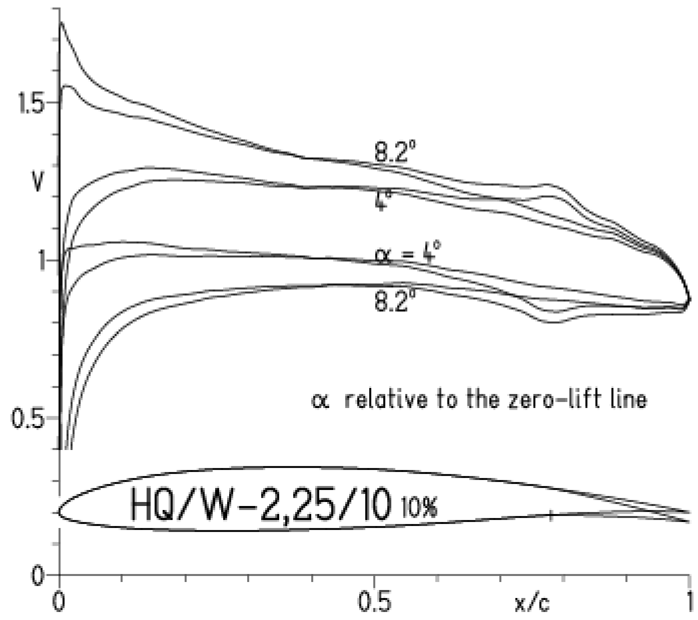


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

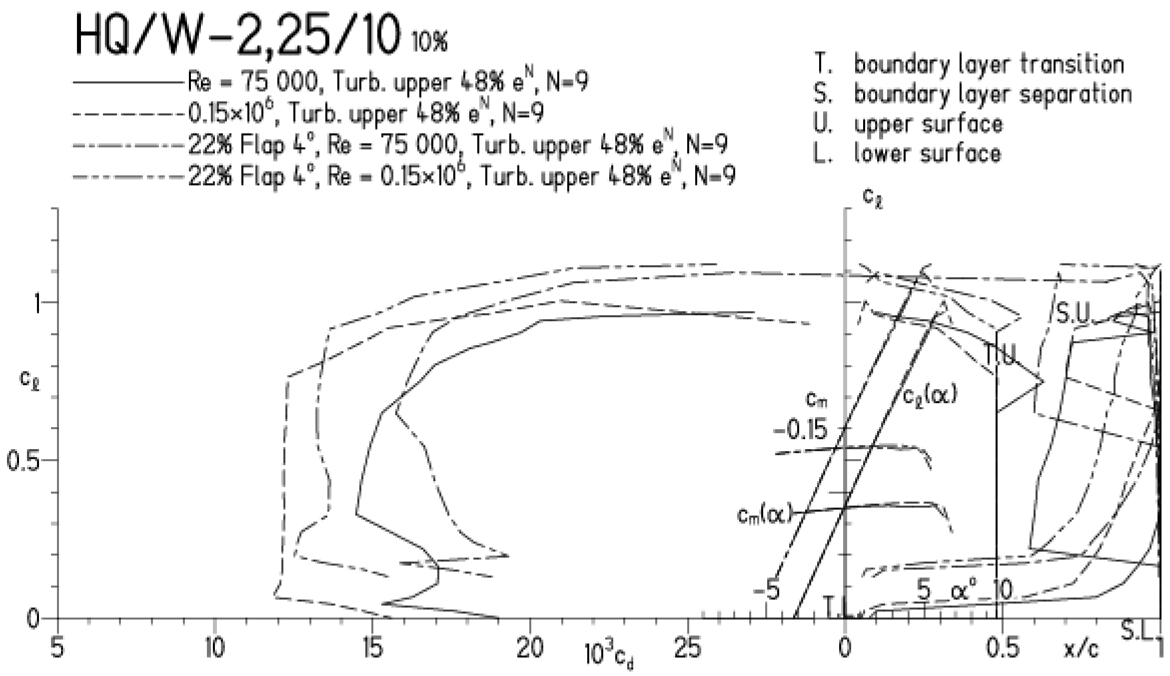


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

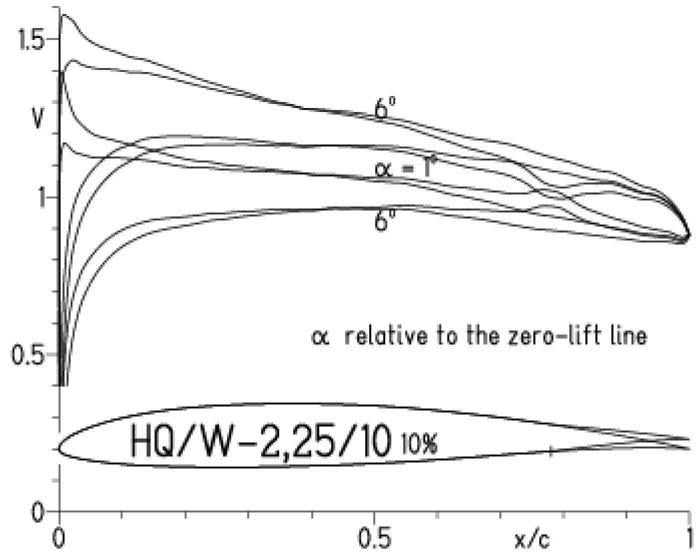


EPPLER 2005 V. 8.5.07 RUN 8.3

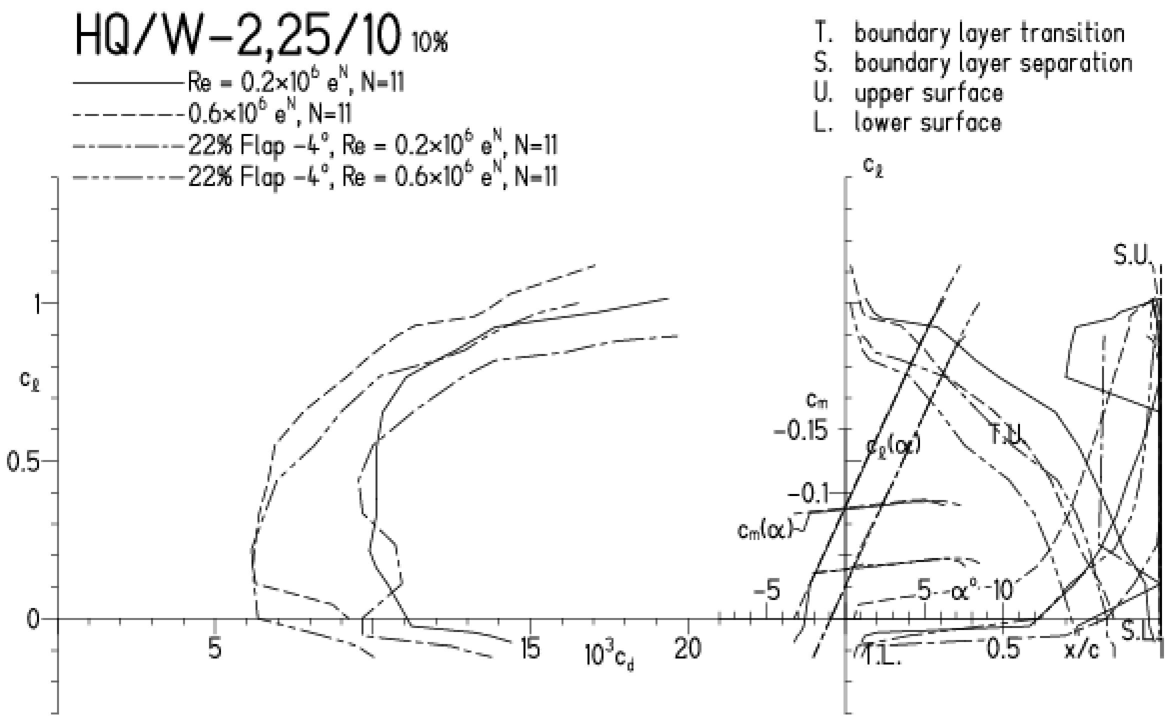


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

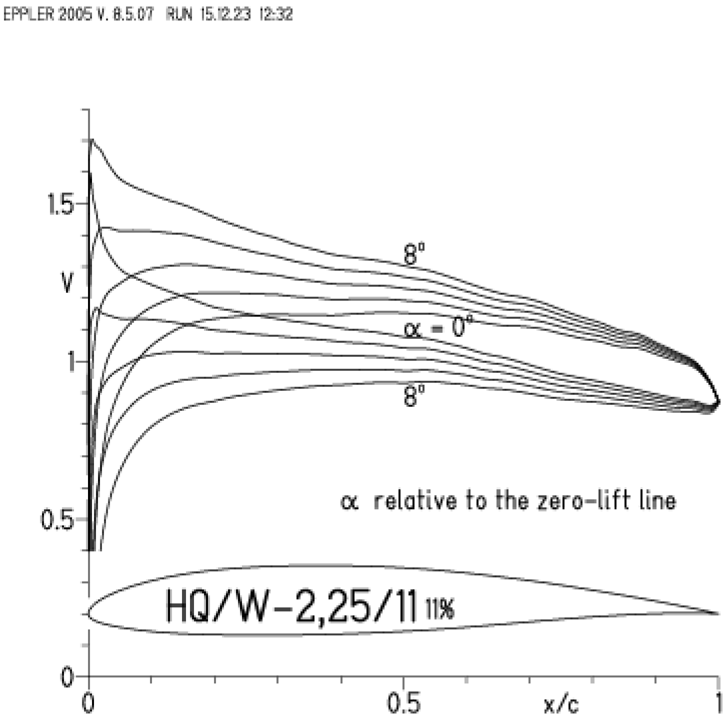
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

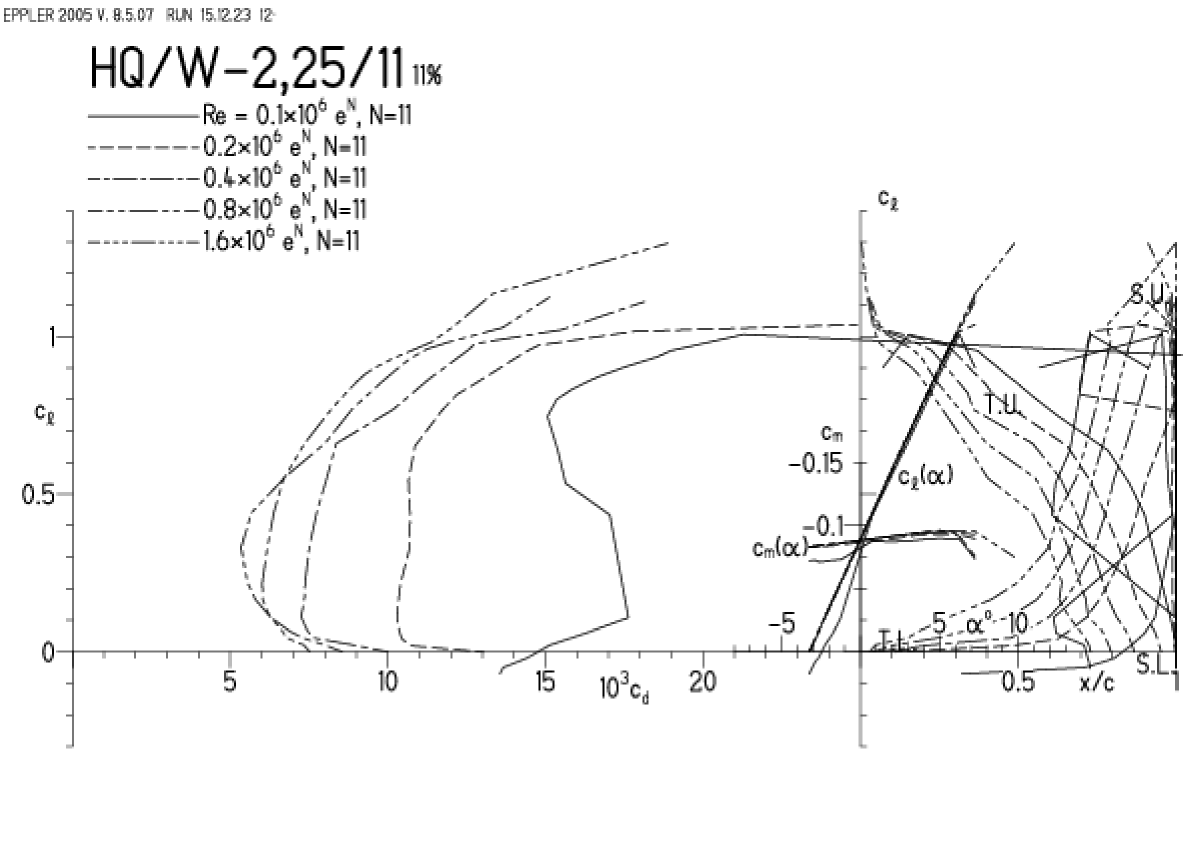


EPPLER 2005 V. 8.5.07 RUN



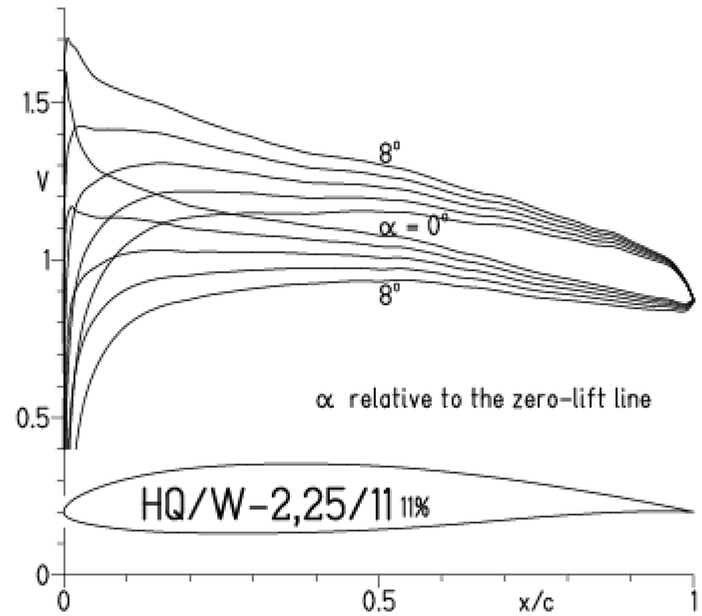
HQ/W-2,25/11, N=11



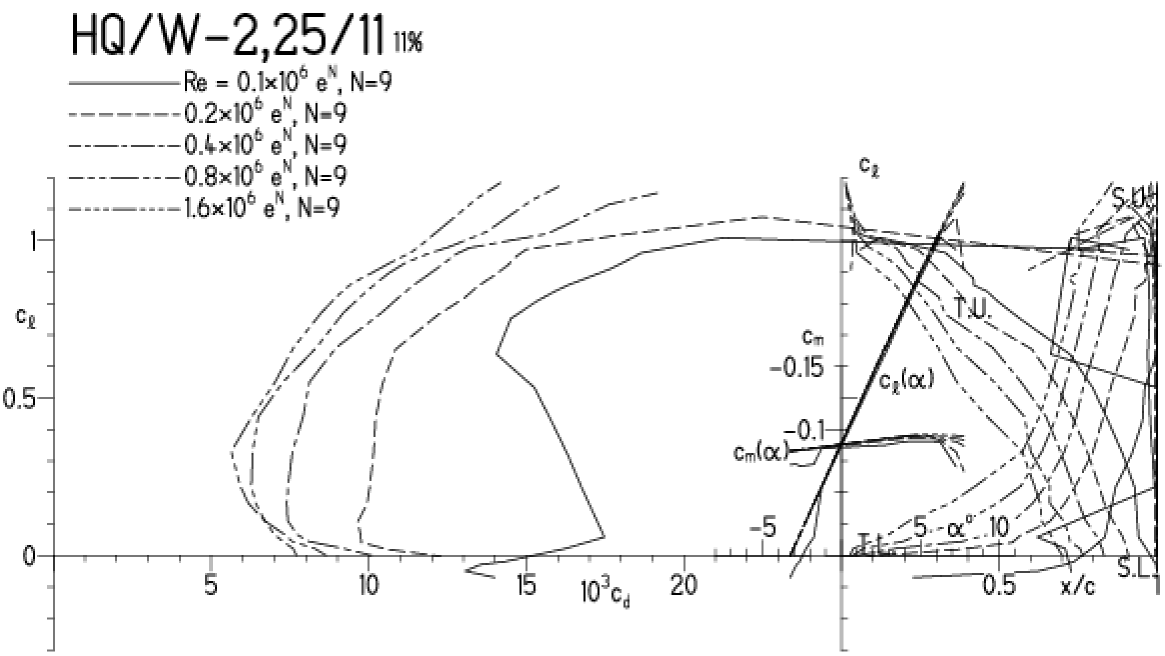


HQQ/W-2,25/11, N=9

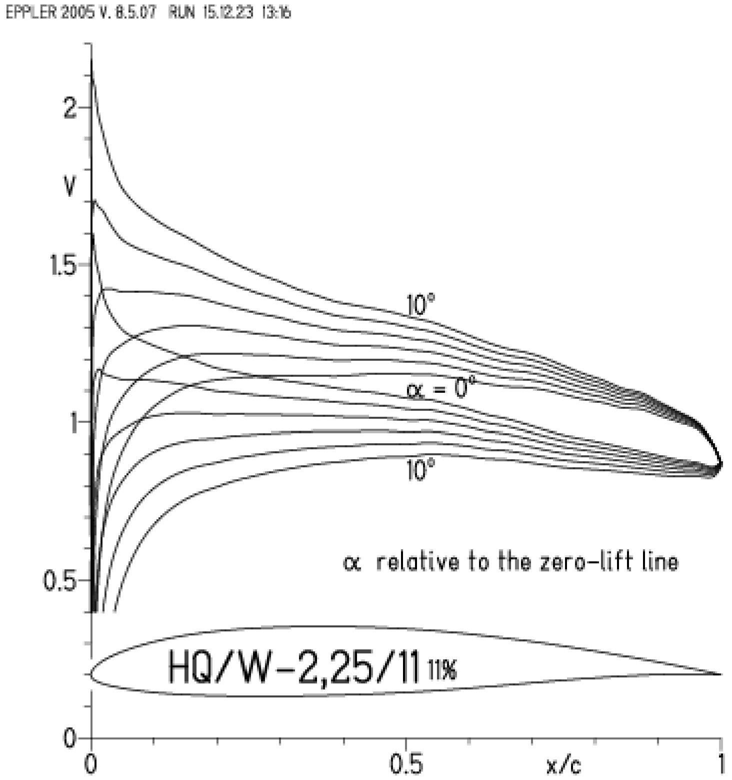
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

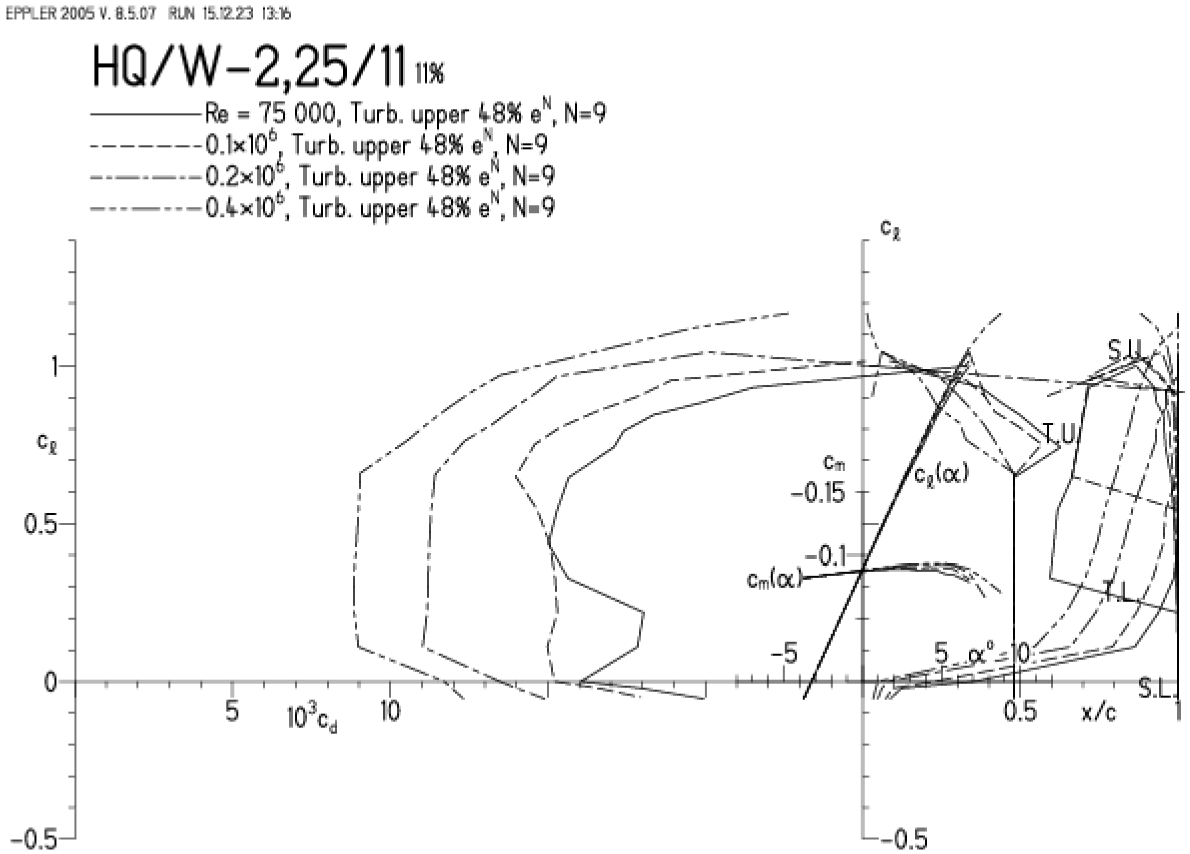


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



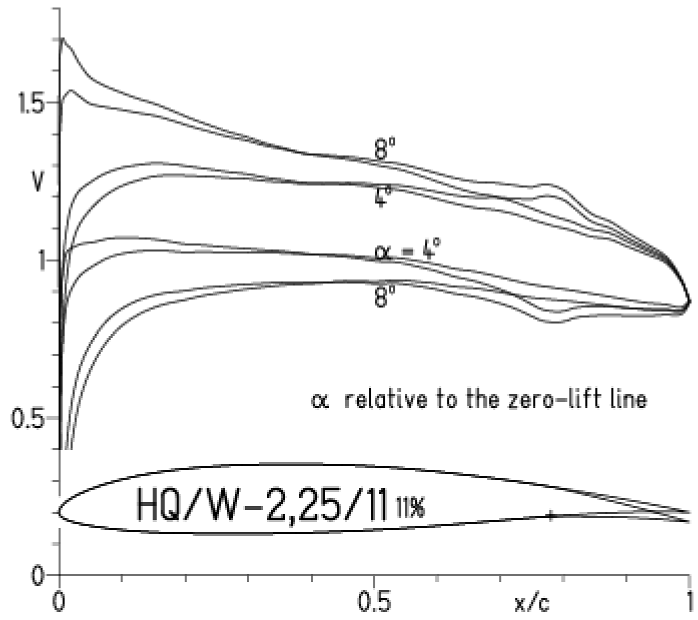
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



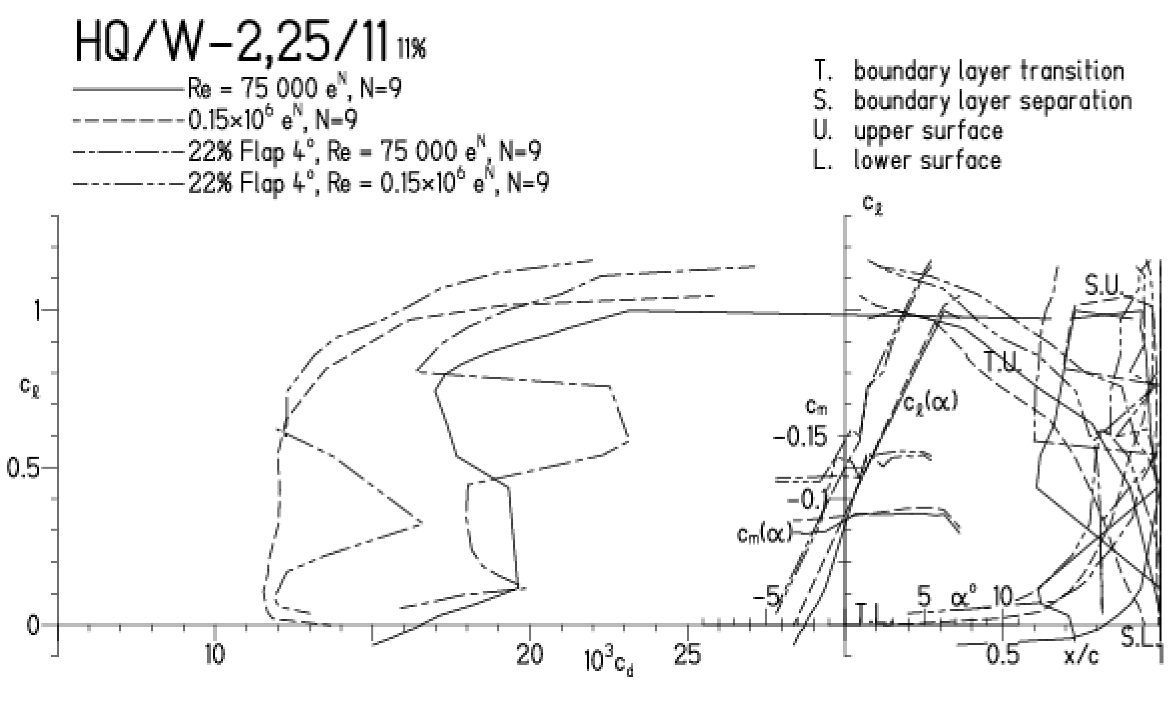


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

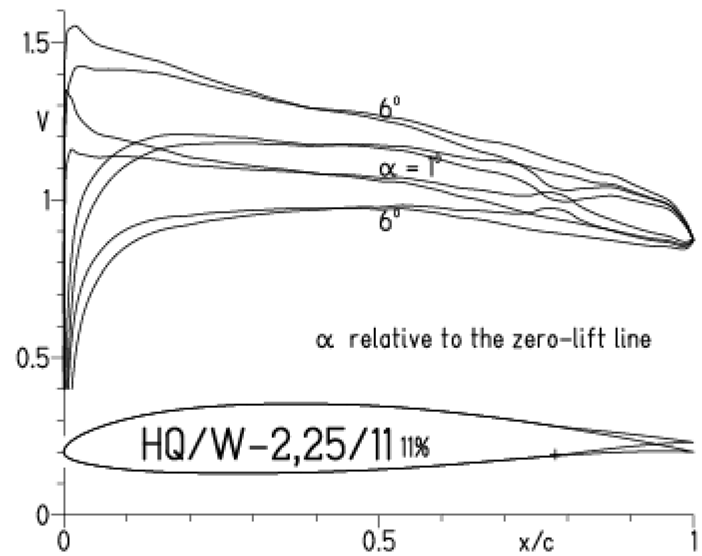


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

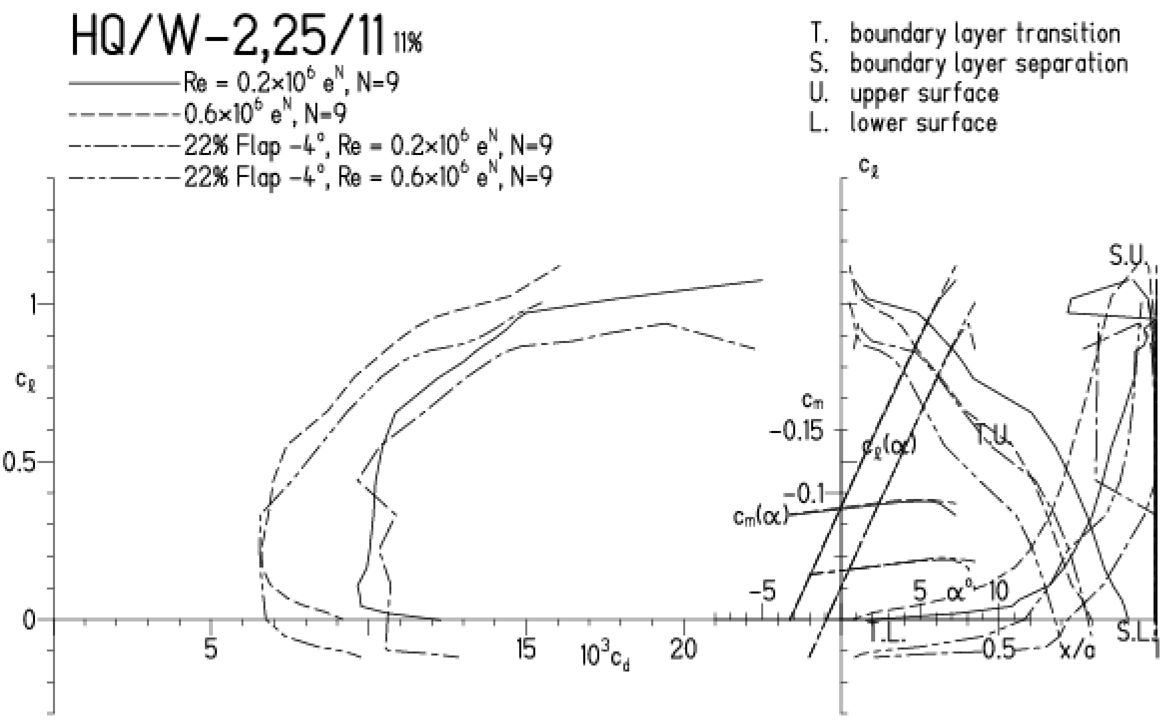


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

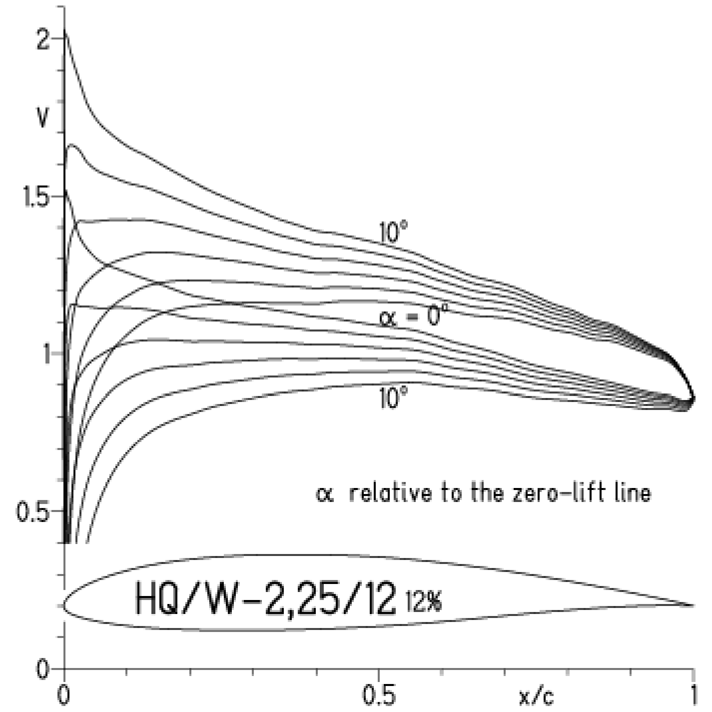


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

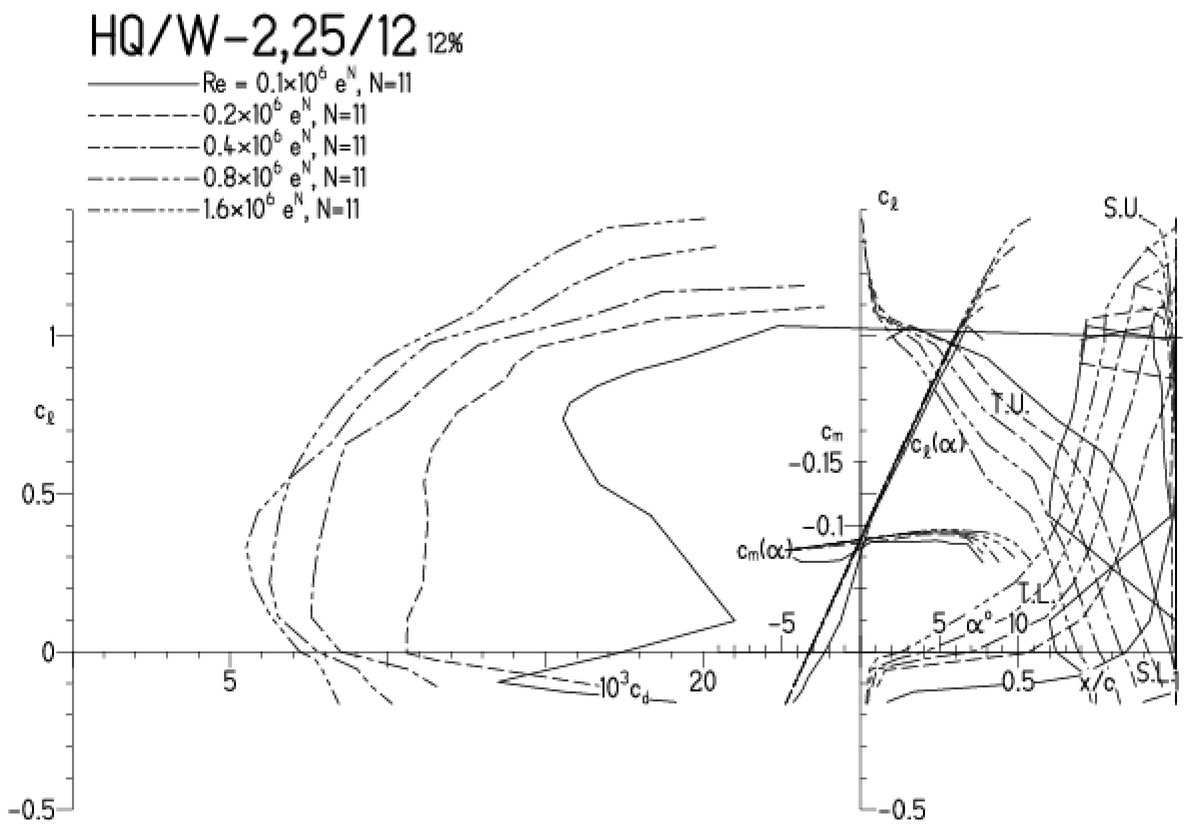


<u>HQ/W-2,25/12</u>, N=11

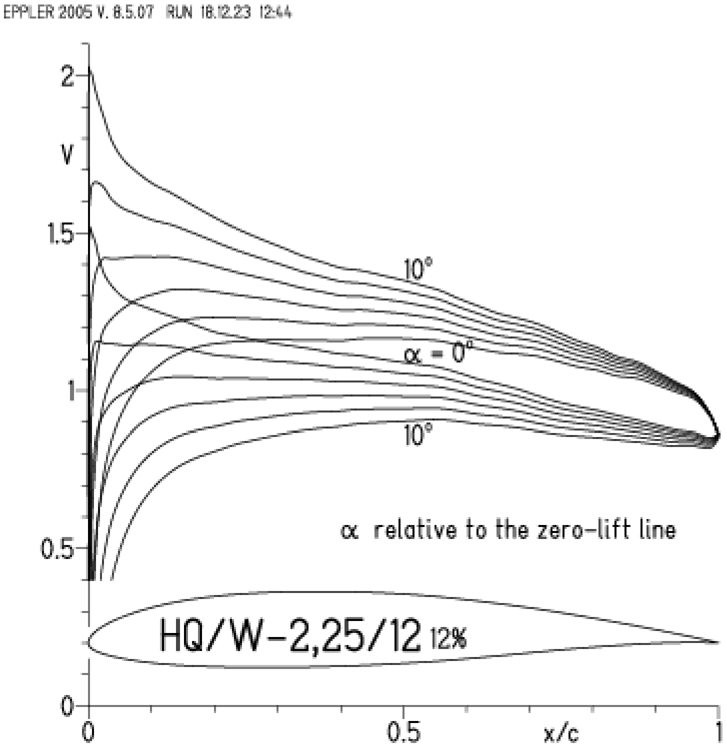
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

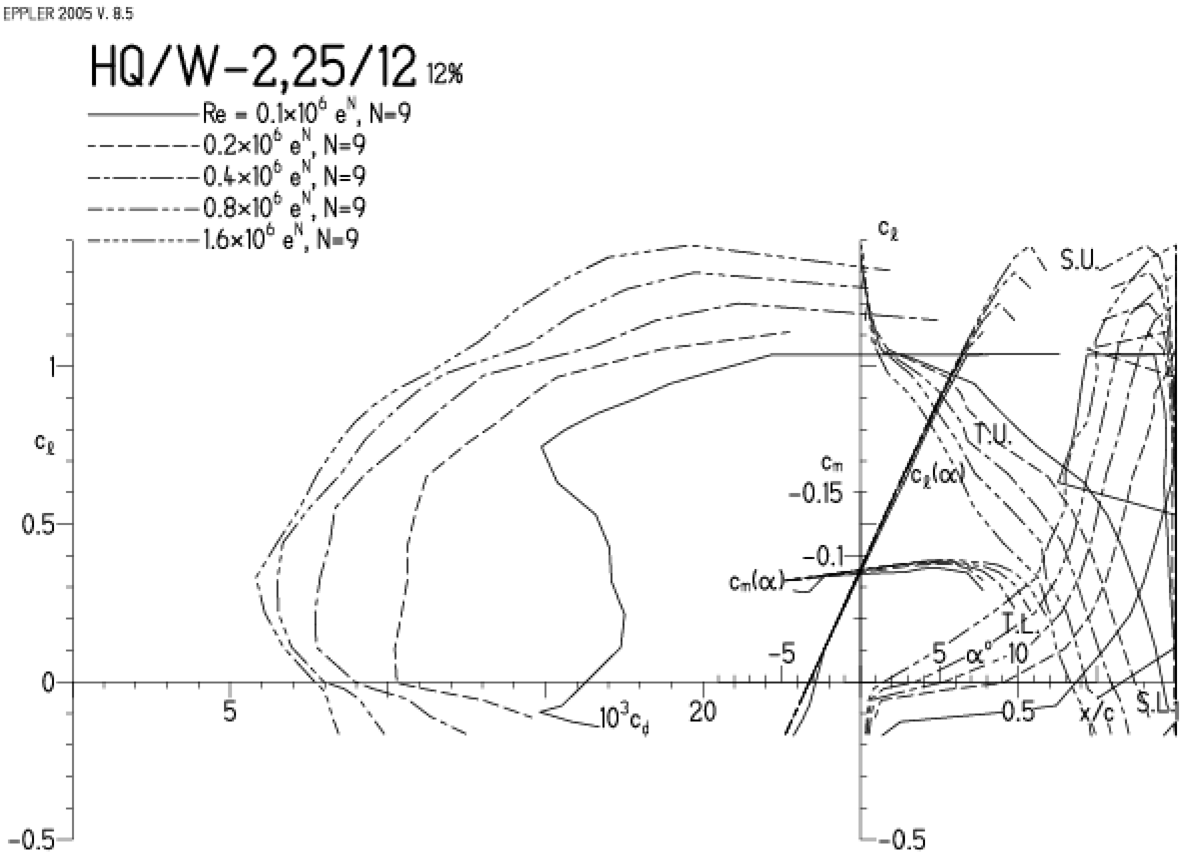


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

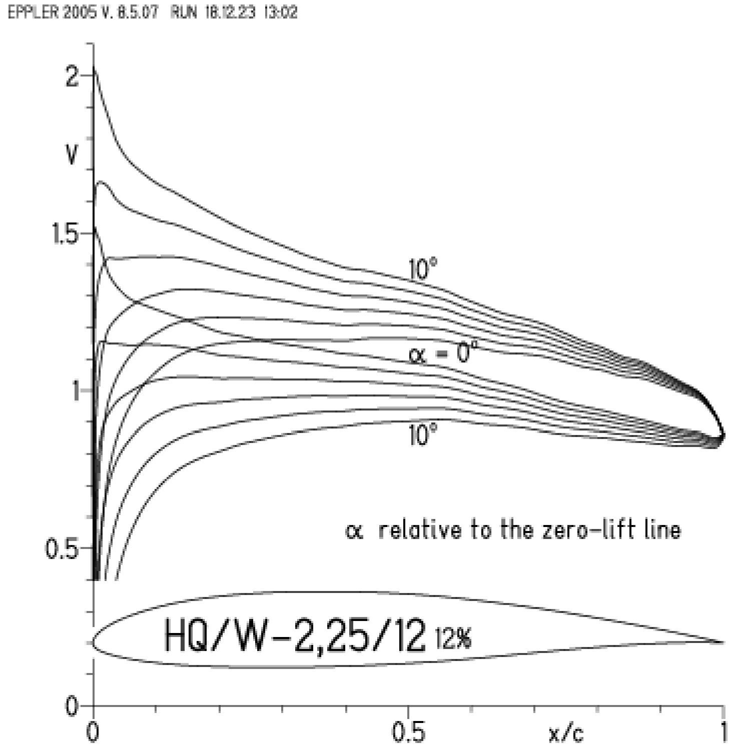


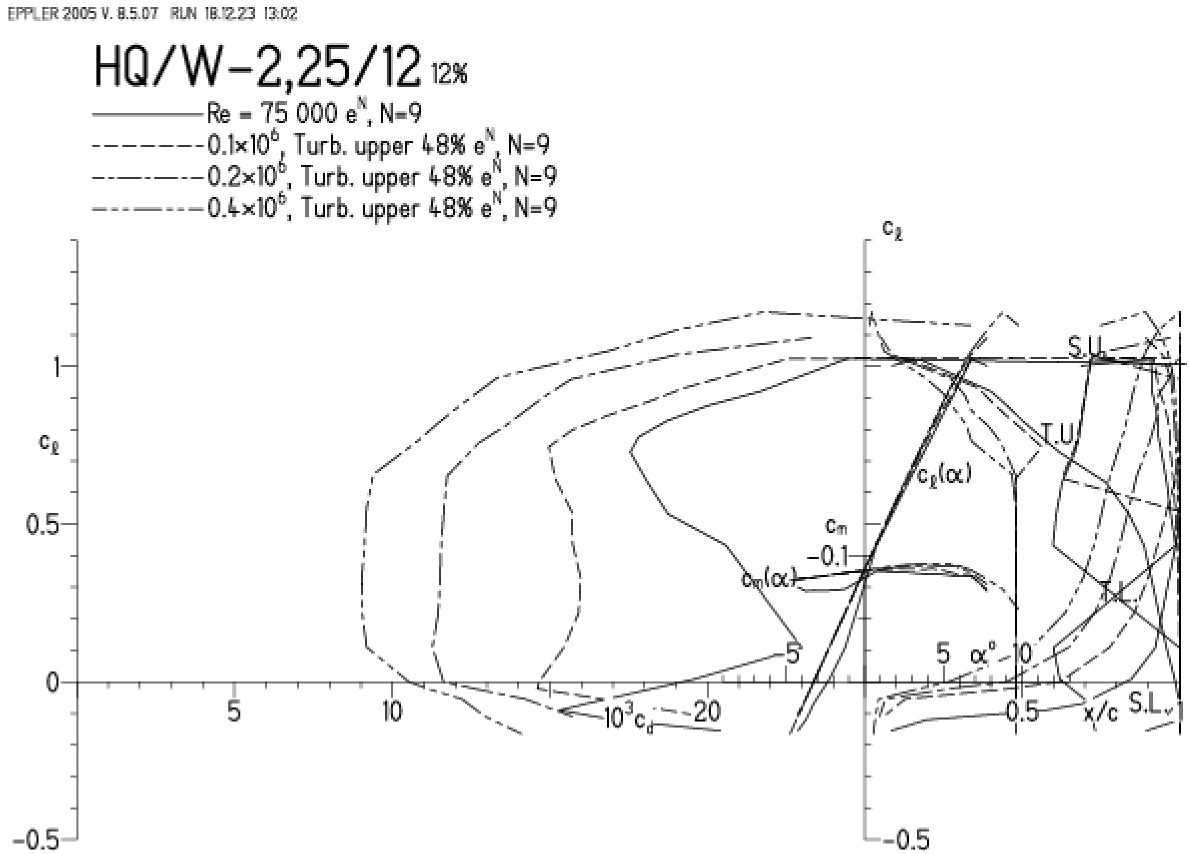
<u>HQ/W-2,25/12</u>, N=9





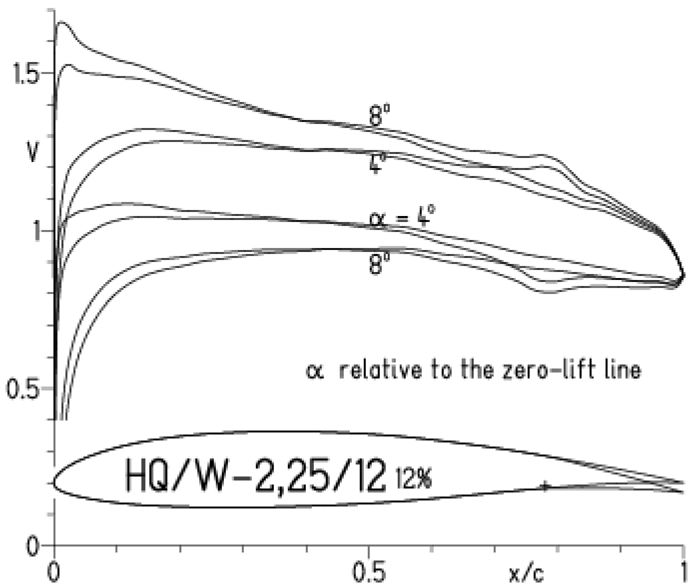
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



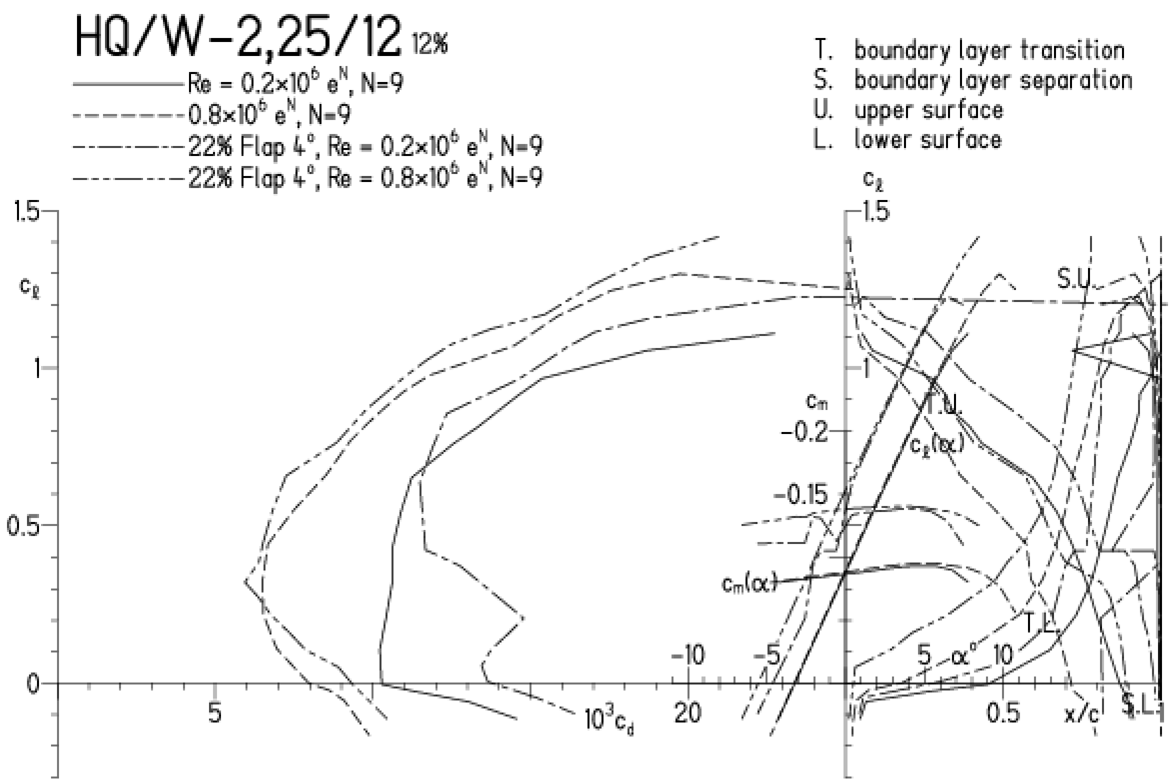


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

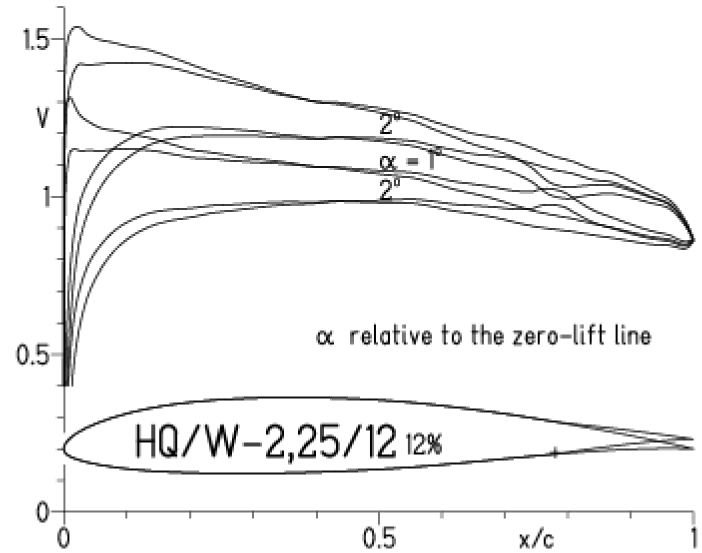


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

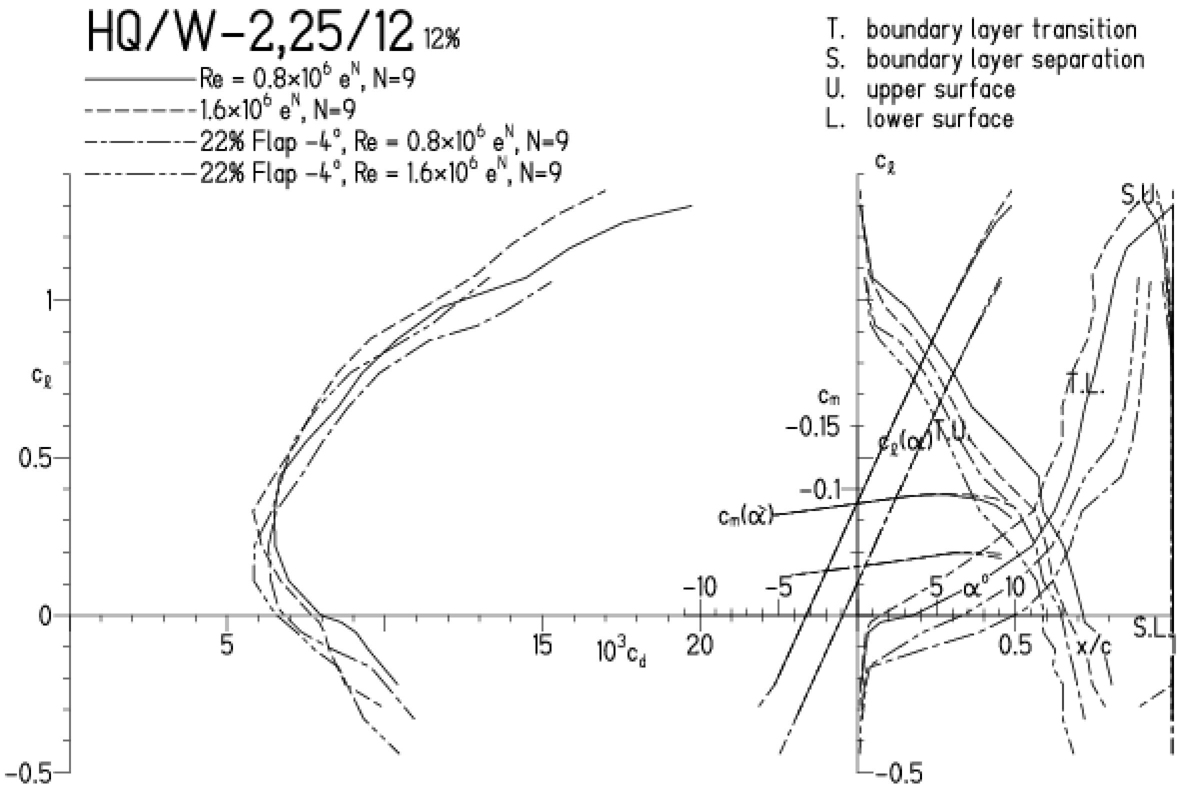


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

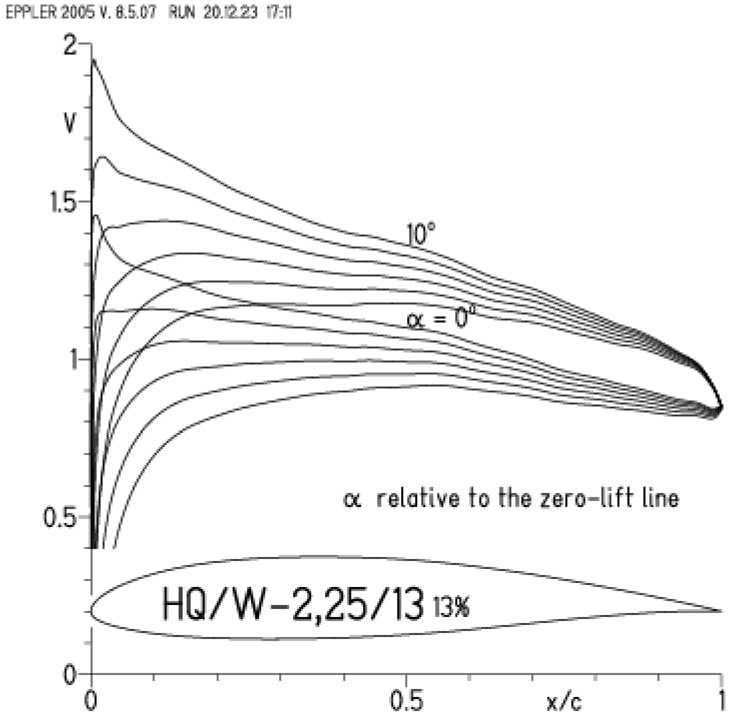
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

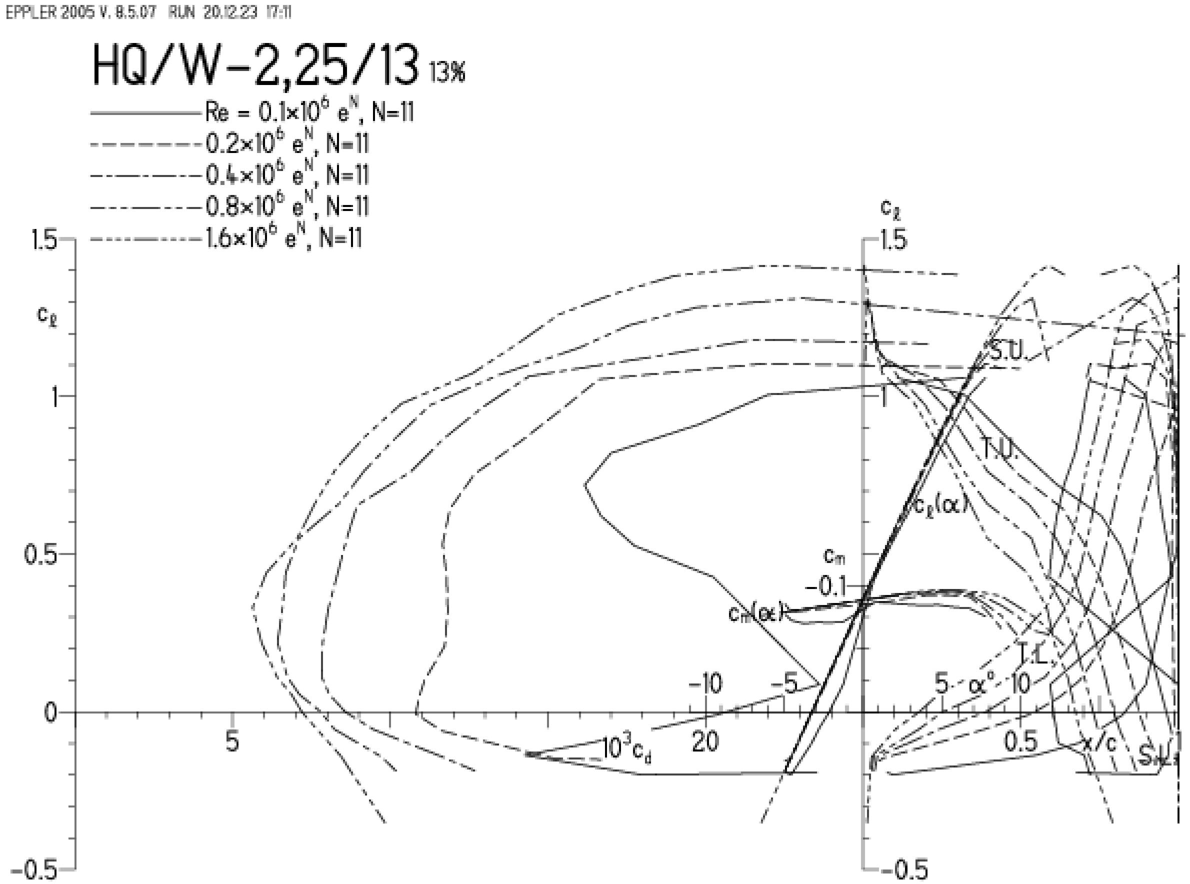


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

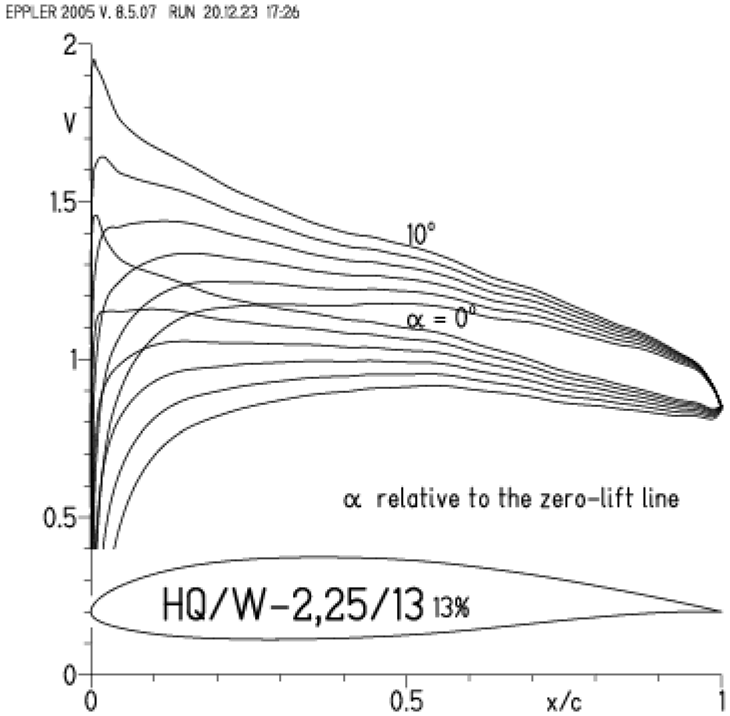


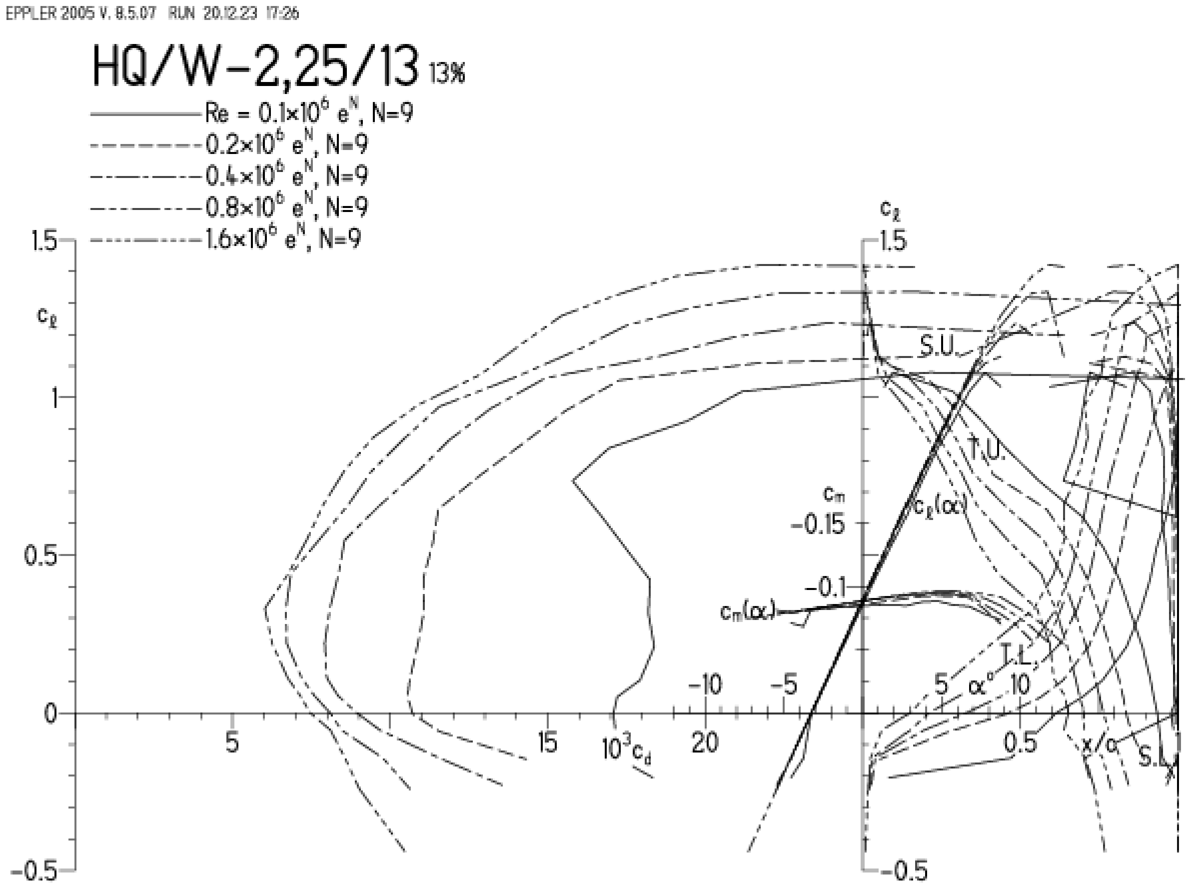
HQ/W-2,25/13, N=11



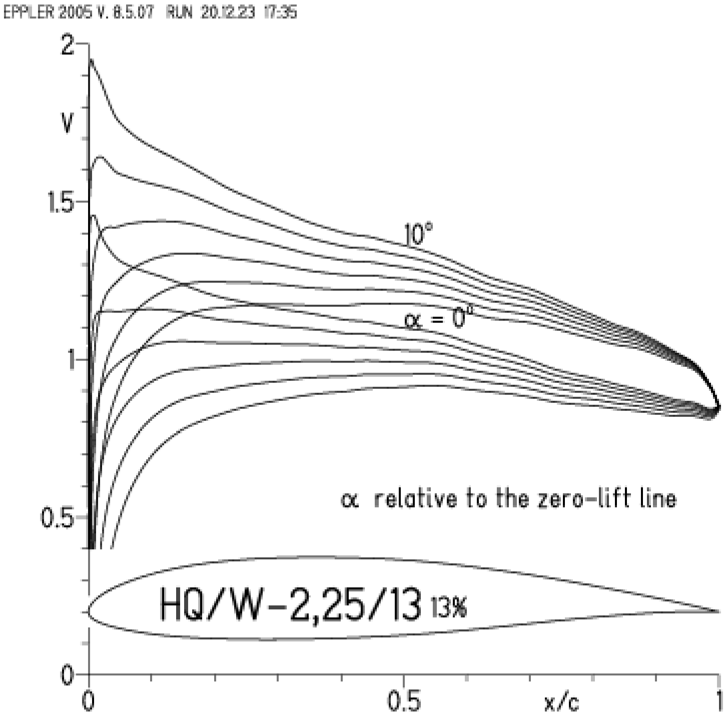


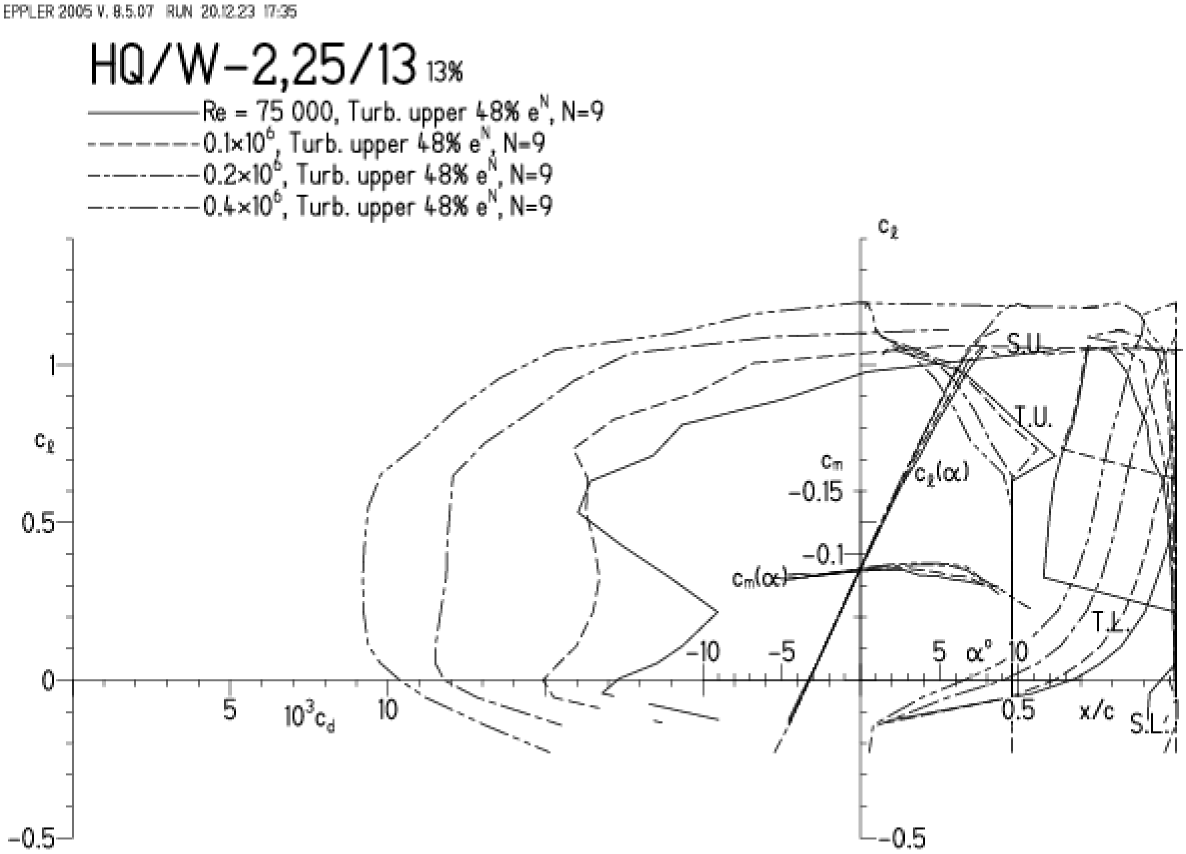
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
10³cd
x/c

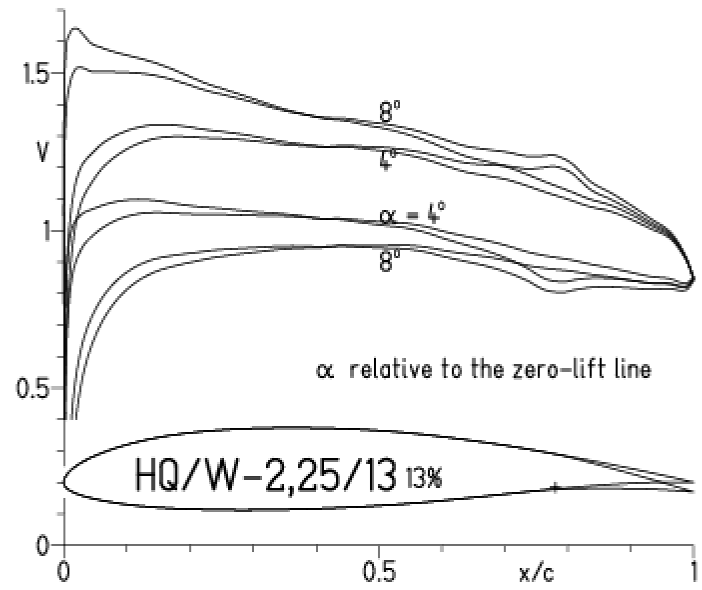
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



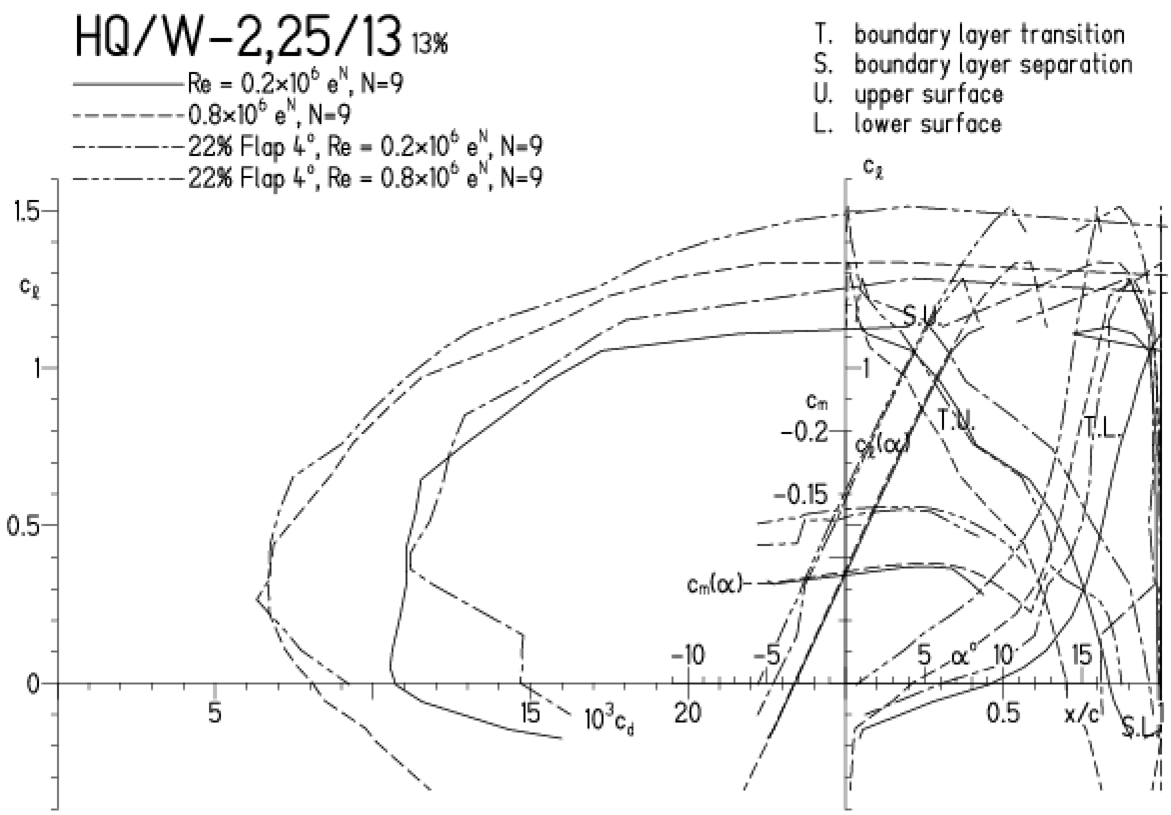


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

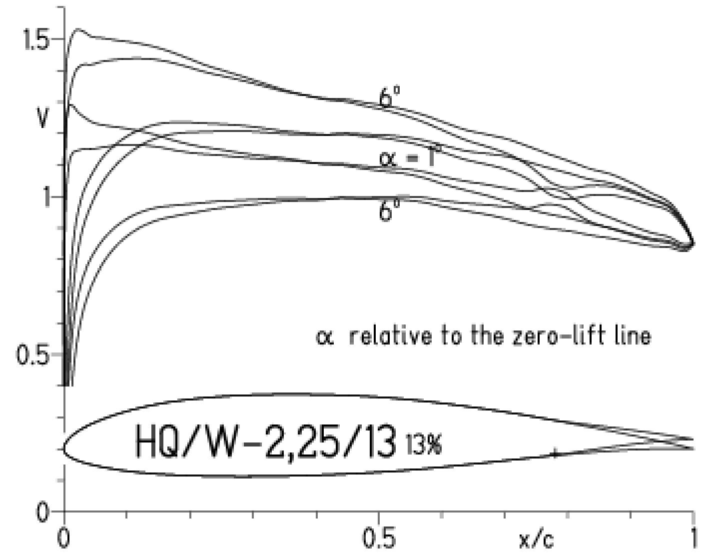


EPPLER 2005 V.

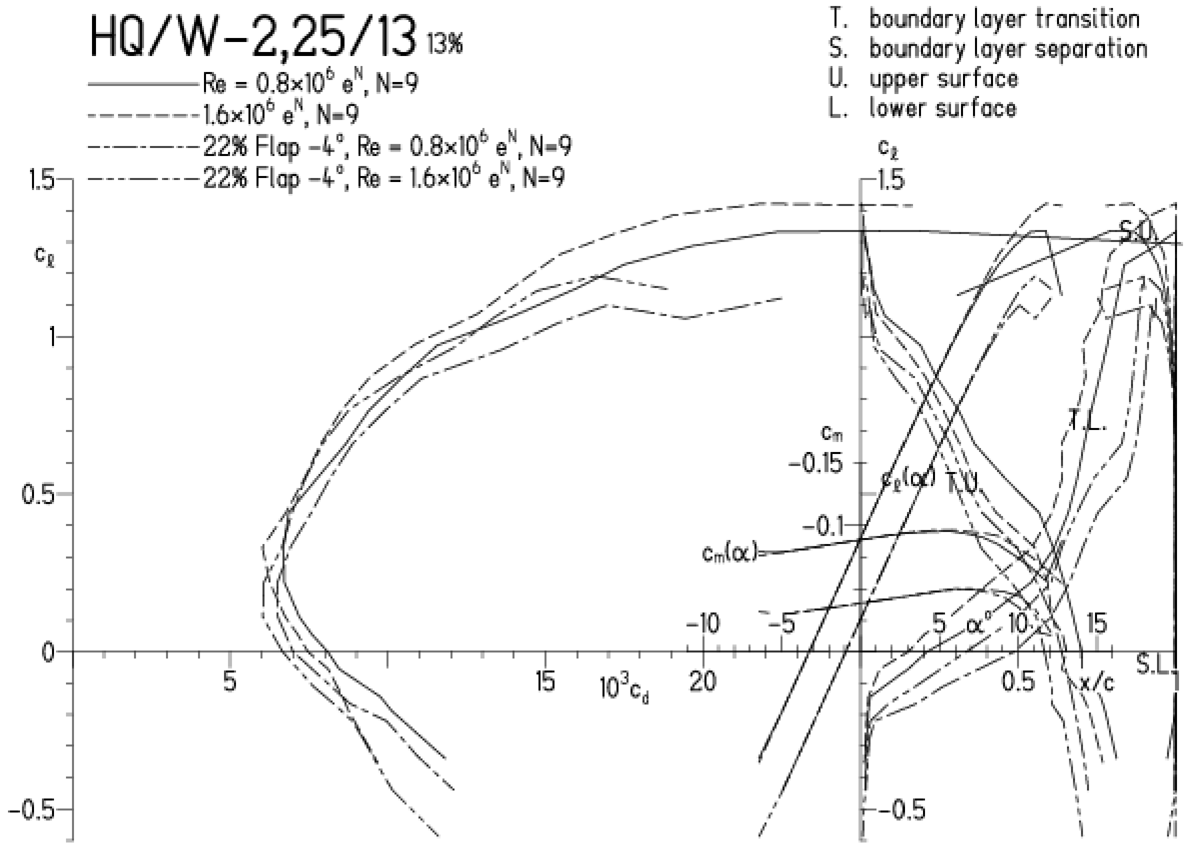


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

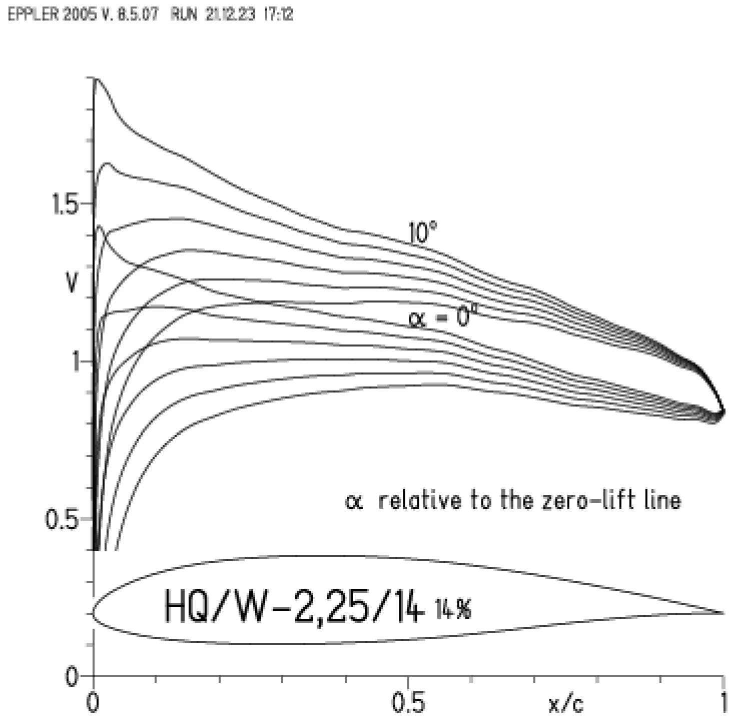
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

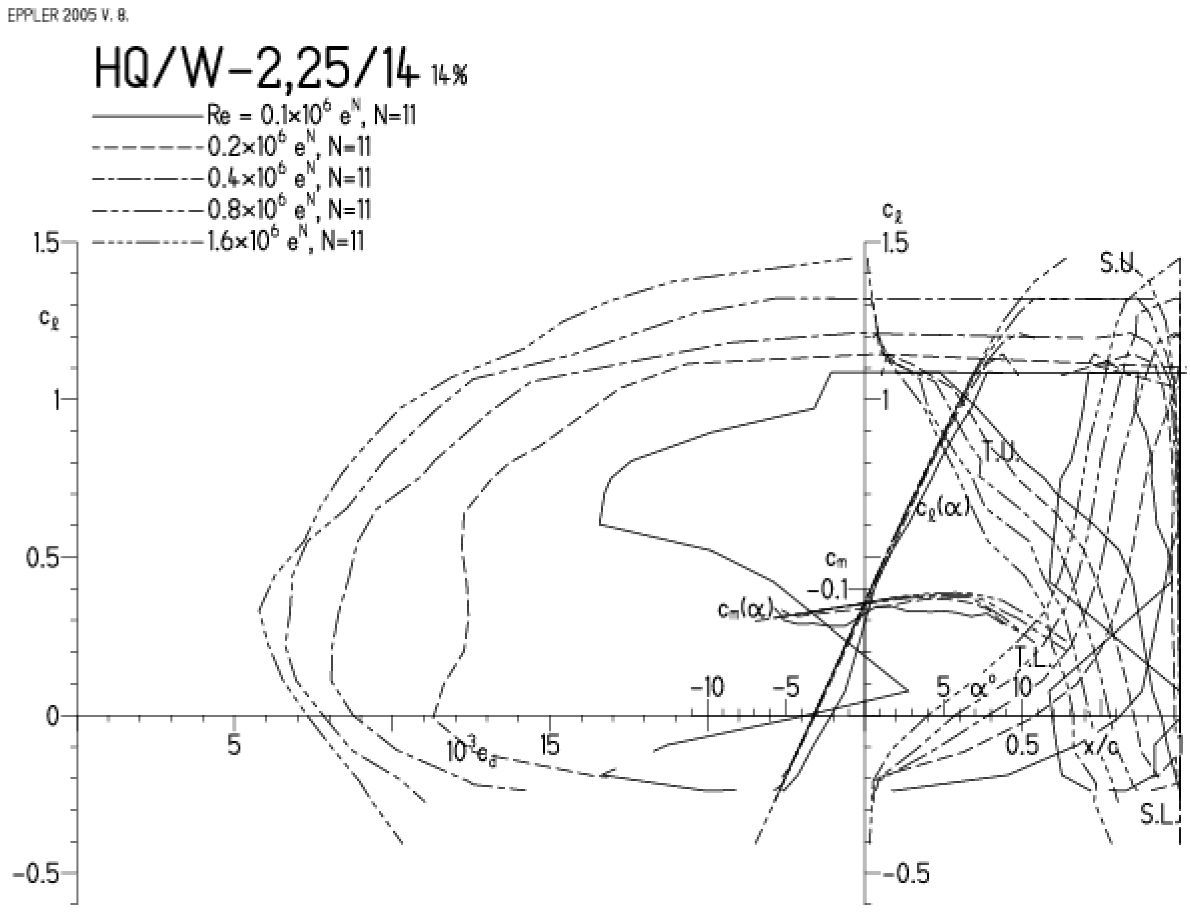


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



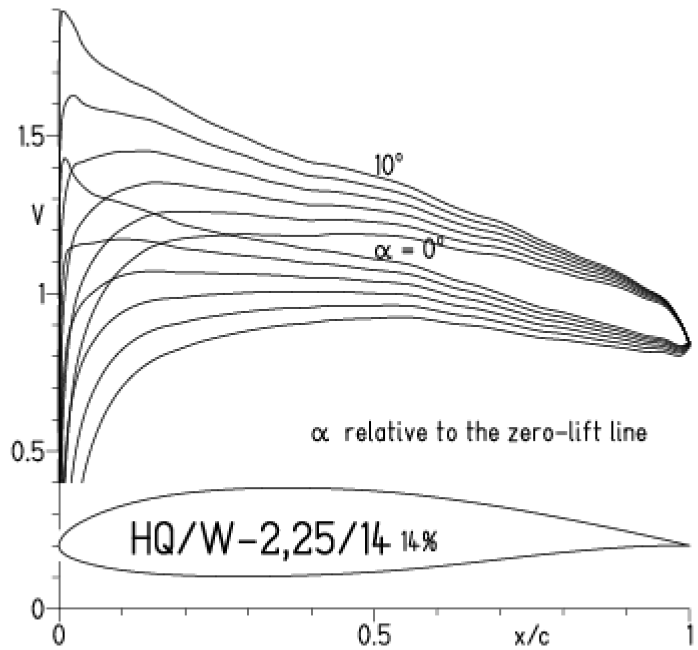
<u>HQ/W-2,25/14</u>, N=11



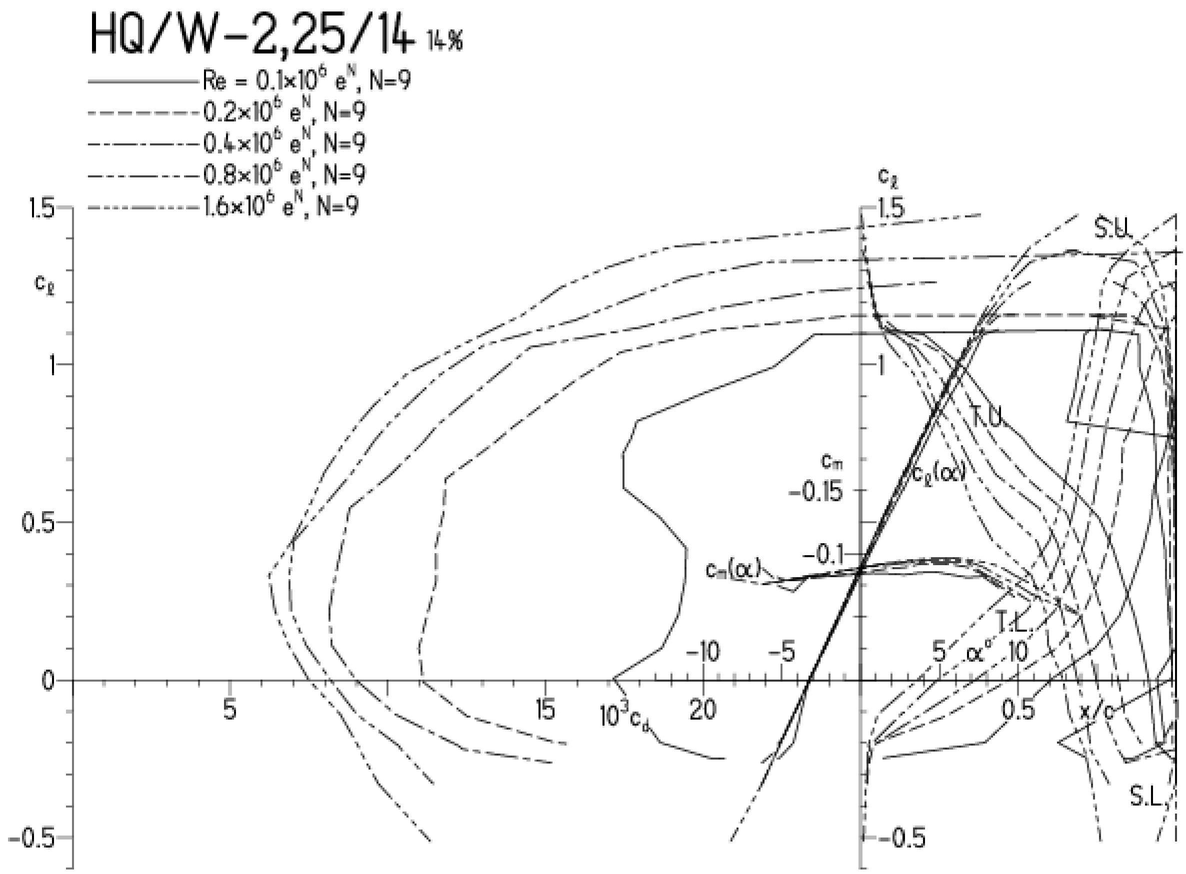


<u>HQ/W-2,25/14</u>, N=9

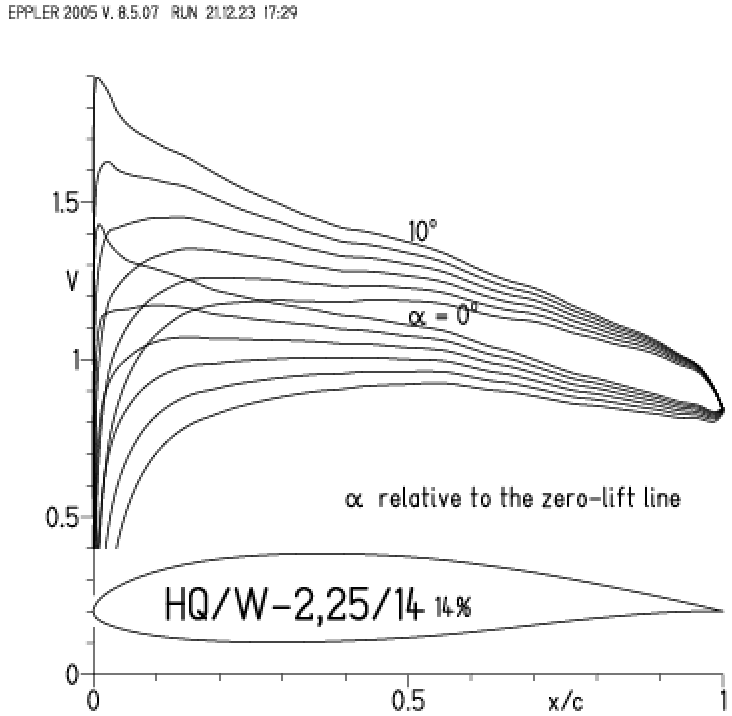
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

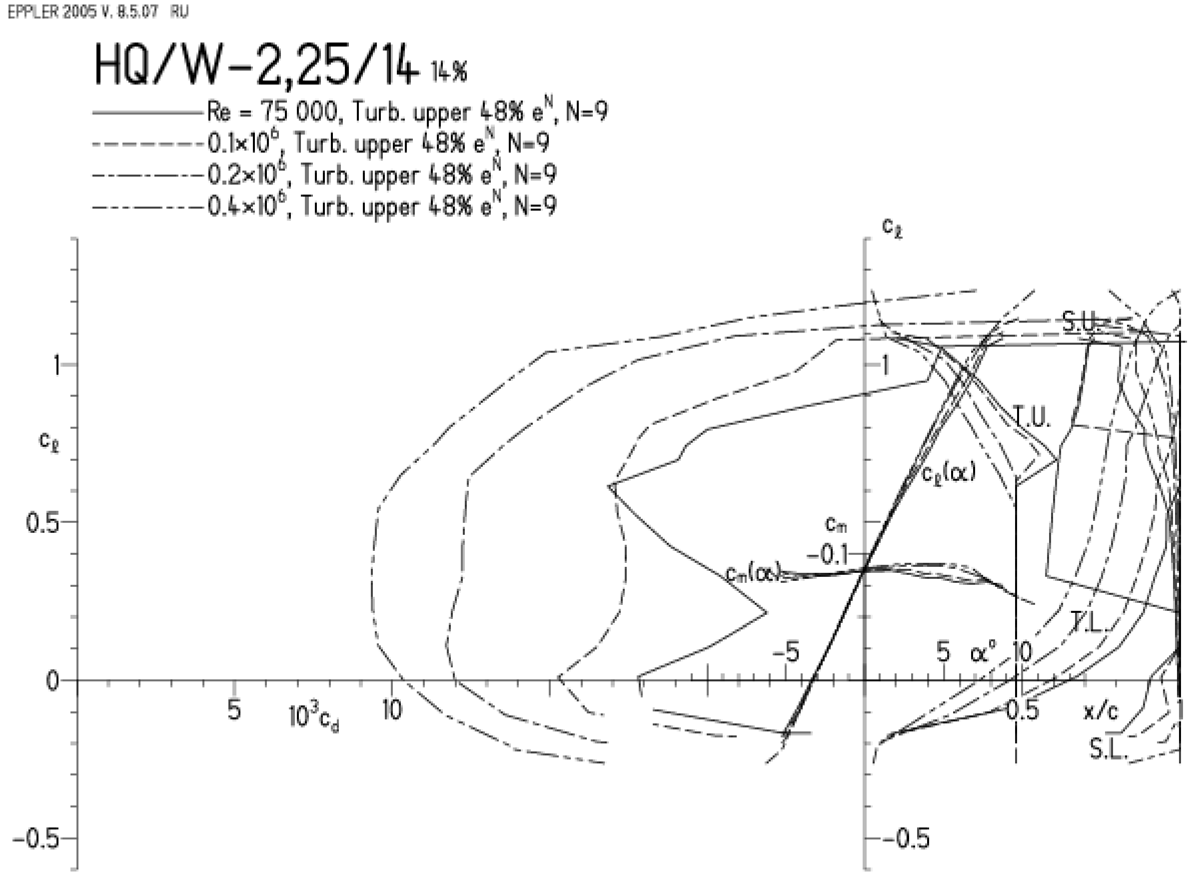


EPPLER 2005 V. 8.



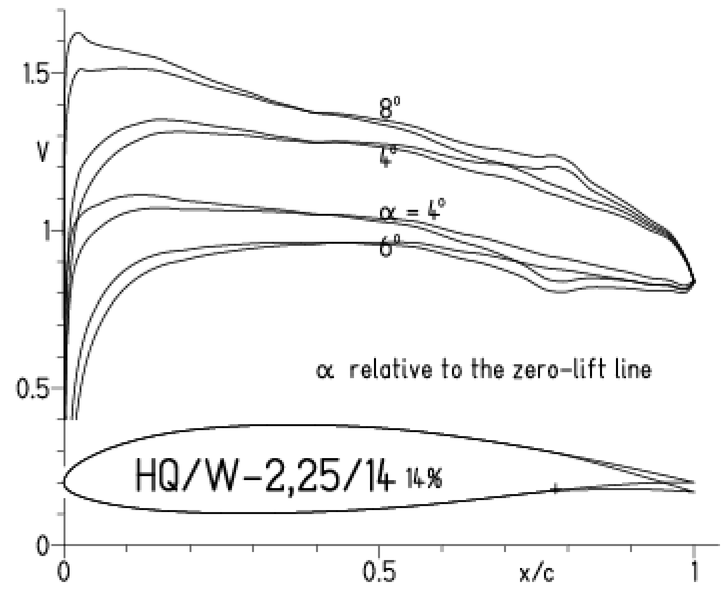
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



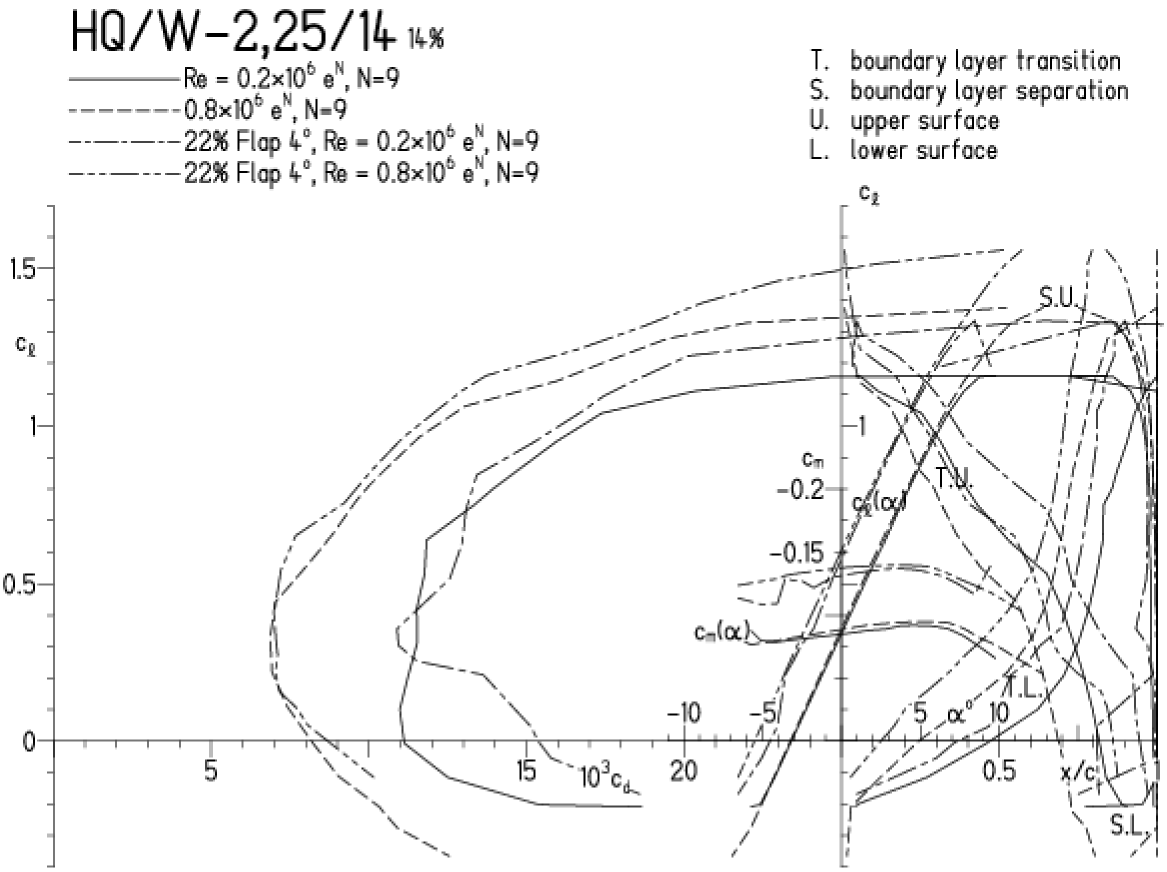


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

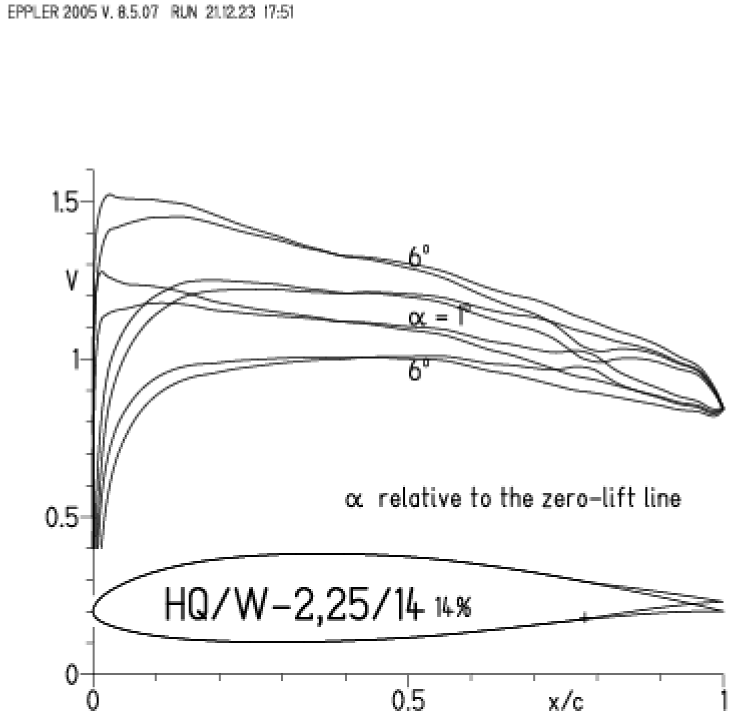
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

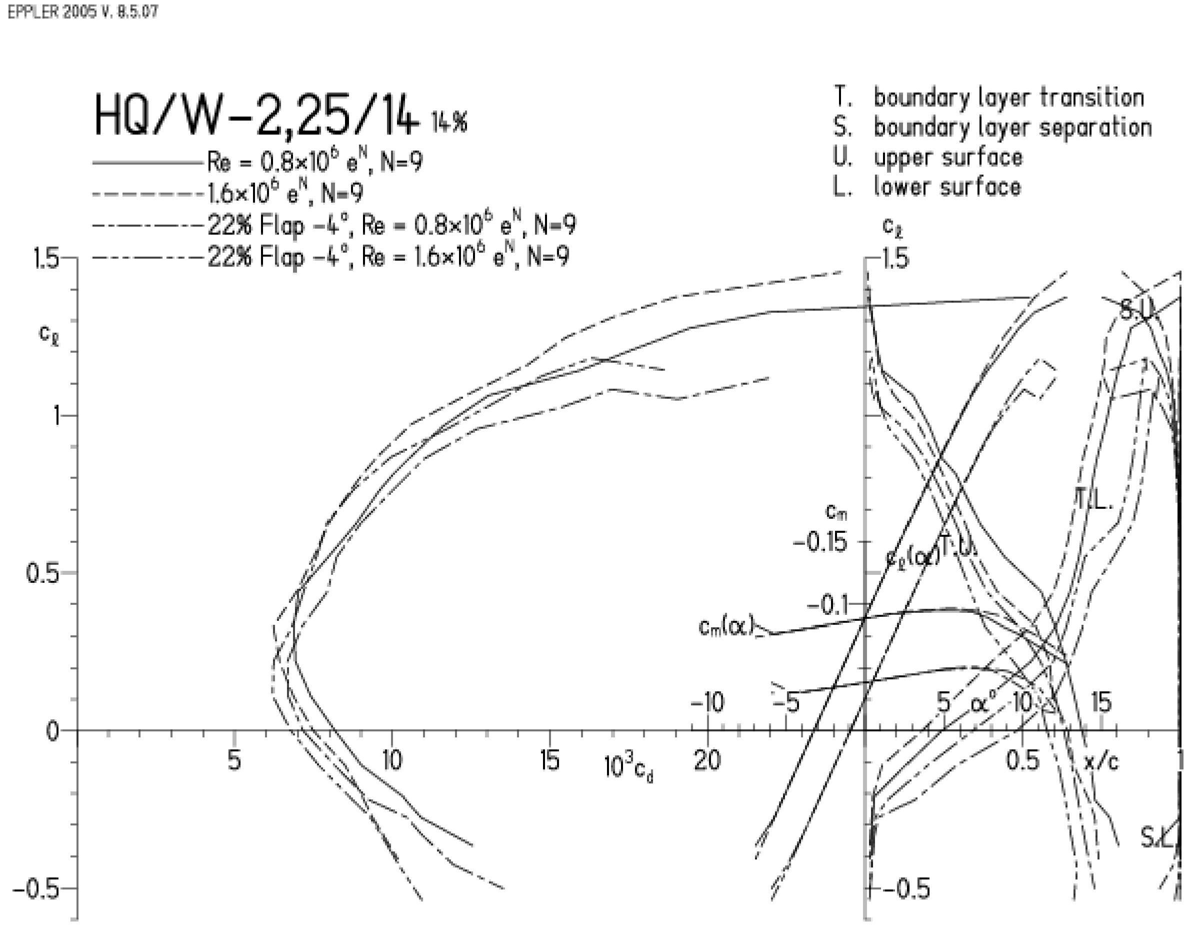


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

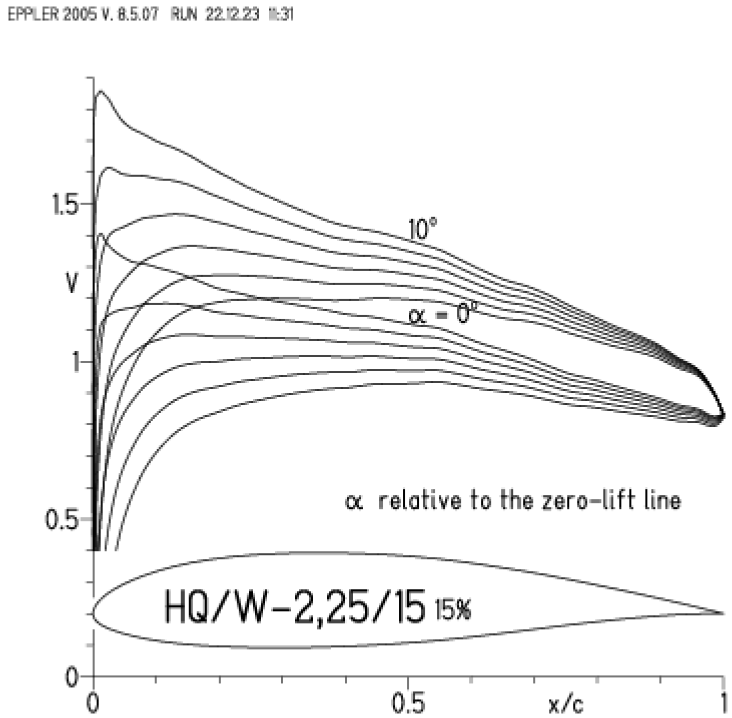


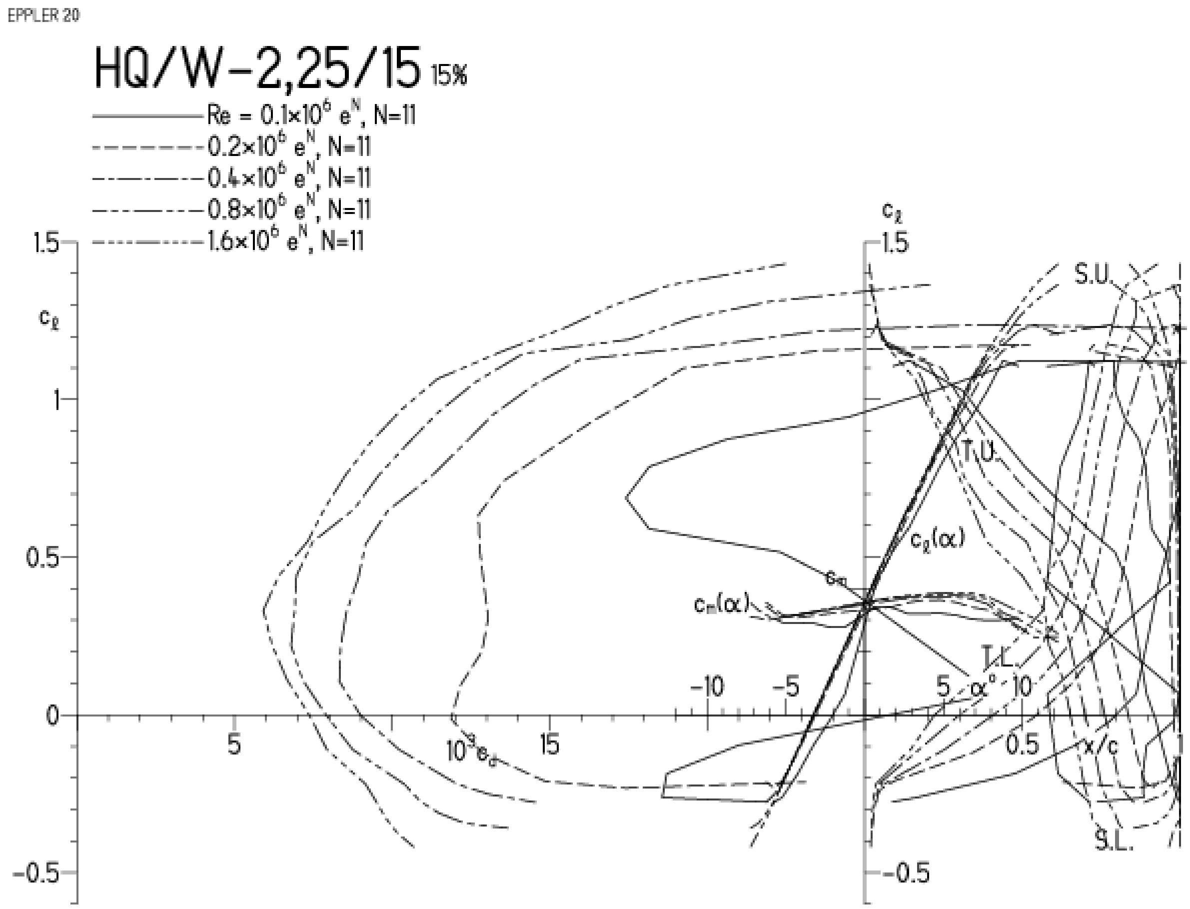
<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag



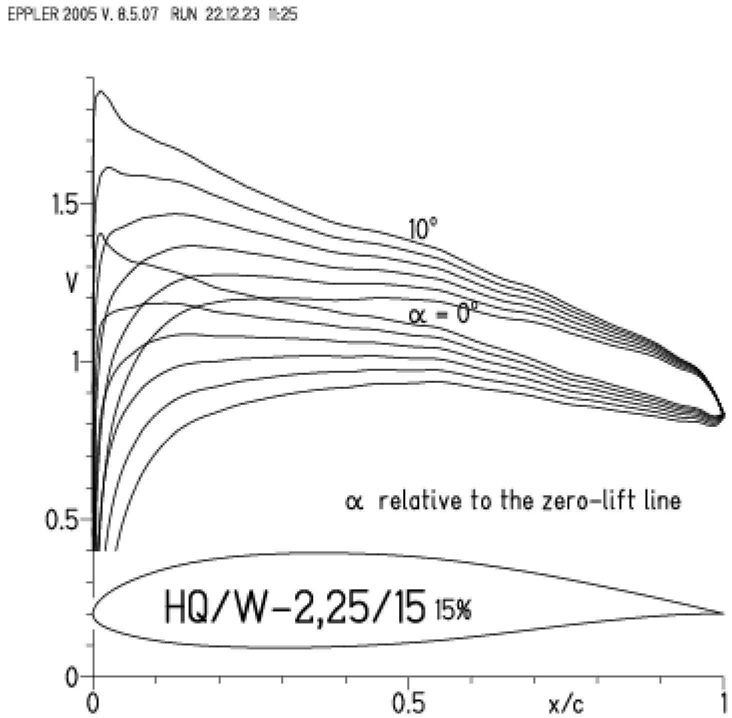


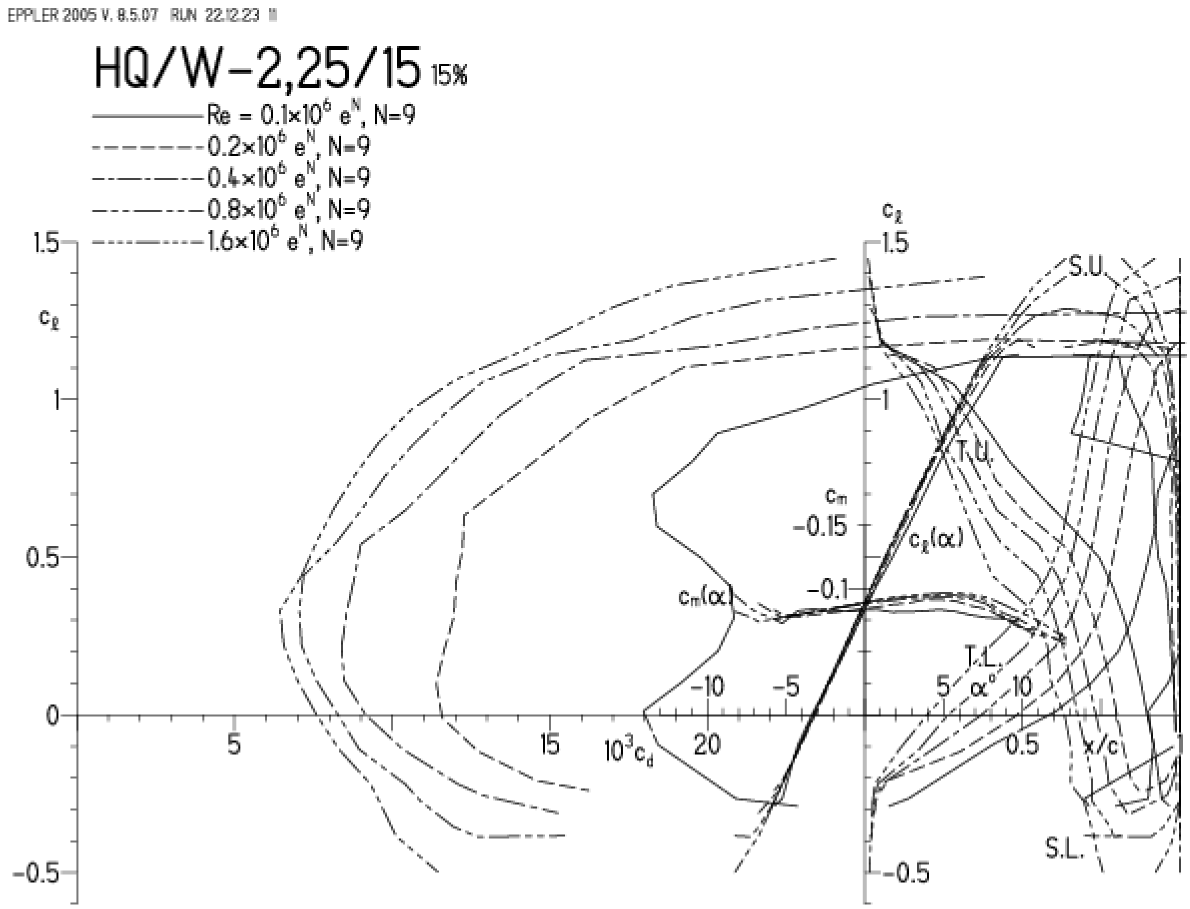
HQ/W-2,25/15, N=11



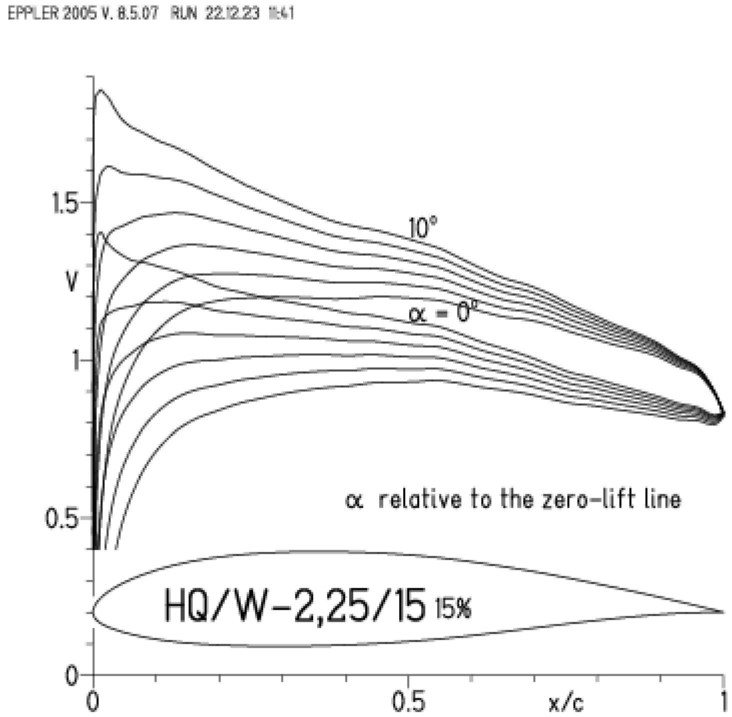


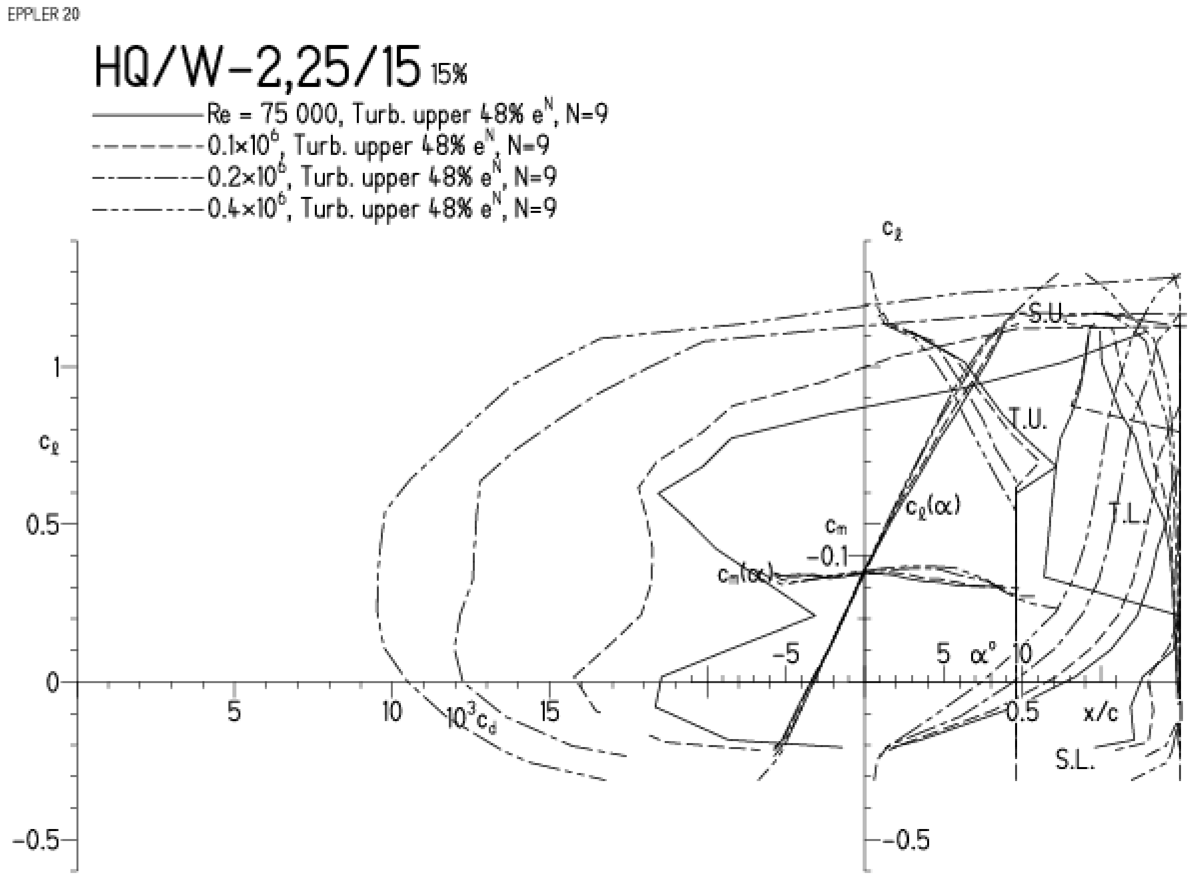
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



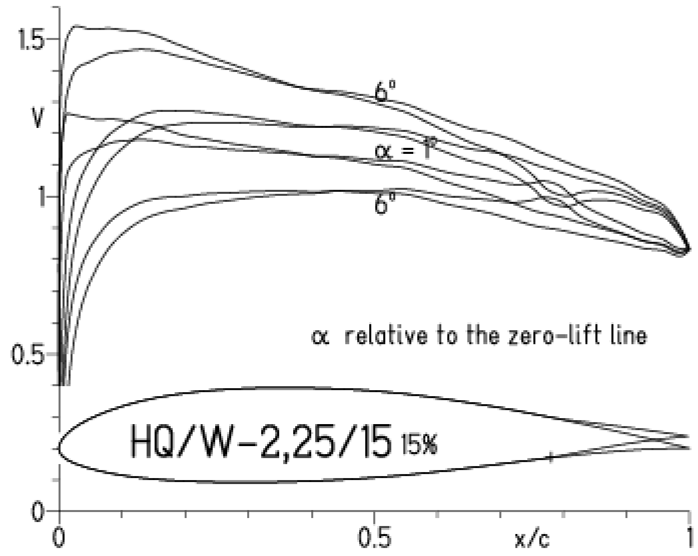


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

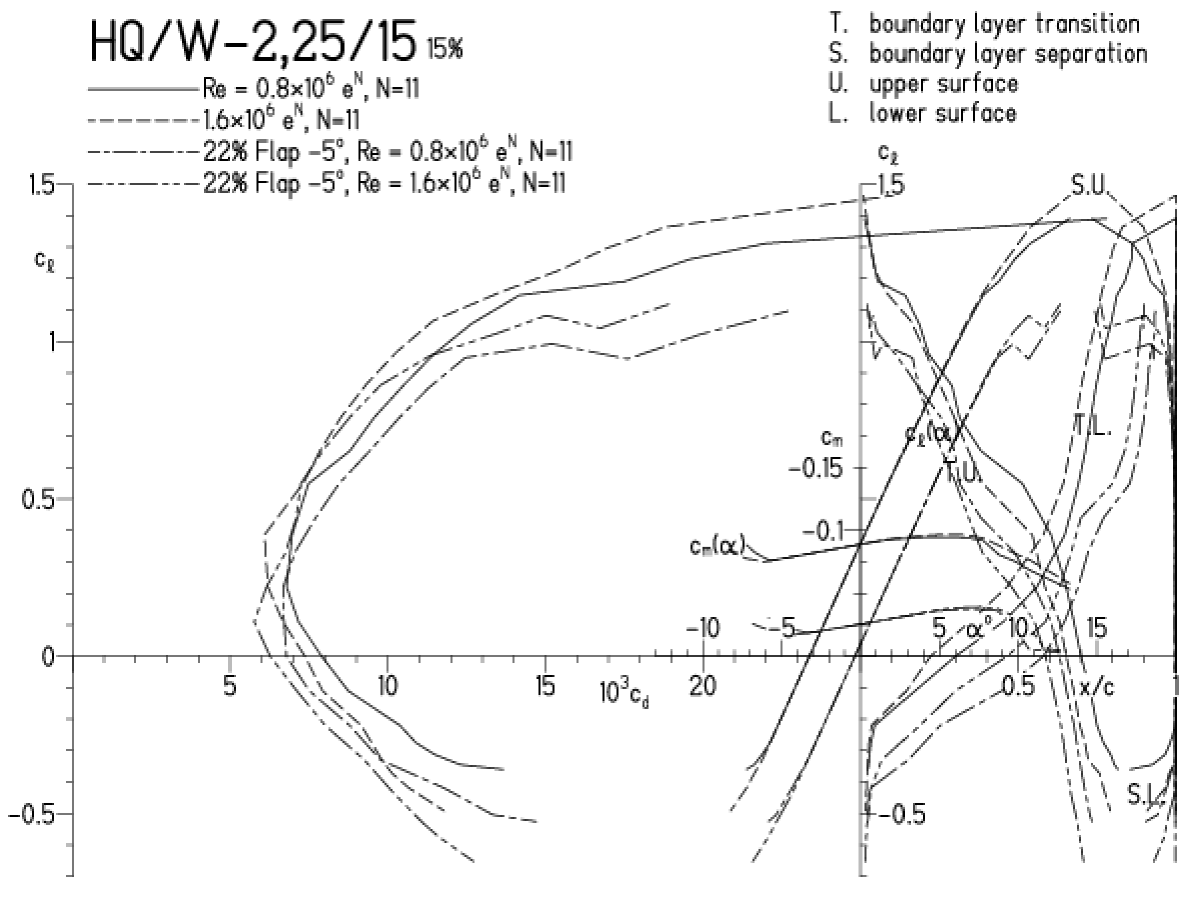
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

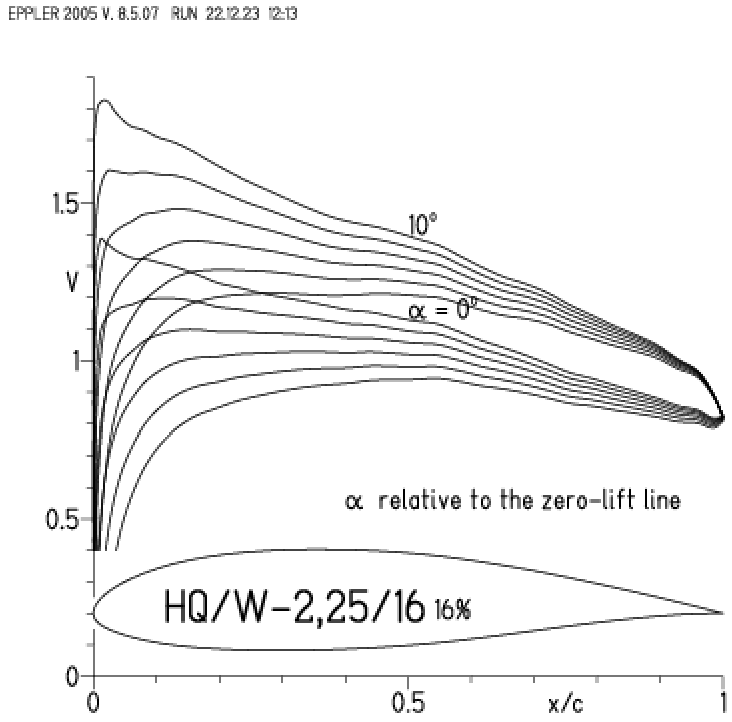
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

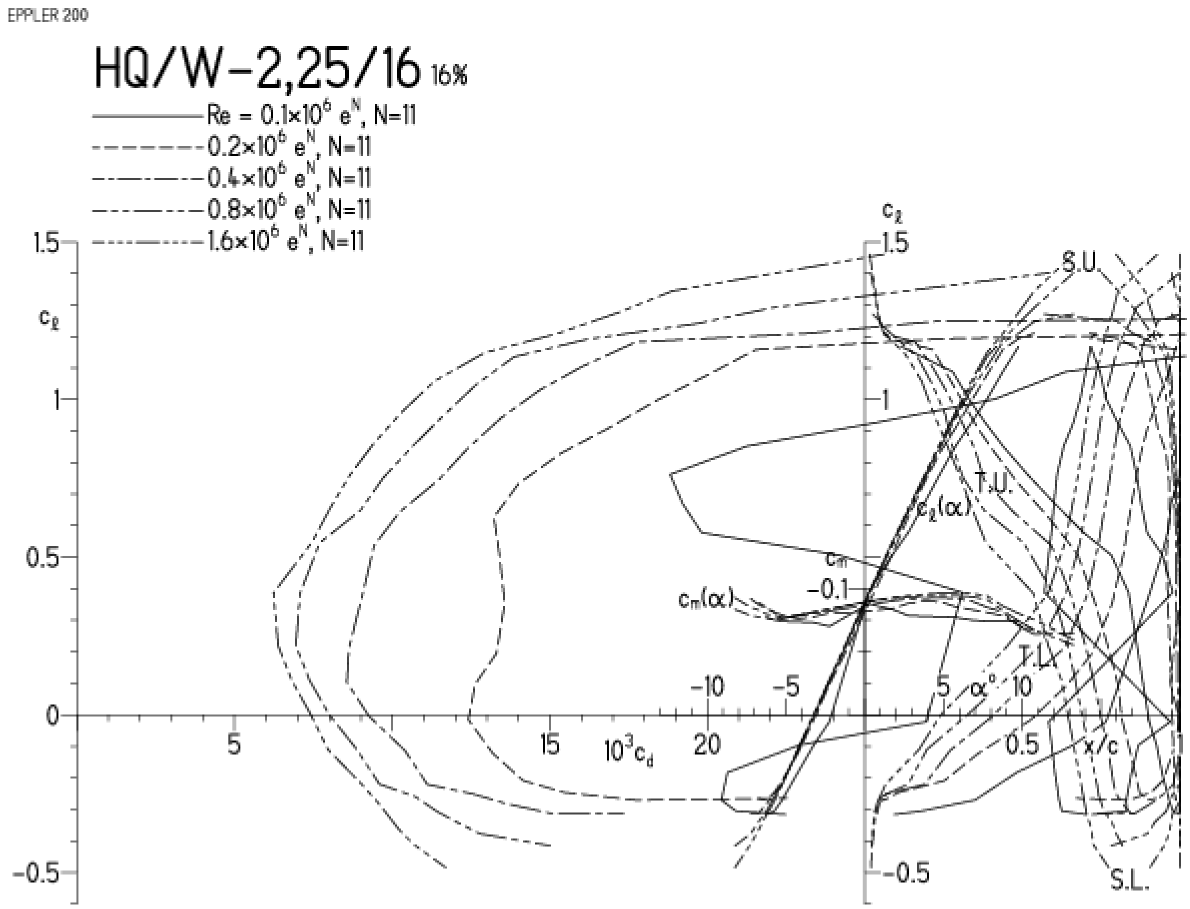


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

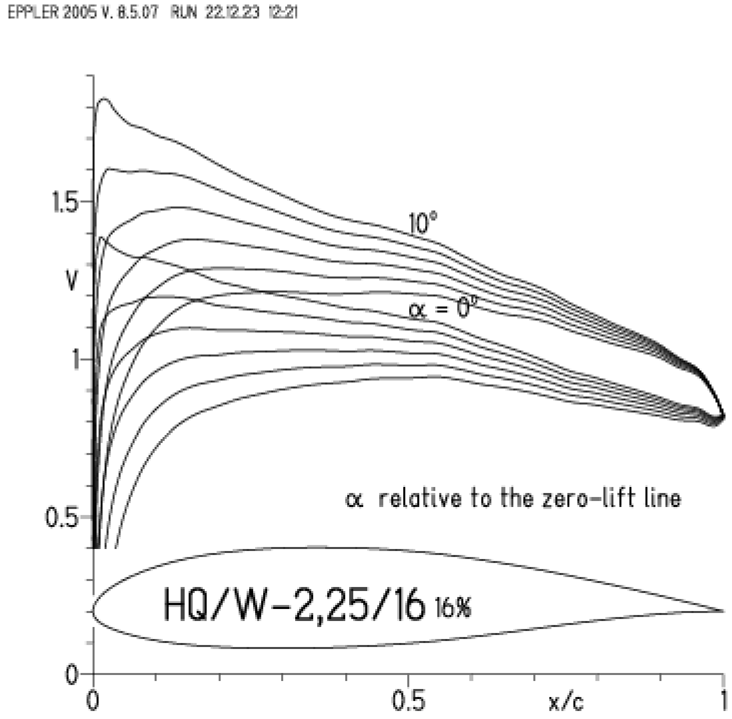


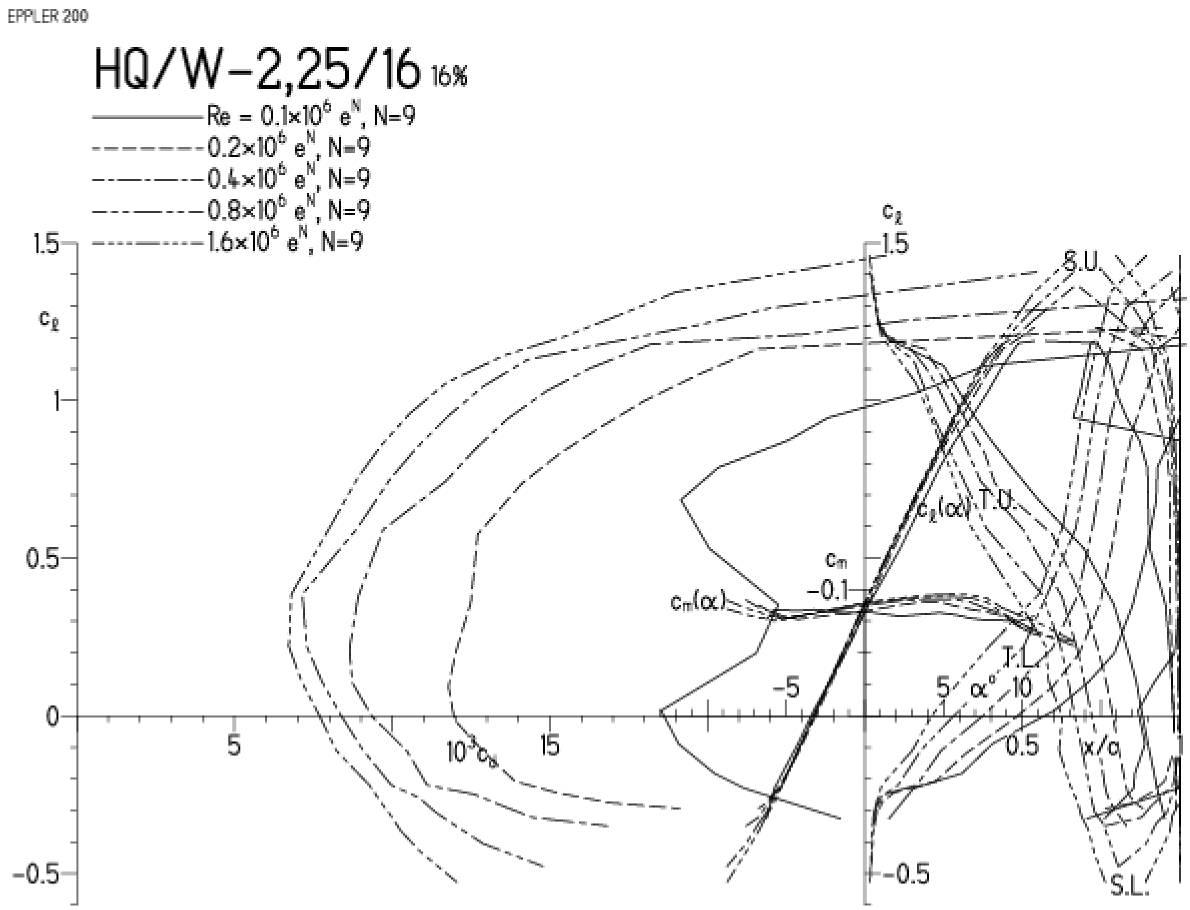
<u>HQ/W-2,25/16</u>, N=11





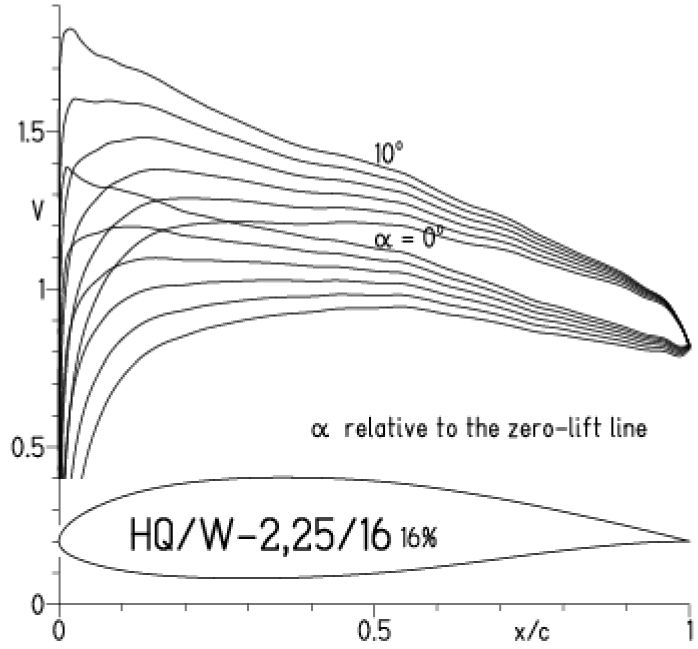
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1

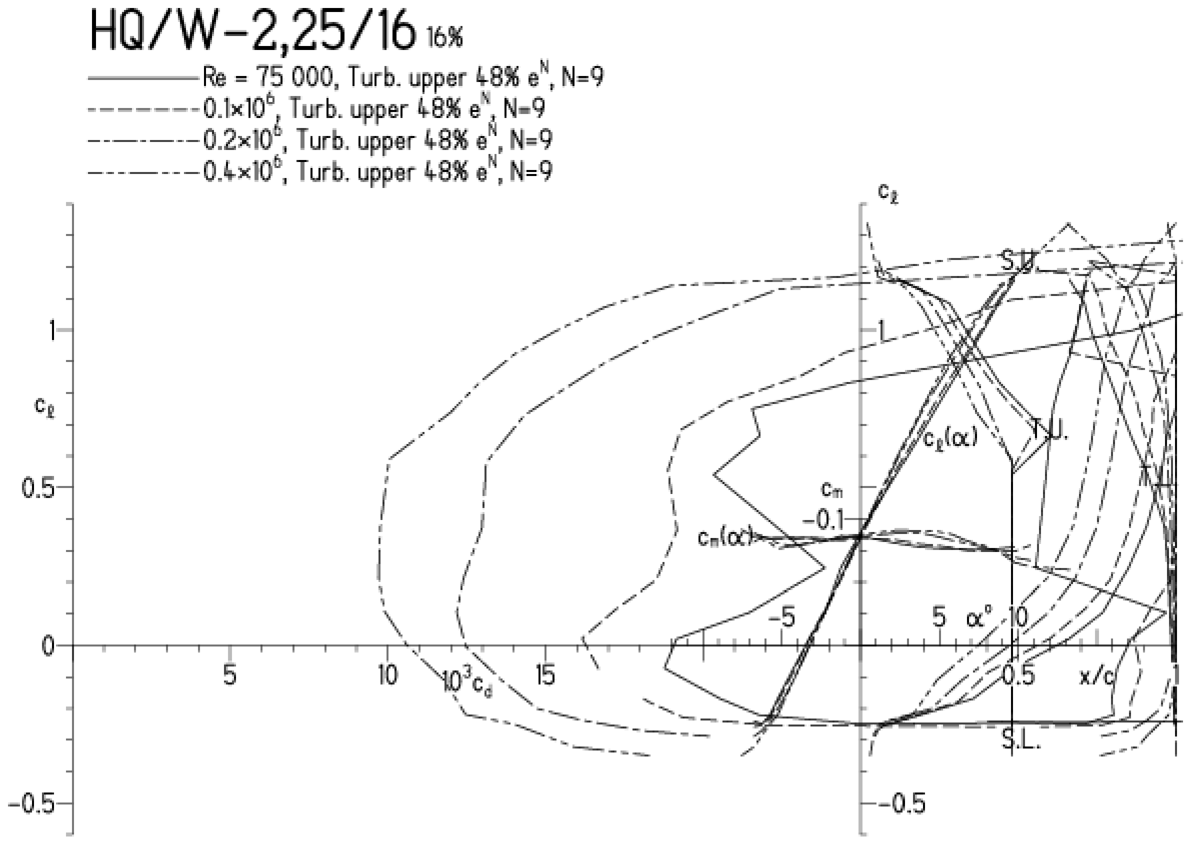

EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
cℓ
1
0.5
0
-0.5
5
10³cd
15
cm(α)
cm
-0.1
-5
5
α°
10
cℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
-0.5

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

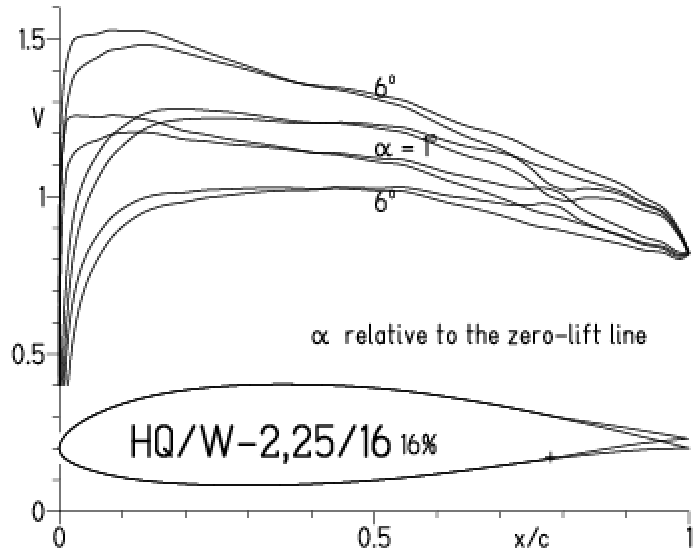


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

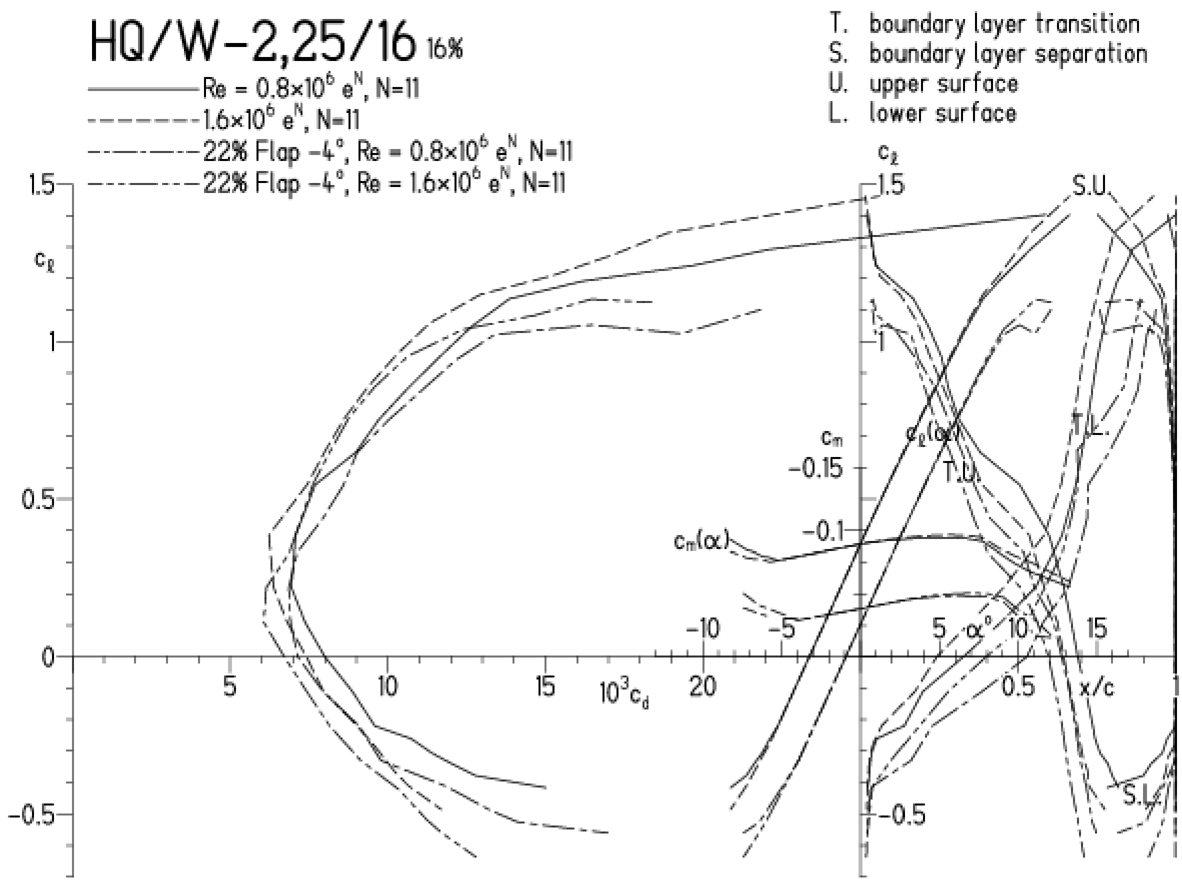
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

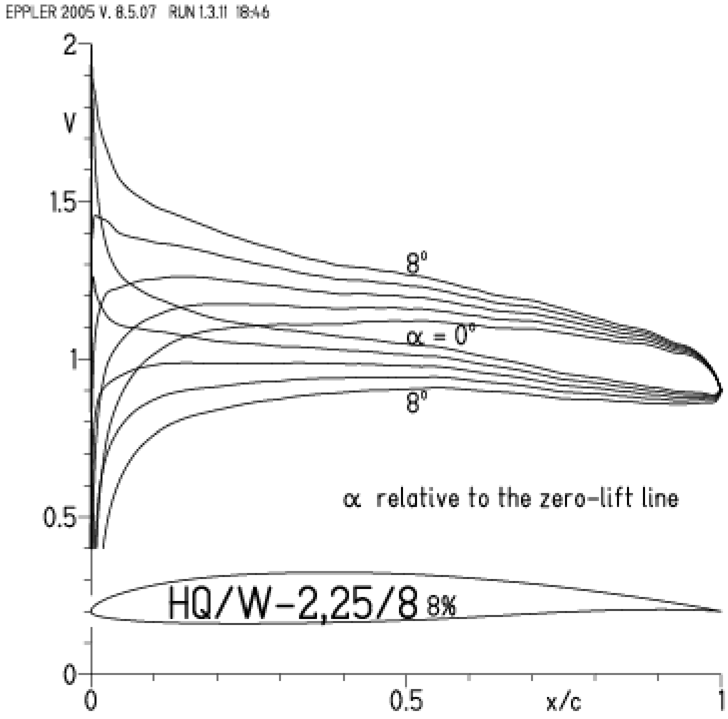
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

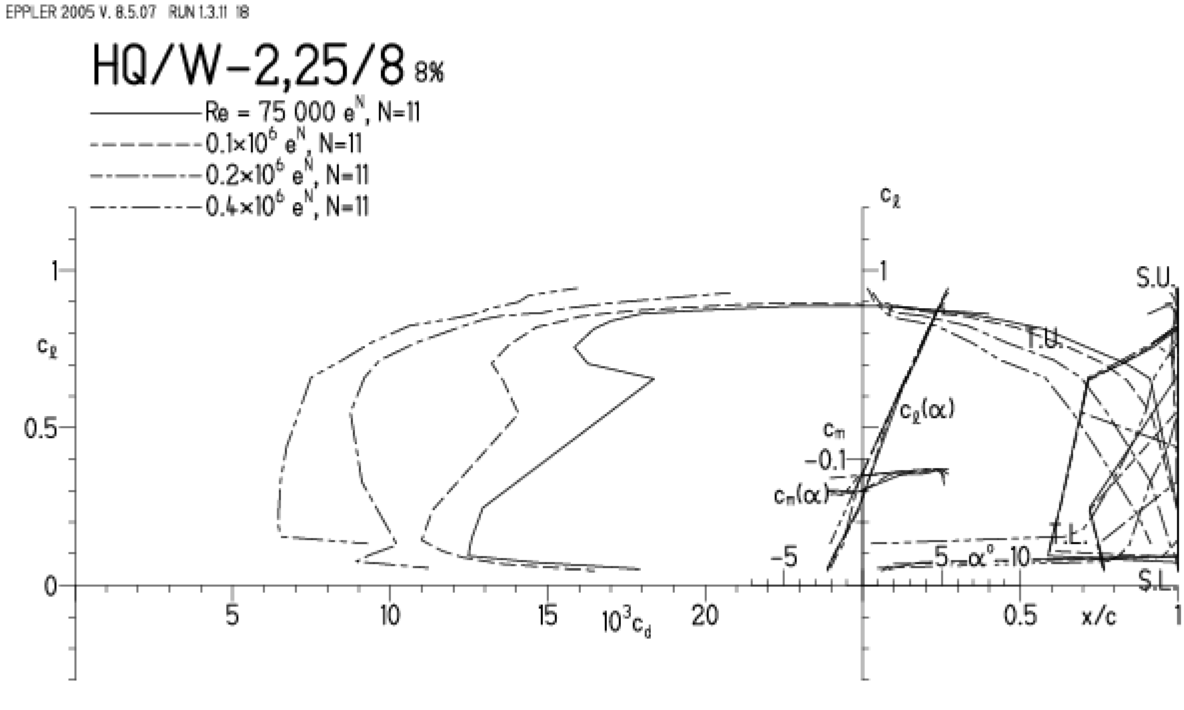


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

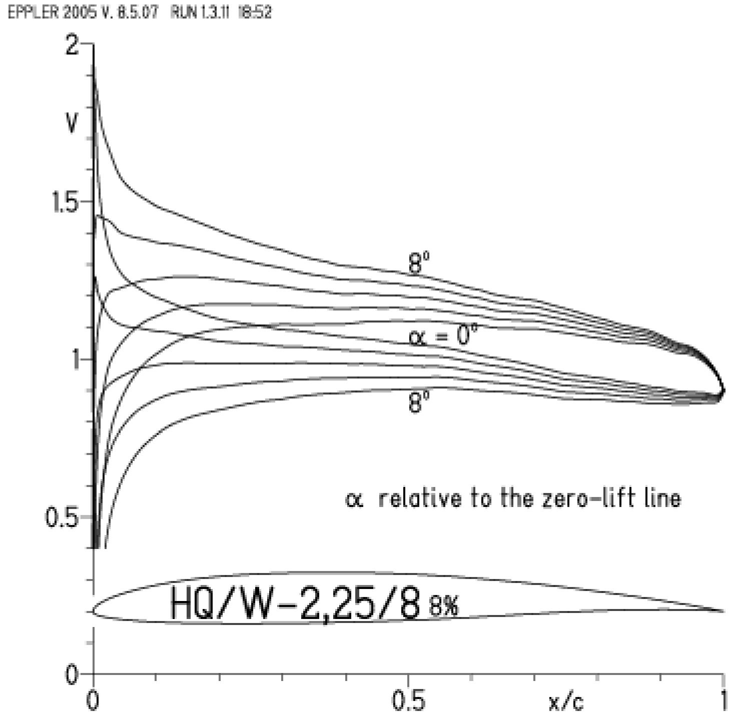


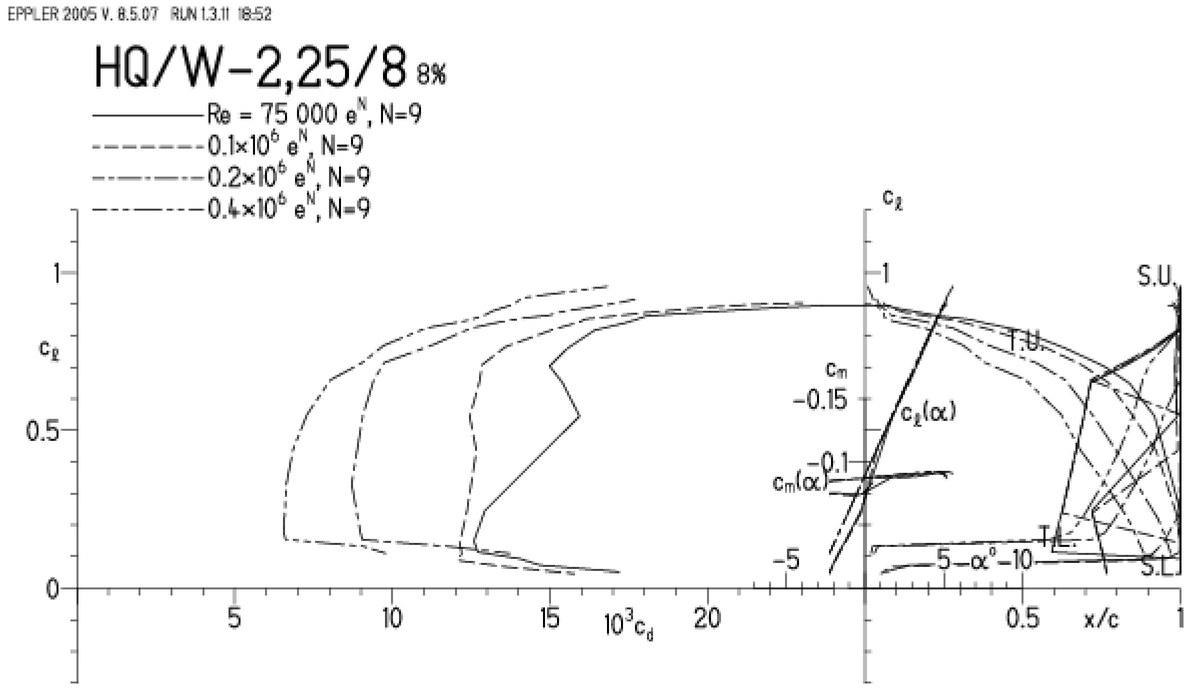
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

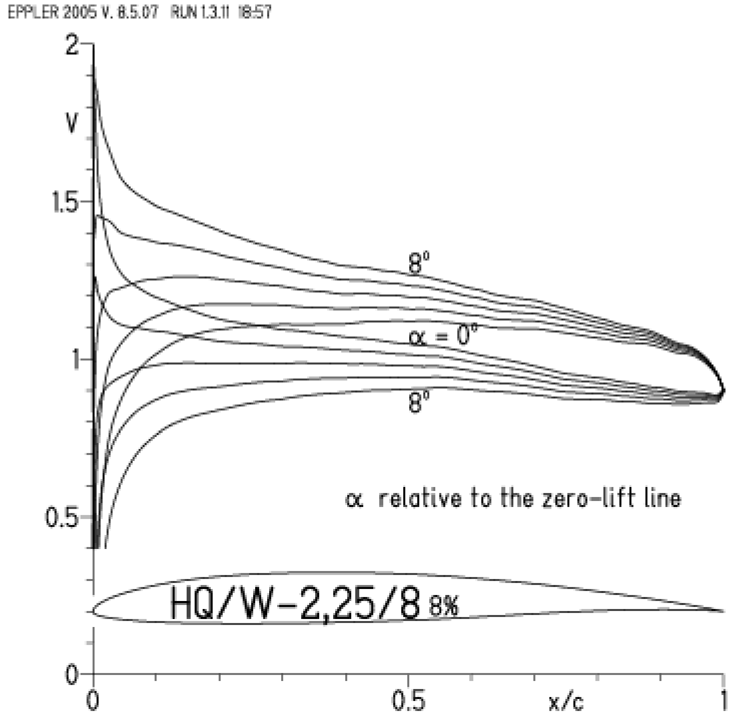

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
10^3 c_d
x/c

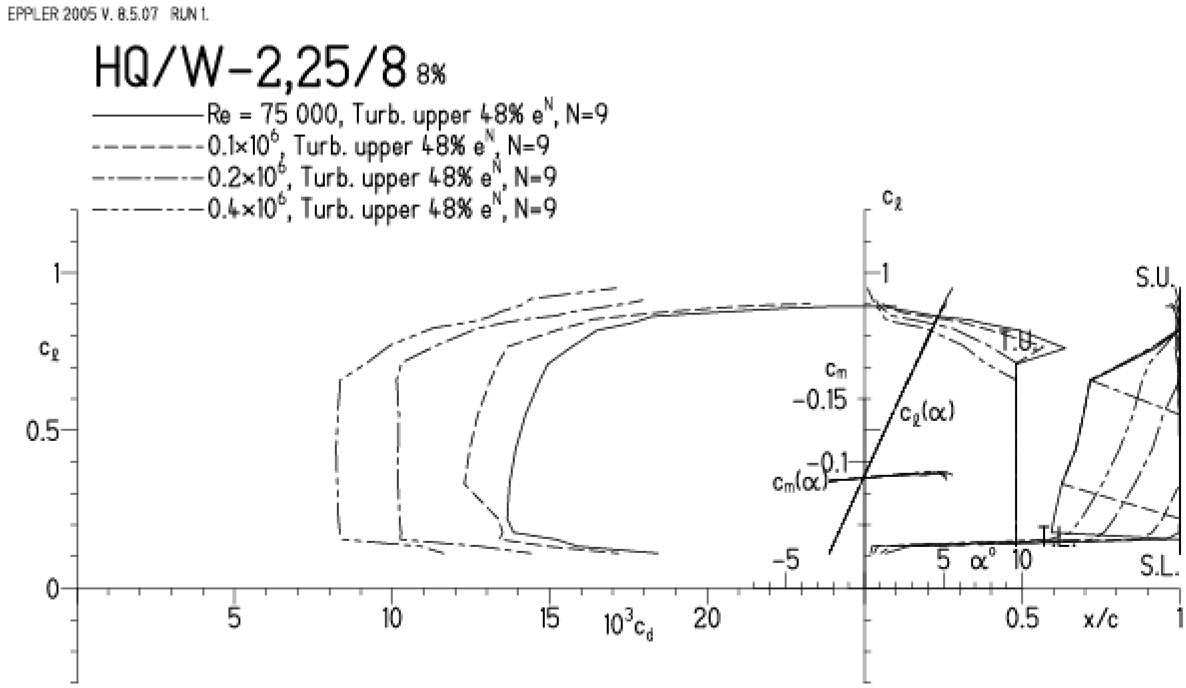
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5 — α° — 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

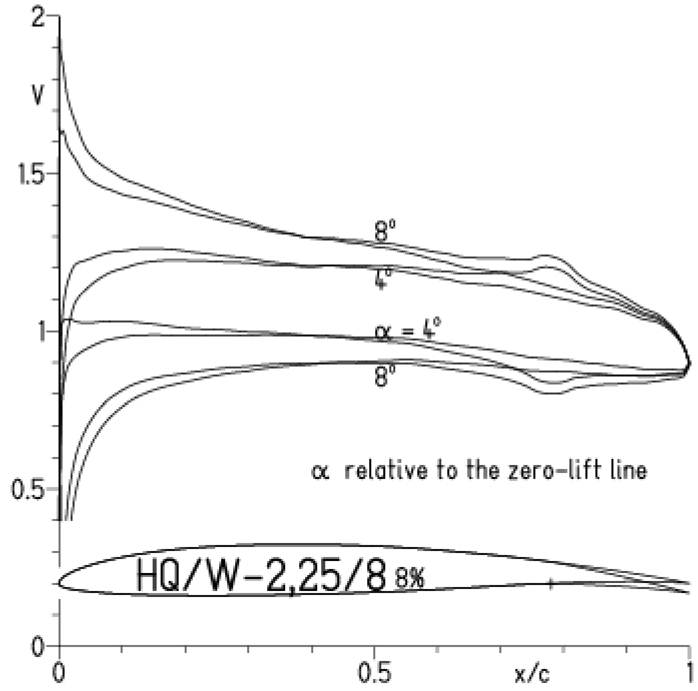
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



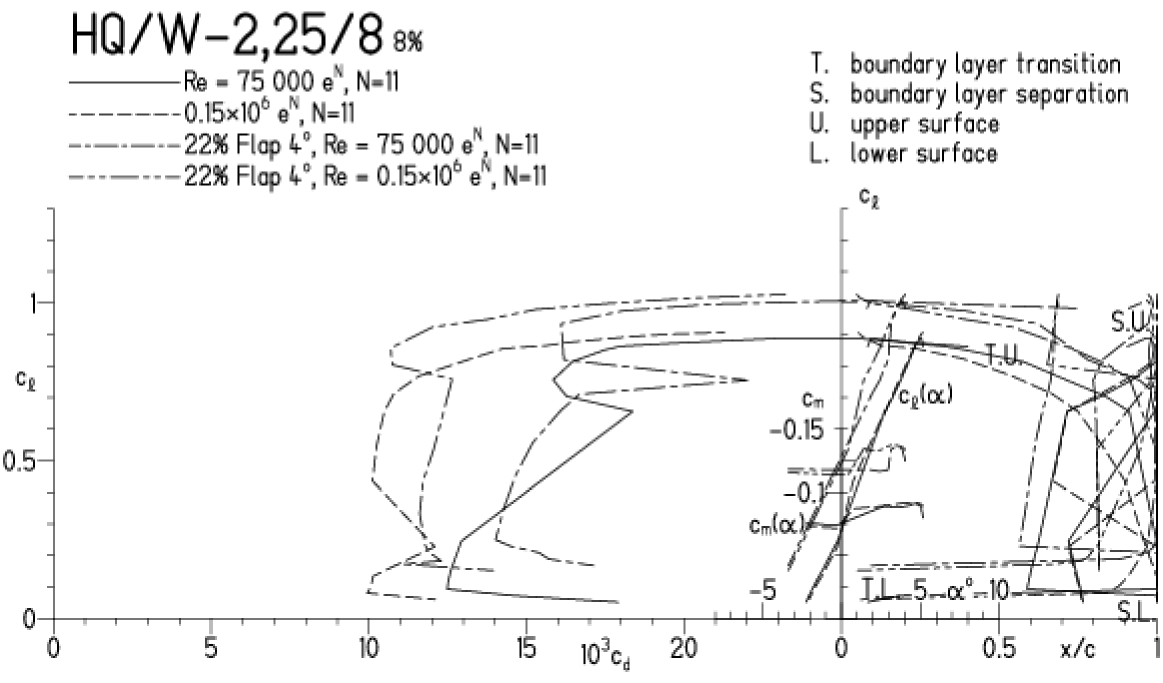


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

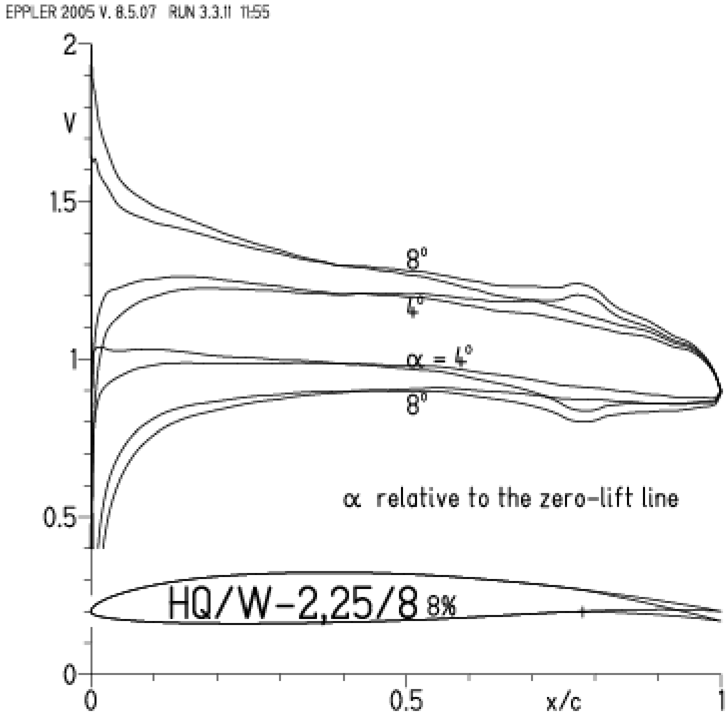
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

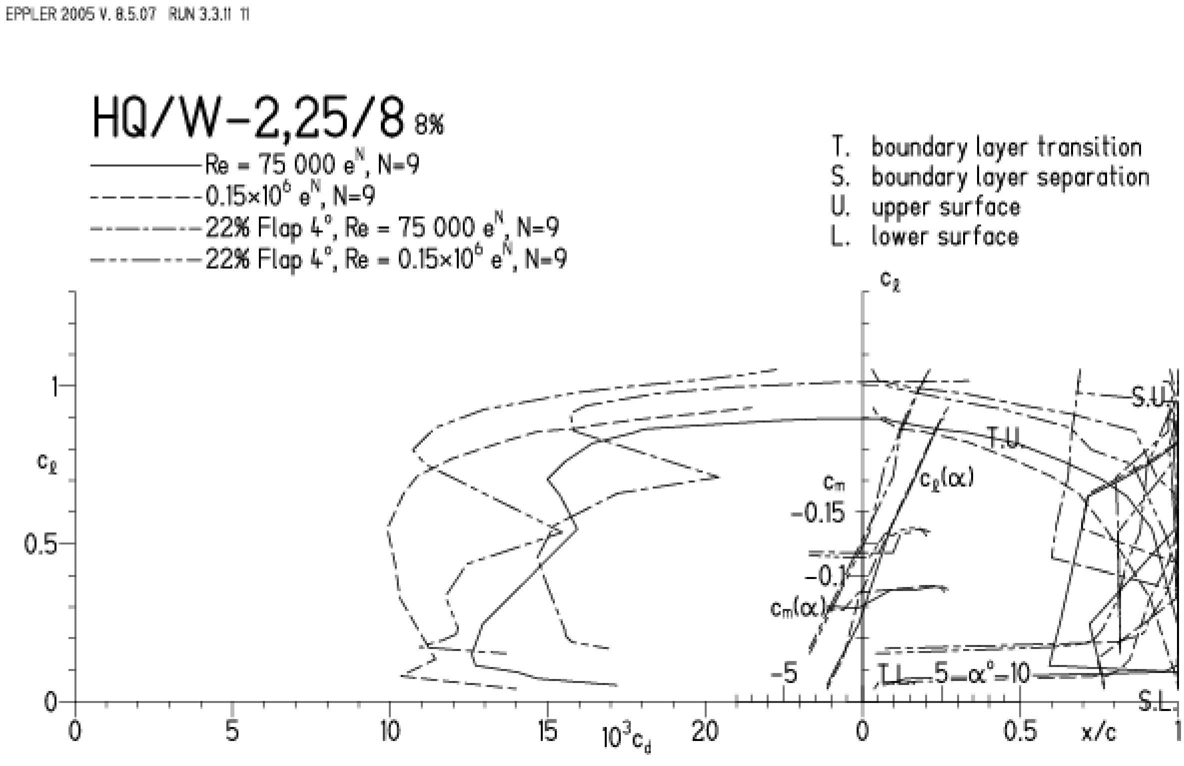


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

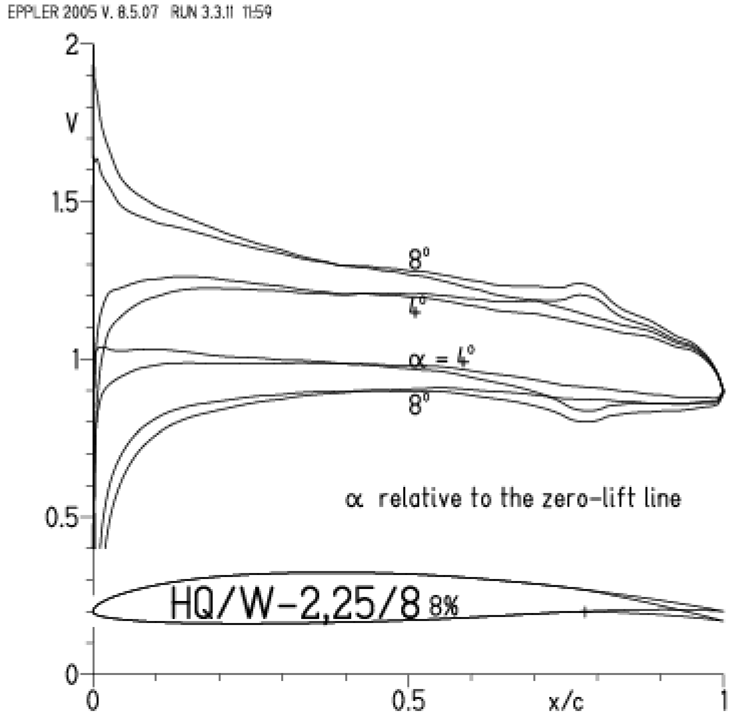


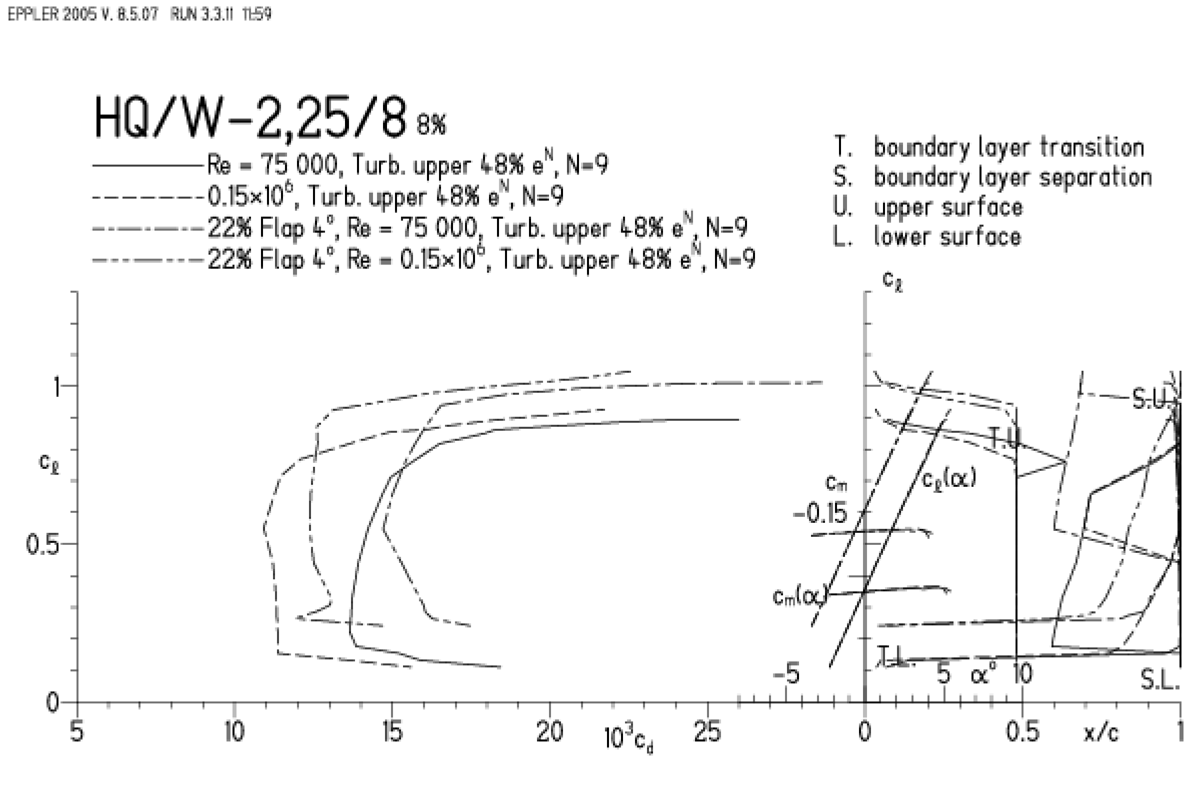
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



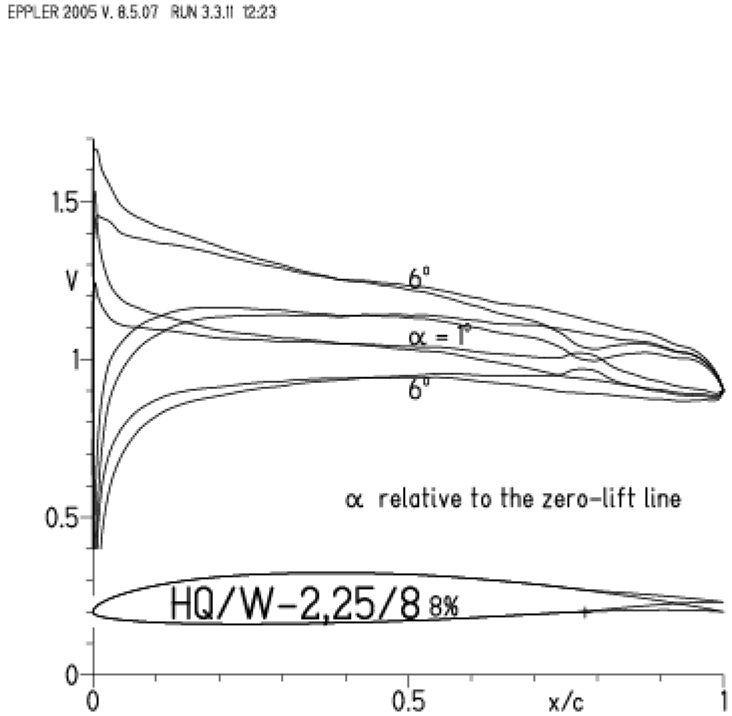


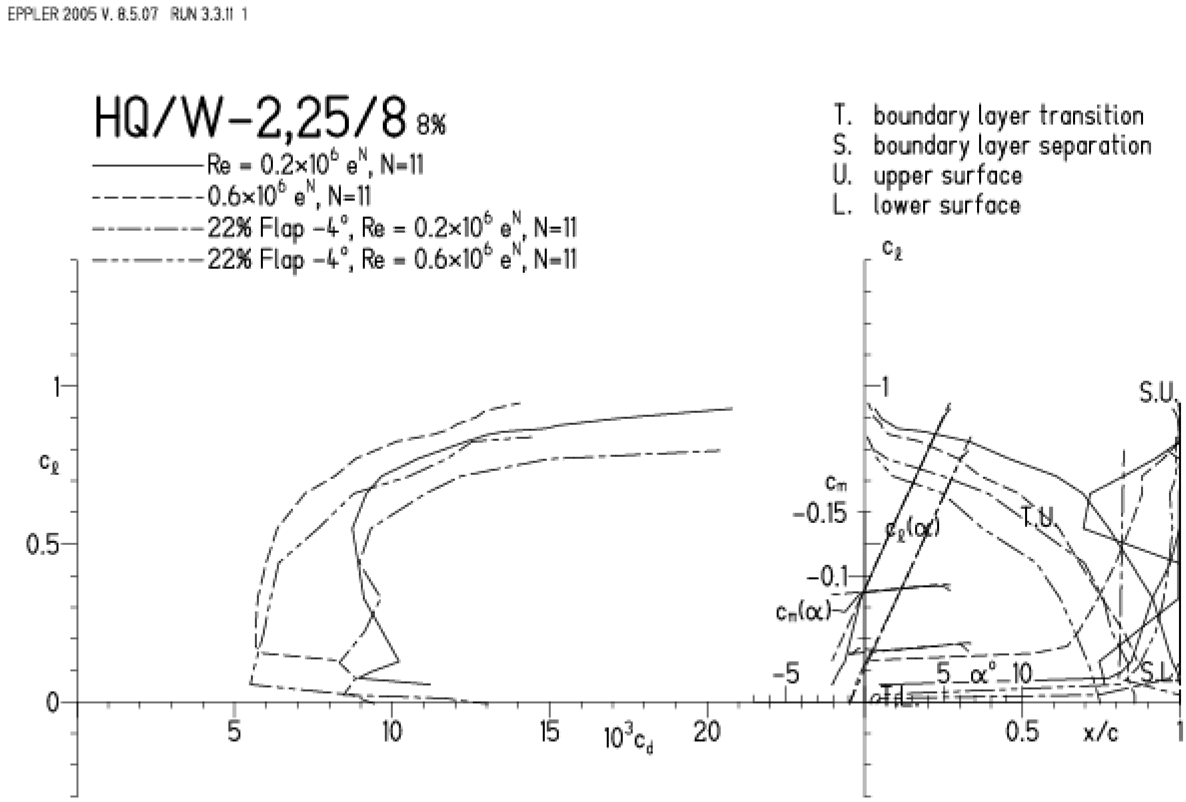
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



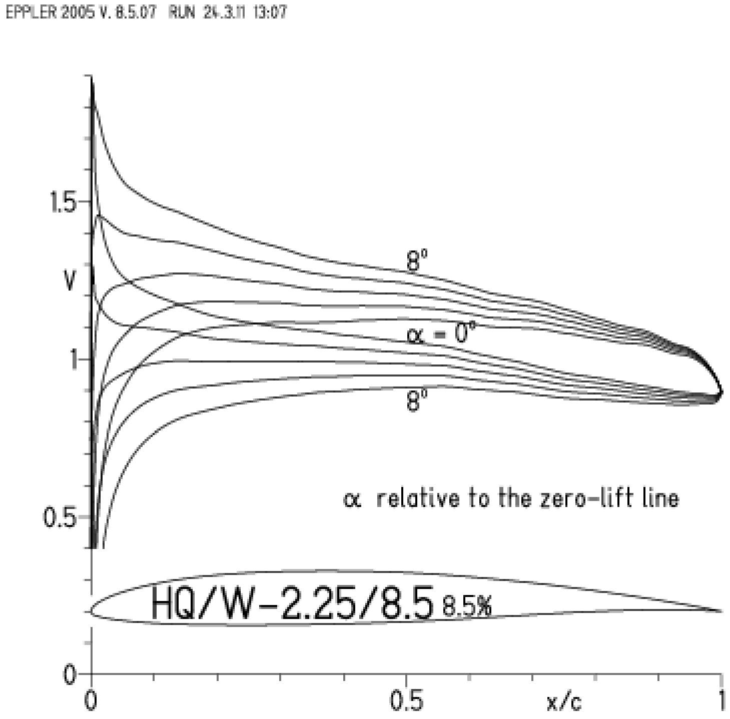


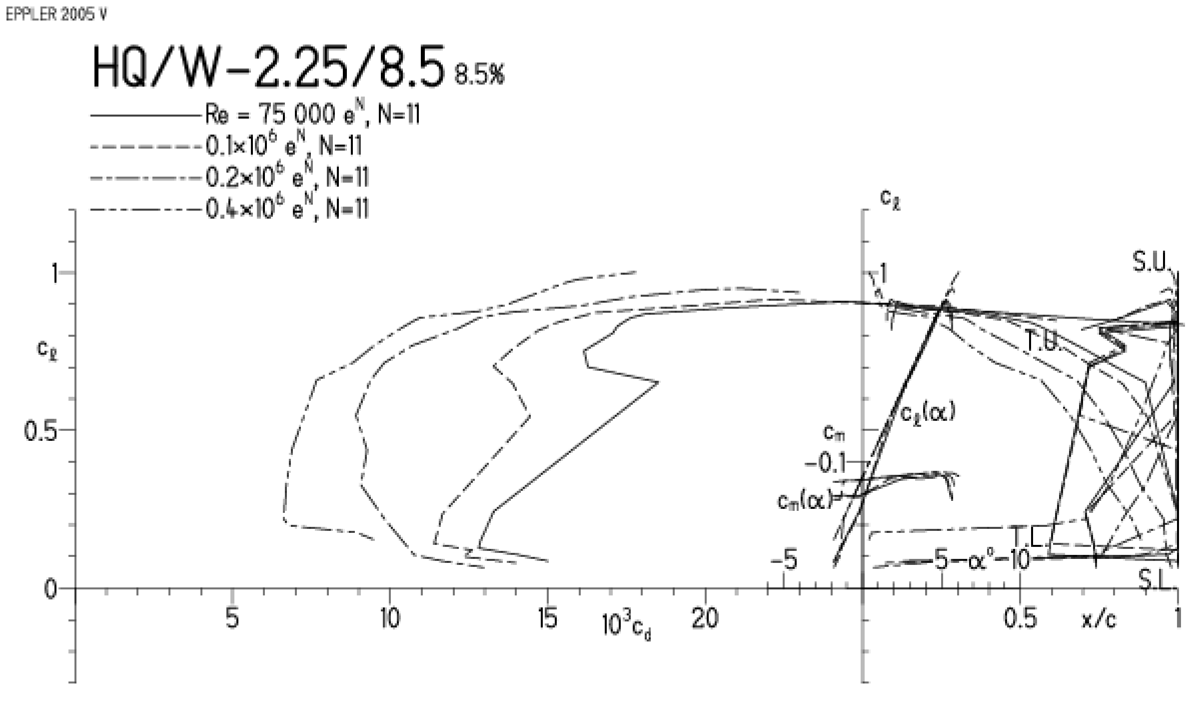
<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)





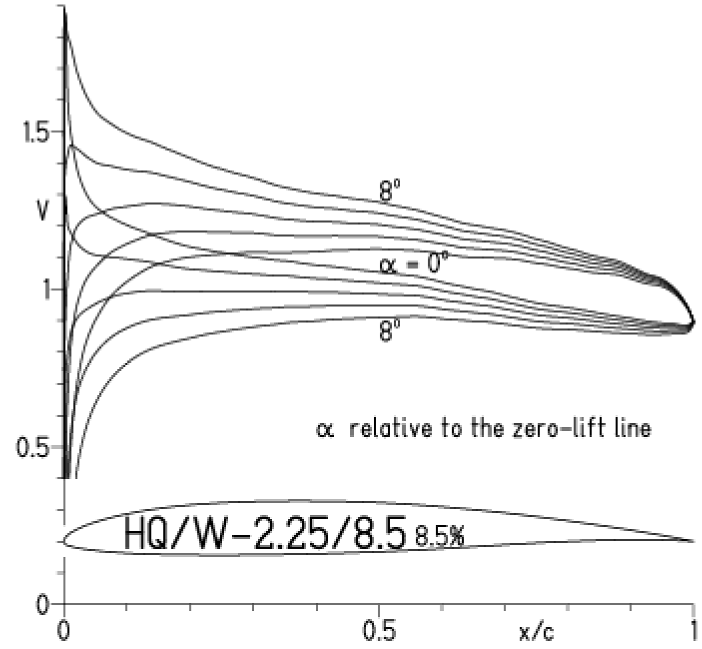
<u>HQ/W-2,25/8,5</u>, N=11



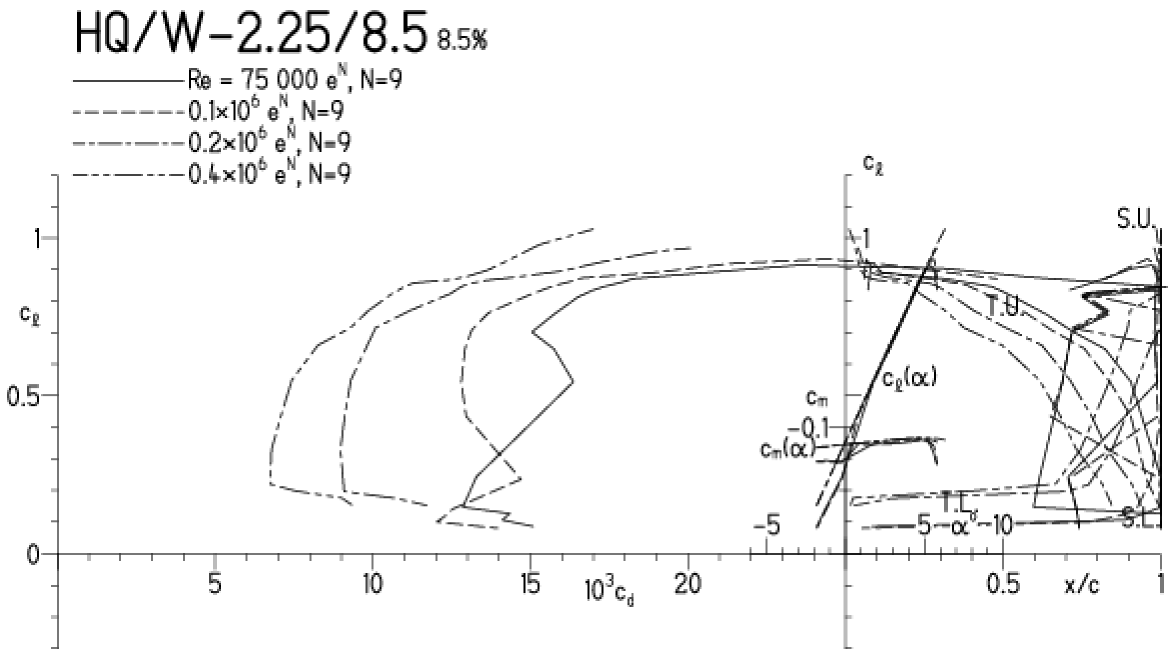


HQ/W-2,25/8,5, N=9

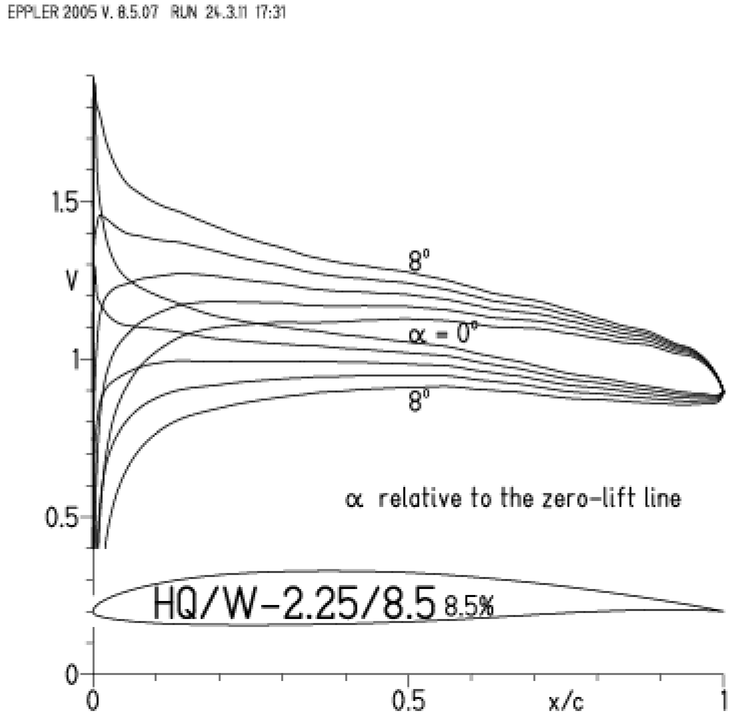
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

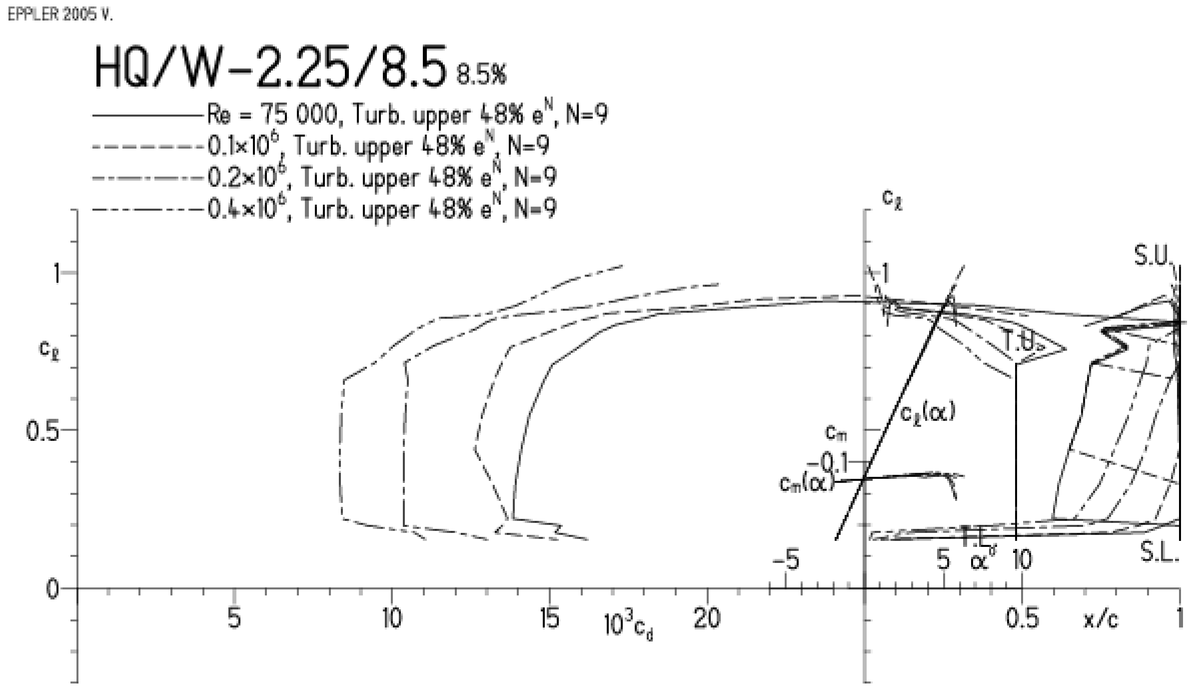


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



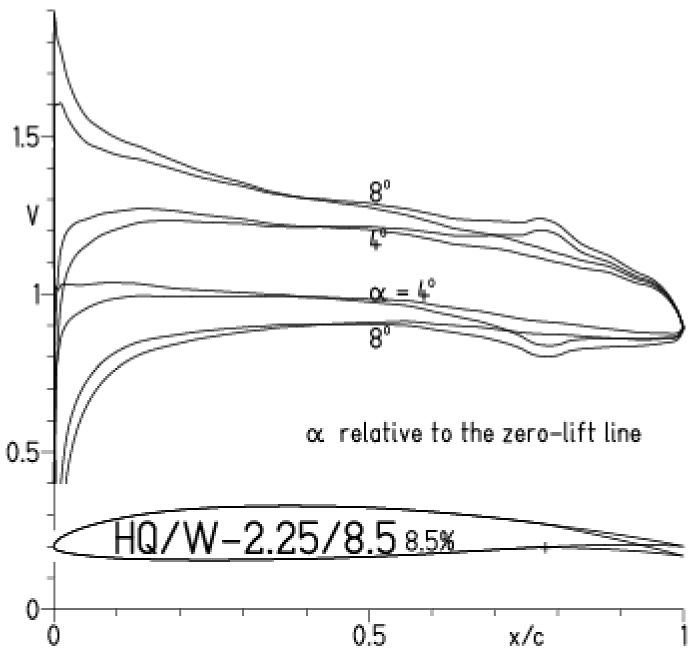
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



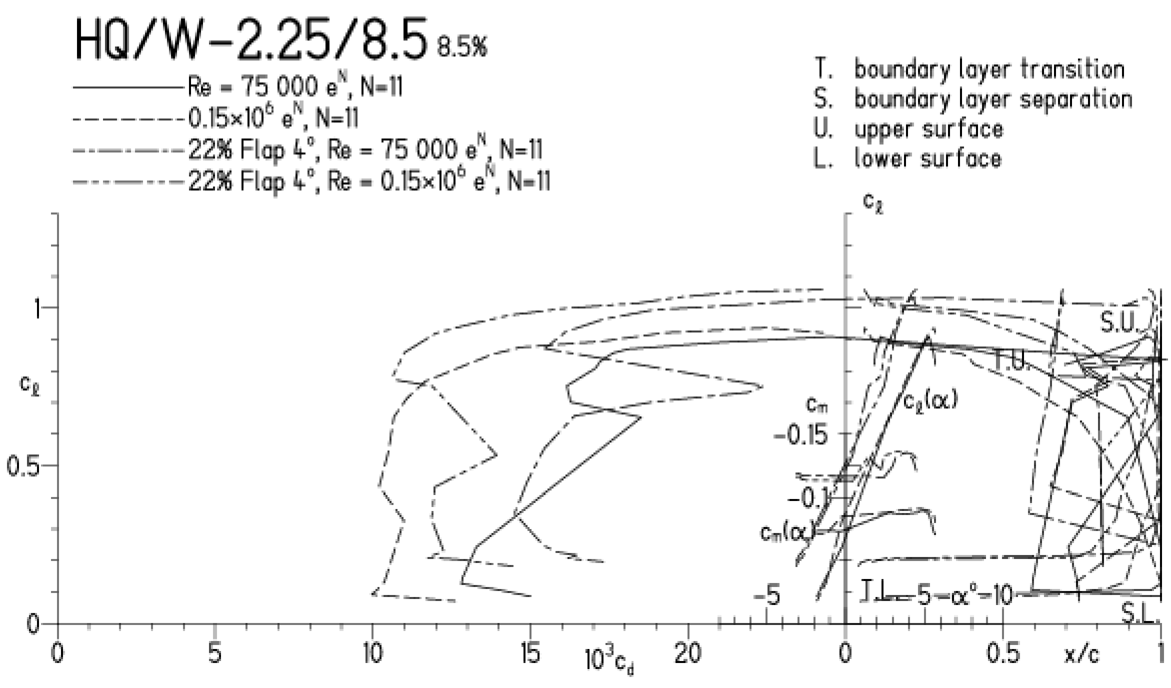


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

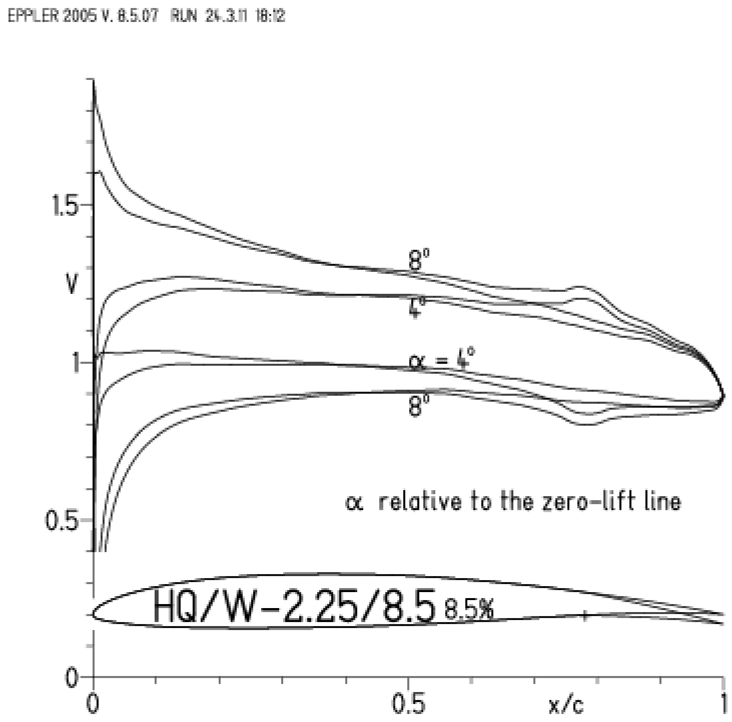
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

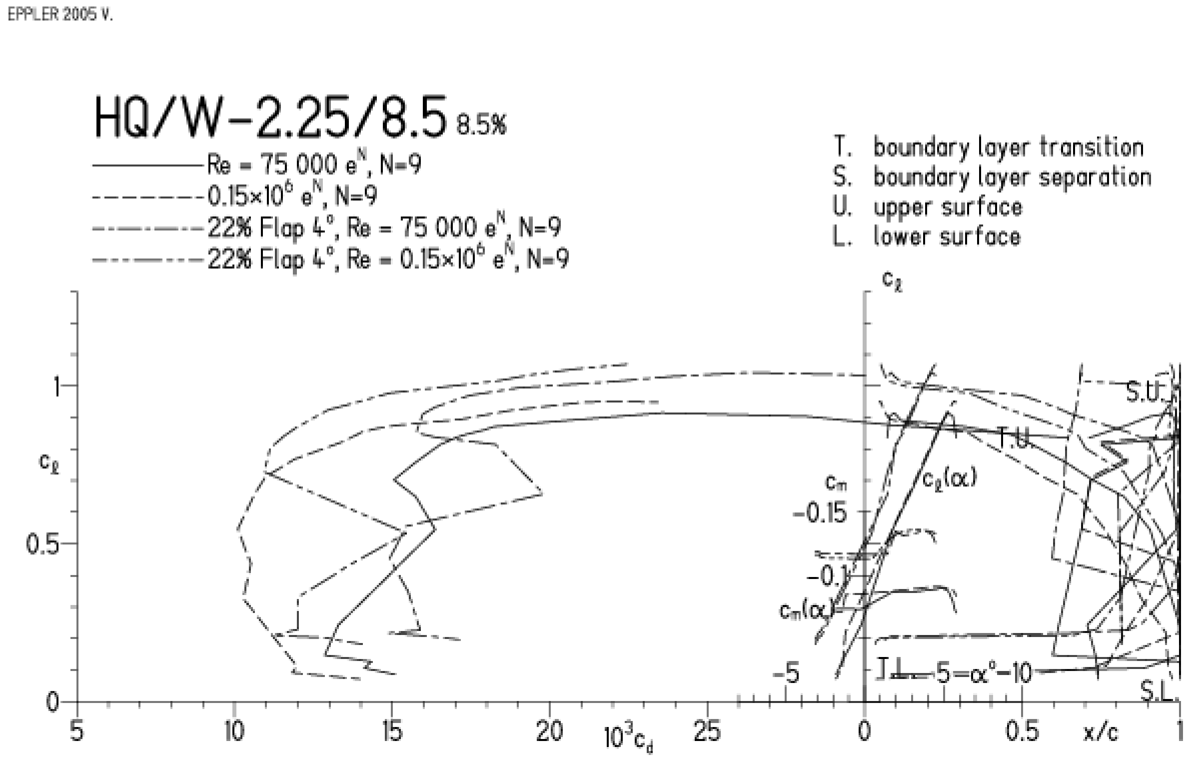


EPPLER 2005 V. 8.5.

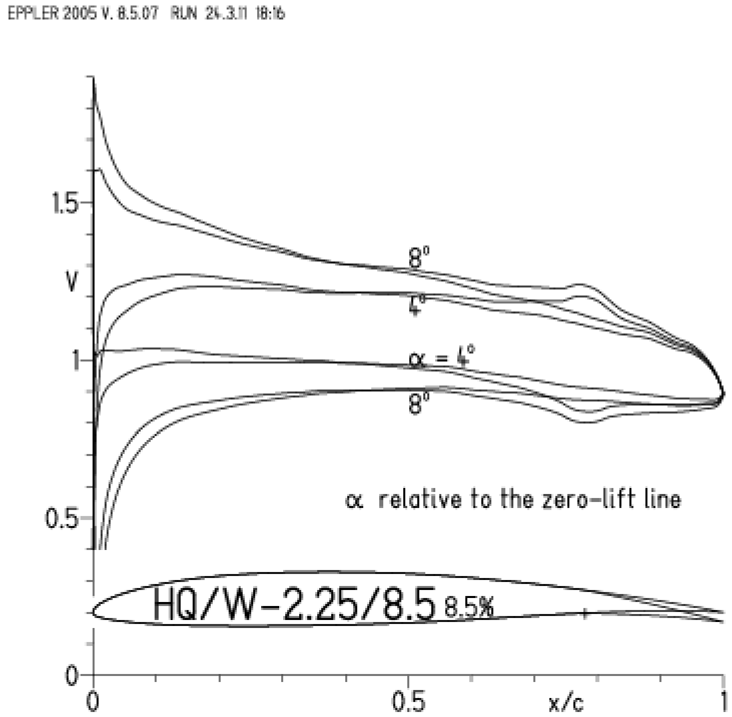


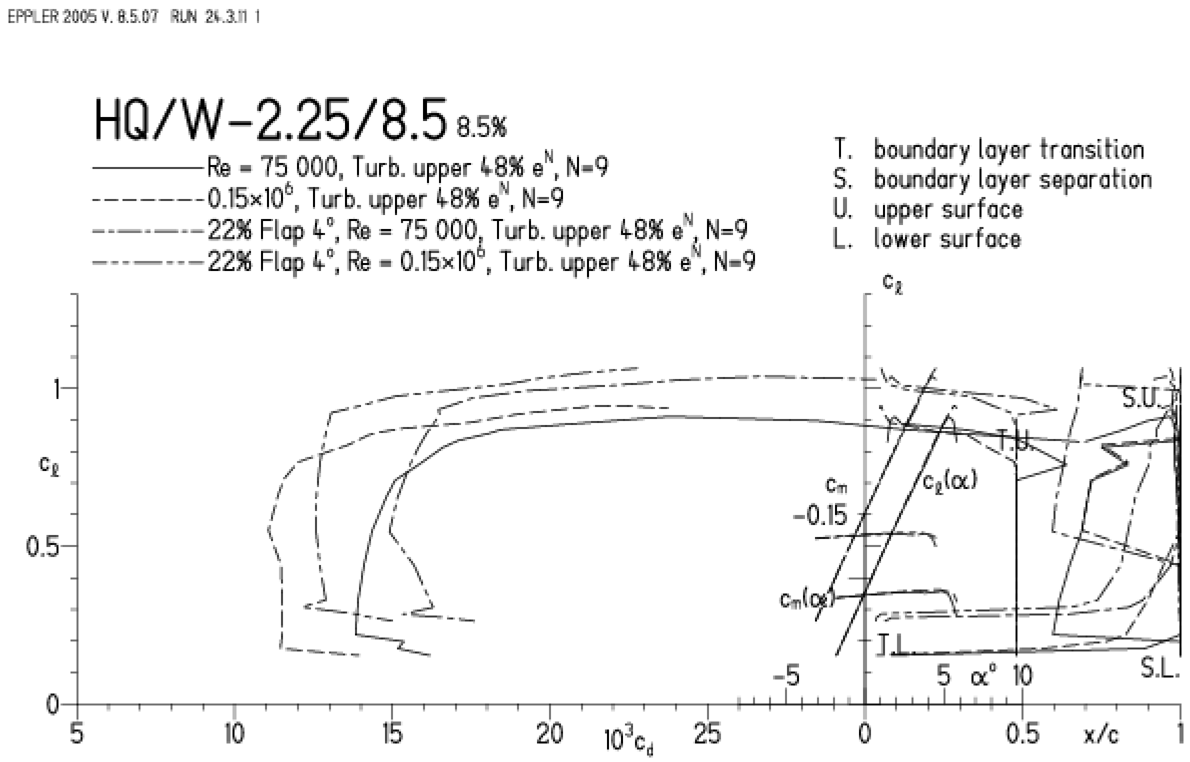
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag





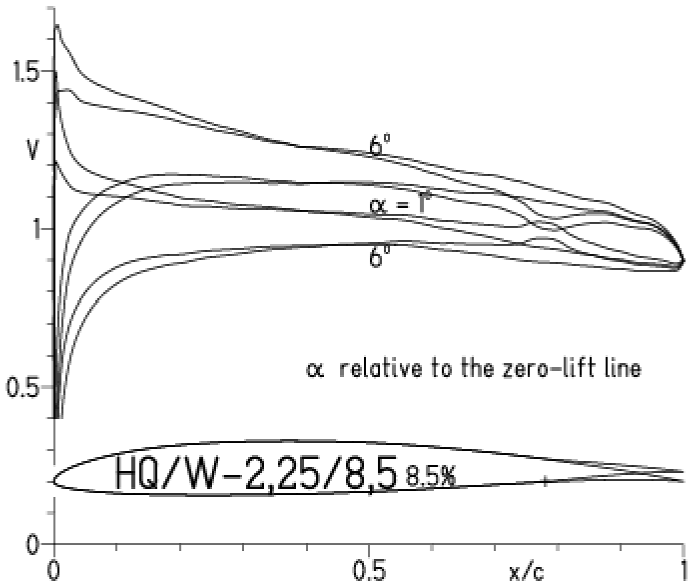
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



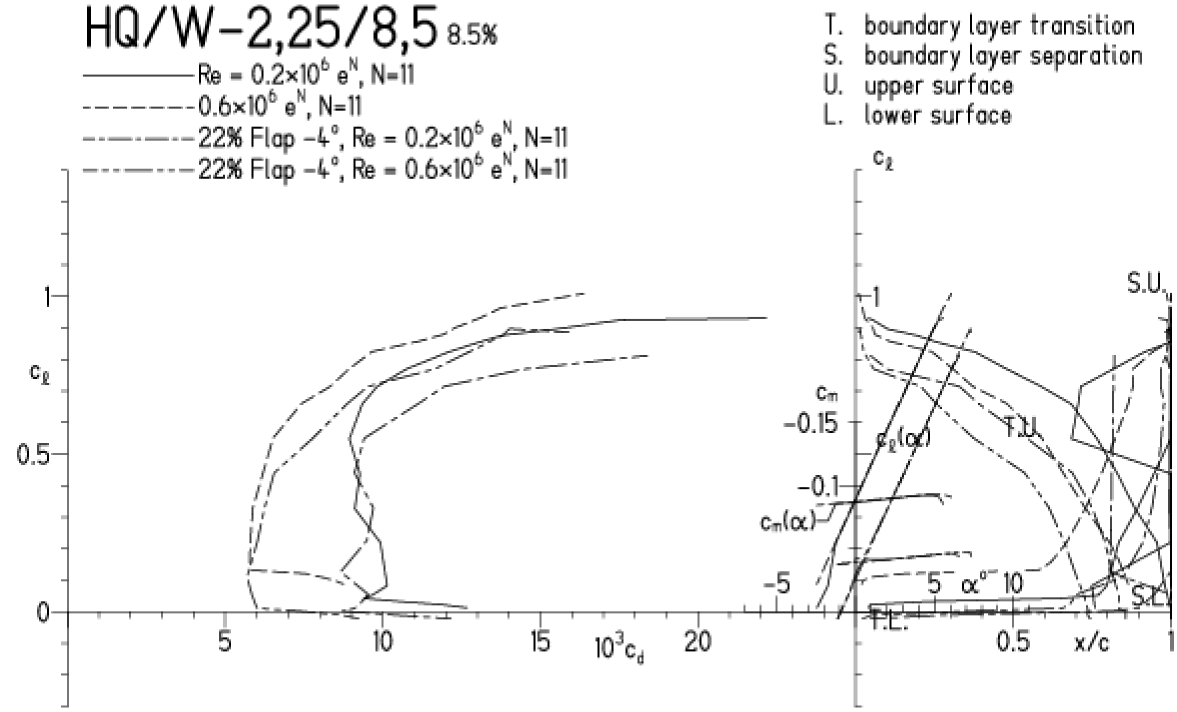


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

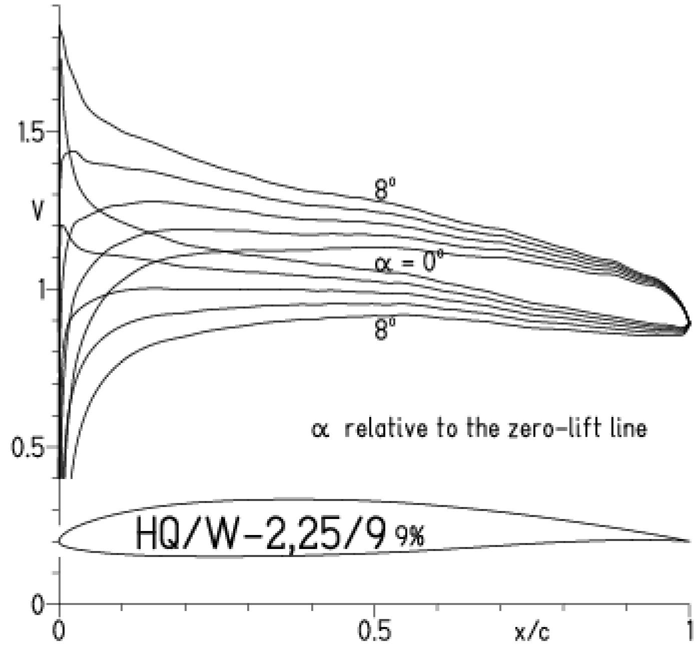


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

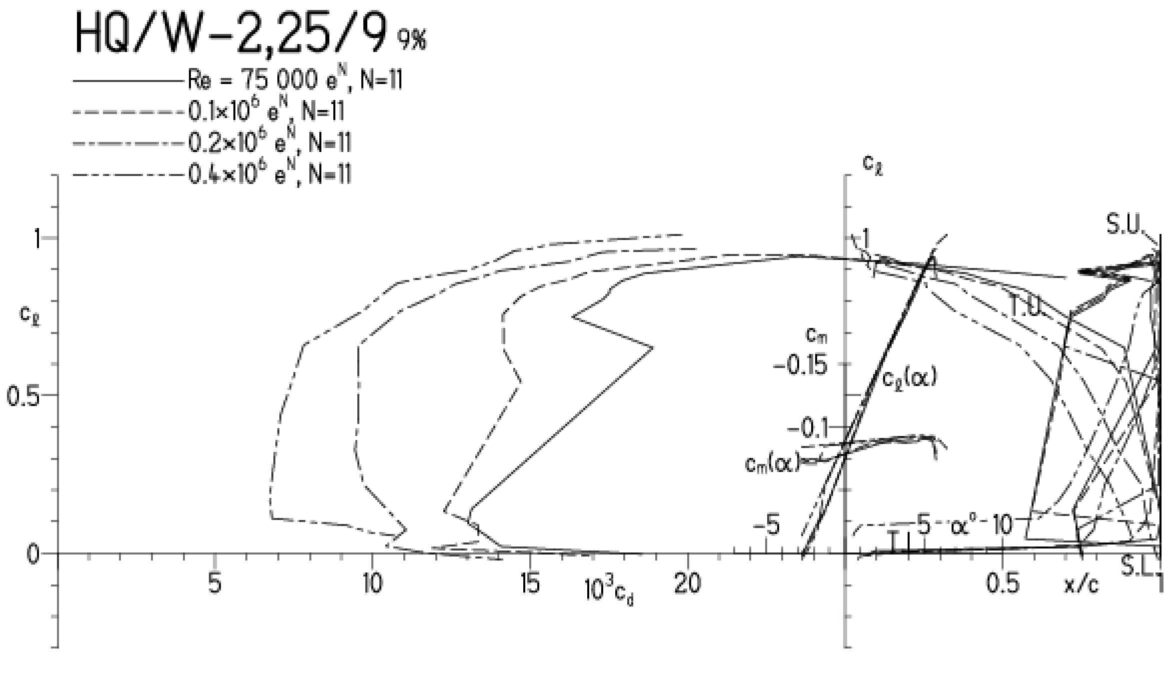


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

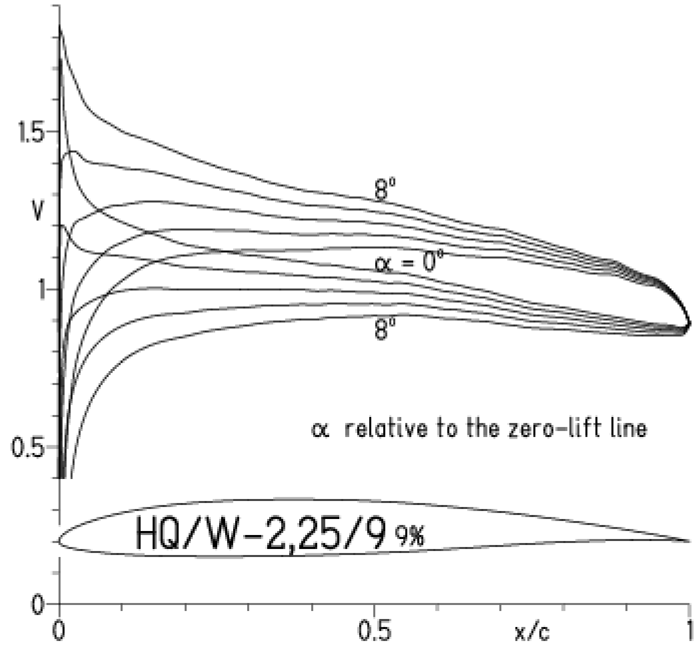


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

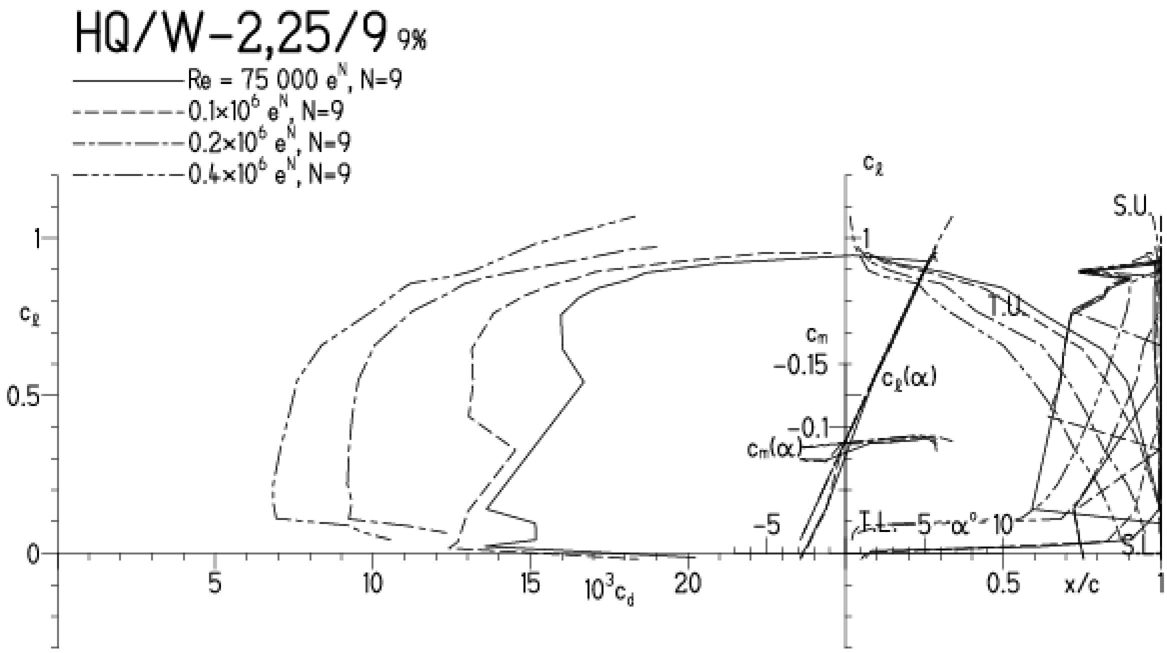


<u>HQ/W-2,25/9</u>, N=9

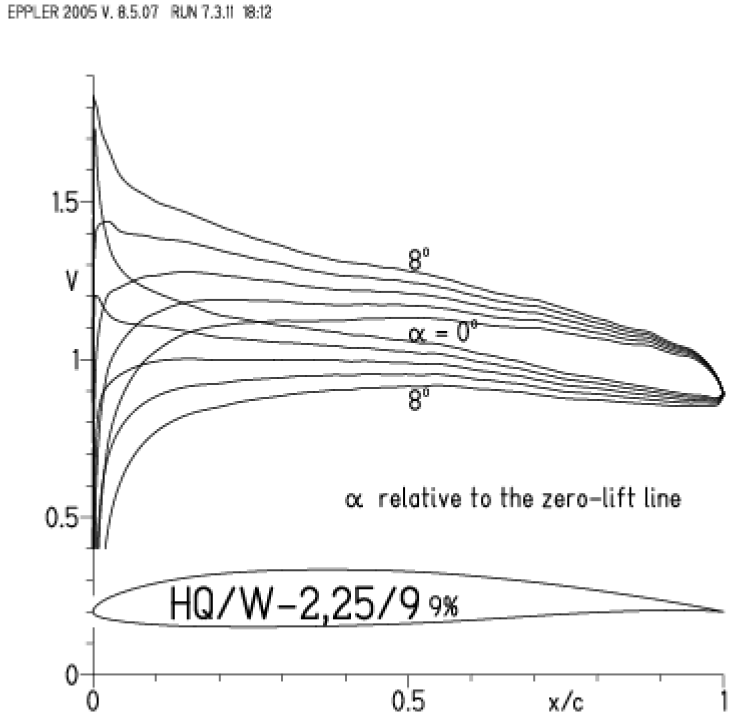
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

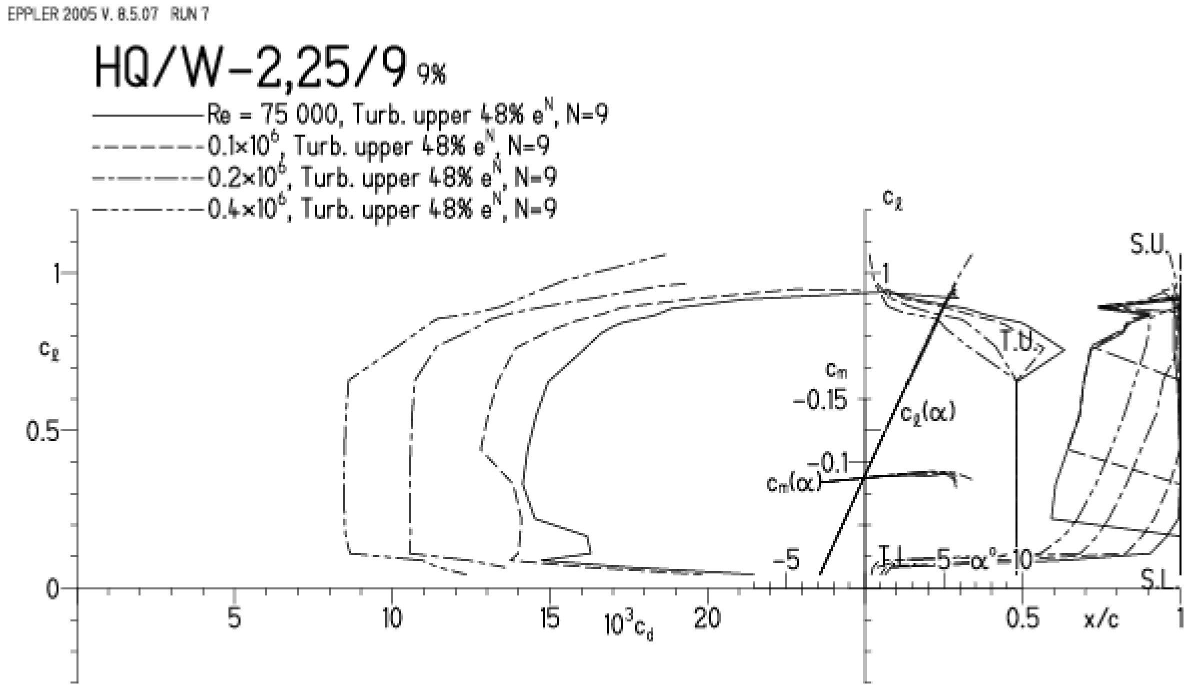


EPPLER 2005 V. 8.



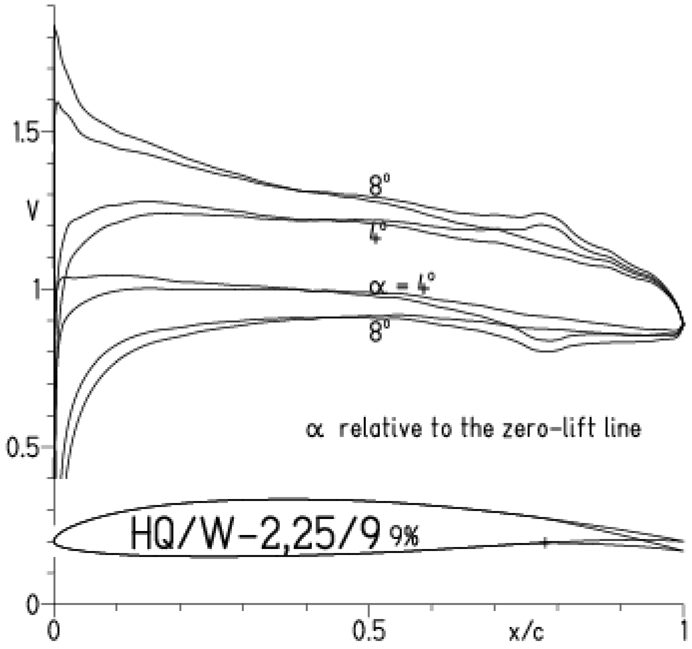
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



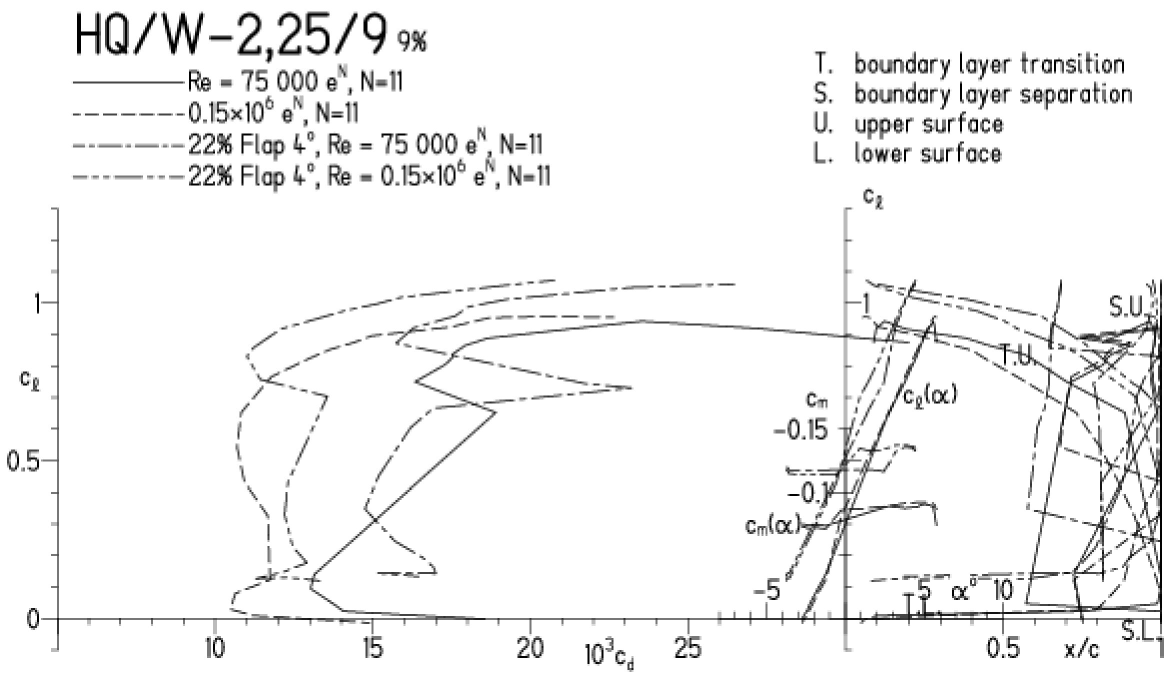


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

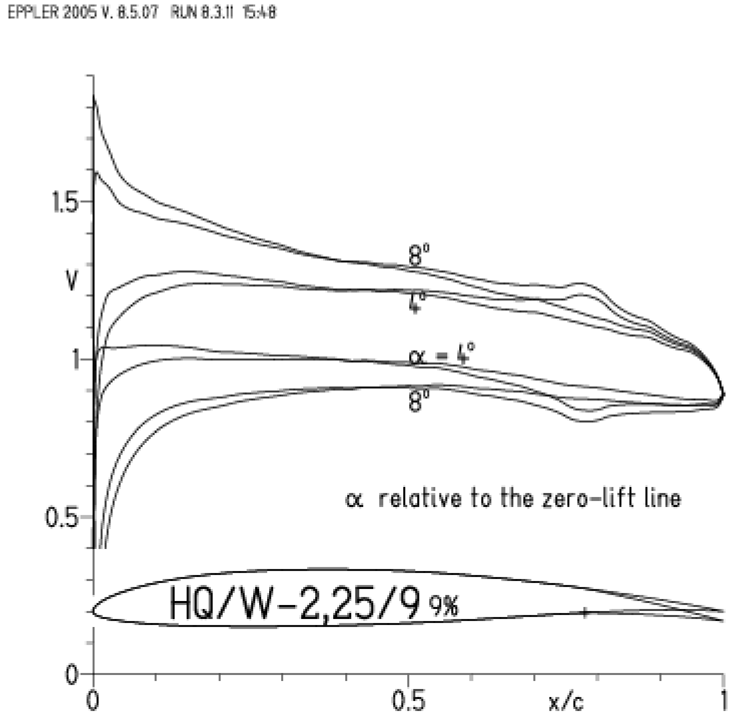
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

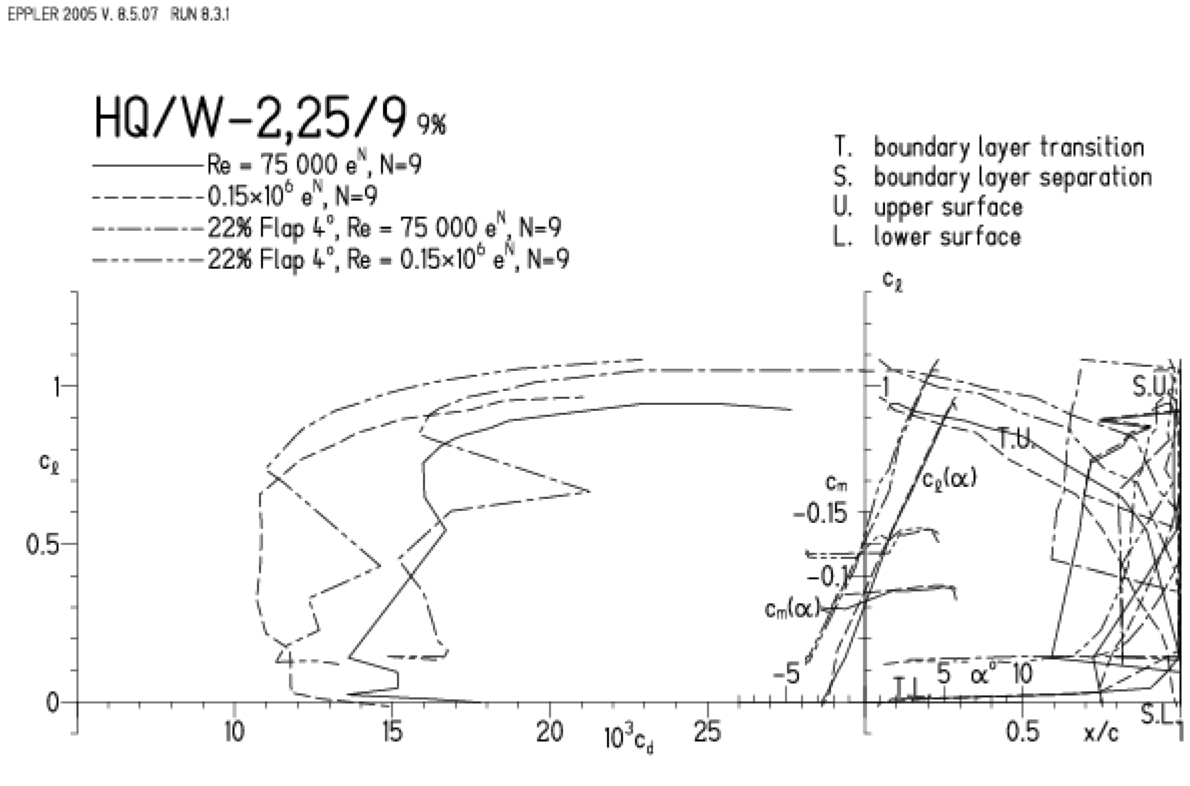


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

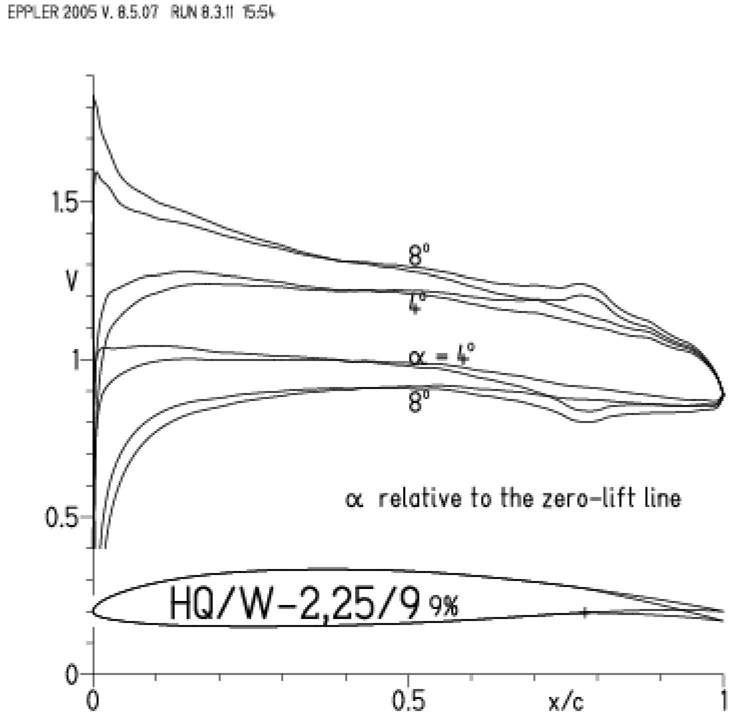


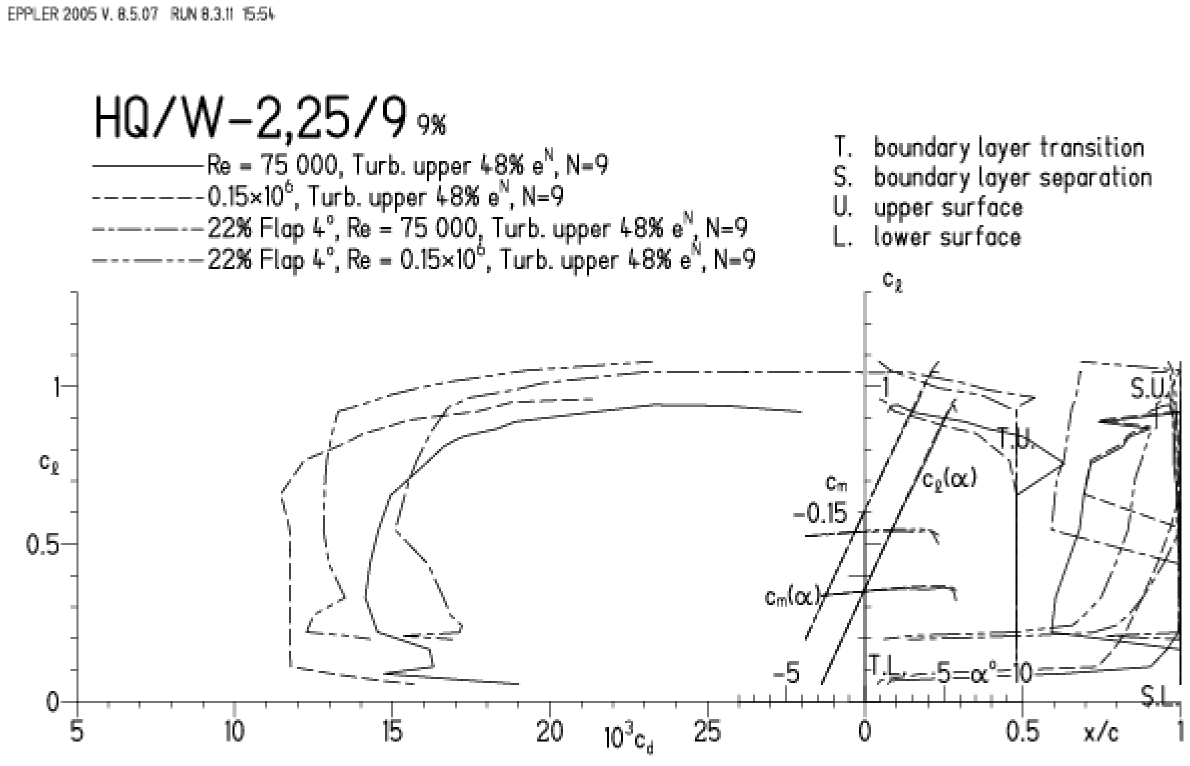
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





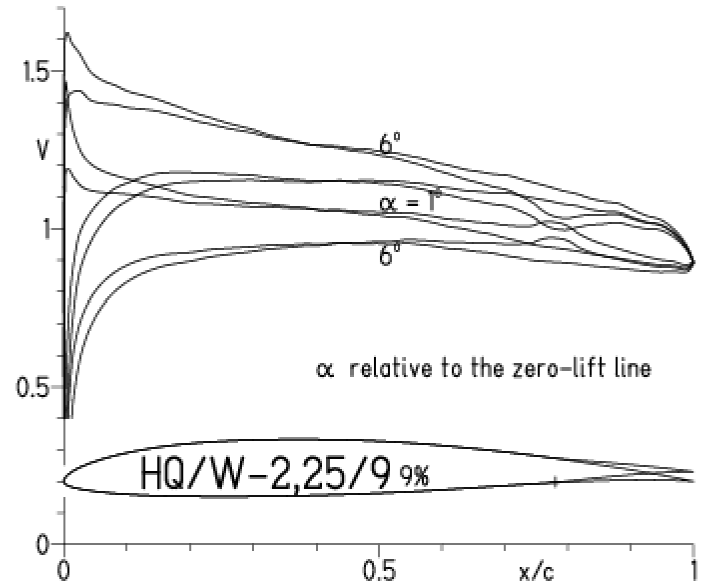
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



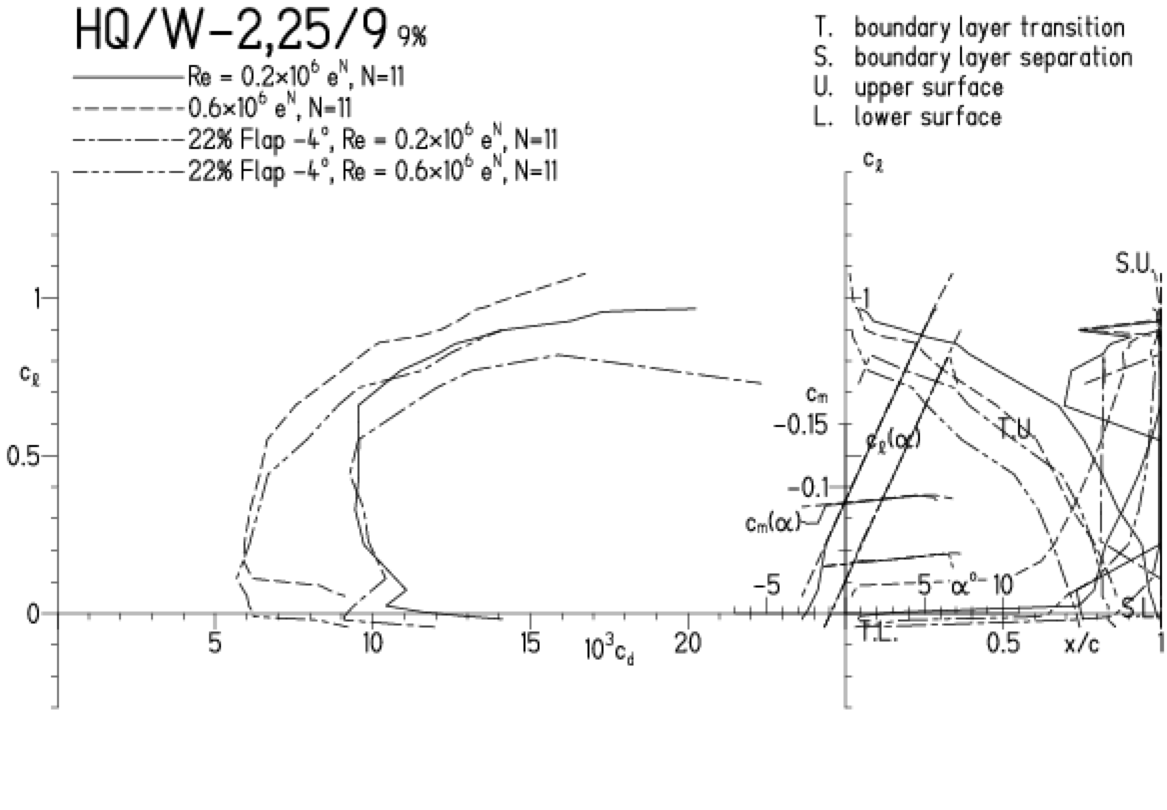


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

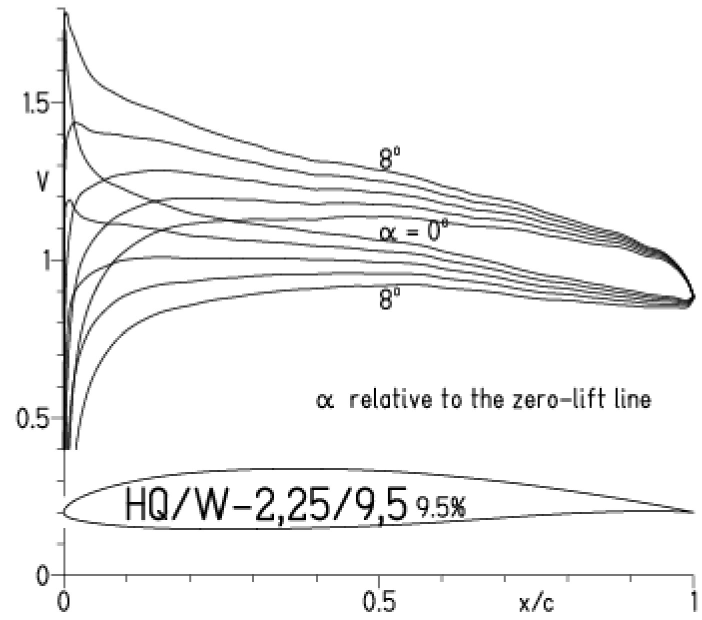


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

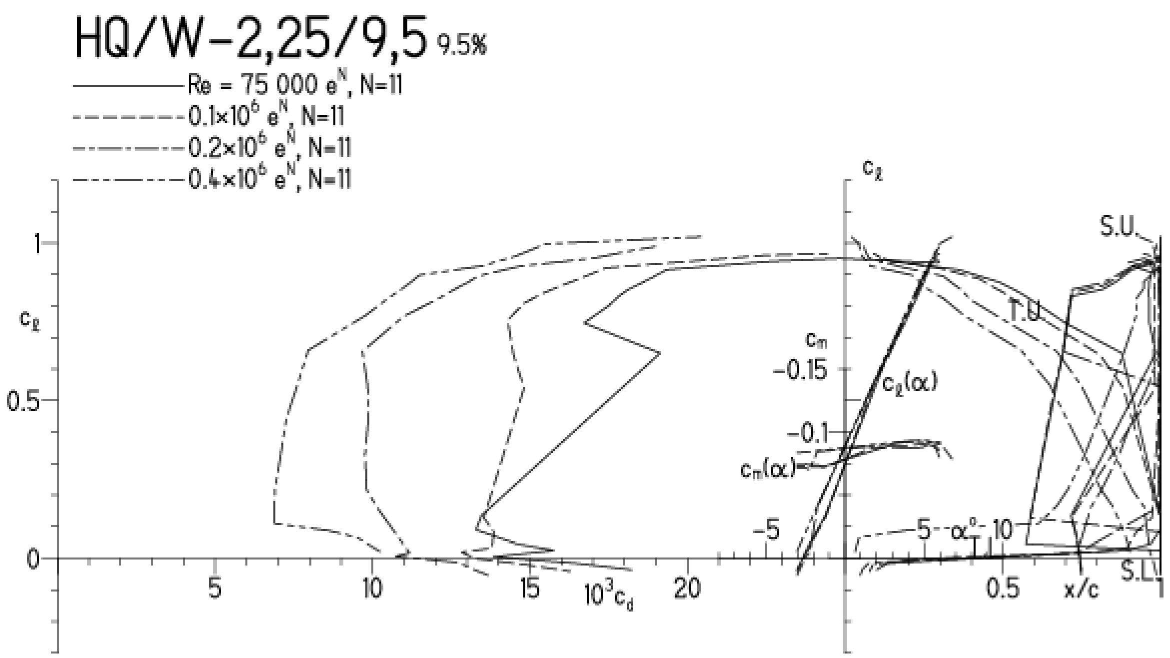


HQ/W-2,25/9,5, N=11

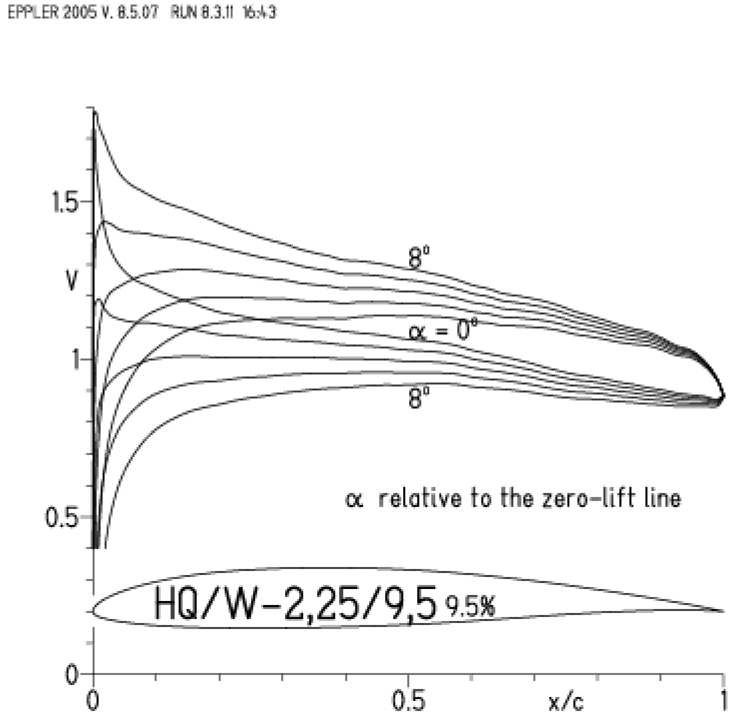
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

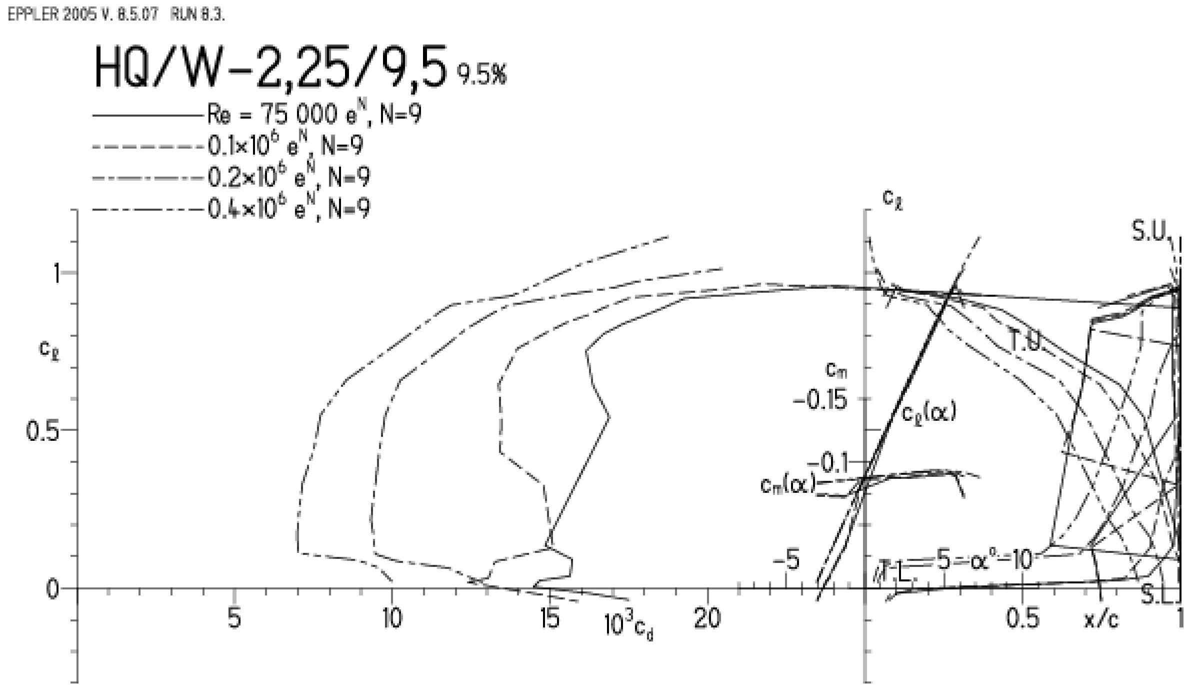


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



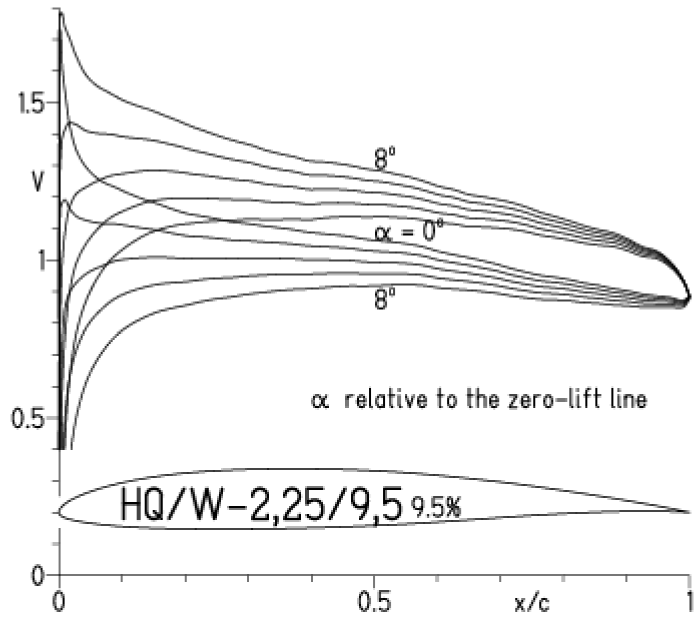
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

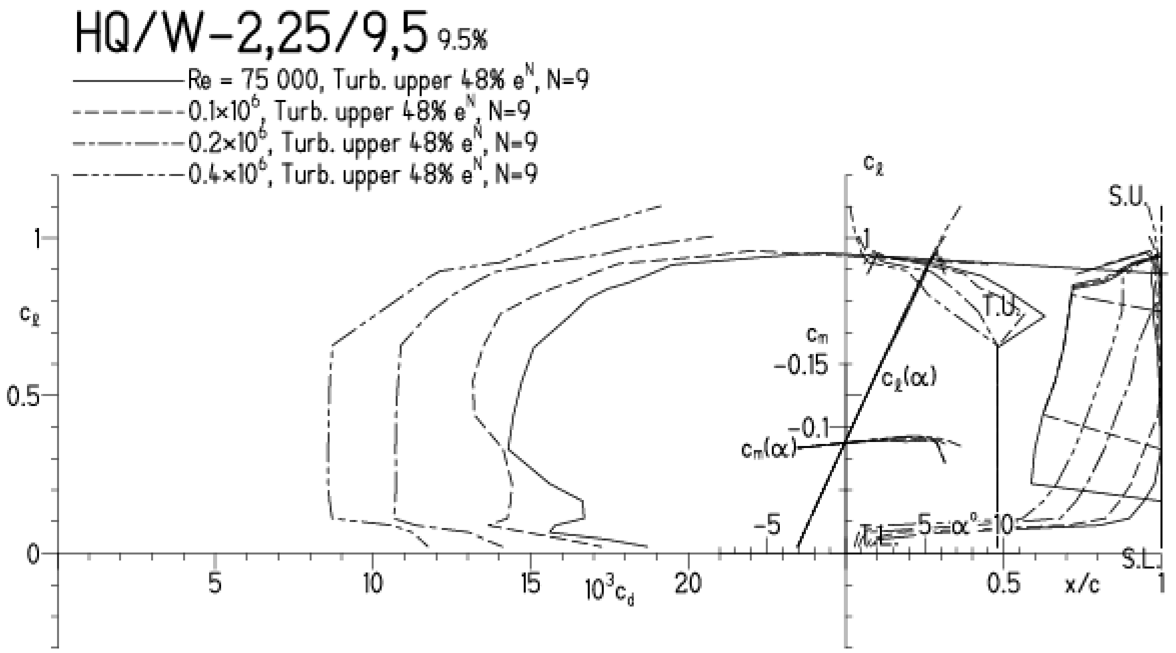

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

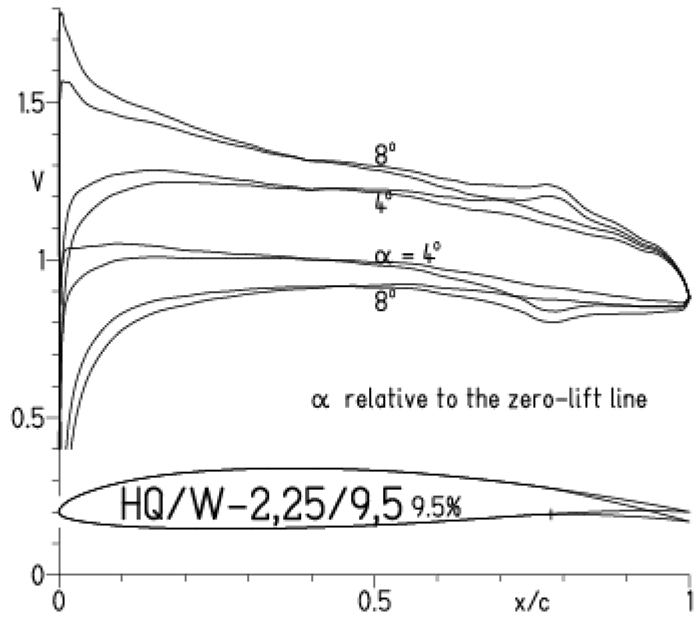


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

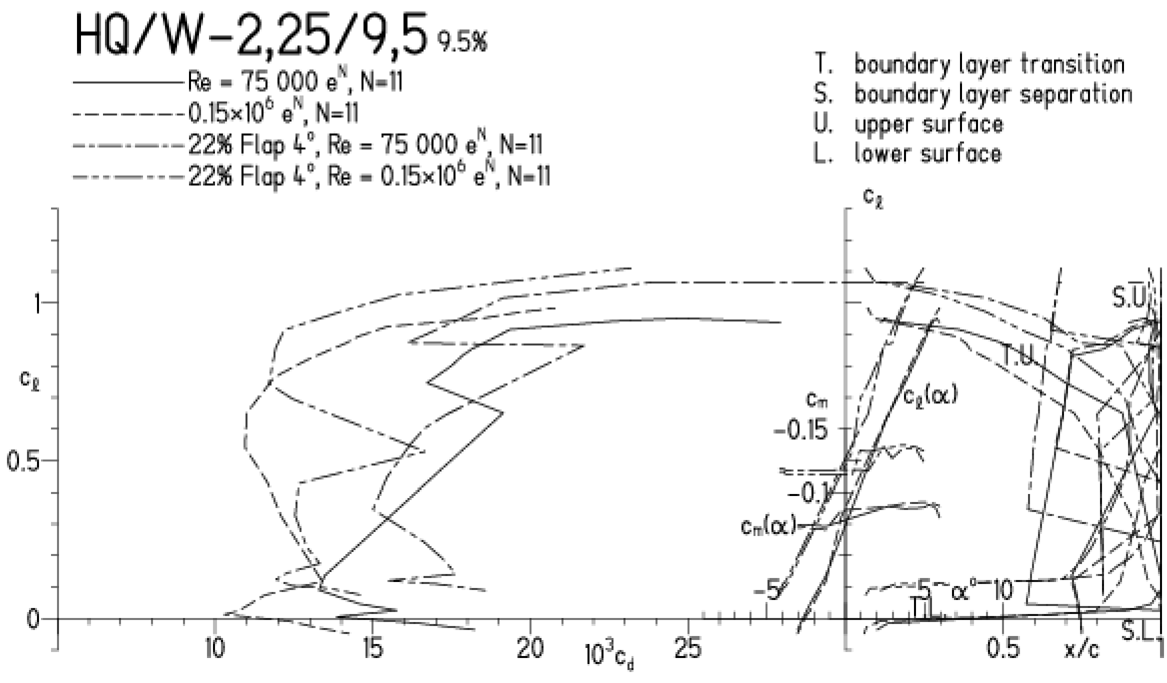


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

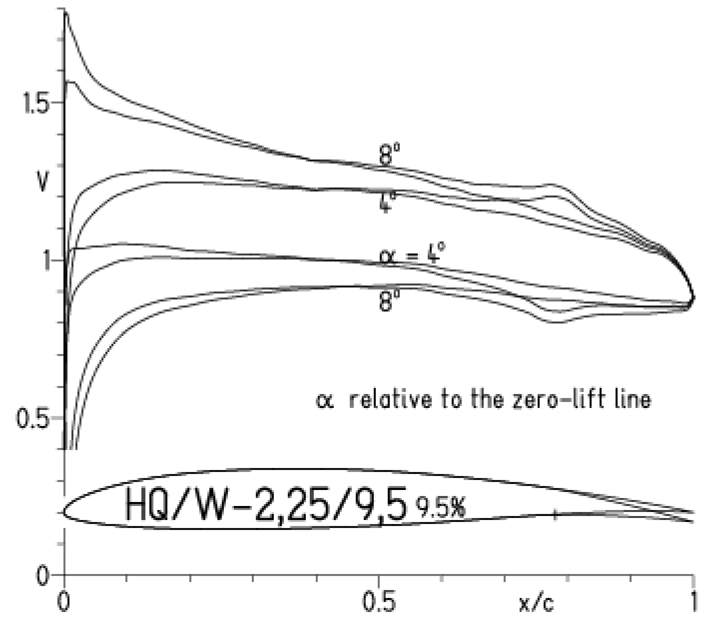


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

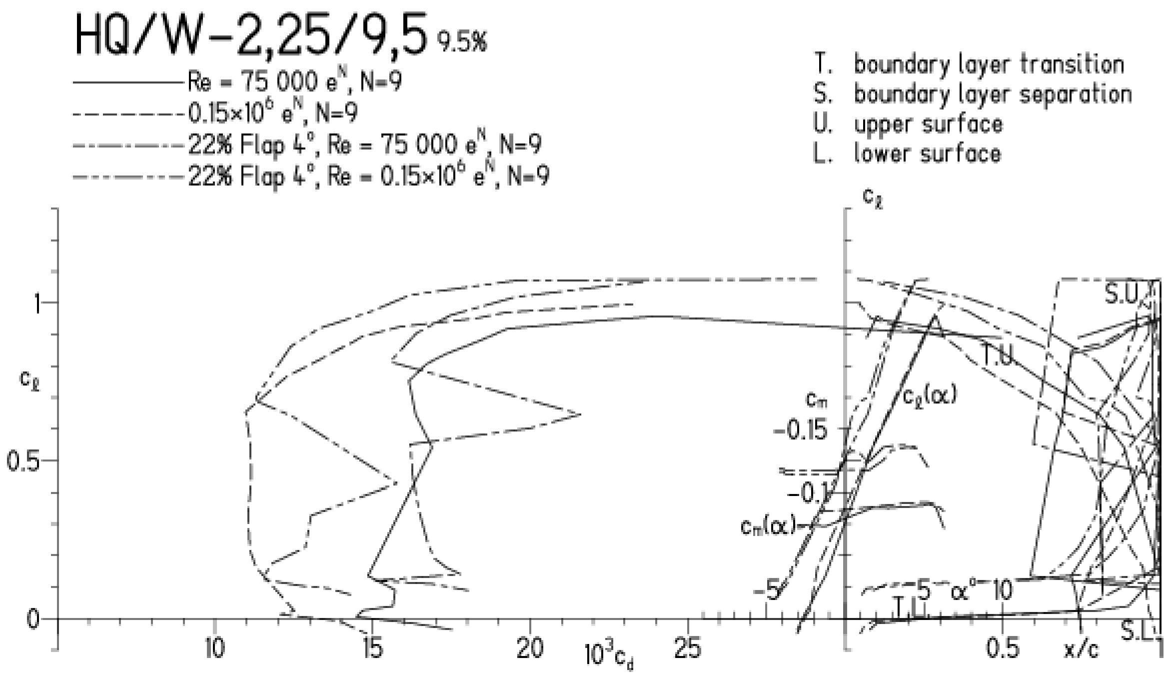


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

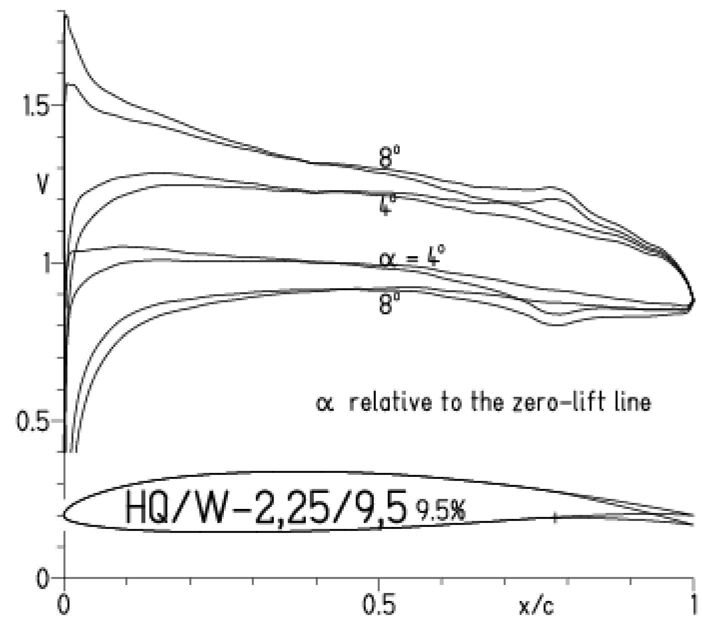


EPPLER 2005 V. 8.5.07 R

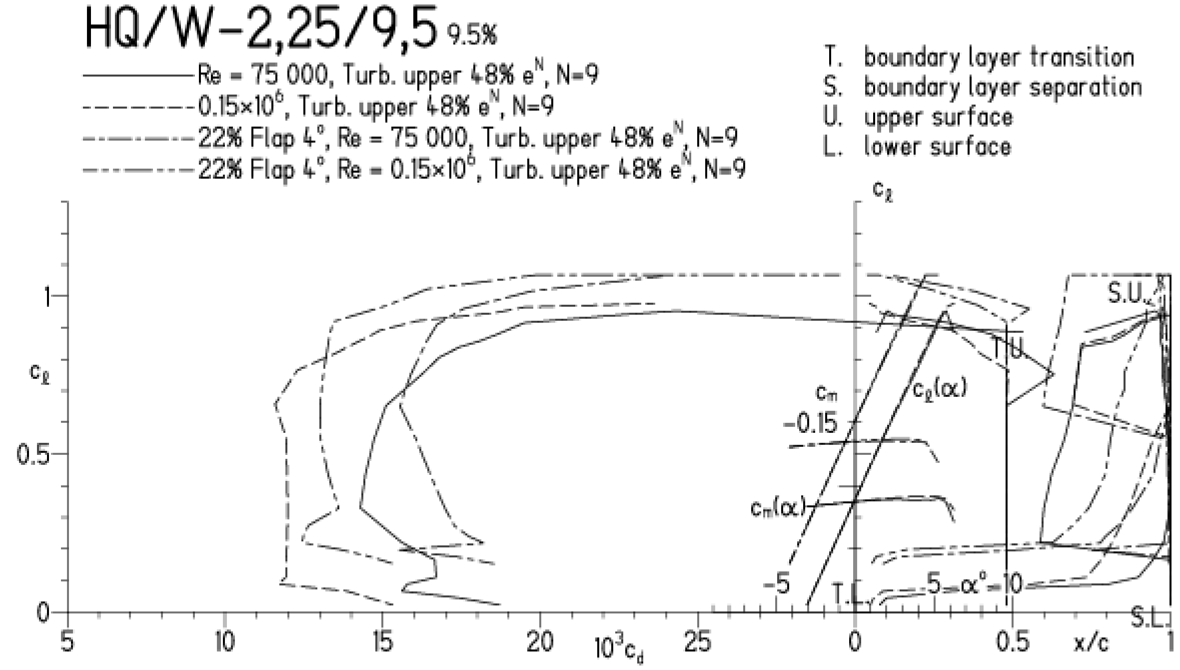


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

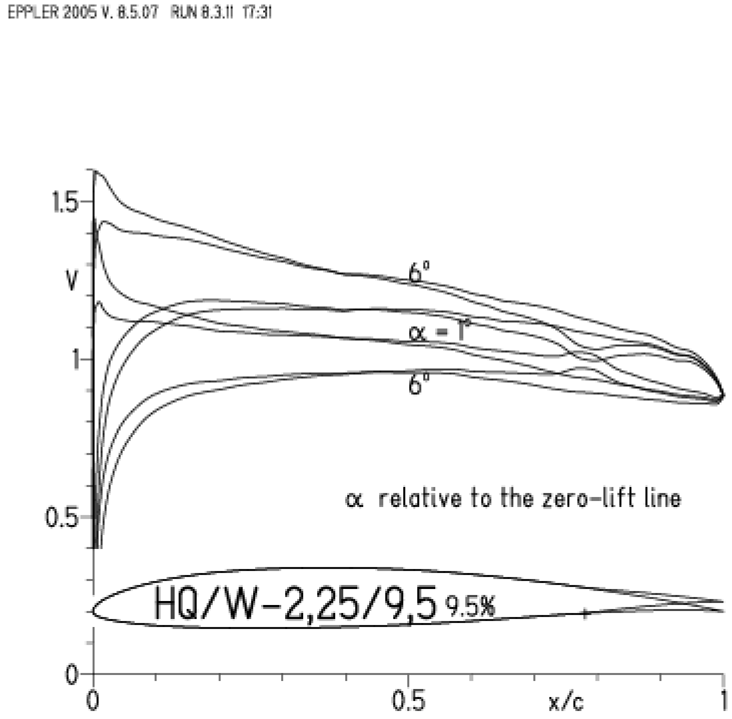
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

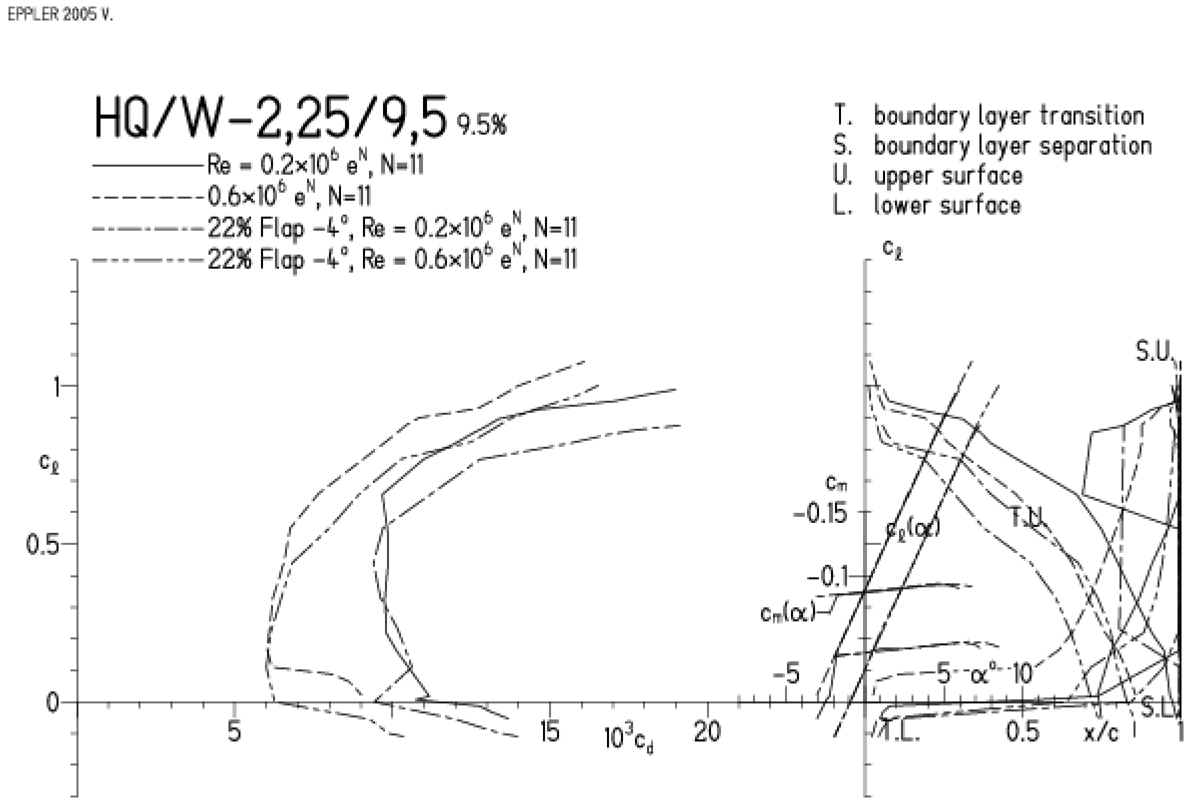


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

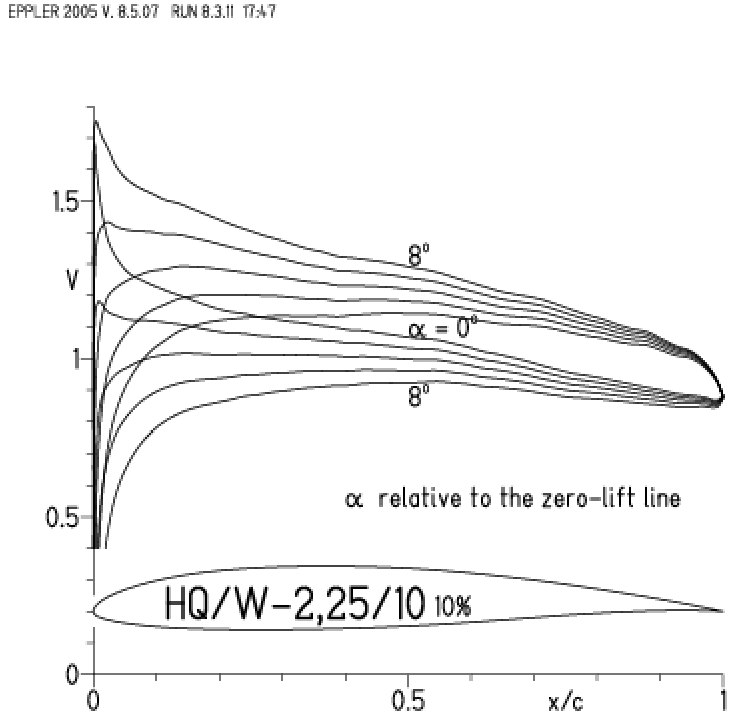


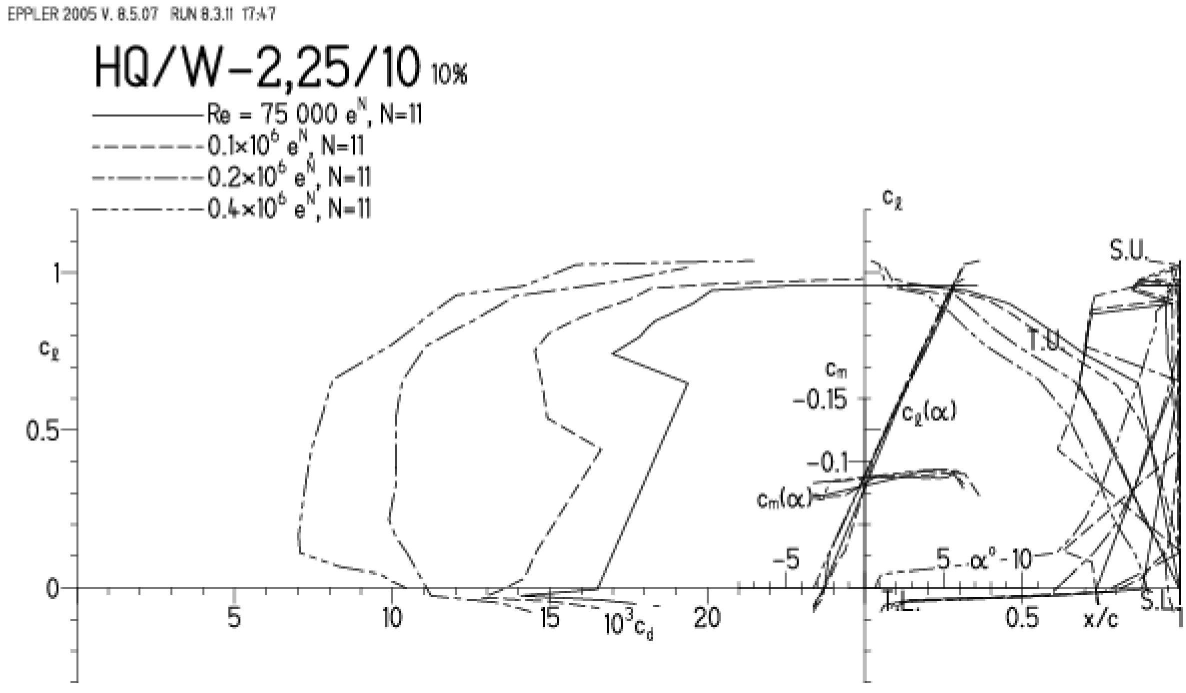
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag





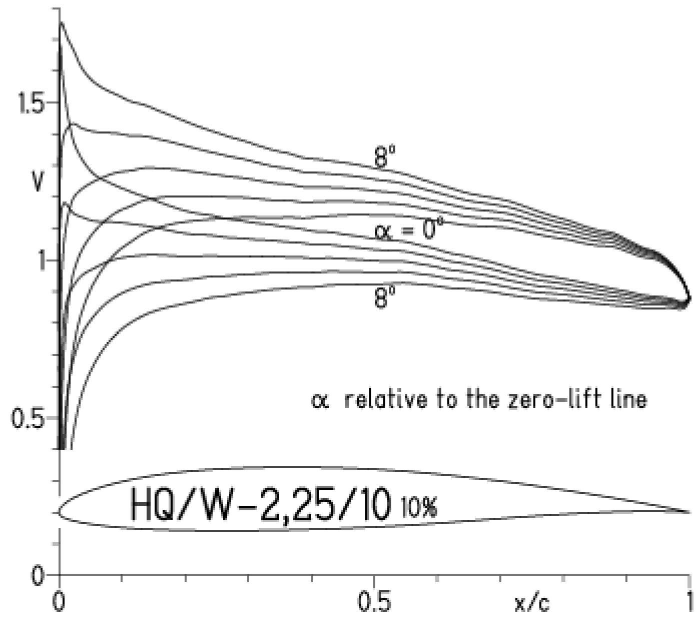
HQ/W-2,25/10, N=11



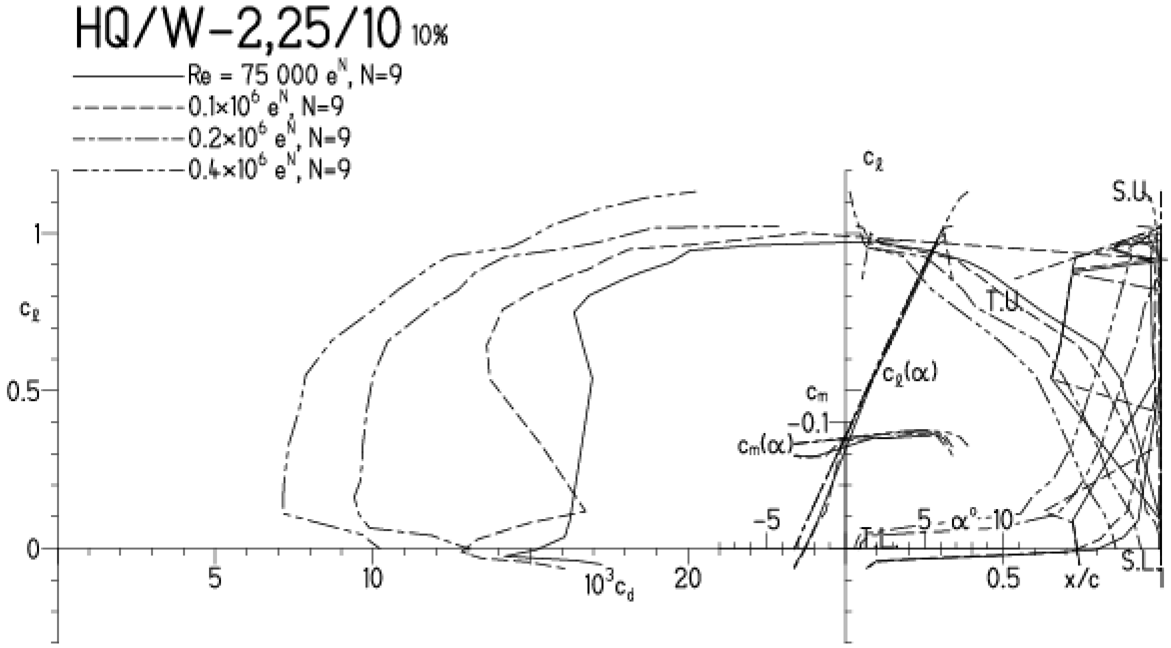


HQ/W-2,25/10, N=9

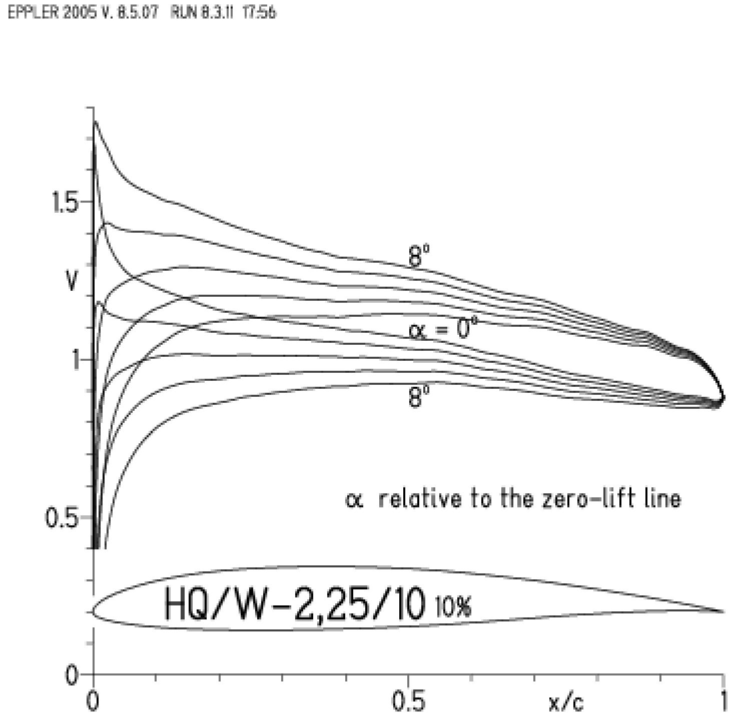
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

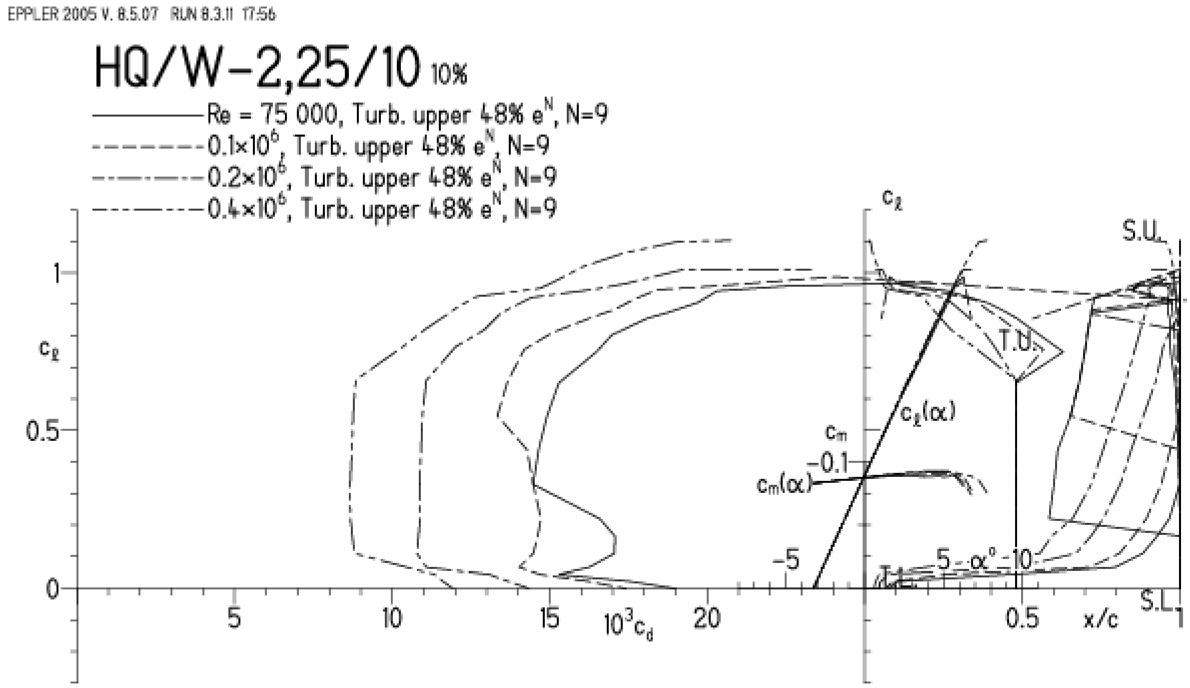


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



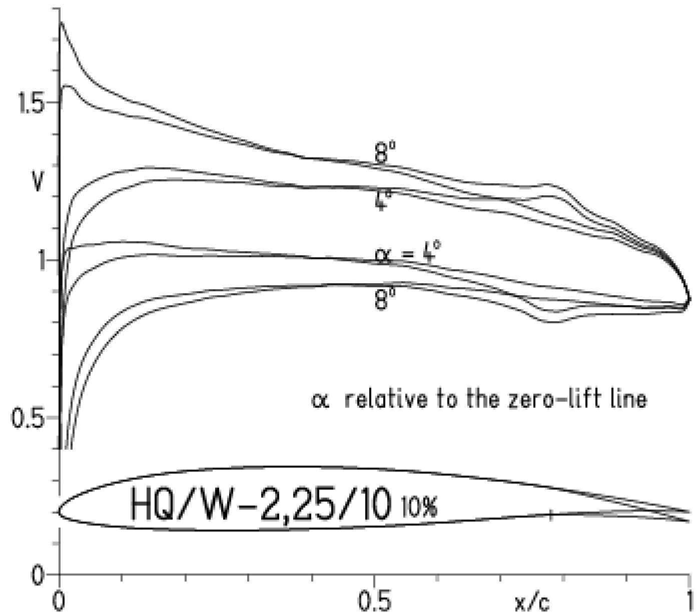
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



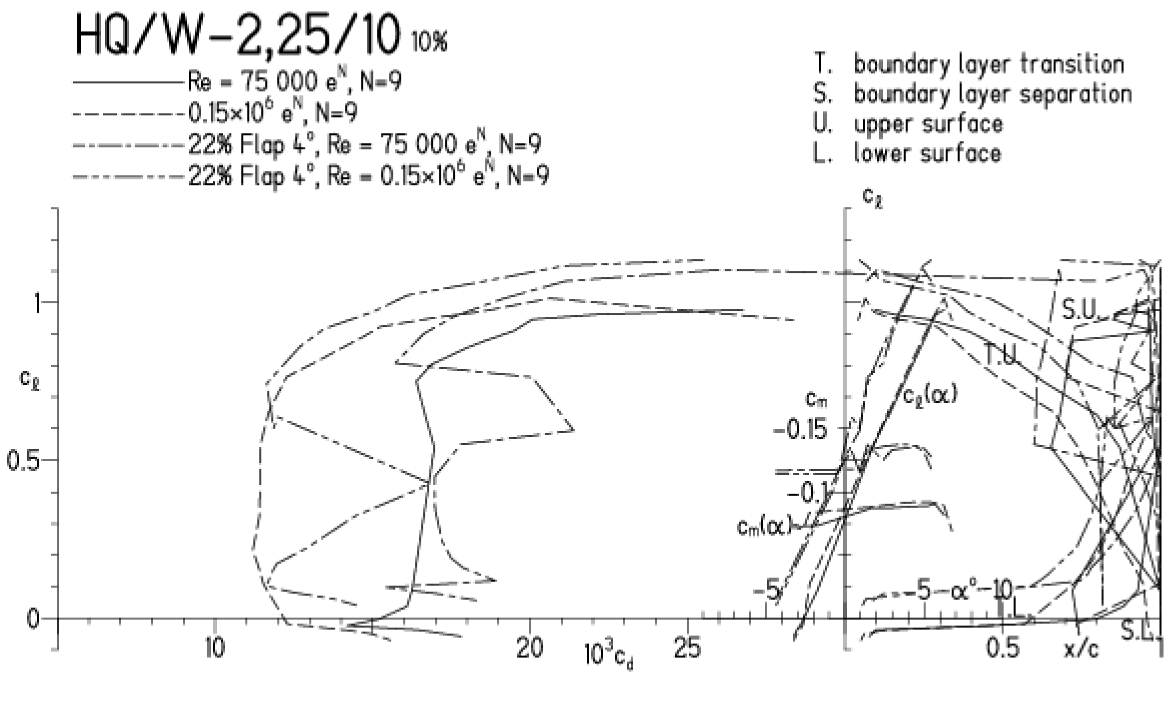


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

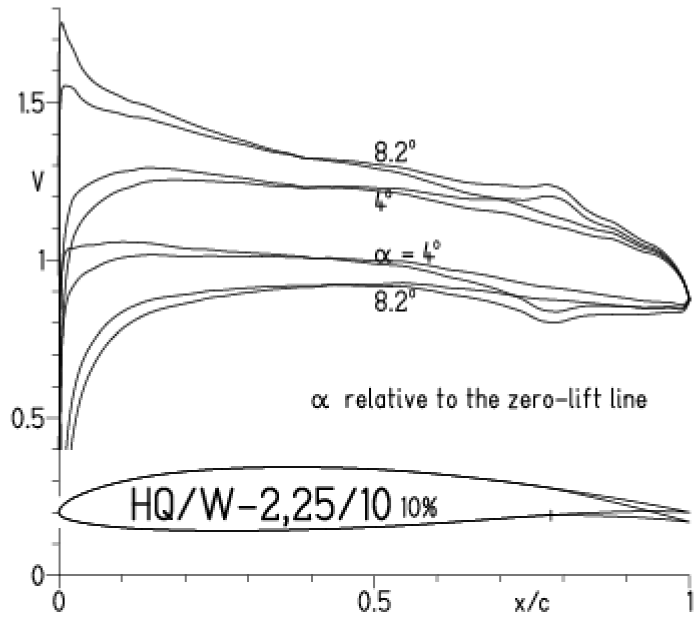


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

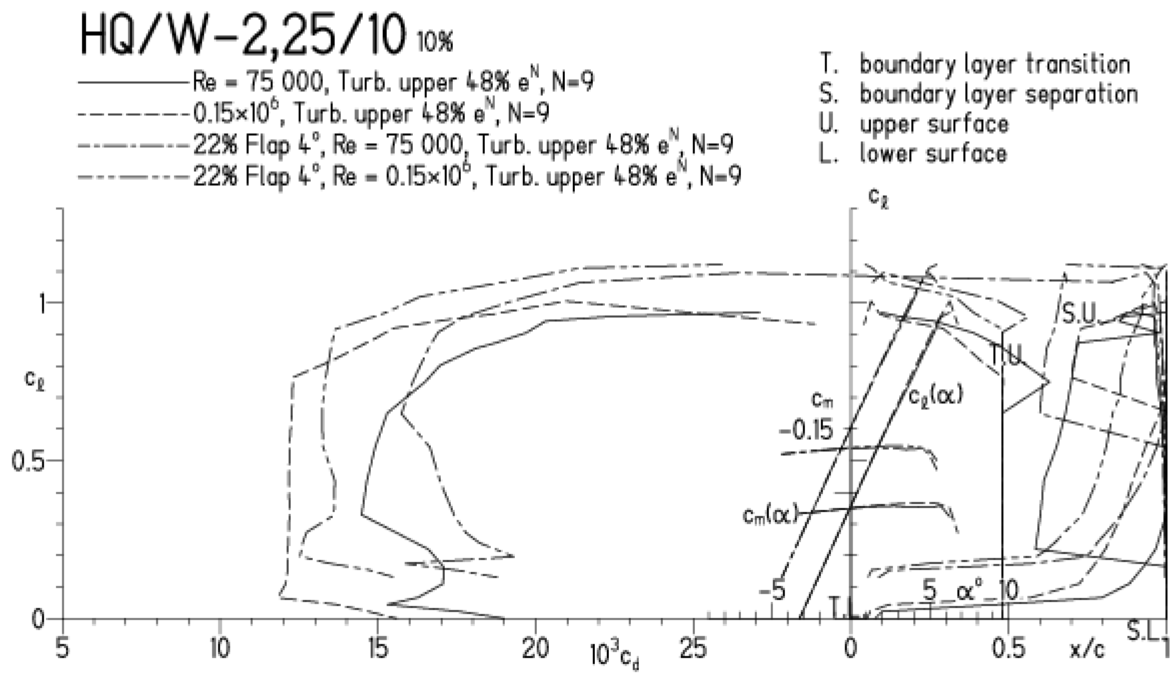


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

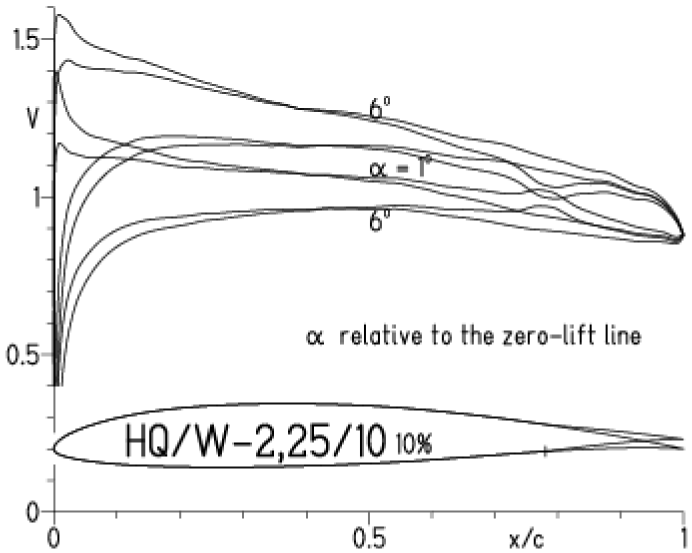


EPPLER 2005 V. 8.5.07 RUN 8.3

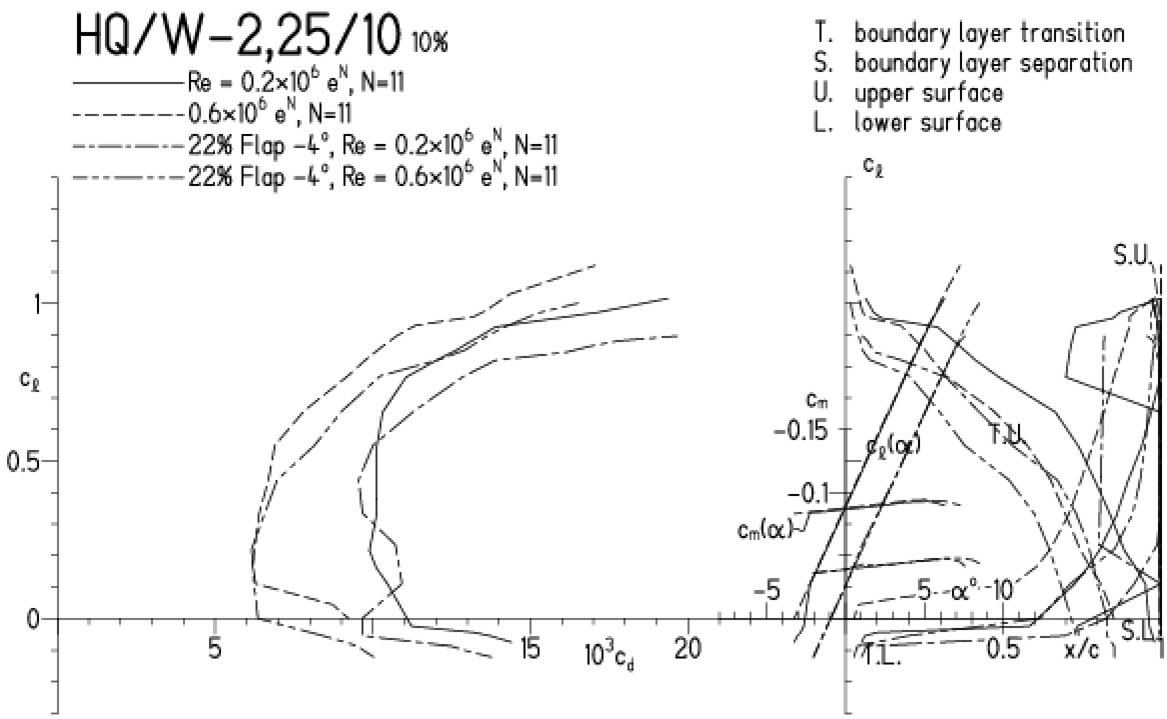


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

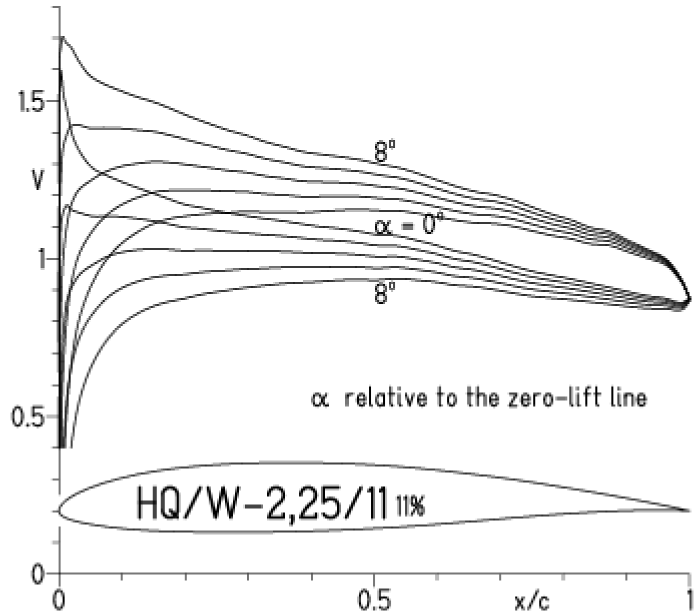


EPPLER 2005 V. 8.5.07 RUN

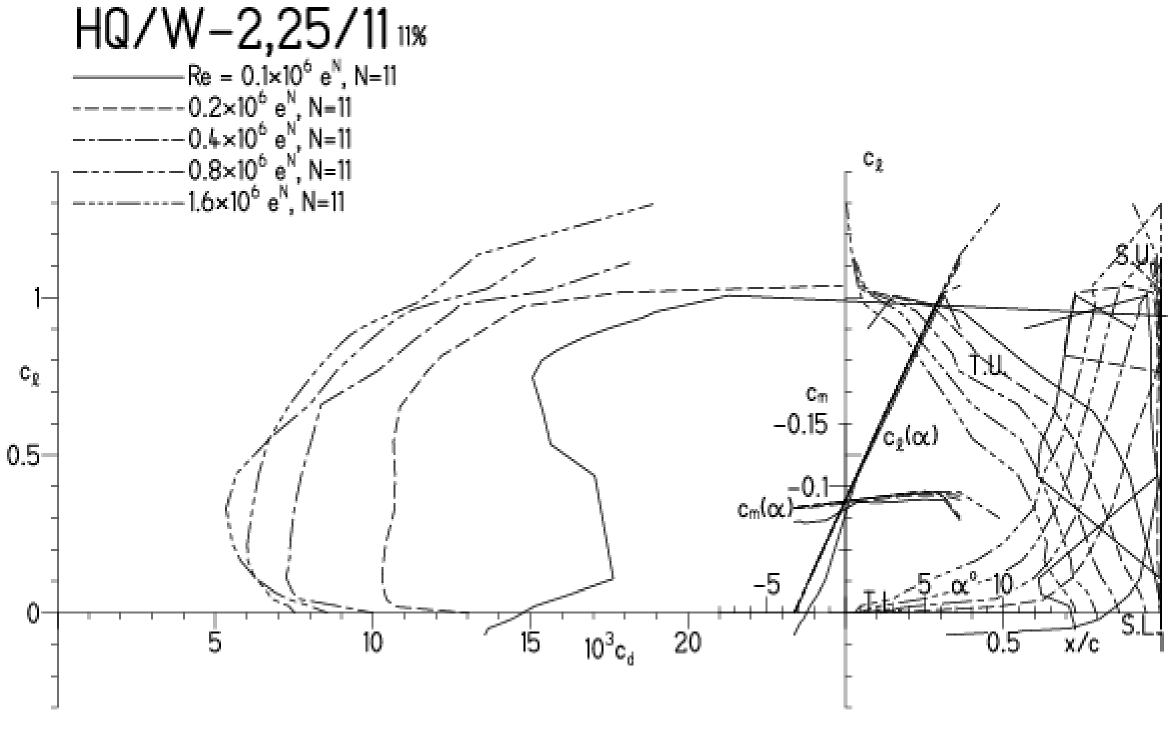


<u>HQ/W-2,25/11</u>, N=11

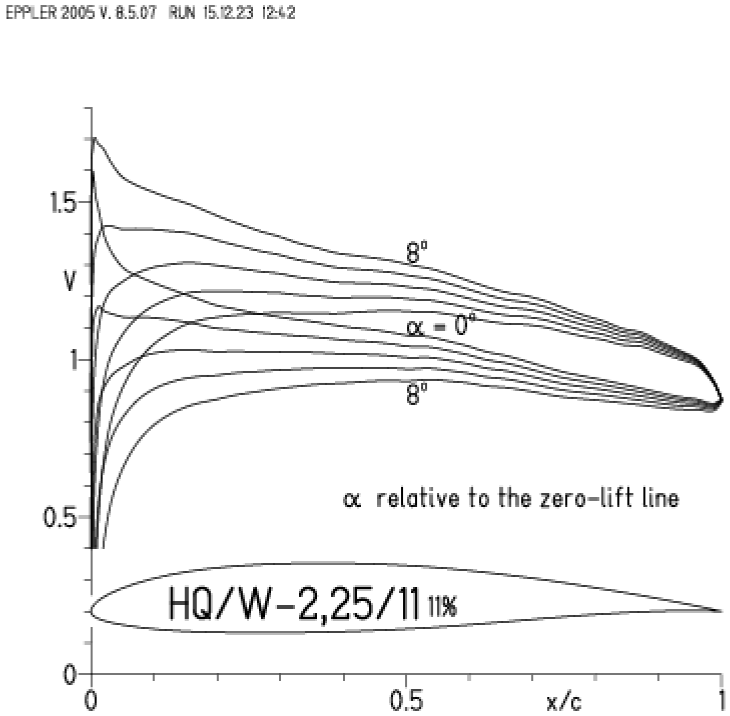
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

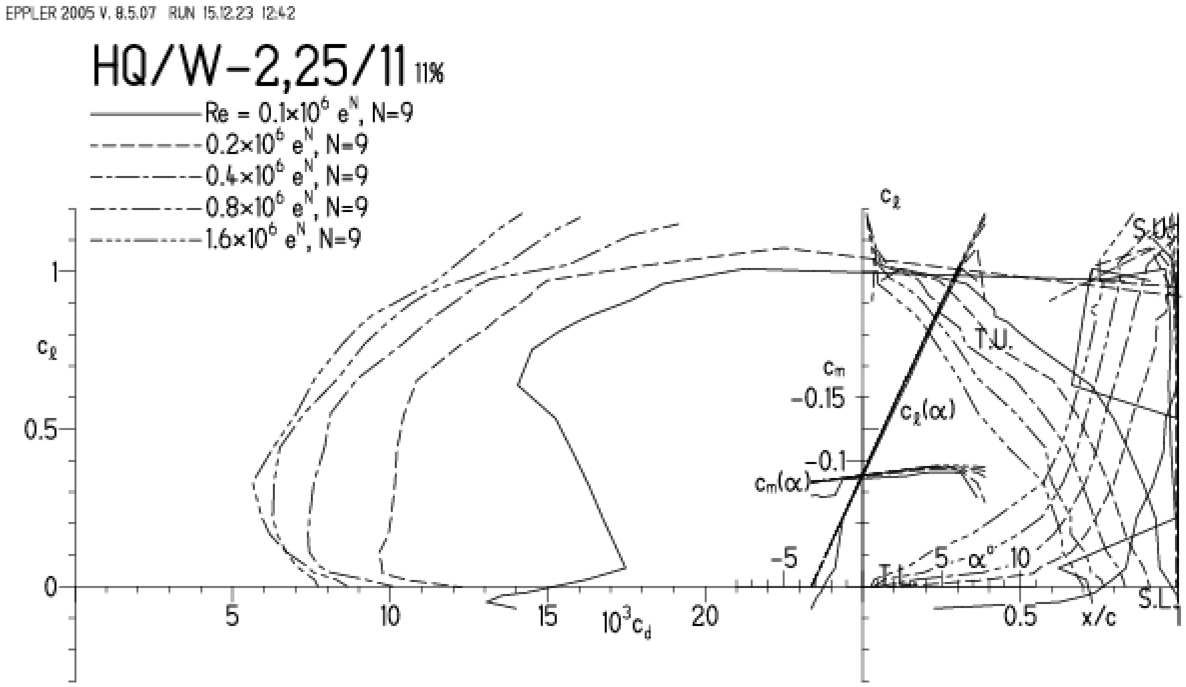


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

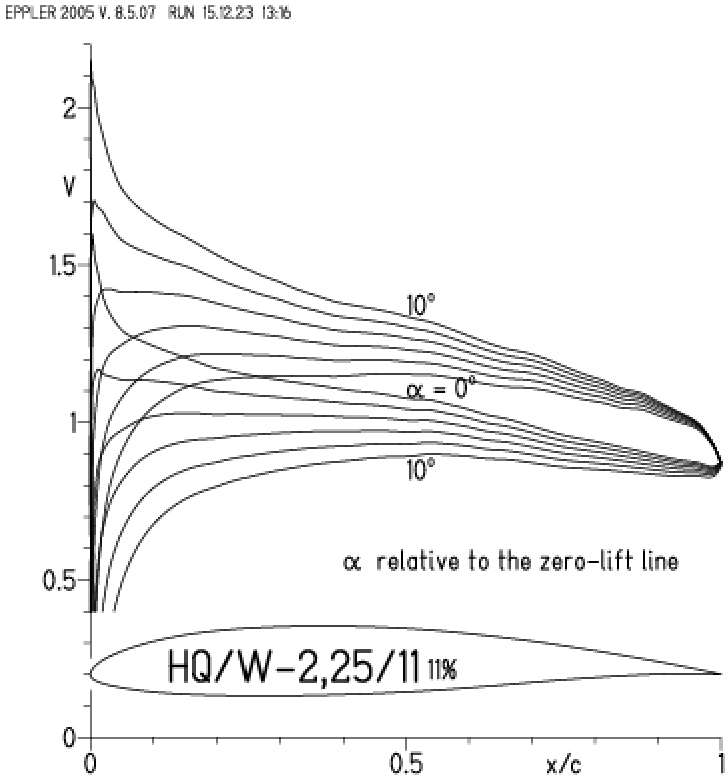


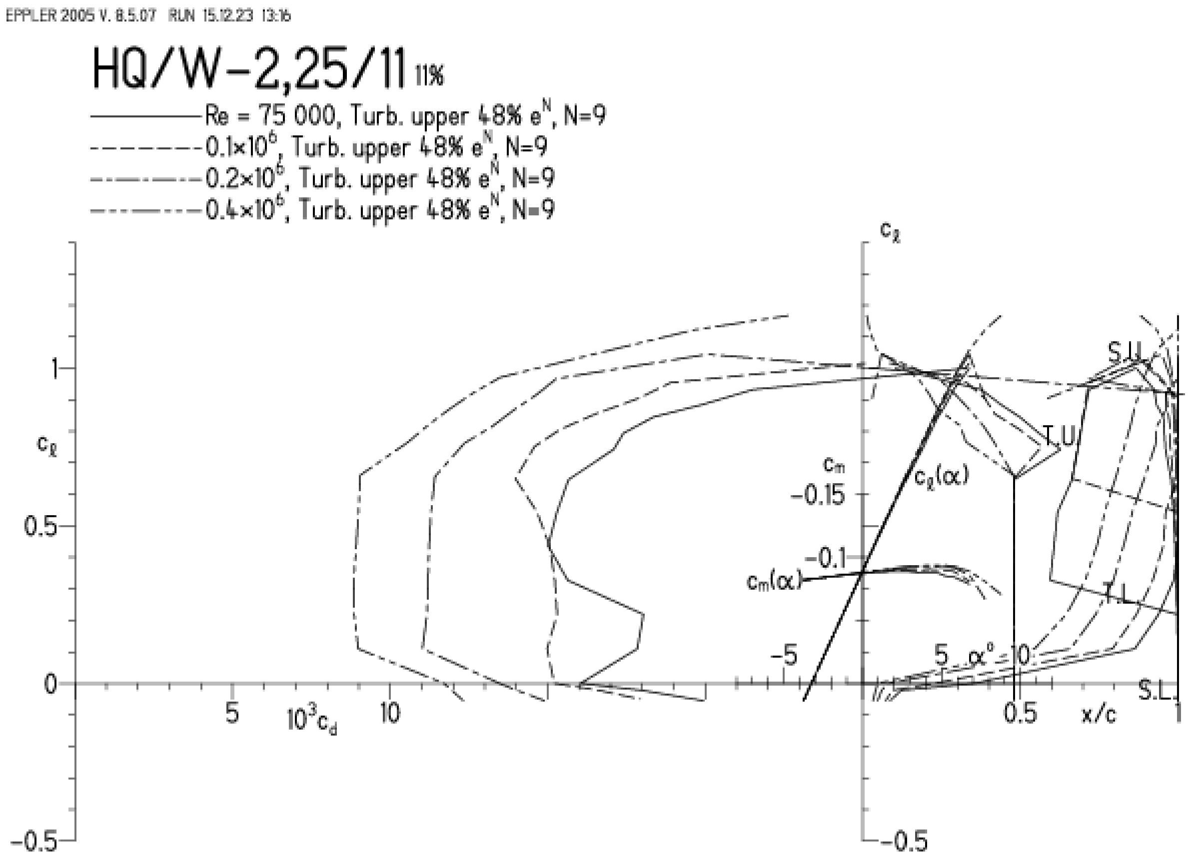
HQQ/W-2,25/11, N=9





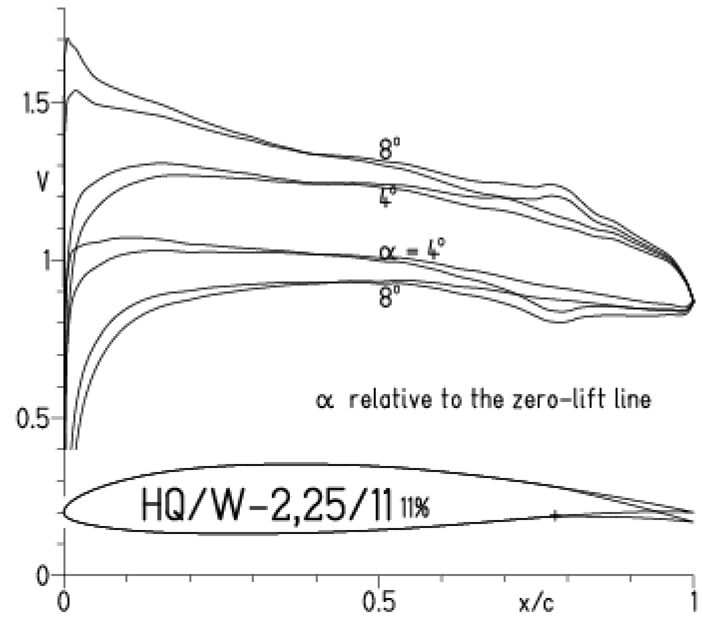
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



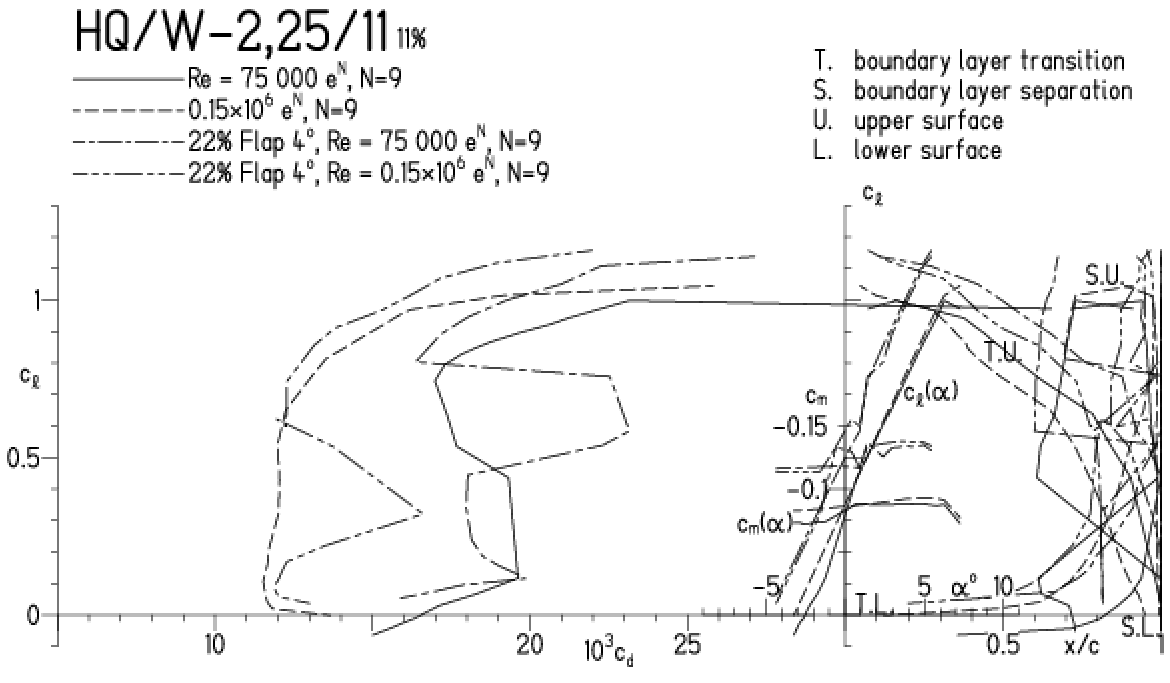


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

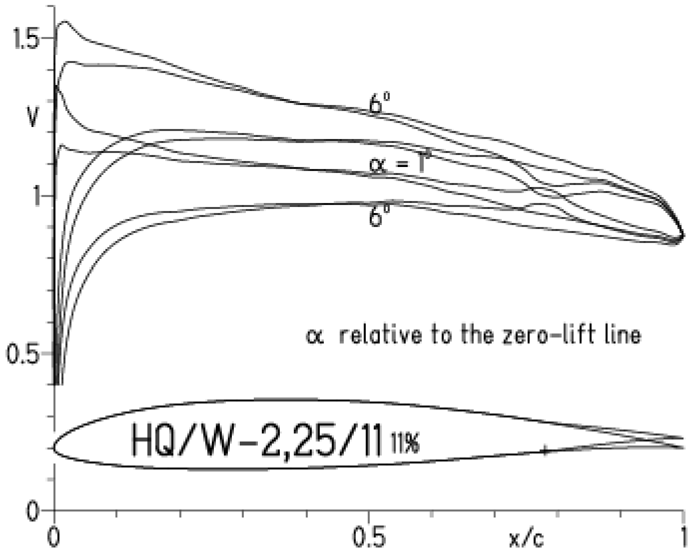


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

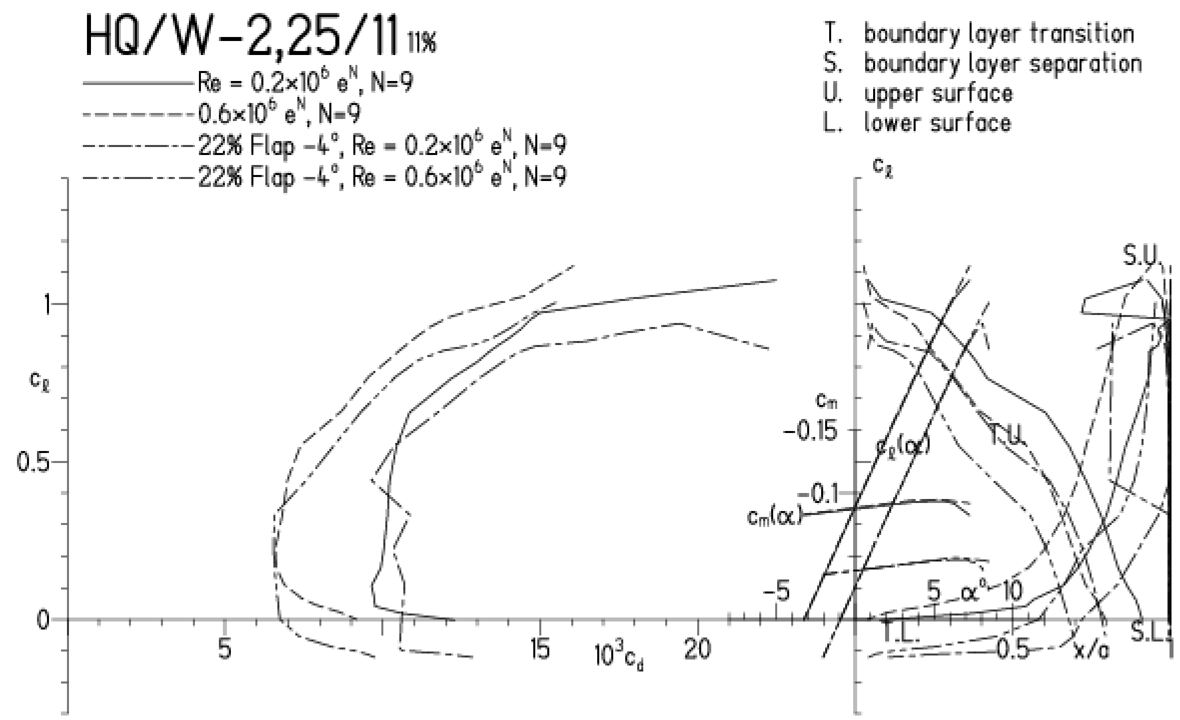


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

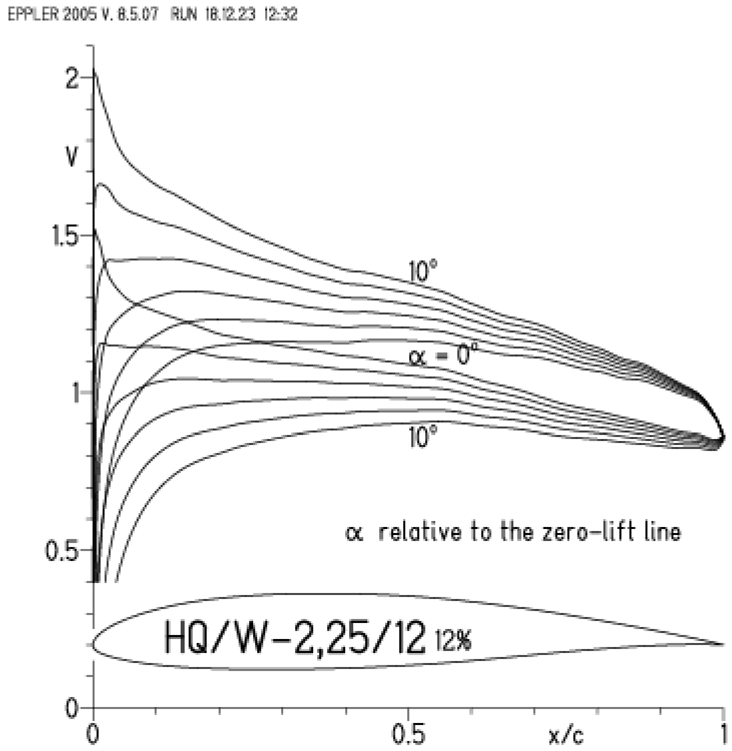
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

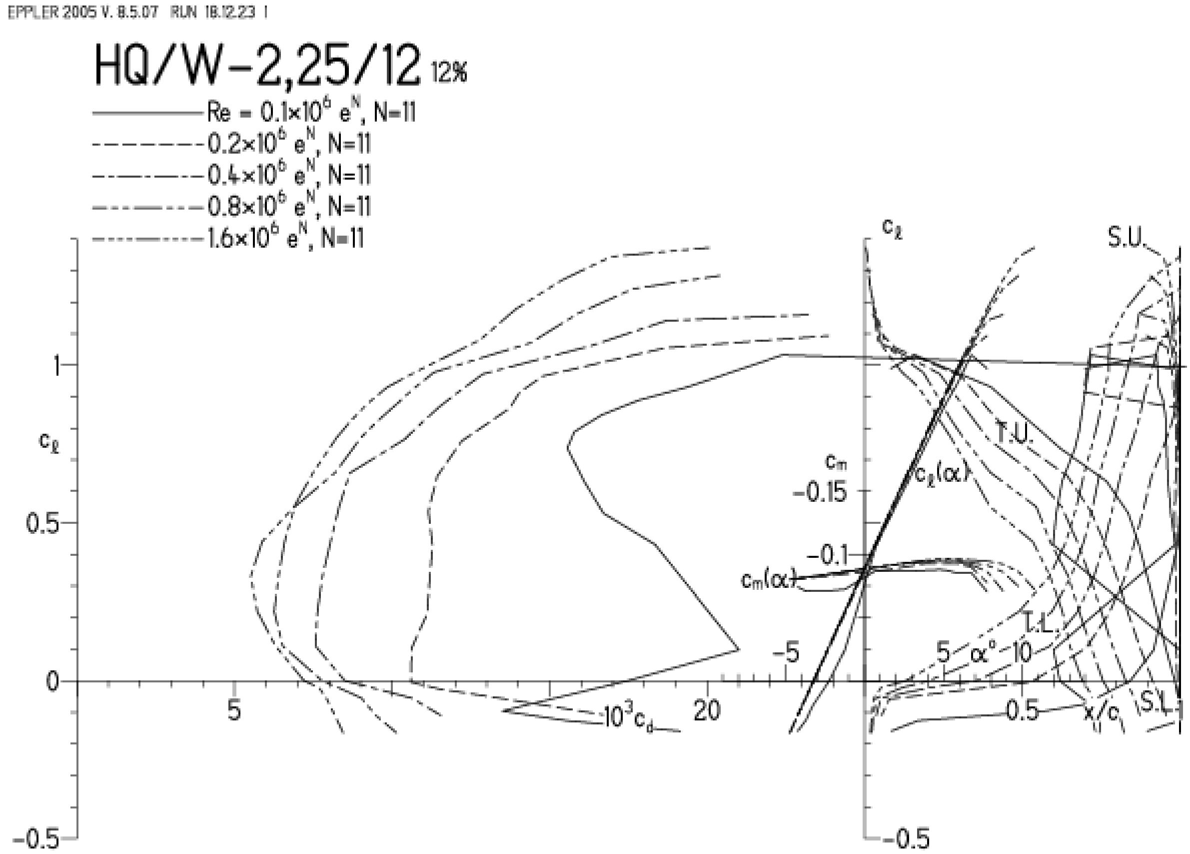


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

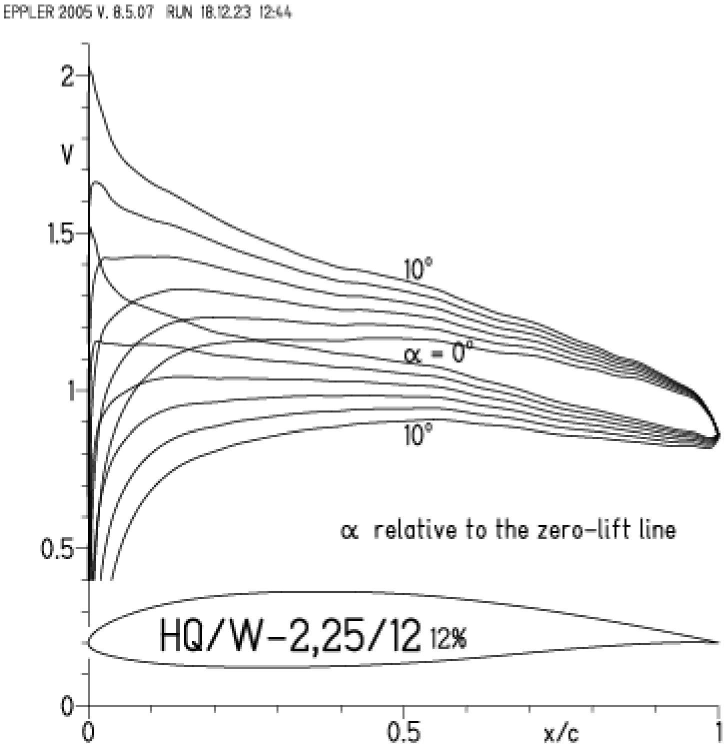


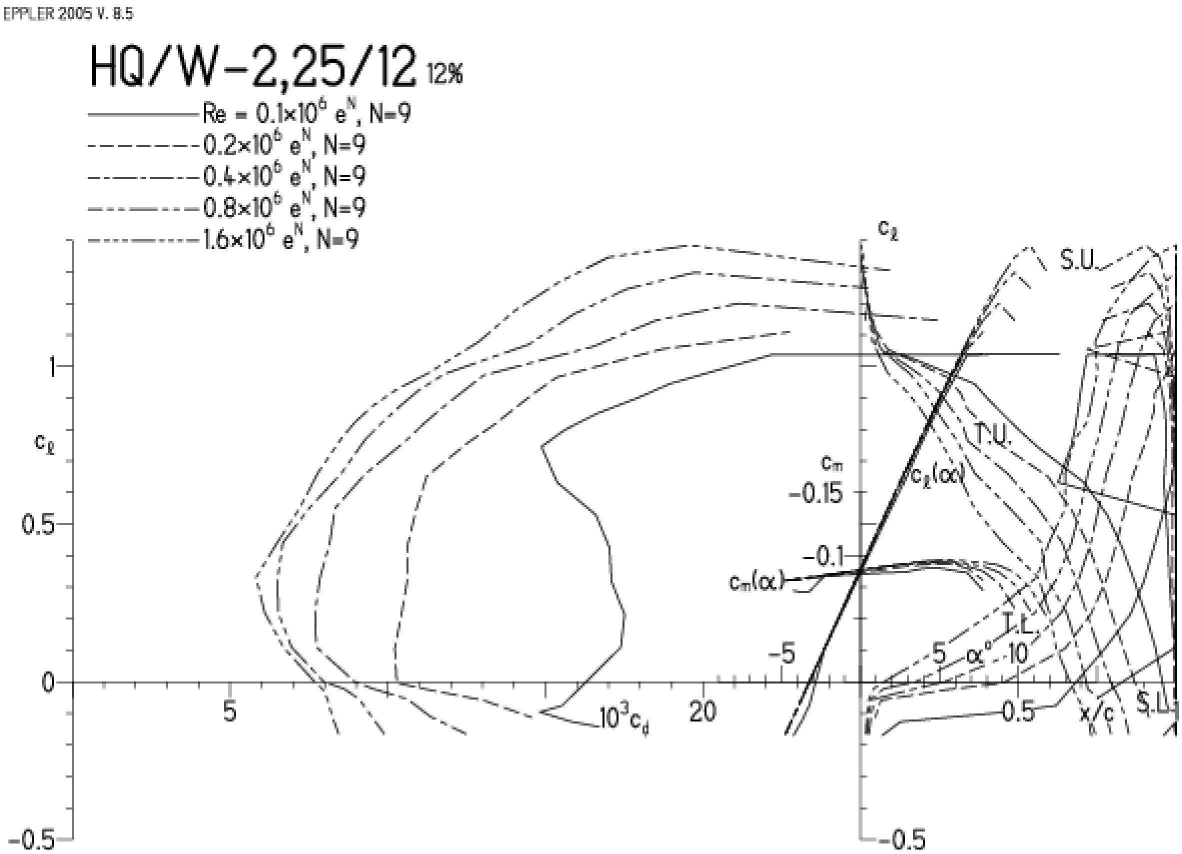
<u>HQ/W-2,25/12</u>, N=11



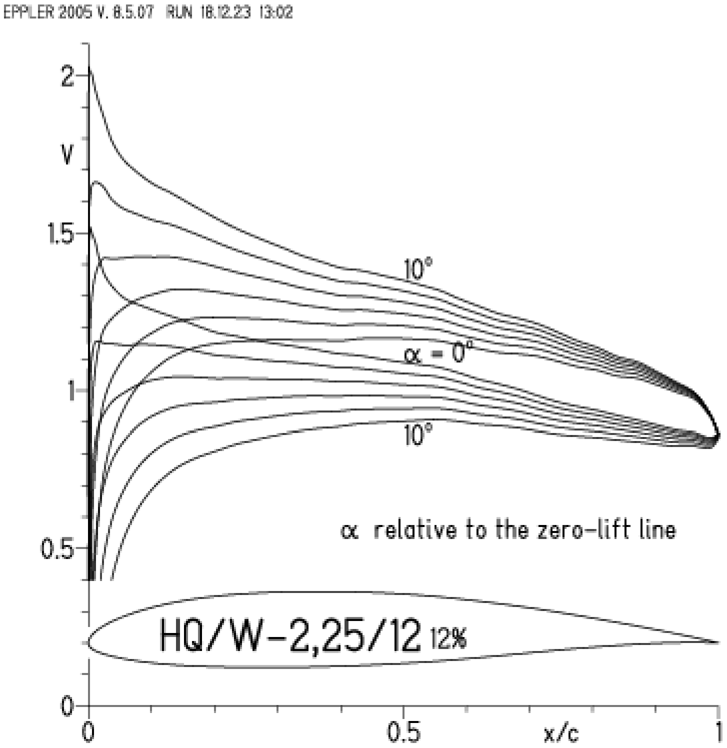


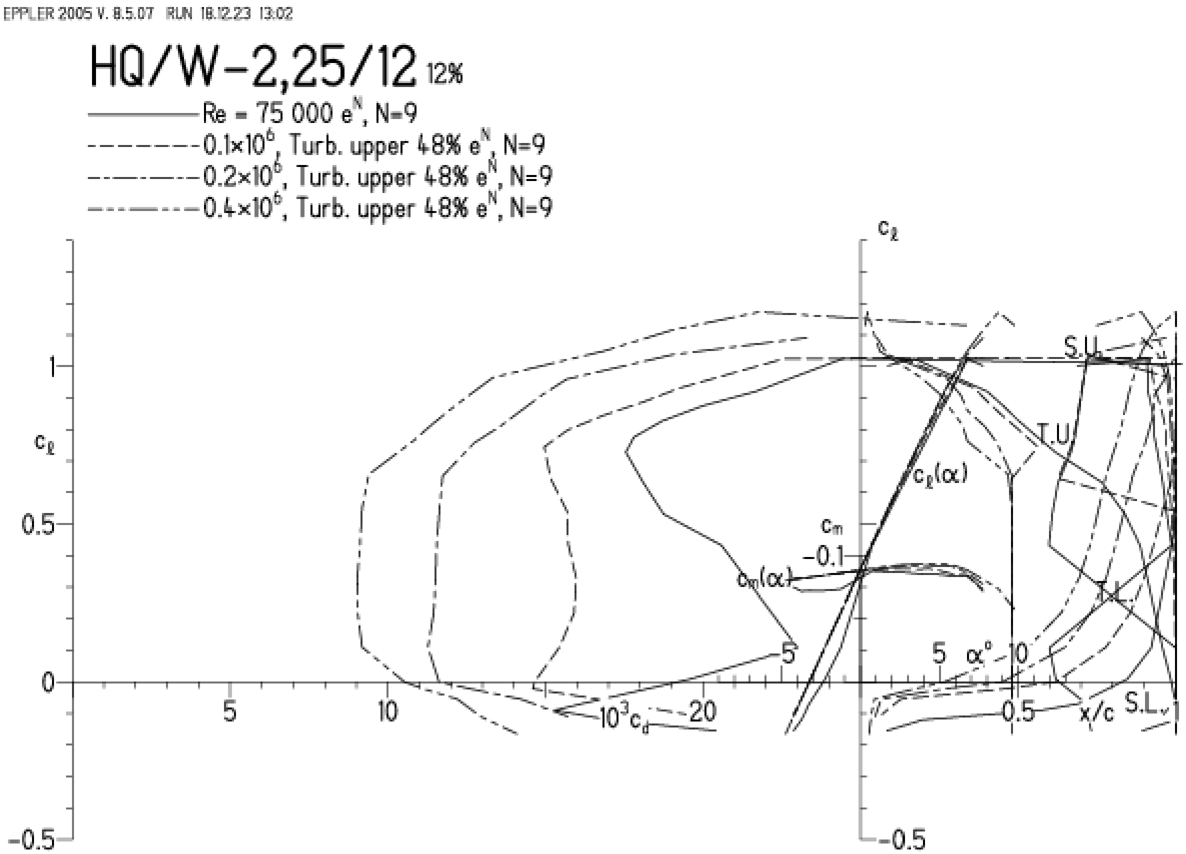
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c
0
0.5
1
2
1.5
1
0.5
0


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
cℓ
10³cd
cm
−0.15
−0.1
cm(α)
cℓ(α)
α°
S.U.
T.U.
T.L.
S.L.
x/c
0.5
5
20
−5
5
10
1
0.5
0
−0.5

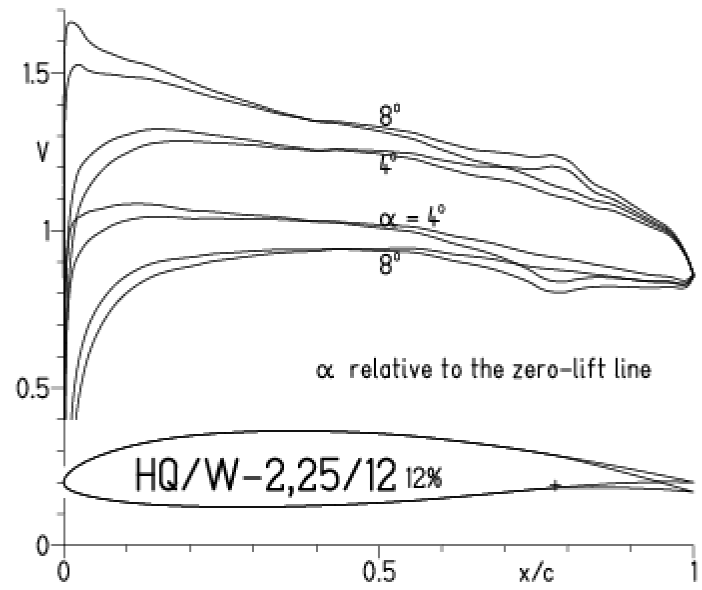
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



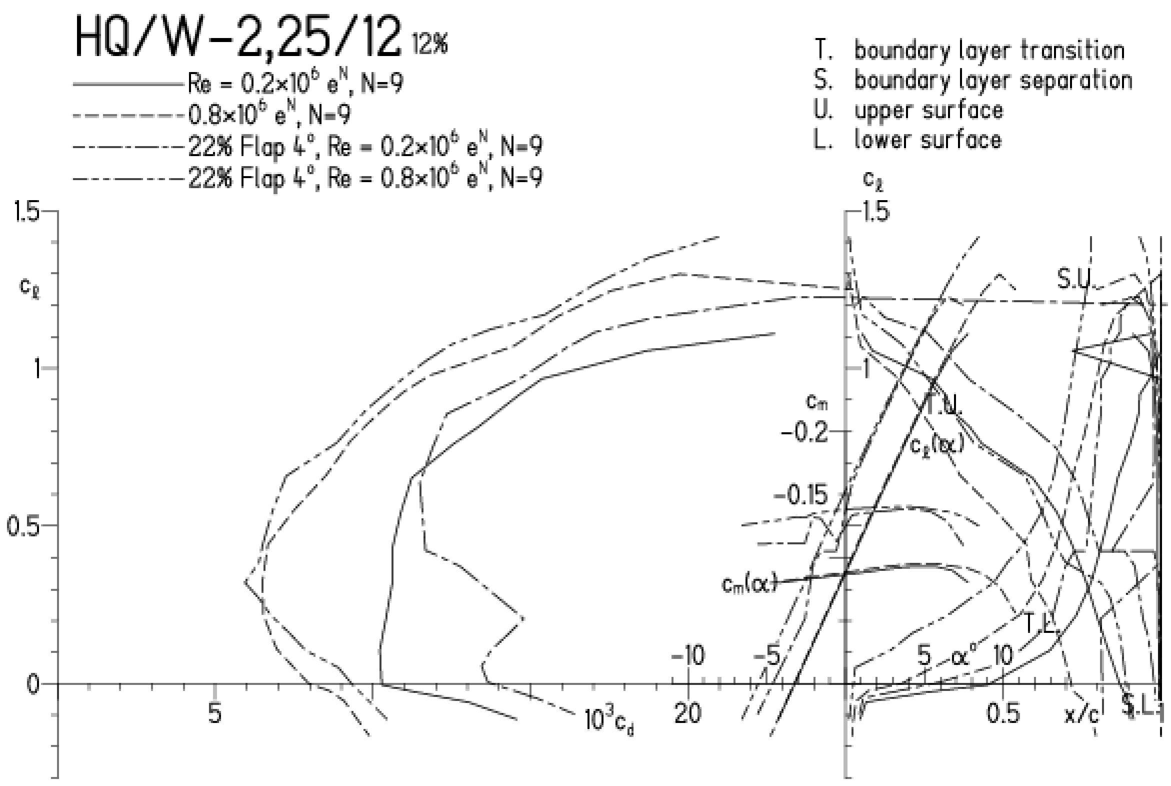


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

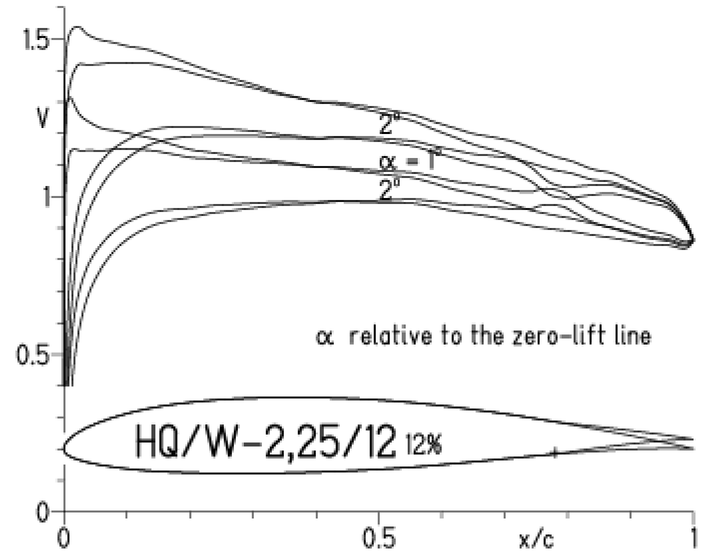


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

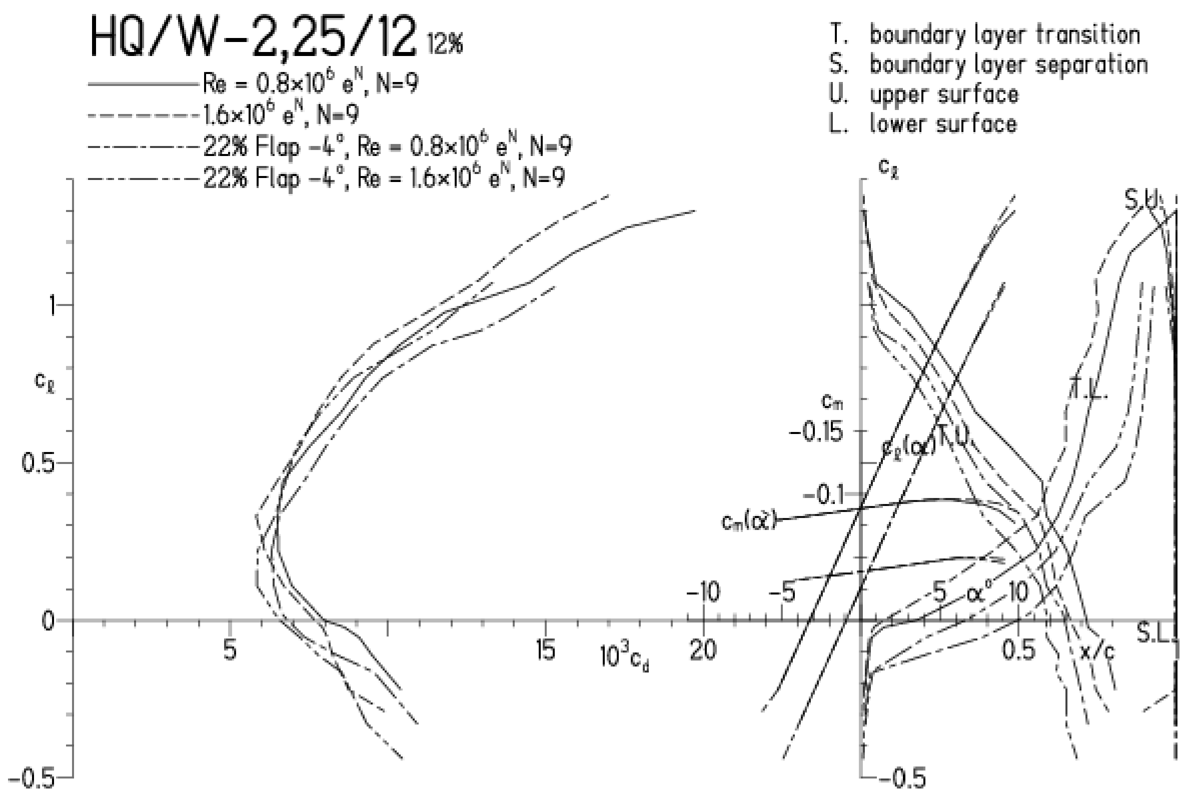


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

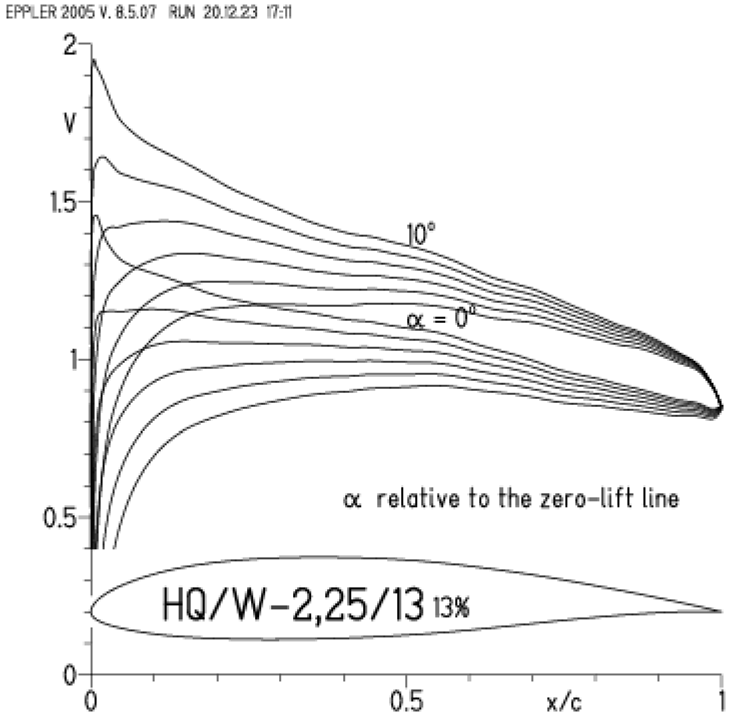
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

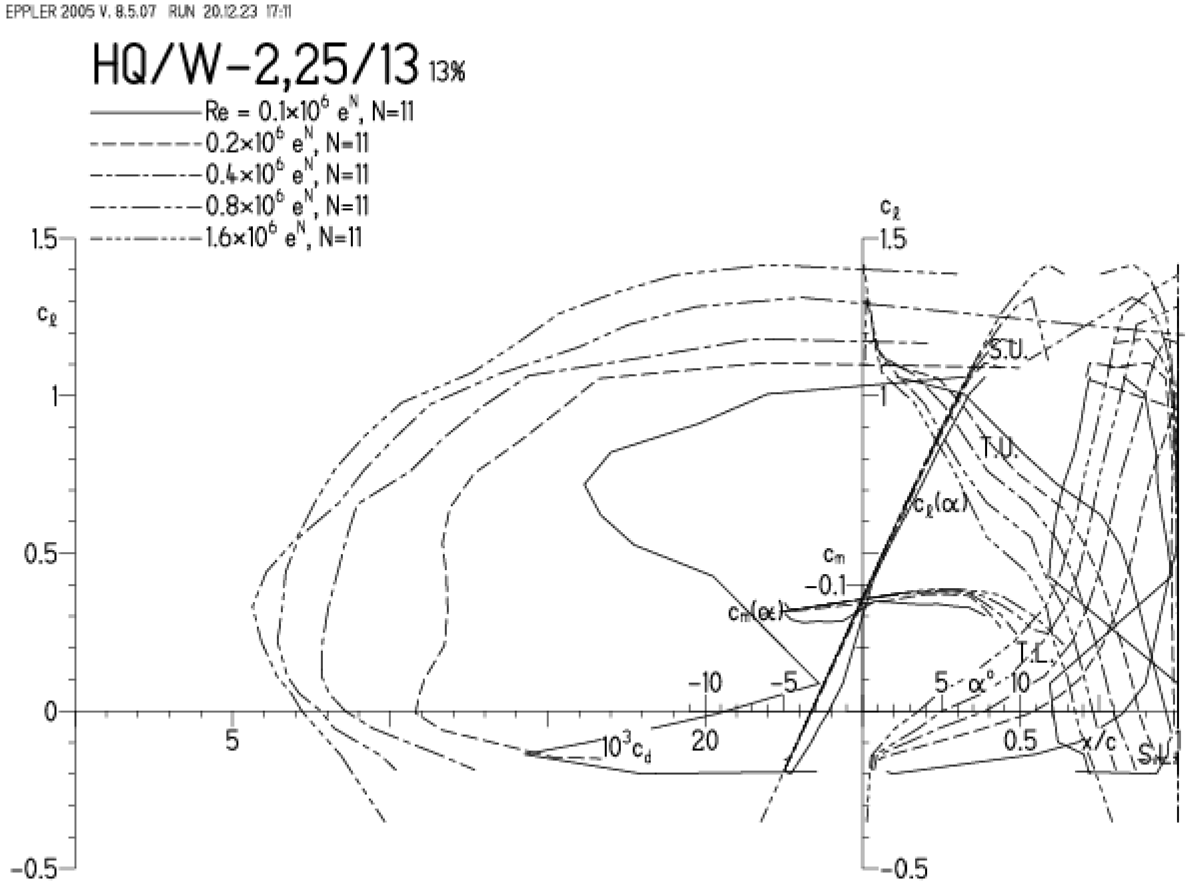


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

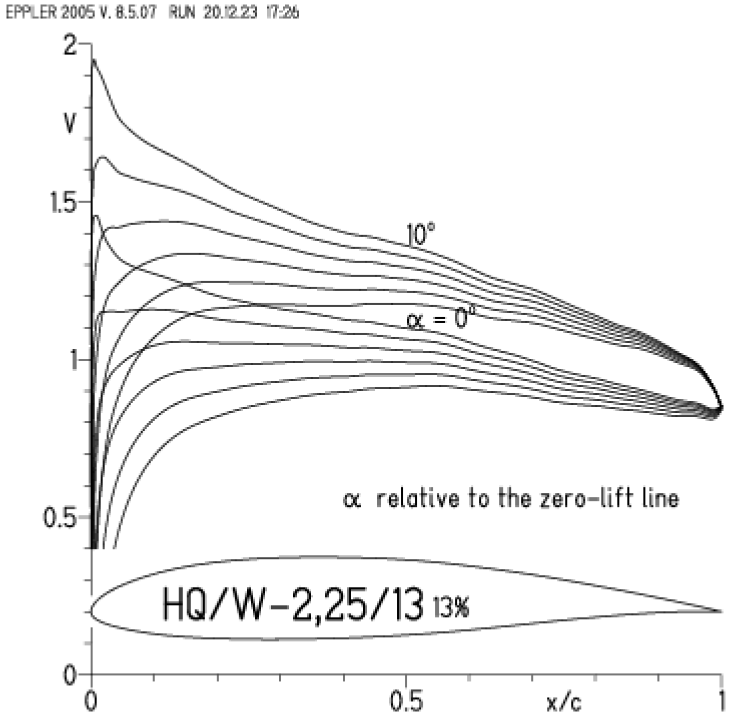


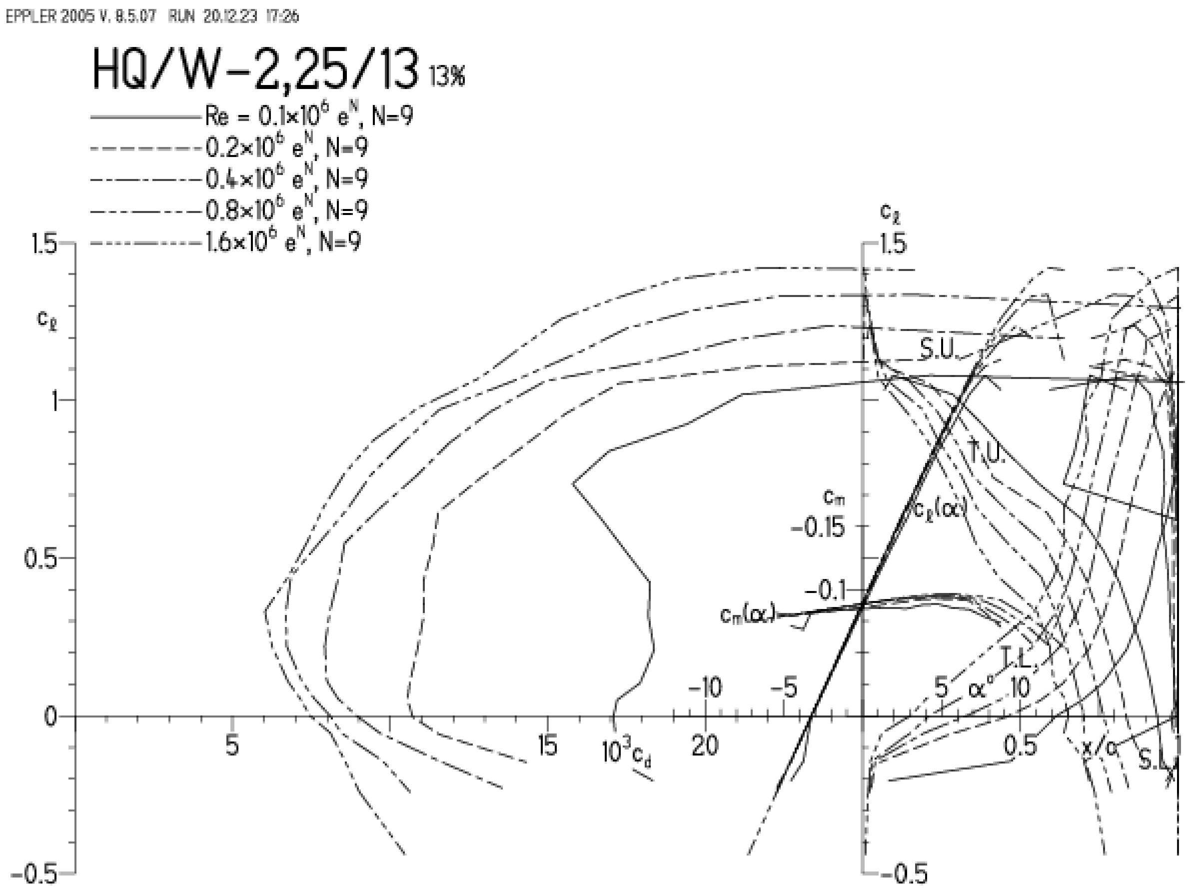
<u>HQ/W-2,25/13</u>, N=11



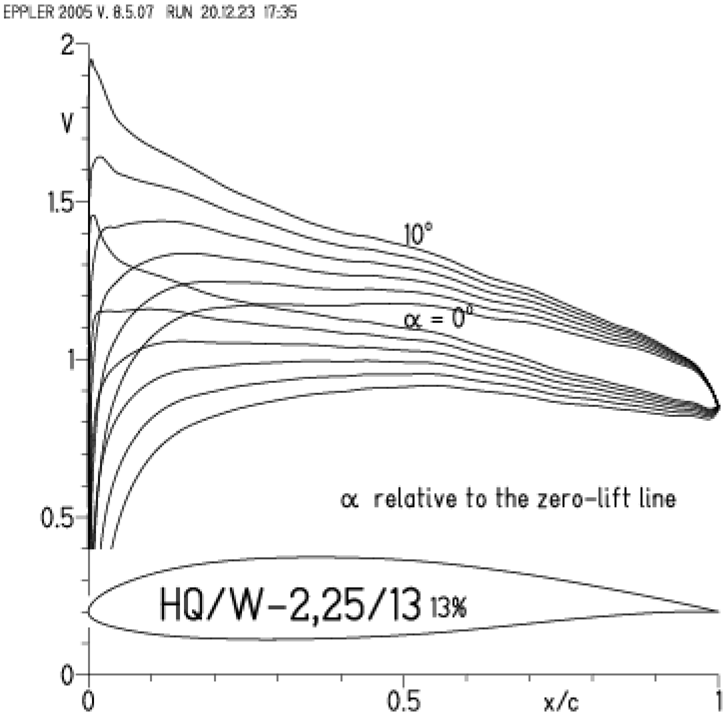


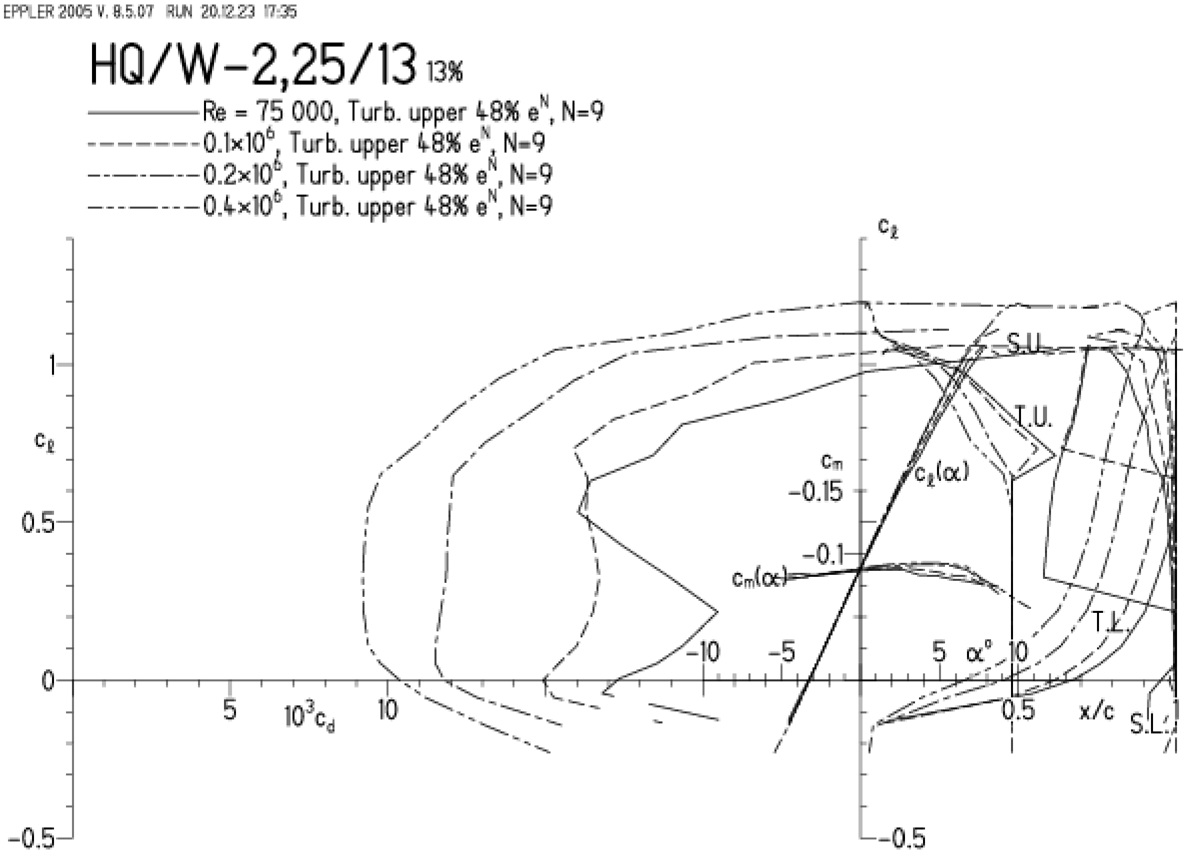
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

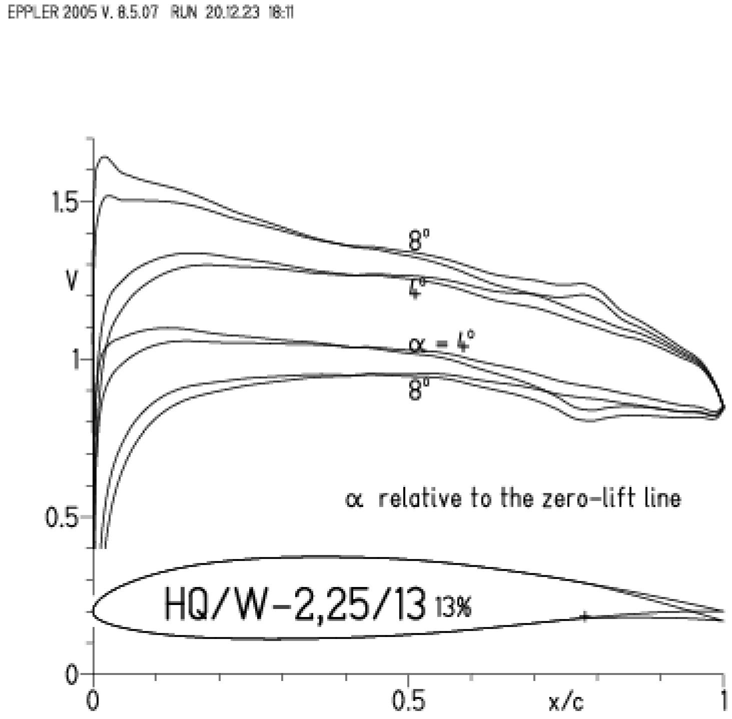

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10^3 cd
α°
x/c

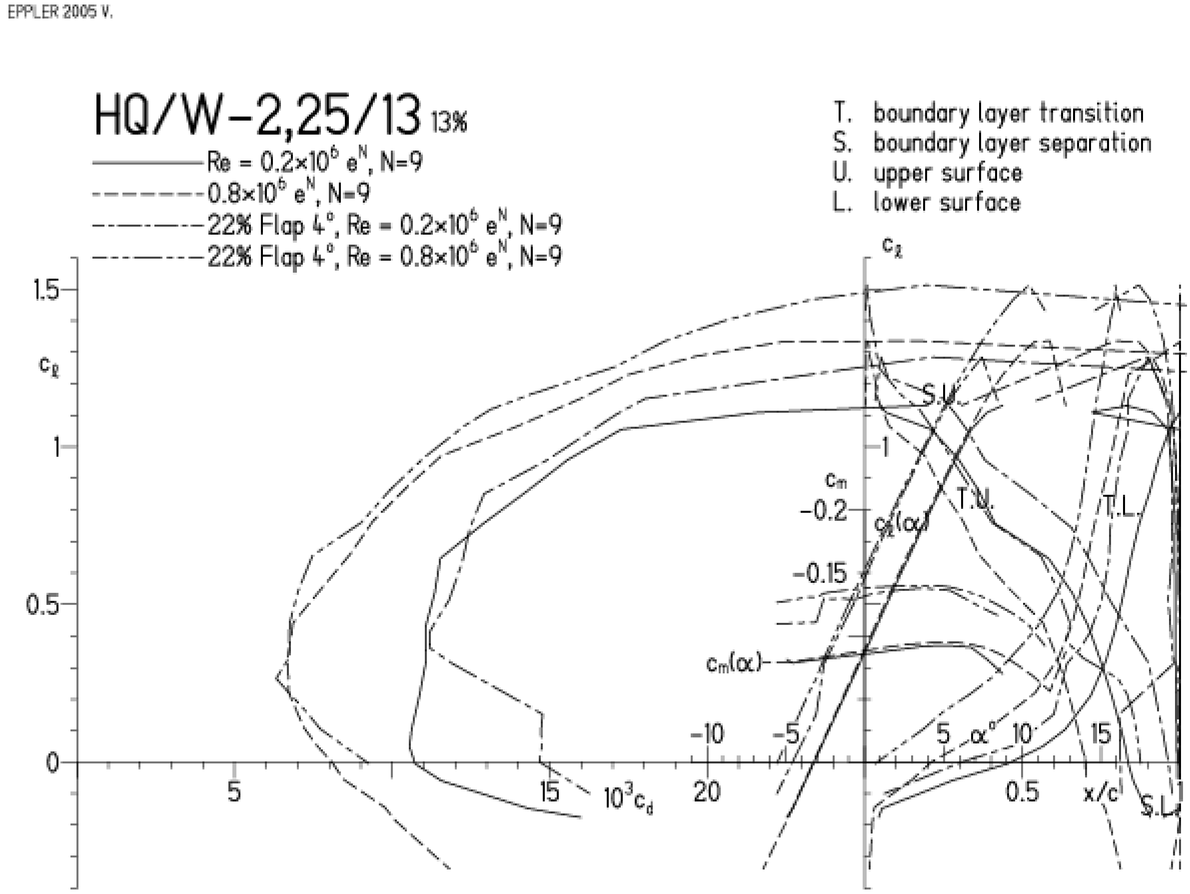
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





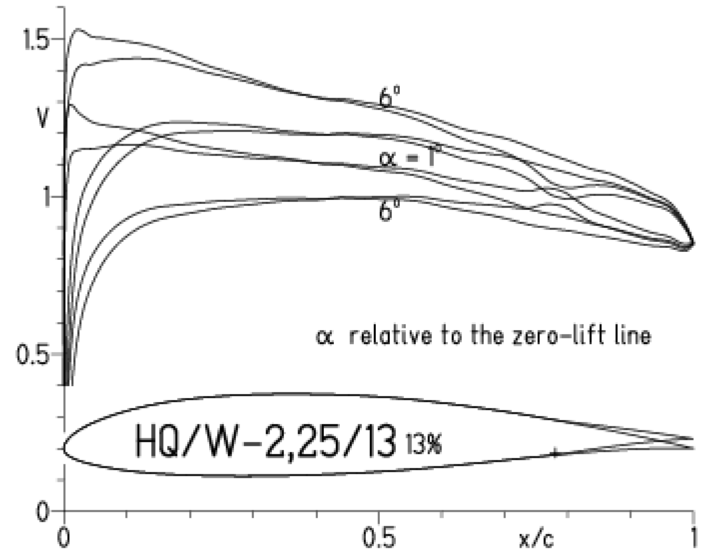
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



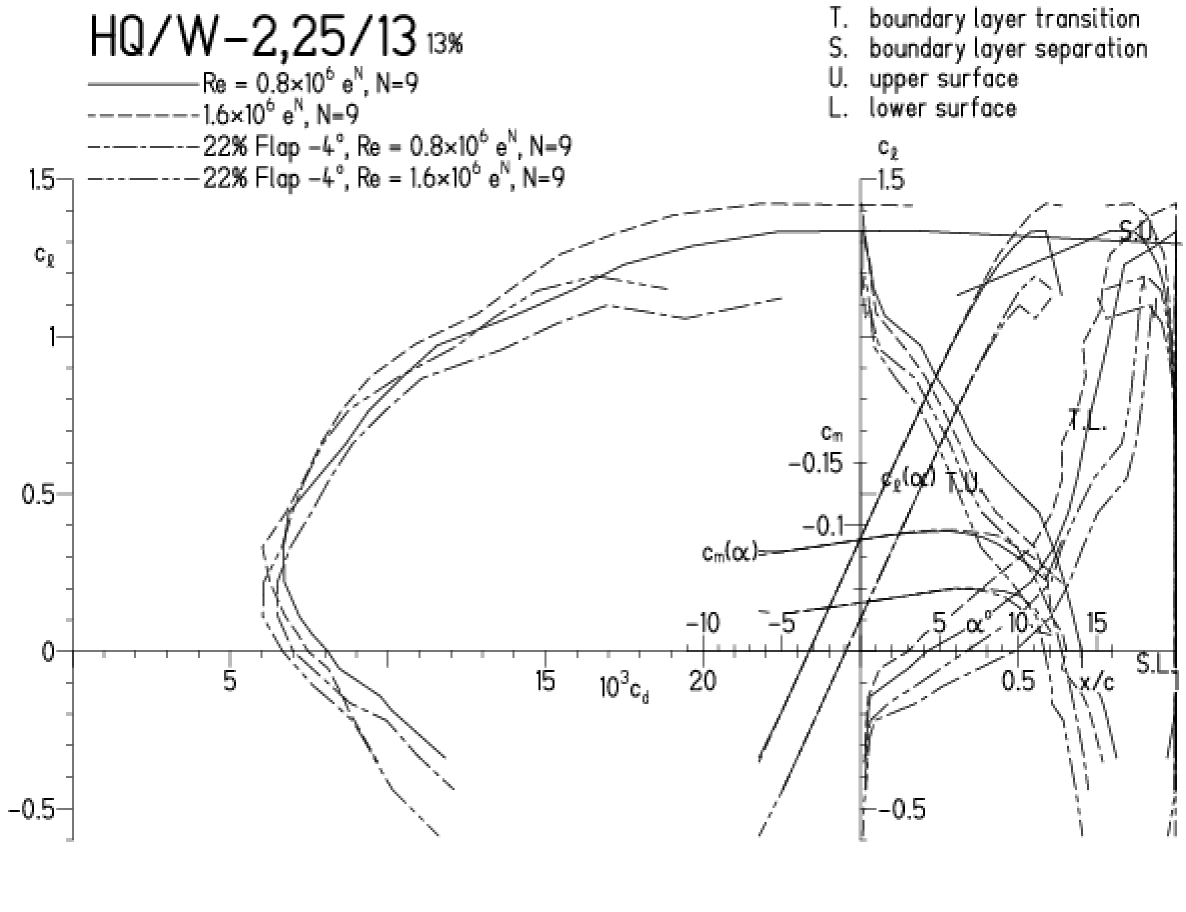


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

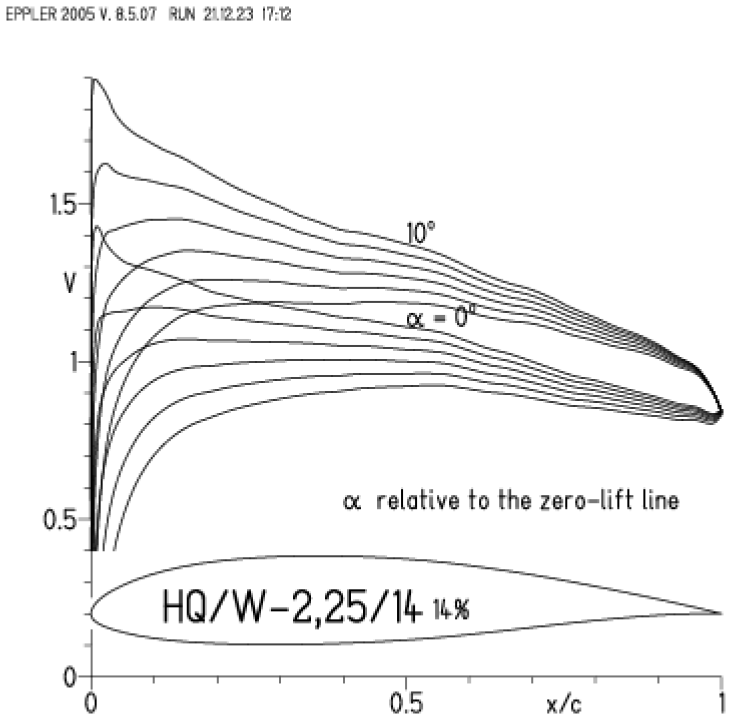
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

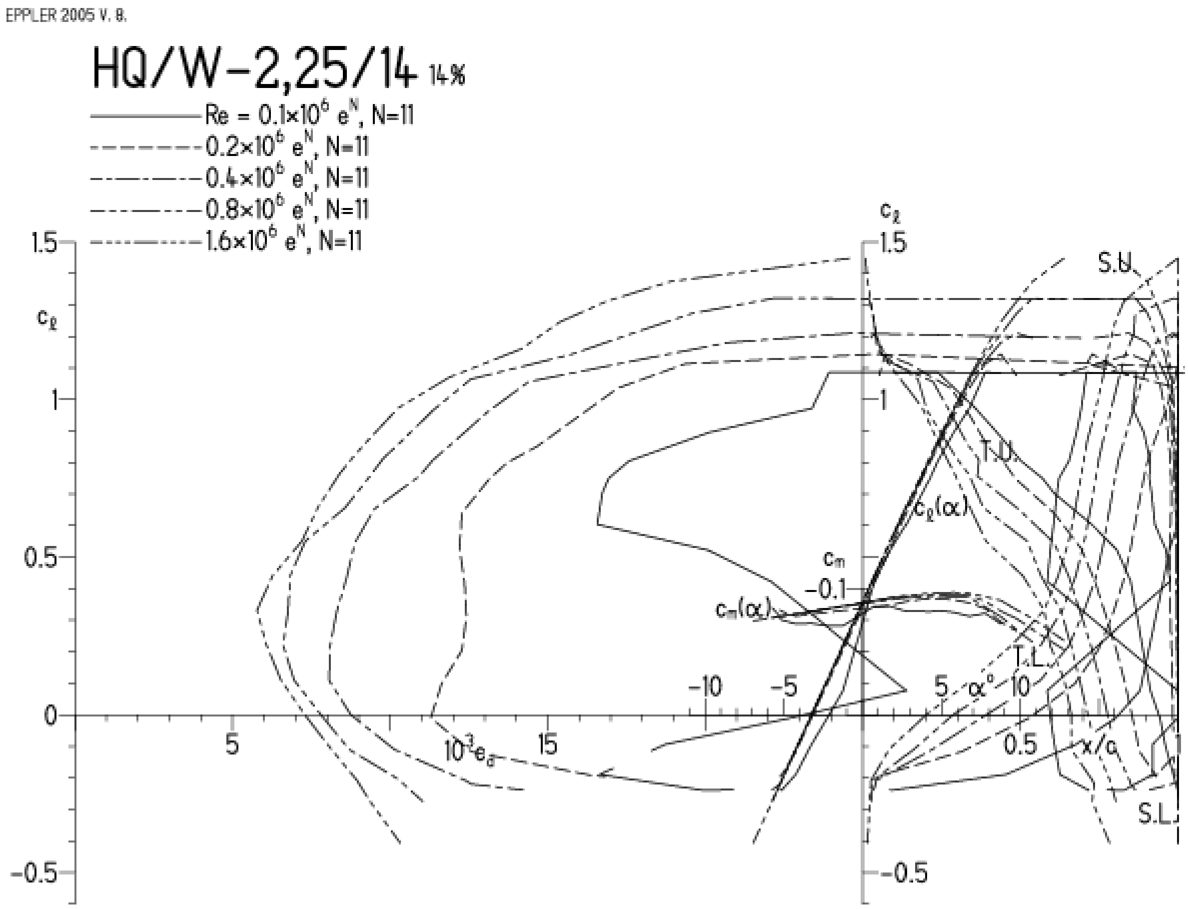


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

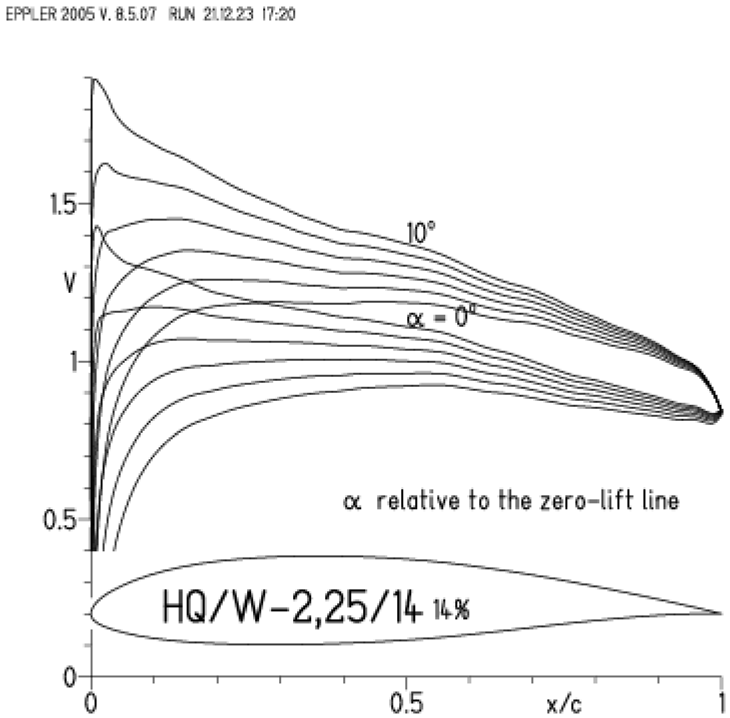


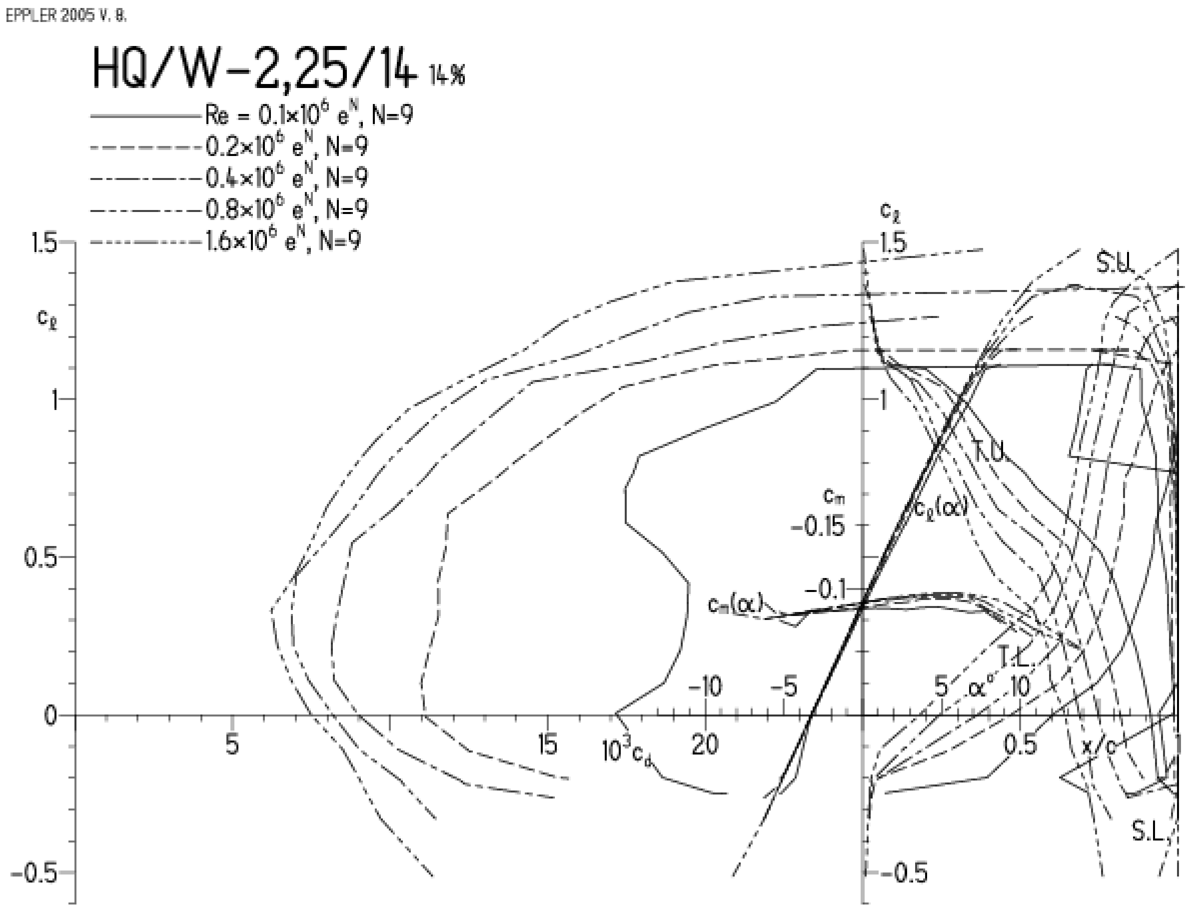
<u>HQ/W-2,25/14</u>, N=11



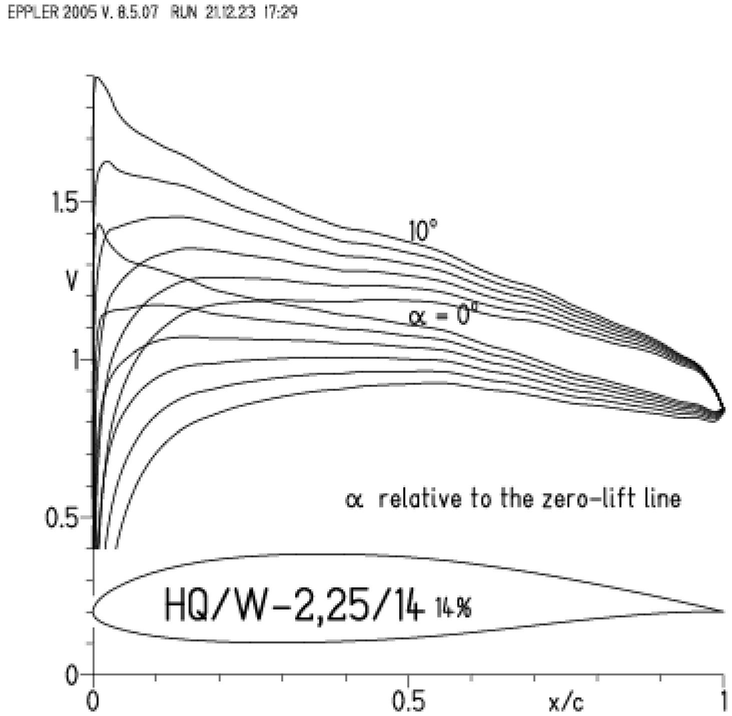


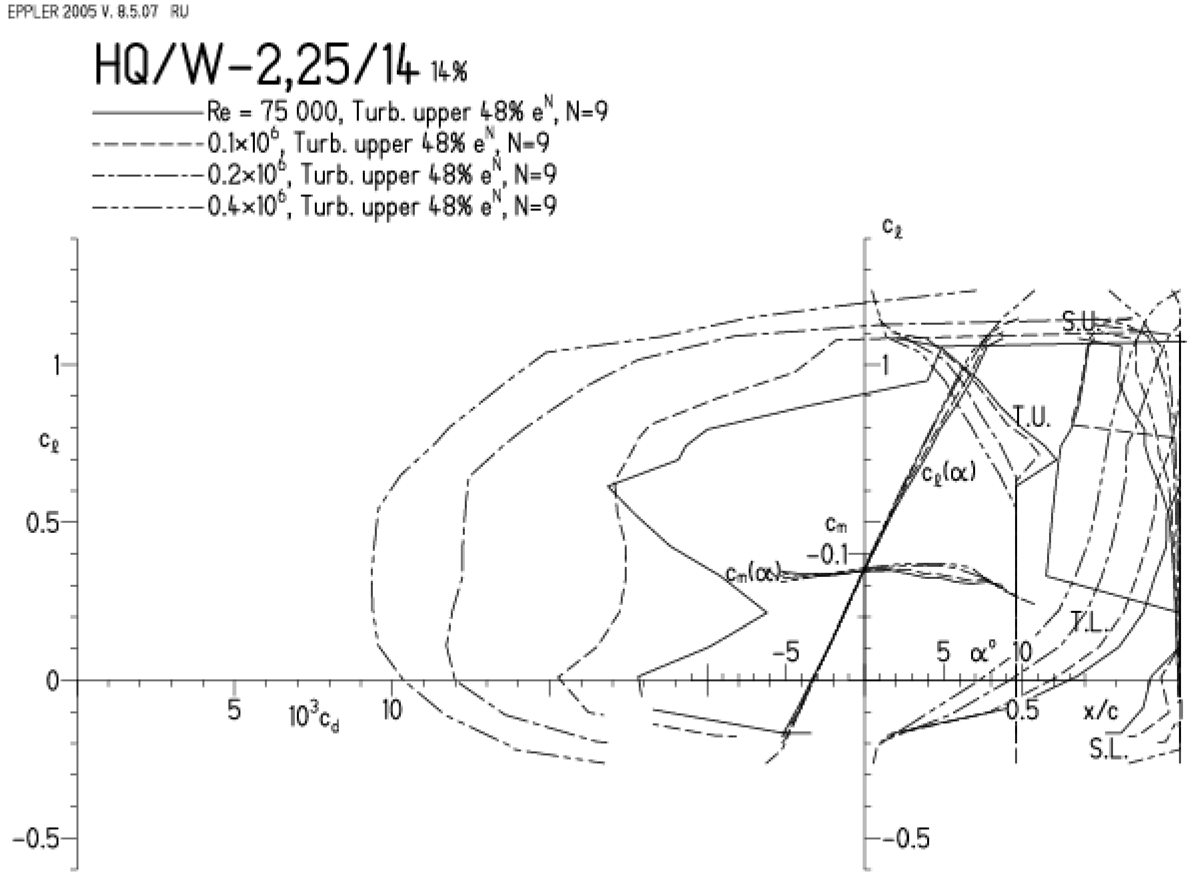
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
α°
x/c

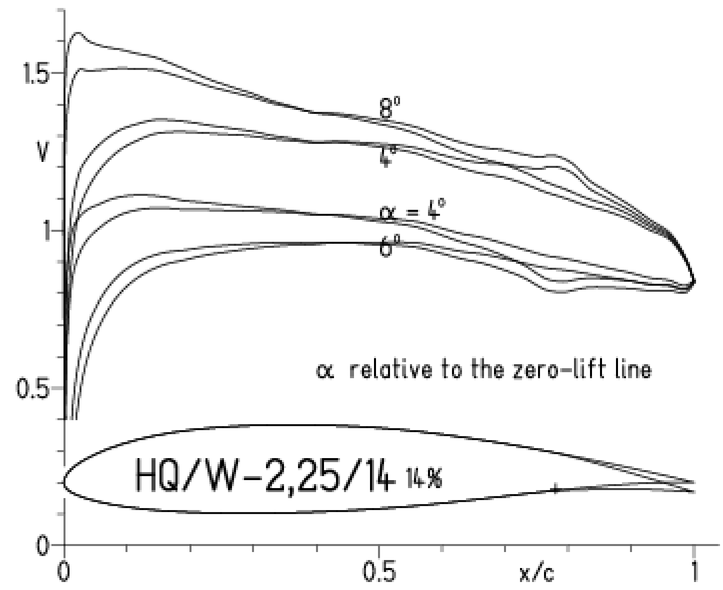
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



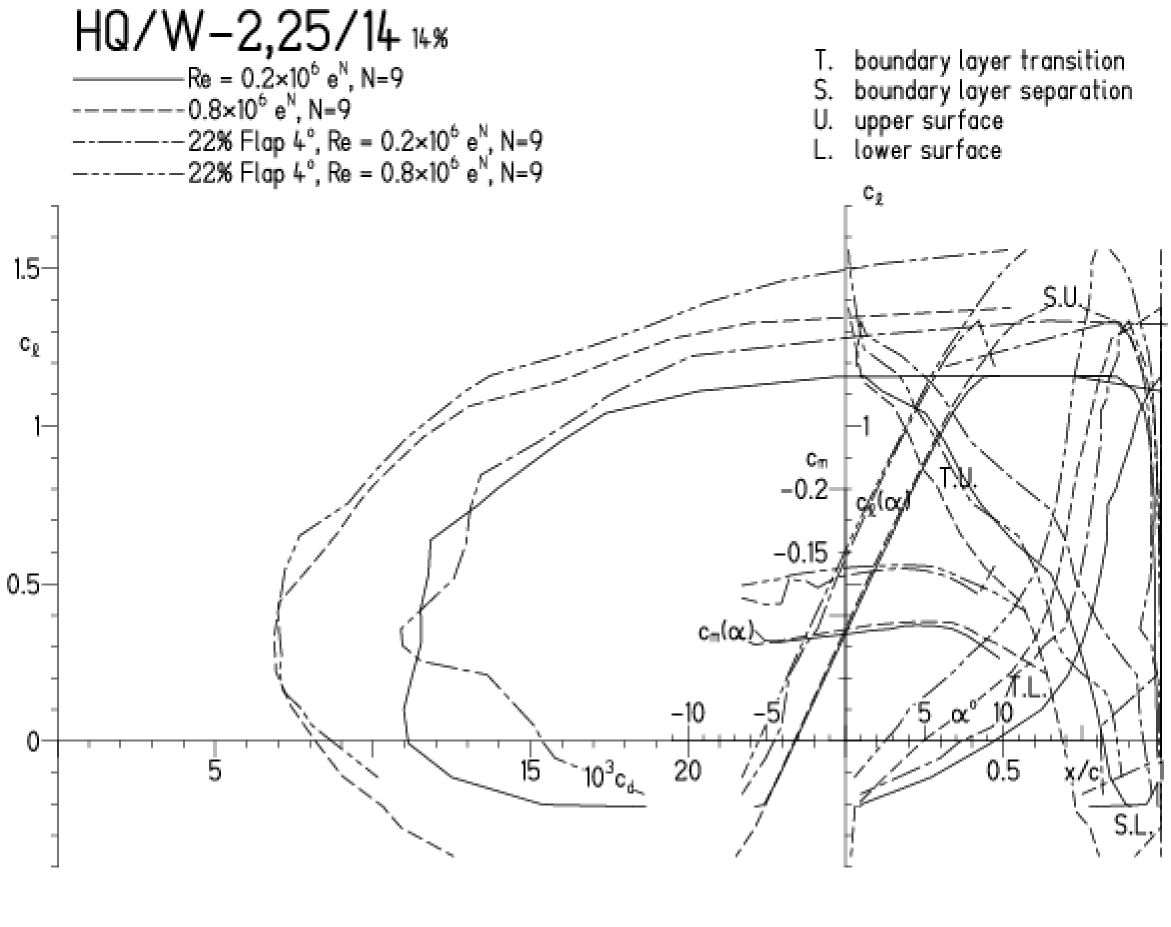


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

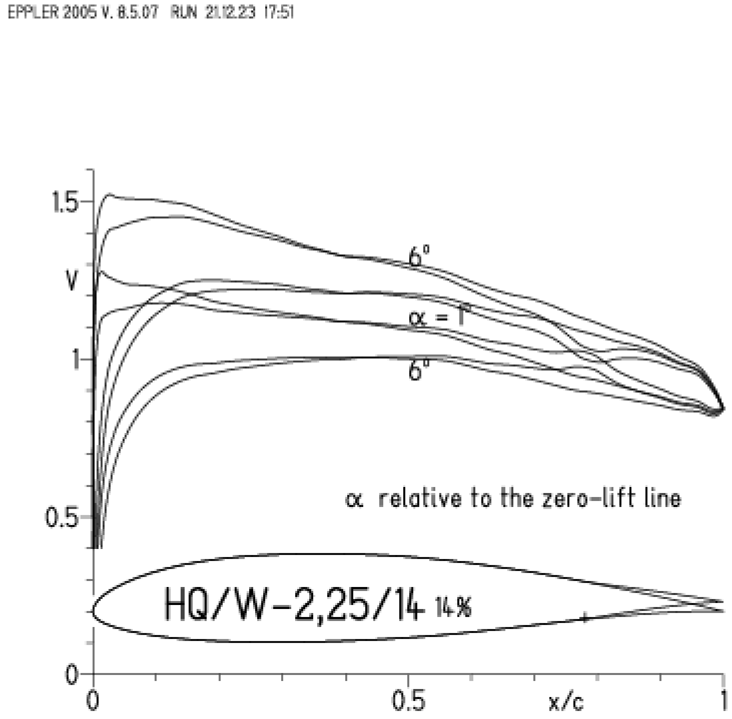
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

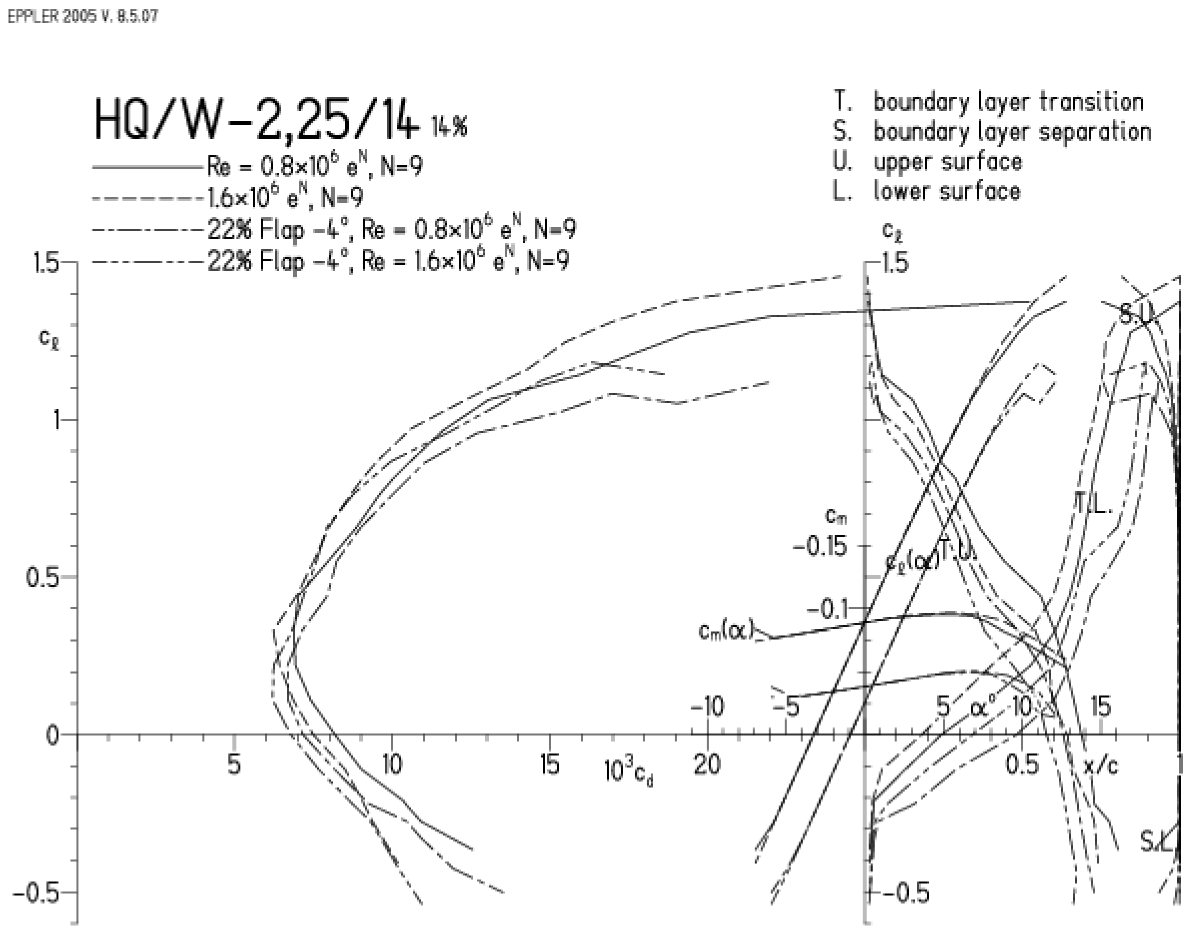


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

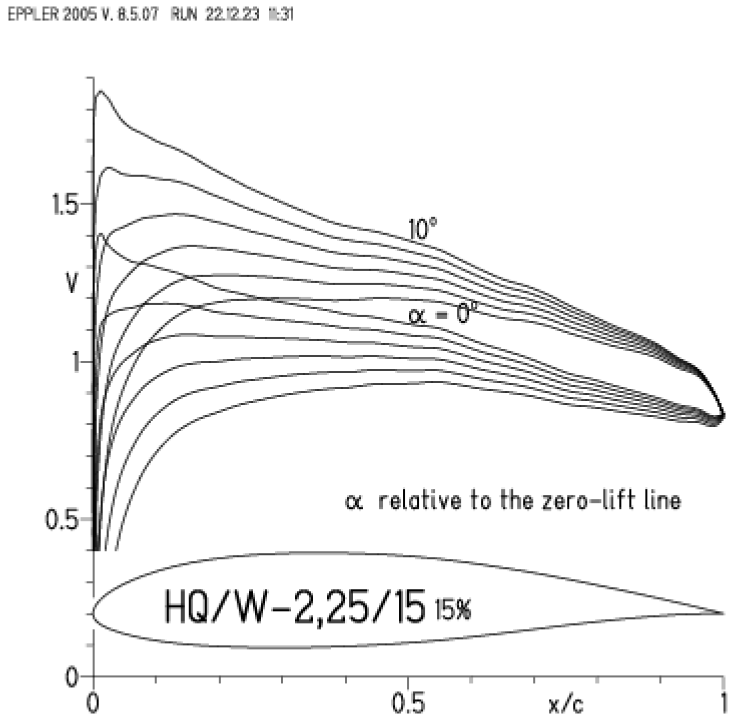


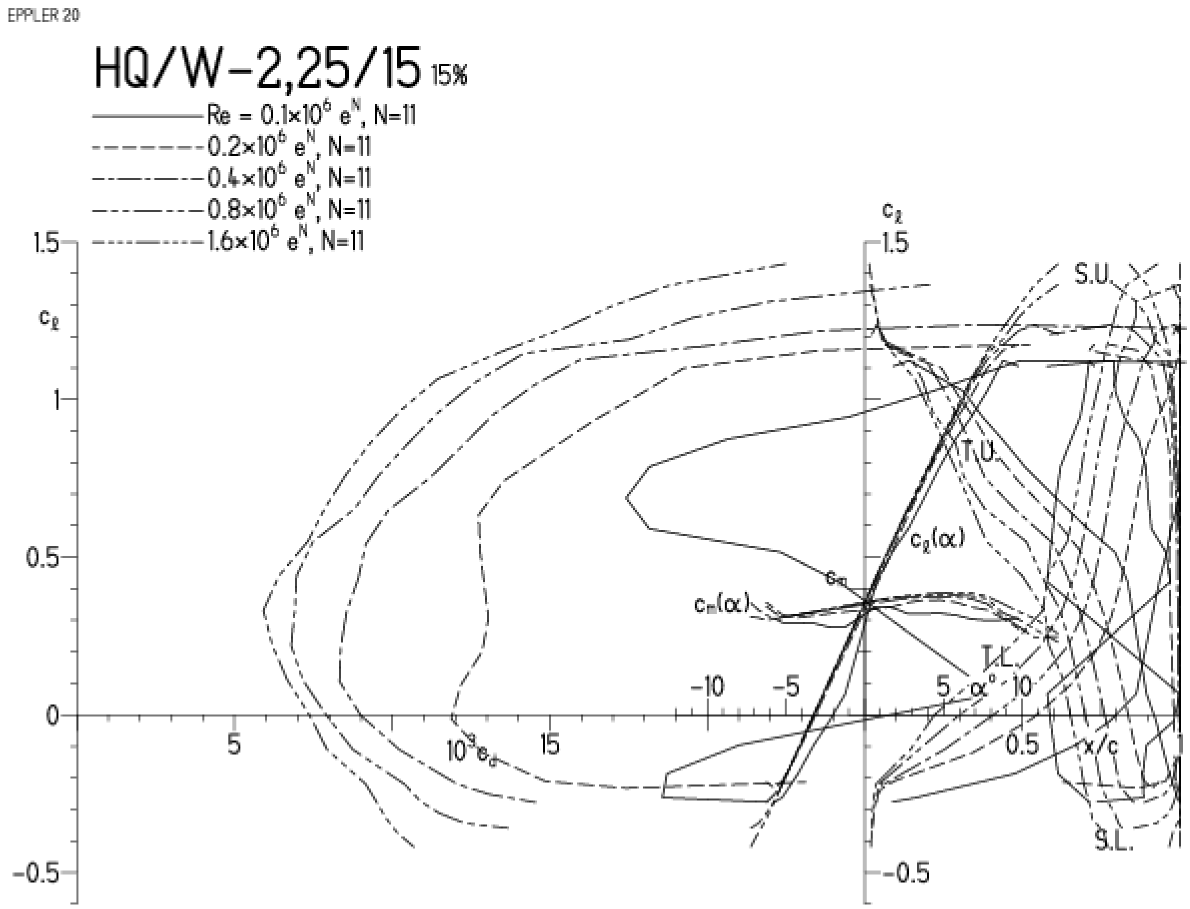
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



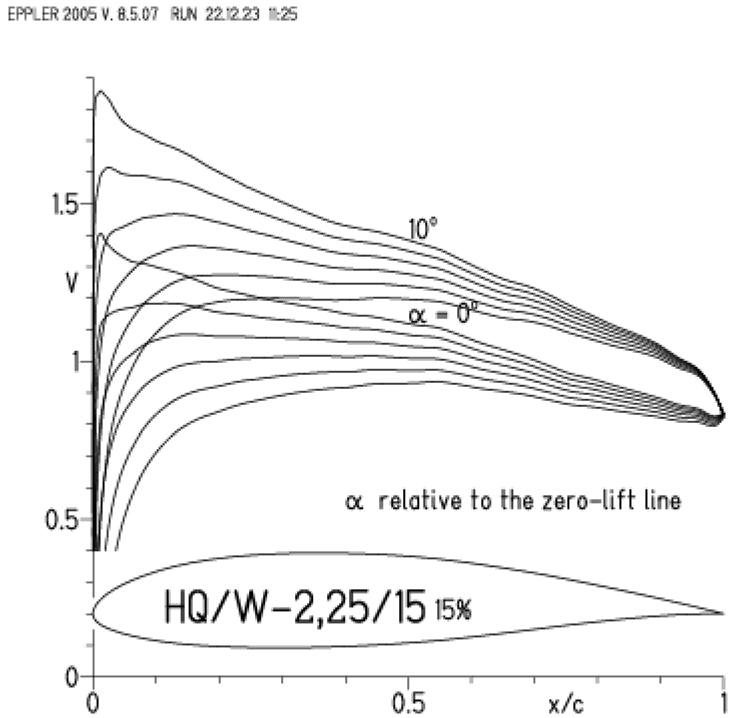


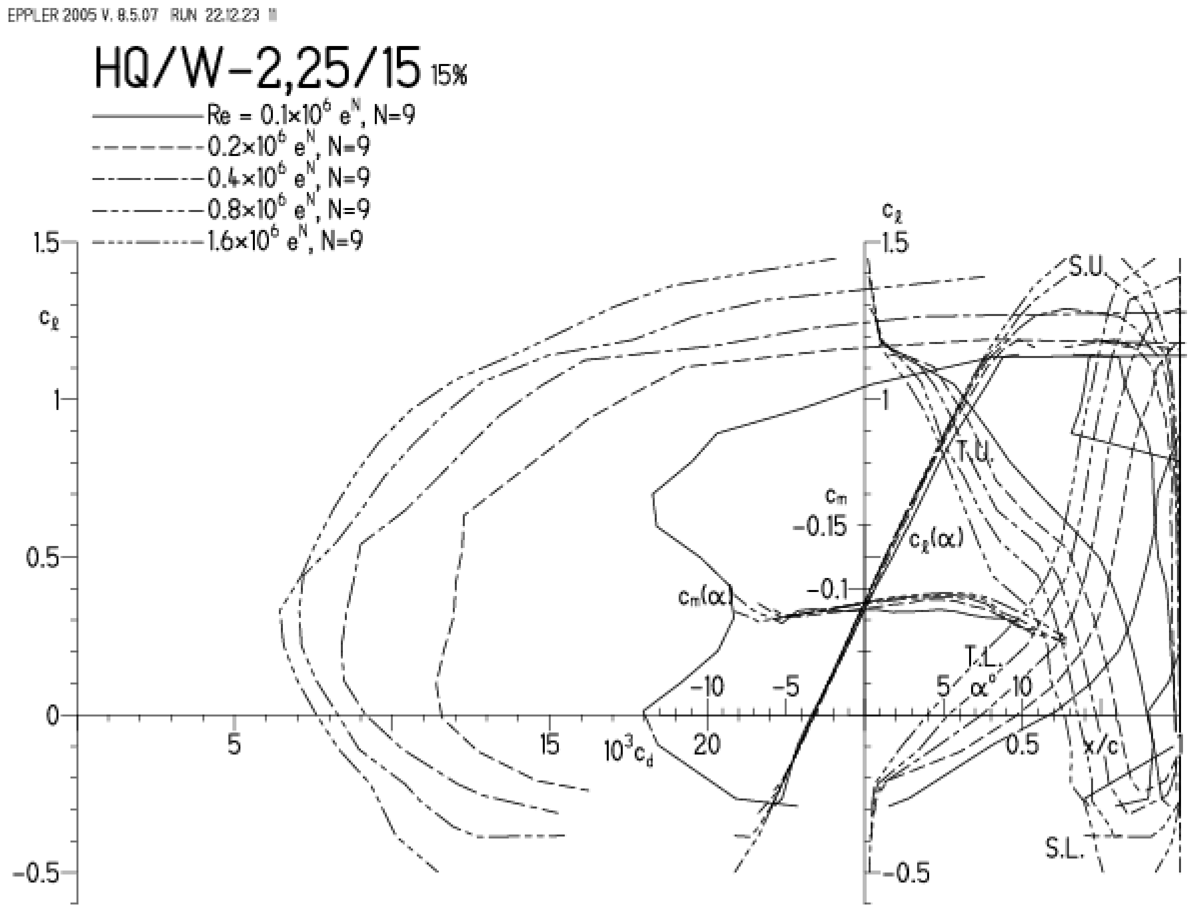
HQ/W-2,25/15, N=11



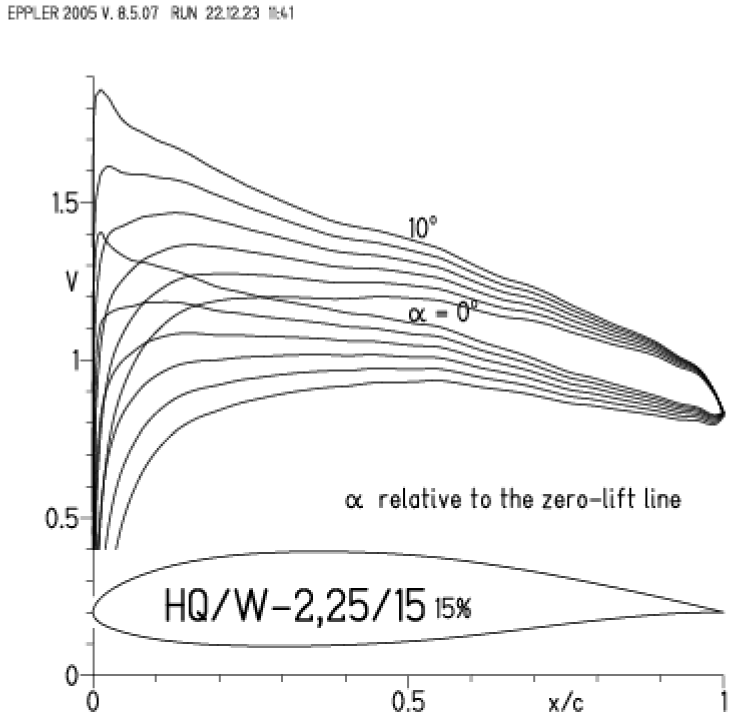


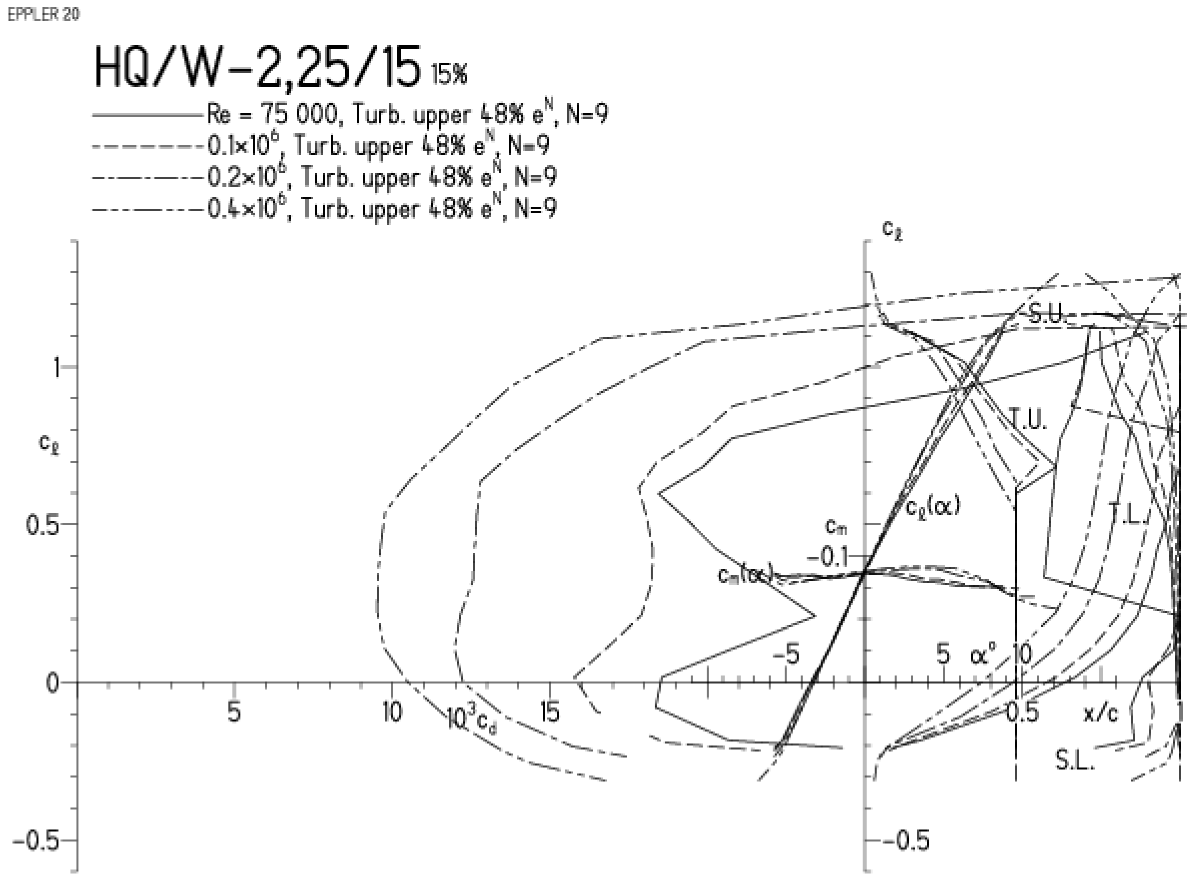
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
1
0.5
0
-0.5
5
15
10³c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



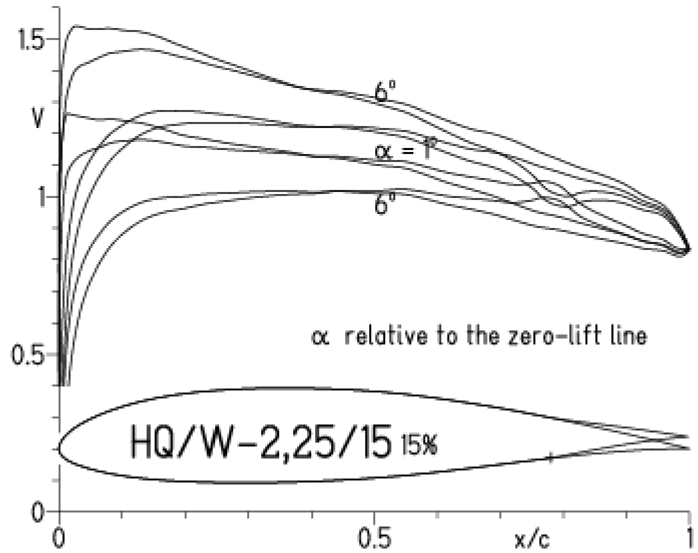


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

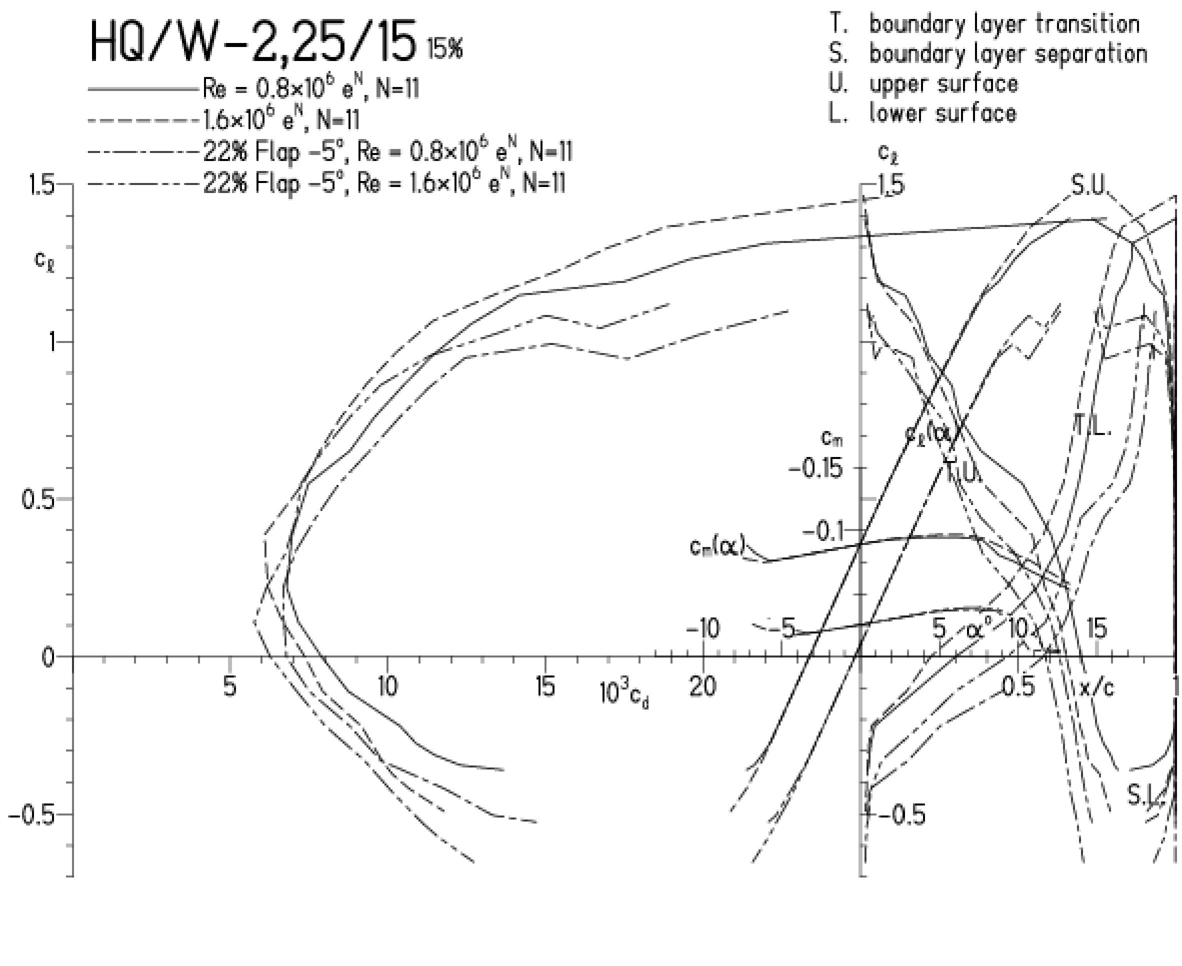
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

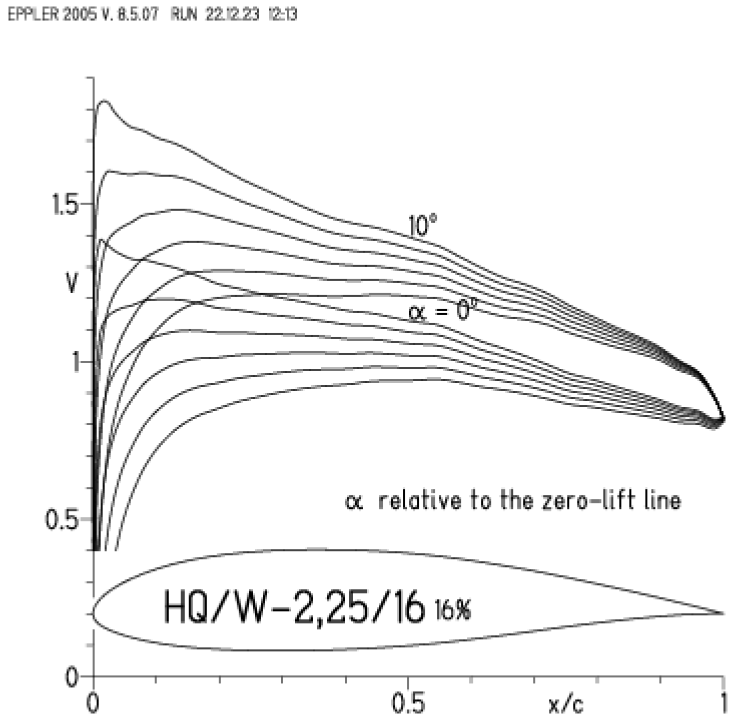
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

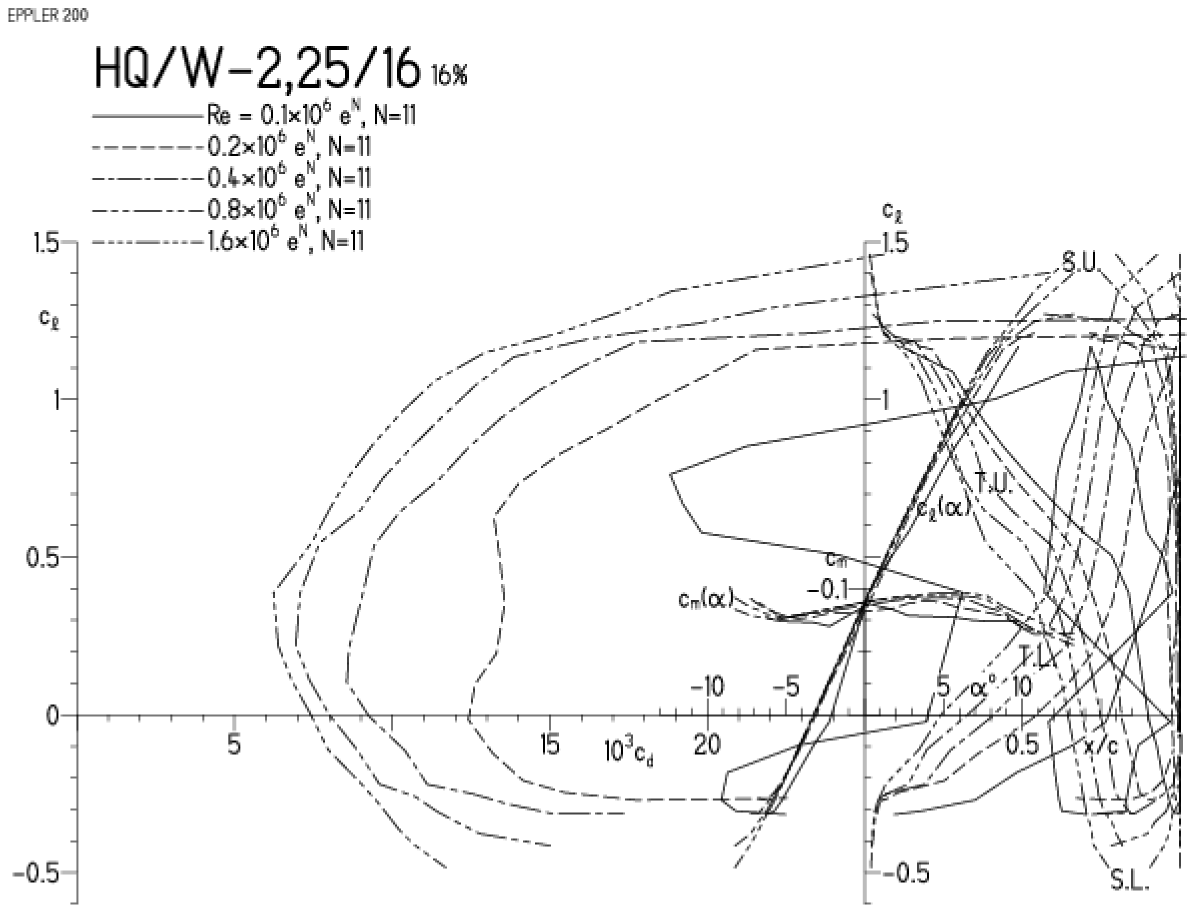


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

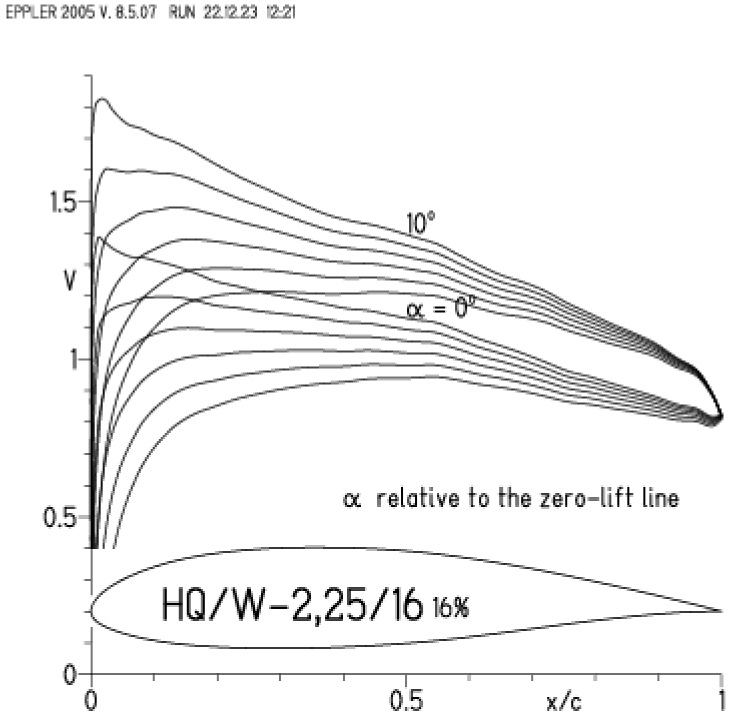


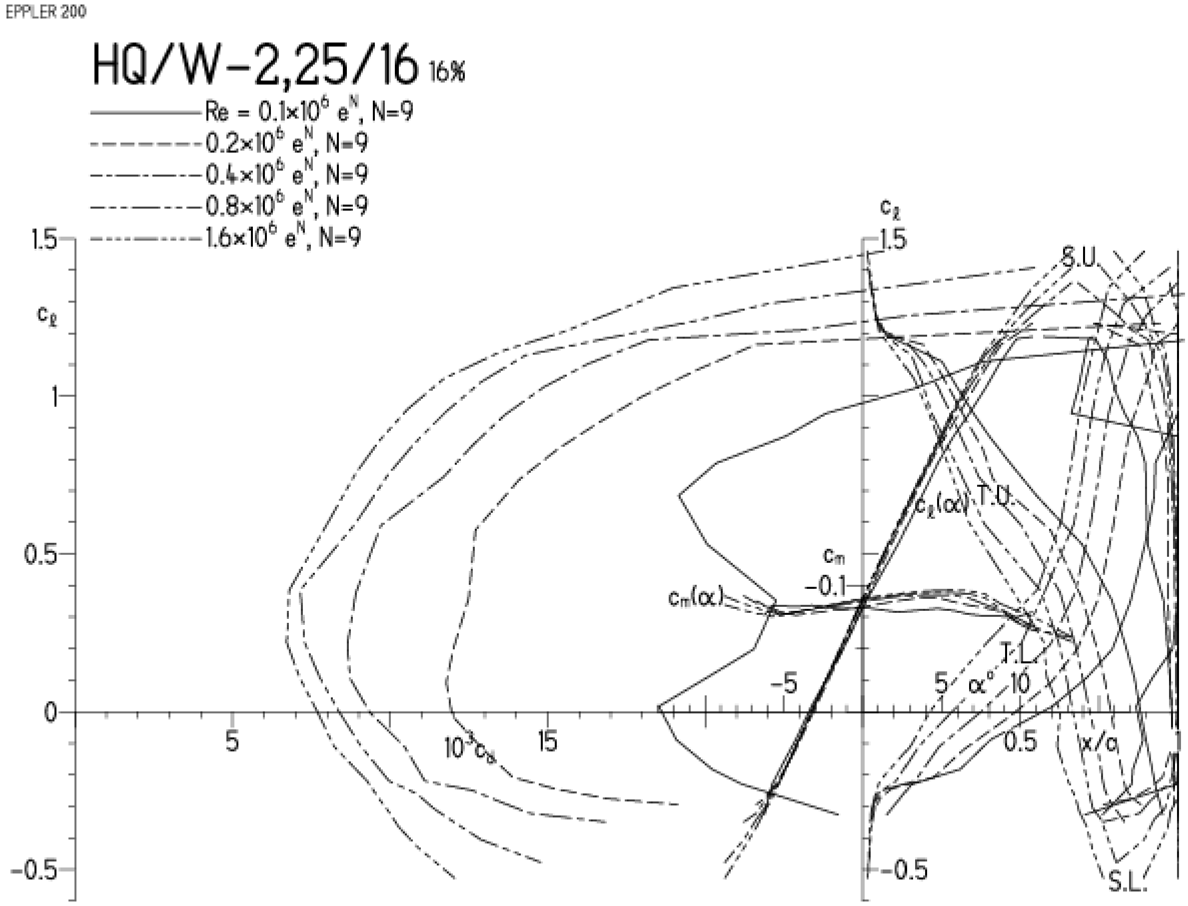
HQ/W-2,25/16, N=11



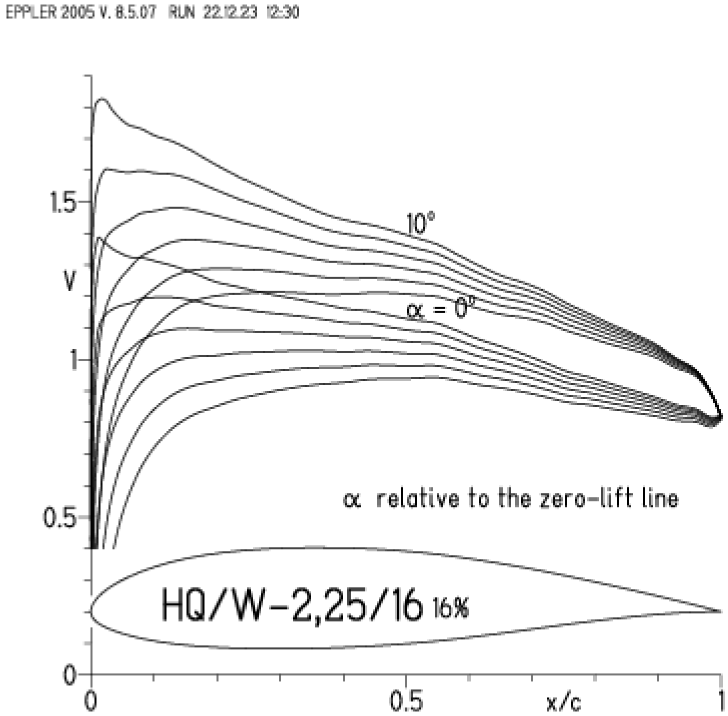


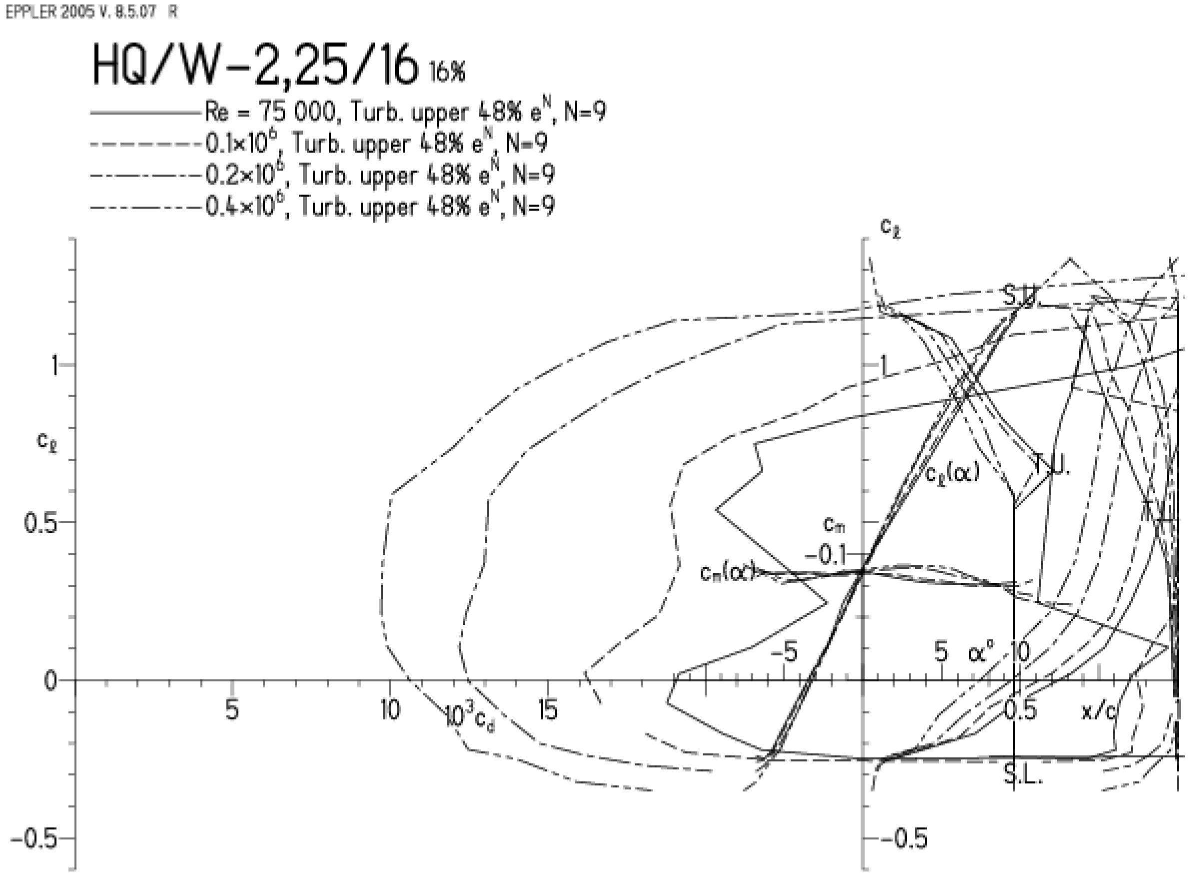
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/16 16%
x/c


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
cm
α°
10⁻³cd
x/c

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



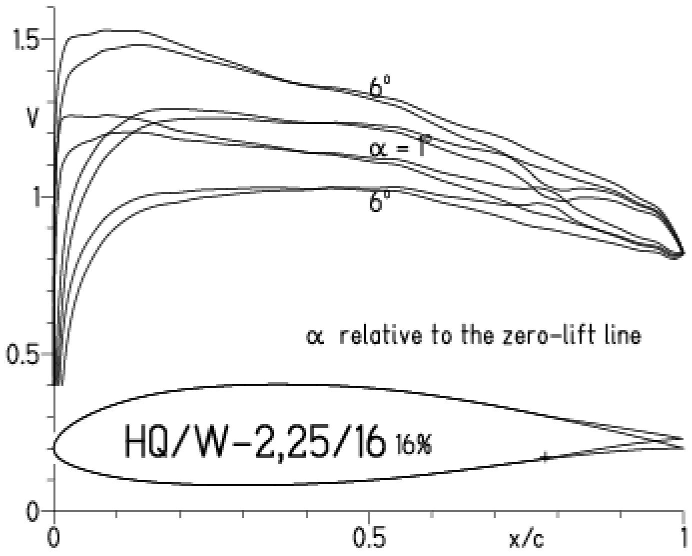


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

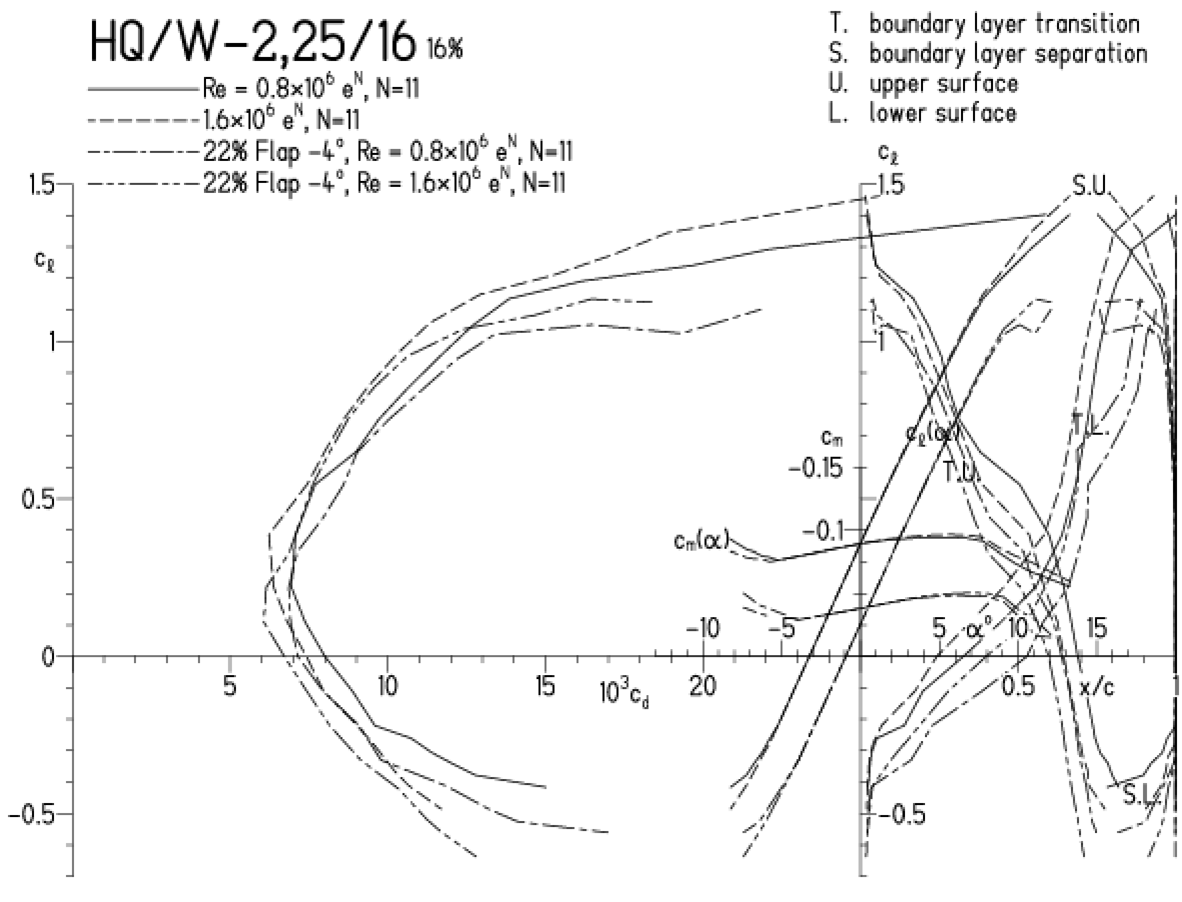
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

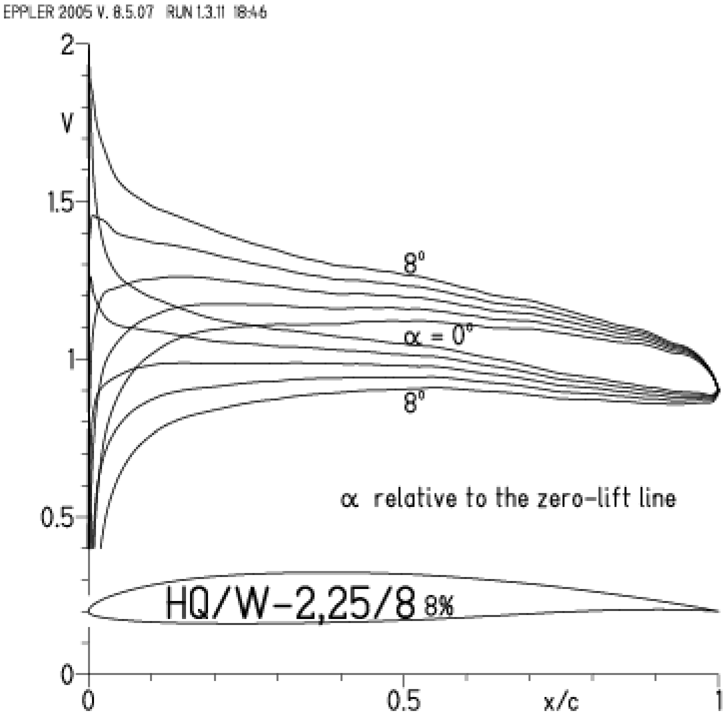
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

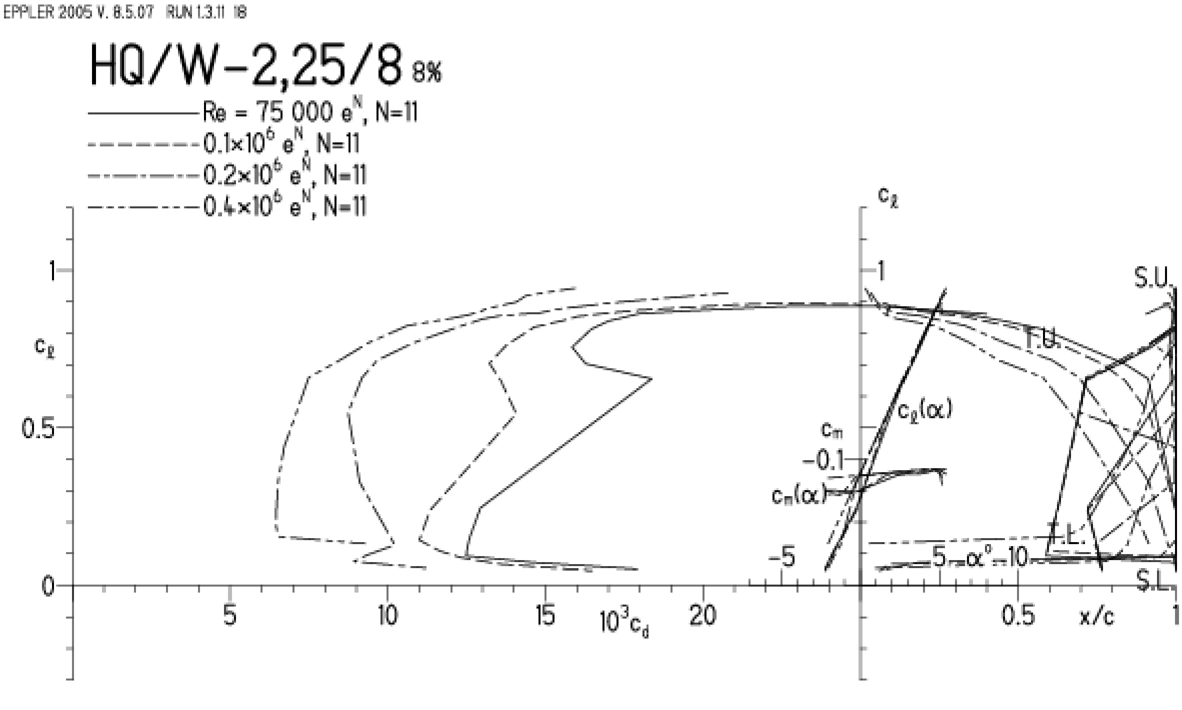


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

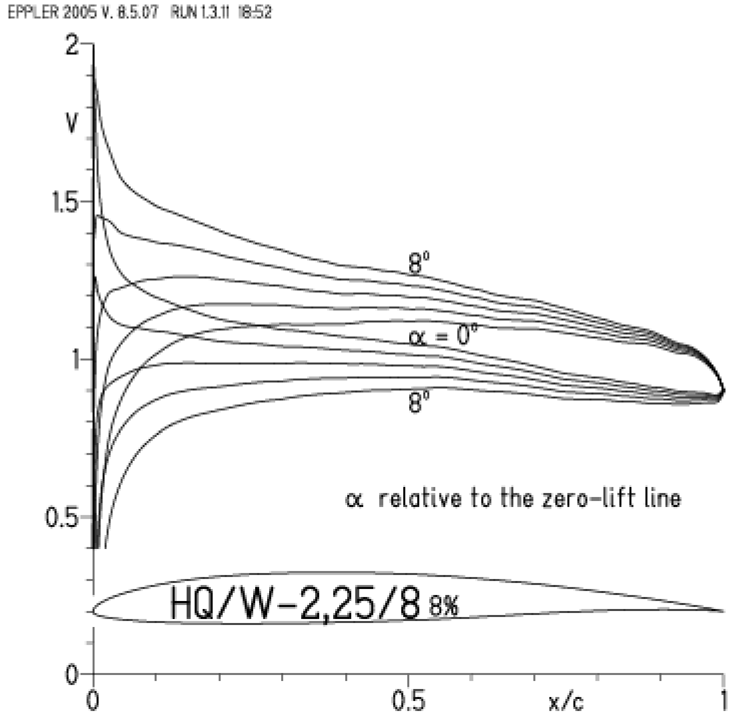


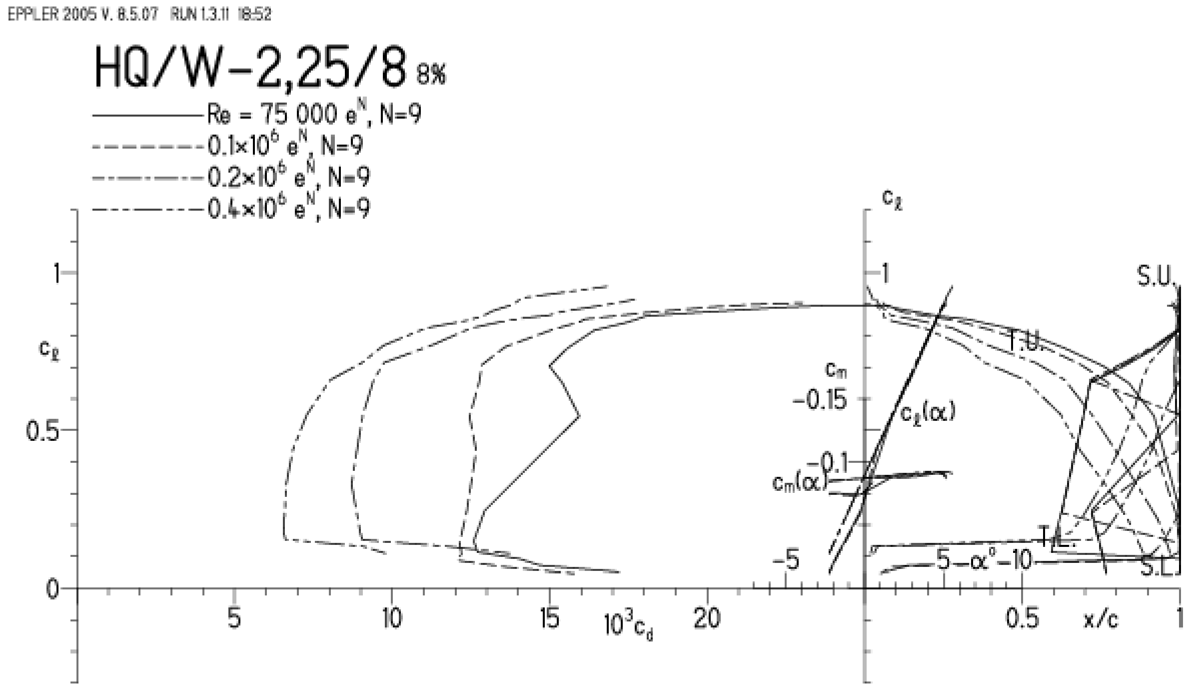
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

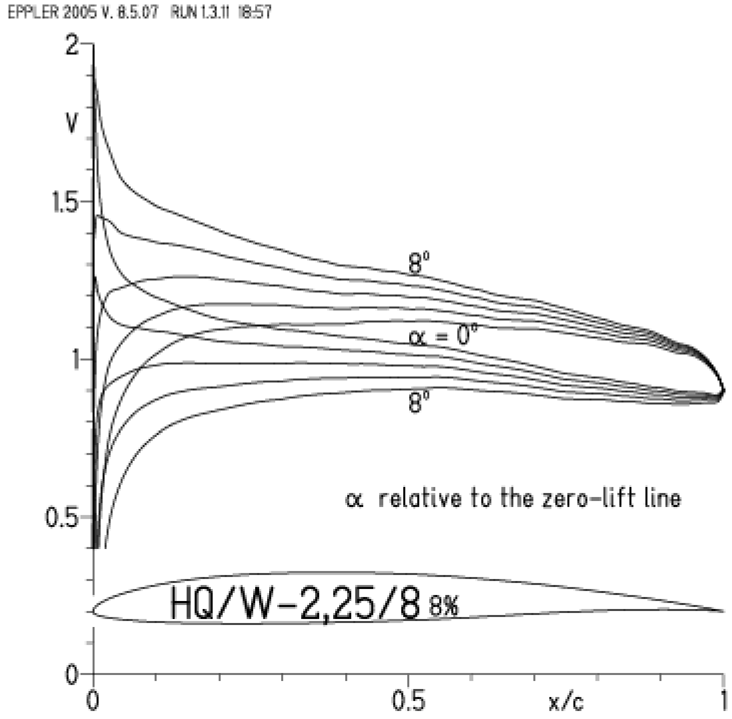

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

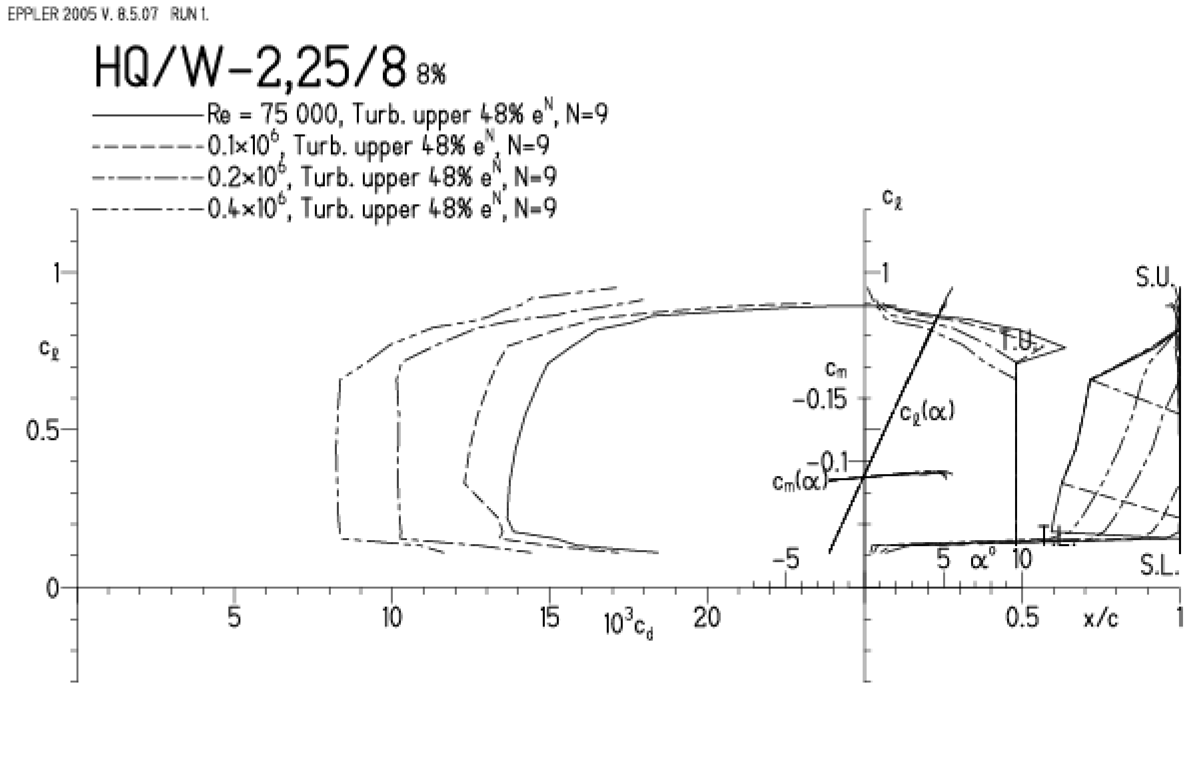
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

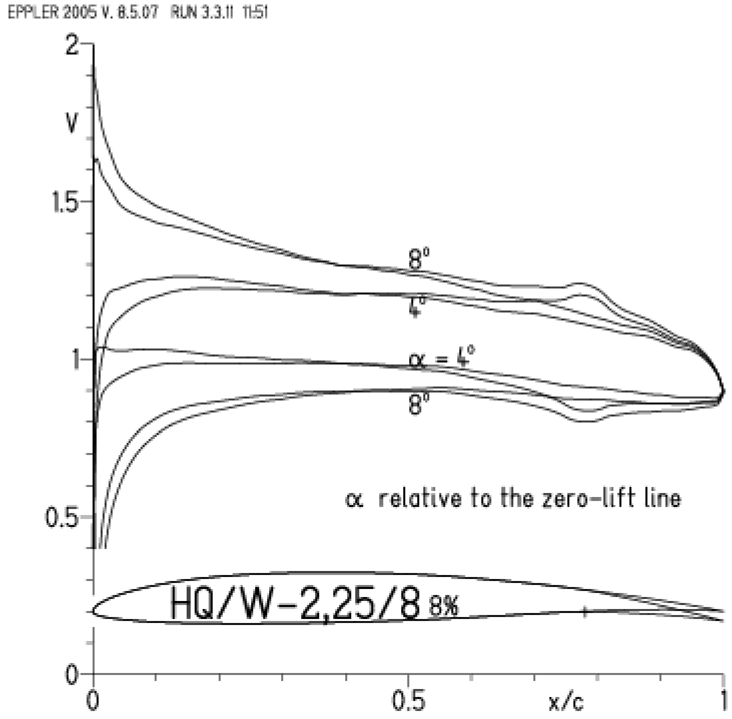

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
$10^3 c_d$
c_m
$c_\ell(\alpha)$
$c_m(\alpha)$
S.U.
T.U.
T.L.
S.L.
5 − α° − 10
x/c

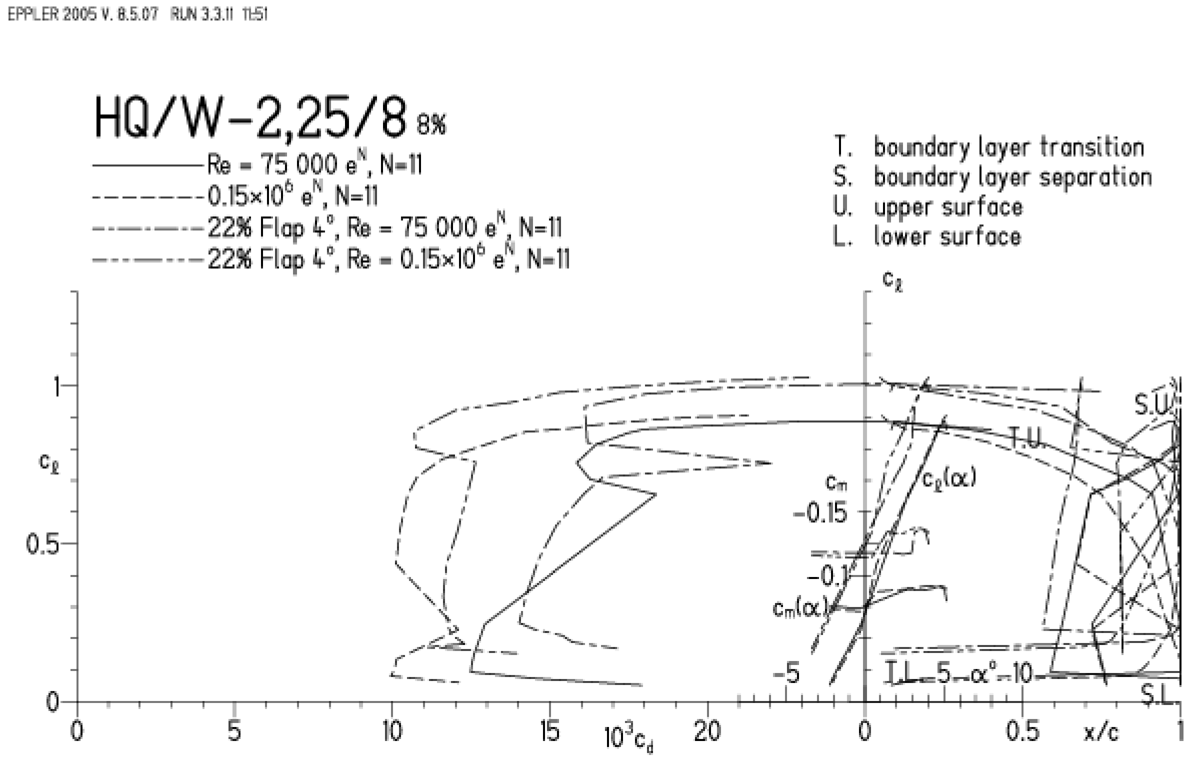
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



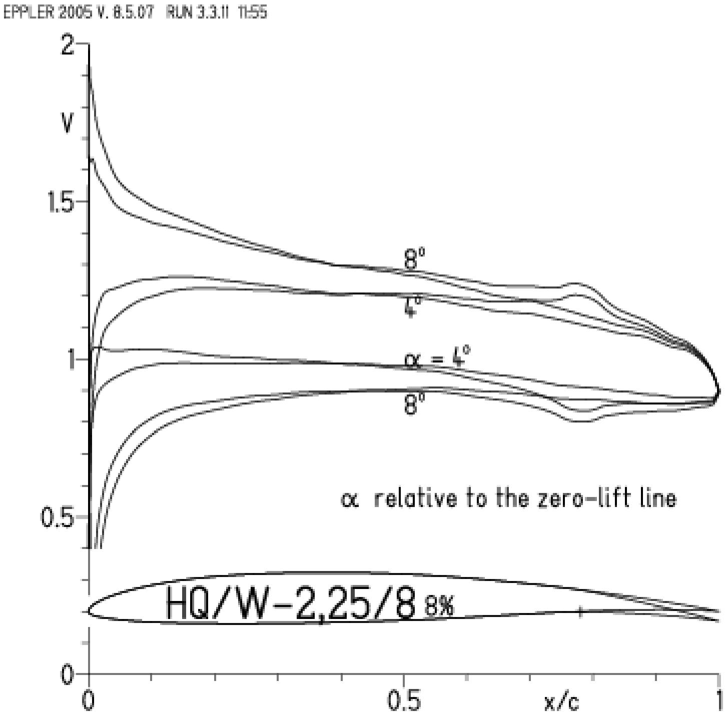


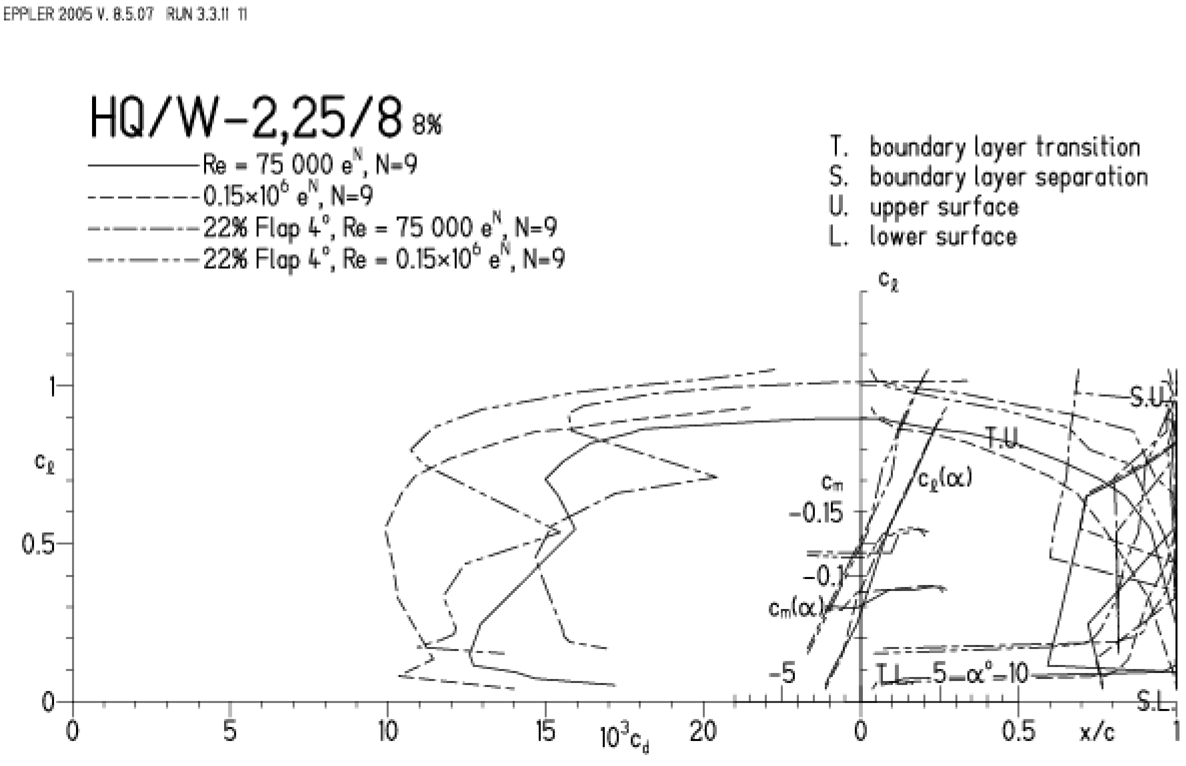
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



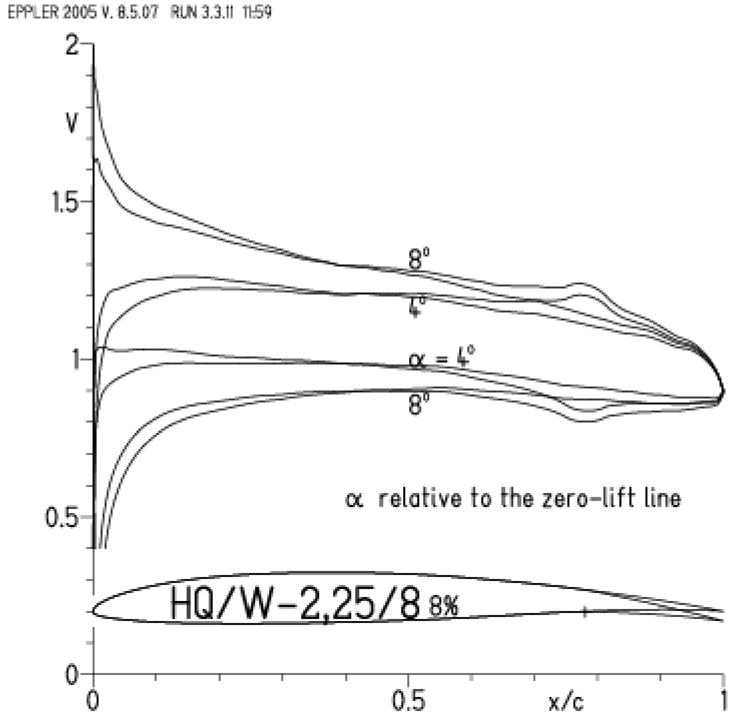


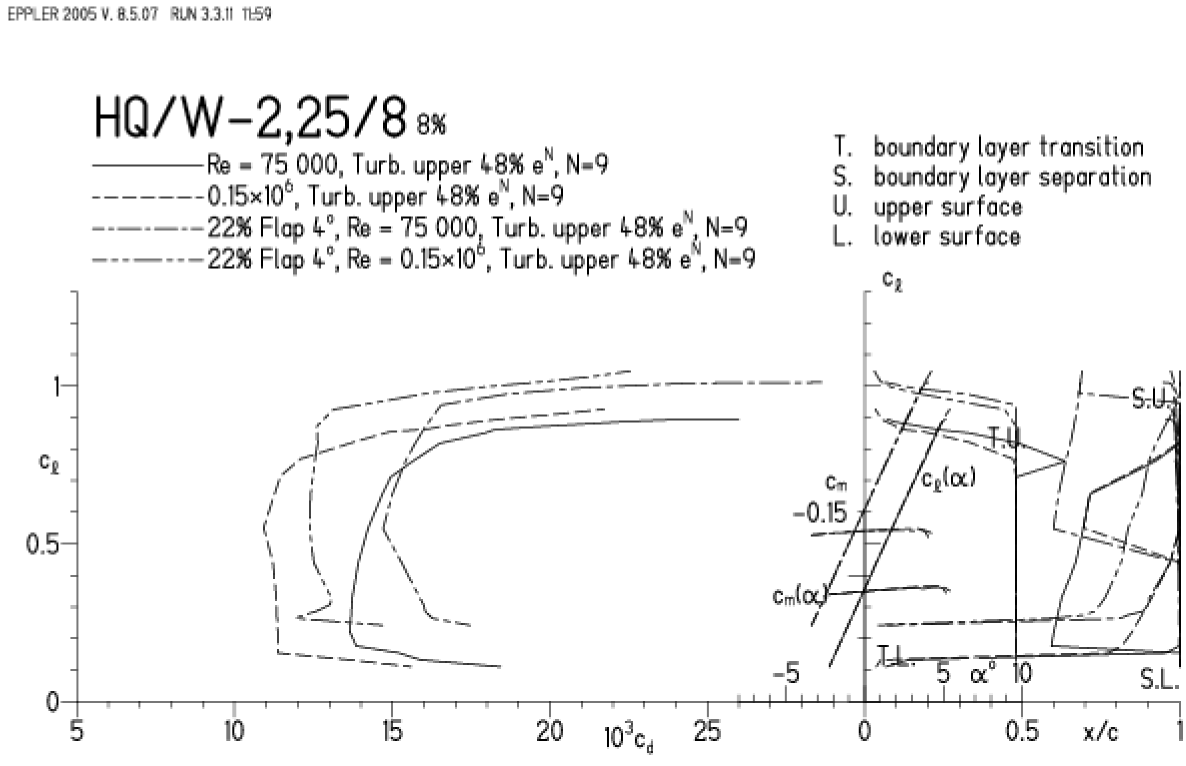
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





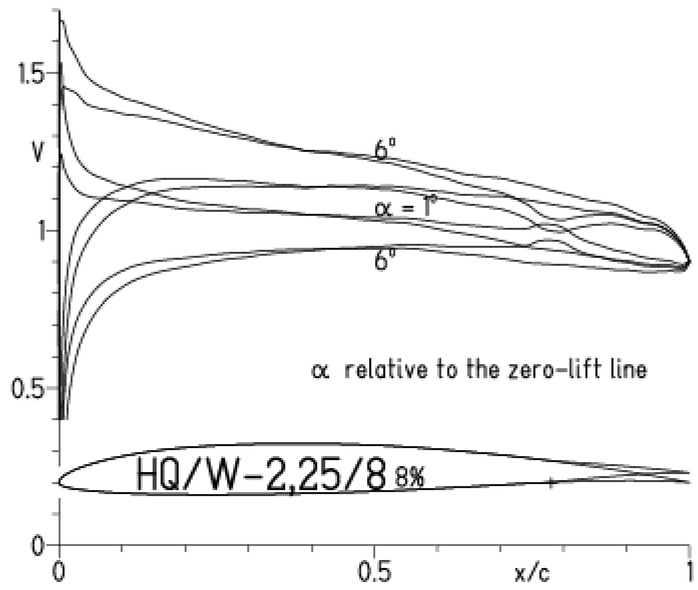
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



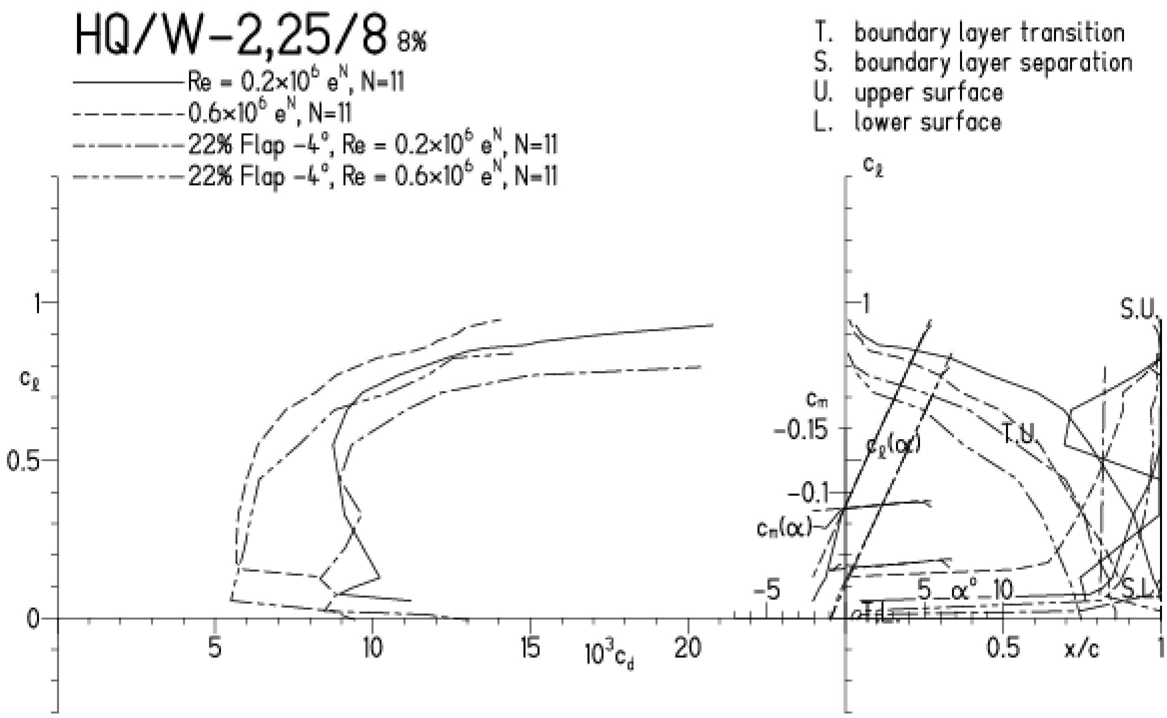


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

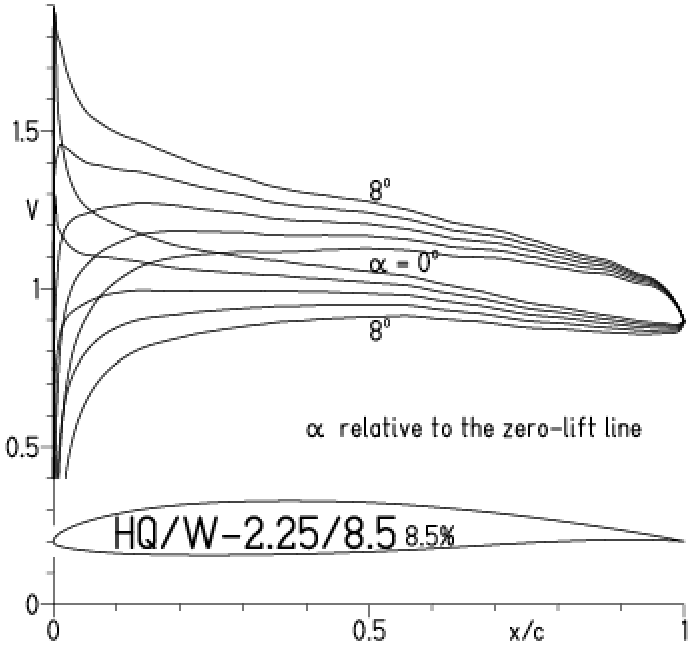


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

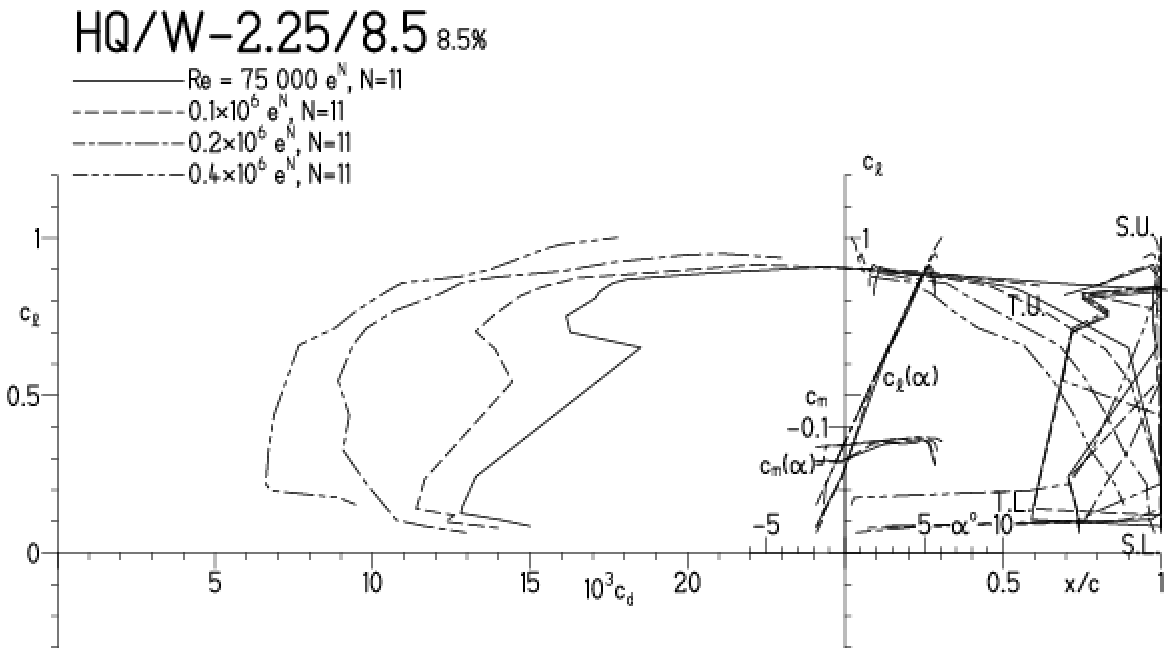


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

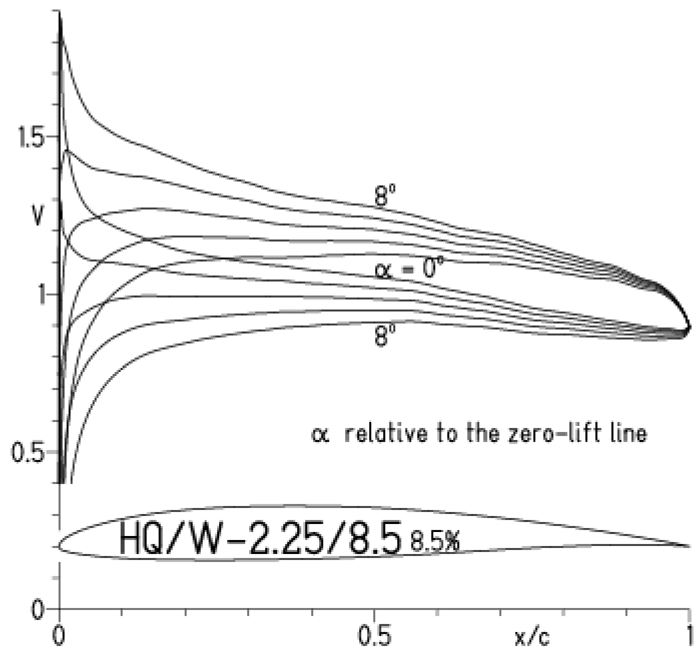


EPPLER 2005 V

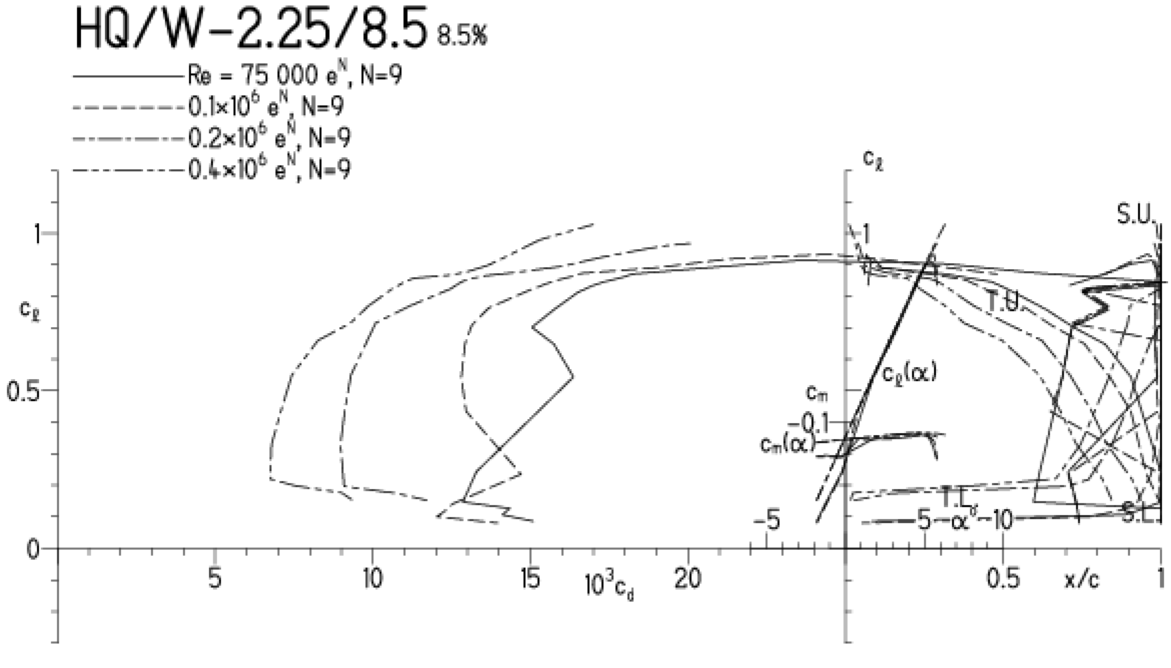


HQ/W-2,25/8,5, N=9

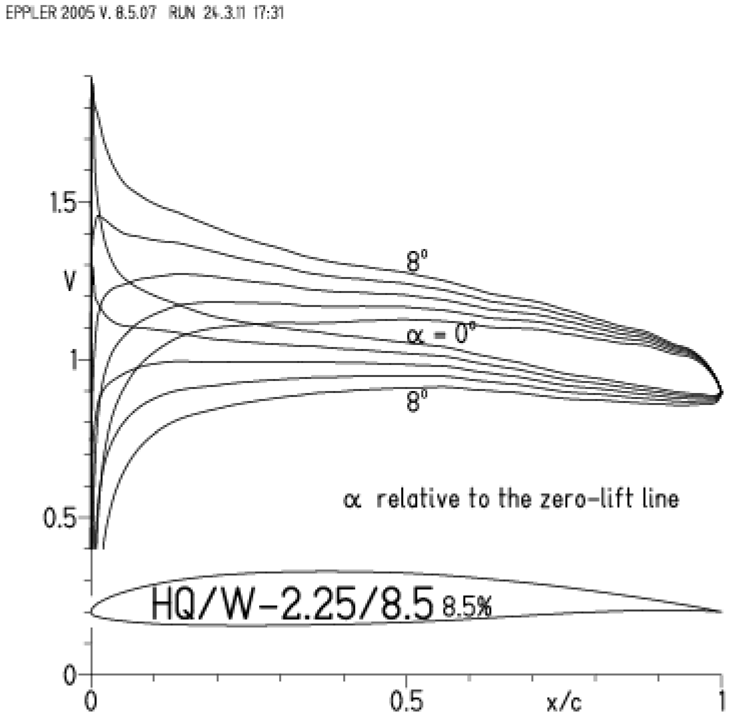
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

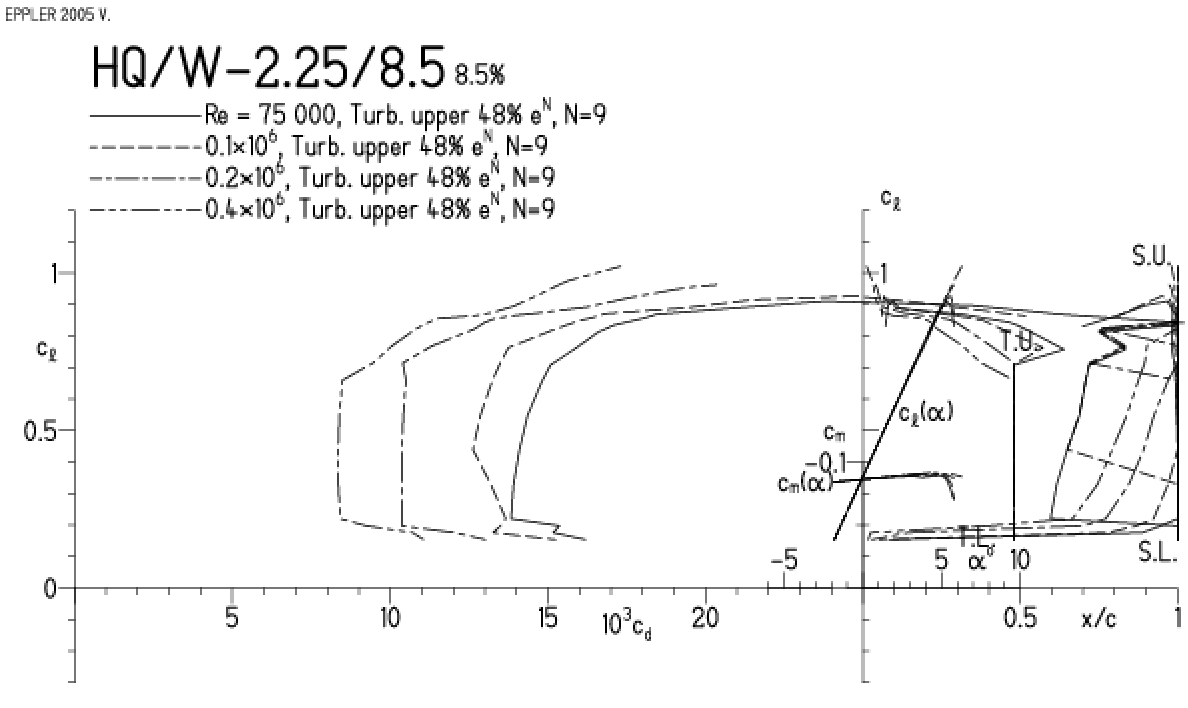


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

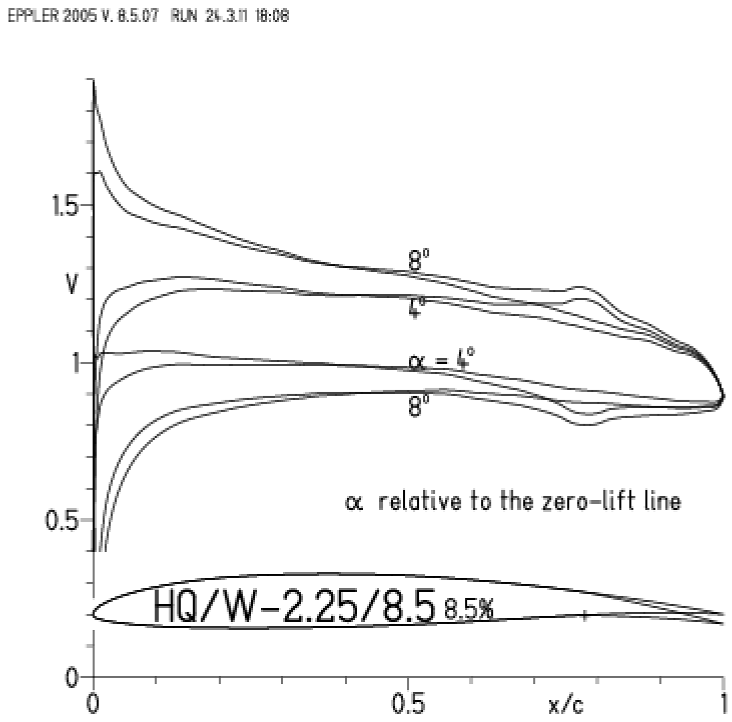


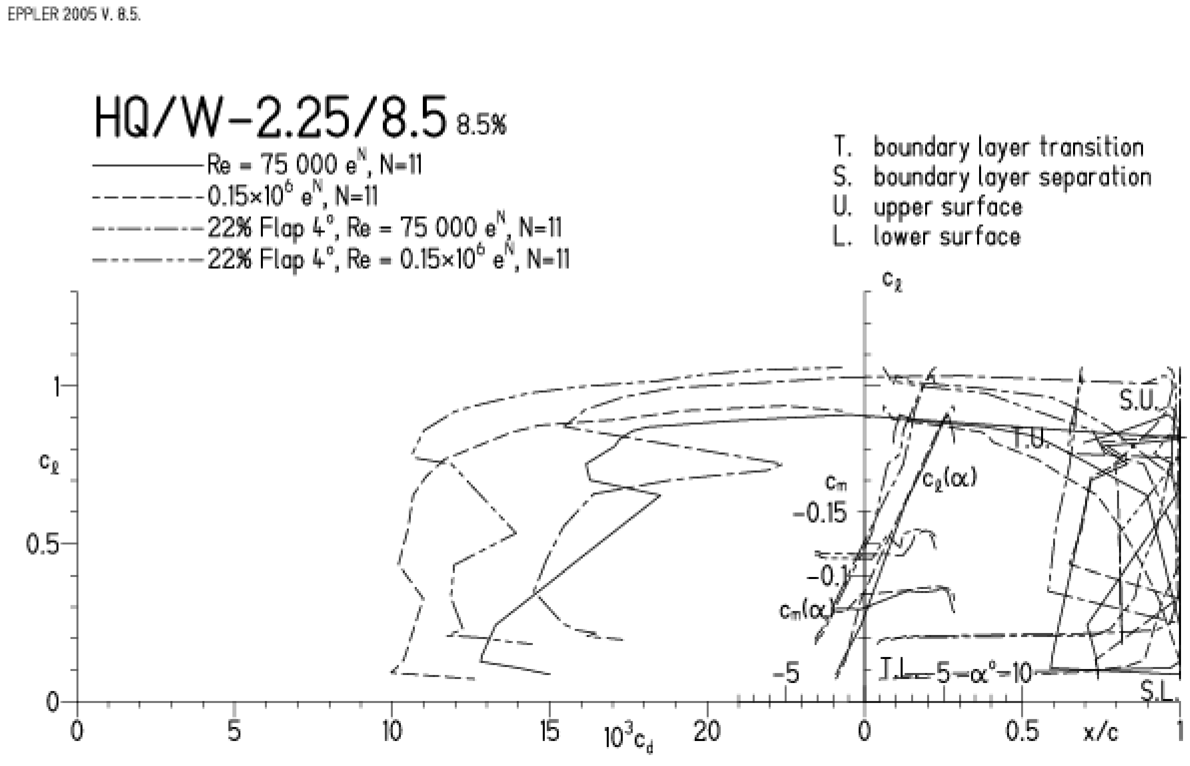
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





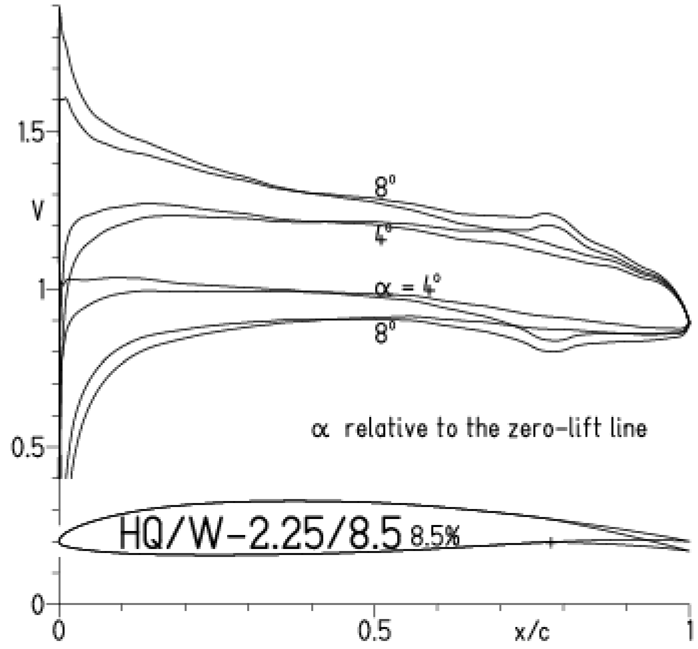
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



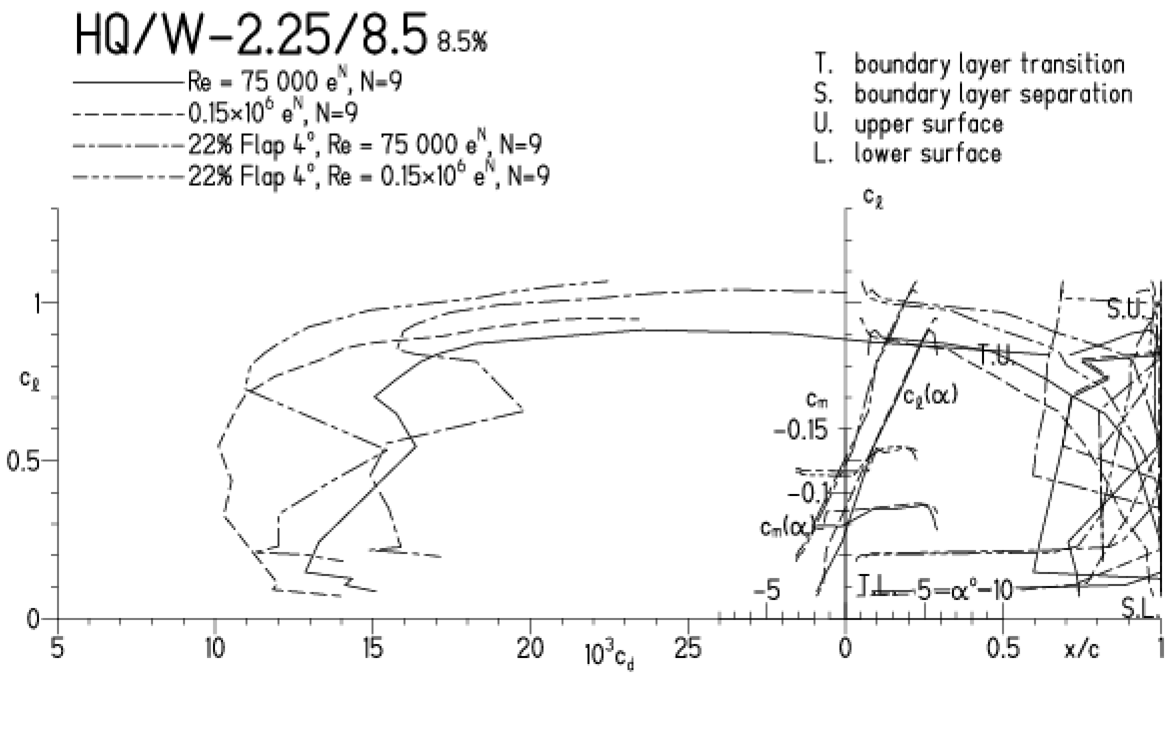


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

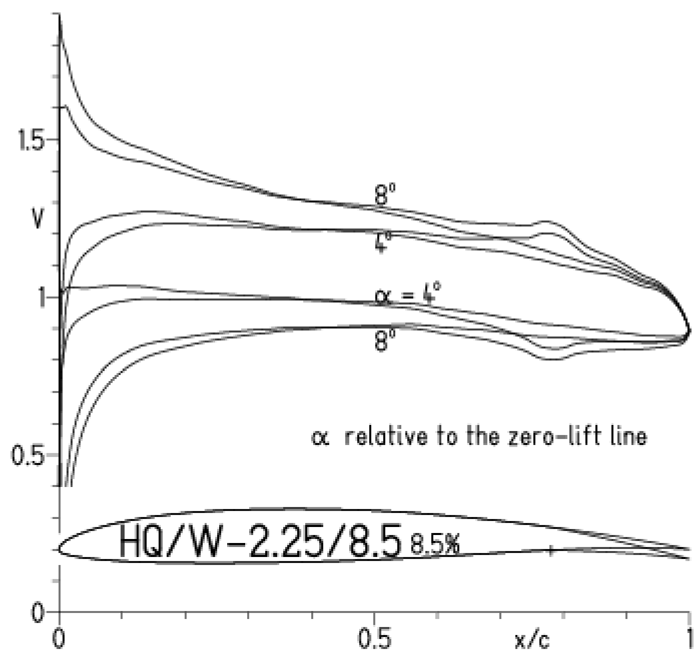


EPPLER 2005 V.

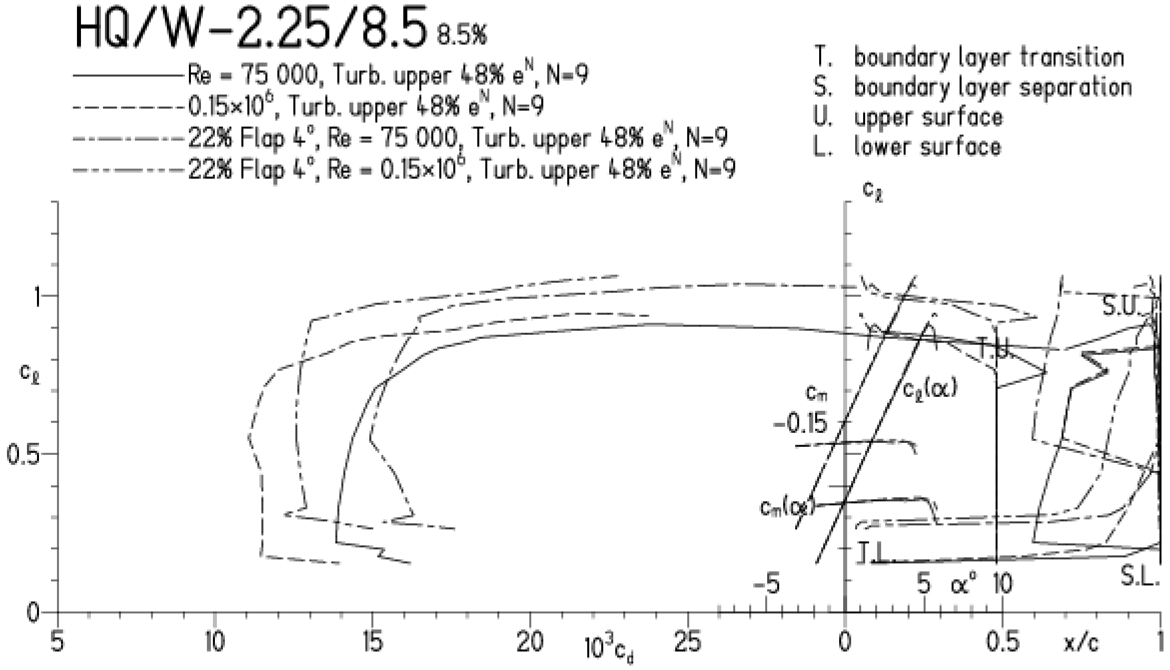


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

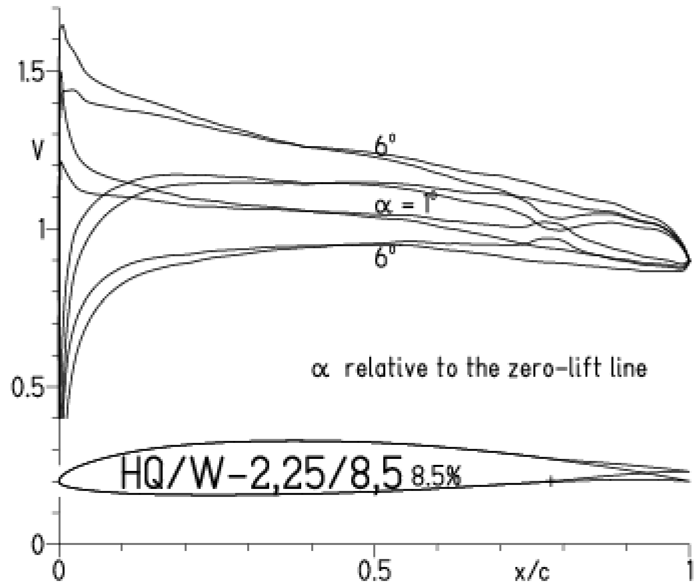


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

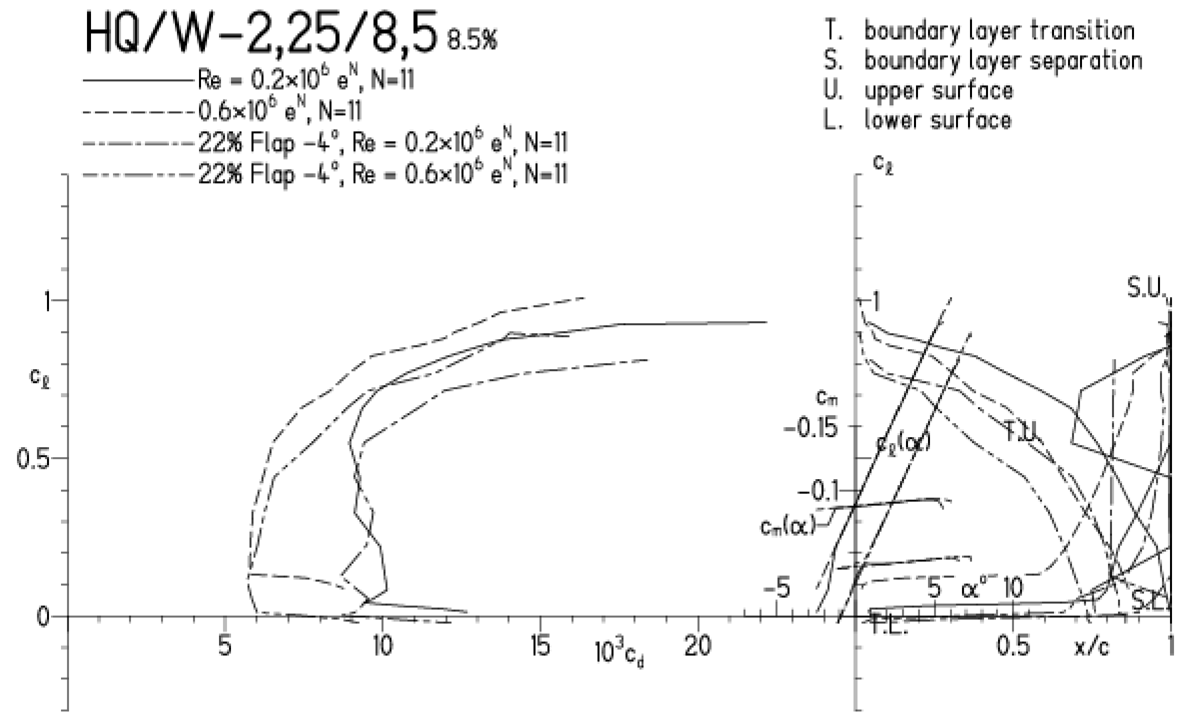


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

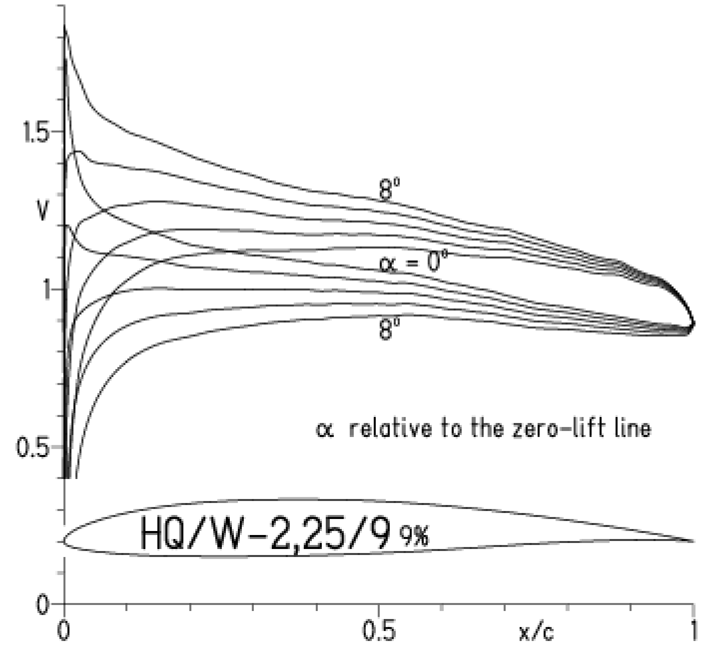


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

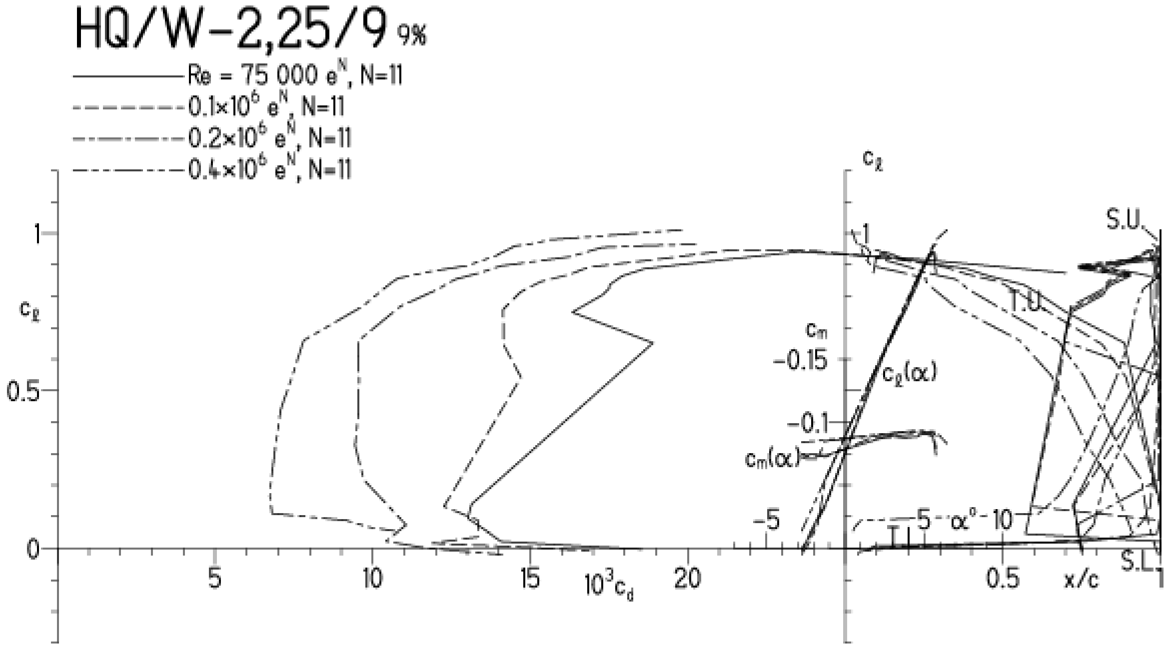


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

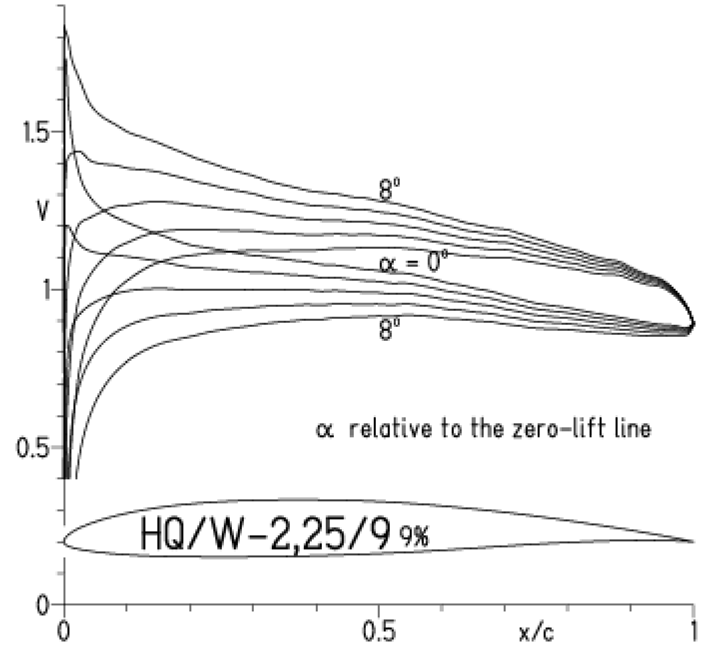


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

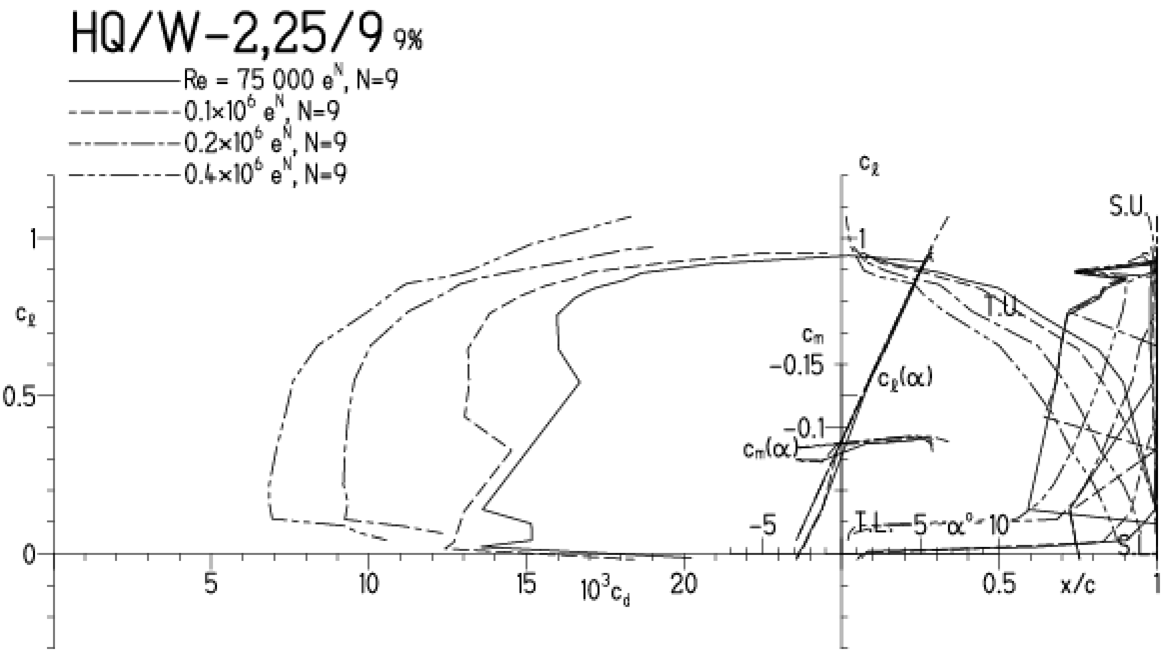


HQ/W-2,25/9, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

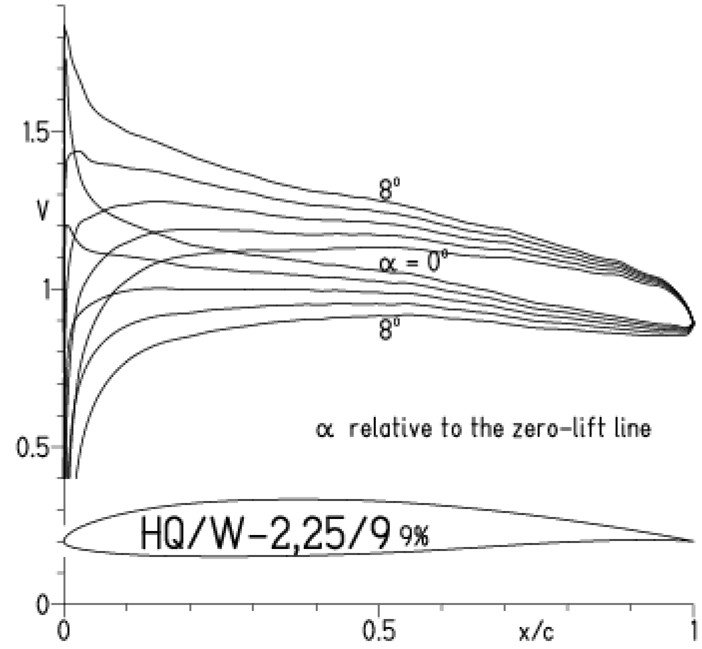


EPPLER 2005 V. 8.

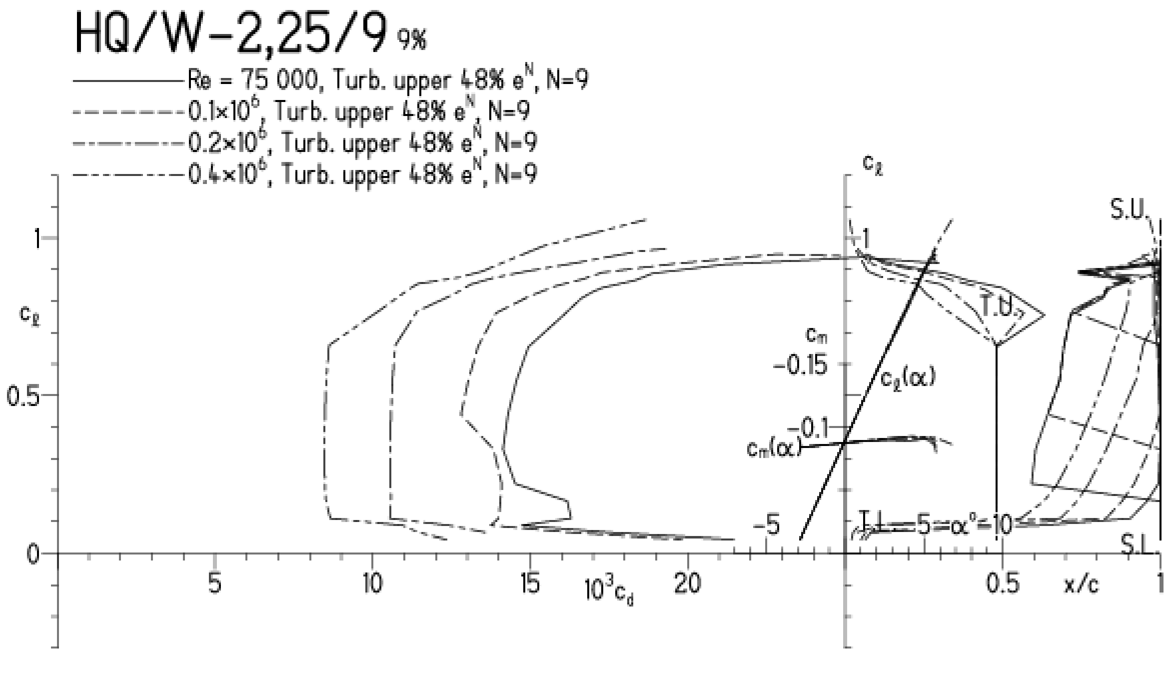


HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

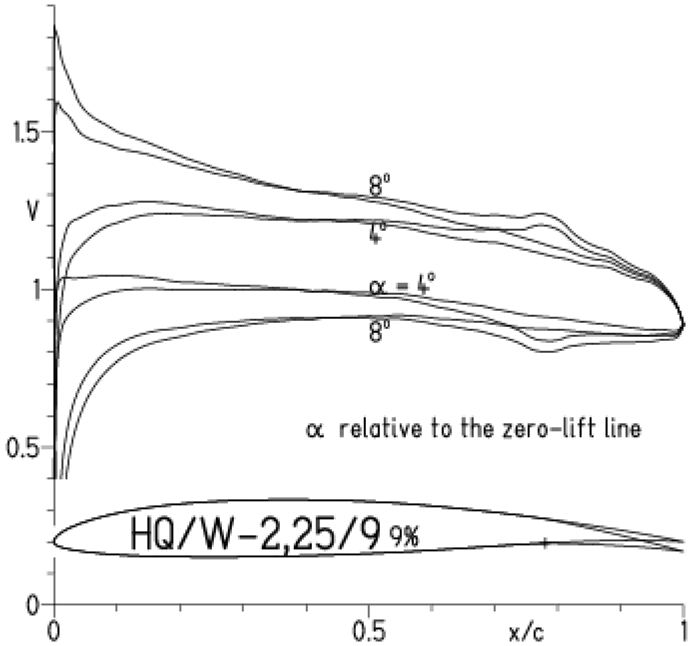


EPPLER 2005 V. 8.5.07 RUN 7

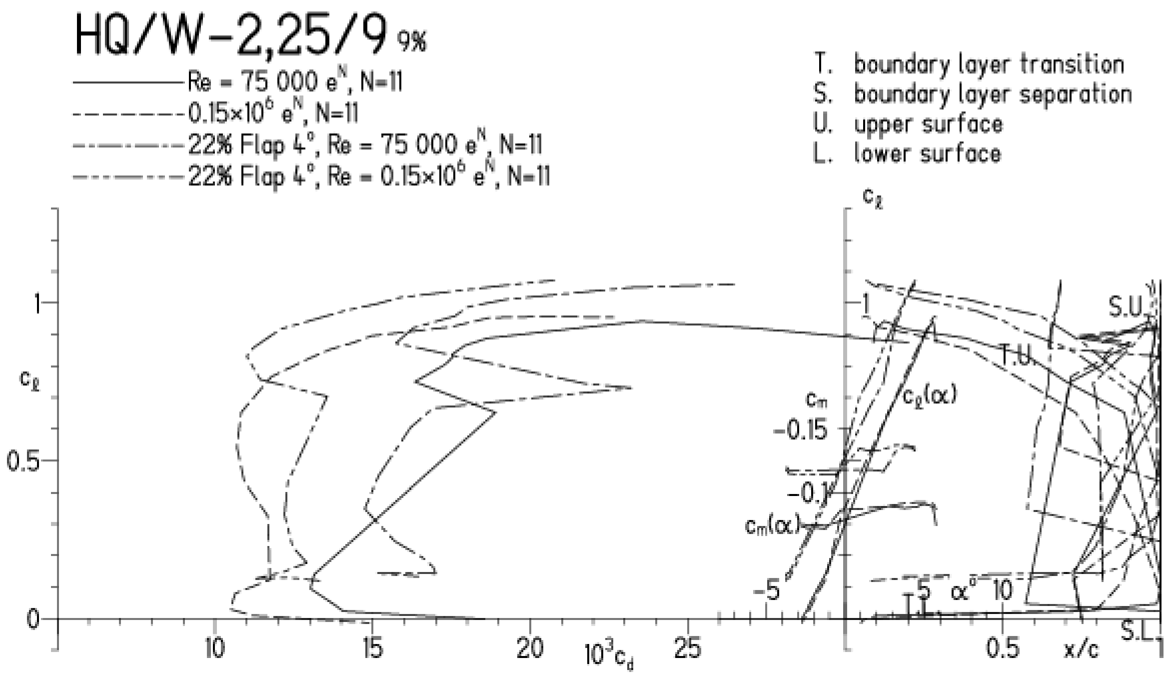


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

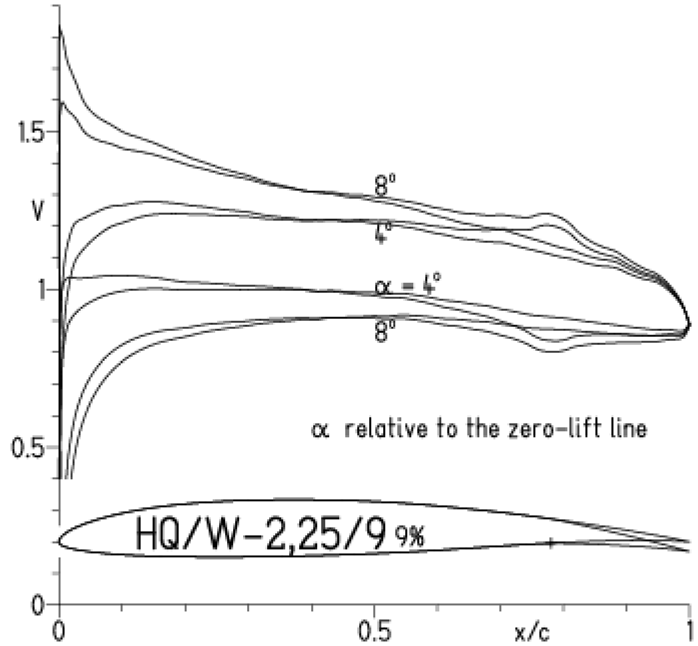


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

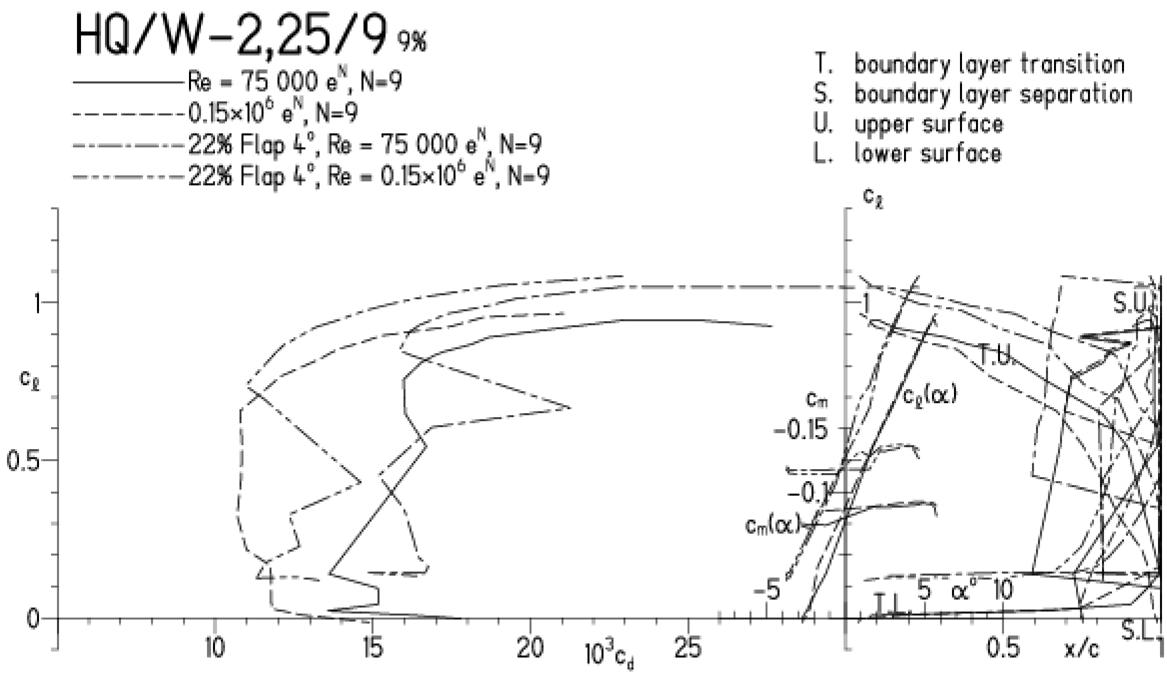


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

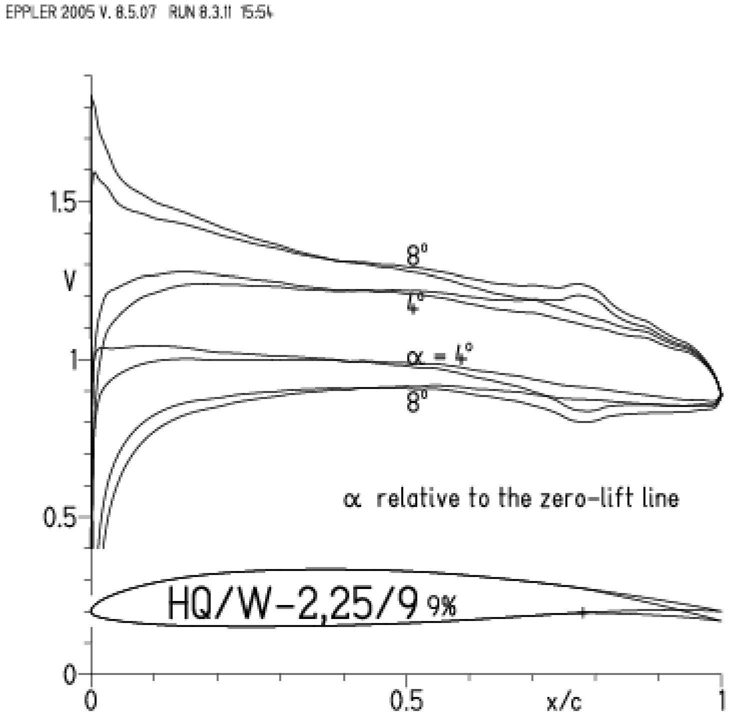
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

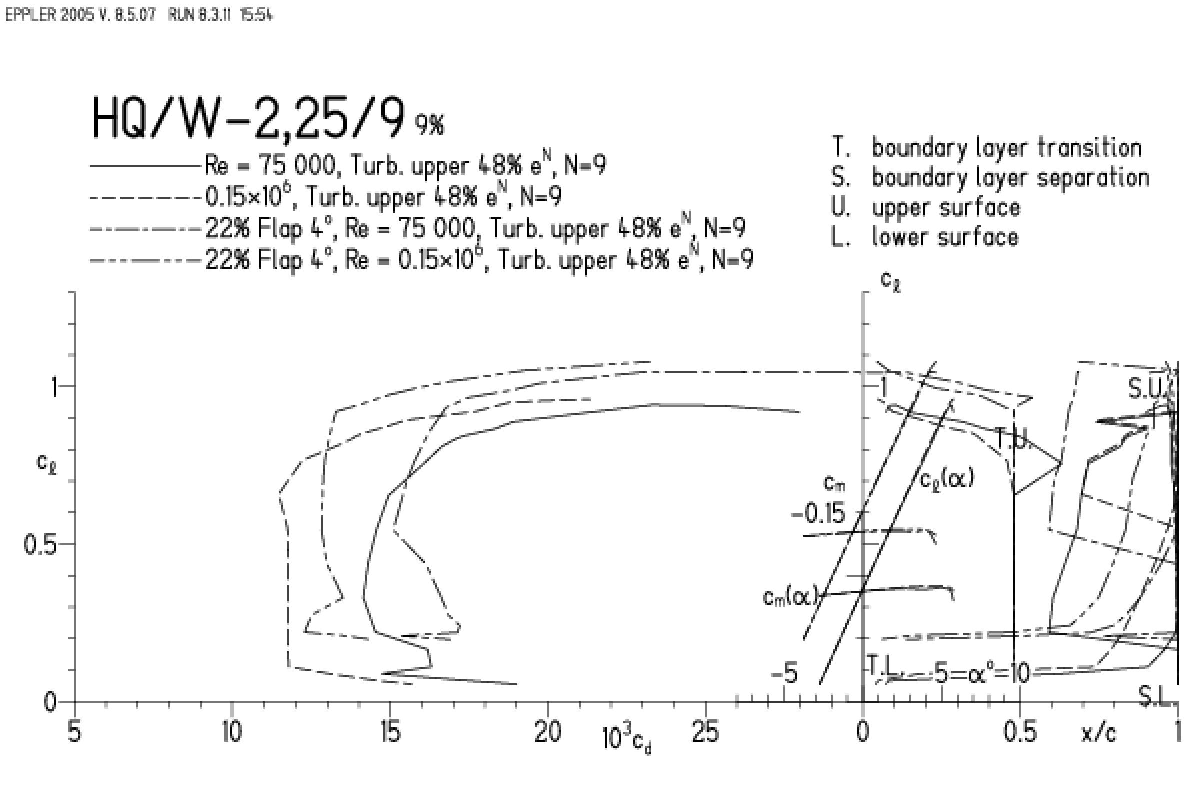


EPPLER 2005 V. 8.5.07 RUN 8.3.1

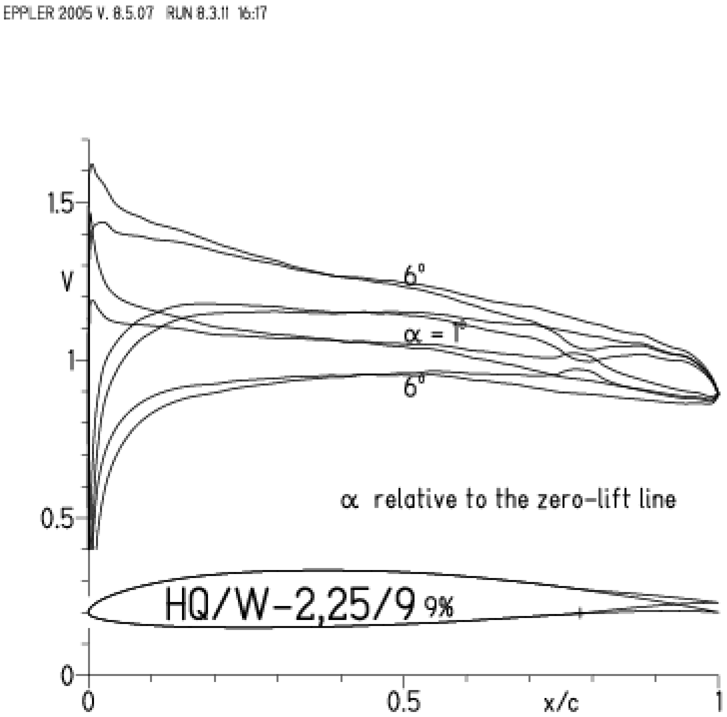


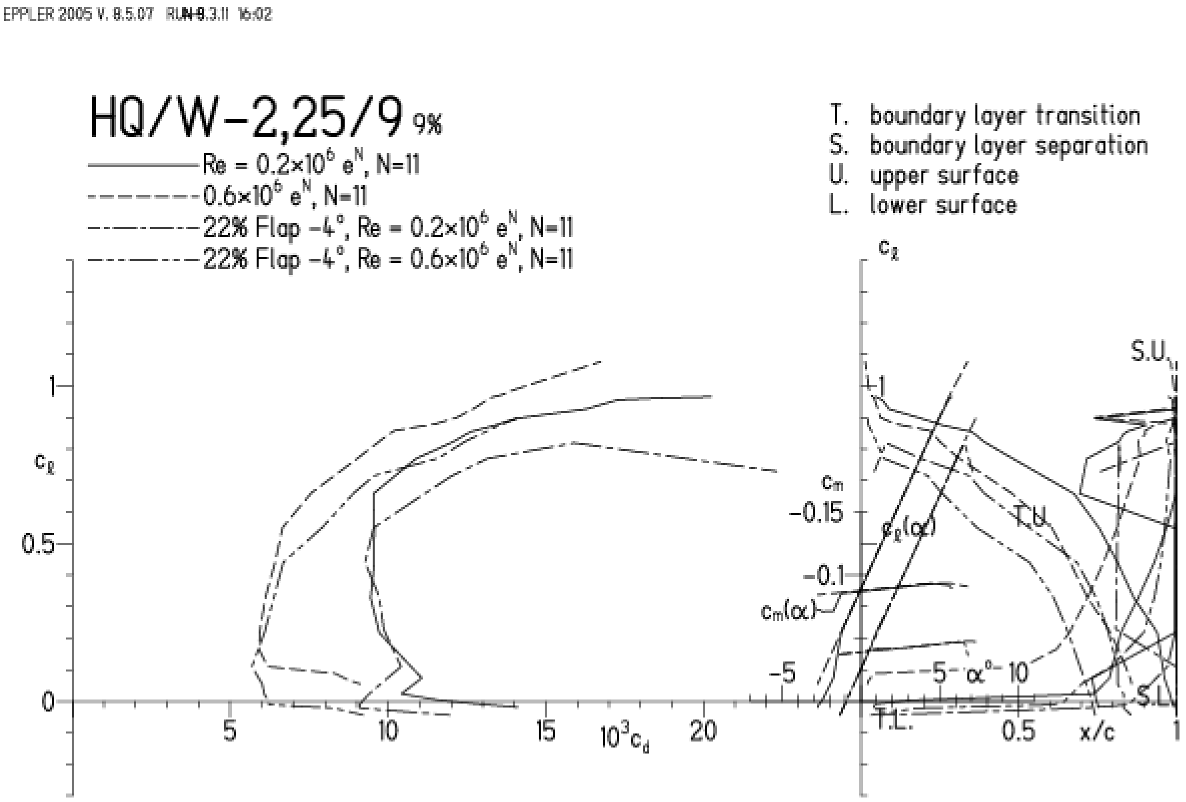
<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



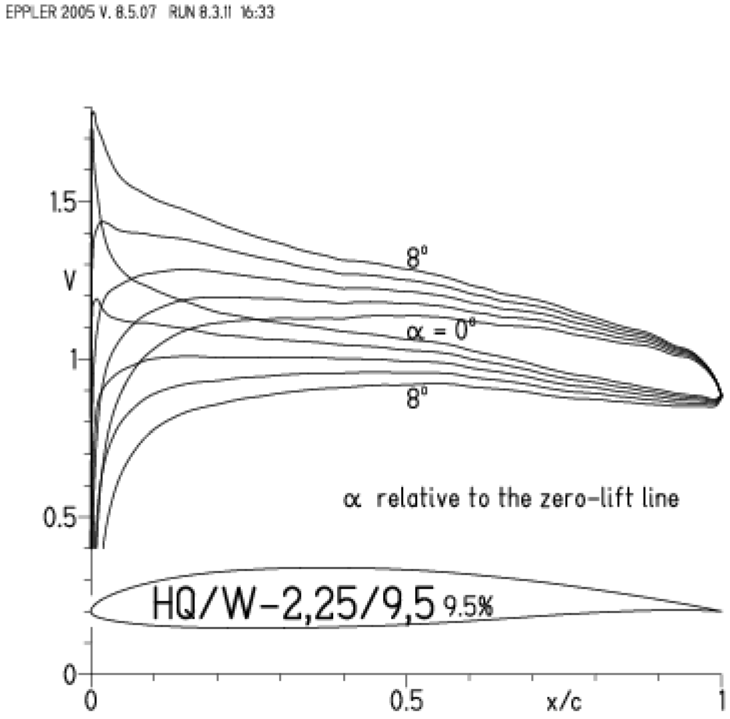


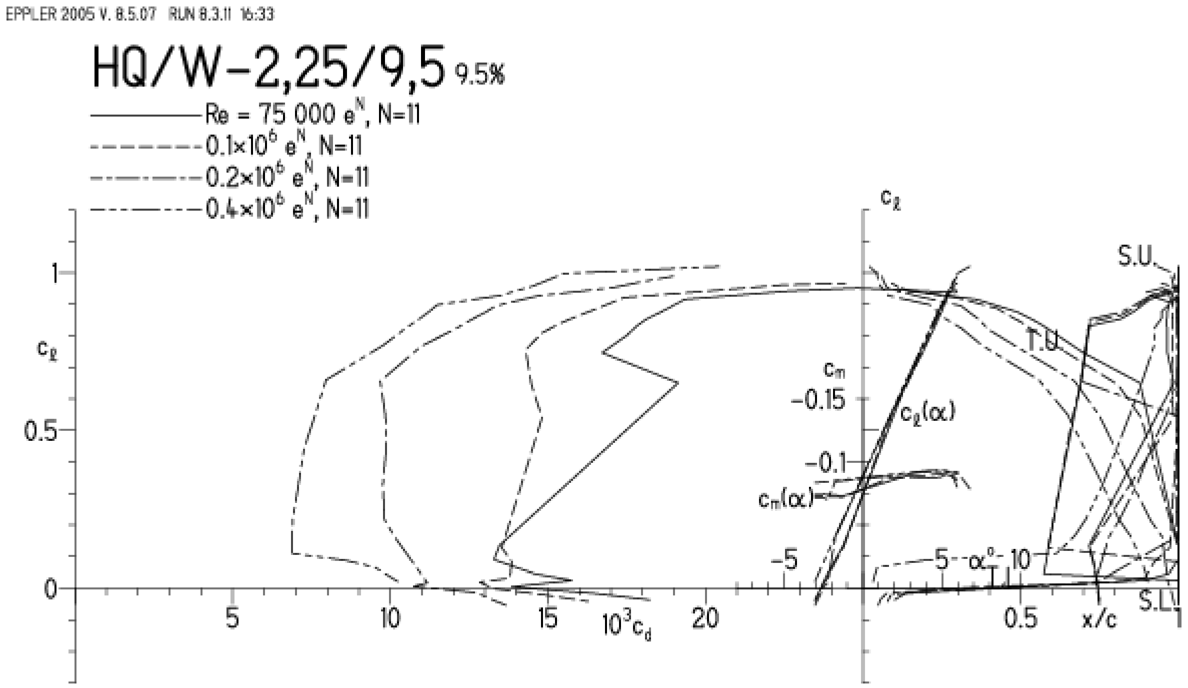
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





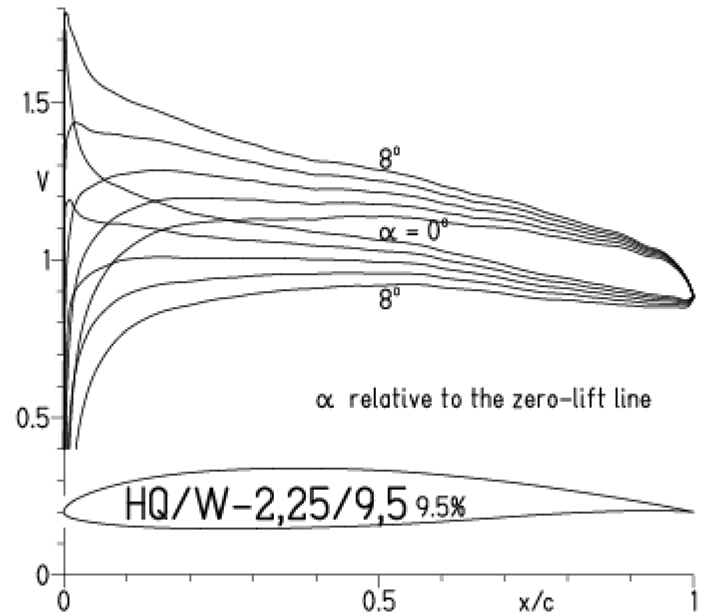
HQ/W-2,25/9,5, N=11



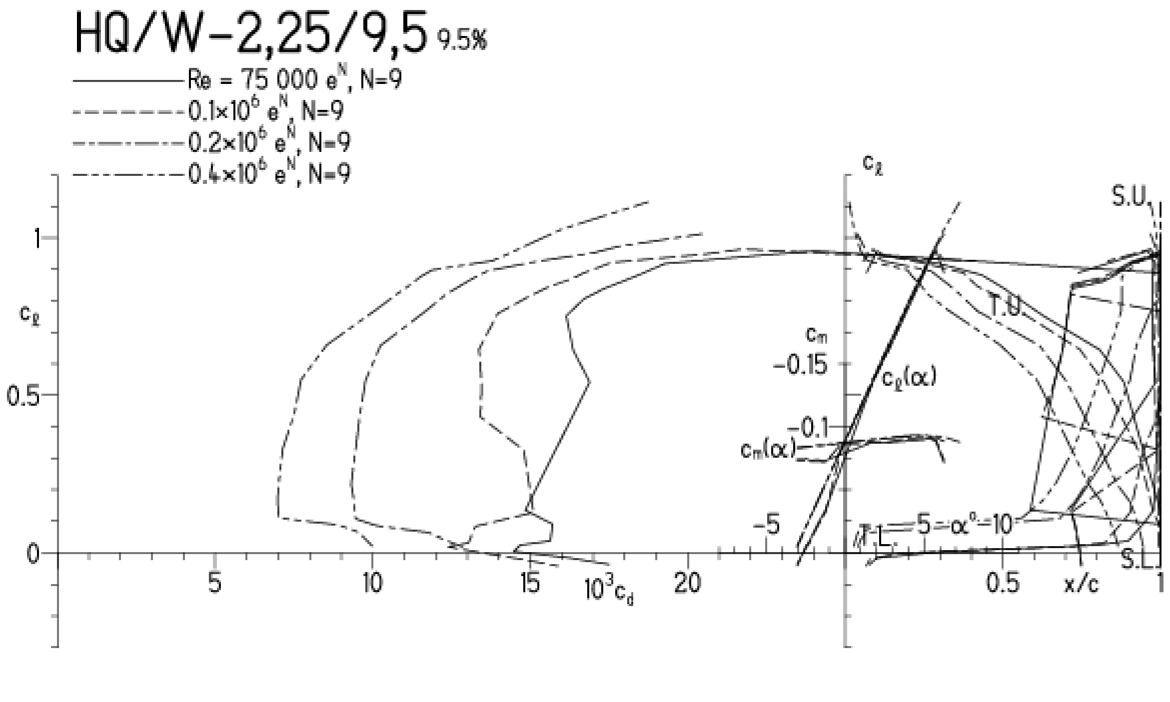


<u>HQ/W-2,25/9,5</u>, N=9

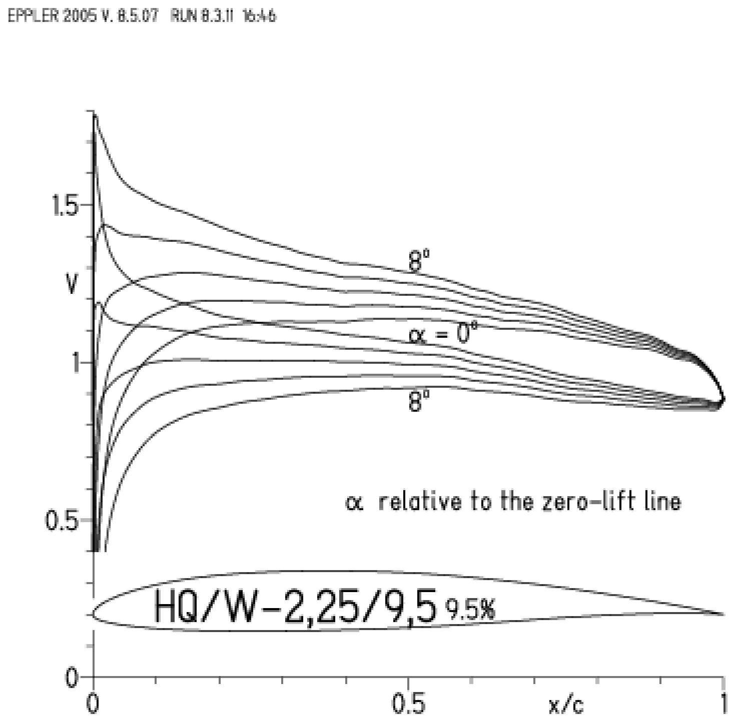
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

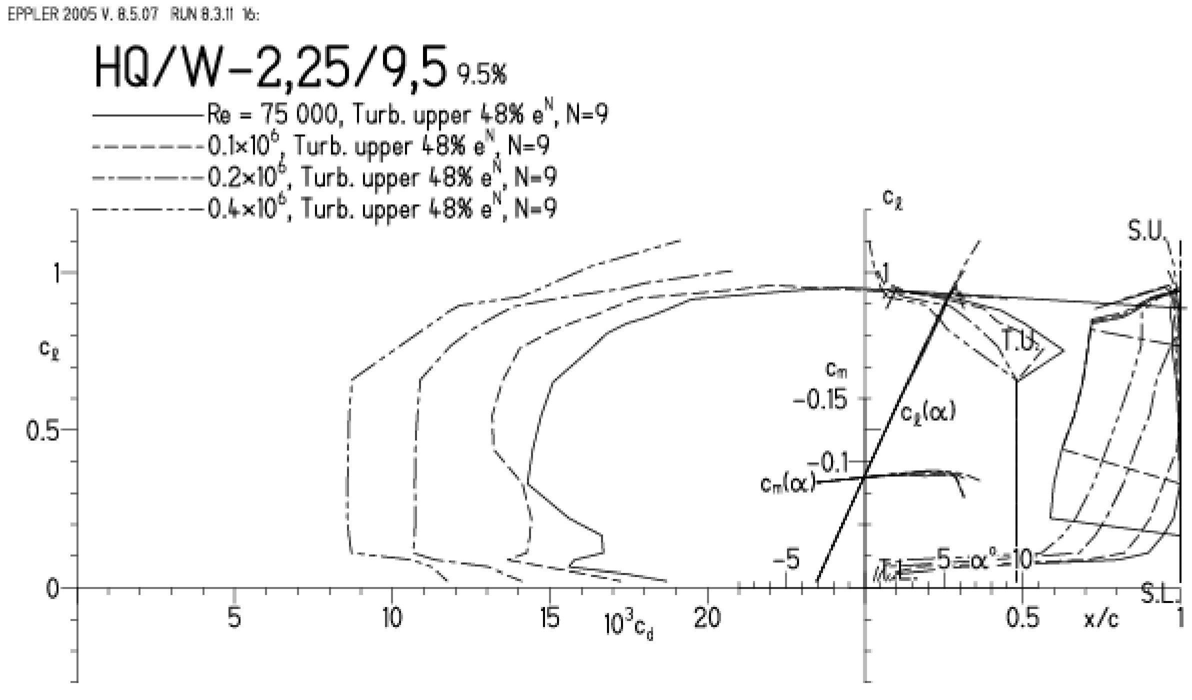


EPPLER 2005 V. 8.5.07 RUN 8.3.



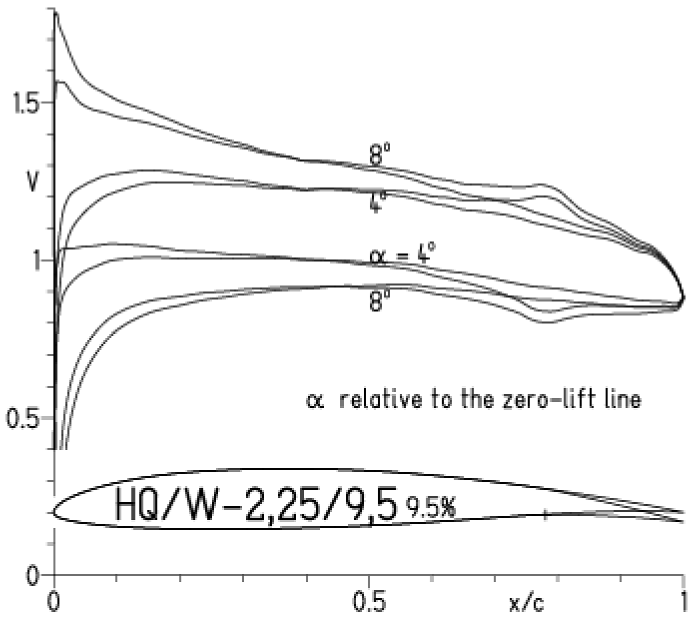
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



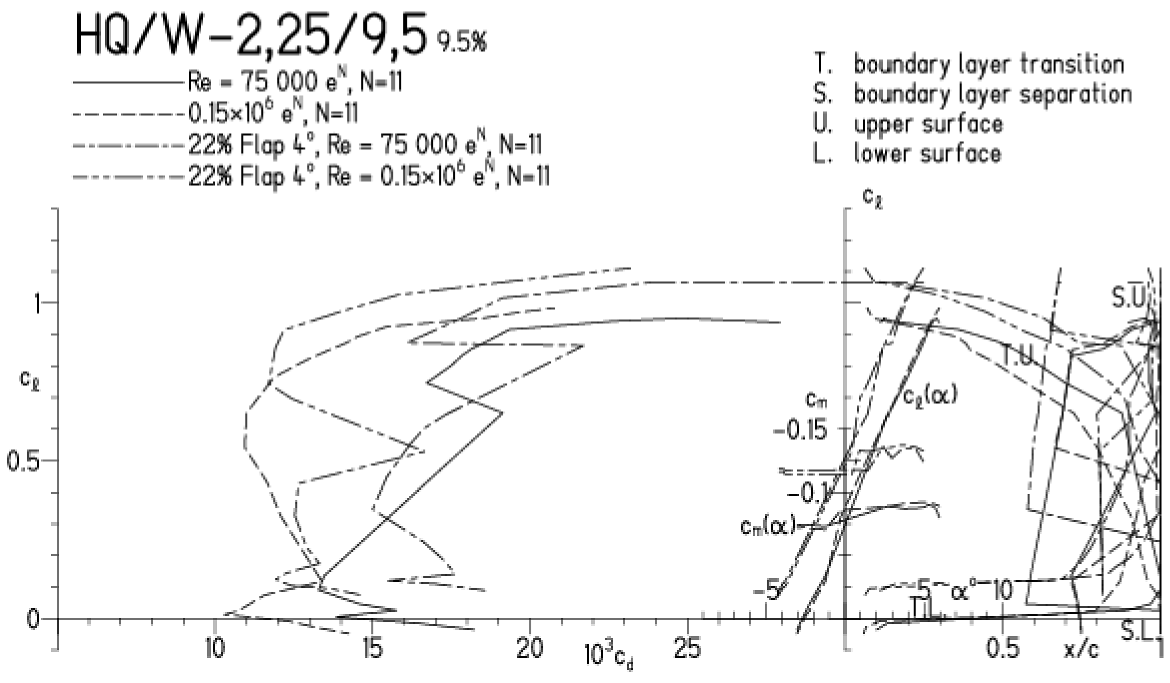


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

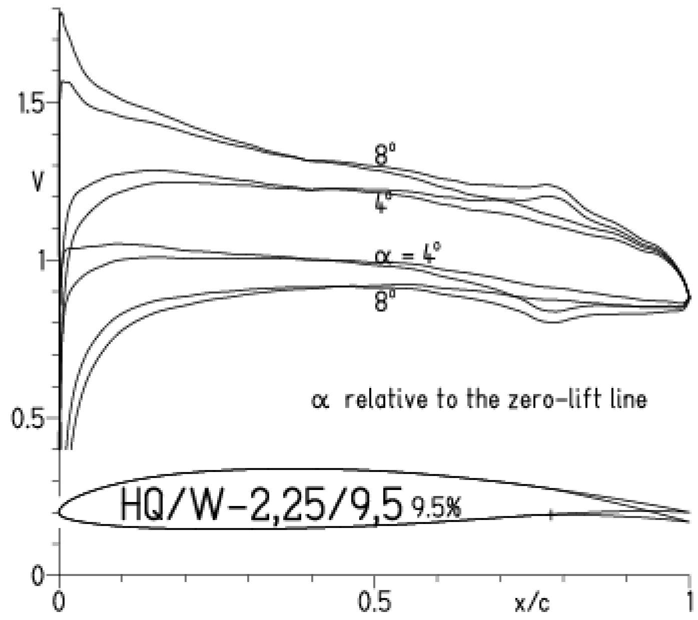


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

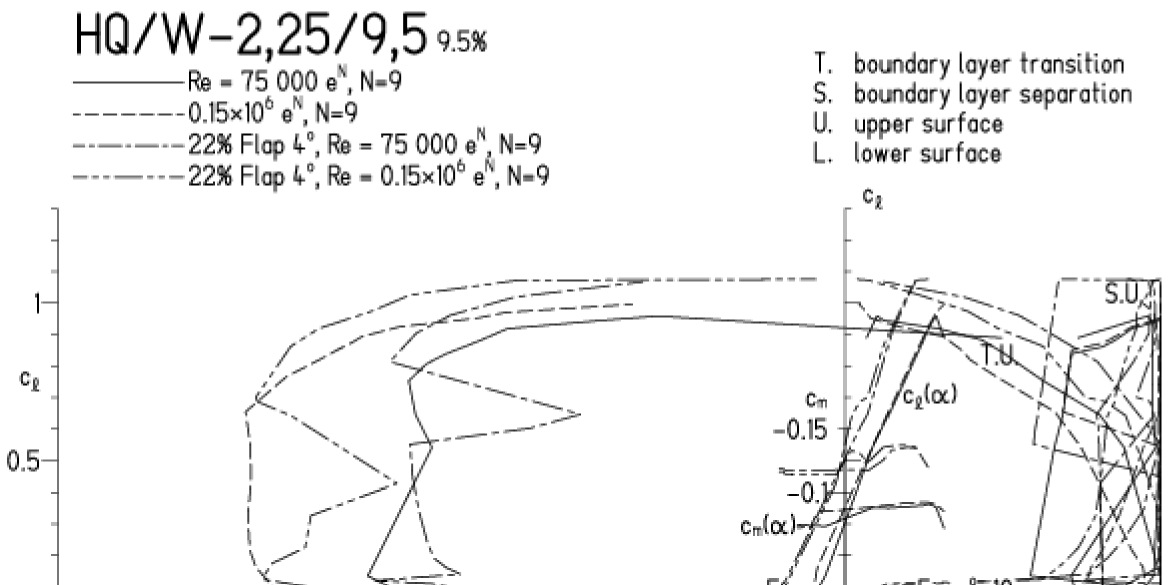


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

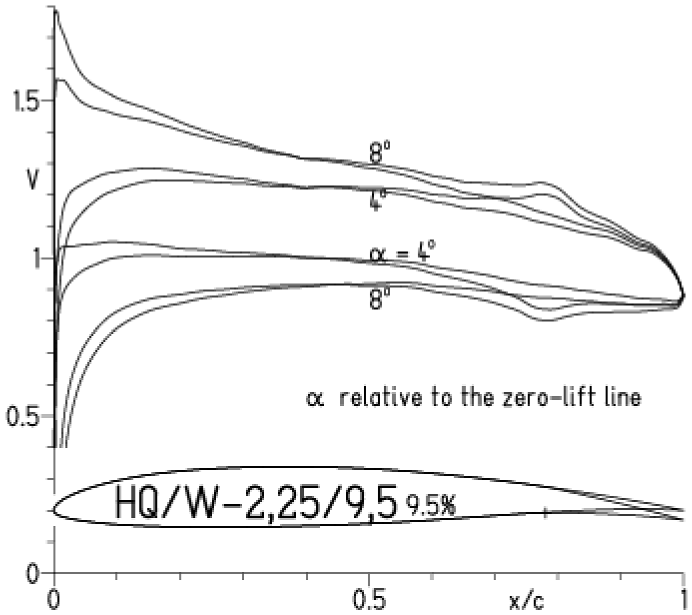


EPPLER 2005 V. 8.5.07 R

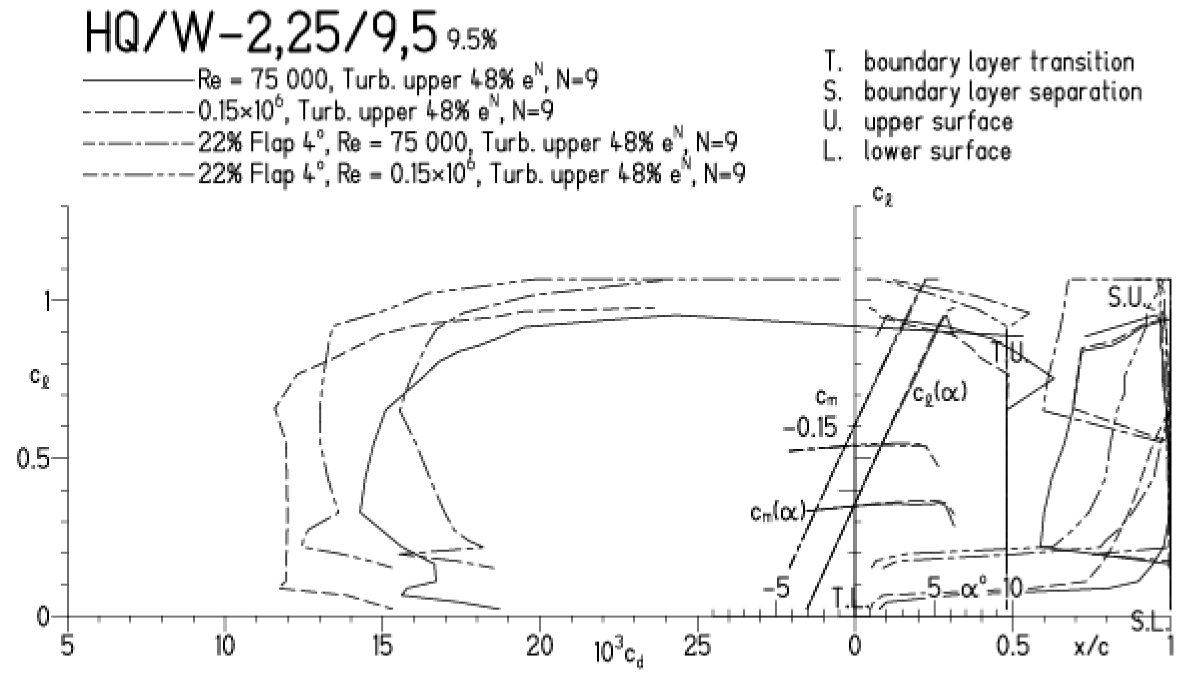


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

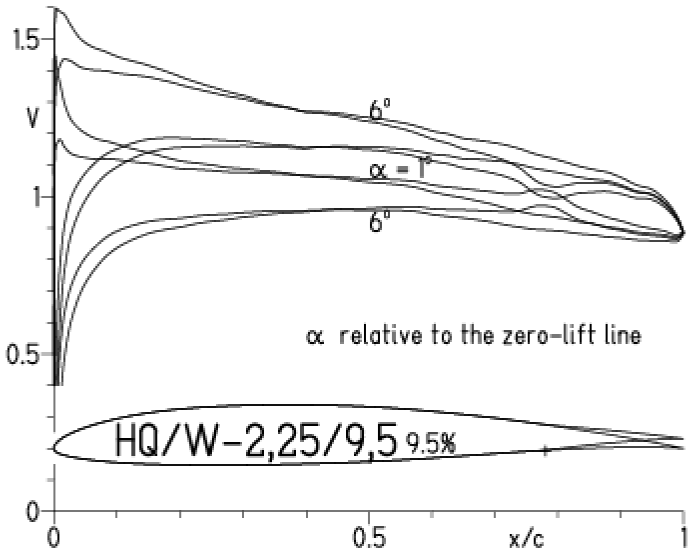


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

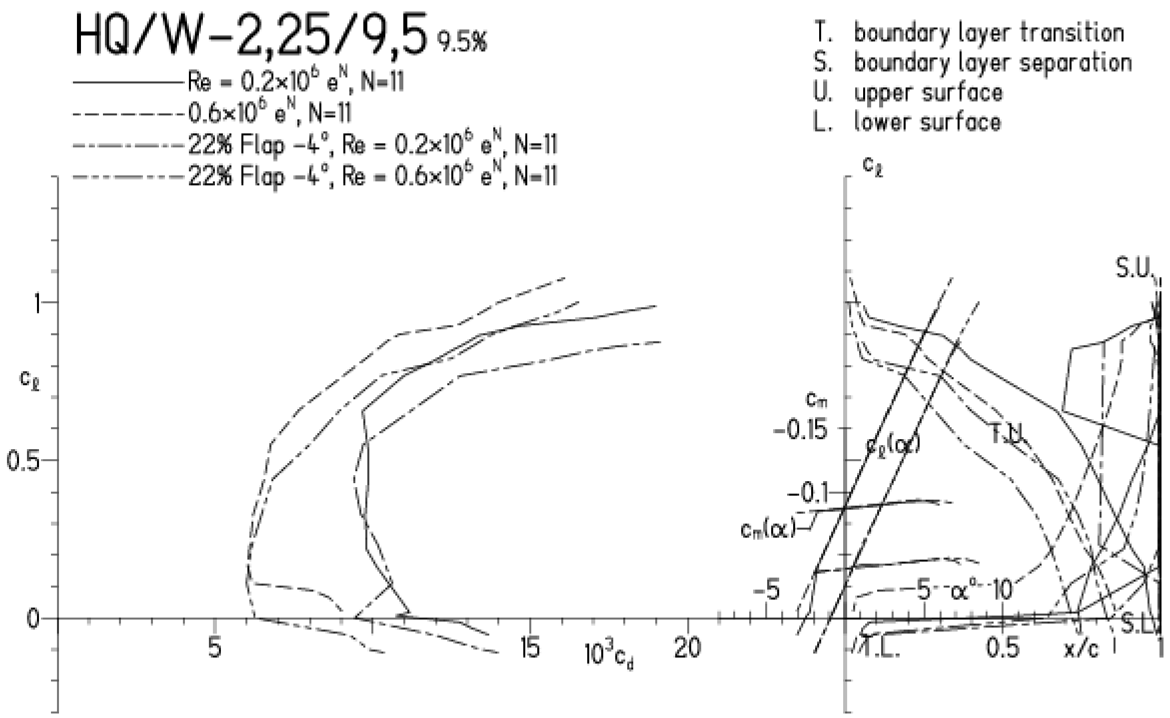


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

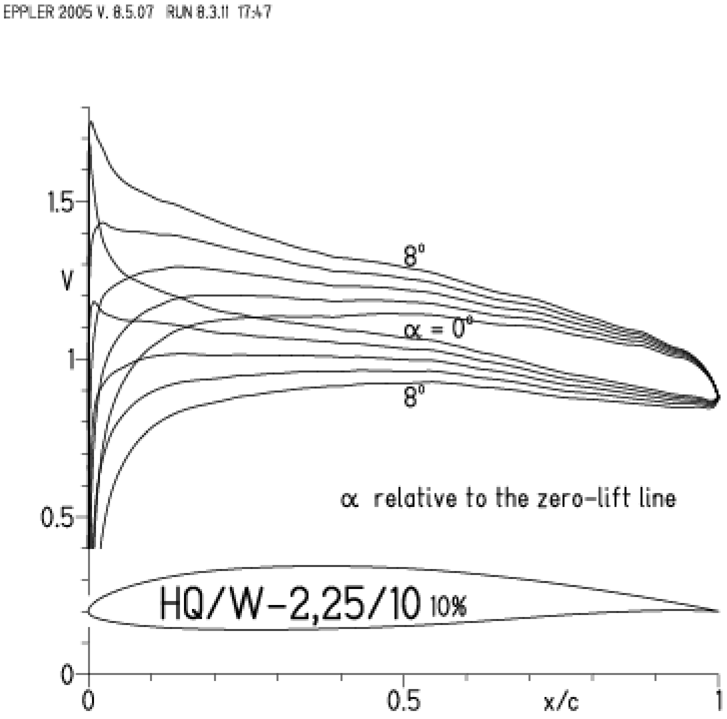
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

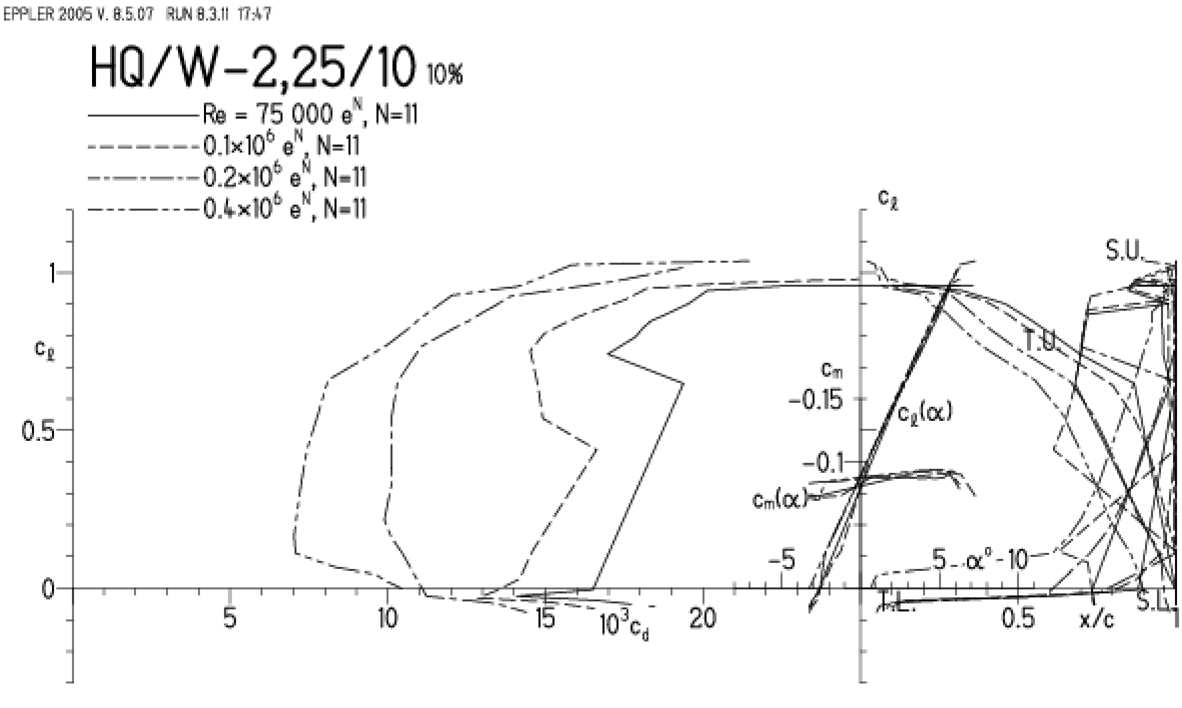


EPPLER 2005 V.



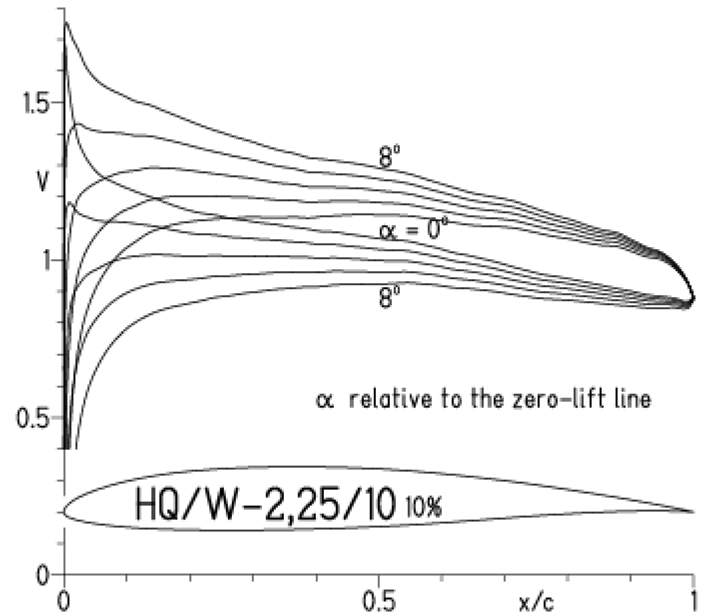
<u>HQ/W-2,25/10</u>, N=11



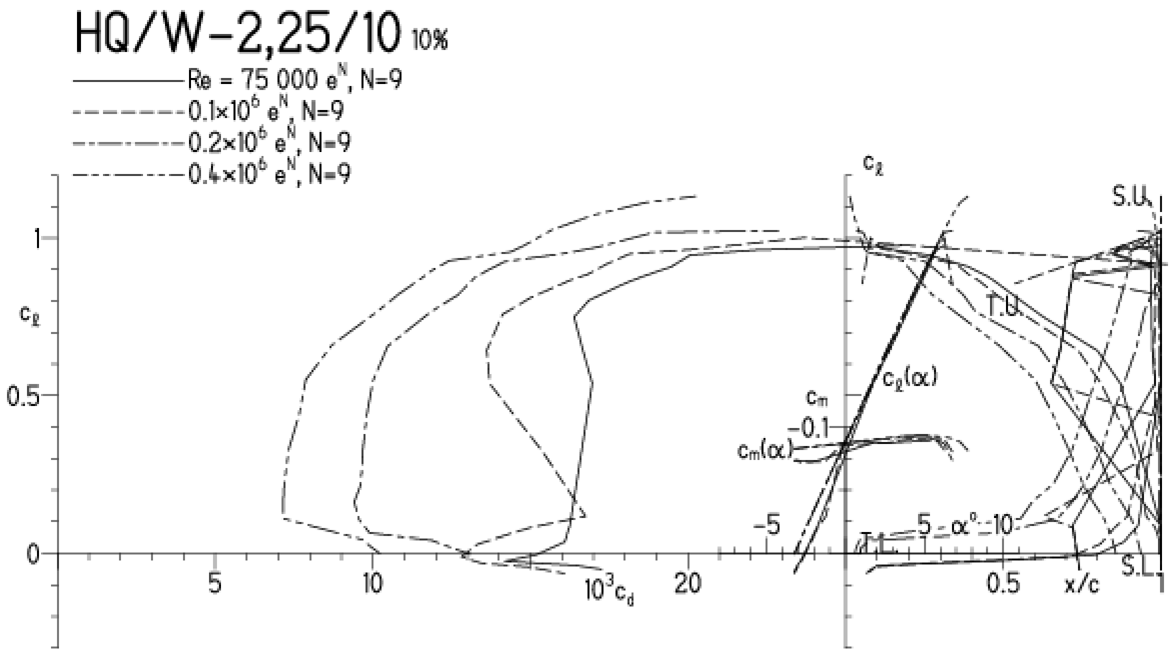


HQ/W-2,25/10, N=9

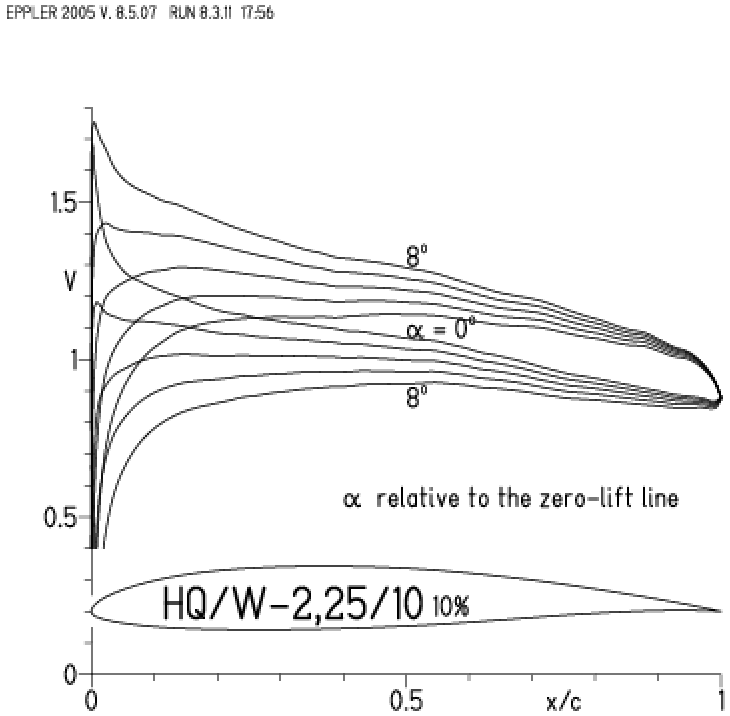
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

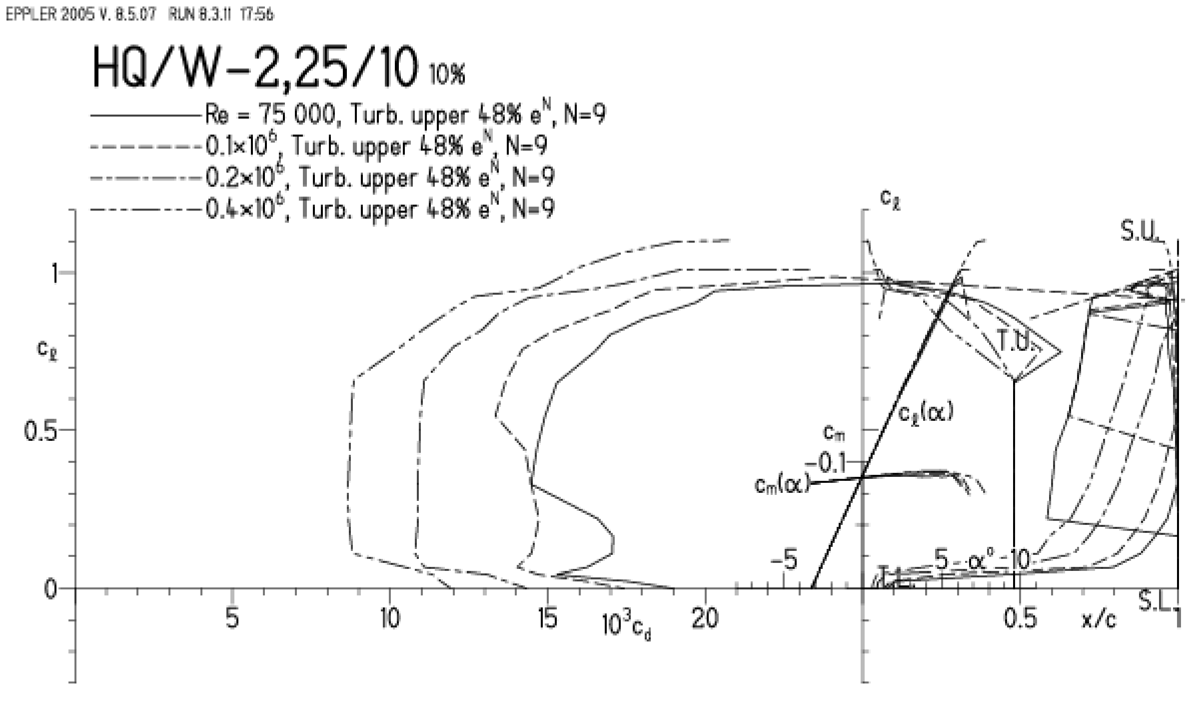


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



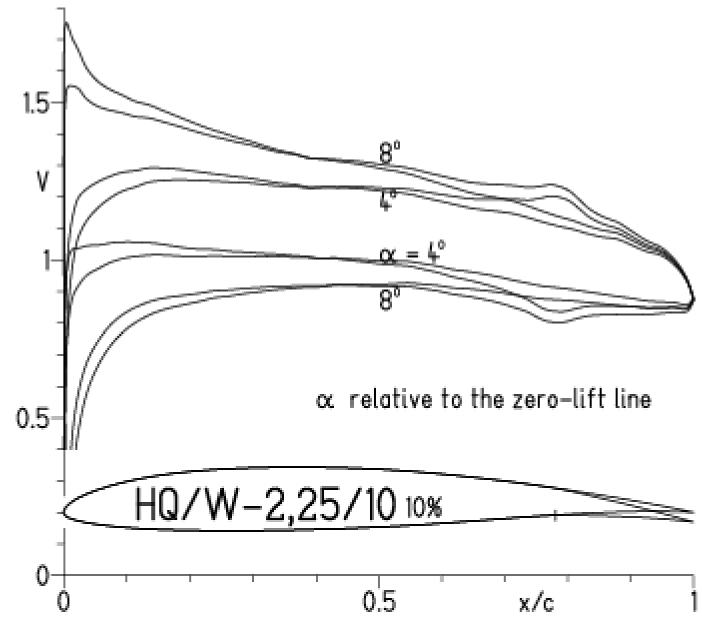
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



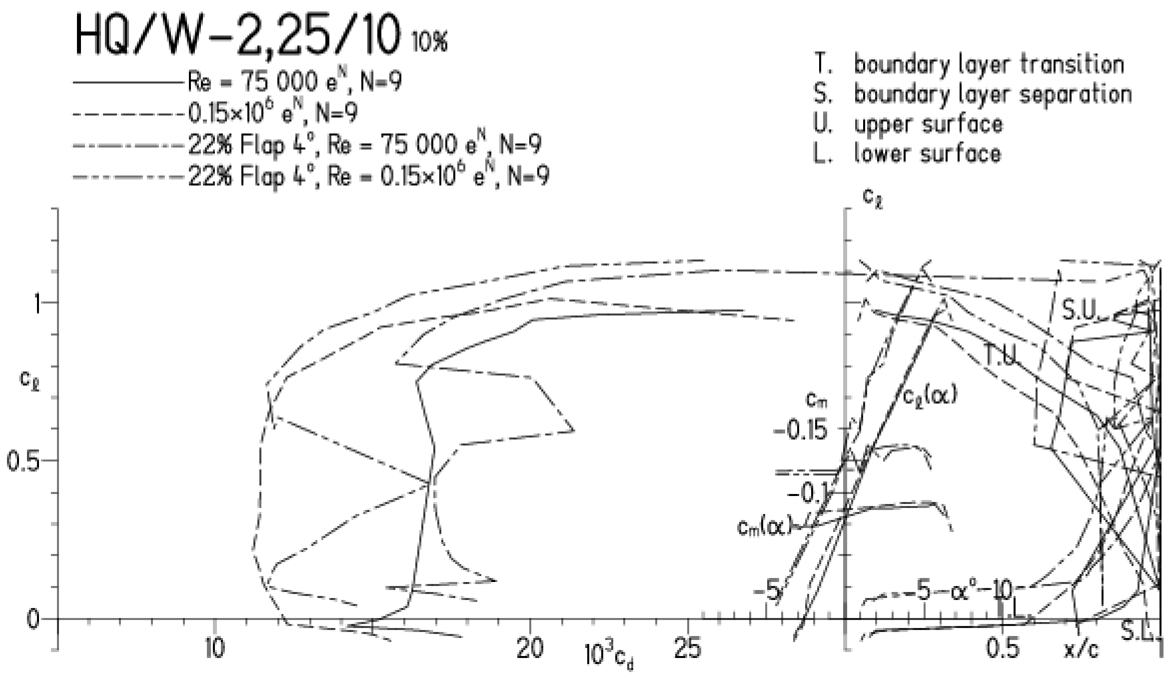


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

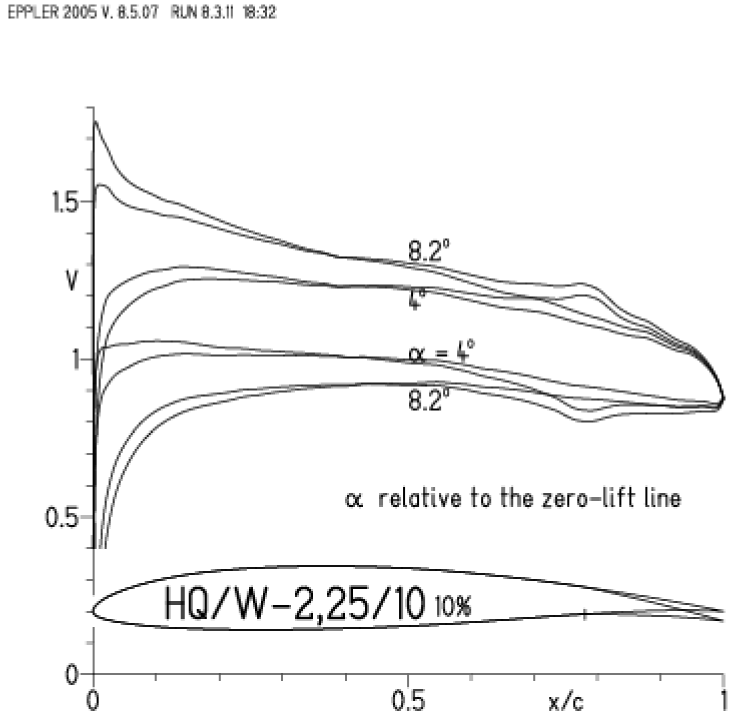
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

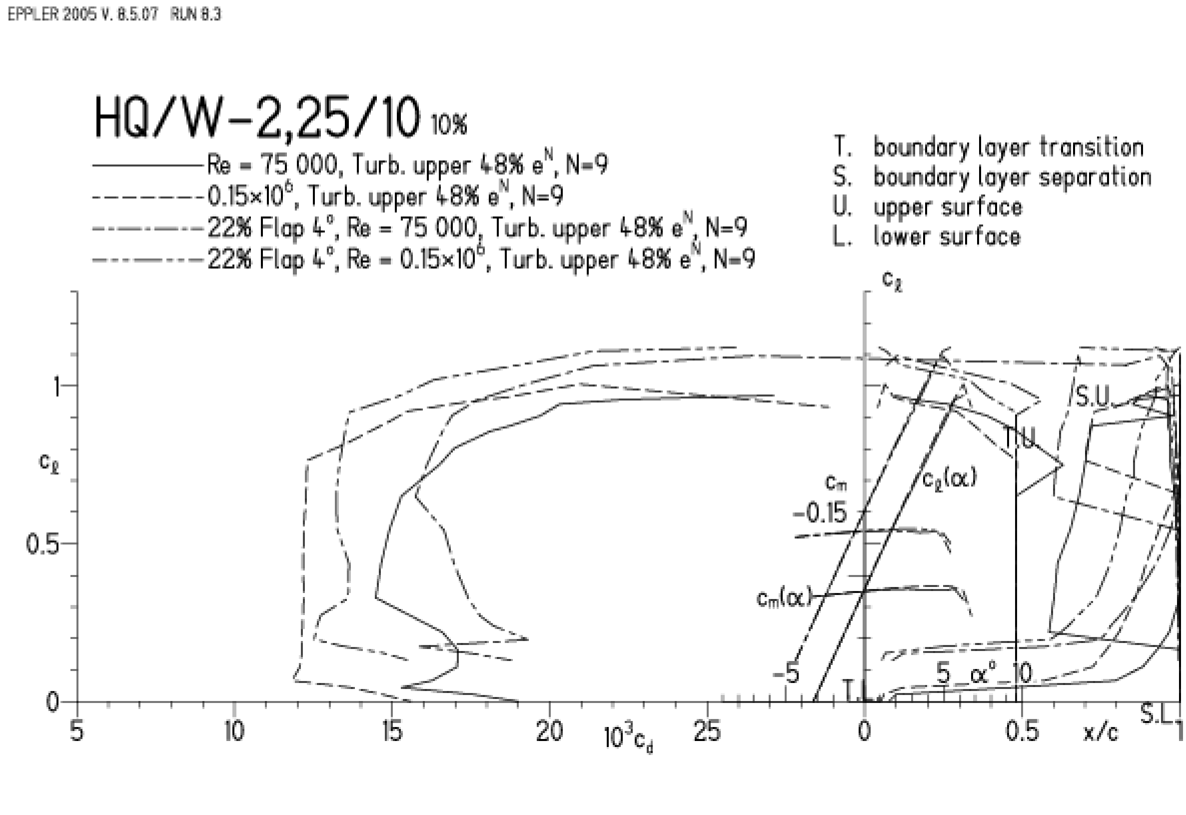


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



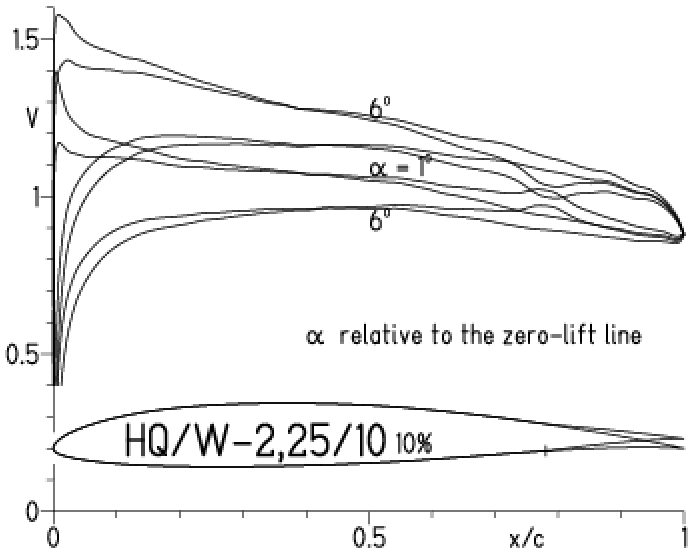
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



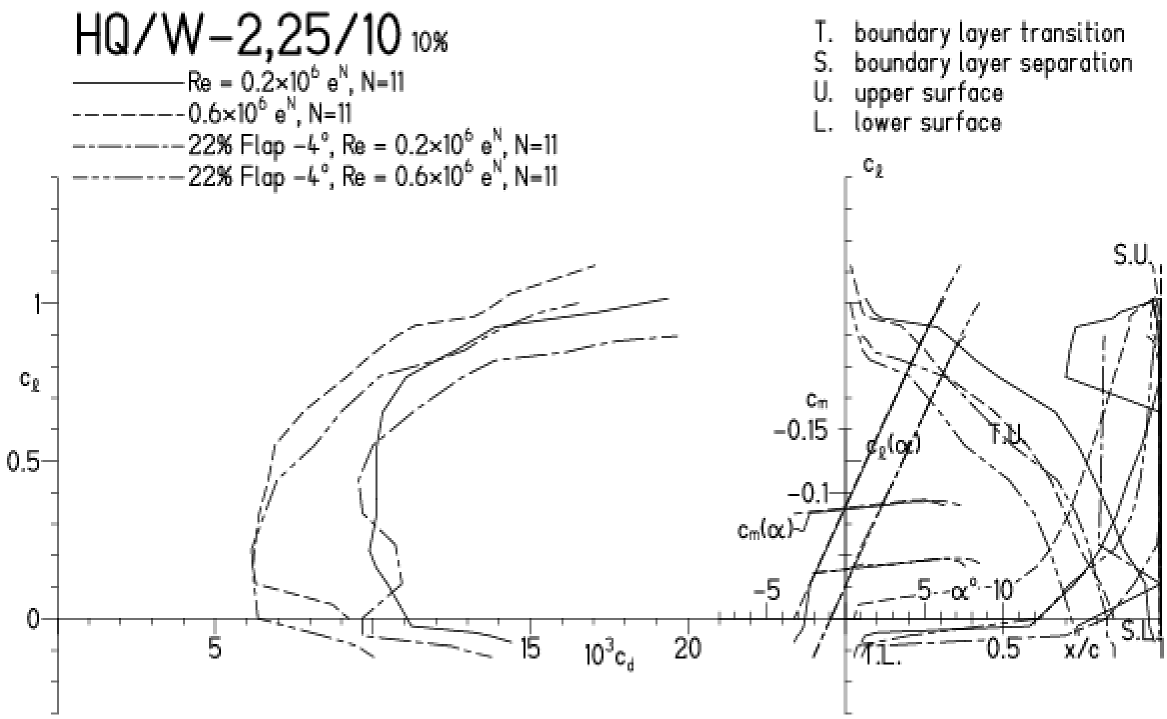


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

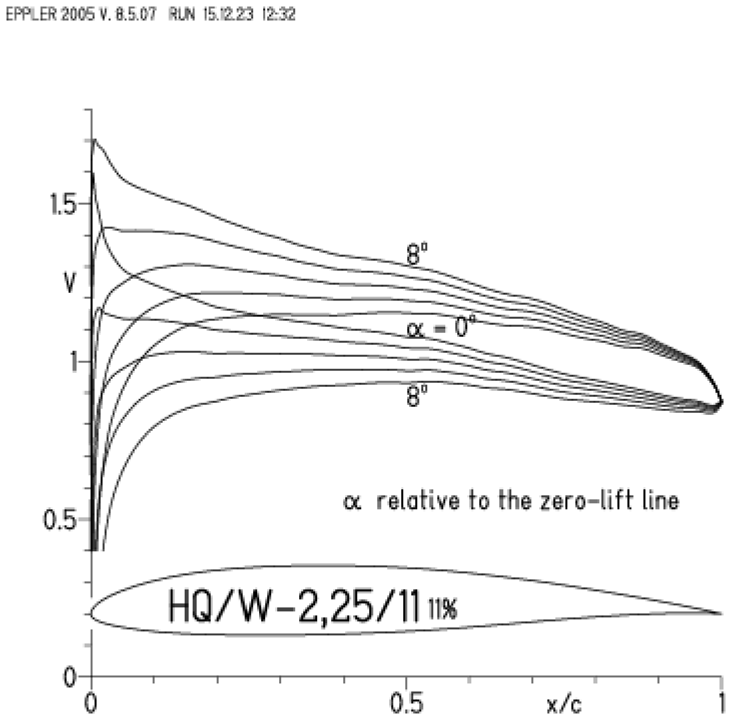
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

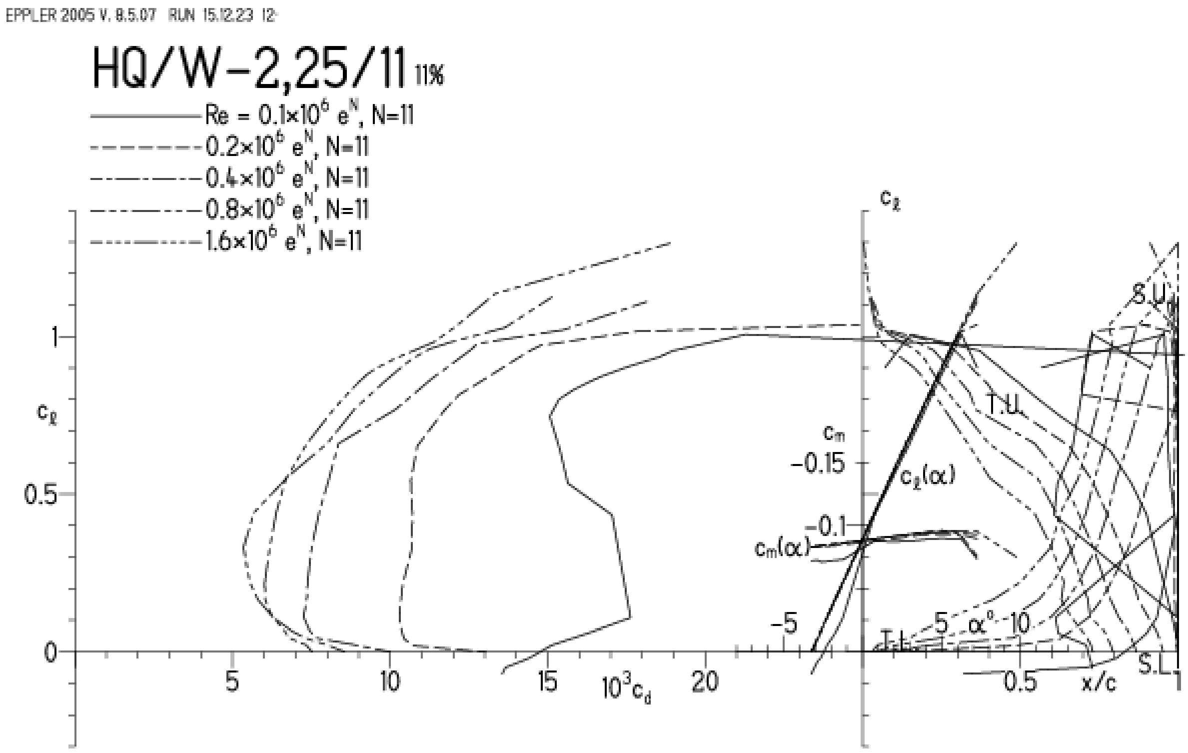


EPPLER 2005 V. 8.5.07 RUN

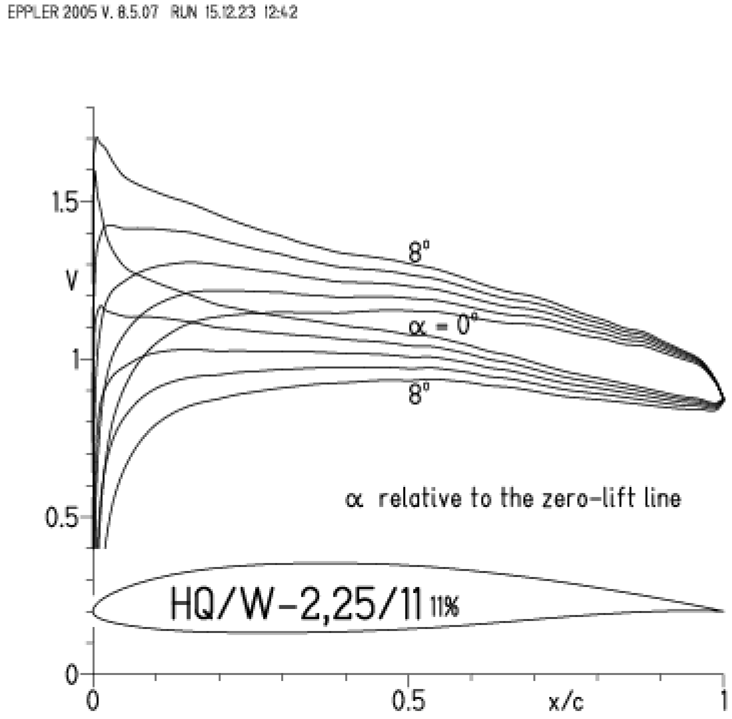


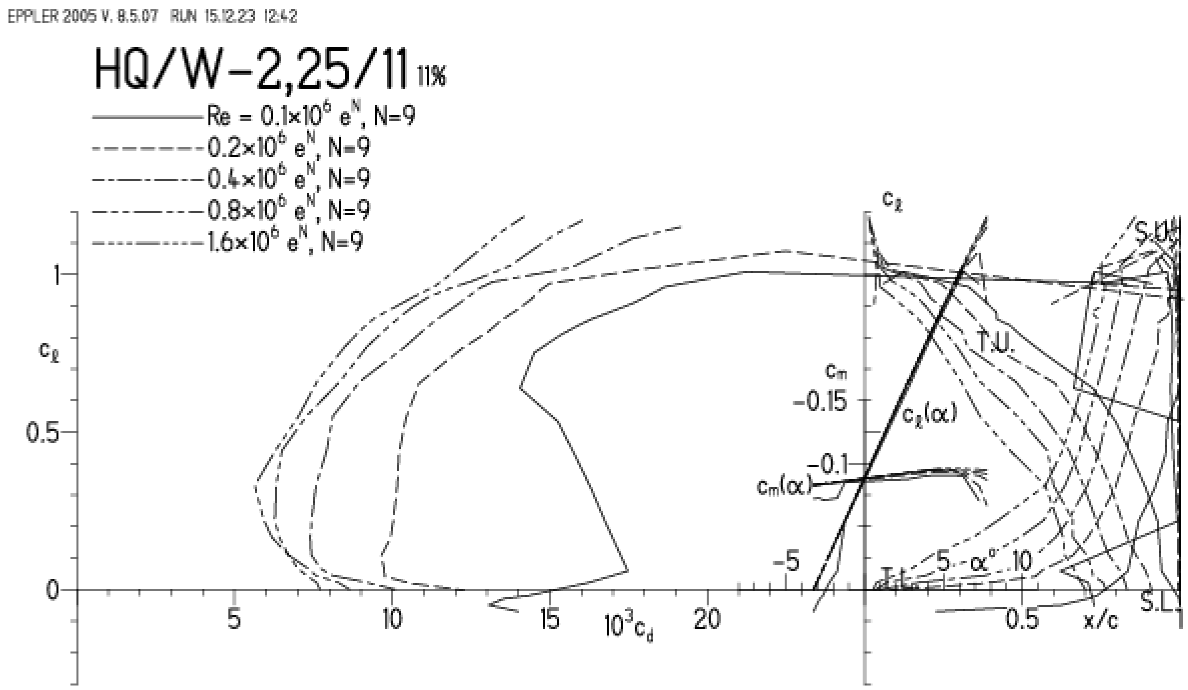
<u>HQ/W-2,25/11</u>, N=11



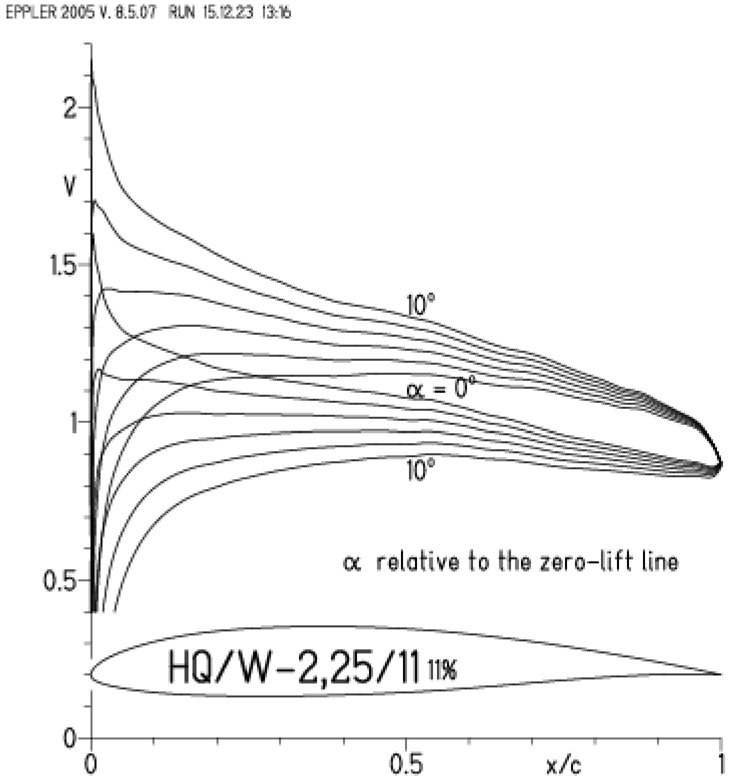


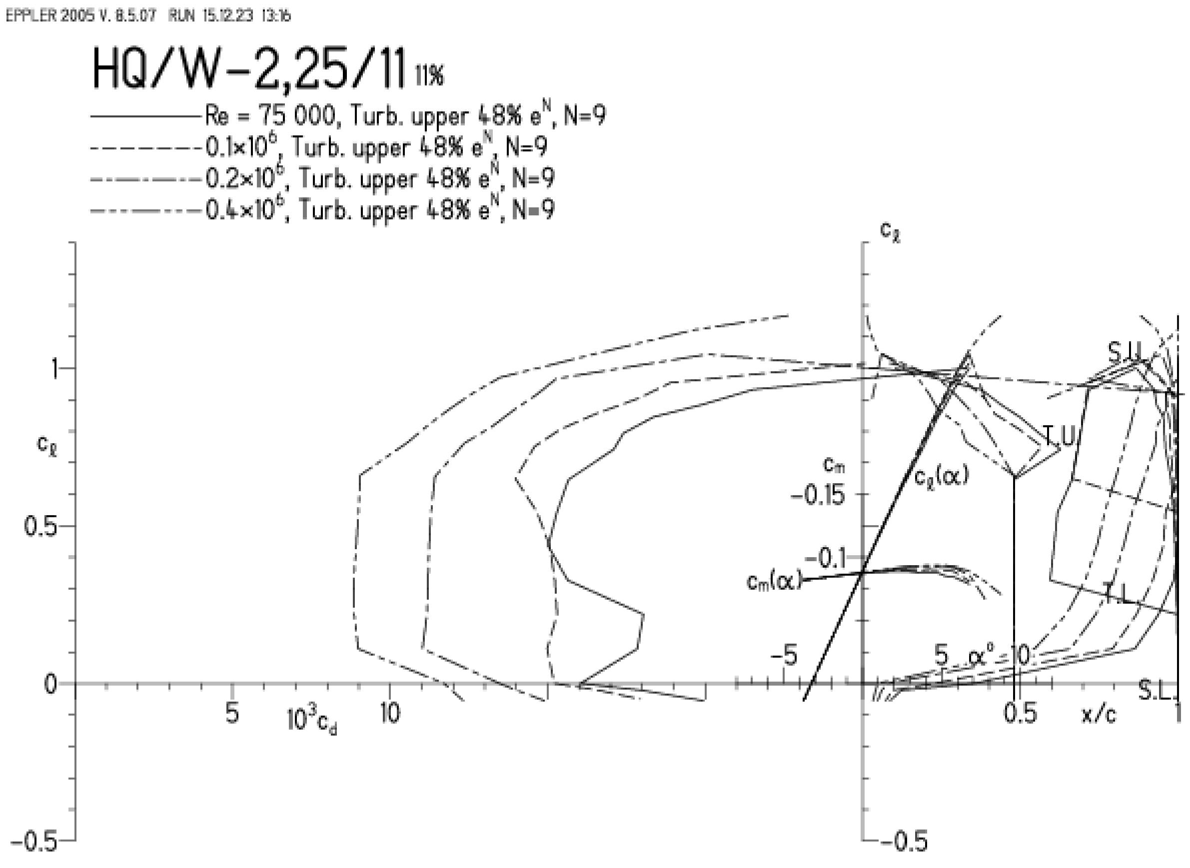
<u>HQQ/W-2,25/11</u>, N=9





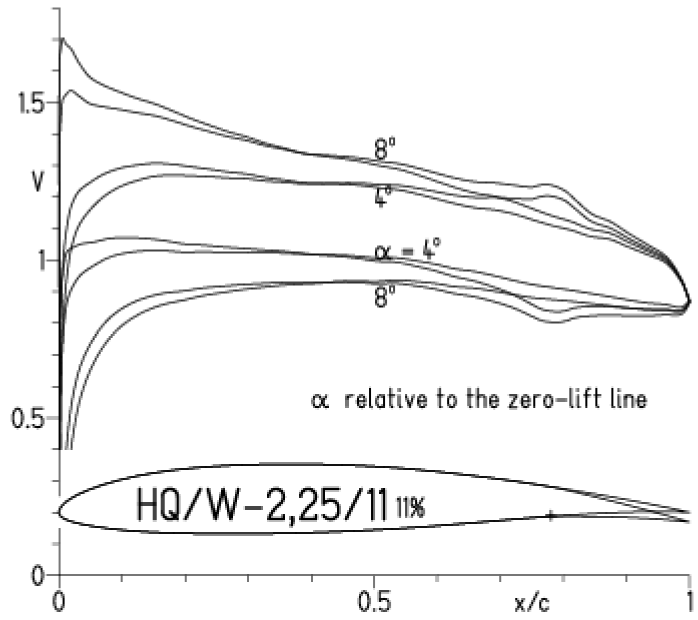
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



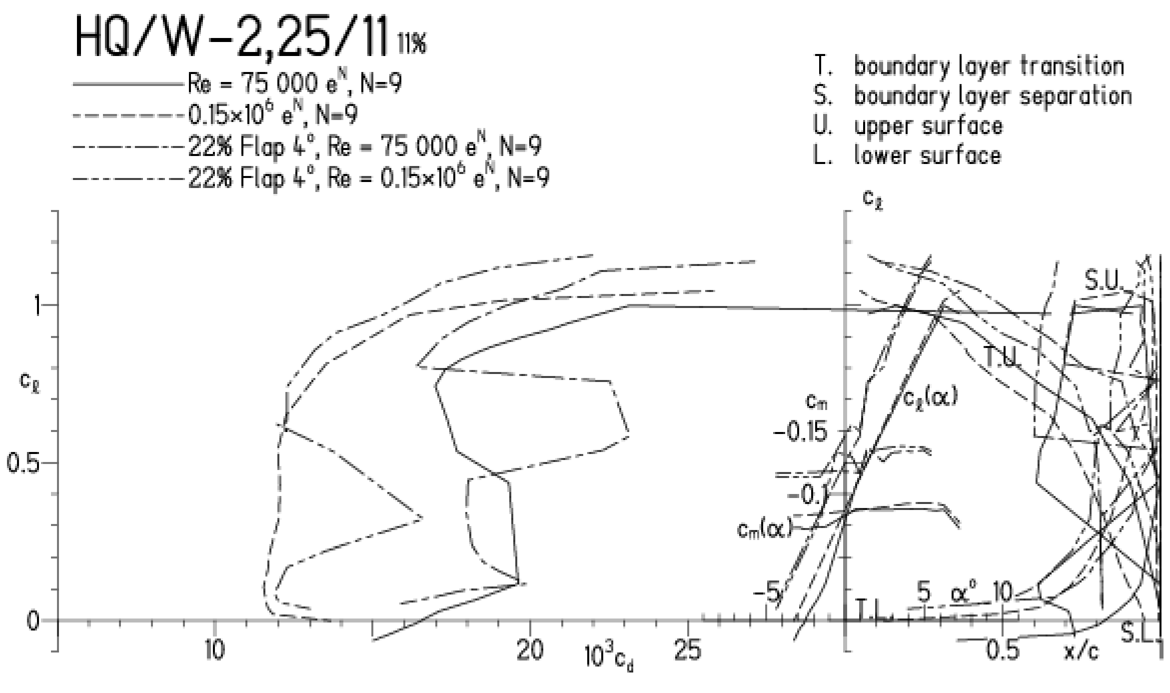


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

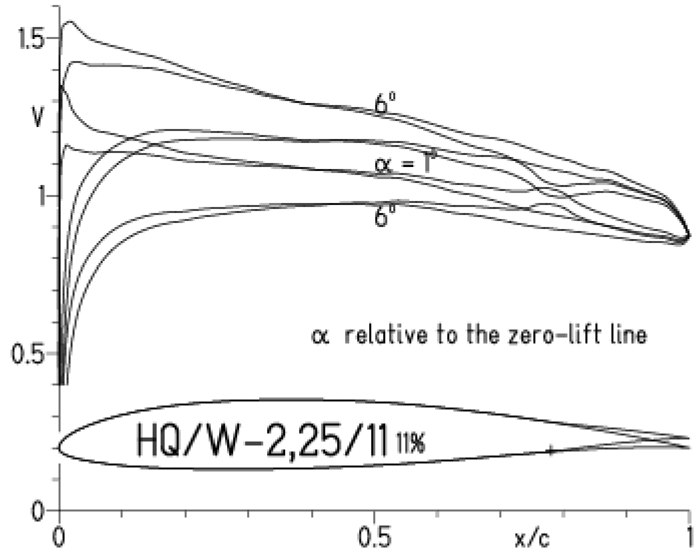


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

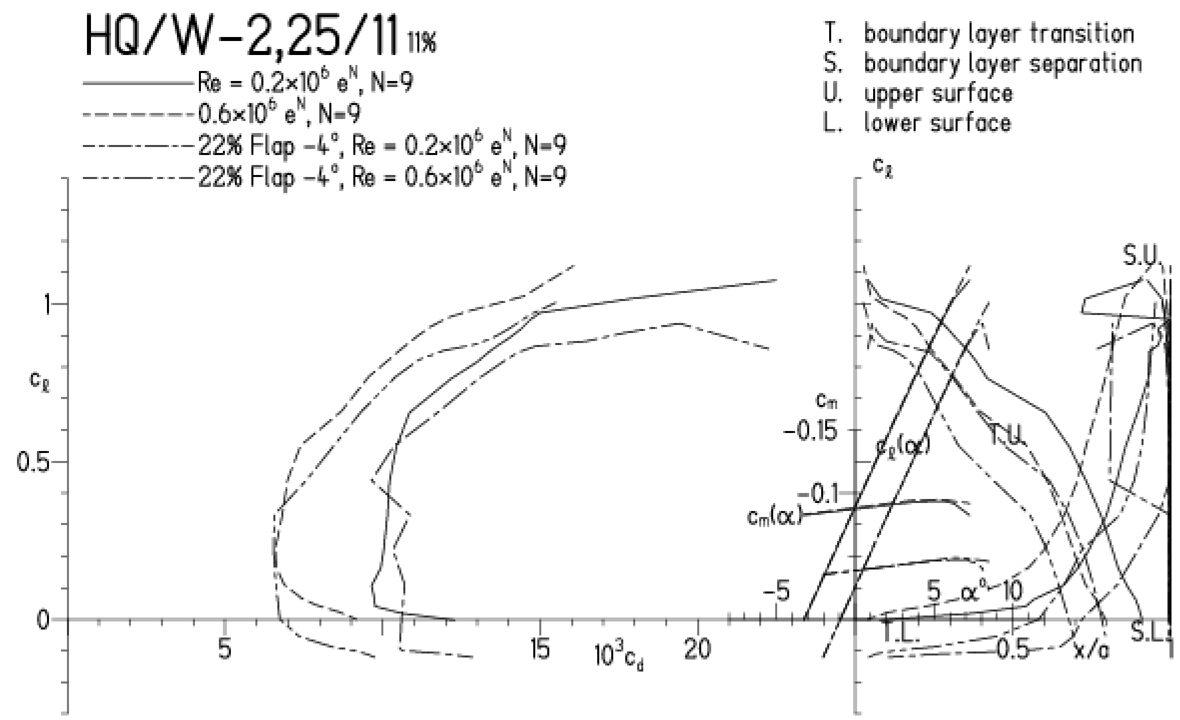


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

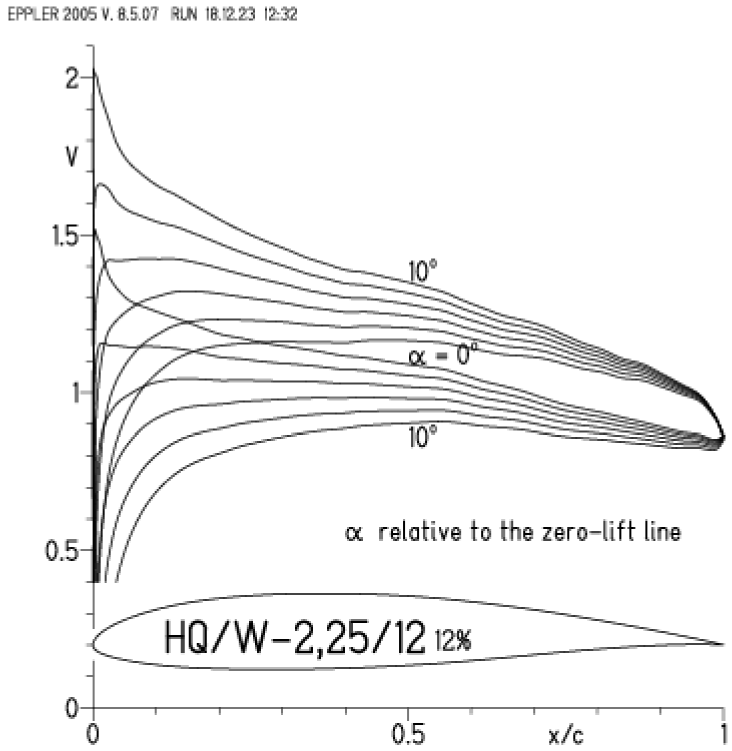
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

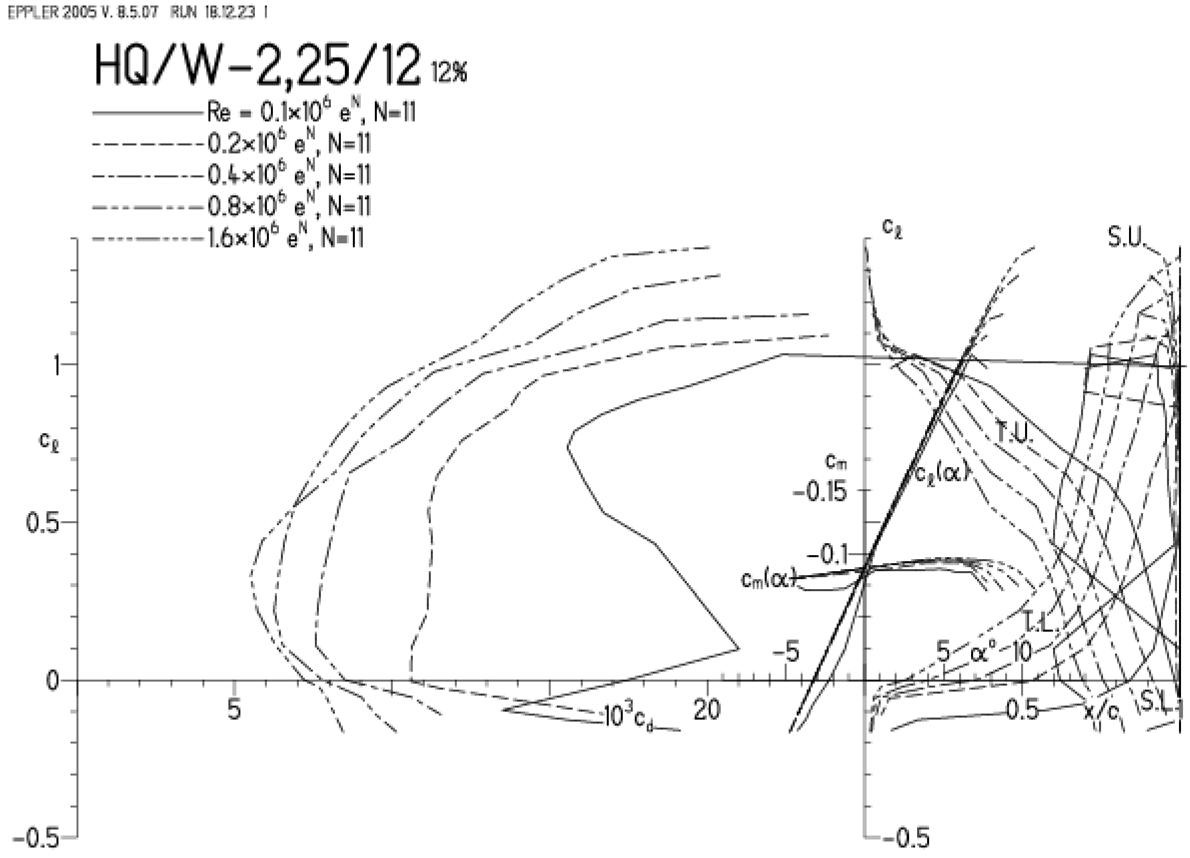


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

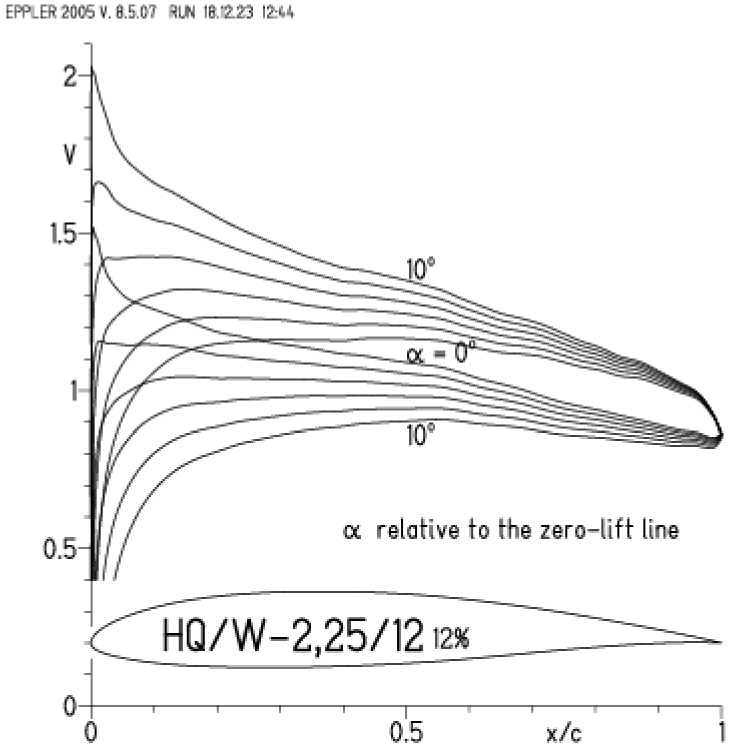


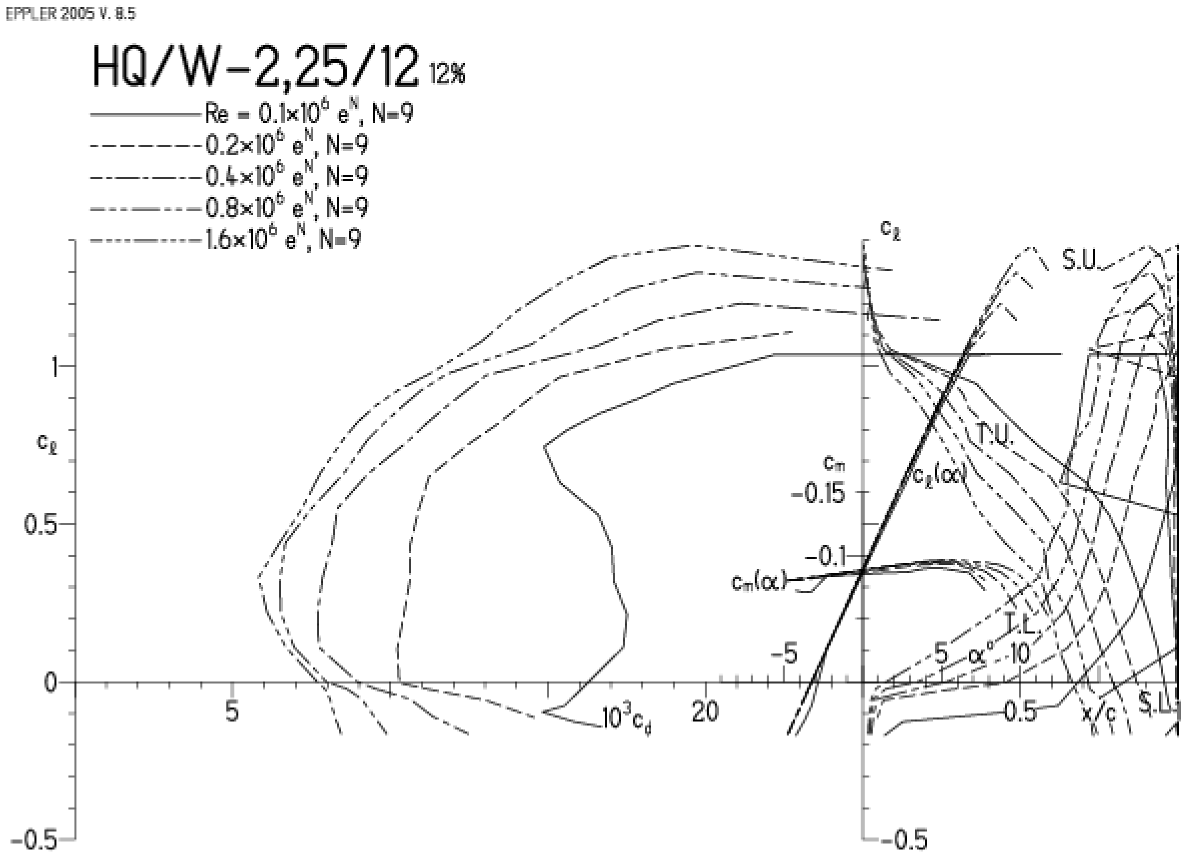
HQ/W-2,25/12, N=11



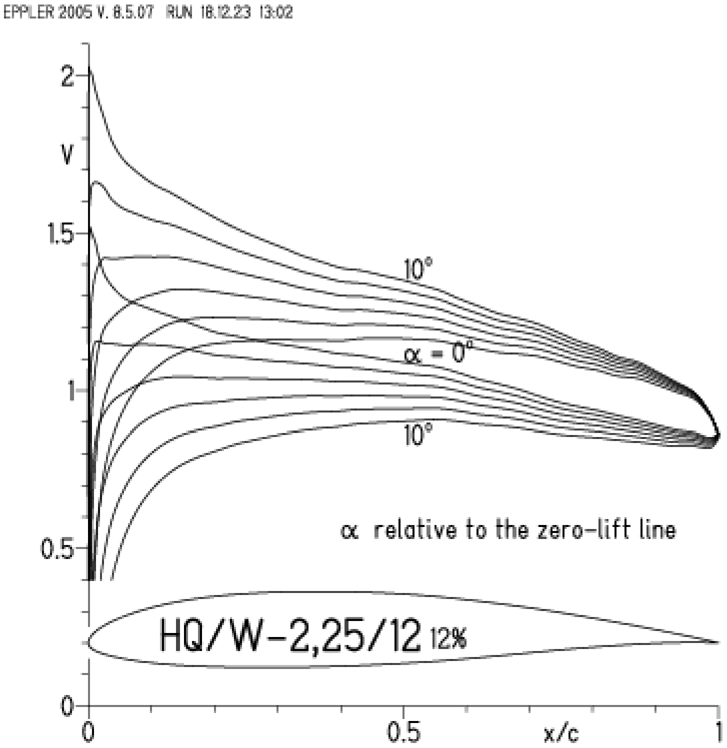


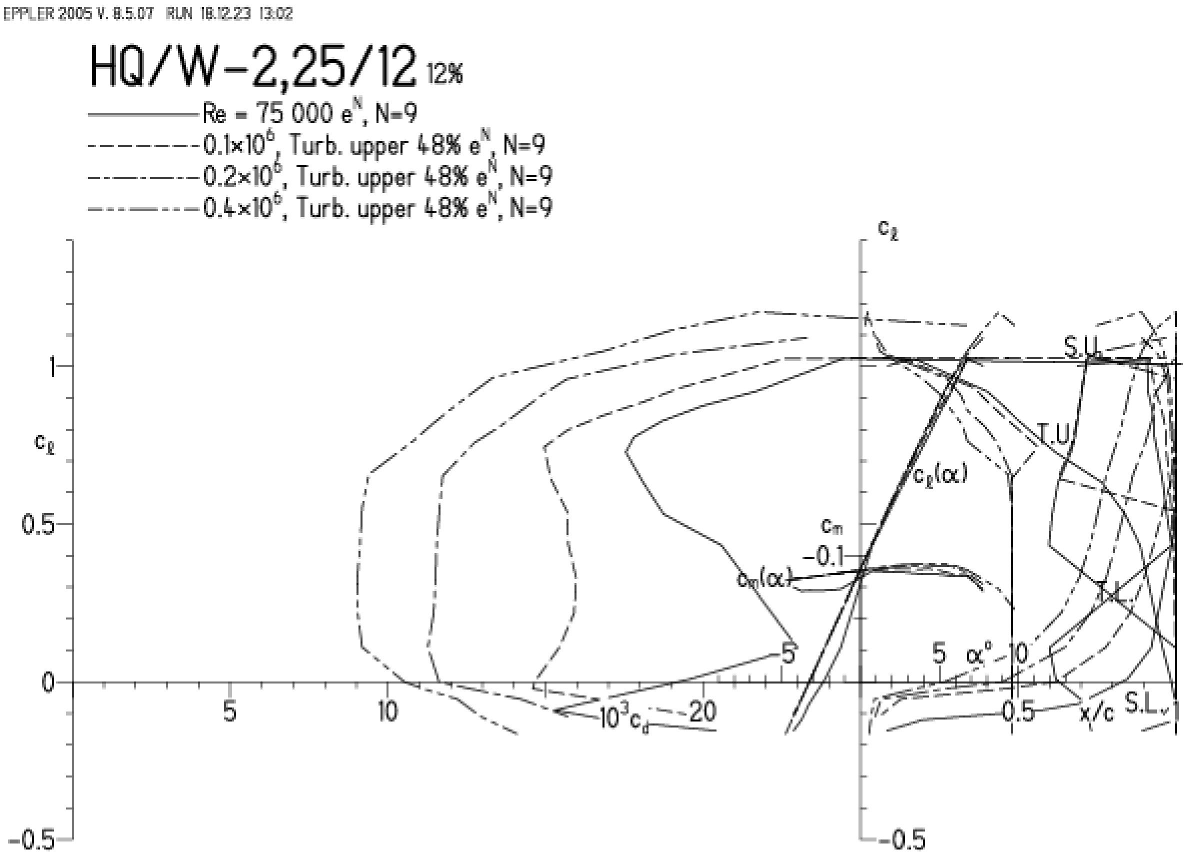
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c
10³c_d

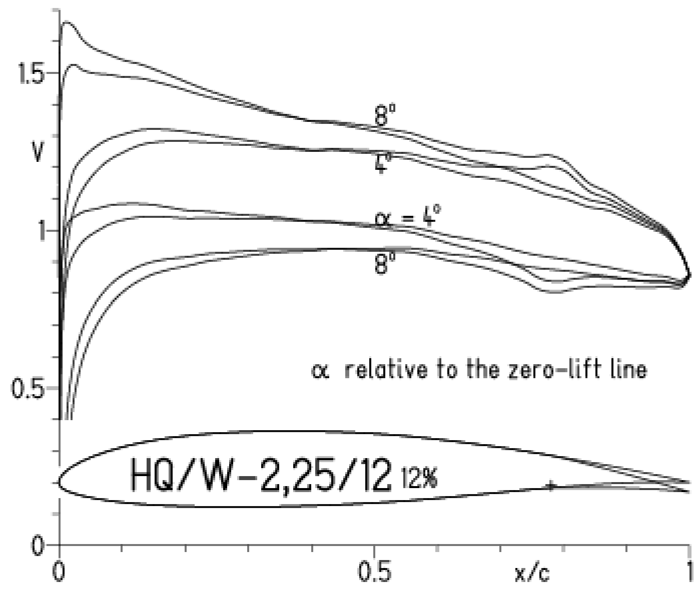
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



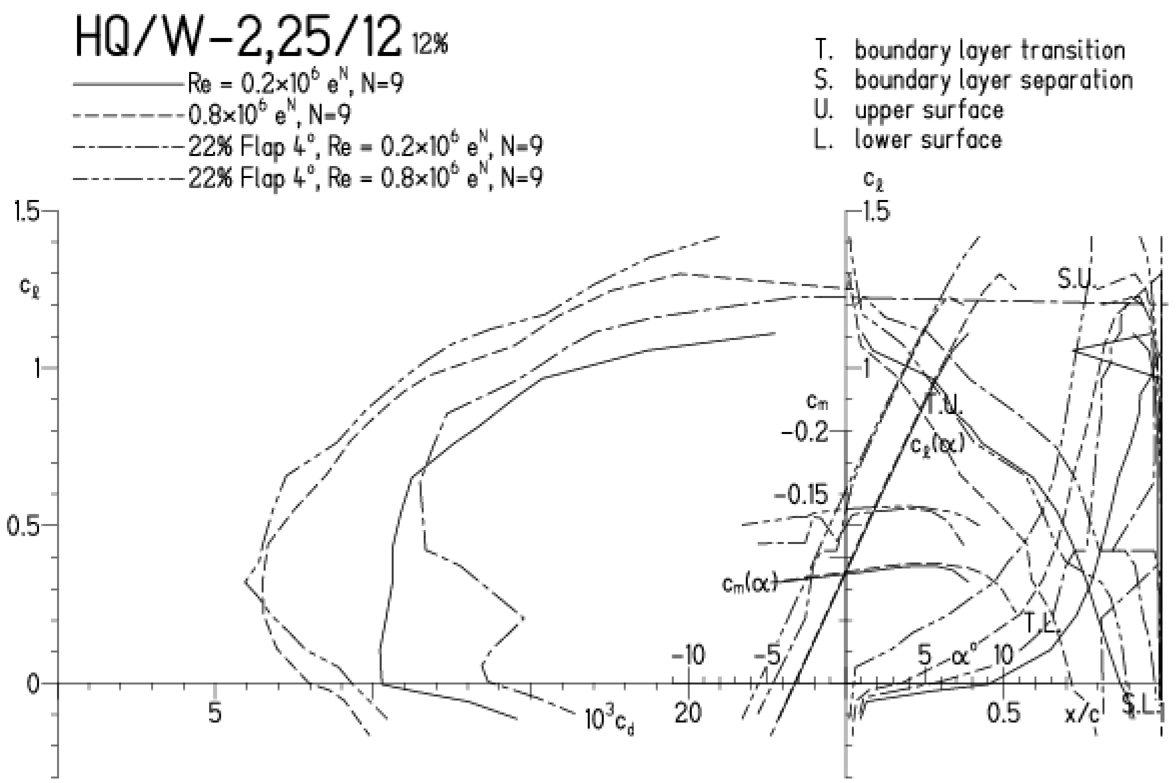


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

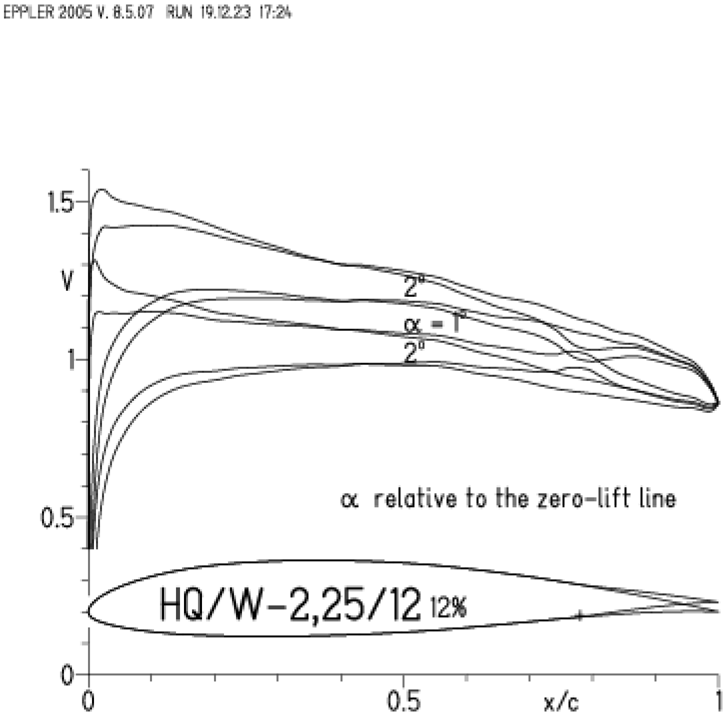
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

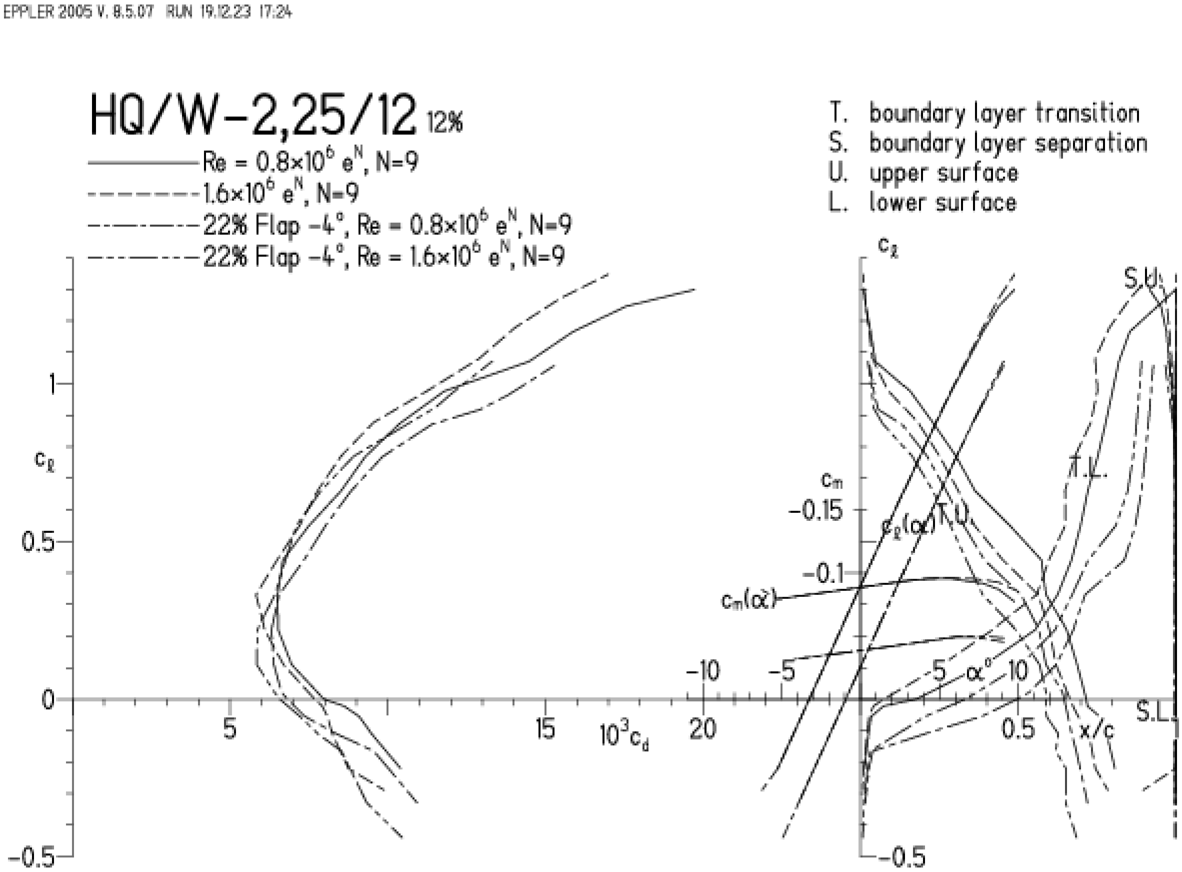


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

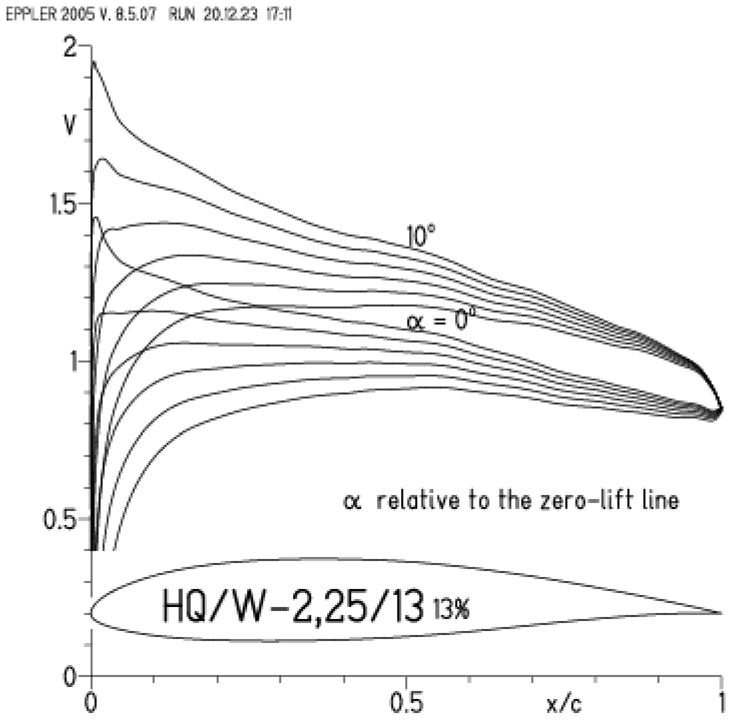


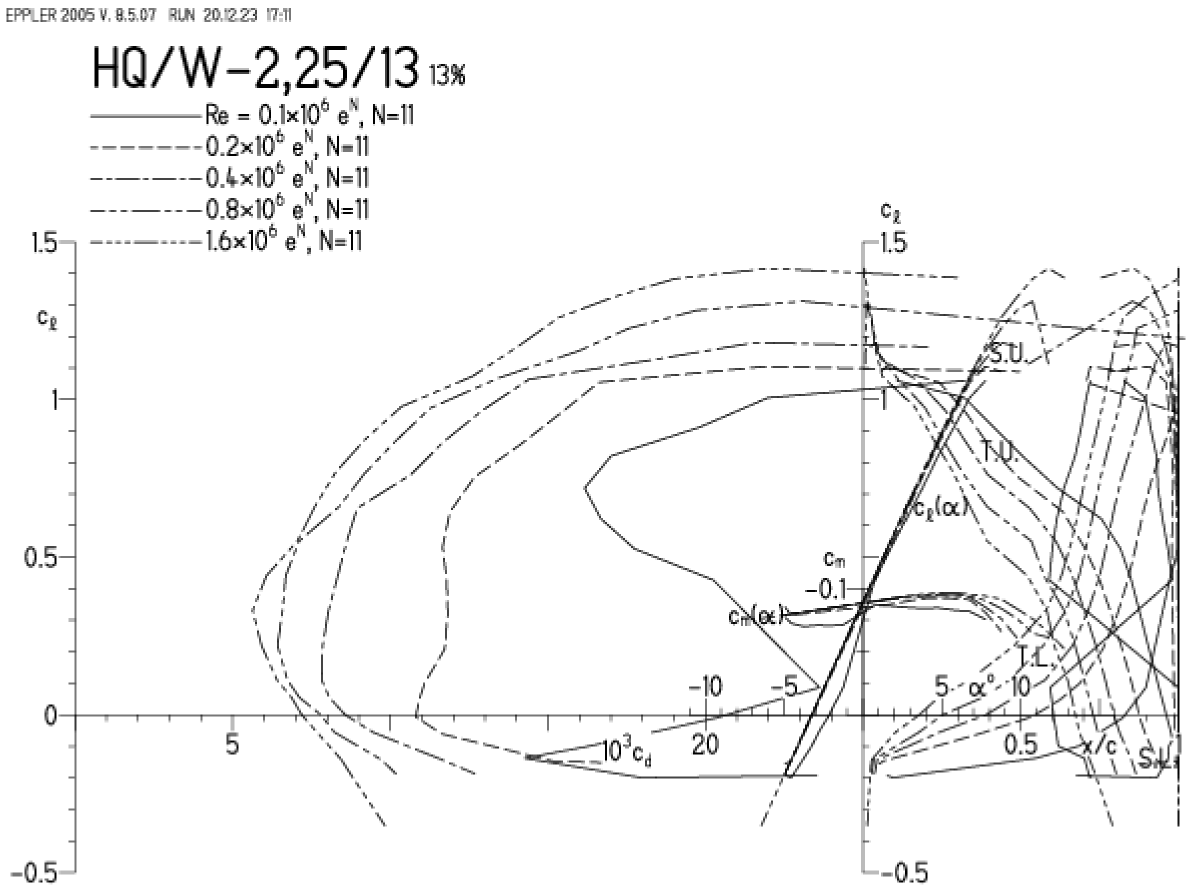
HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag



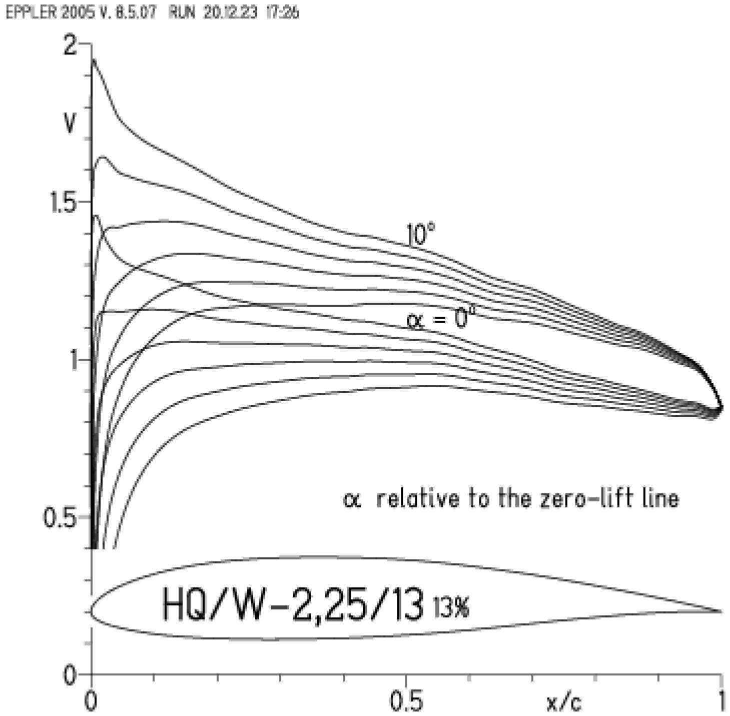


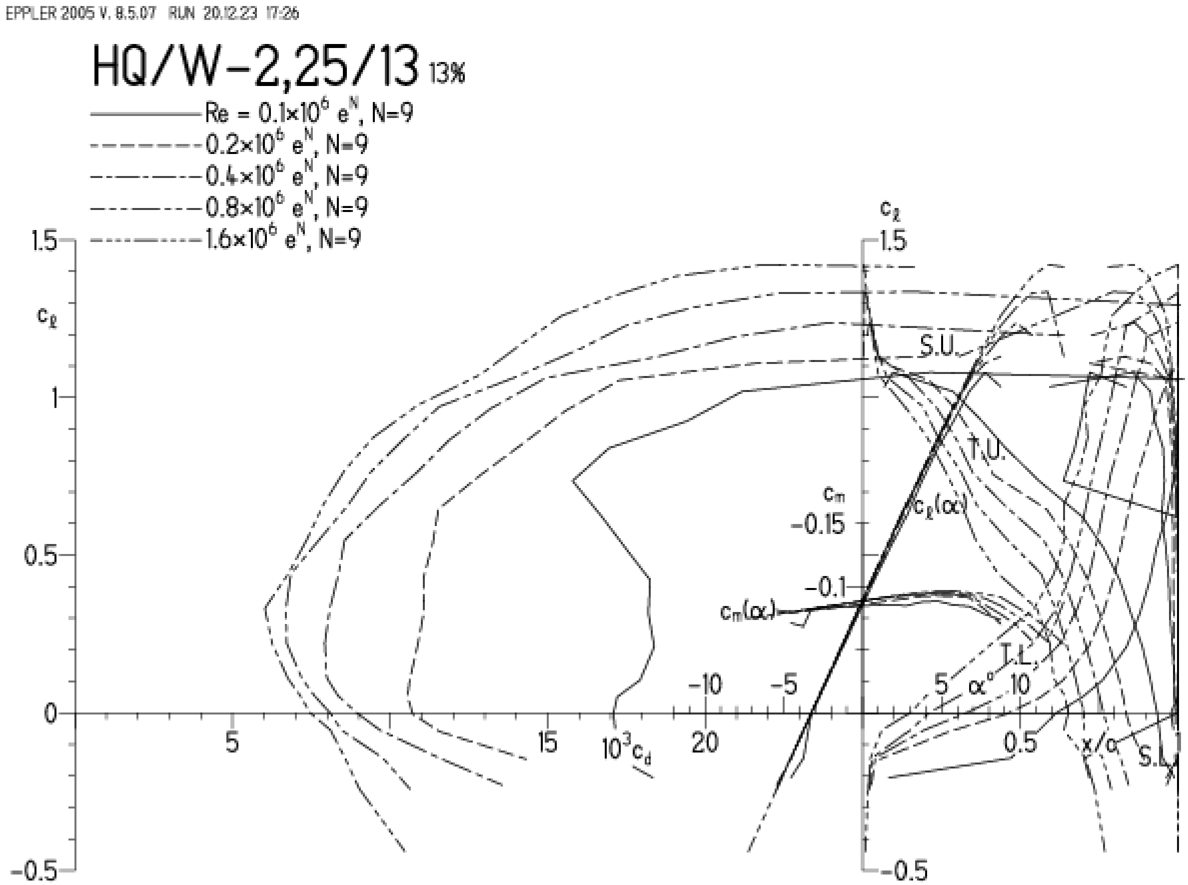
HQ/W-2,25/13, N=11



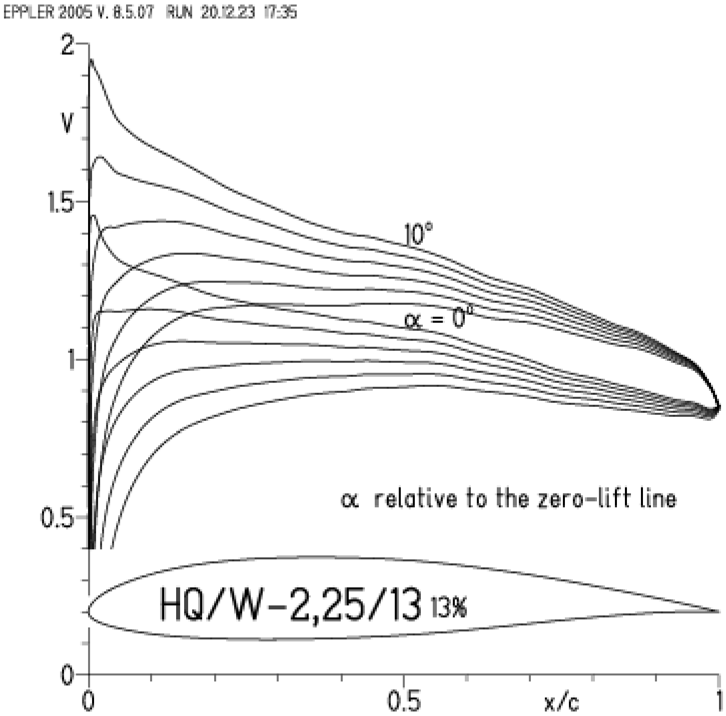


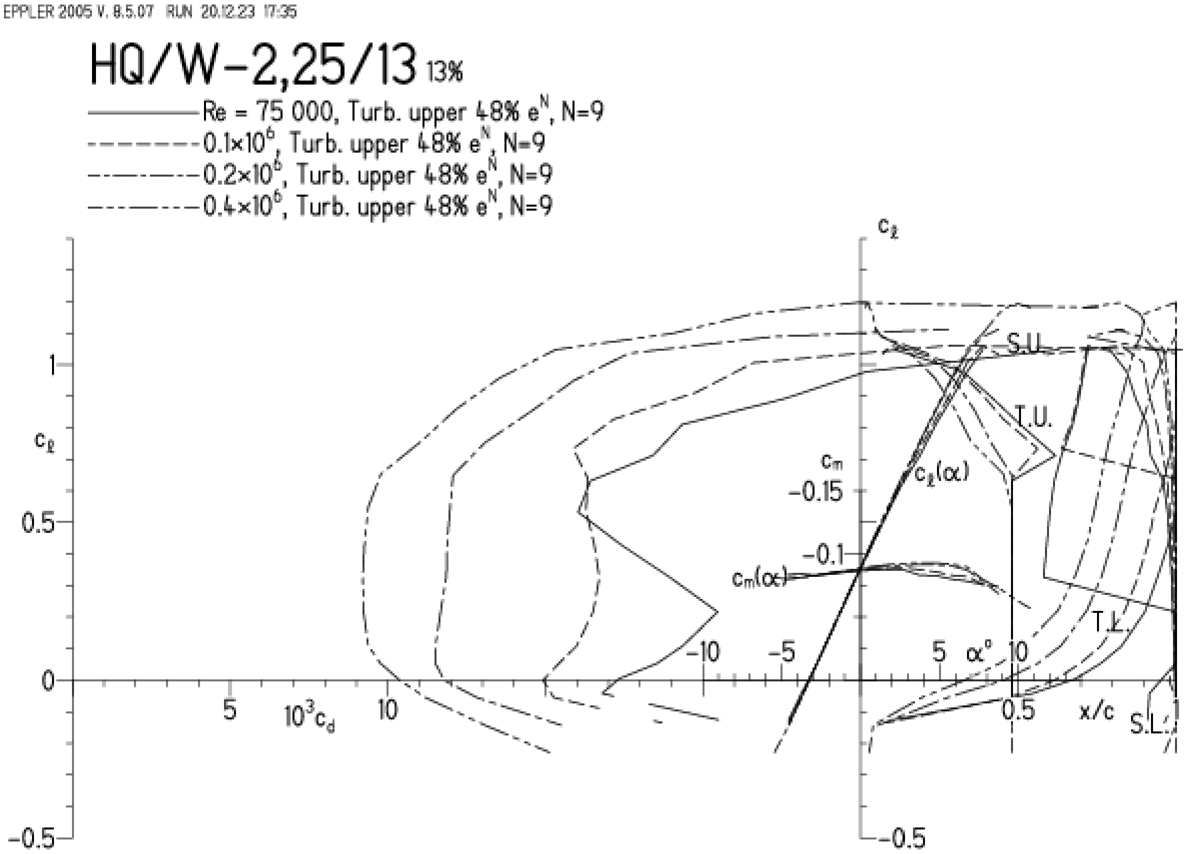
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
10³cd
x/c

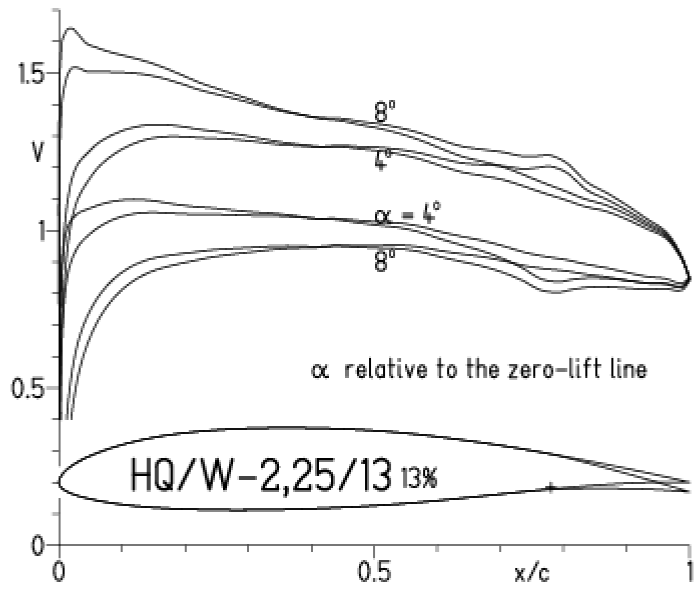
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



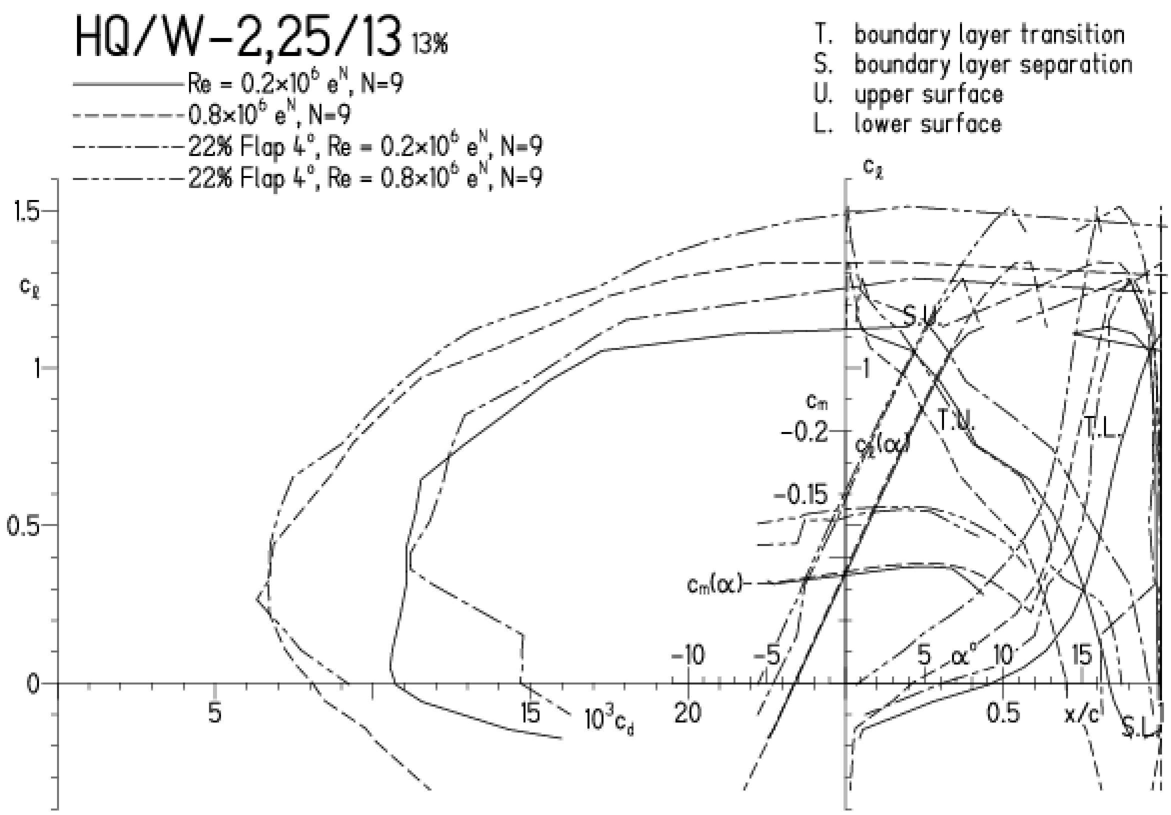


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

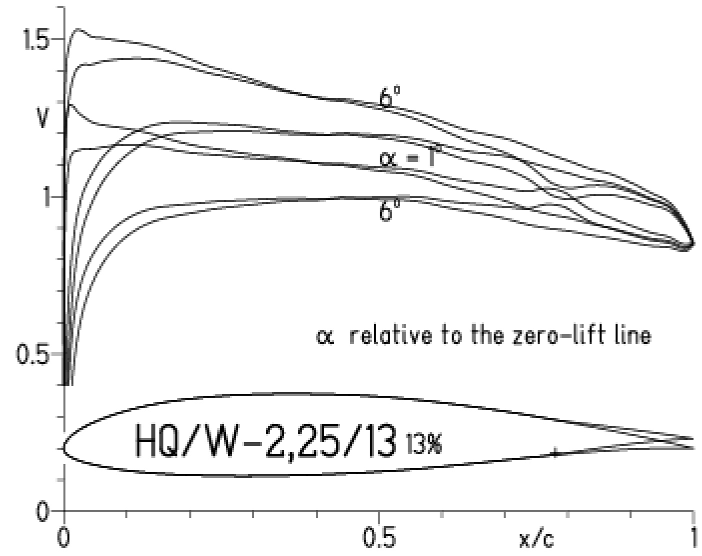


EPPLER 2005 V.

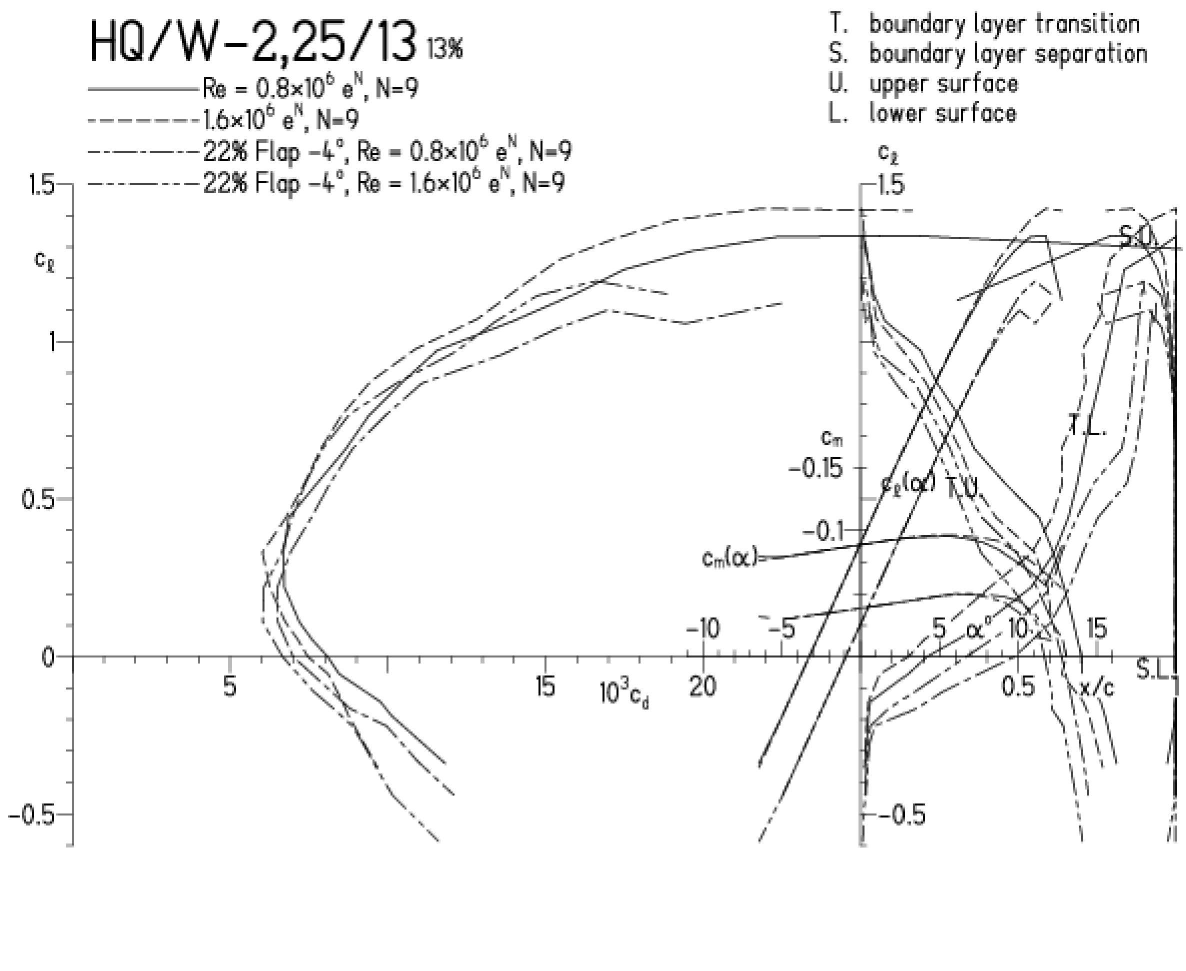


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

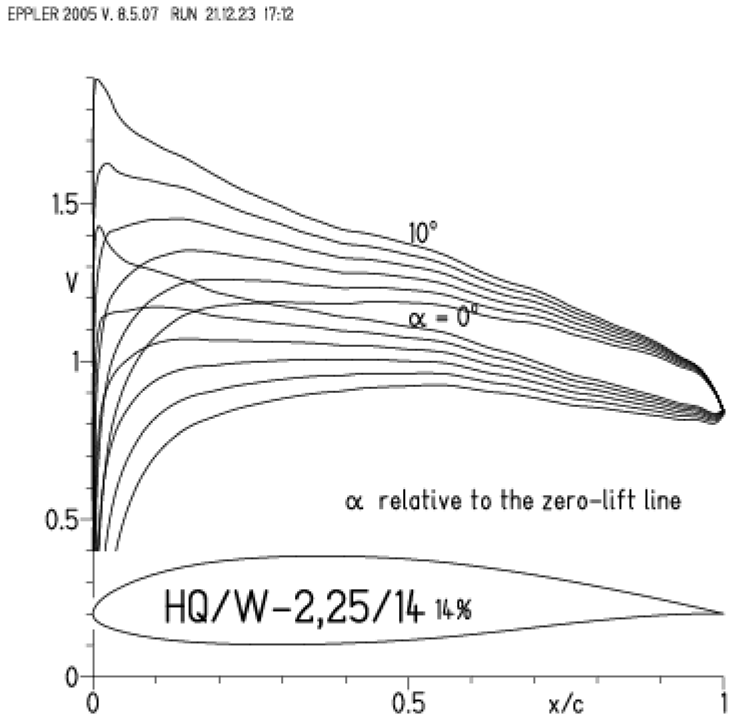
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

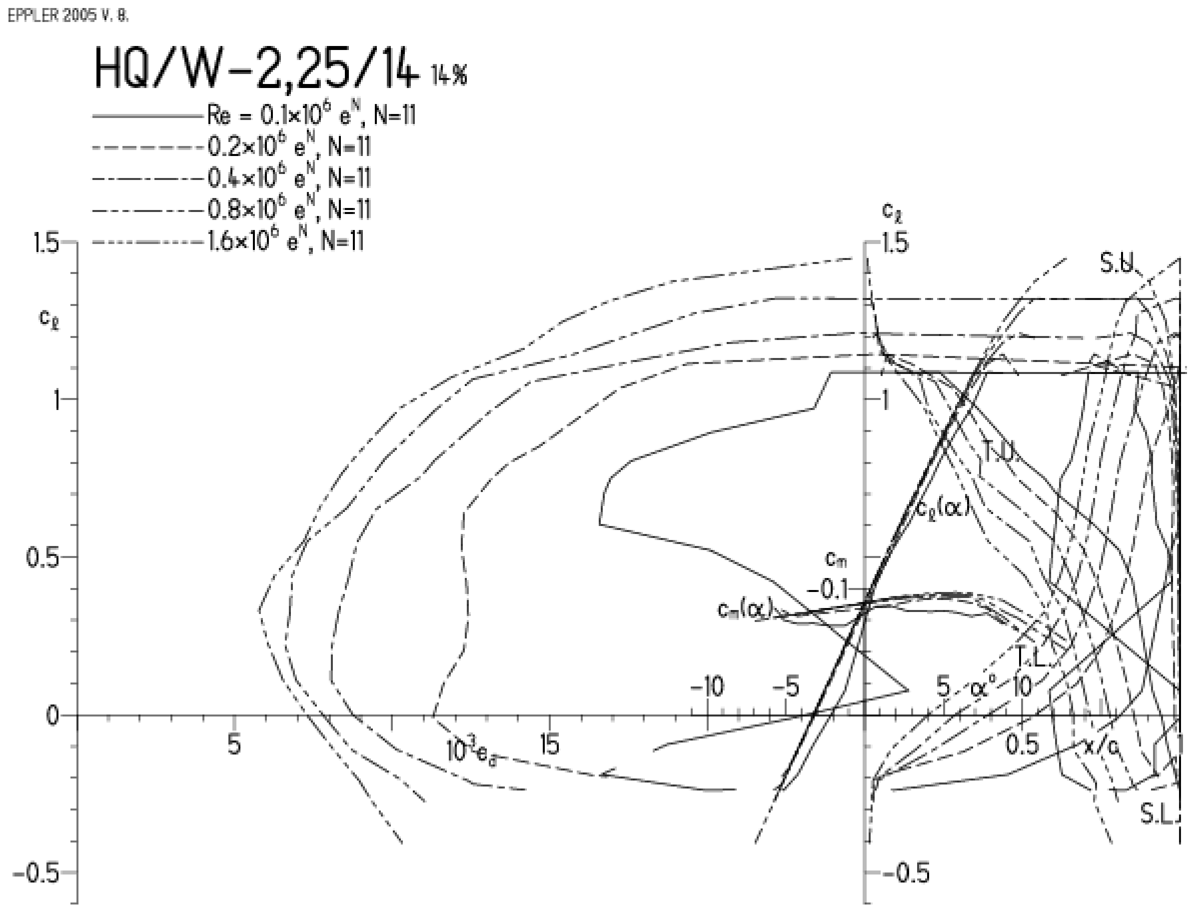


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

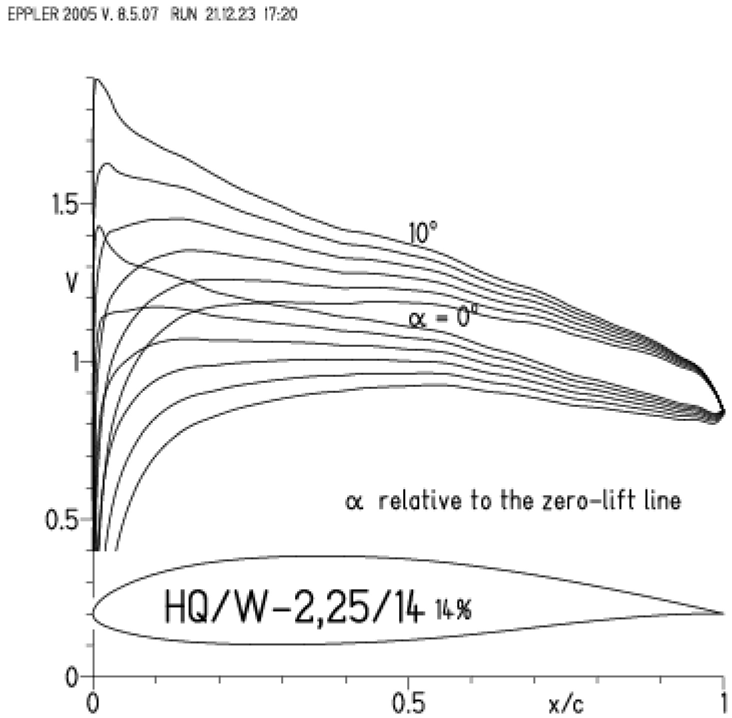


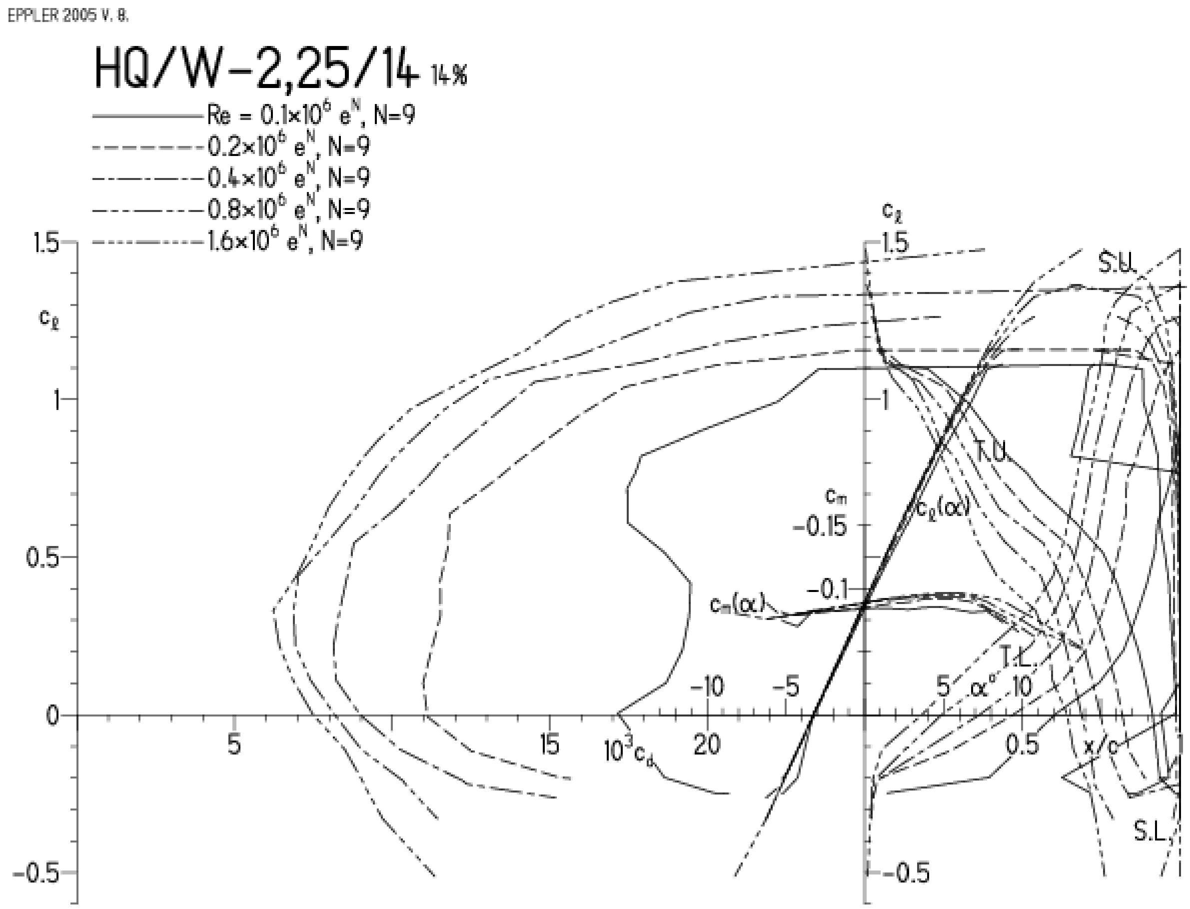
<u>HQ/W-2,25/14</u>, N=11





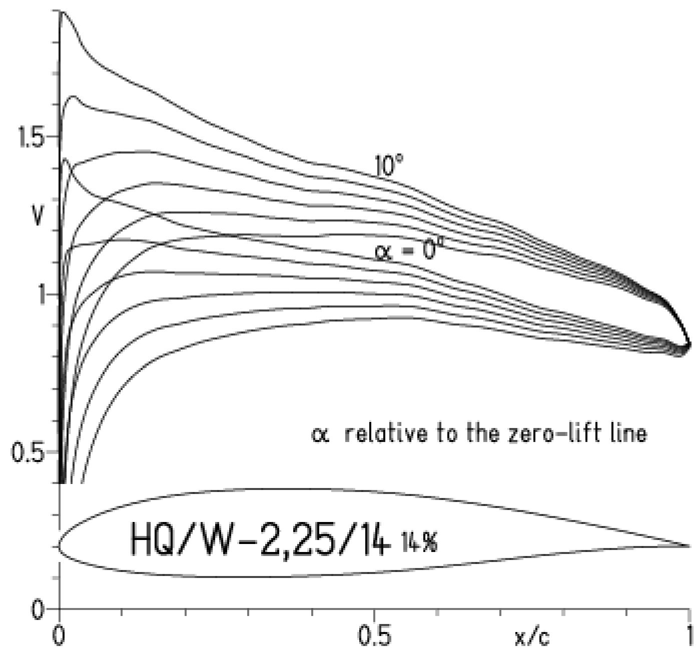
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c

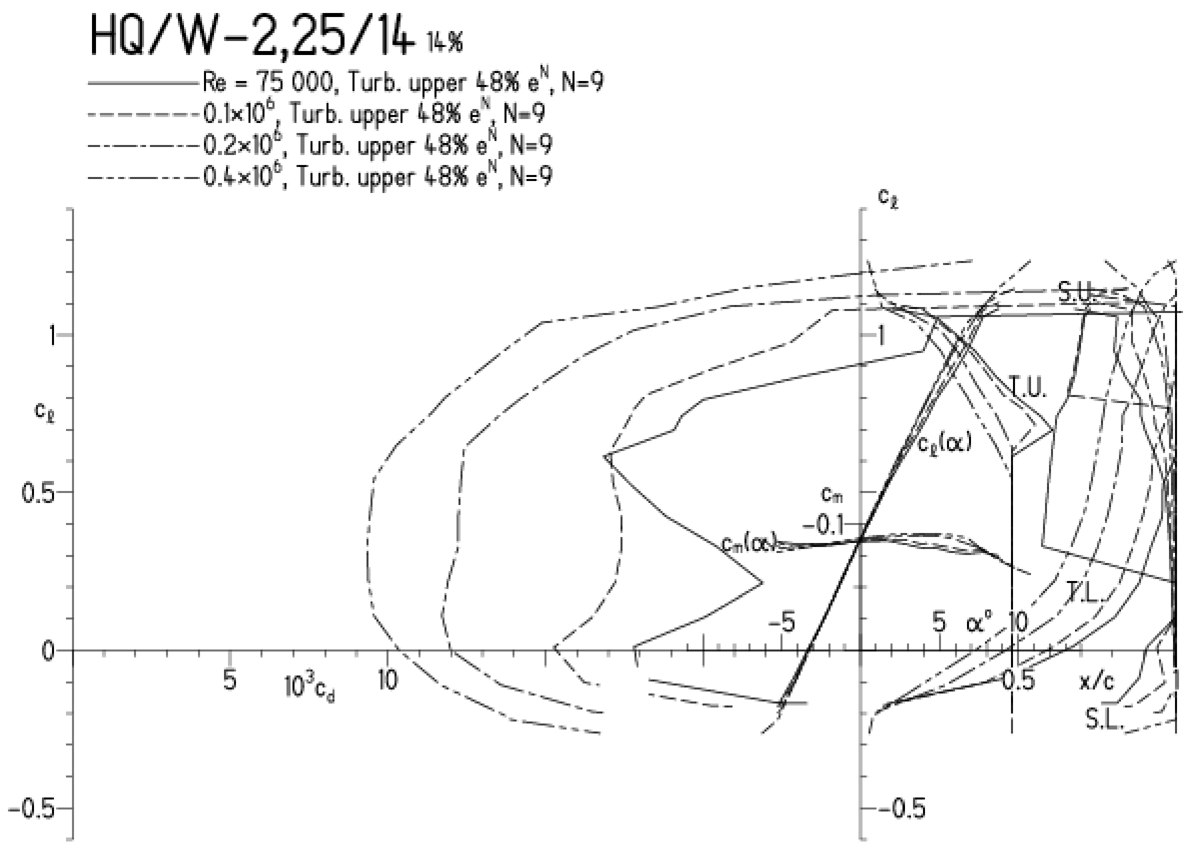

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
α°
x/c

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

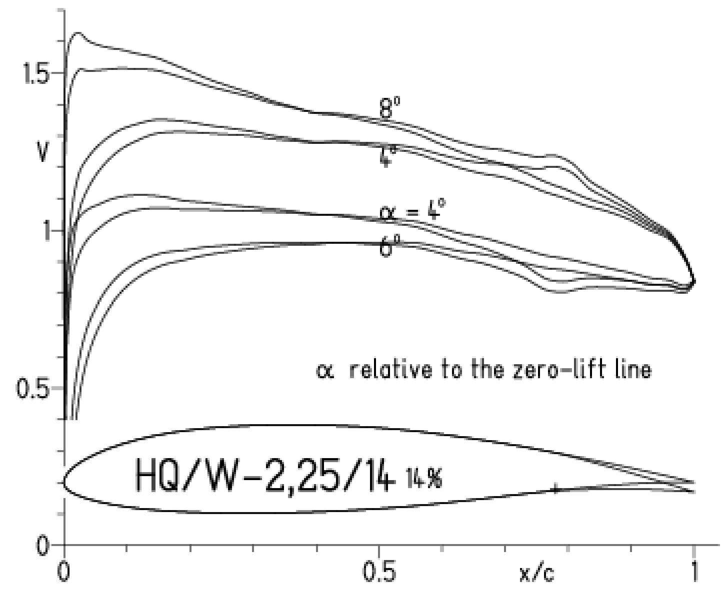


EPPLER 2005 V. 8.5.07 RU

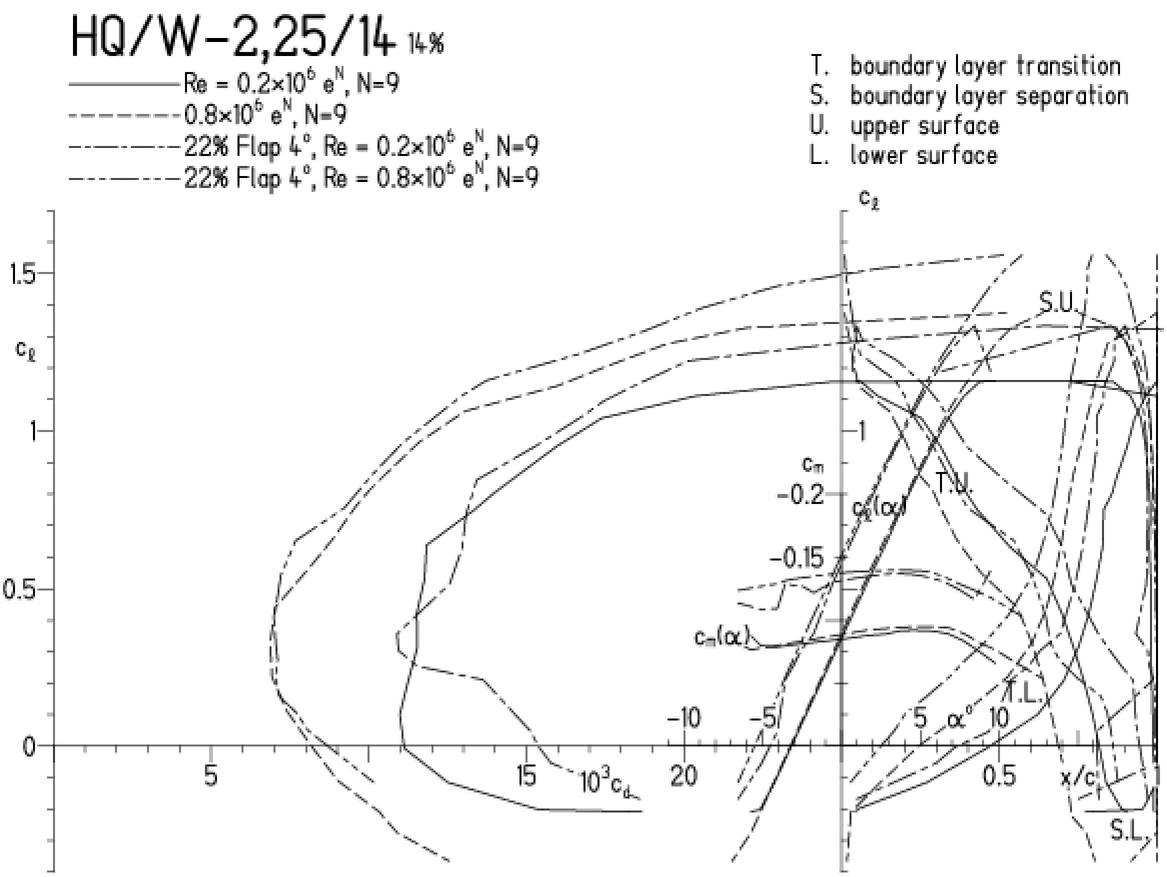


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

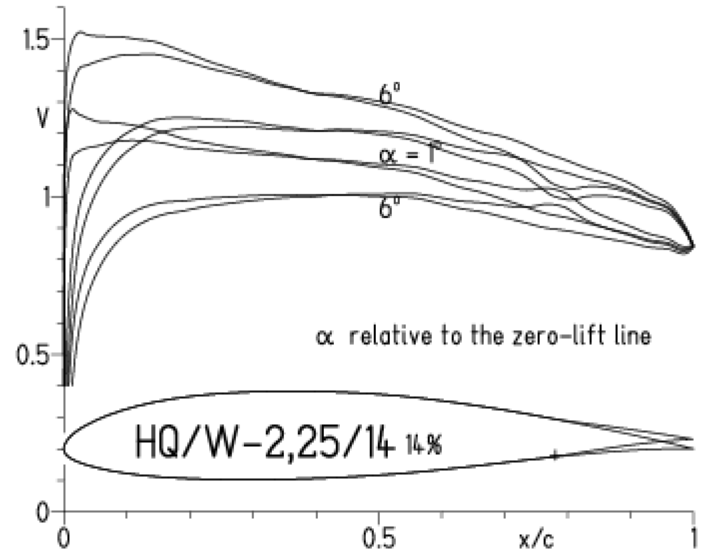


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

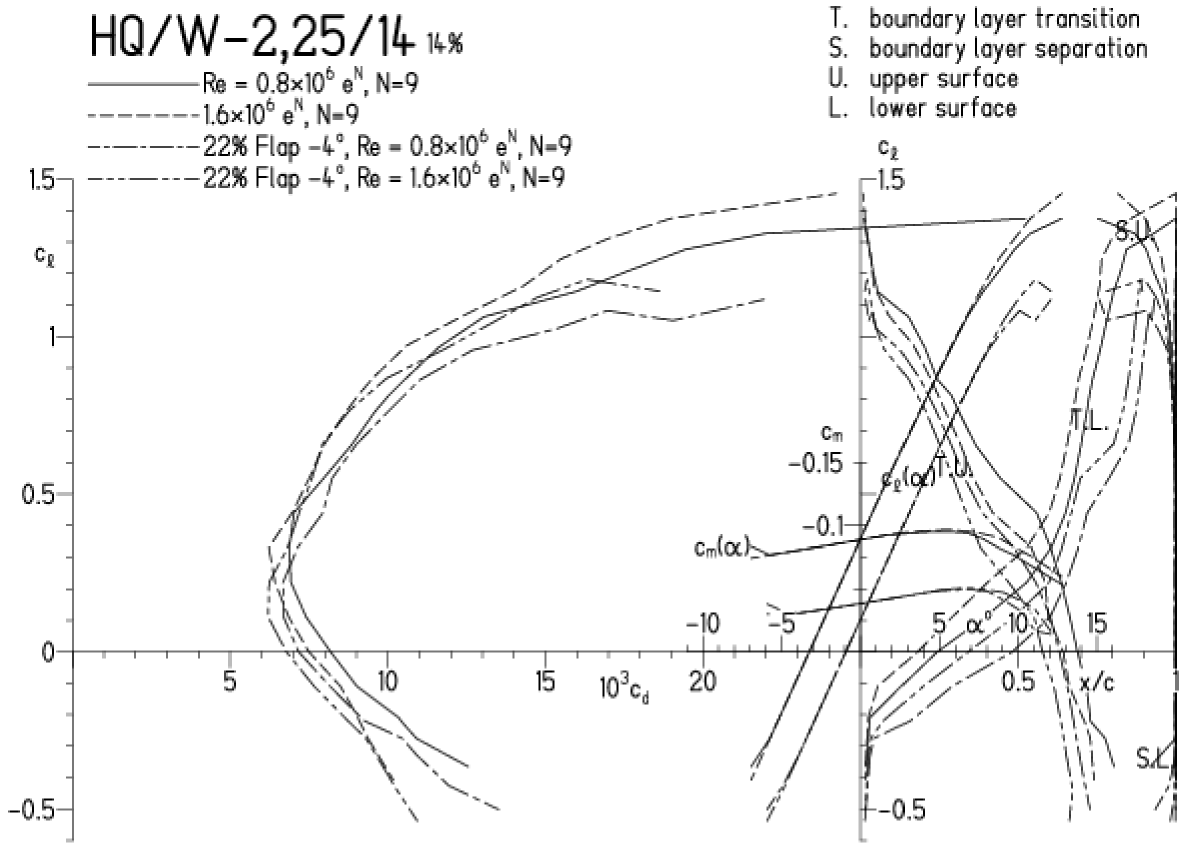


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

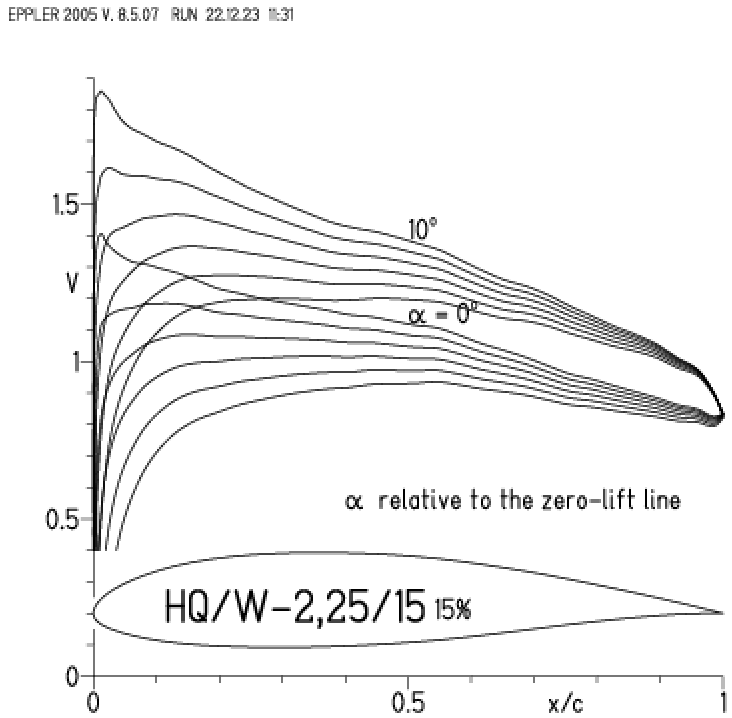
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

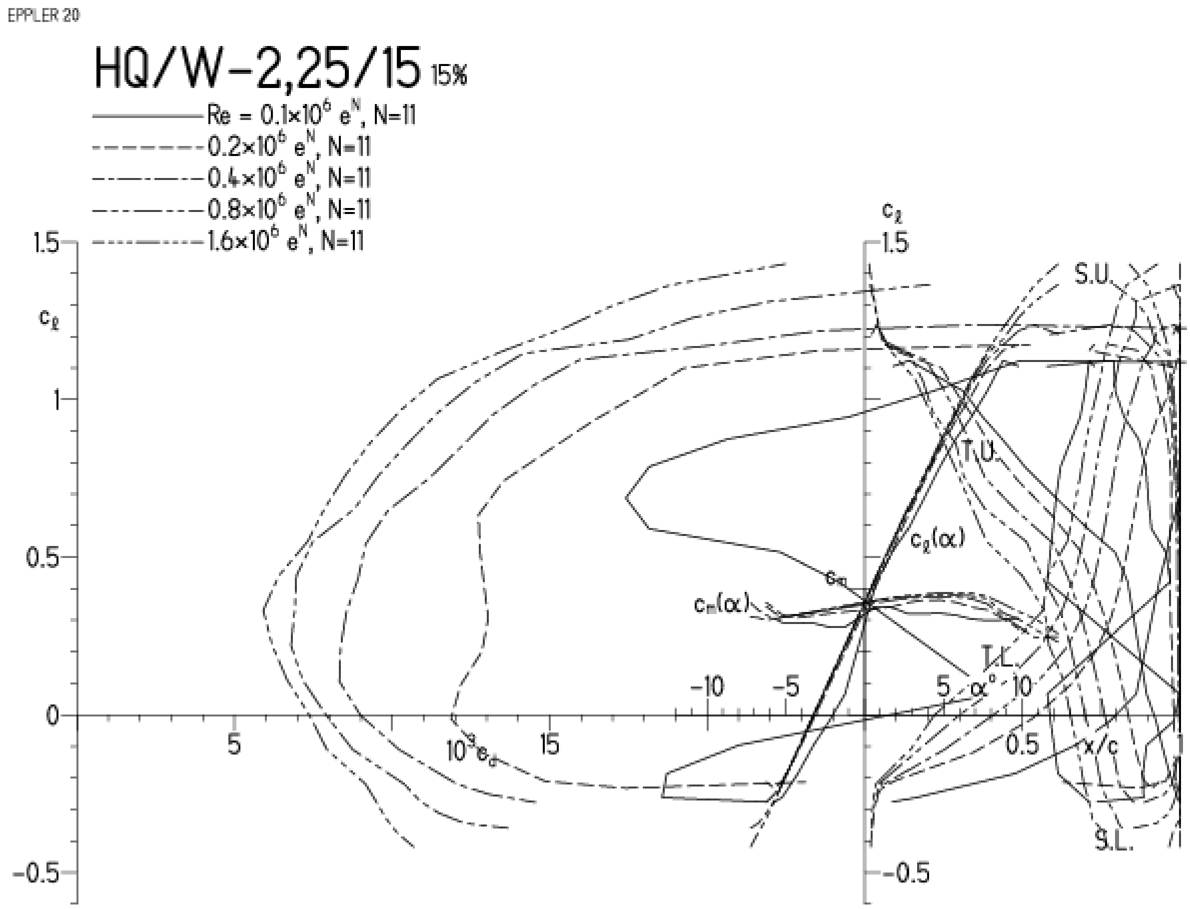


EPPLER 2005 V. 8.5.07

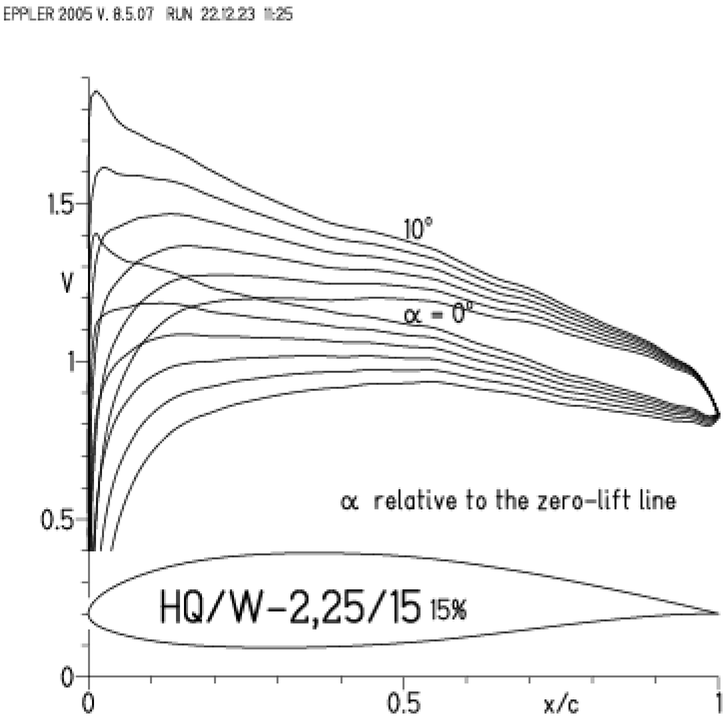


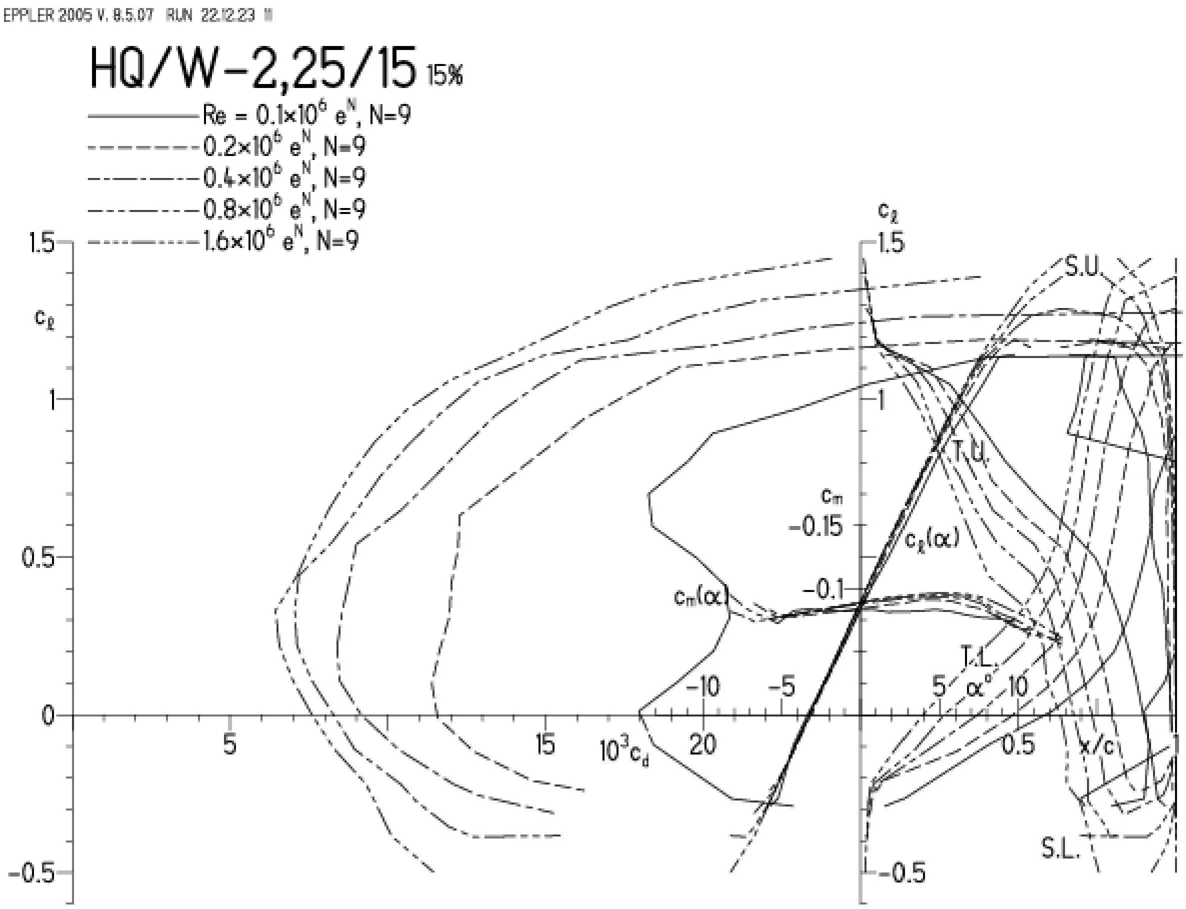
<u>HQ/W-2,25/15</u>, N=11



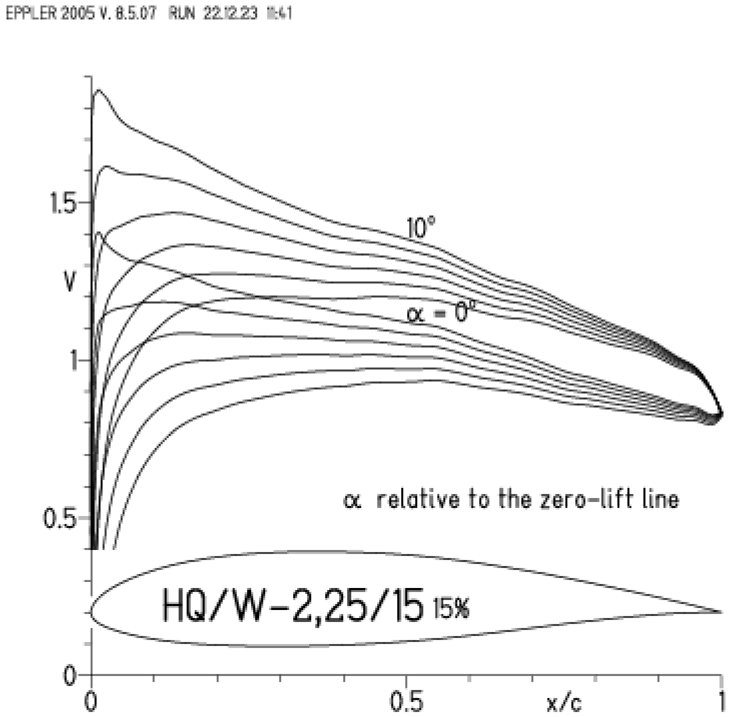


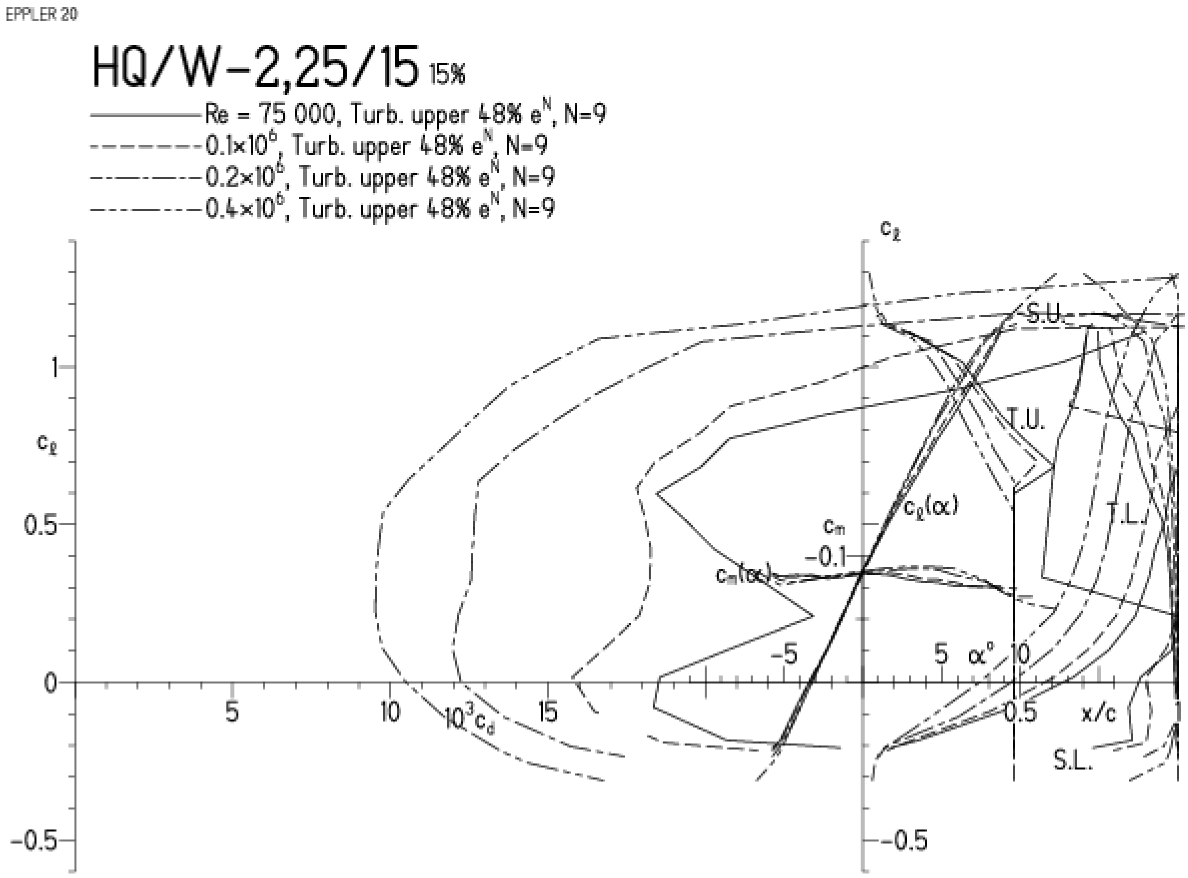
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10³c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



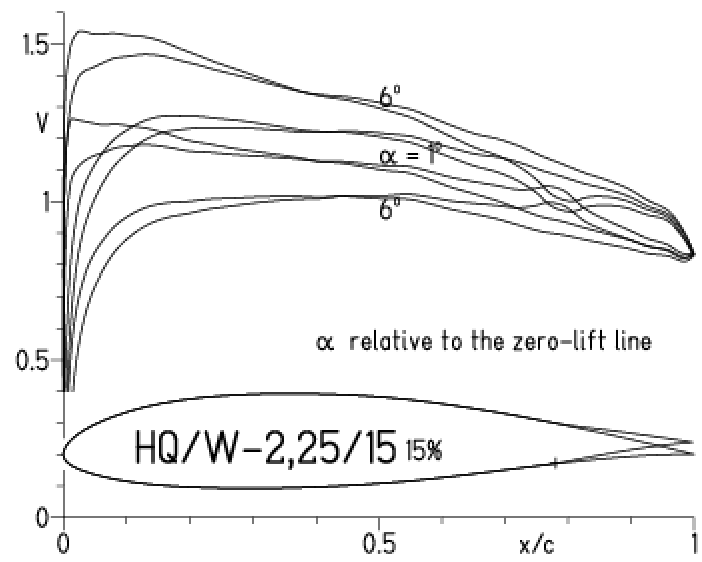


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

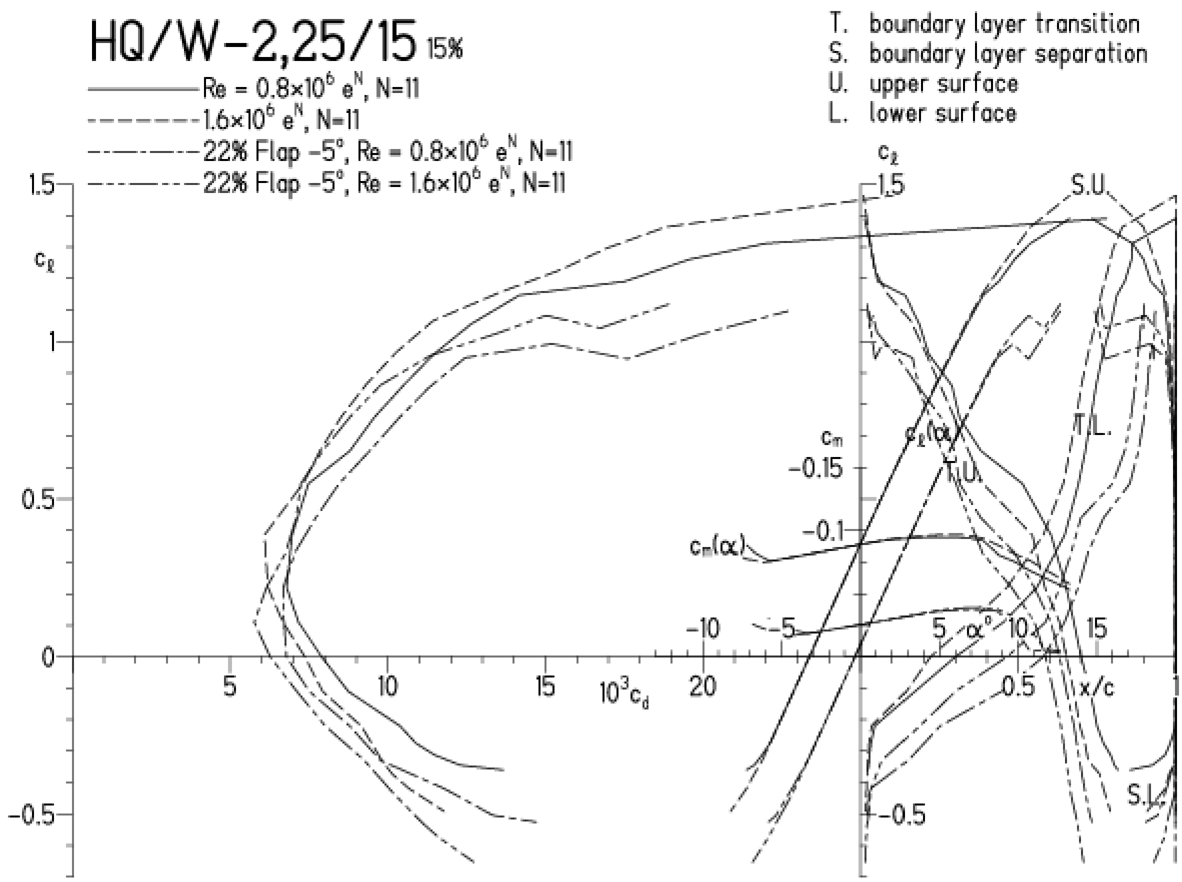
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

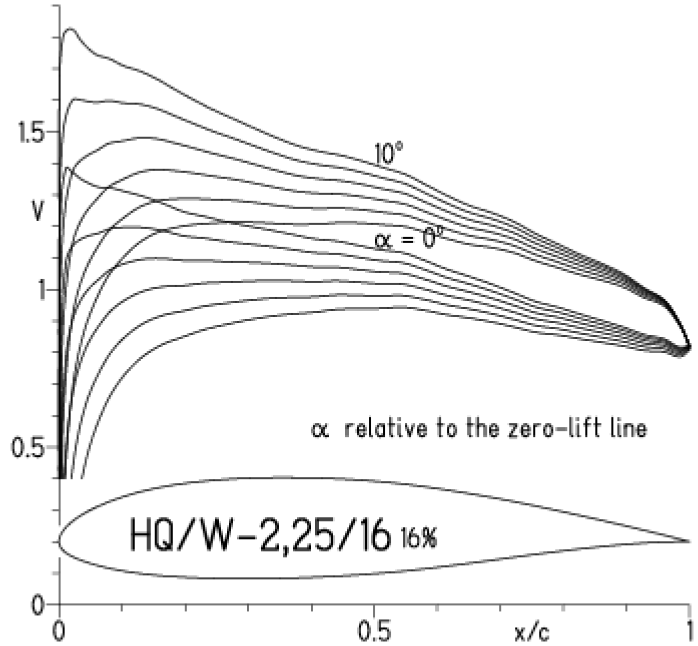


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

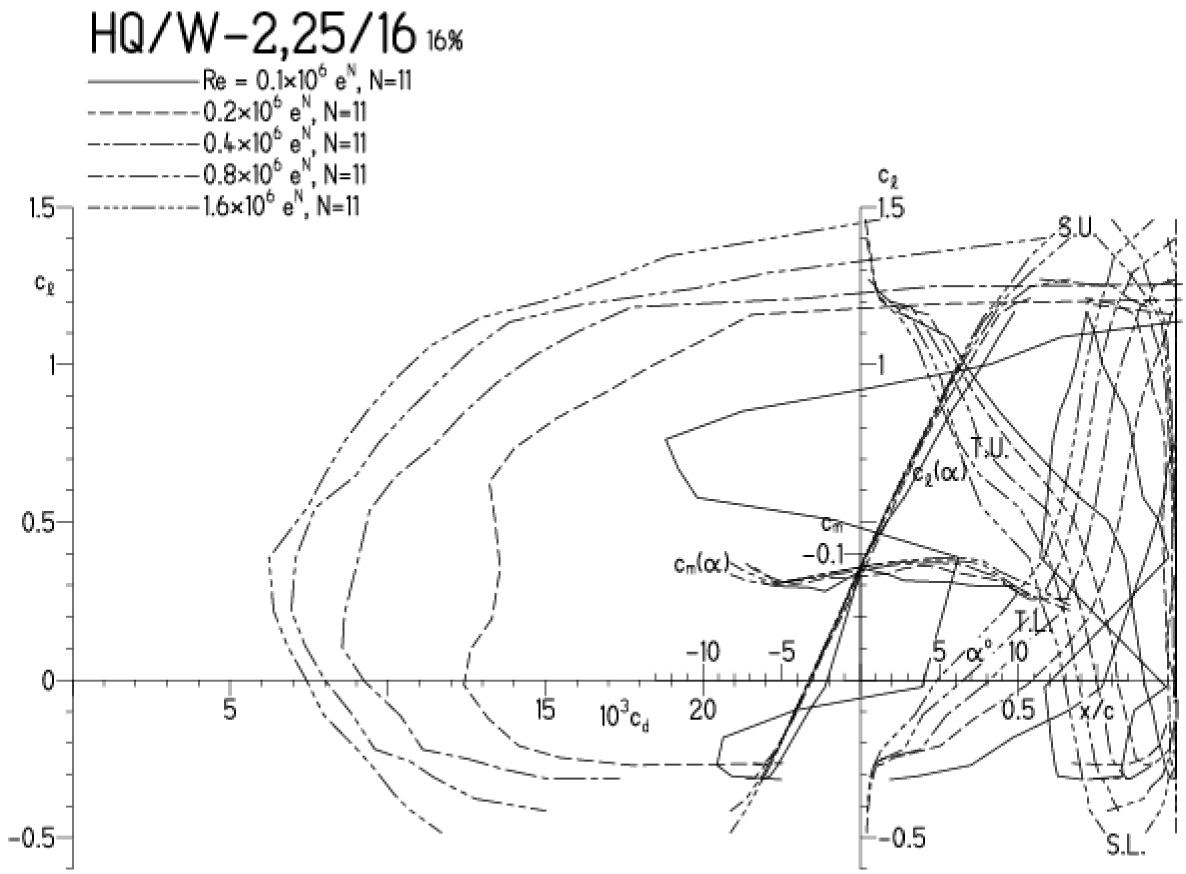


HQ/W-2,25/16, N=11

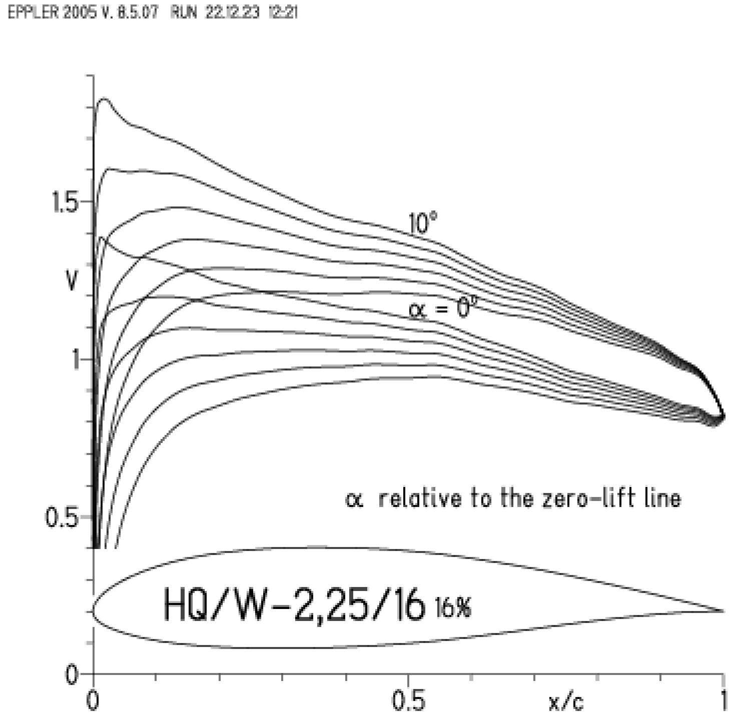
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

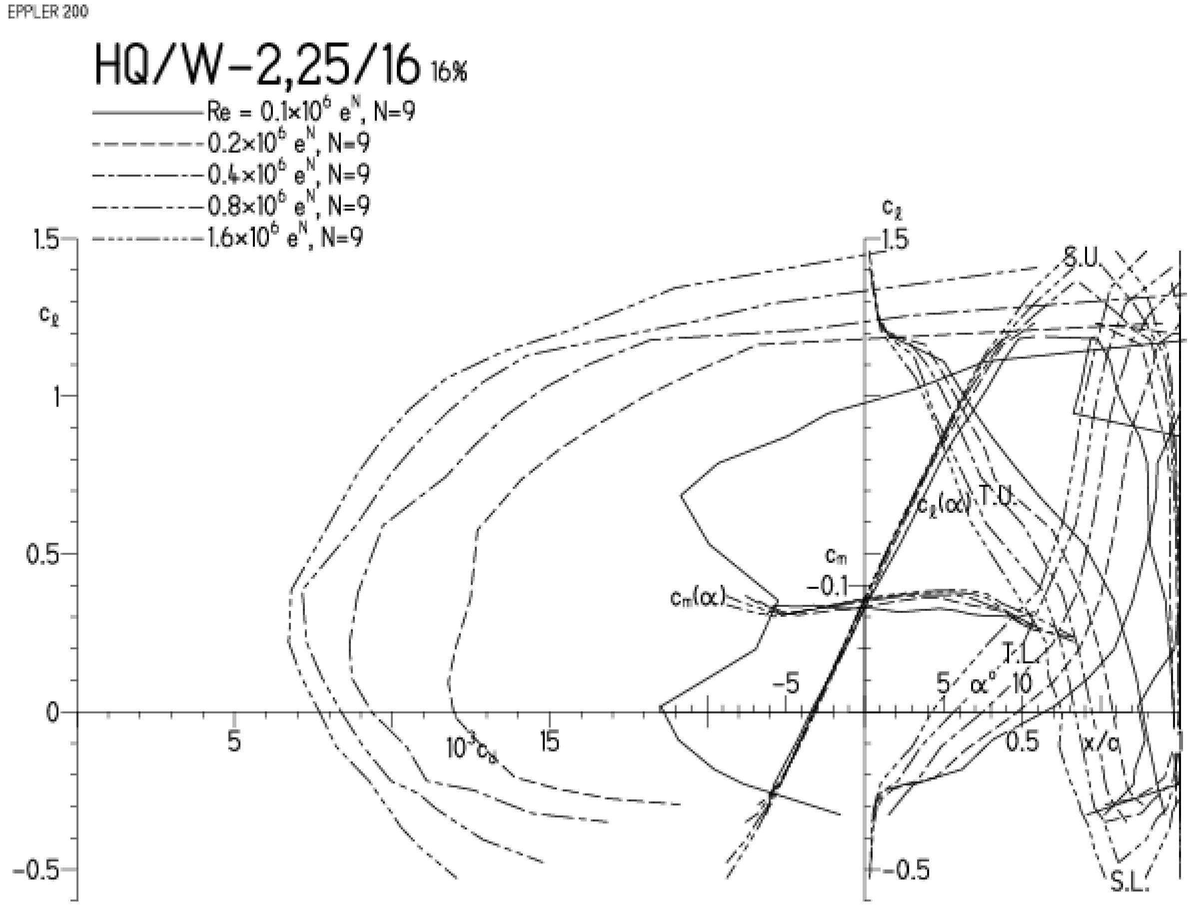


EPPLER 200

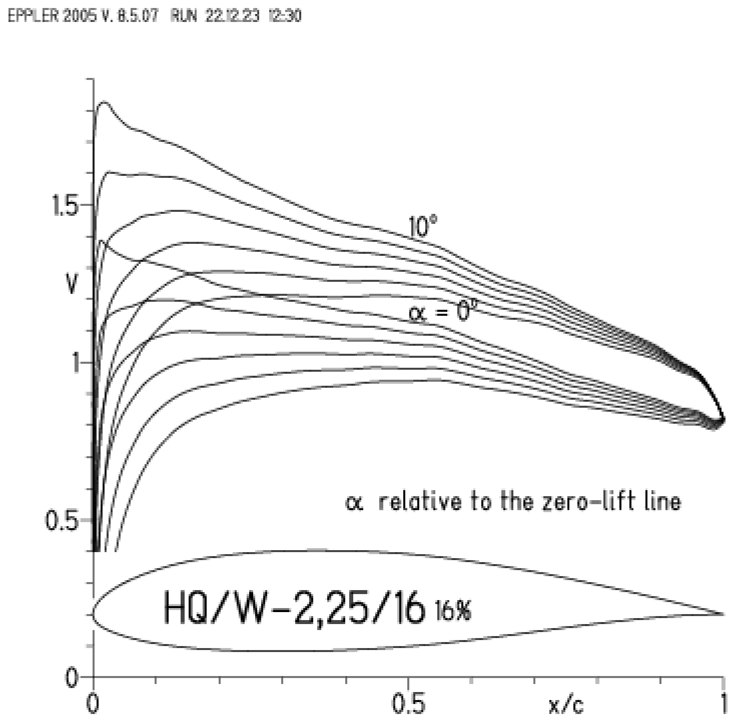


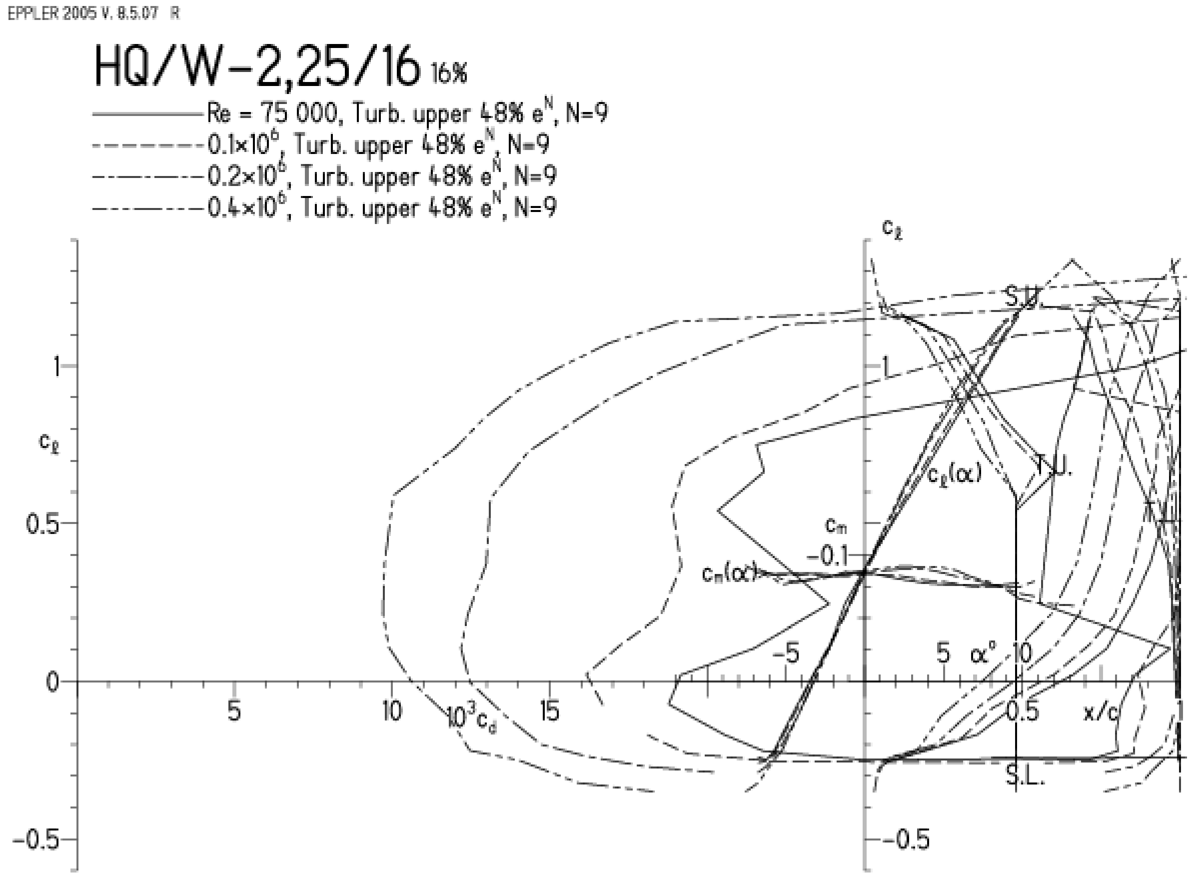
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



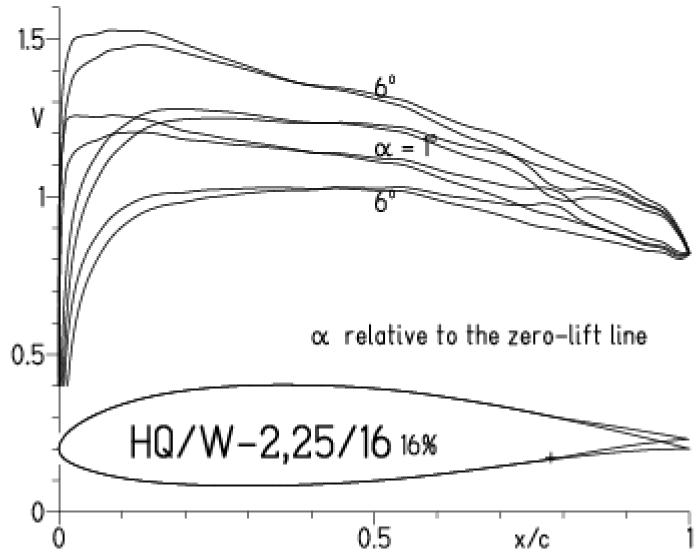


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

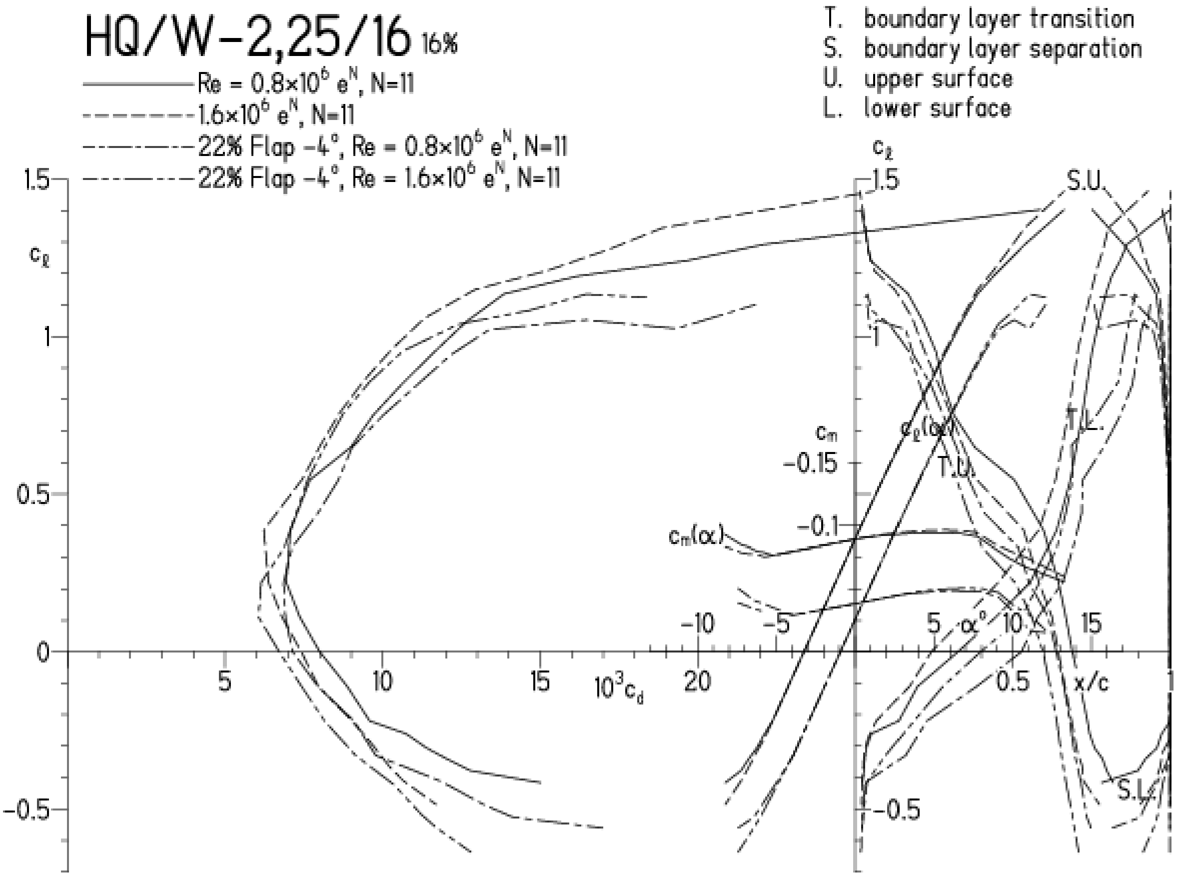
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

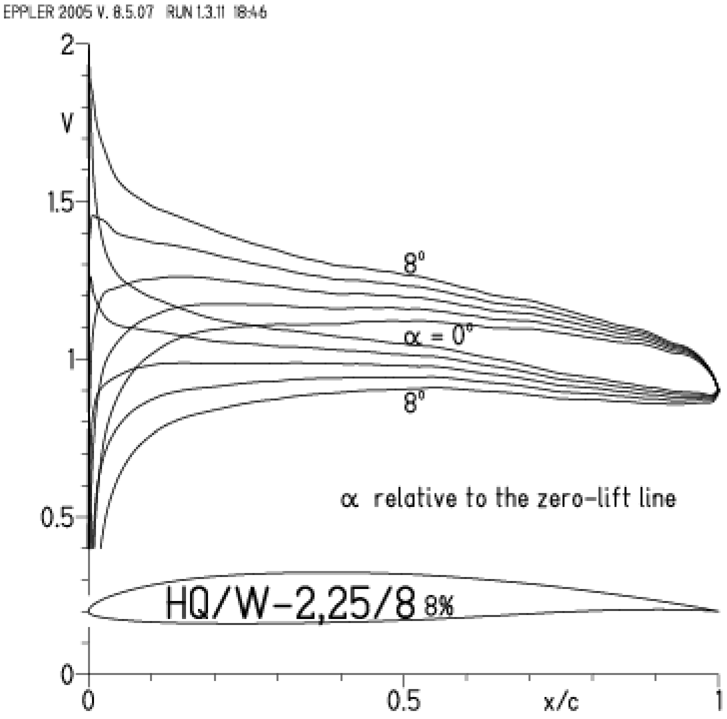
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

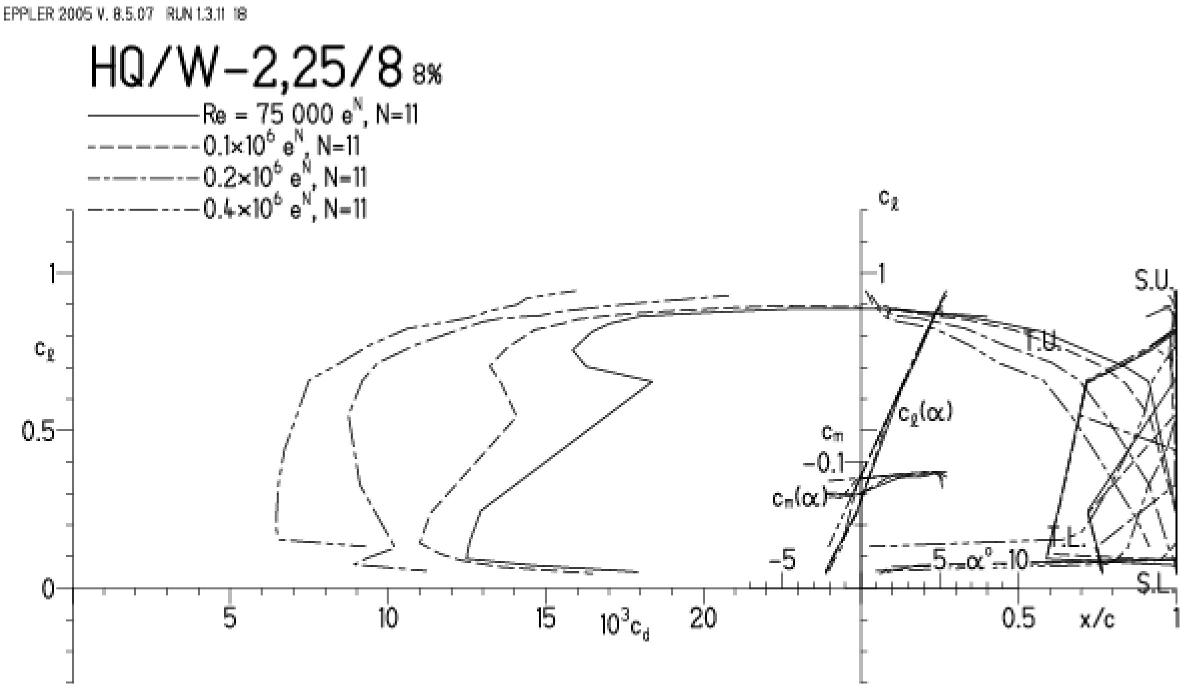


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

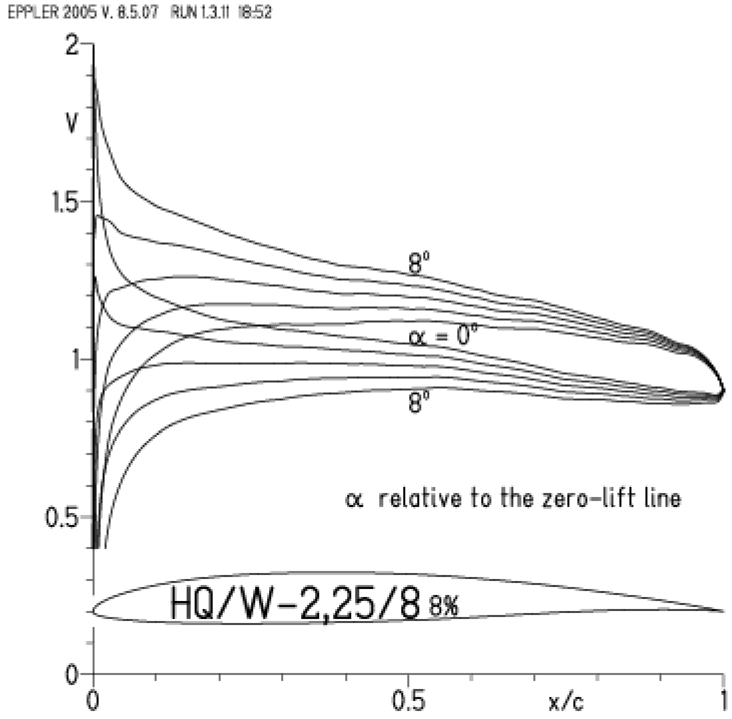


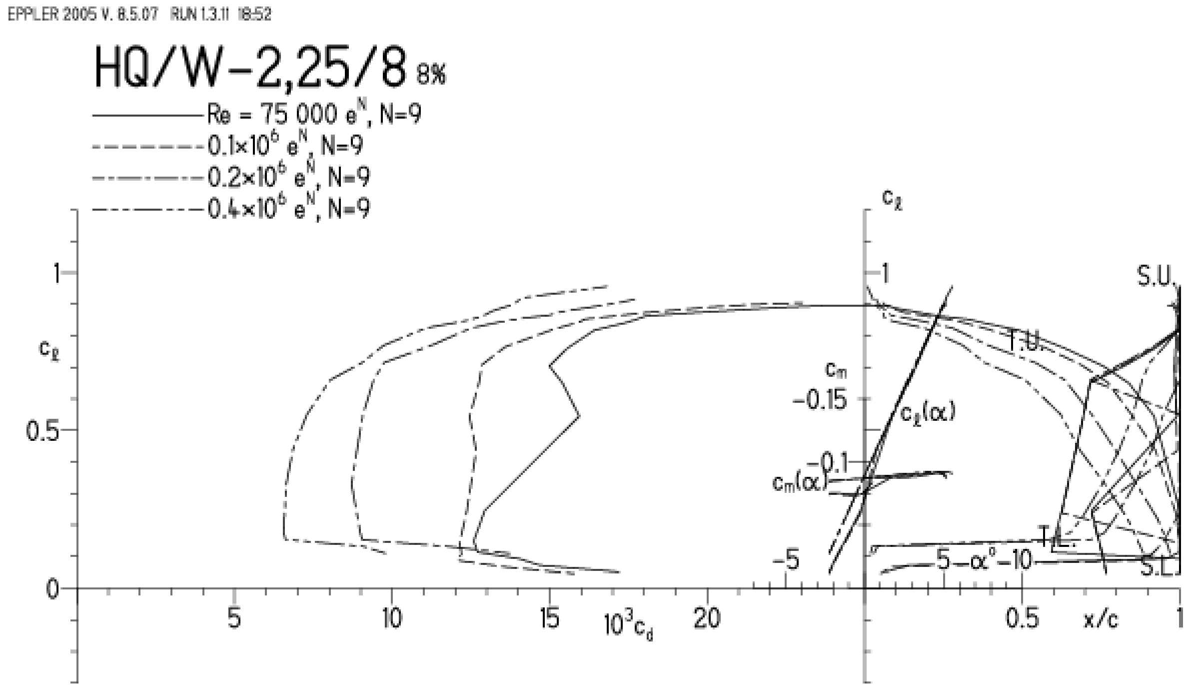
<u>HQ/W-2,25/8</u>, N=11



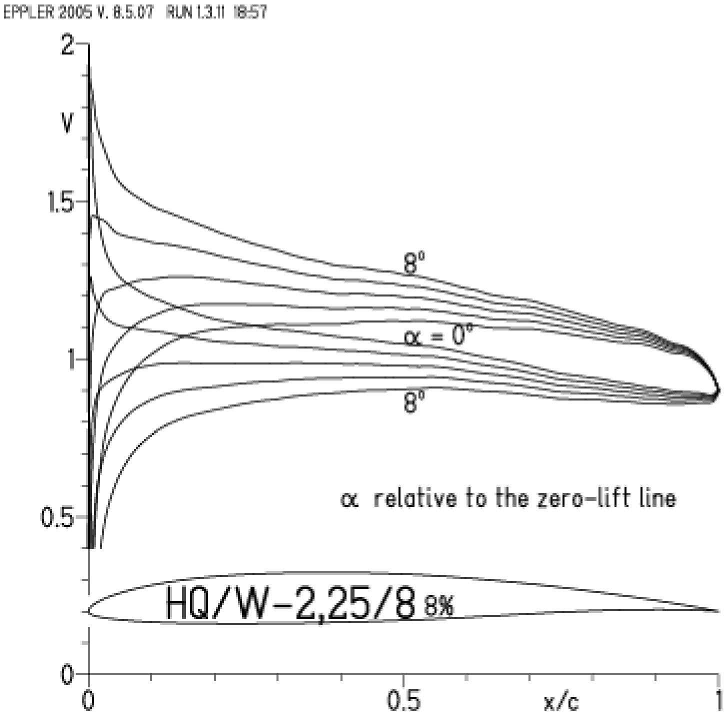


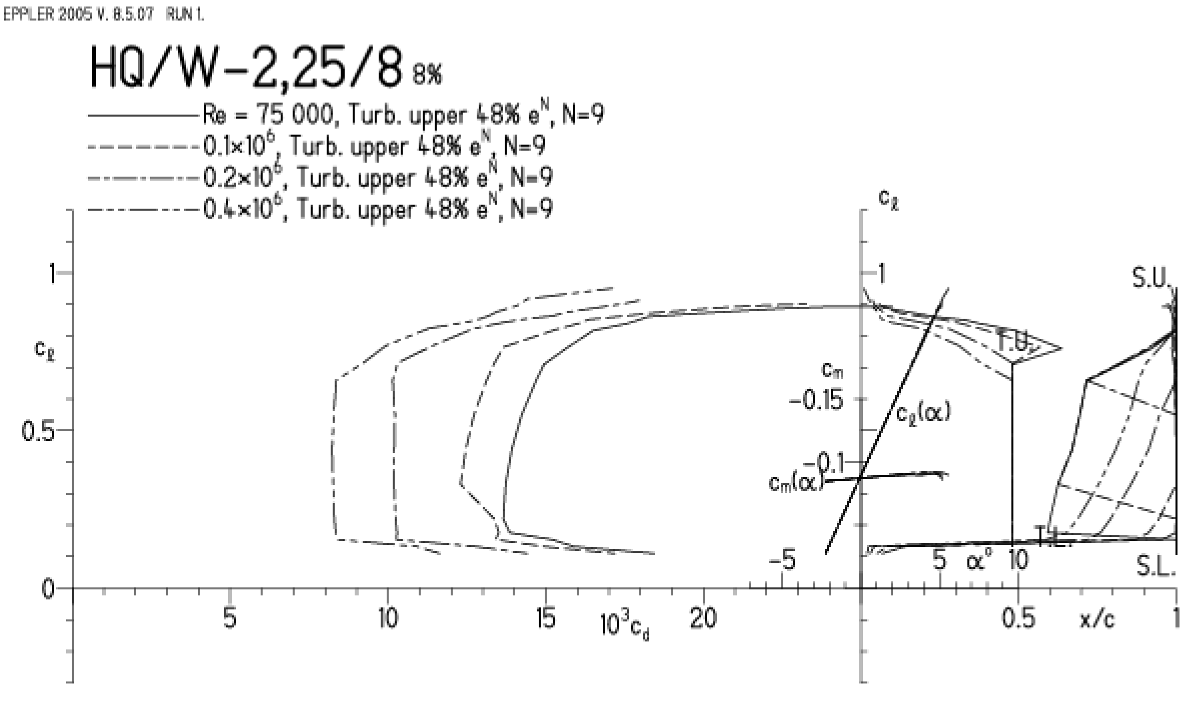
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

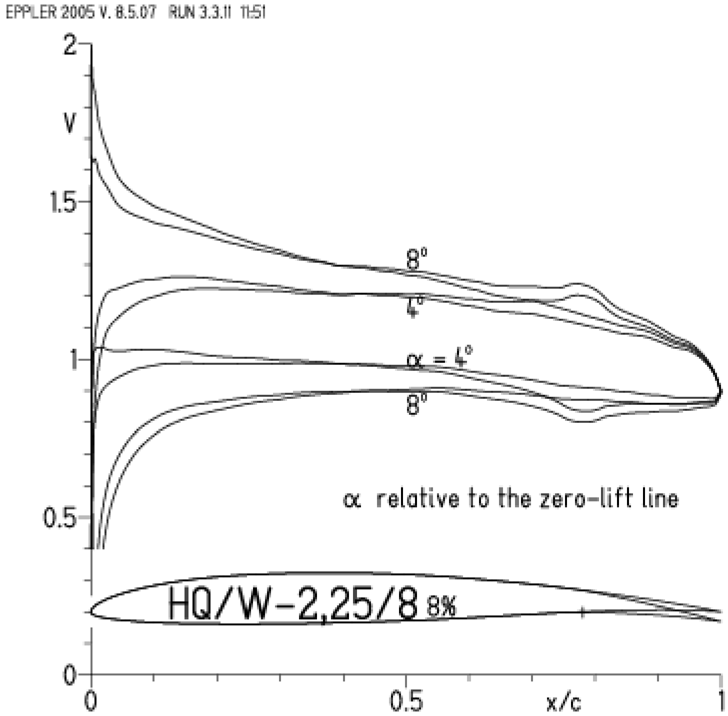

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
5−α°−10
10^3 c_d
x/c

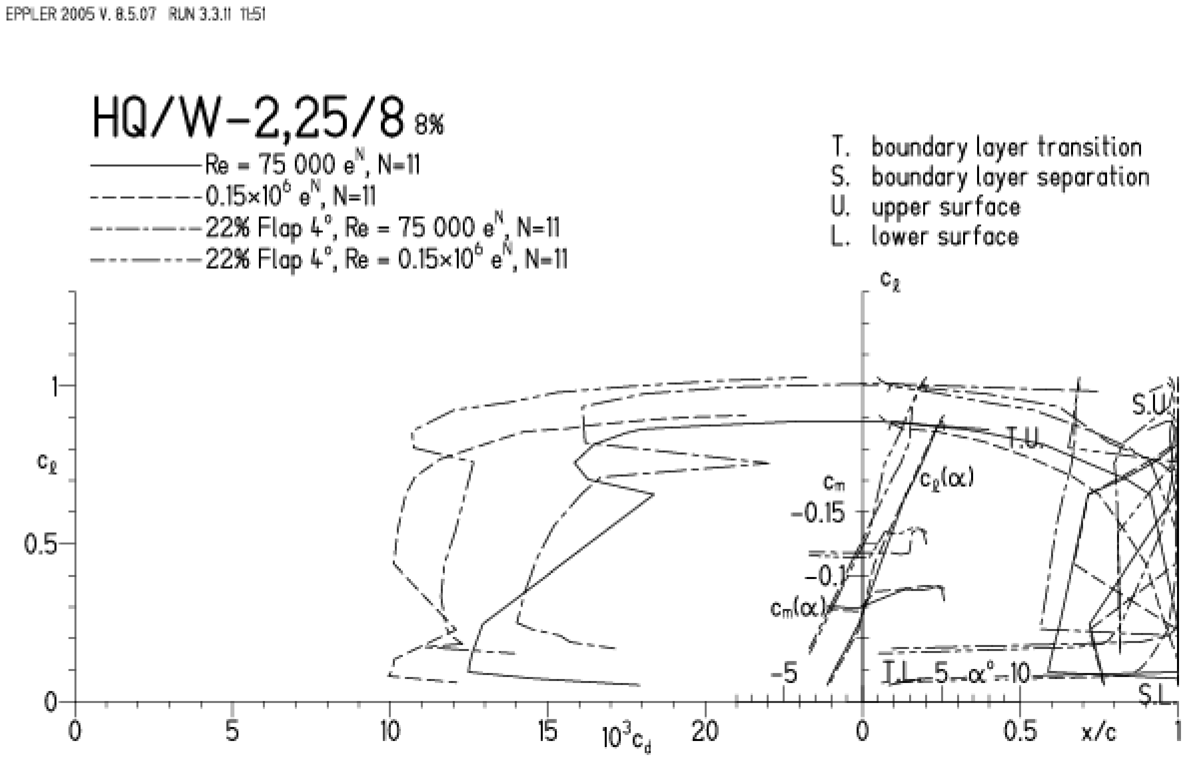
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



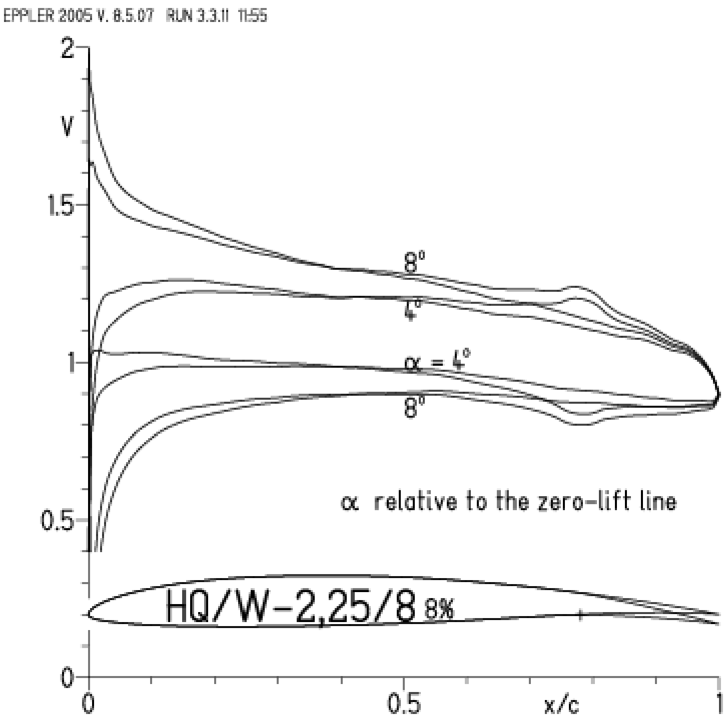


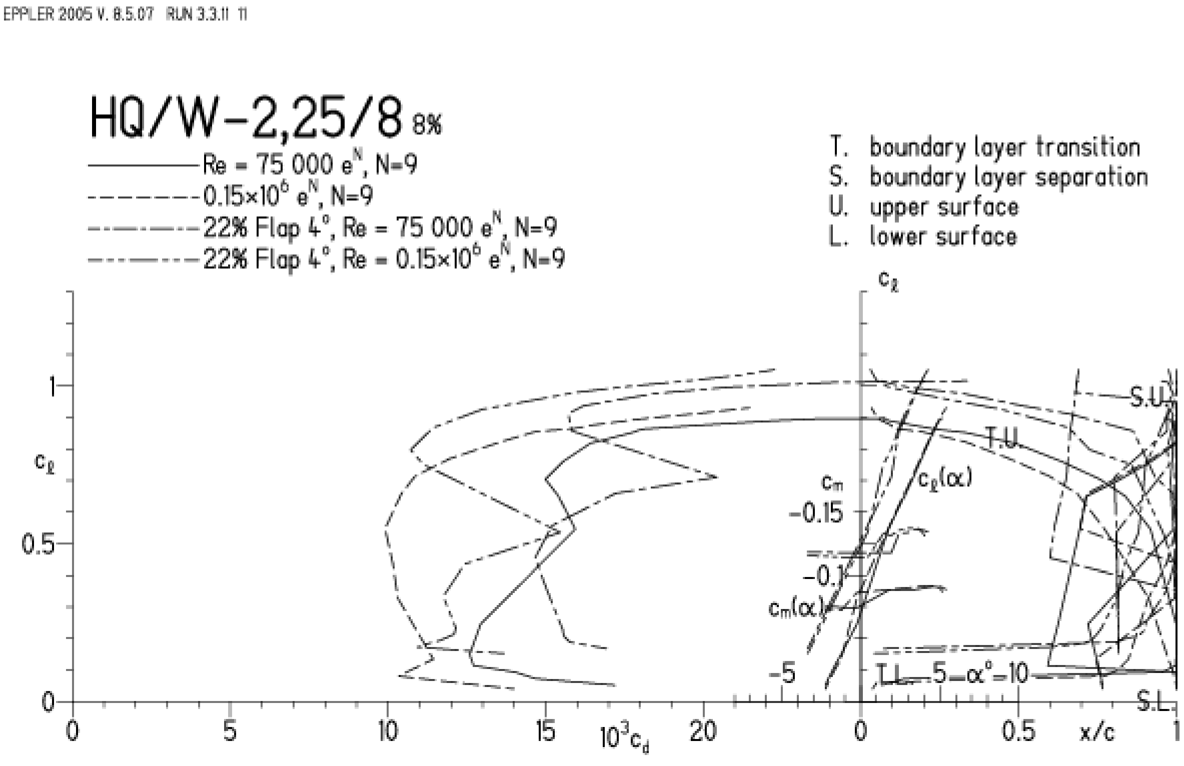
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



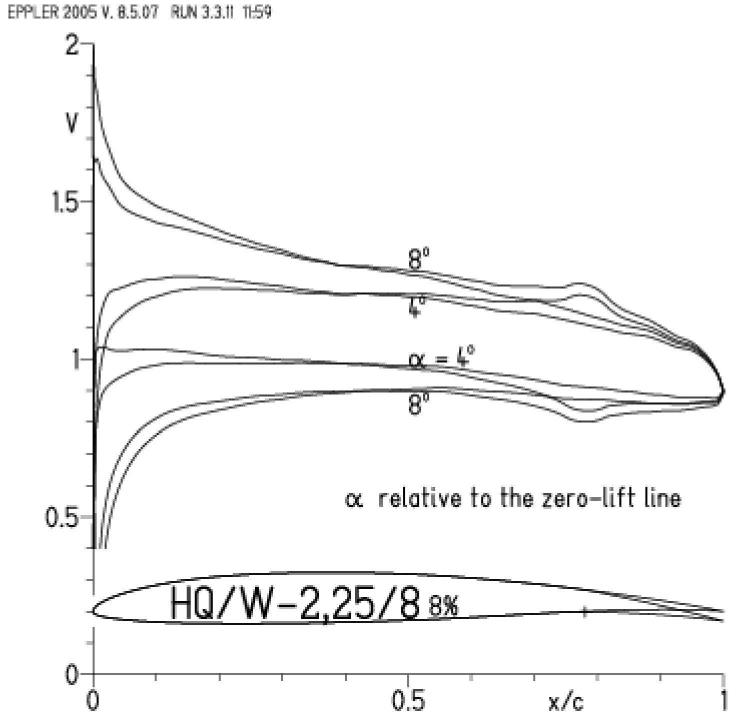


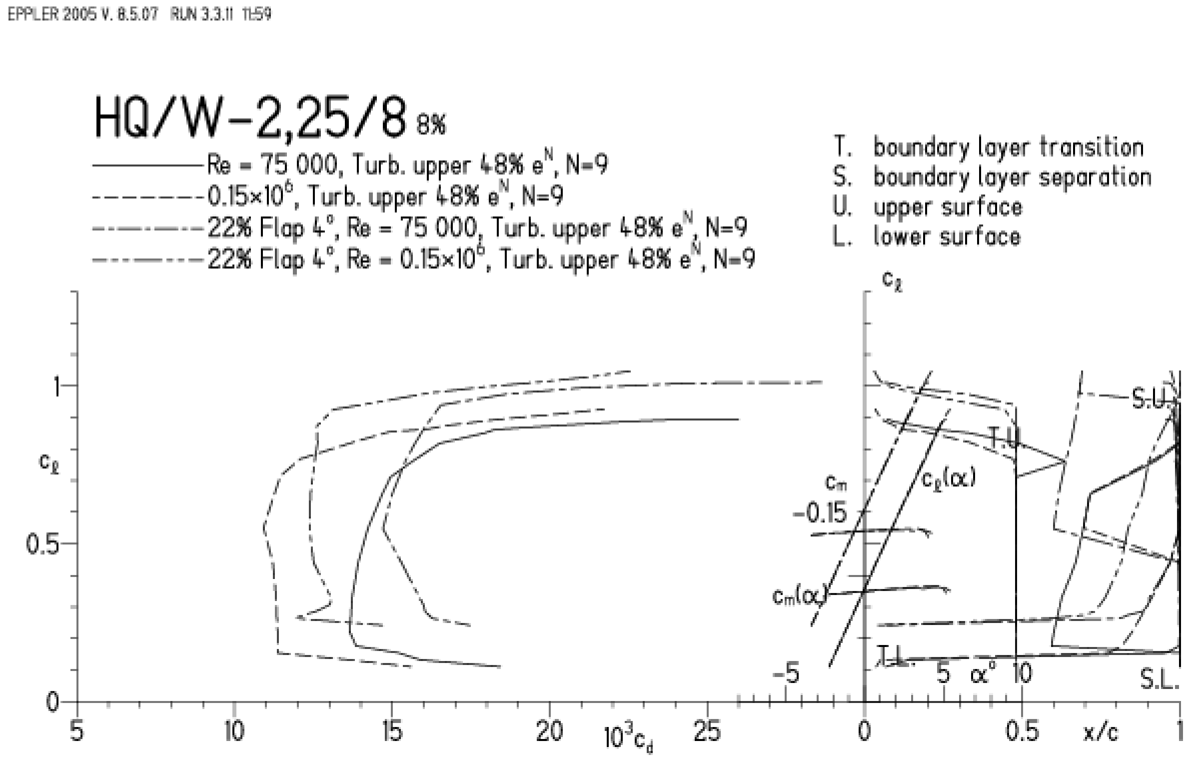
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





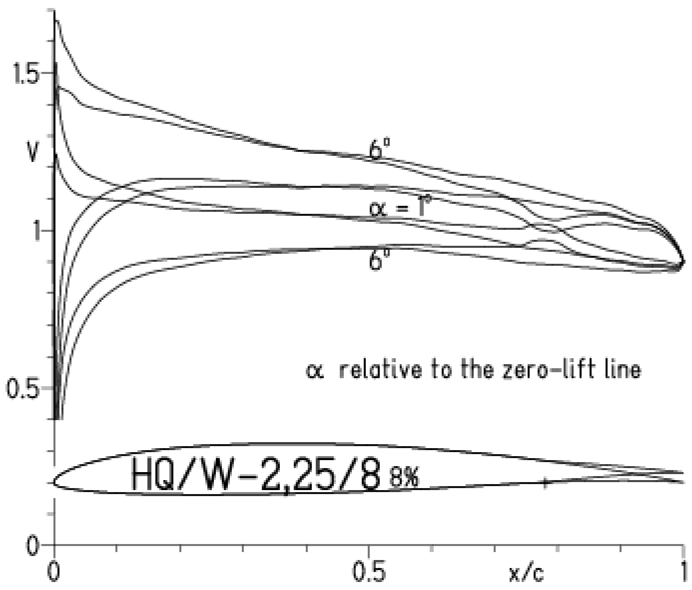
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



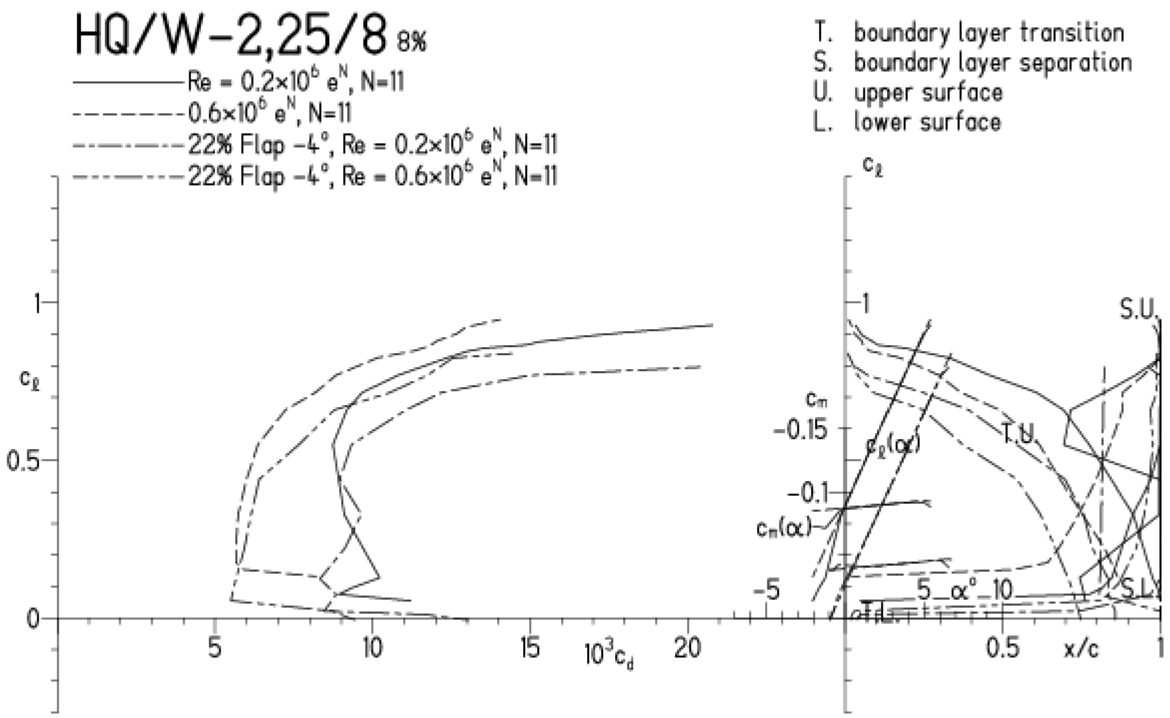


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

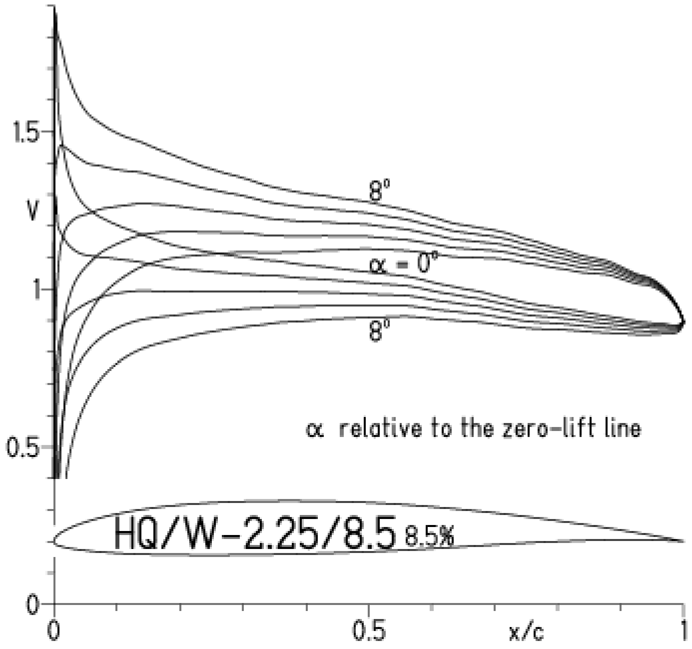


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

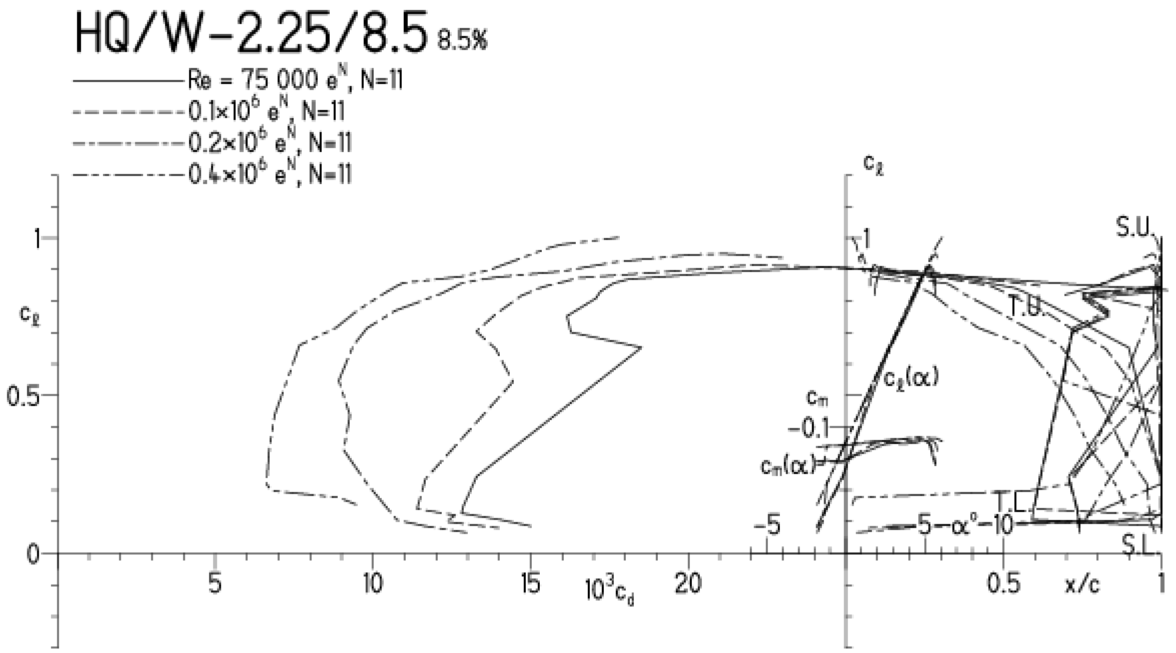


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

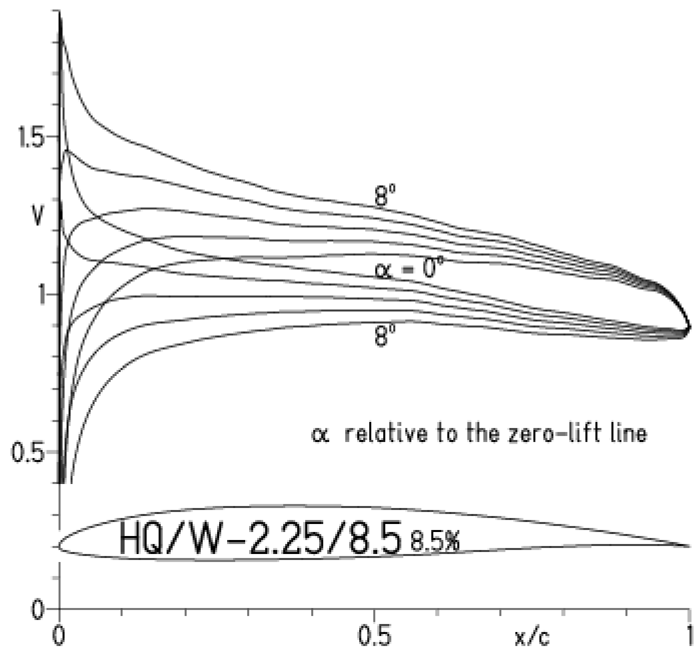


EPPLER 2005 V

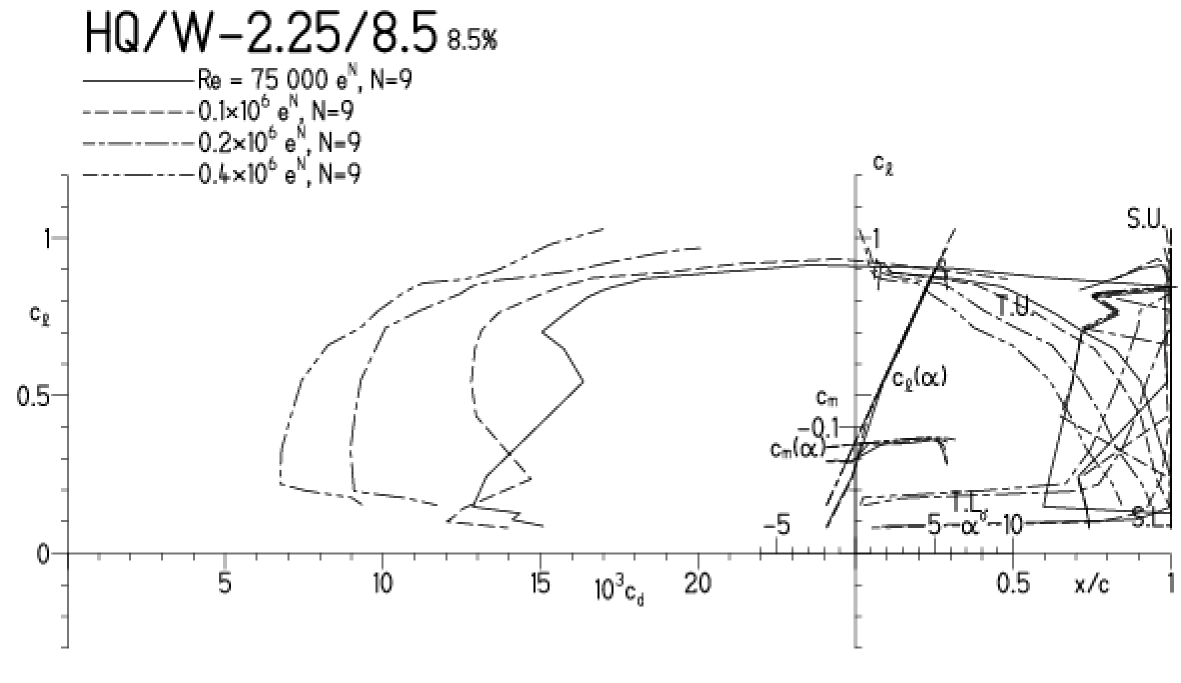


HQ/W-2,25/8,5, N=9

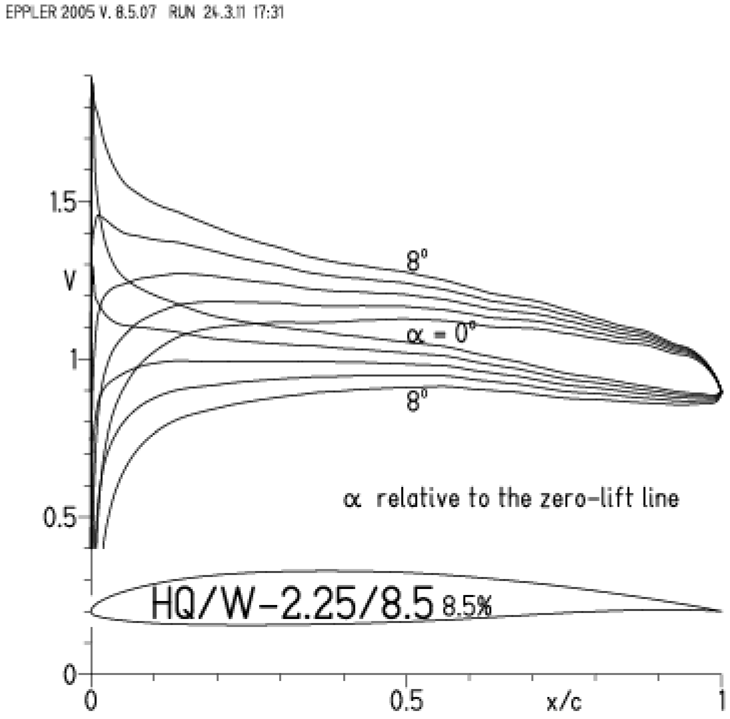
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

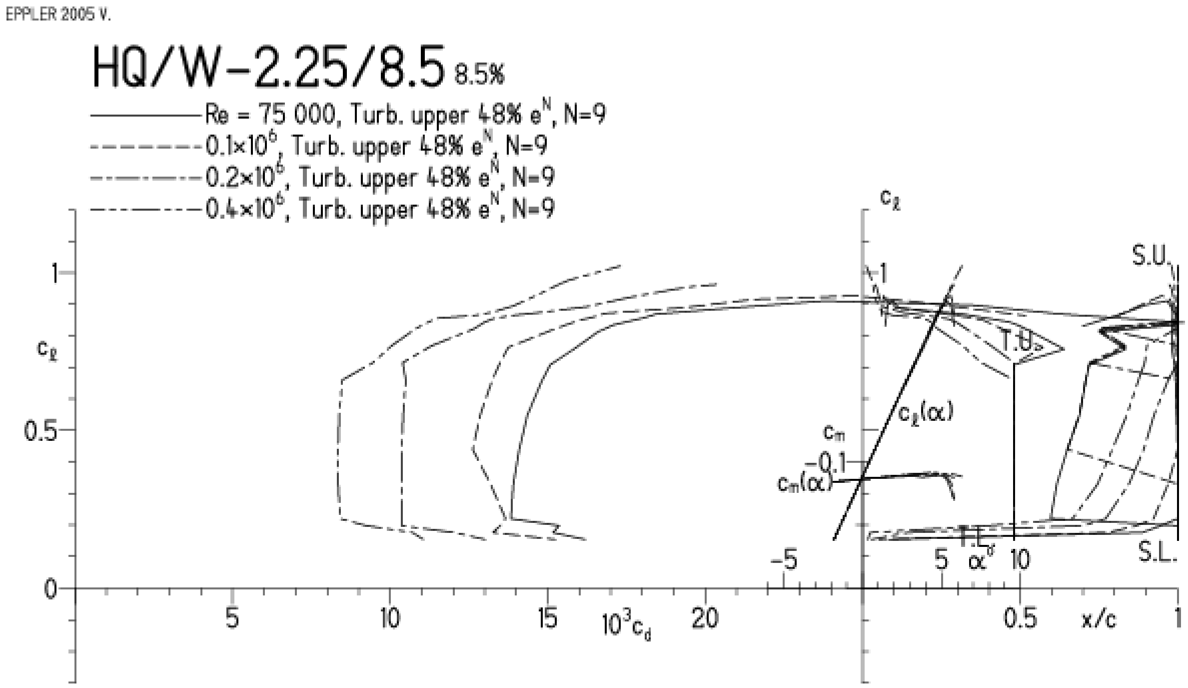


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



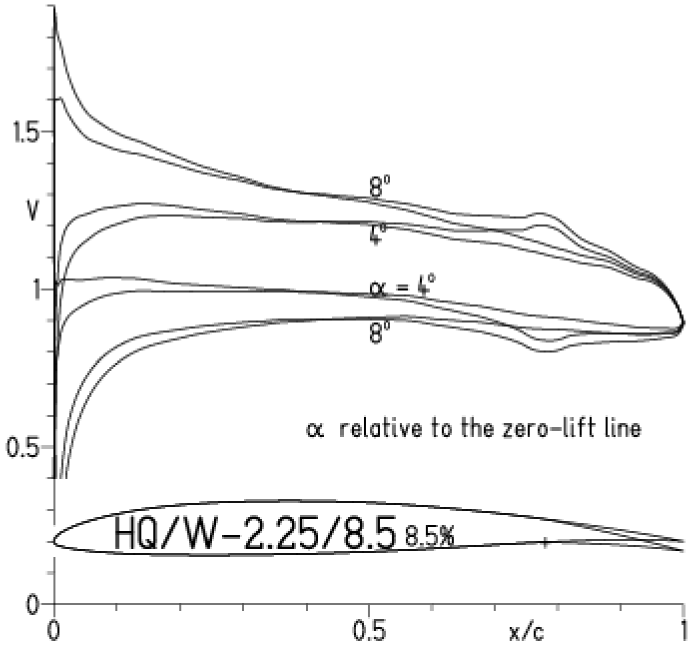
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



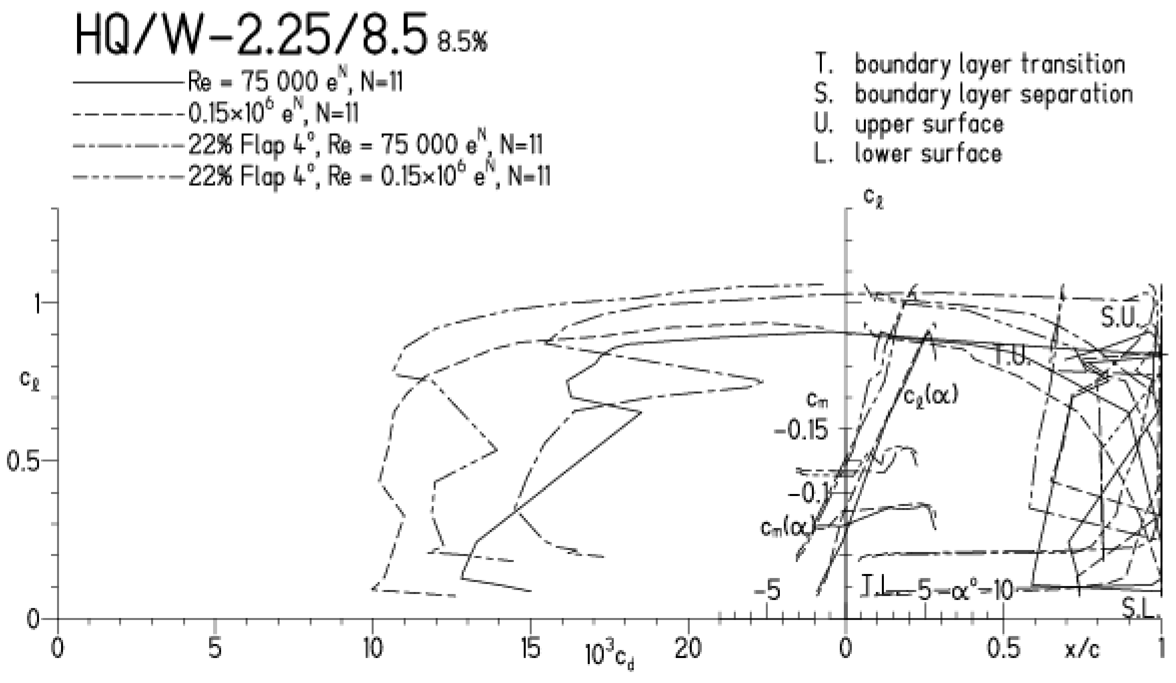


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

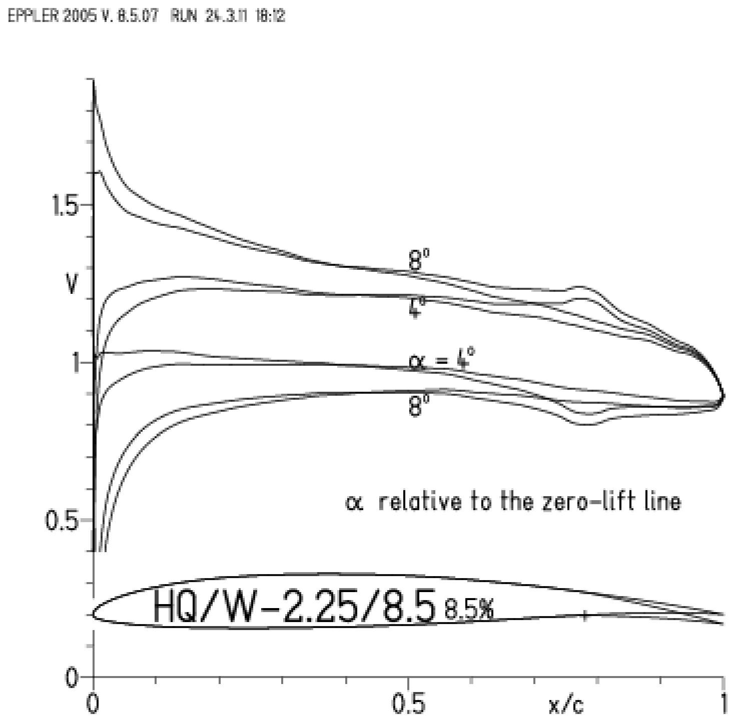
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

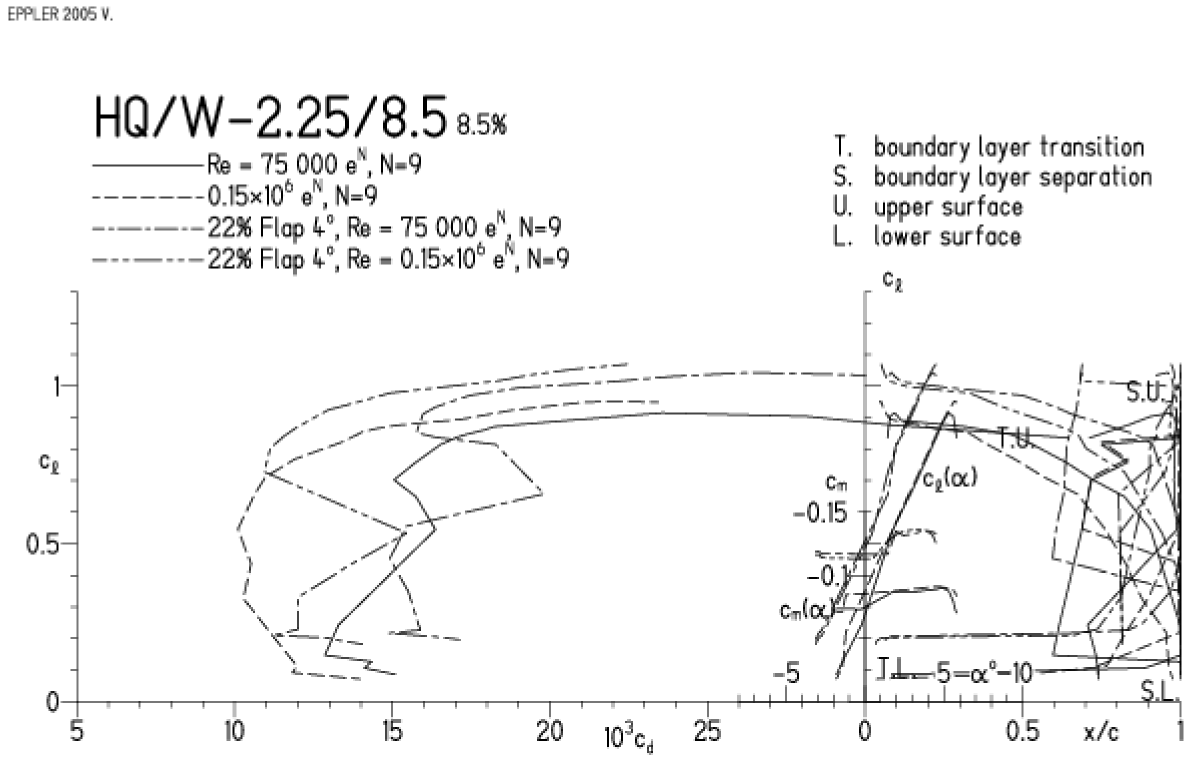


EPPLER 2005 V. 8.5.

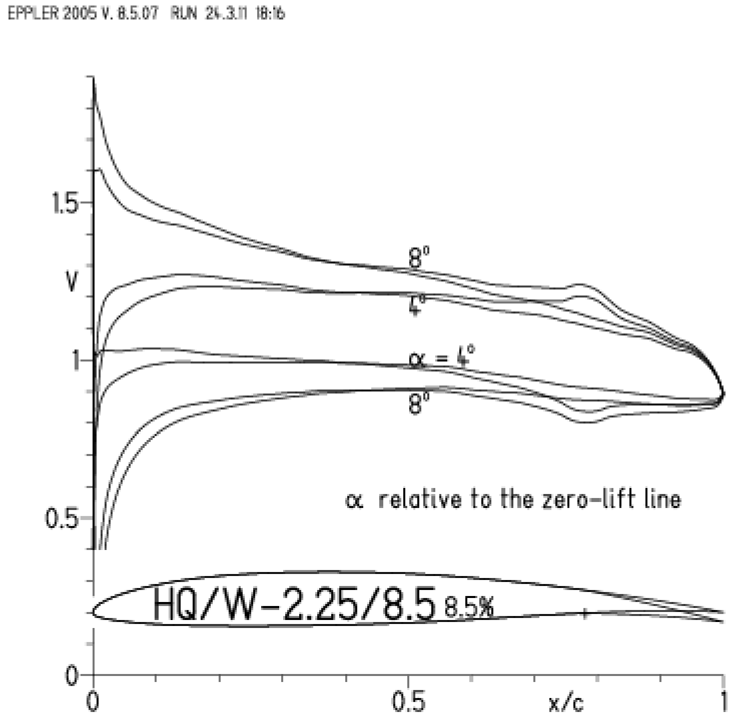


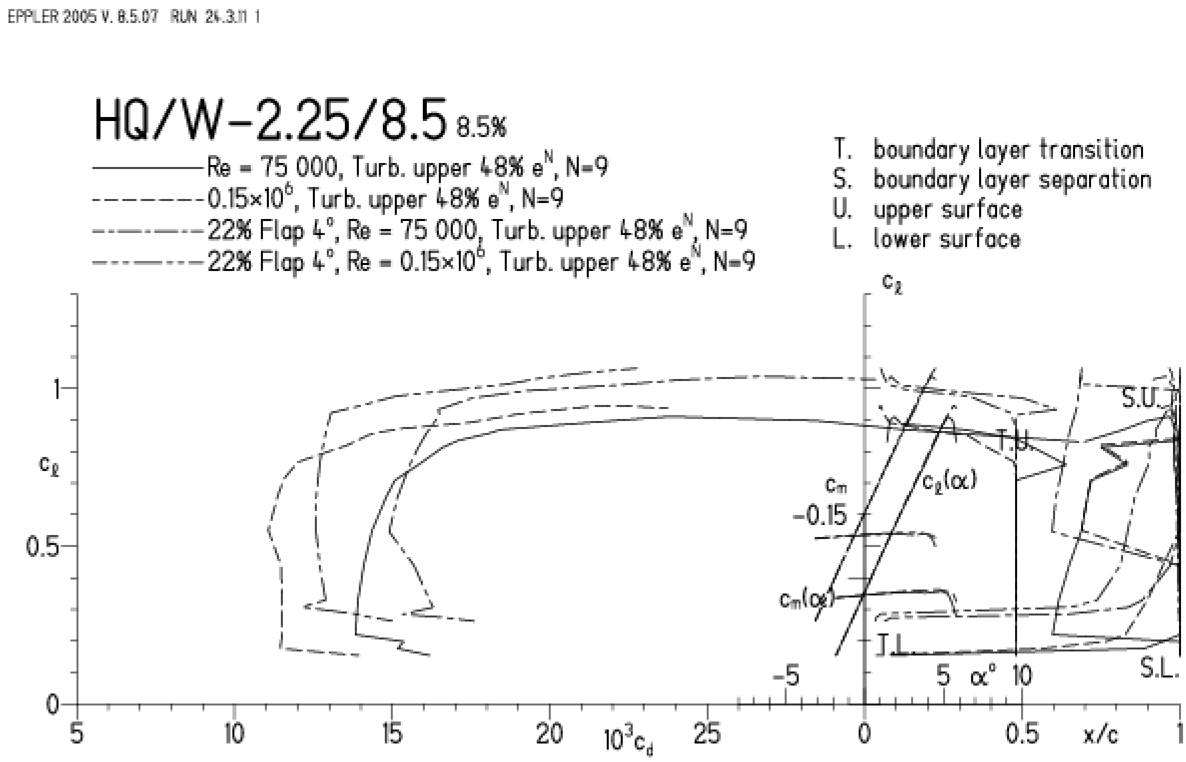
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag





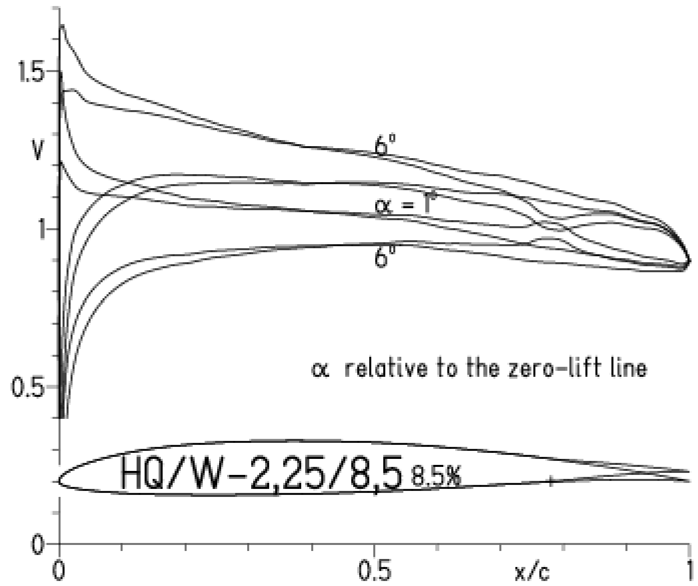
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



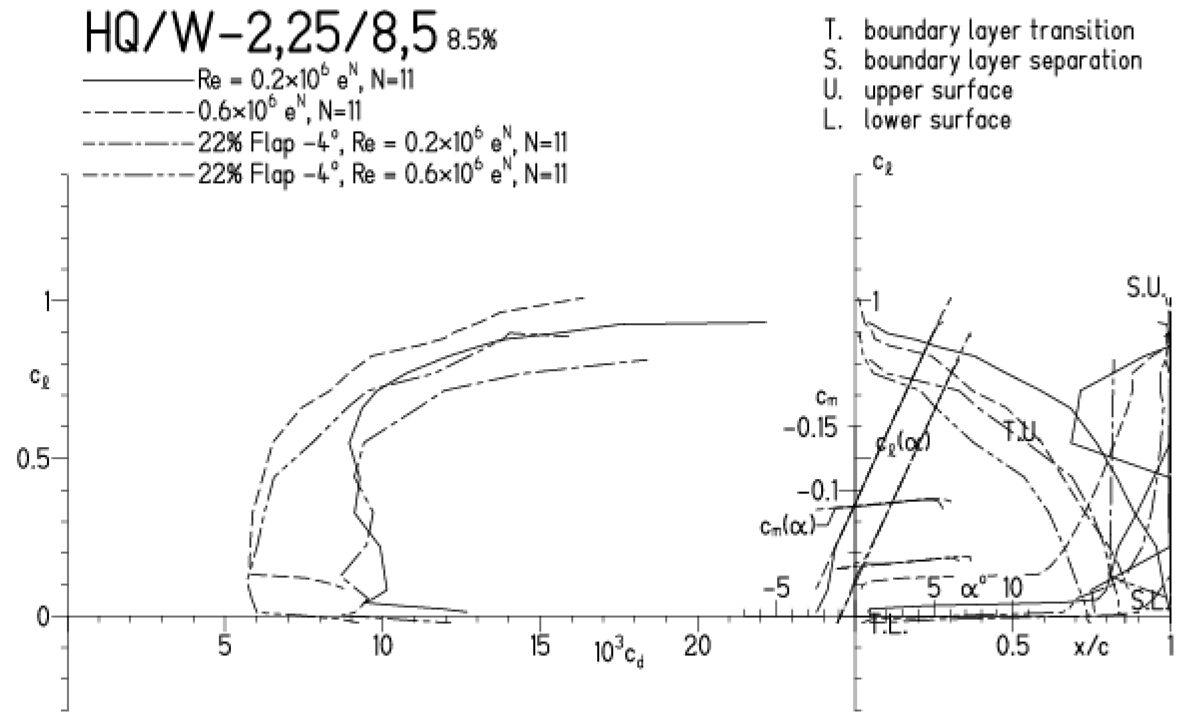


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

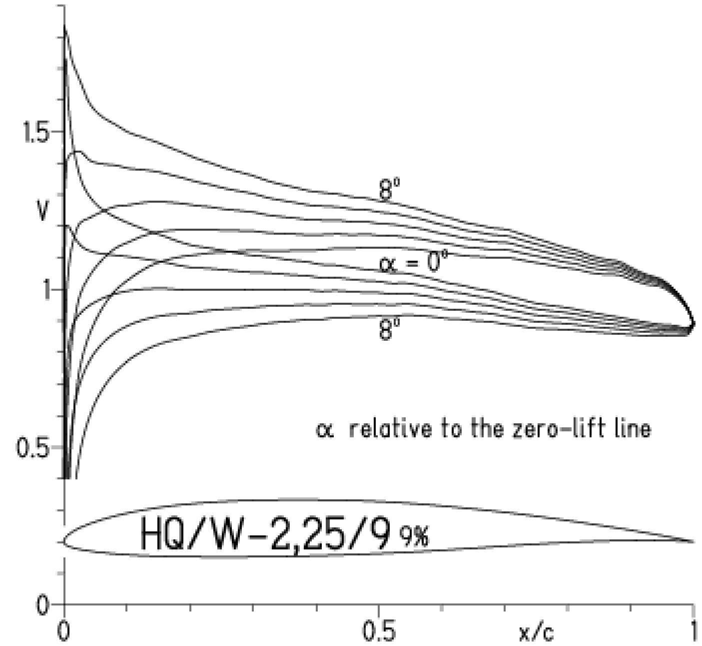


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

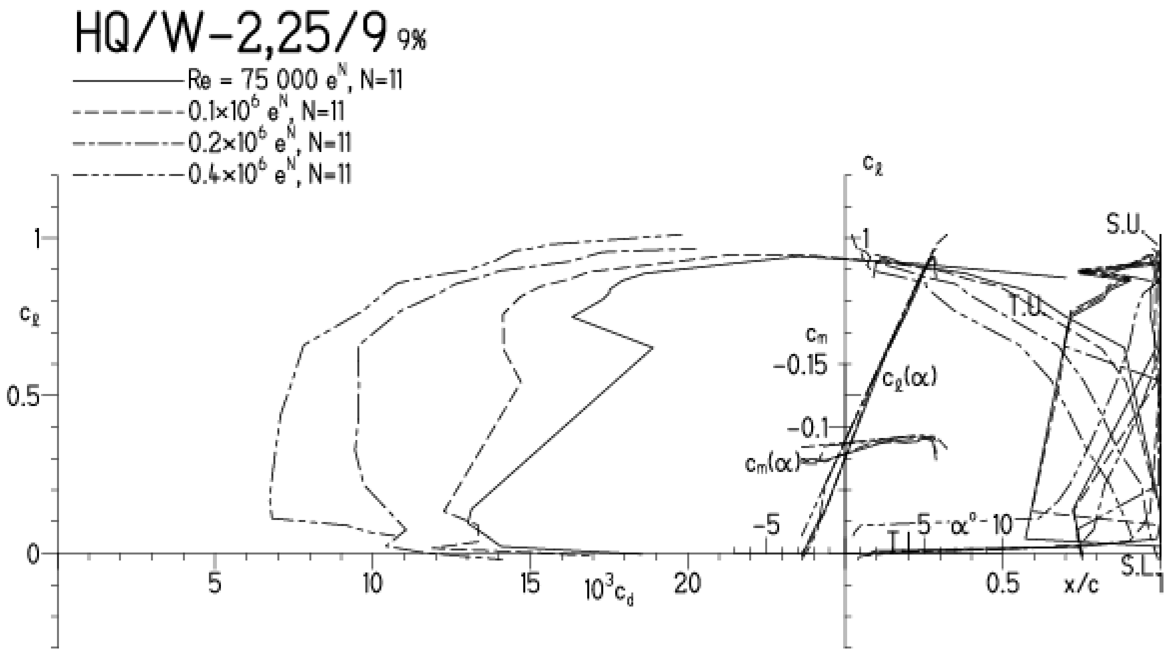


HQ/W-2,25/9, N=11

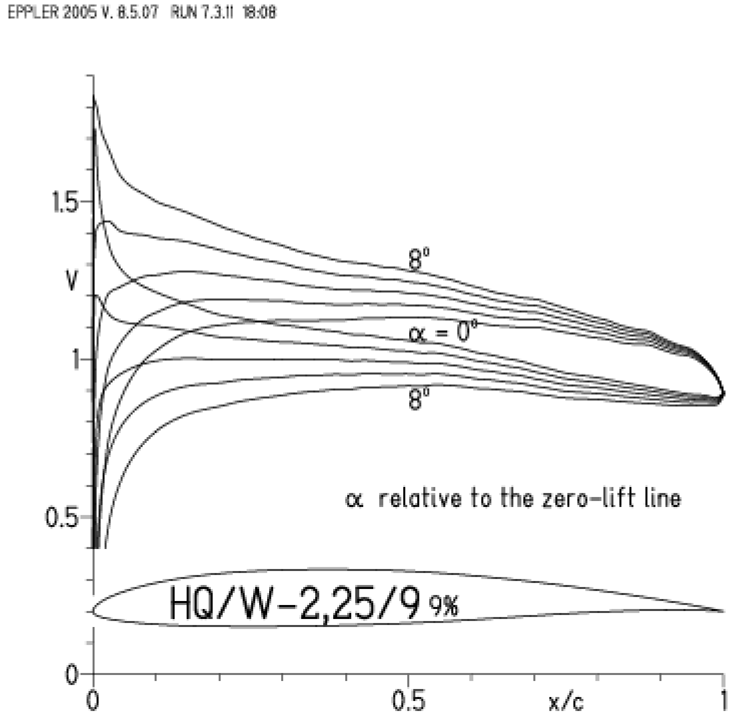
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

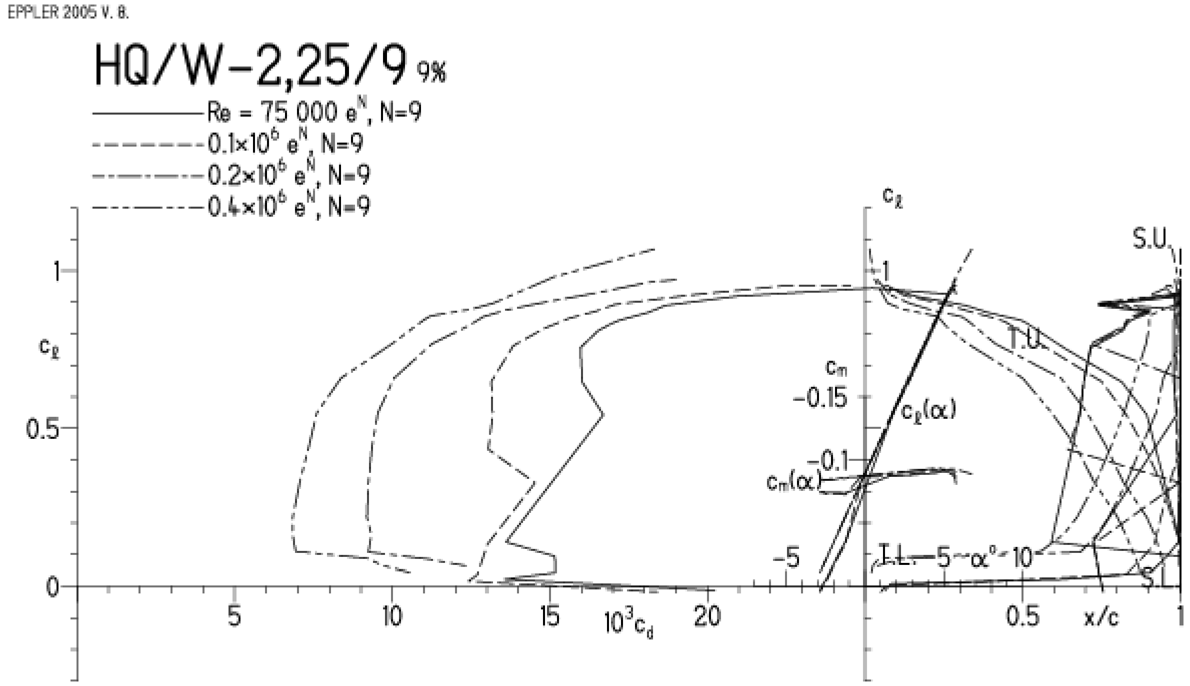


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

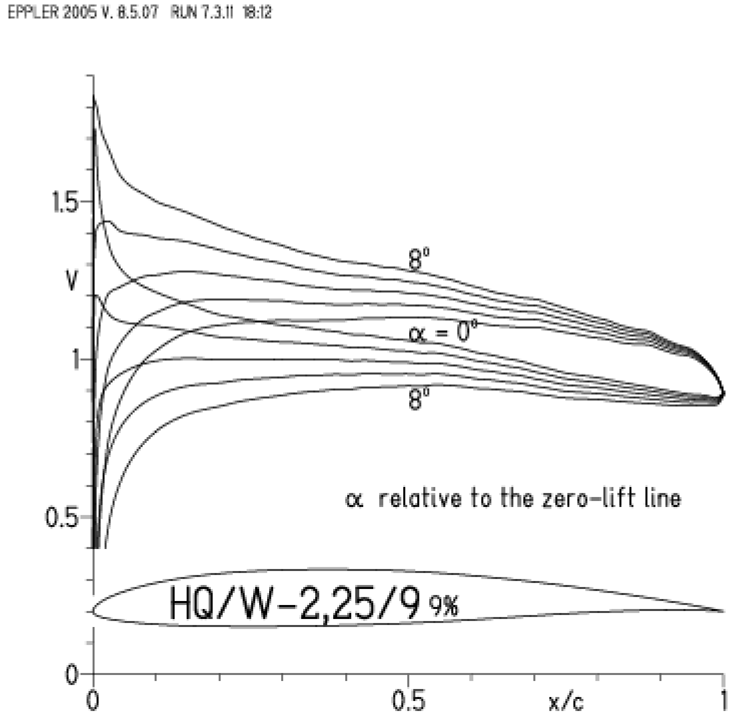


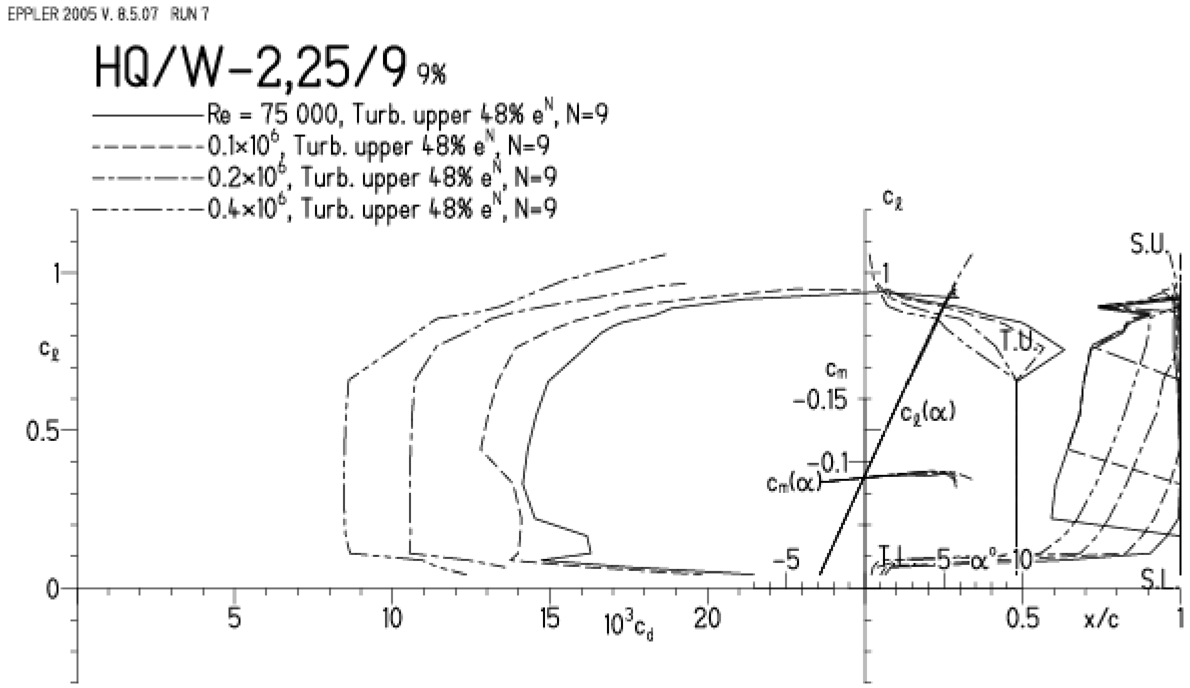
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_l(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

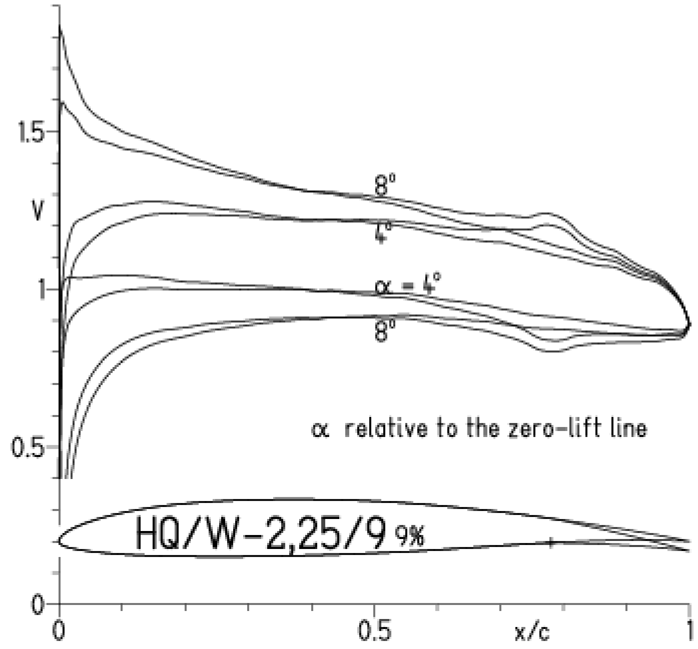
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



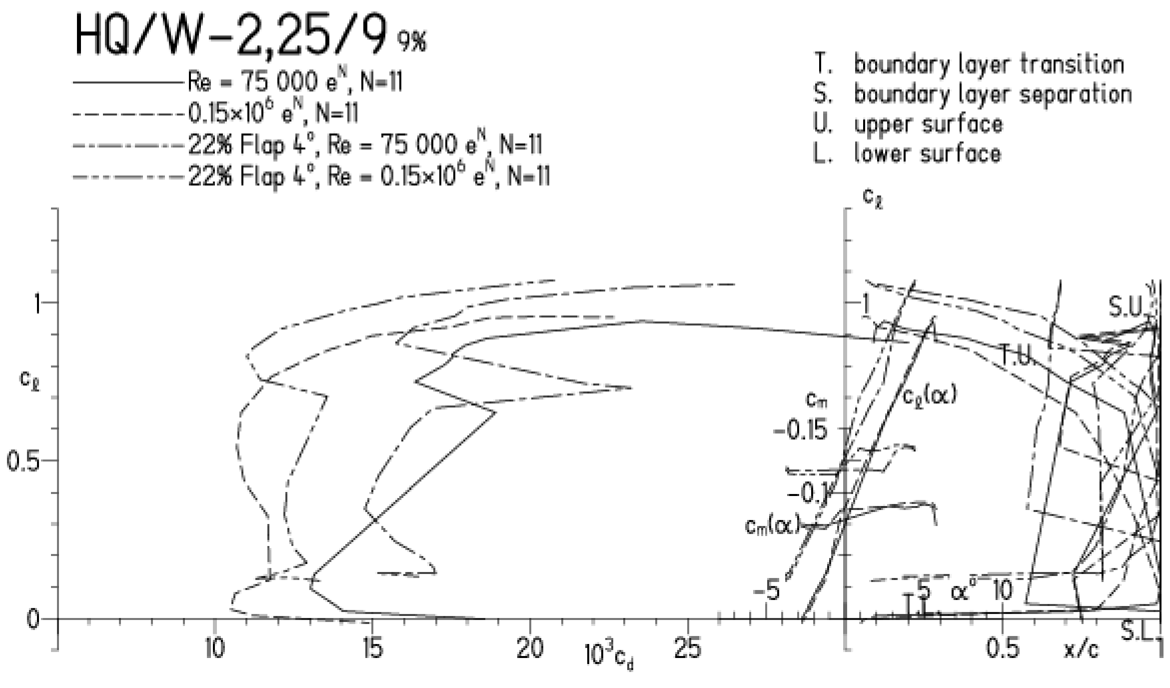


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

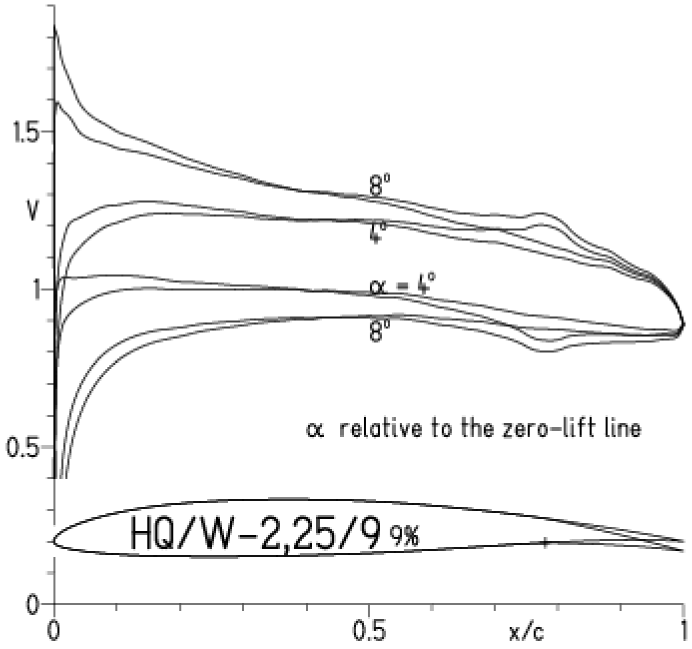


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

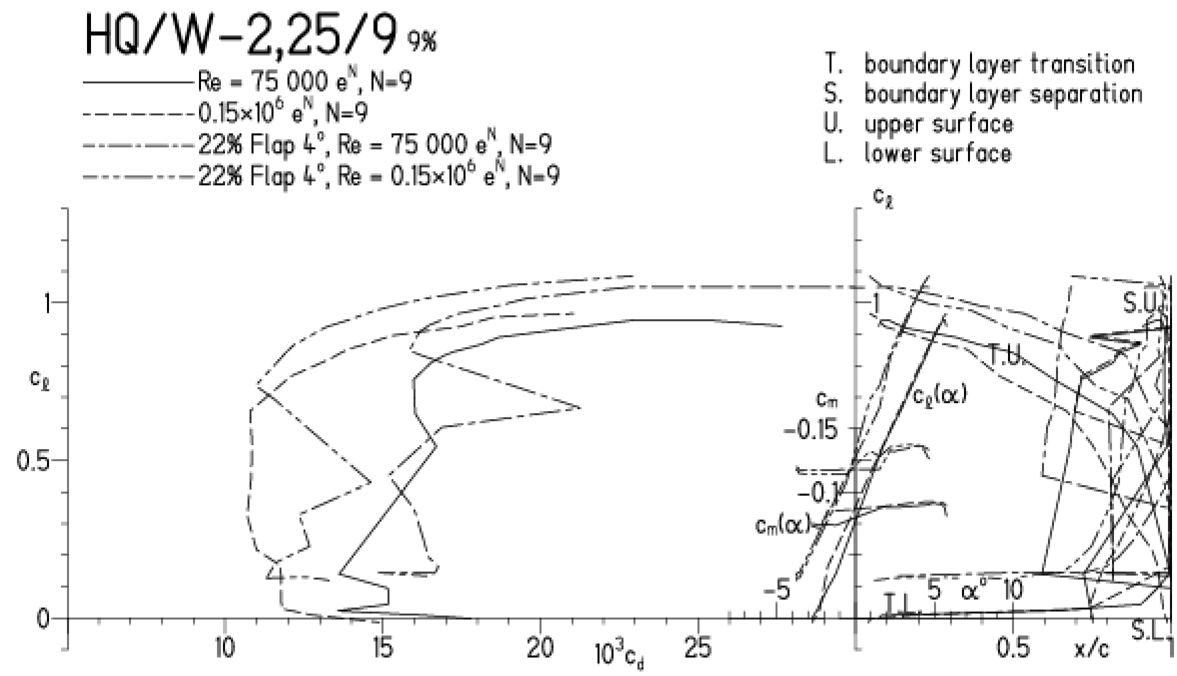


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

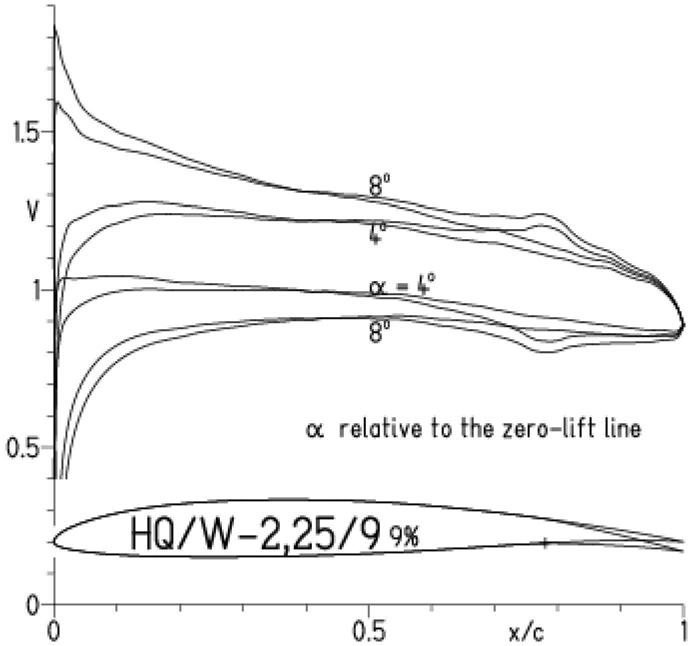


EPPLER 2005 V. 8.5.07 RUN 8.3.1

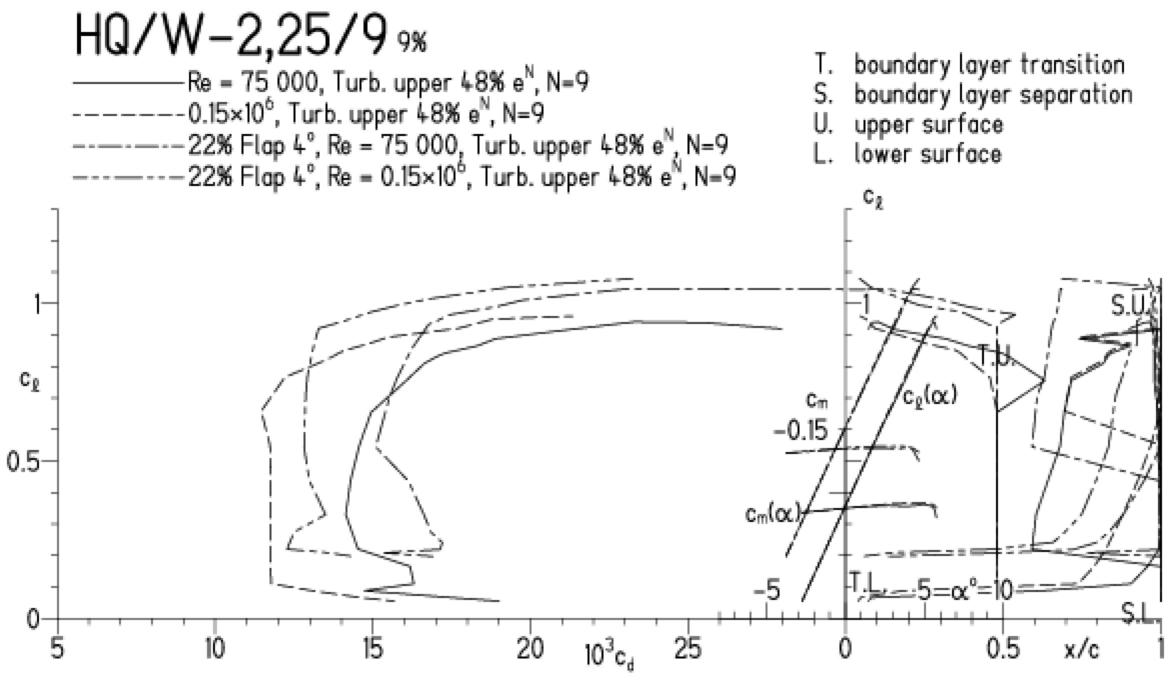


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

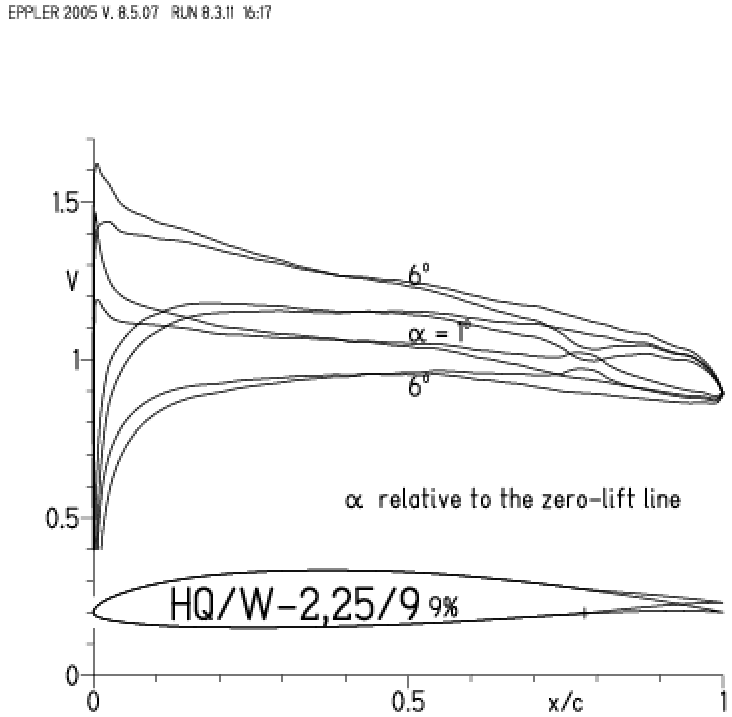
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

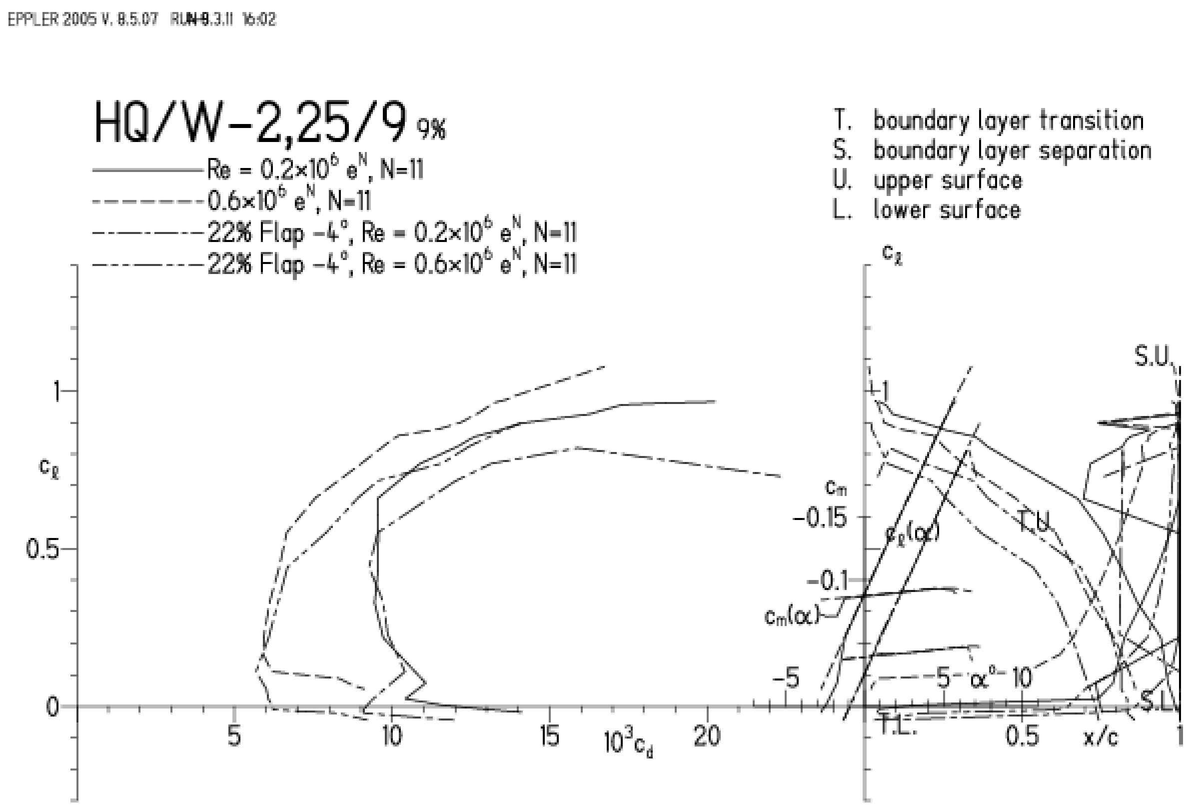


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

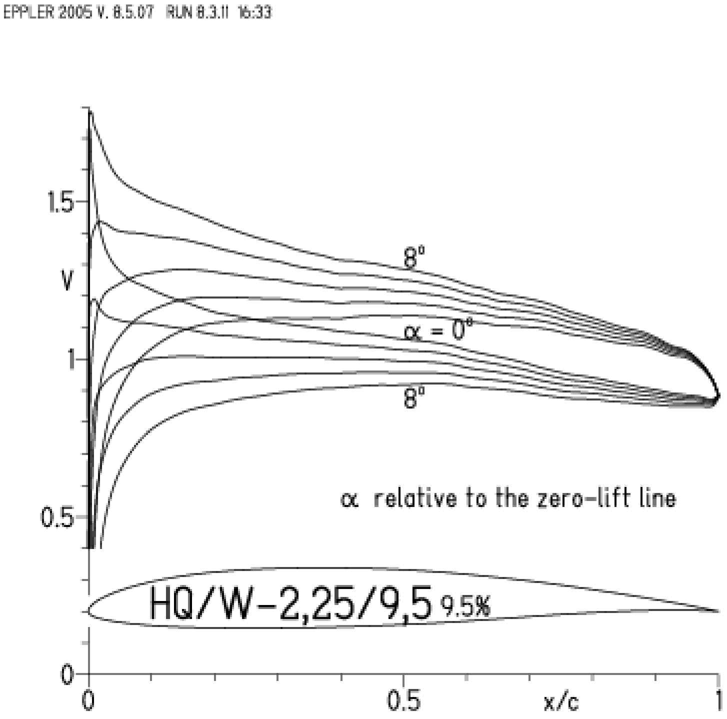


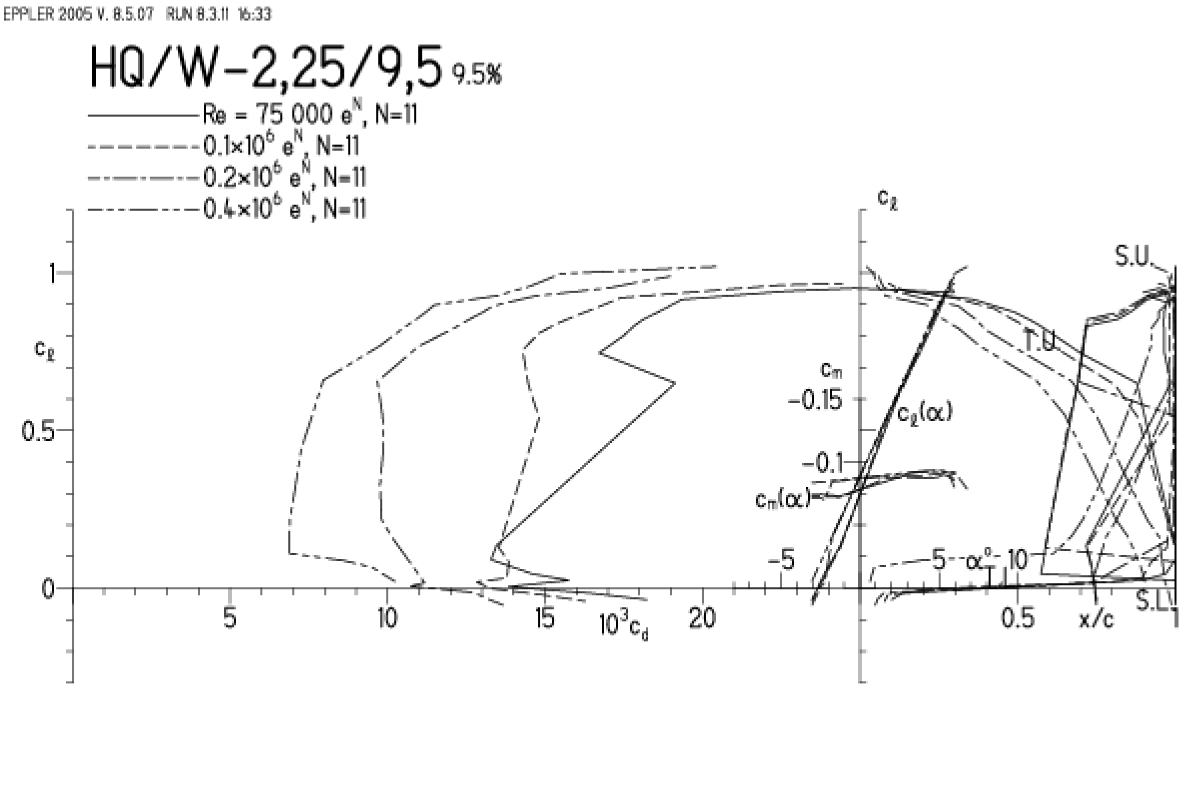
<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



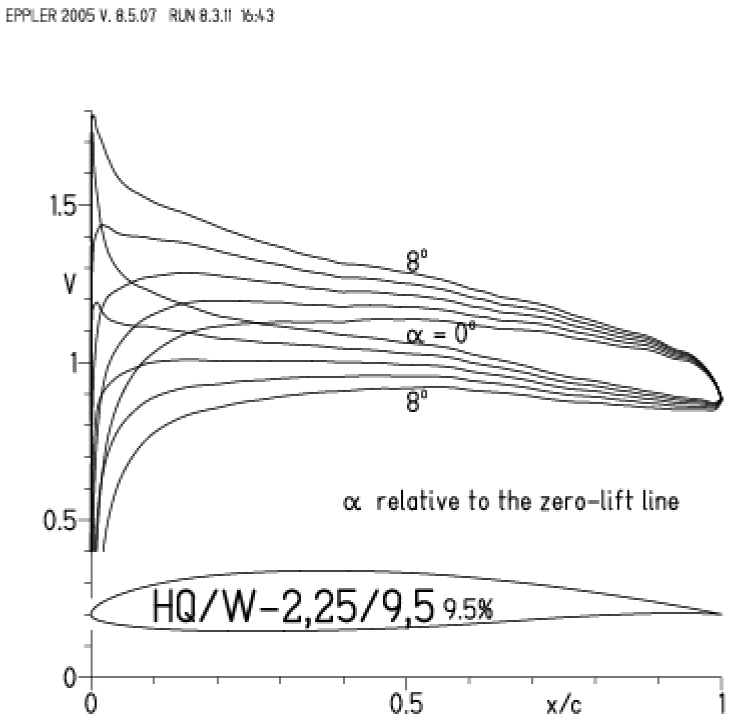


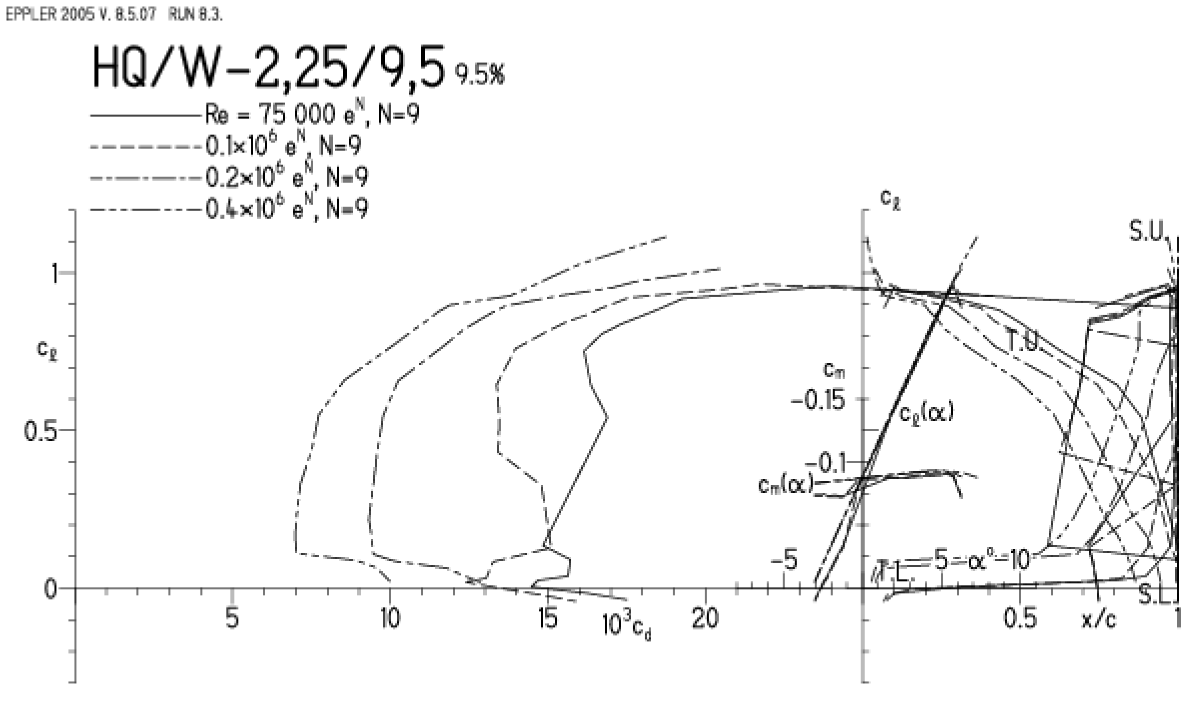
HQ/W-2,25/9,5, N=11



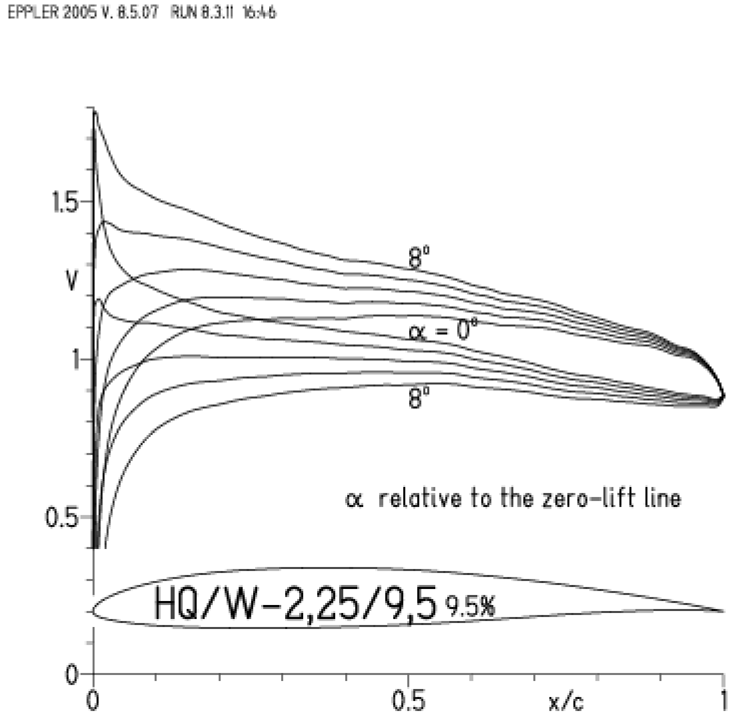


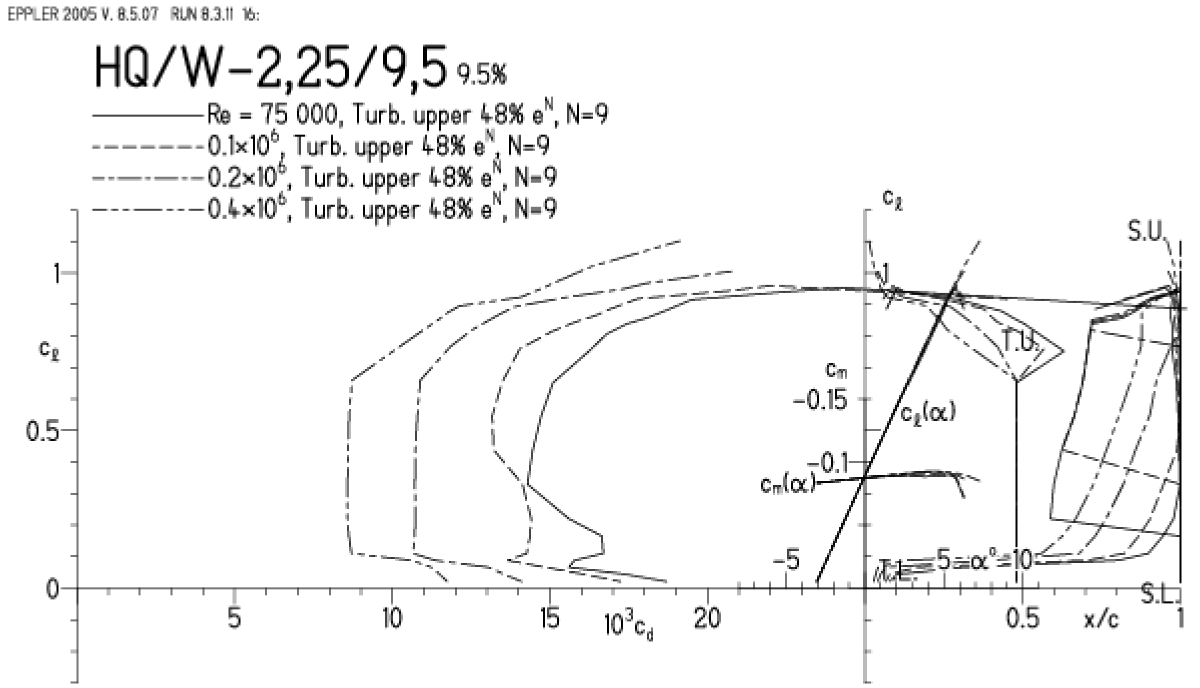
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

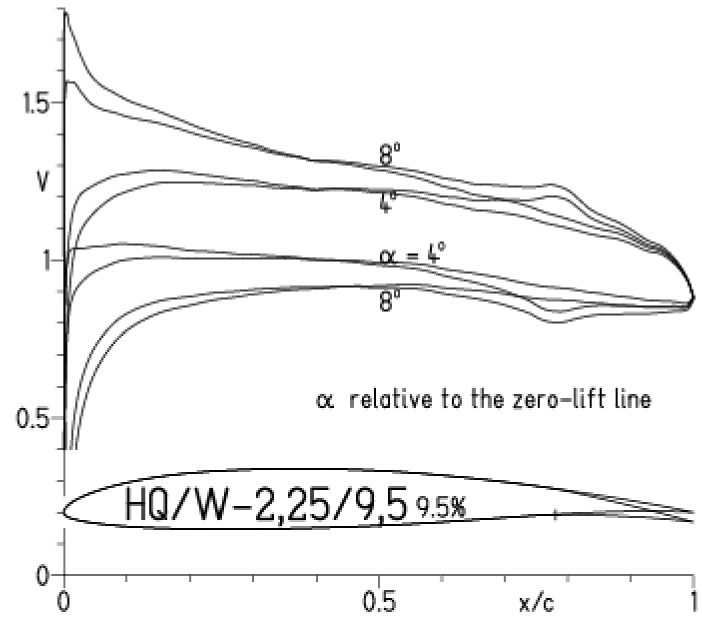
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



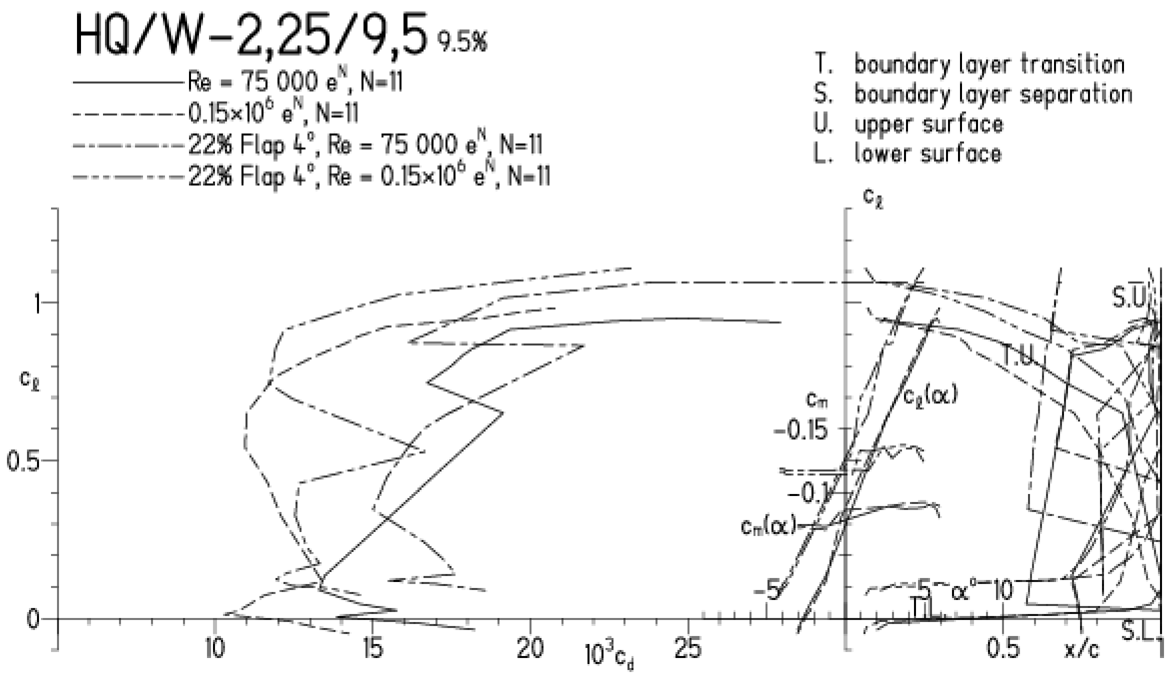


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

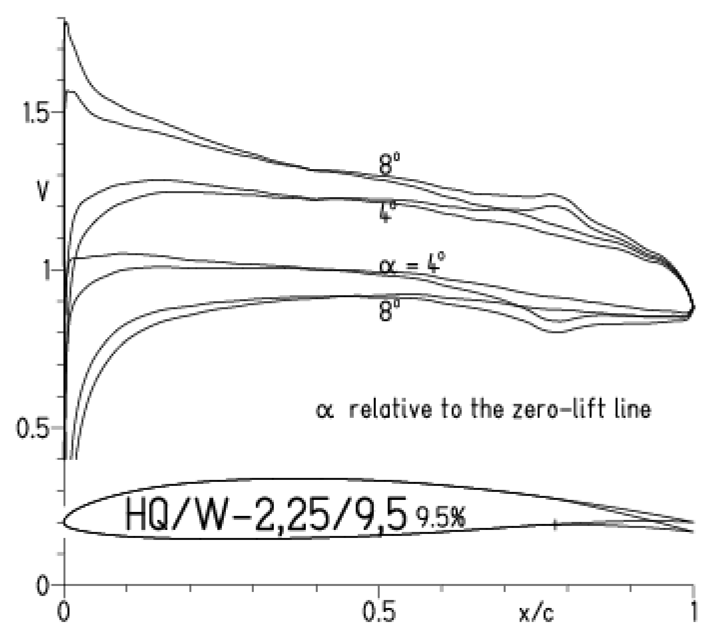


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

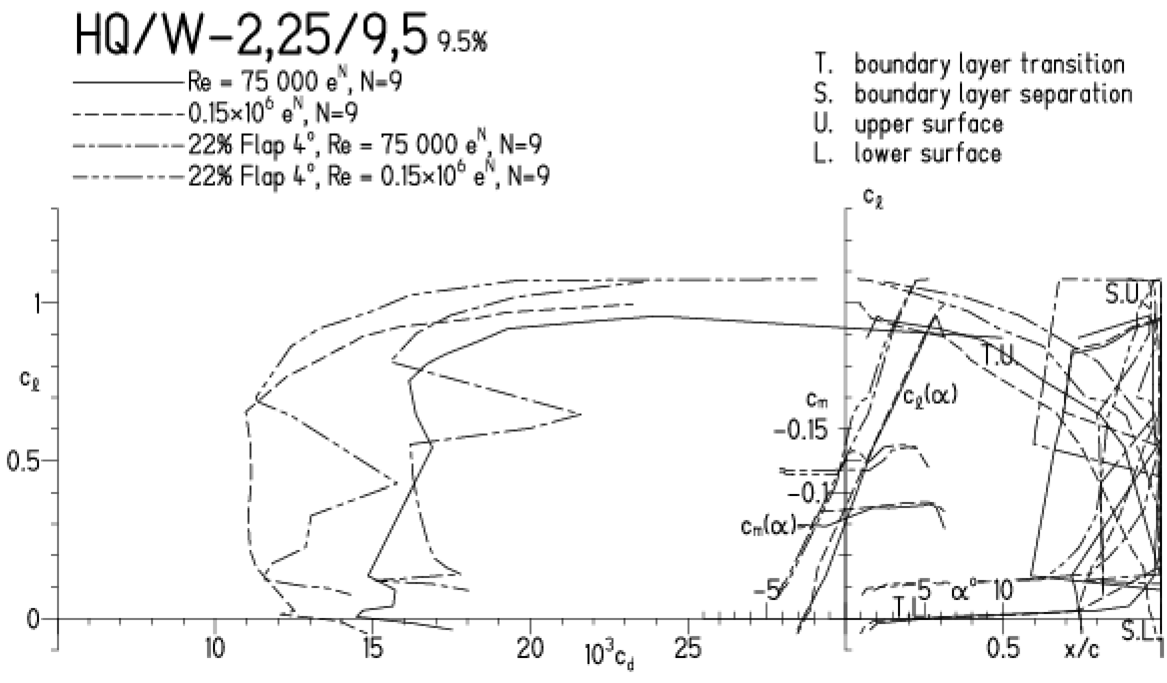


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

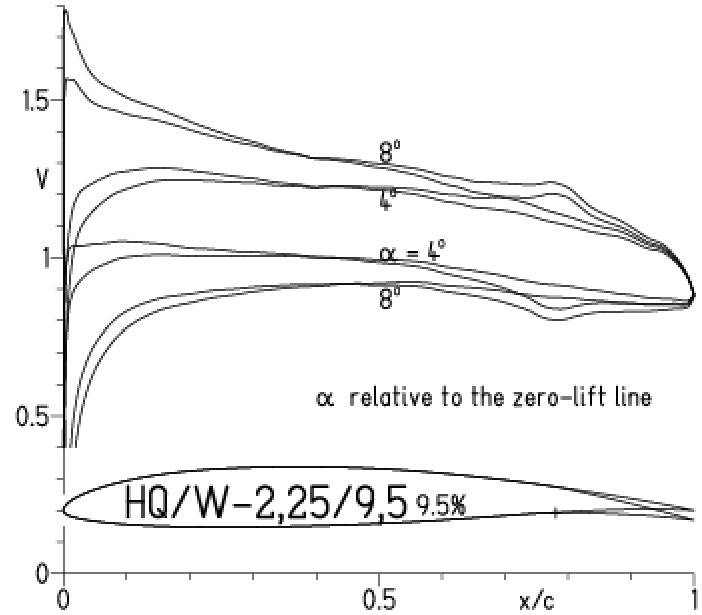


EPPLER 2005 V. 8.5.07 R

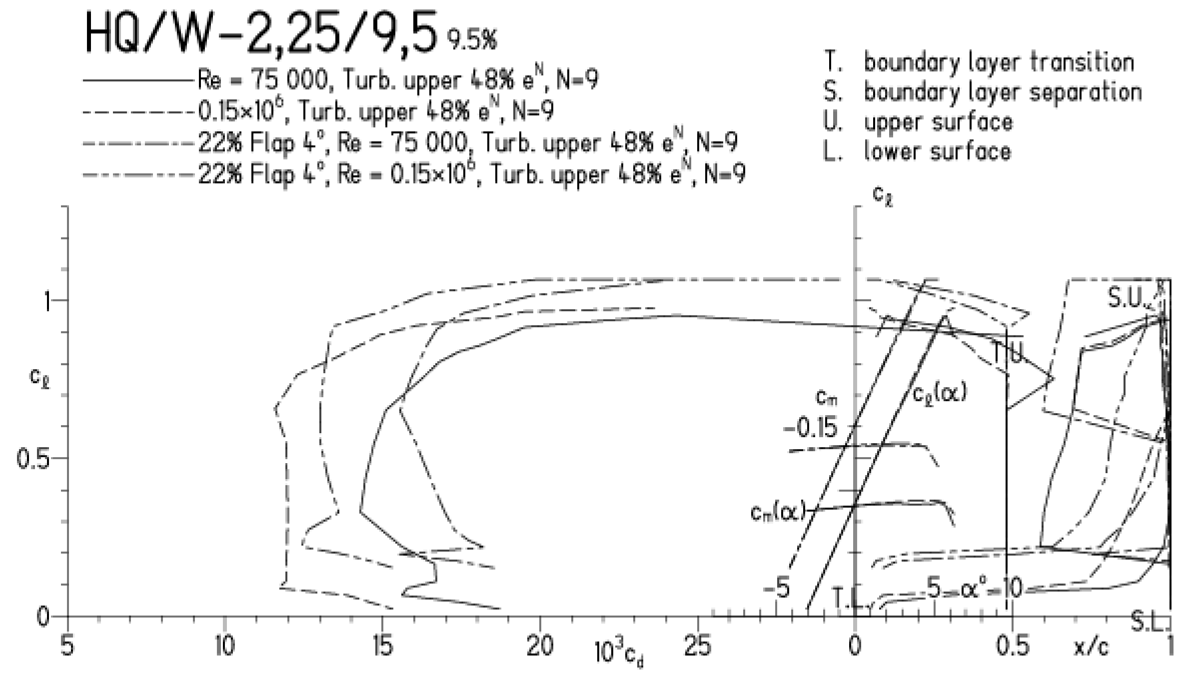


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

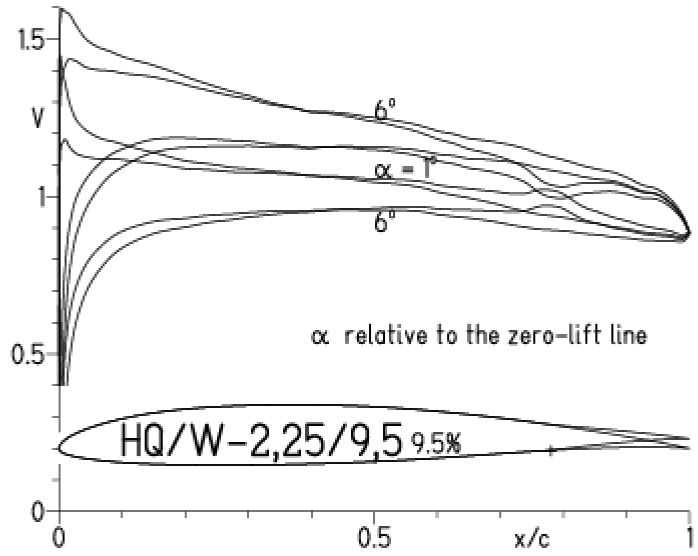


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

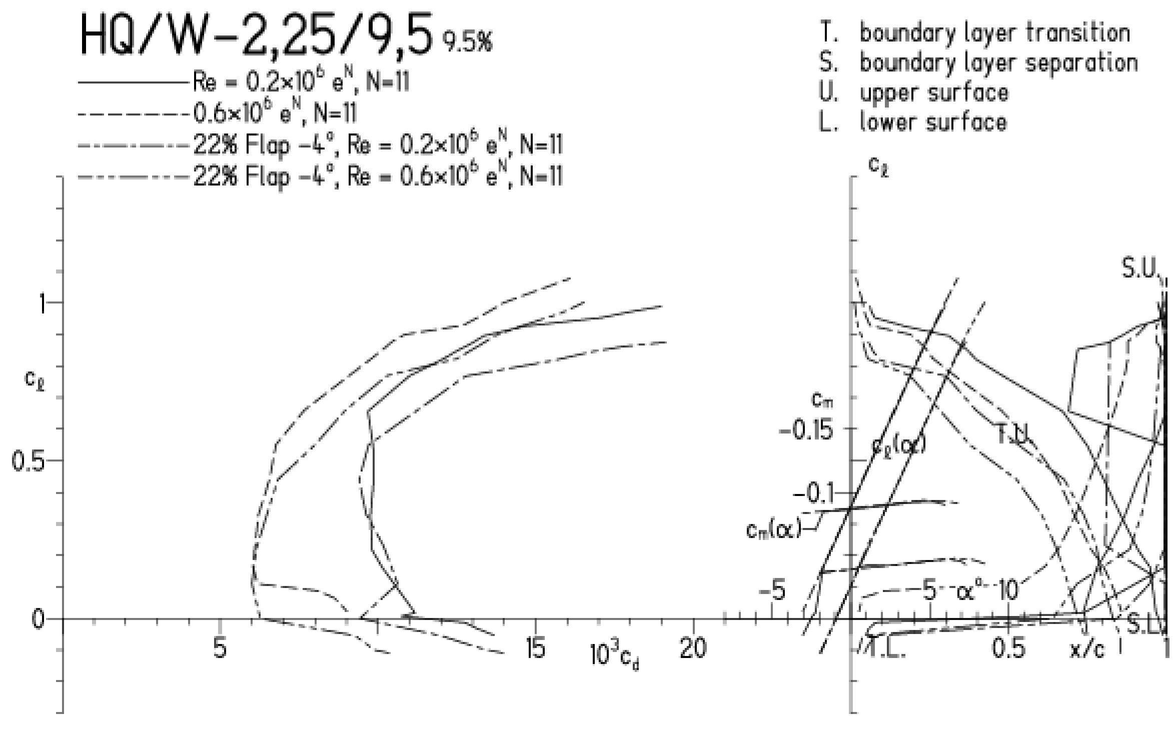


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

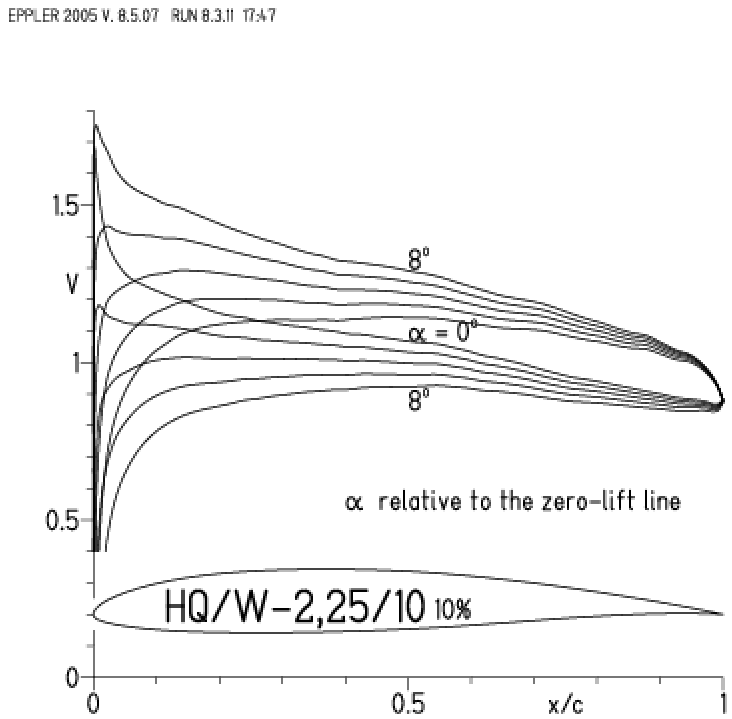
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

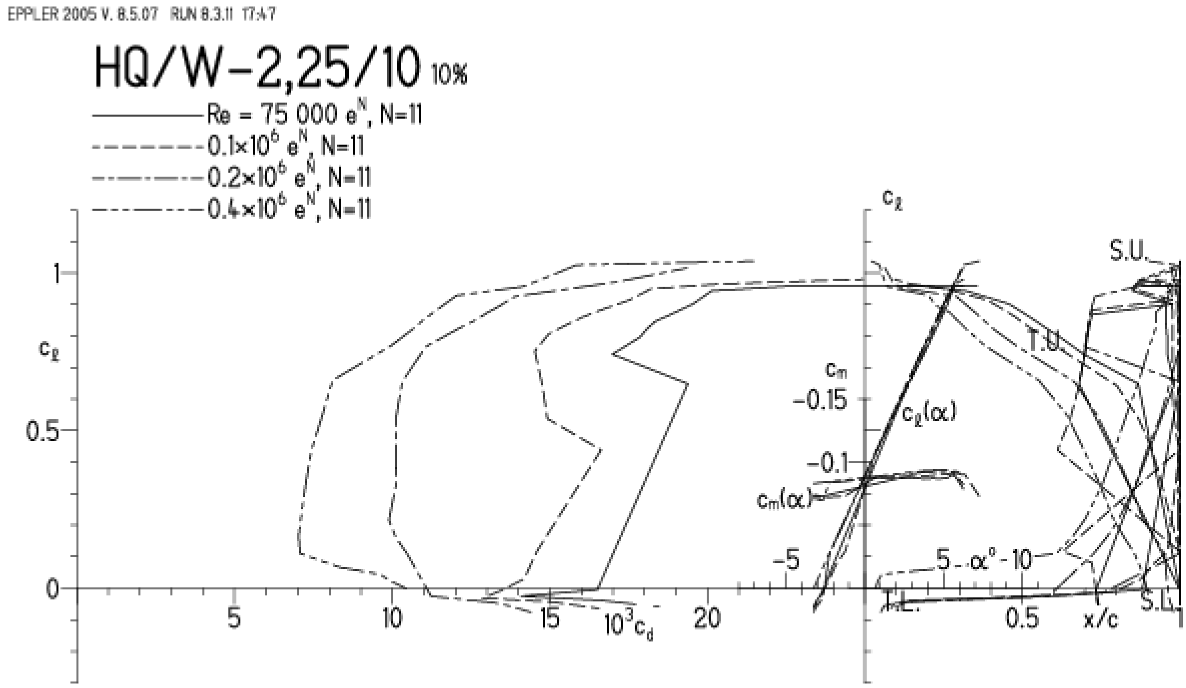


EPPLER 2005 V.



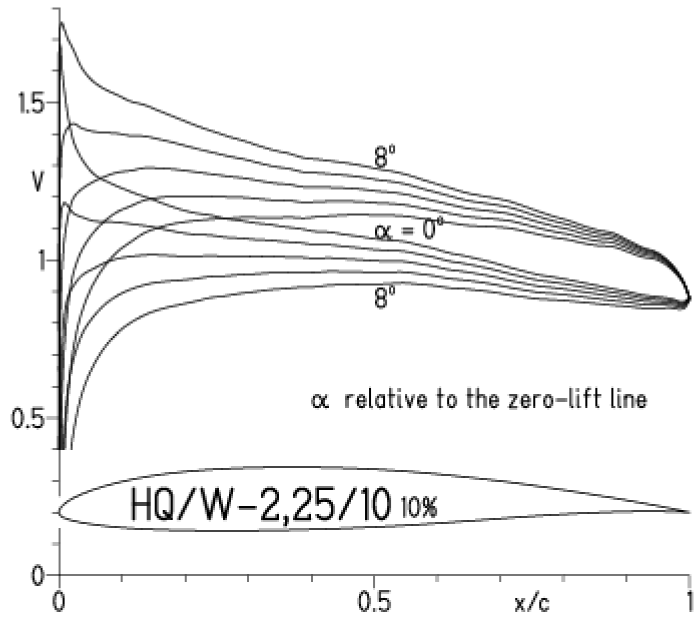
HQ/W-2,25/10, N=11



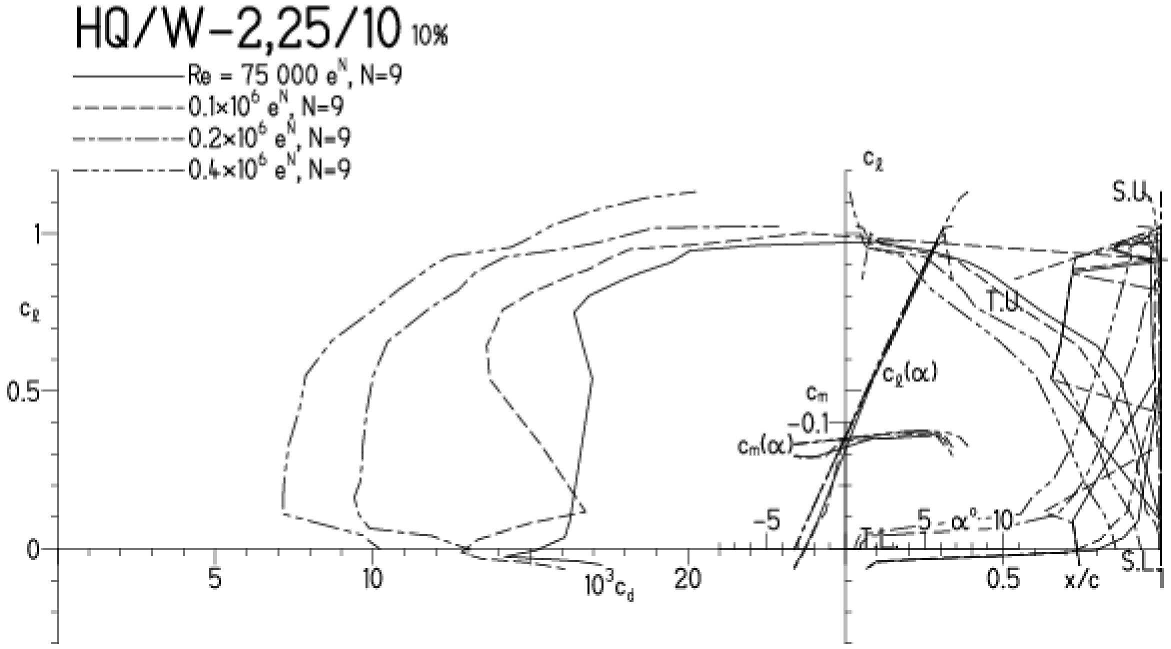


HQ/W-2,25/10, N=9

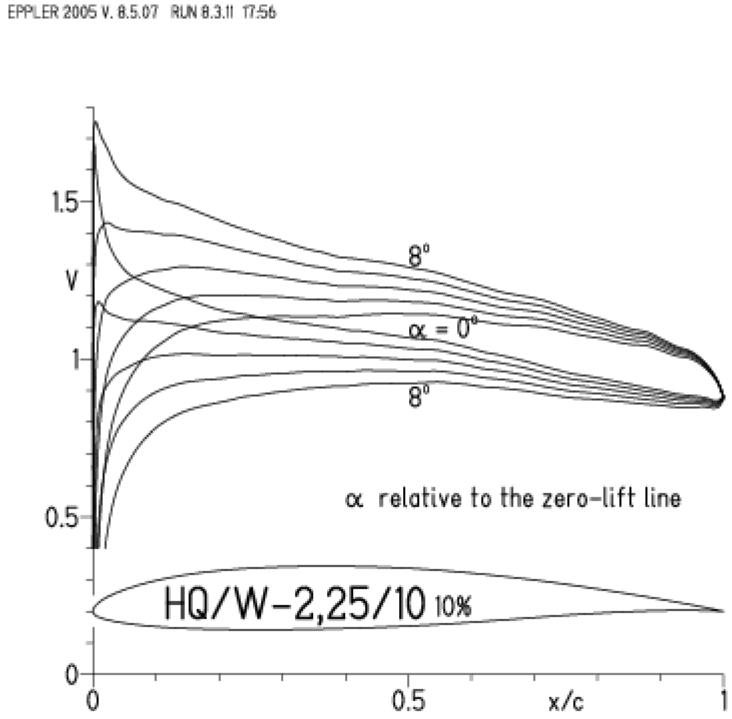
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

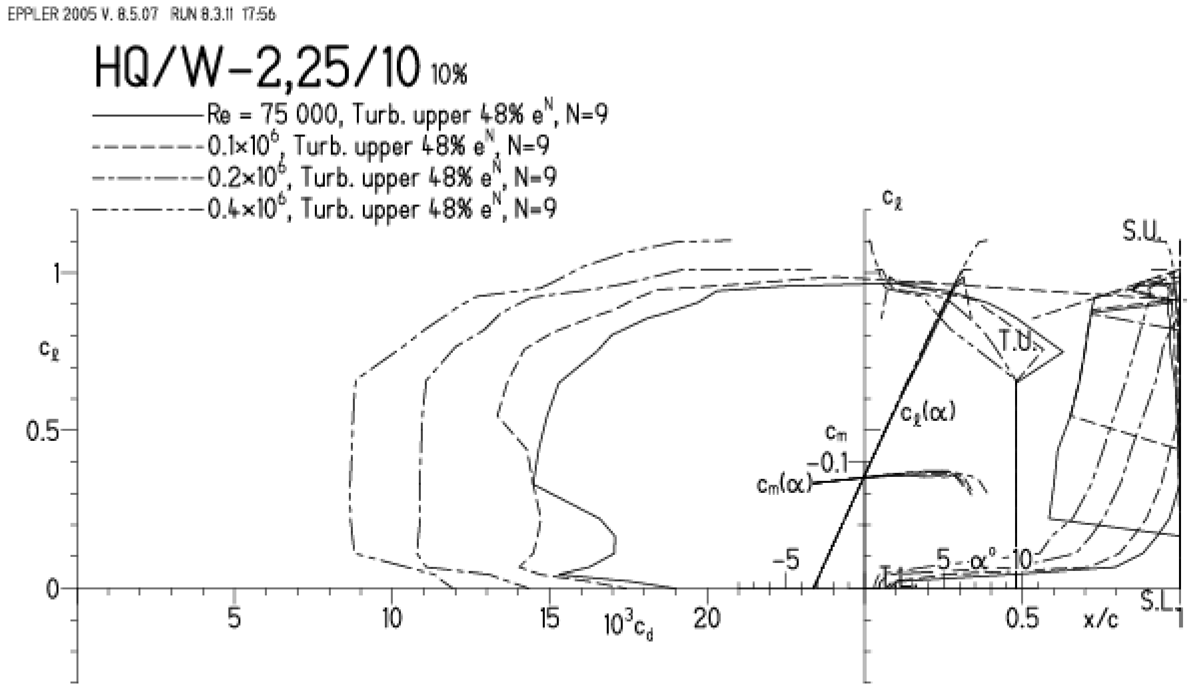


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



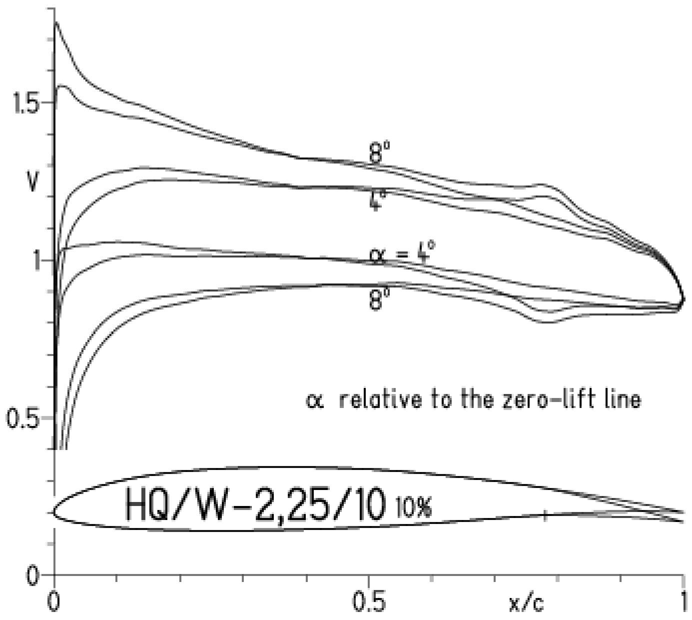
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



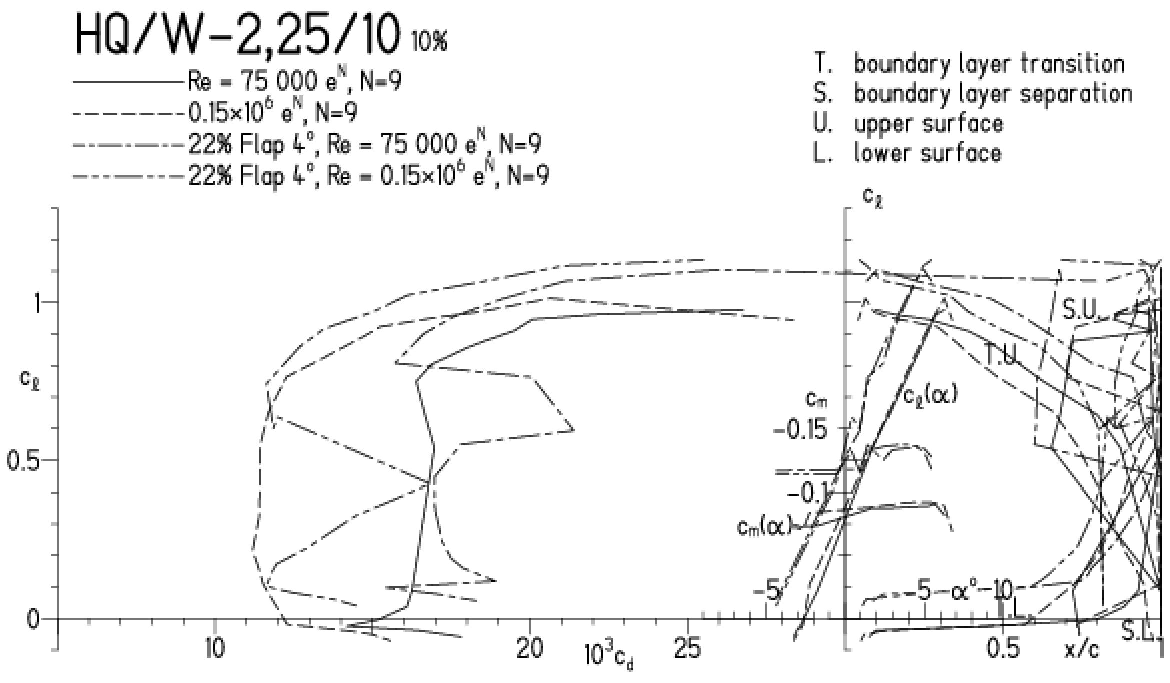


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

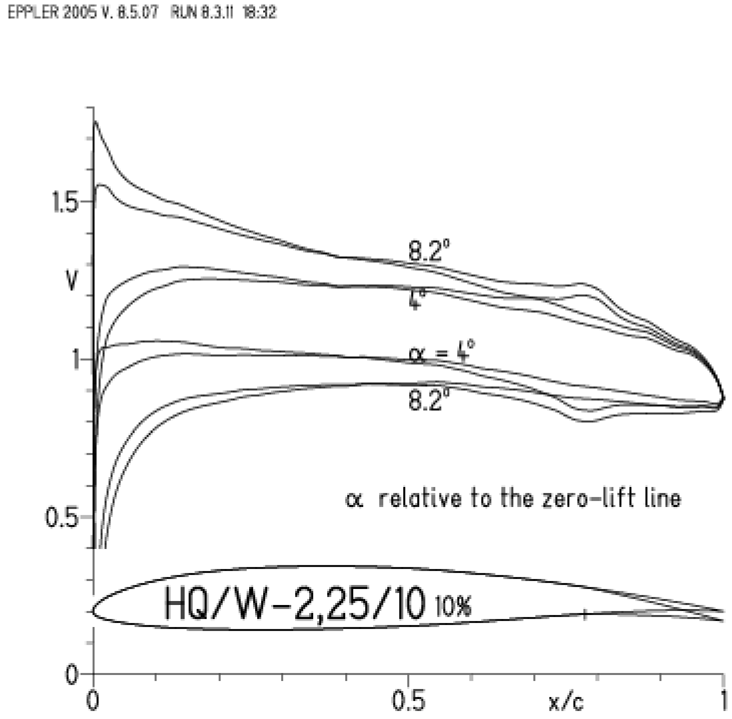
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

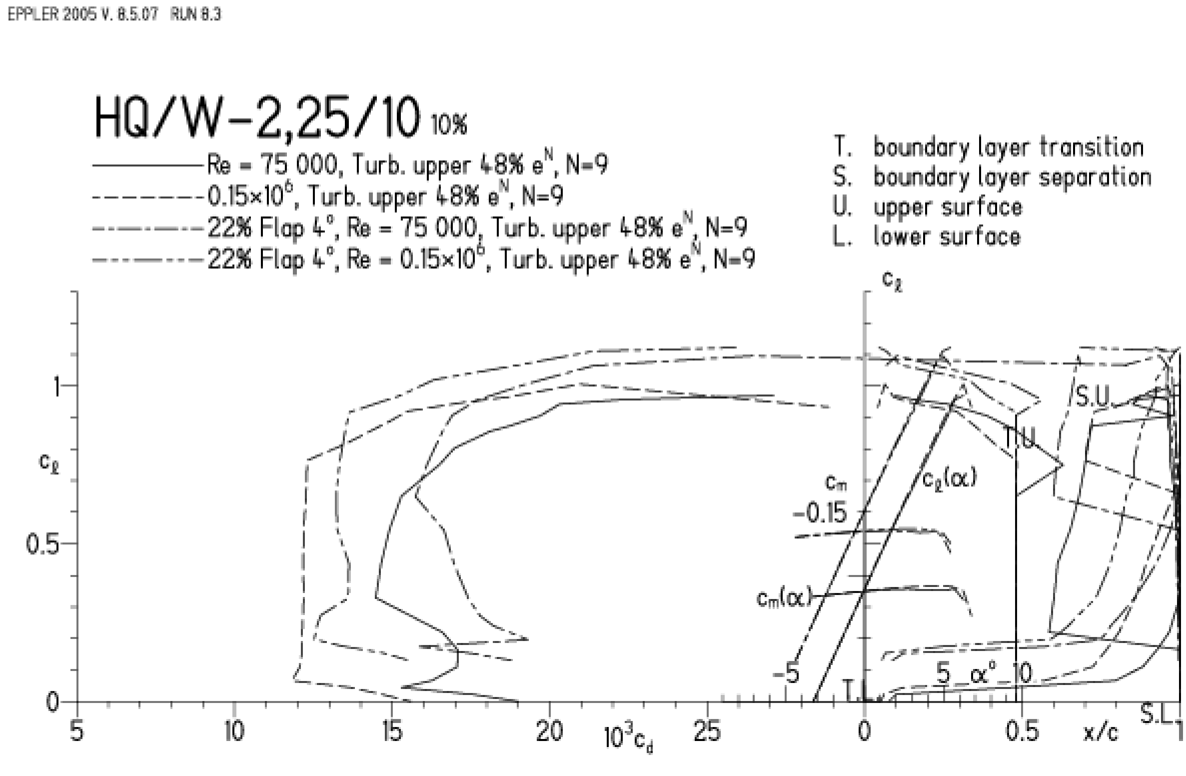


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



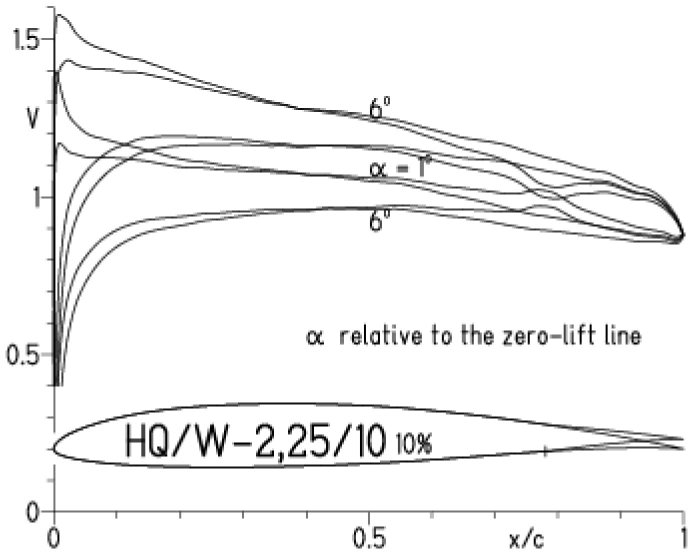
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



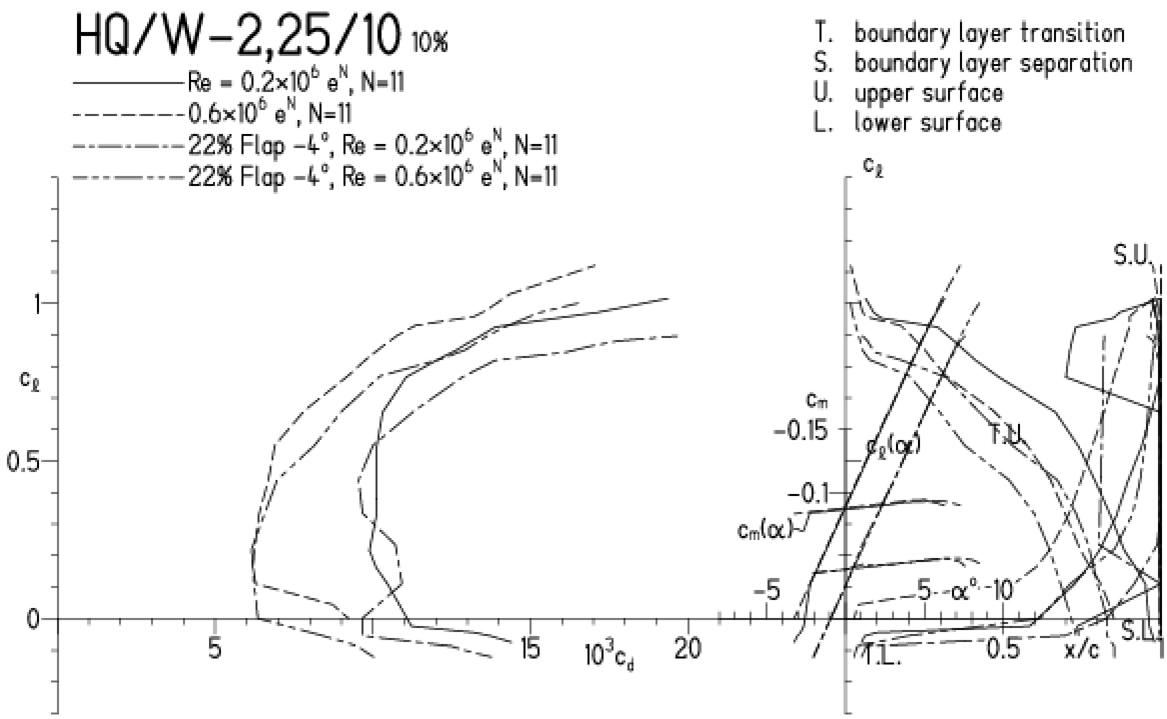


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

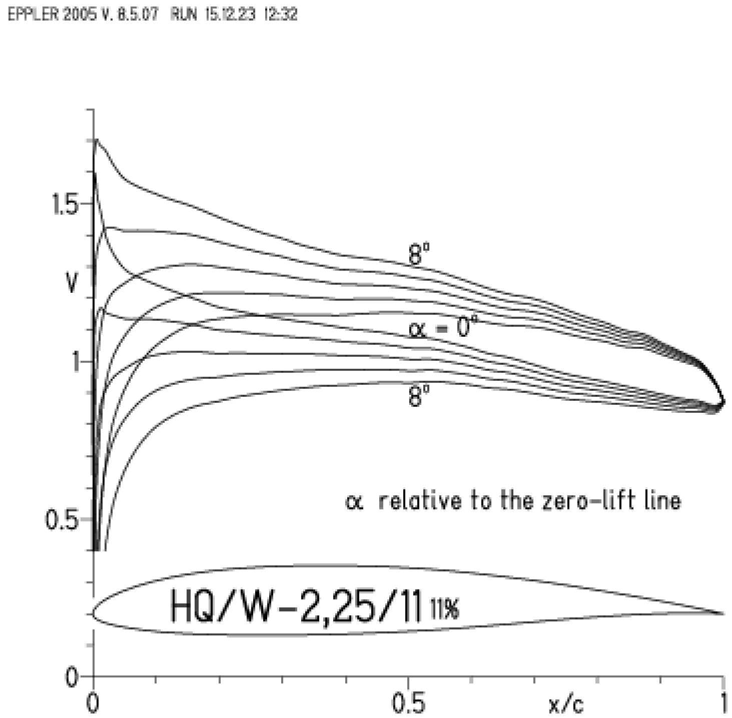
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

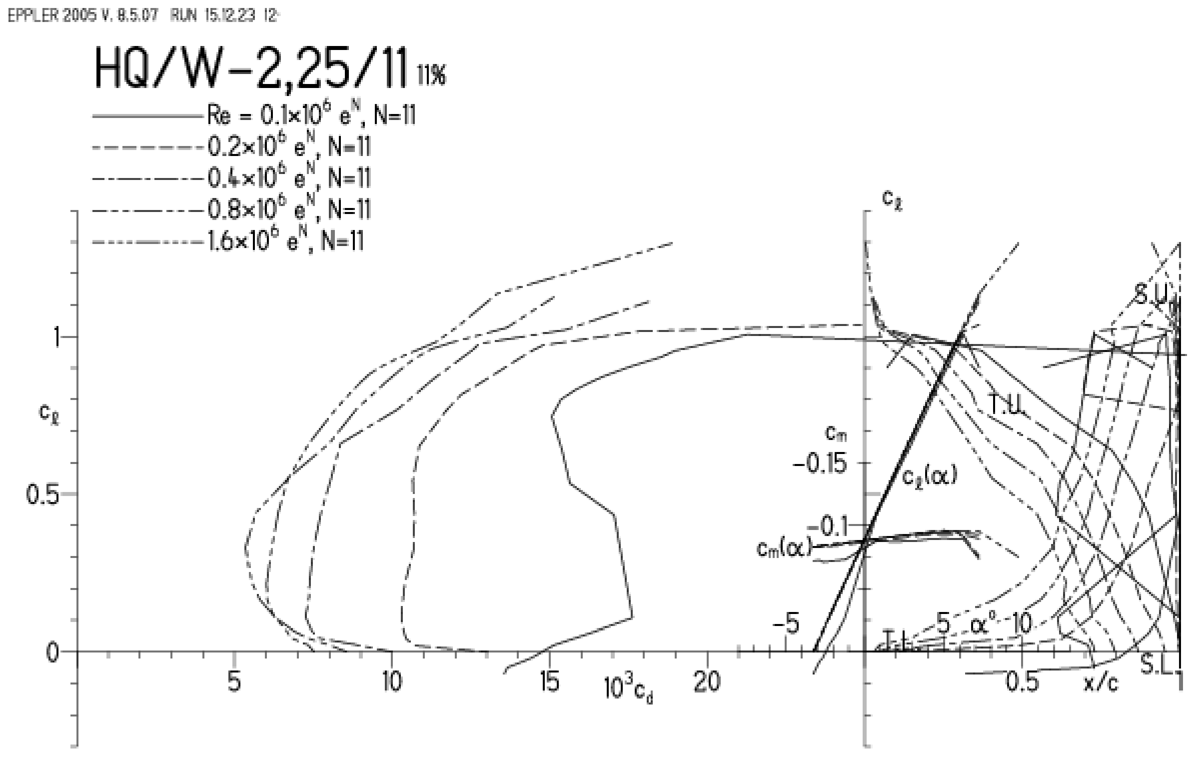


EPPLER 2005 V. 8.5.07 RUN



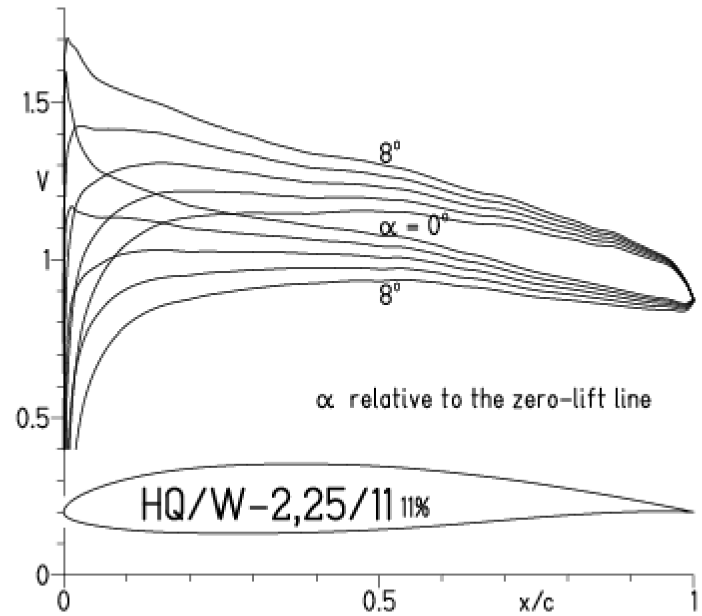
<u>HQ/W-2,25/11</u>, N=11



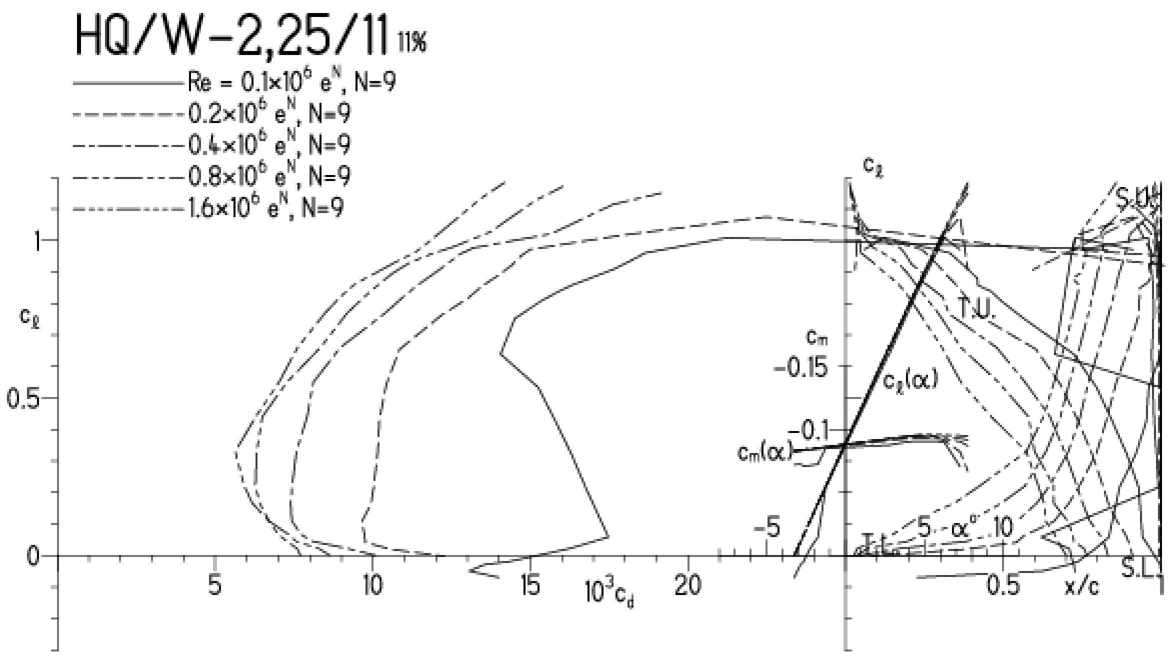


HQQ/W-2,25/11, N=9

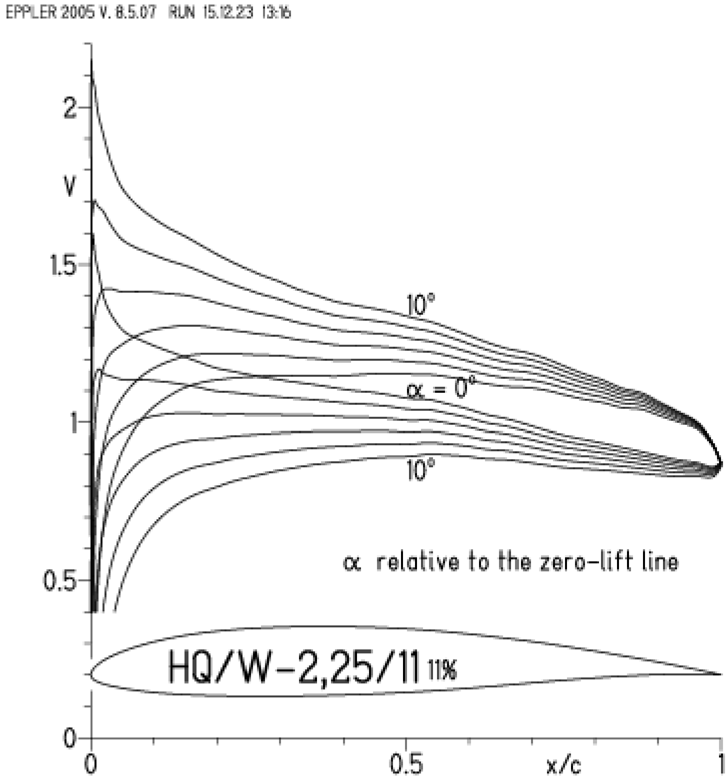
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

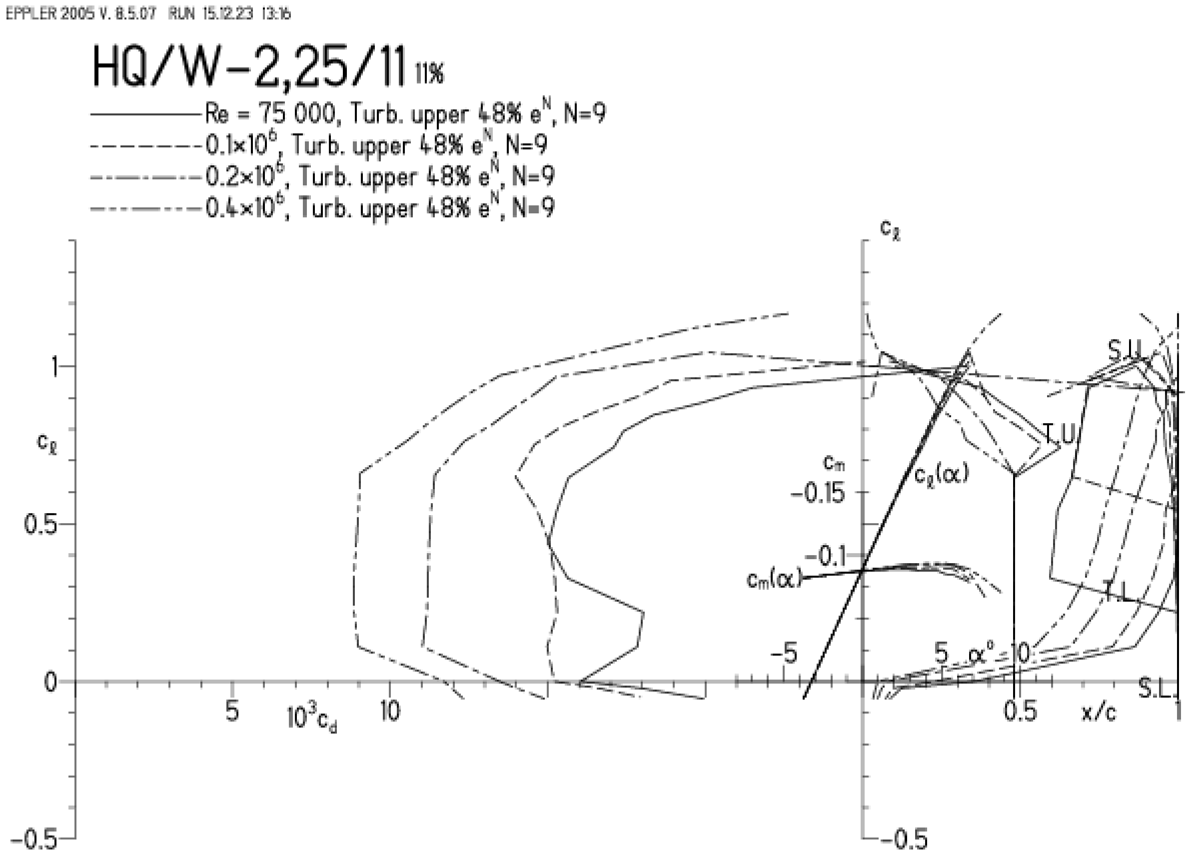


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



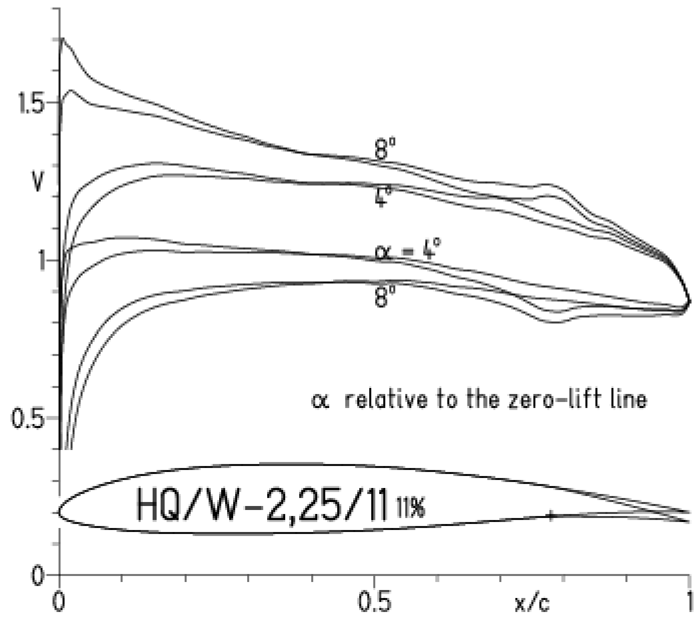
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



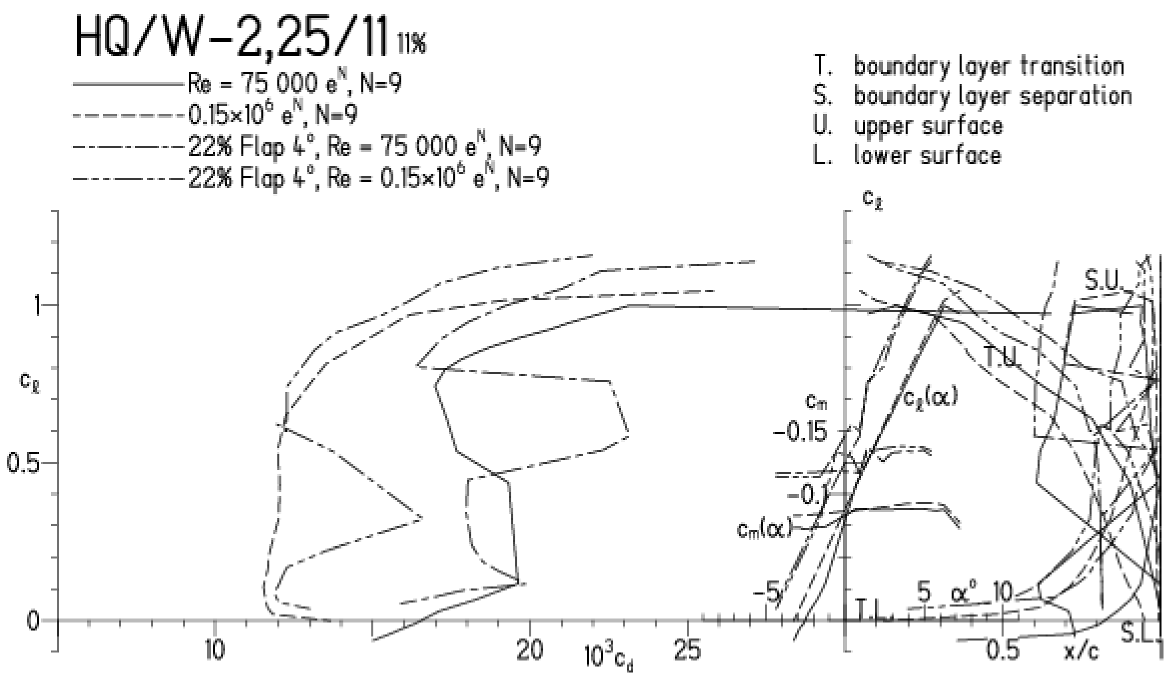


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

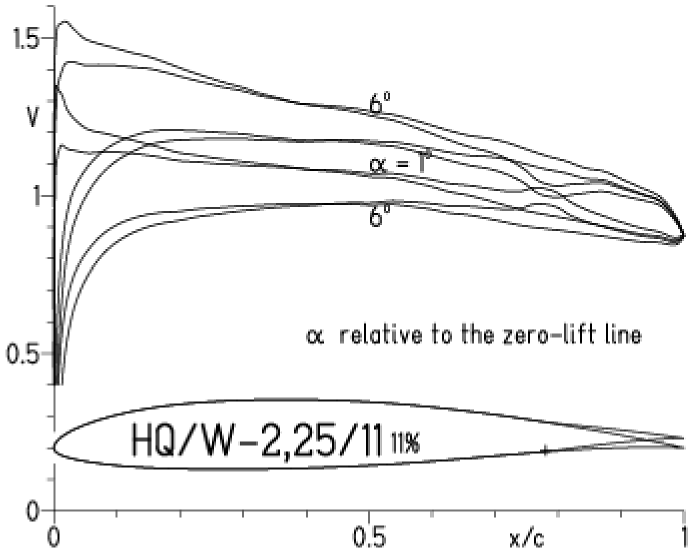


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

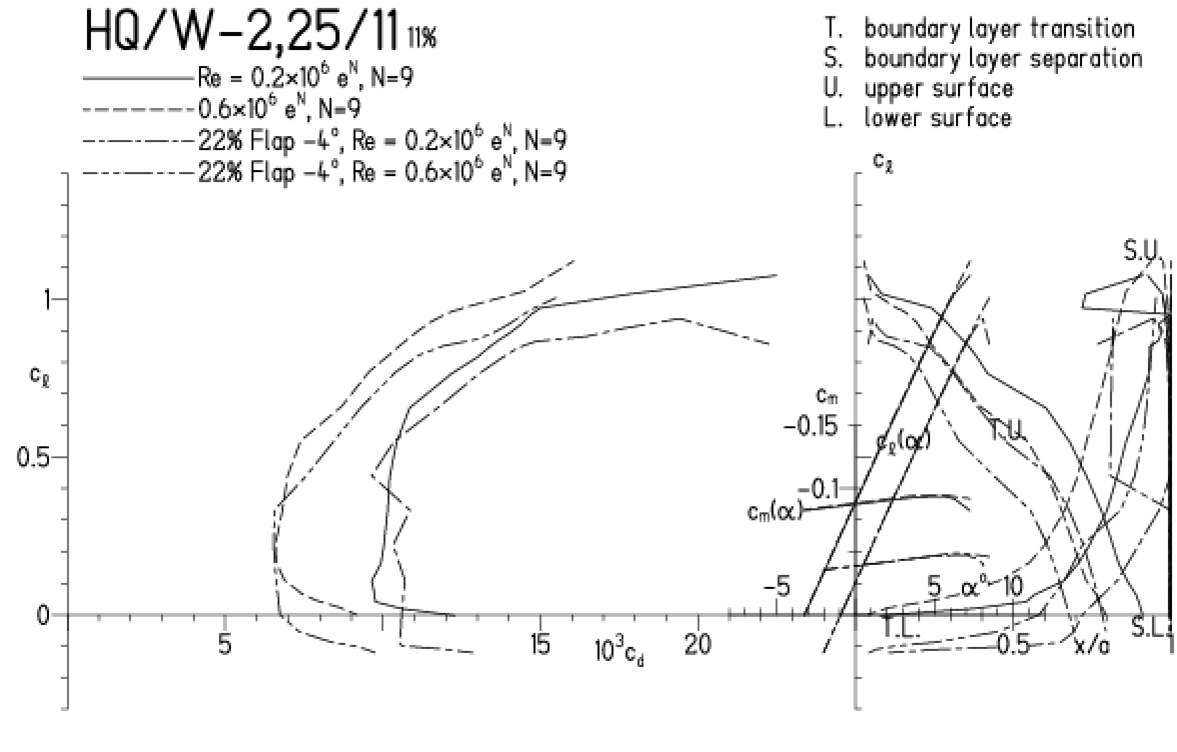


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

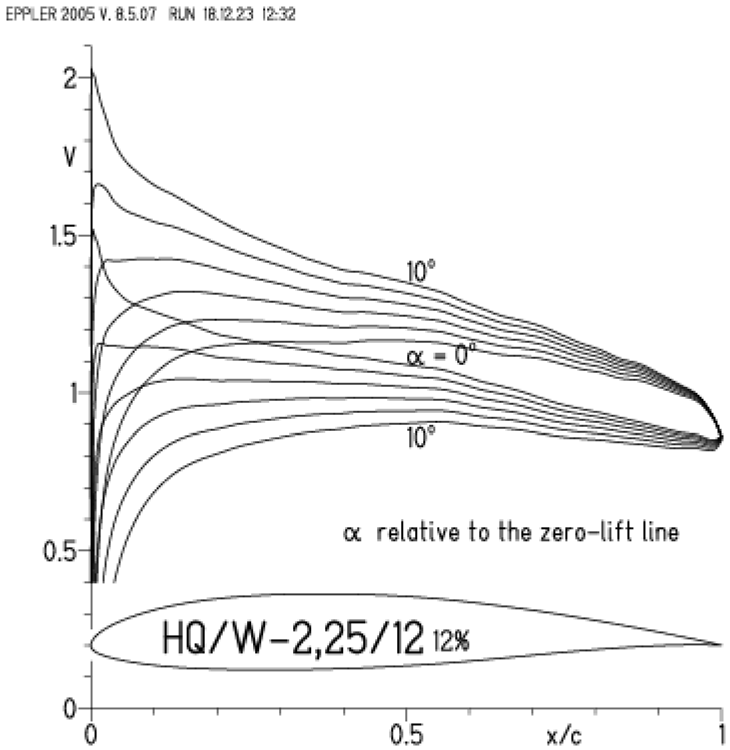
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

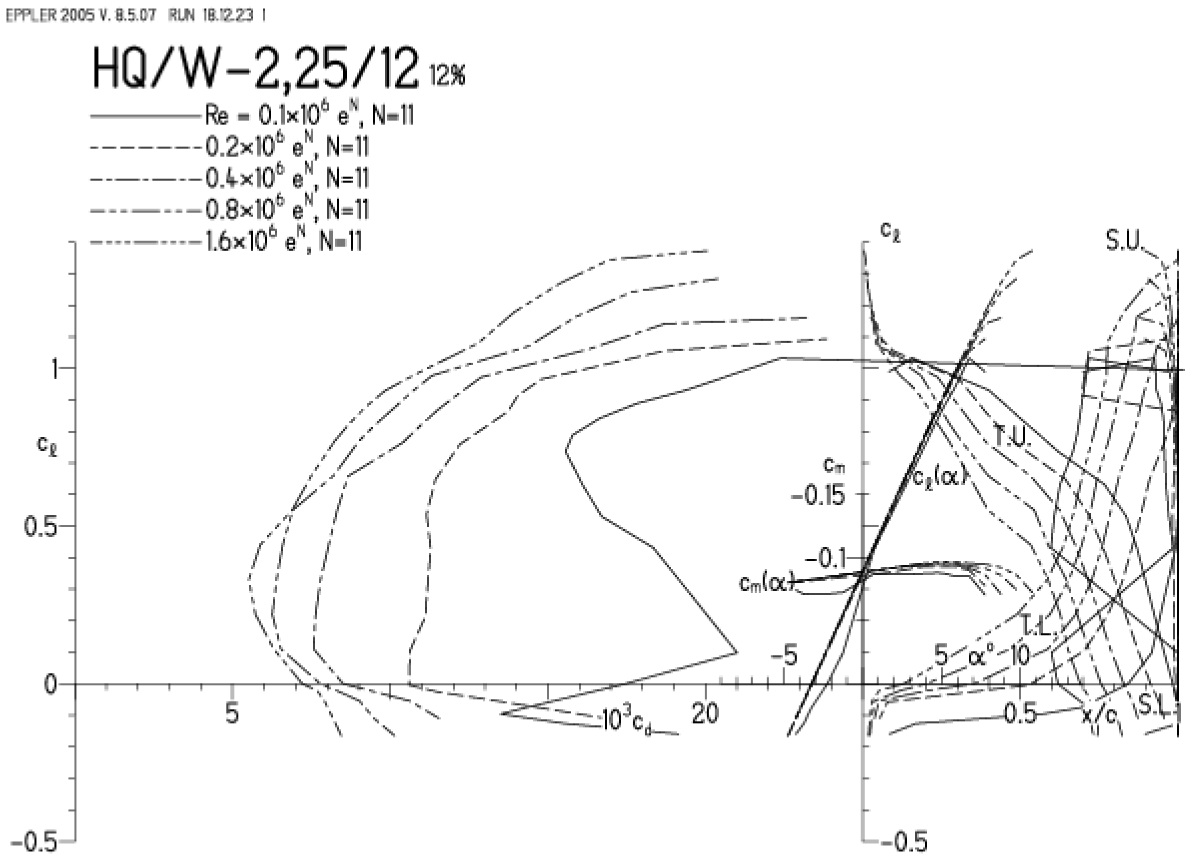


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



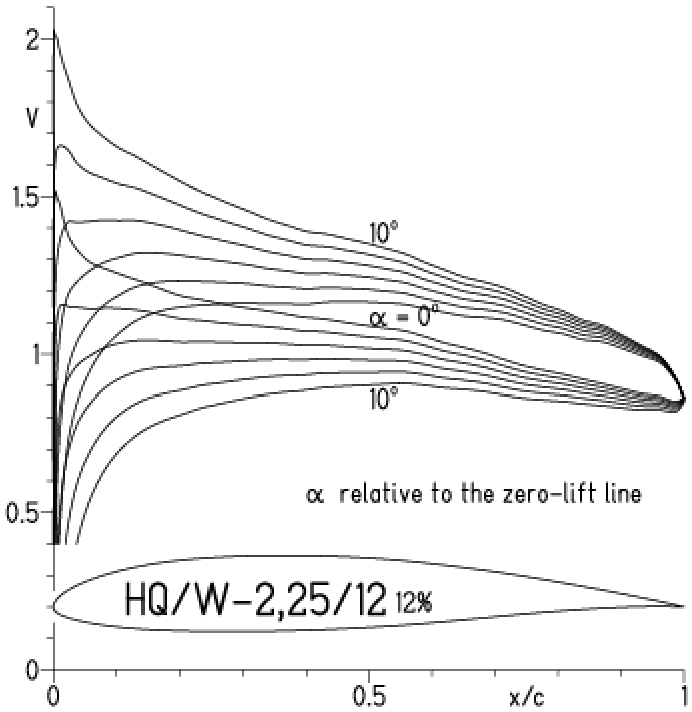
<u>HQ/W-2,25/12</u>, N=11



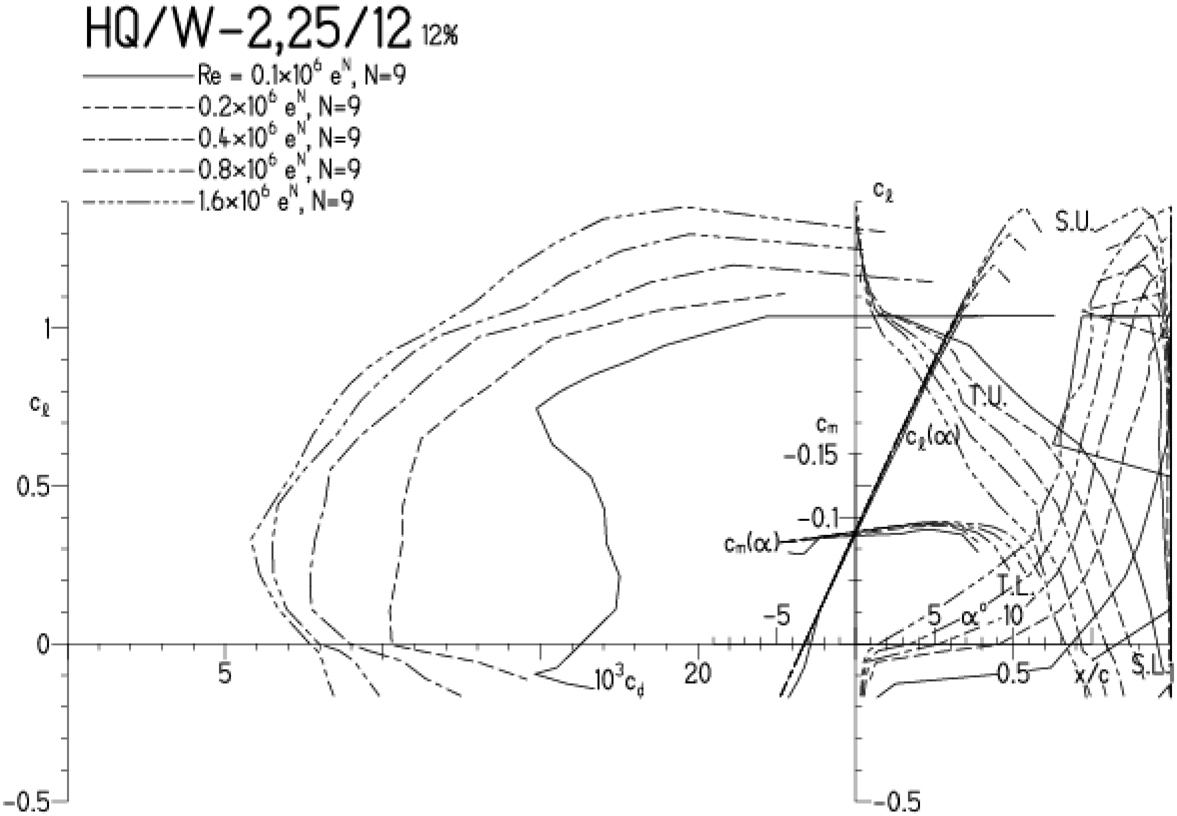


<u>HQ/W-2,25/12</u>, N=9

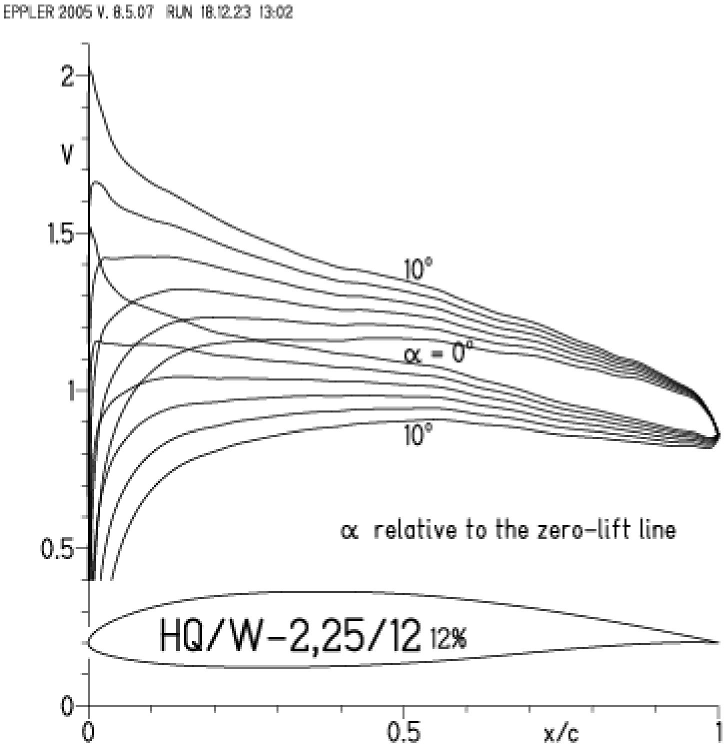
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

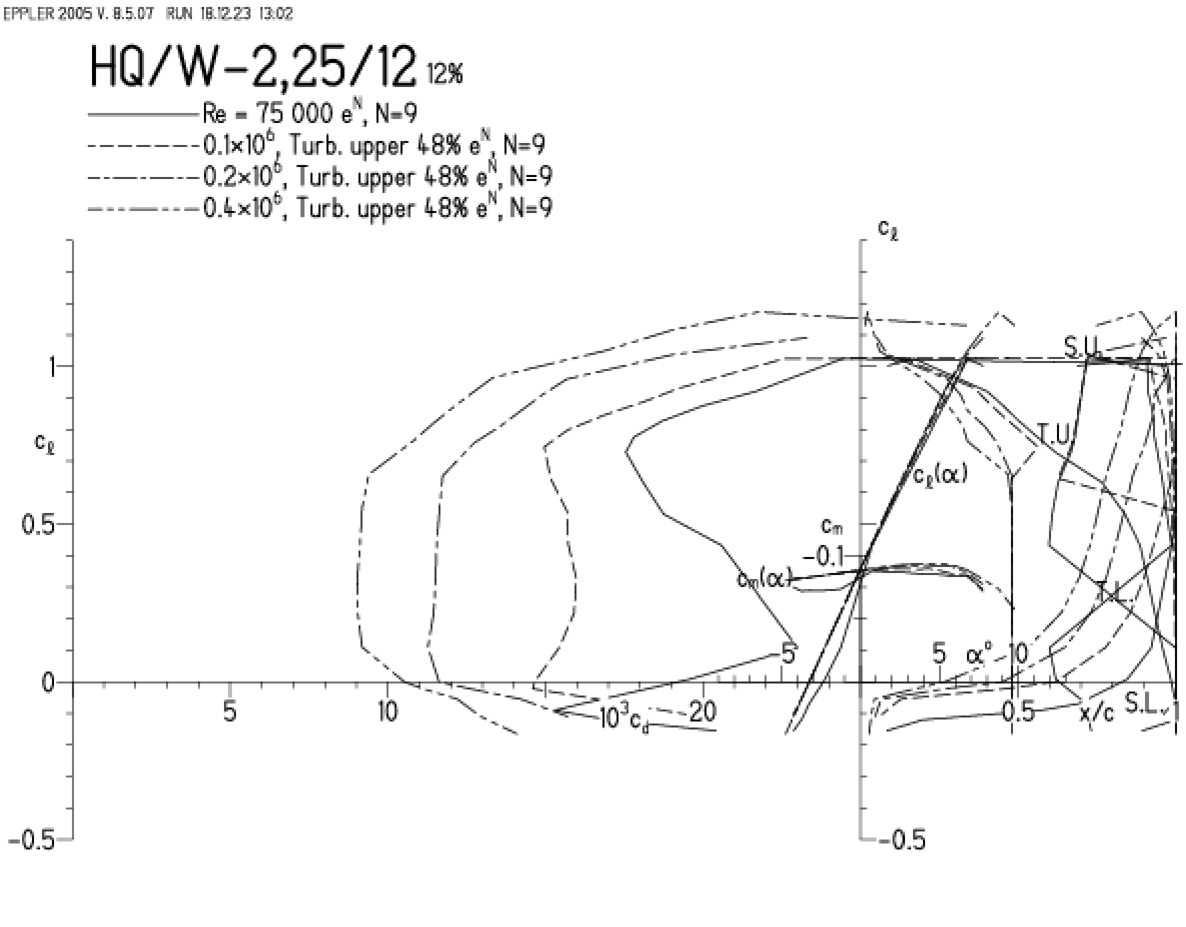


EPPLER 2005 V. 8.5



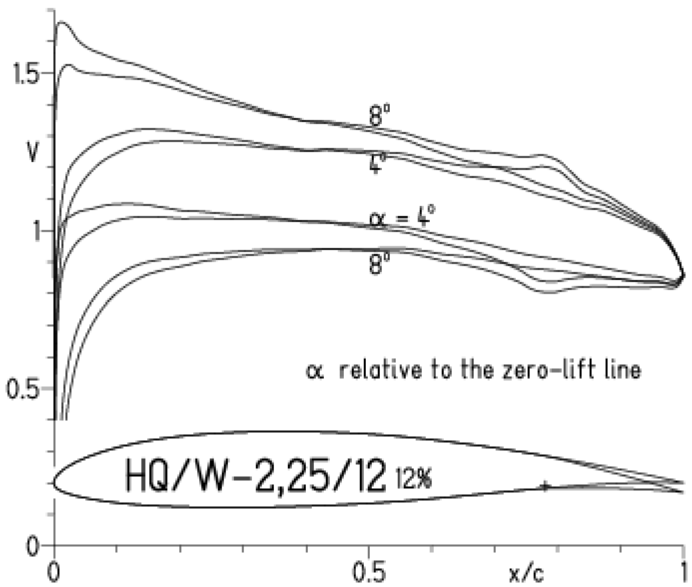
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



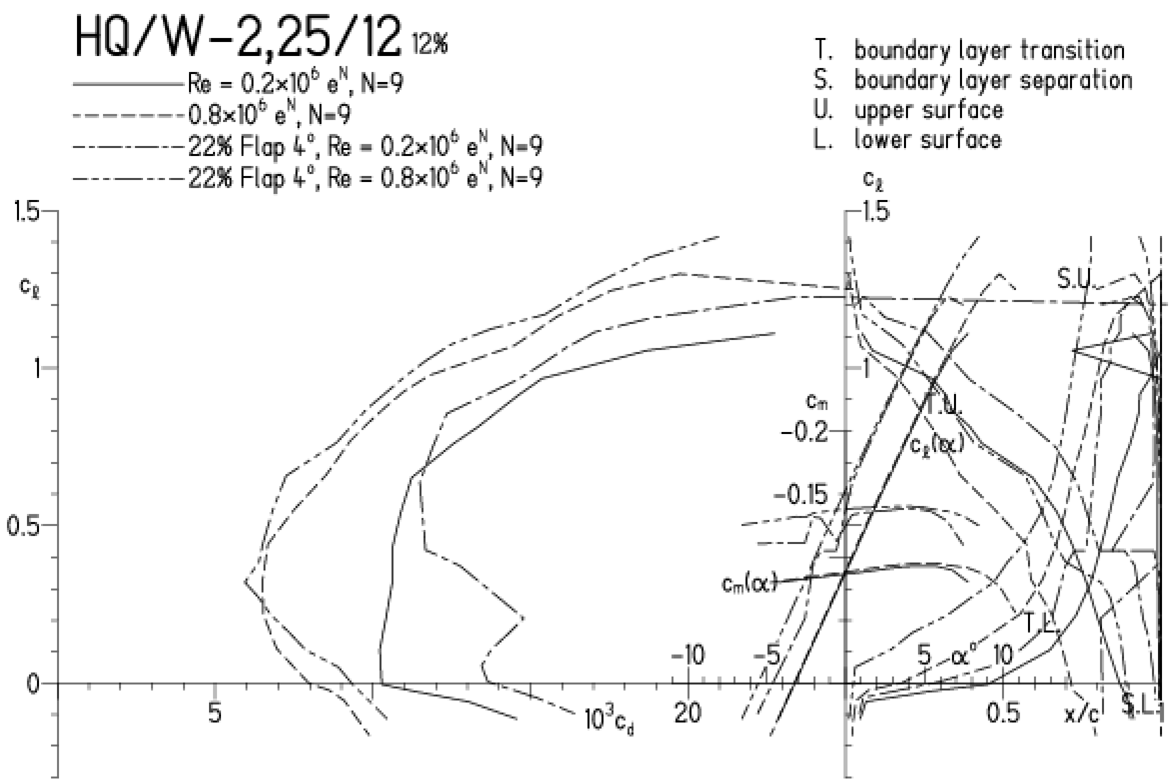


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

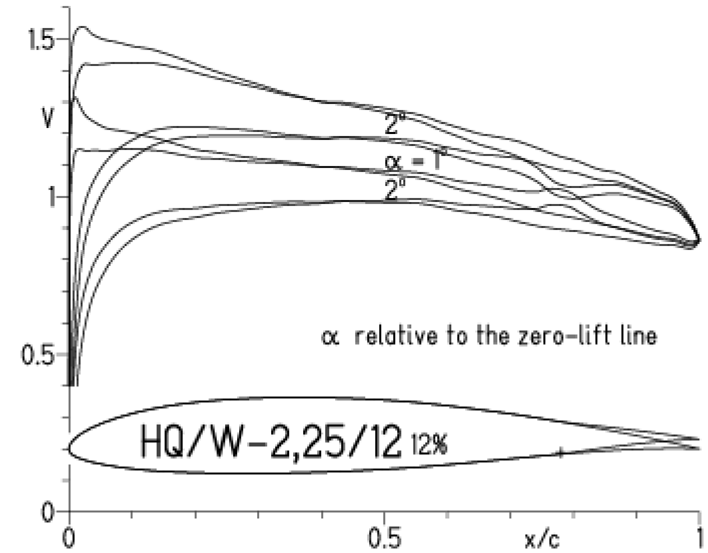


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

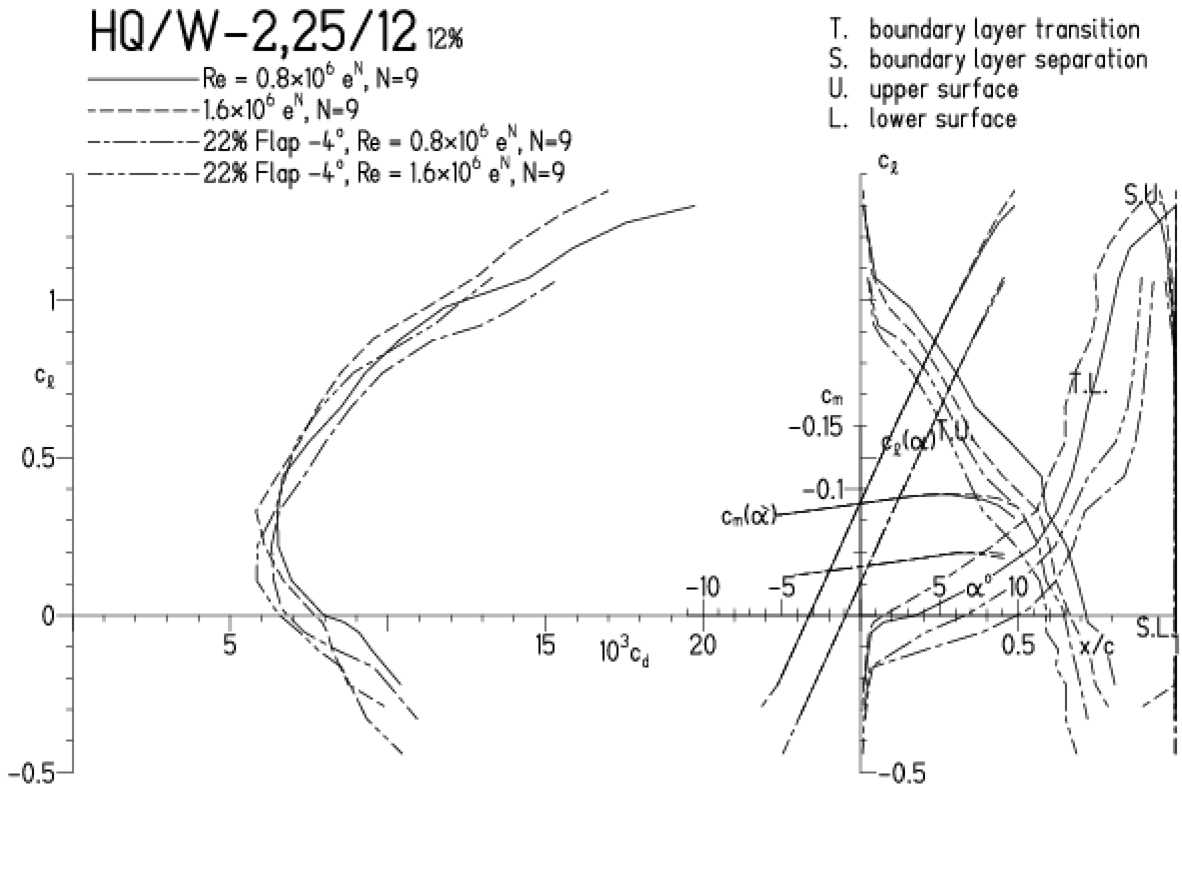


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

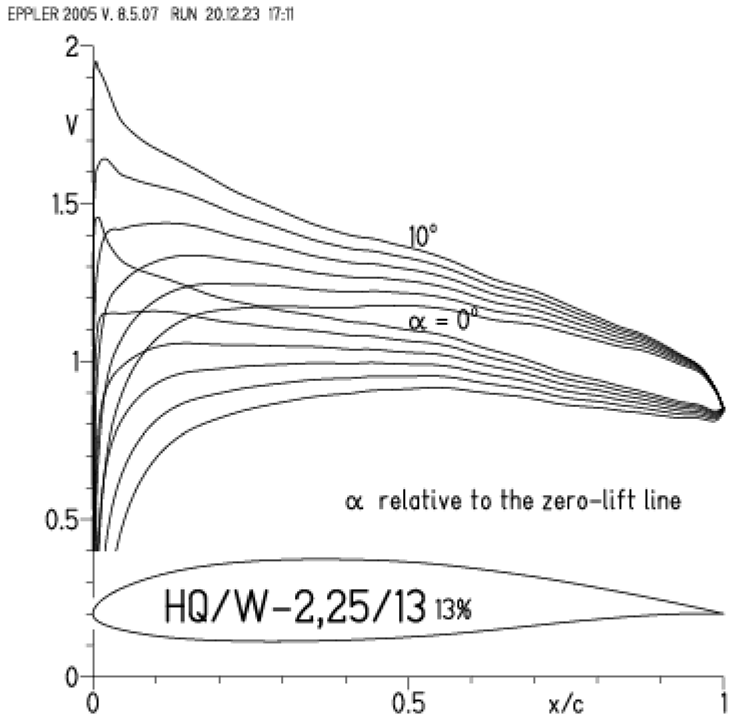
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

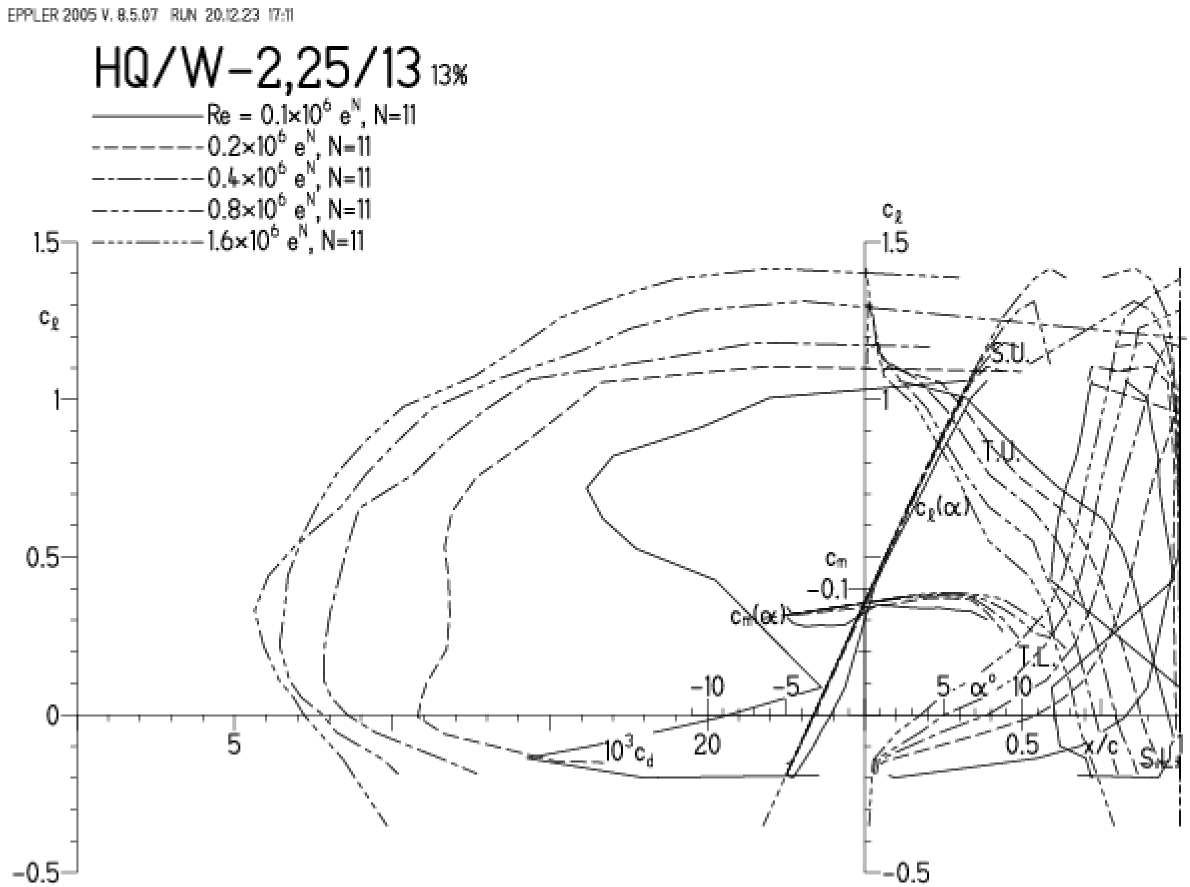


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

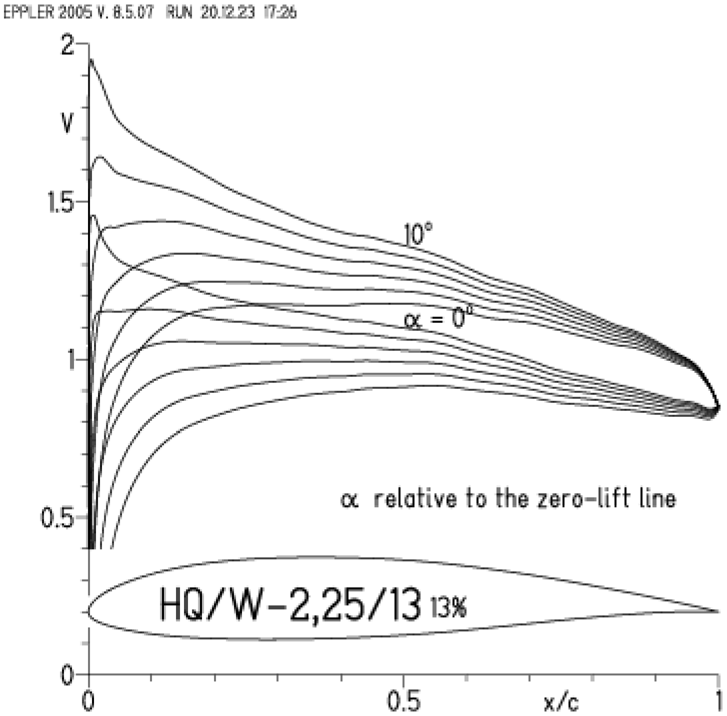


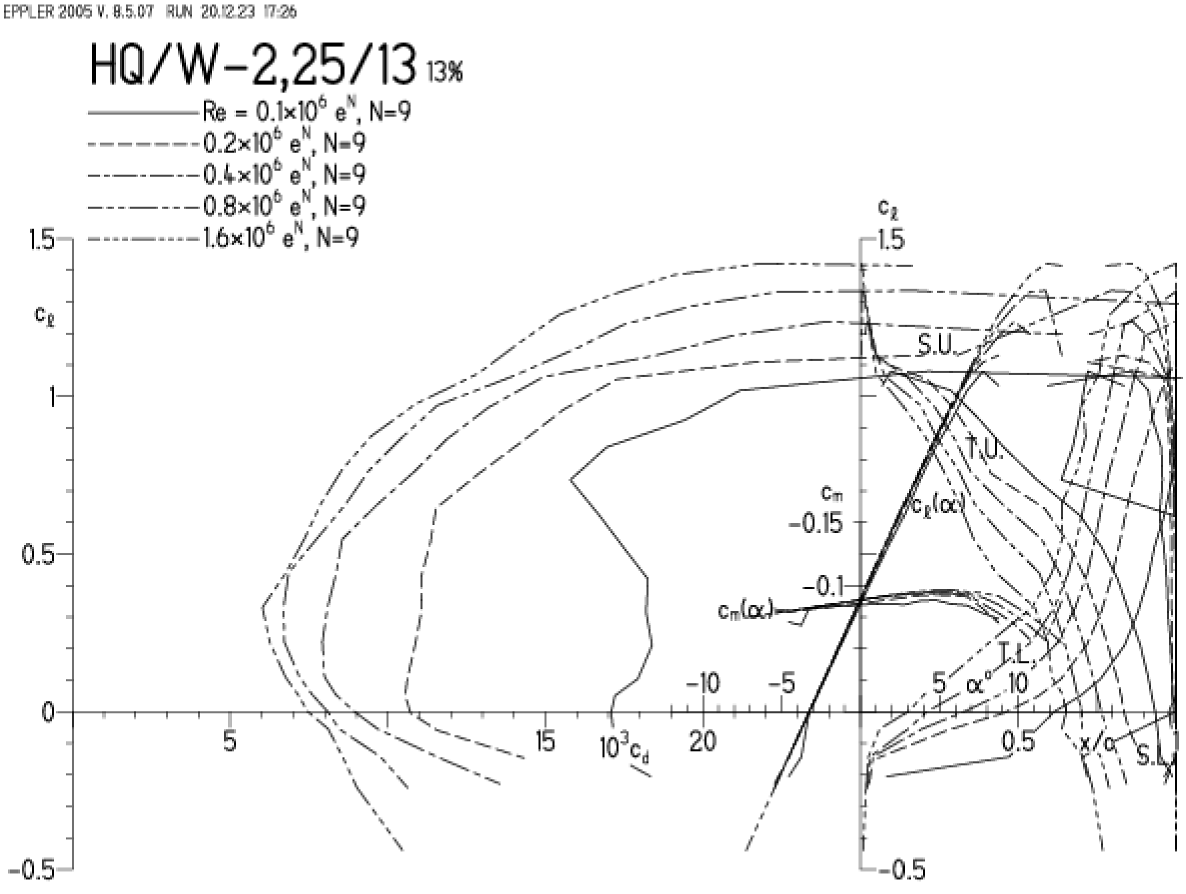
HQ/W-2,25/13, N=11



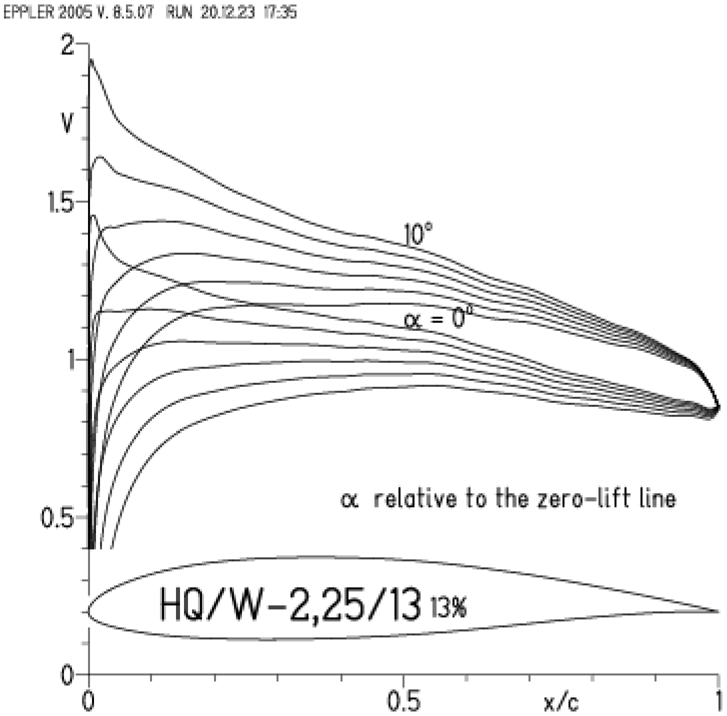


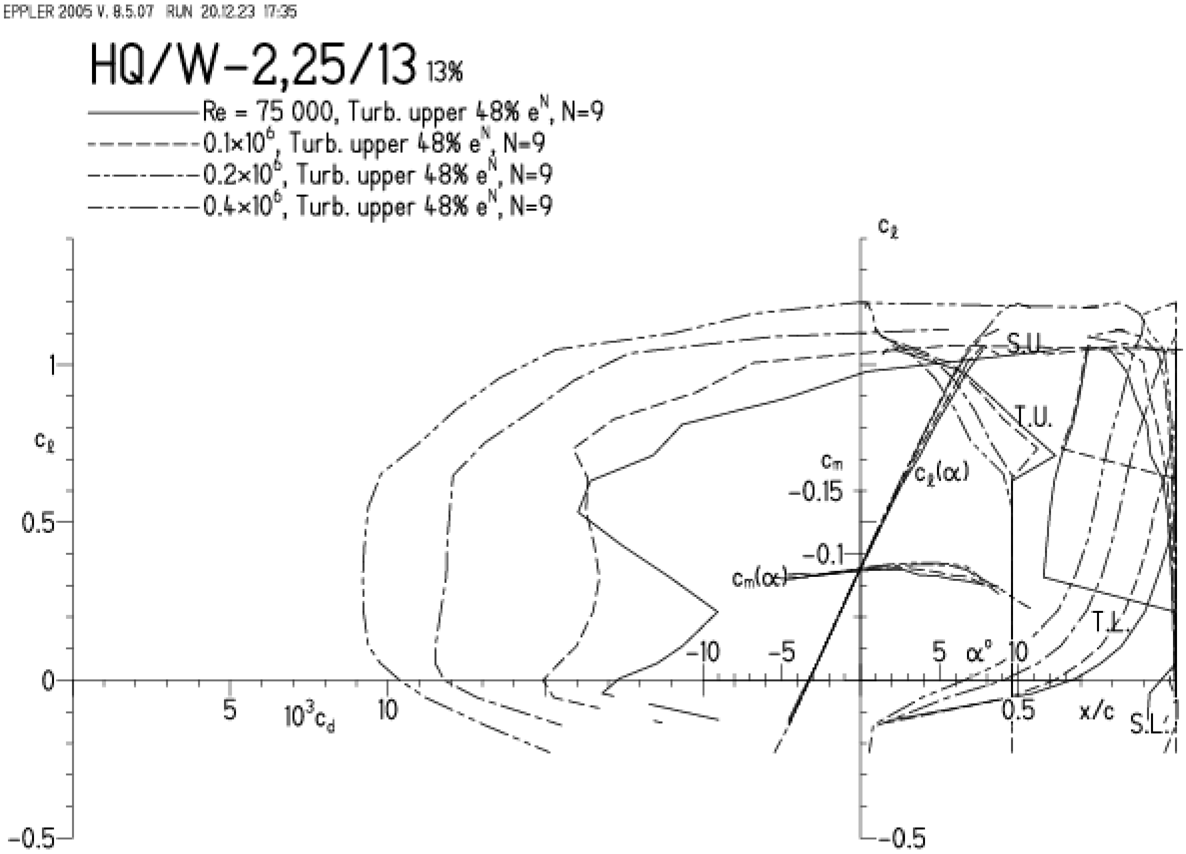
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
10³c_d
x/c

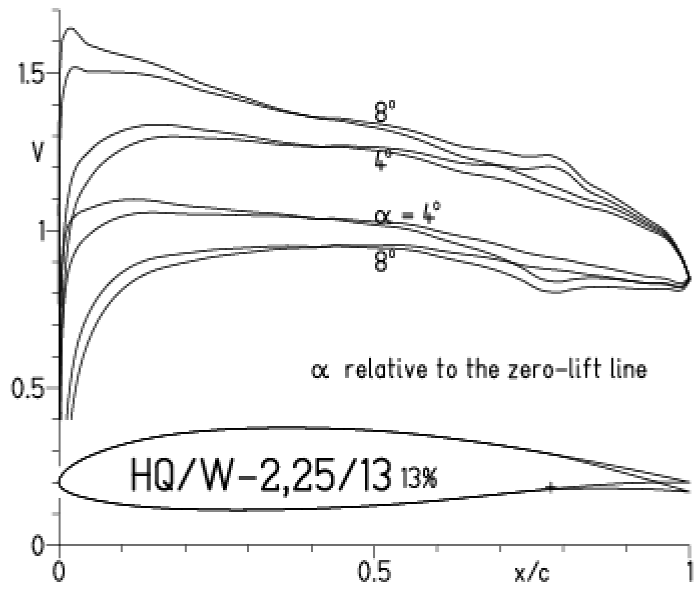
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



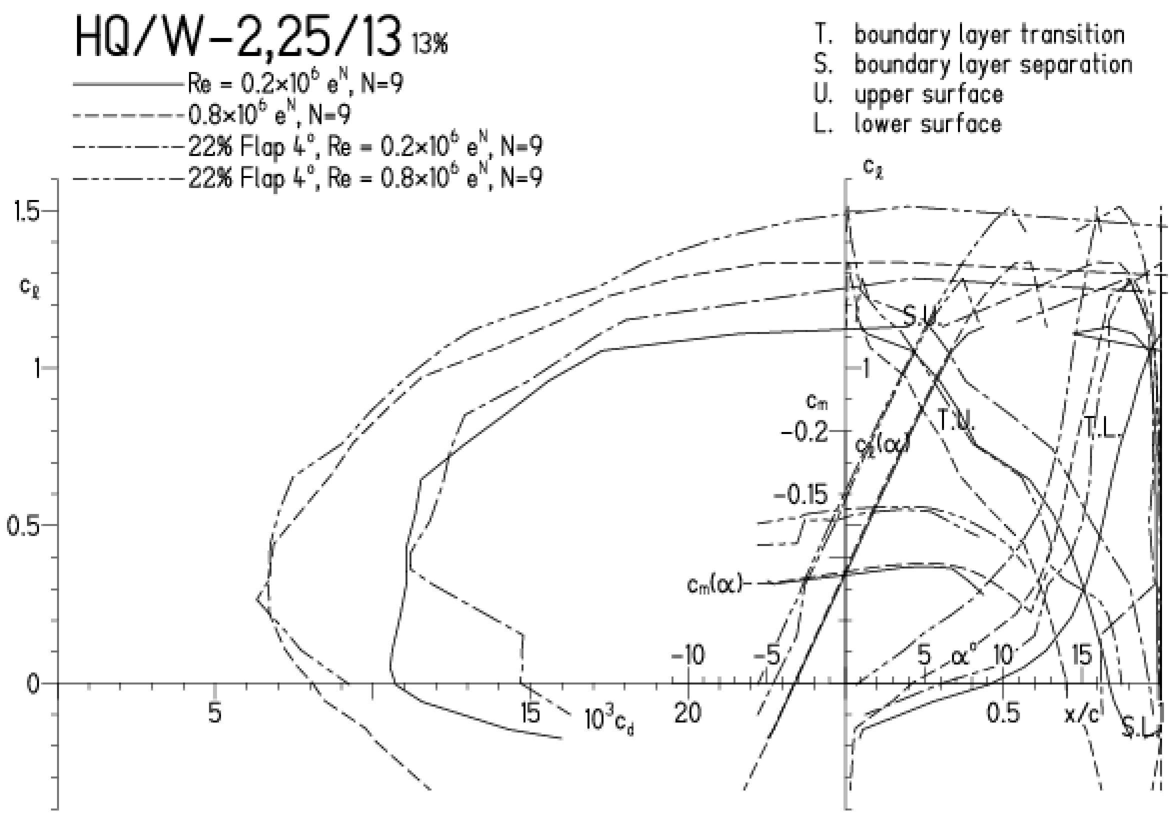


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

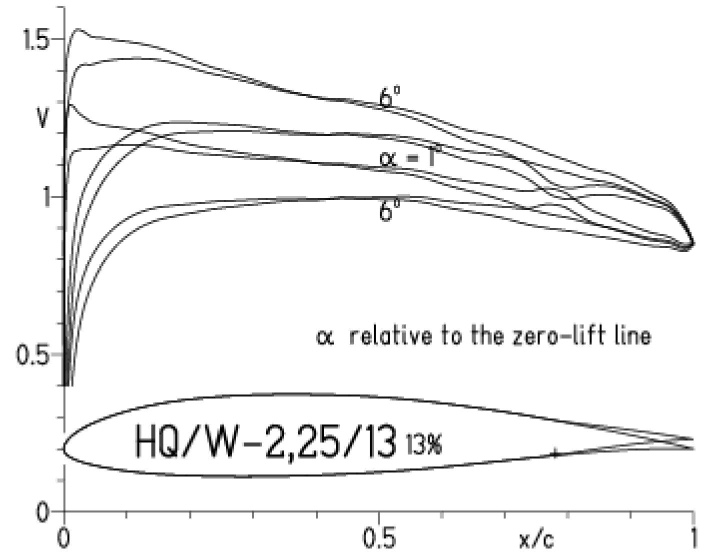


EPPLER 2005 V.

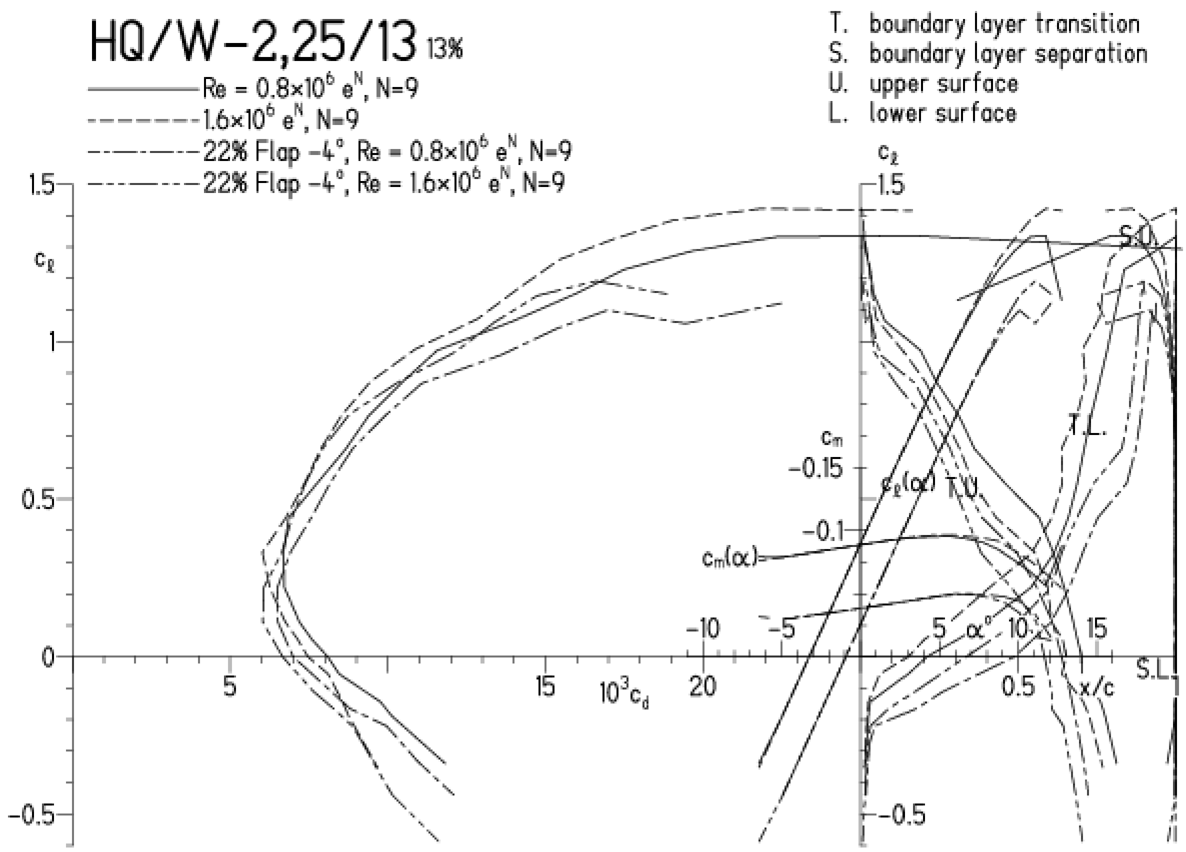


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

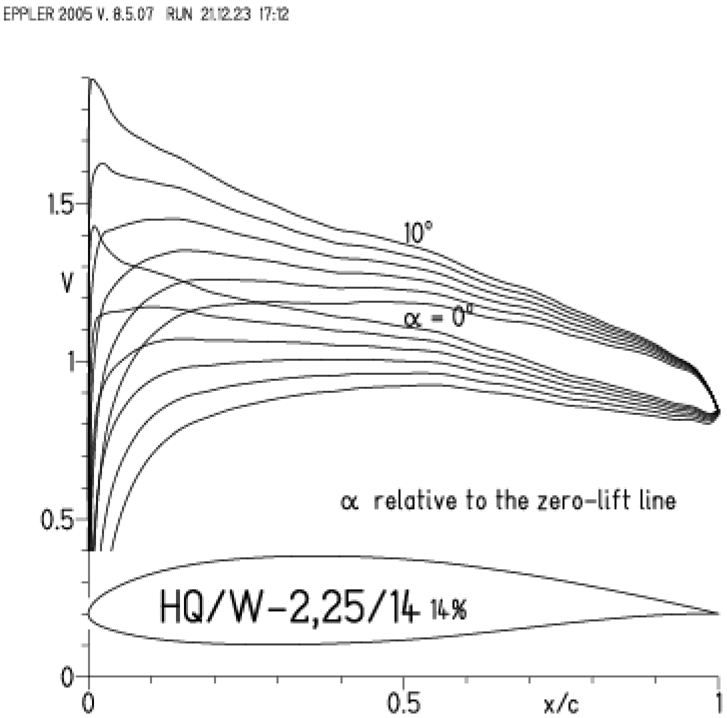
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

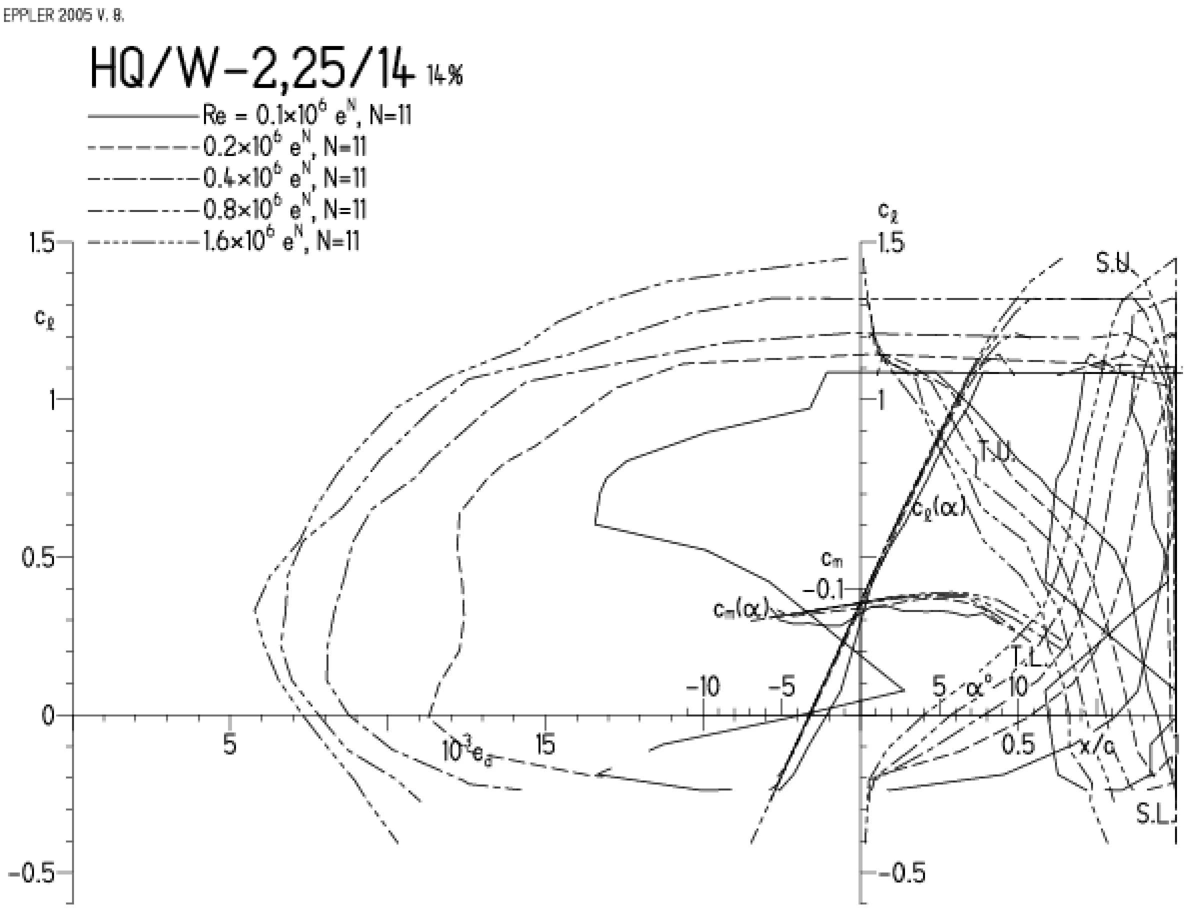


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

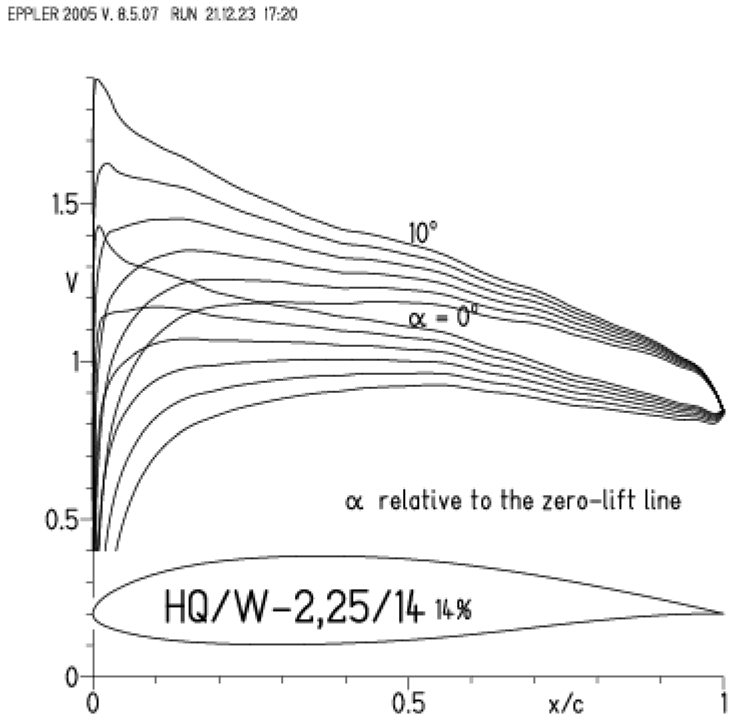


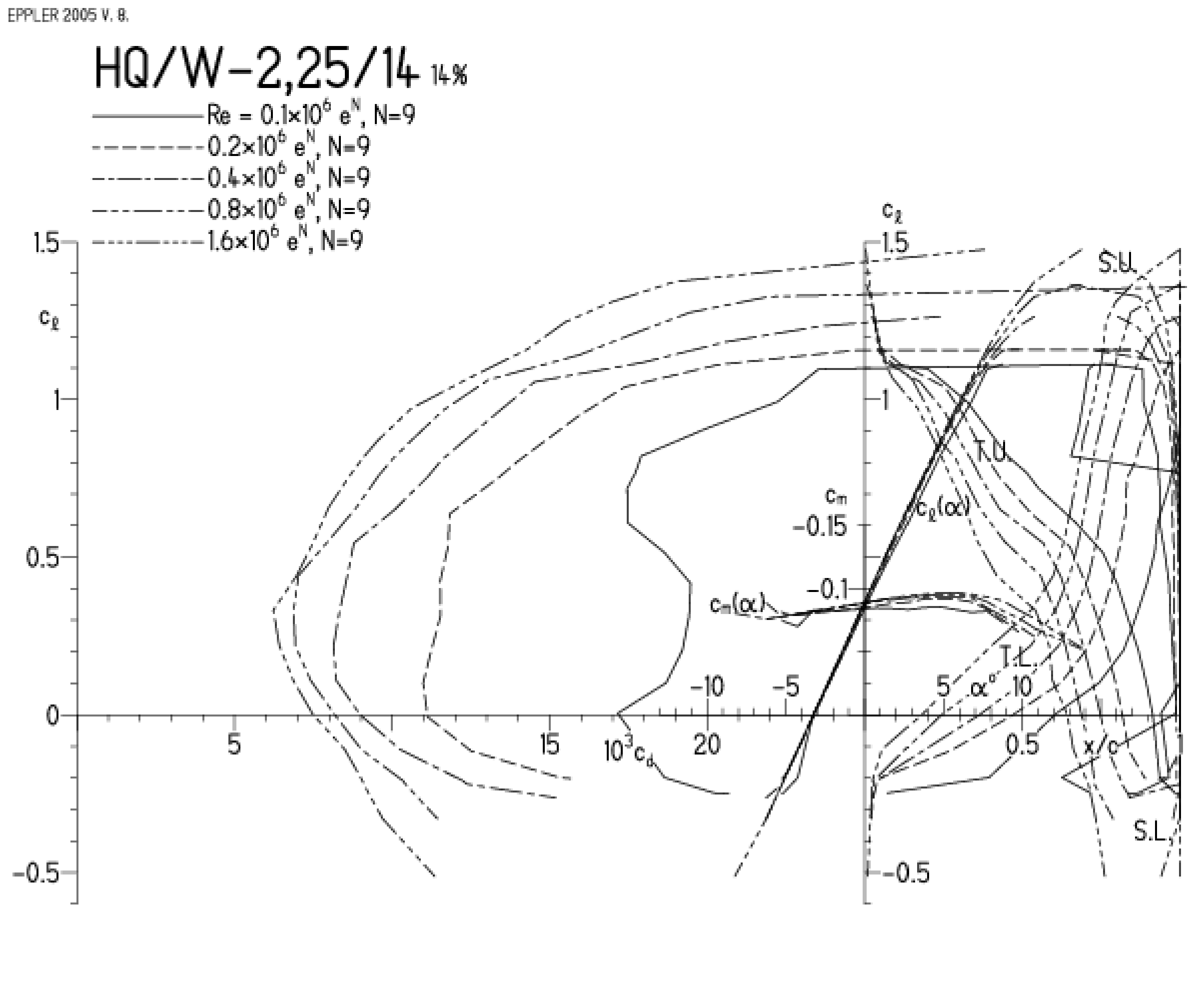
<u>HQ/W-2,25/14</u>, N=11



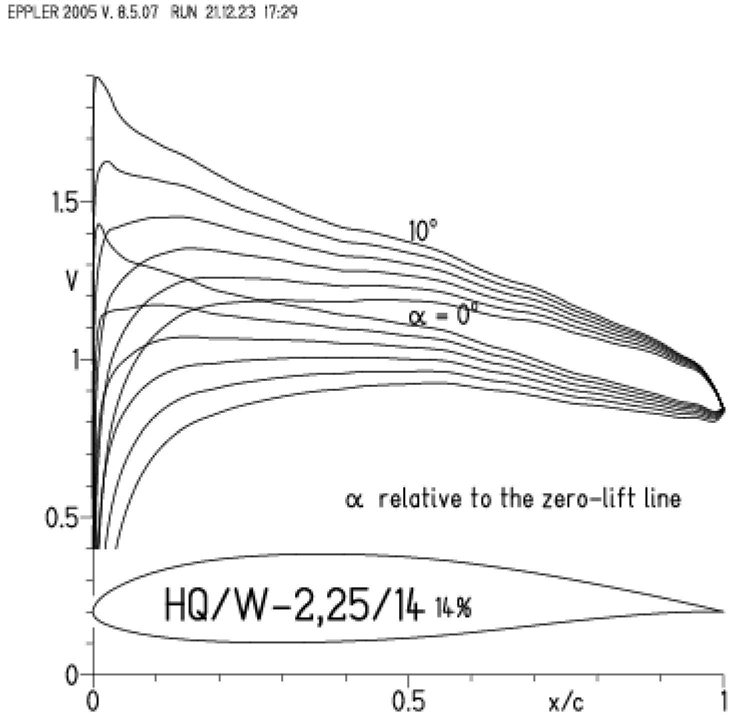


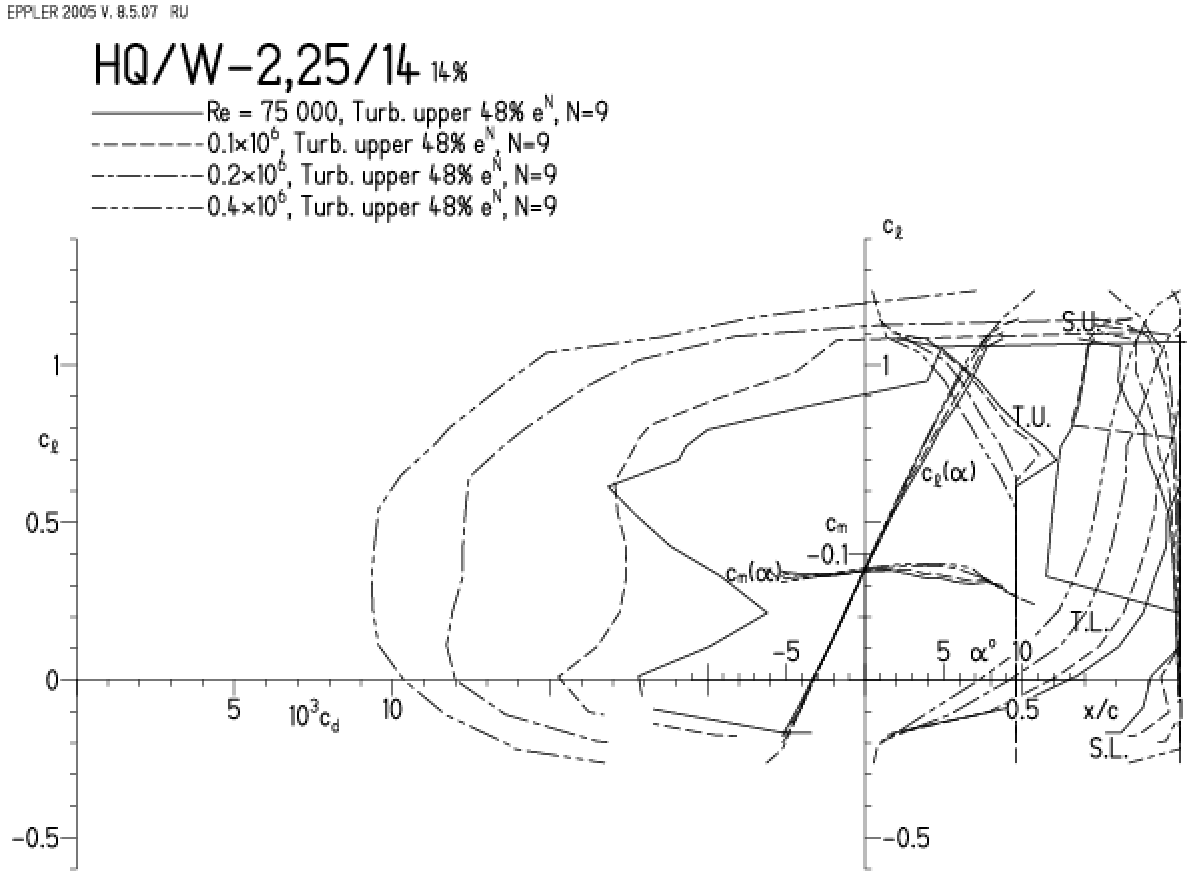
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_l
10^3 c_d
c_m
c_l(α)
c_m(α)
α°
x/c
S.U.
T.U.
T.L.
S.L.

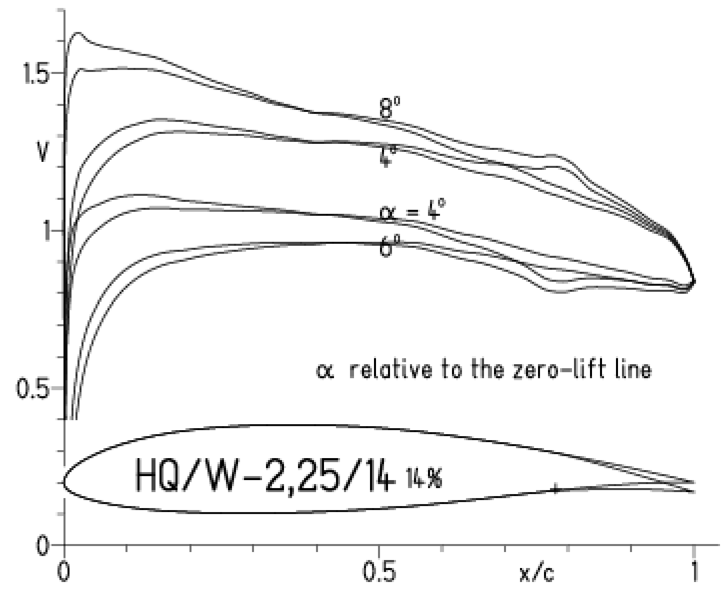
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



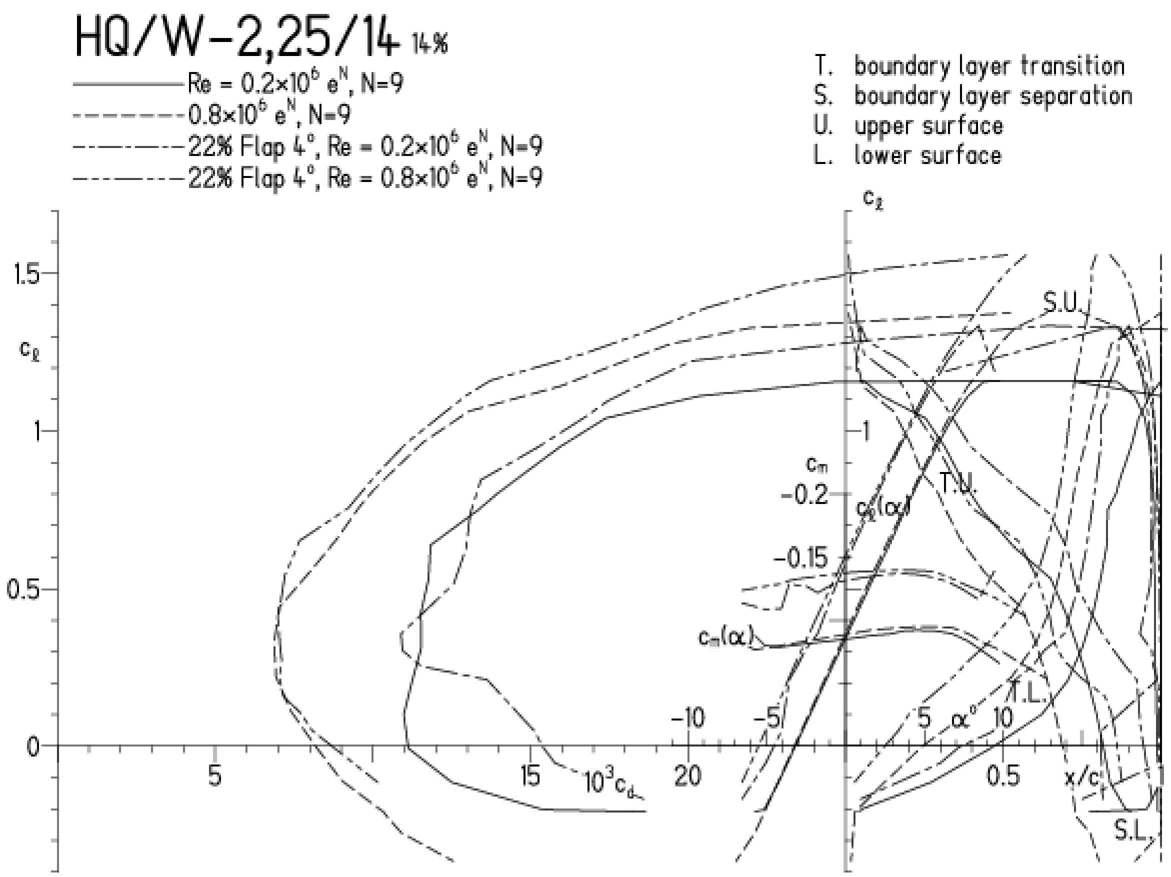


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

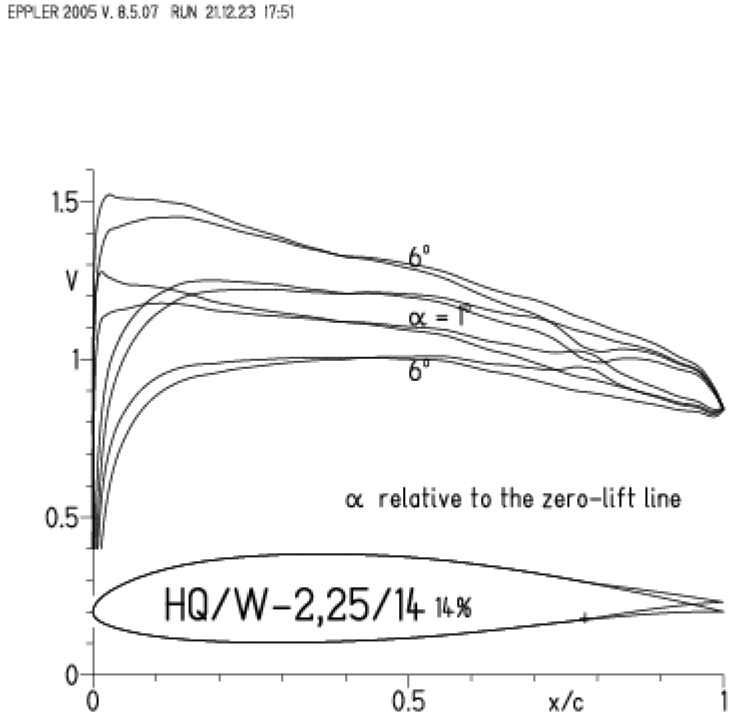
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

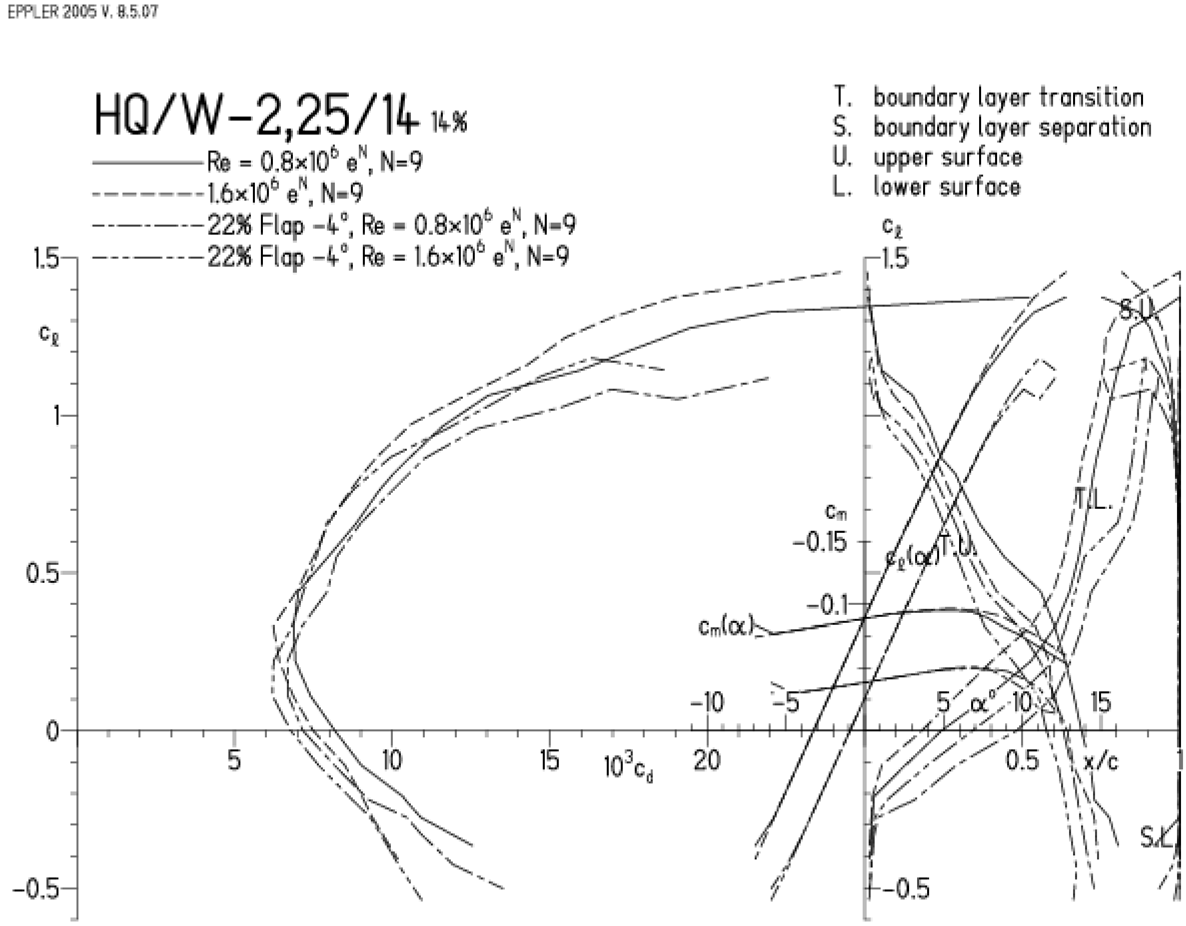


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

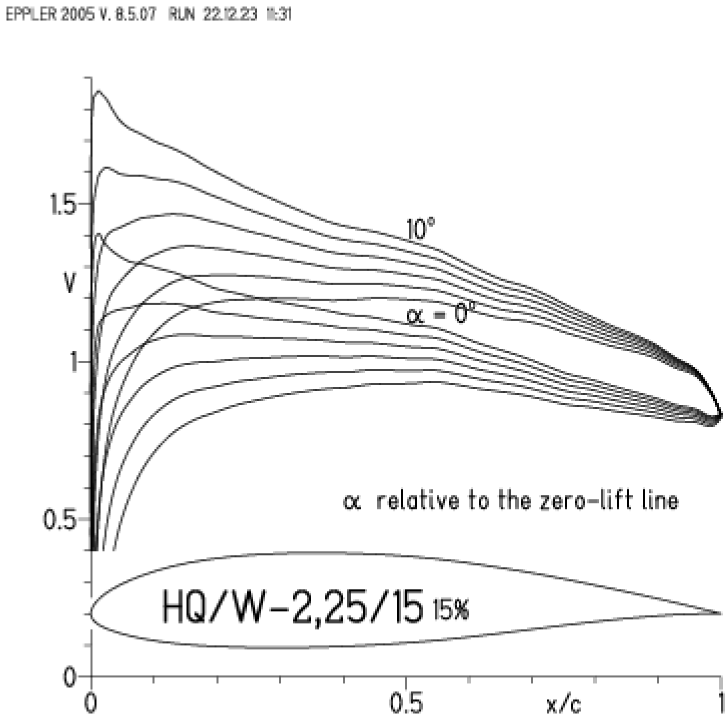


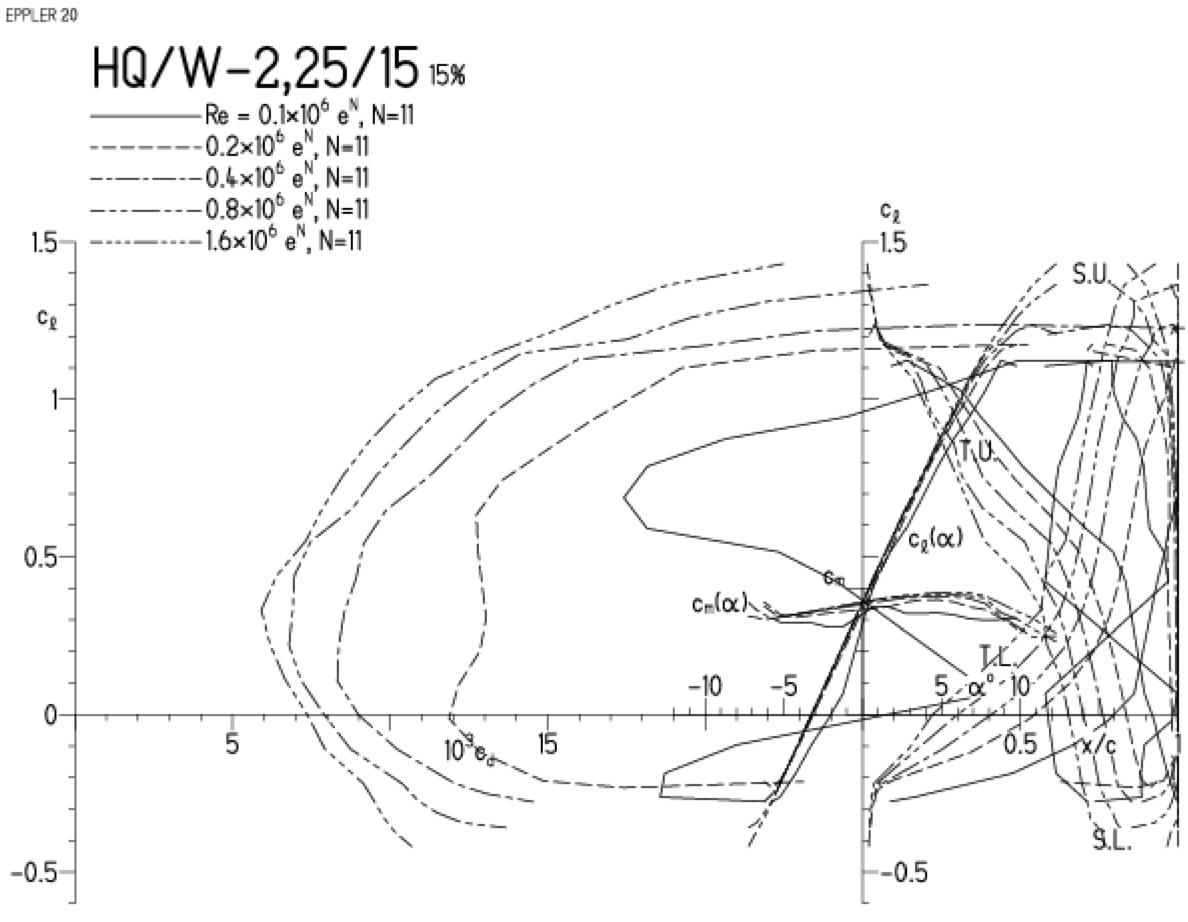
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



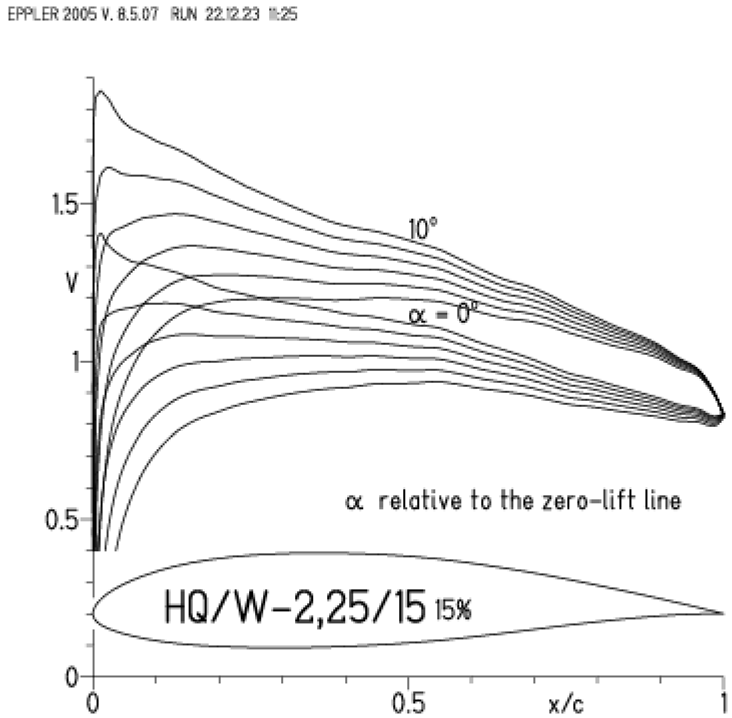


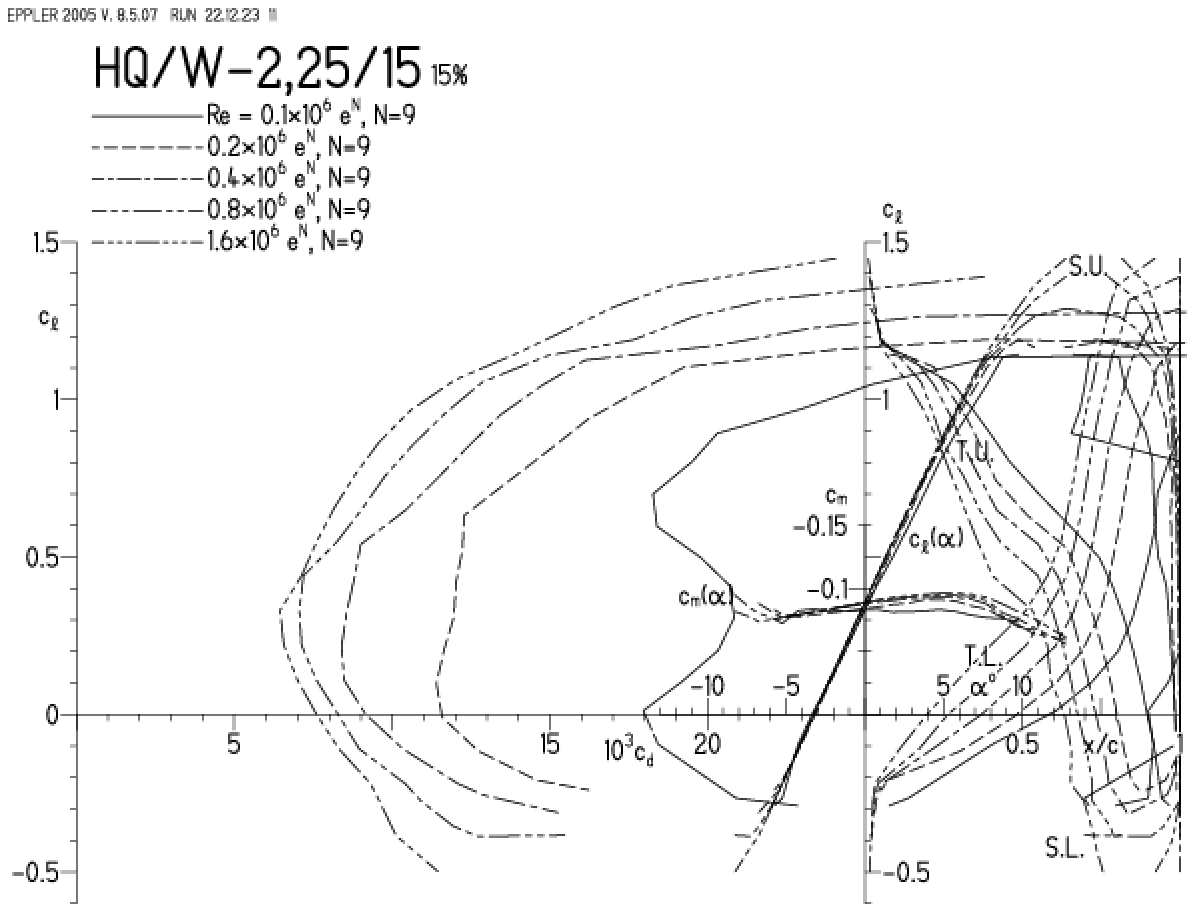
HQ/W-2,25/15, N=11



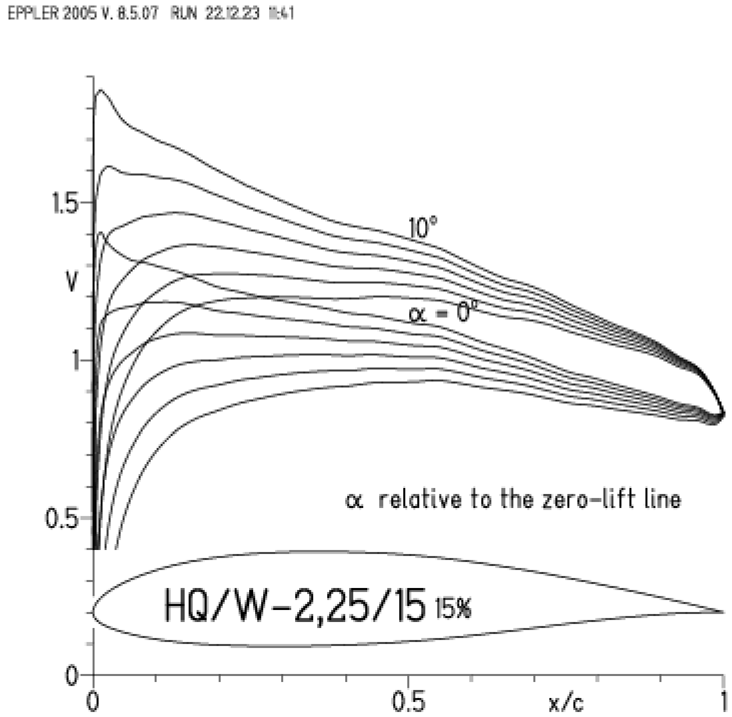


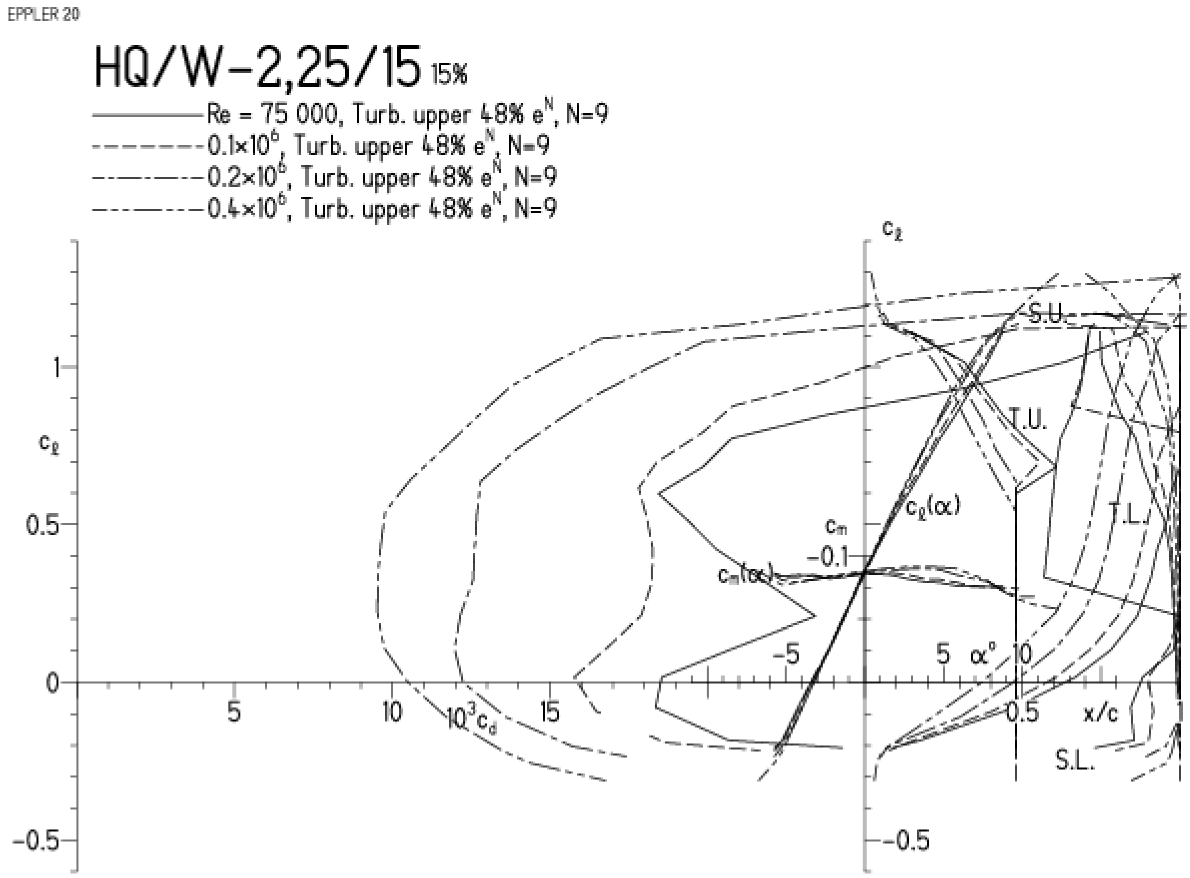
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



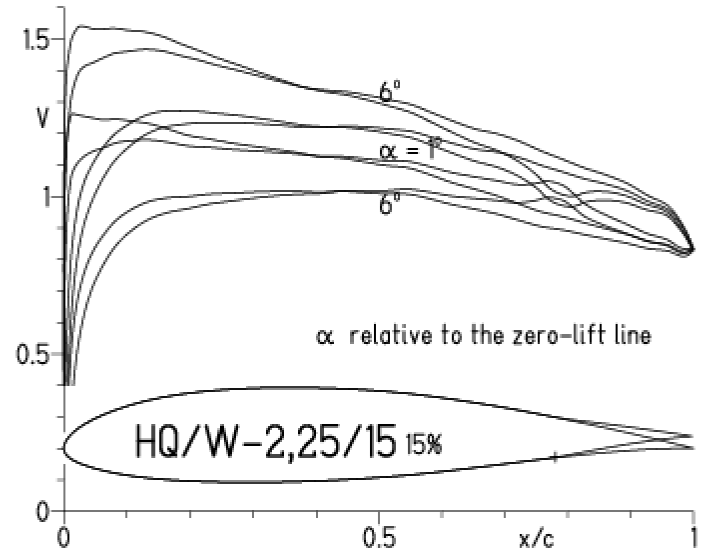


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

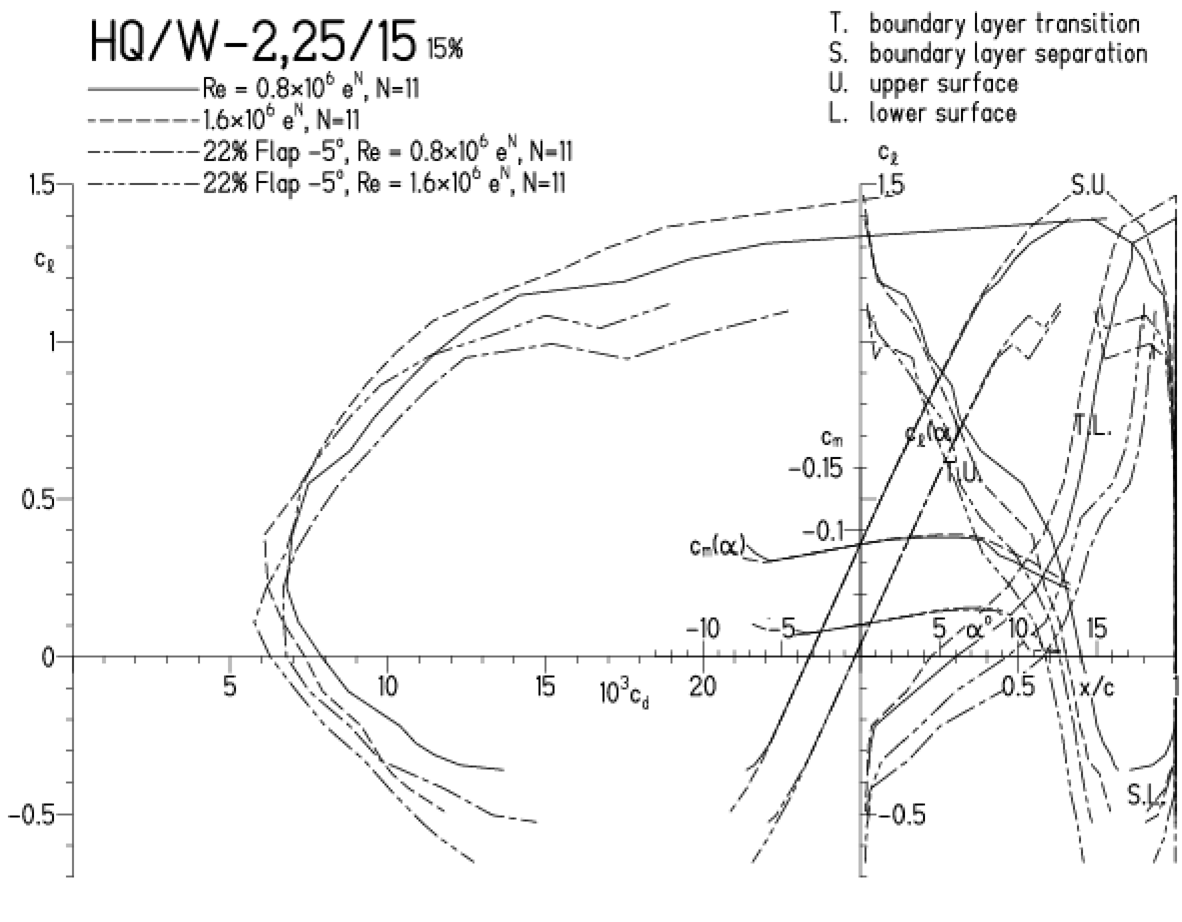
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

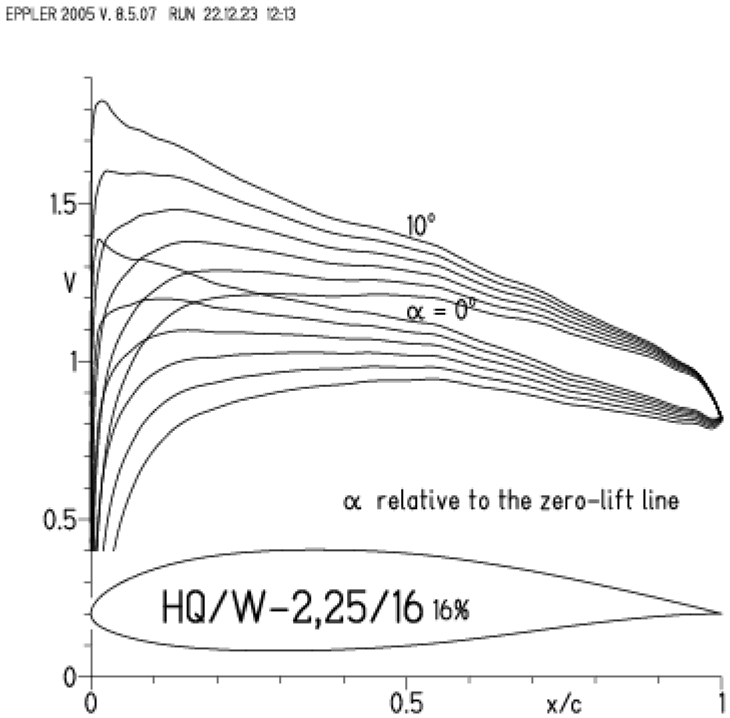
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

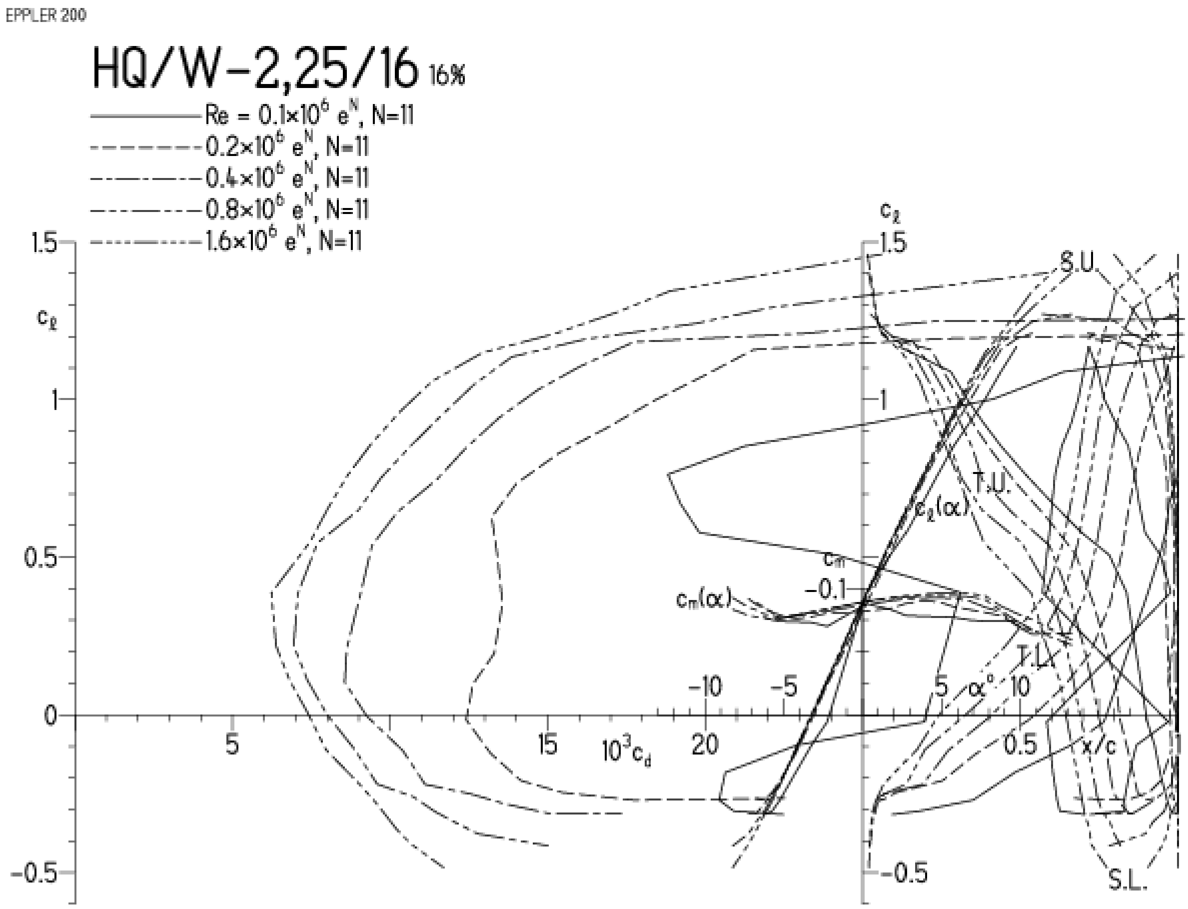


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

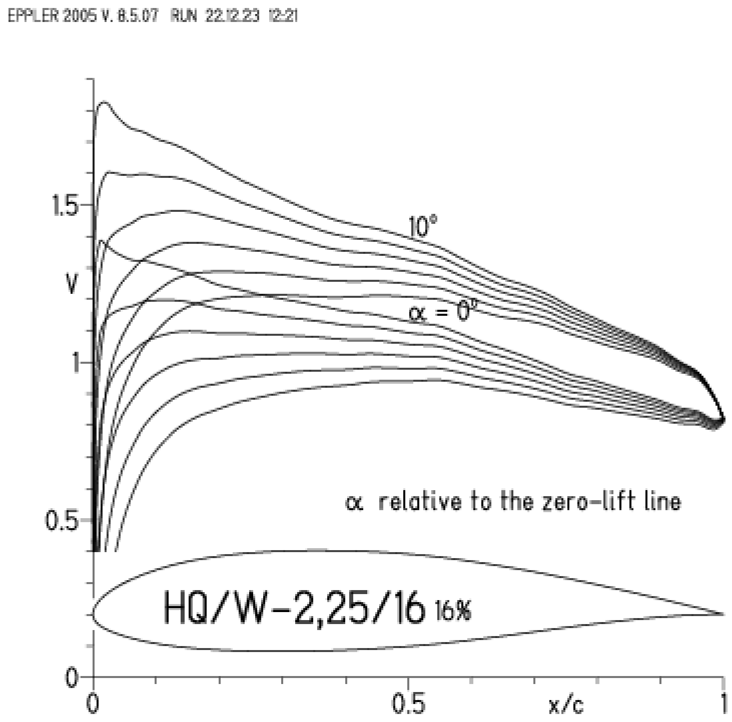


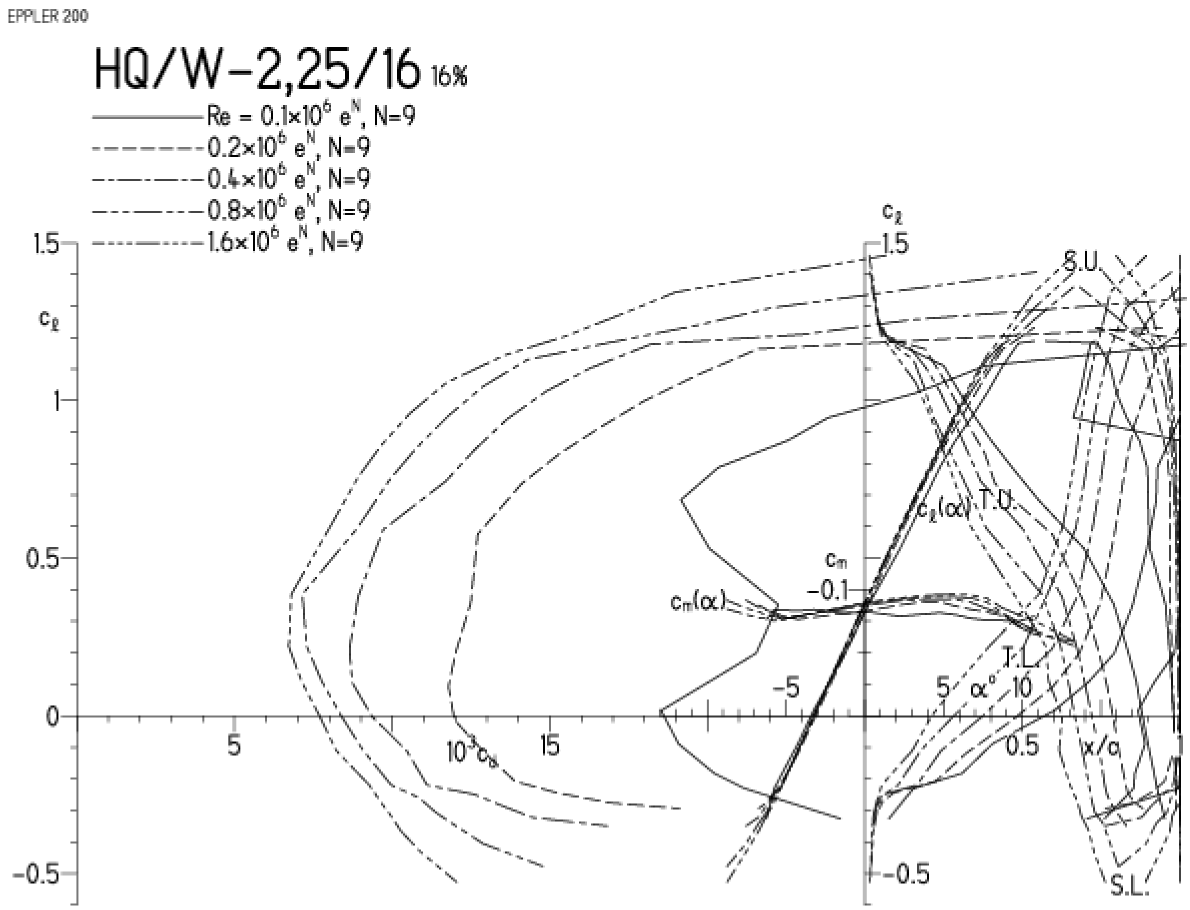
HQ/W-2,25/16, N=11



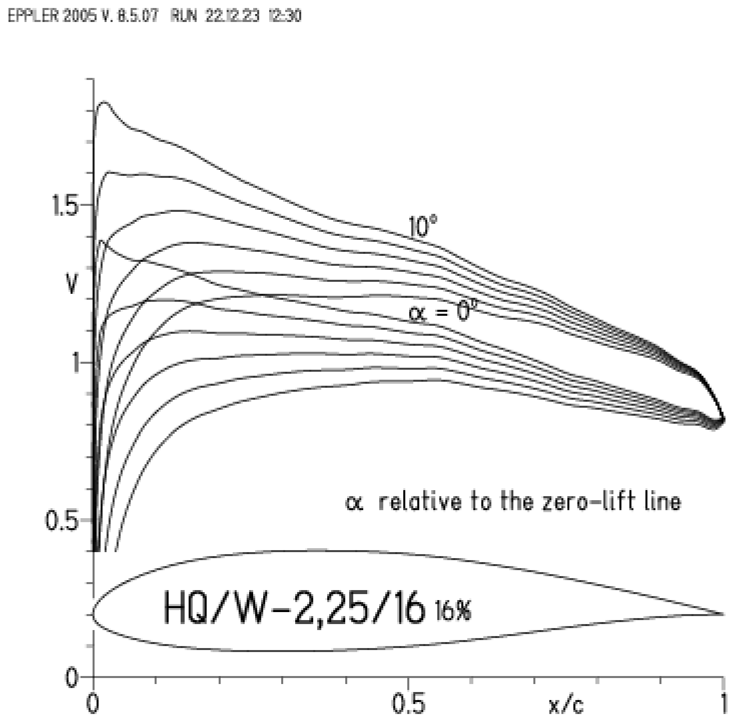


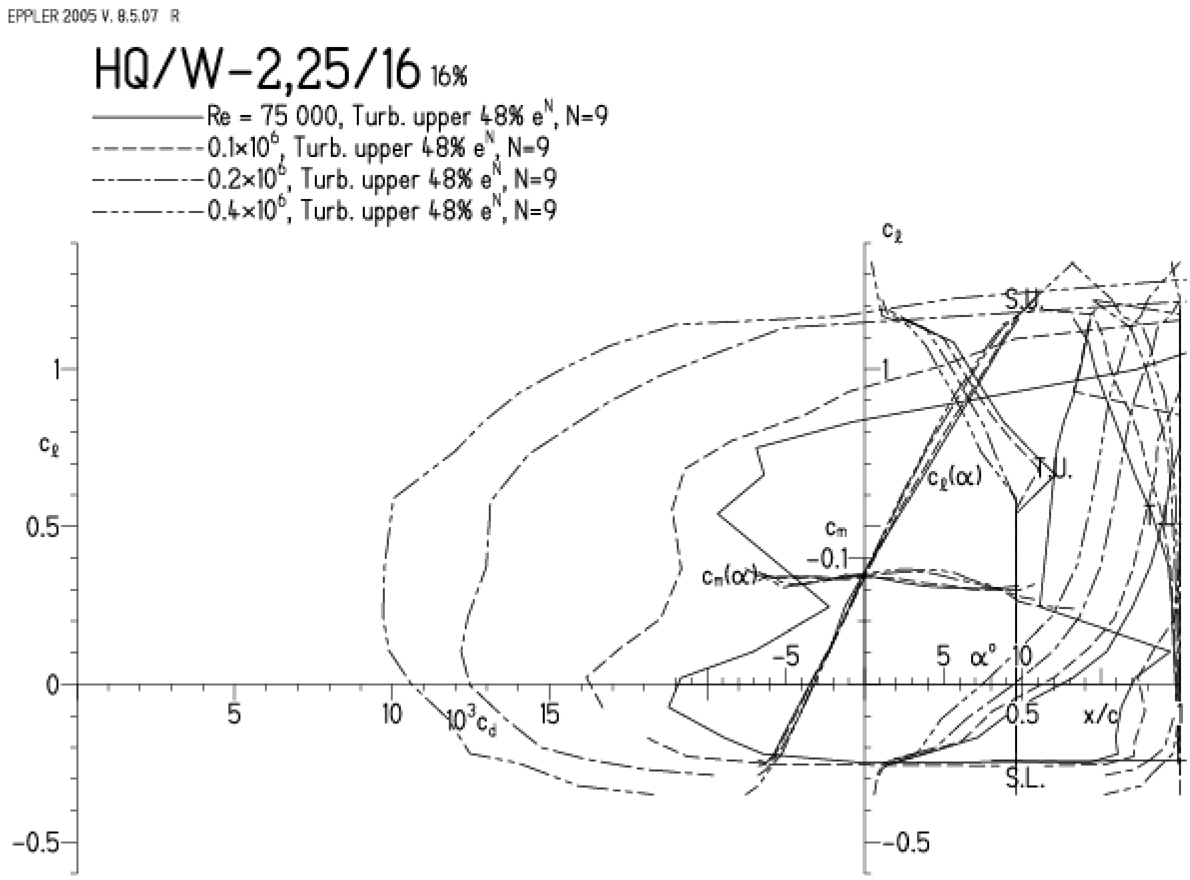
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_l(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



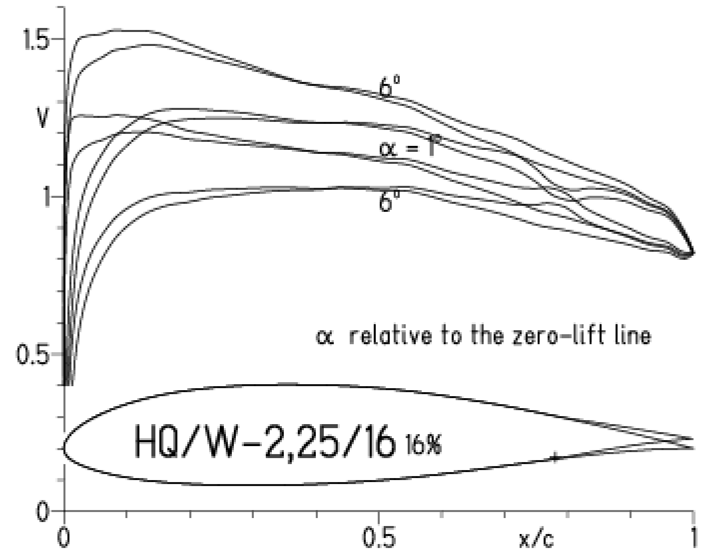


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

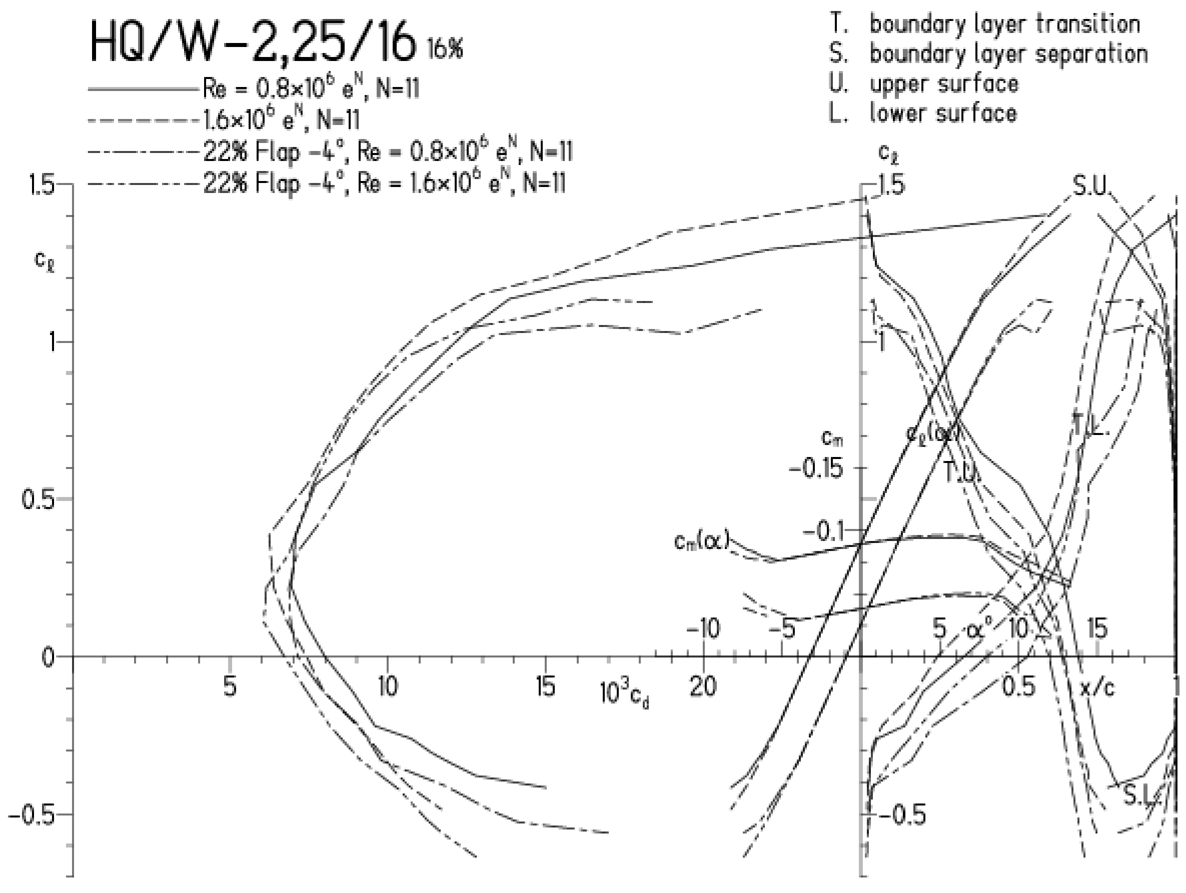
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

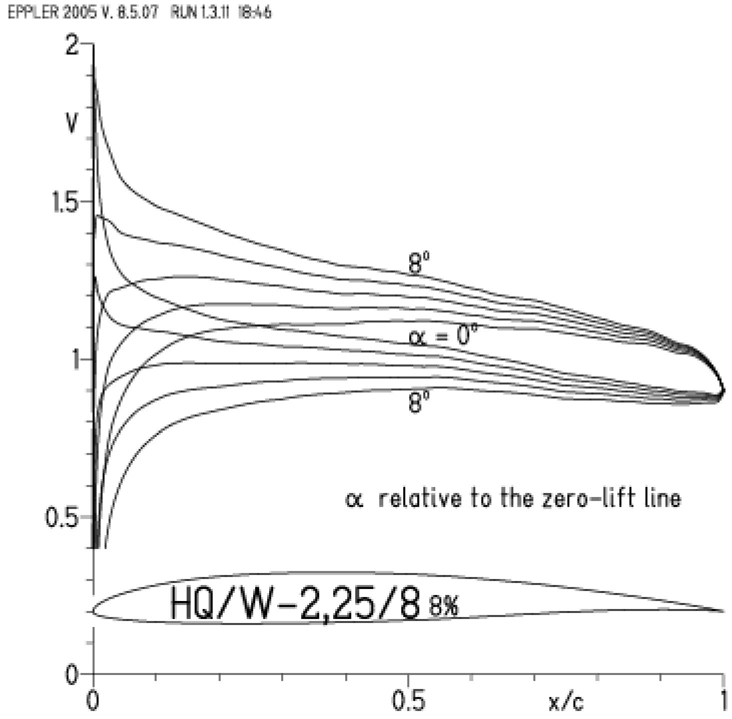
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

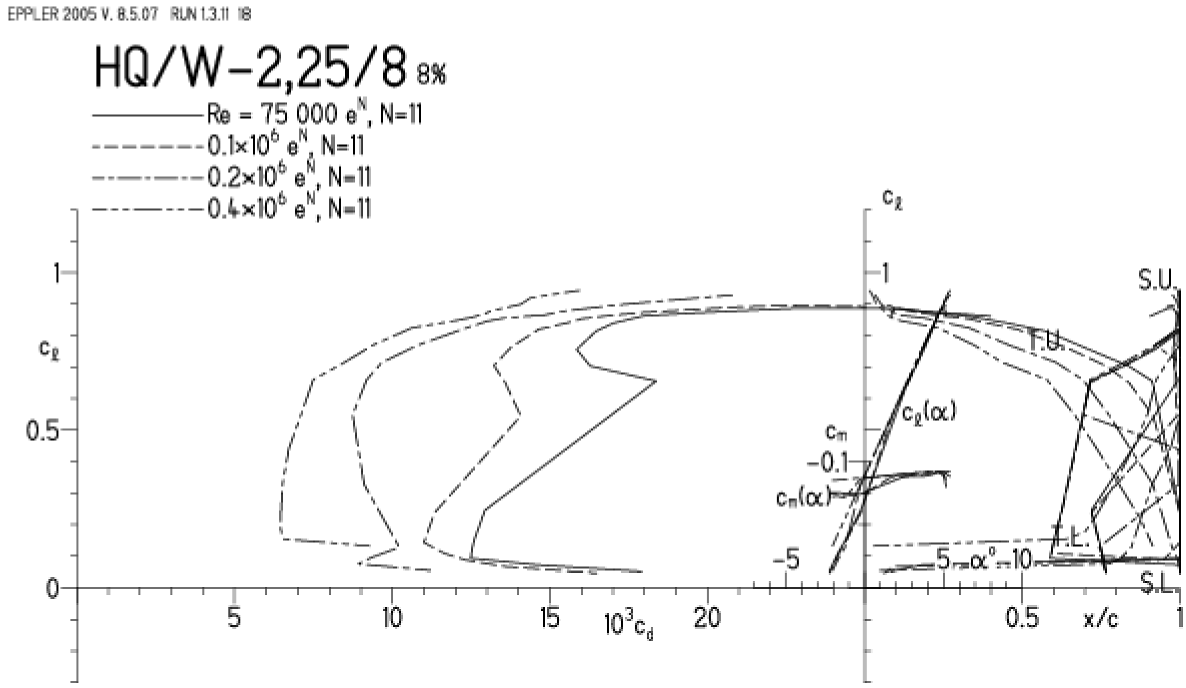


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

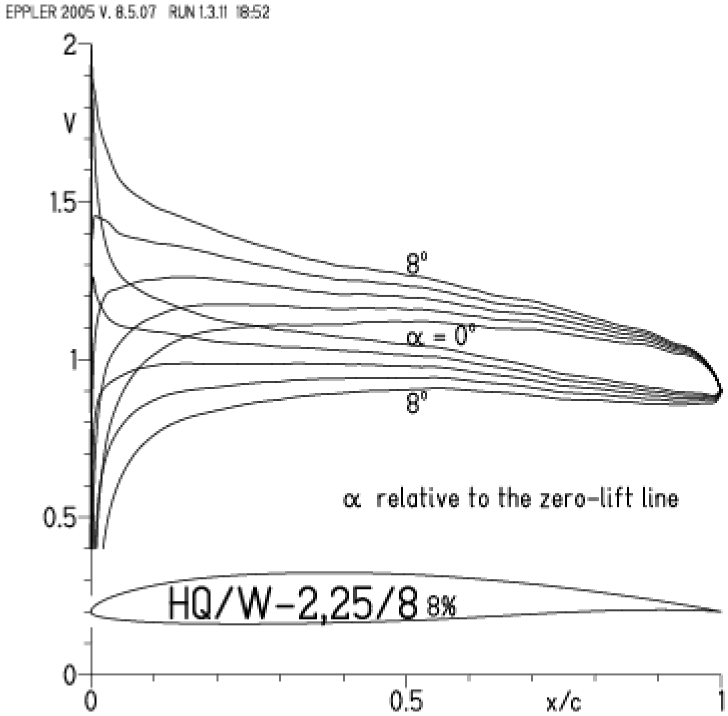


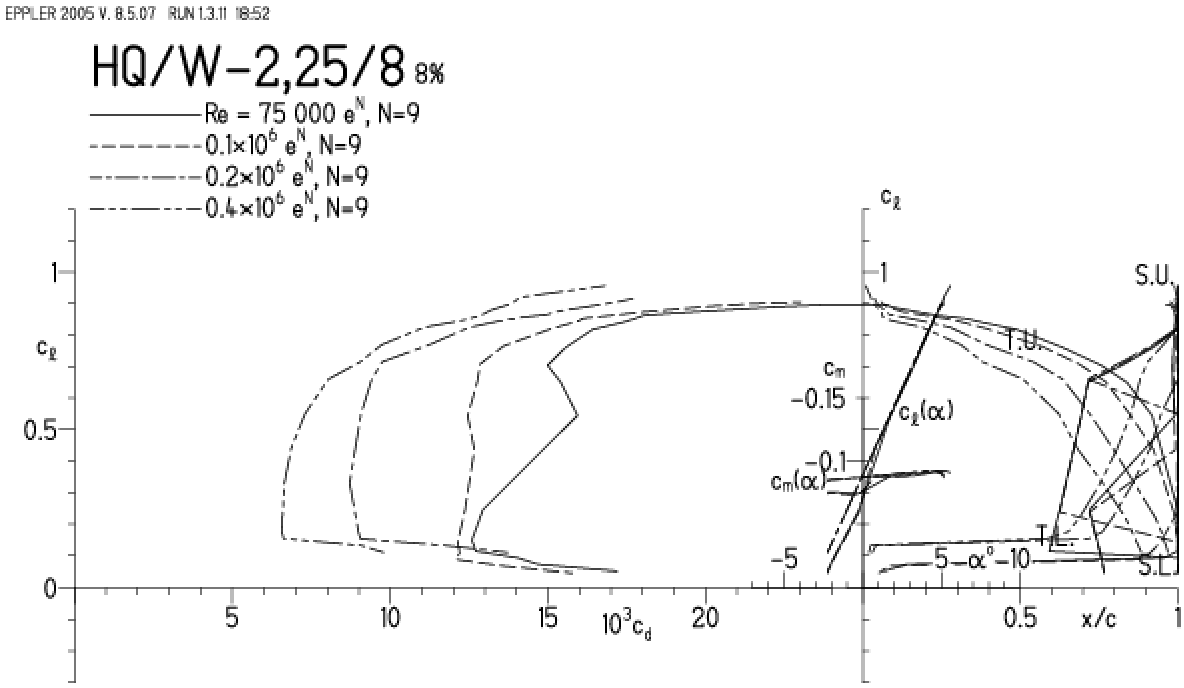
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

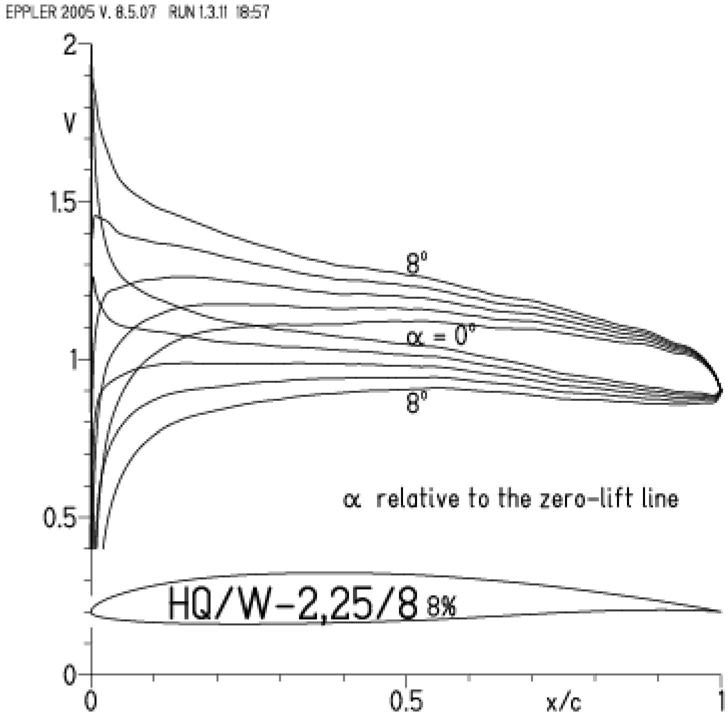

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
10^3 c_d
x/c

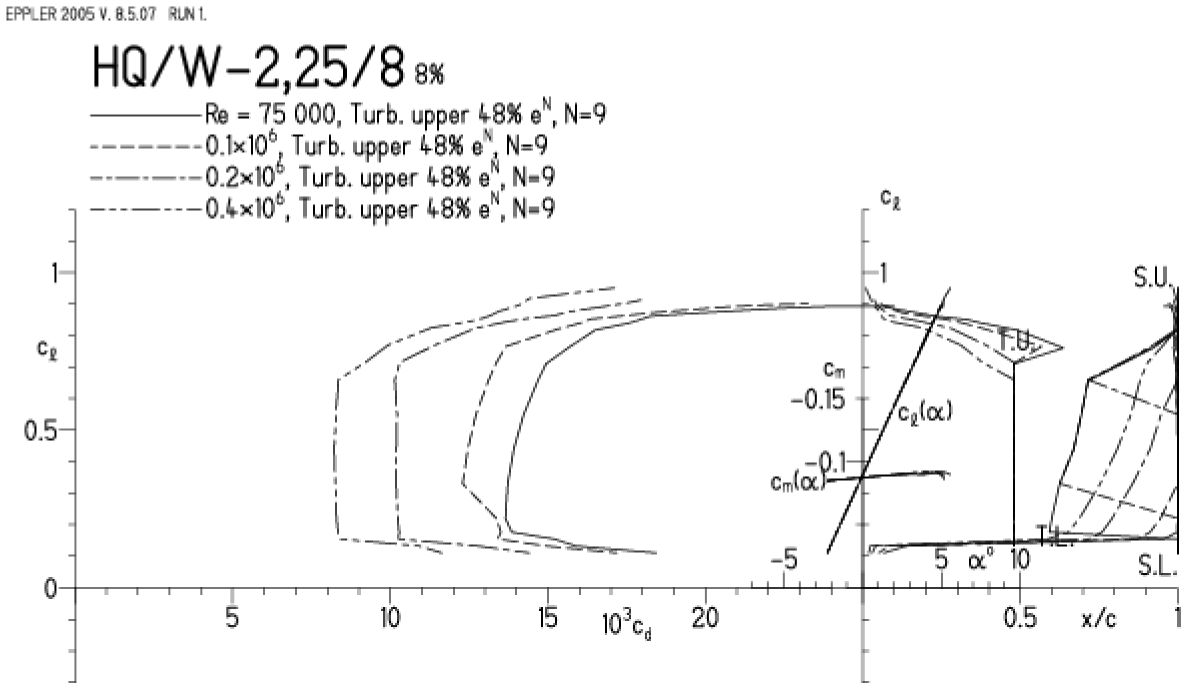
<u>HQ/W-2,25/8</u>, N=9





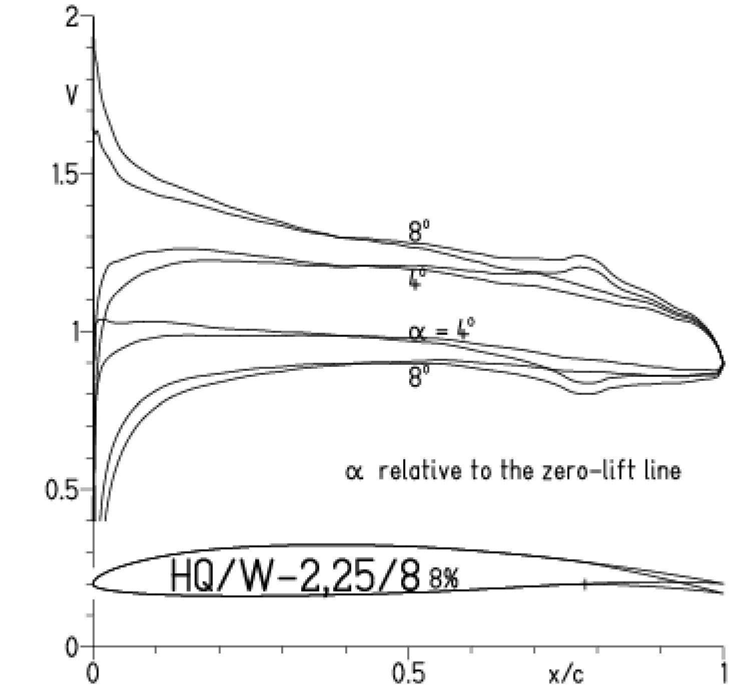
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



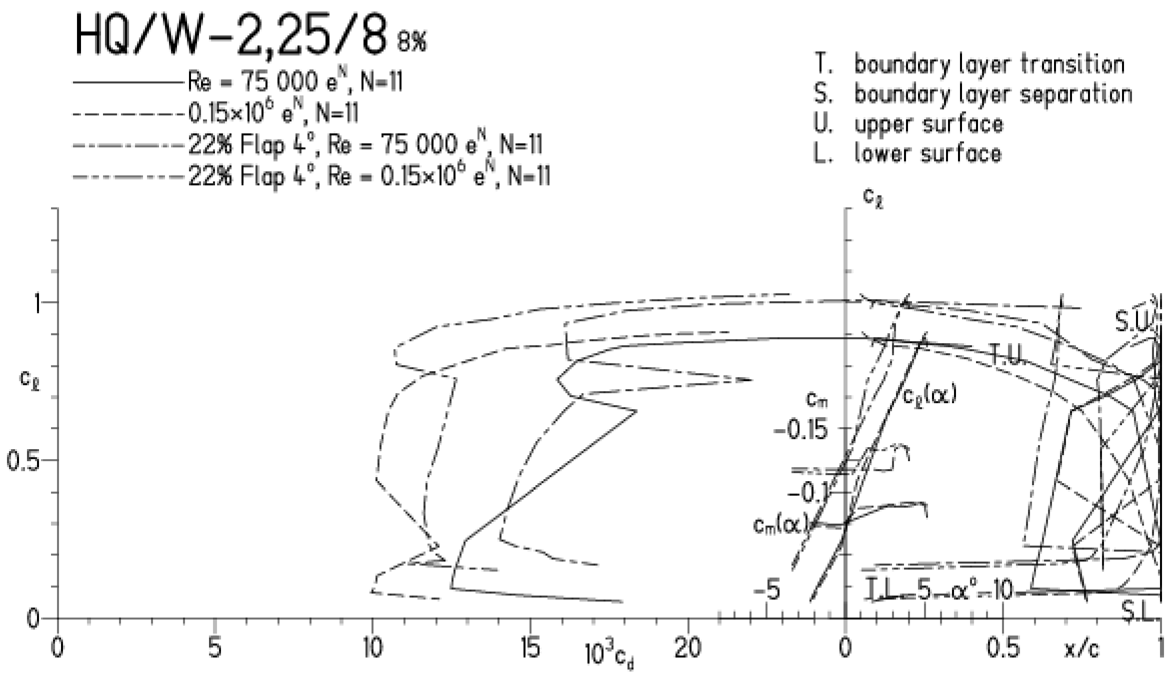


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

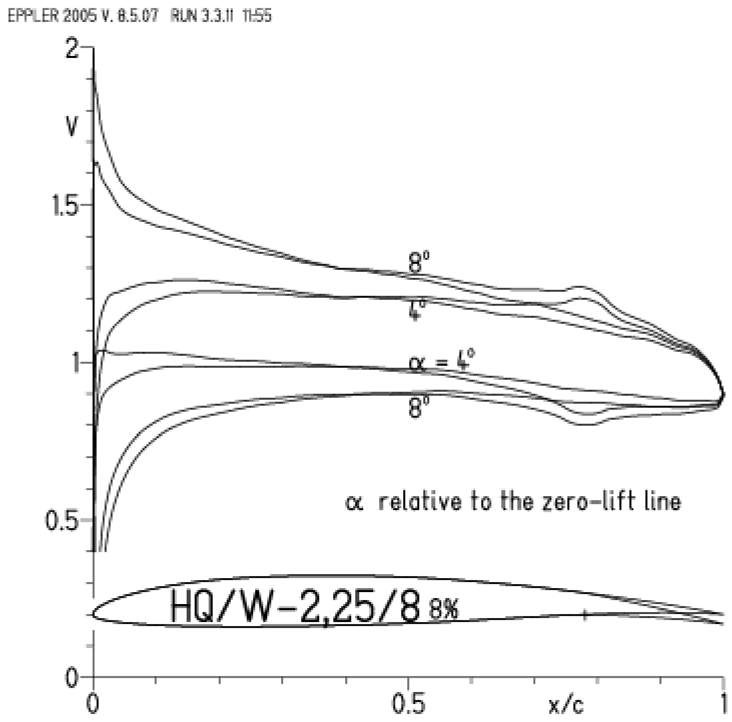
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

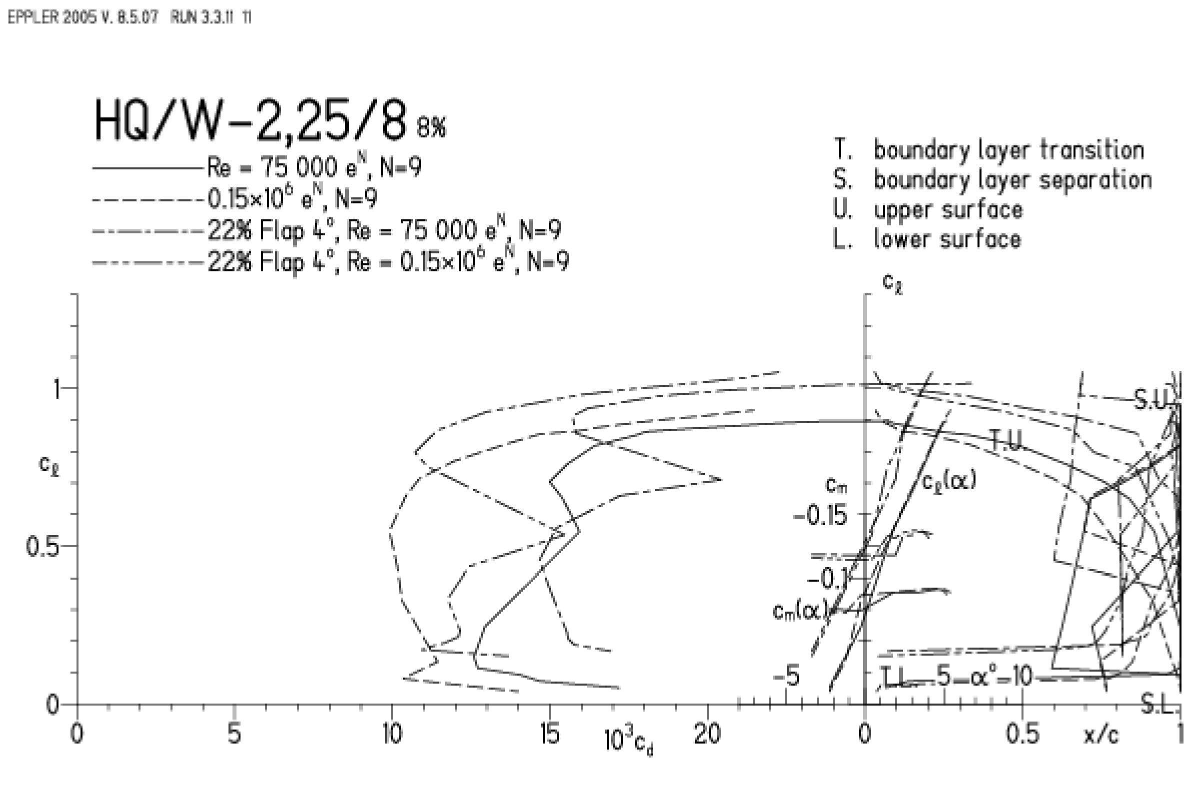


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

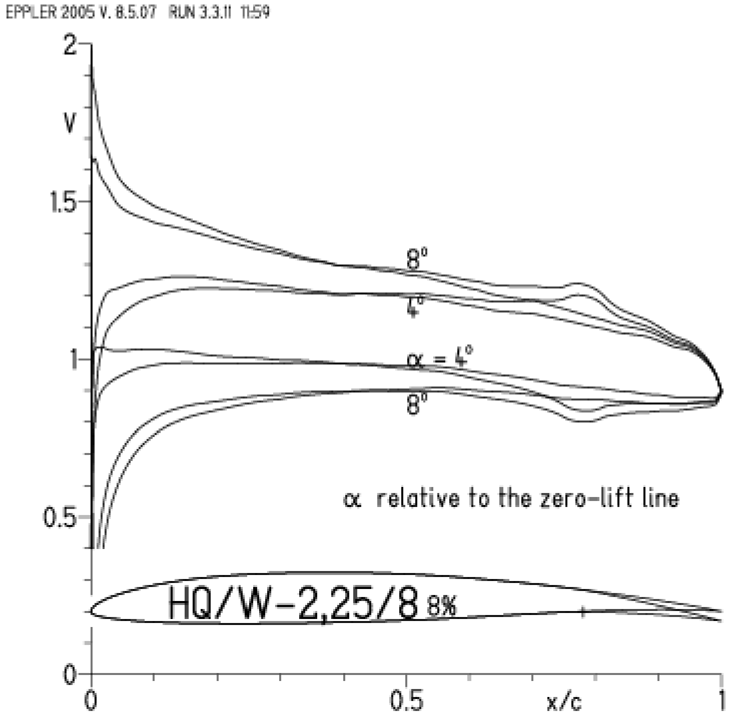


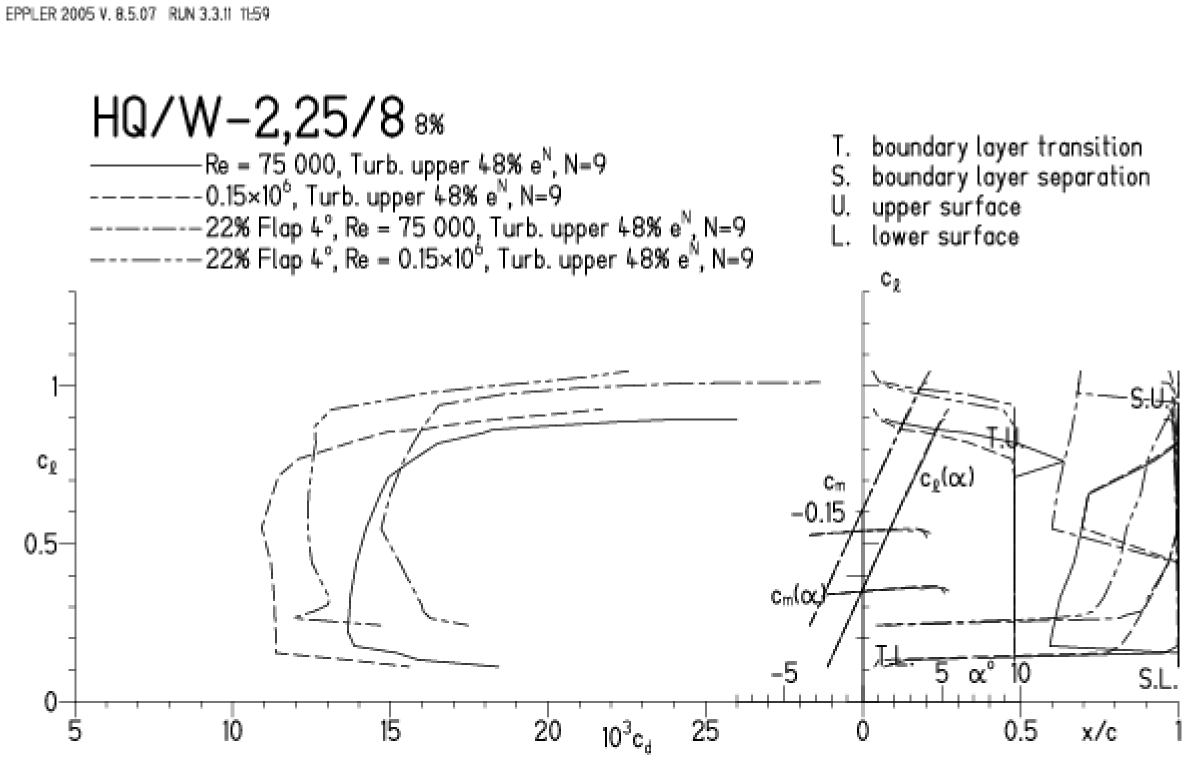
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



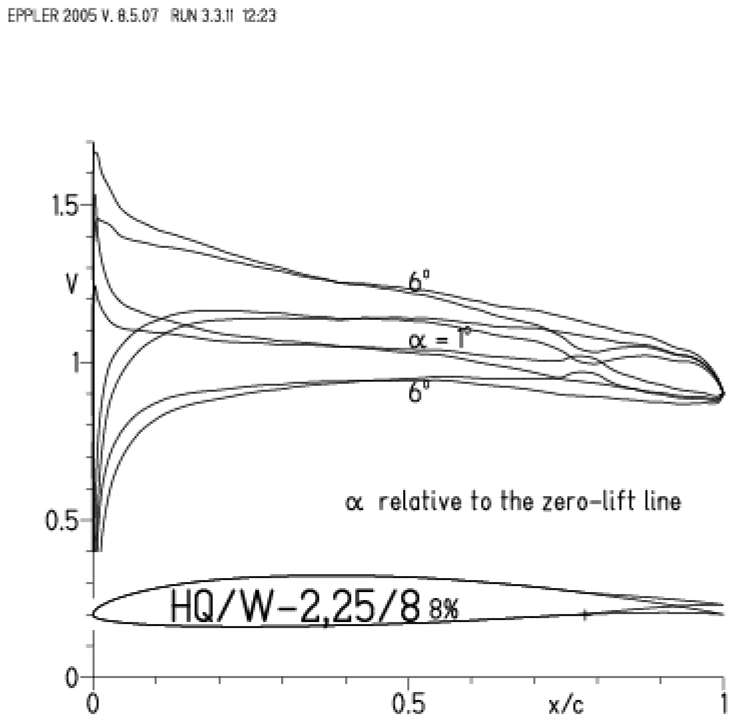


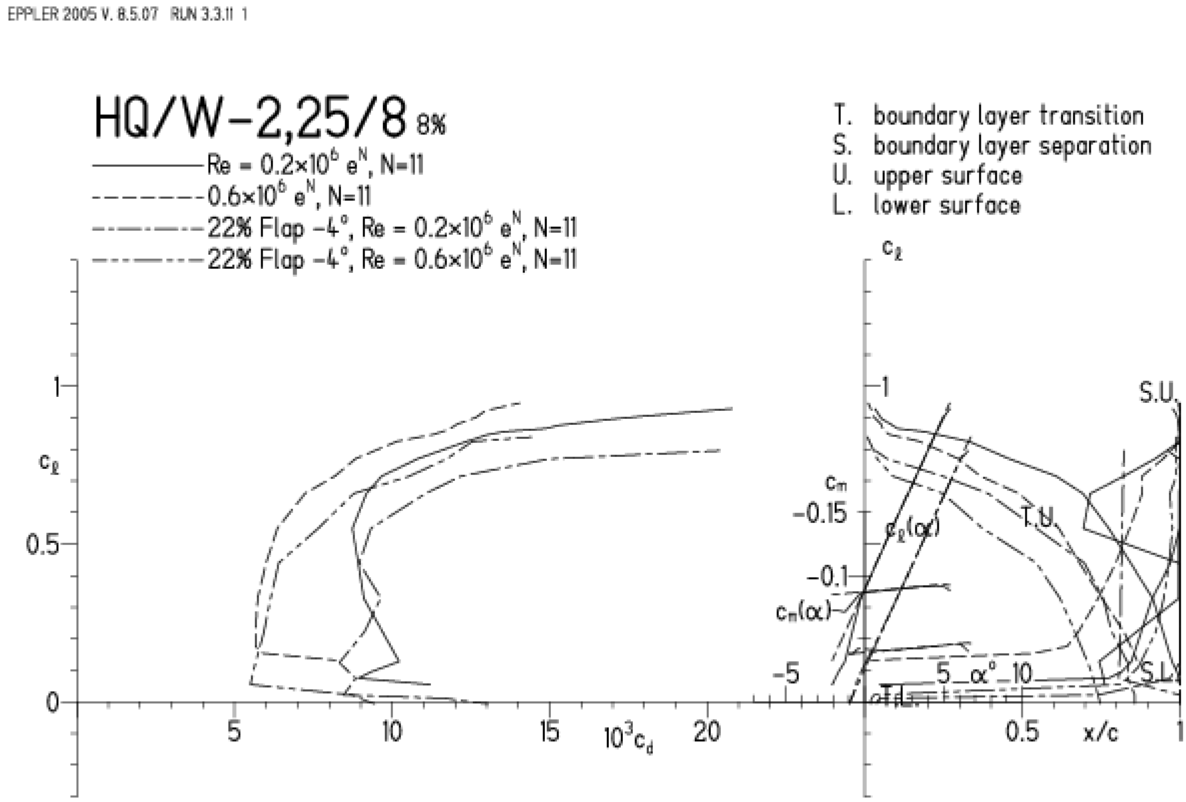
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





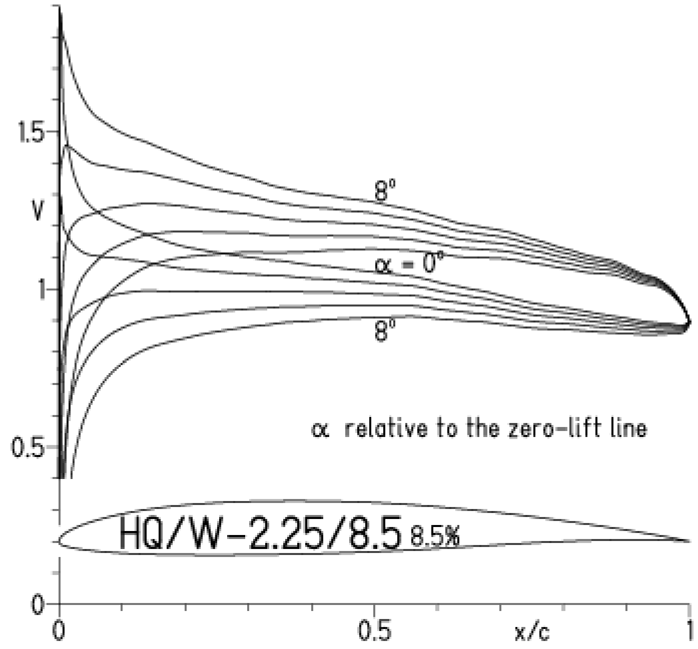
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



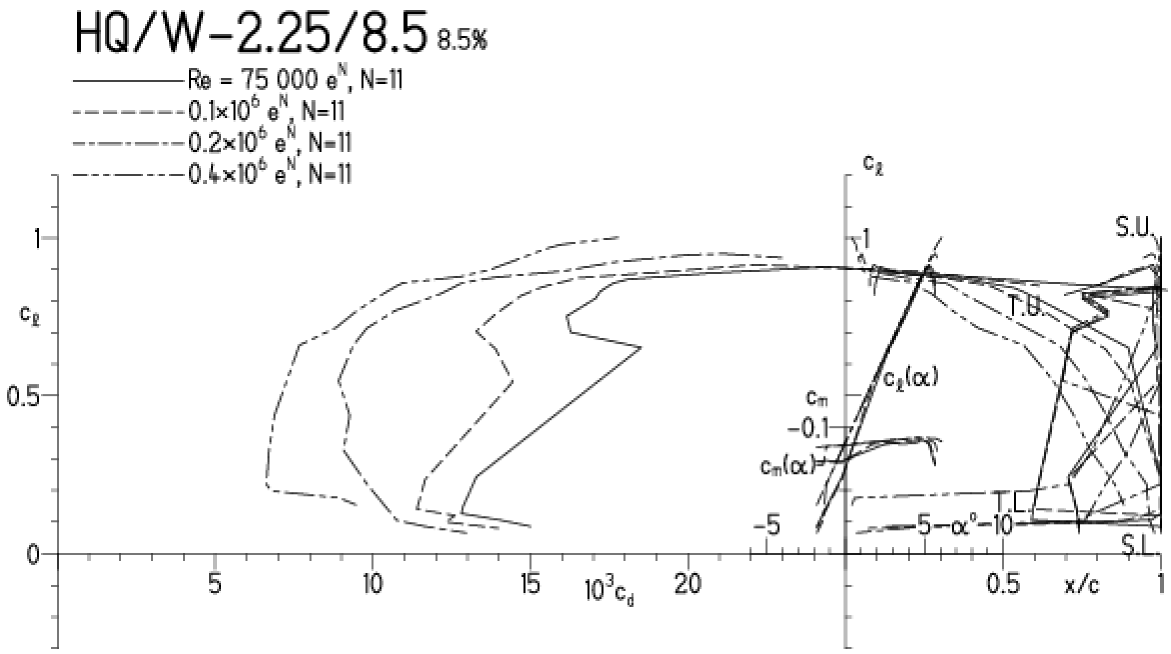


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

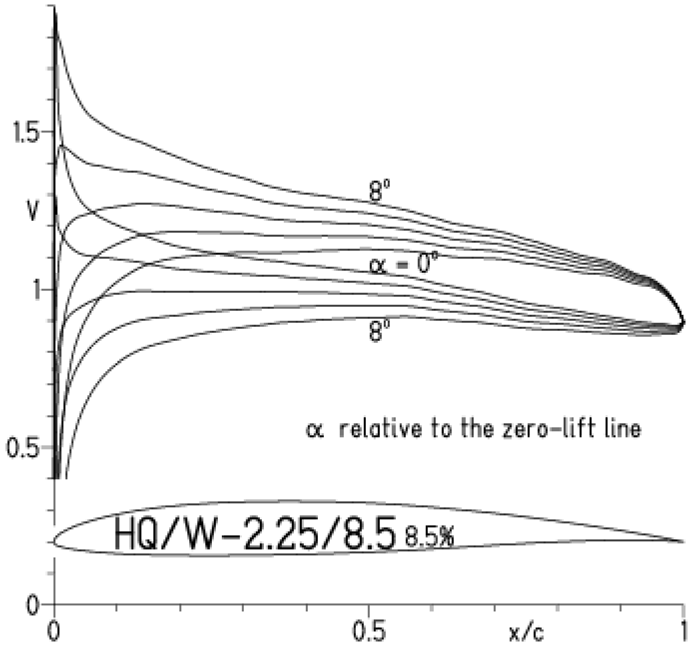


EPPLER 2005 V

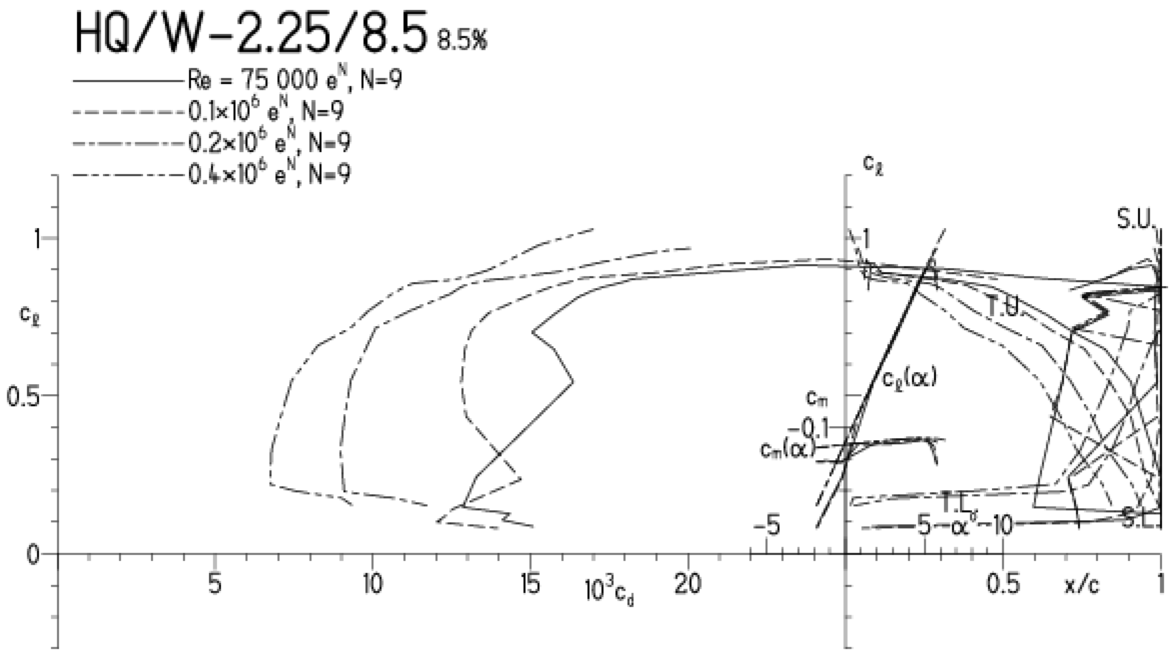


HQ/W-2,25/8,5, N=9

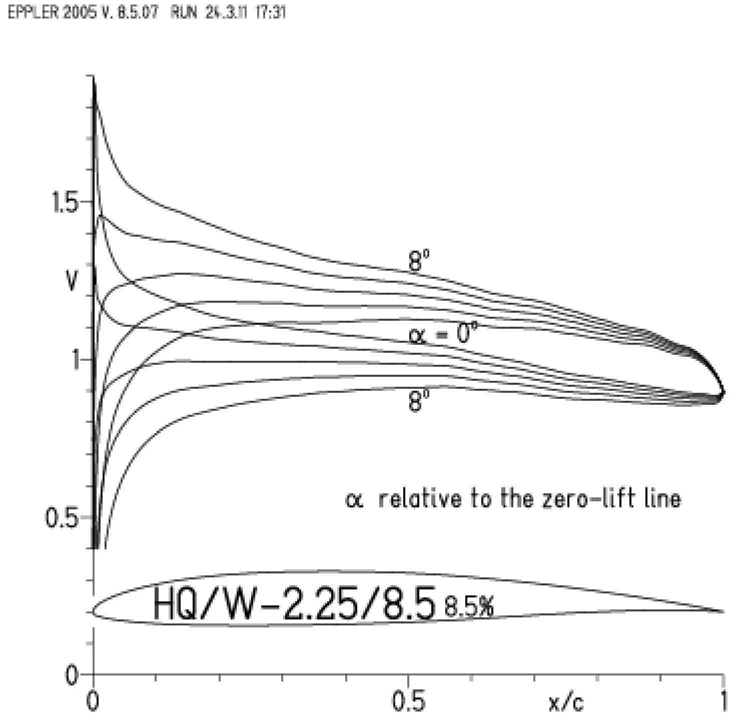
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

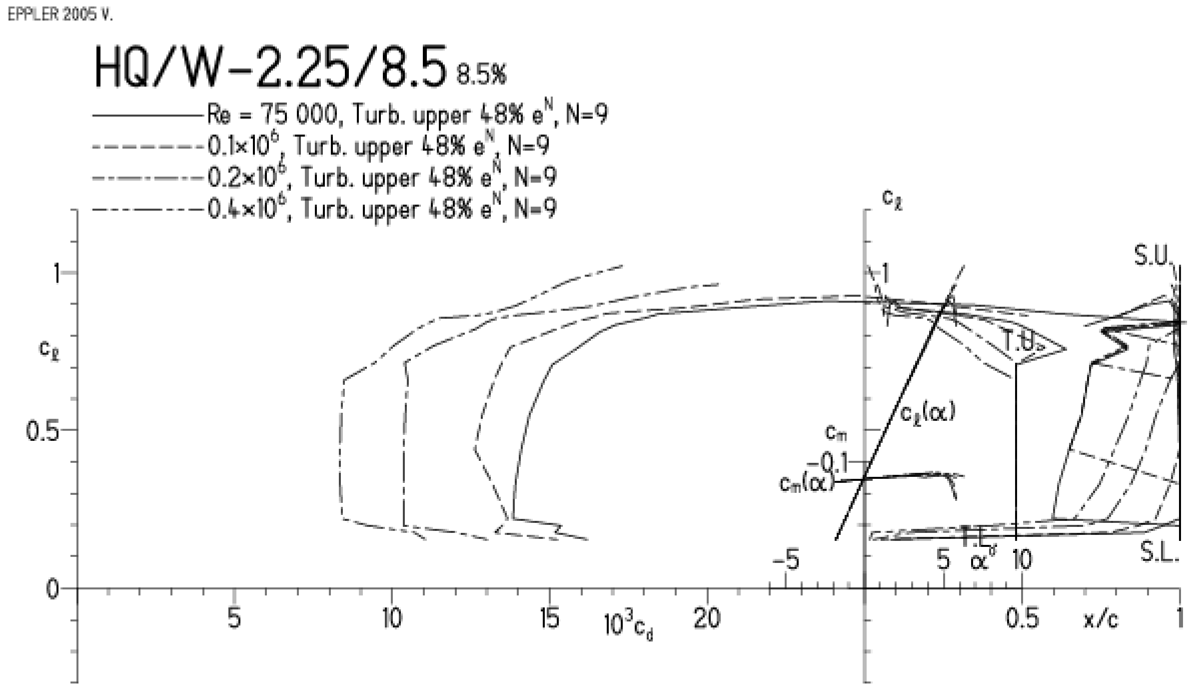


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

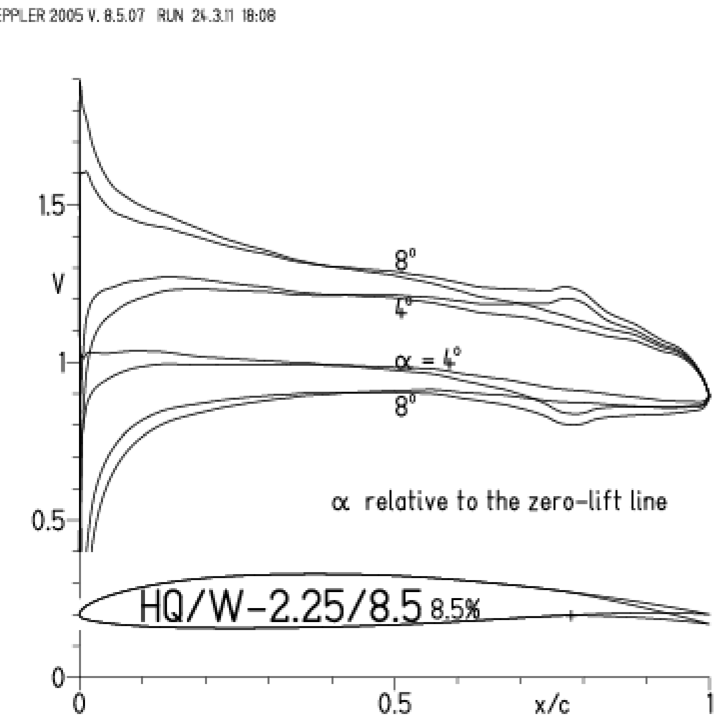


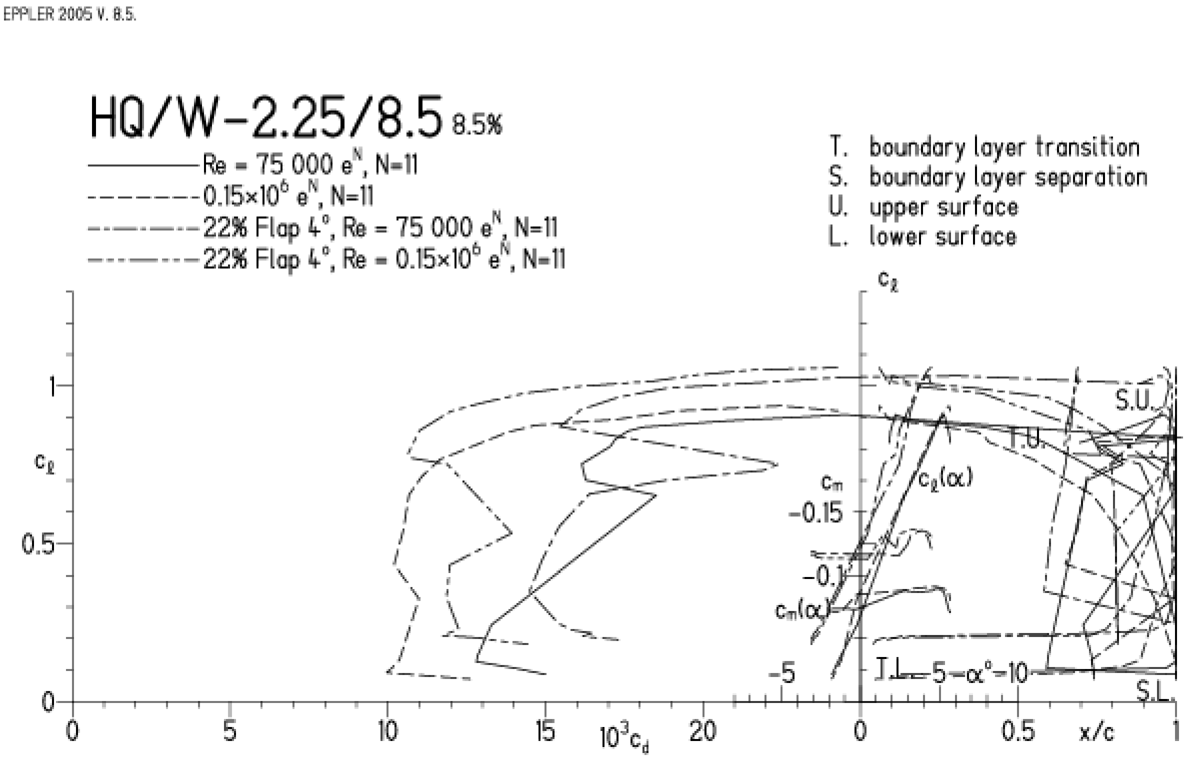
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



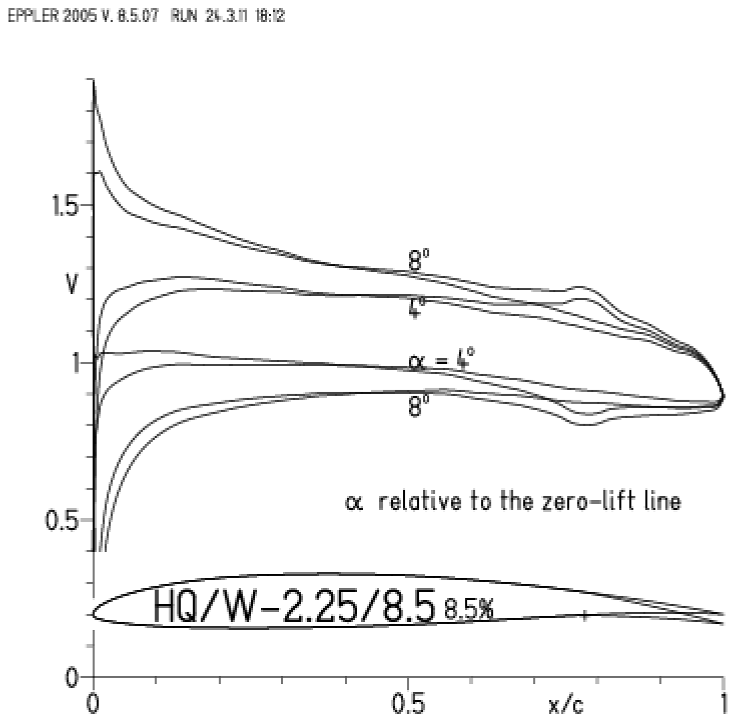


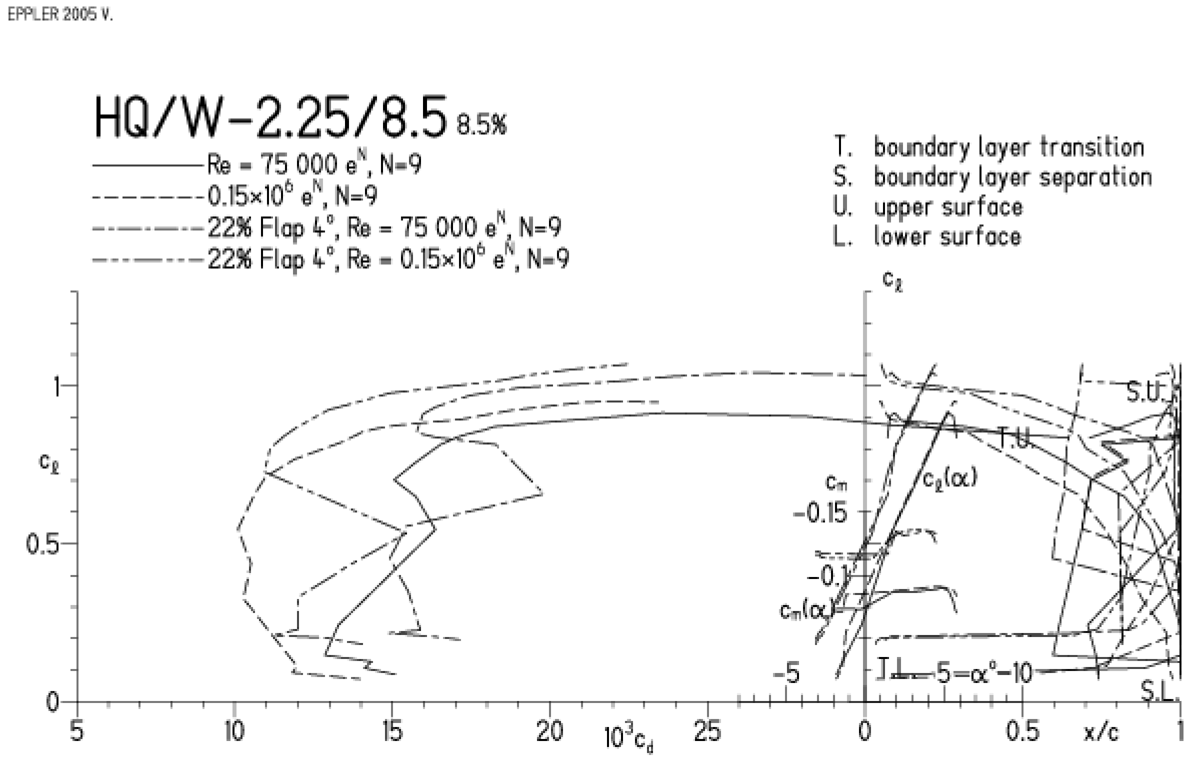
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag





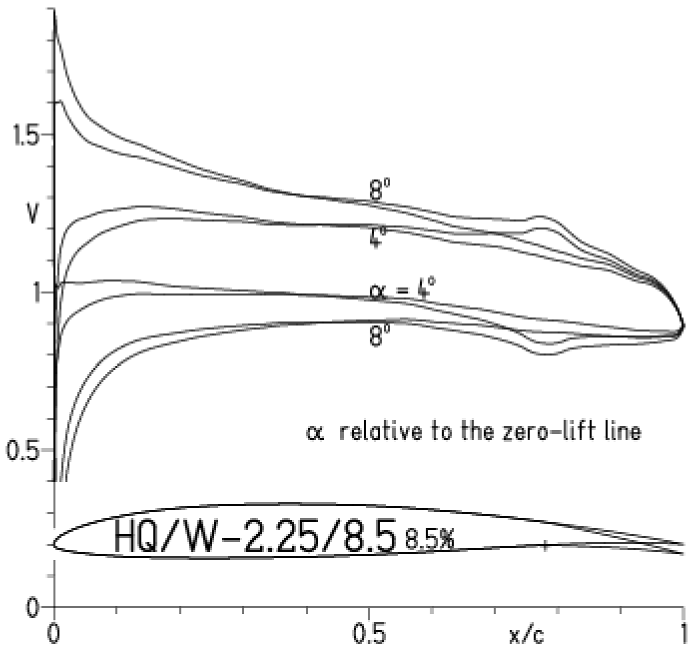
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



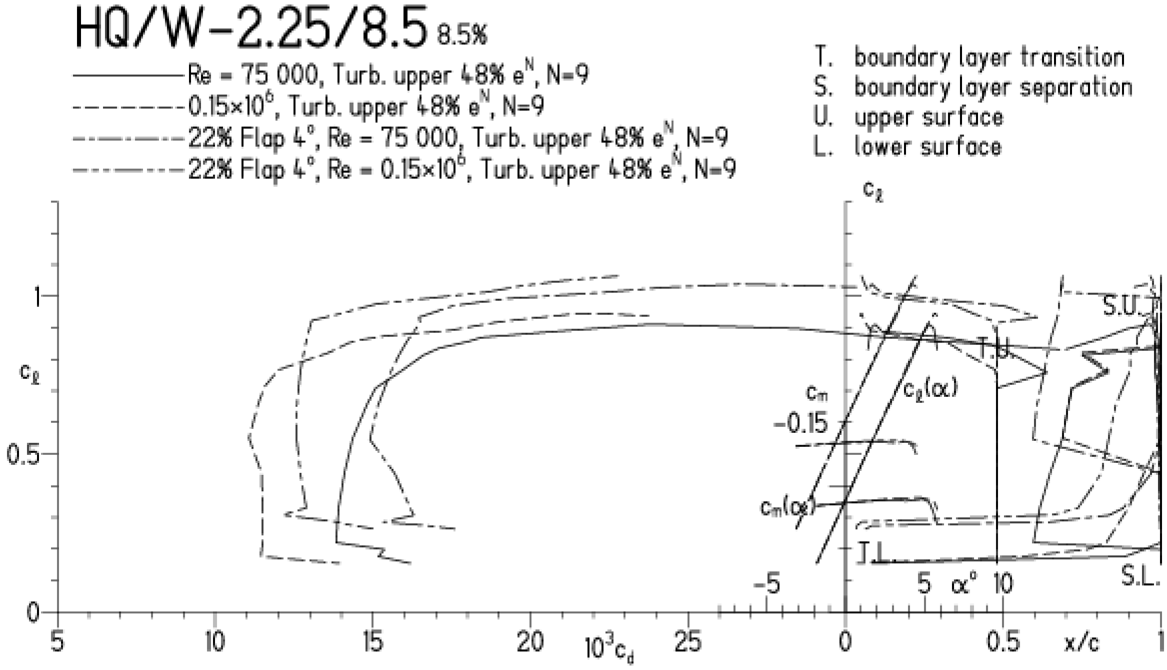


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

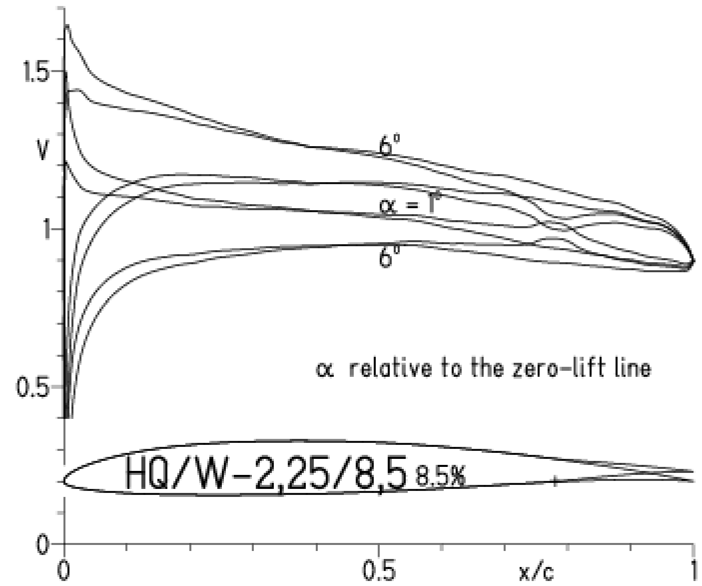


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

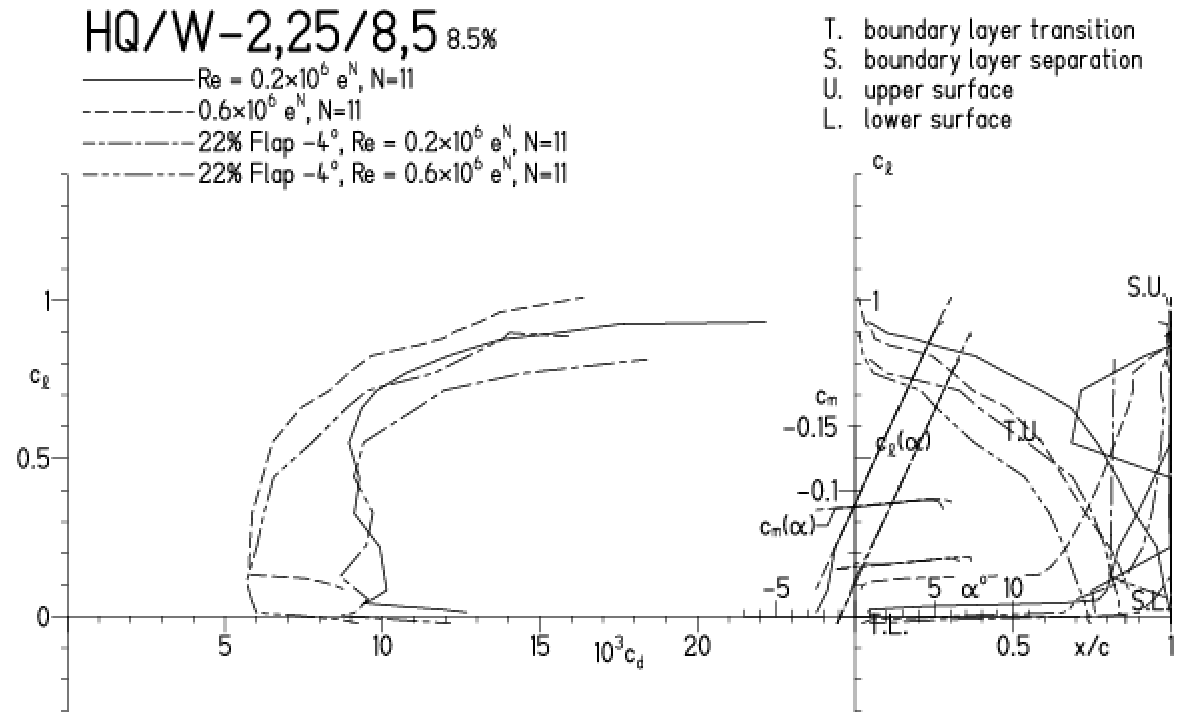


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

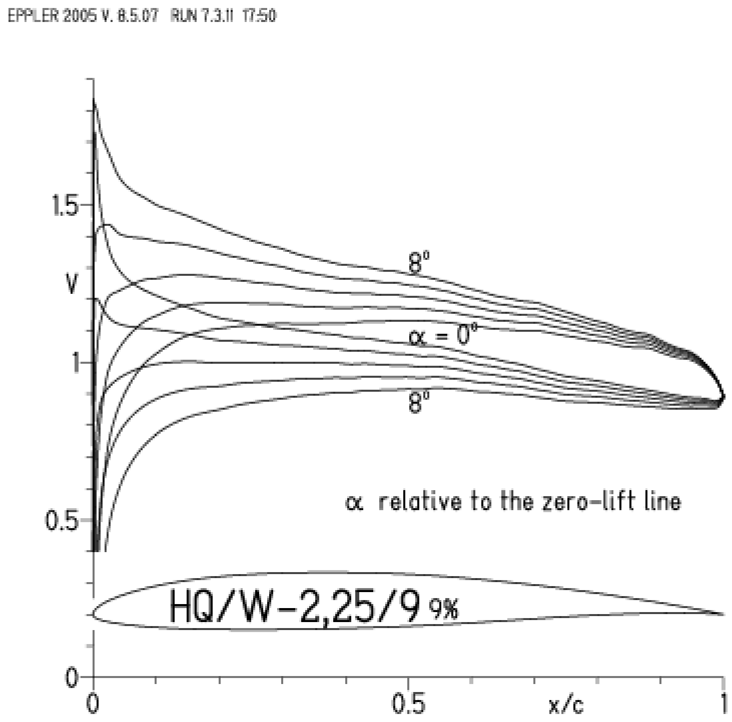
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

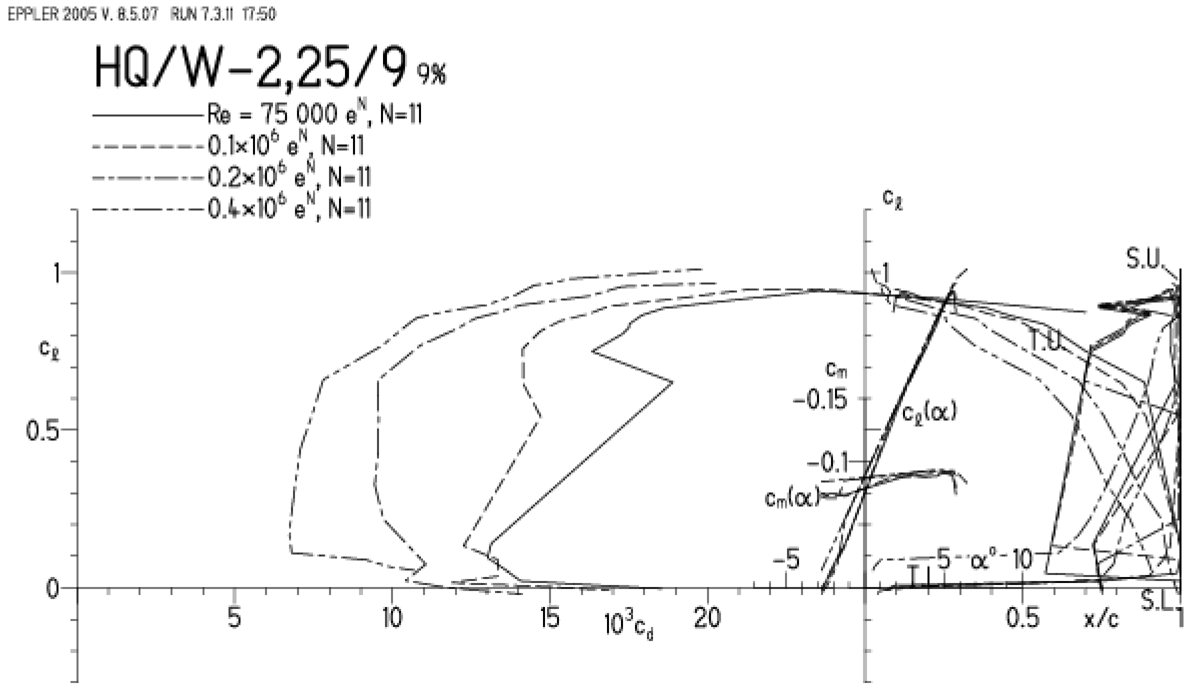


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



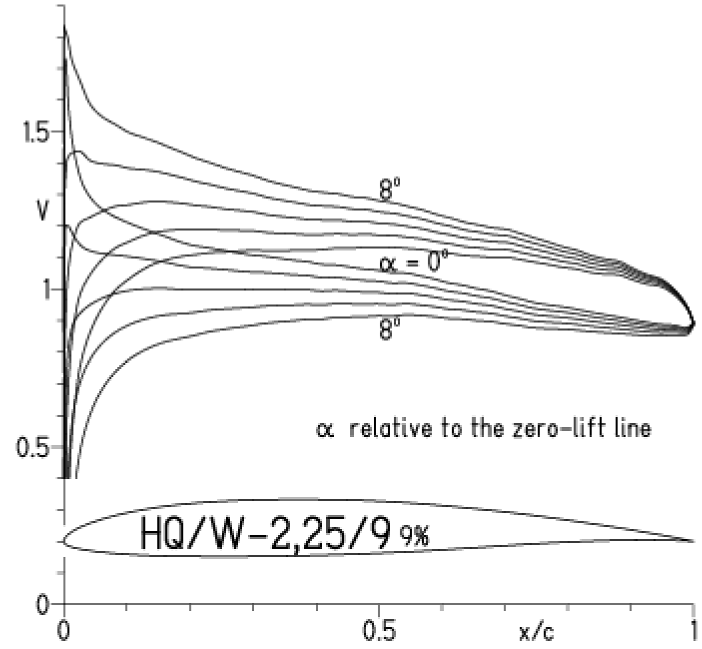
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

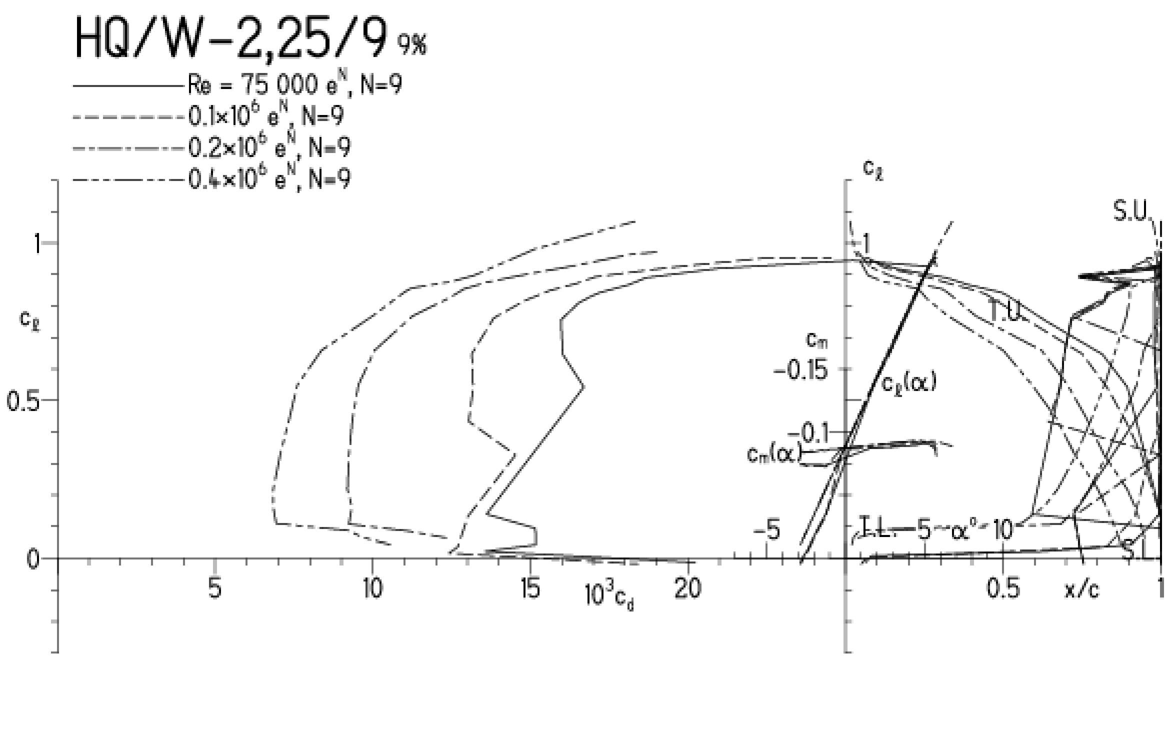

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

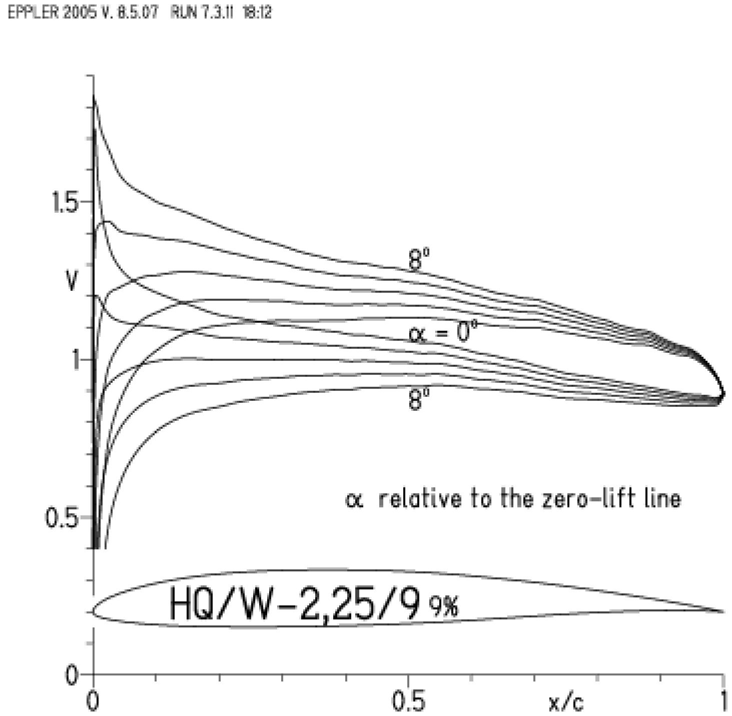
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

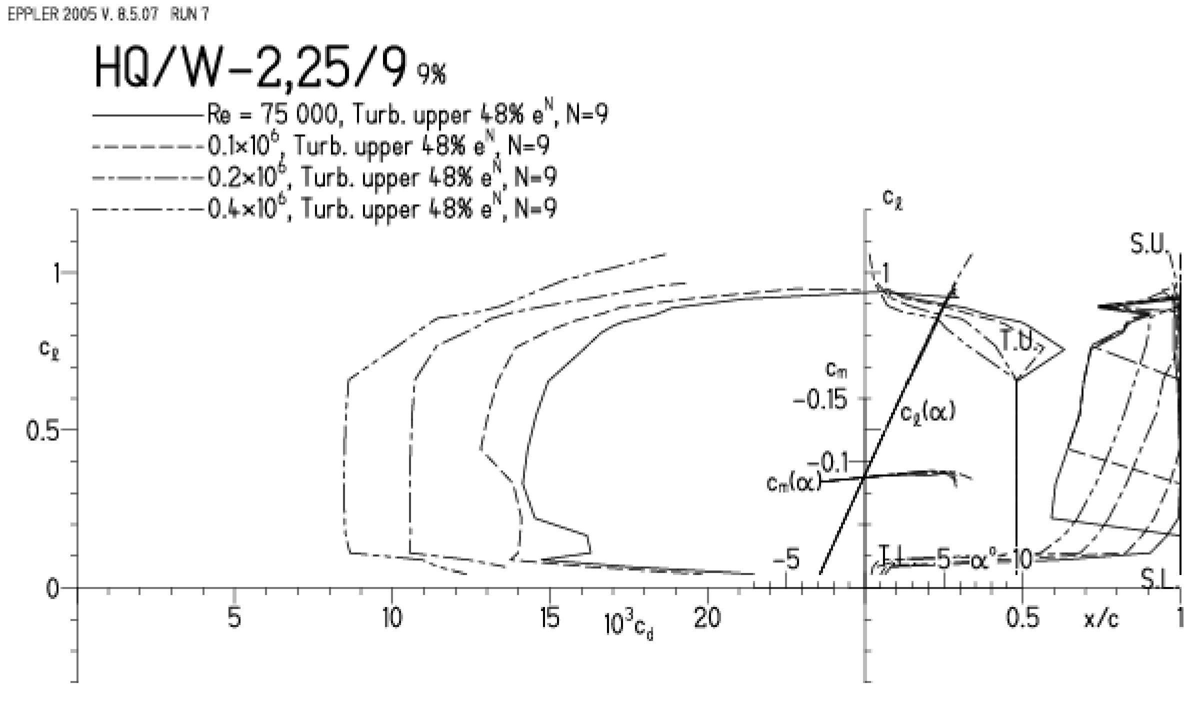


EPPLER 2005 V. 8.



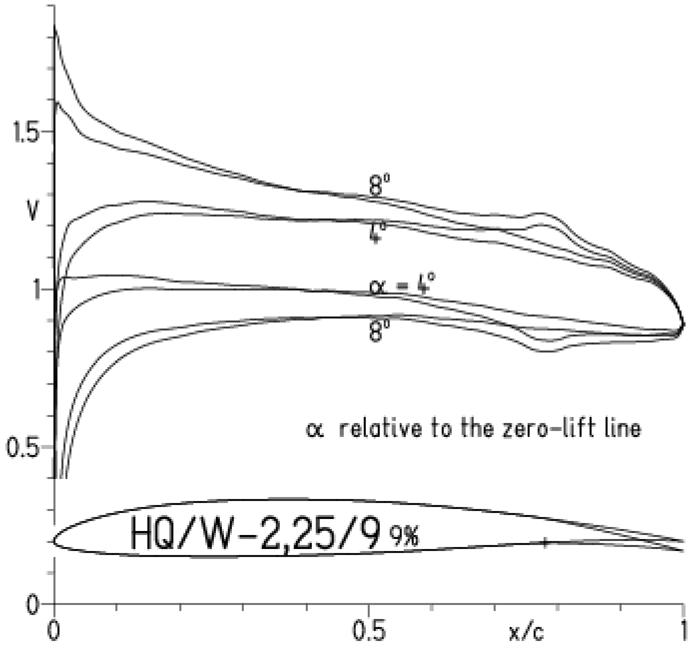
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



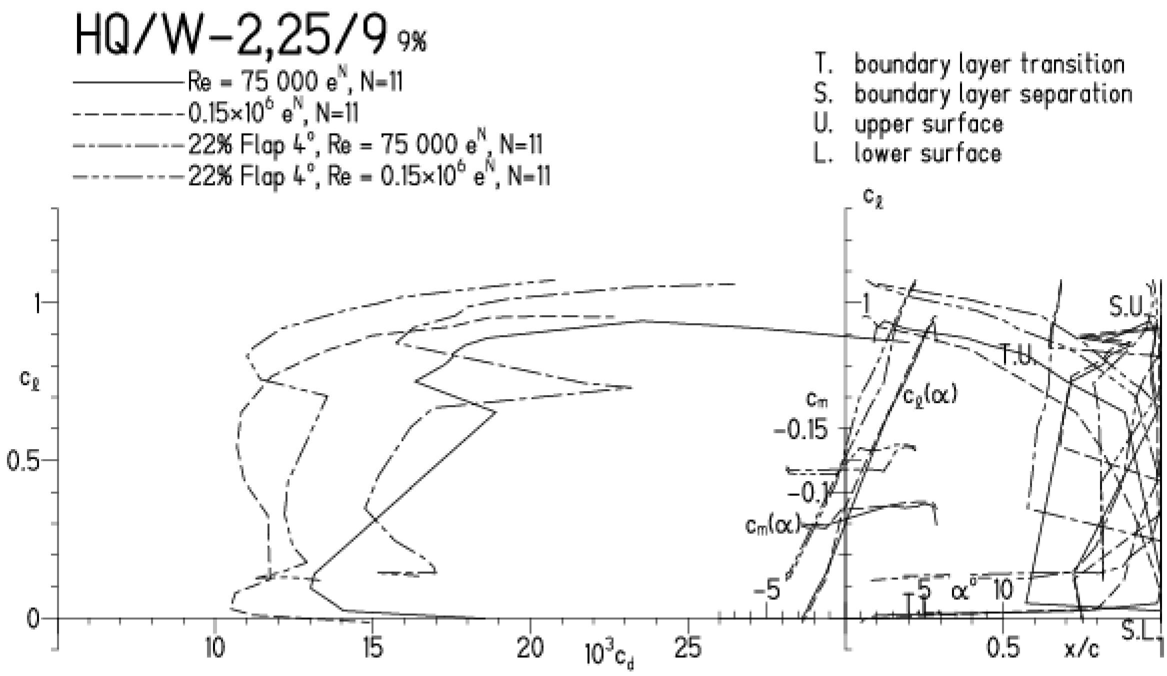


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

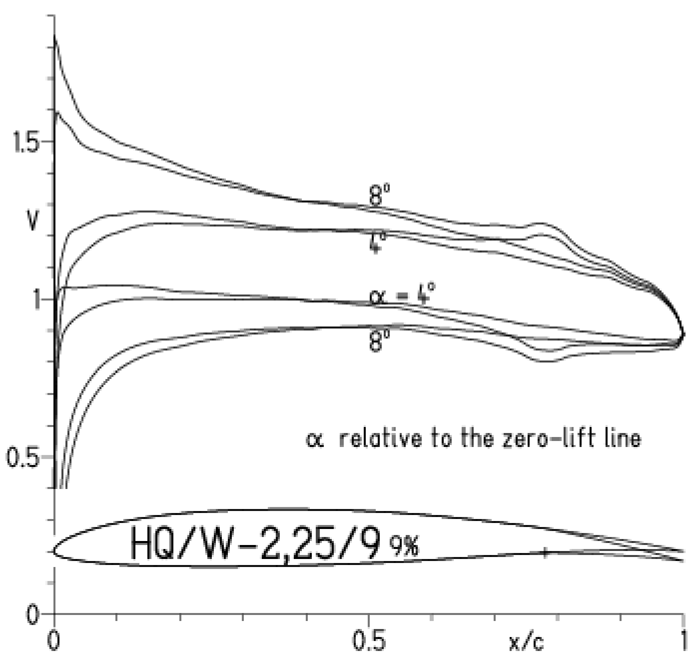


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

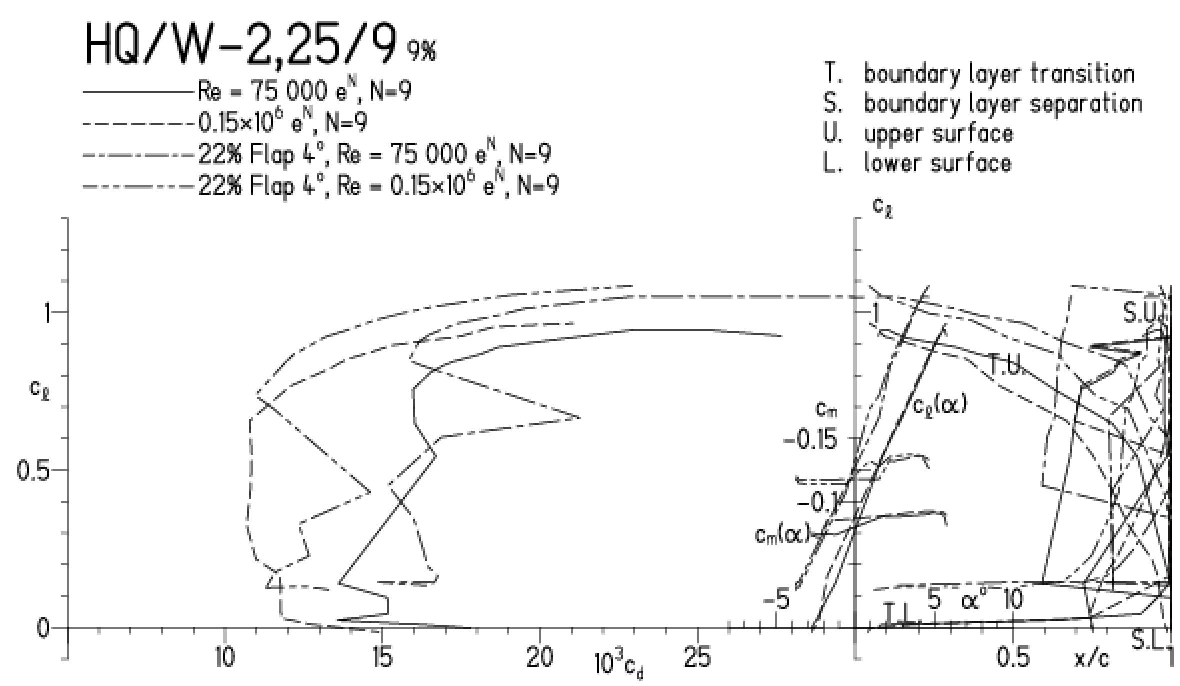


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

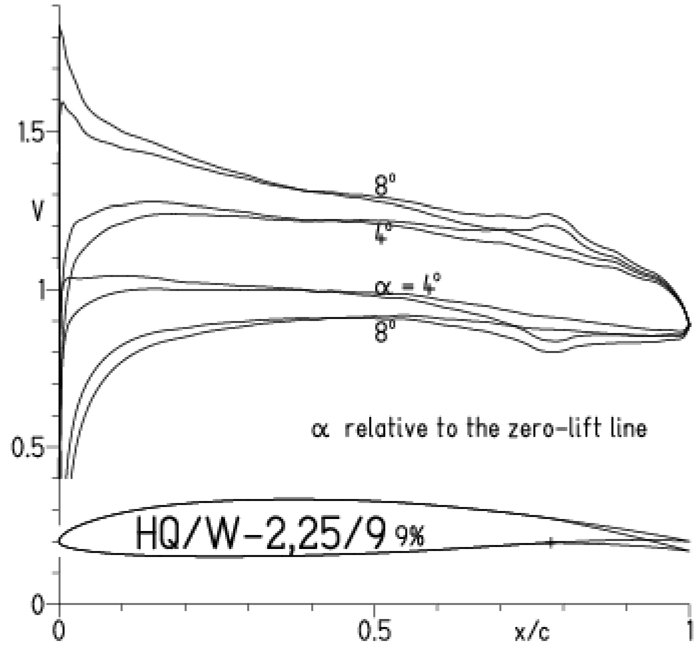


EPPLER 2005 V. 8.5.07 RUN 8.3.1

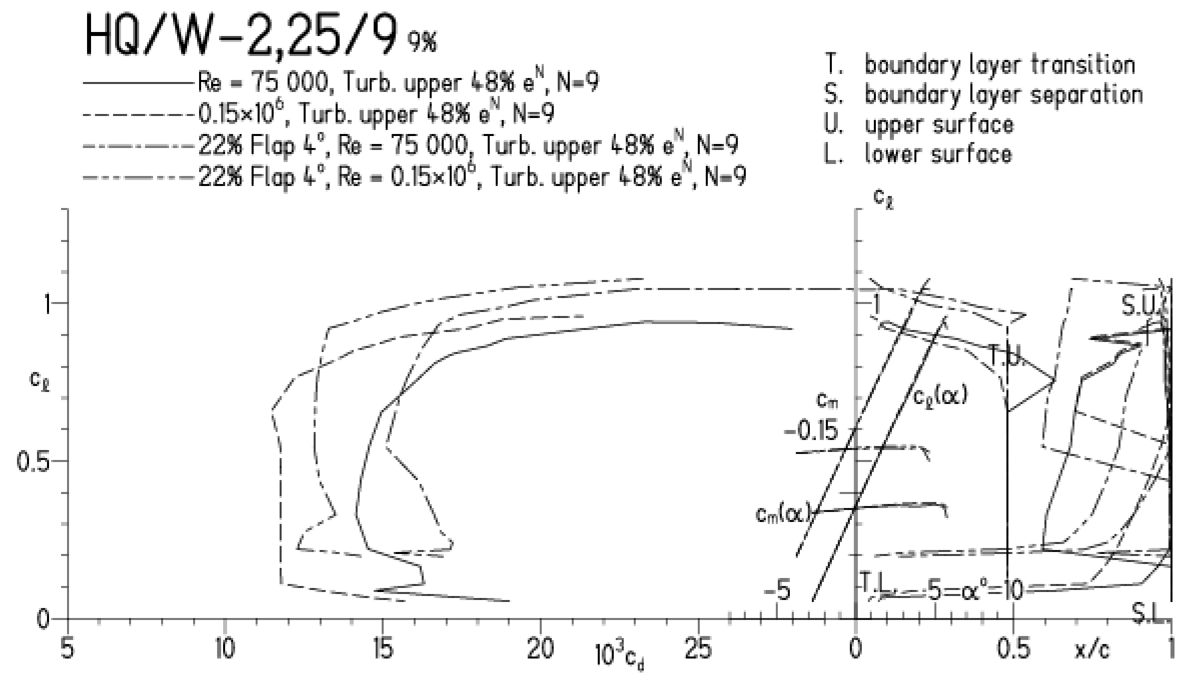


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

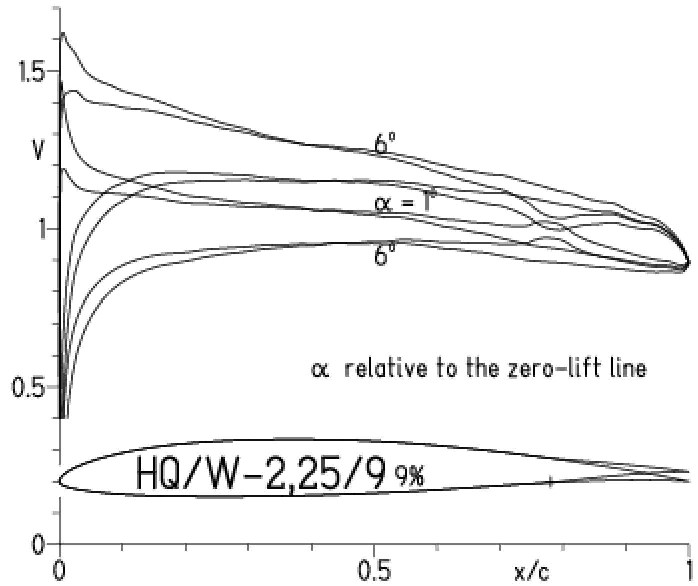


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

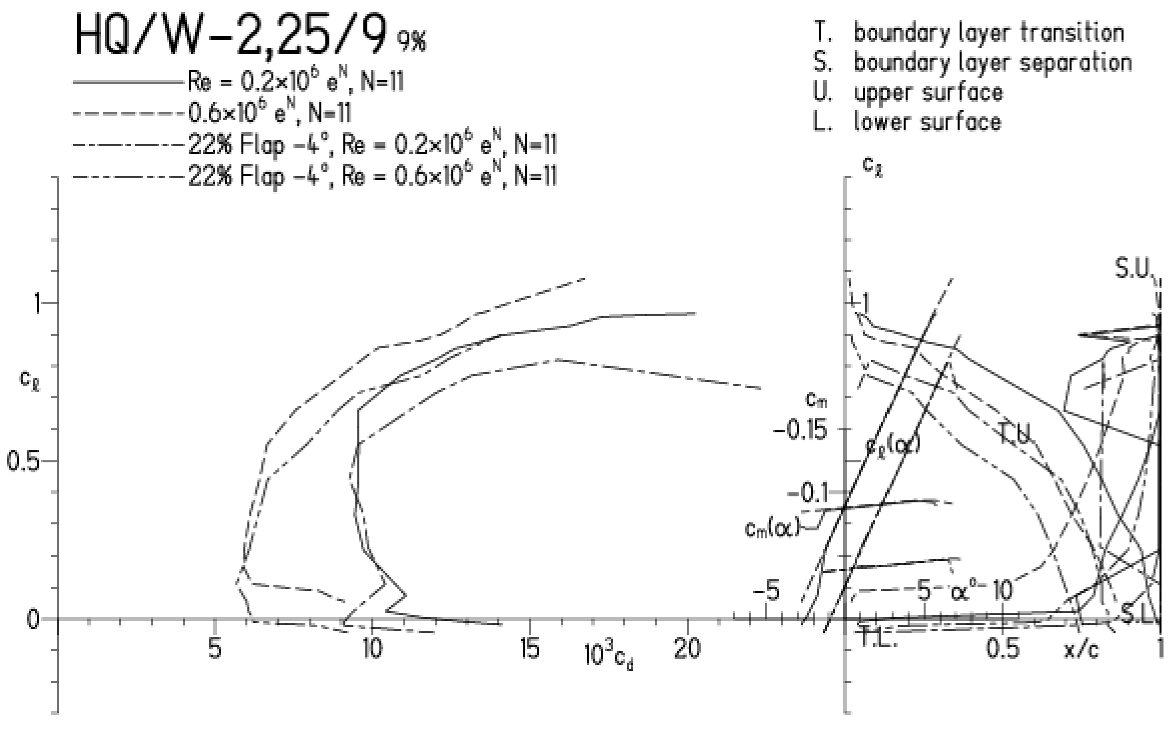


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

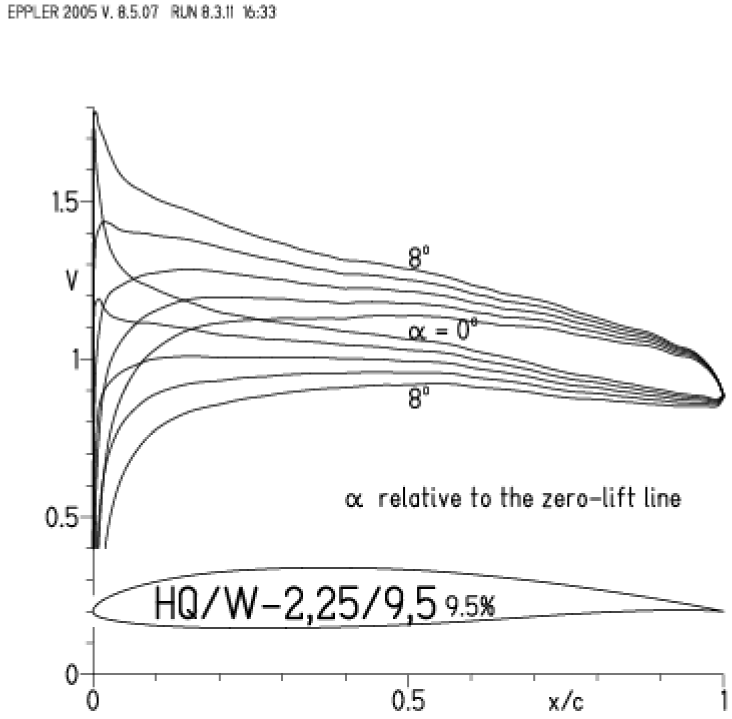
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

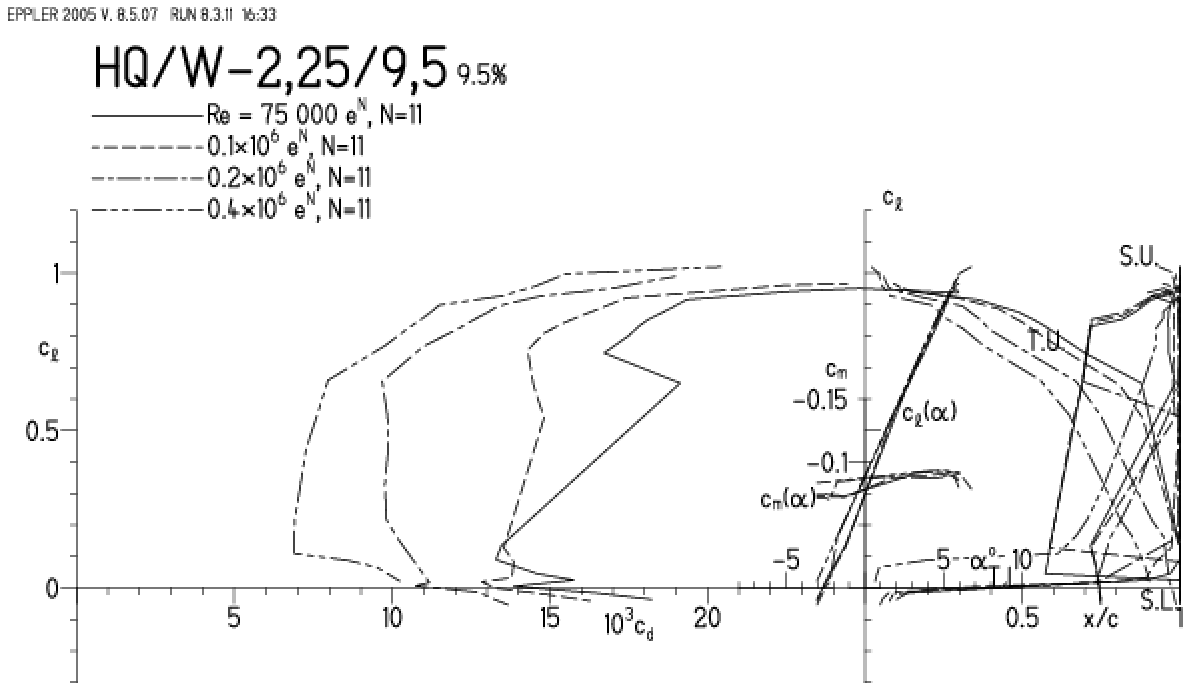


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



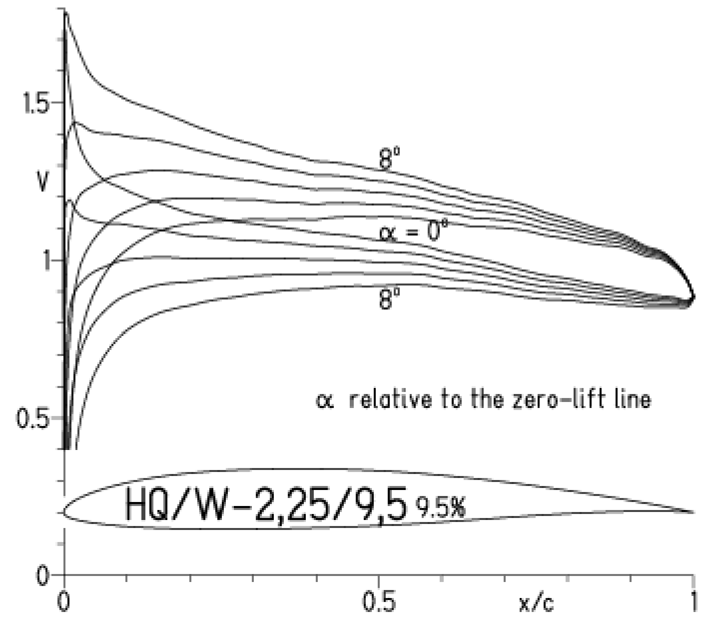
HQ/W-2,25/9,5, N=11



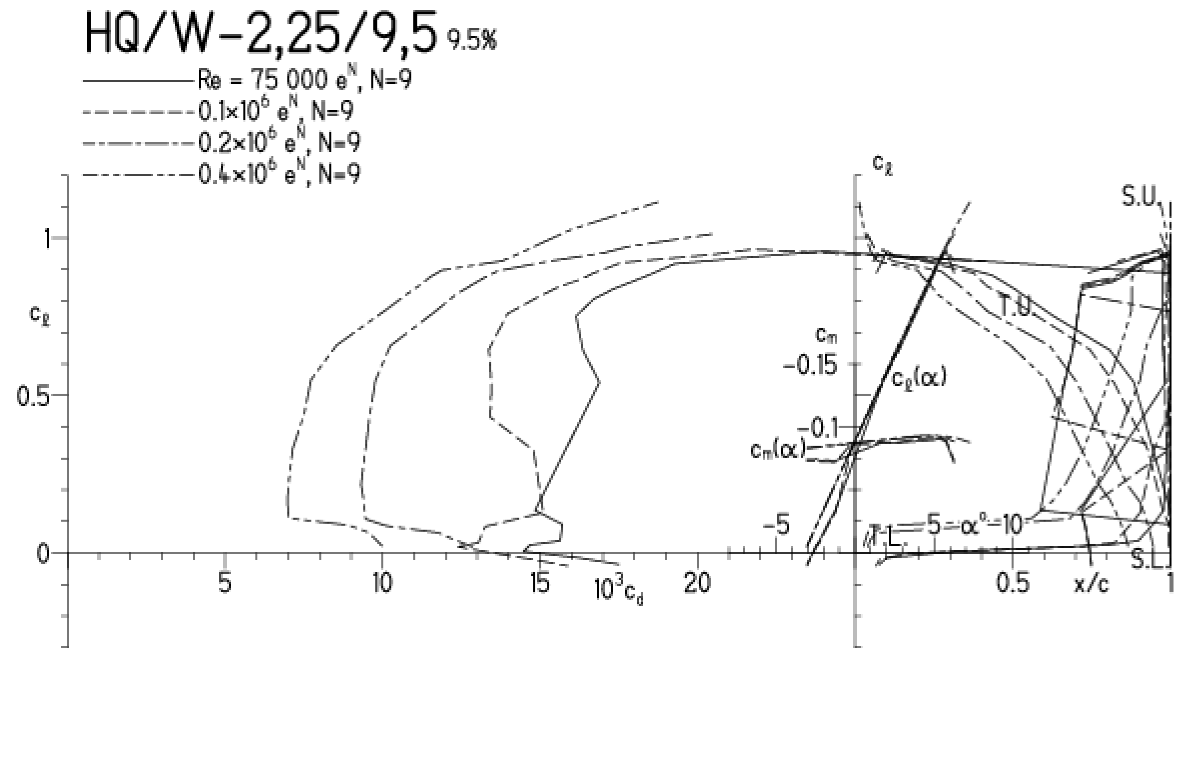


HQ/W-2,25/9,5, N=9

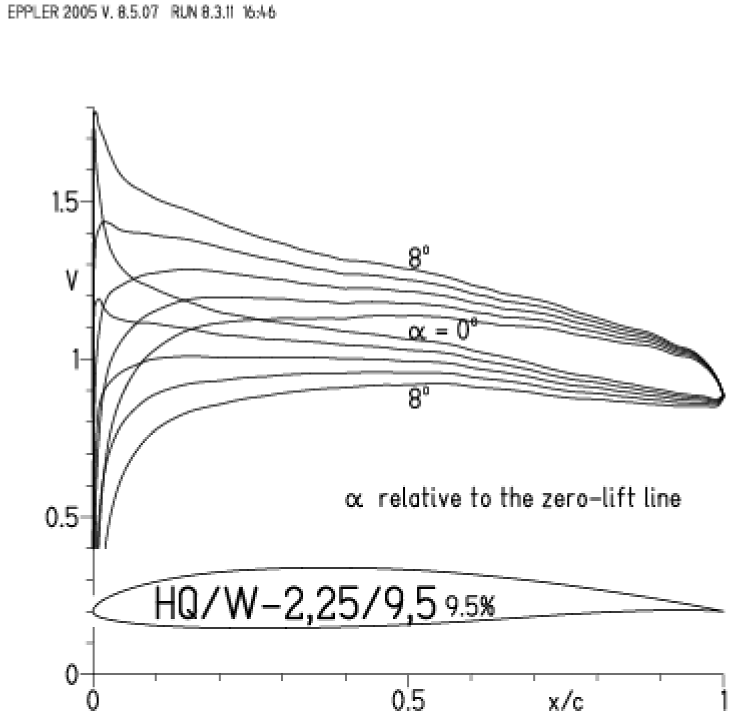
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

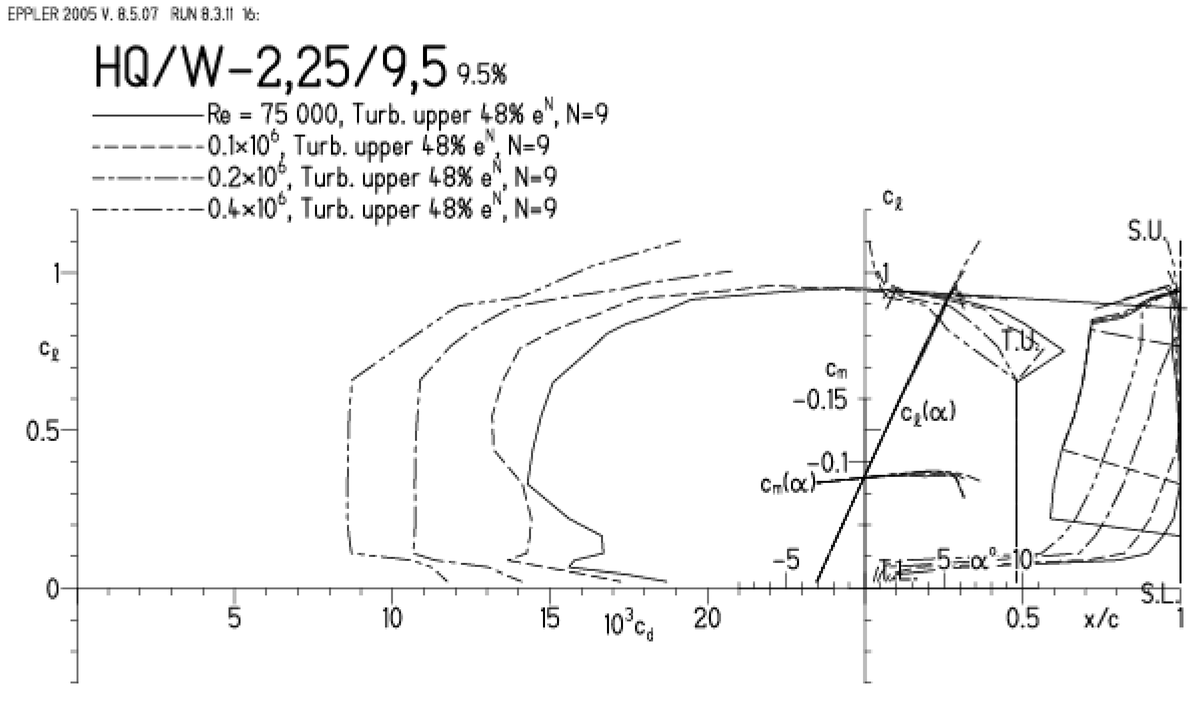


EPPLER 2005 V. 8.5.07 RUN 8.3.



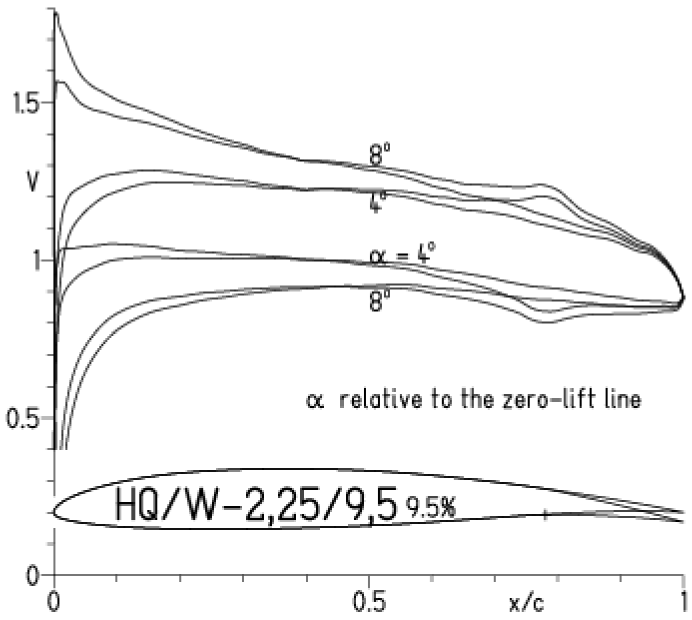
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



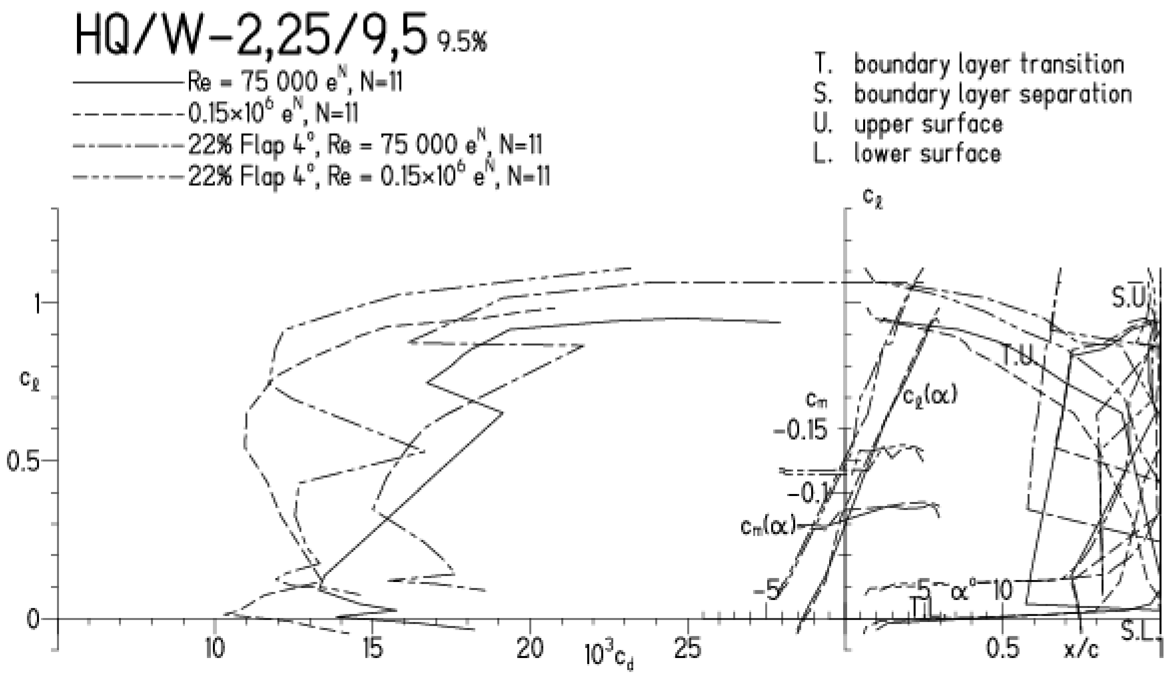


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

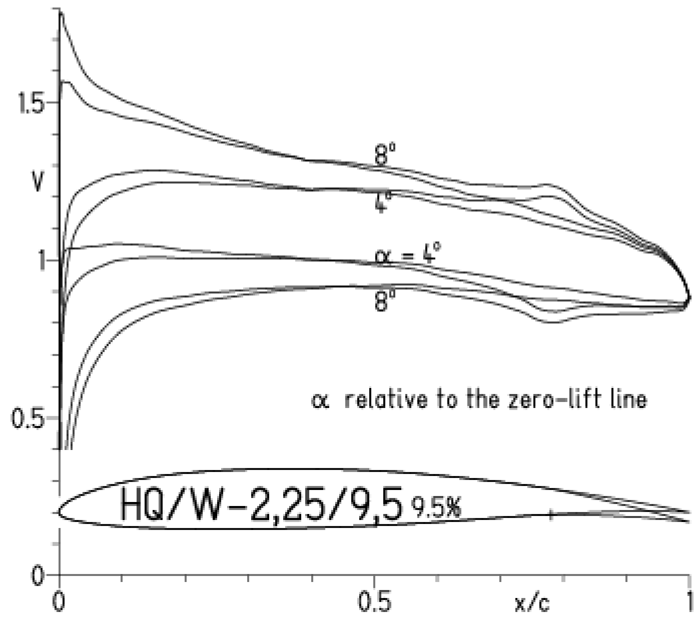


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

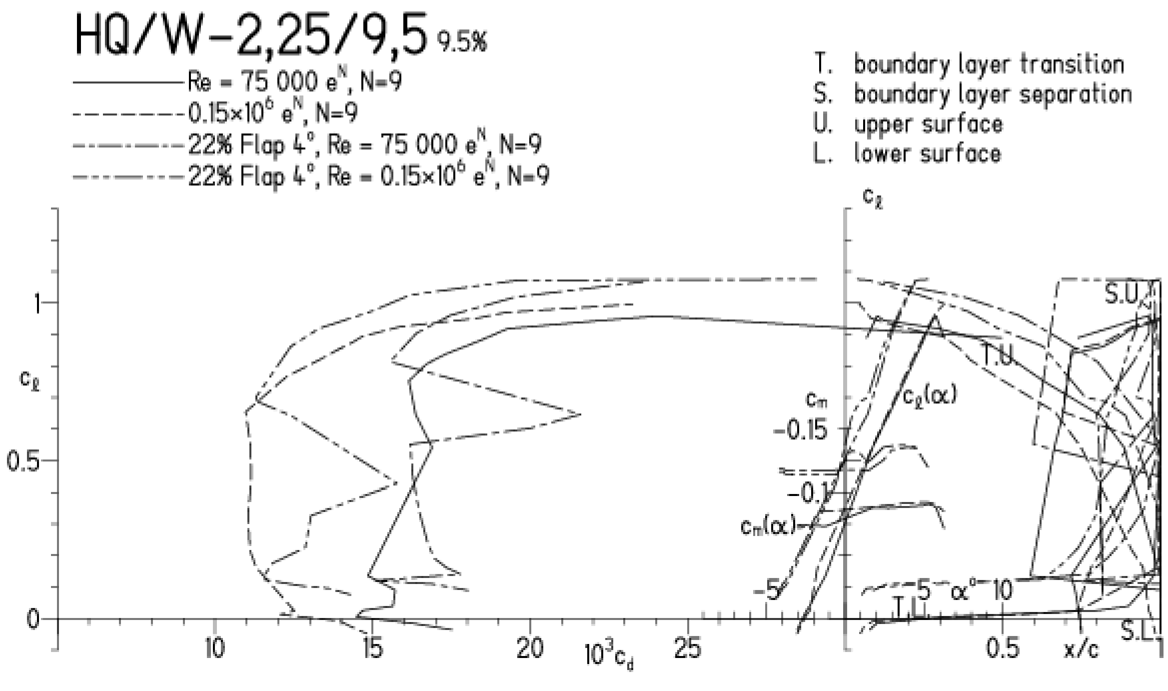


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

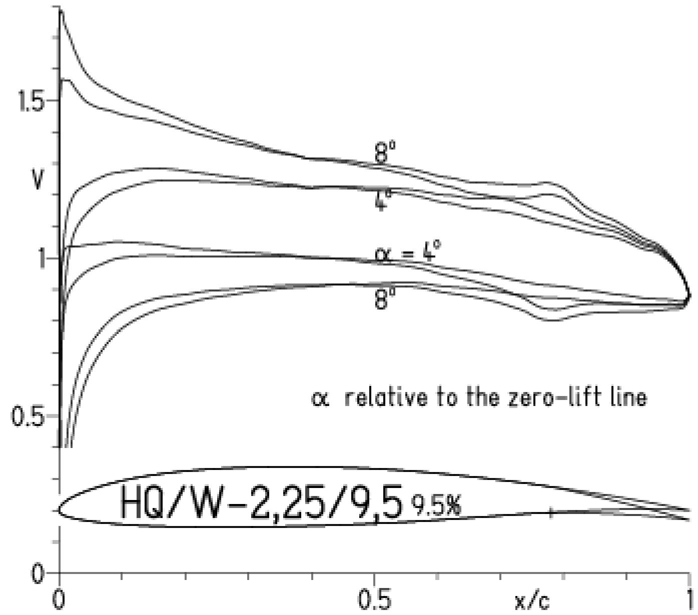


EPPLER 2005 V. 8.5.07 R

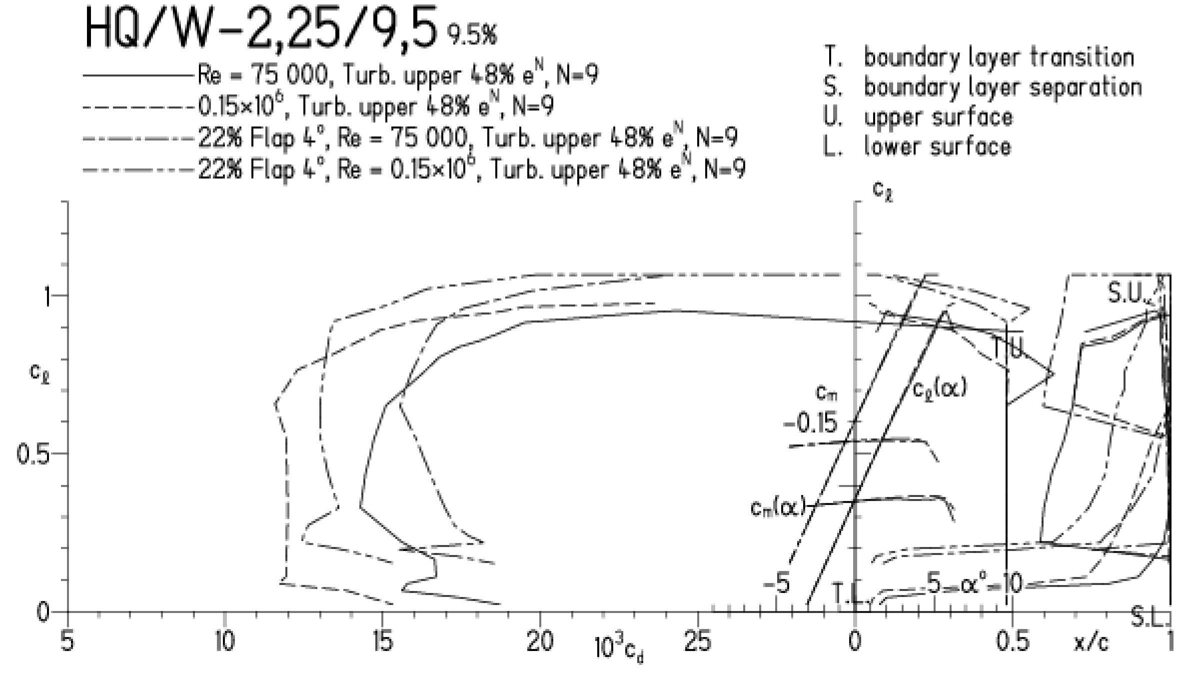


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

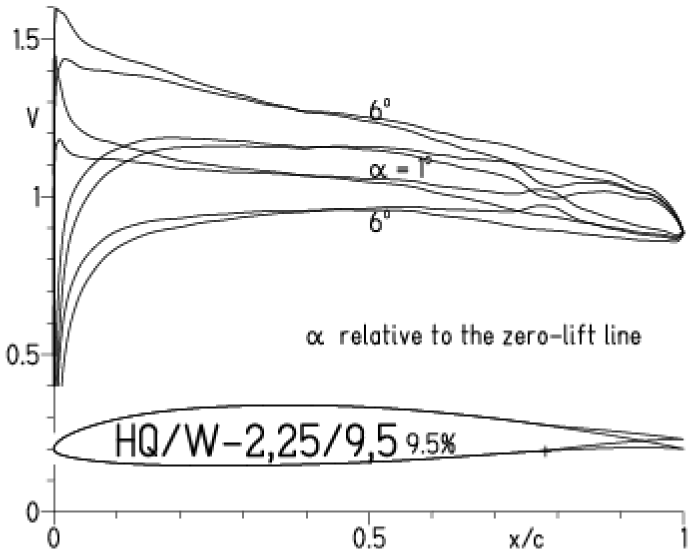


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

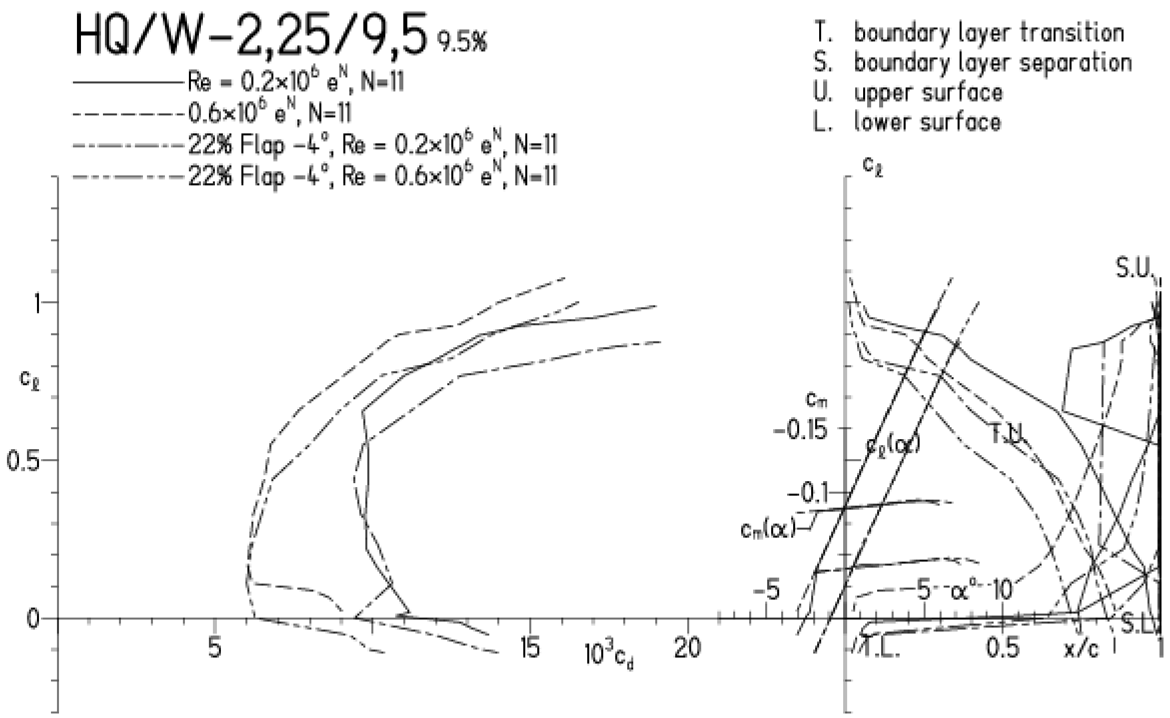


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

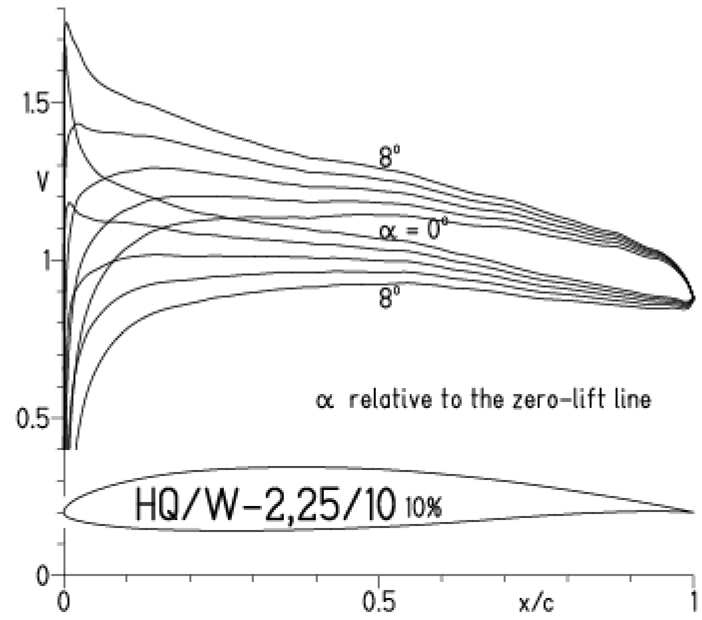


EPPLER 2005 V.

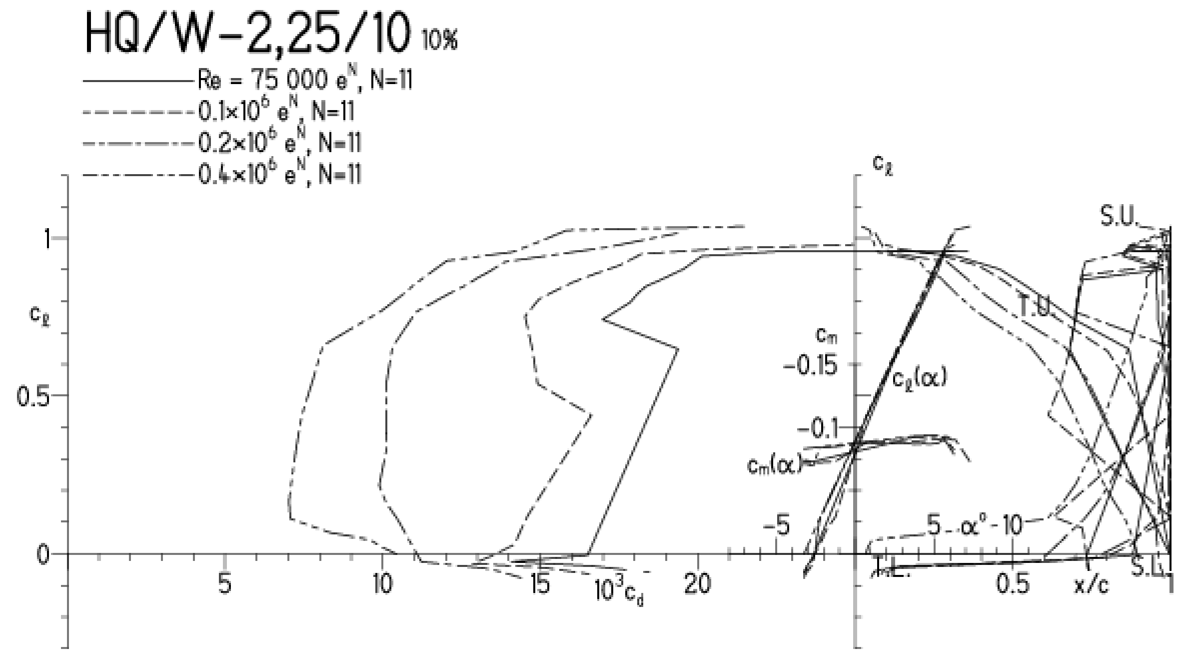


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

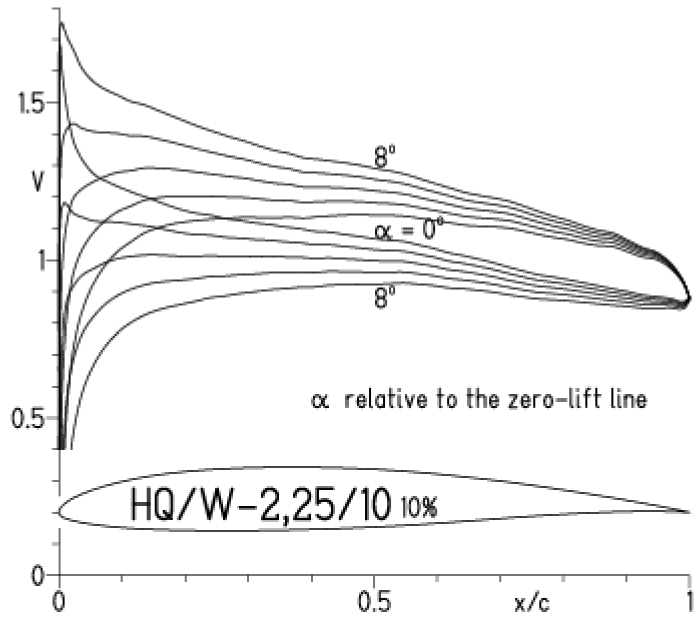


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

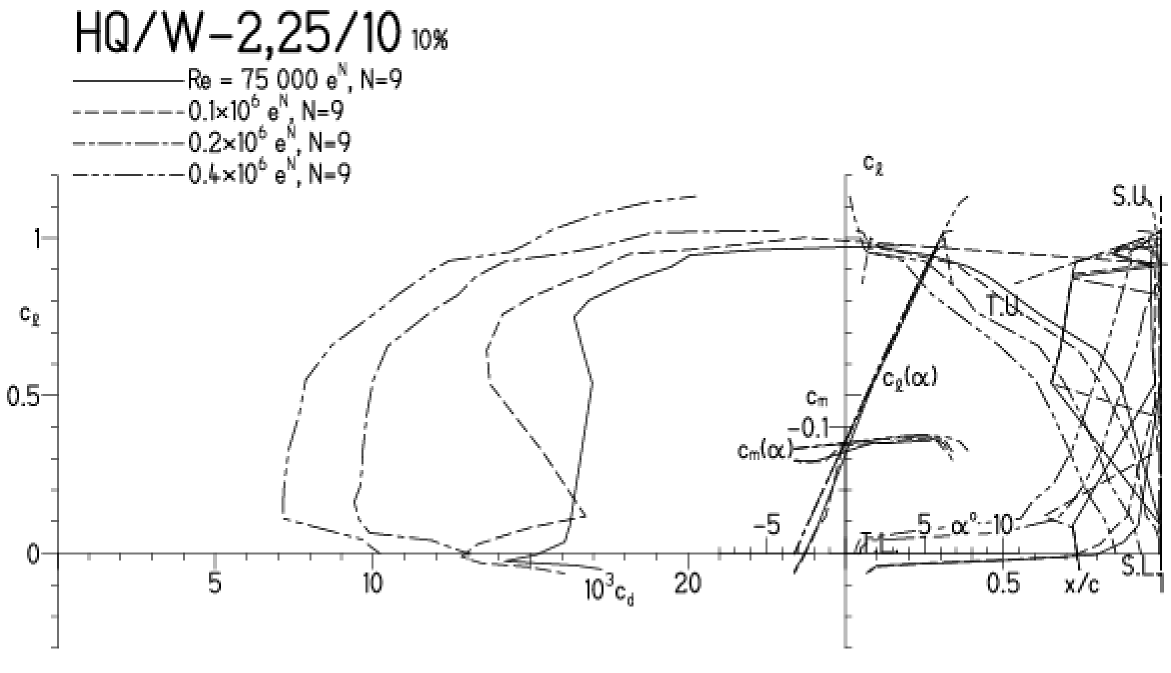


HQ/W-2,25/10, N=9

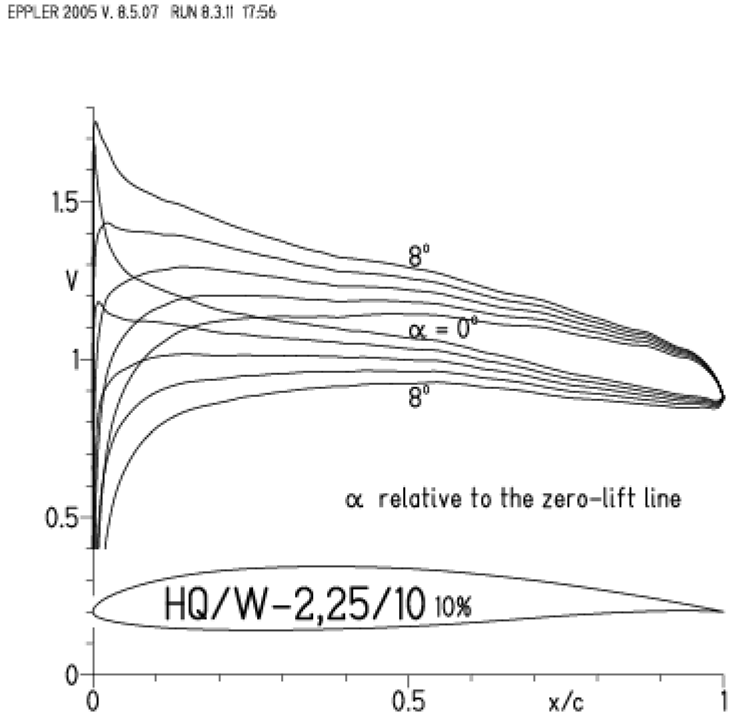
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

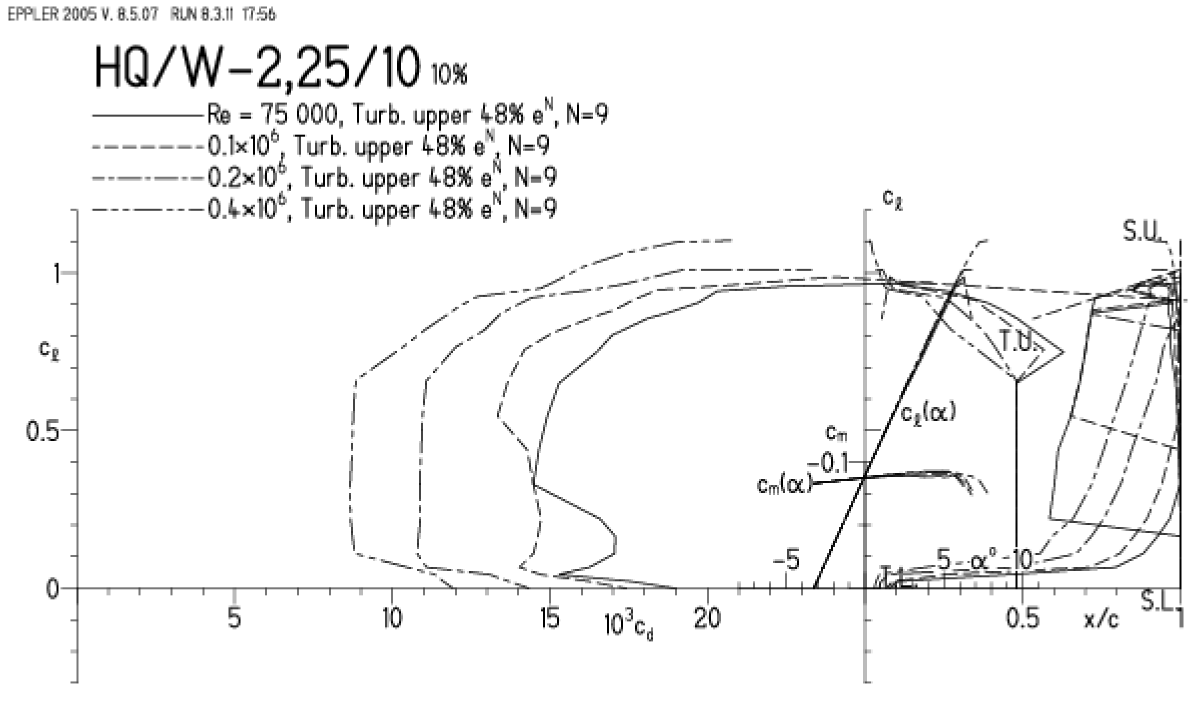


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

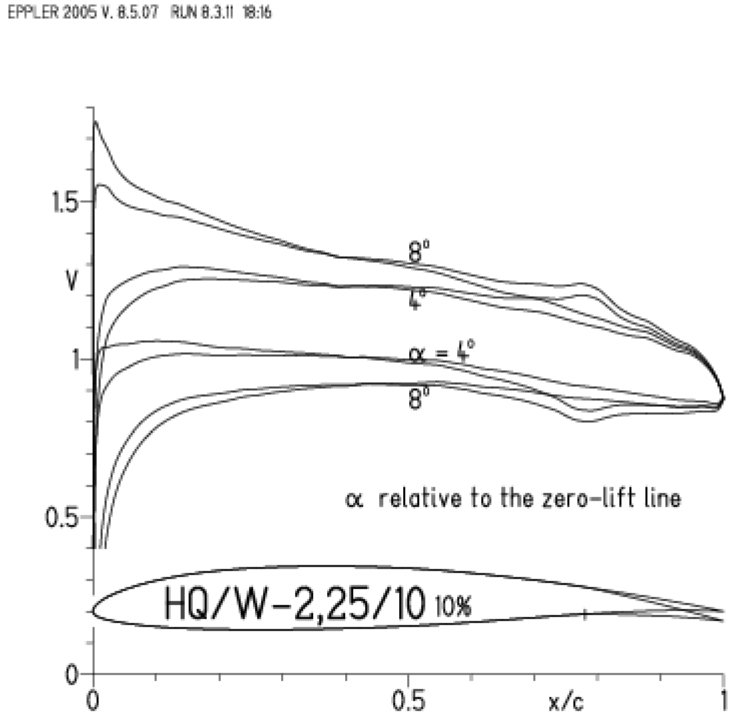


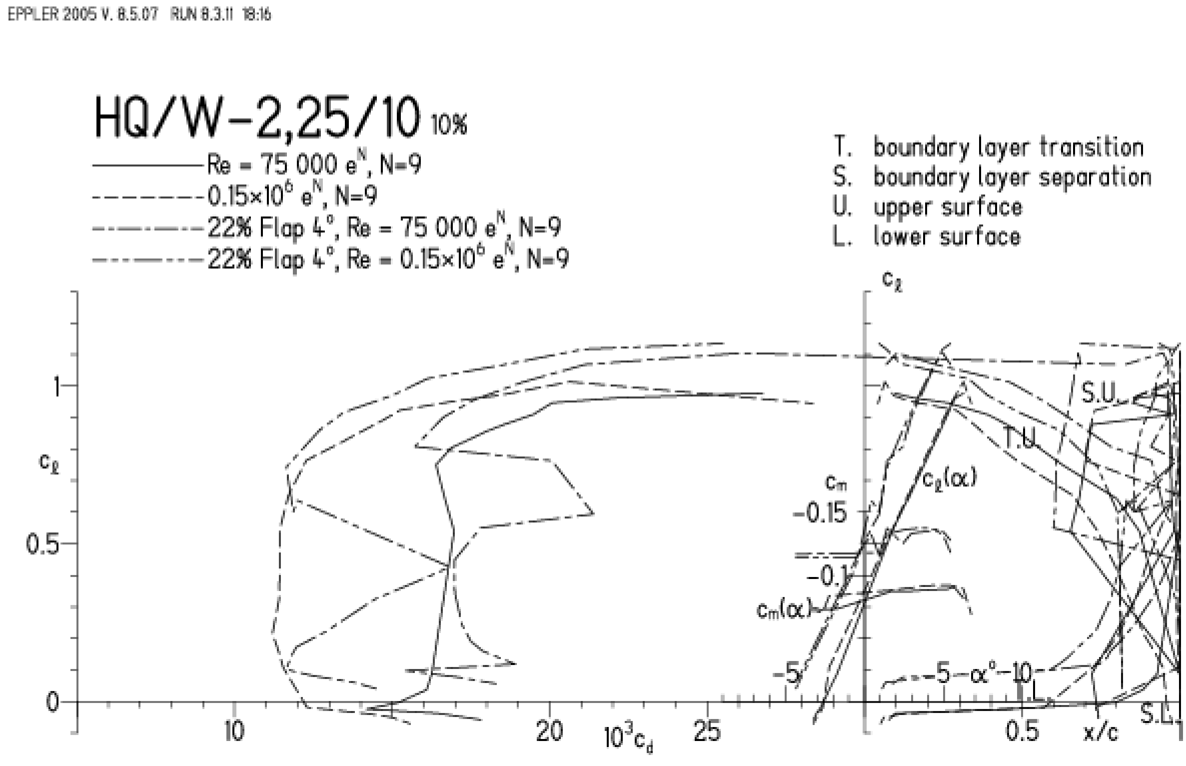
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





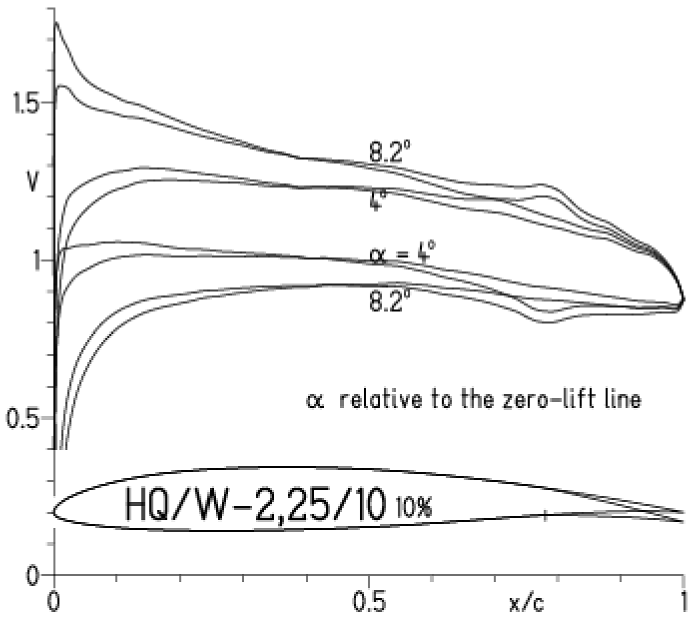
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag



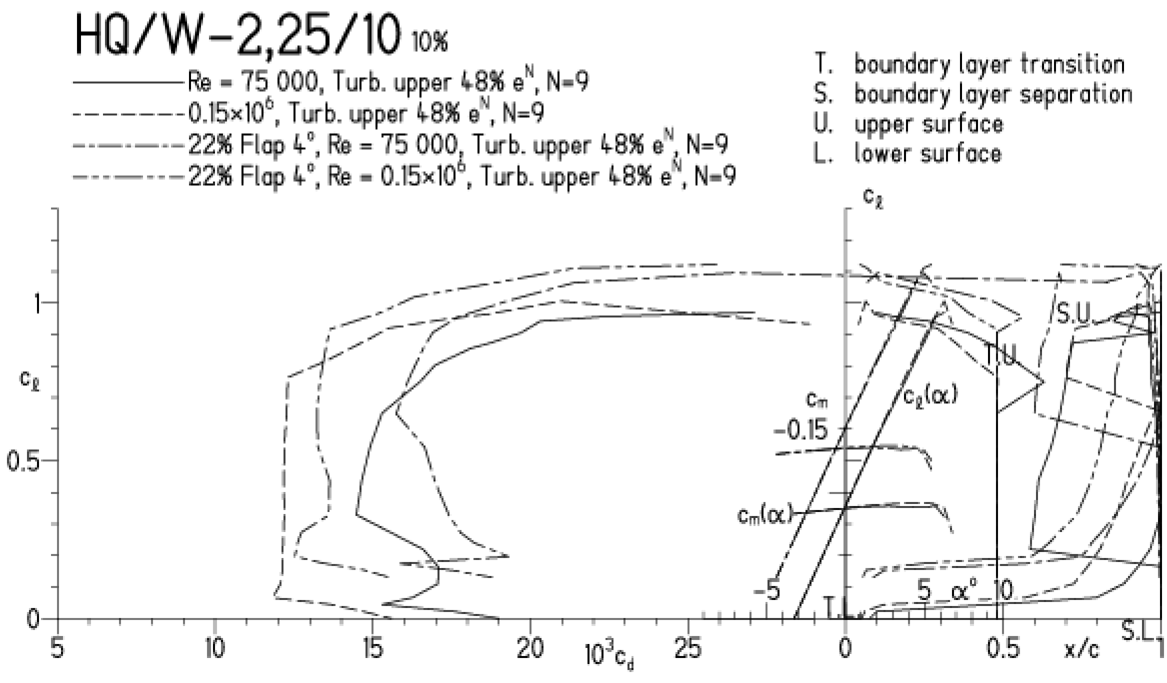


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

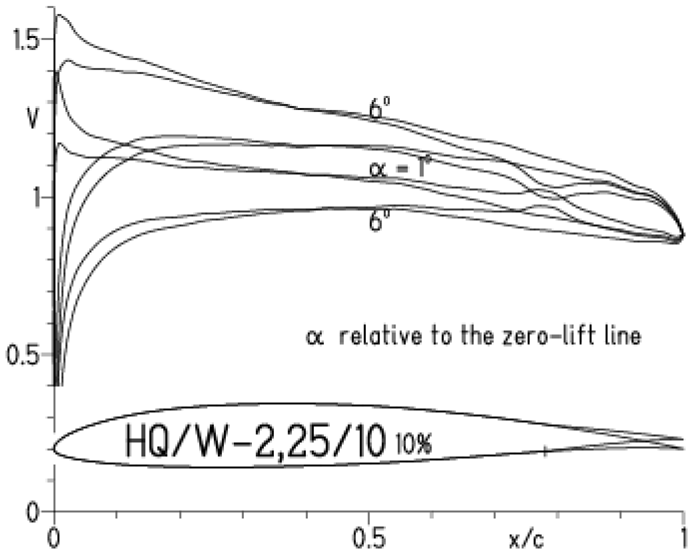


EPPLER 2005 V. 8.5.07 RUN 8.3

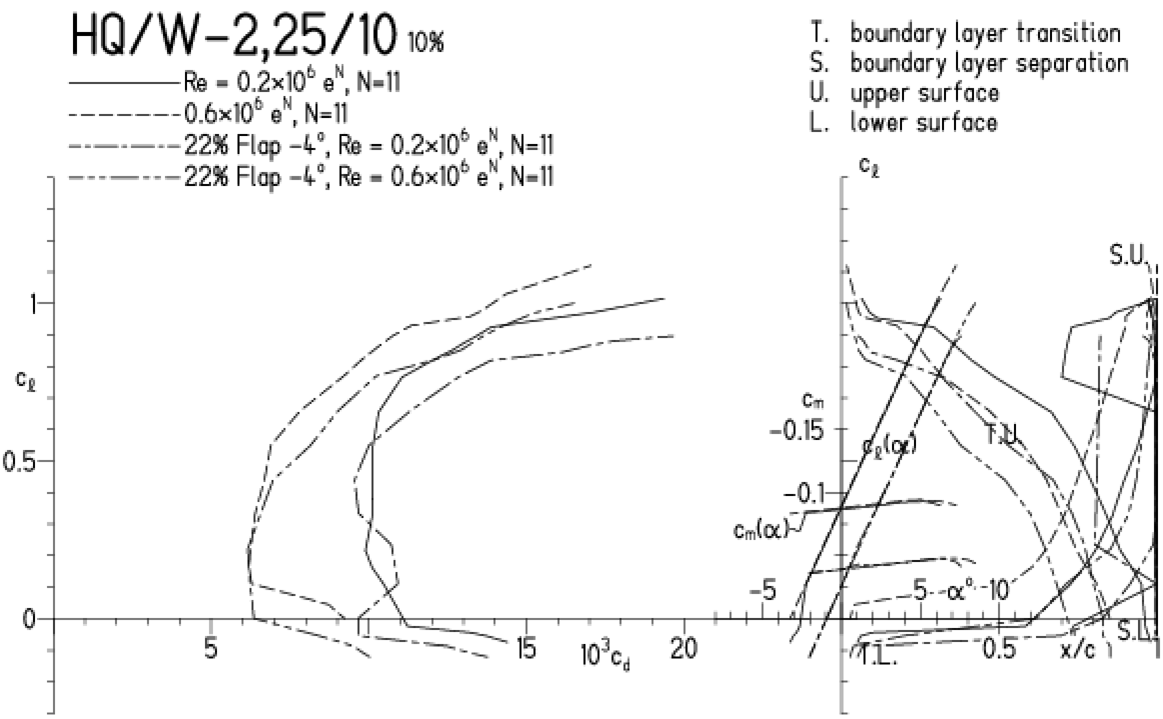


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

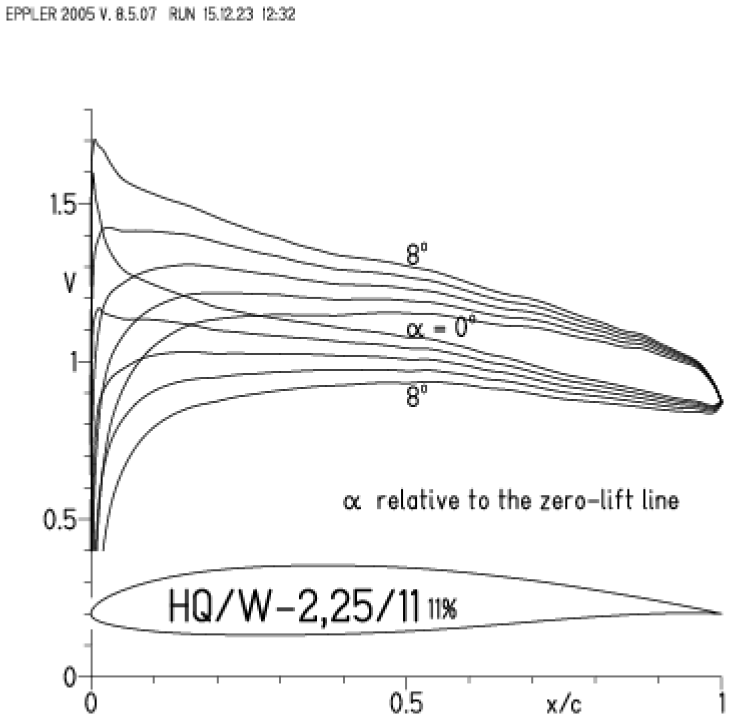
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

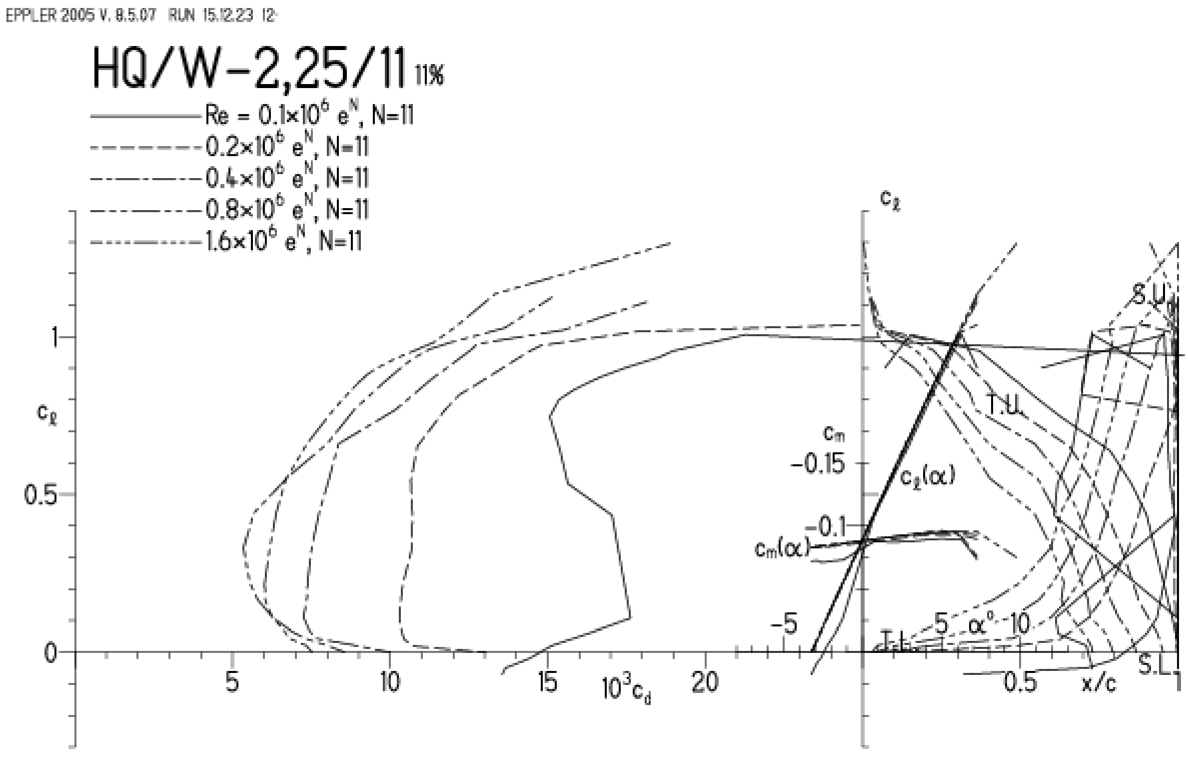


EPPLER 2005 V. 8.5.07 RUN



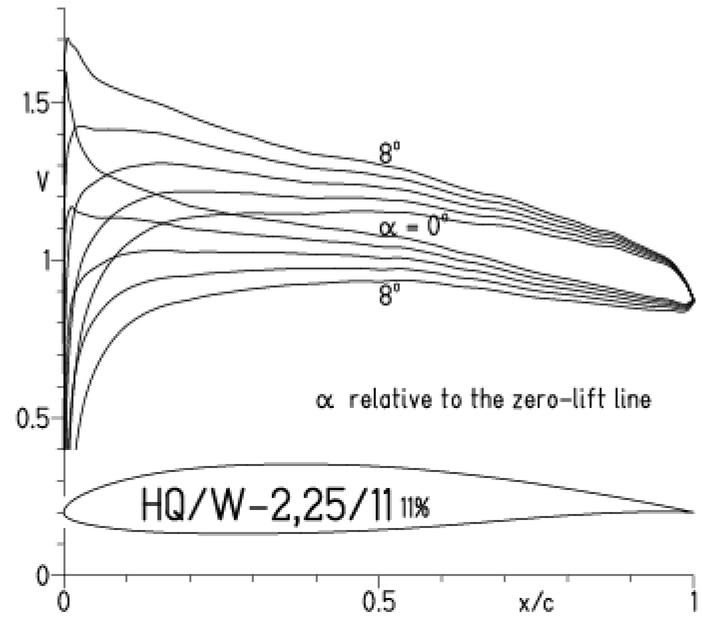
HQ/W-2,25/11, N=11



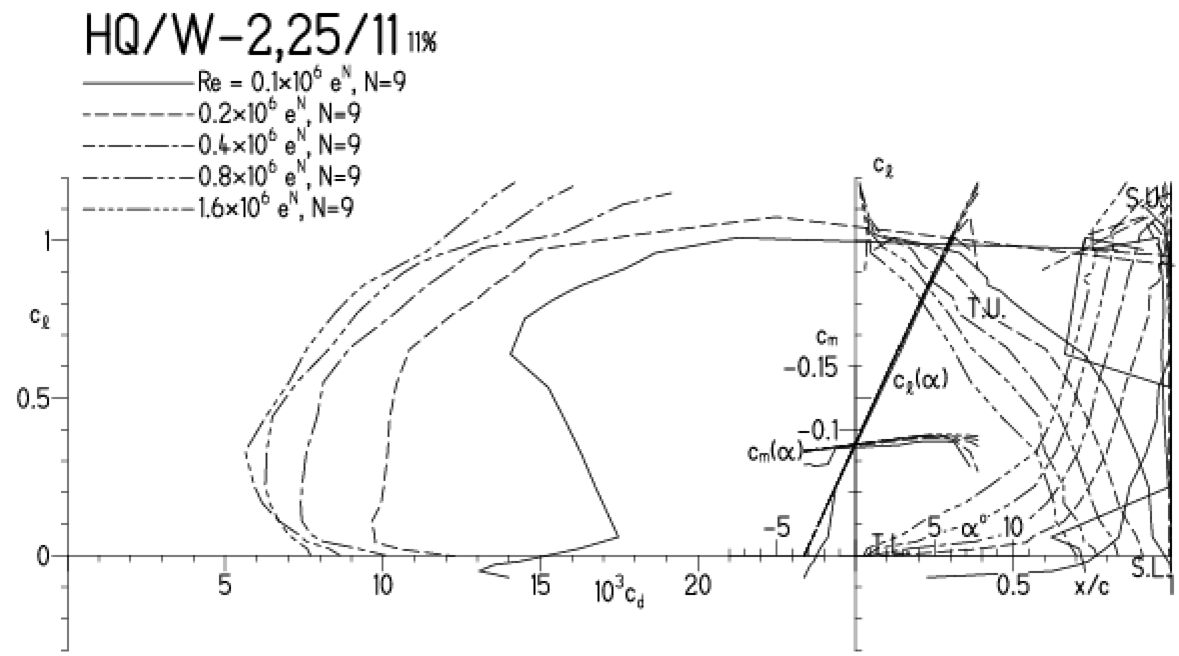


HQQ/W-2,25/11, N=9

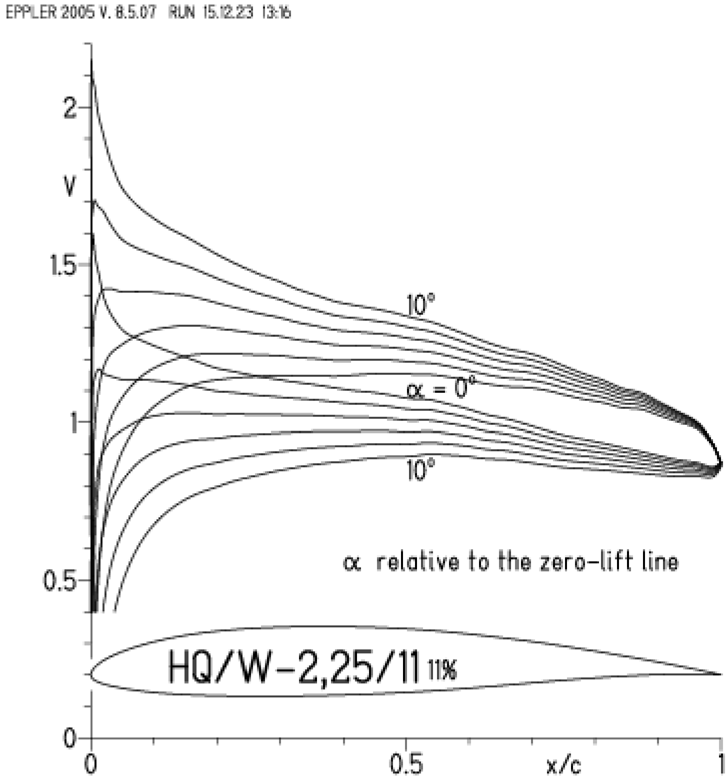
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

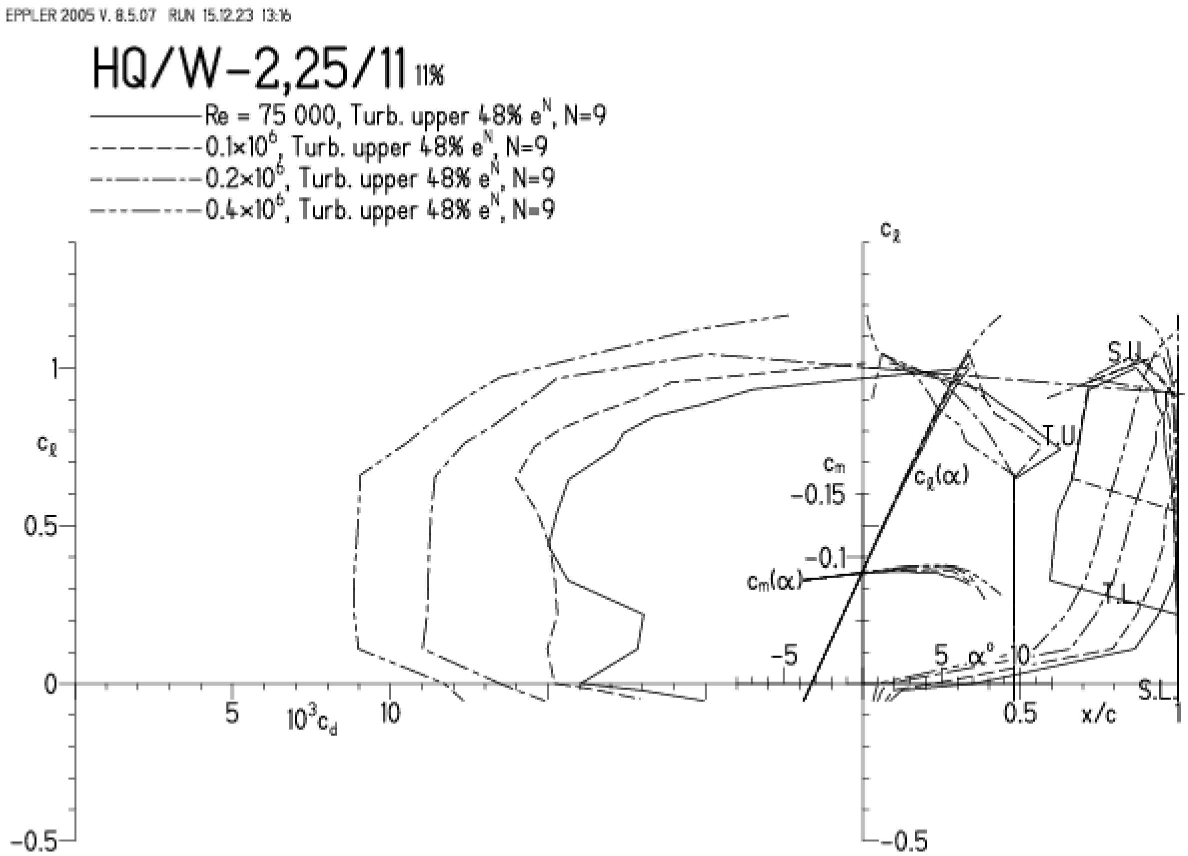


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

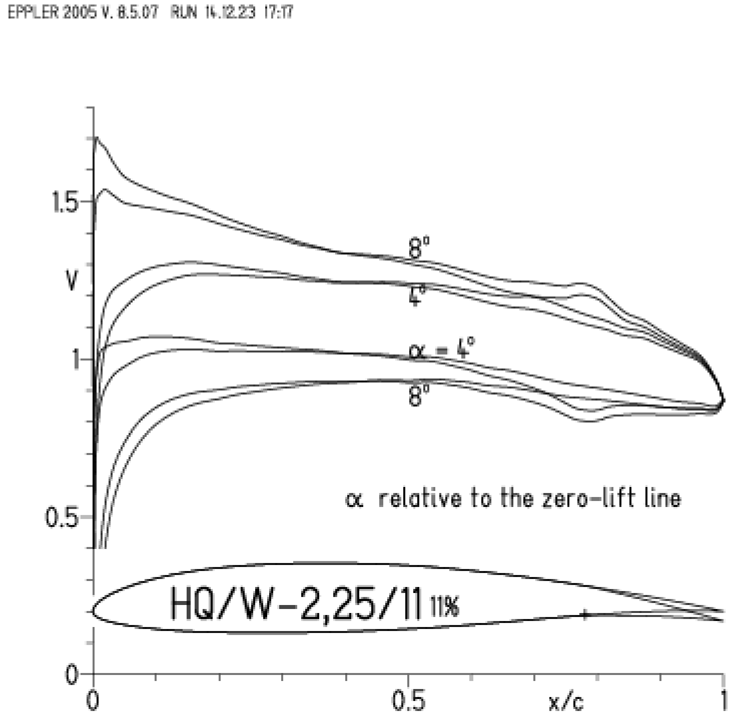


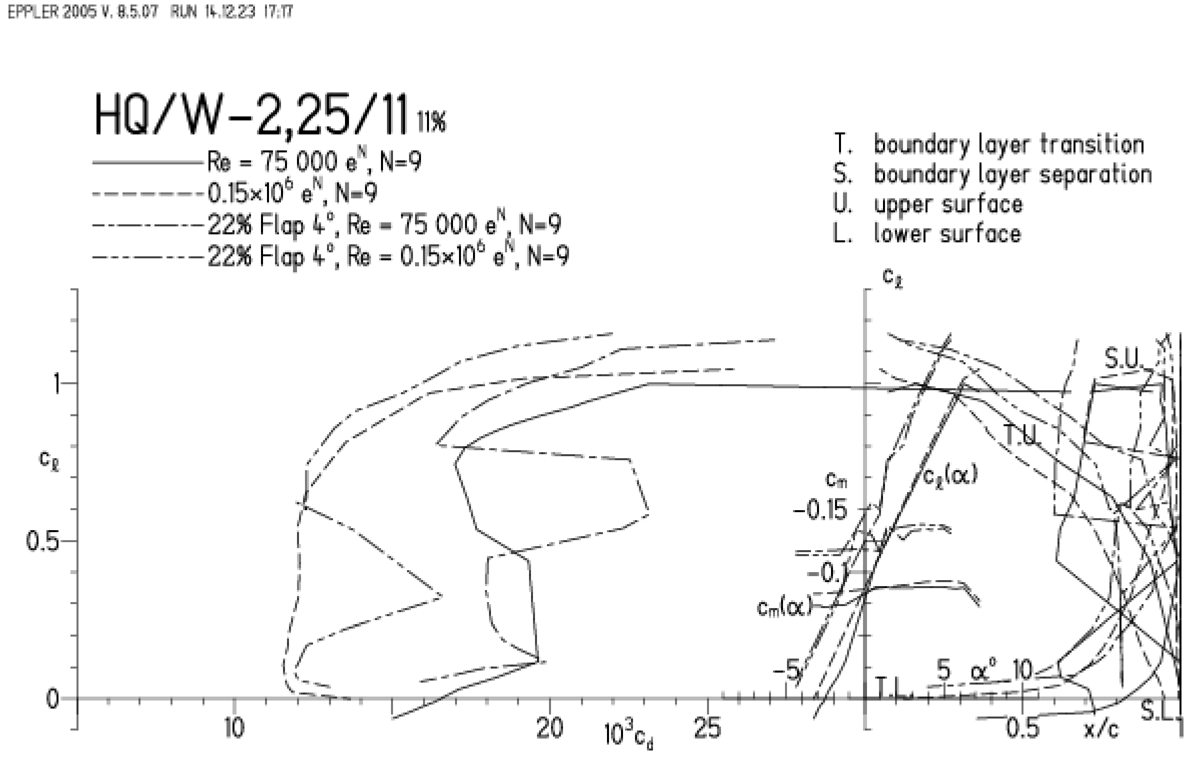
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





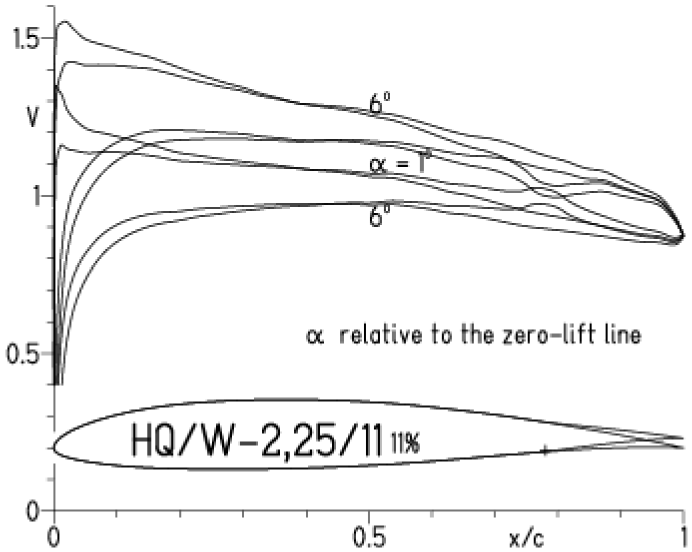
HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag



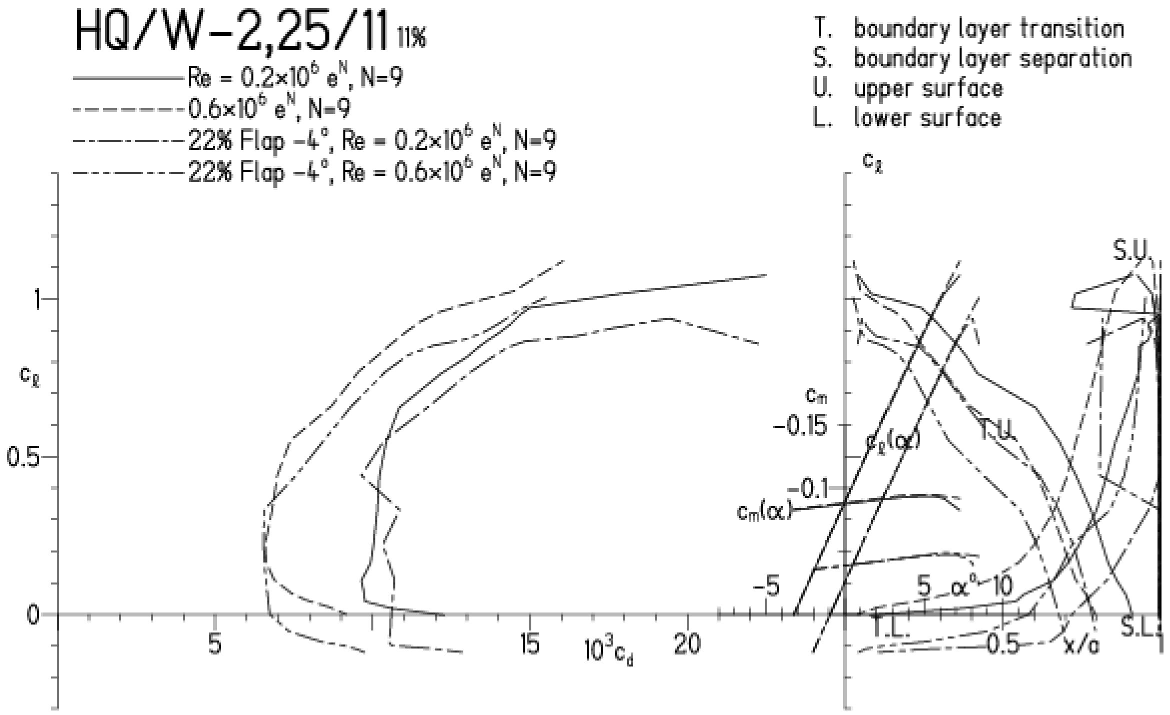


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

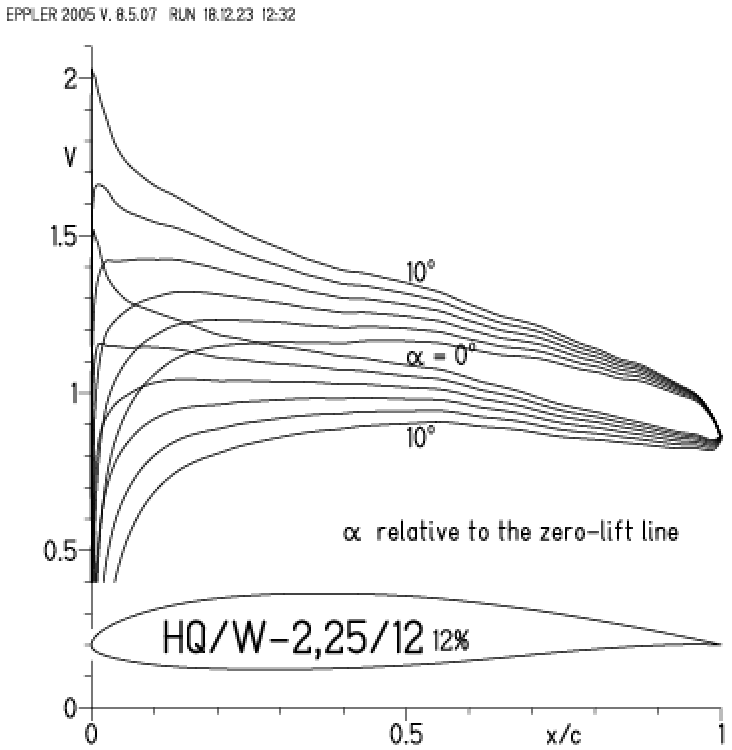
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

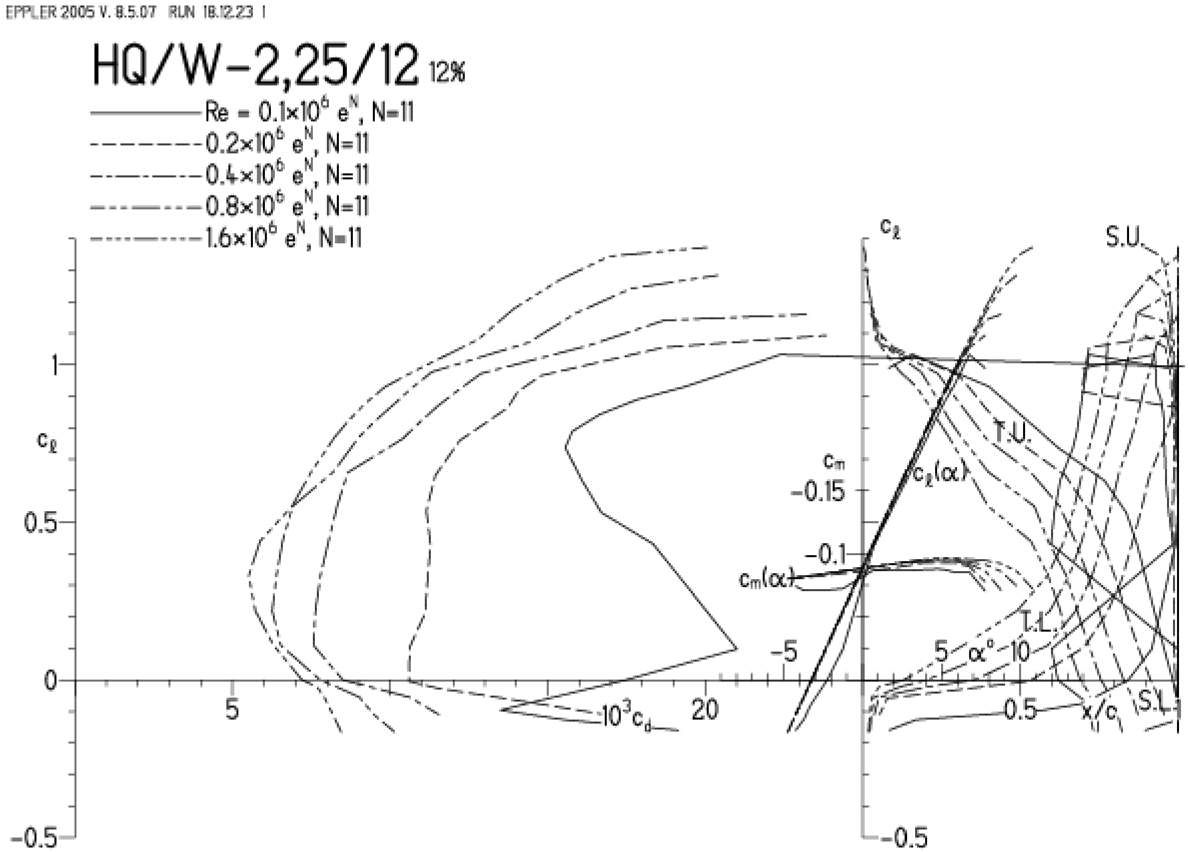


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



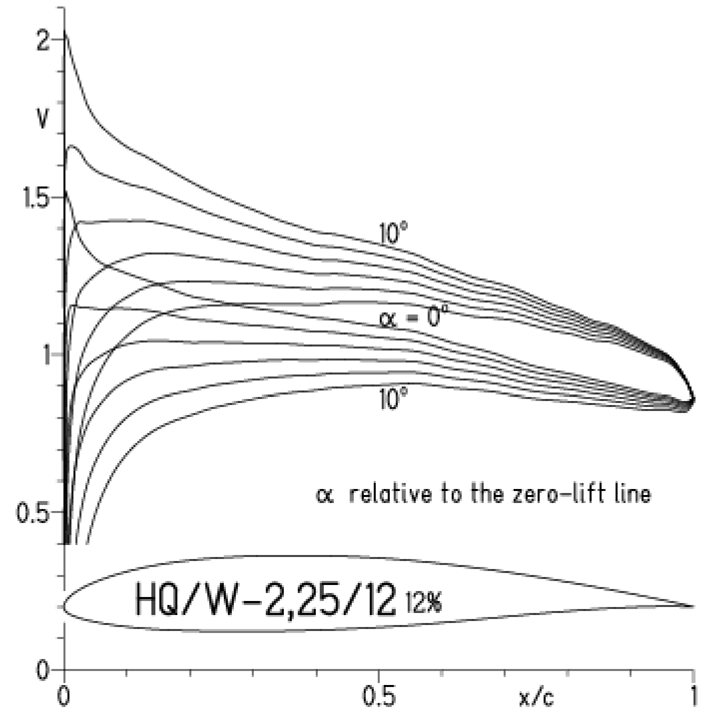
<u>HQ/W-2,25/12</u>, N=11



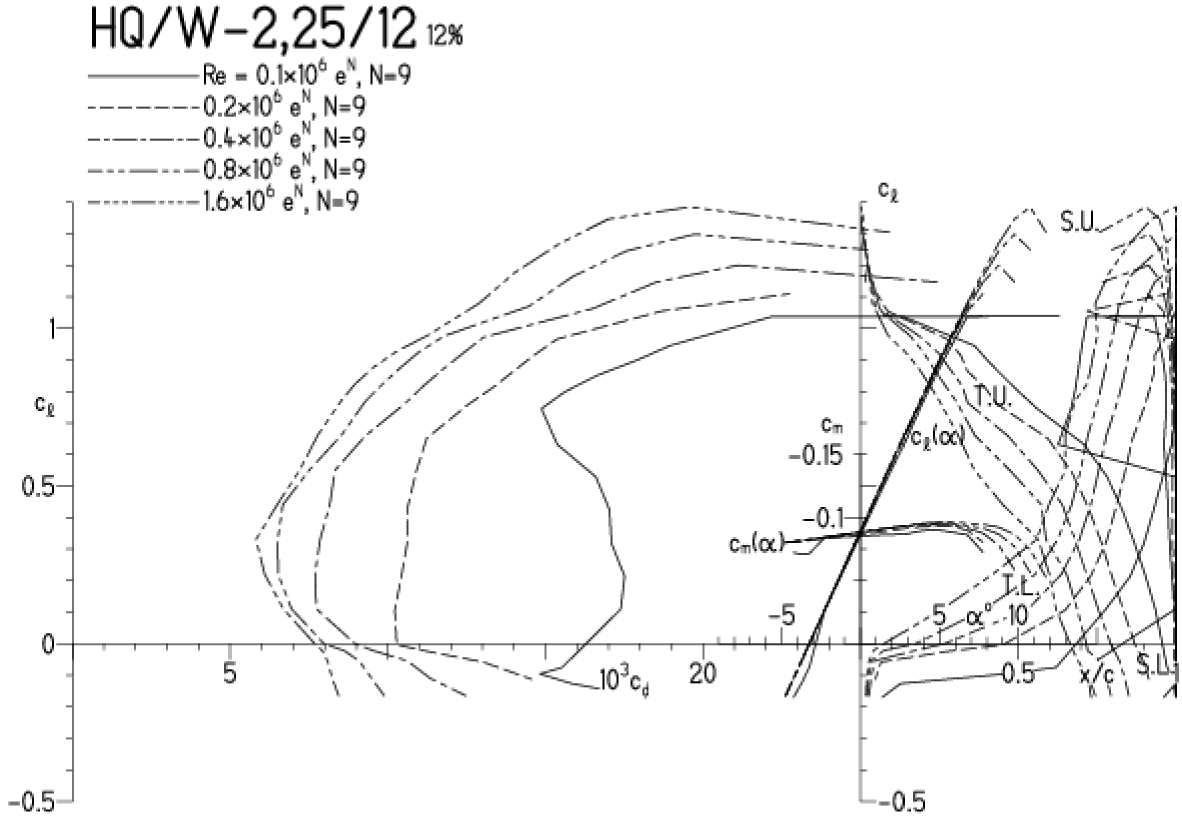


<u>HQ/W-2,25/12</u>, N=9

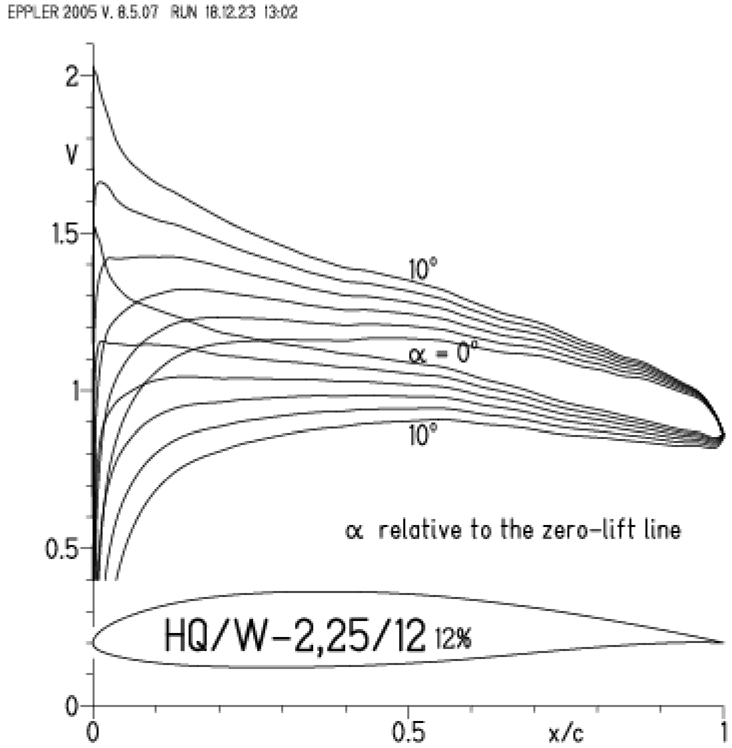
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

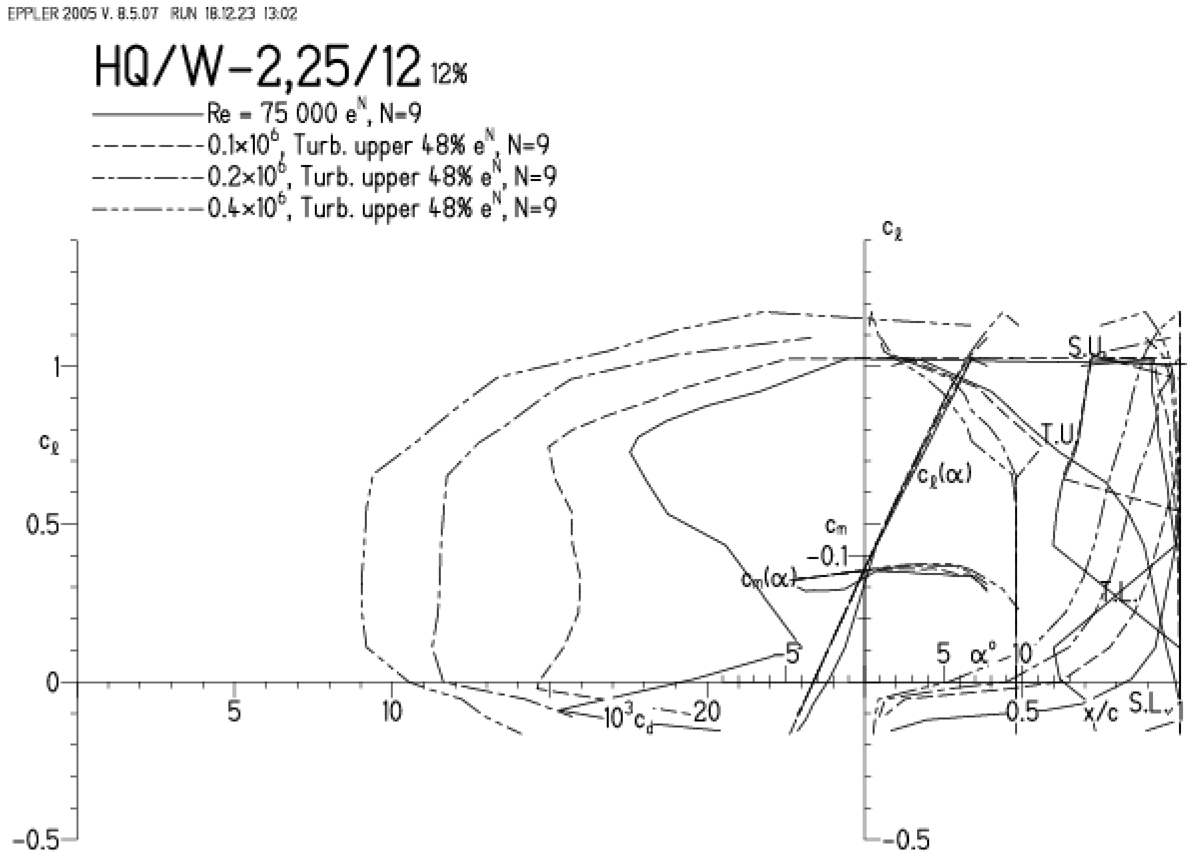


EPPLER 2005 V. 8.5



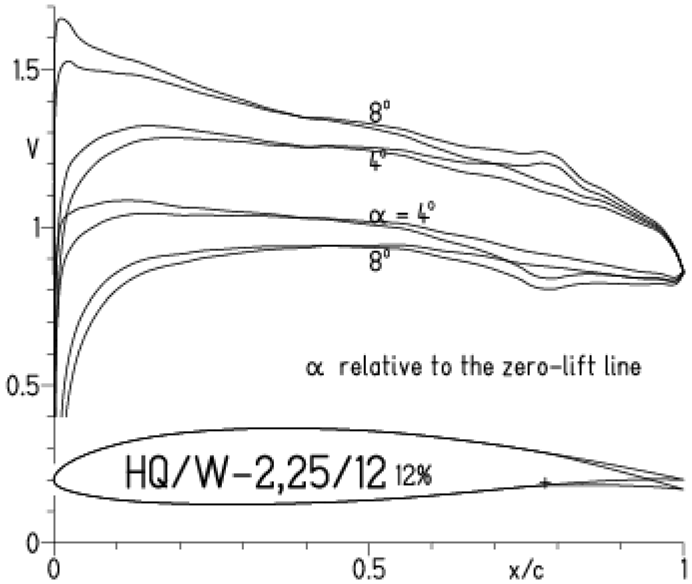
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



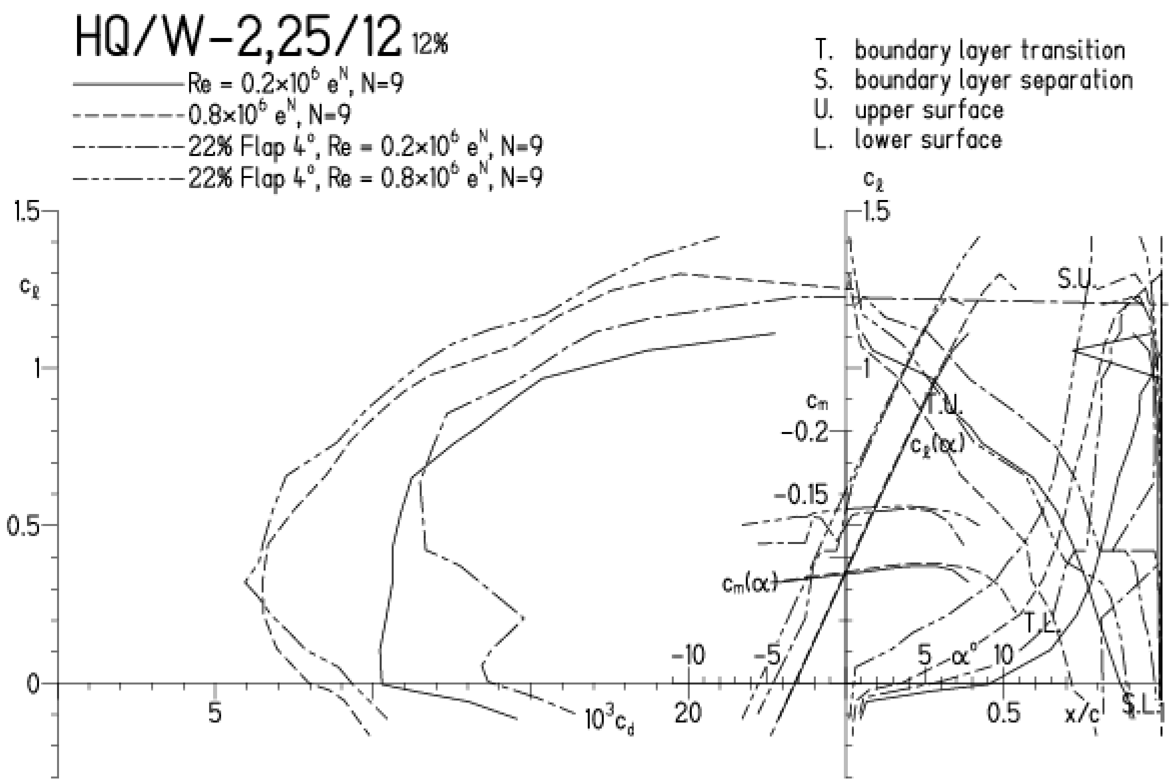


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

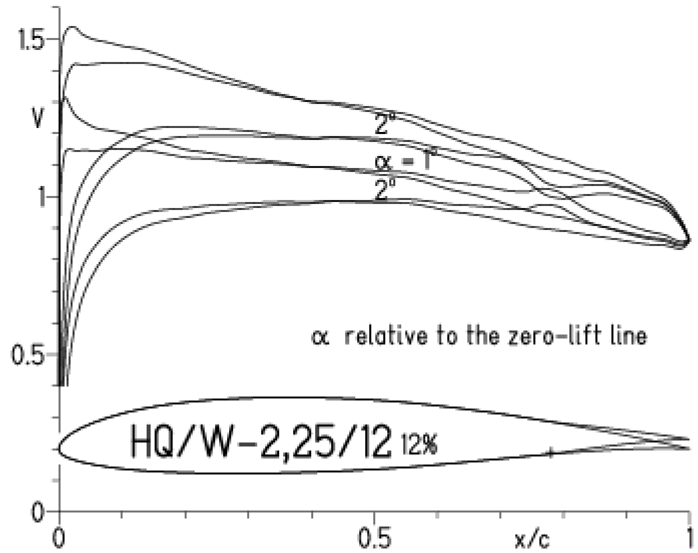


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

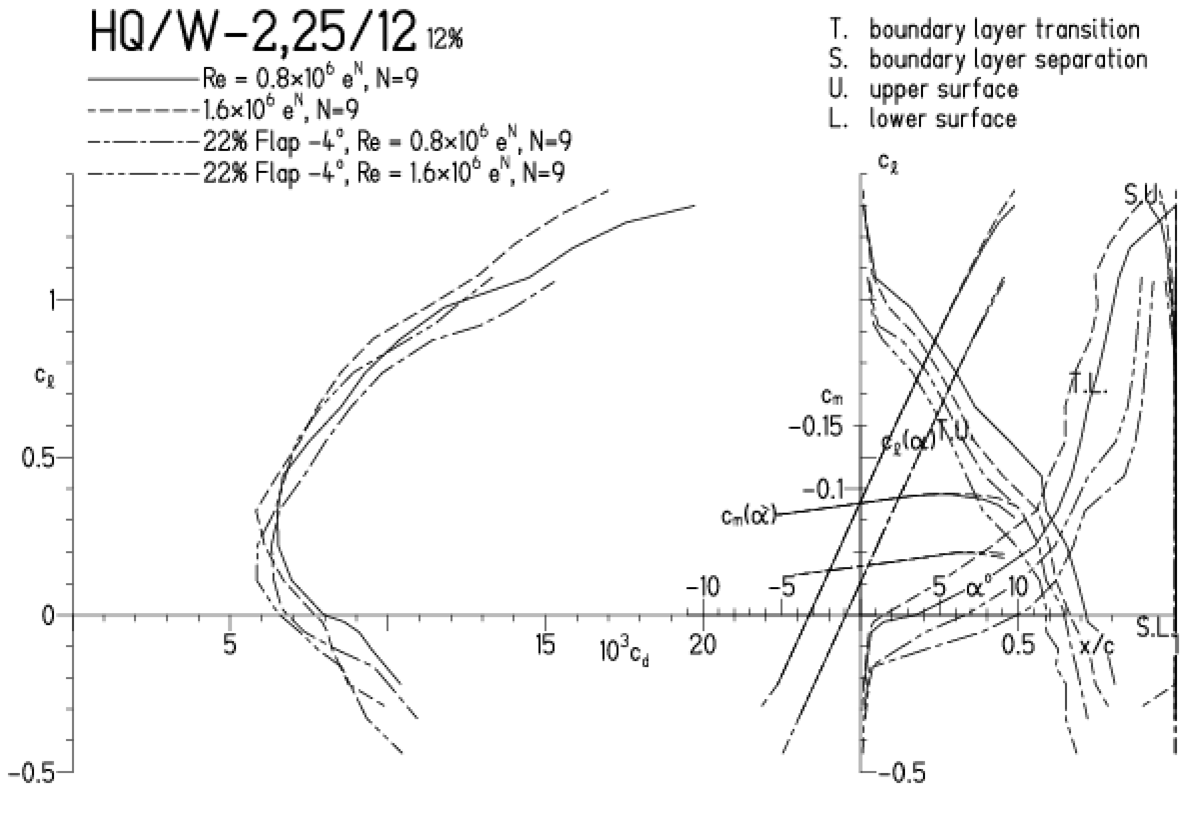


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

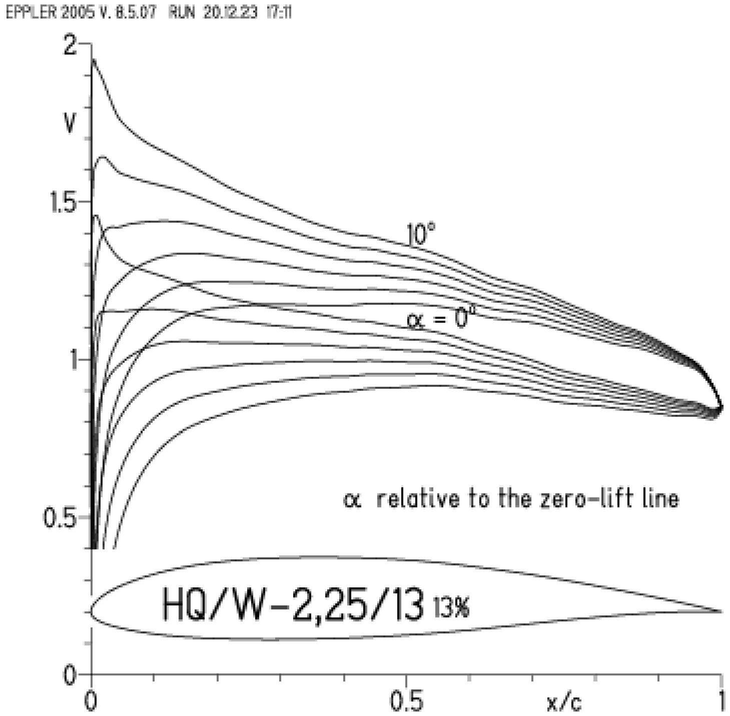
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

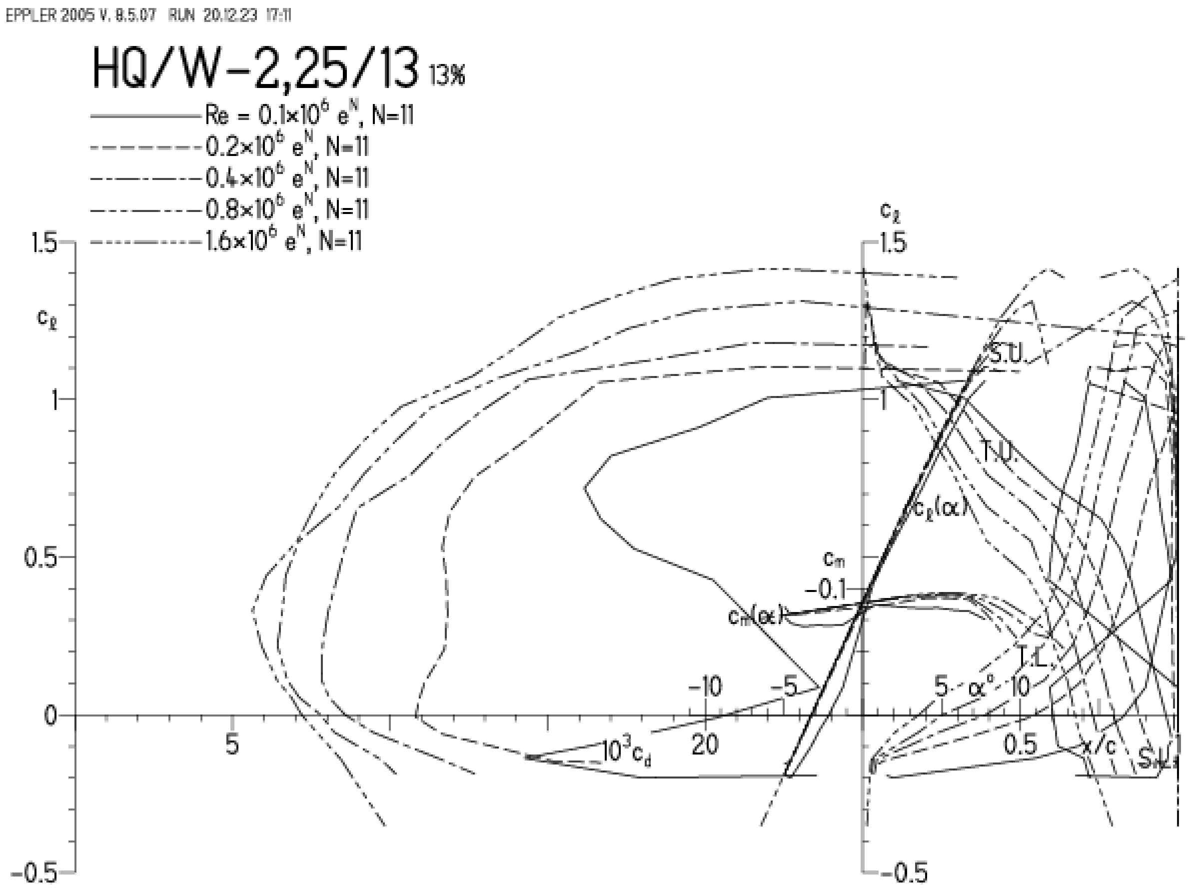


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

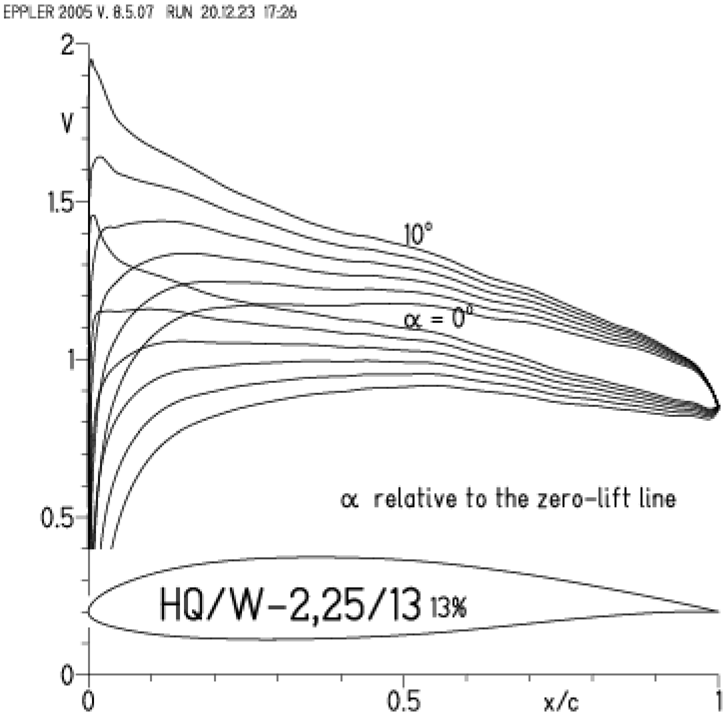


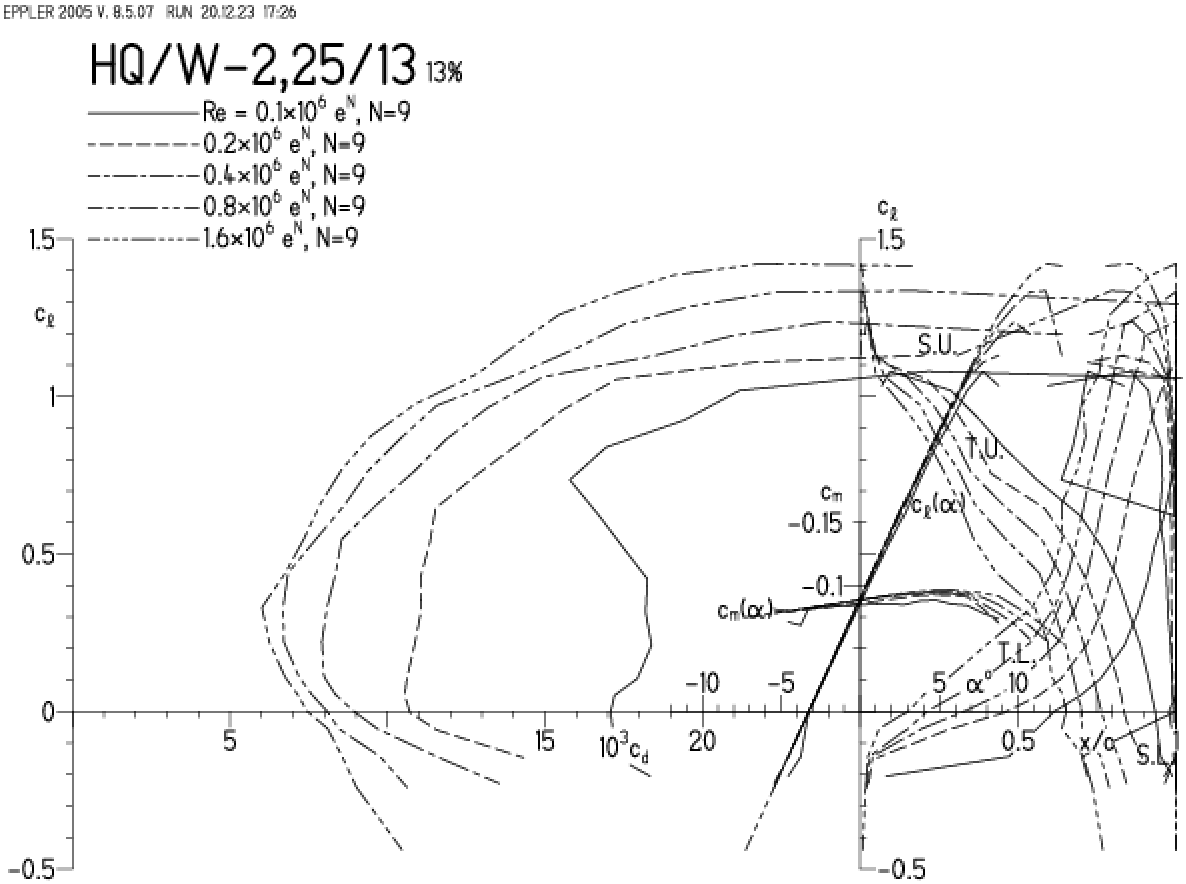
<u>HQ/W-2,25/13</u>, N=11



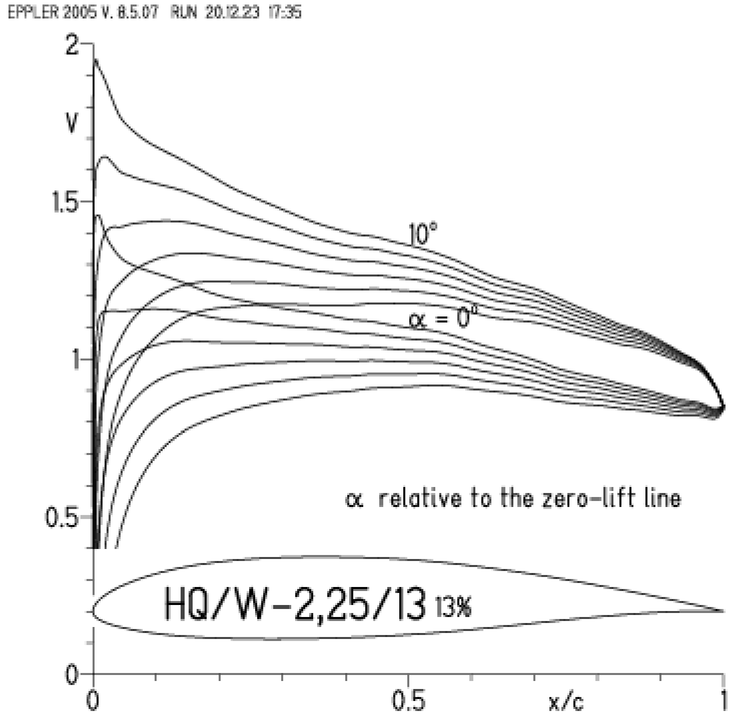


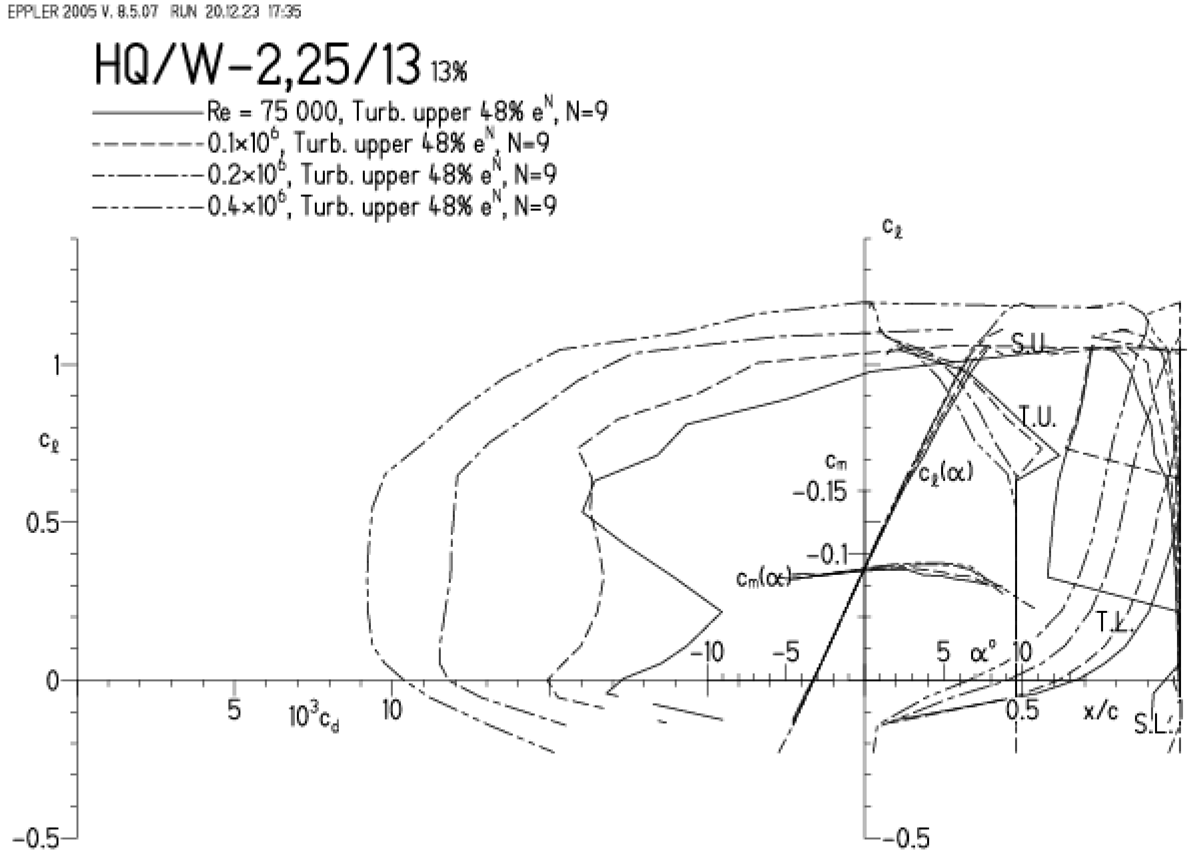
<u>HQ/W-2,25/13</u>, N=9



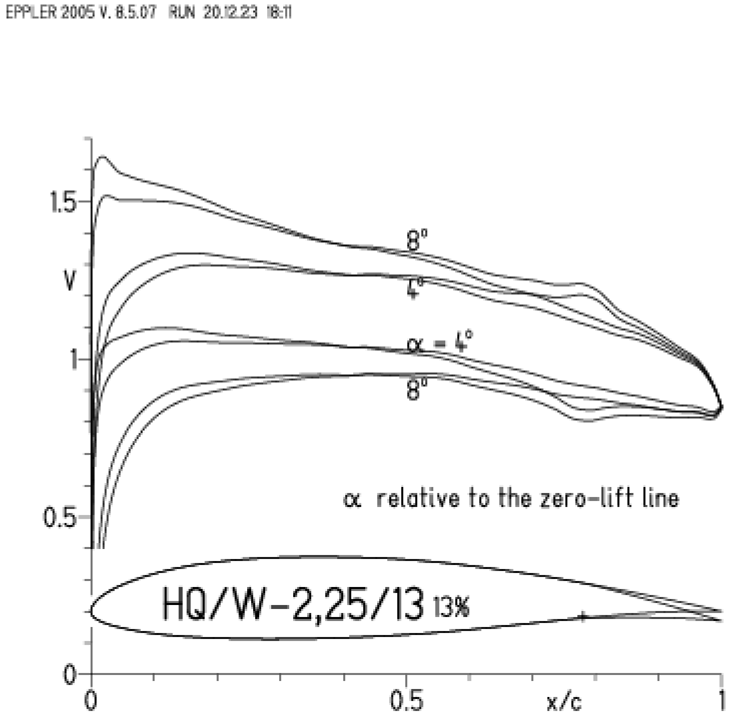


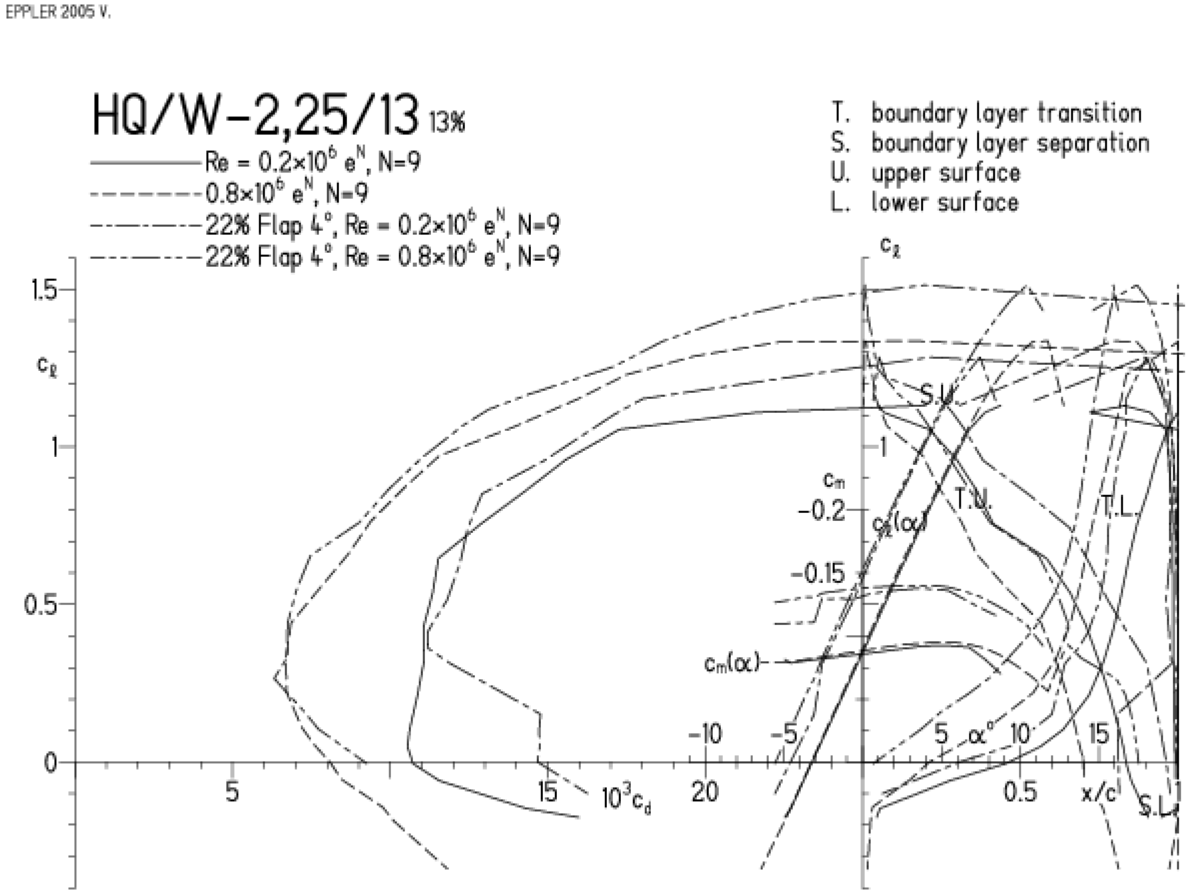
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





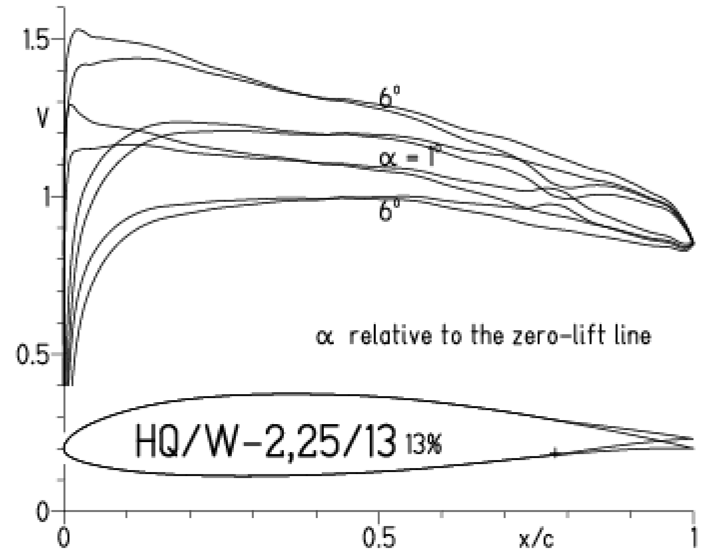
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



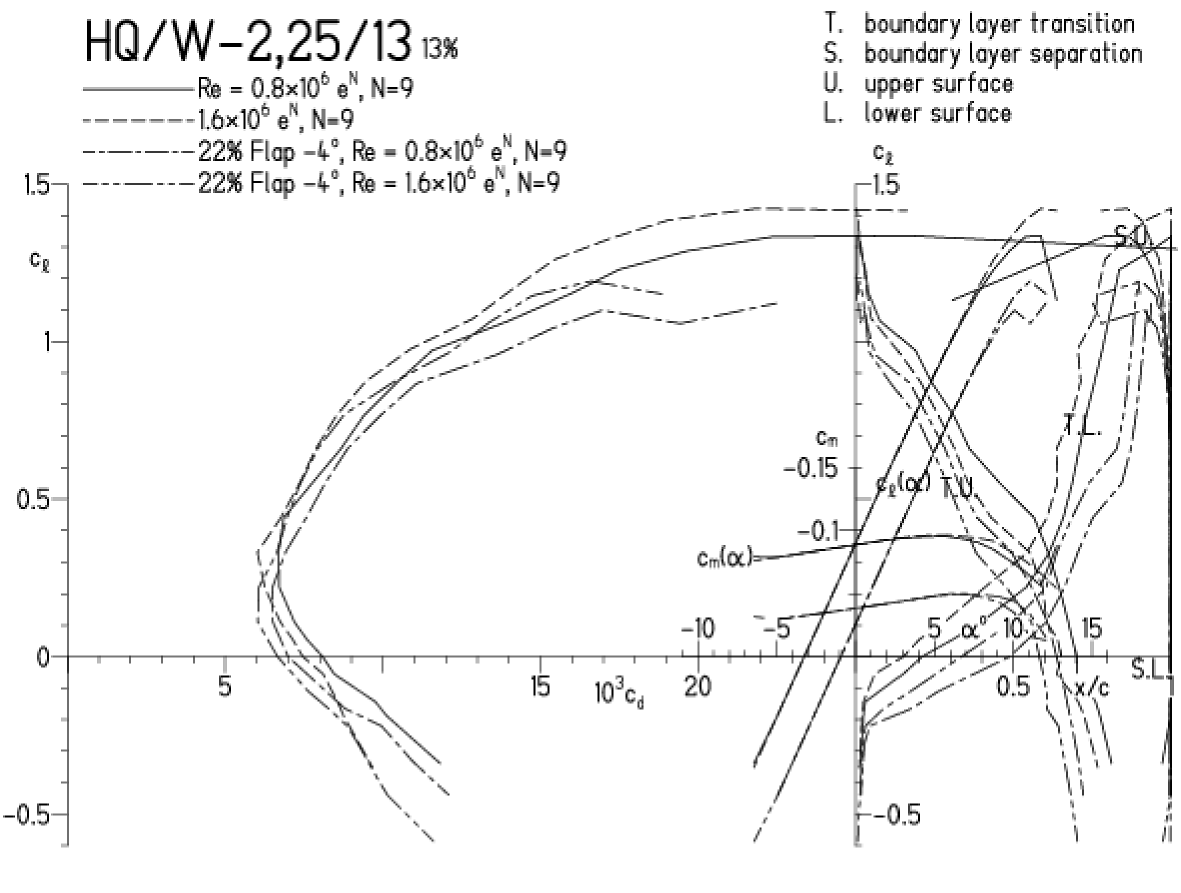


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

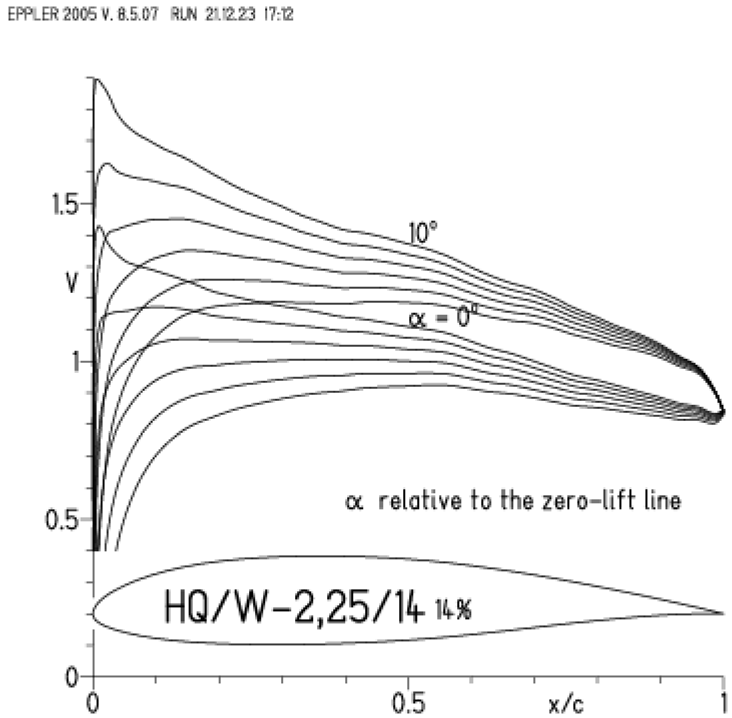
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

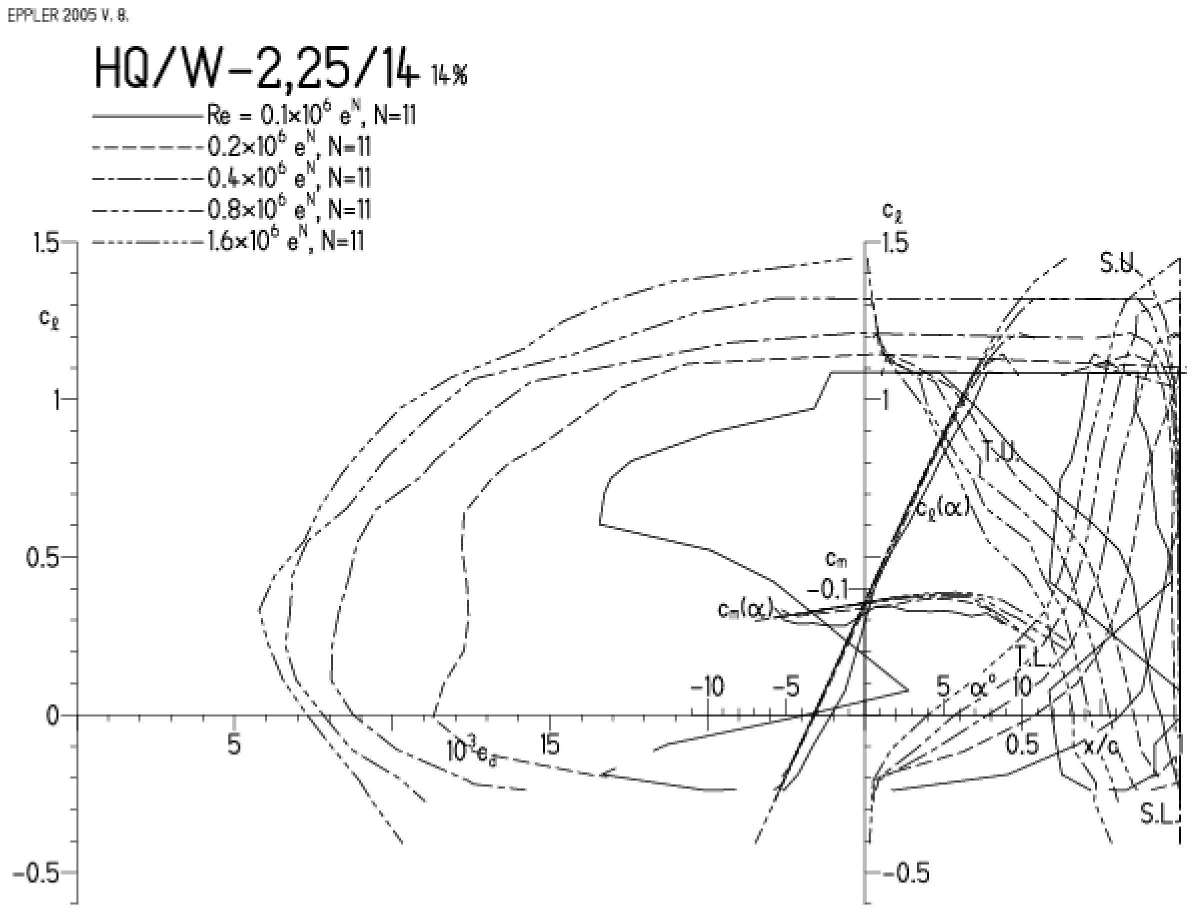


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

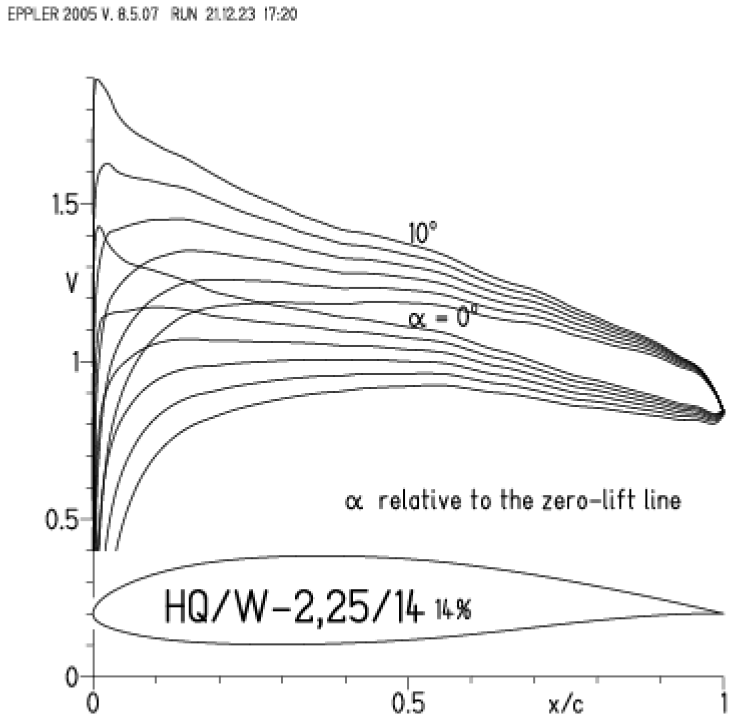


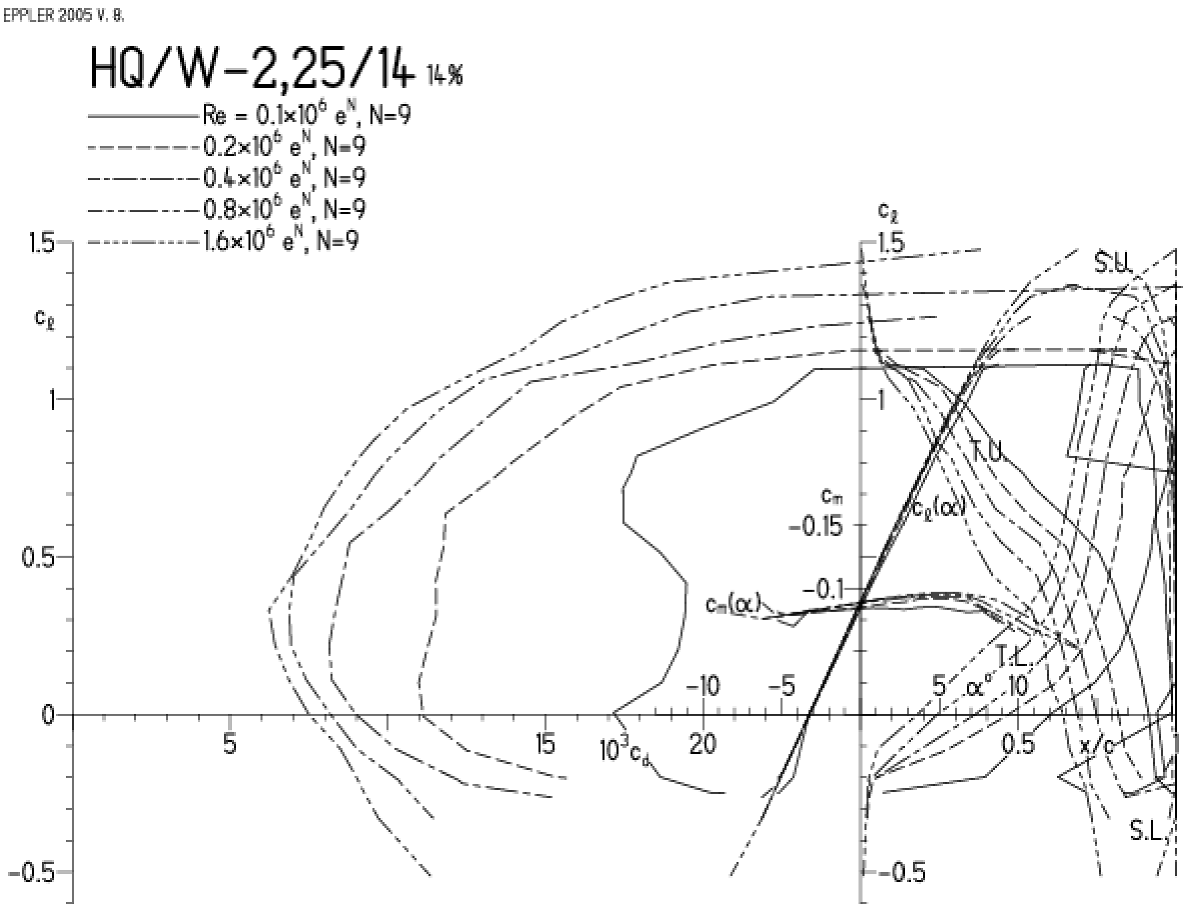
HQ/W-2,25/14, N=11



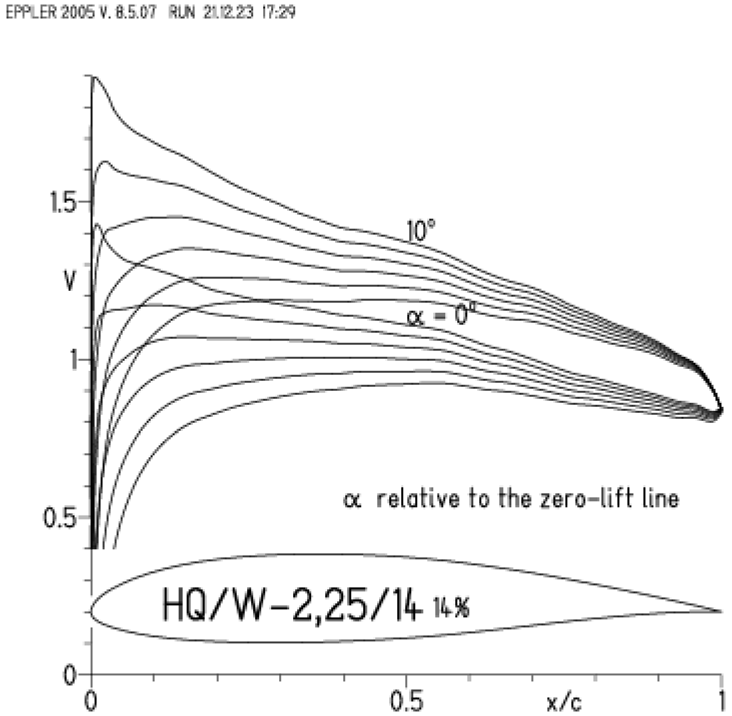


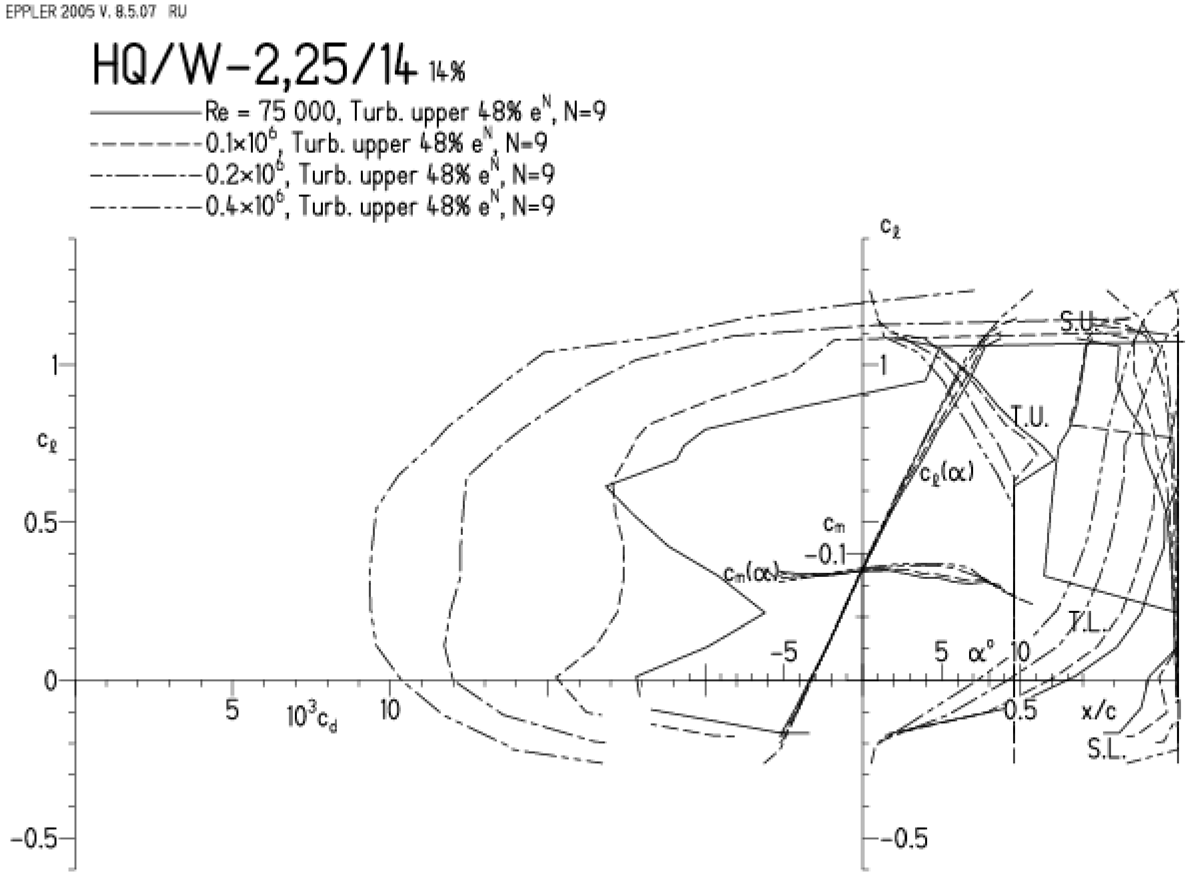
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
V
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10^3 cd
α°
x/c

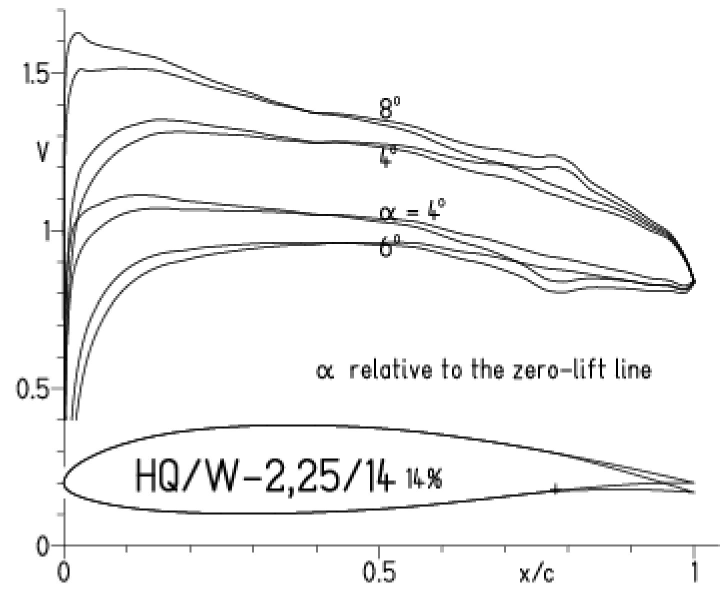
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



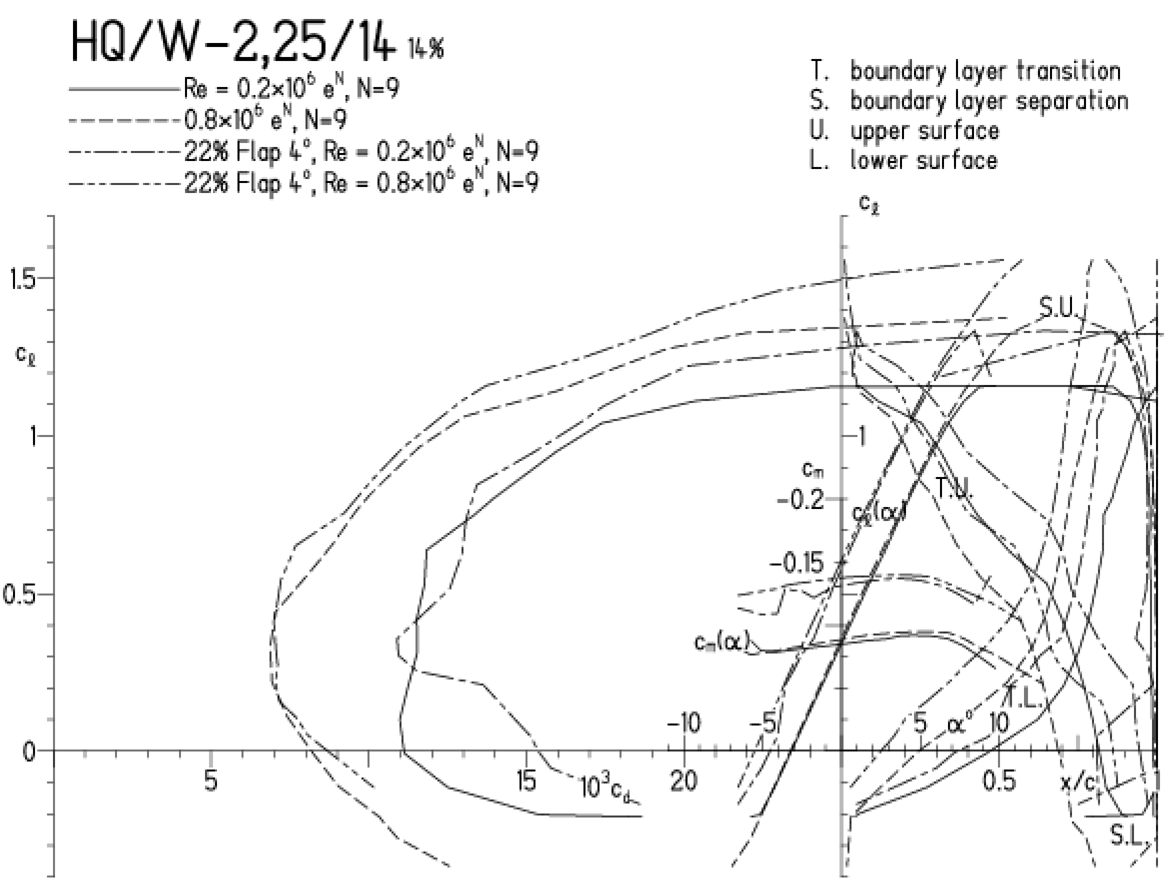


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

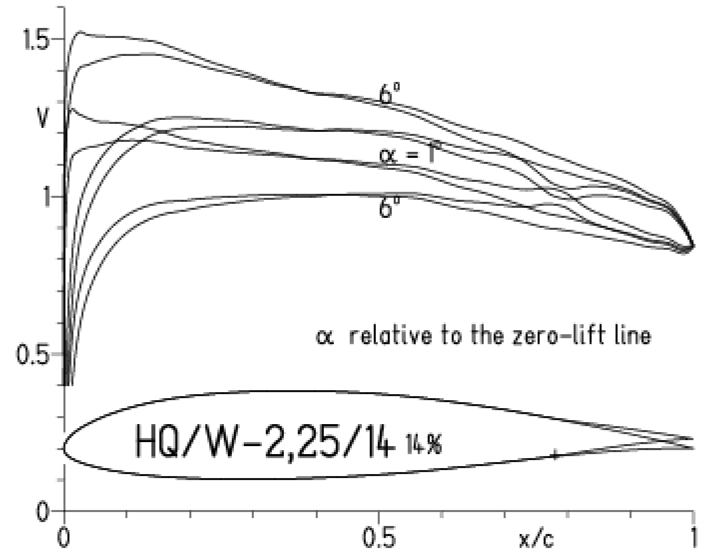


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

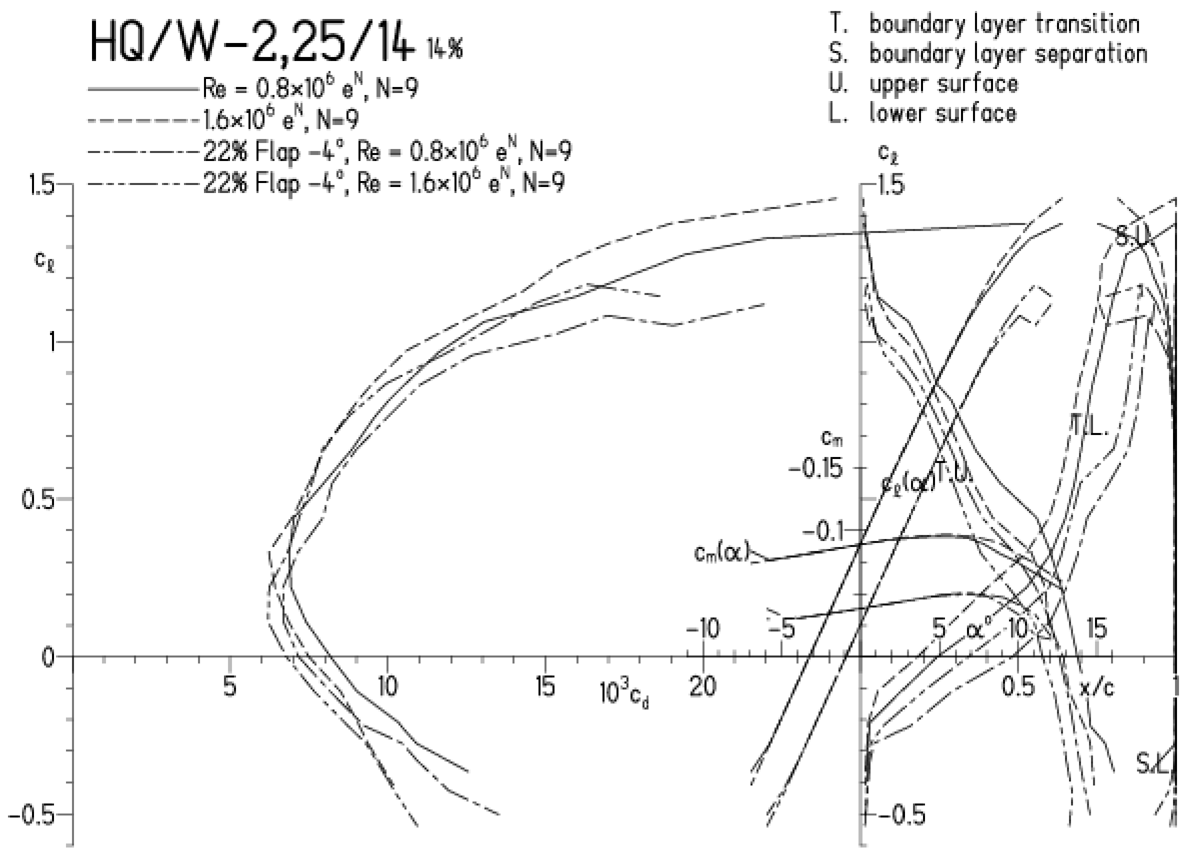


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

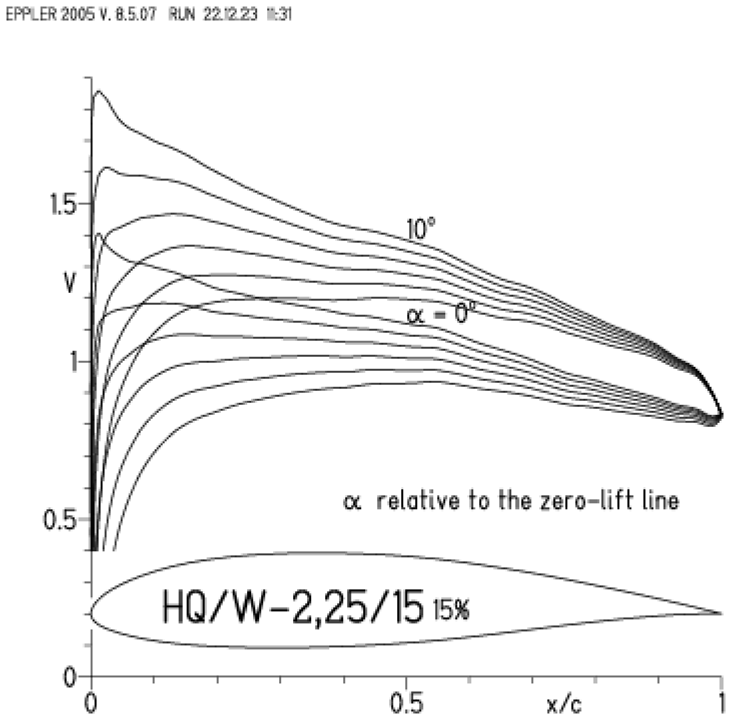
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

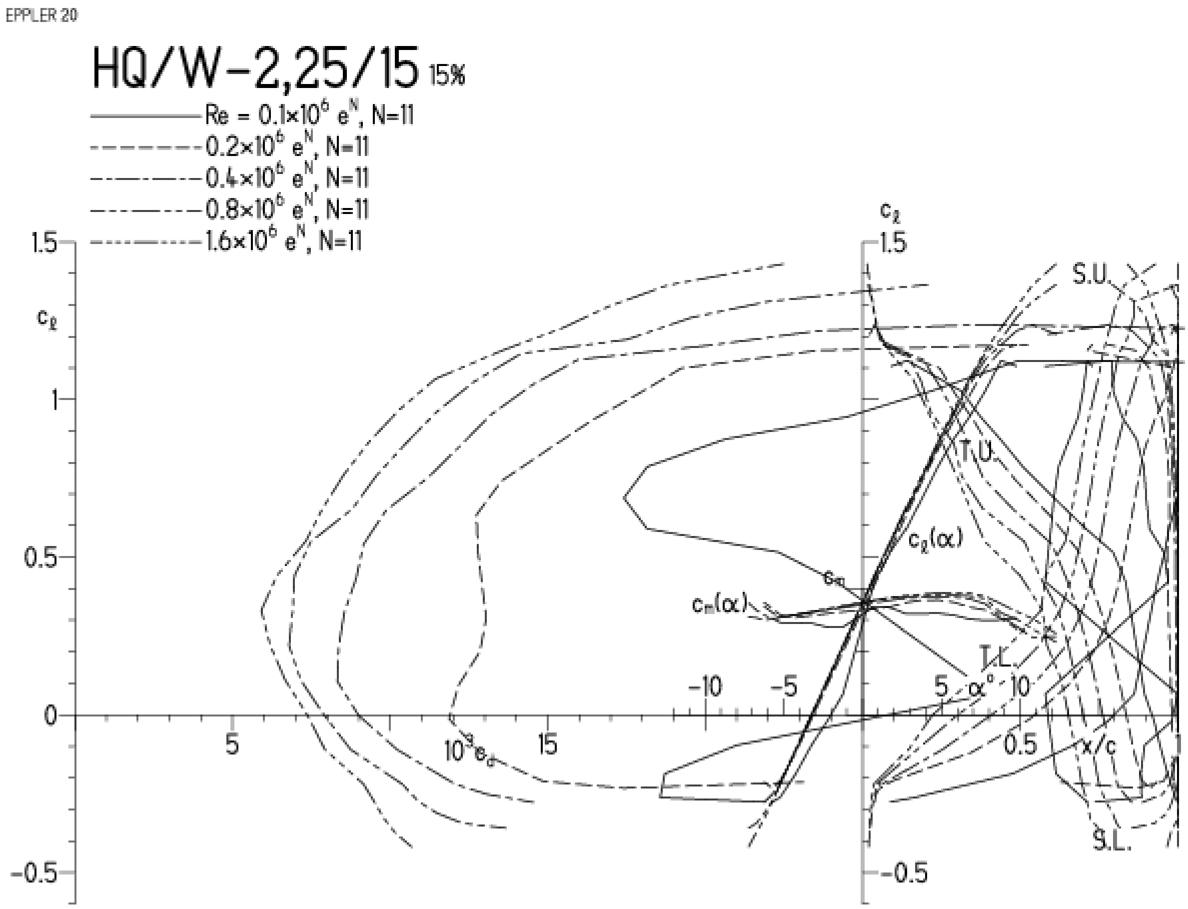


EPPLER 2005 V. 8.5.07

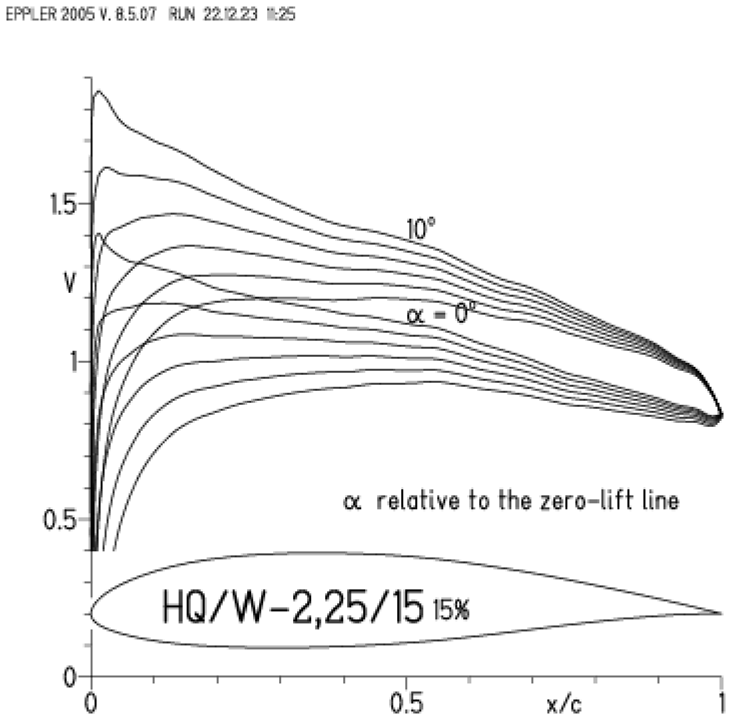


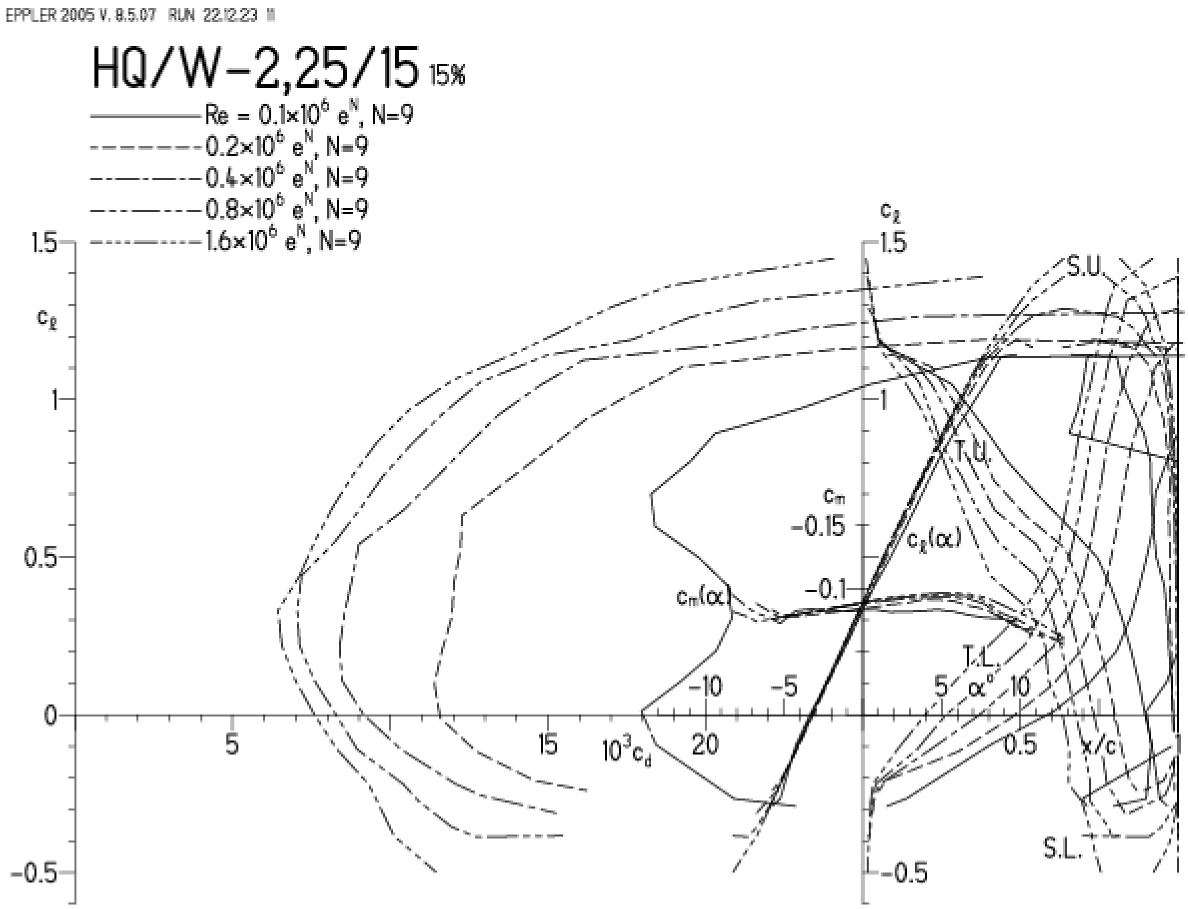
HQ/W-2,25/15, N=11



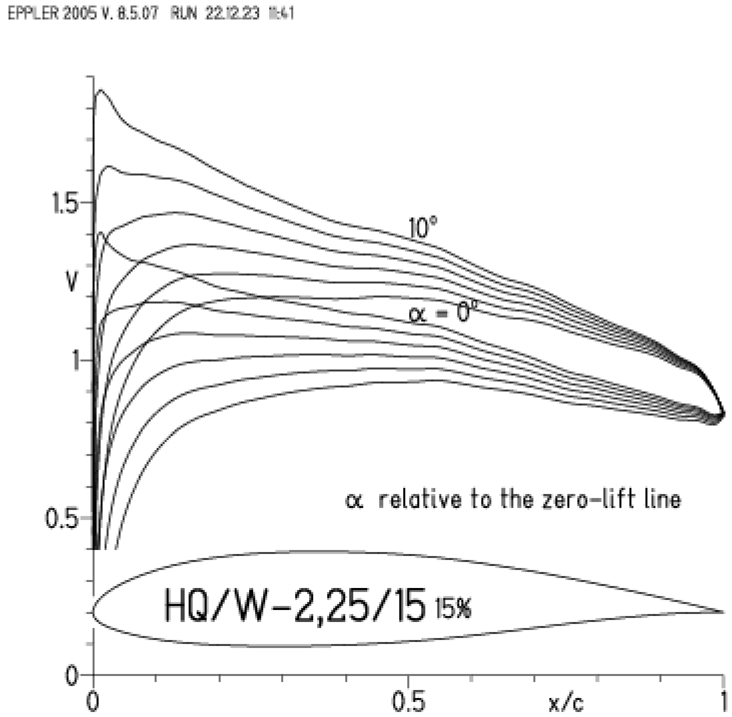


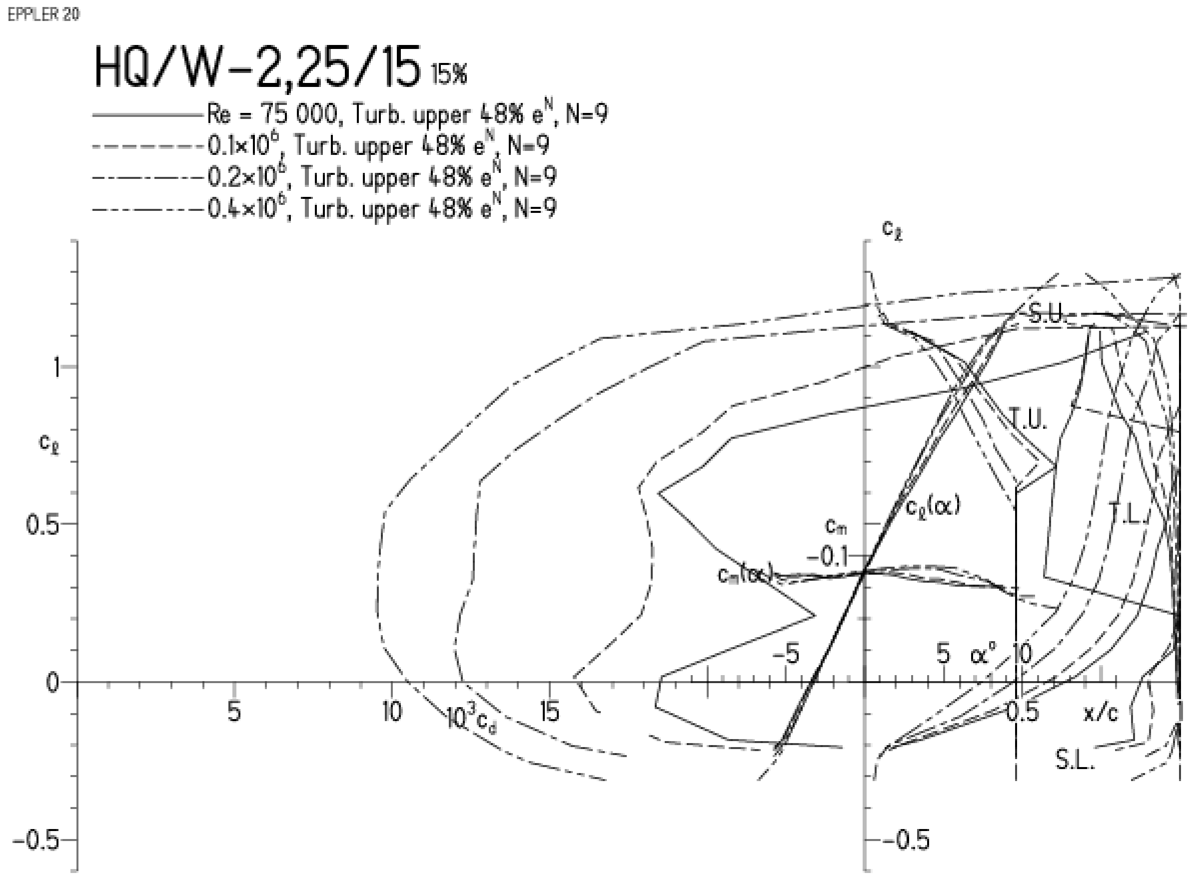
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.
-0.5

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



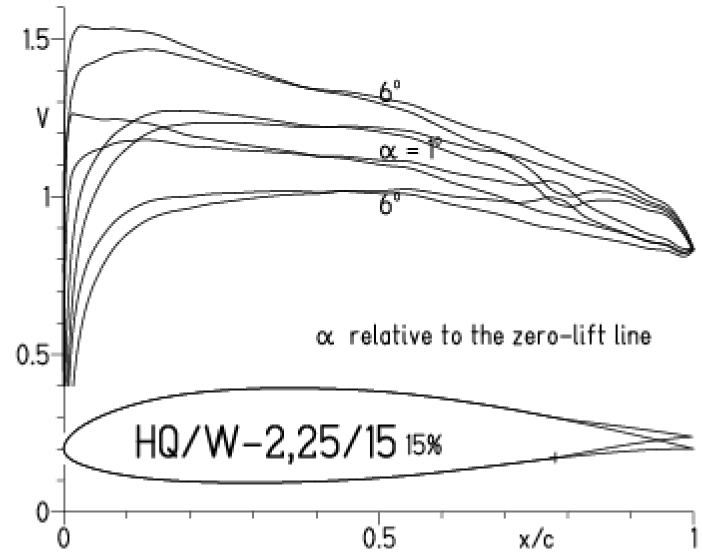


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

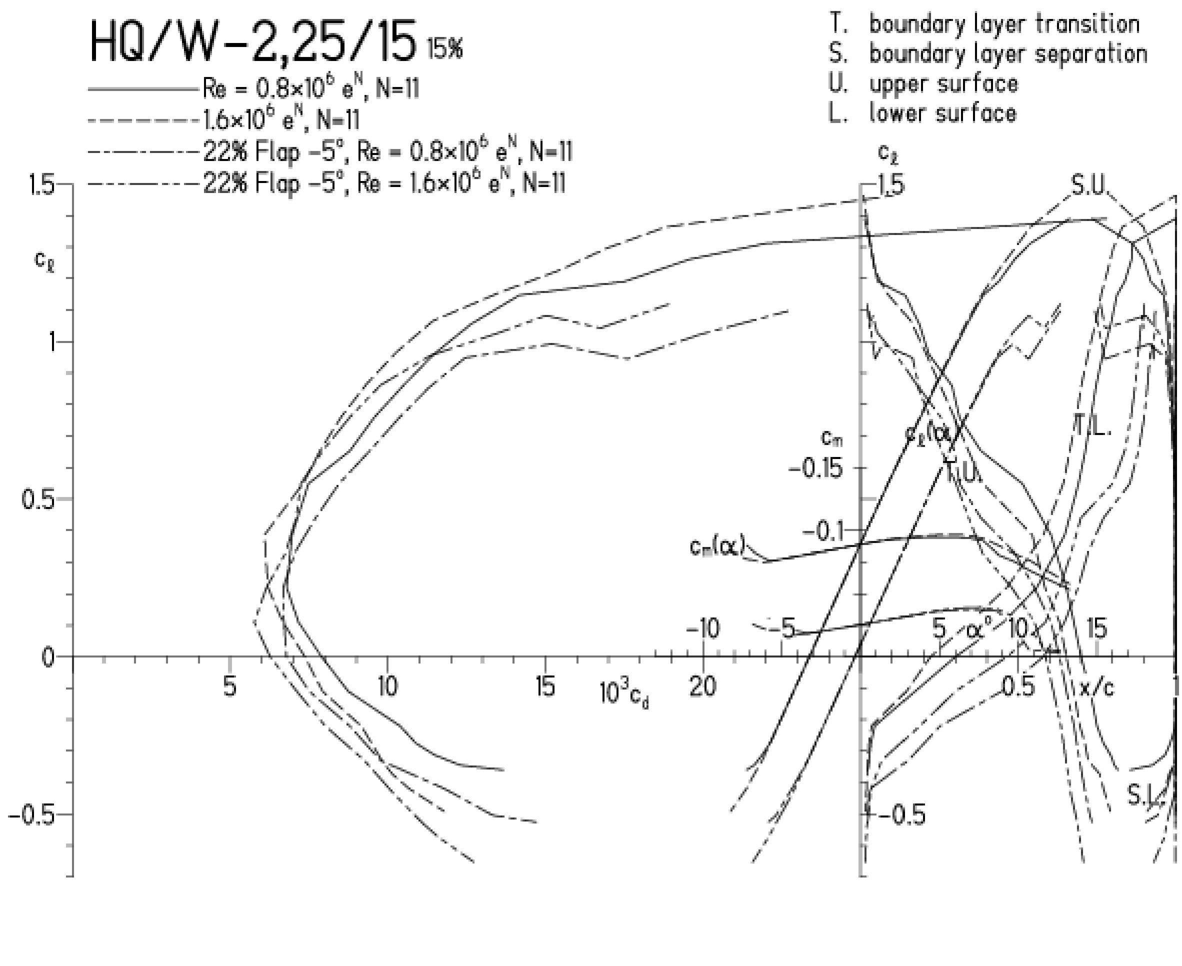
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

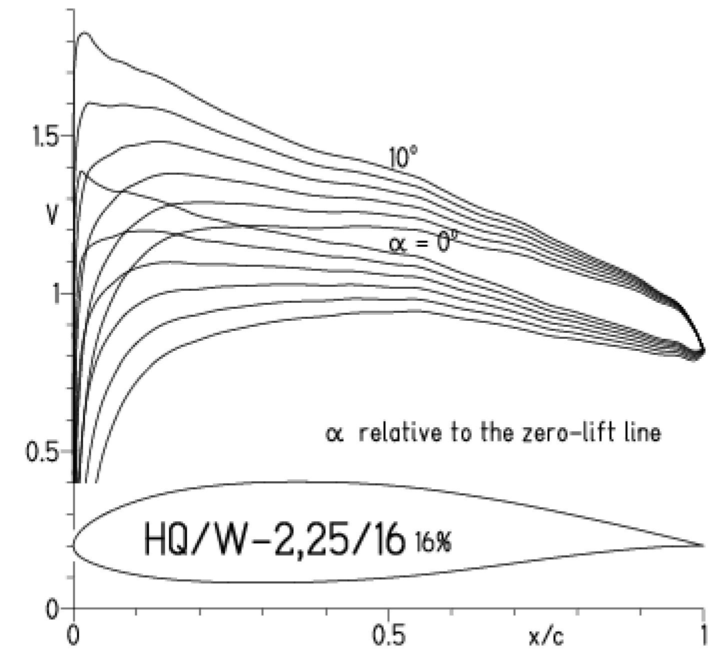


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

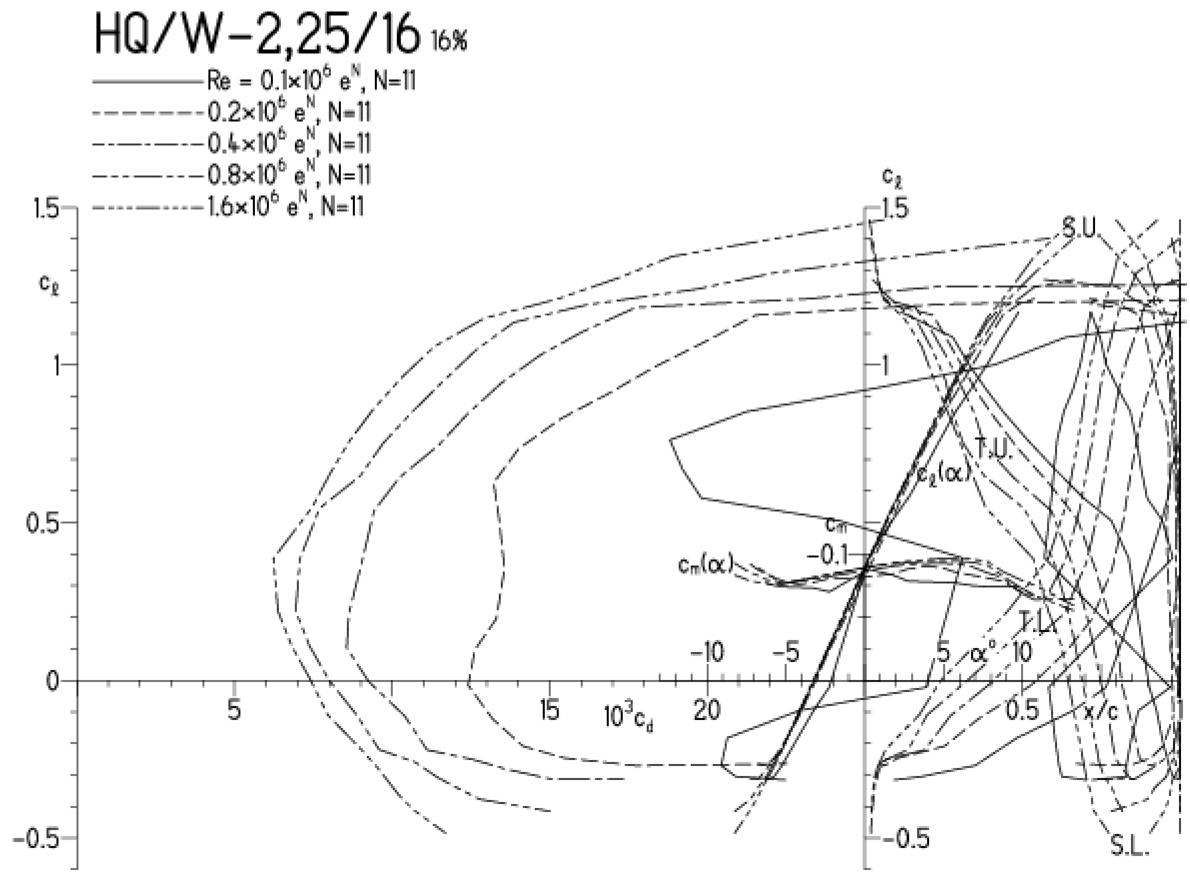


HQ/W-2,25/16, N=11

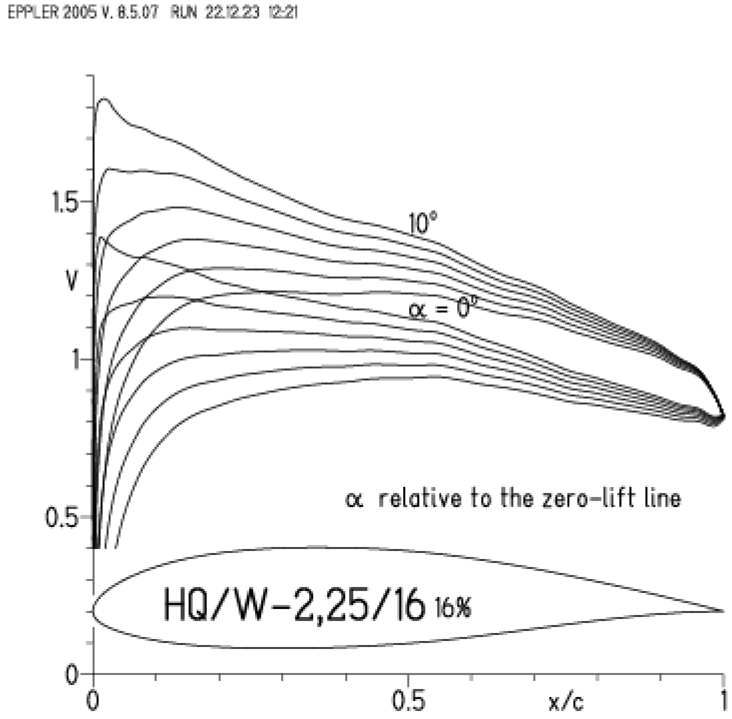
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

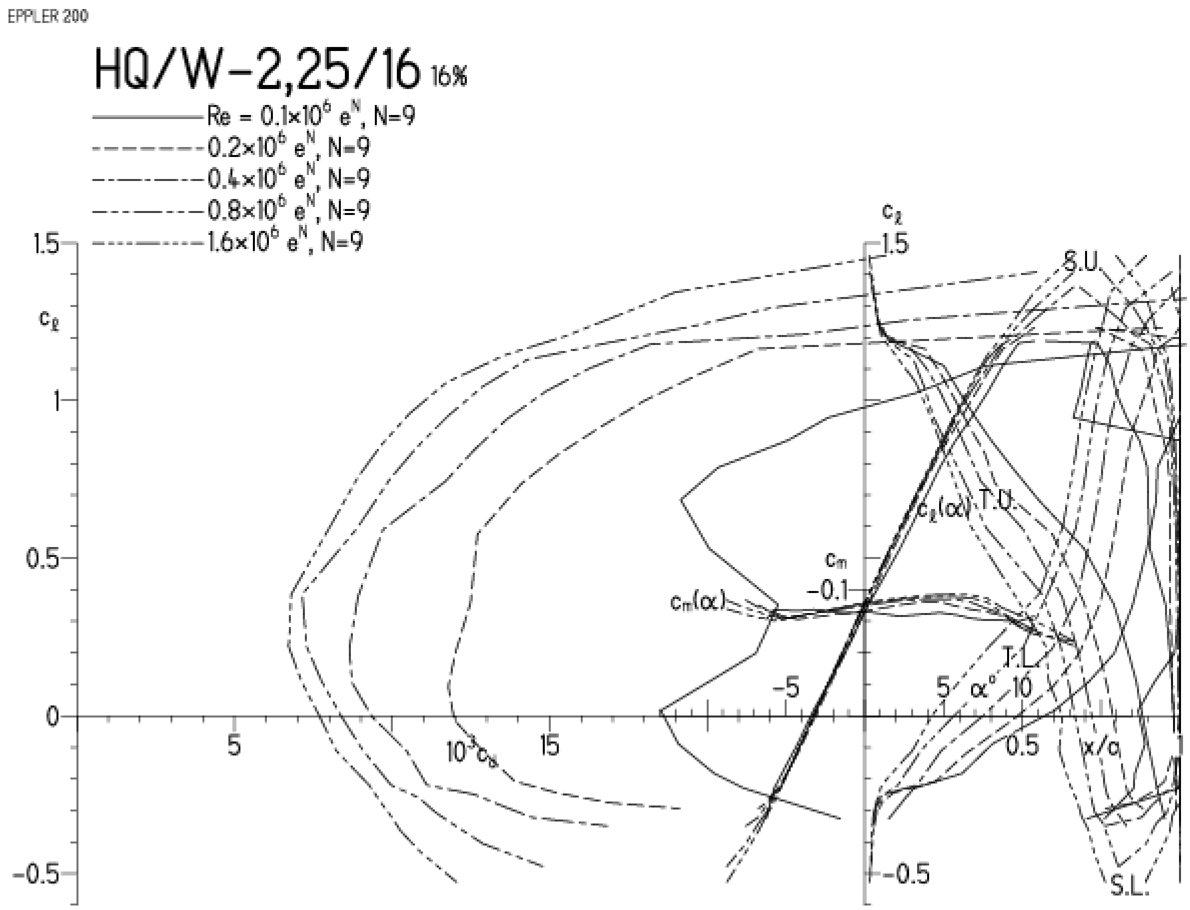


EPPLER 200

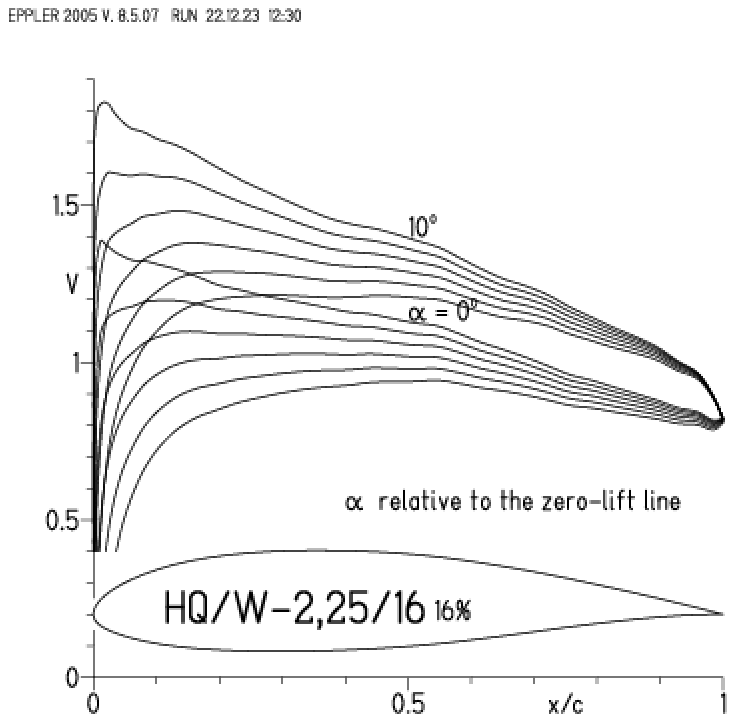


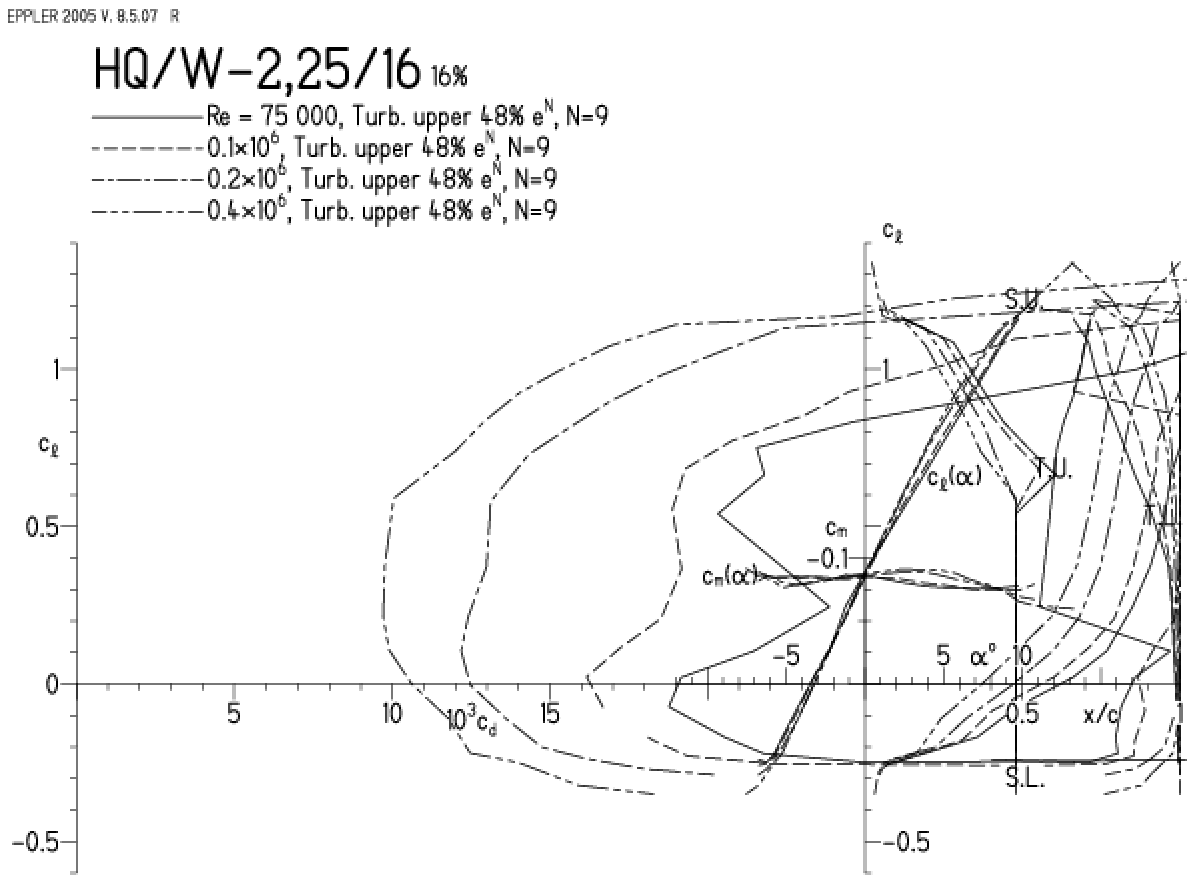
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



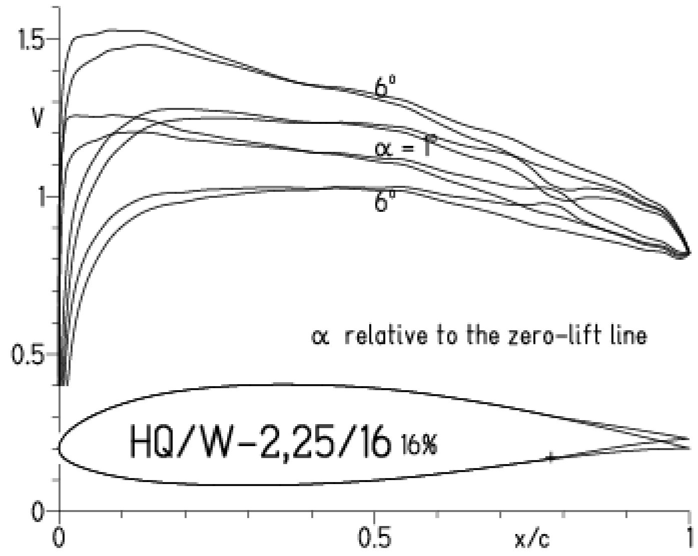


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

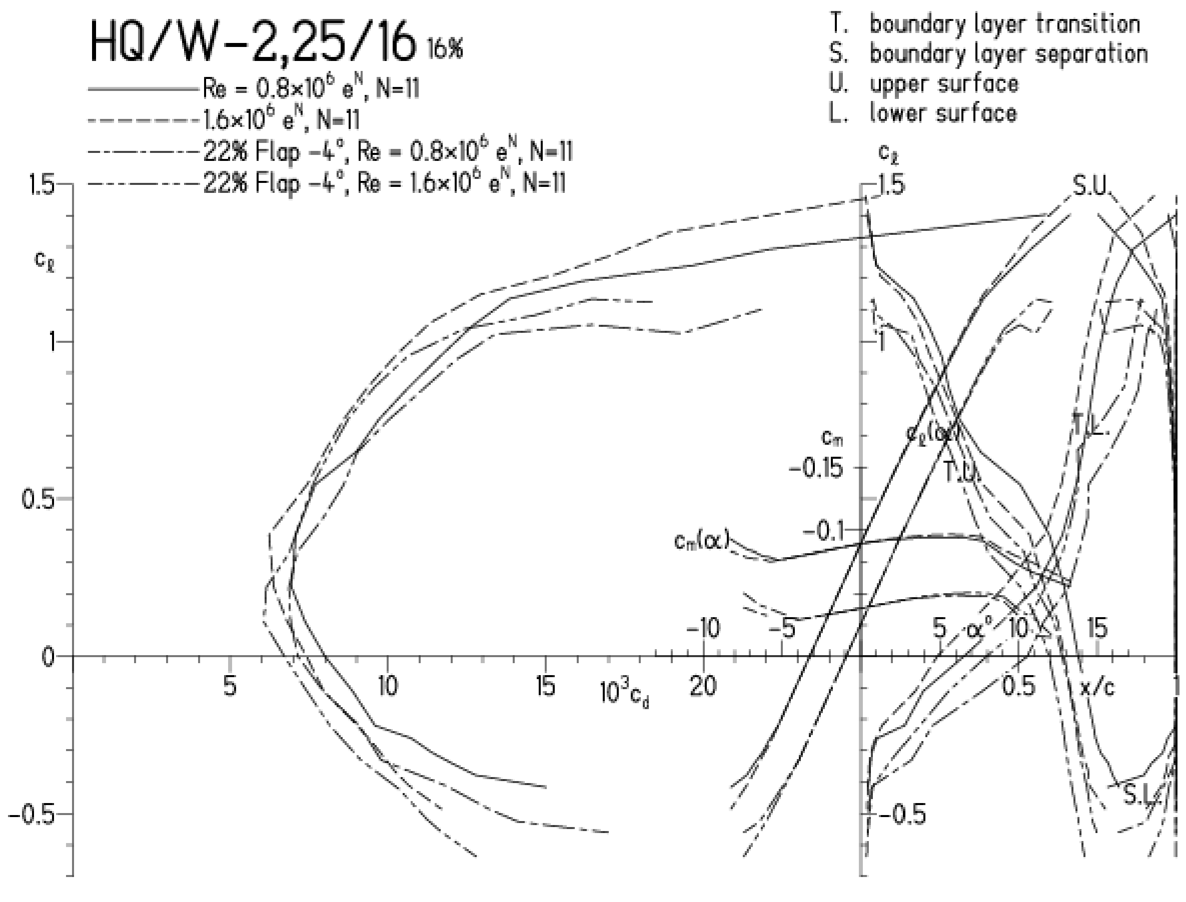
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

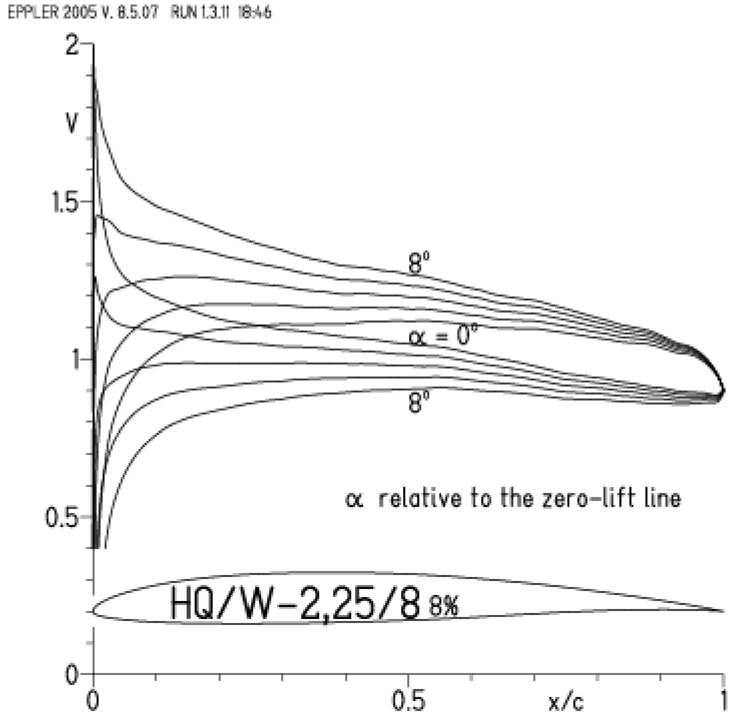
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

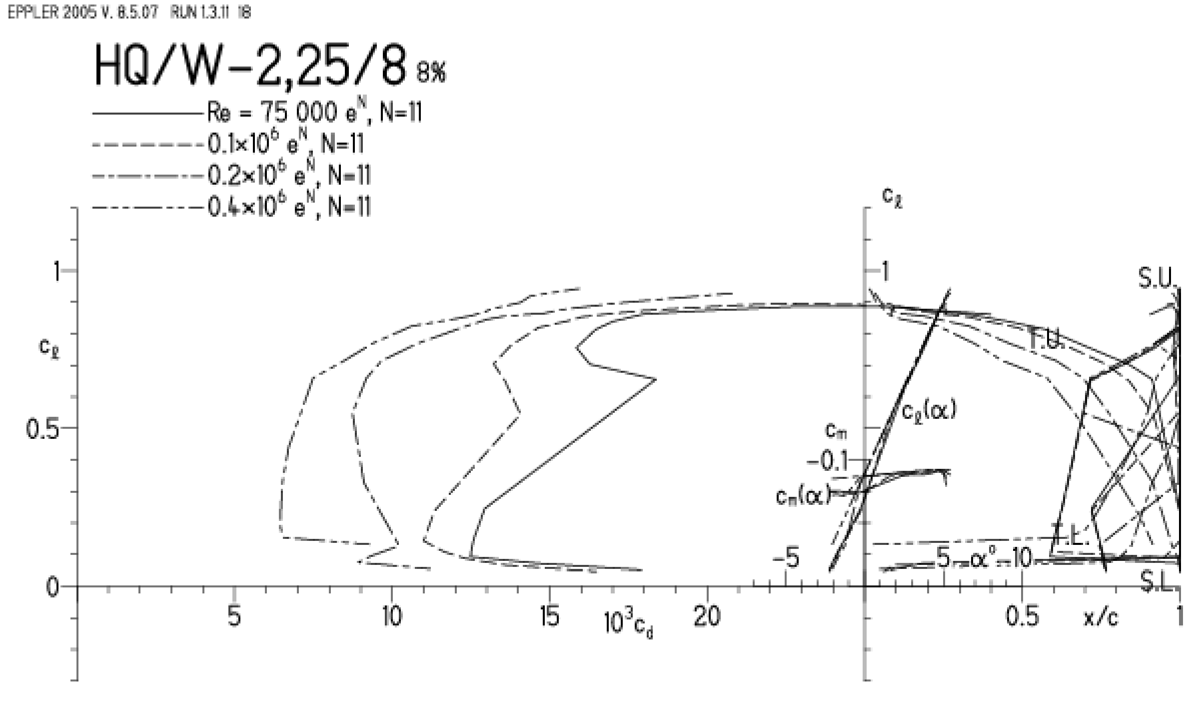


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

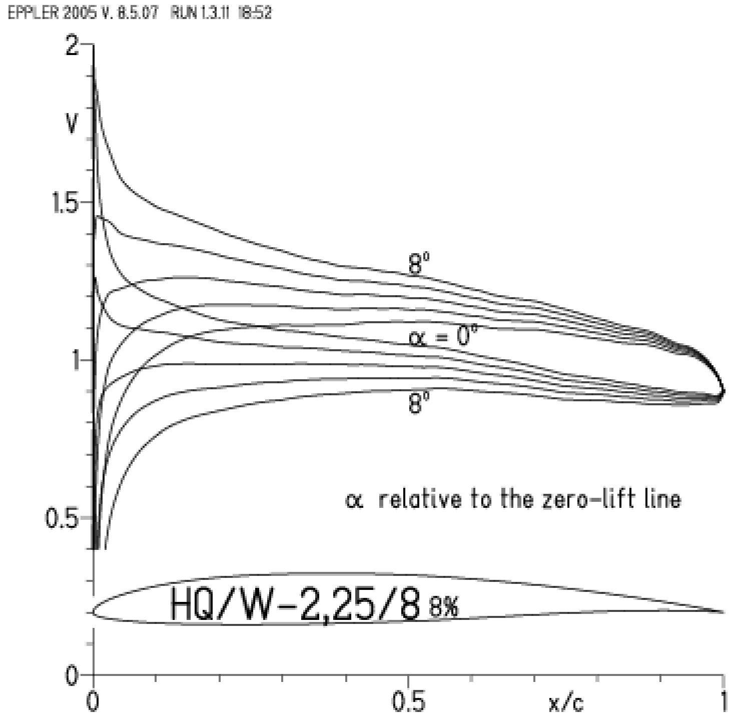


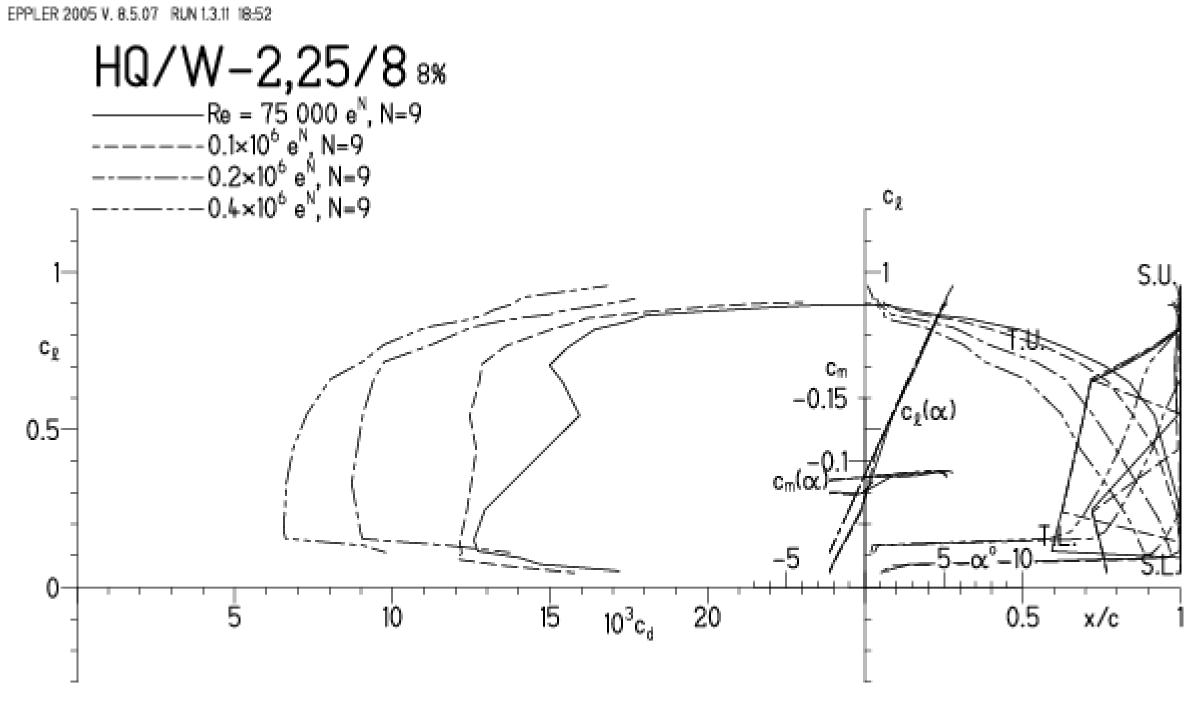
<u>HQ/W-2,25/8</u>, N=11



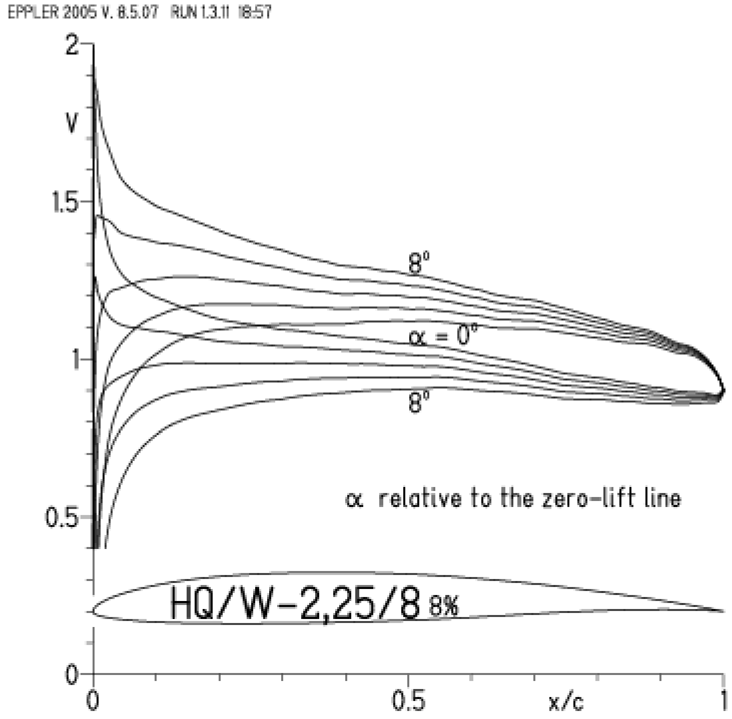


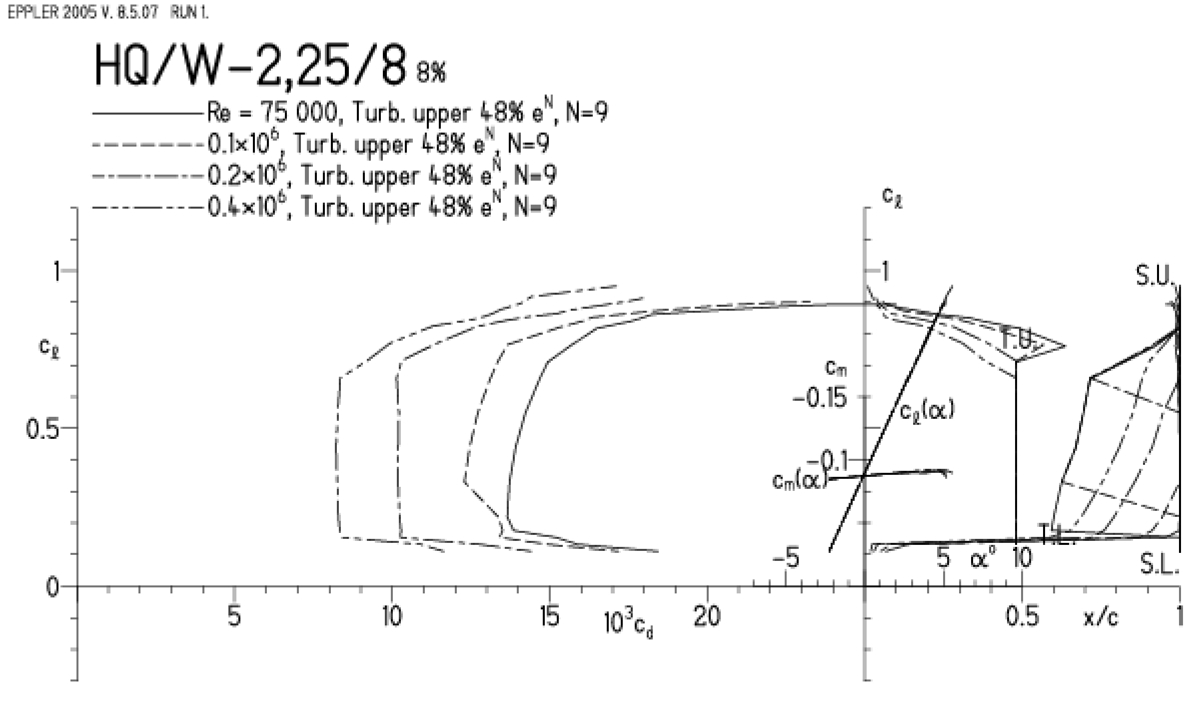
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
0
0.5
x/c
1

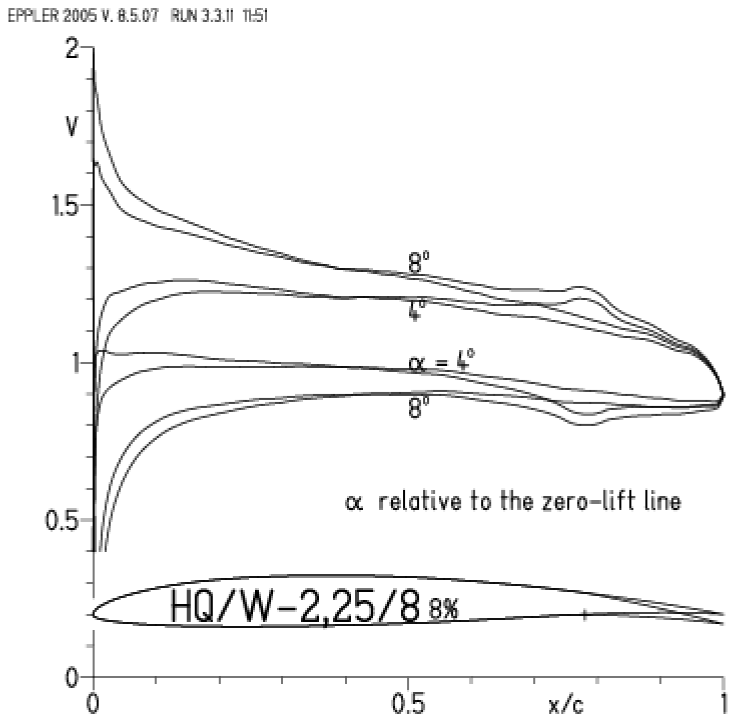

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5 -α°- 10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

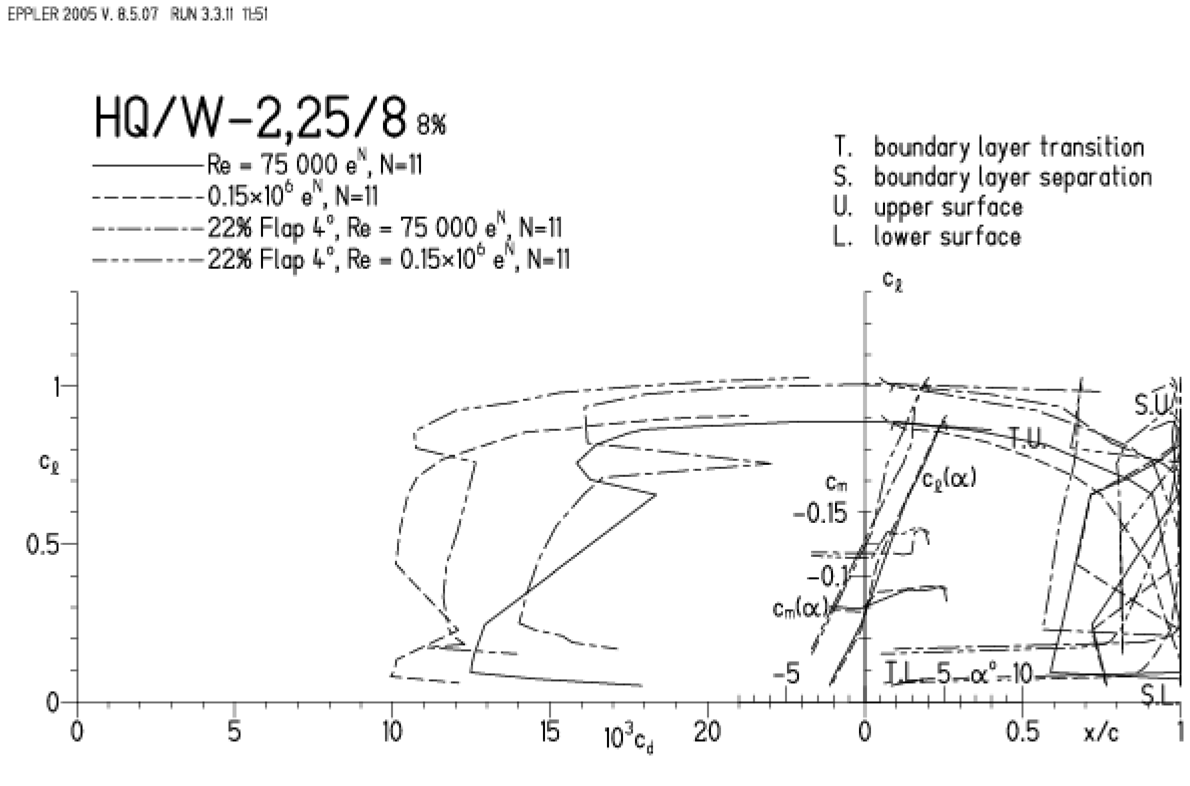
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



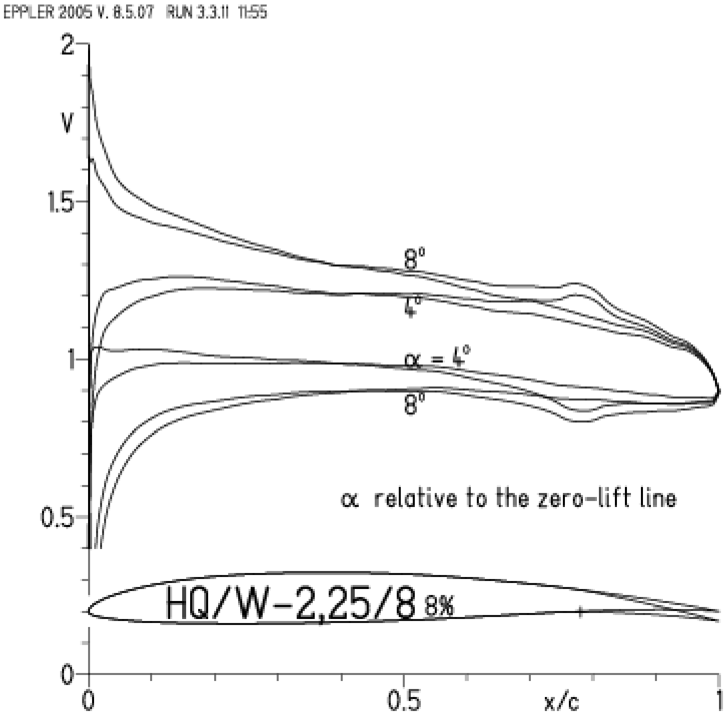


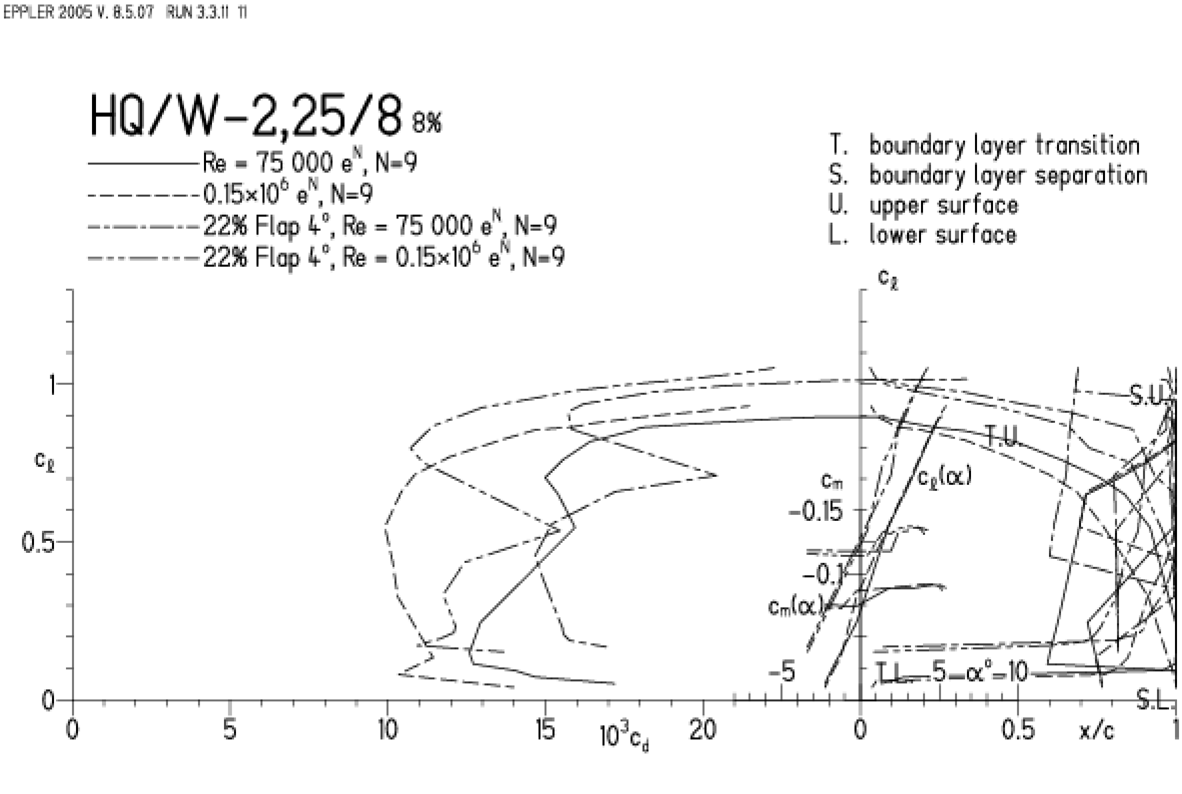
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



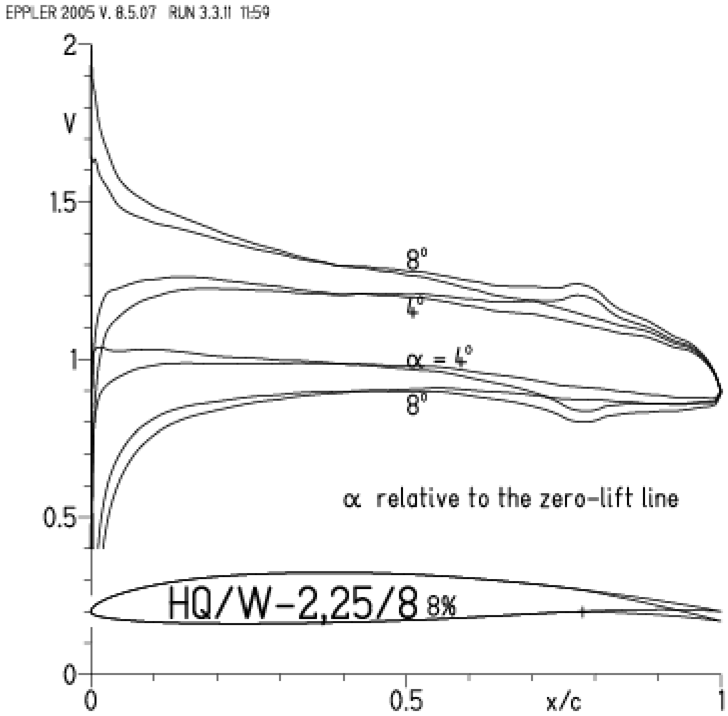


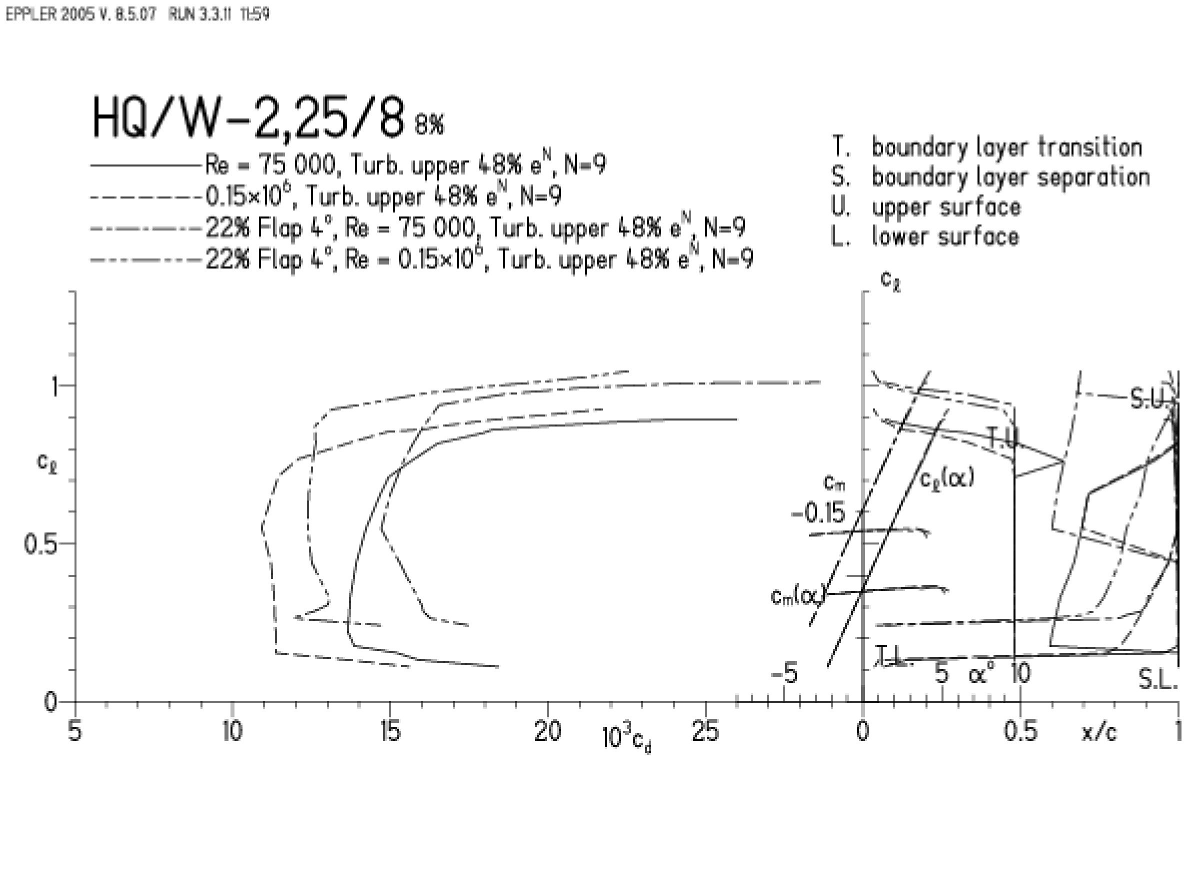
<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag





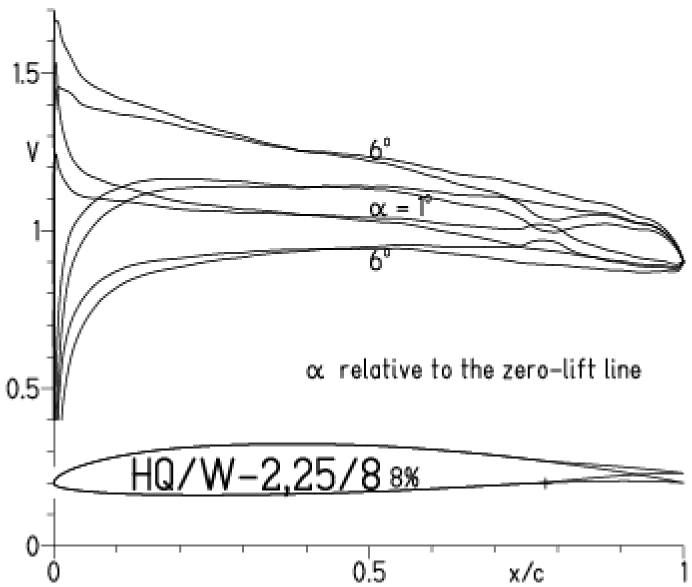
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



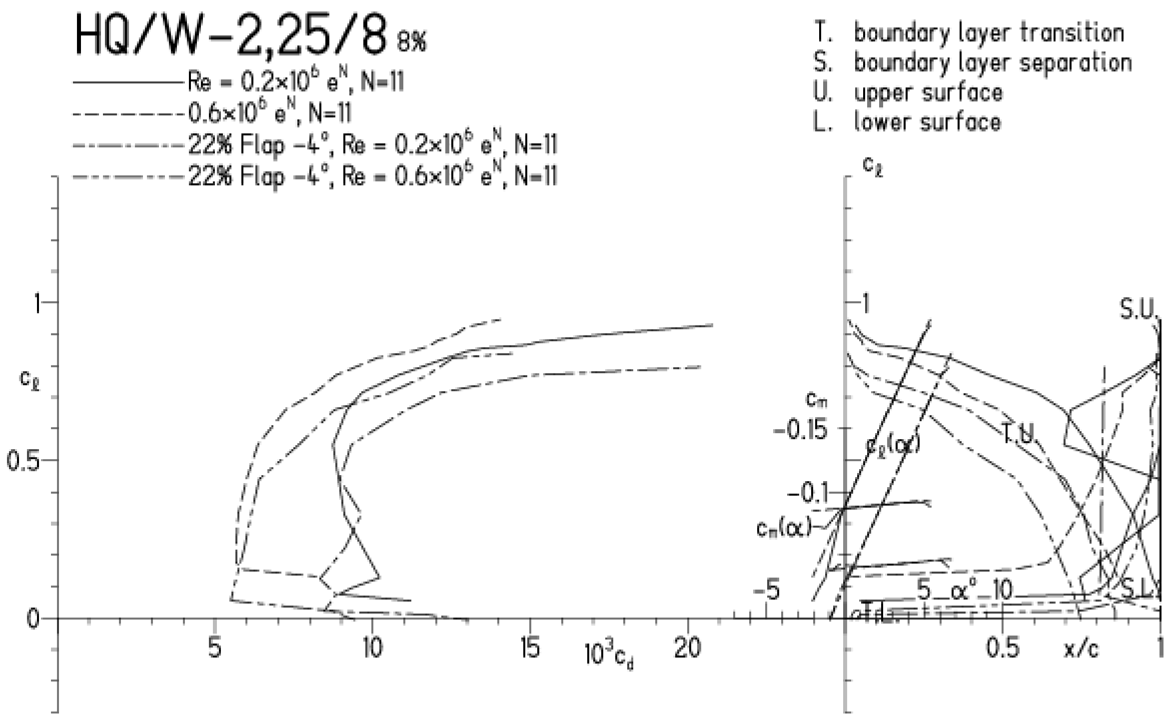


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

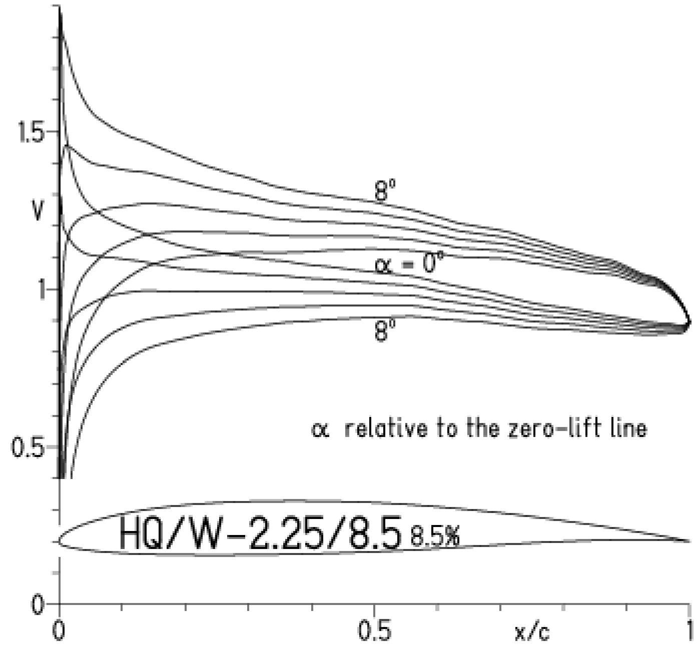


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

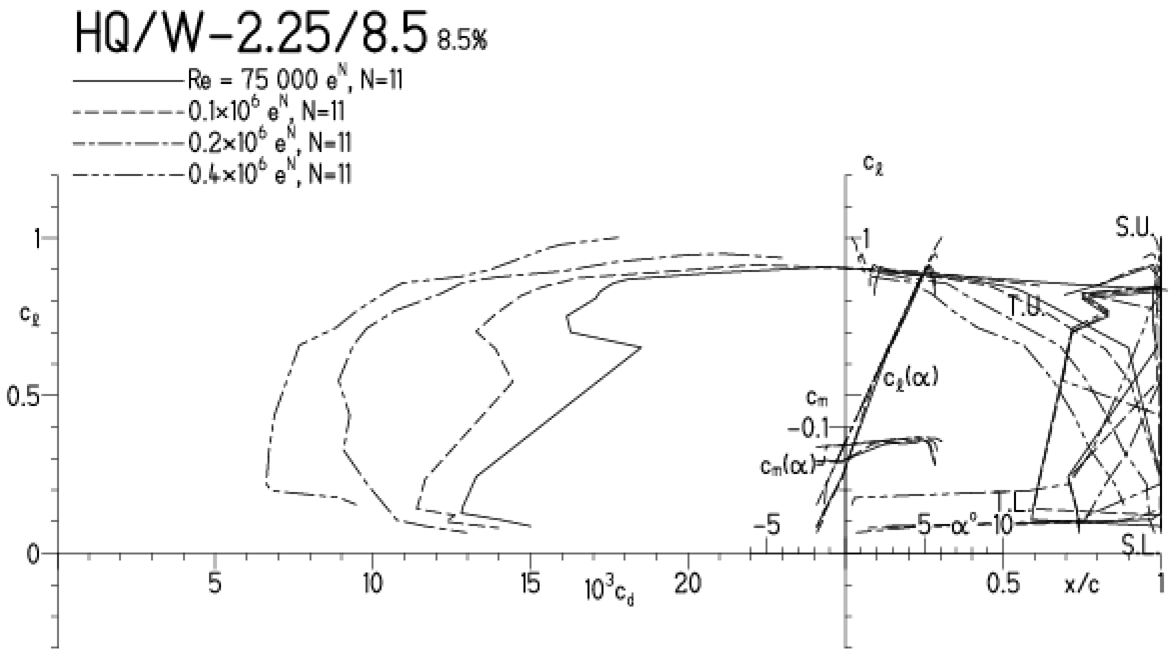


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

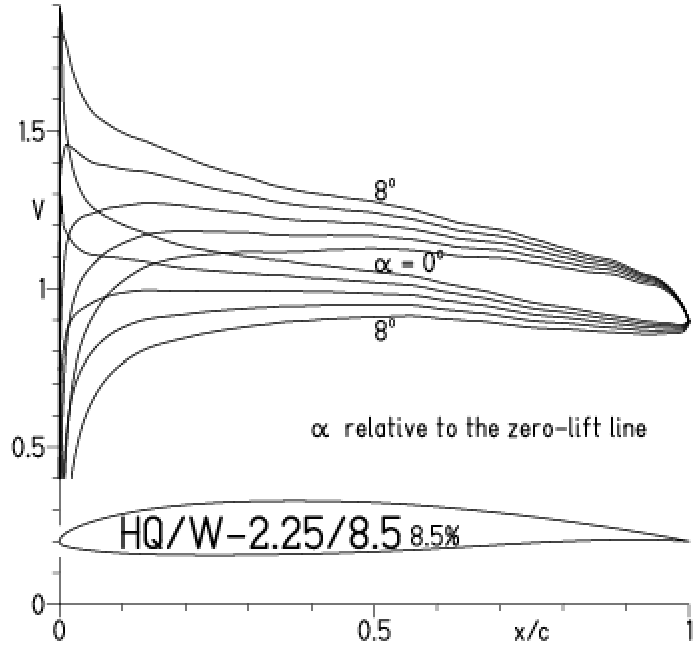


EPPLER 2005 V

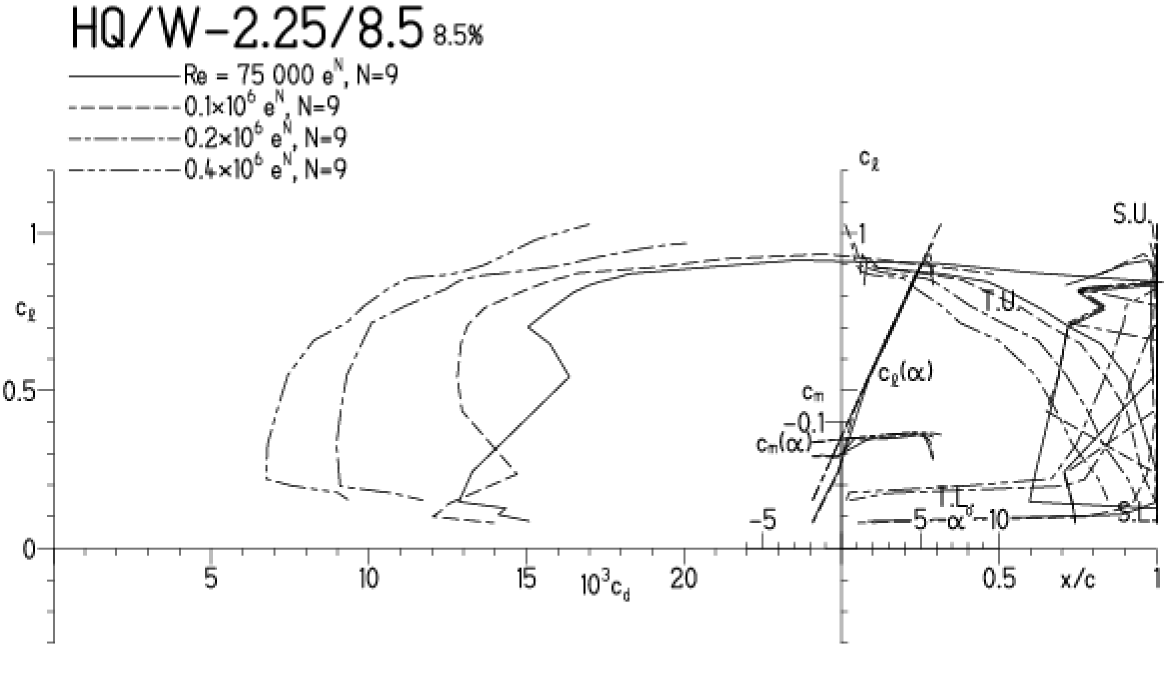


HQ/W-2,25/8,5, N=9

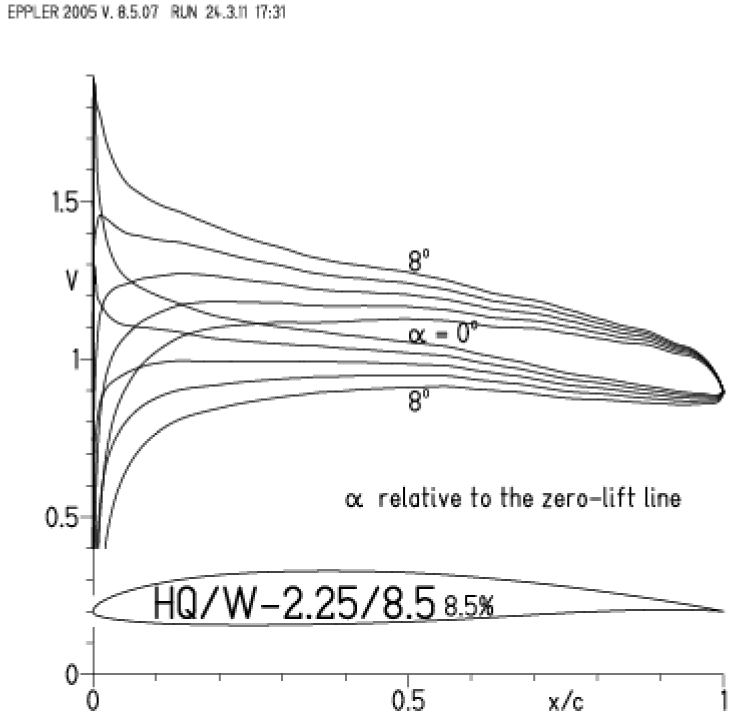
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

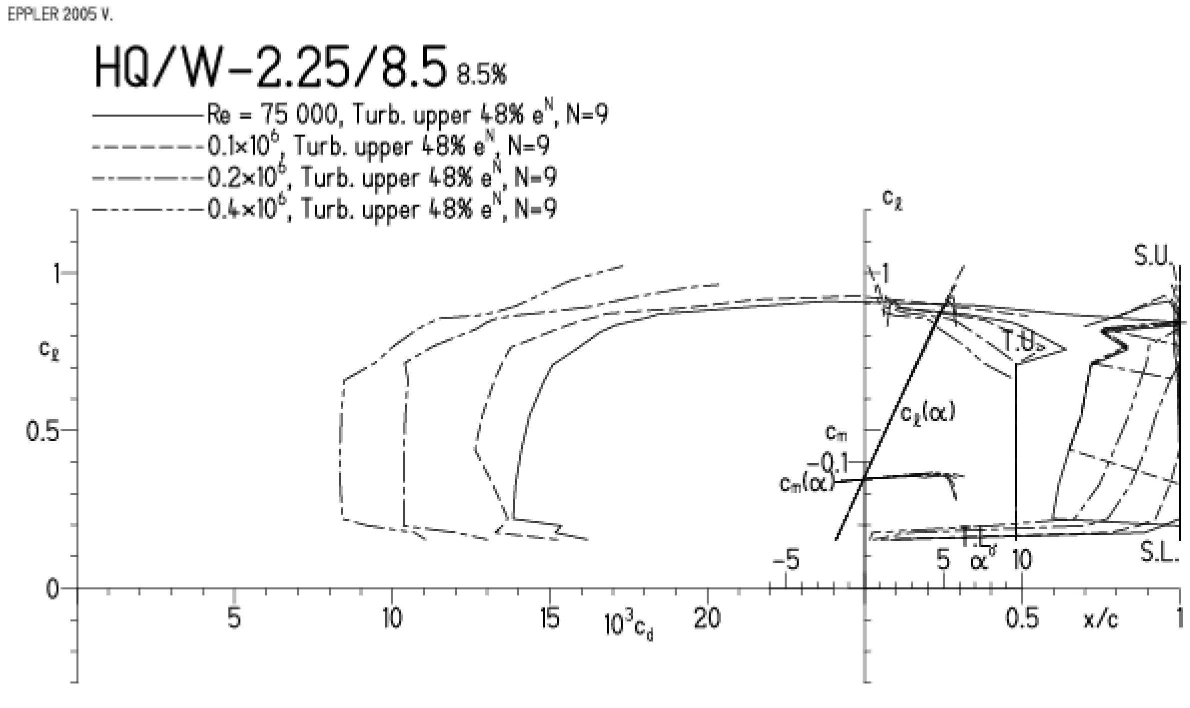


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

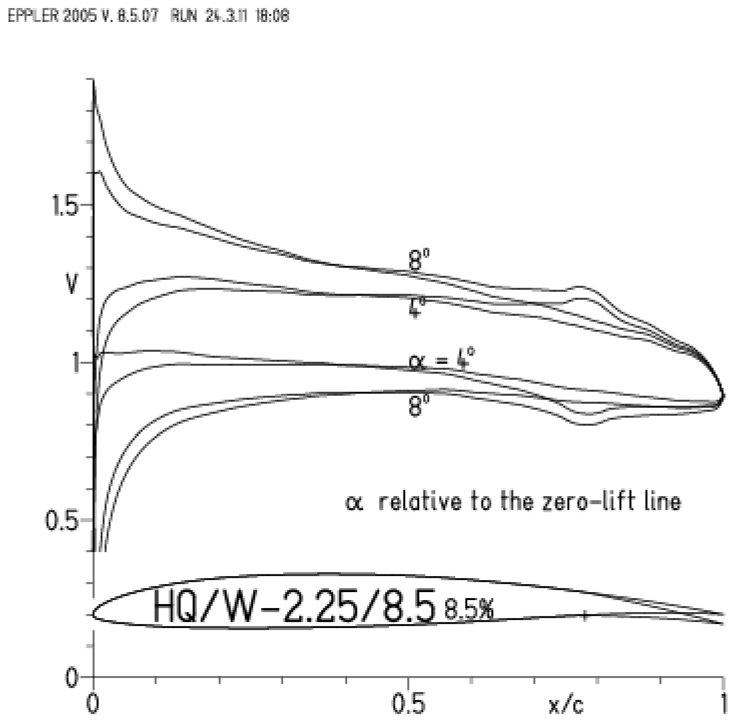


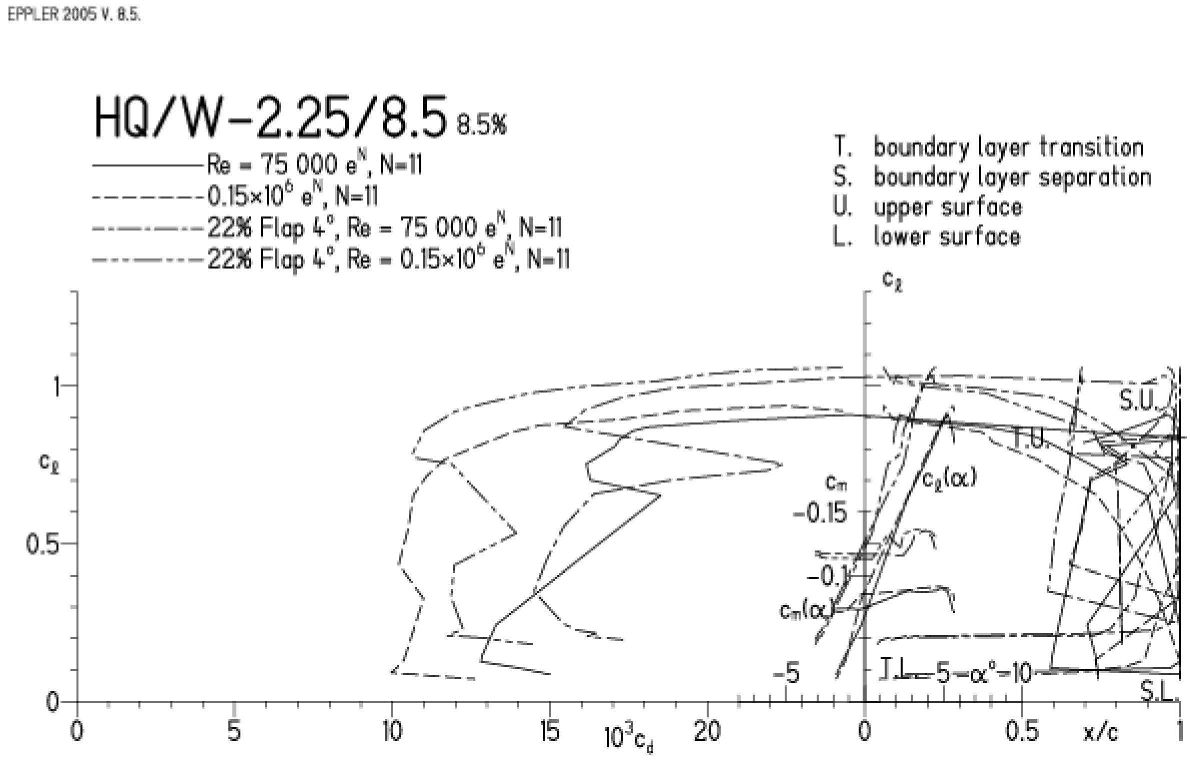
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





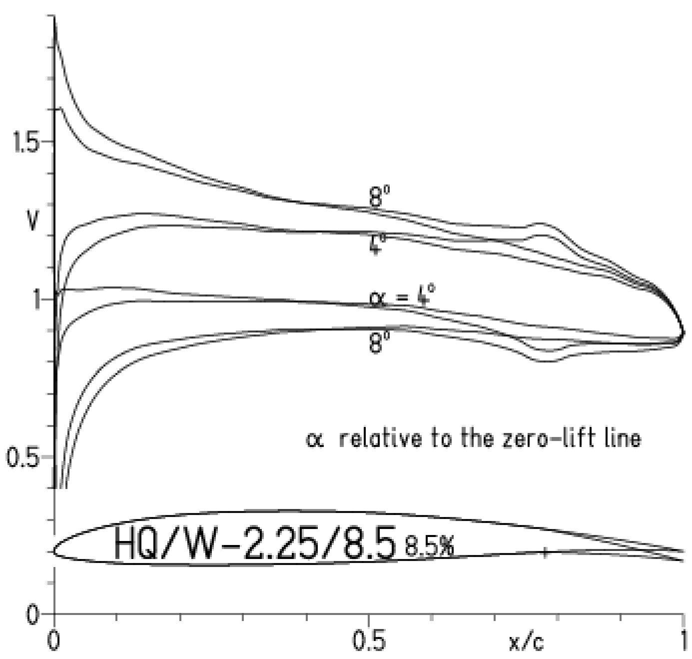
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



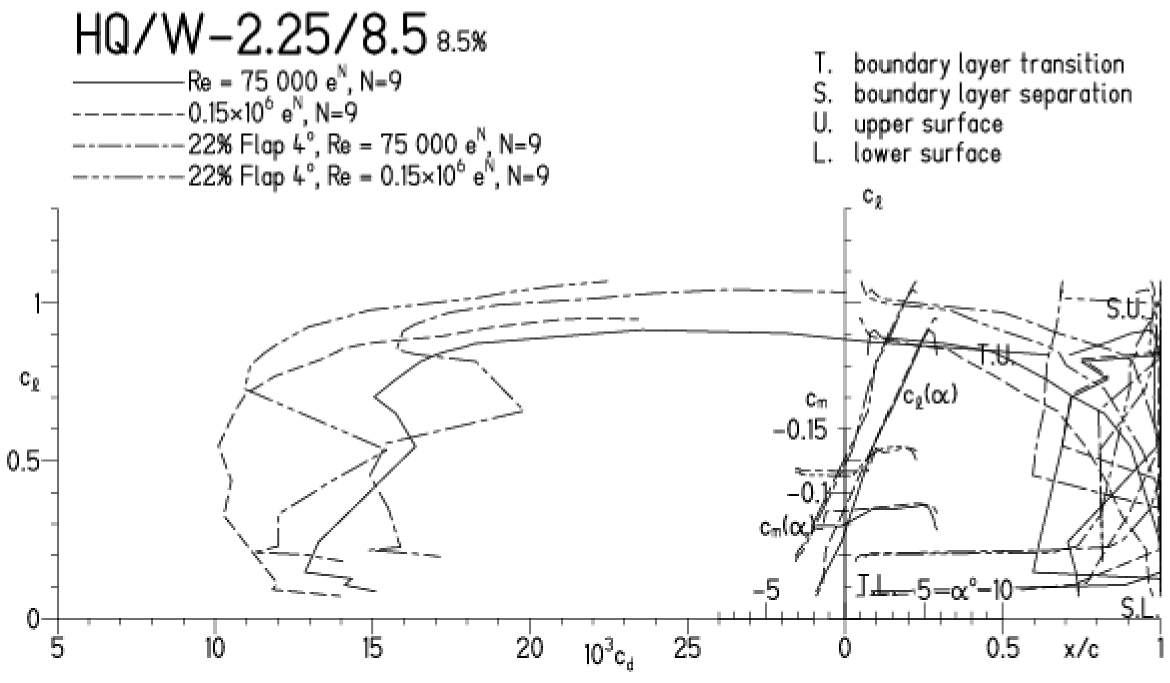


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

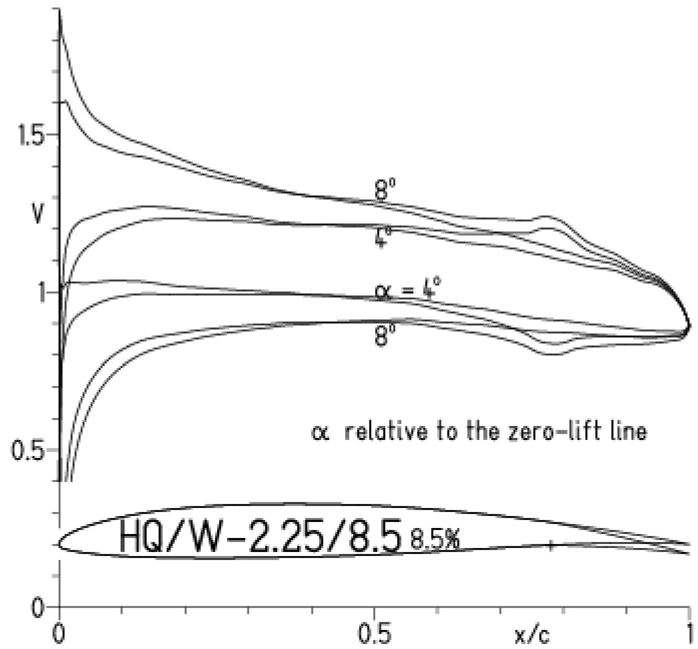


EPPLER 2005 V.

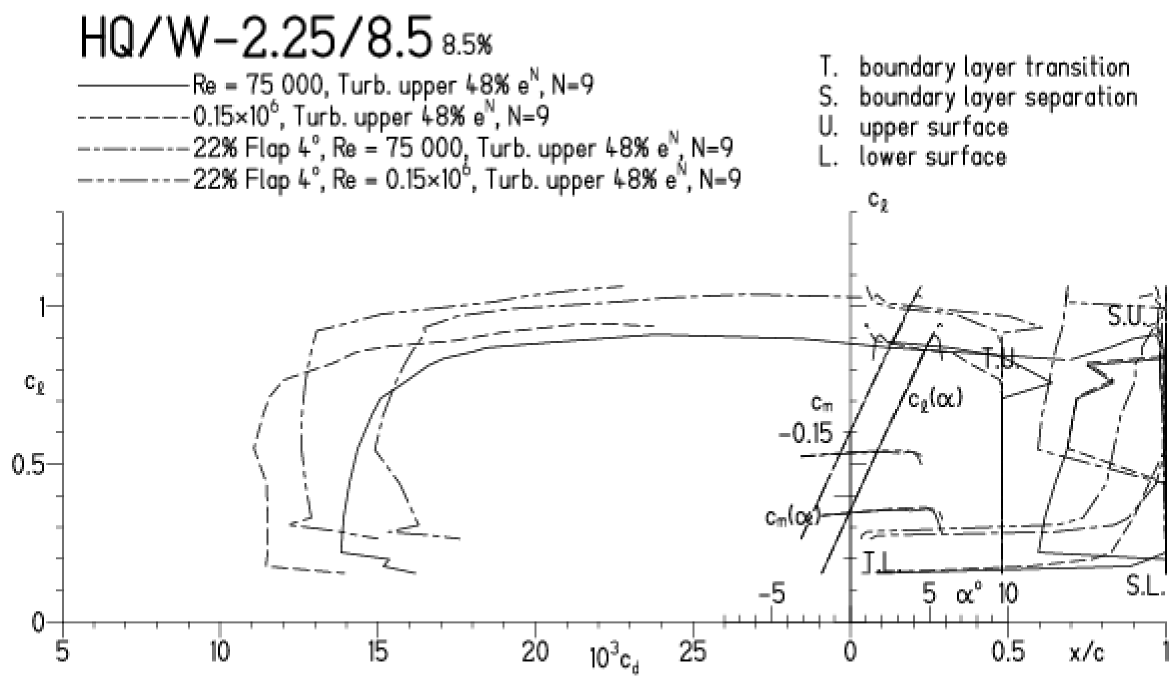


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

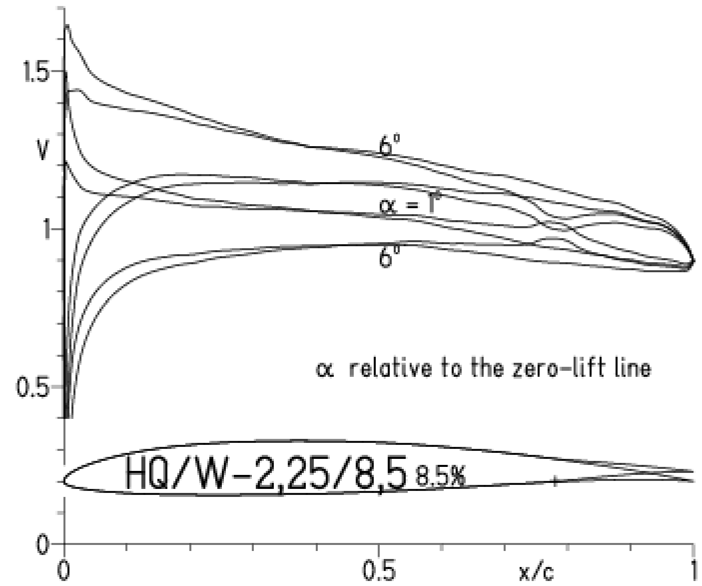


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

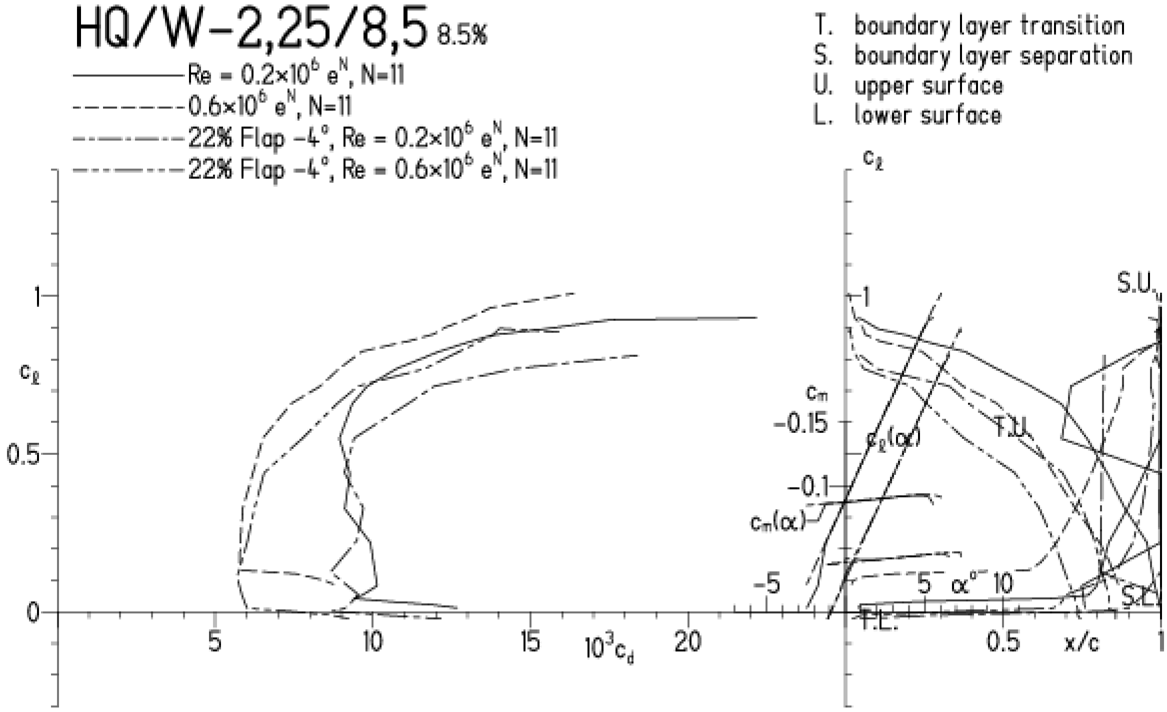


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

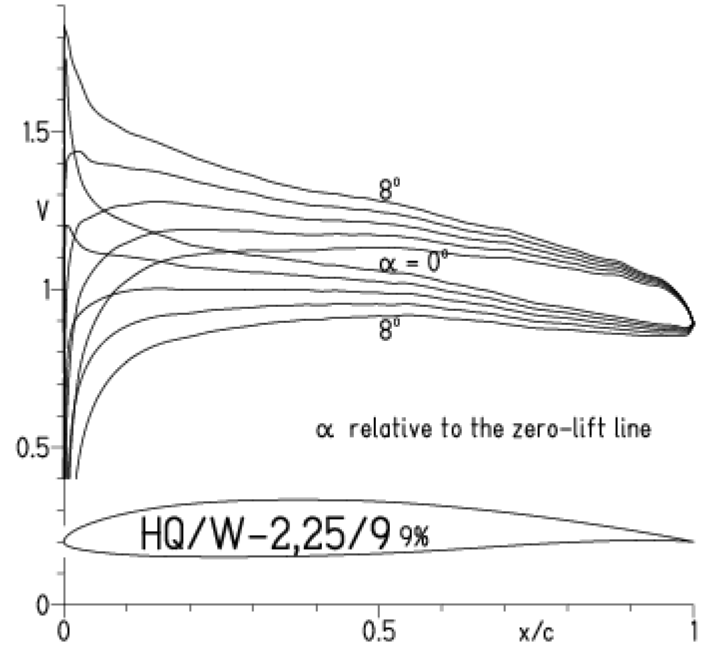


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

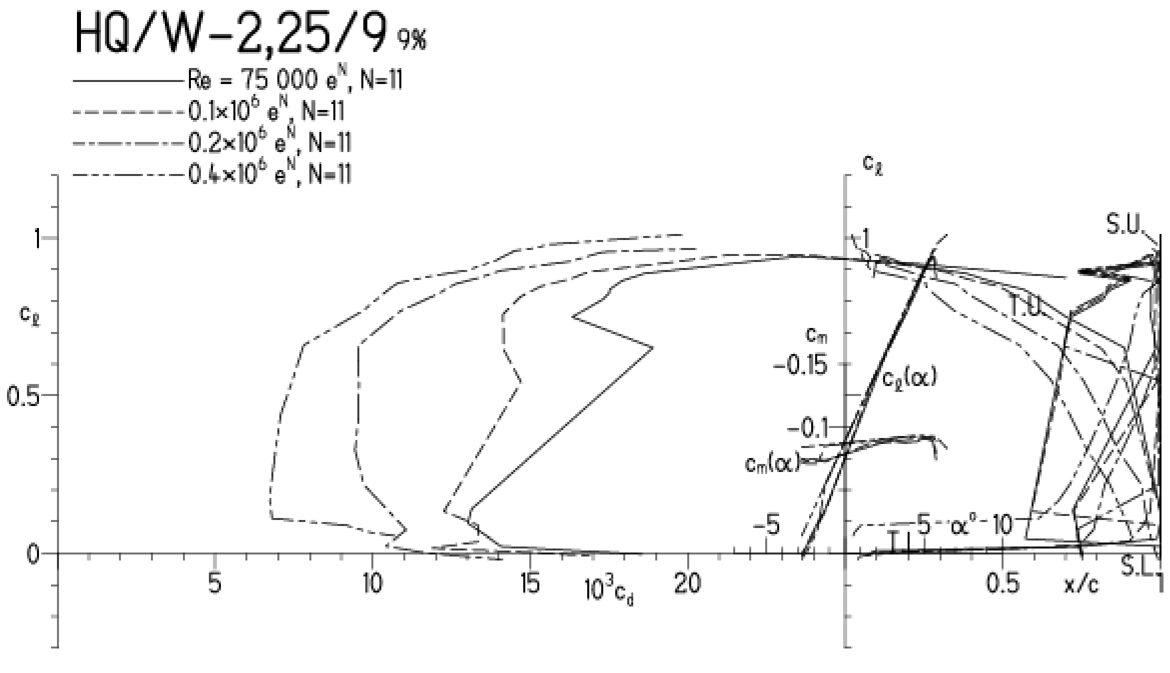


<u>HQ/W-2,25/9</u>, N=11

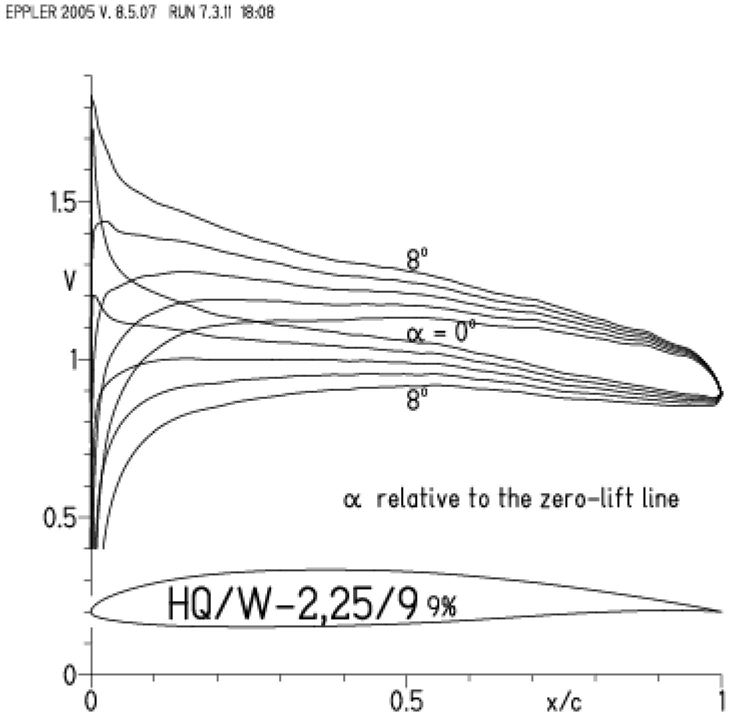
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

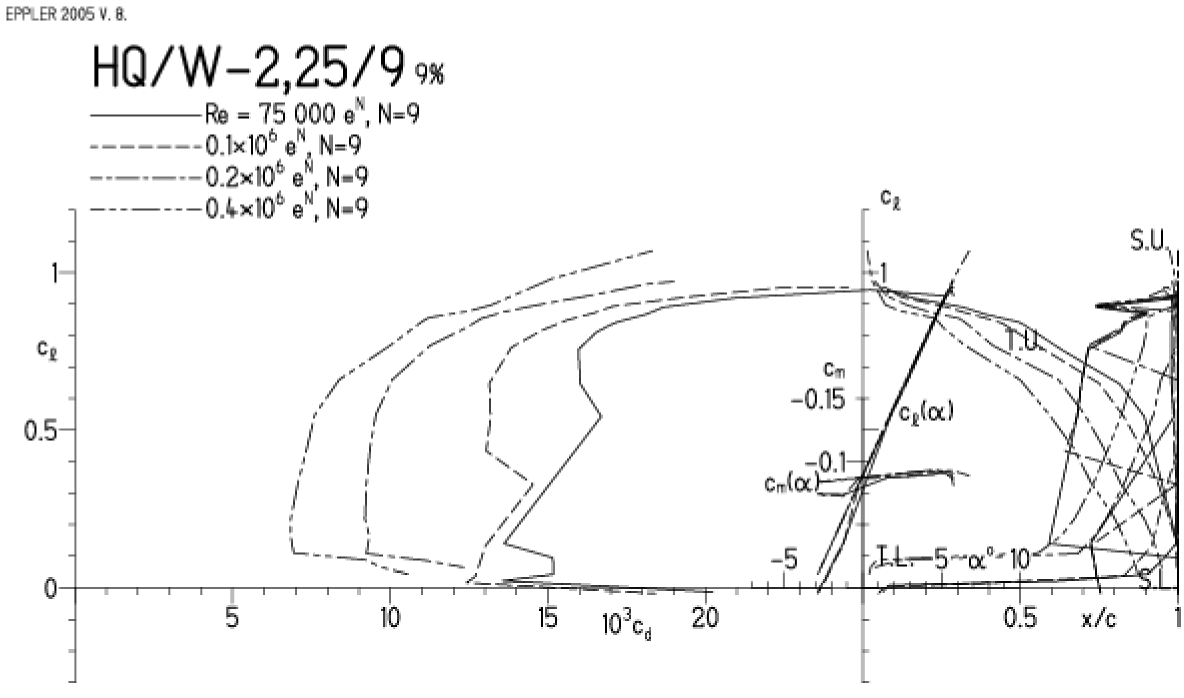


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

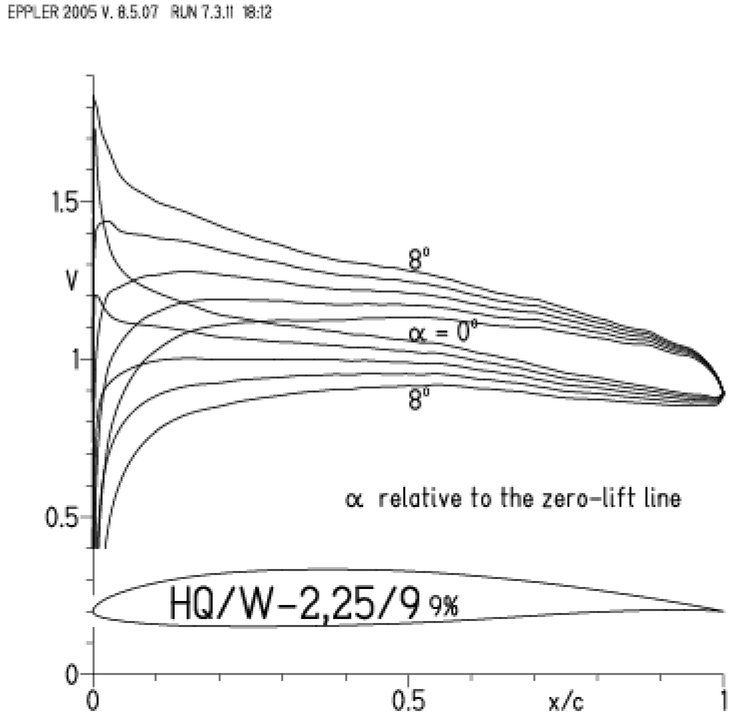


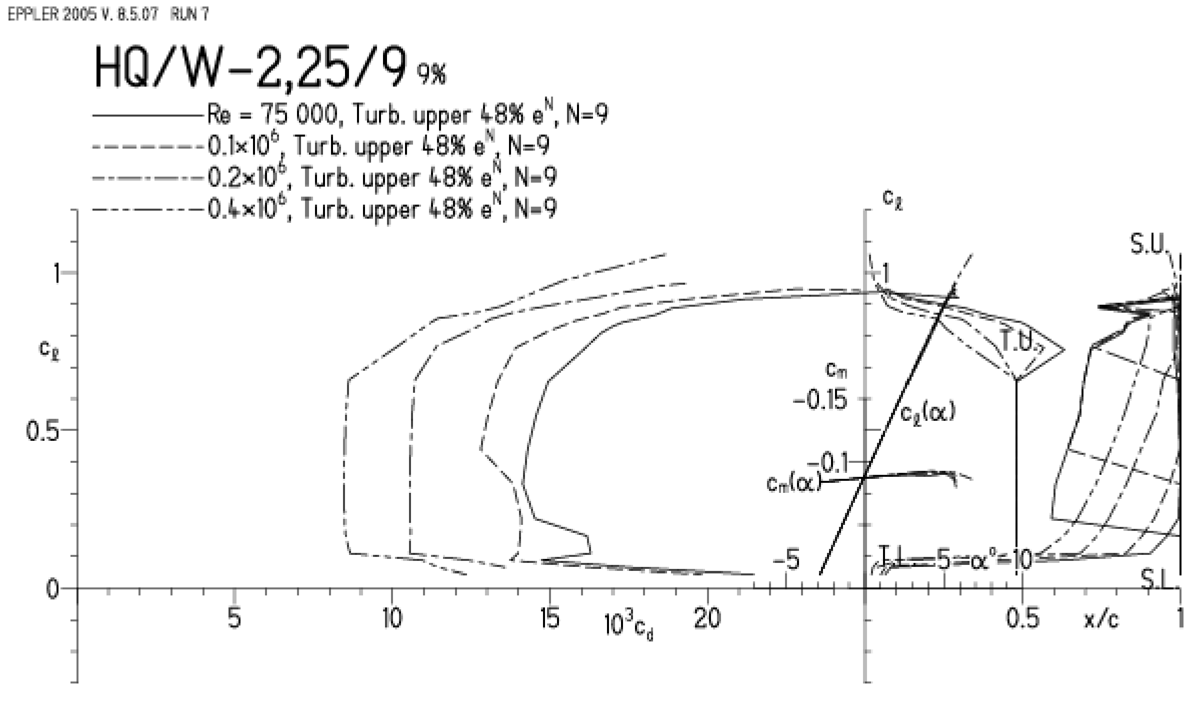
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

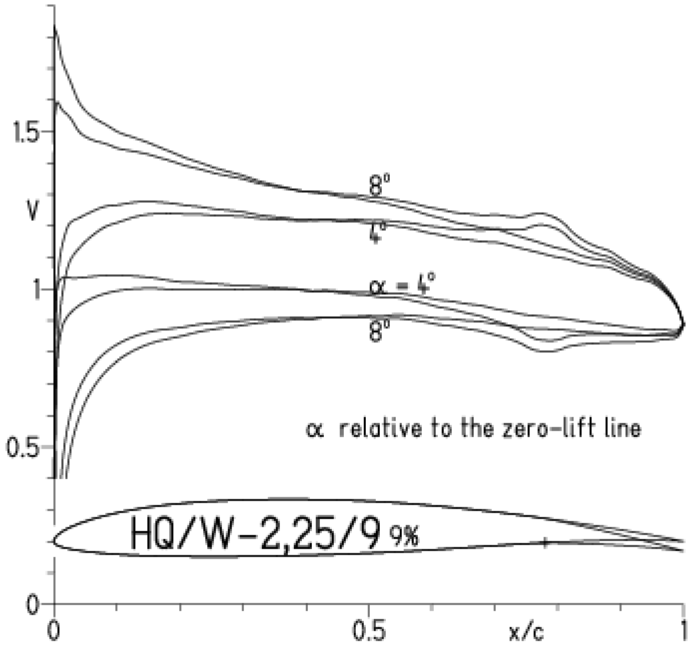
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



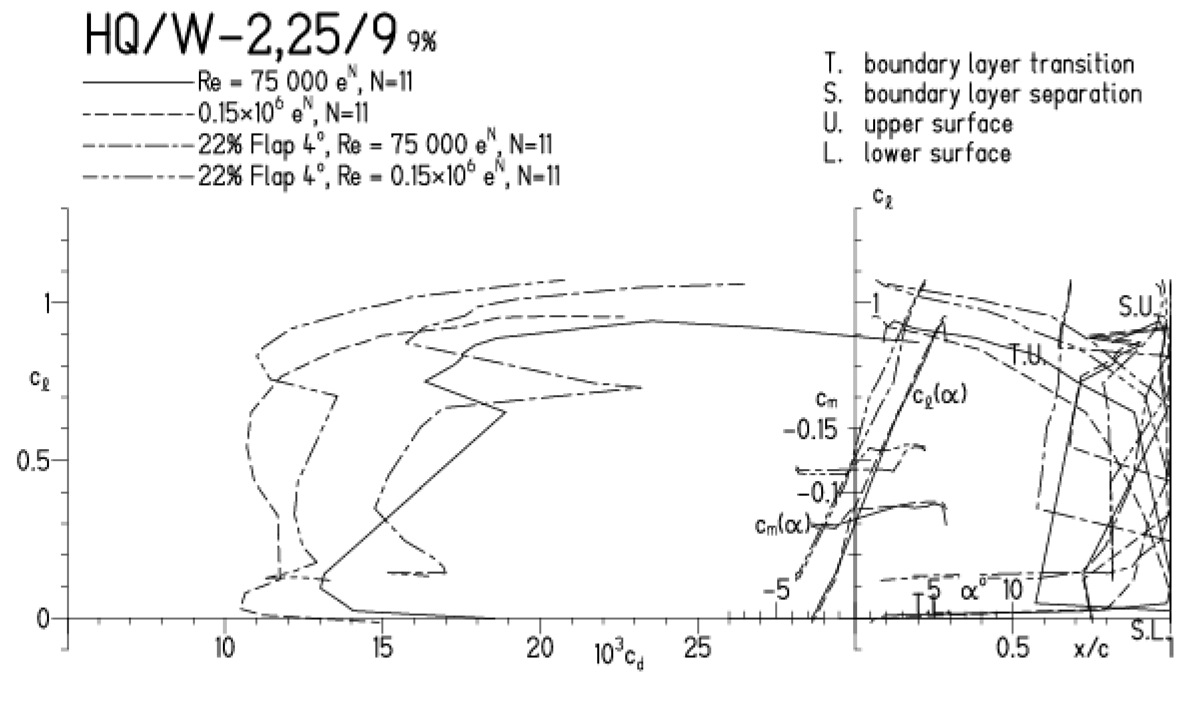


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

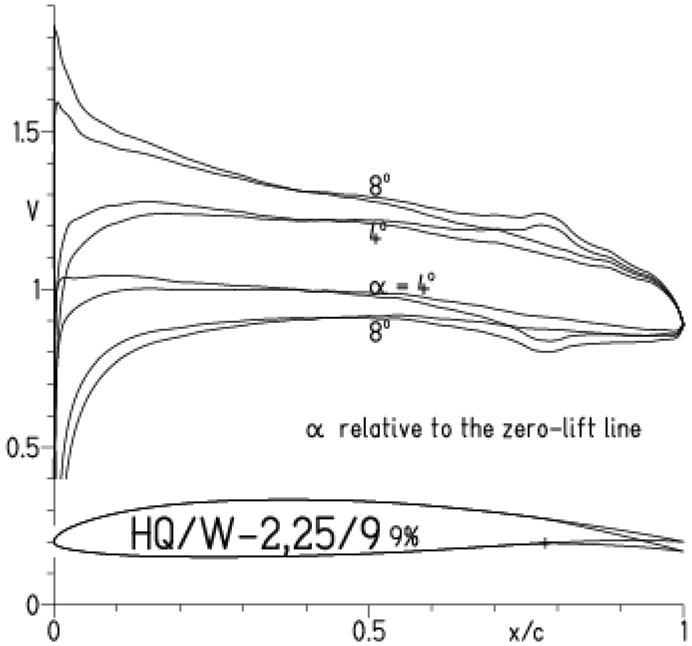


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

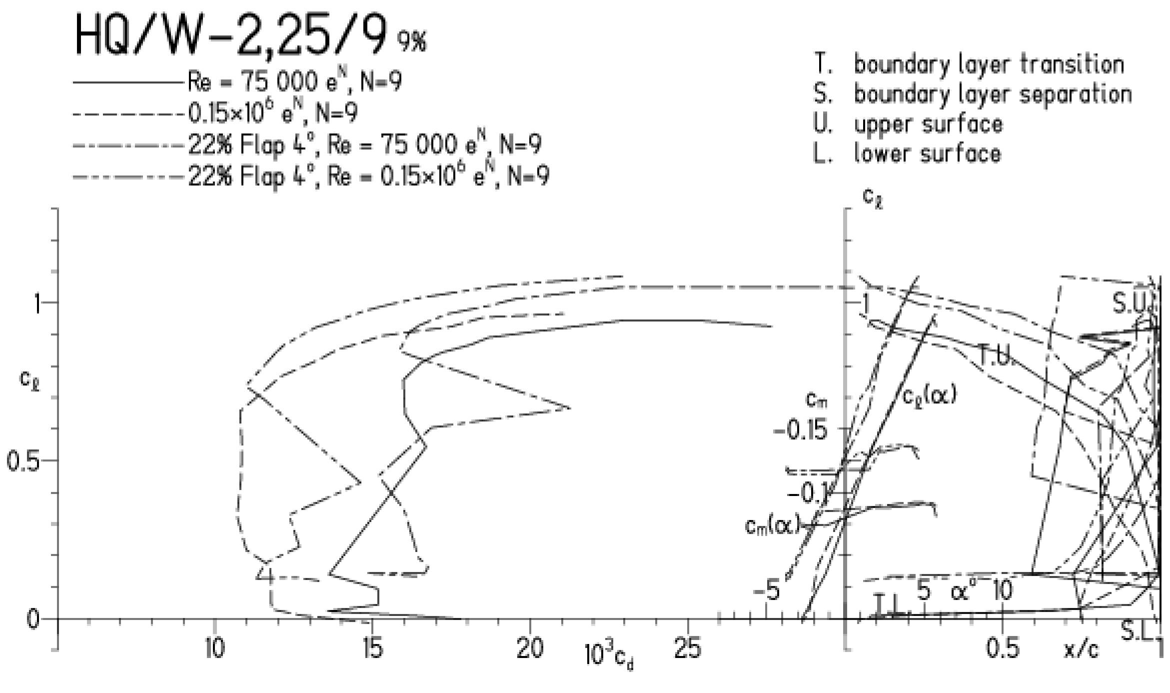


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

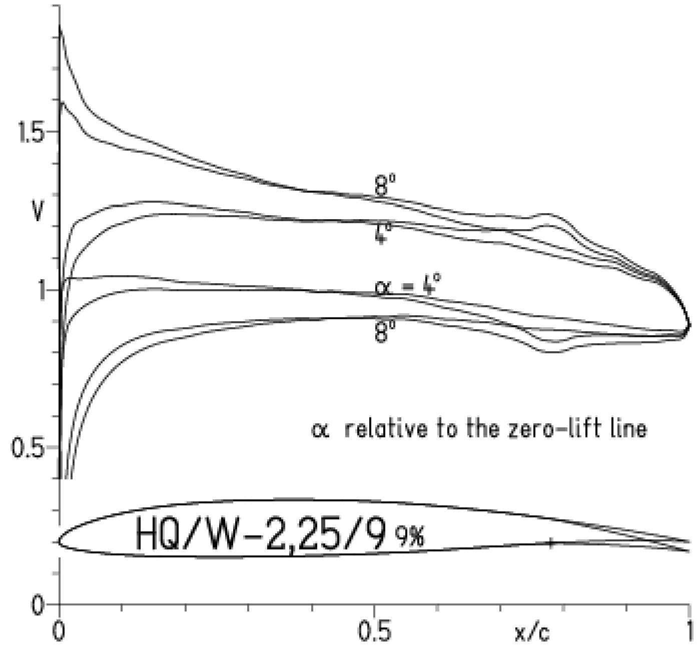


EPPLER 2005 V. 8.5.07 RUN 8.3.1

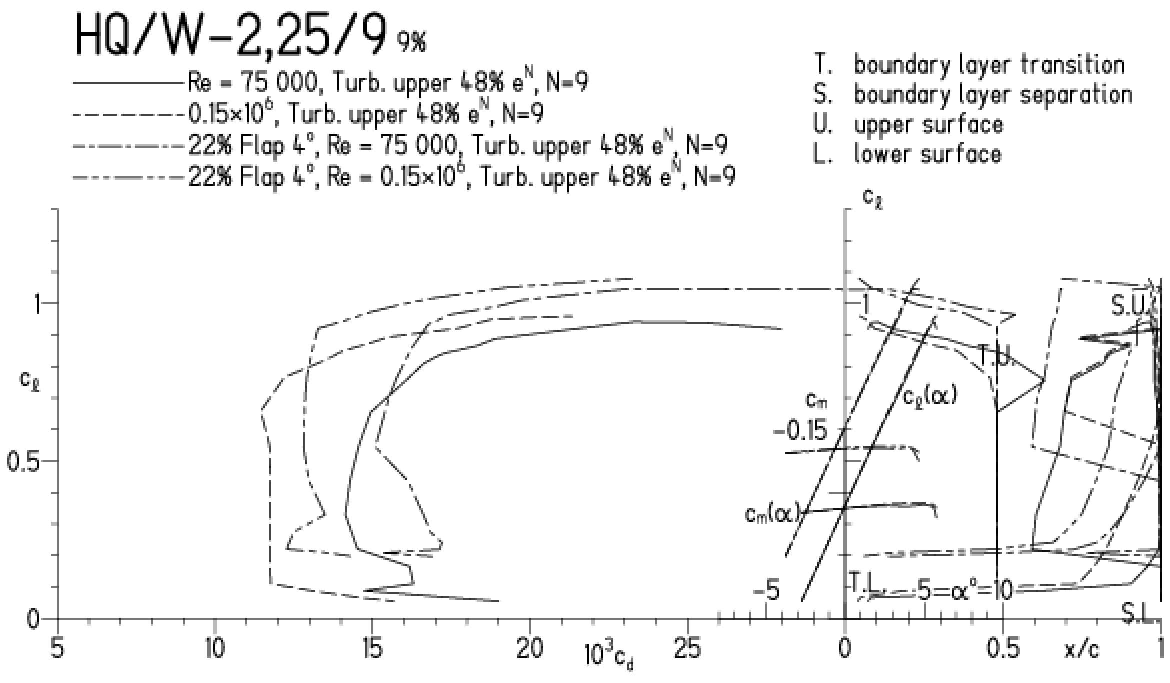


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

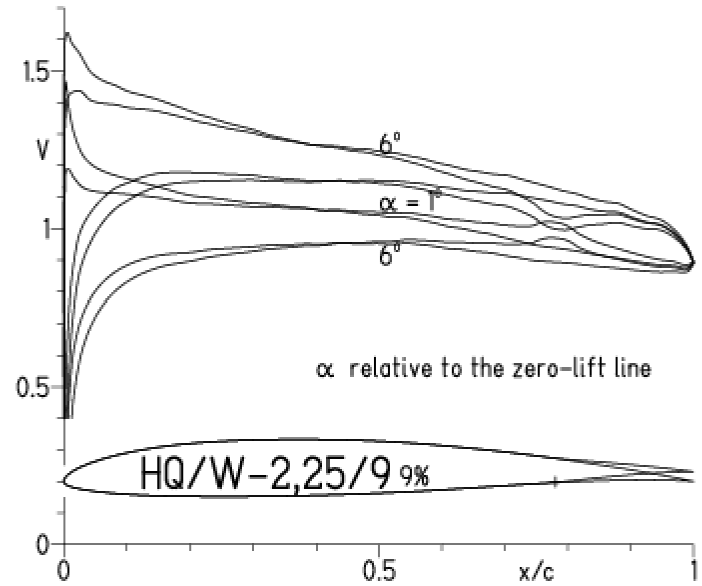


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

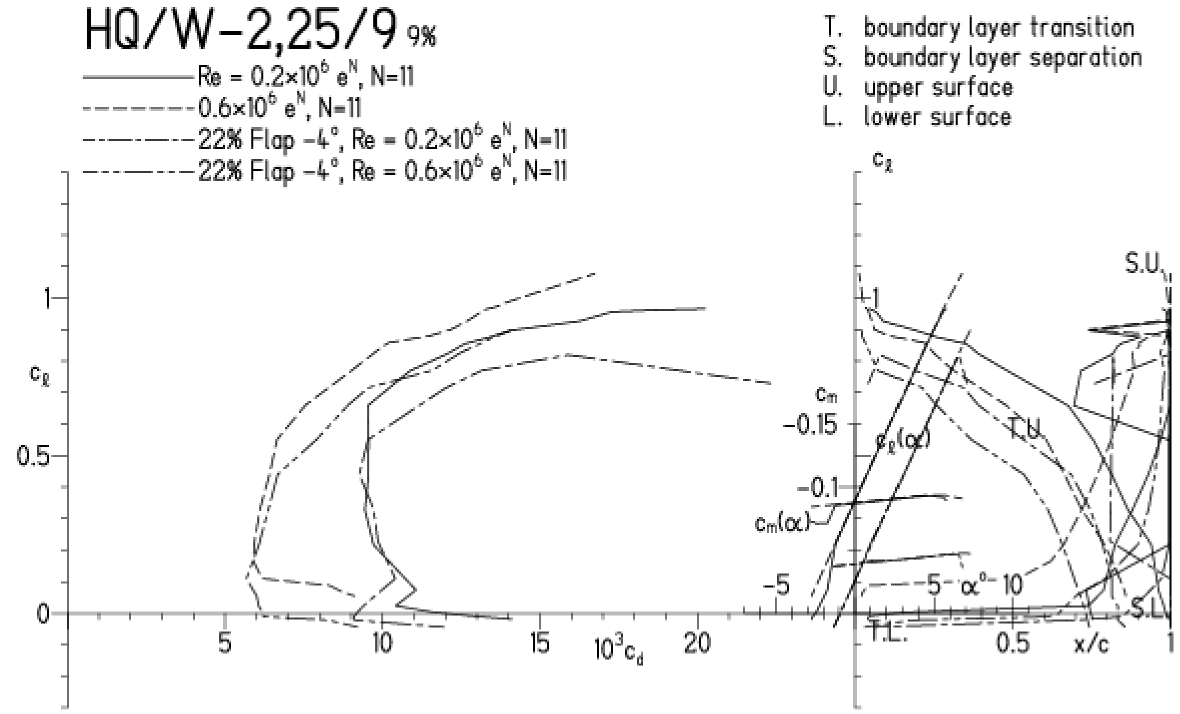


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

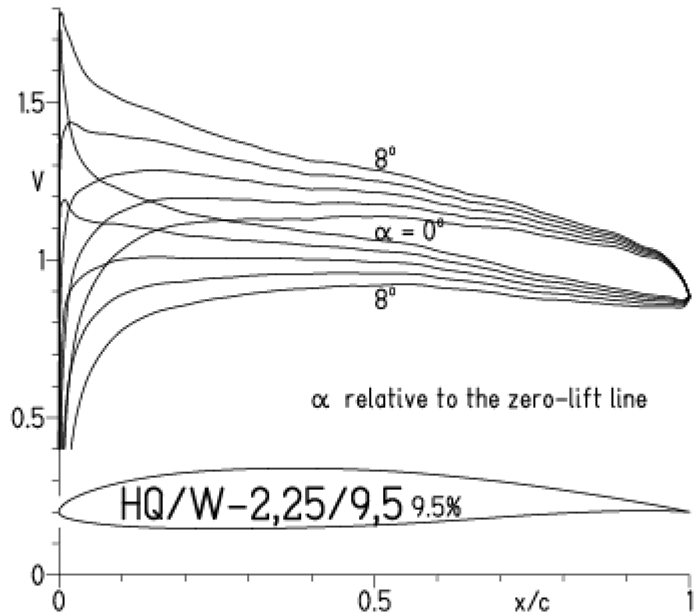


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

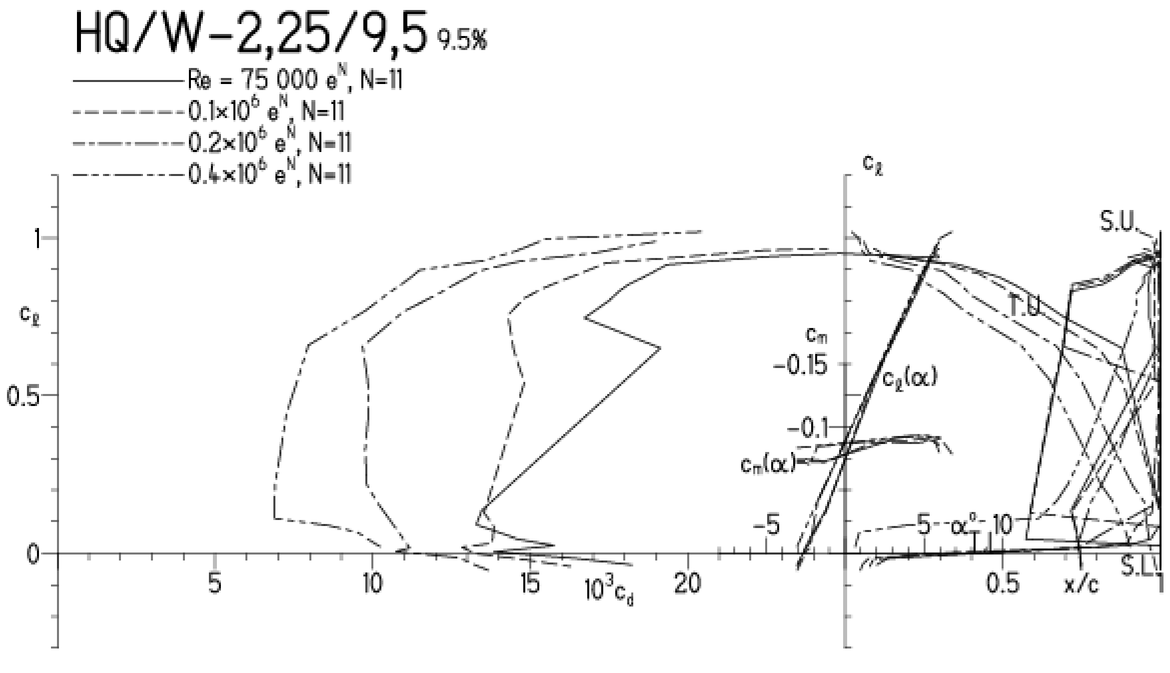


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

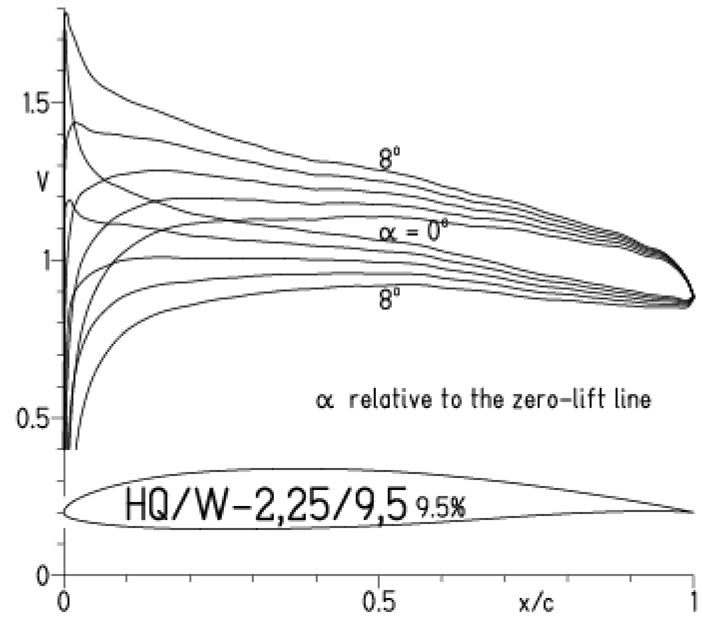


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

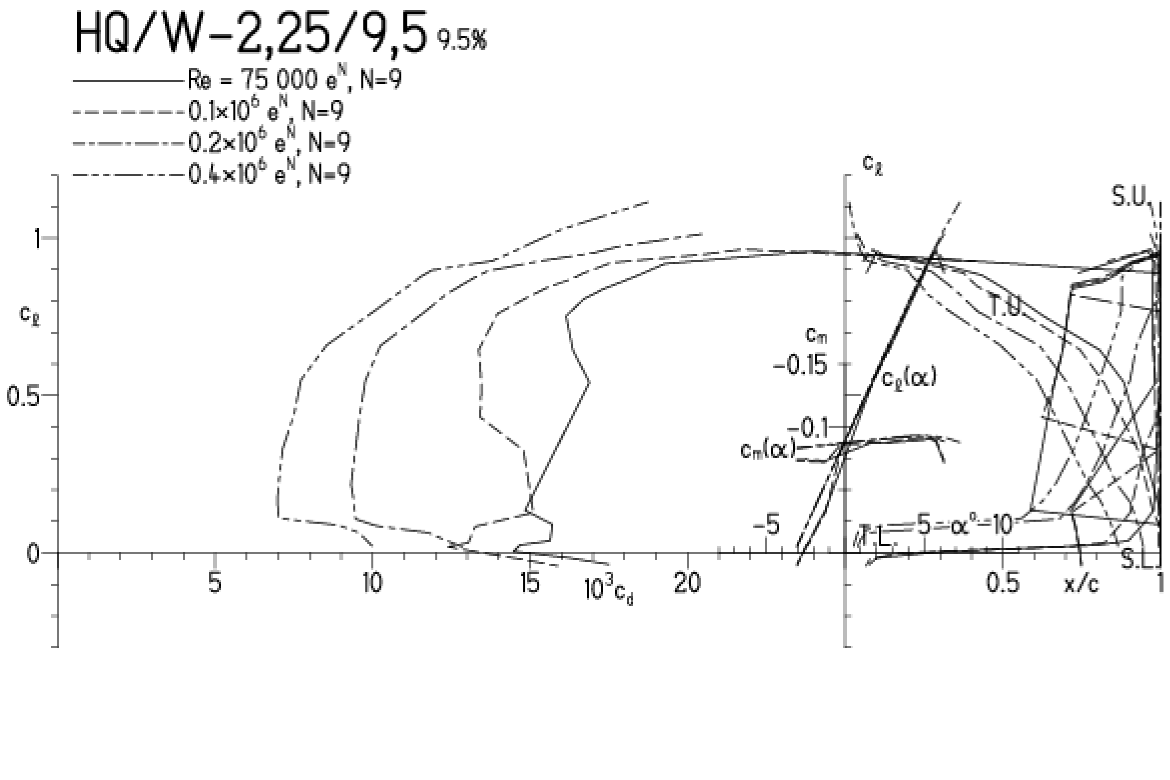


<u>HQ/W-2,25/9,5</u>, N=9

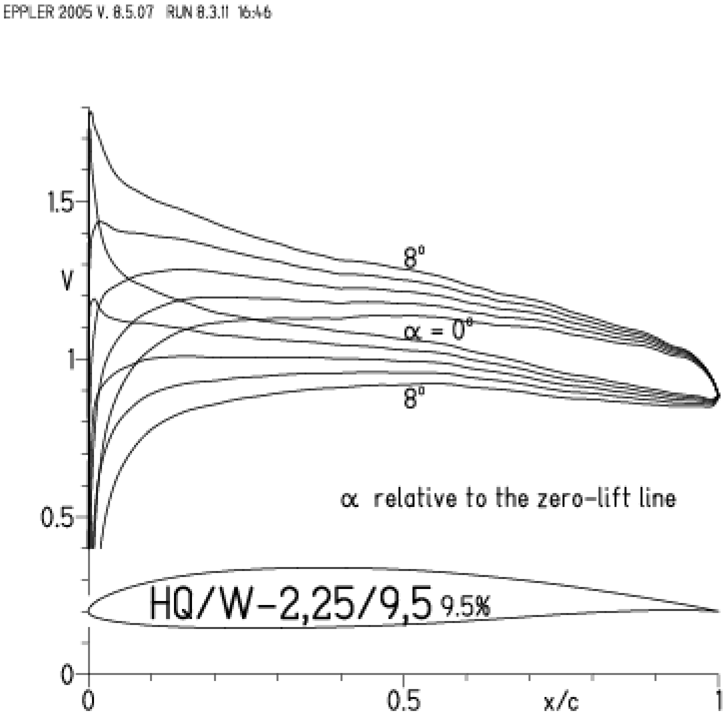
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

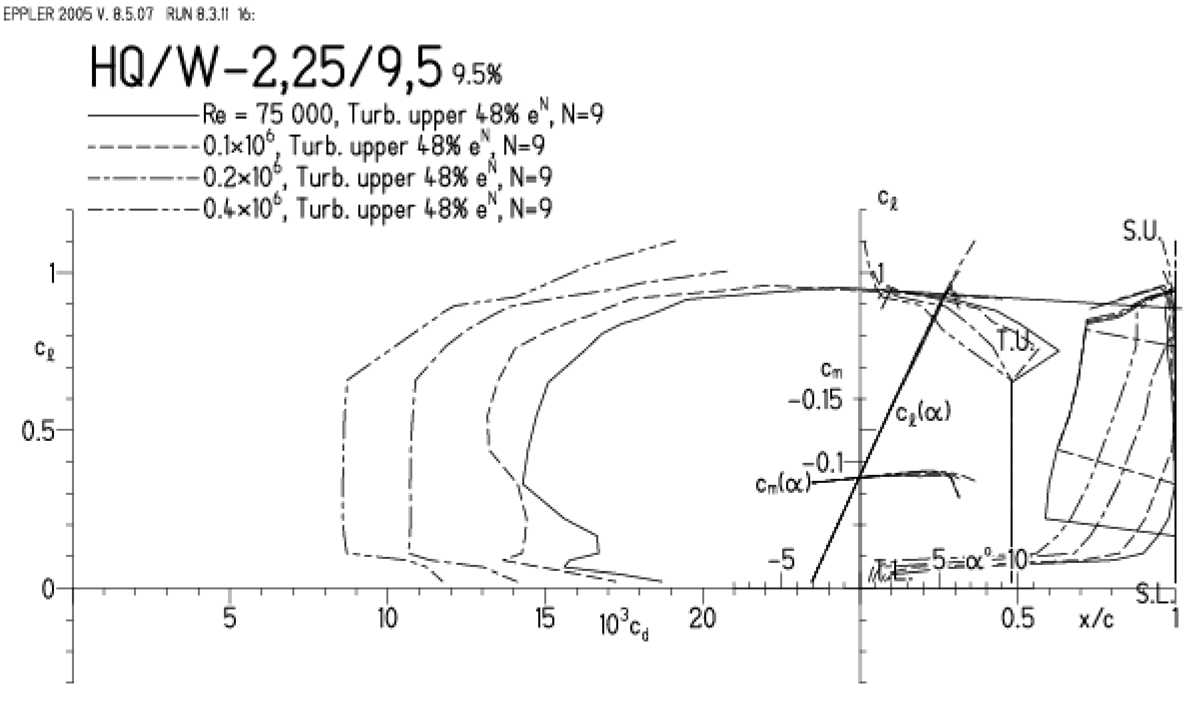


EPPLER 2005 V. 8.5.07 RUN 8.3.



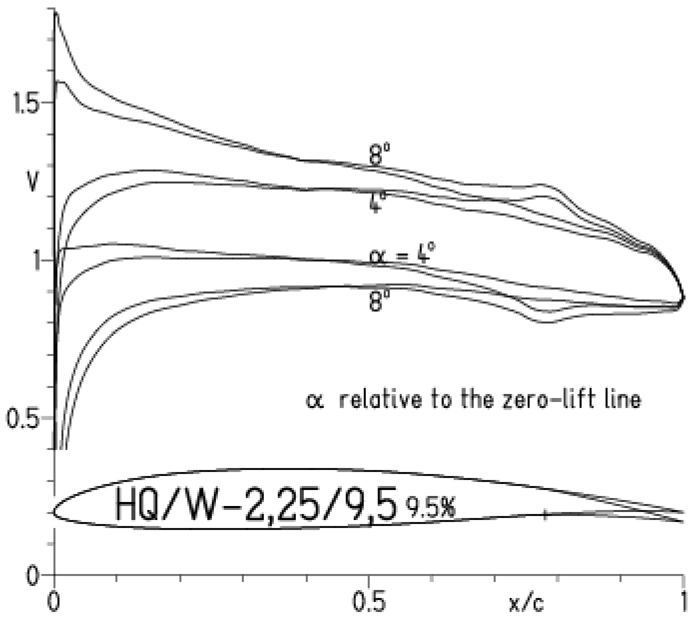
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



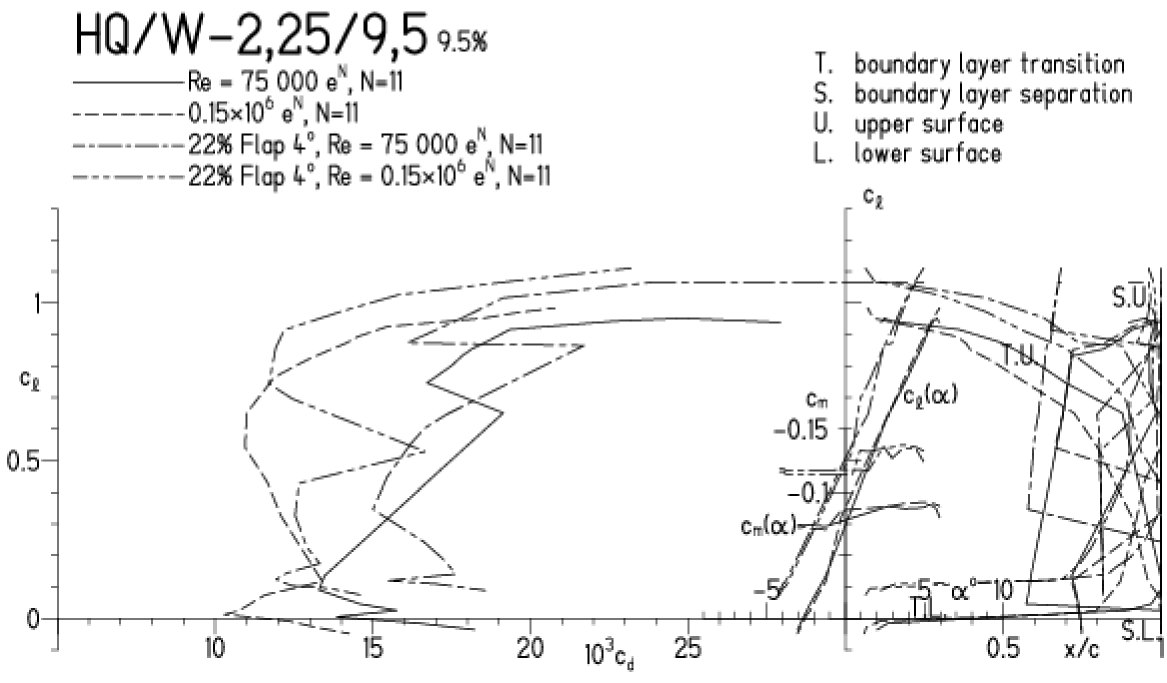


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

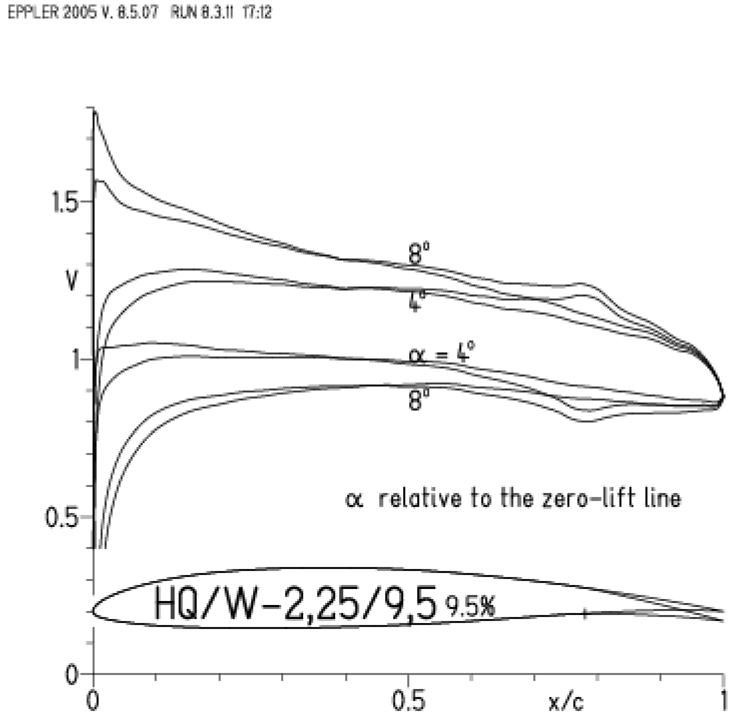
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

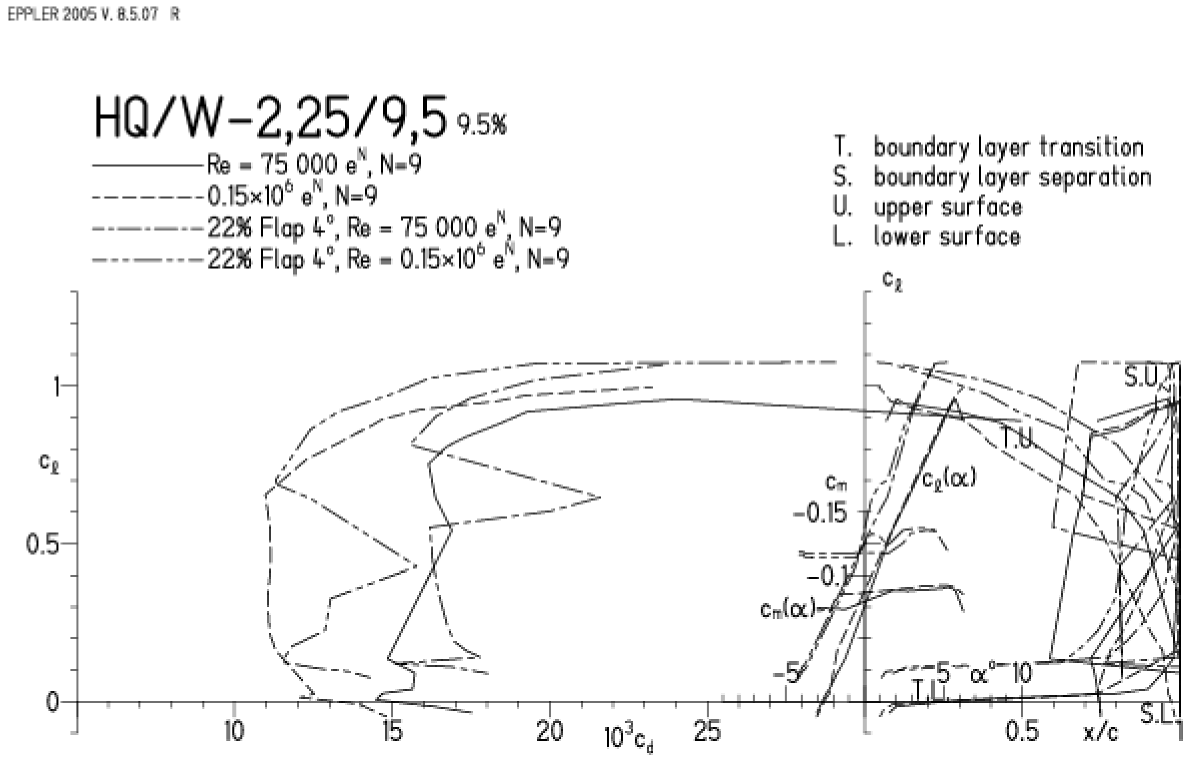


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

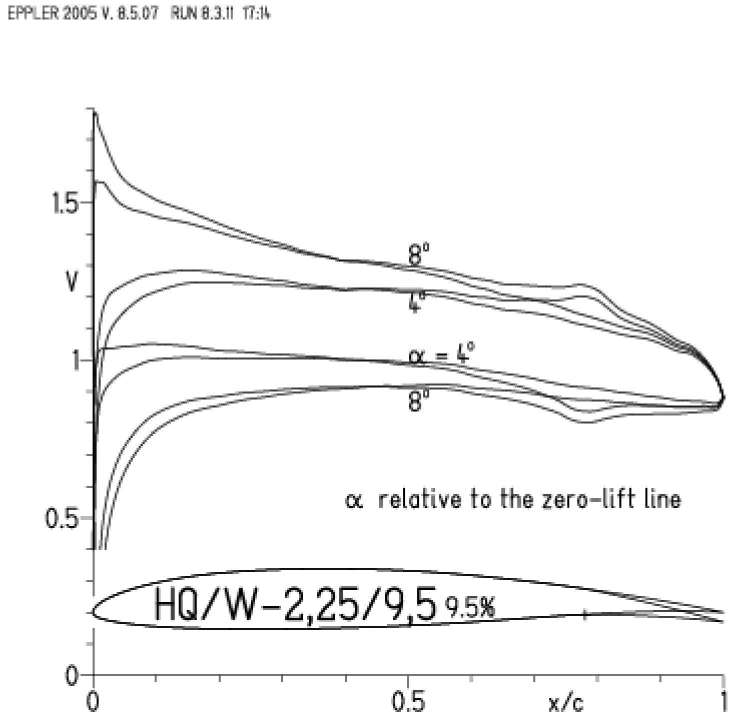


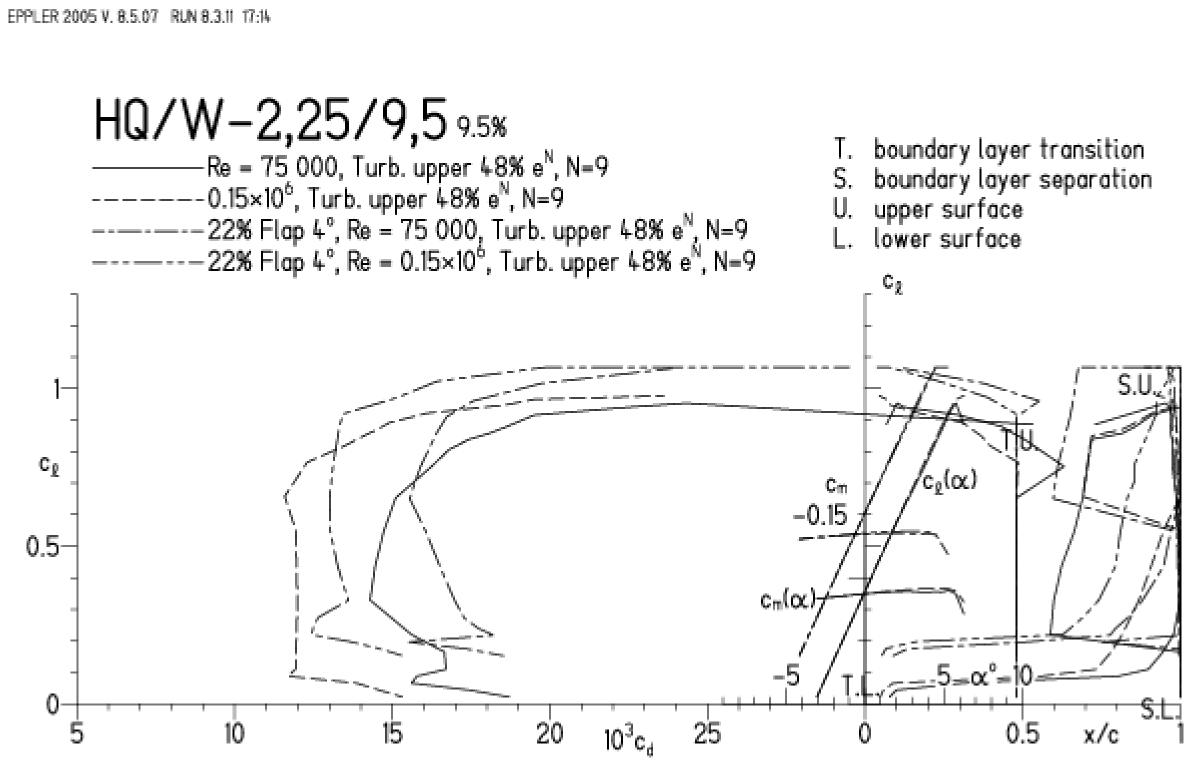
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag





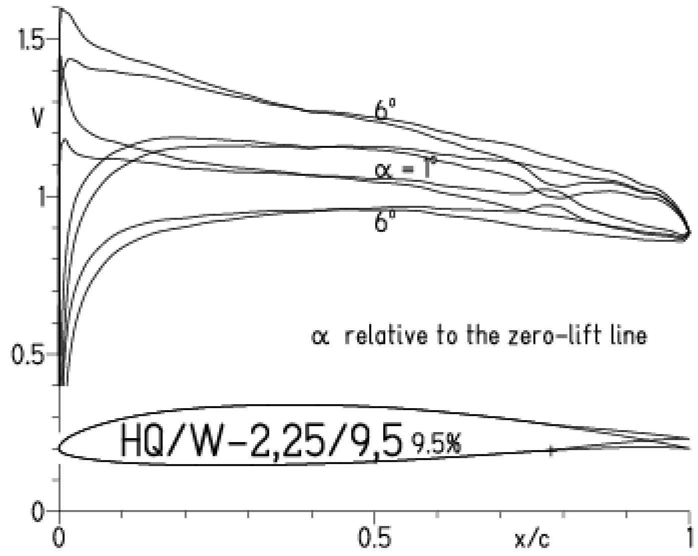
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



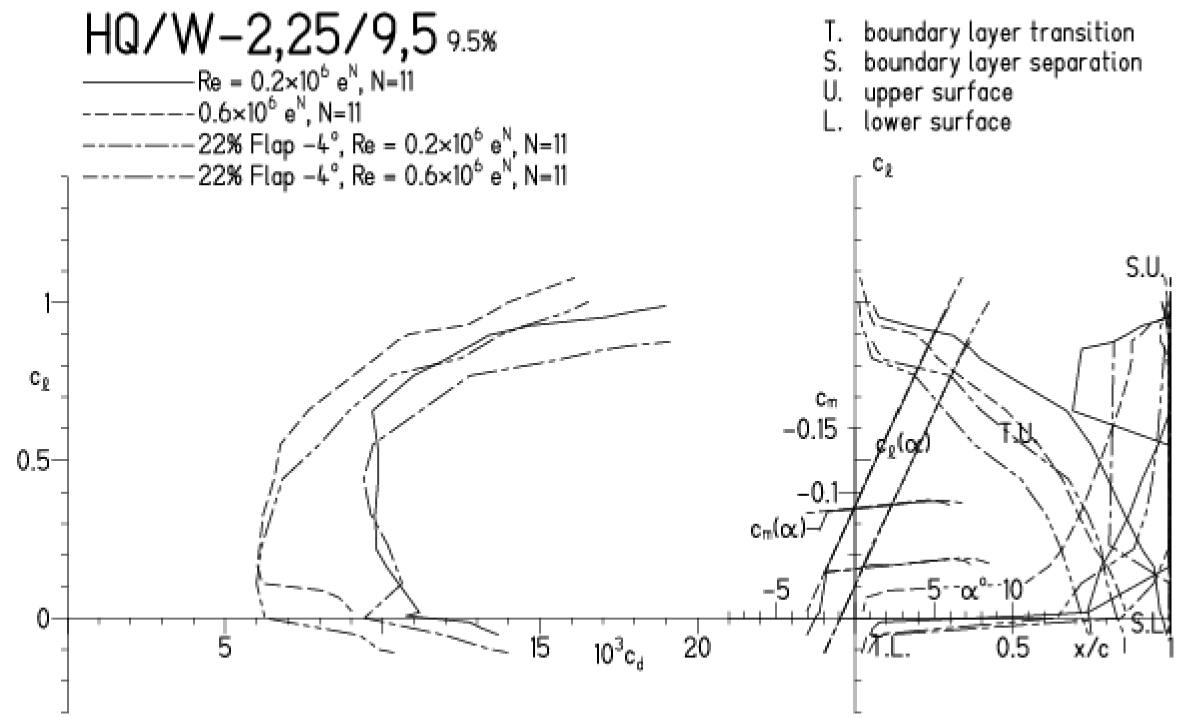


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

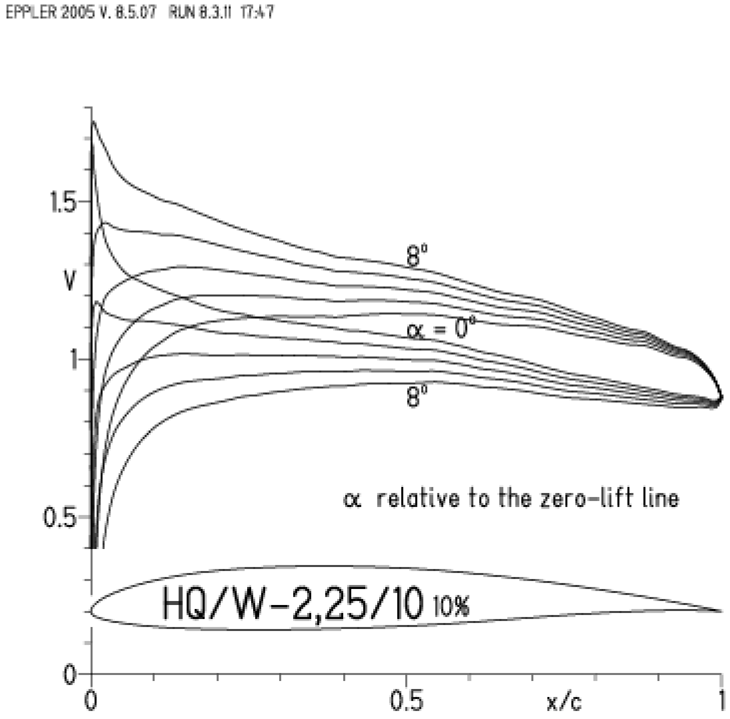
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

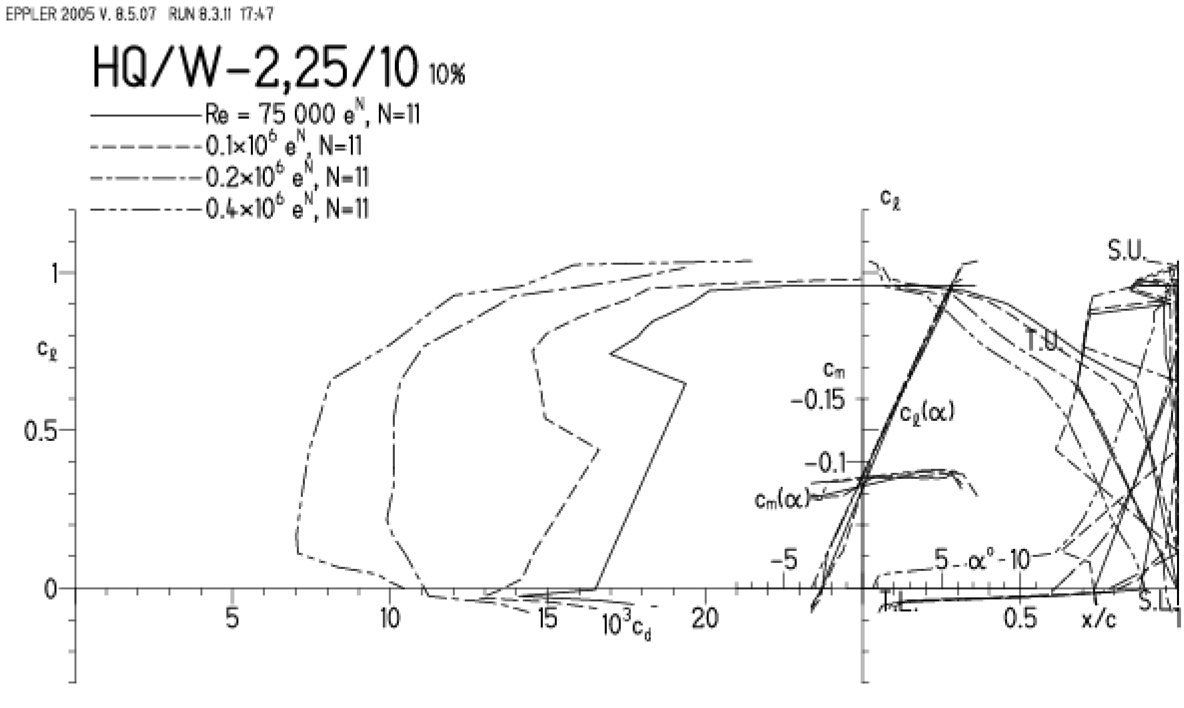


EPPLER 2005 V.



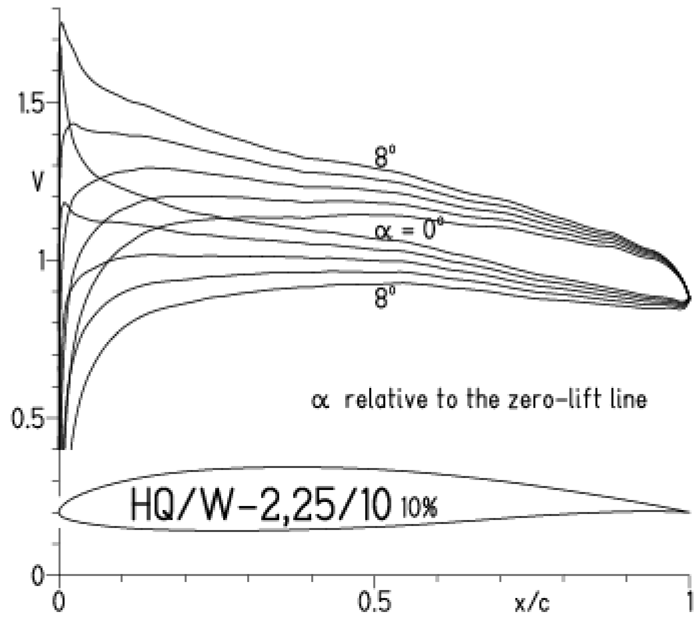
HQ/W-2,25/10, N=11



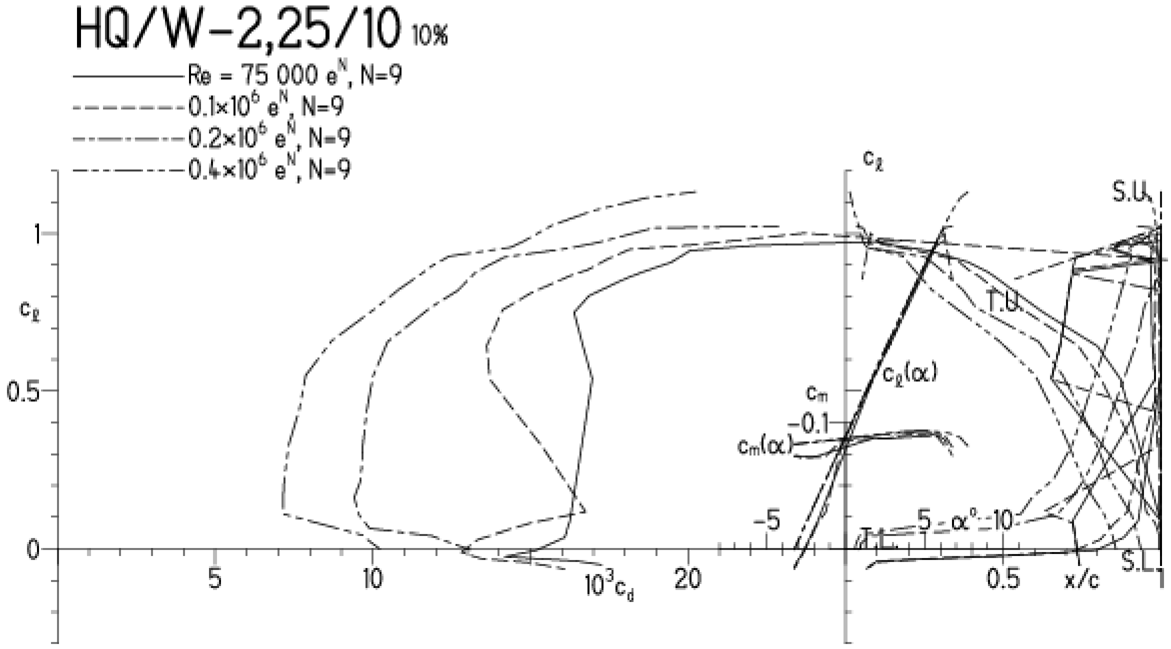


HQ/W-2,25/10, N=9

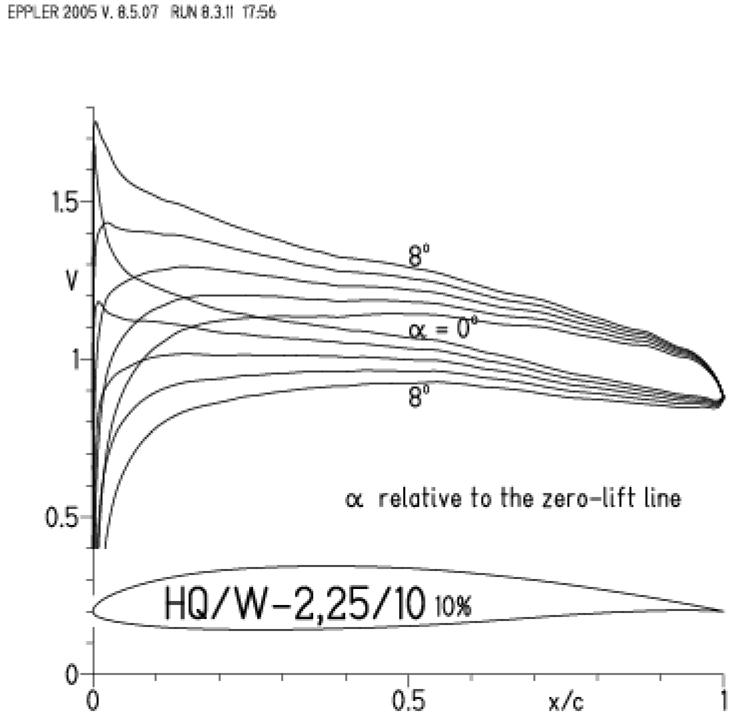
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

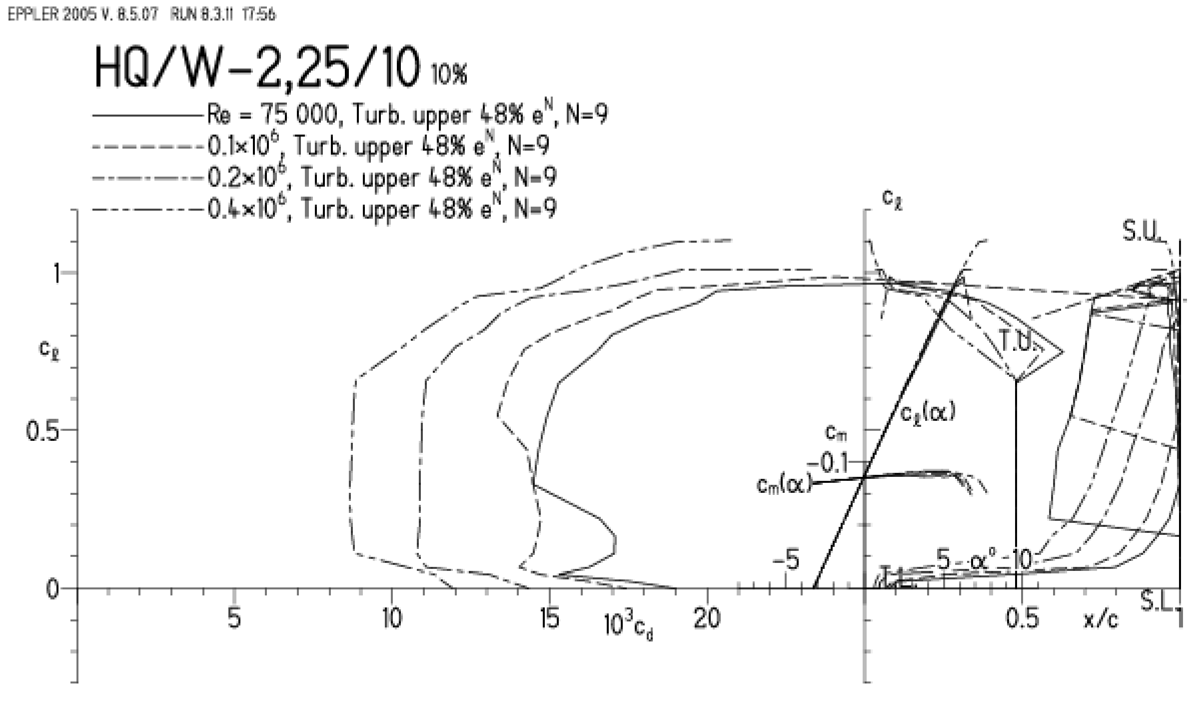


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



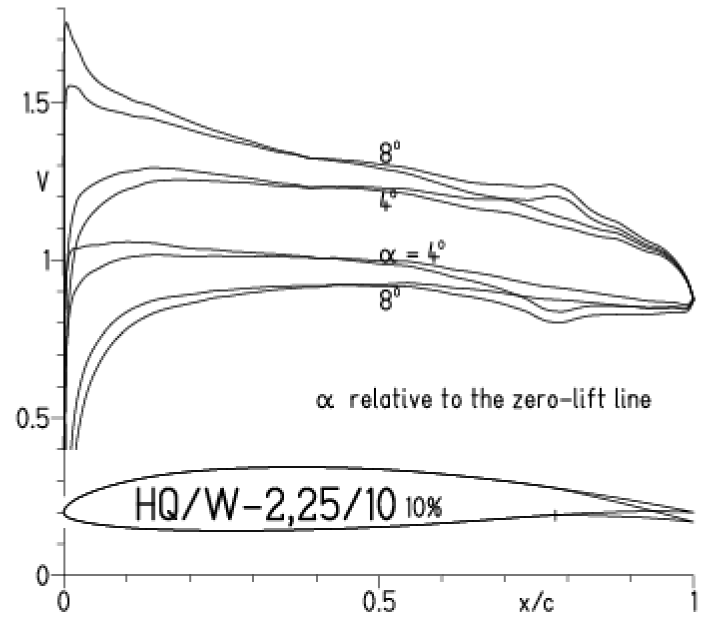
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



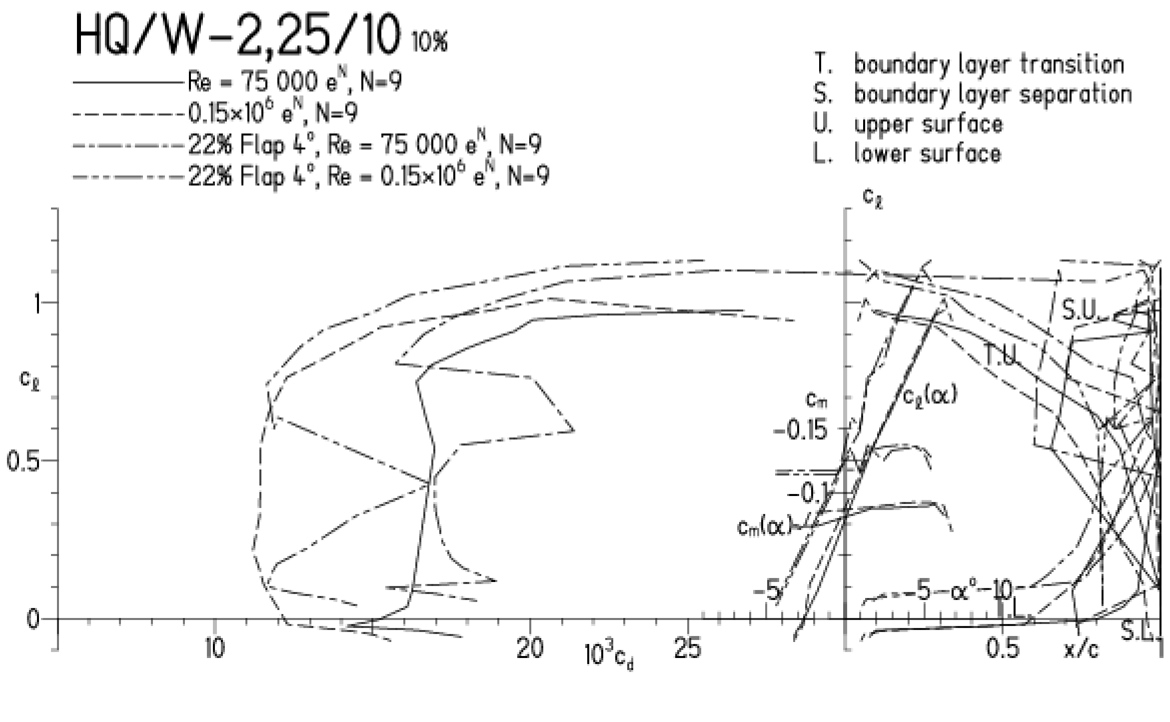


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

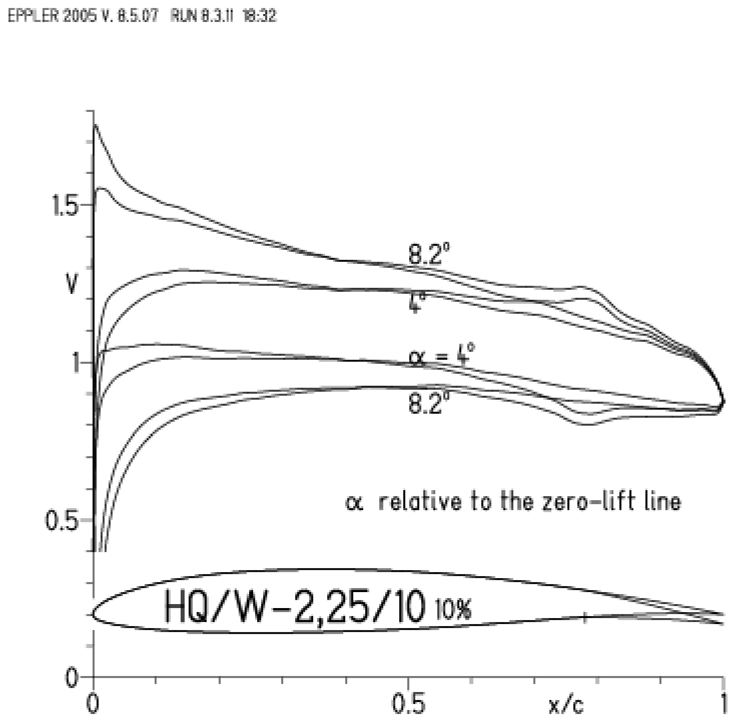
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

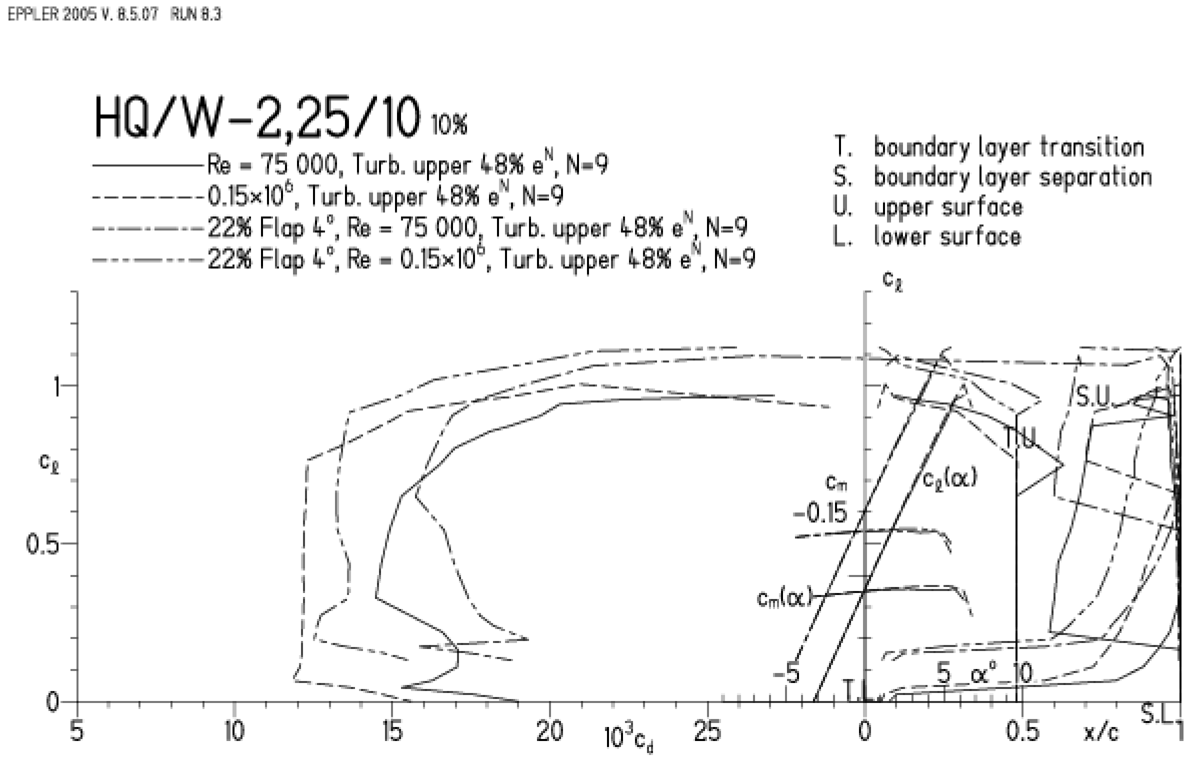


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



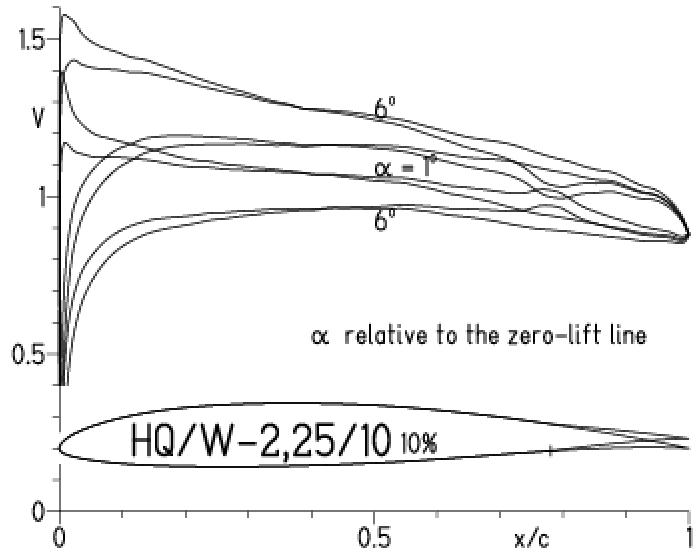
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



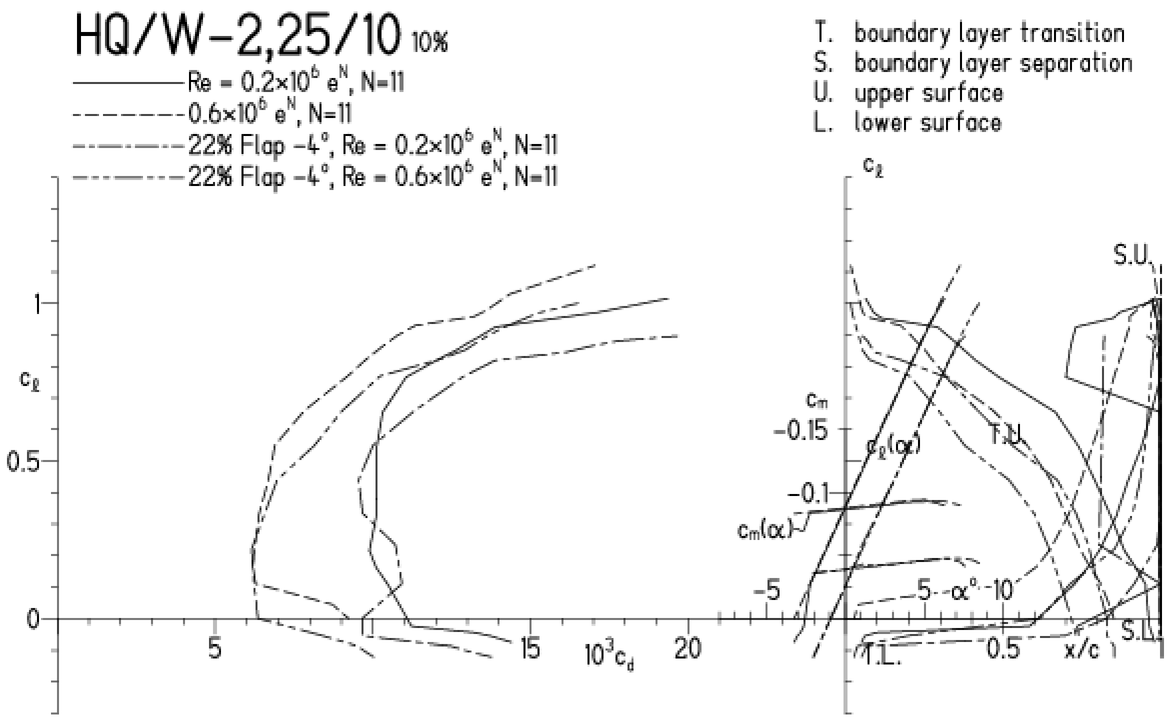


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

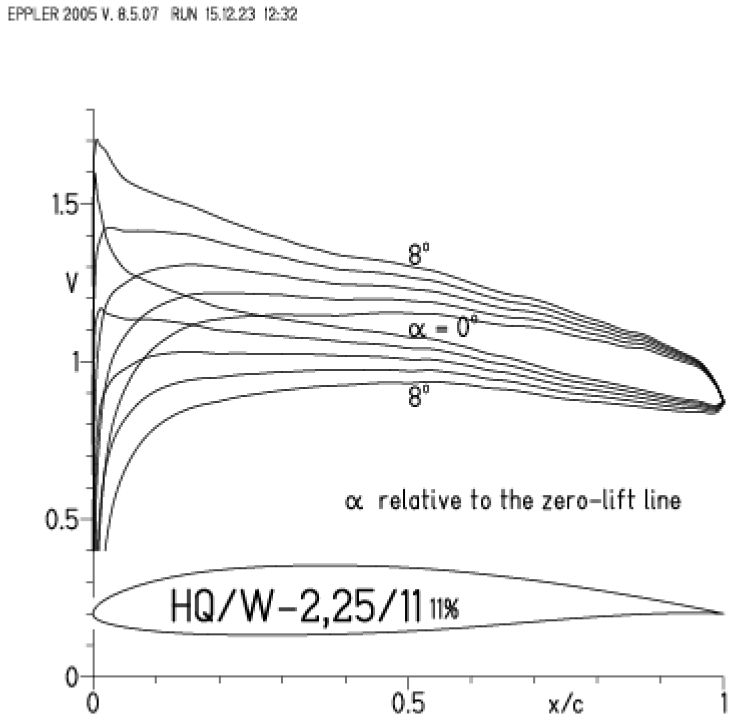
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

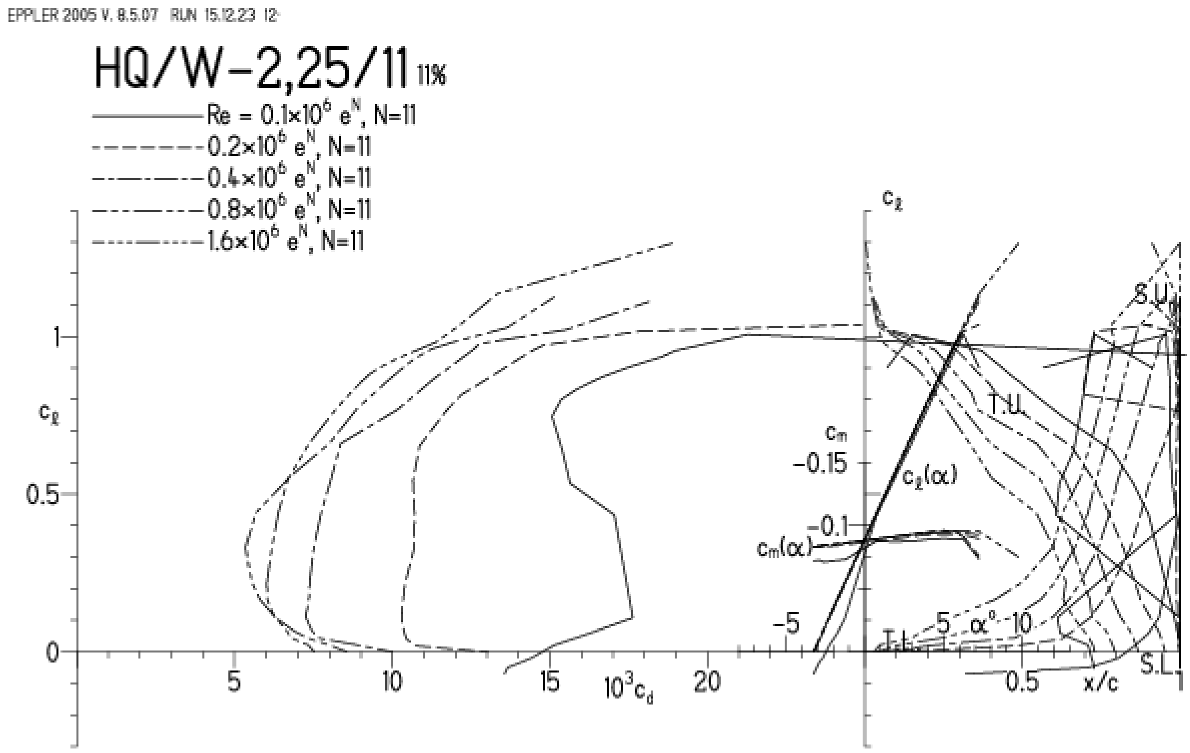


EPPLER 2005 V. 8.5.07 RUN



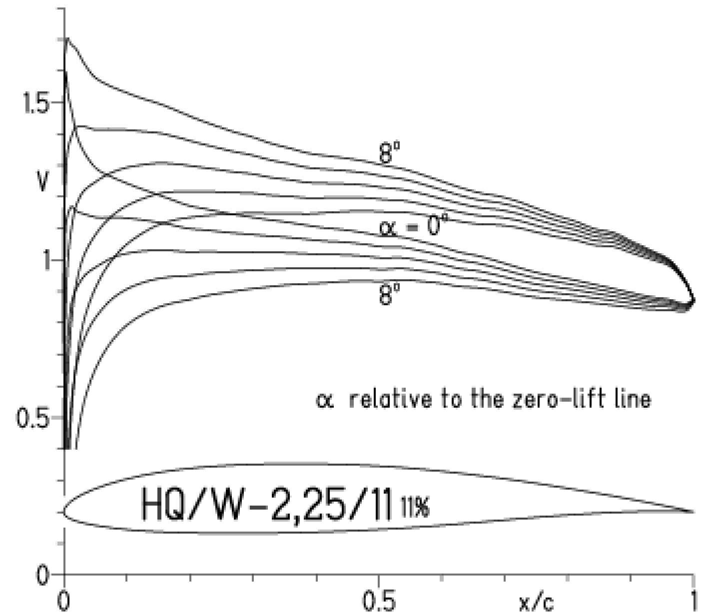
HQ/W-2,25/11, N=11



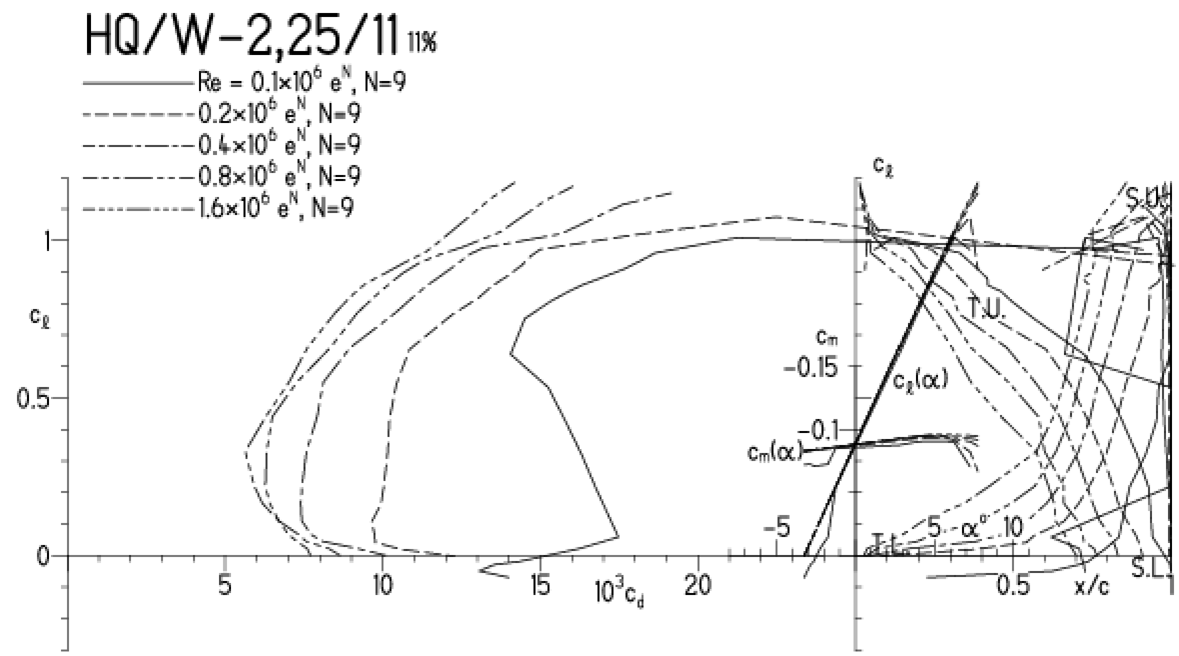


HQQ/W-2,25/11, N=9

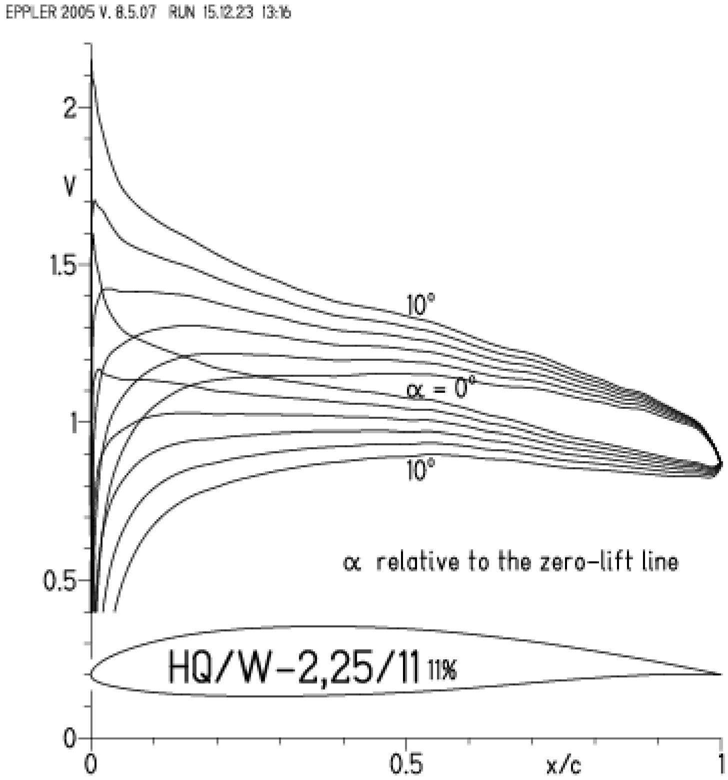
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

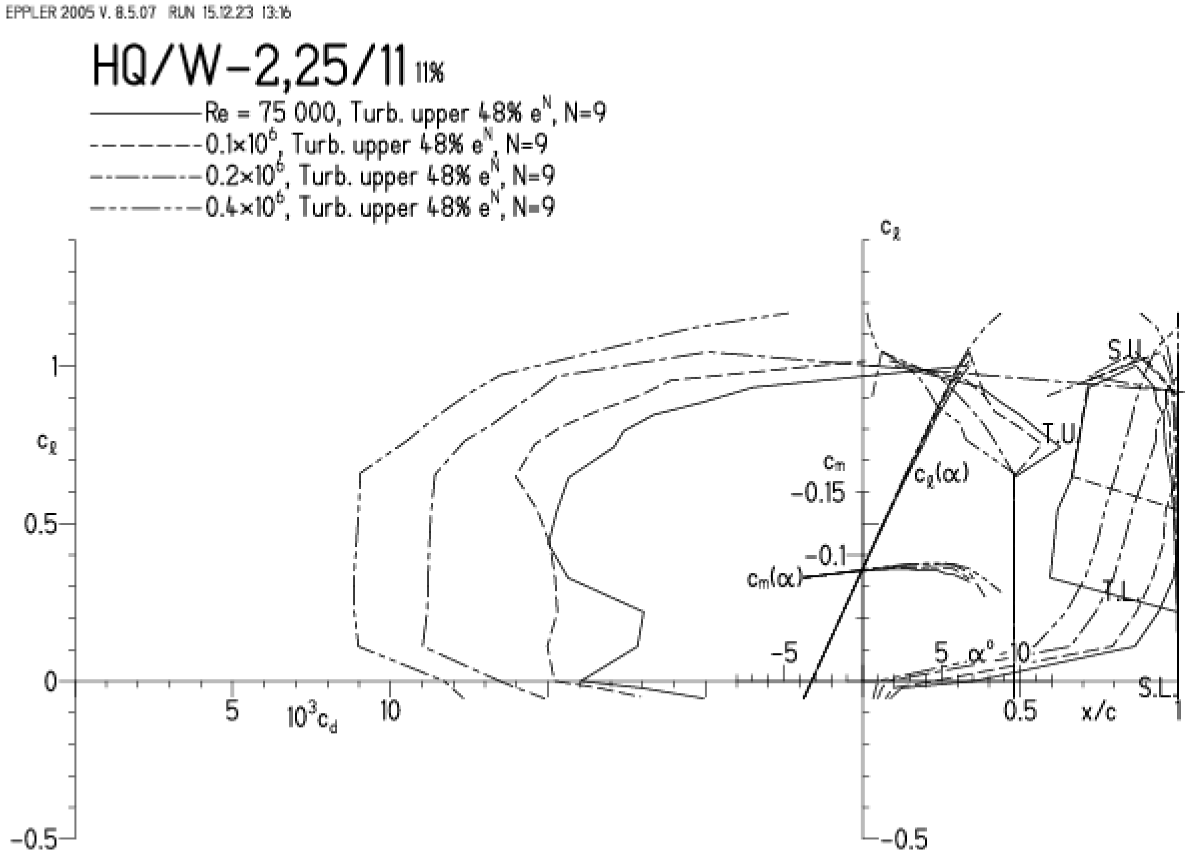


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



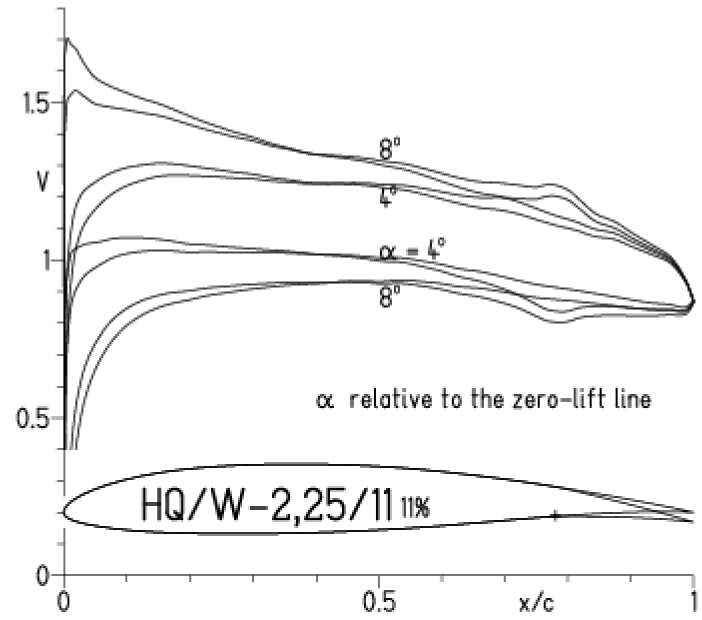
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



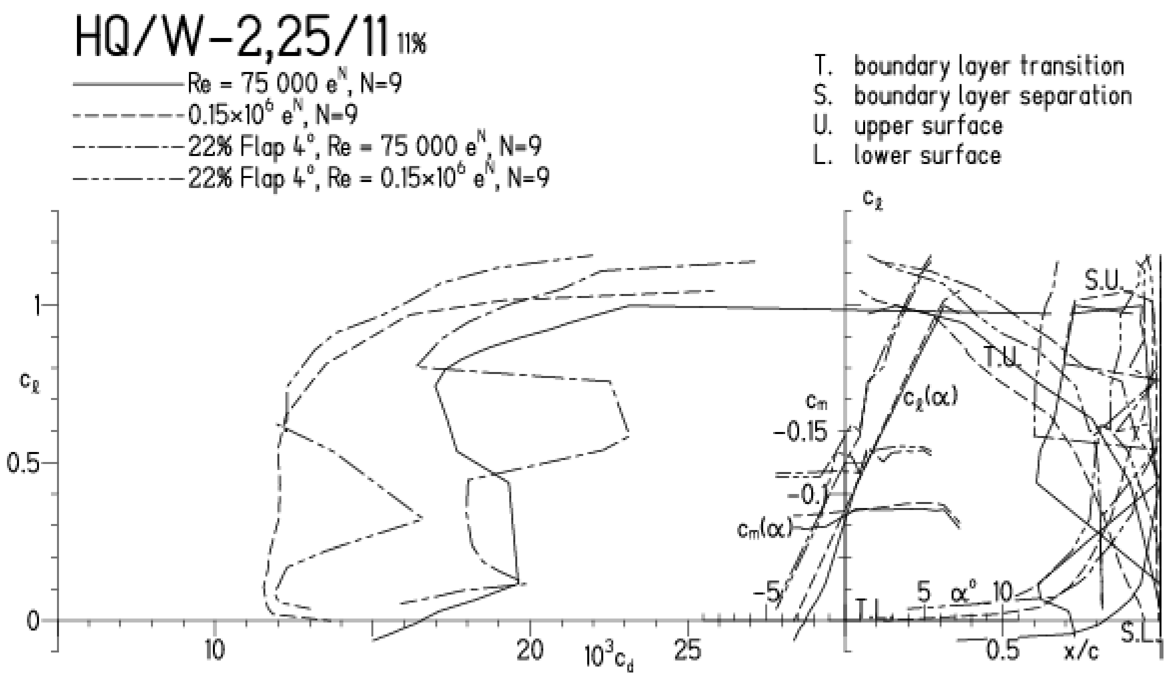


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

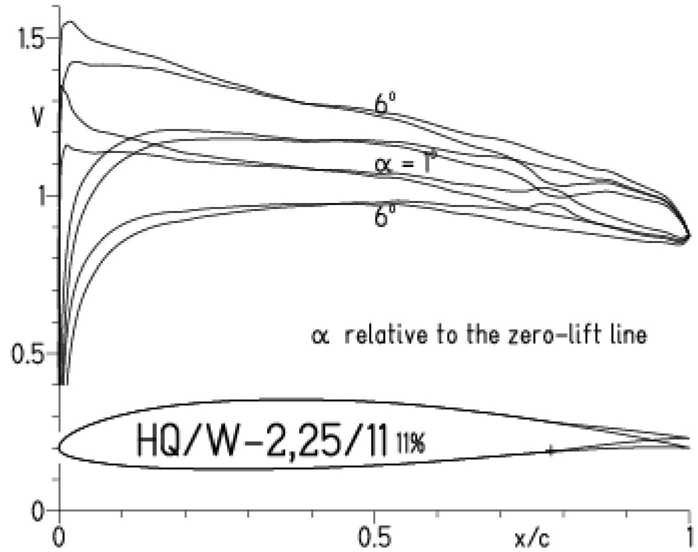


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

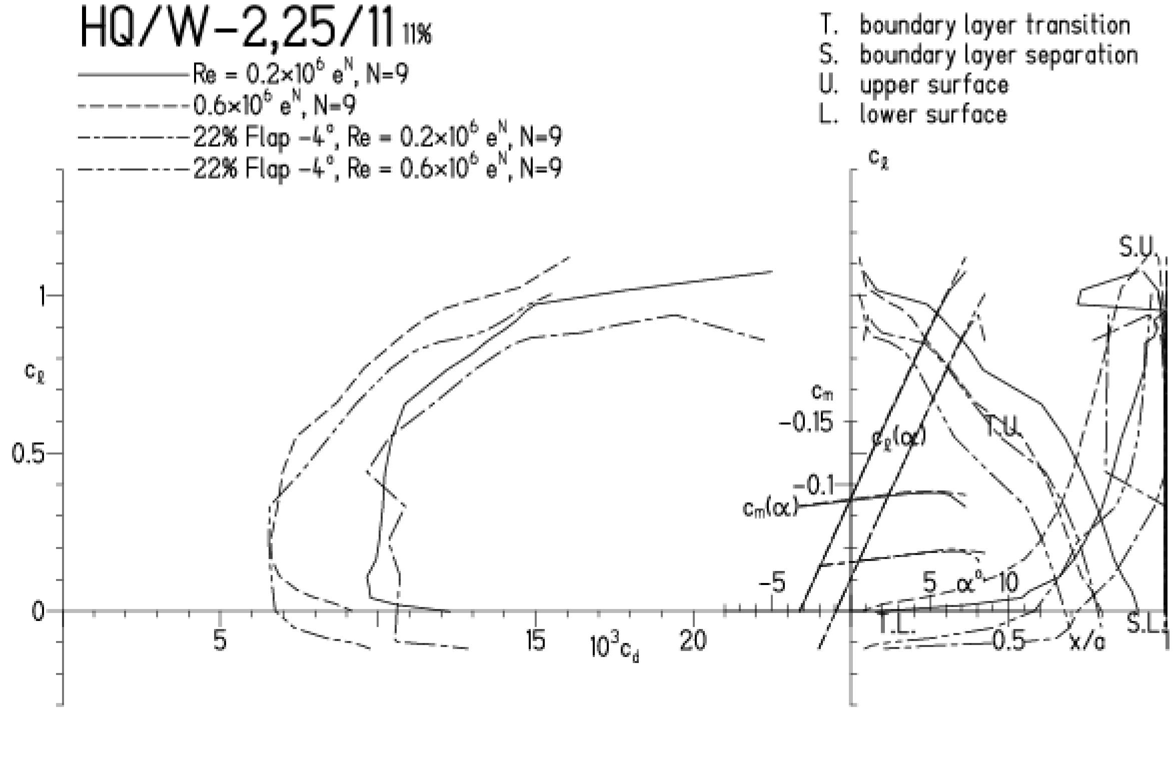


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

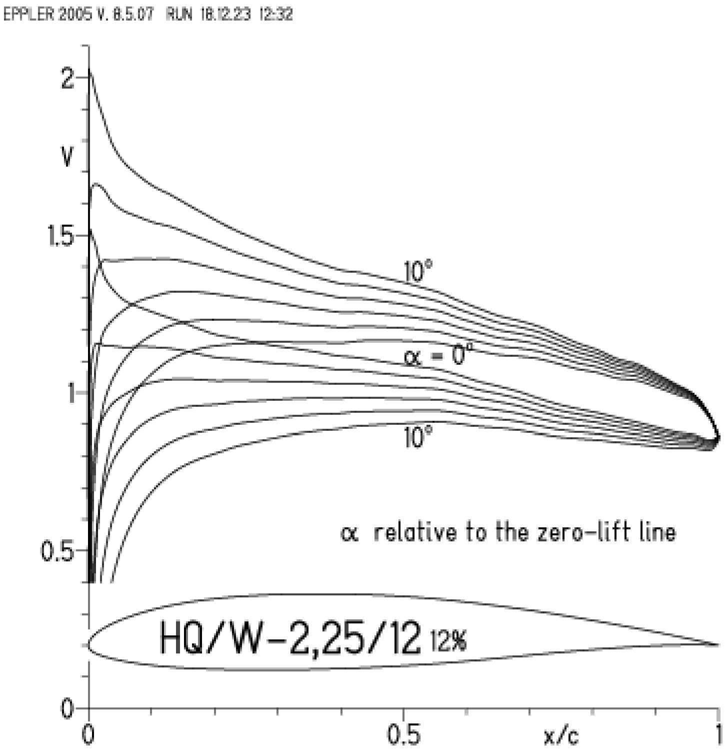
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

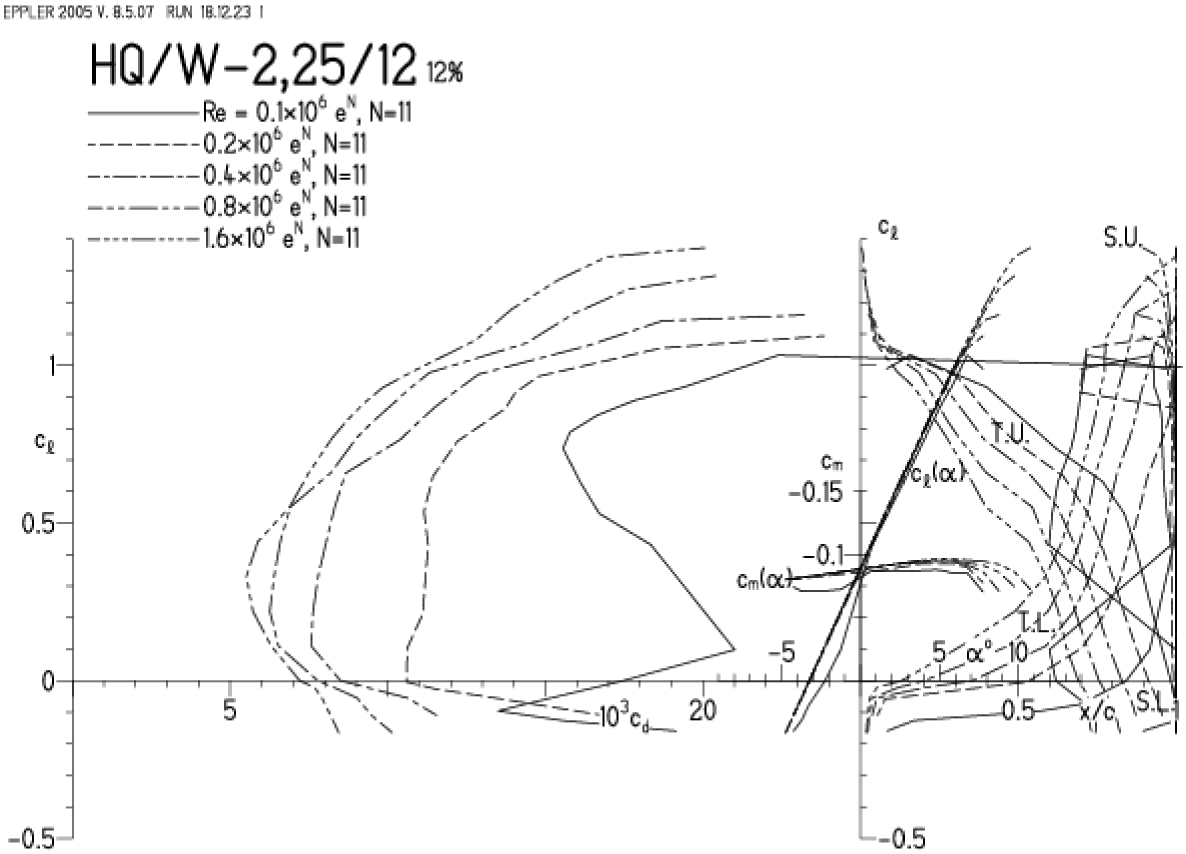


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

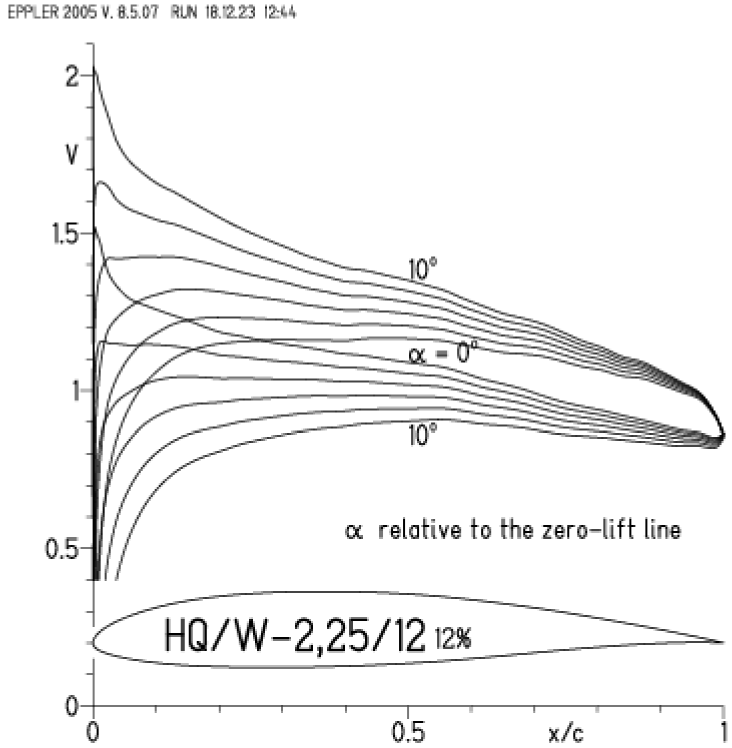


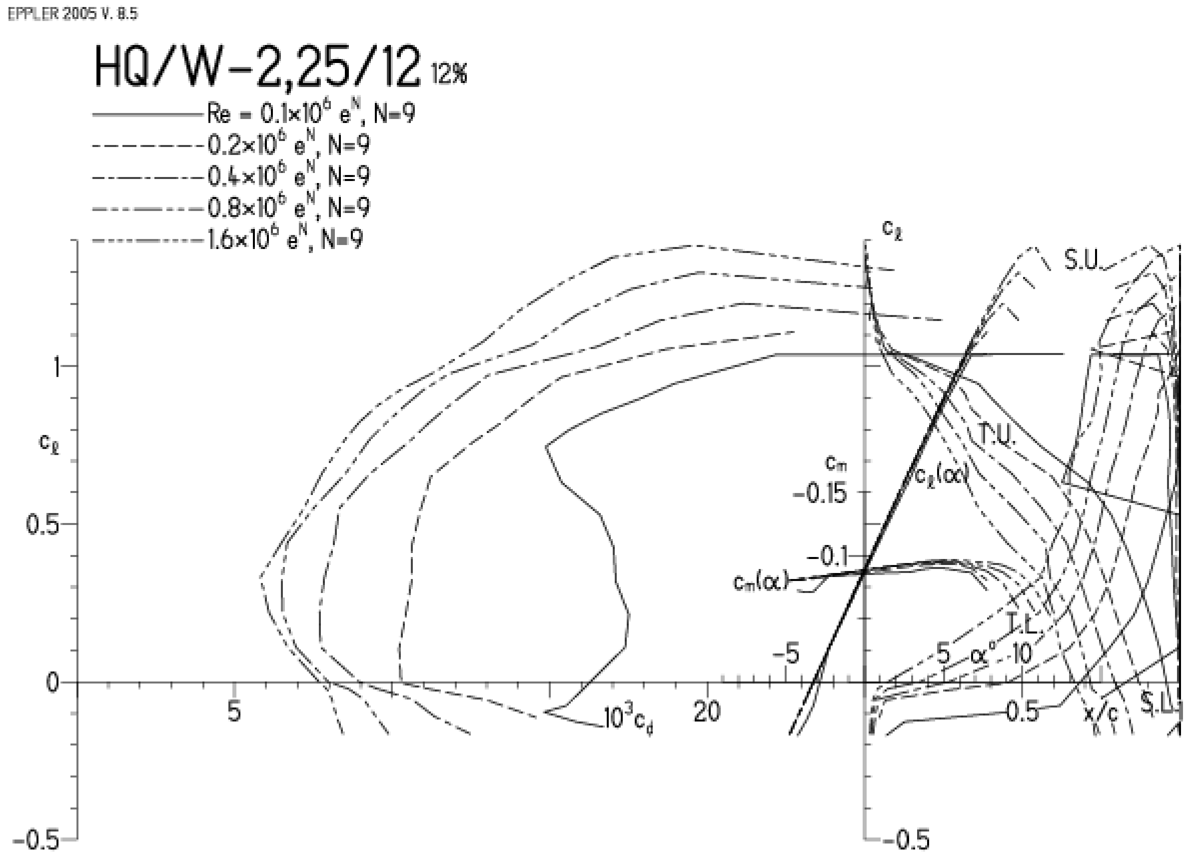
HQ/W-2,25/12, N=11



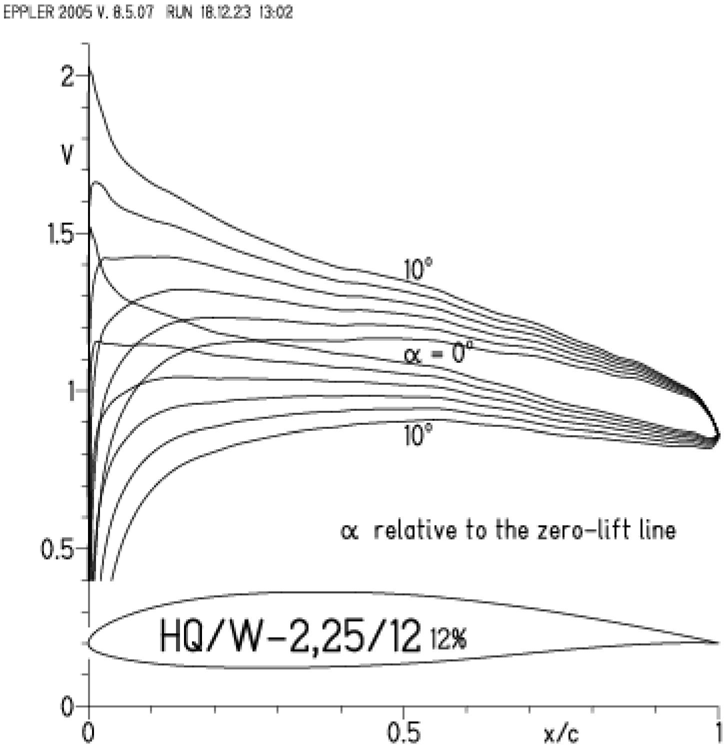


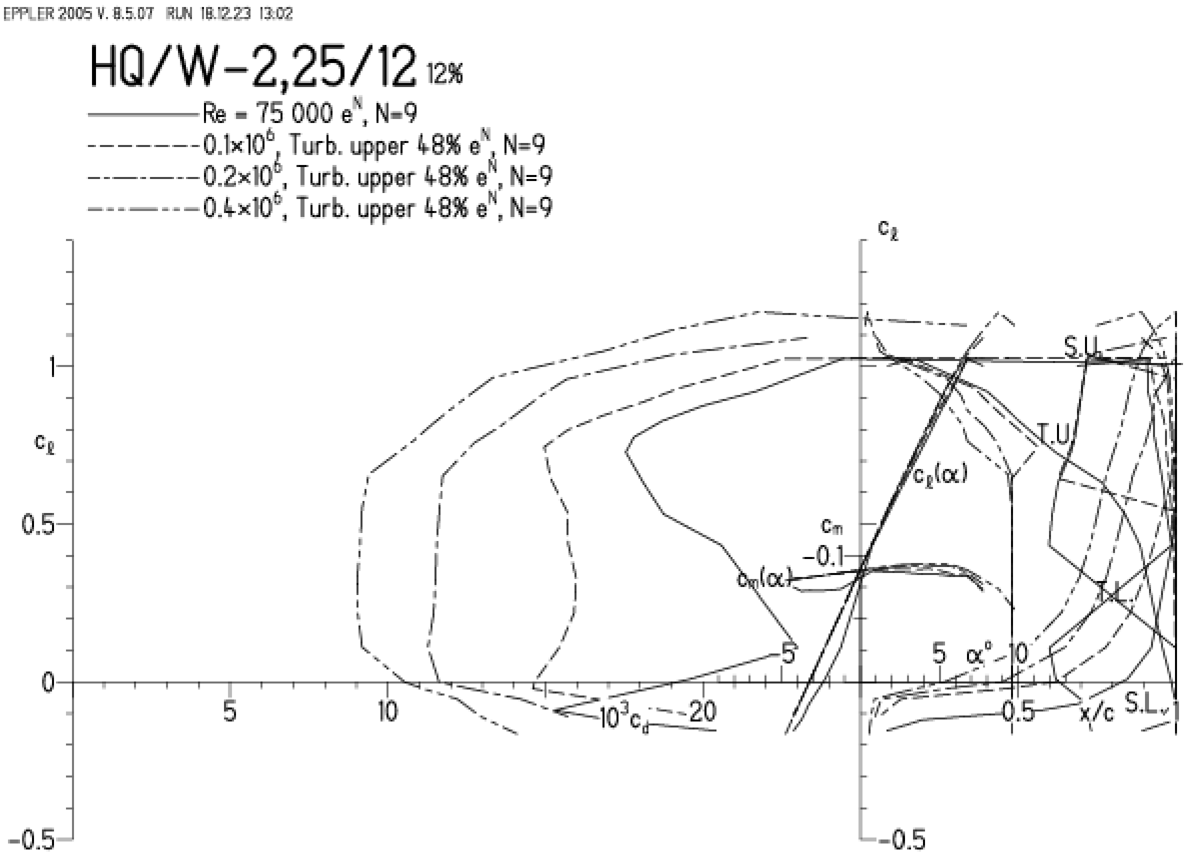
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
x/c
α°

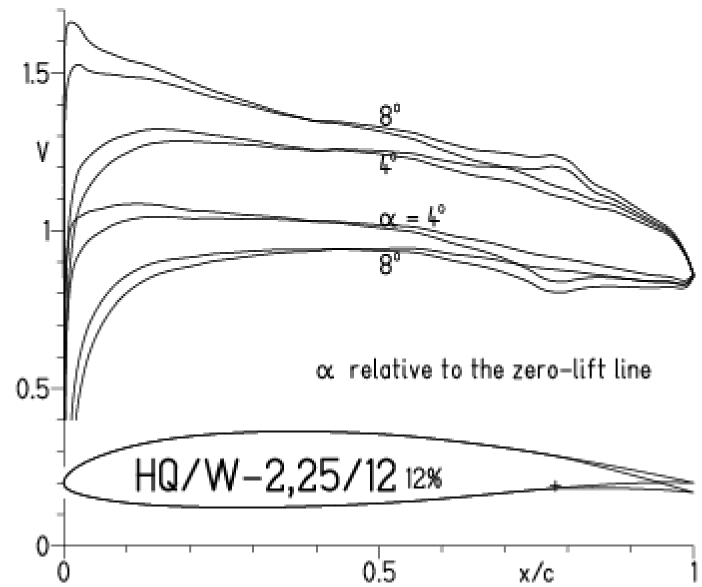
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



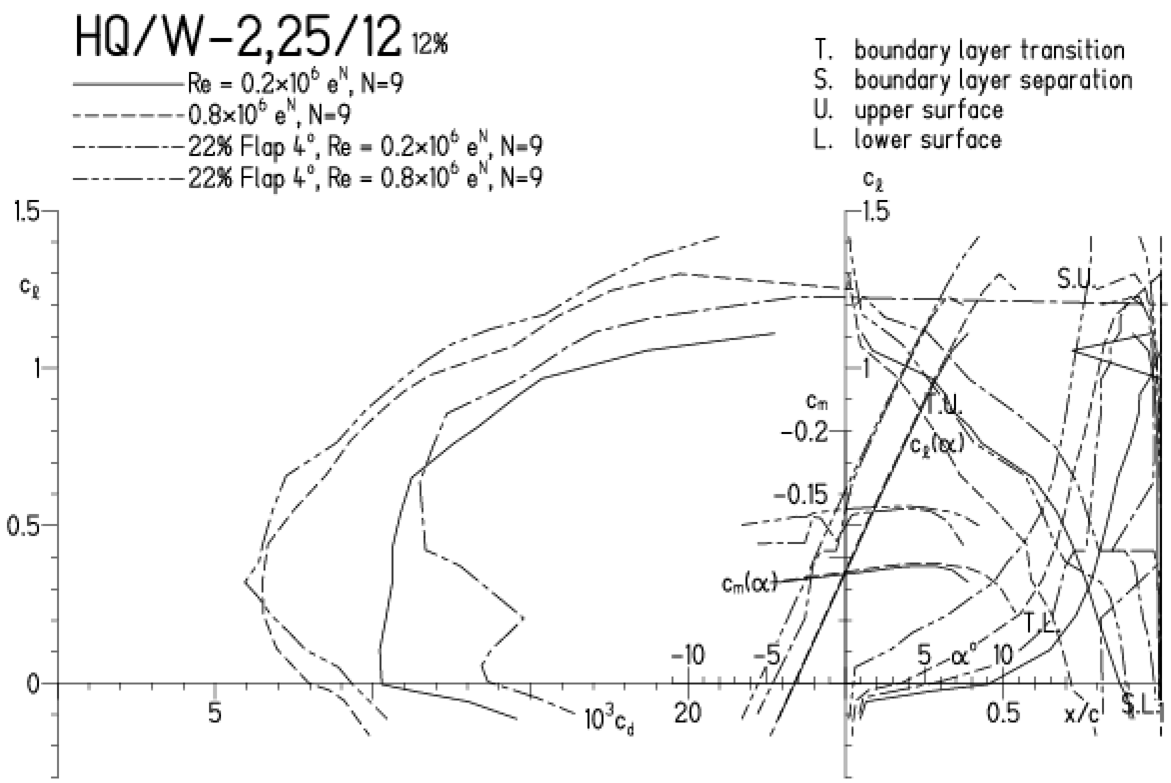


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

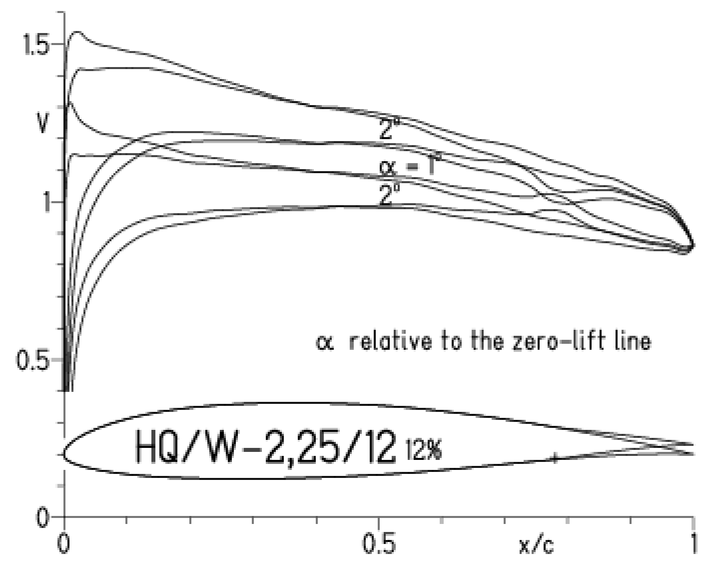


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

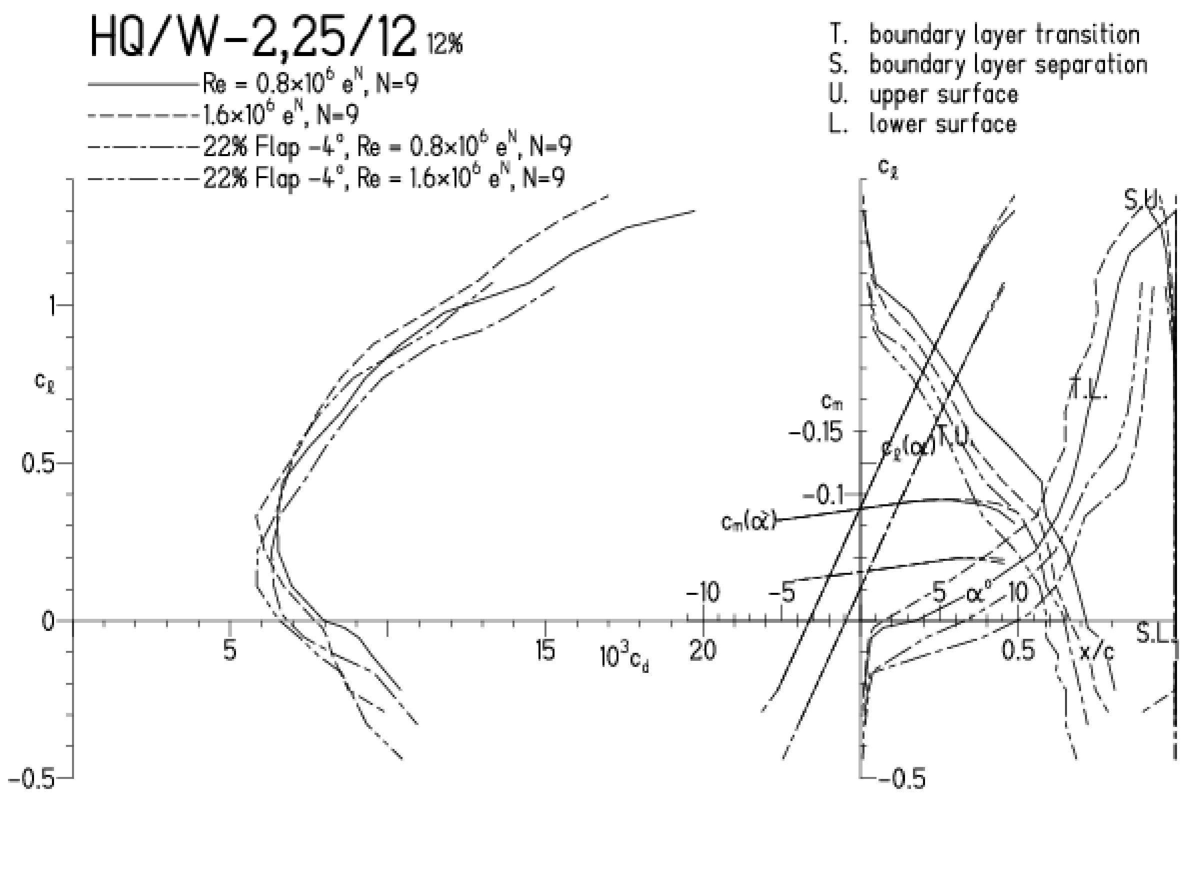


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

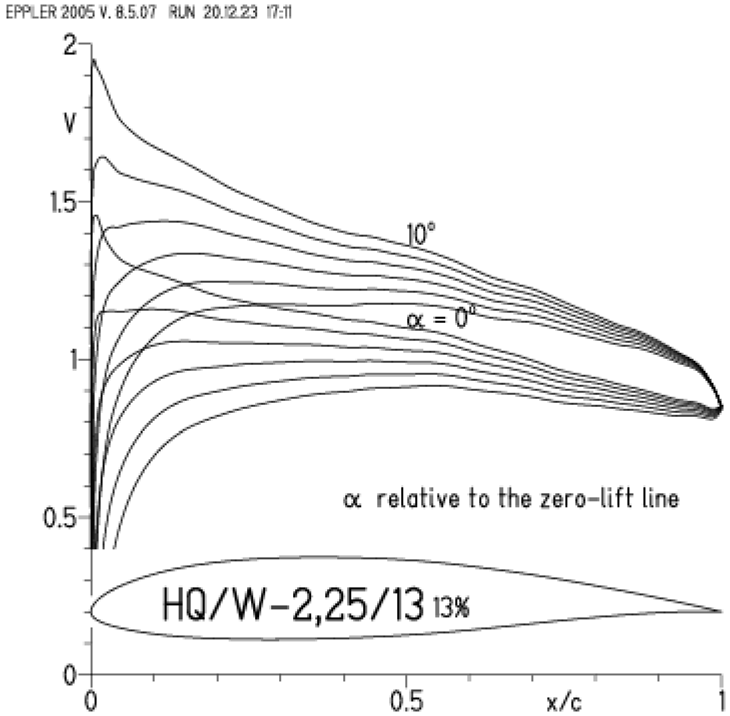
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

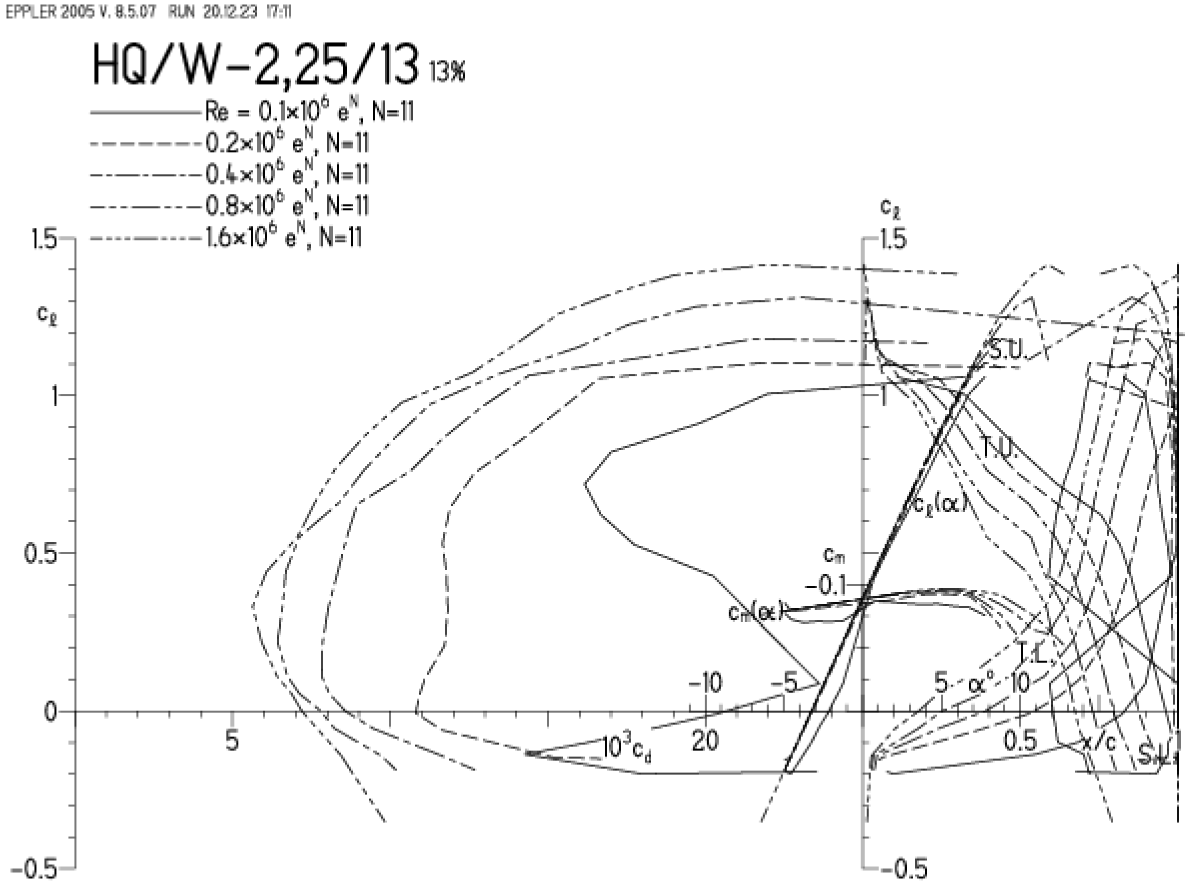


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

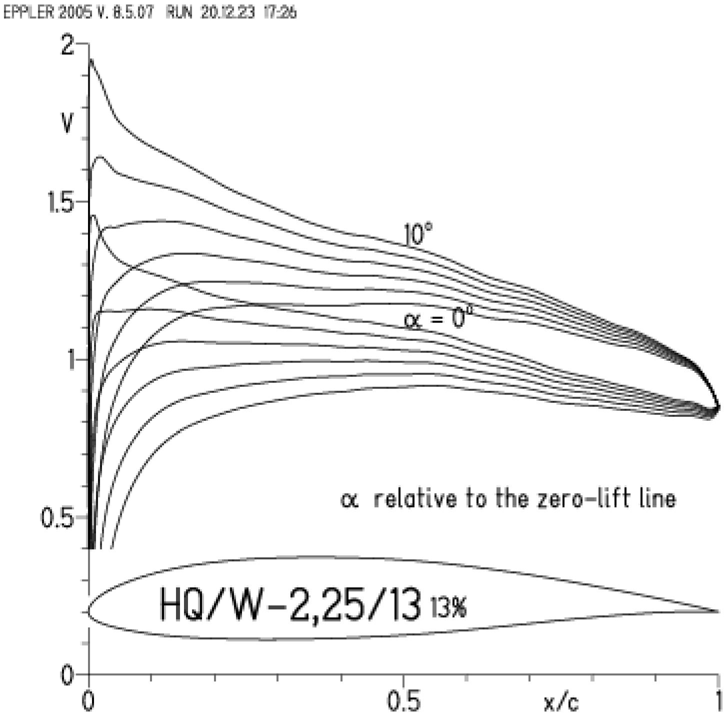


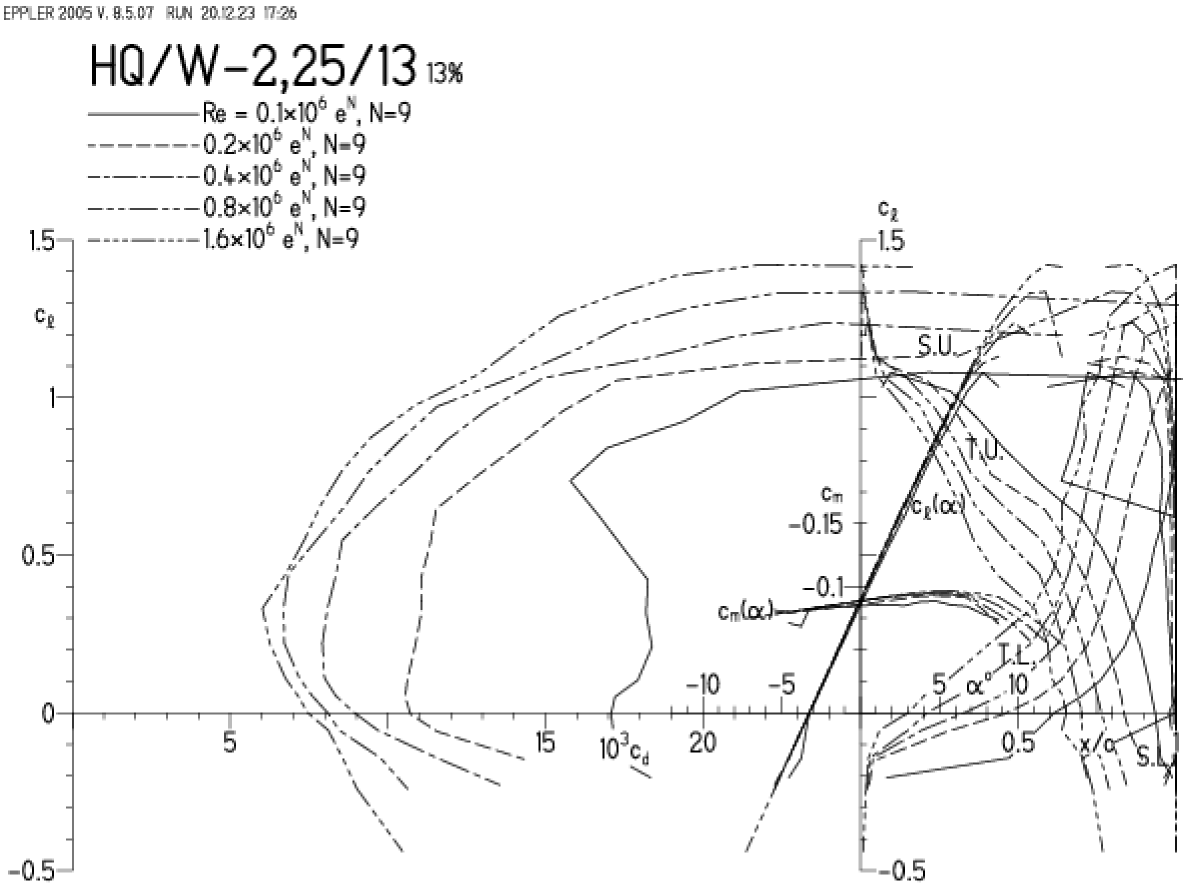
HQ/W-2,25/13, N=11



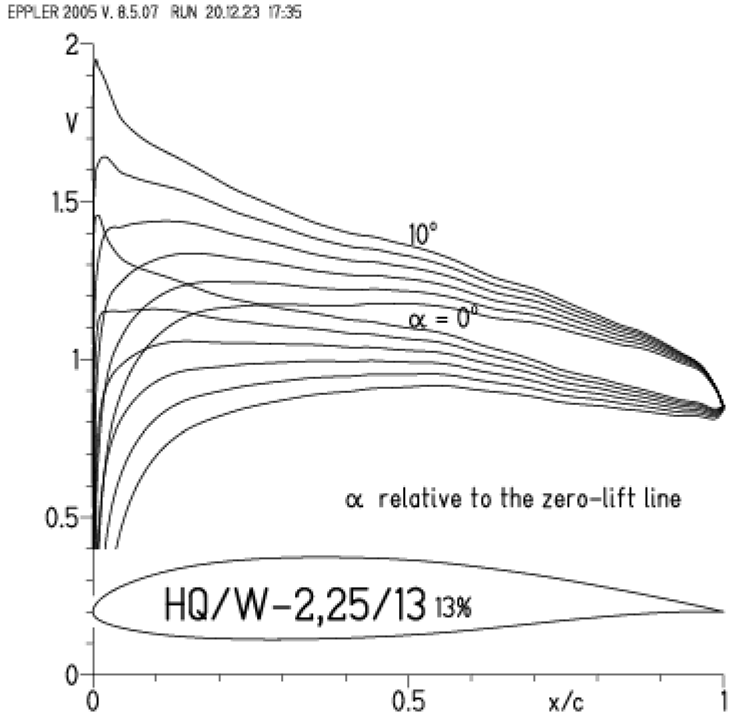


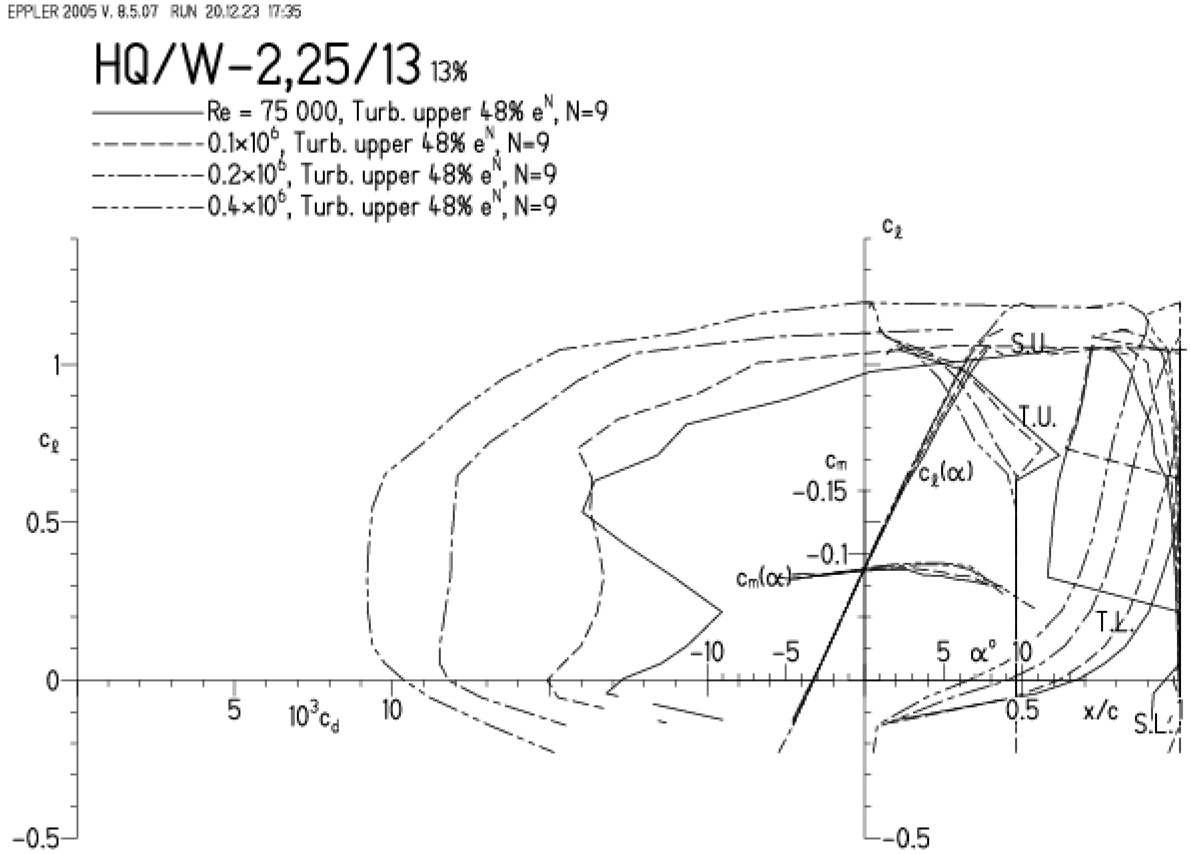
<u>HQ/W-2,25/13</u>, N=9





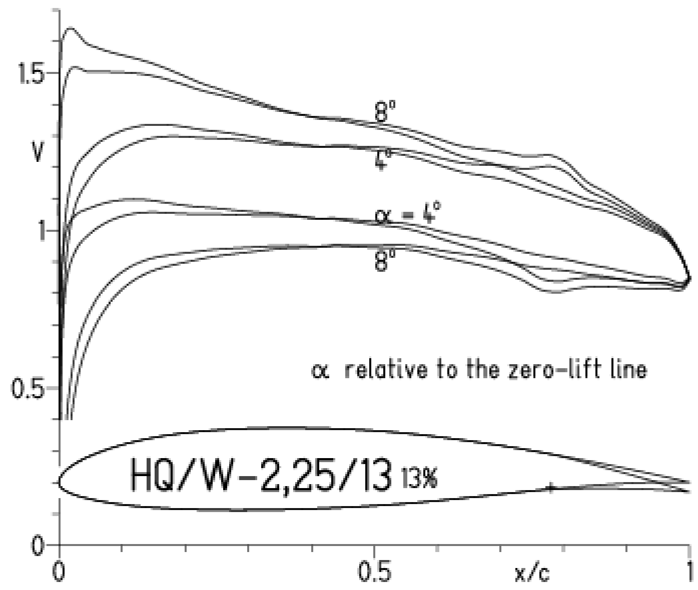
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



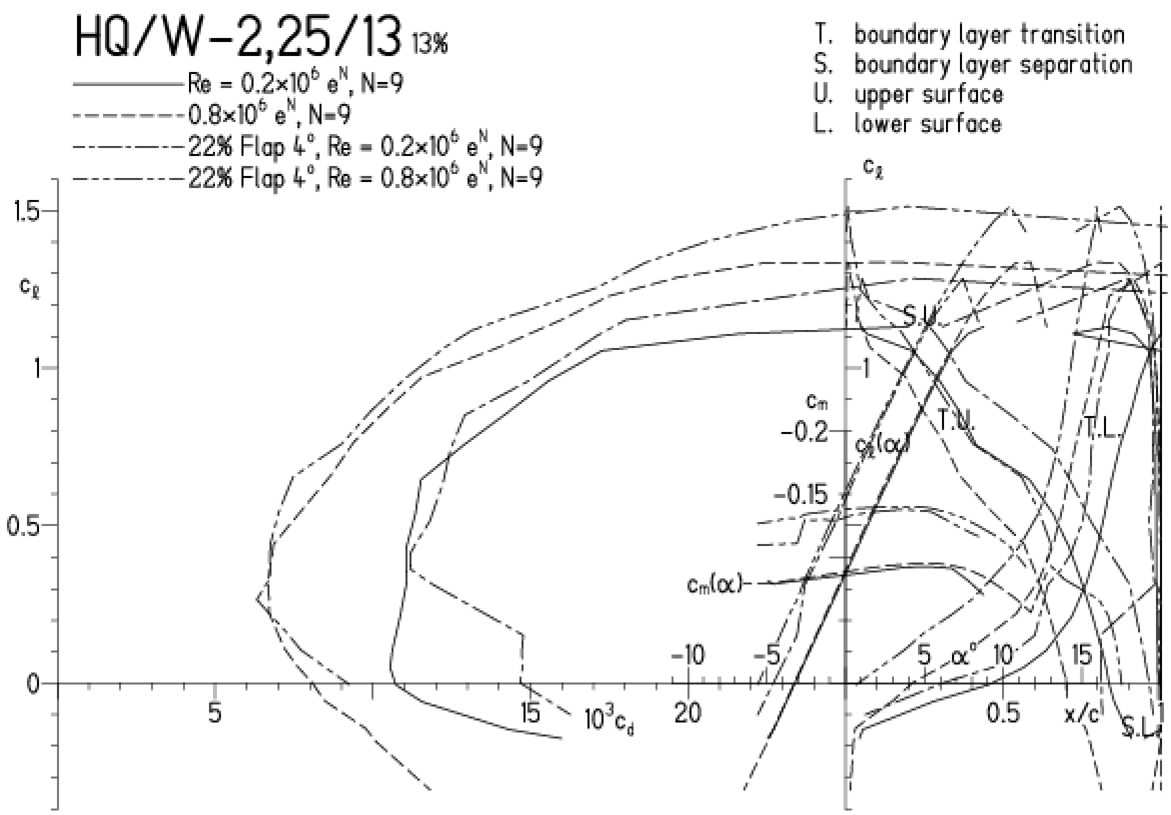


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

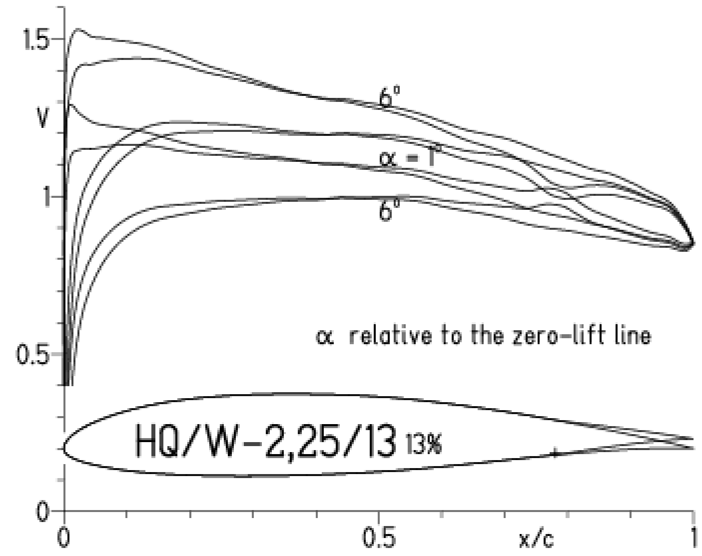


EPPLER 2005 V.

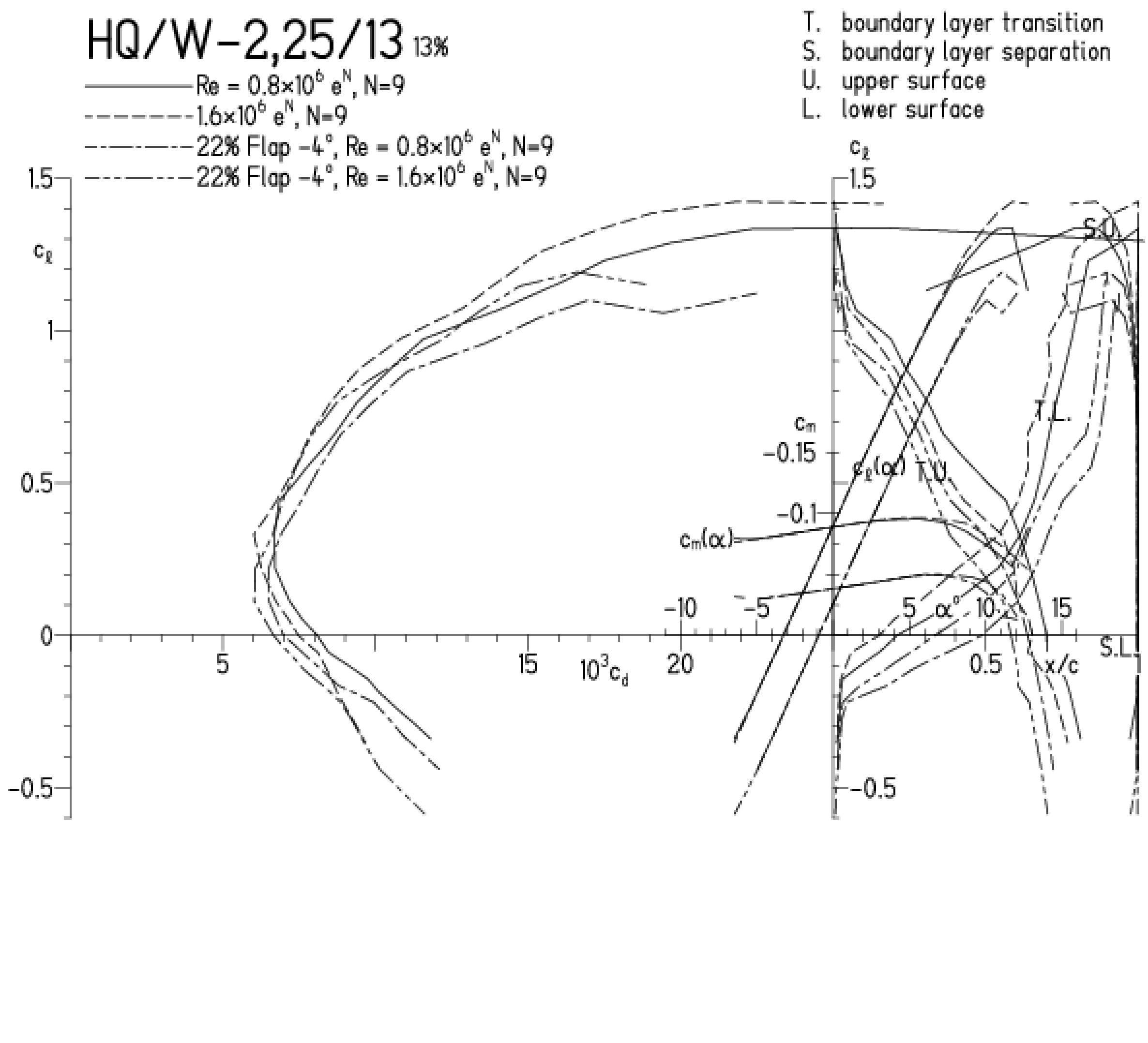


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

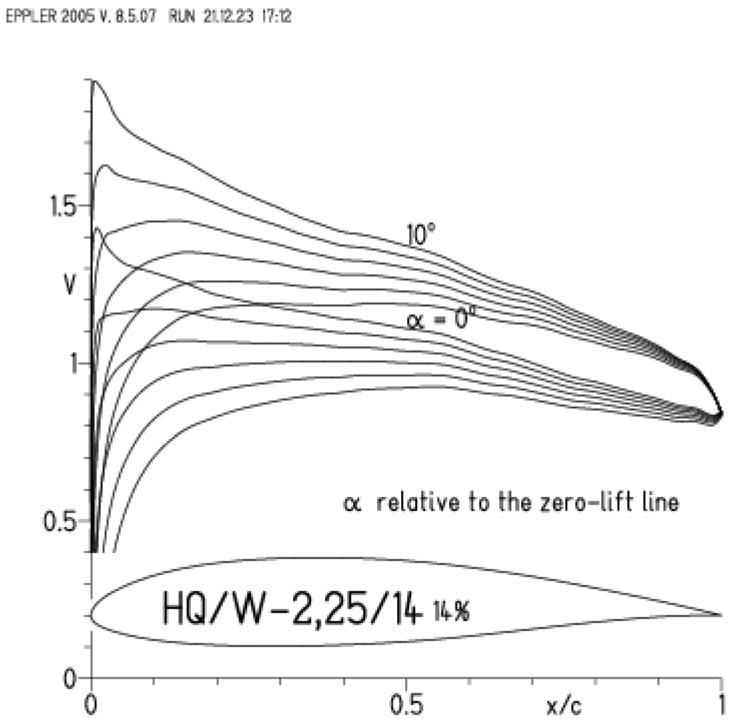
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

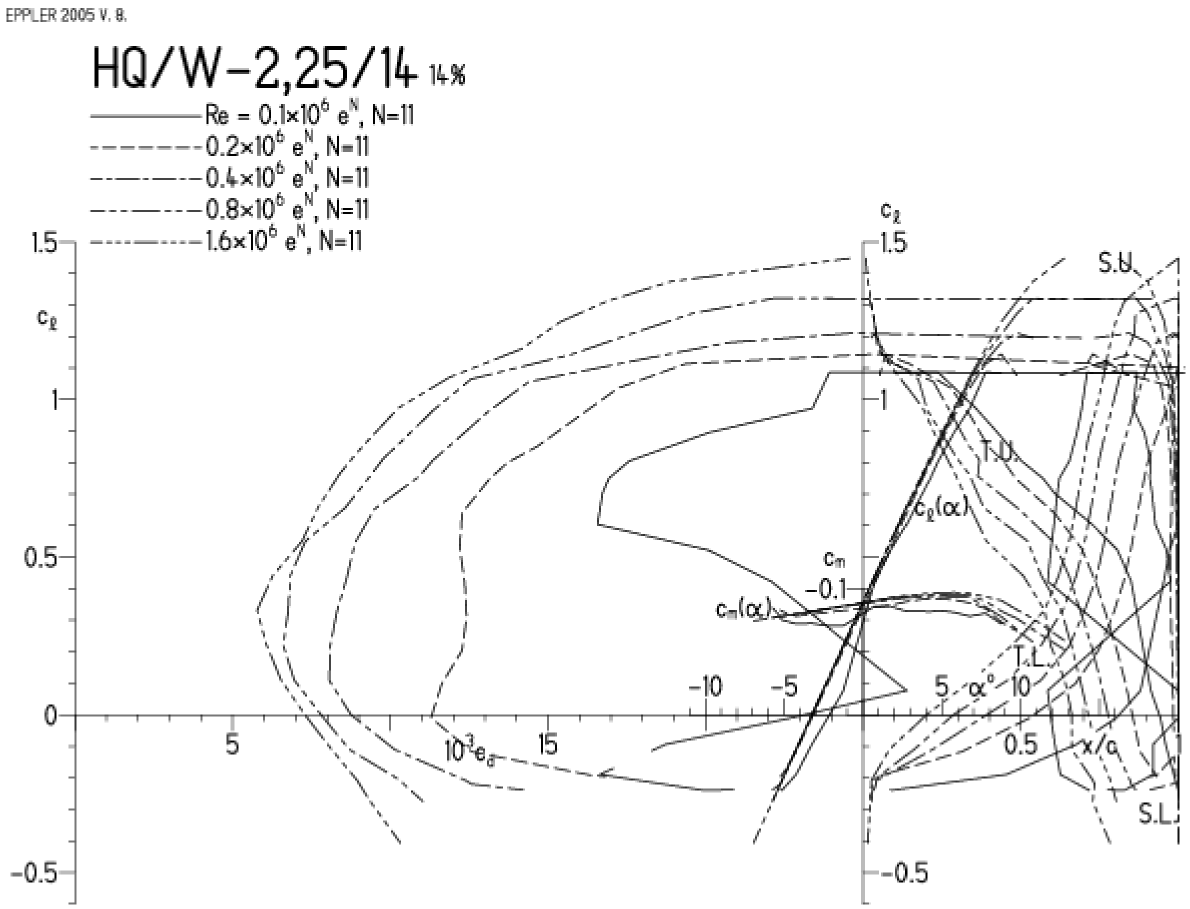


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

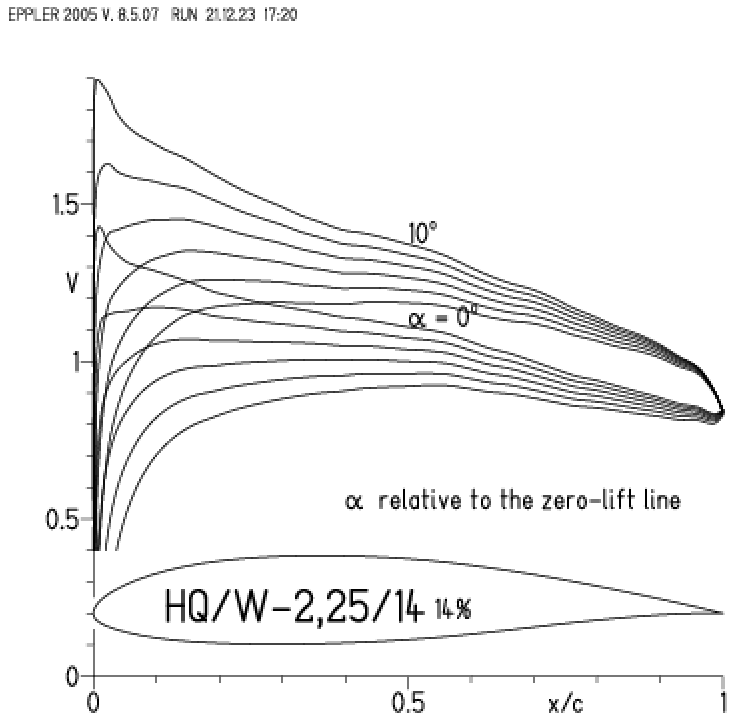


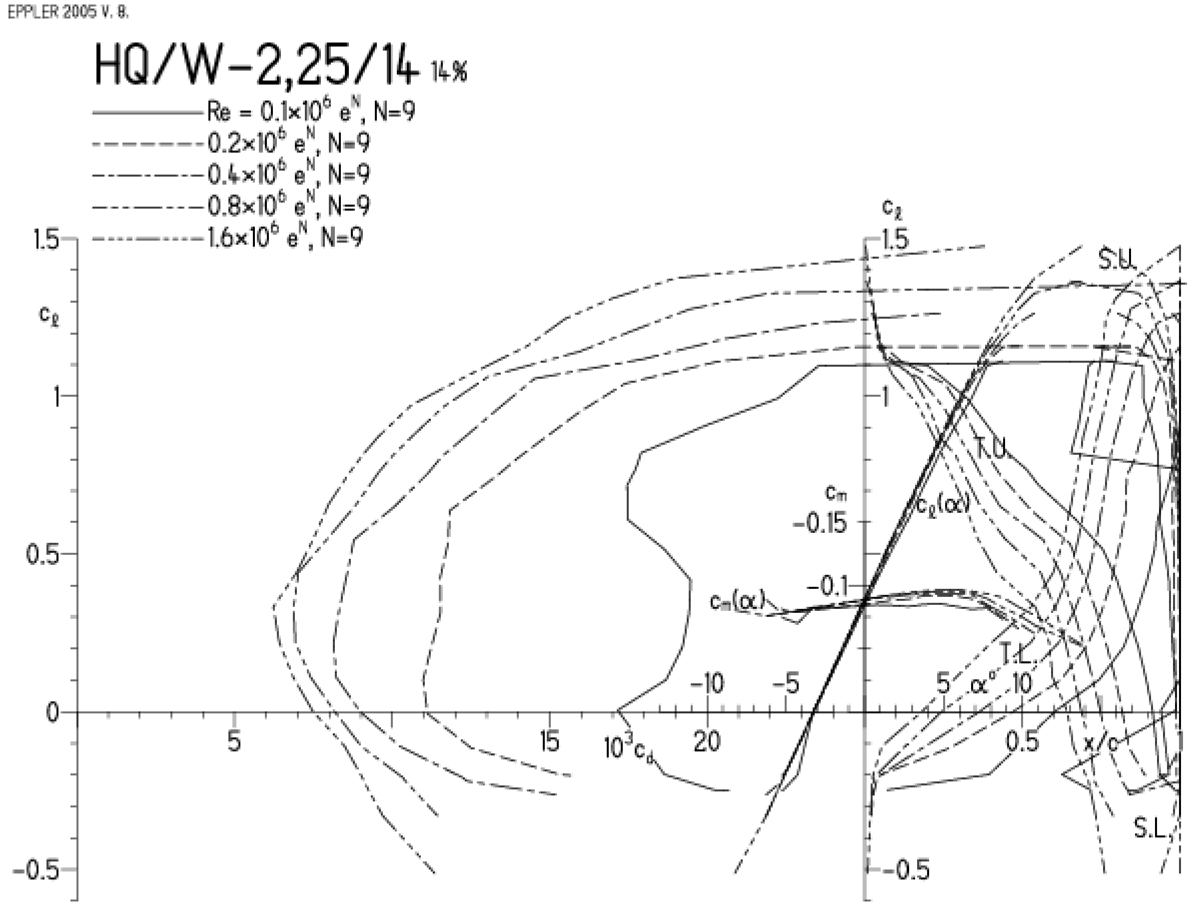
HQ/W-2,25/14, N=11



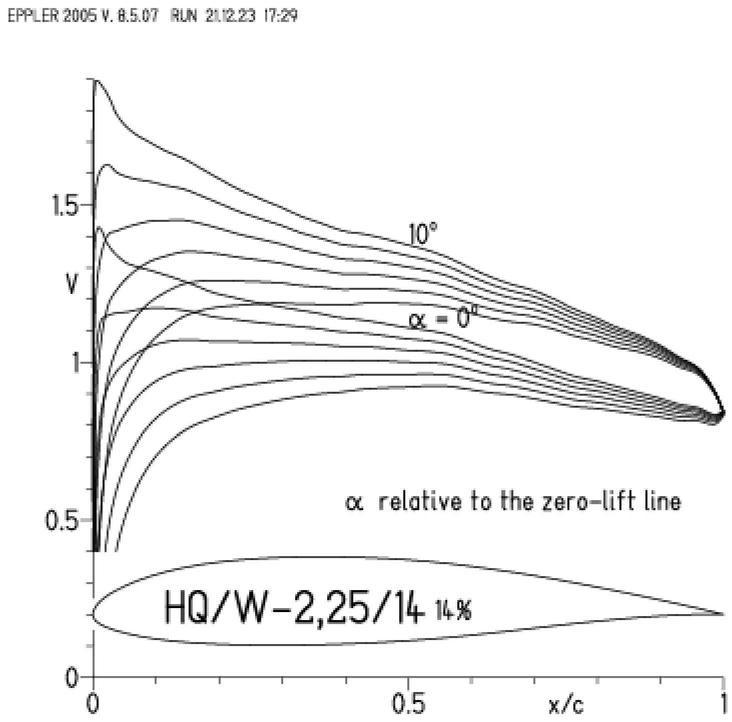


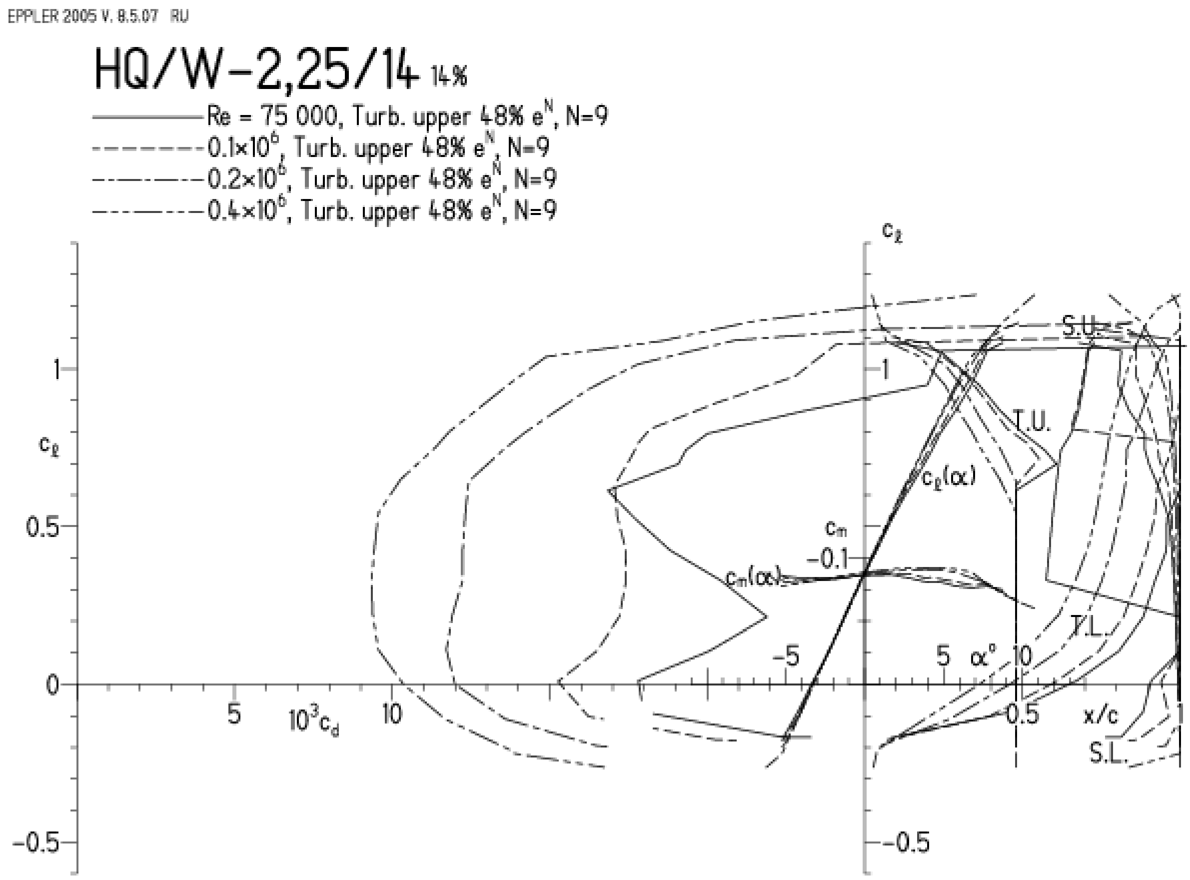
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_l
1.5
1
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−10
−5
5
α°
10
−0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

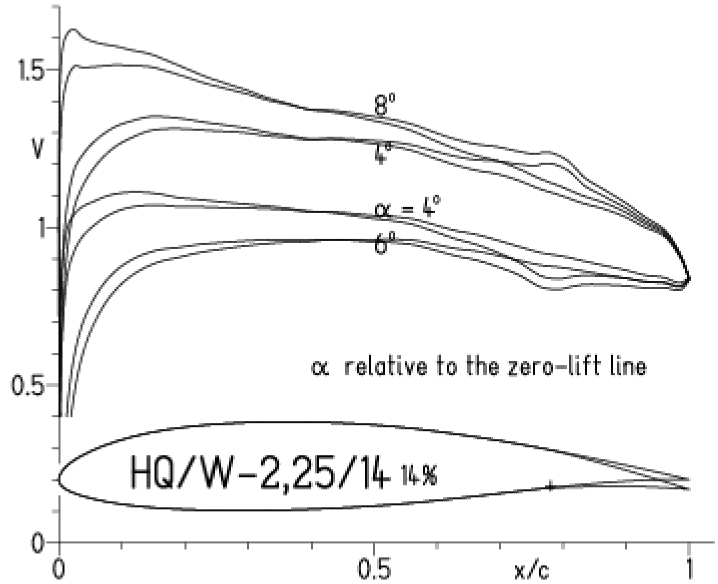
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



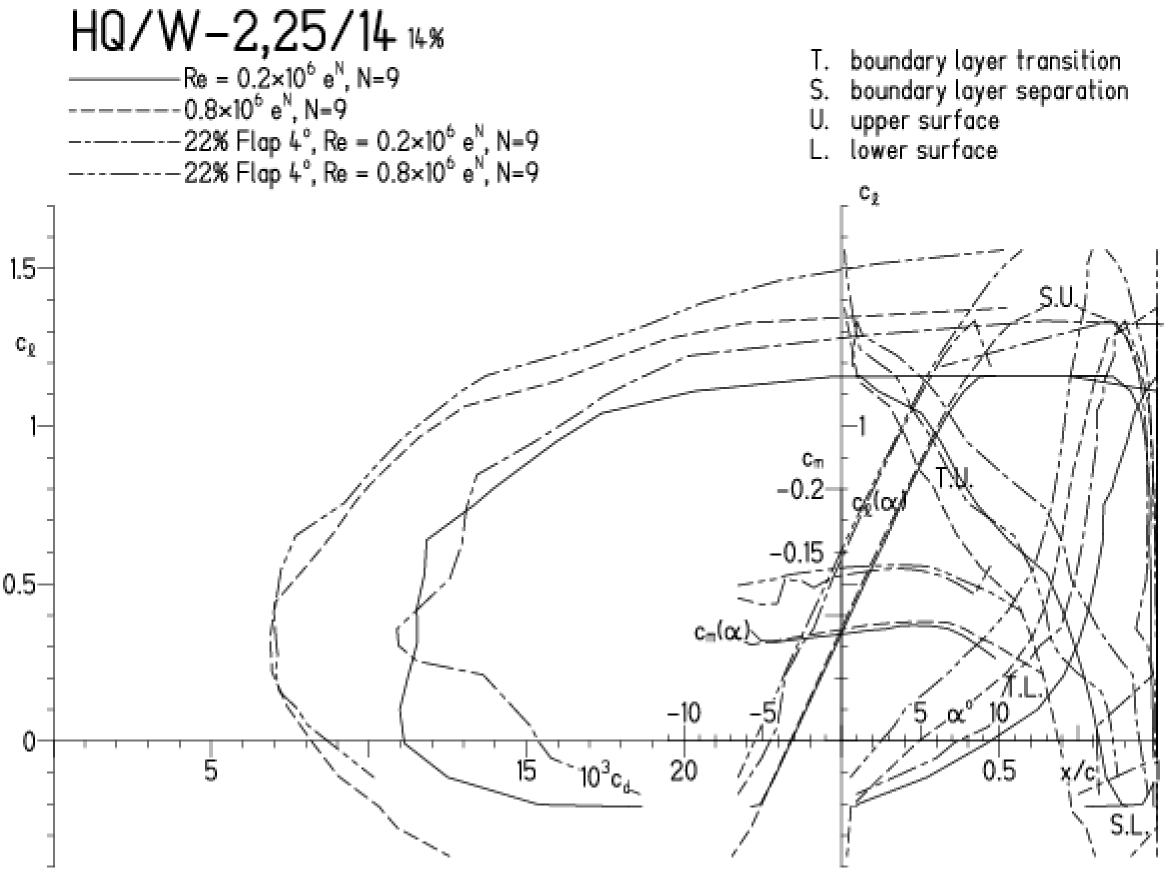


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

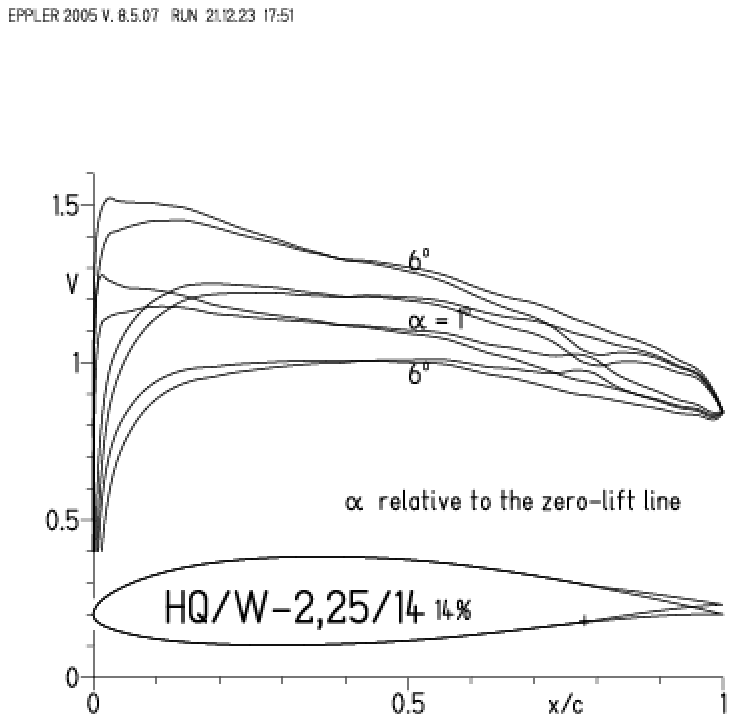
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

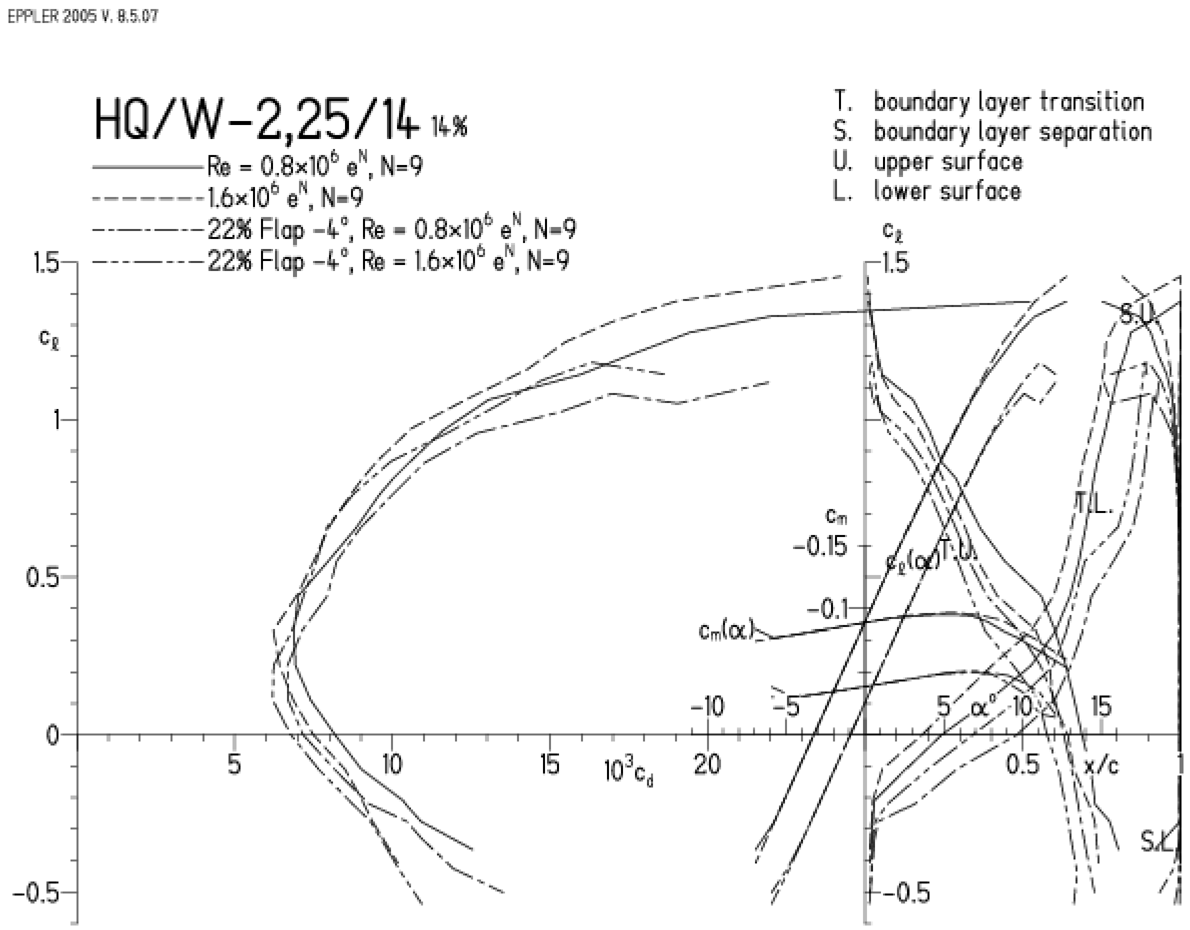


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

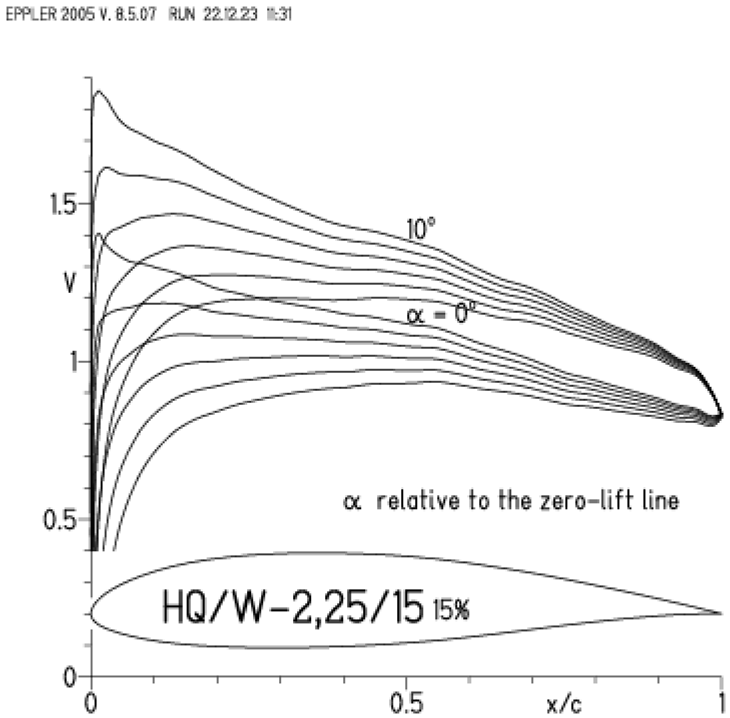


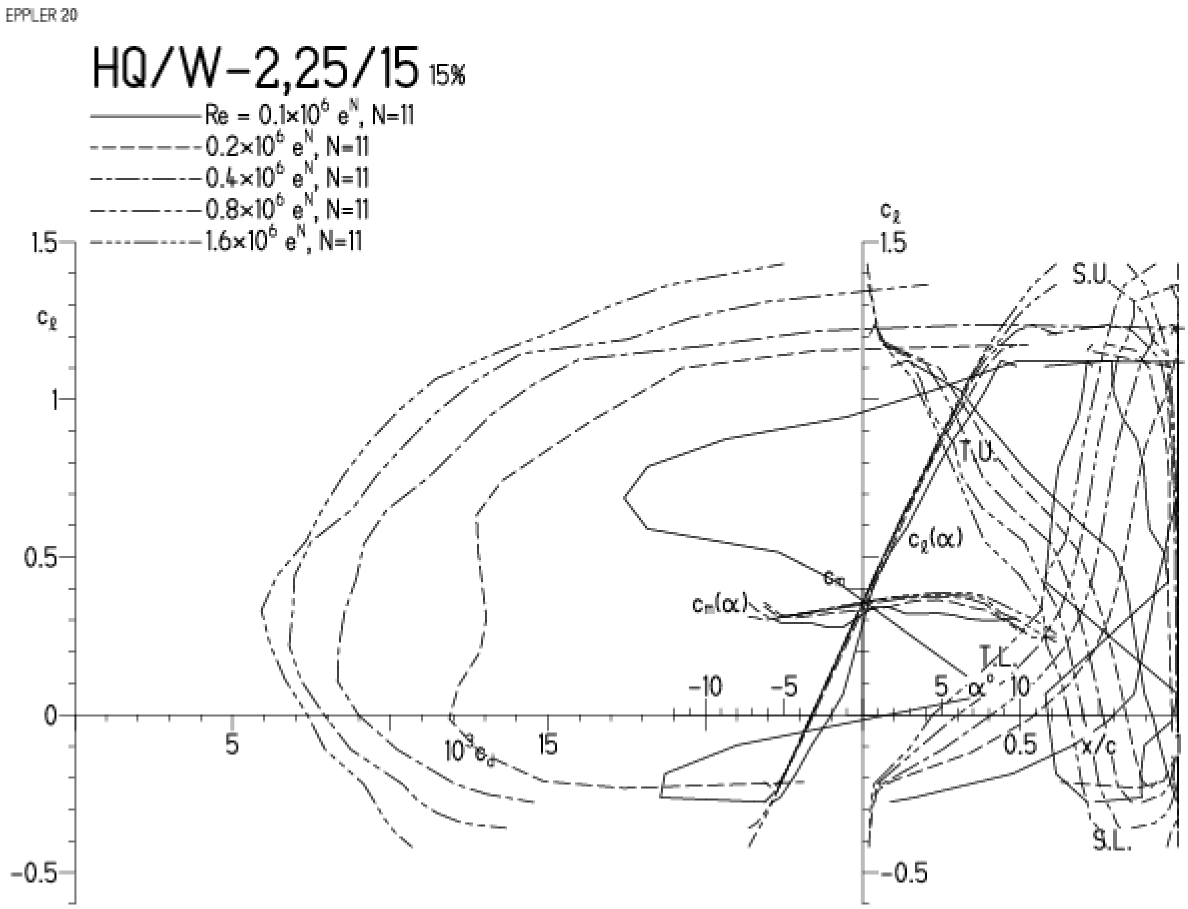
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



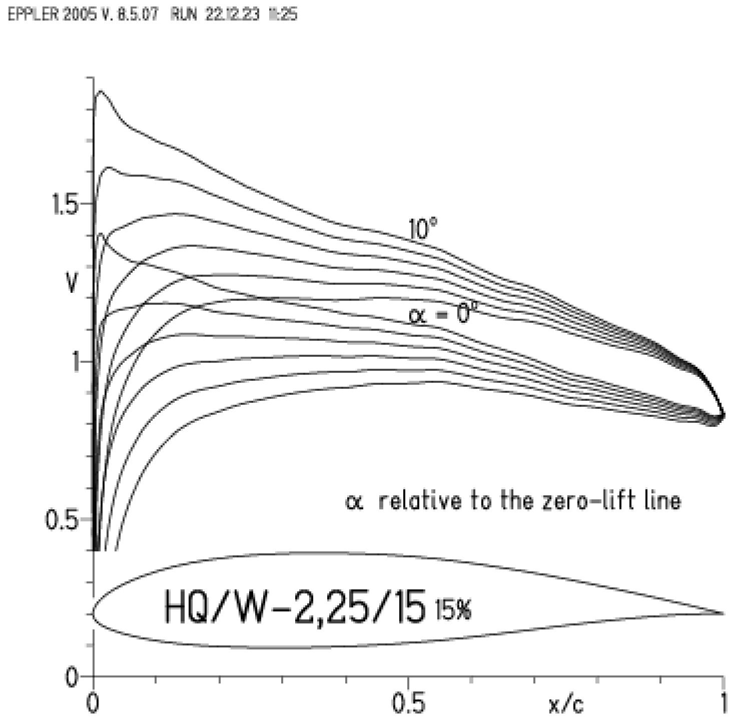


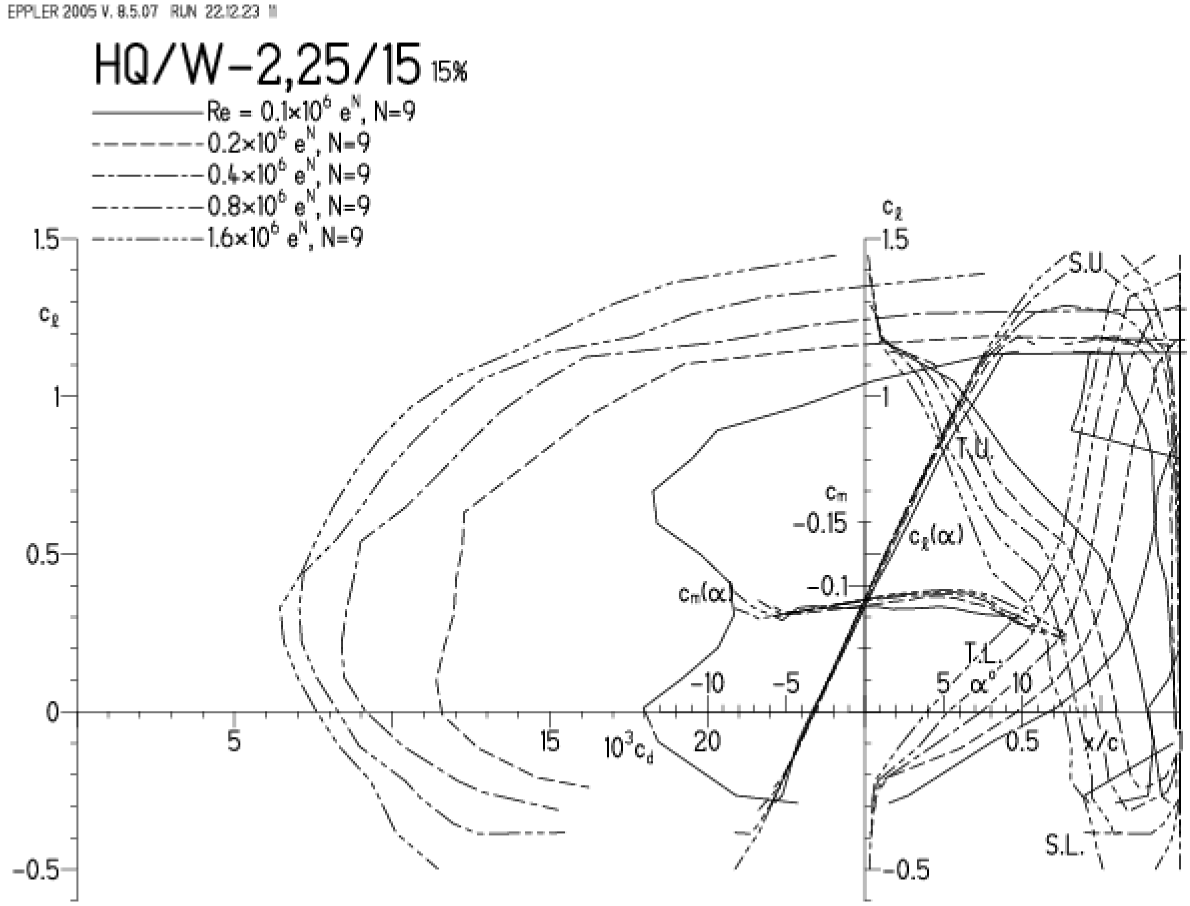
HQ/W-2,25/15, N=11



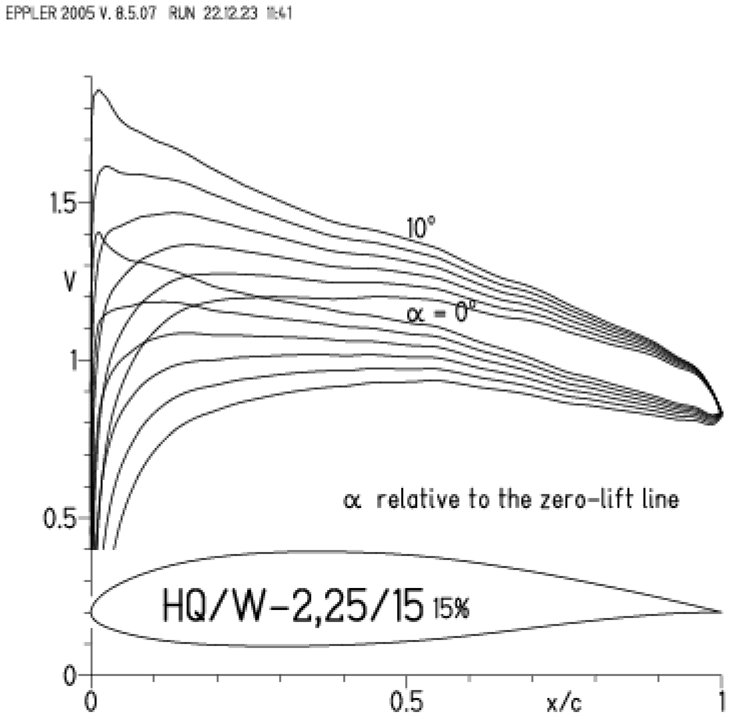


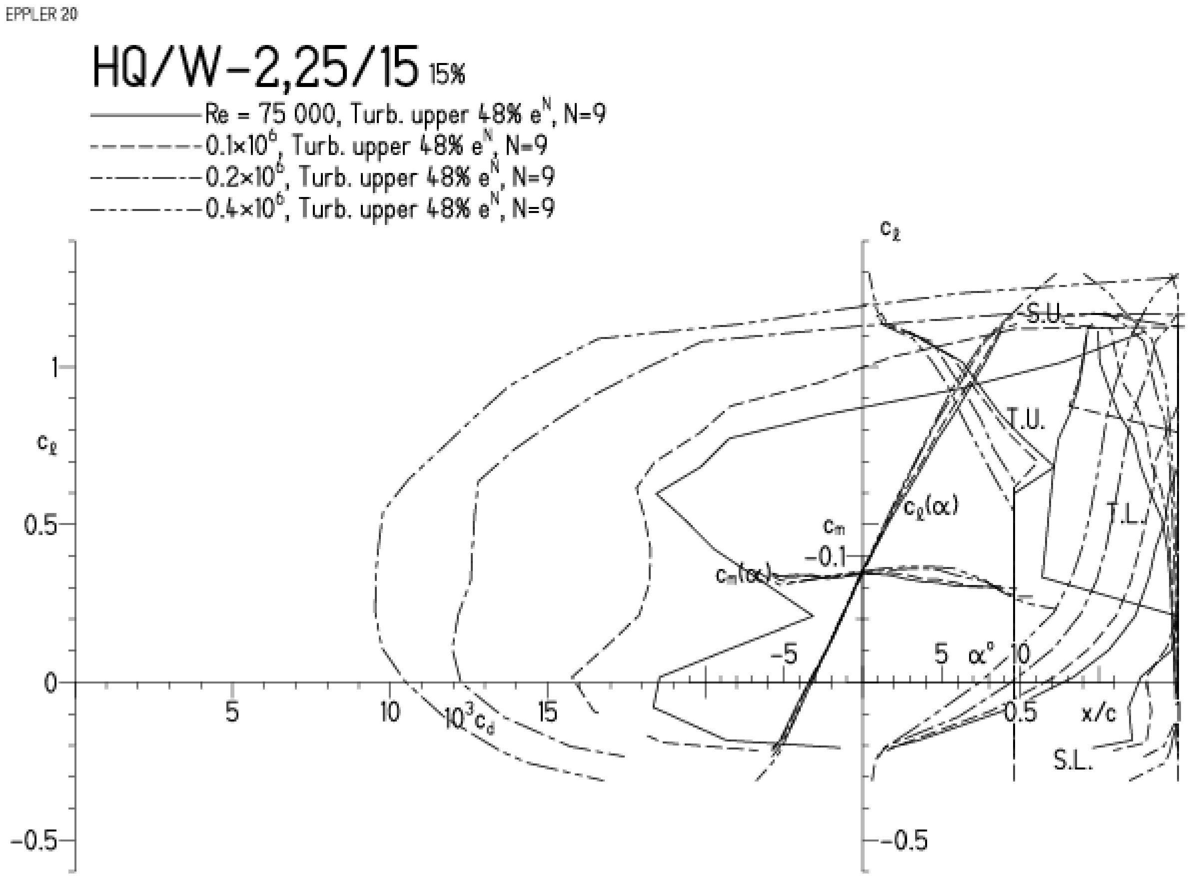
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



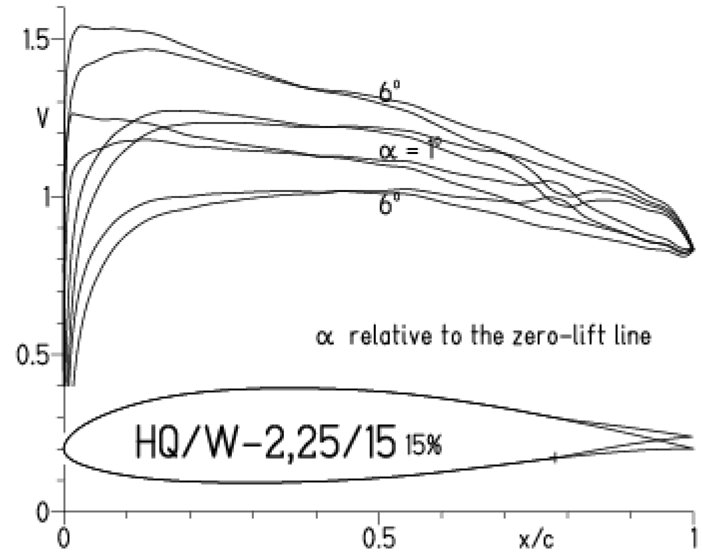


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

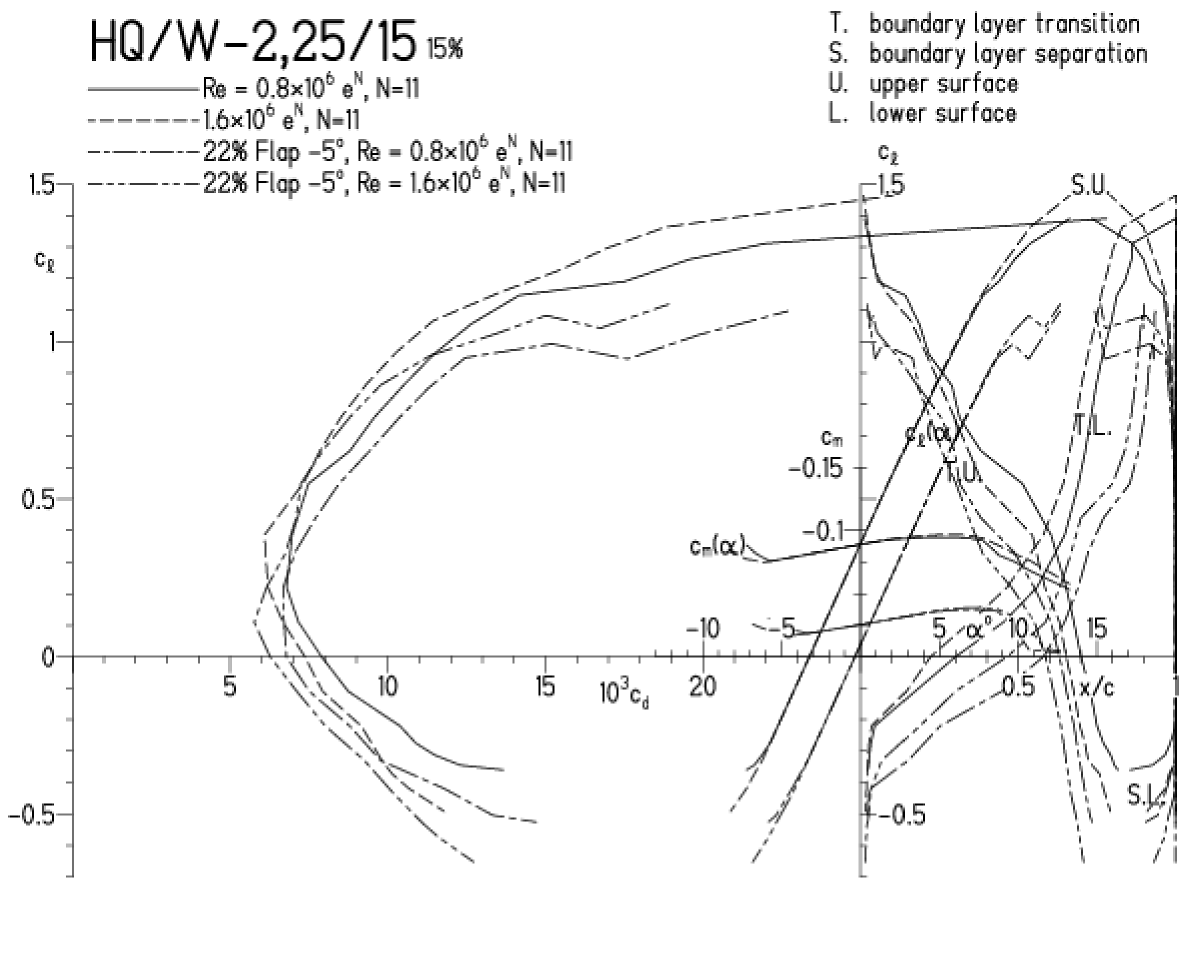
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

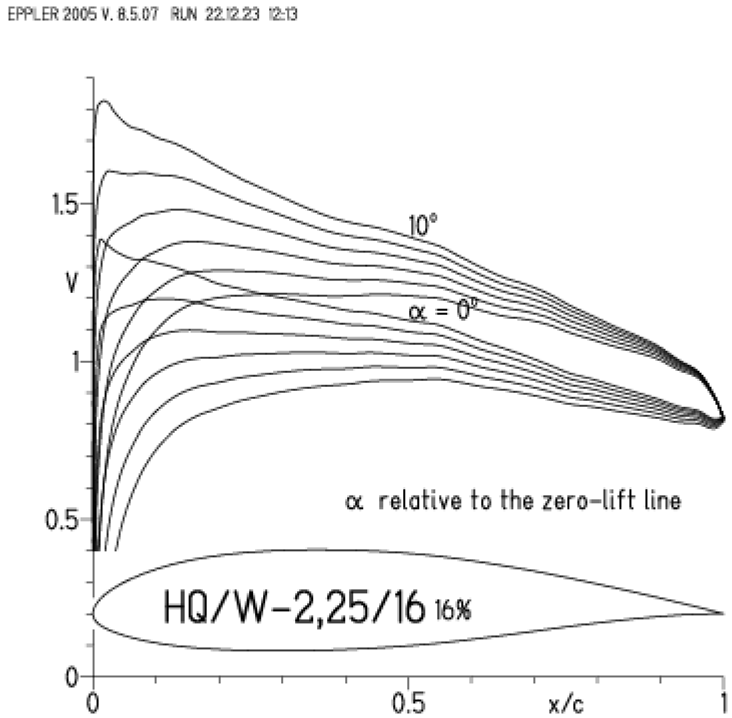
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

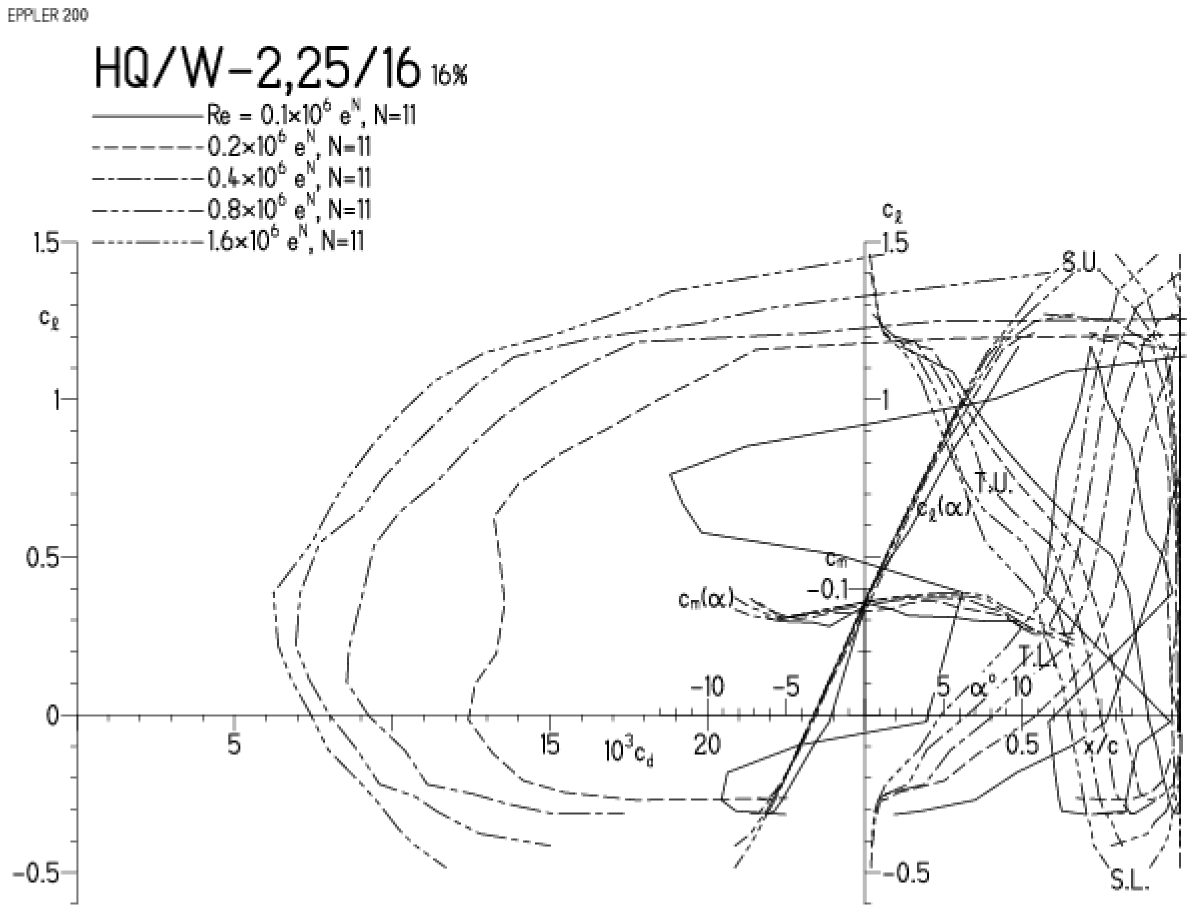


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

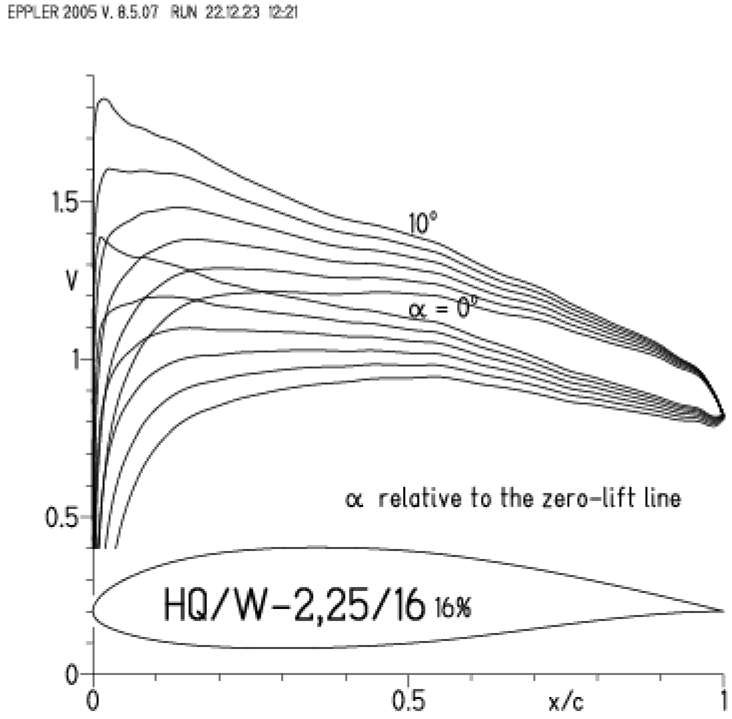


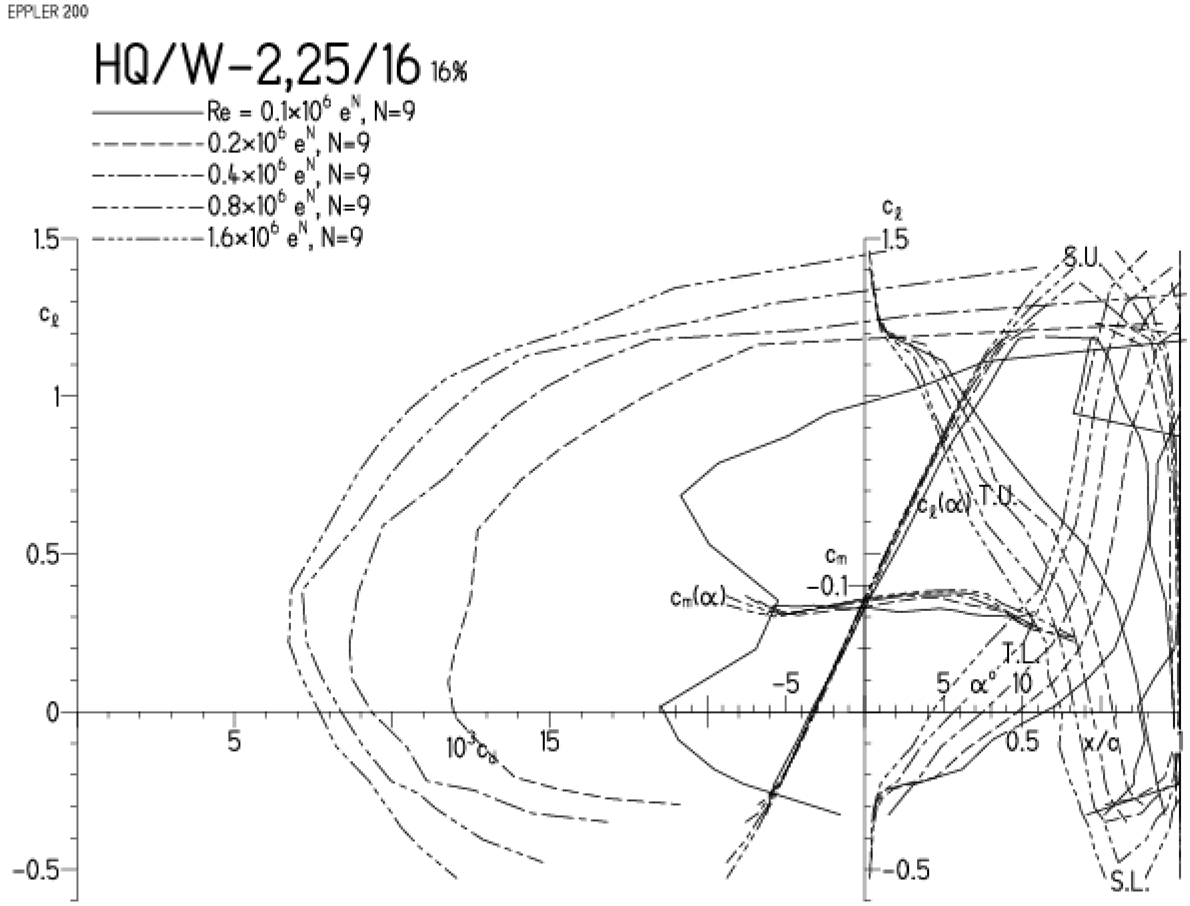
HQ/W-2,25/16, N=11



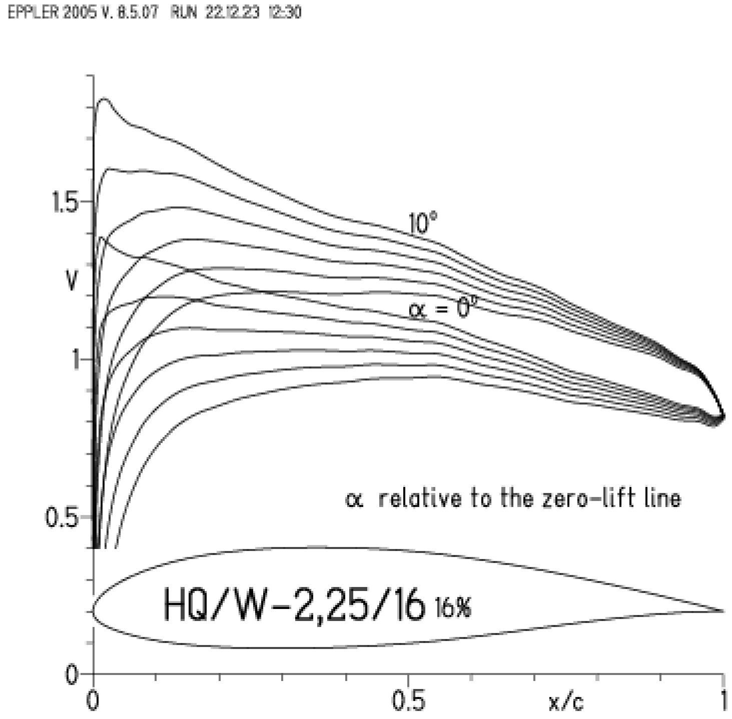


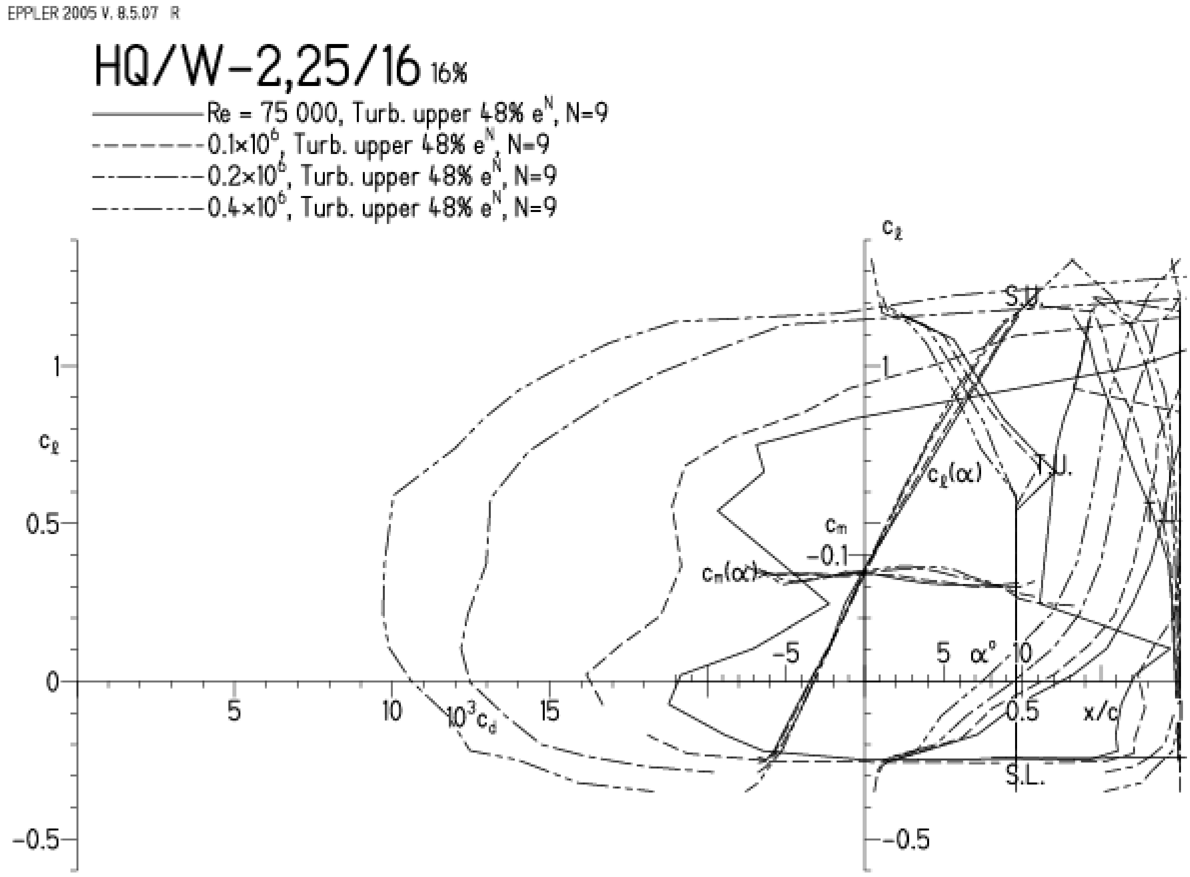
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
10^-3 c_d
15
c_m(α)
c_m
−0.1
−5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1.5
−0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



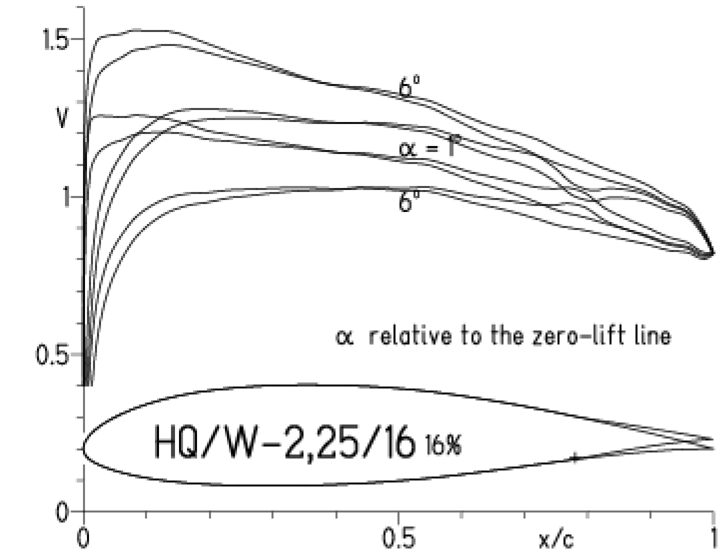


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

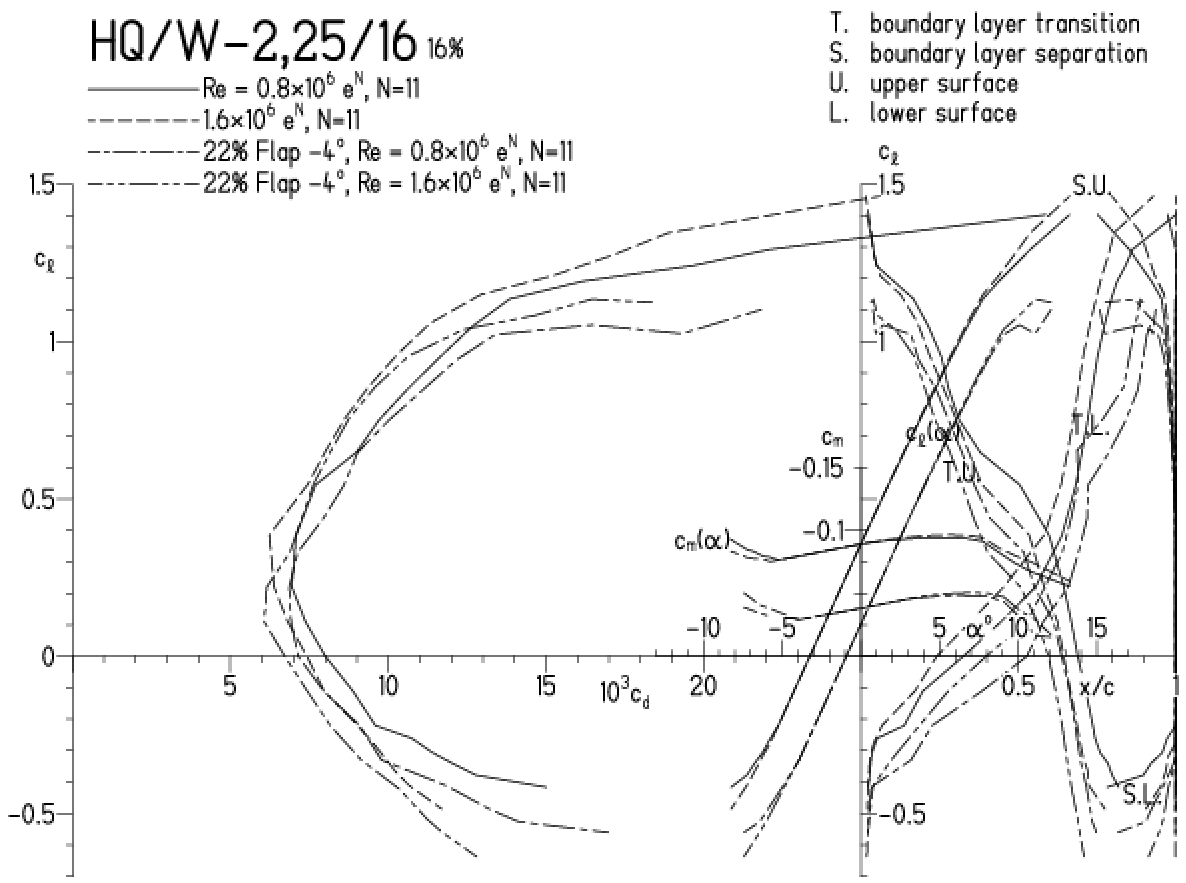
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

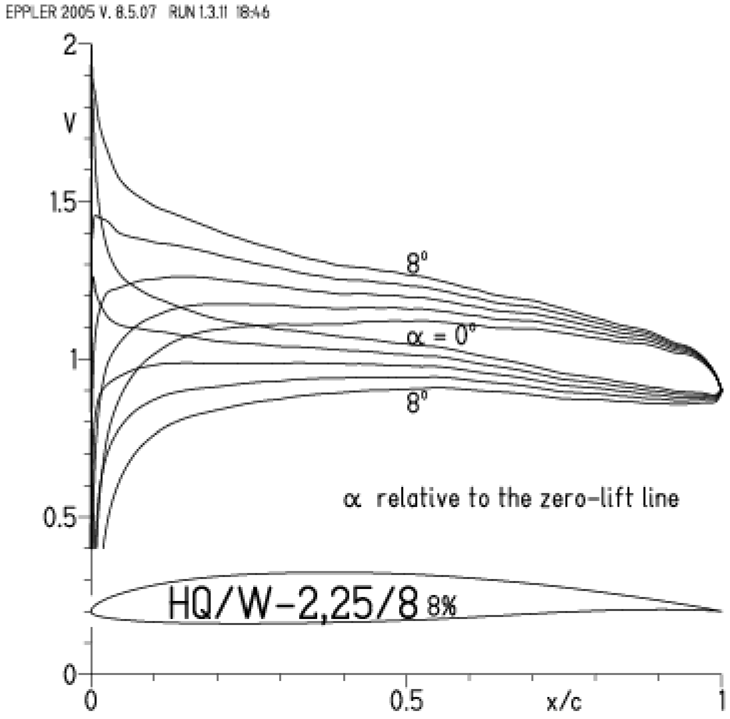
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

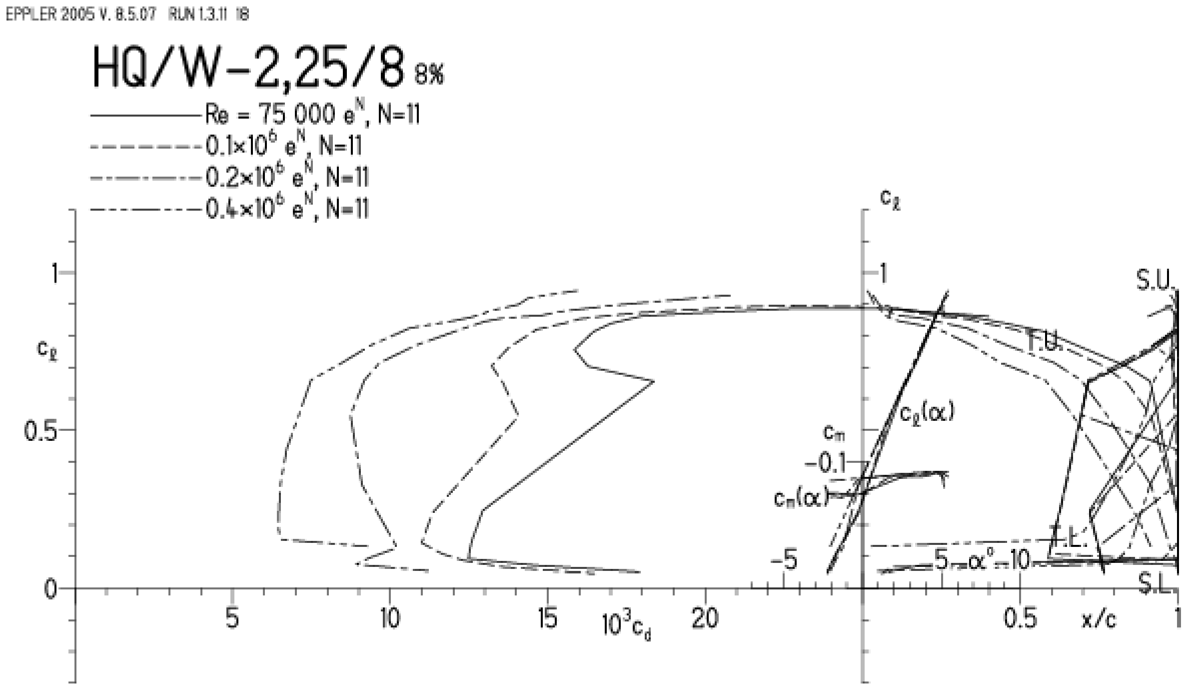


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

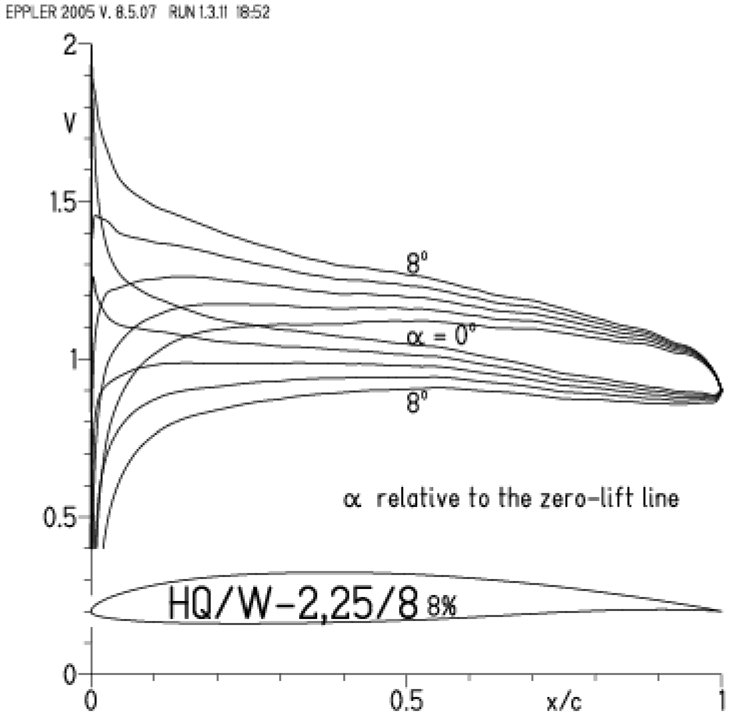


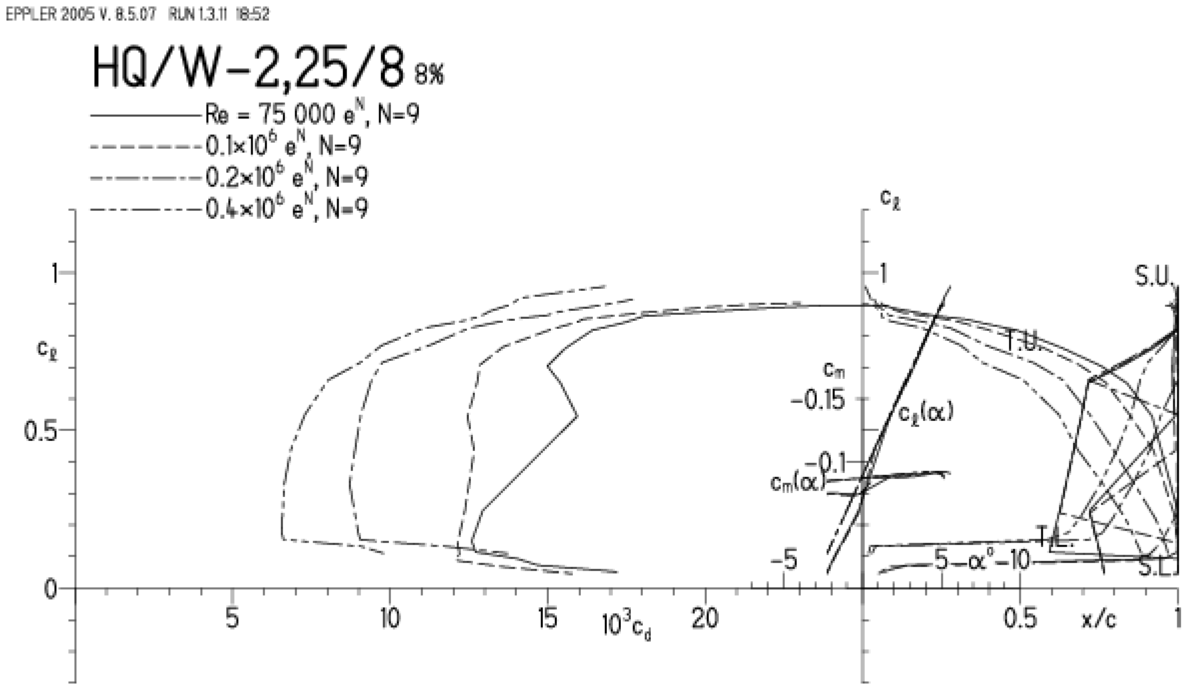
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

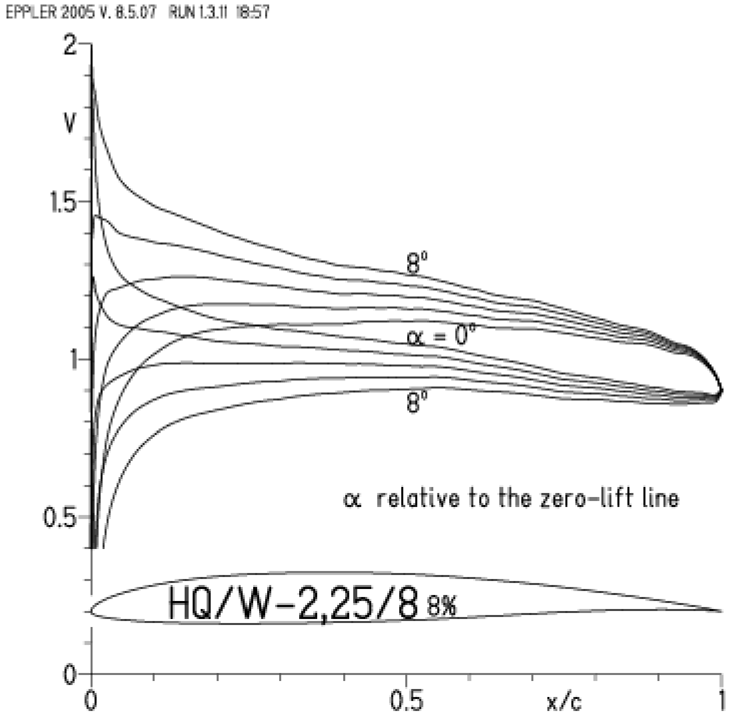

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

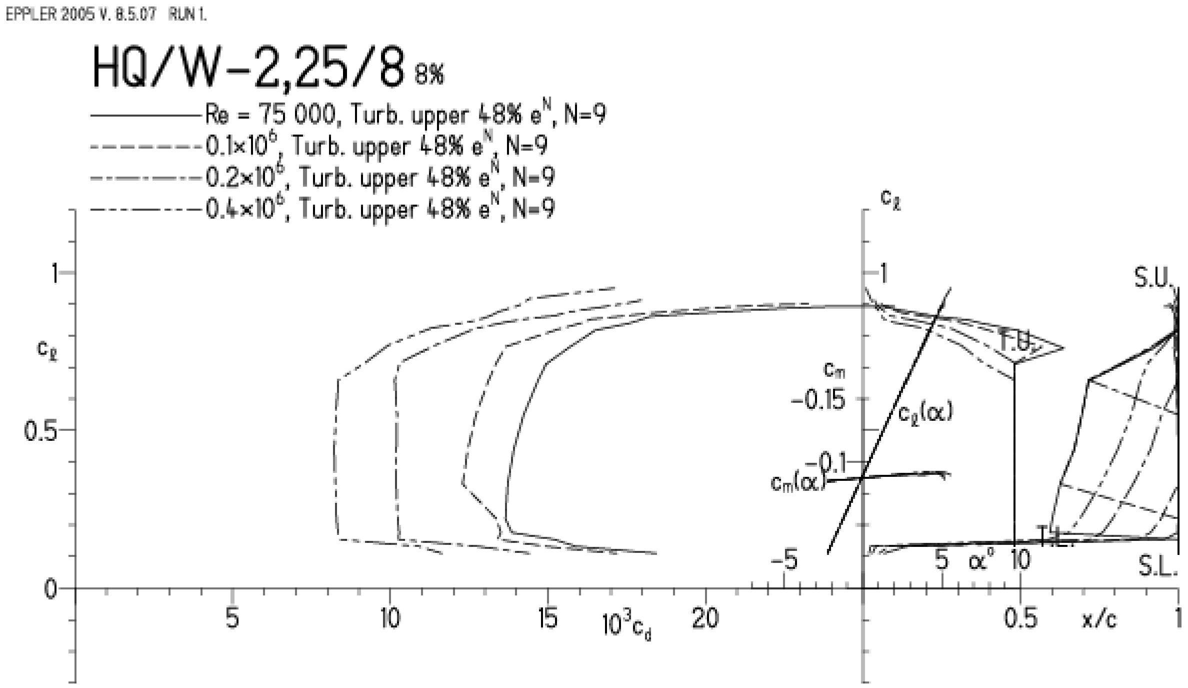
<u>HQ/W-2,25/8</u>, N=9



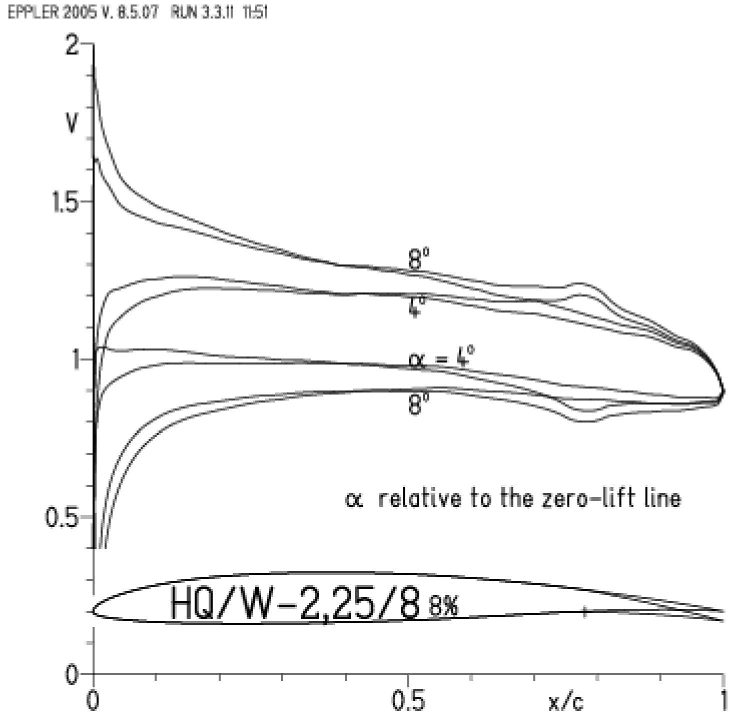


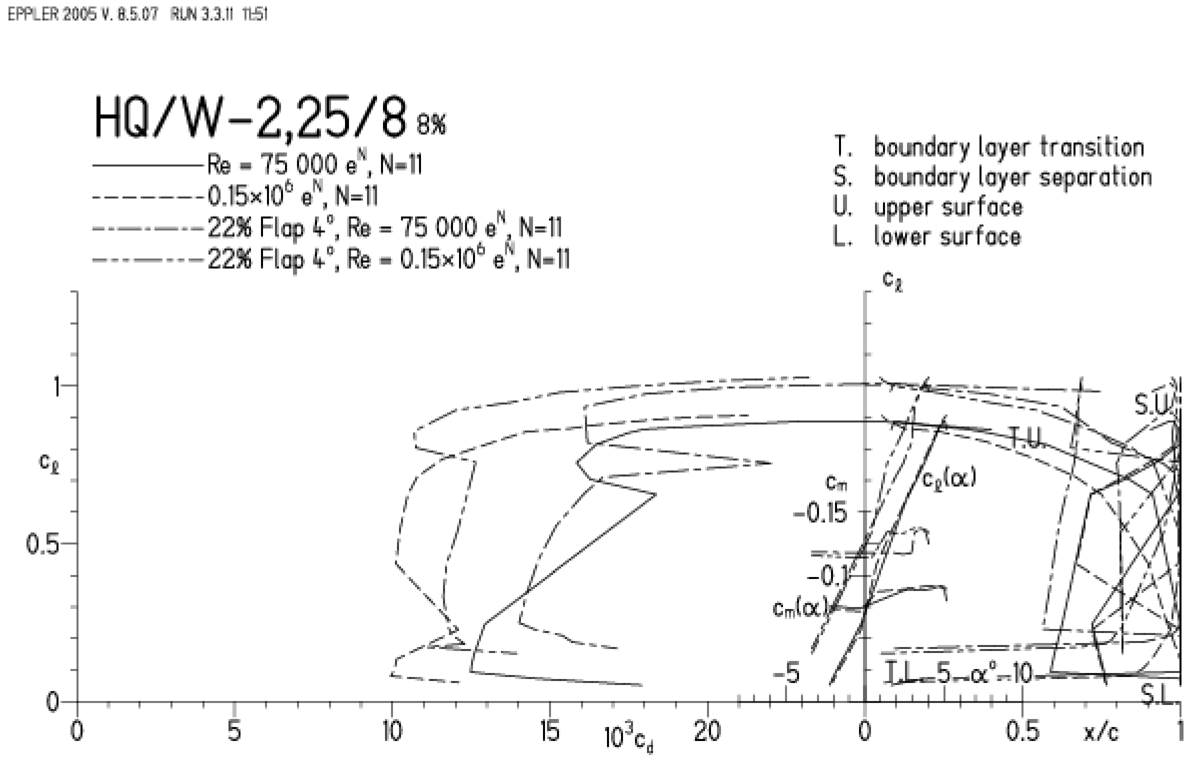
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



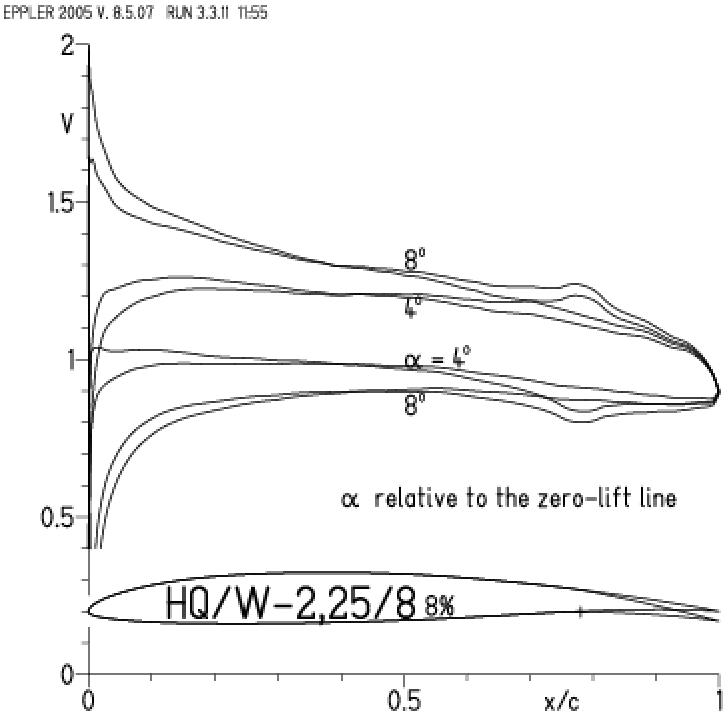


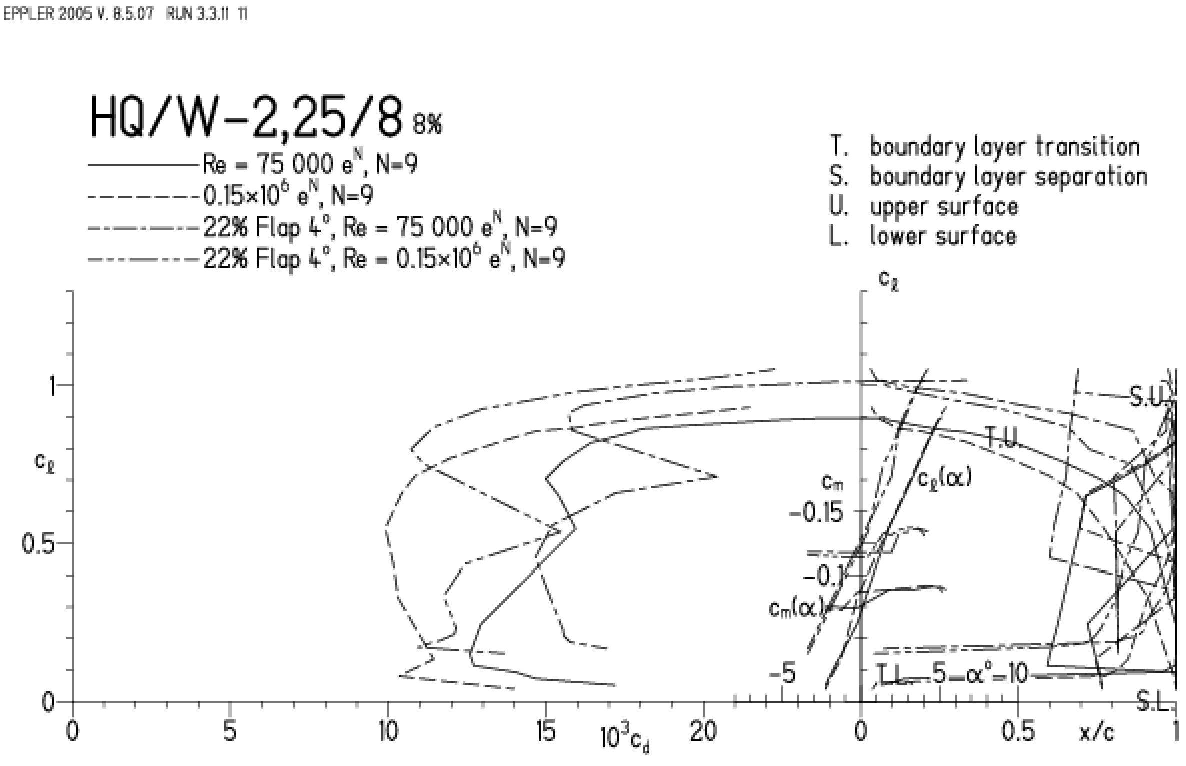
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



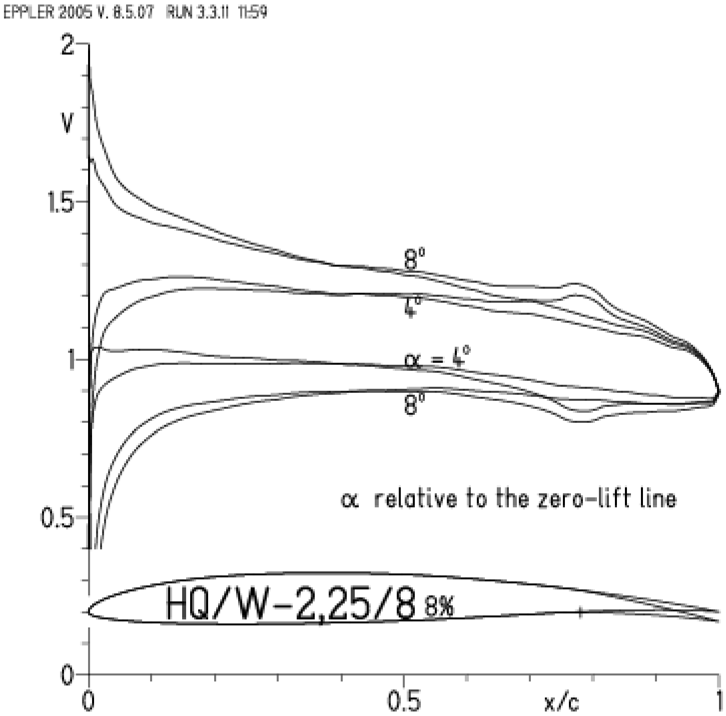


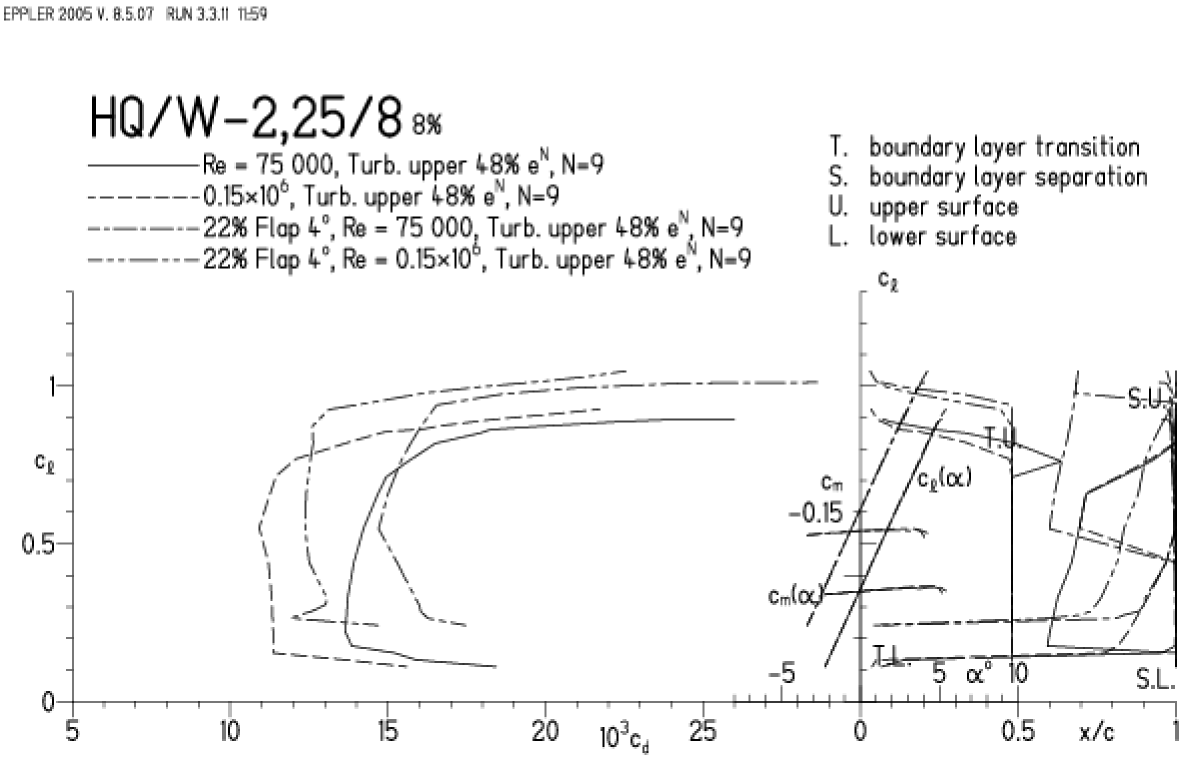
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





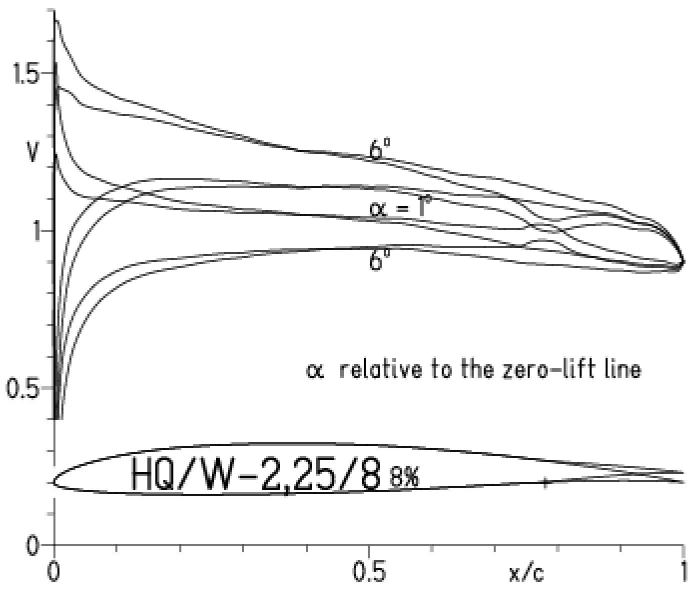
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



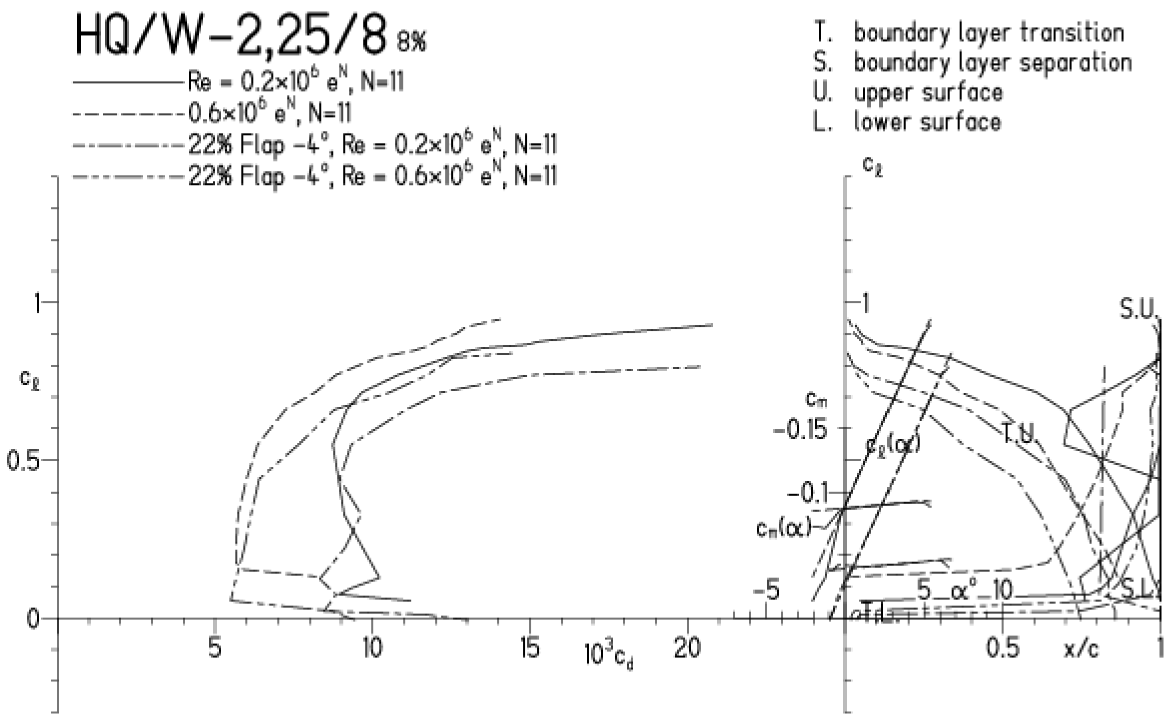


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

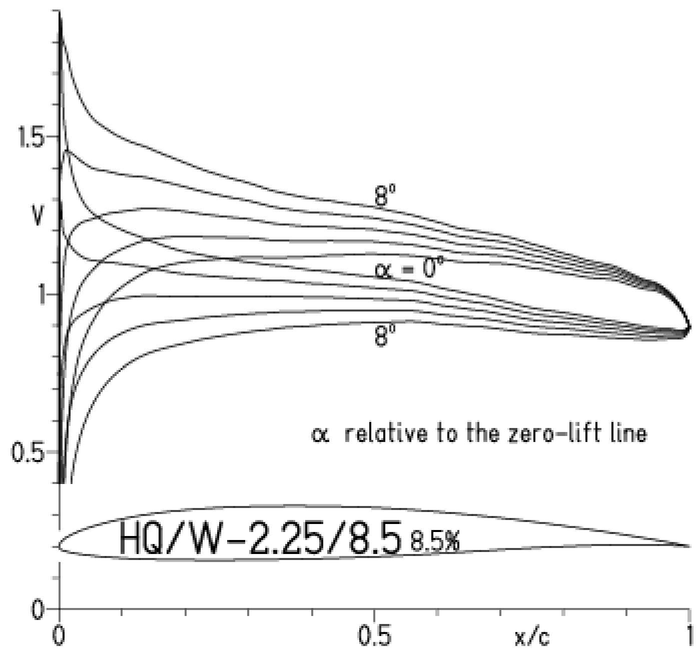


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

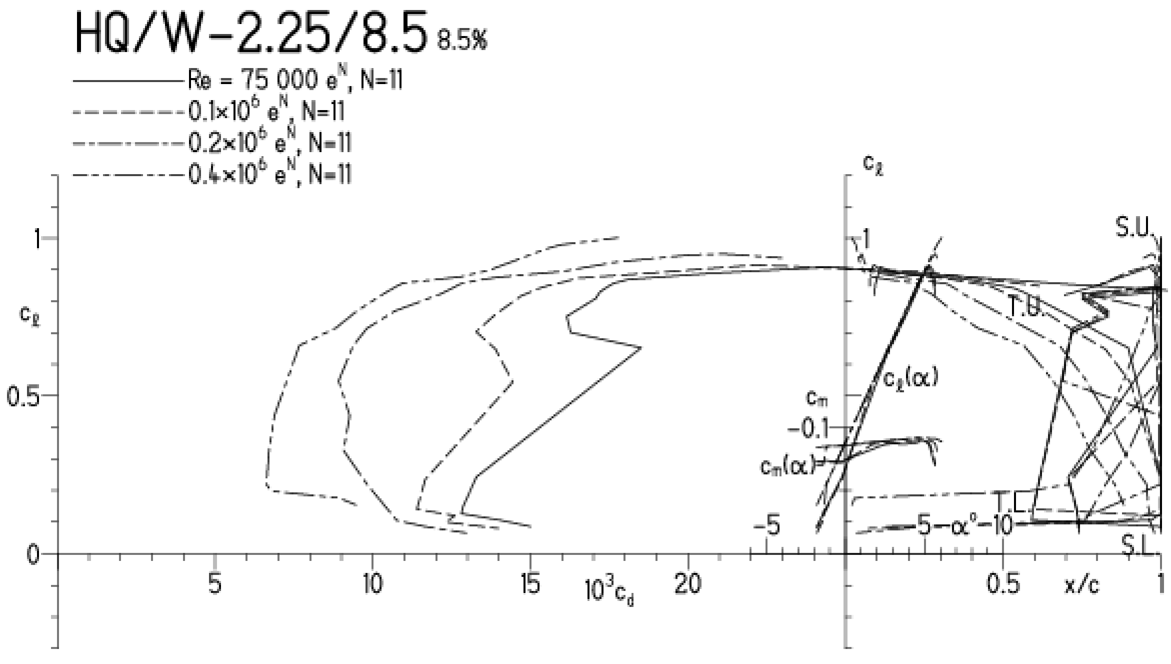


<u>HQ/W-2,25/8,5</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

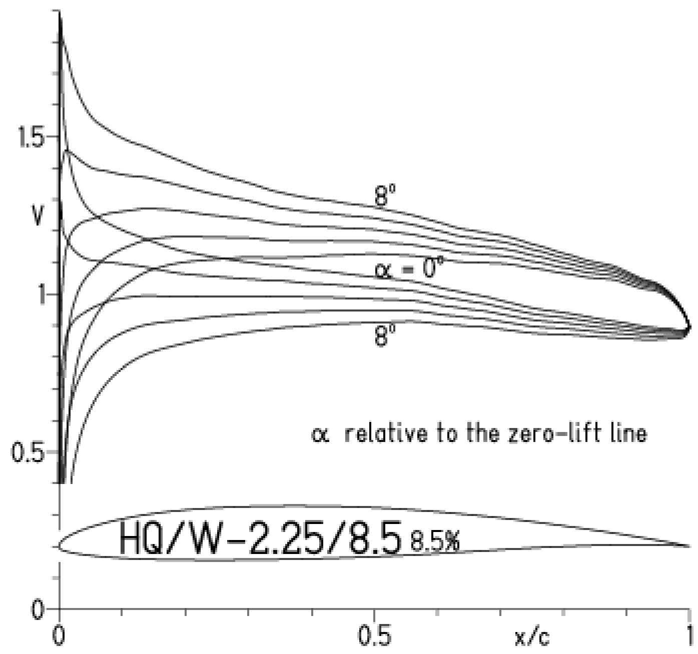


EPPLER 2005 V

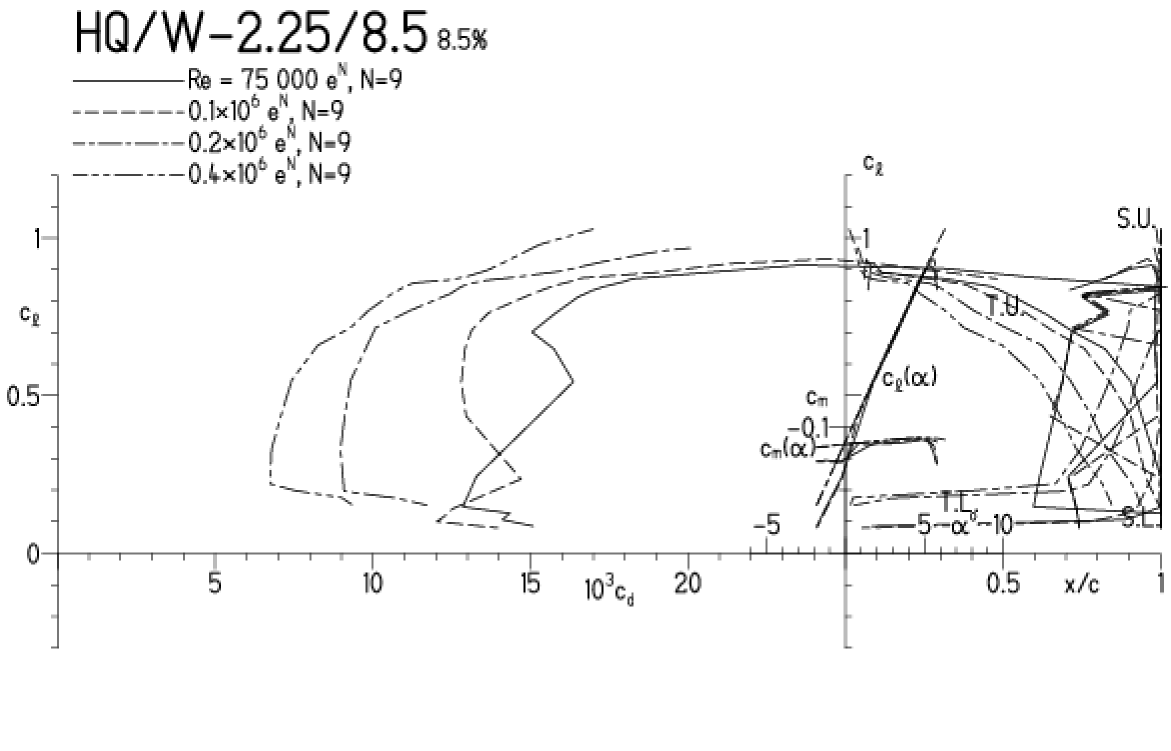


HQ/W-2,25/8,5, N=9

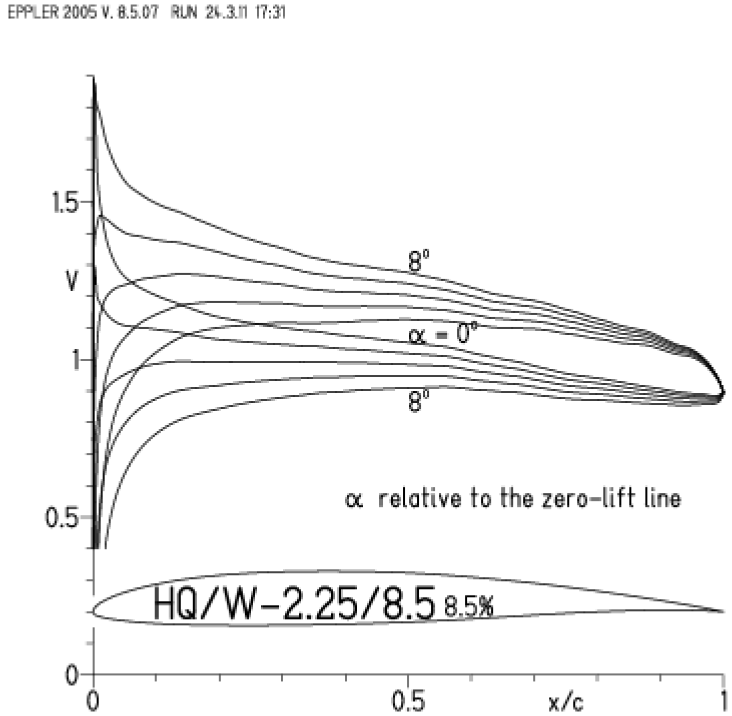
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

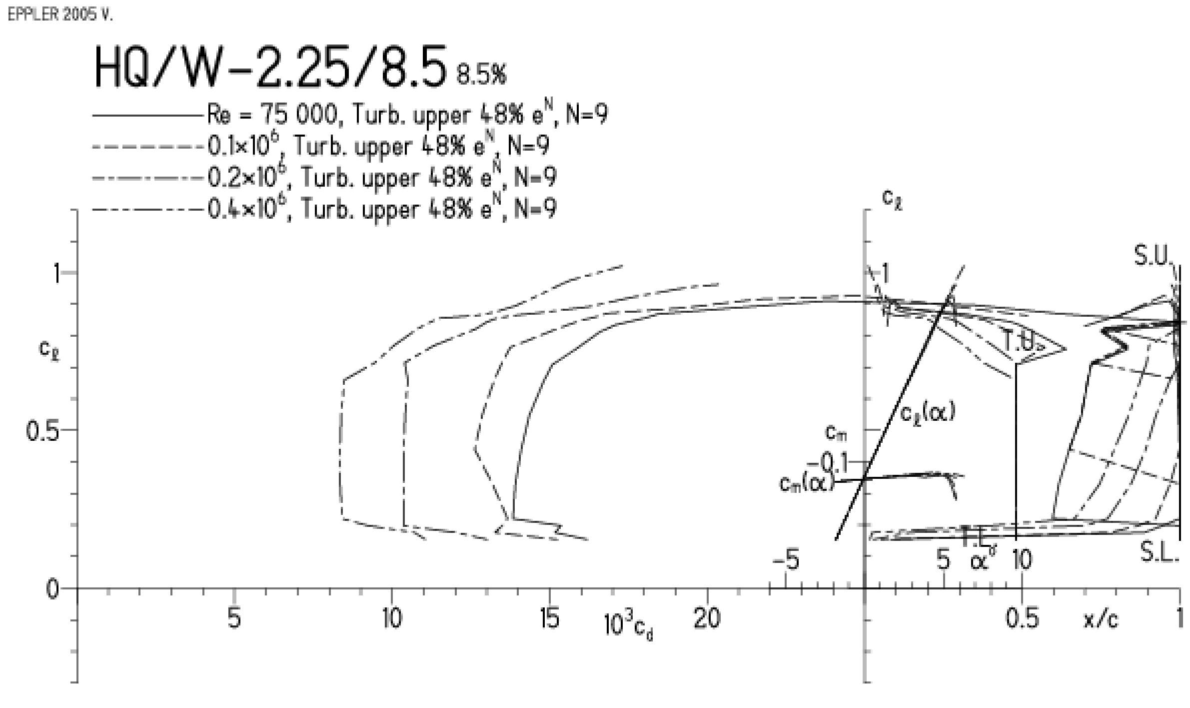


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



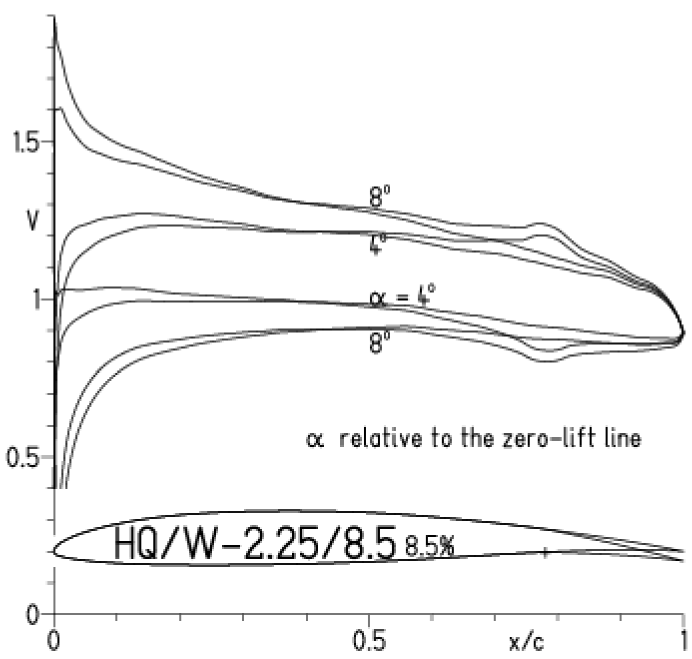
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



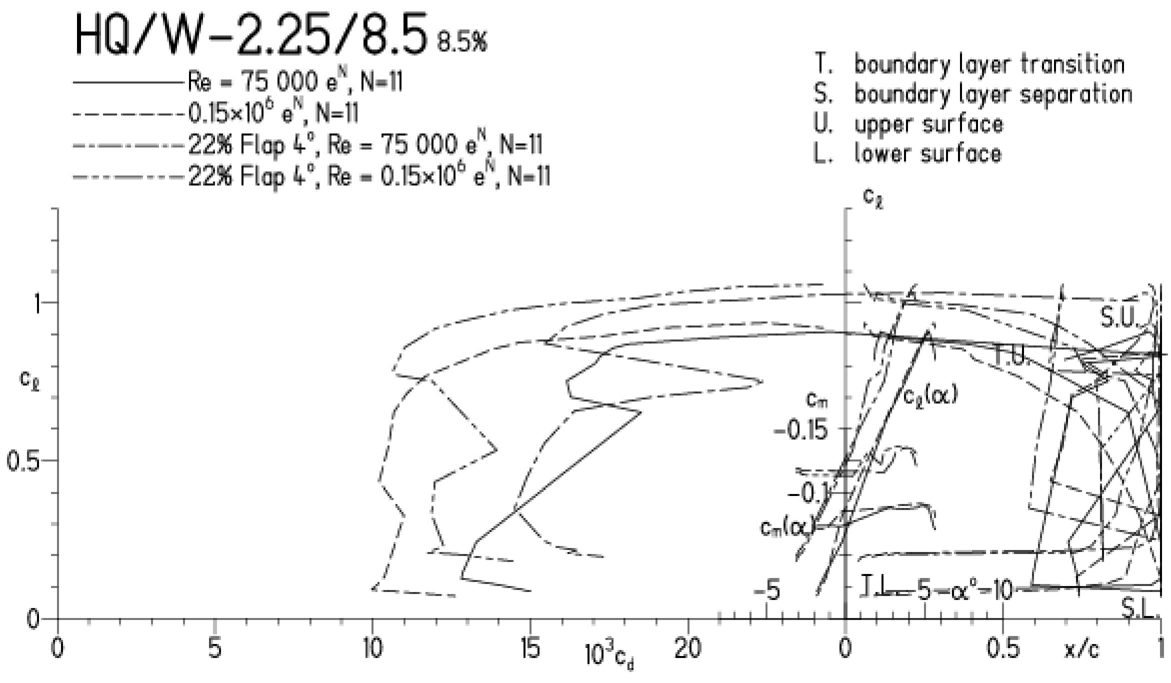


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

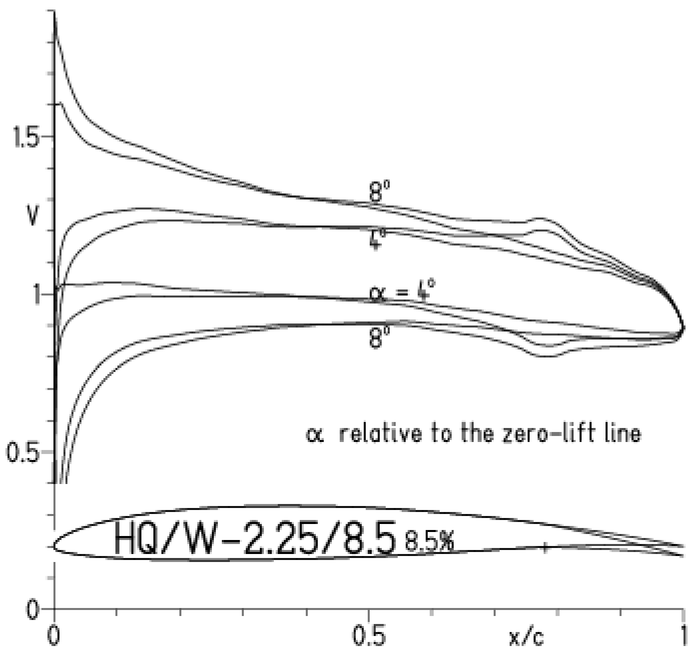


EPPLER 2005 V. 8.5.

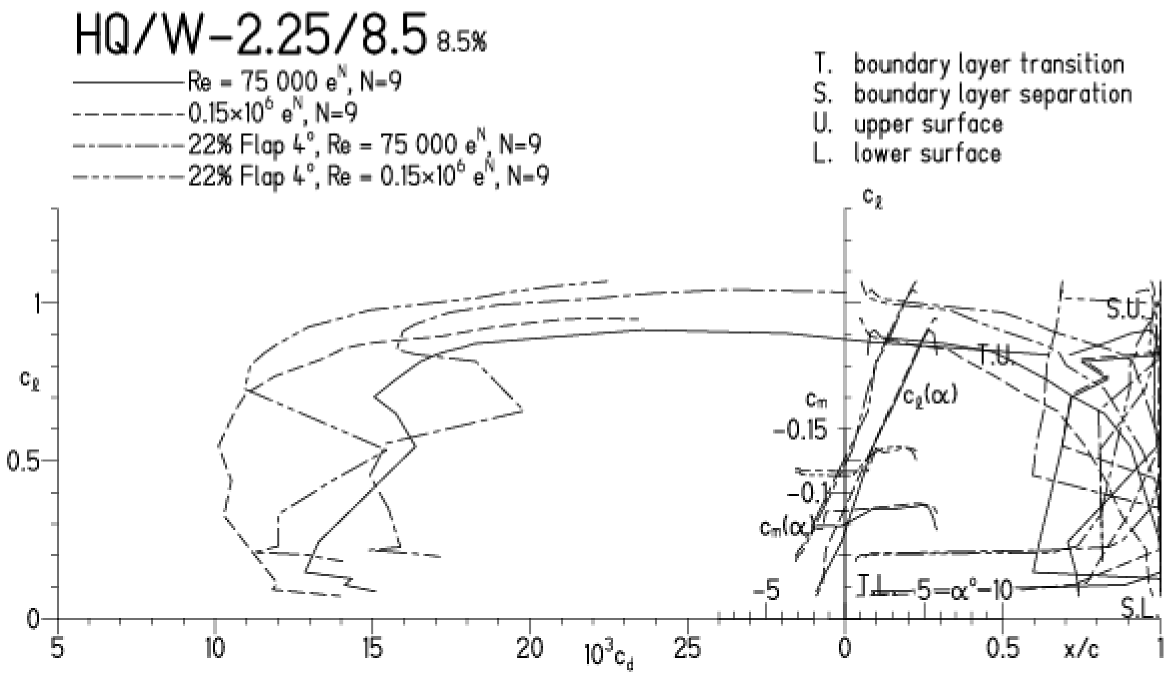


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

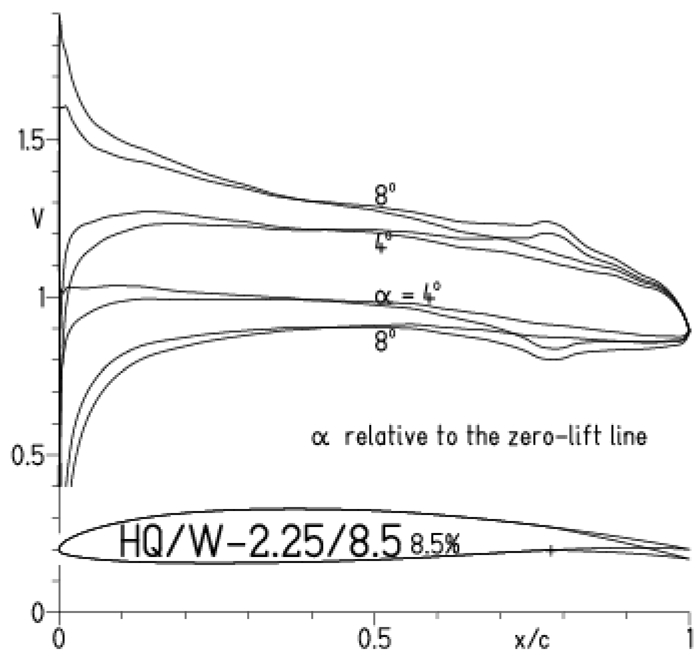


EPPLER 2005 V.

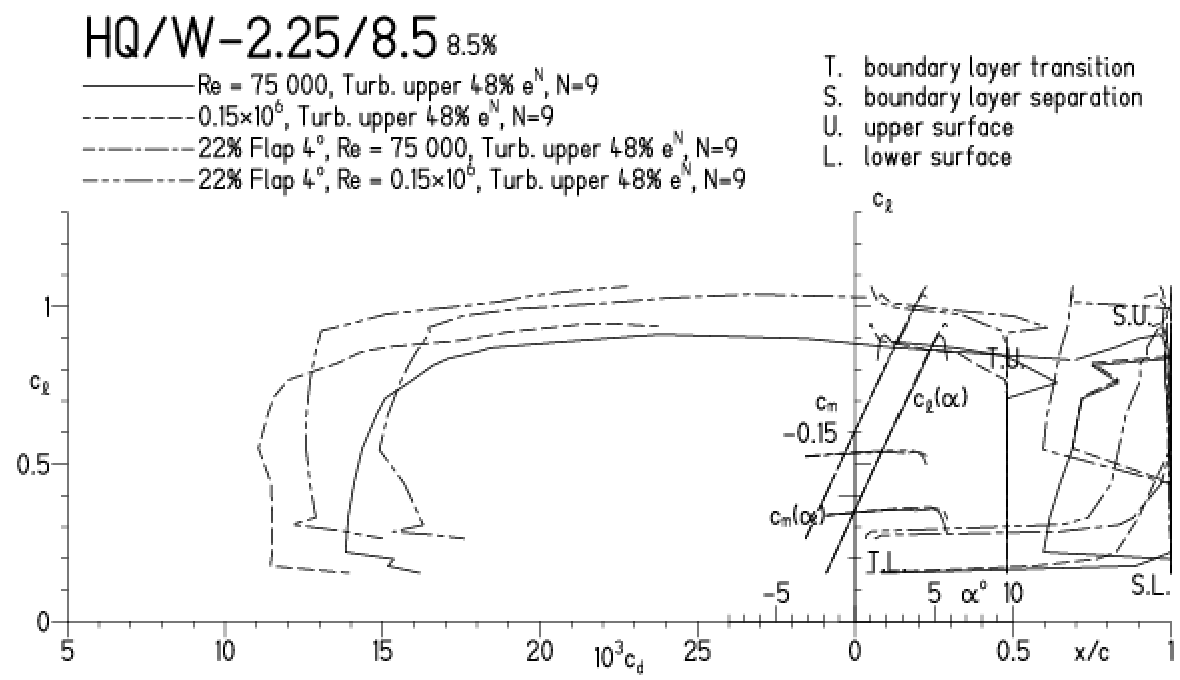


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

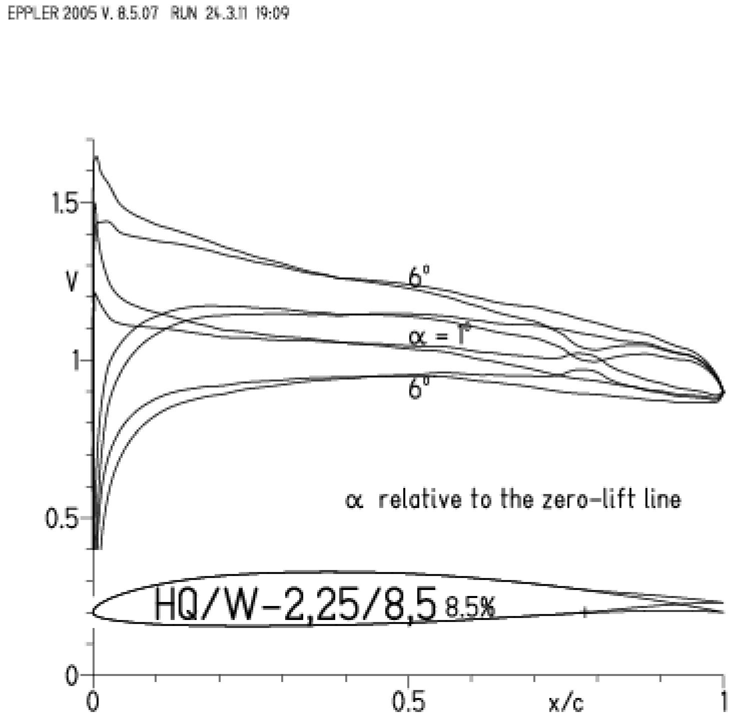
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

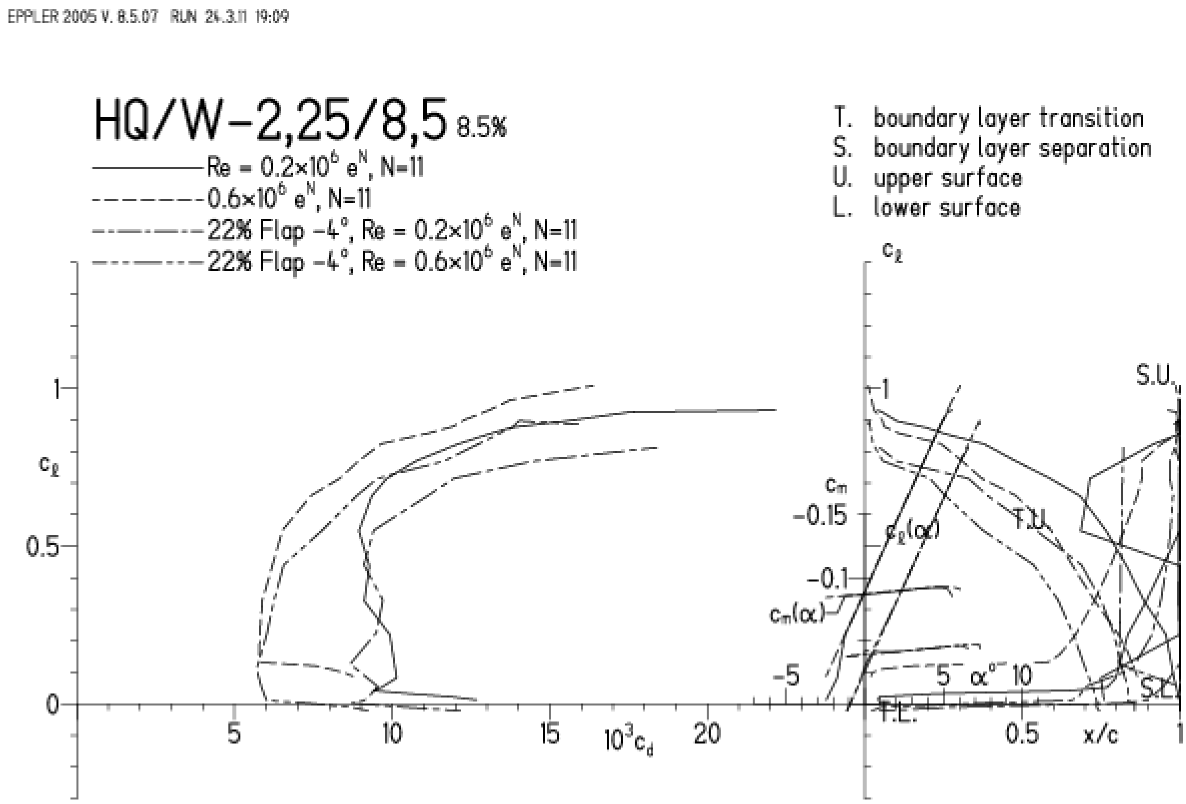


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



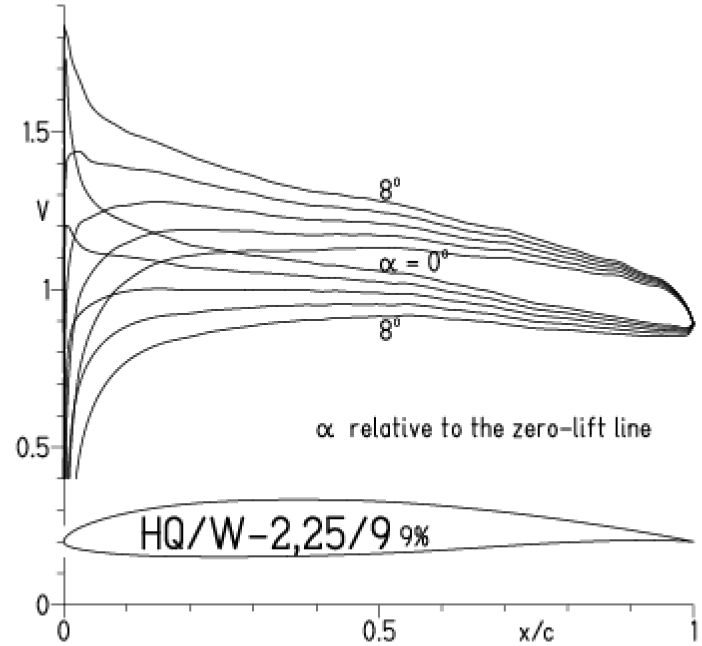
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



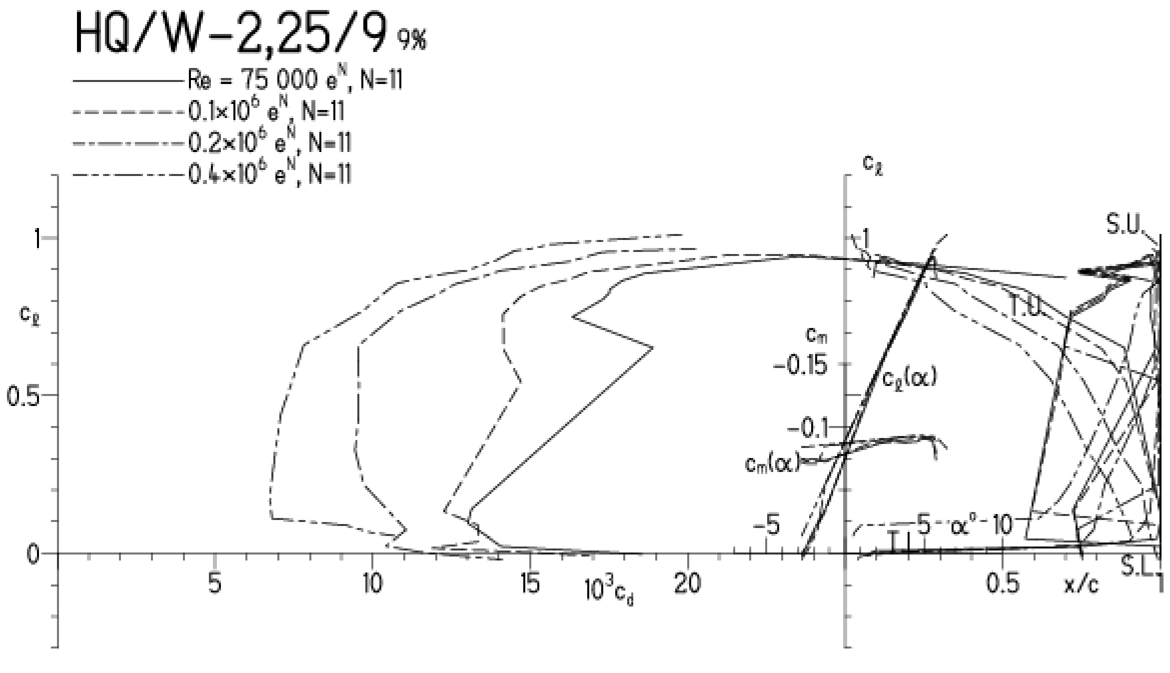


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

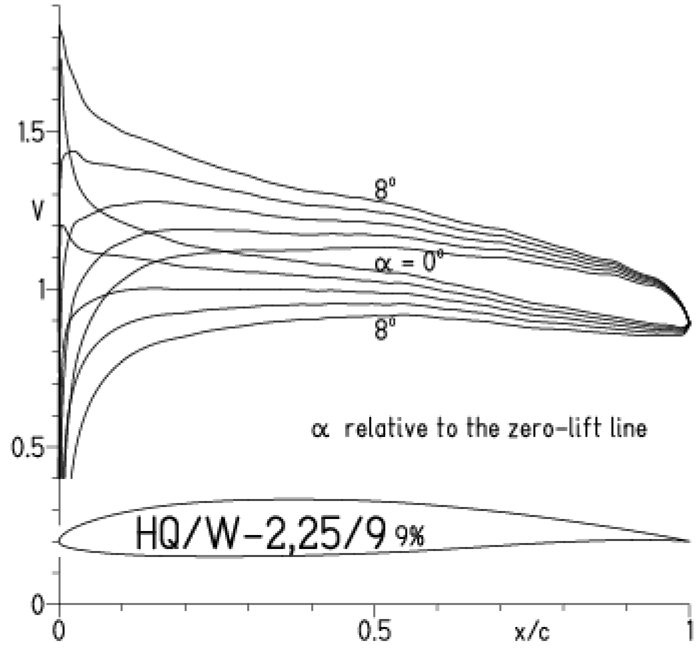


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

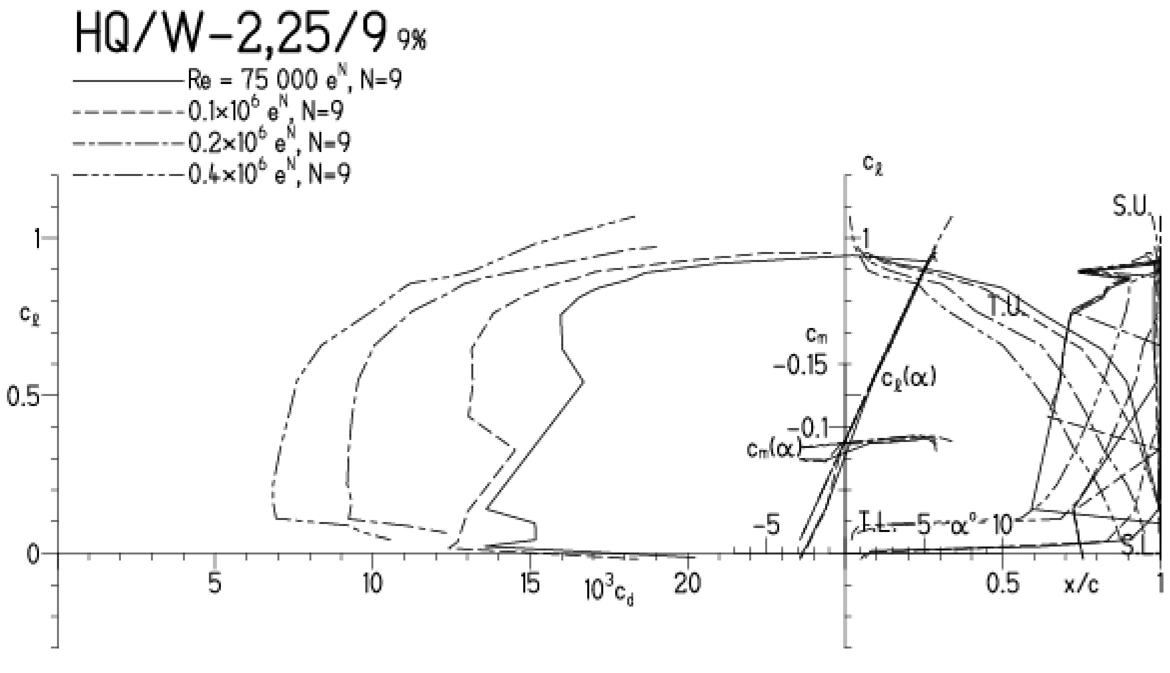


HQ/W-2,25/9, N=9

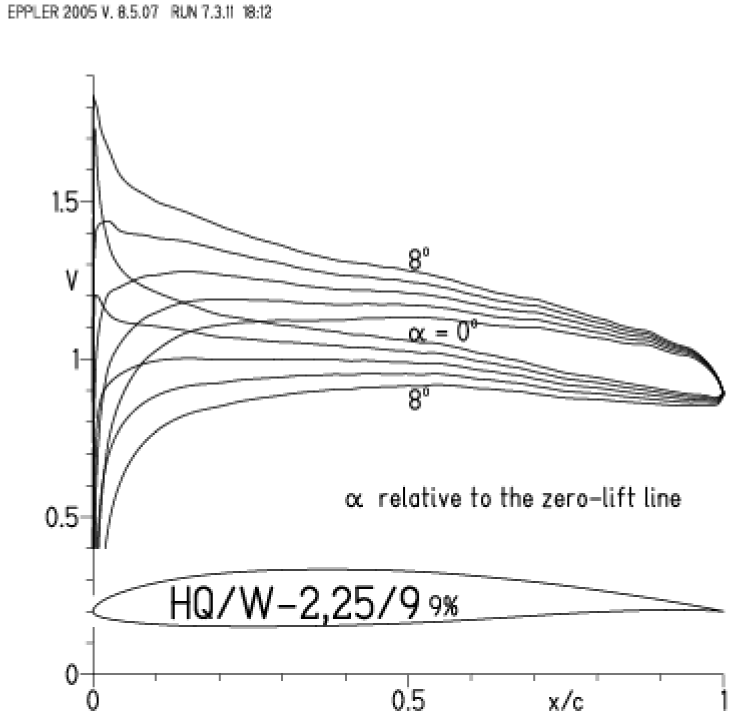
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

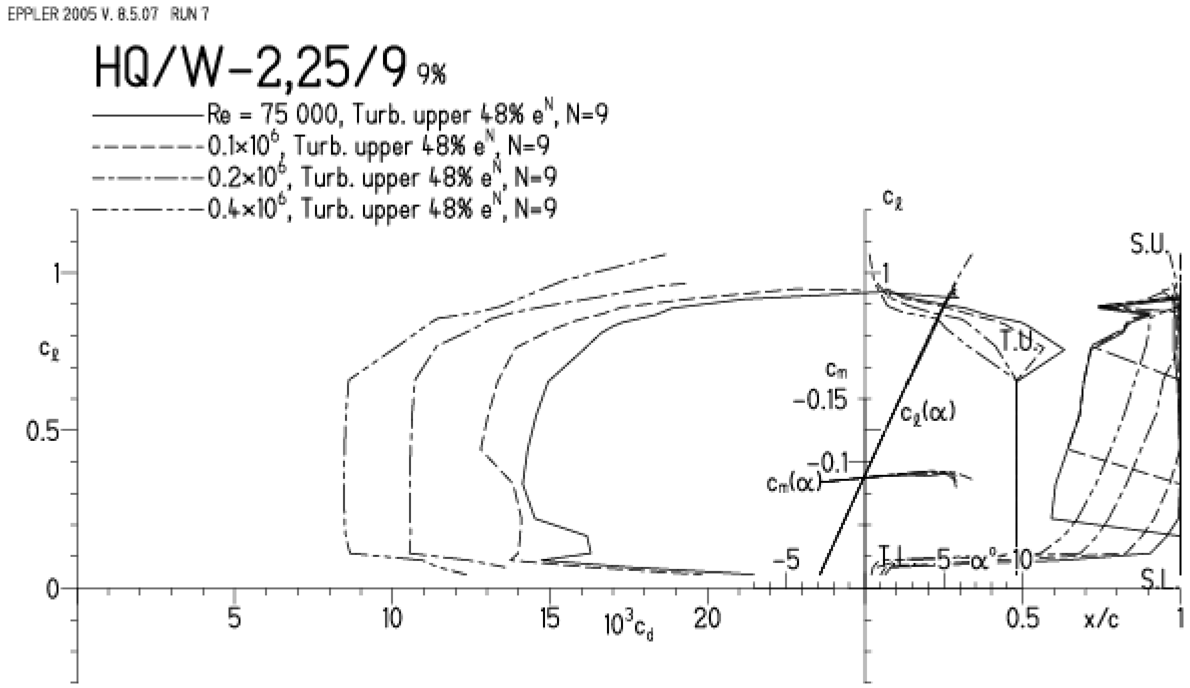


EPPLER 2005 V. 8.



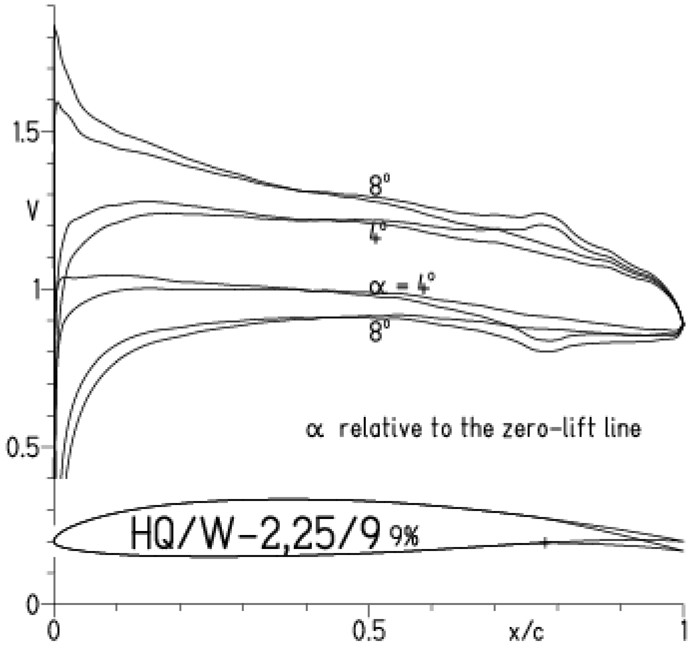
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



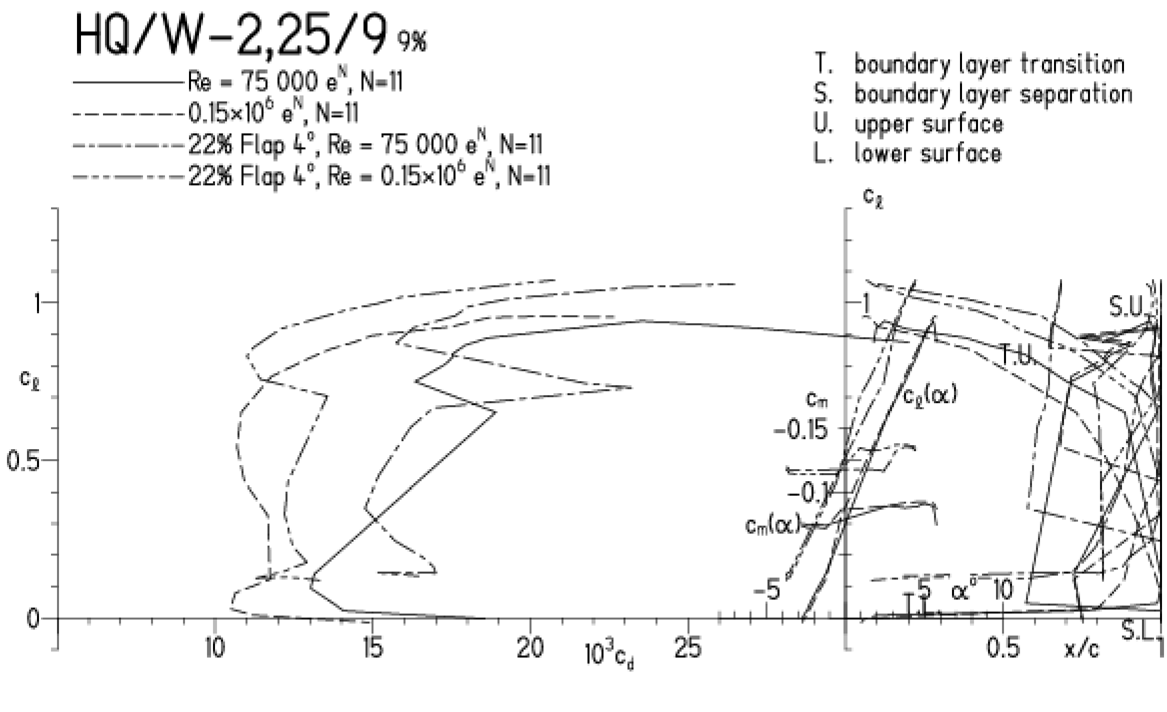


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

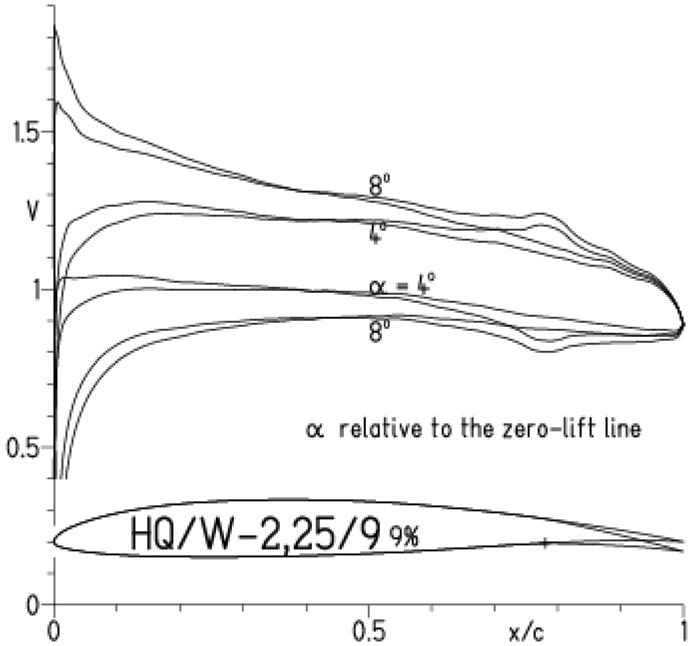


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

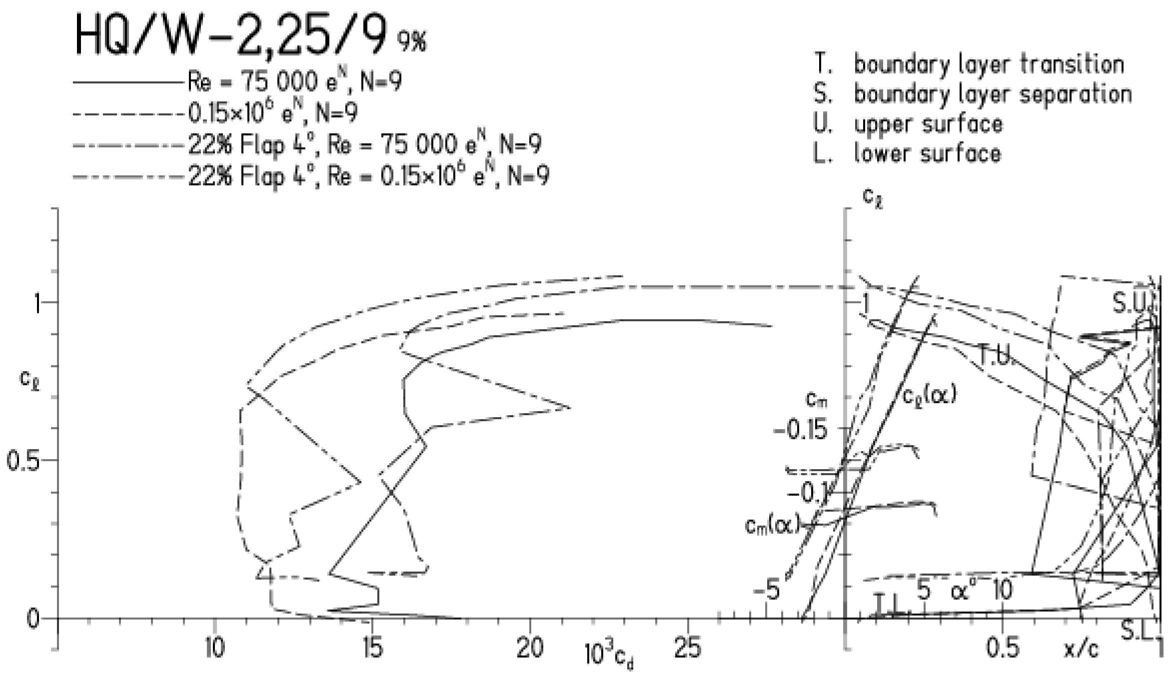


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

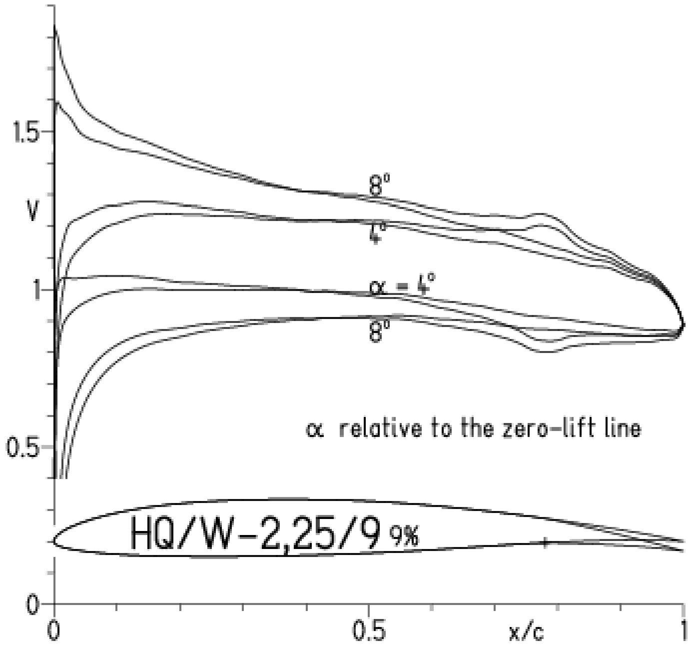


EPPLER 2005 V. 8.5.07 RUN 8.3.1

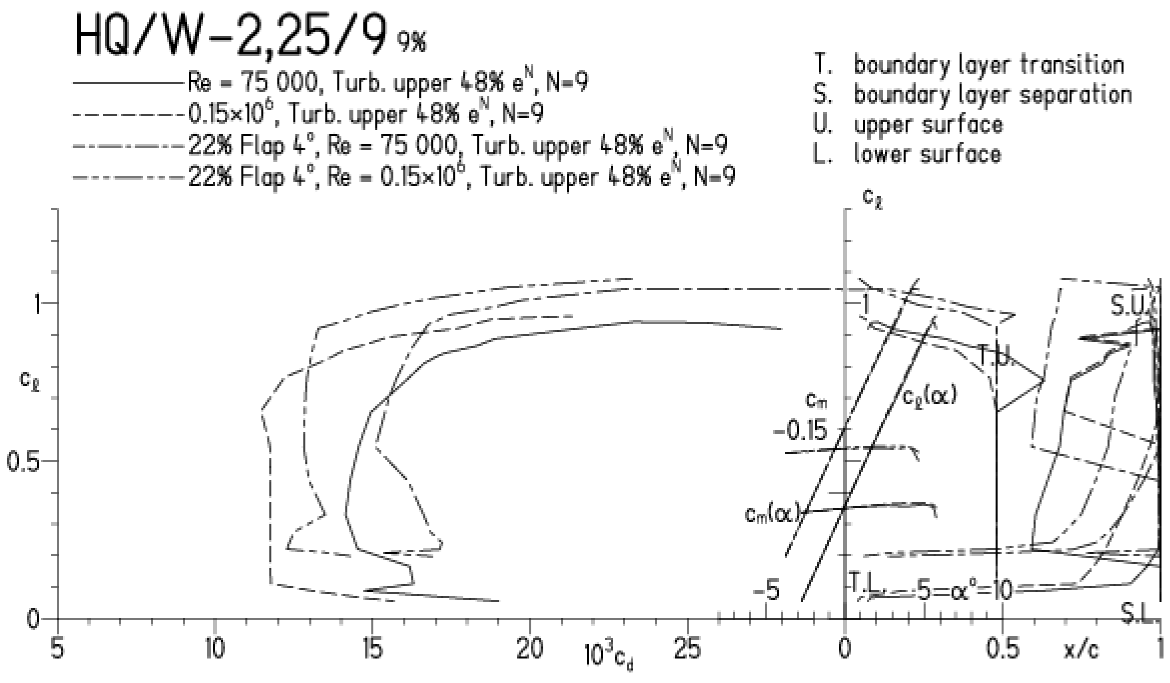


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

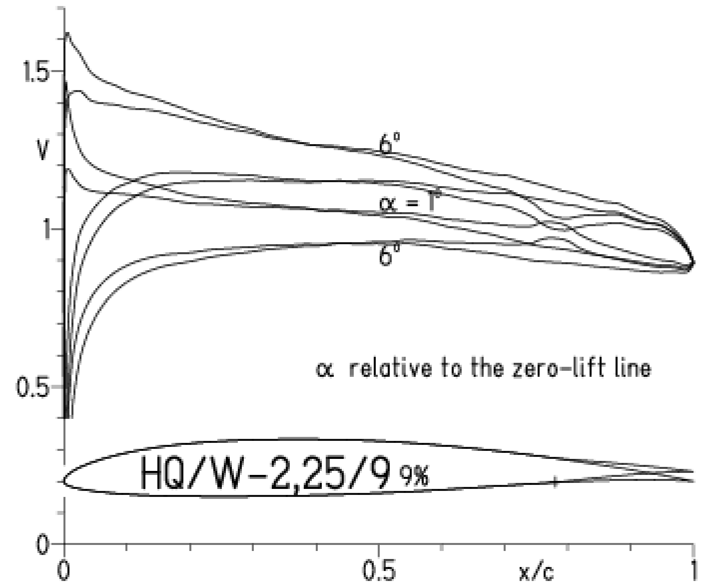


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

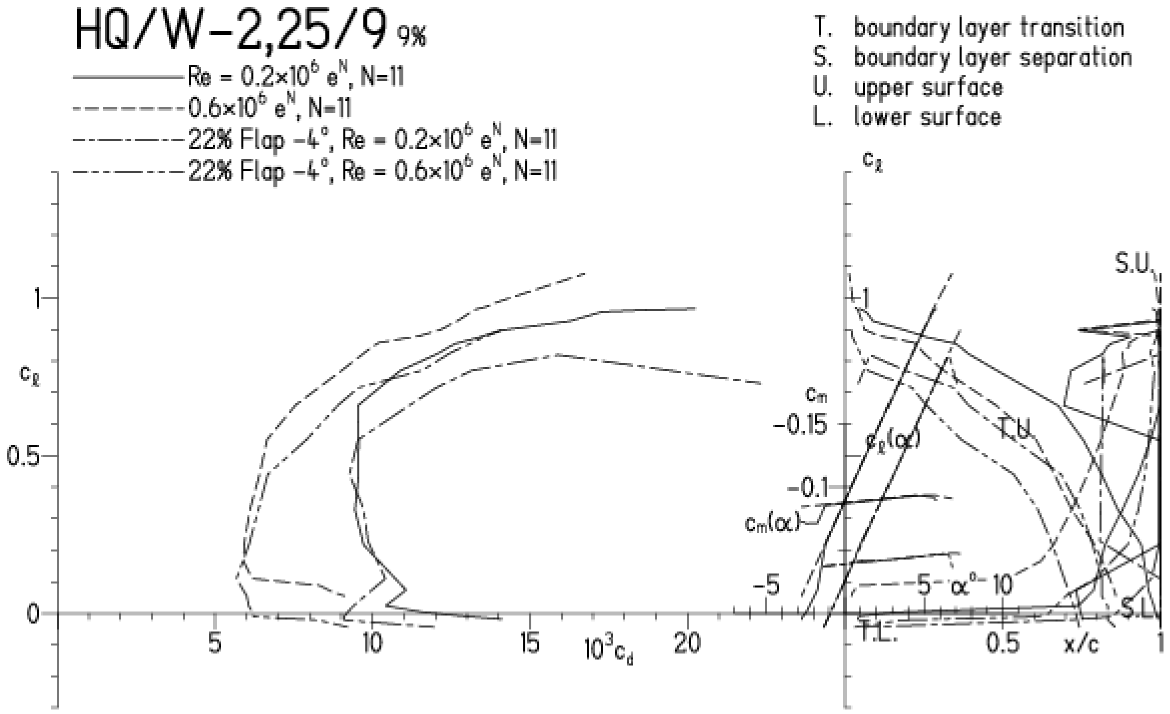


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

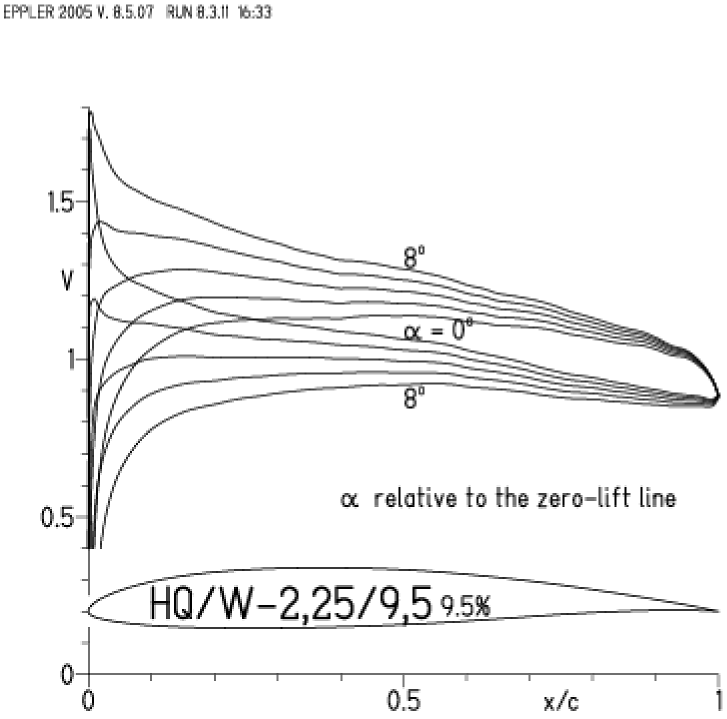
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

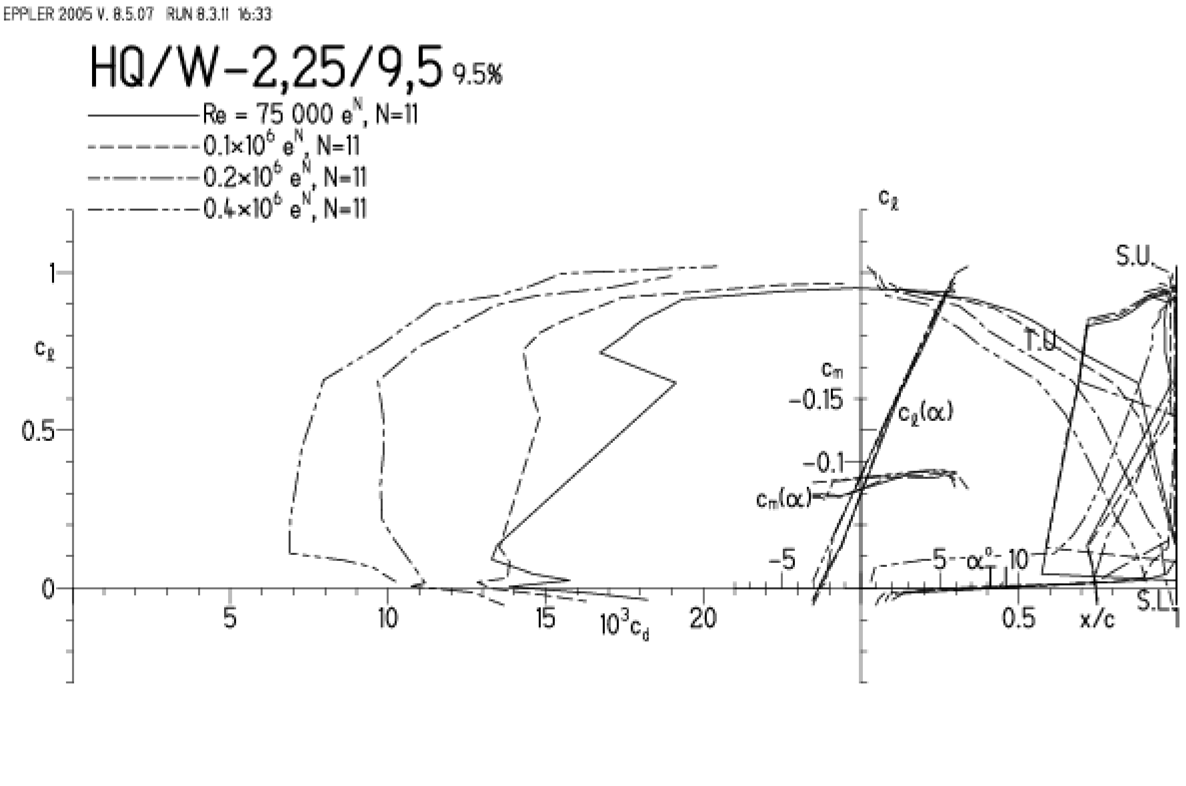


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

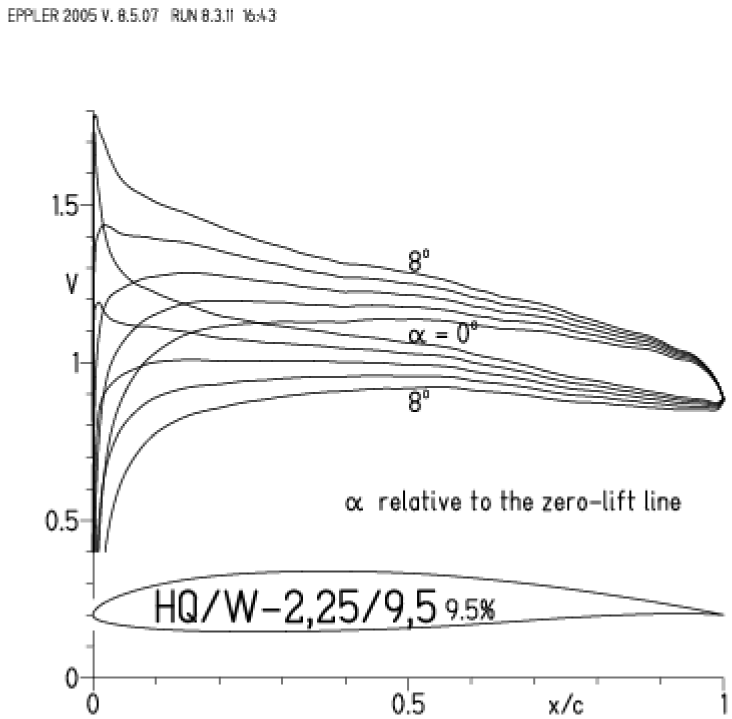


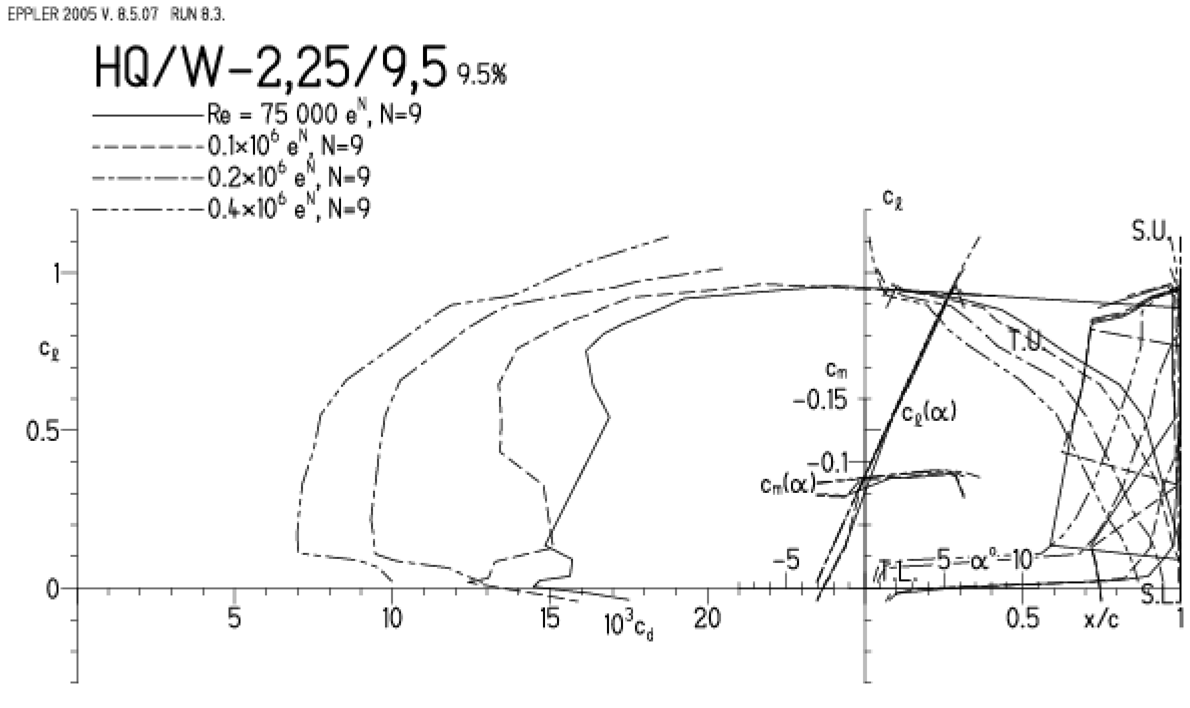
HQ/W-2,25/9,5, N=11



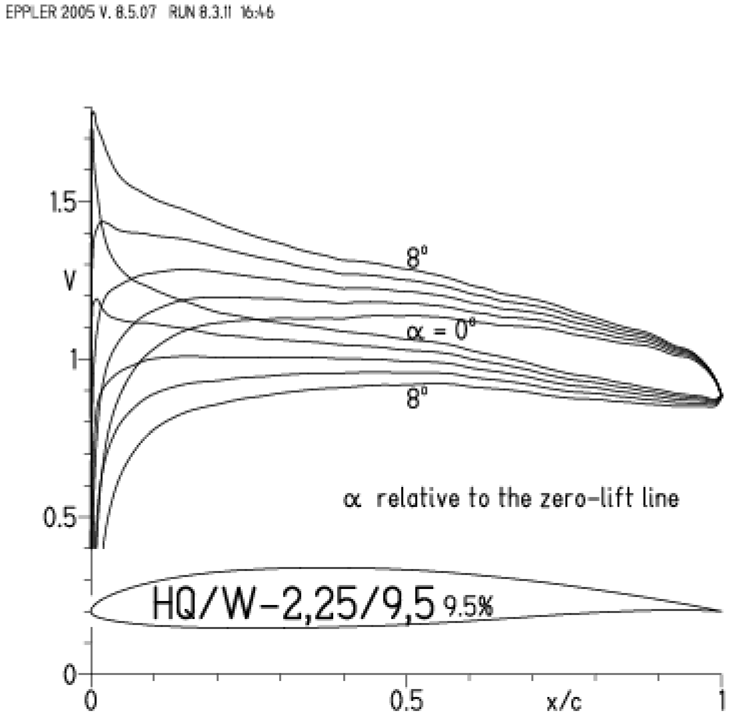


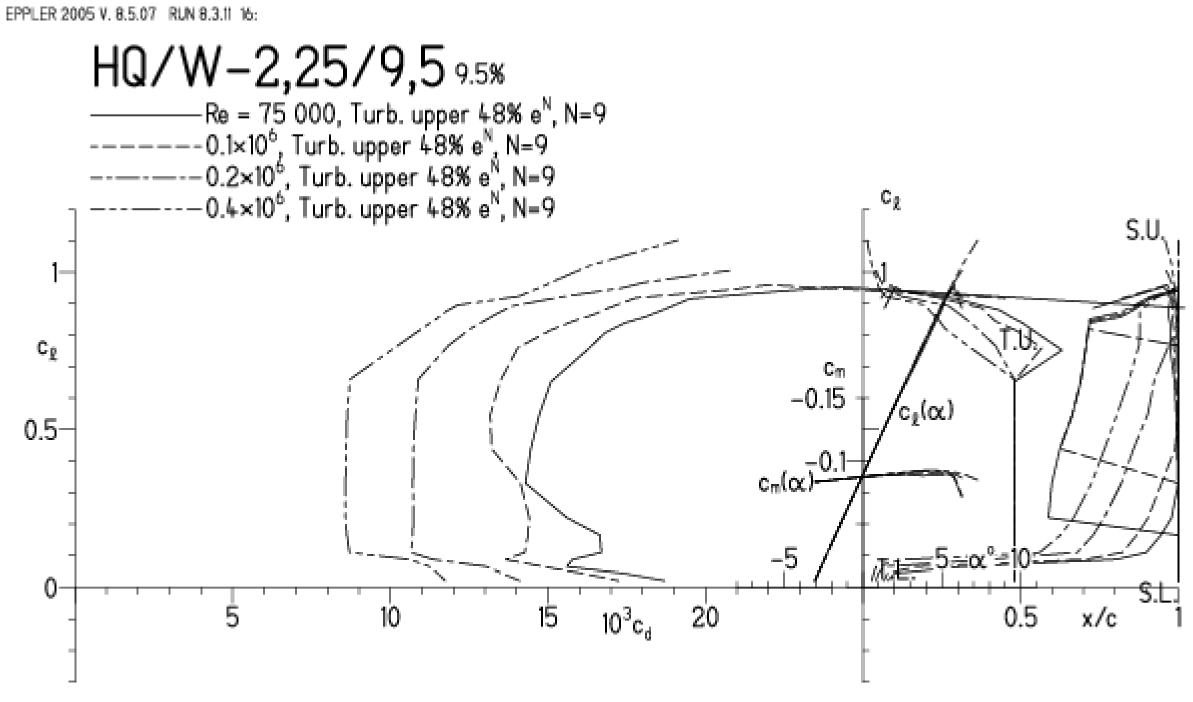
<u>HQ/W-2,25/9,5</u>, N=9





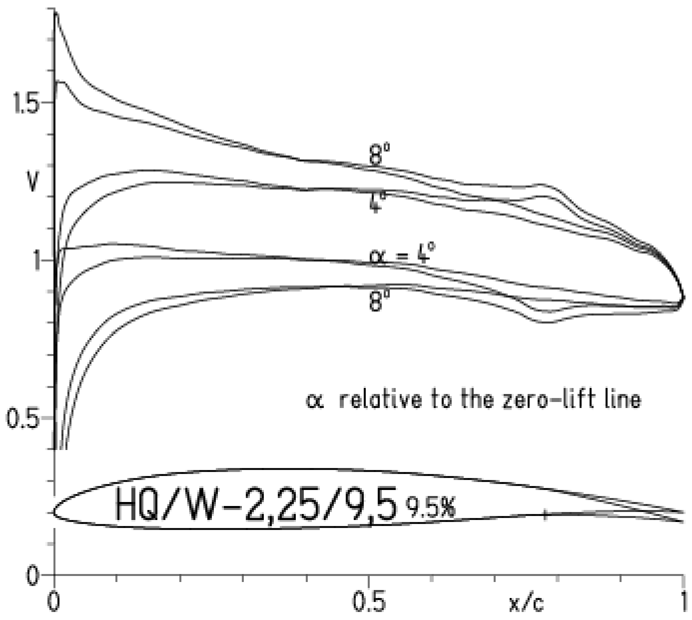
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



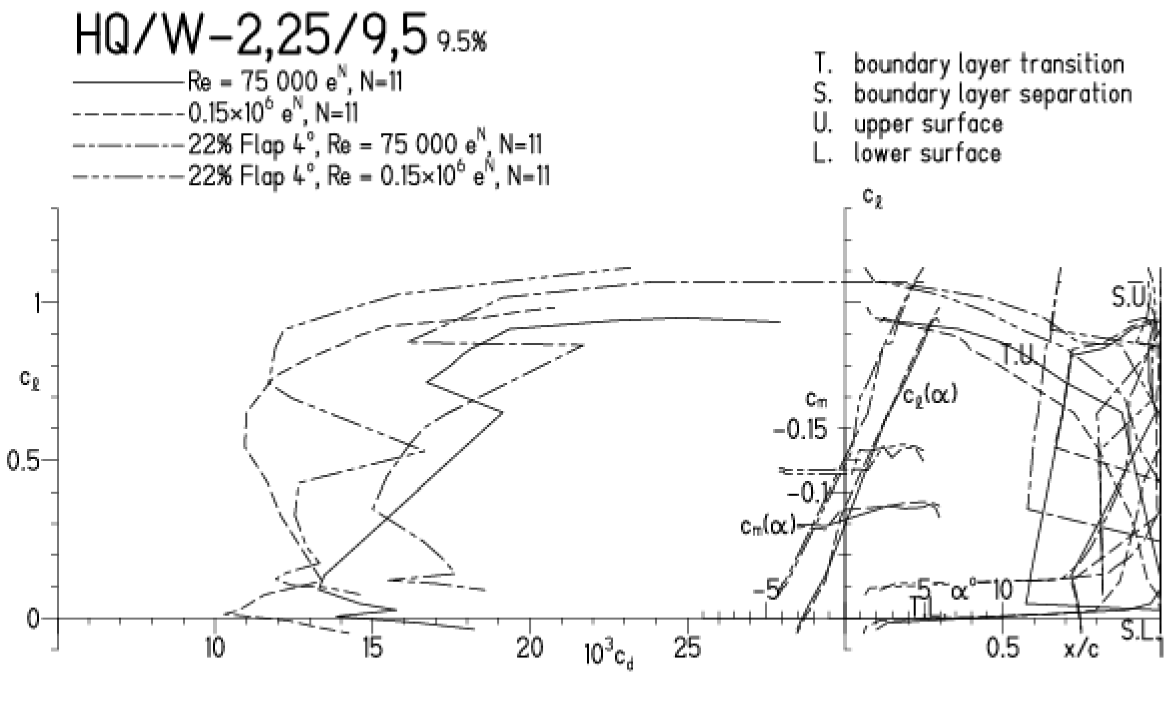


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

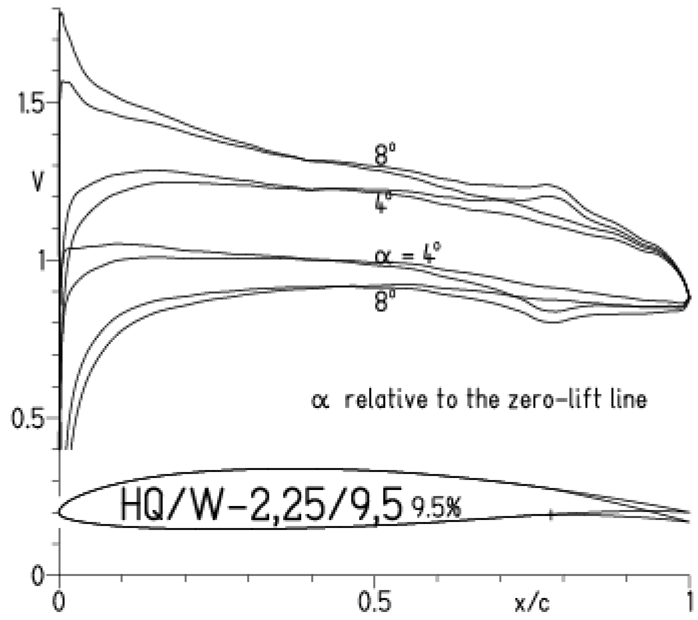


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

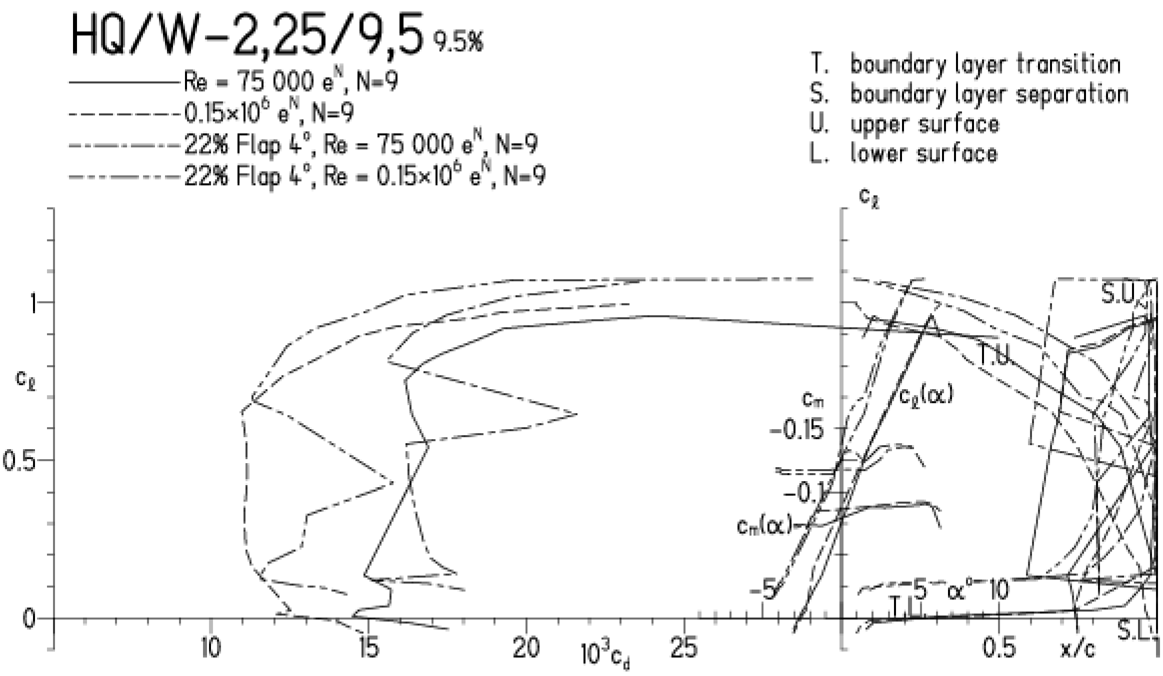


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

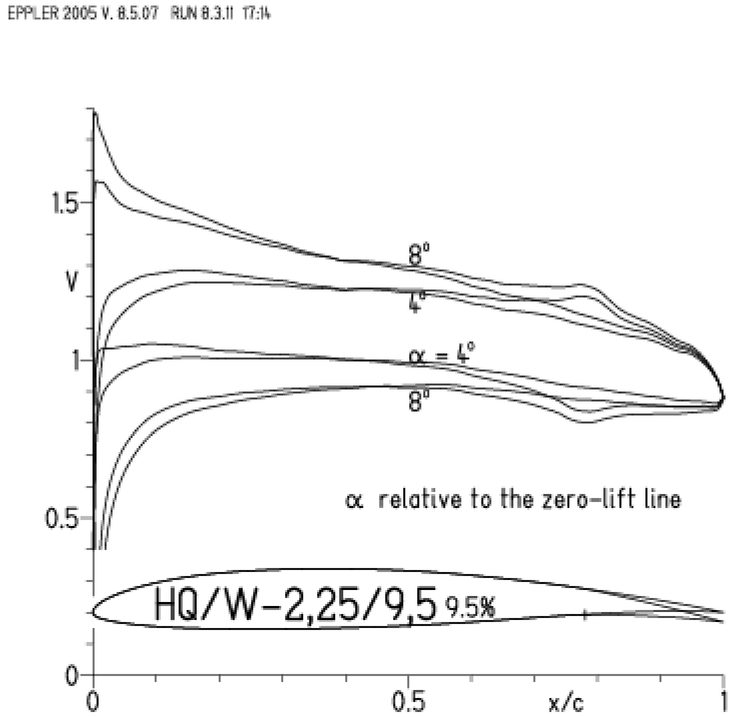
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

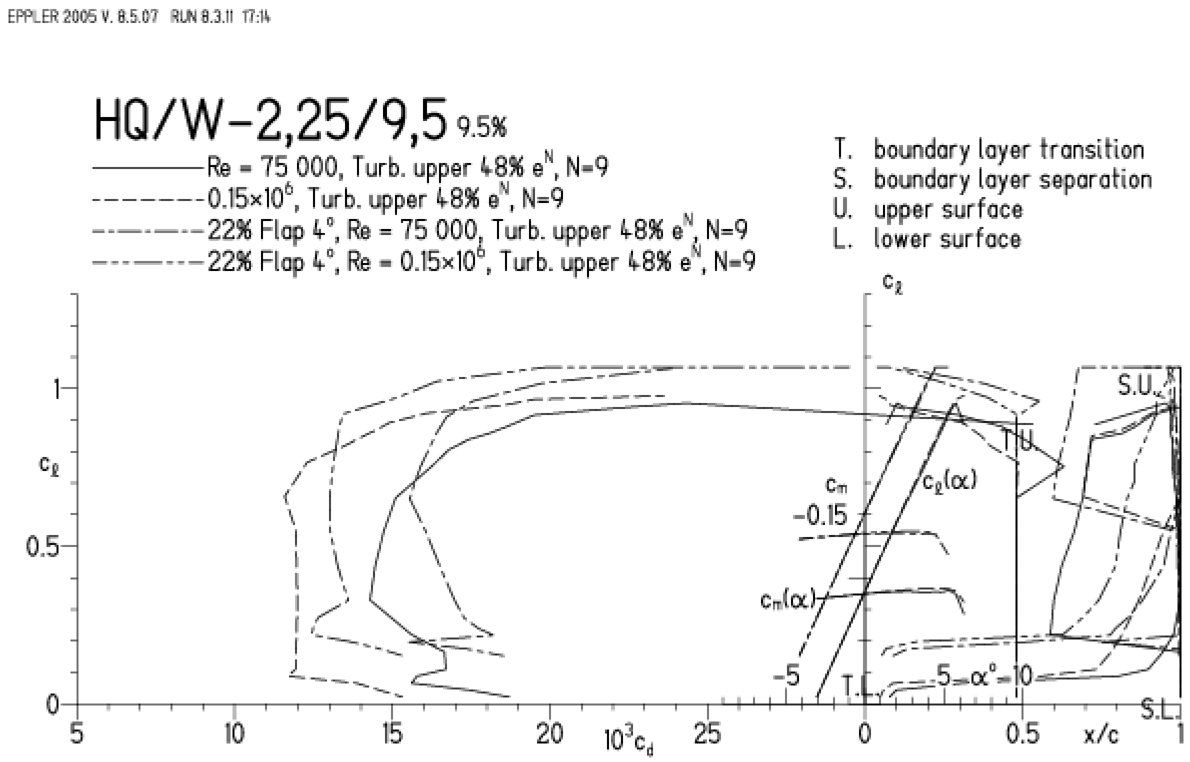


EPPLER 2005 V. 8.5.07 R



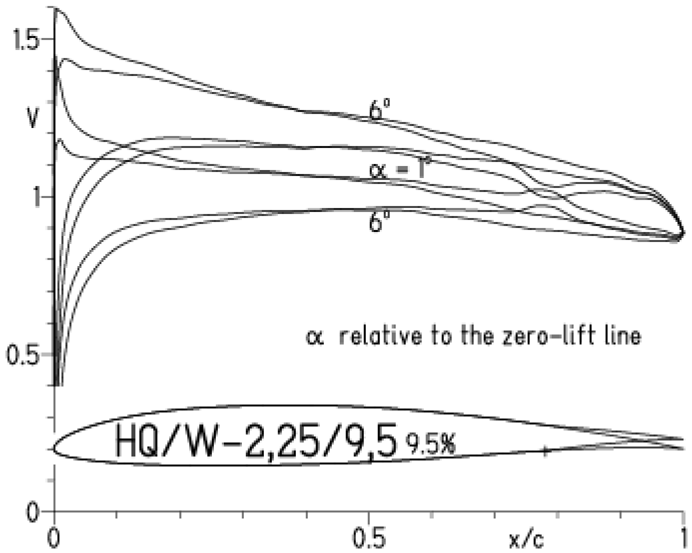
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



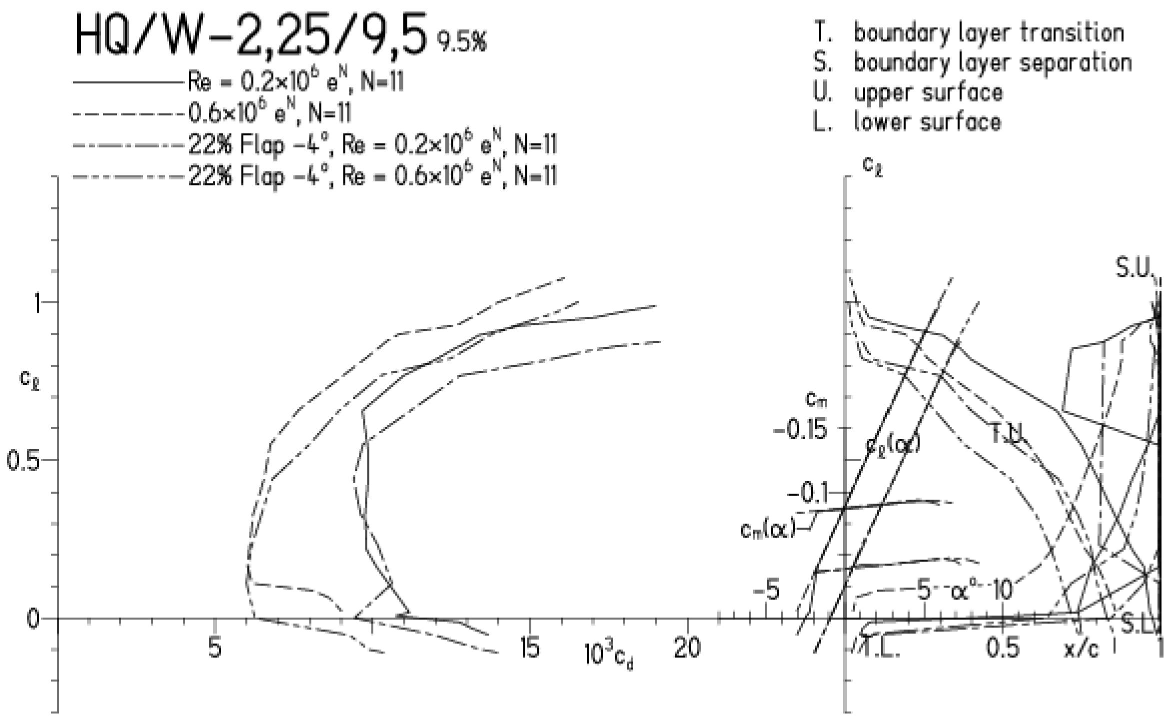


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

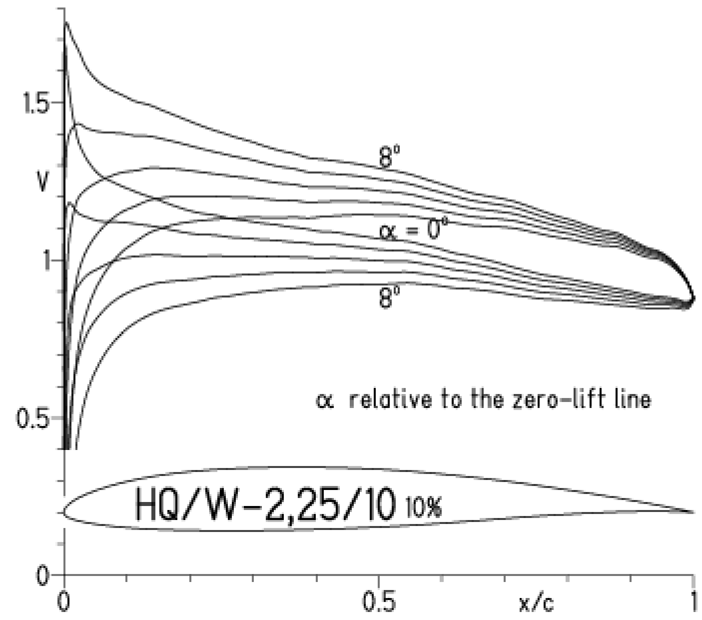


EPPLER 2005 V.

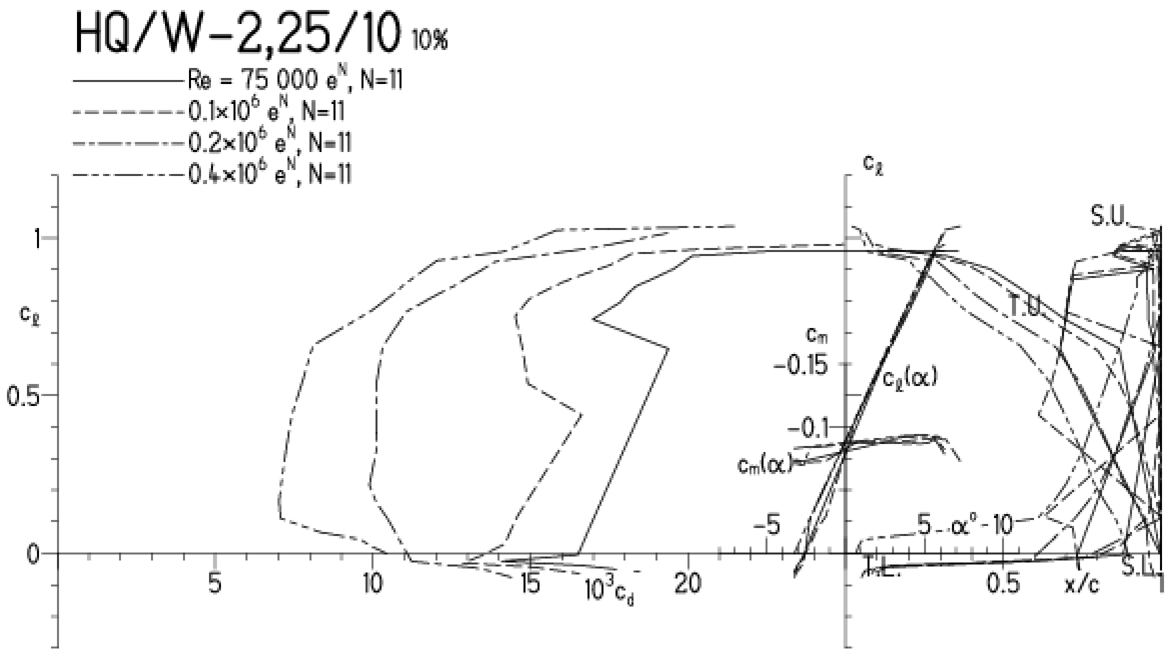


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

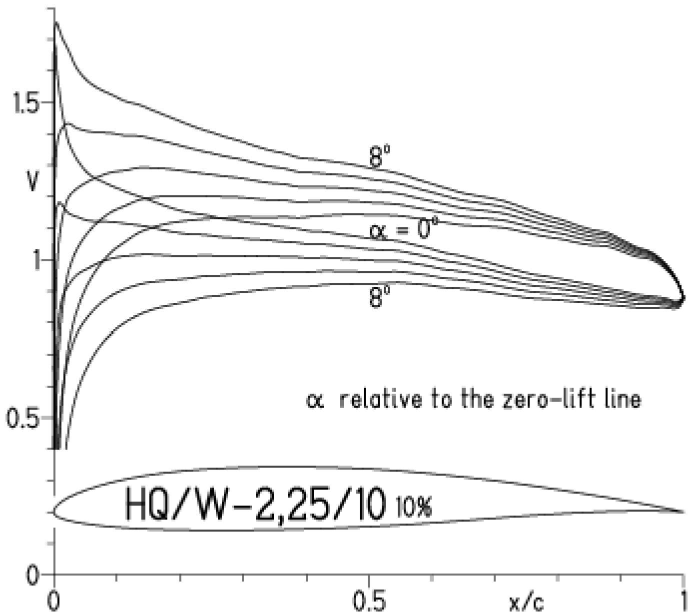


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

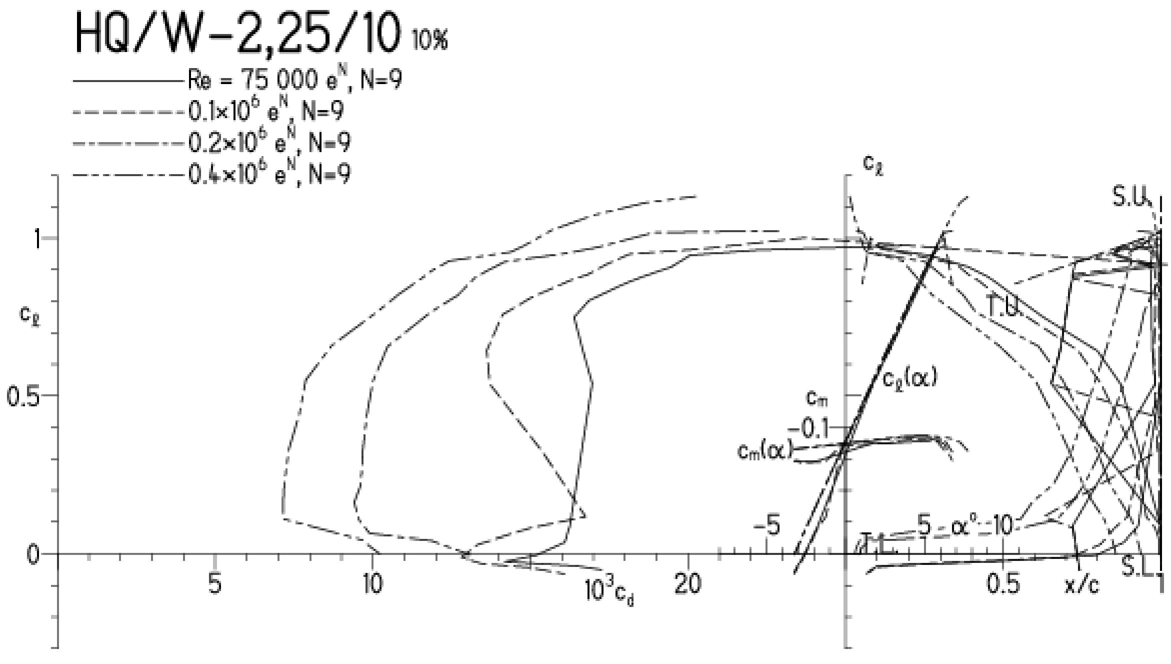


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

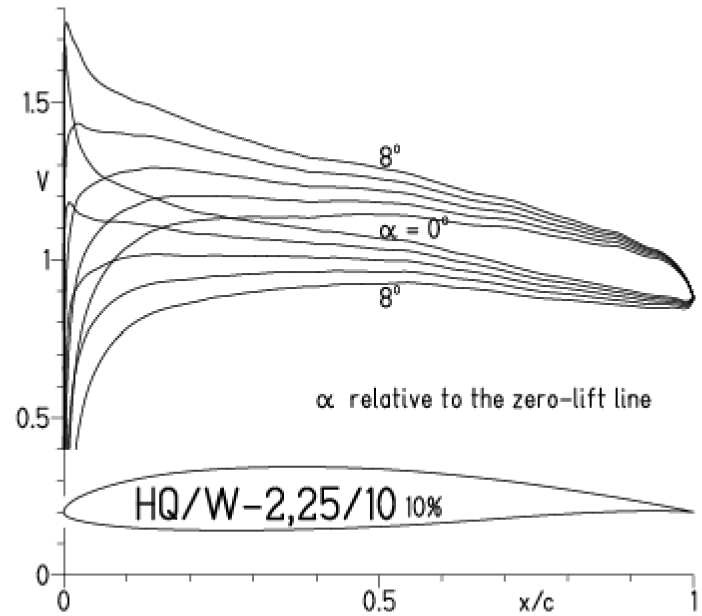


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

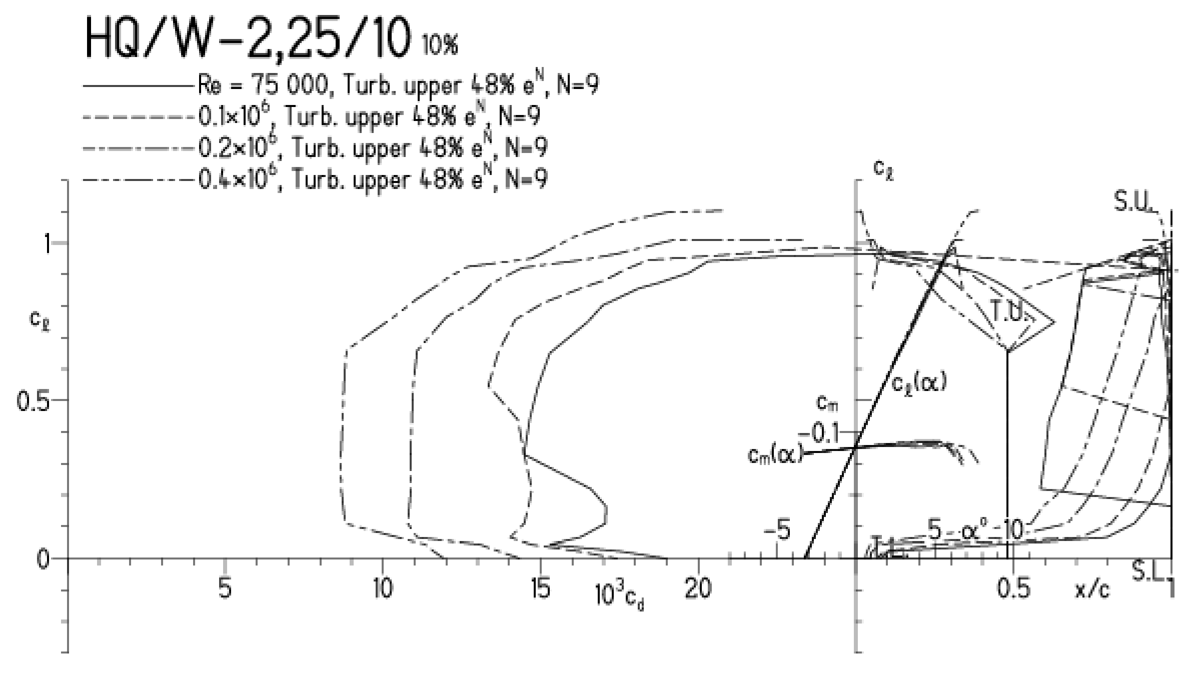


<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

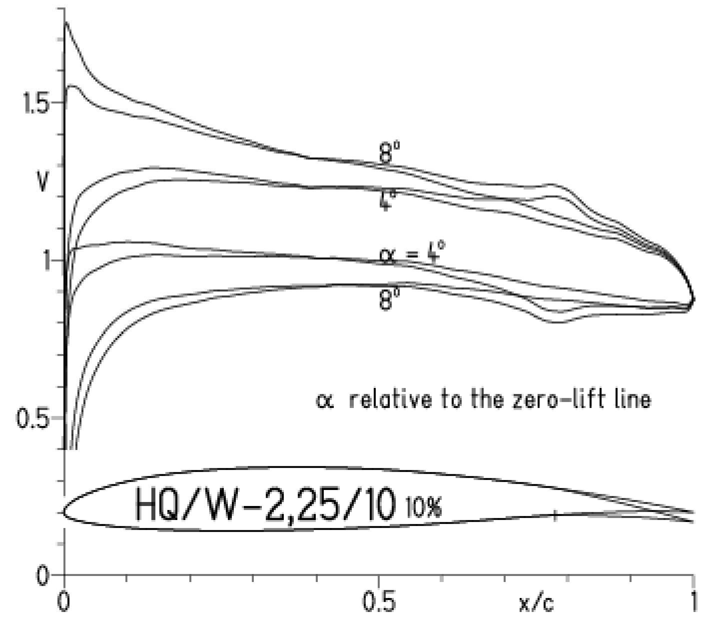


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

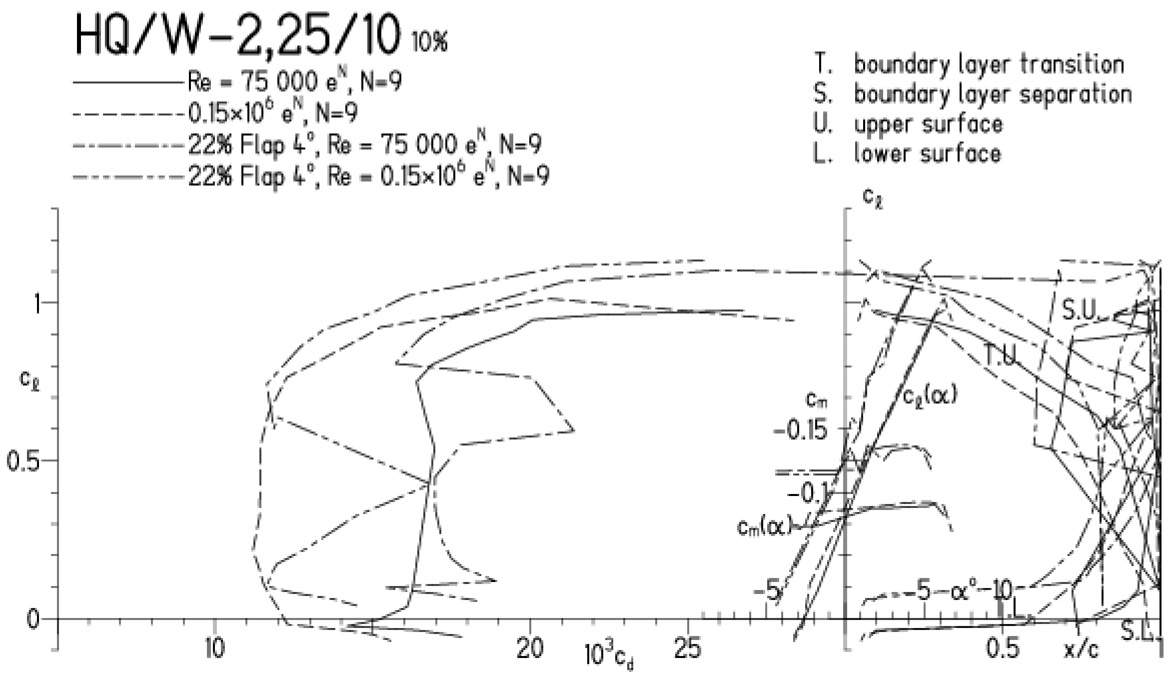


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

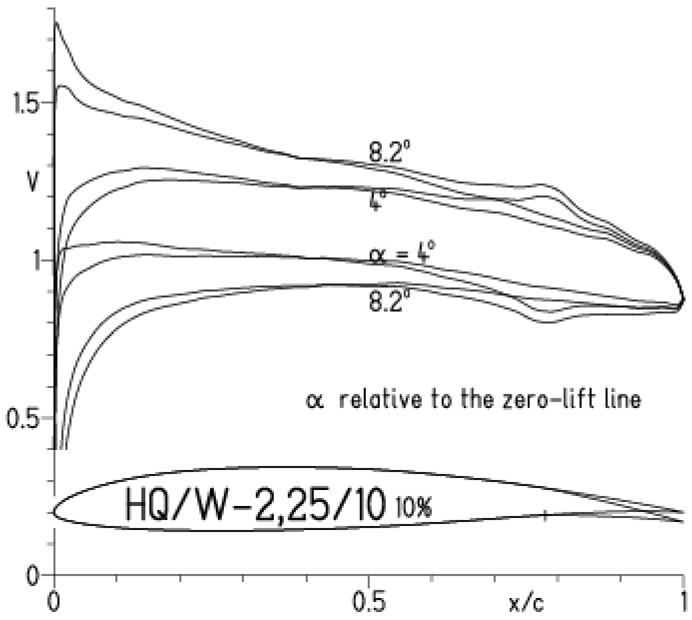


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

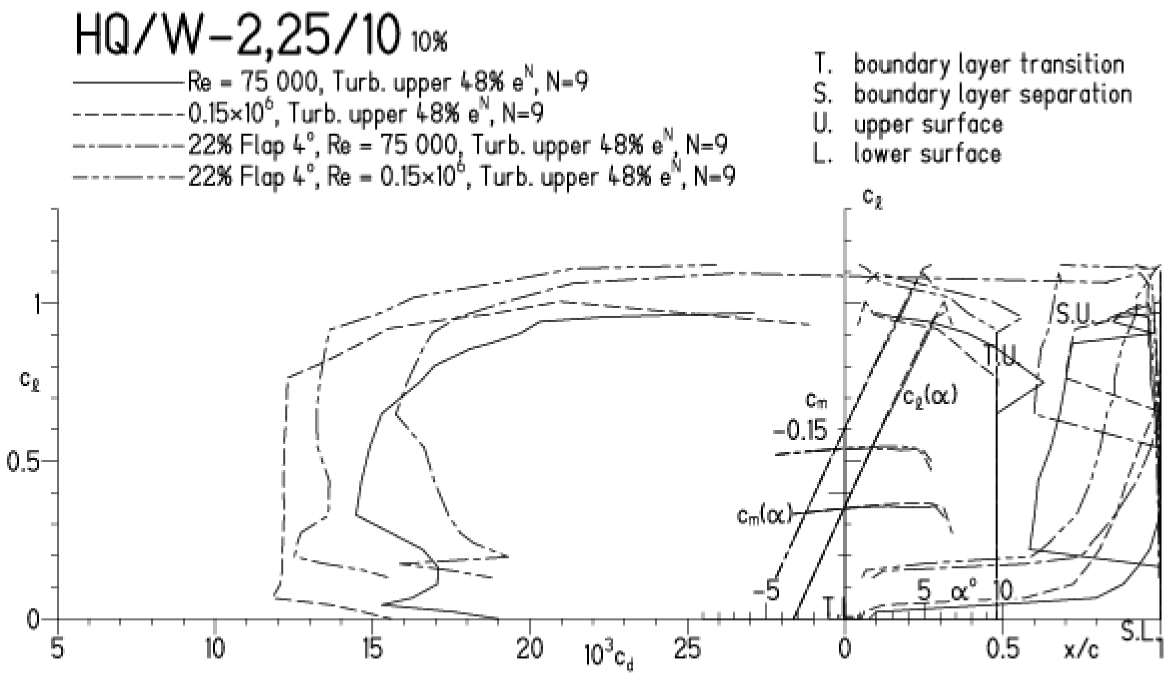


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

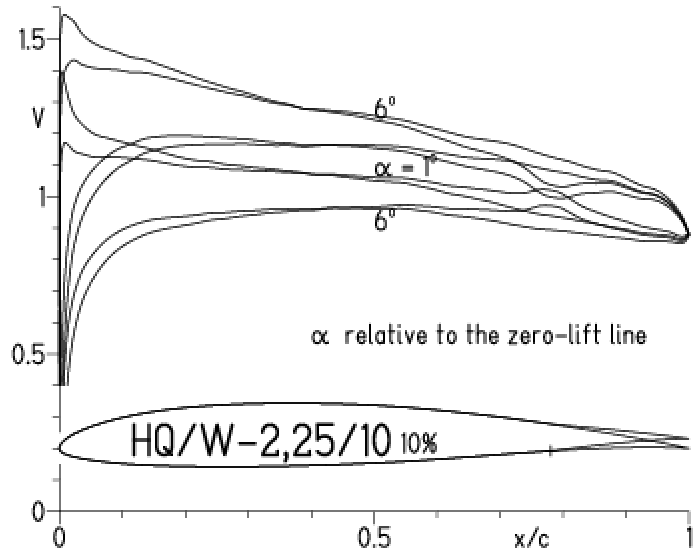


EPPLER 2005 V. 8.5.07 RUN 8.3

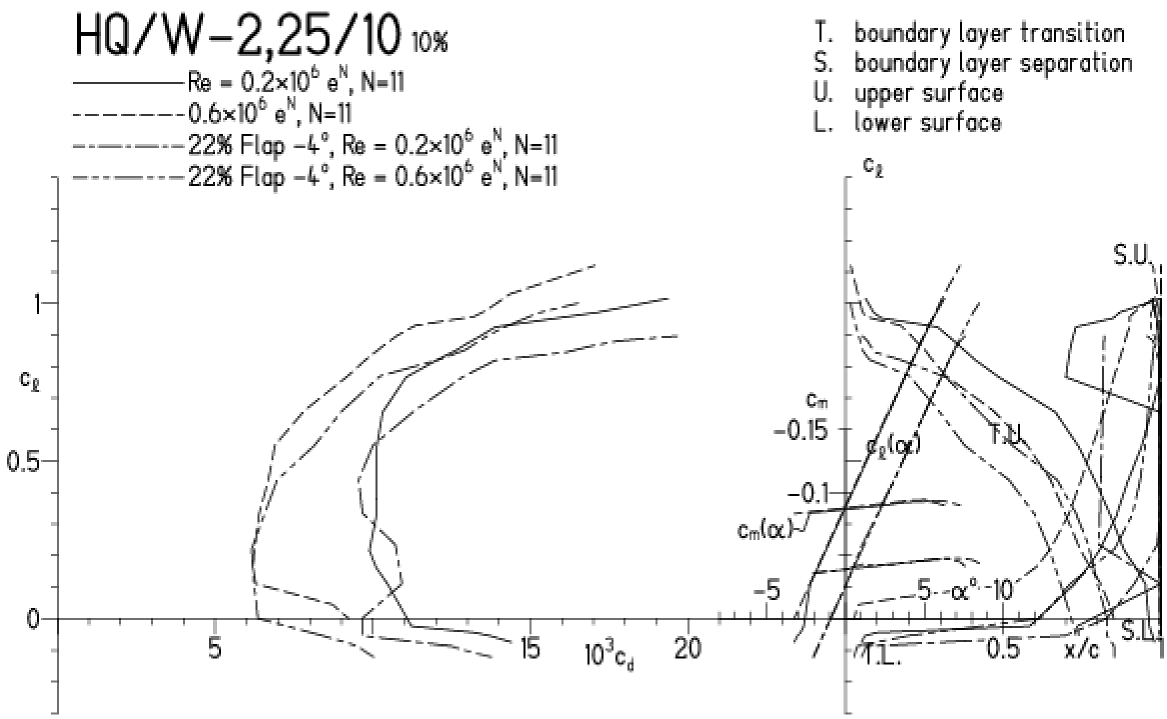


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

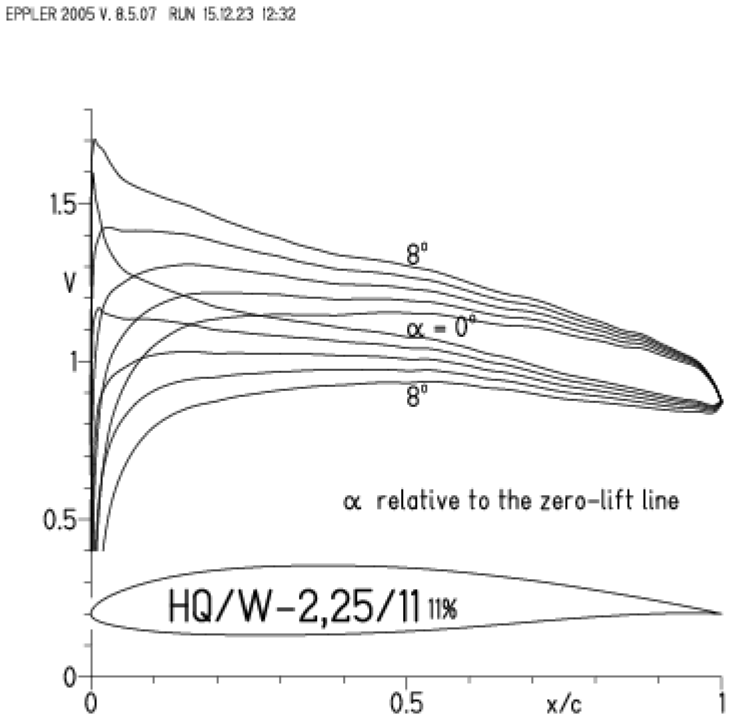
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

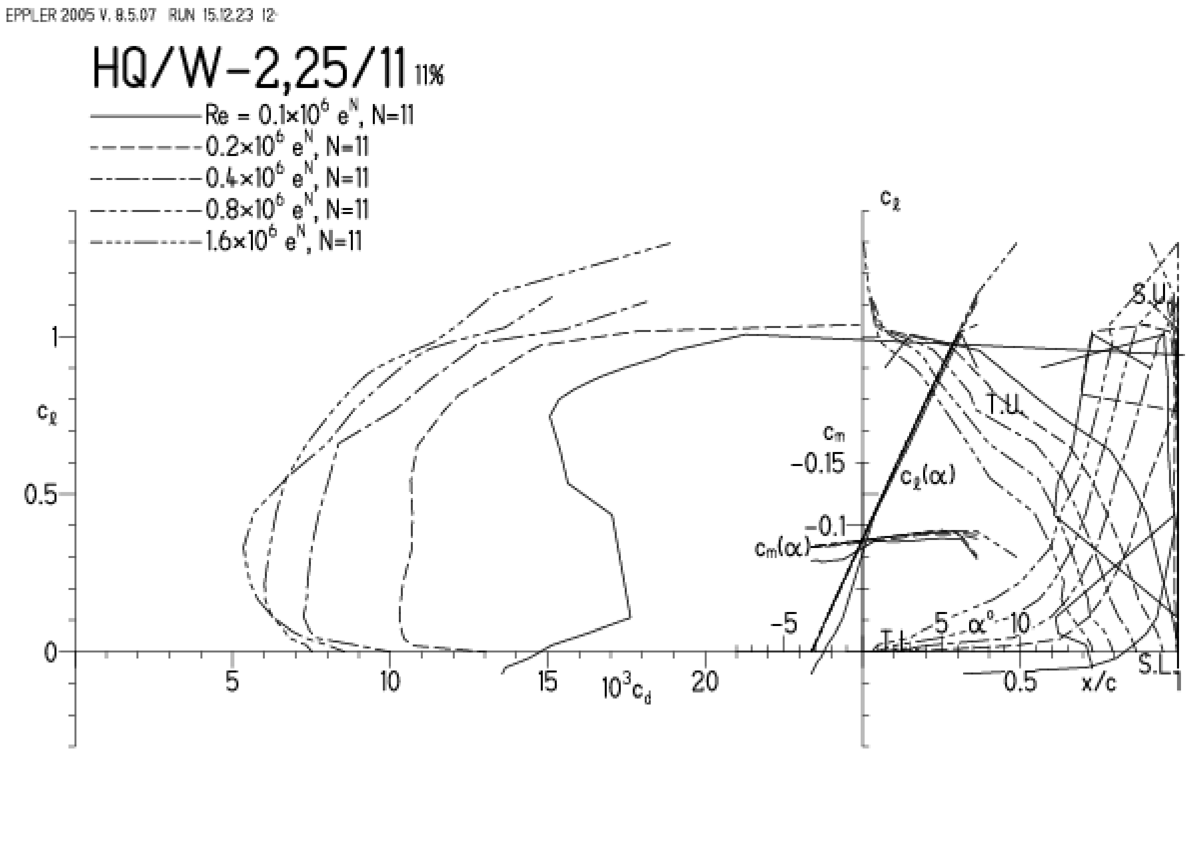


EPPLER 2005 V. 8.5.07 RUN



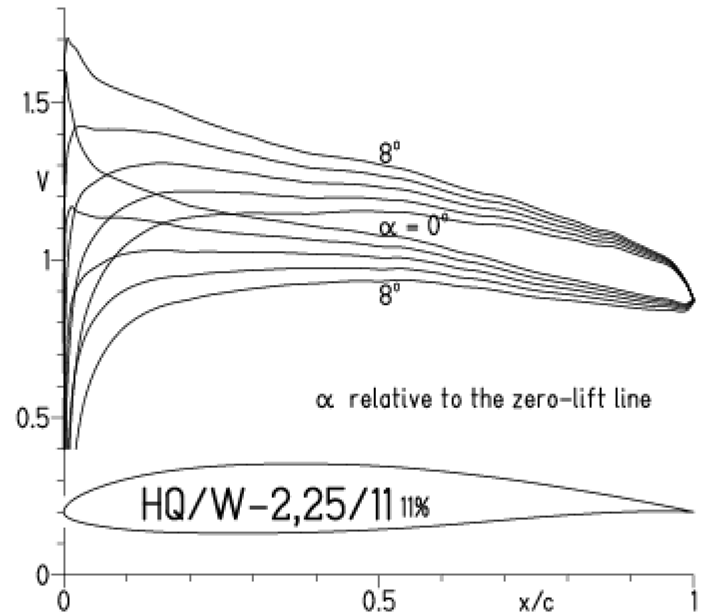
HQ/W-2,25/11, N=11



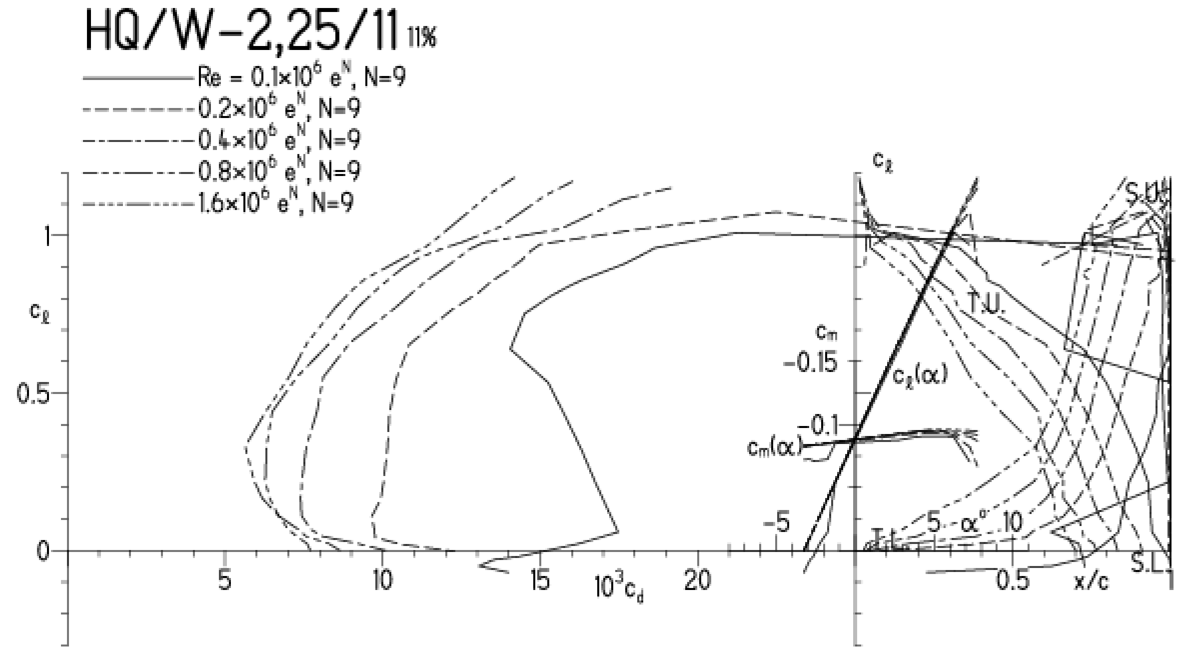


HQQ/W-2,25/11, N=9

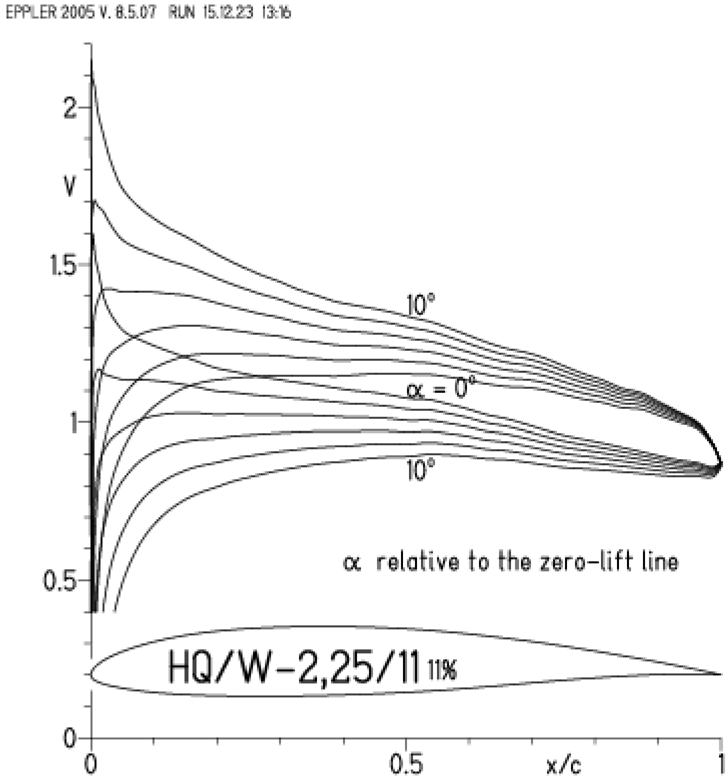
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

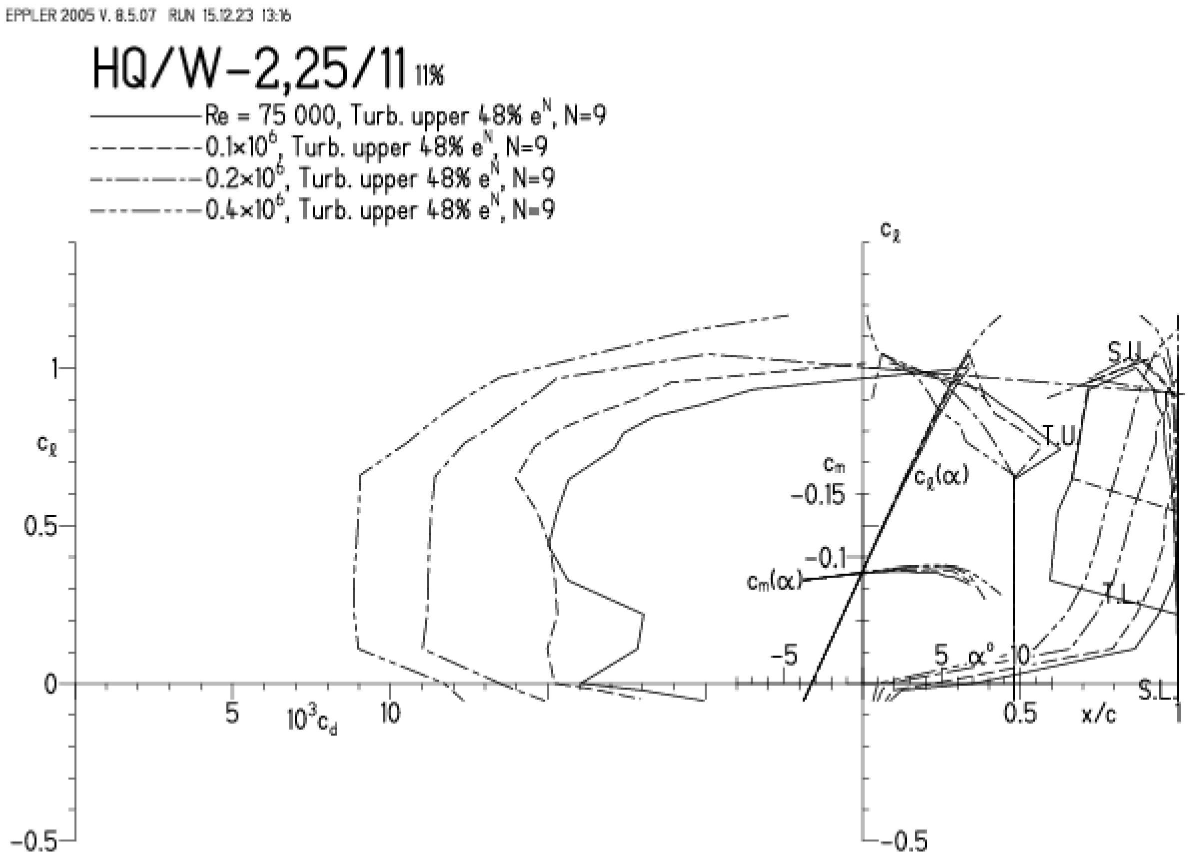


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



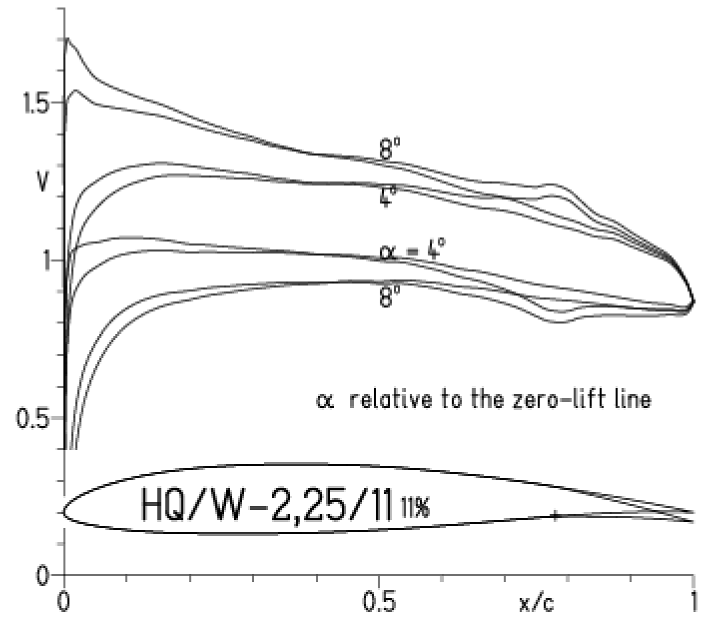
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



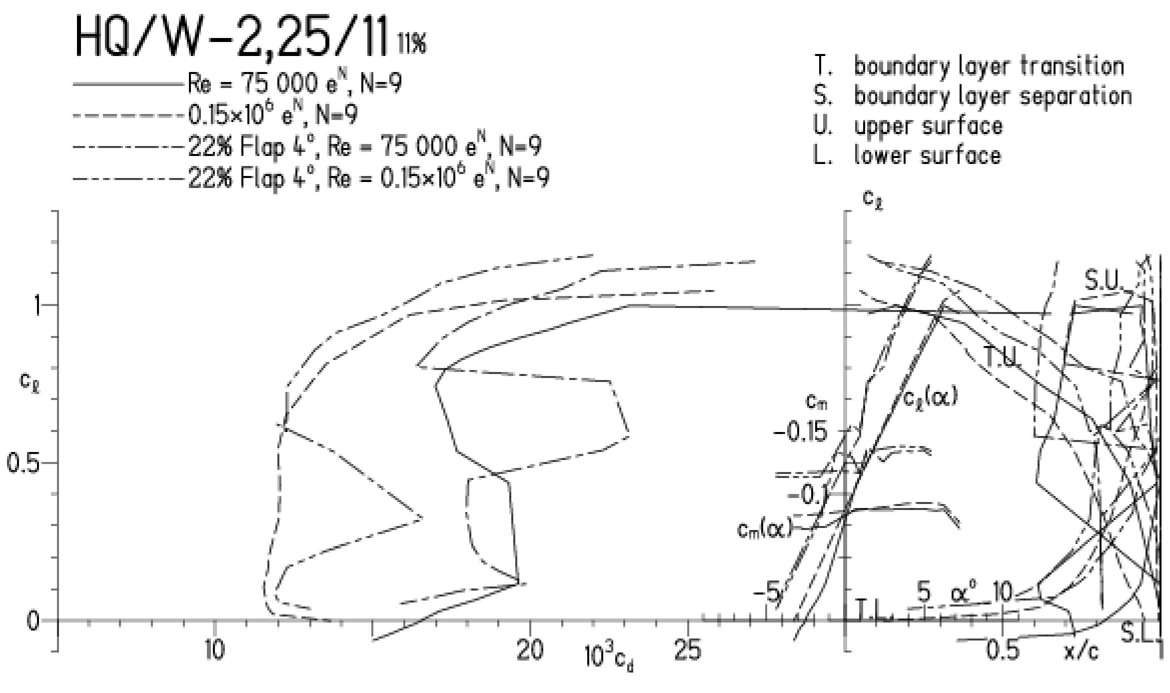


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

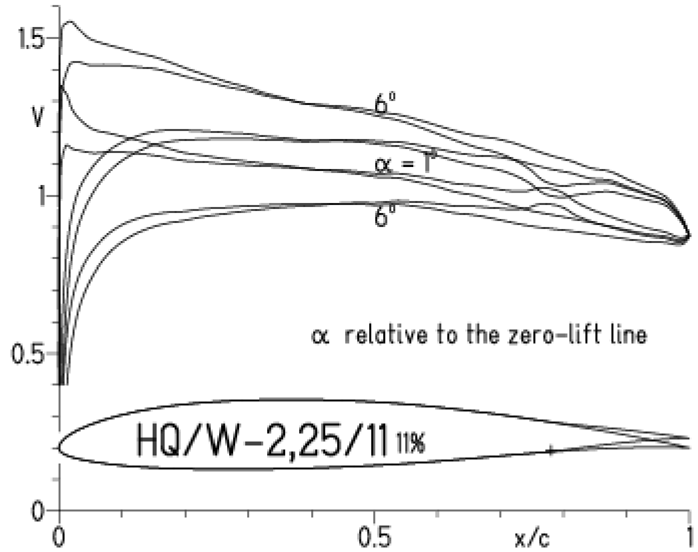


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

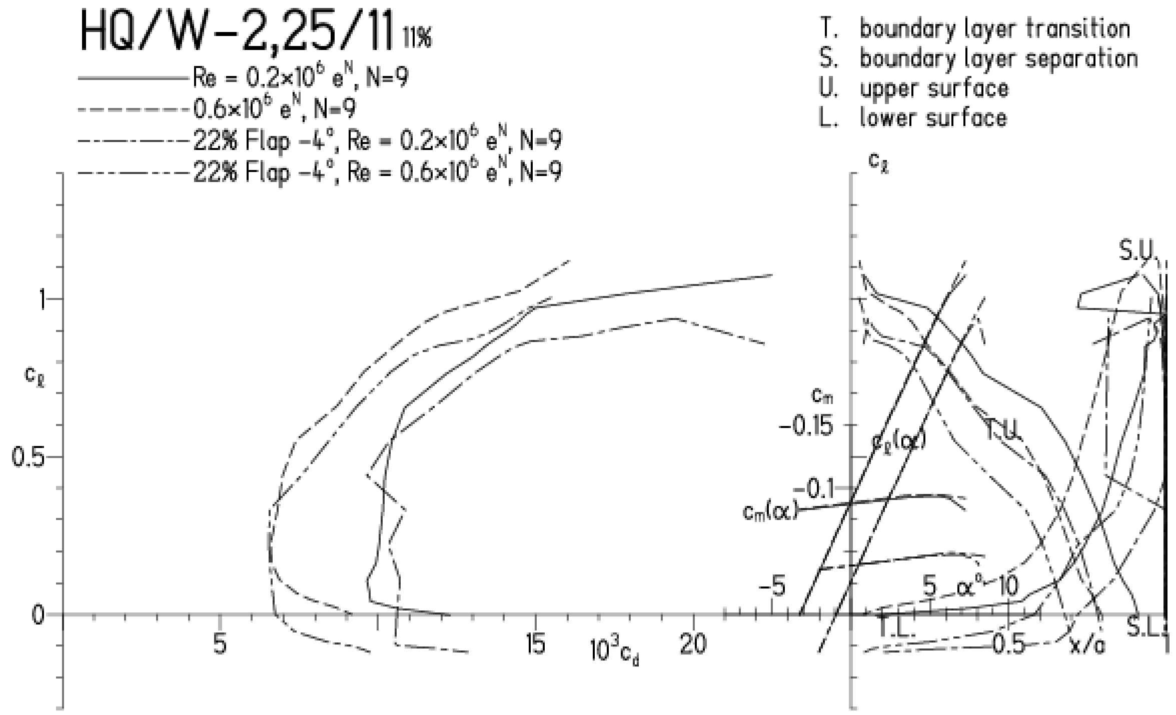


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

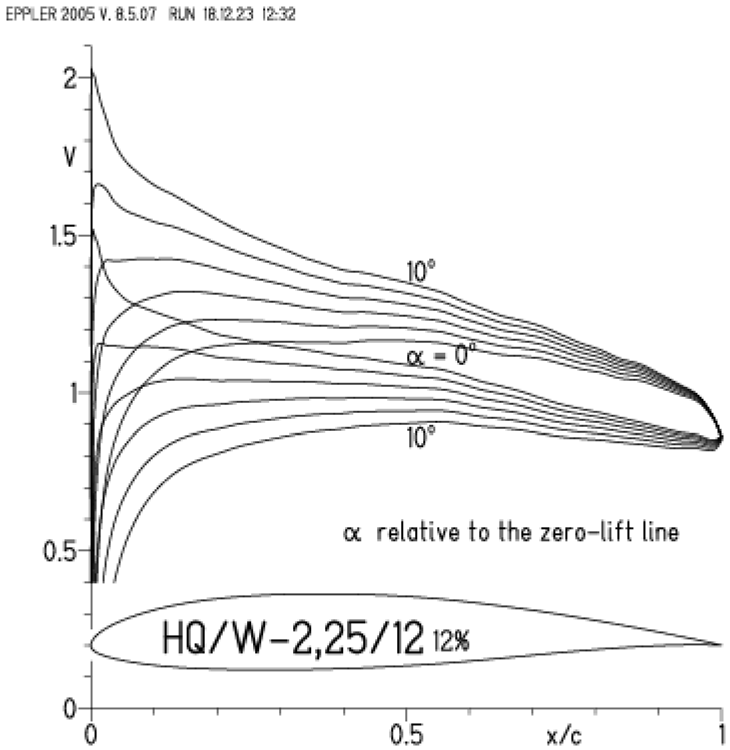
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

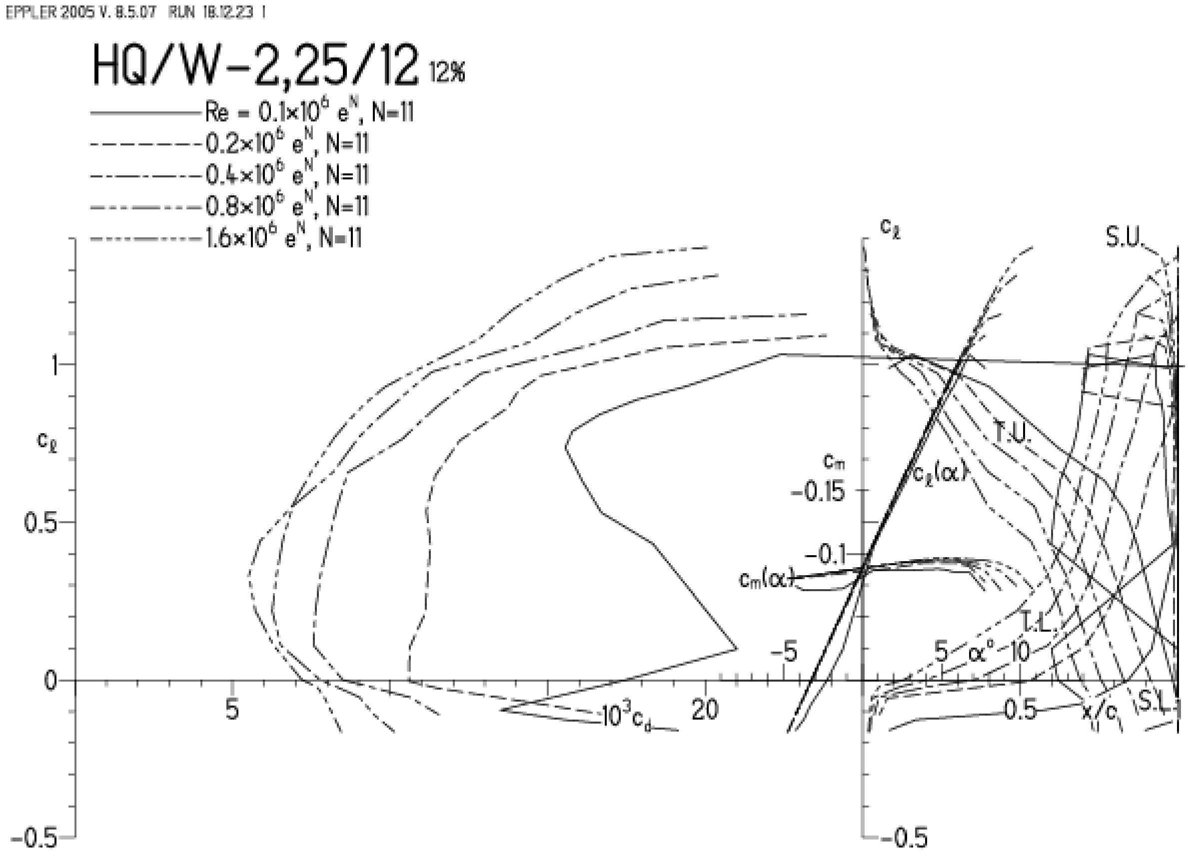


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

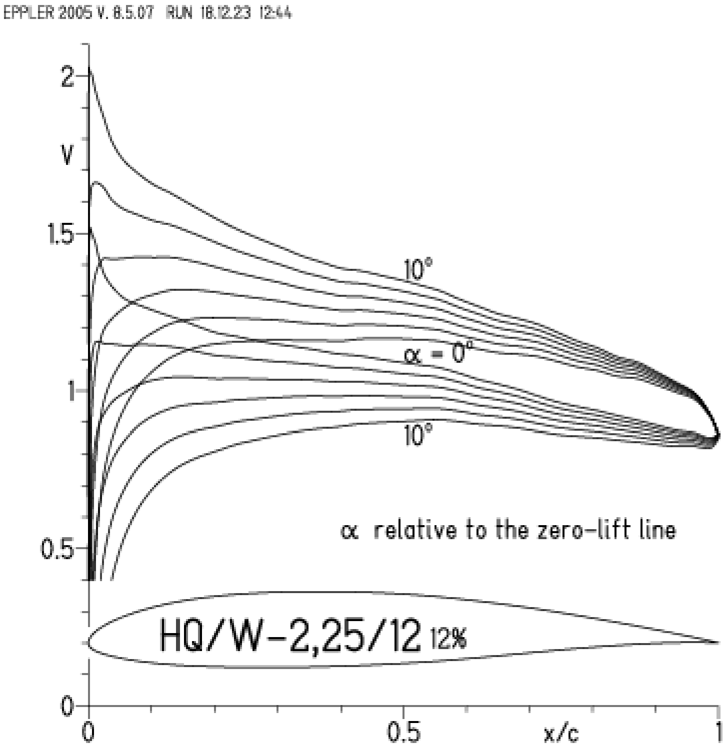


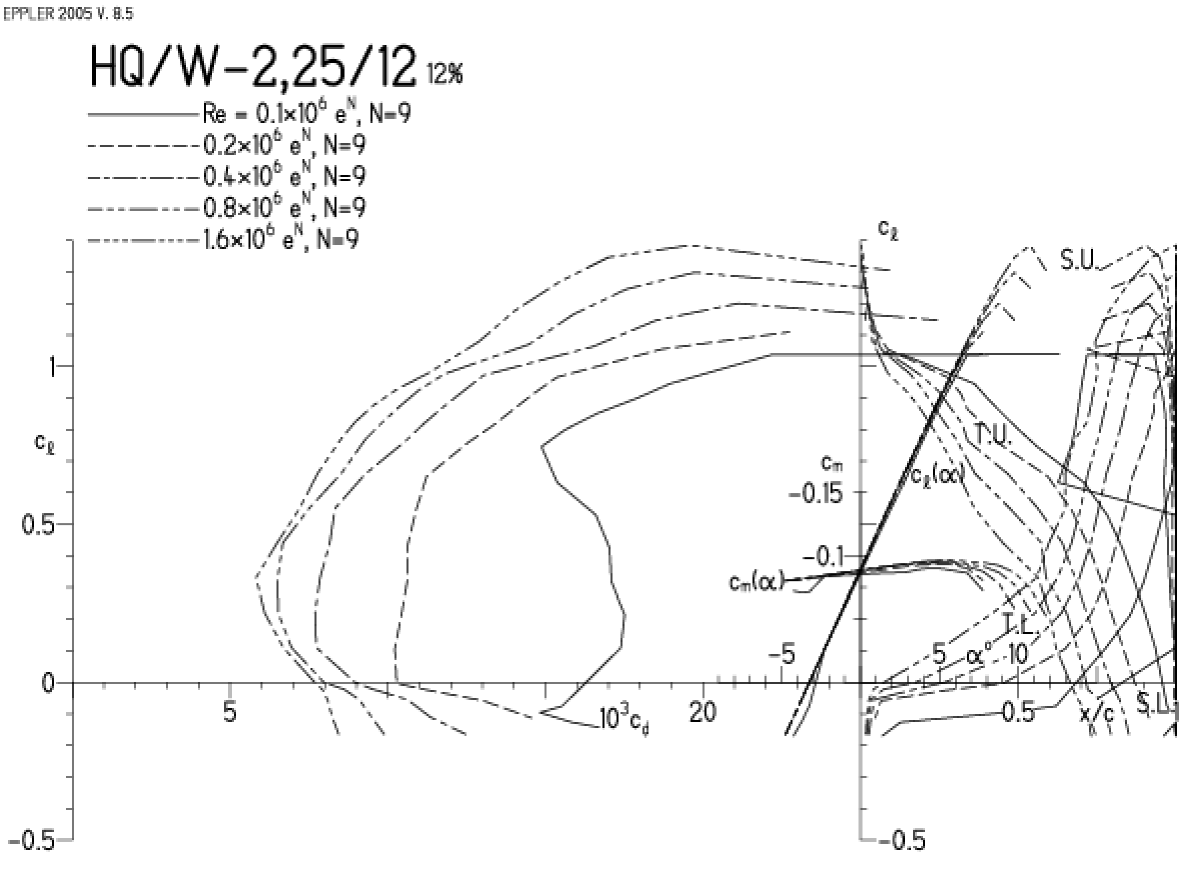
HQ/W-2,25/12, N=11



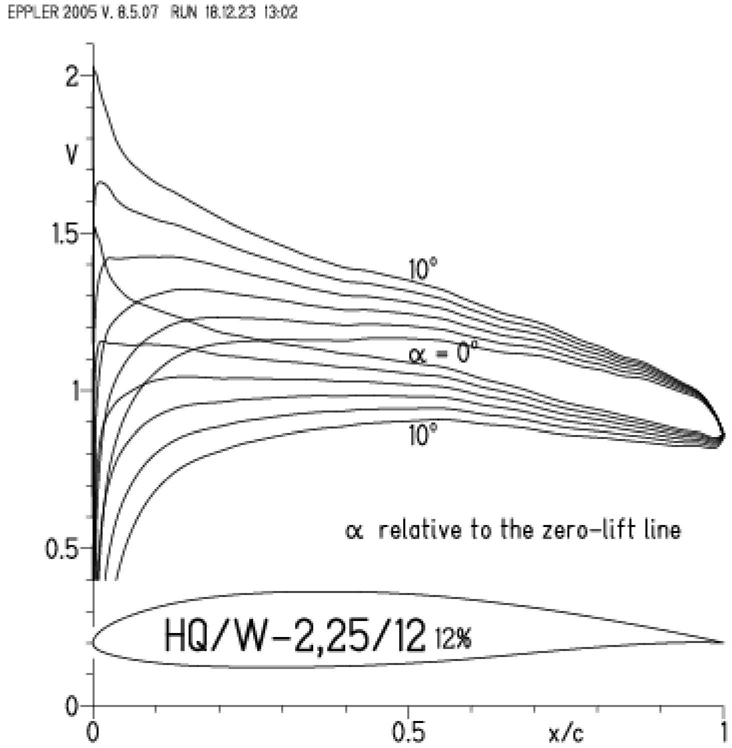


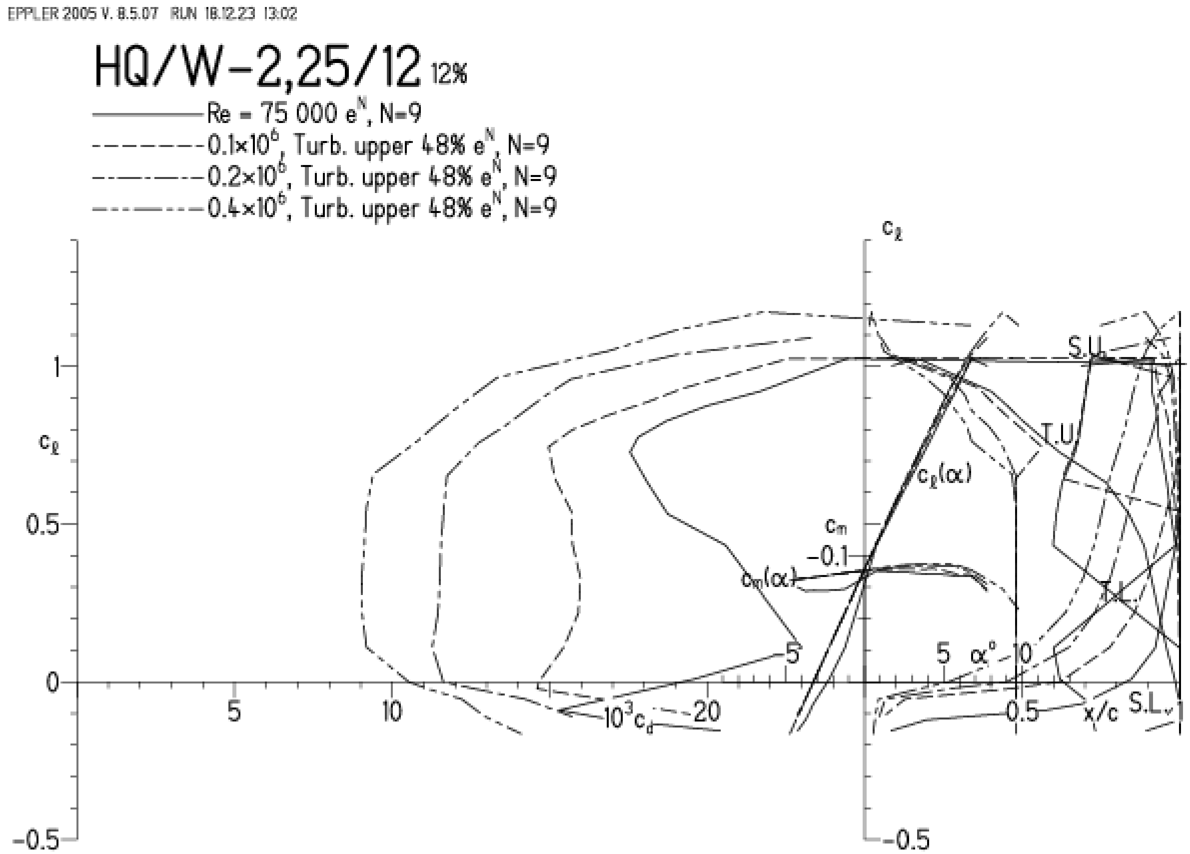
<u>HQ/W-2,25/12</u>, N=9





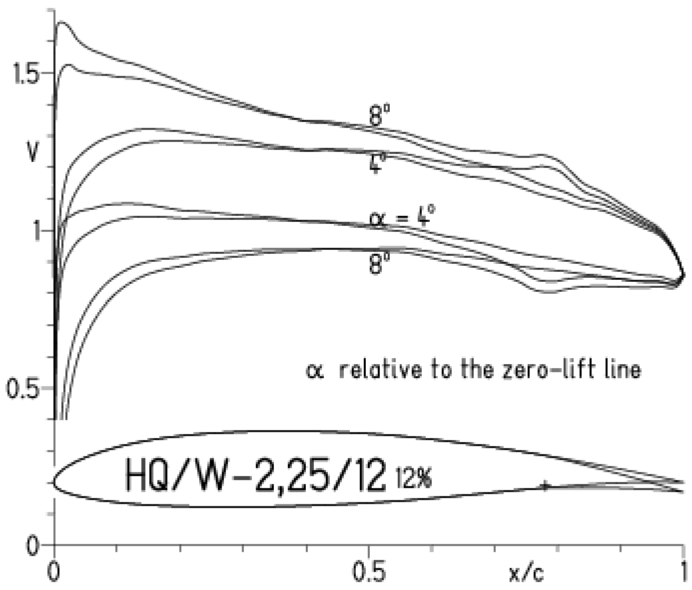
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



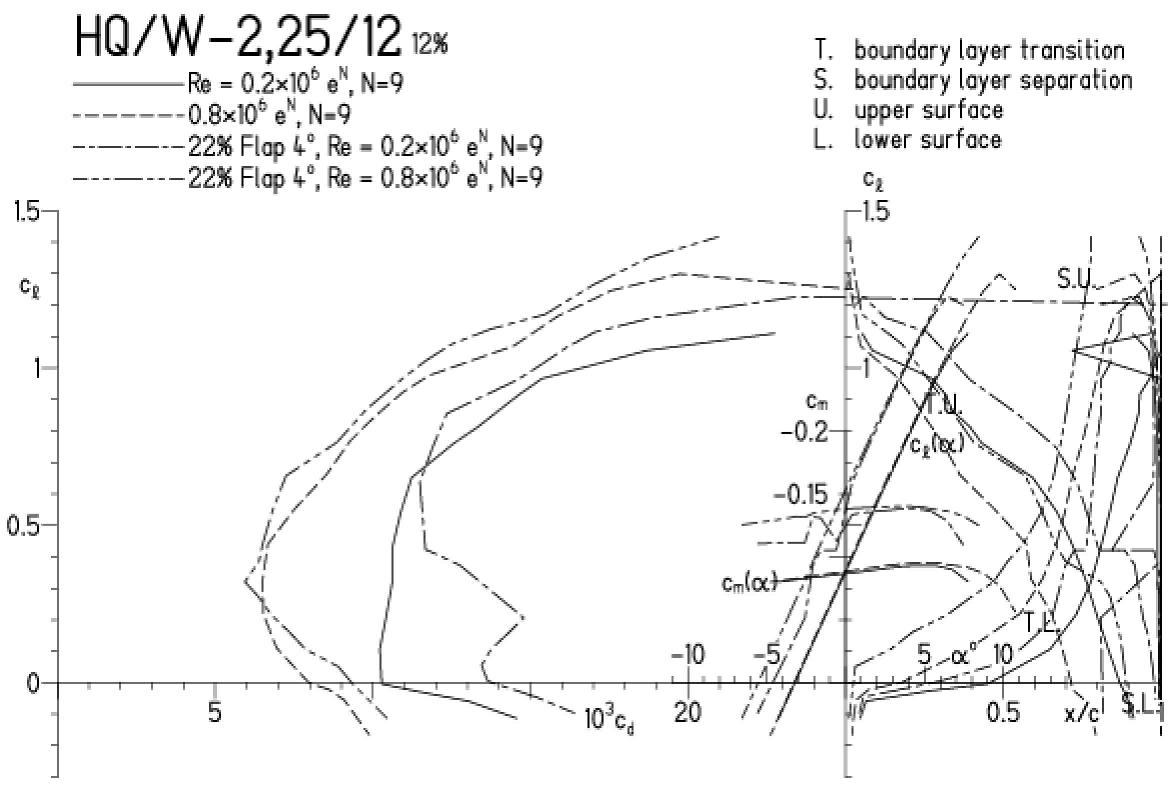


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

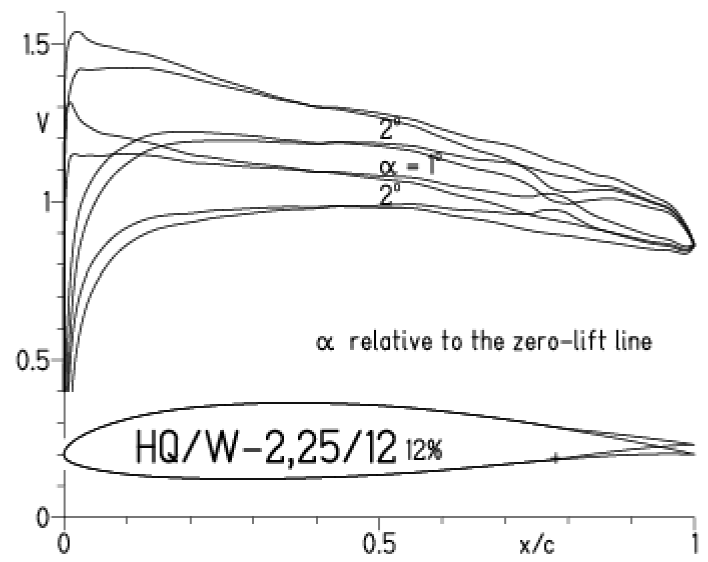


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

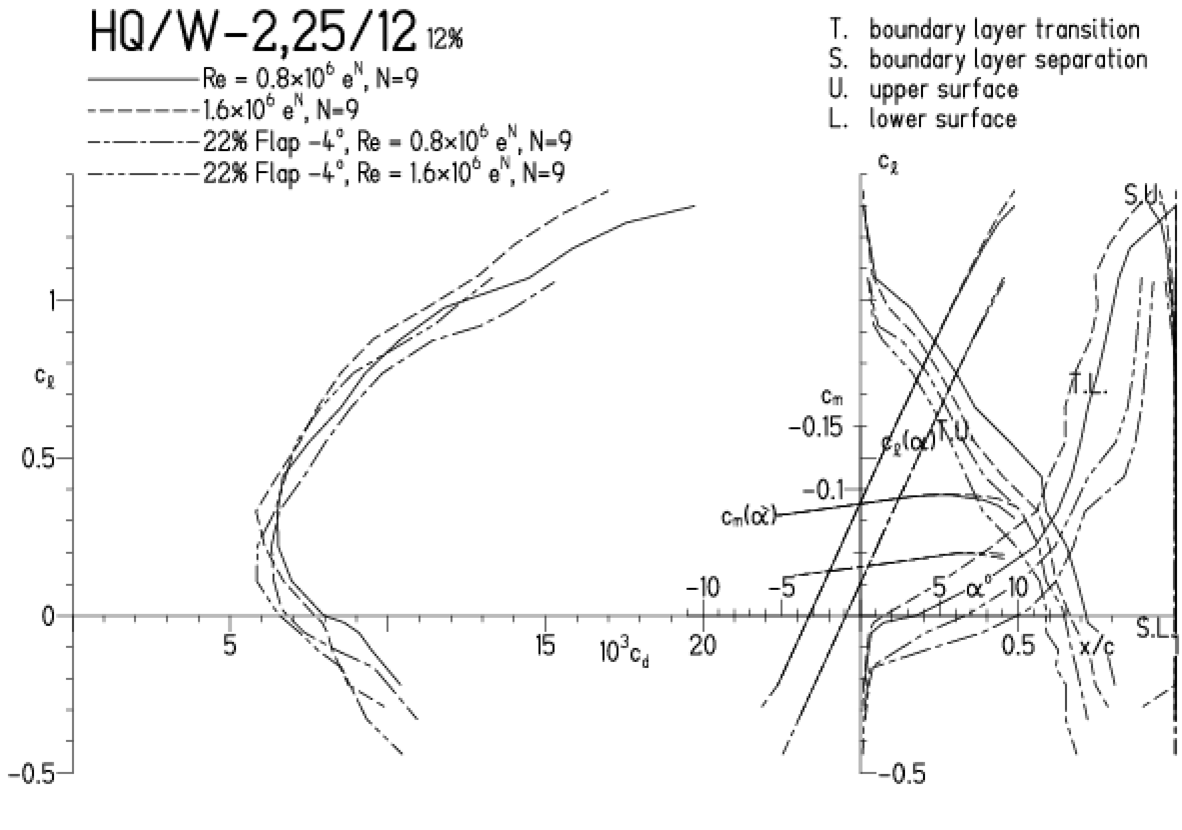


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

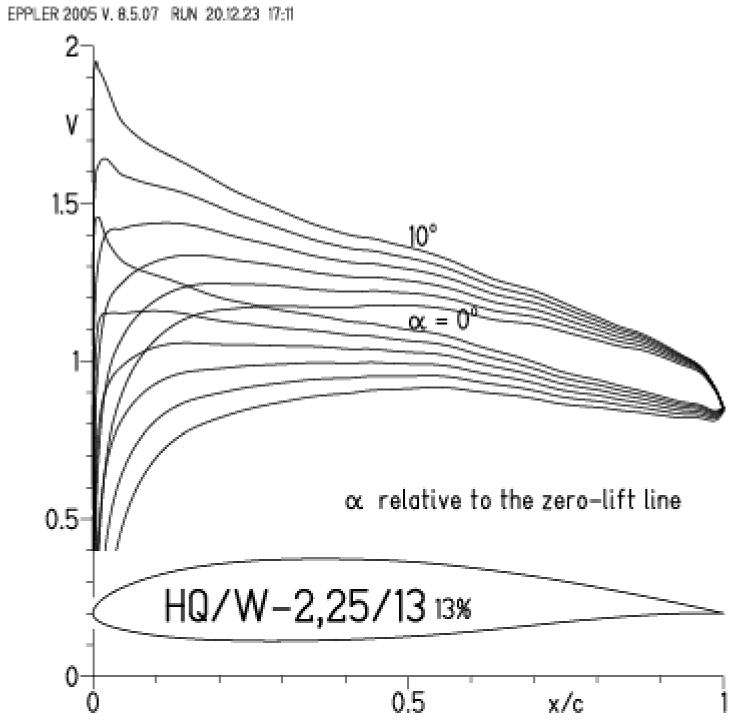
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

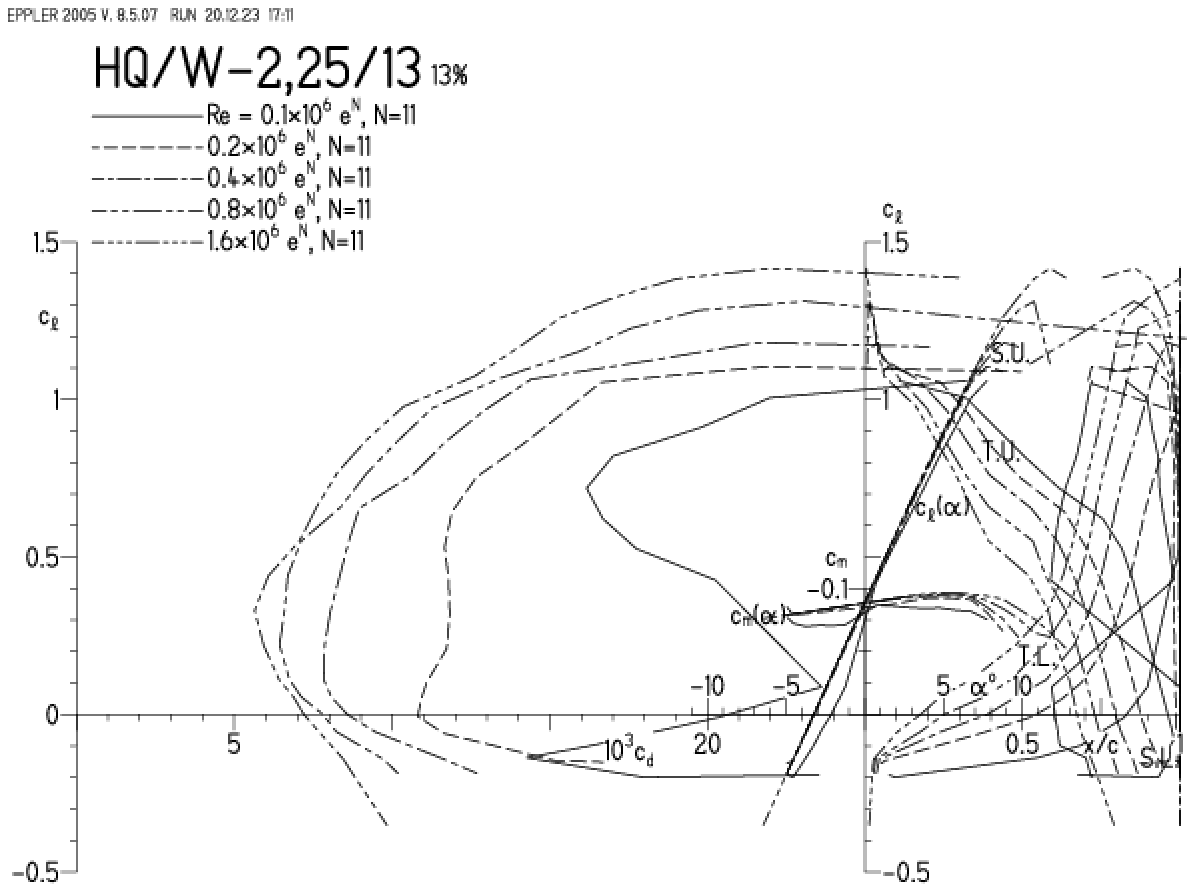


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

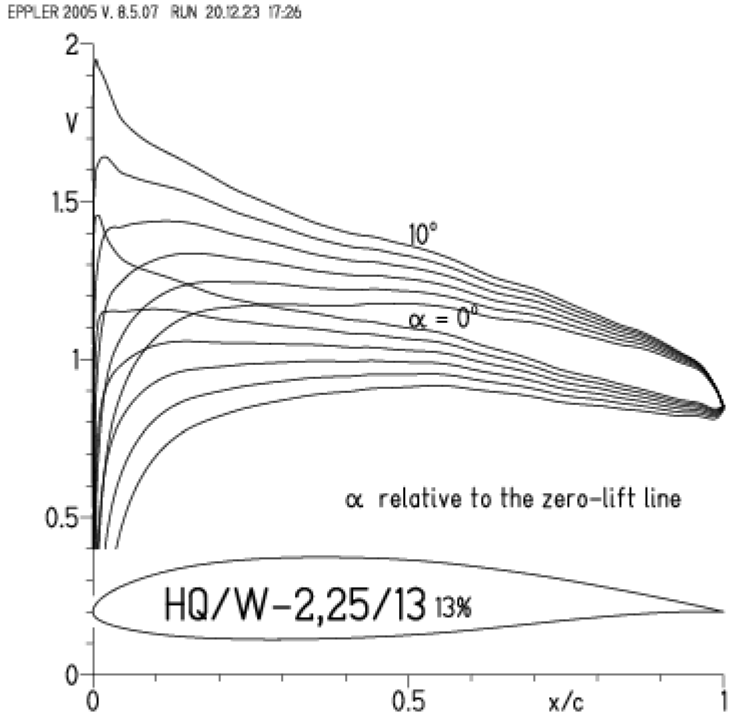


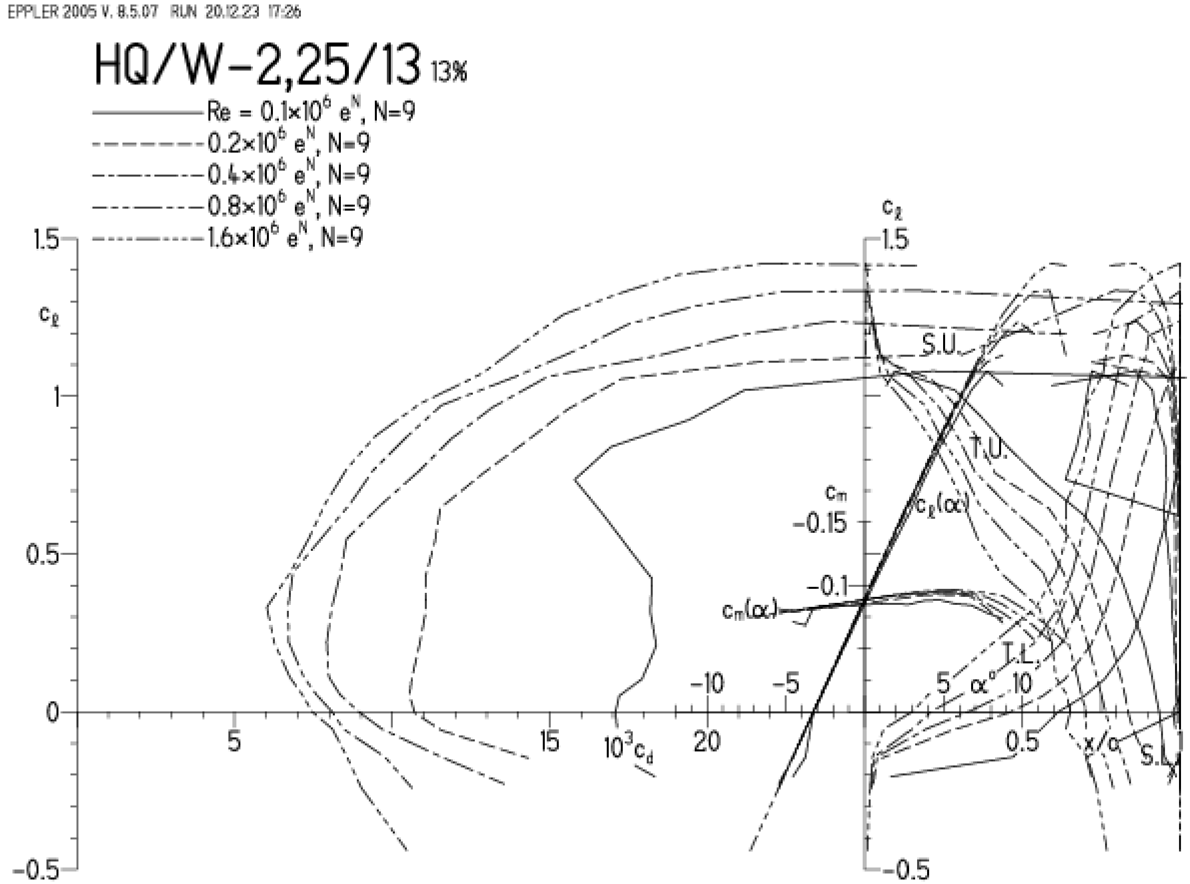
HQ/W-2,25/13, N=11



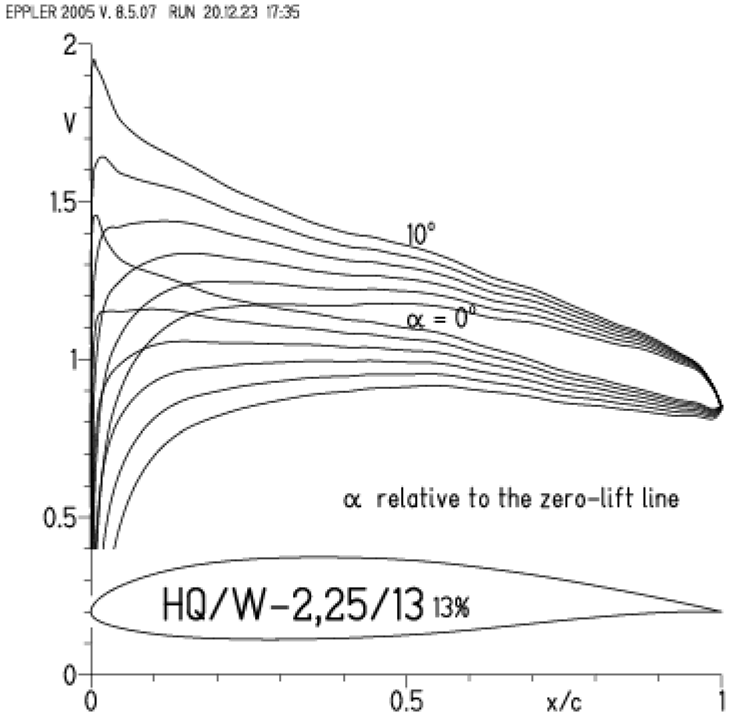


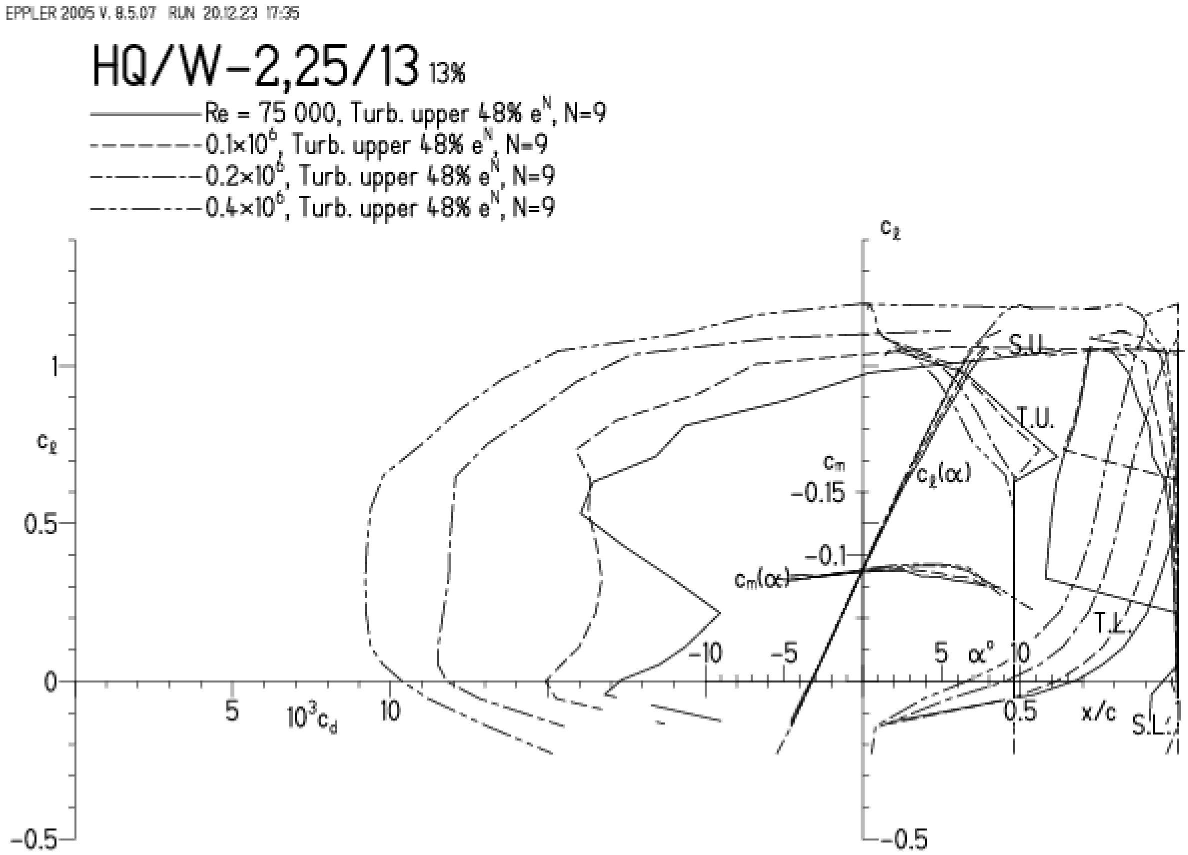
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

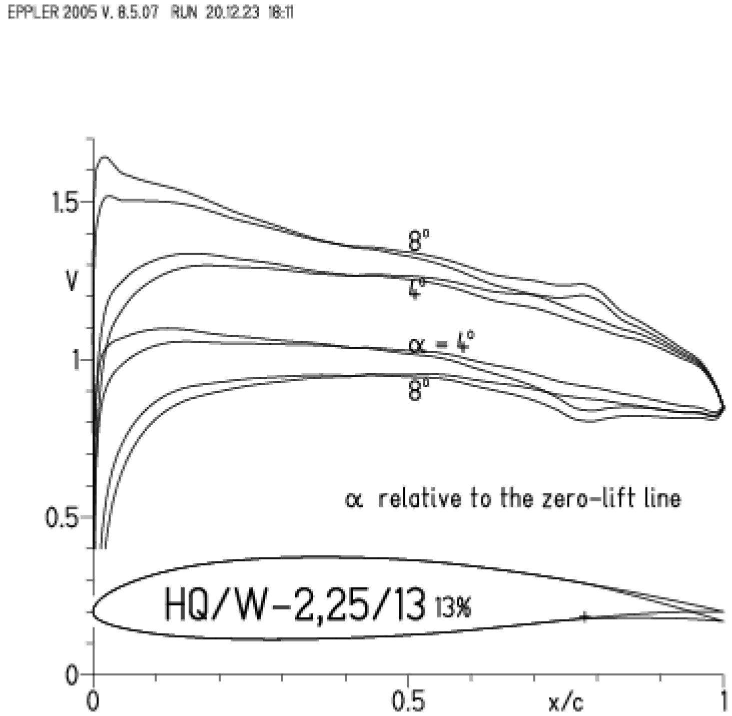

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
x/c
10³cd

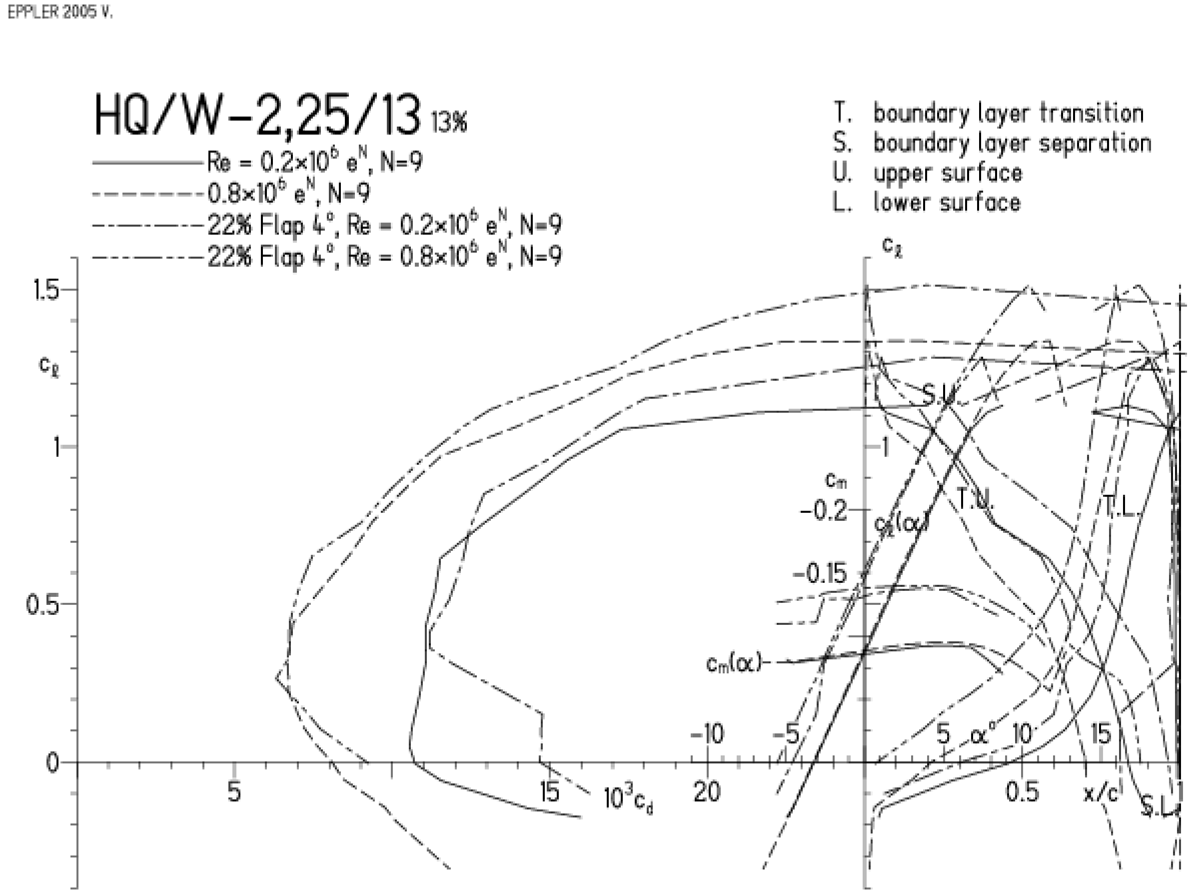
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





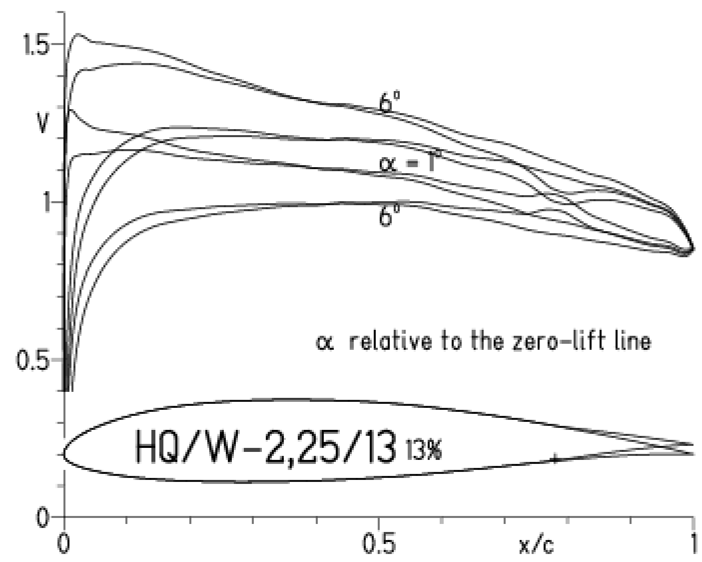
<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag



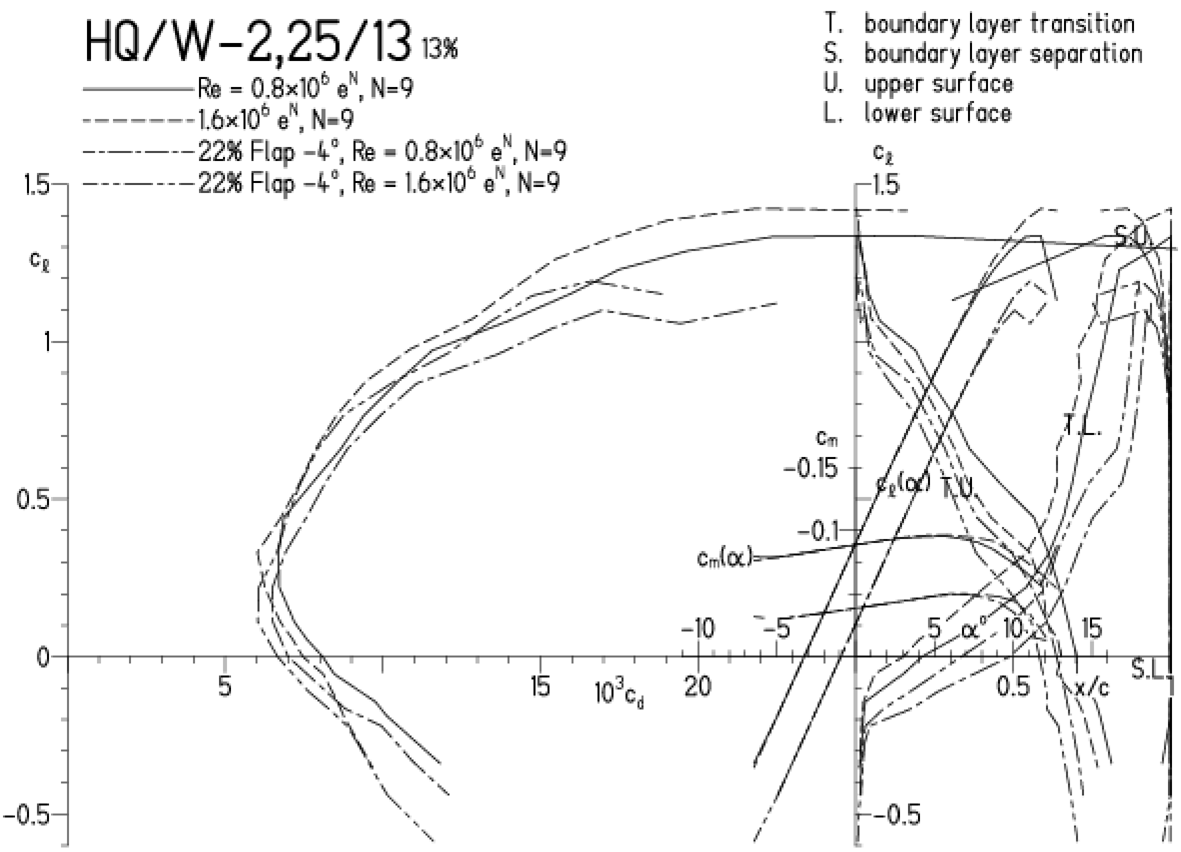


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

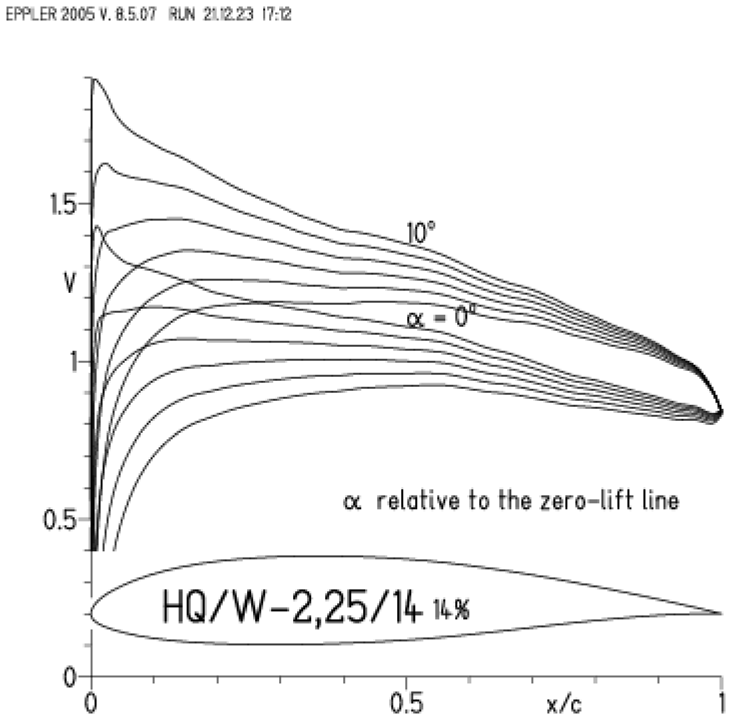
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

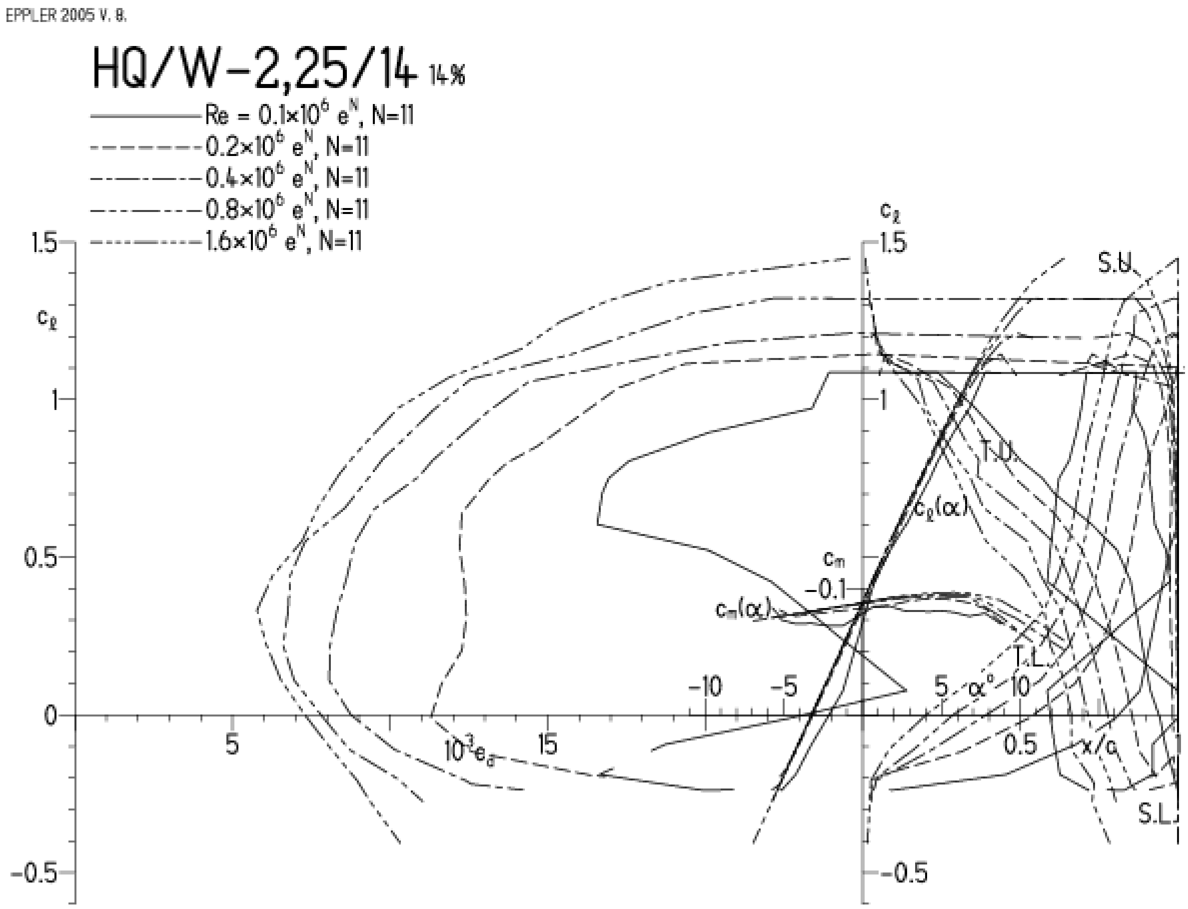


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



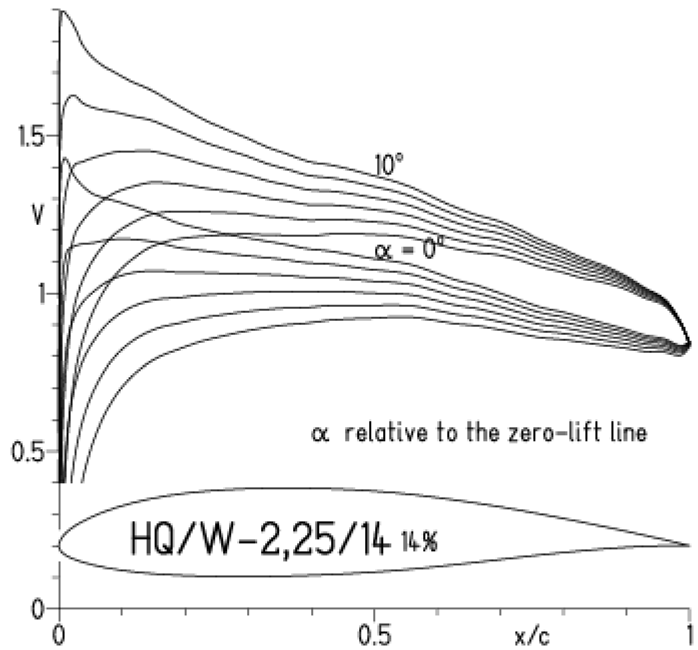
HQ/W-2,25/14, N=11



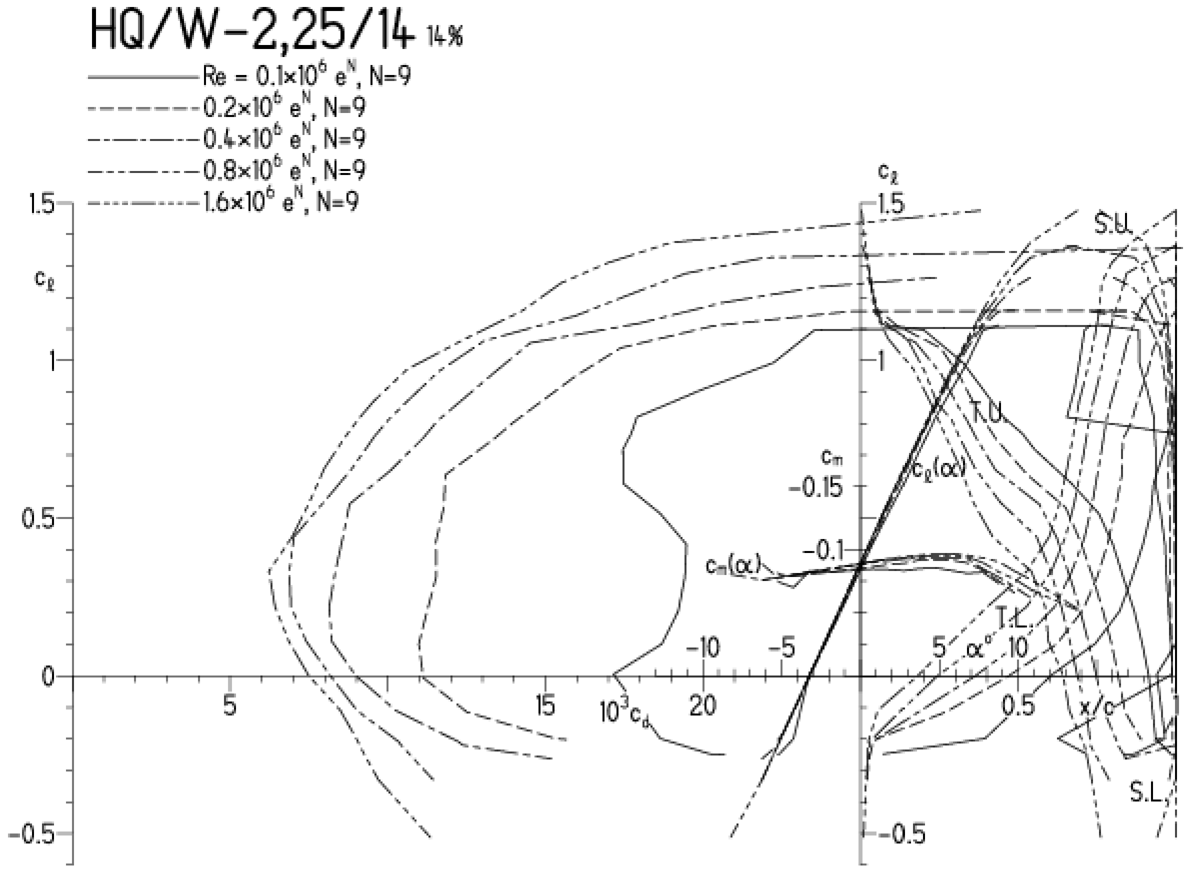


HQ/W-2,25/14, N=9

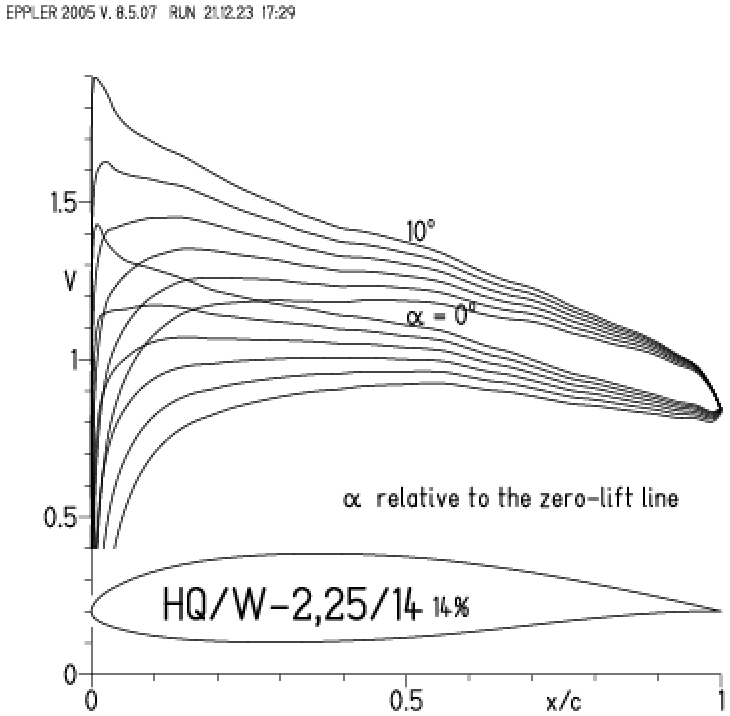
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

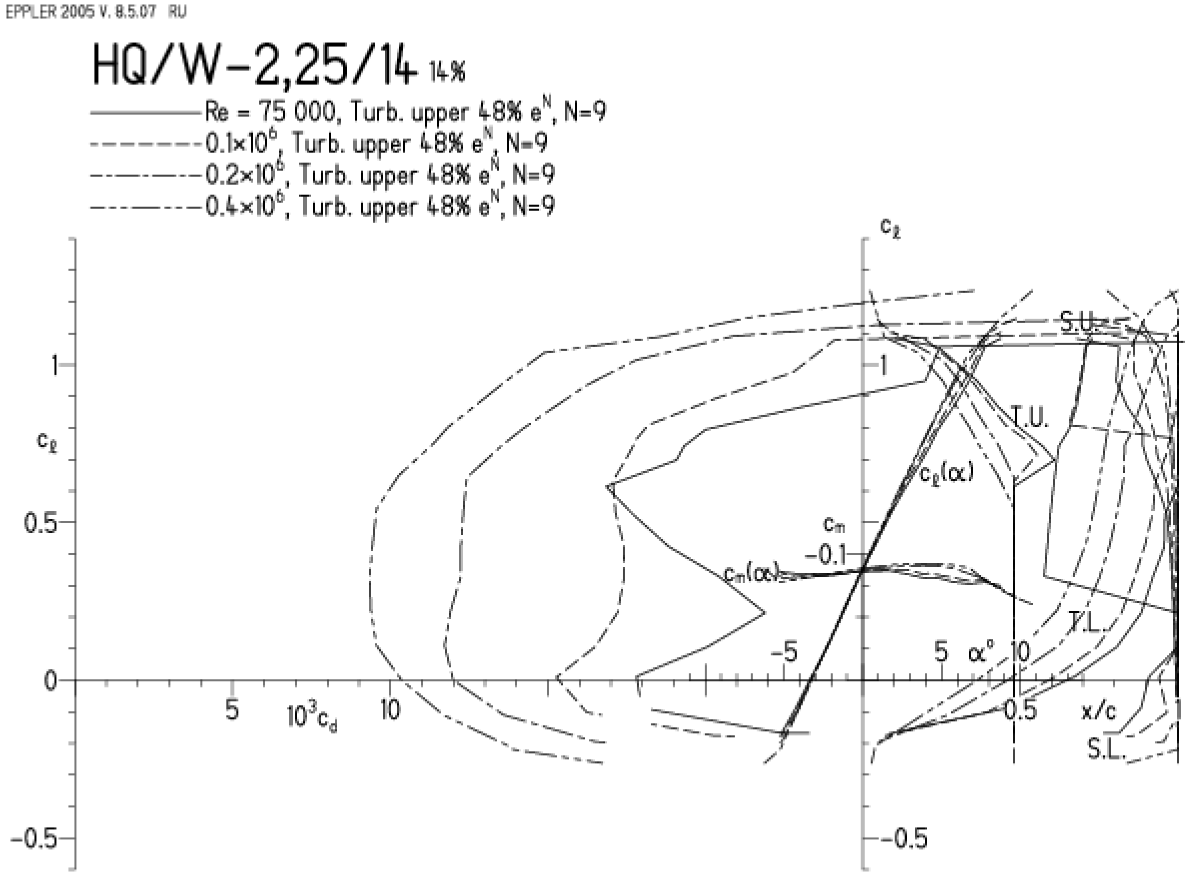


EPPLER 2005 V. 8.



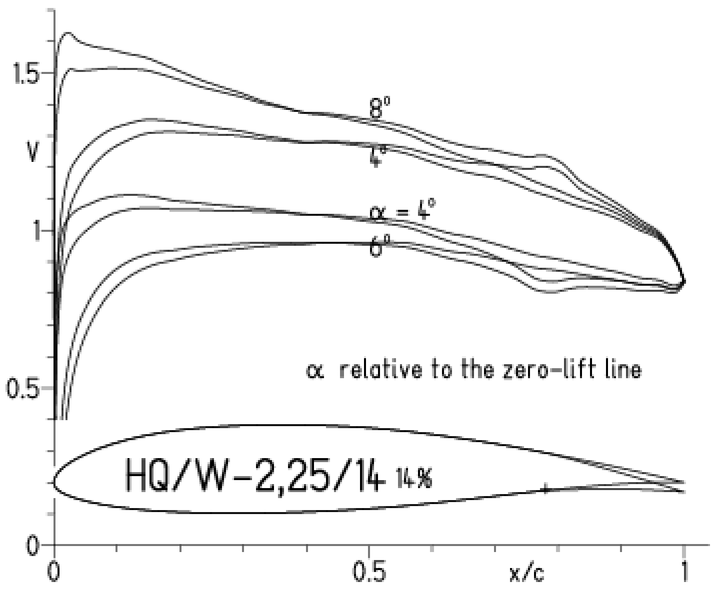
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



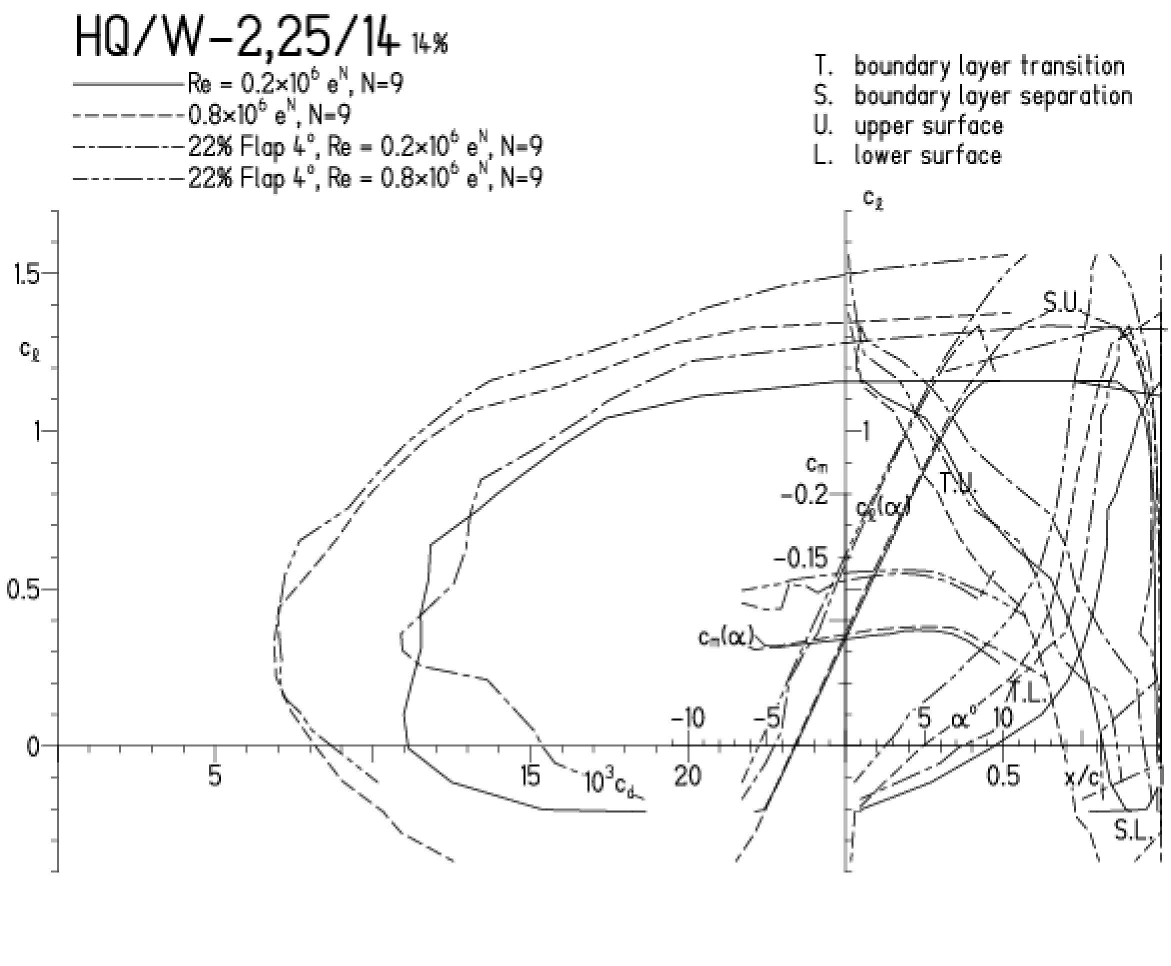


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

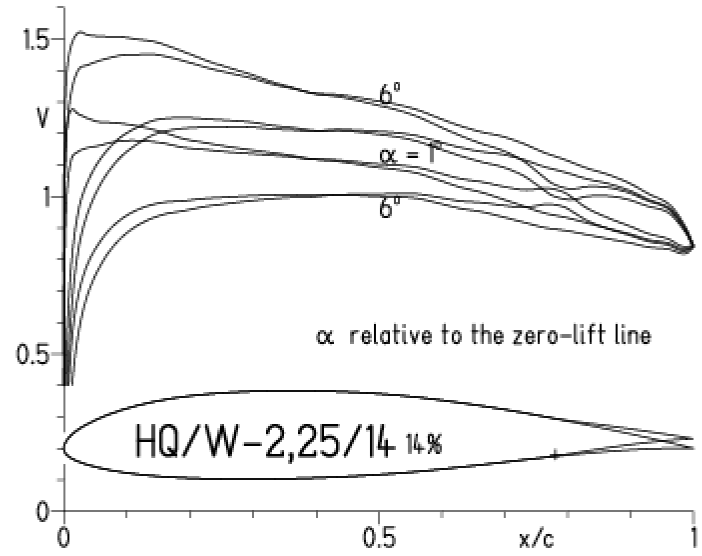


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

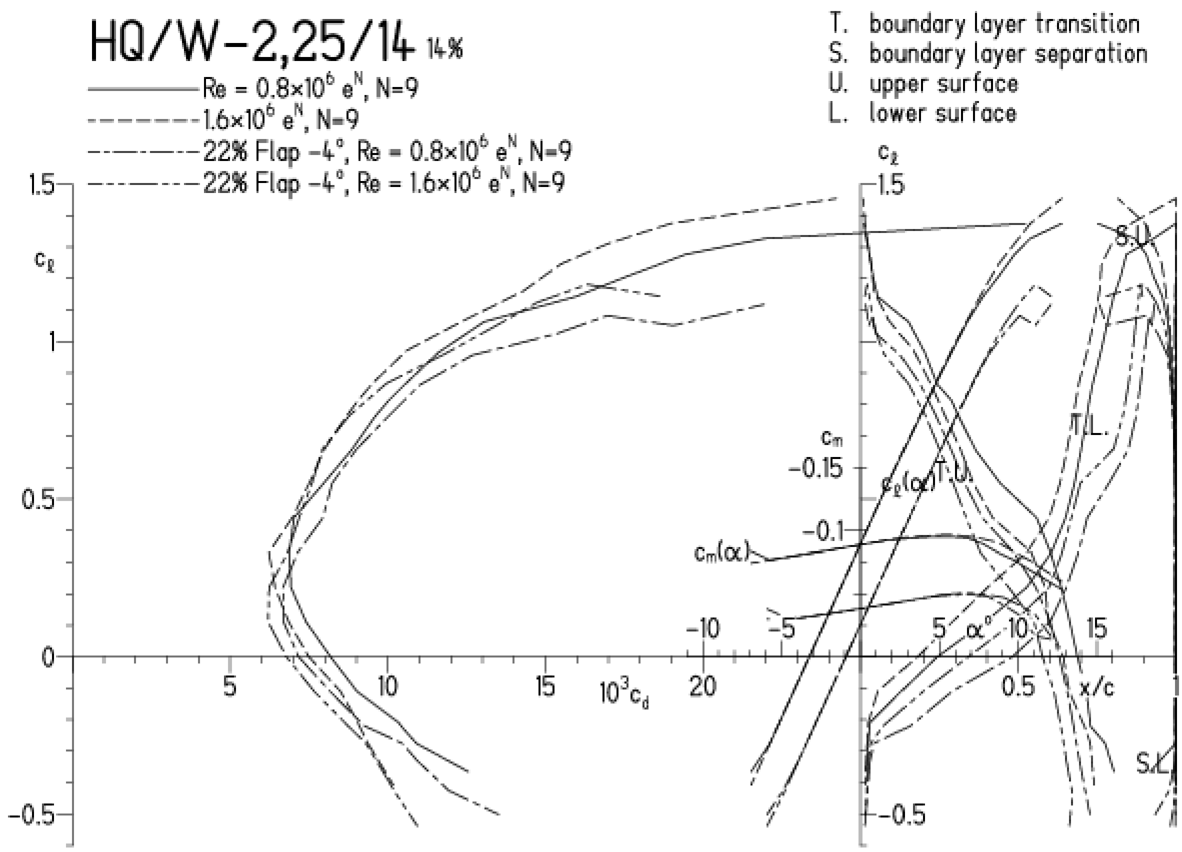


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

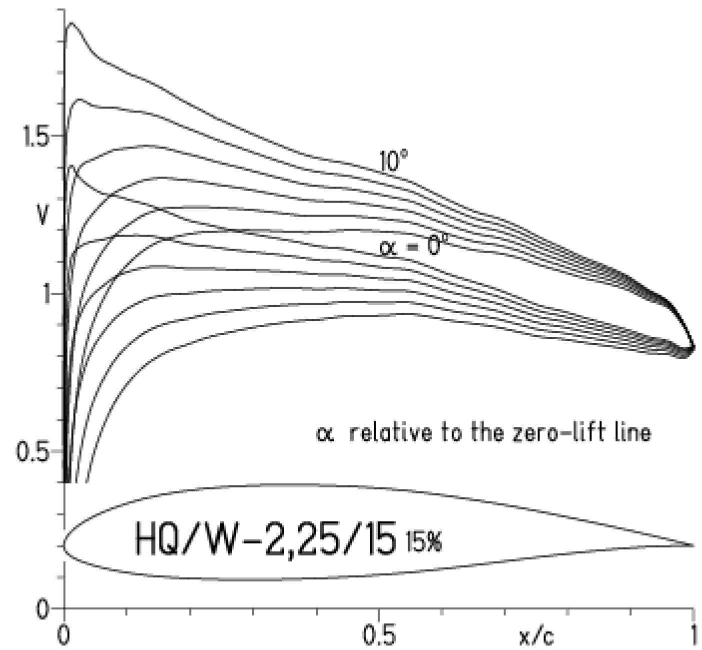


EPPLER 2005 V. 8.5.07

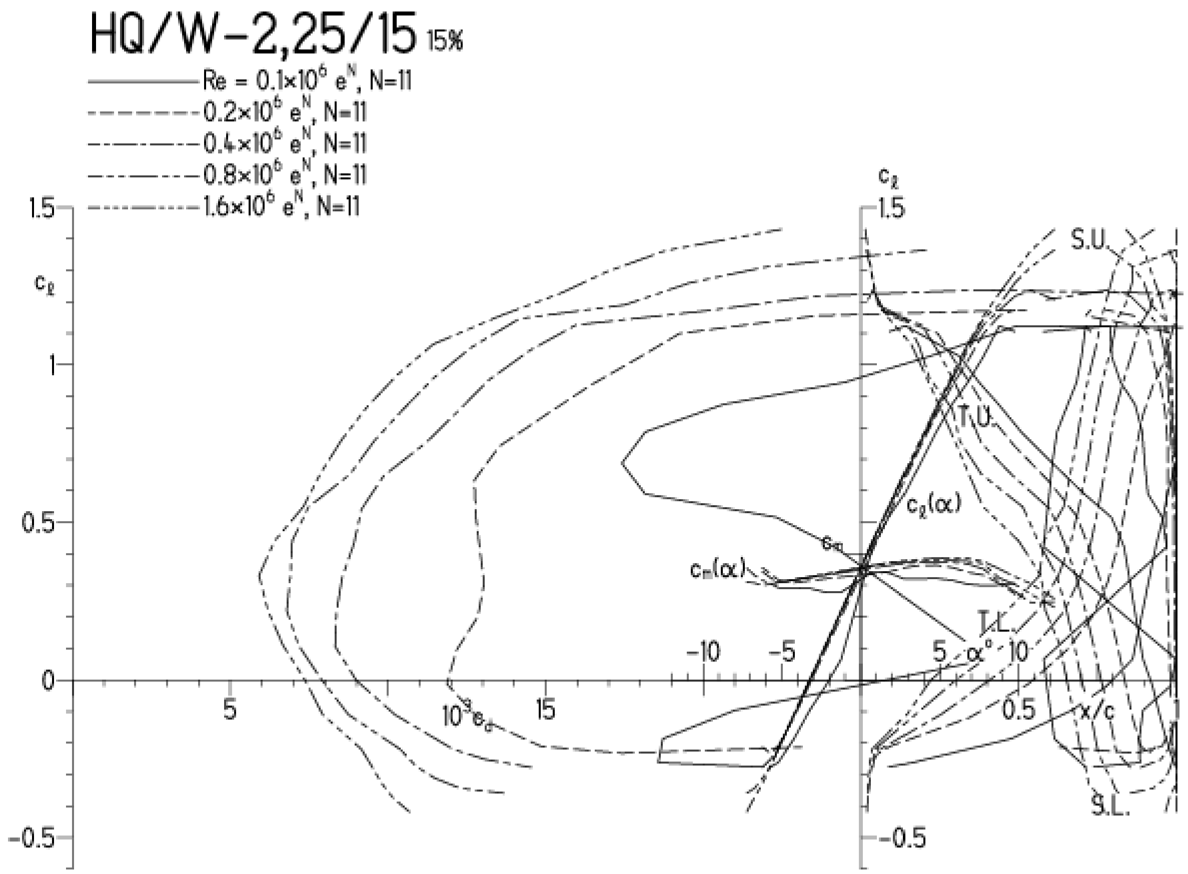


HQ/W-2,25/15, N=11

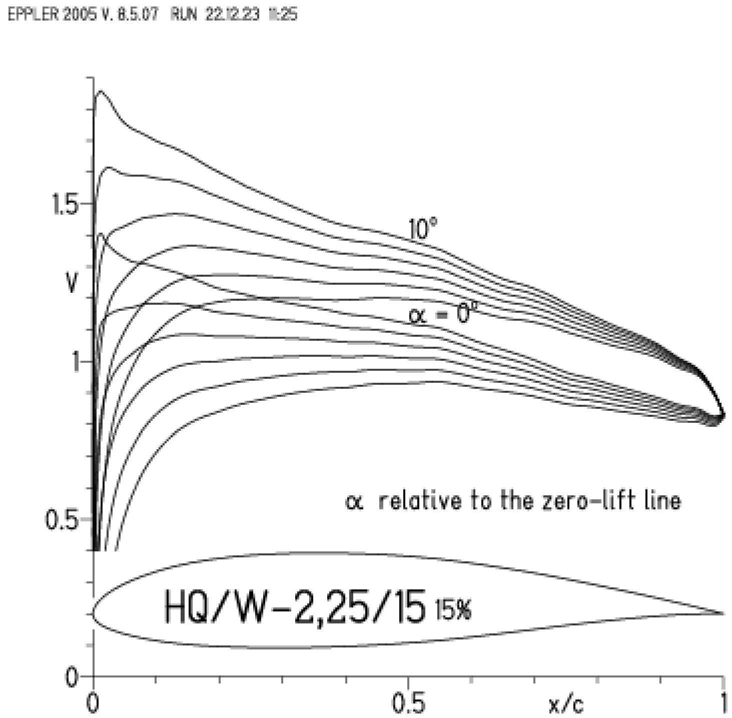
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

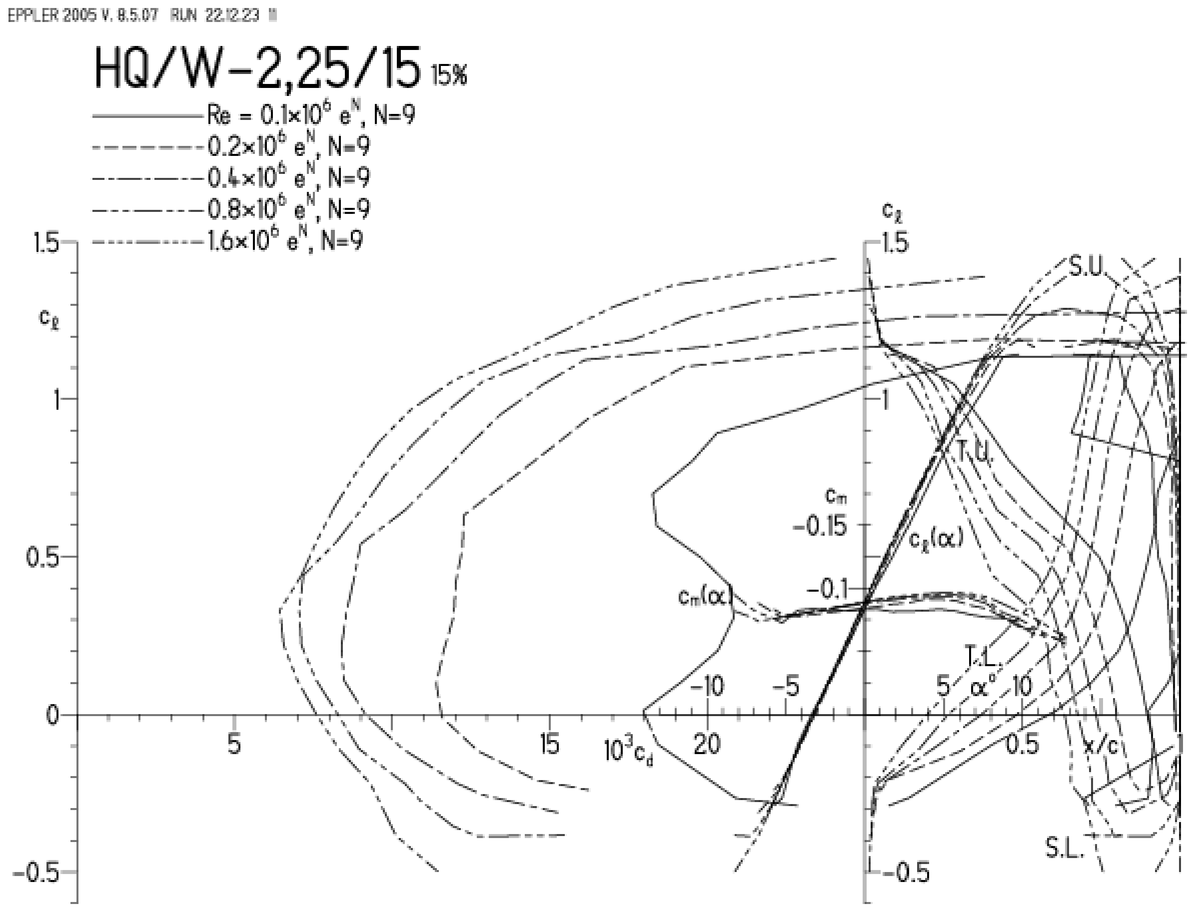


EPPLER 20

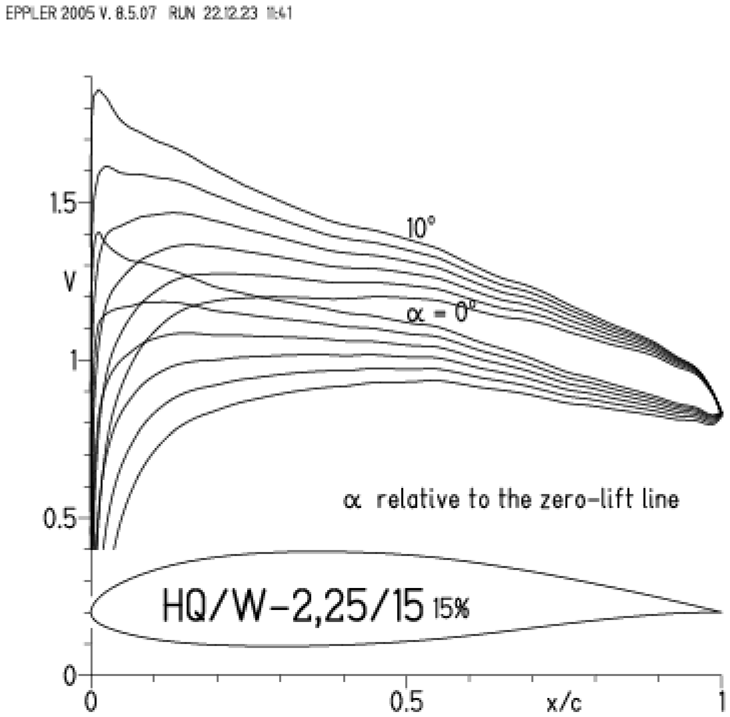


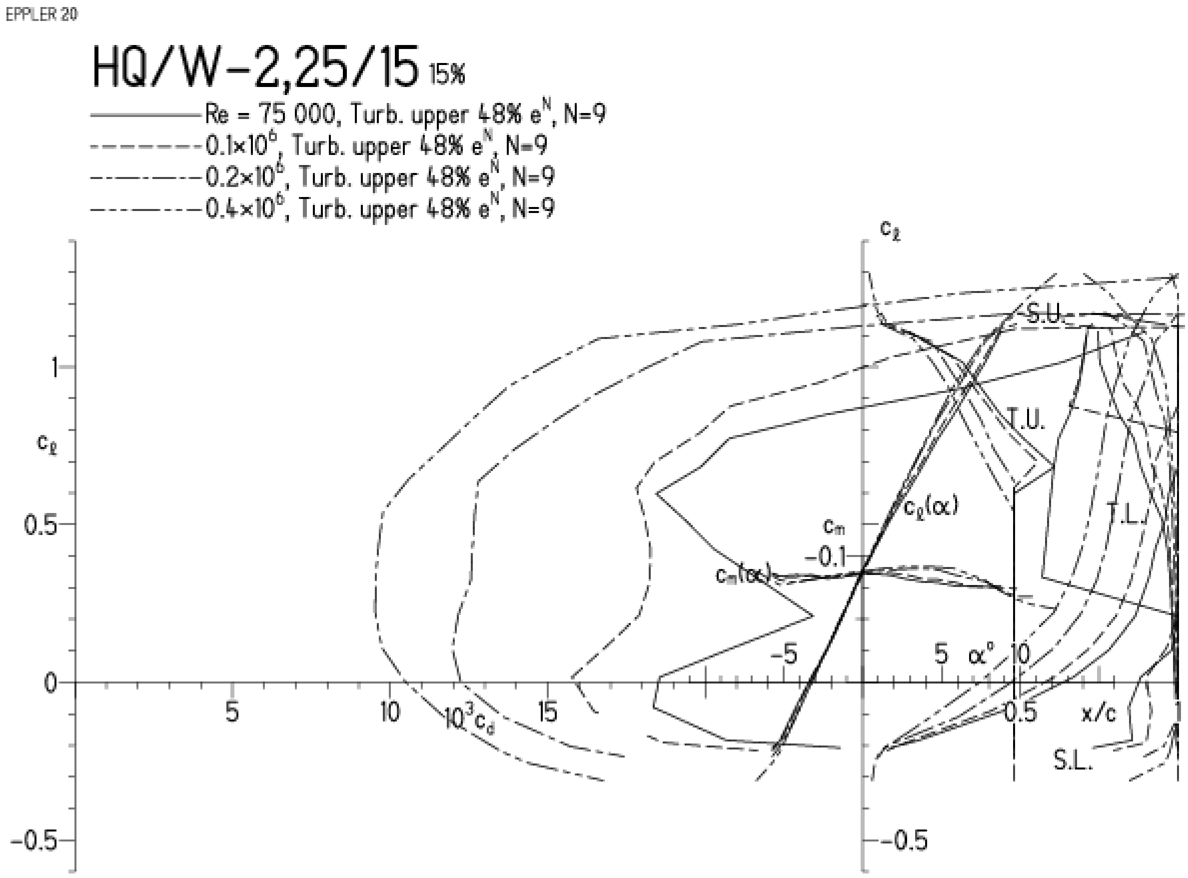
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



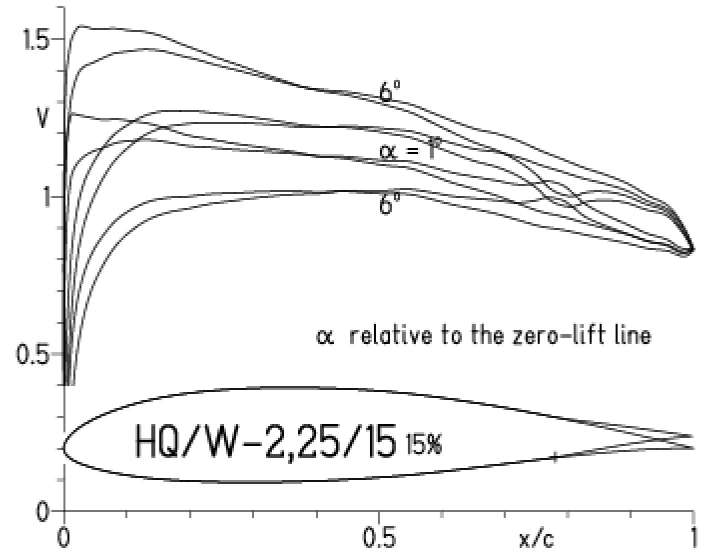


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

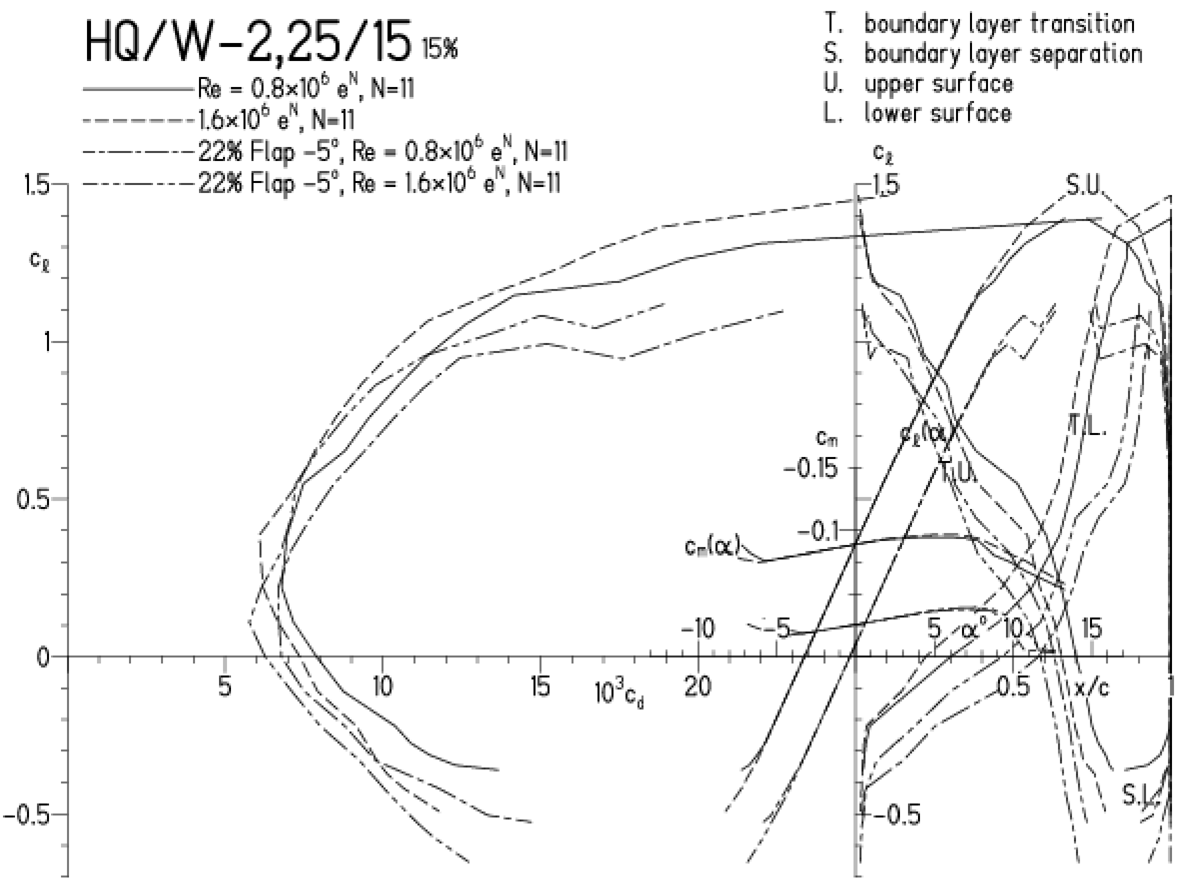
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

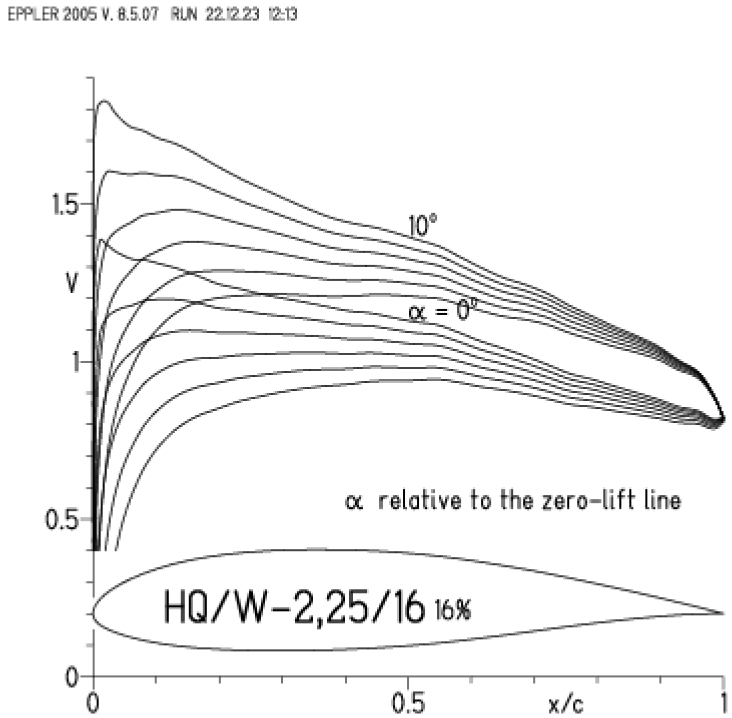
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

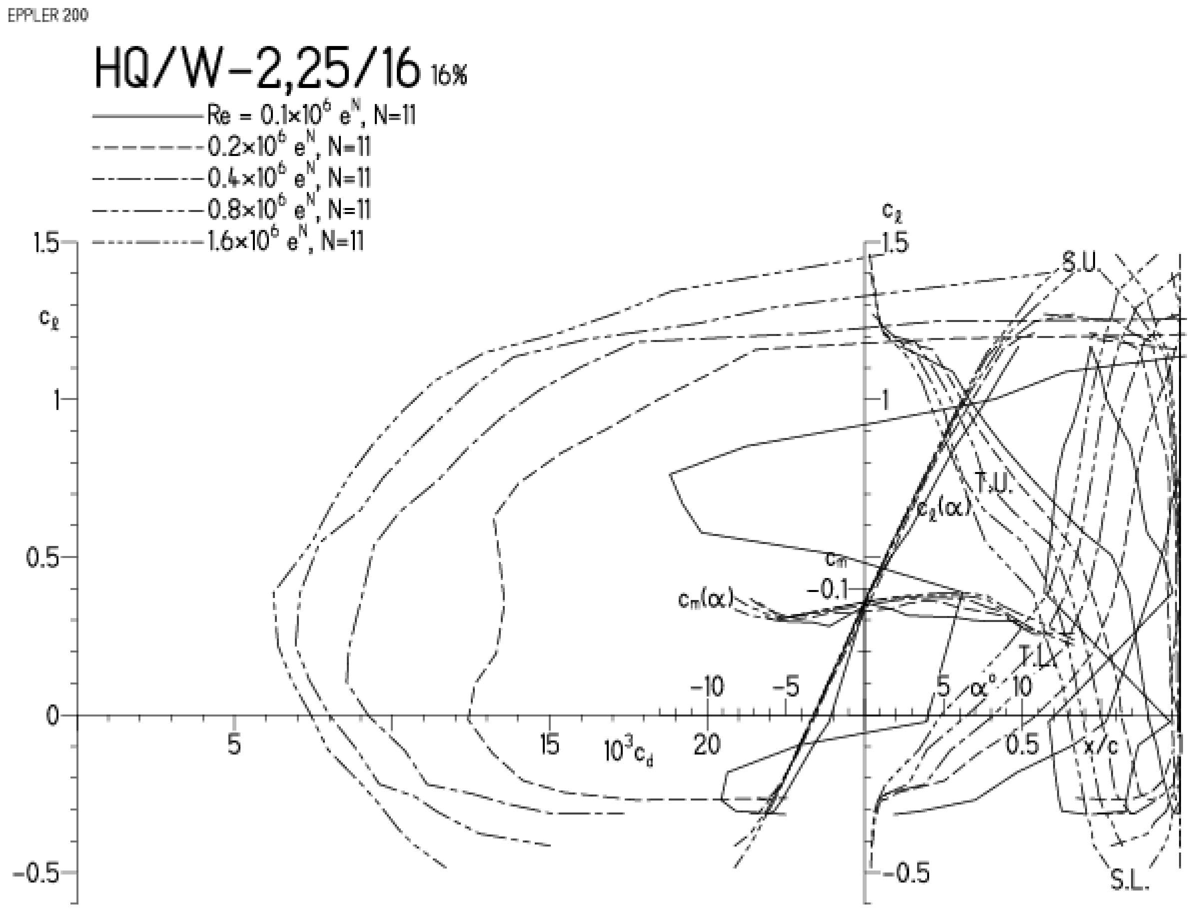


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

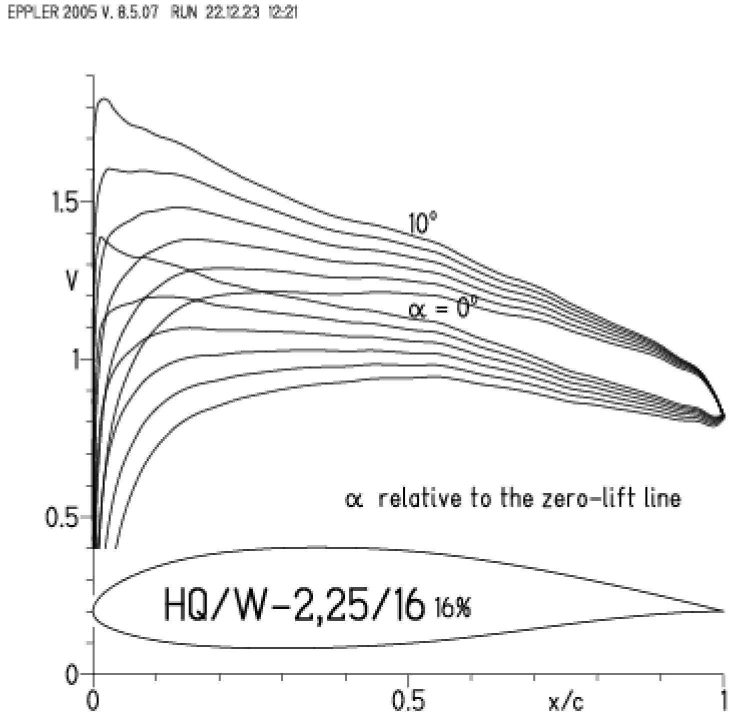


HQ/W-2,25/16, N=11

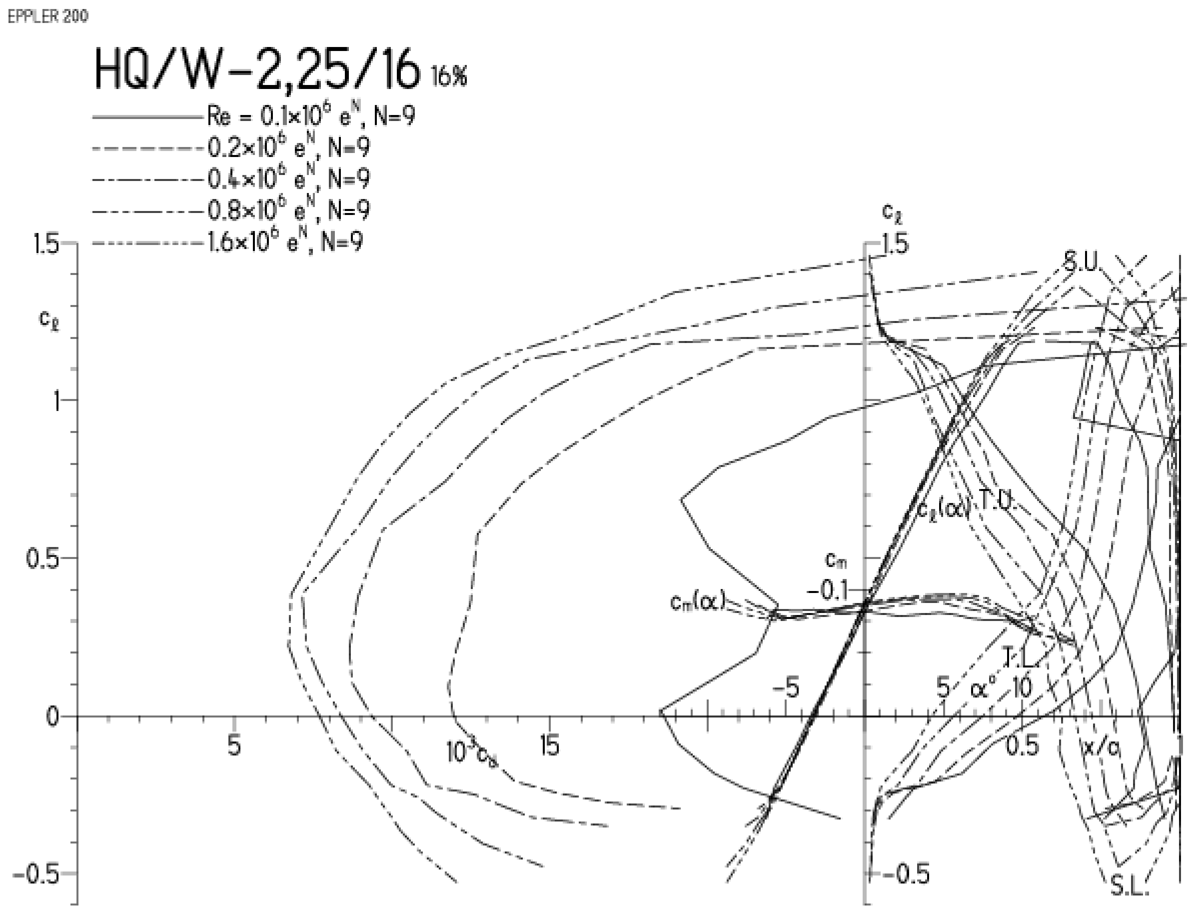




HQ/W-2,25/16, N=9

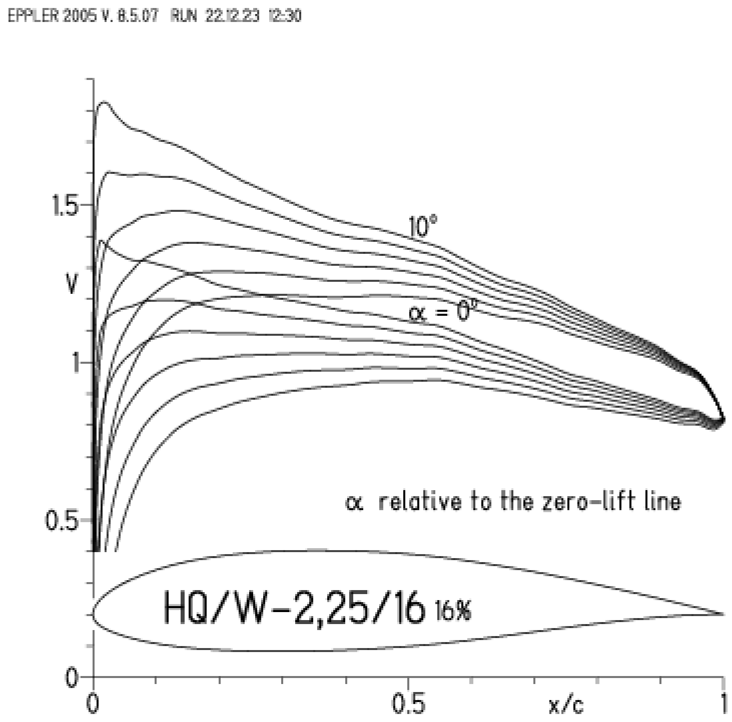


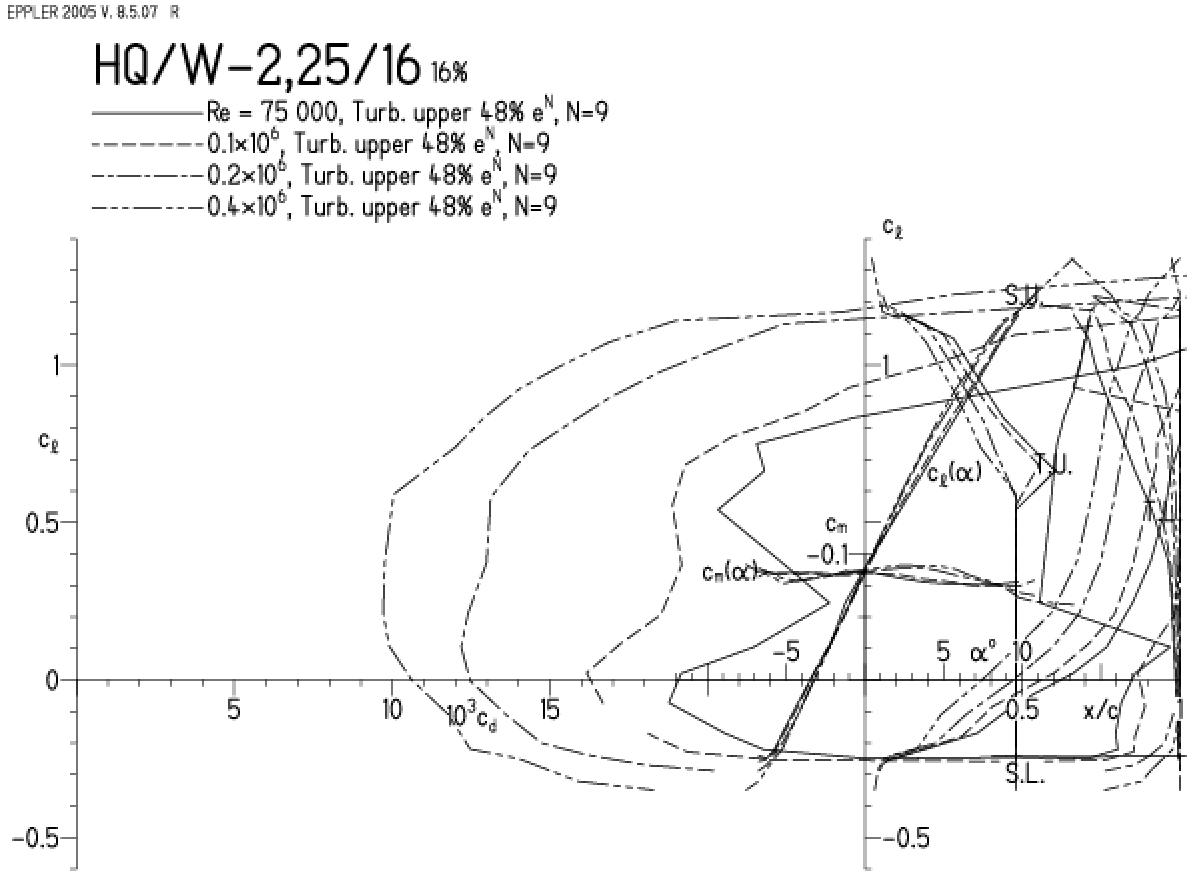
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/16 16%
0.5
x/c
1



EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1.5
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



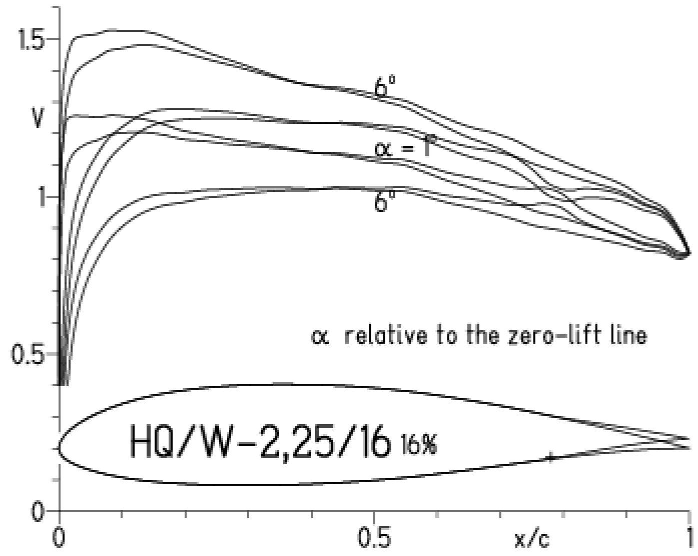


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

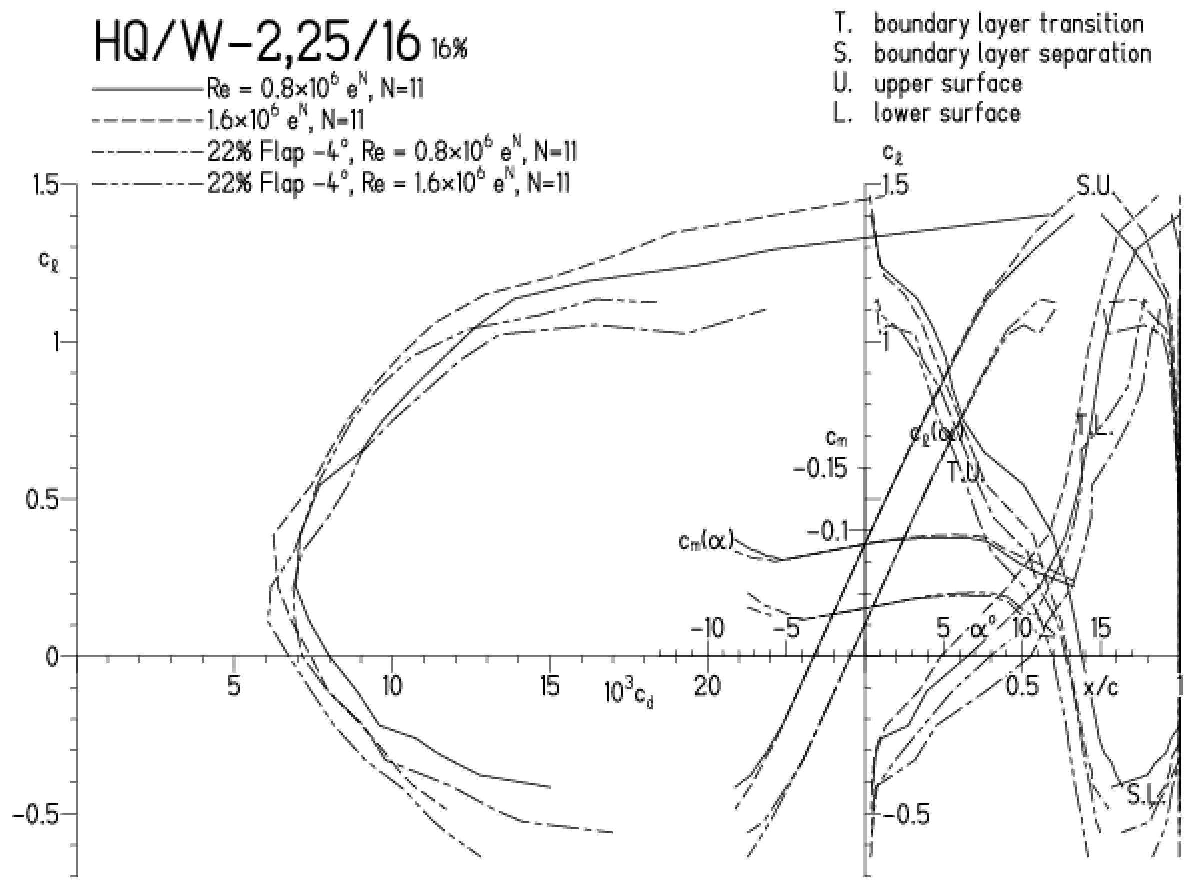
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

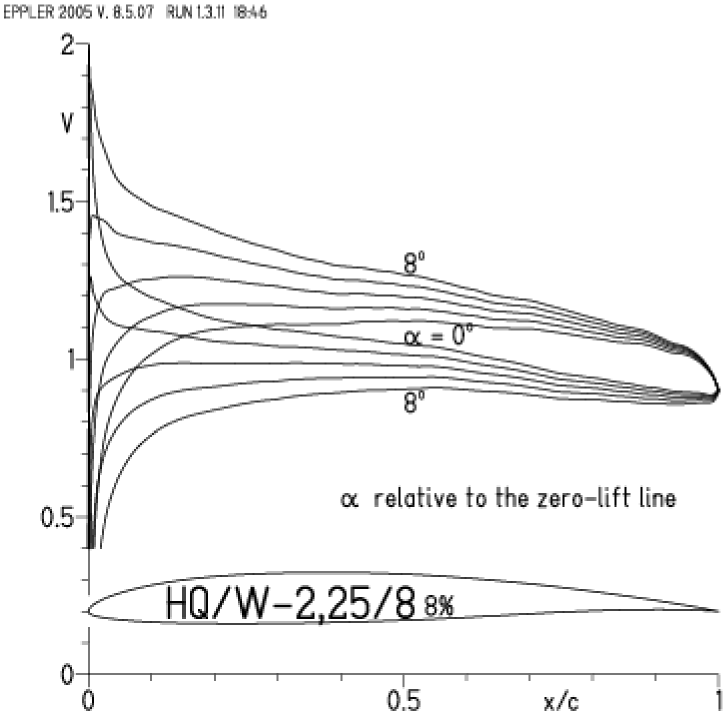
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

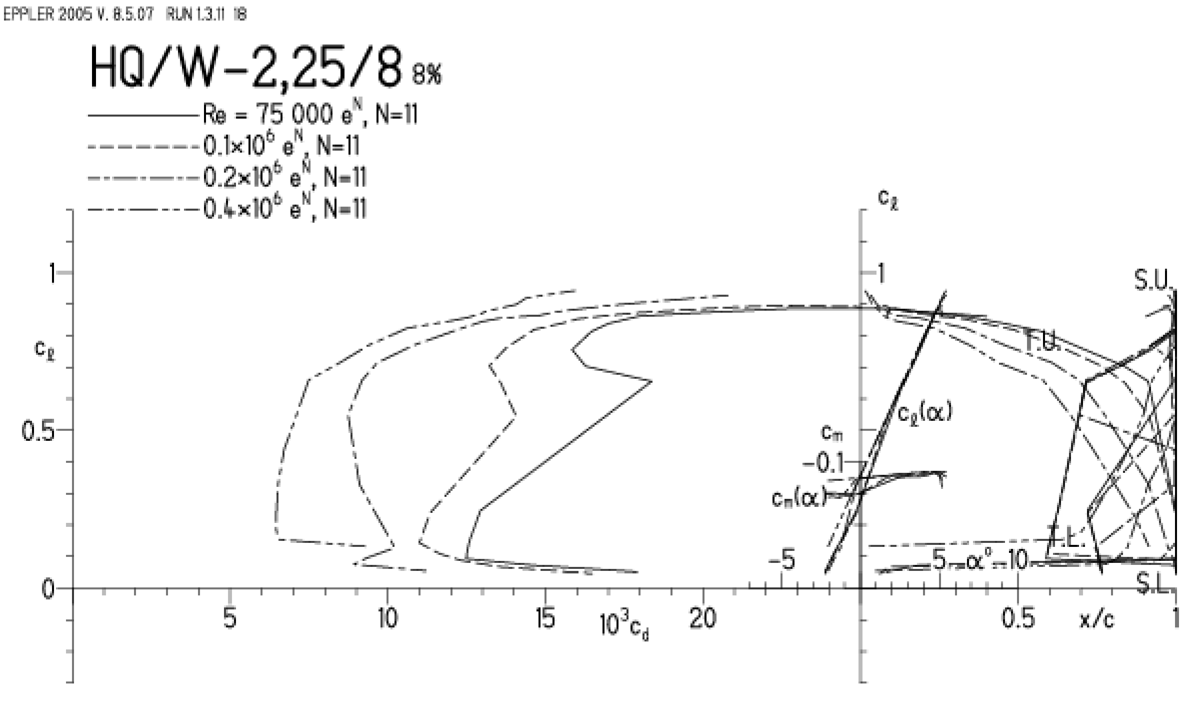


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

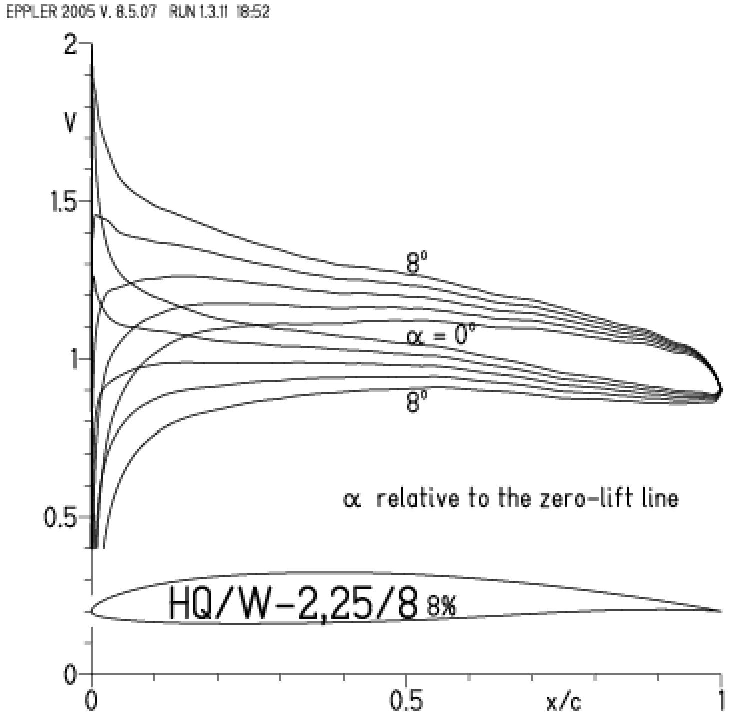


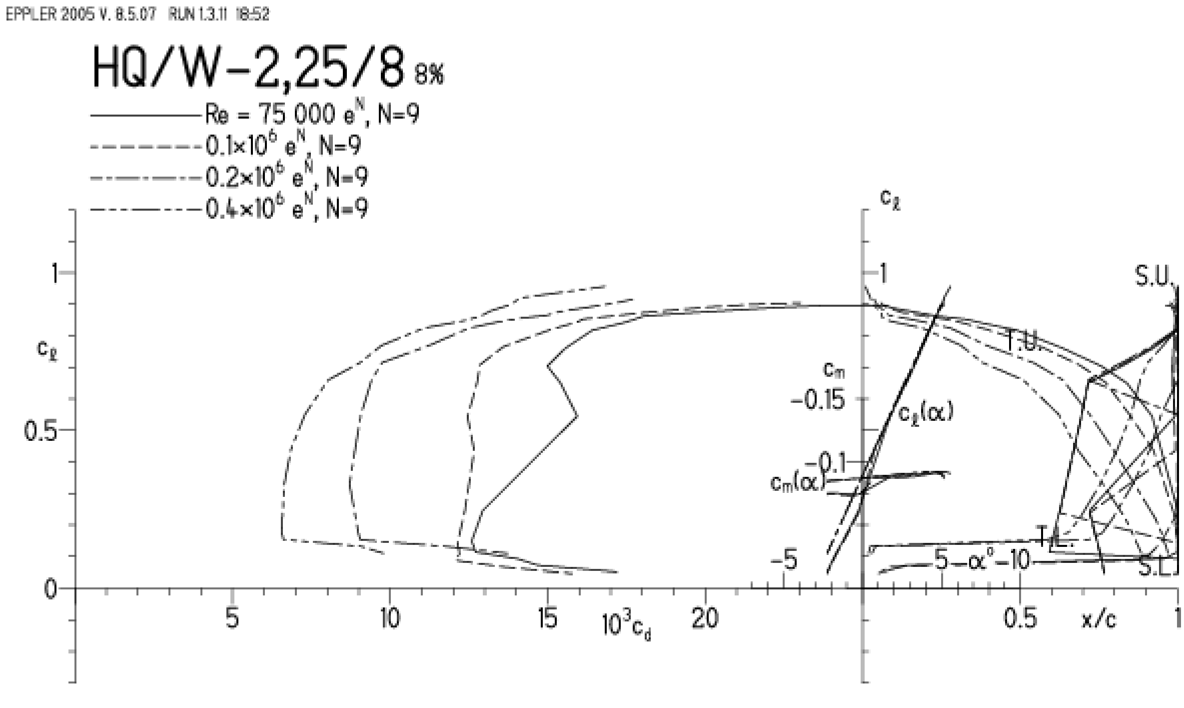
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

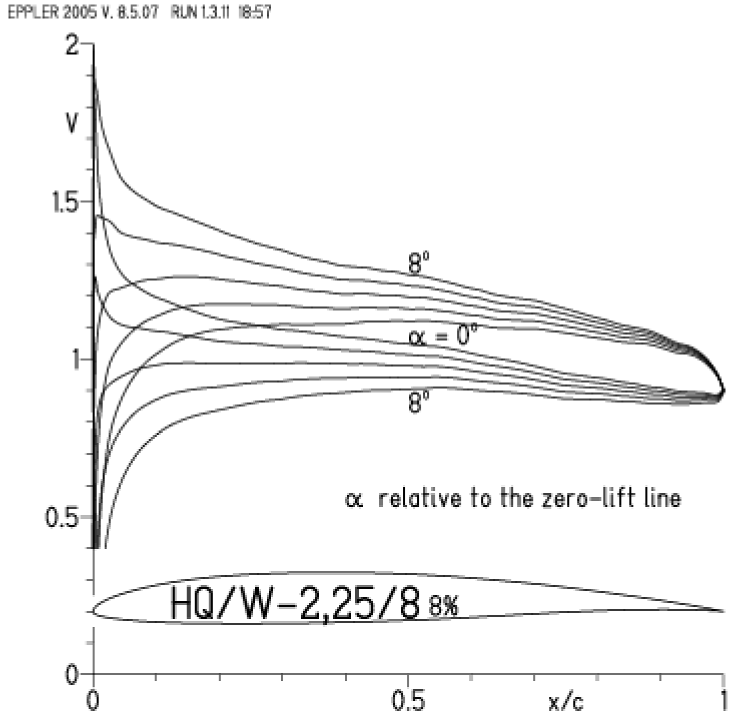

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
$c_\ell(\alpha)$
c_m
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
α°
x/c

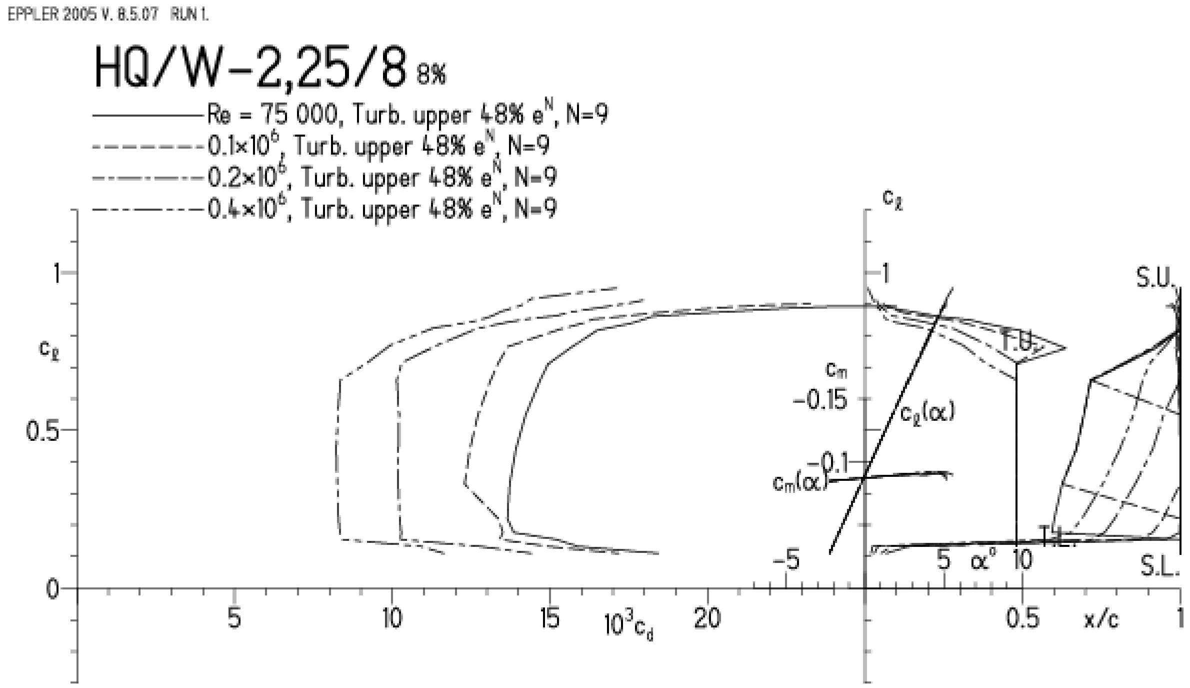
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

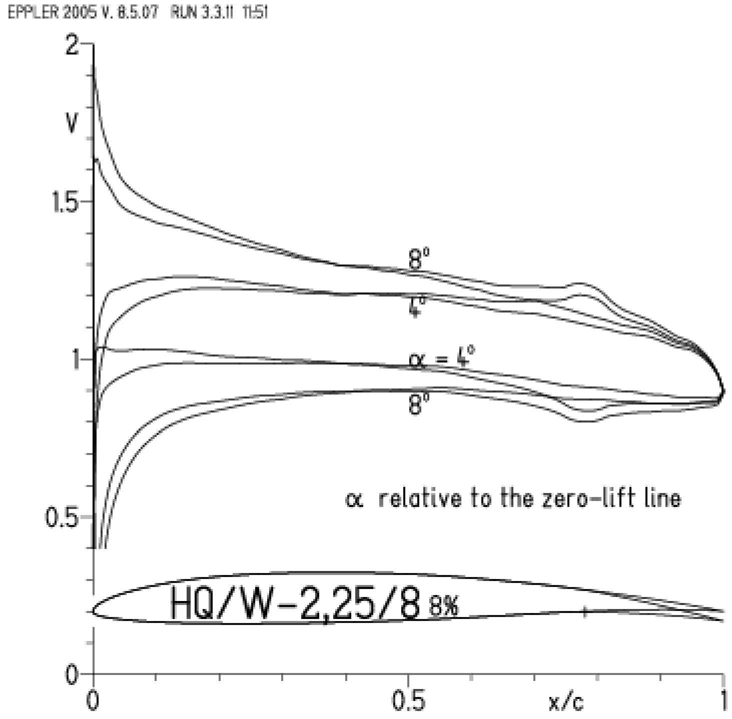

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5−α°−10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

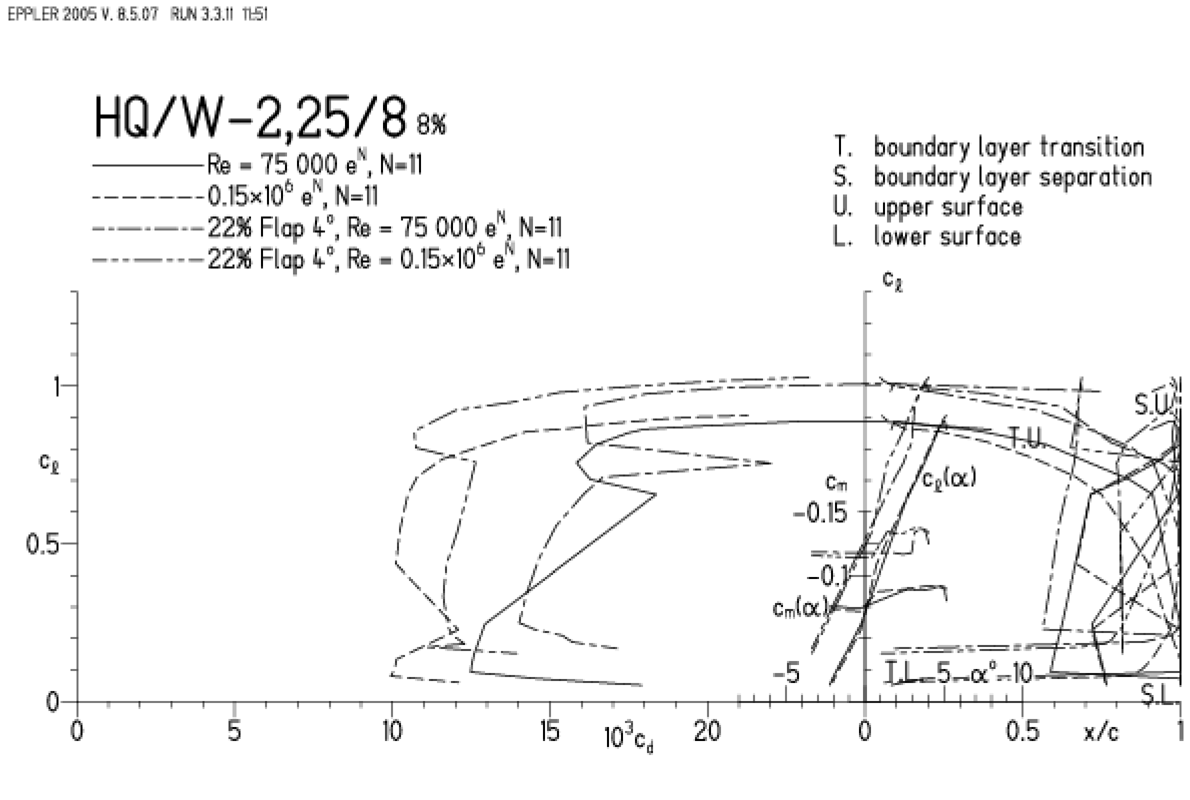
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



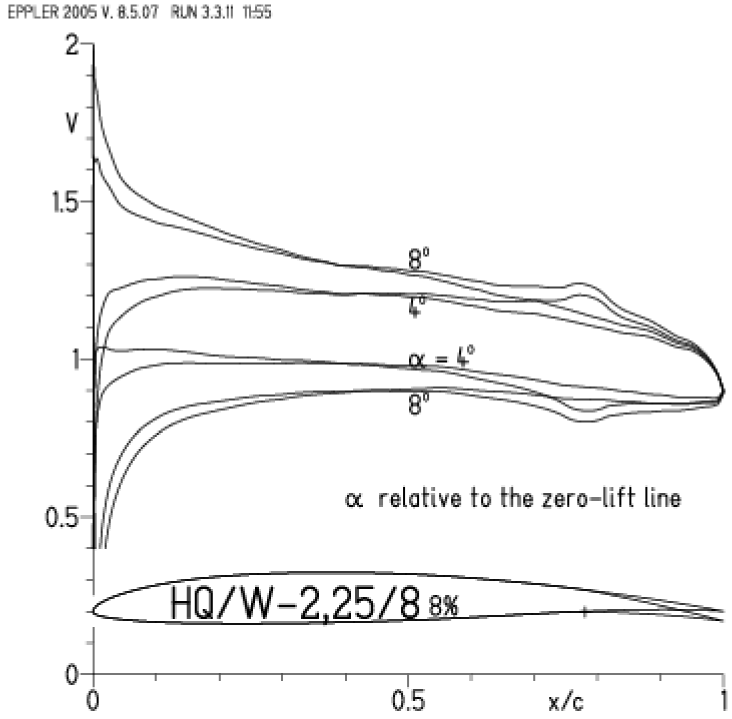


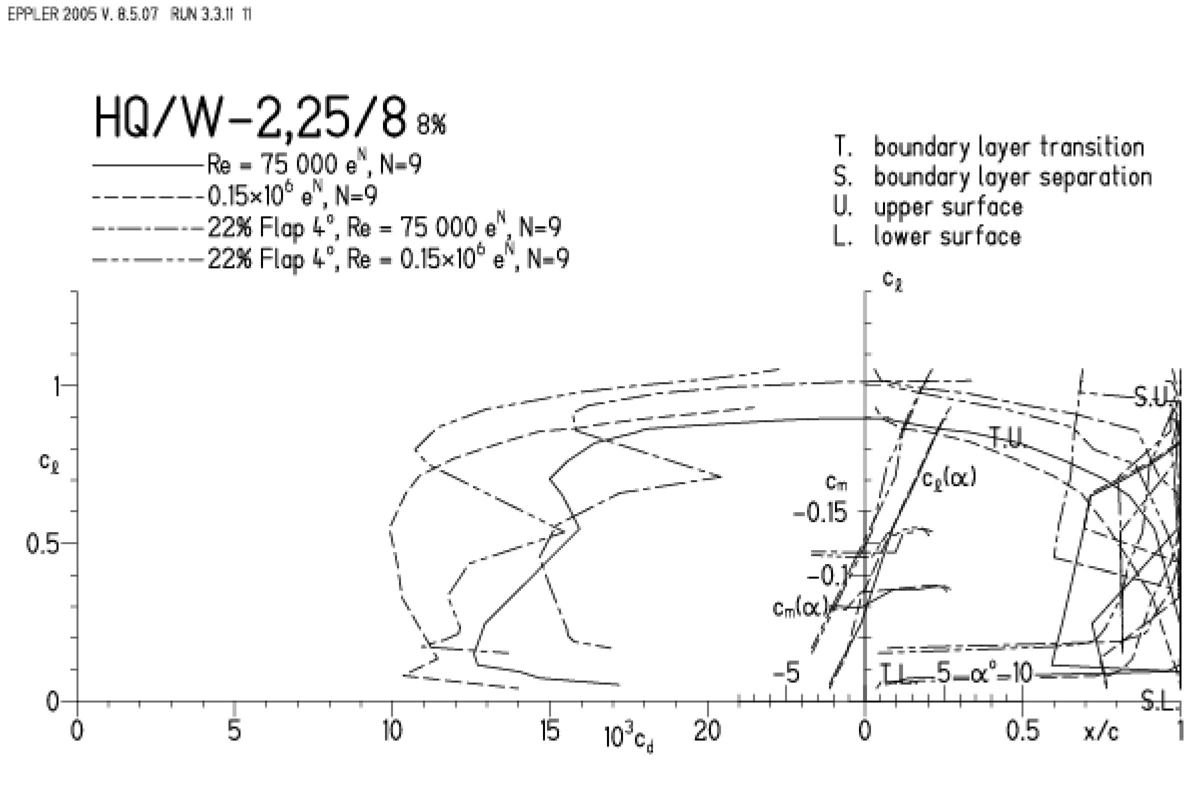
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



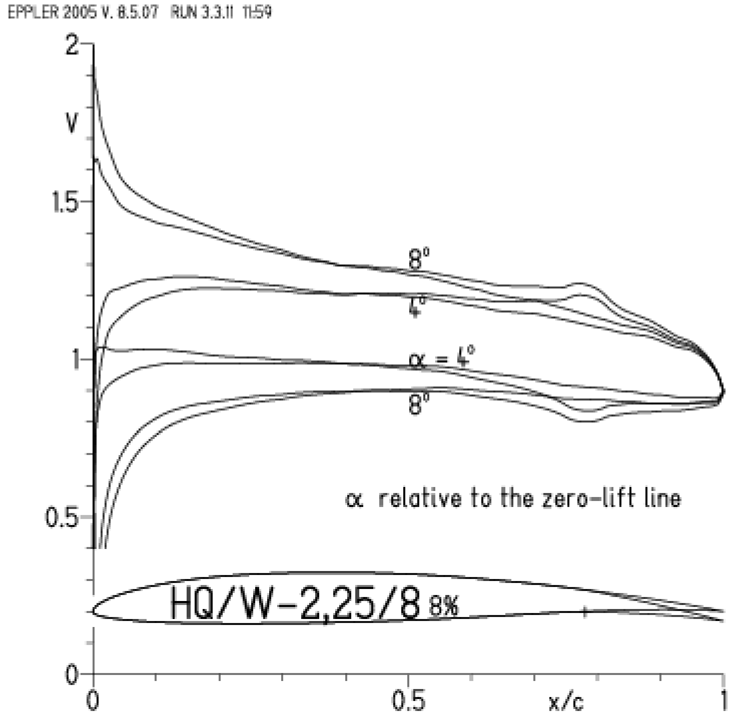


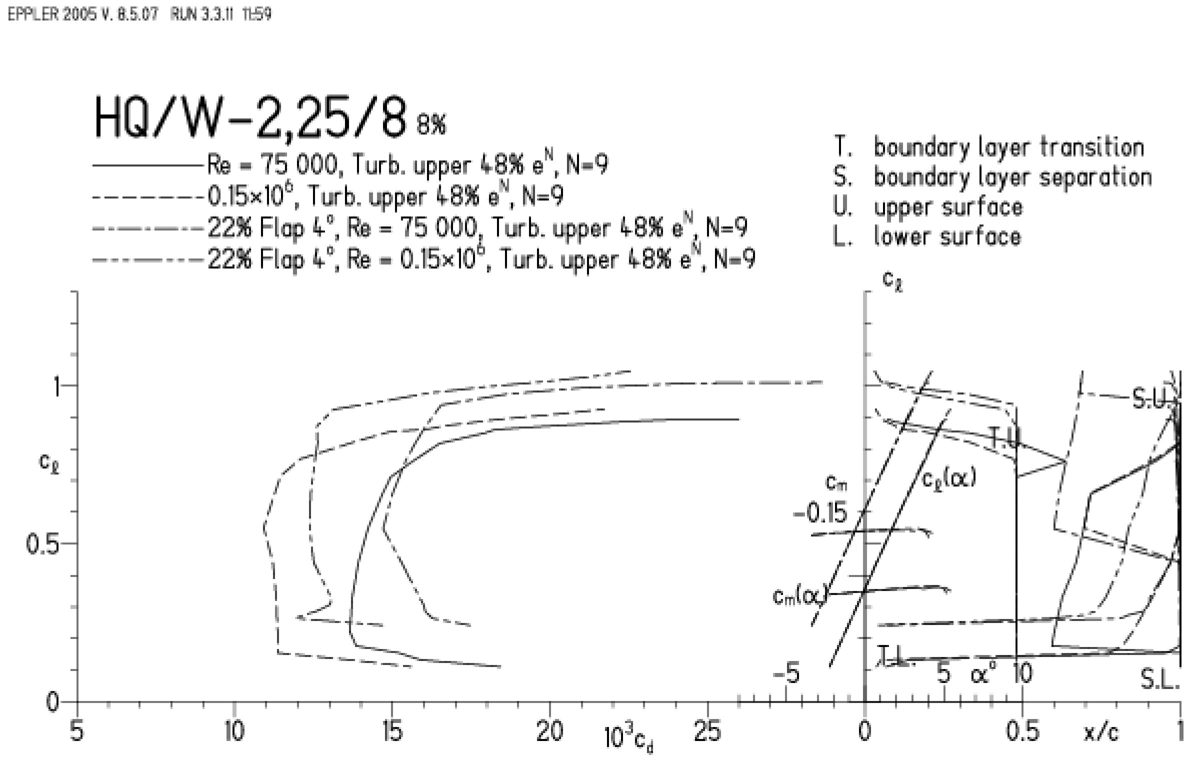
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





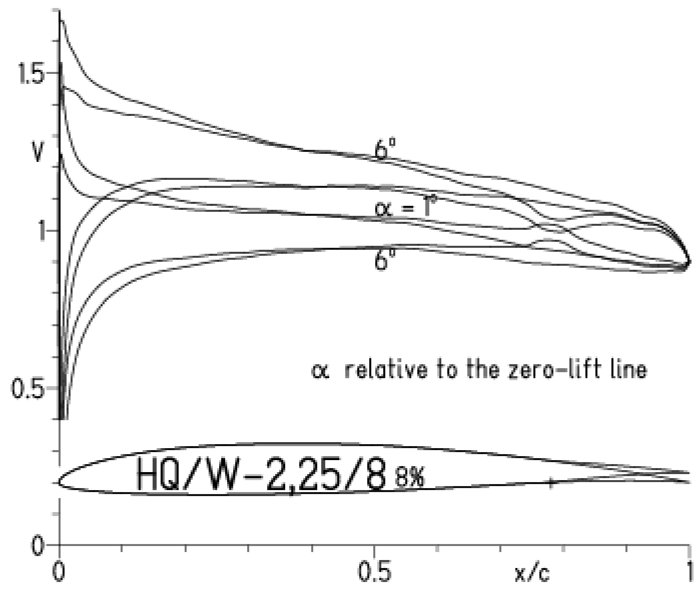
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



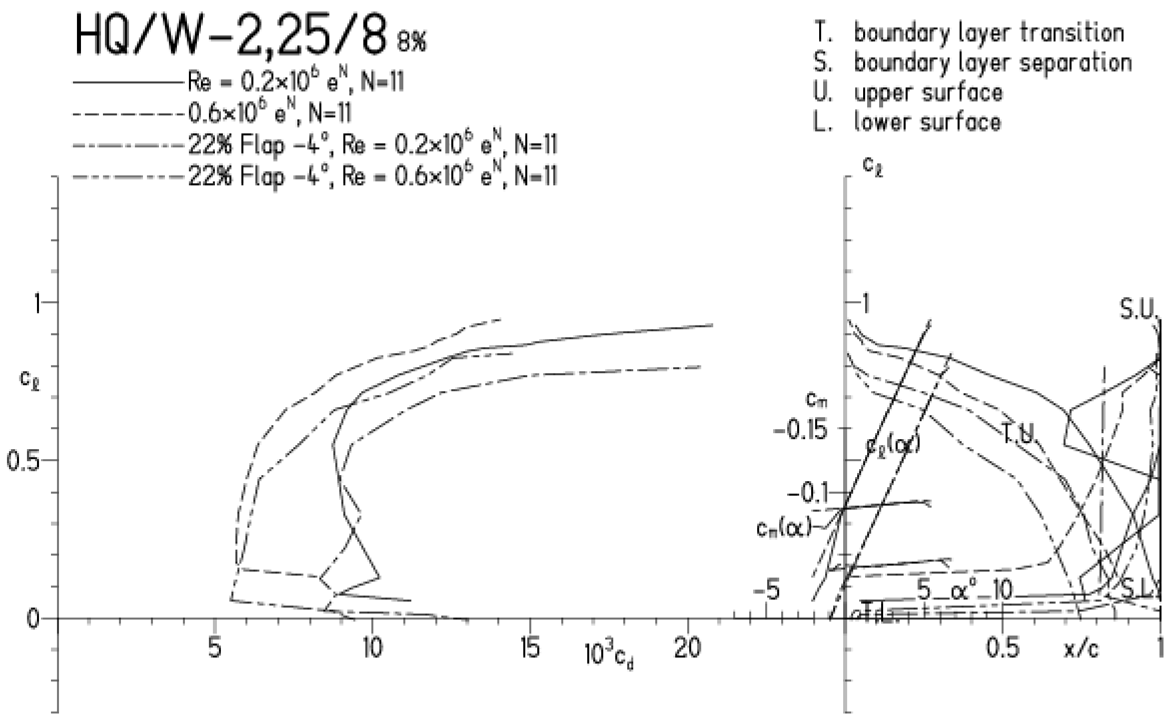


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

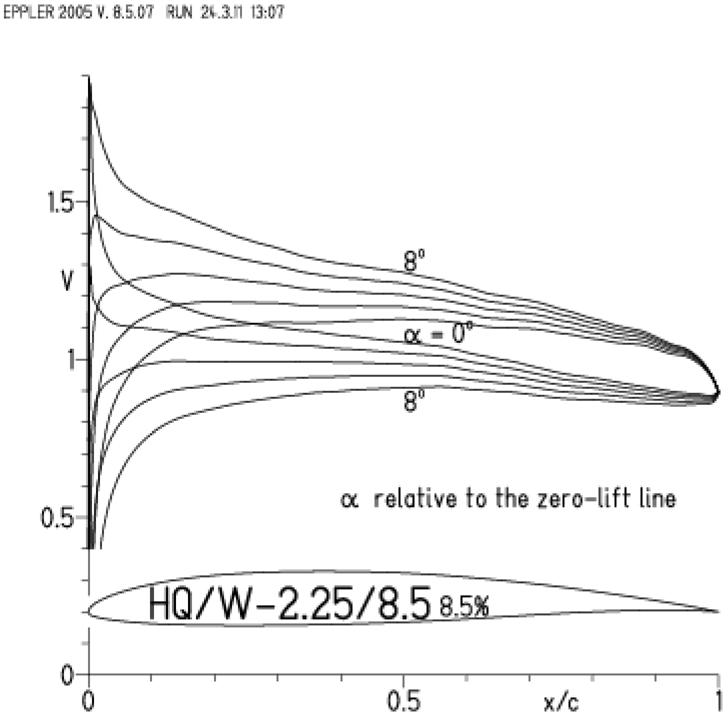
EPPLER 2005 V. 8.5.07   RUN 3.3.11 12:23

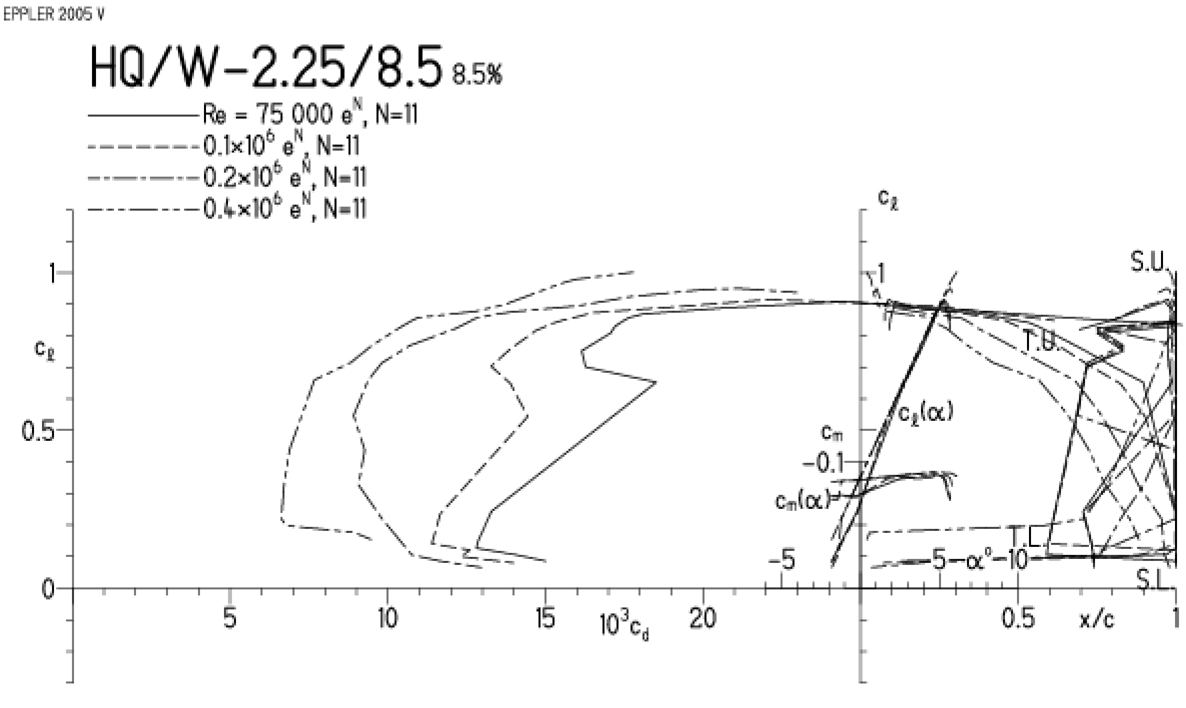


EPPLER 2005 V. 8.5.07   RUN 3.3.11 1

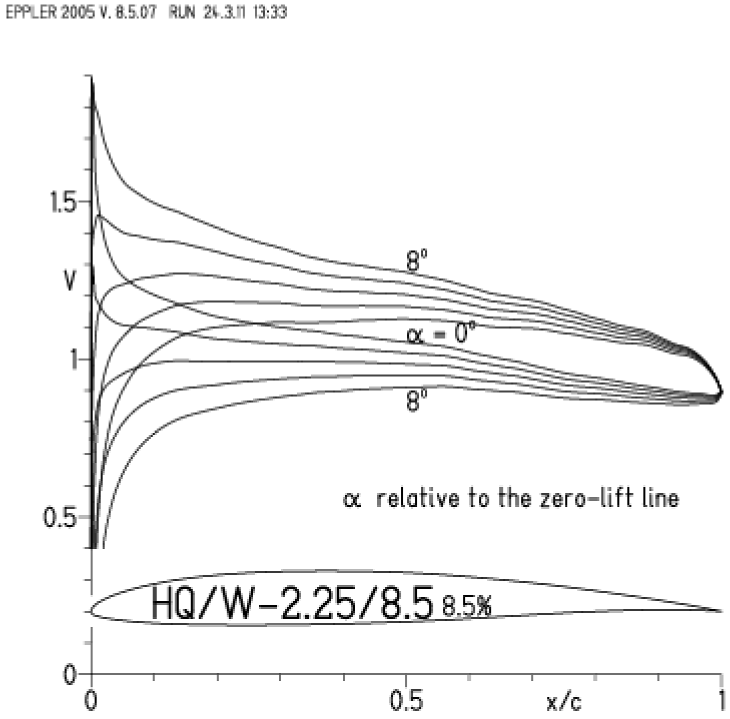


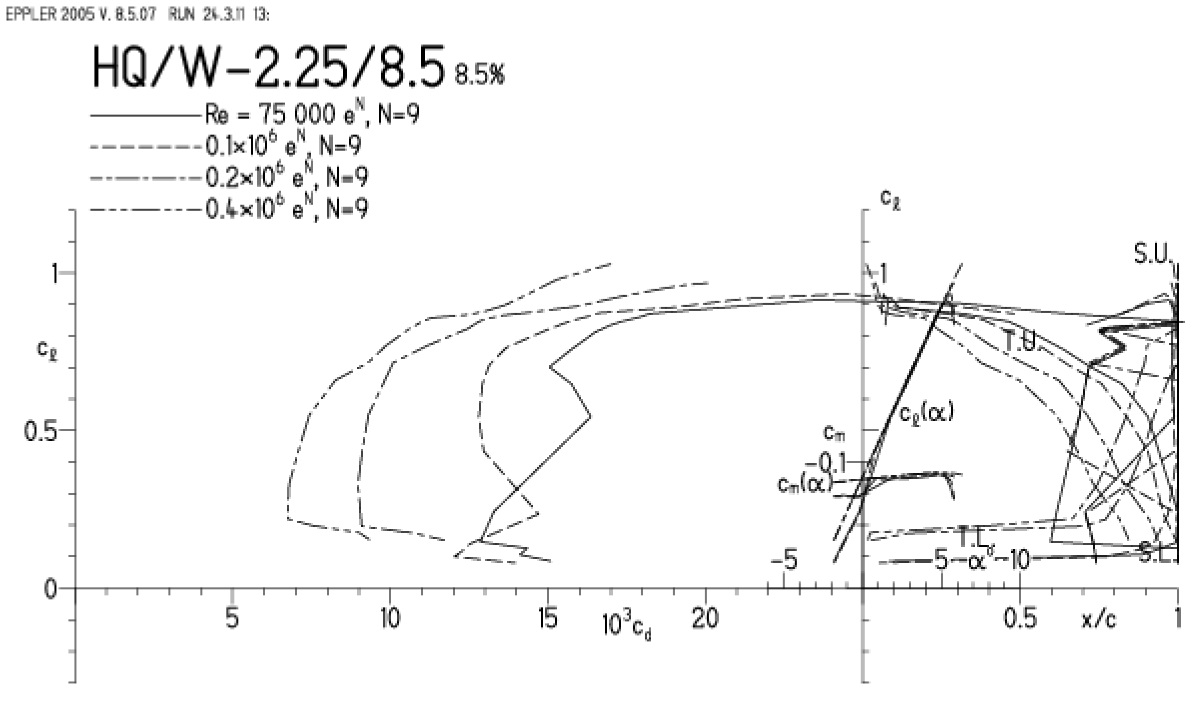
<u>HQ/W-2,25/8,5</u>, N=11



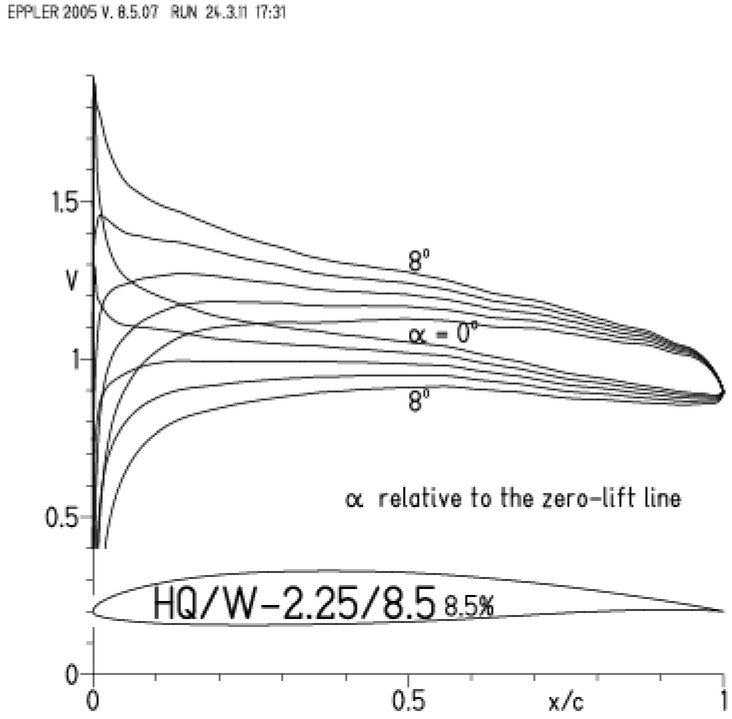


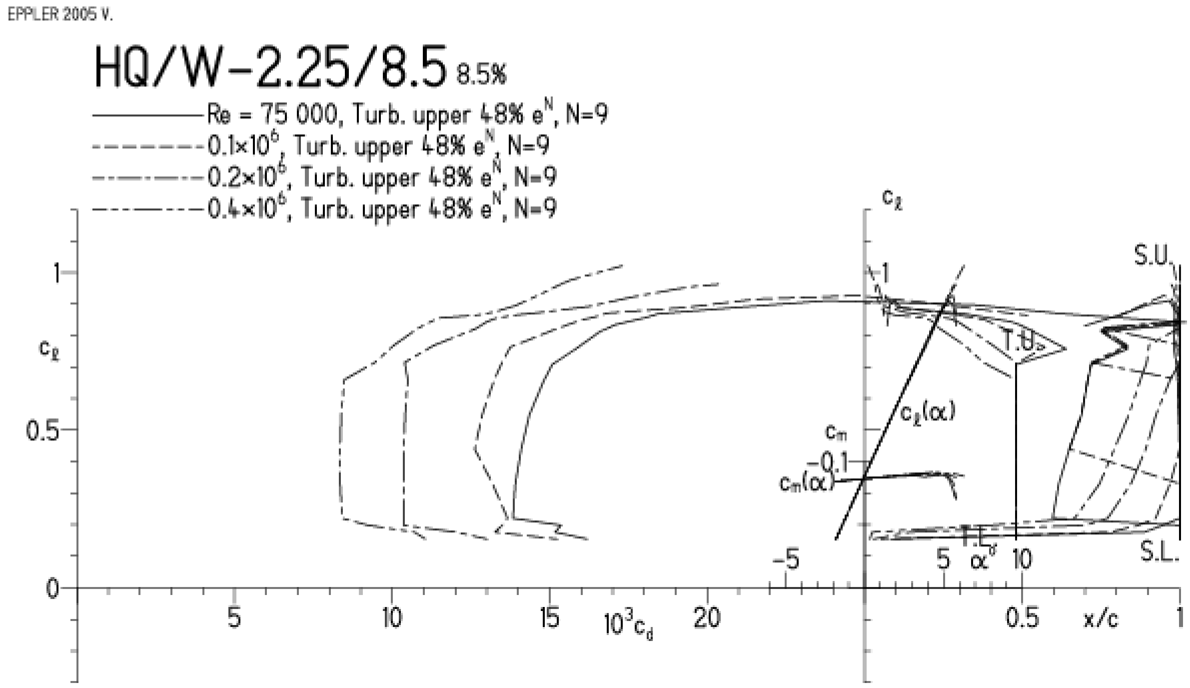
<u>HQ/W-2,25/8,5</u>, N=9



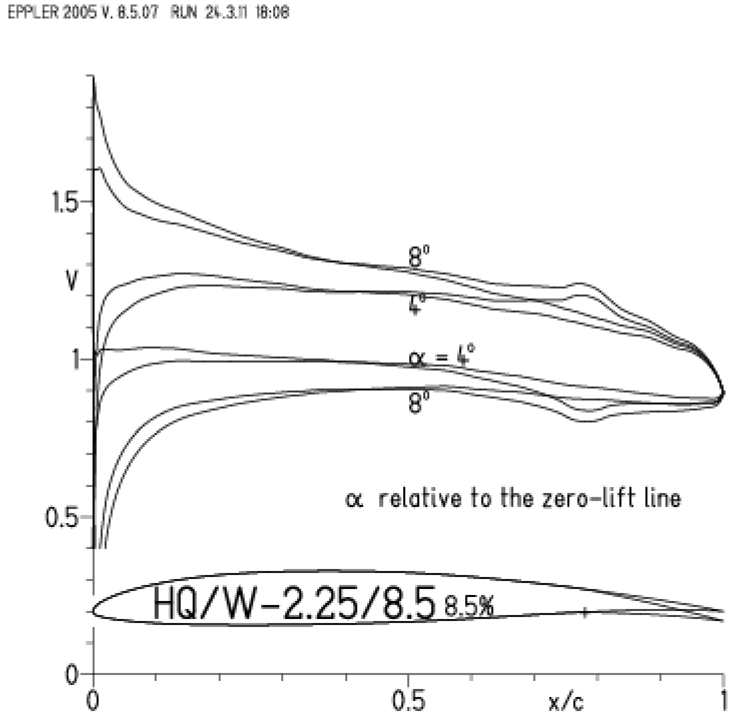


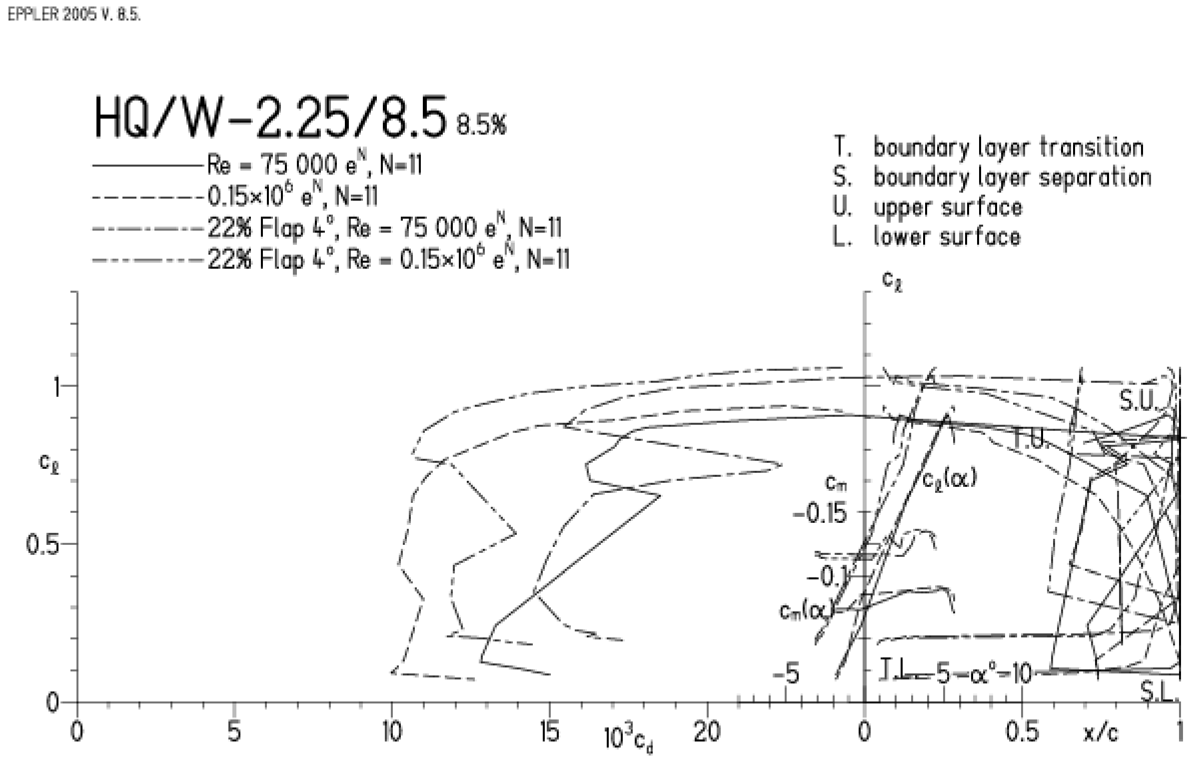
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



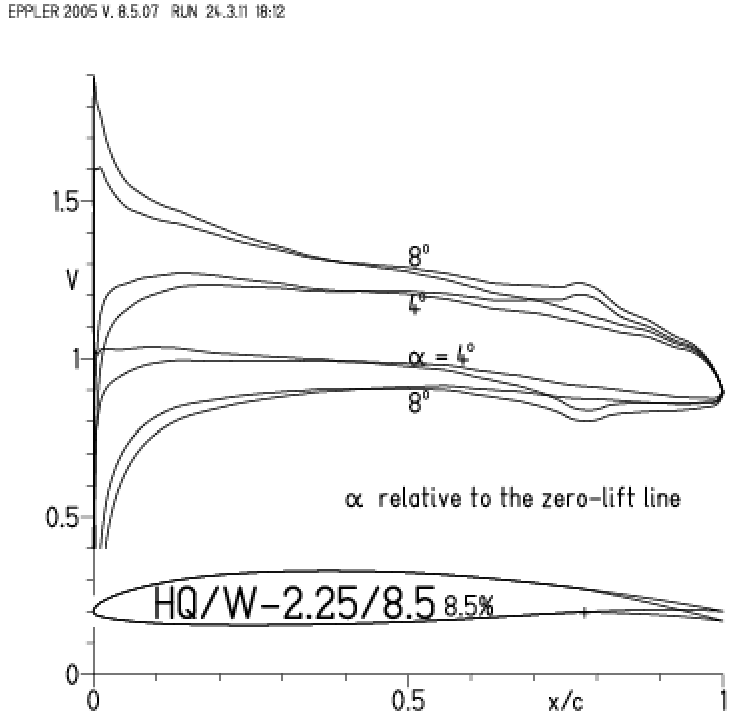


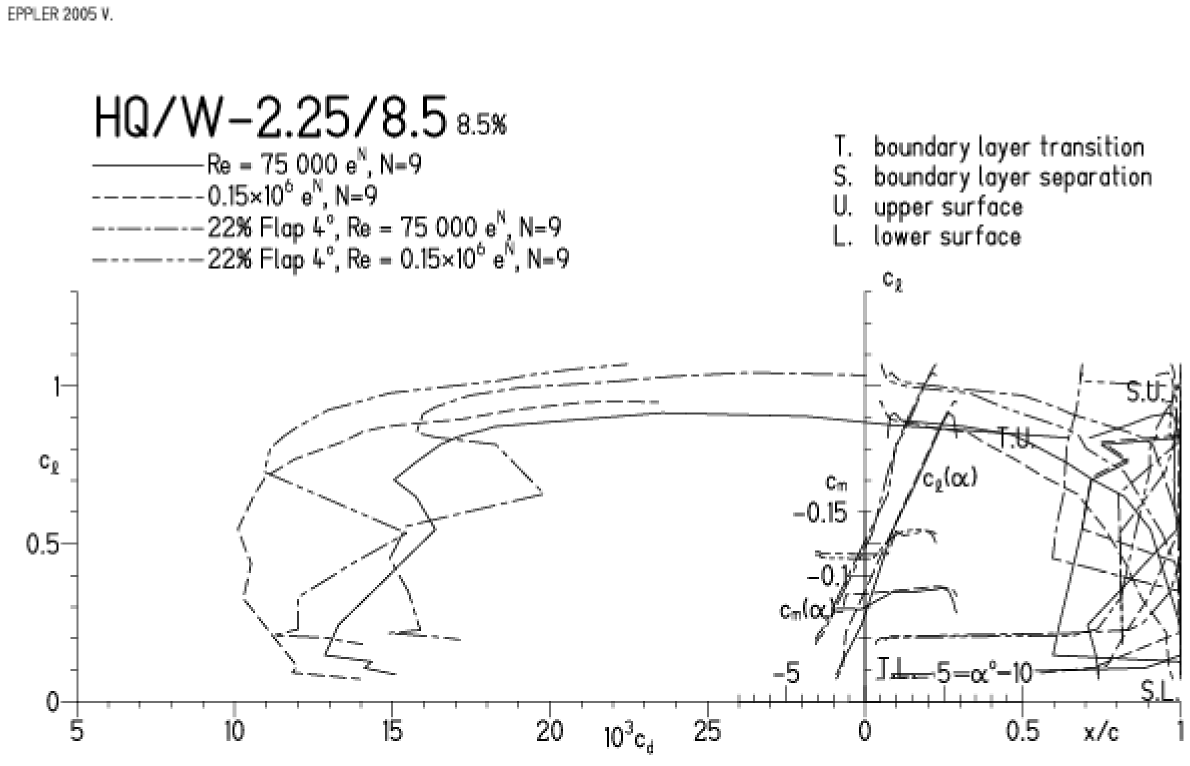
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag





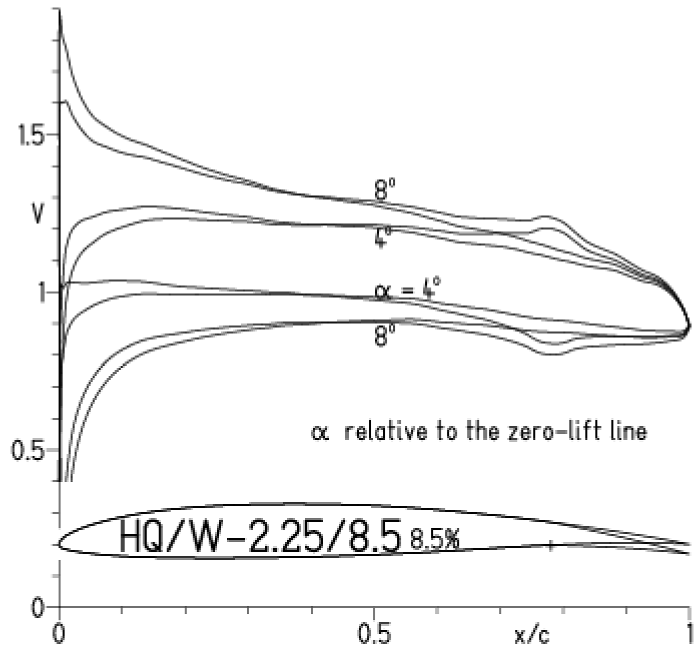
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



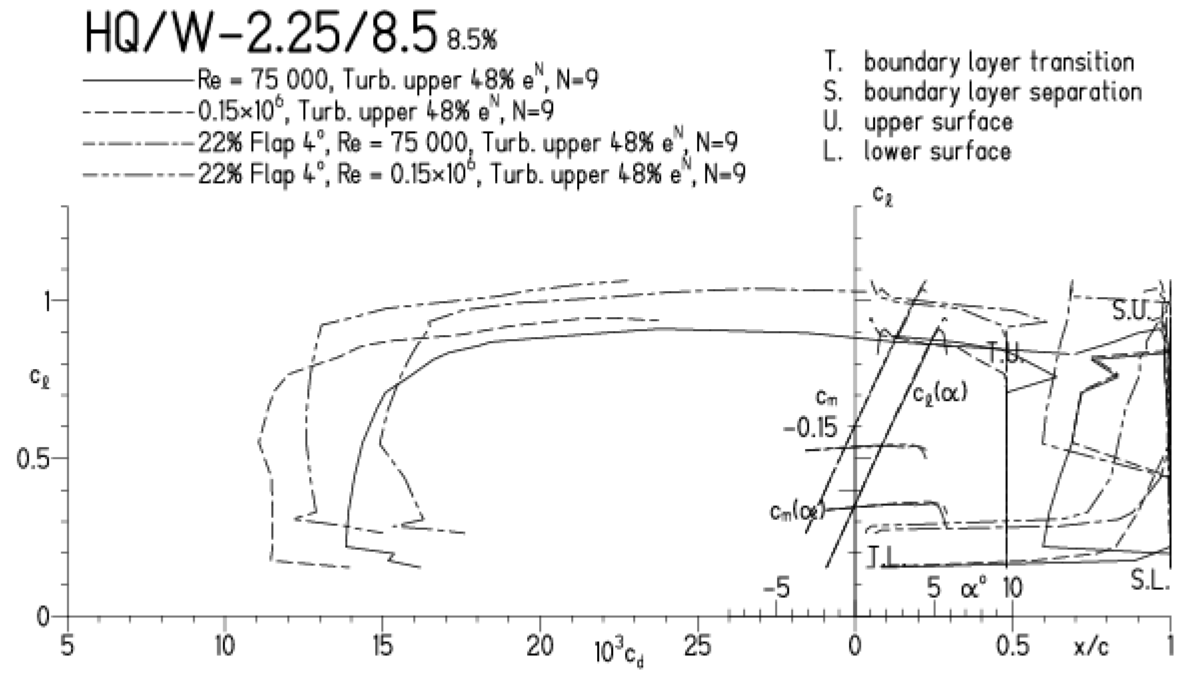


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

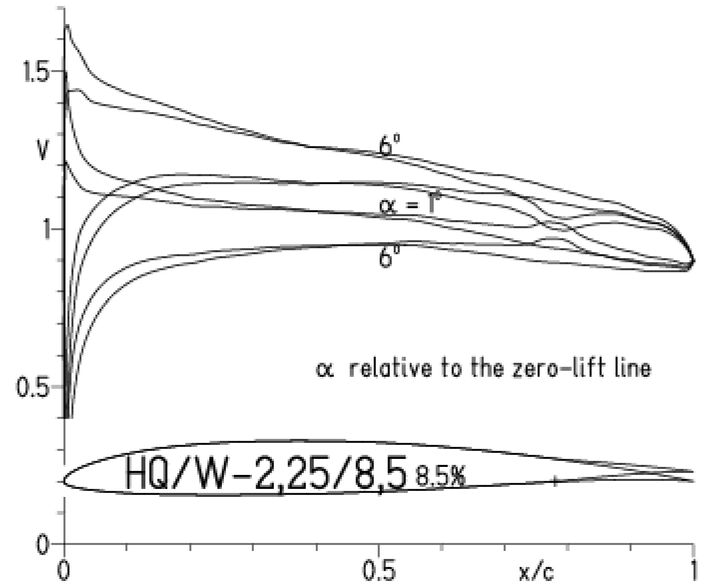


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

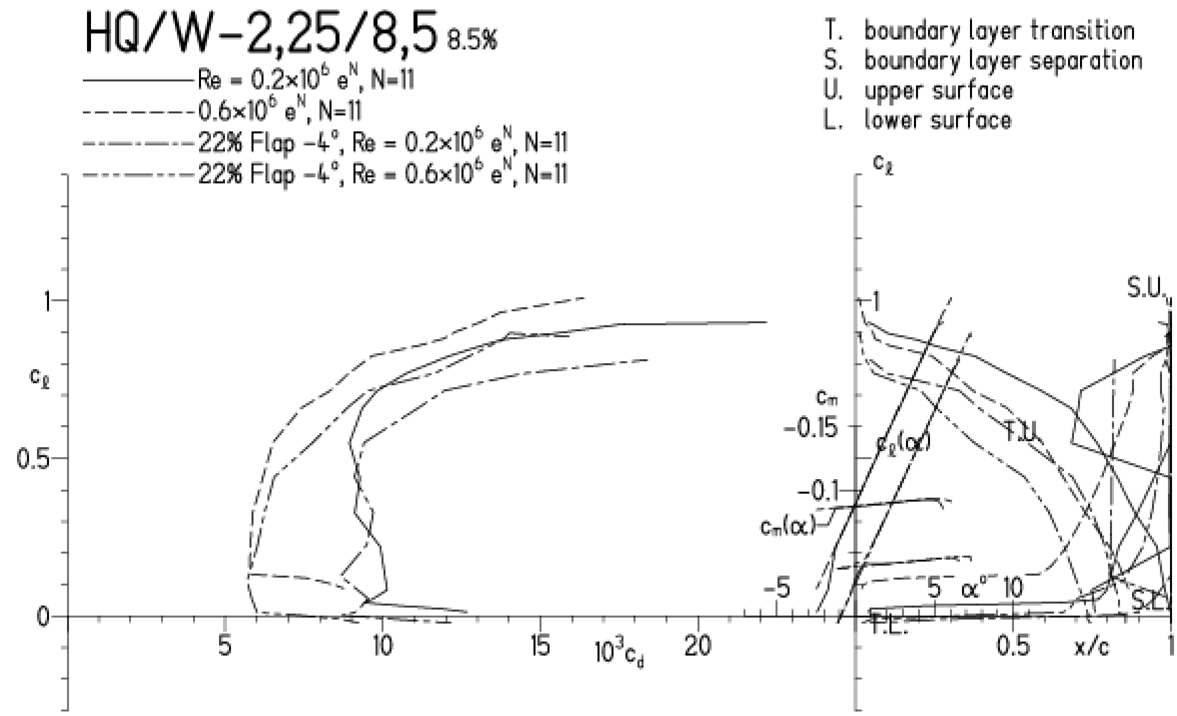


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

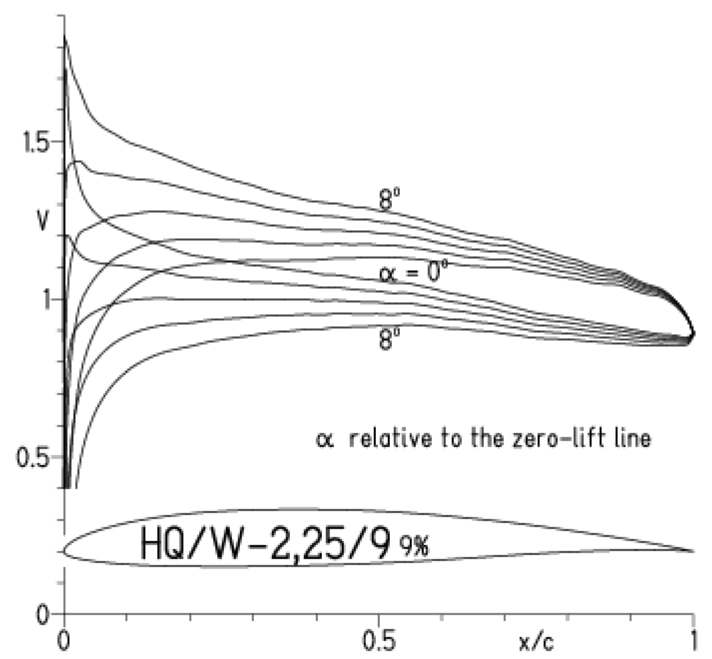


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

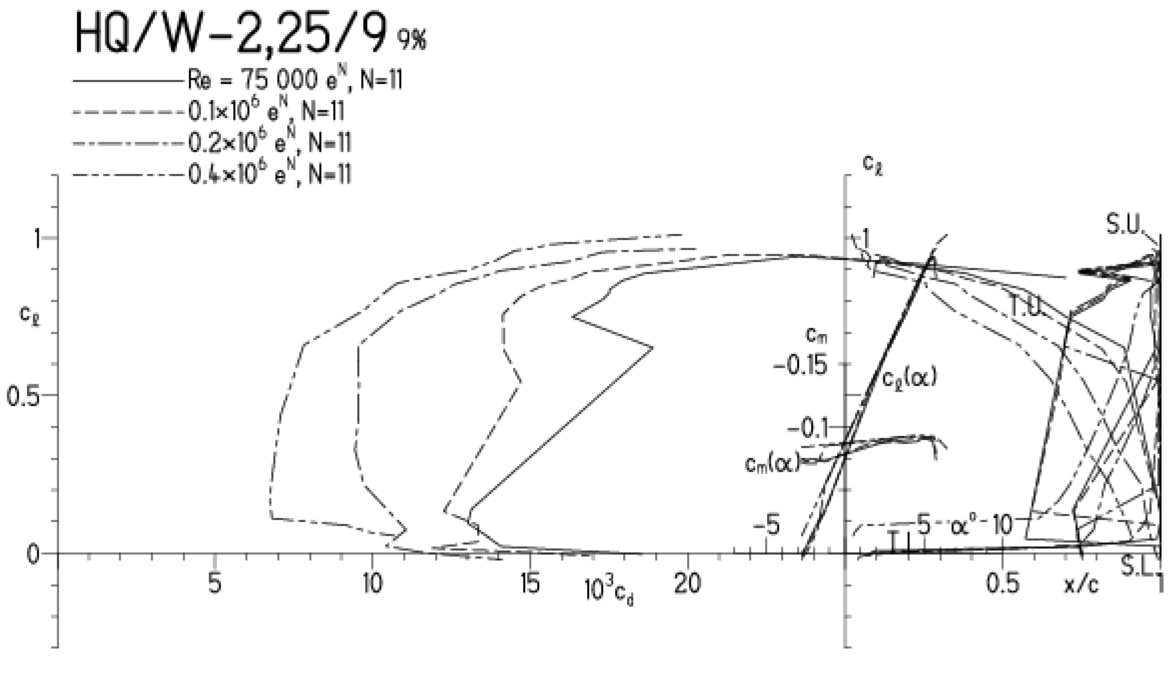


HQ/W-2,25/9, N=11

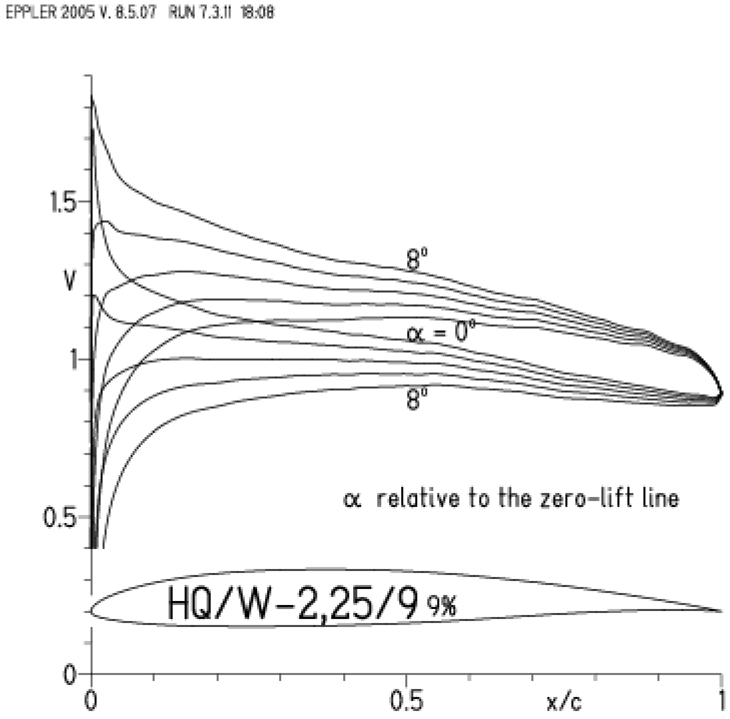
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

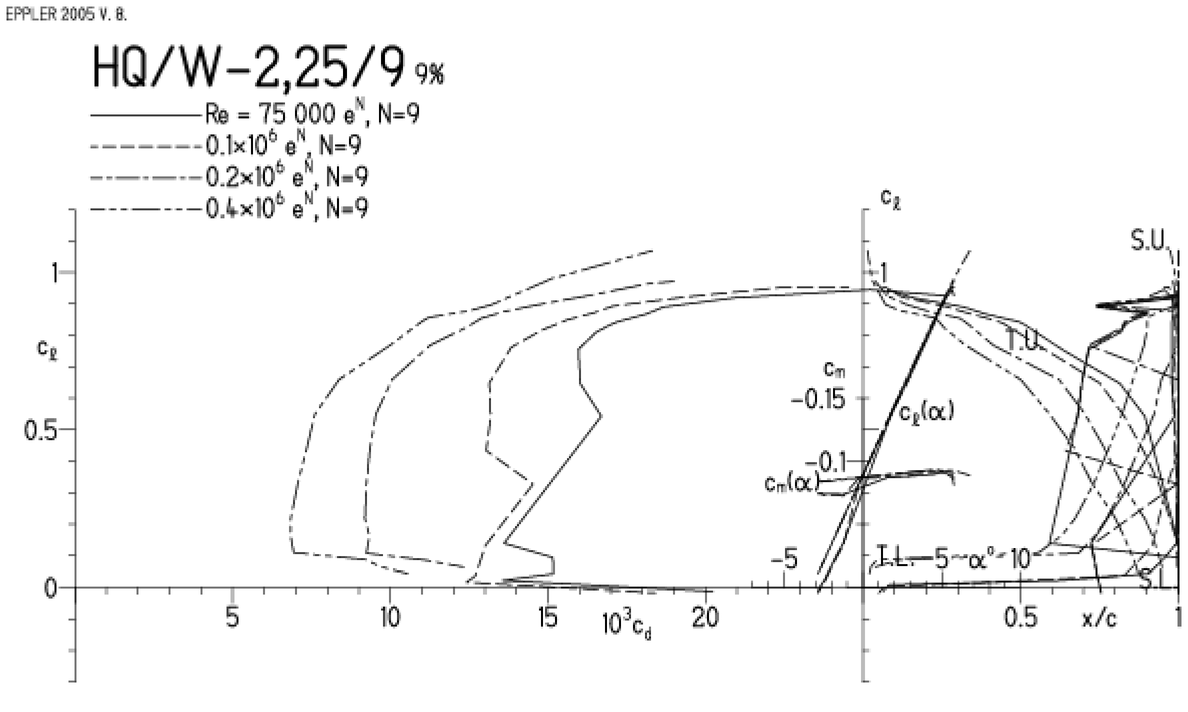


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

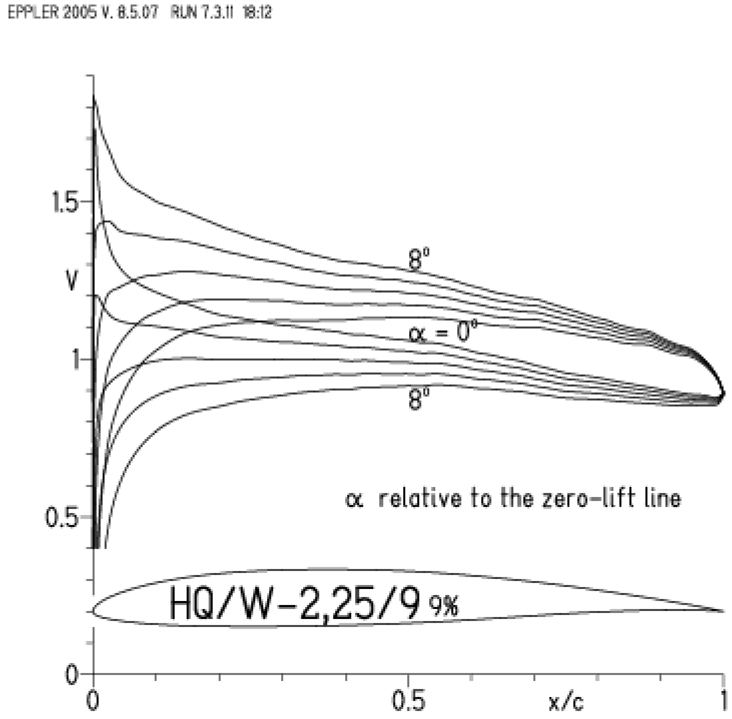


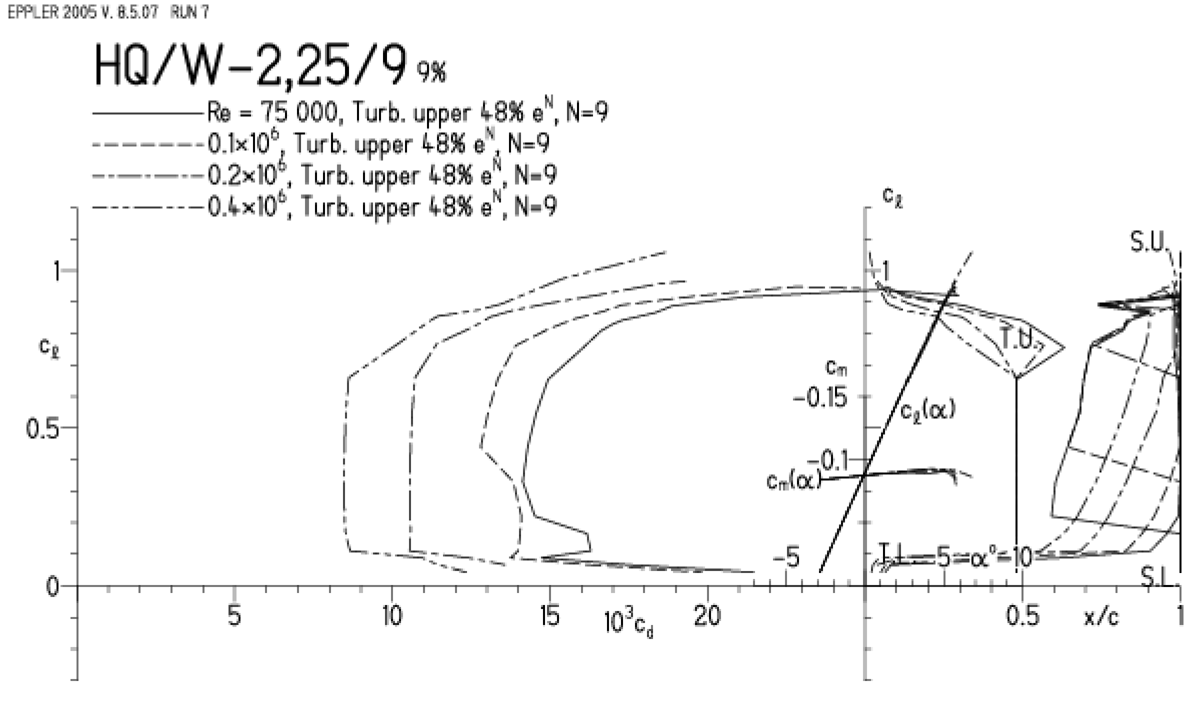
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
S.U.
T.U.
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
T.L.
5
α°
10
S.L.
0.5
x/c
1
5
10
15
10^3c_d
20

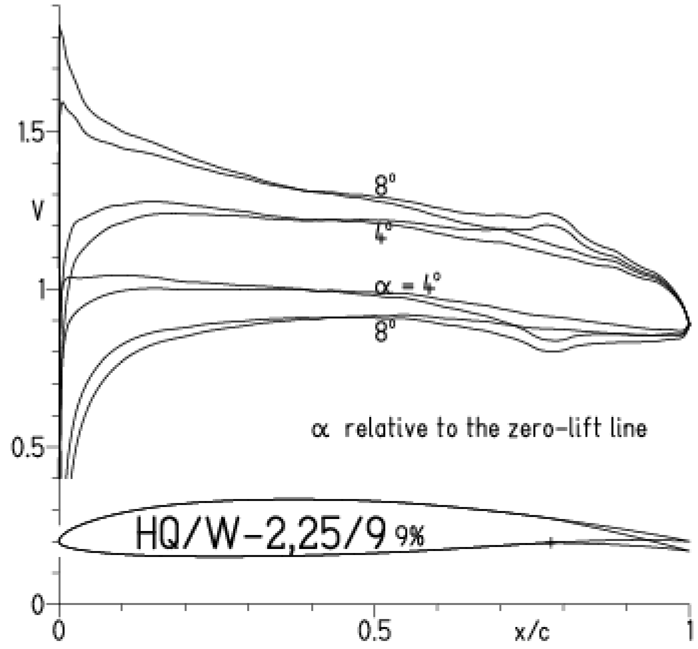
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



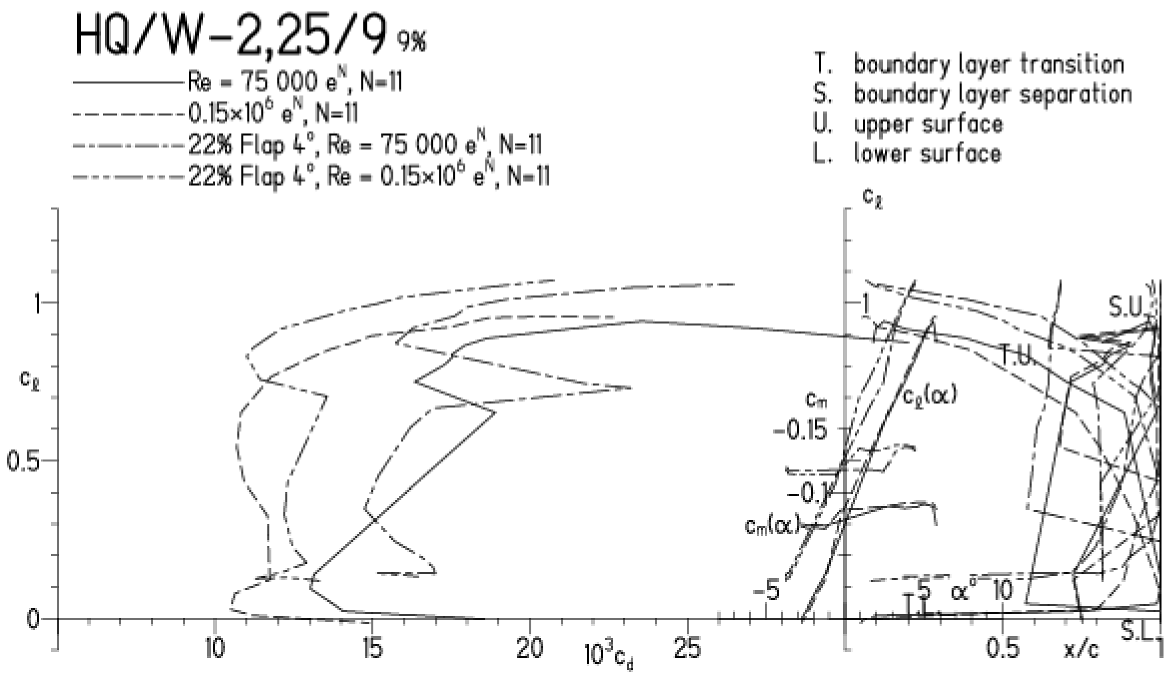


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

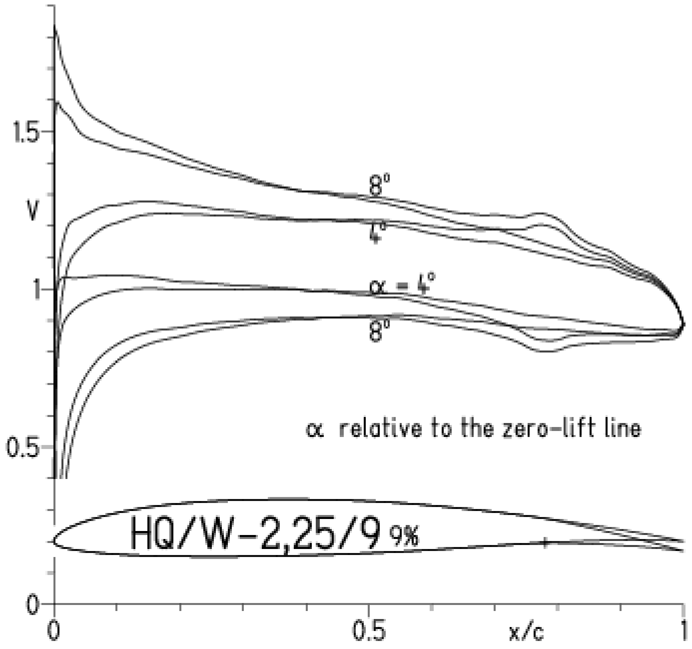


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

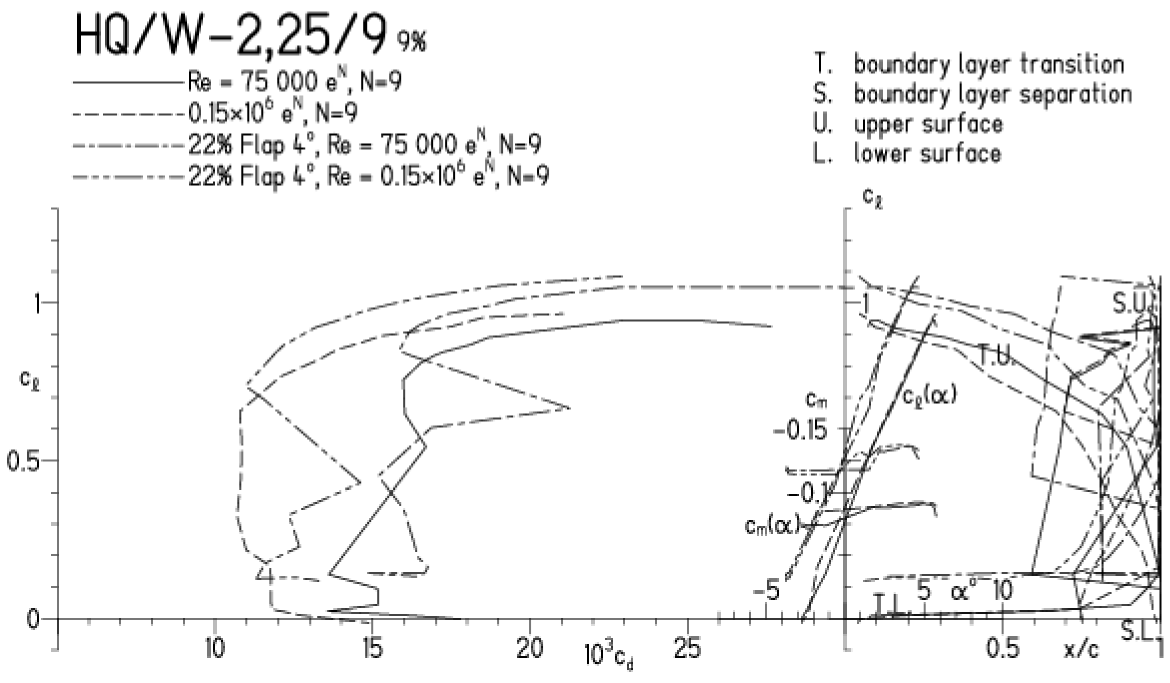


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

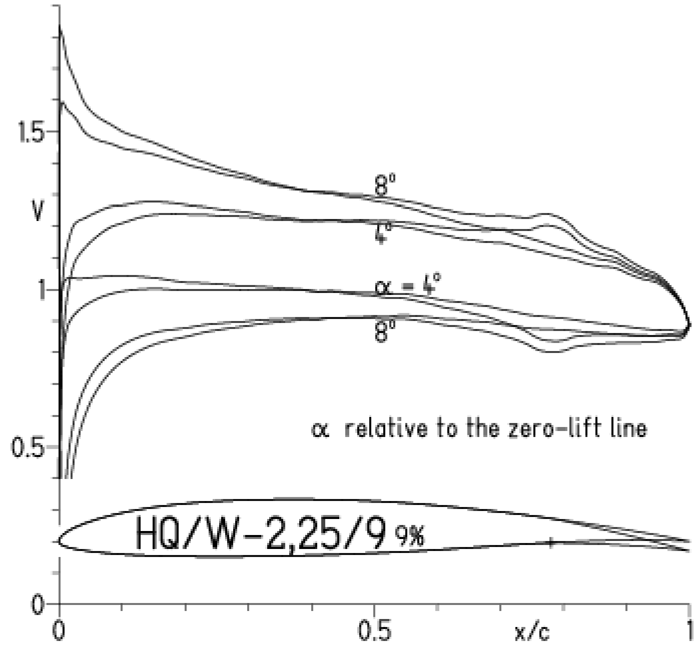


EPPLER 2005 V. 8.5.07 RUN 8.3.1

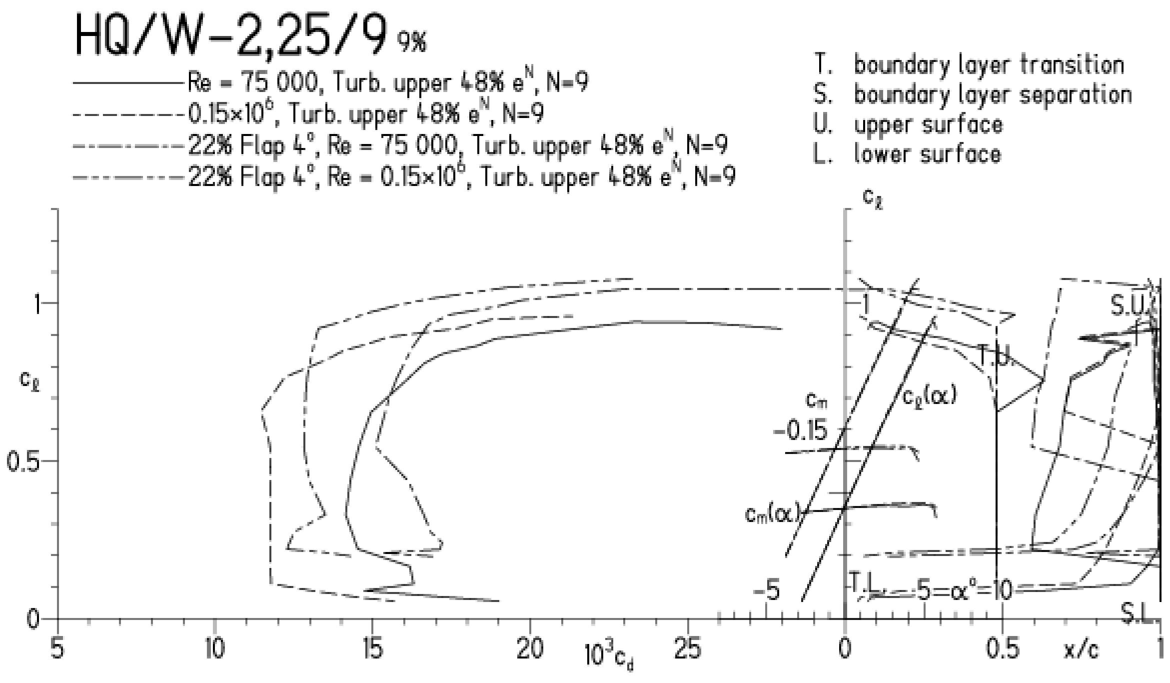


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

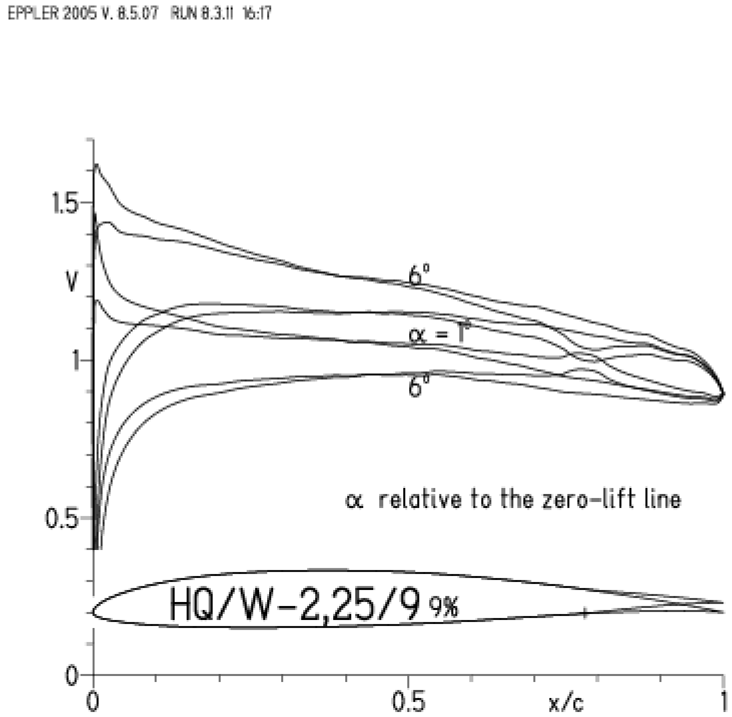
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

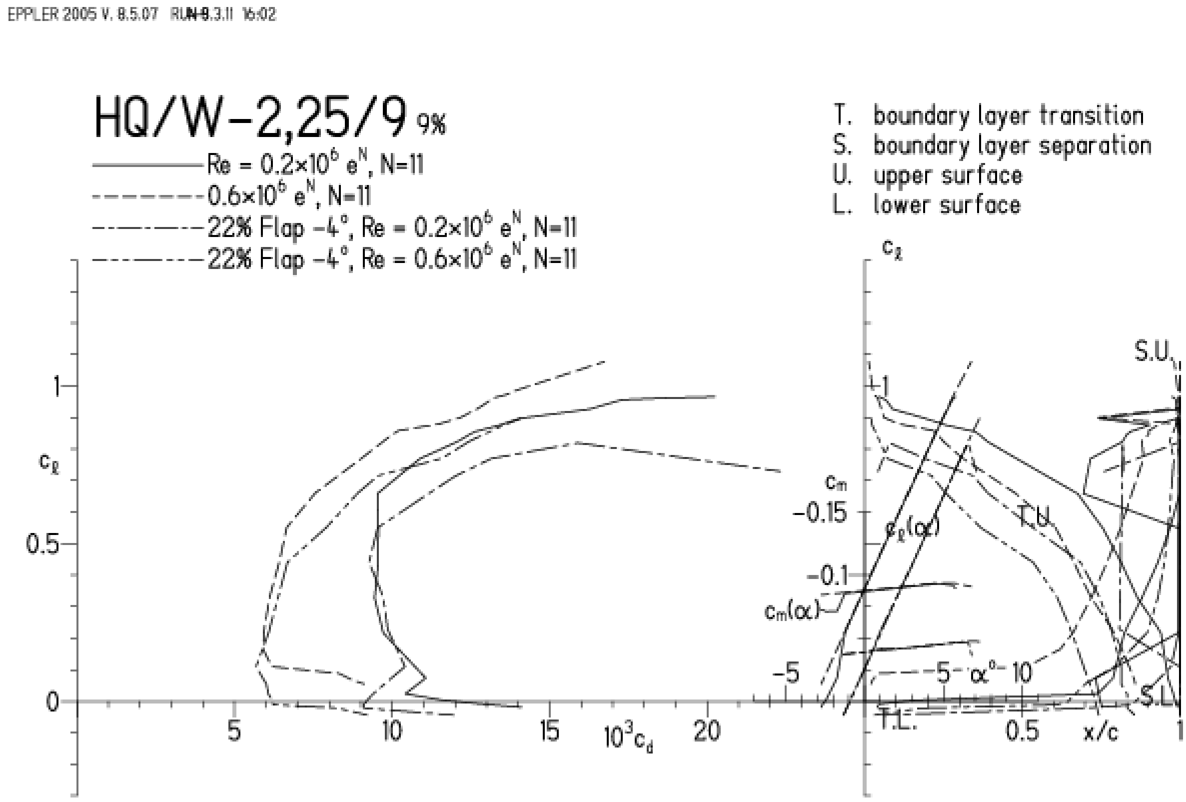


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54



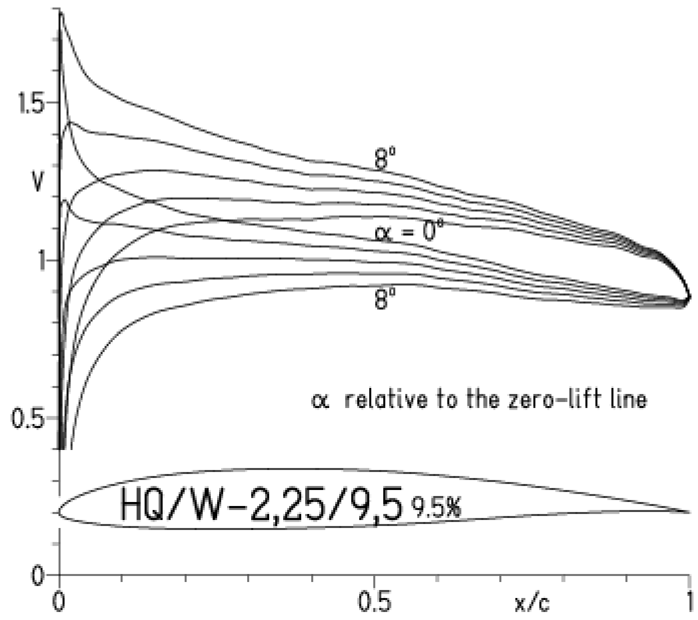
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



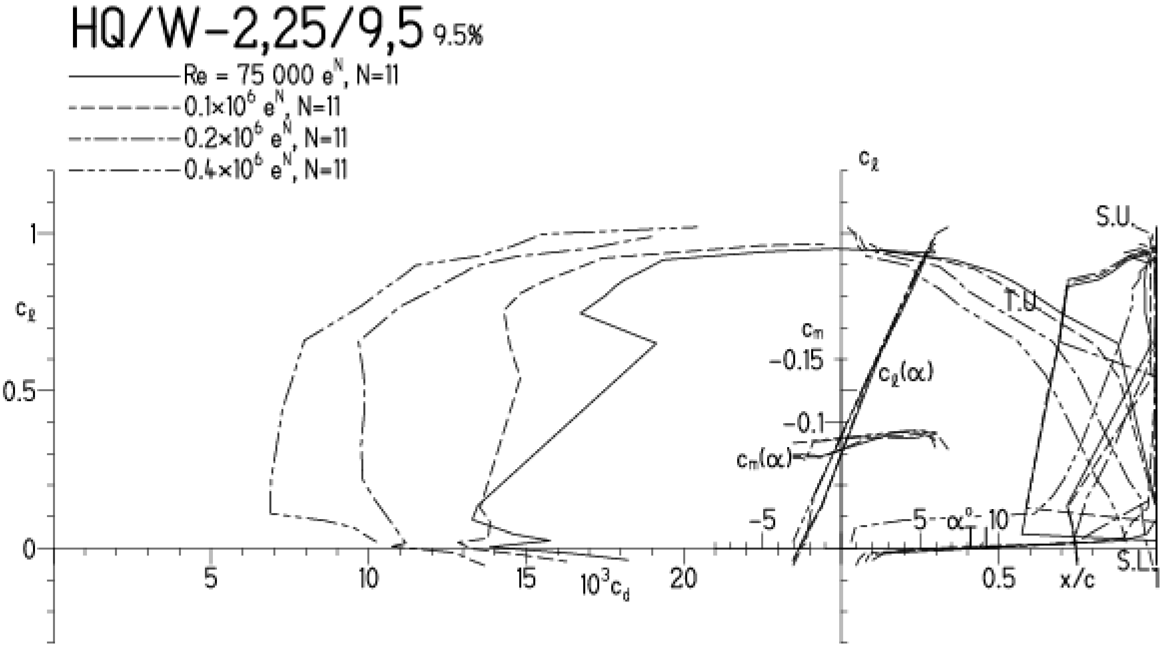


HQ/W-2,25/9,5, N=11

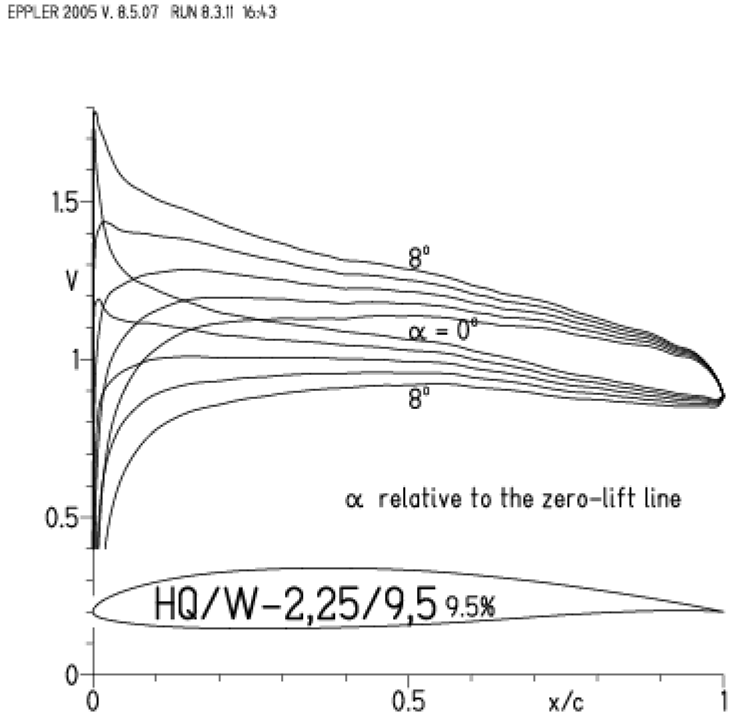
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

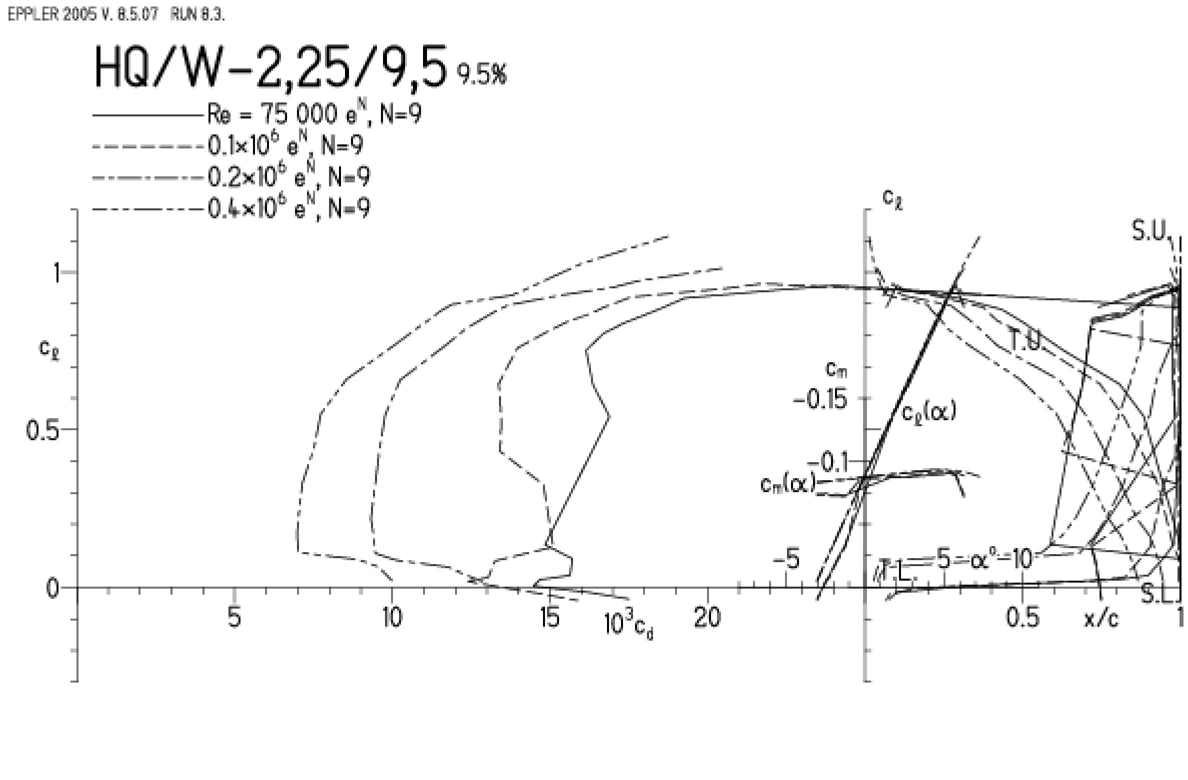


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

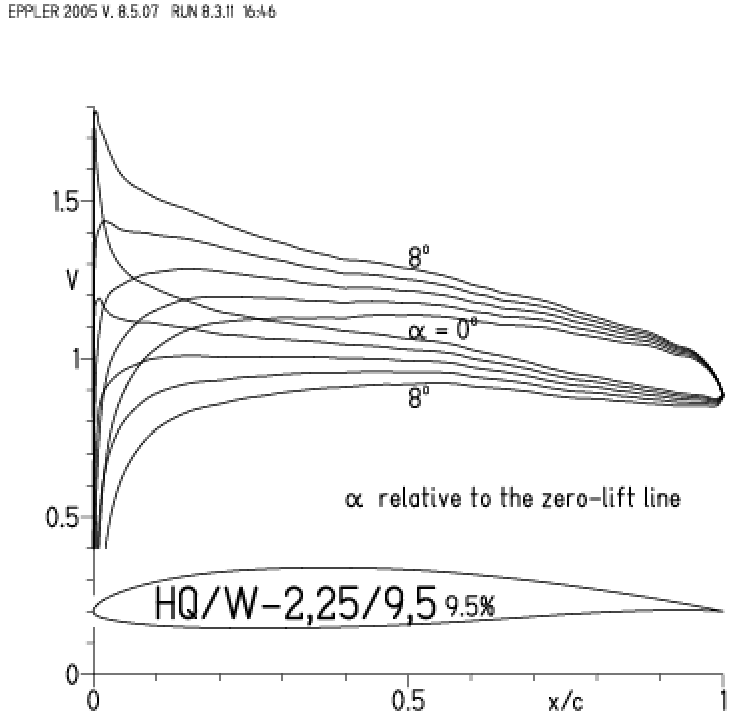


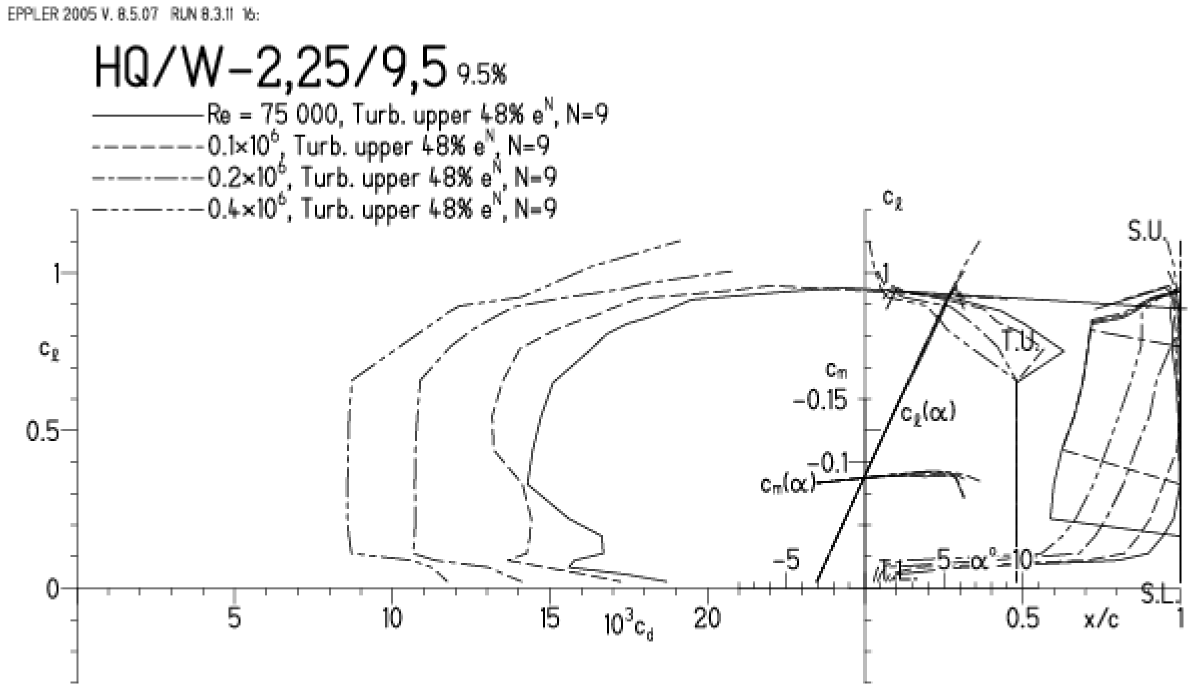
<u>HQ/W-2,25/9,5</u>, N=9





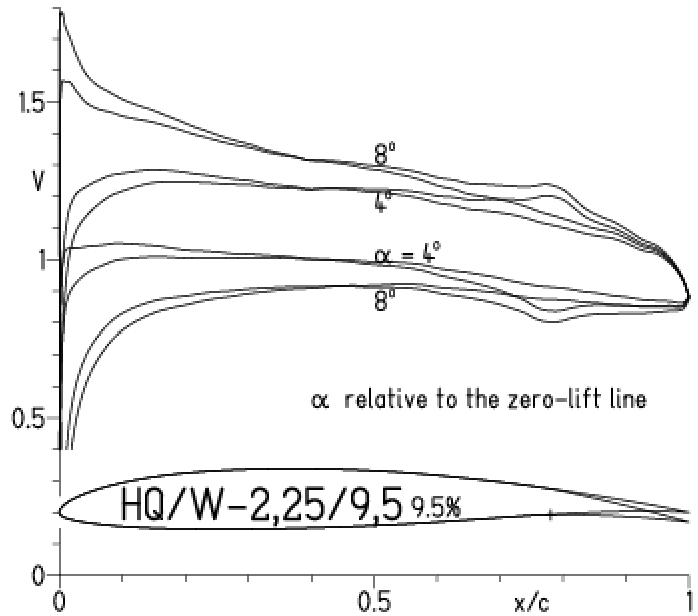
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



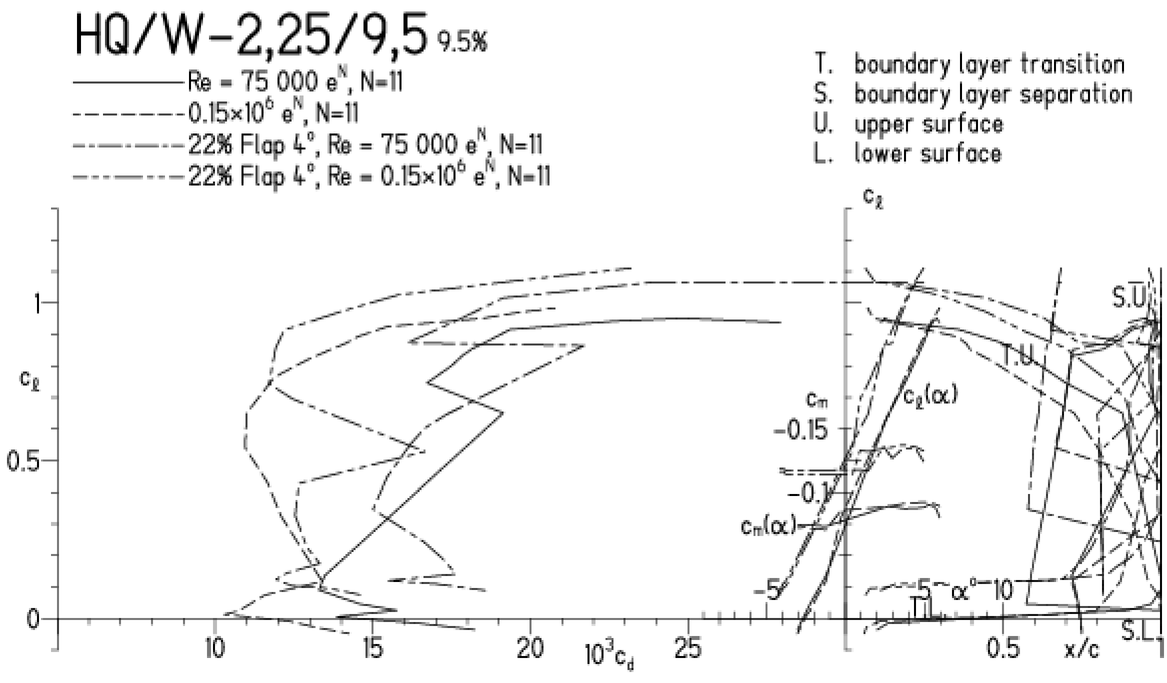


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

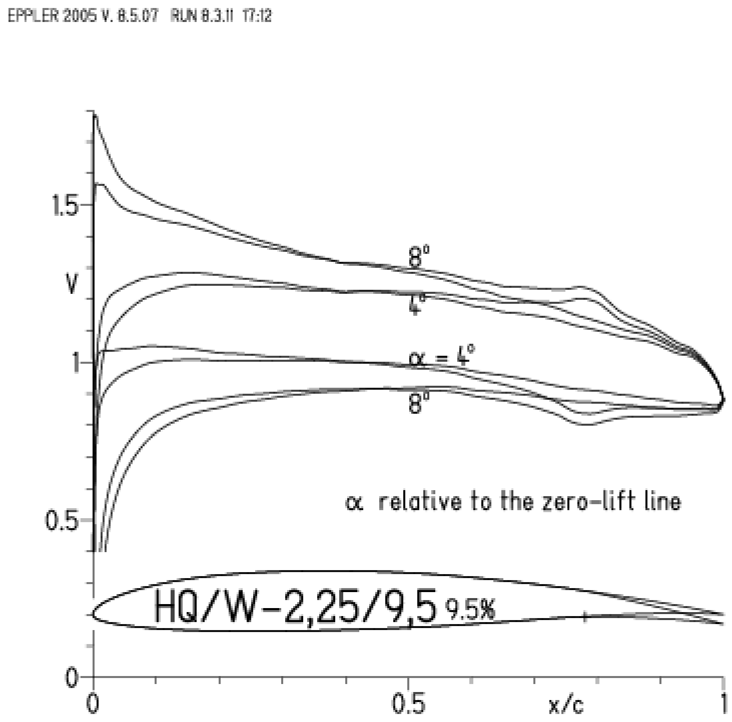
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

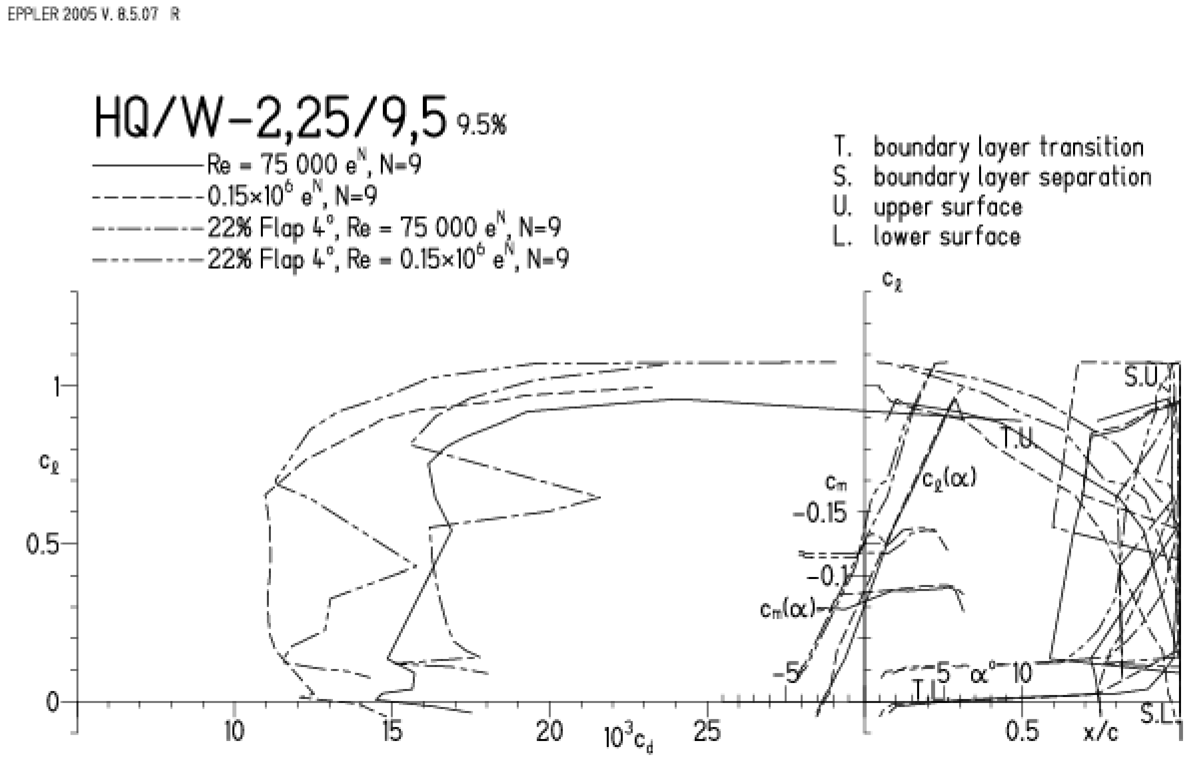


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

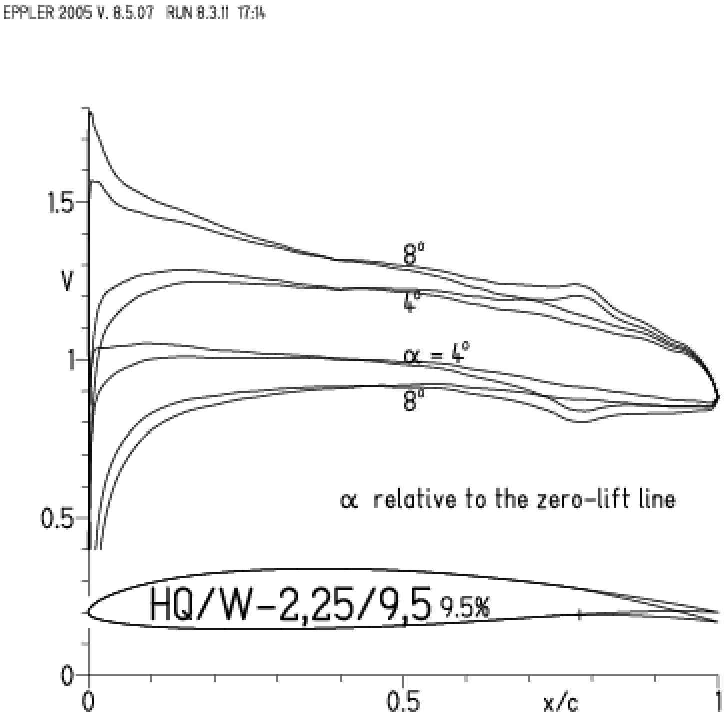


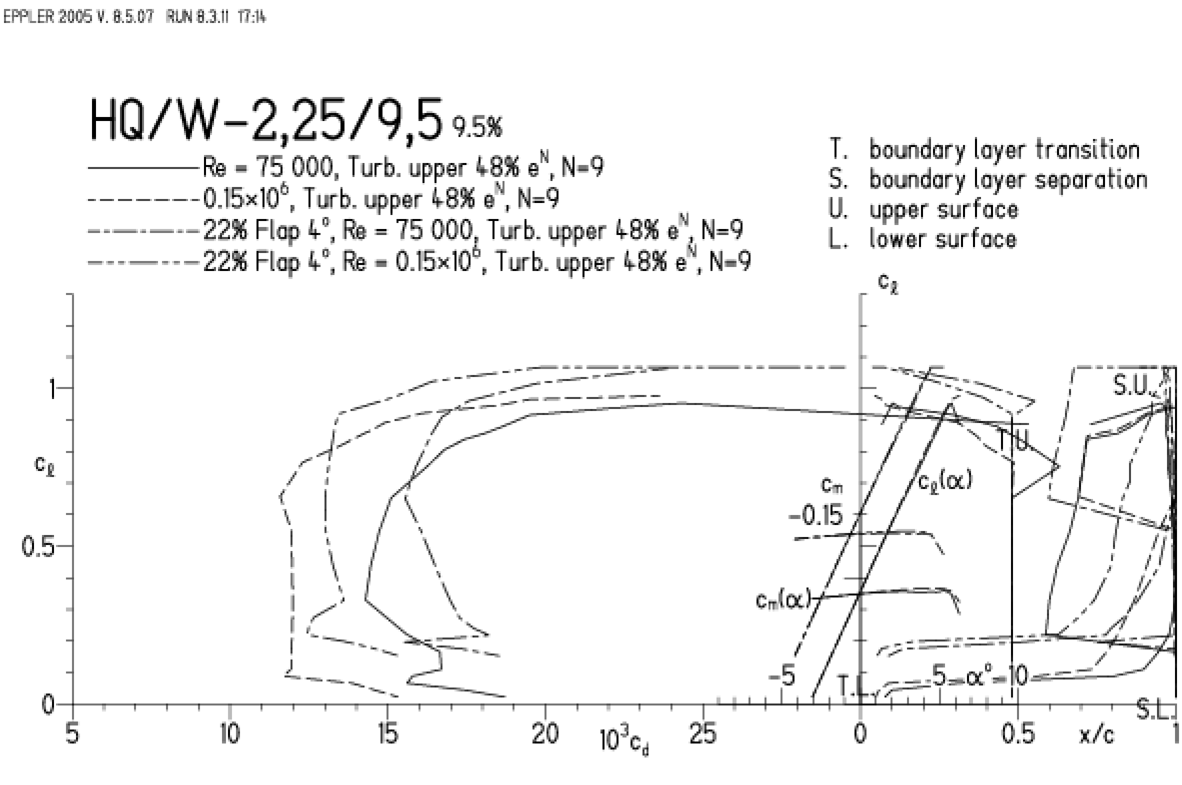
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag





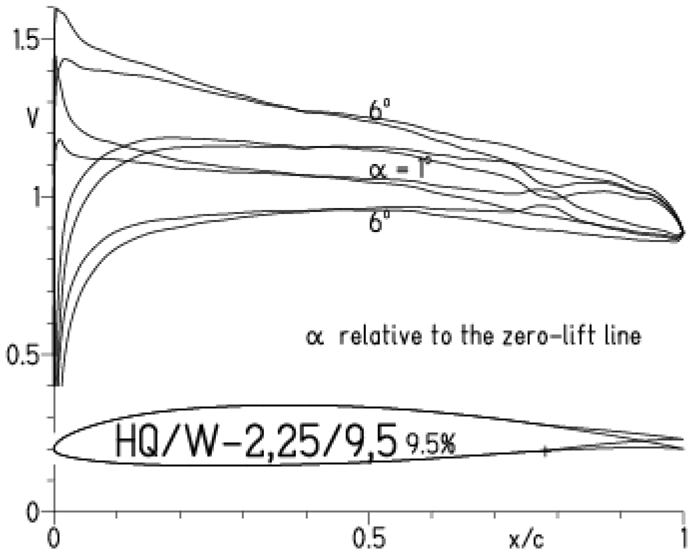
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



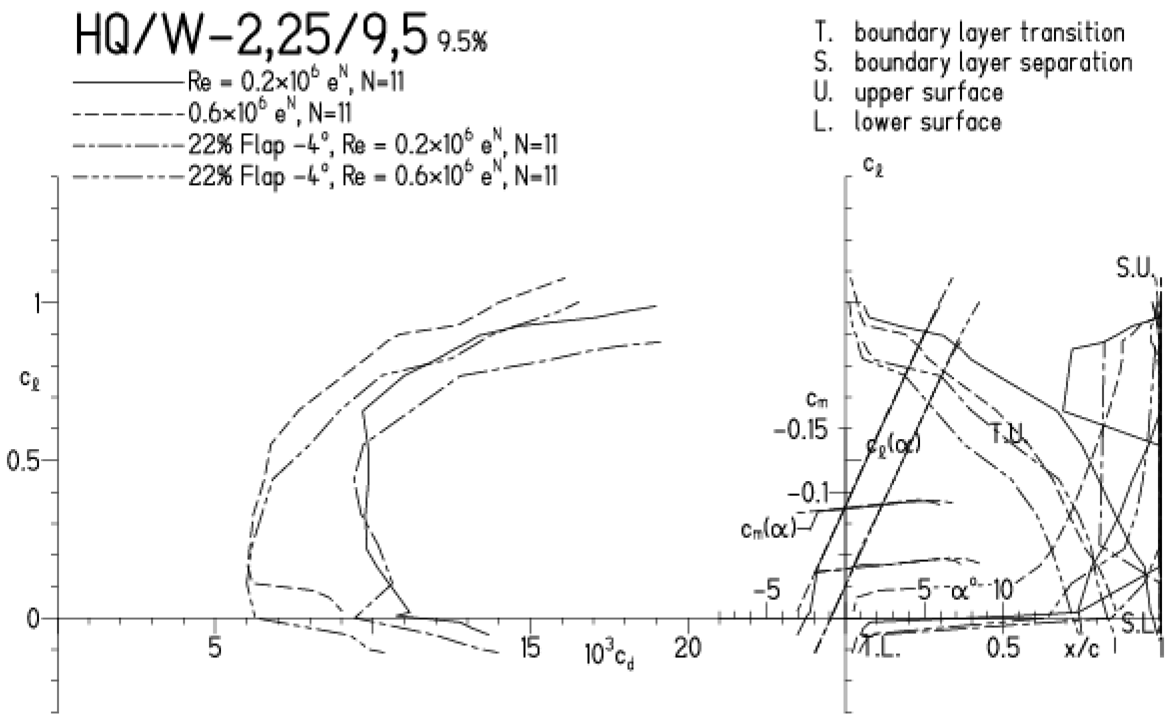


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

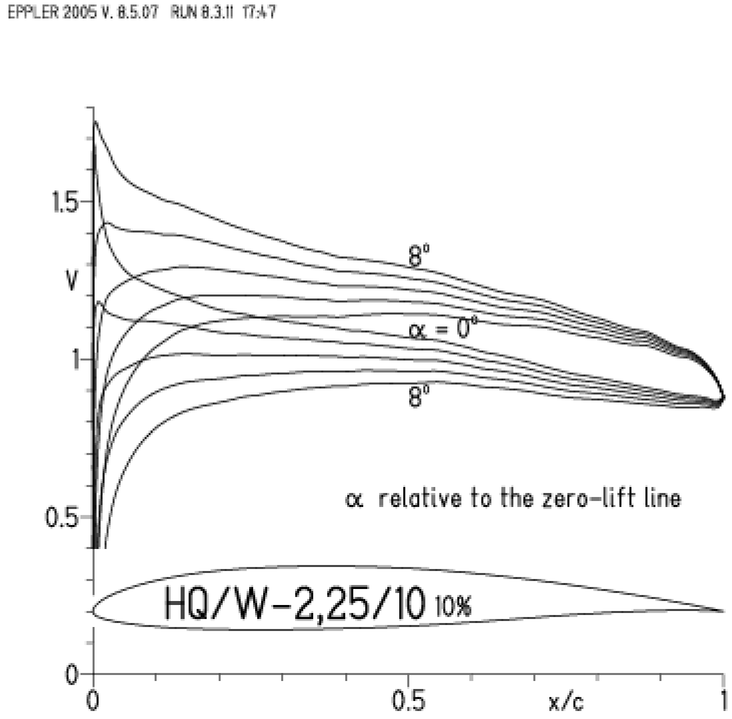
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

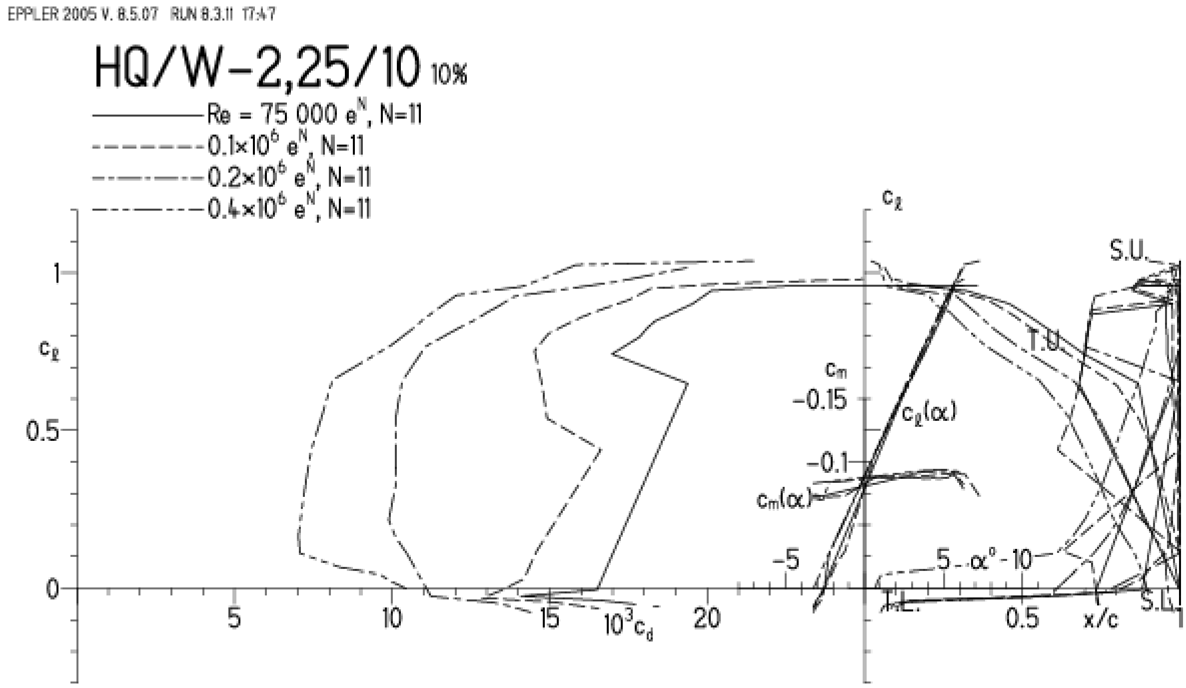


EPPLER 2005 V.



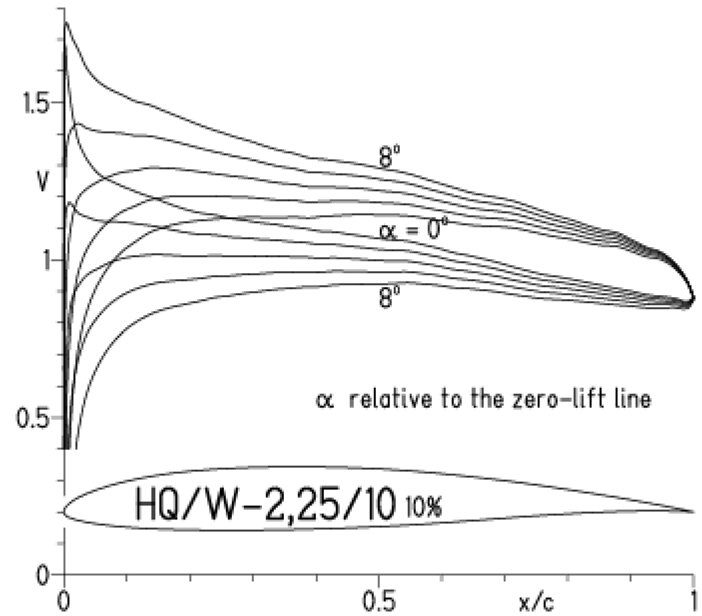
HQ/W-2,25/10, N=11



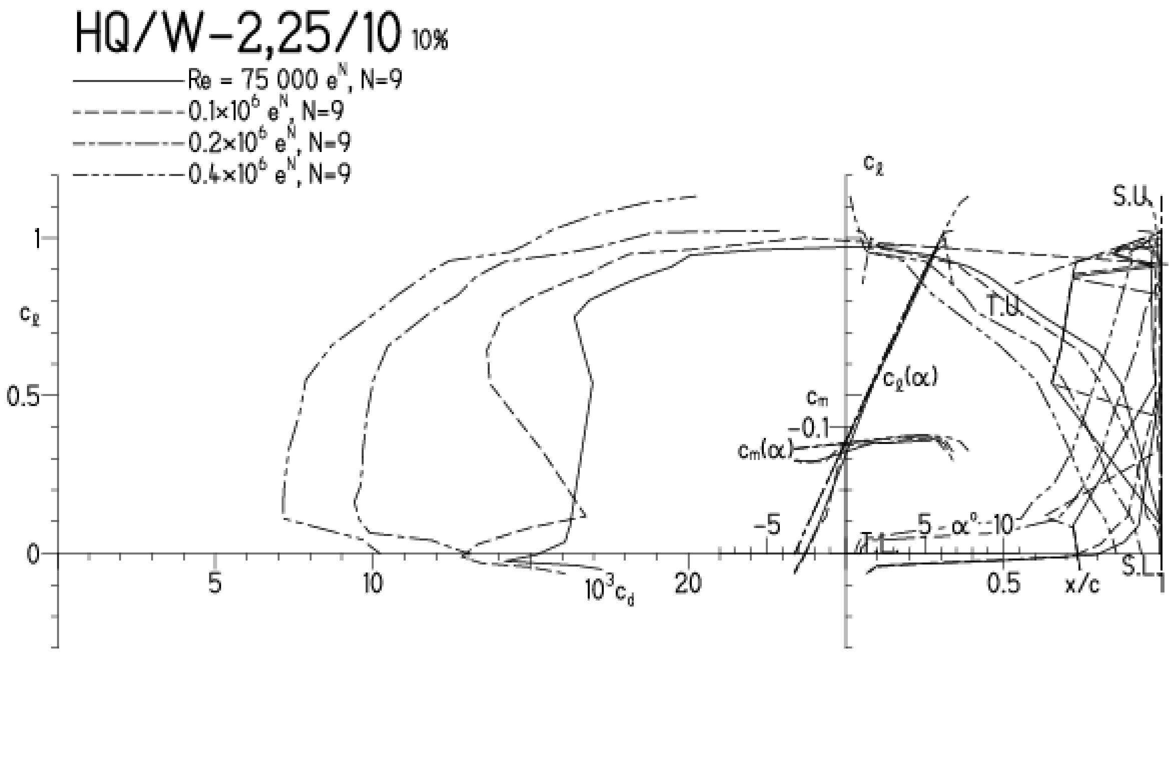


HQ/W-2,25/10, N=9

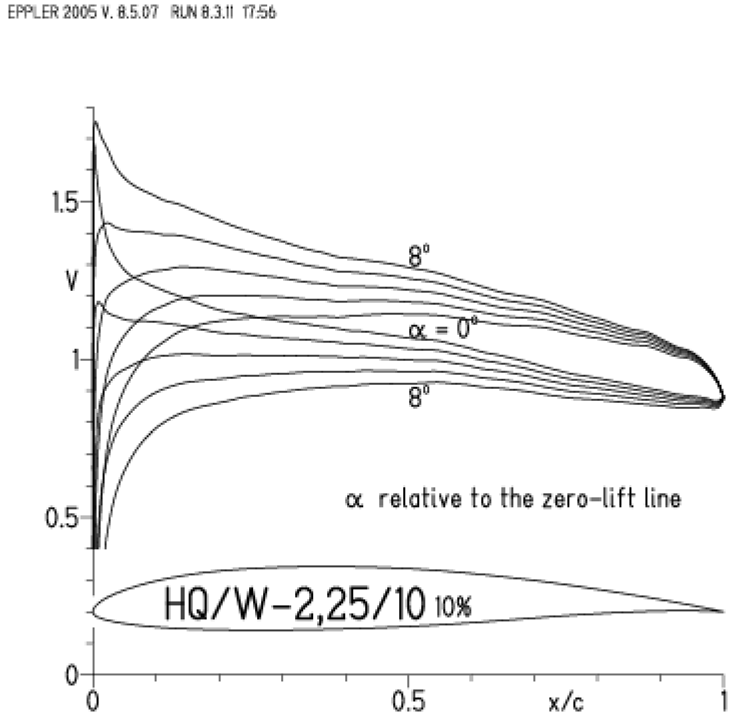
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

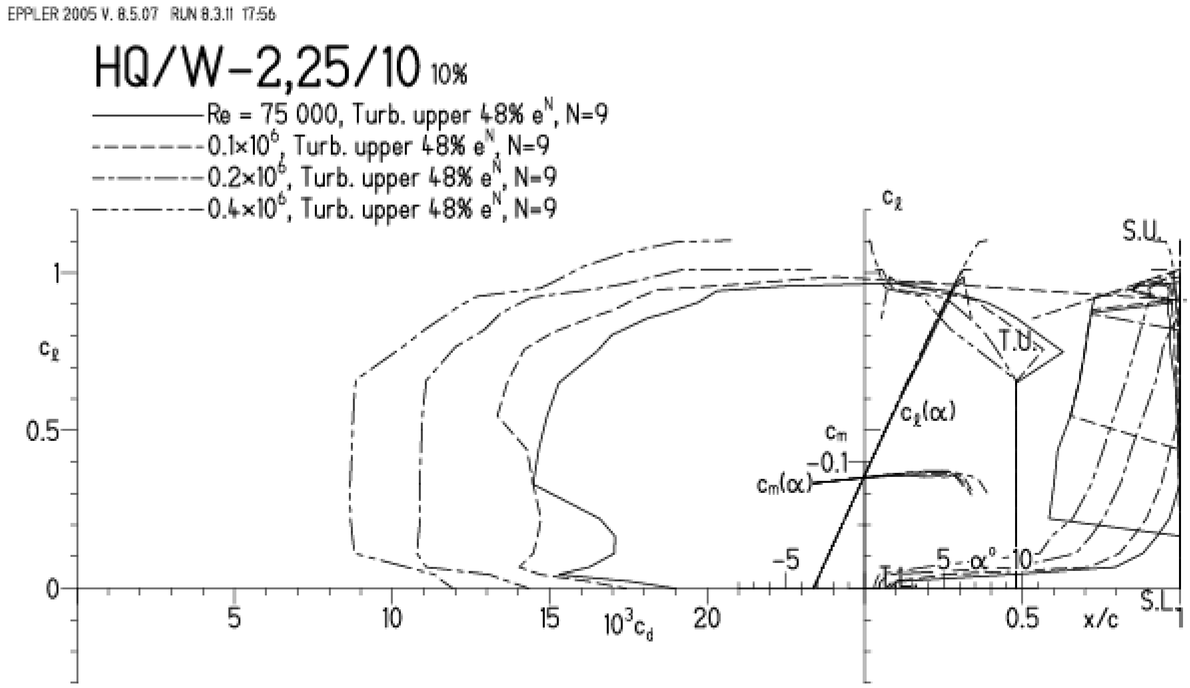


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



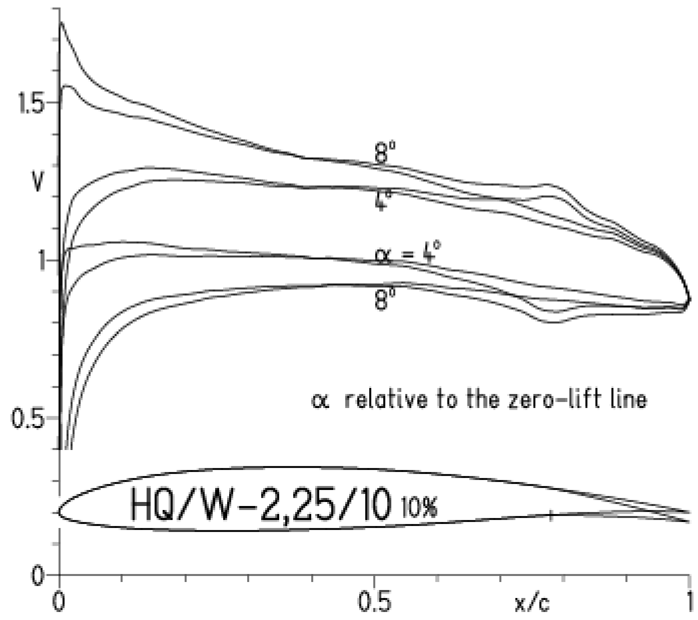
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



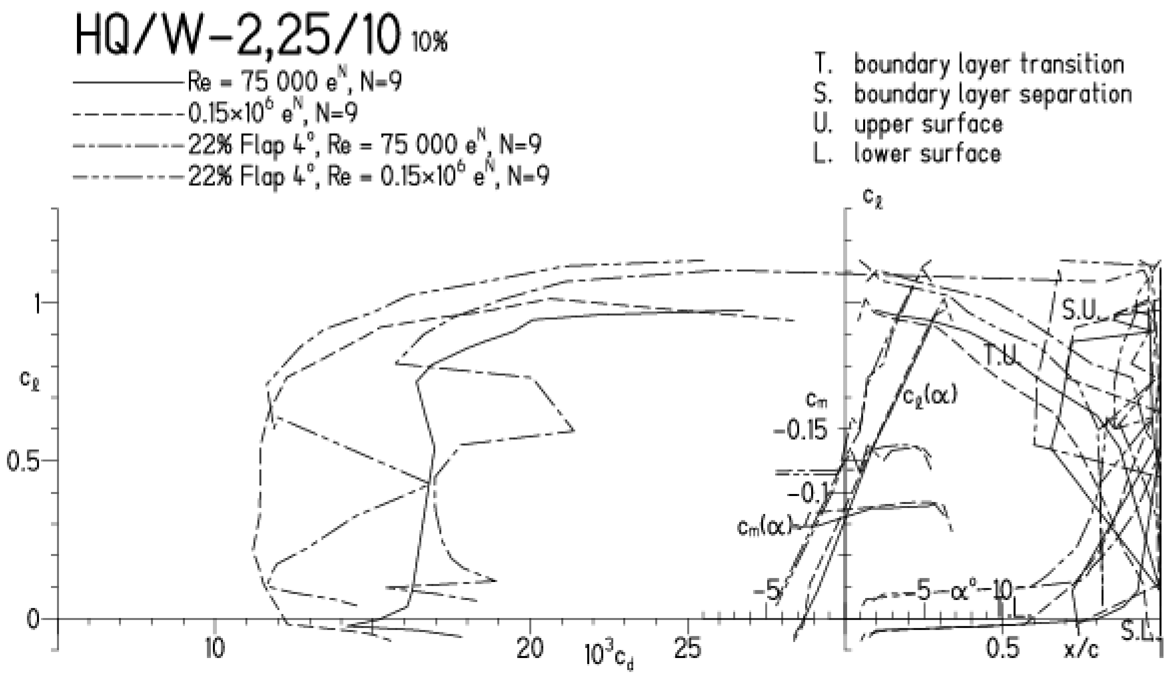


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

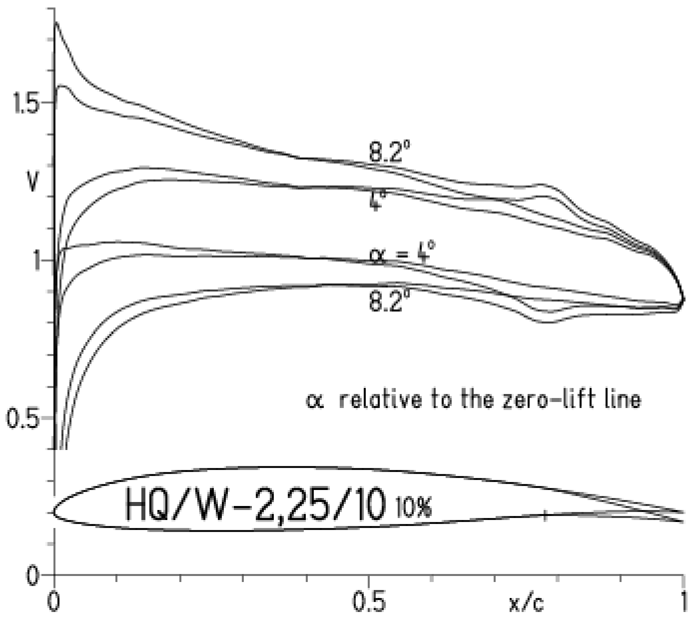


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

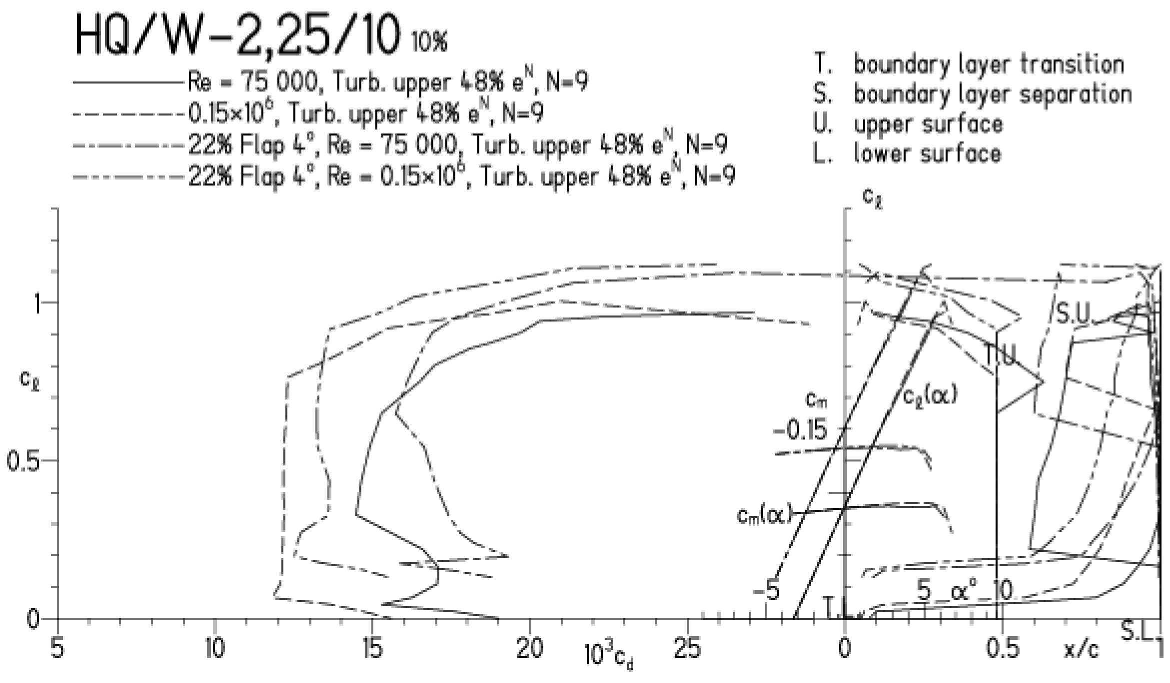


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

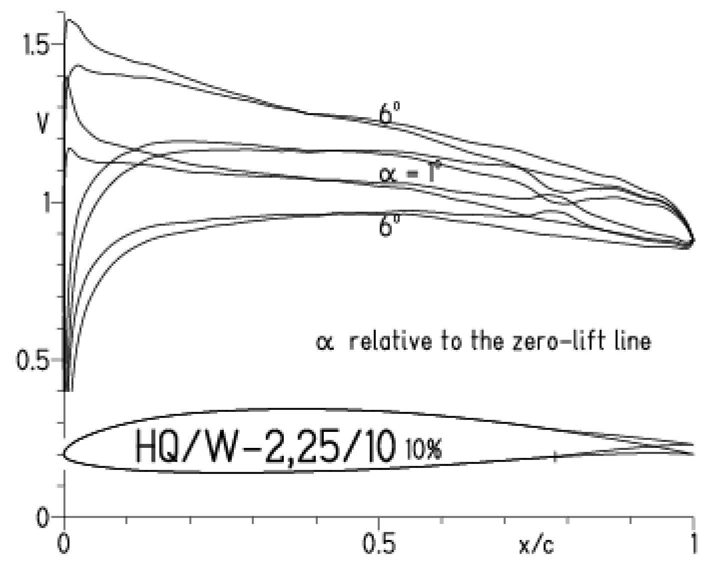


EPPLER 2005 V. 8.5.07 RUN 8.3

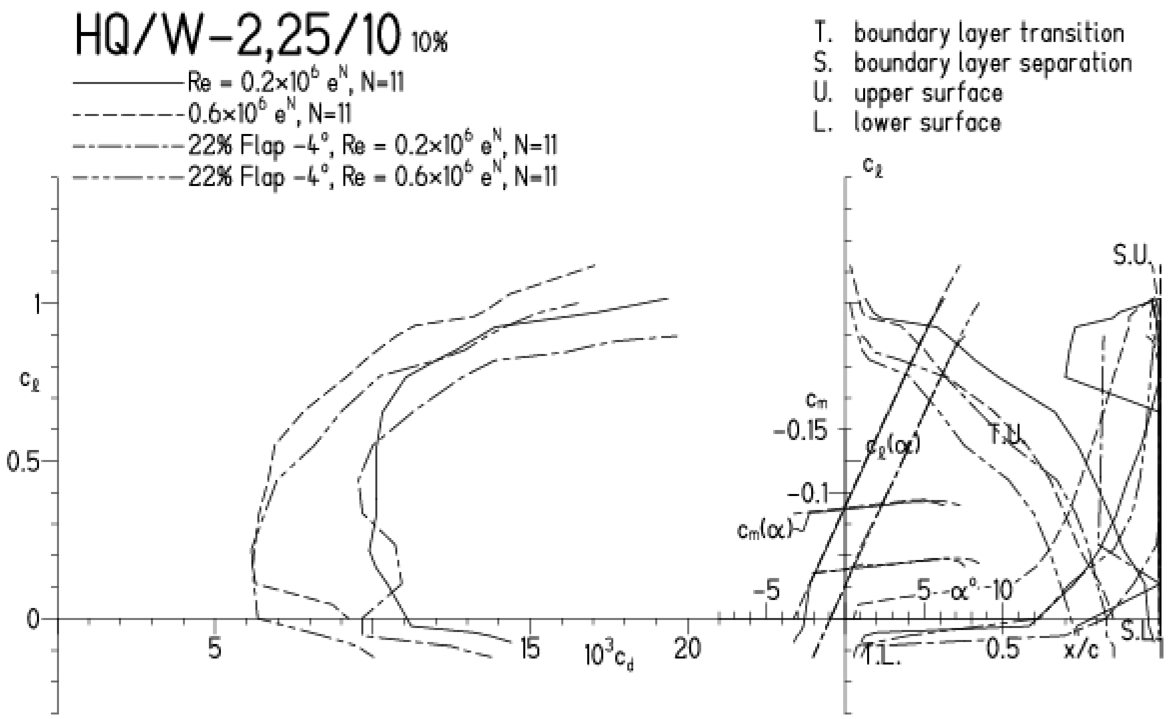


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

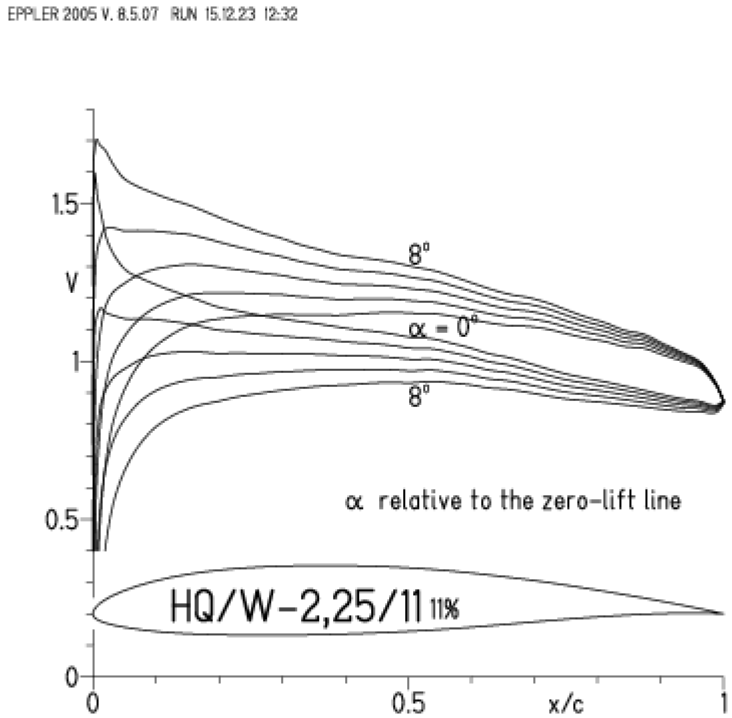
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

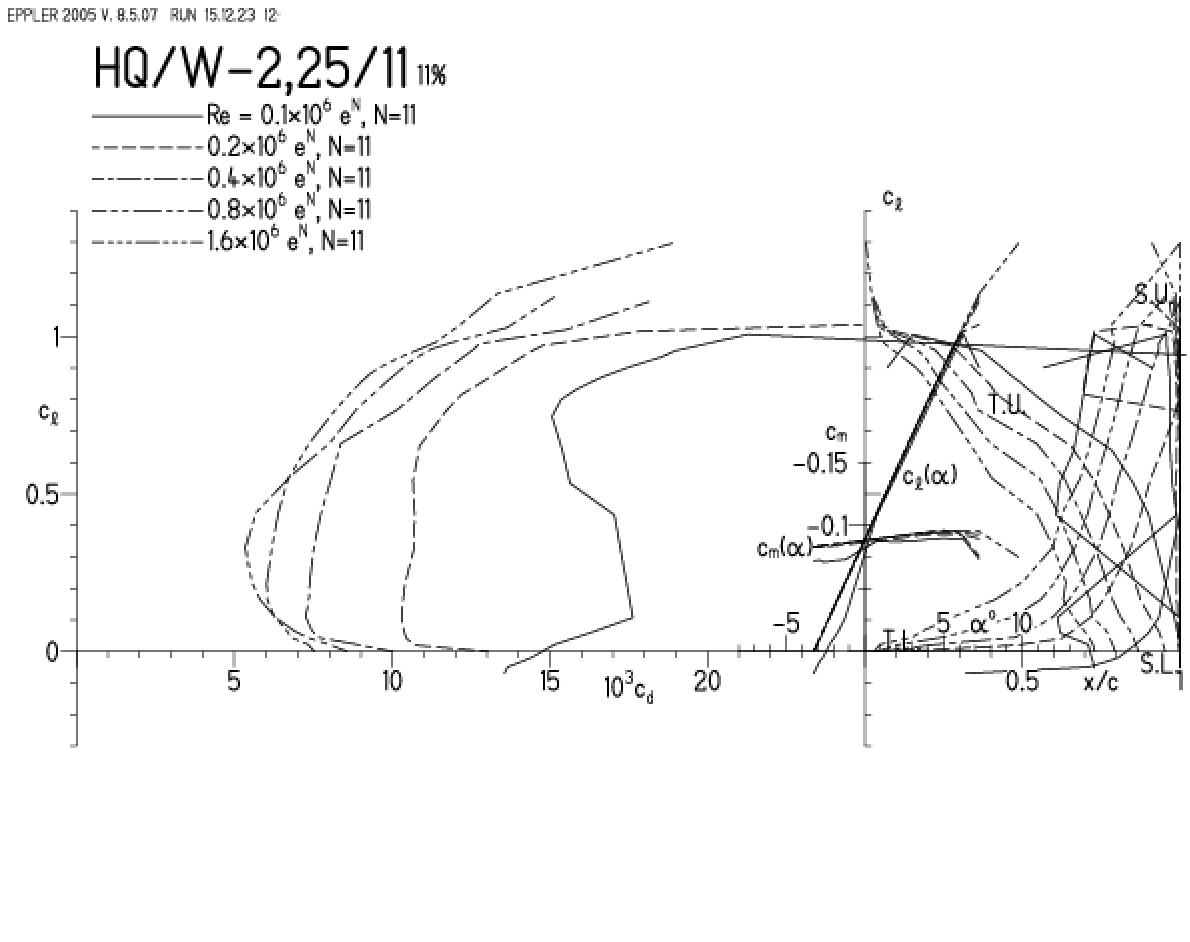


EPPLER 2005 V. 8.5.07 RUN

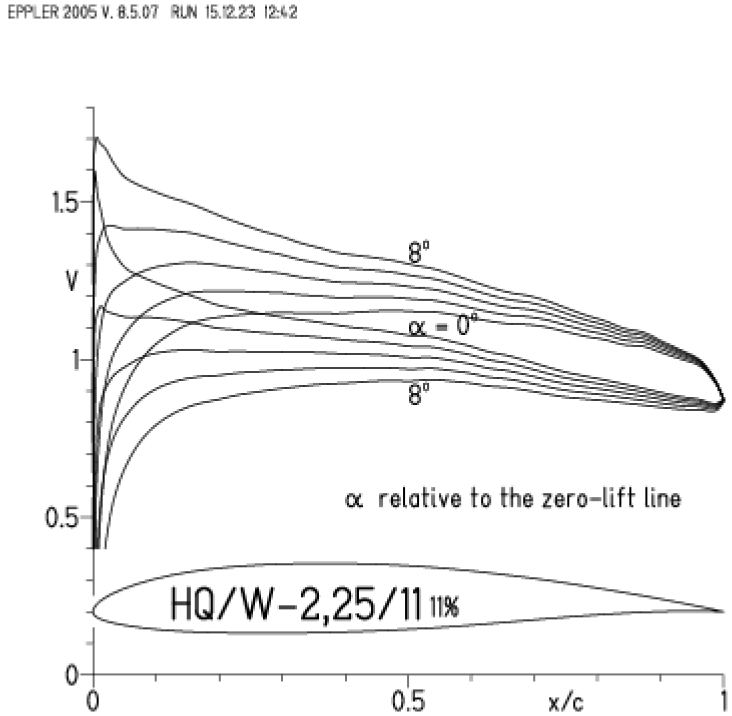


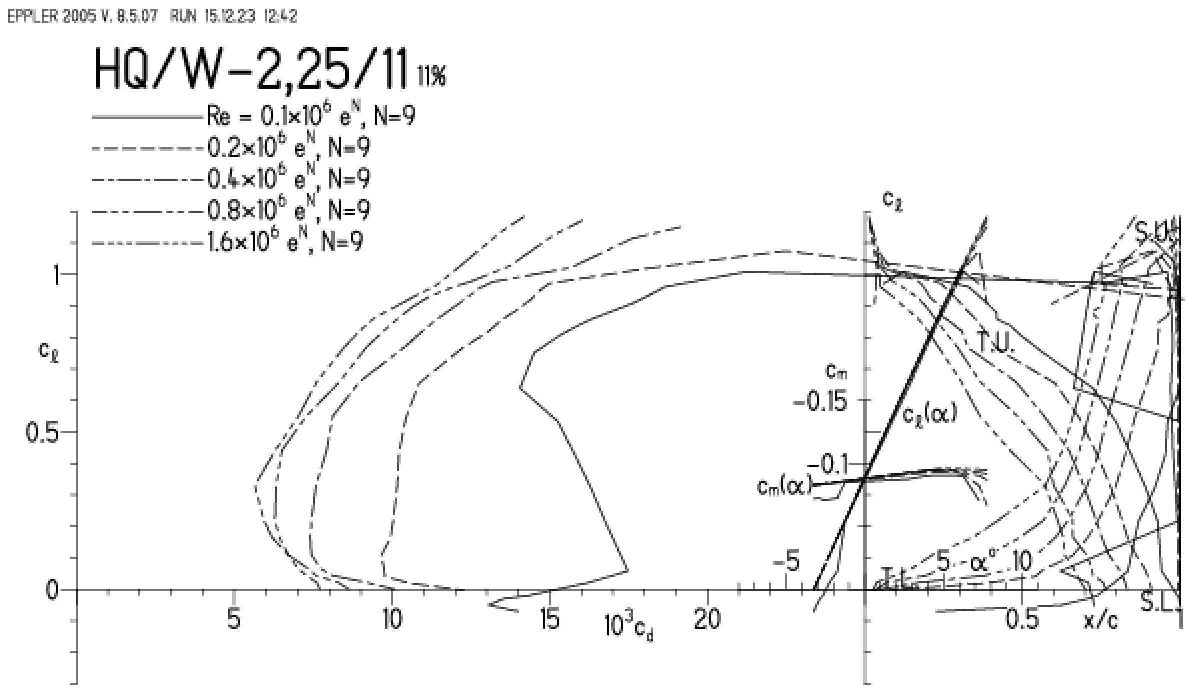
<u>HQ/W-2,25/11</u>, N=11



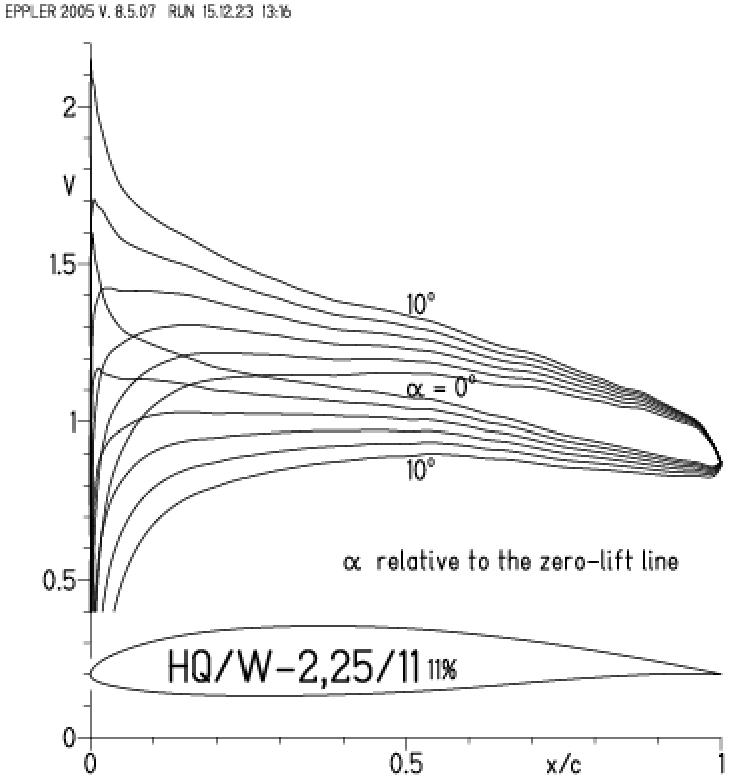


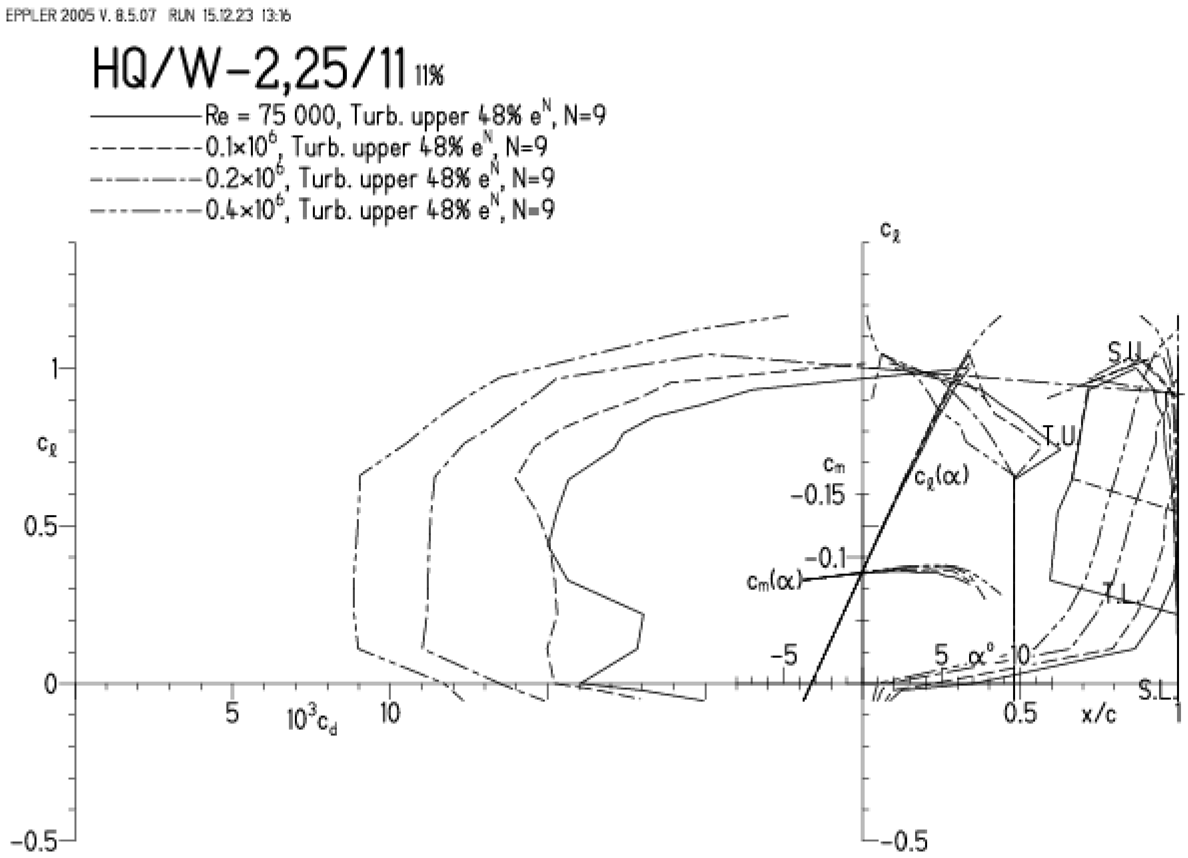
HQQ/W-2,25/11, N=9





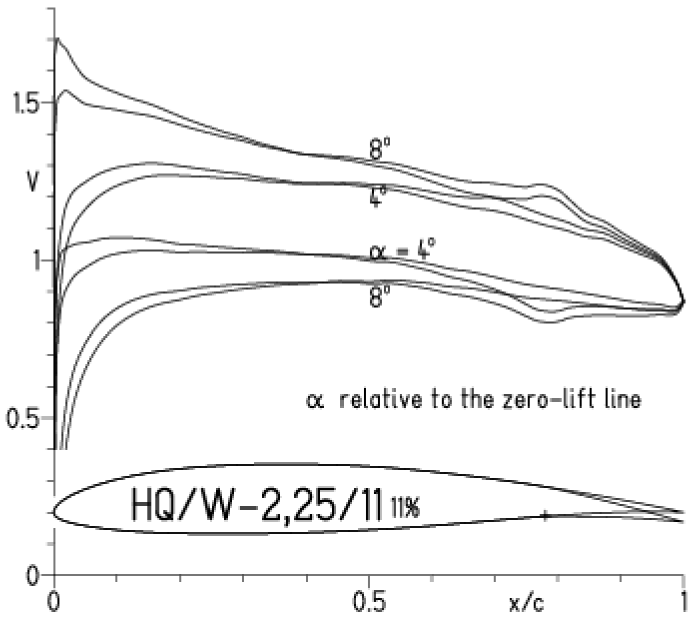
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



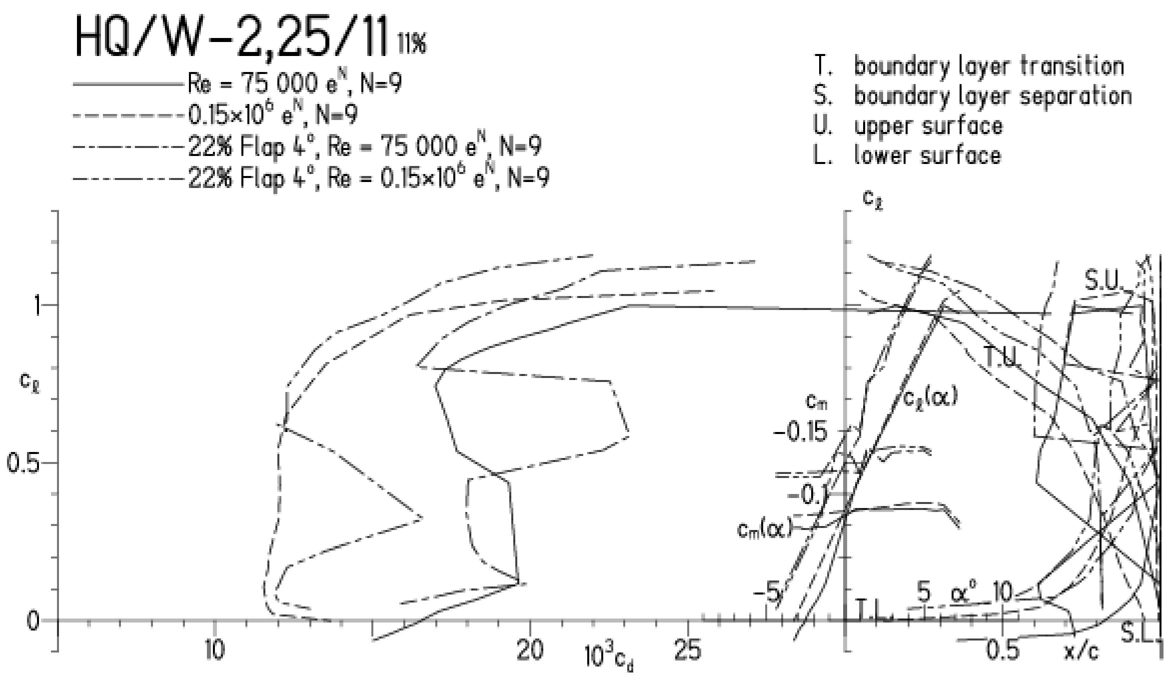


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

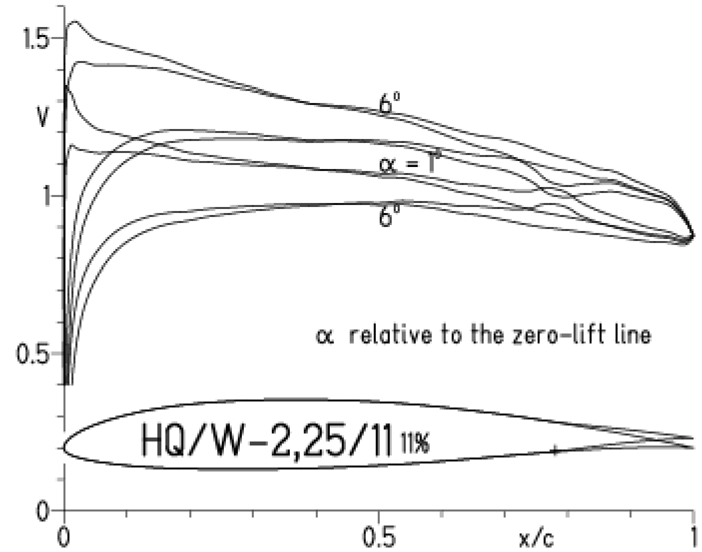


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

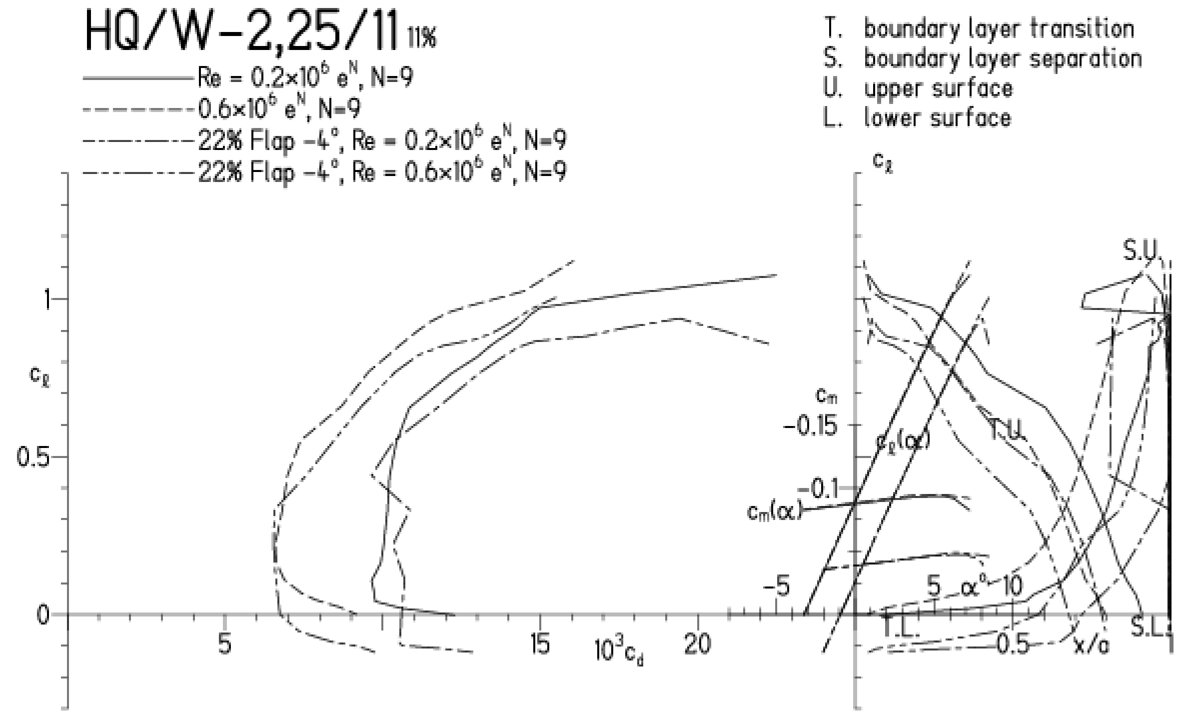


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

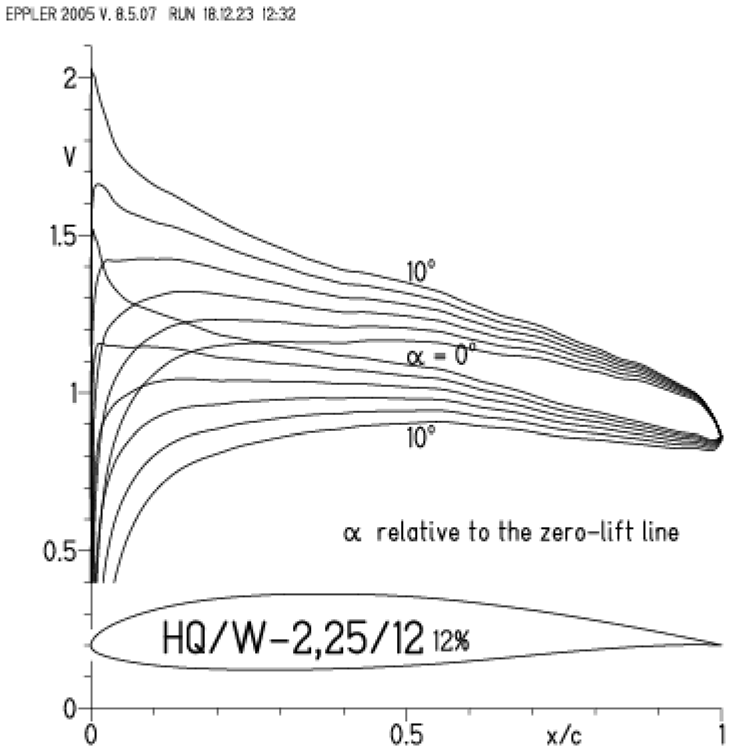
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

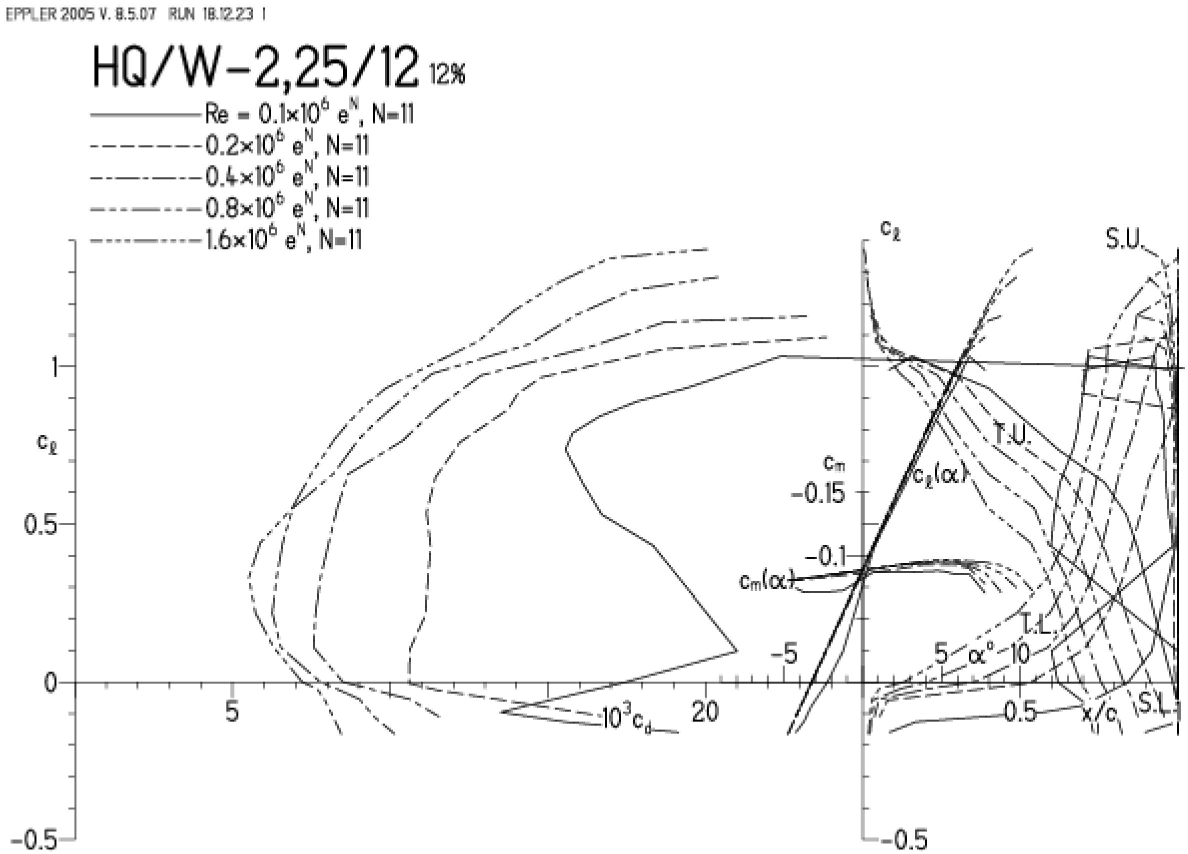


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

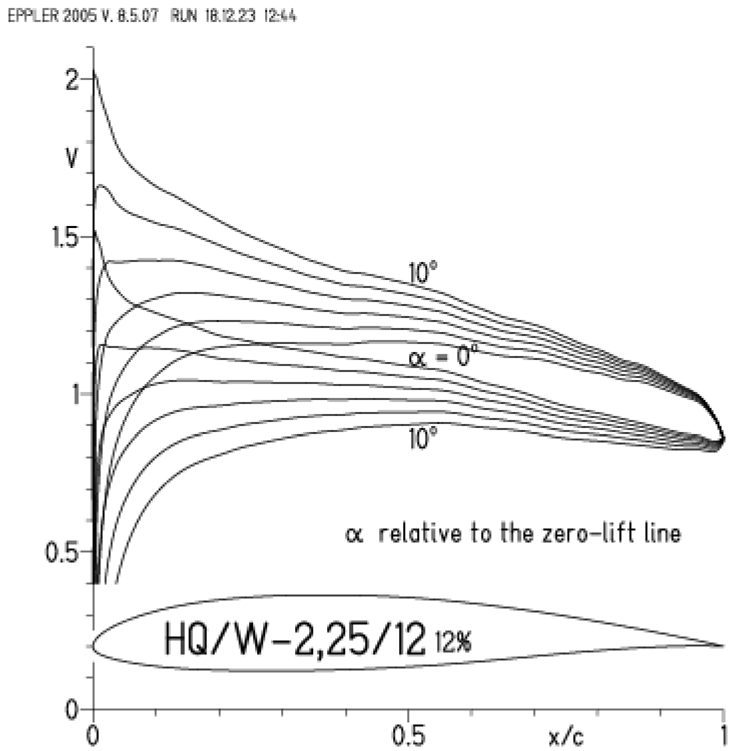


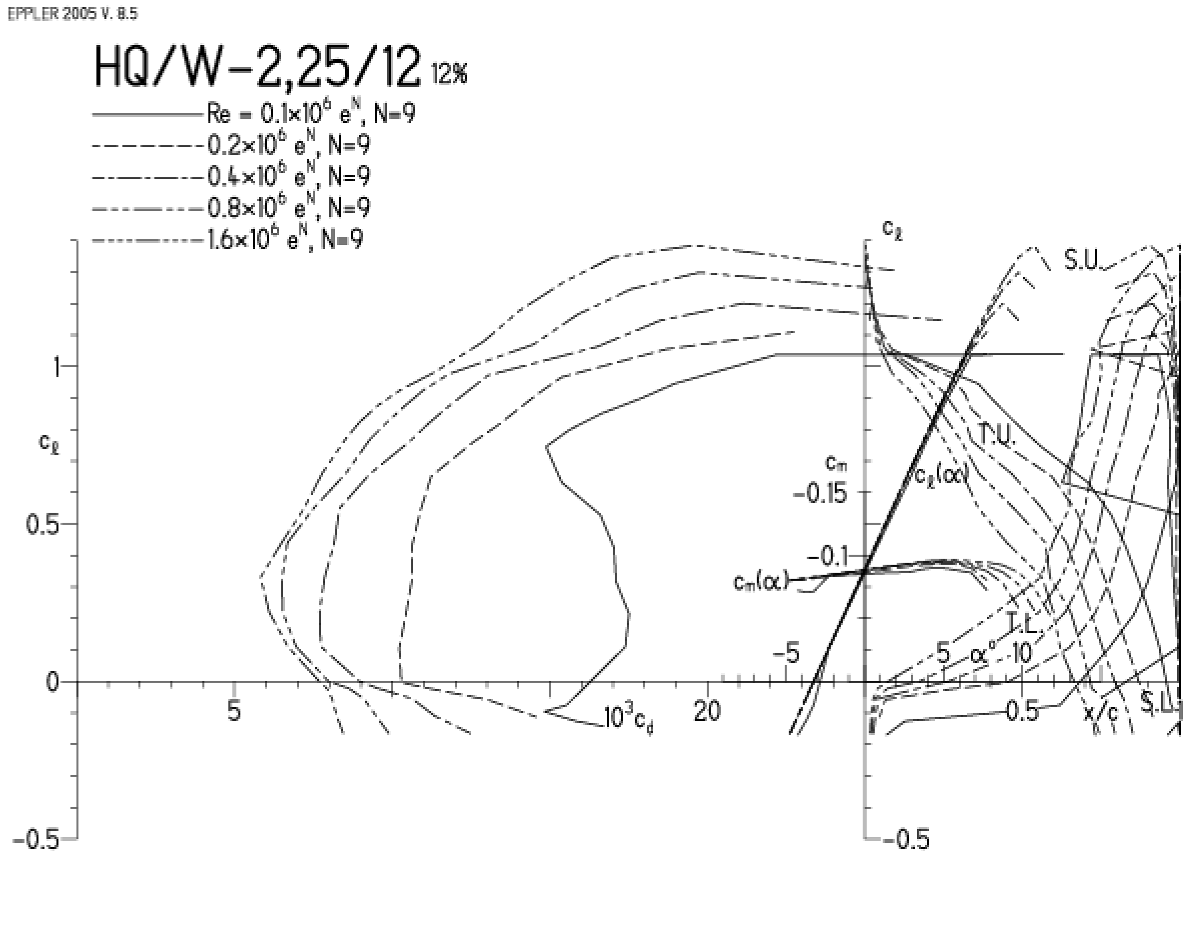
<u>HQ/W-2,25/12</u>, N=11



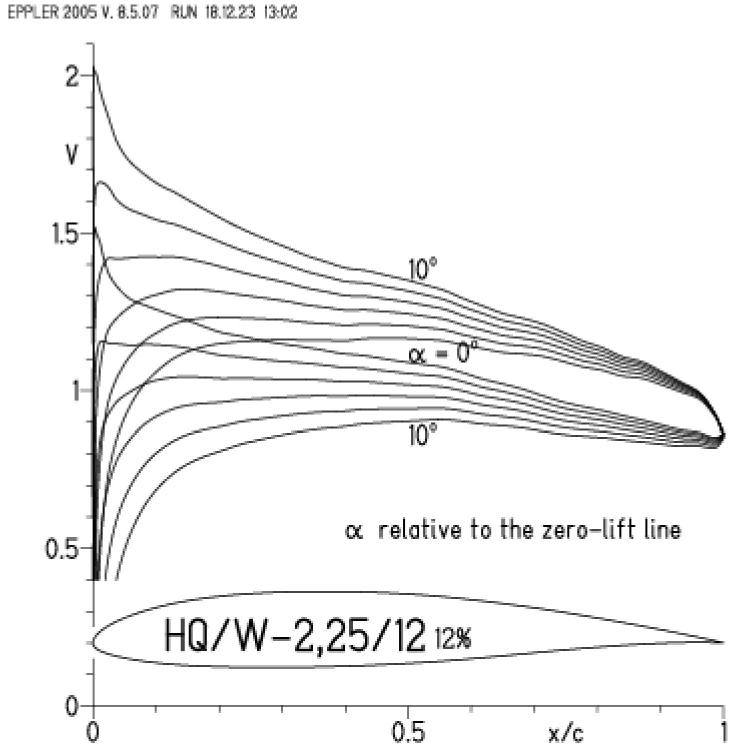


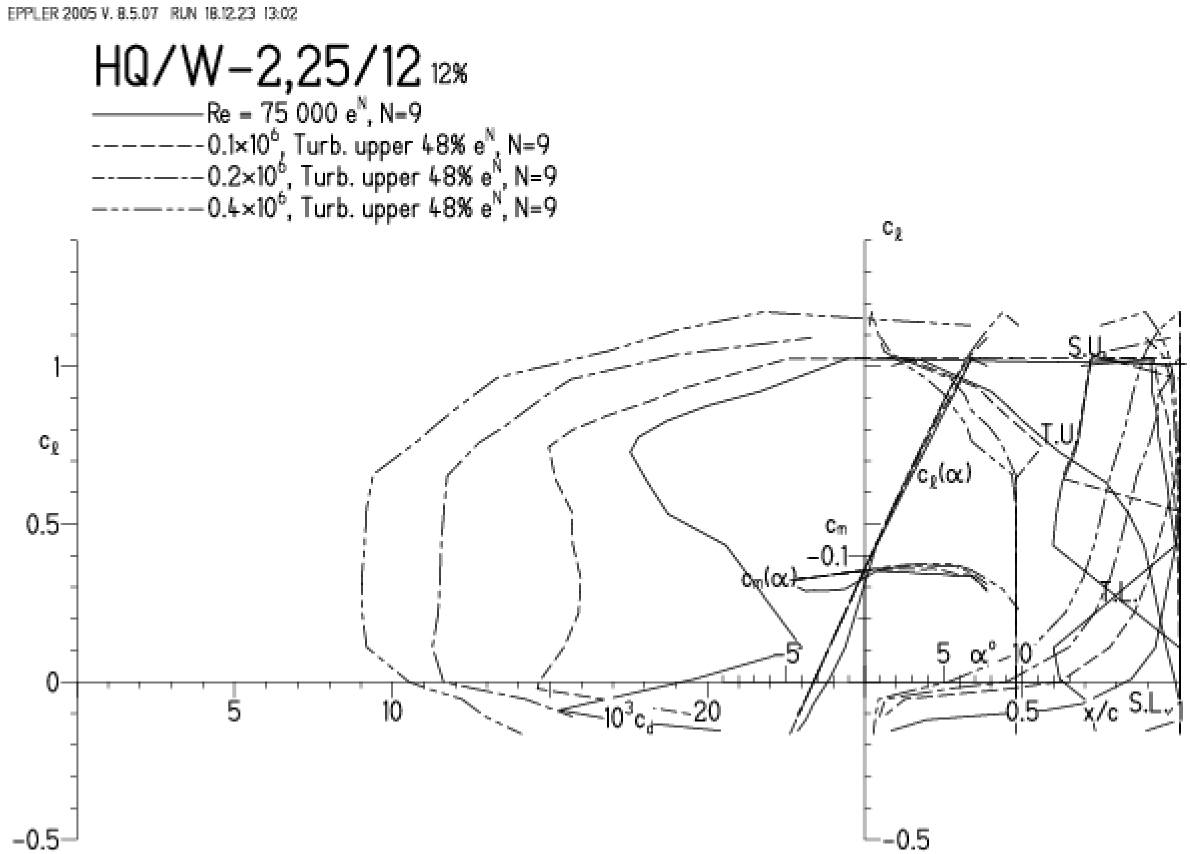
<u>HQ/W-2,25/12</u>, N=9





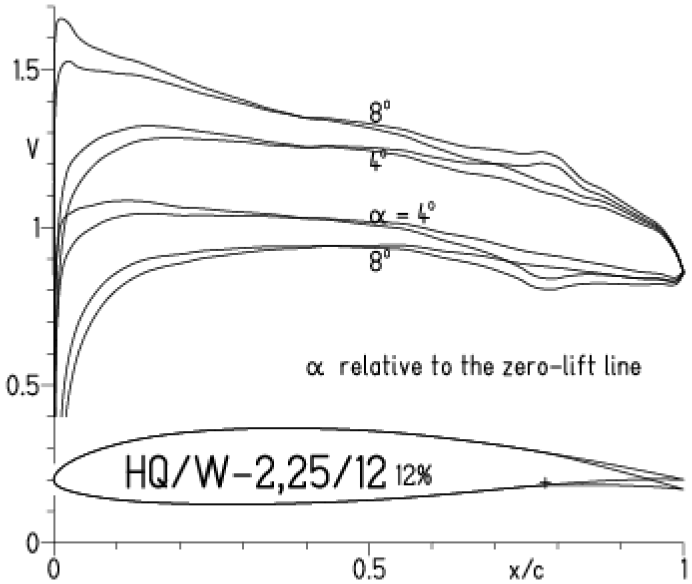
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



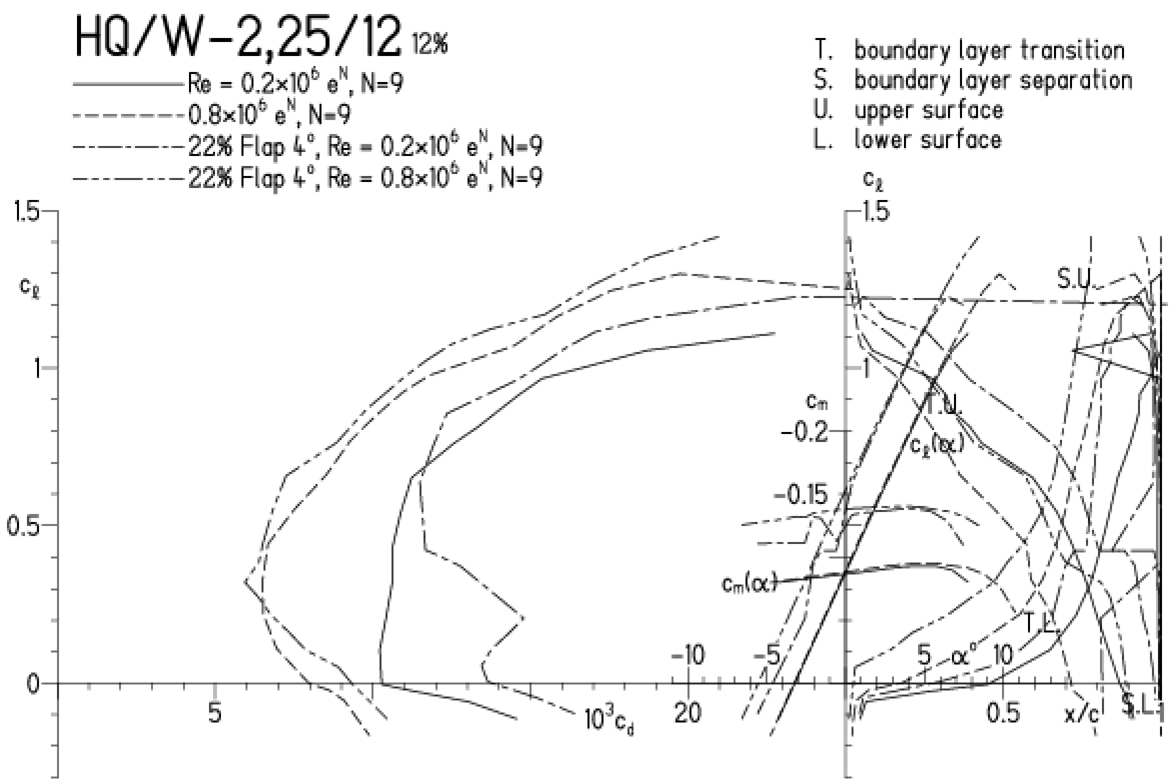


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

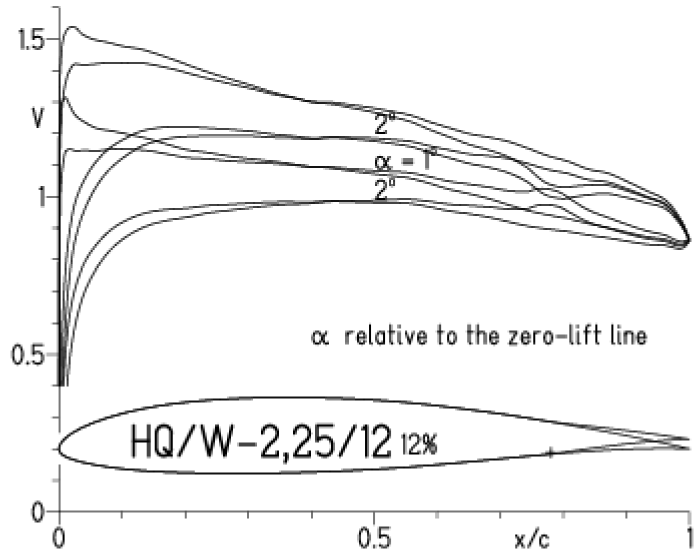


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

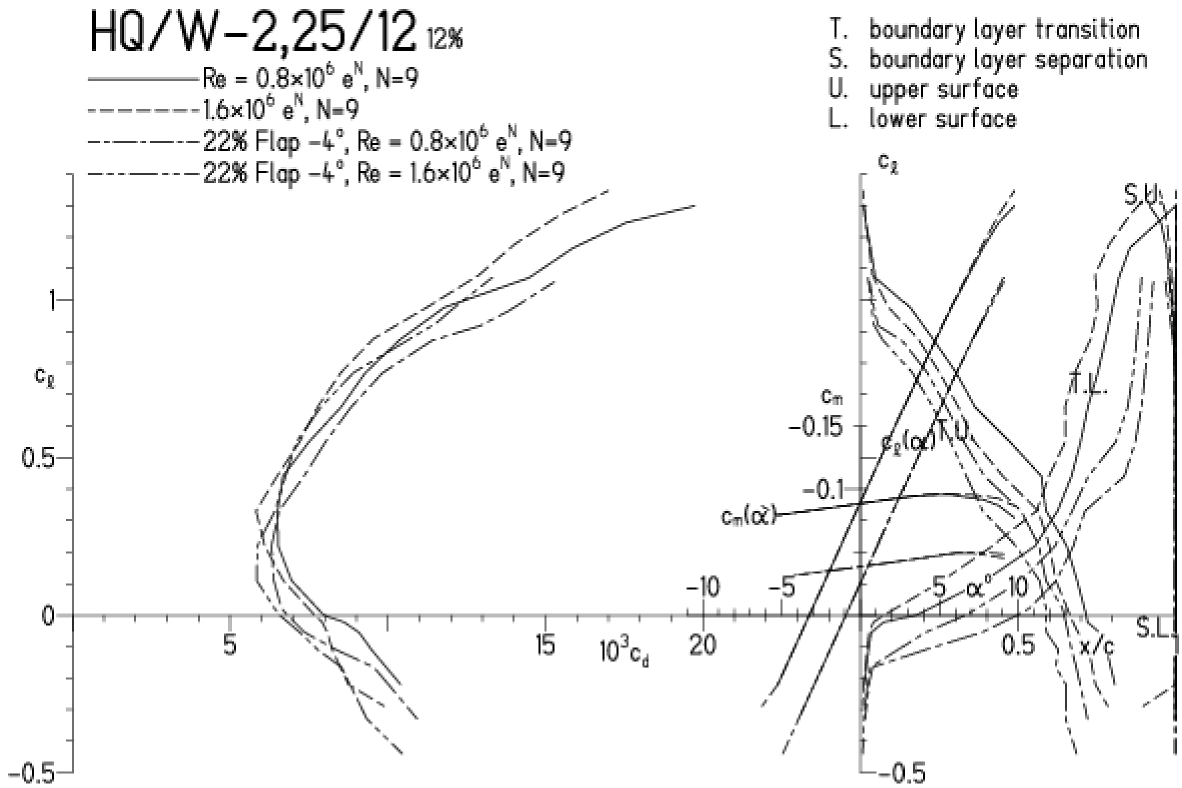


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

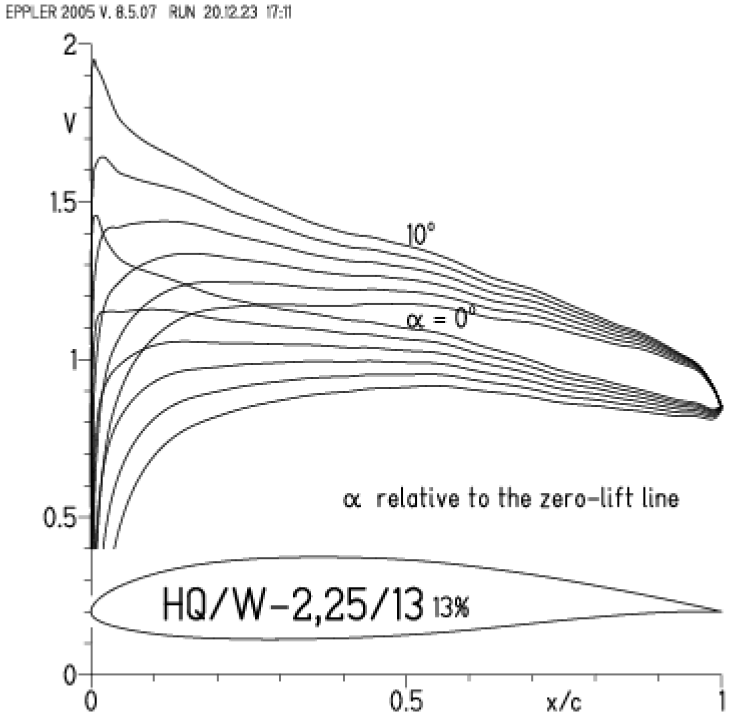
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

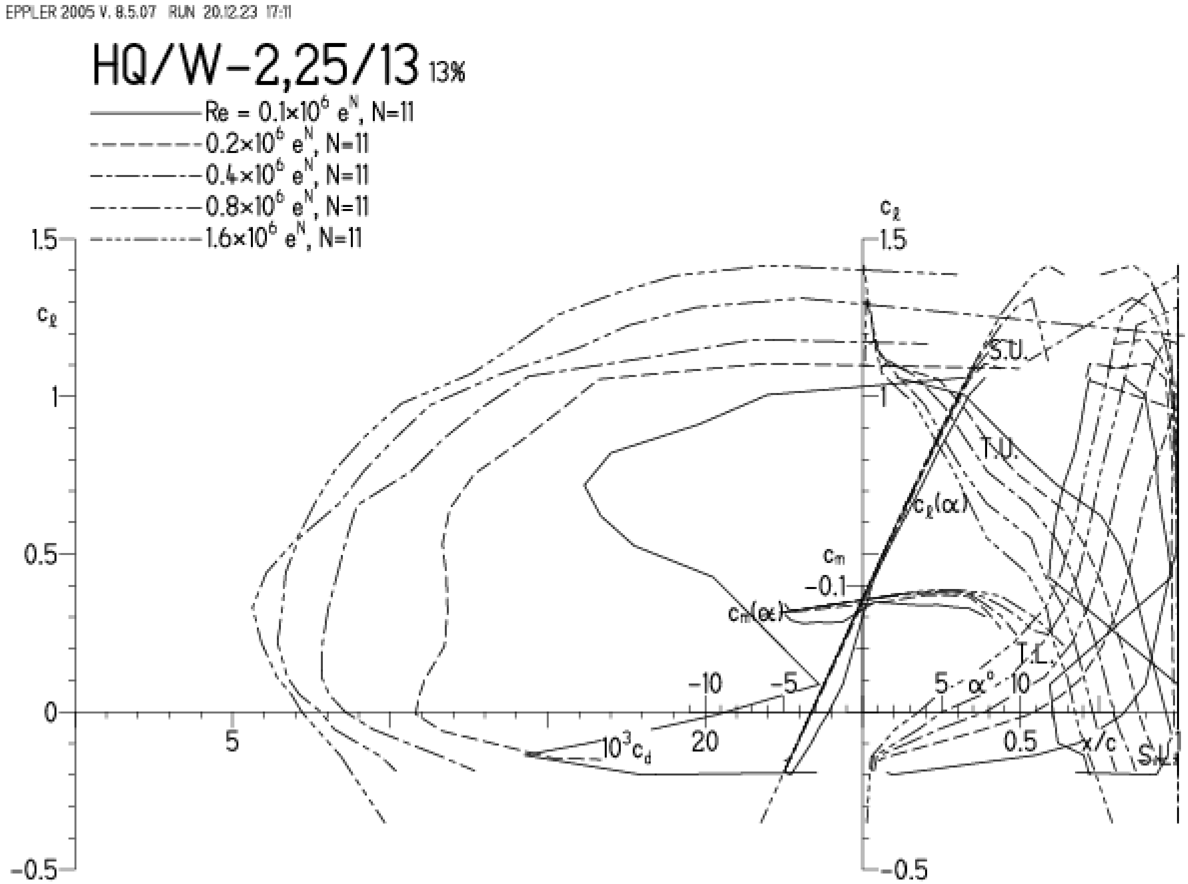


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

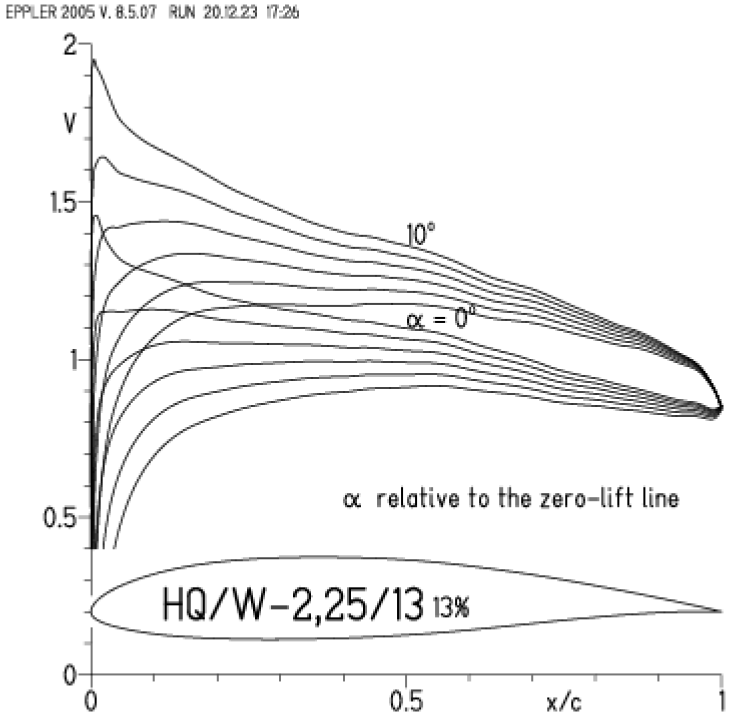


<u>HQ/W-2,25/13</u>, N=11

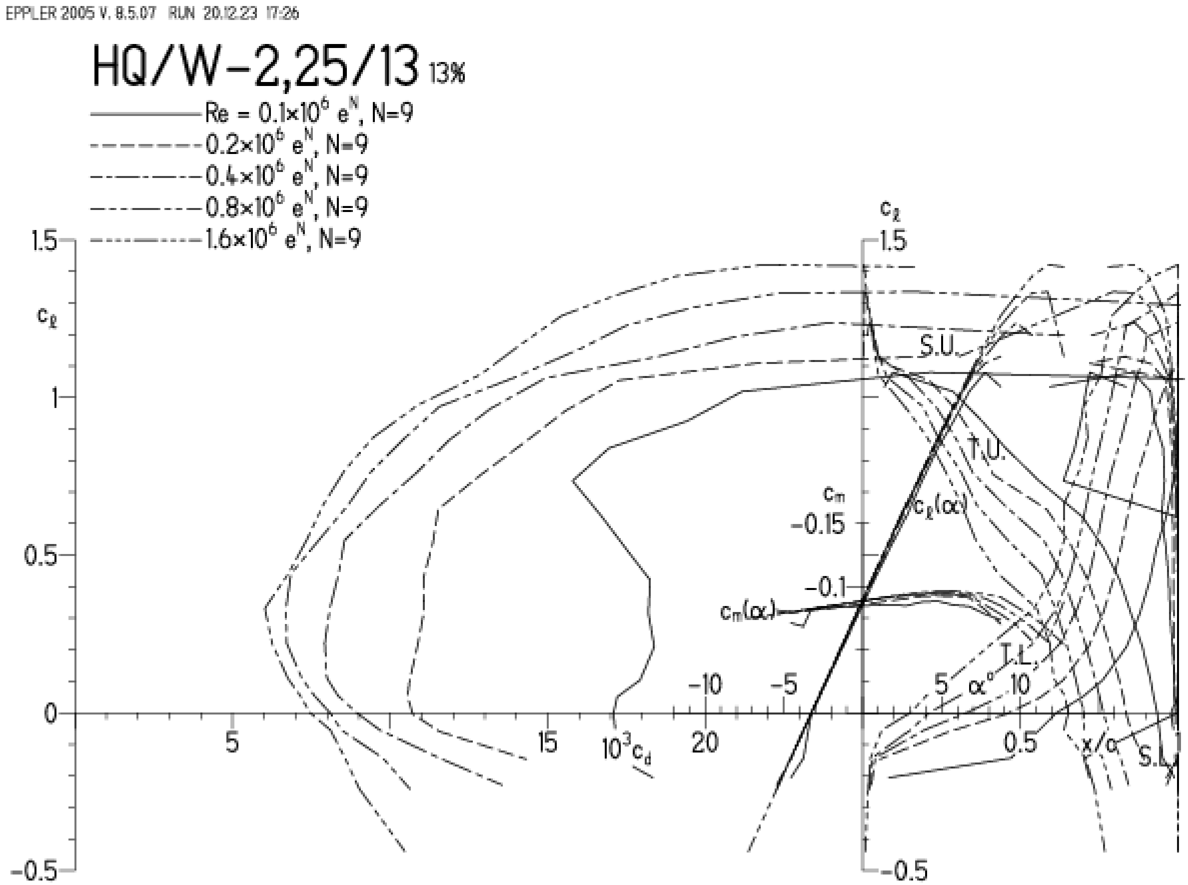




HQ/W-2,25/13, N=9

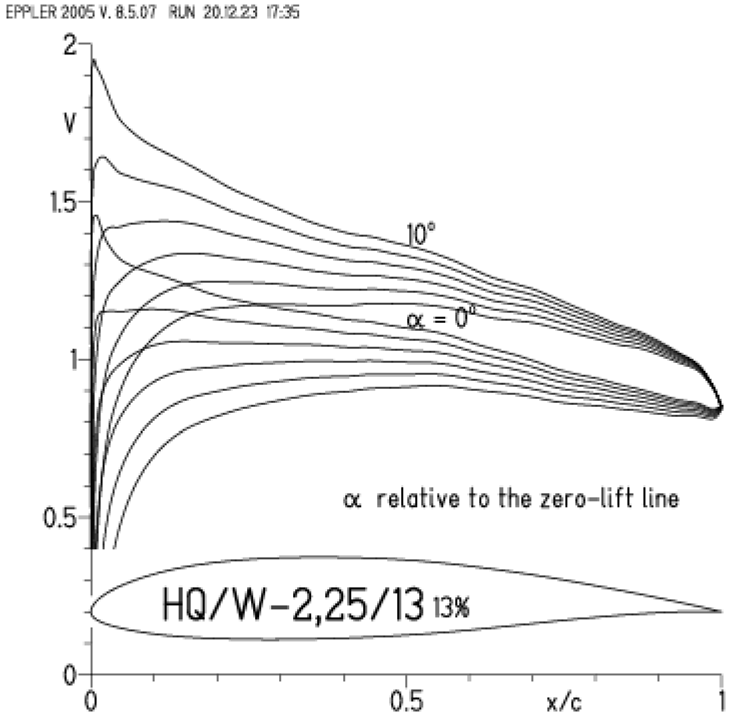


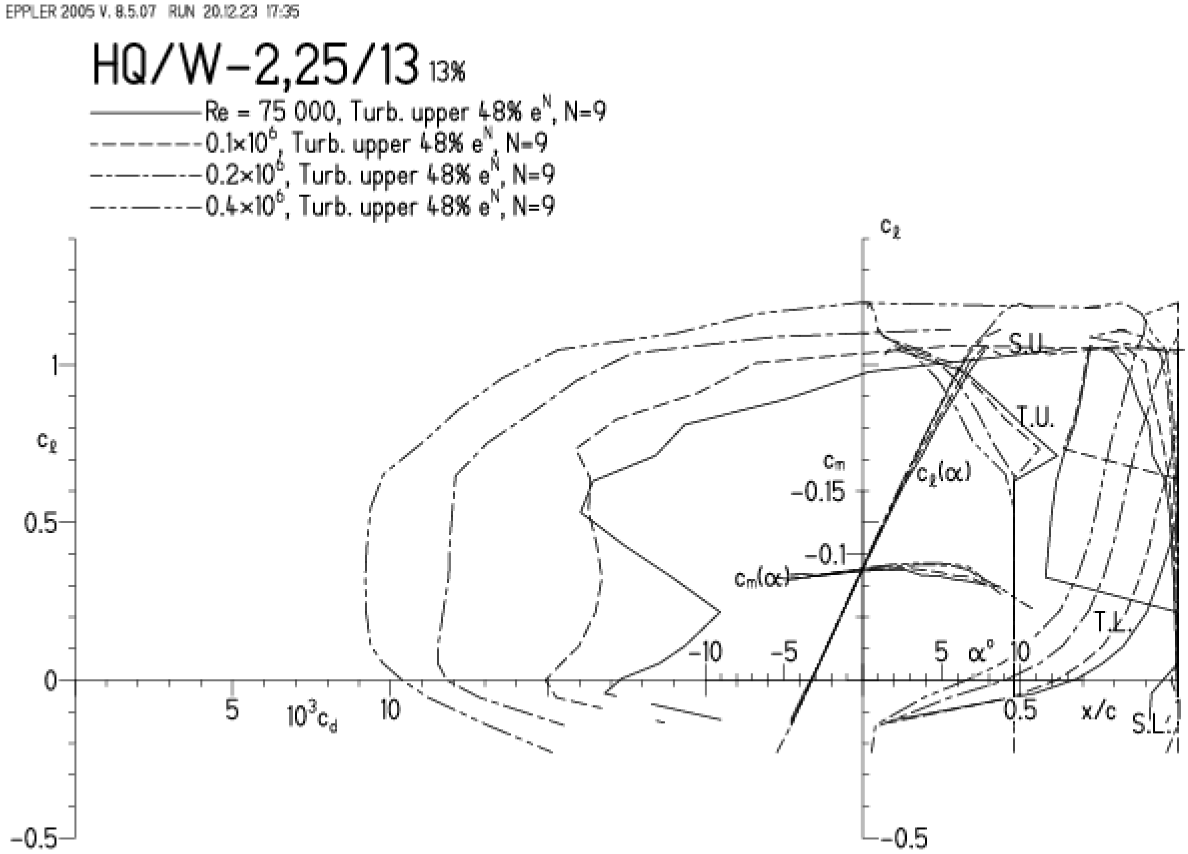
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c



EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
x/c
10^3 c_d

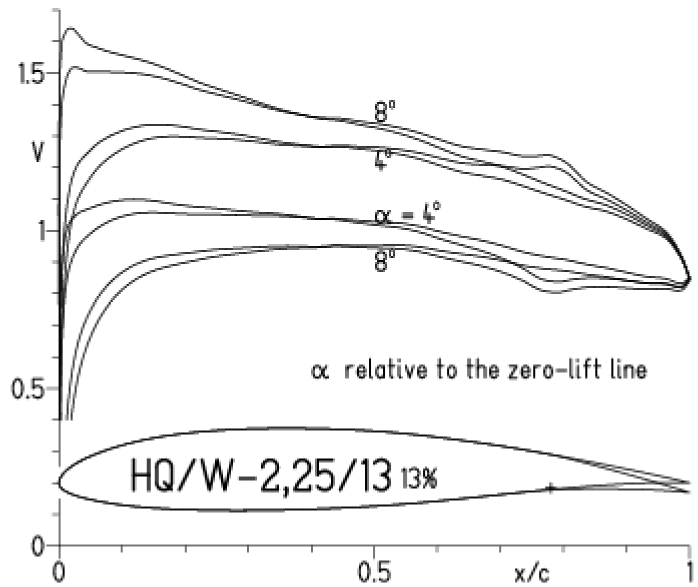
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



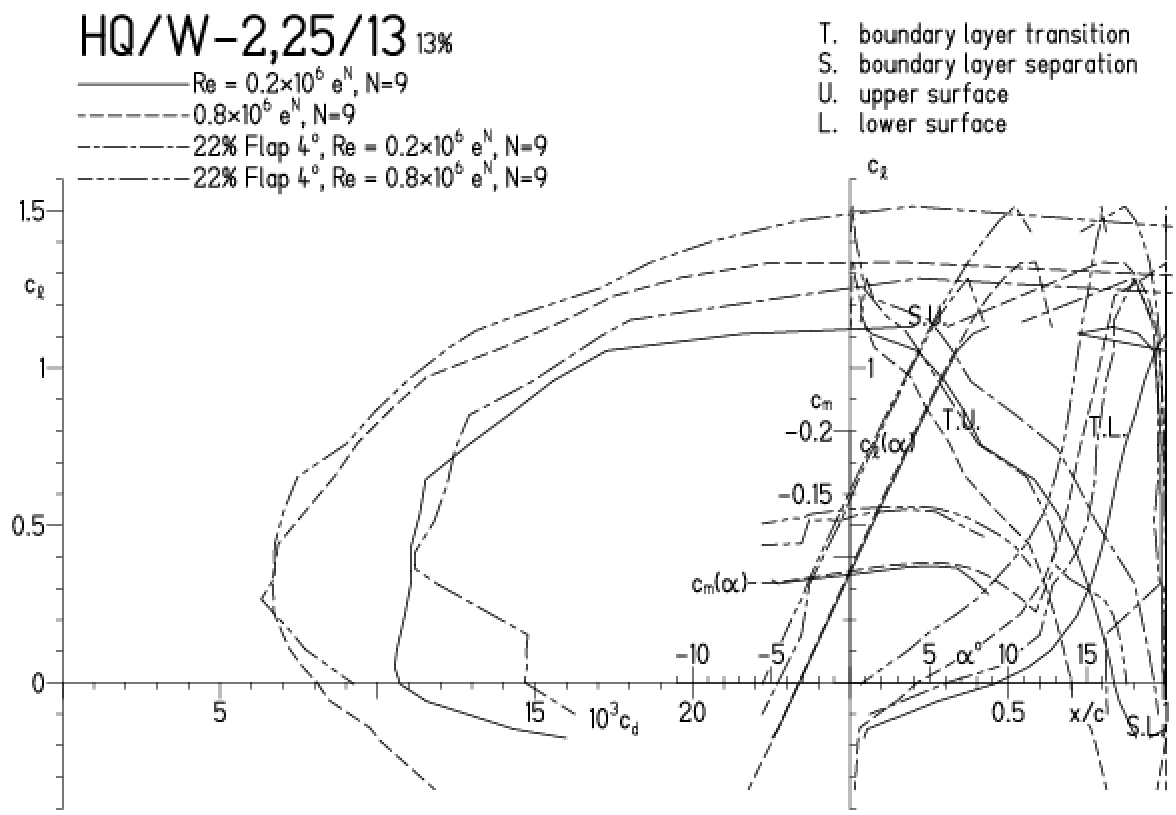


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

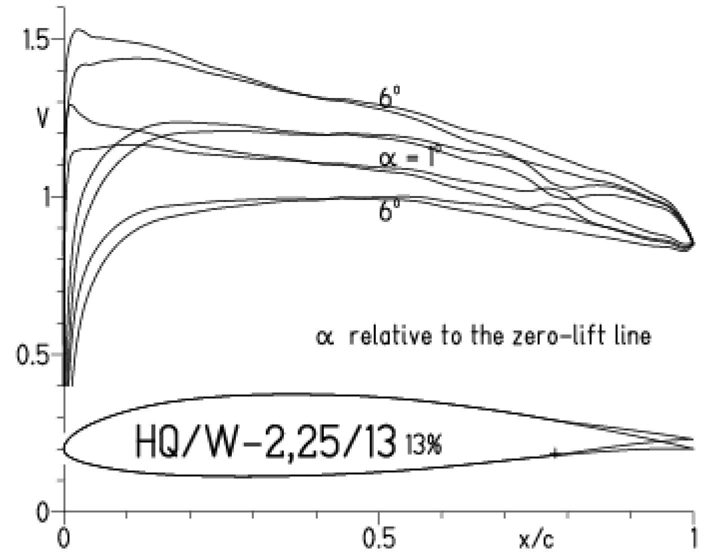


EPPLER 2005 V.

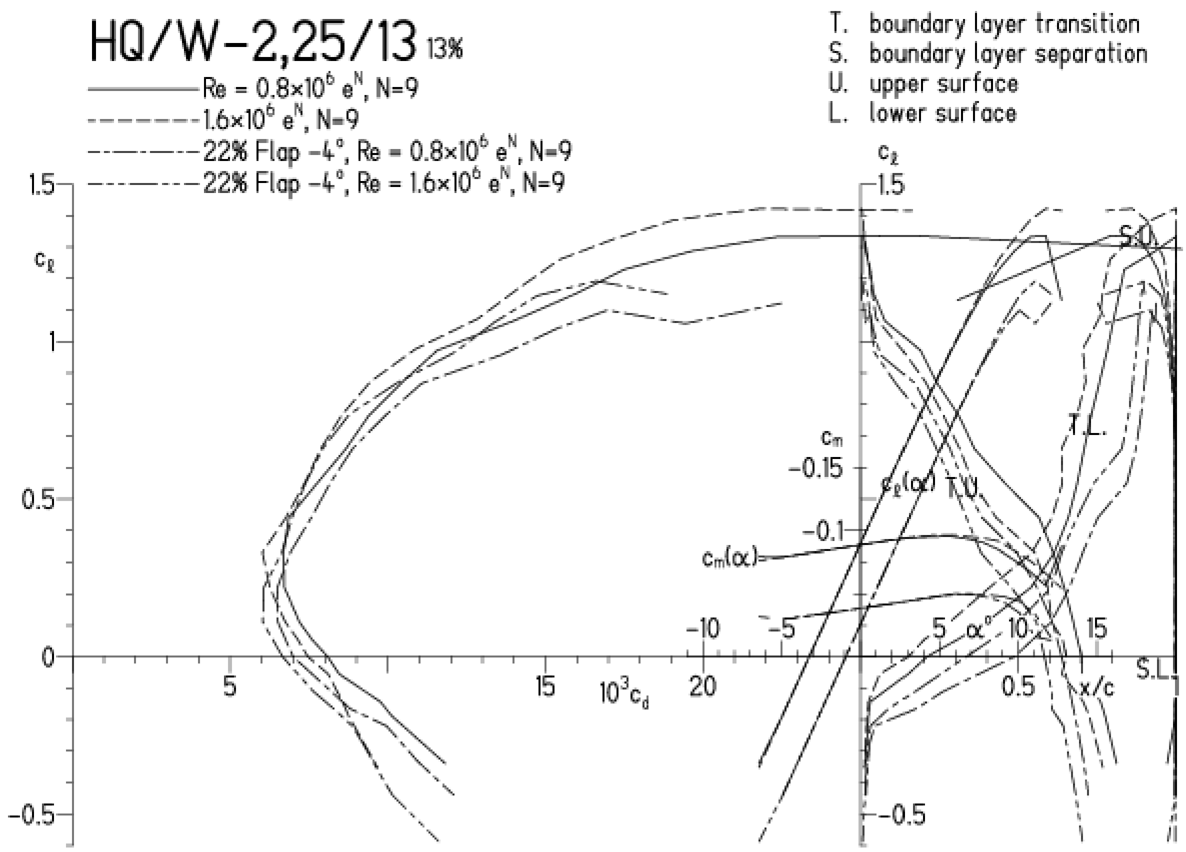


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

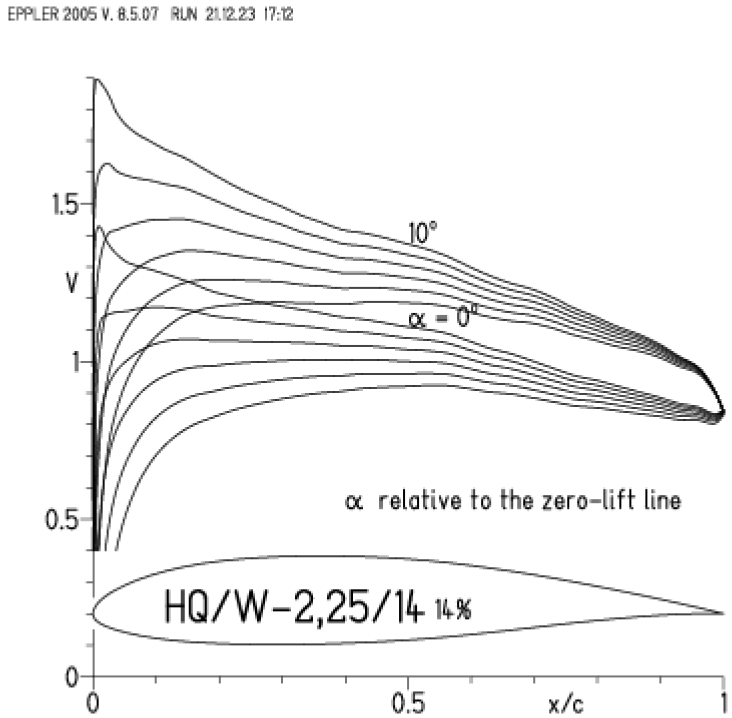
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

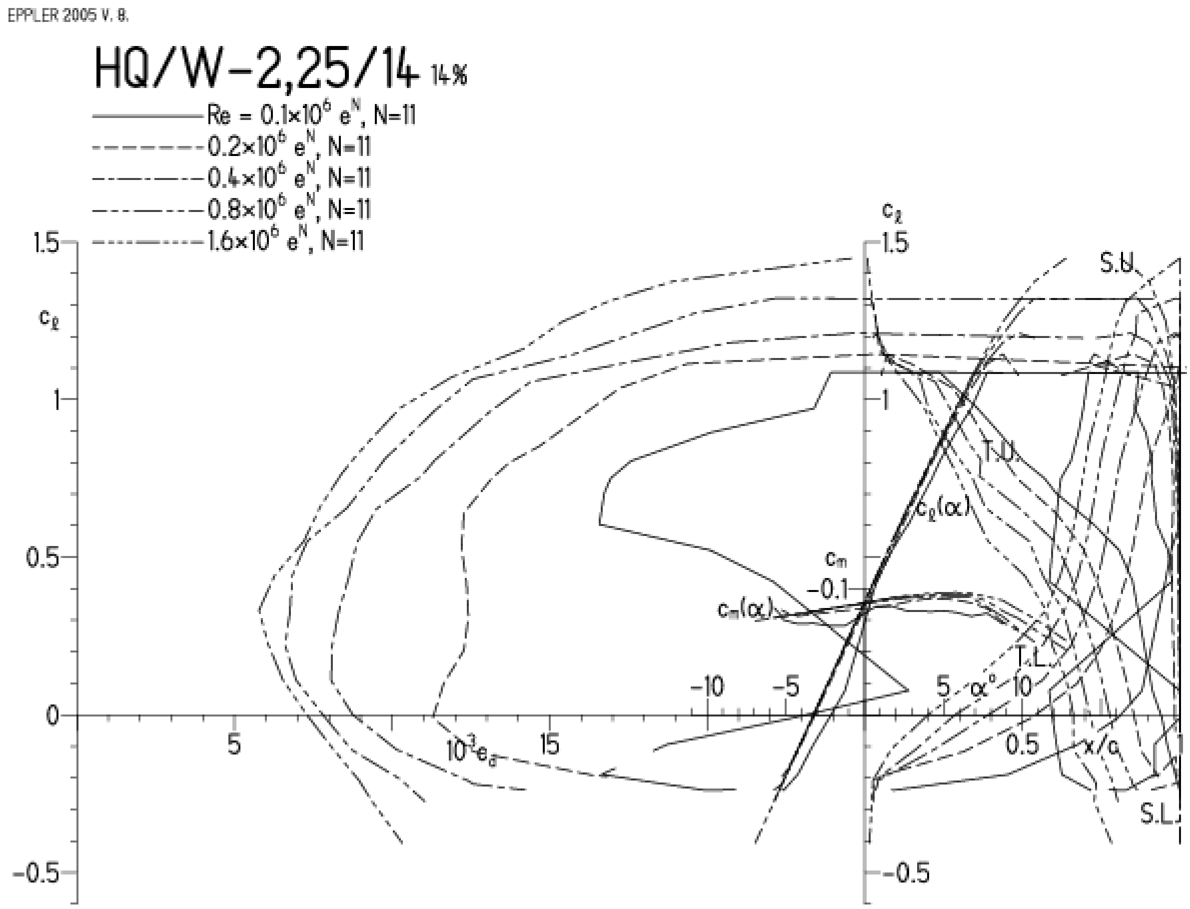


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

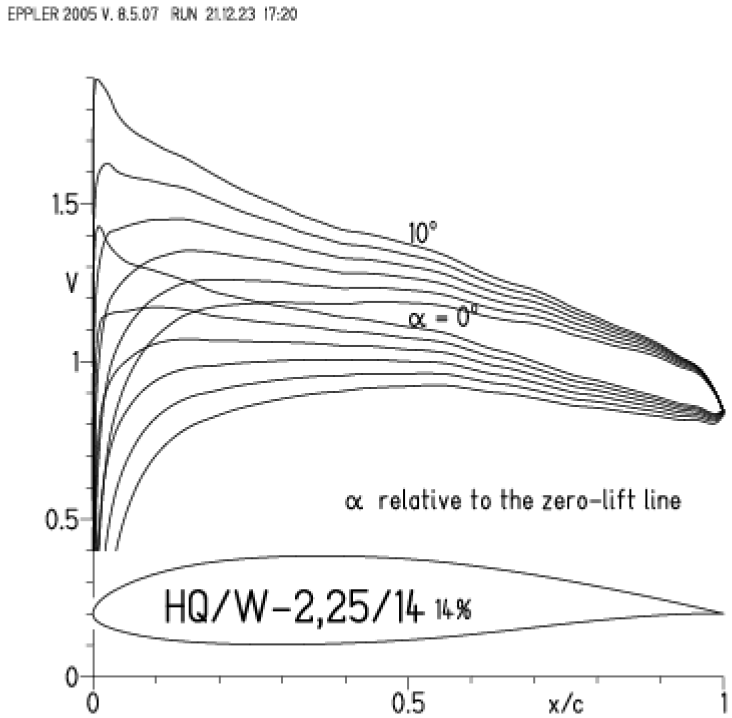


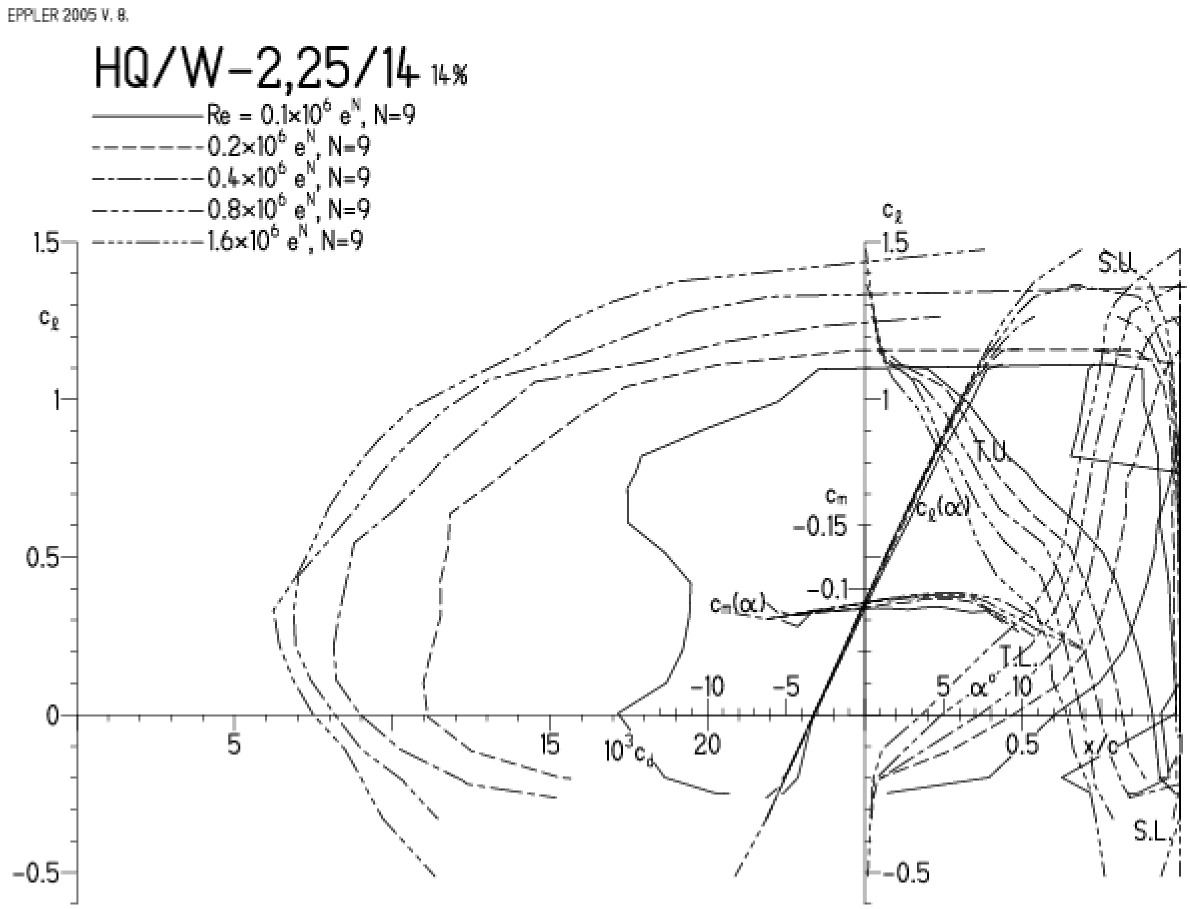
HQ/W-2,25/14, N=11



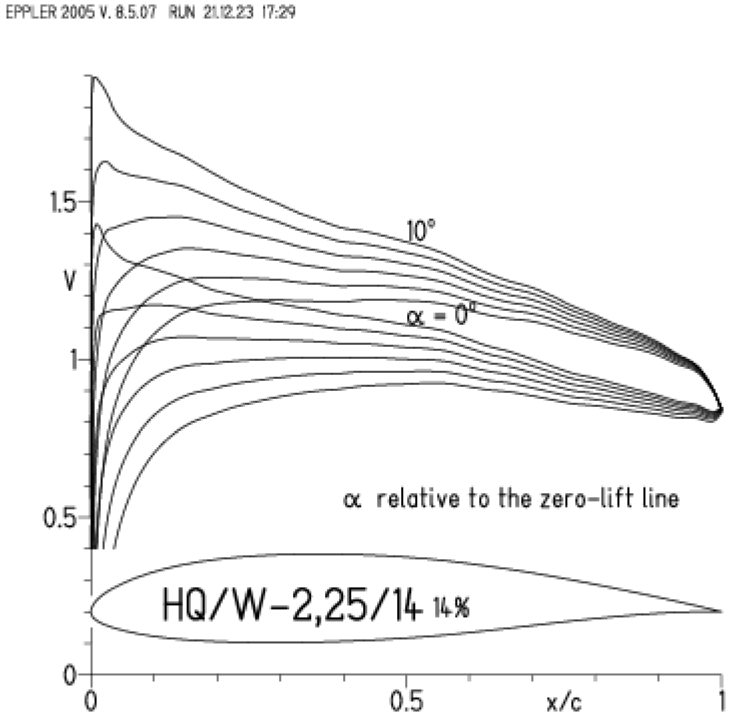


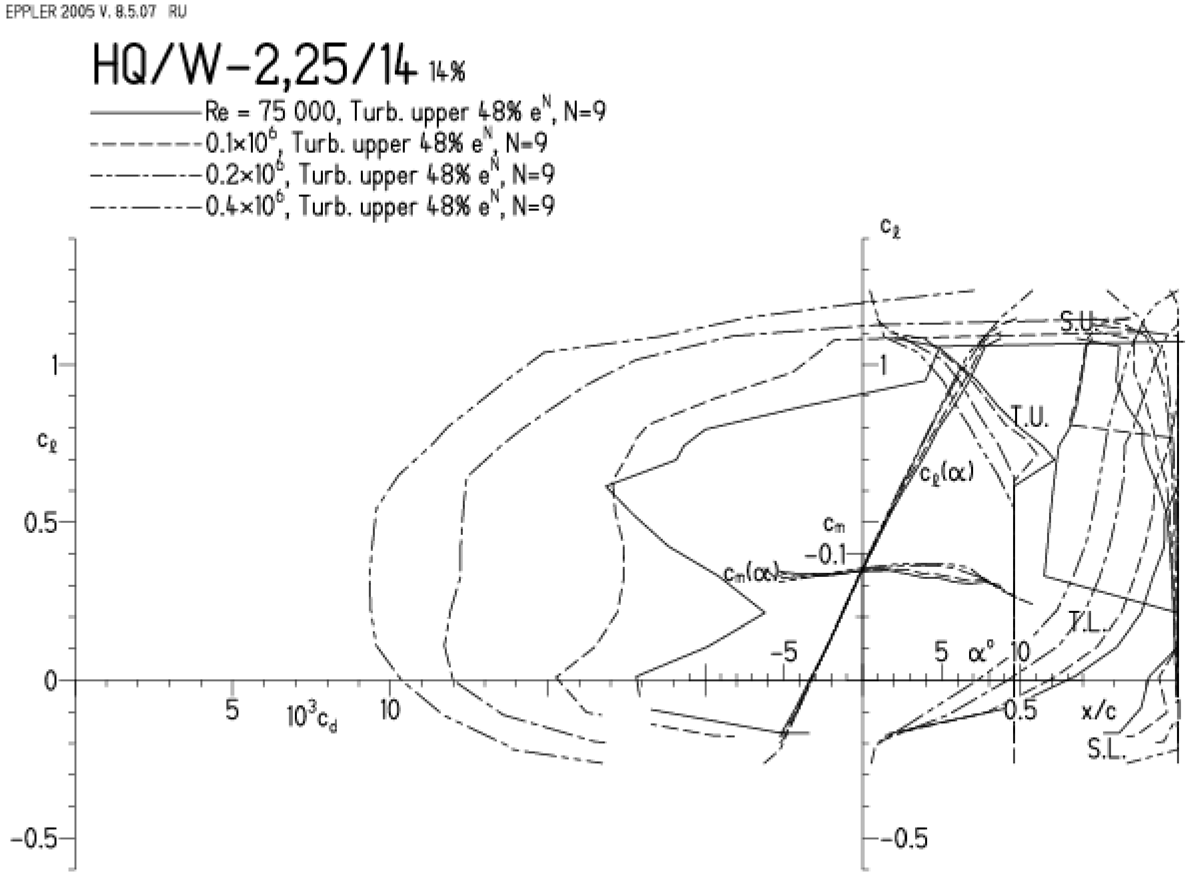
<u>HQ/W-2,25/14</u>, N=9





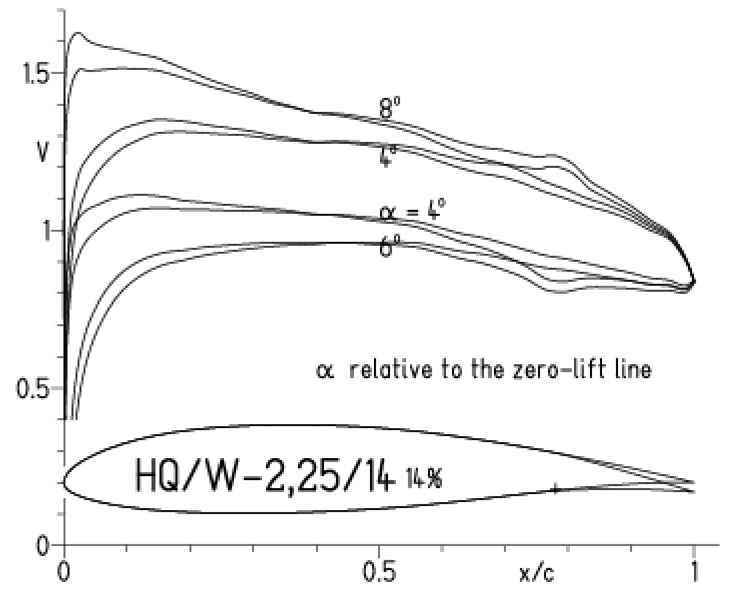
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



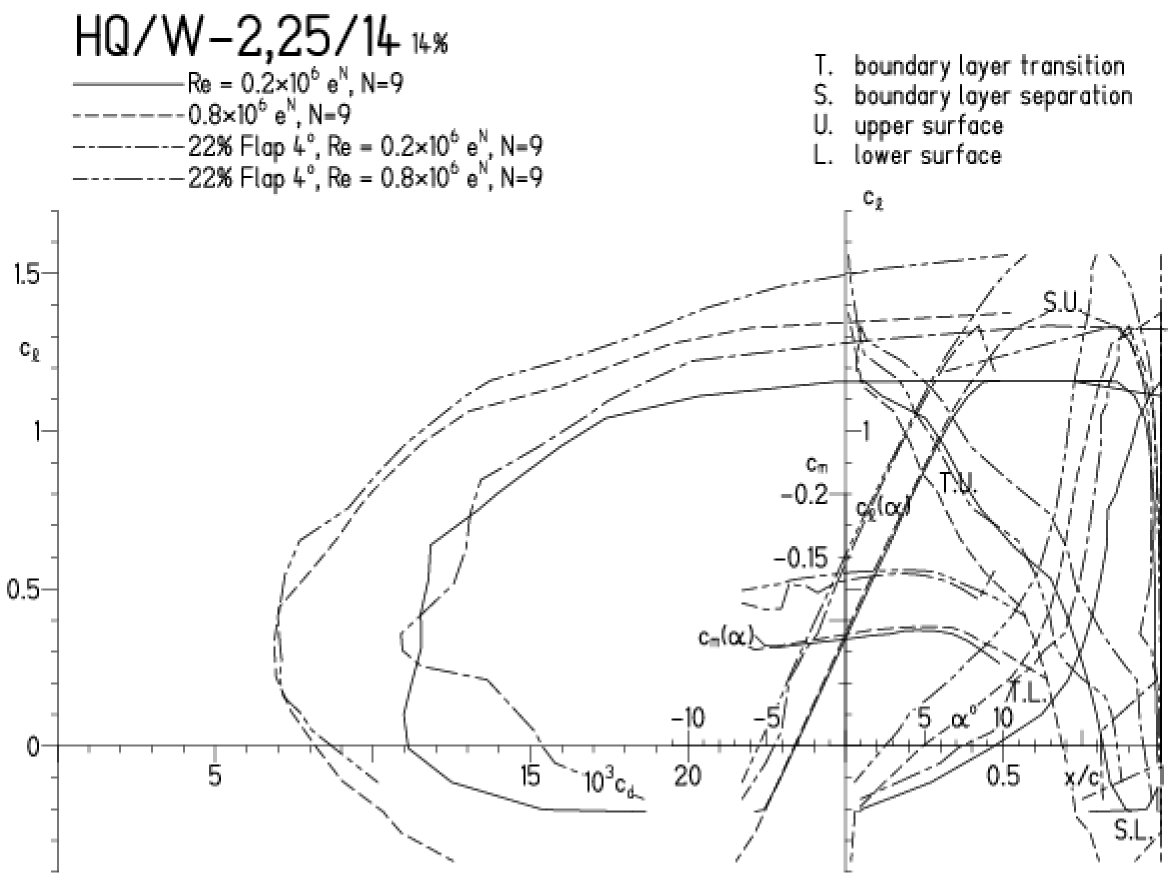


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

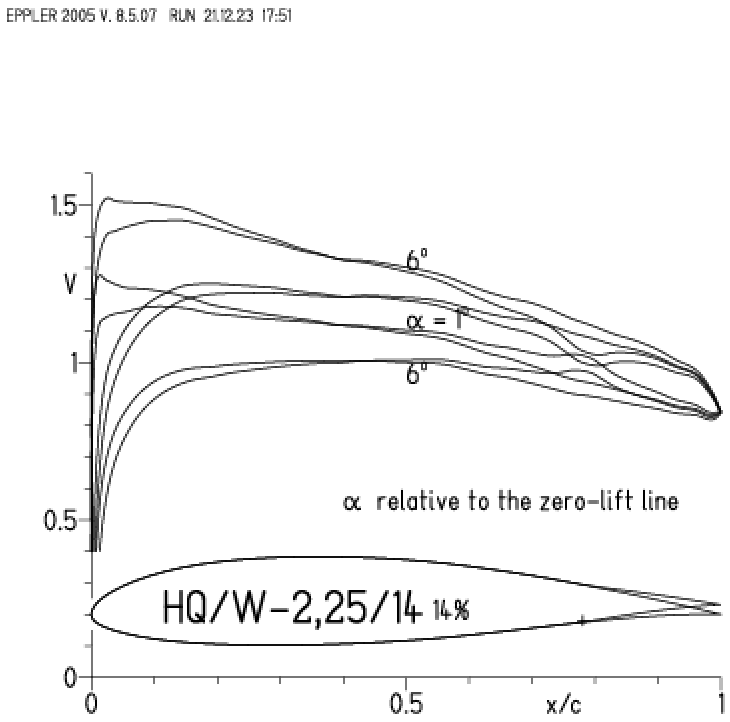
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

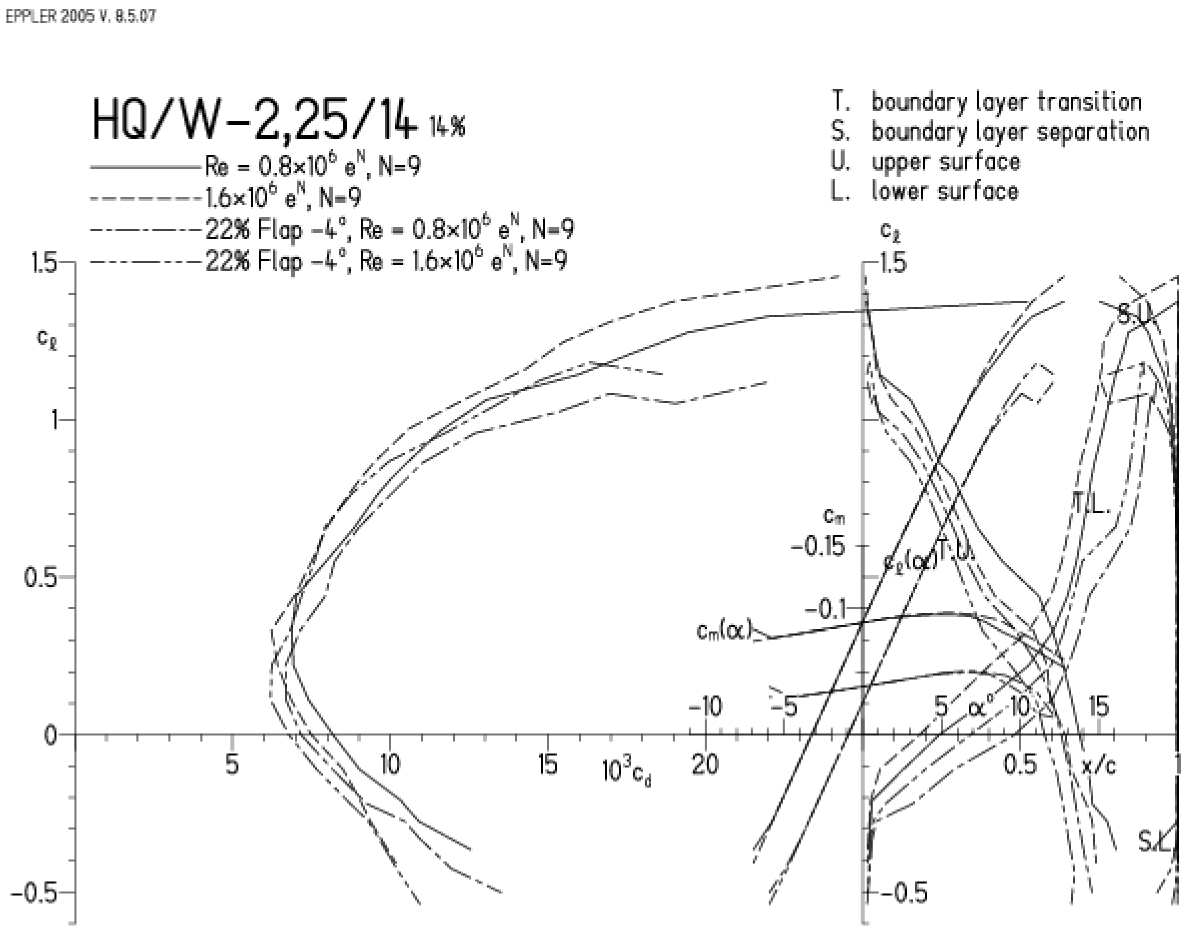


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

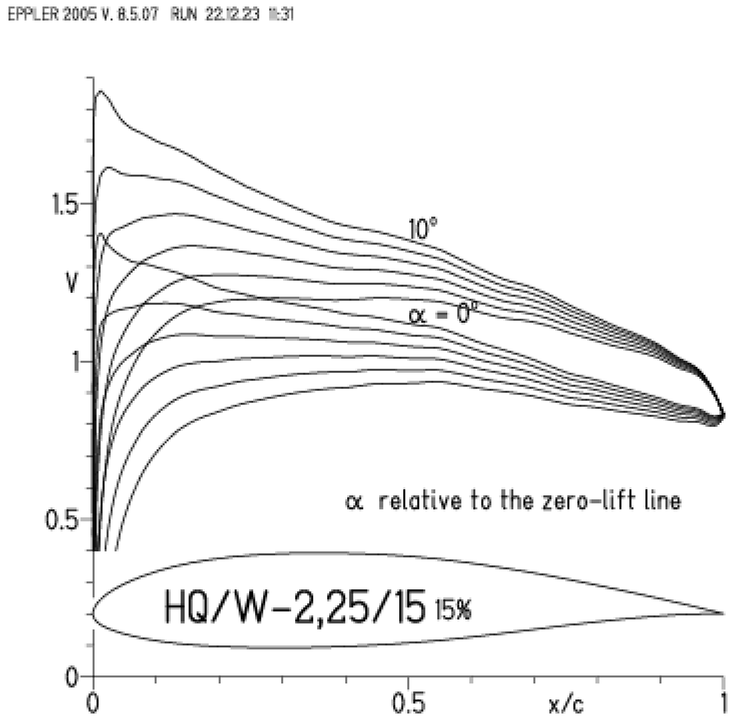


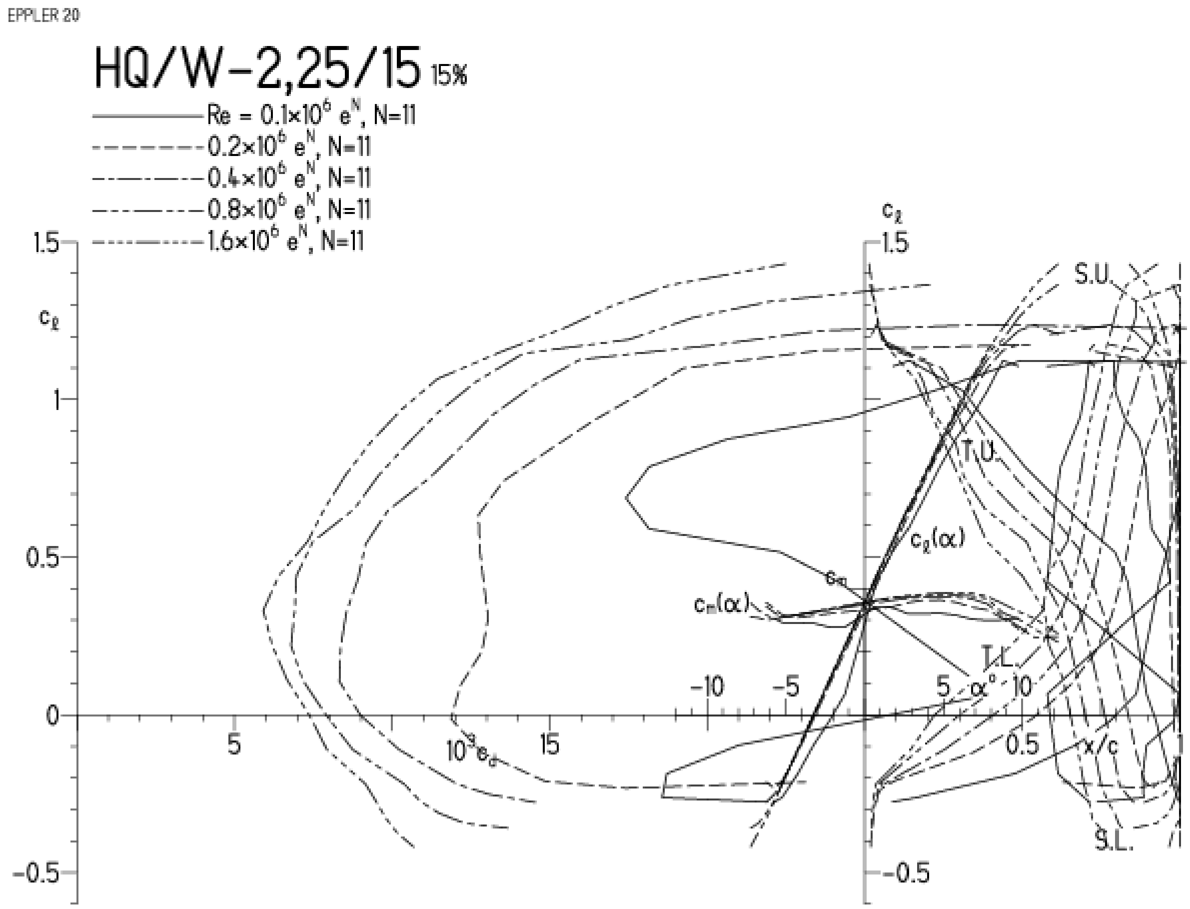
<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag



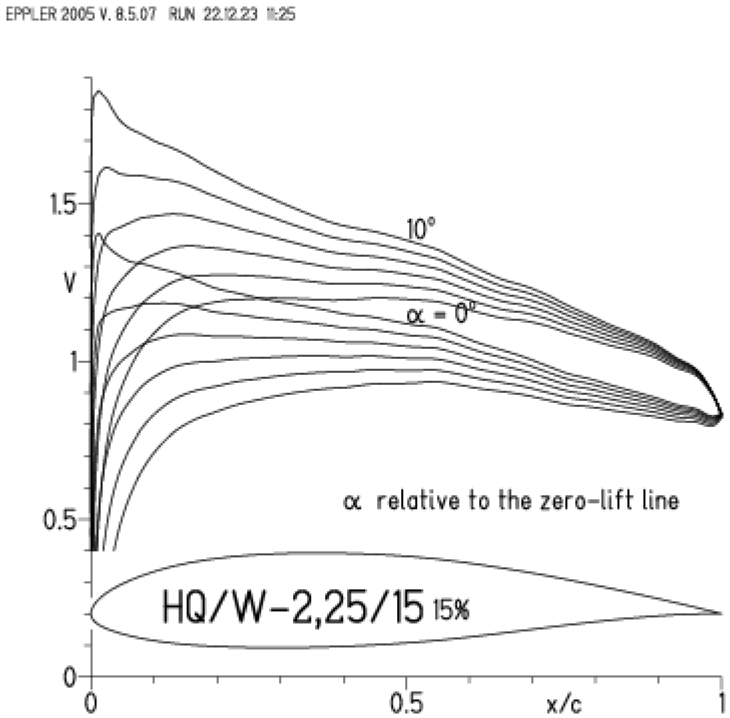


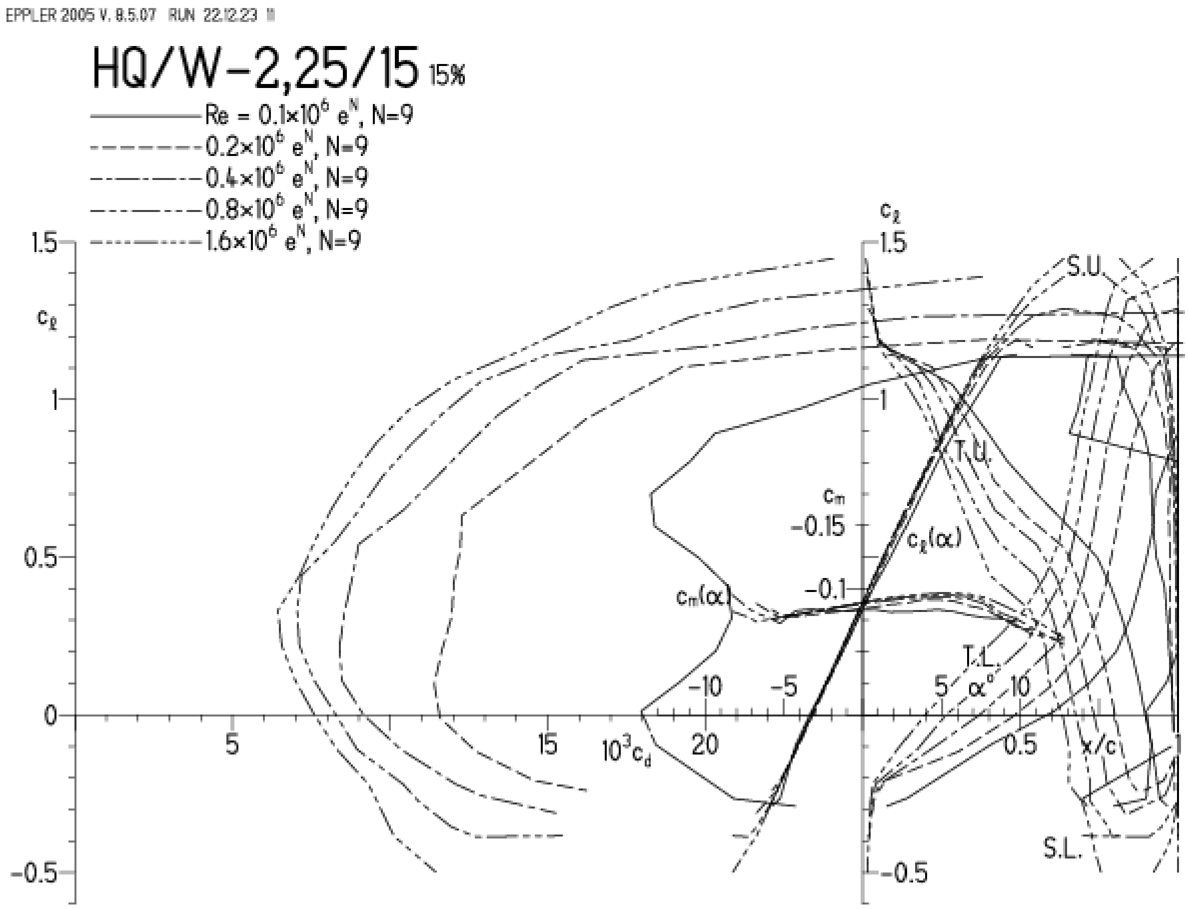
HQ/W-2,25/15, N=11



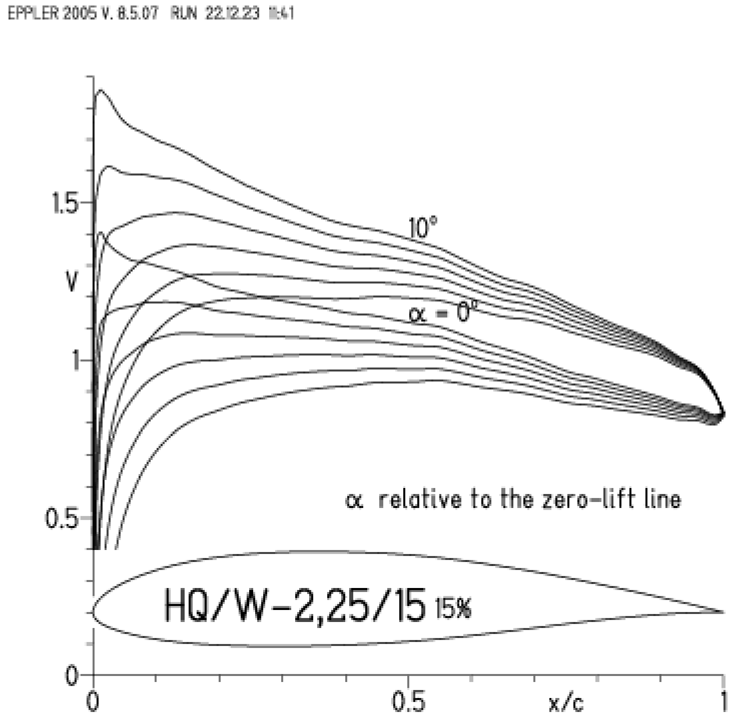


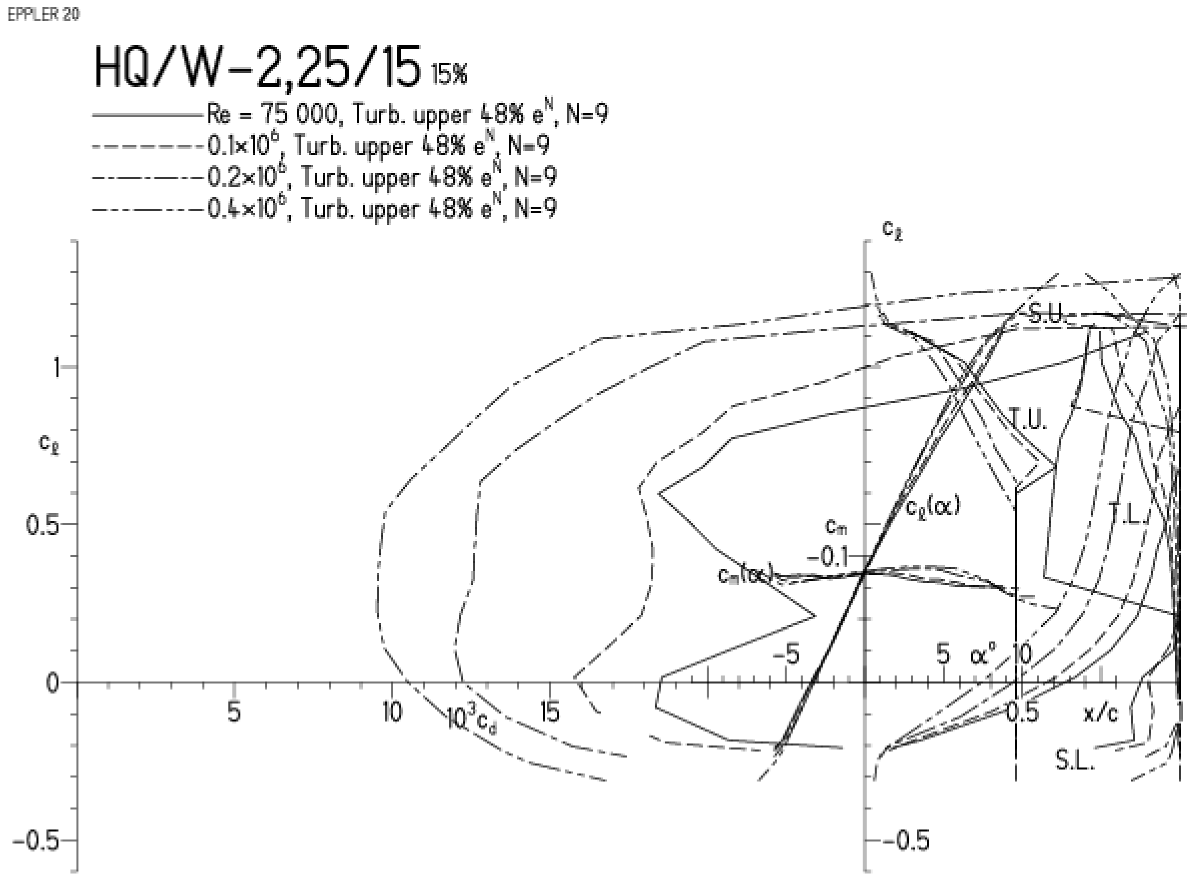
<u>HQ/W-2,25/15</u>, N=9





HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



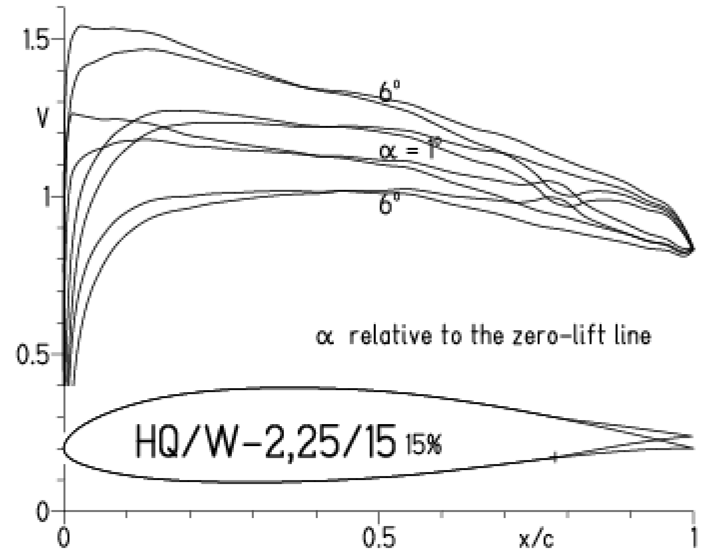


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

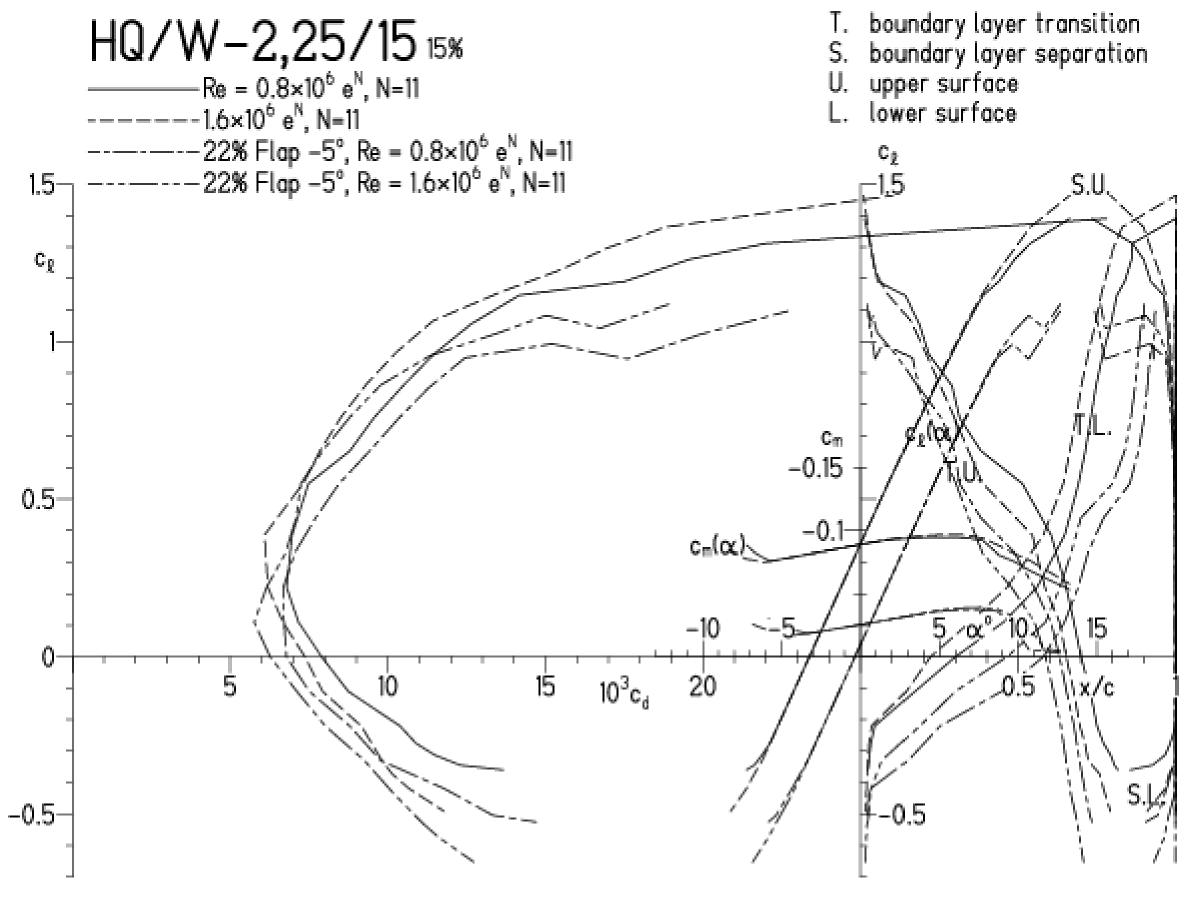
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

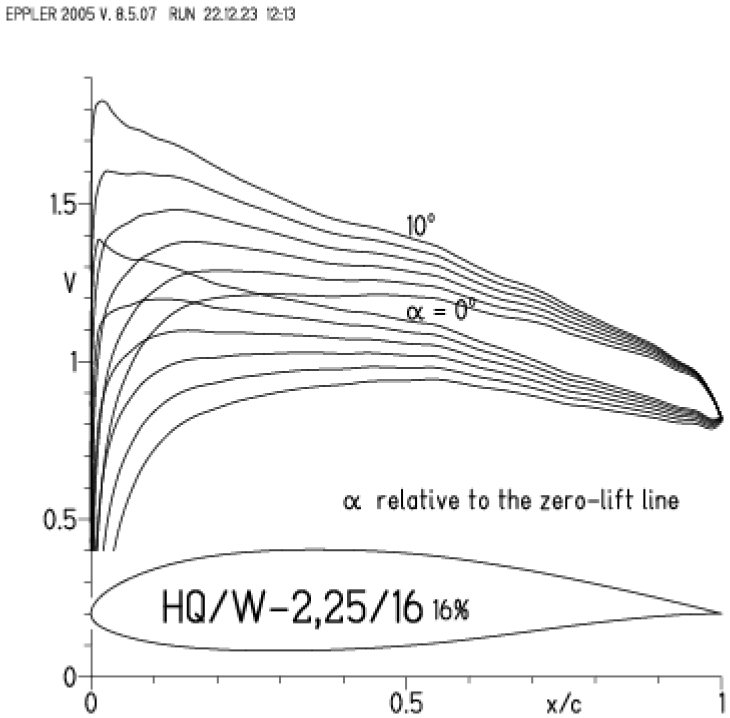
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

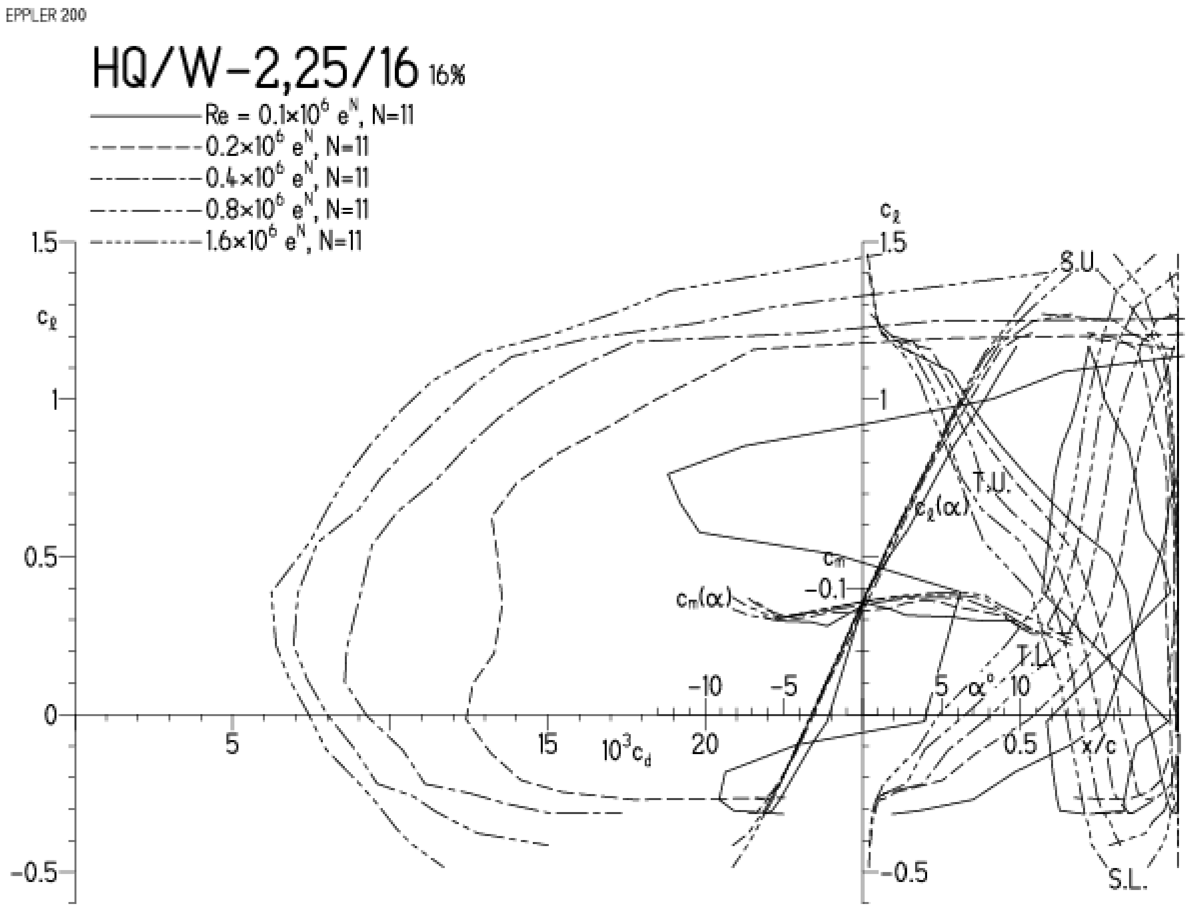


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

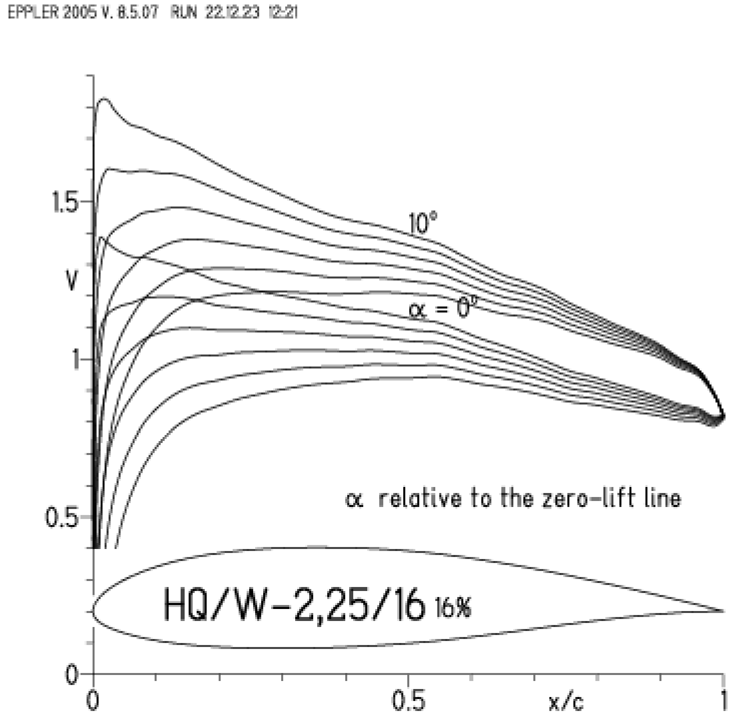


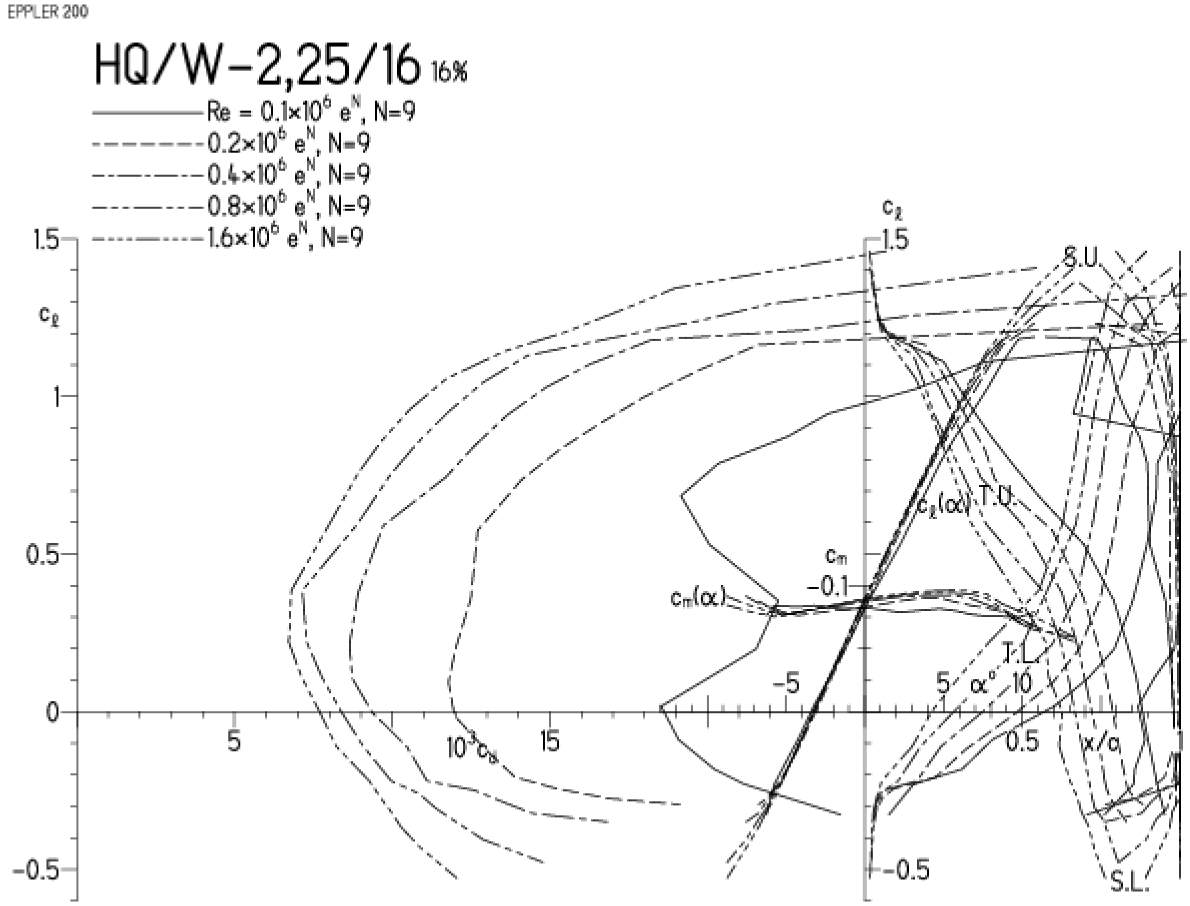
<u>HQ/W-2,25/16</u>, N=11



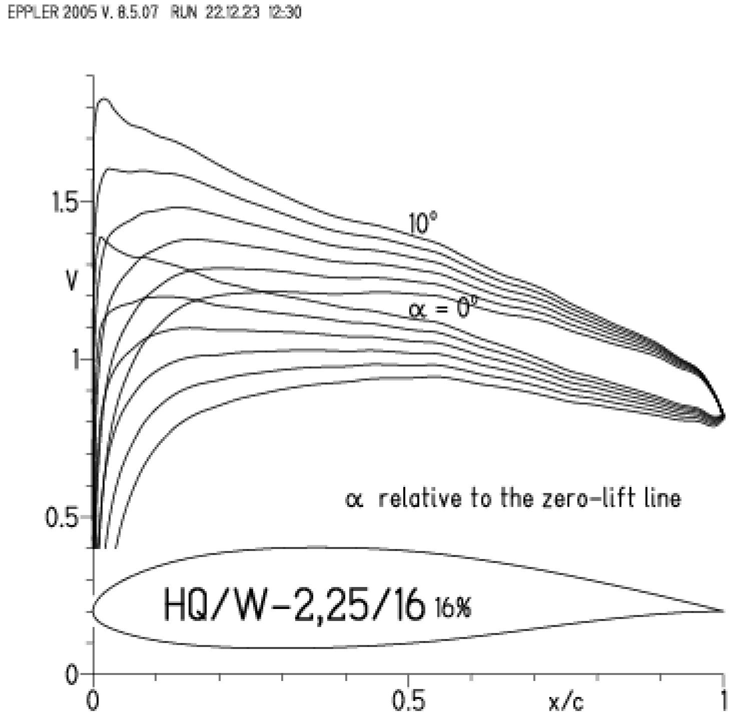


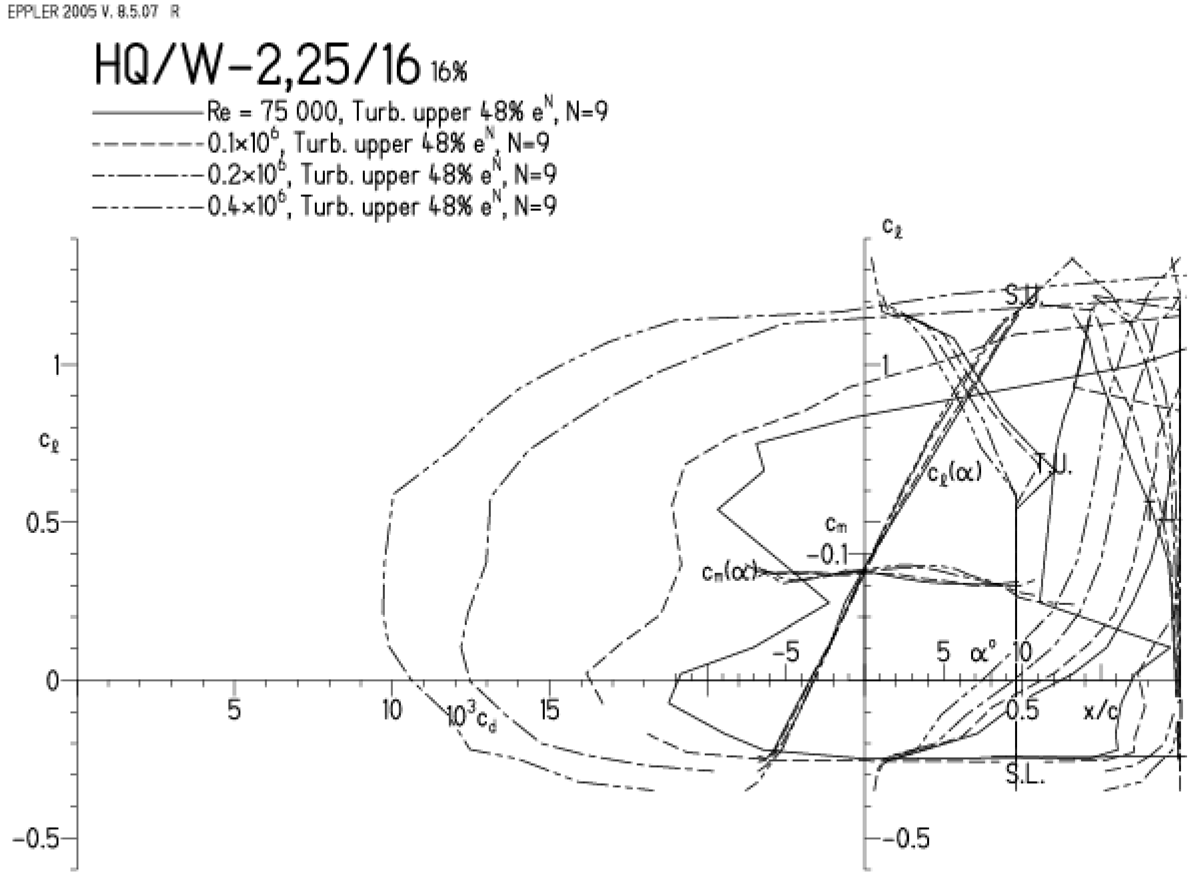
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
10^3 c_d
15
c_l
1.5
S.U.
c_l(α)
T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



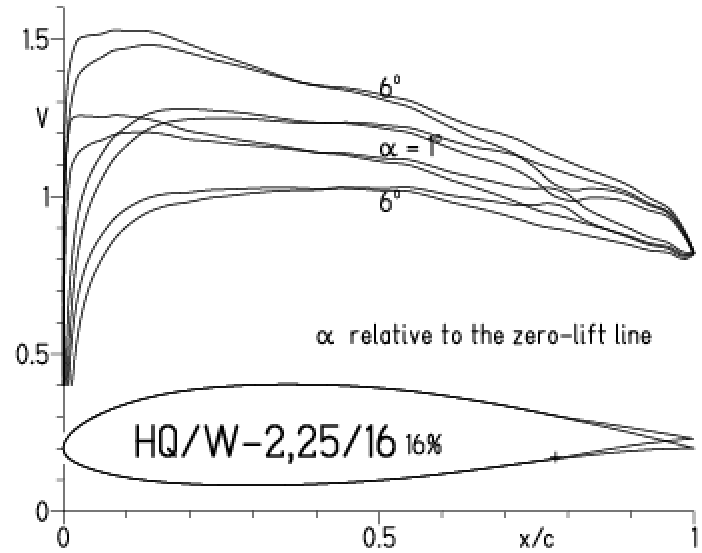


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

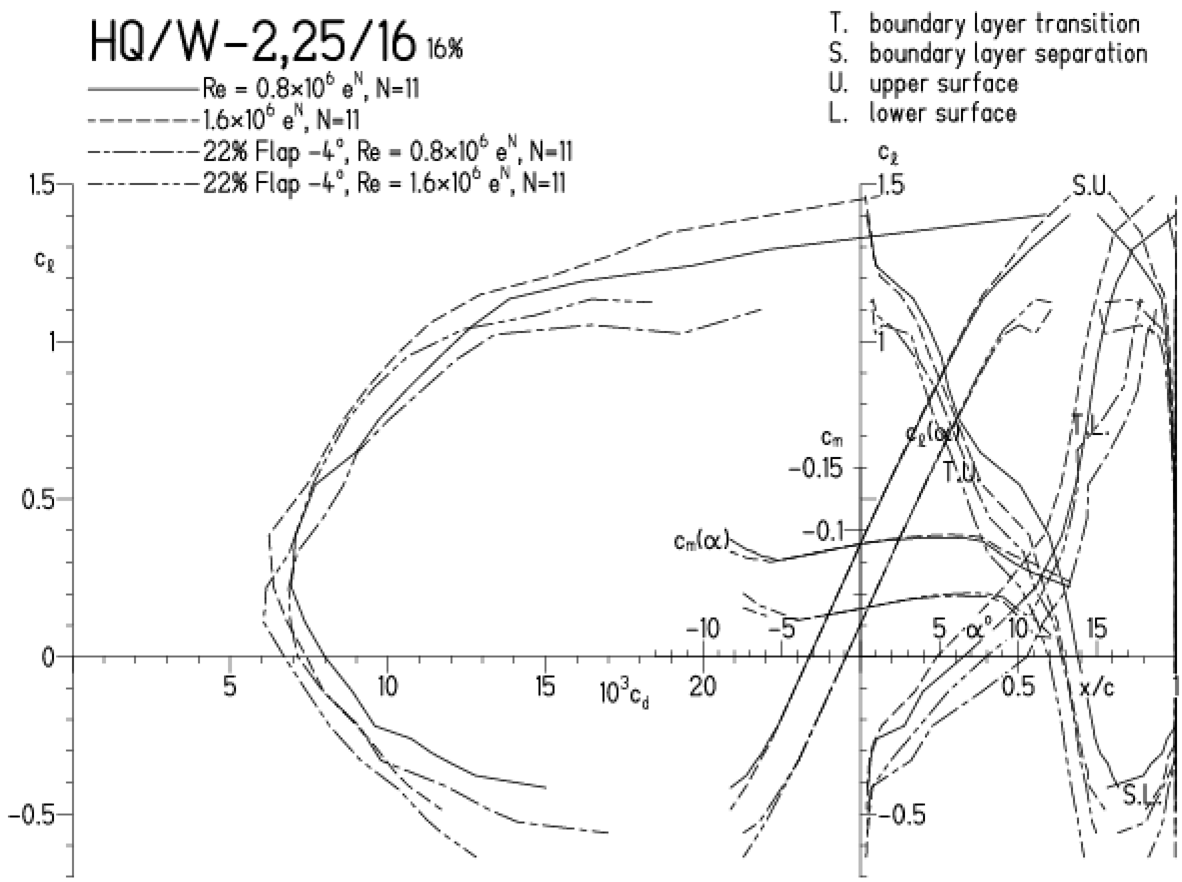
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

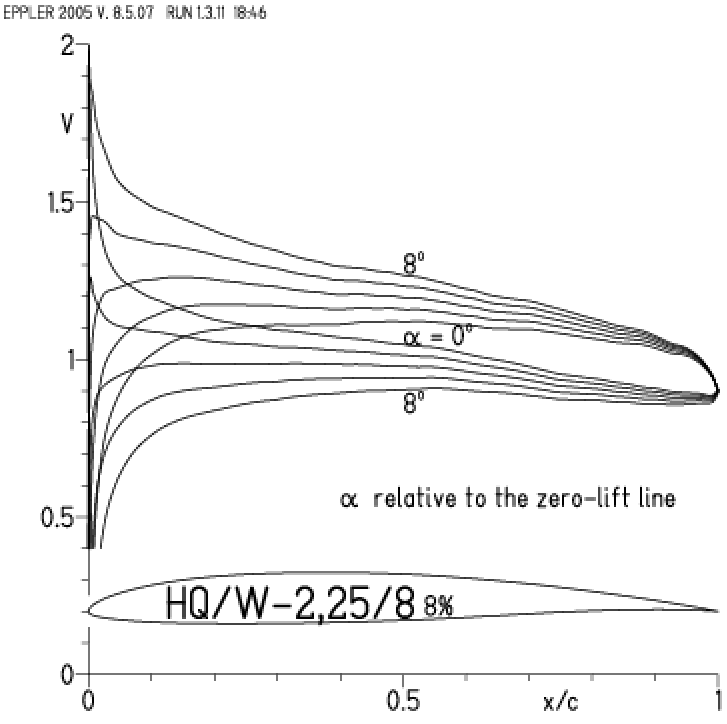
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

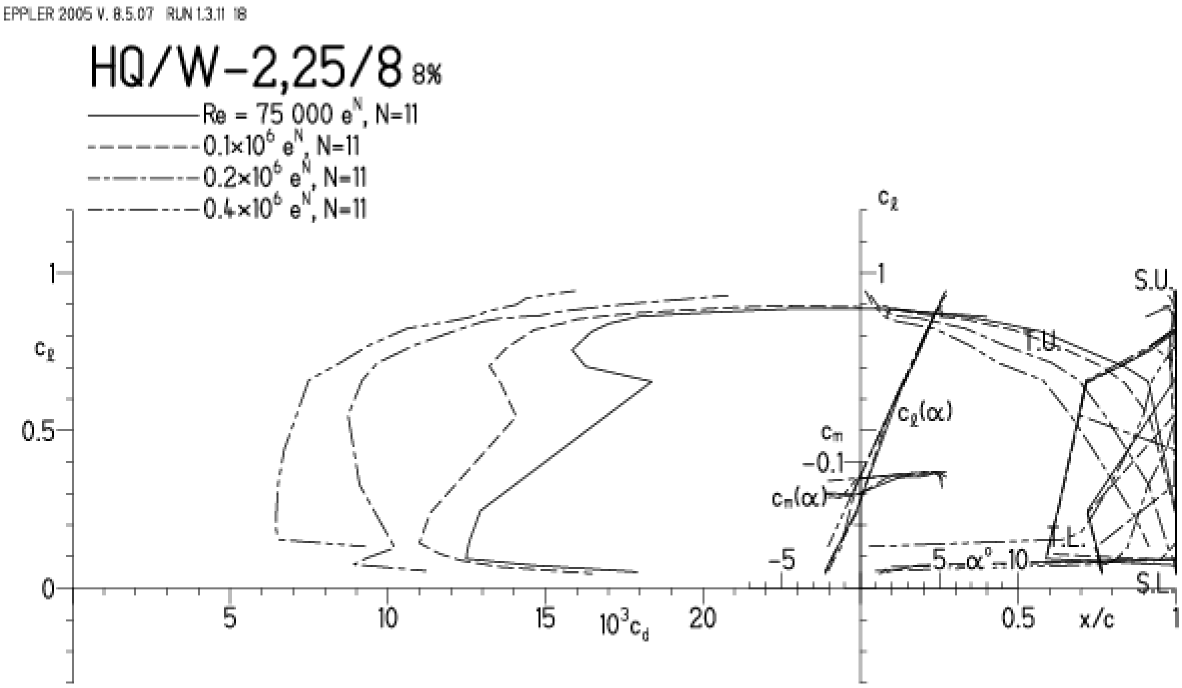


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

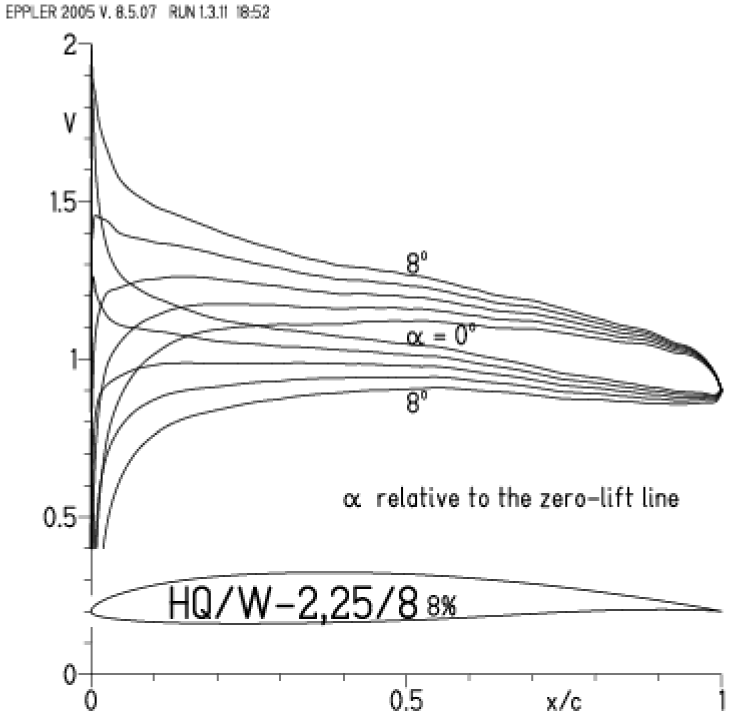


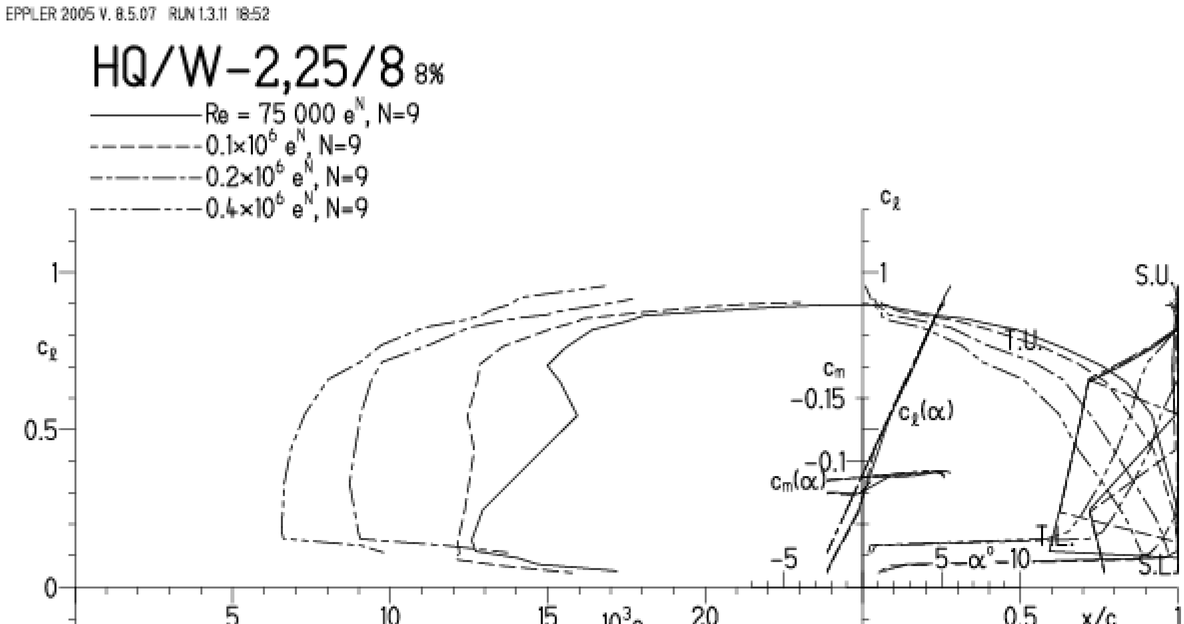
<u>HQ/W-2,25/8</u>, N=11



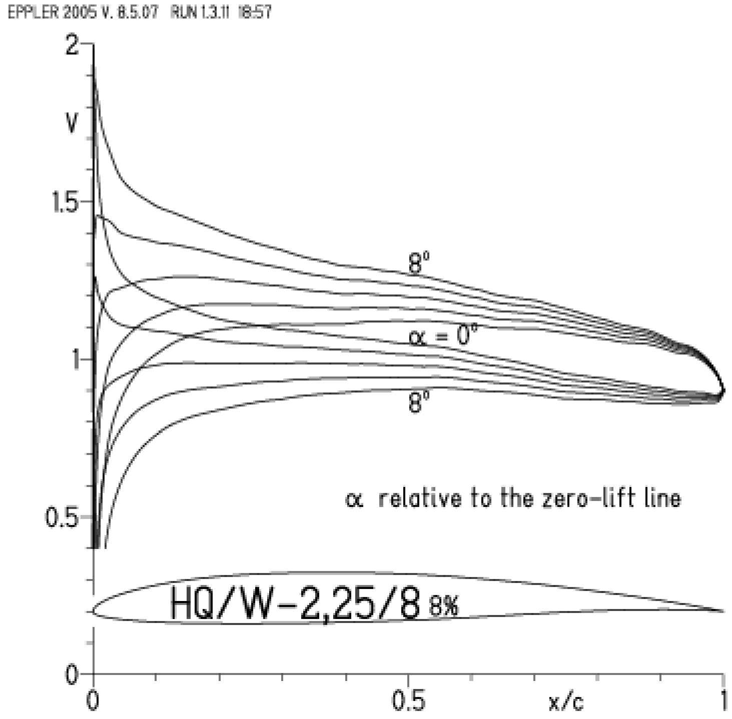


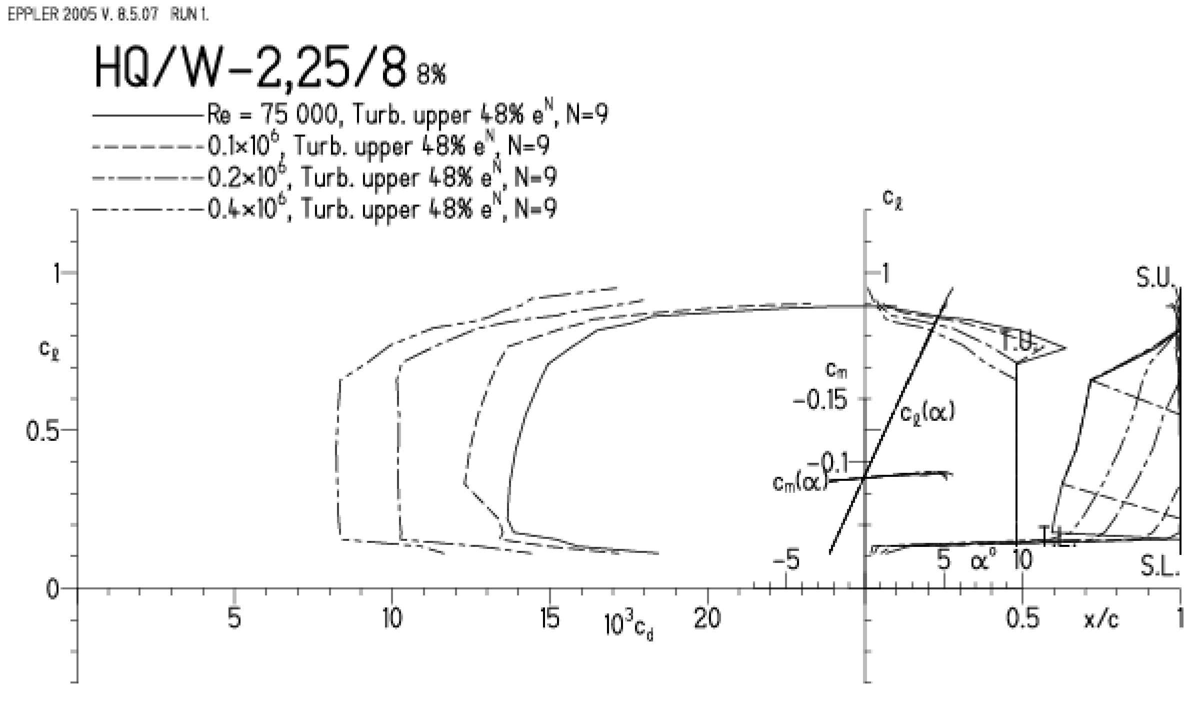
<u>HQ/W-2,25/8</u>, N=9



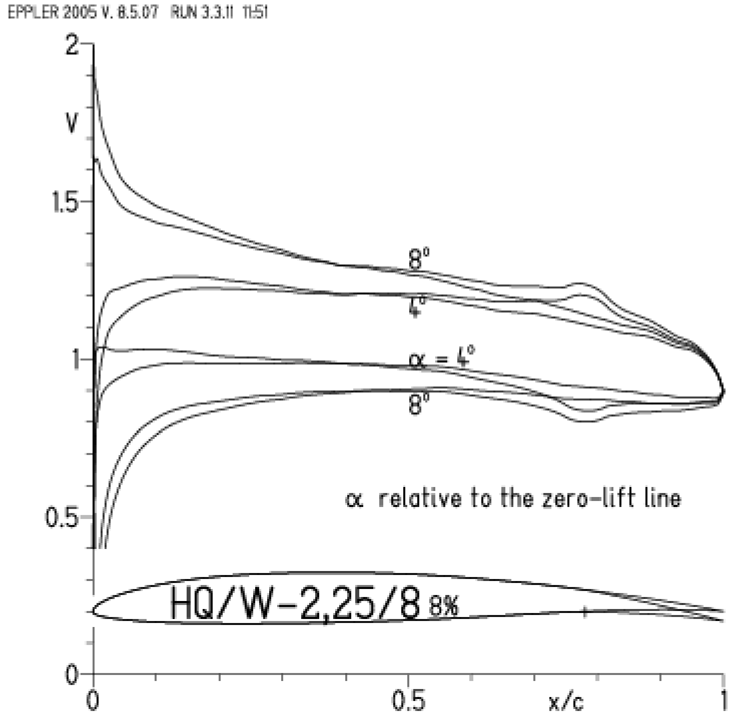


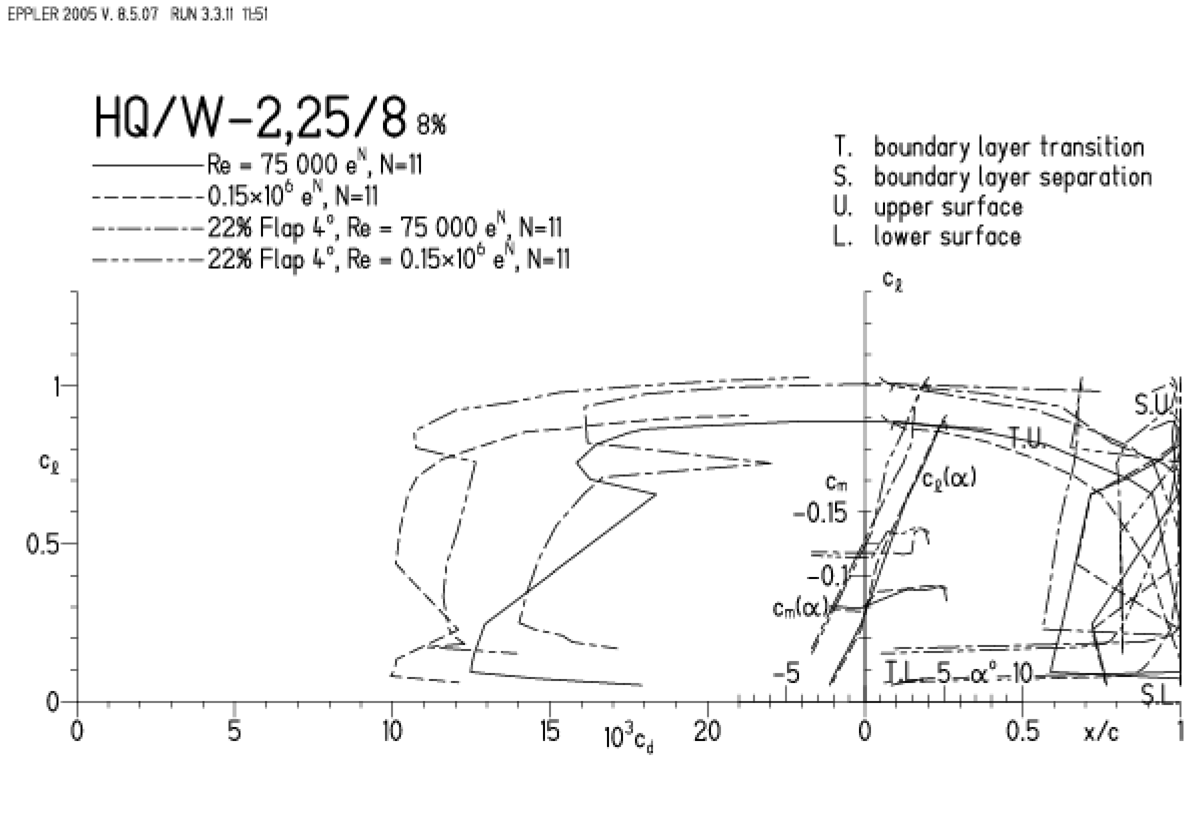
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



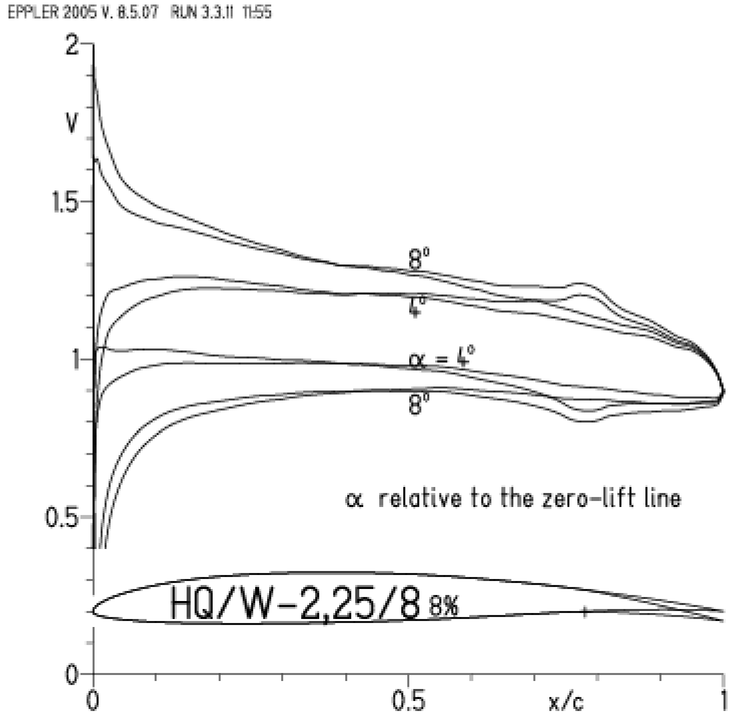


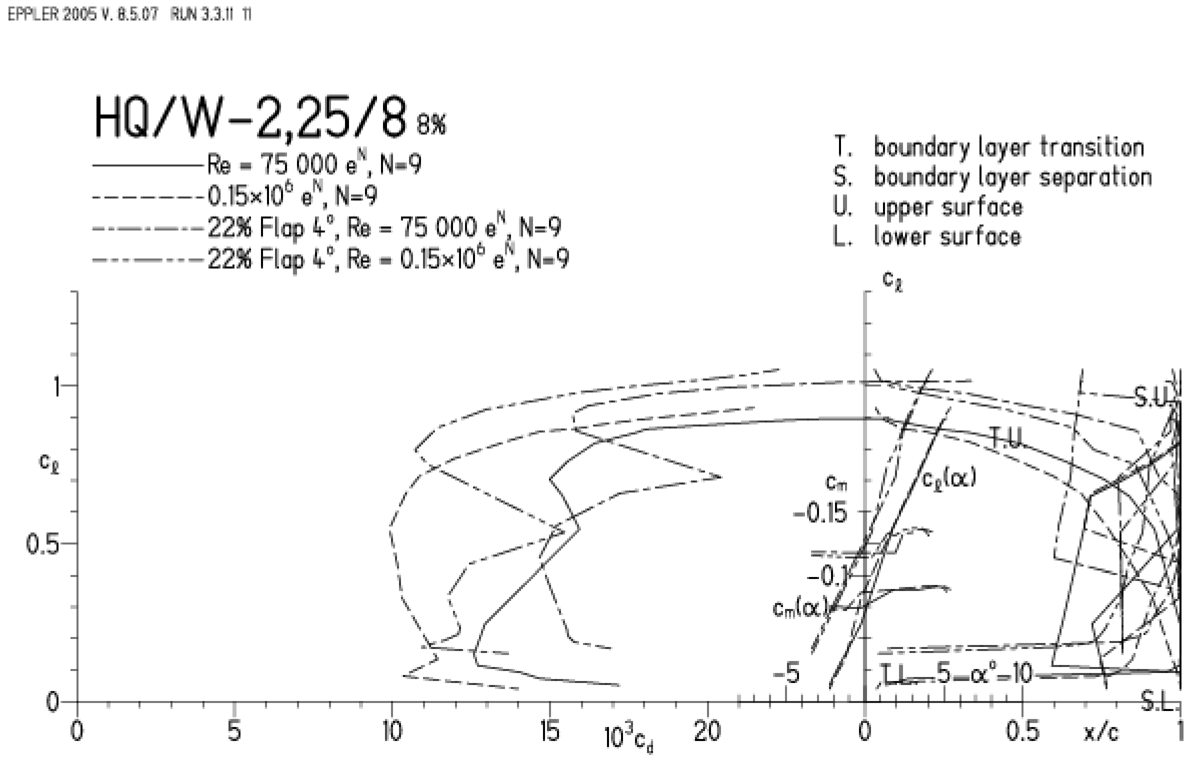
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



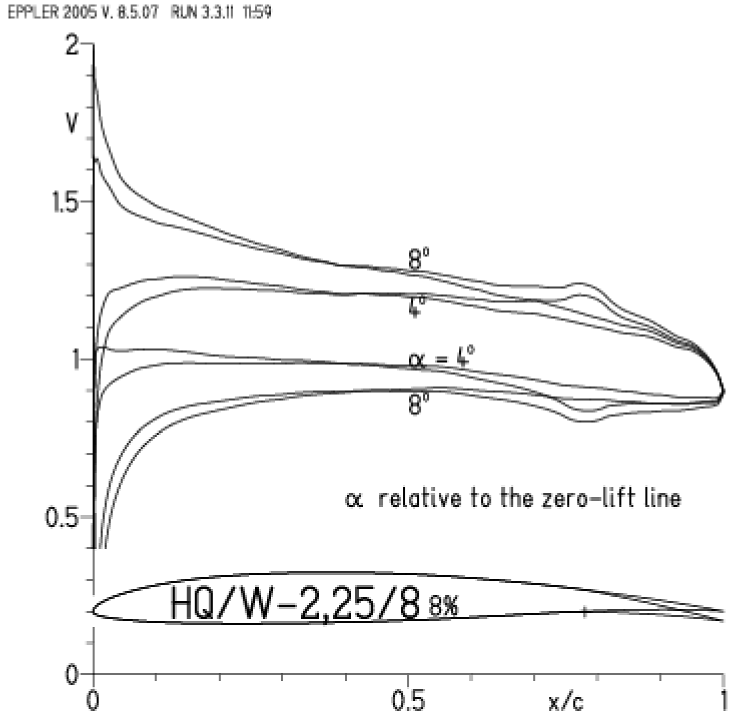


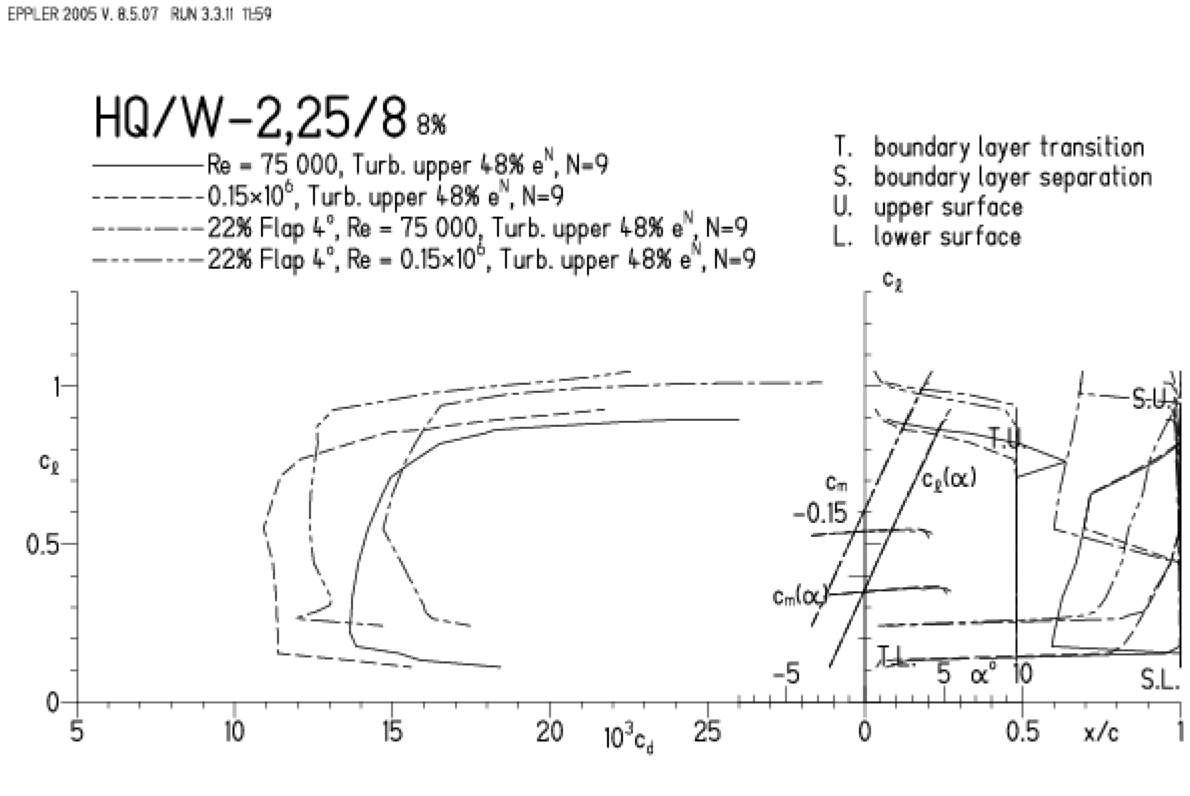
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





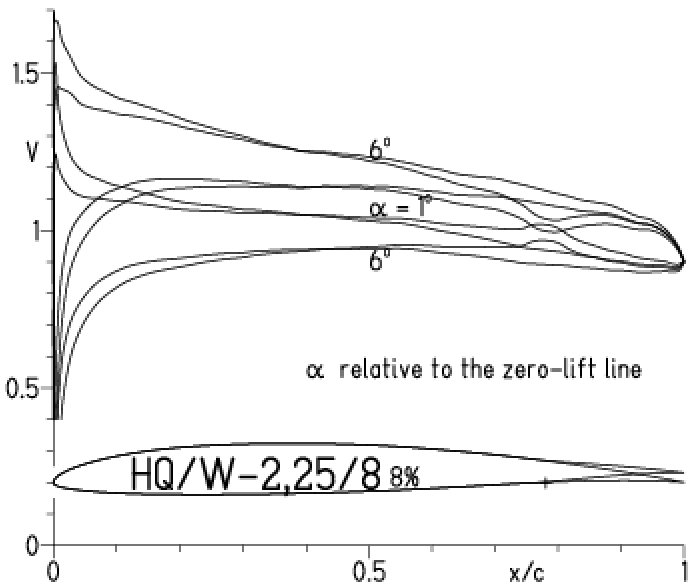
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



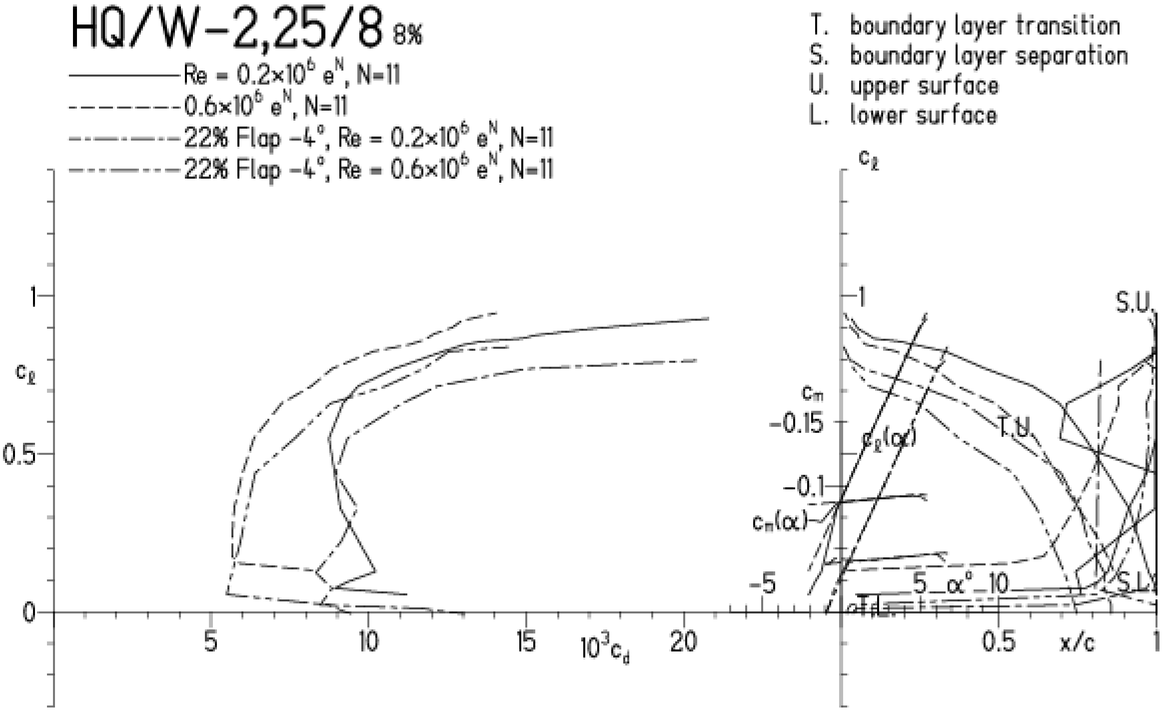


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07   RUN 3.3.11 12:23

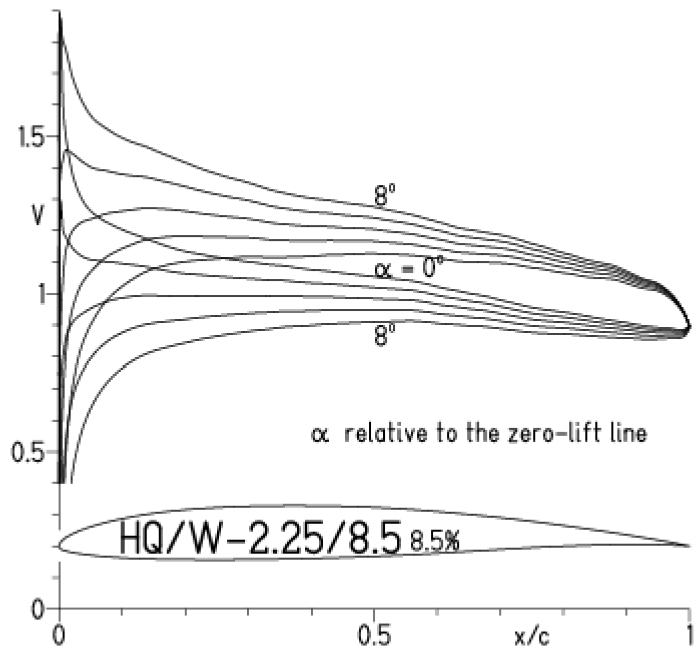


EPPLER 2005 V. 8.5.07   RUN 3.3.11 1

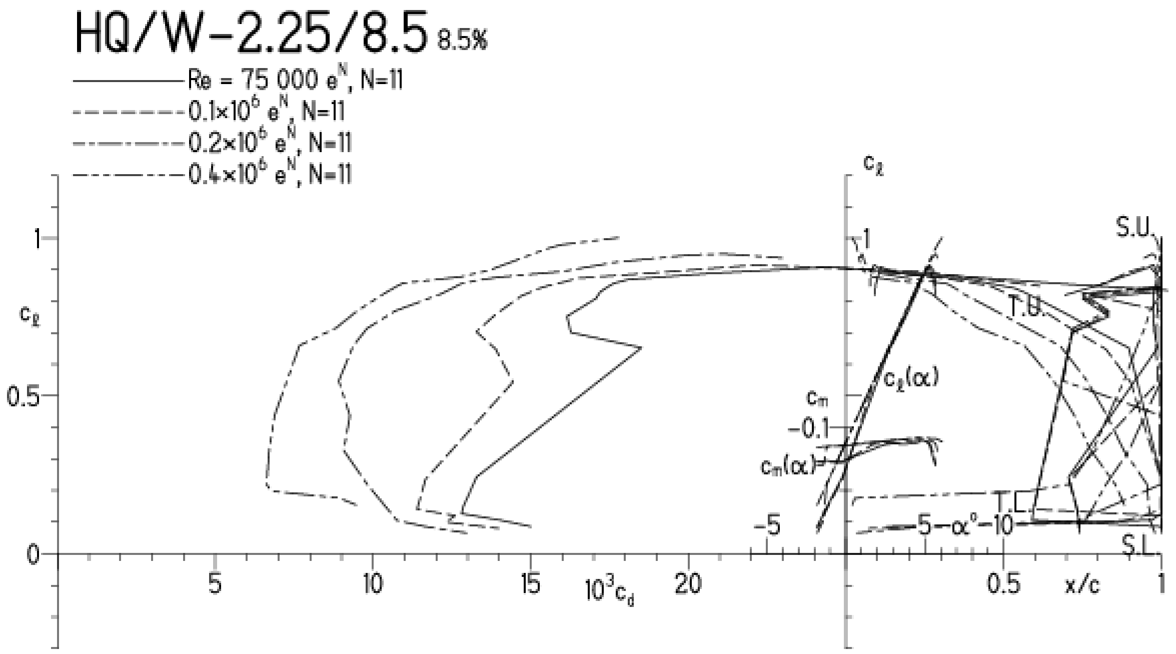


HQ/W-2,25/8,5, N=11

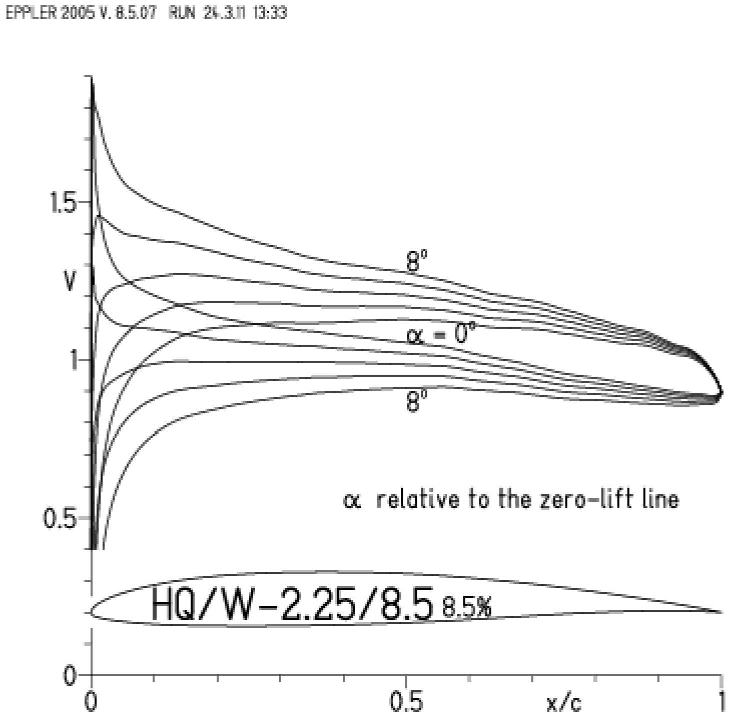
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

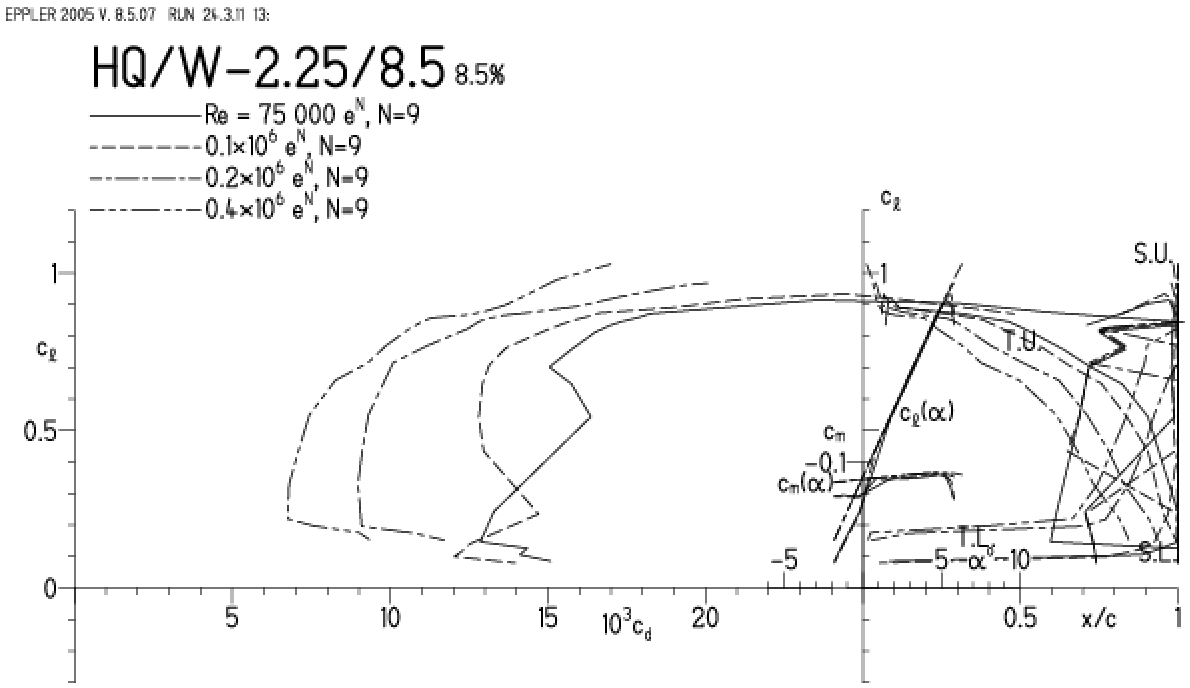


EPPLER 2005 V

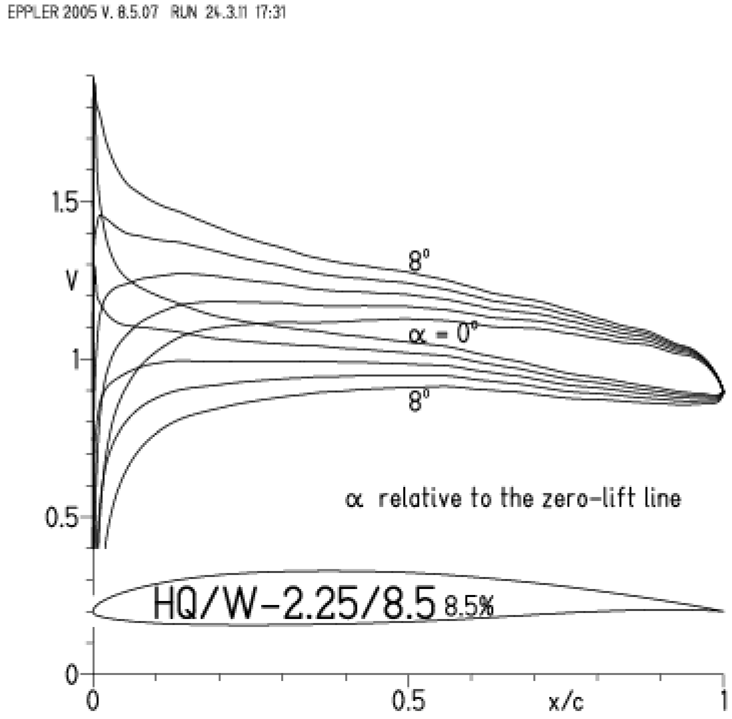


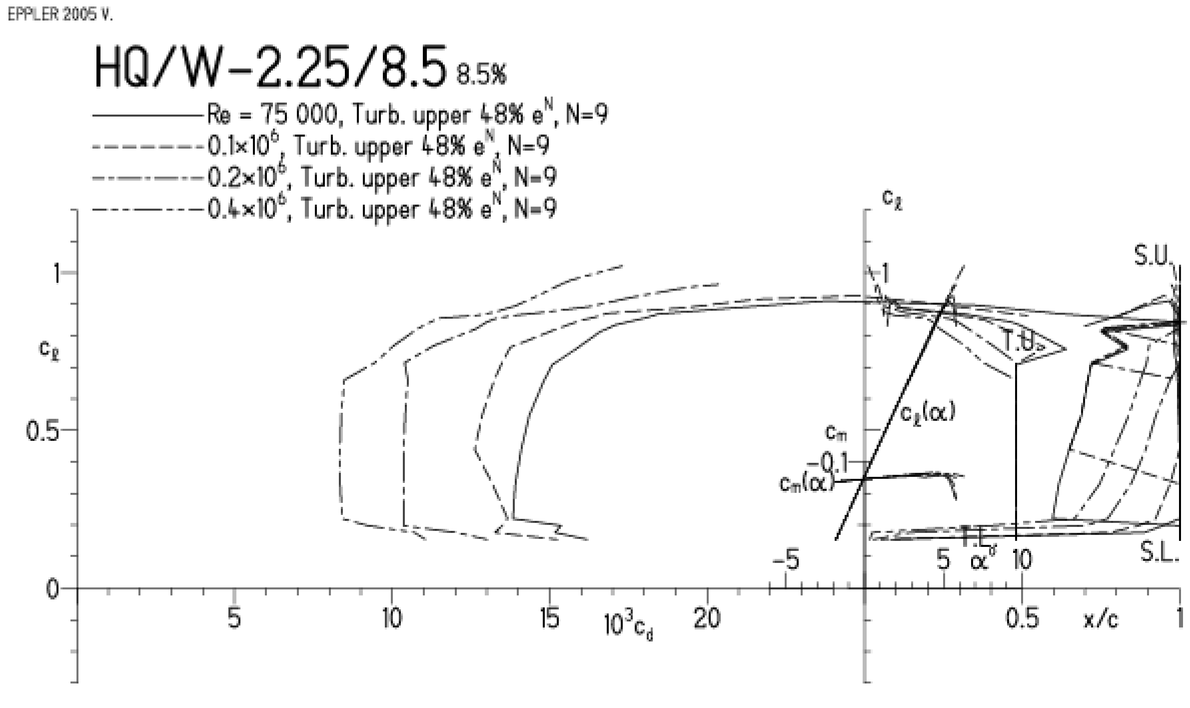
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

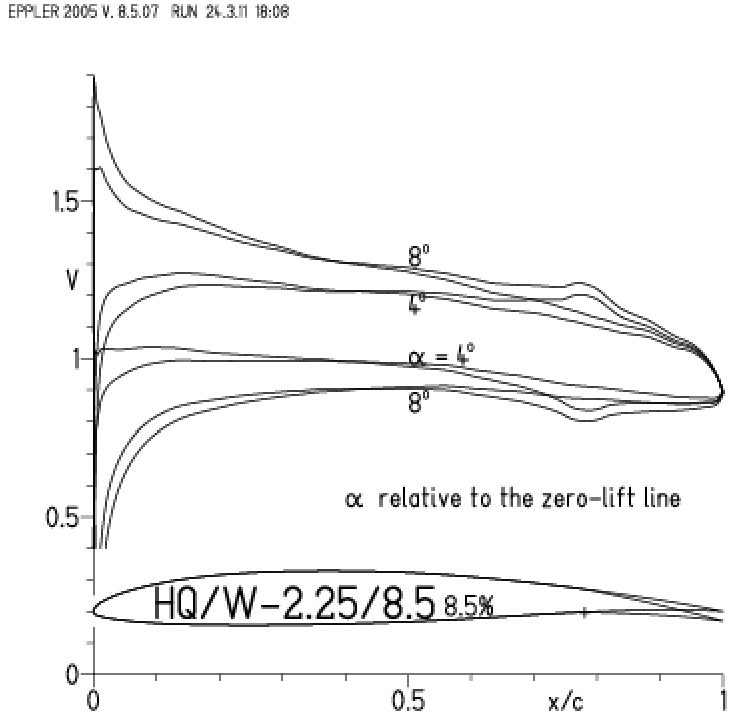

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
−0.1
c_m(α)
−5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

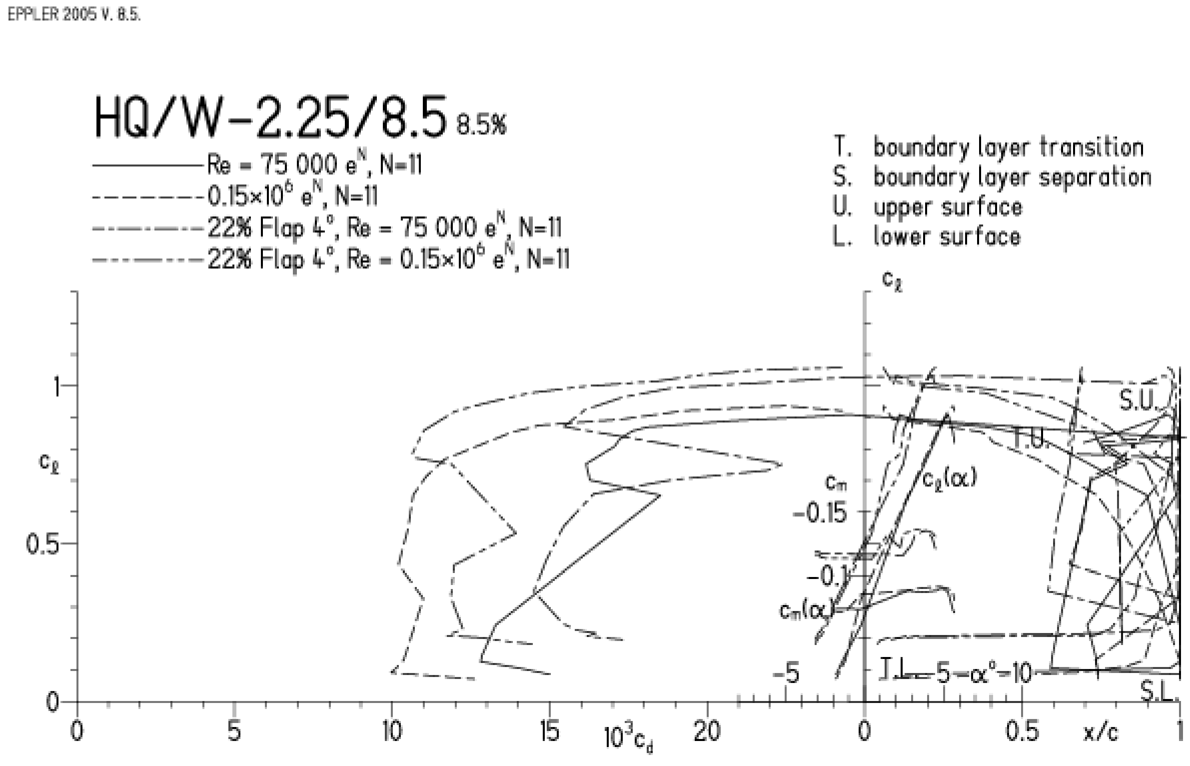
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



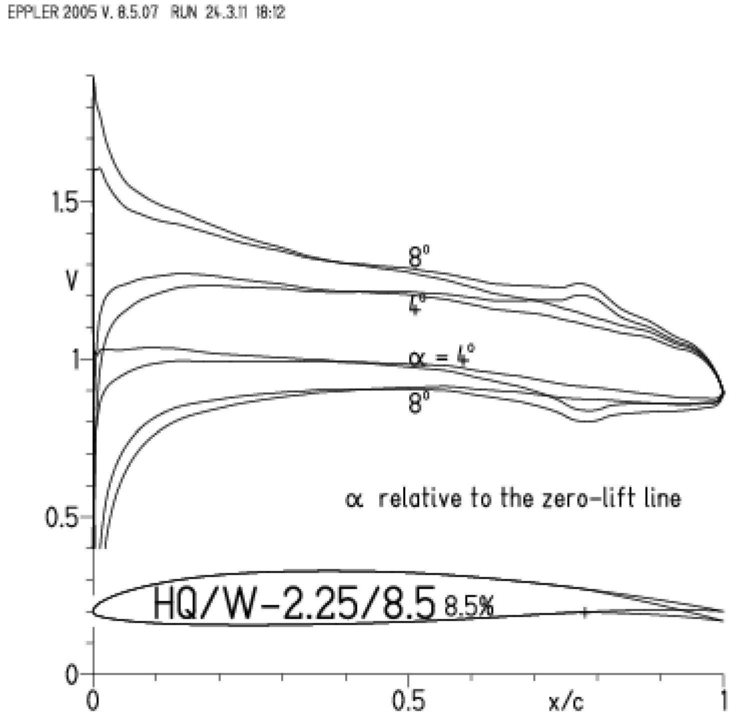


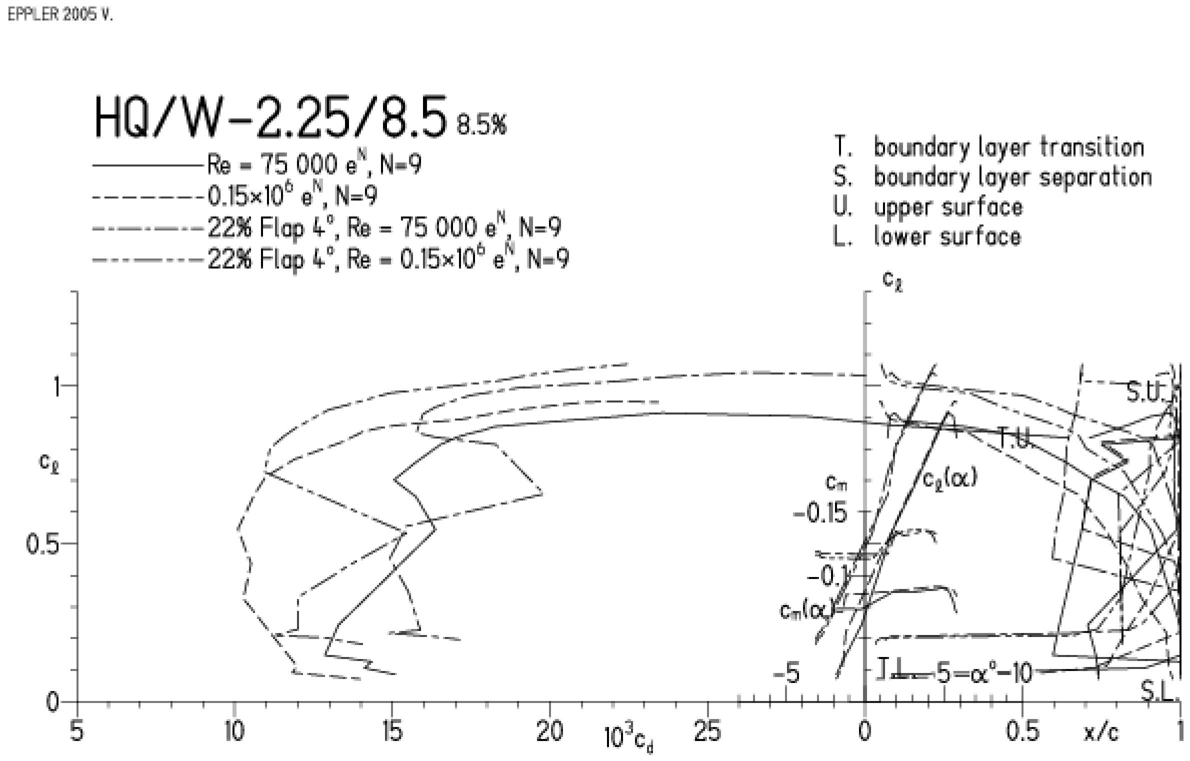
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag





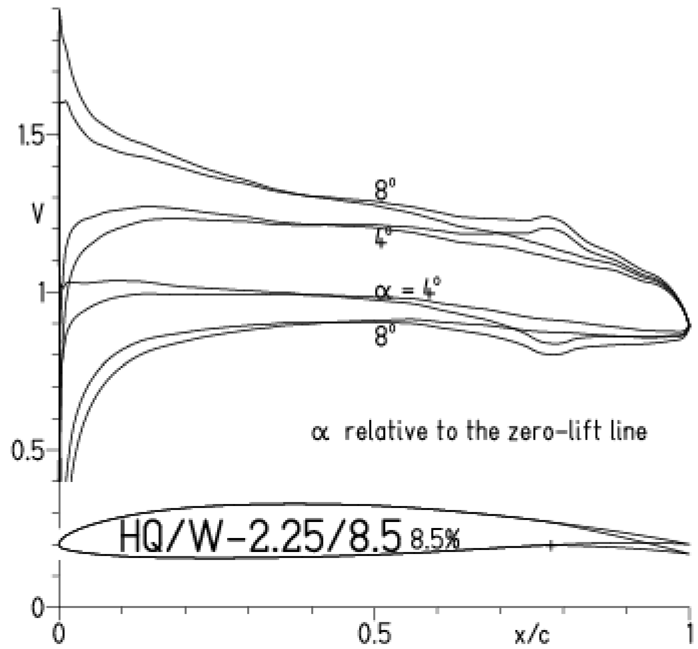
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



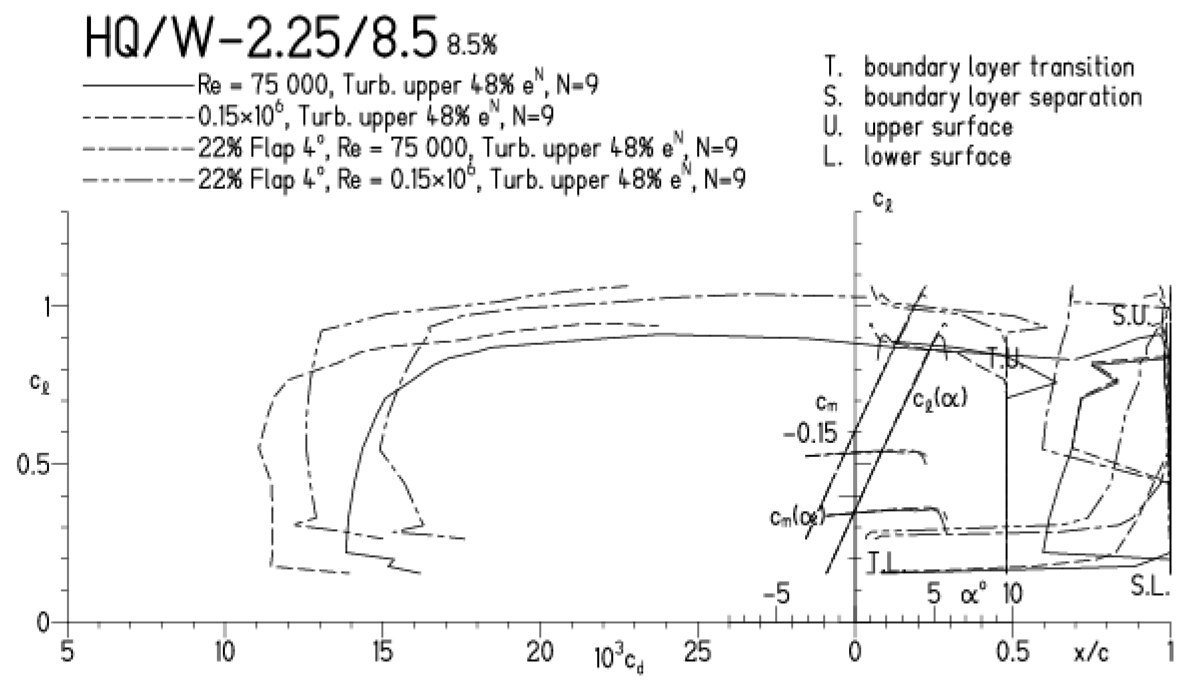


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

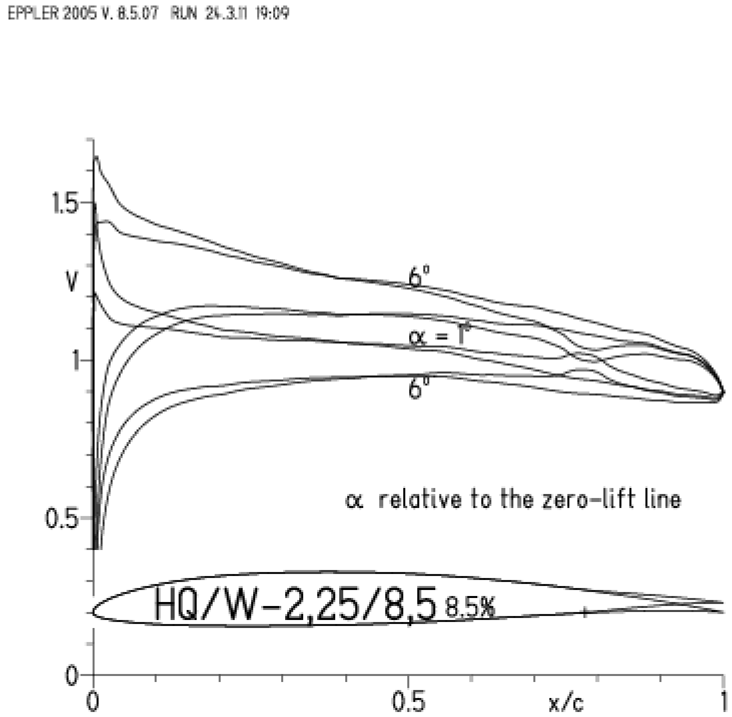
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

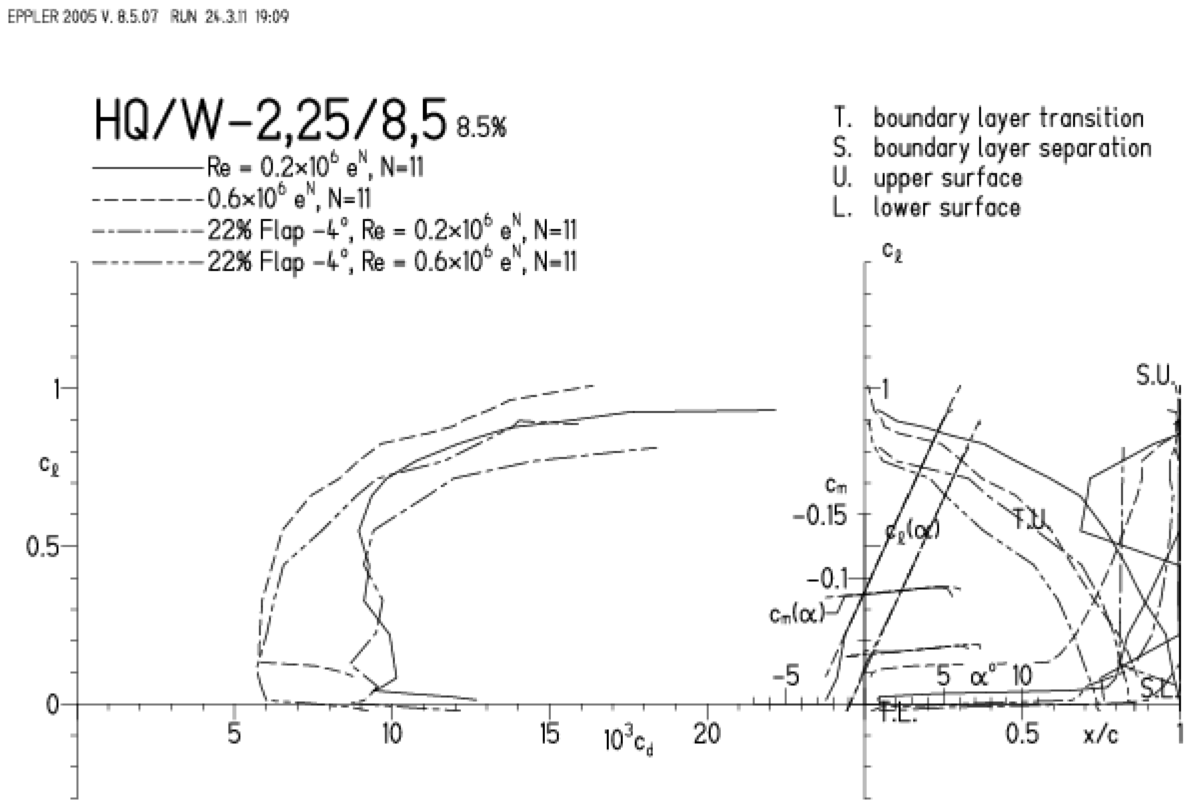


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

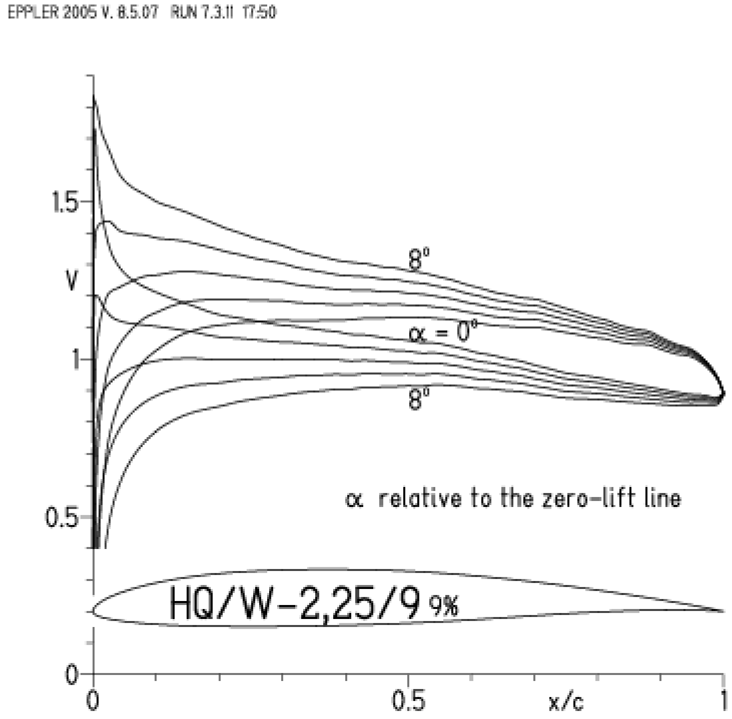


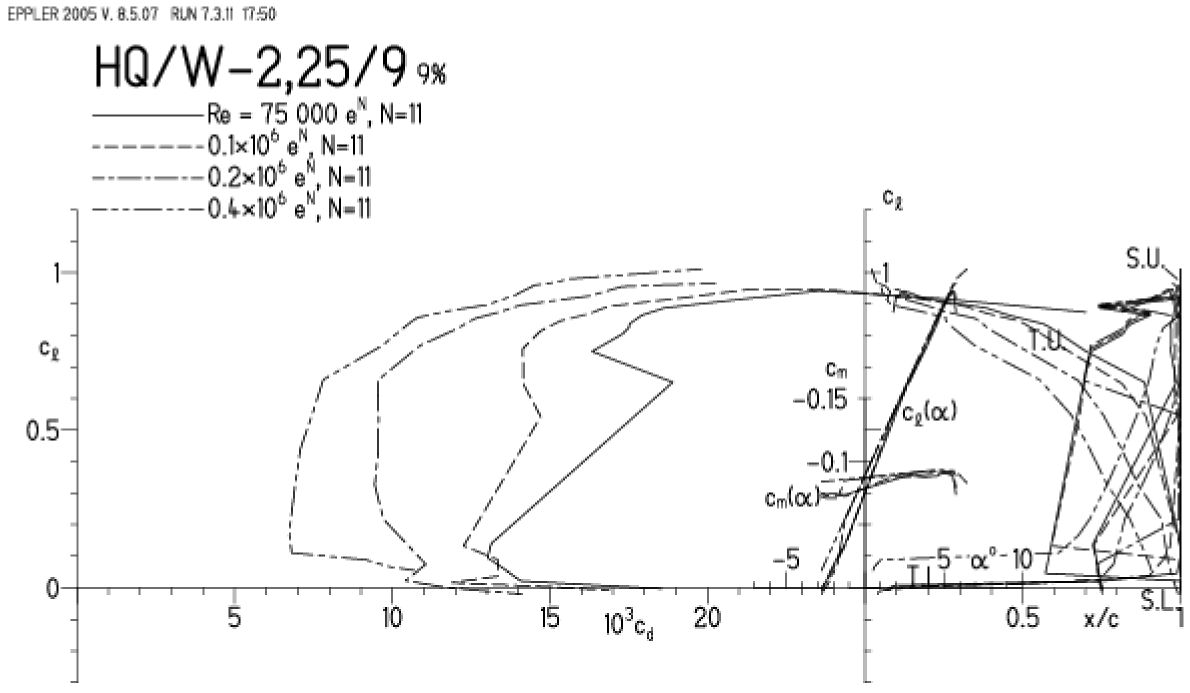
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





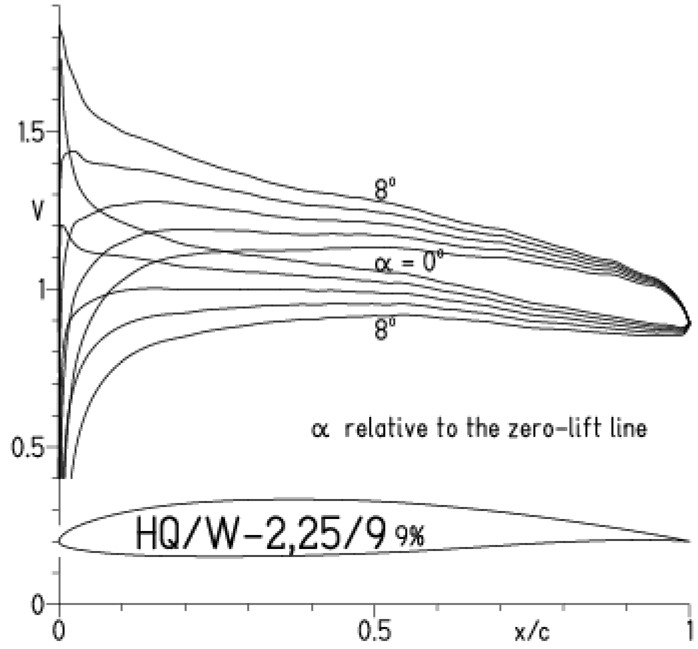
<u>HQ/W-2,25/9</u>, N=11



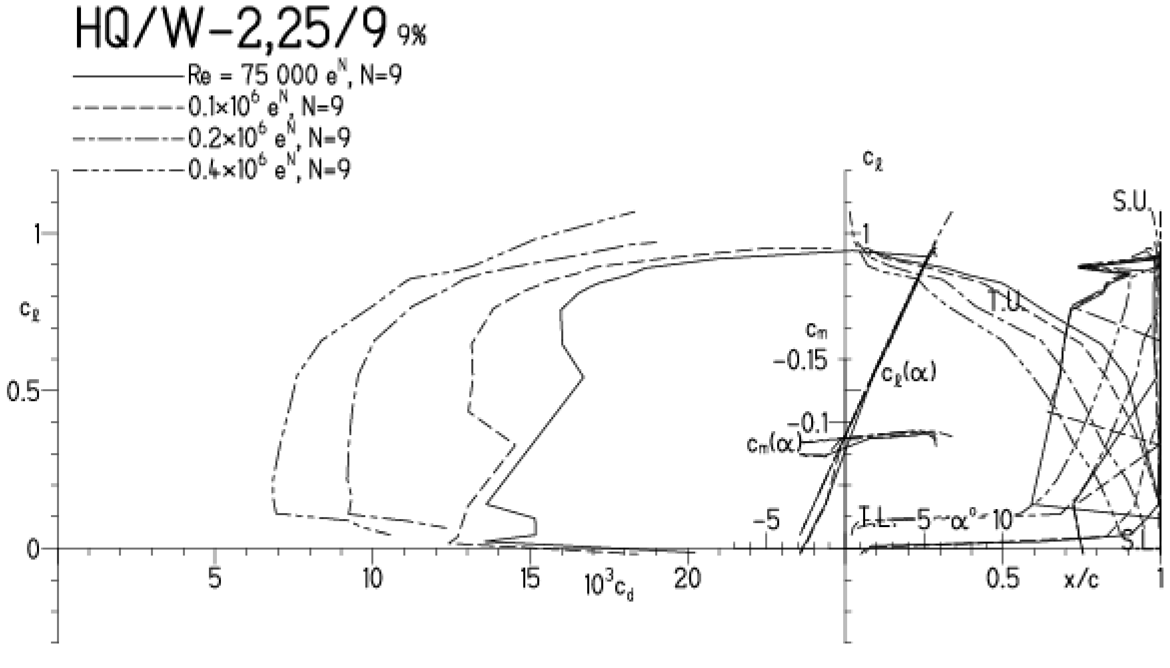


HQ/W-2,25/9, N=9

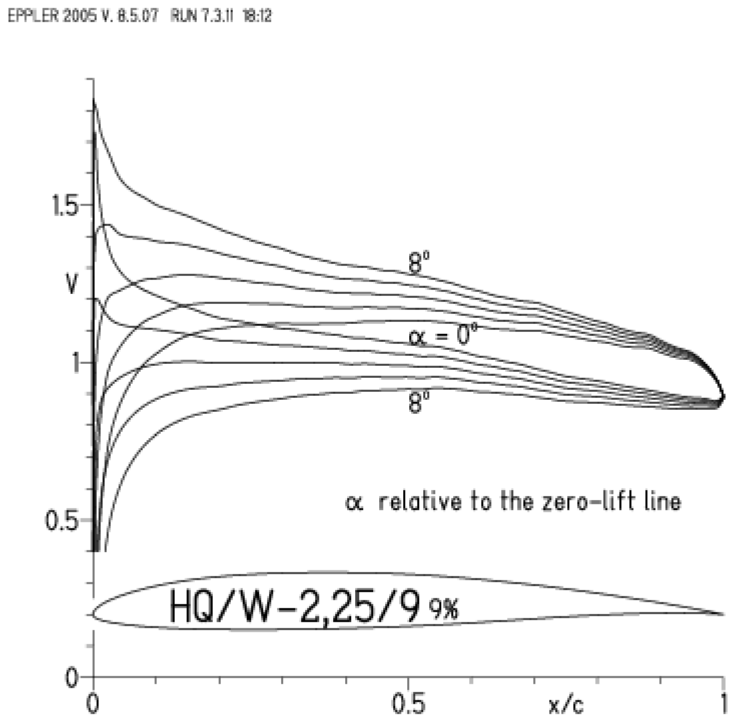
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

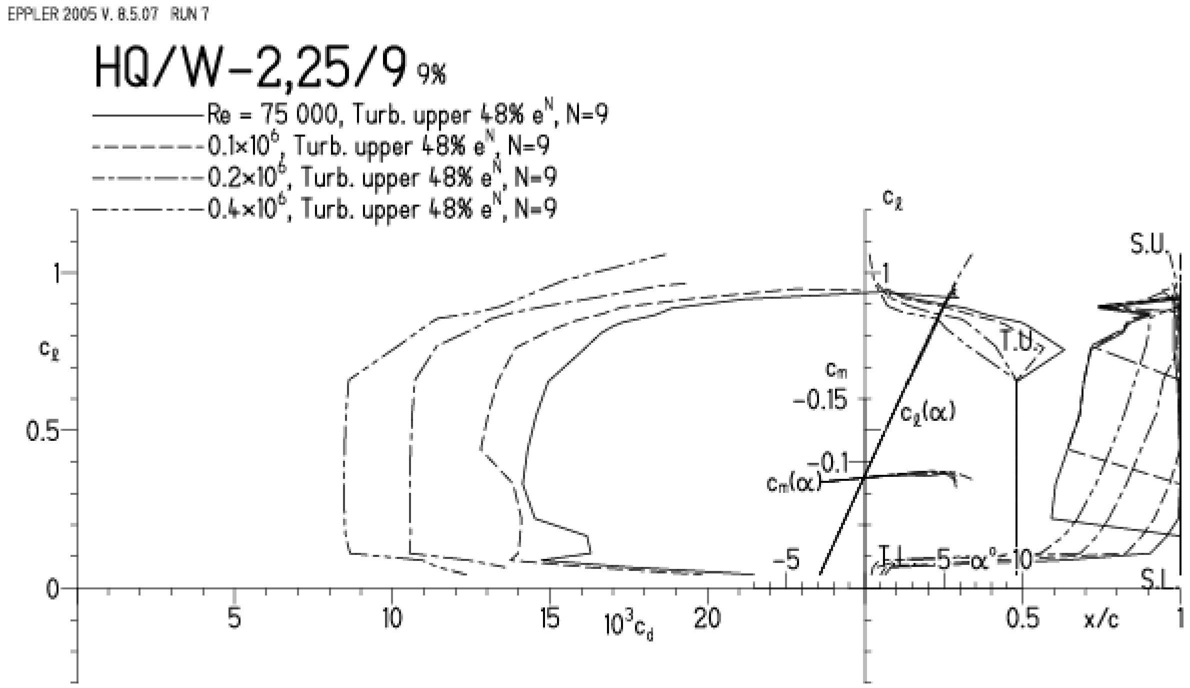


EPPLER 2005 V. 8.



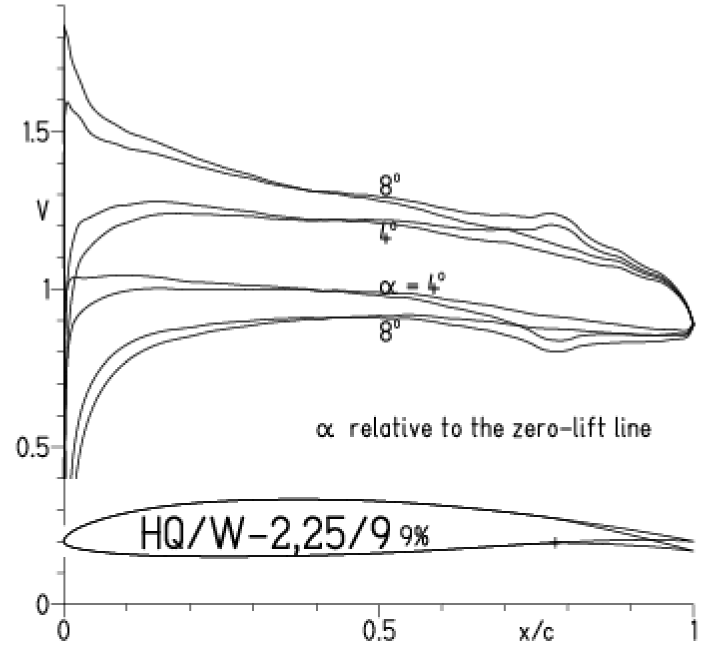
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



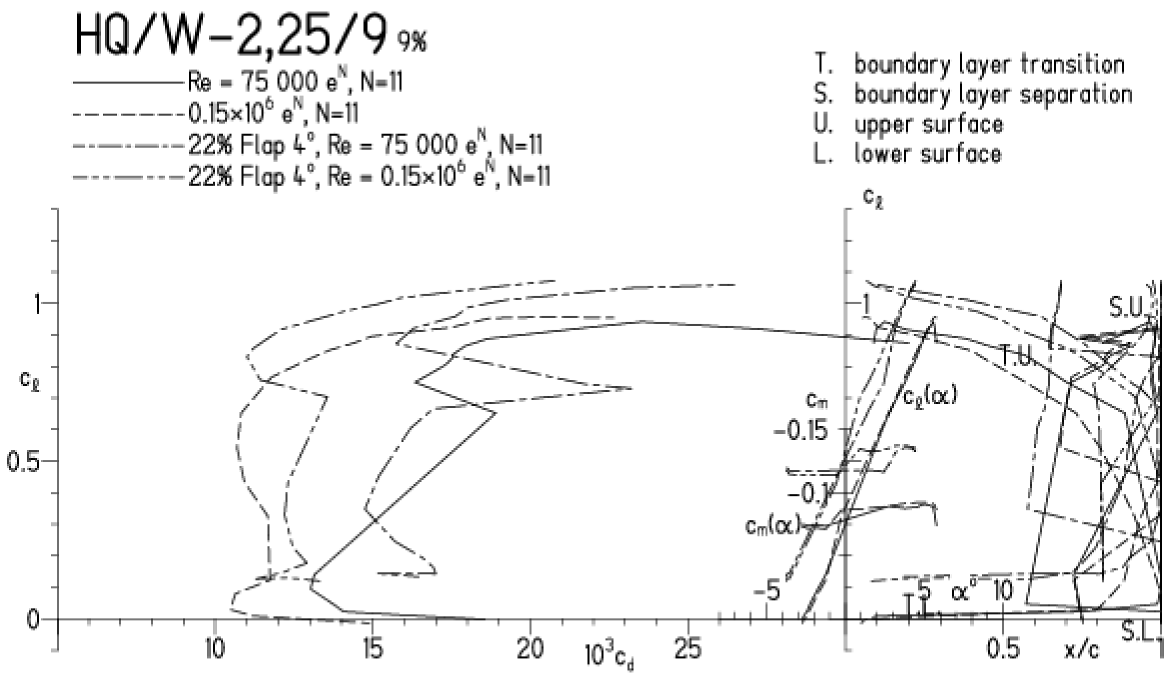


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

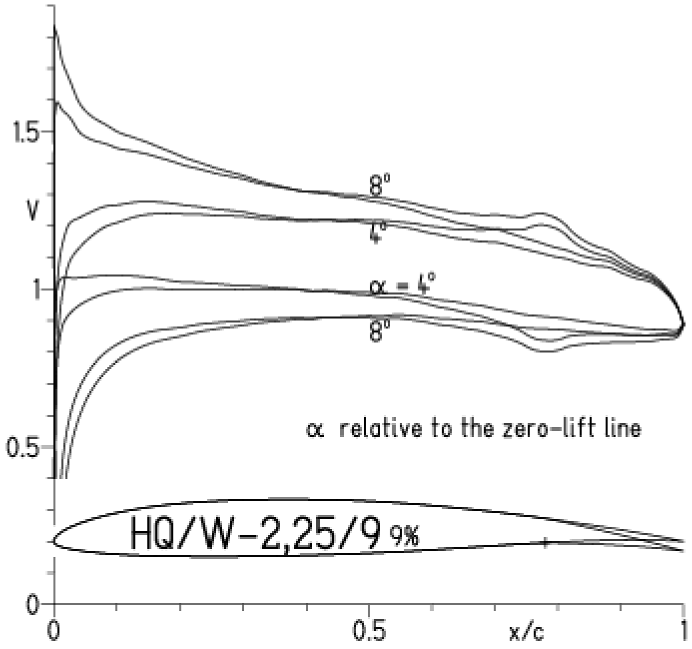


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

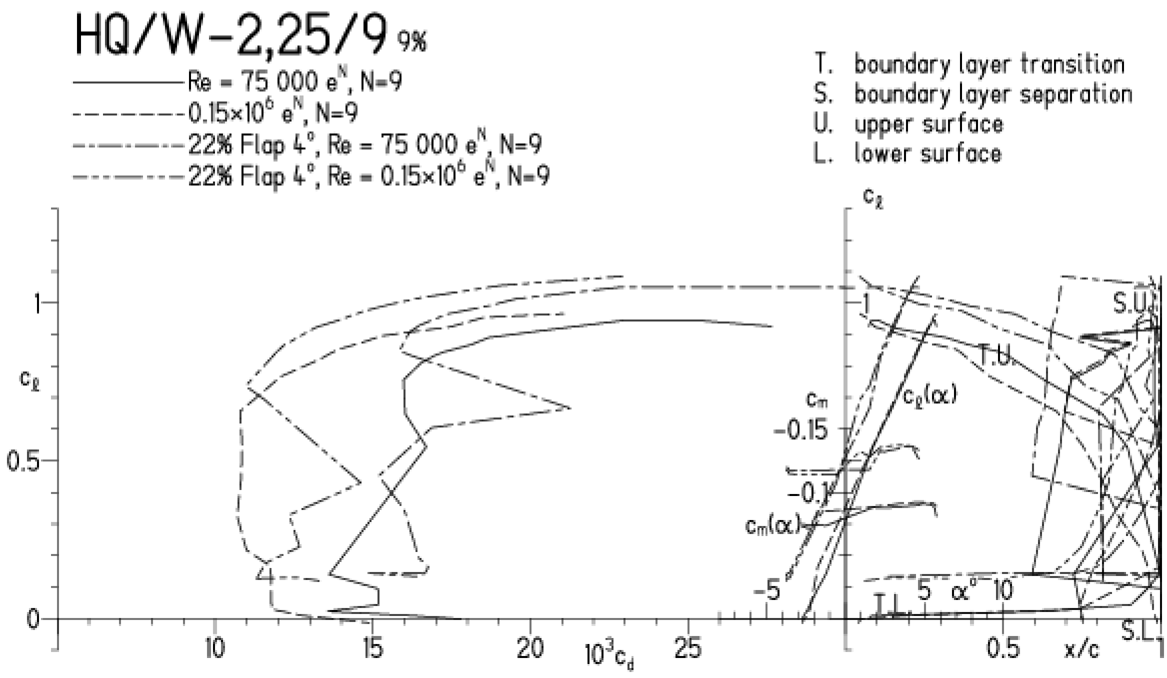


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

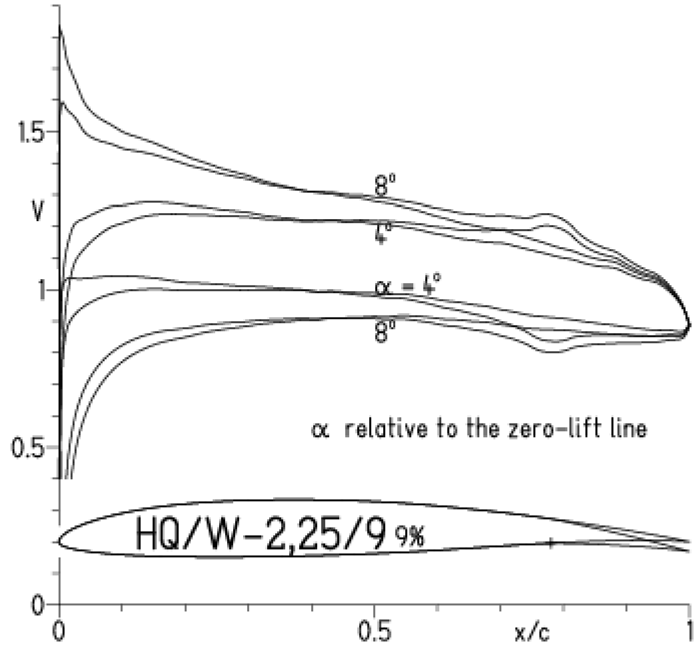


EPPLER 2005 V. 8.5.07 RUN 8.3.1

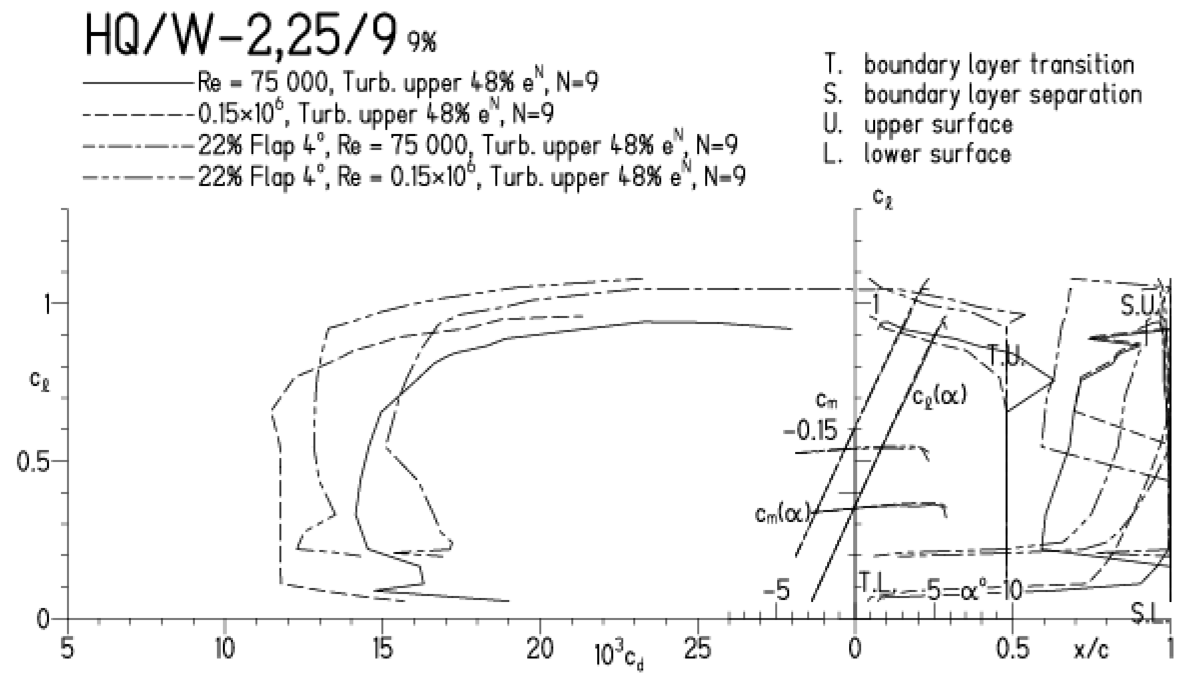


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

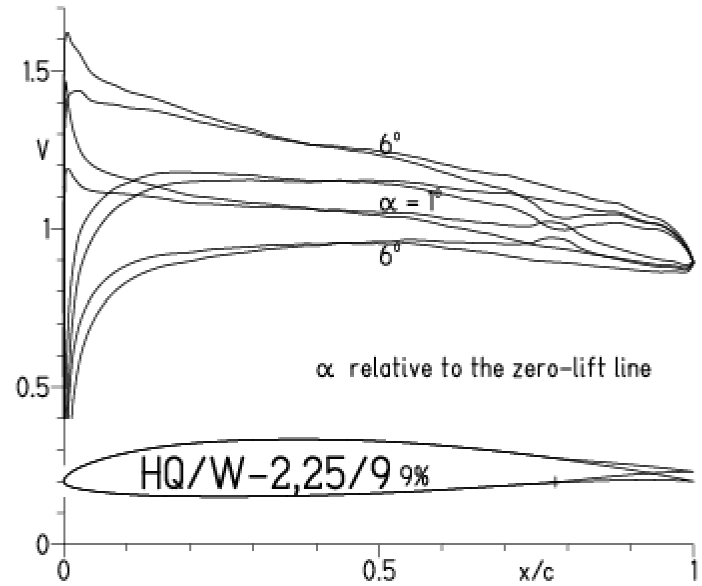


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

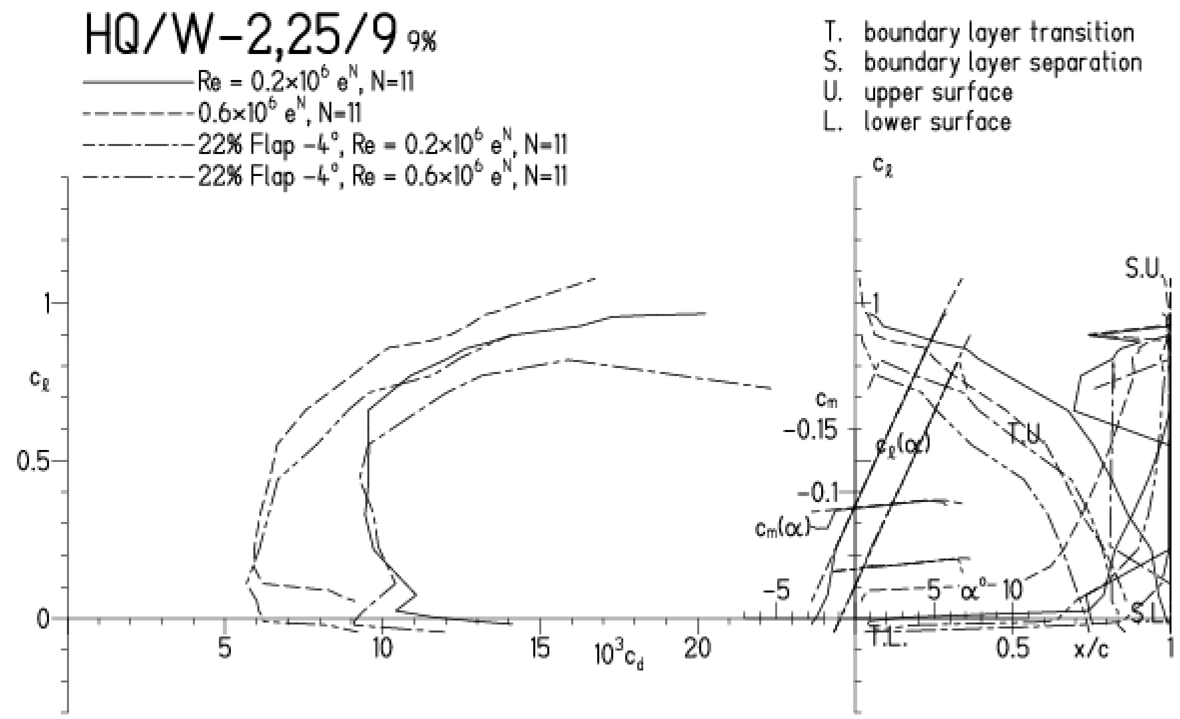


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

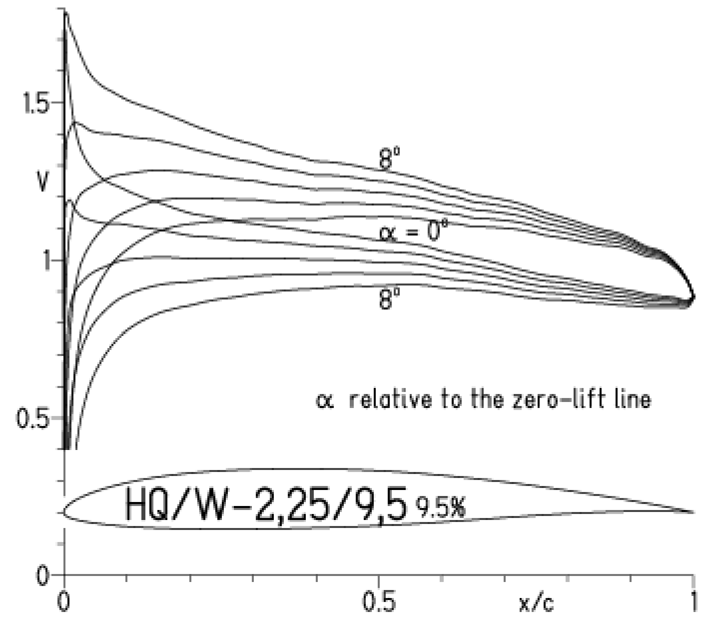


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

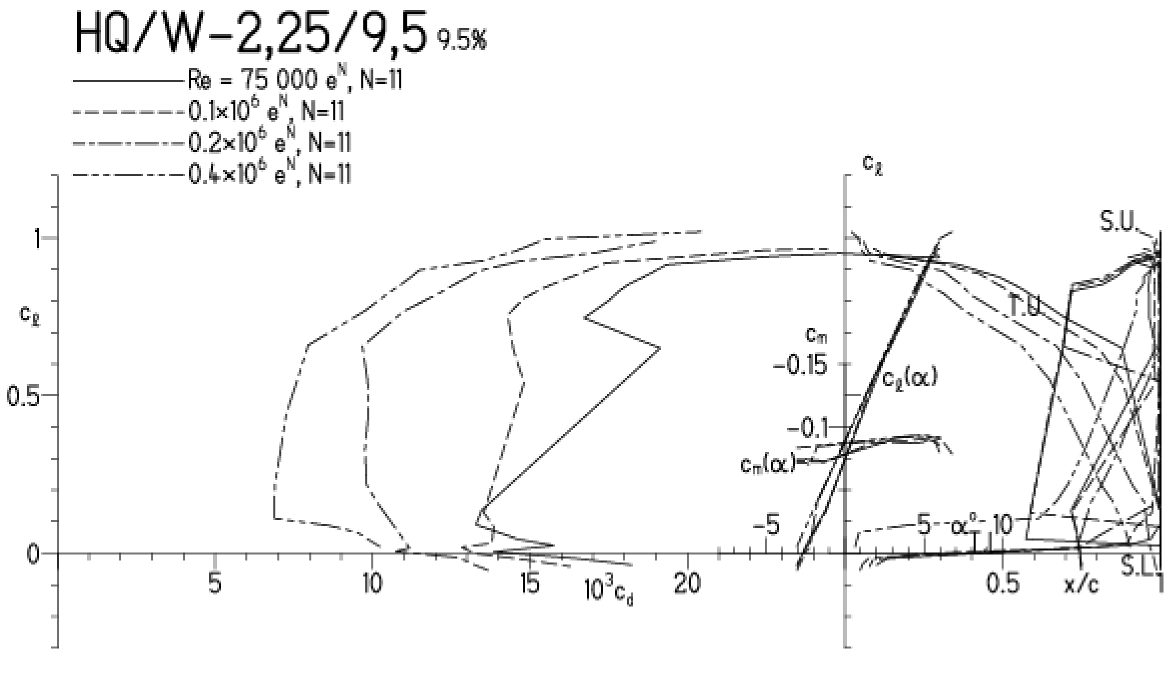


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

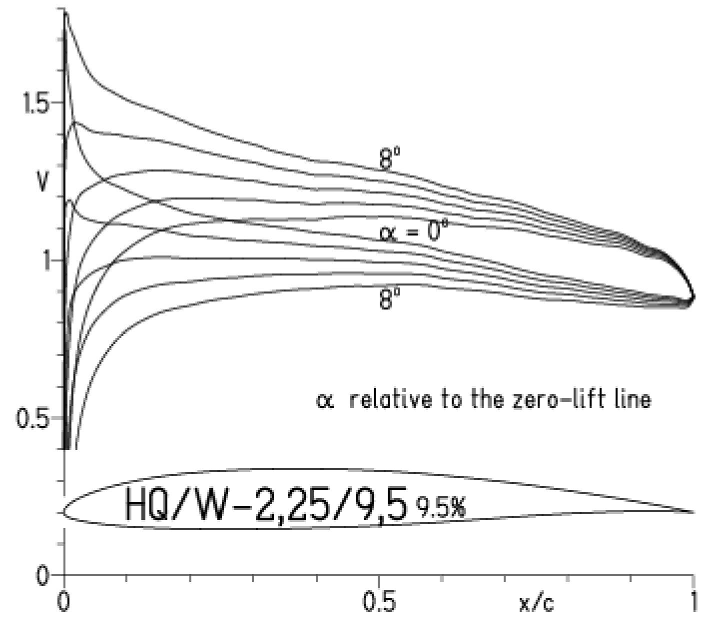


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

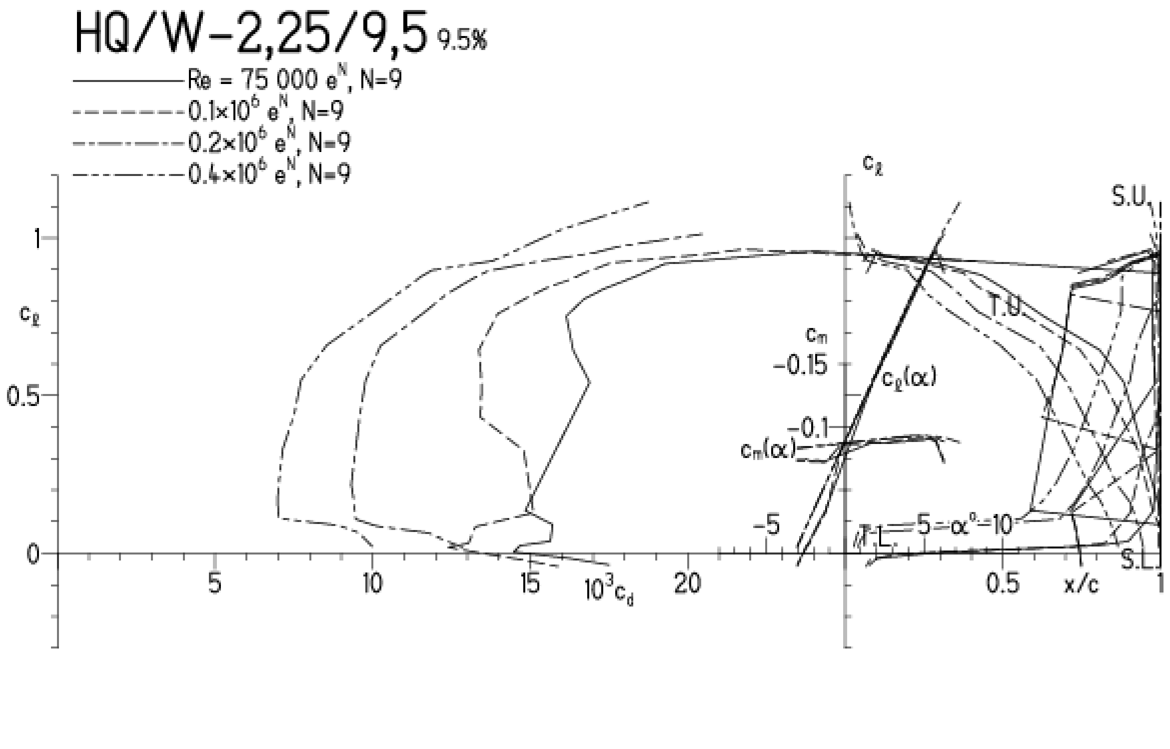


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

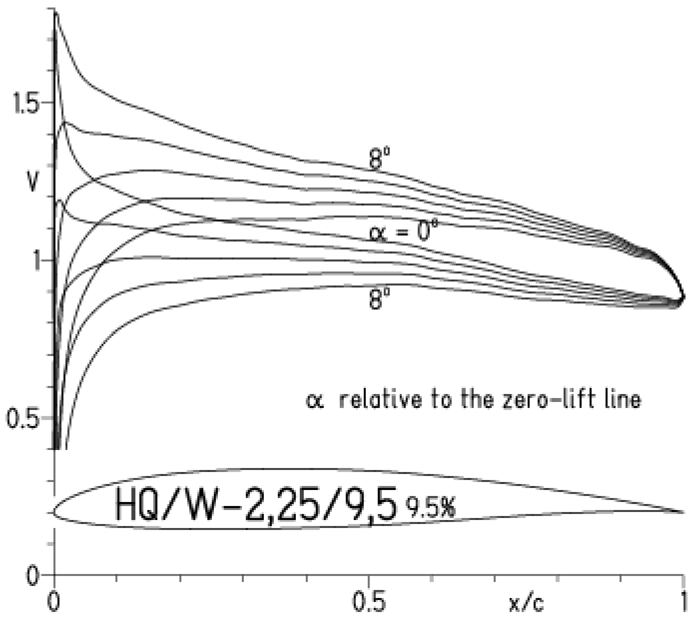


EPPLER 2005 V. 8.5.07 RUN 8.3.

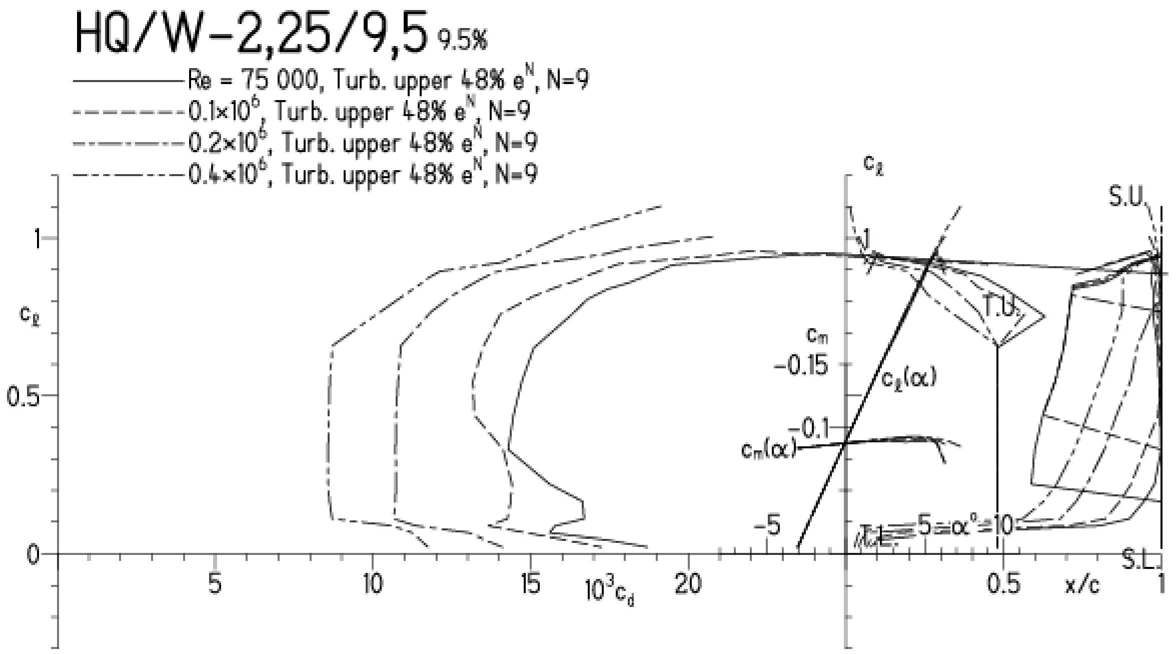


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

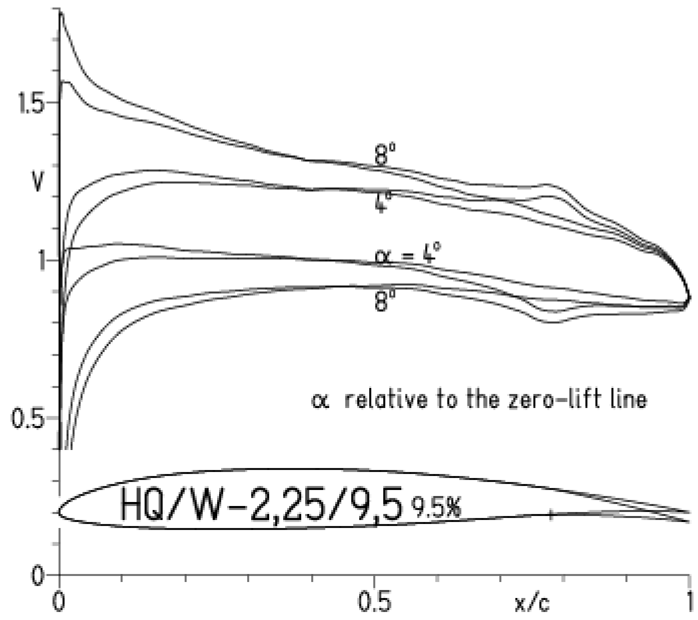


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

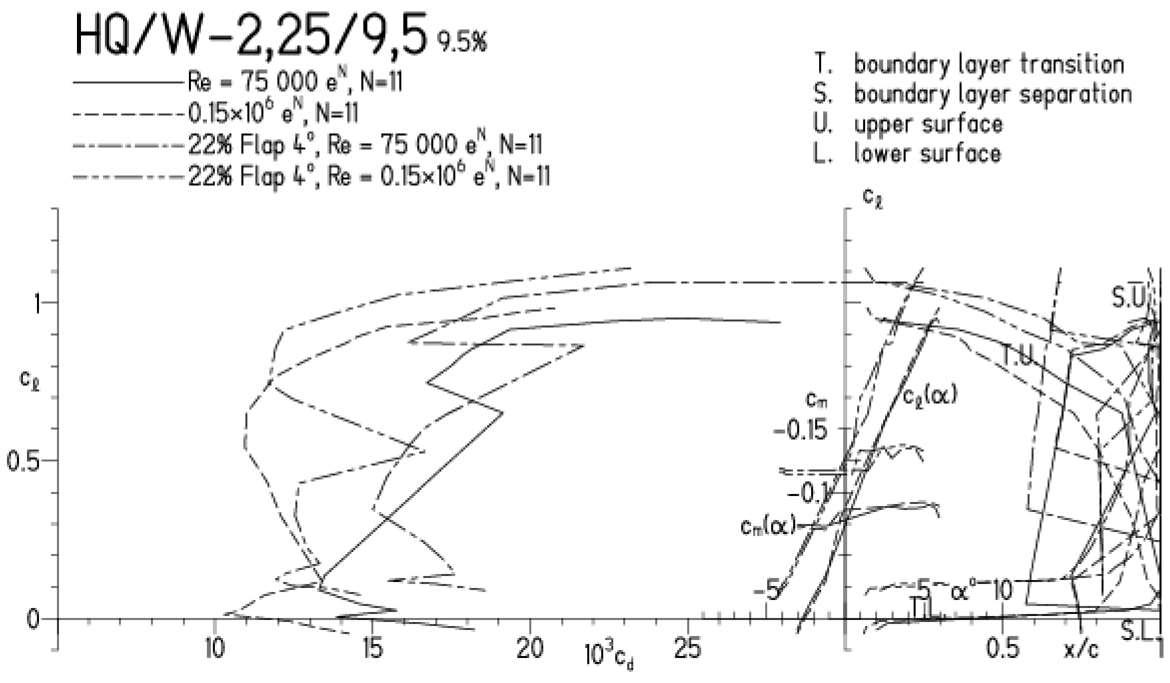


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

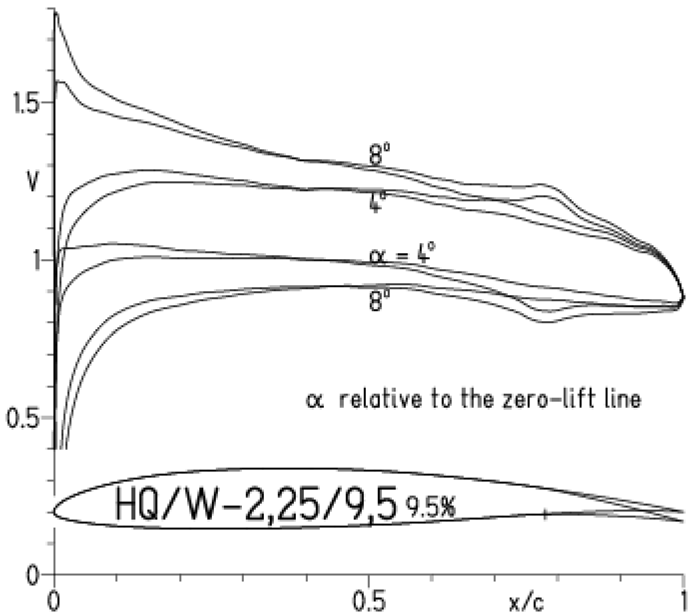


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

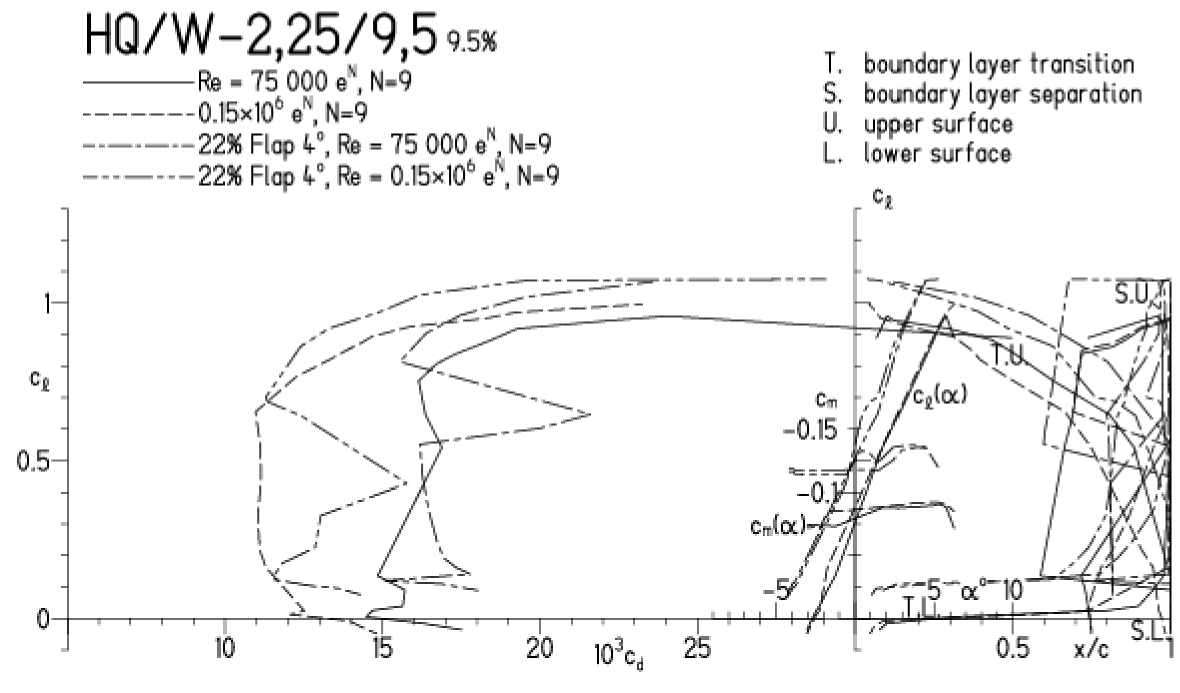


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

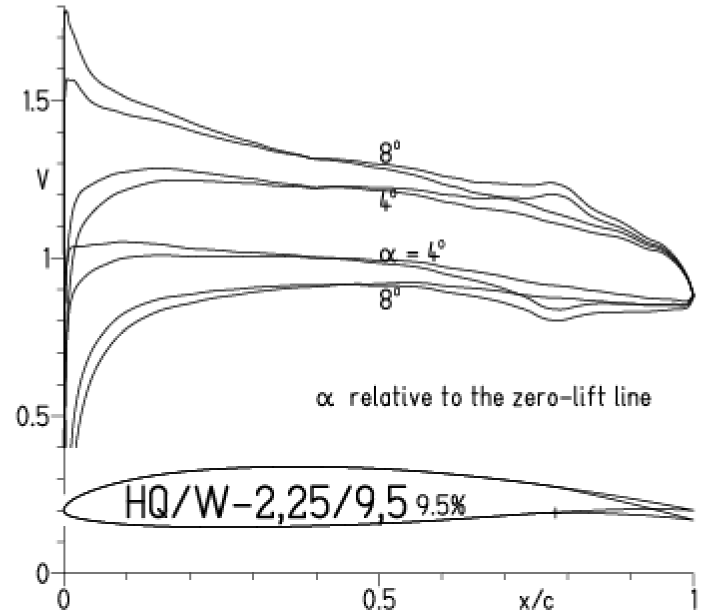


EPPLER 2005 V. 8.5.07 R

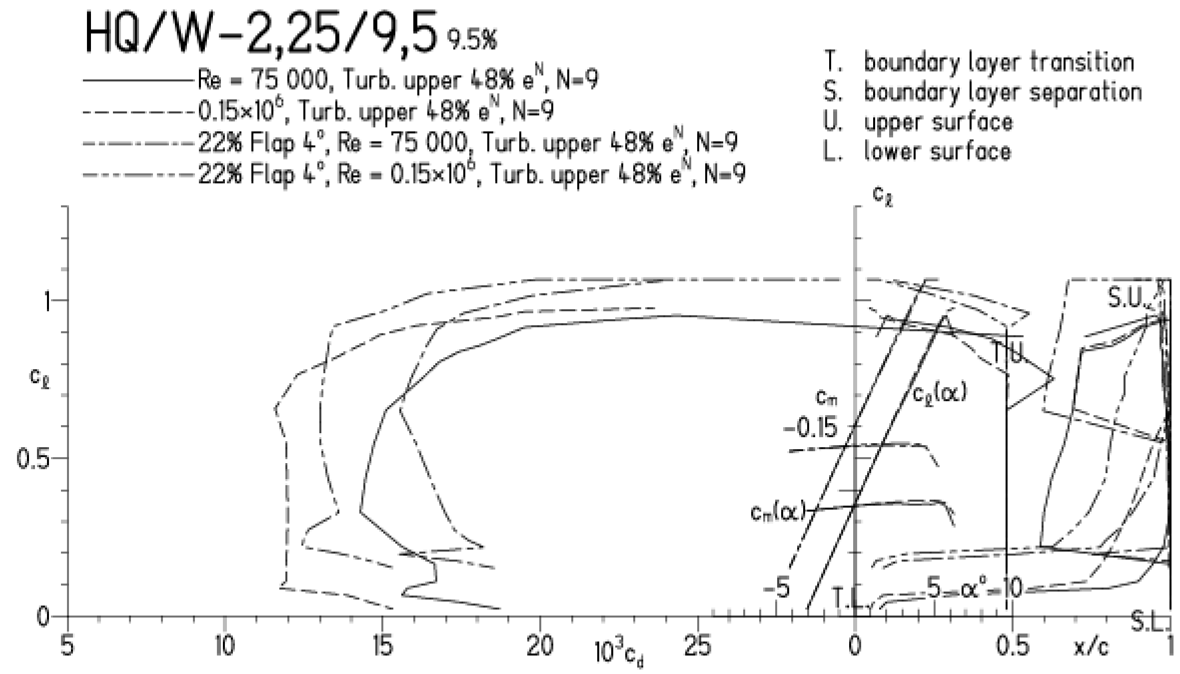


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

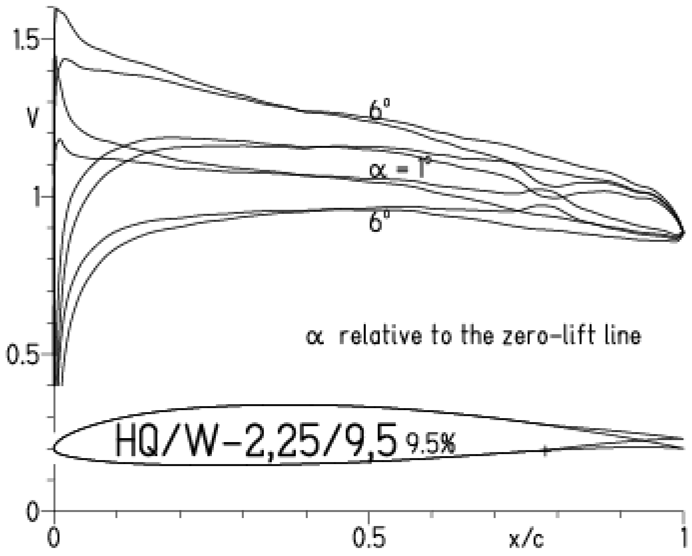


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

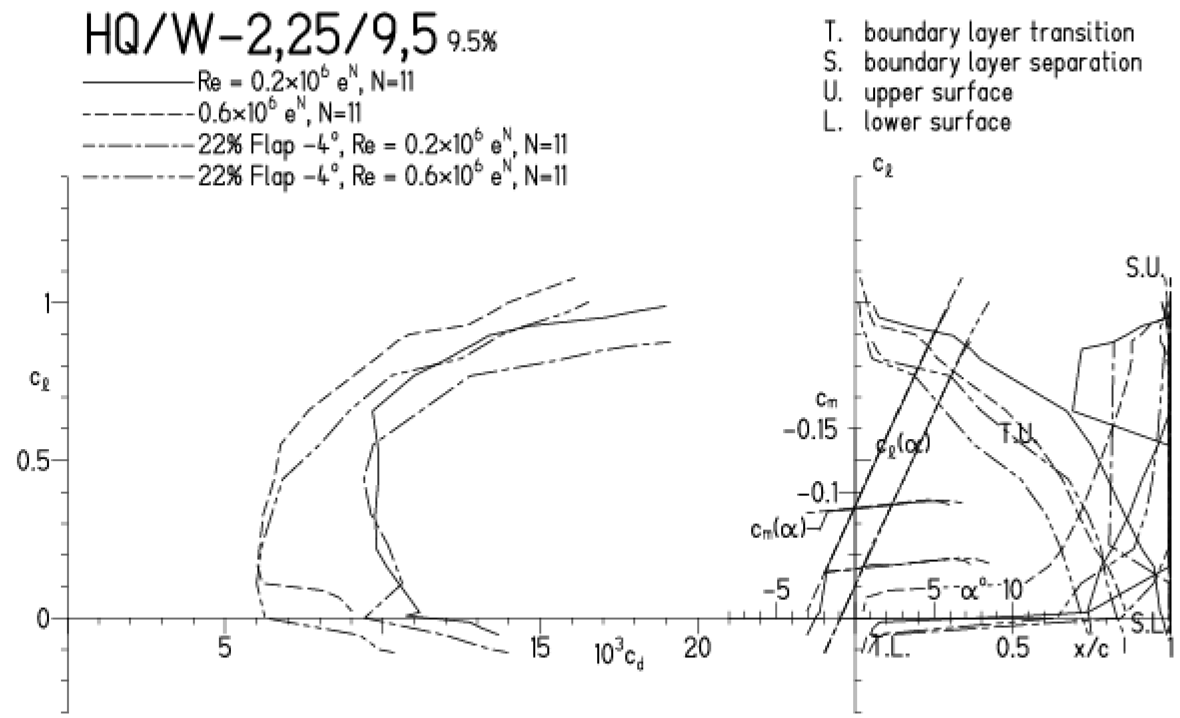


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

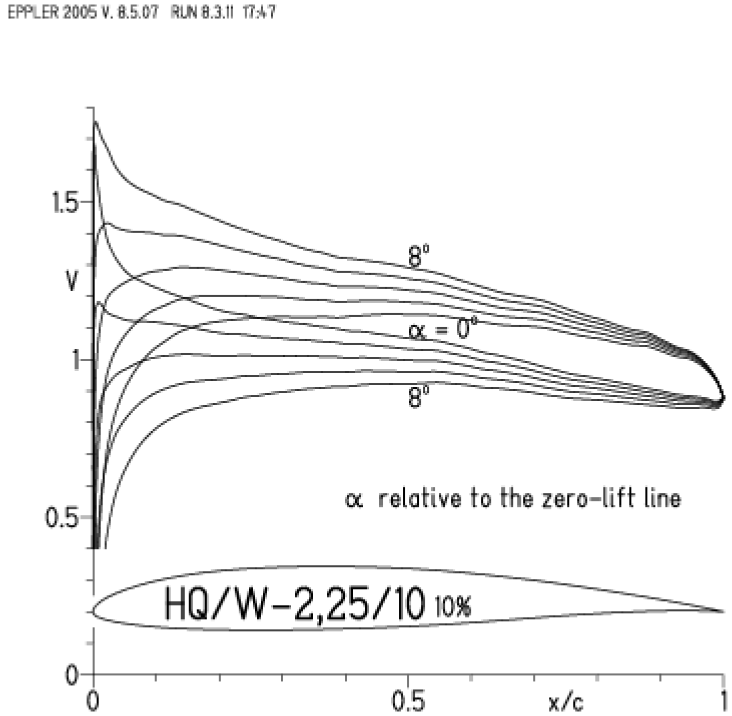
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

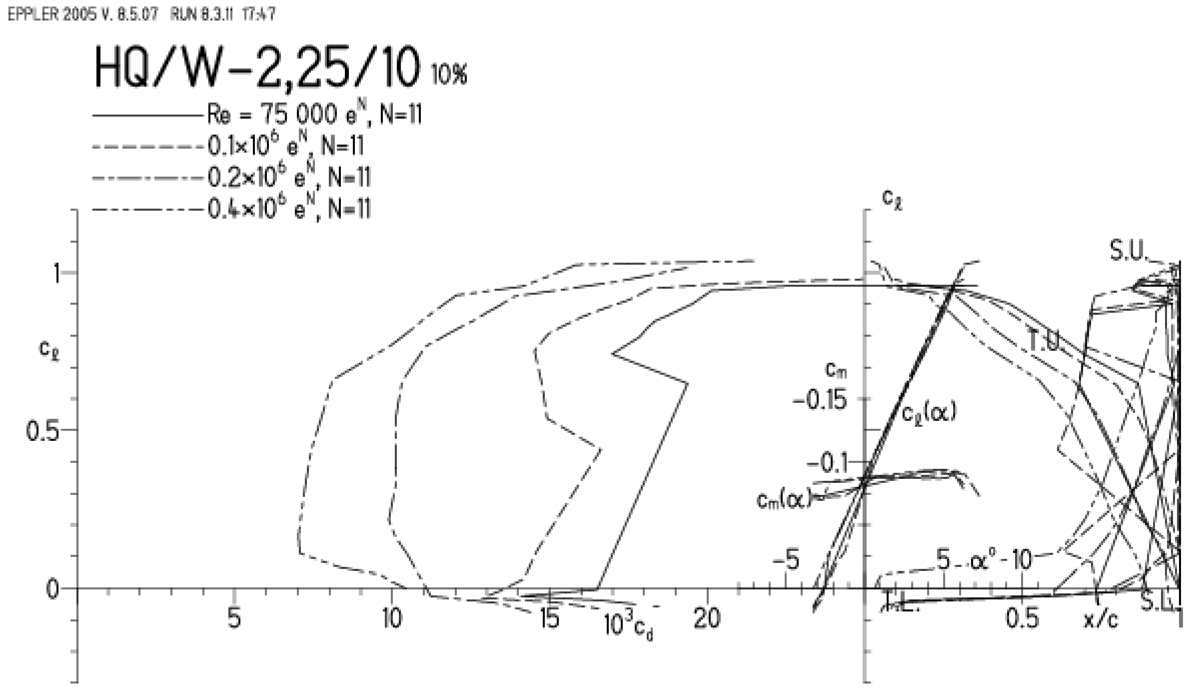


EPPLER 2005 V.



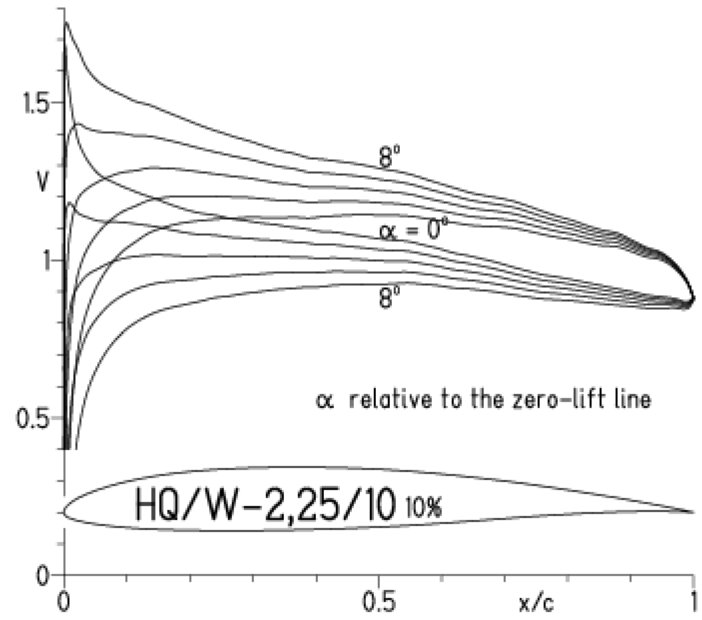
<u>HQ/W-2,25/10</u>, N=11



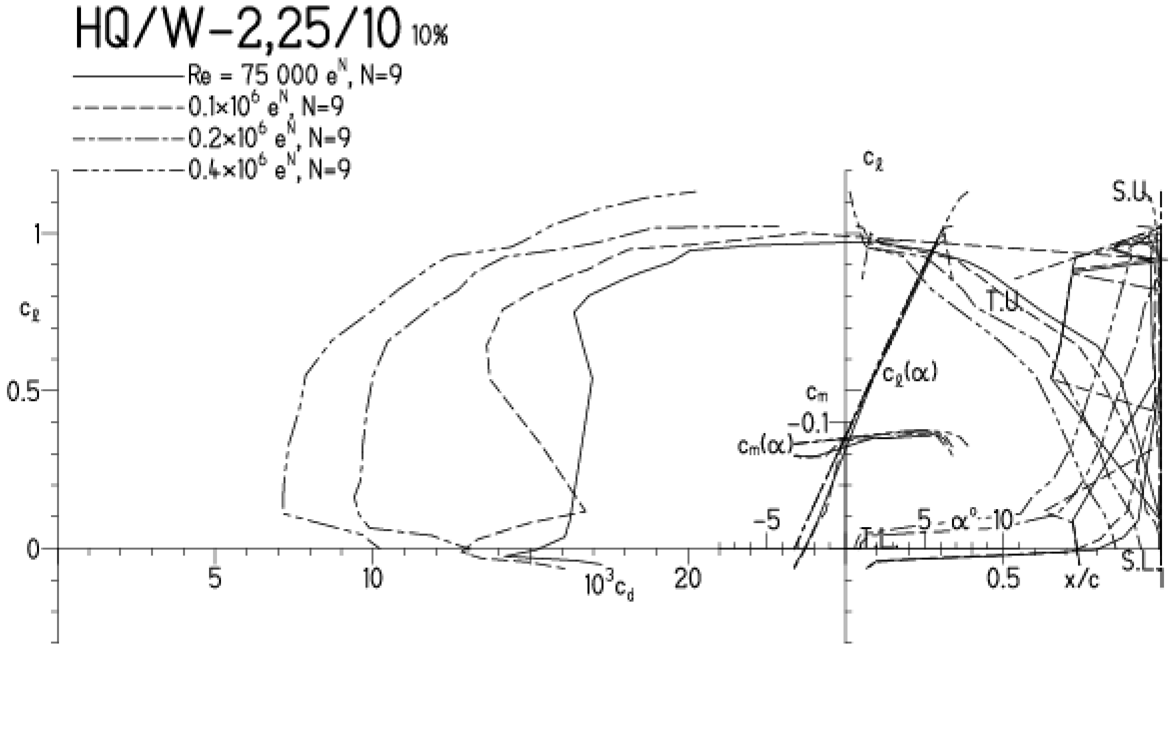


HQ/W-2,25/10, N=9

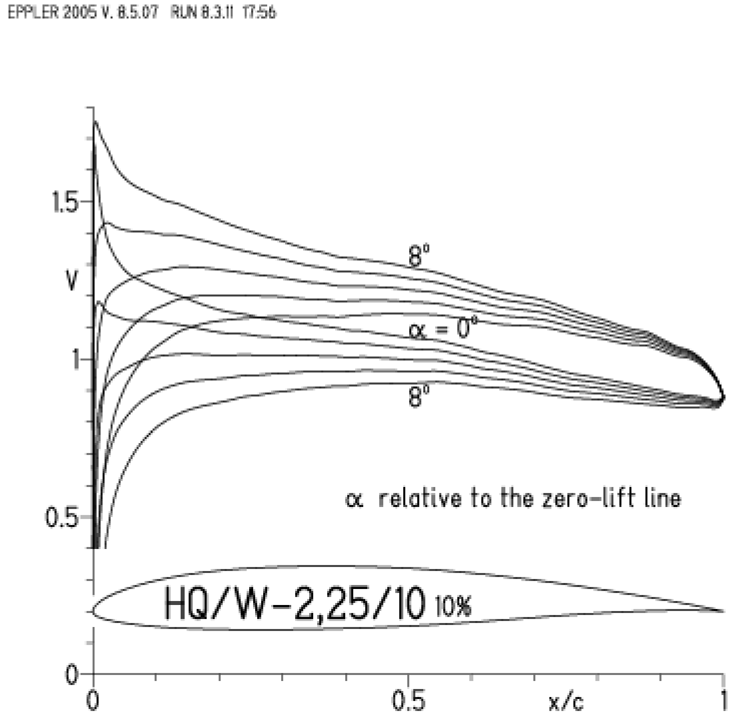
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

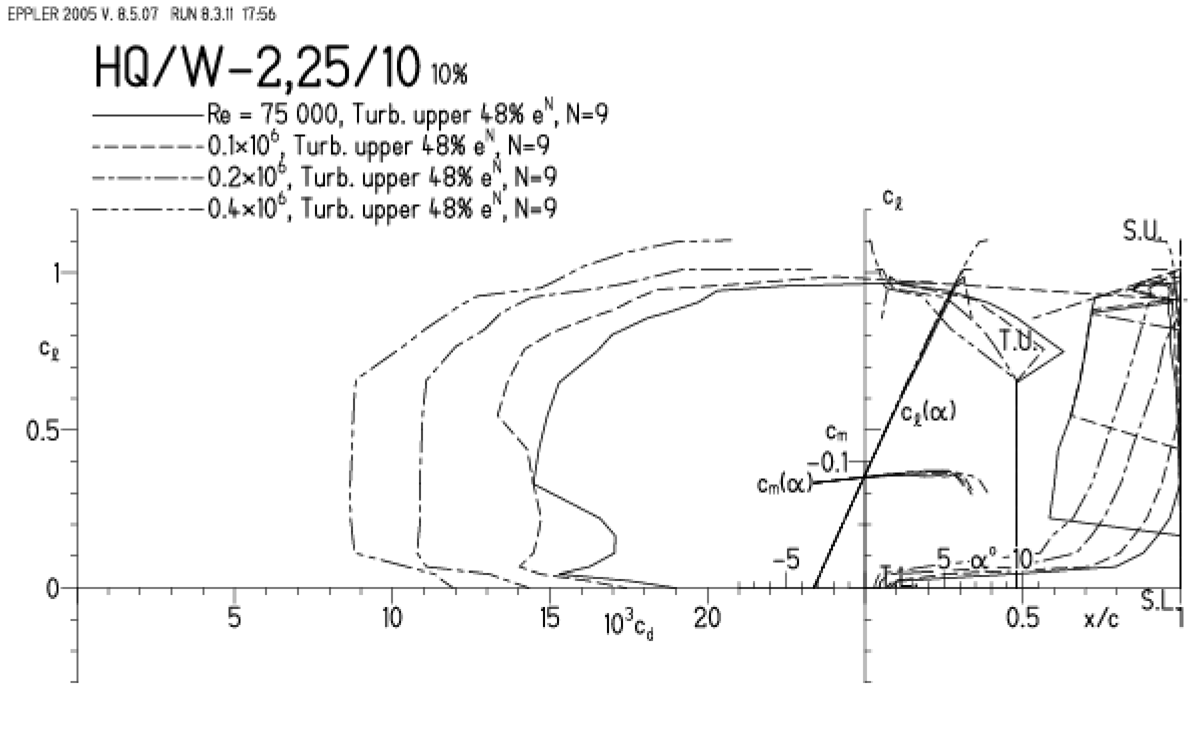


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



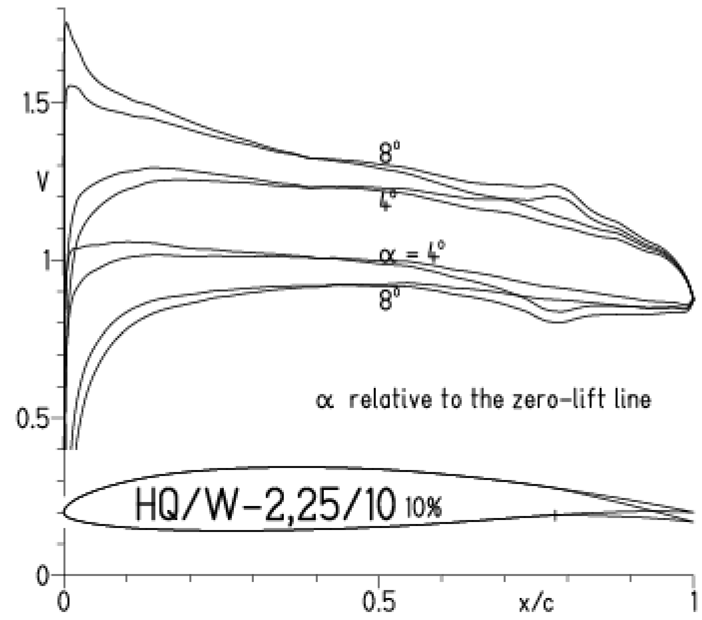
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



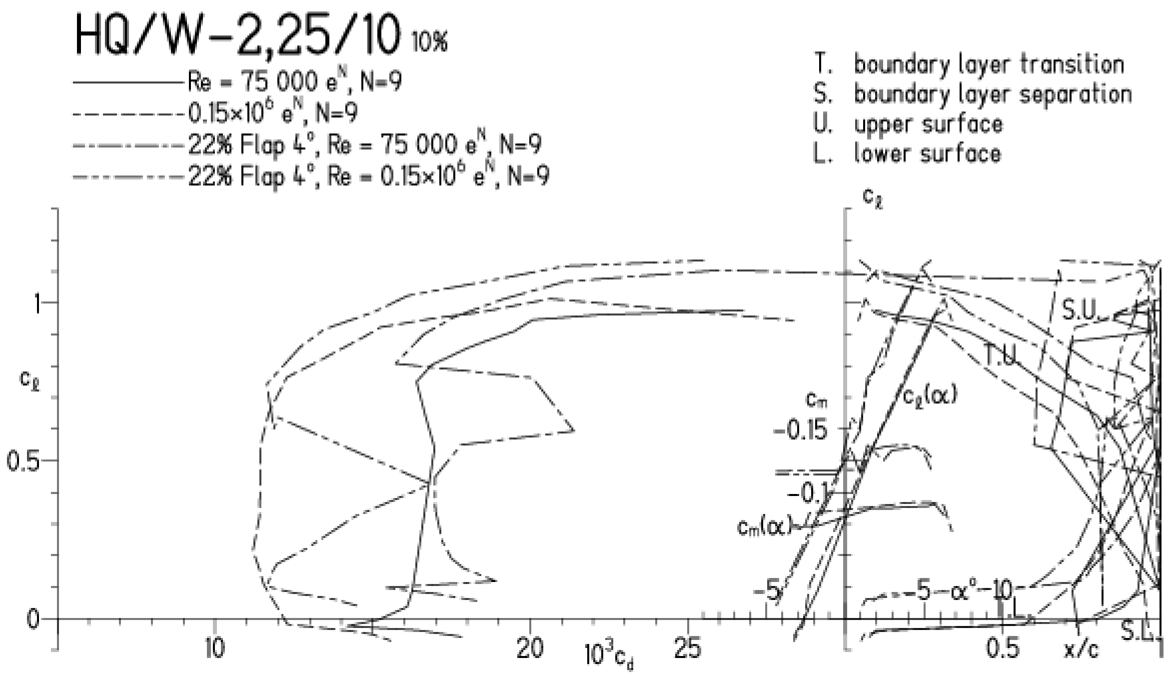


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

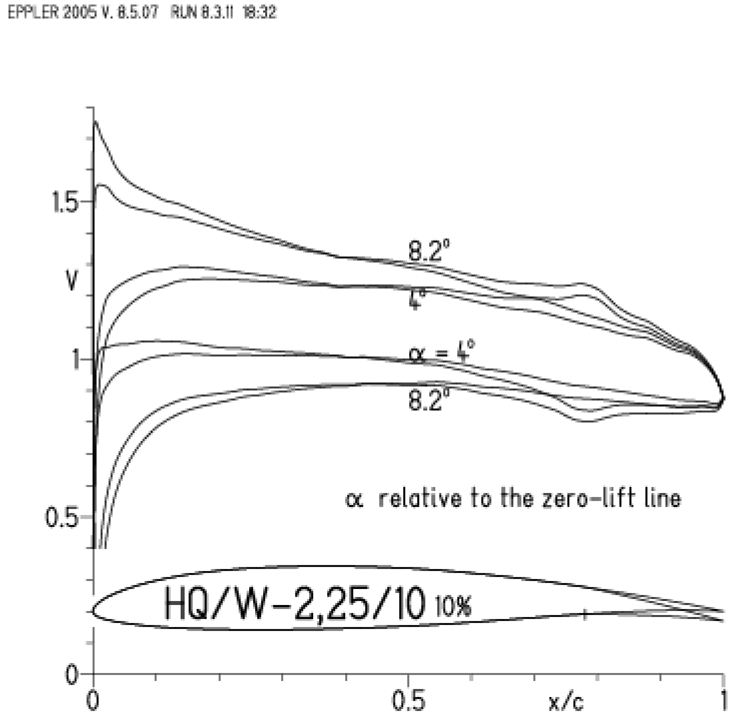
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

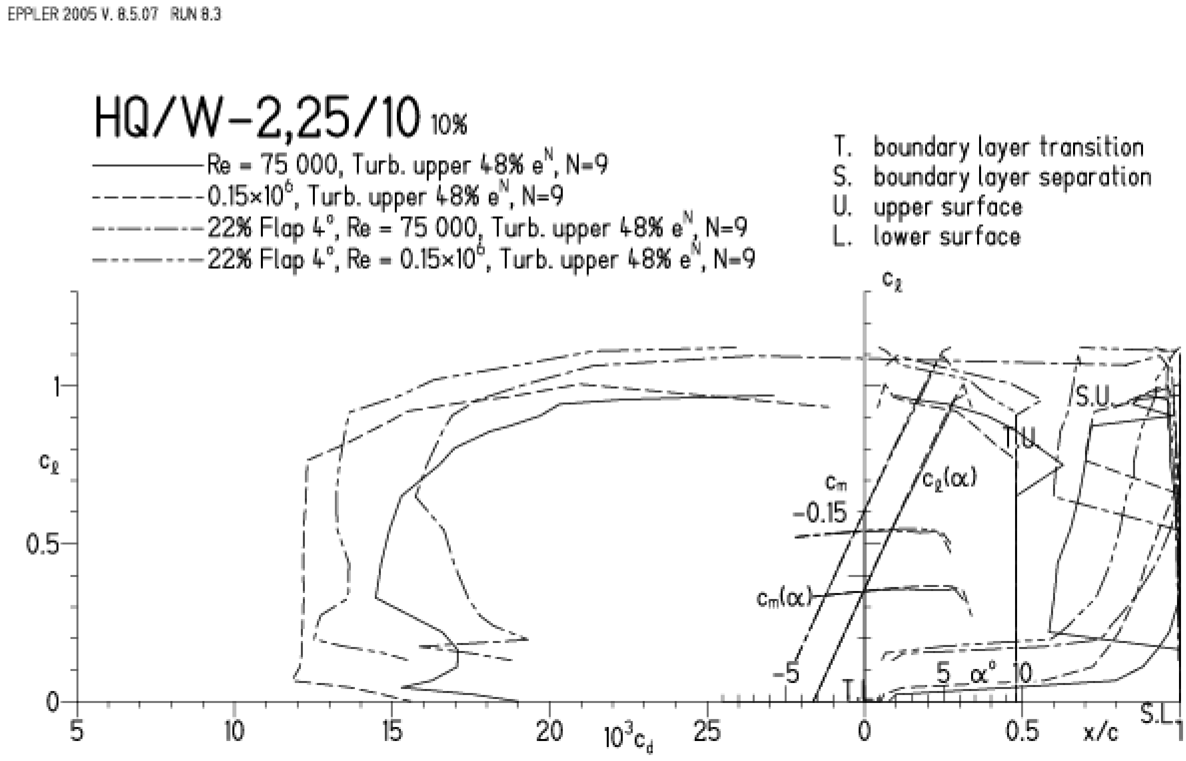


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



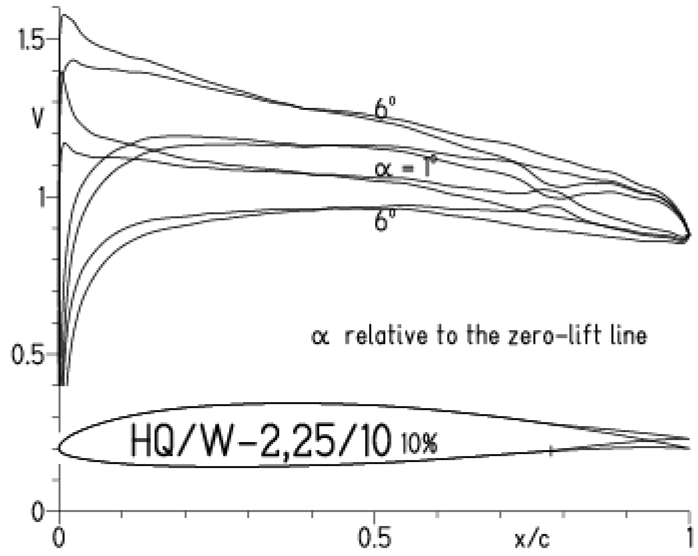
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



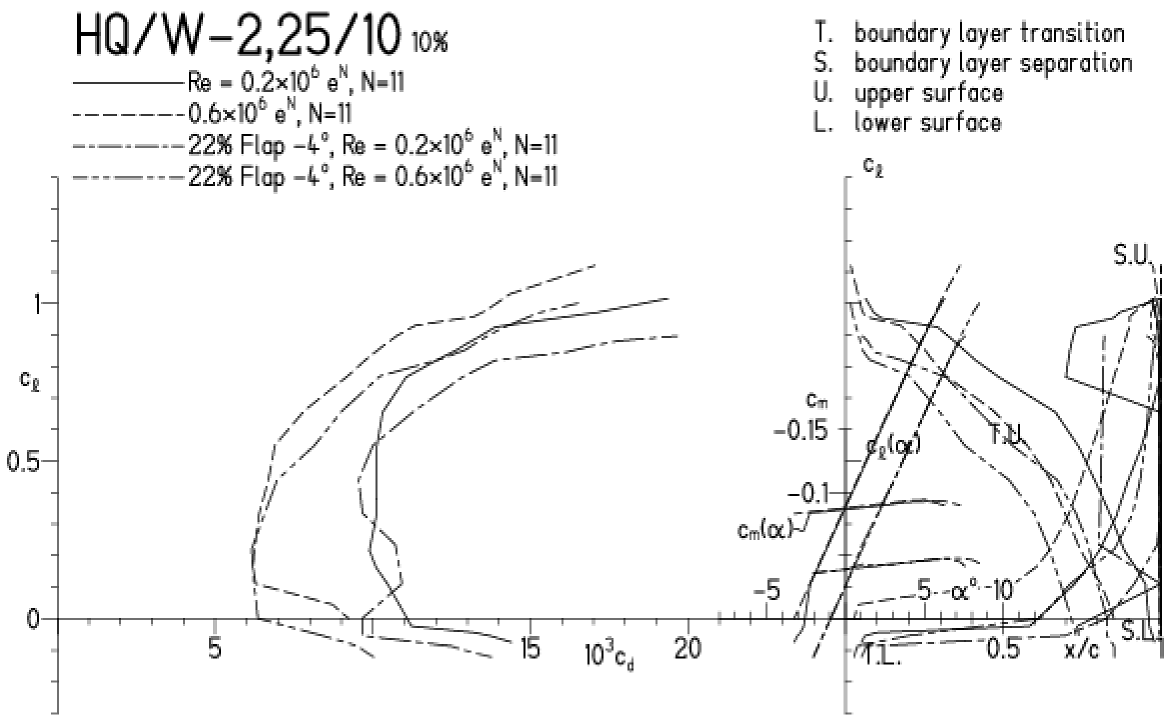


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

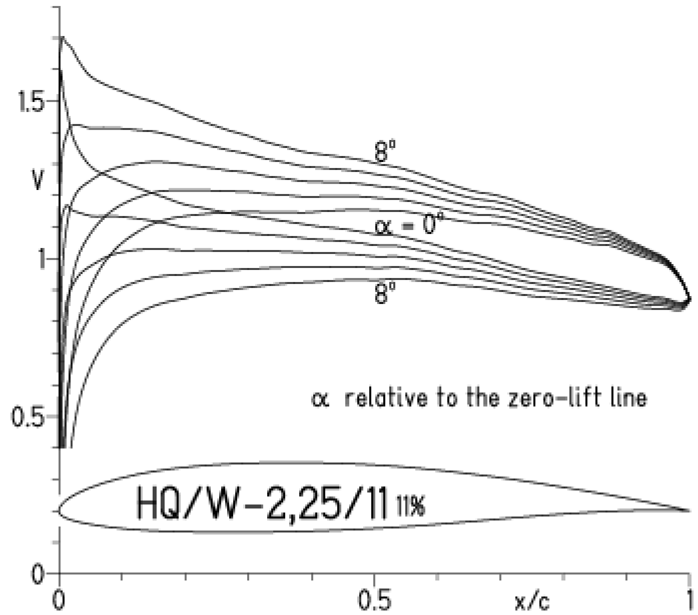


EPPLER 2005 V. 8.5.07 RUN

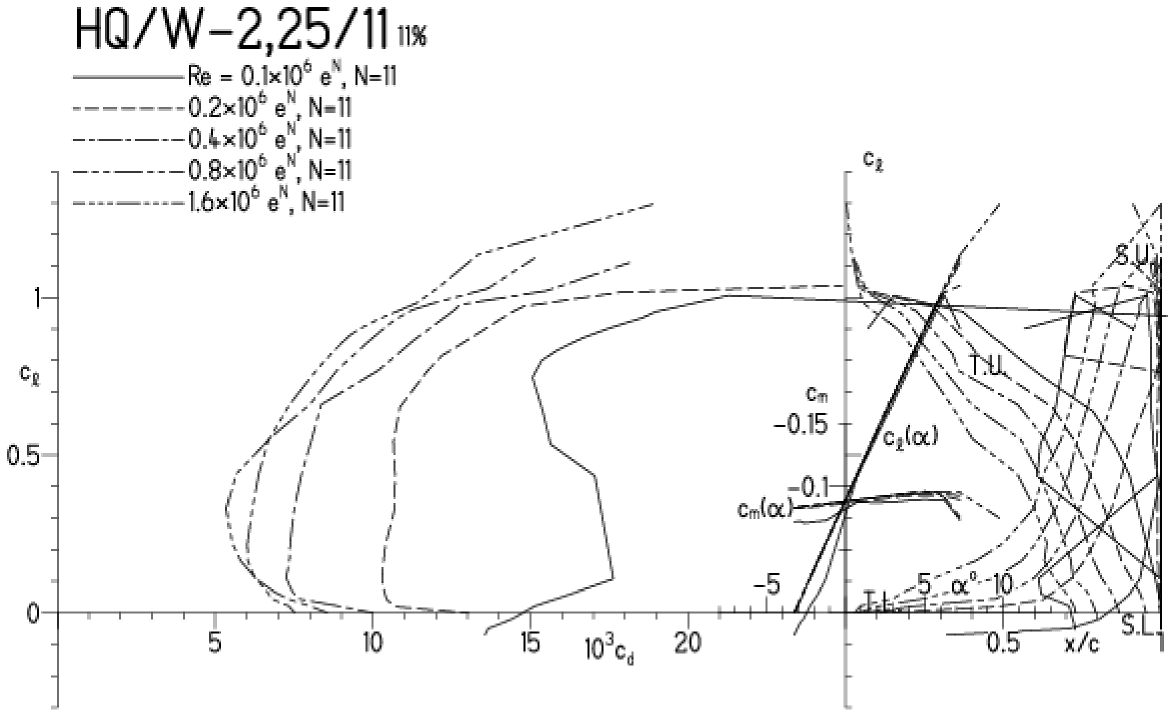


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

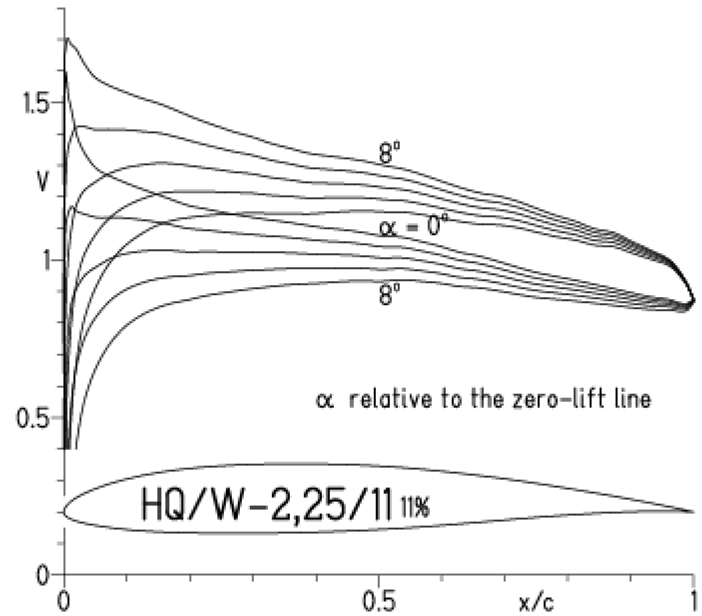


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

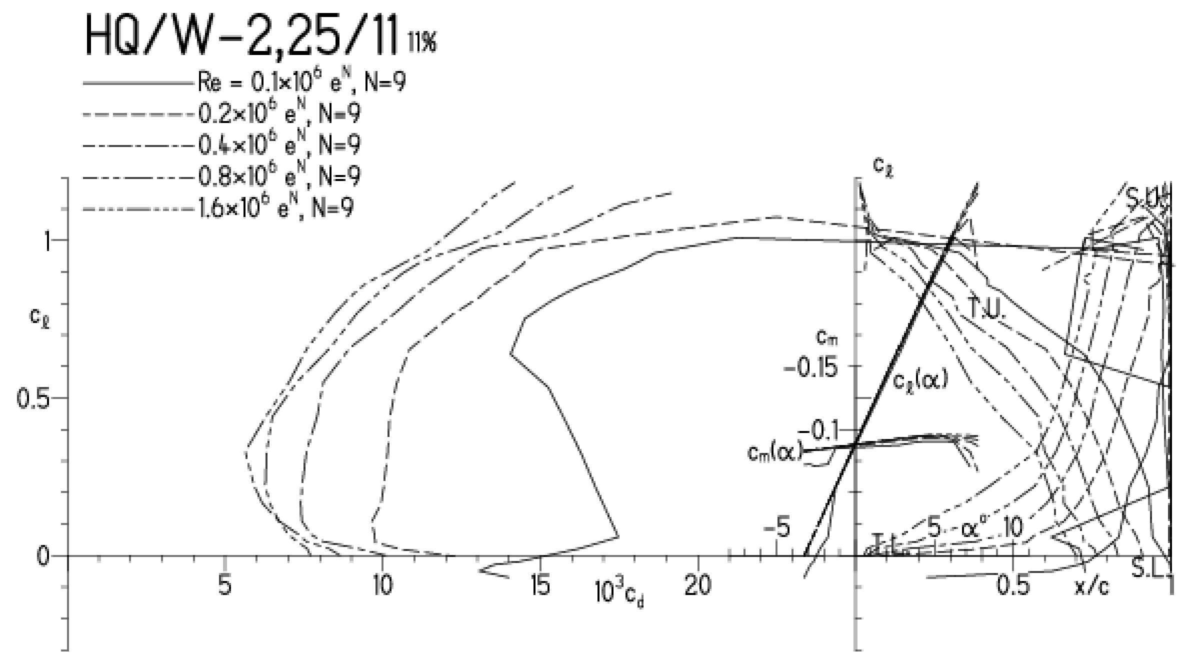


HQQ/W-2,25/11, N=9

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

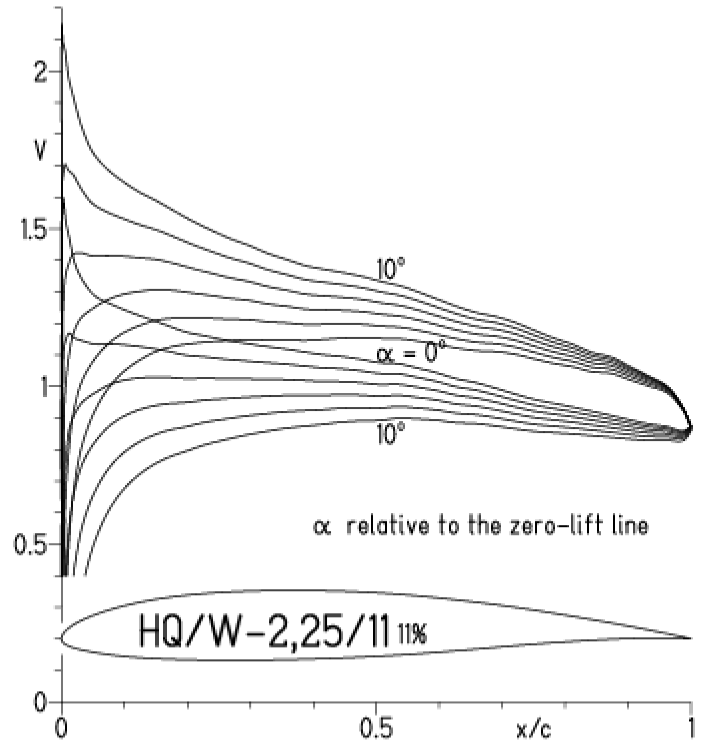


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

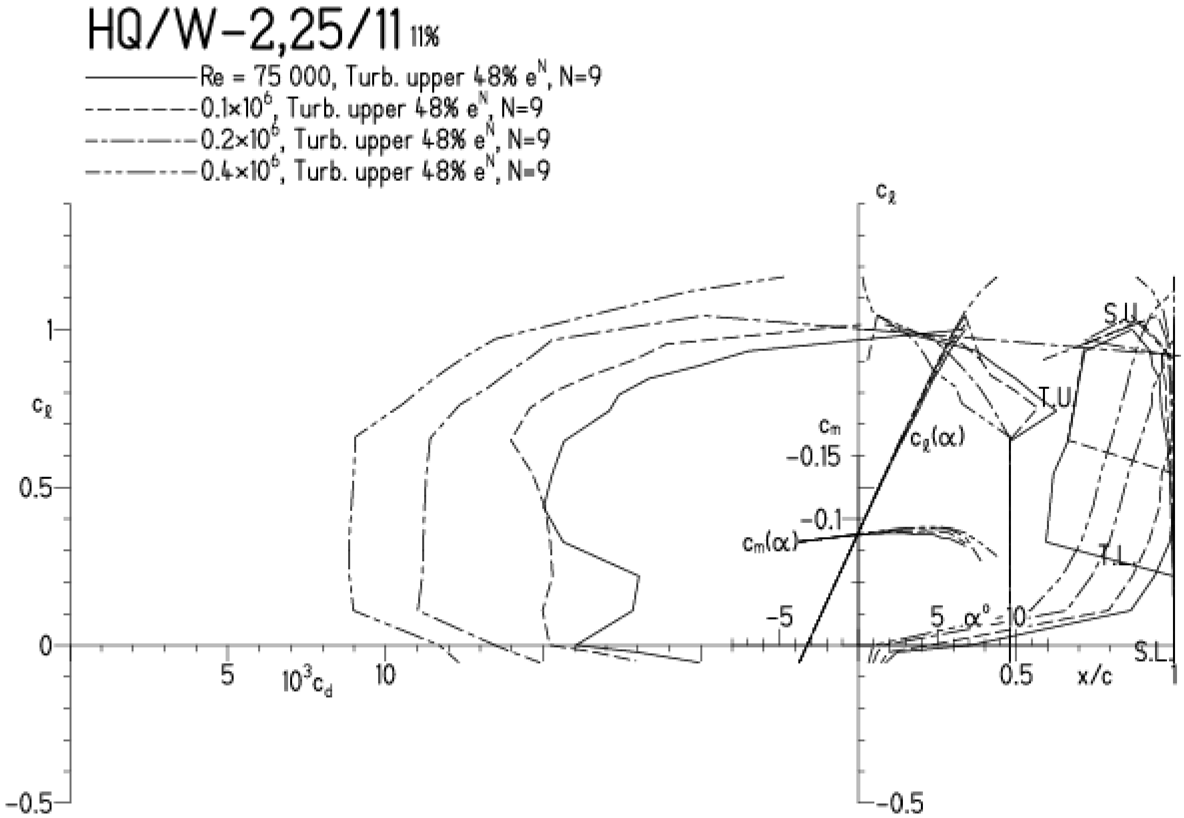


HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

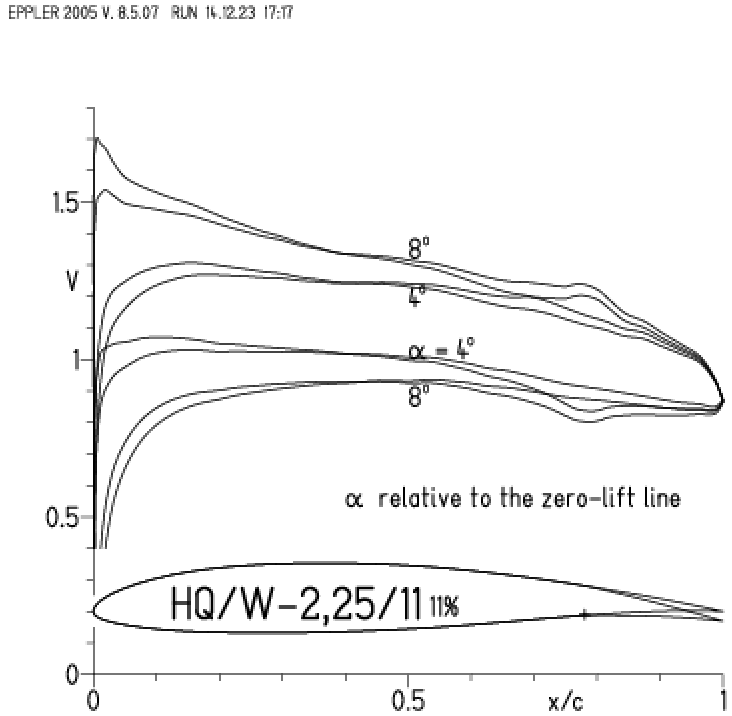
EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

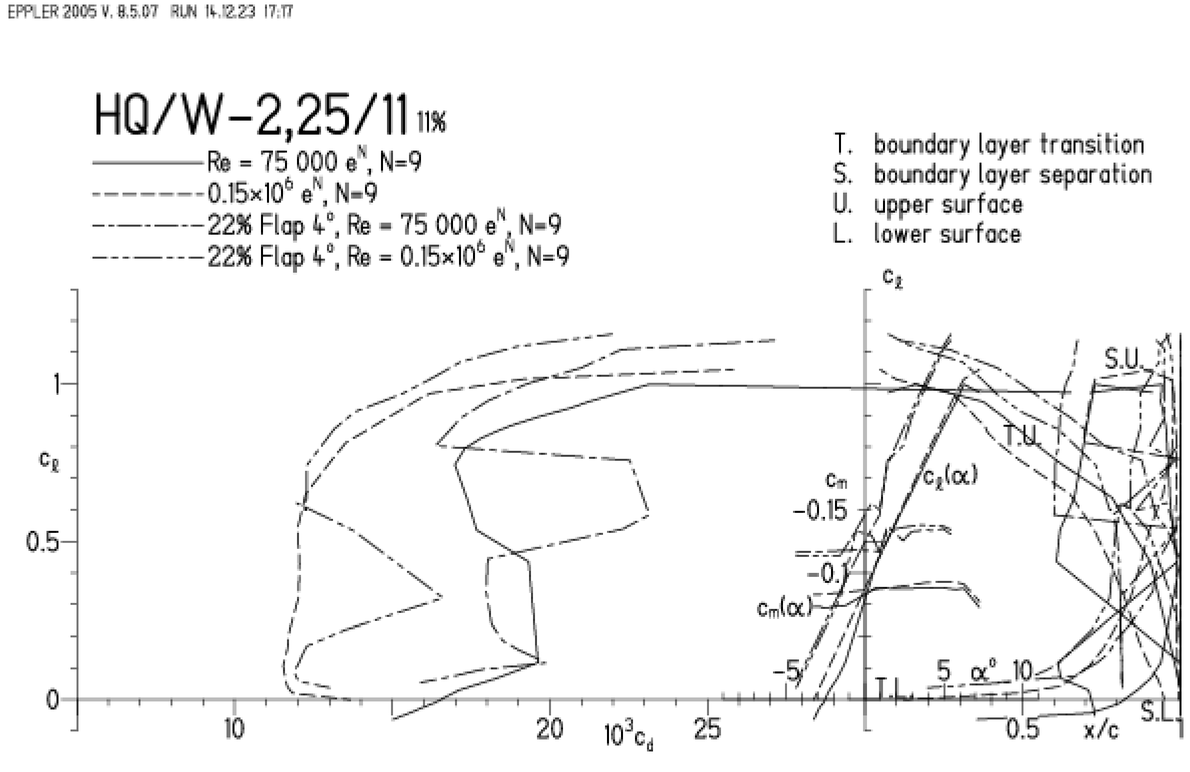


EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16



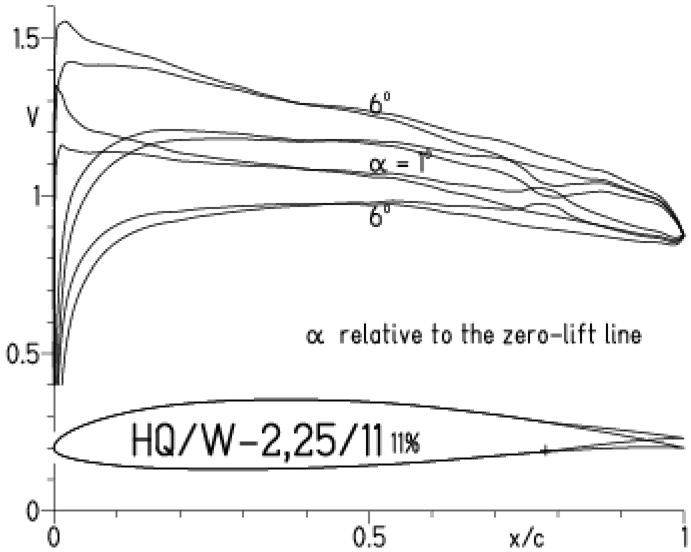
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



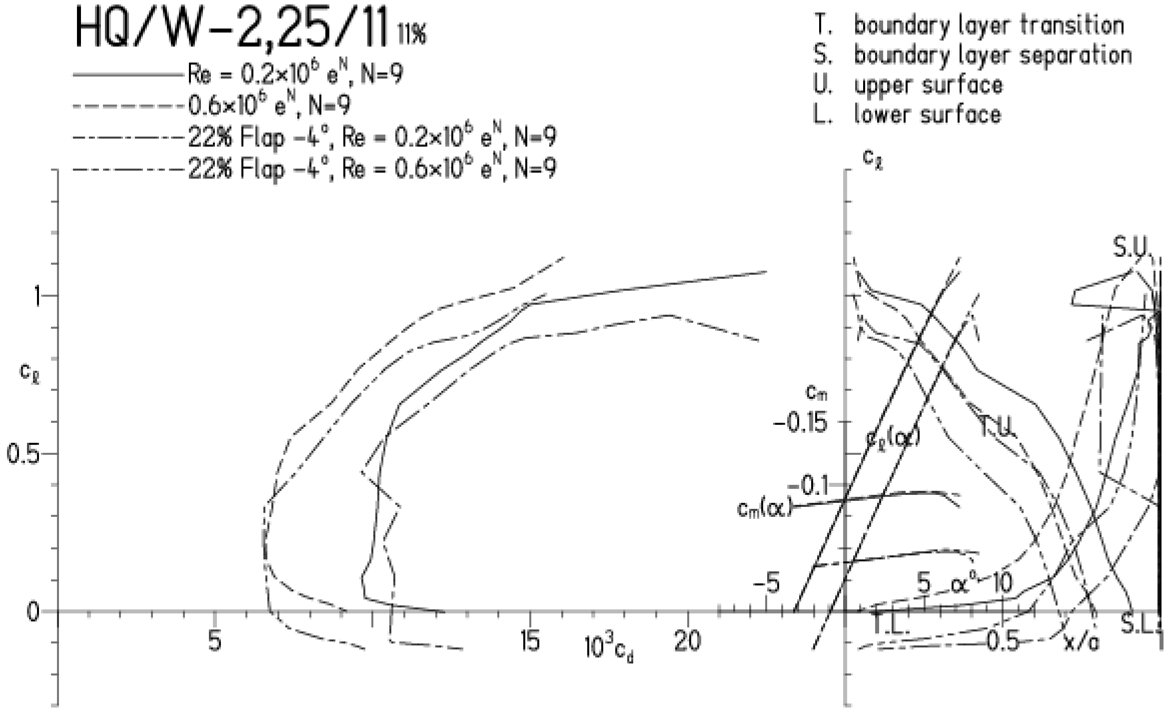


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

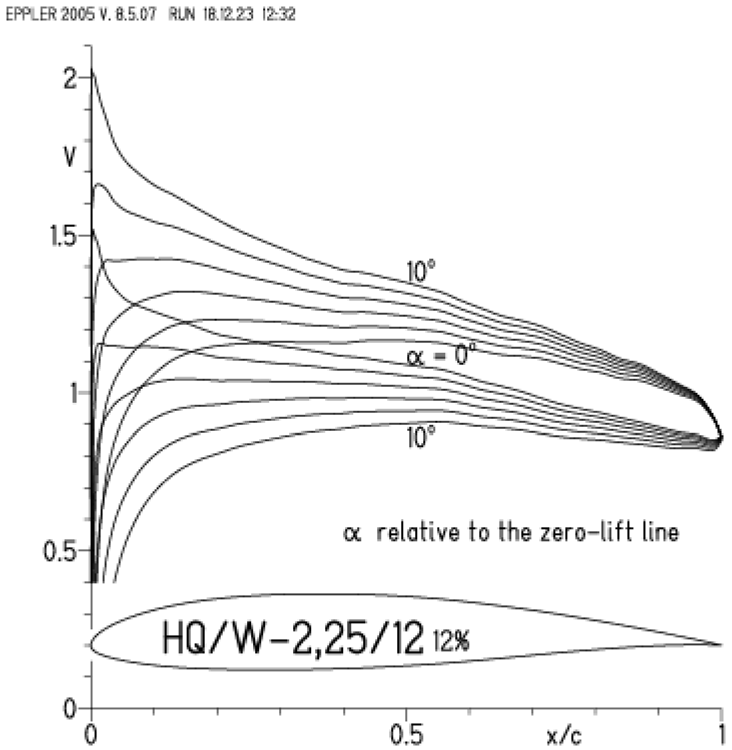
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

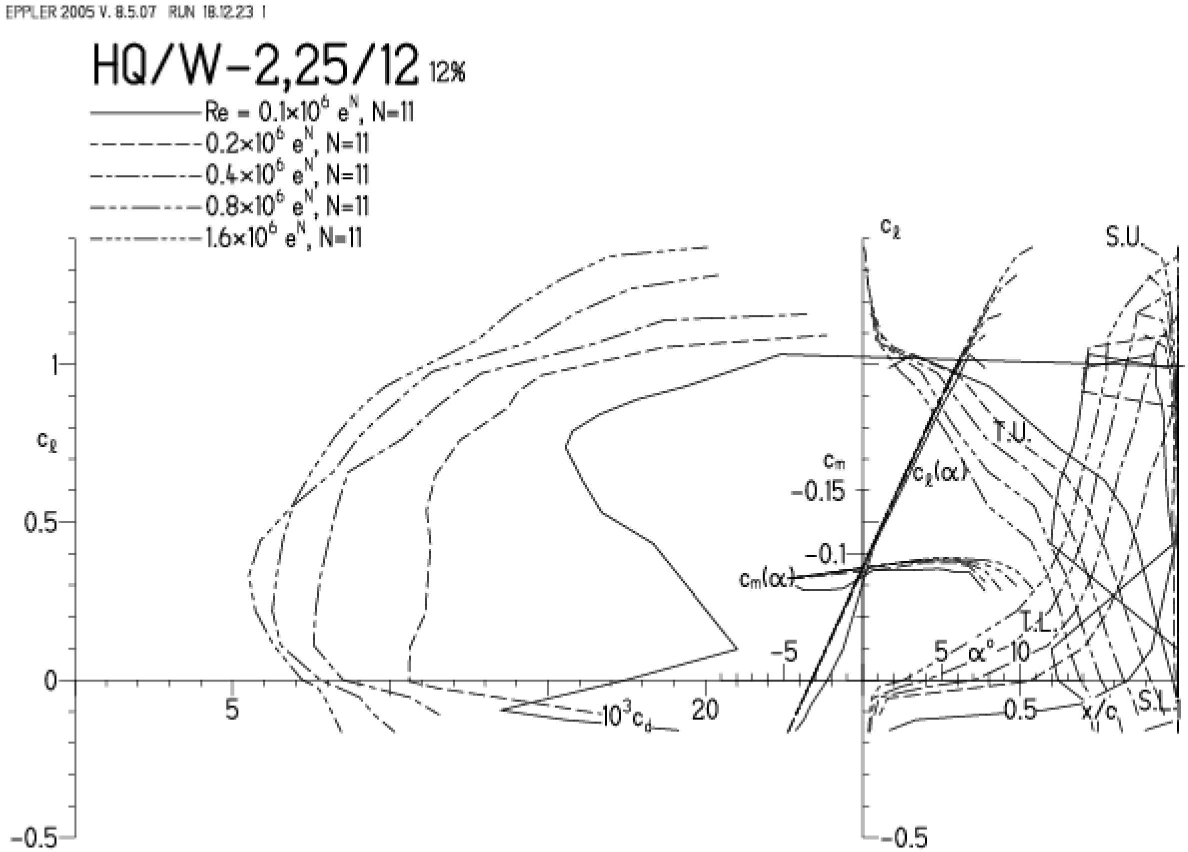


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



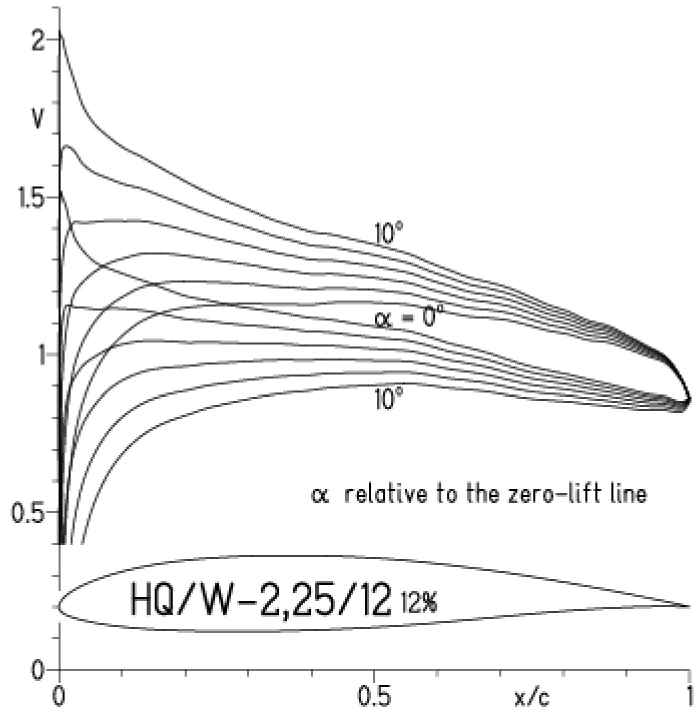
<u>HQ/W-2,25/12</u>, N=11



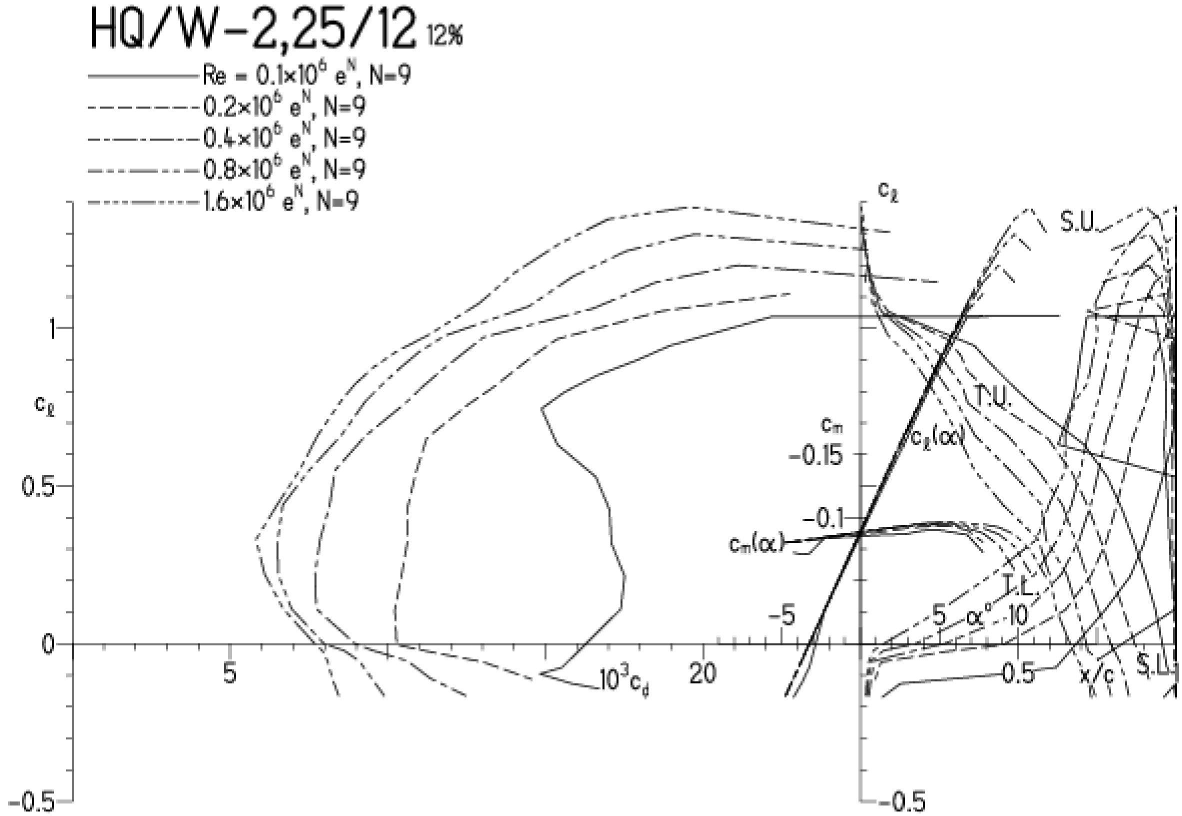


<u>HQ/W-2,25/12</u>, N=9

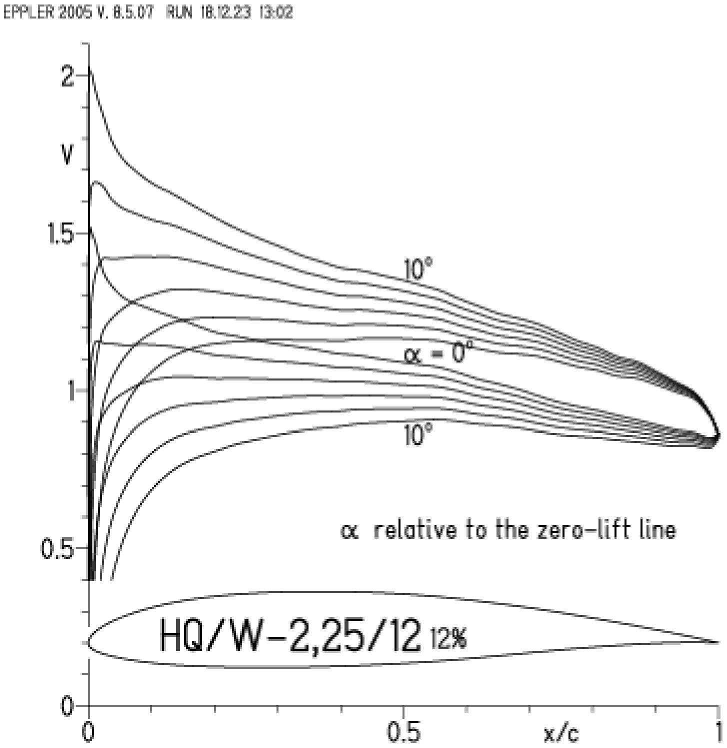
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

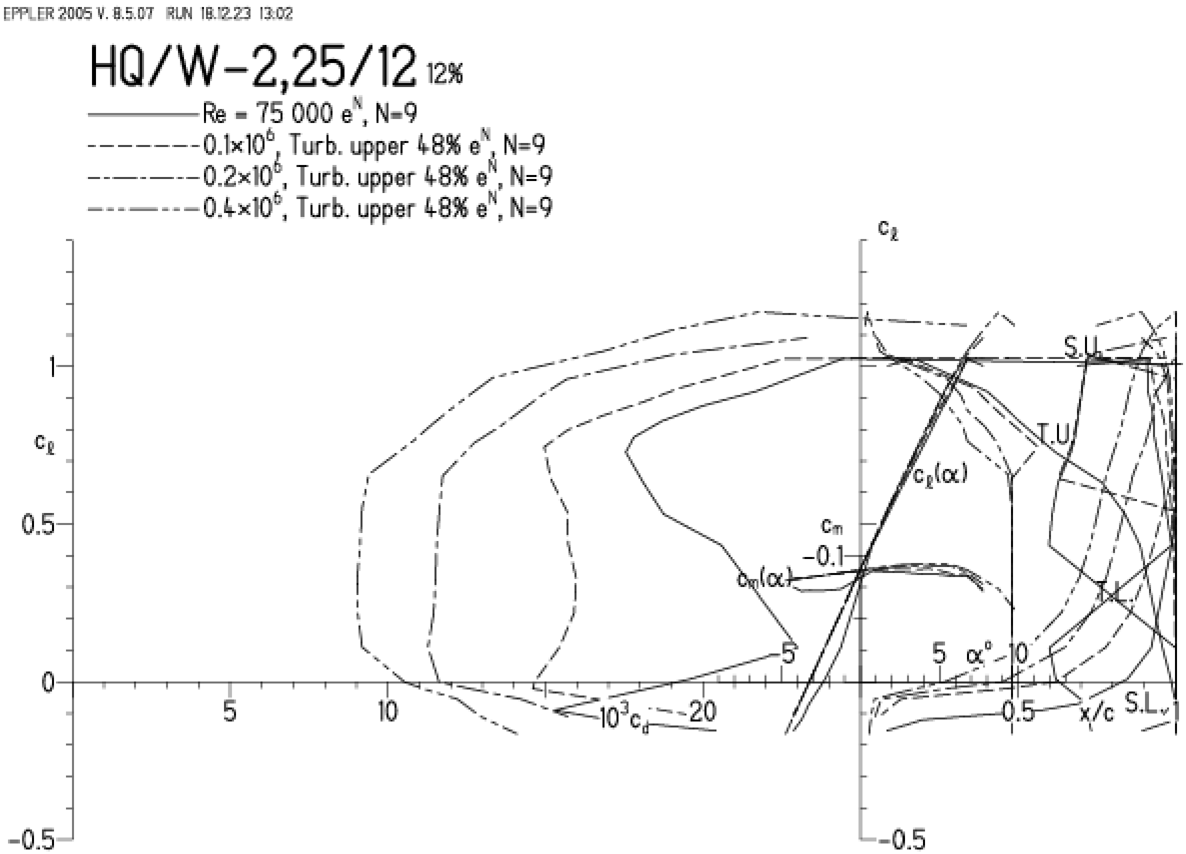


EPPLER 2005 V. 8.5

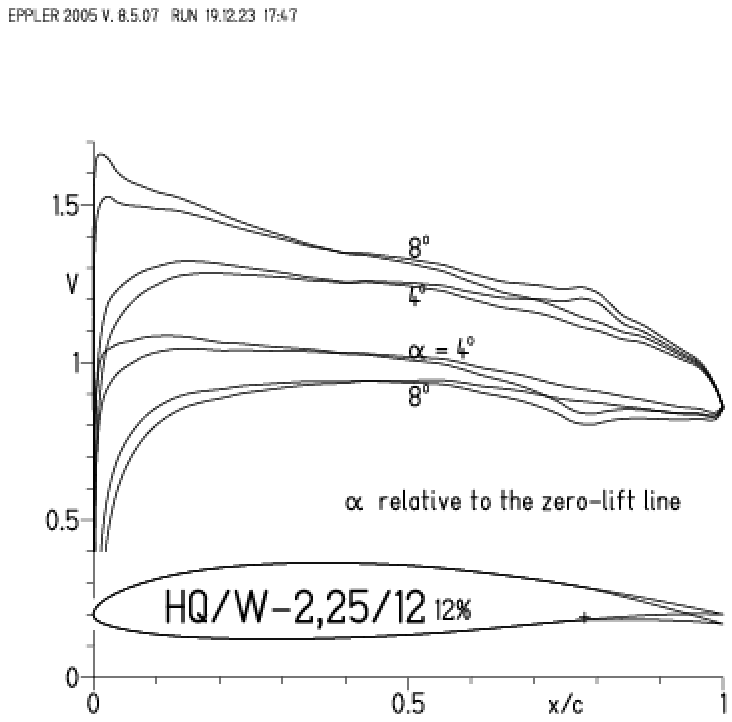


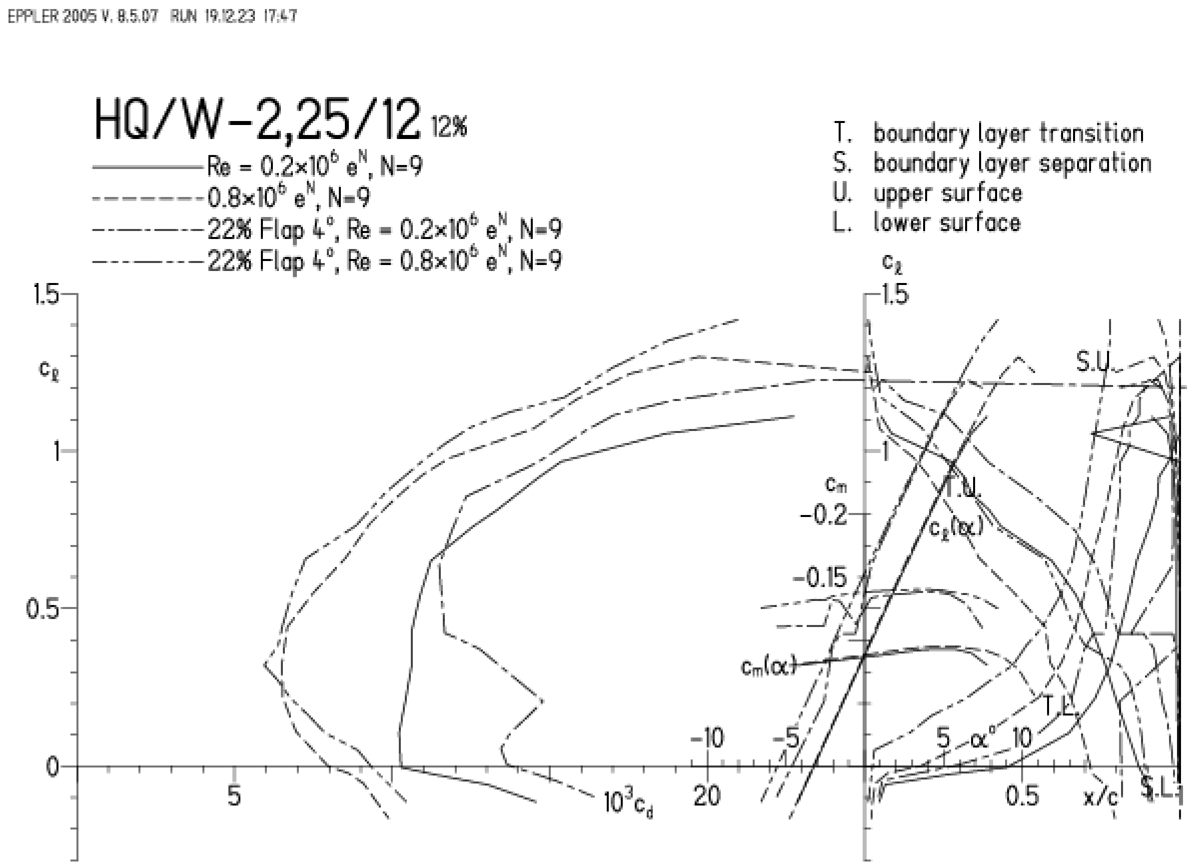
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





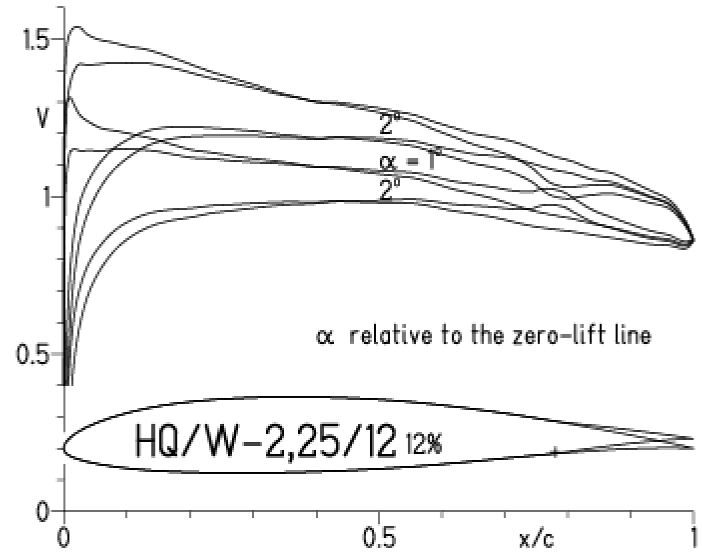
<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag



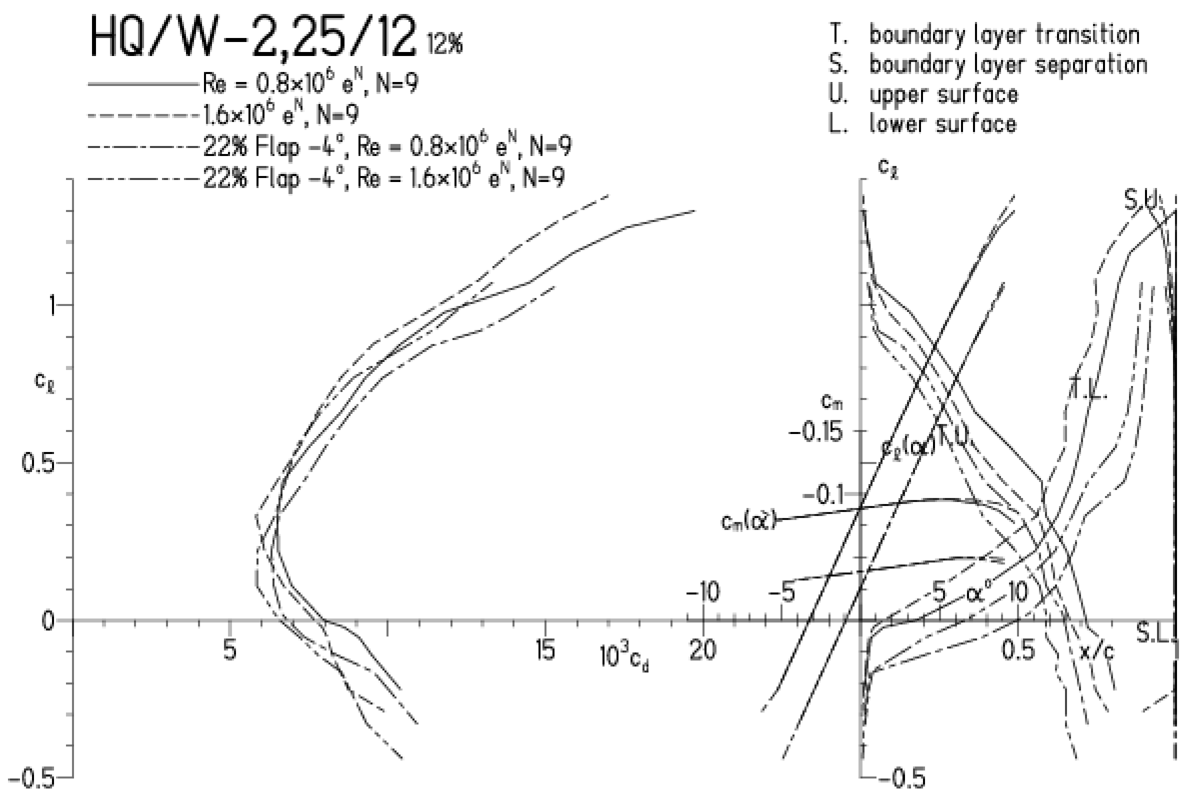


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

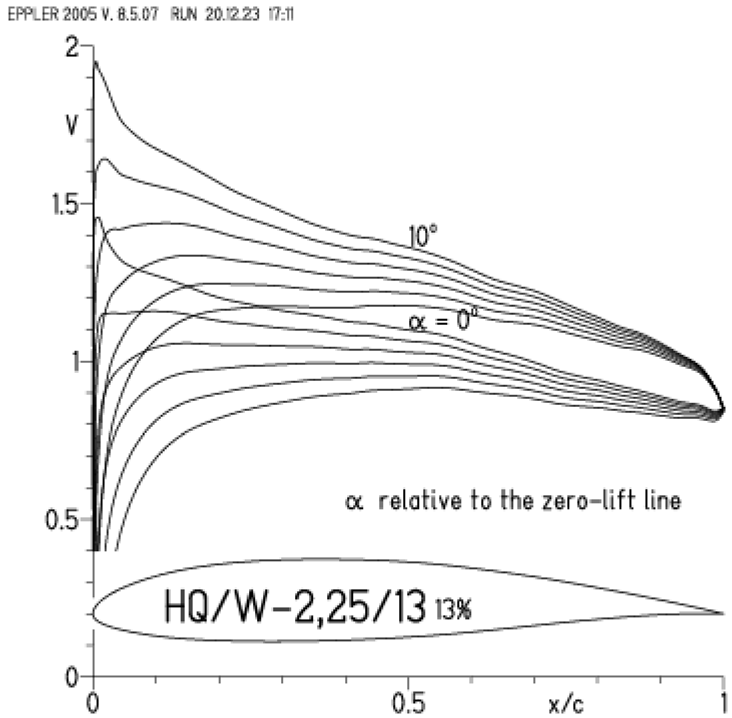
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

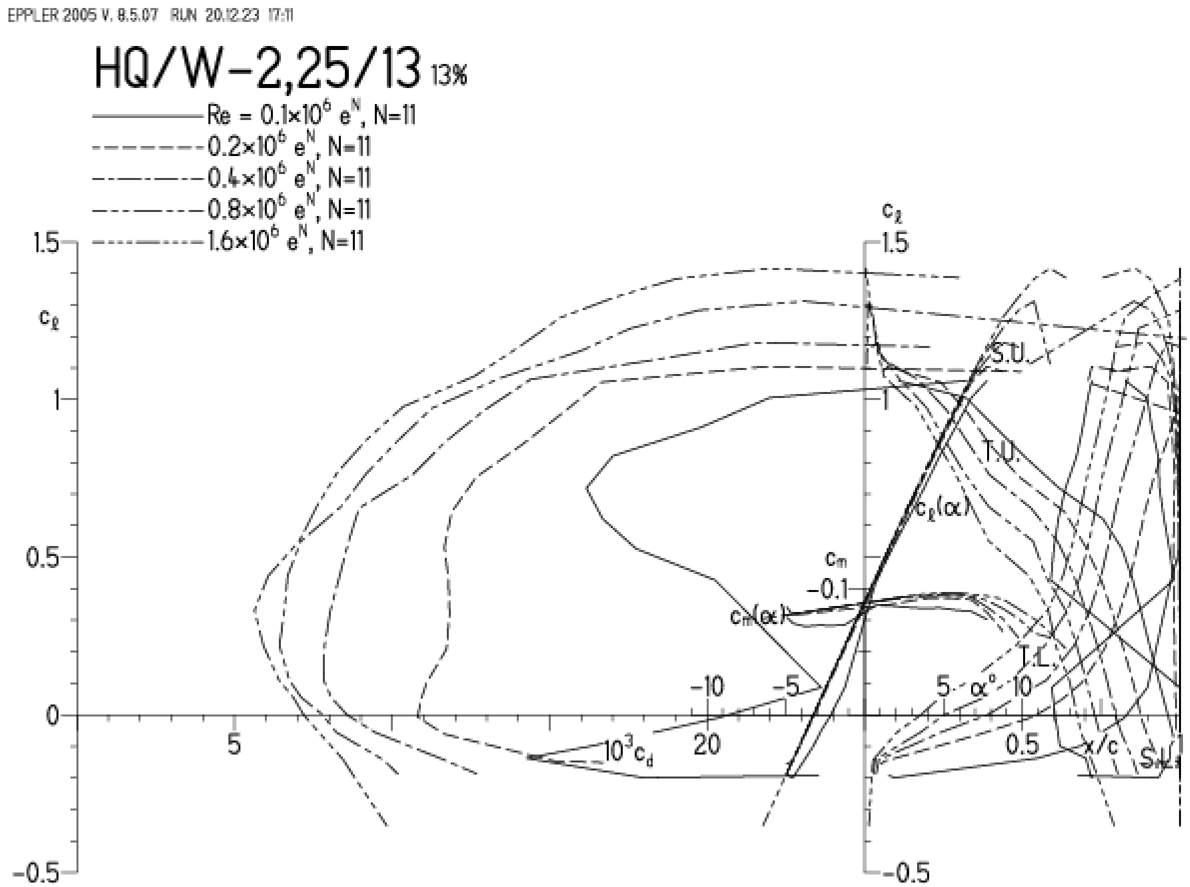


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

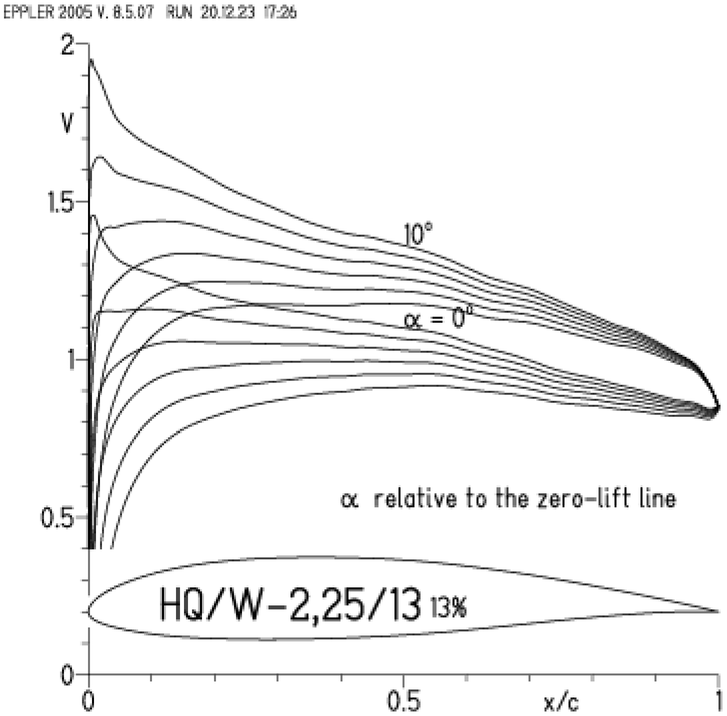


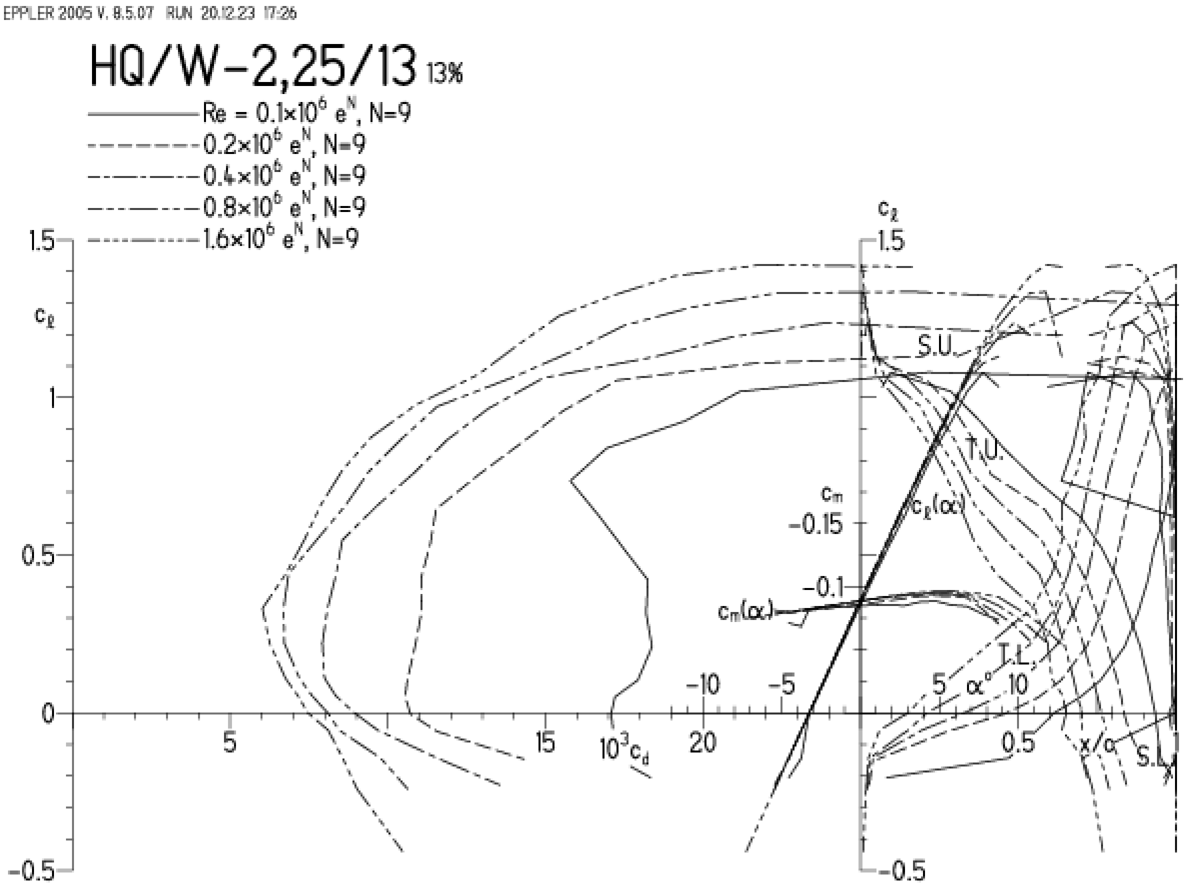
<u>HQ/W-2,25/13</u>, N=11



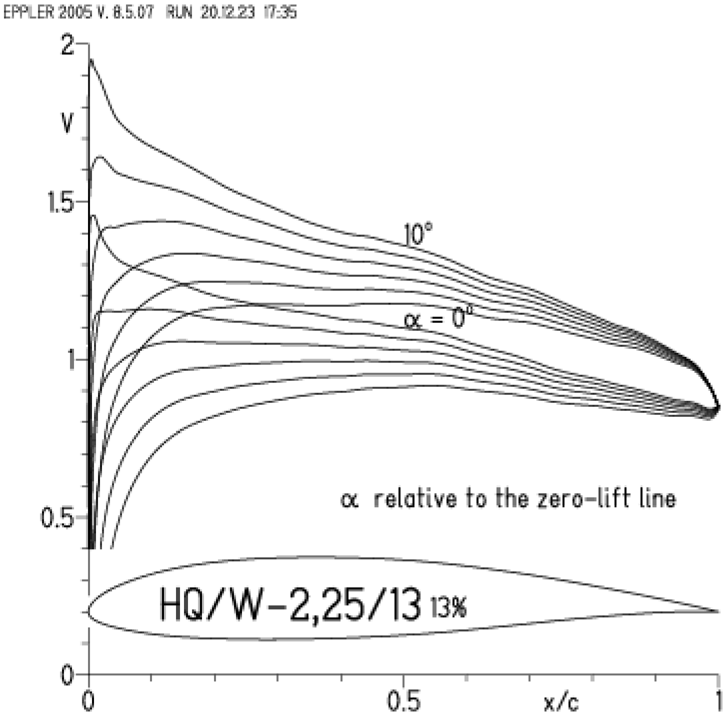


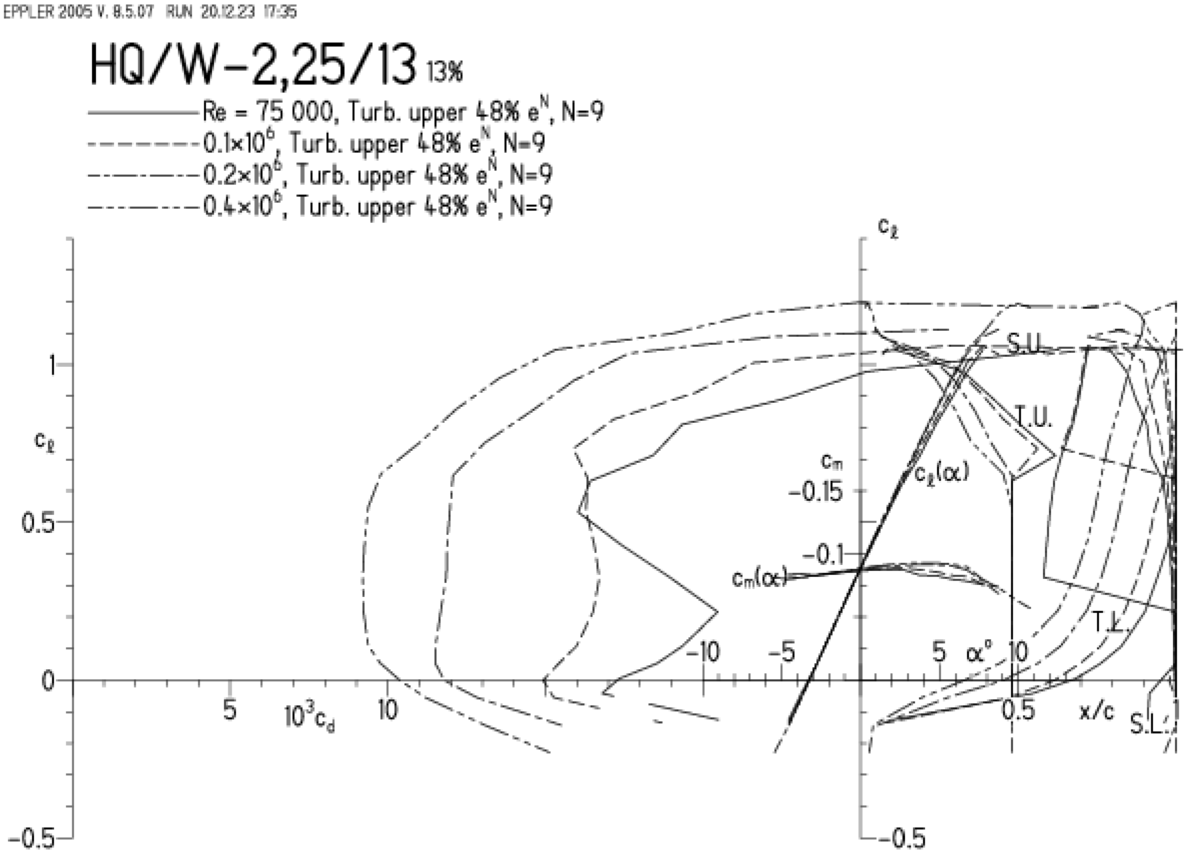
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
cℓ
S.U.
T.U.
cℓ(α)
cm
cm(α)
T.L.
α°
10³cd
x/c
S.L.

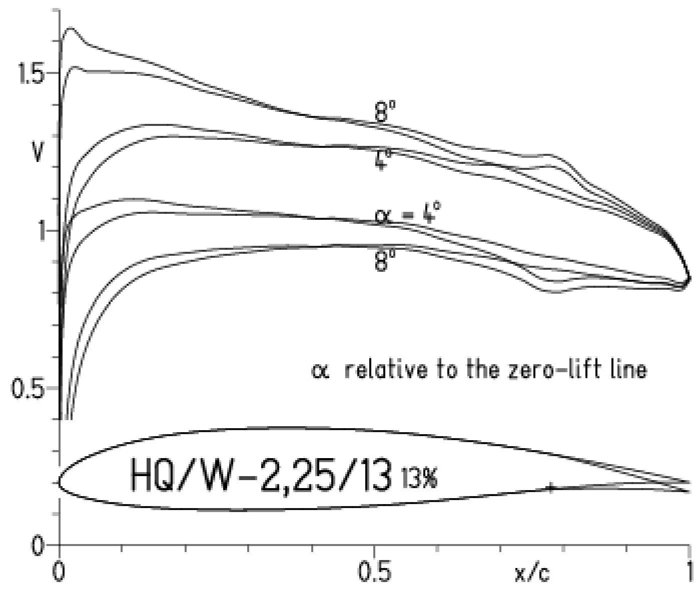
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



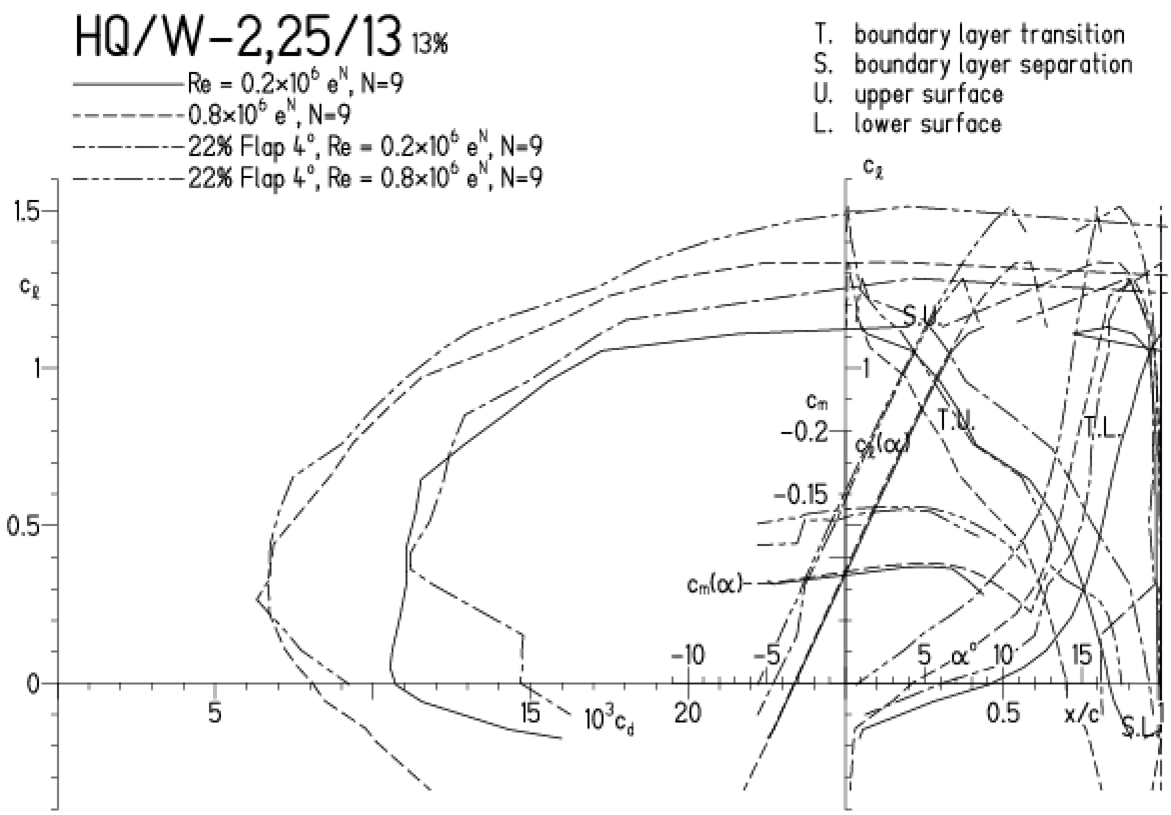


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

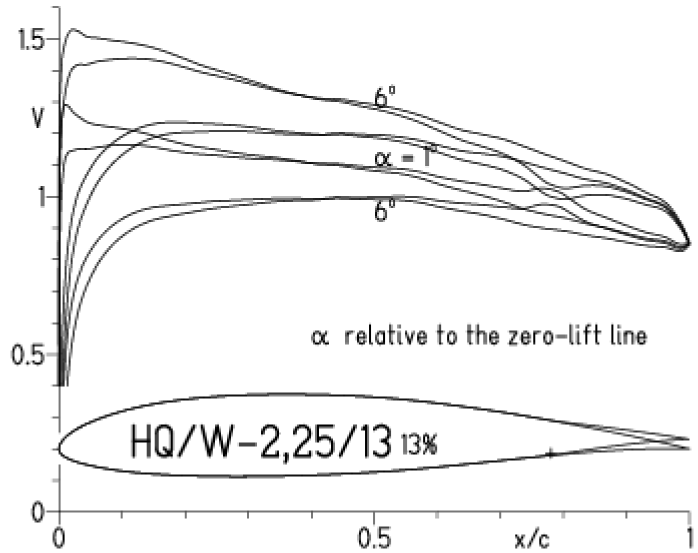


EPPLER 2005 V.

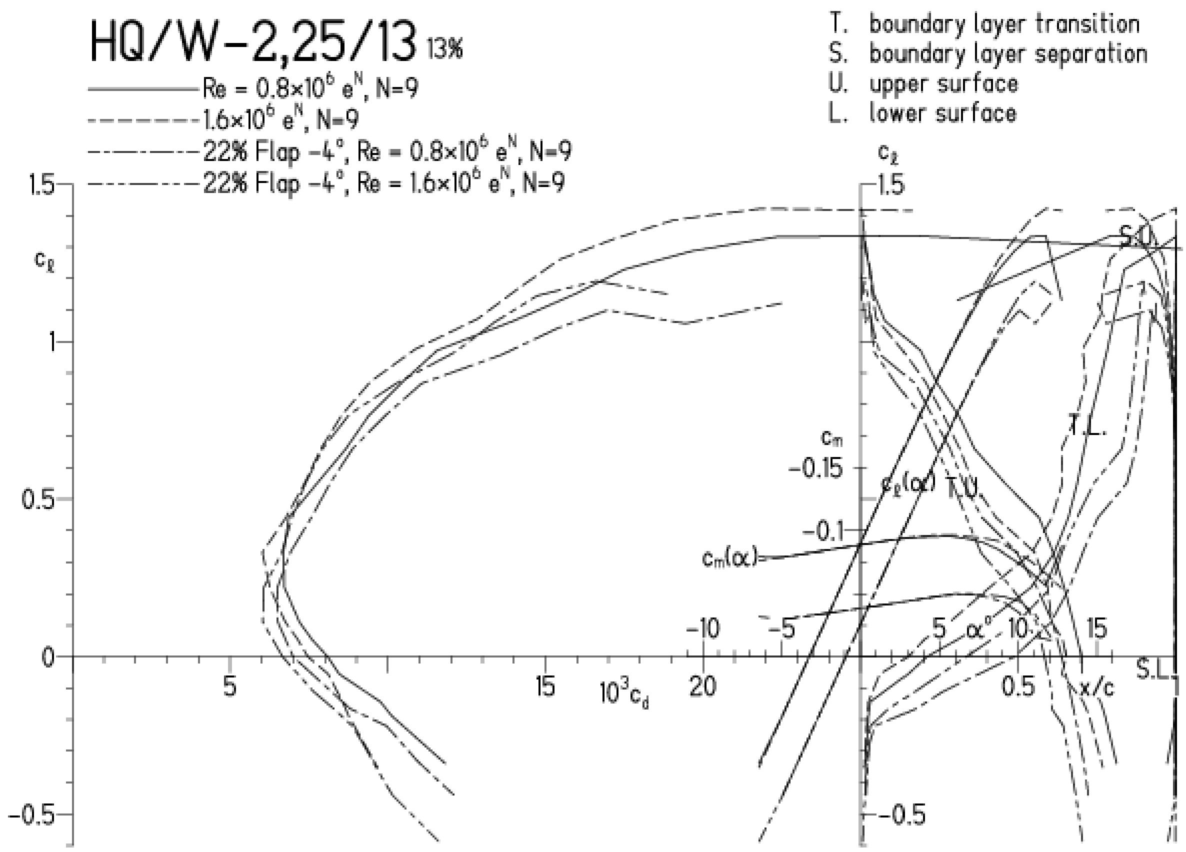


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

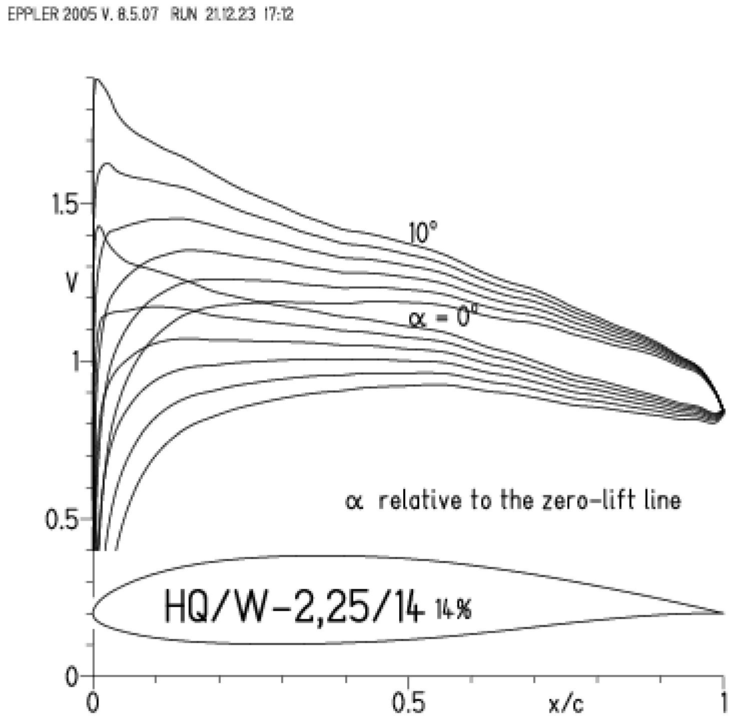
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

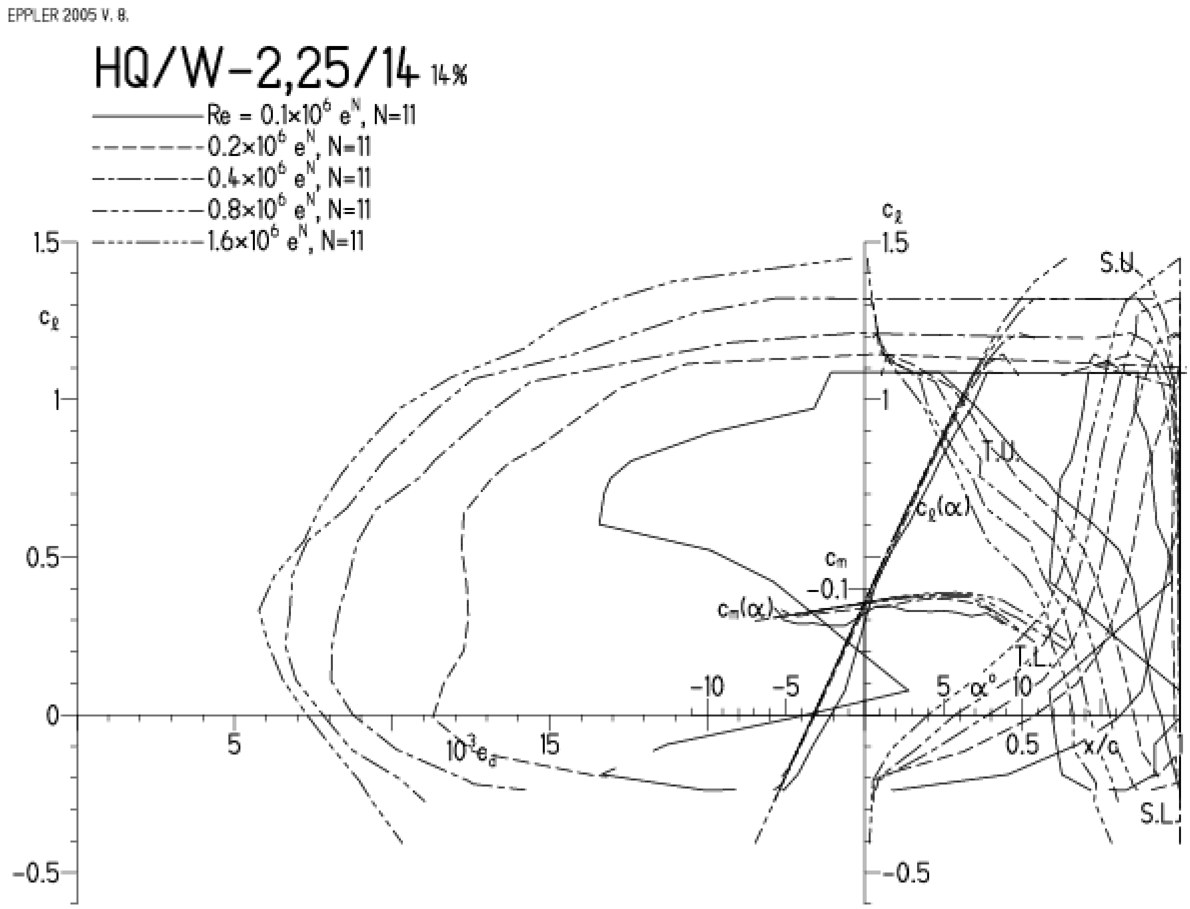


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

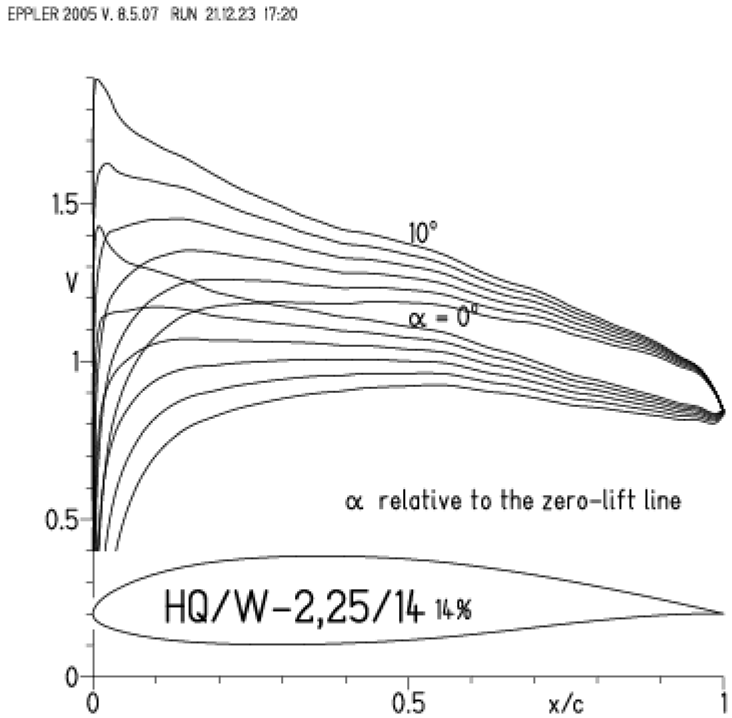


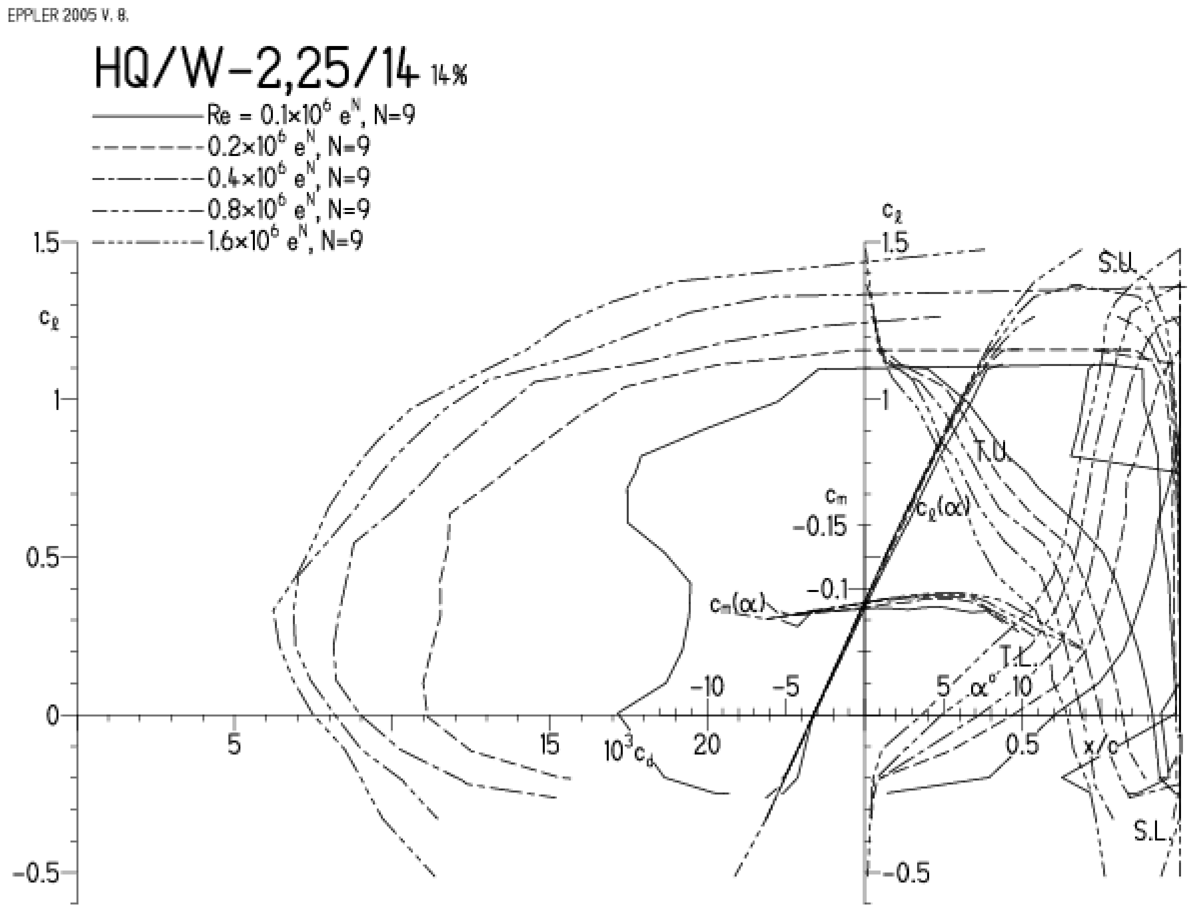
HQ/W-2,25/14, N=11





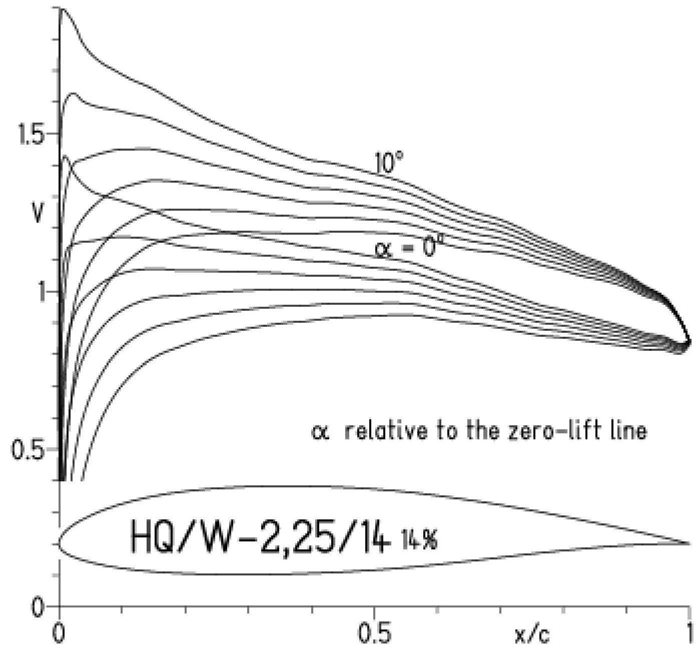
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

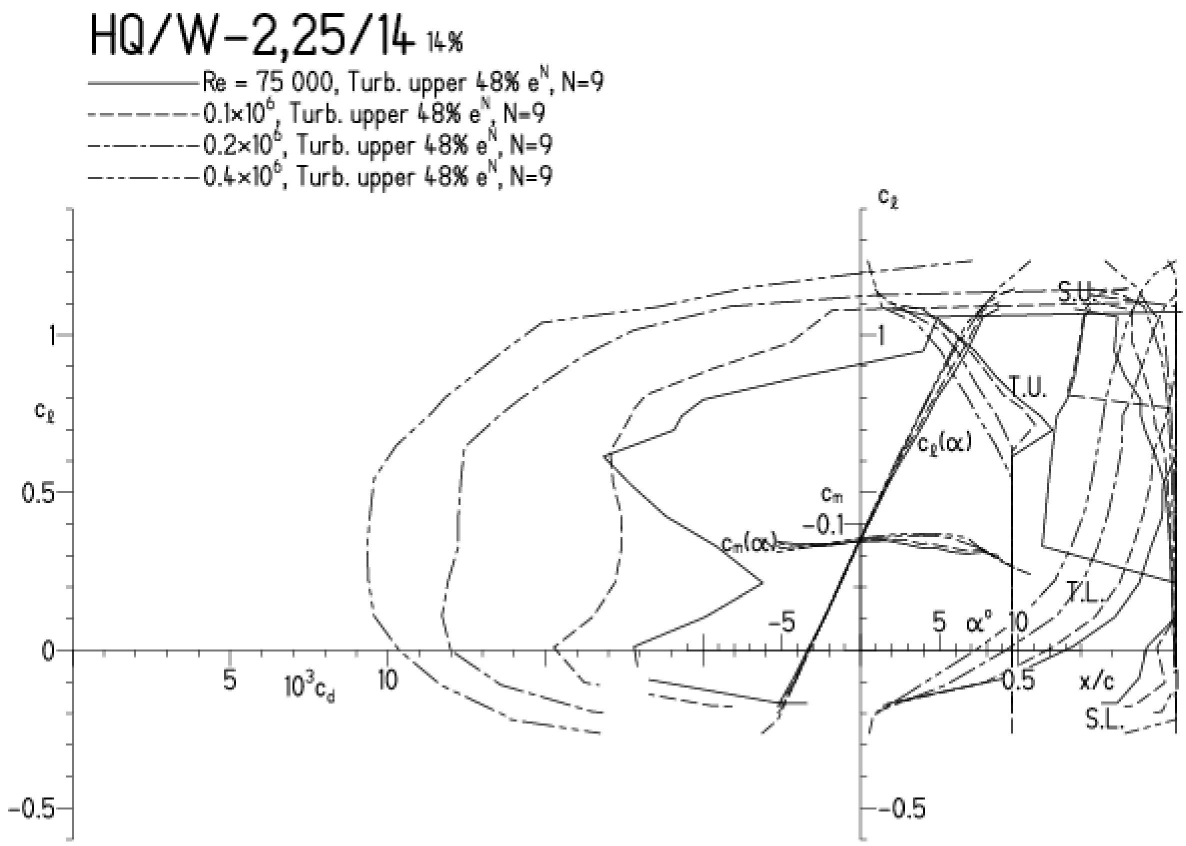

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
cℓ
1
0.5
0
−0.5
5
15
10³cd
20
cm
−0.15
−0.1
cm(α)
cℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

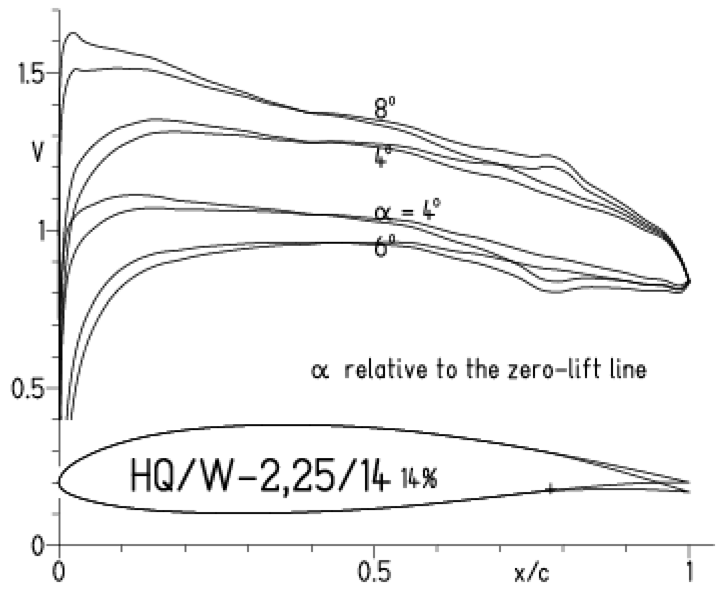


EPPLER 2005 V. 8.5.07 RU

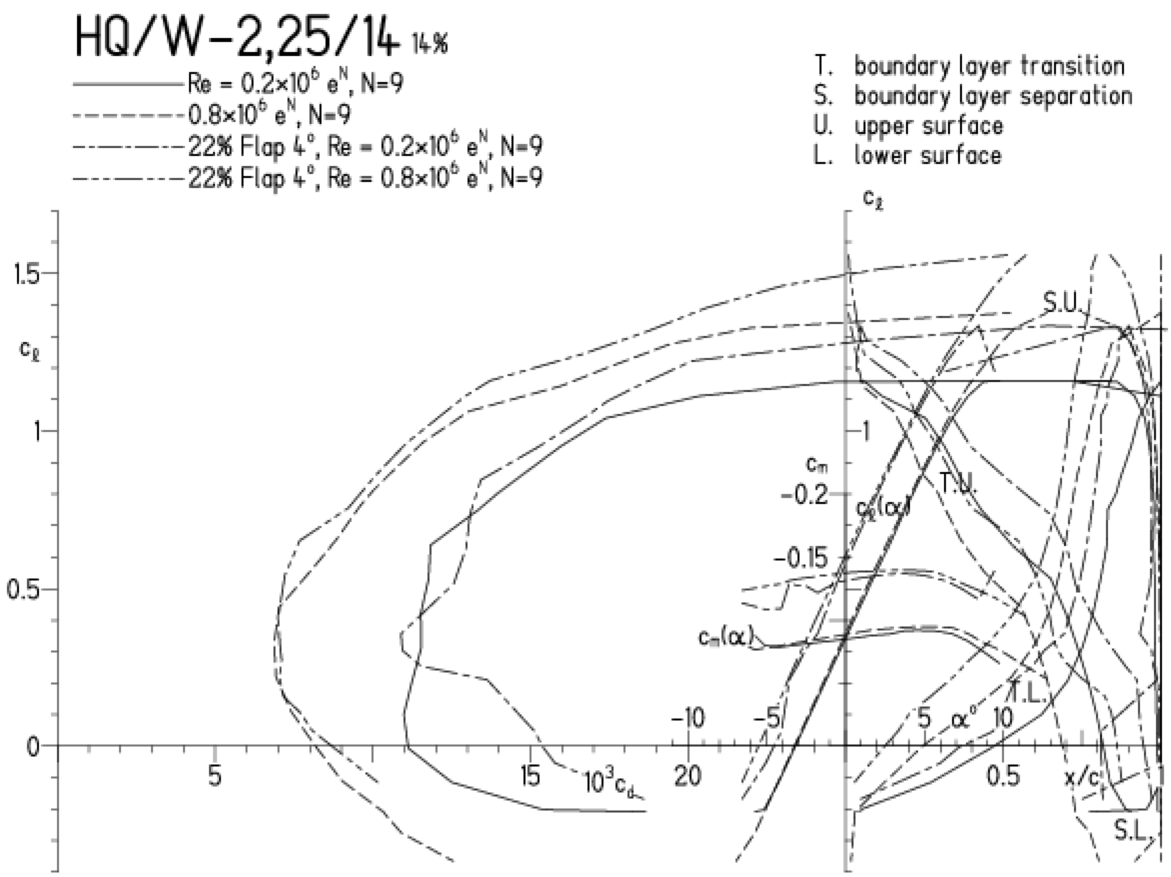


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

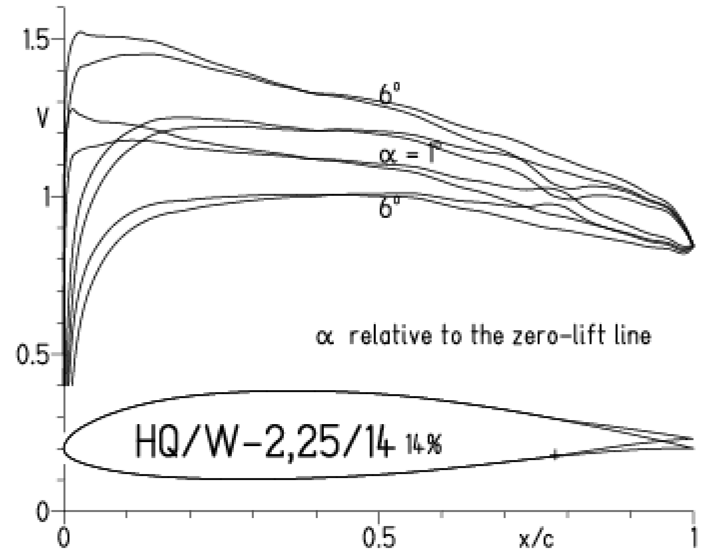


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

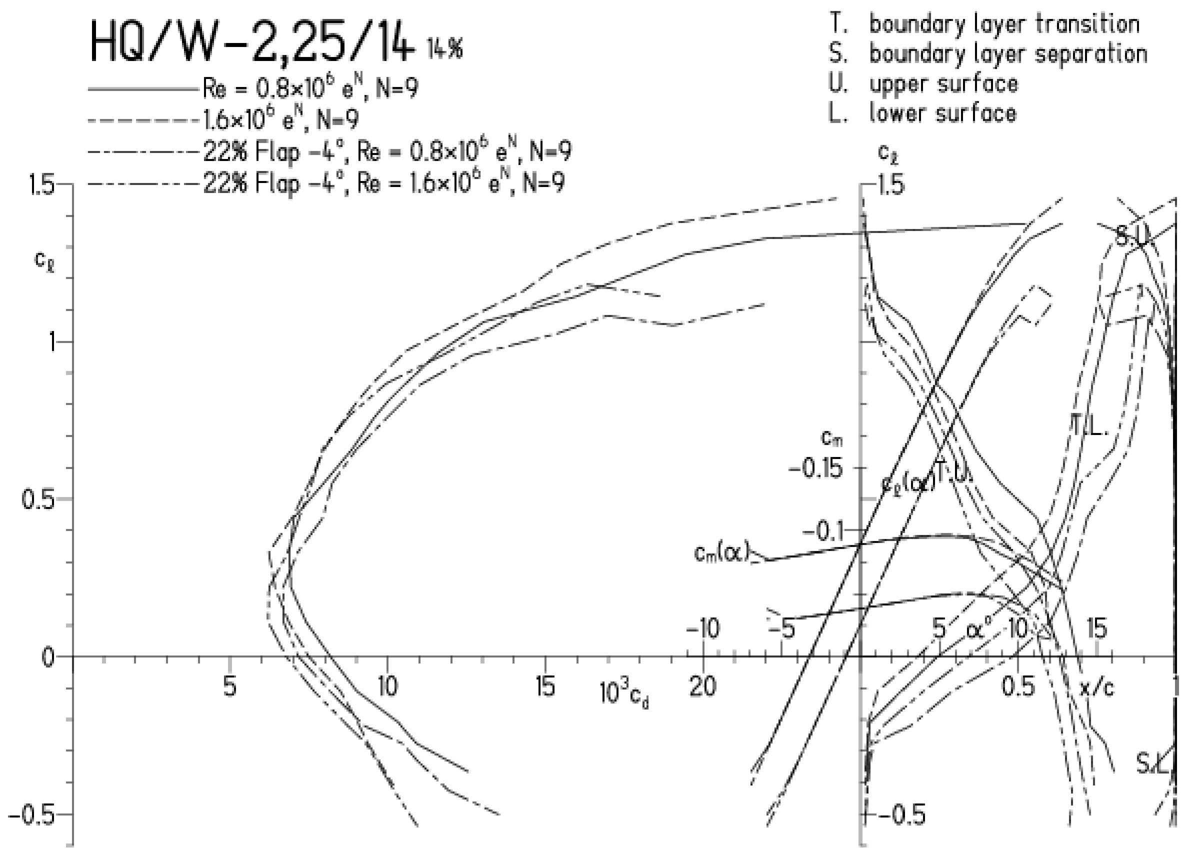


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

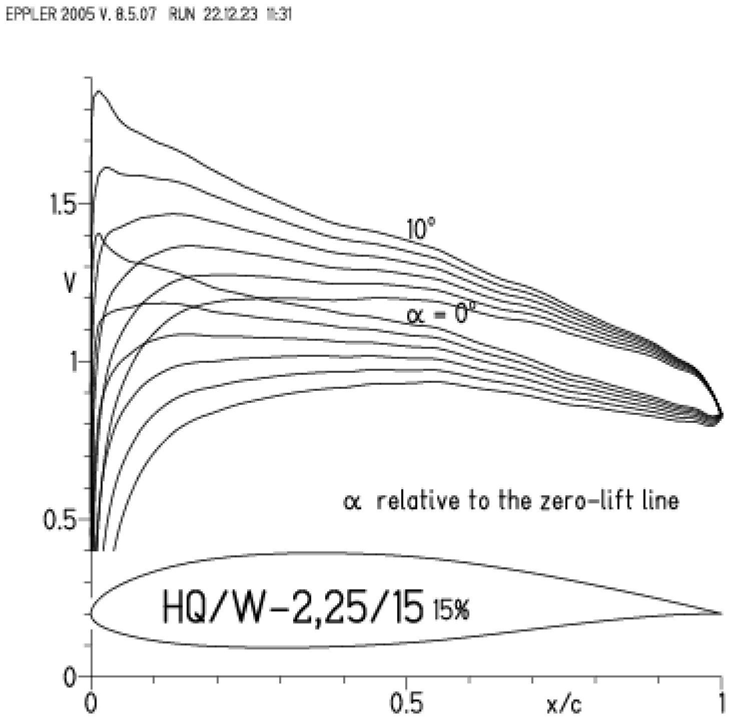
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

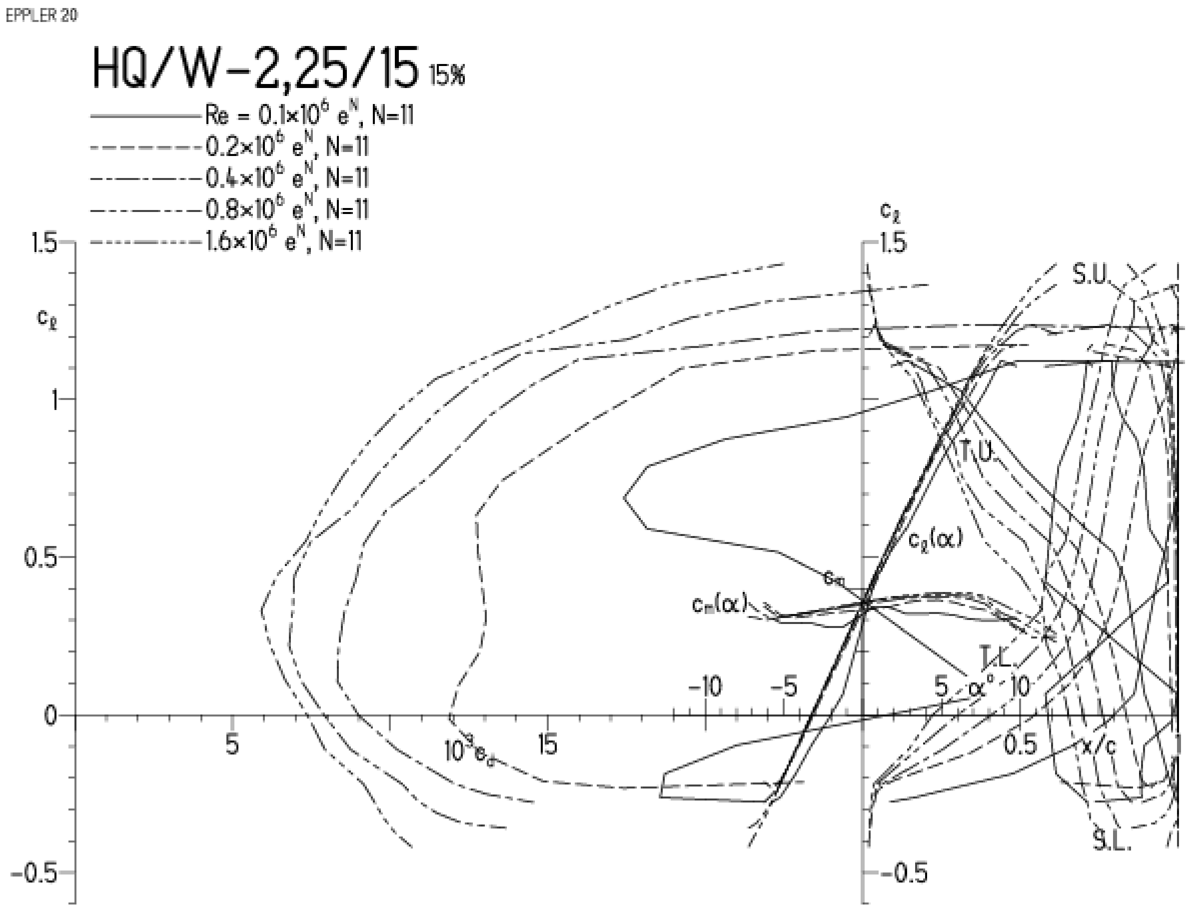


EPPLER 2005 V. 8.5.07



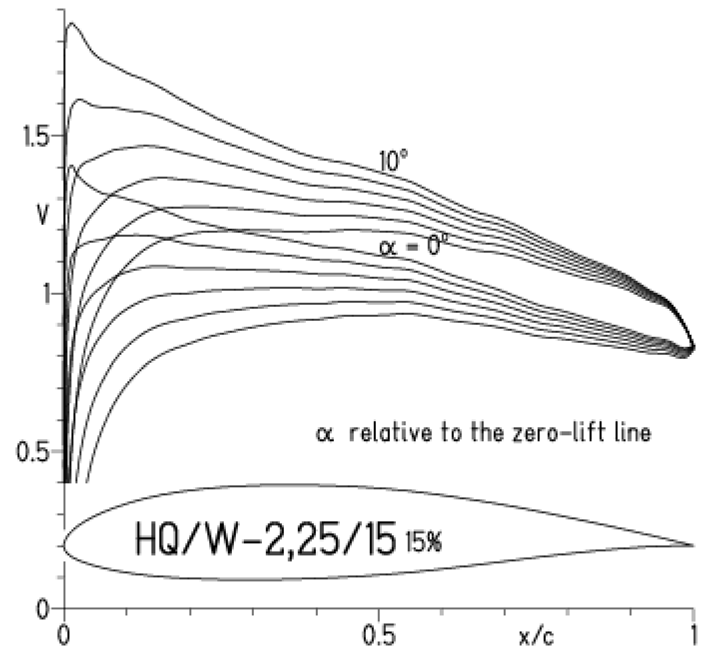
HQ/W-2,25/15, N=11



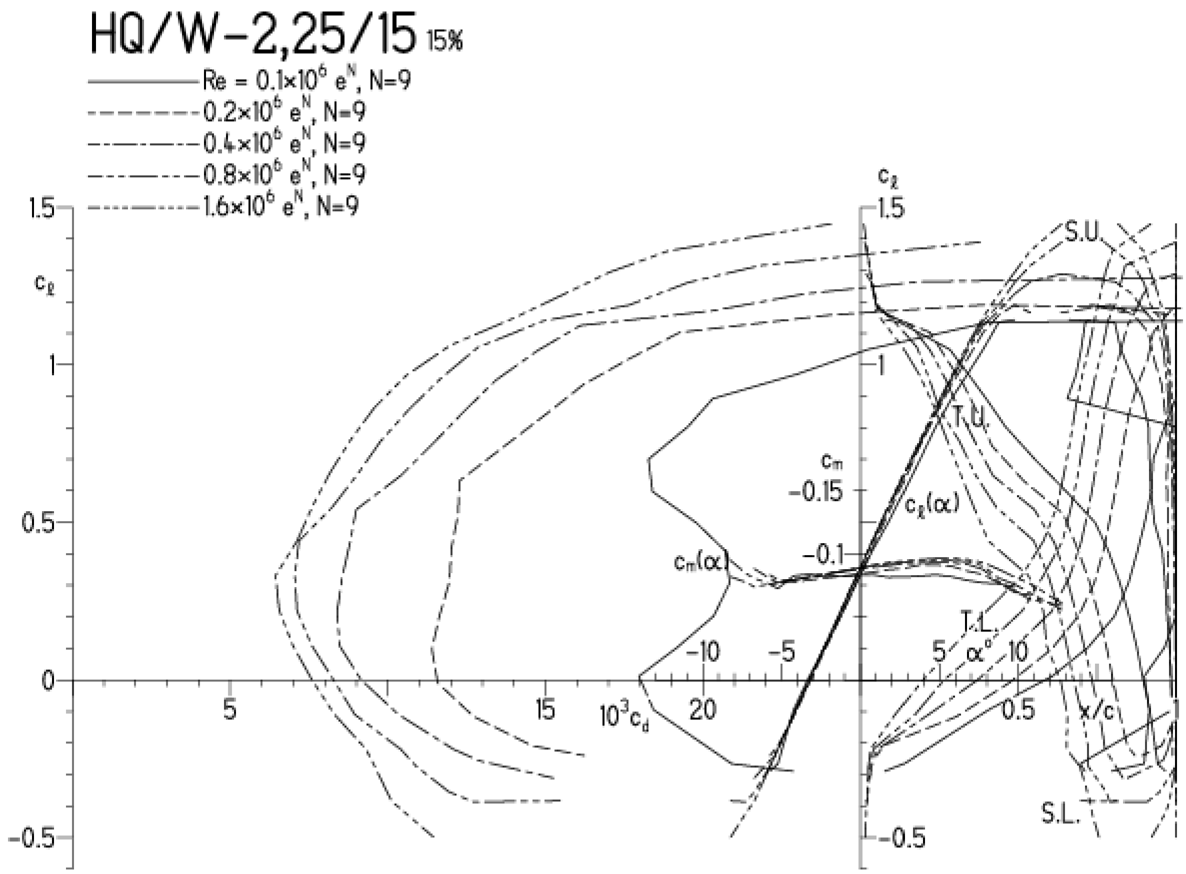


HQ/W-2,25/15, N=9

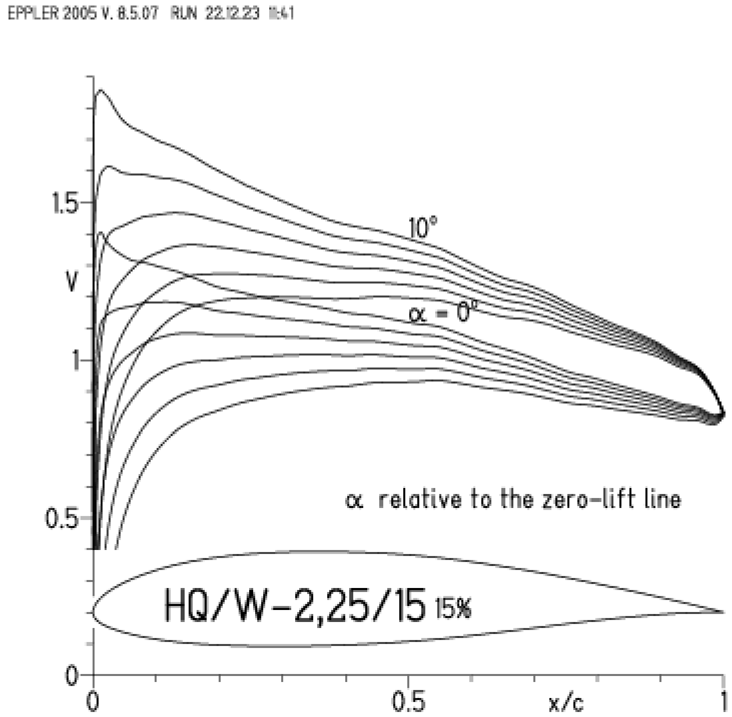
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

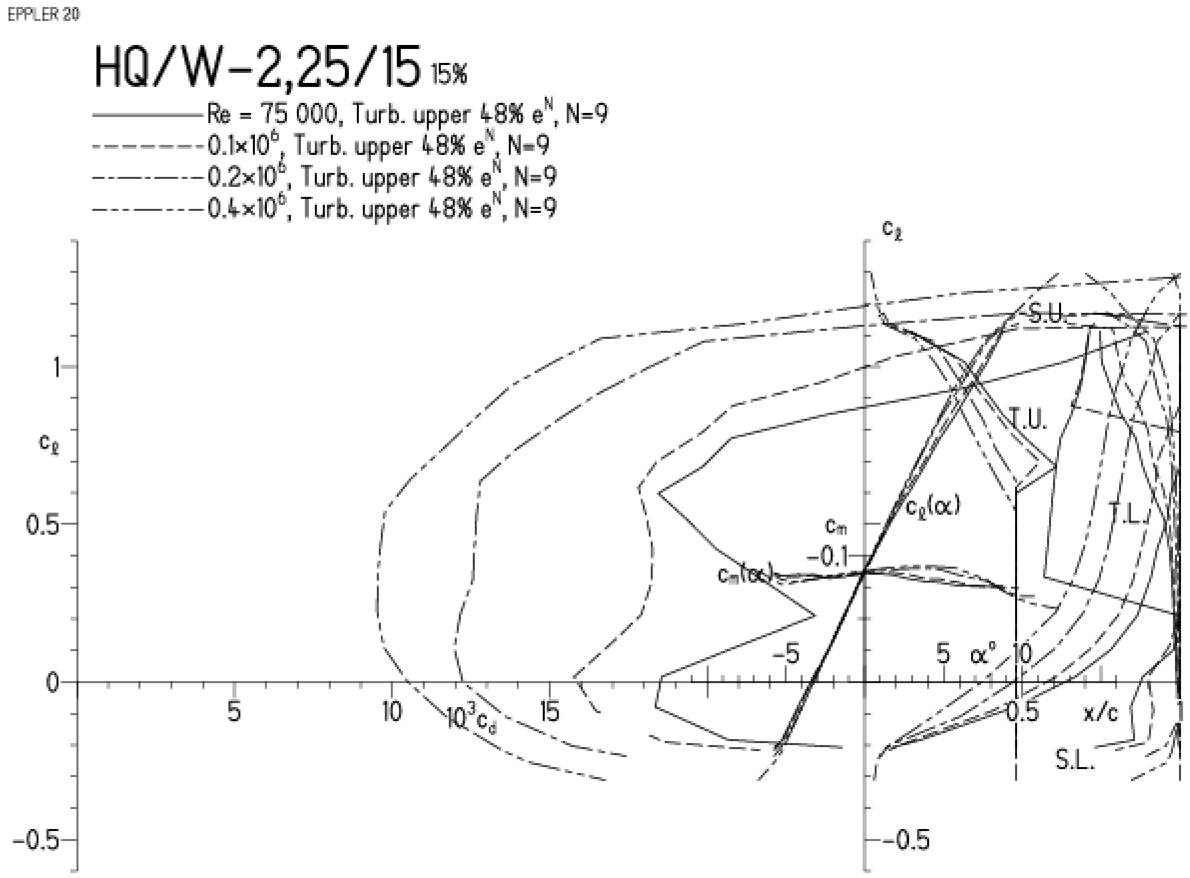


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



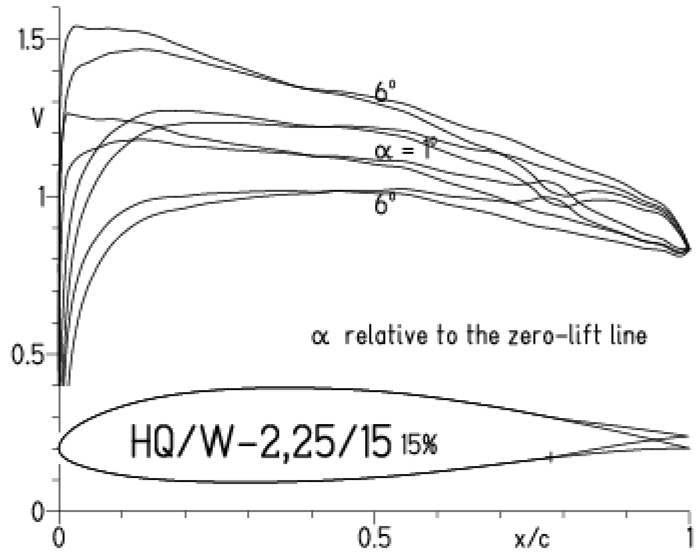


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

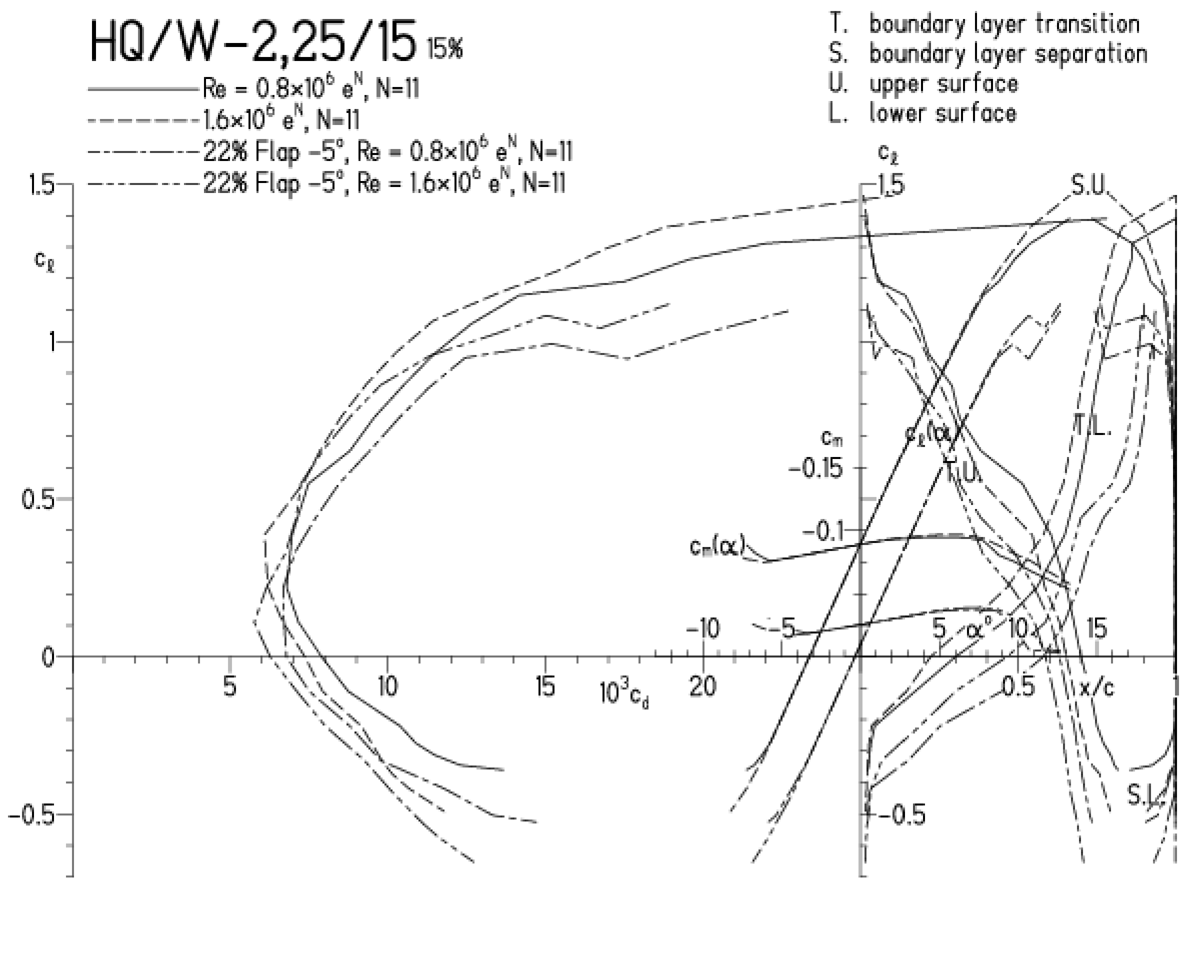
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

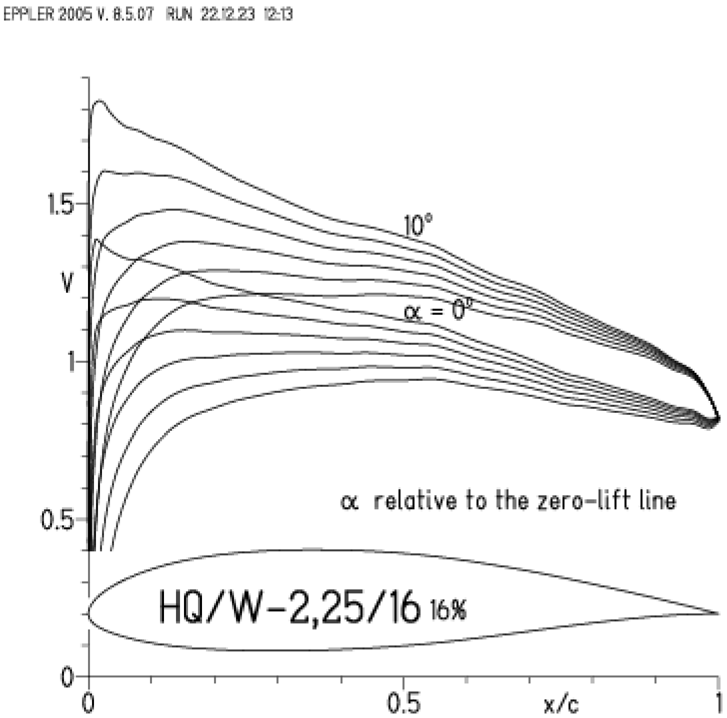
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

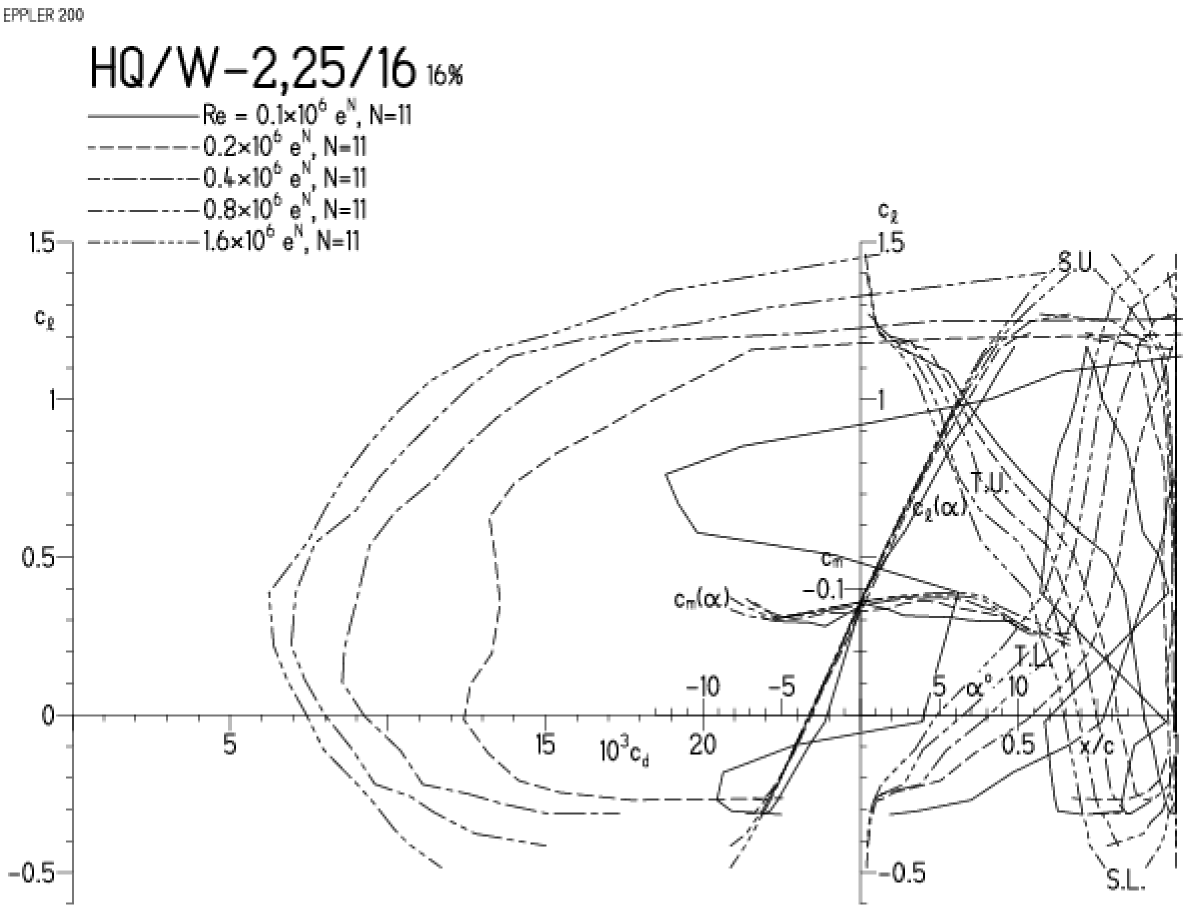


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

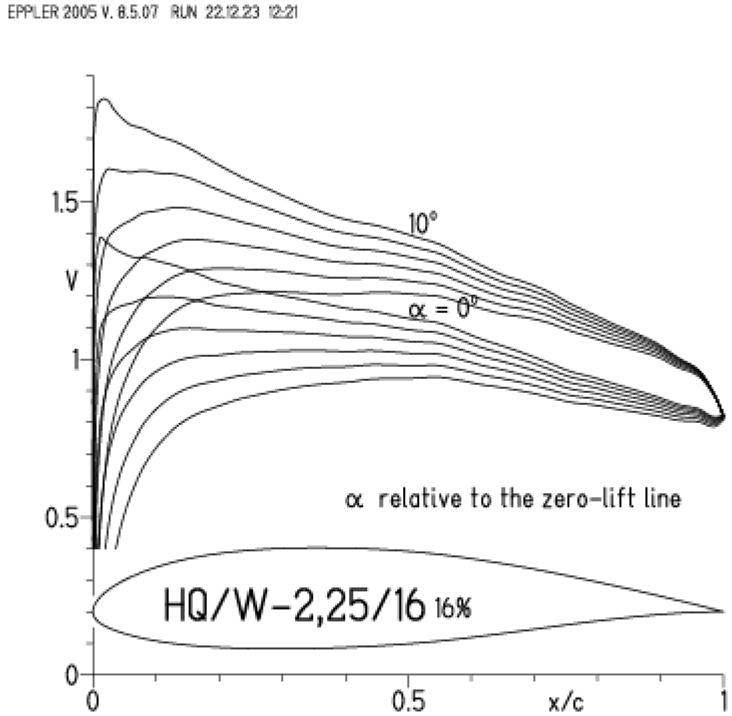


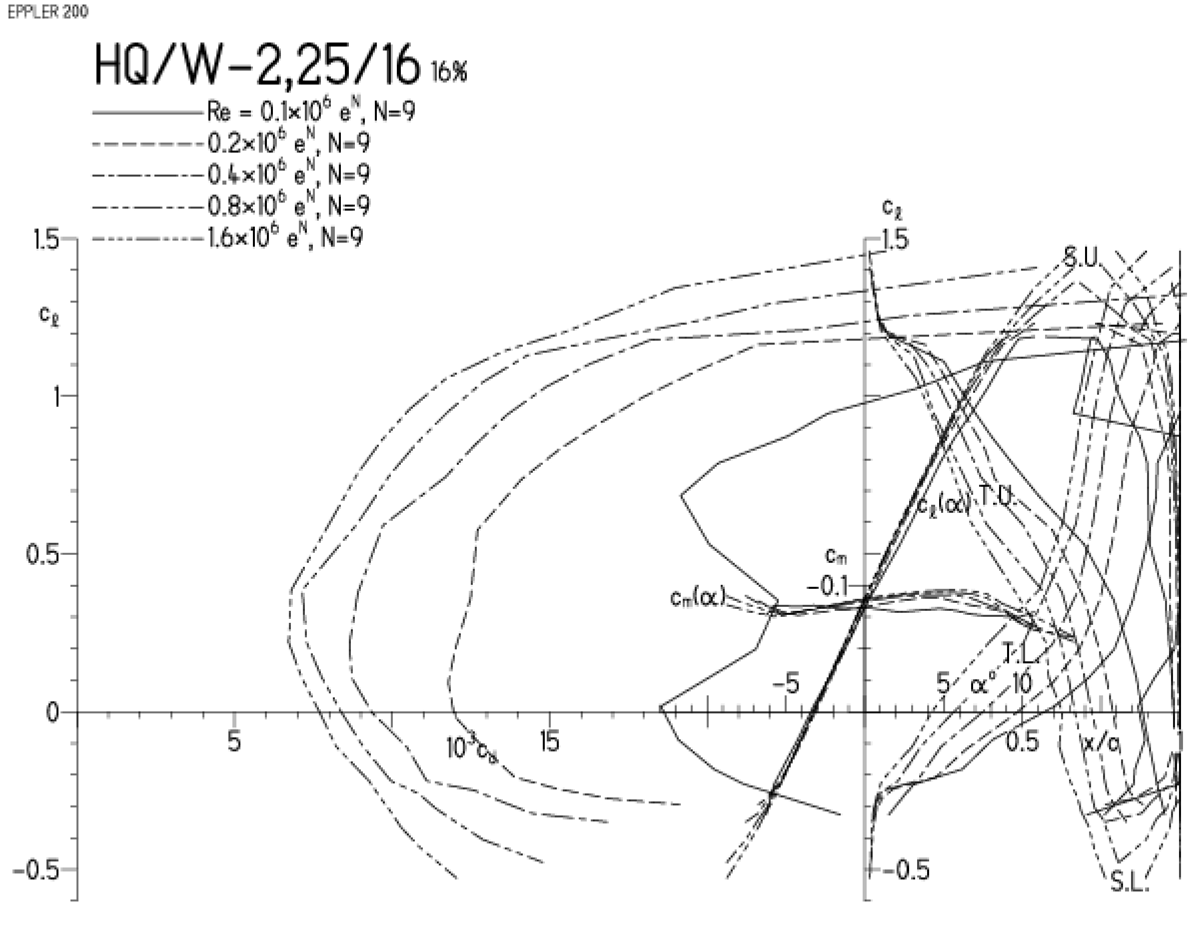
HQ/W-2,25/16, N=11



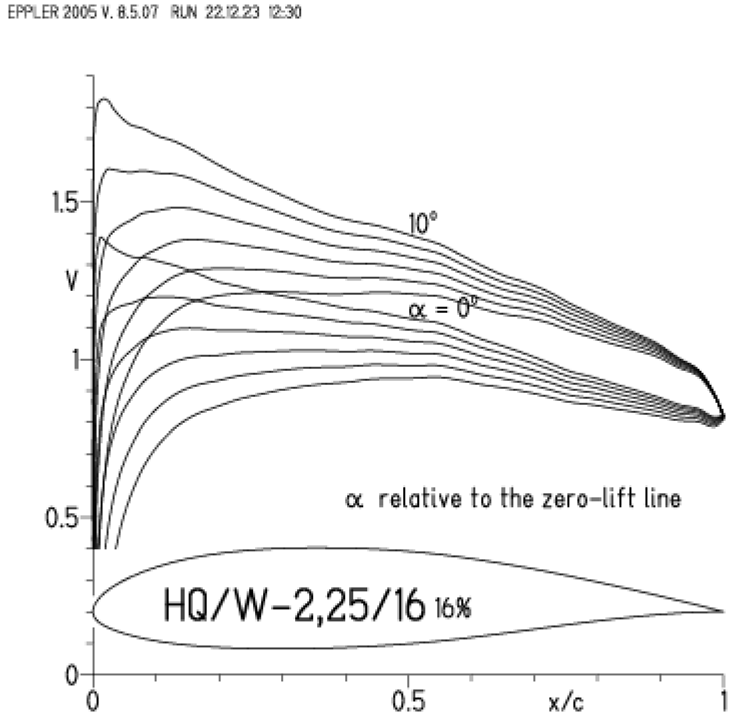


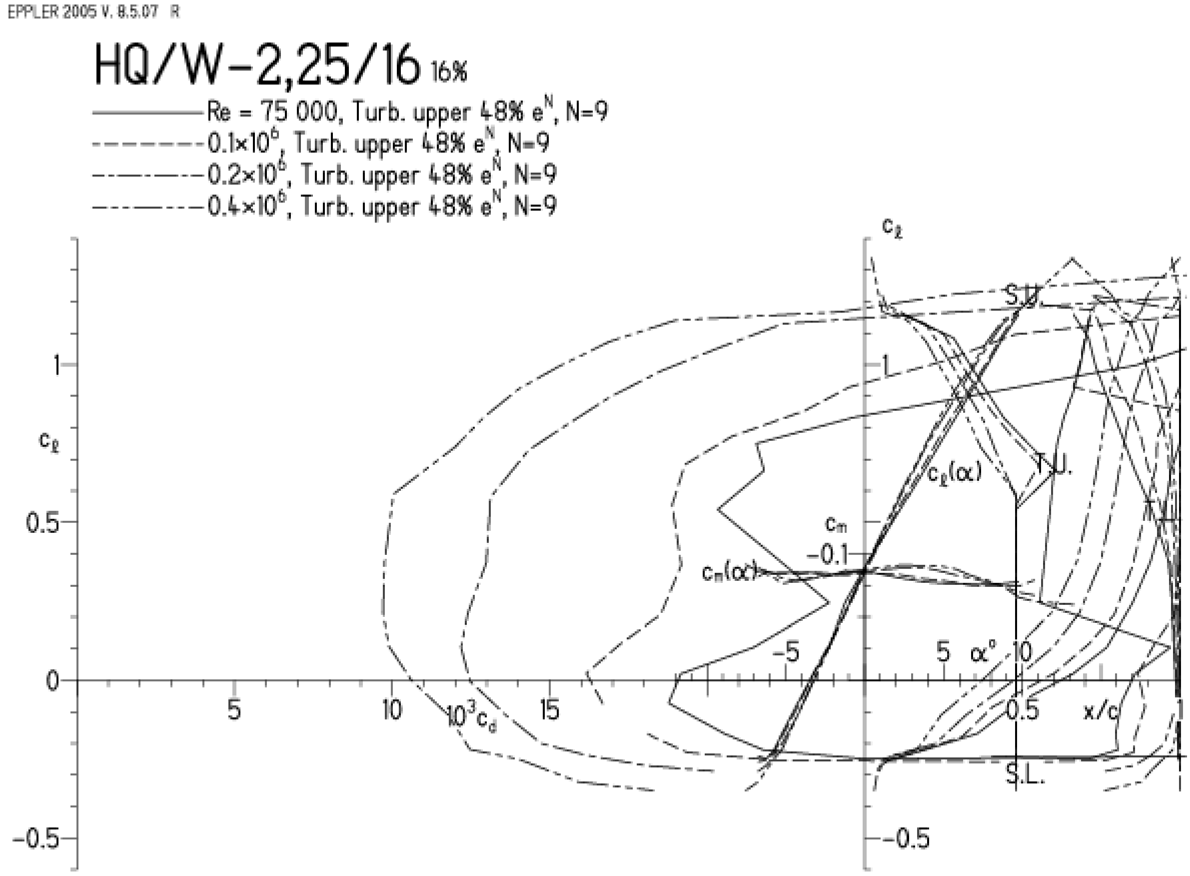
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^3 c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α)
T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

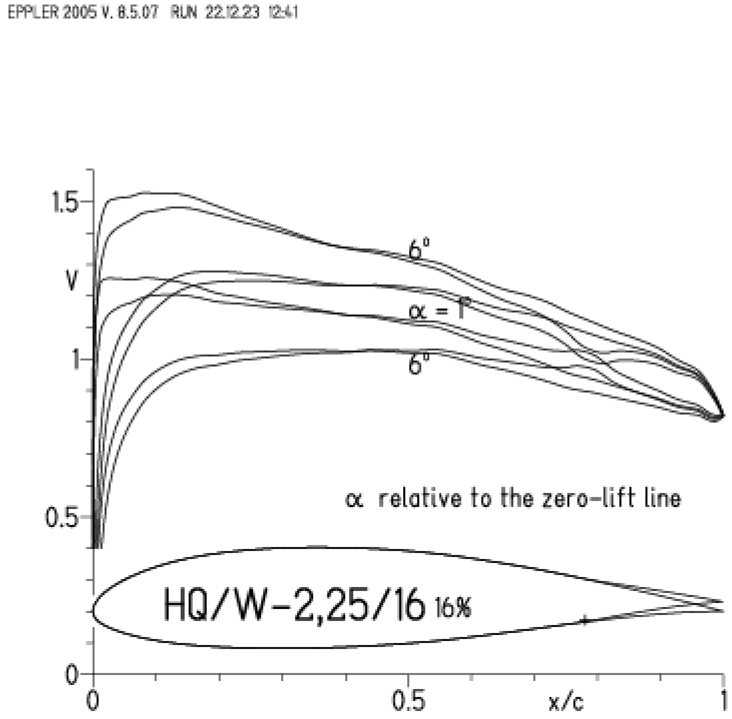


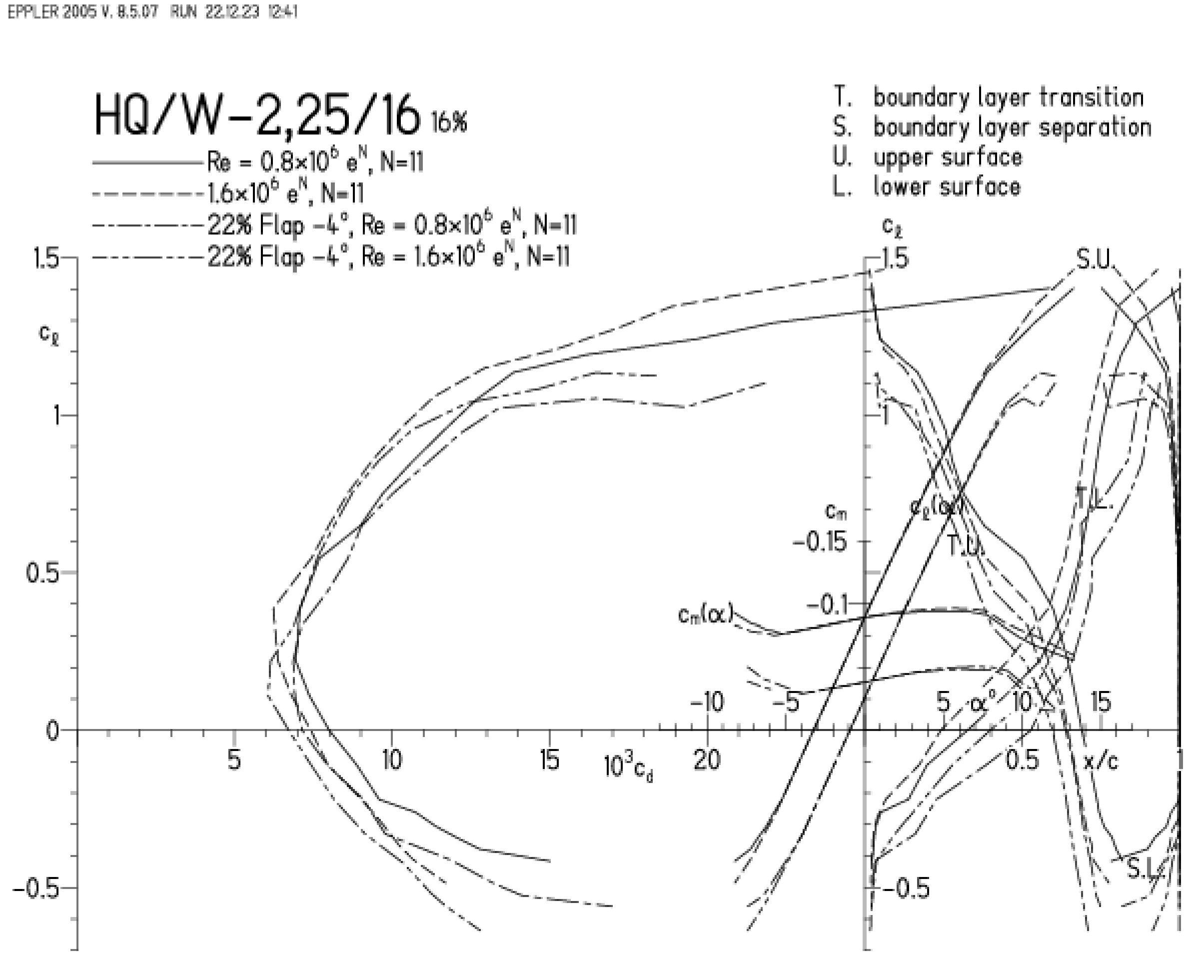


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

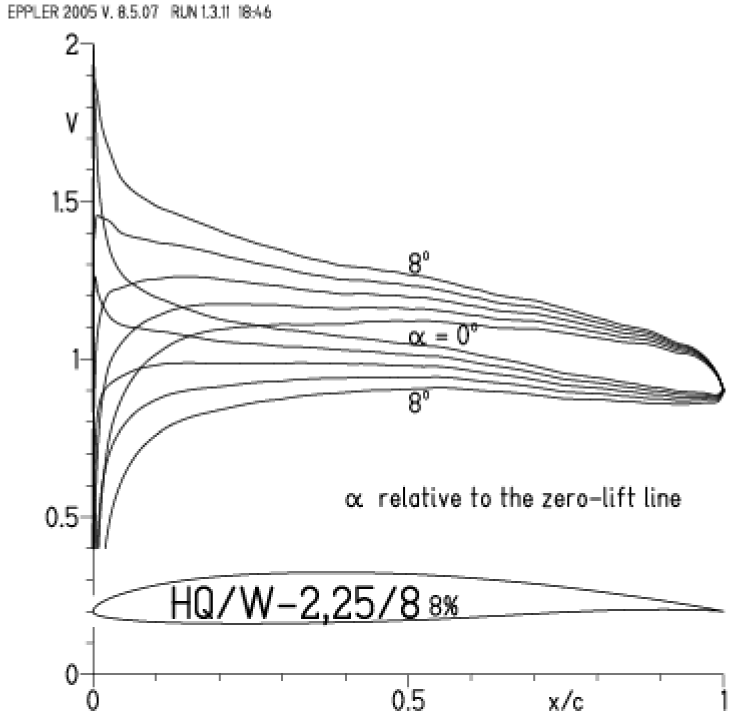
Bringt keine merkliche Verbesserung im Langsamflug.

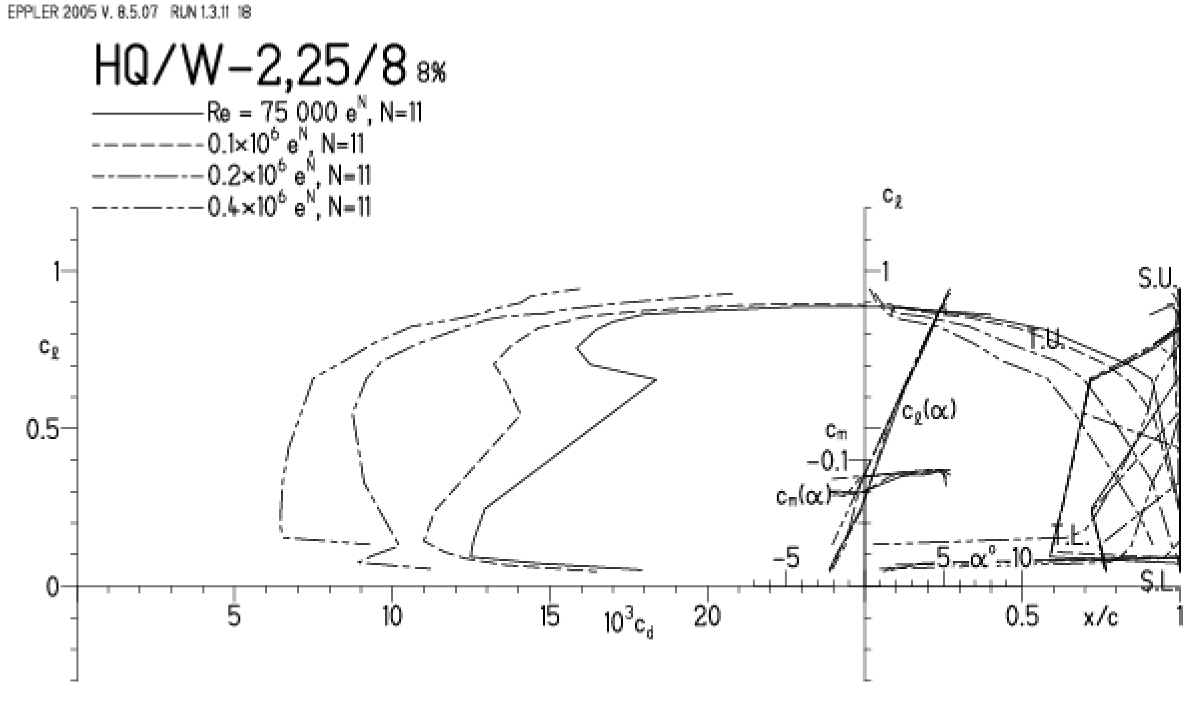
<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag



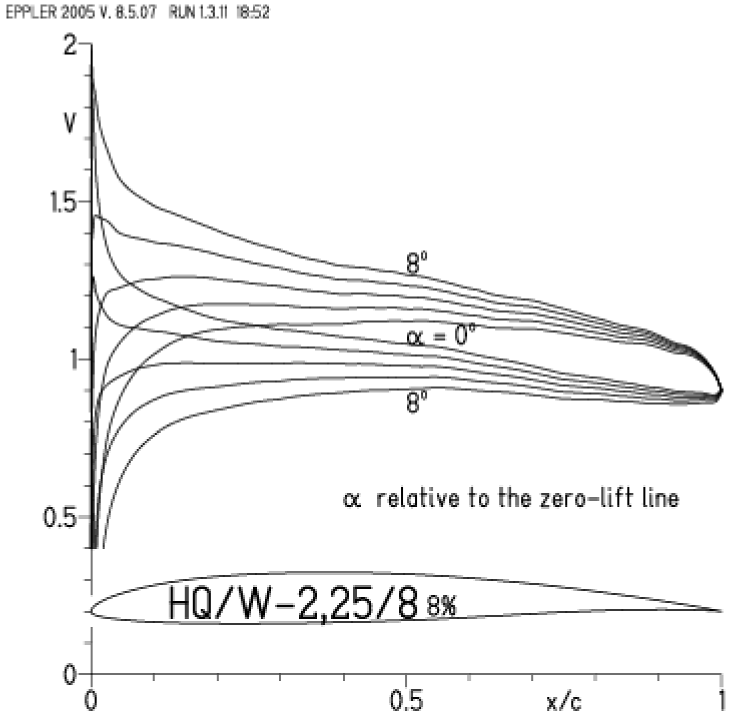


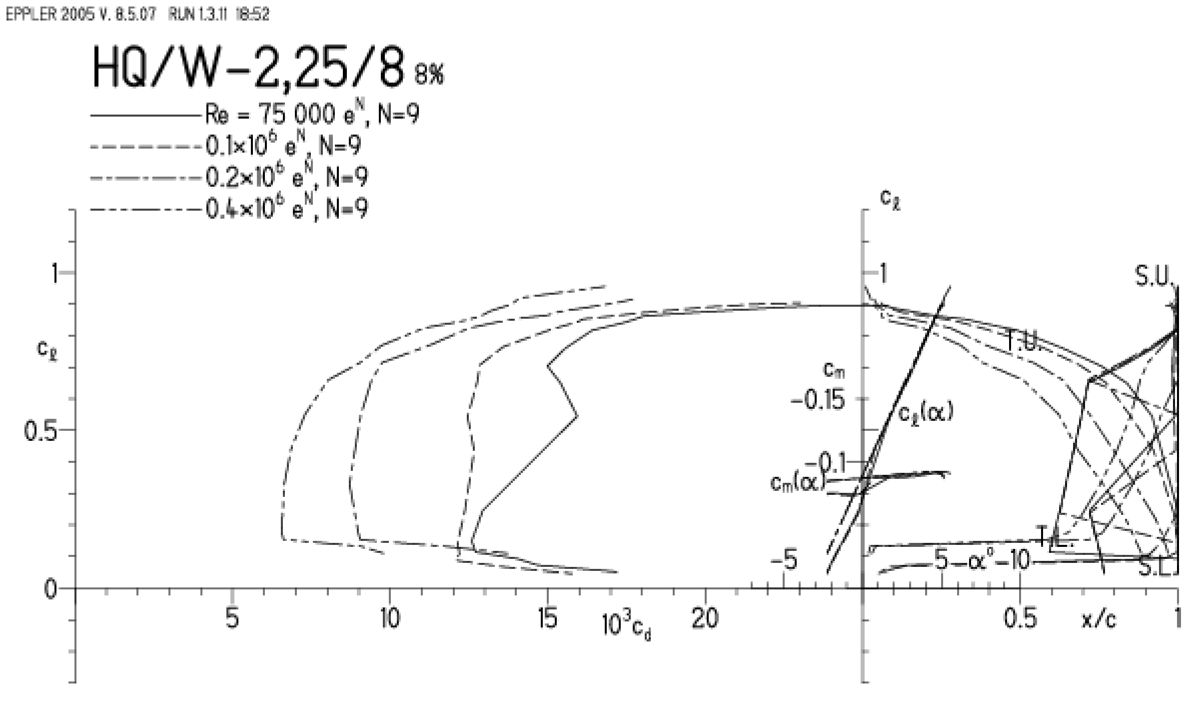
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

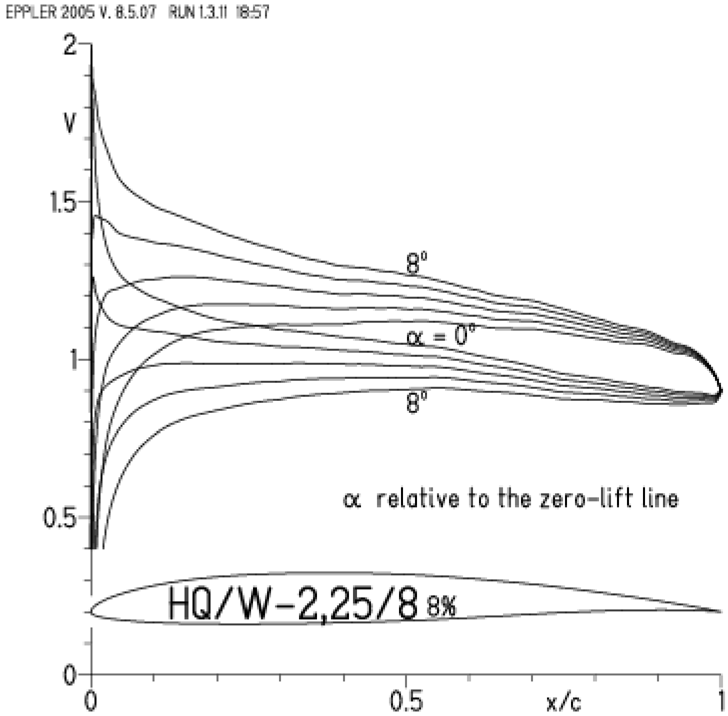

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
10^3 c_d
c_l(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
x/c

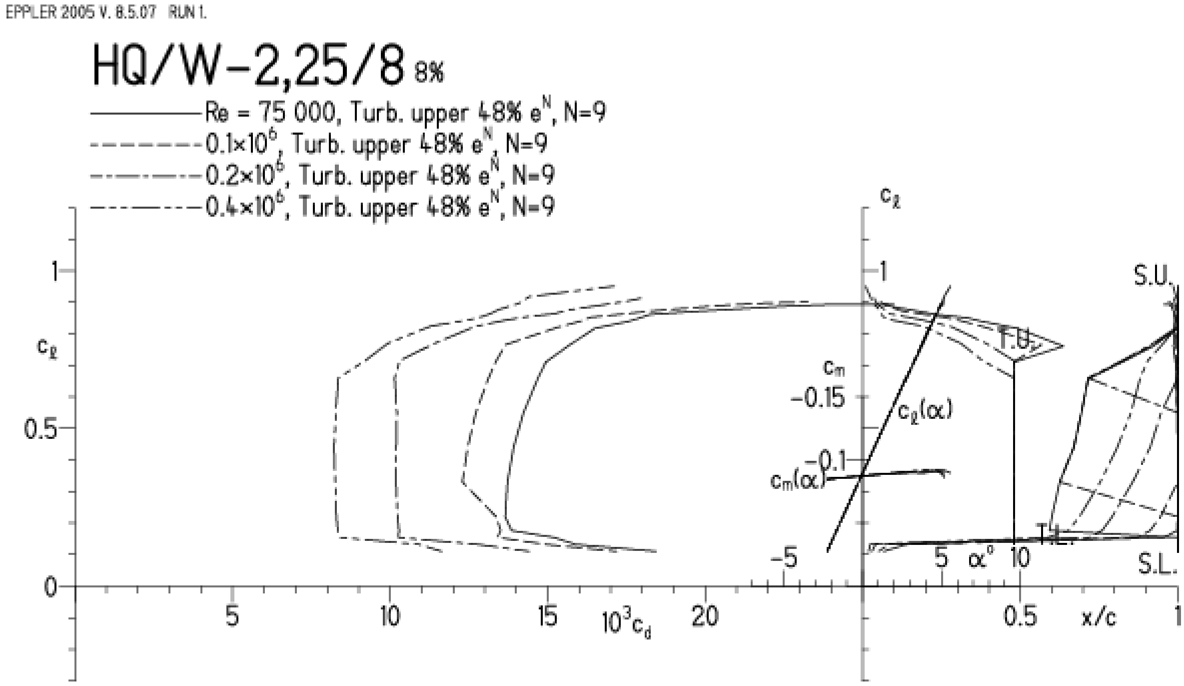
<u>HQ/W-2,25/8</u>, N=9



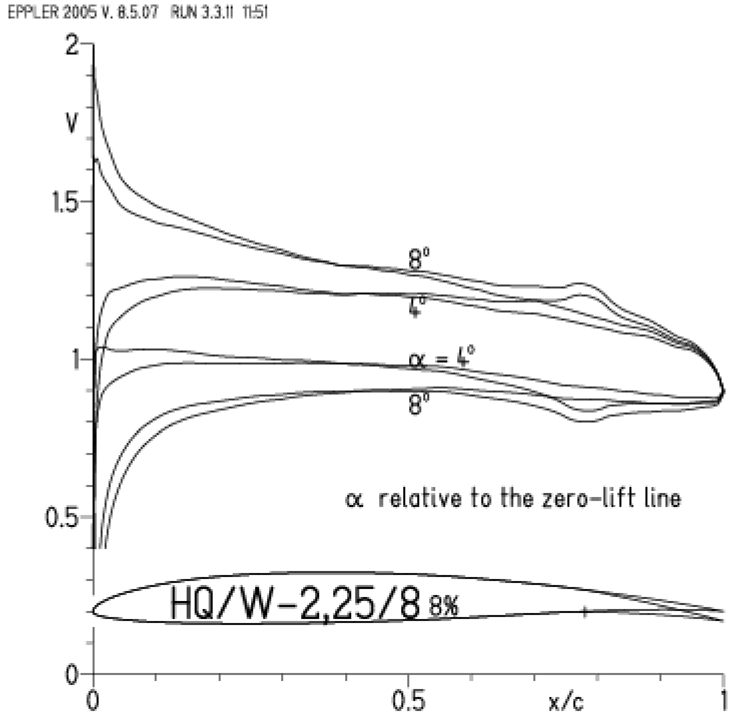


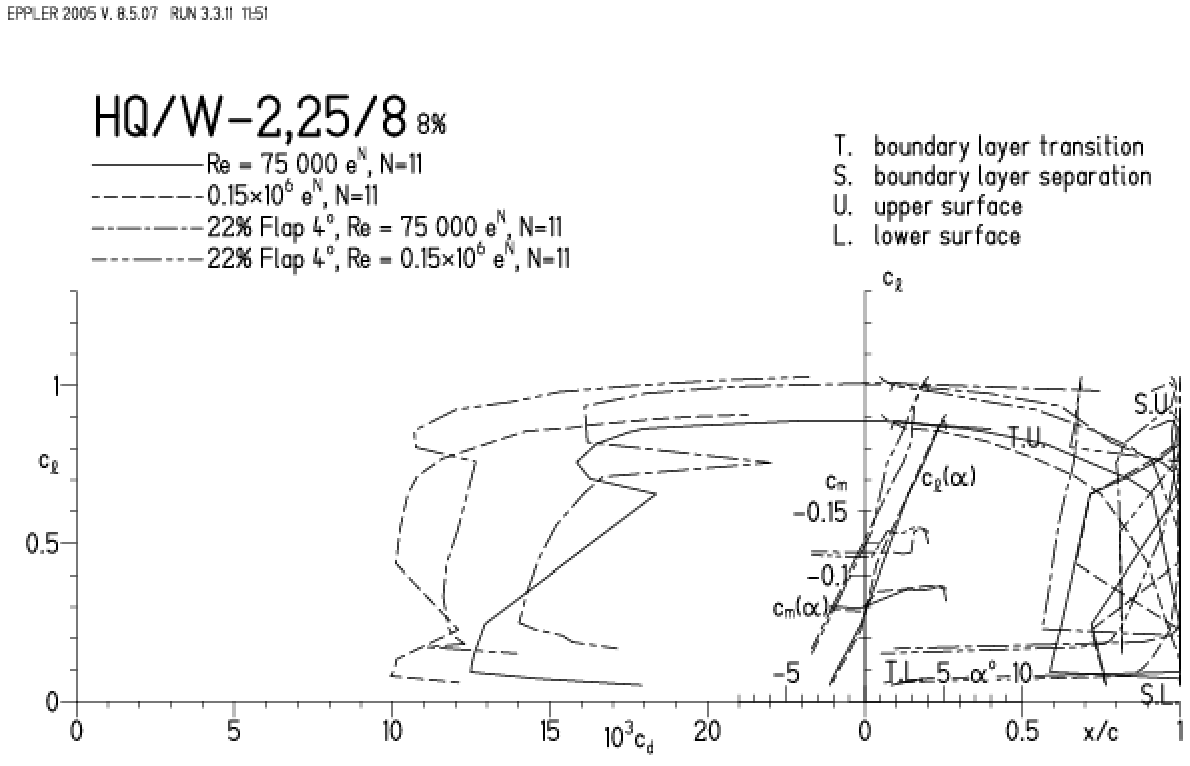
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



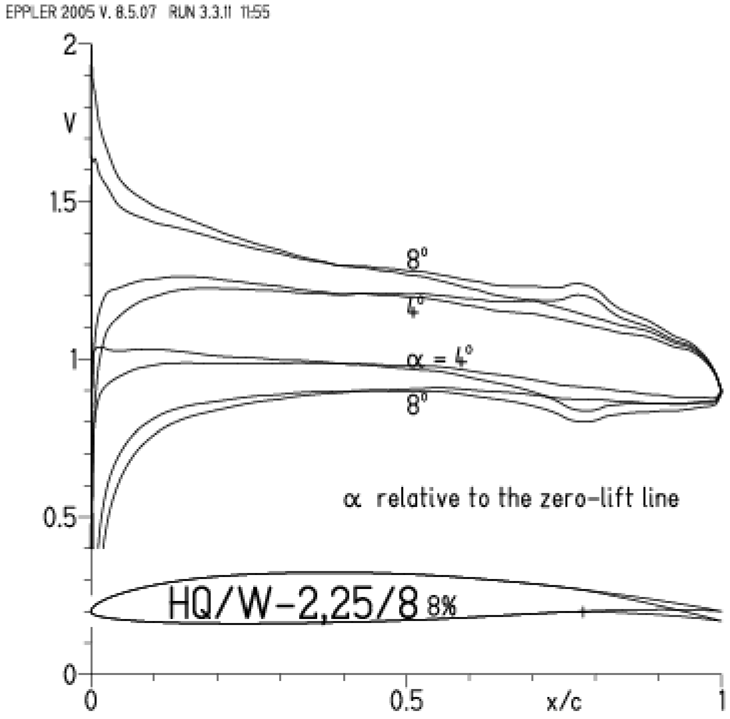


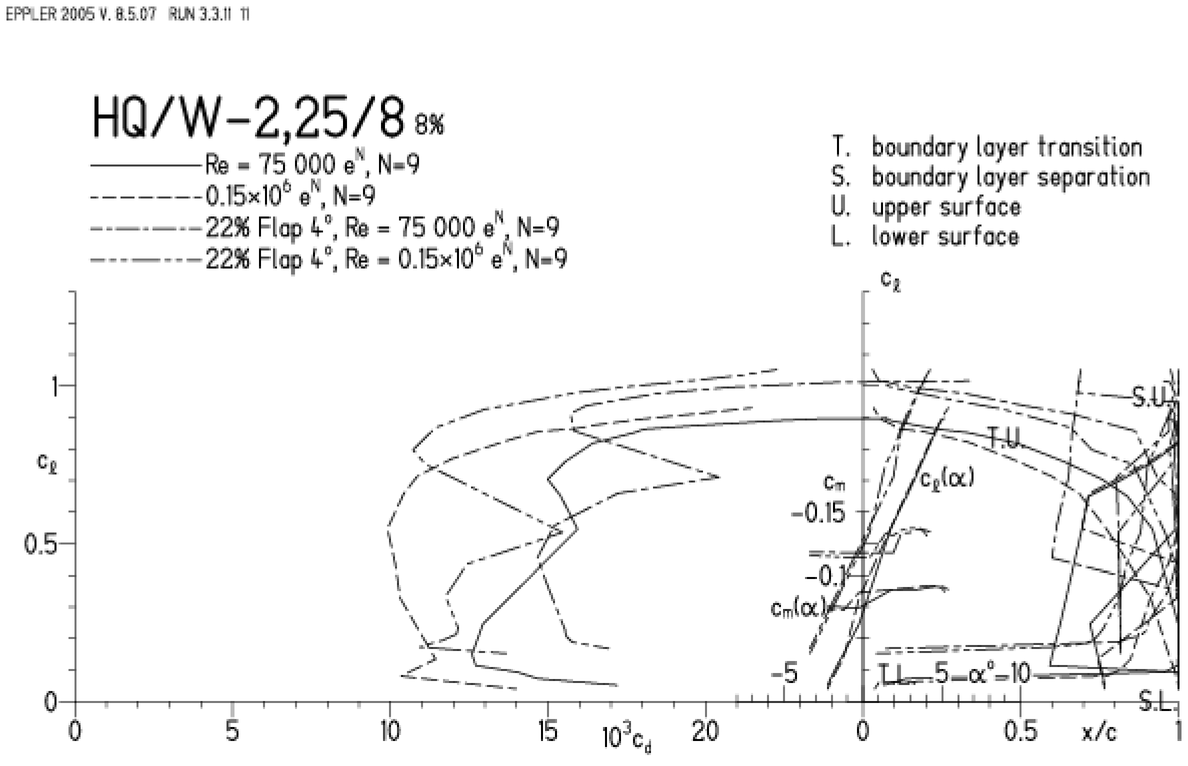
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



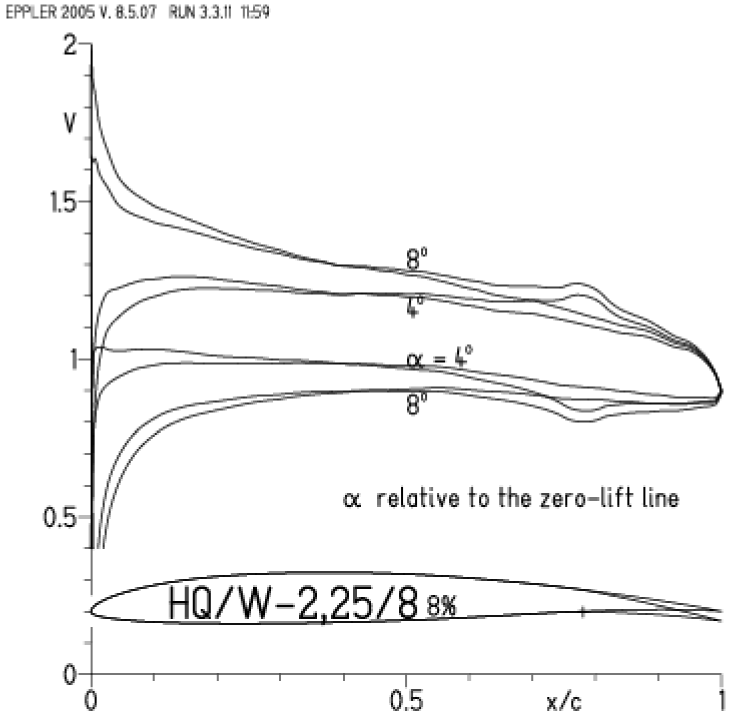


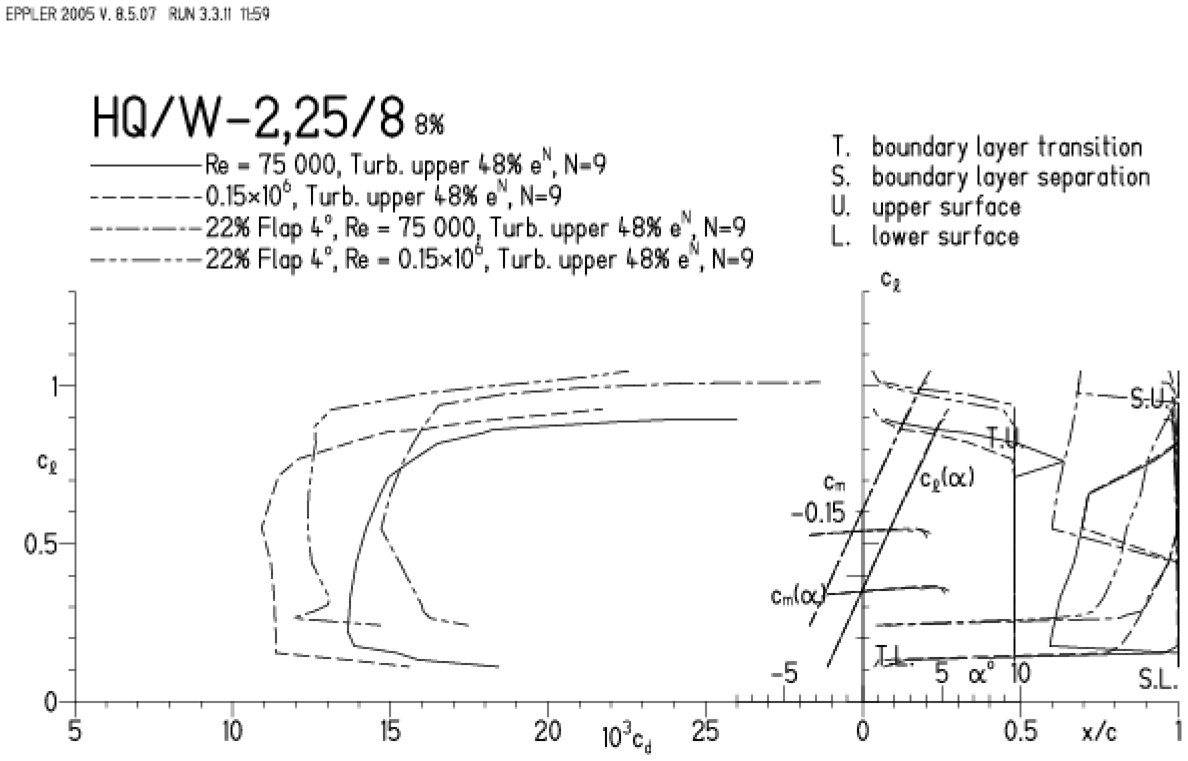
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



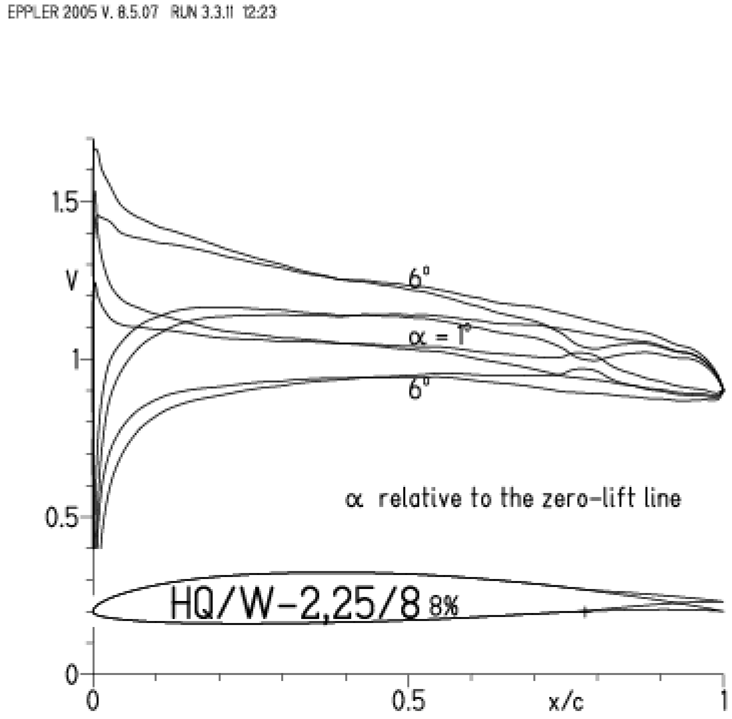


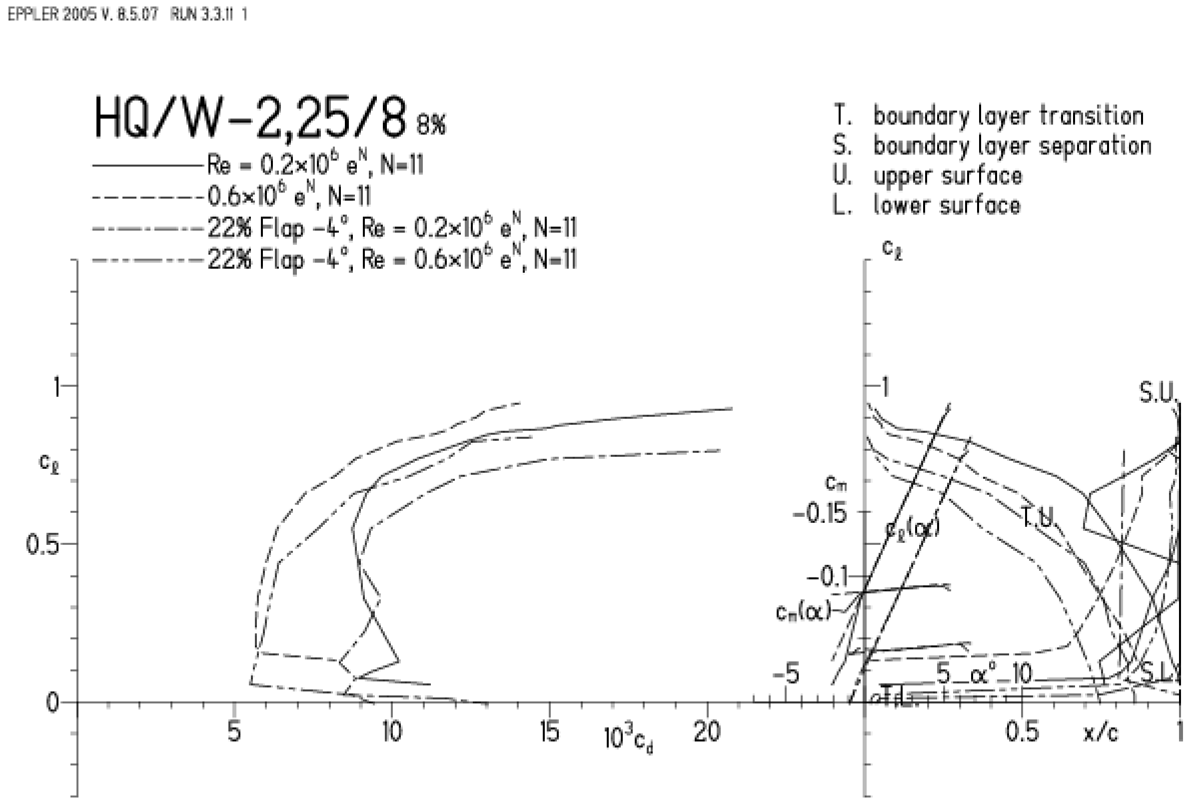
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



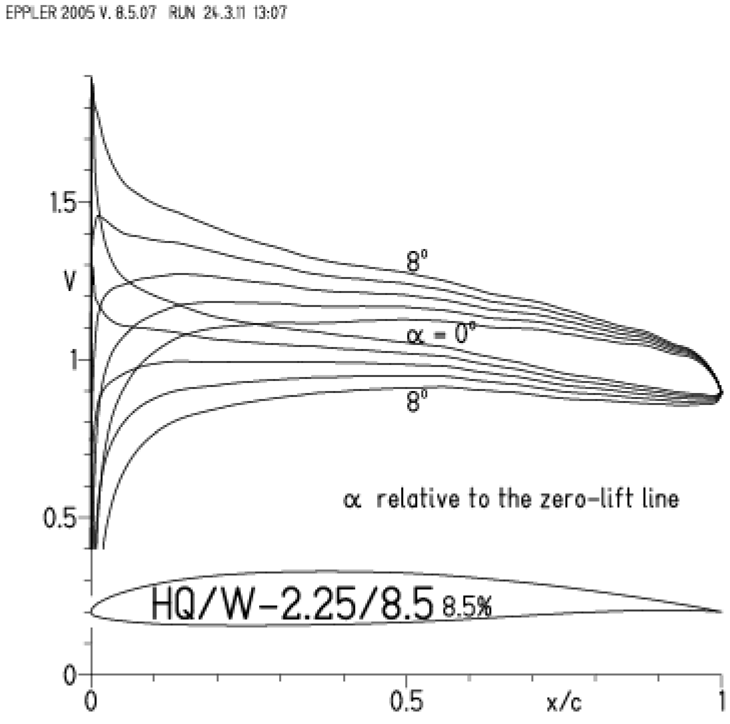


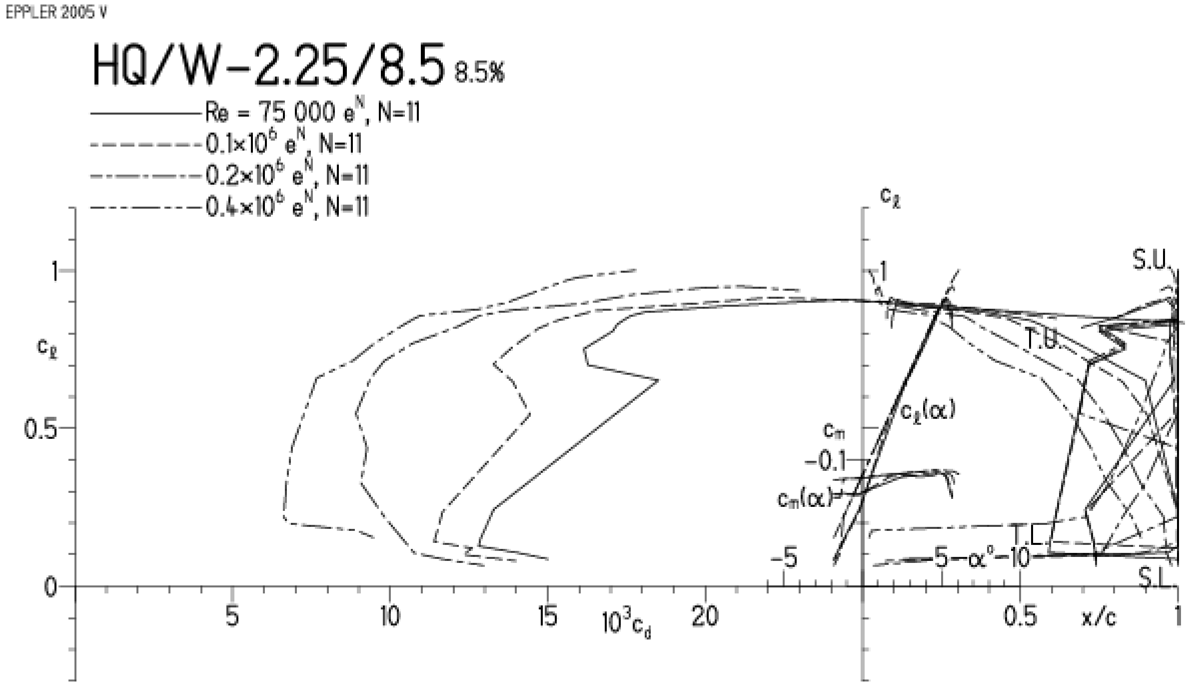
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



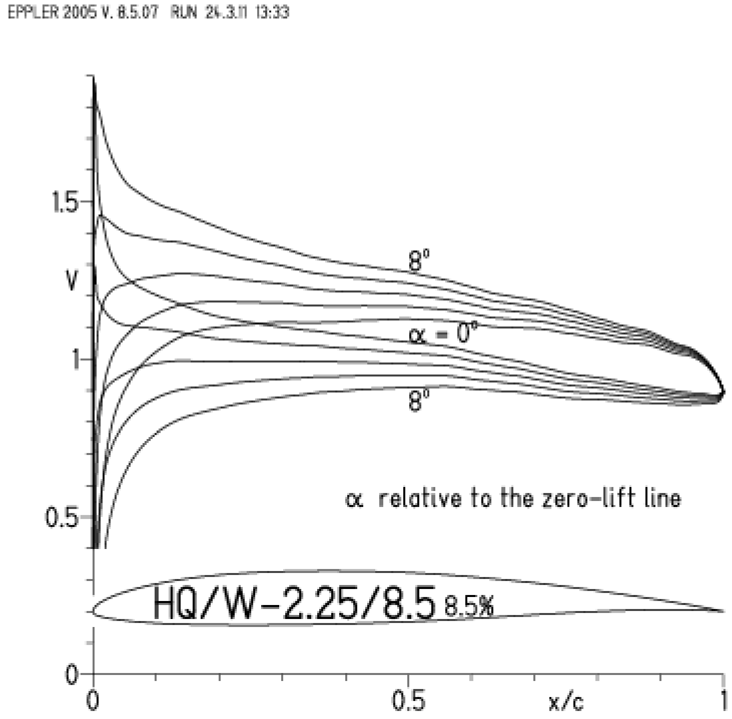


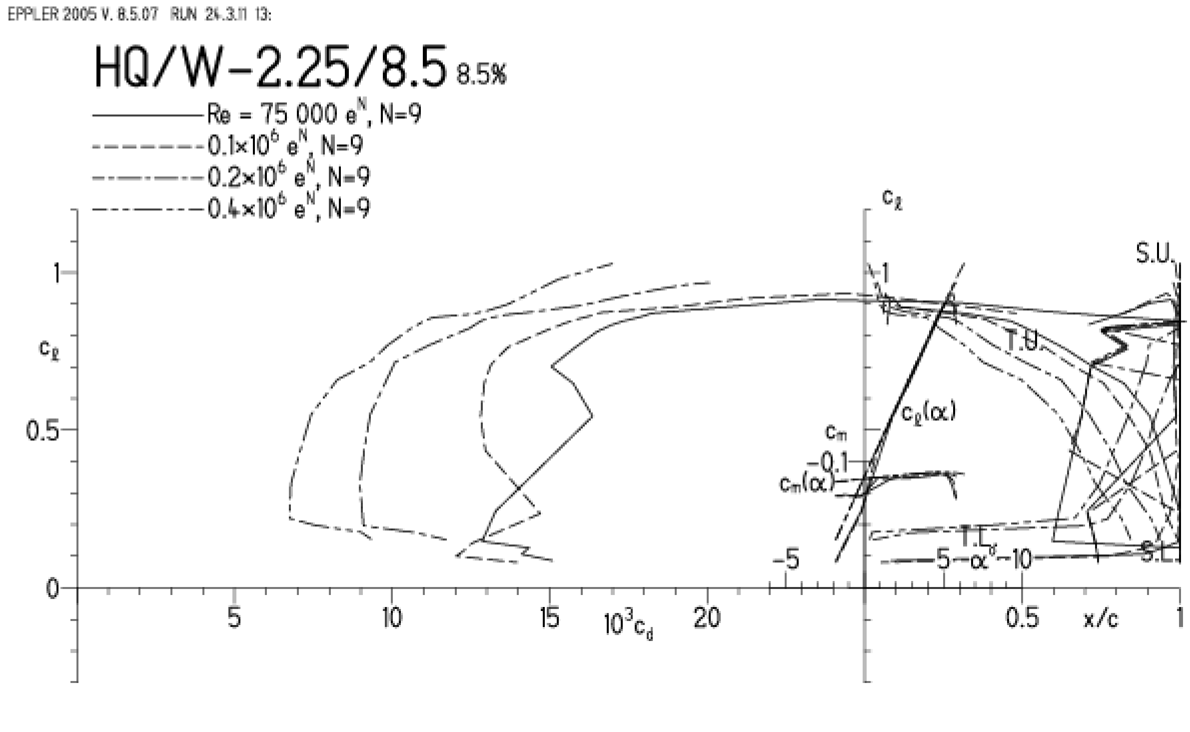
<u>HQ/W-2,25/8,5</u>, N=11



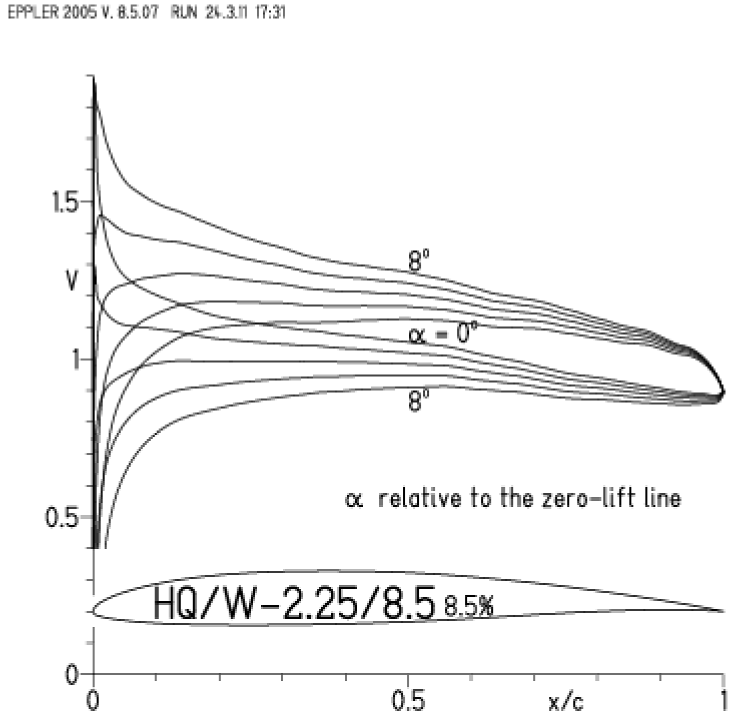


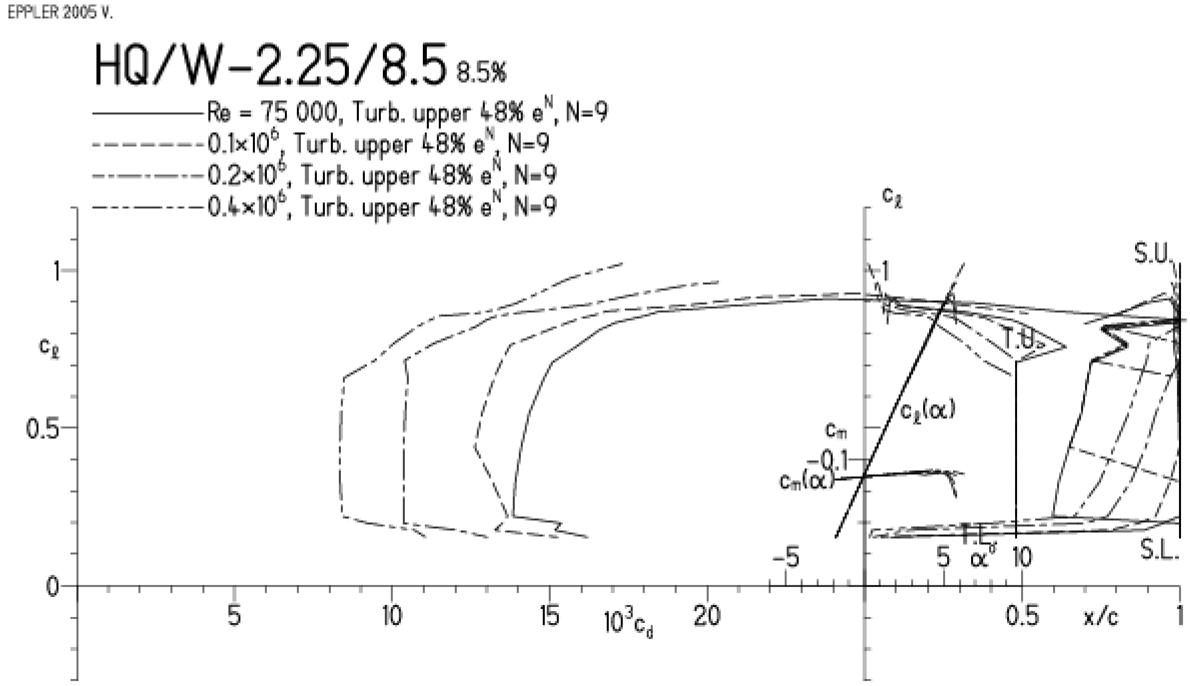
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

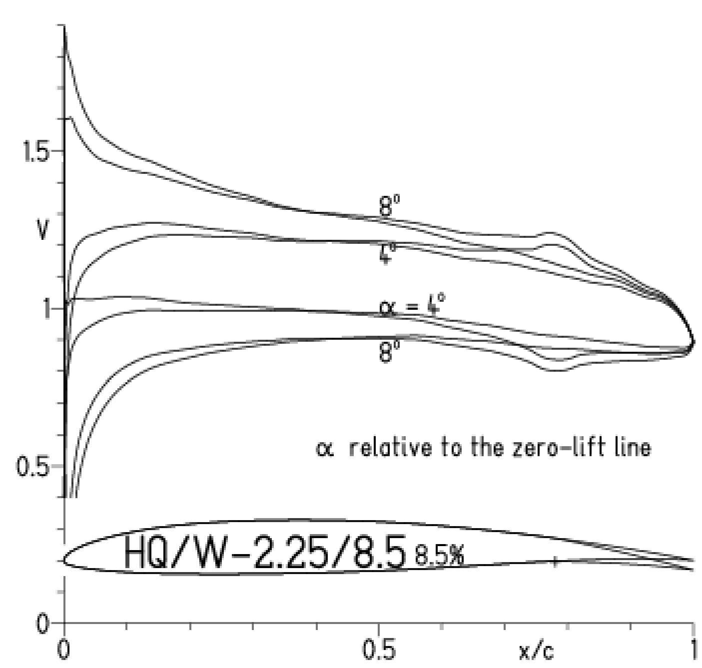
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



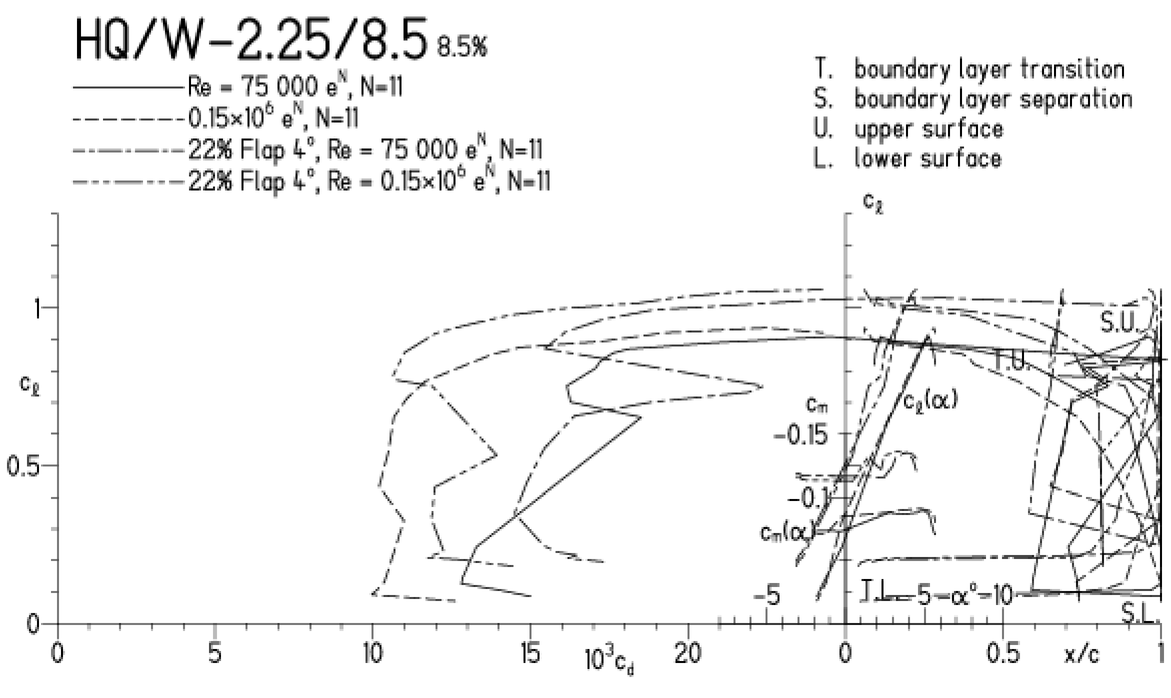


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

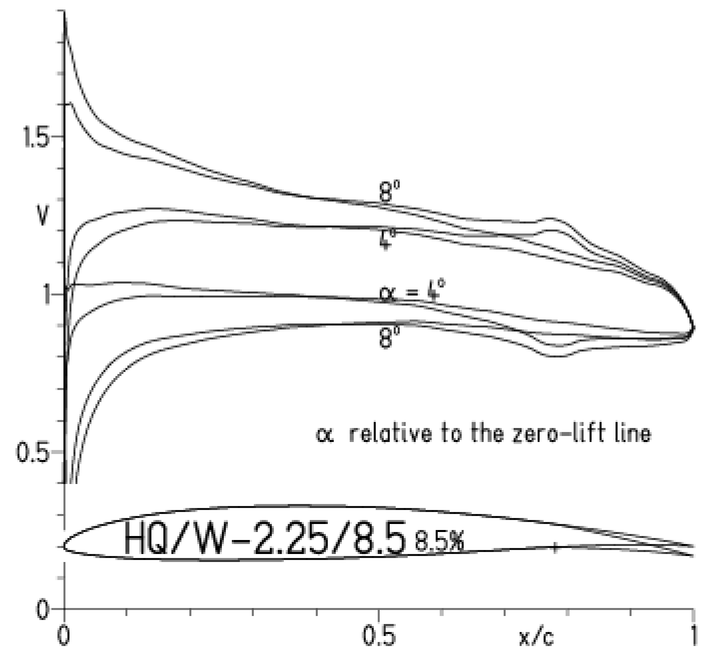


EPPLER 2005 V. 8.5.

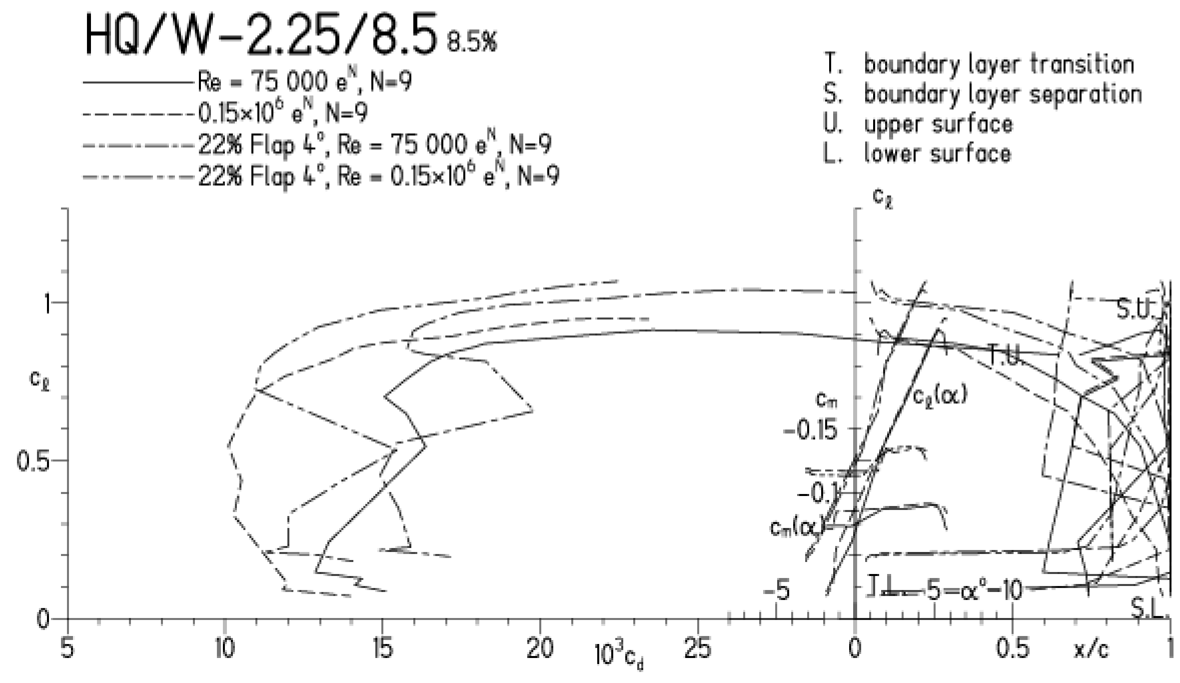


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

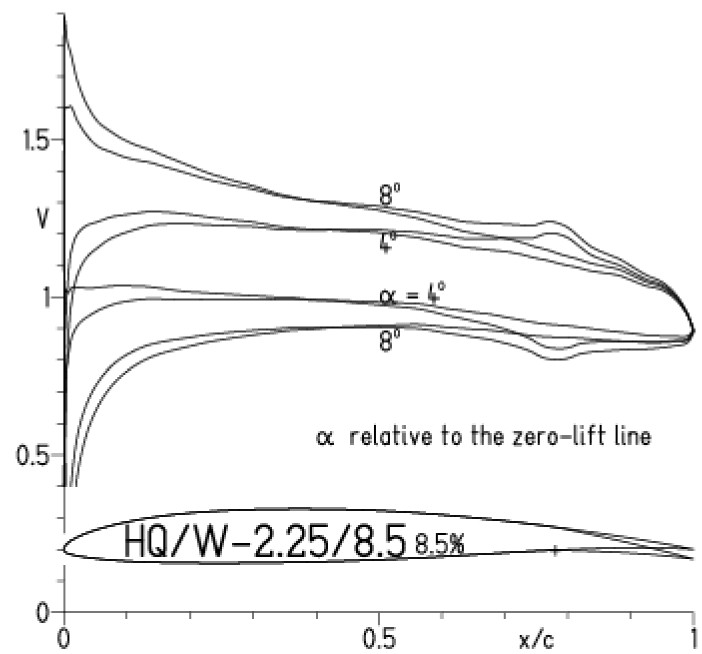


EPPLER 2005 V.

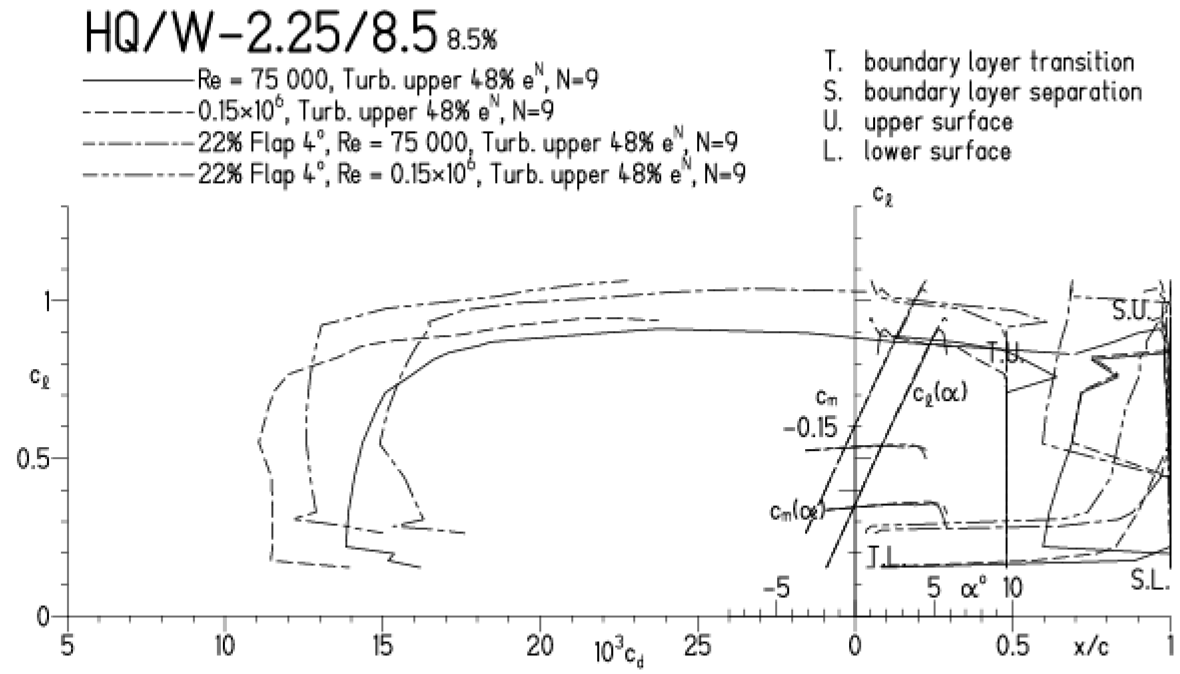


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

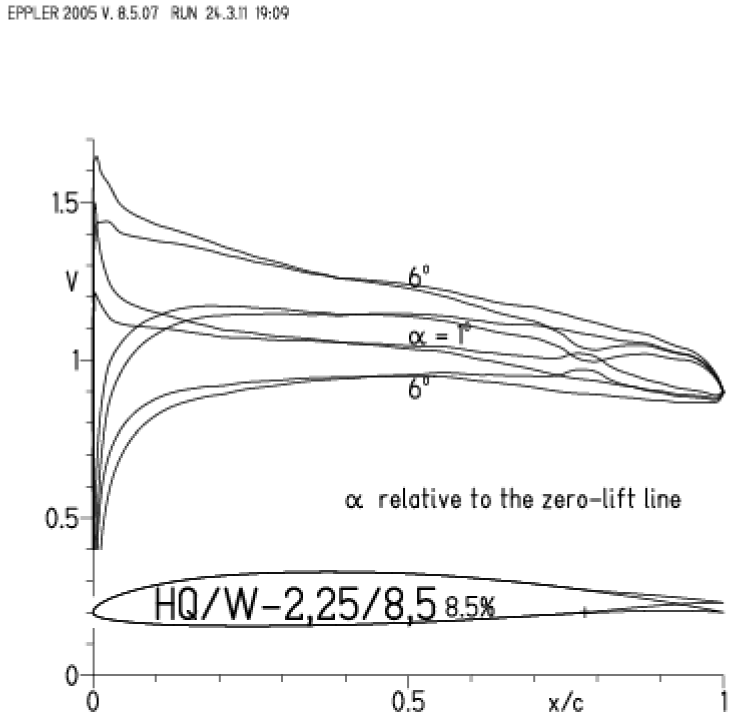
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

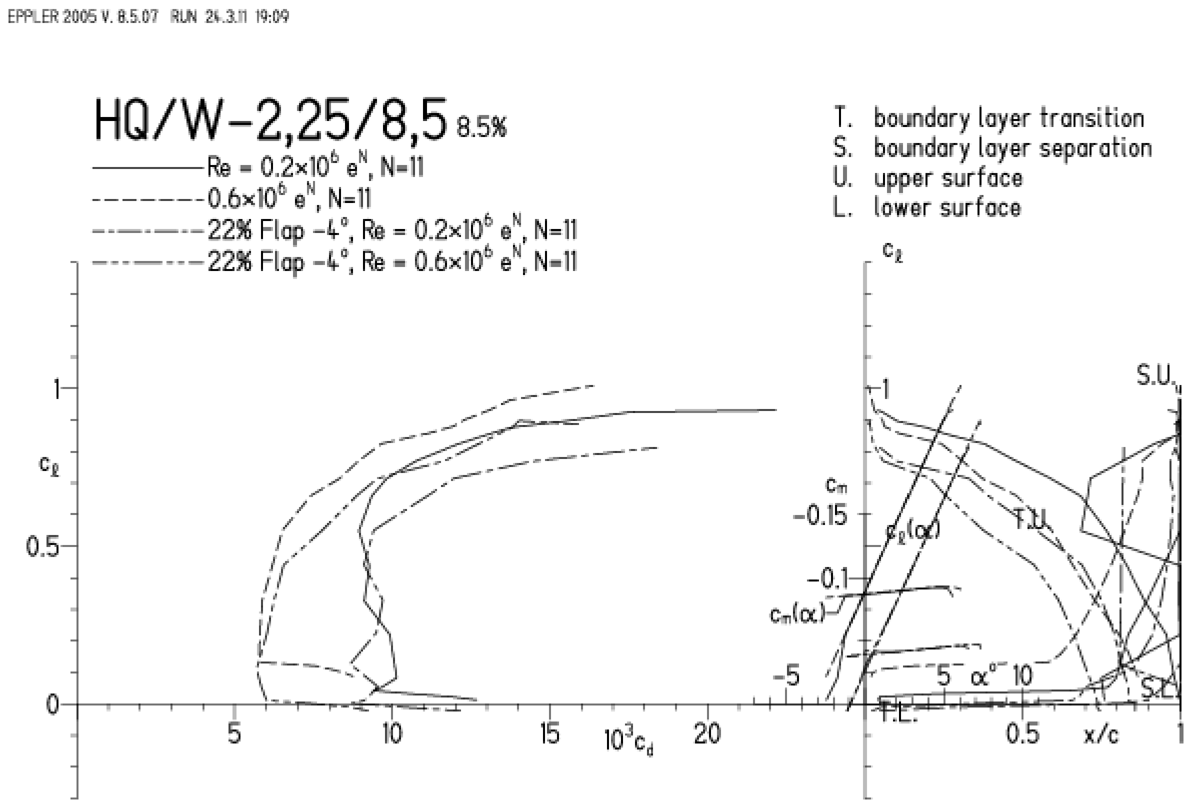


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



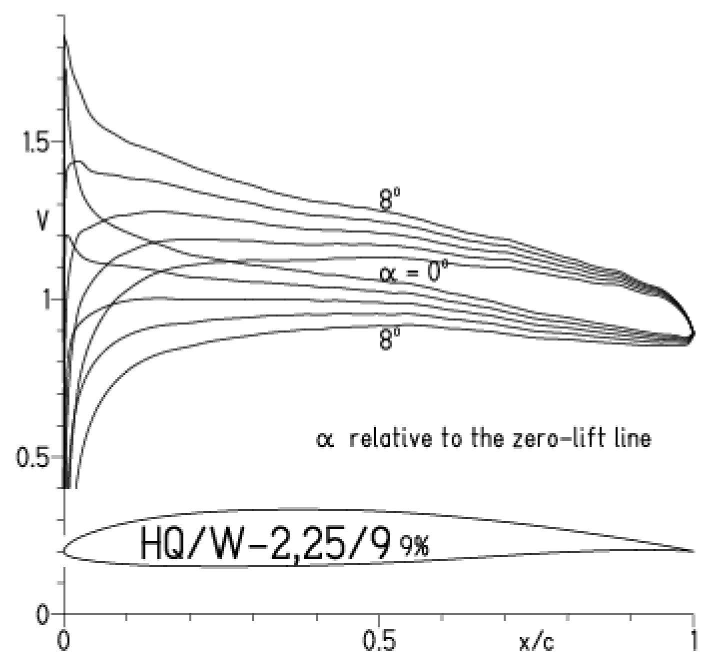
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



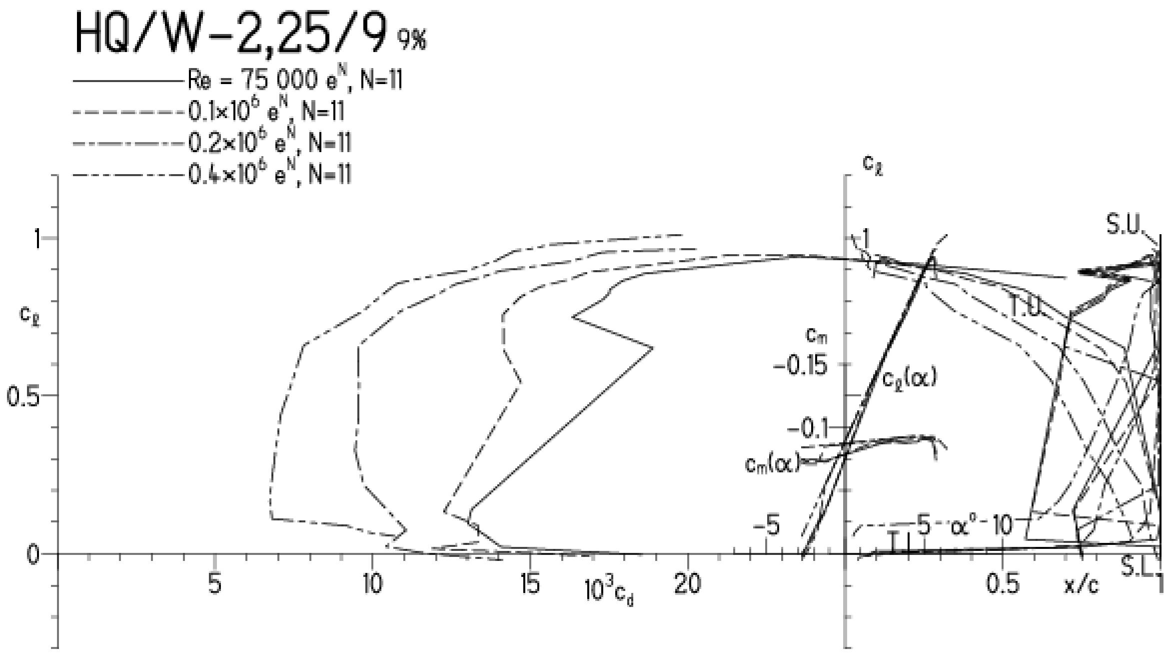


<u>HQ/W-2,25/9</u>, N=11

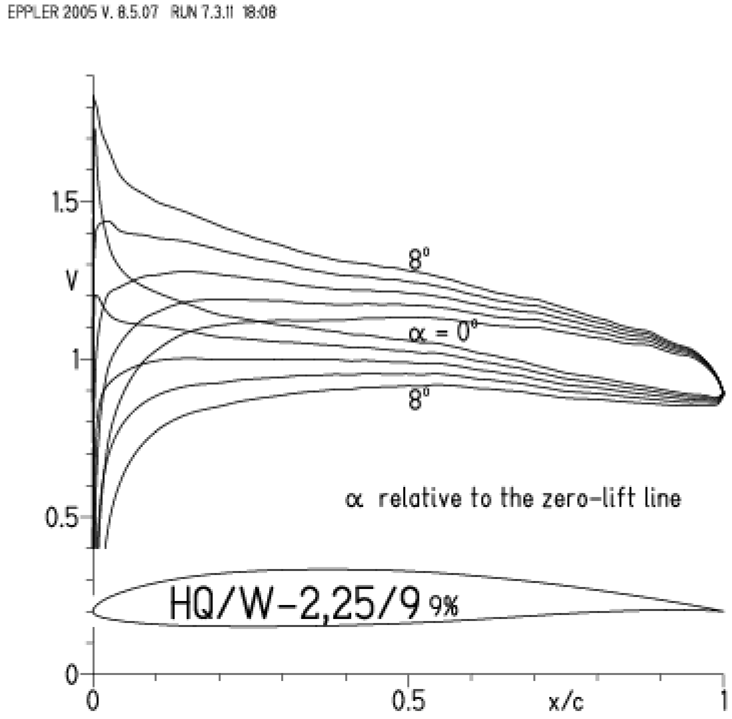
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

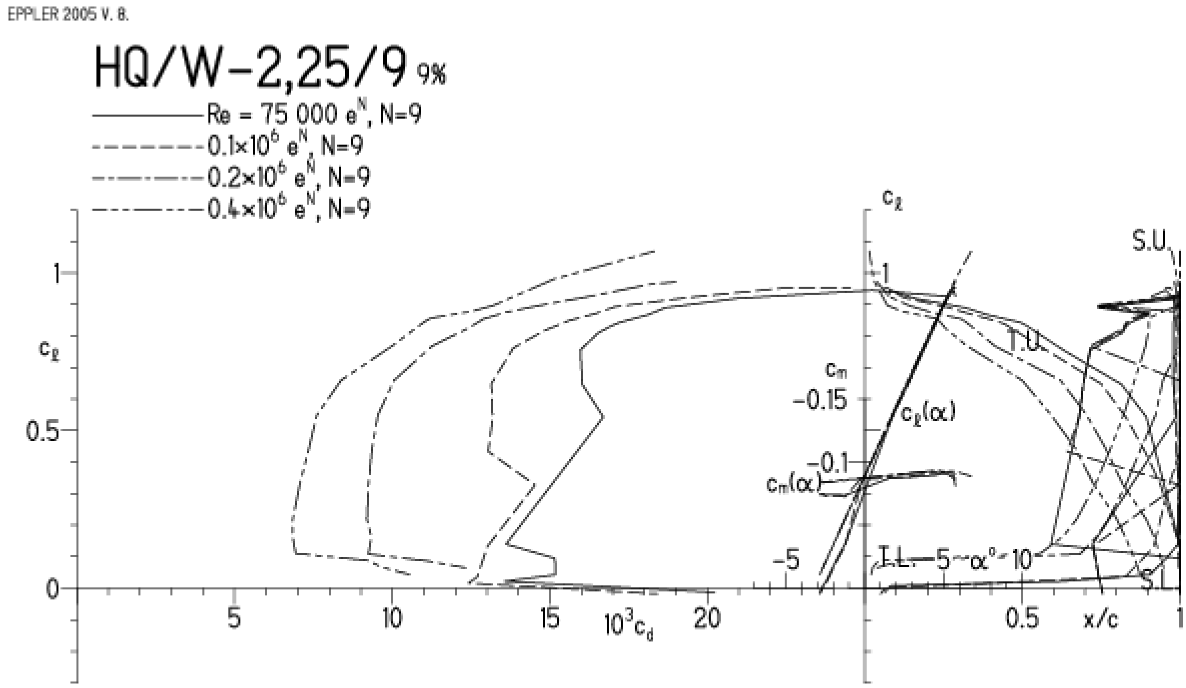


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

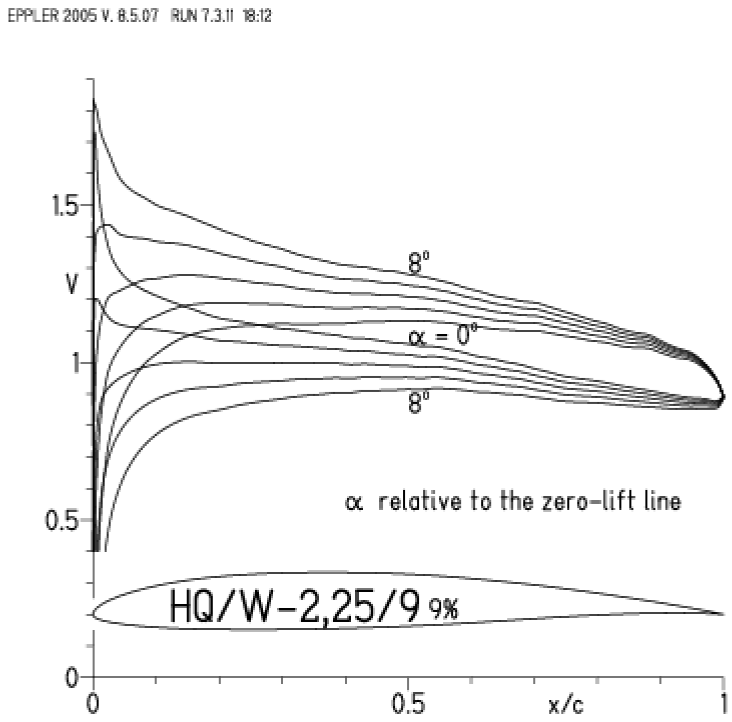


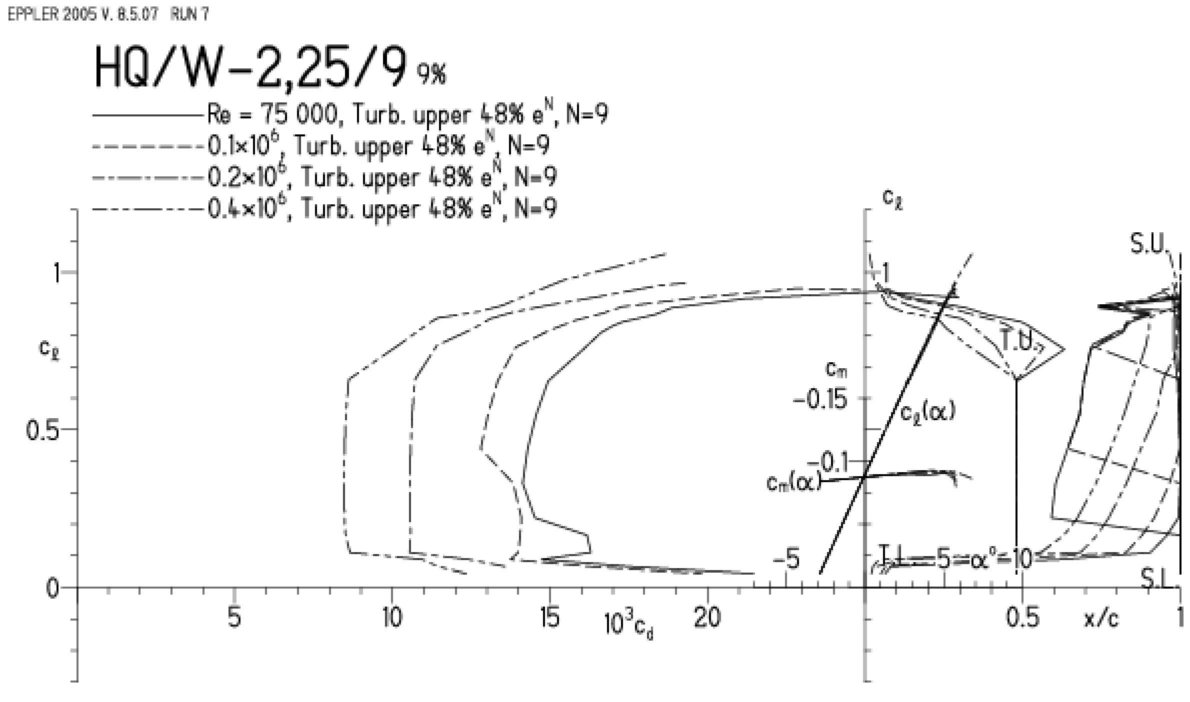
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

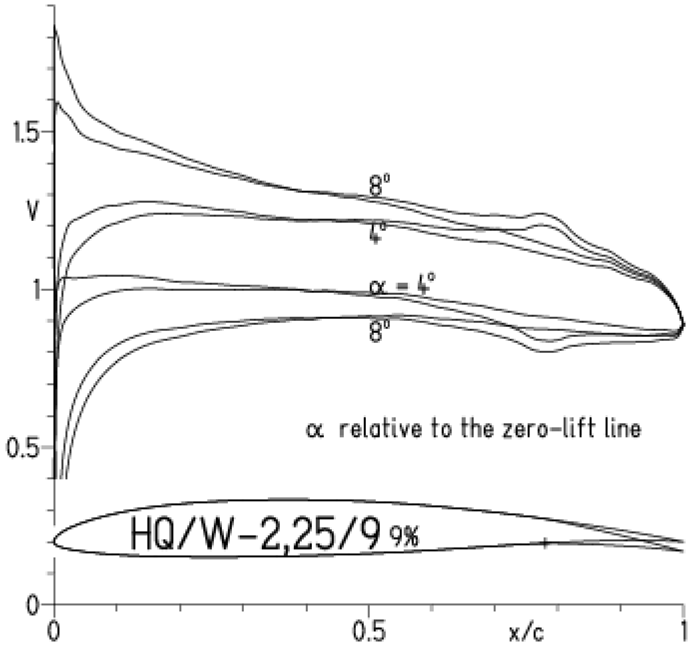
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



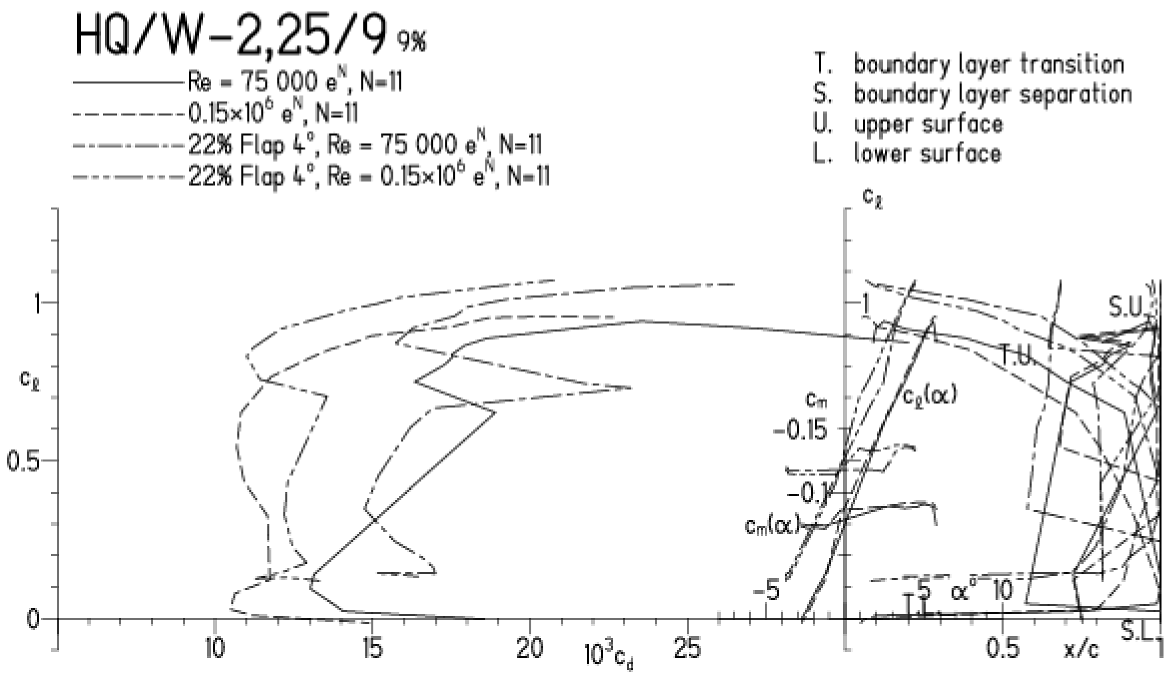


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

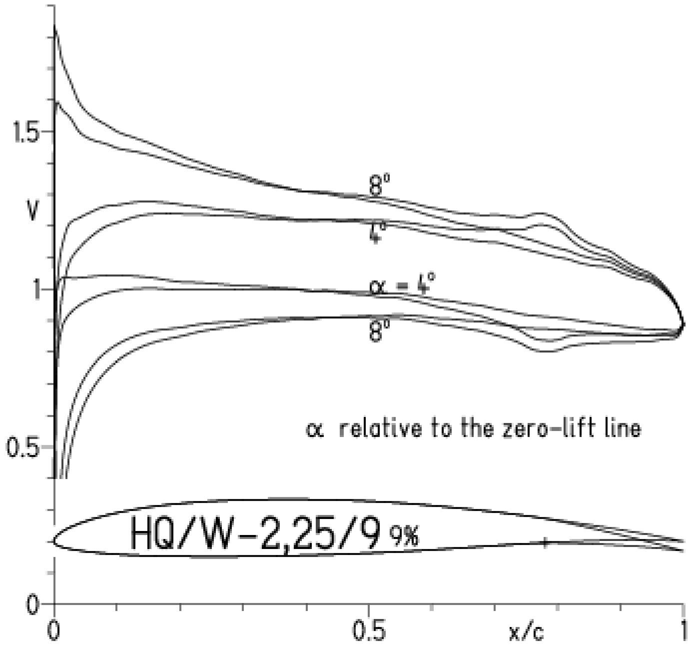


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

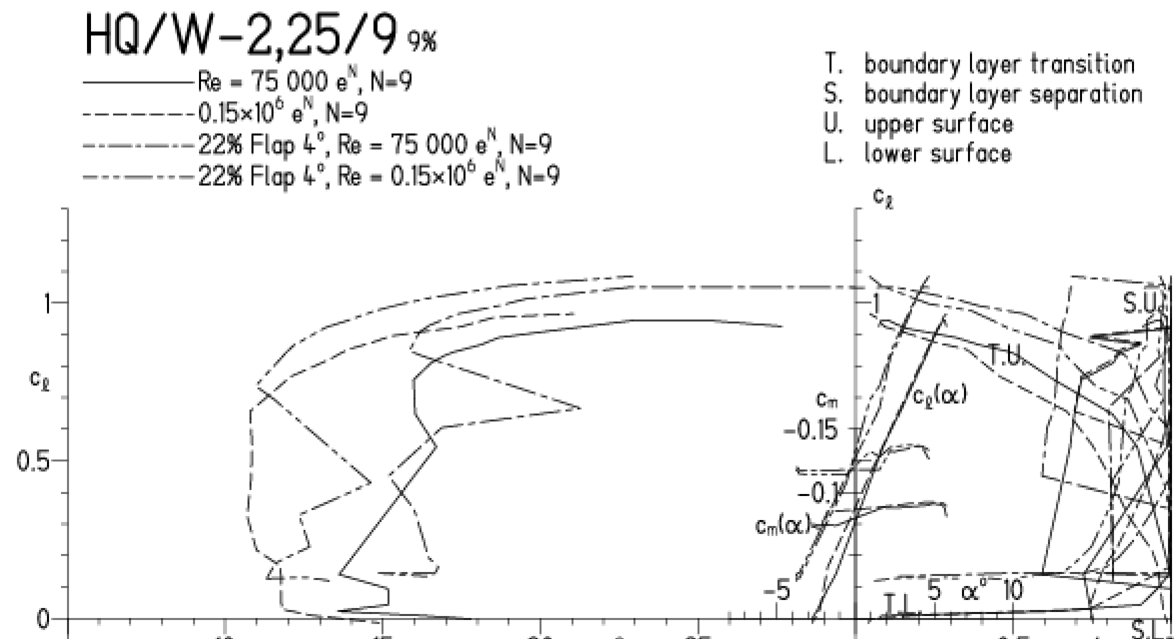


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

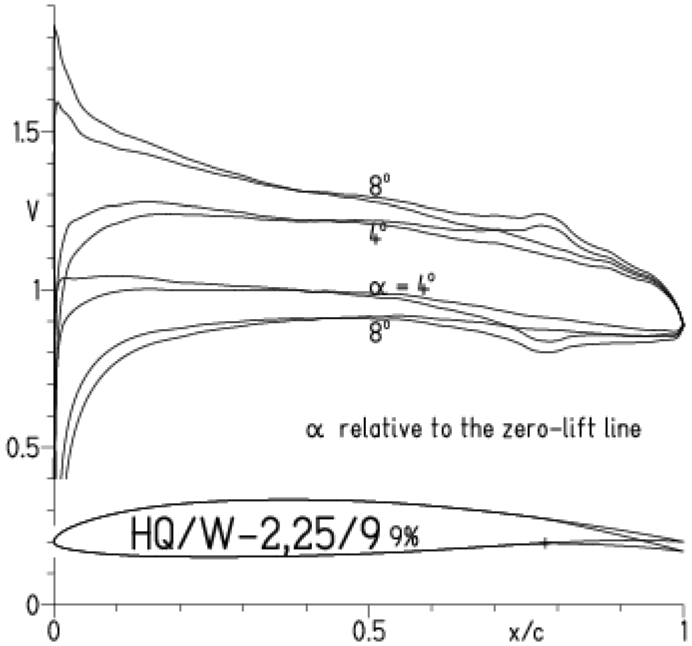


EPPLER 2005 V. 8.5.07 RUN 8.3.1

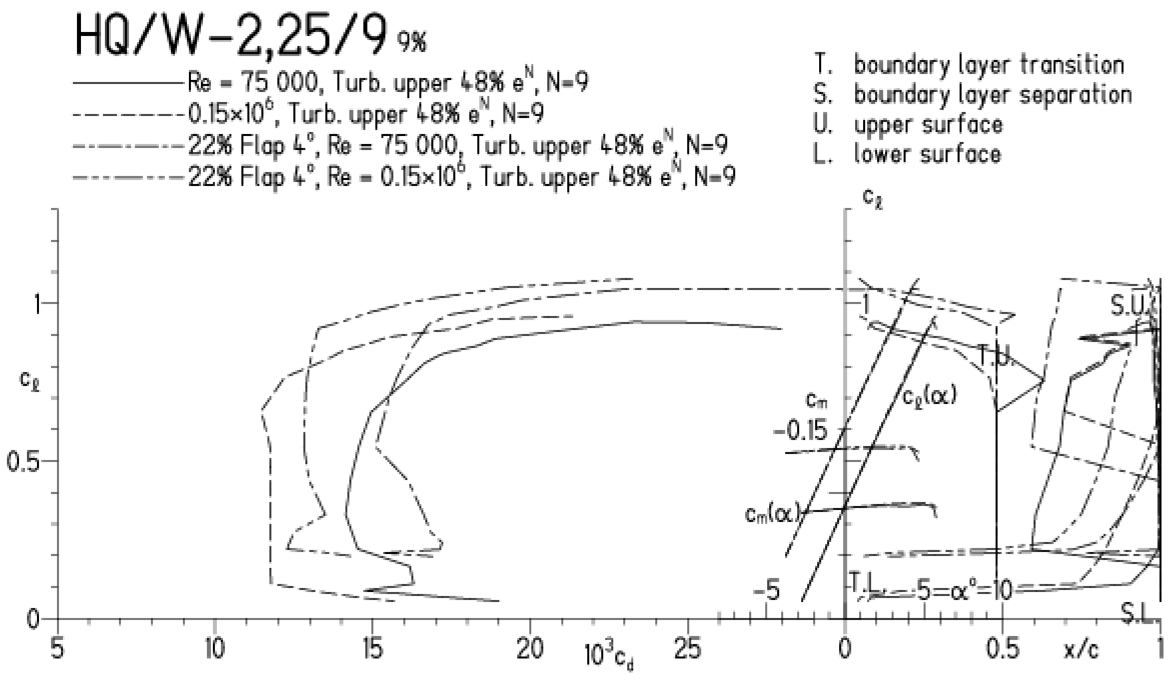


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

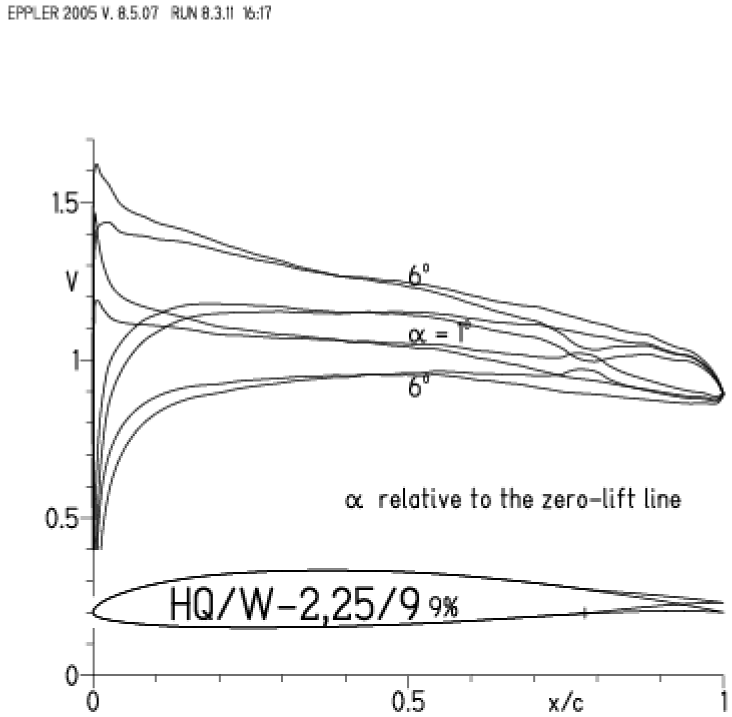
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

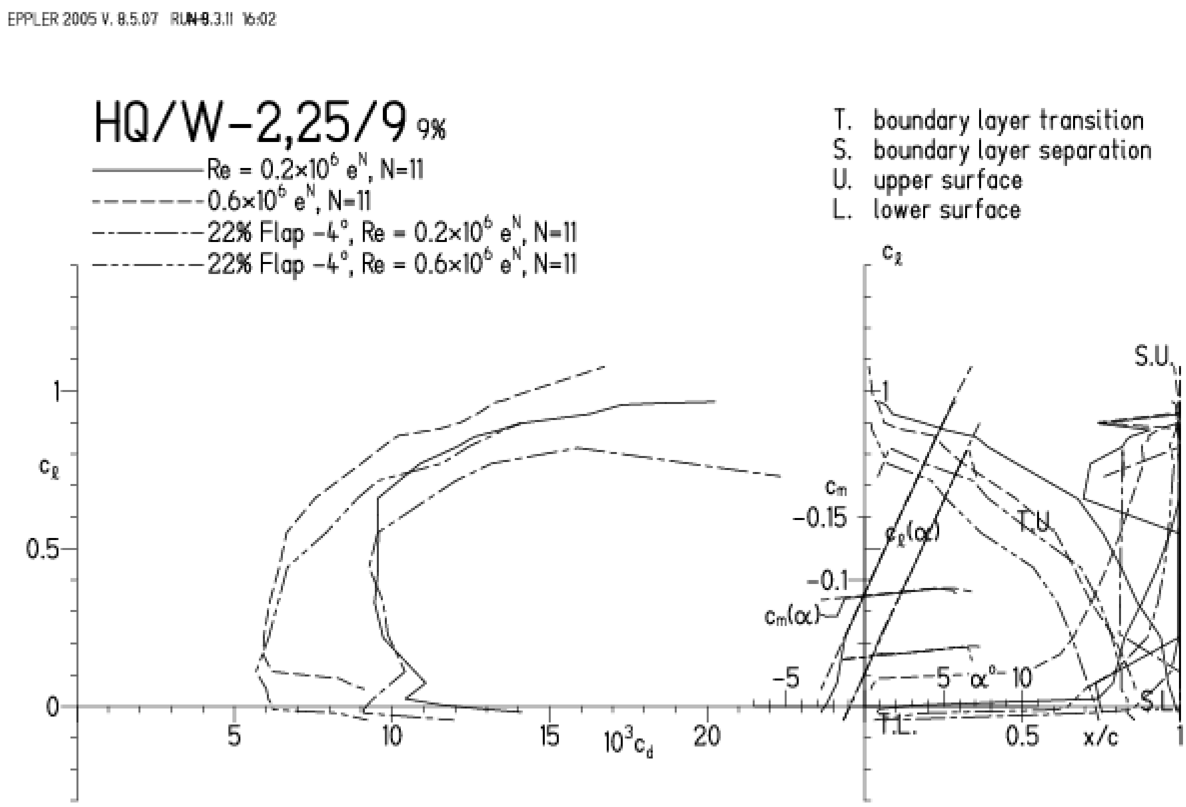


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

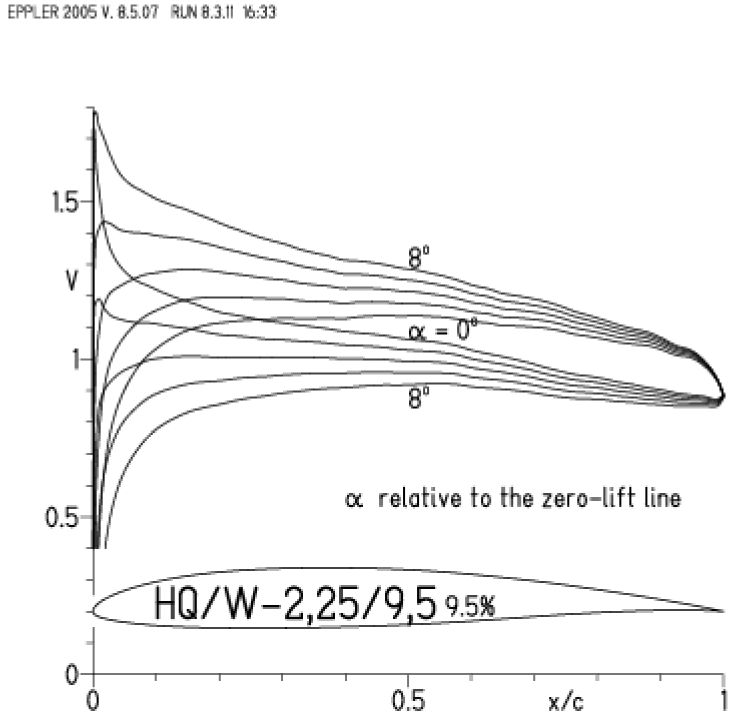


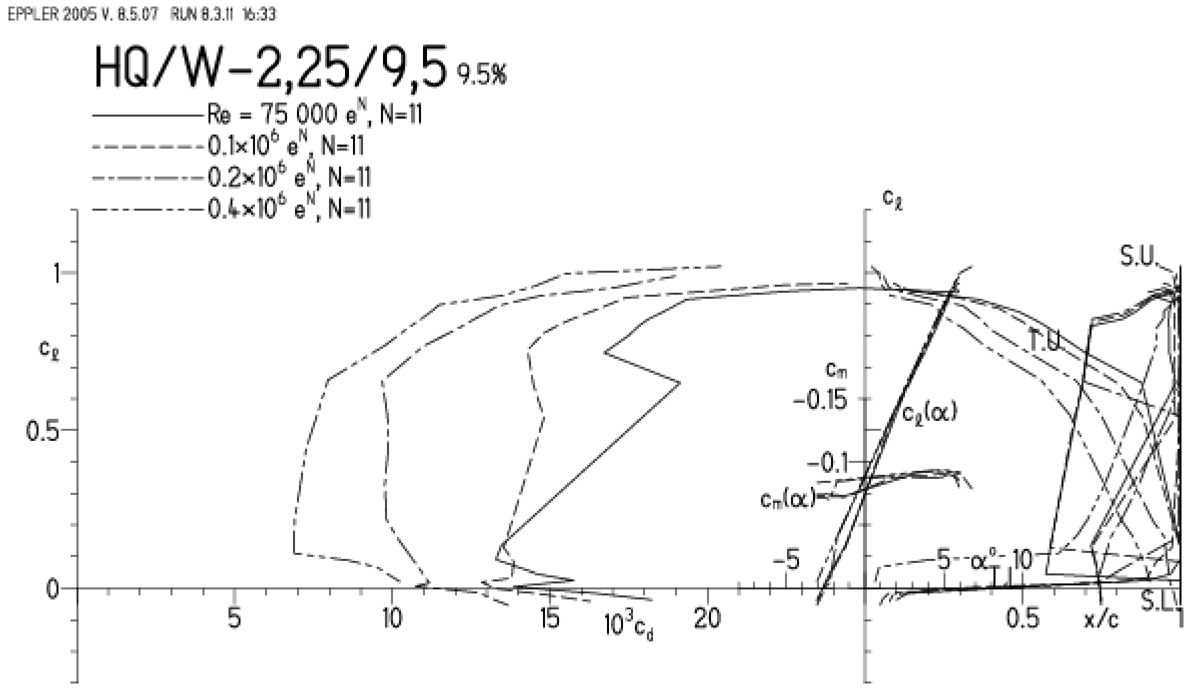
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



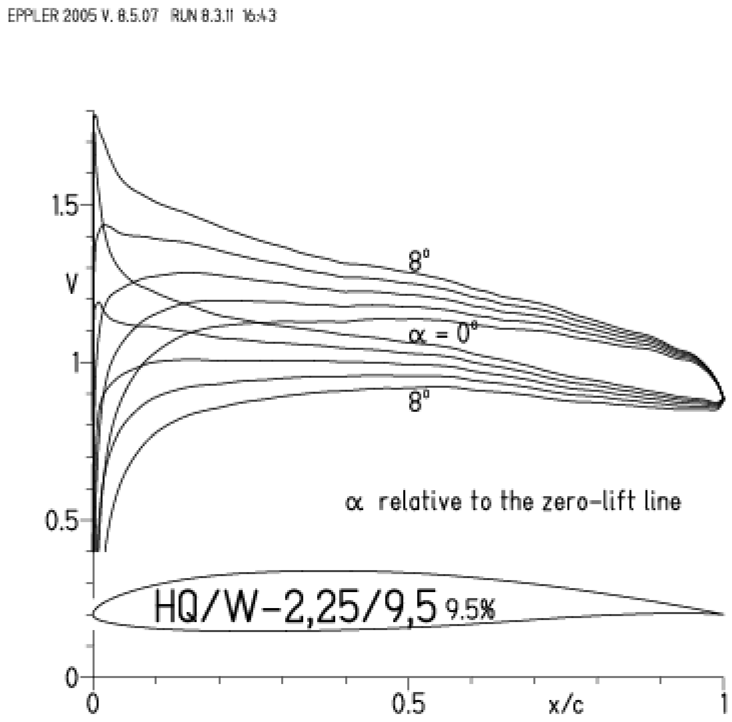


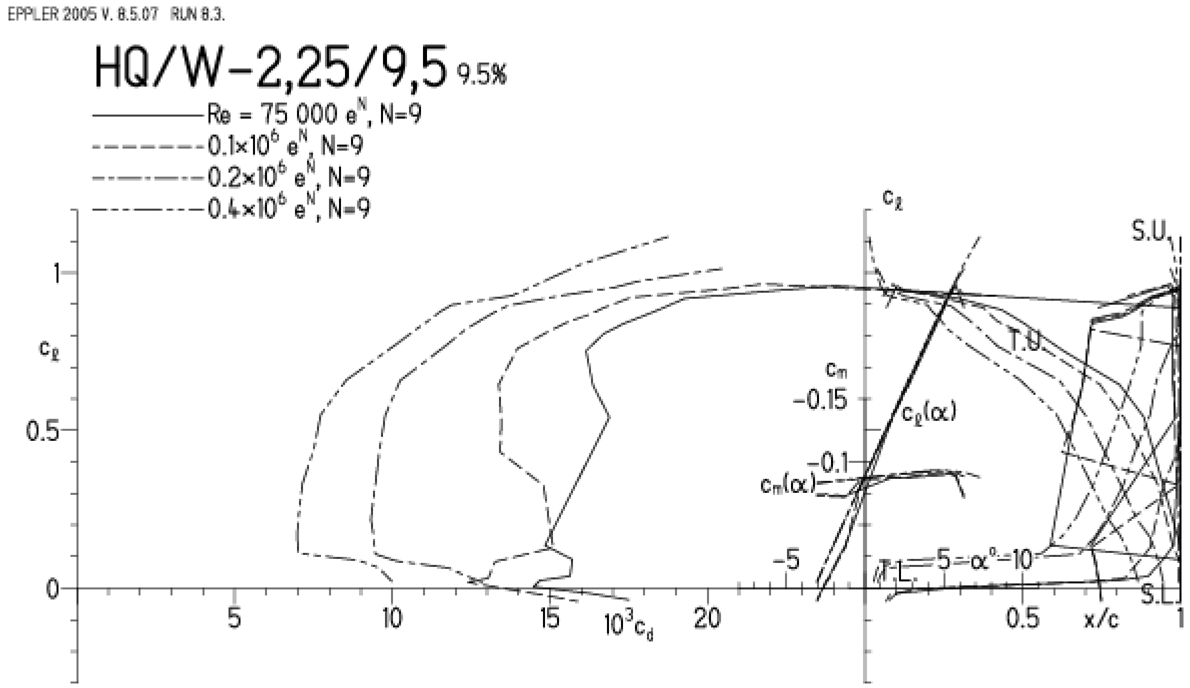
HQ/W-2,25/9,5, N=11





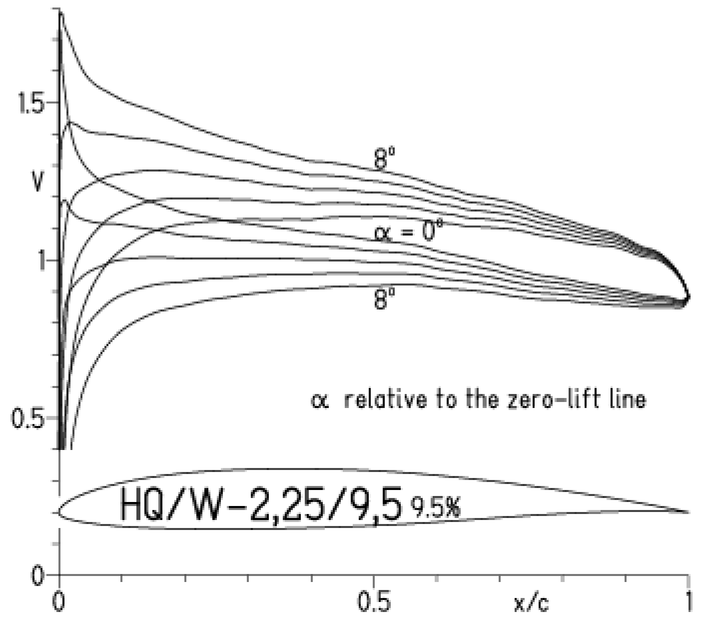
<u>HQ/W-2,25/9,5</u>, N=9



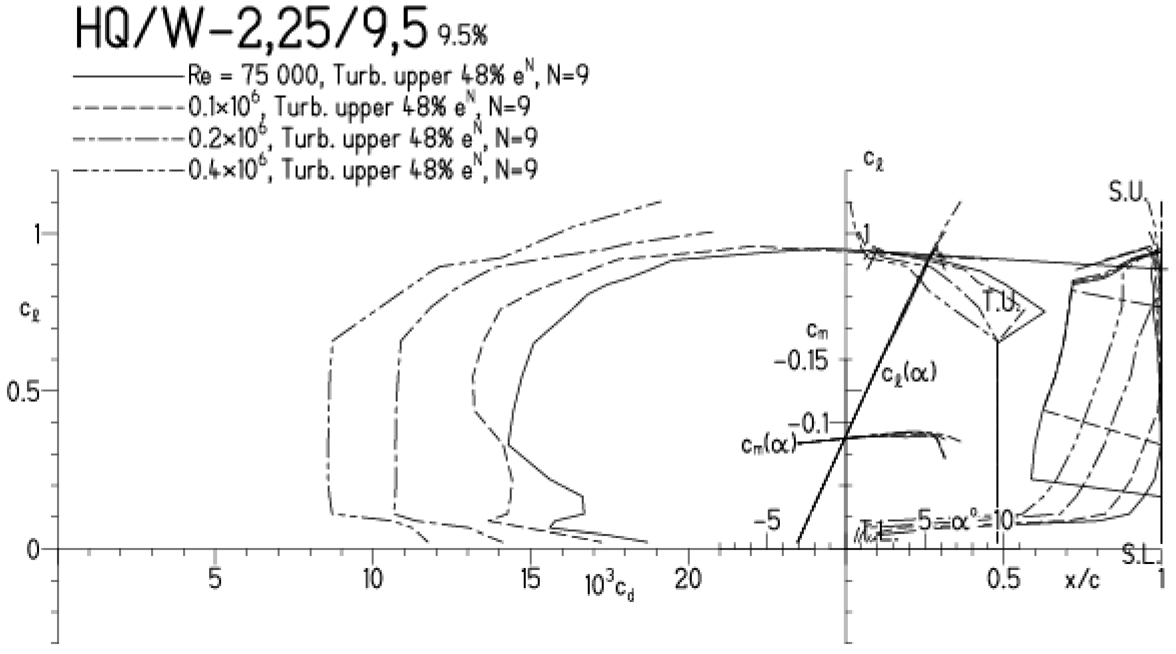


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

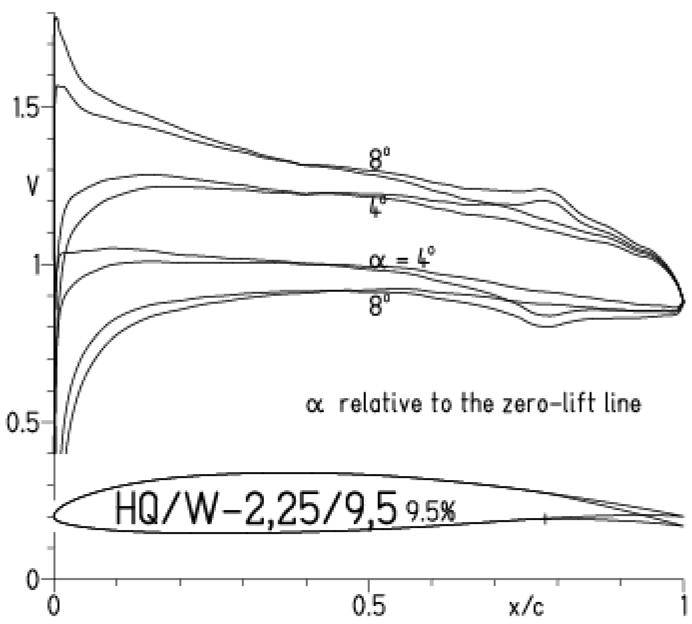


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

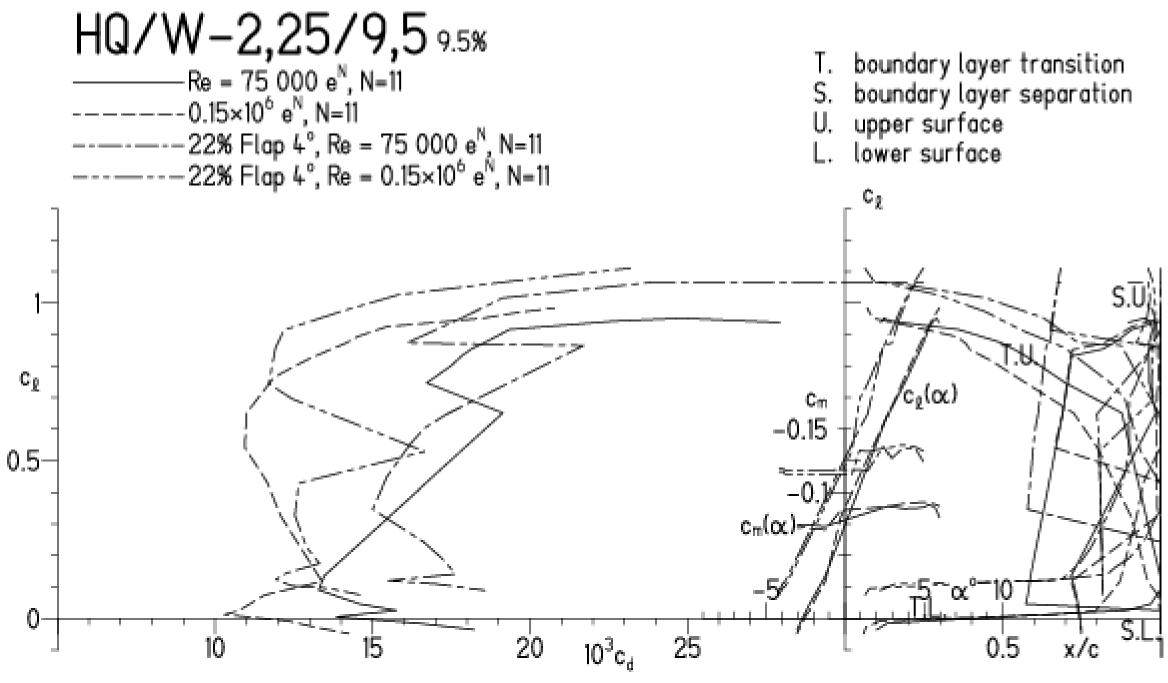


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

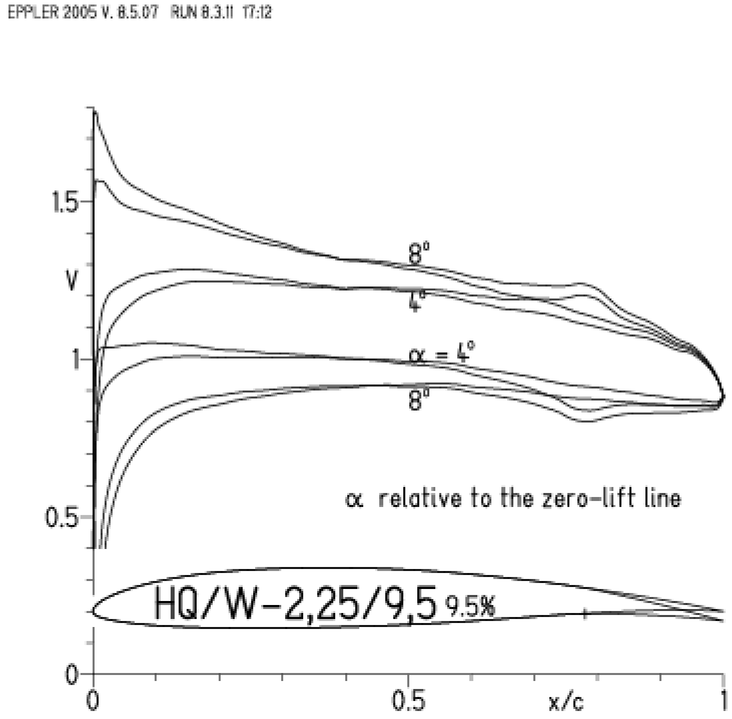
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

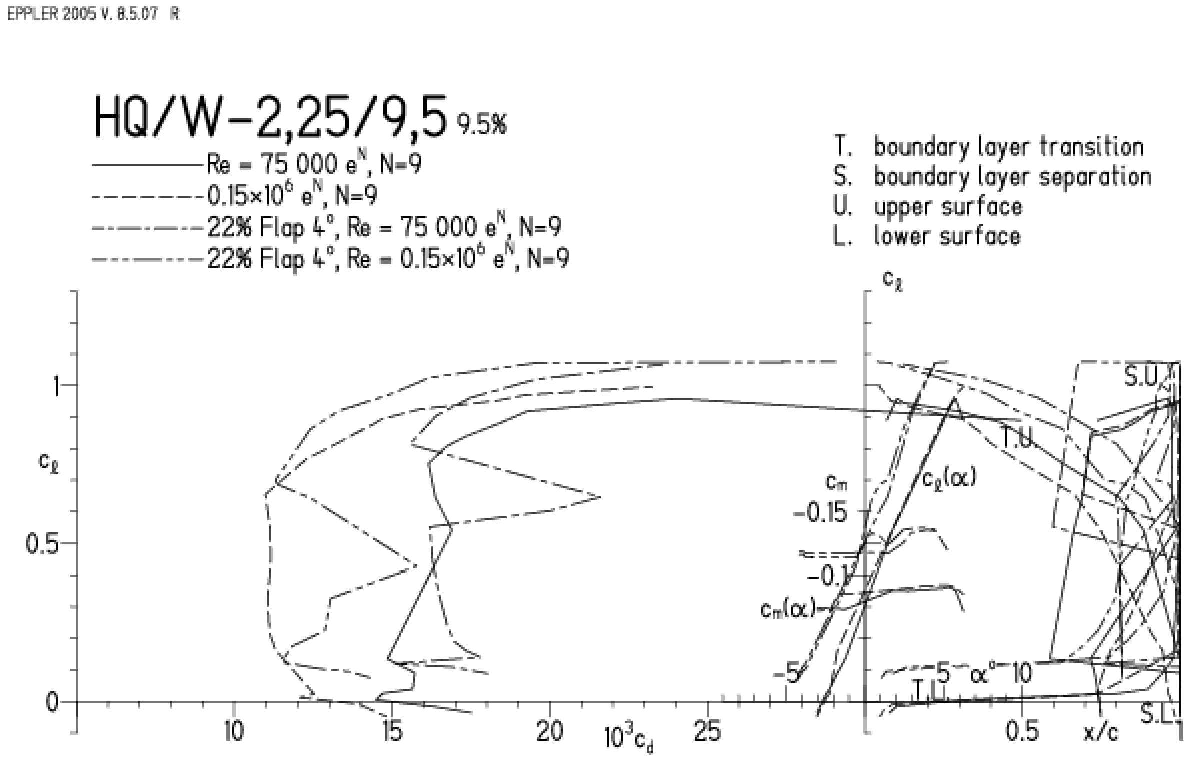


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



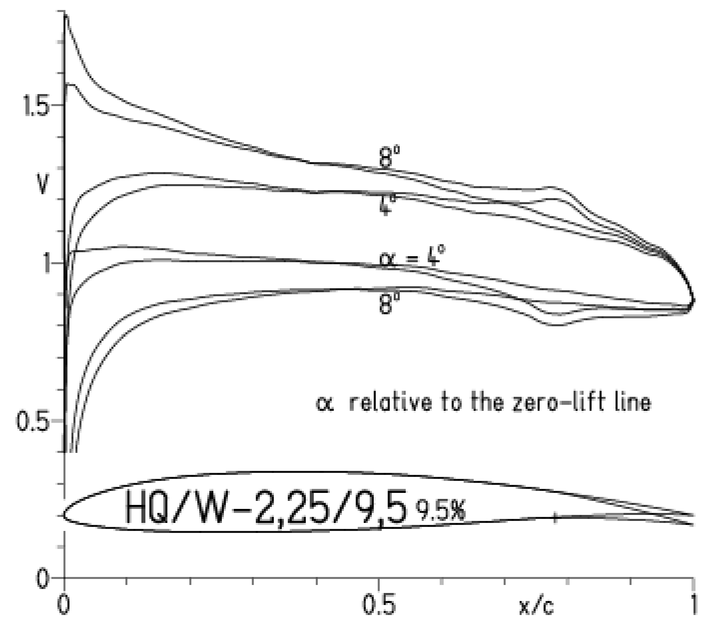
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



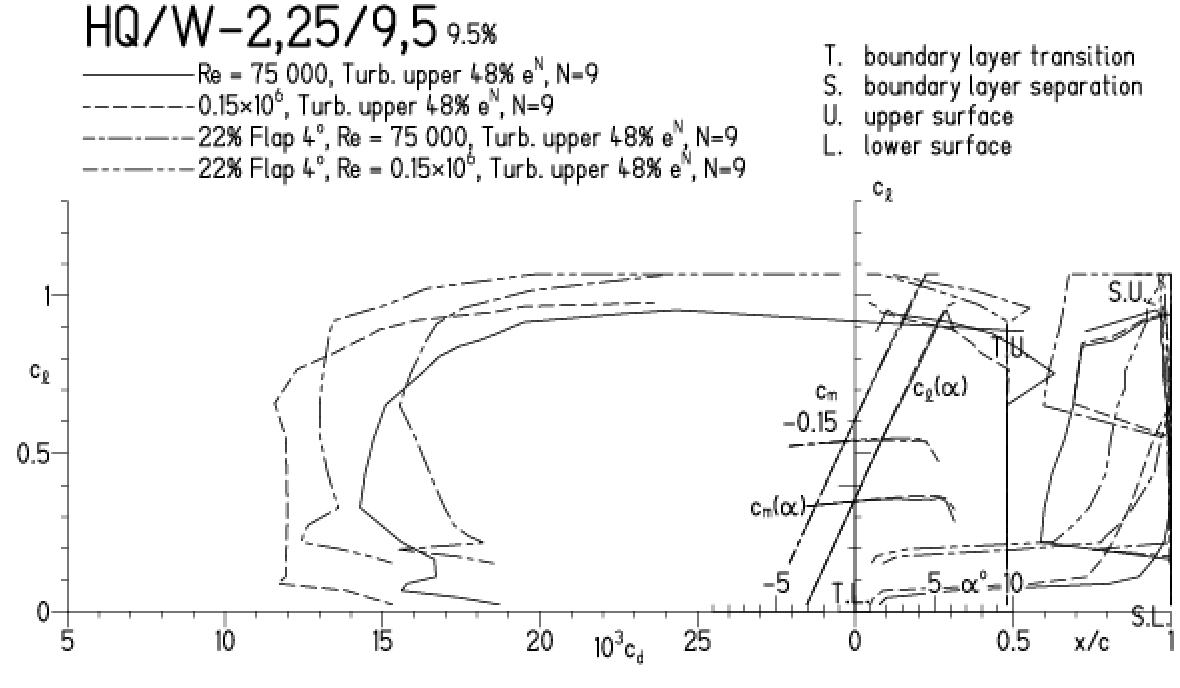


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

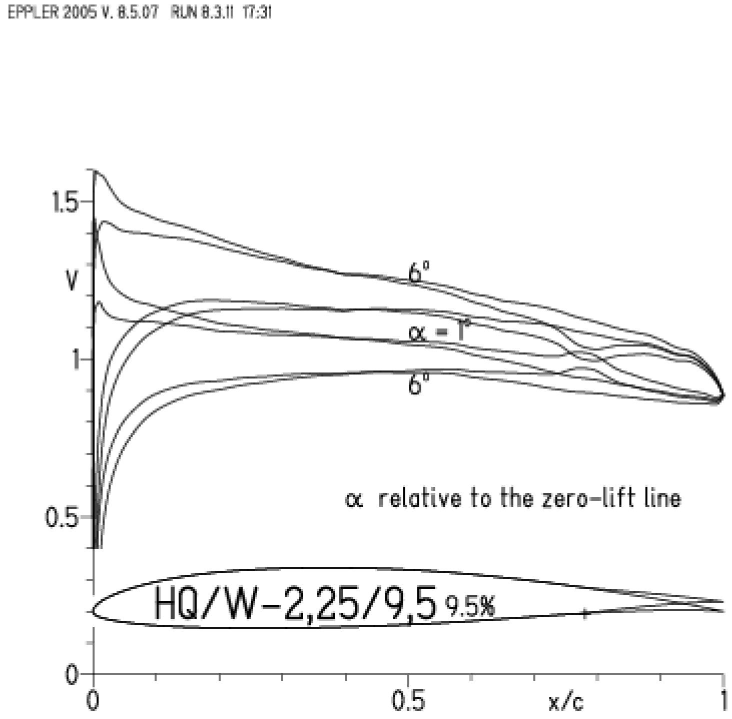
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

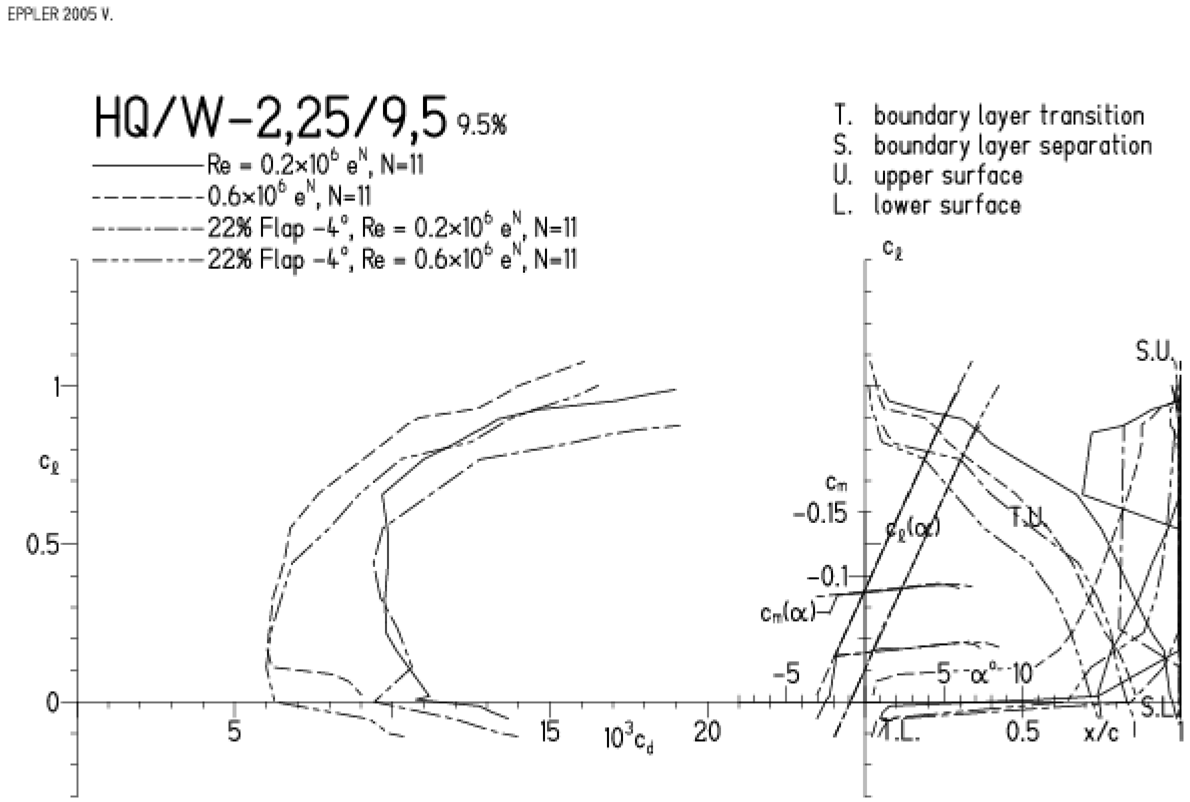


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



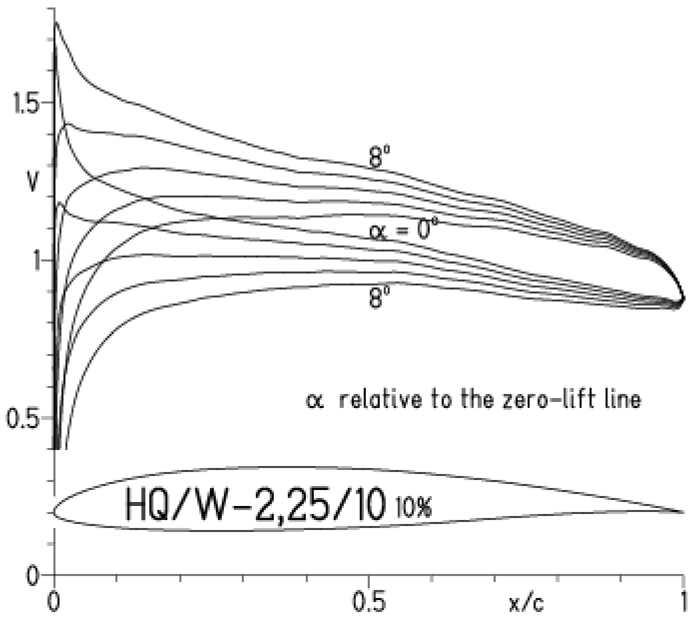
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



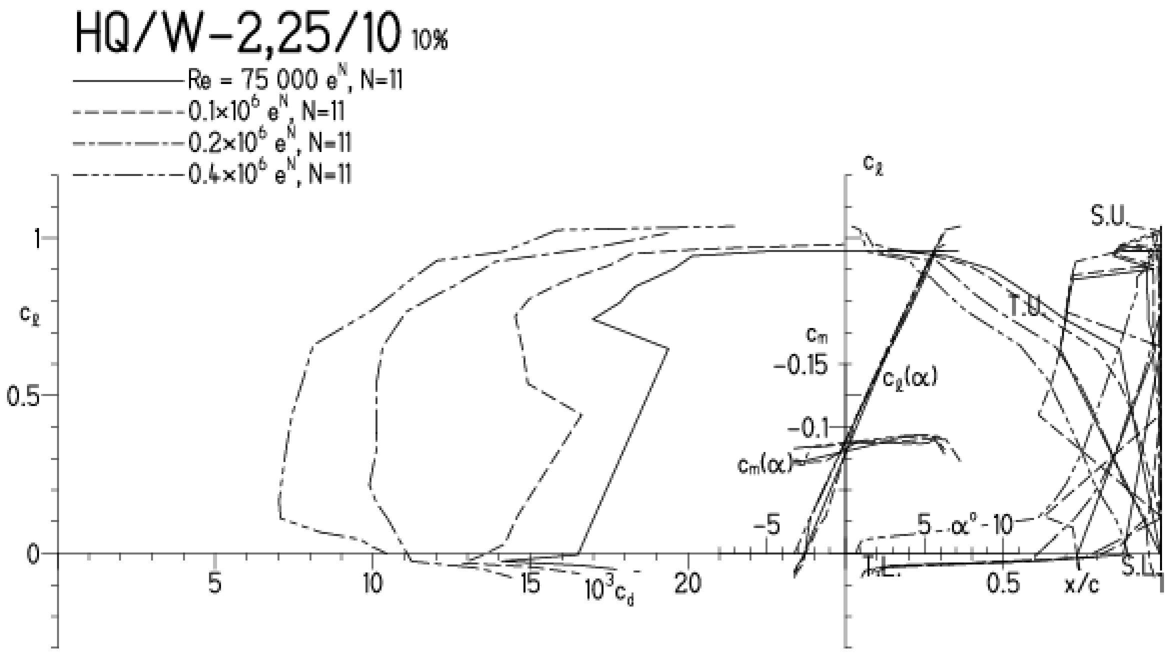


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

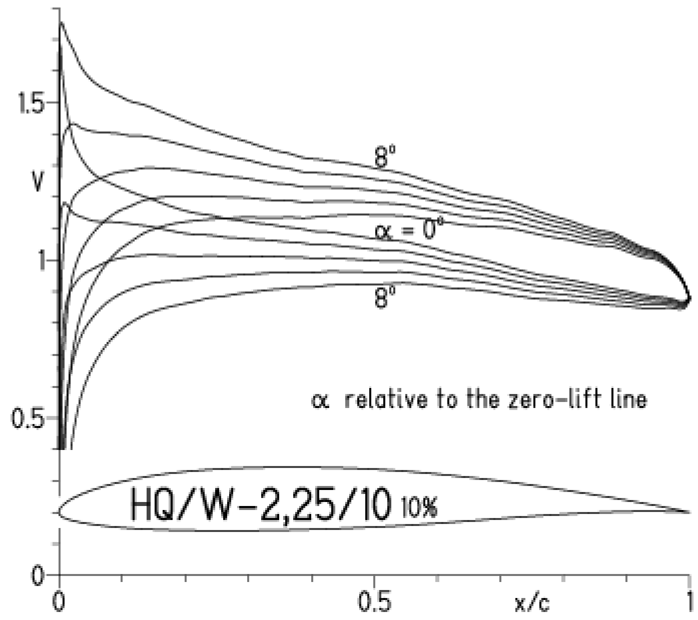


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

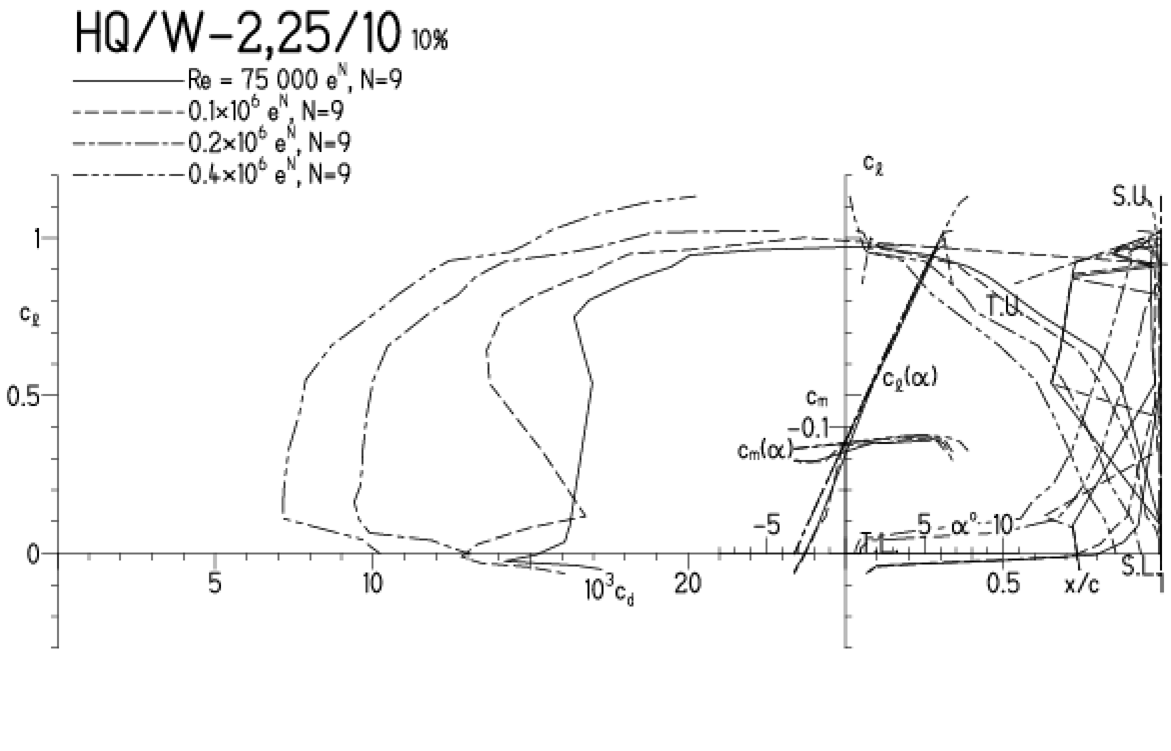


HQ/W-2,25/10, N=9

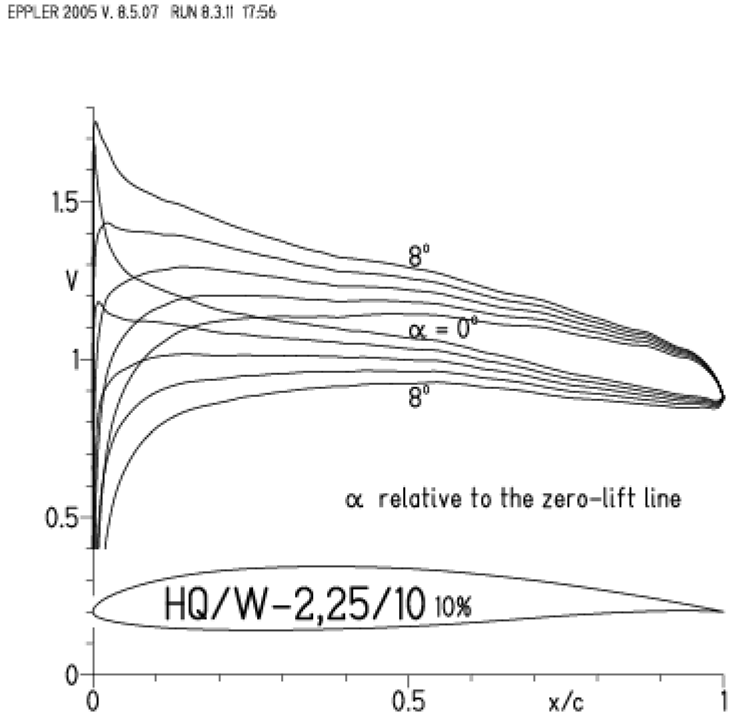
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

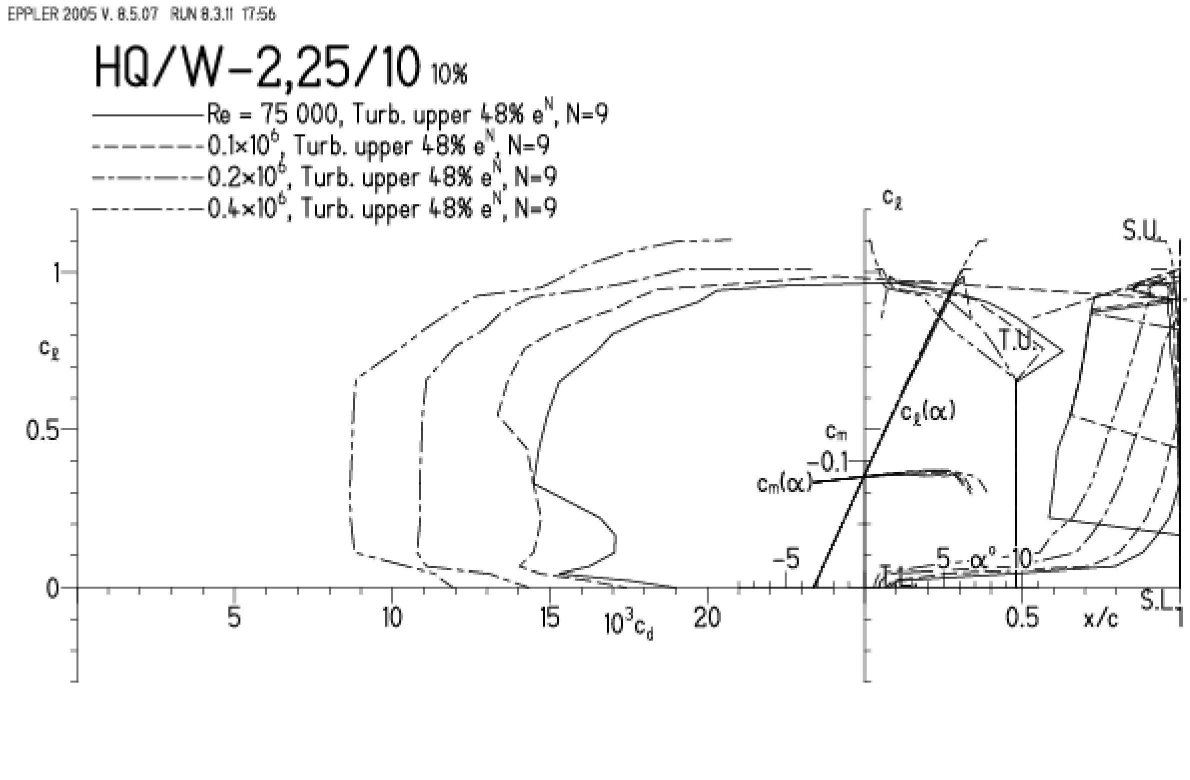


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



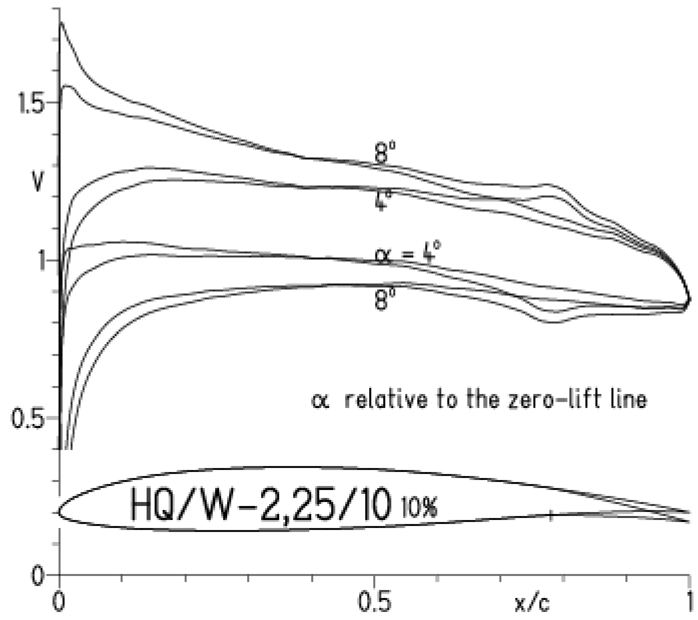
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



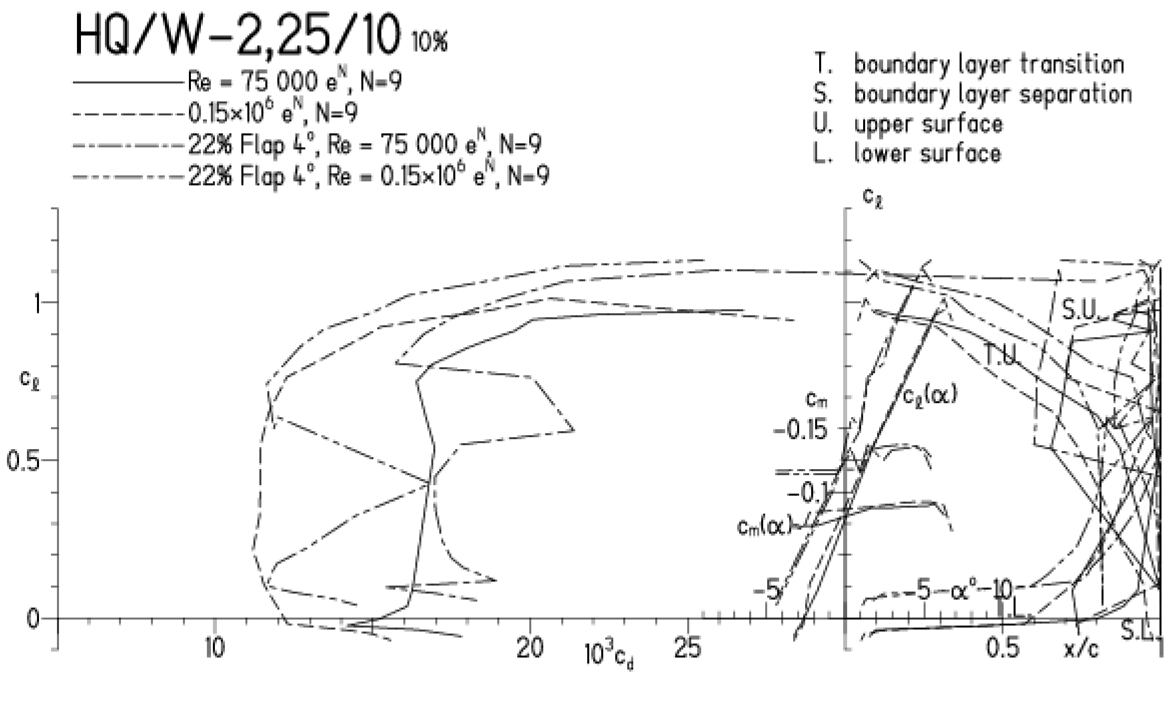


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

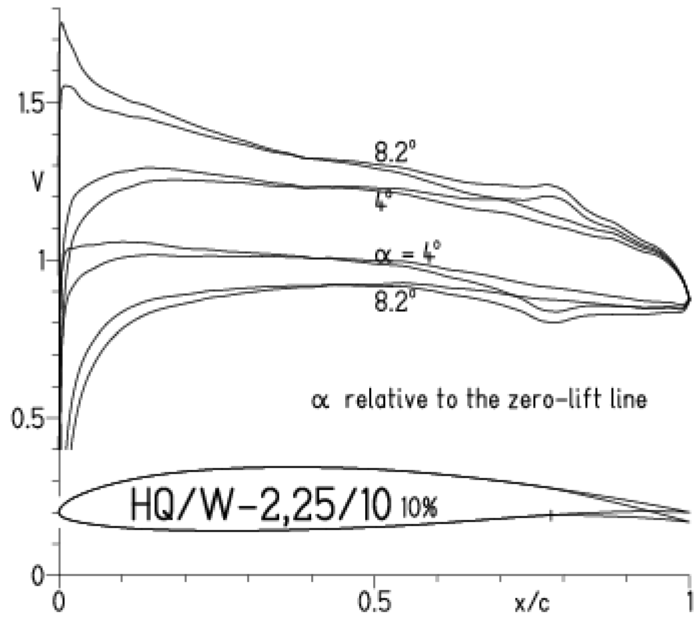


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

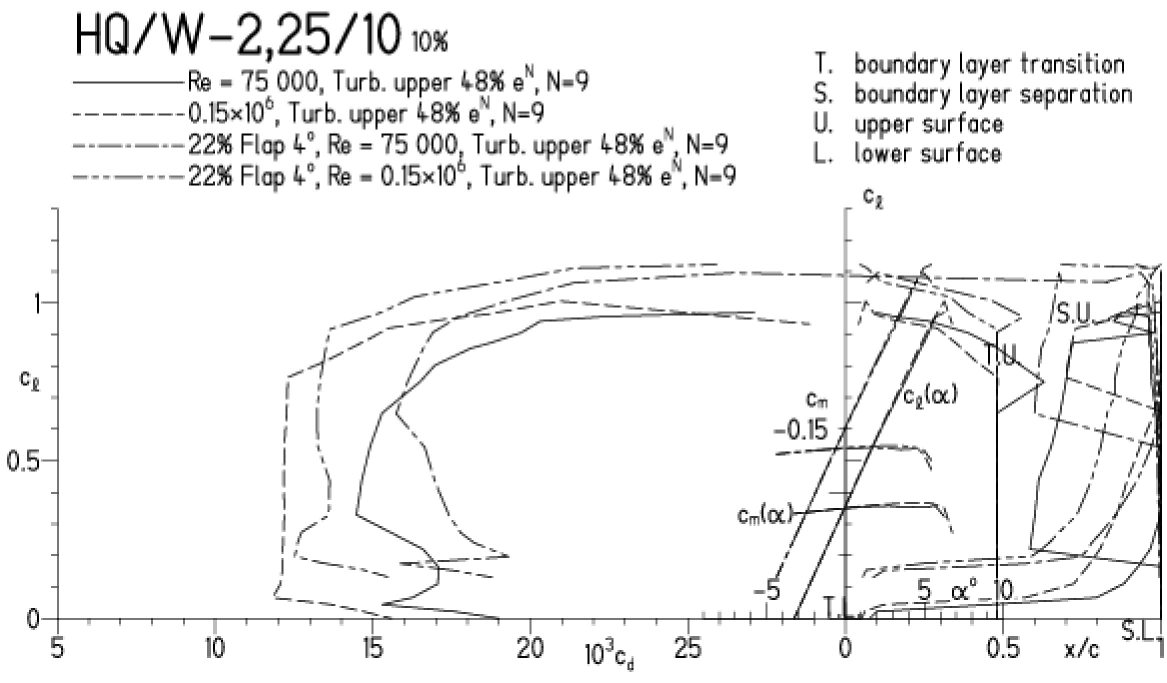


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

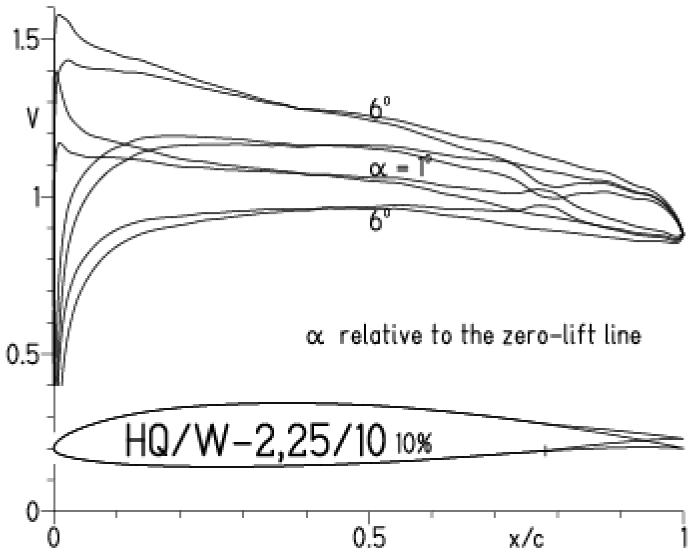


EPPLER 2005 V. 8.5.07 RUN 8.3

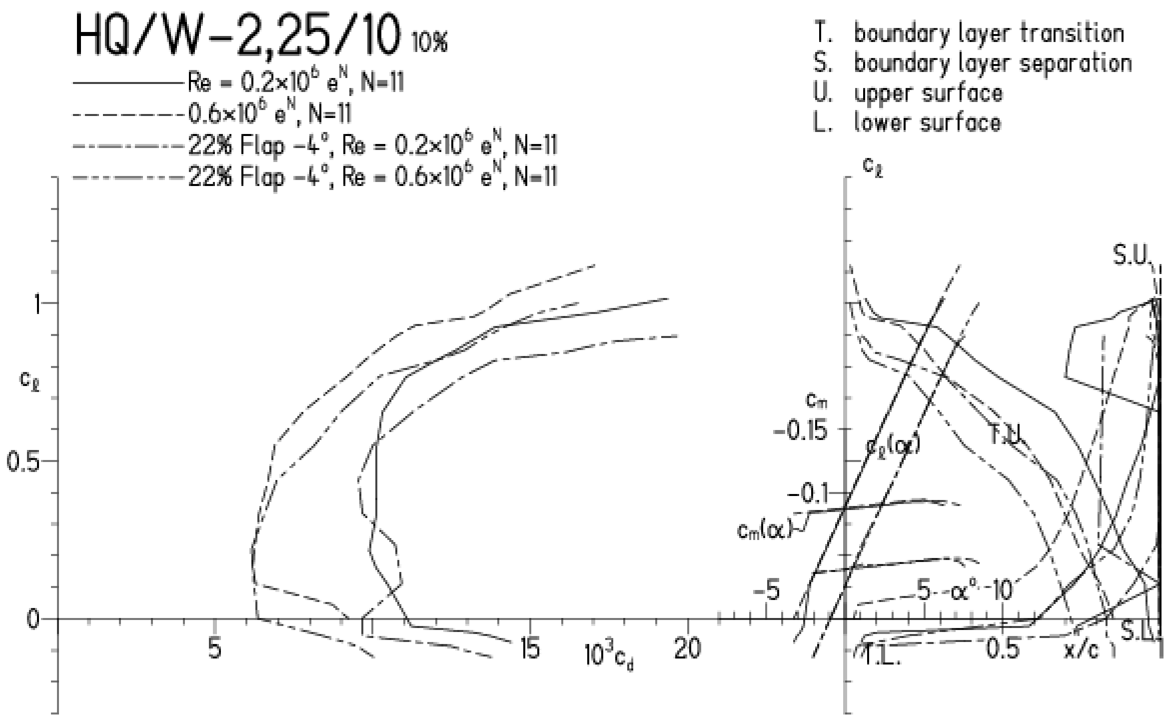


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

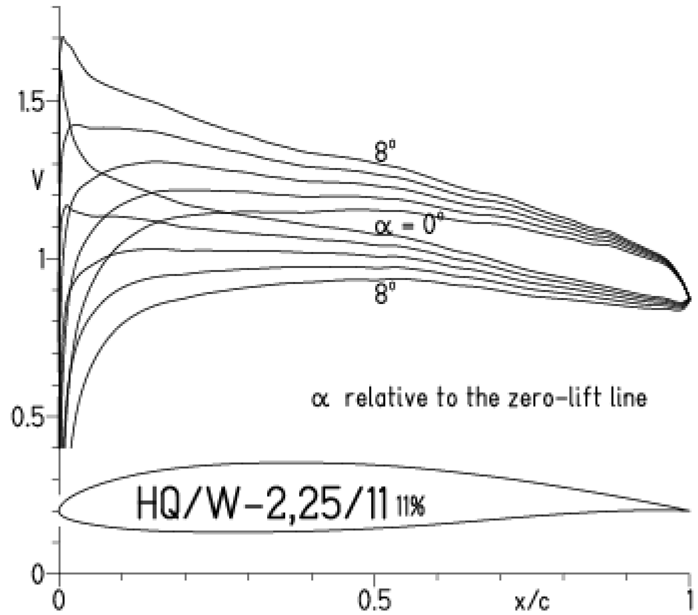


EPPLER 2005 V. 8.5.07 RUN

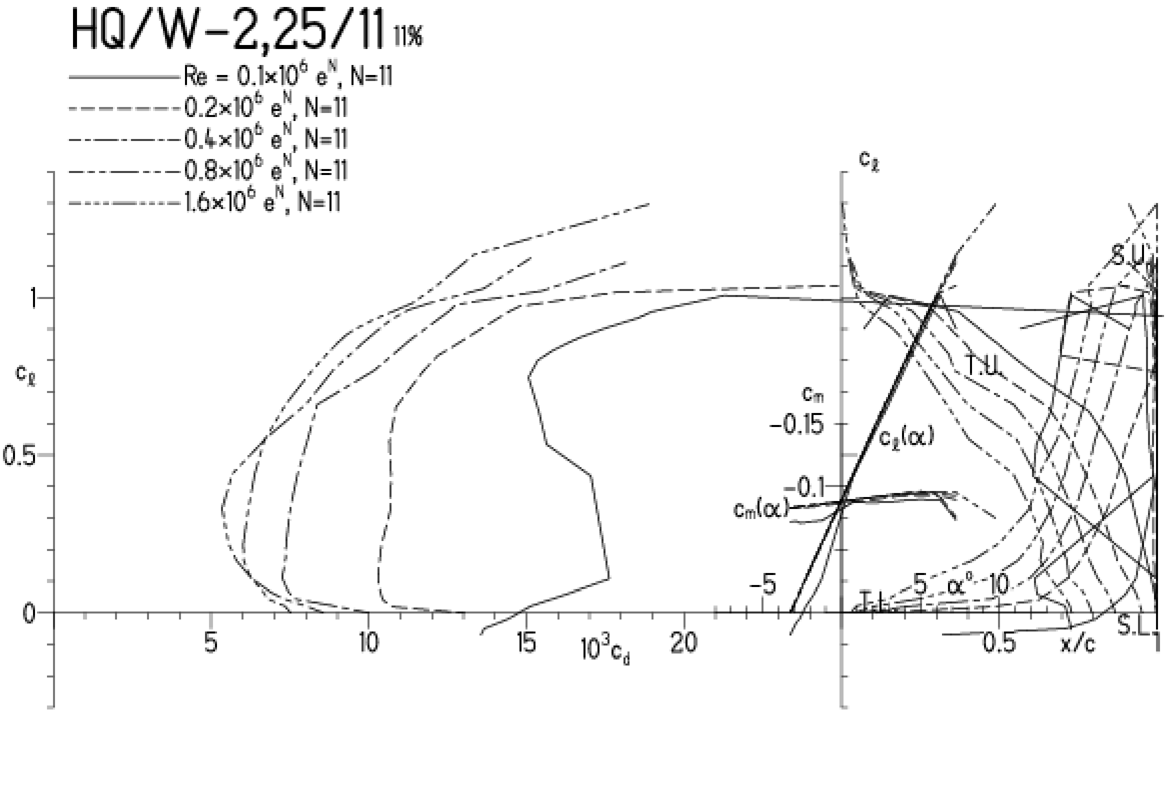


HQ/W-2,25/11, N=11

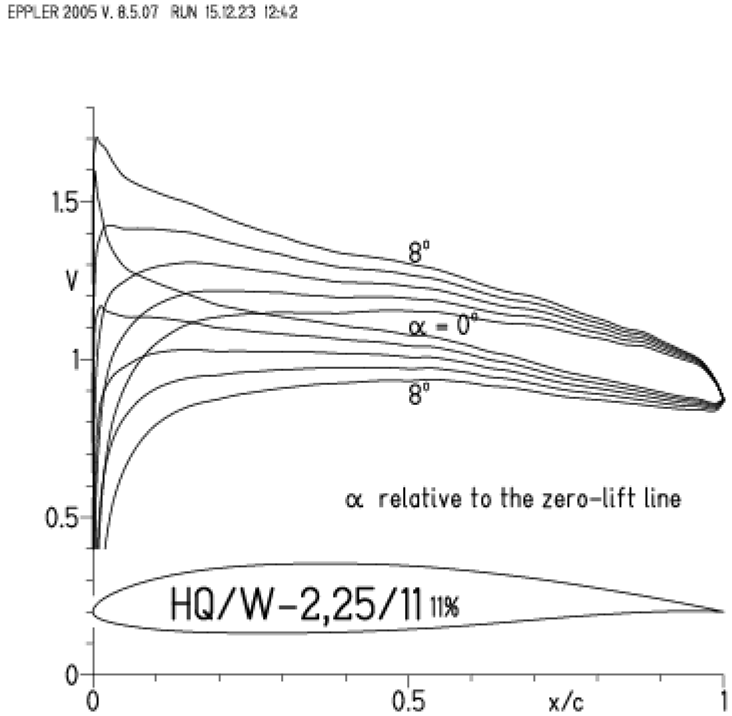
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

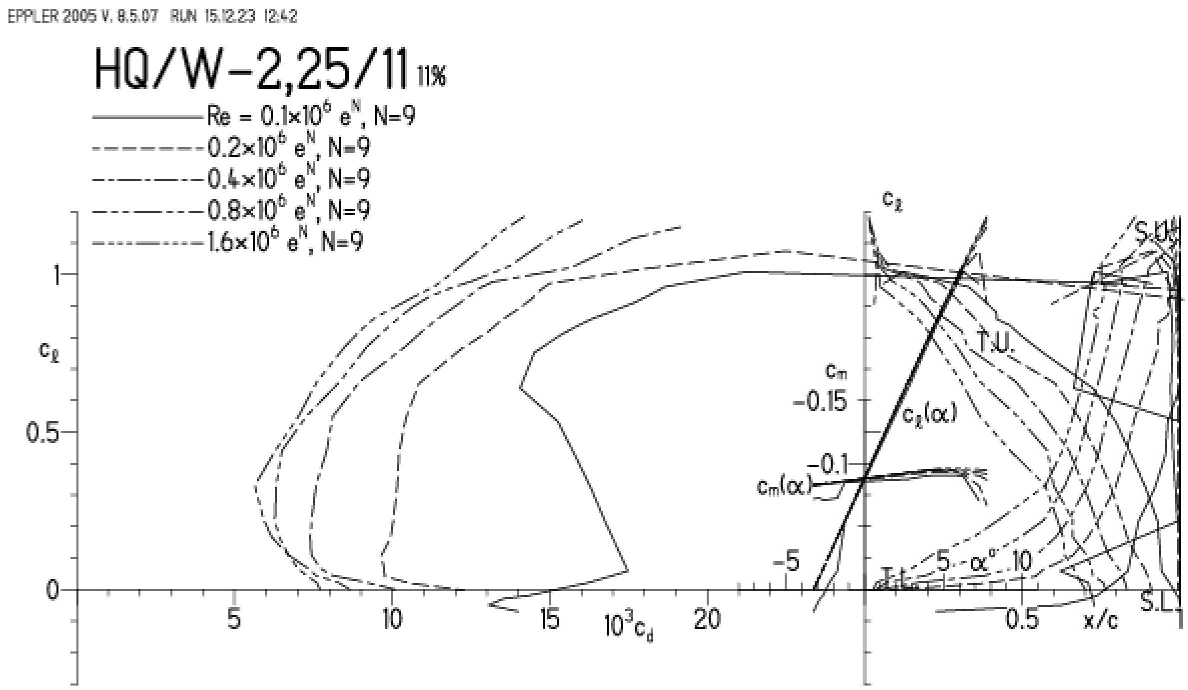


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

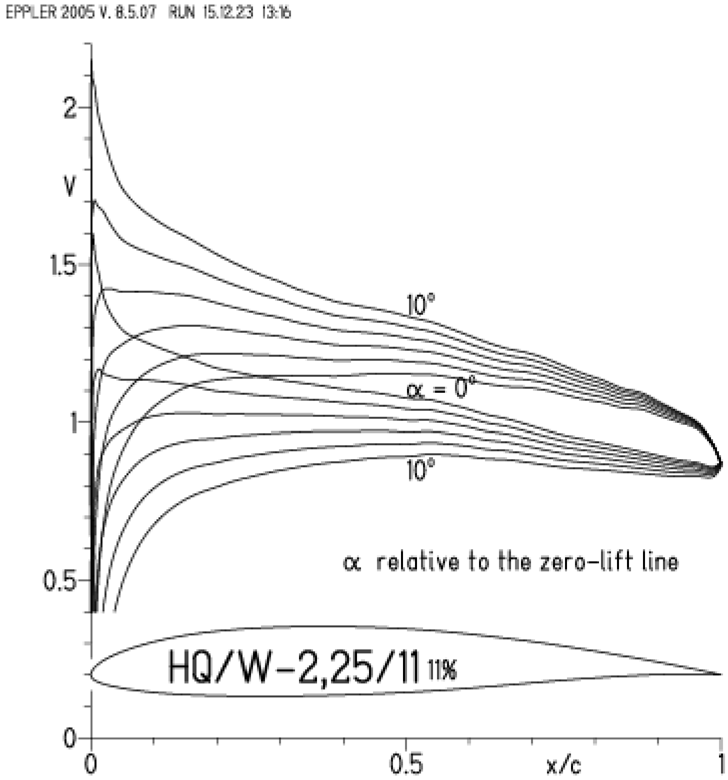


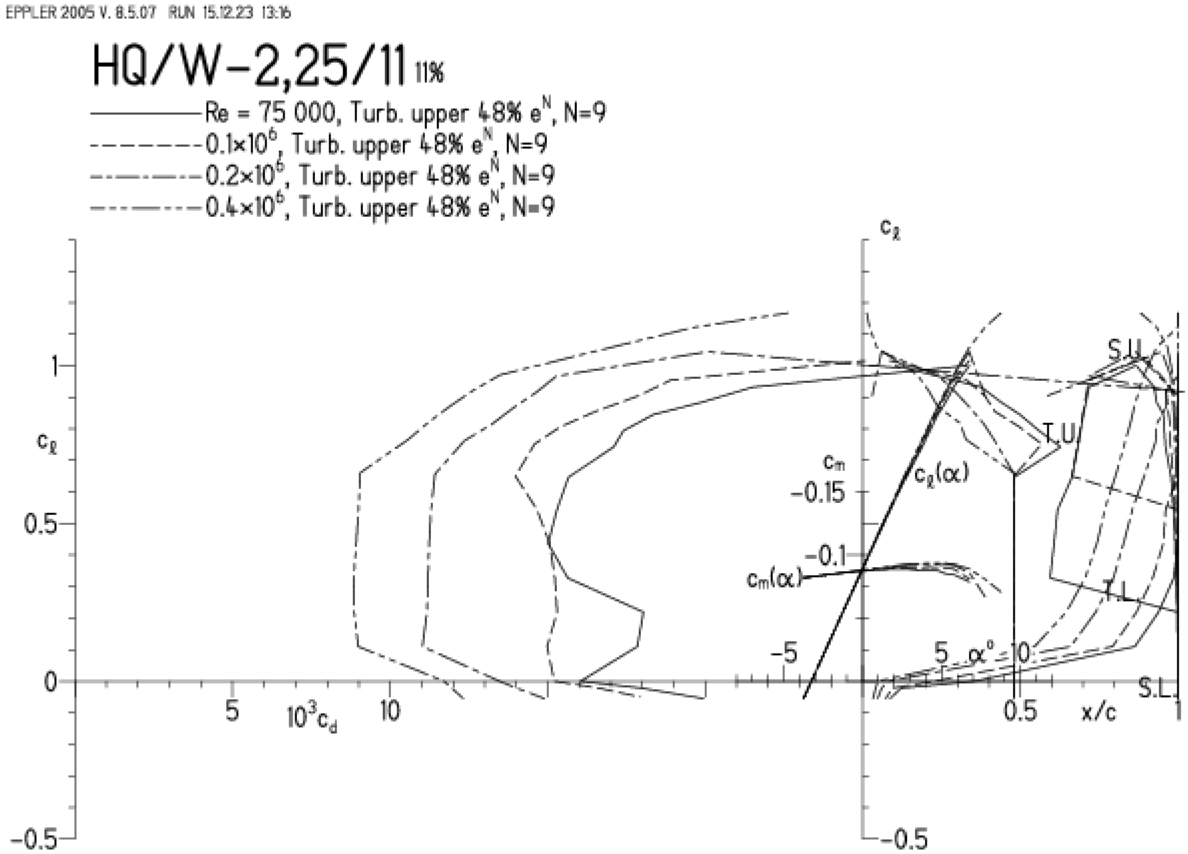
HQQ/W-2,25/11, N=9





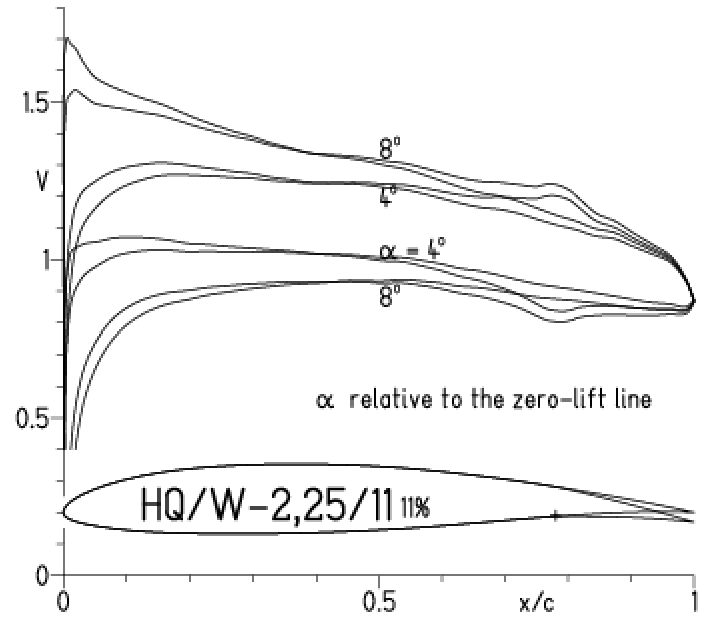
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



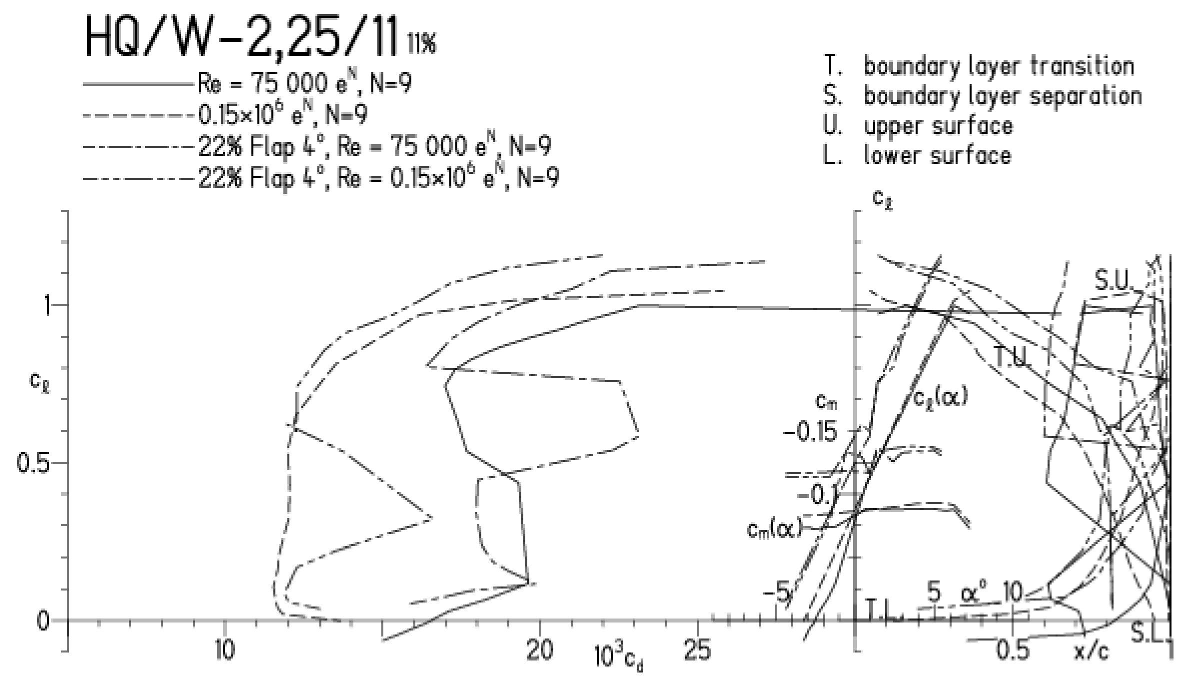


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

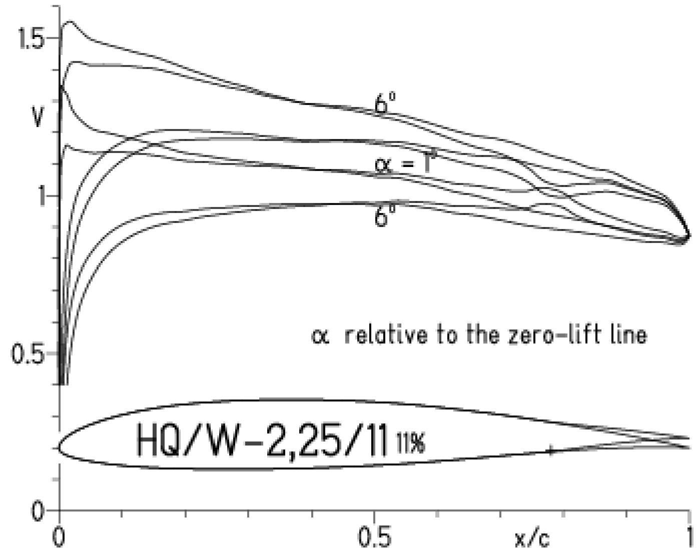


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

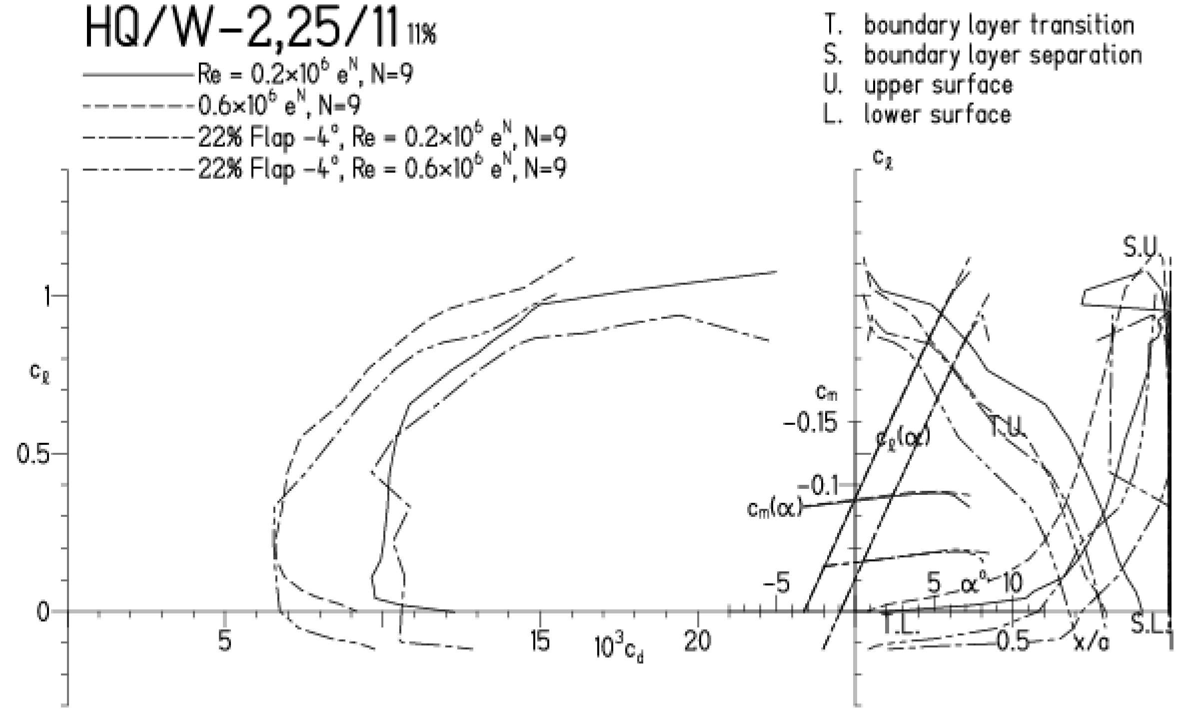


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

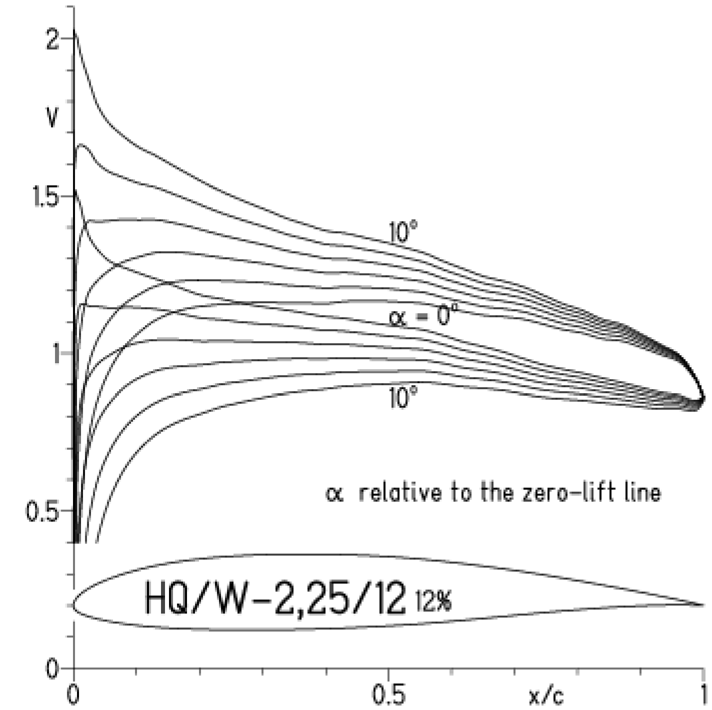


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

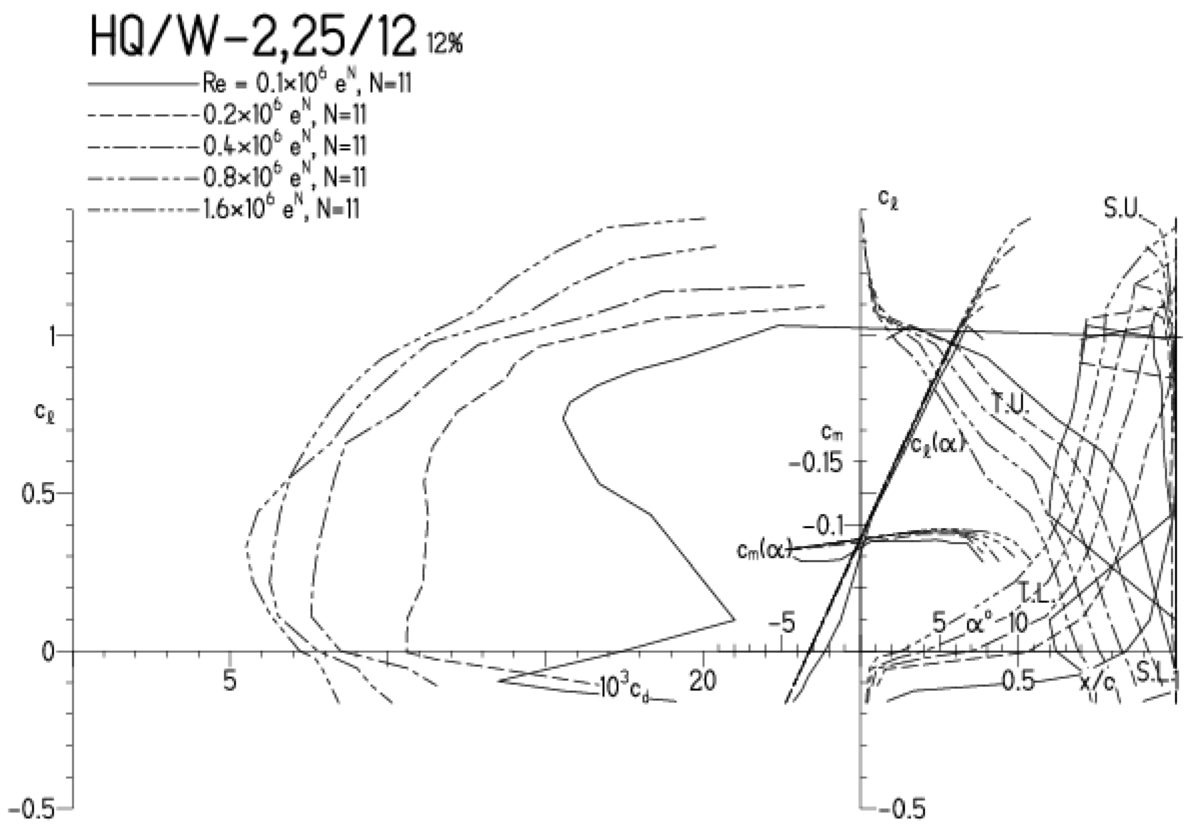


<u>HQ/W-2,25/12</u>, N=11

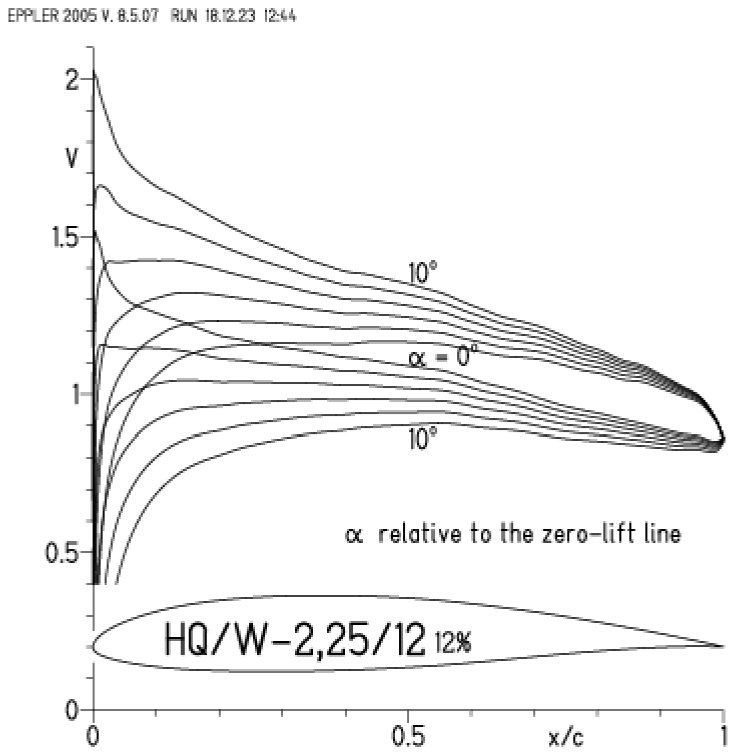
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

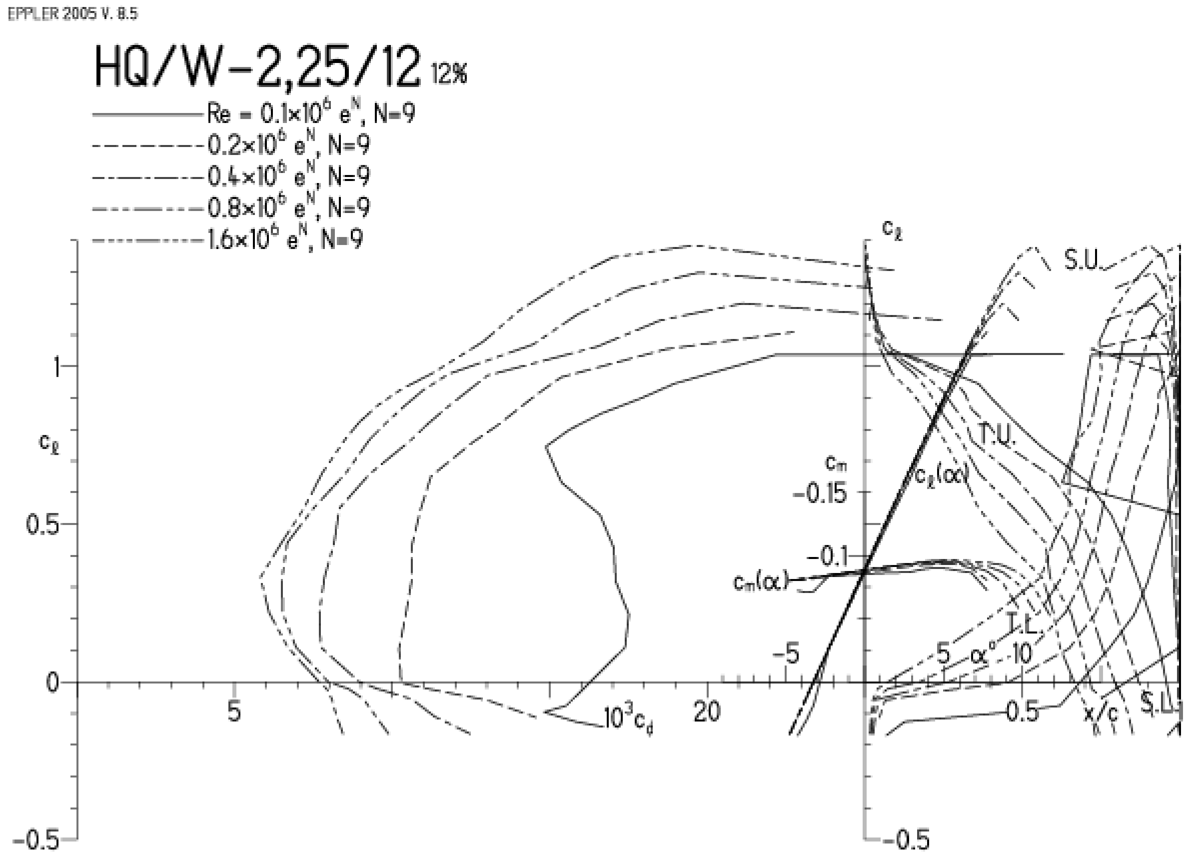


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

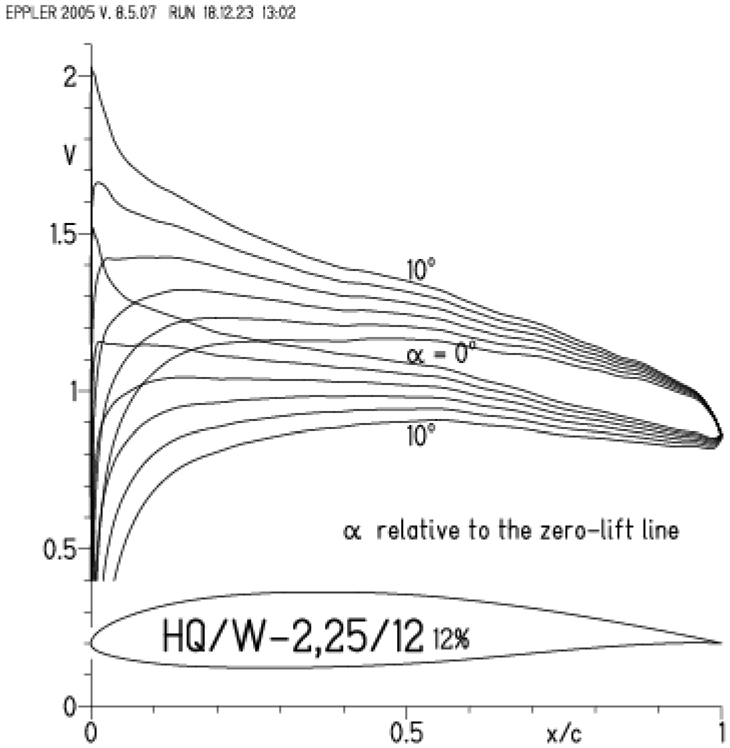


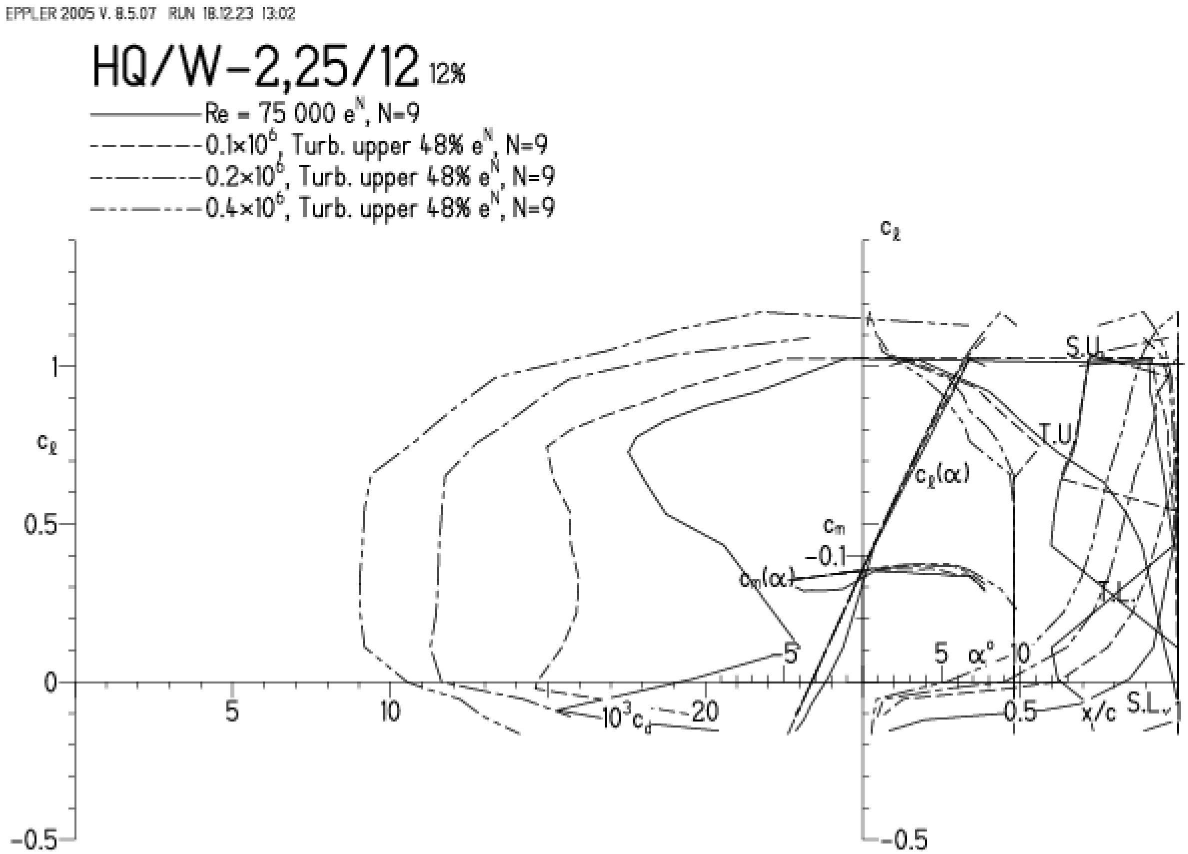
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
2
1.5
1
0.5
0
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
0
0.5
x/c
1


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1
0.5
0
−0.5
5
20
10^3 c_d
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
−0.5

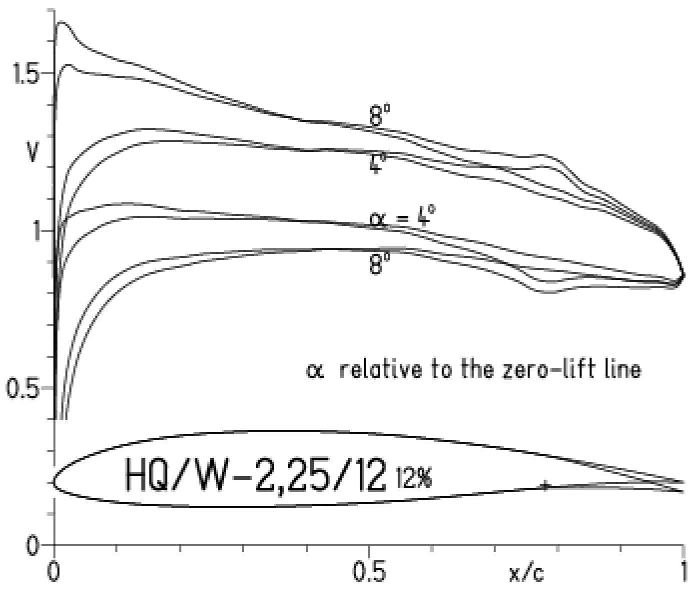
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



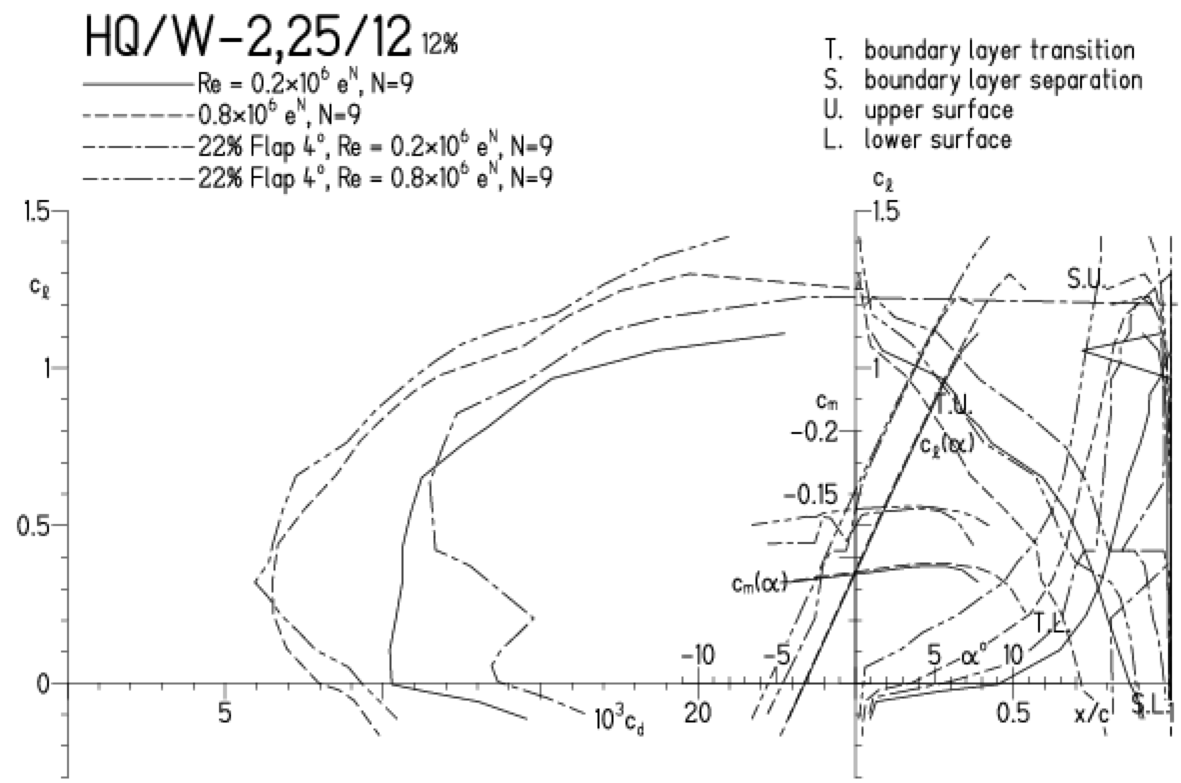


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

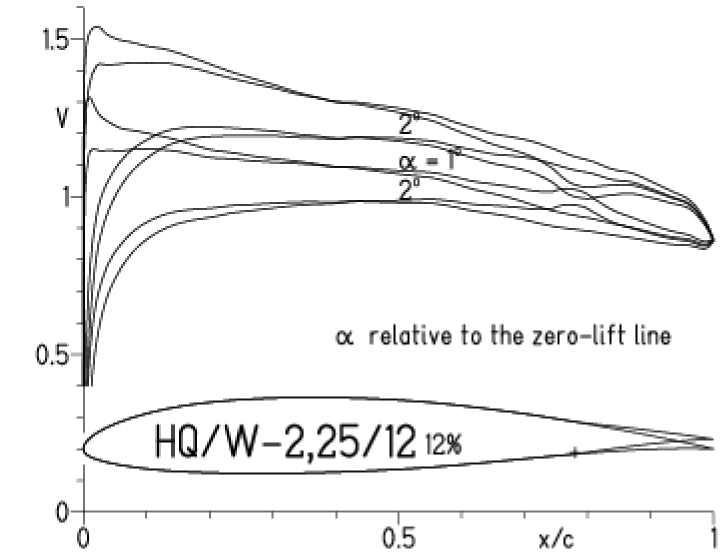


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

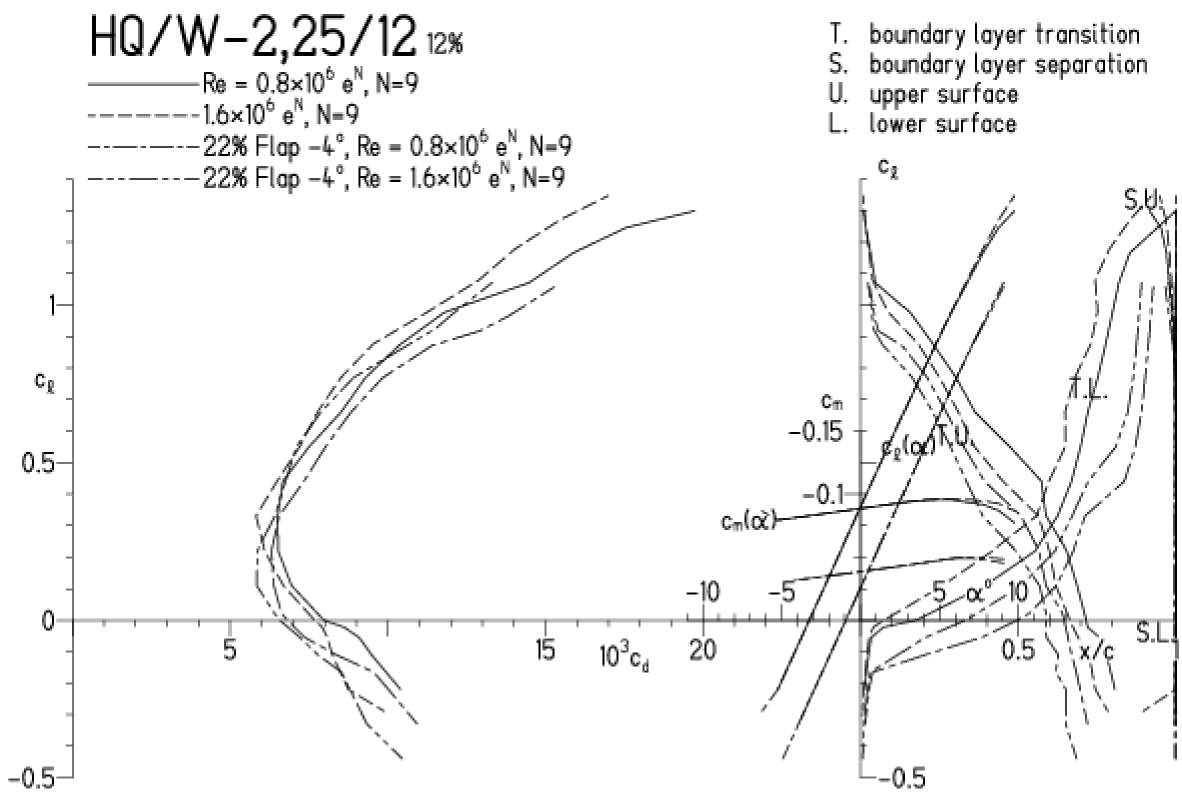


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

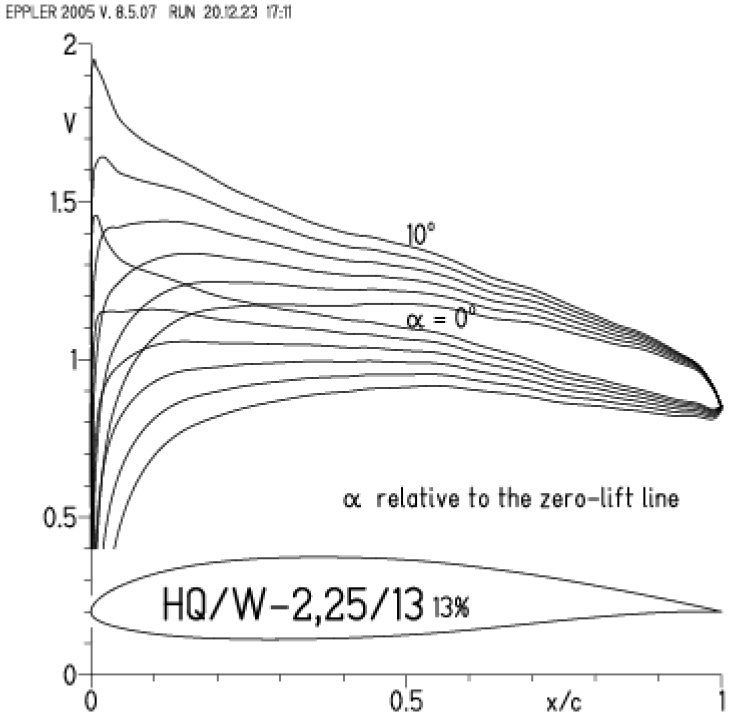
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

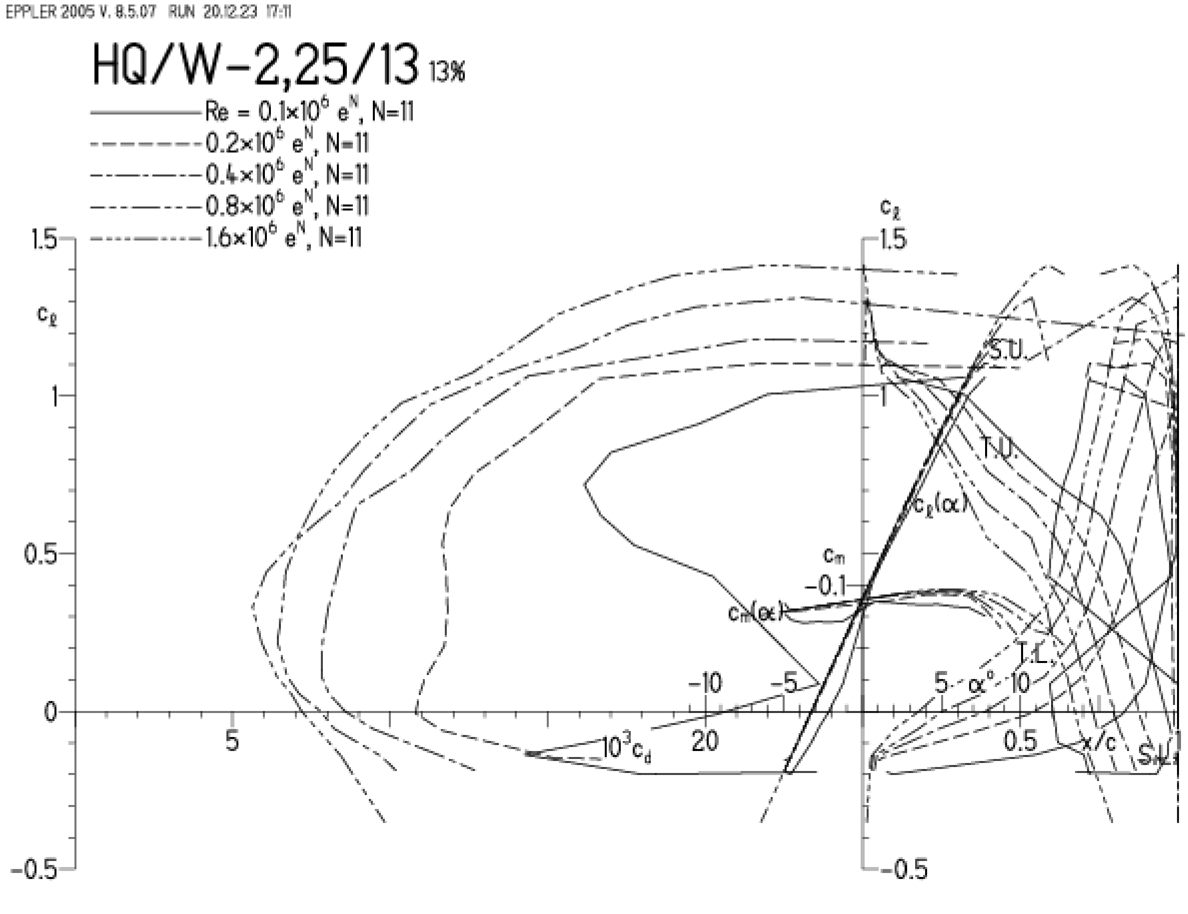


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

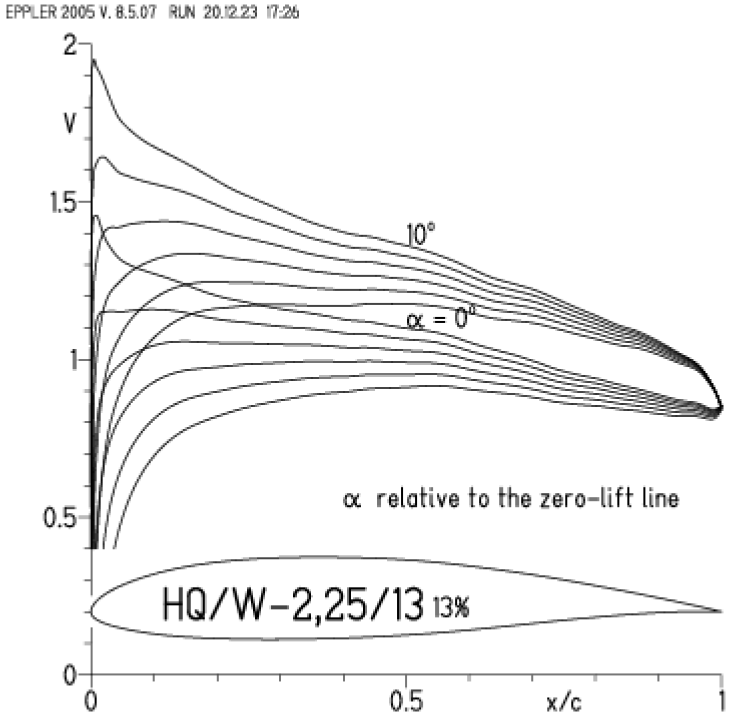


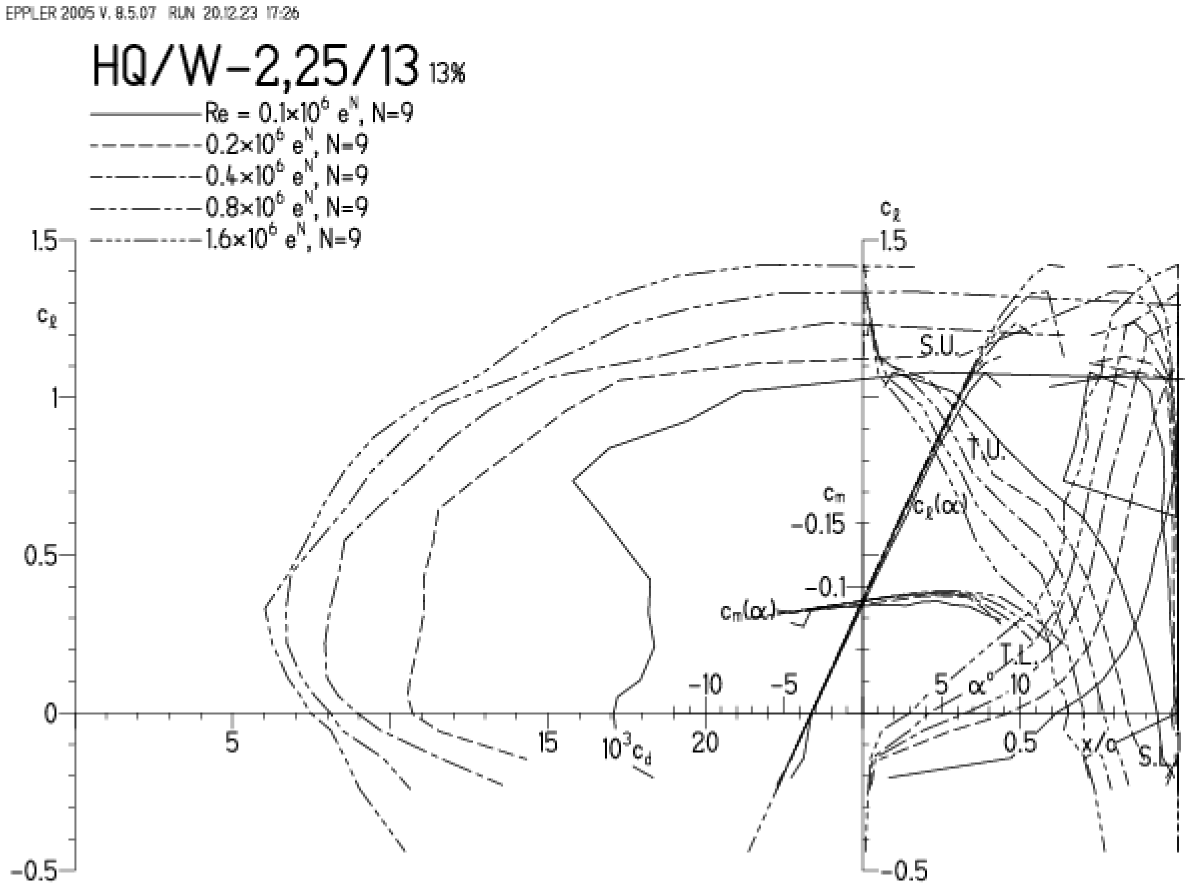
HQ/W-2,25/13, N=11



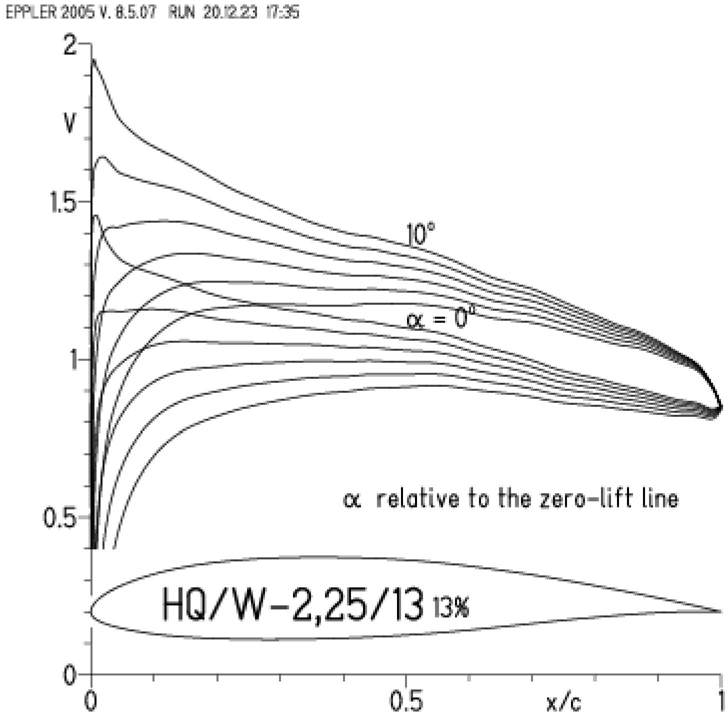


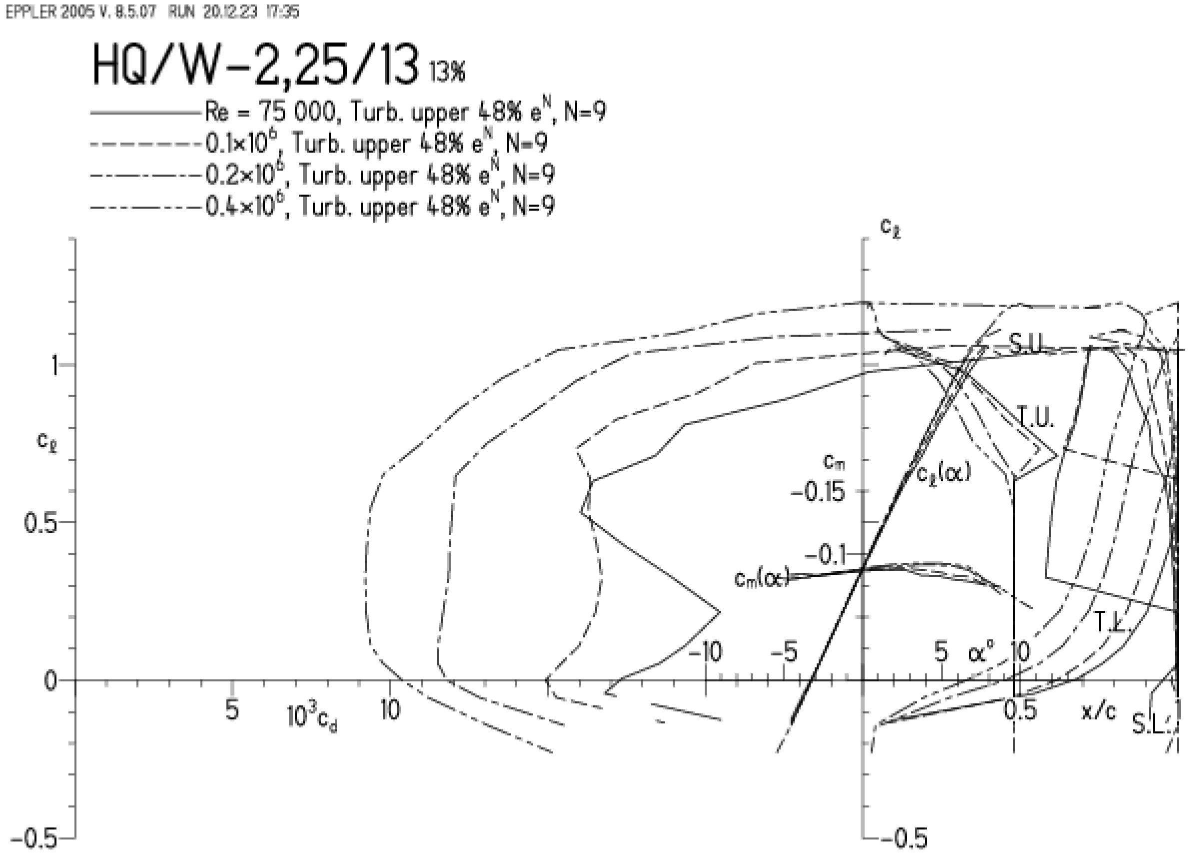
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
$c_\ell(\alpha)$
$c_m(\alpha)$
T.L.
S.L.
$10^3 c_d$
α°
x/c

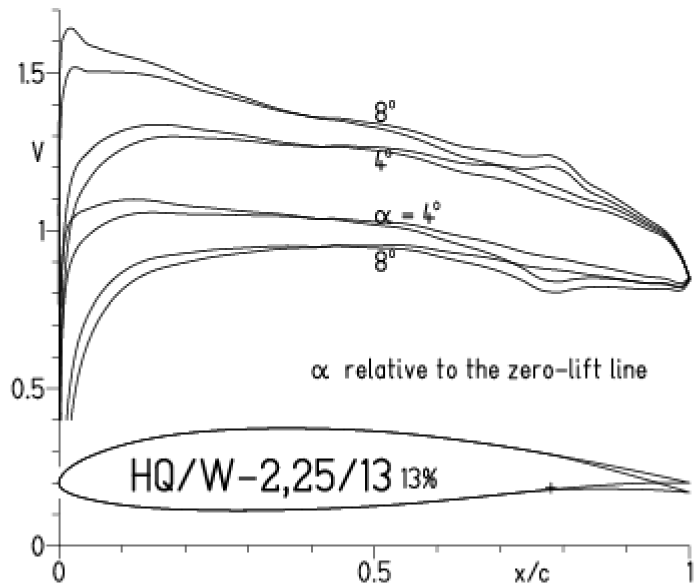
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



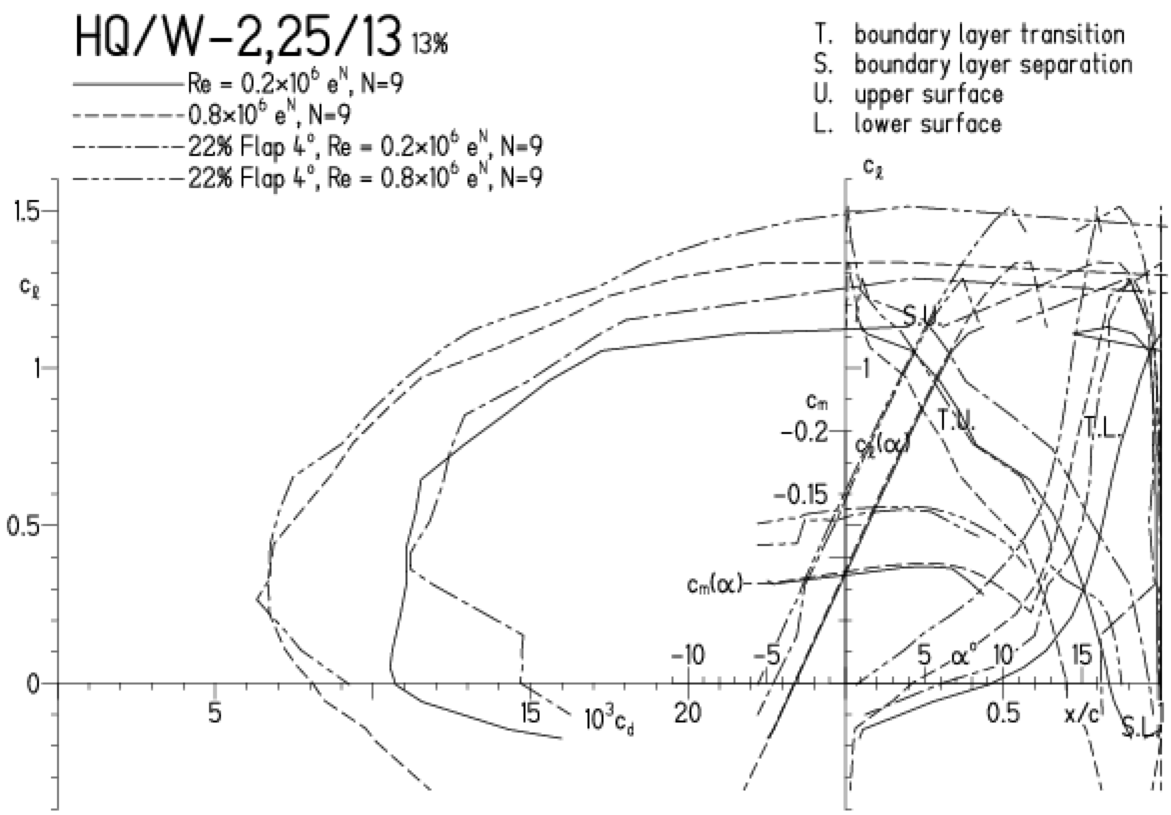


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

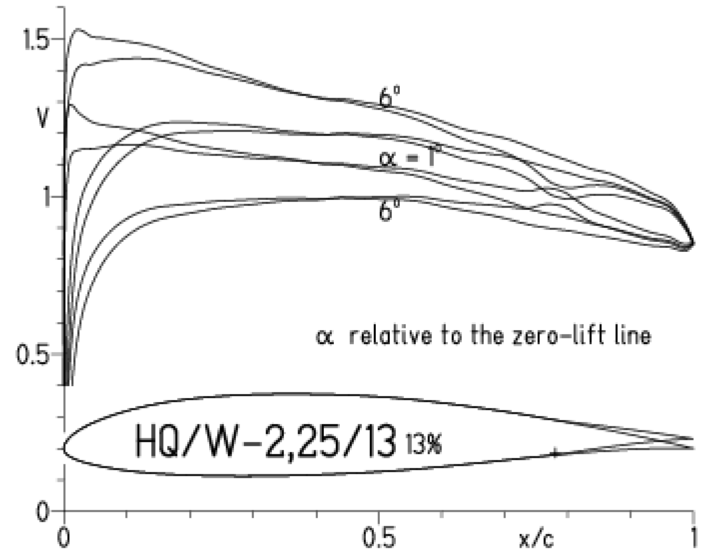


EPPLER 2005 V.

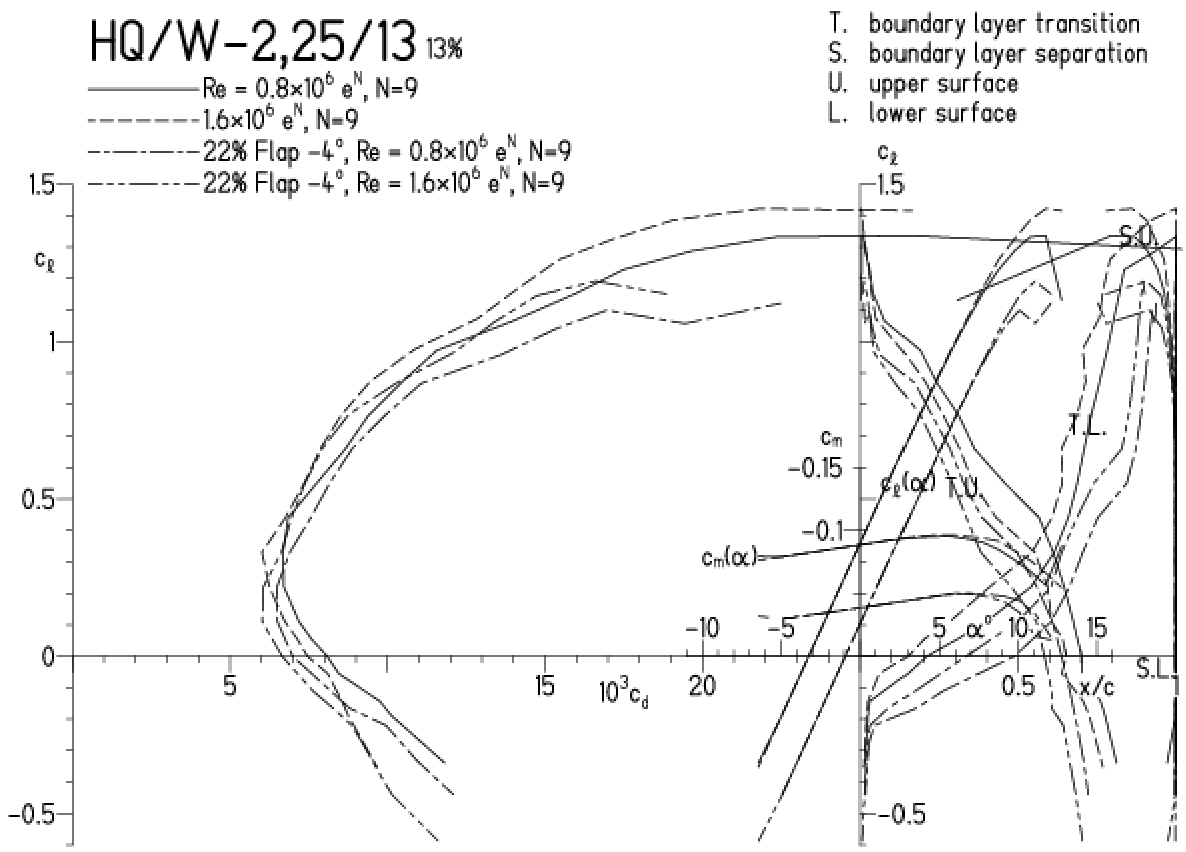


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

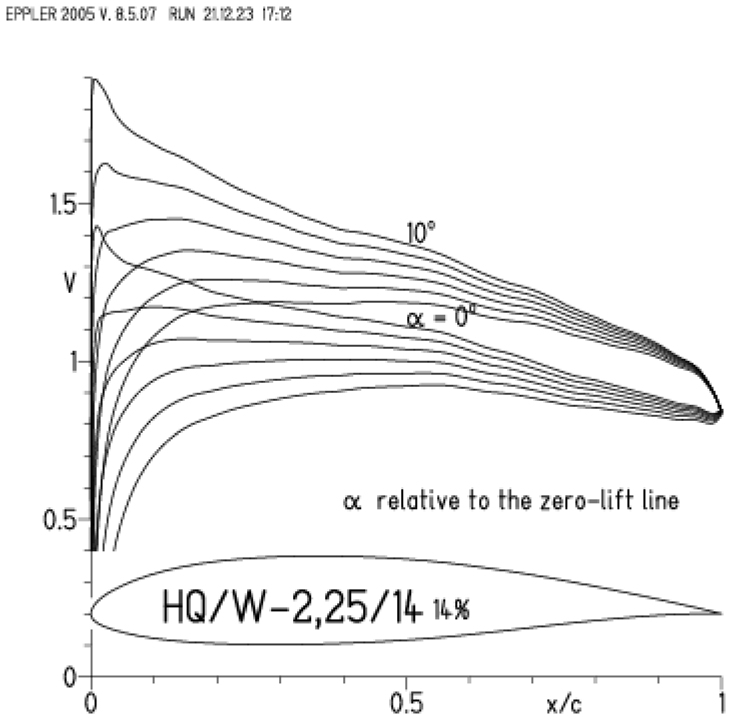
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

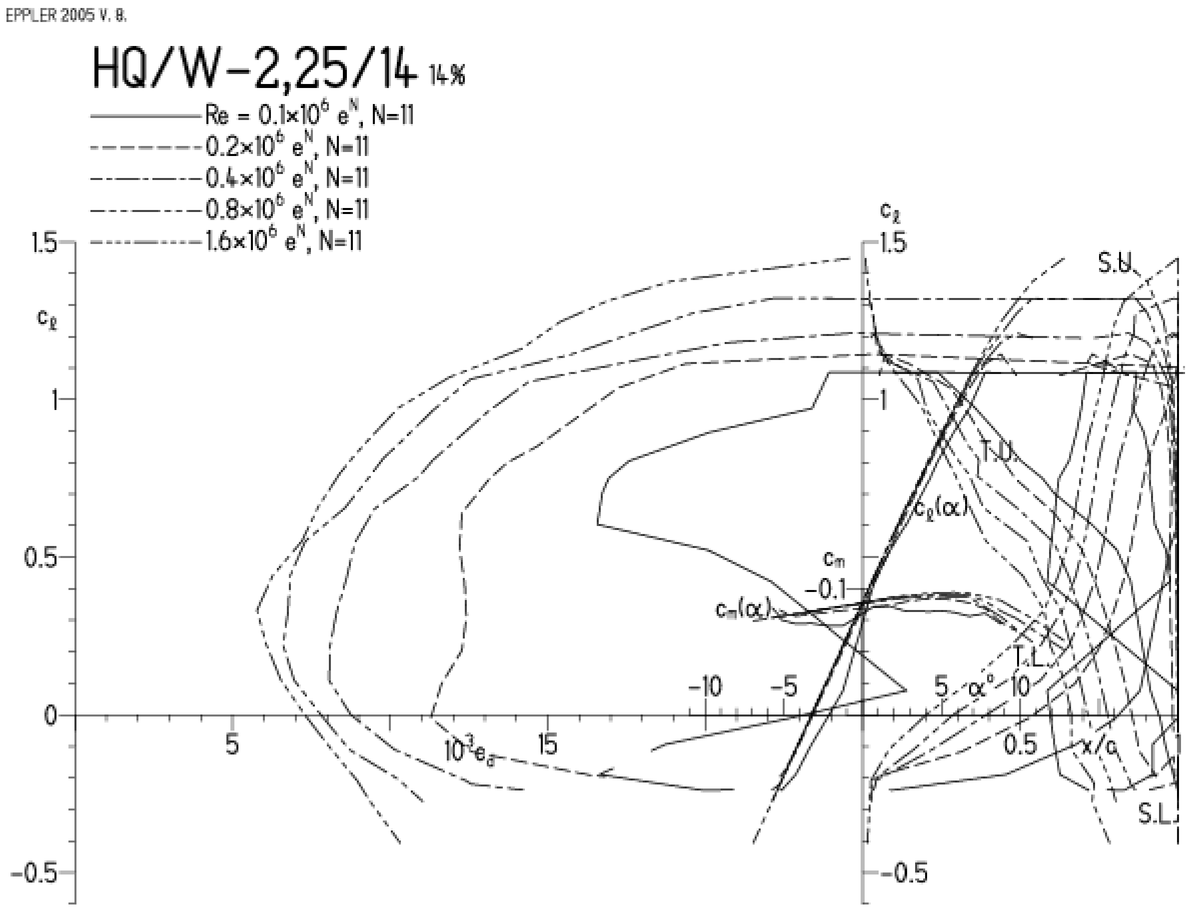


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

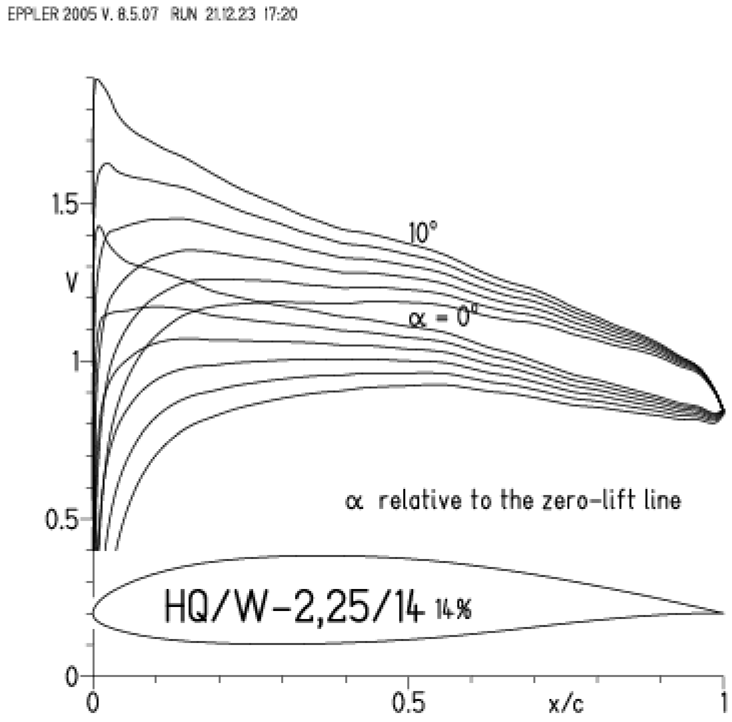


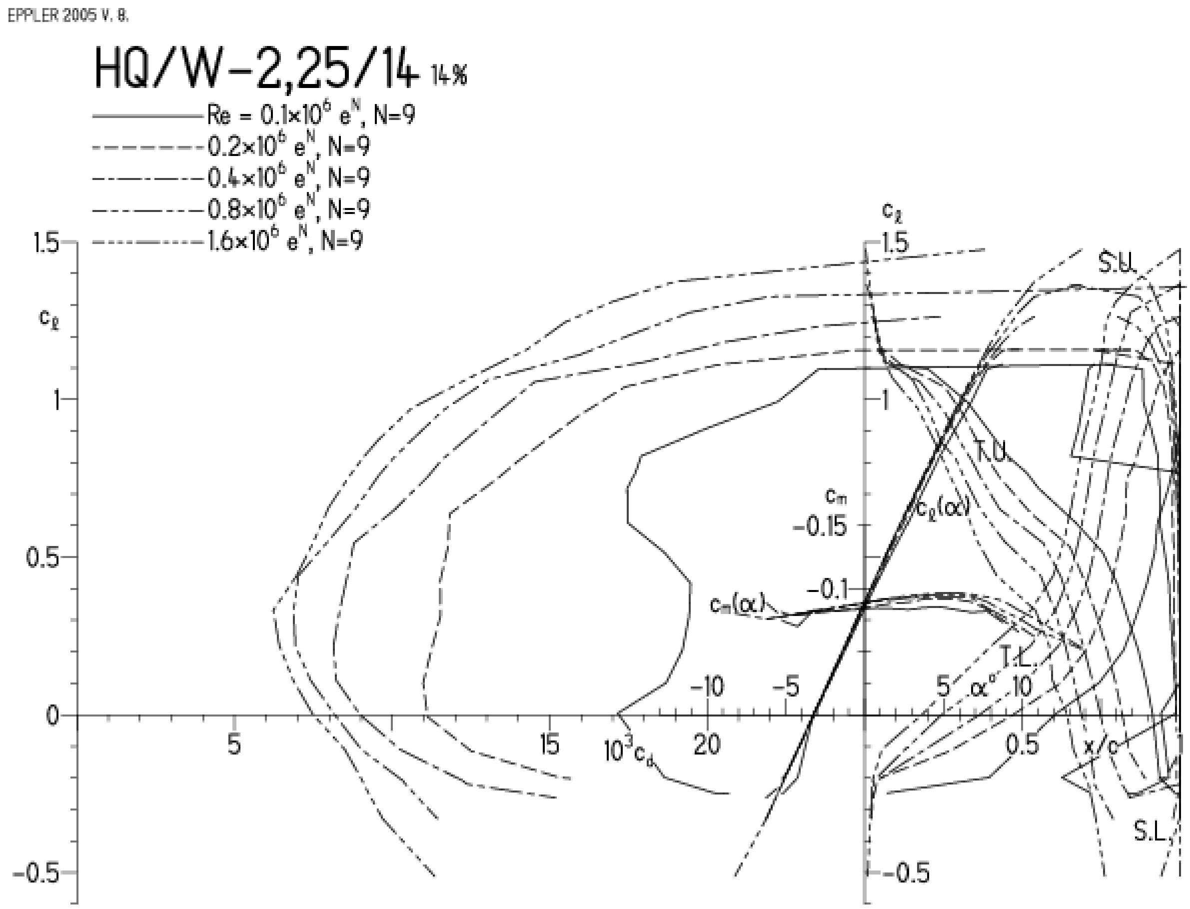
<u>HQ/W-2,25/14</u>, N=11



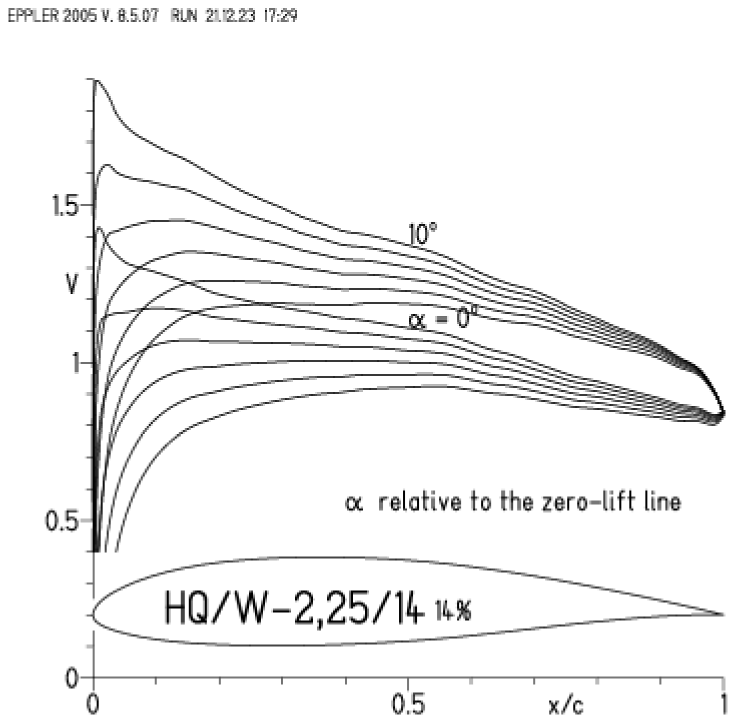


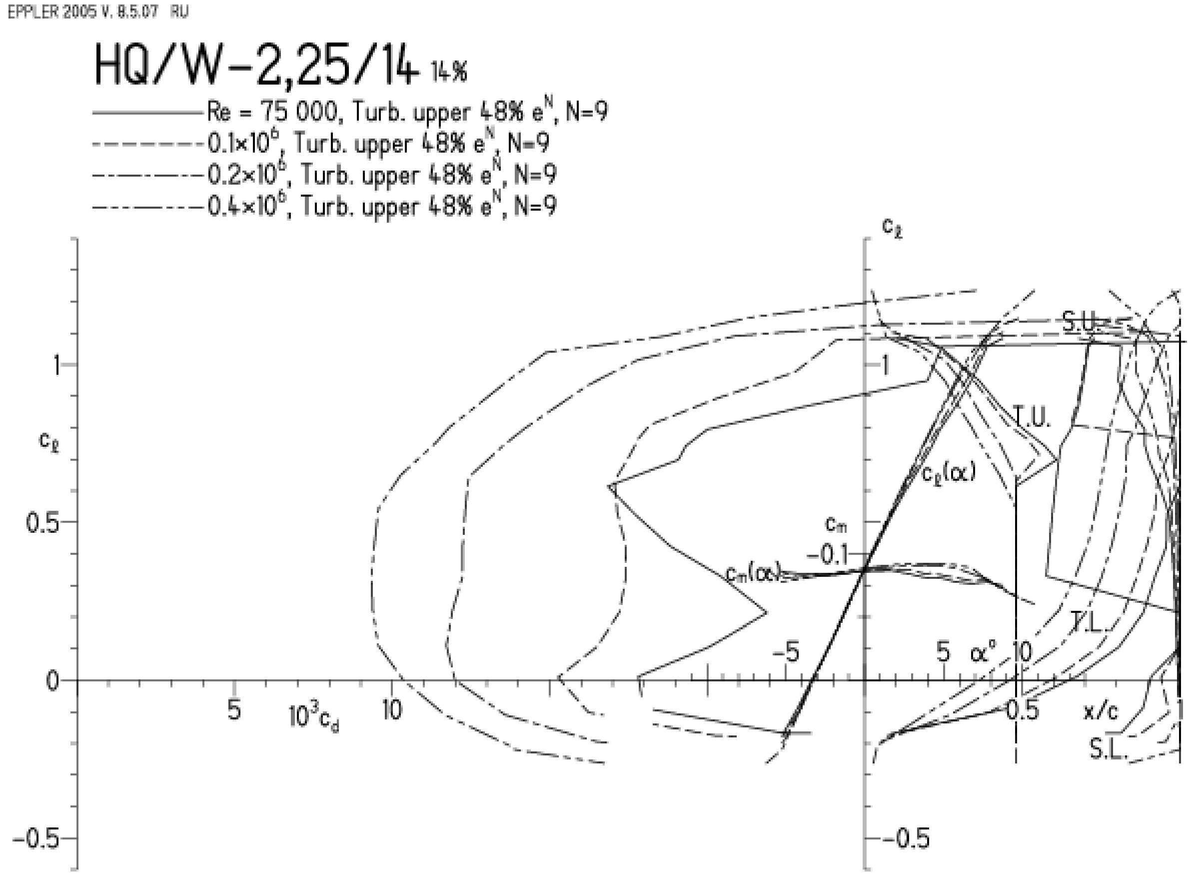
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

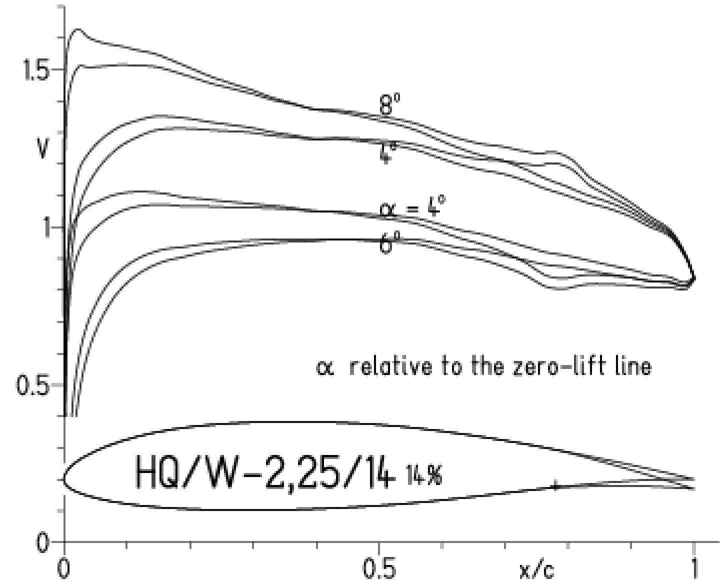
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



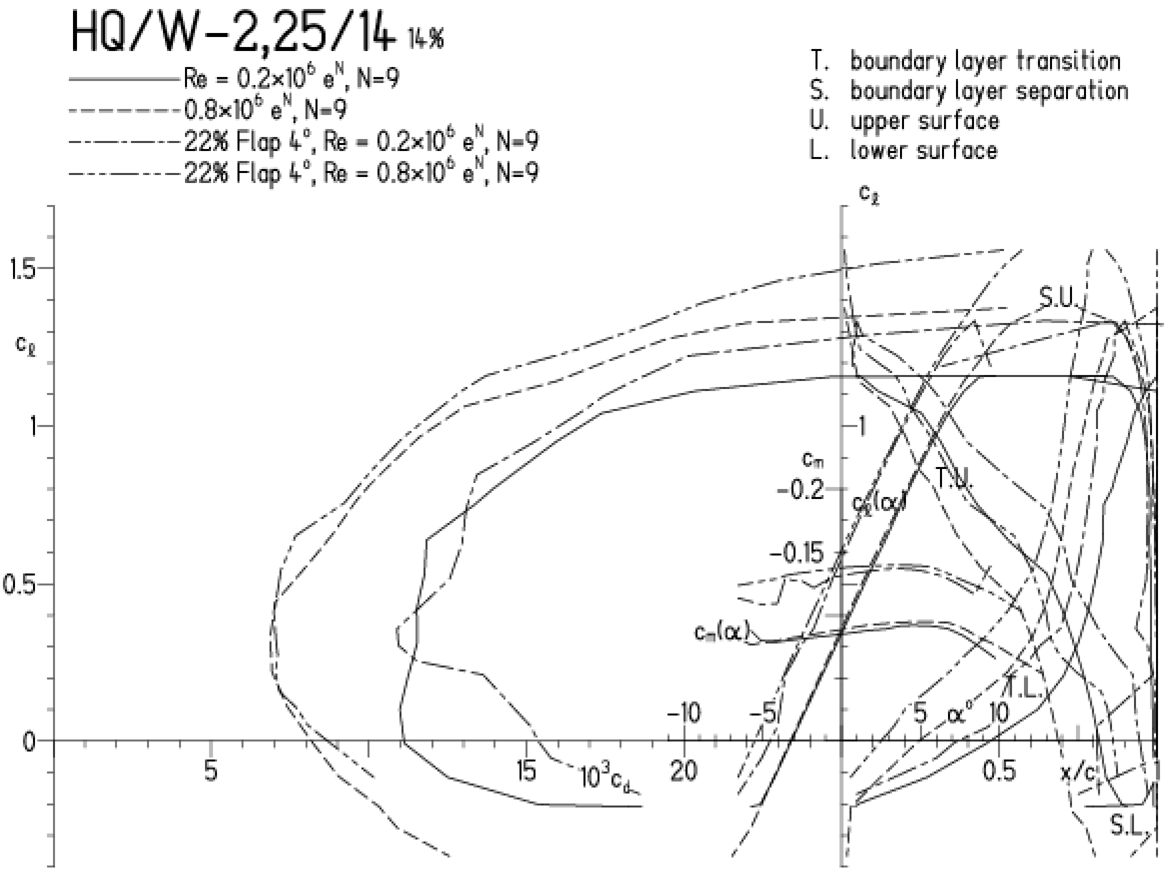


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

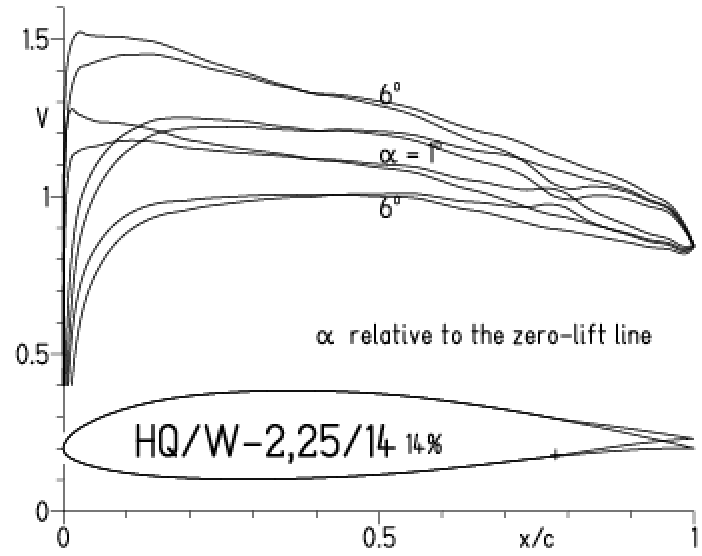


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

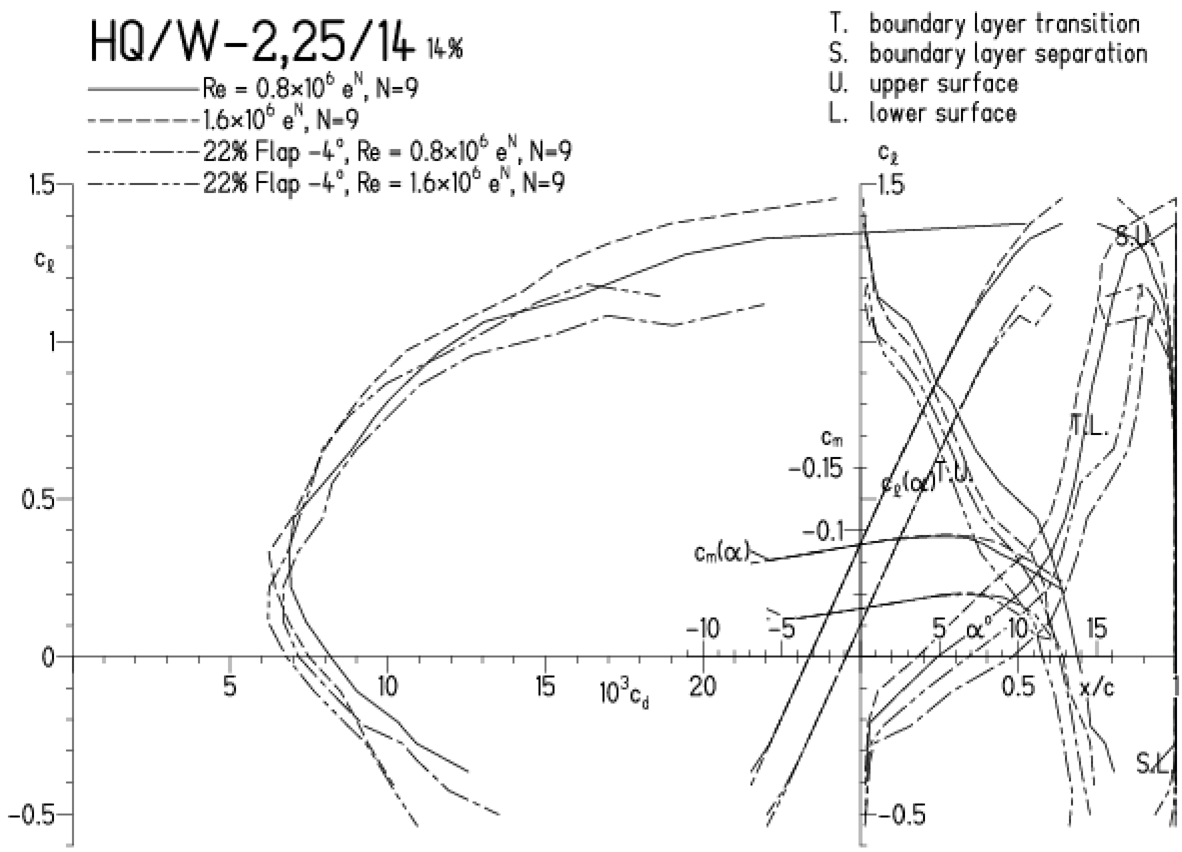


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

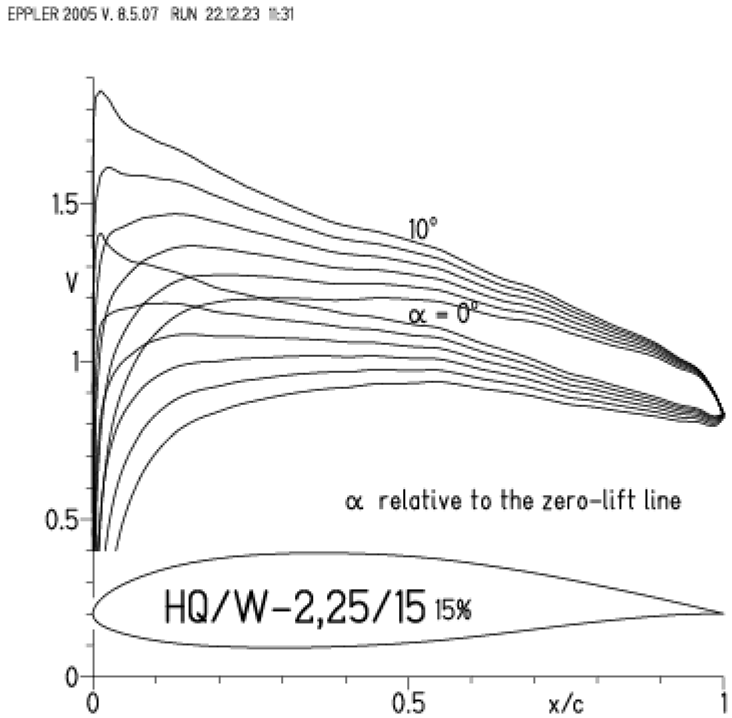
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

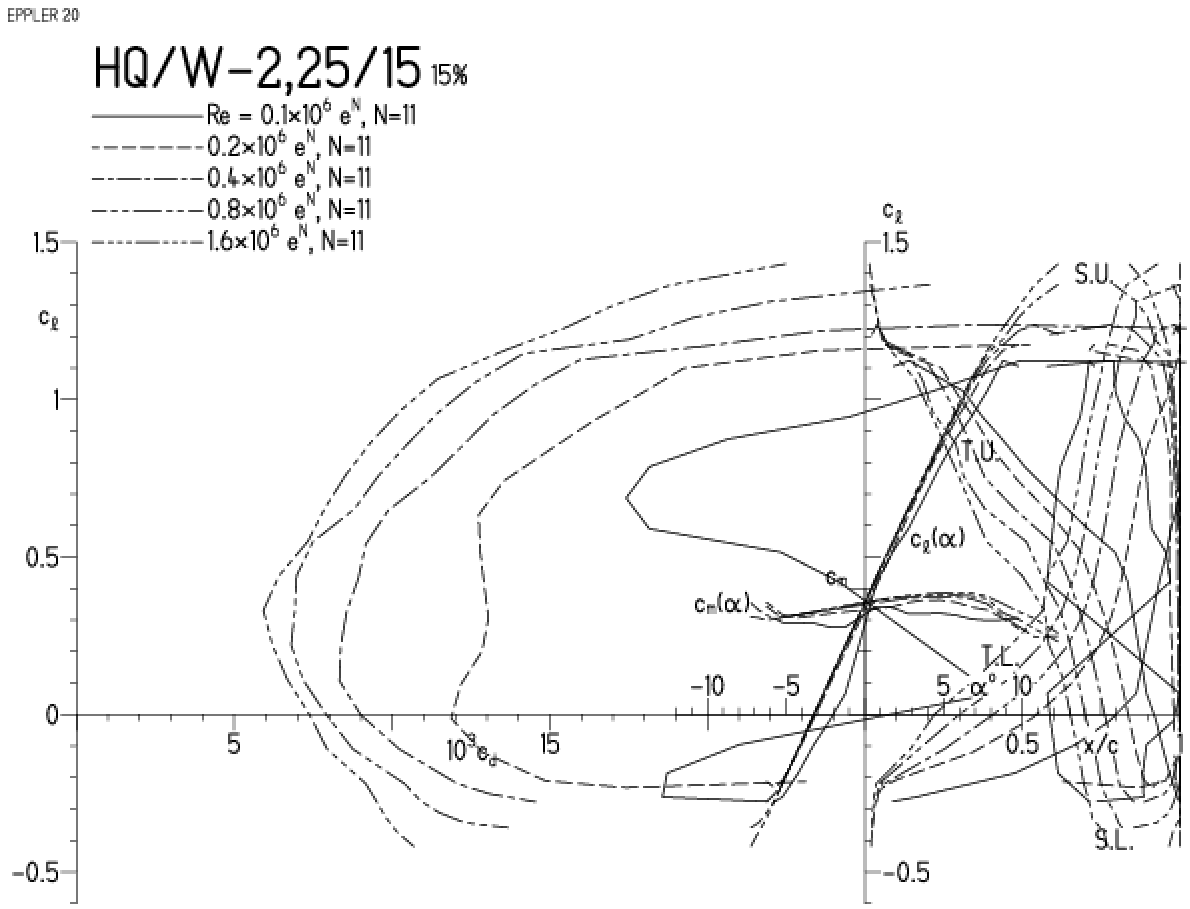


EPPLER 2005 V. 8.5.07

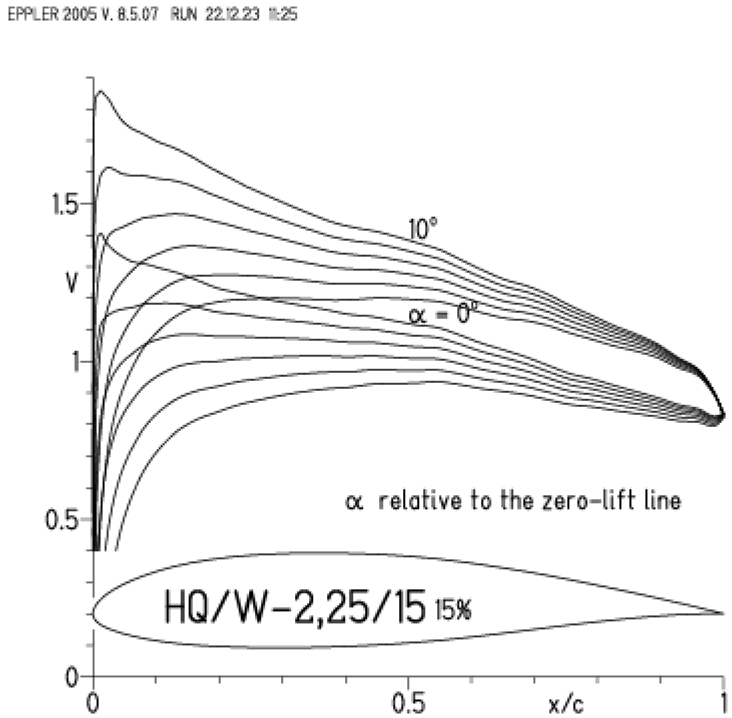


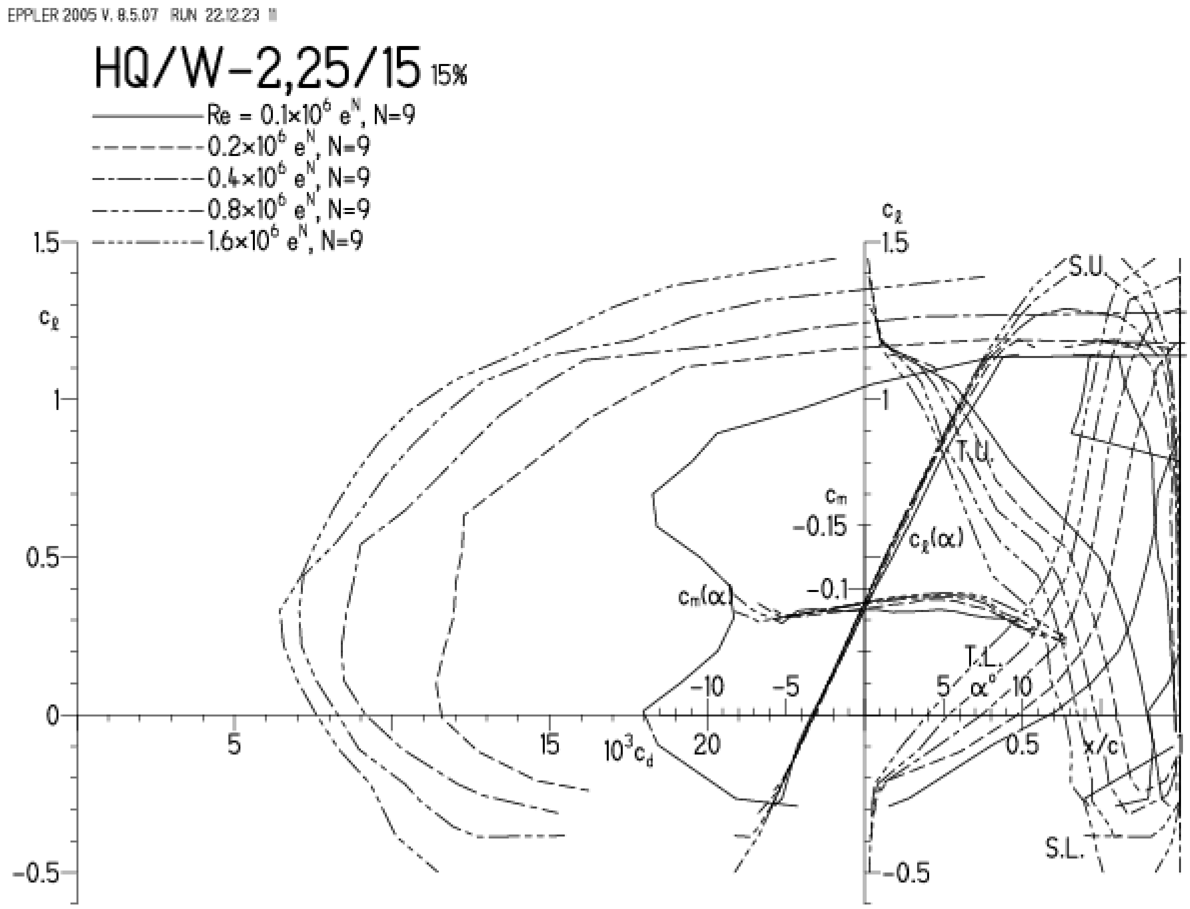
HQ/W-2,25/15, N=11



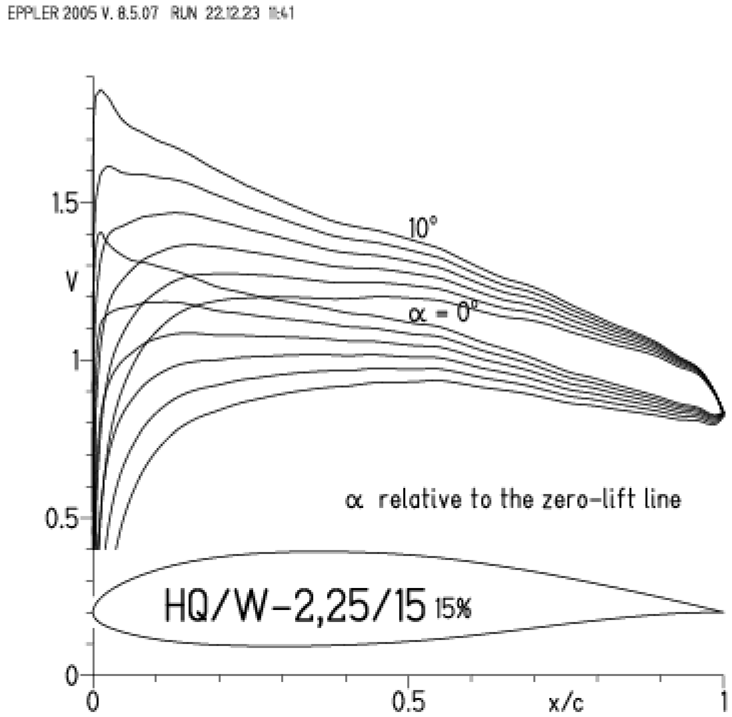


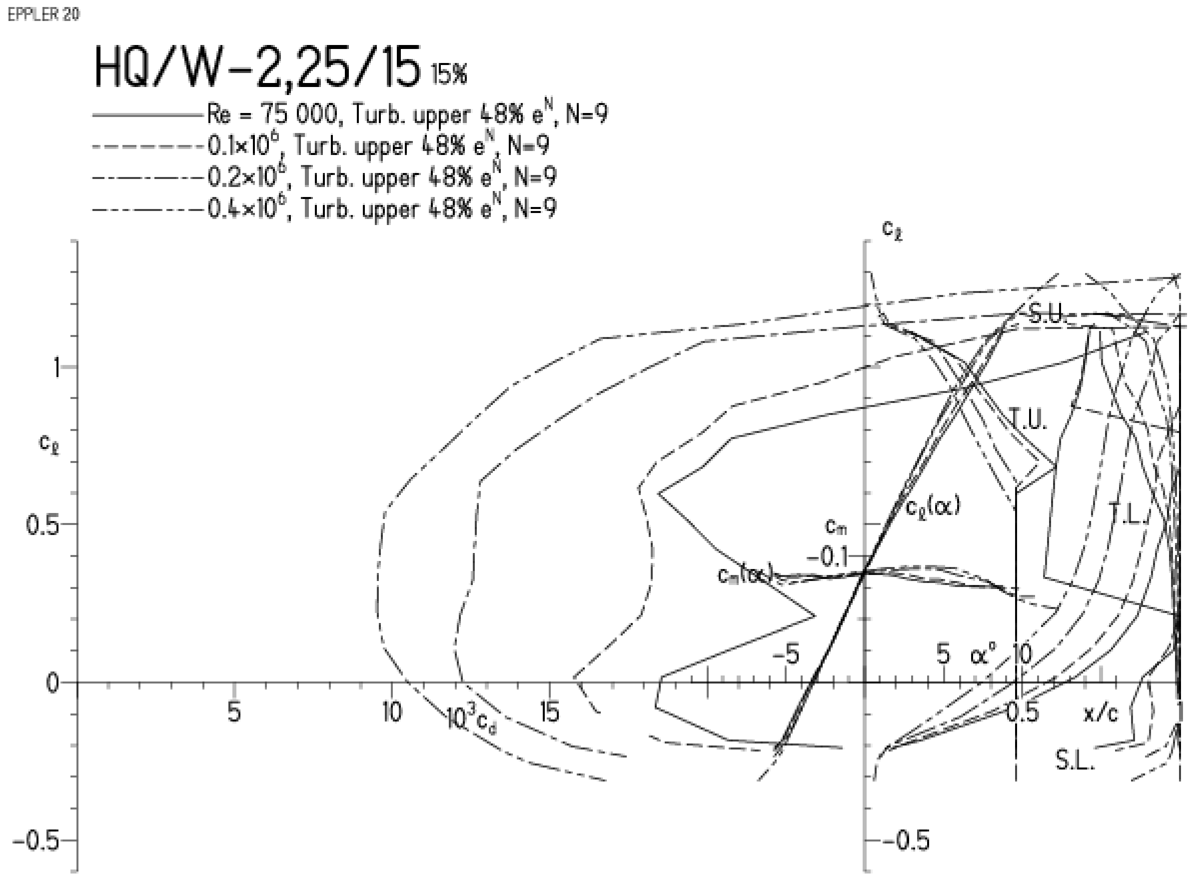
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



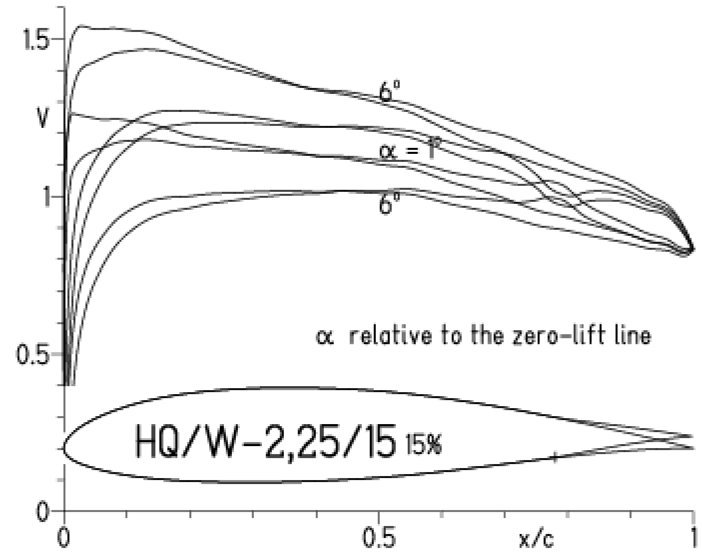


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

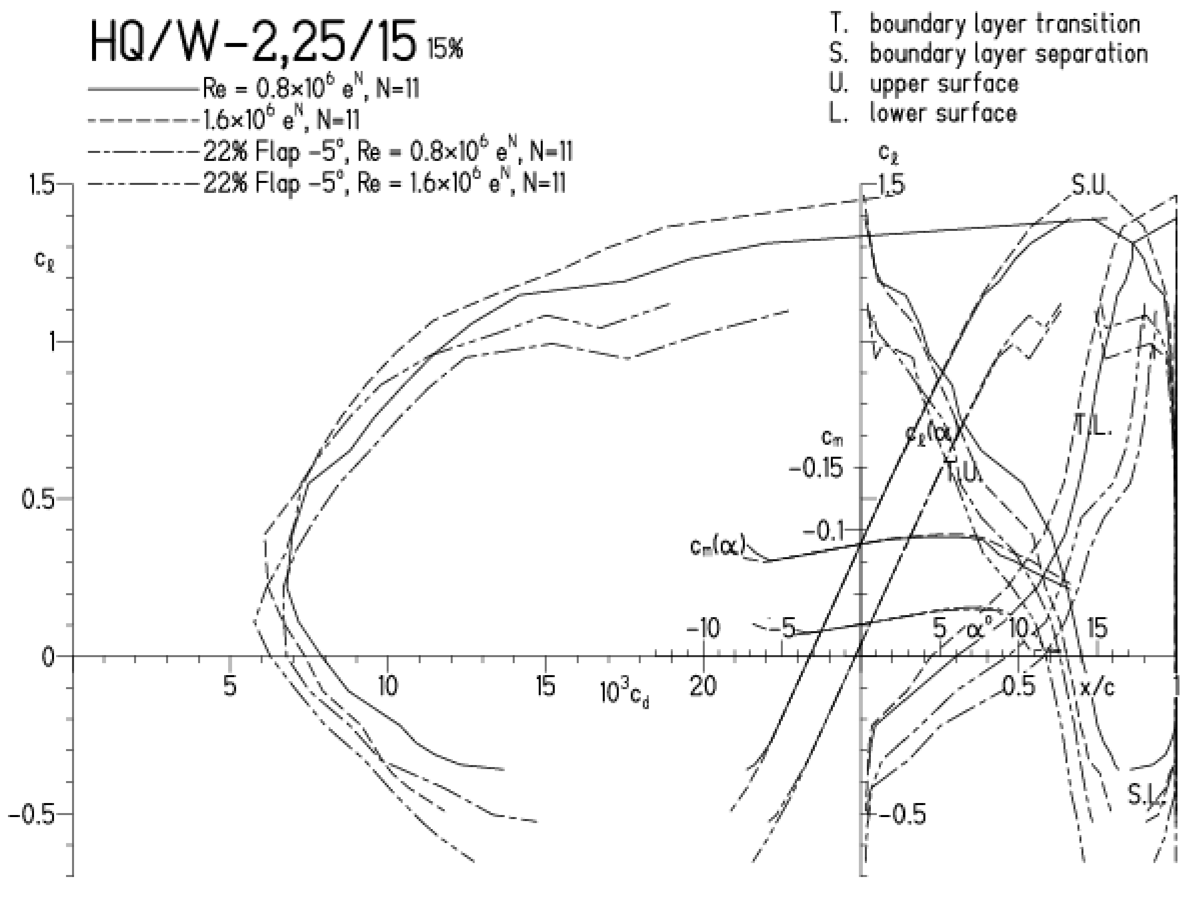
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

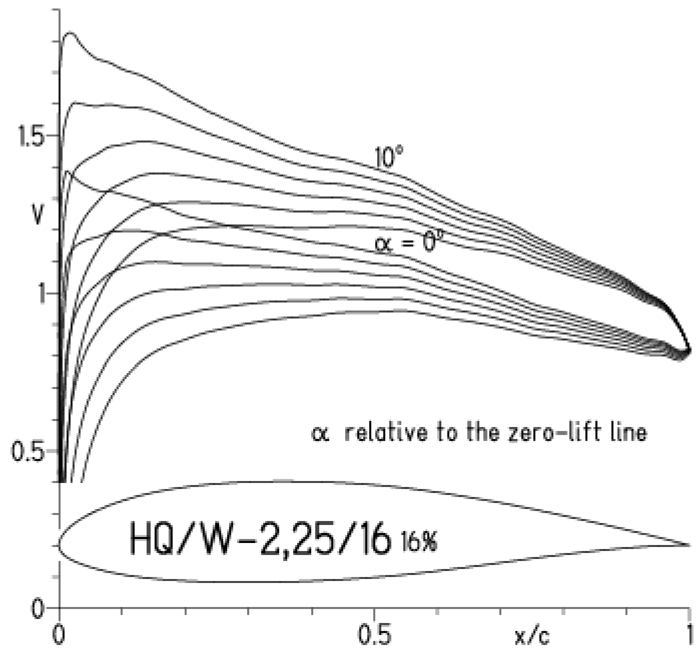


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

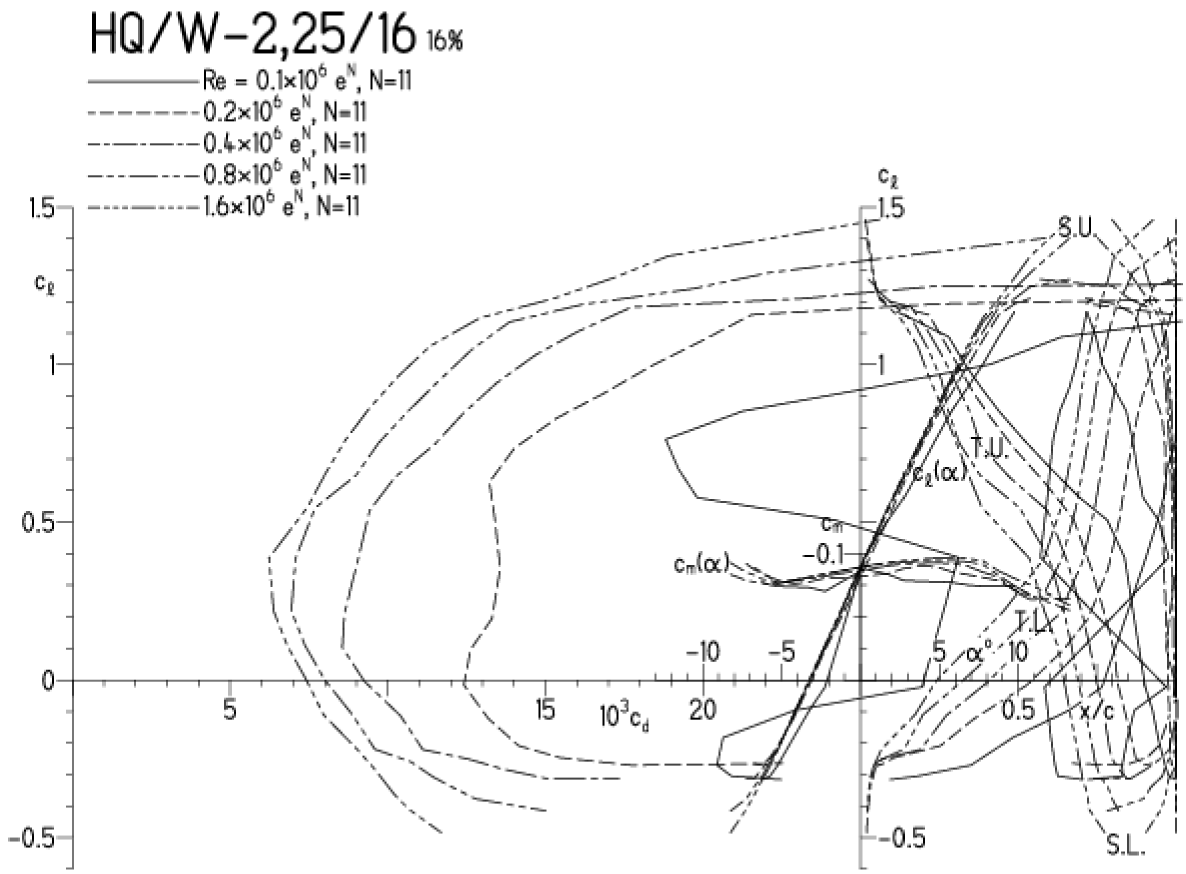


<u>HQ/W-2,25/16</u>, N=11

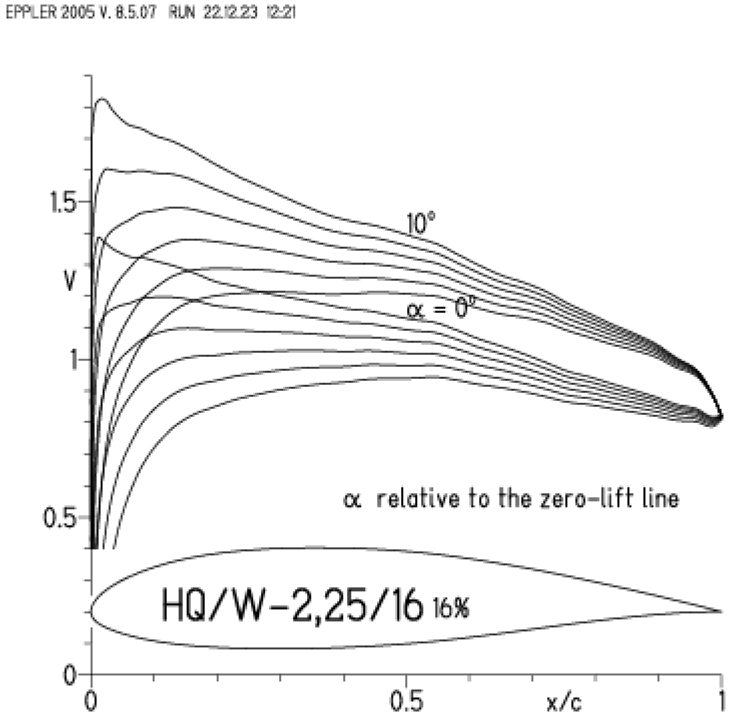
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

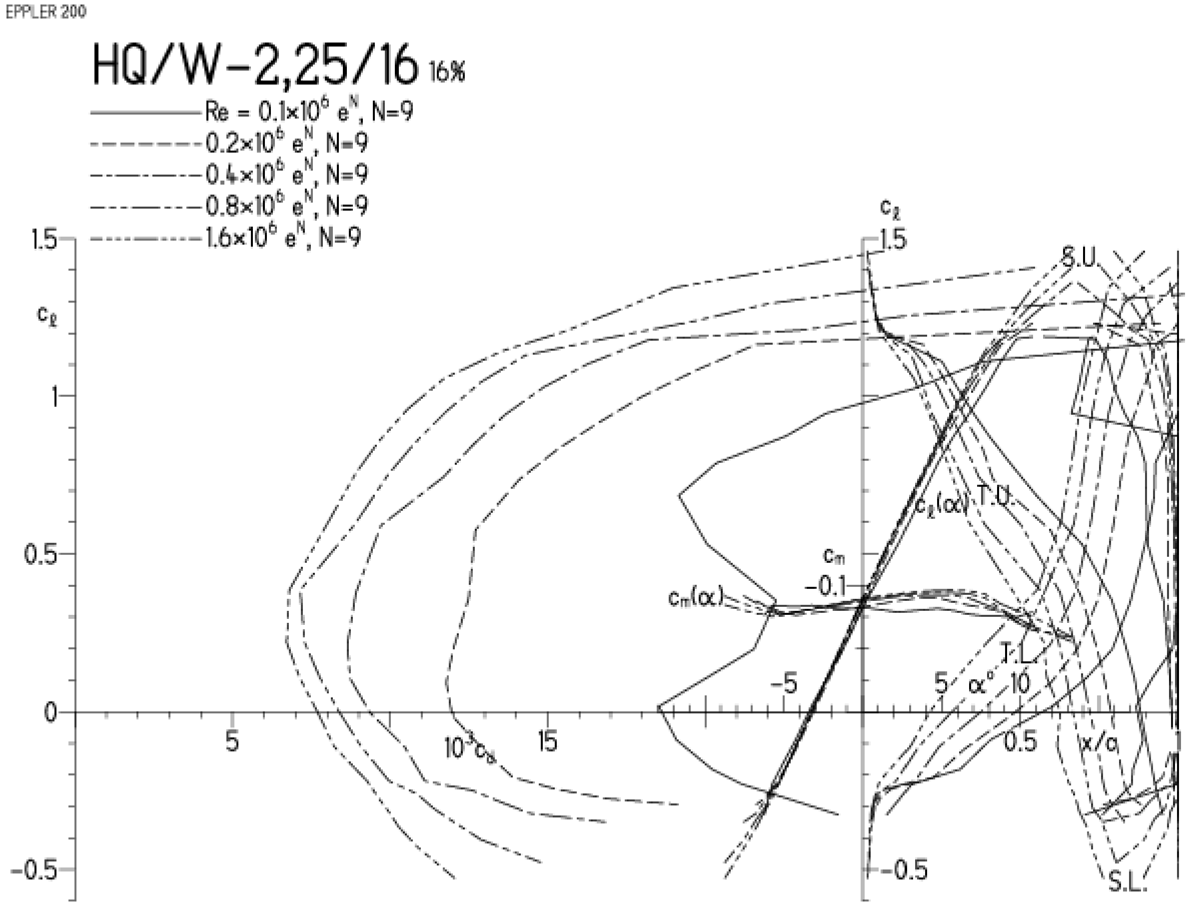


EPPLER 200

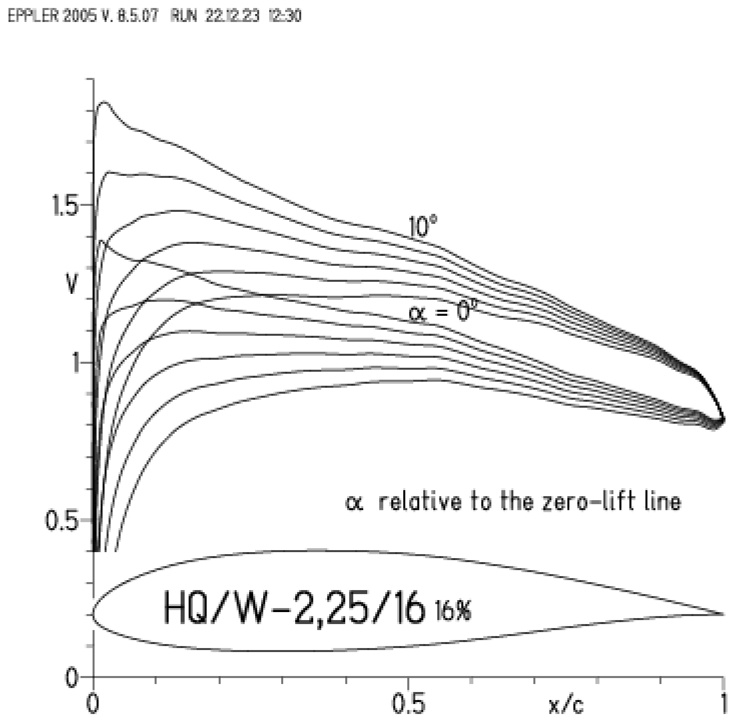


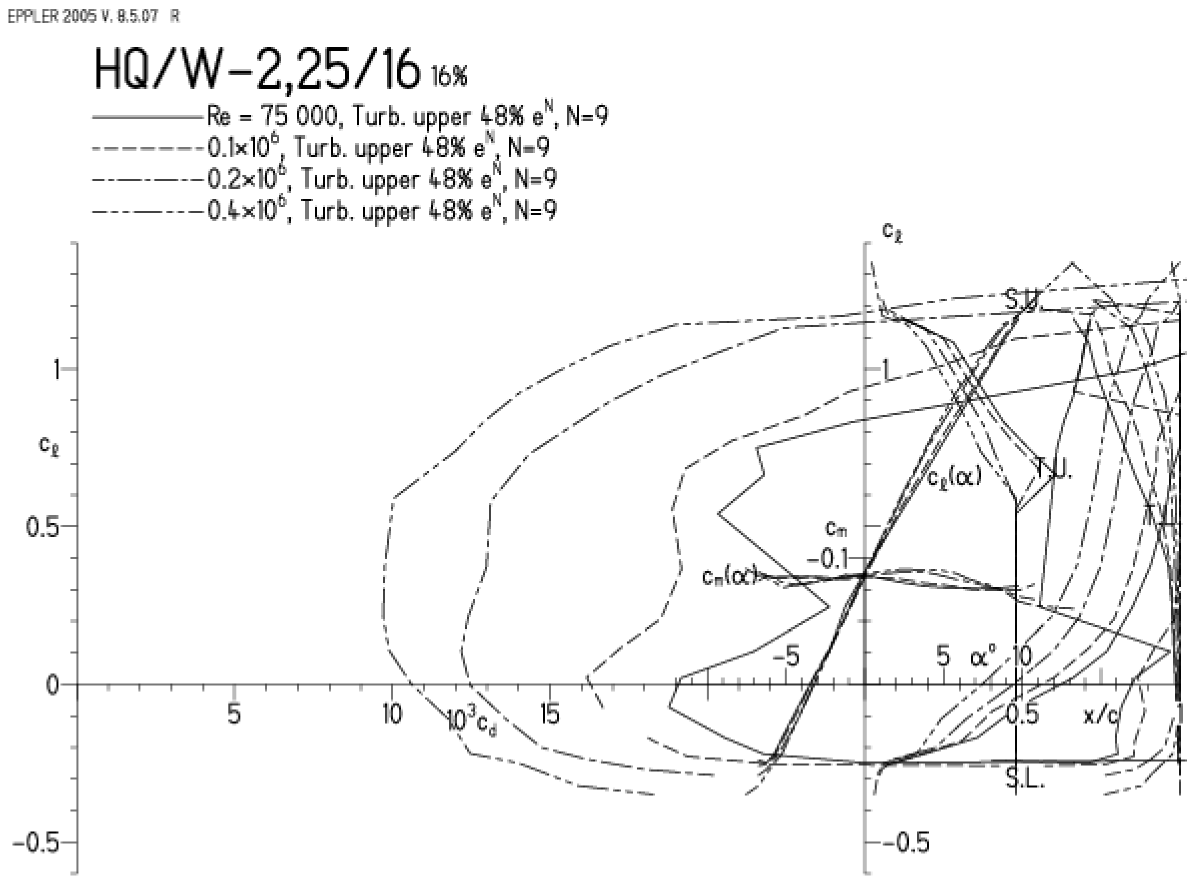
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
V
1.5
1
0.5
0
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_l(α)
c_m(α)
c_m
-0.1
α°
x/c
10^3 c_d
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



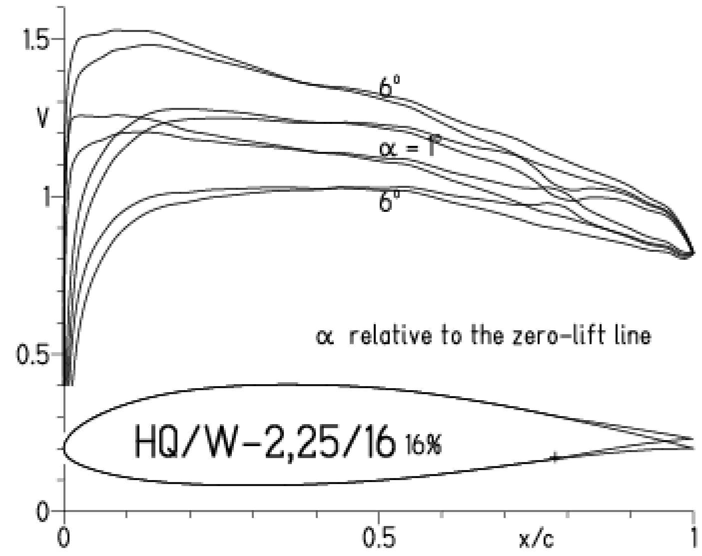


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

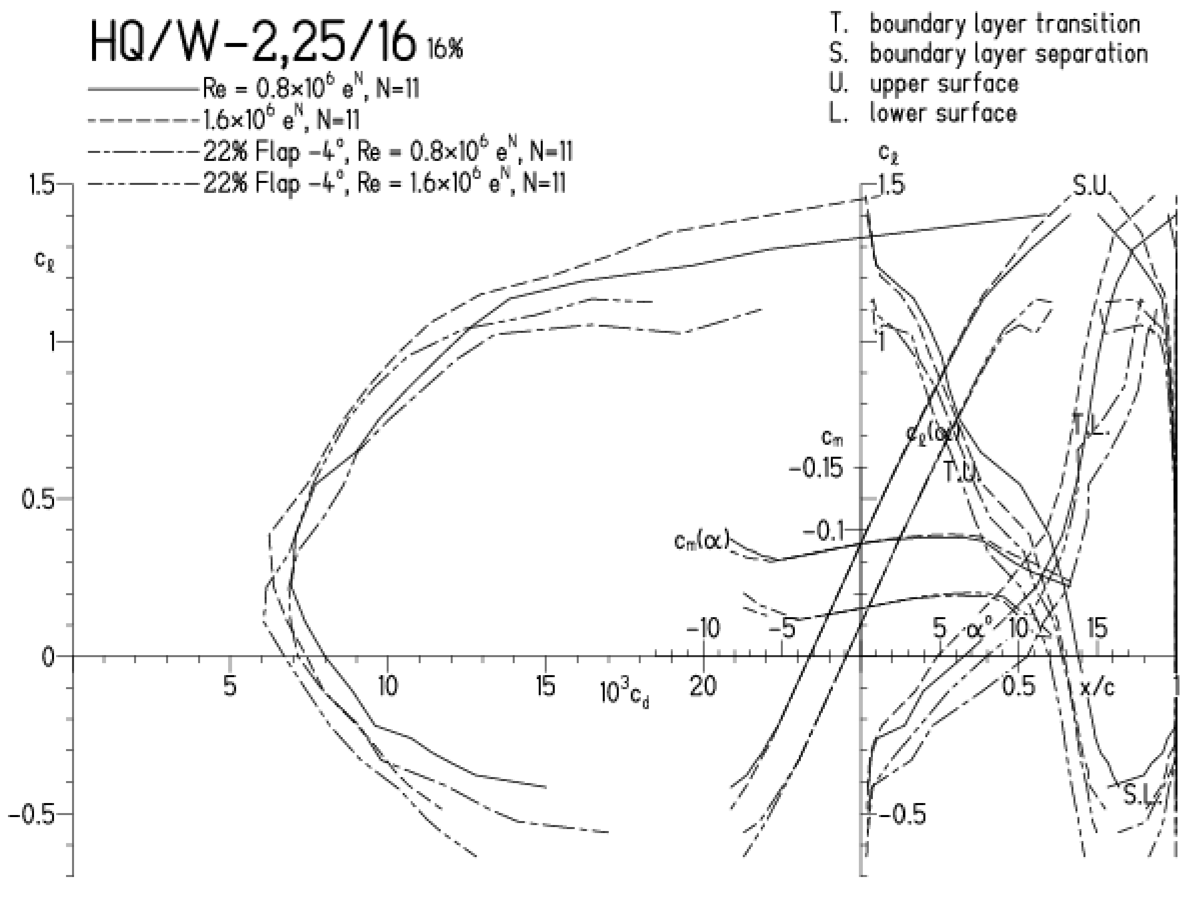
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

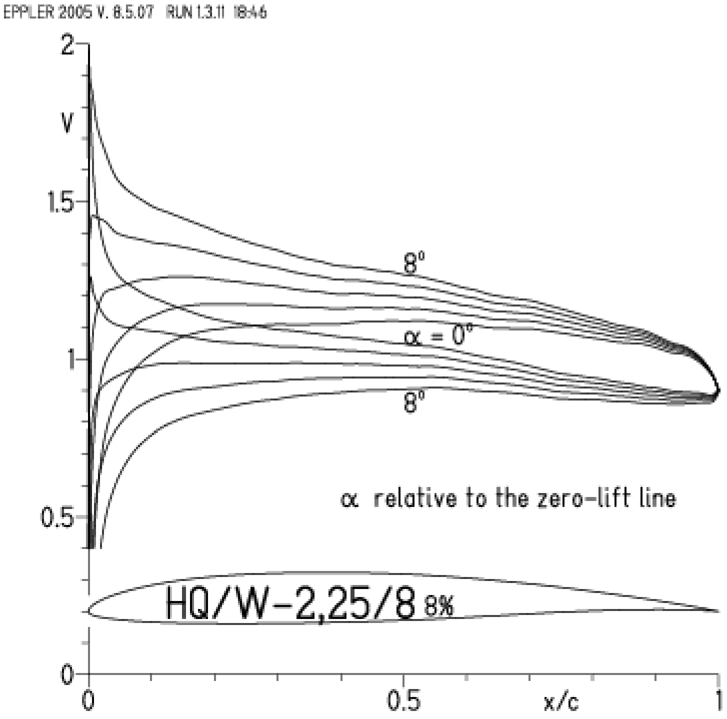
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

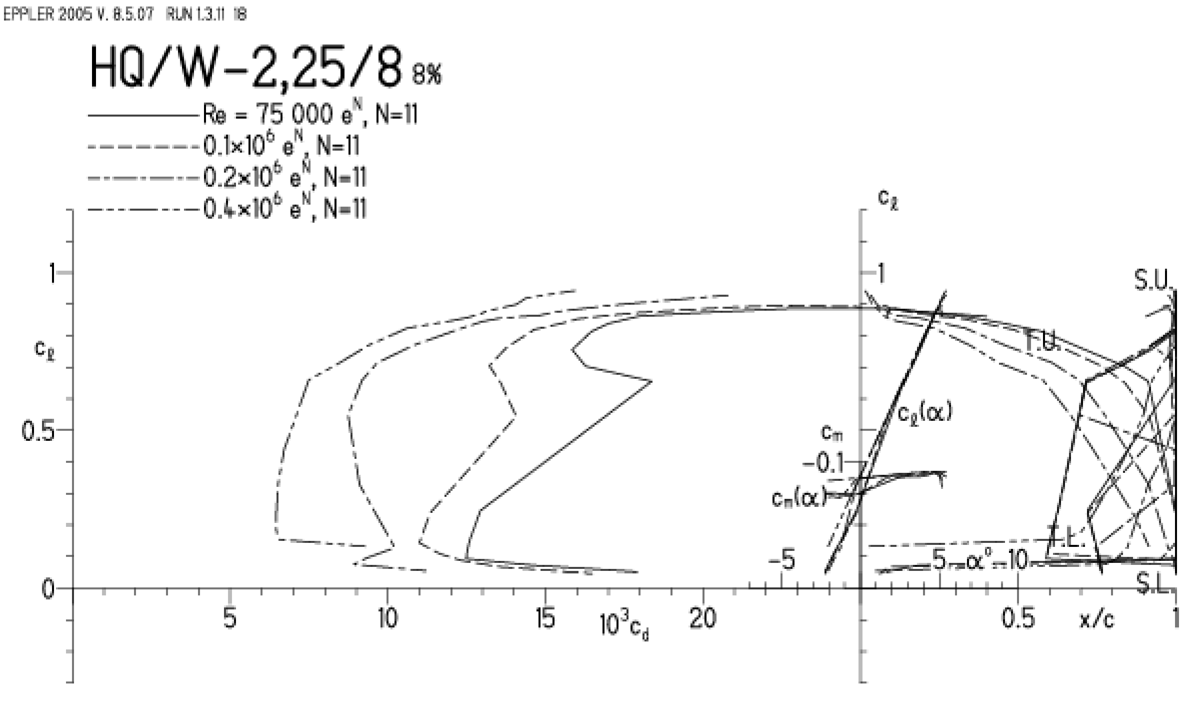


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

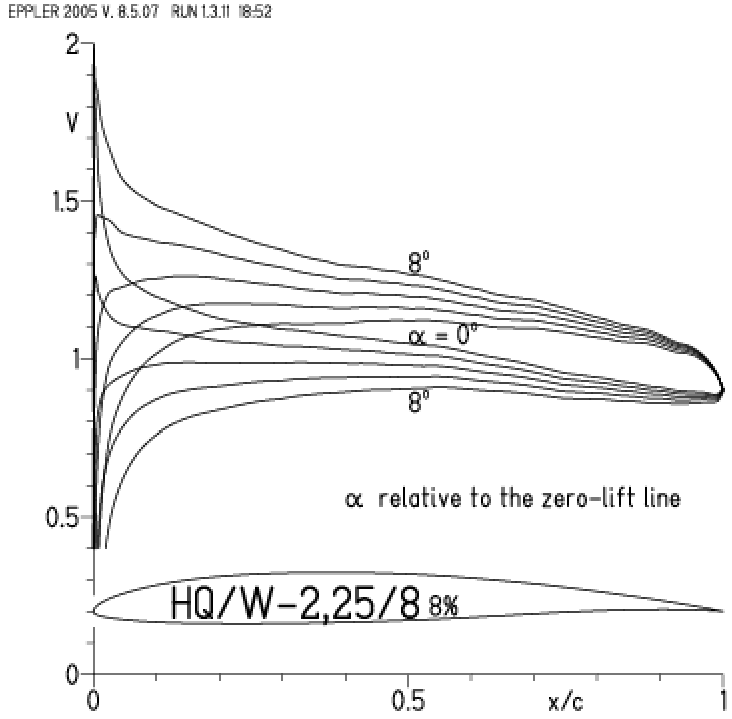


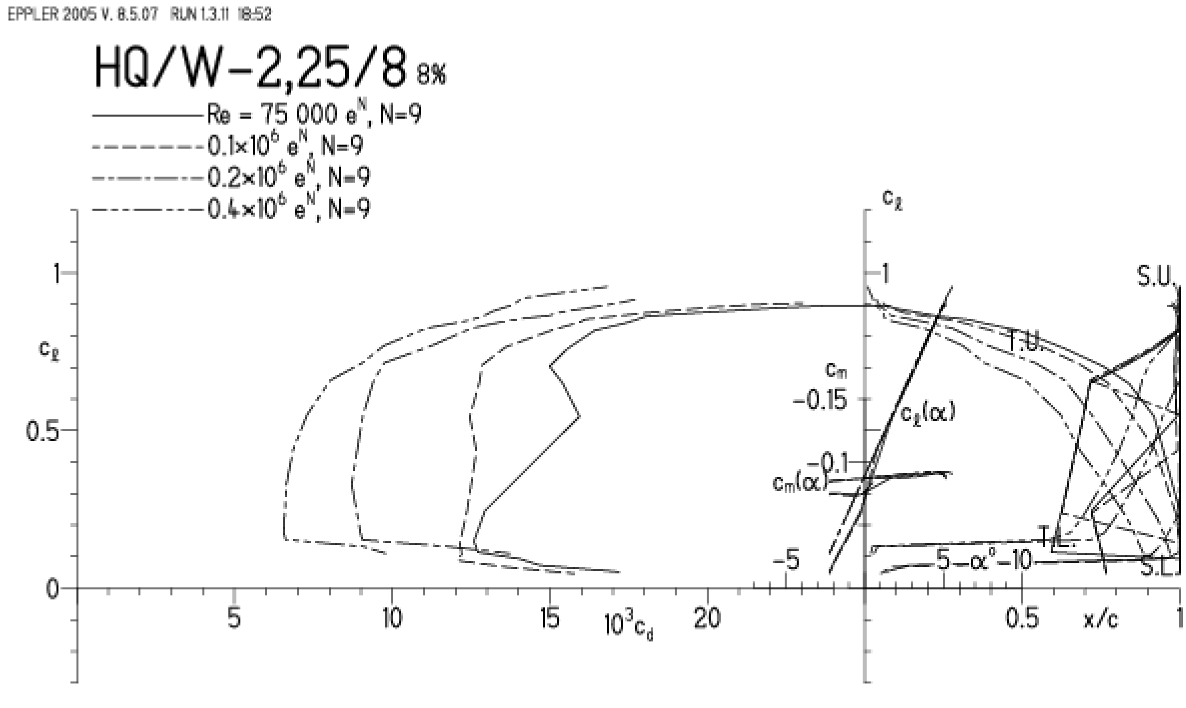
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

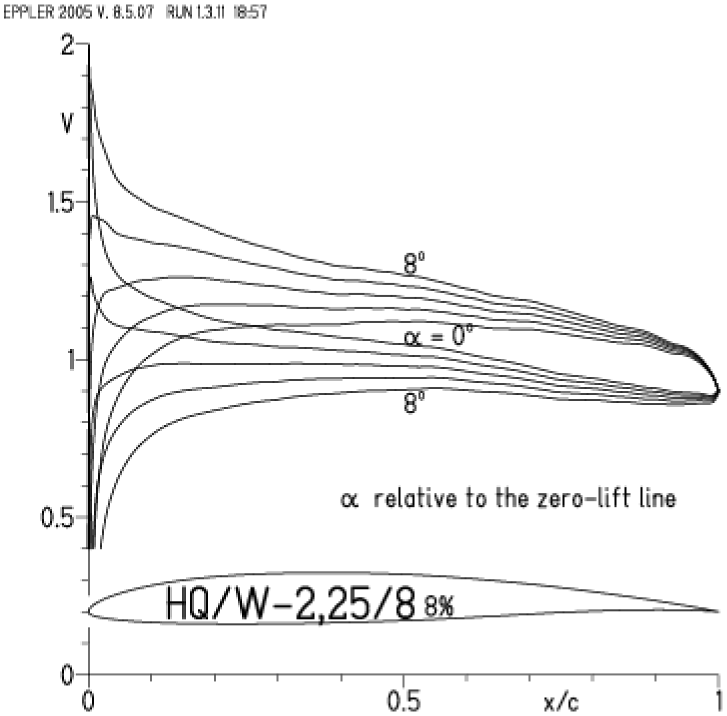

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
10^3 c_d
c_ℓ(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c

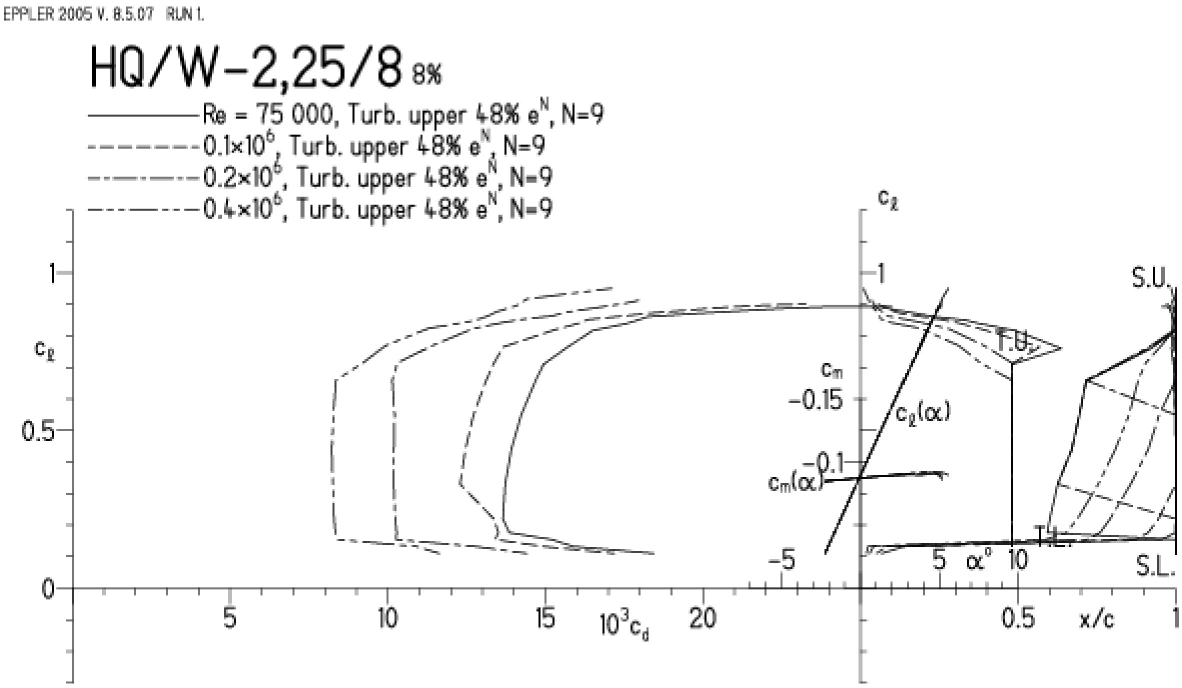
<u>HQ/W-2,25/8</u>, N=9





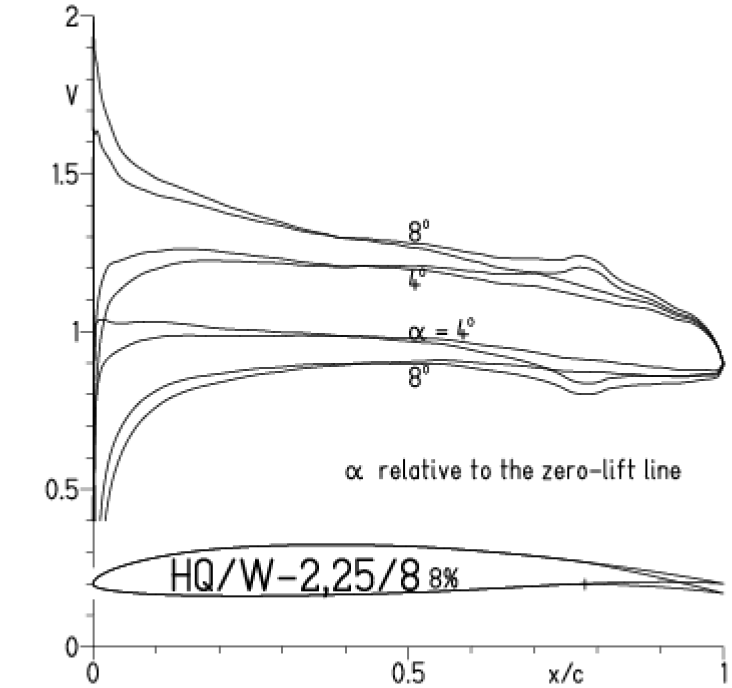
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



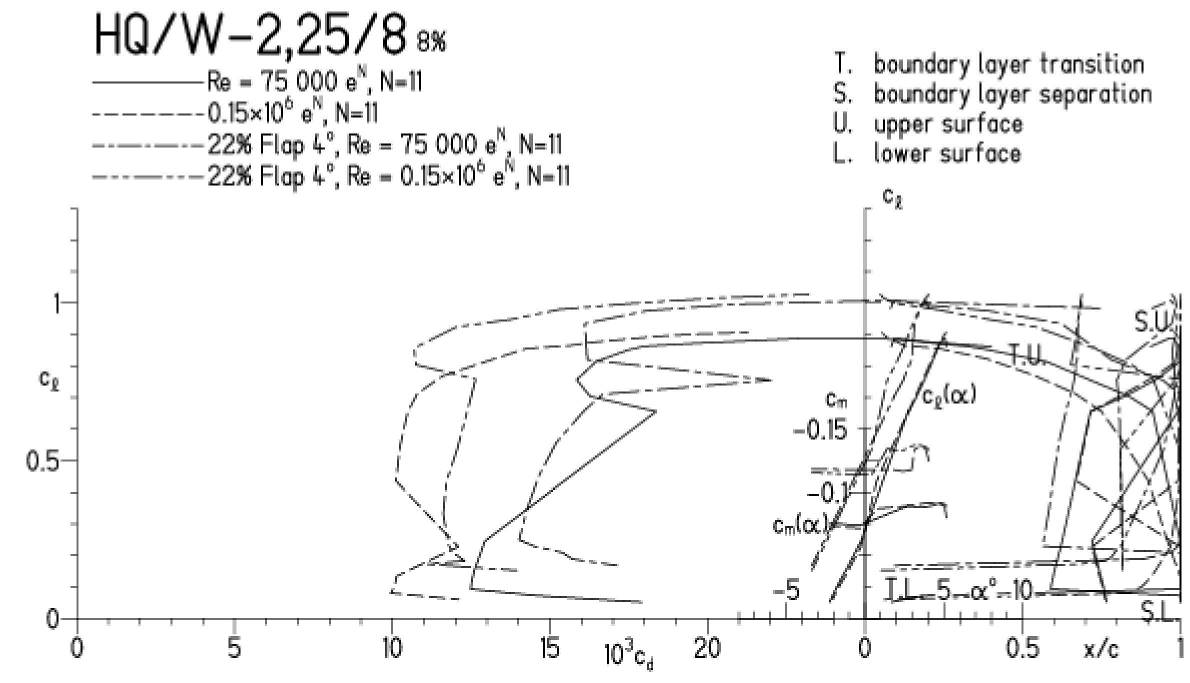


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

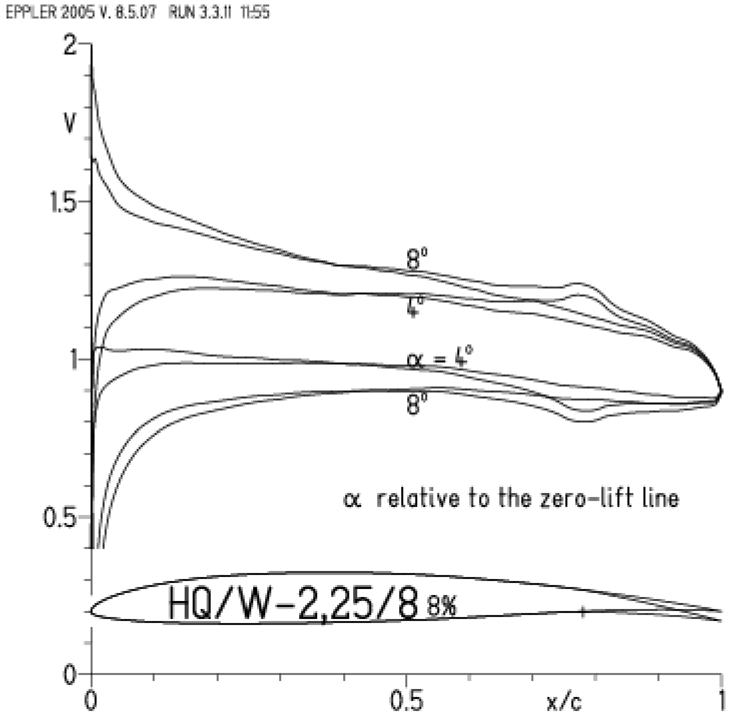
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

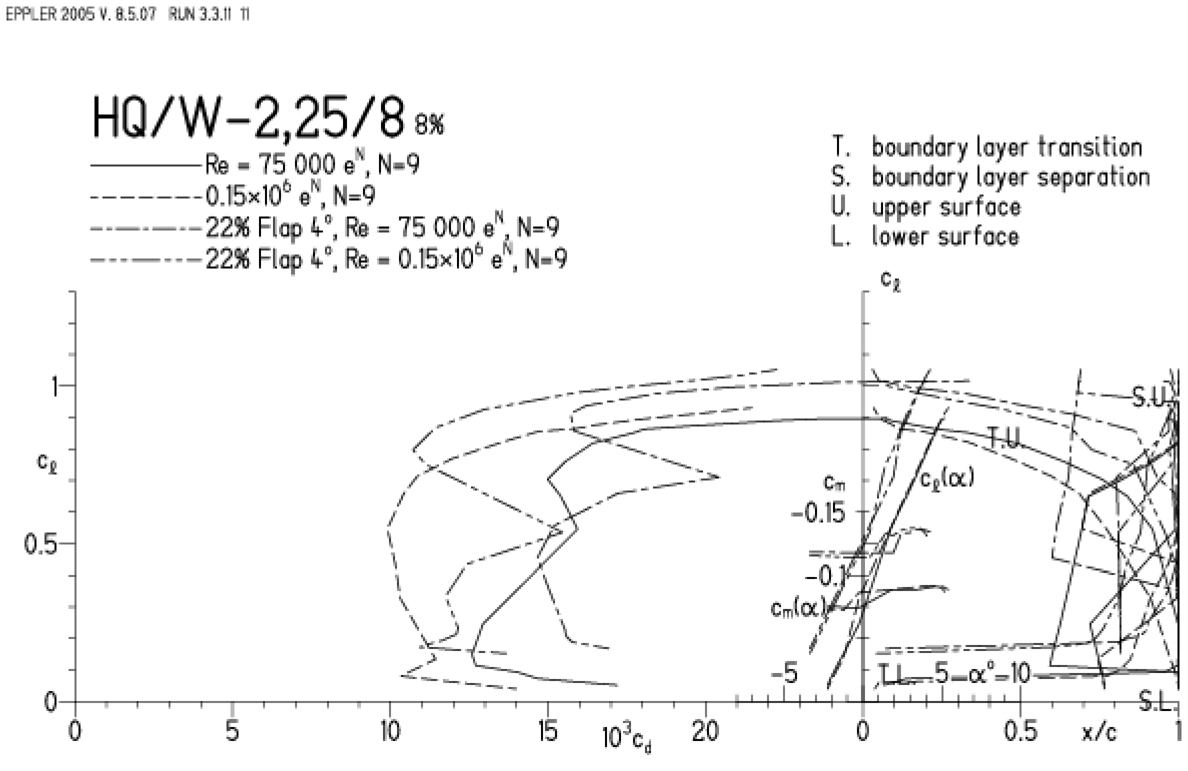


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

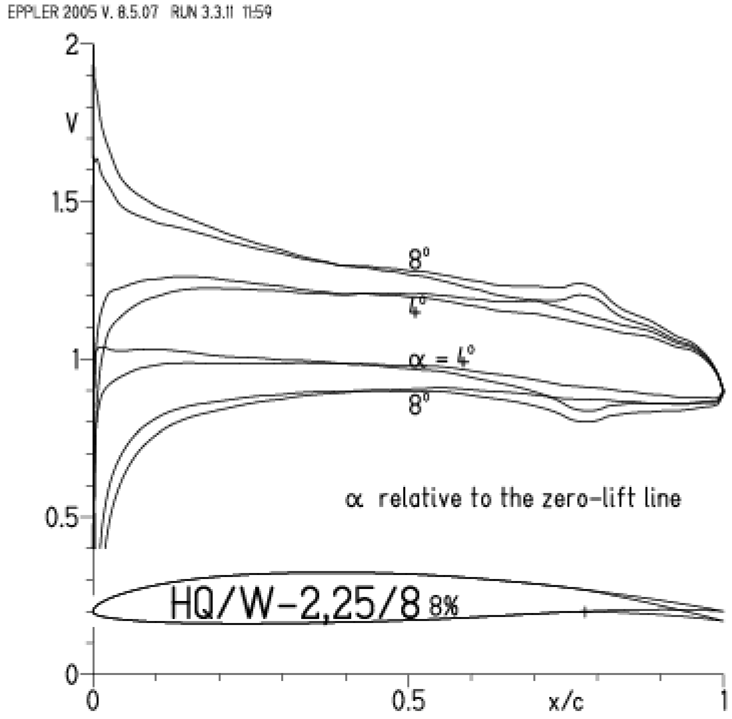


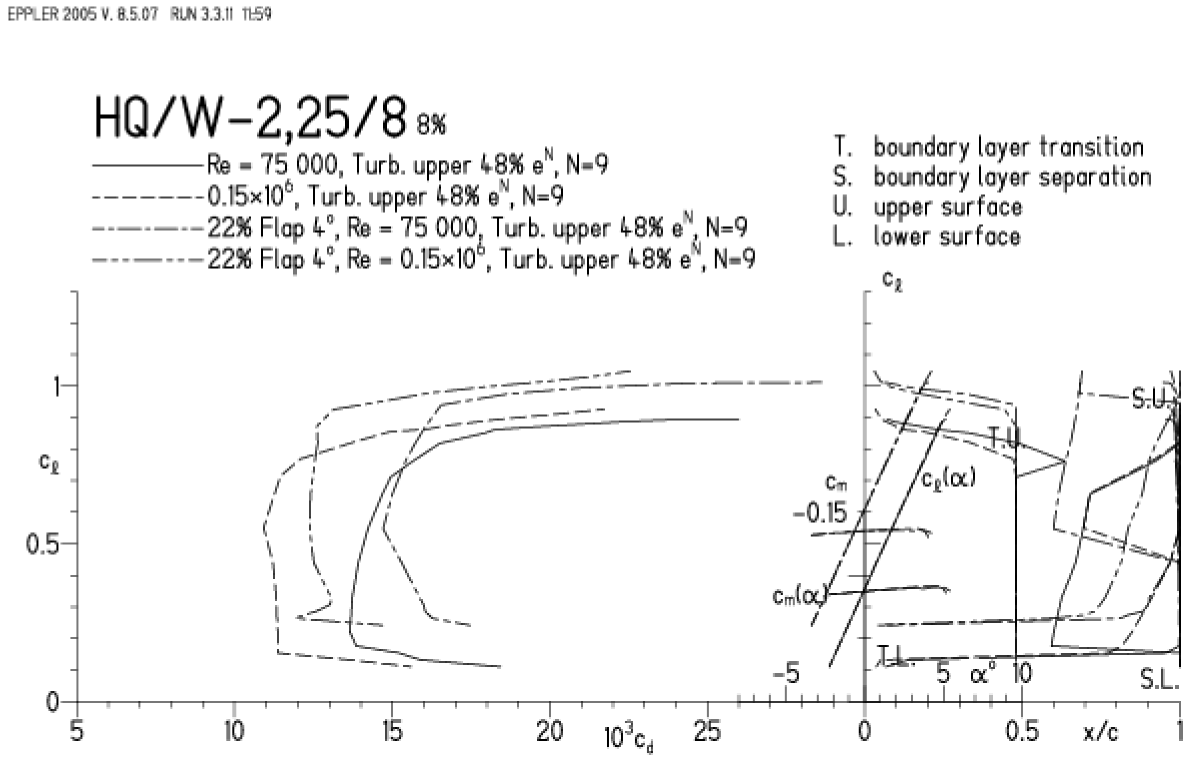
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





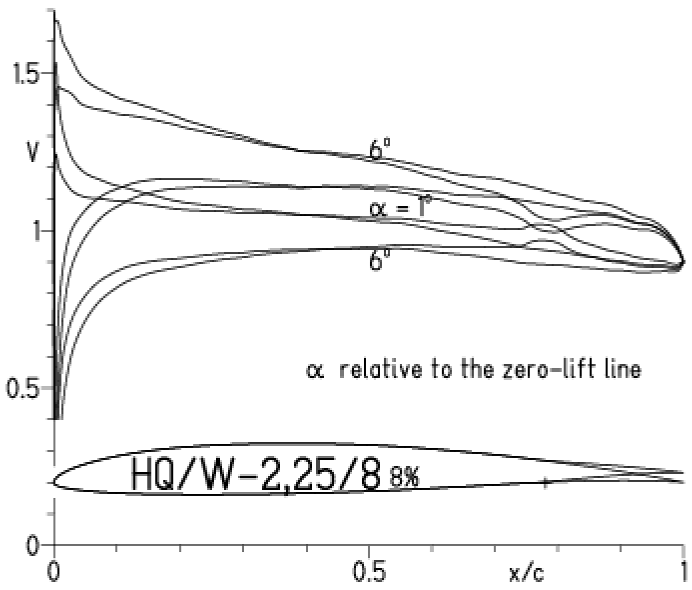
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



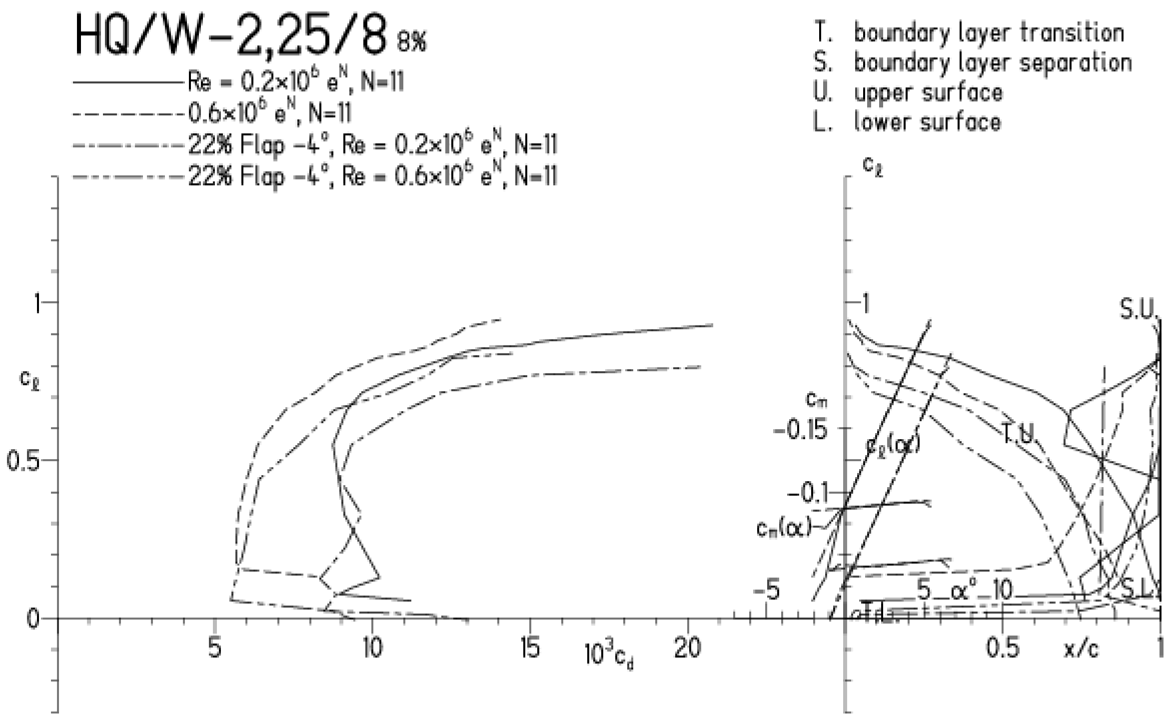


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

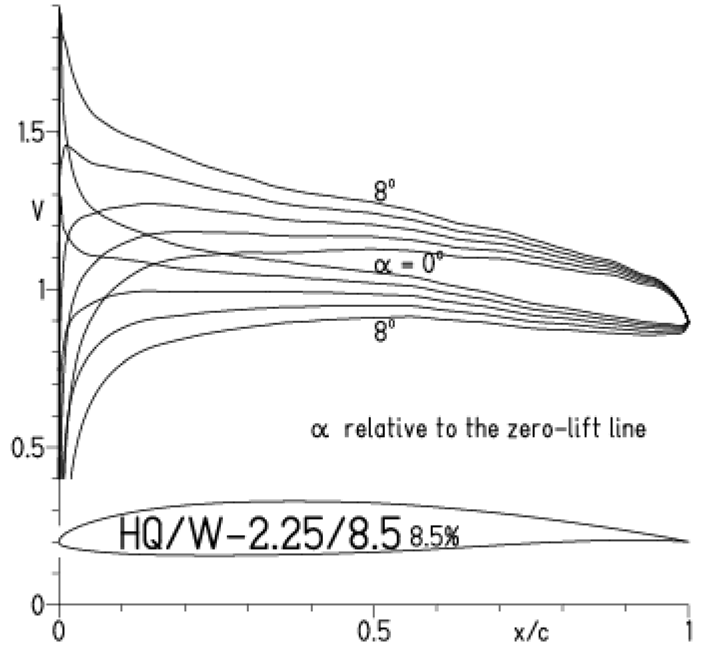


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

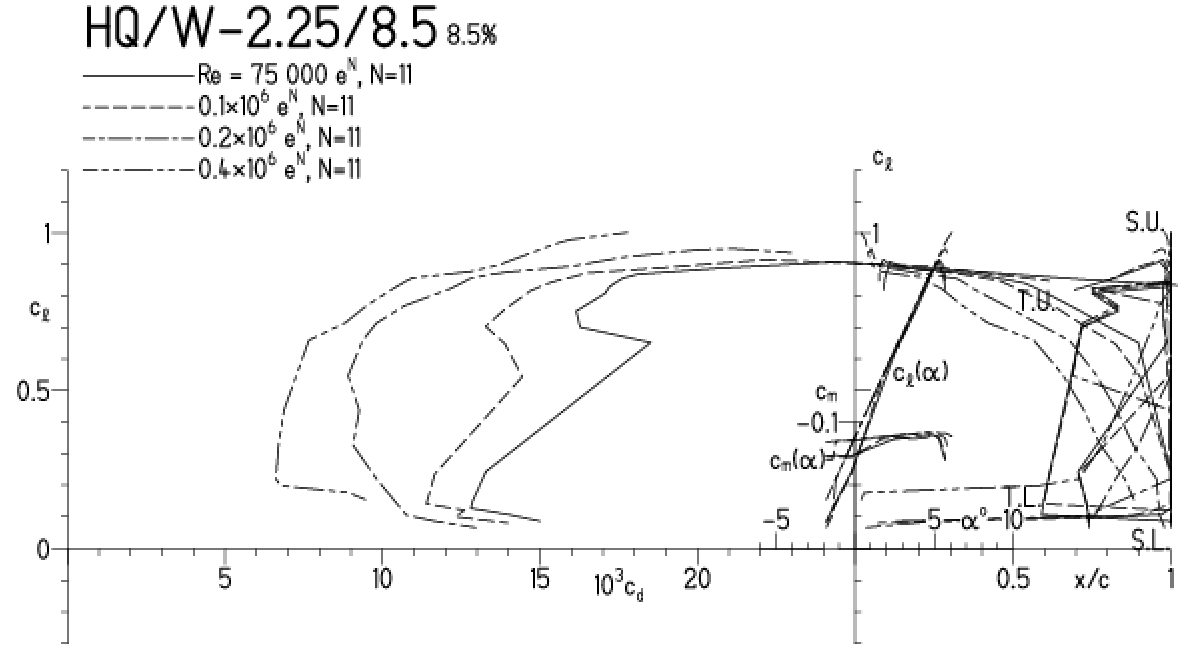


<u>HQ/W-2,25/8,5</u>, N=11

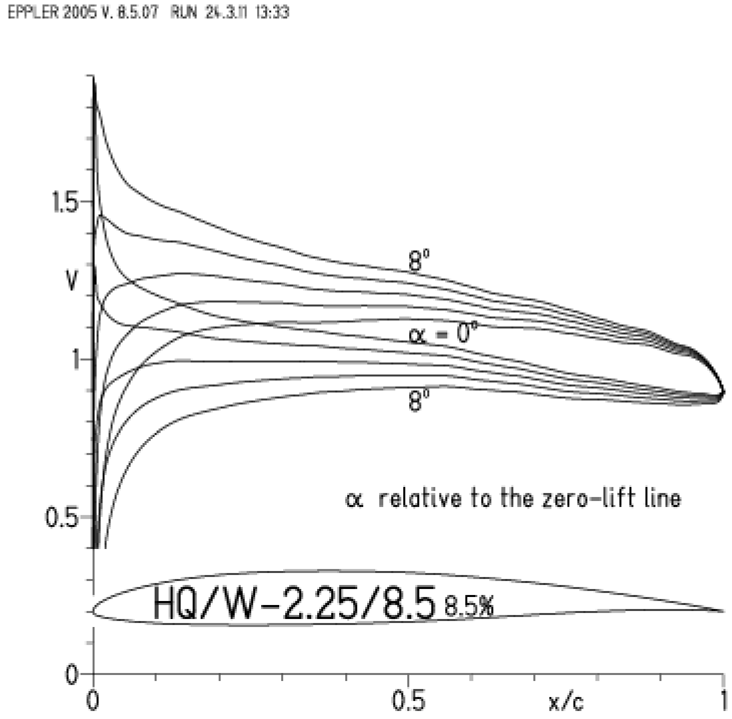
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

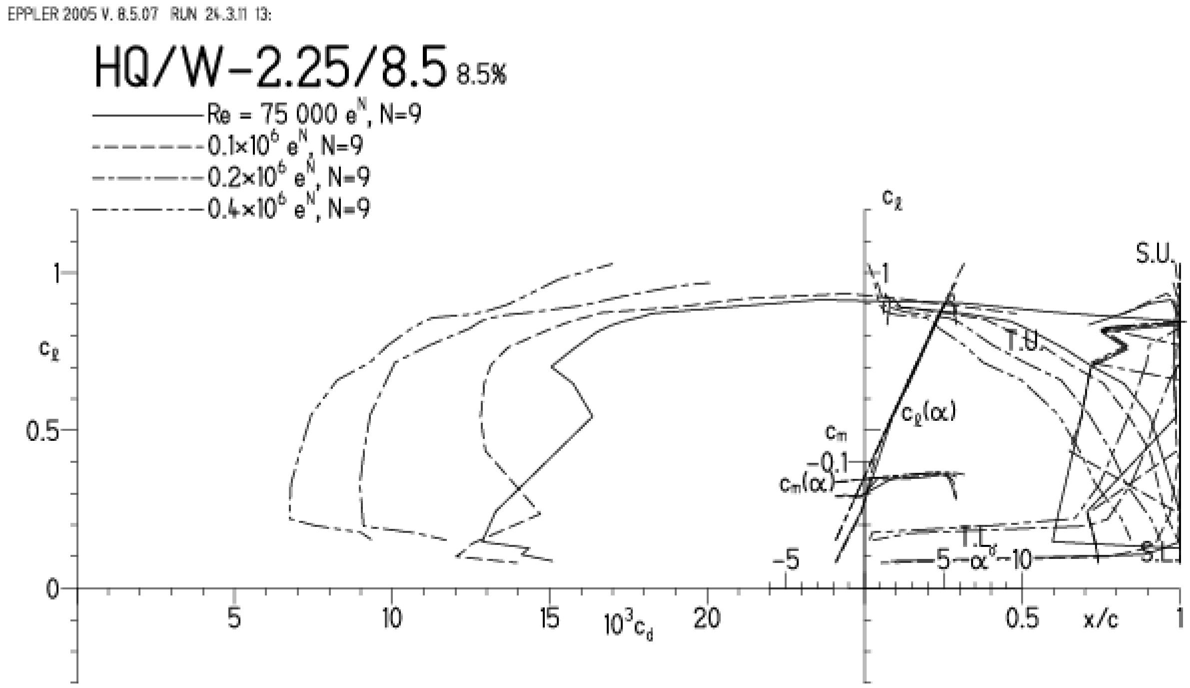


EPPLER 2005 V

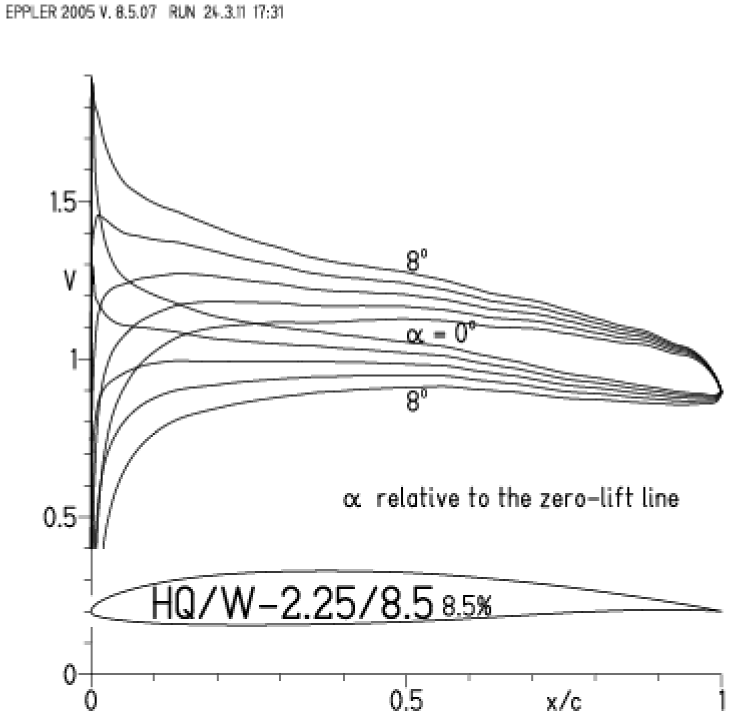


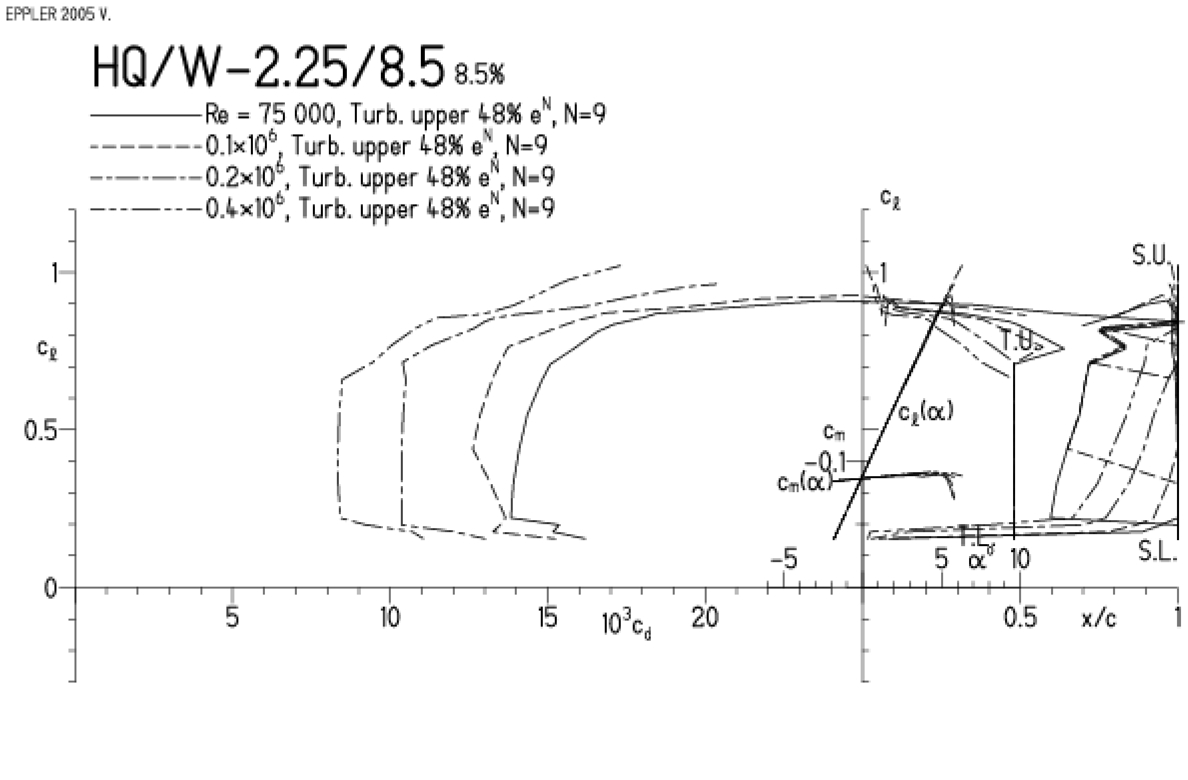
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

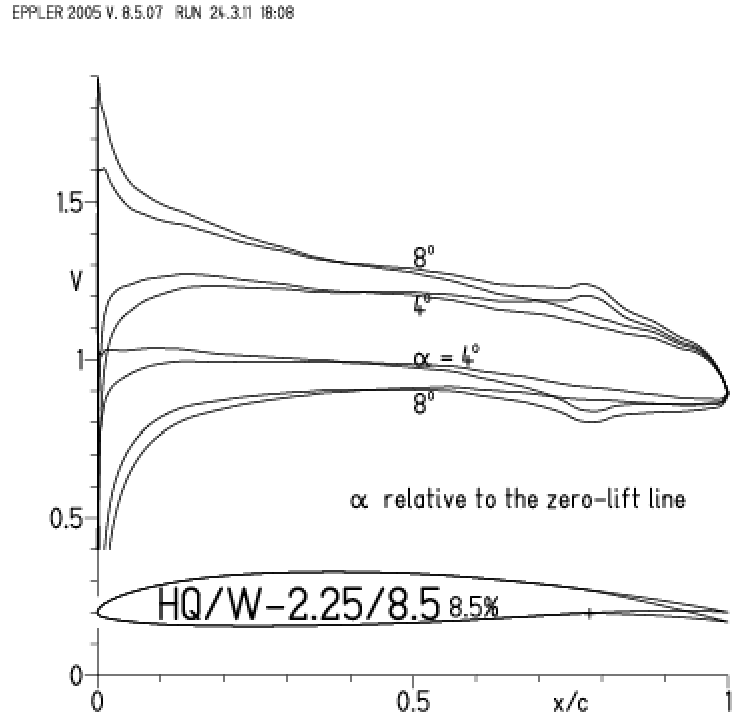

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
S.U.
T.U.
c_l(α)
c_m
−0.1
c_m(α)
−5
T.L.
5 α° 10
S.L.
0.5
x/c
1

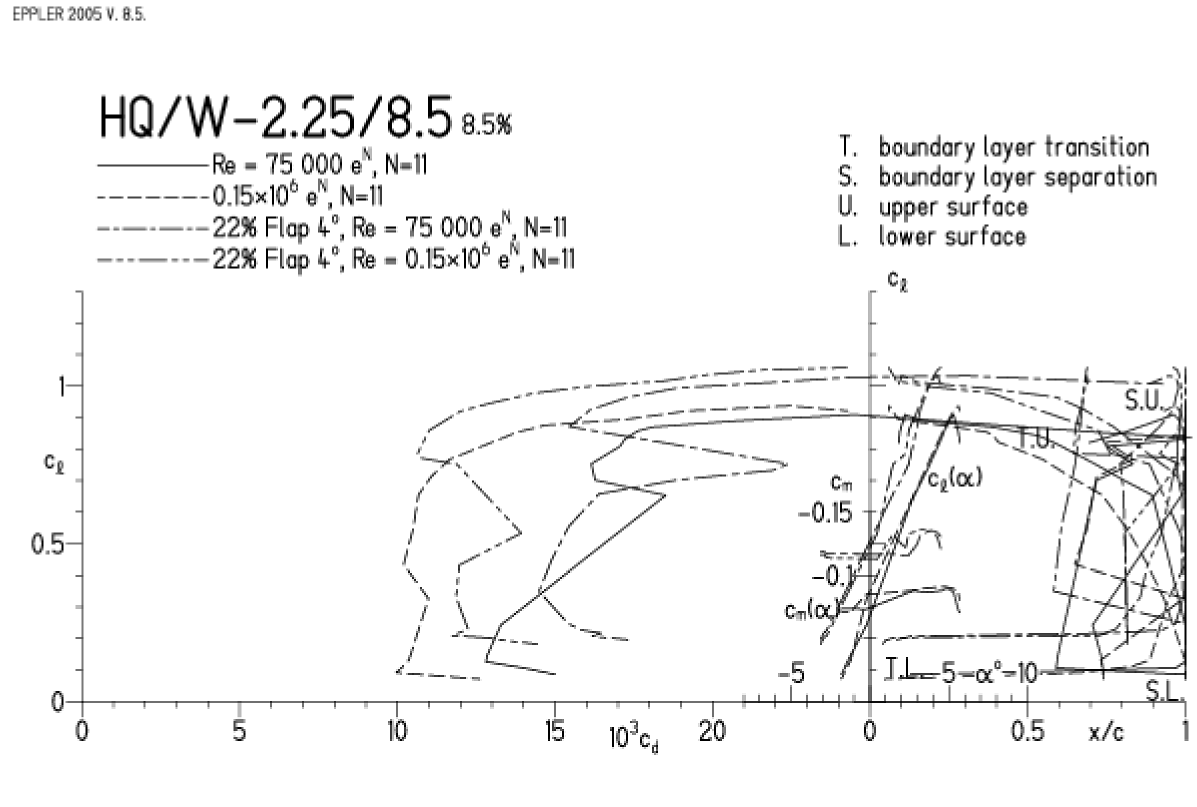
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



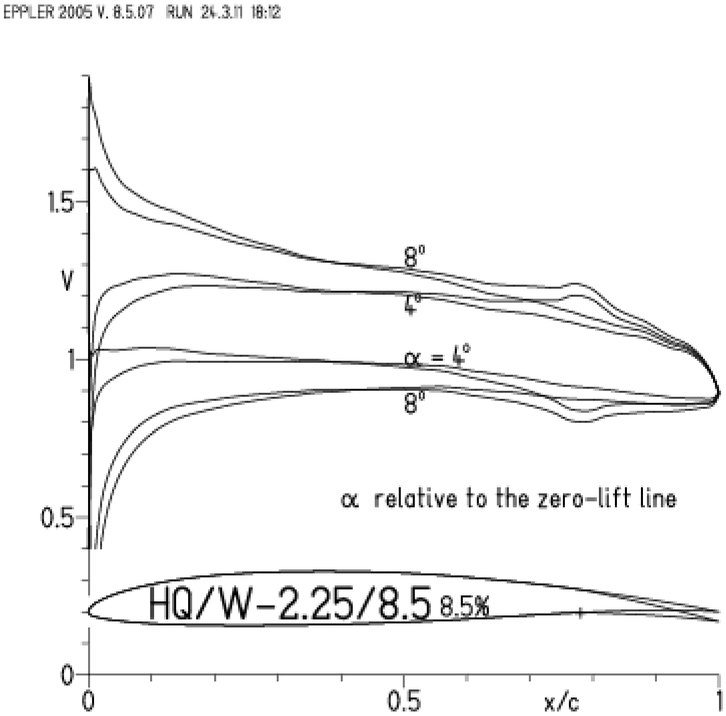


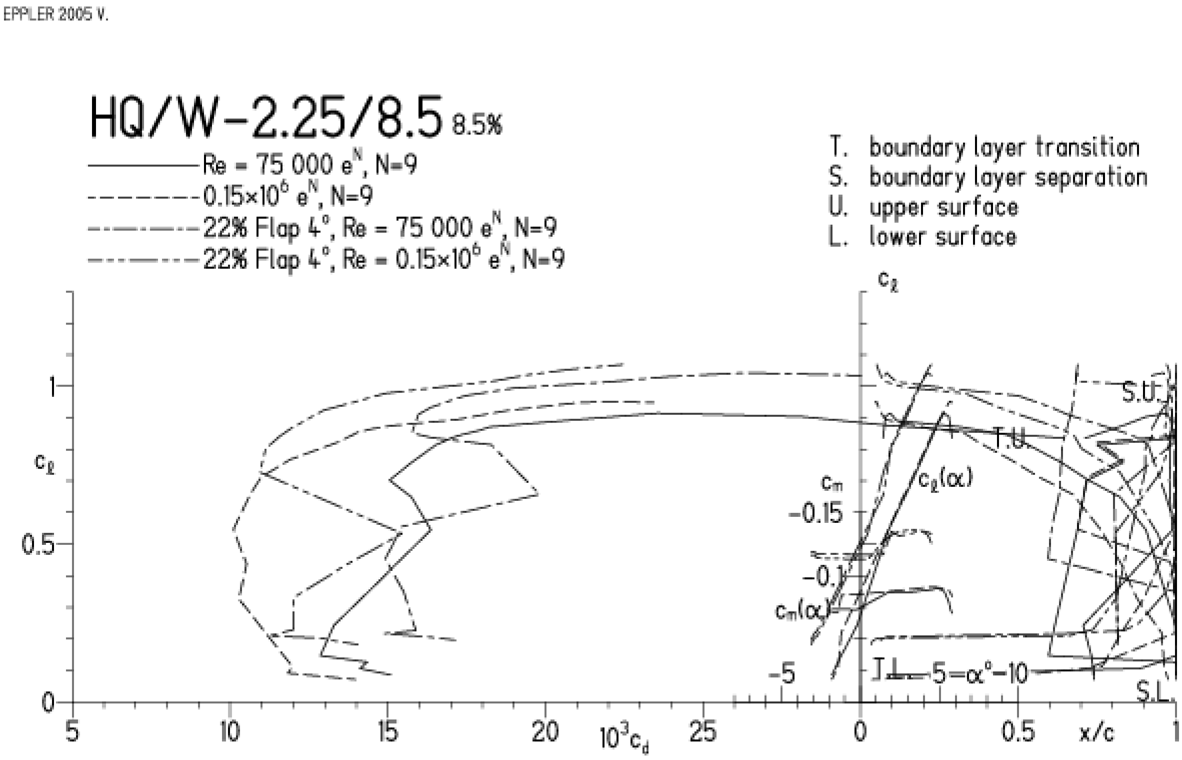
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag





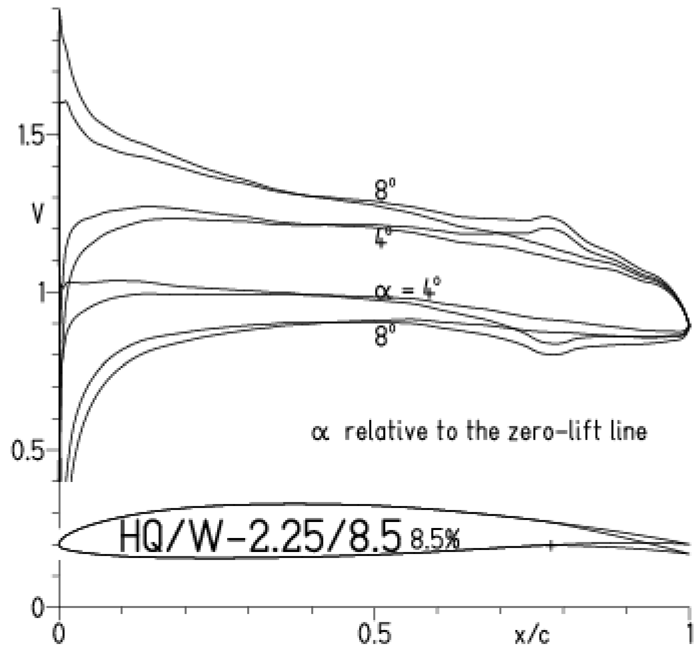
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



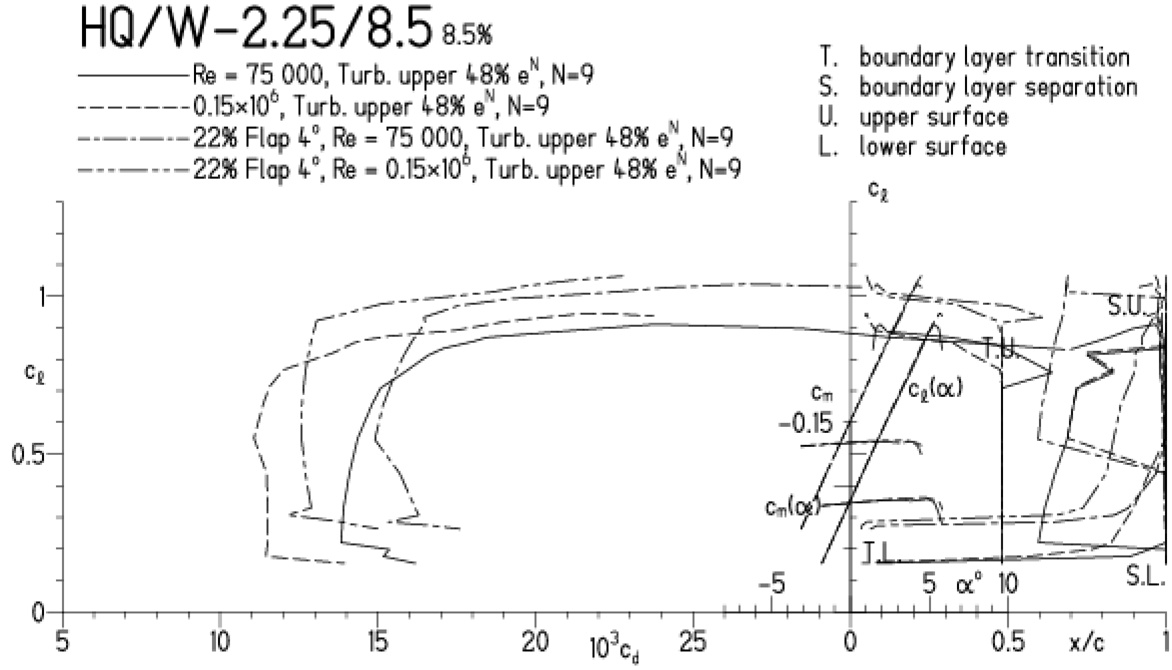


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

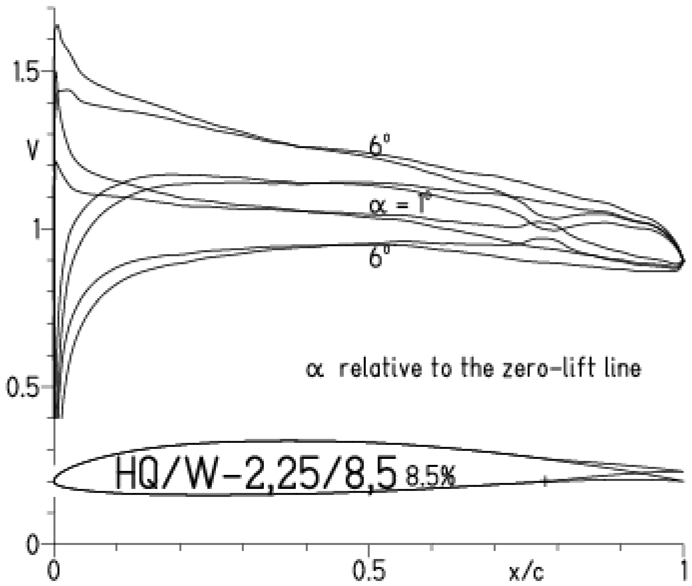


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

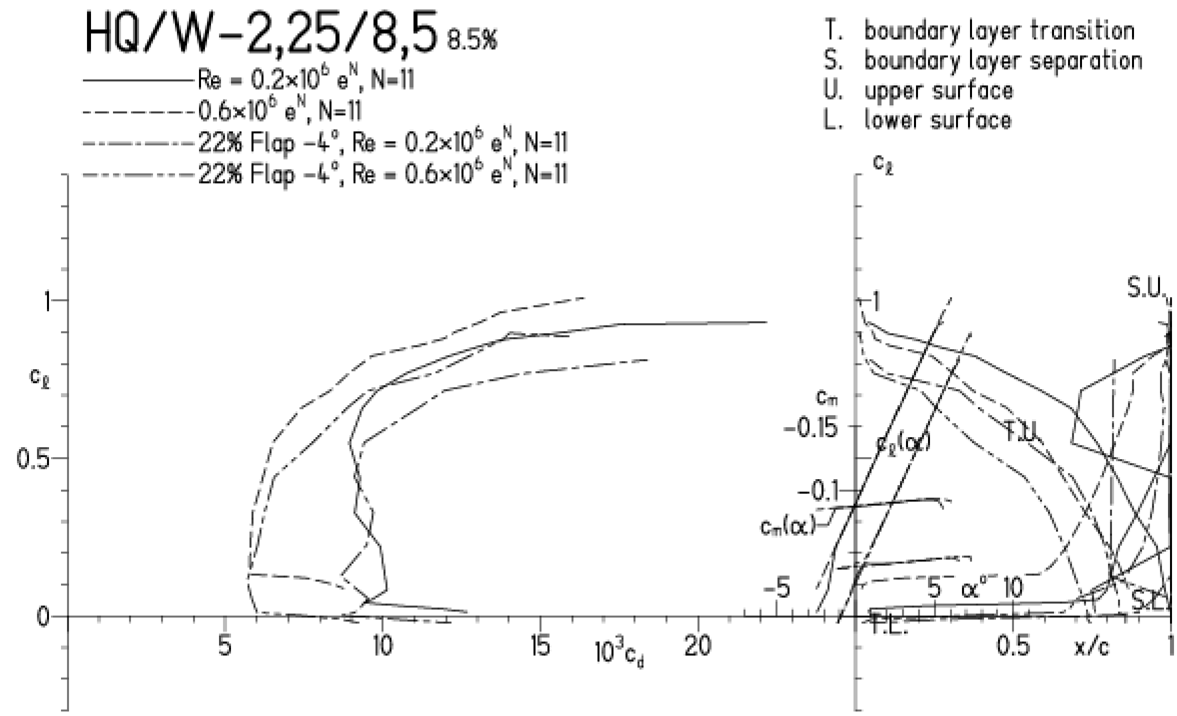


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

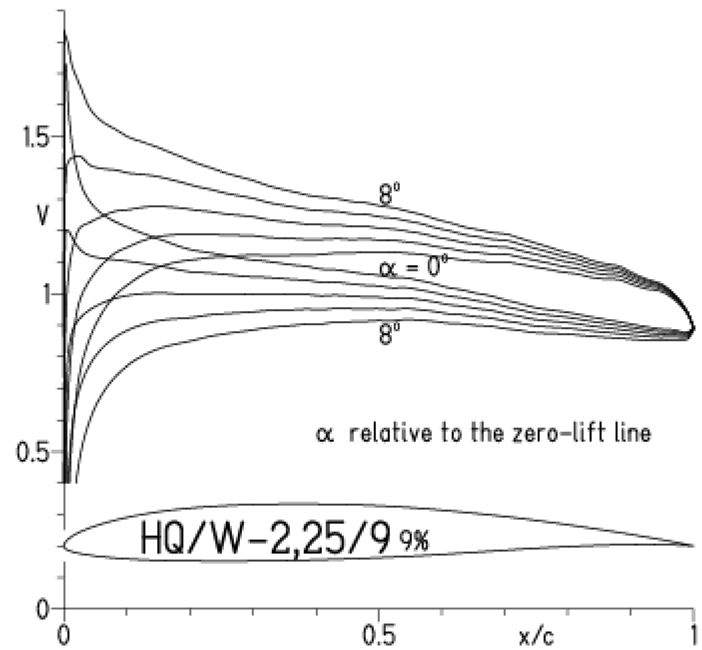


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

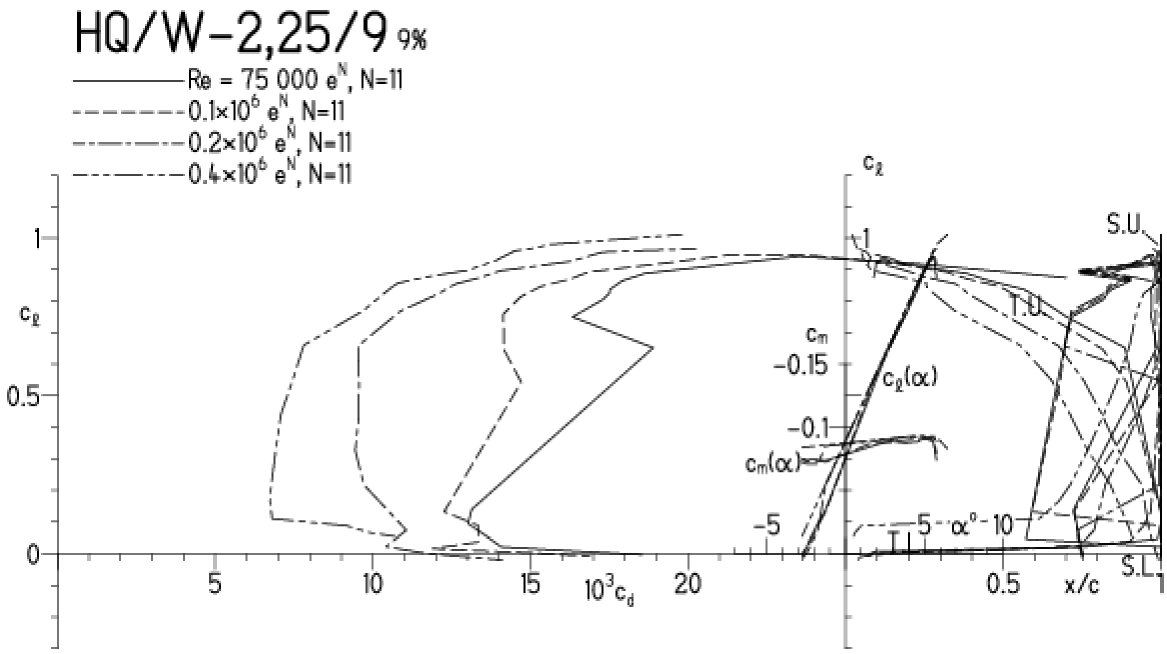


HQ/W-2,25/9, N=11

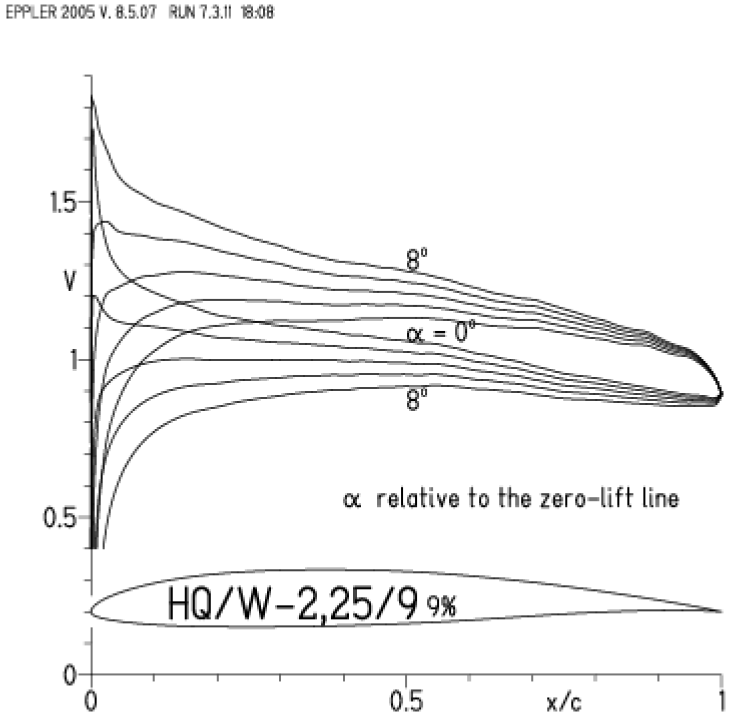
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

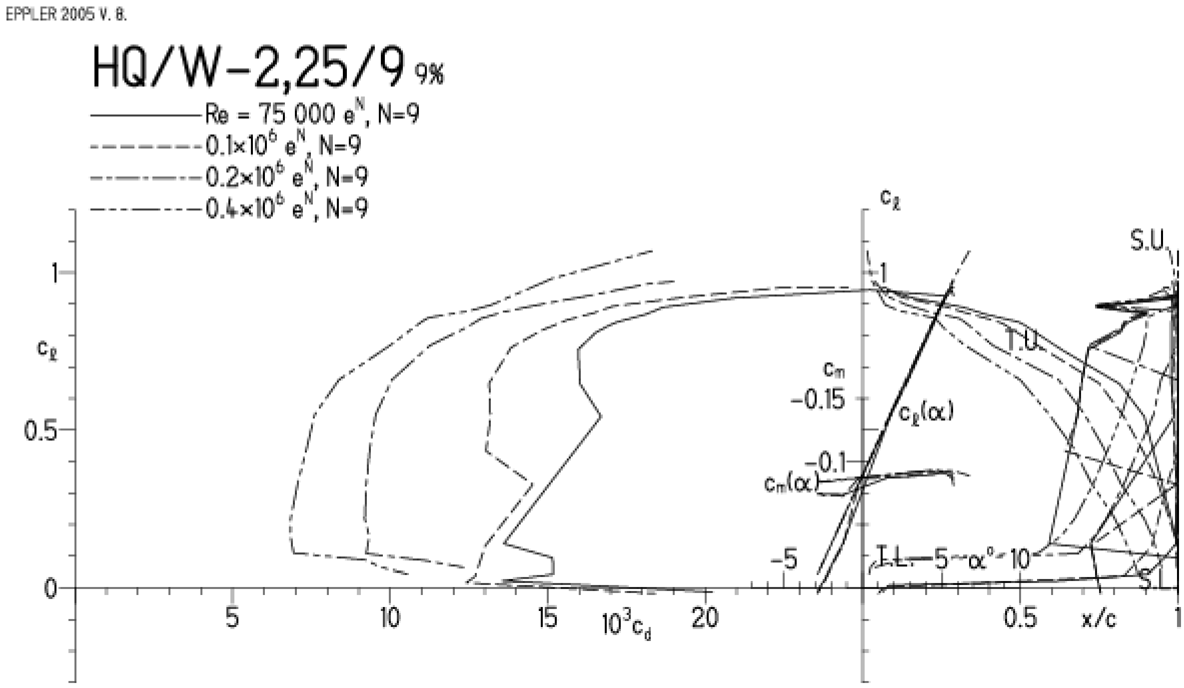


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

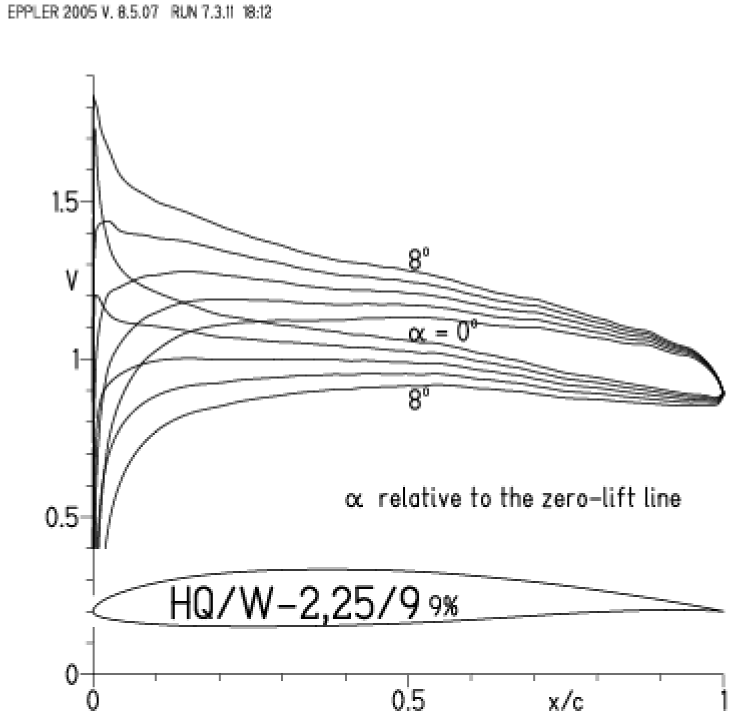


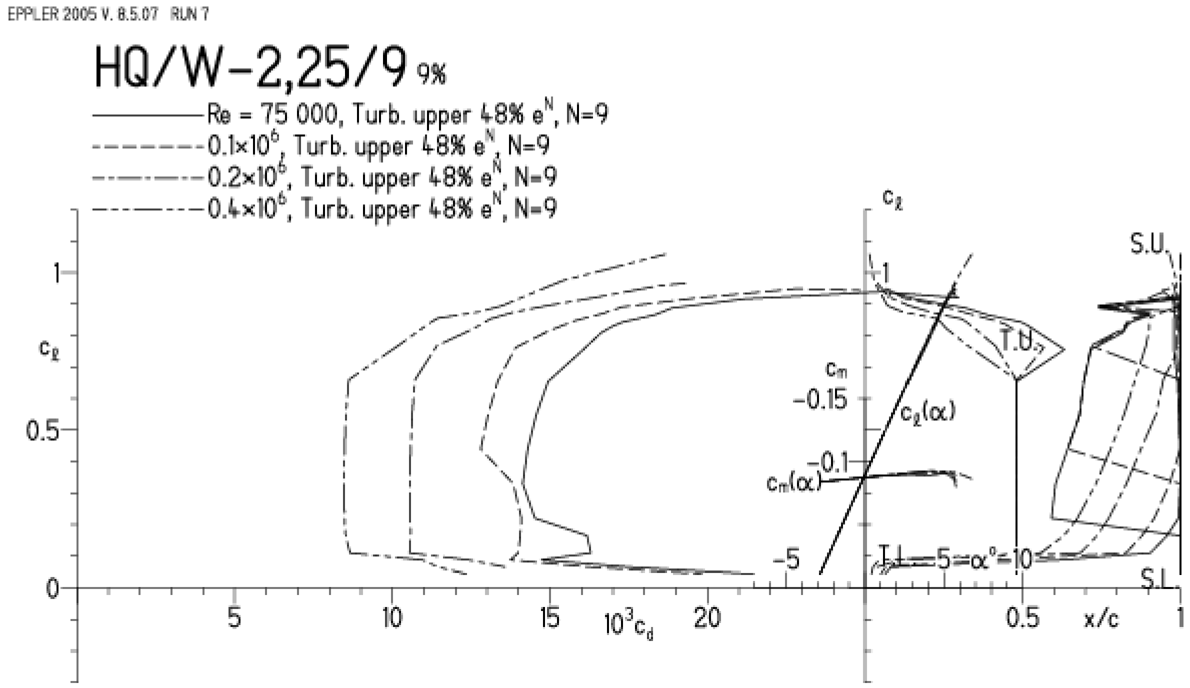
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
20
10^3 c_d
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

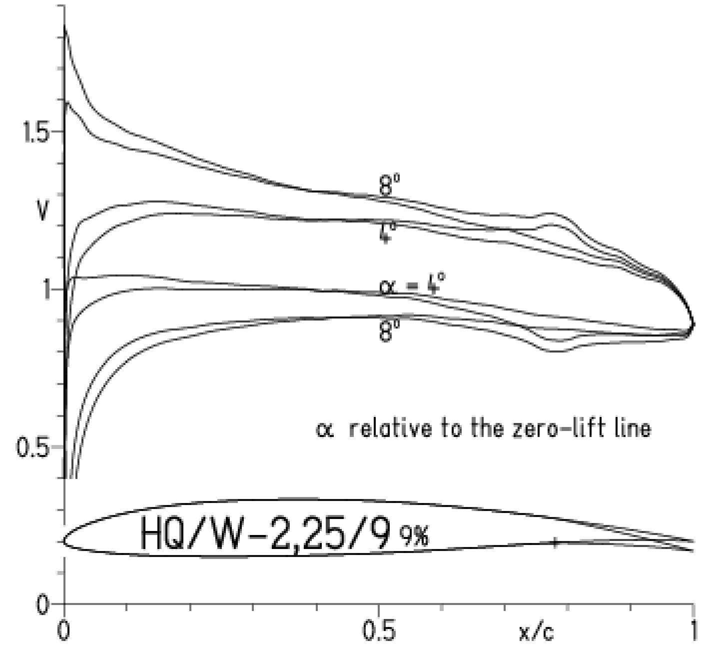
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



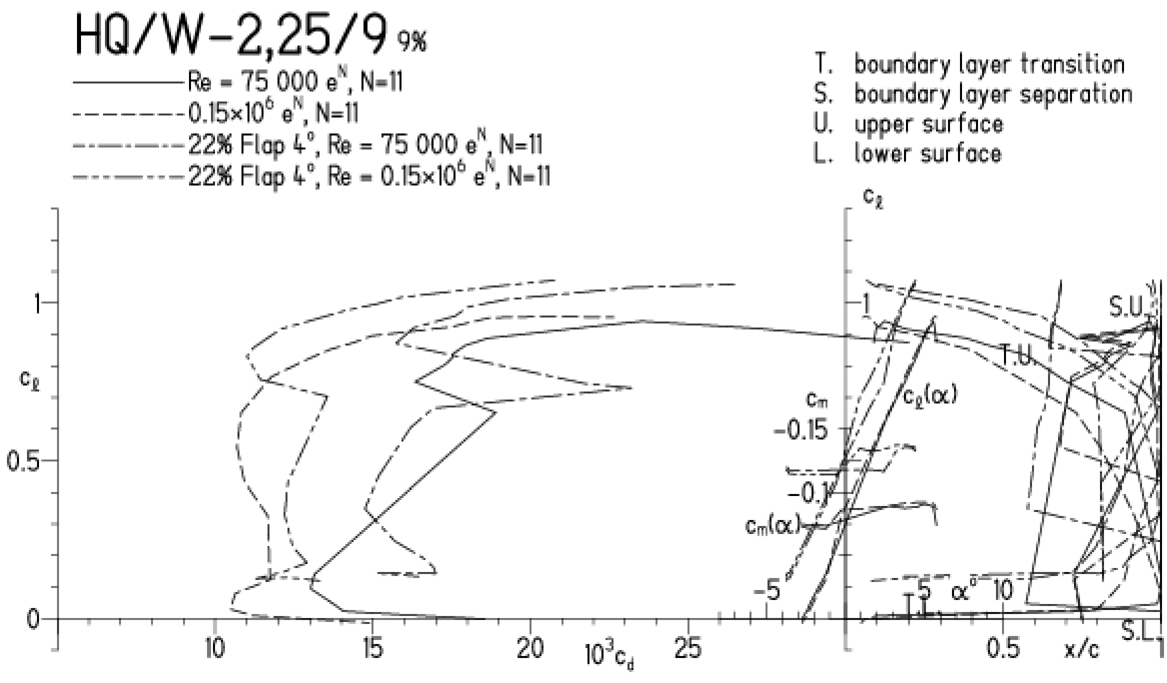


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

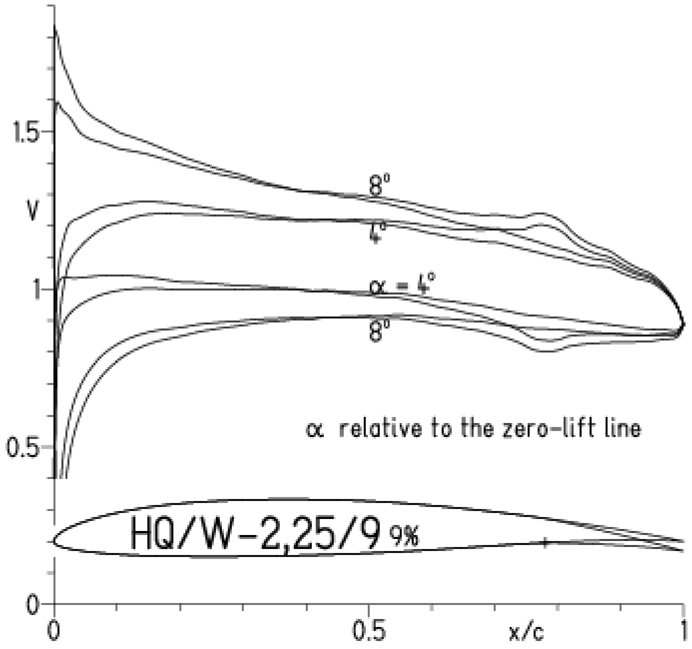


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

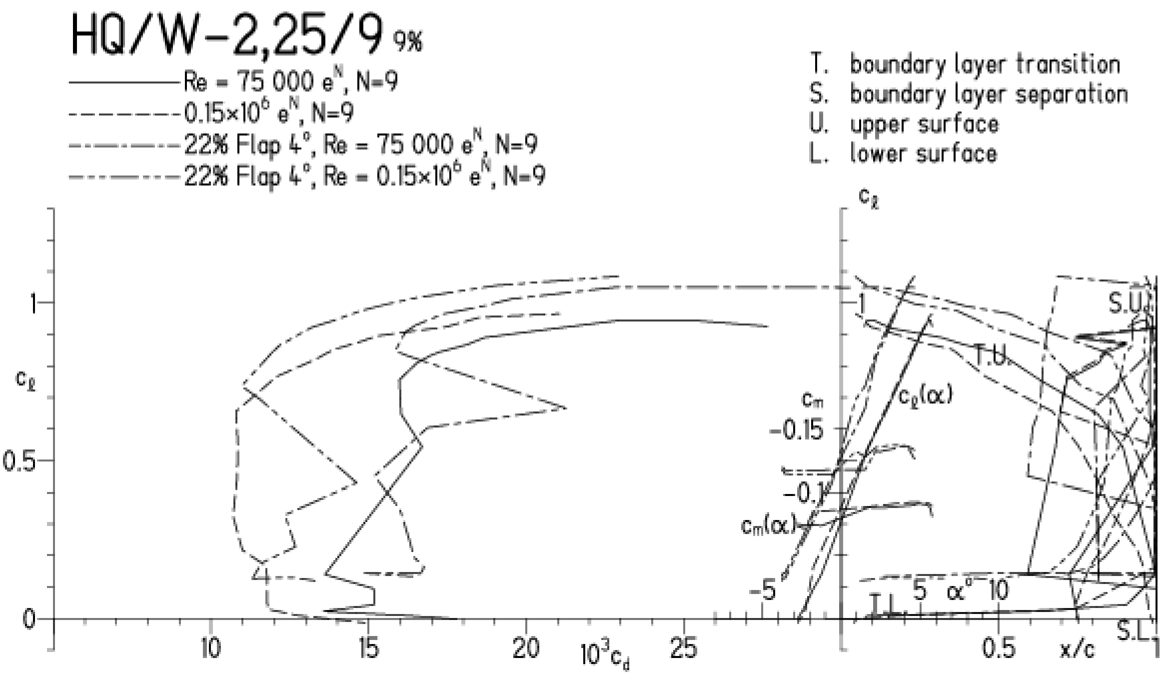


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

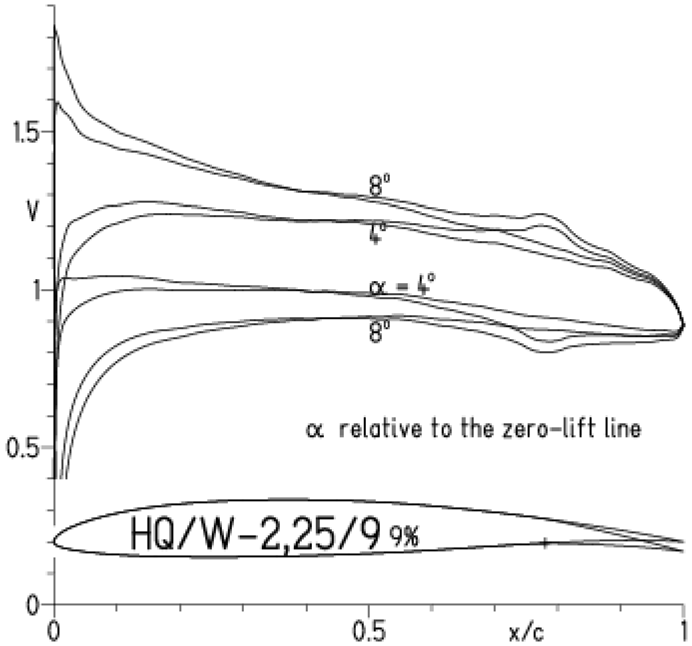


EPPLER 2005 V. 8.5.07 RUN 8.3.1

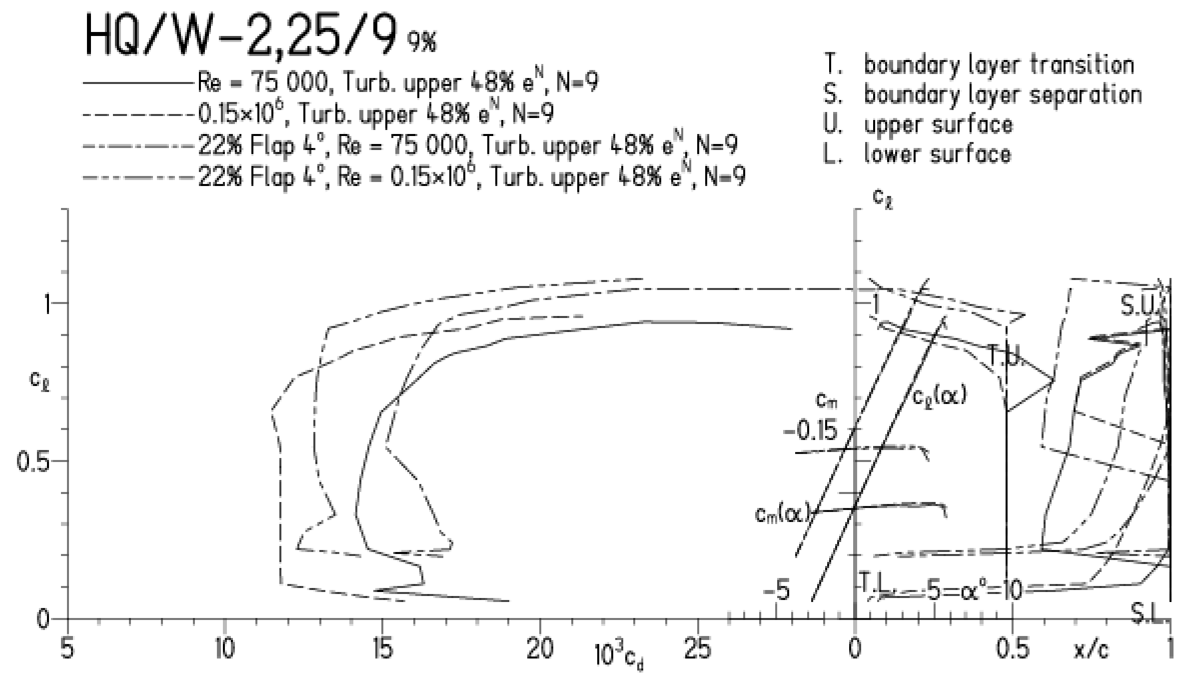


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

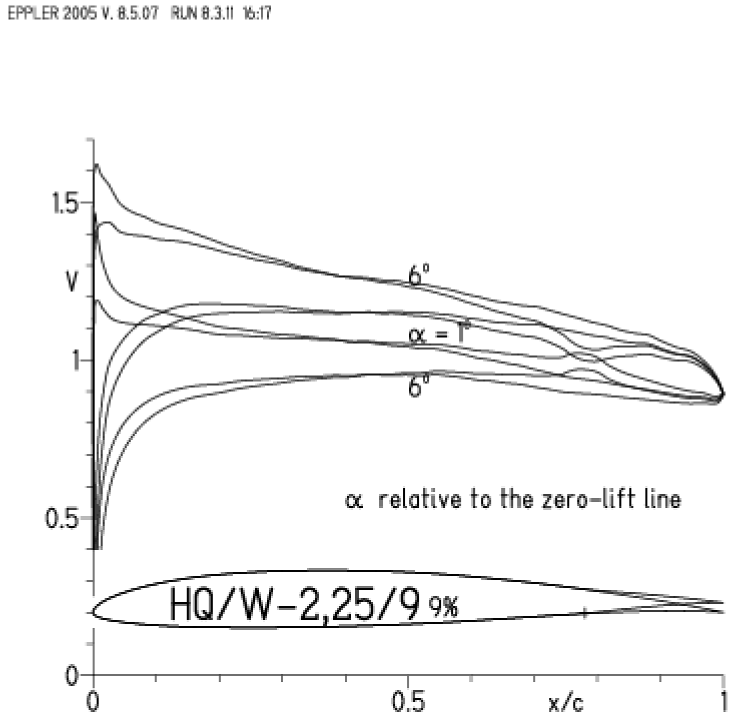
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

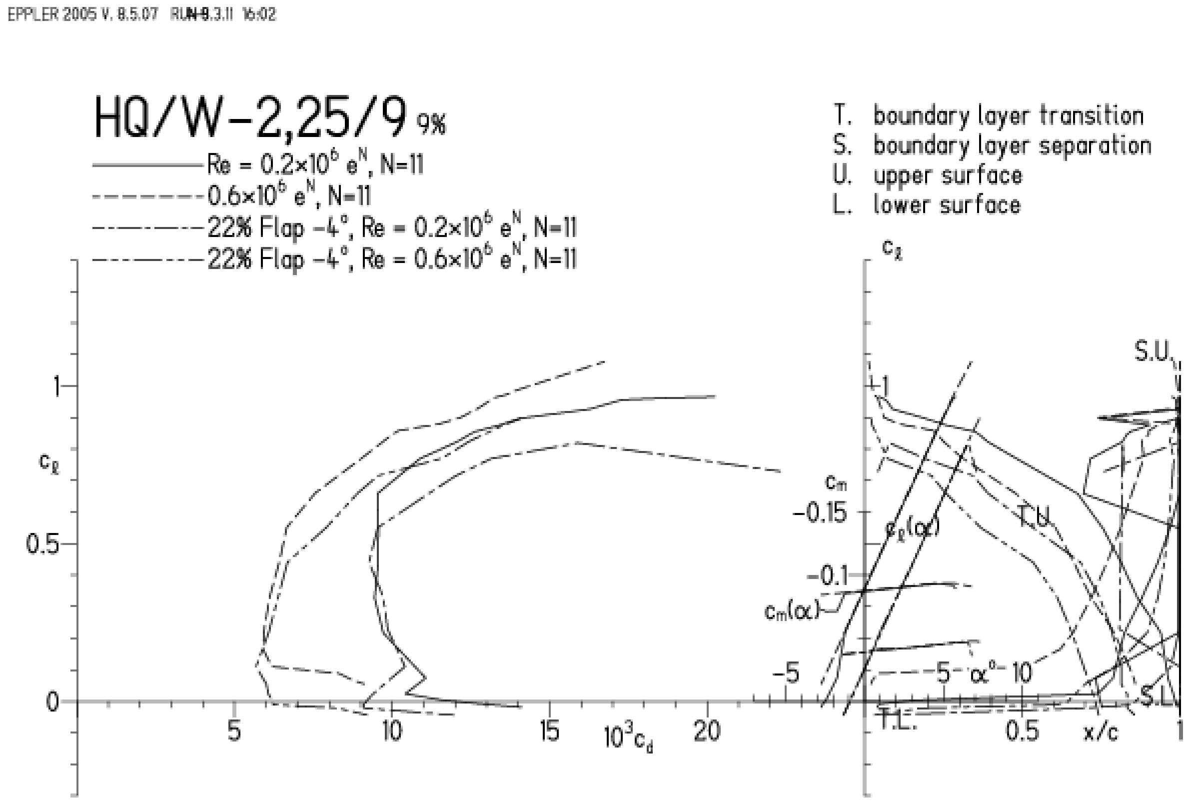


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54



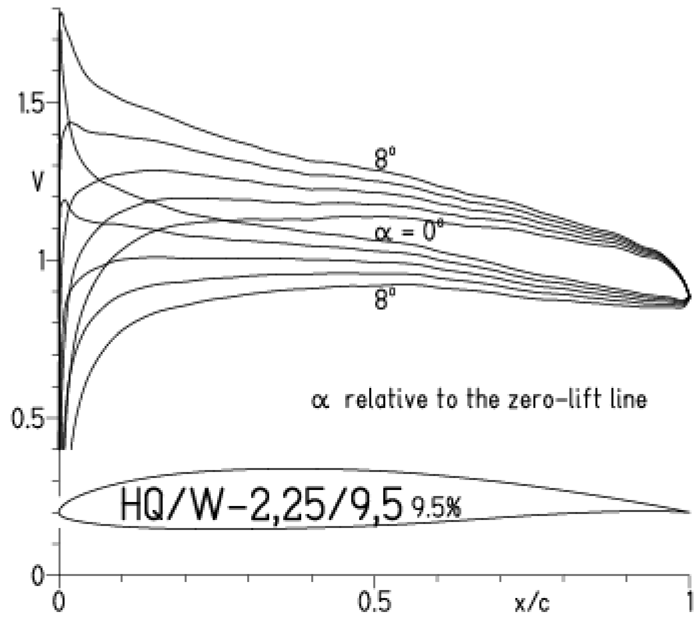
<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



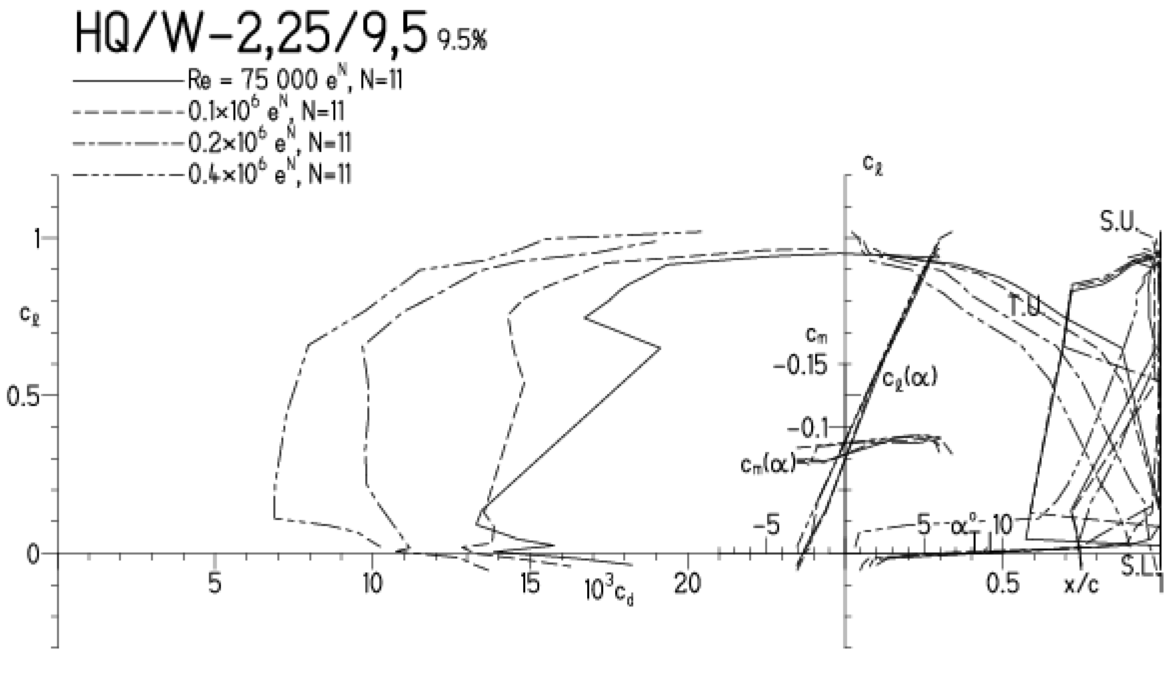


<u>HQ/W-2,25/9,5</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

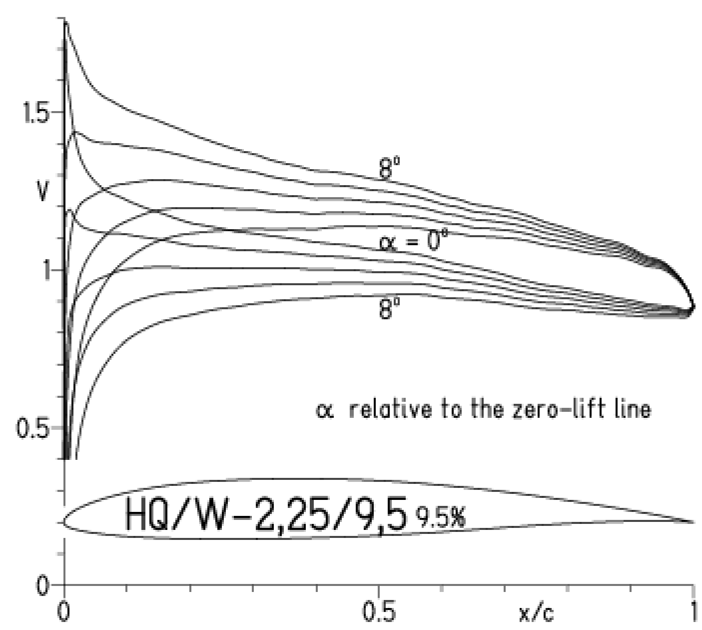


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

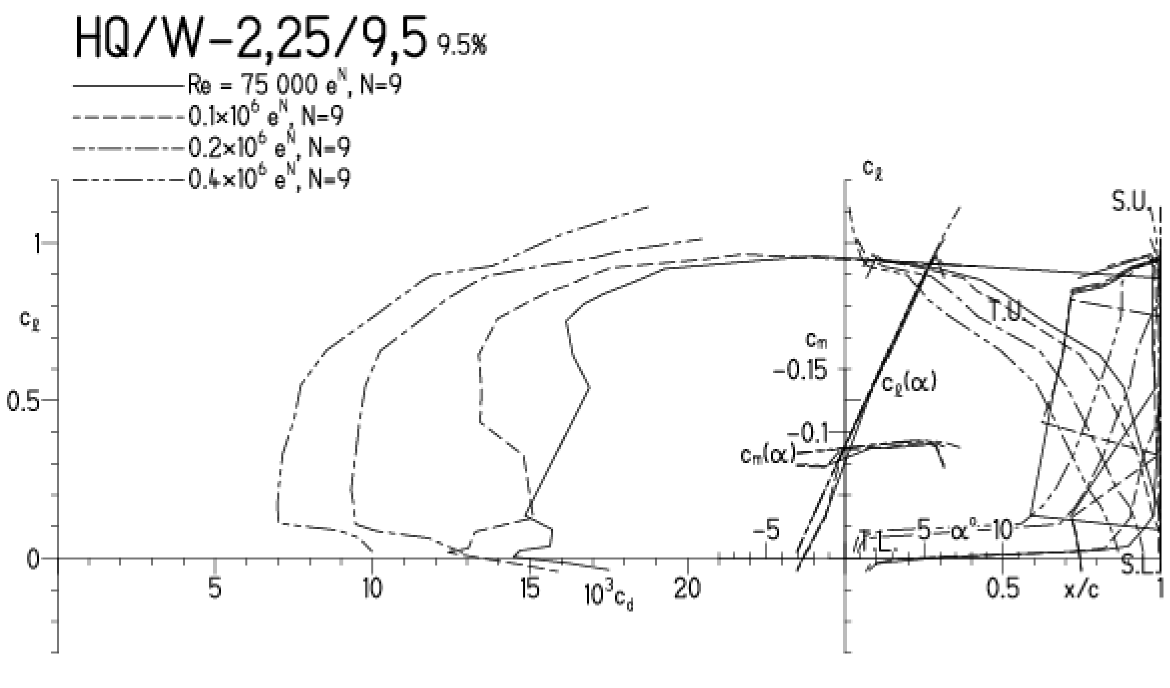


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

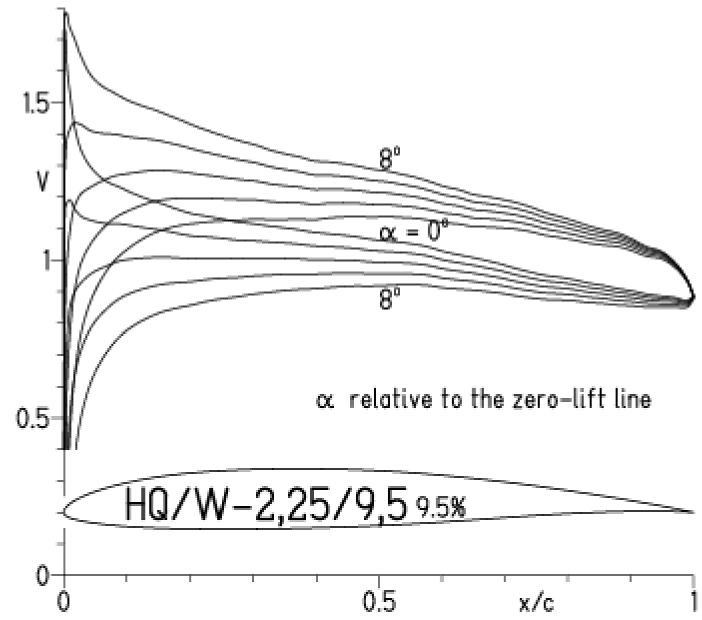


EPPLER 2005 V. 8.5.07 RUN 8.3.

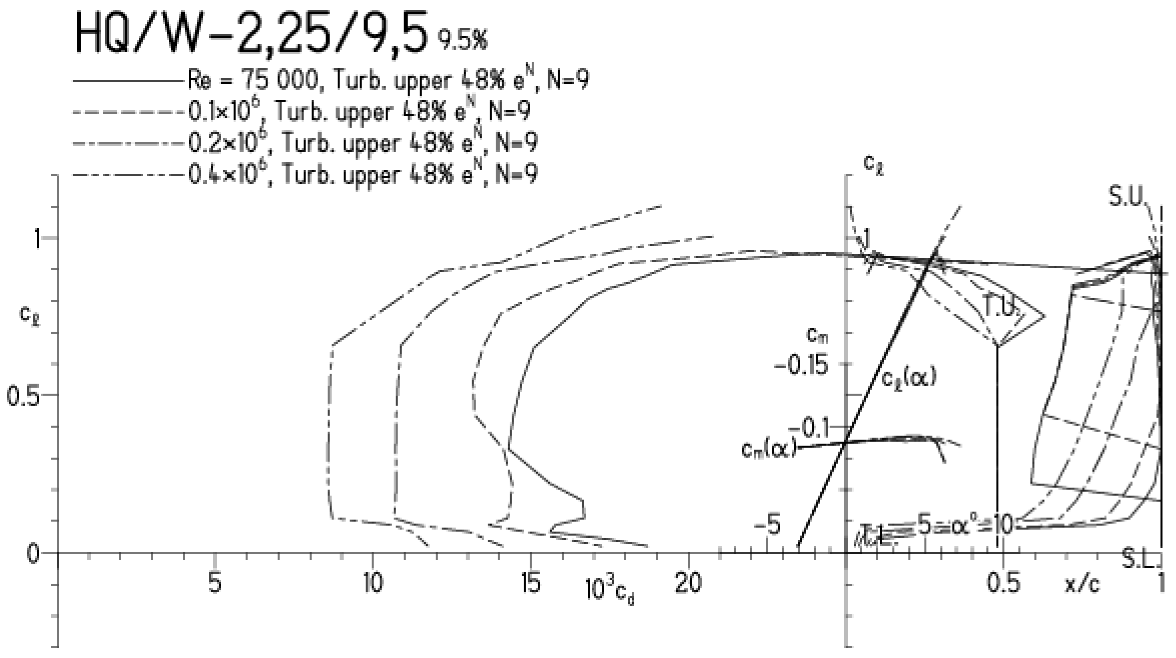


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

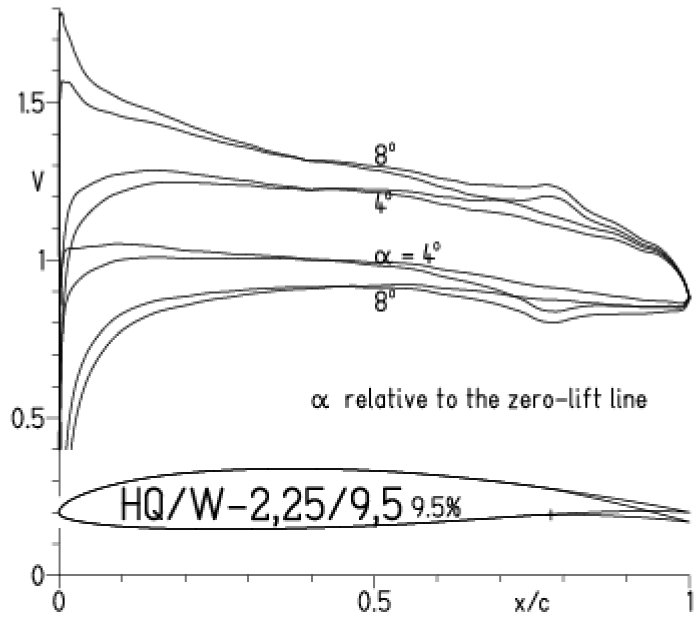


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

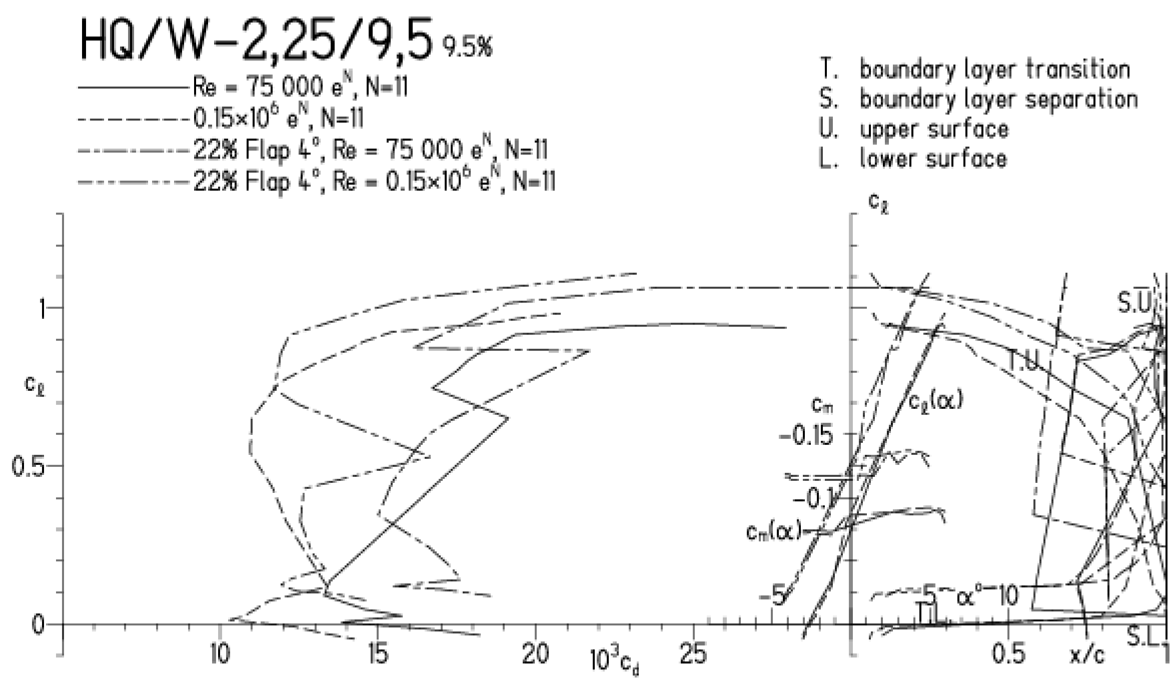


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

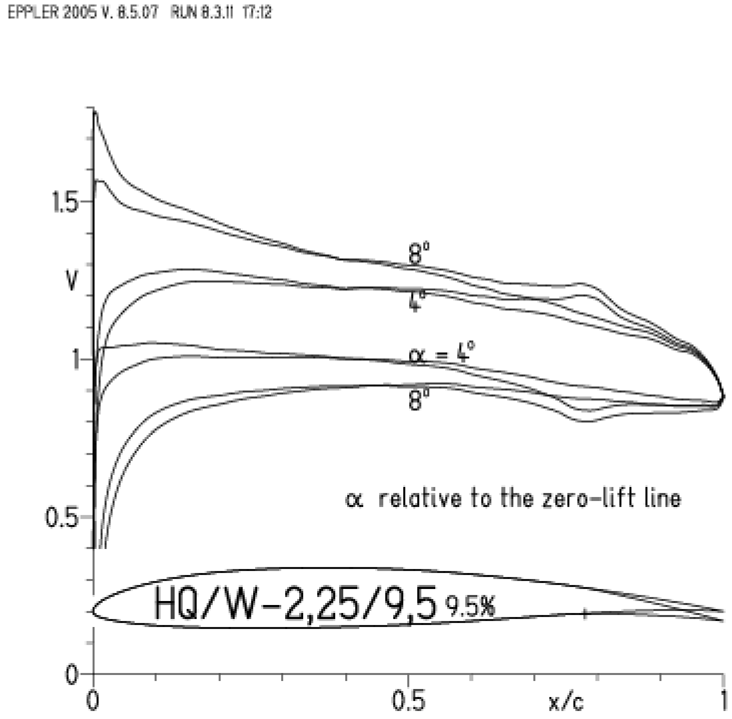
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

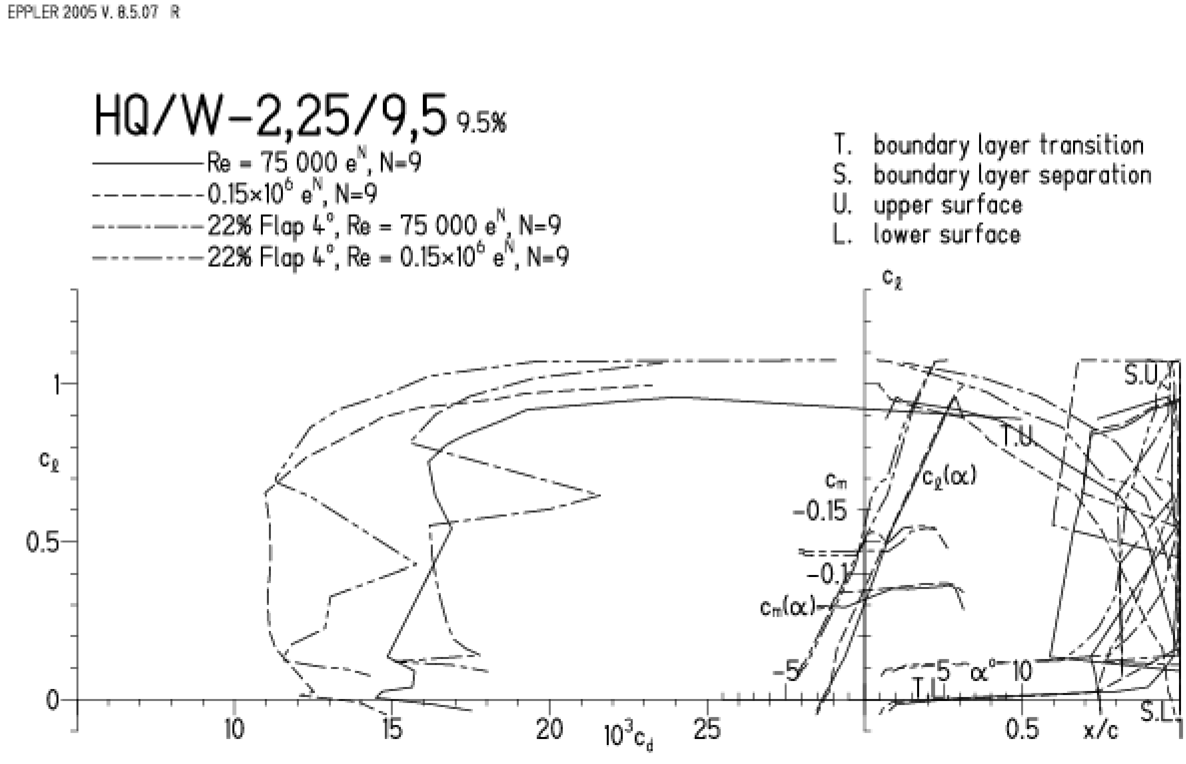


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



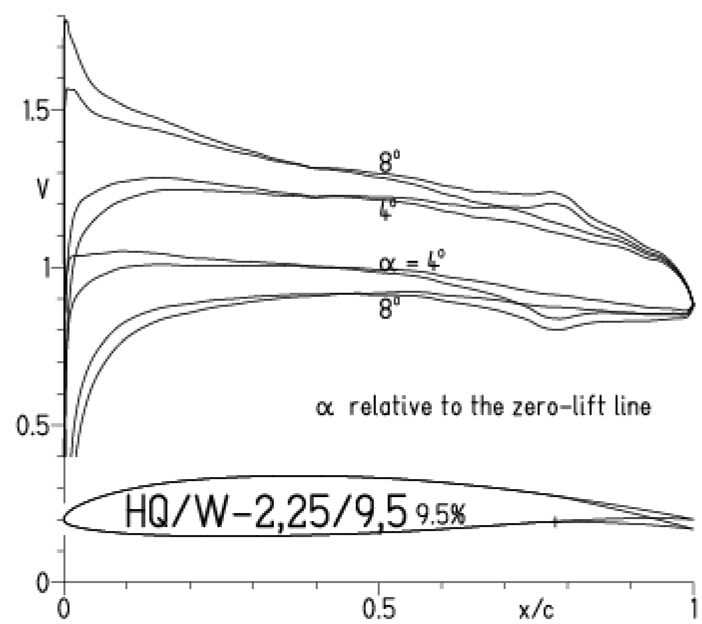
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



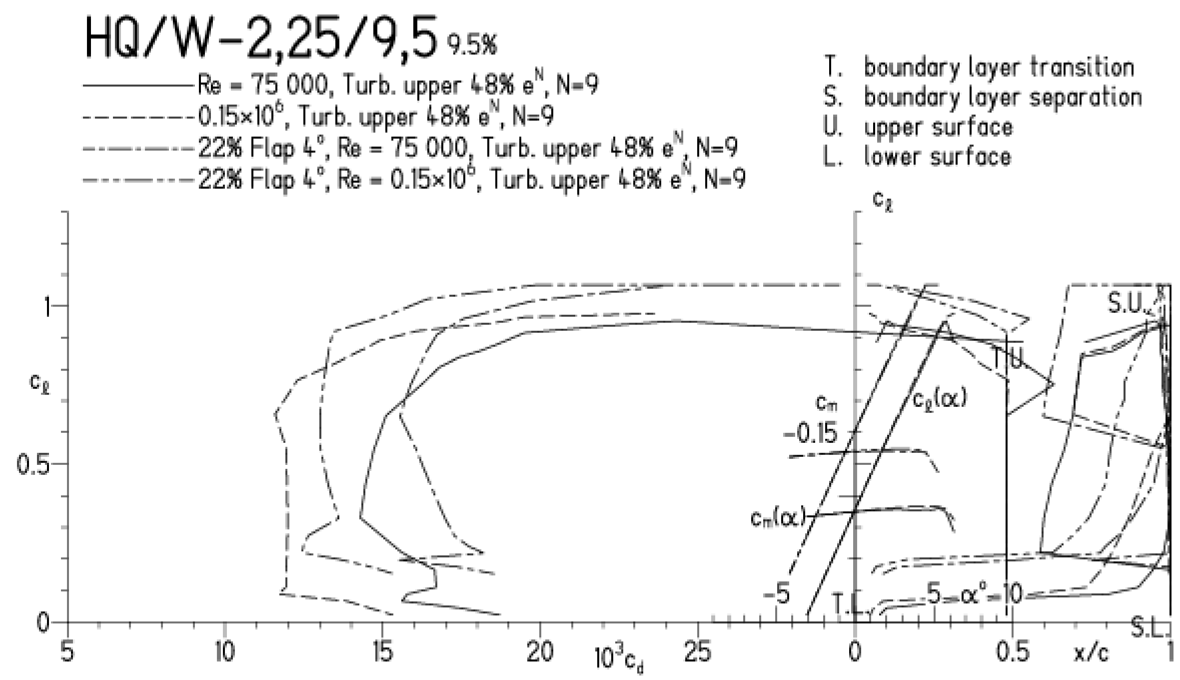


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

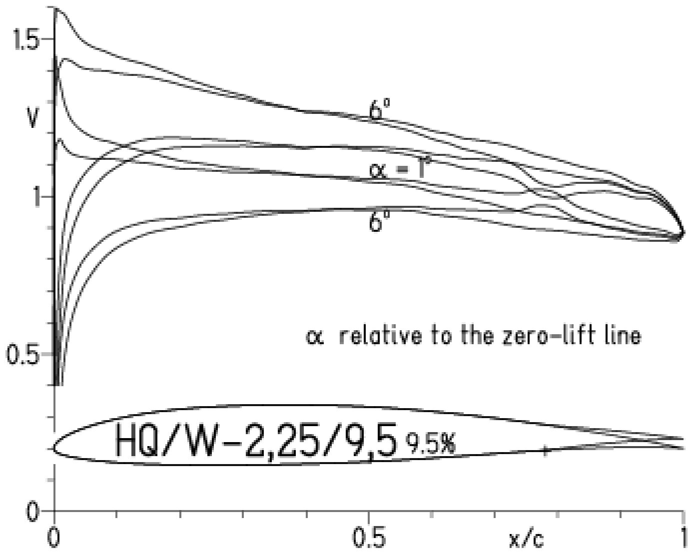


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

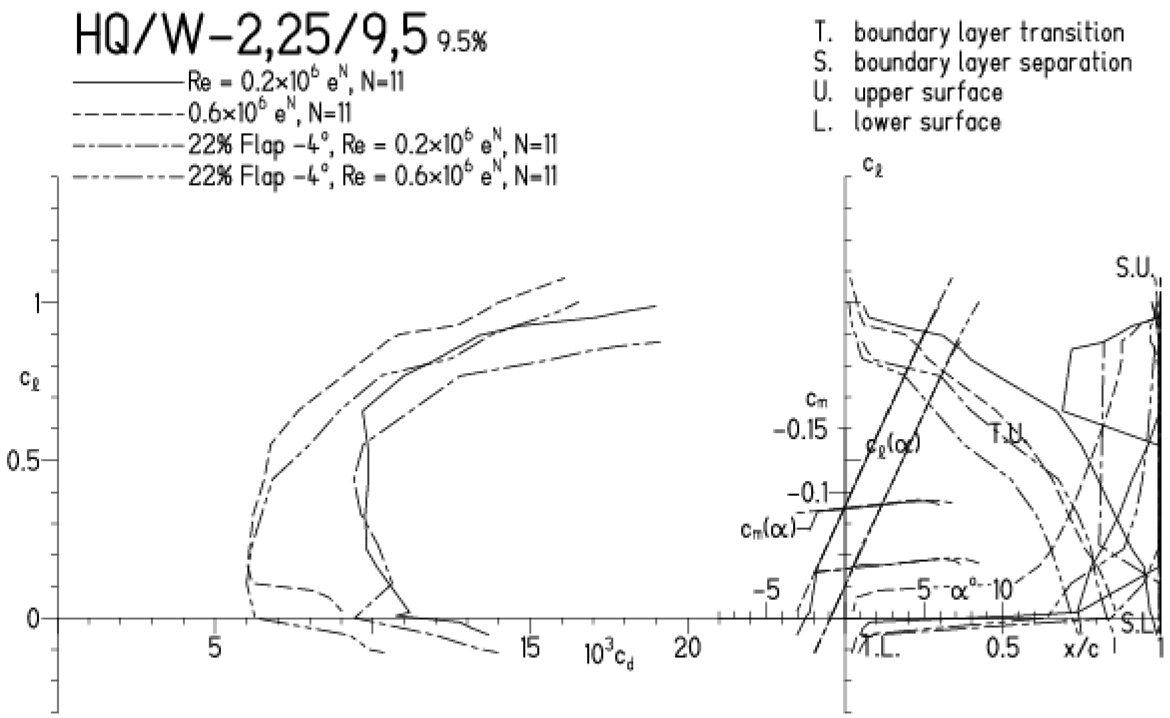


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

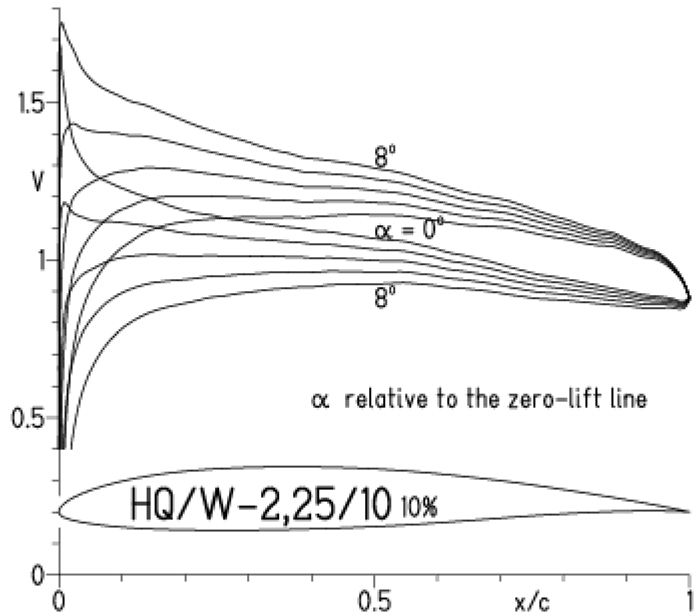


EPPLER 2005 V.

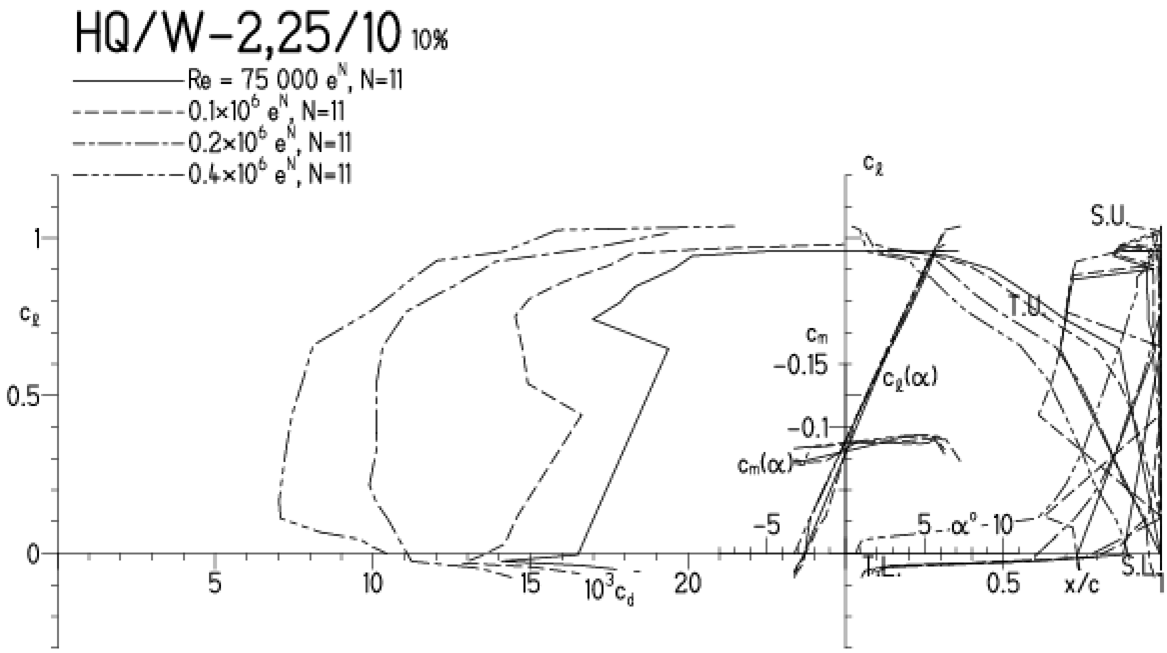


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

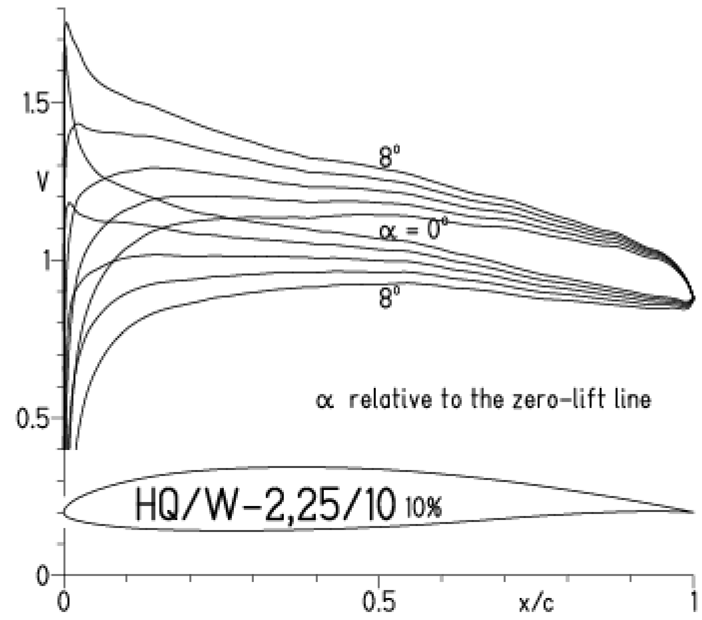


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

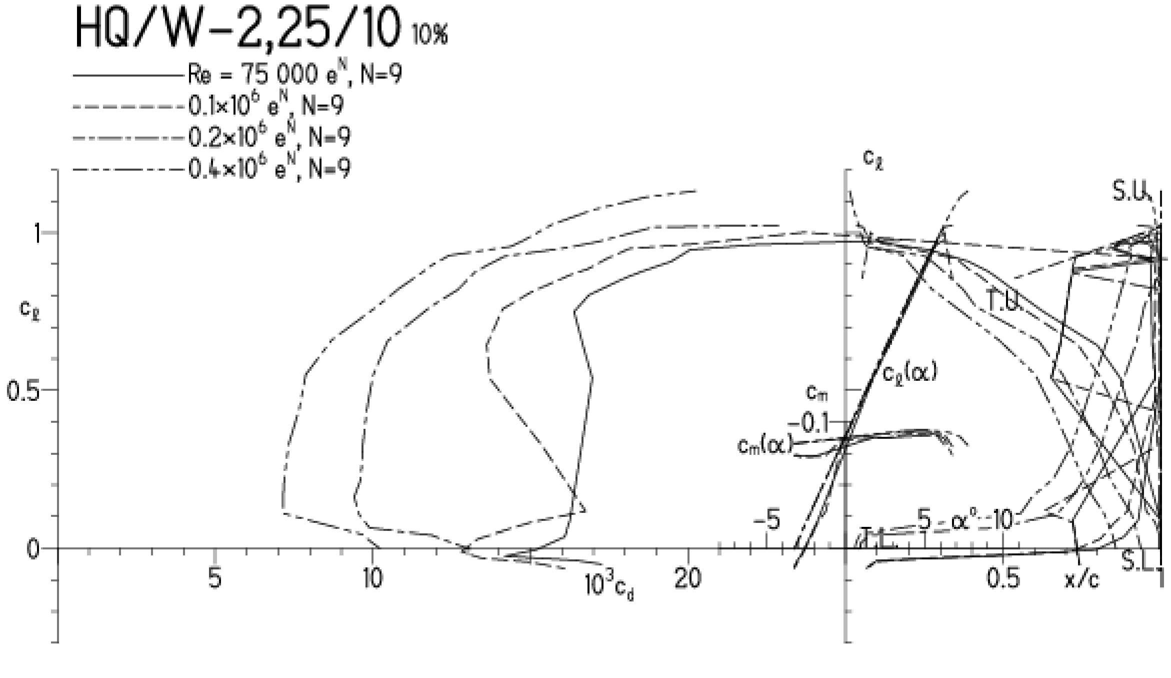


HQ/W-2,25/10, N=9

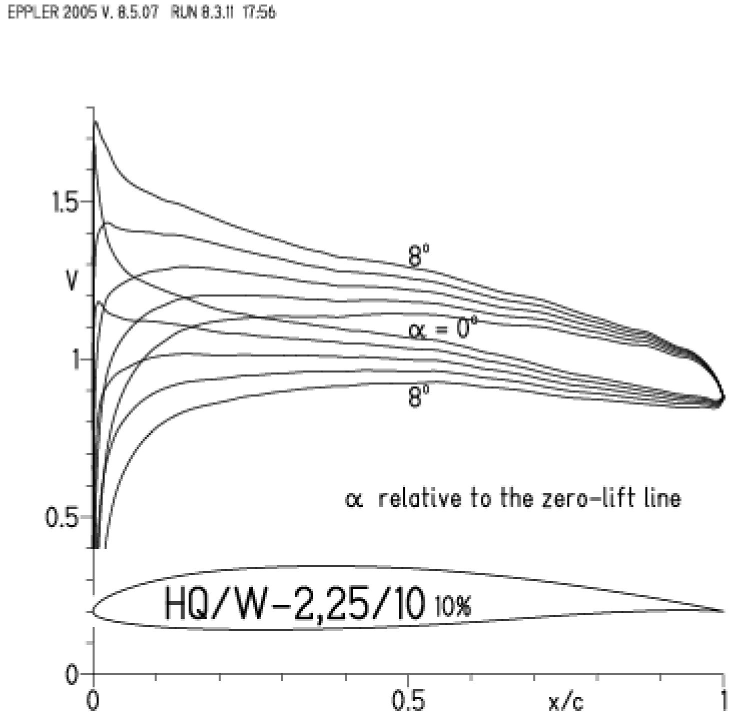
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

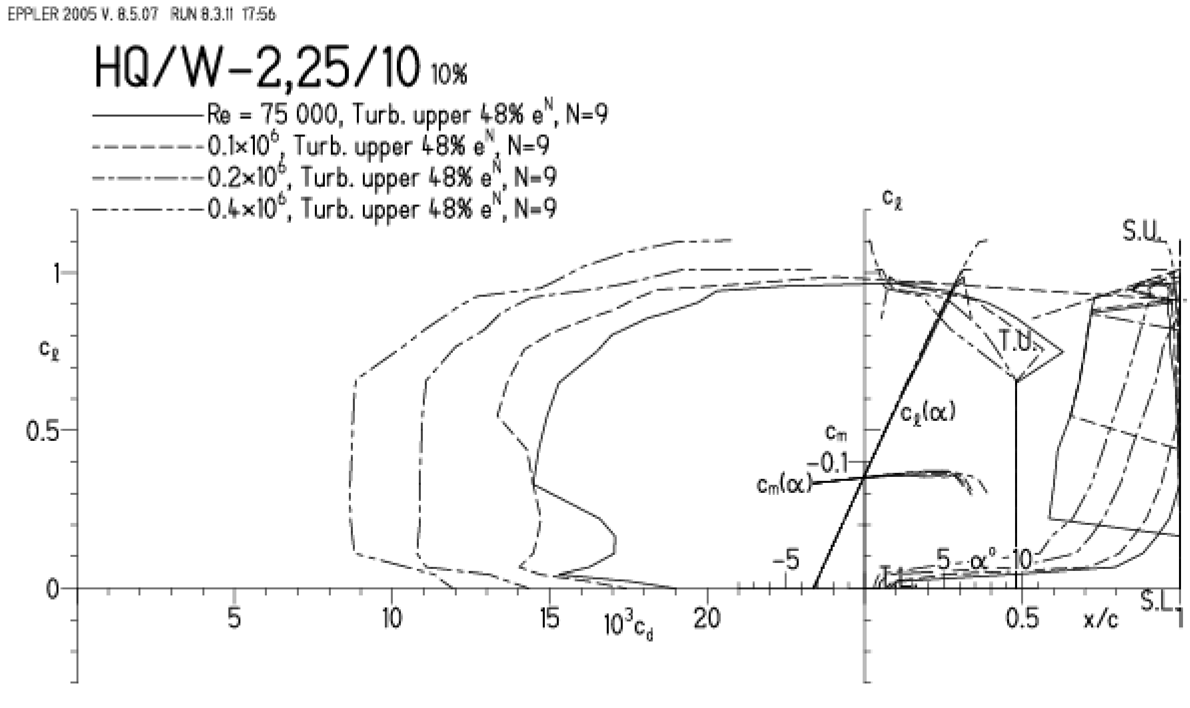


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



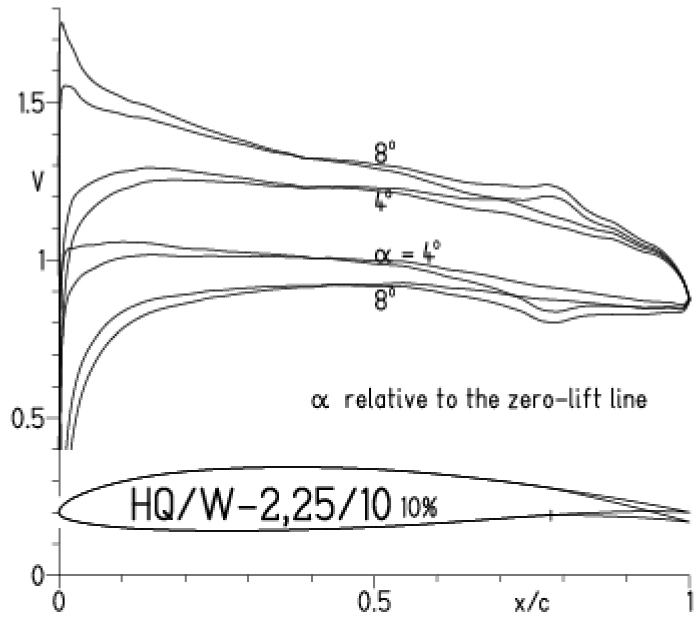
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



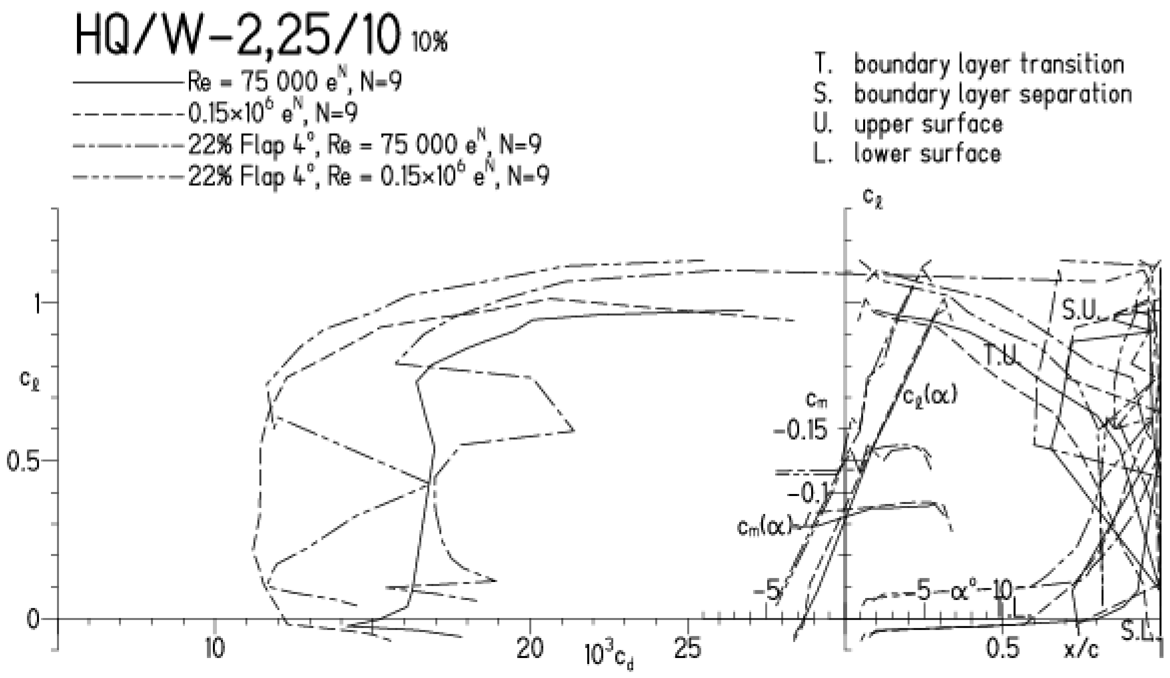


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

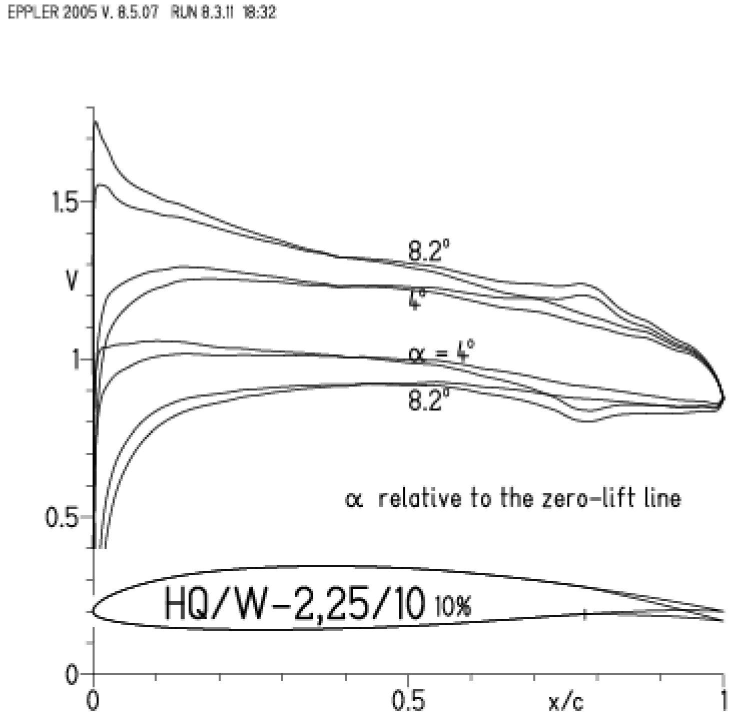
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

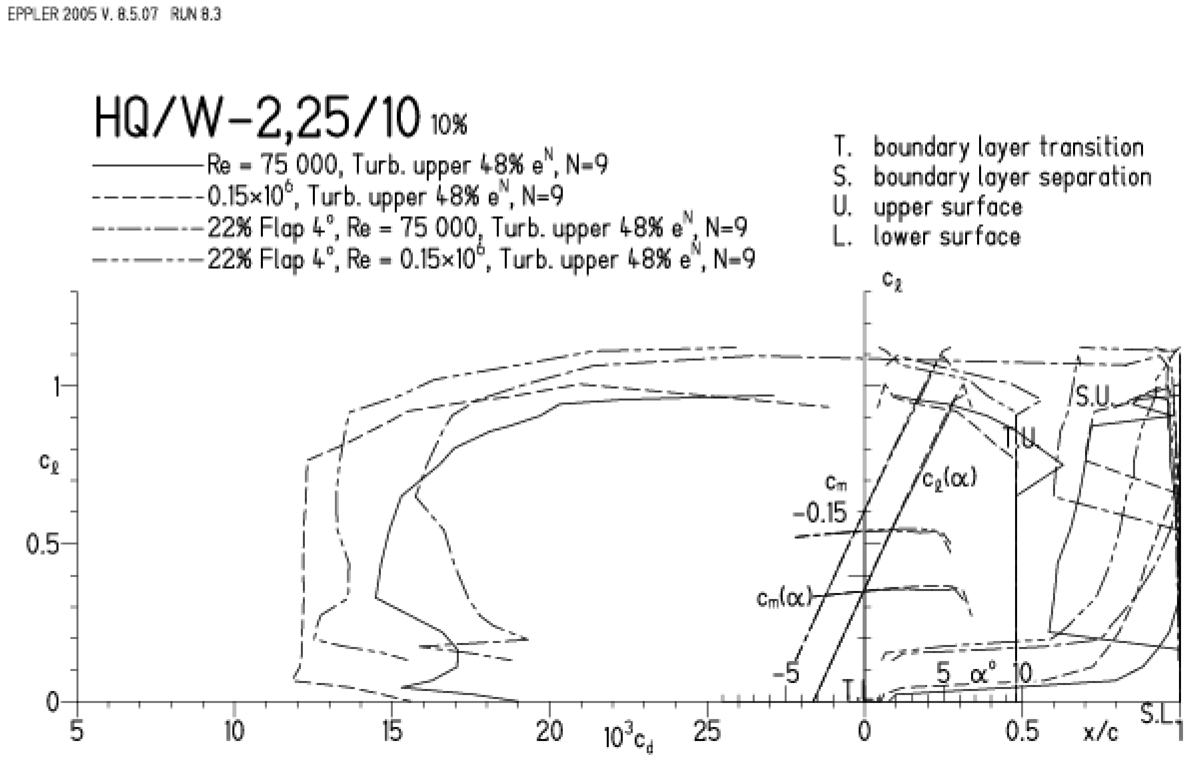


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



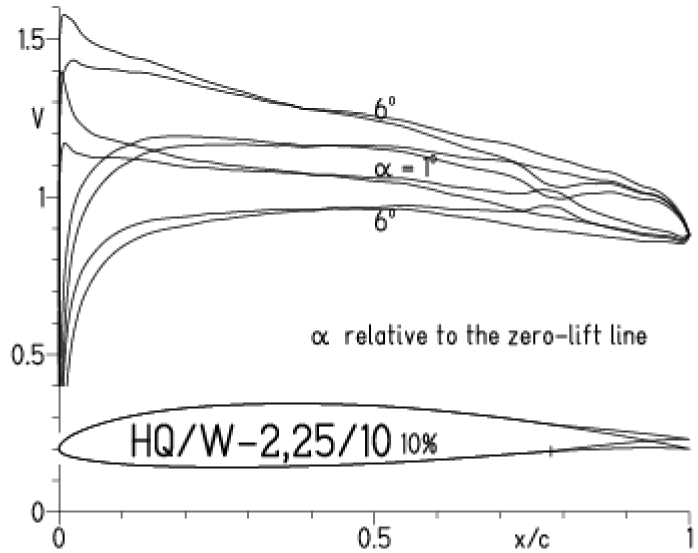
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



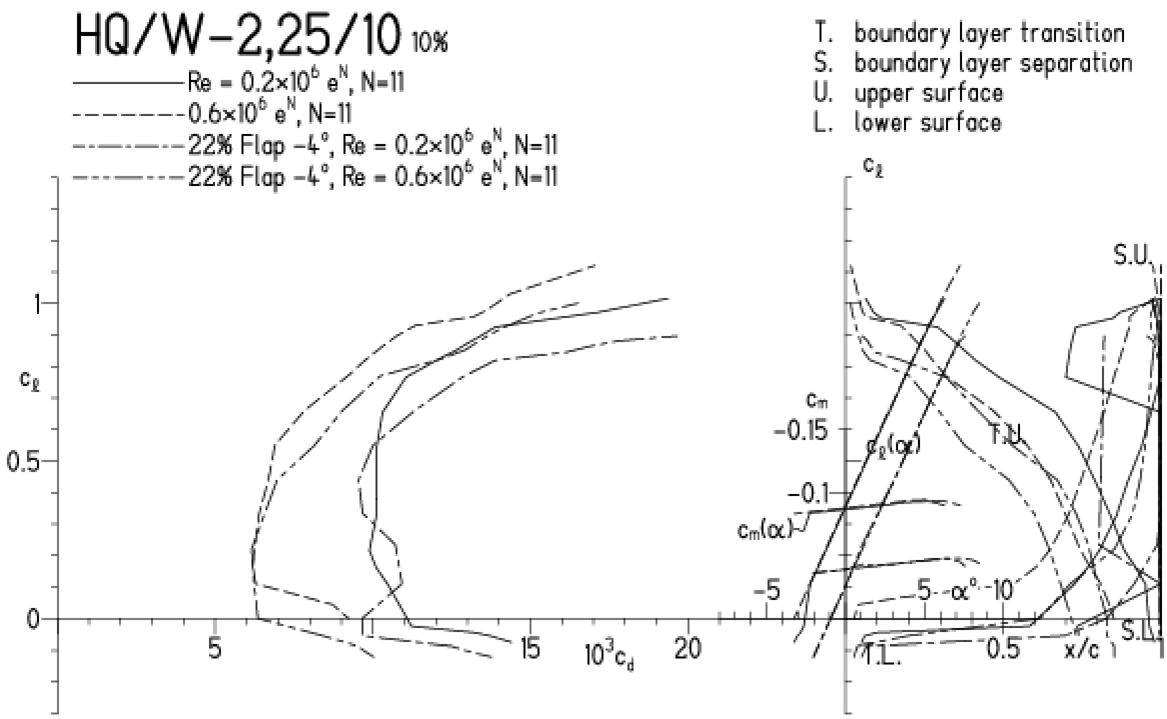


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

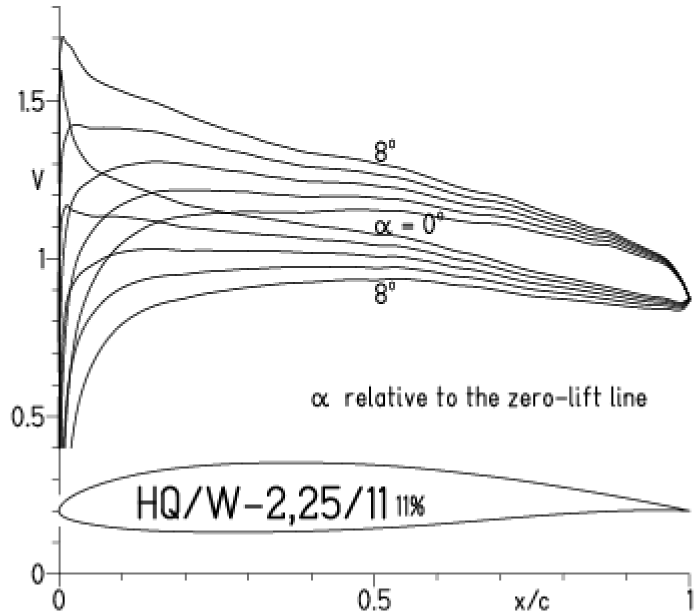


EPPLER 2005 V. 8.5.07 RUN

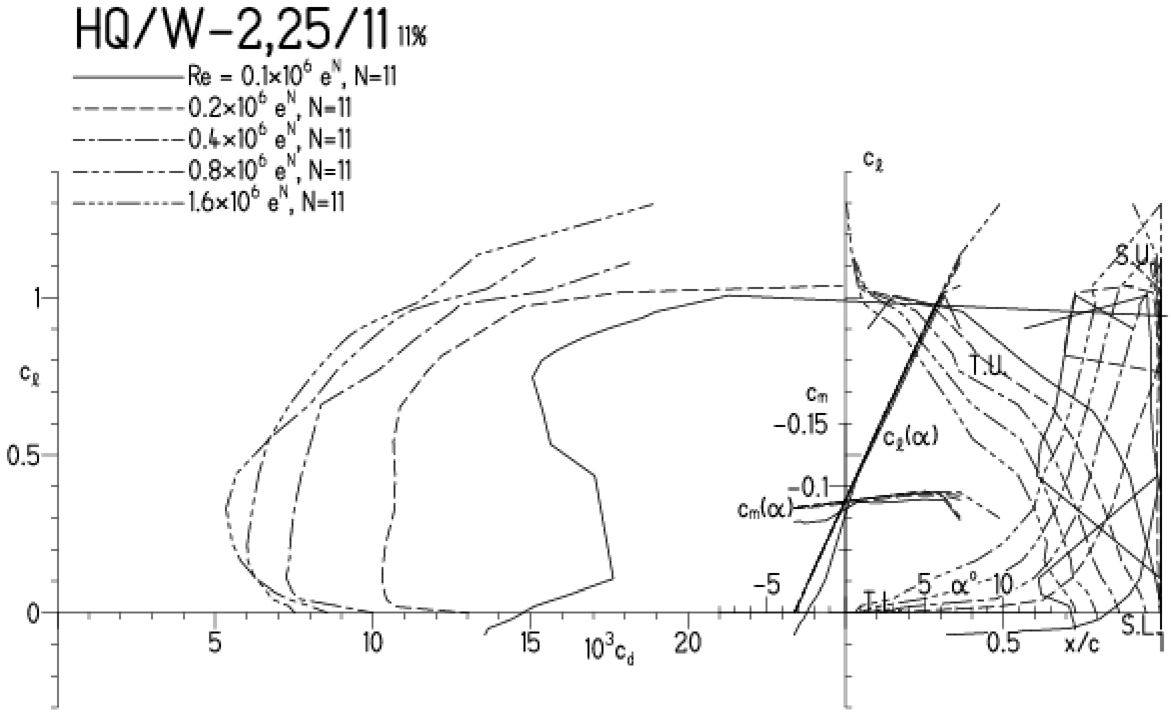


<u>HQ/W-2,25/11</u>, N=11

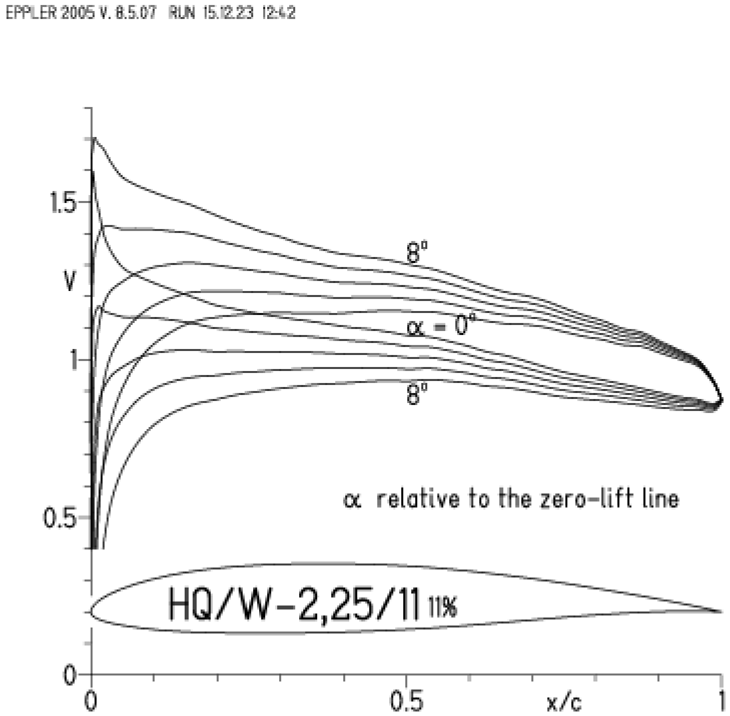
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

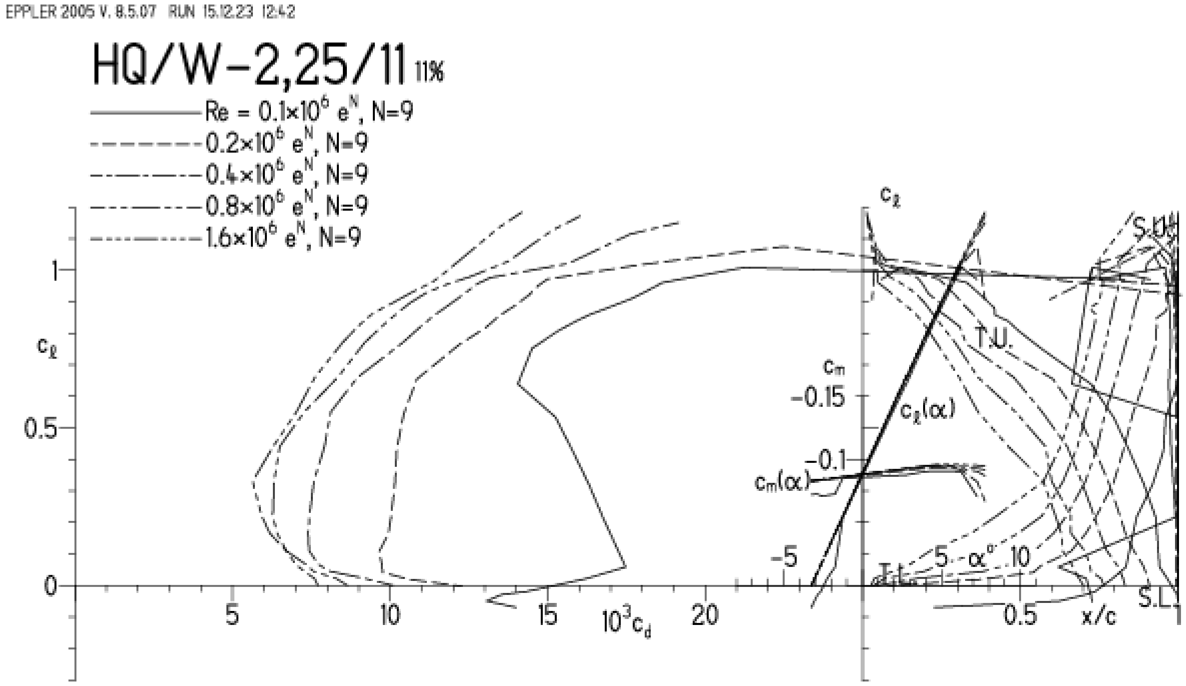


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

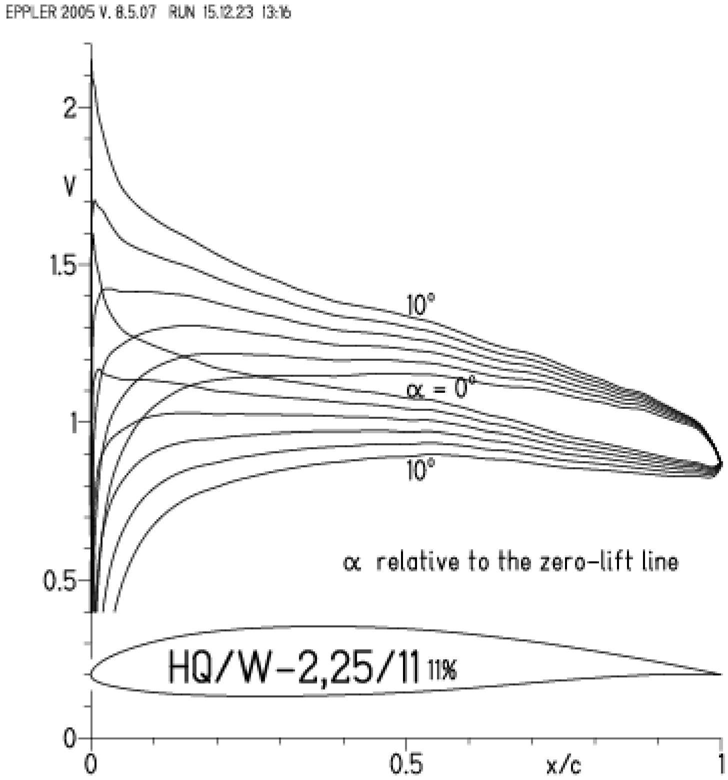


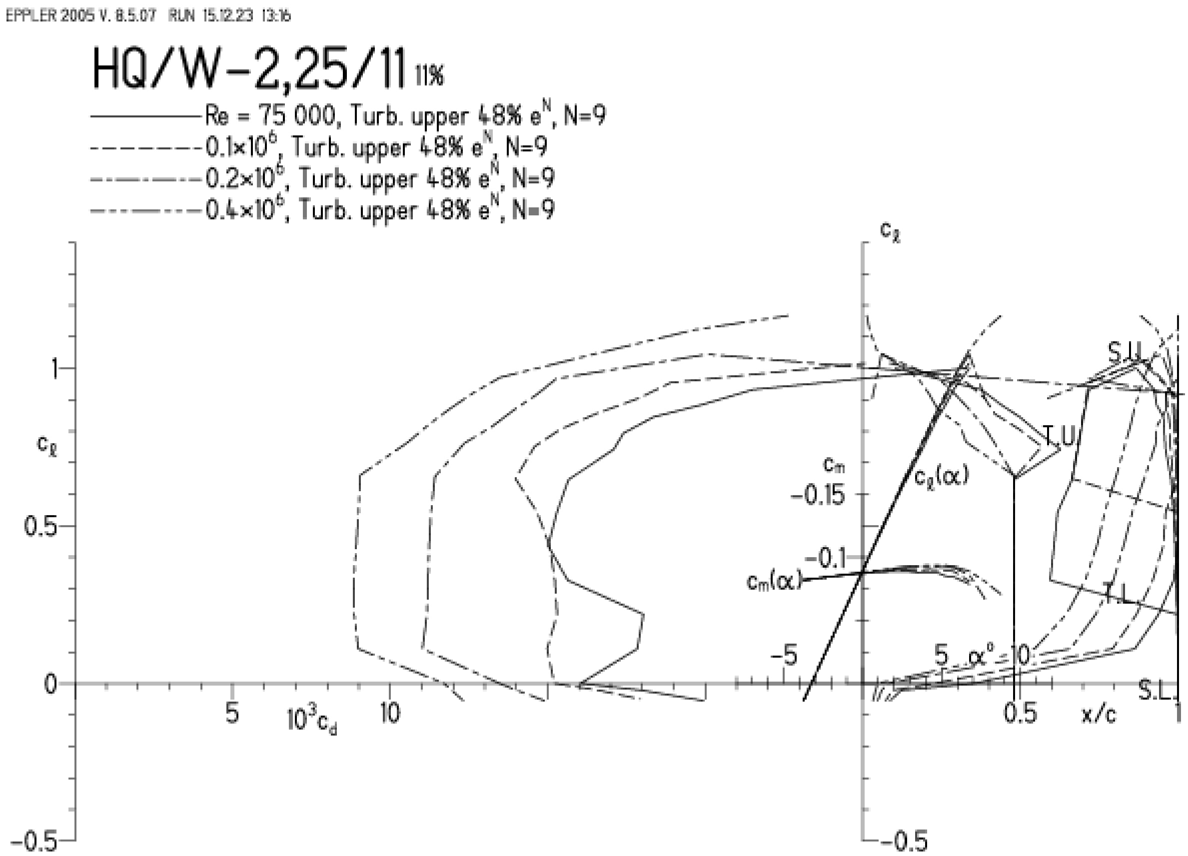
HQQ/W-2,25/11, N=9



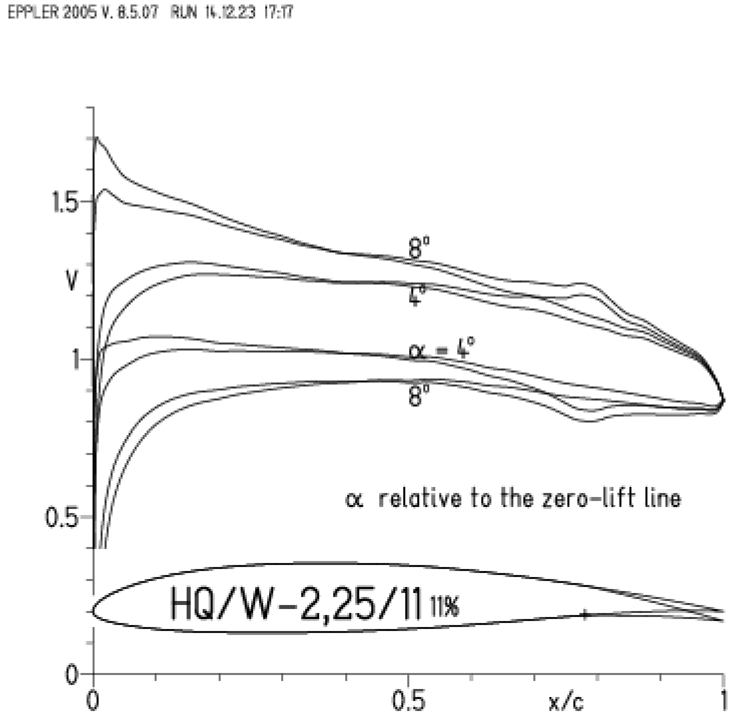


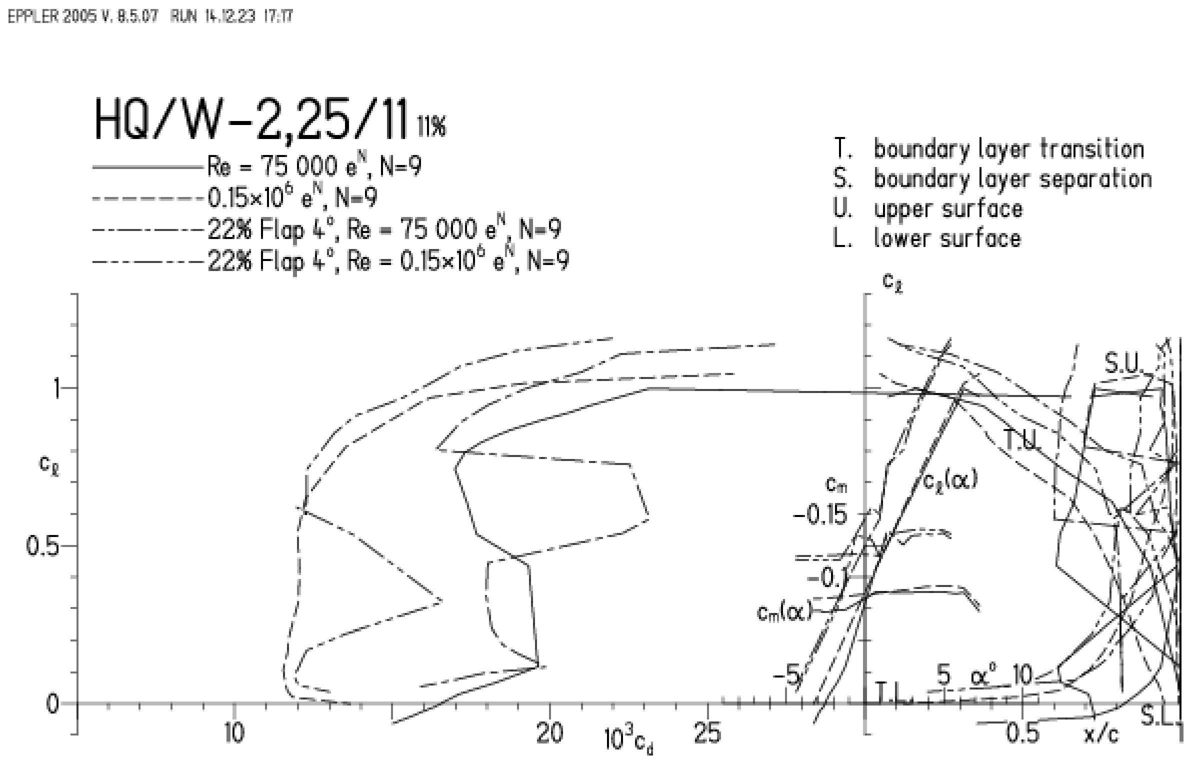
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





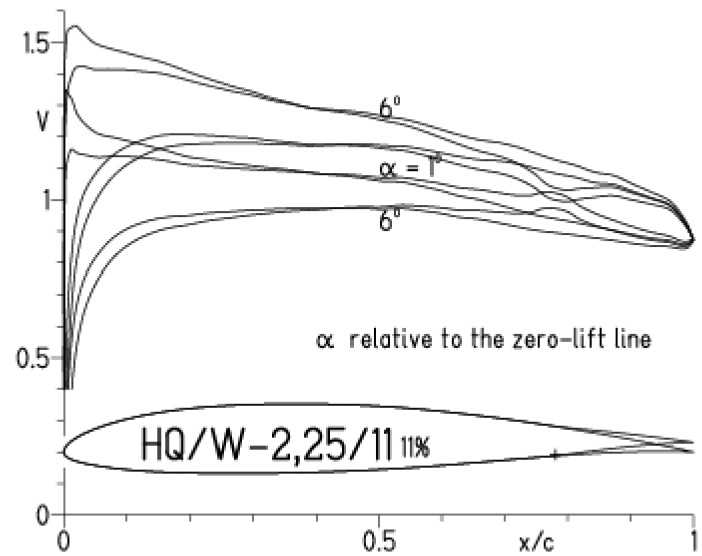
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



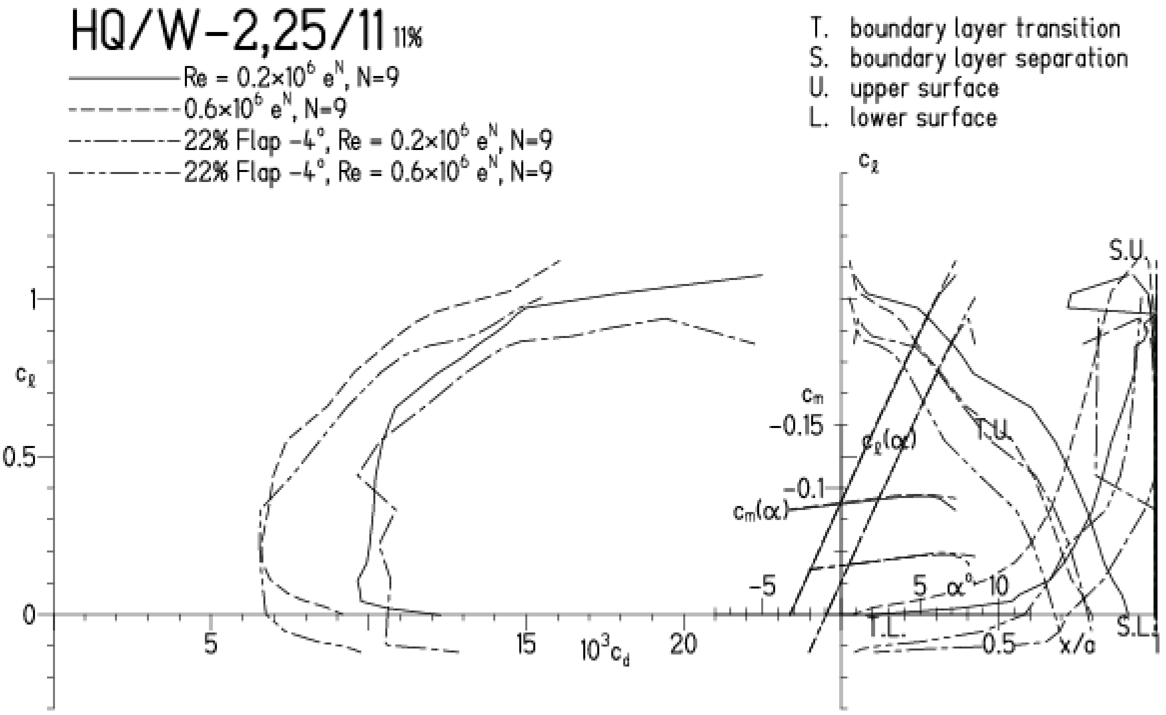


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

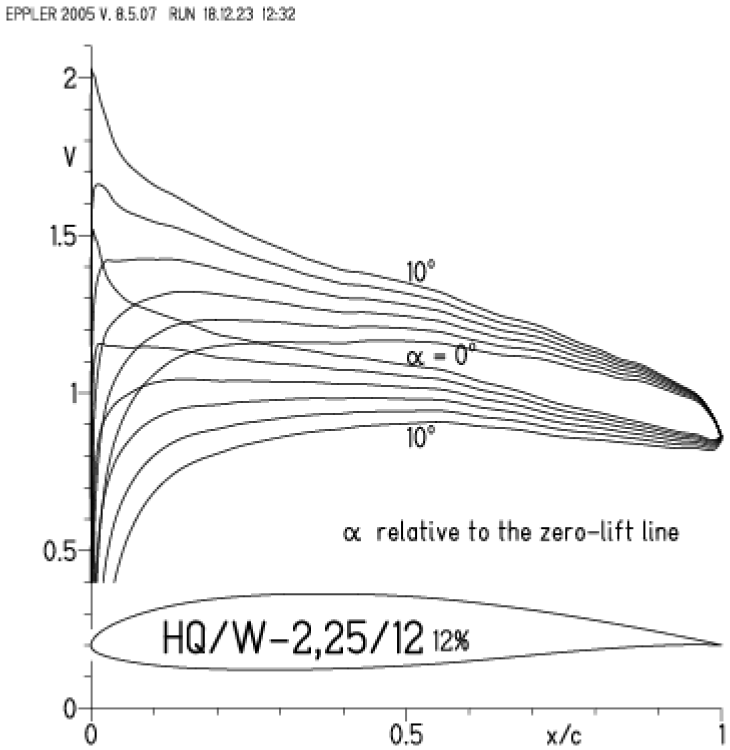
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

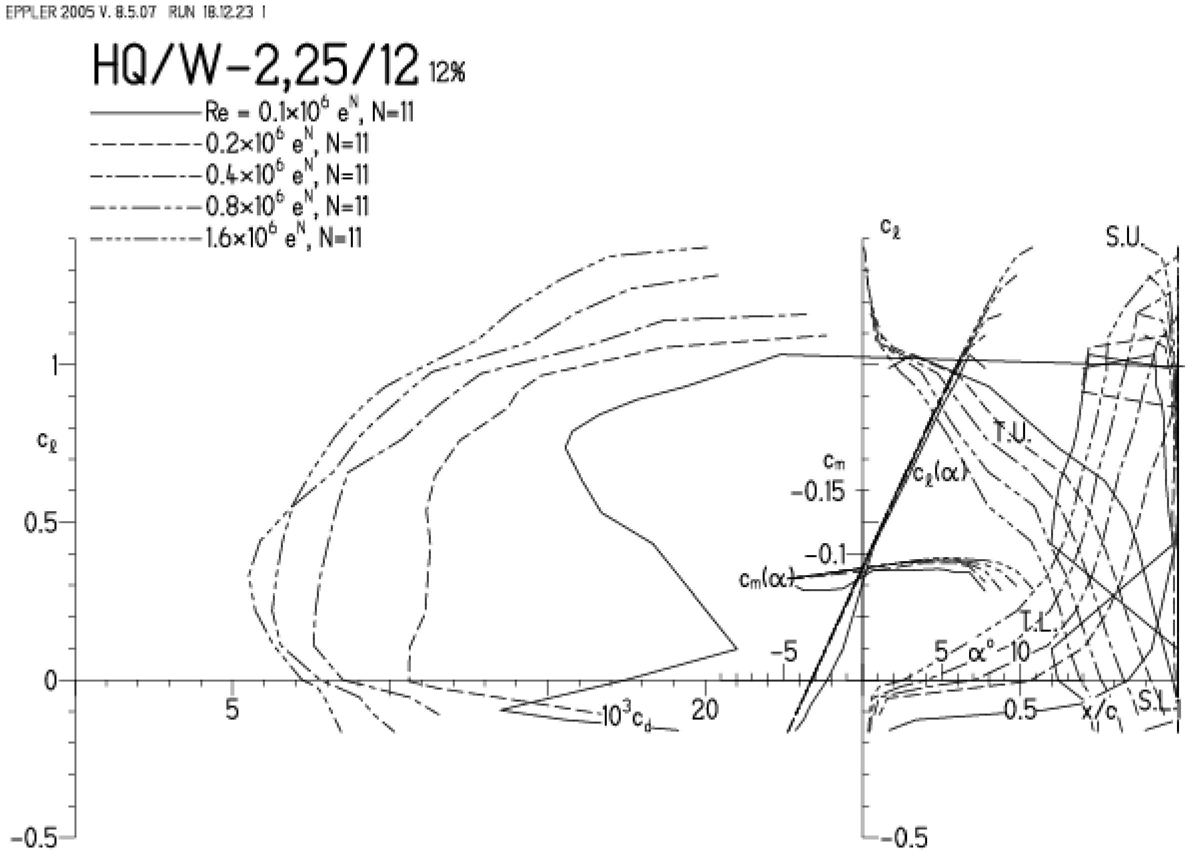


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



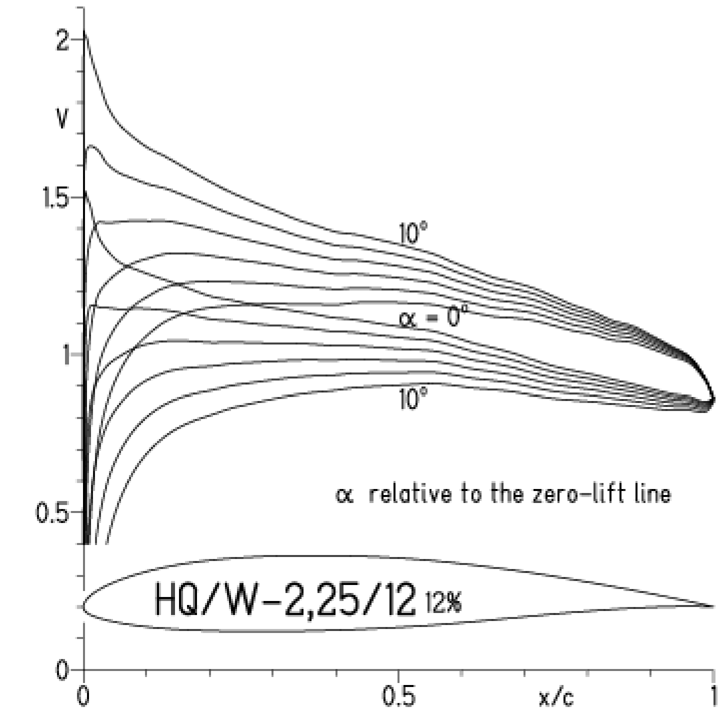
HQ/W-2,25/12, N=11



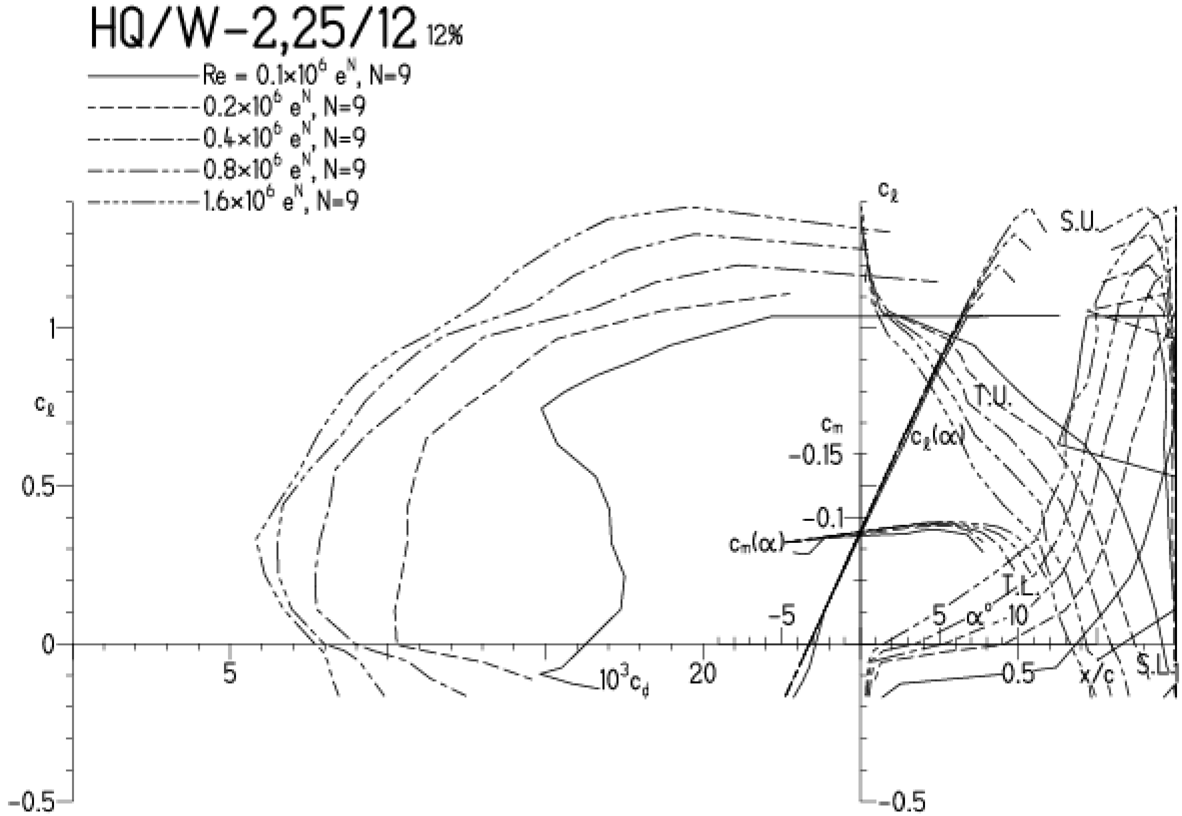


HQ/W-2,25/12, N=9

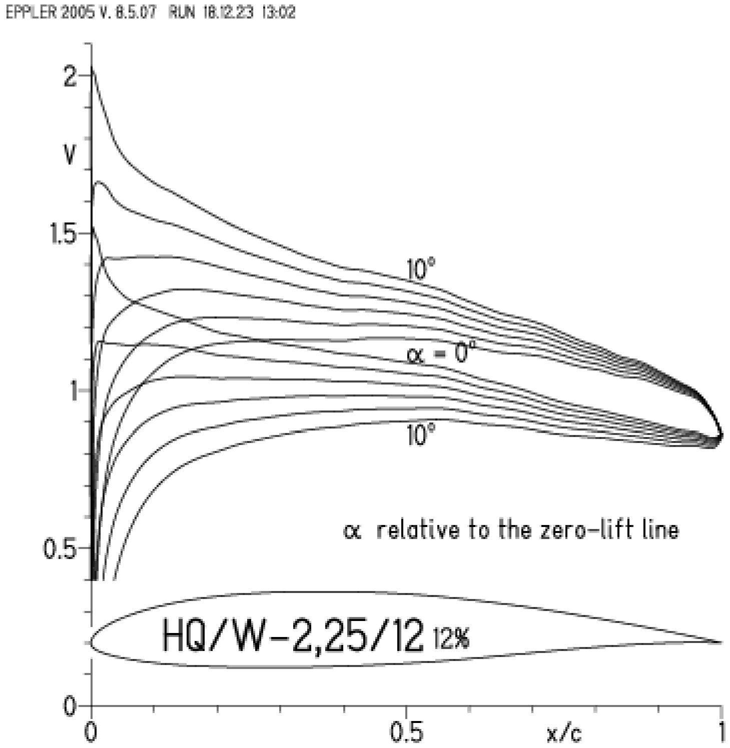
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

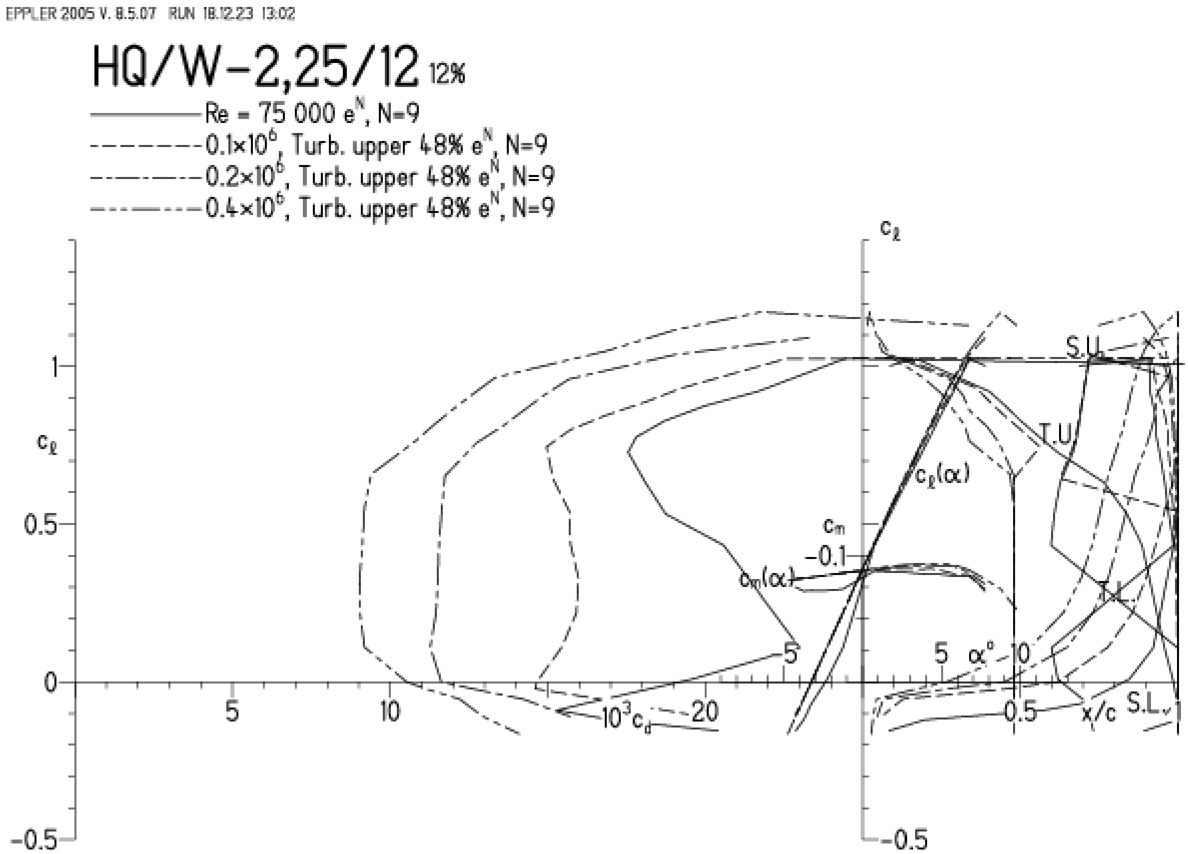


EPPLER 2005 V. 8.5



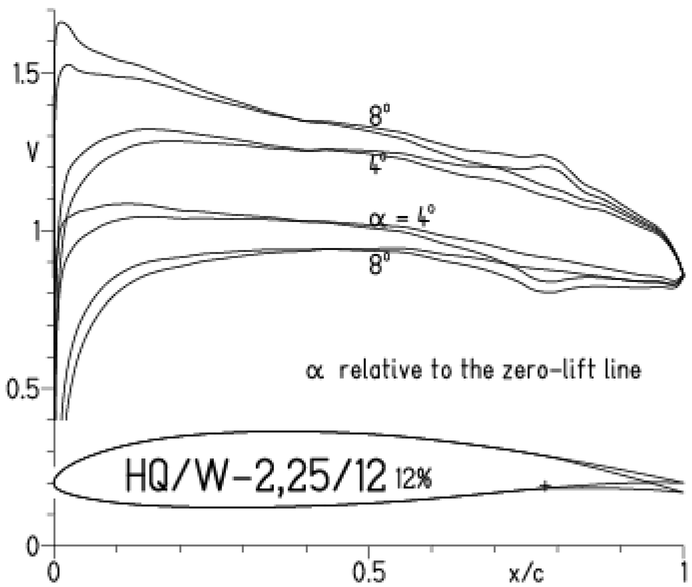
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



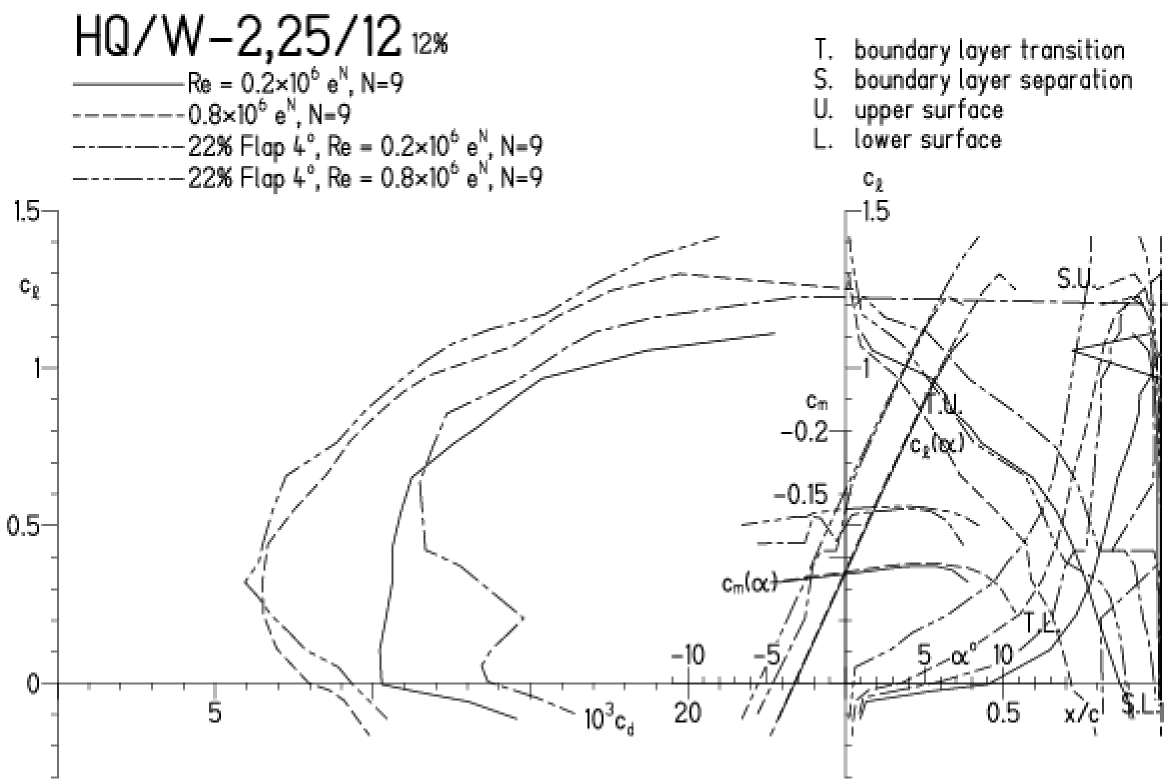


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

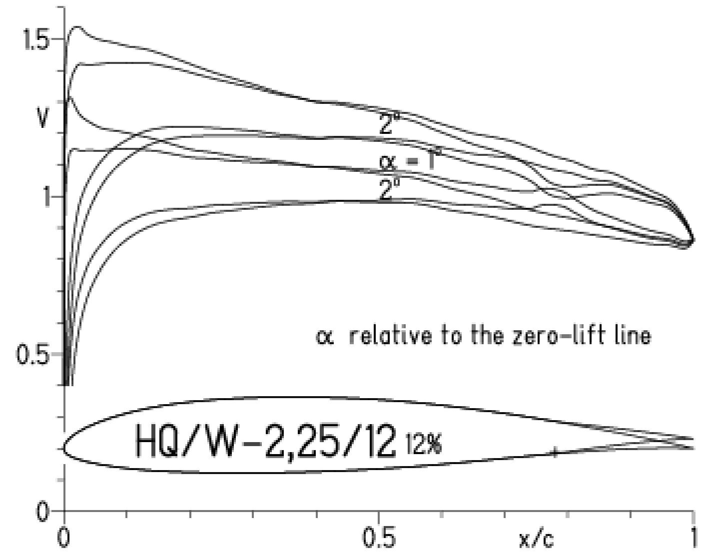


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

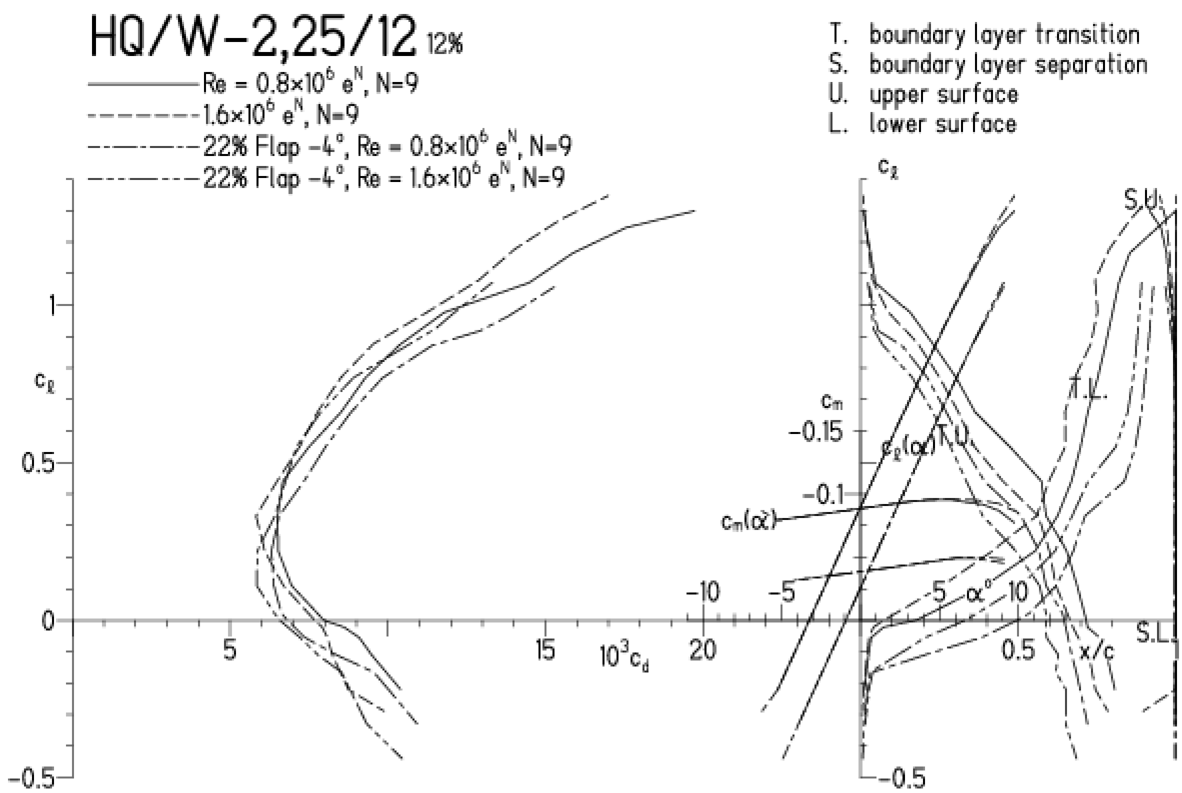


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

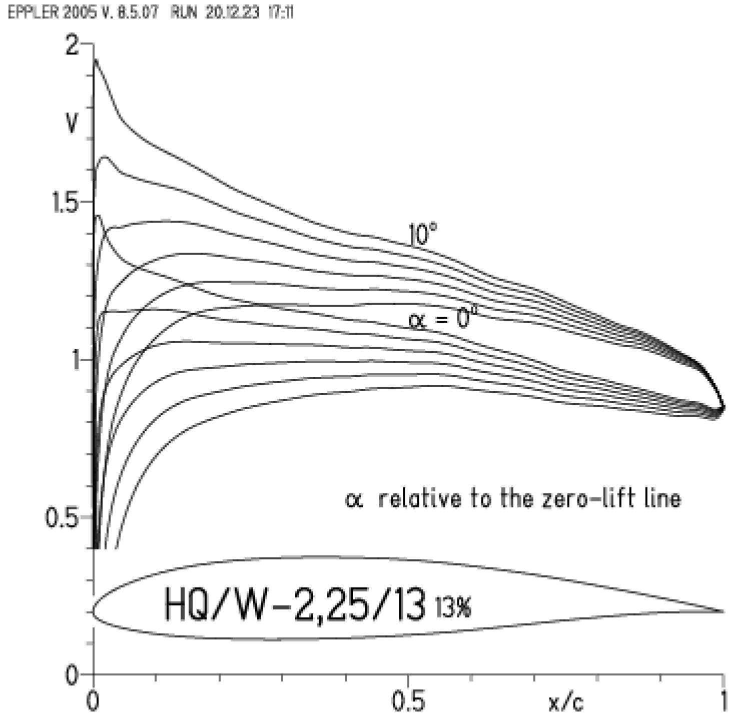
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

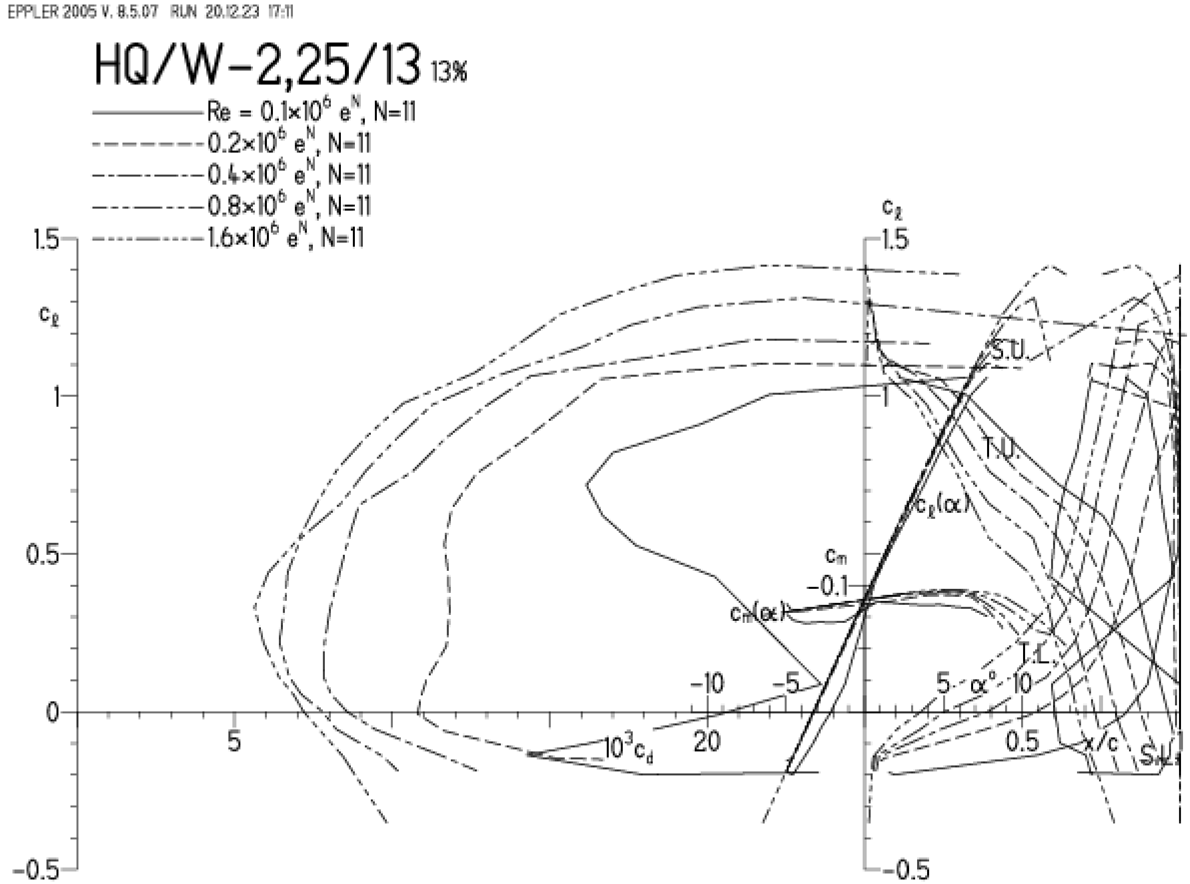


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

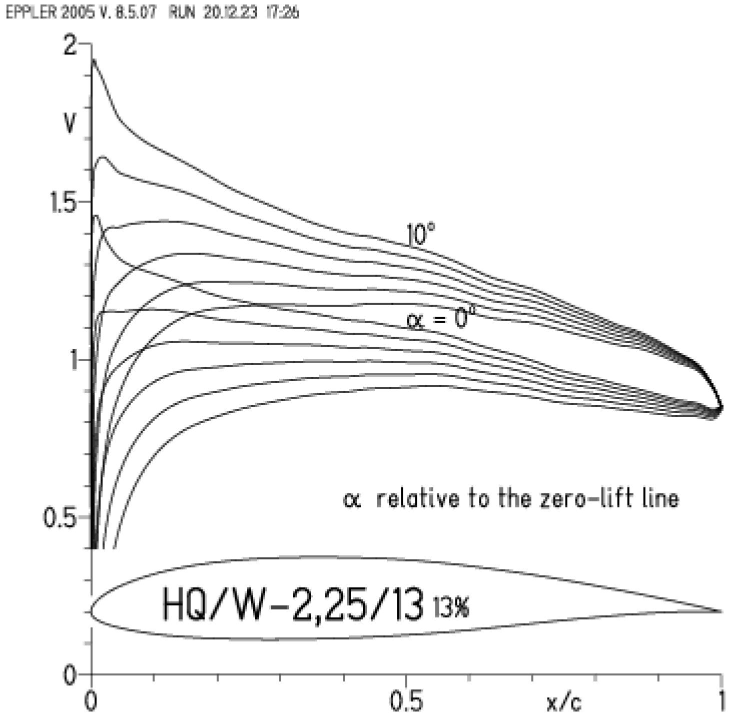


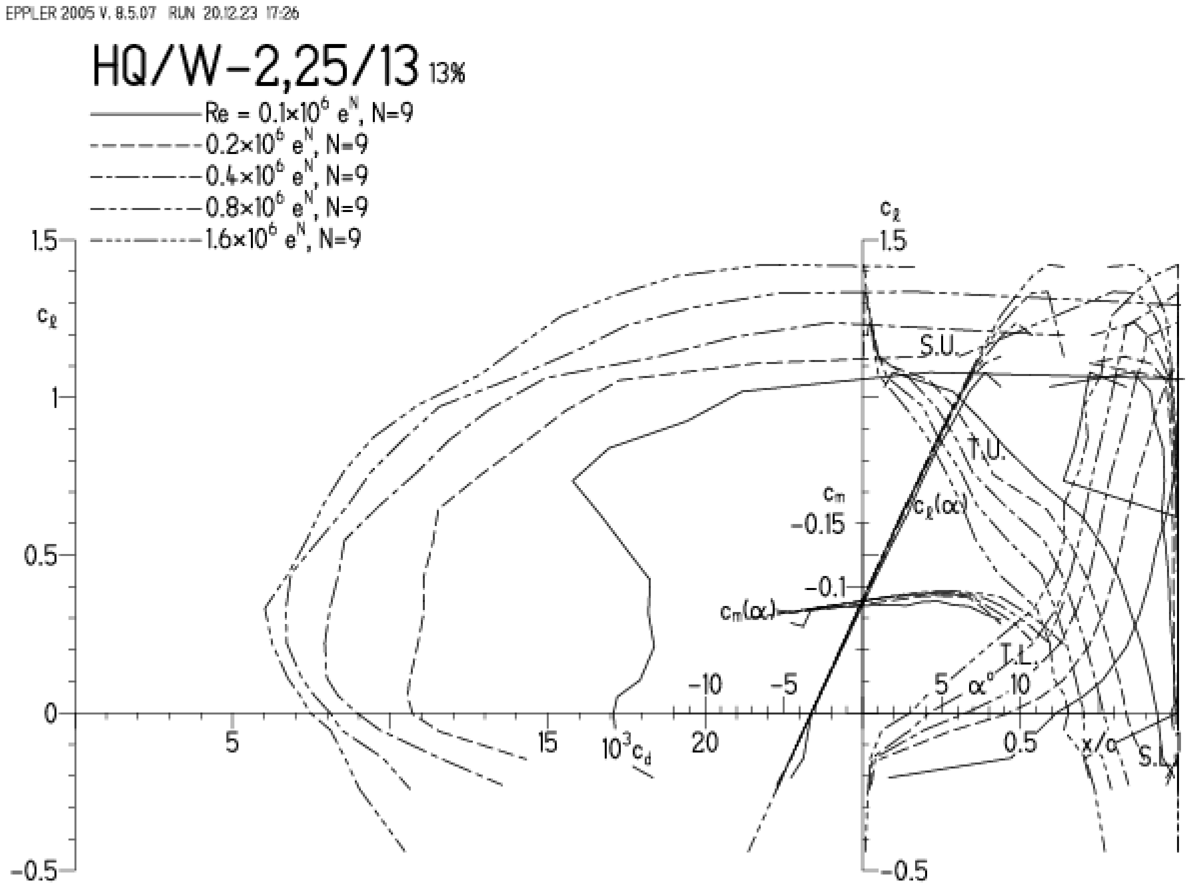
<u>HQ/W-2,25/13</u>, N=11



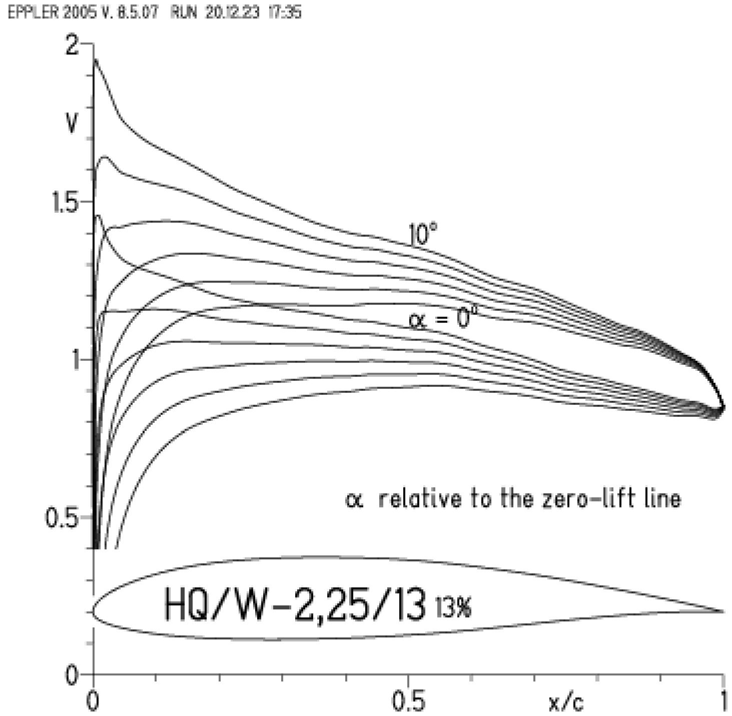


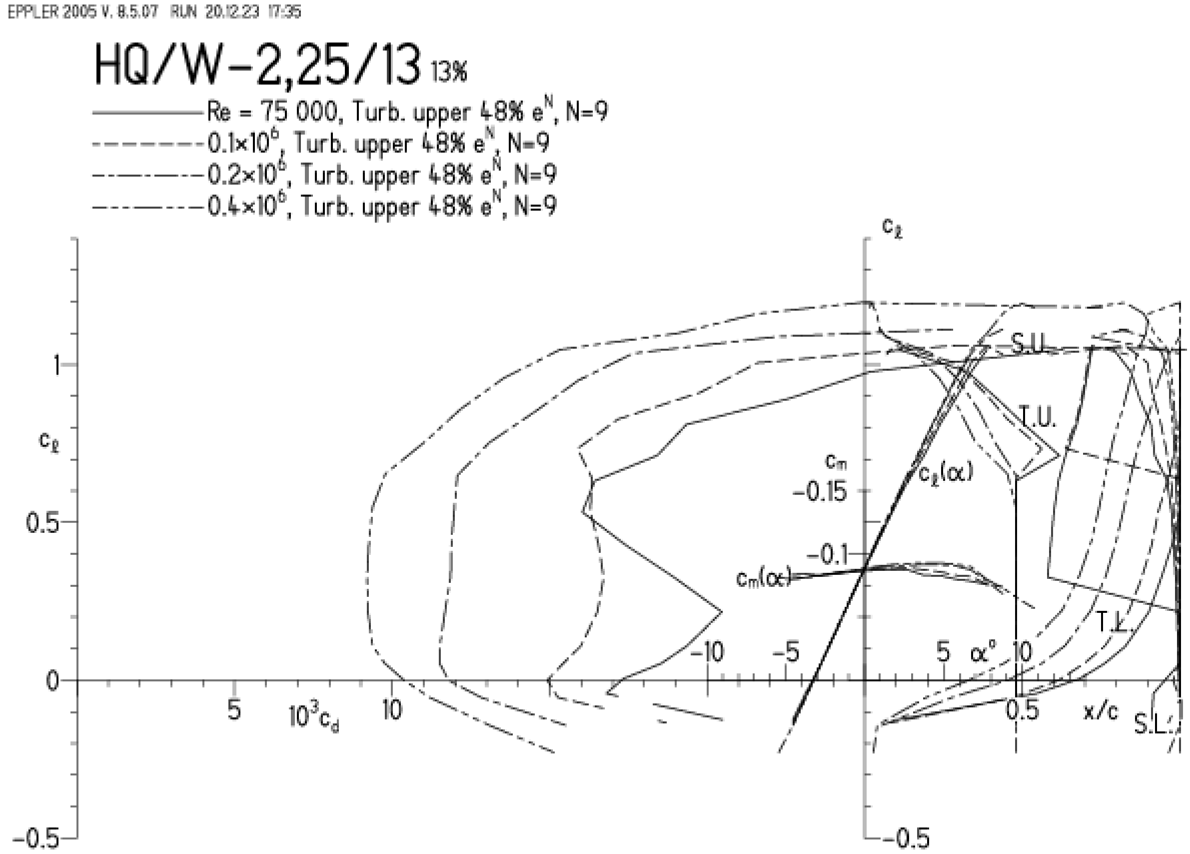
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
α relative to the zero-lift line
0.5
HQ/W-2,25/13 13%
0
0
0.5
x/c
1

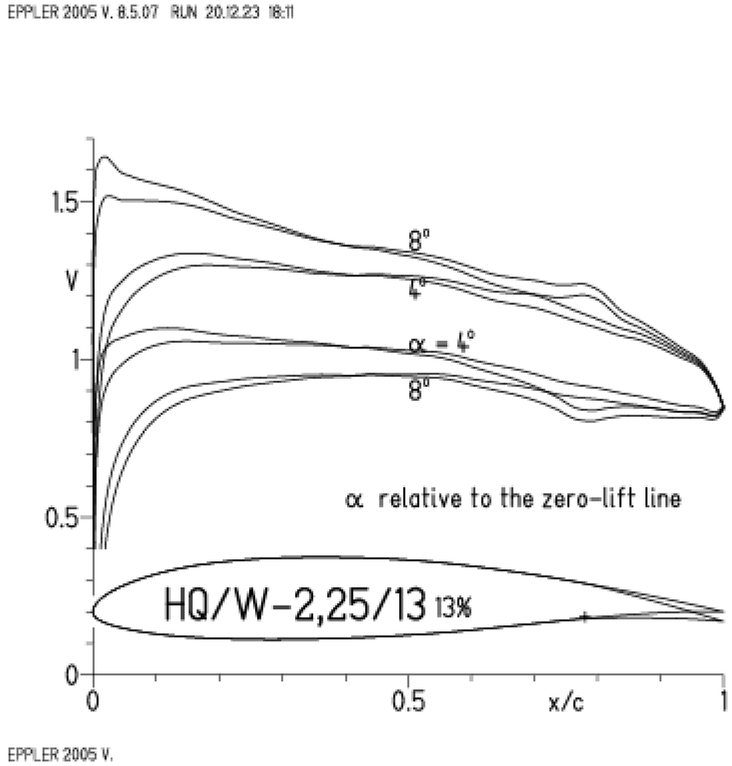

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
cℓ
1
0.5
0
−0.5
5
15
10³cd
20
−10
−5
5
α°
10
0.5
x/c
S.U.
T.U.
cℓ(α)
cm
−0.15
−0.1
cm(α)
T.L.
S.L.
1.5
−0.5

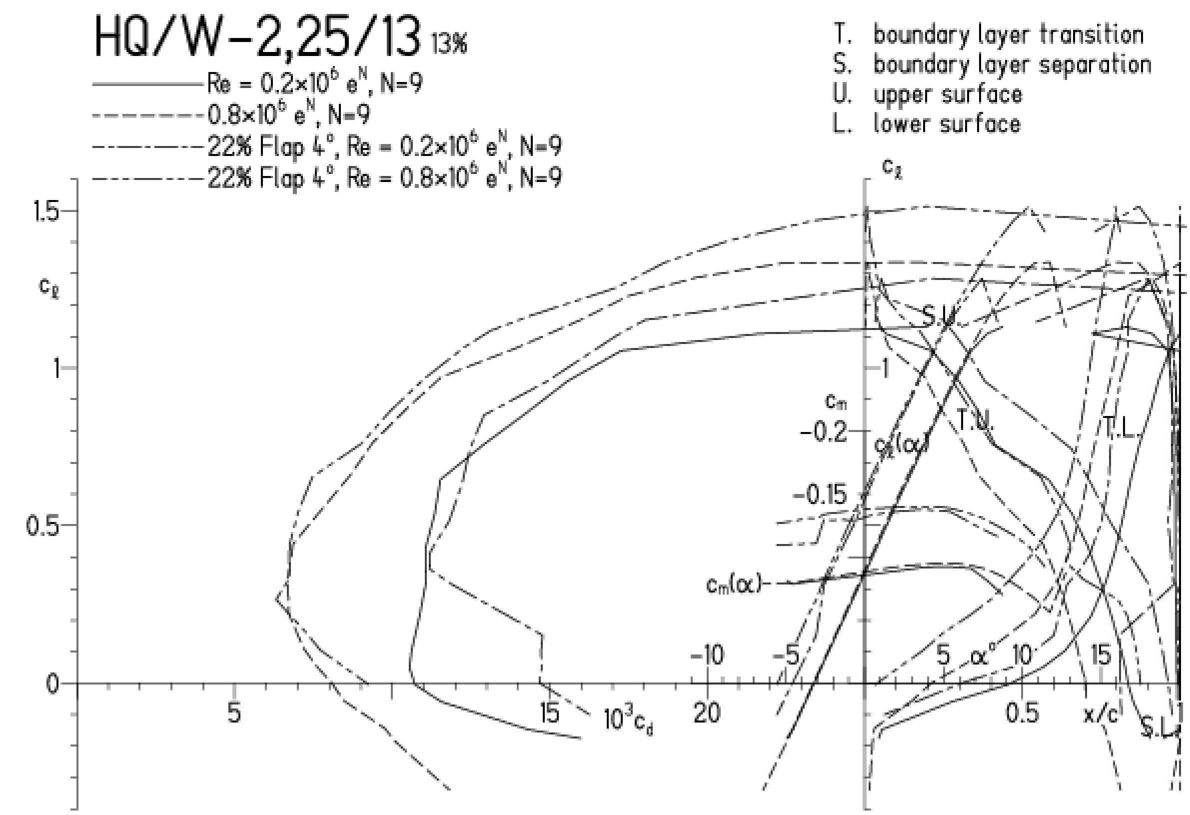
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





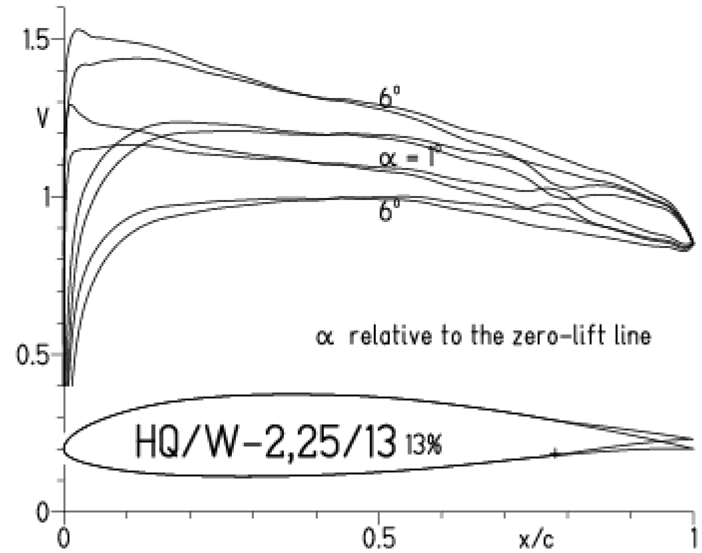
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



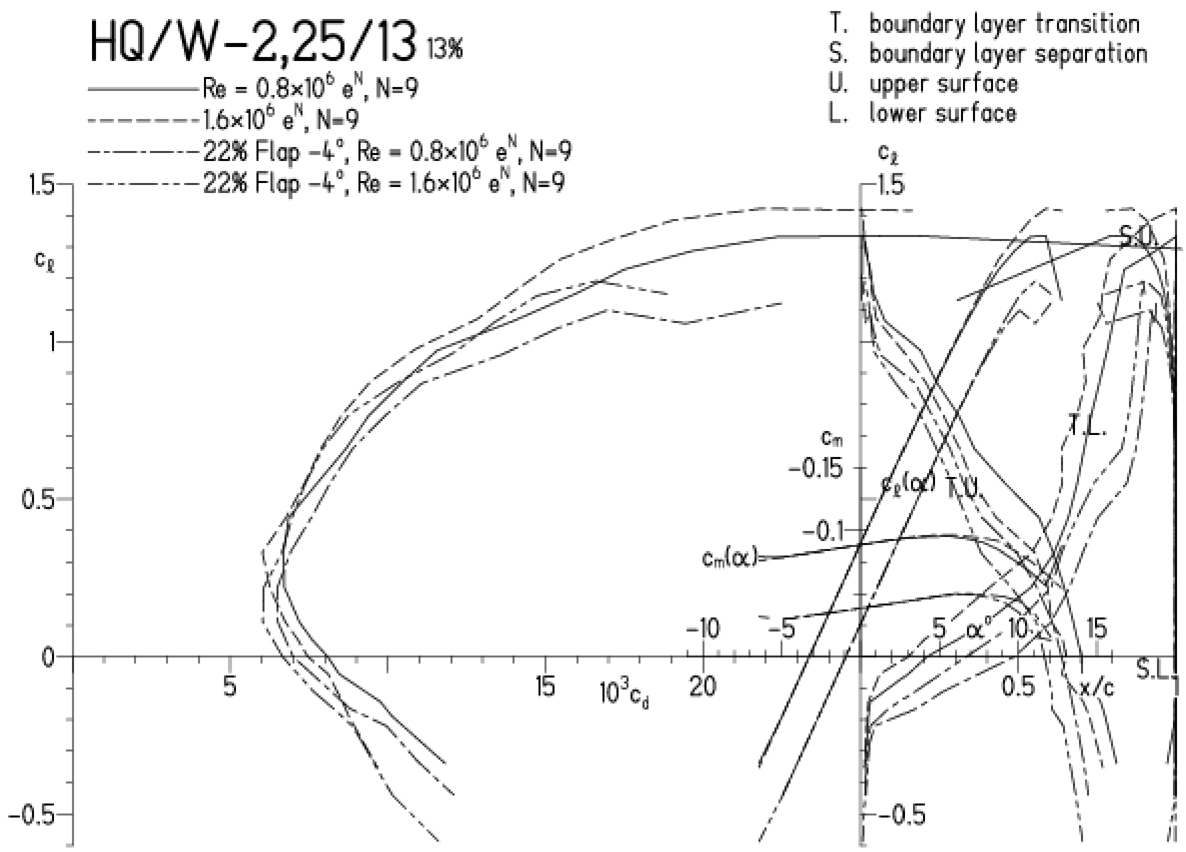


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

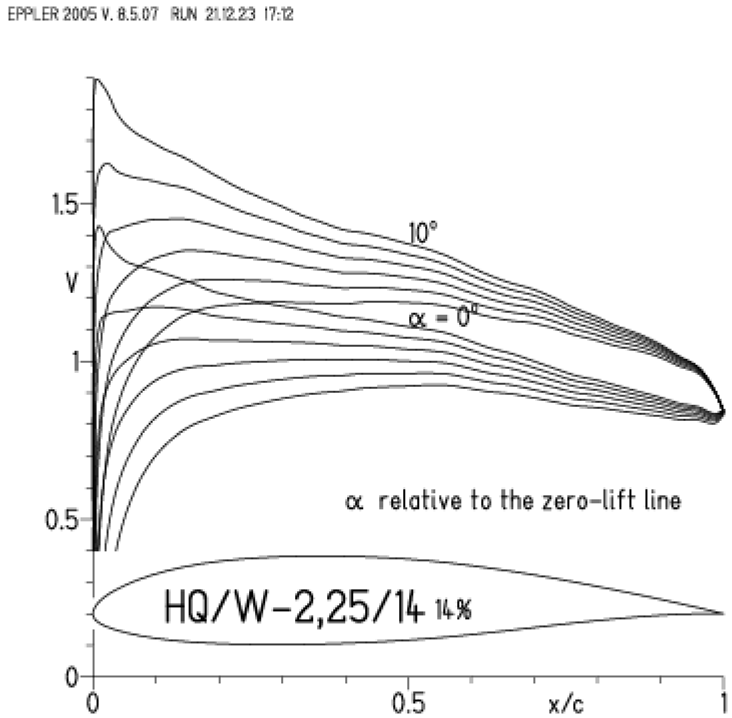
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

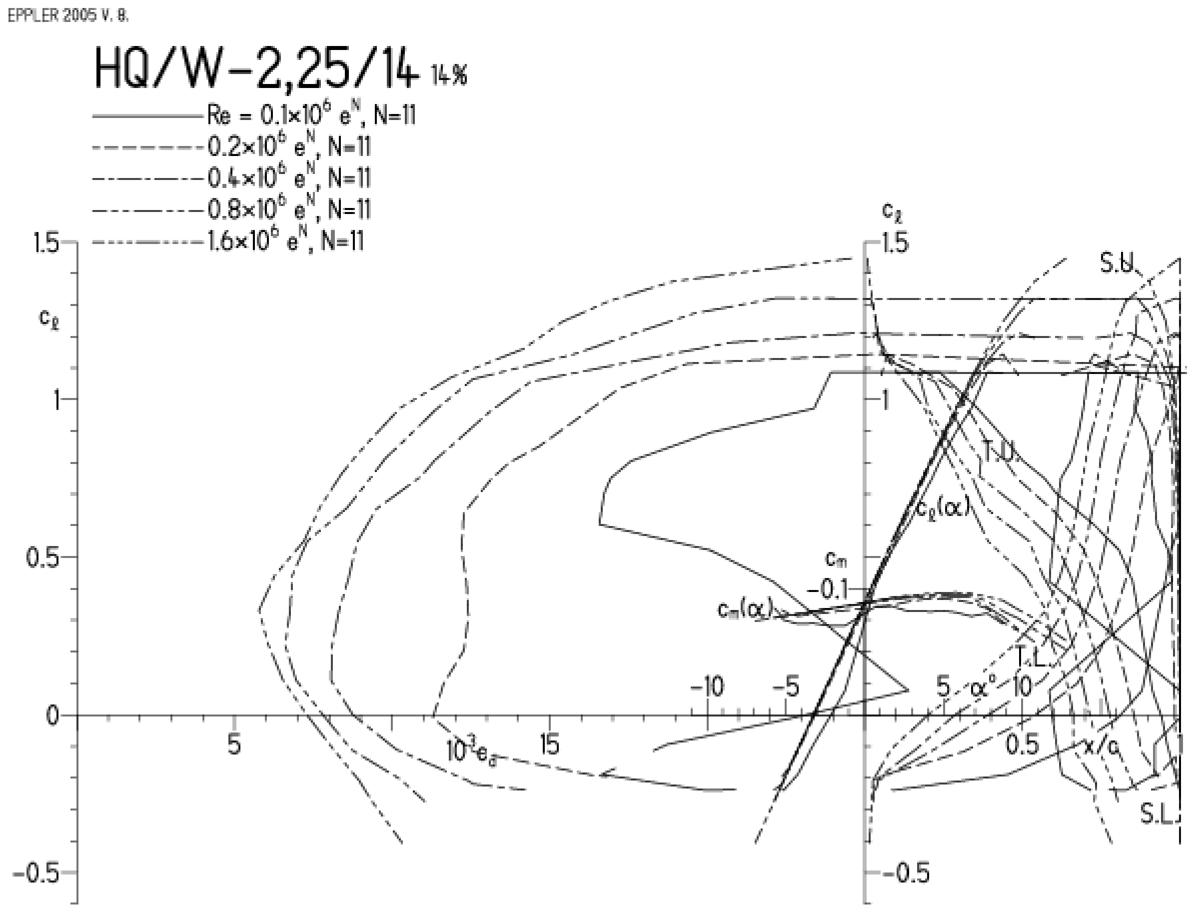


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

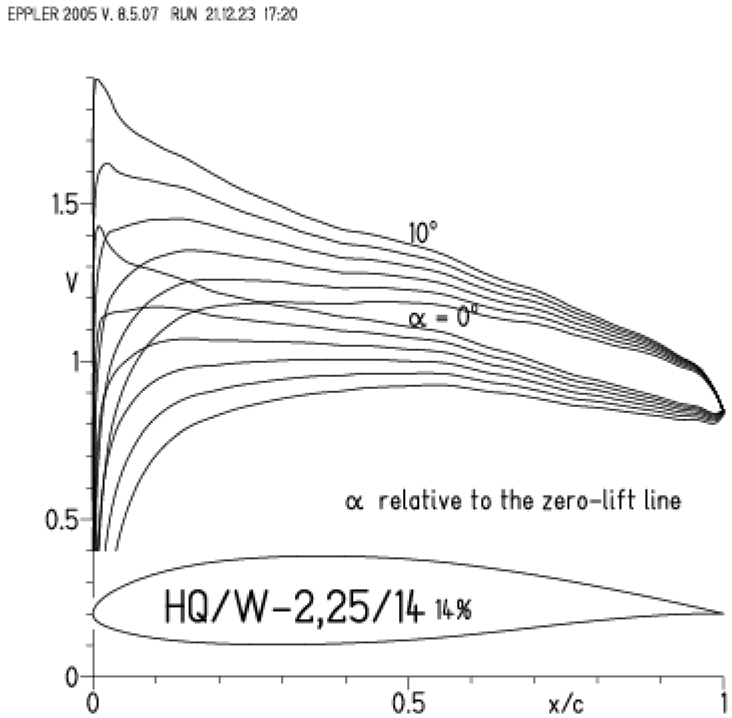


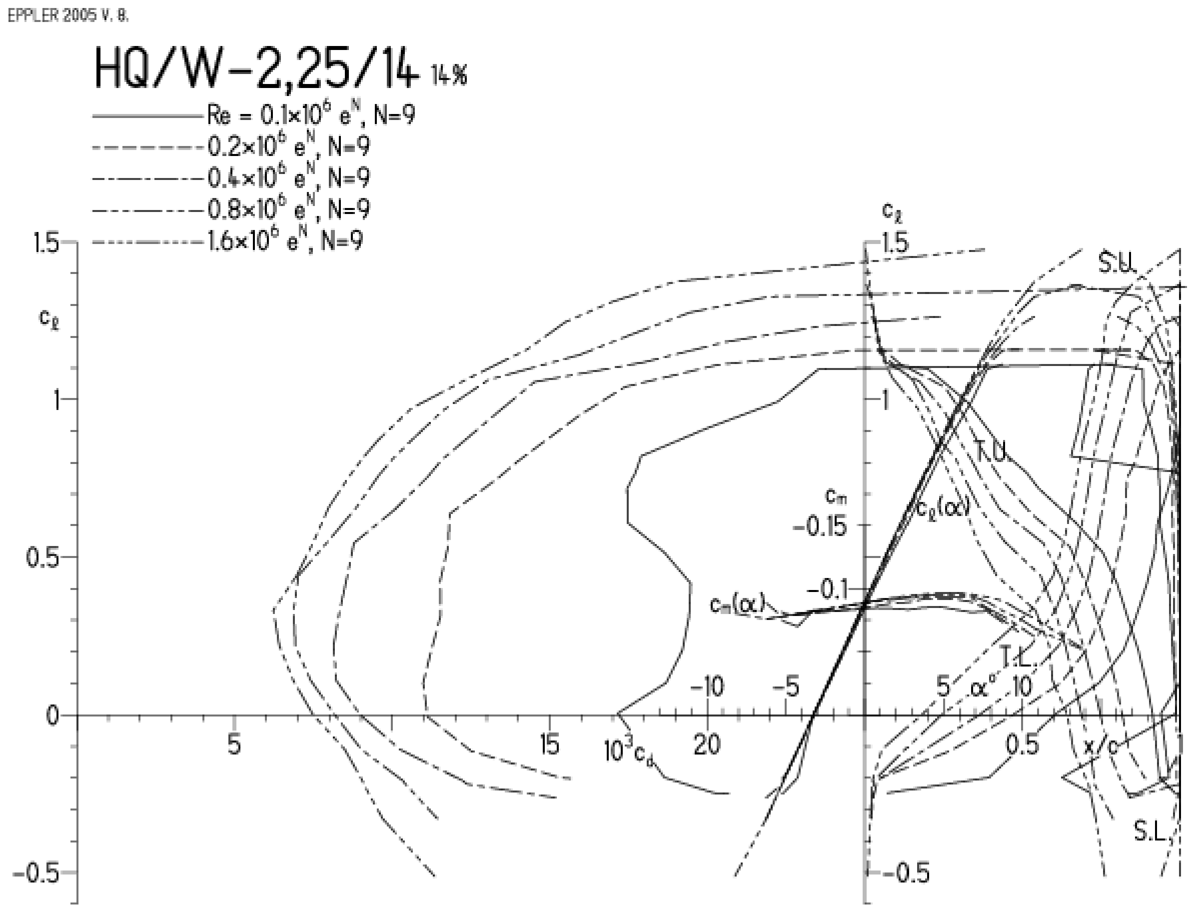
HQ/W-2,25/14, N=11



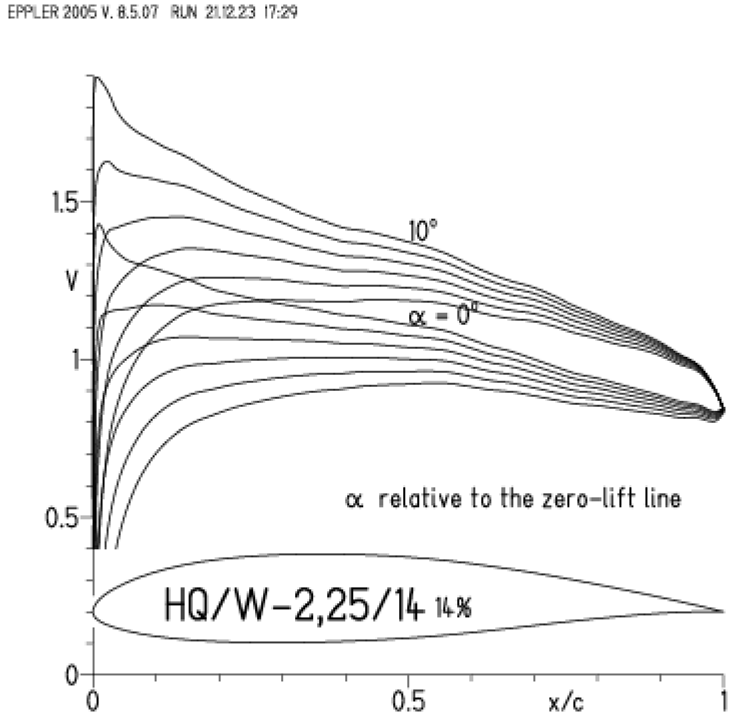


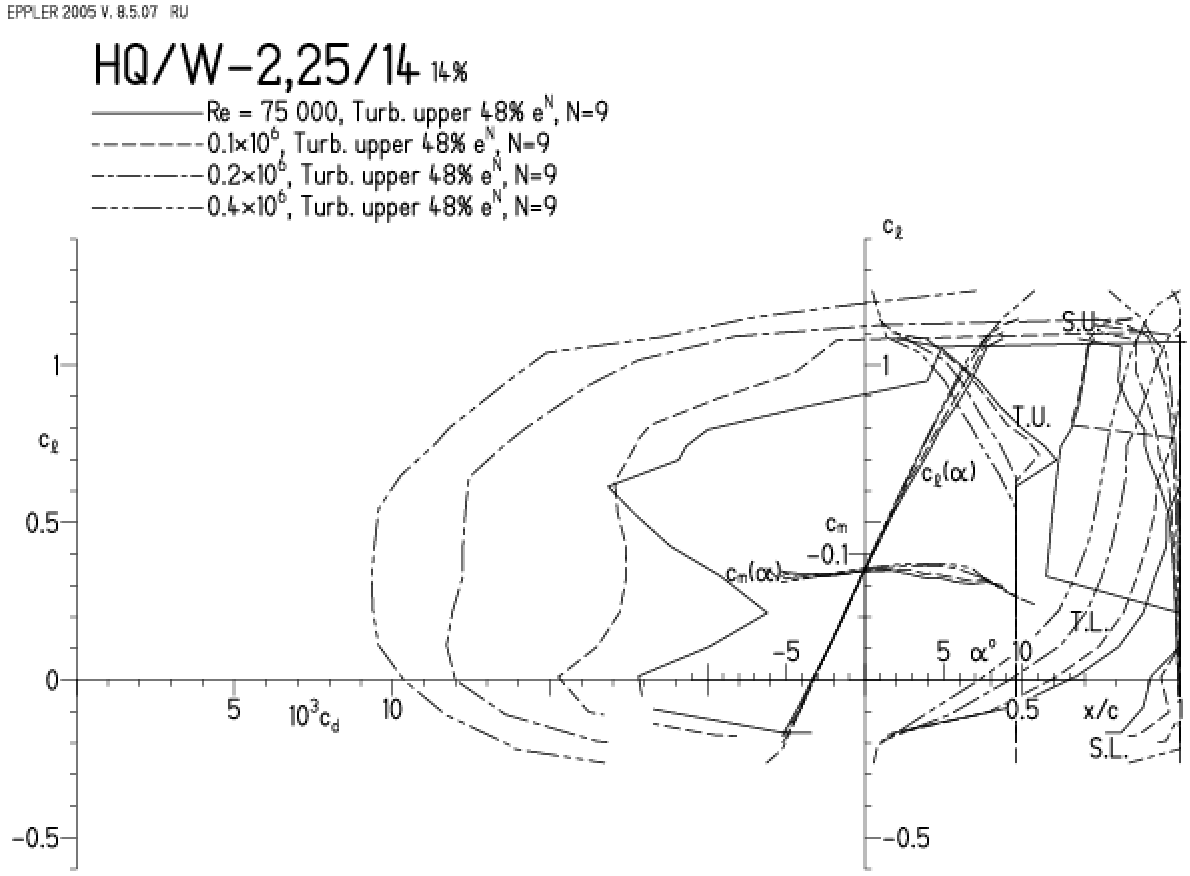
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
10^3 c_d
α°
x/c
S.U.
T.U.
T.L.
S.L.

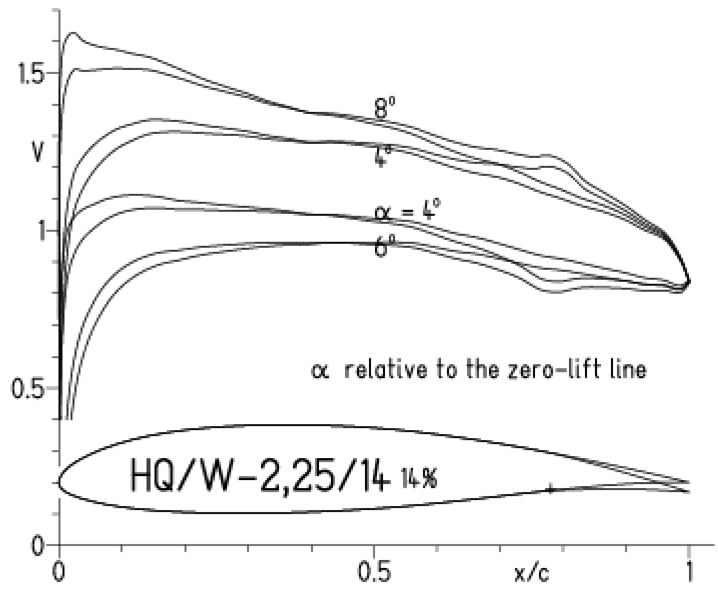
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



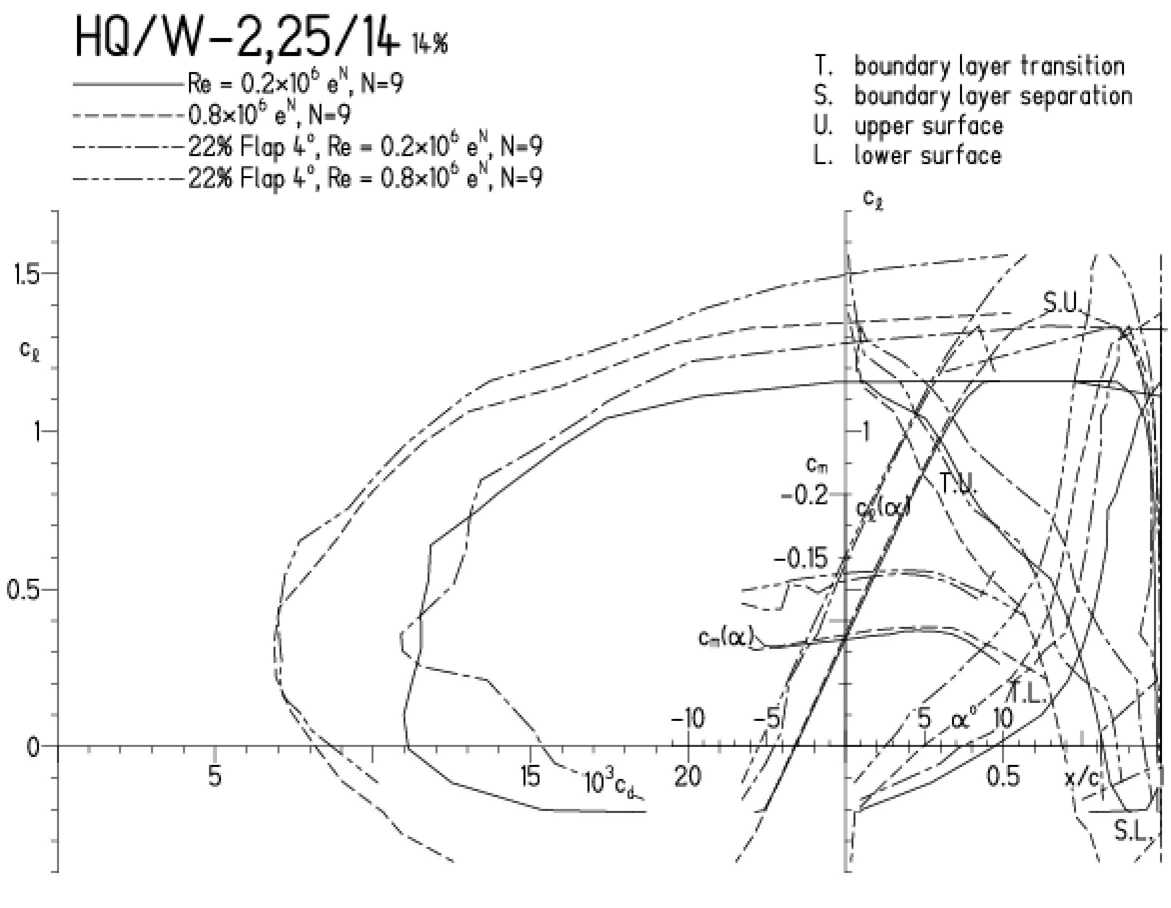


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

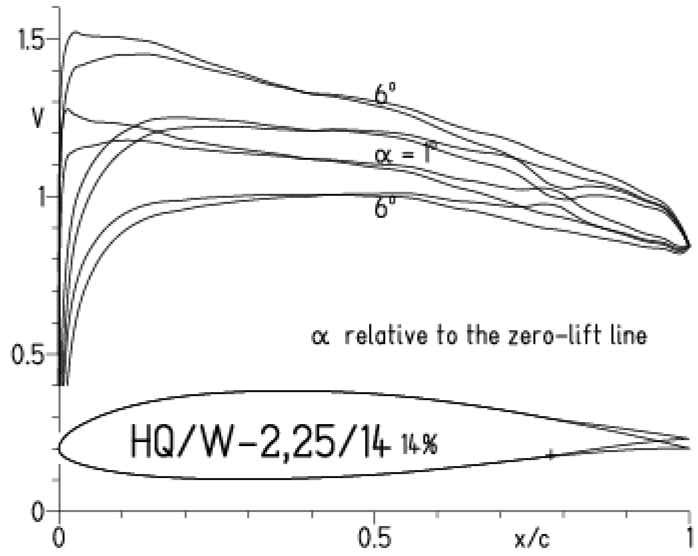


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

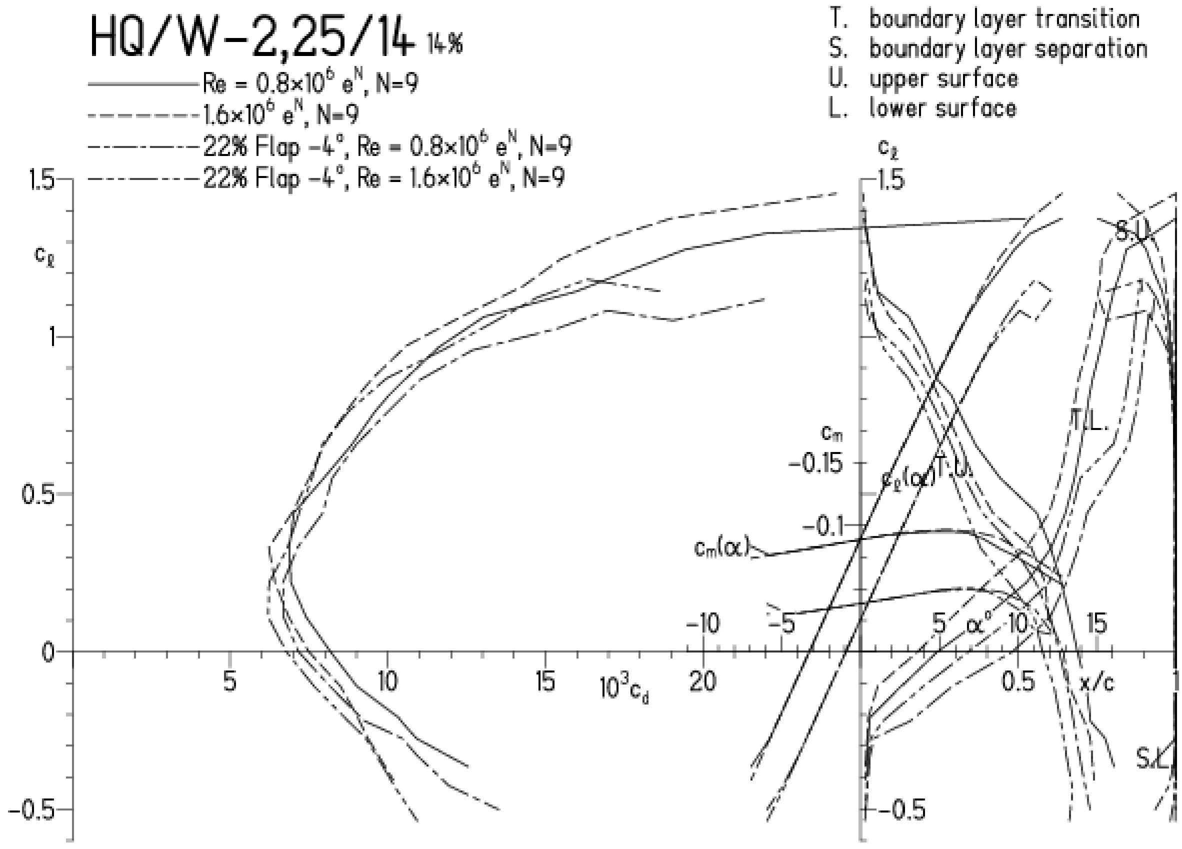


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

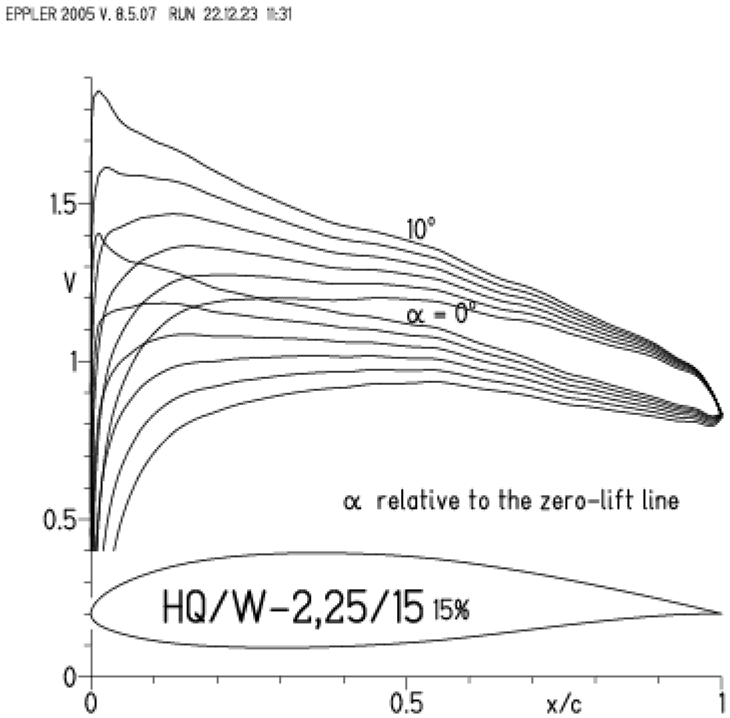
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

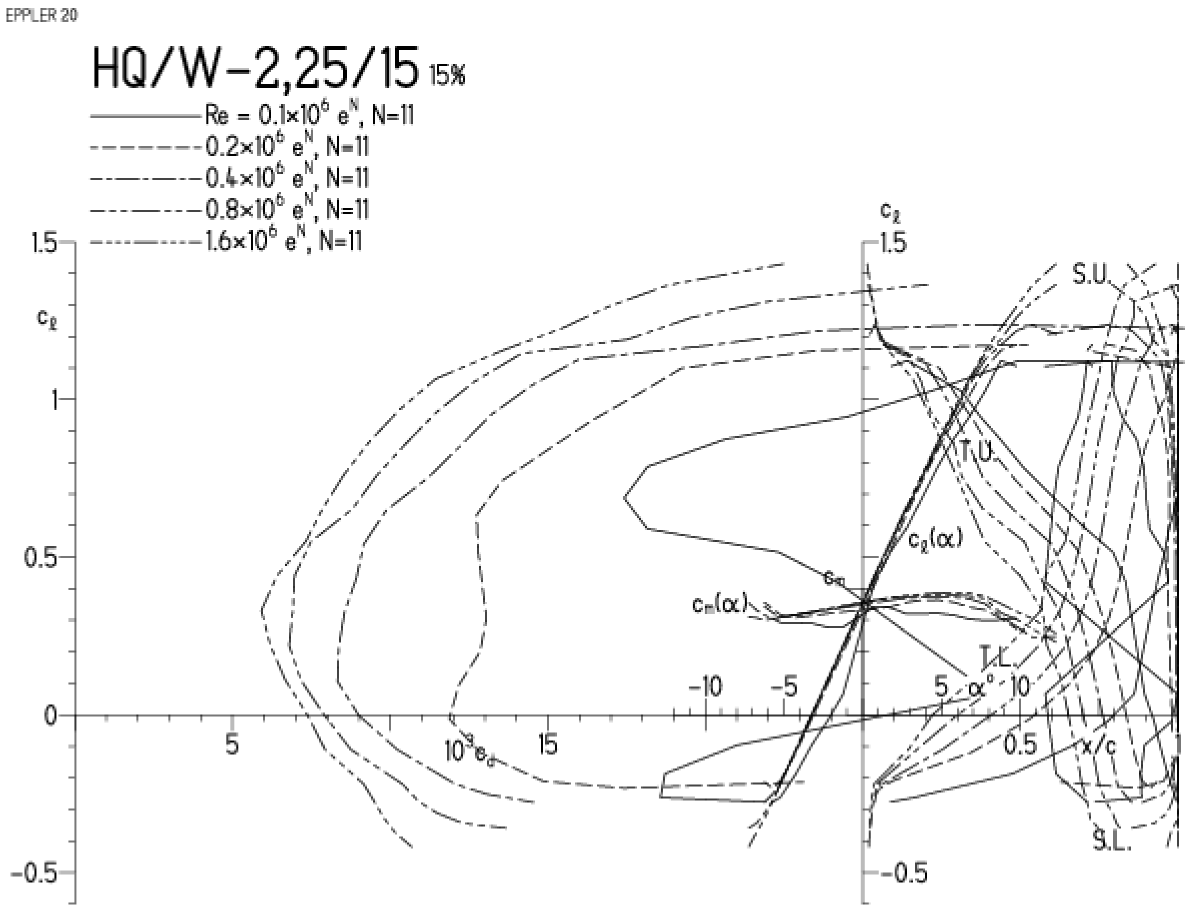


EPPLER 2005 V. 8.5.07



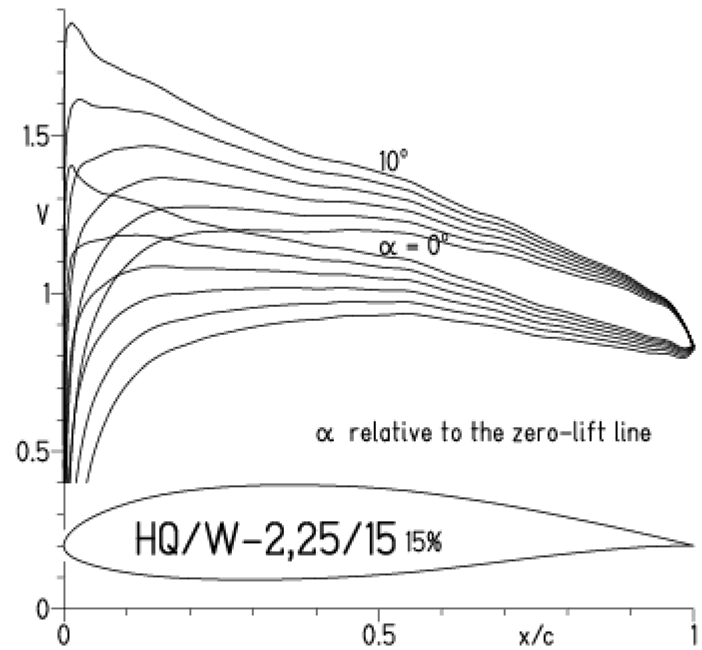
<u>HQ/W-2,25/15</u>, N=11



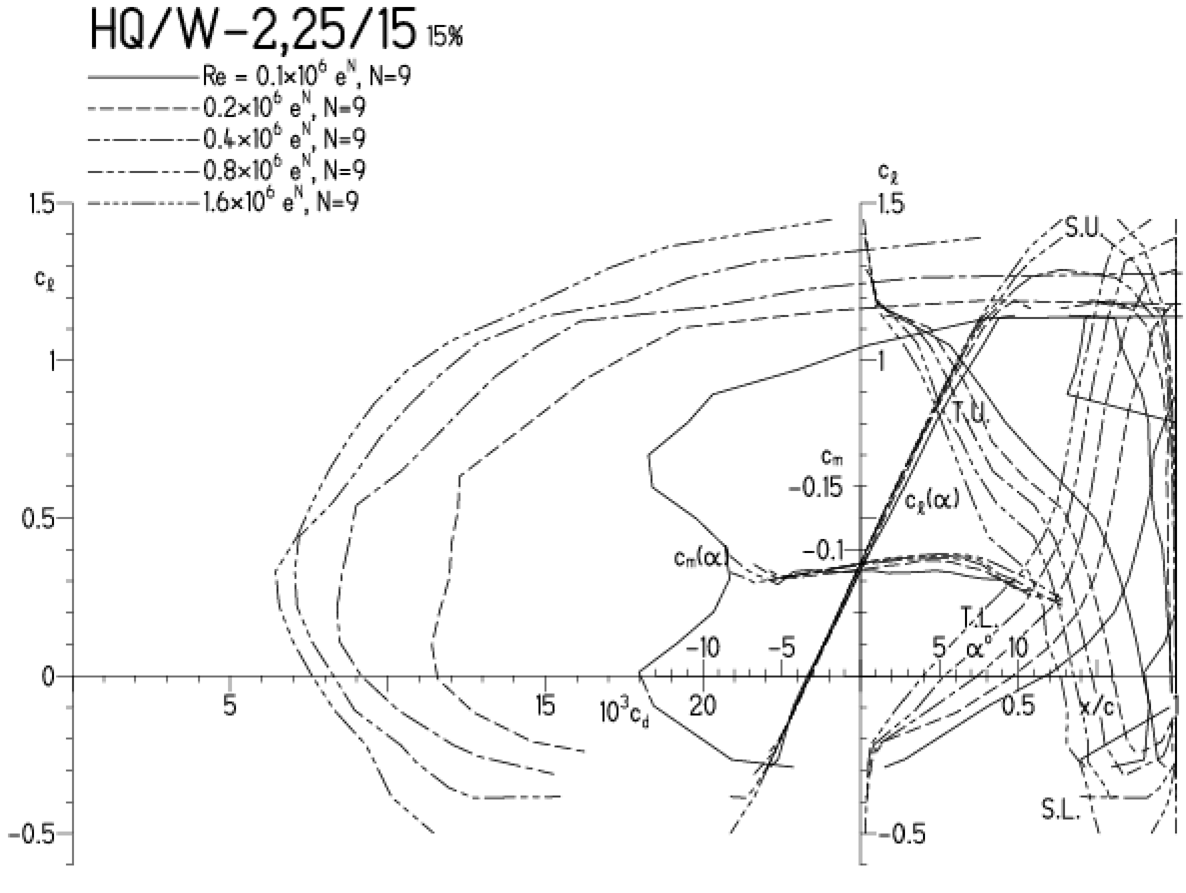


HQ/W-2,25/15, N=9

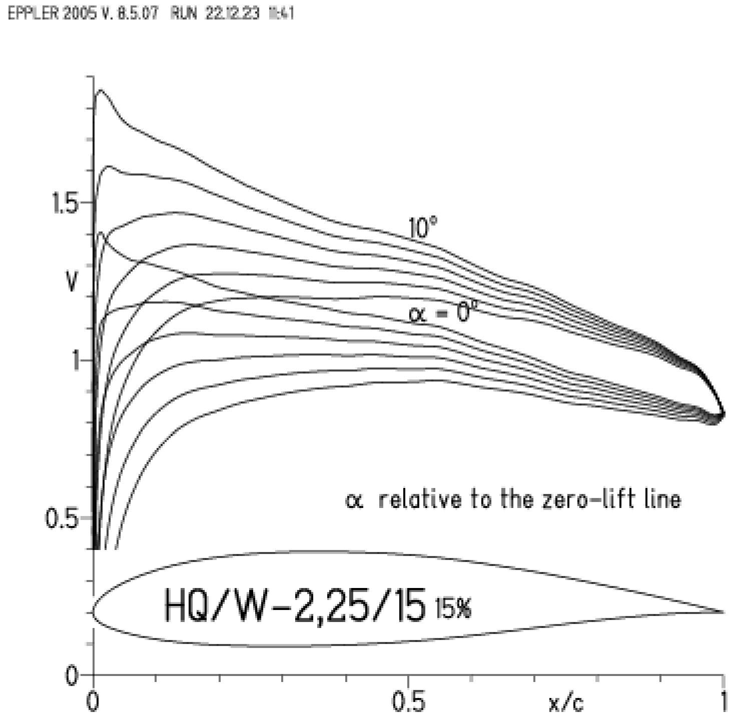
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

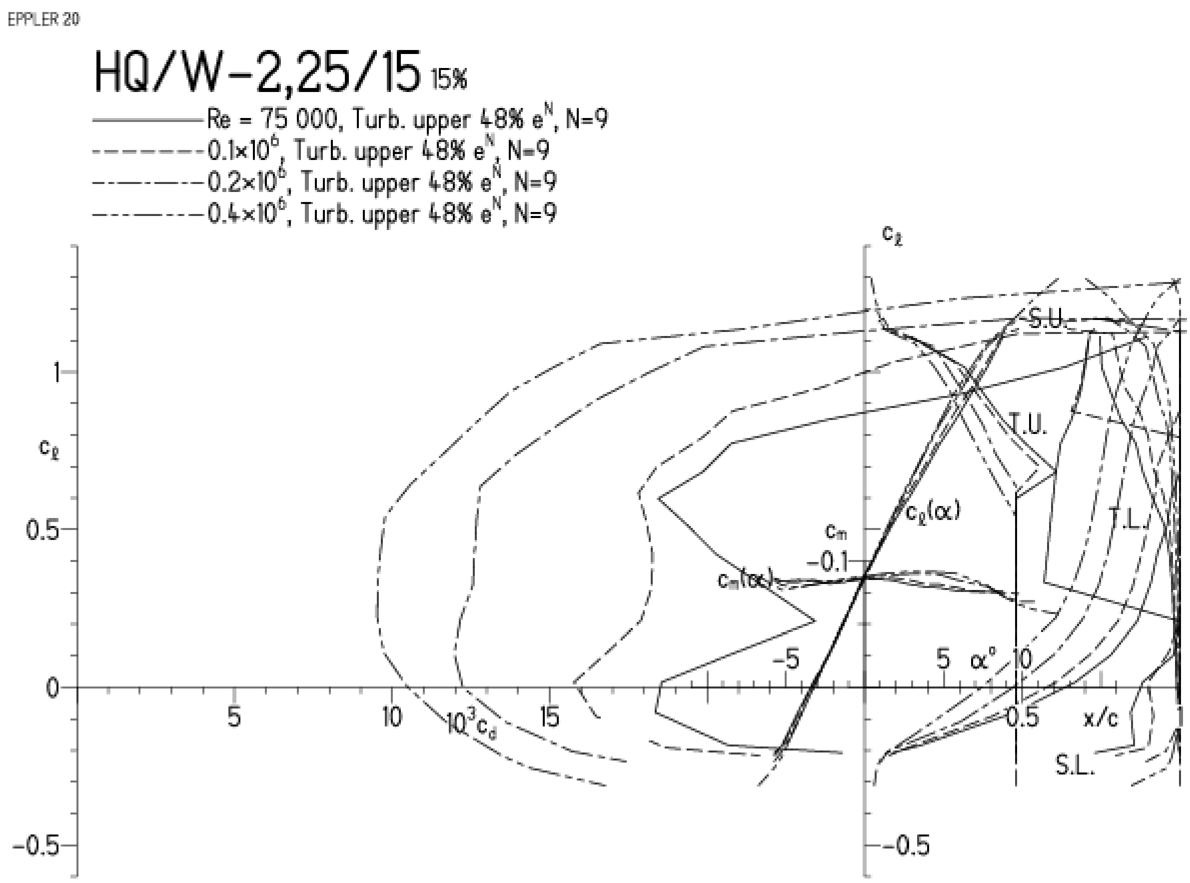


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



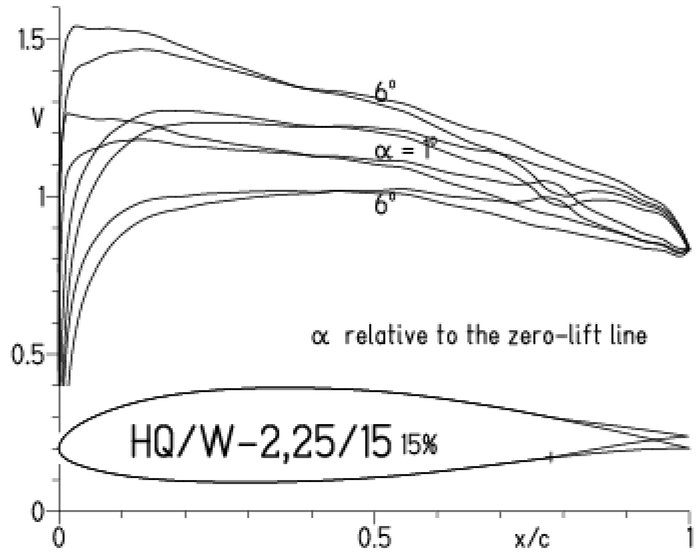


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

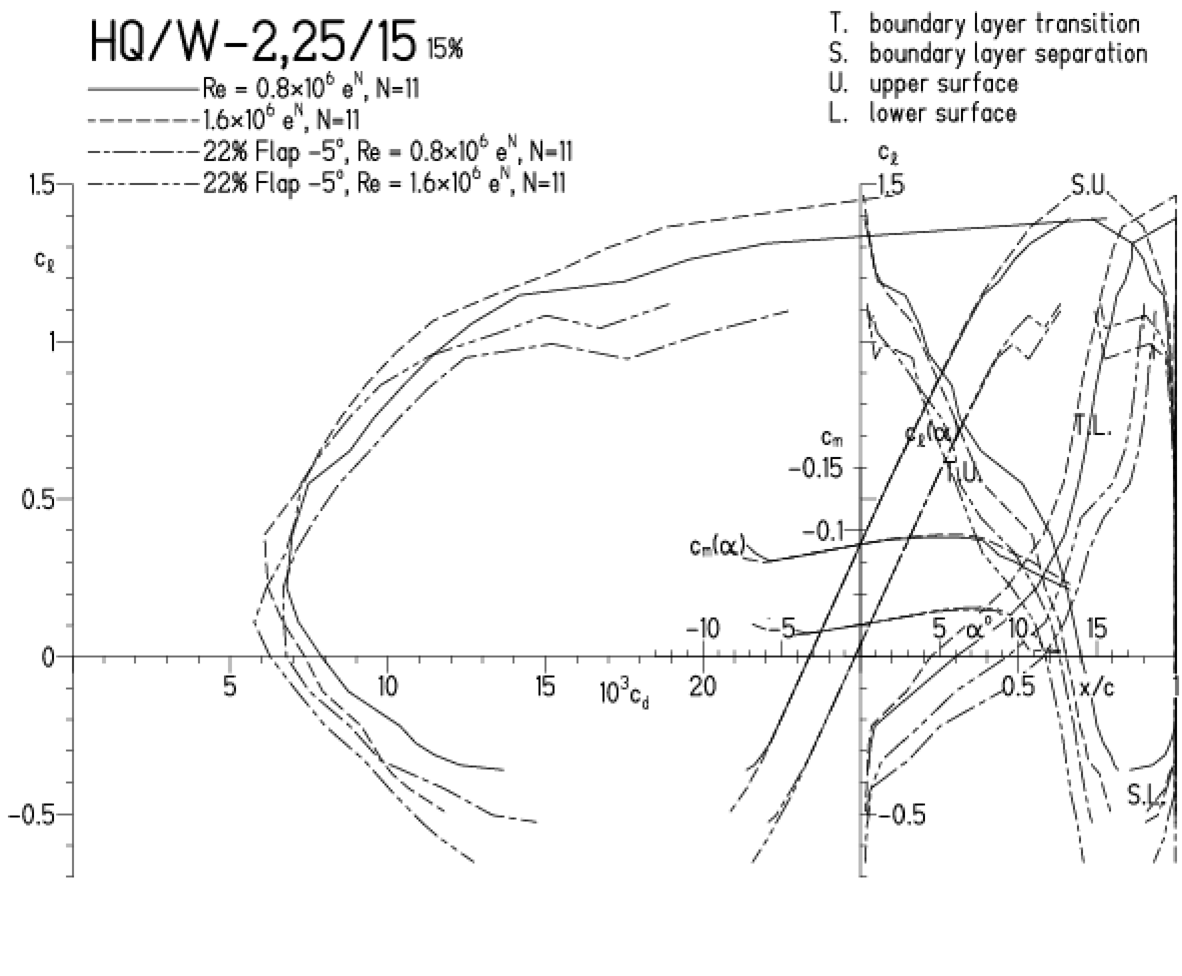
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

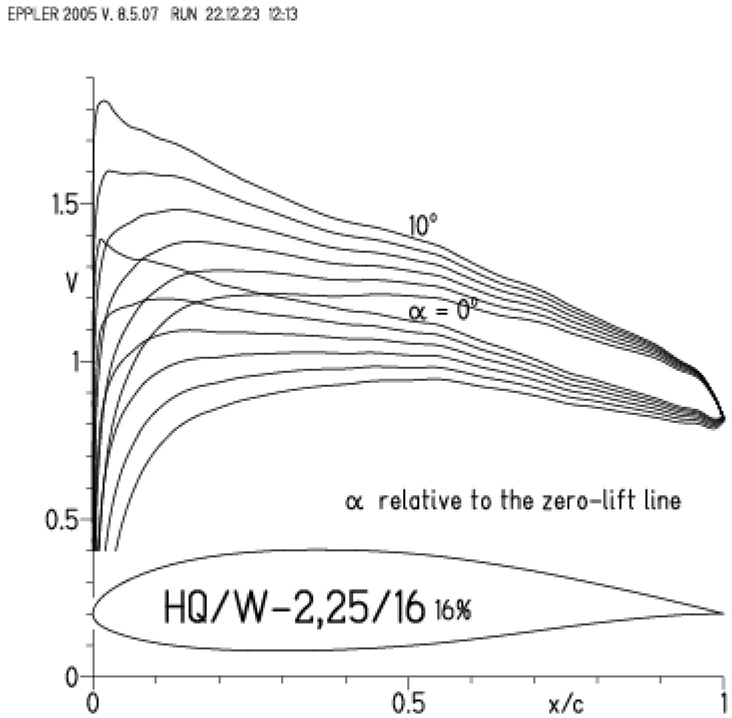
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

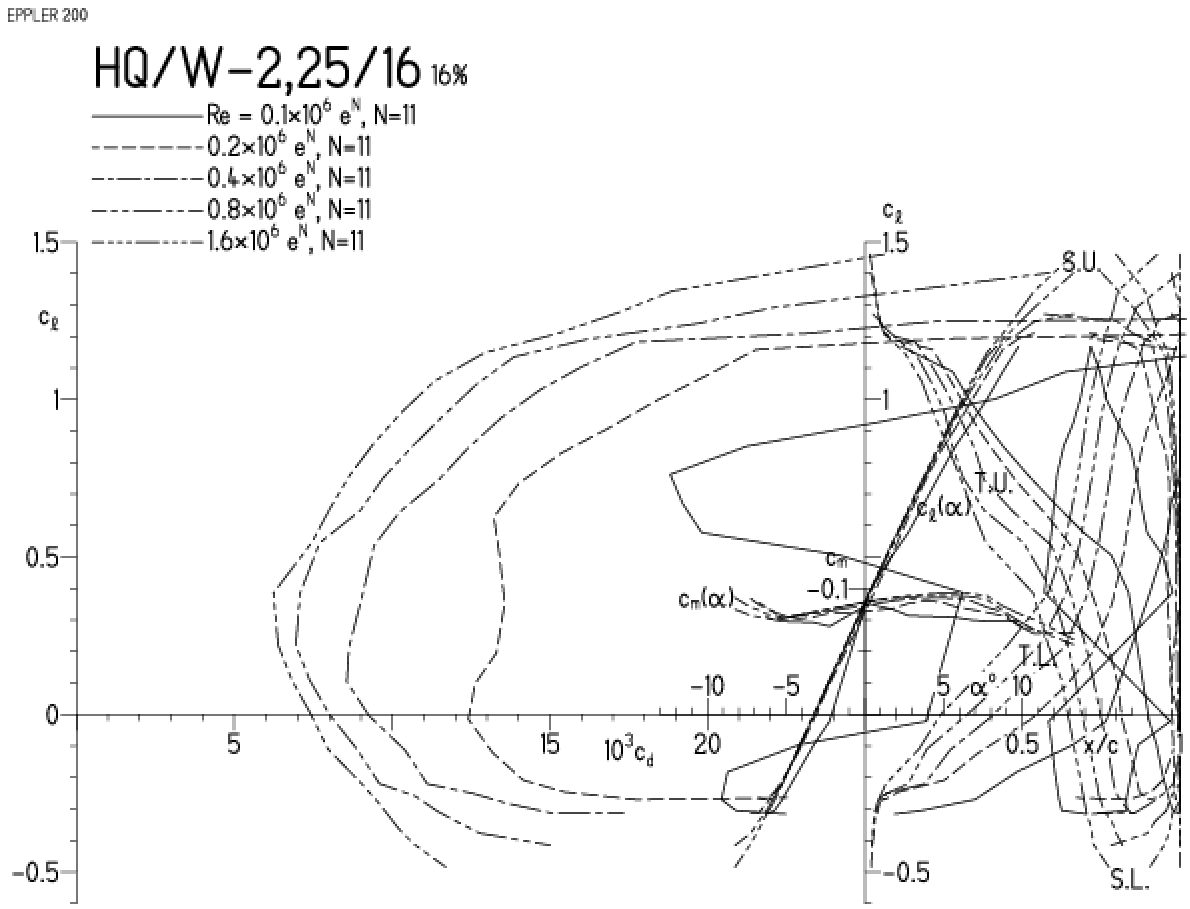


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

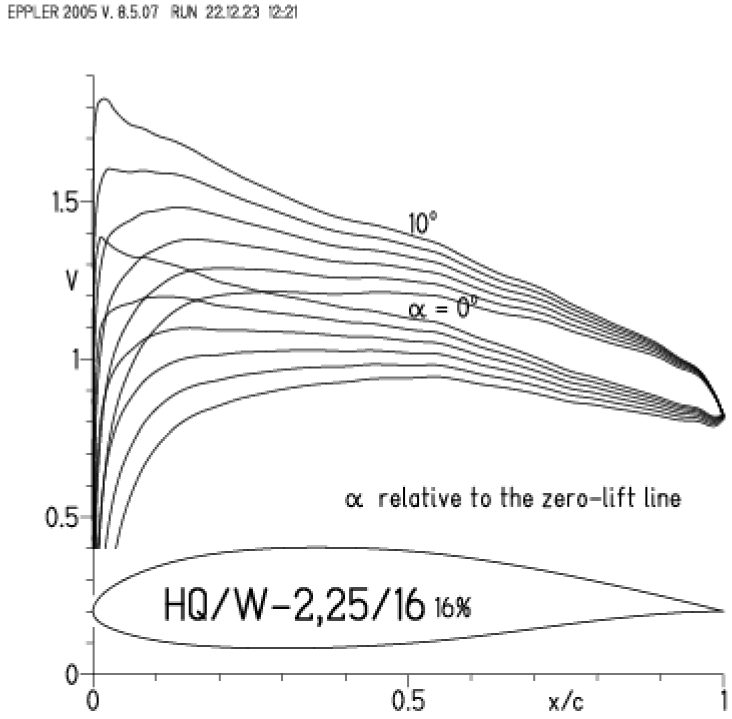


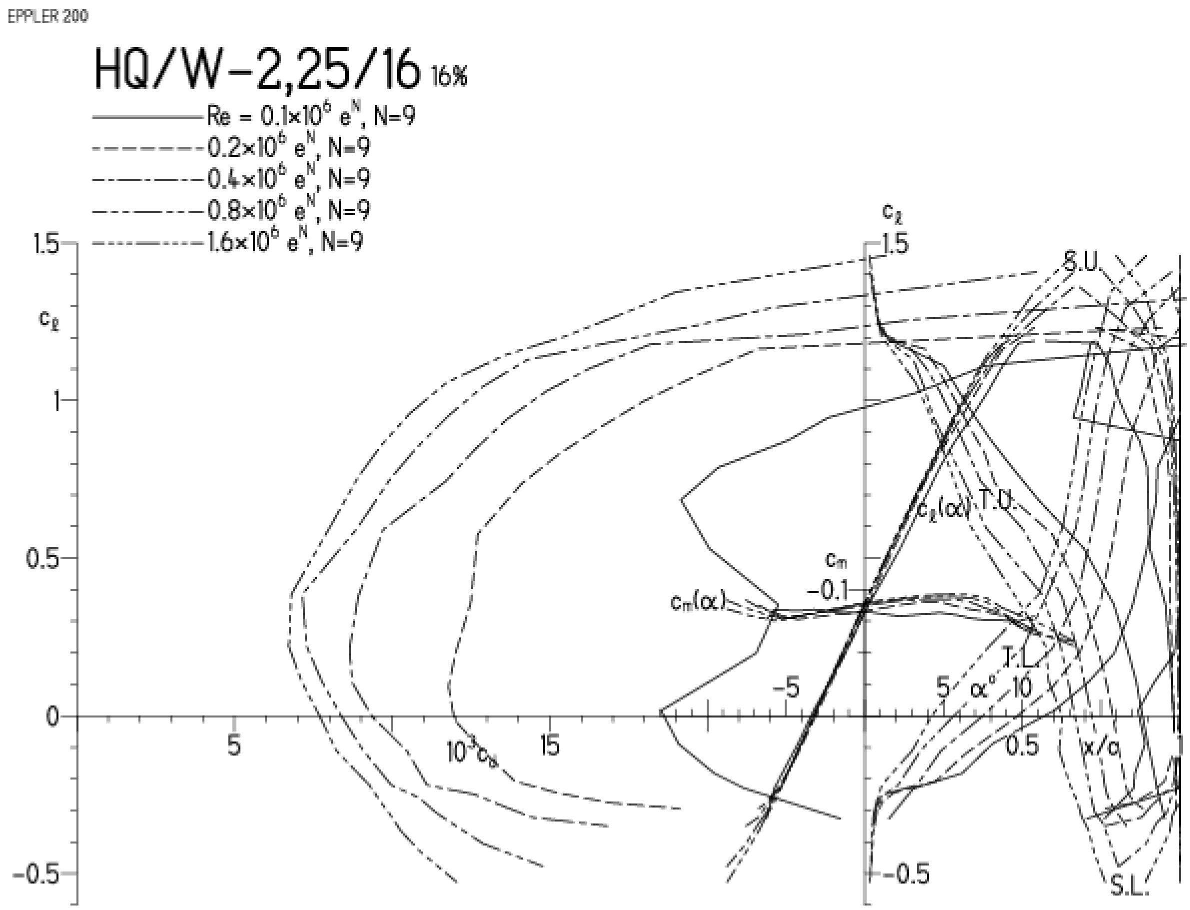
HQ/W-2,25/16, N=11



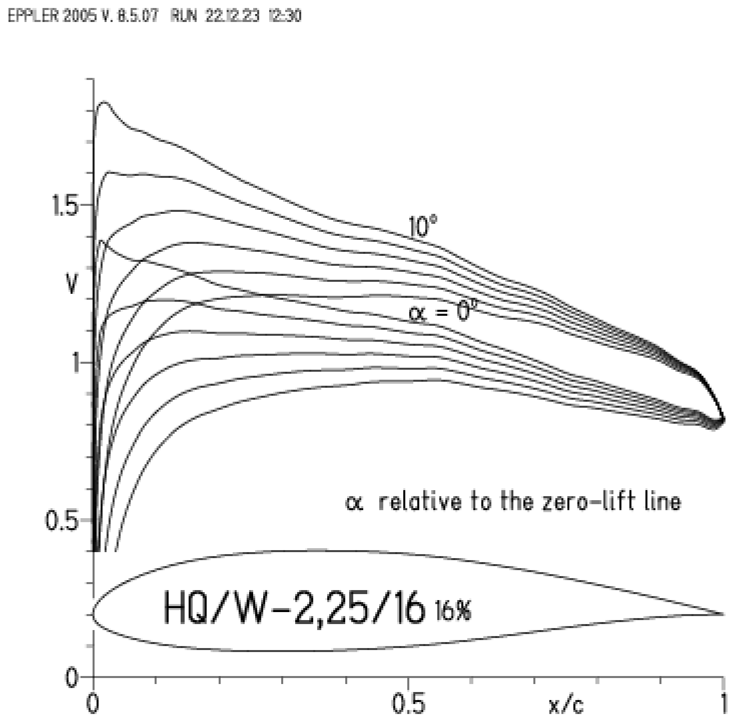


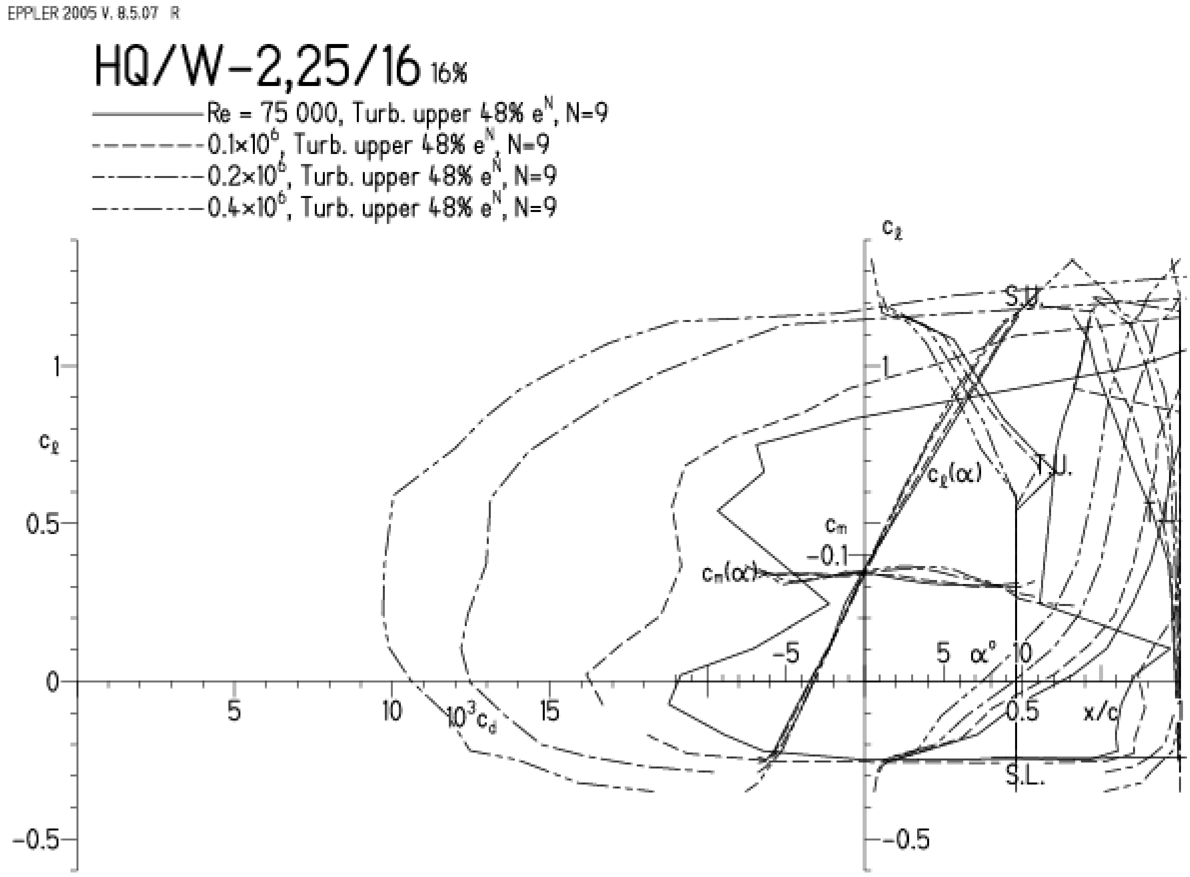
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



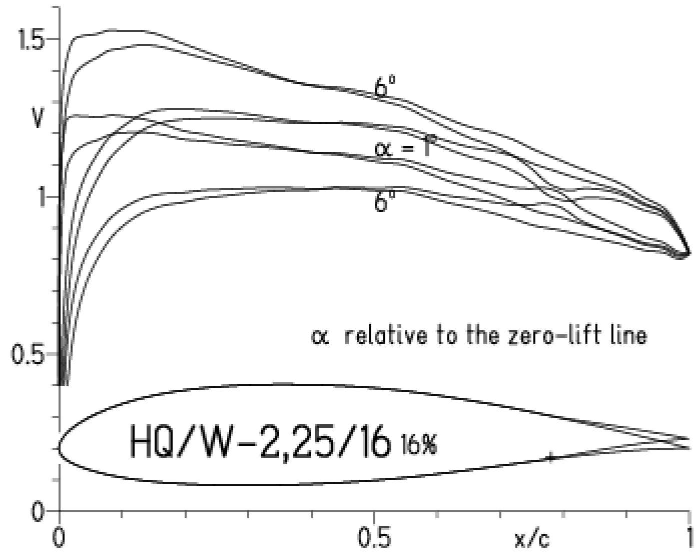


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

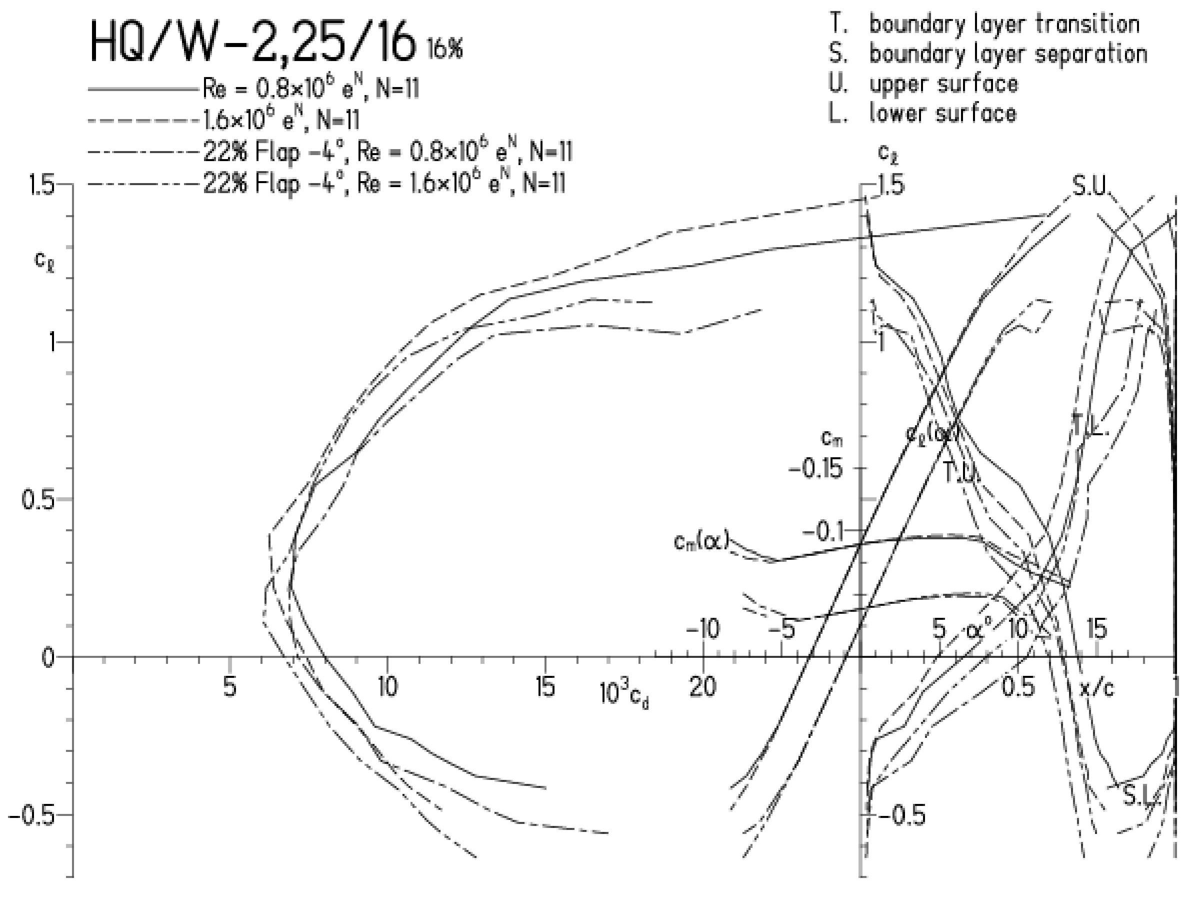
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

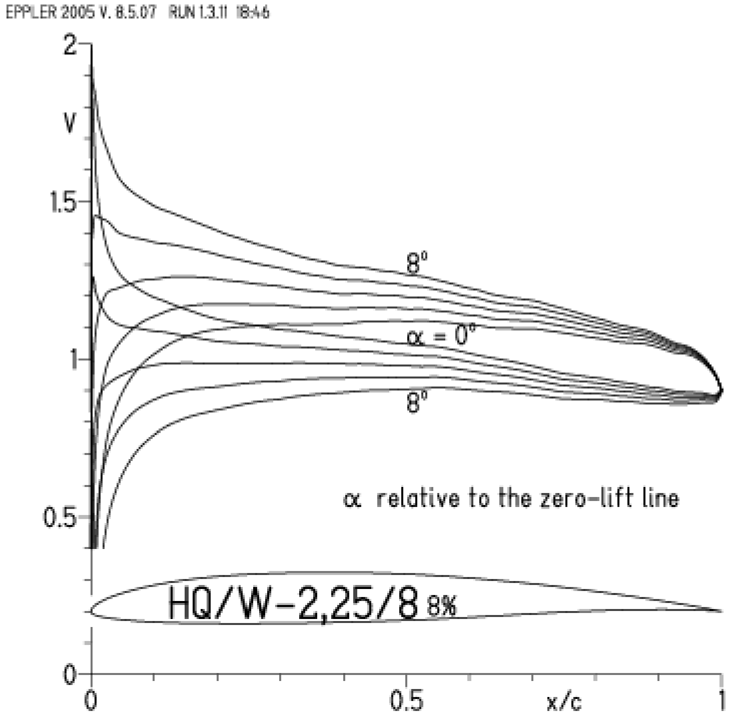
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

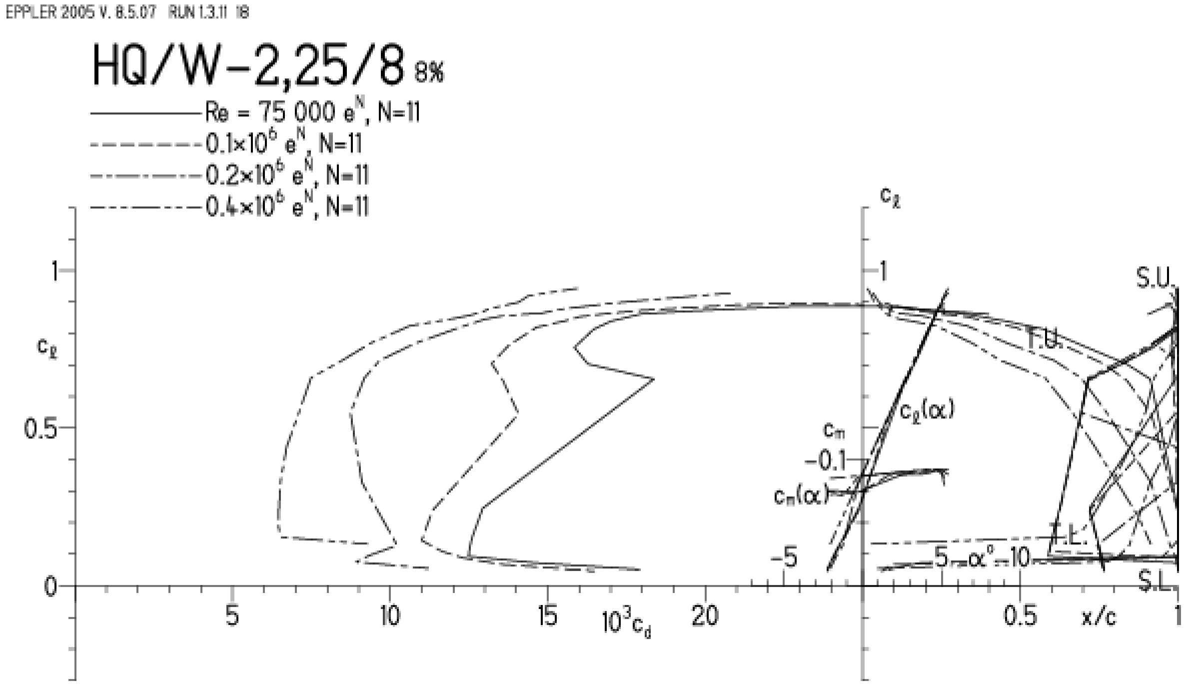


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

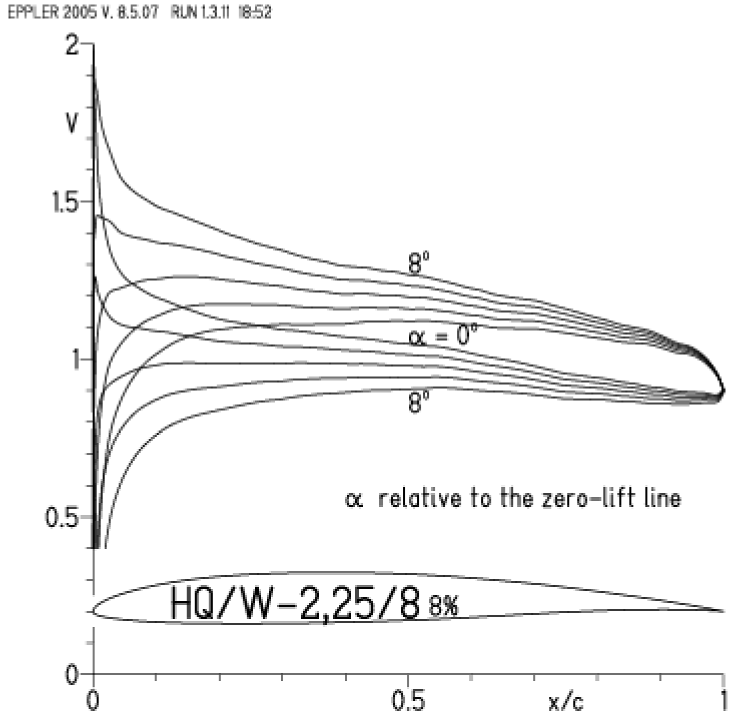


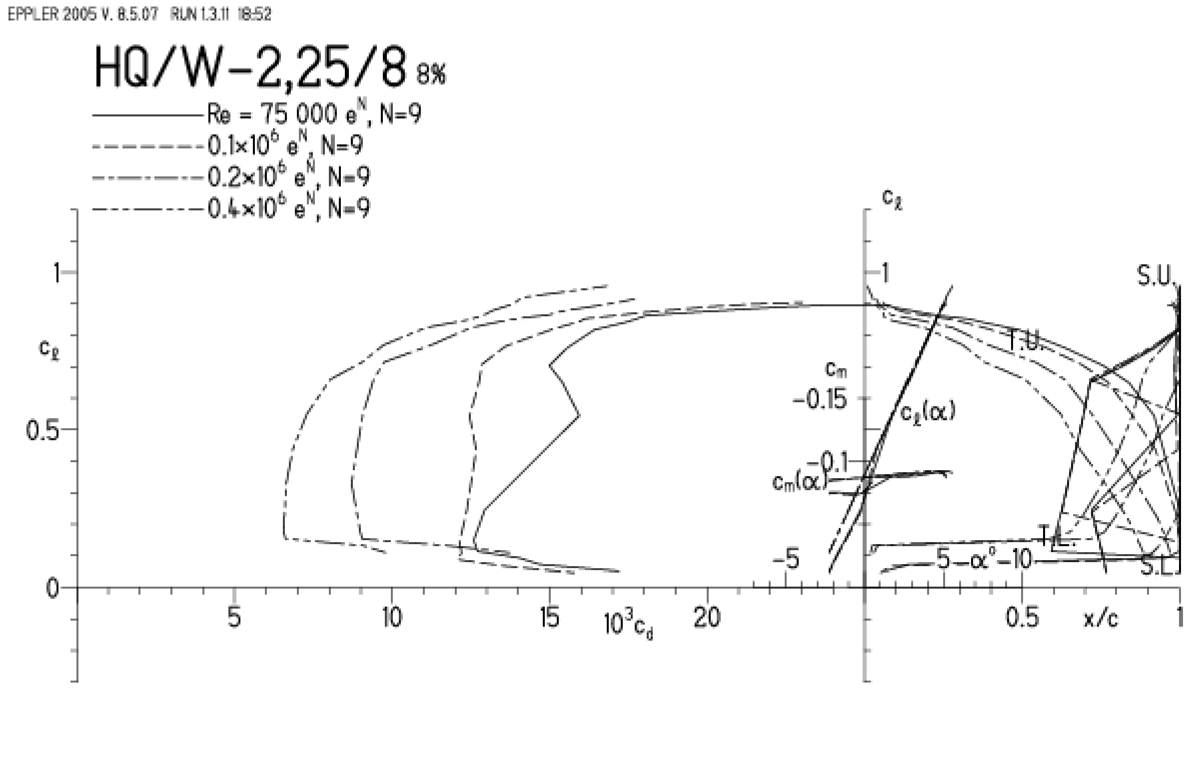
<u>HQ/W-2,25/8</u>, N=11



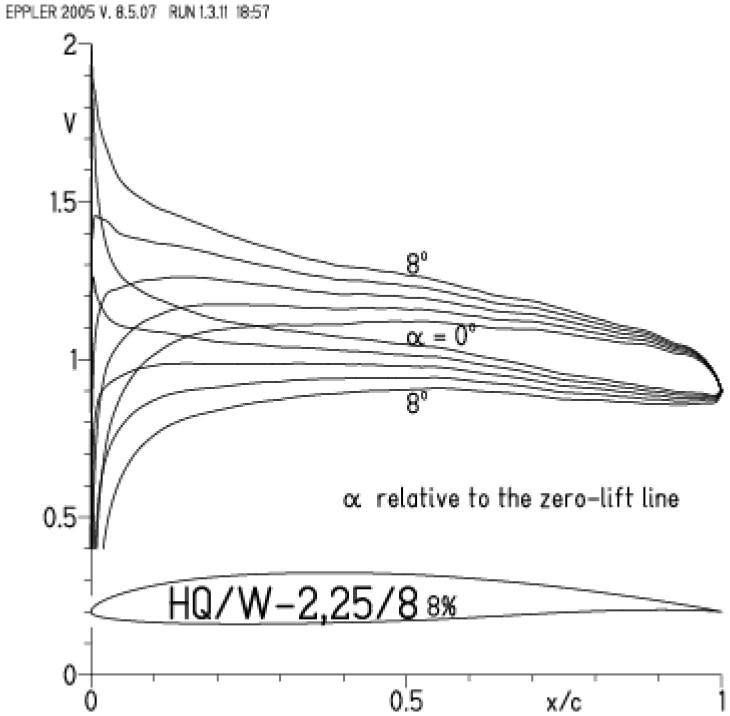


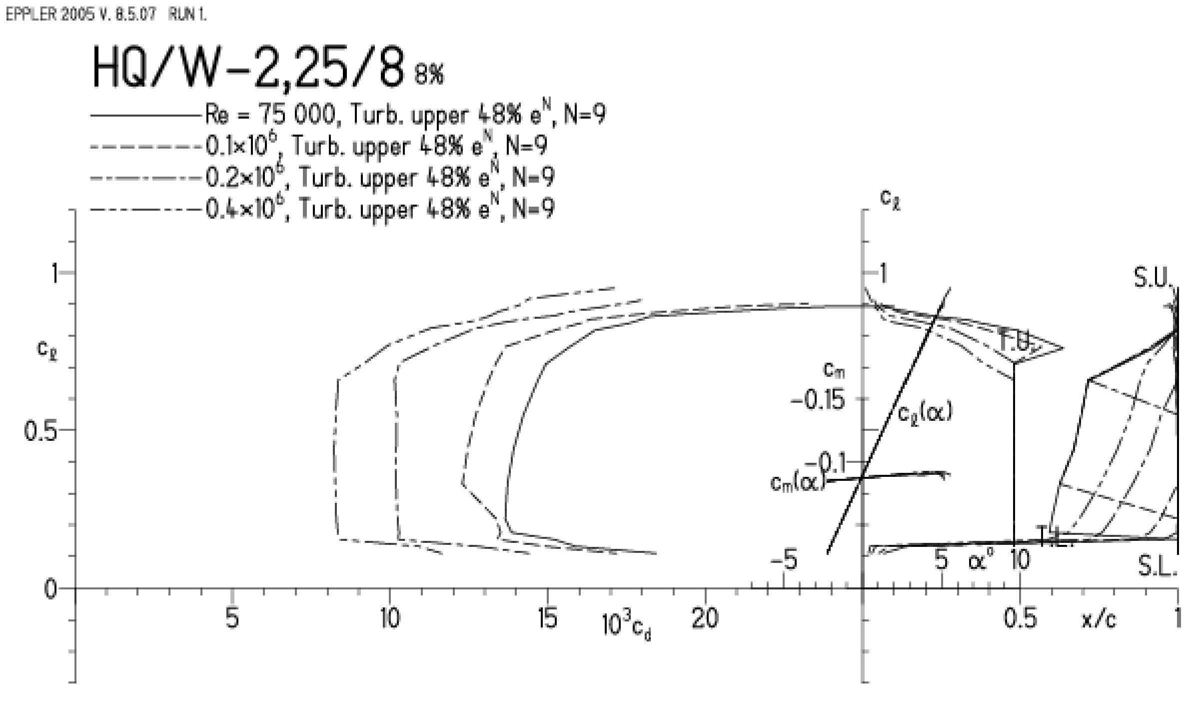
<u>HQ/W-2,25/8</u>, N=9



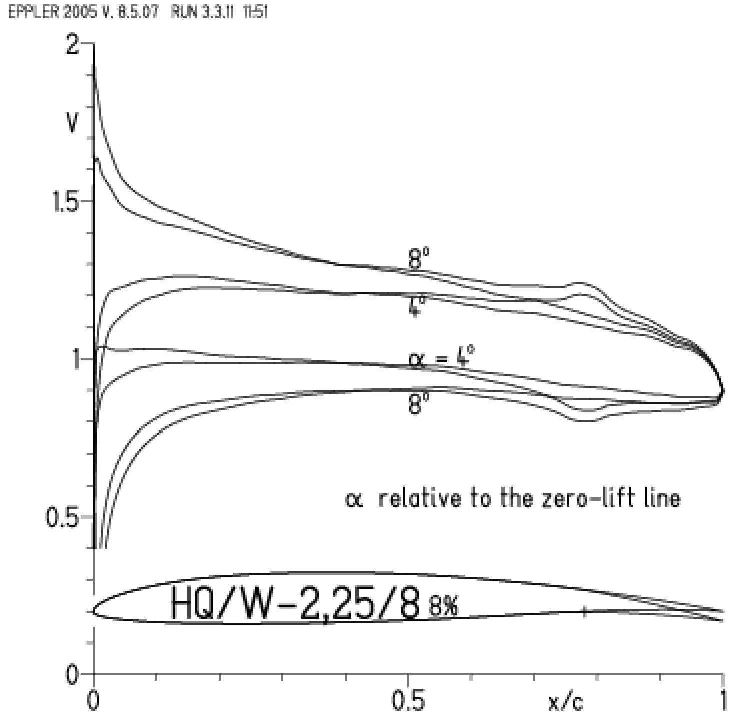


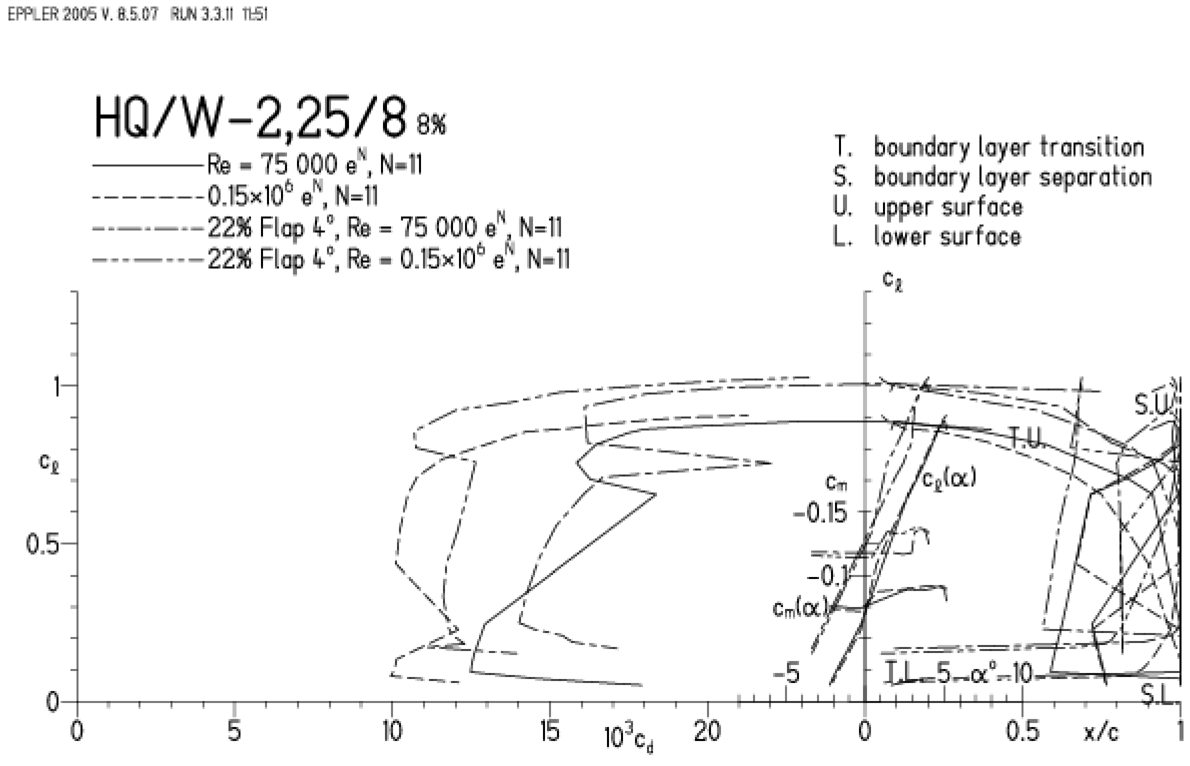
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





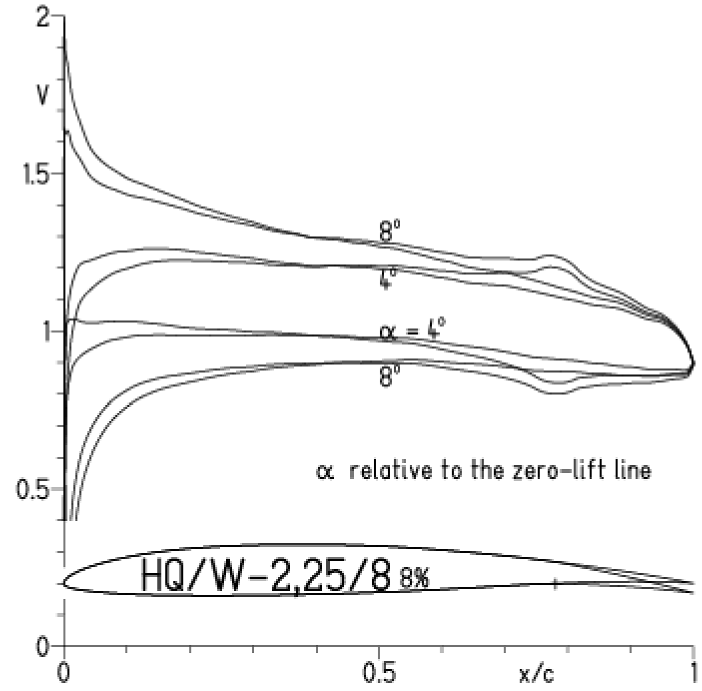
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



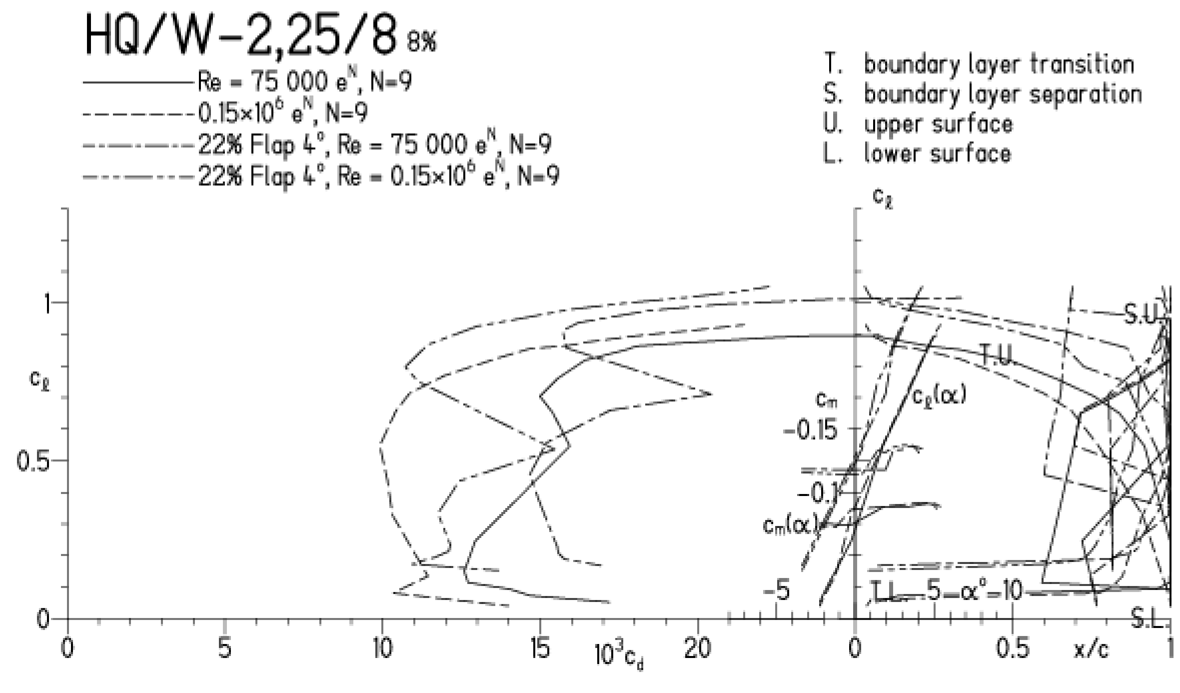


HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag

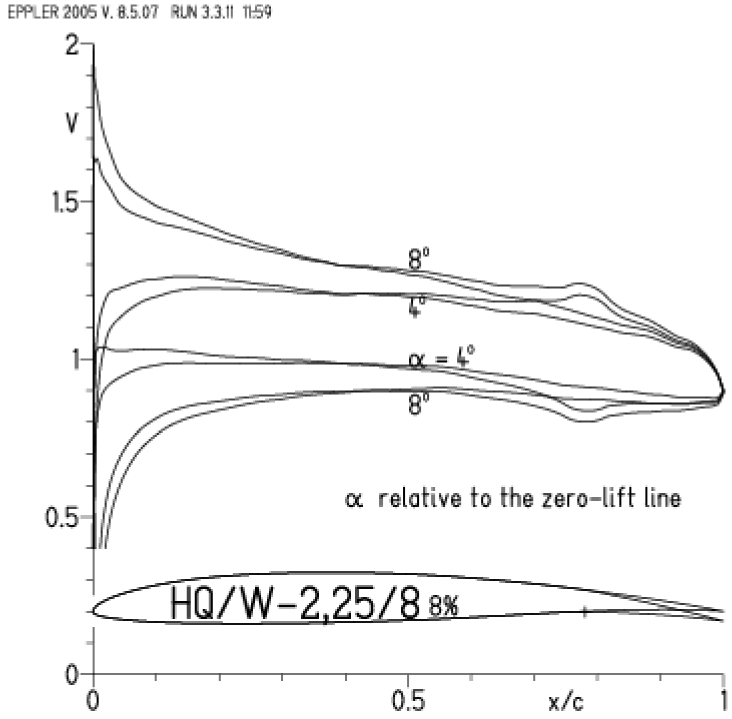
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

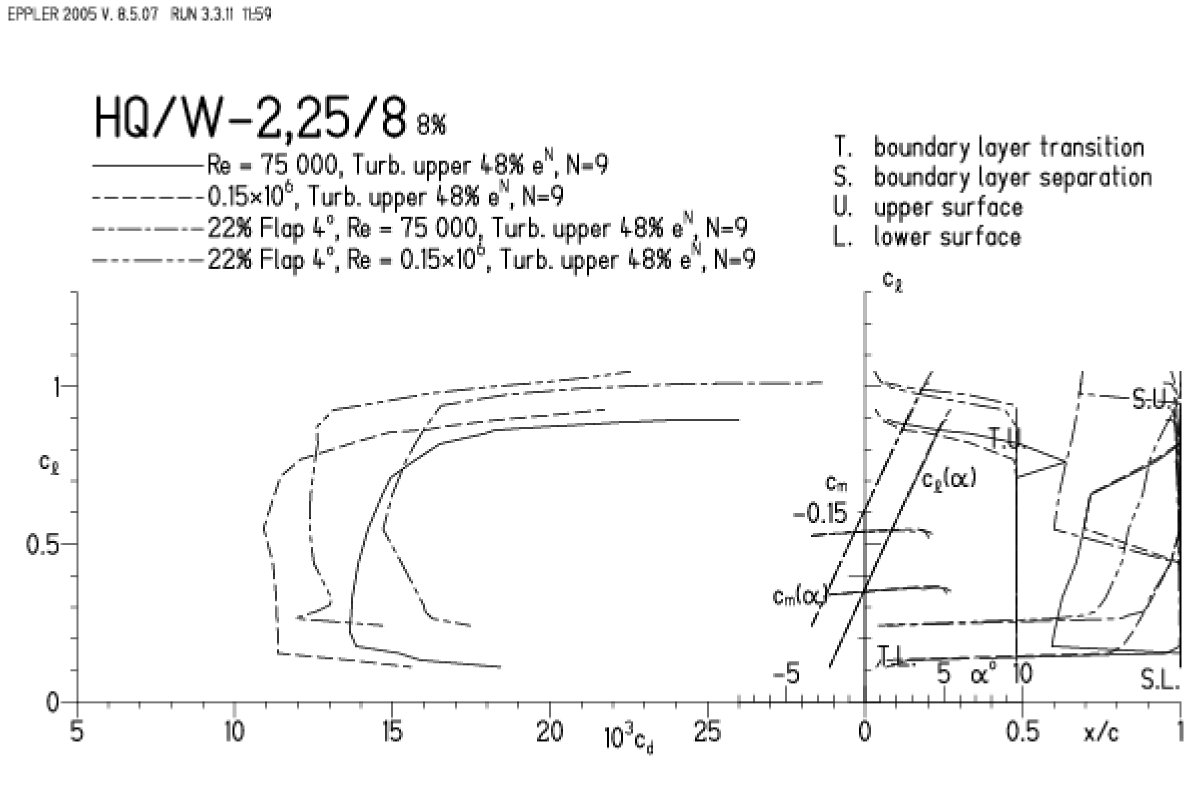


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



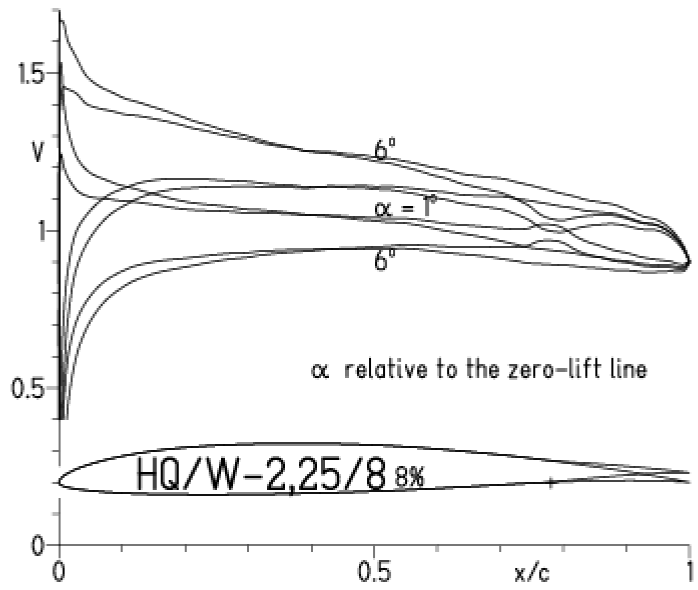
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



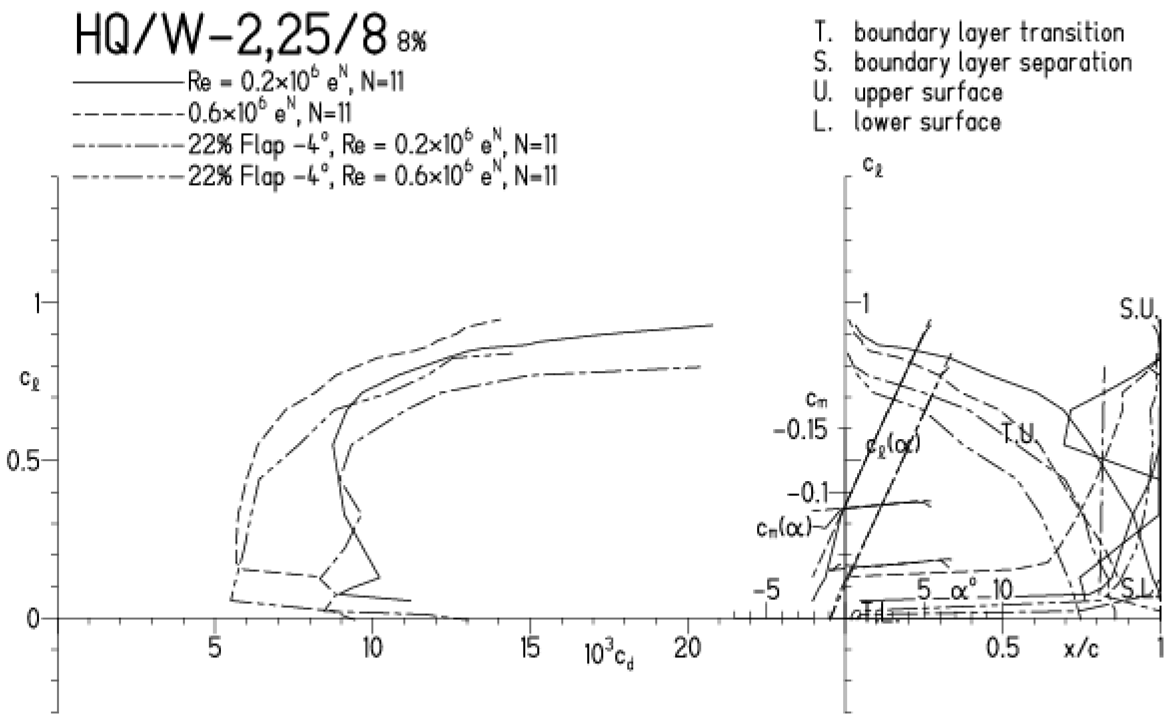


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

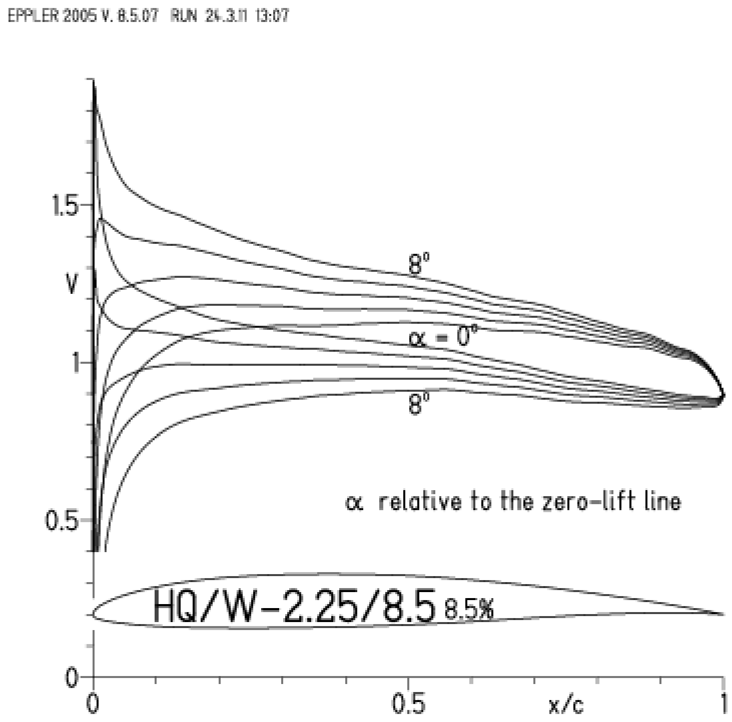
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

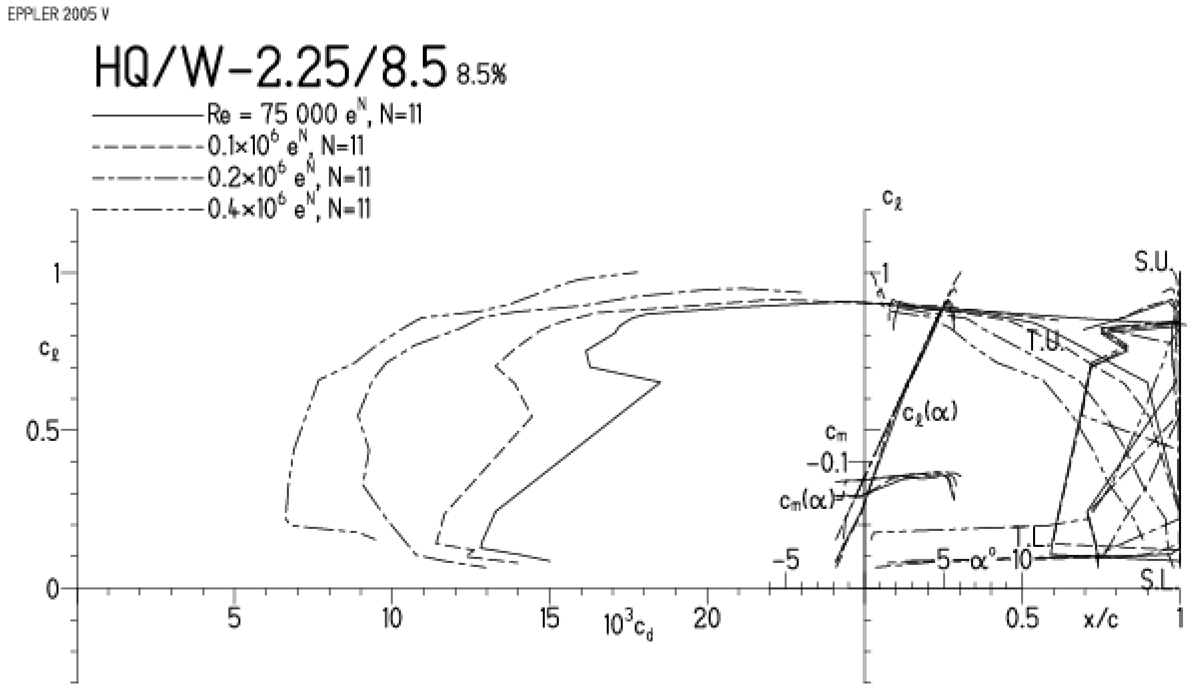


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



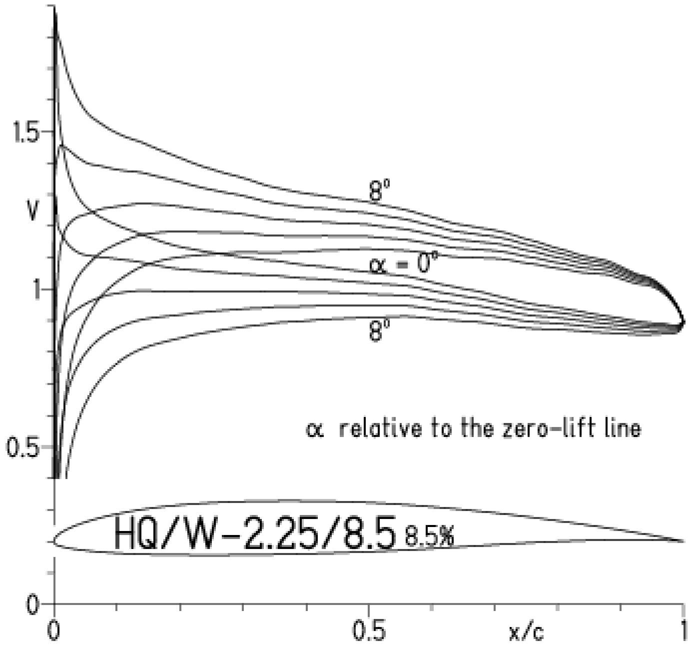
<u>HQ/W-2,25/8,5</u>, N=11



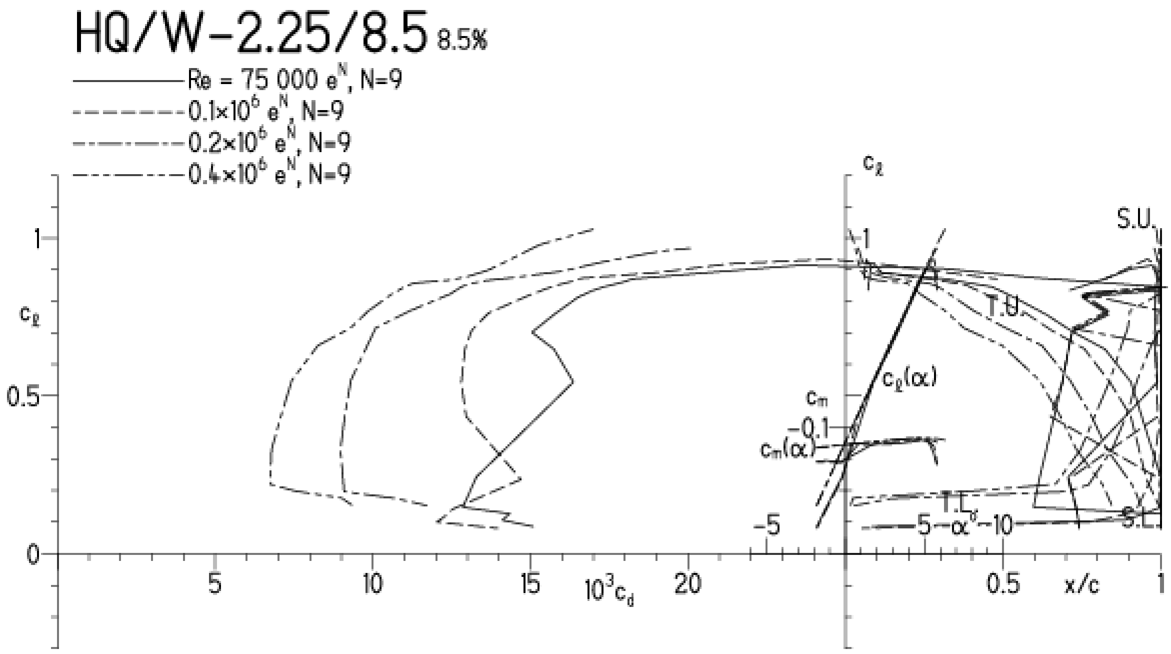


HQ/W-2,25/8,5, N=9

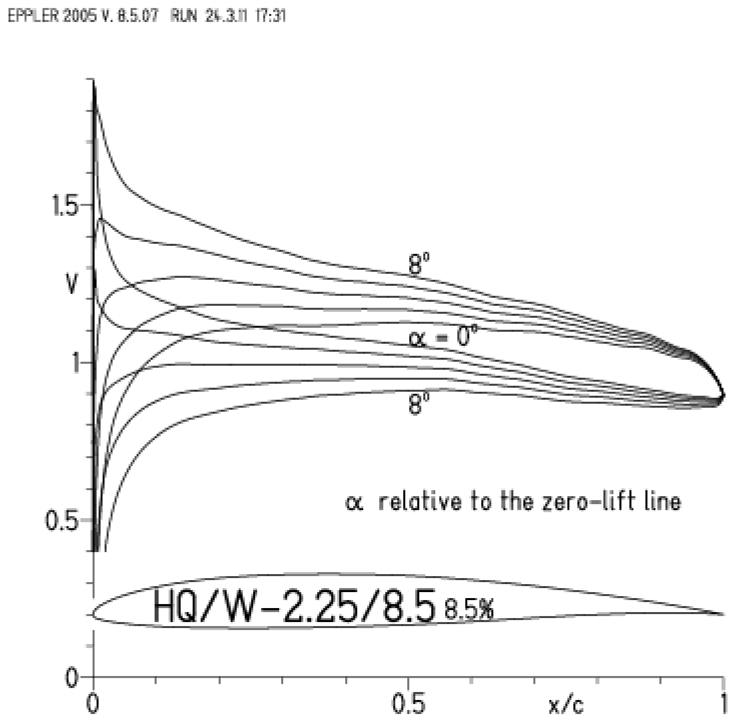
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

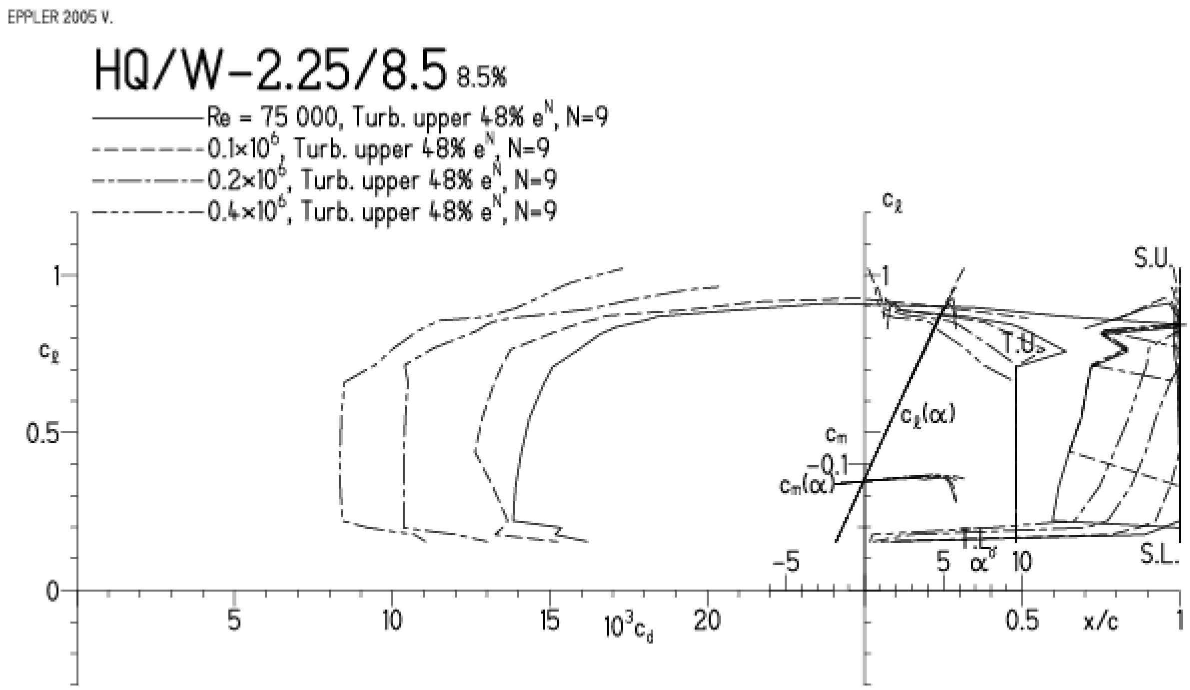


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

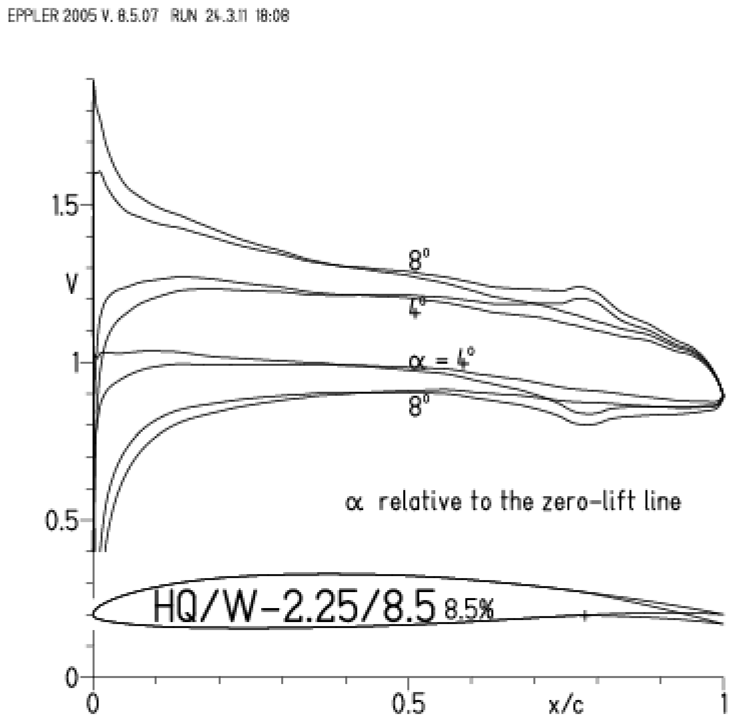


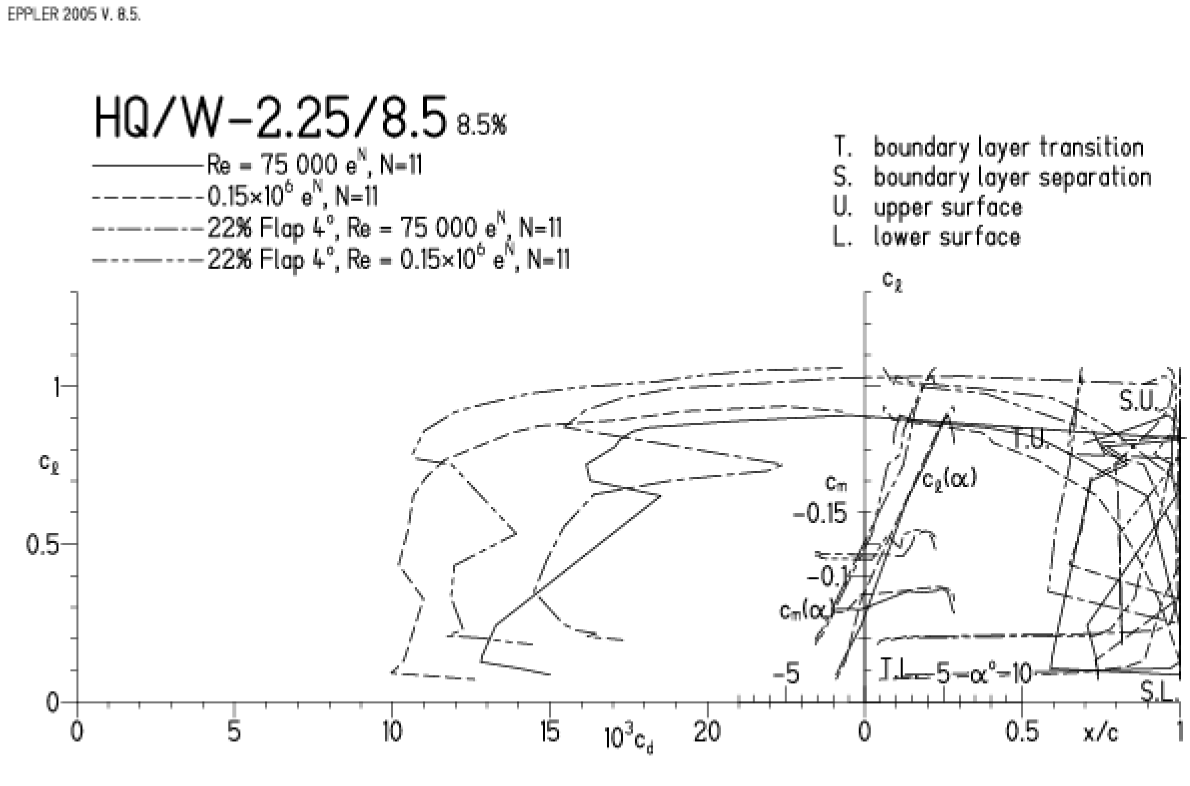
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





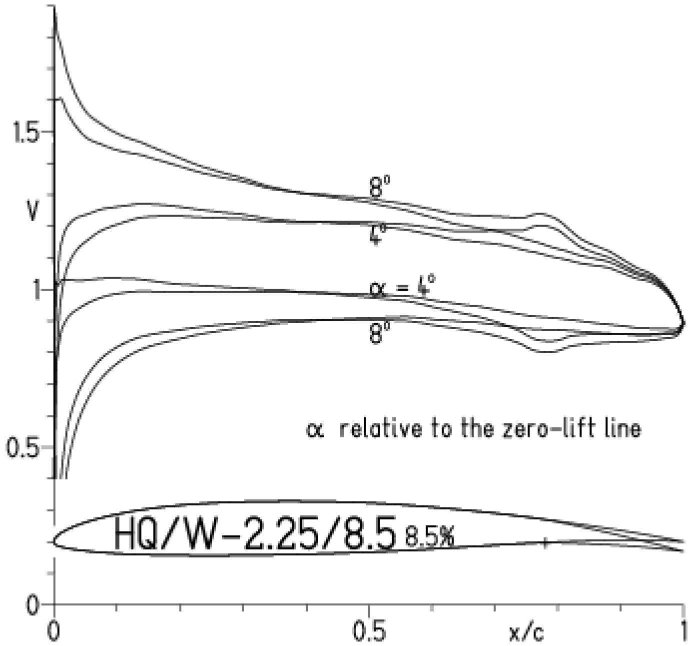
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



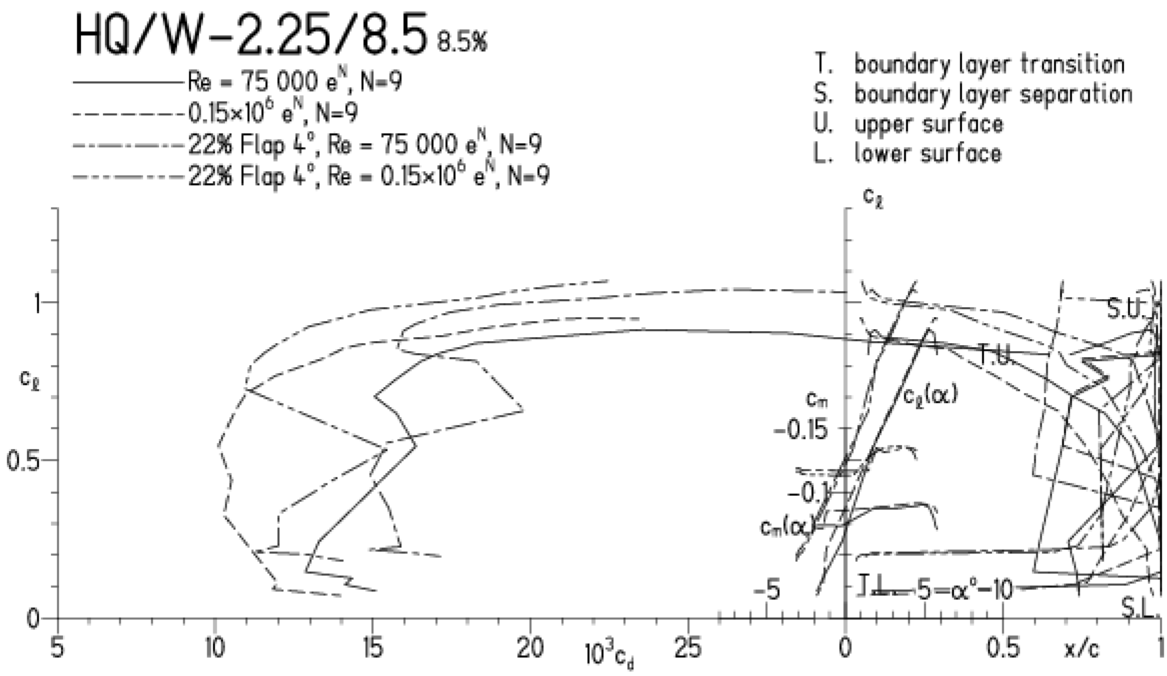


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

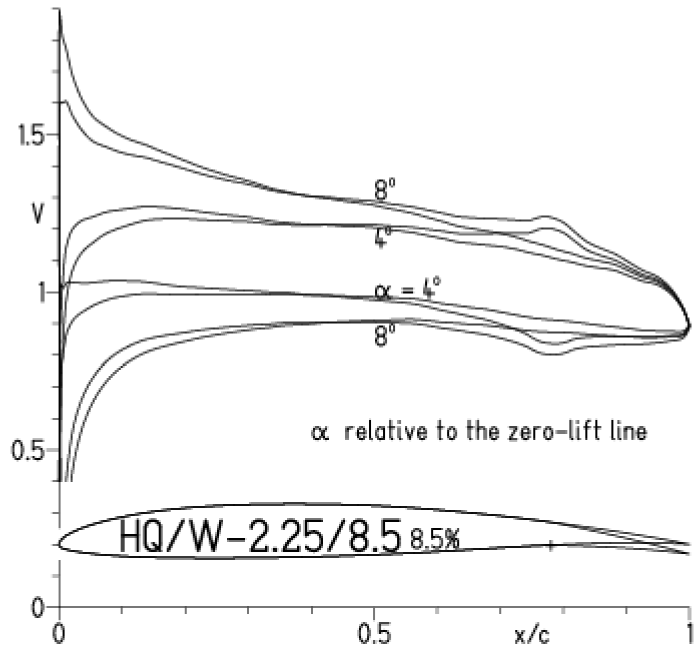


EPPLER 2005 V.

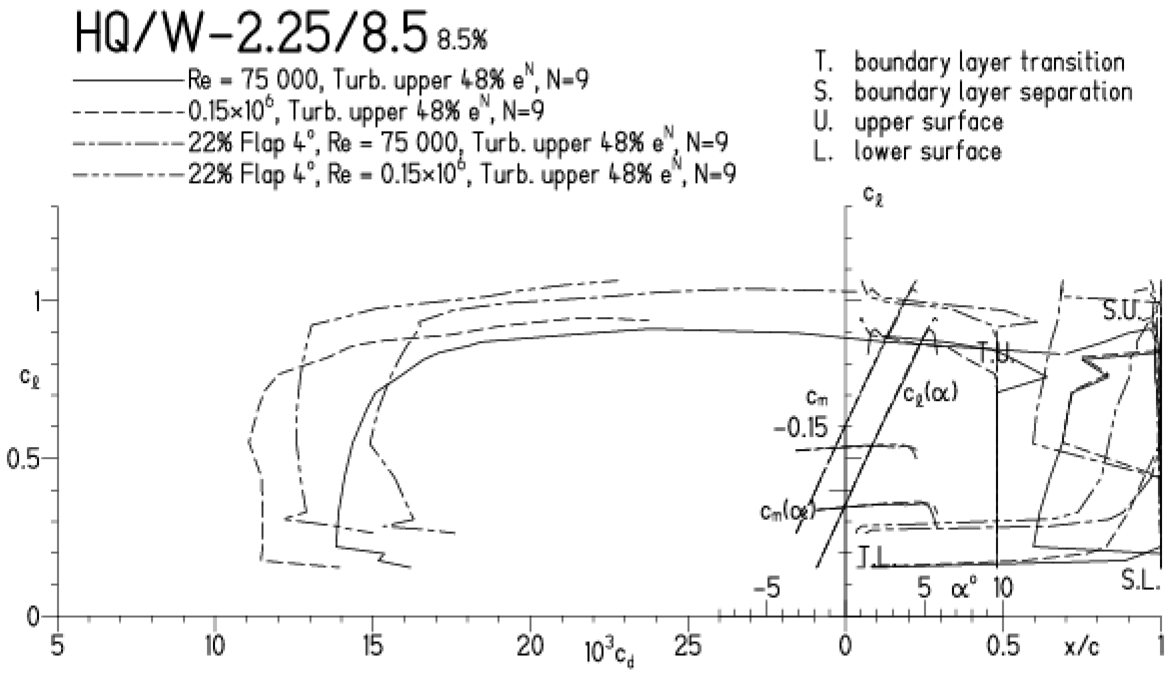


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

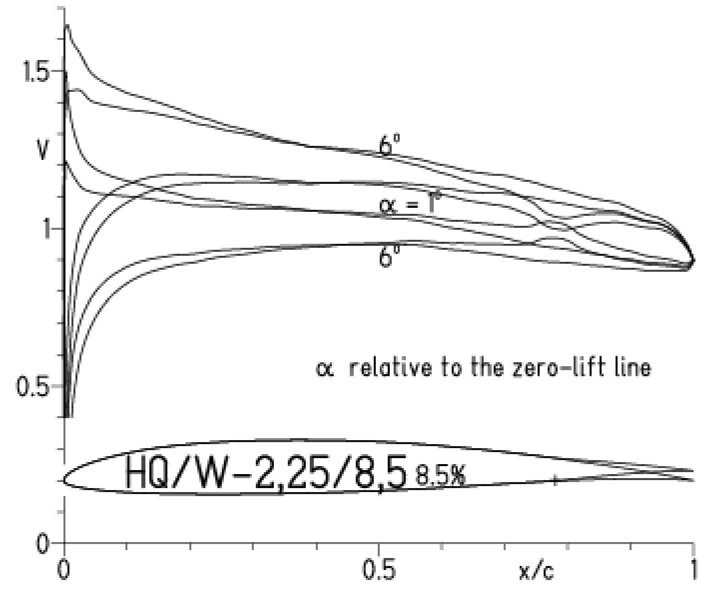


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

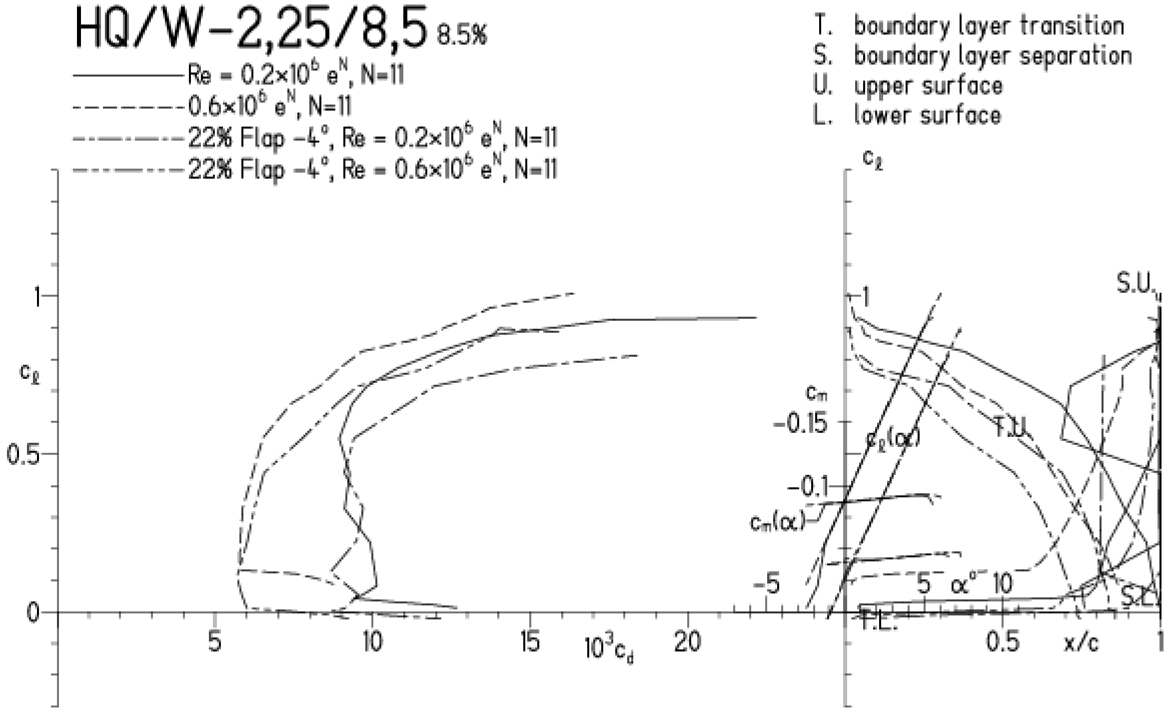


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

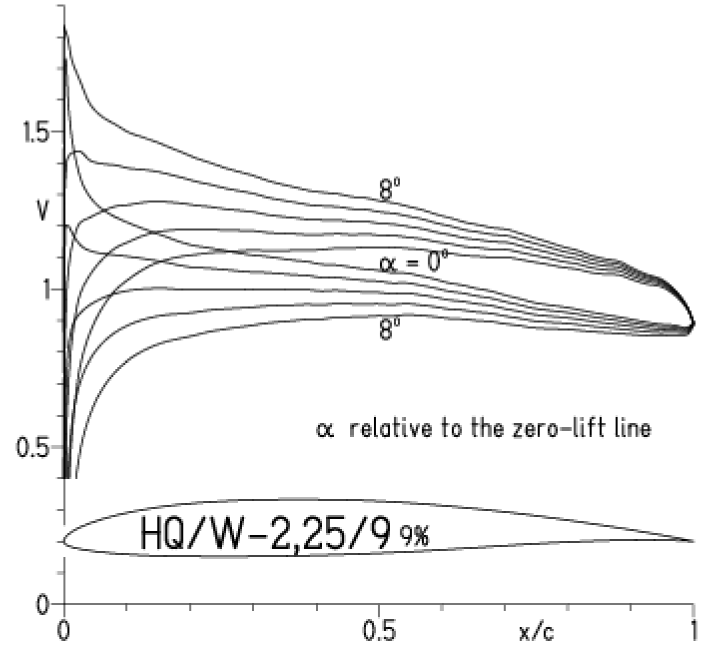


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

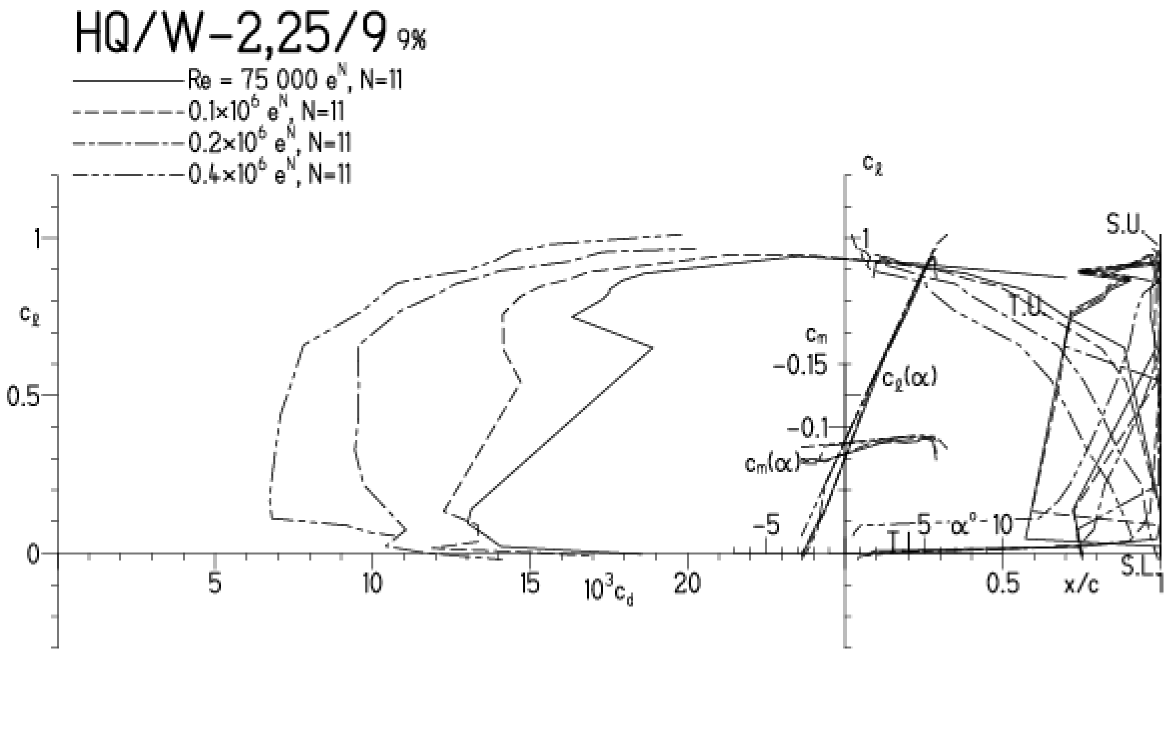


HQ/W-2,25/9, N=11

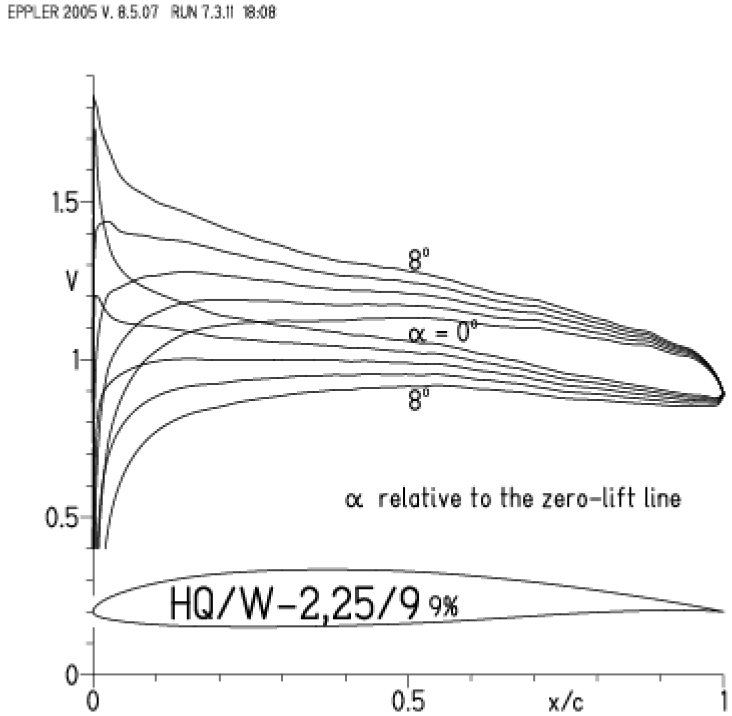
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

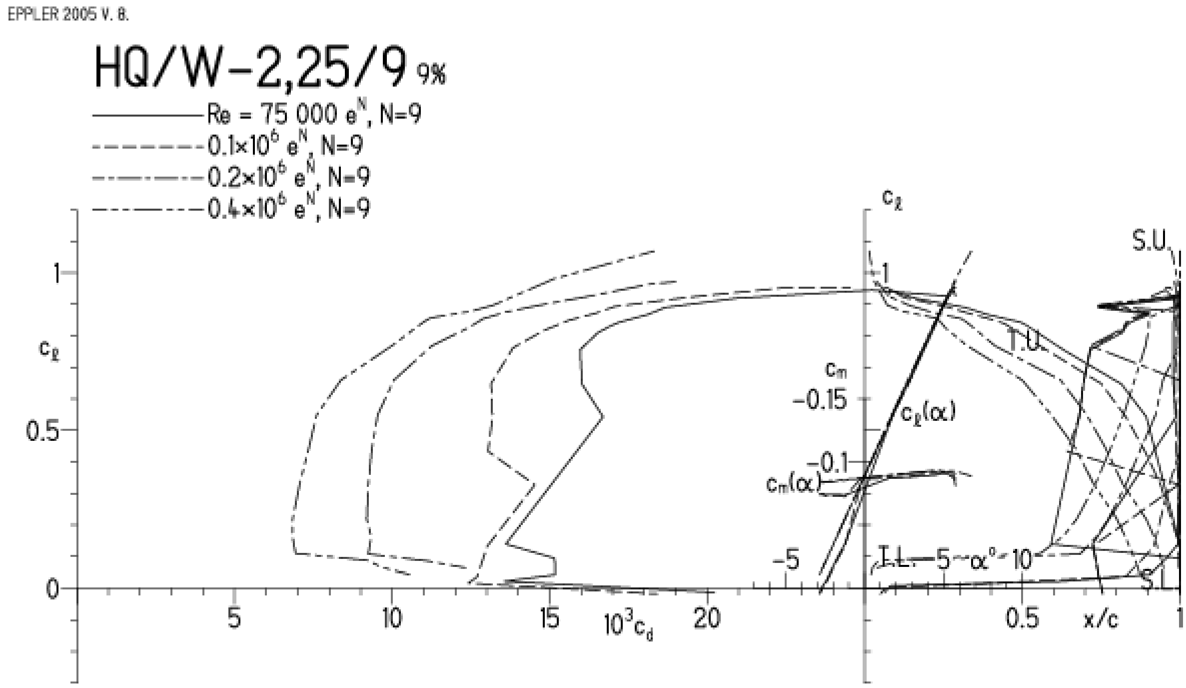


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

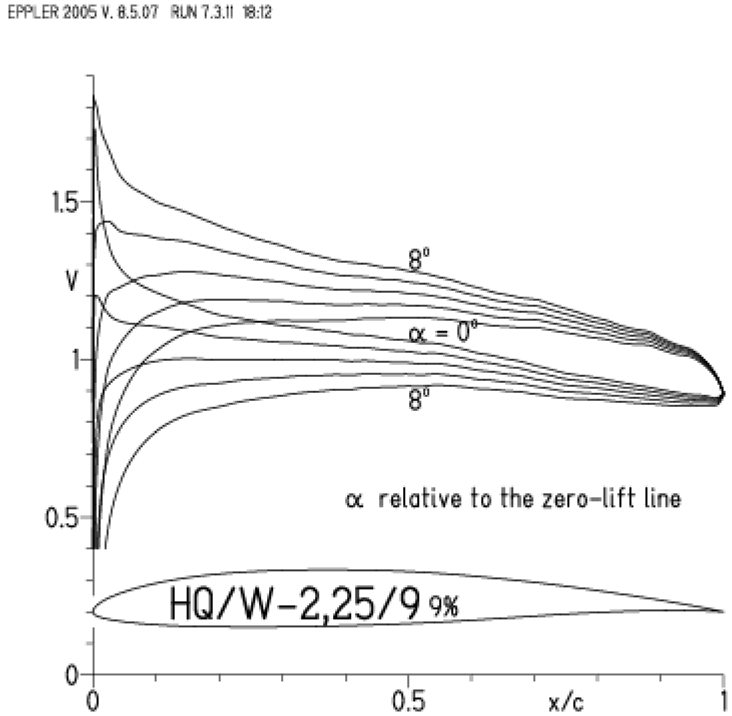


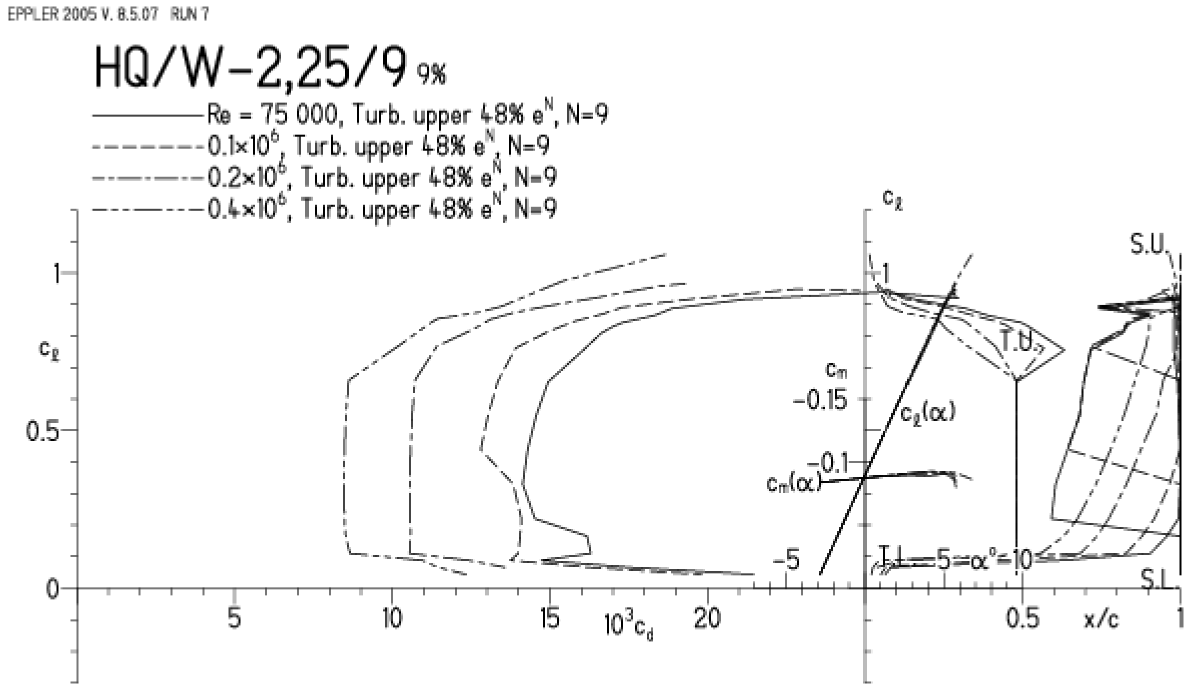
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

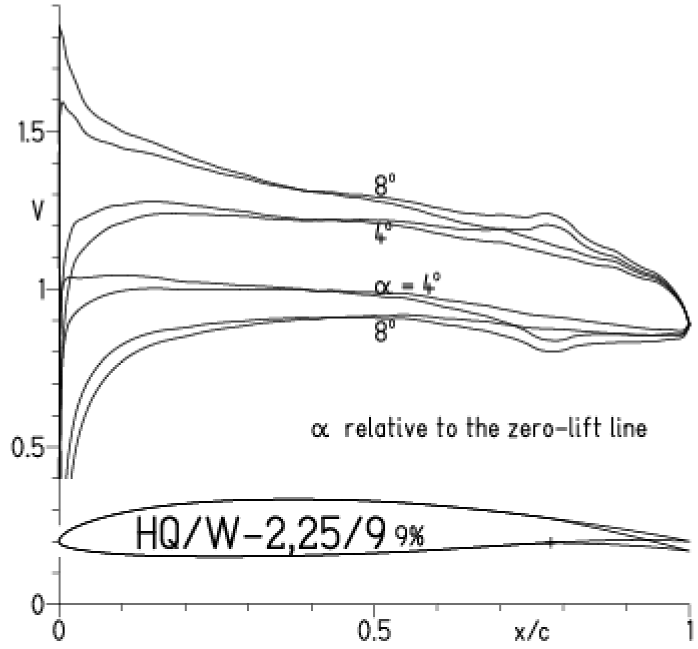
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



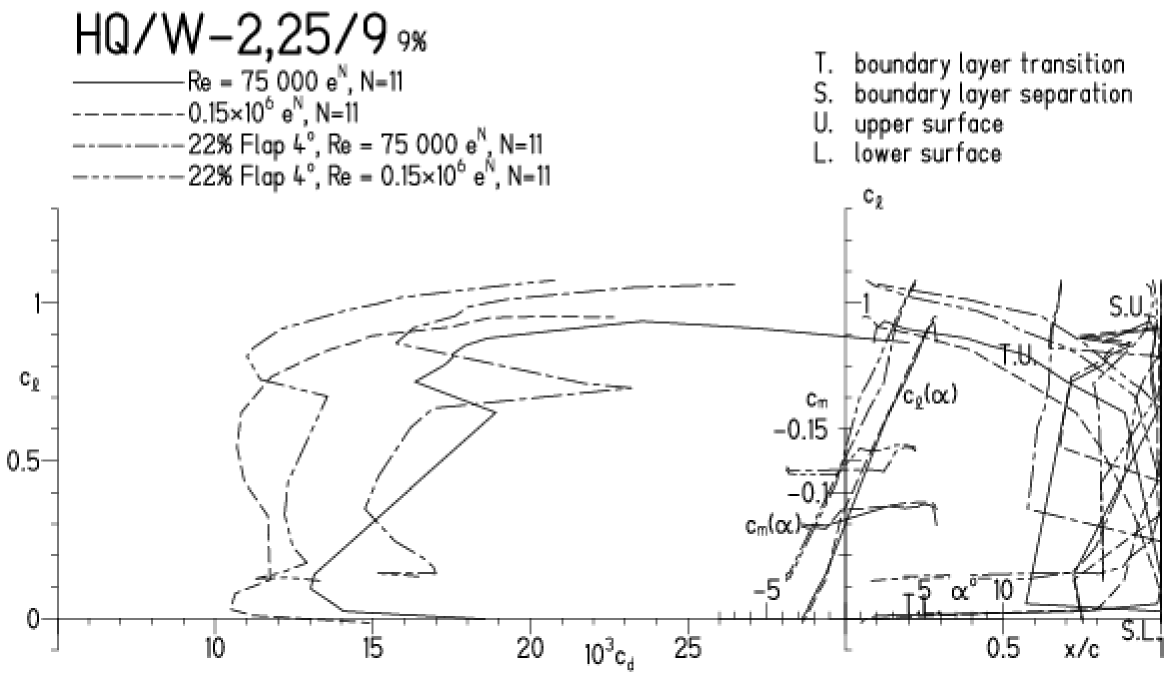


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

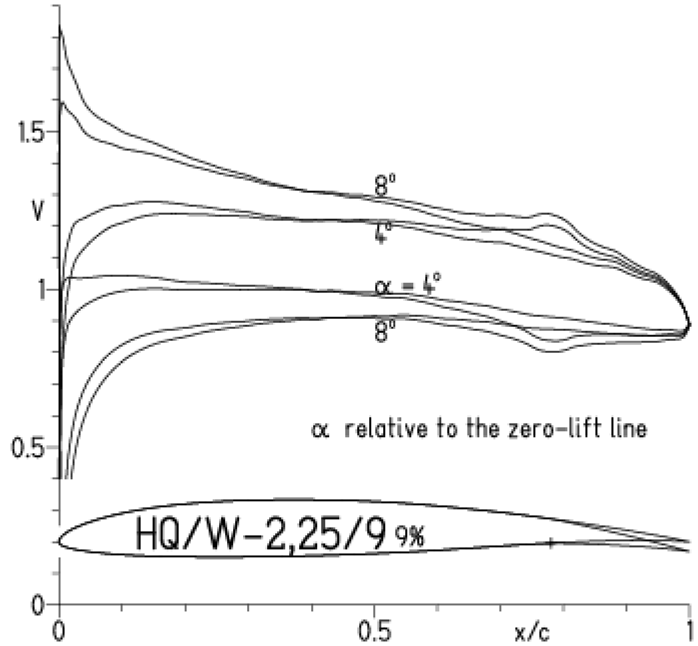


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

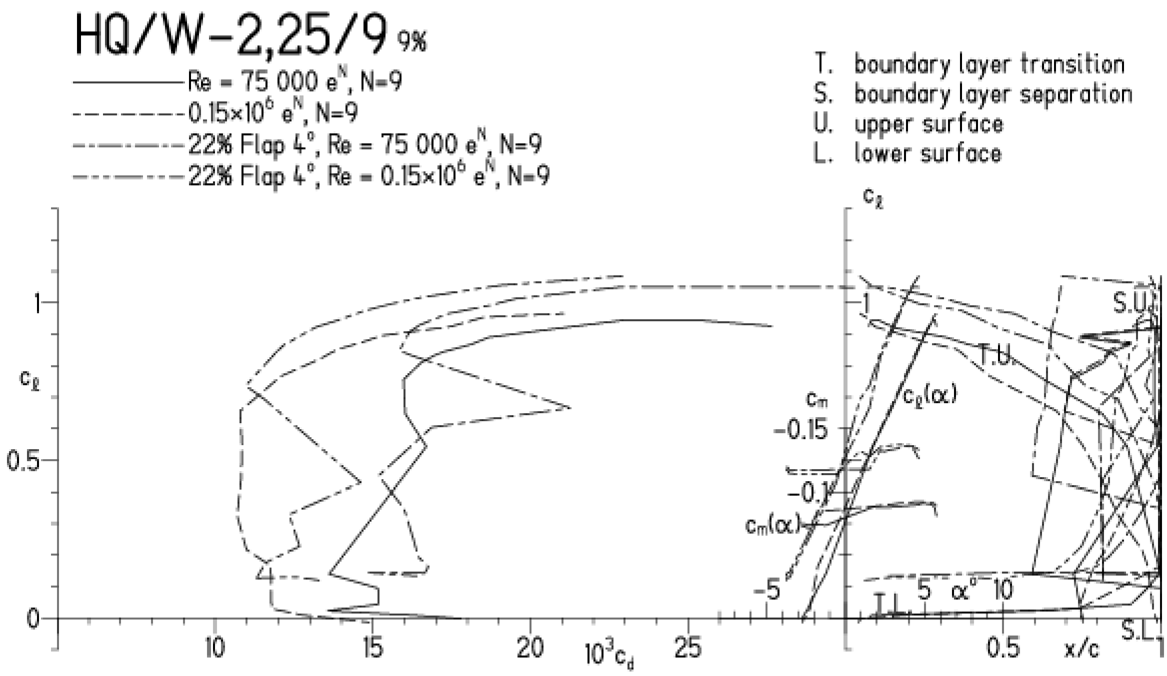


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

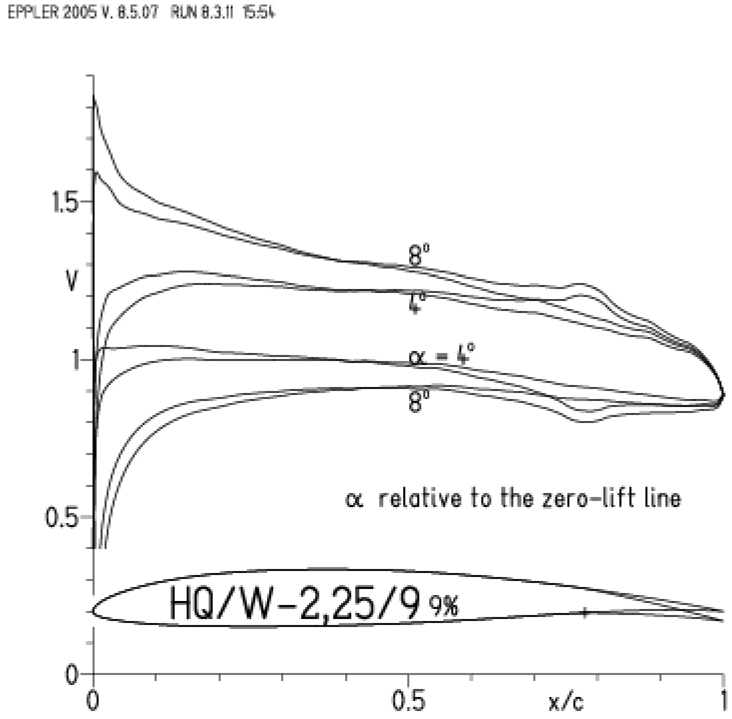
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

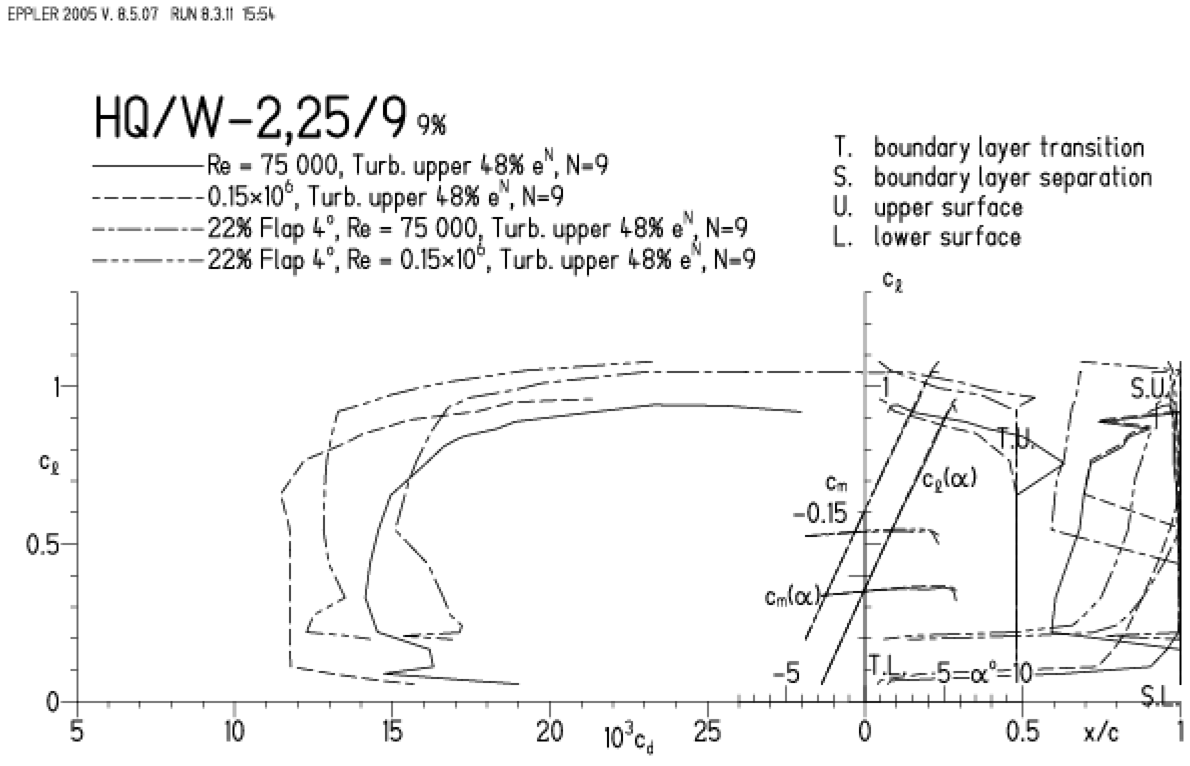


EPPLER 2005 V. 8.5.07 RUN 8.3.1

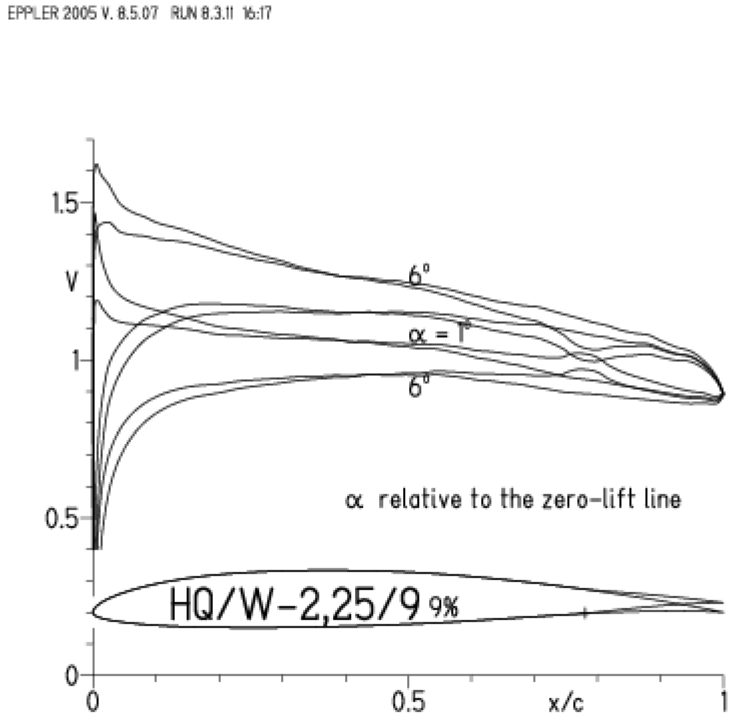


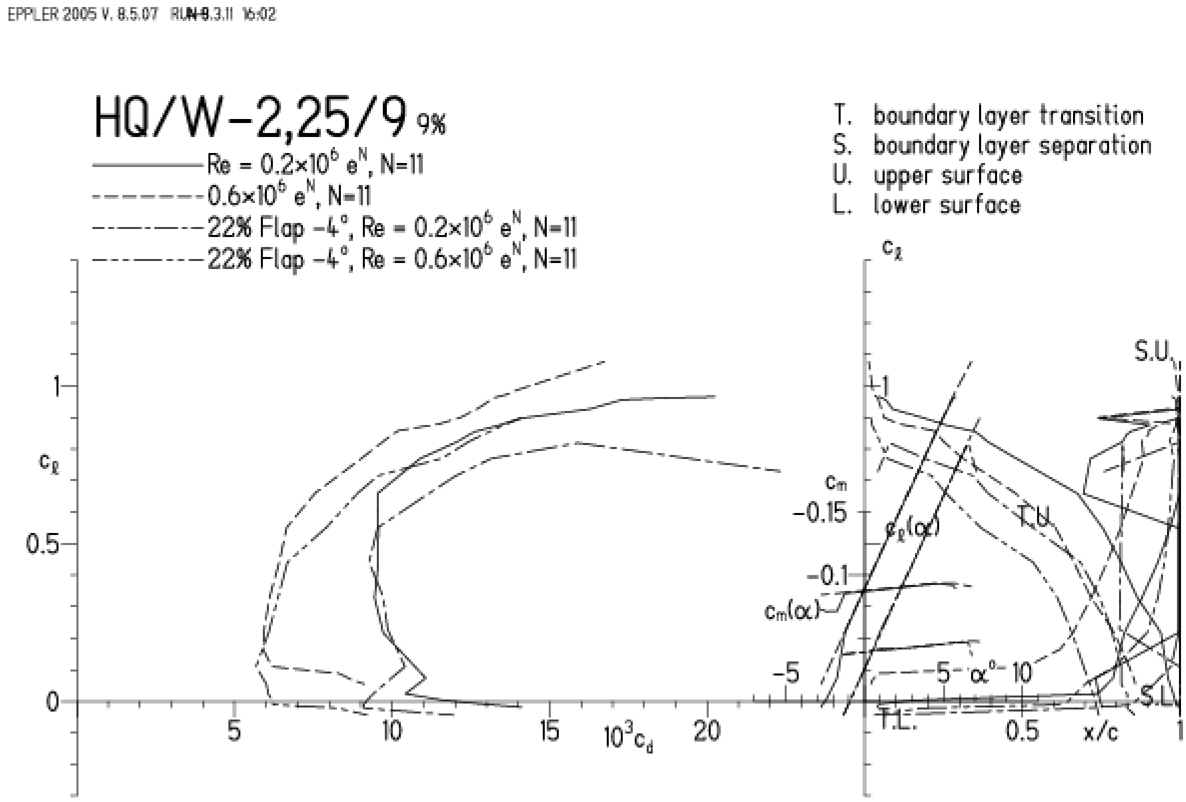
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





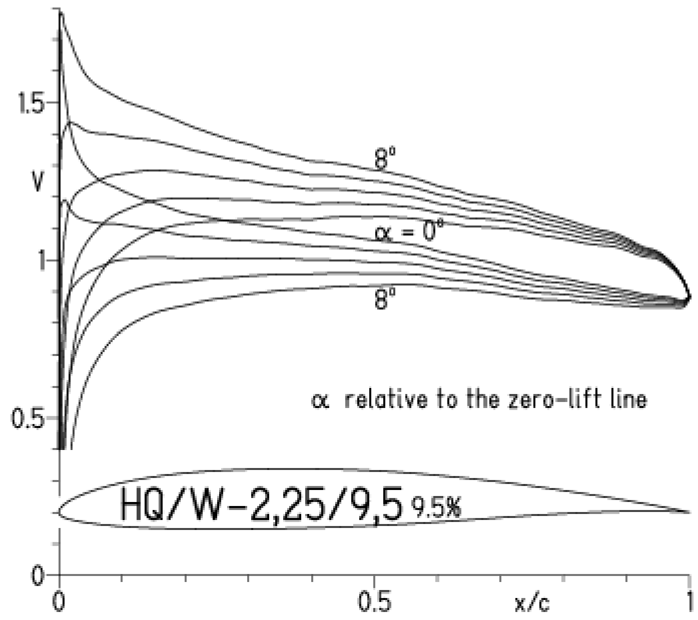
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



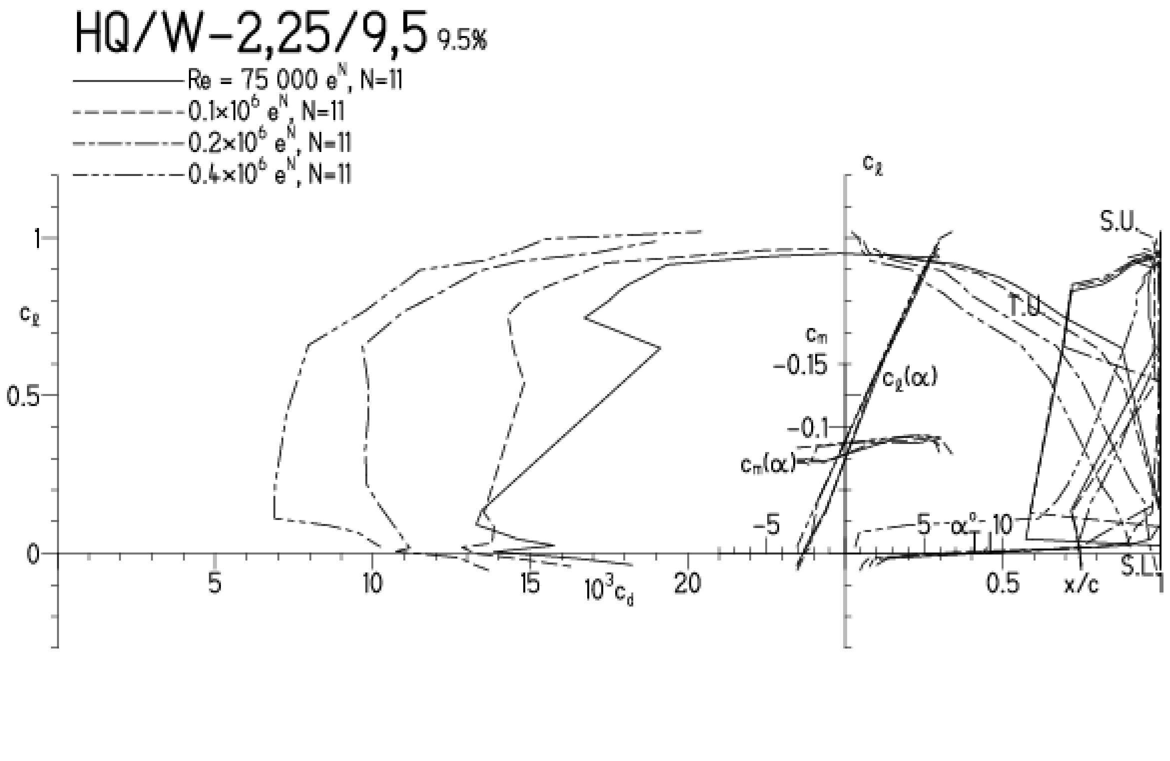


HQ/W-2,25/9,5, N=11

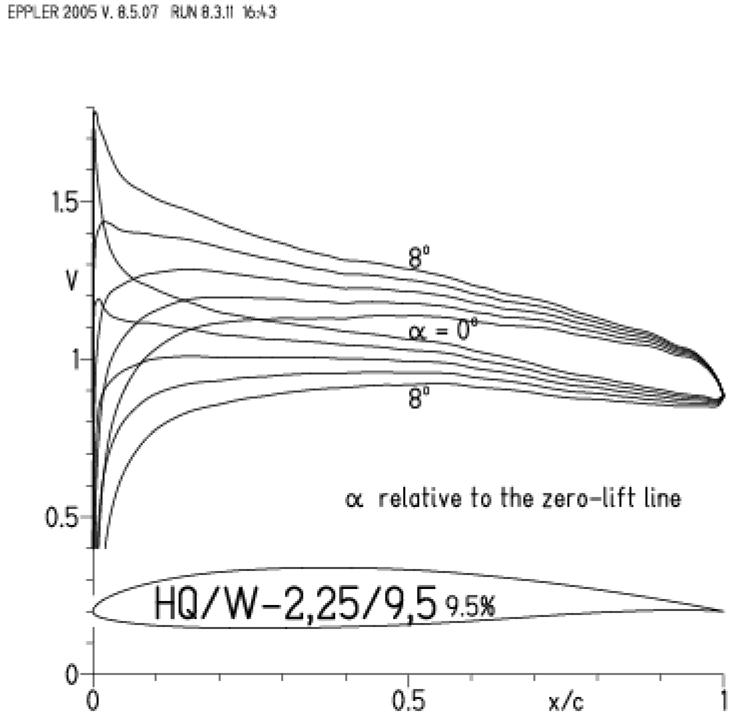
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

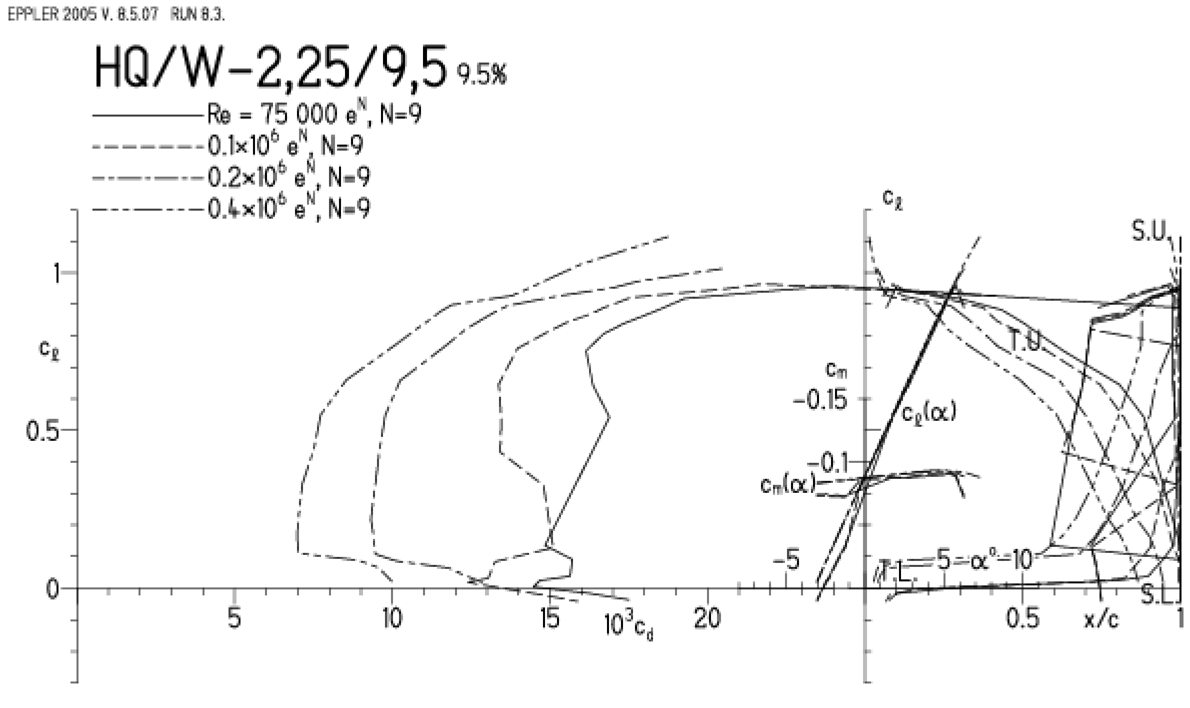


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



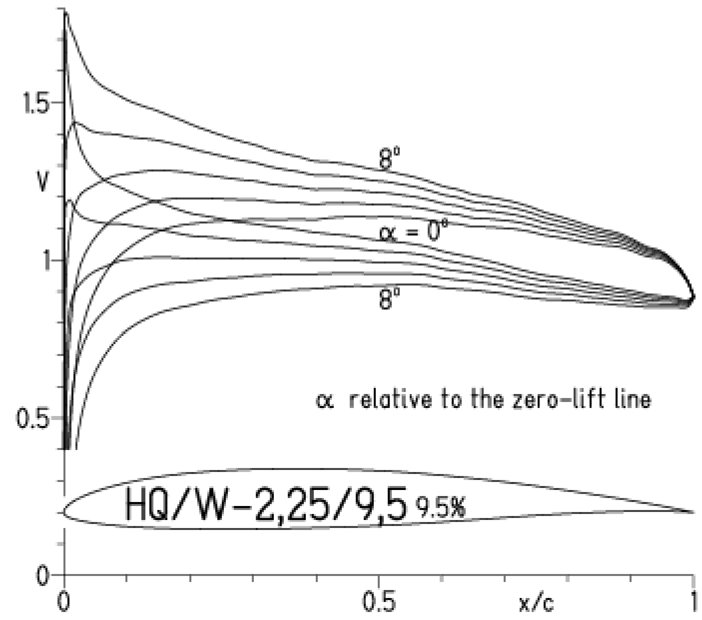
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

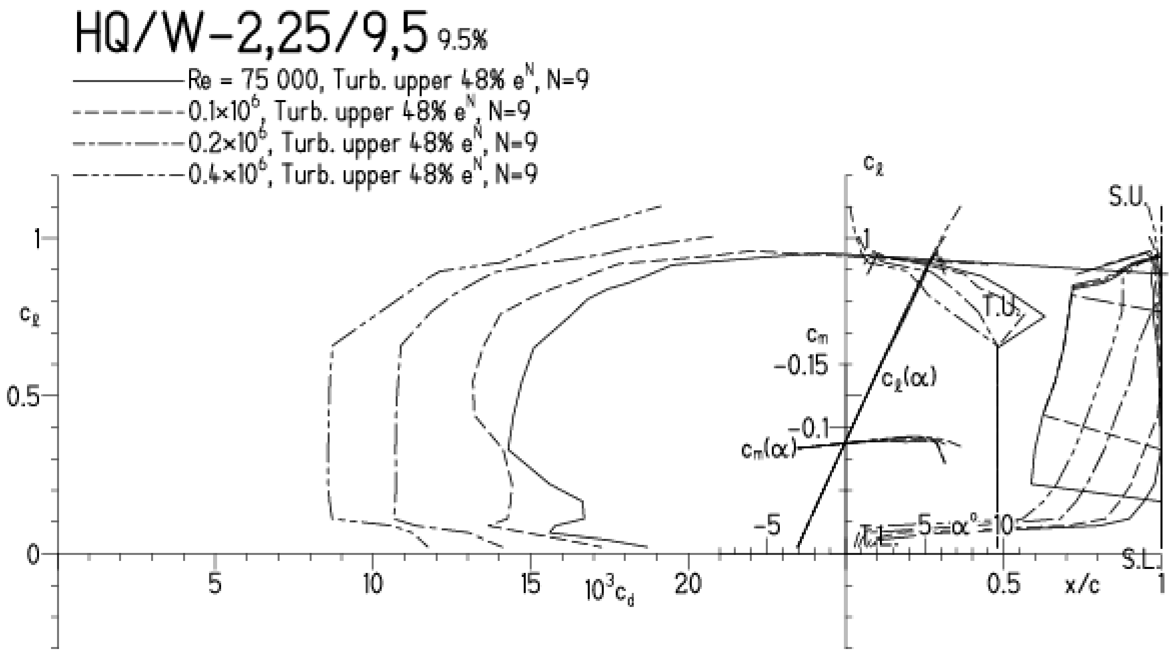

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

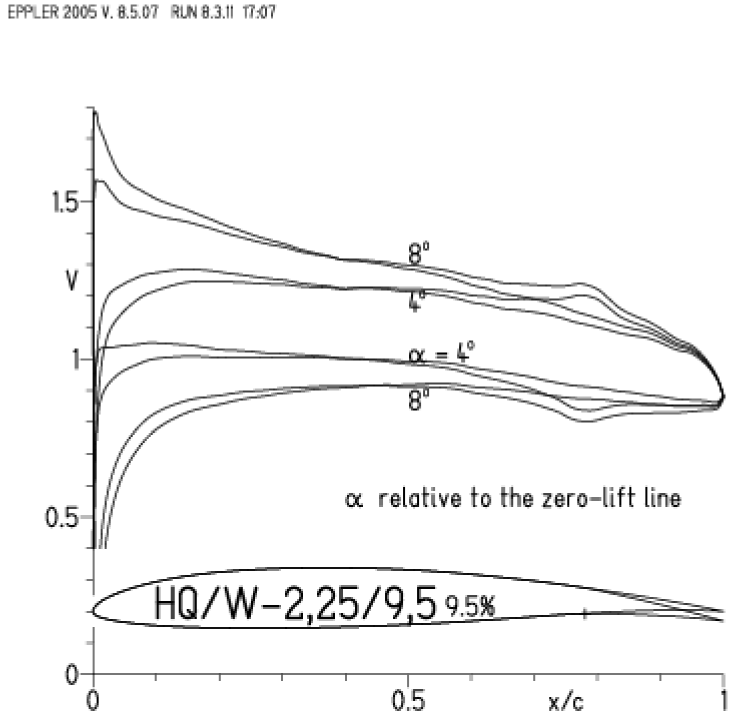
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

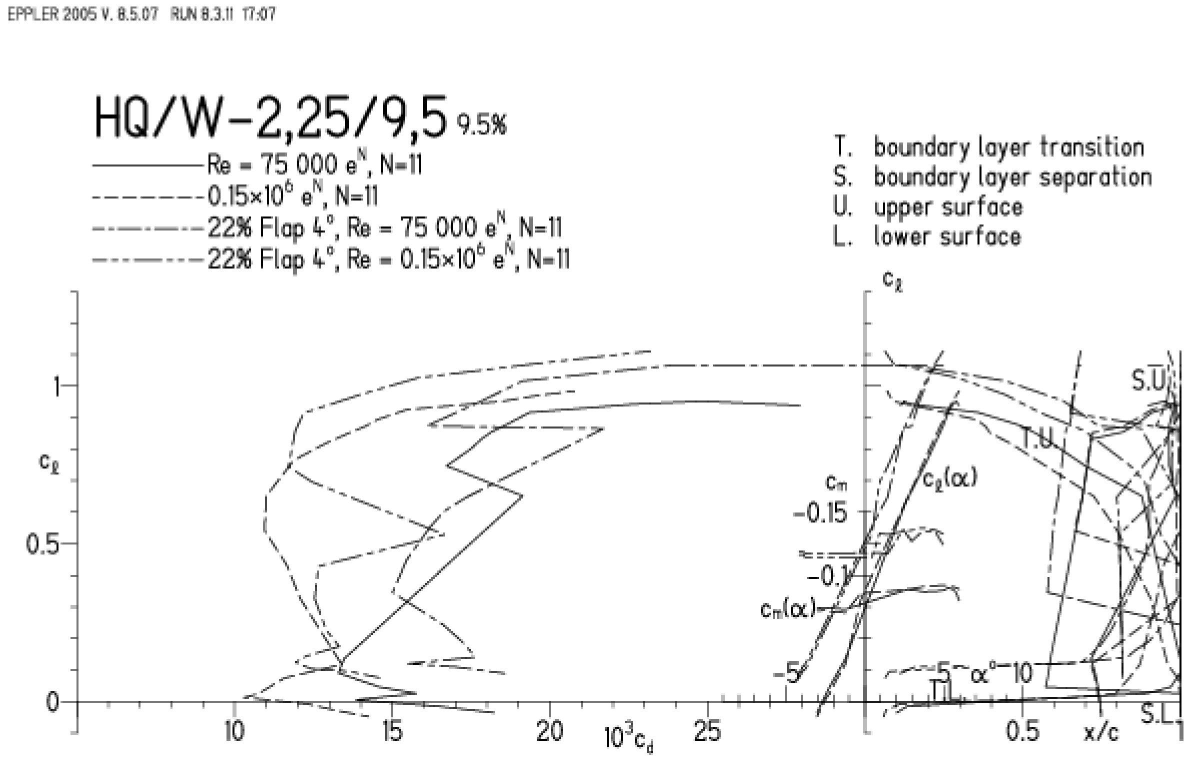


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

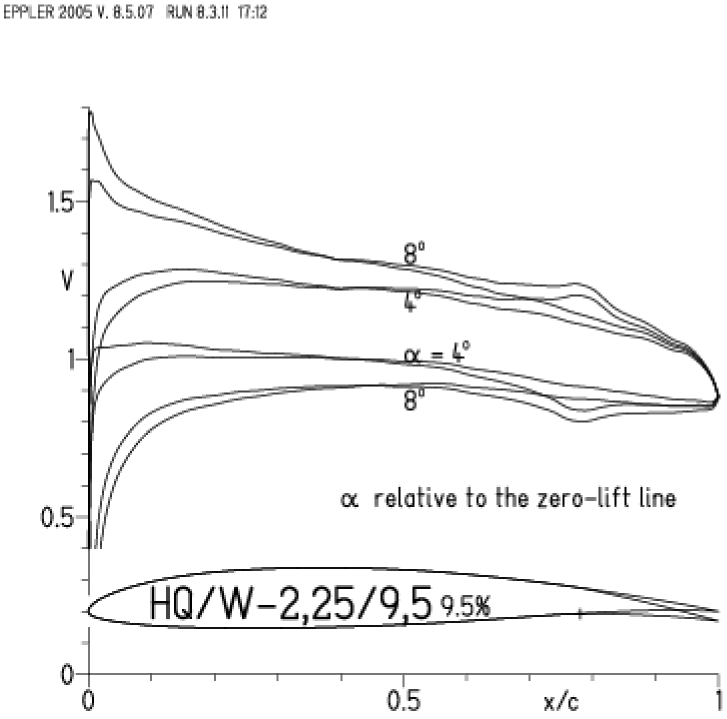


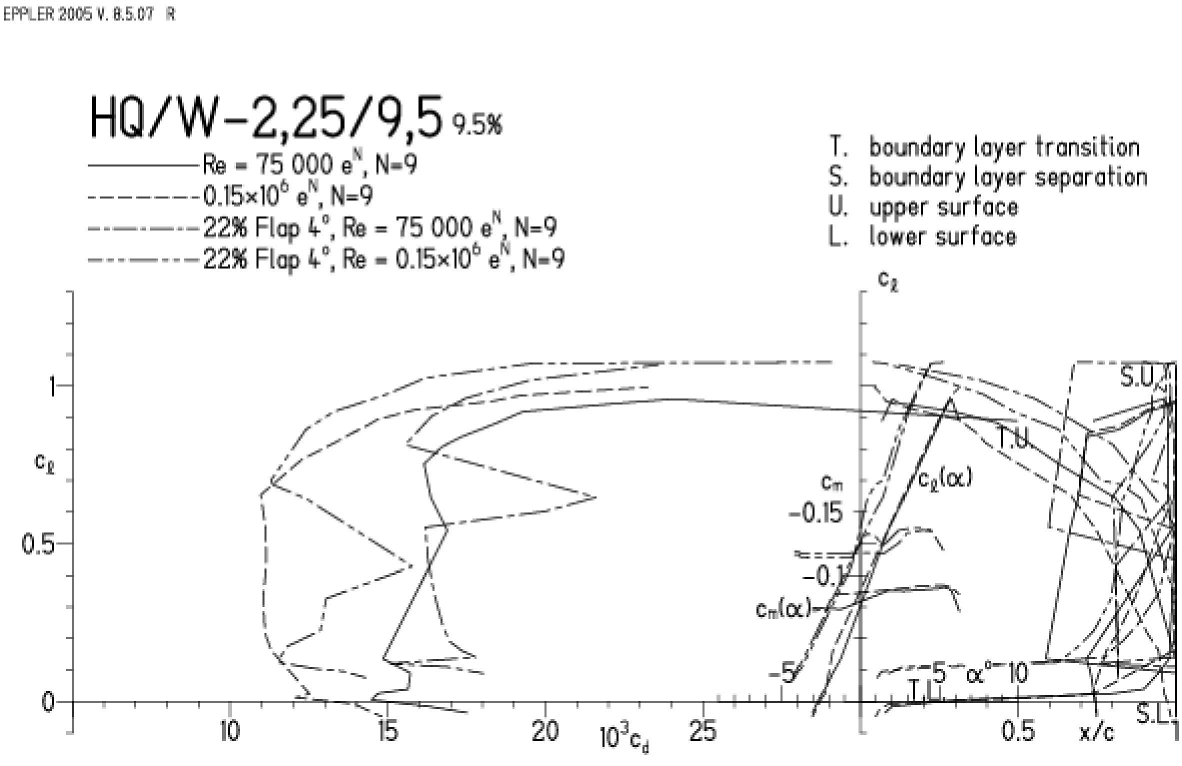
HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag





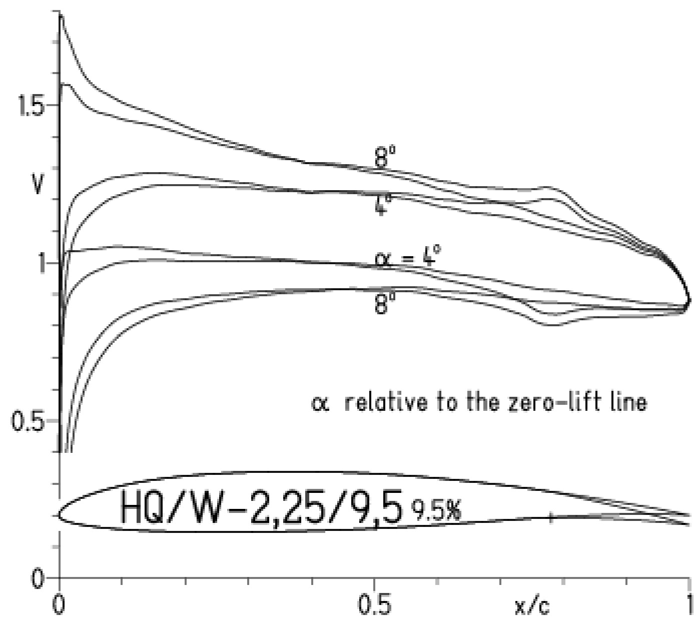
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



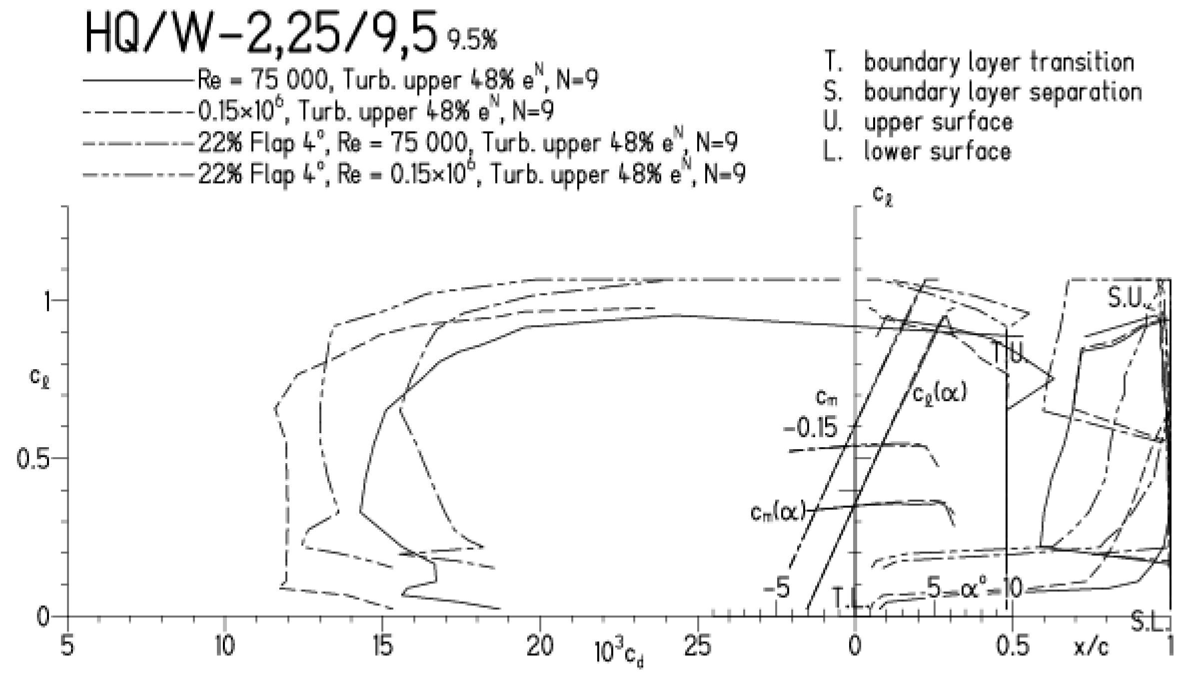


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

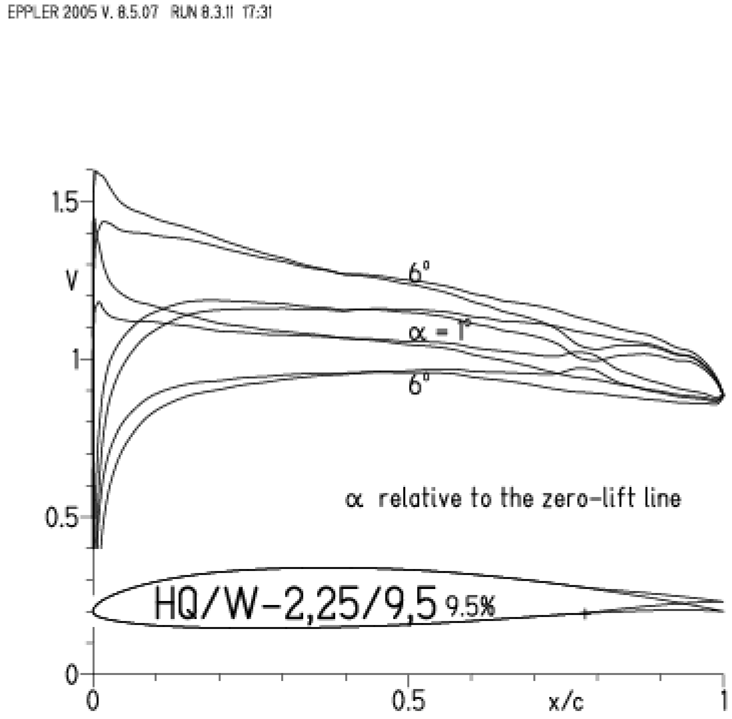
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

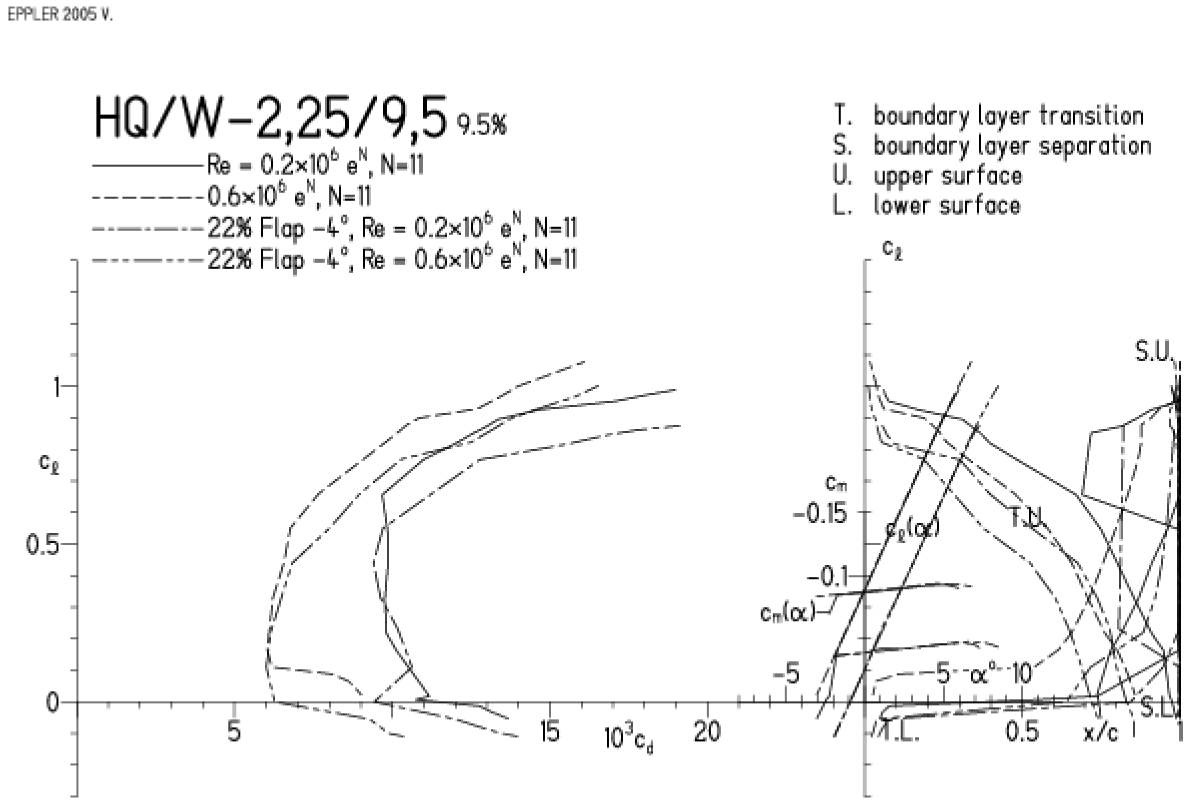


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



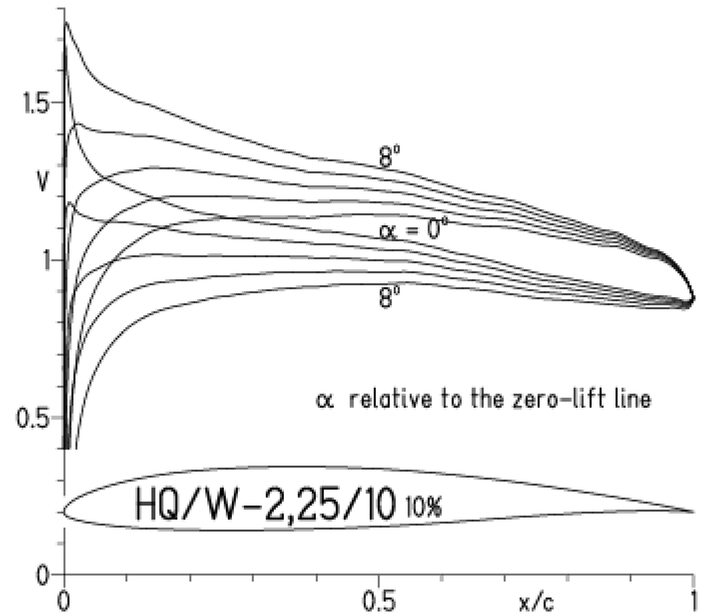
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



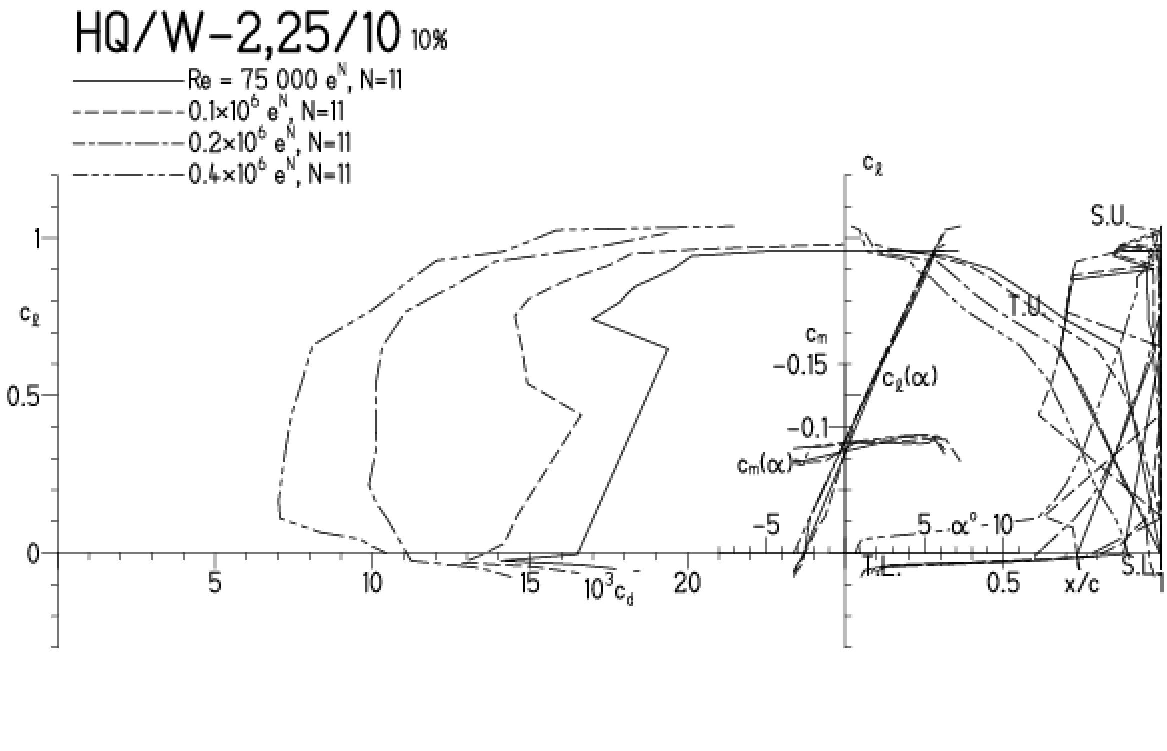


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

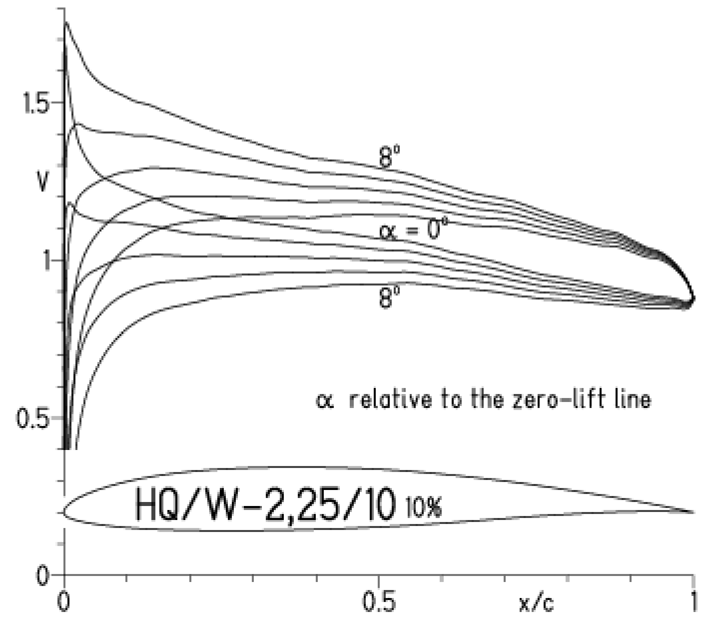


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

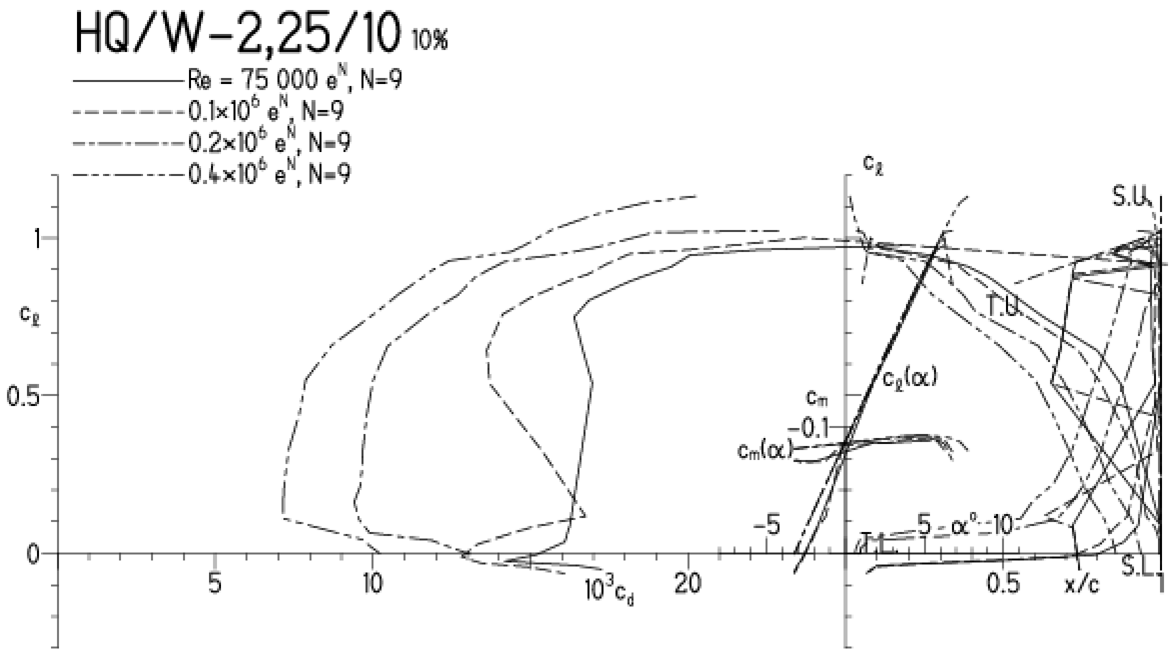


HQ/W-2,25/10, N=9

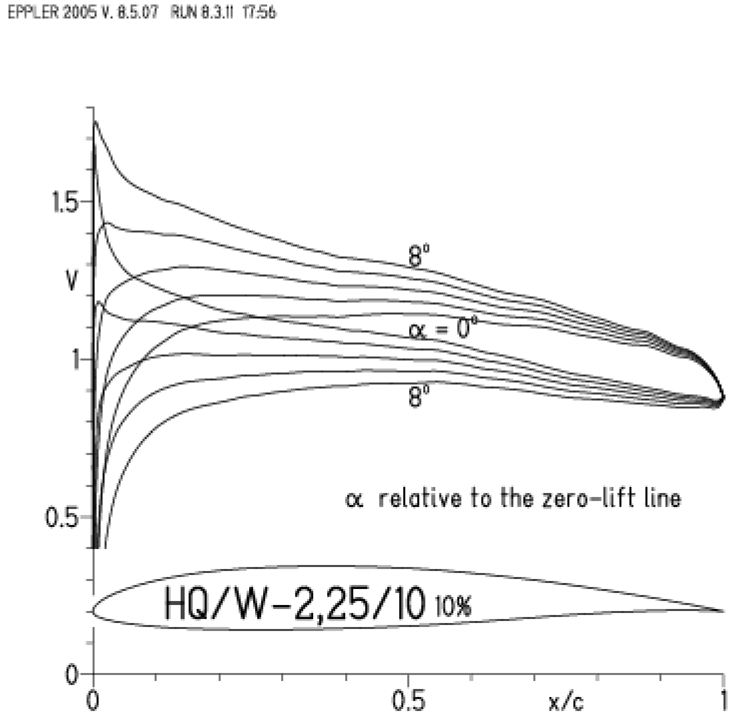
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

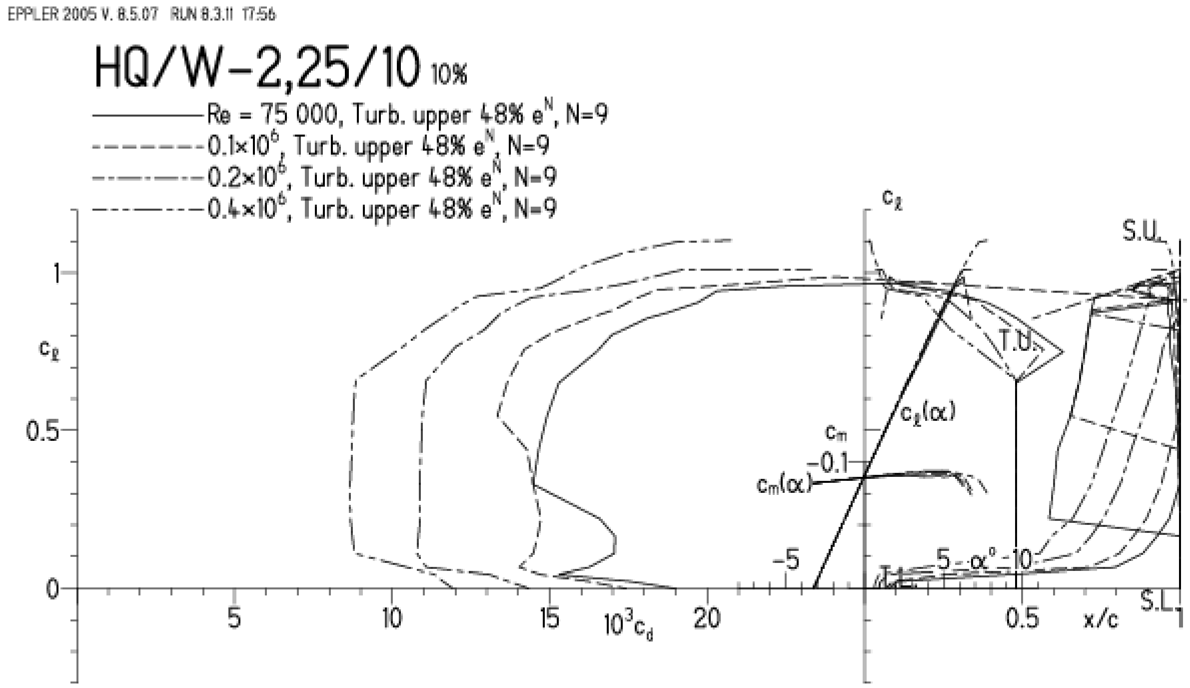


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



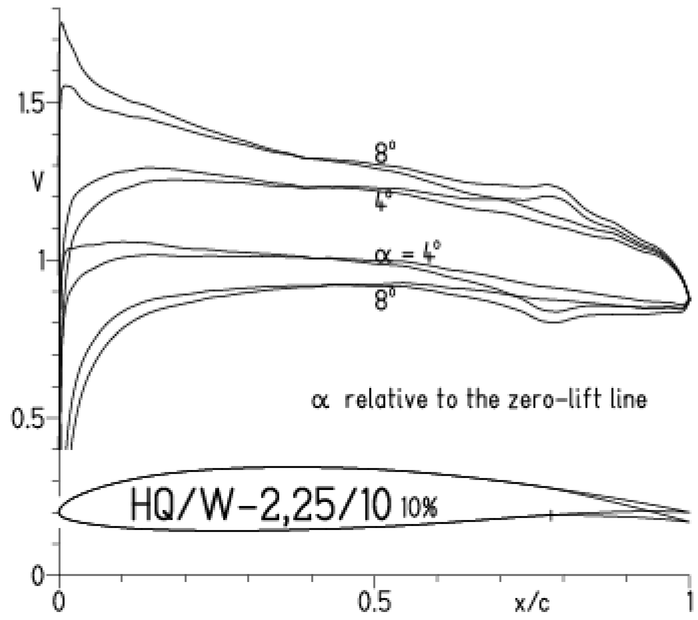
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



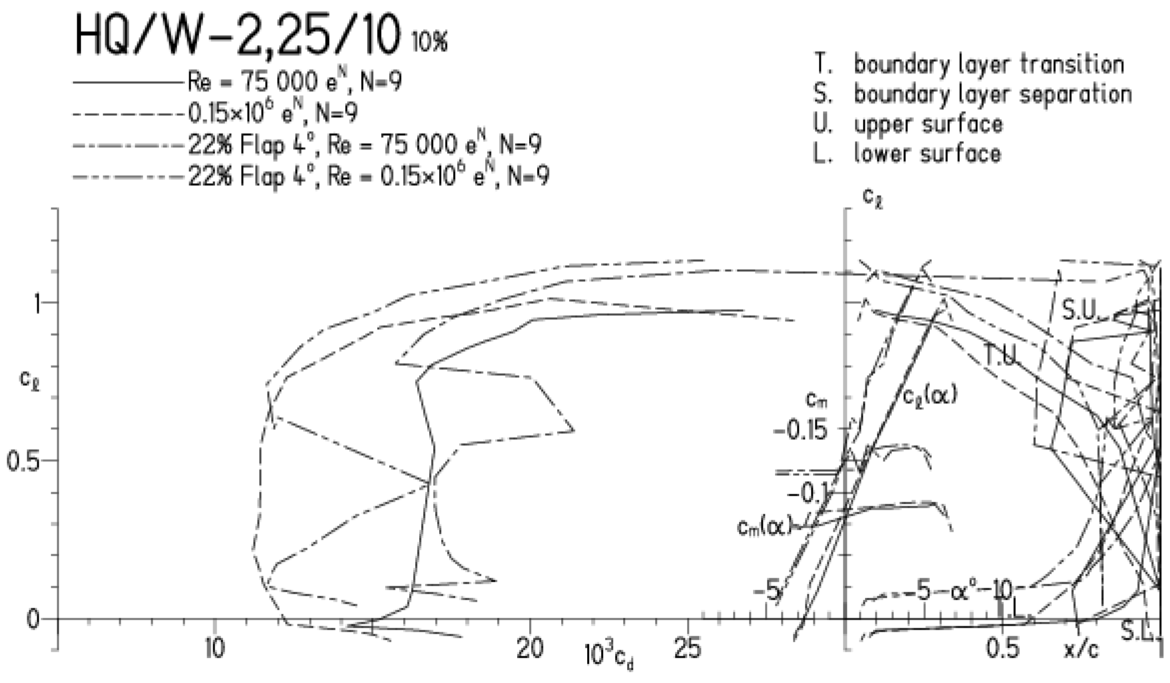


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

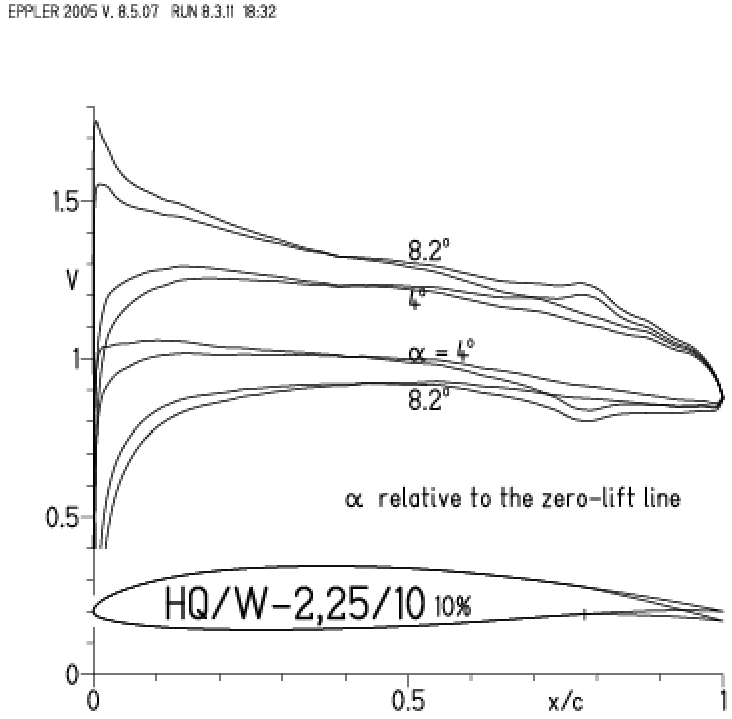
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

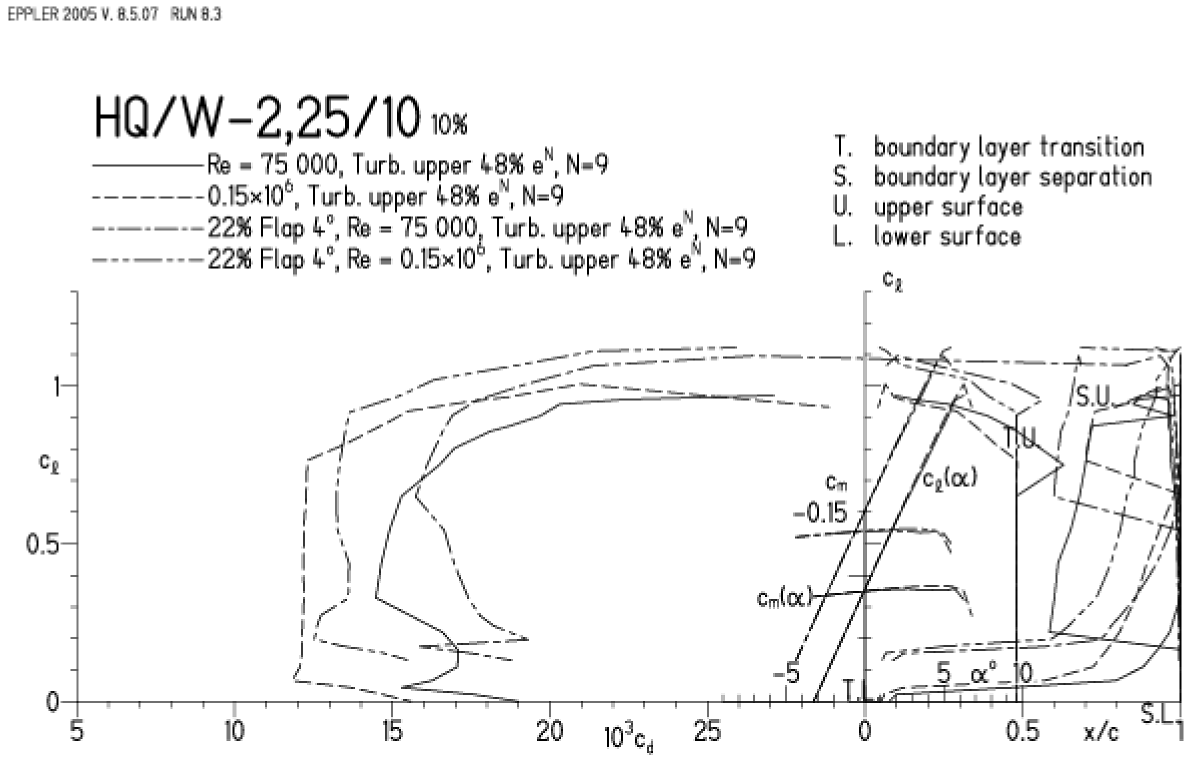


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



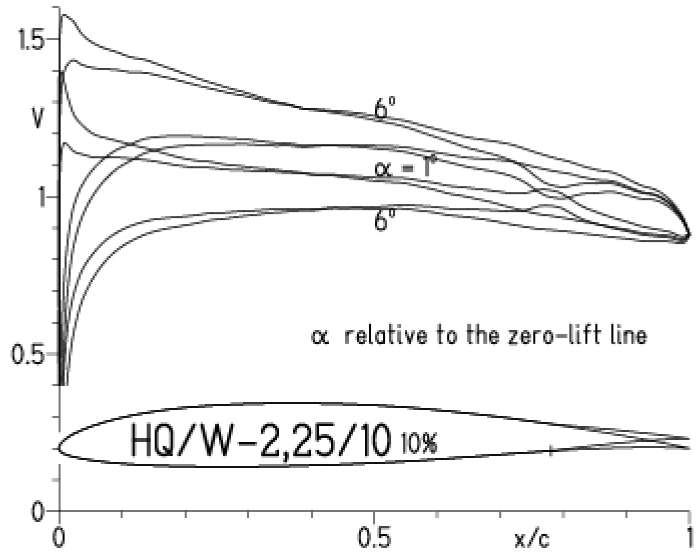
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



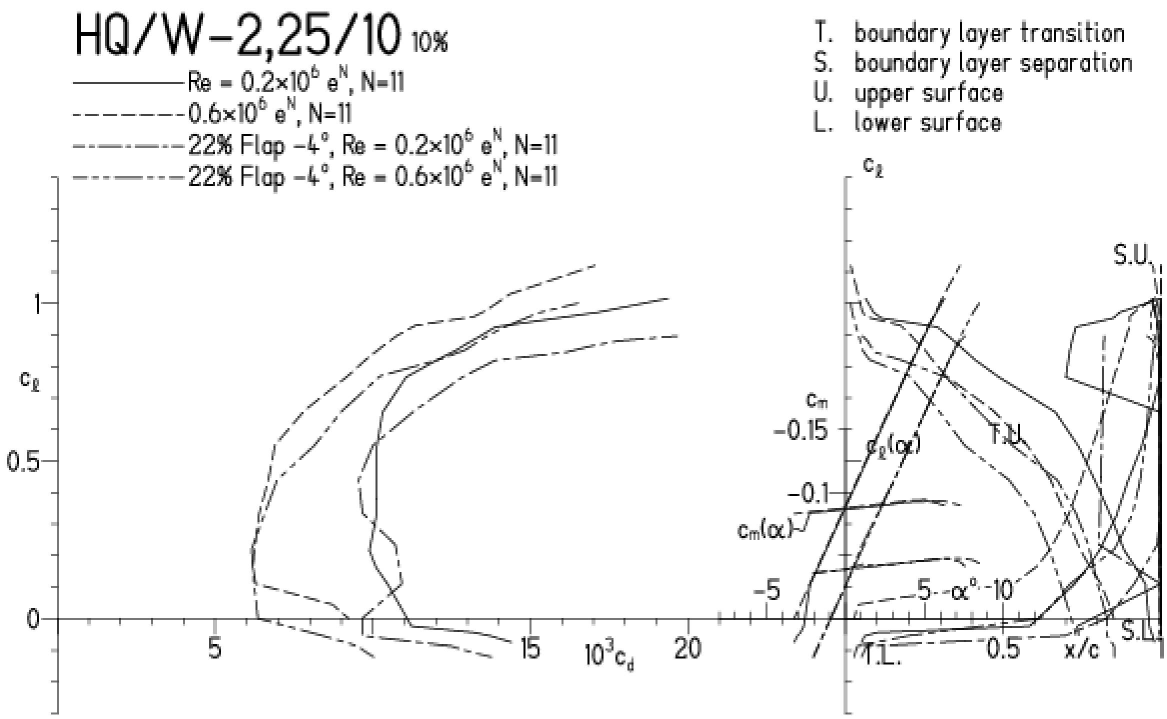


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

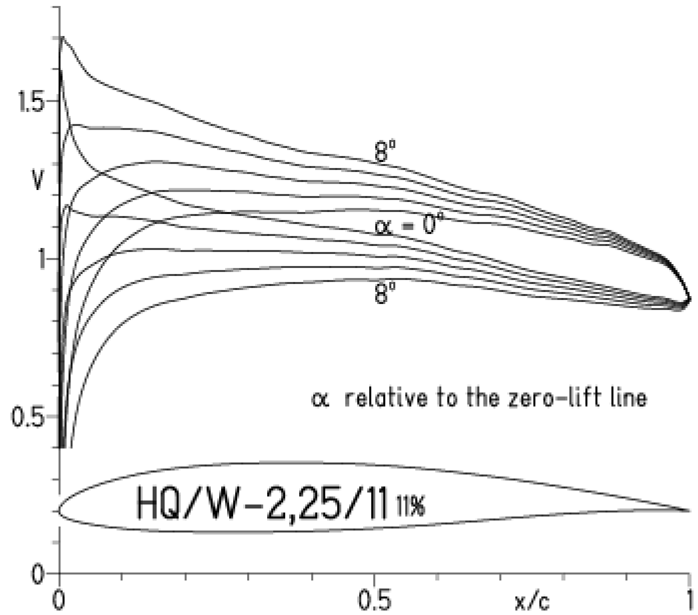


EPPLER 2005 V. 8.5.07 RUN

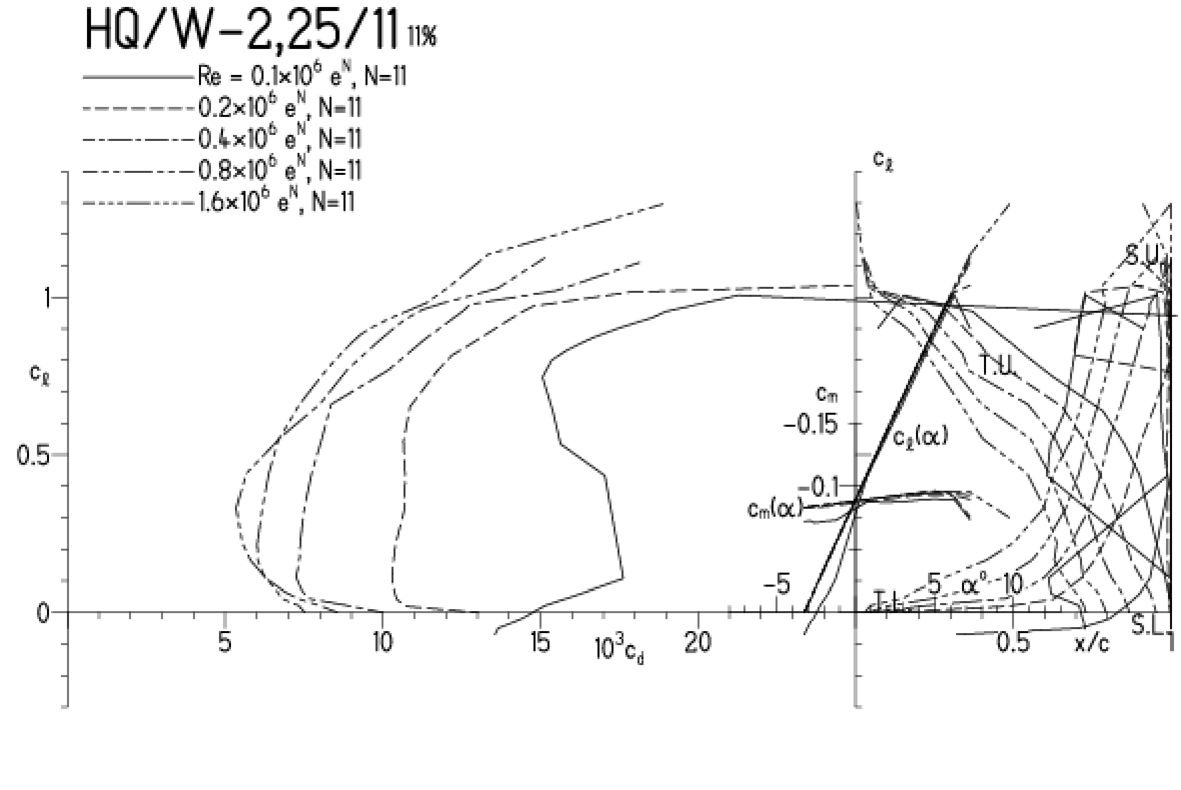


HQ/W-2,25/11, N=11

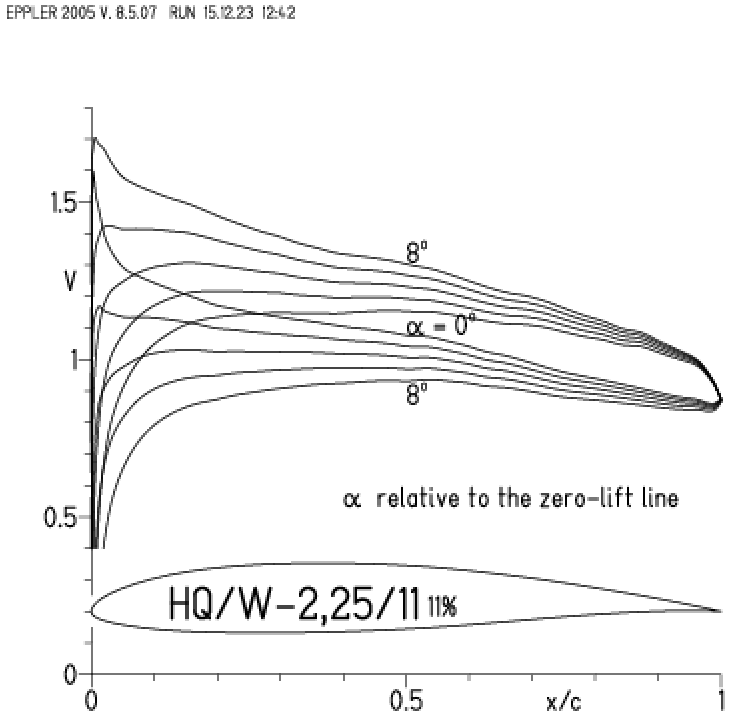
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

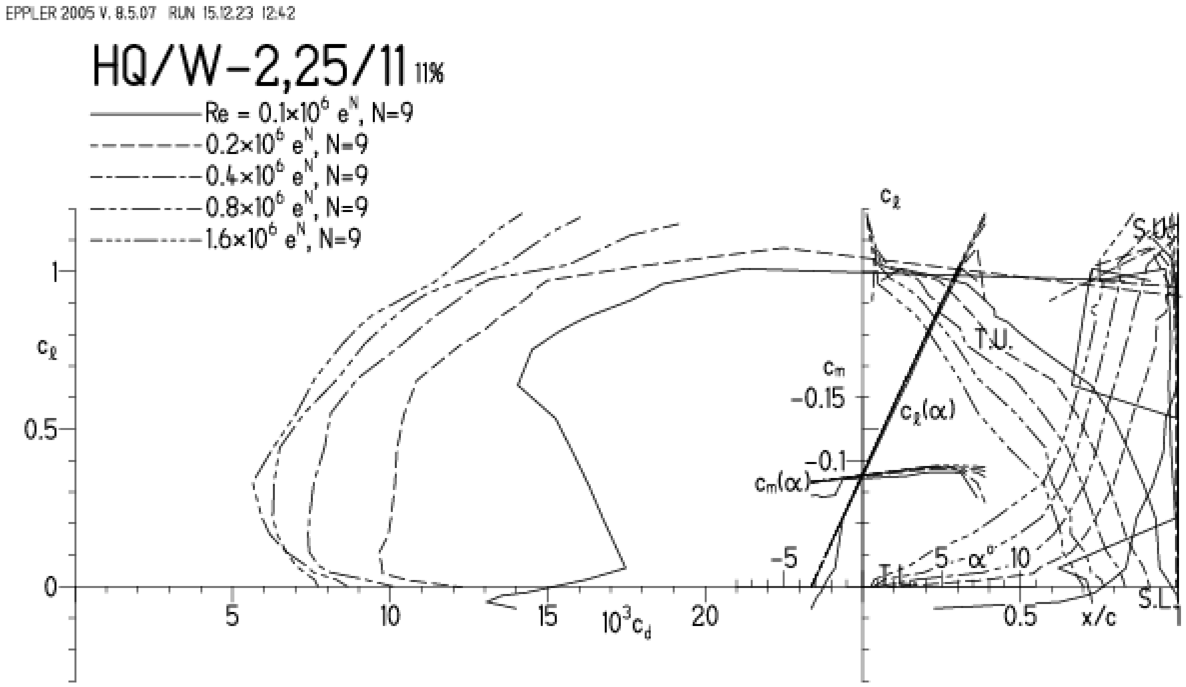


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

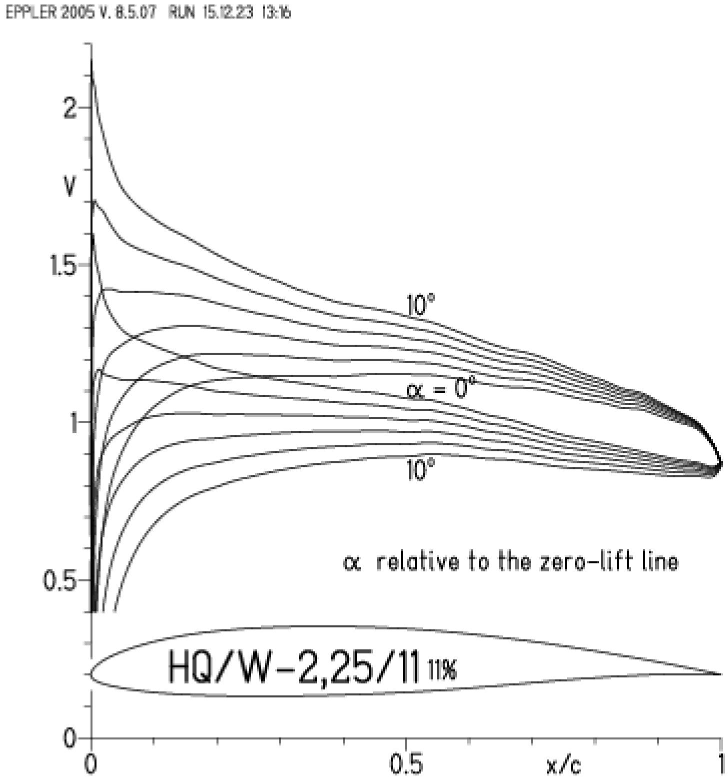


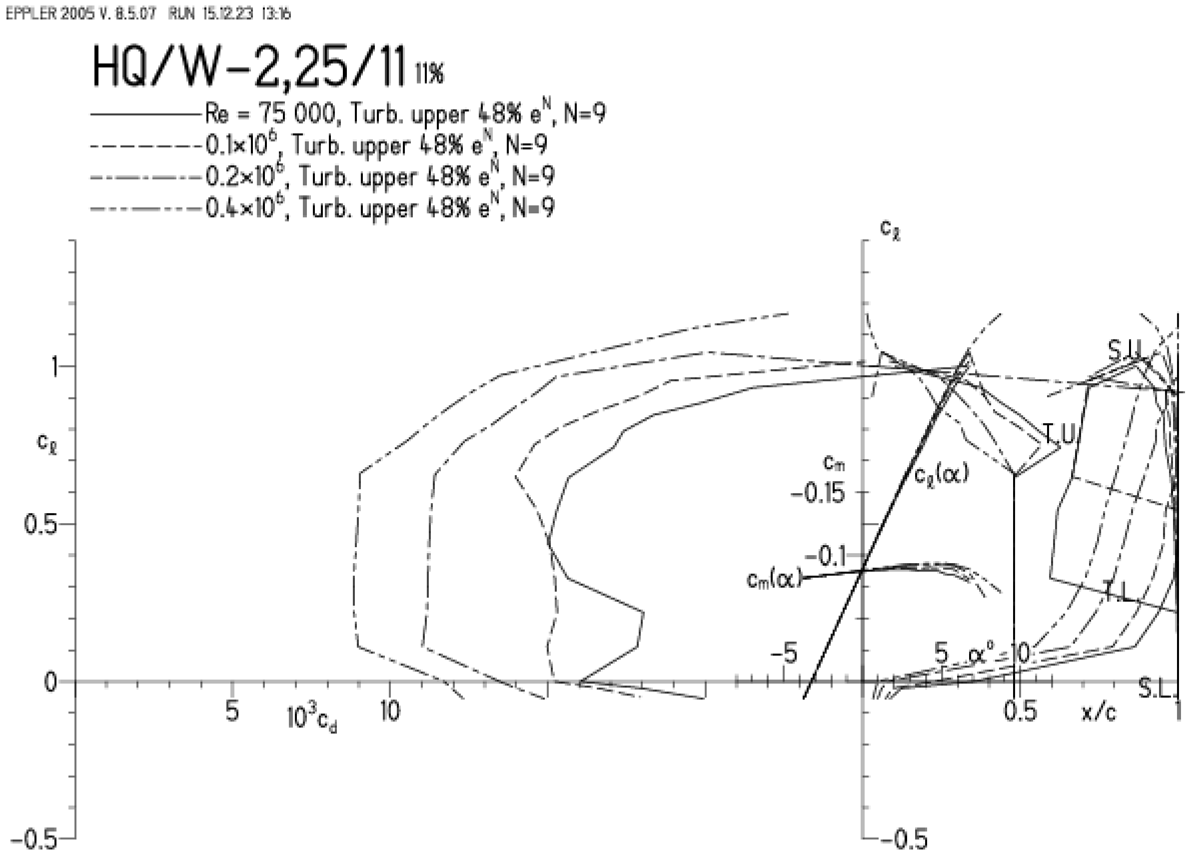
HQQ/W-2,25/11, N=9



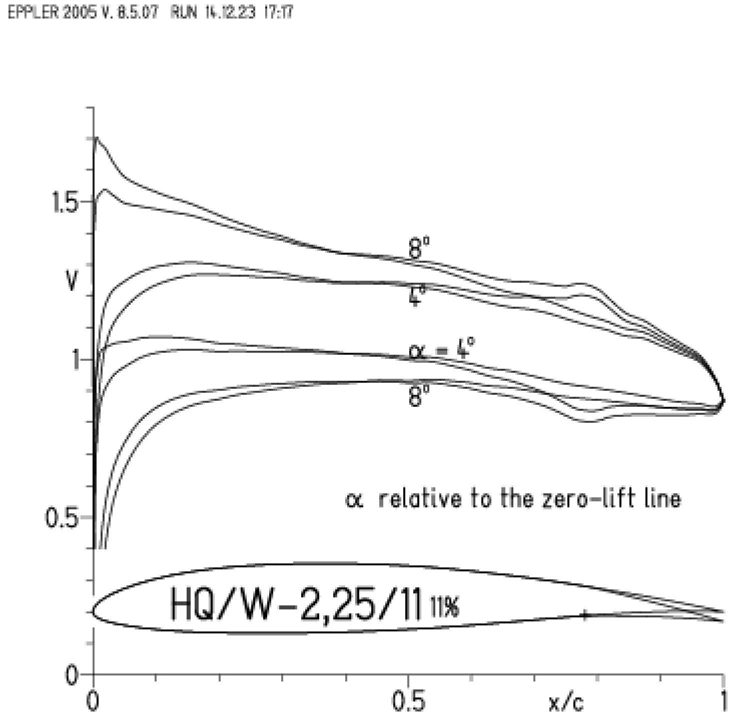


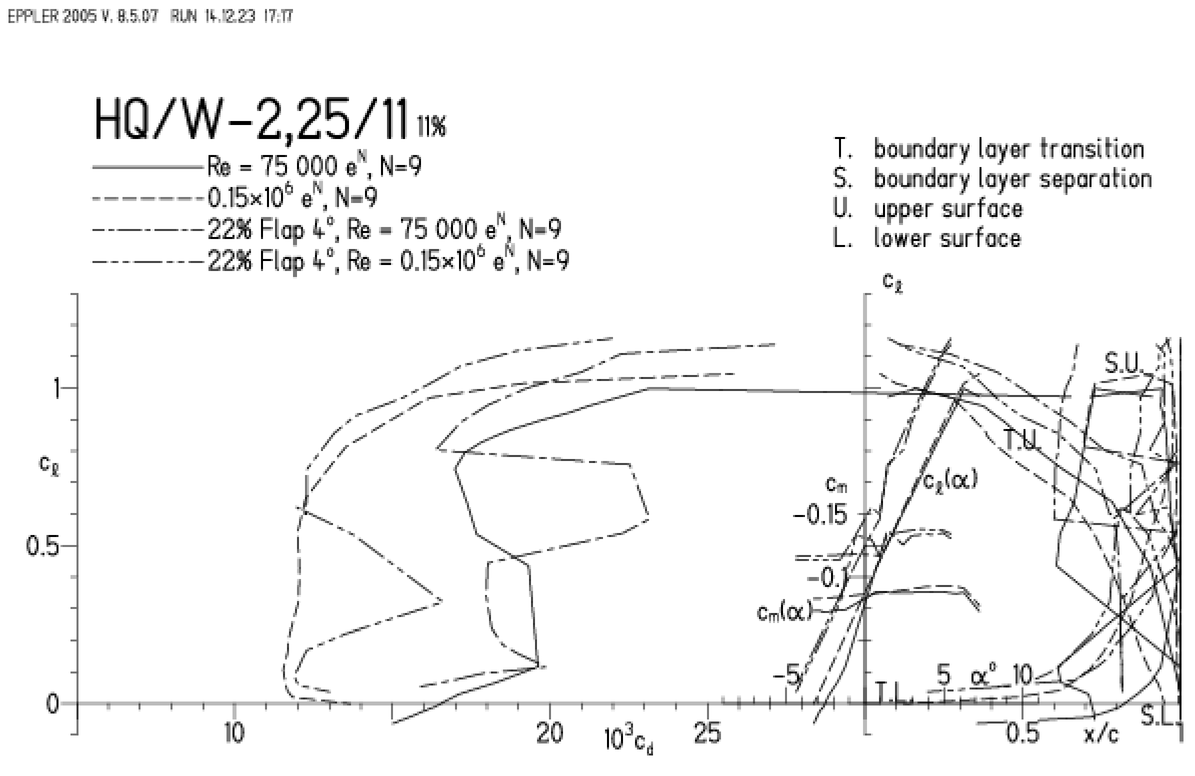
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





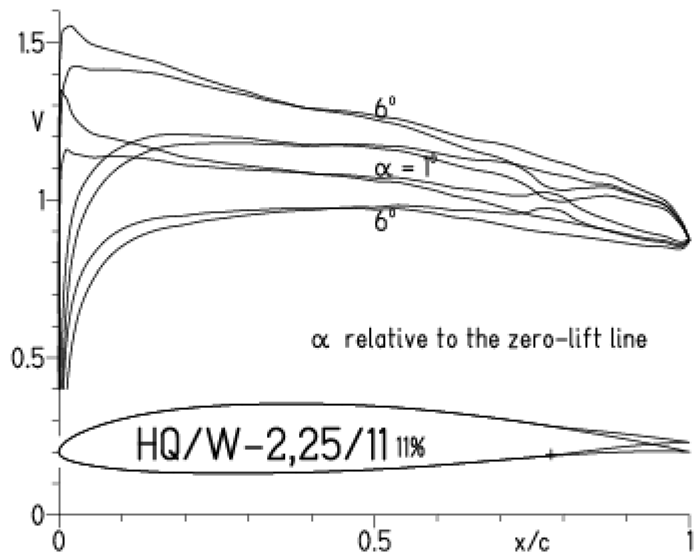
HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag



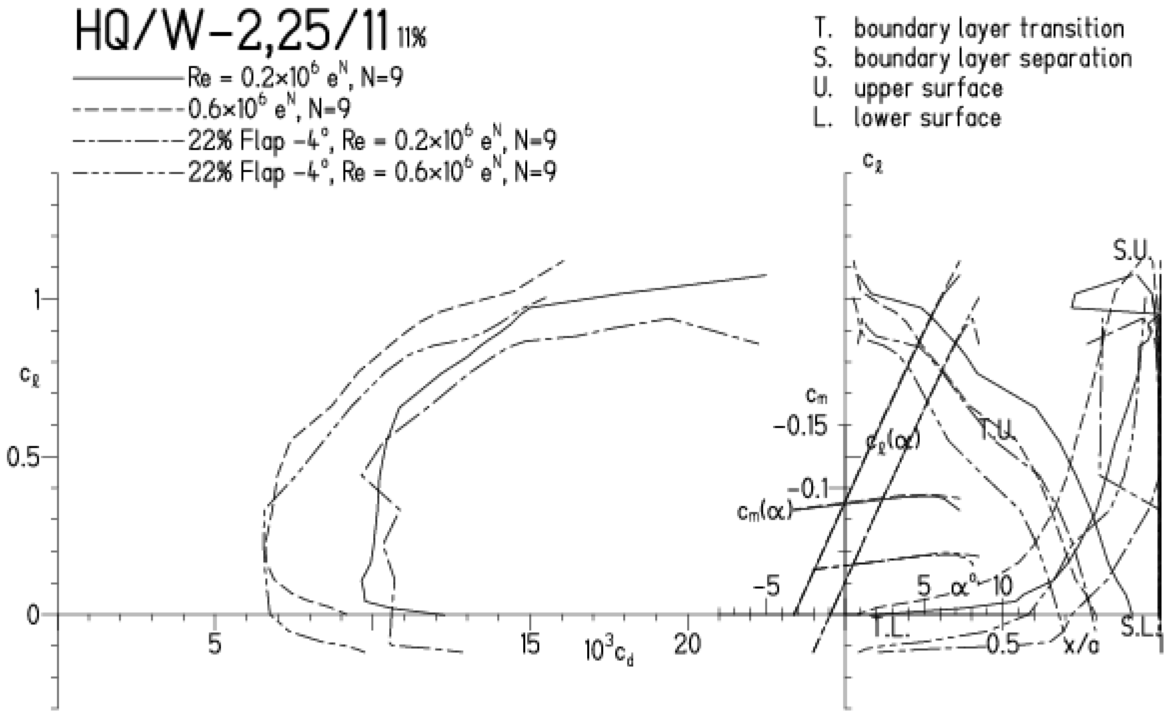


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

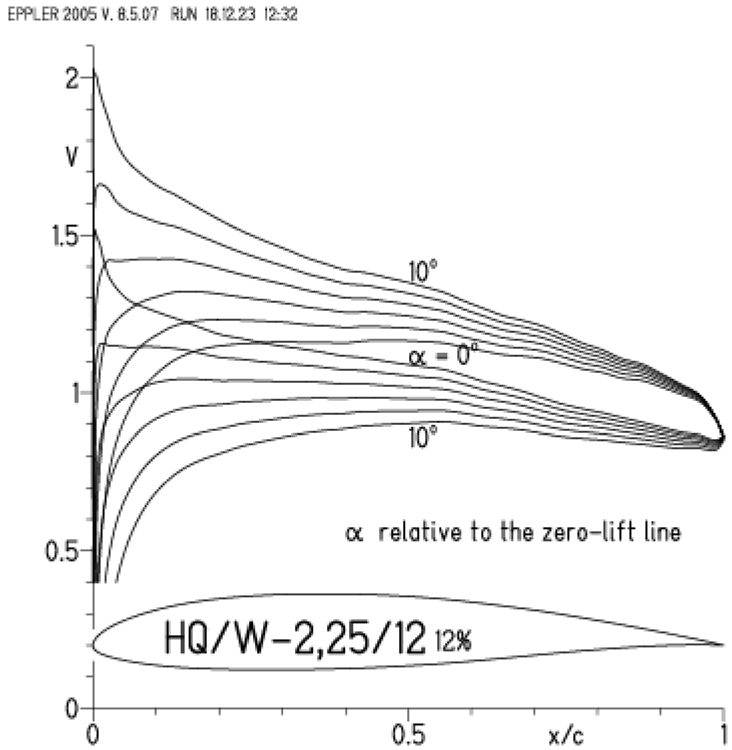
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

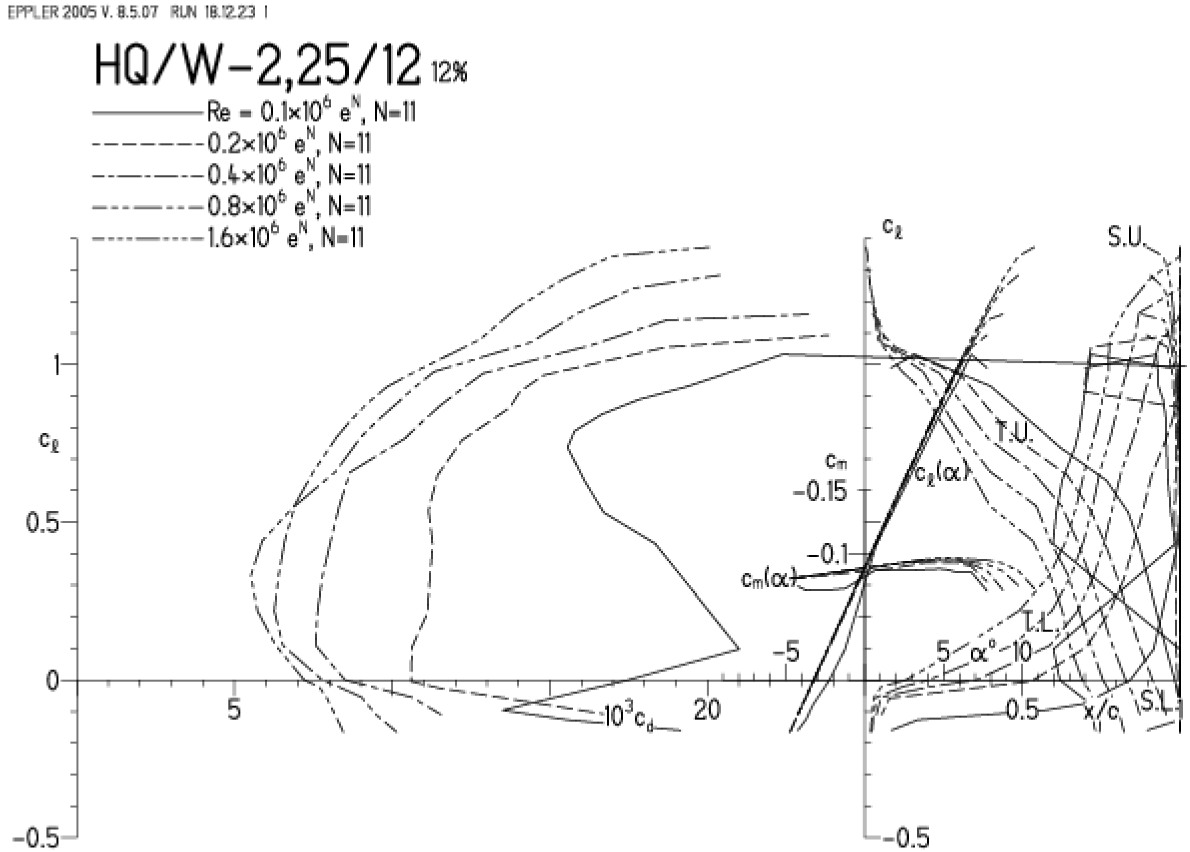


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

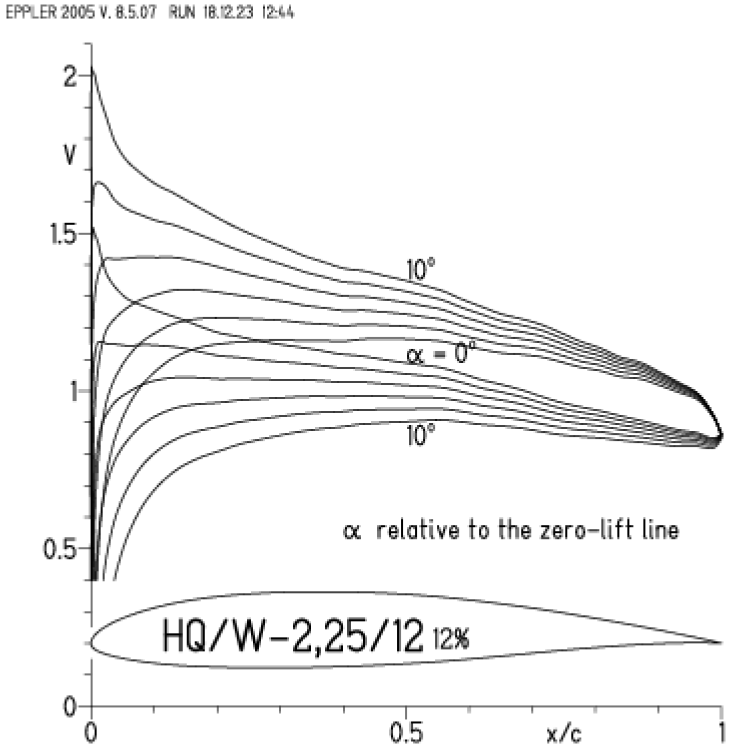


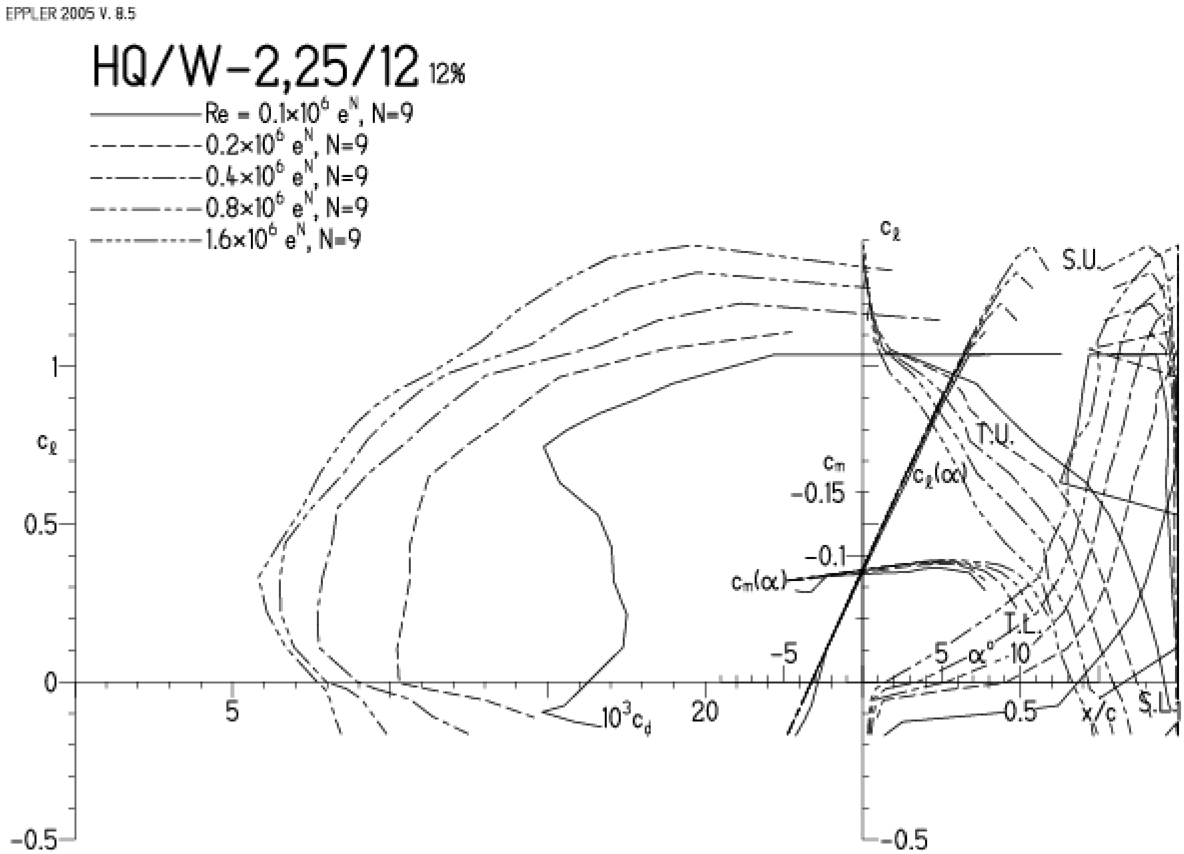
HQ/W-2,25/12, N=11



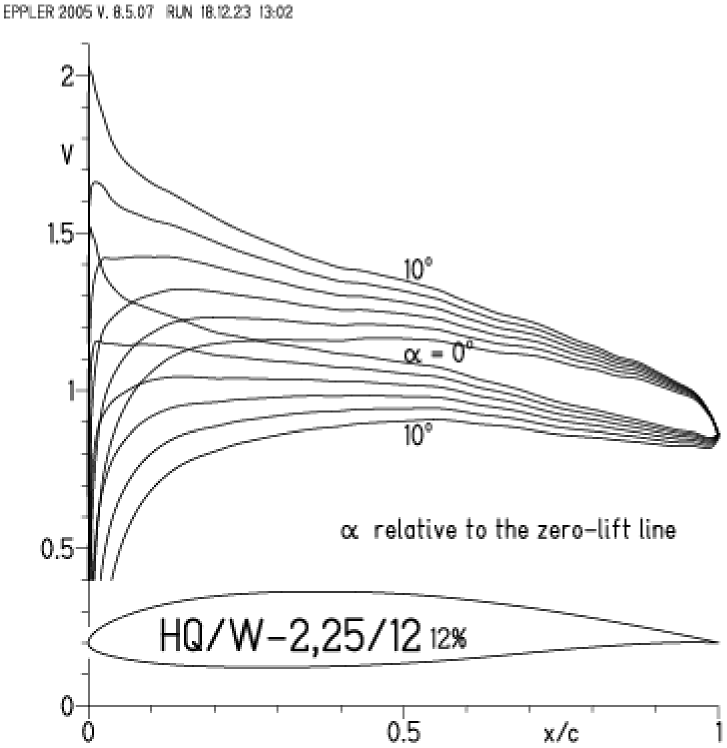


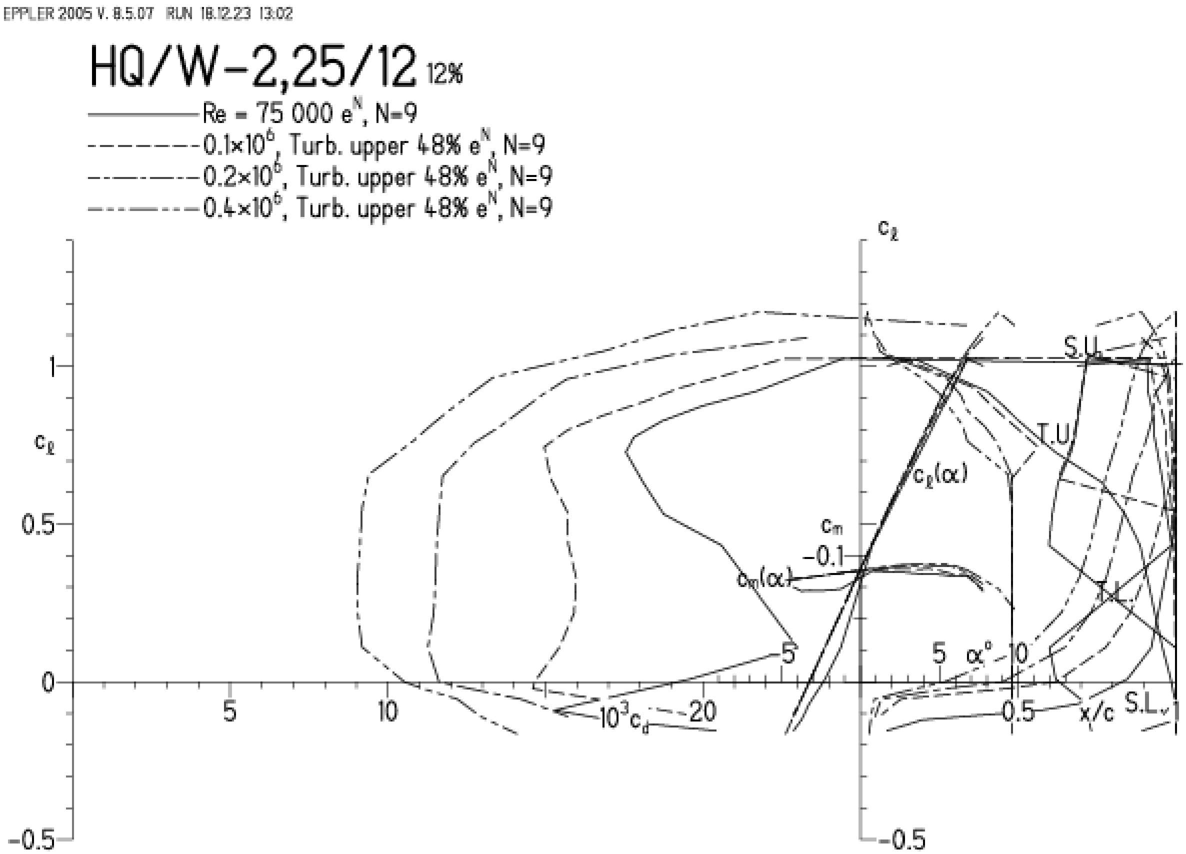
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_m
c_ℓ(α)
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

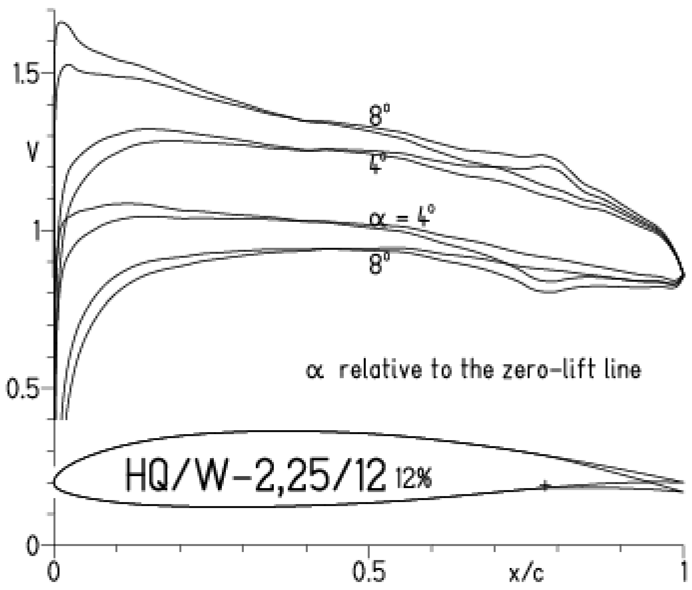
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



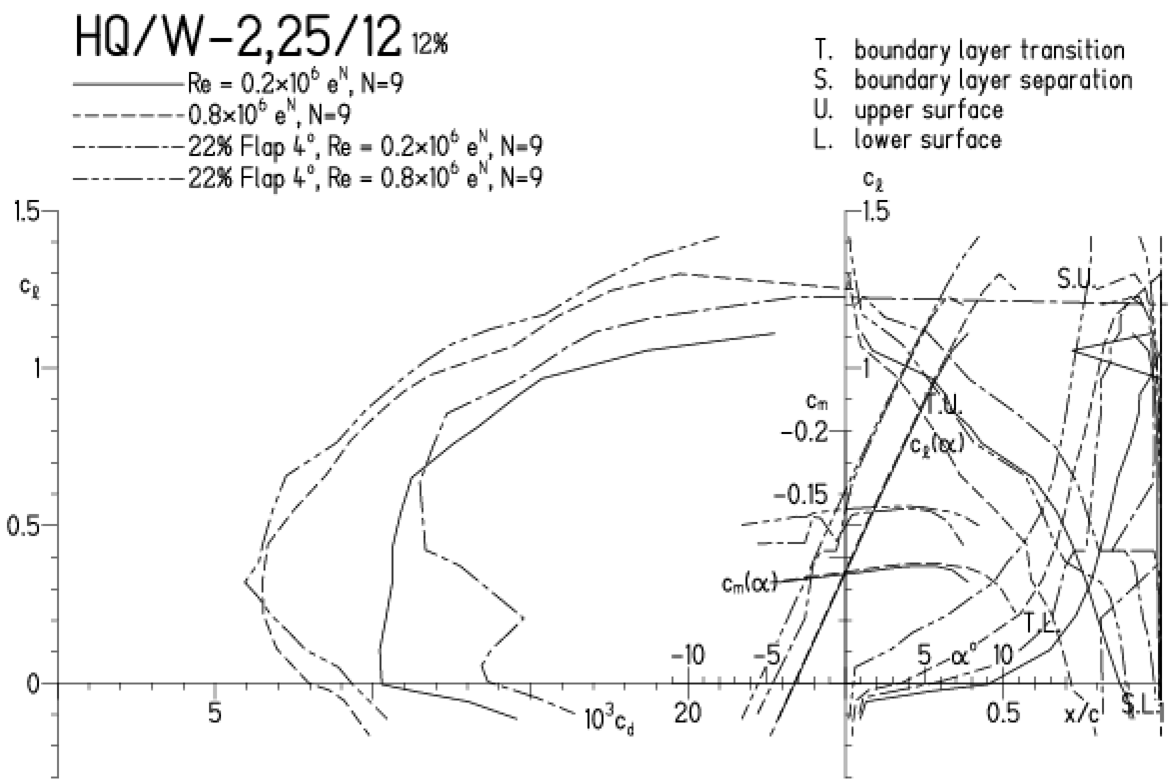


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

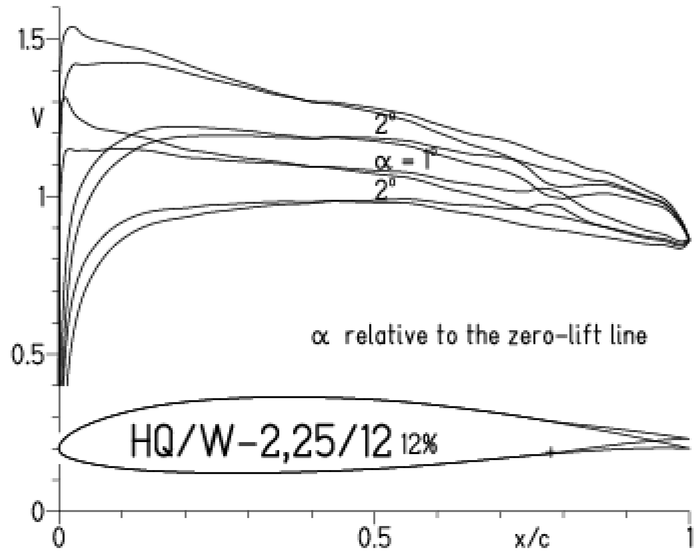


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

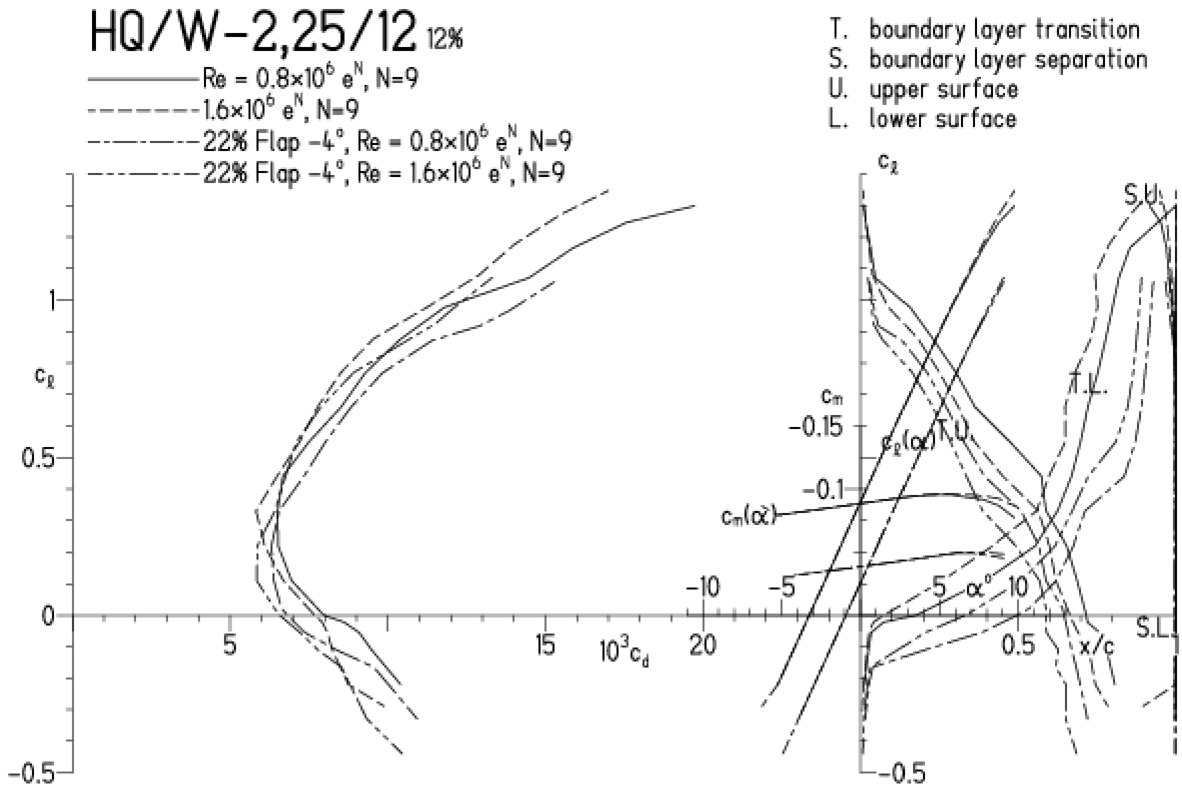


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

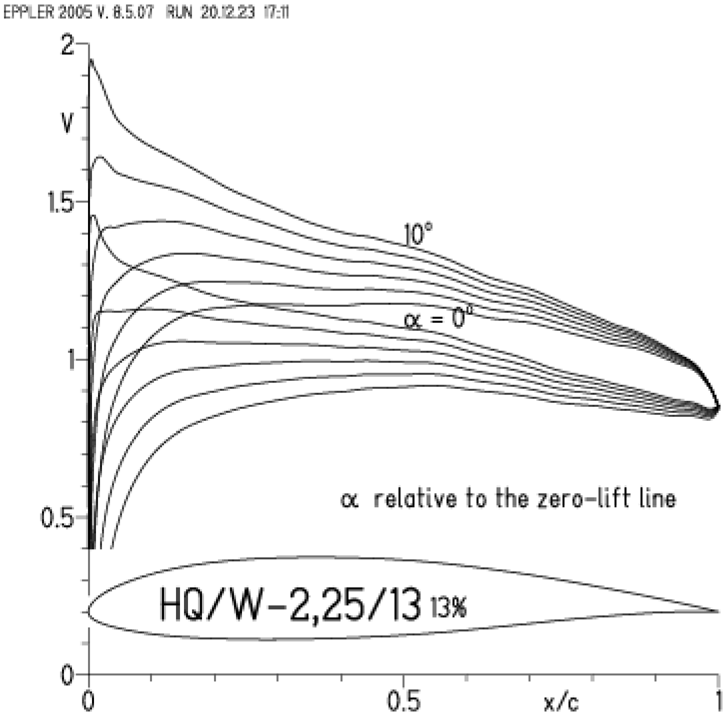
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

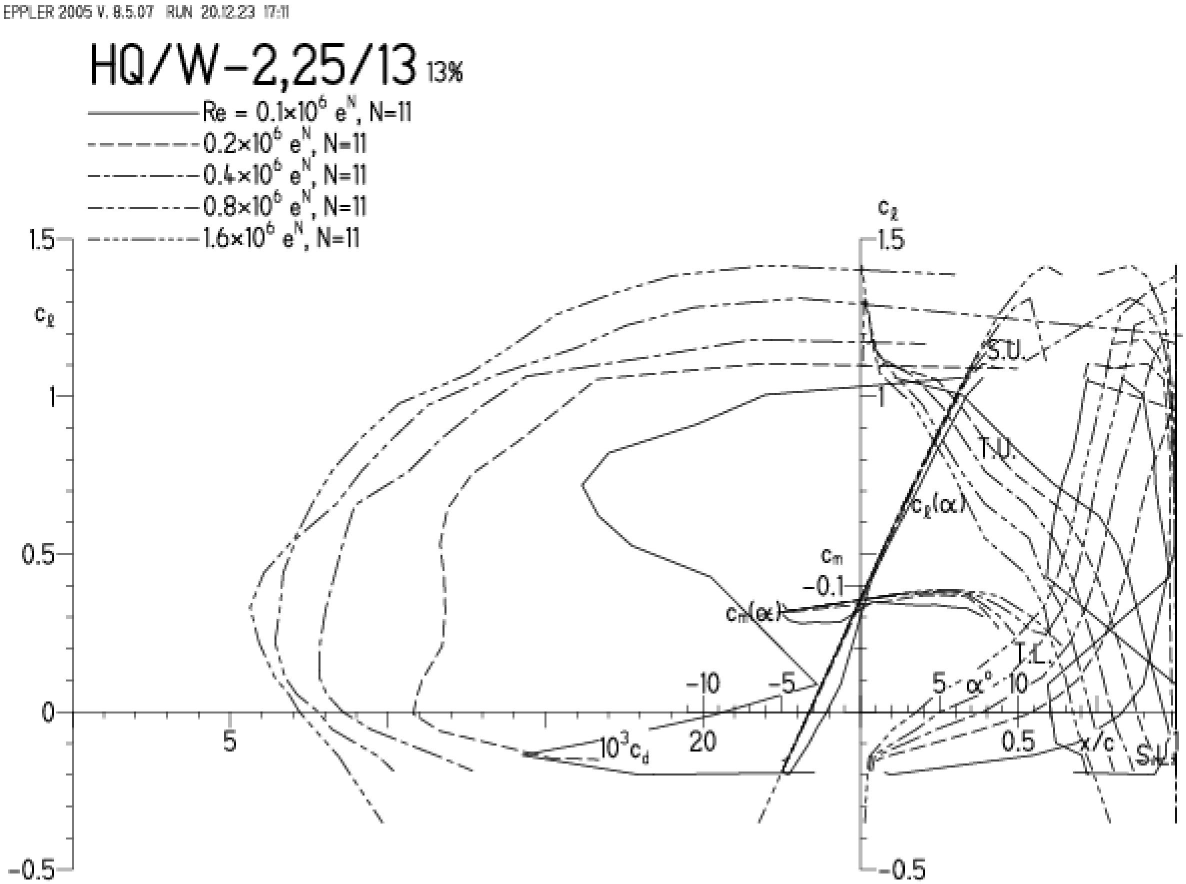


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

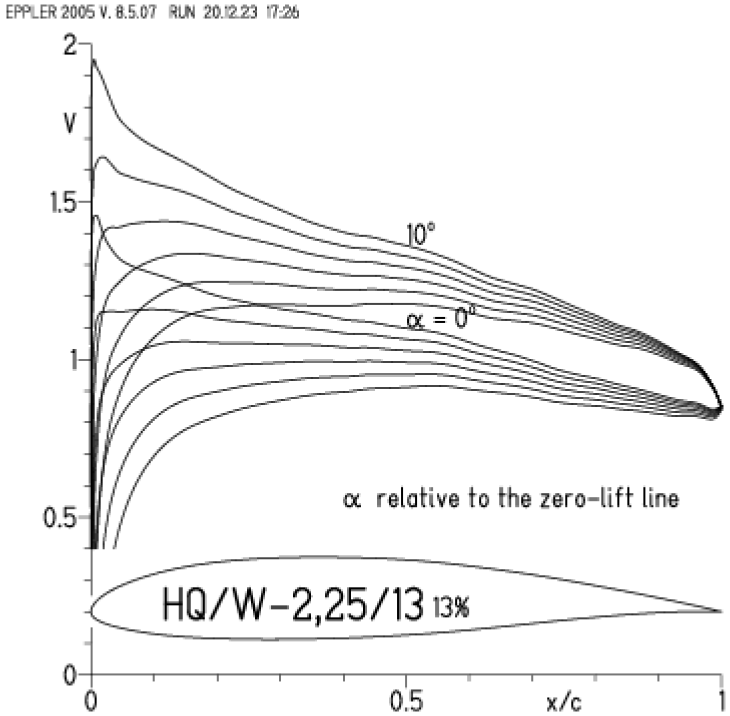


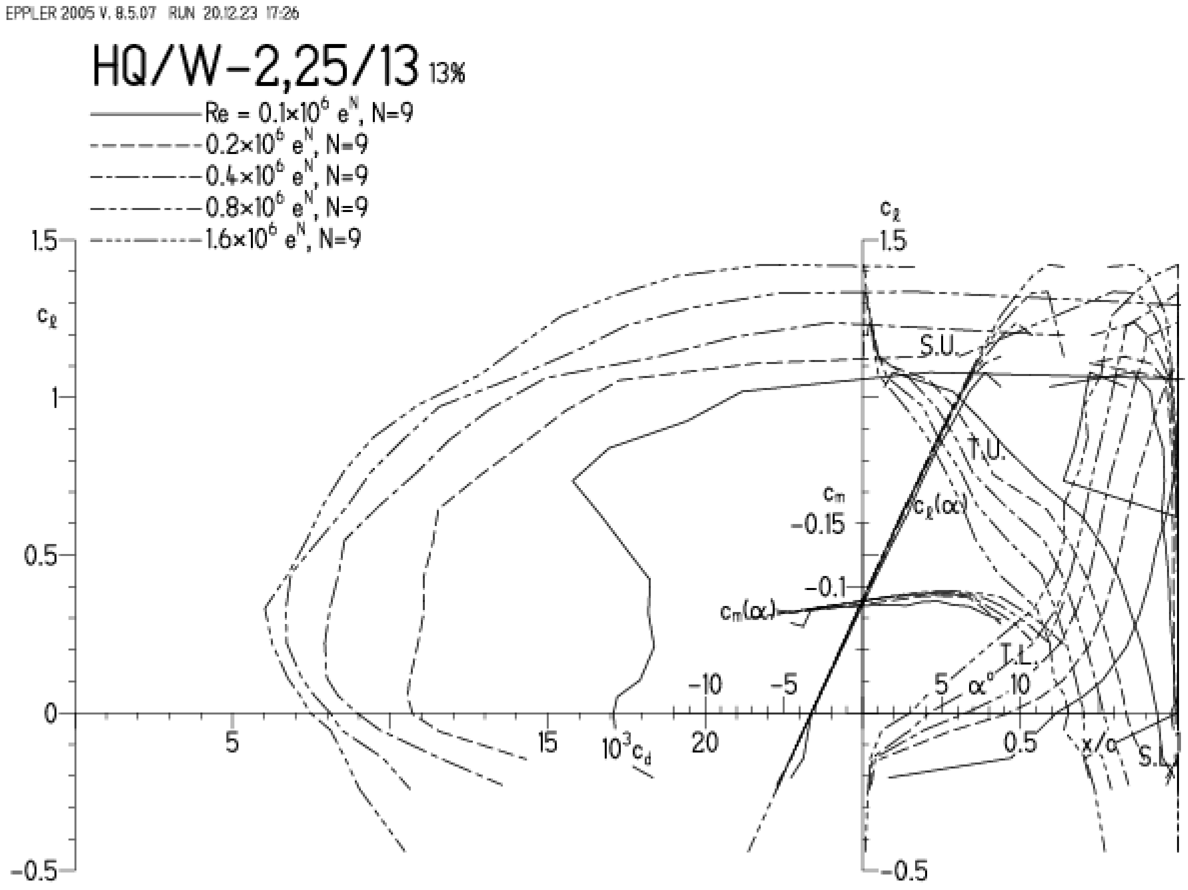
<u>HQ/W-2,25/13</u>, N=11



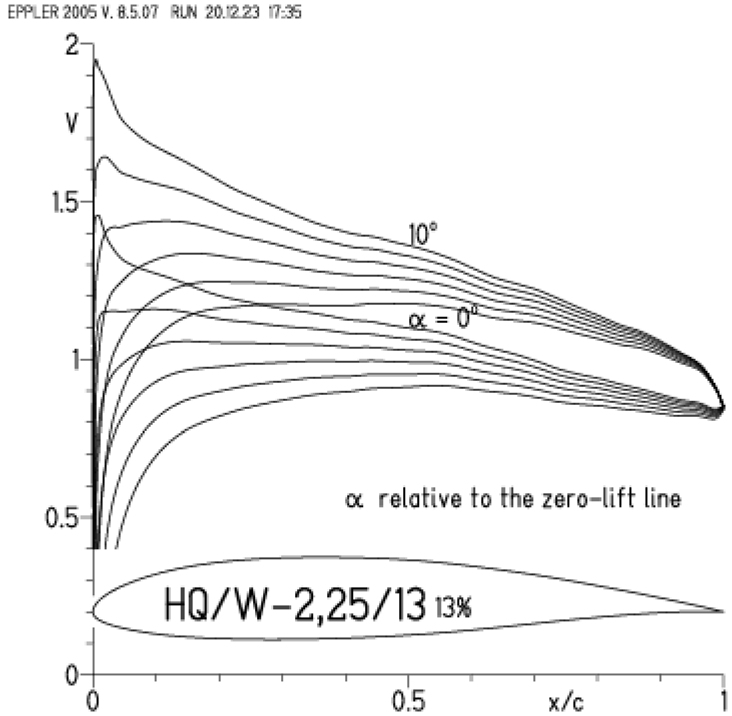


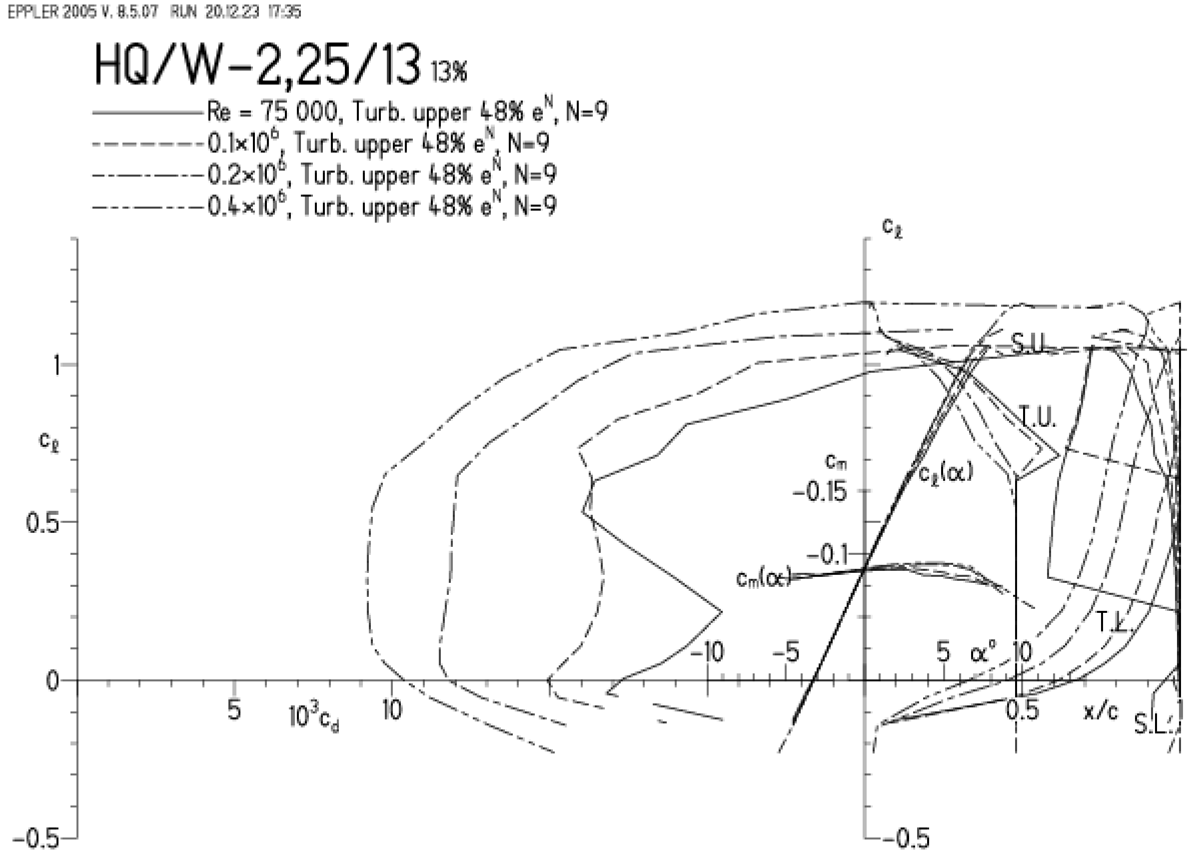
<u>HQ/W-2,25/13</u>, N=9





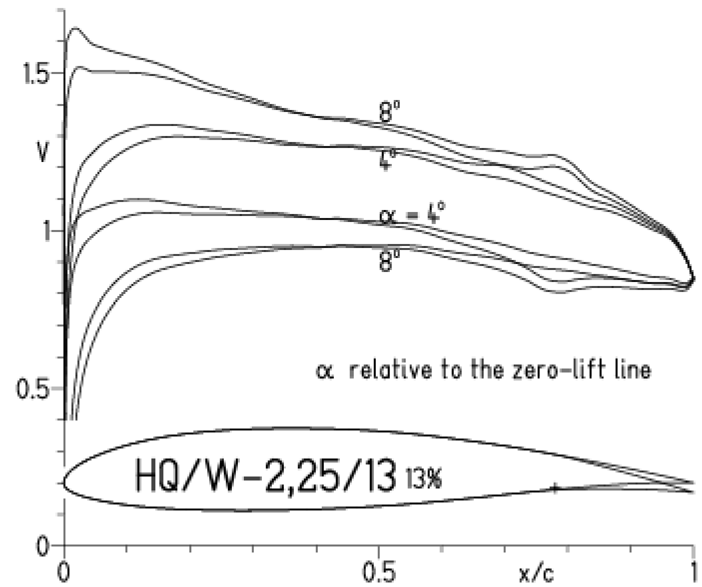
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



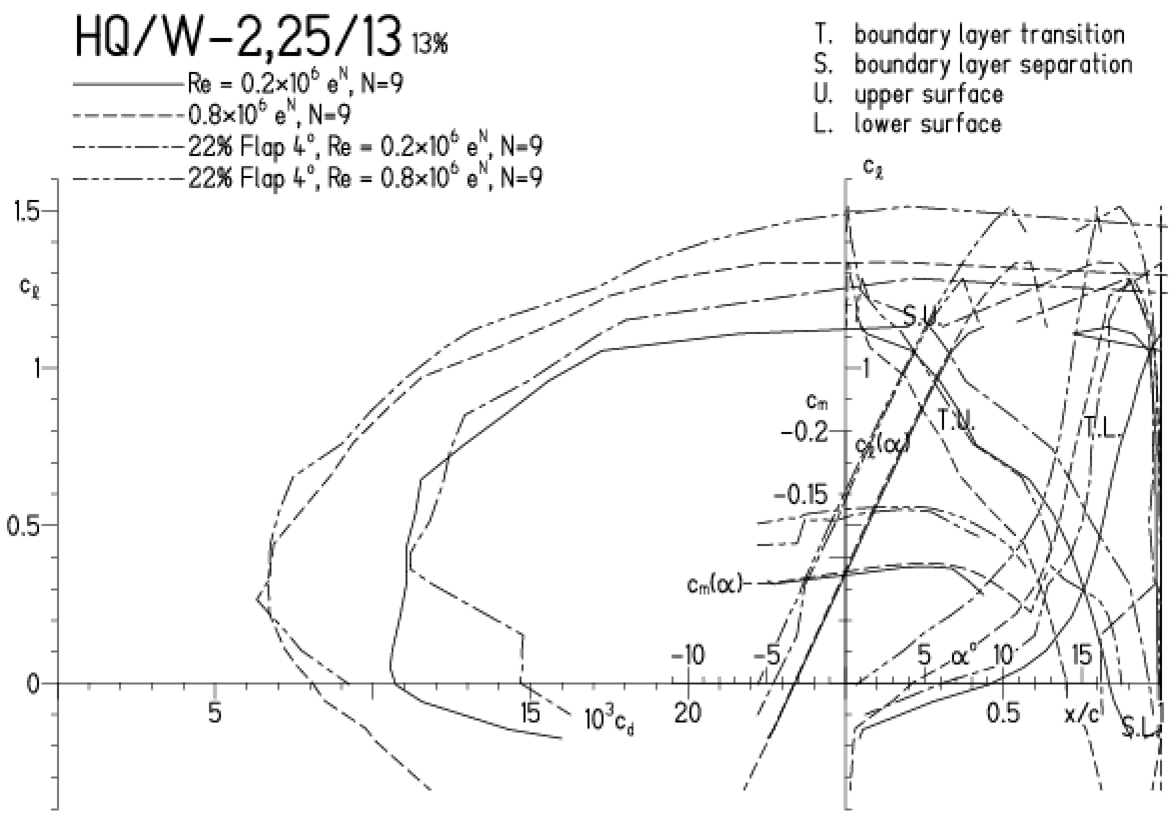


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

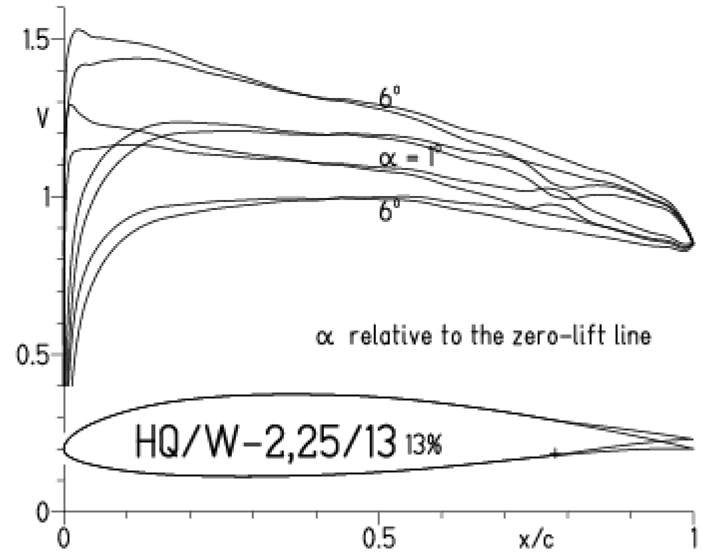


EPPLER 2005 V.

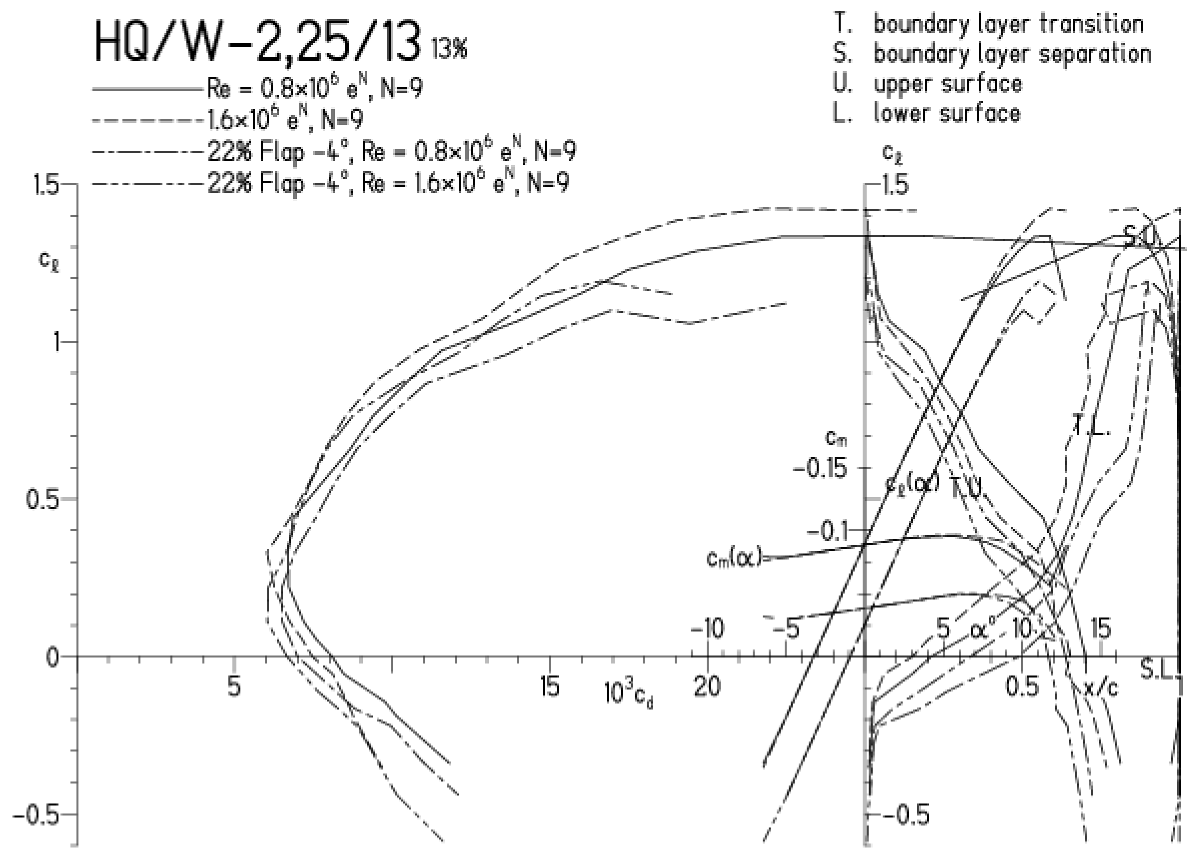


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

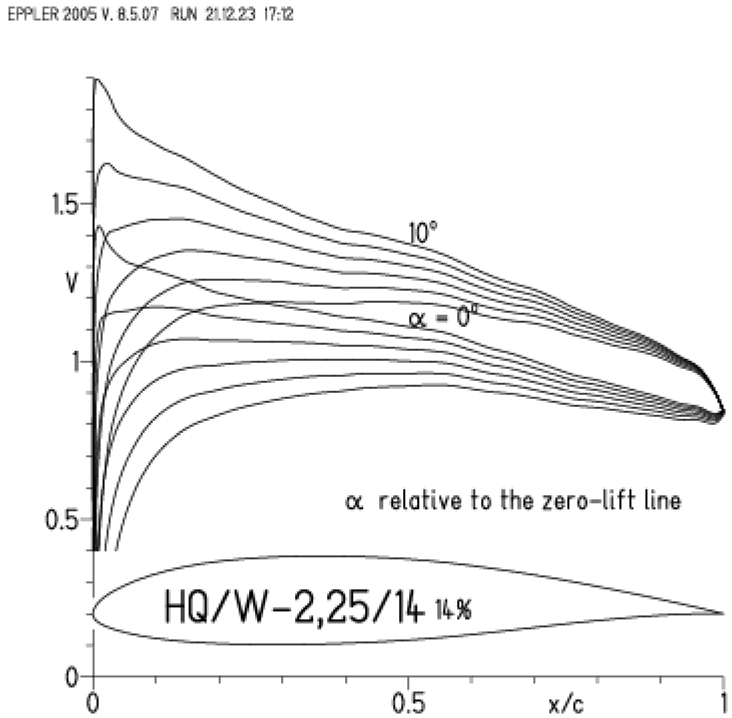
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

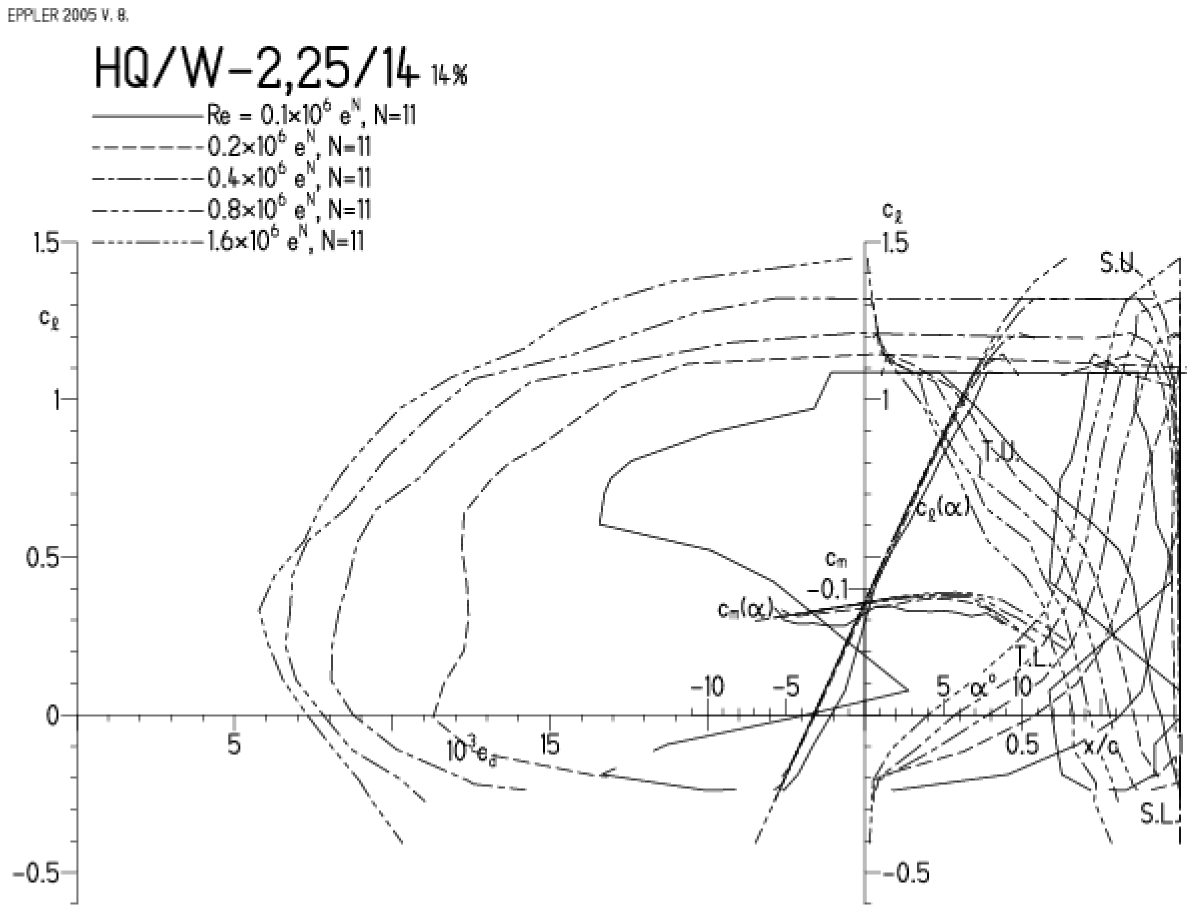


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



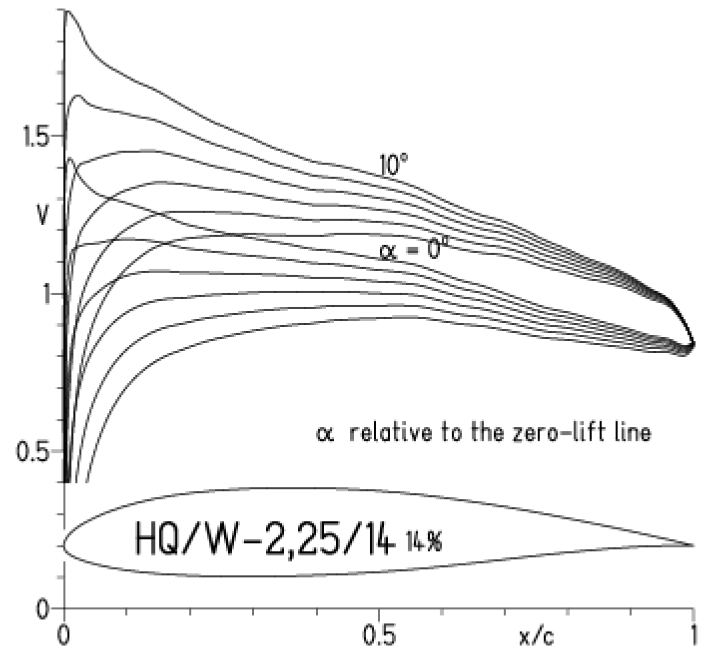
HQ/W-2,25/14, N=11



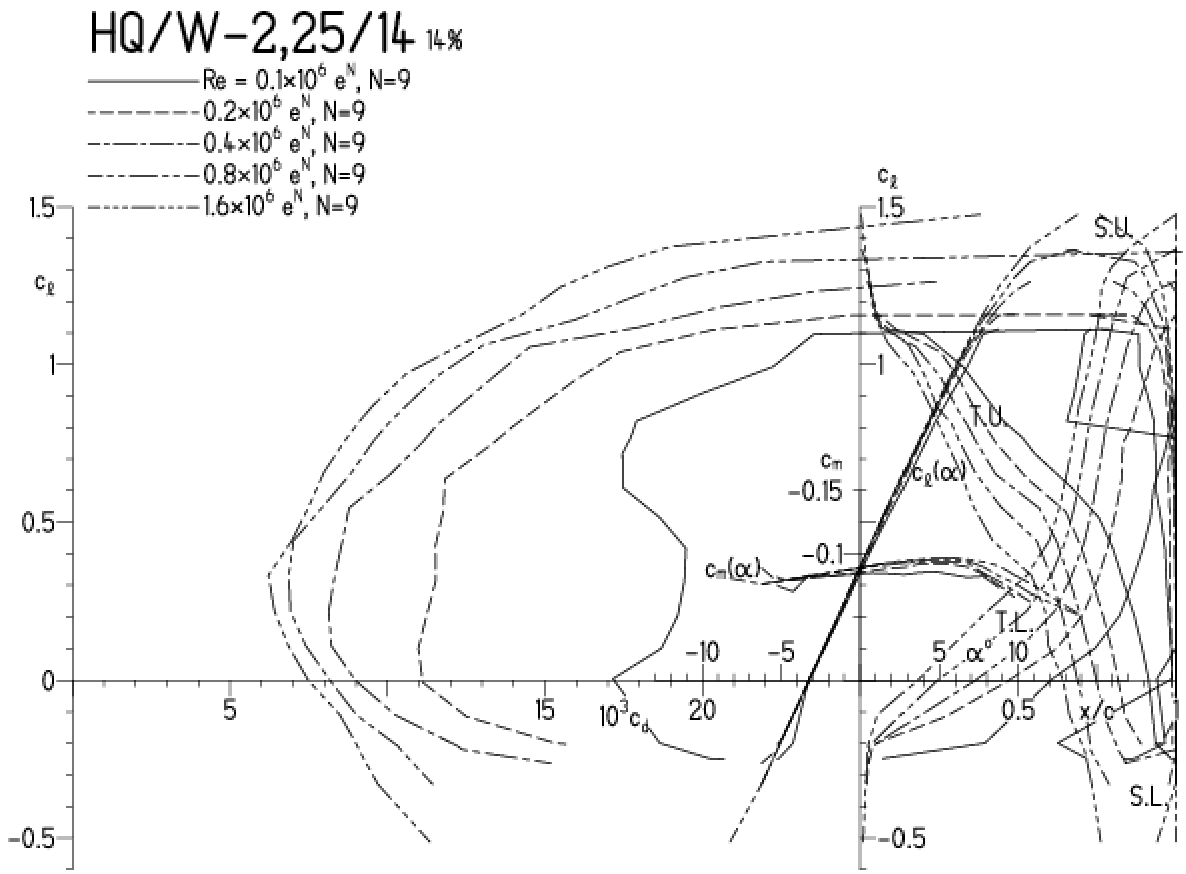


<u>HQ/W-2,25/14</u>, N=9

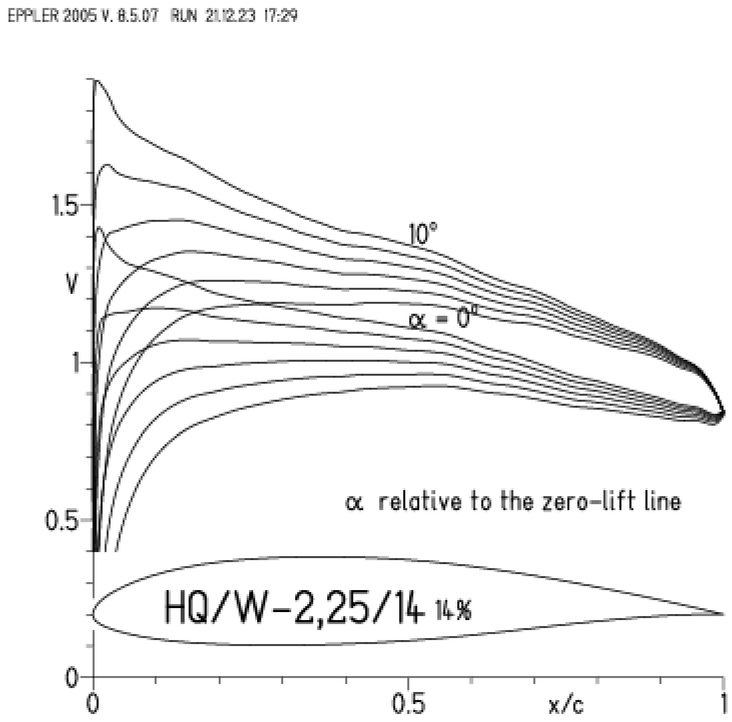
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

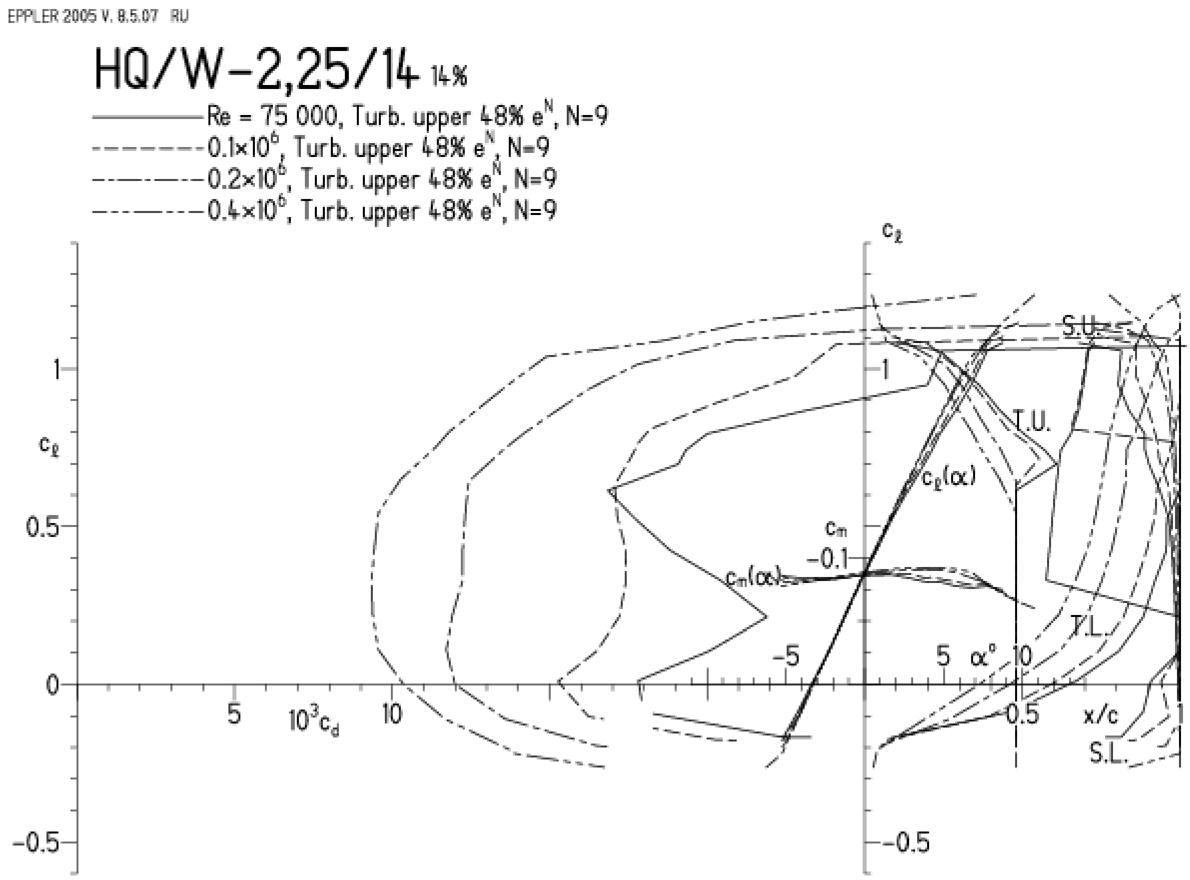


EPPLER 2005 V. 8.



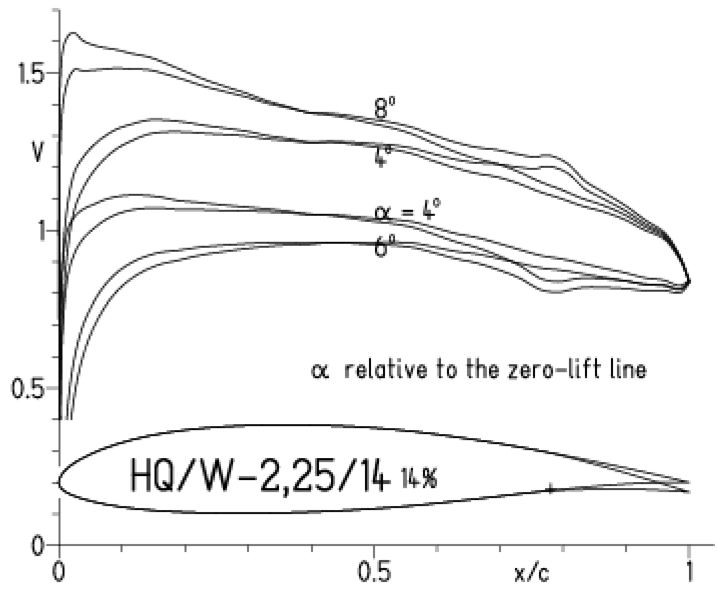
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



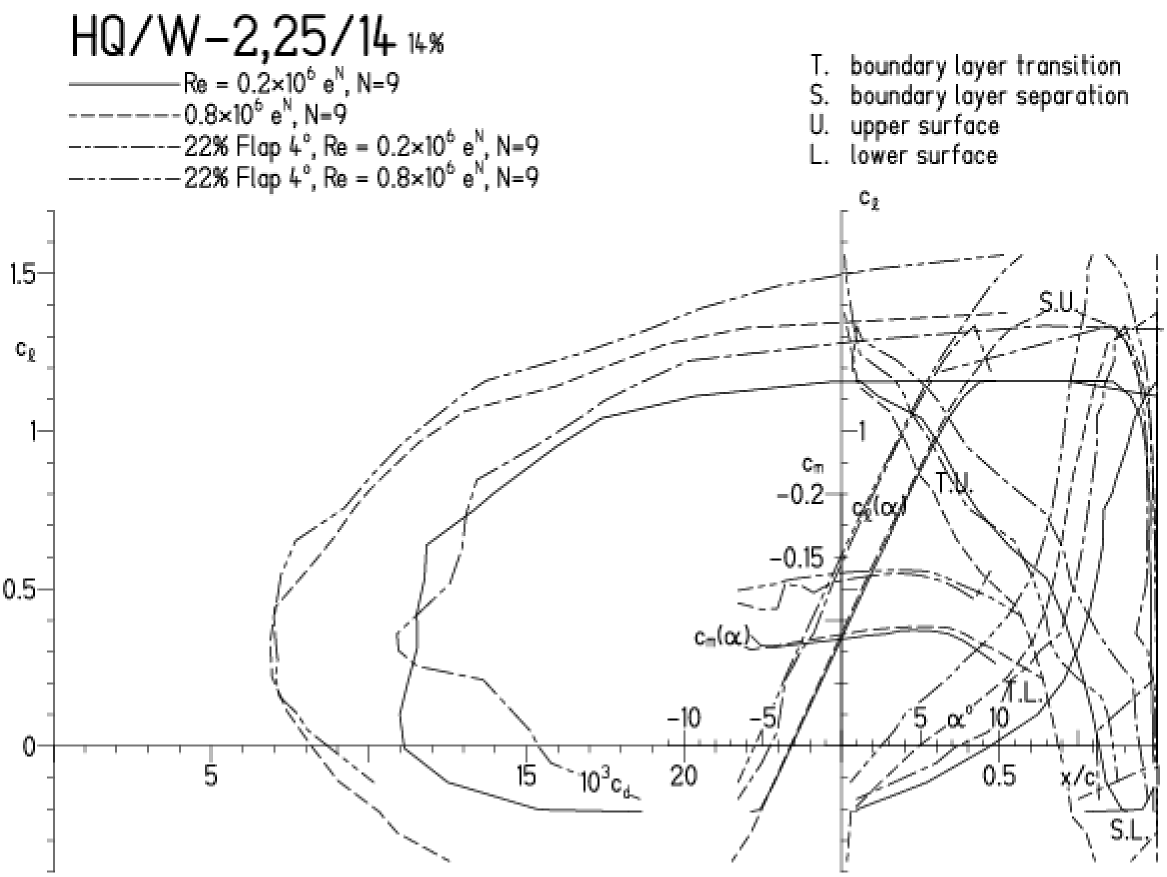


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

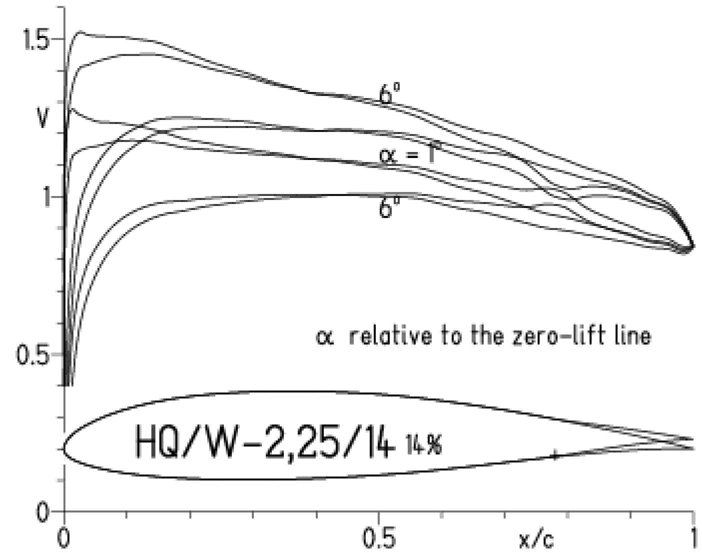


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

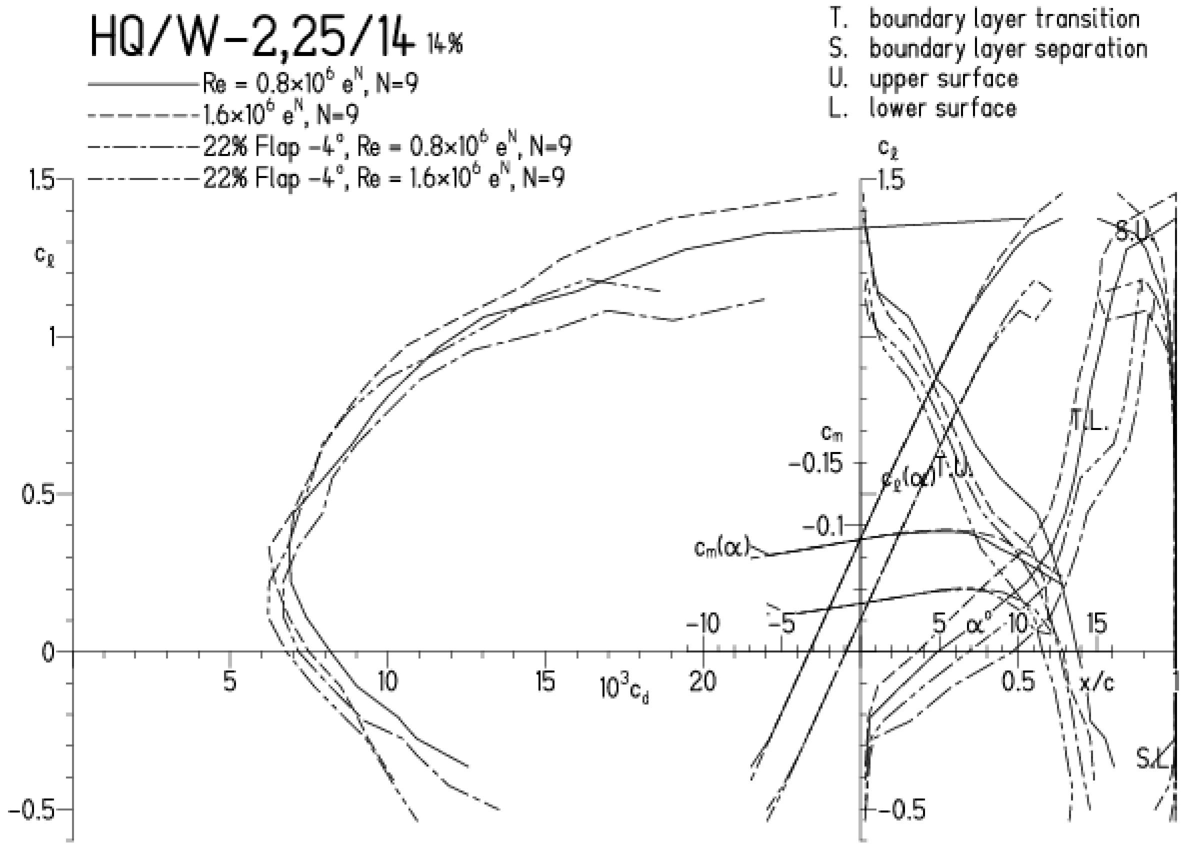


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

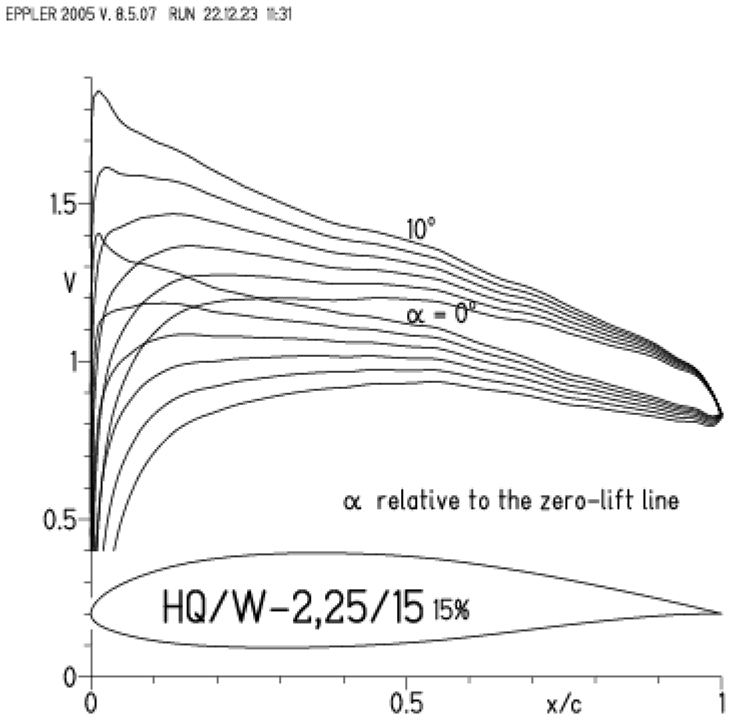
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

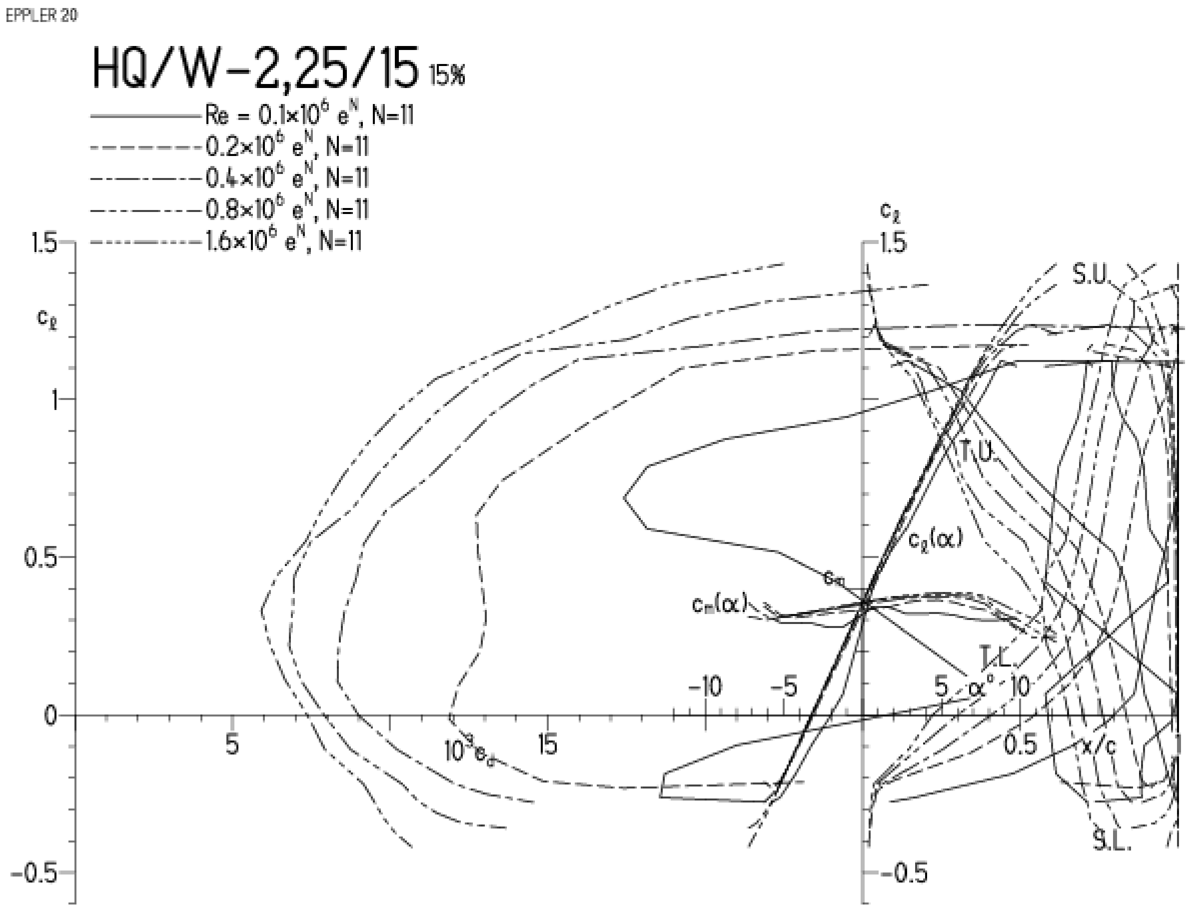


EPPLER 2005 V. 8.5.07



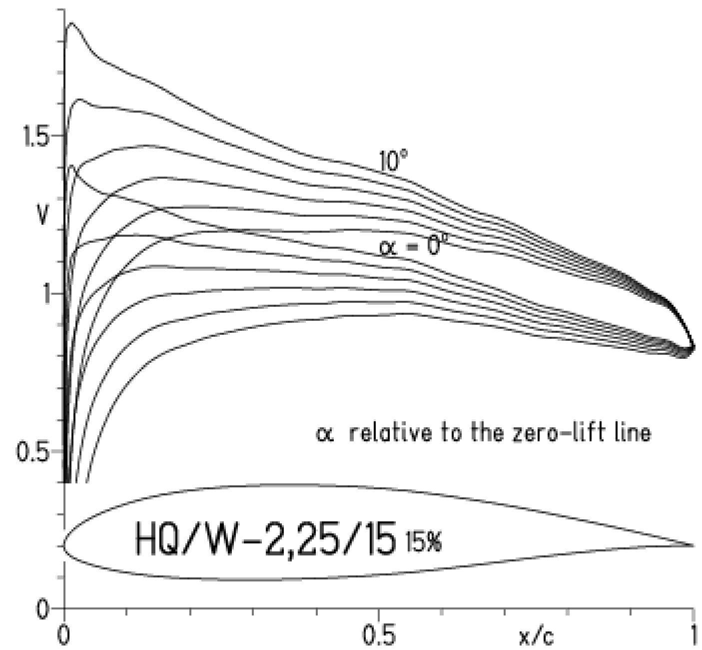
<u>HQ/W-2,25/15</u>, N=11



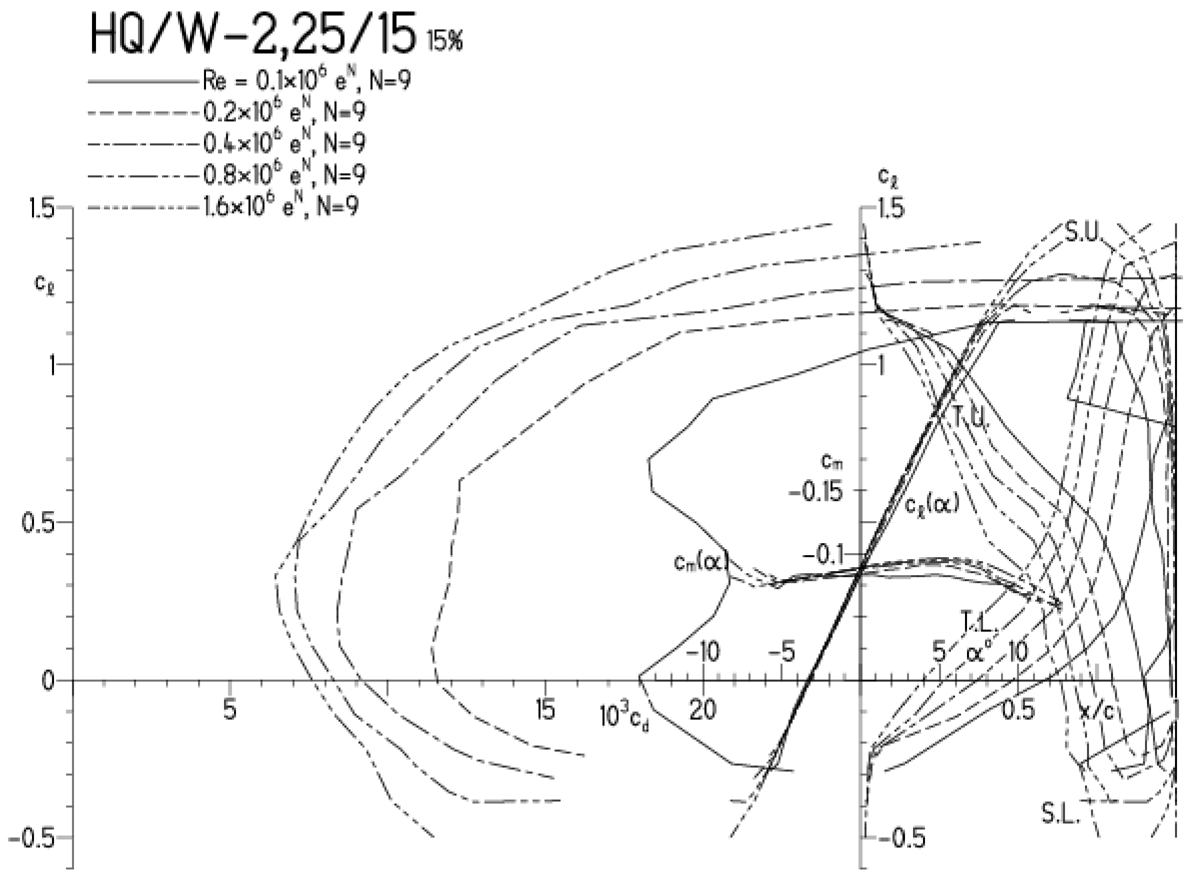


HQ/W-2,25/15, N=9

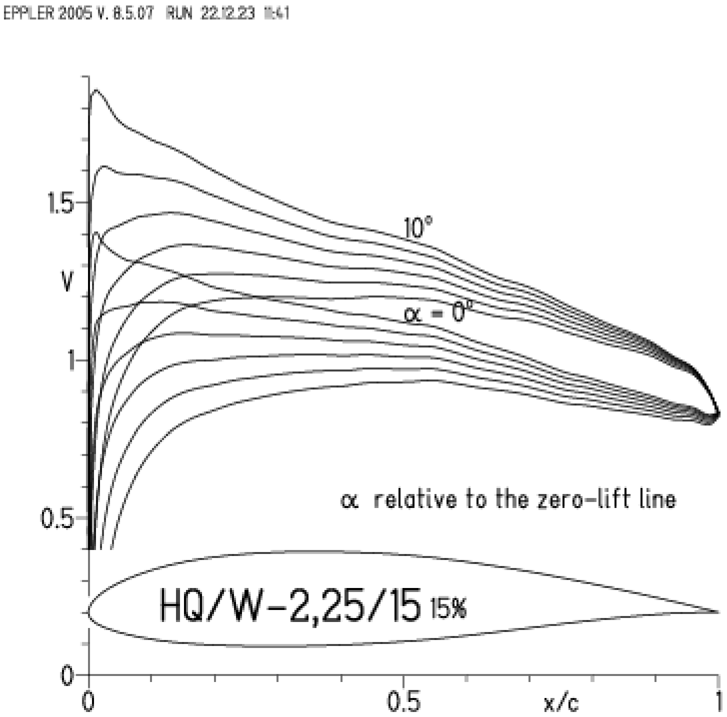
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

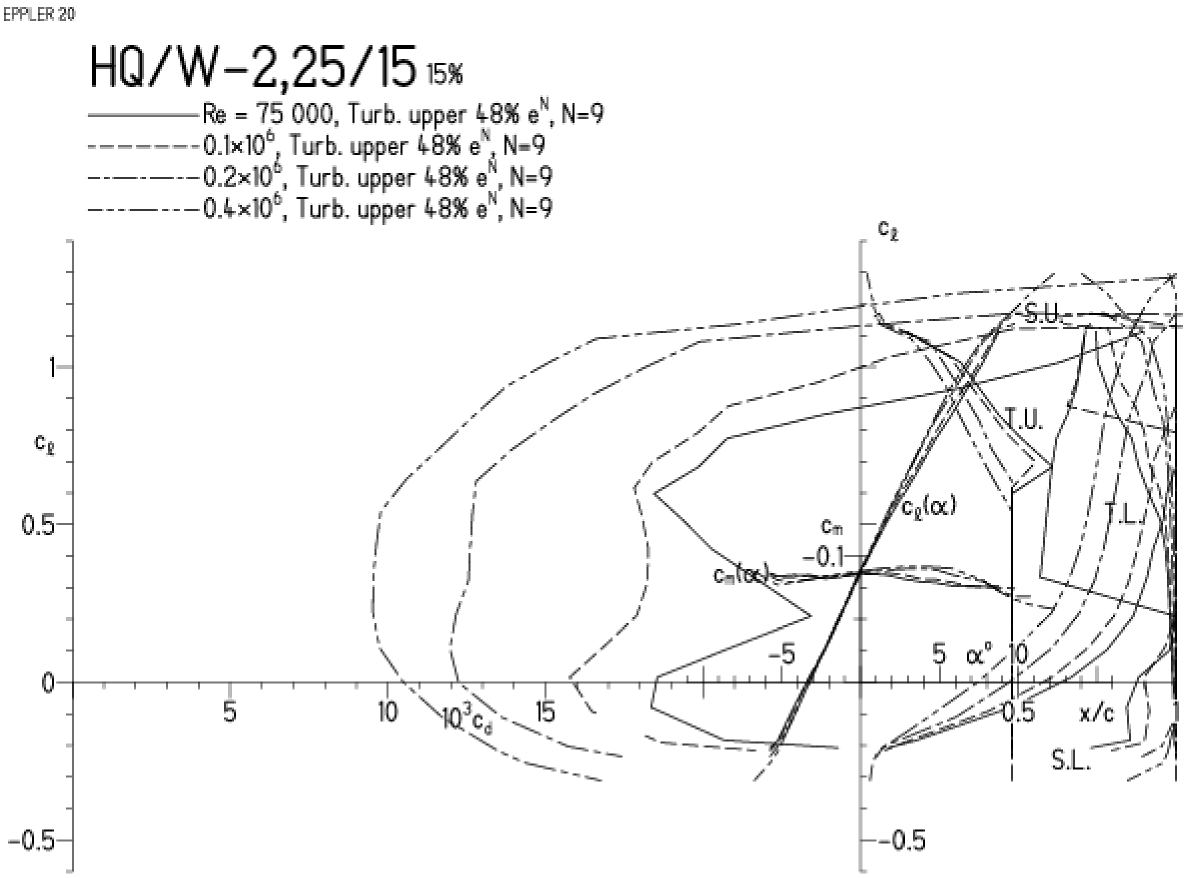


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



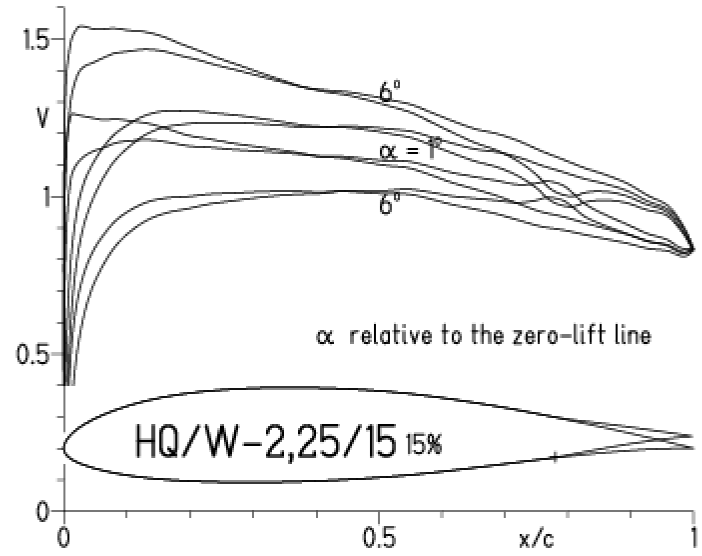


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

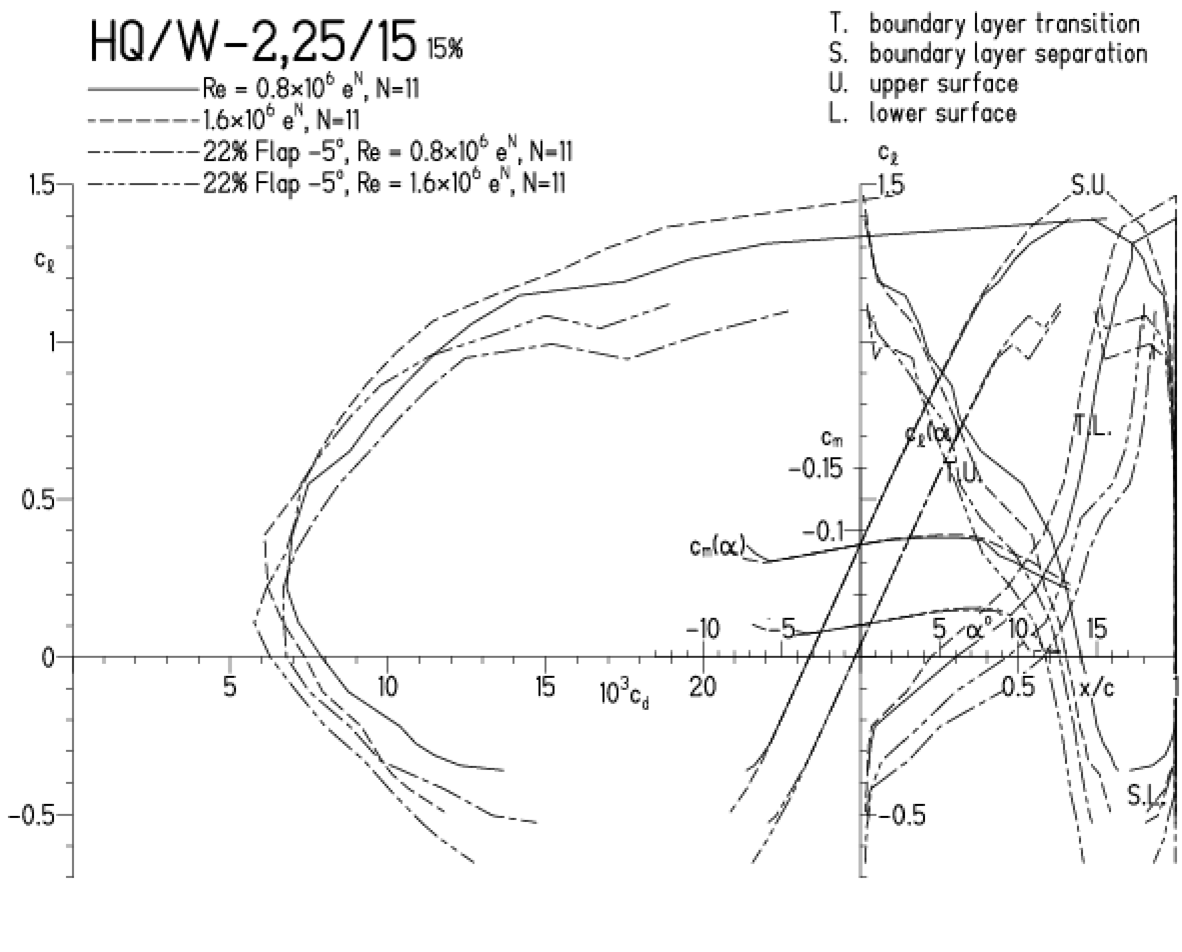
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

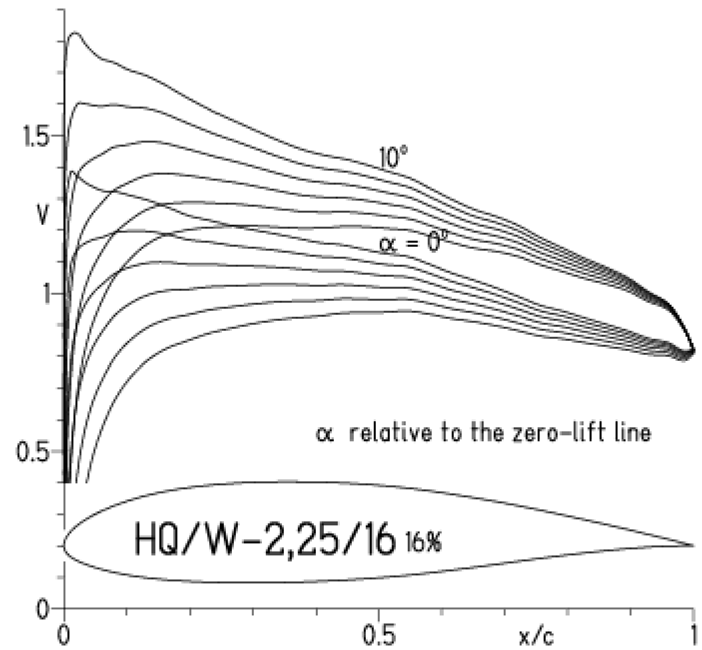


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

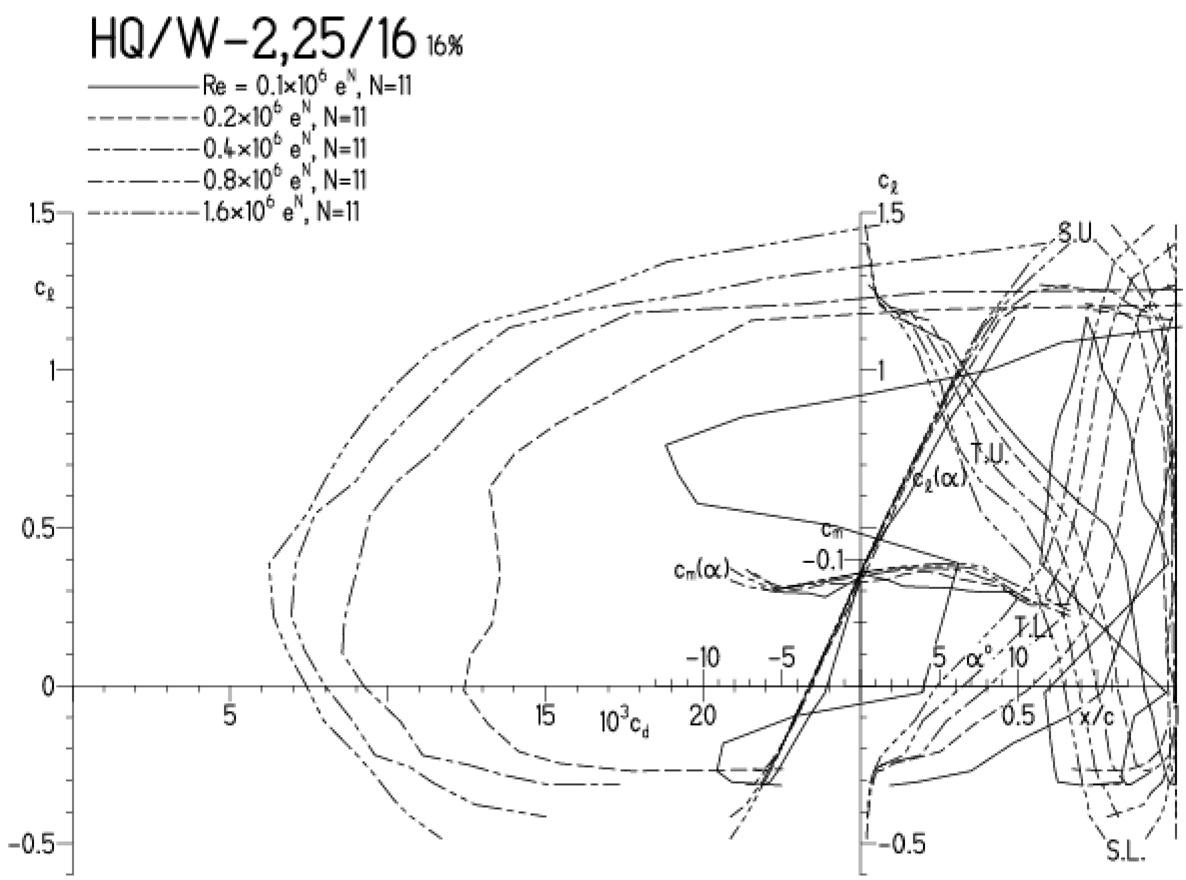


HQ/W-2,25/16, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

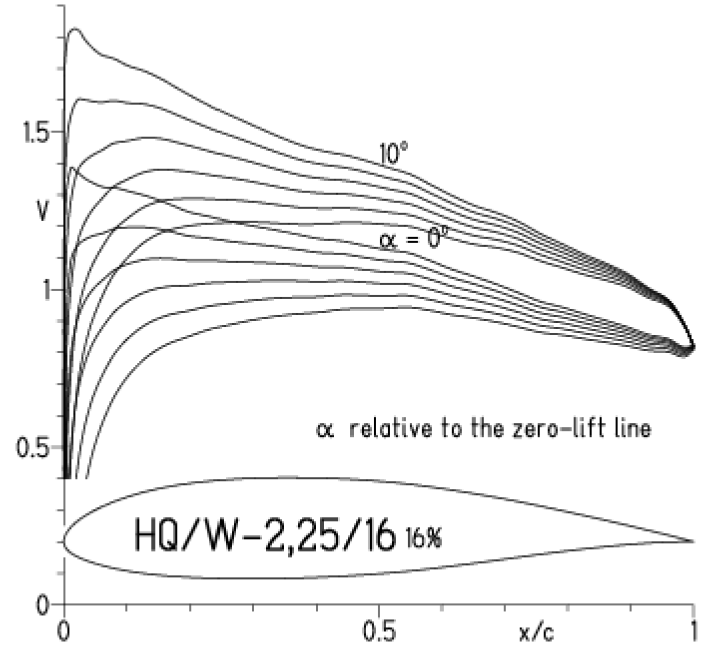


EPPLER 200

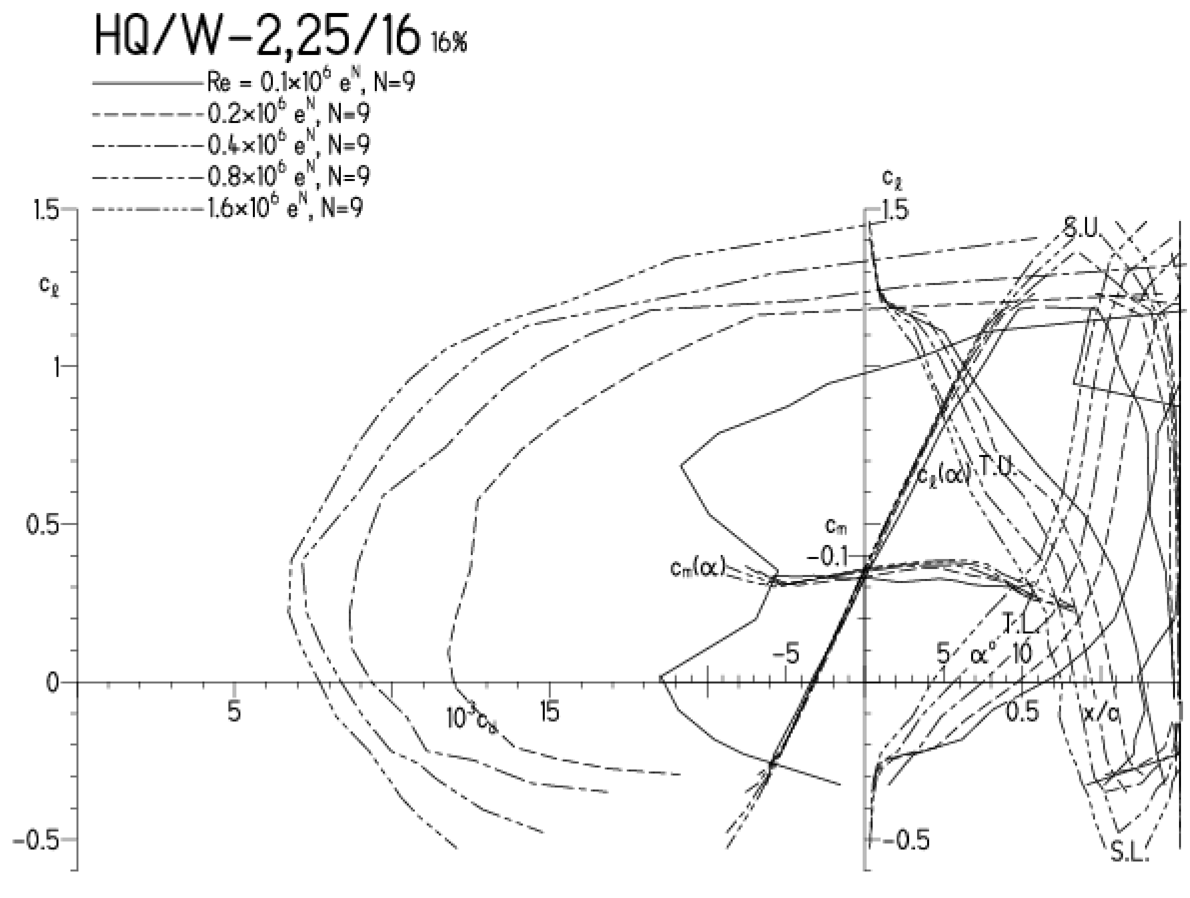


<u>HQ/W-2,25/16</u>, N=9

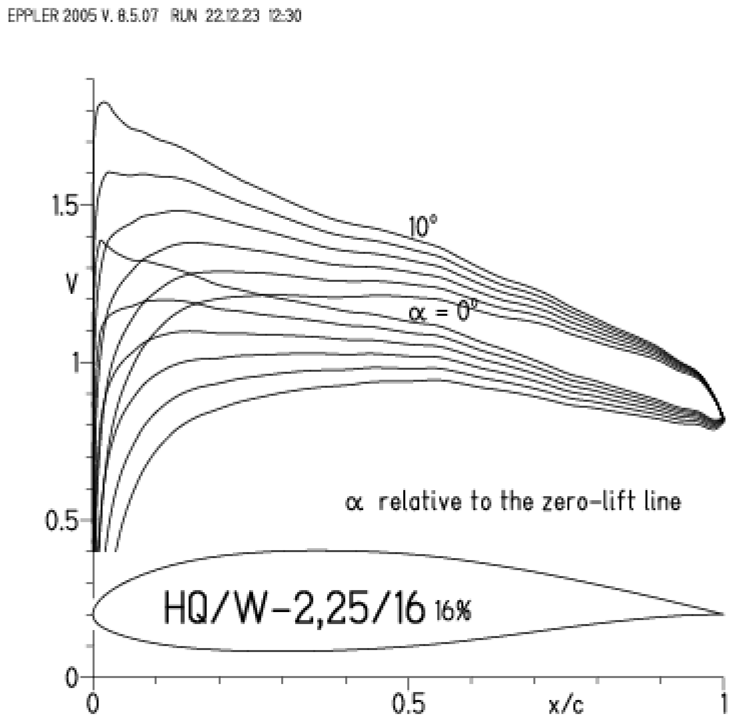
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

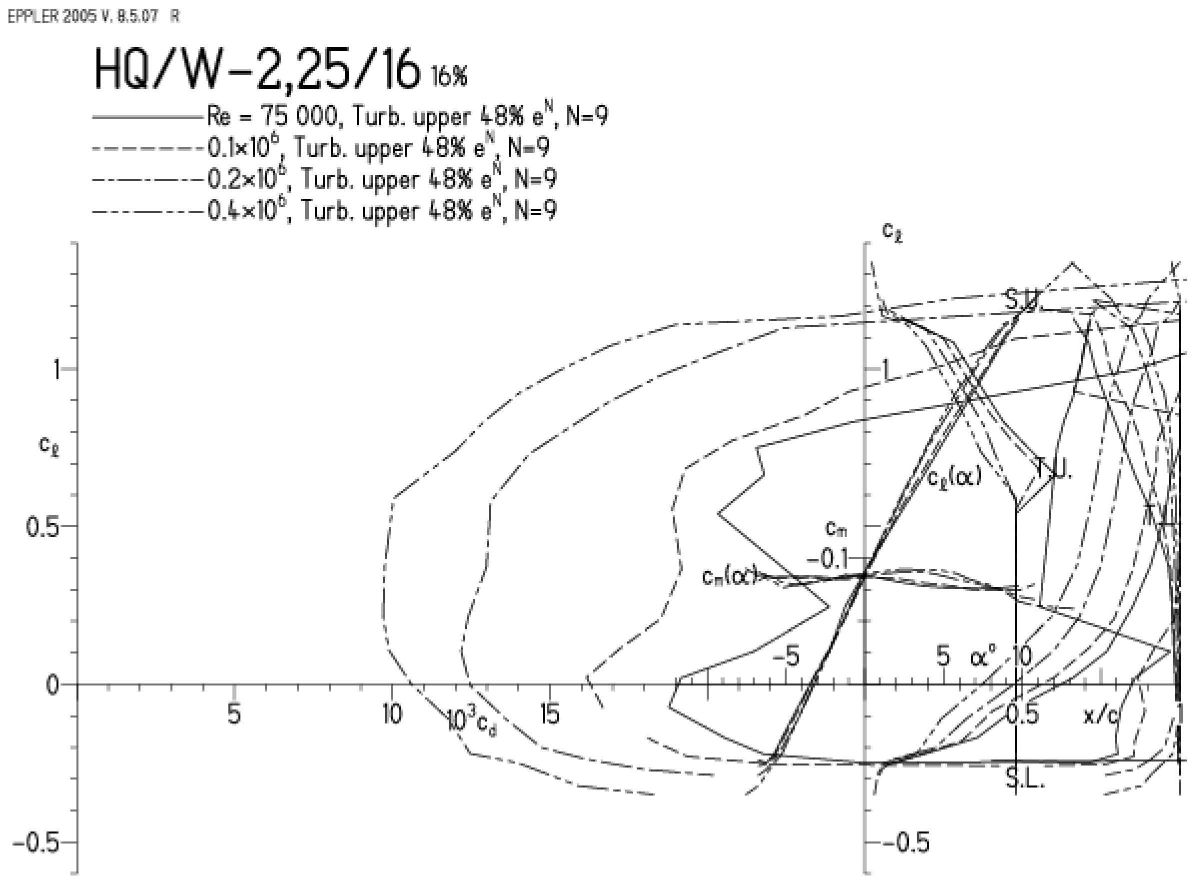


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



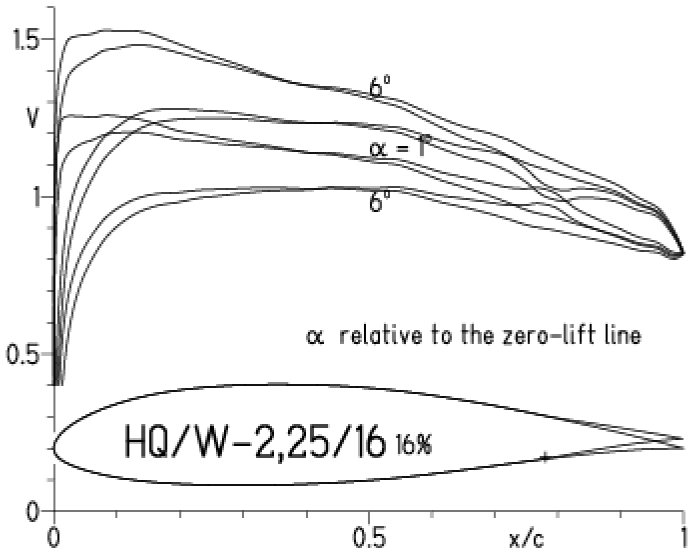


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

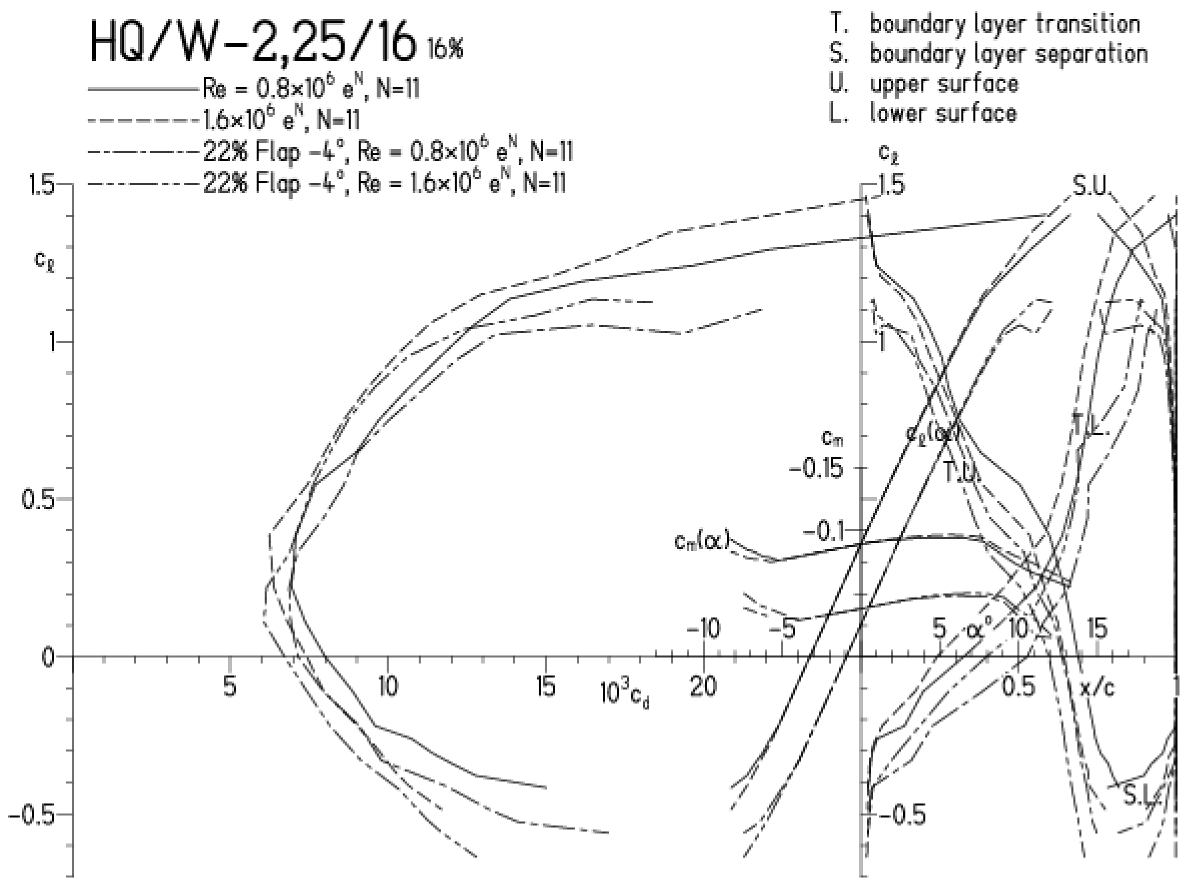
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

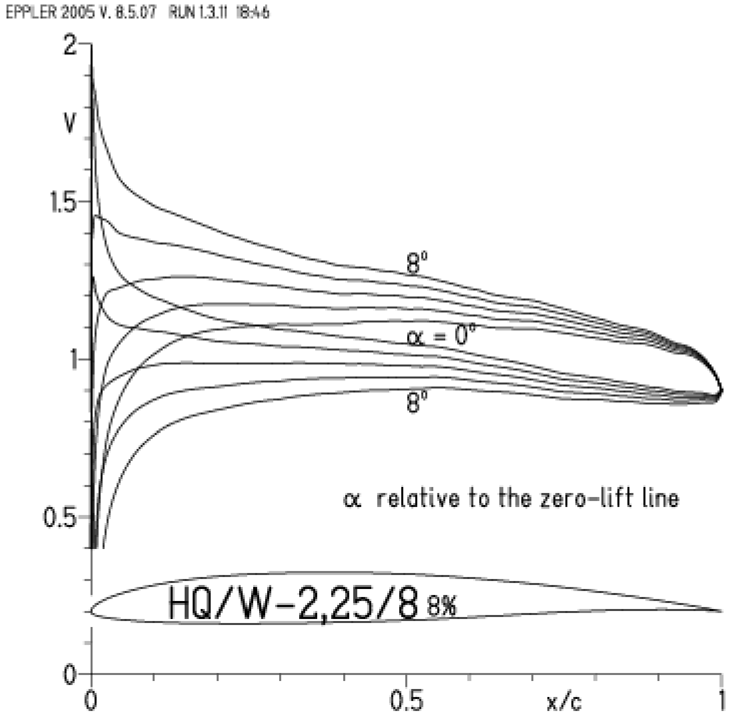
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

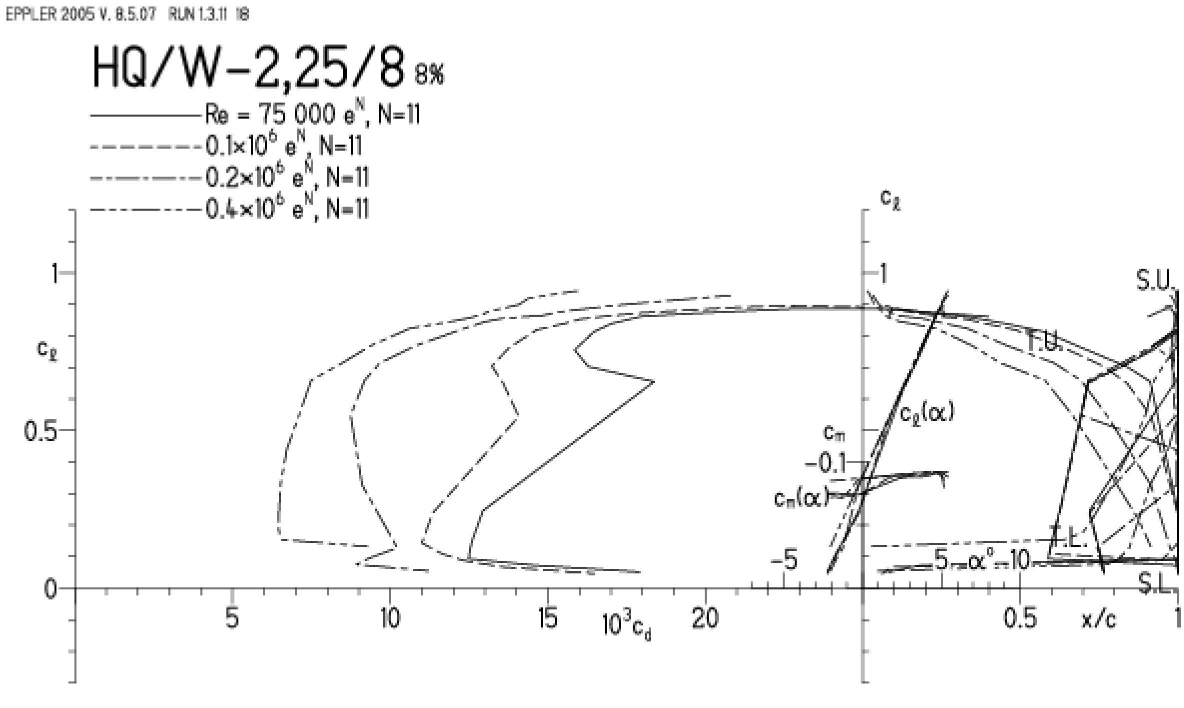


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

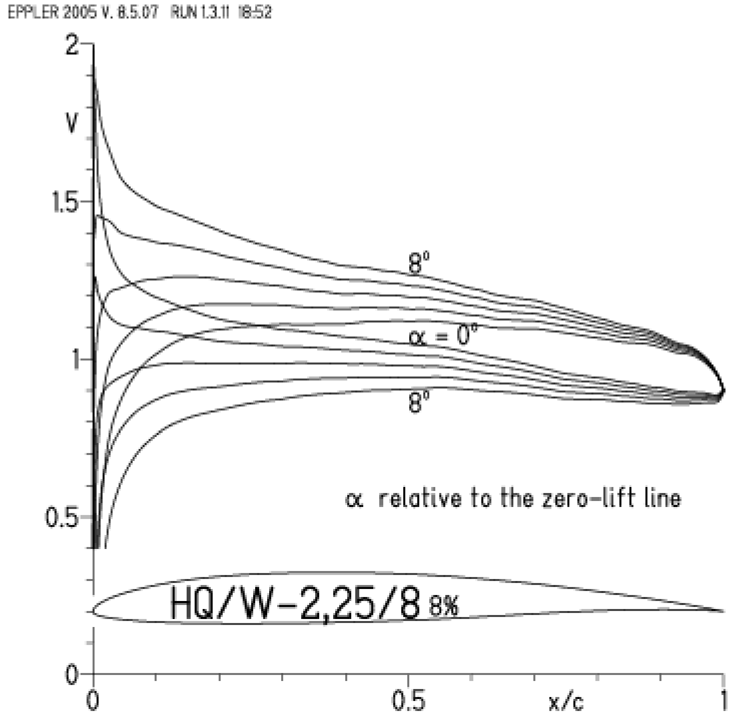


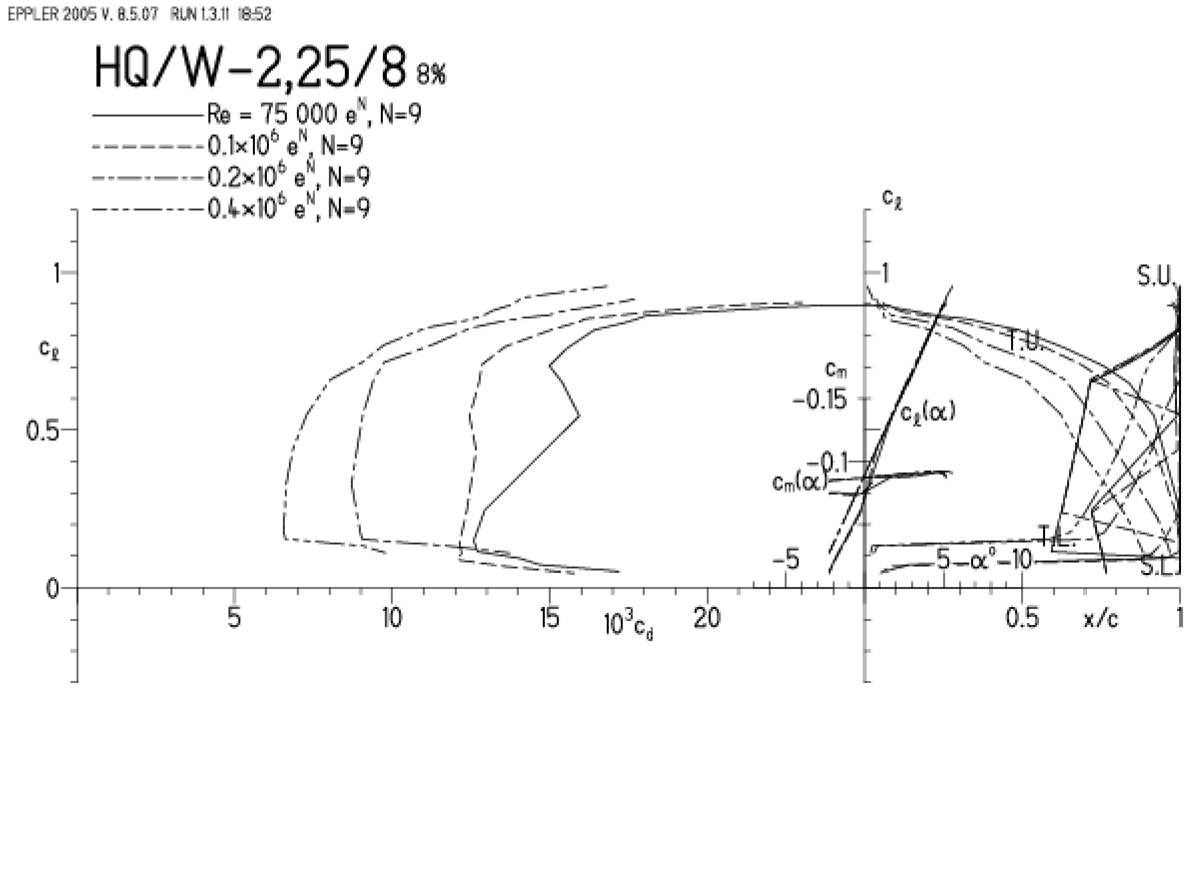
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

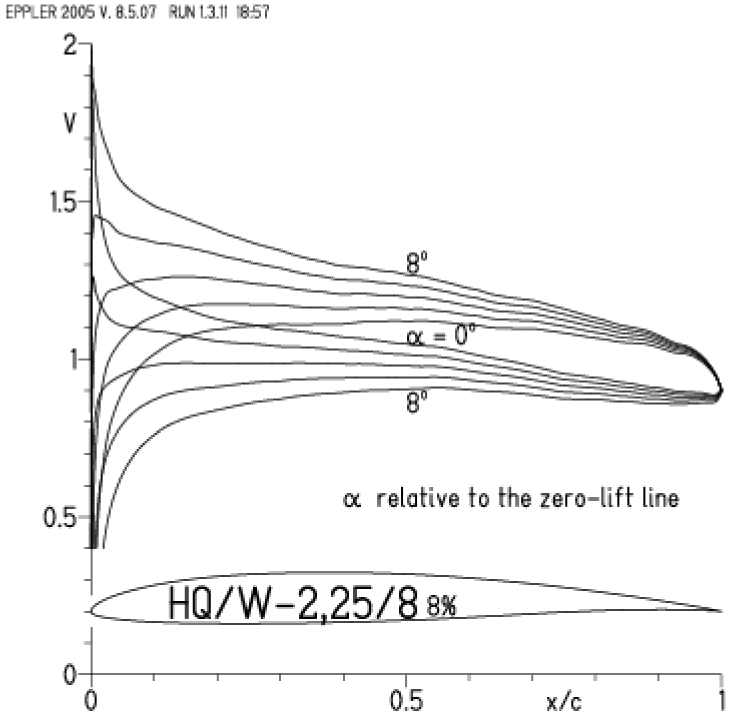

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
$c_\ell(\alpha)$
c_m
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
α°
x/c

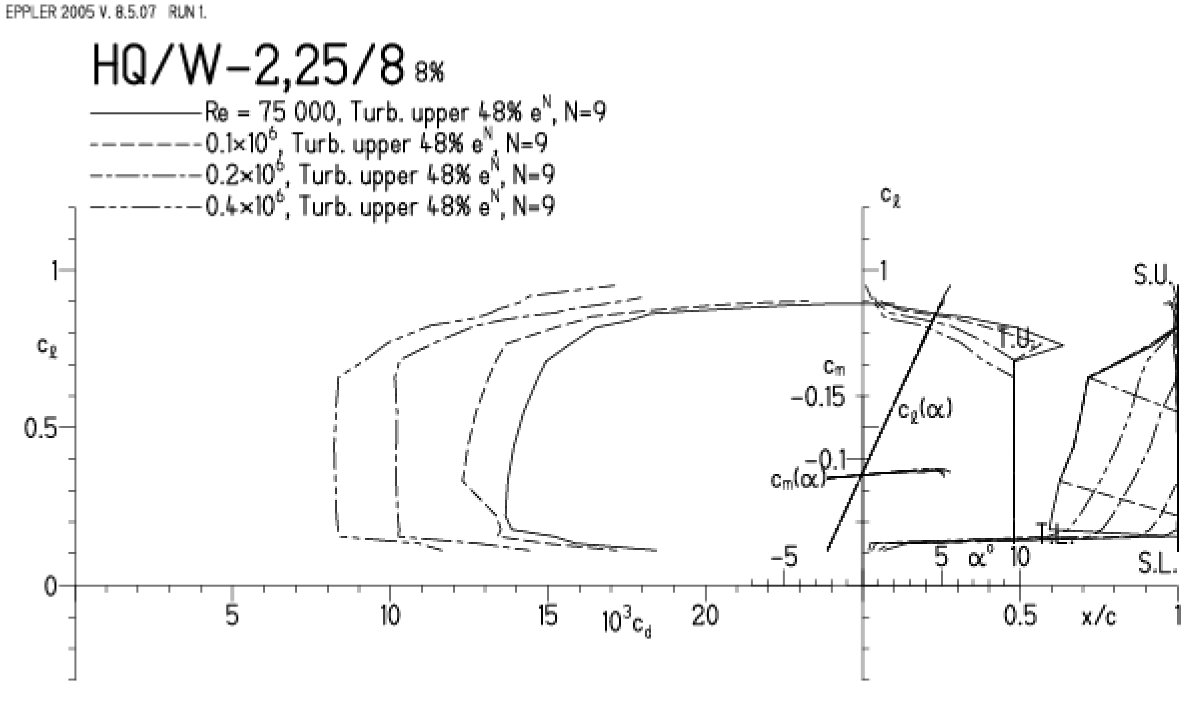
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
-0.15
c_ℓ(α)
-0.1
c_m(α)
-5
5 -α°- 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

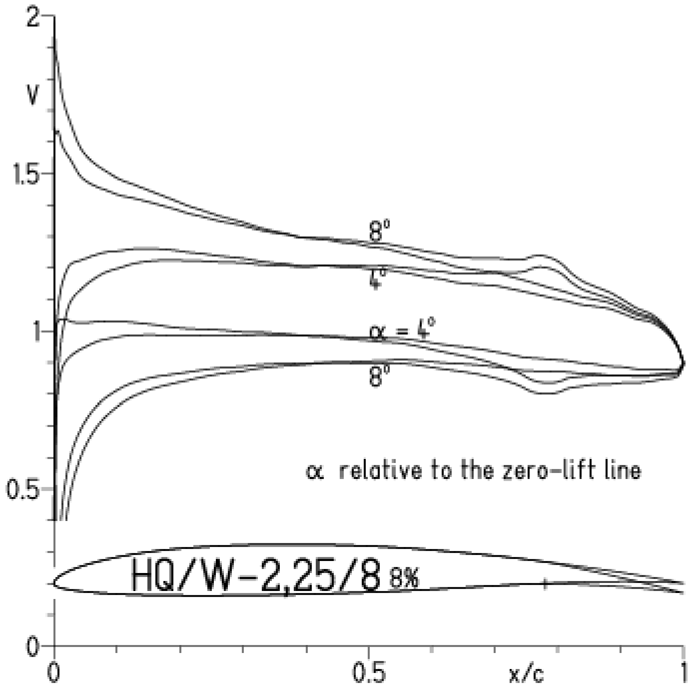
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



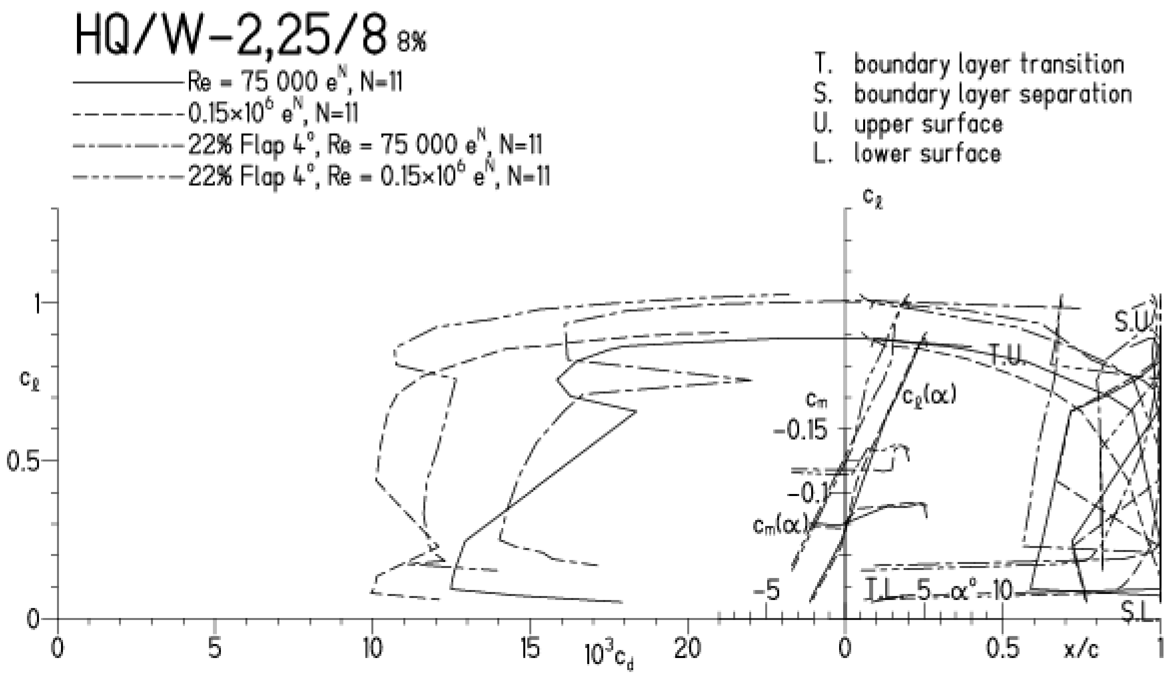


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

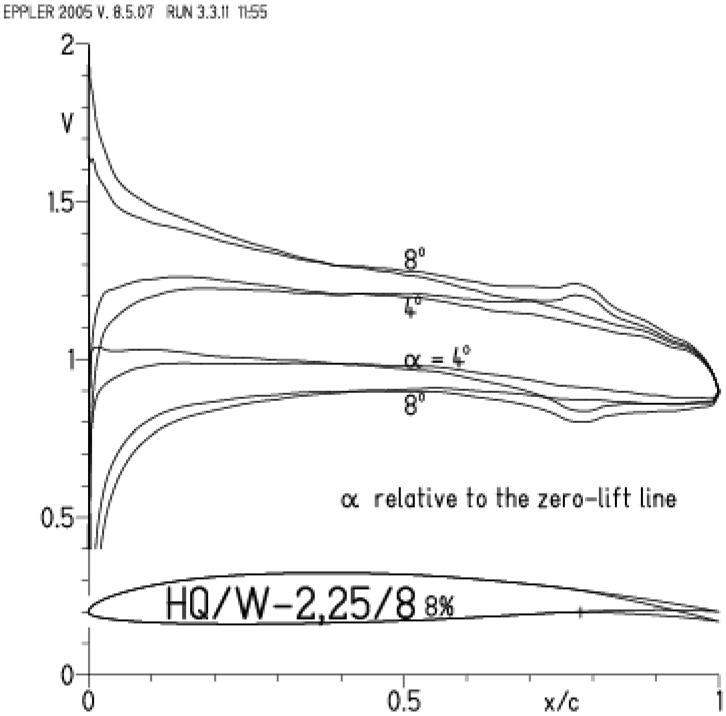
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

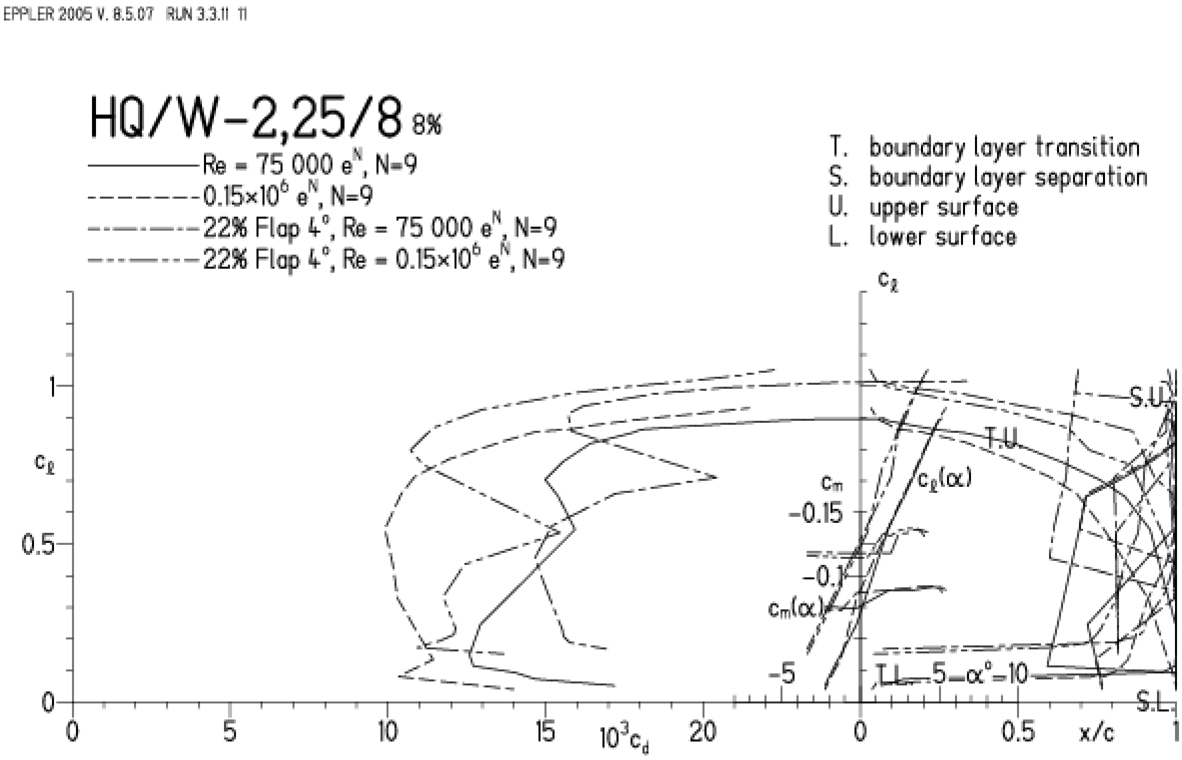


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

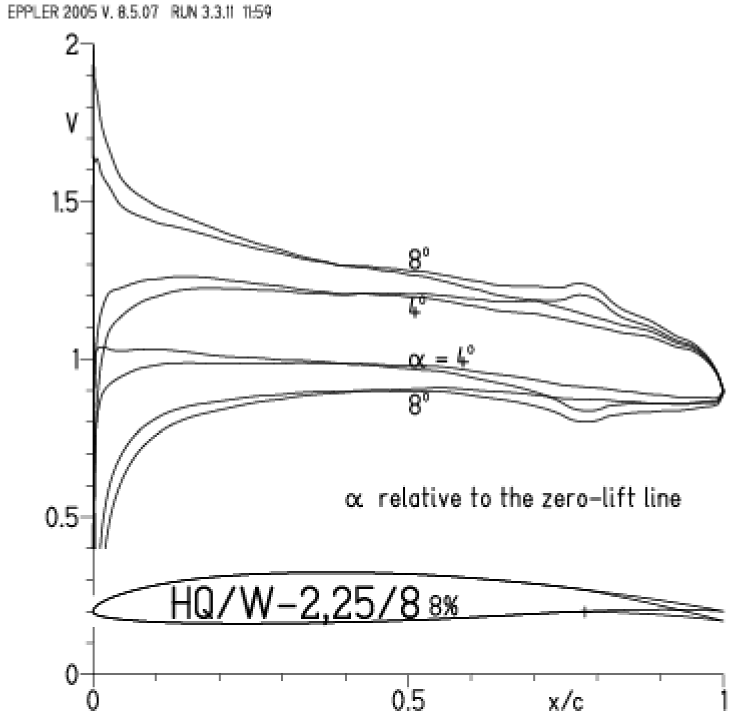


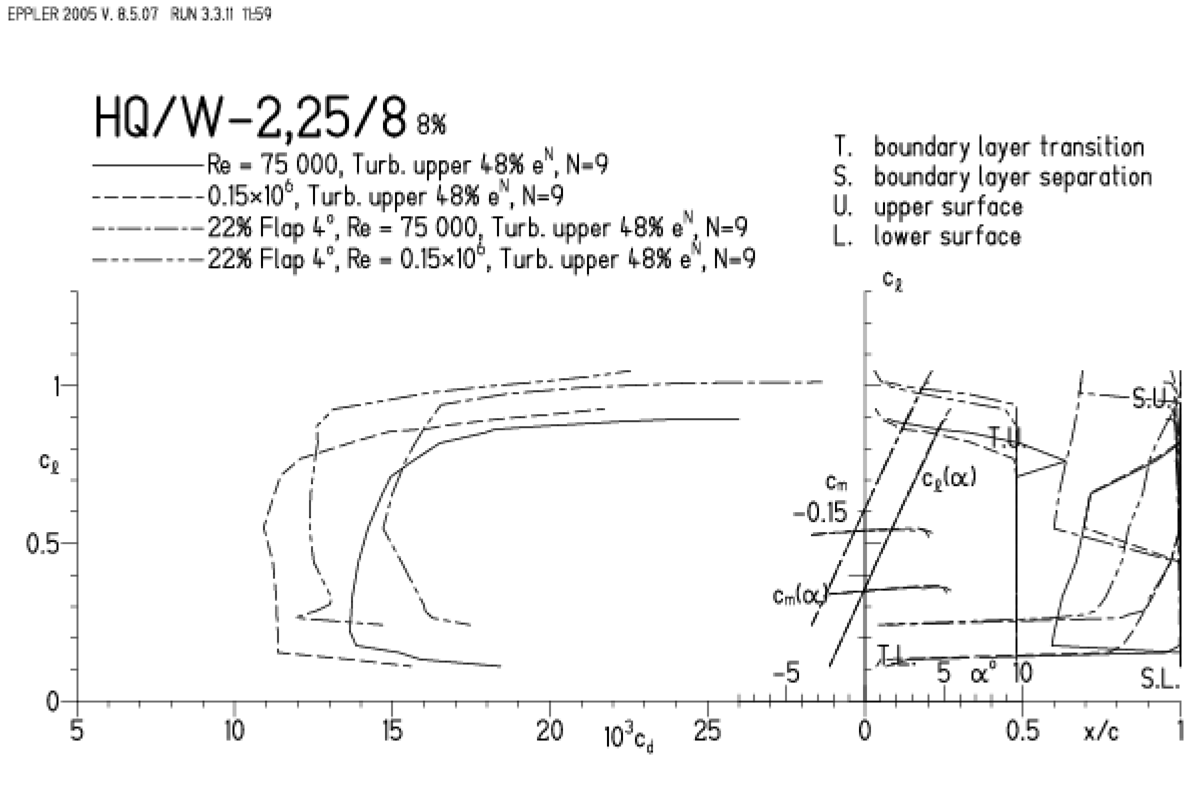
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag



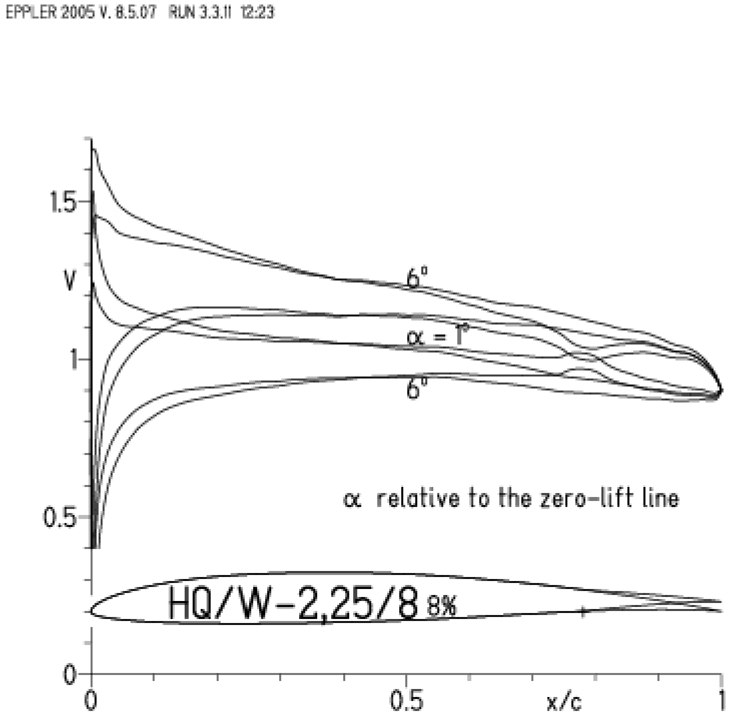


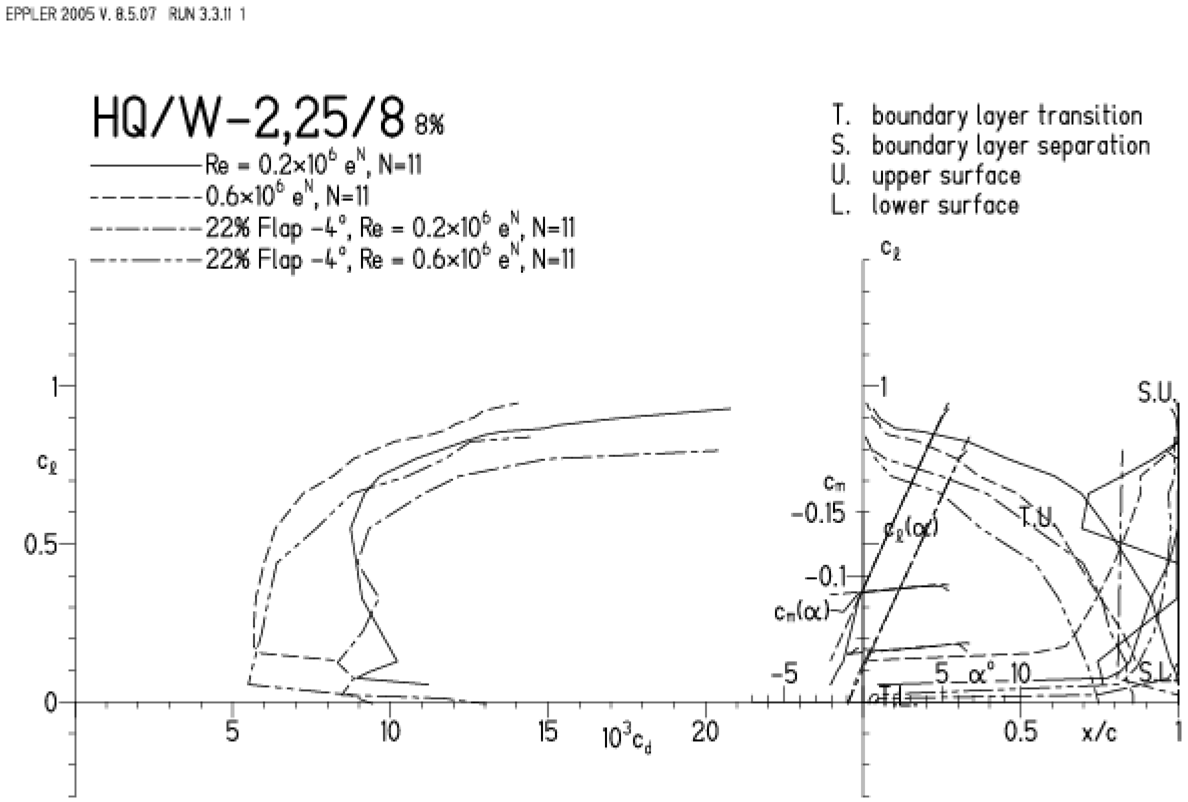
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





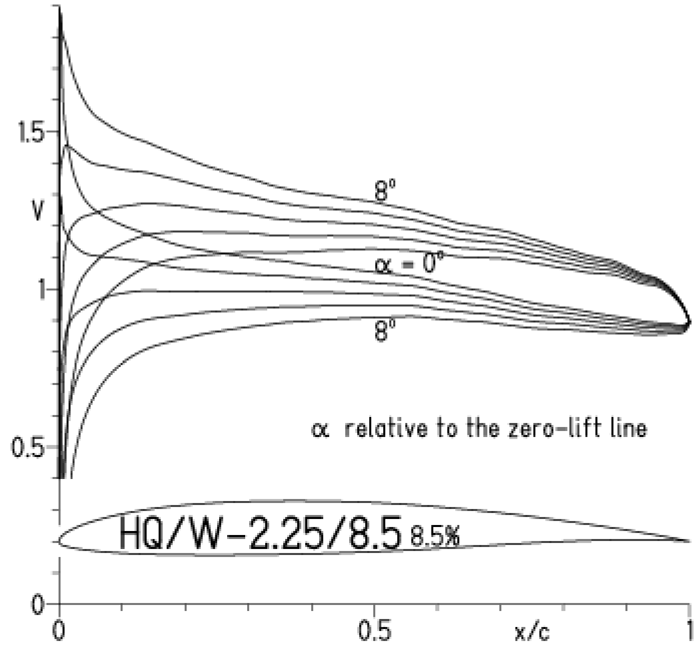
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm[2] erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



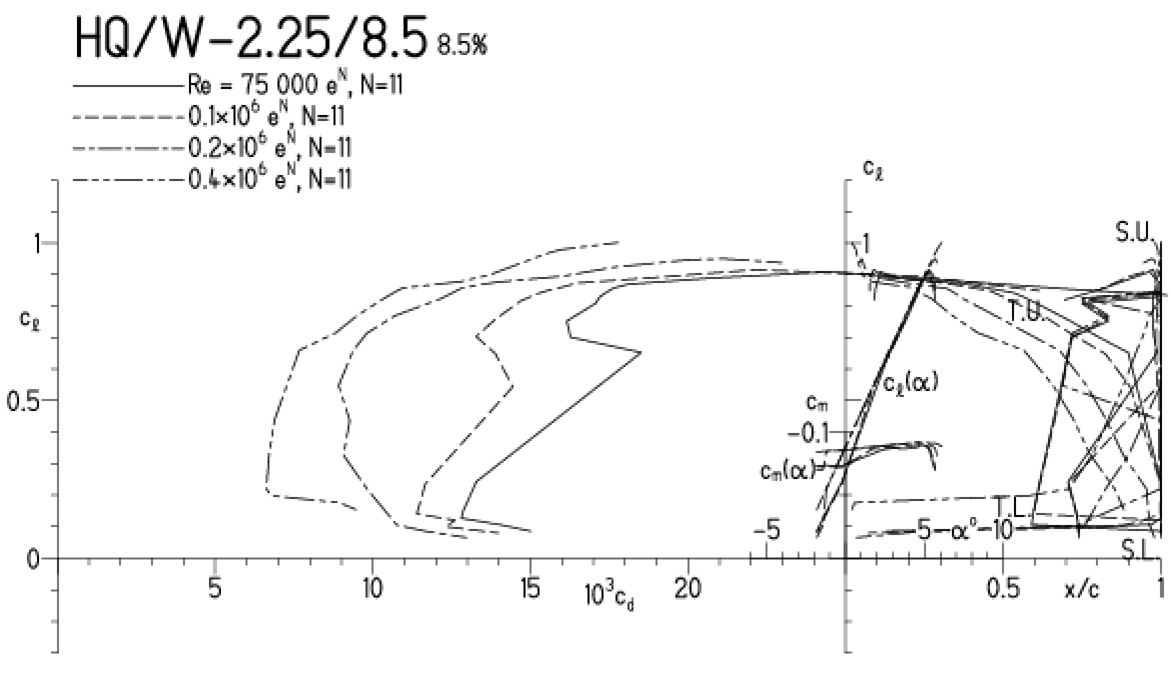


HQ/W-2,25/8,5, N=11

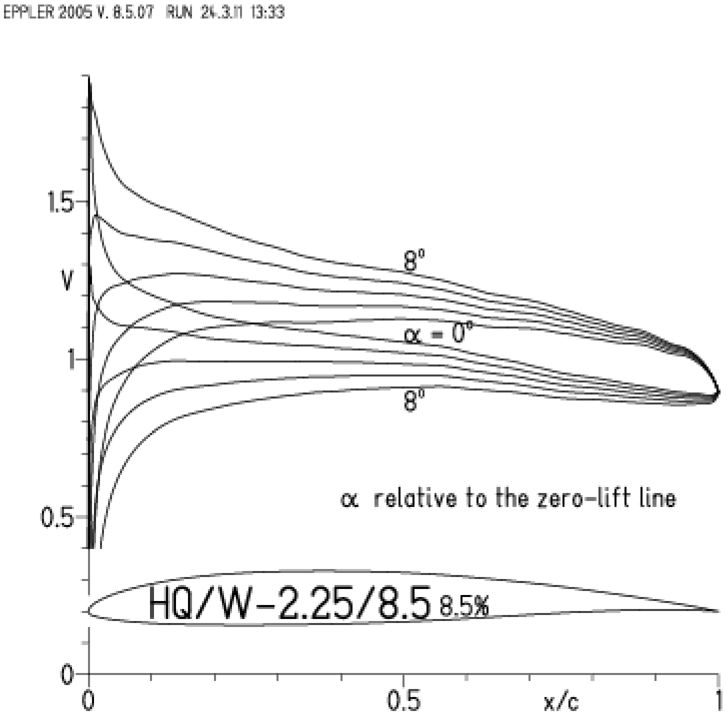
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

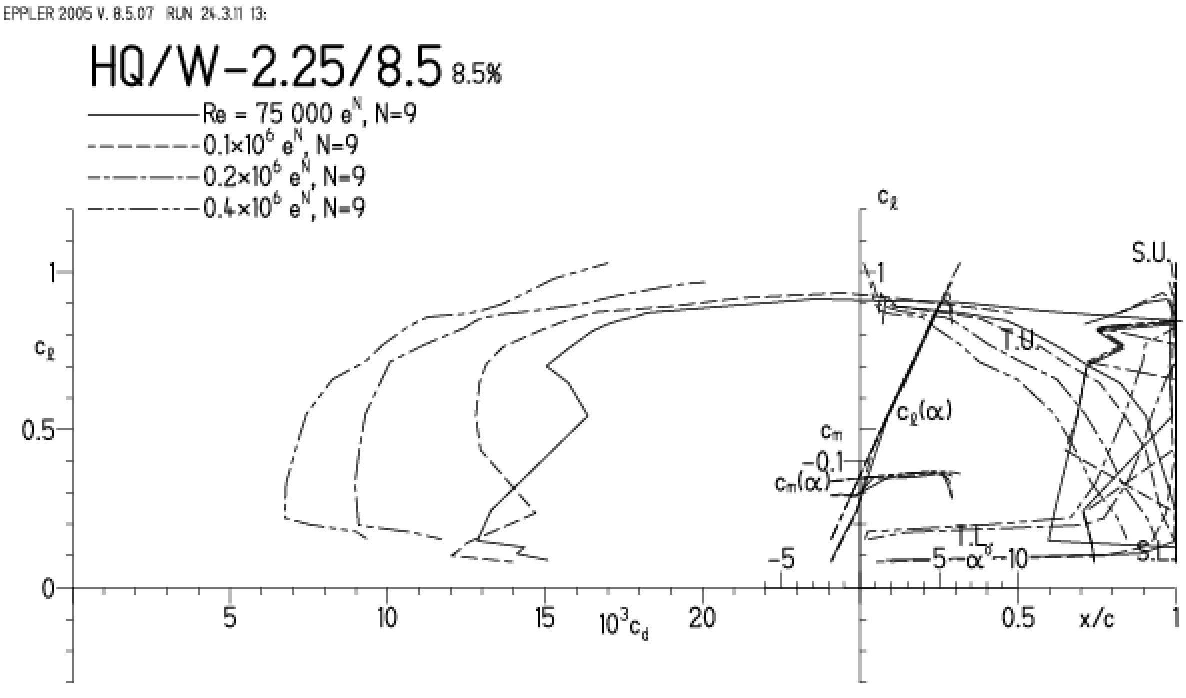


EPPLER 2005 V

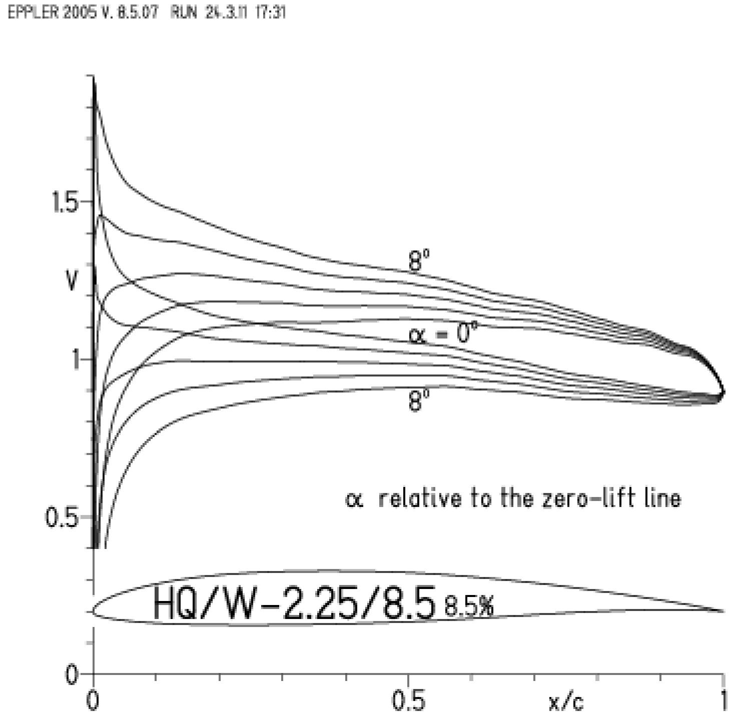


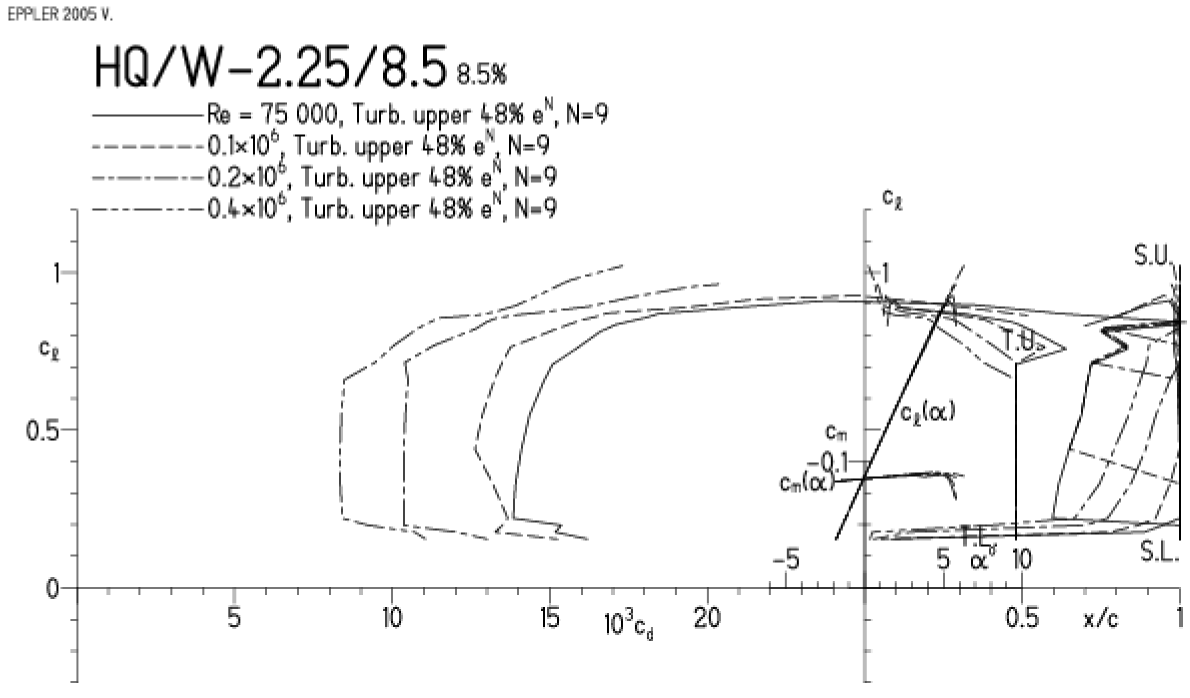
<u>HQ/W-2,25/8,5</u>, N=9





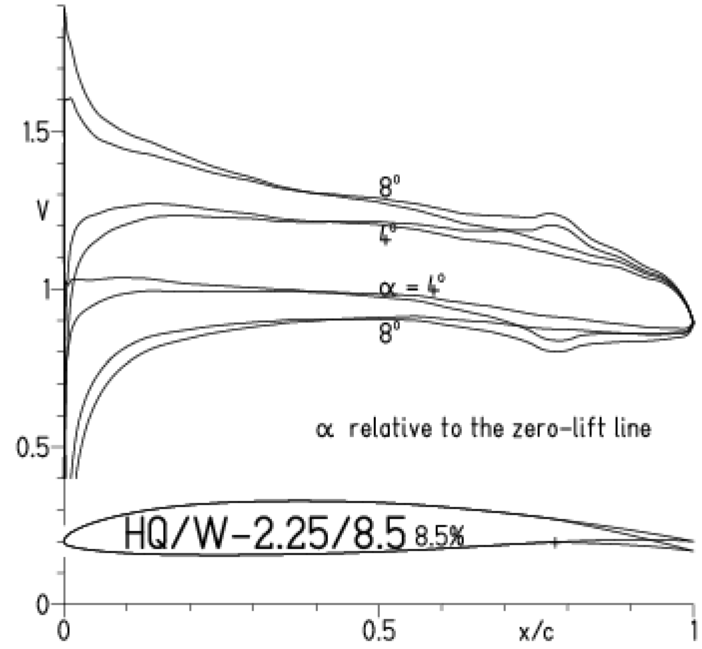
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



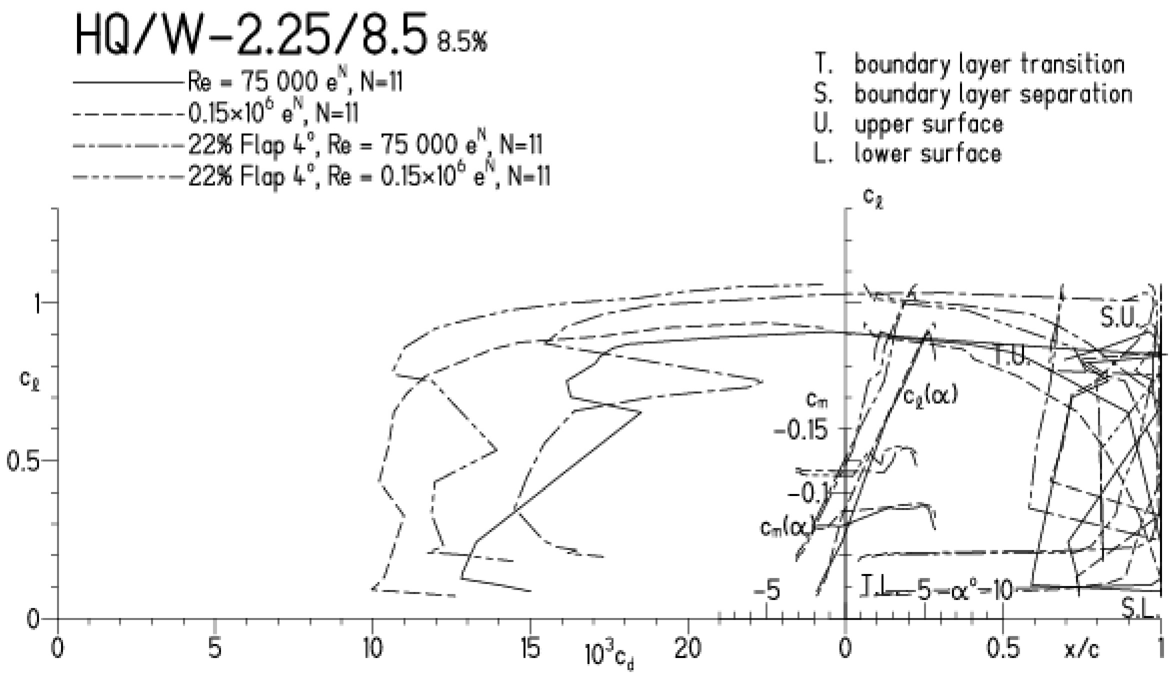


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

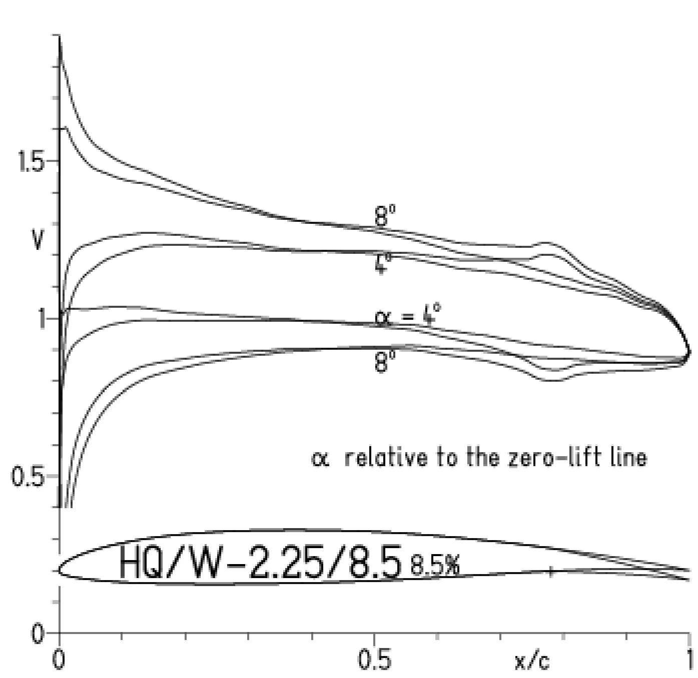


EPPLER 2005 V. 8.5.

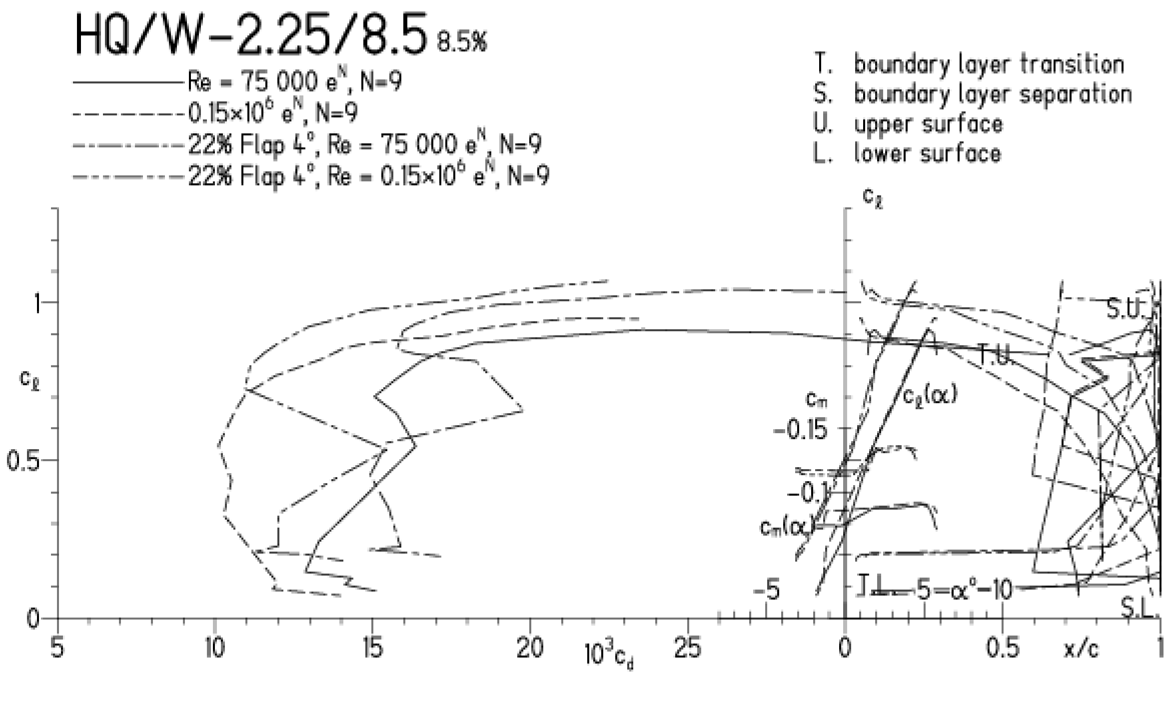


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

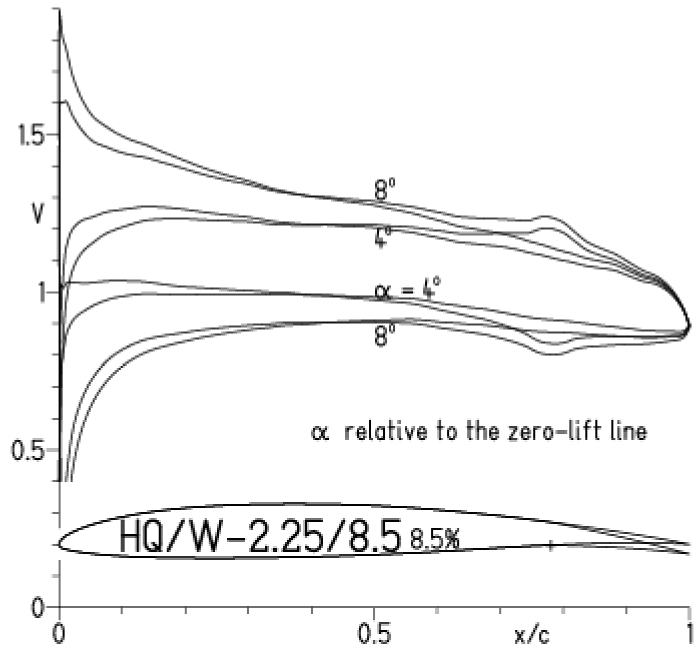


EPPLER 2005 V.

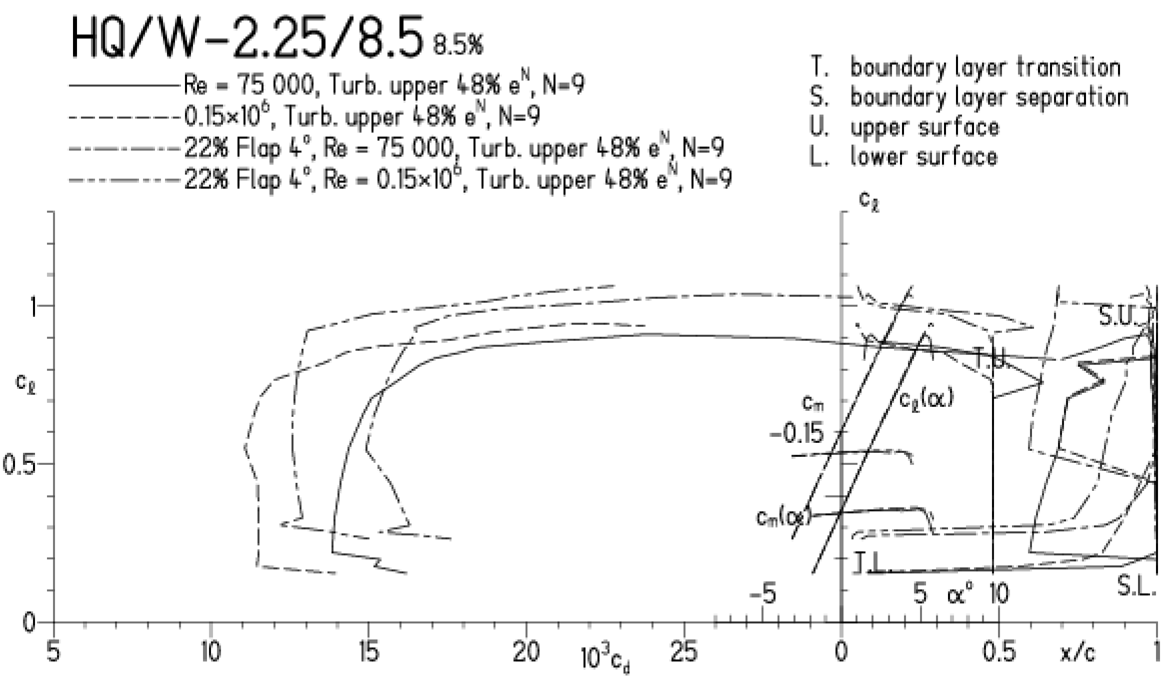


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

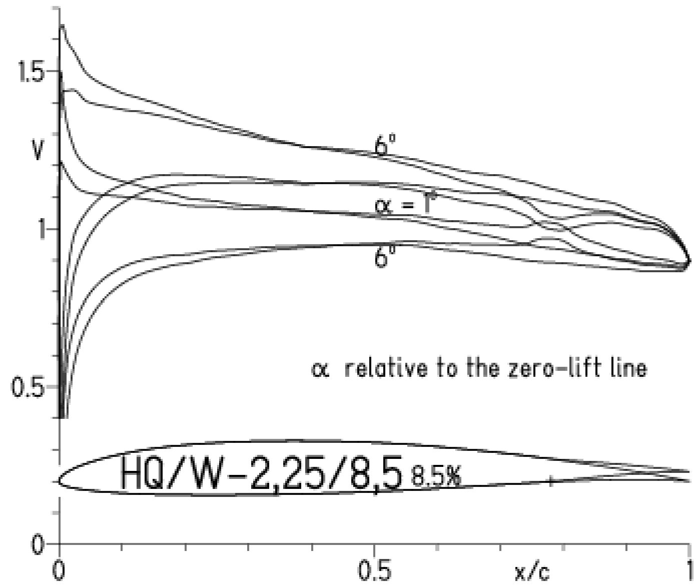


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

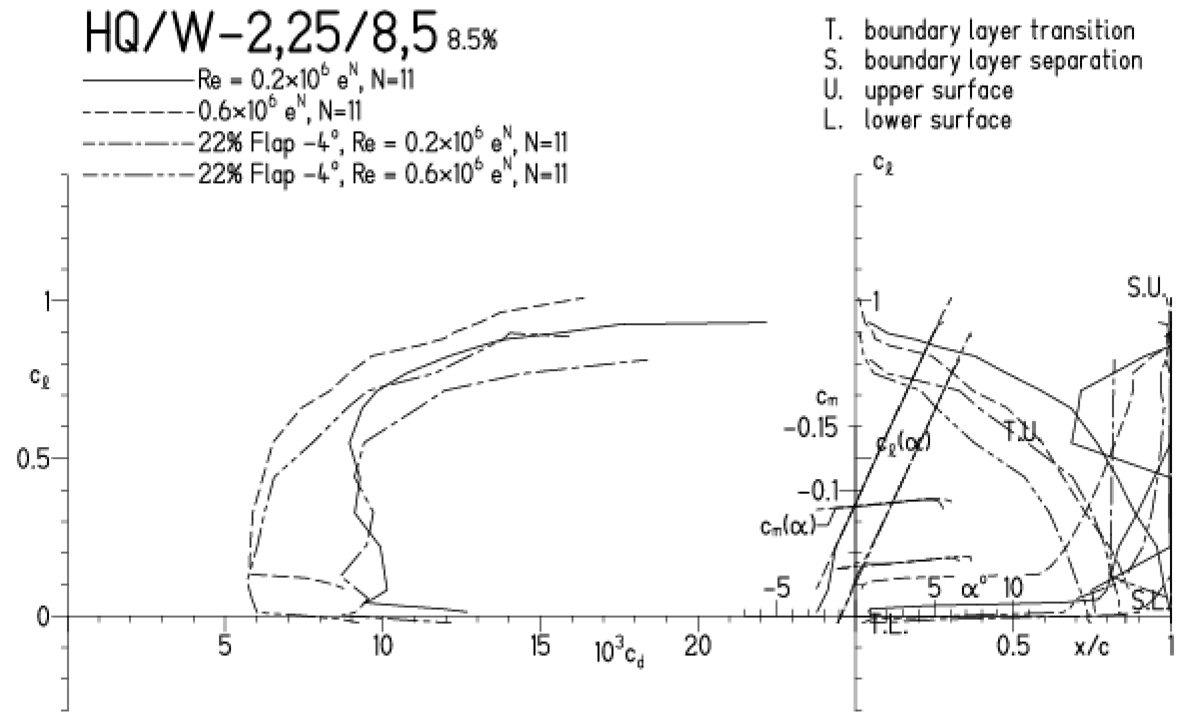


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

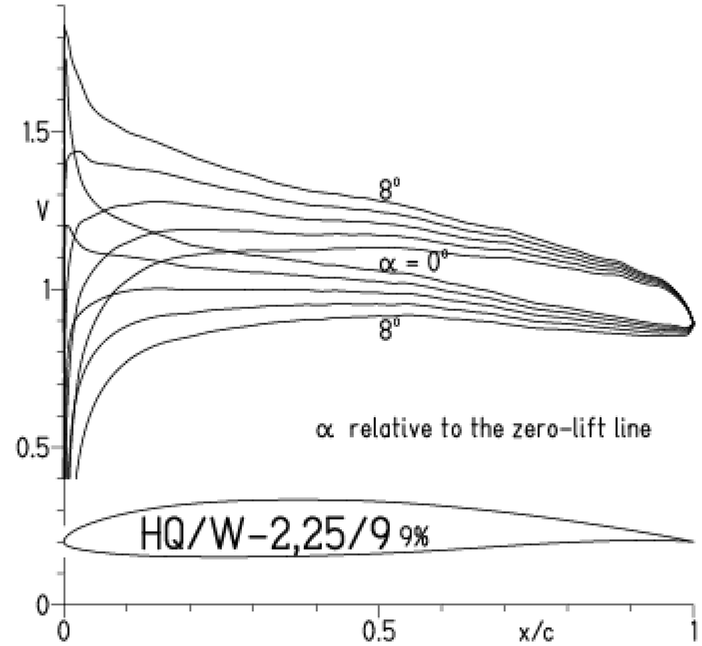


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

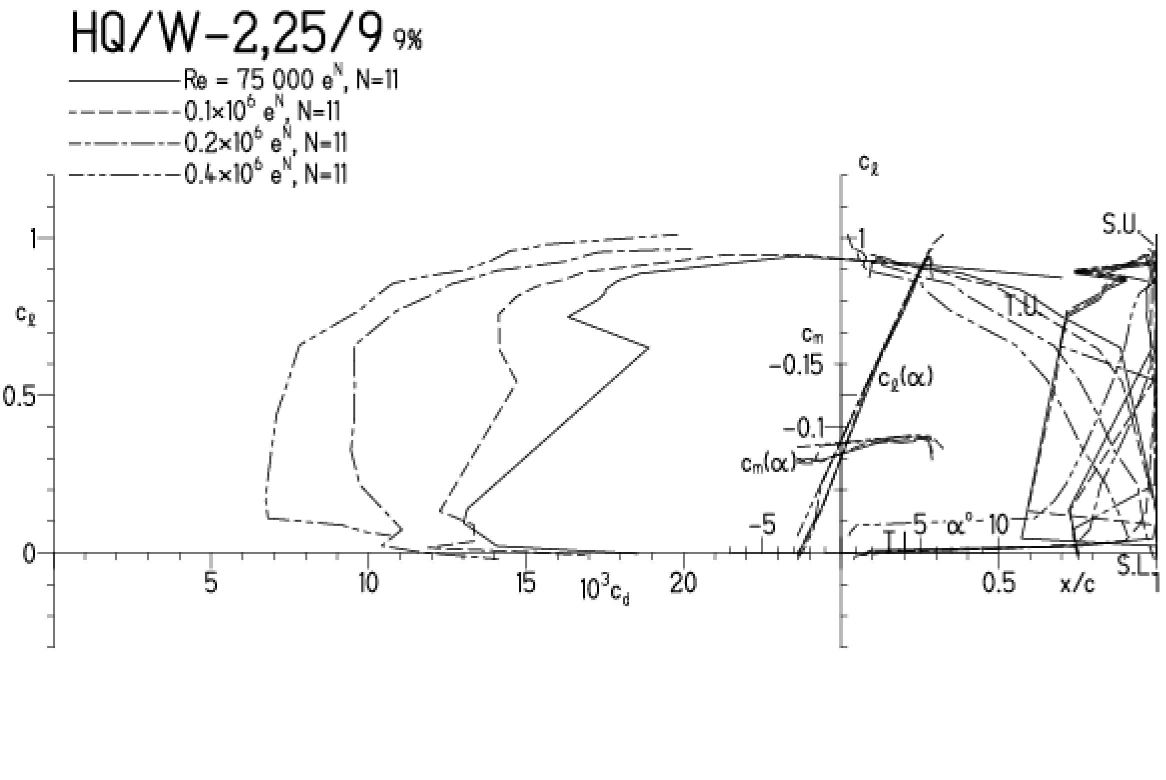


<u>HQ/W-2,25/9</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

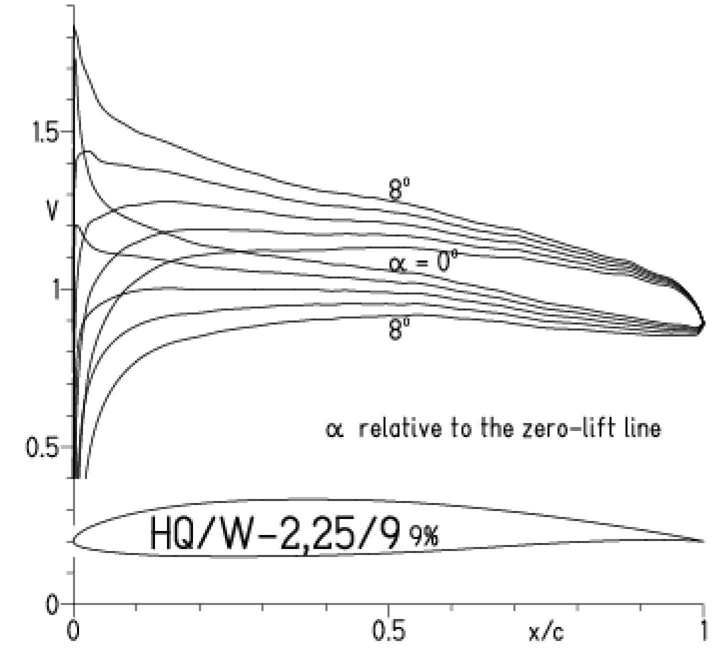


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

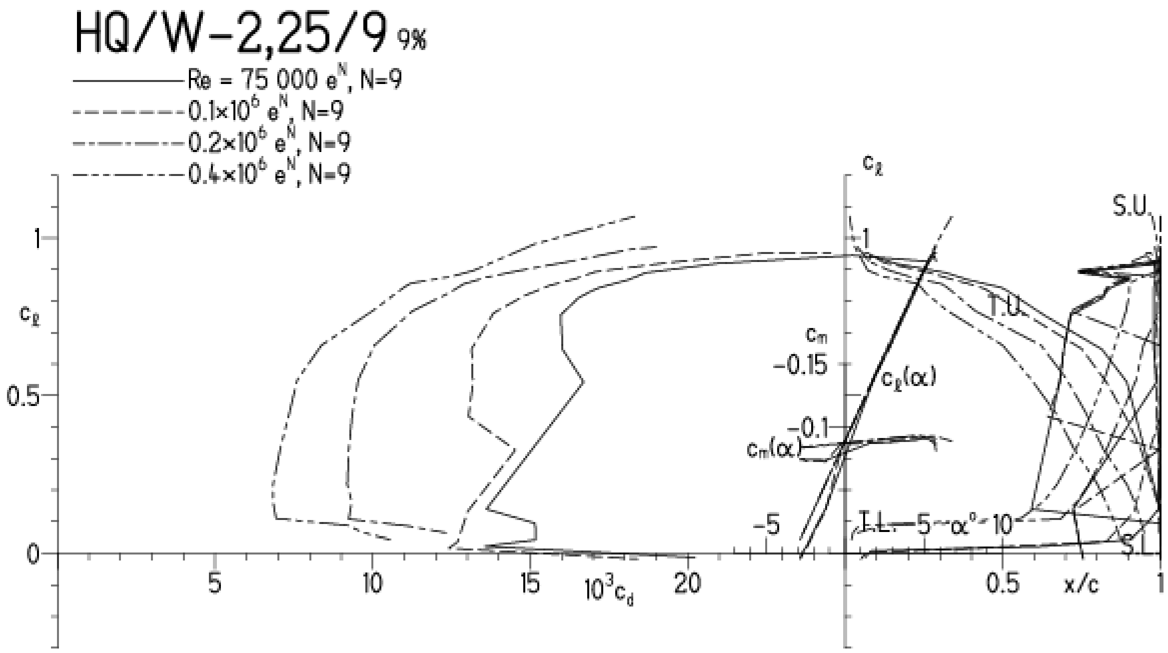


HQ/W-2,25/9, N=9

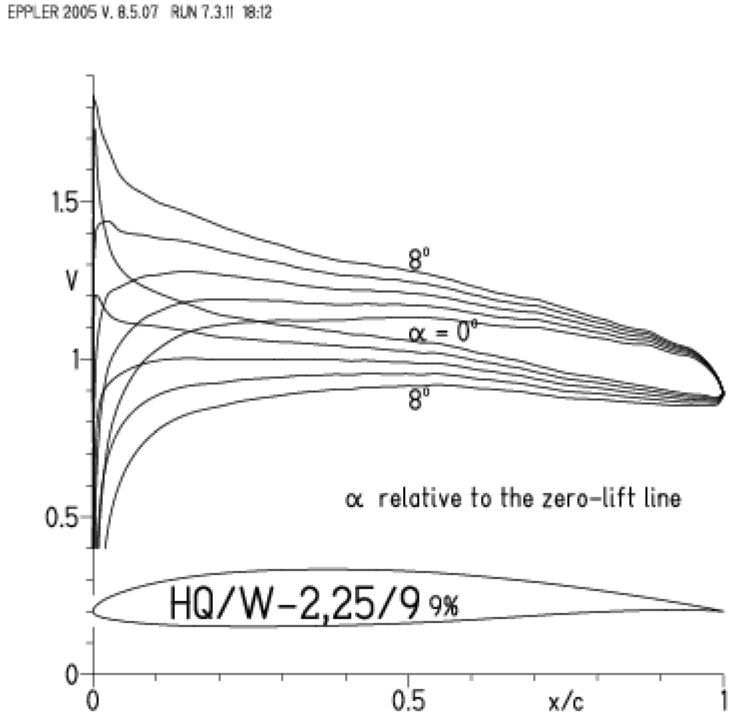
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

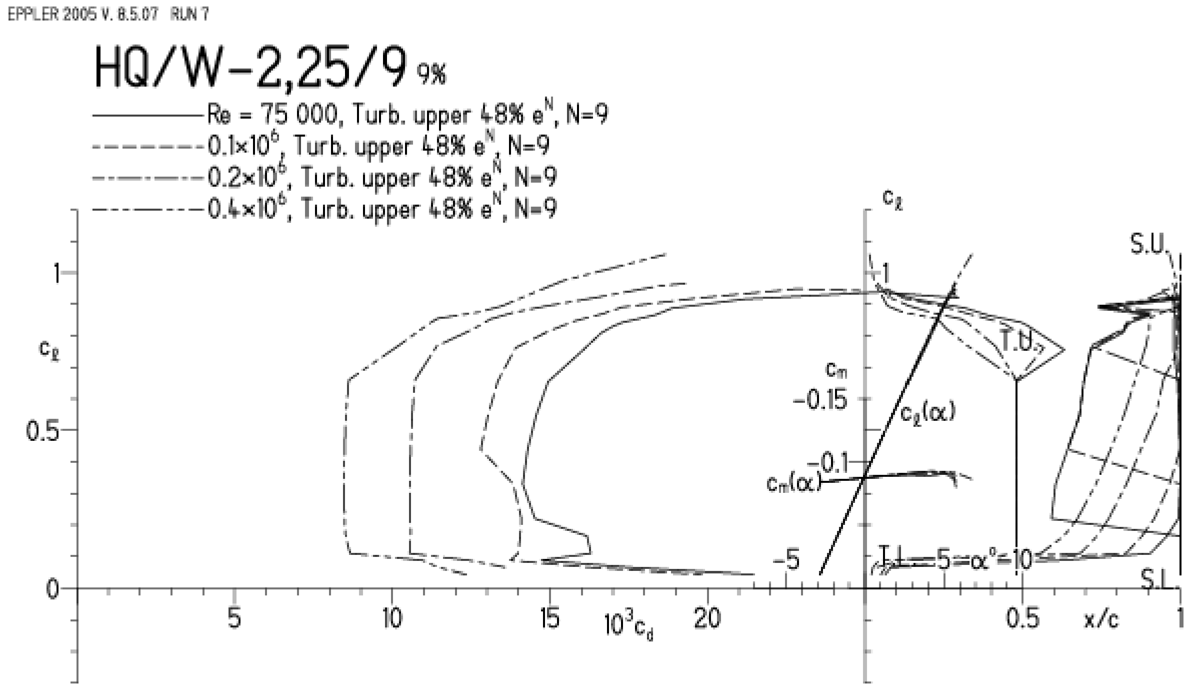


EPPLER 2005 V. 8.



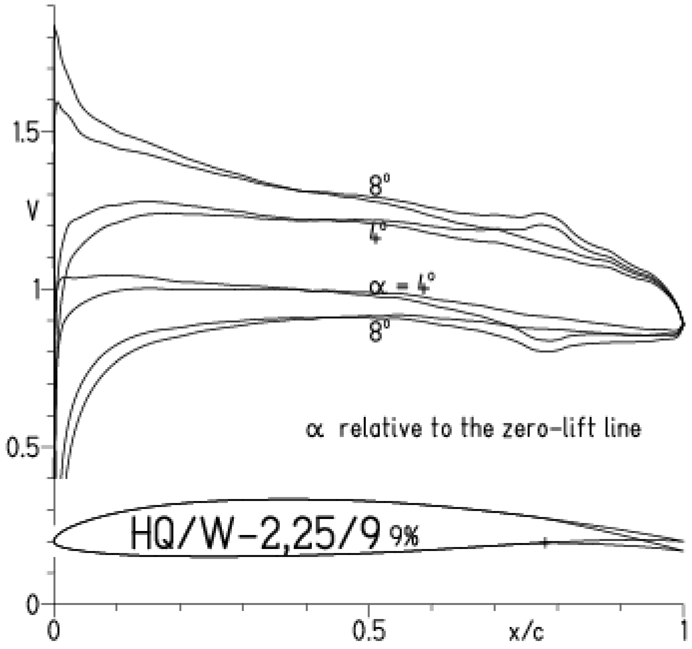
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



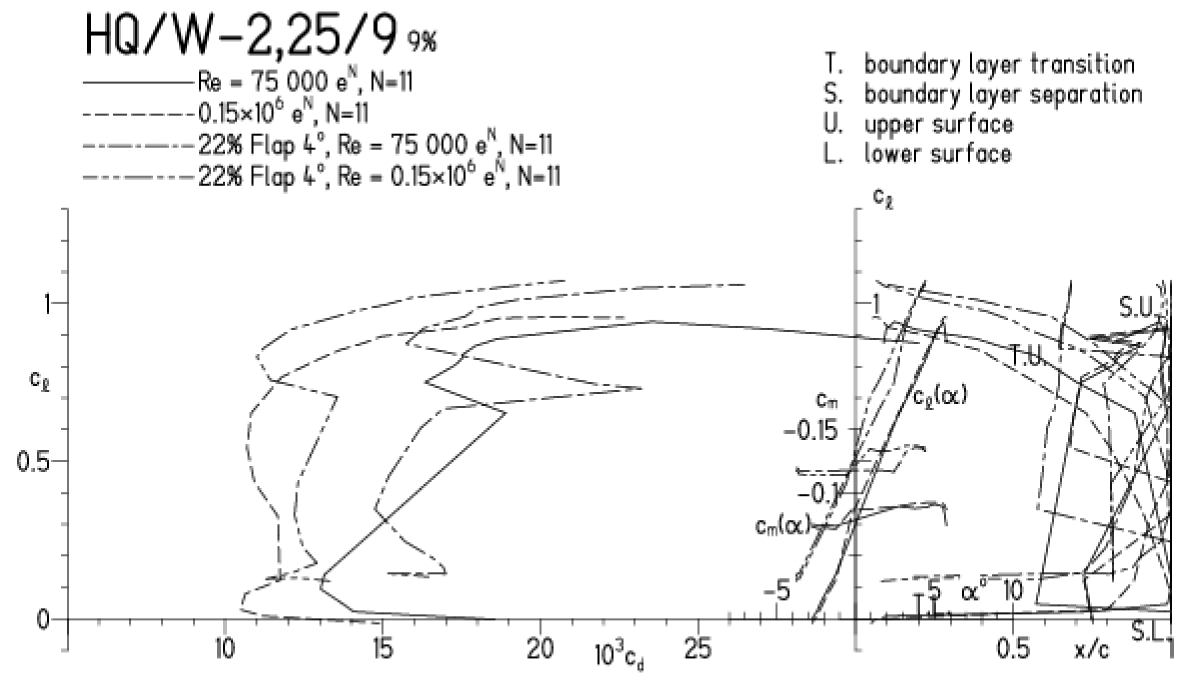


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

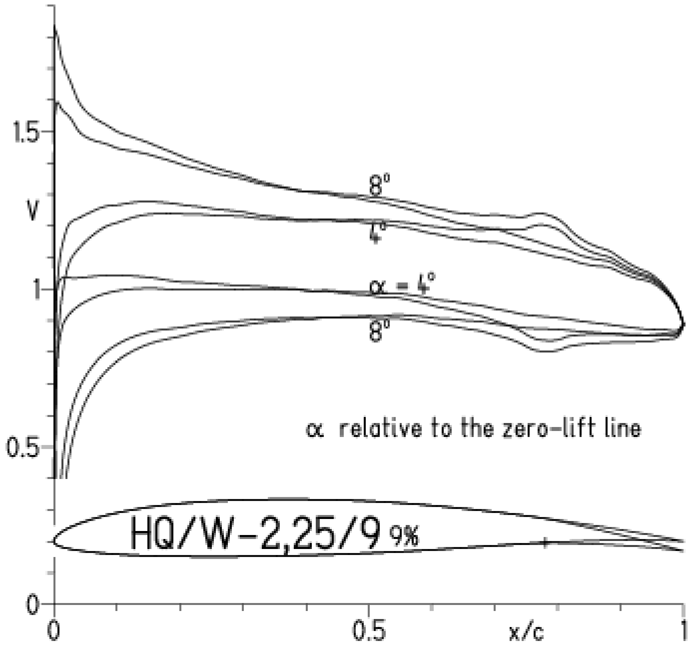


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

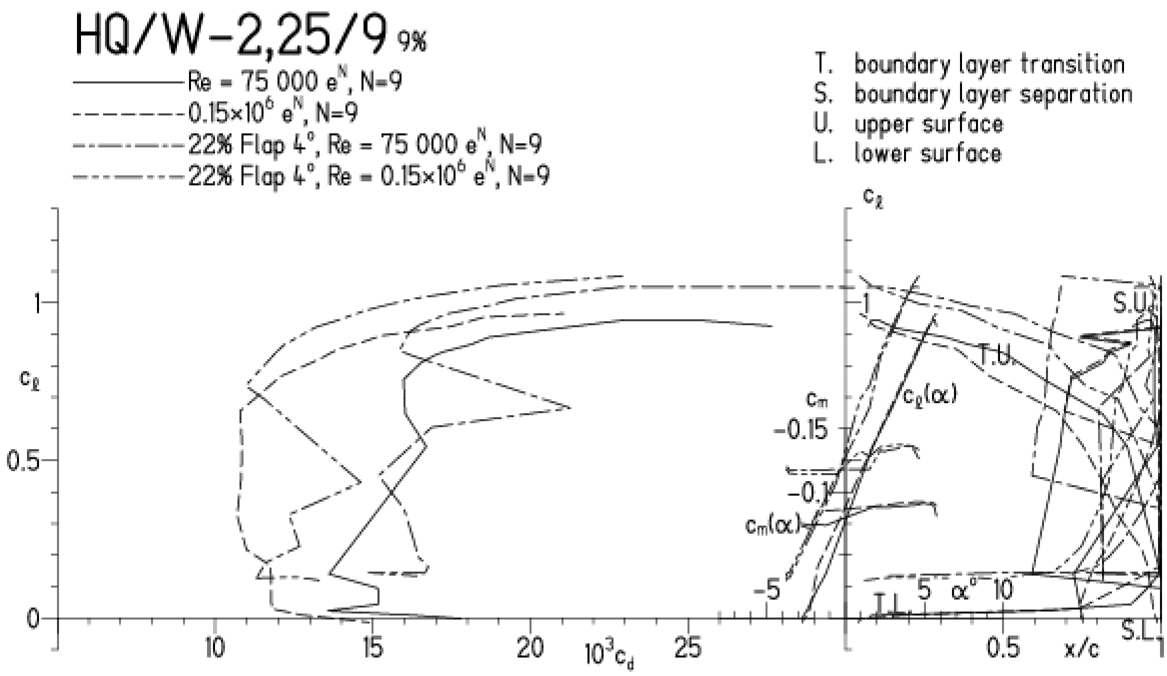


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

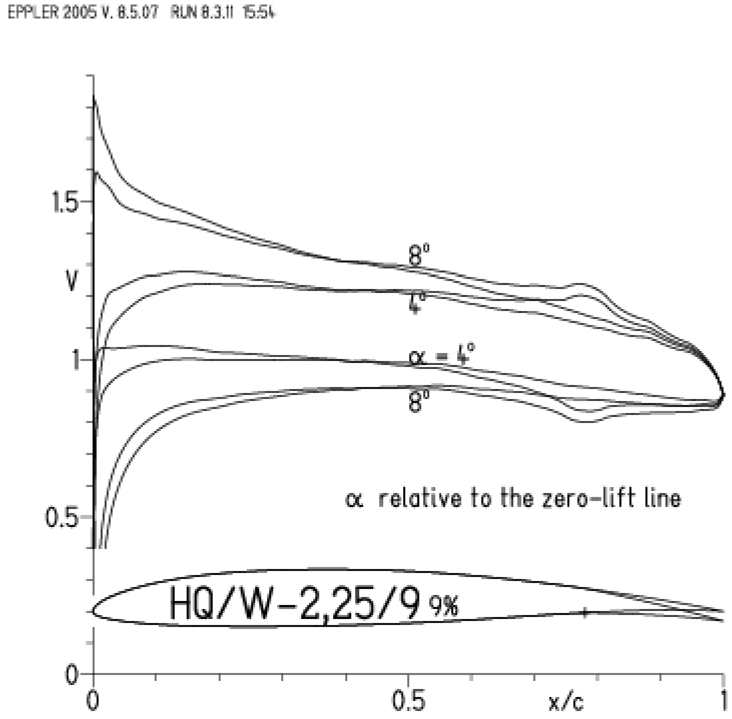
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

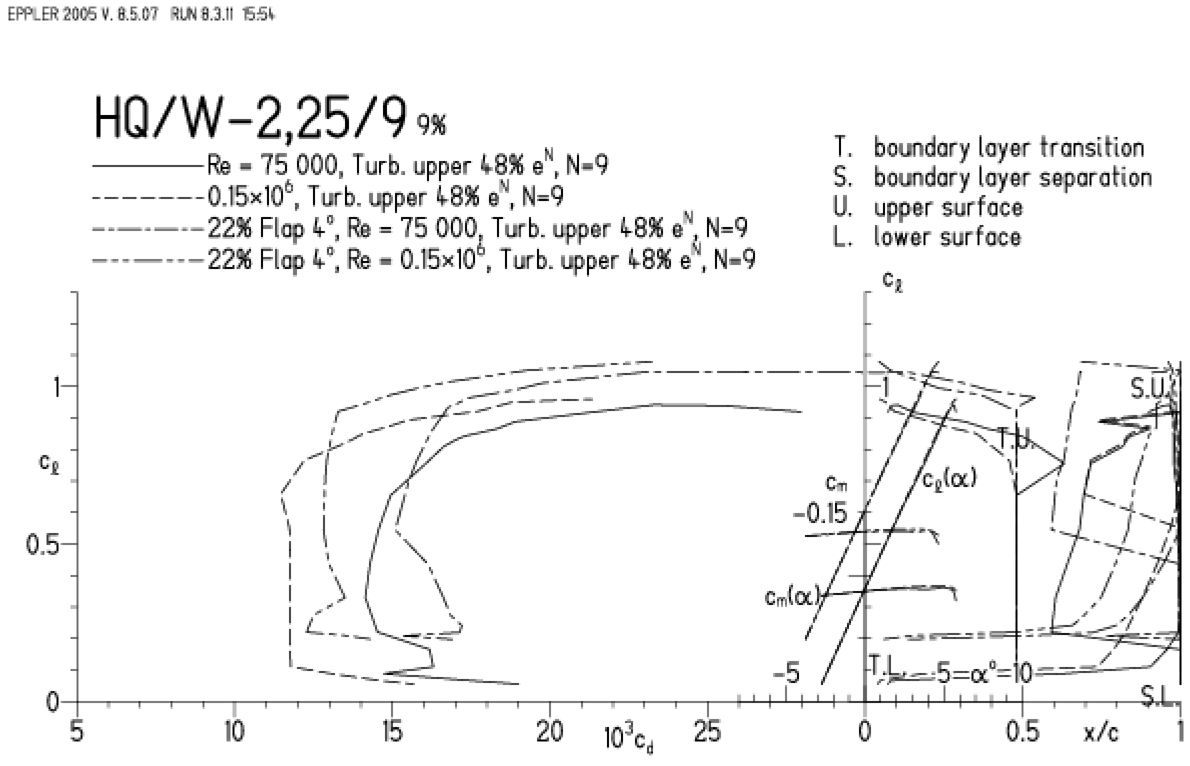


EPPLER 2005 V. 8.5.07 RUN 8.3.1

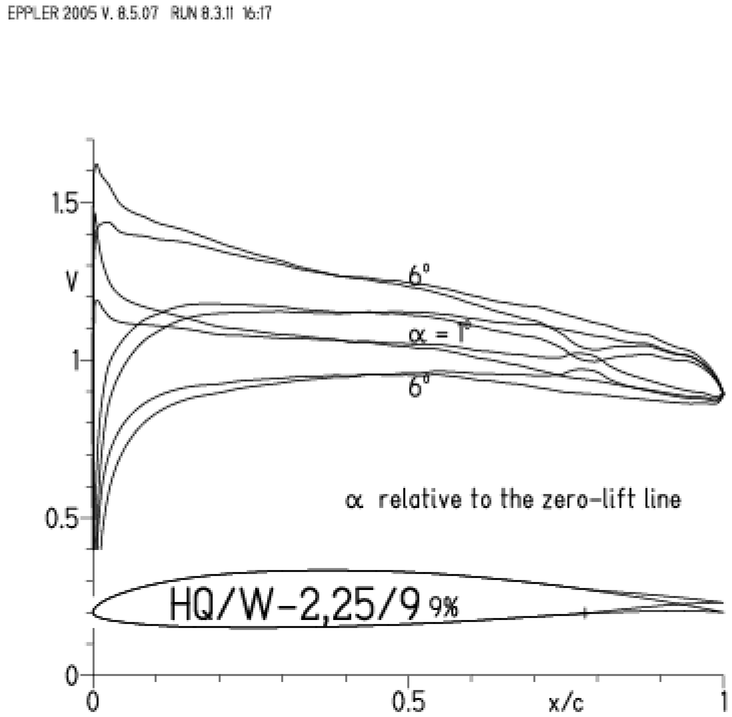


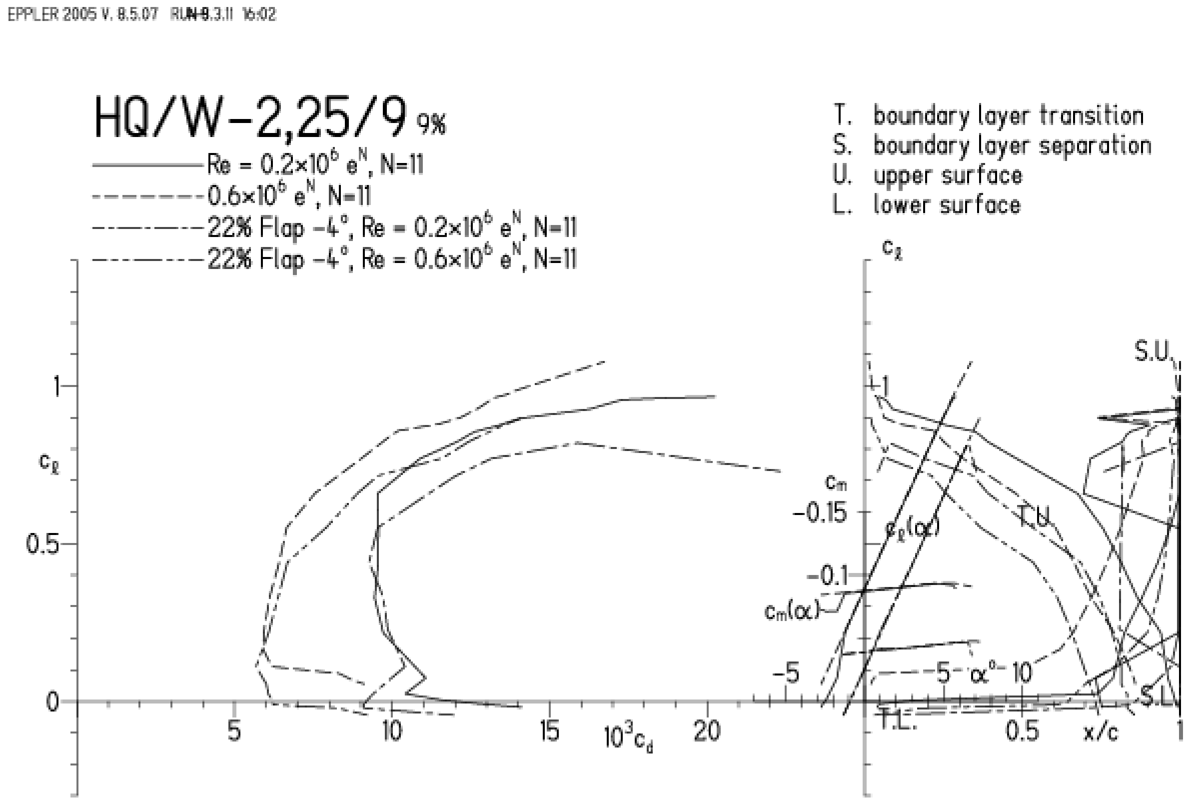
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





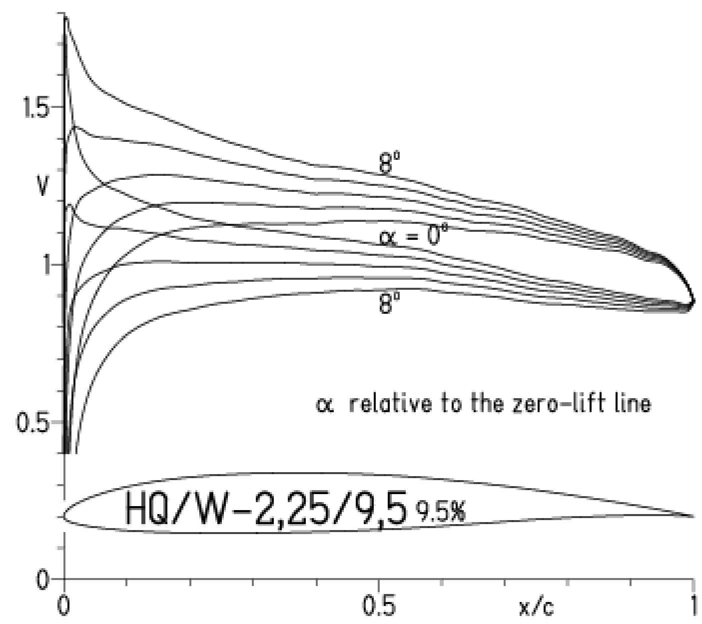
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



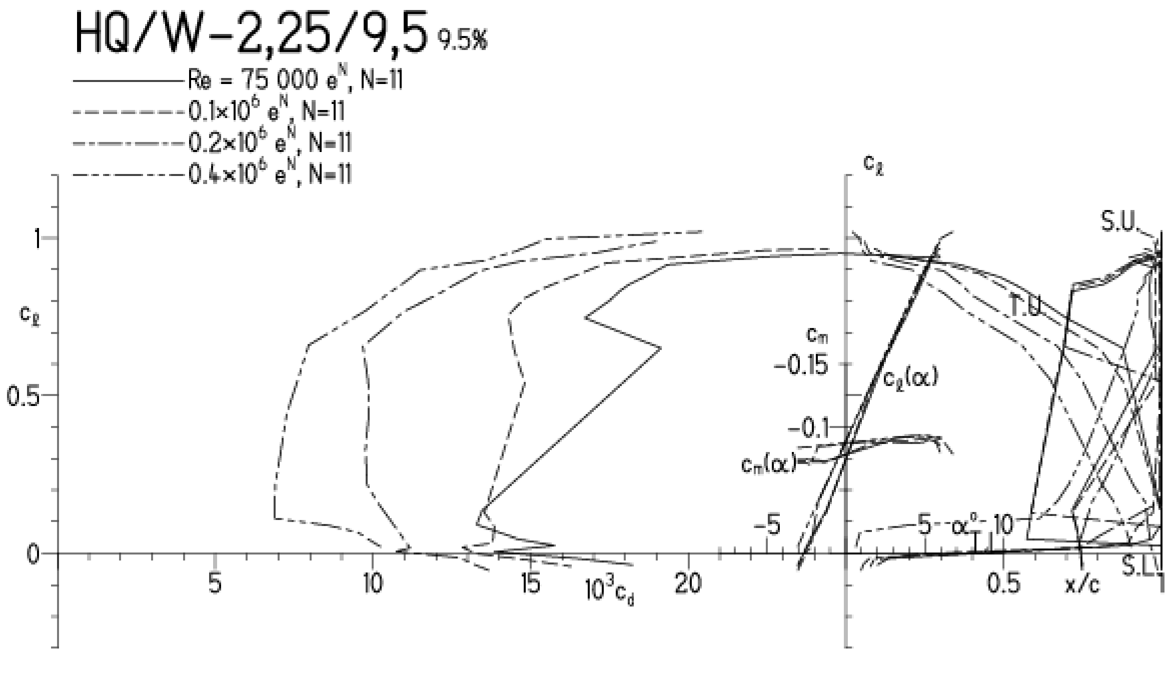


HQ/W-2,25/9,5, N=11

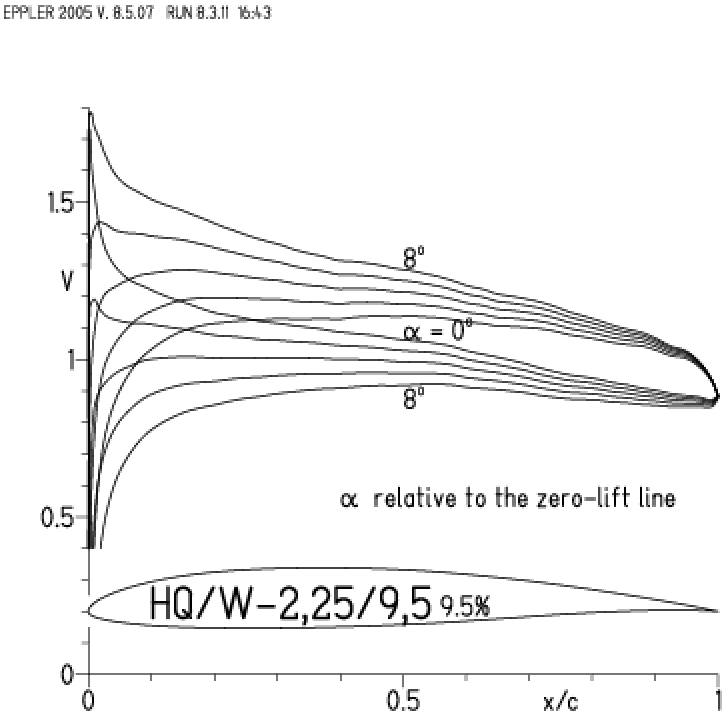
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

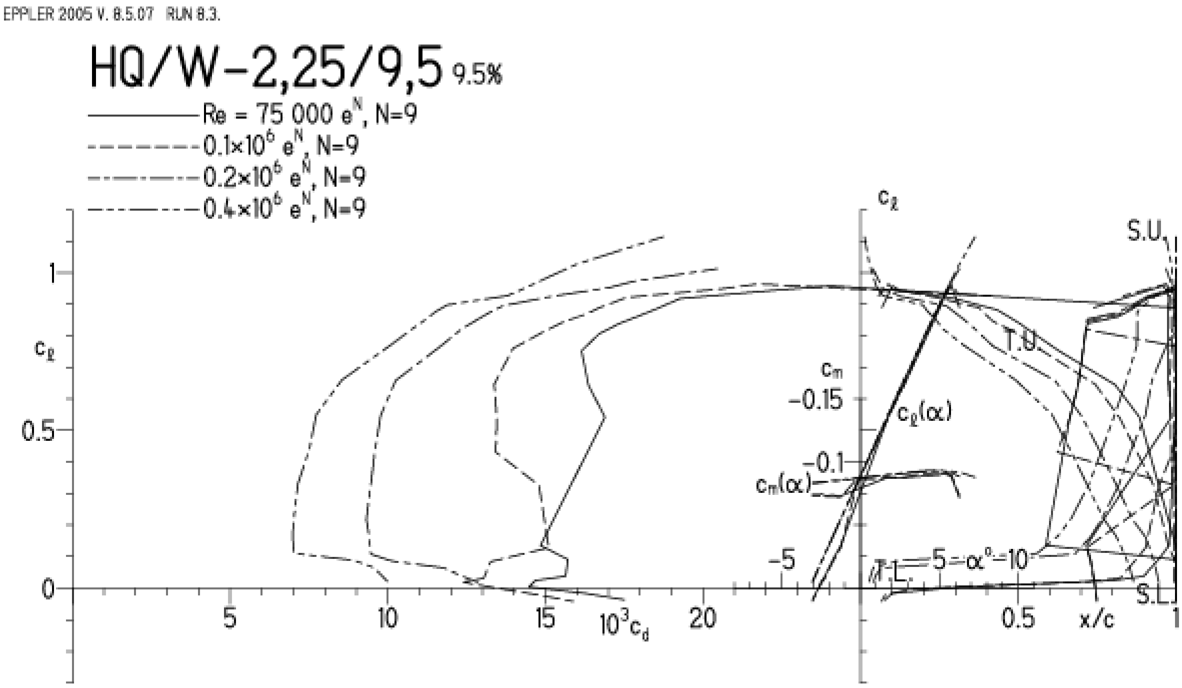


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



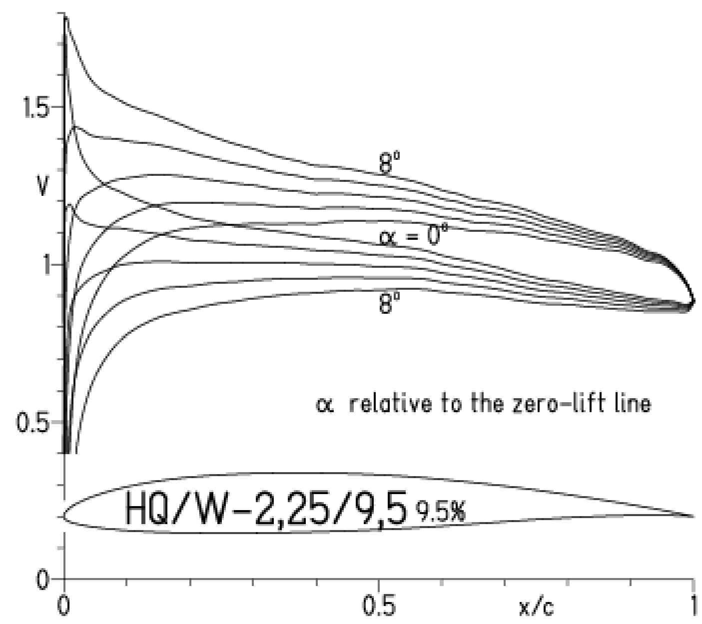
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

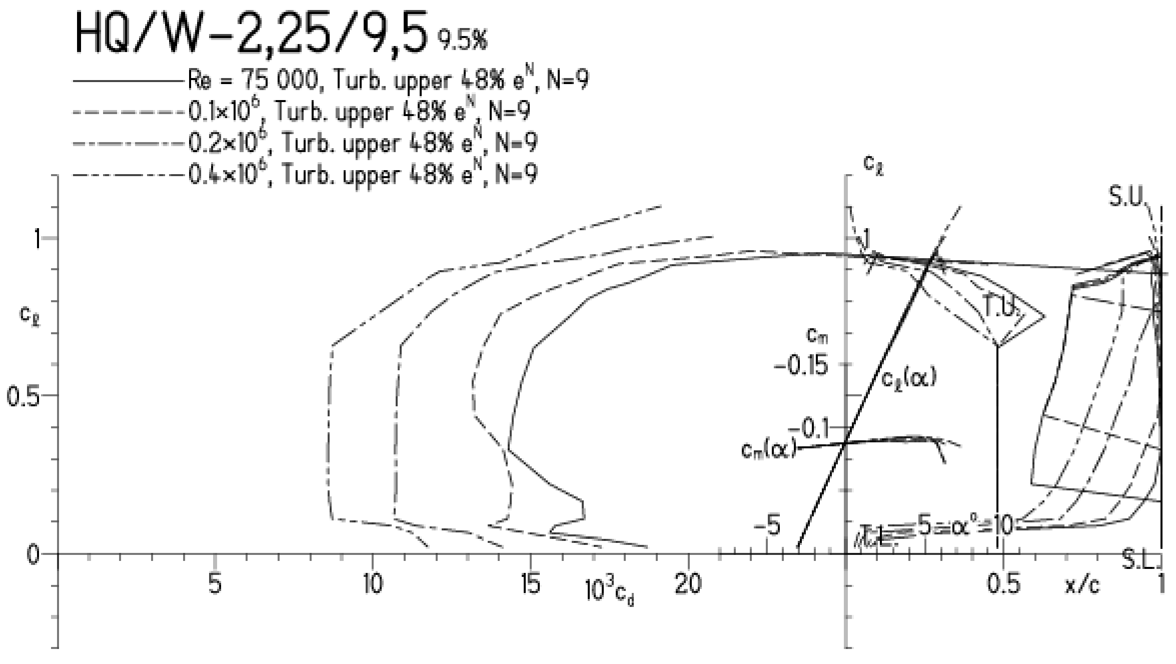

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

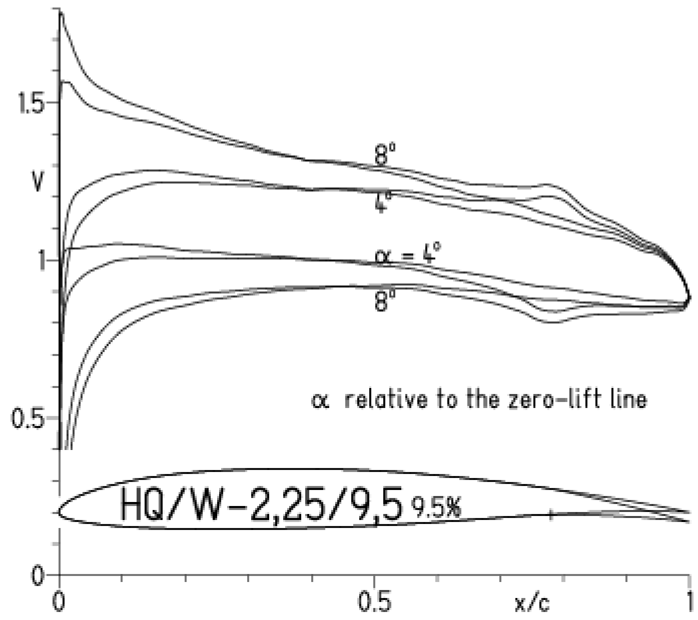


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

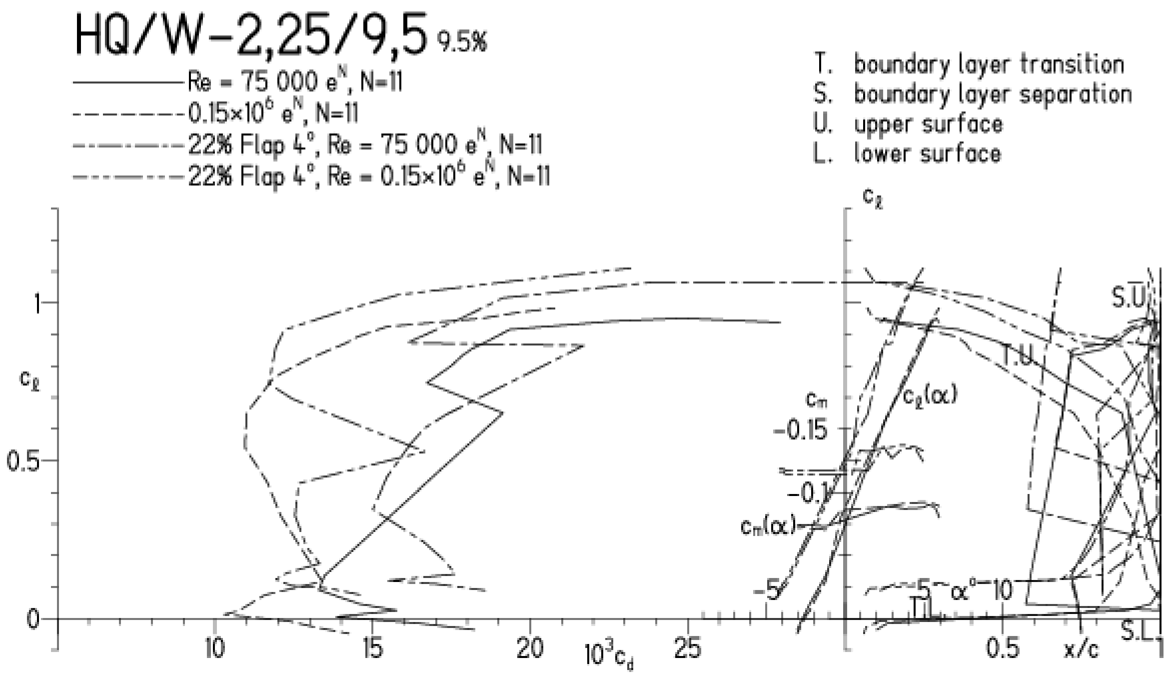


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

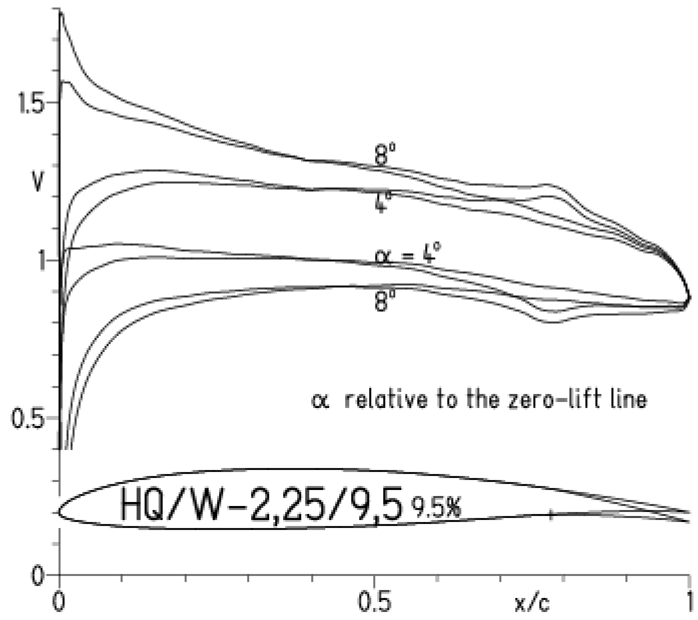


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

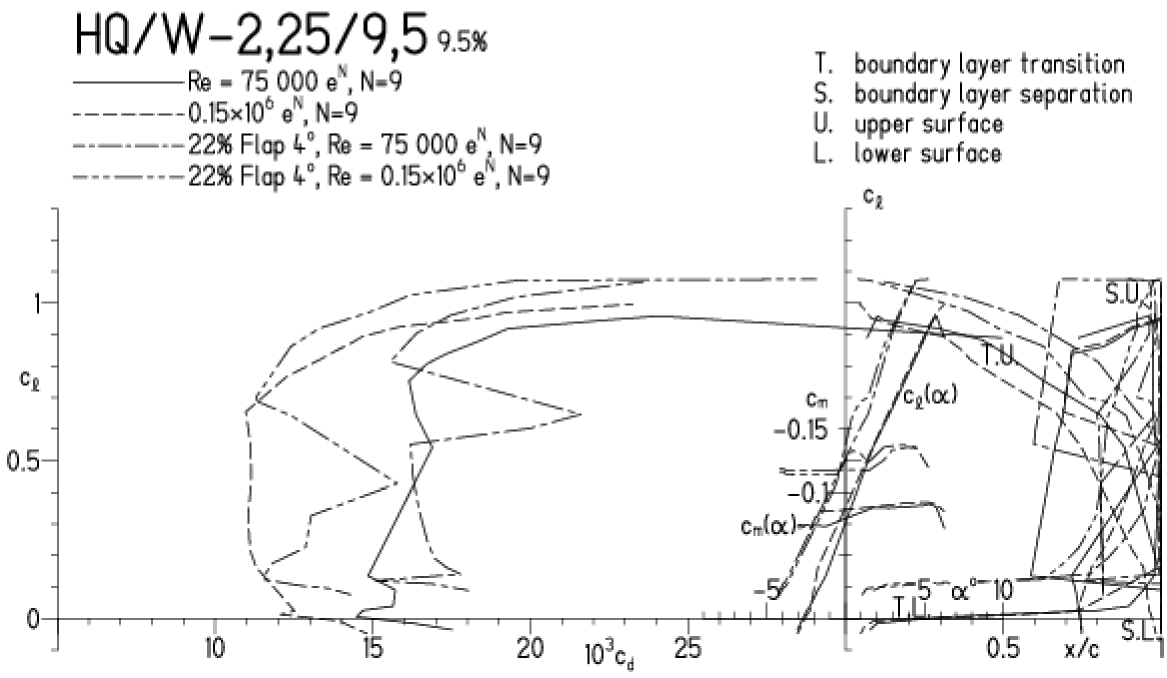


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

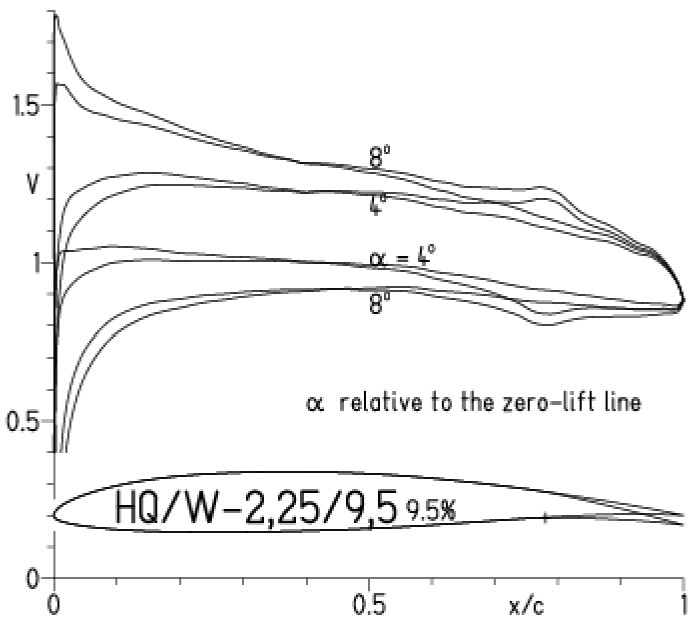


EPPLER 2005 V. 8.5.07 R

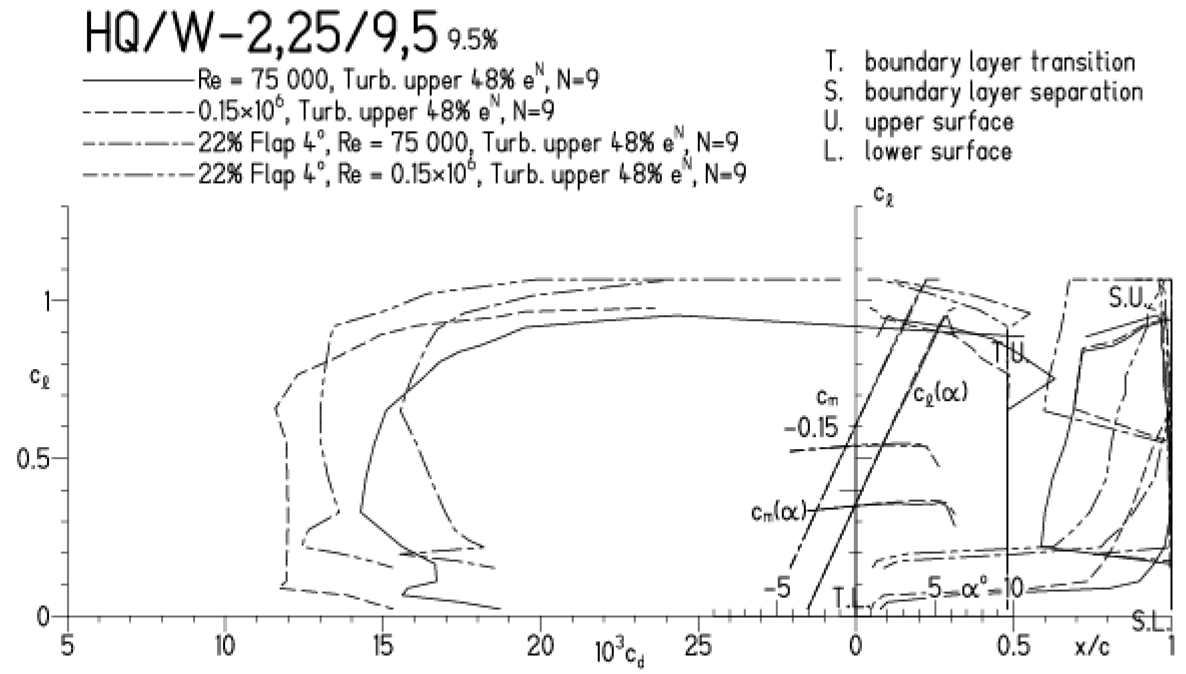


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

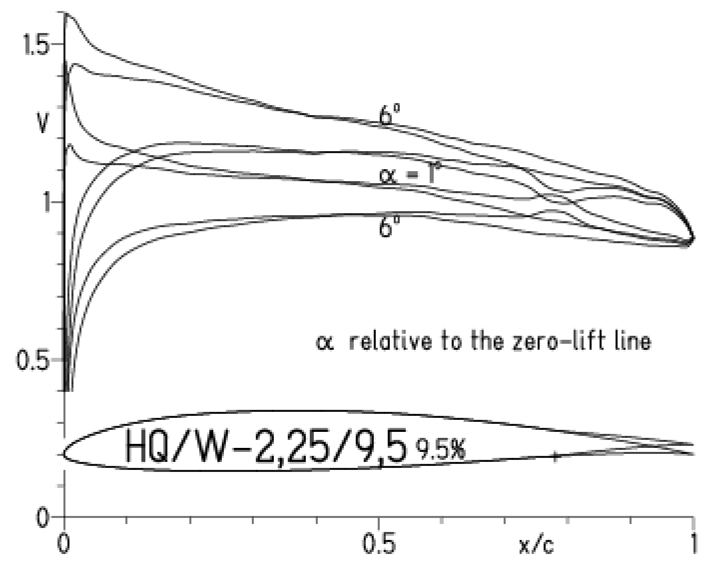


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

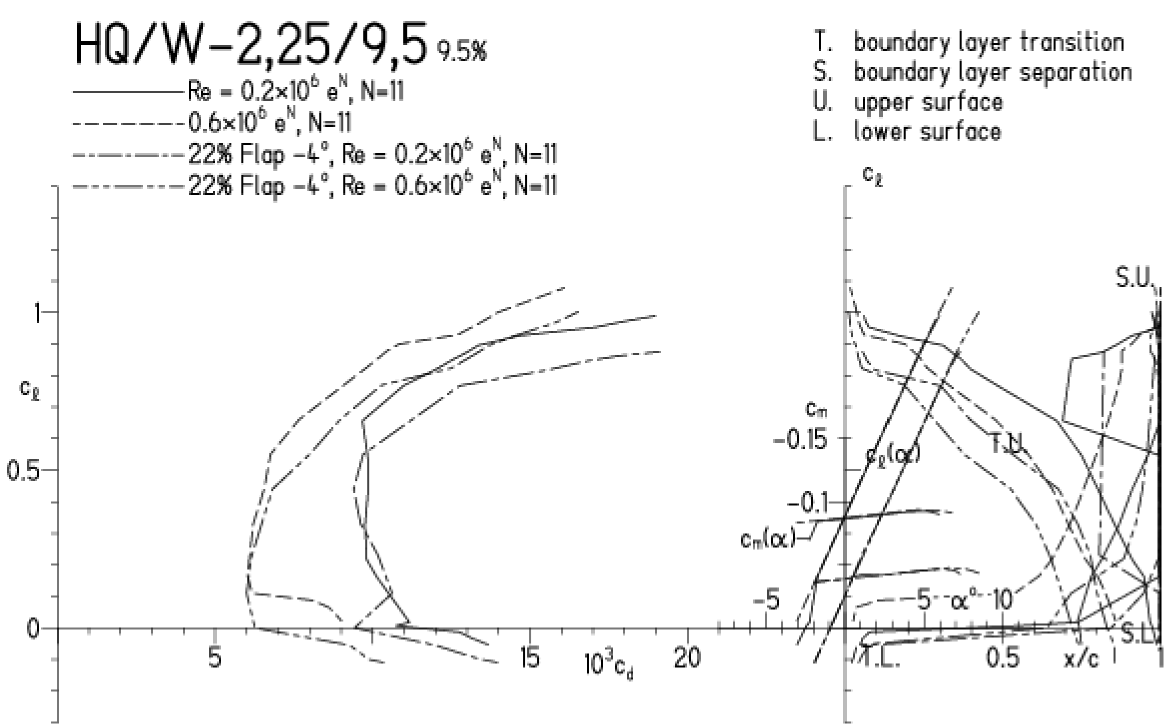


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

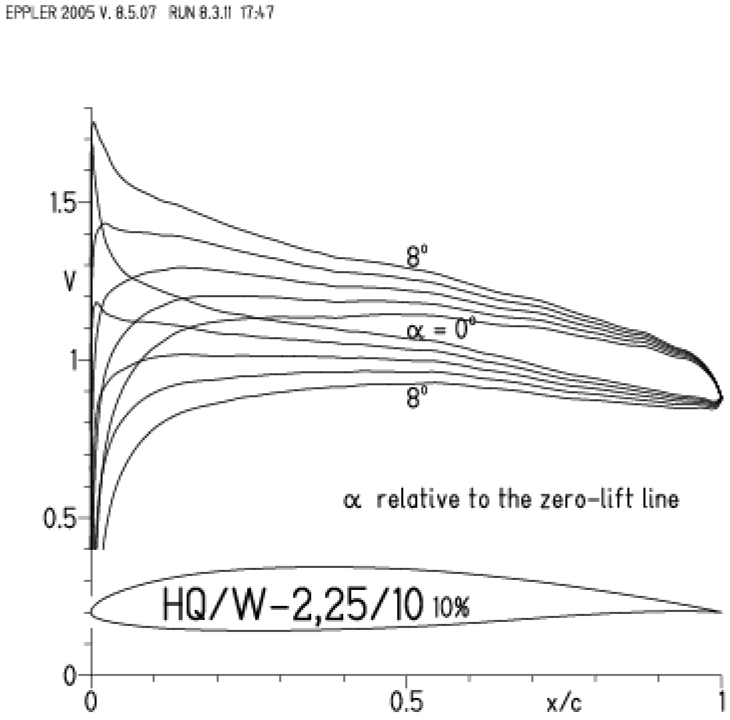
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

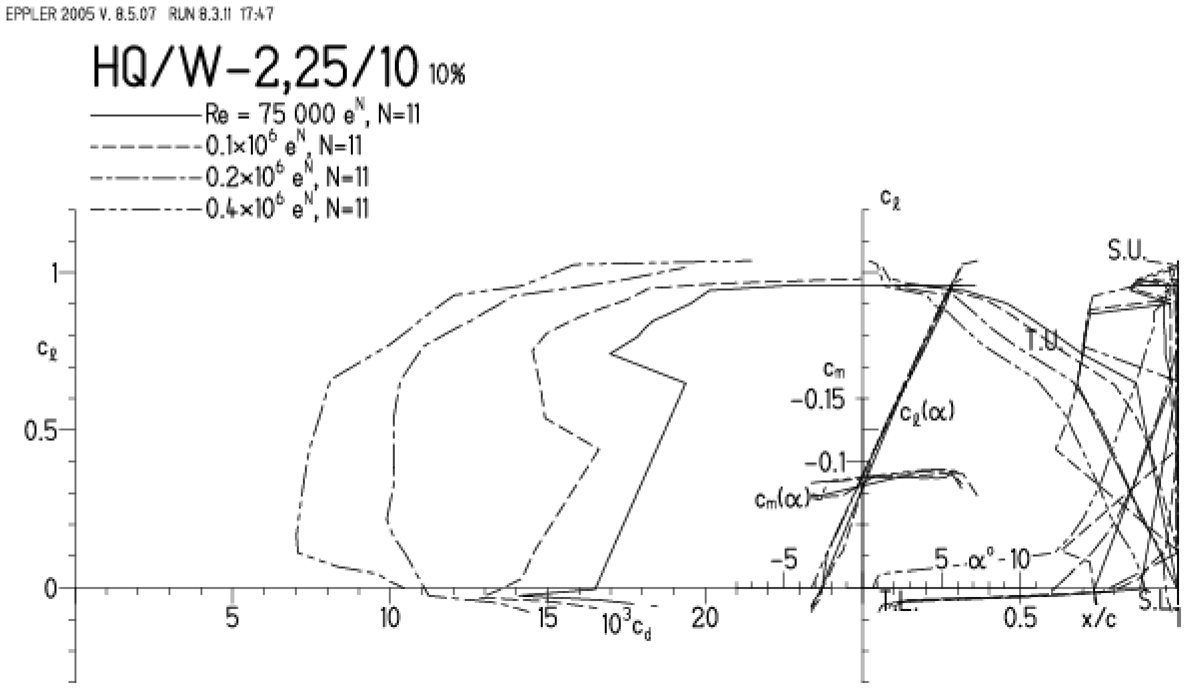


EPPLER 2005 V.



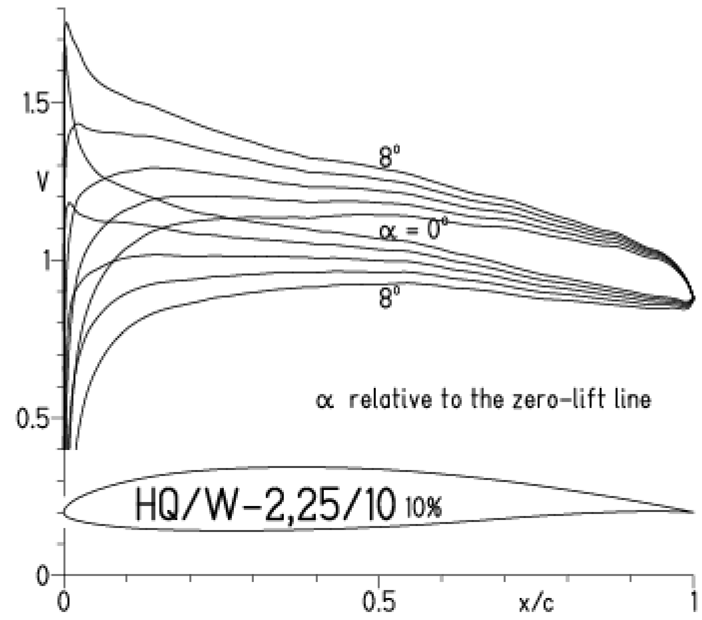
HQ/W-2,25/10, N=11



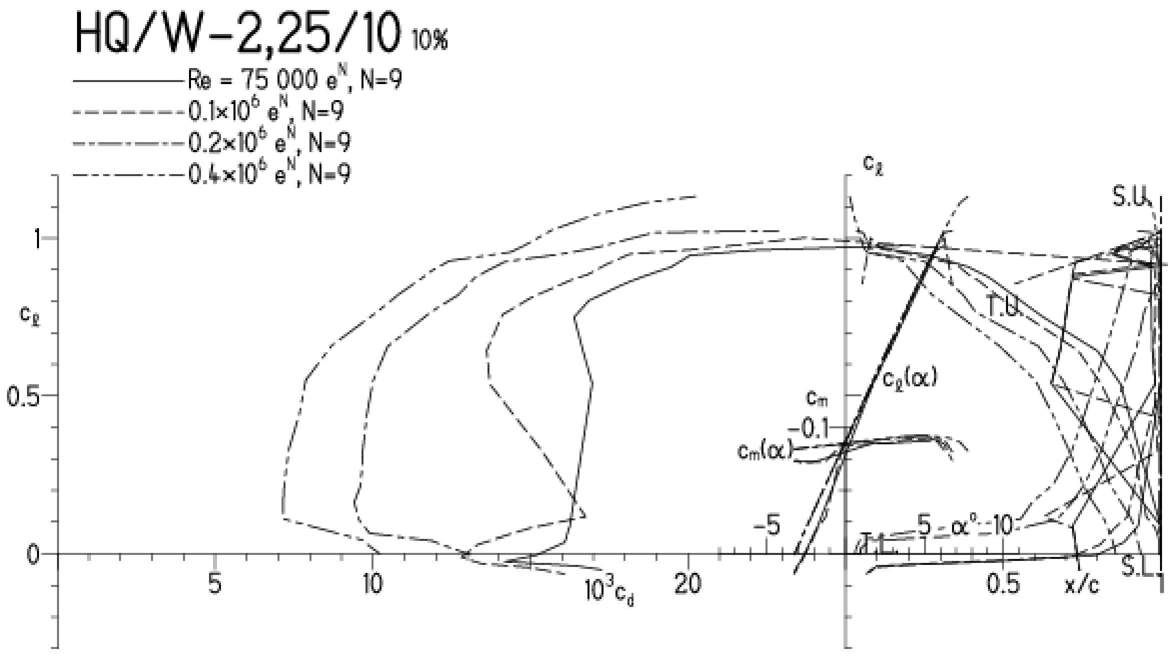


<u>HQ/W-2,25/10</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

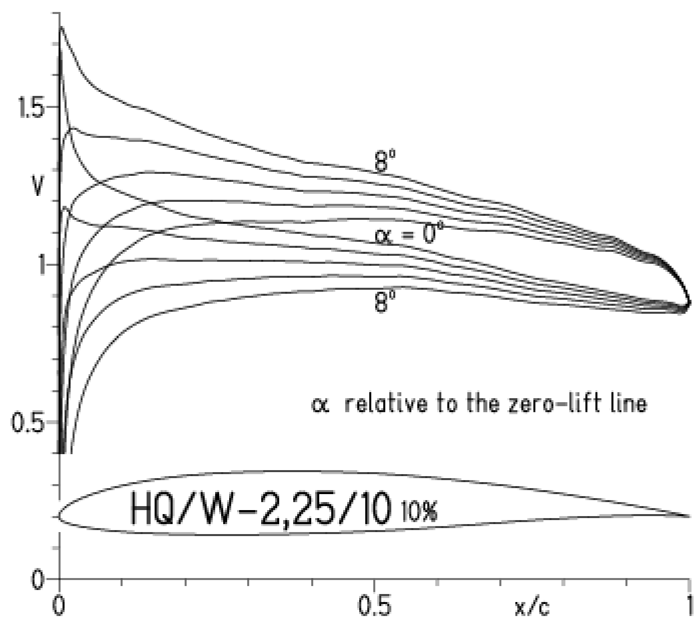


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

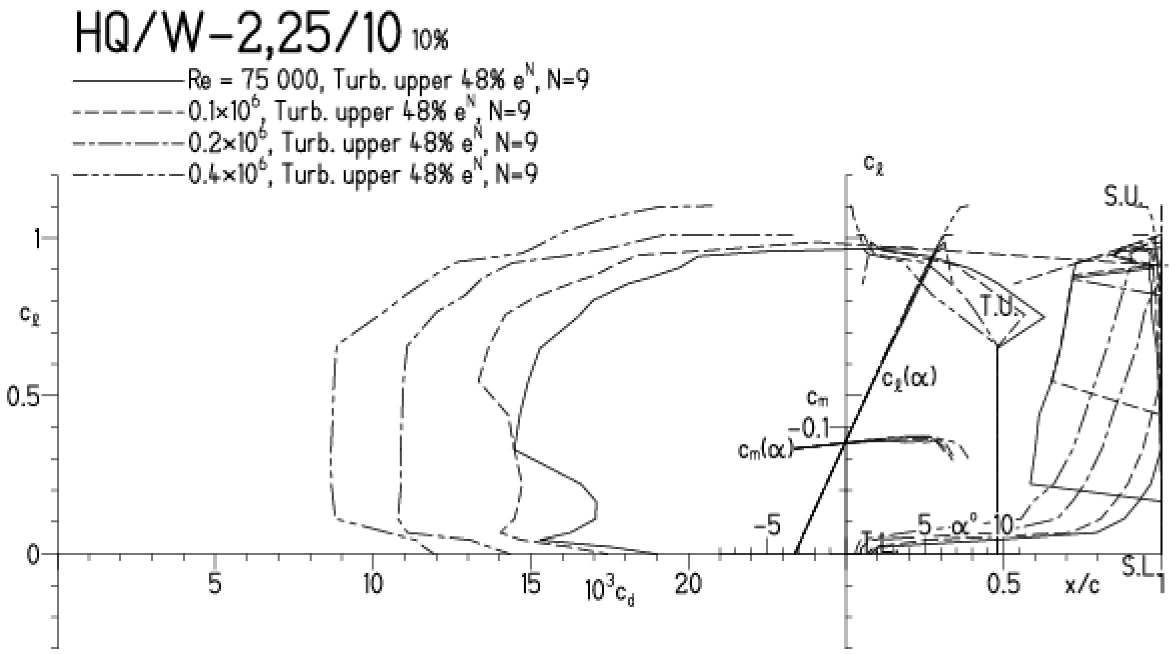


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

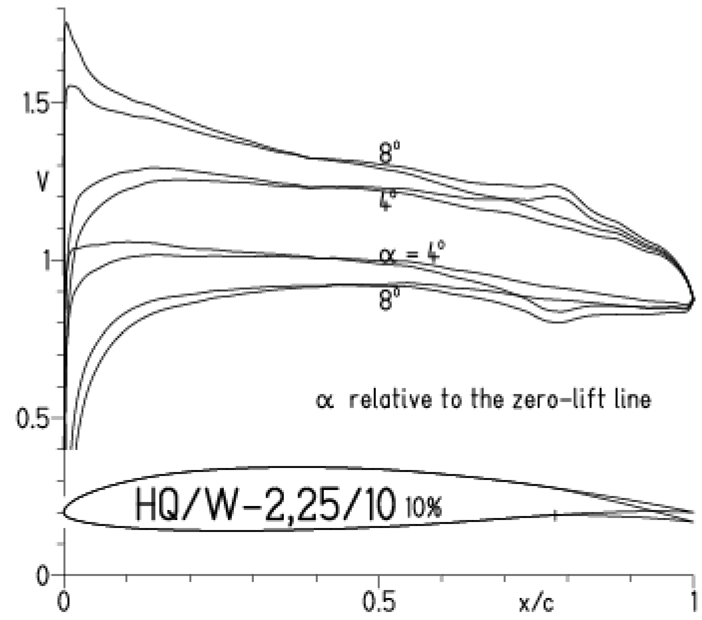


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

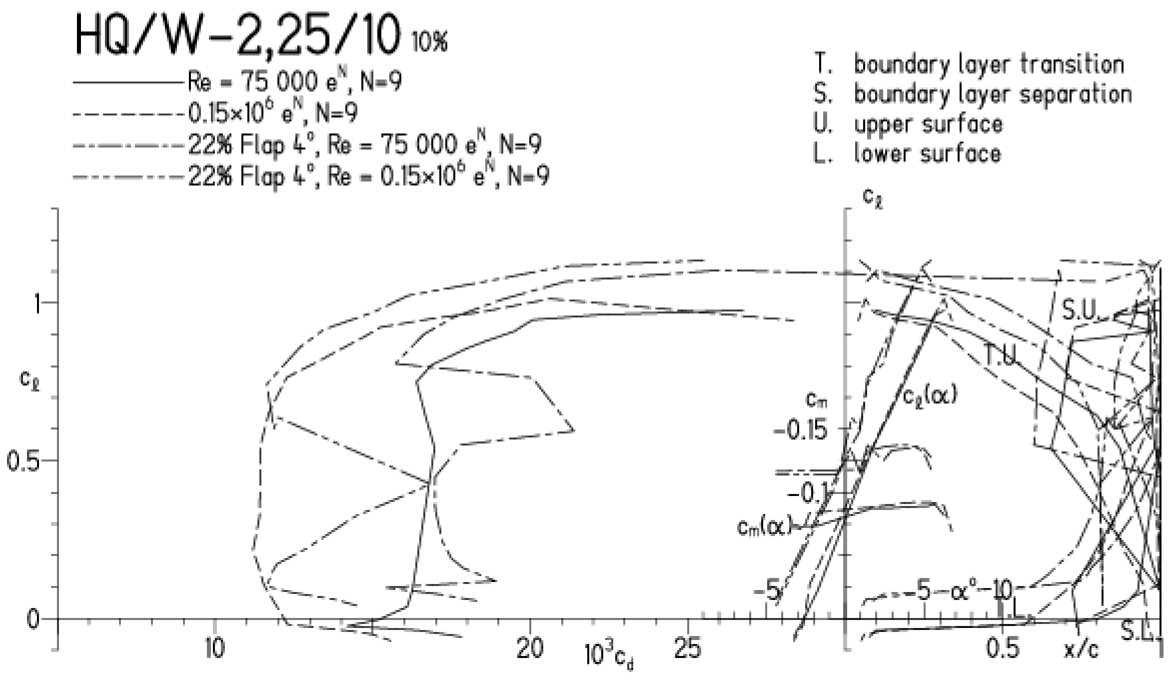


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

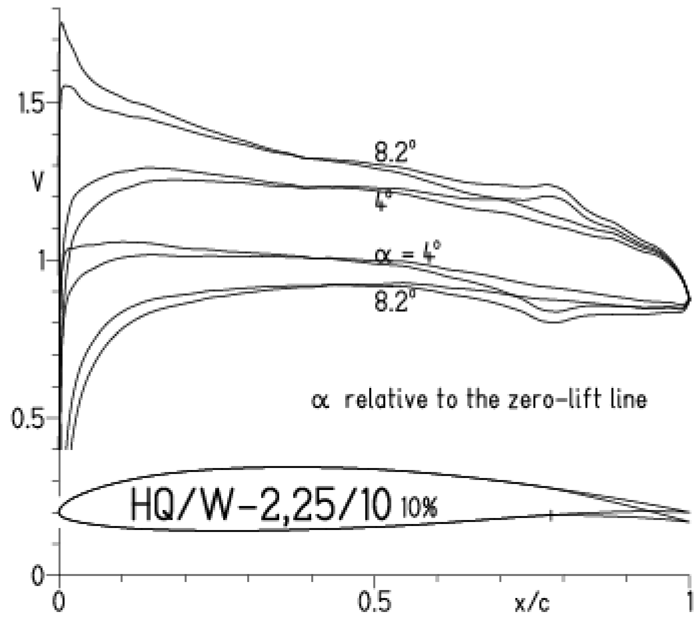


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

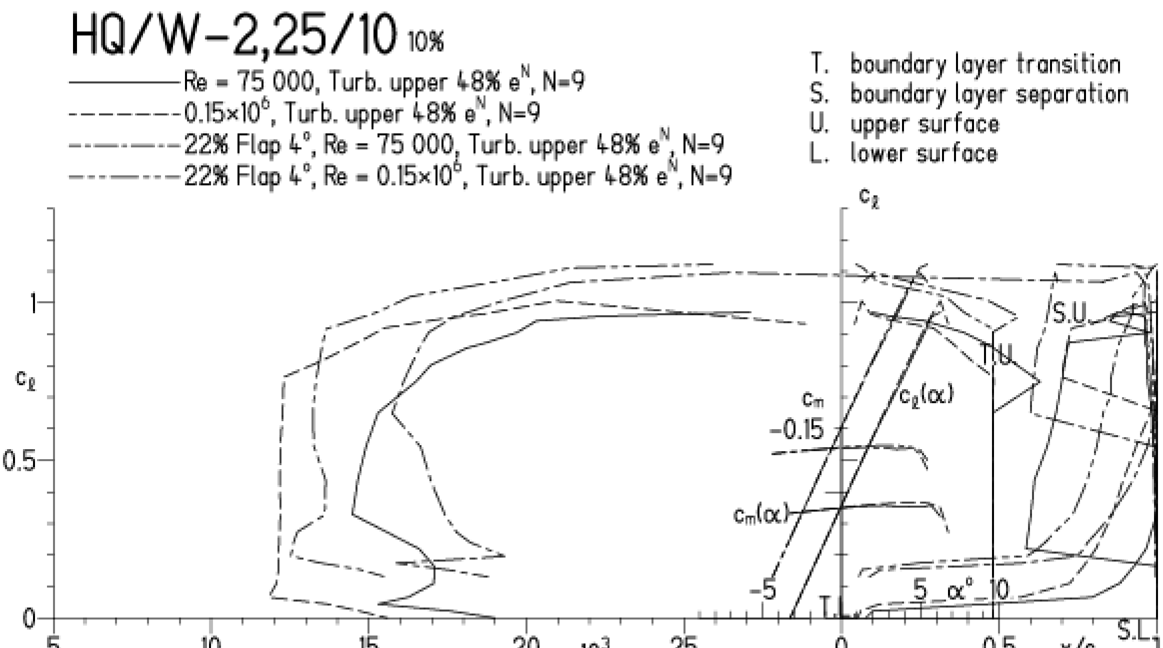


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

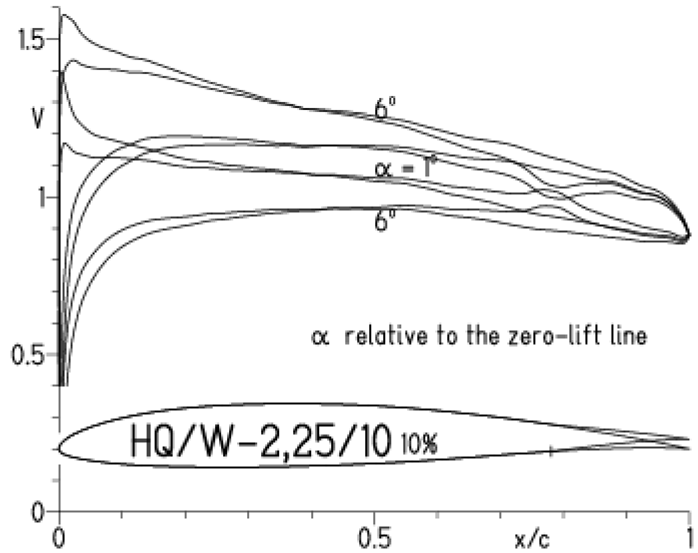


EPPLER 2005 V. 8.5.07 RUN 8.3

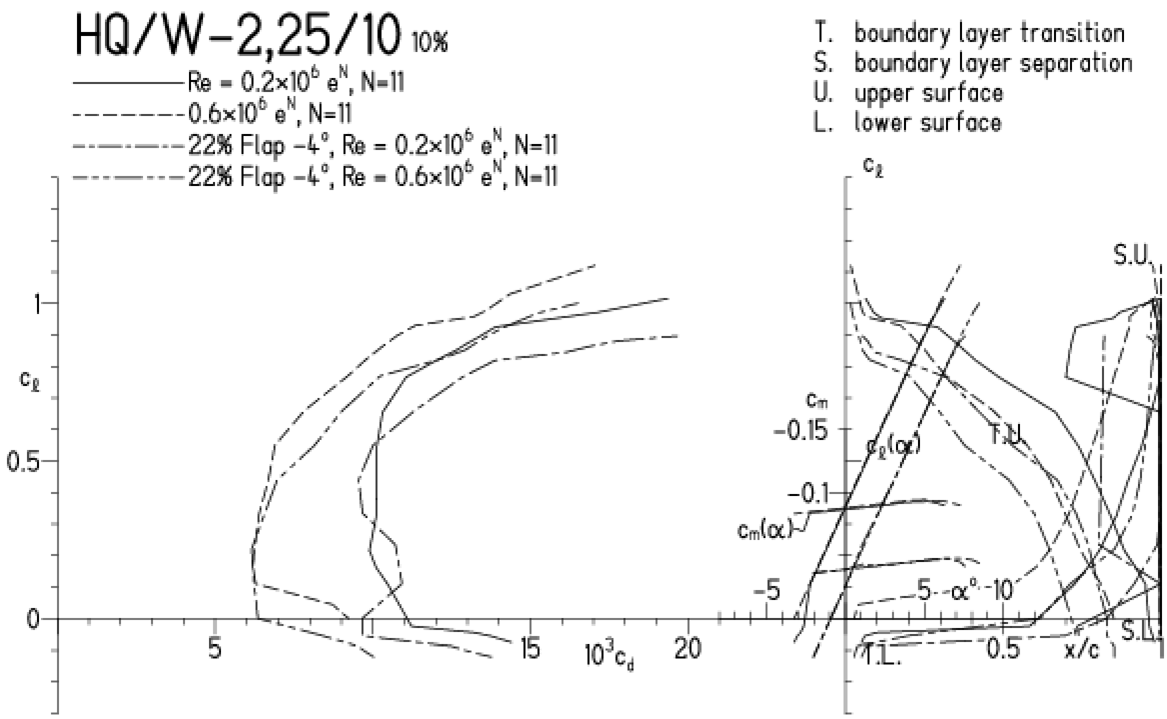


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

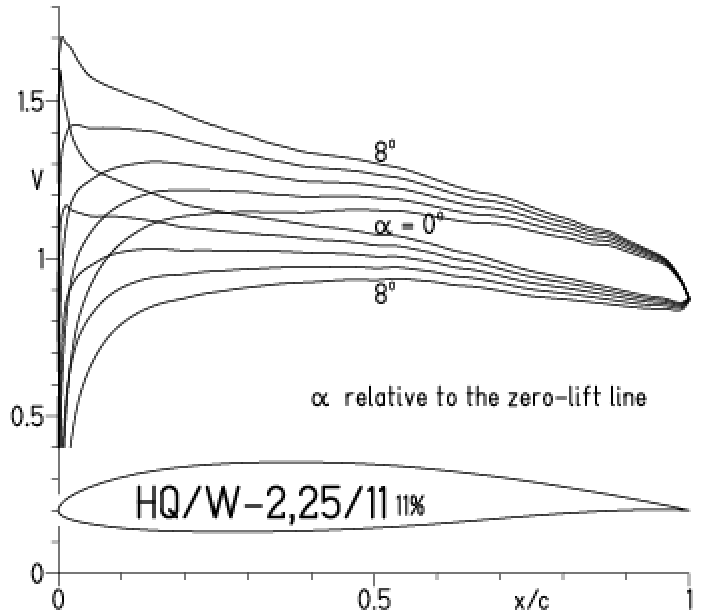


EPPLER 2005 V. 8.5.07 RUN

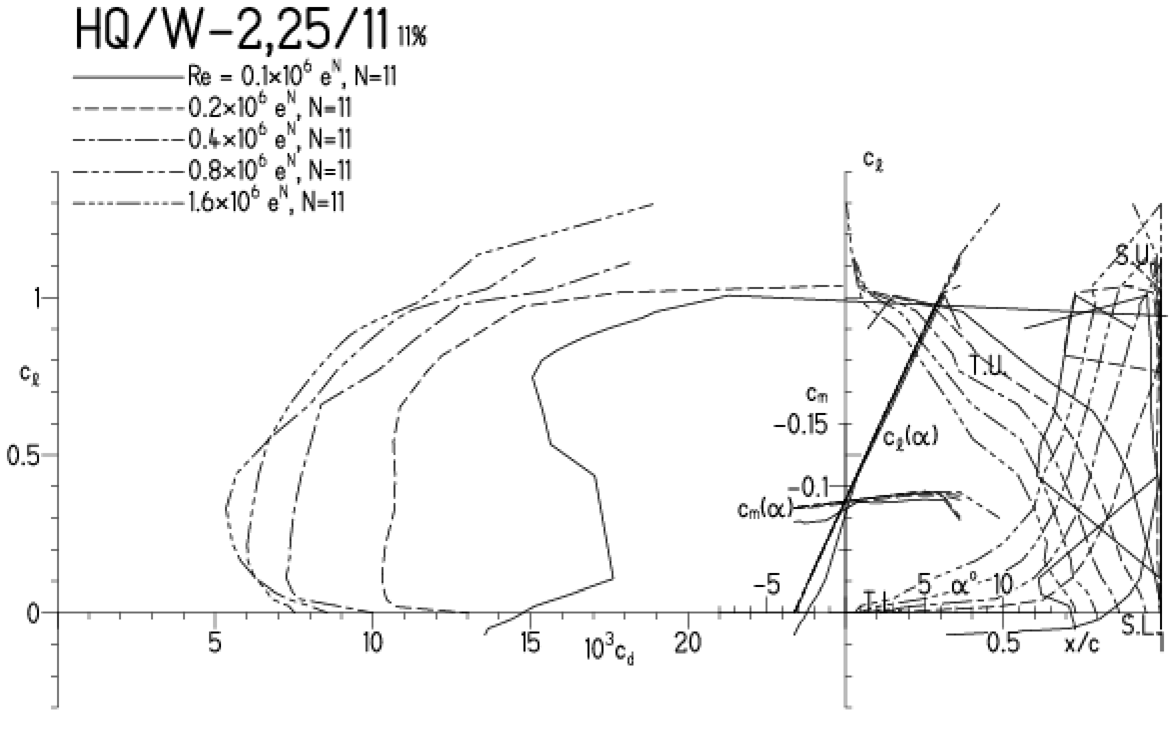


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

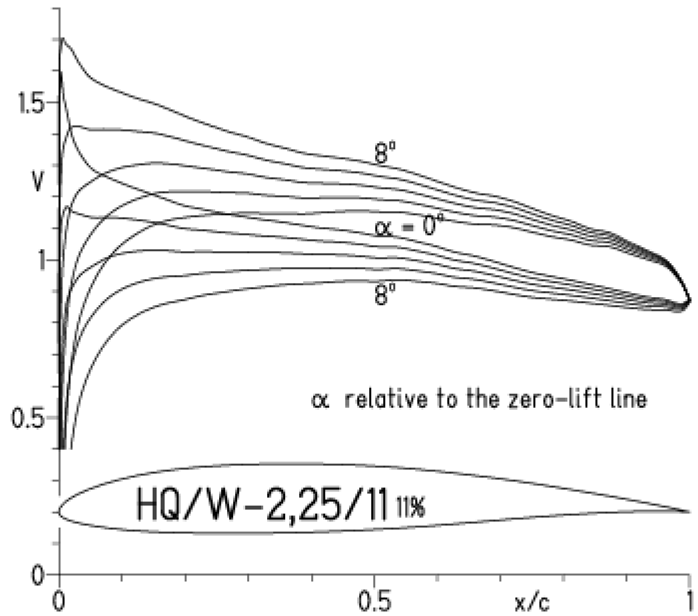


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

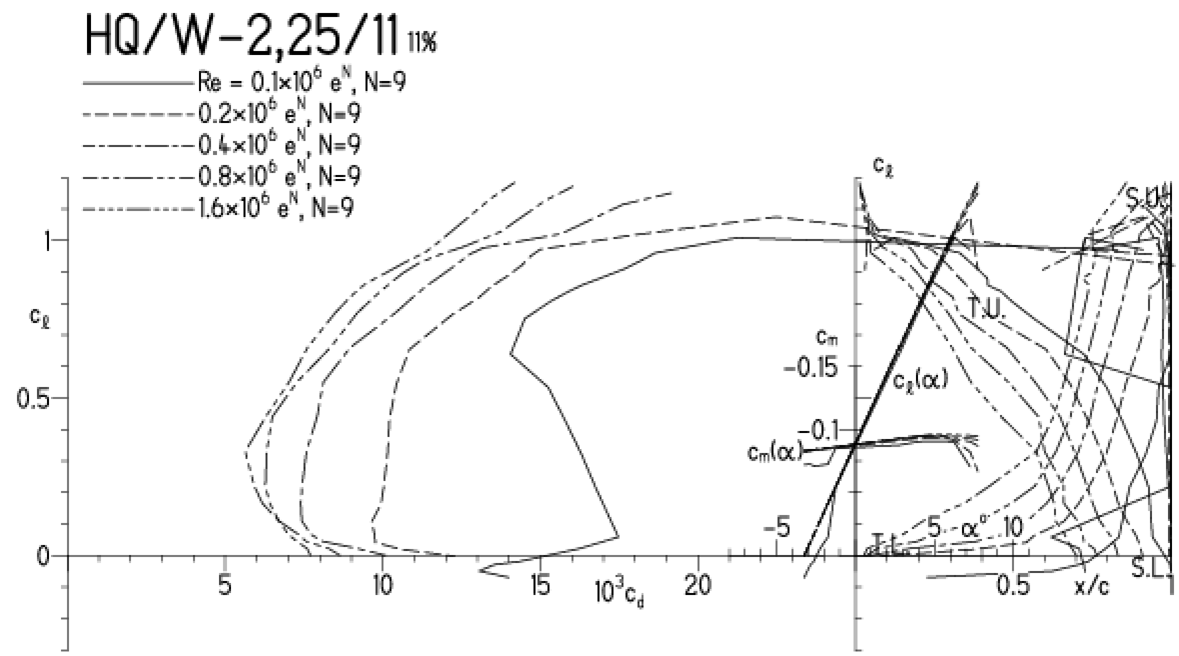


HQQ/W-2,25/11, N=9

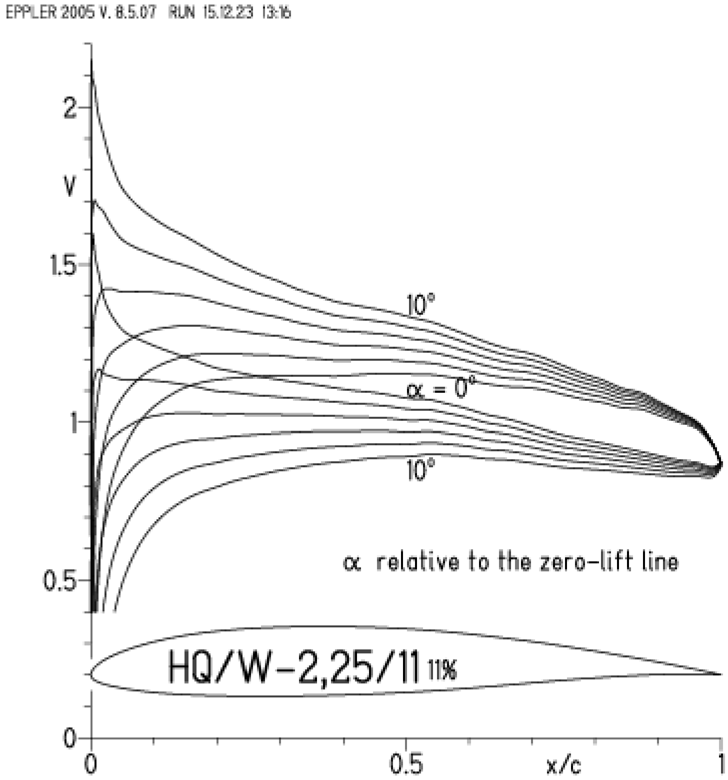
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

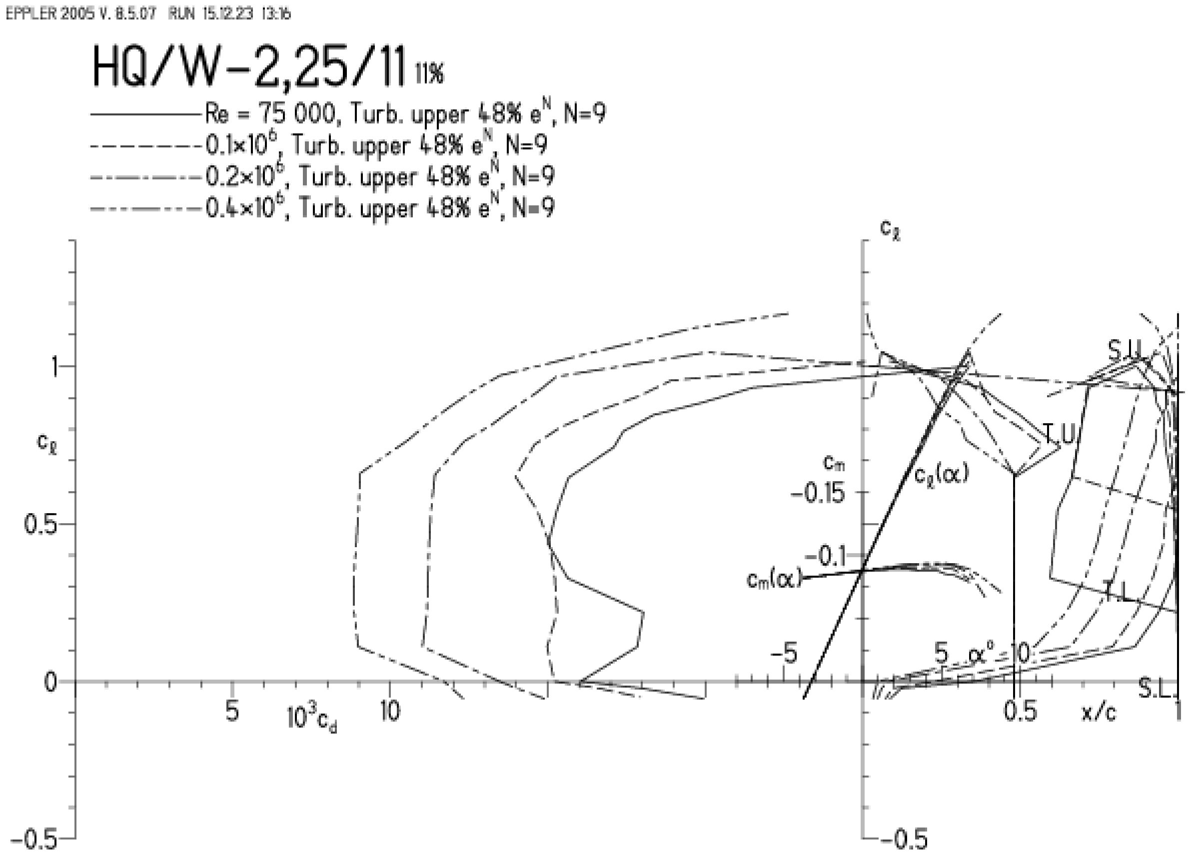


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



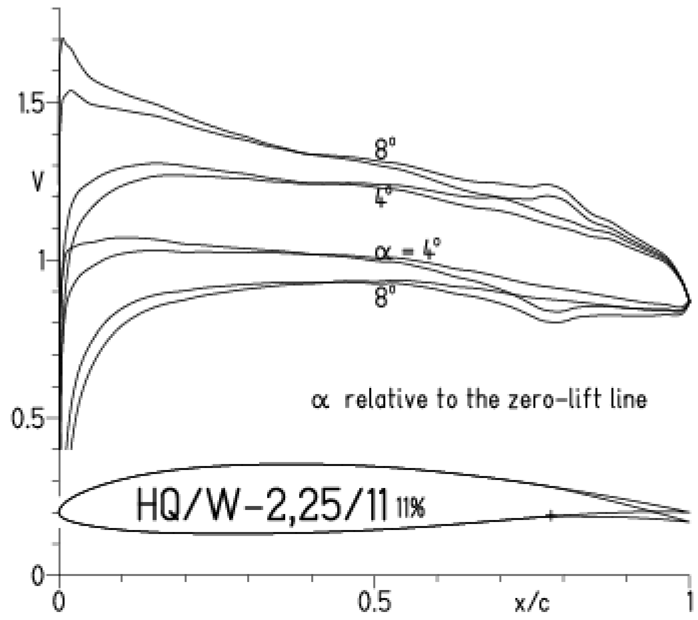
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



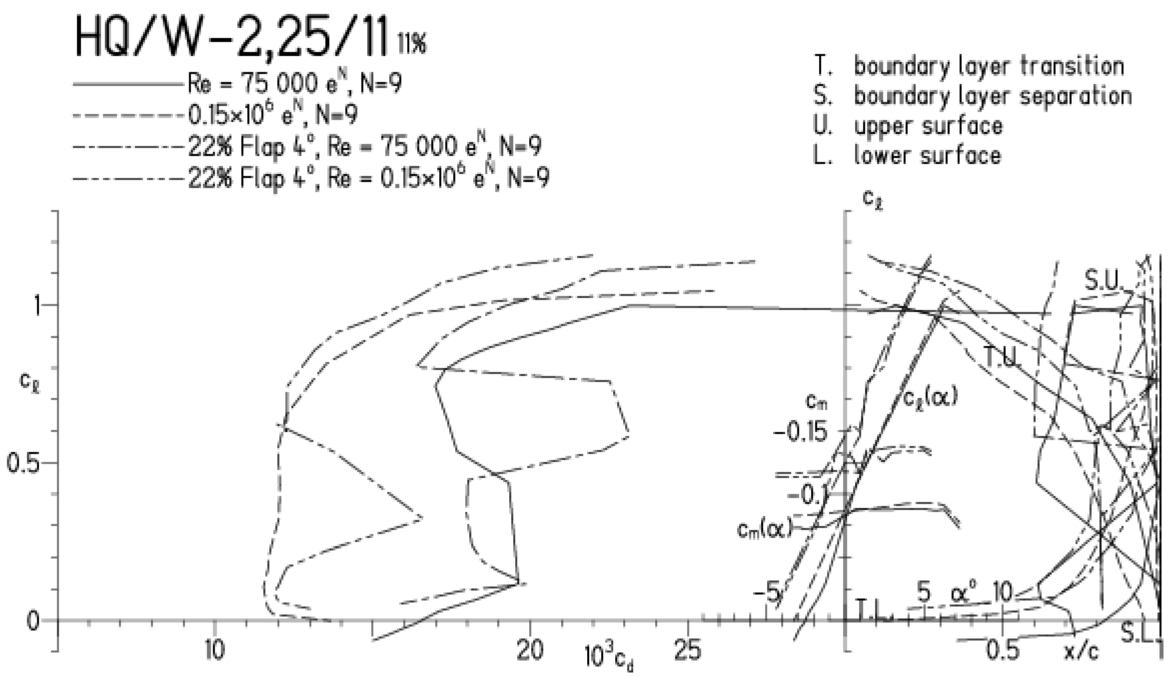


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

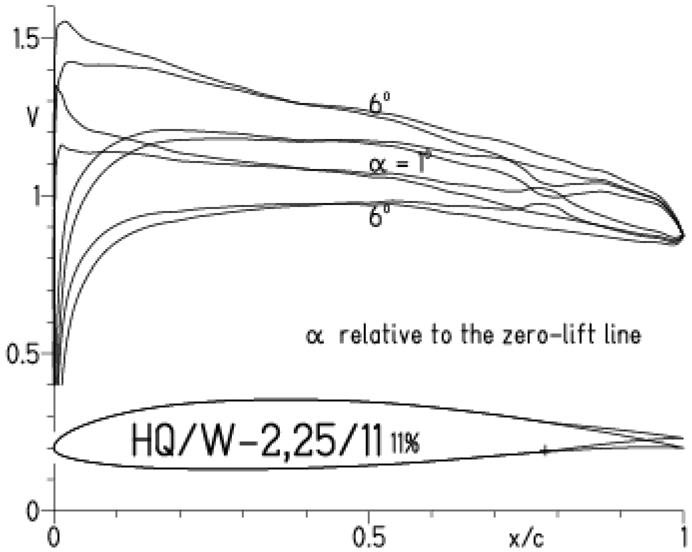


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

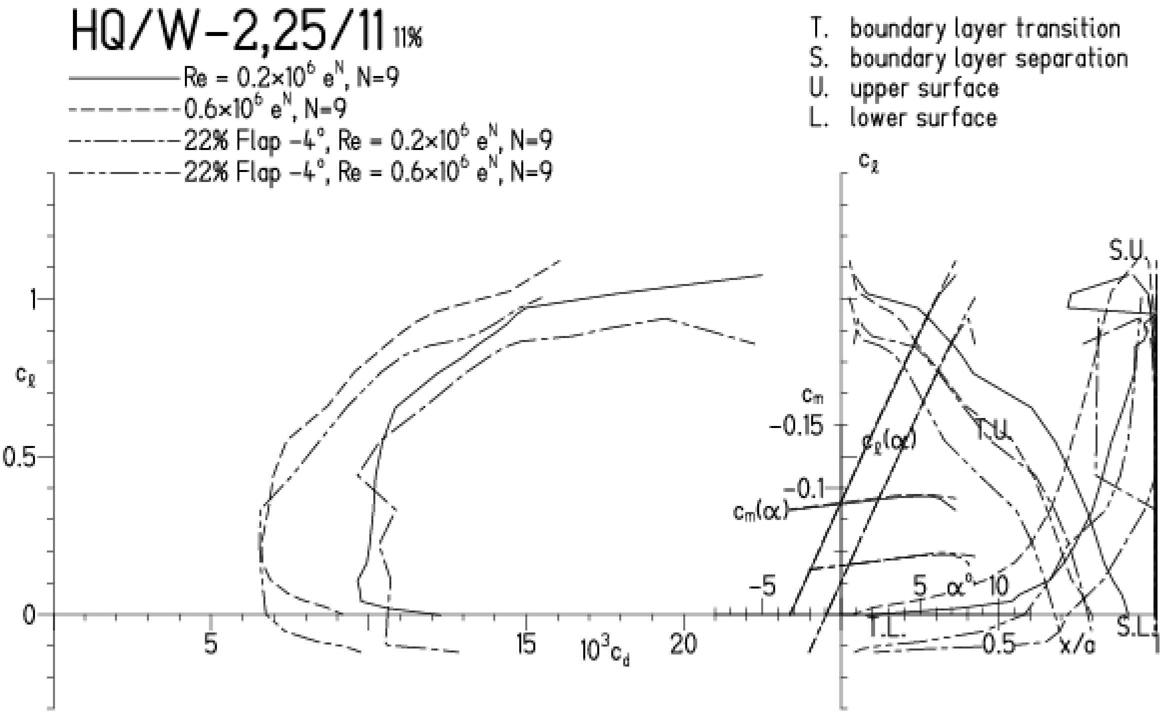


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

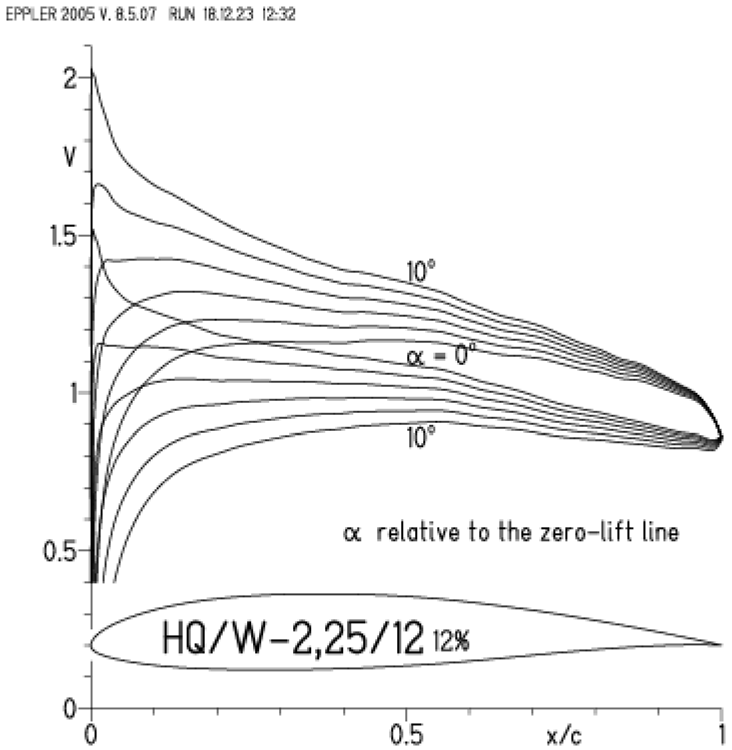
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

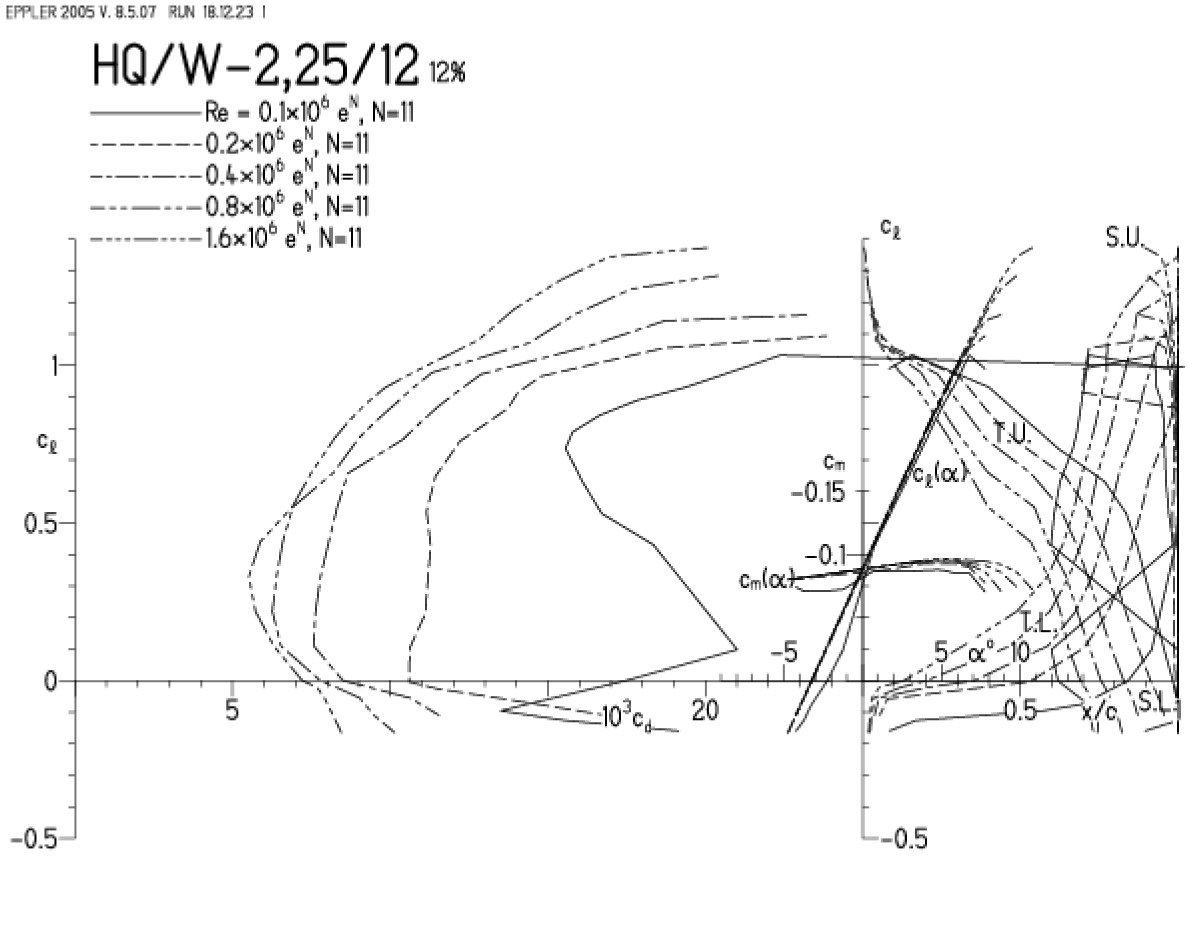


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

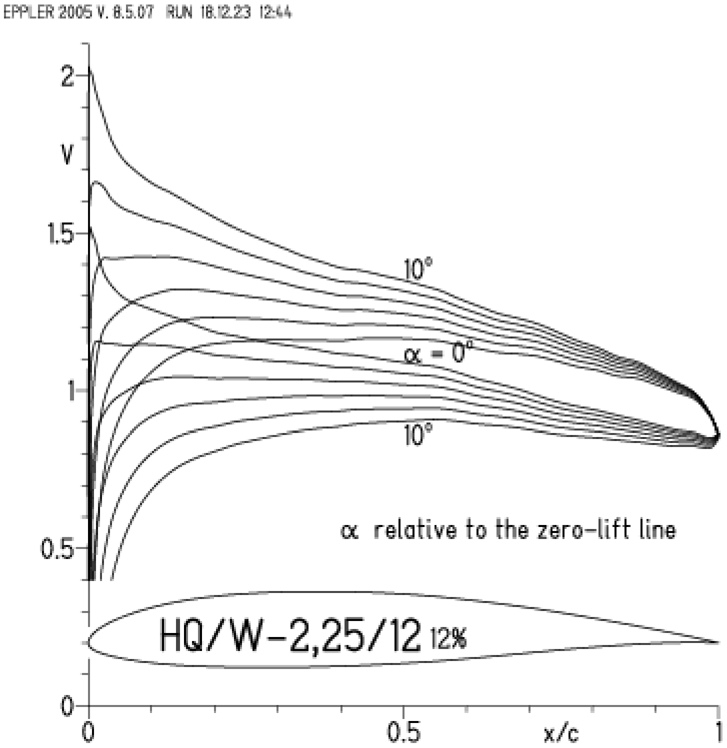


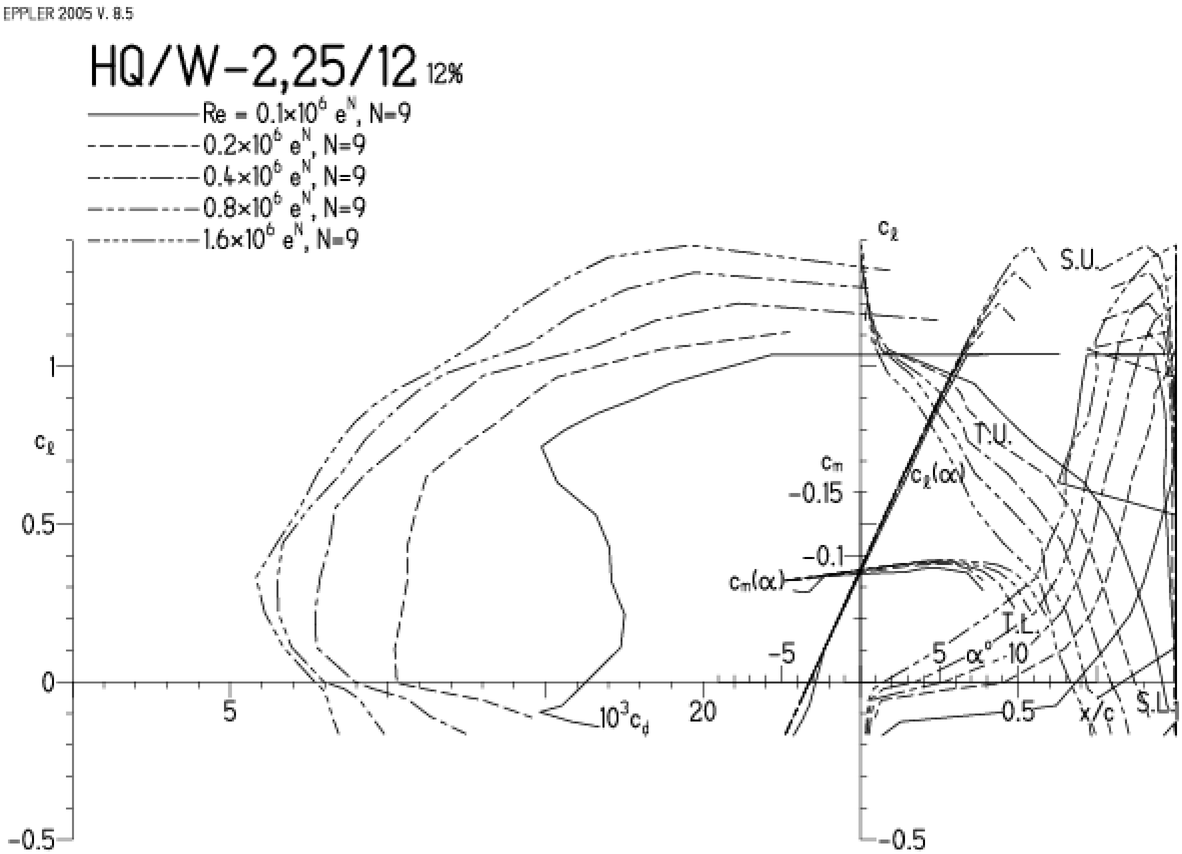
<u>HQ/W-2,25/12</u>, N=11



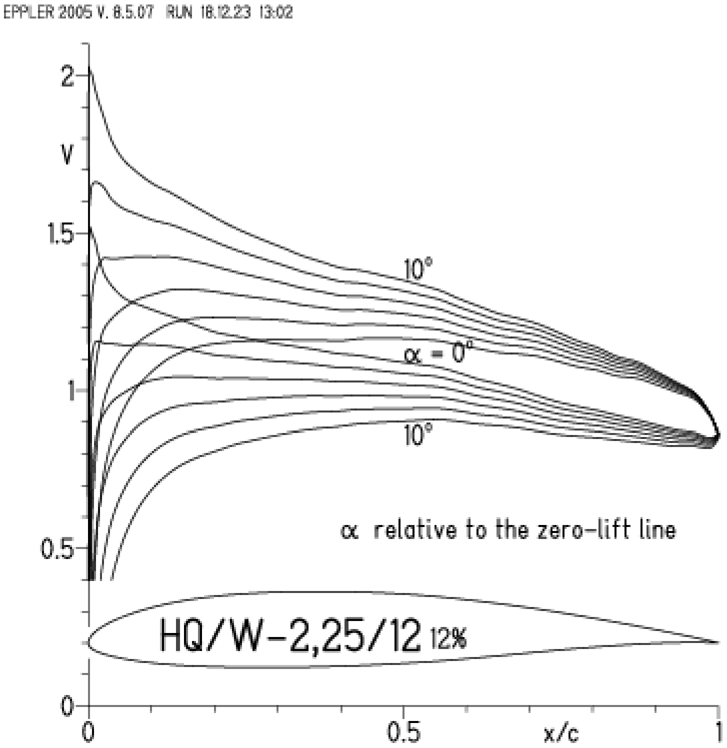


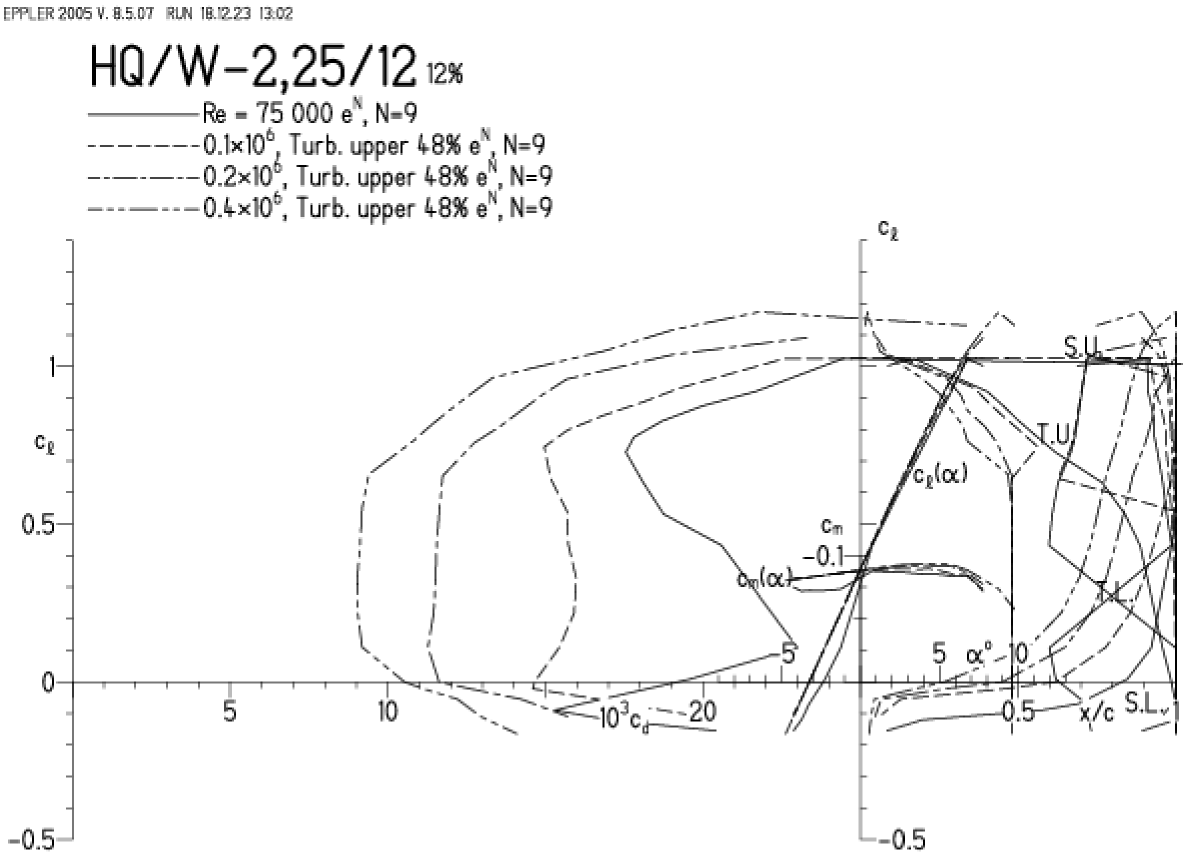
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_ℓ(α)
c_m(α)
10^3 c_d
α°
x/c

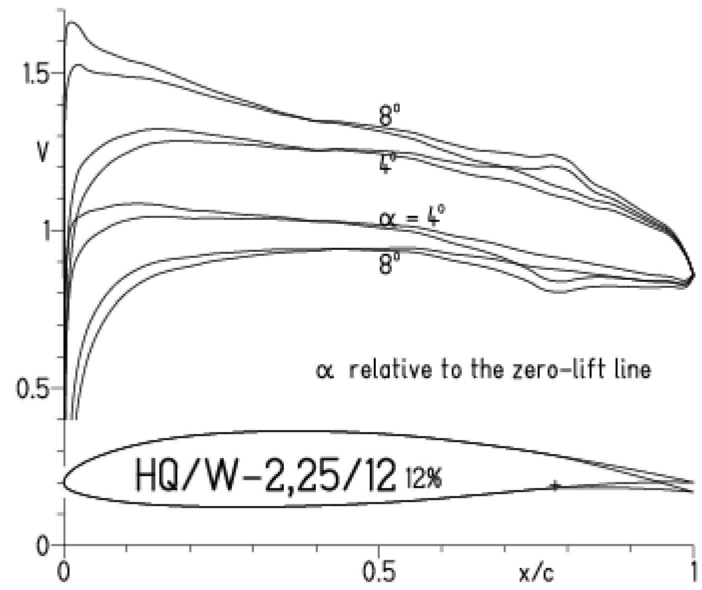
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



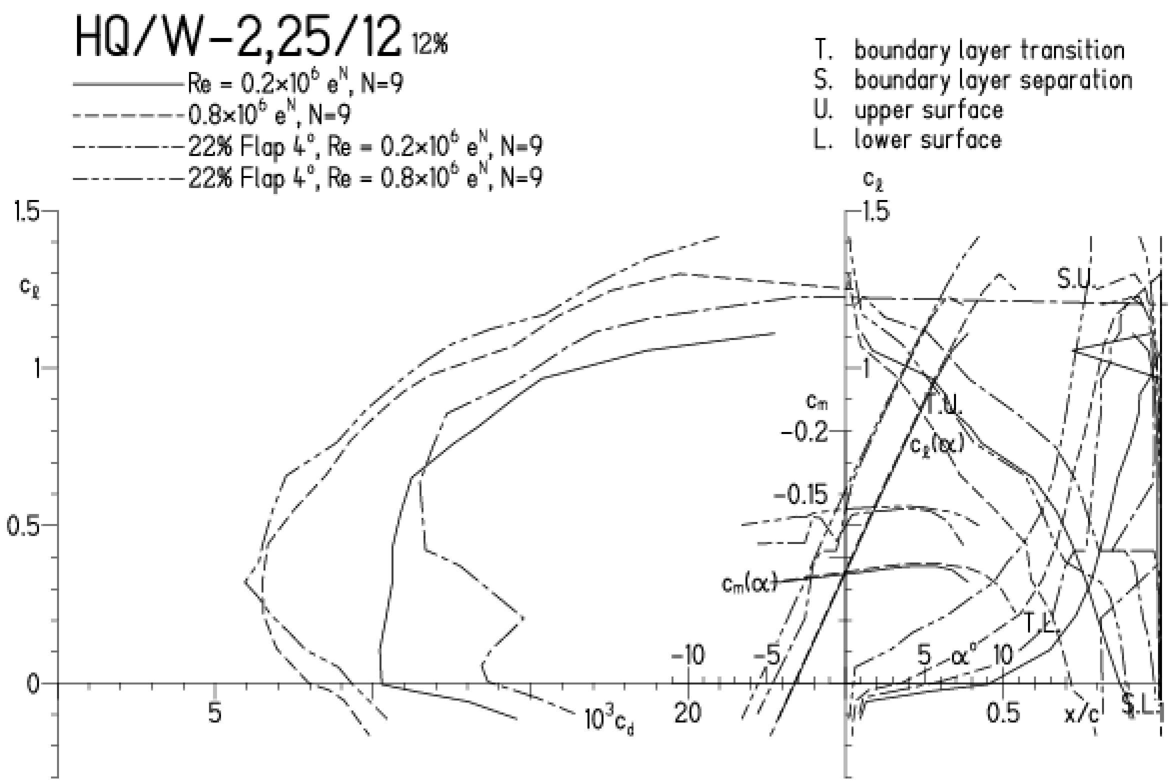


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

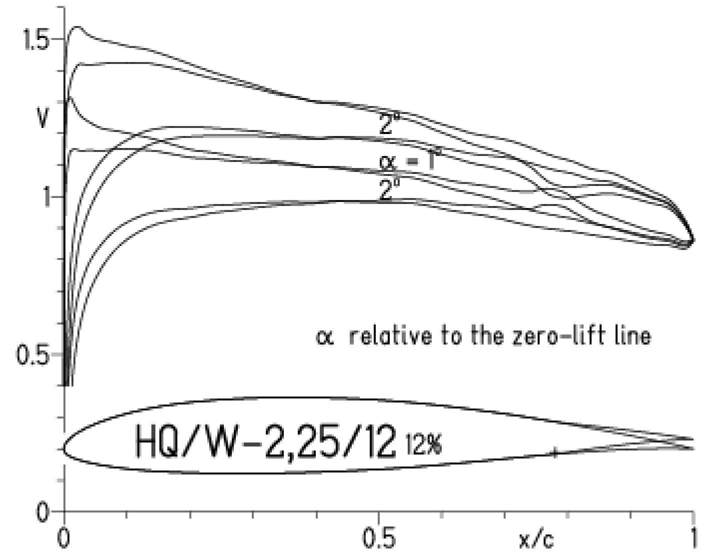


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

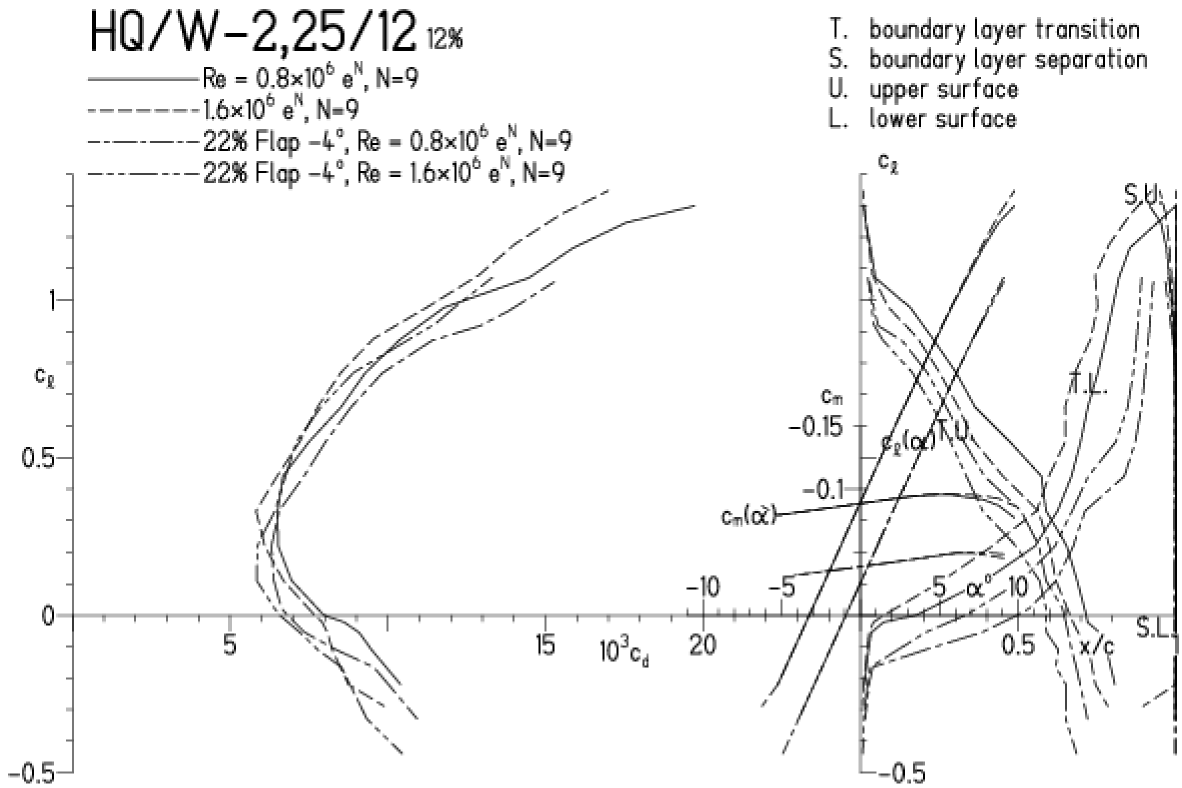


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

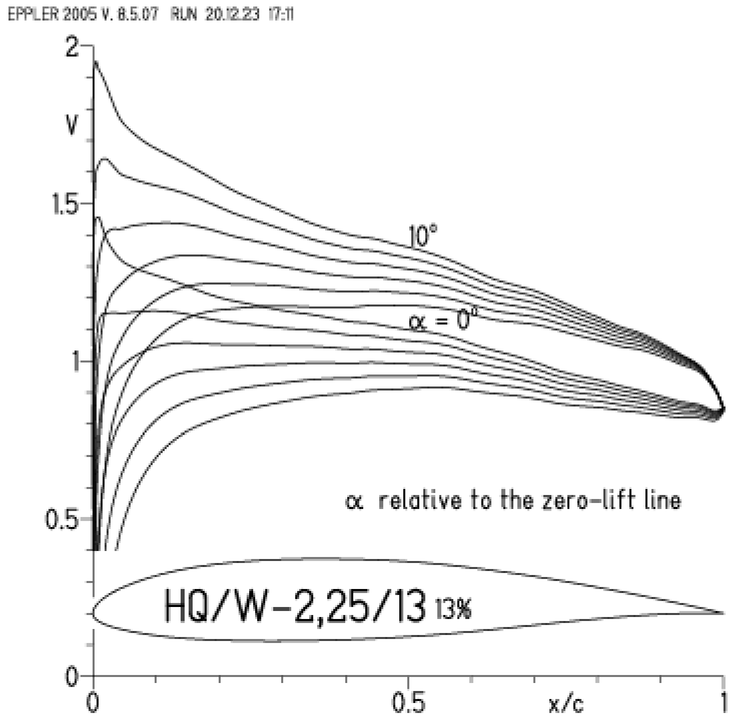
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

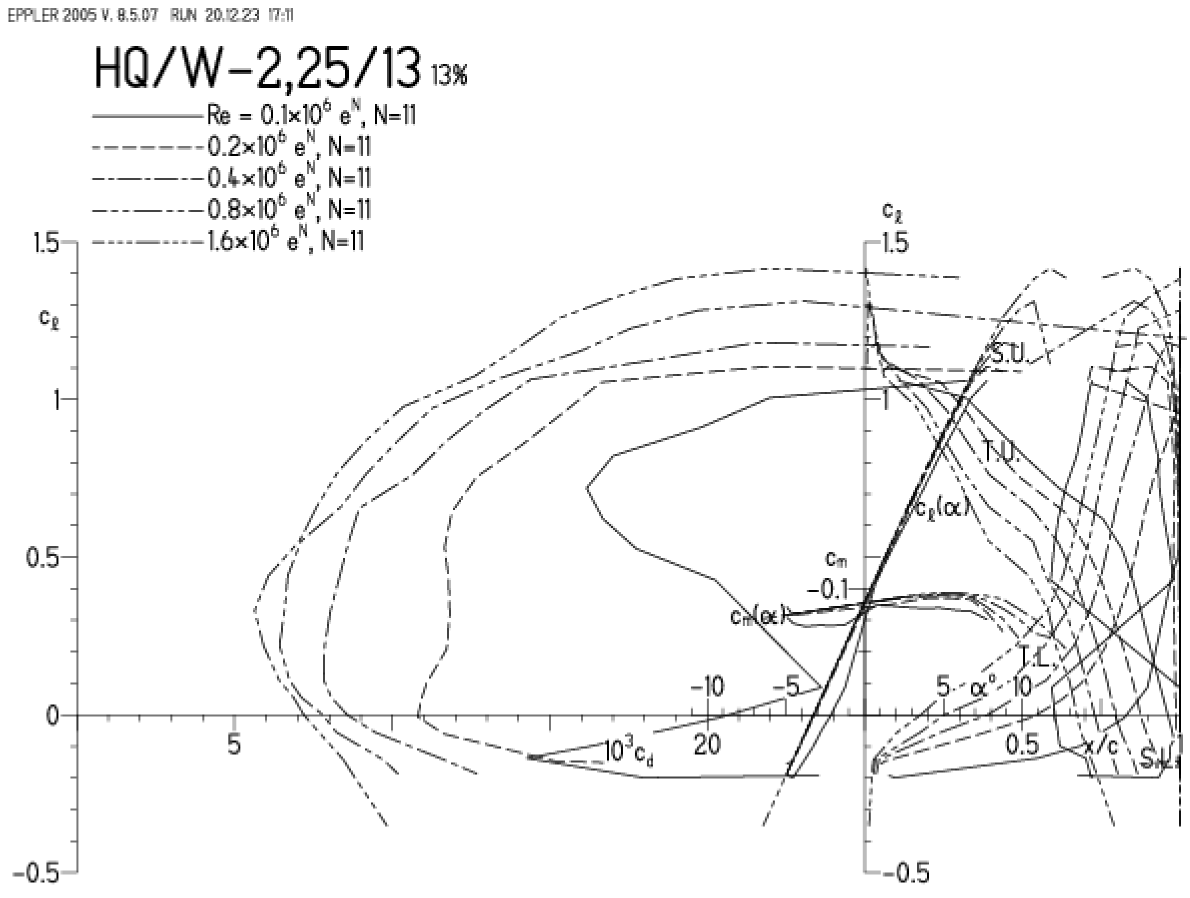


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

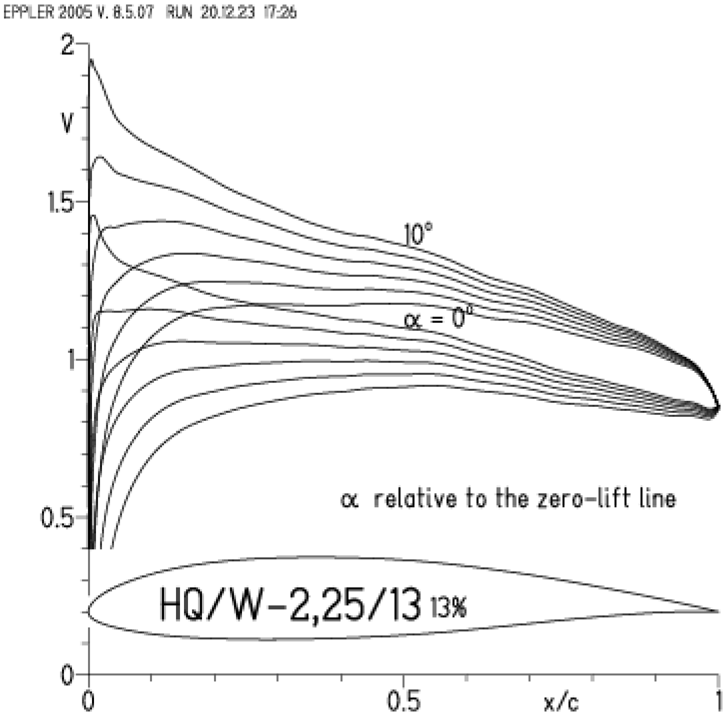


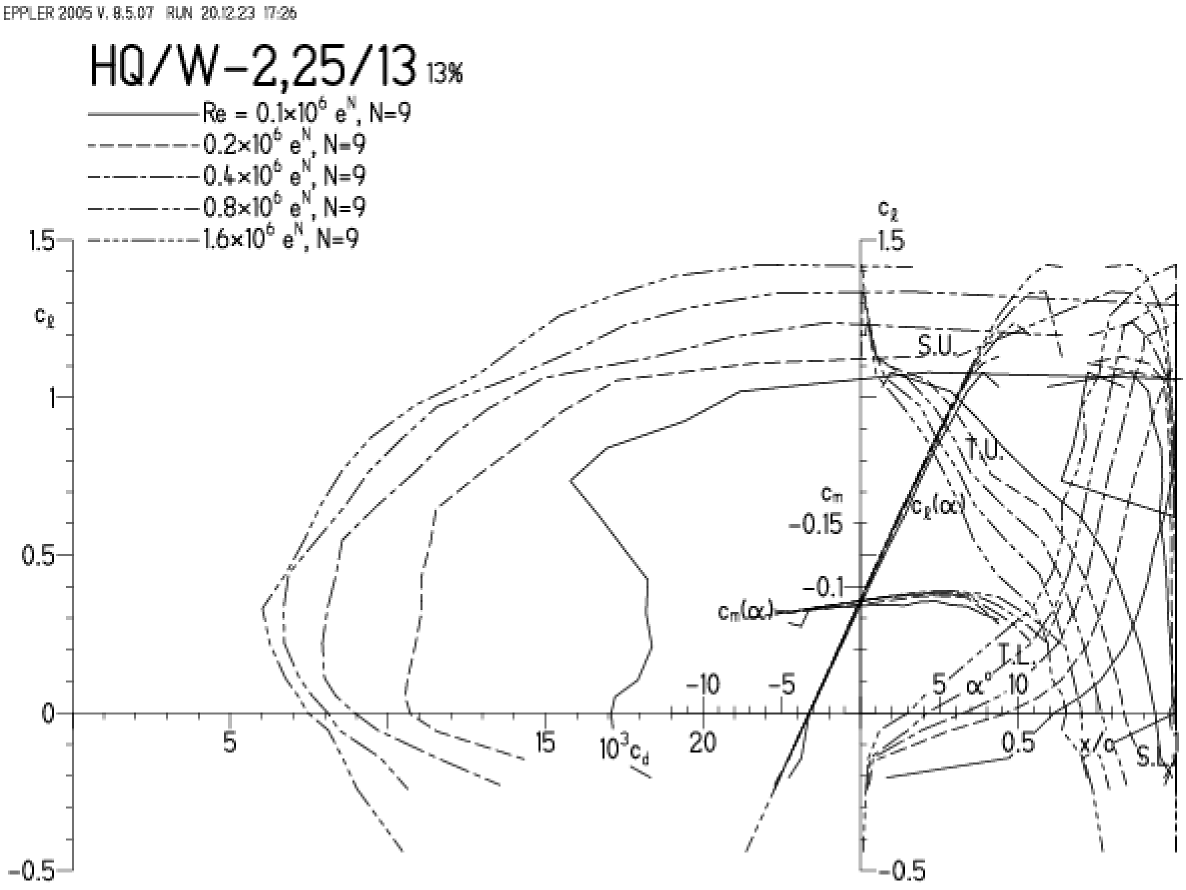
HQ/W-2,25/13, N=11



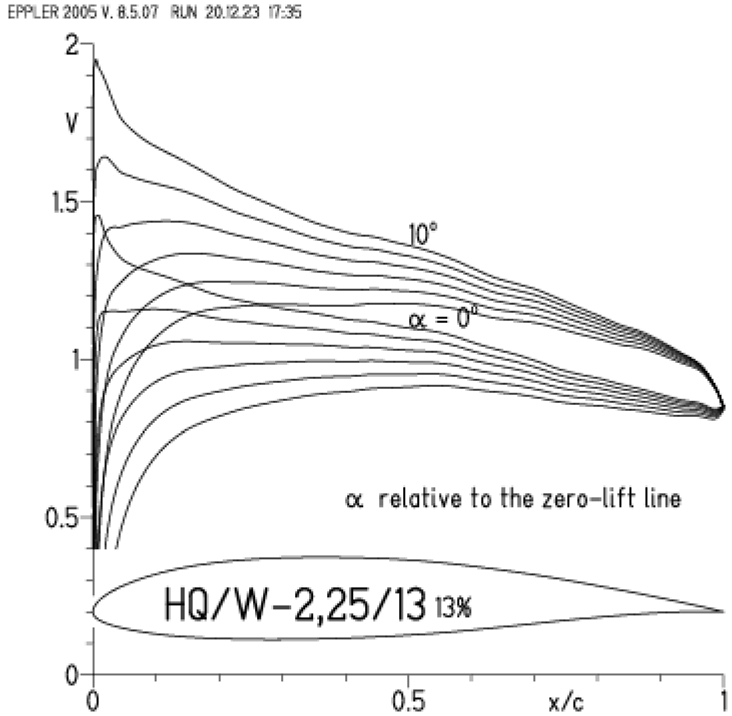


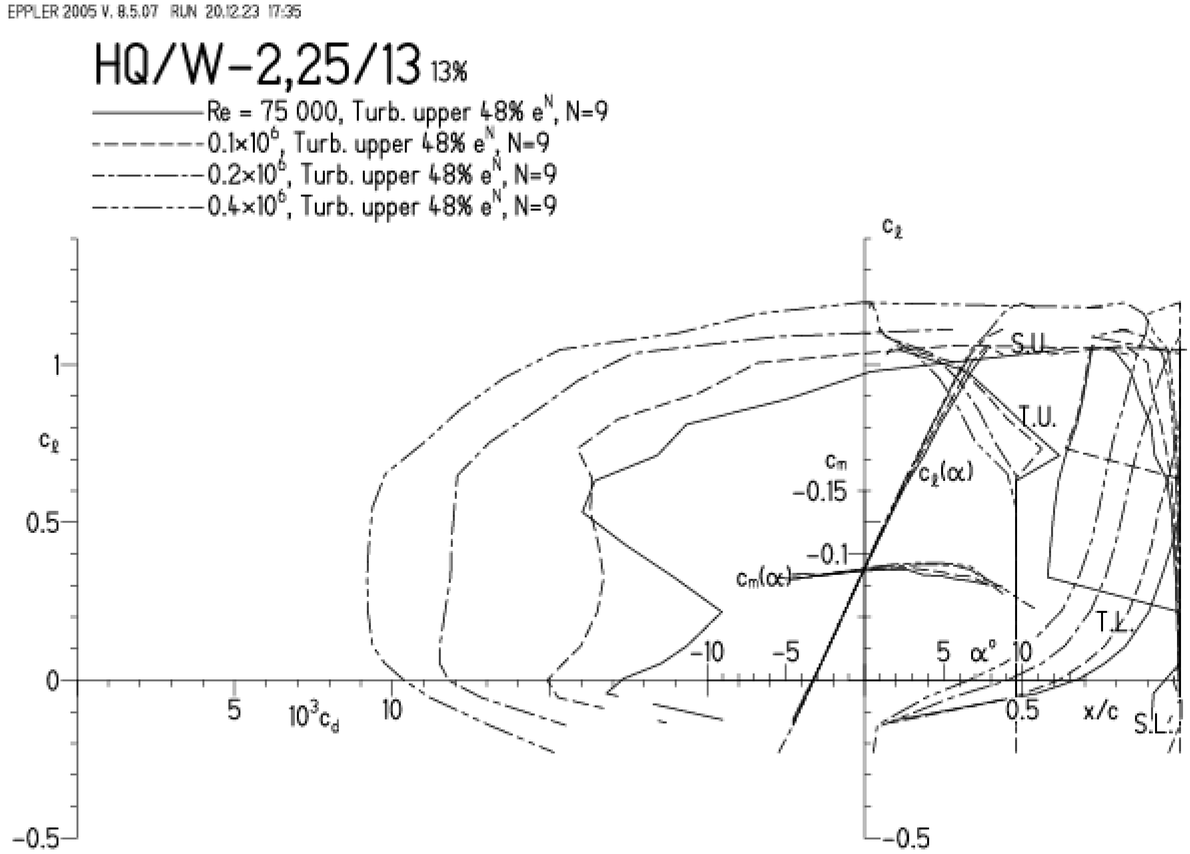
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
α relative to the zero-lift line
0.5
HQ/W-2,25/13 13%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
-10
-5
5
α°
10
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1.5
-0.5

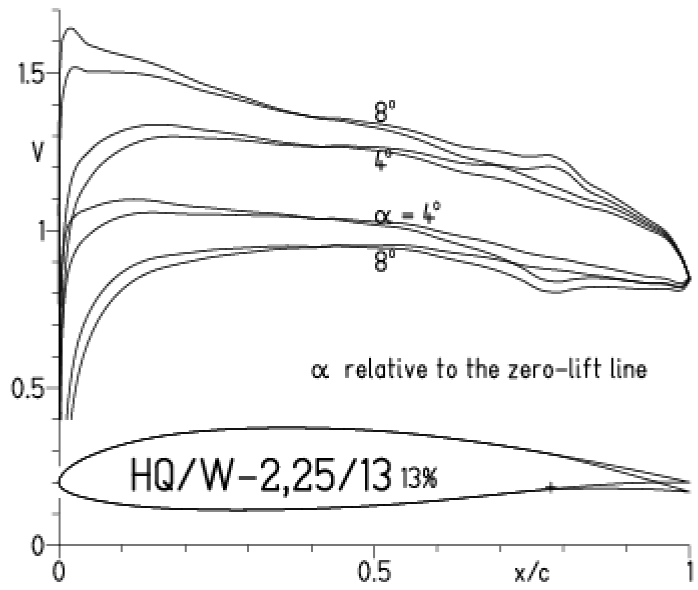
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



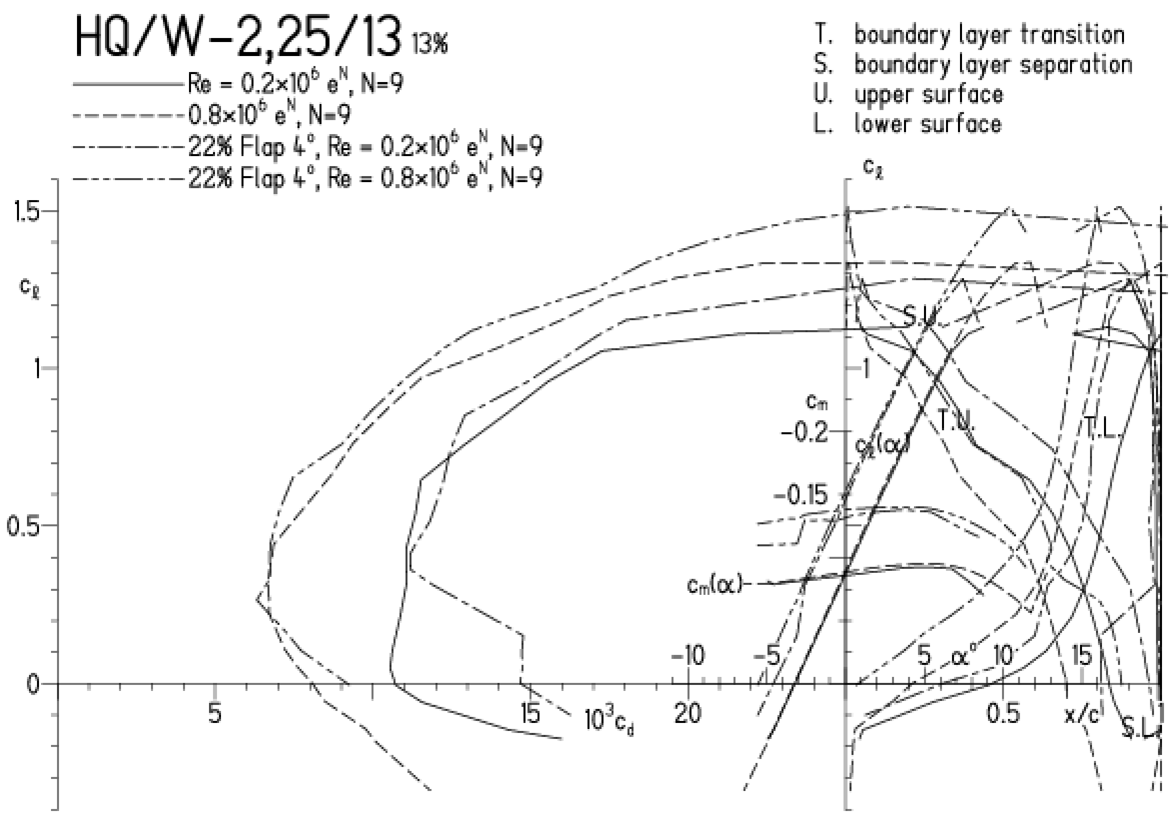


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

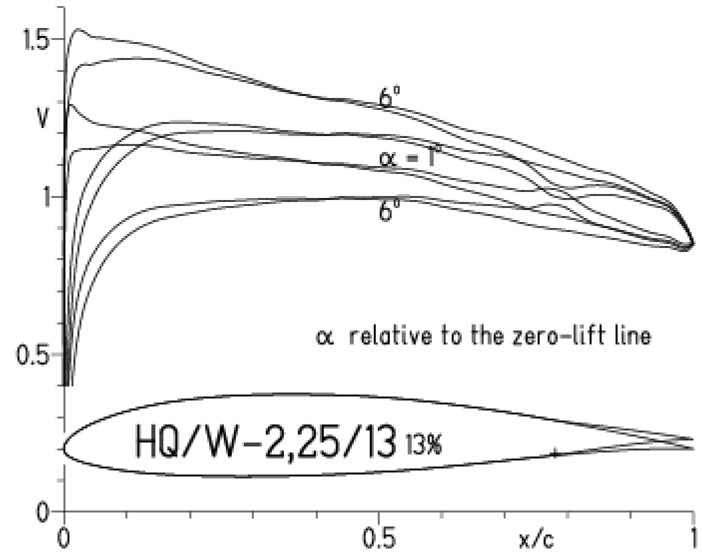


EPPLER 2005 V.

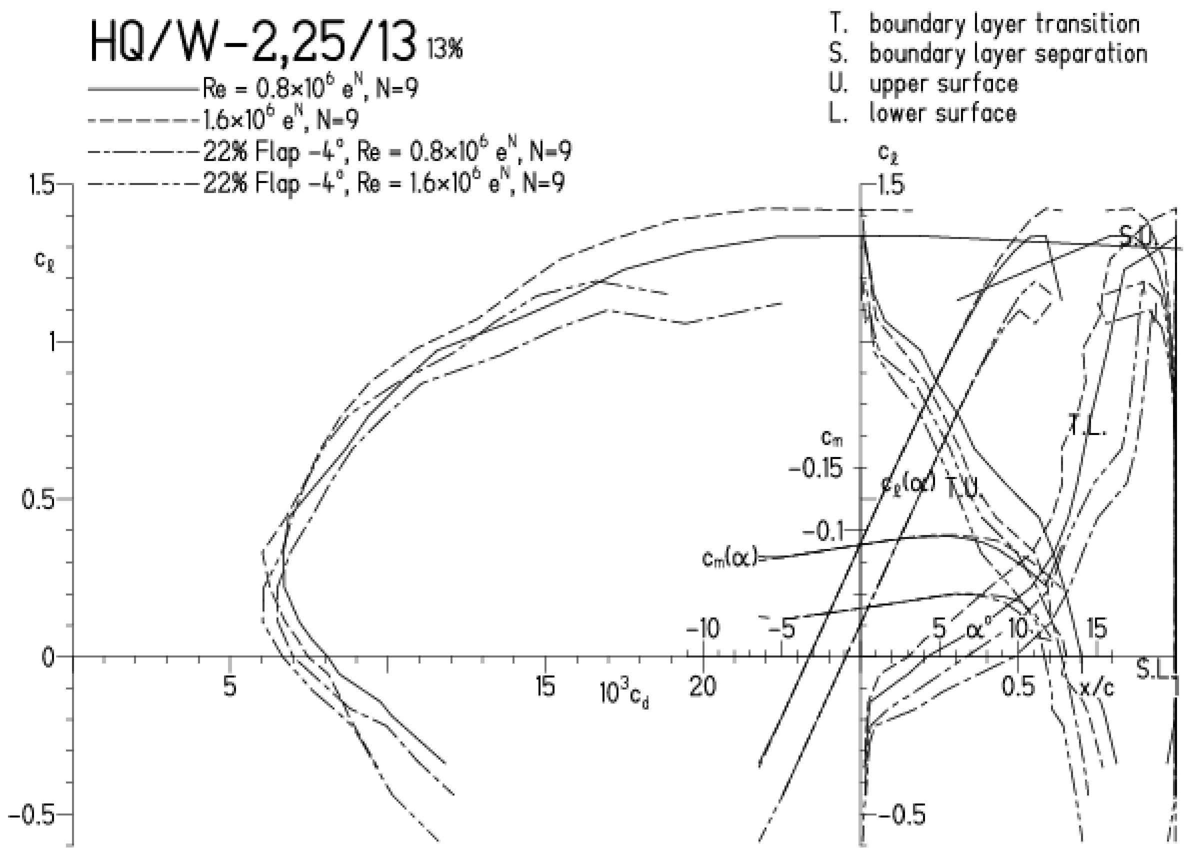


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

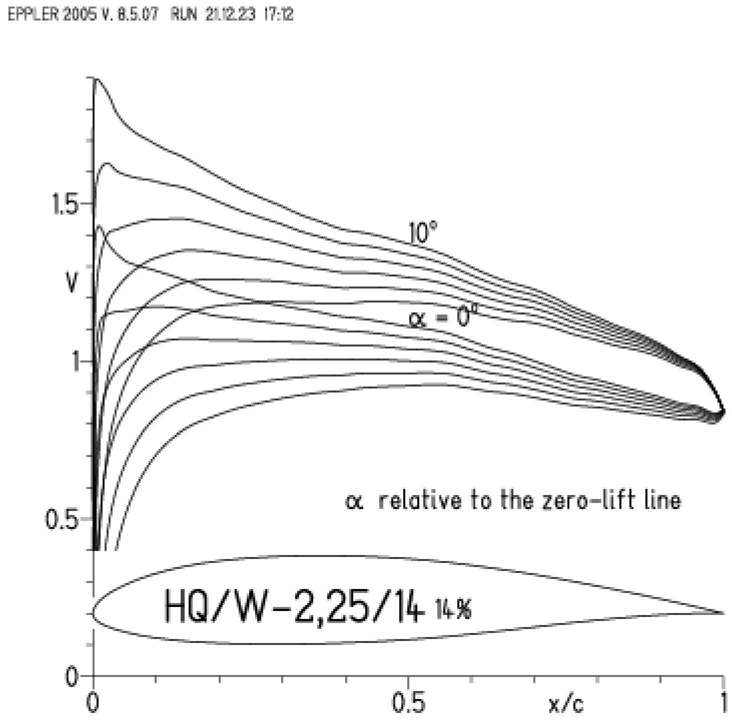
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

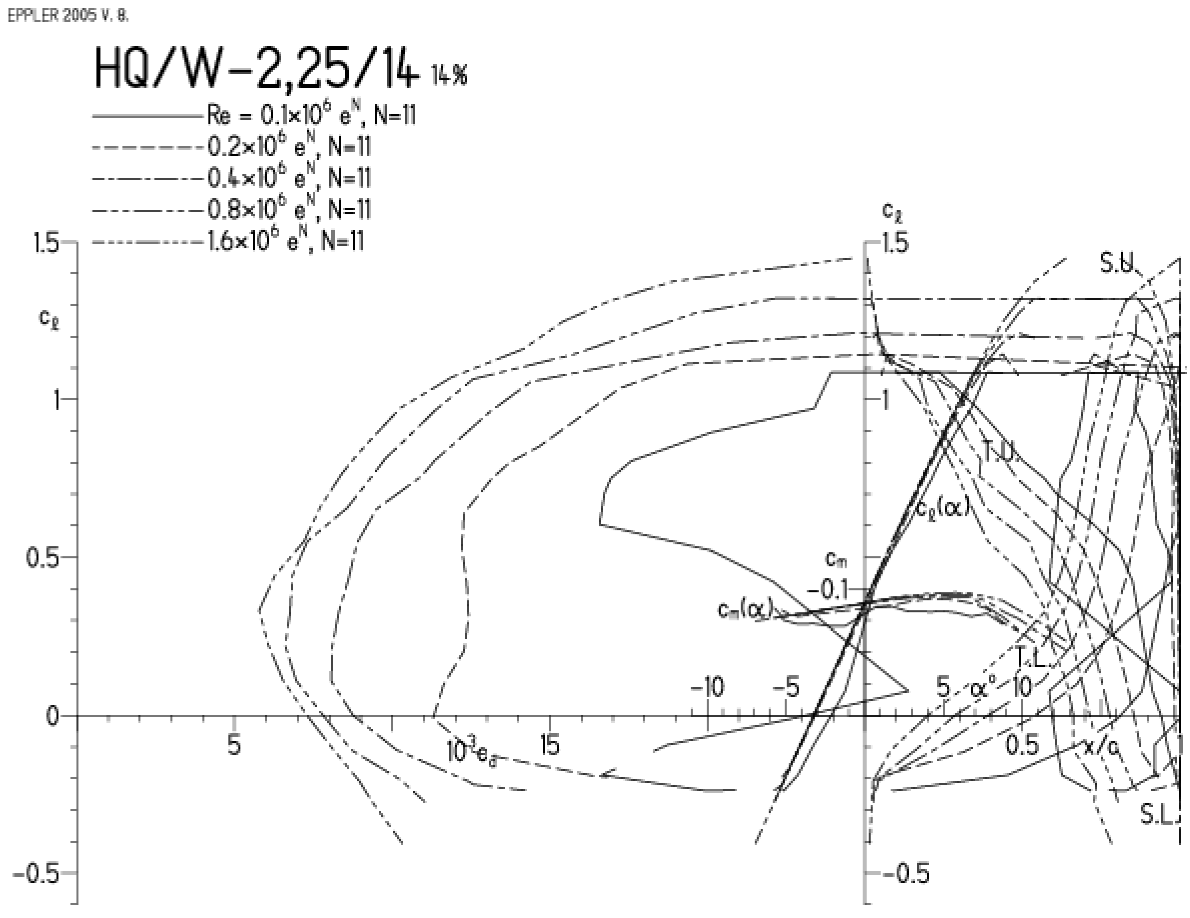


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

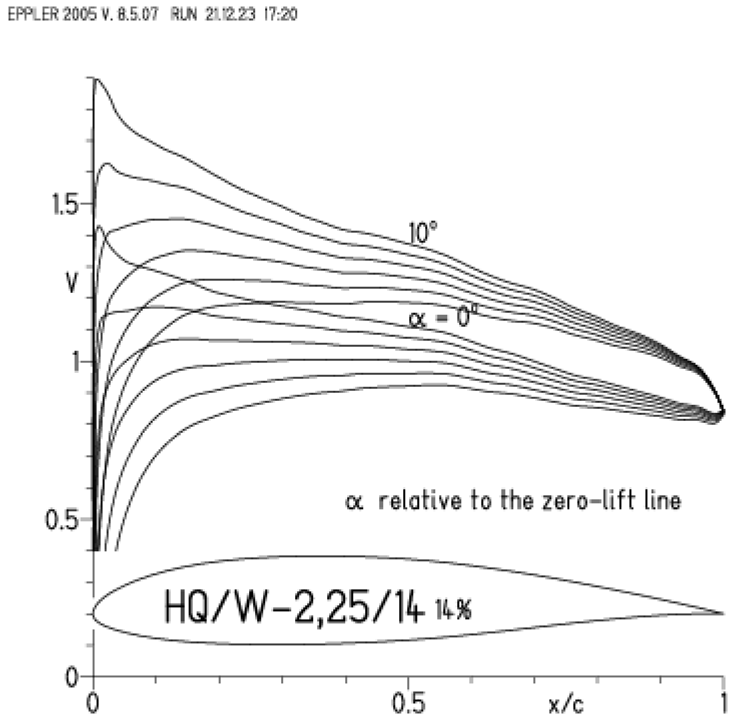


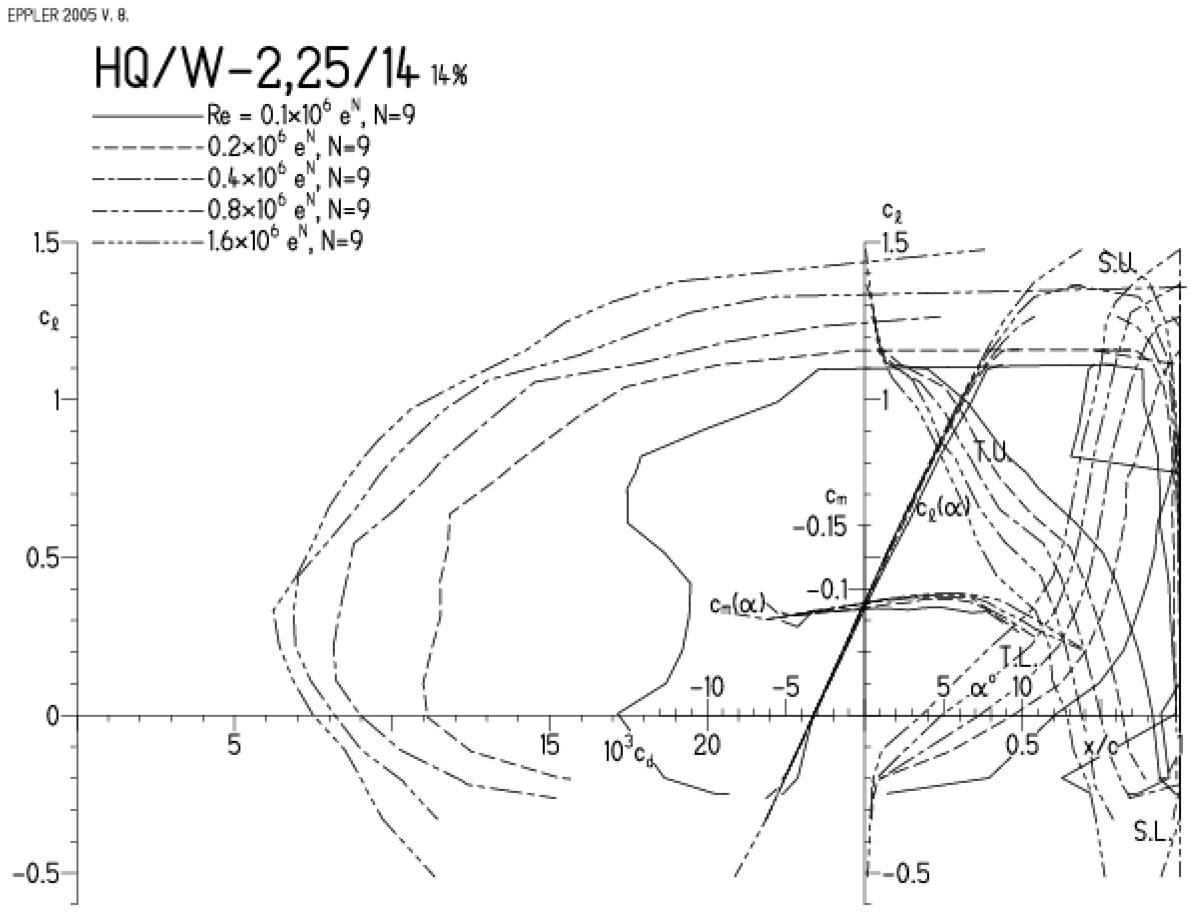
HQ/W-2,25/14, N=11





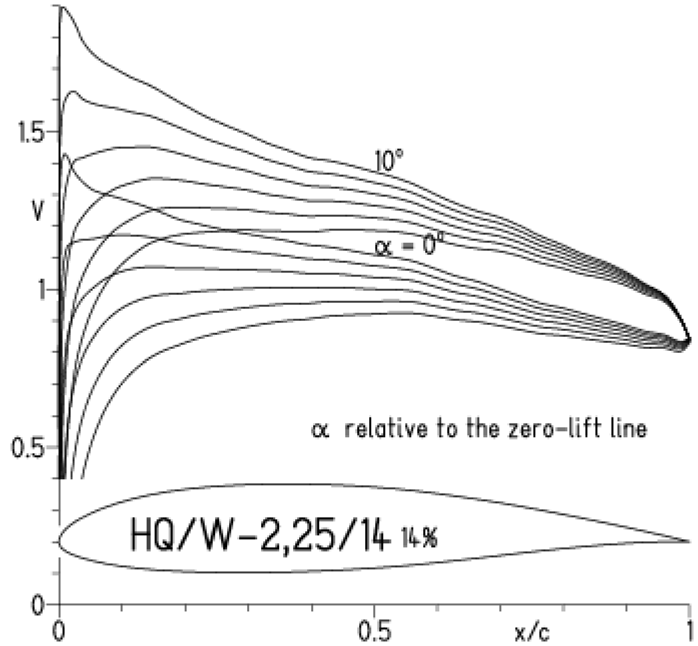
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c

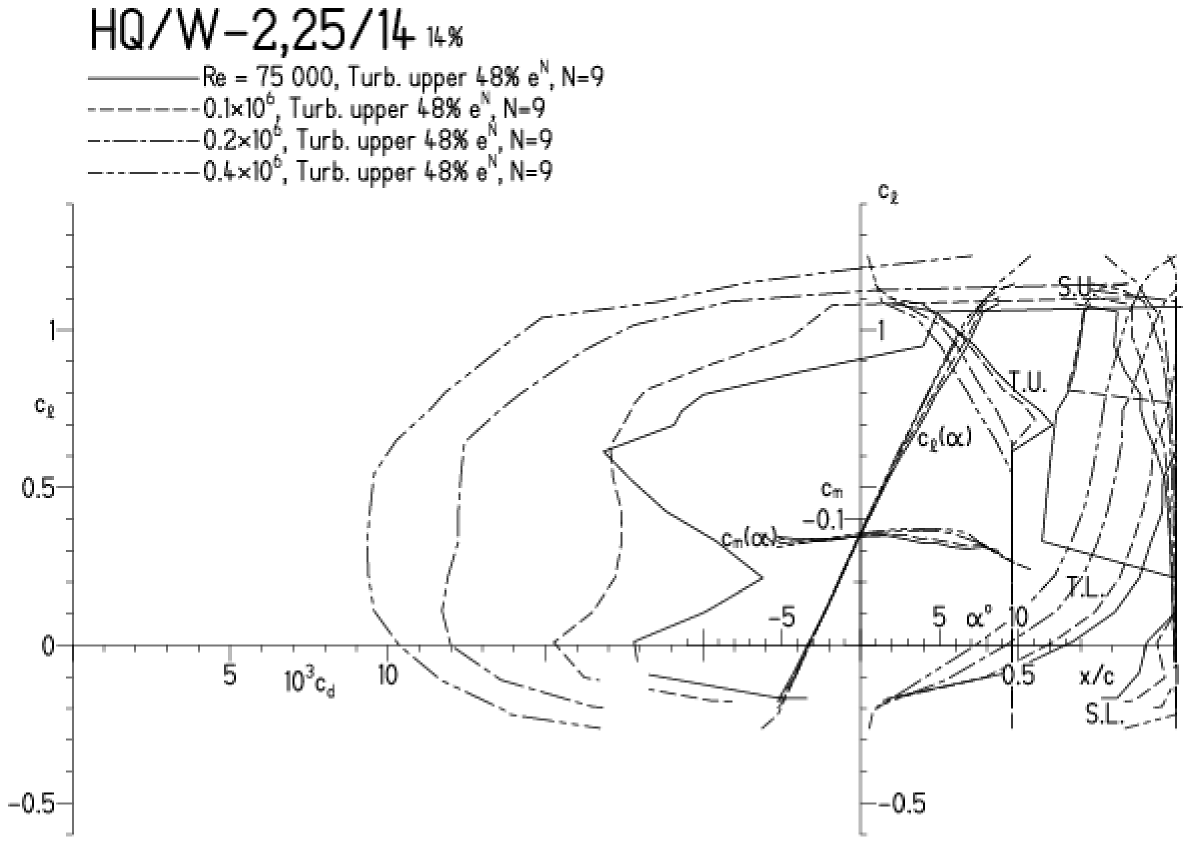

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
10^3 c_d
c_m
c_ℓ(α)
c_m(α)
α°
S.U.
T.U.
T.L.
S.L.
x/c

HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

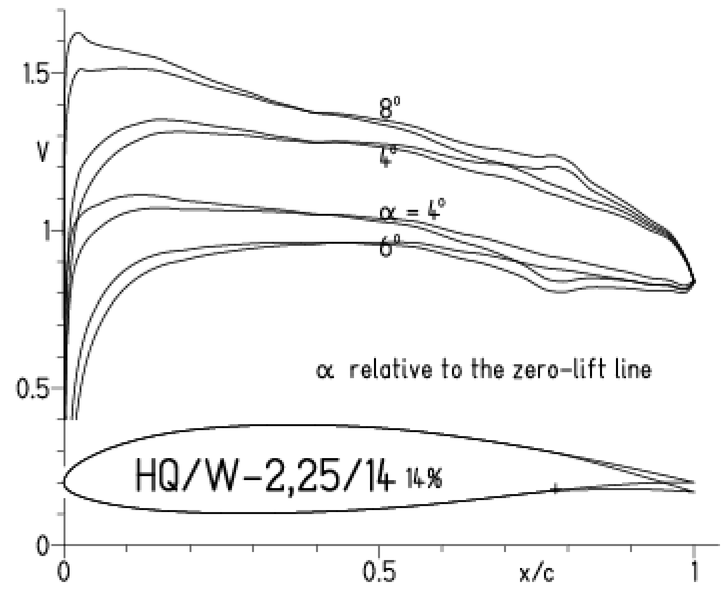


EPPLER 2005 V. 8.5.07 RU

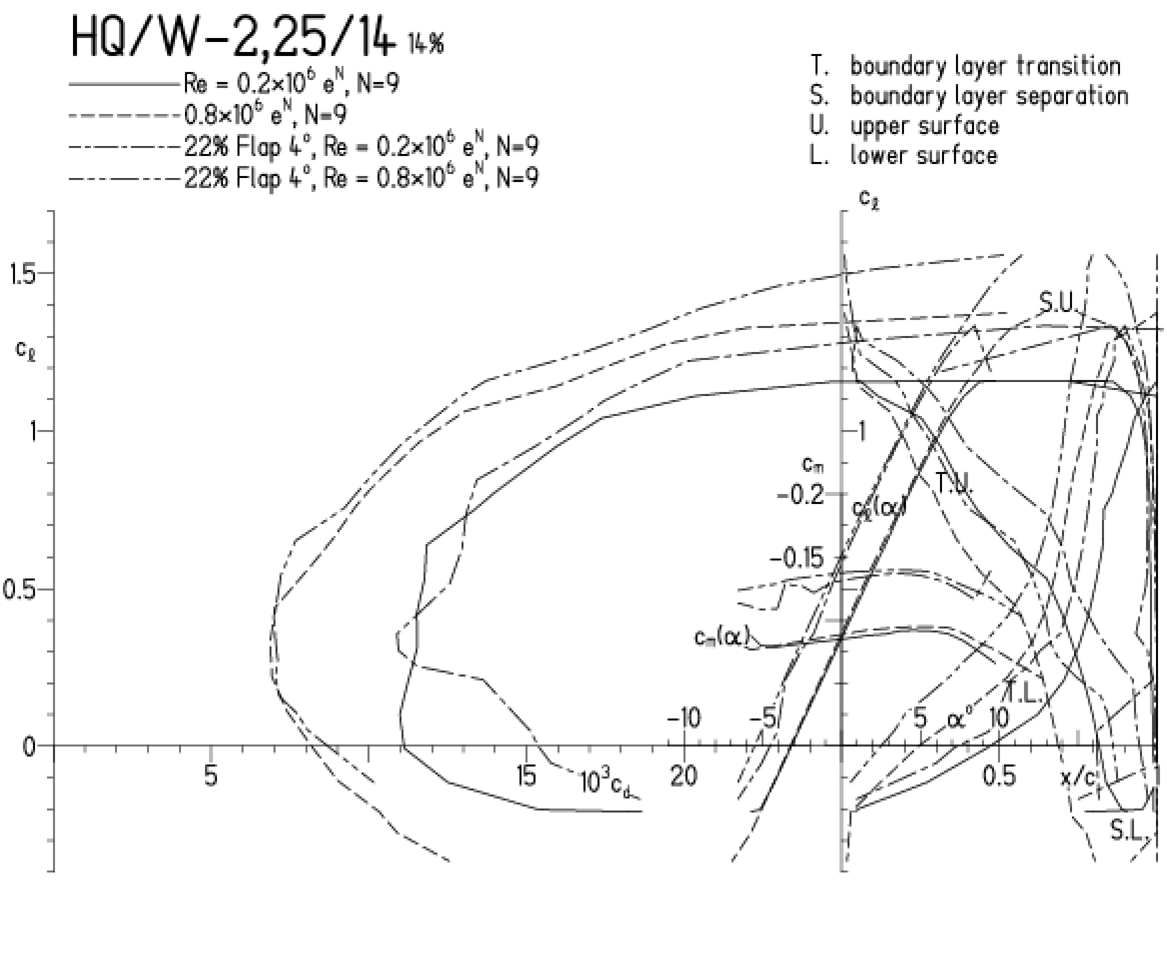


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

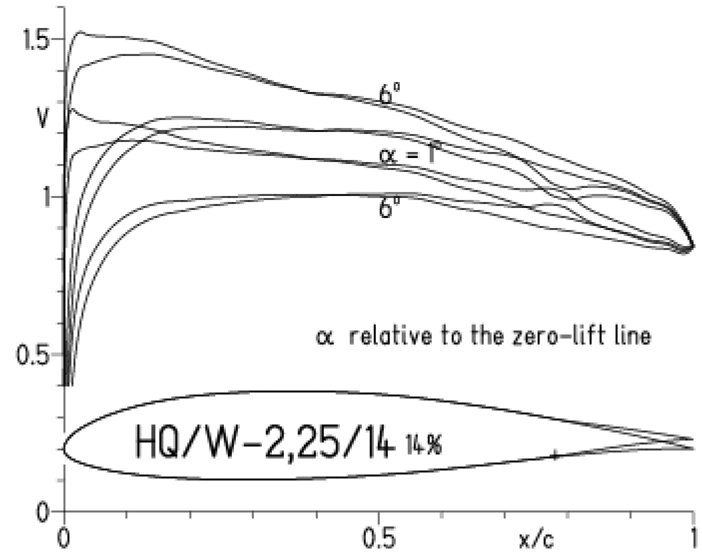


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

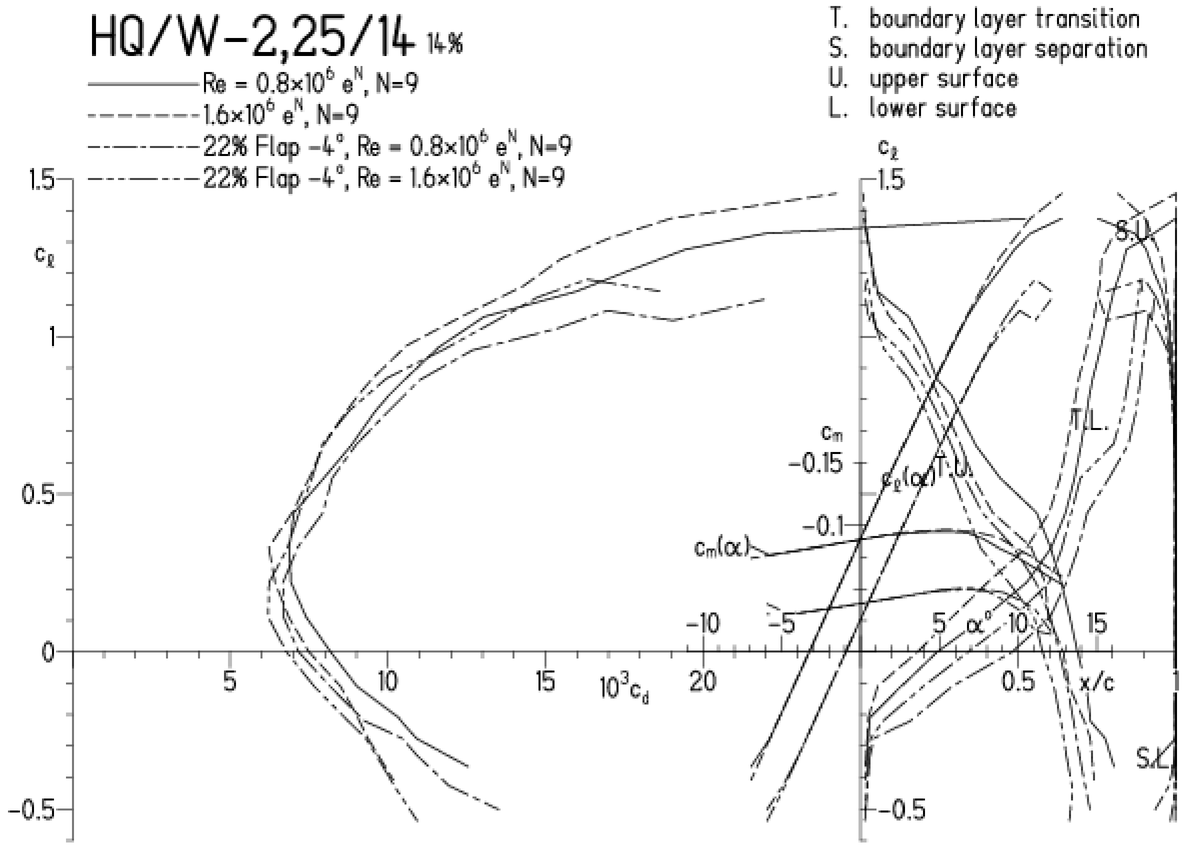


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

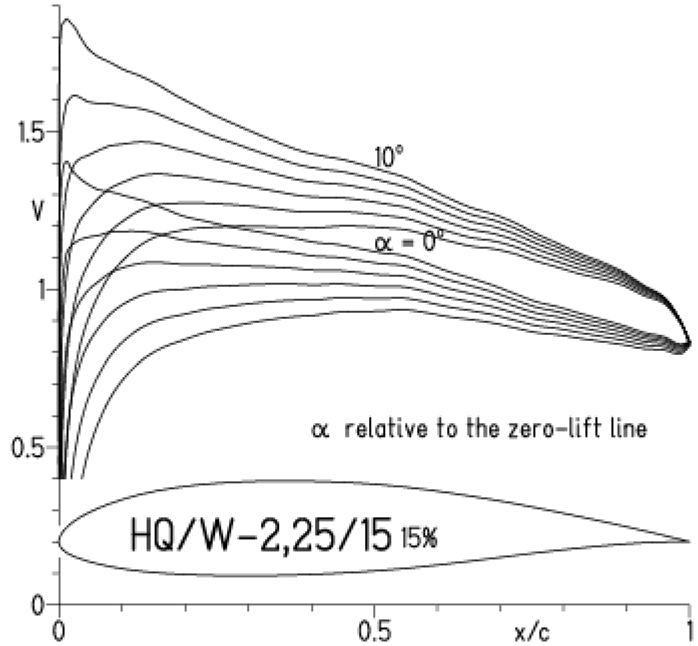


EPPLER 2005 V. 8.5.07

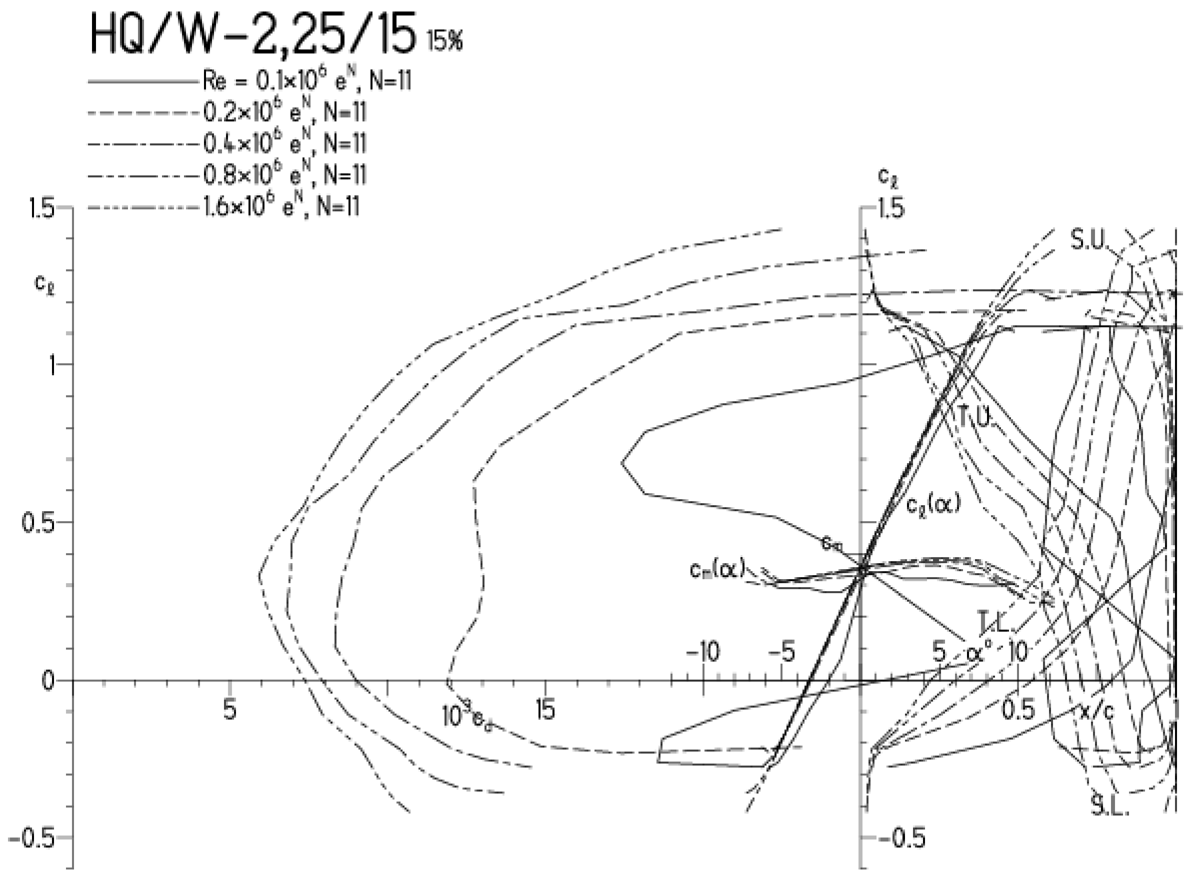


HQ/W-2,25/15, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

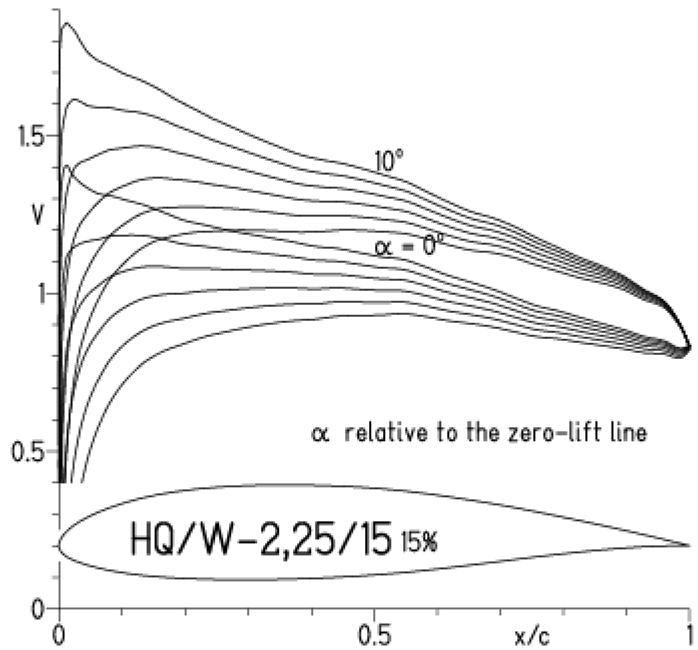


EPPLER 20

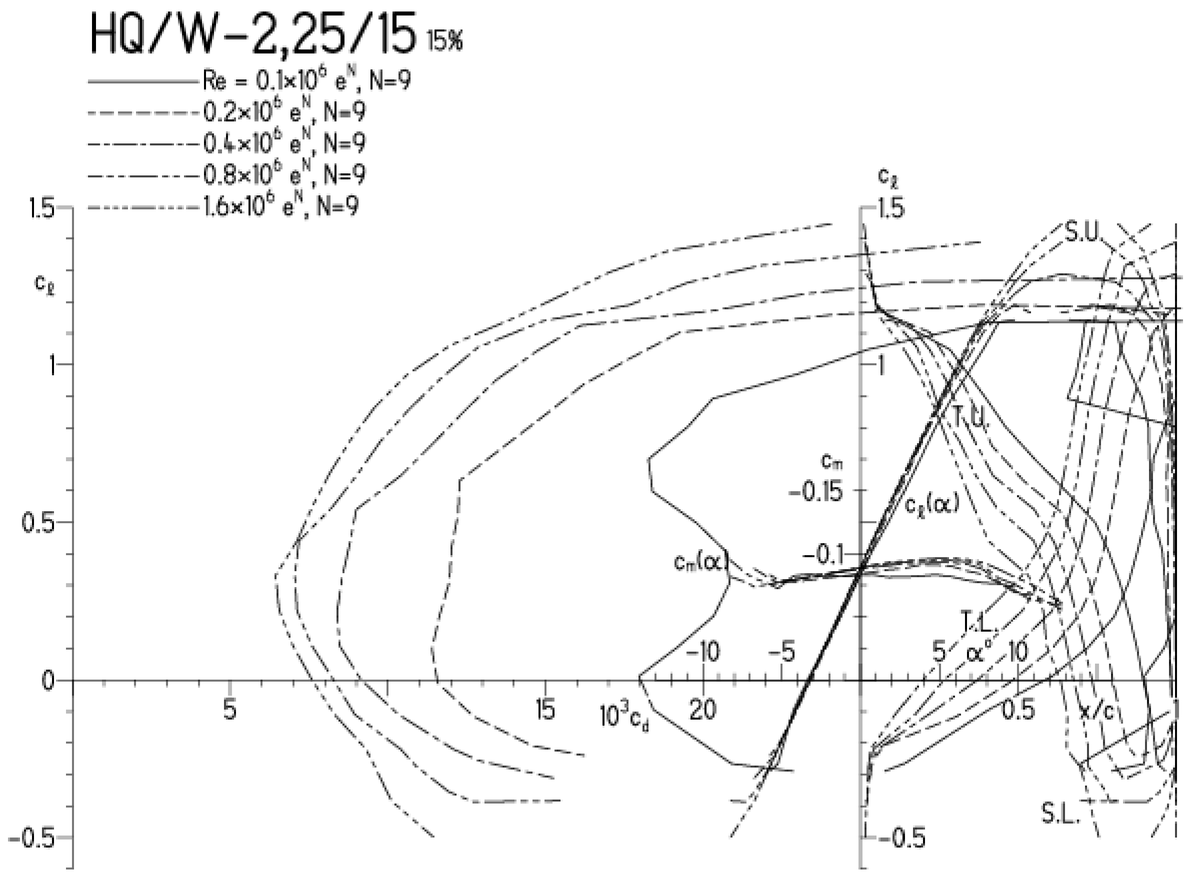


<u>HQ/W-2,25/15</u>, N=9

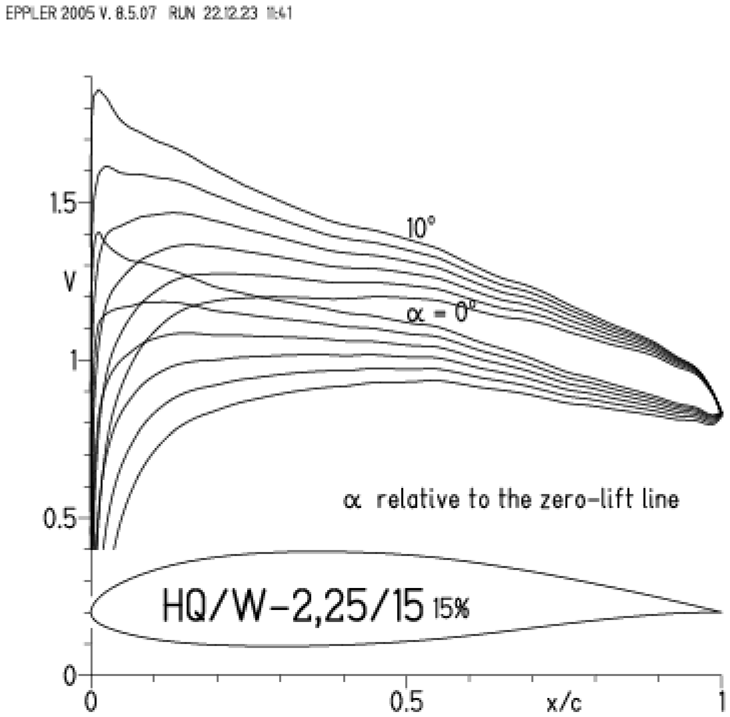
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

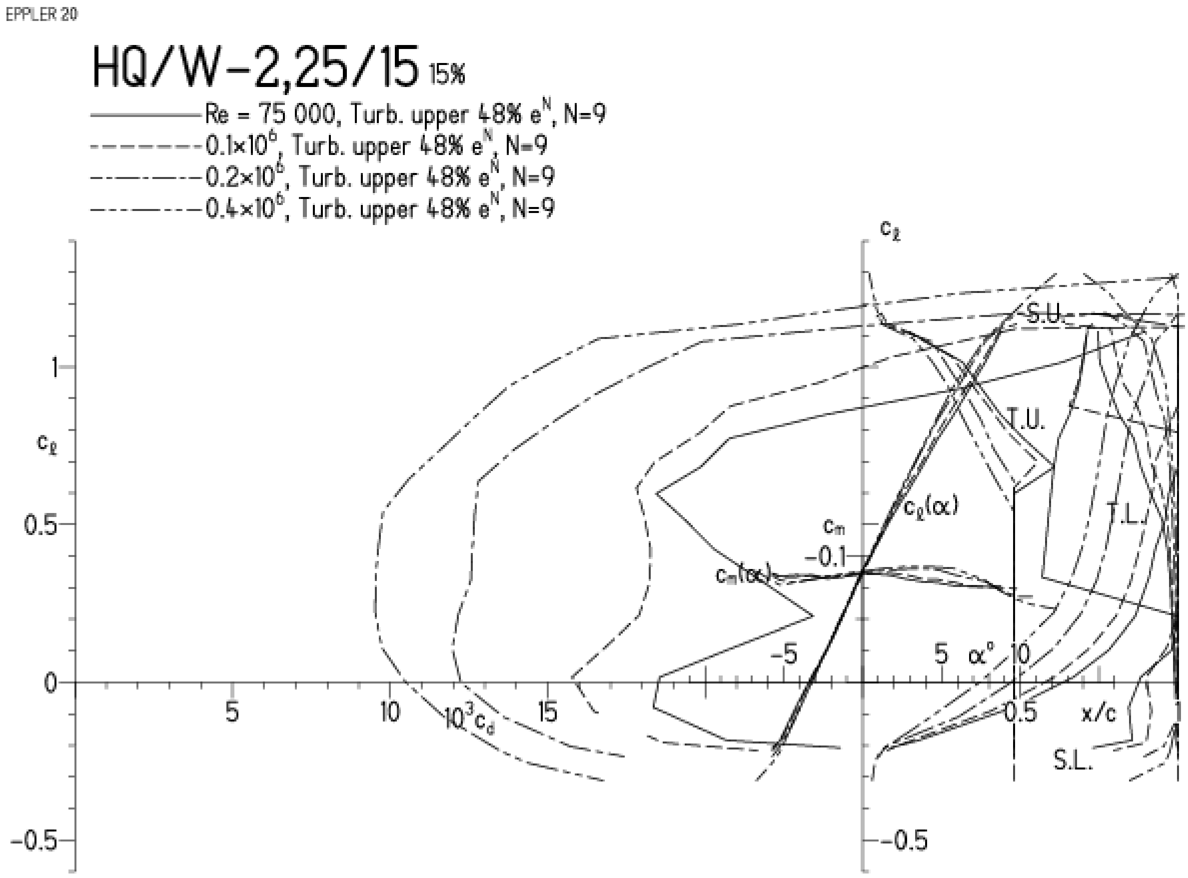


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



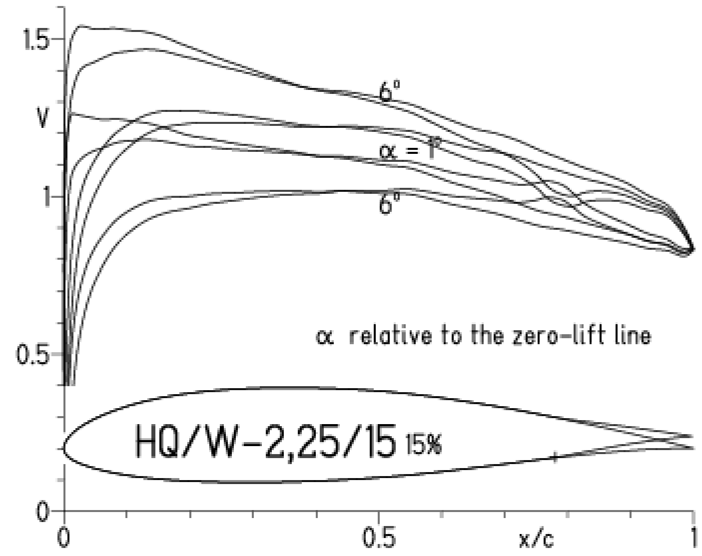


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

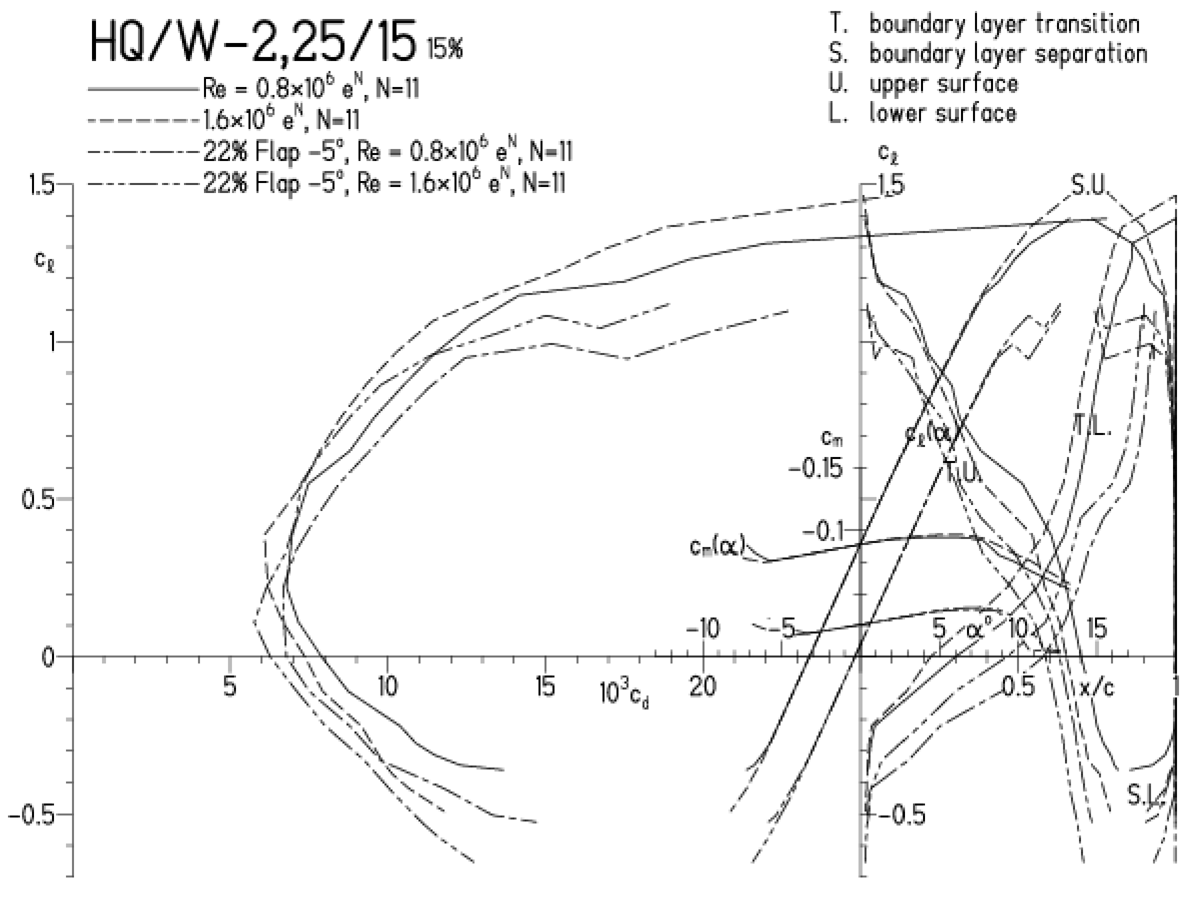
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

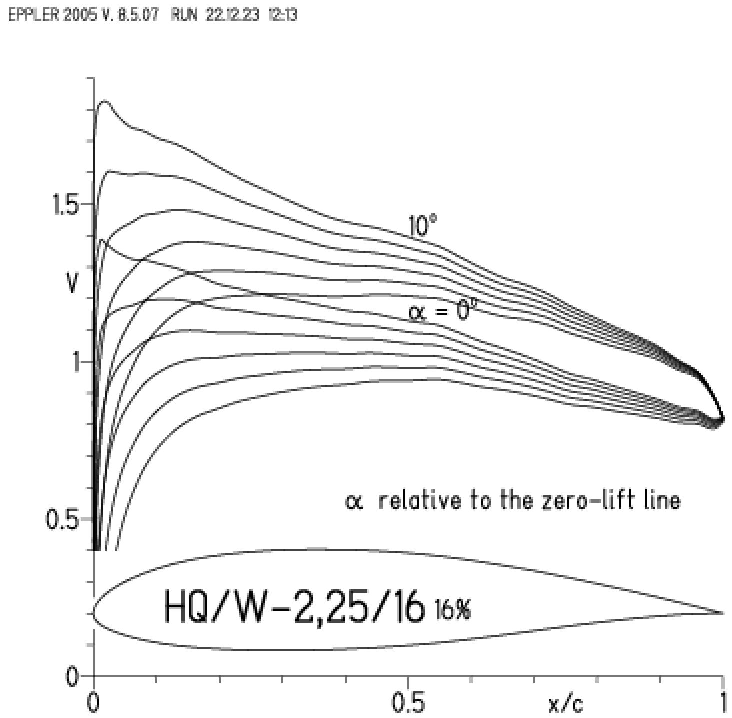
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

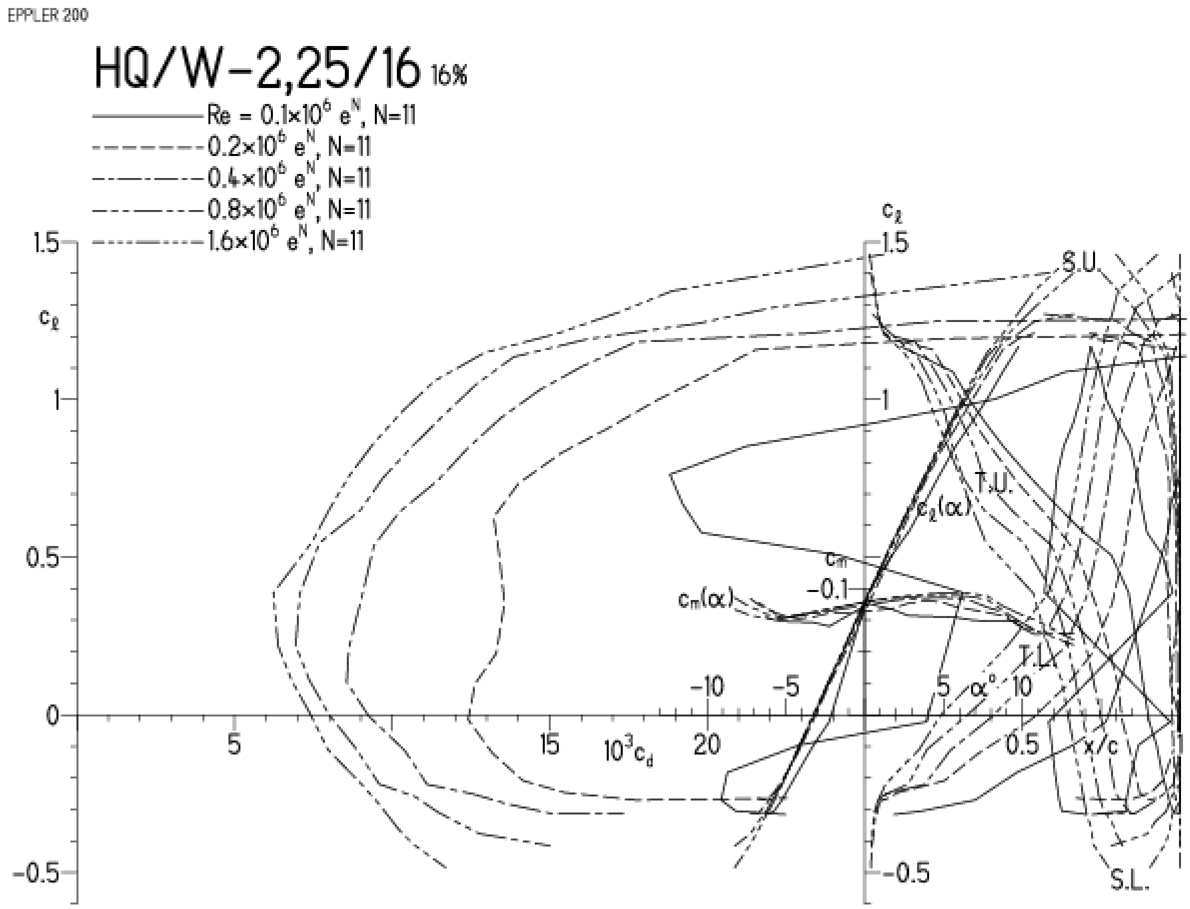


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

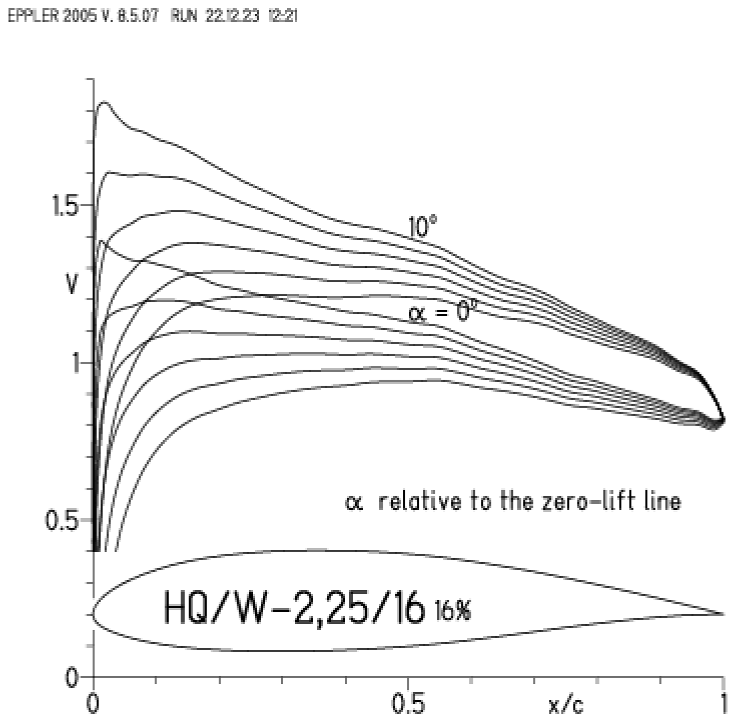


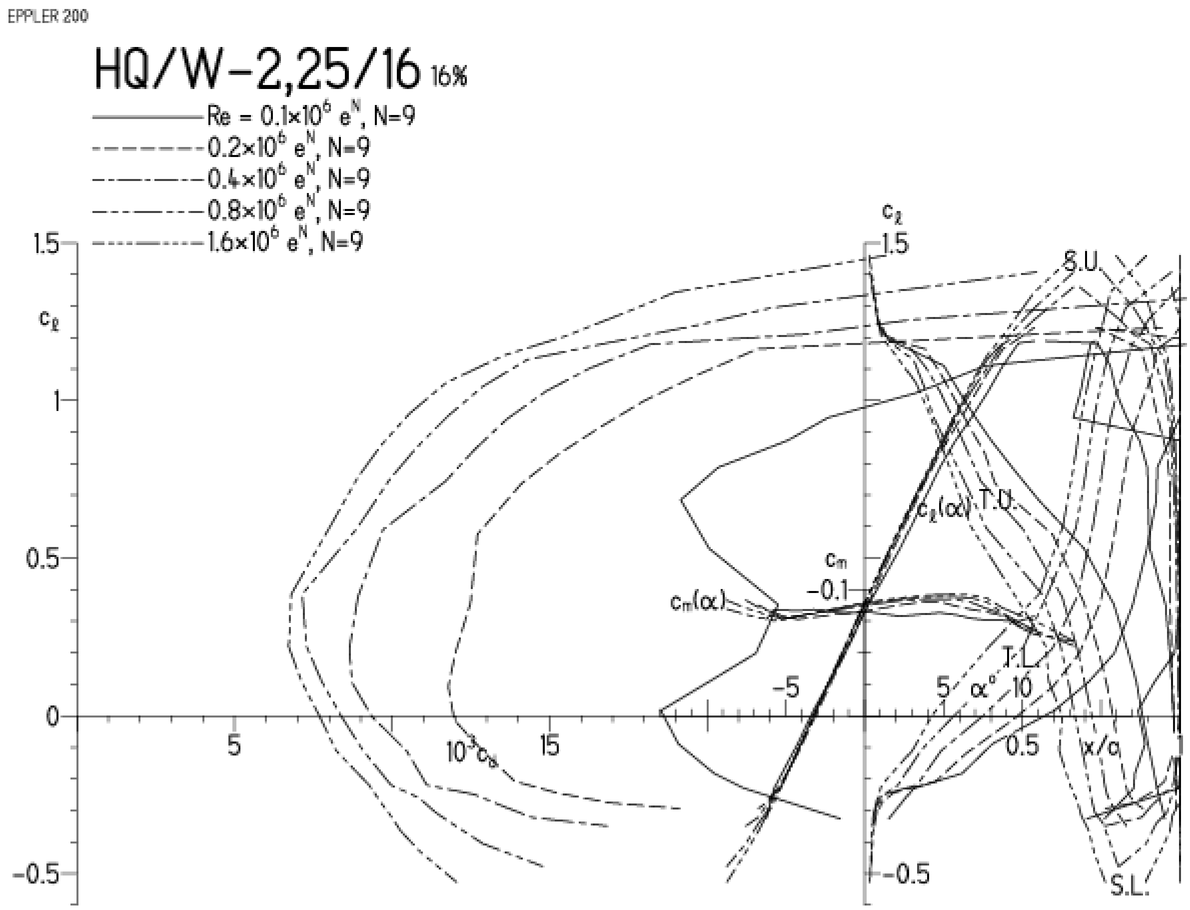
<u>HQ/W-2,25/16</u>, N=11



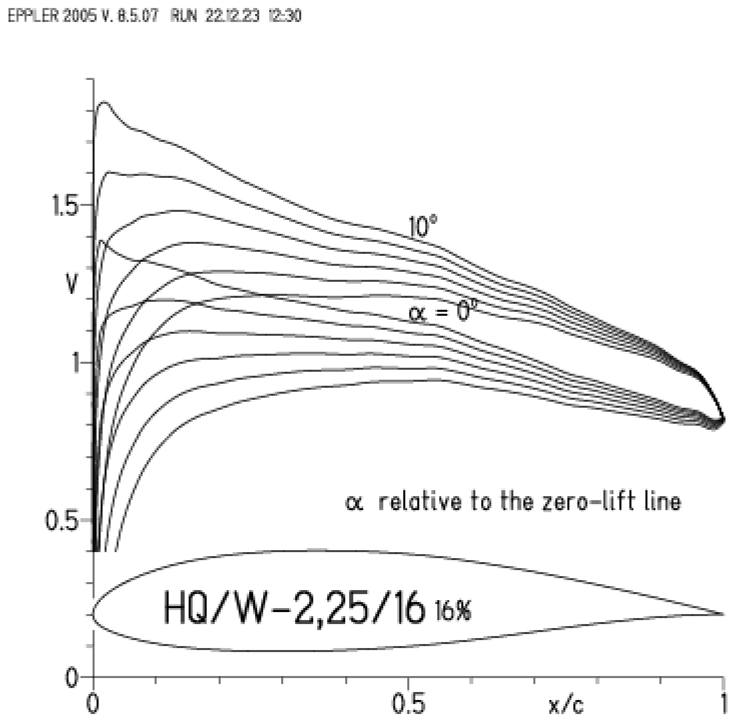


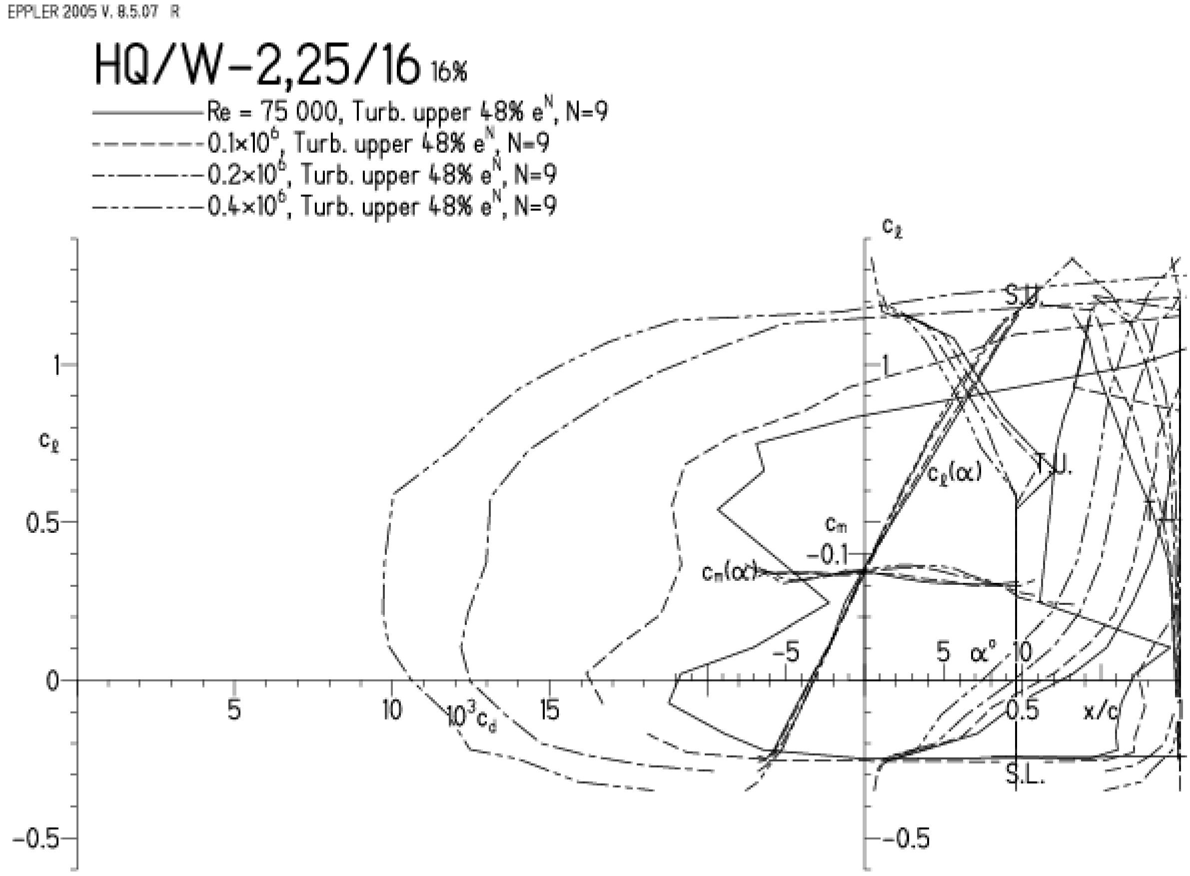
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



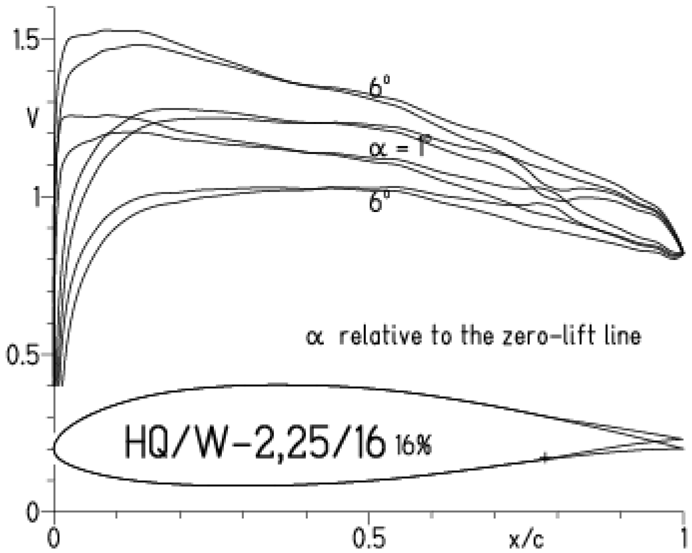


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

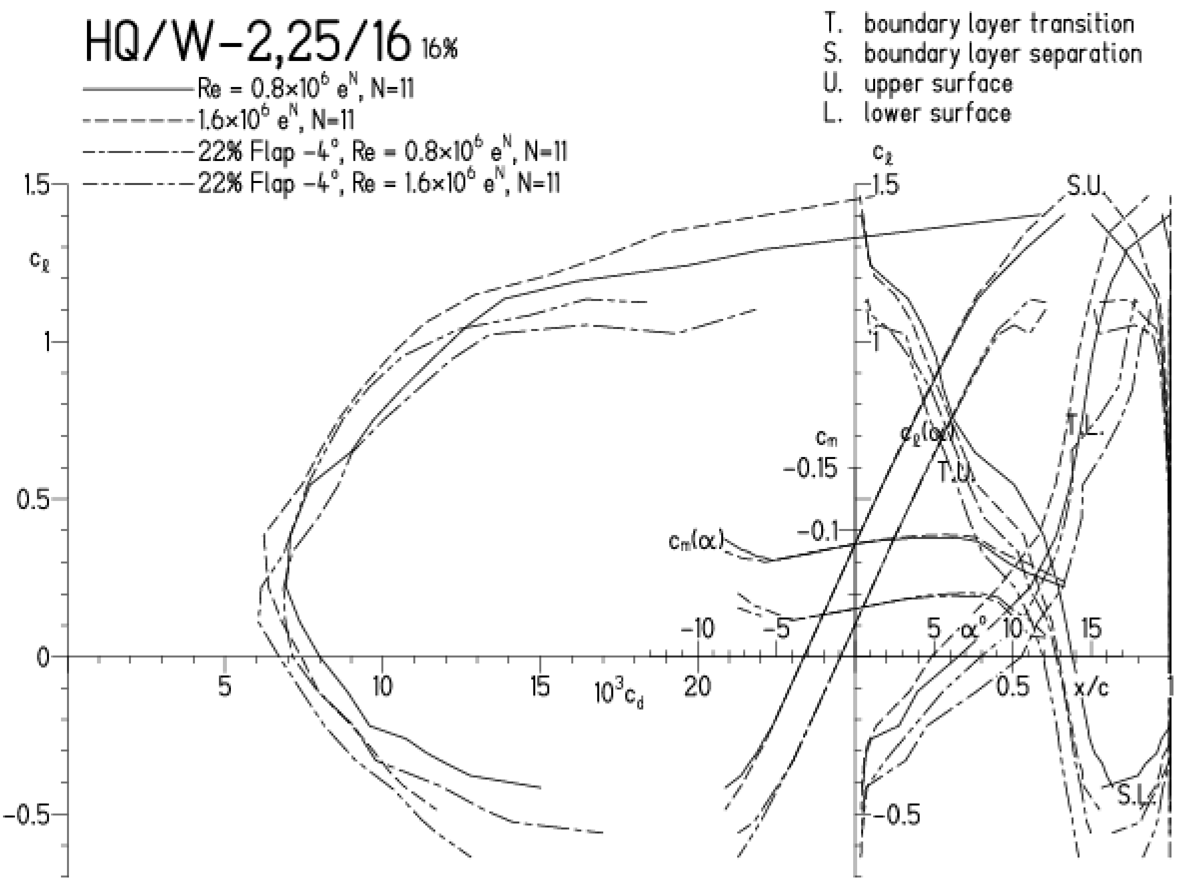
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

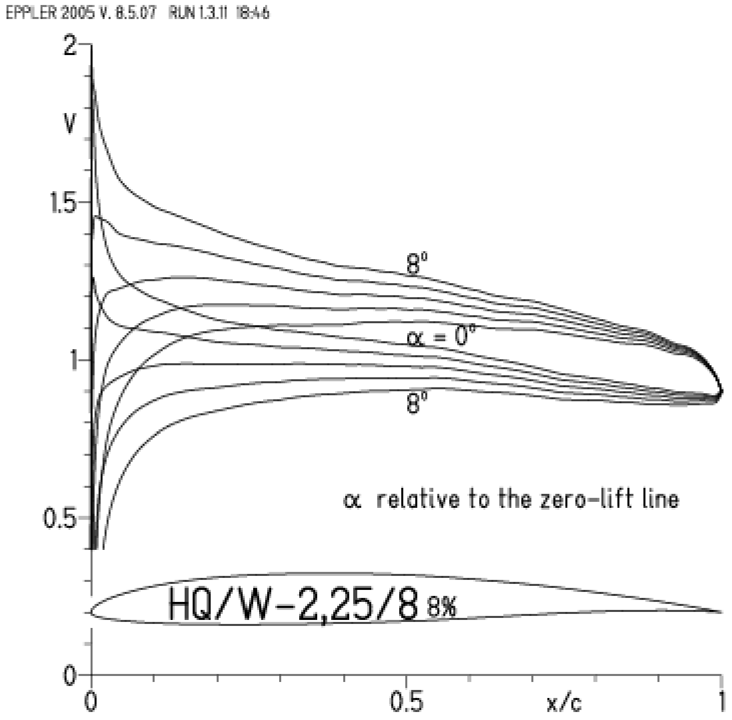
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

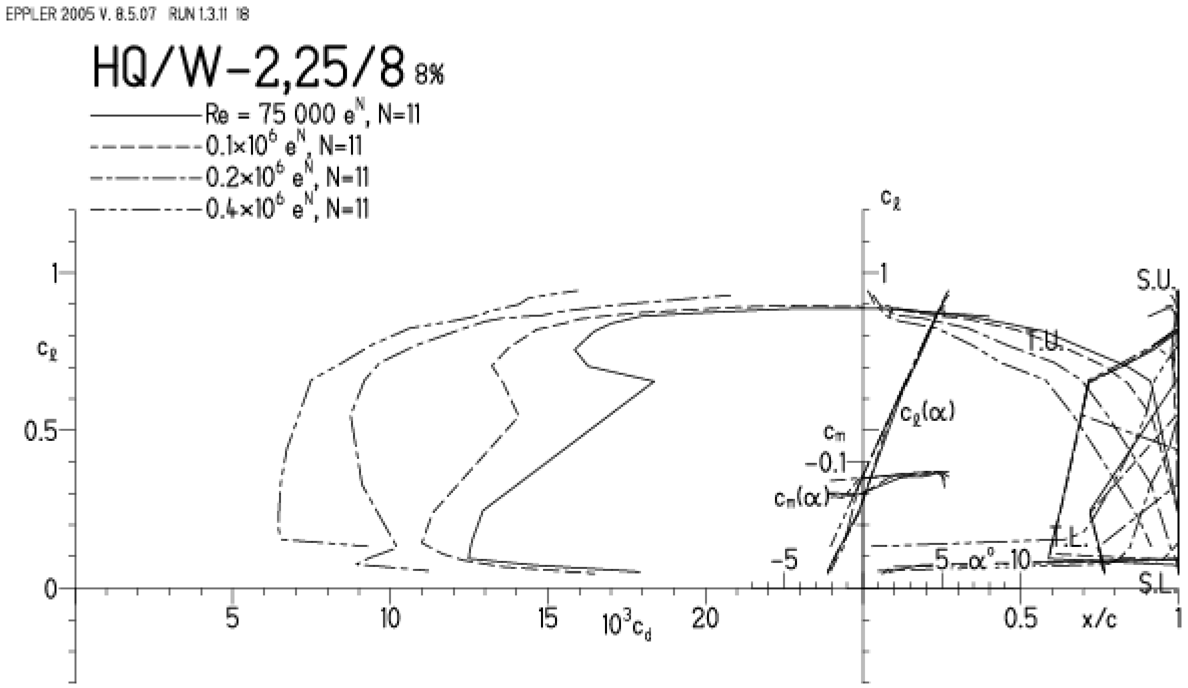


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

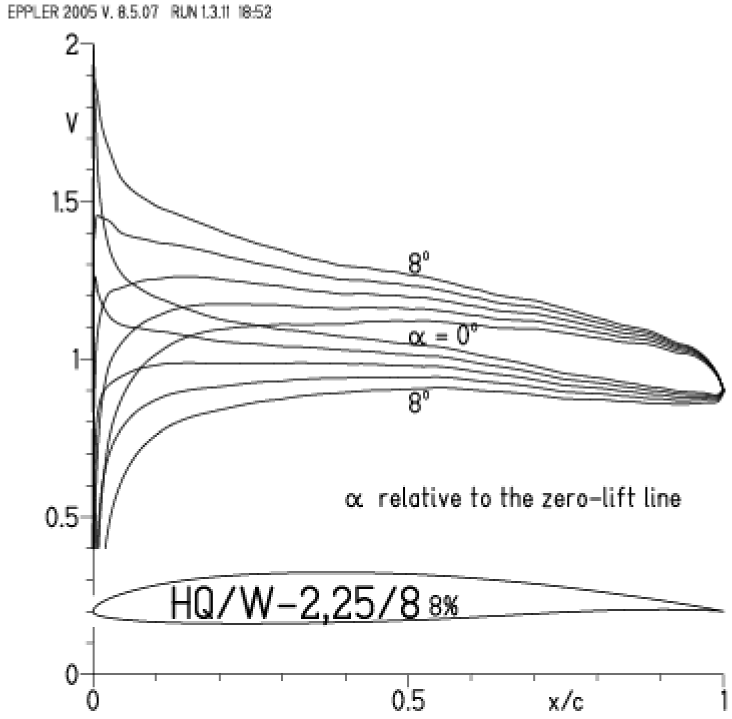


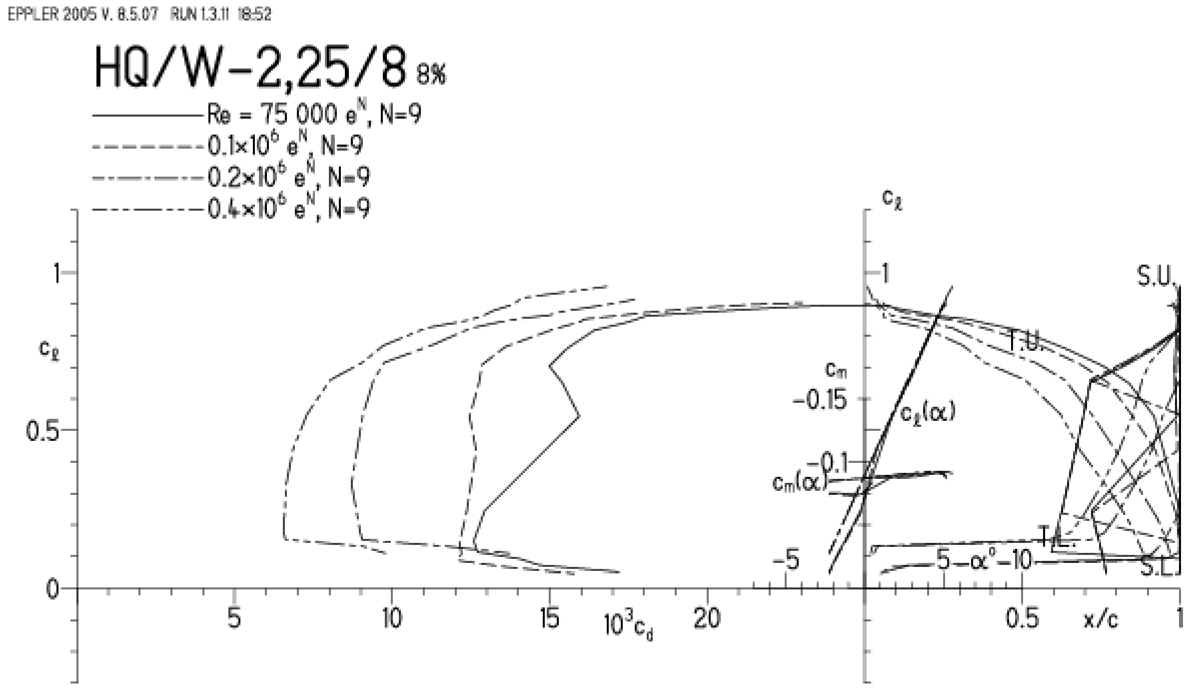
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
2
V
1.5
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
0
0.5
x/c
1

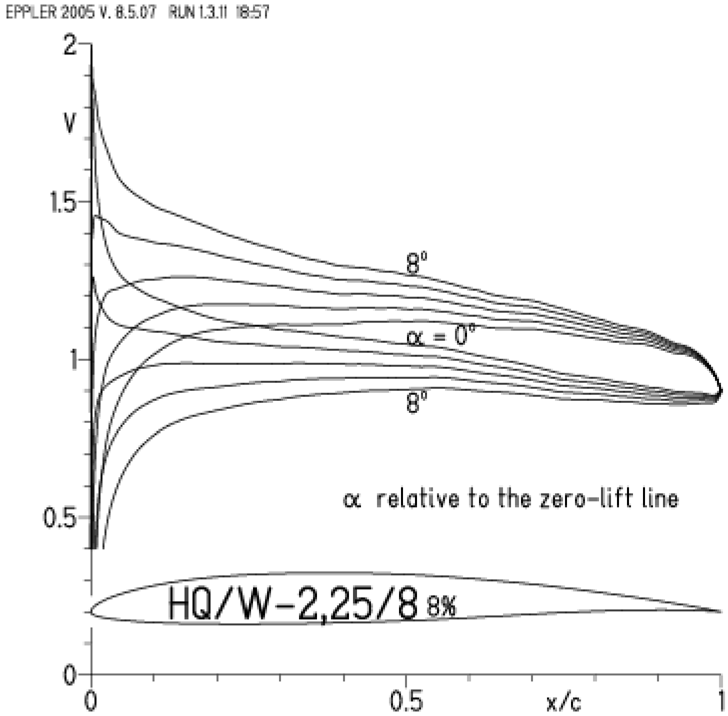

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

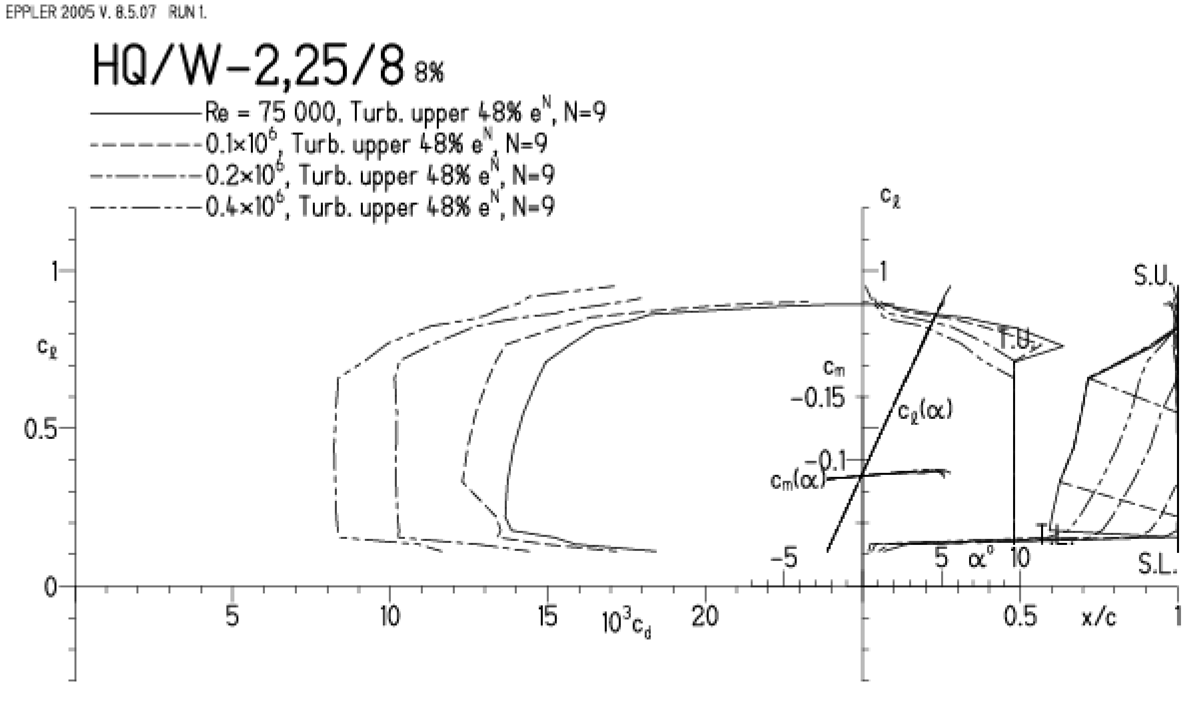
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
-α°-10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.

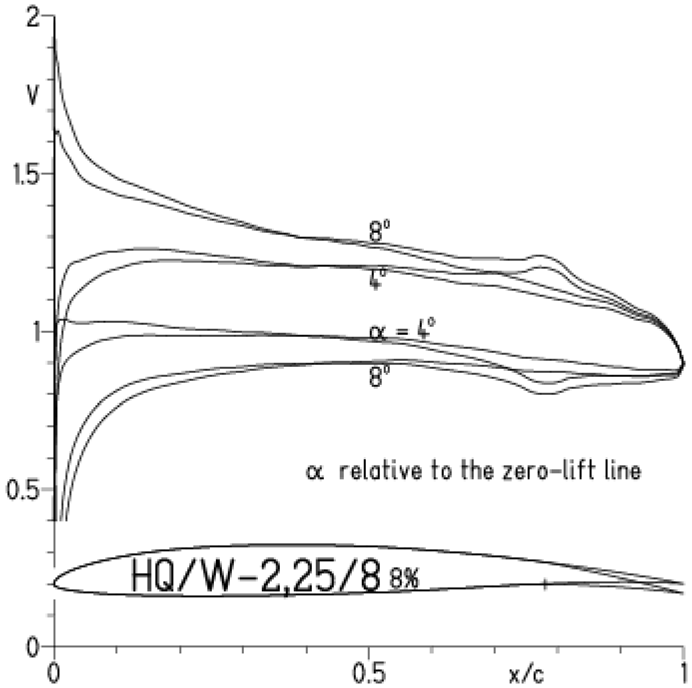
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



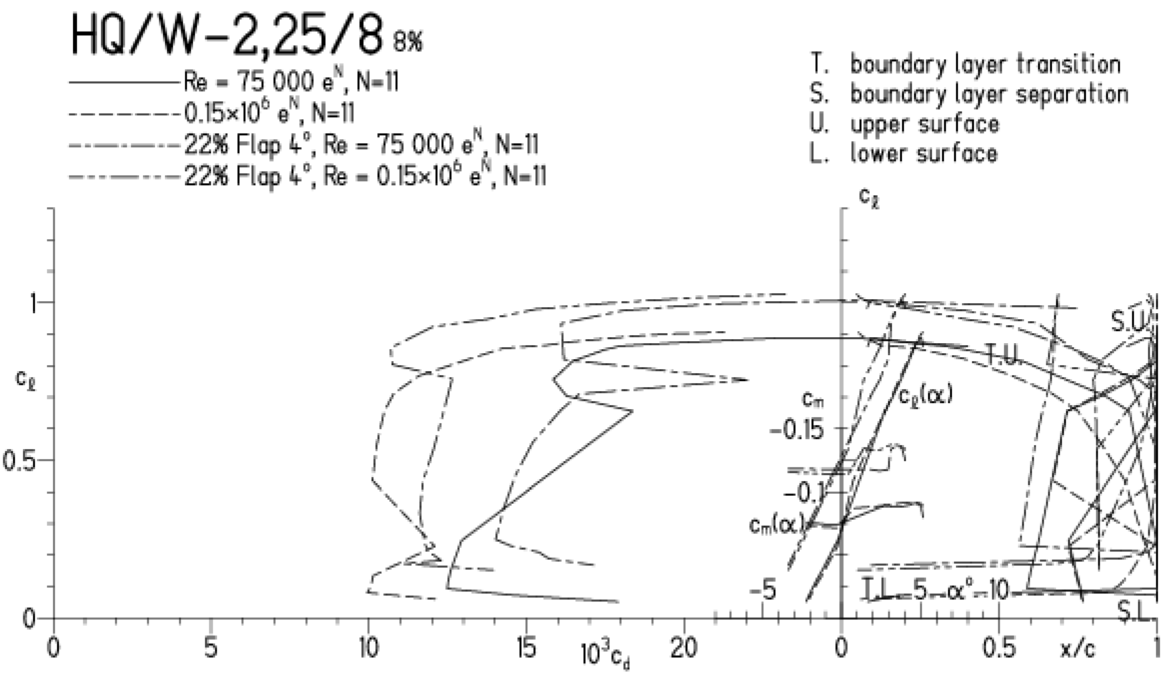


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

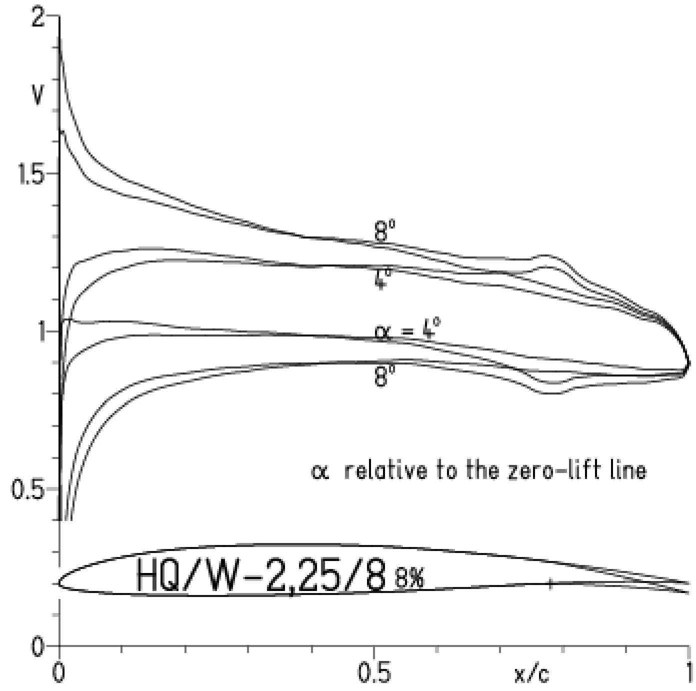


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

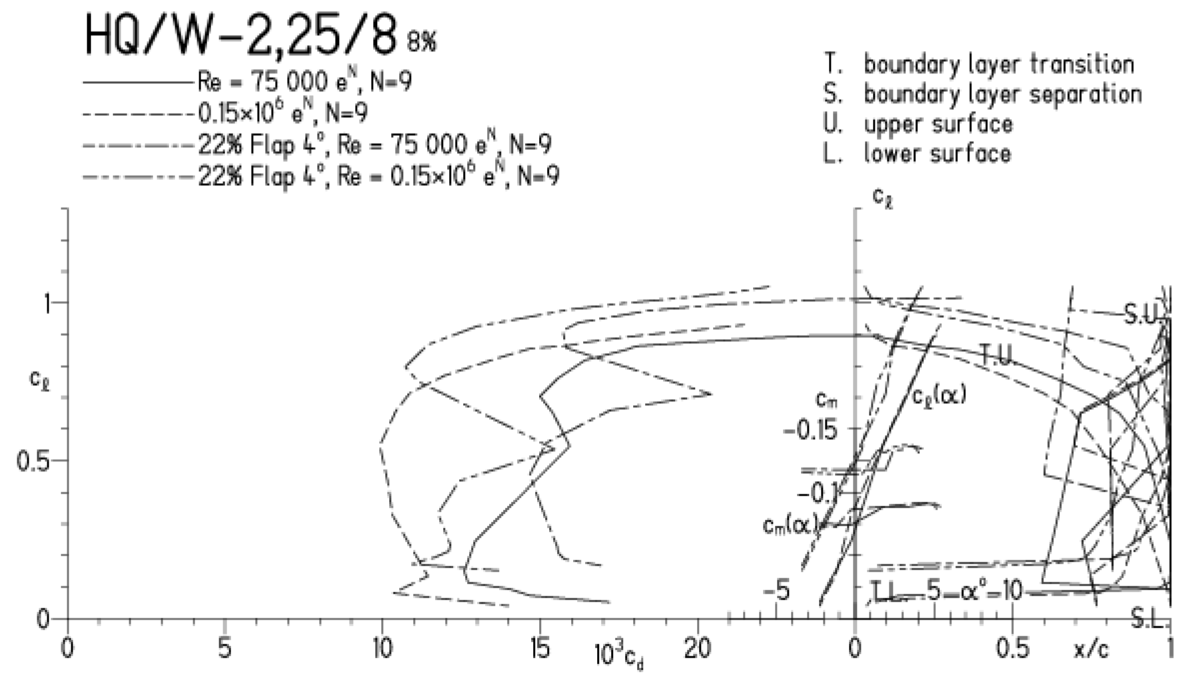


HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag

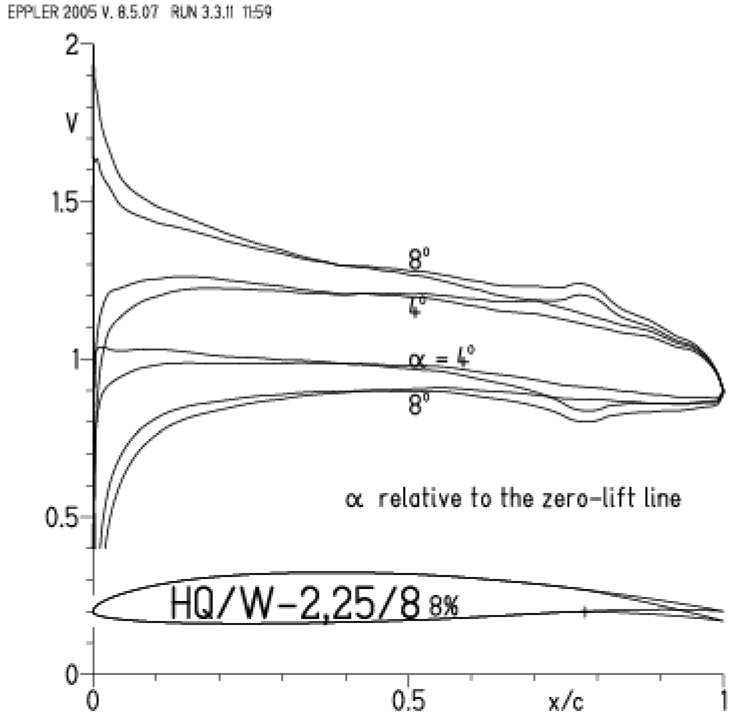
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

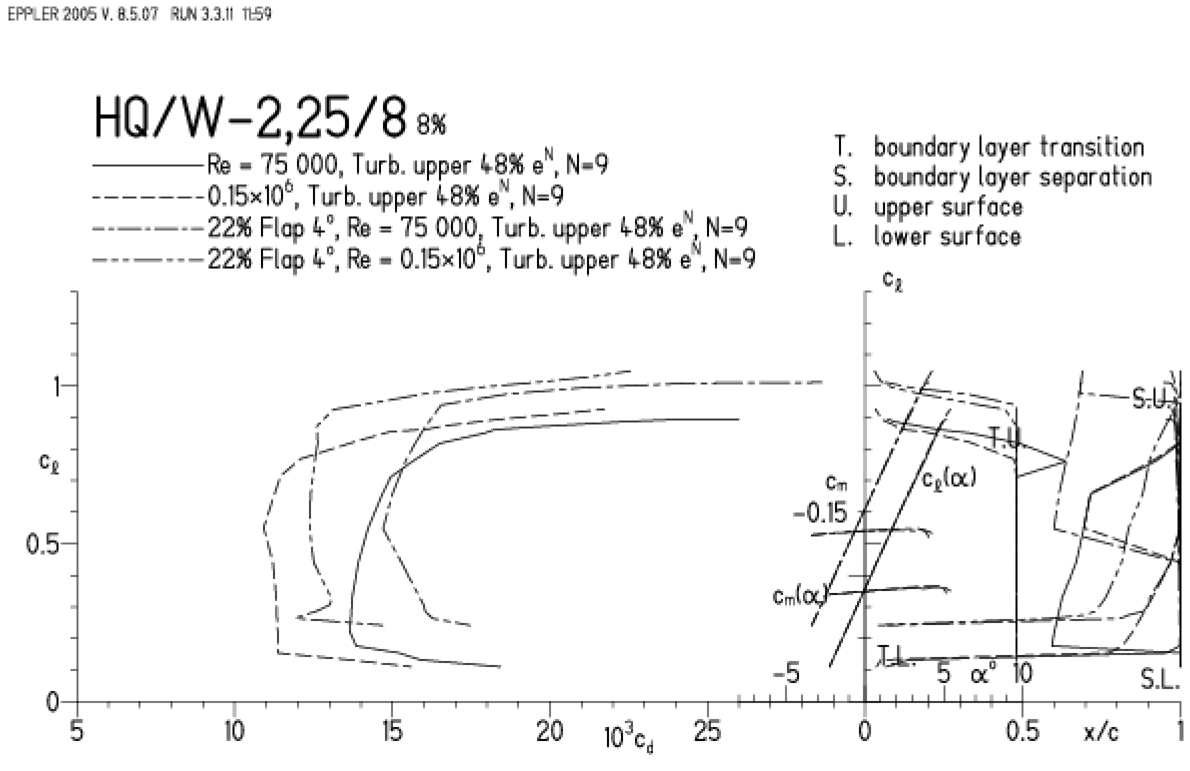


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11

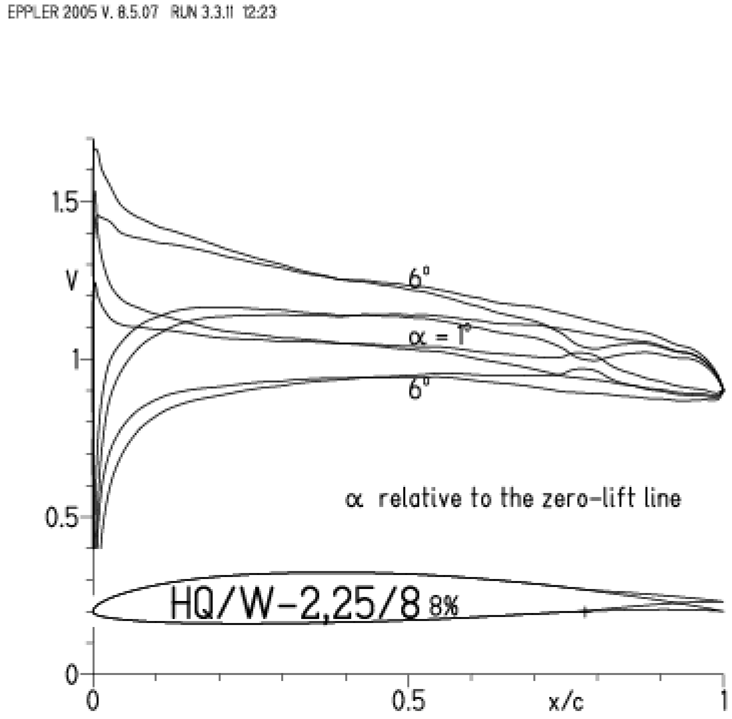


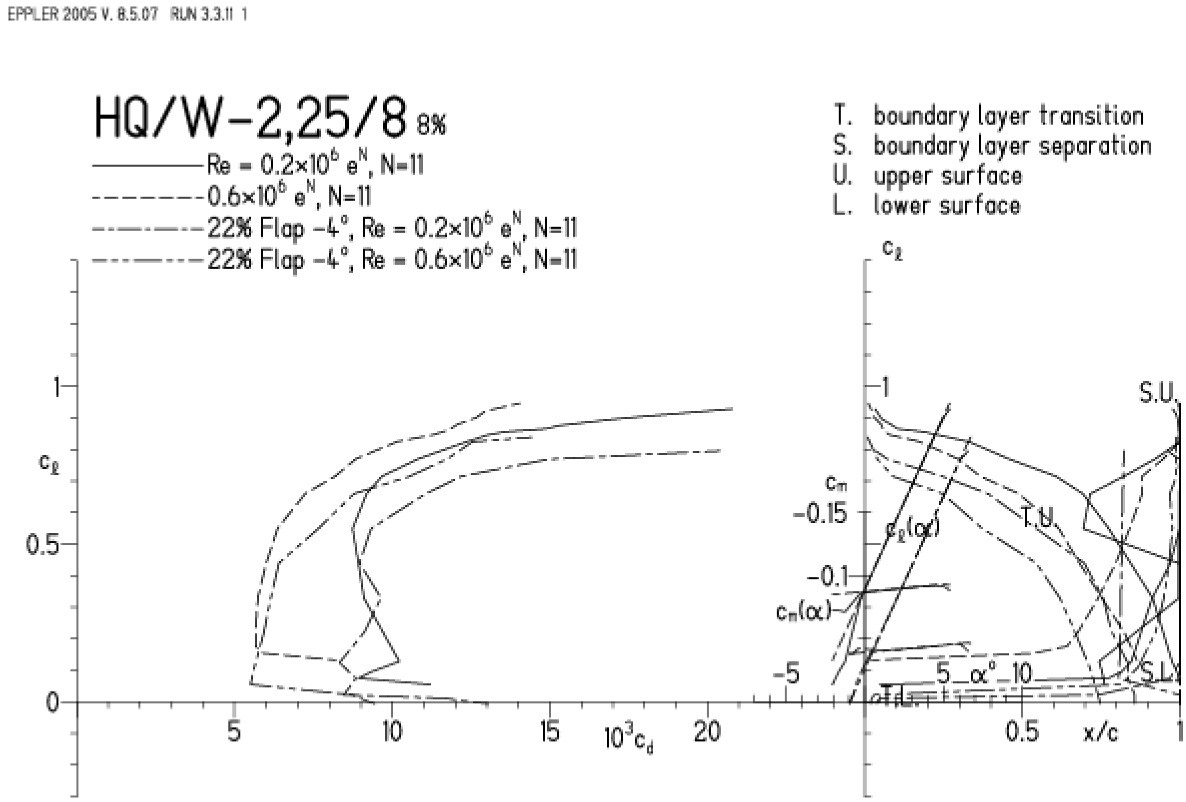
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





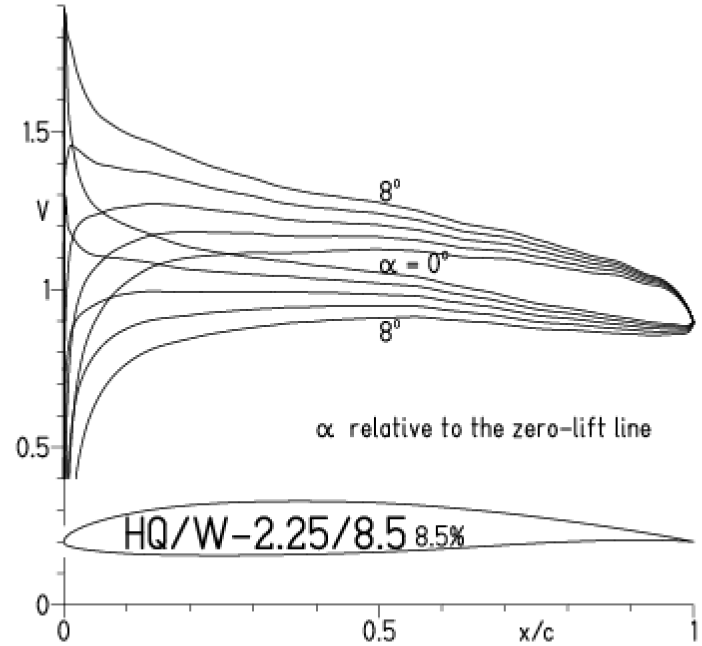
<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



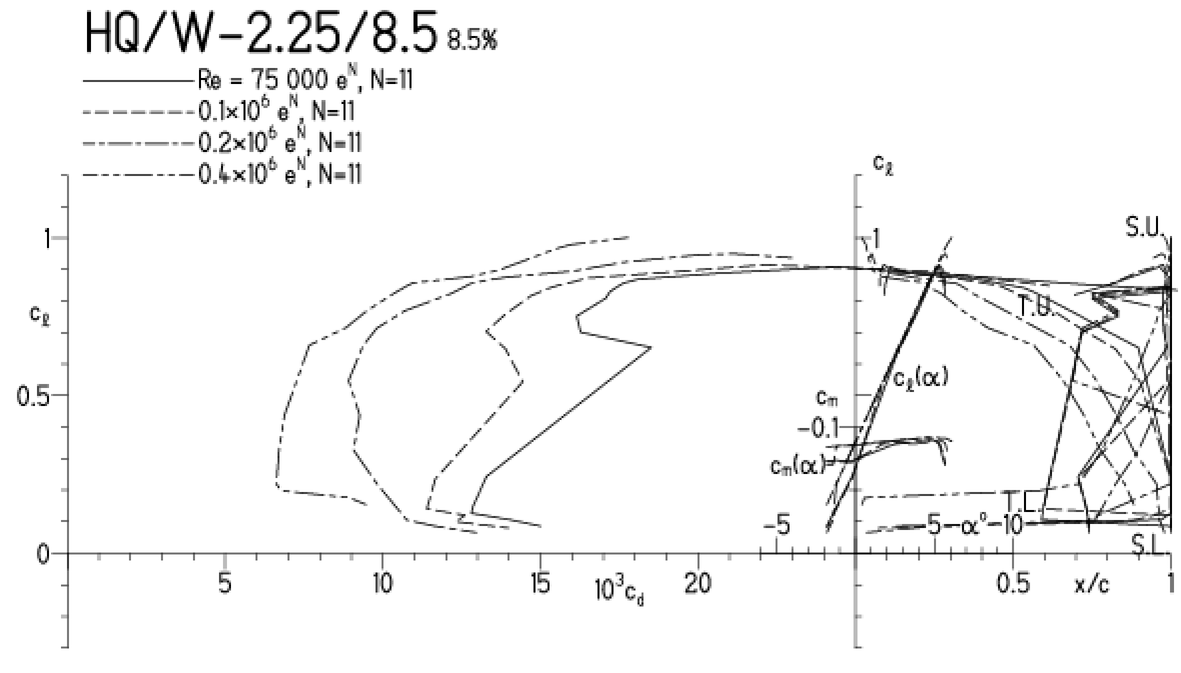


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

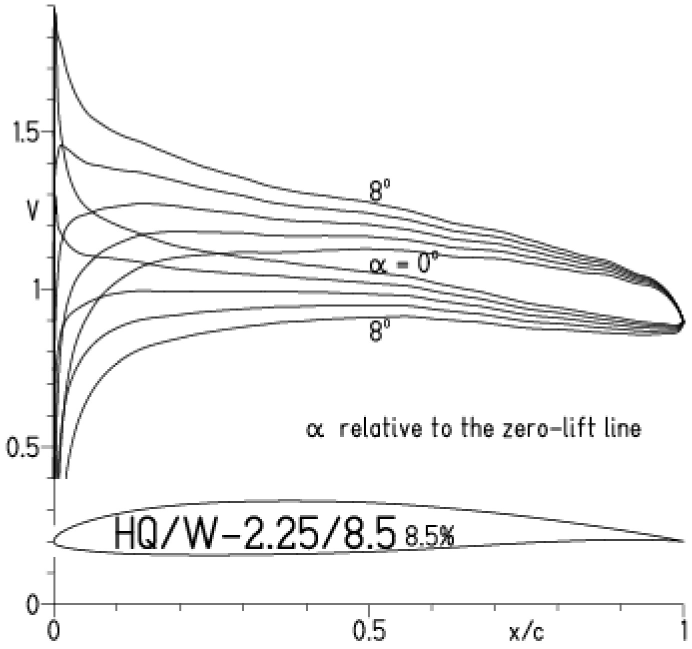


EPPLER 2005 V

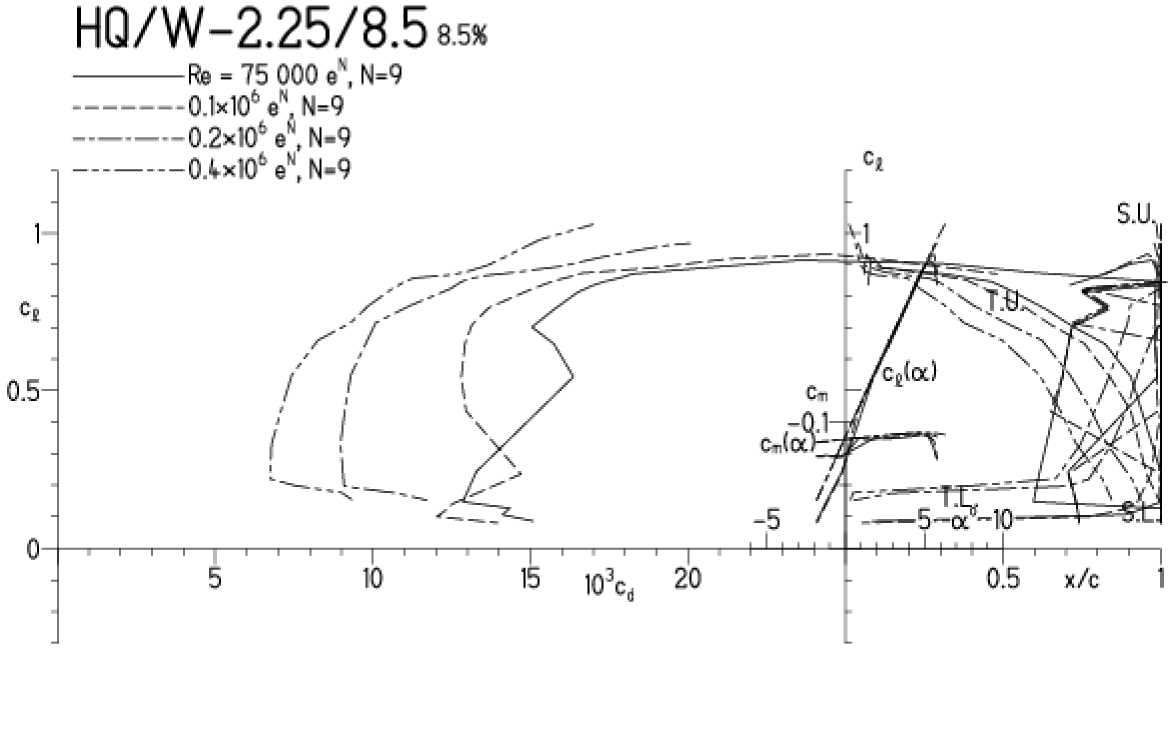


HQ/W-2,25/8,5, N=9

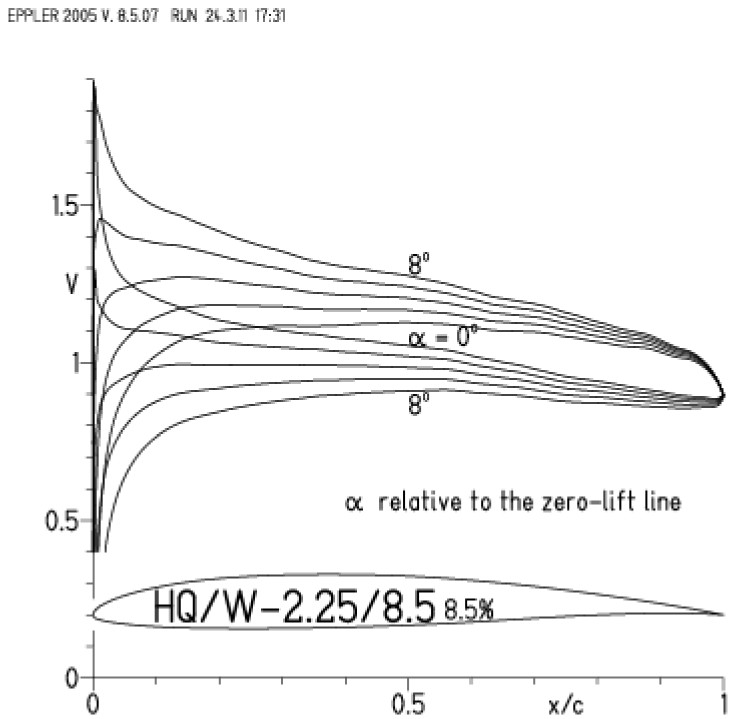
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

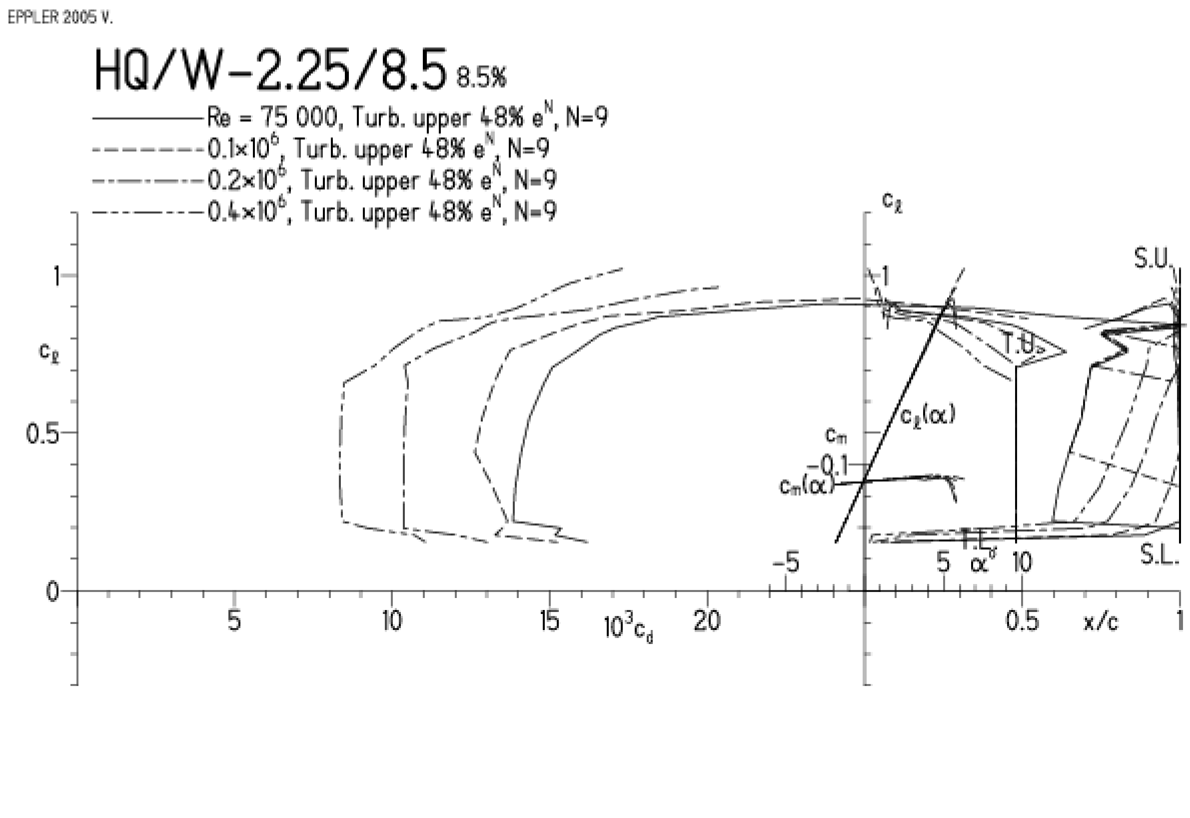


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

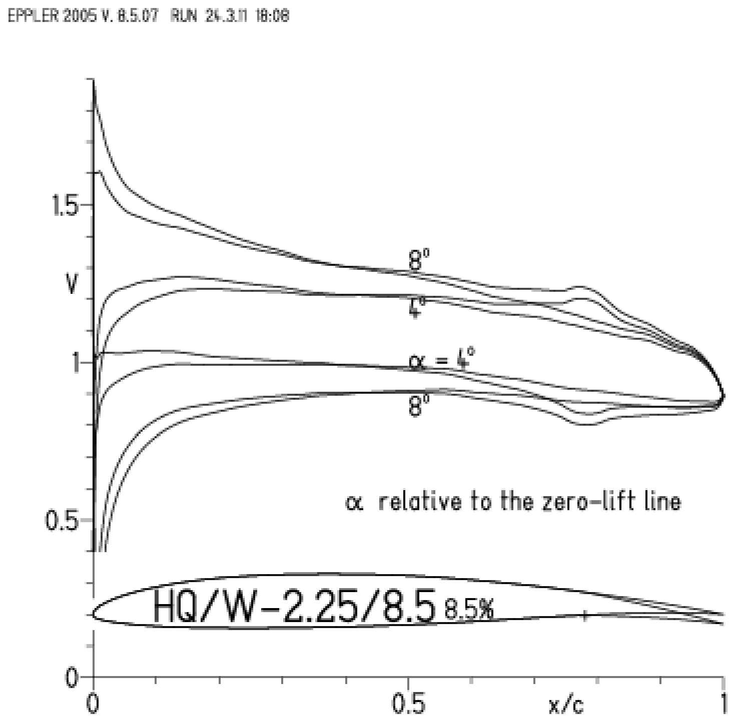


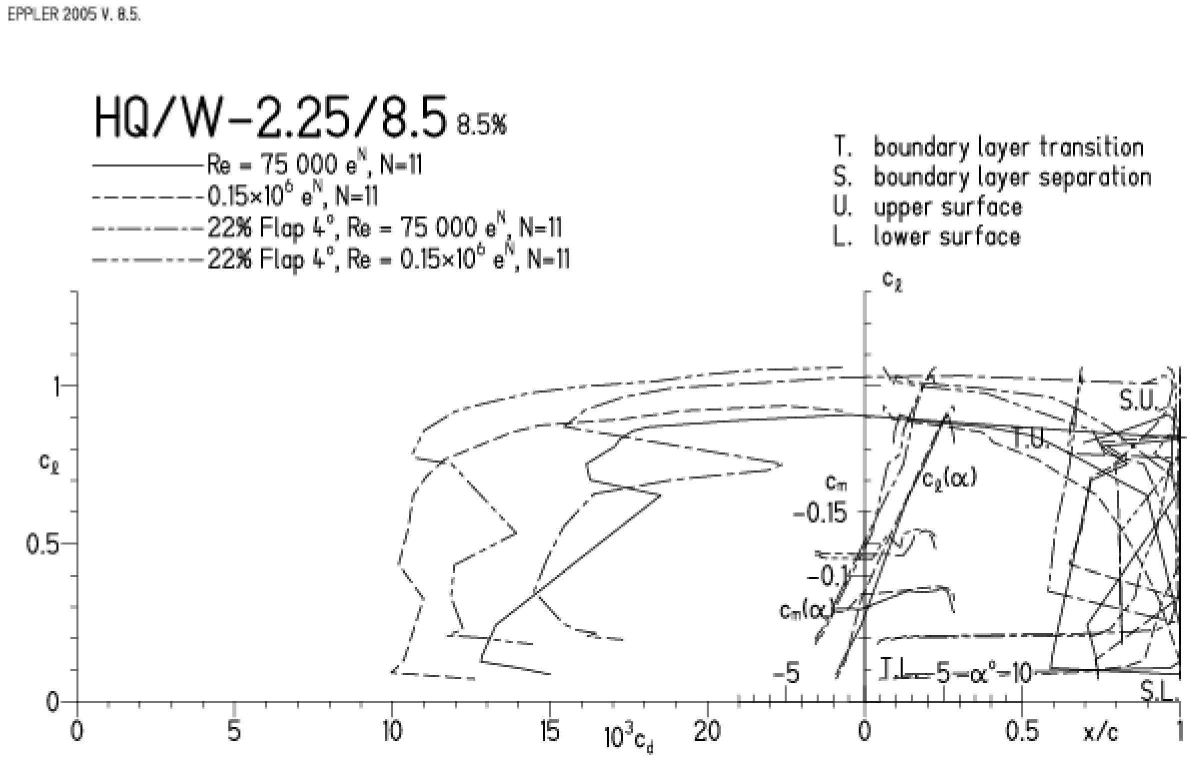
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



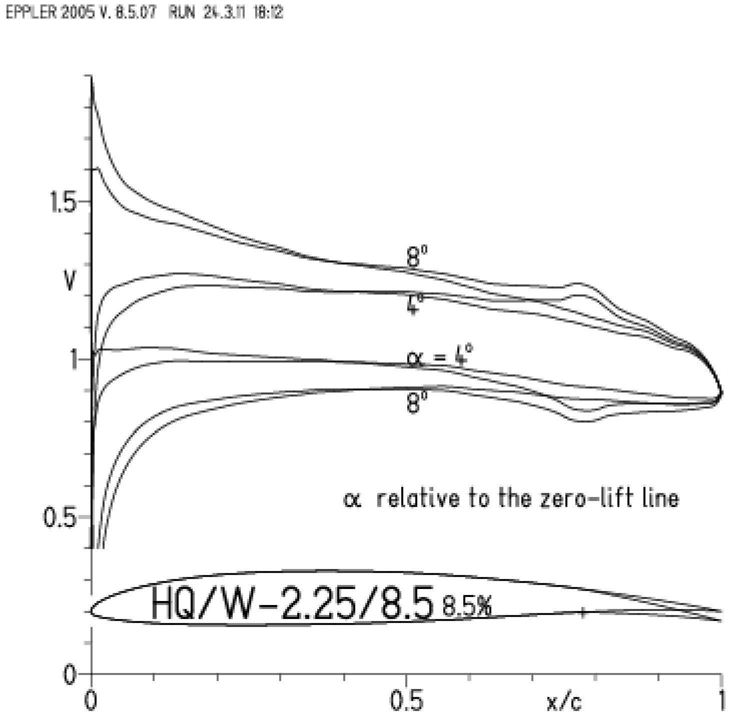


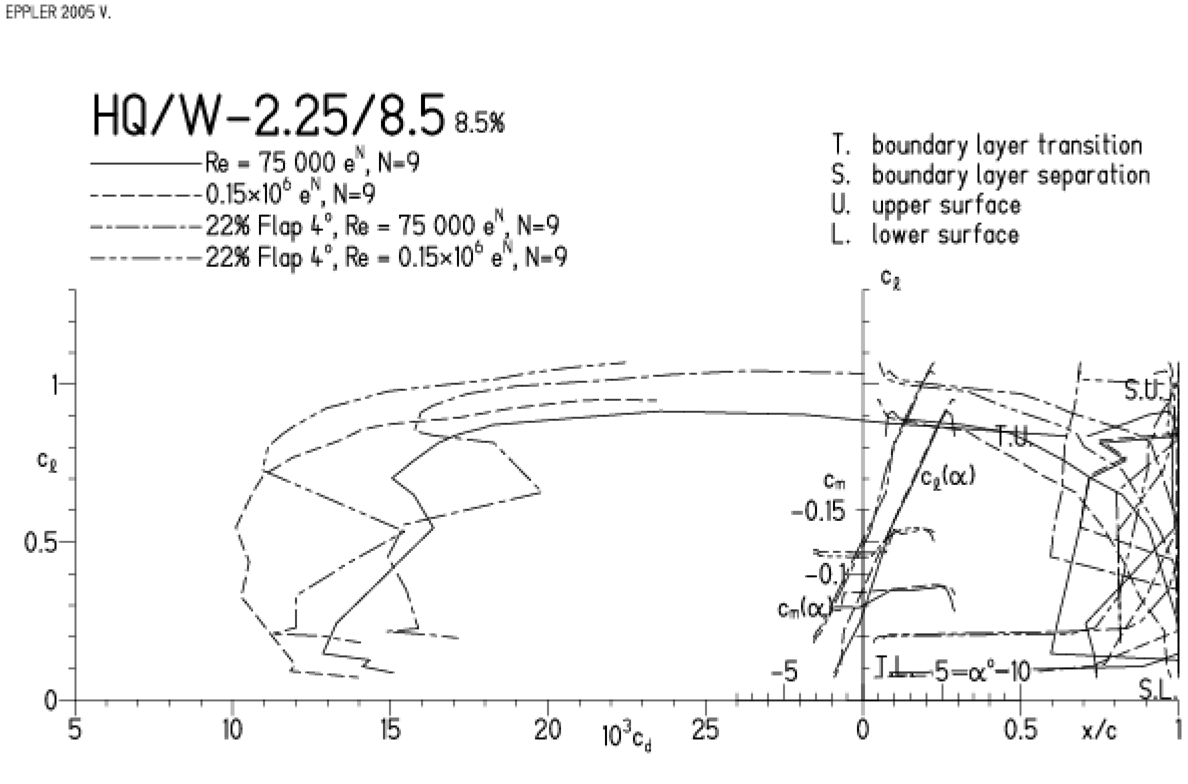
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag





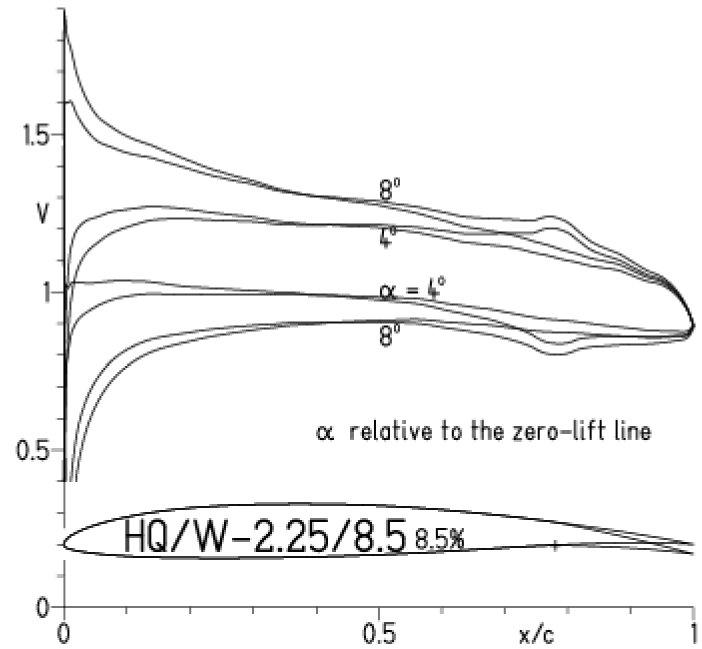
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



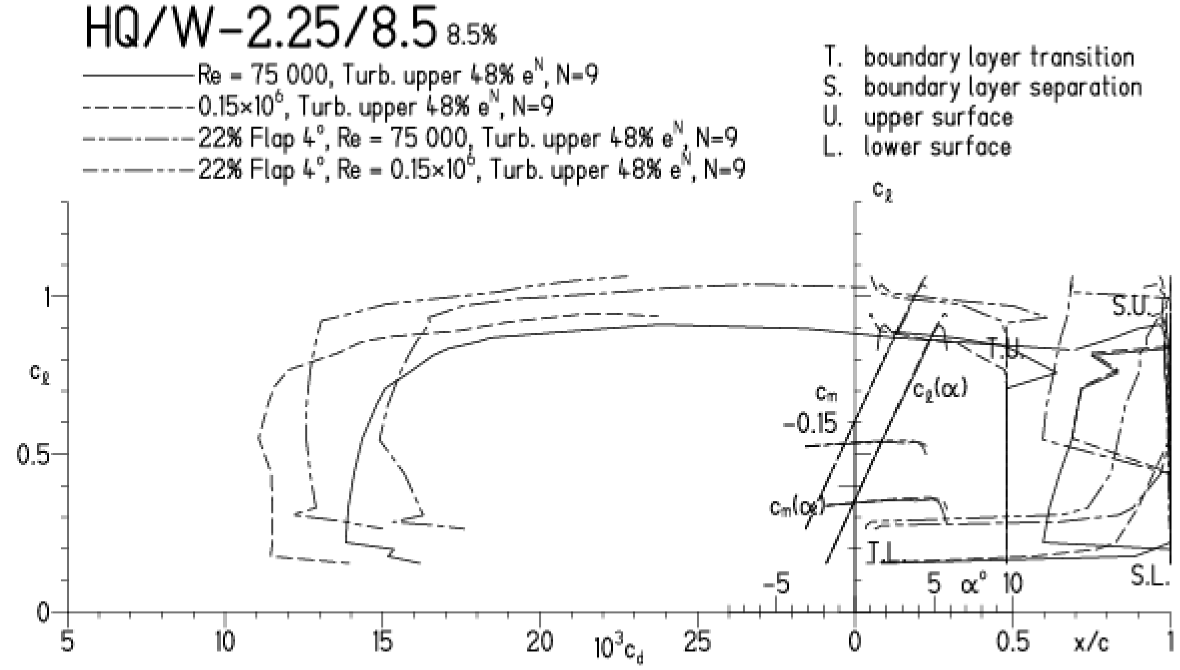


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

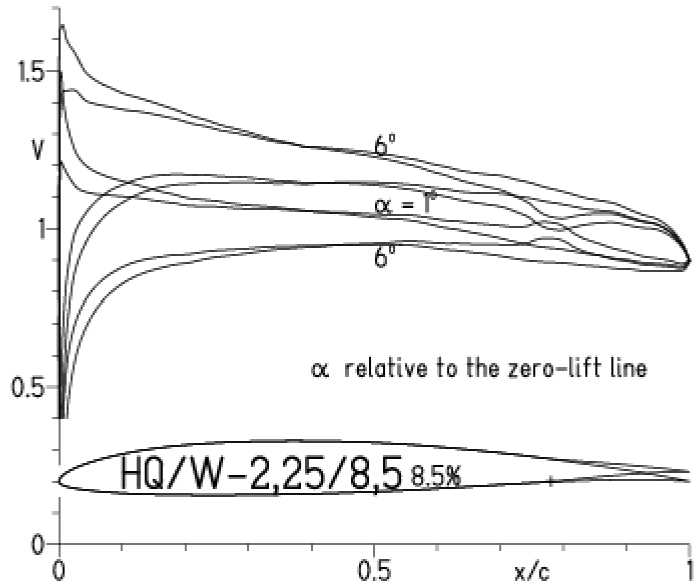


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

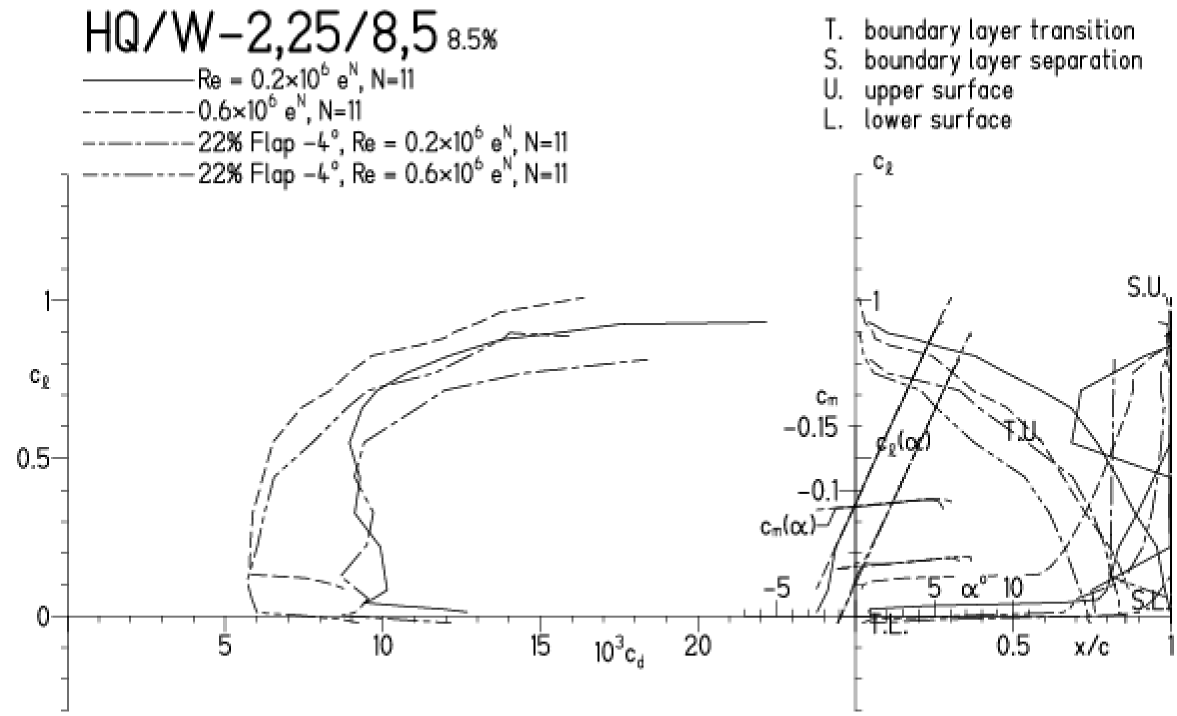


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

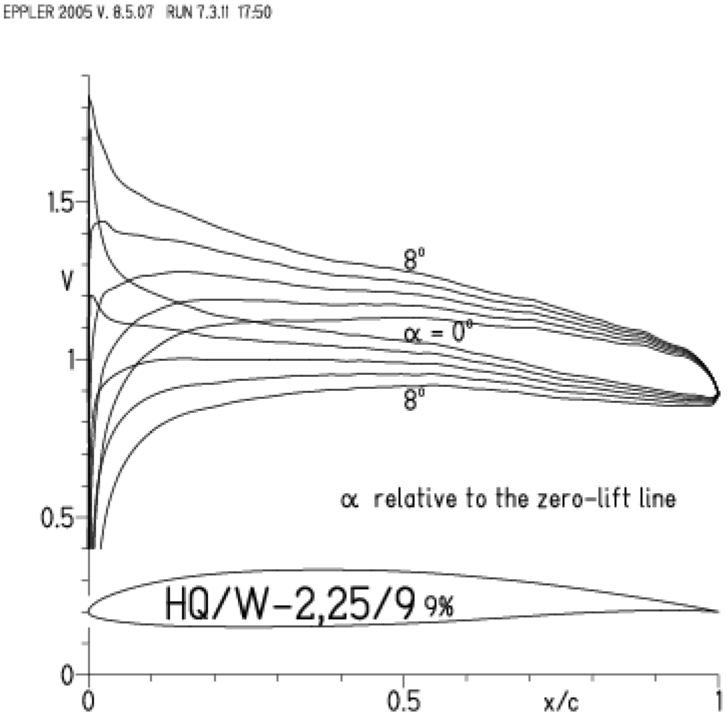
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

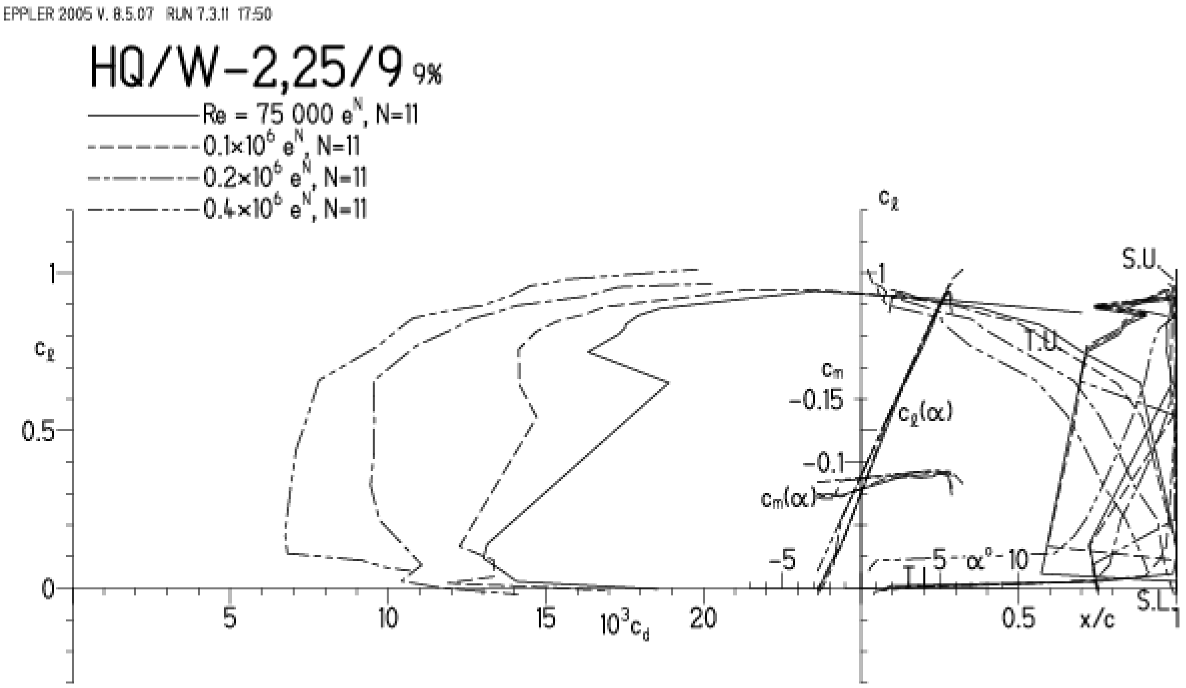


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



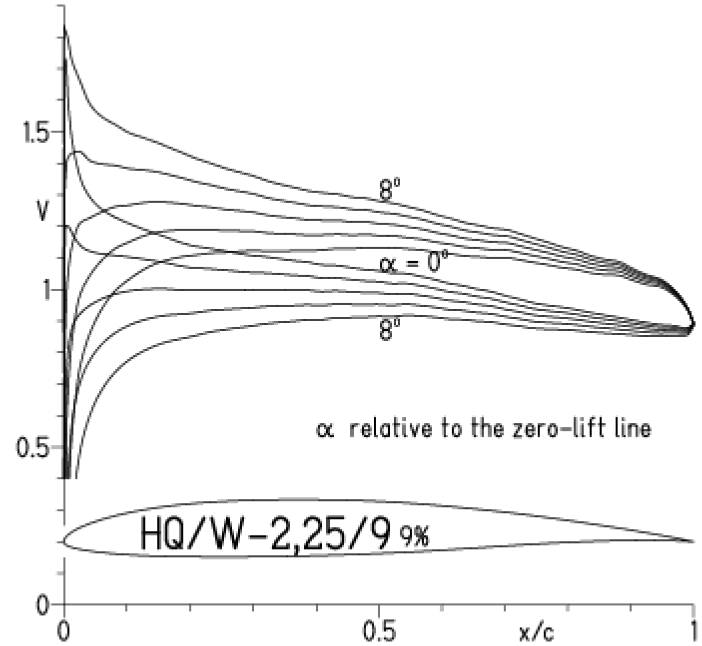
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

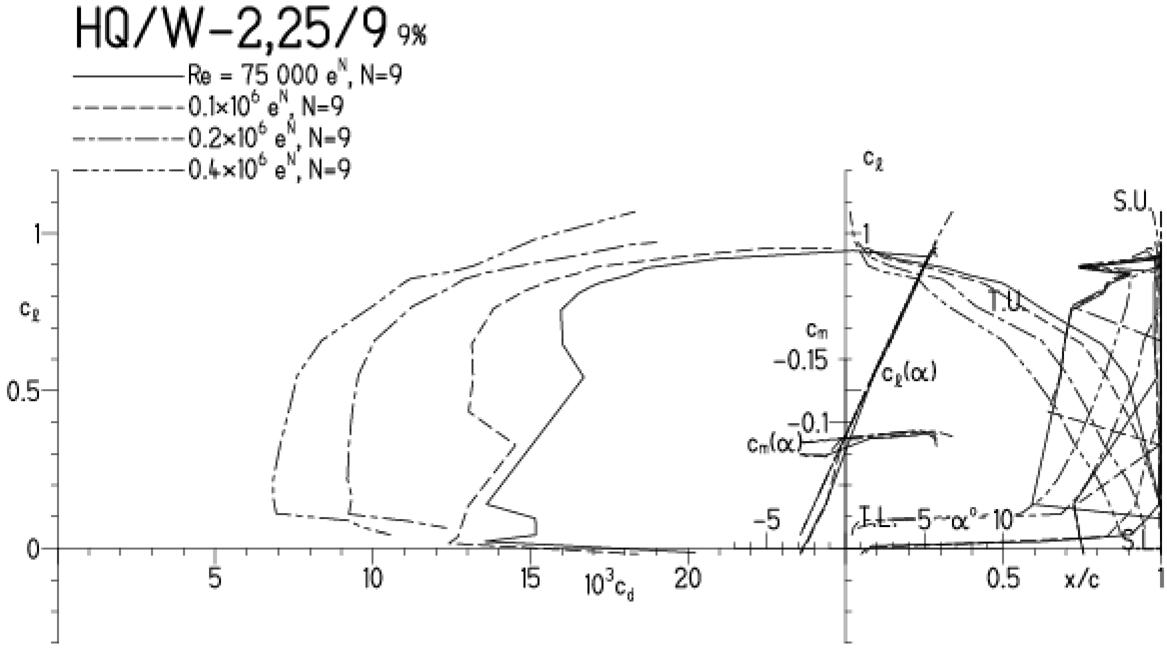

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9</u>, N=9

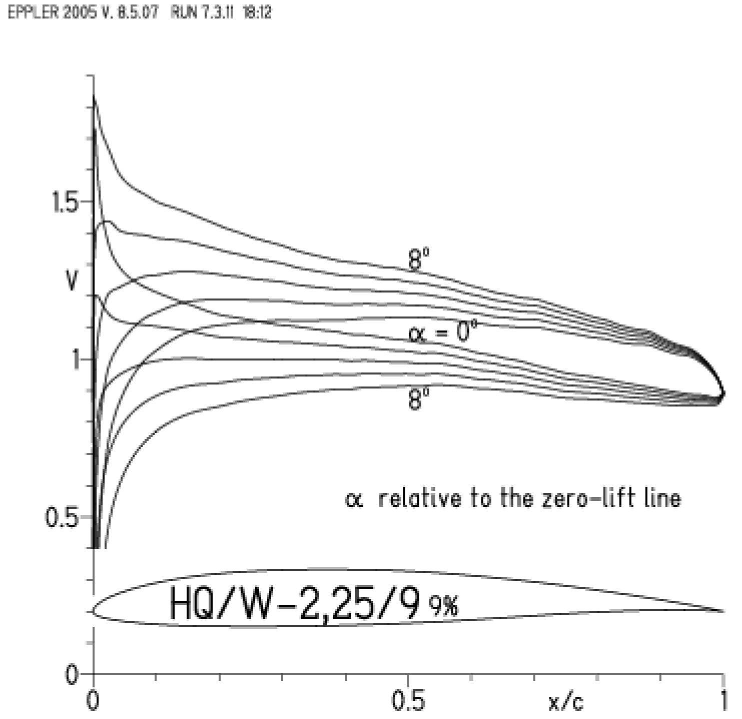
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

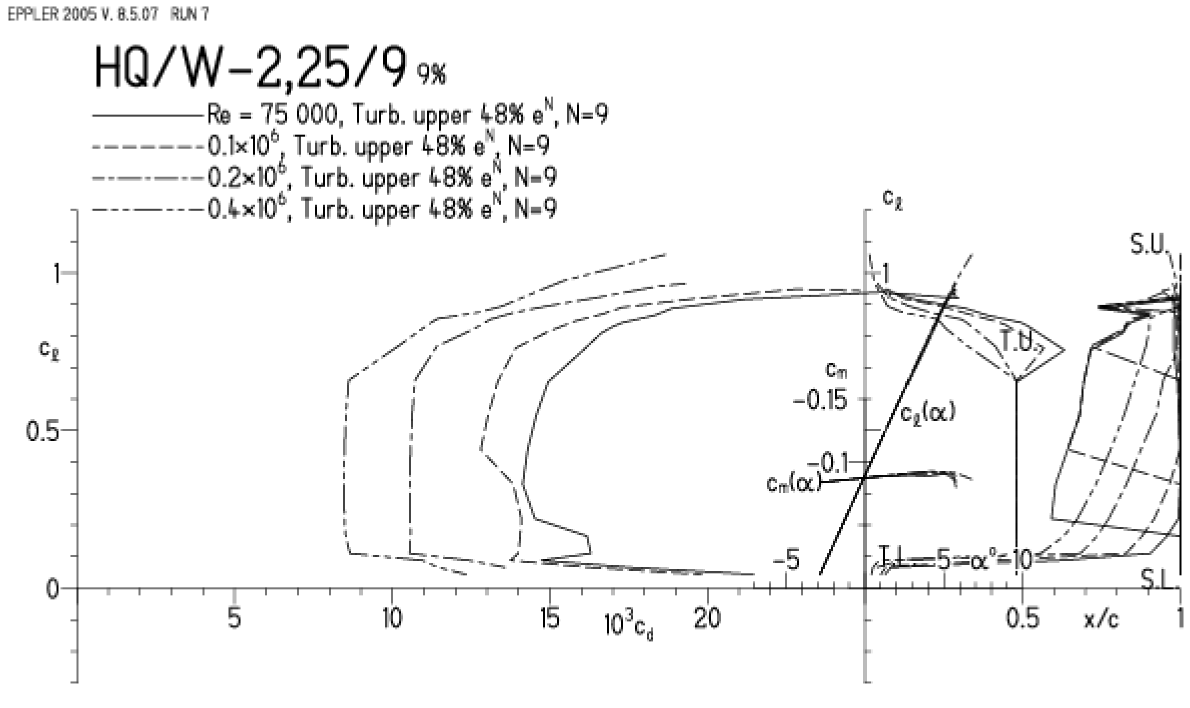


EPPLER 2005 V. 8.



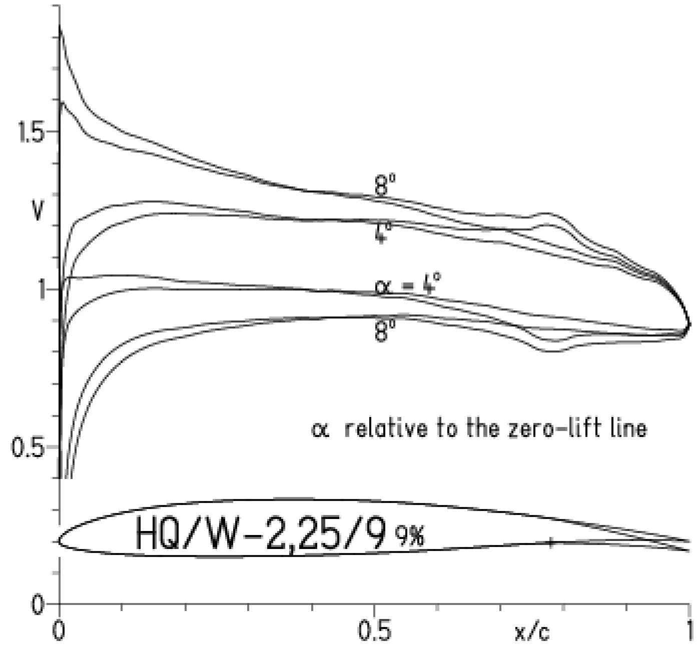
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



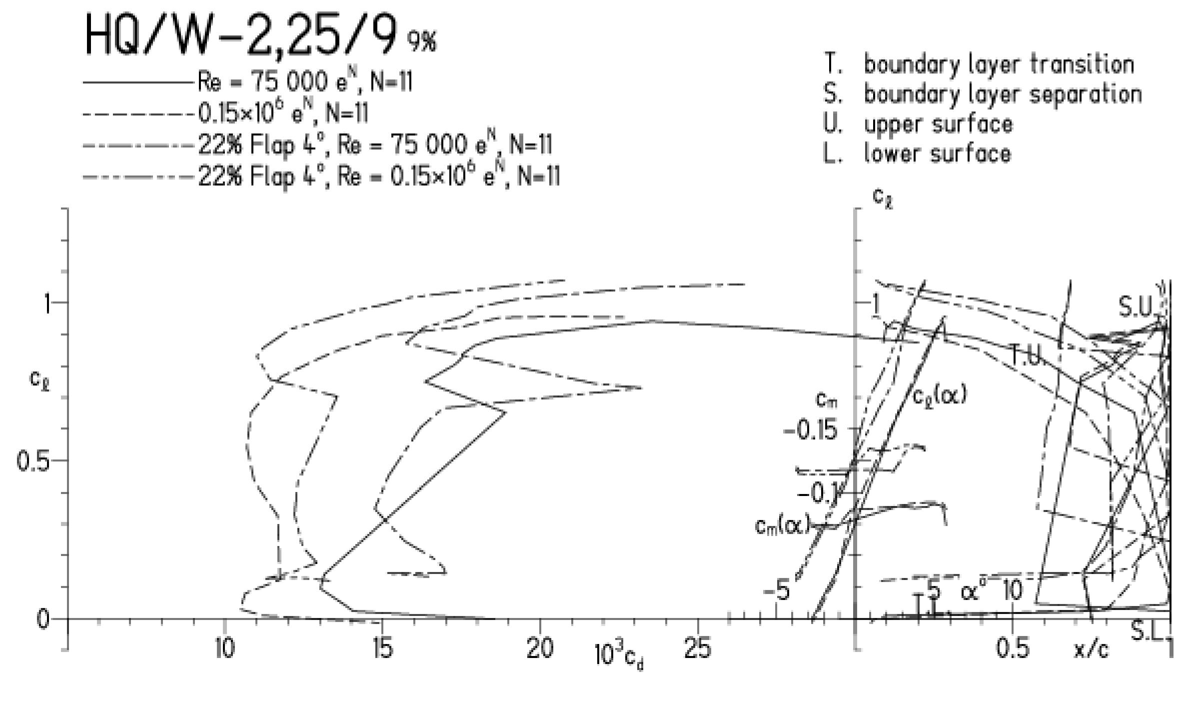


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

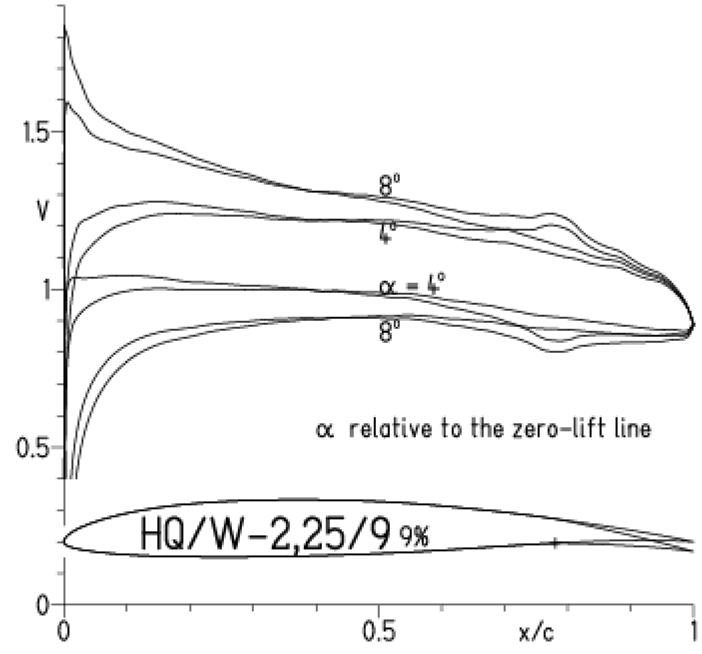


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

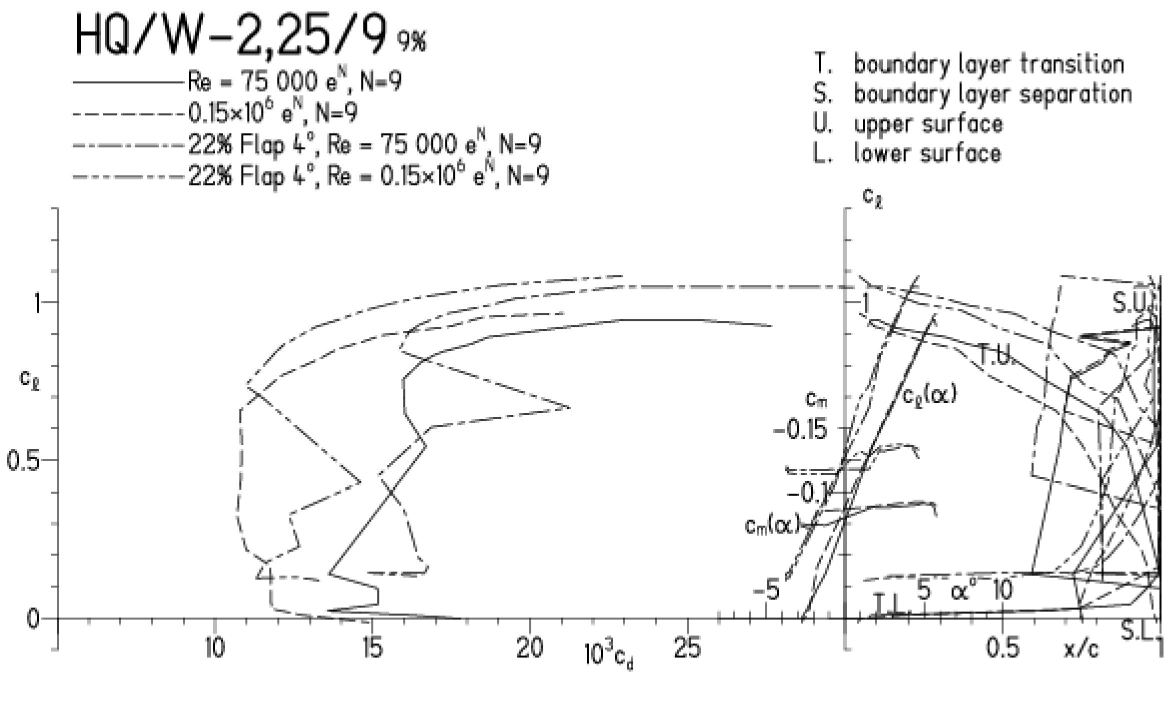


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

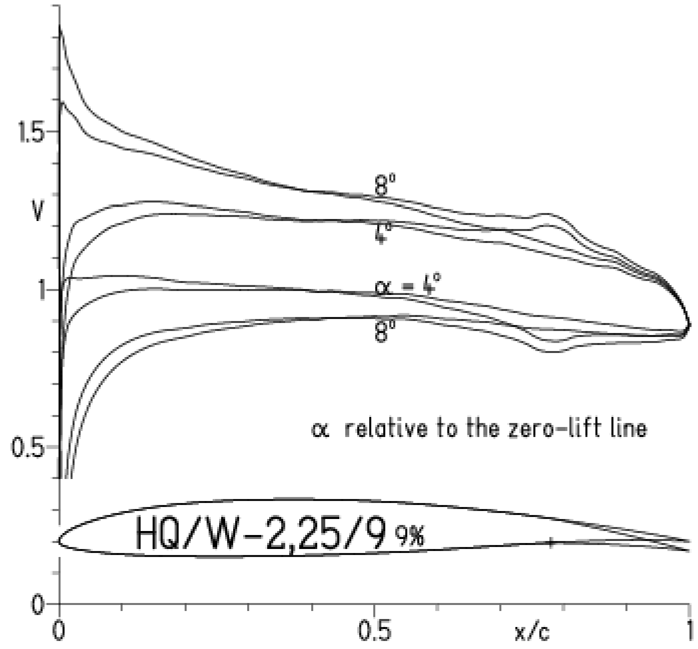


EPPLER 2005 V. 8.5.07 RUN 8.3.1

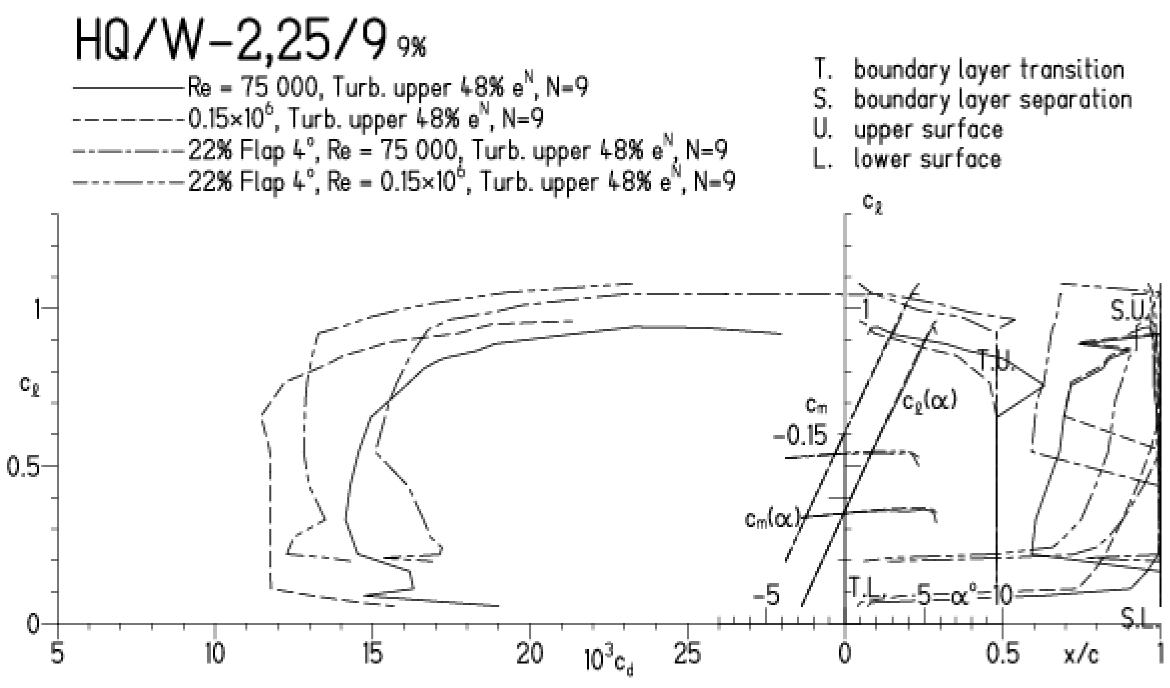


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

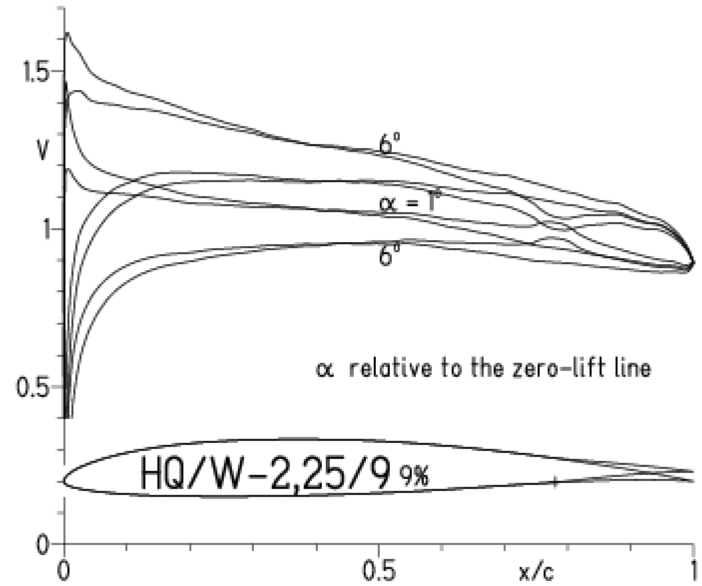


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

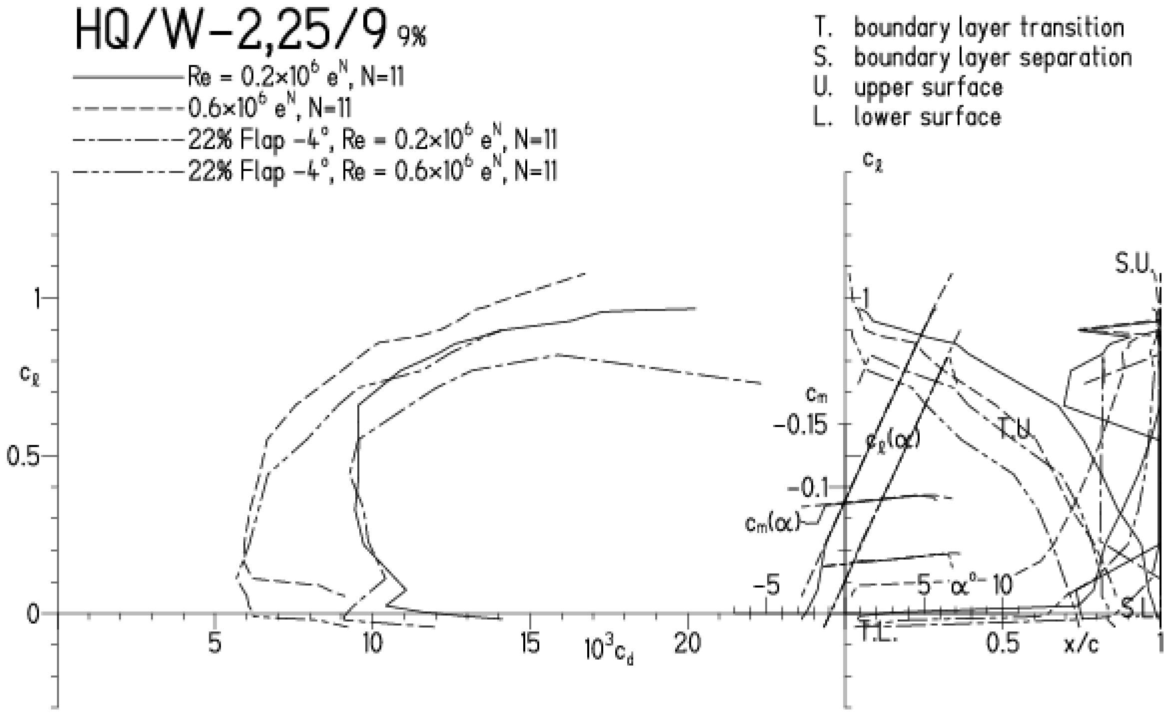


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

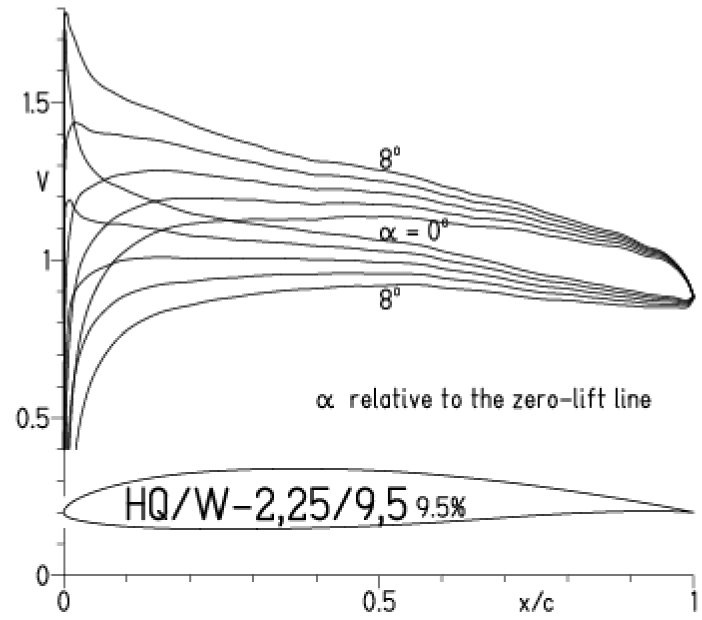


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

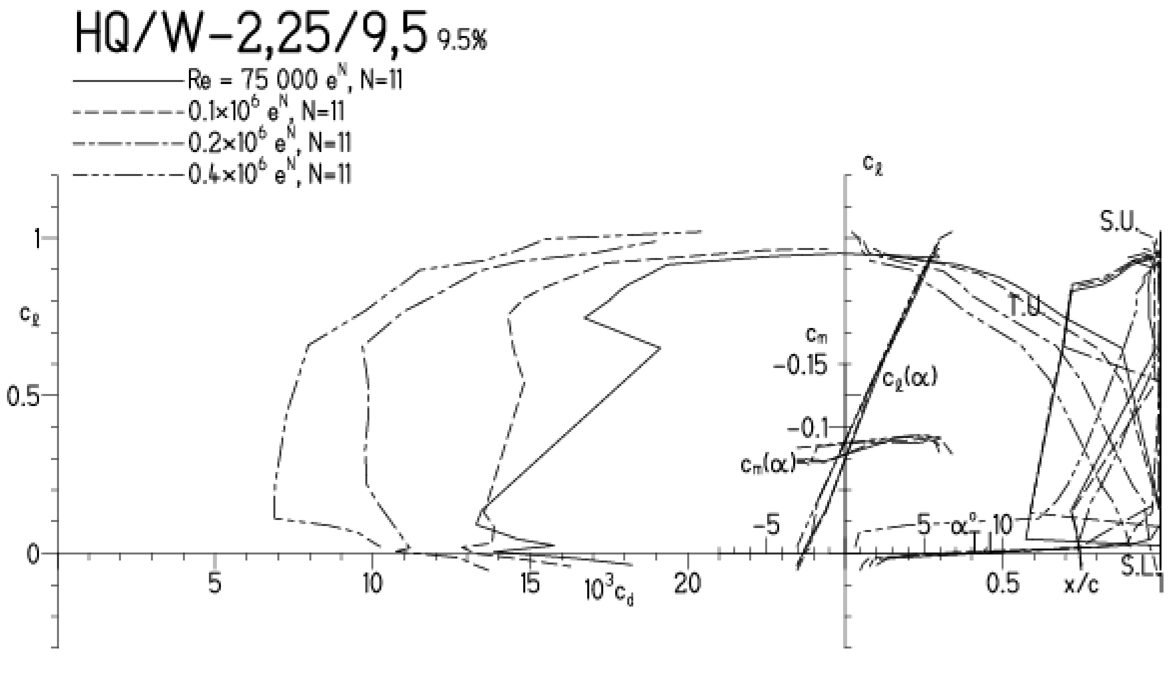


HQ/W-2,25/9,5, N=11

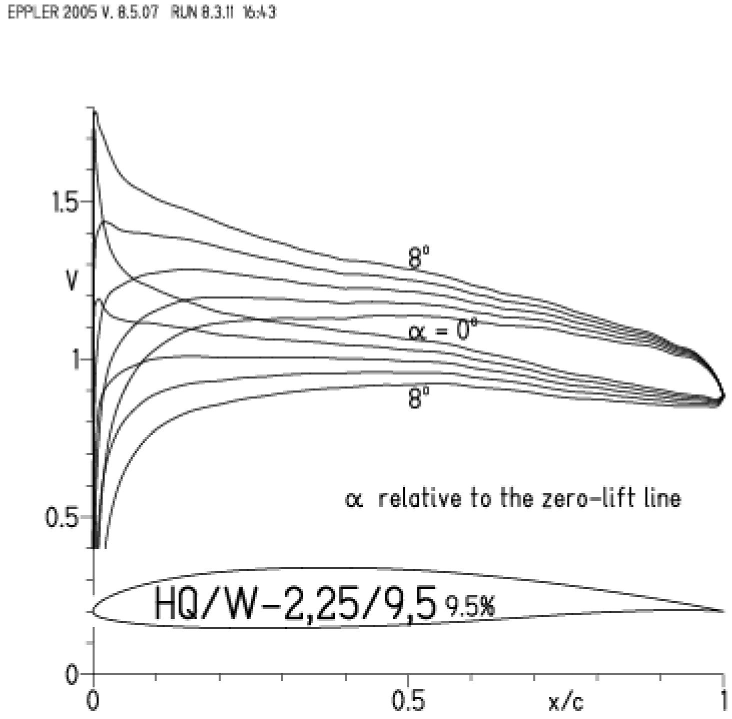
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

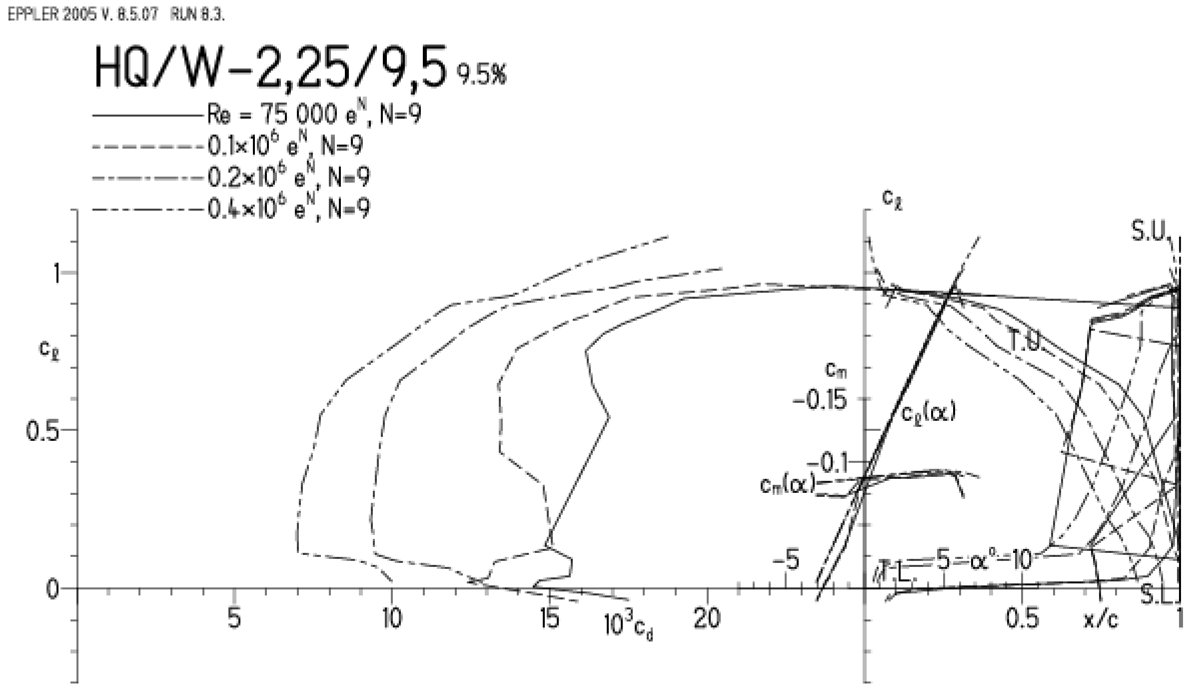


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



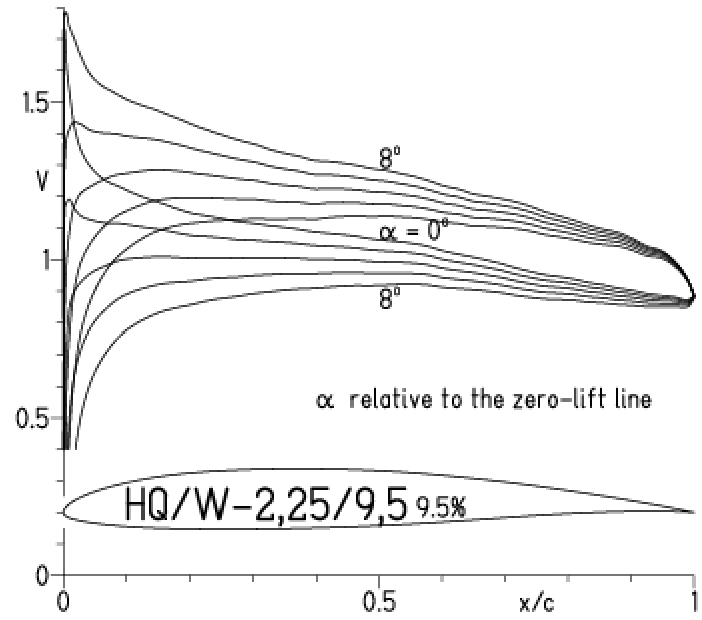
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

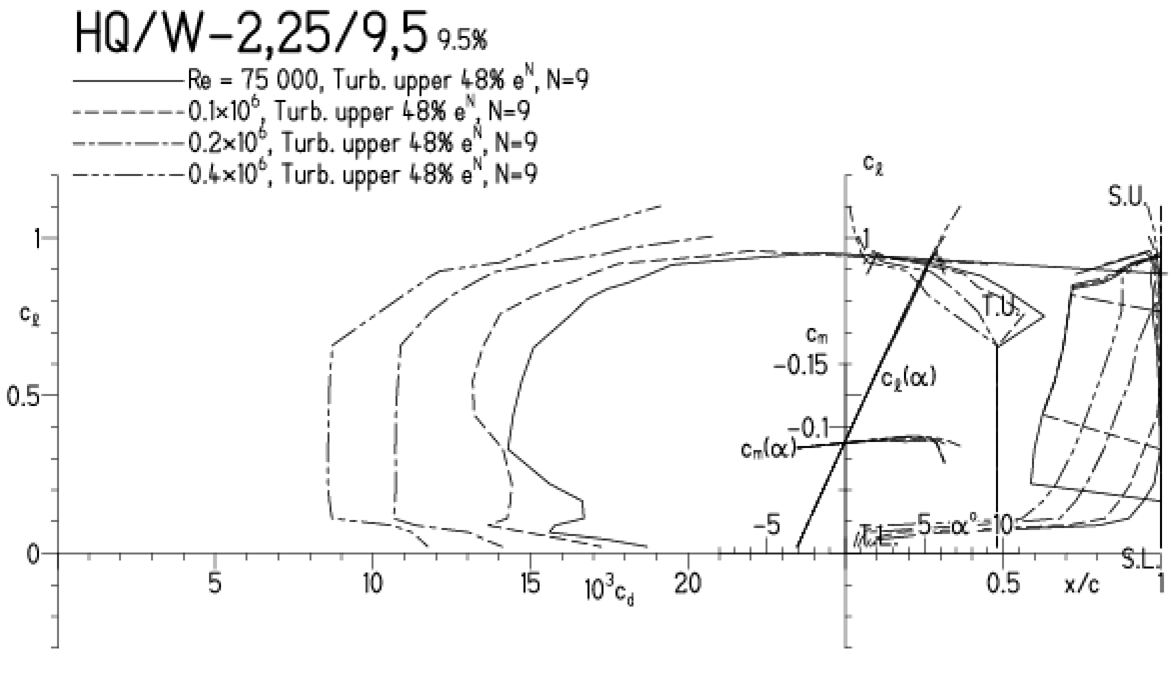

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

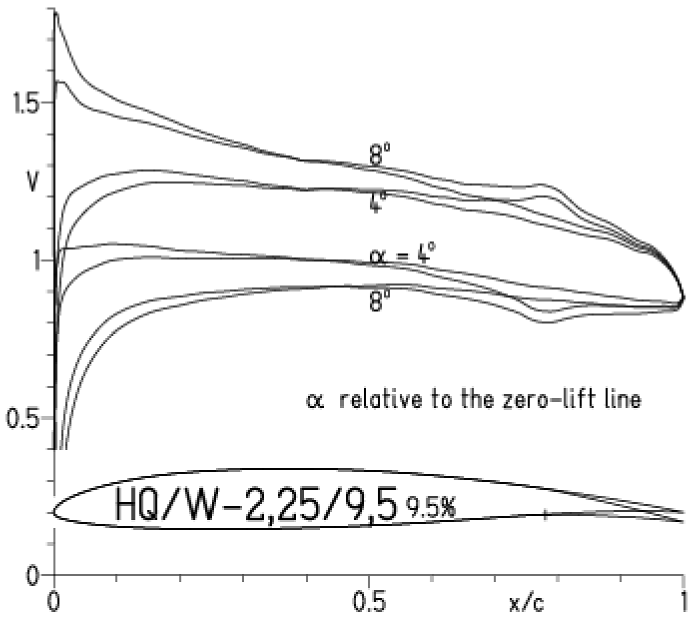


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

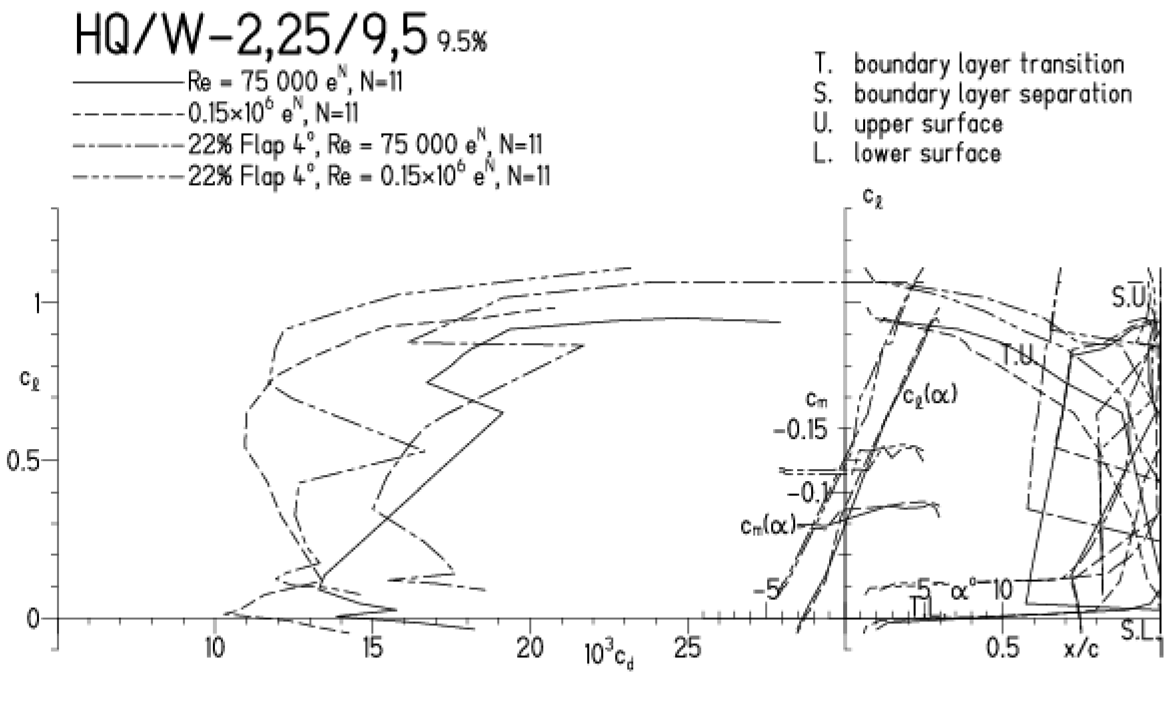


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

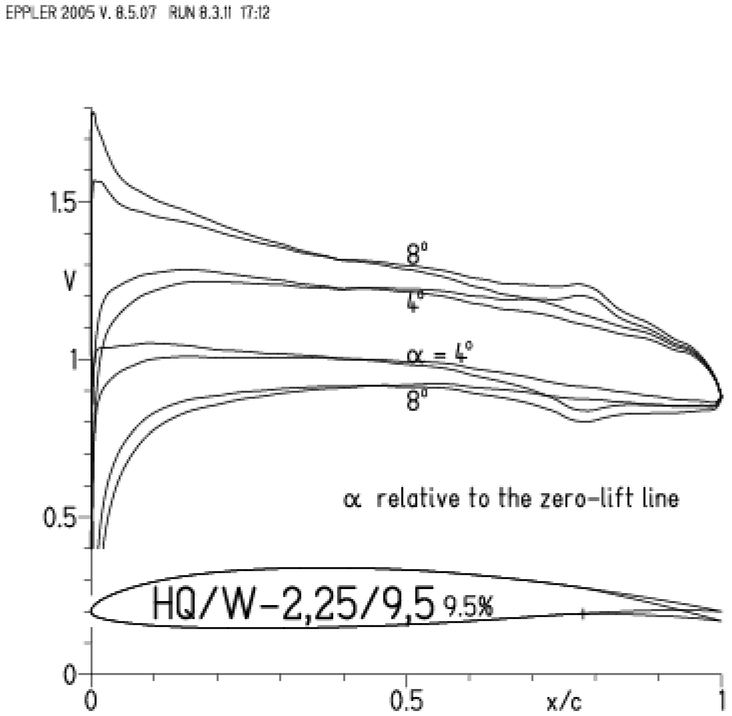
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

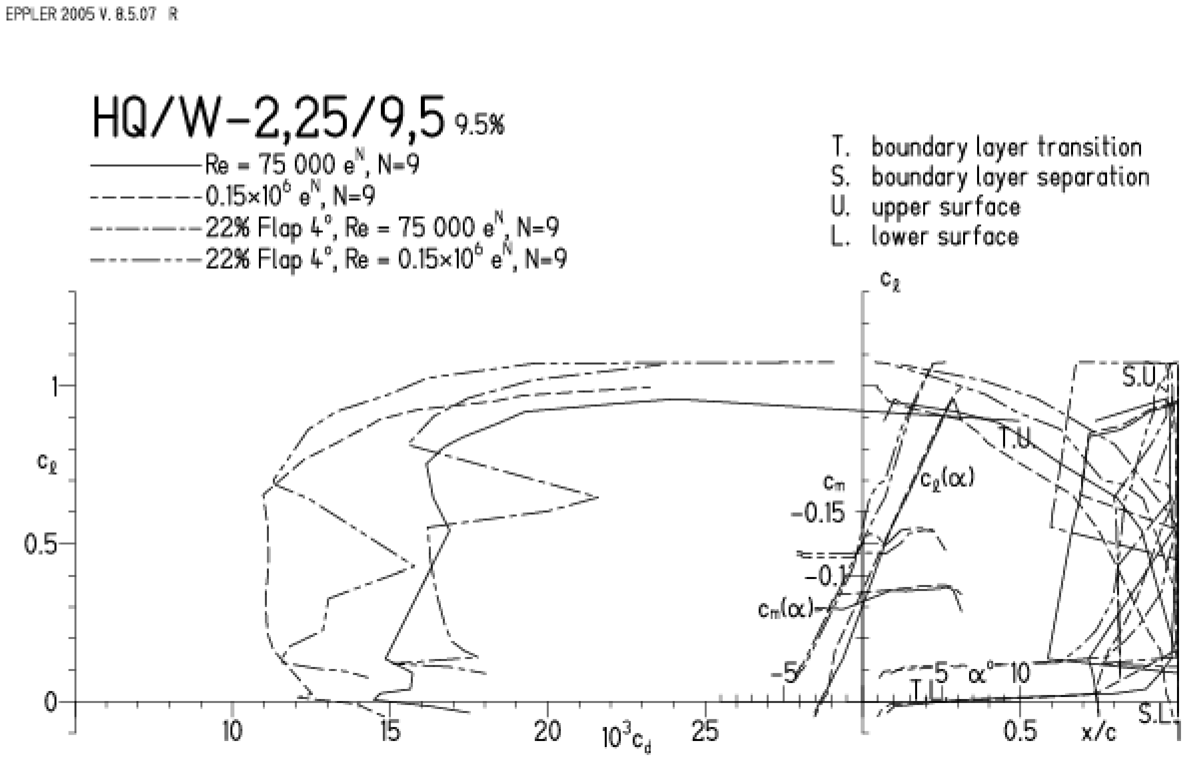


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



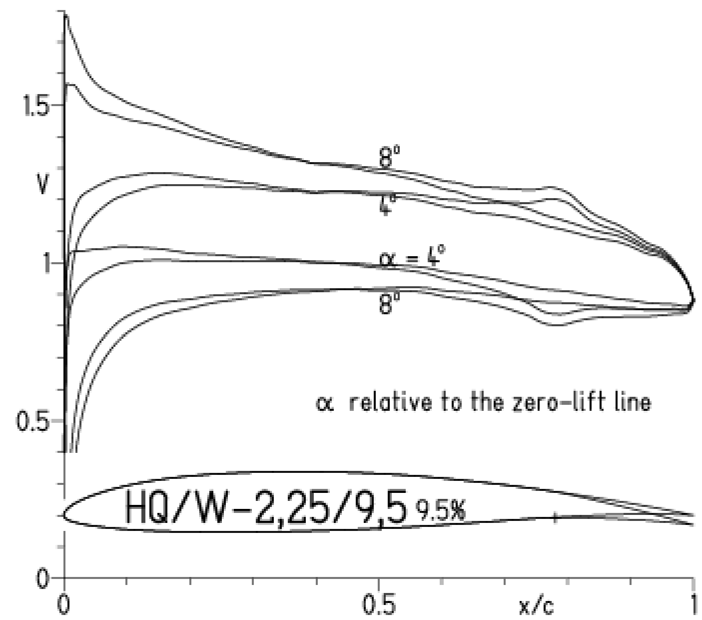
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



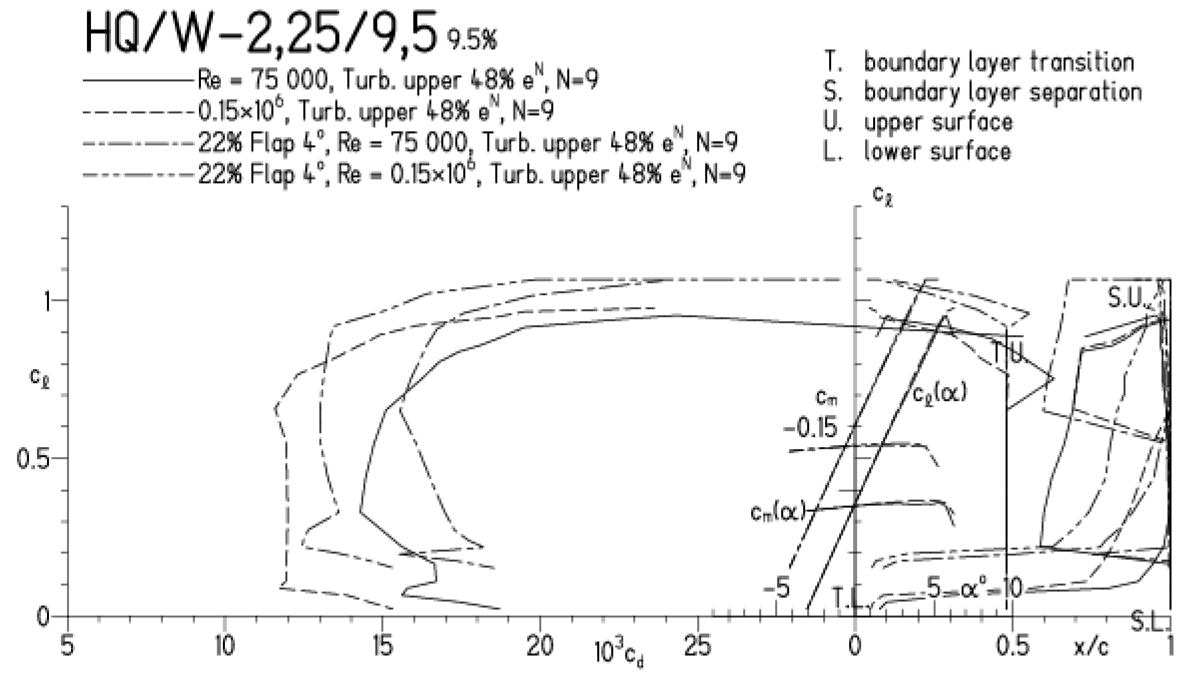


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

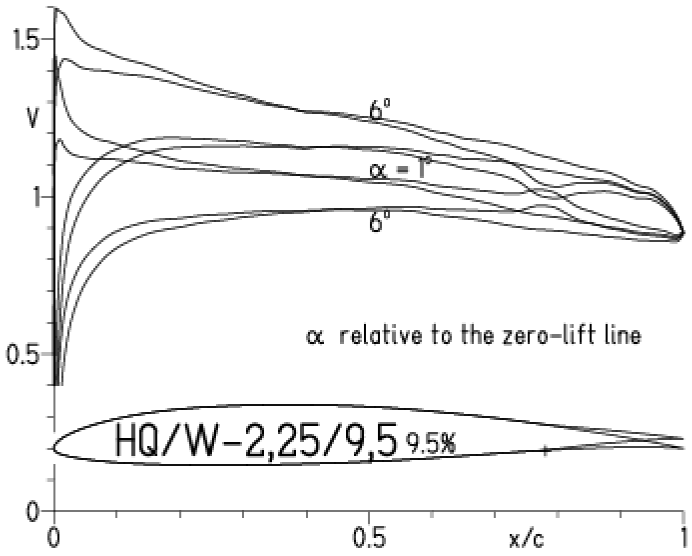


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

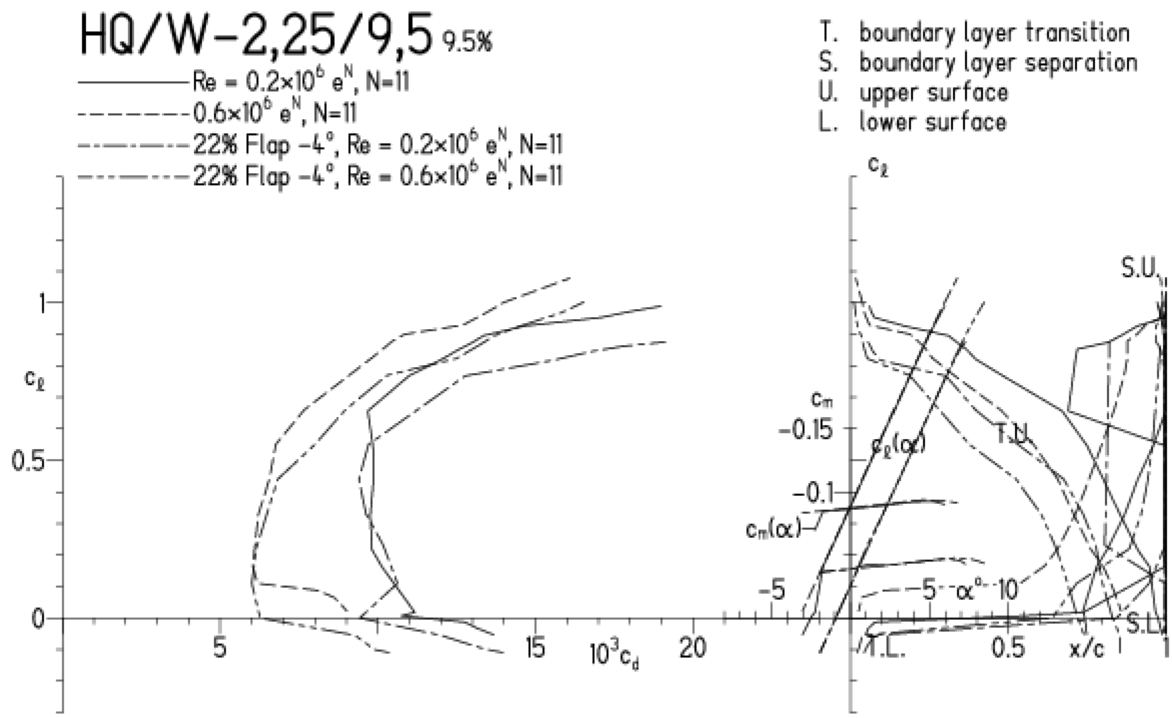


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

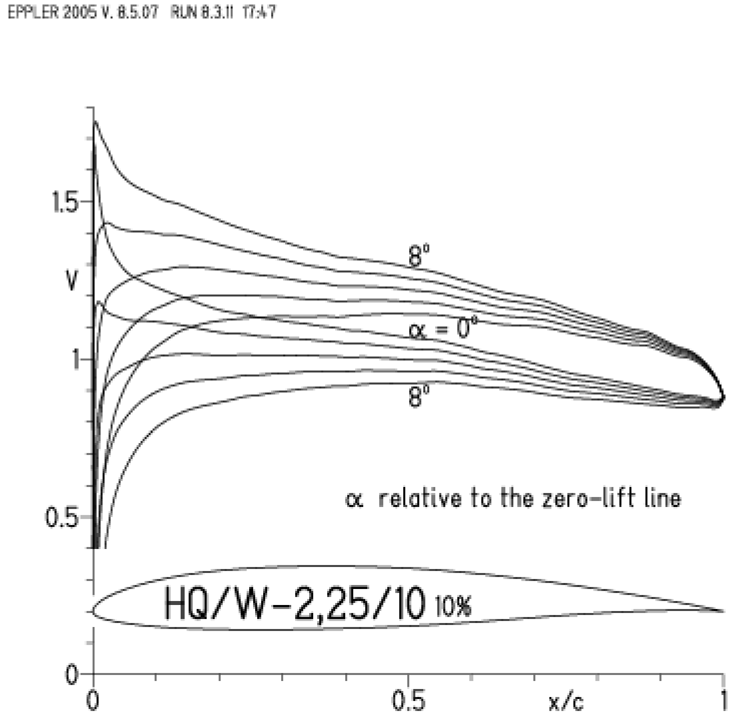
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

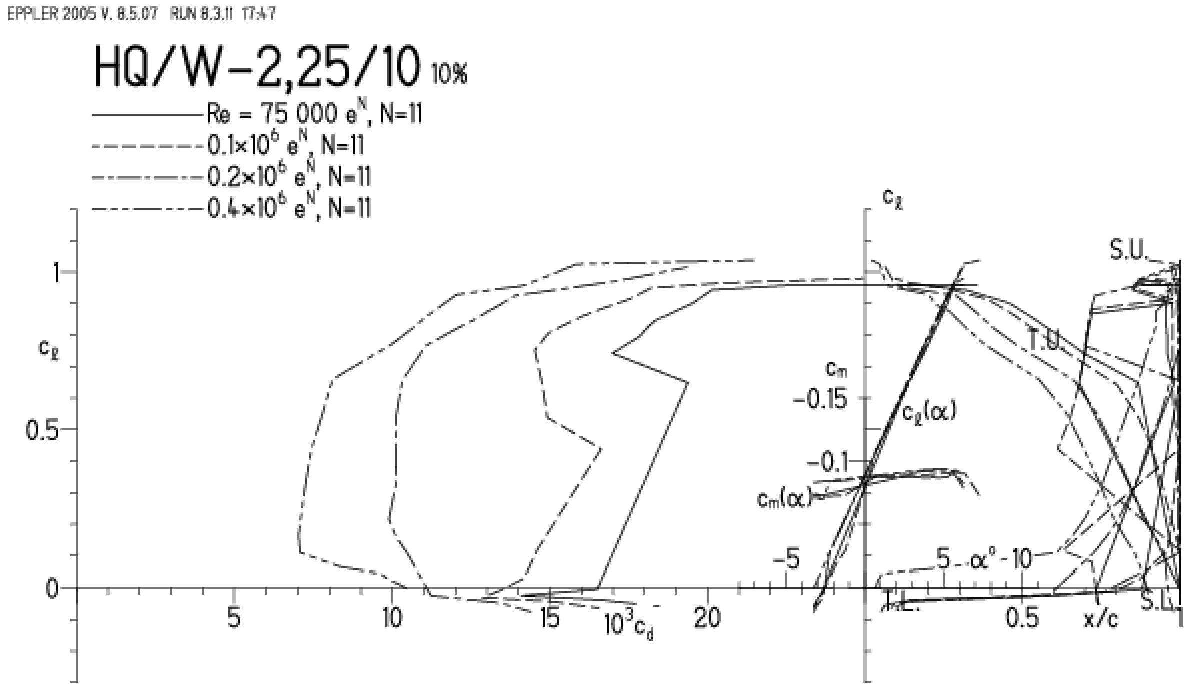


EPPLER 2005 V.



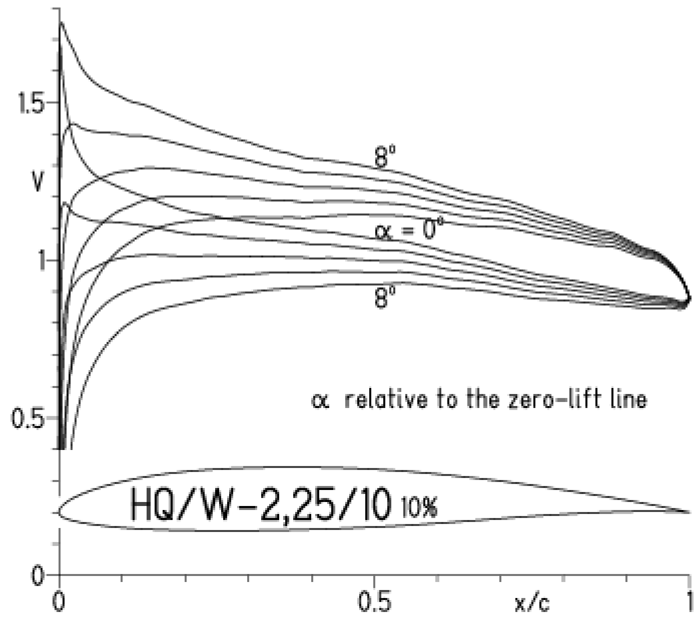
HQ/W-2,25/10, N=11



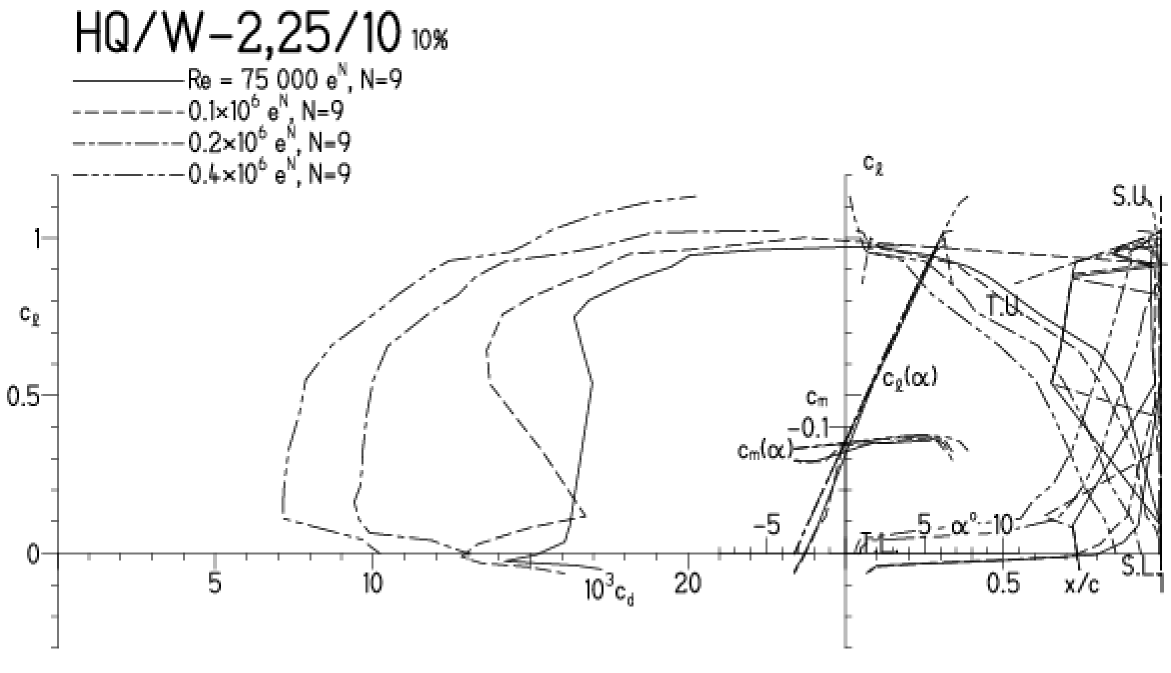


<u>HQ/W-2,25/10</u>, N=9

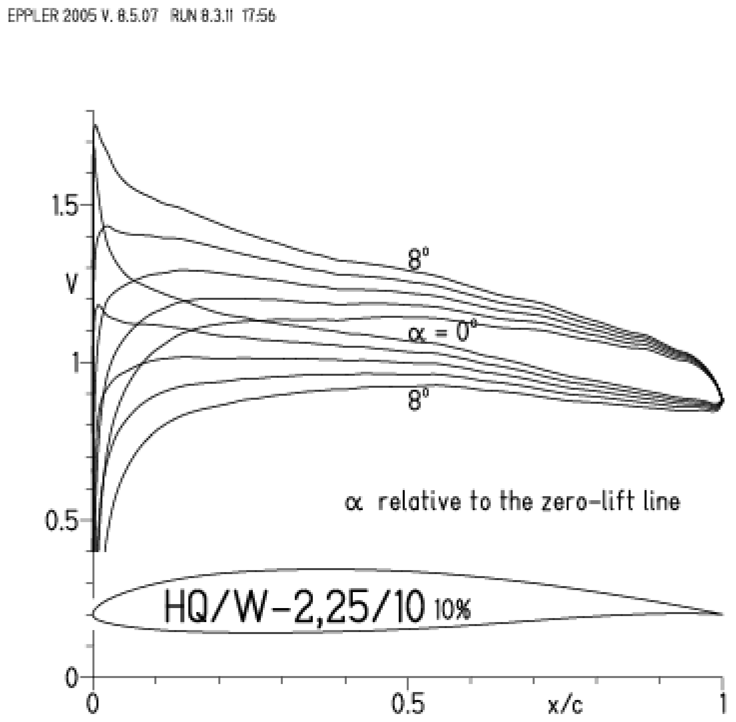
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

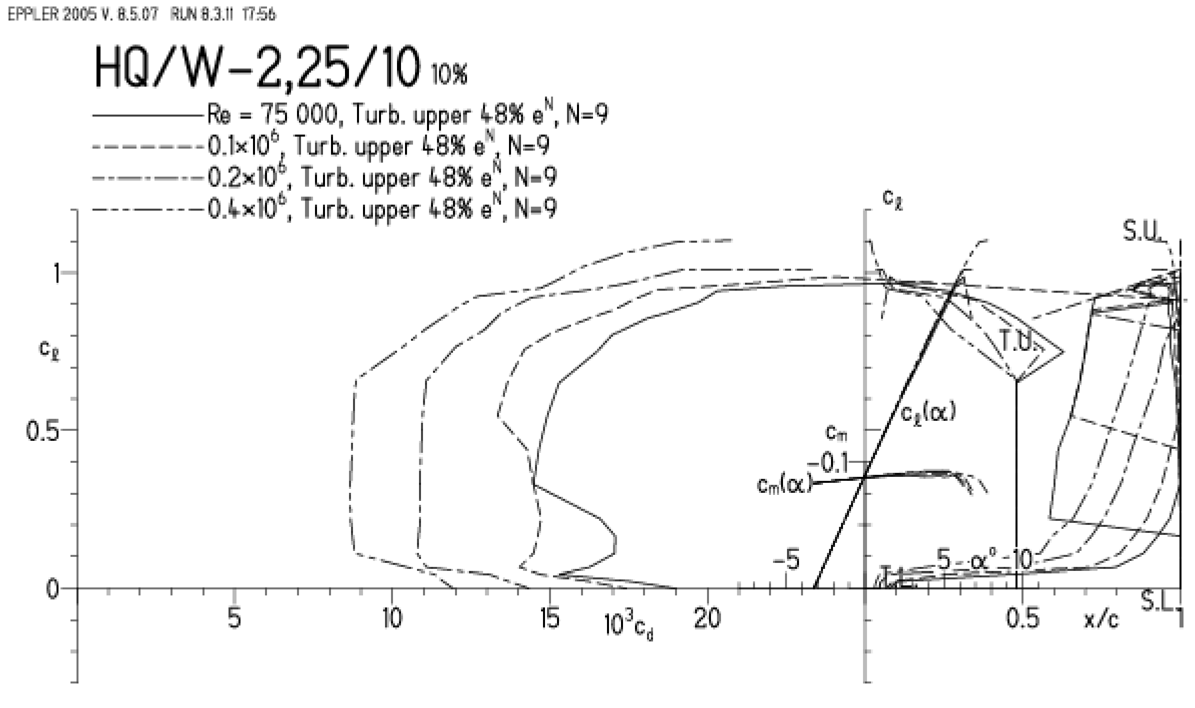


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



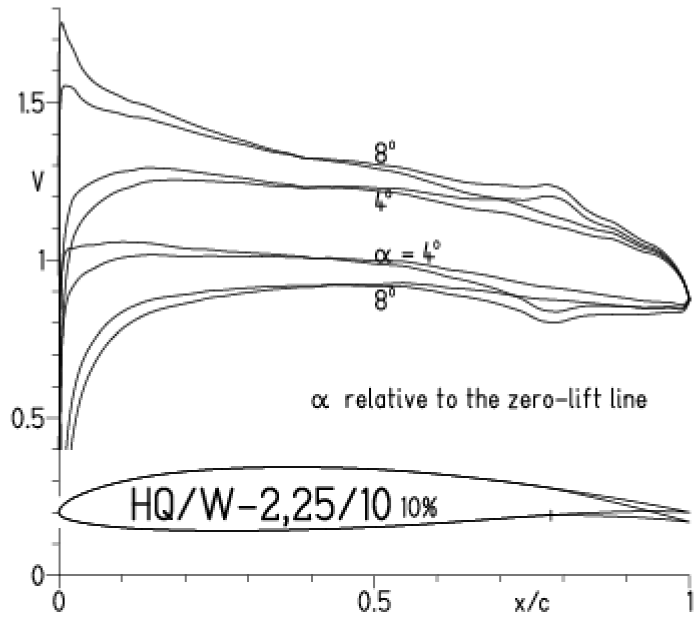
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



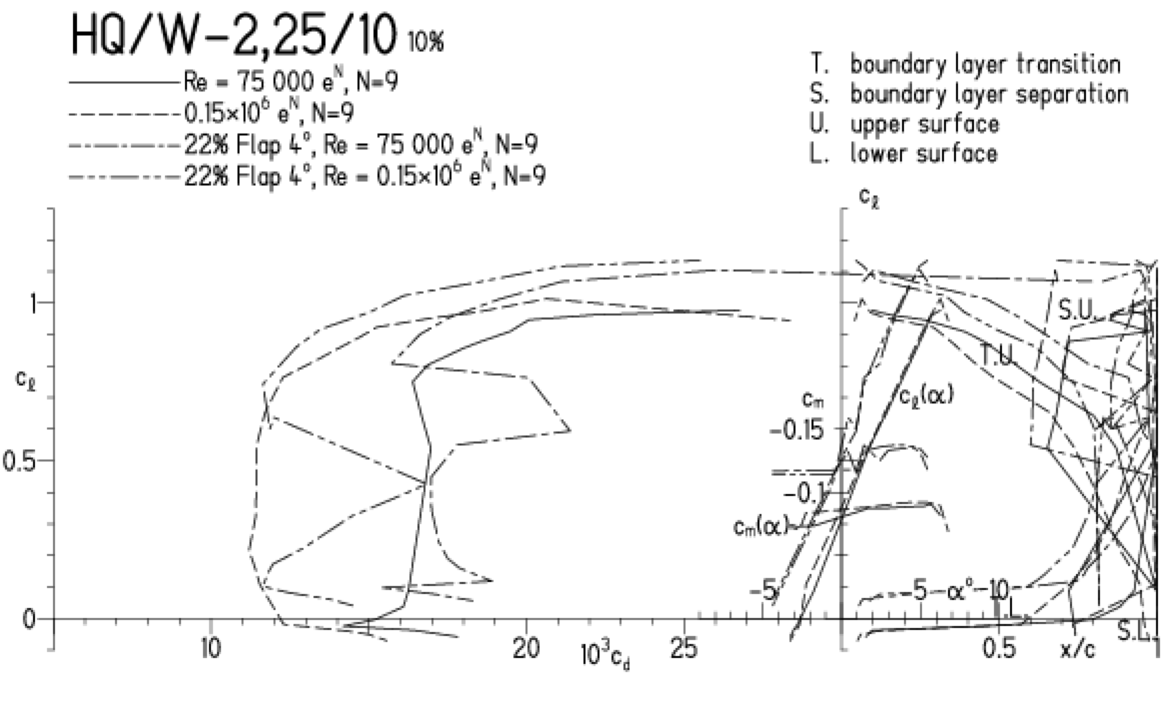


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

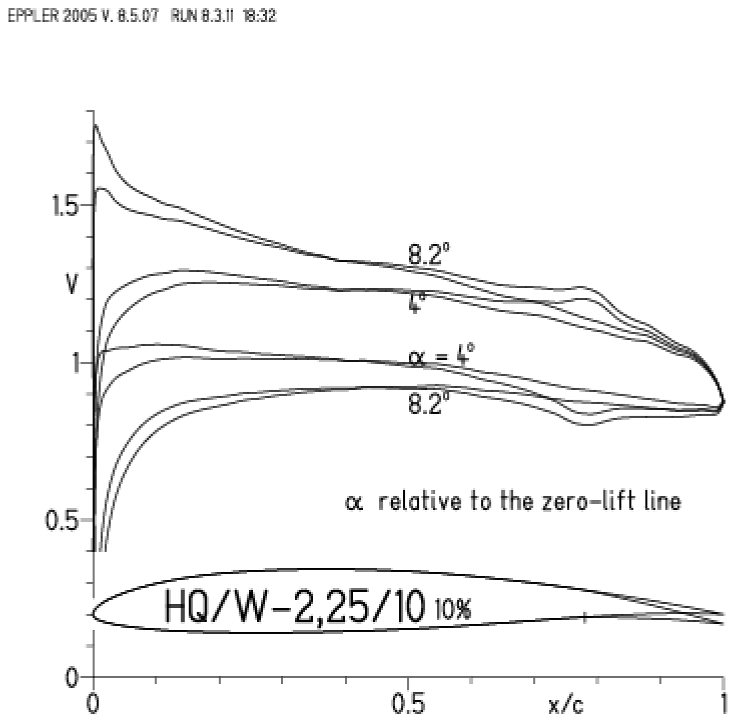
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

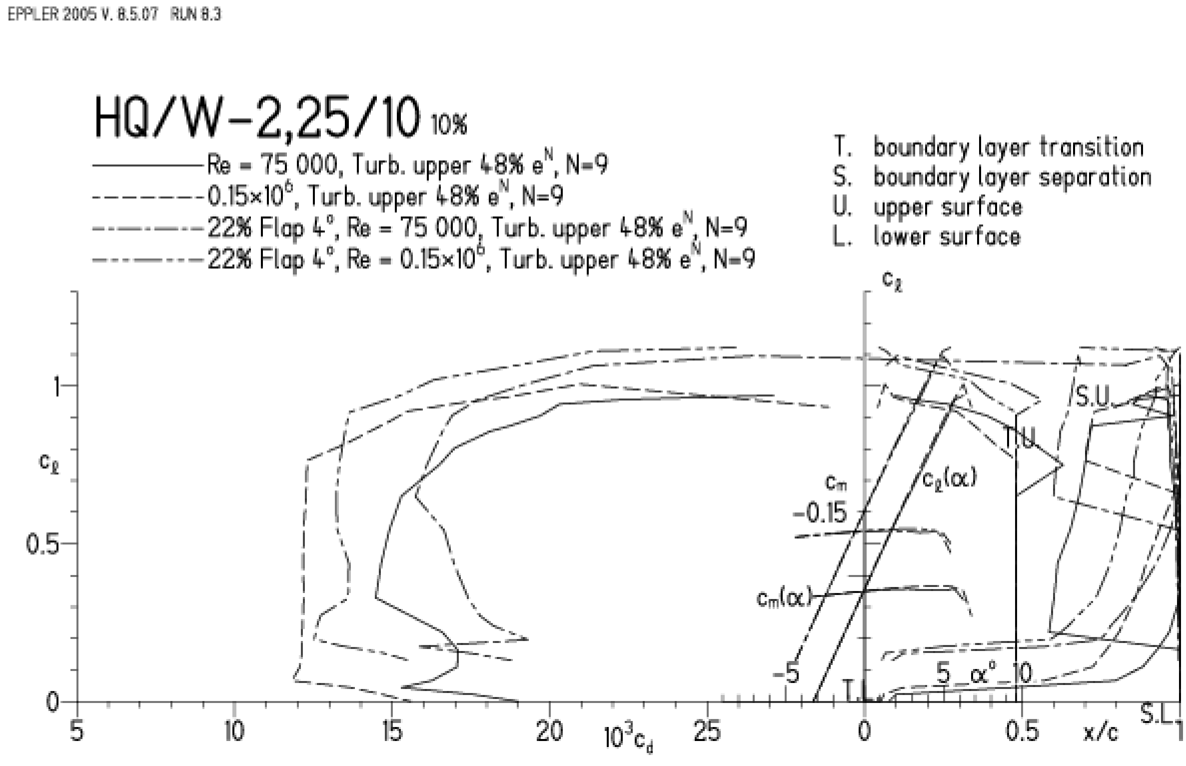


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



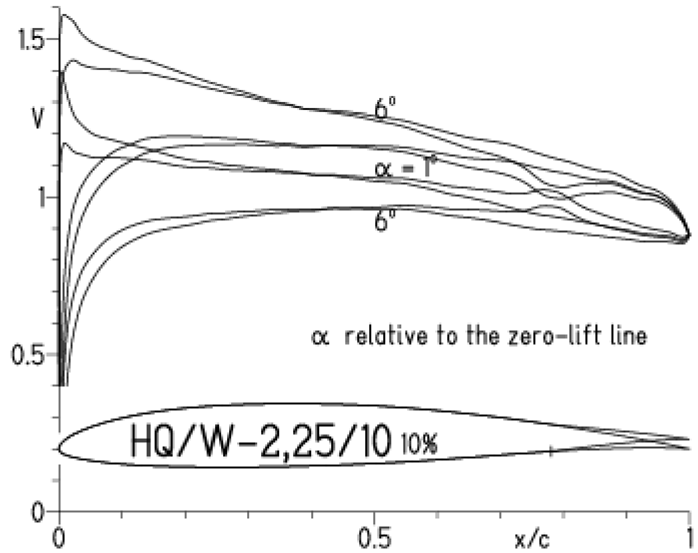
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



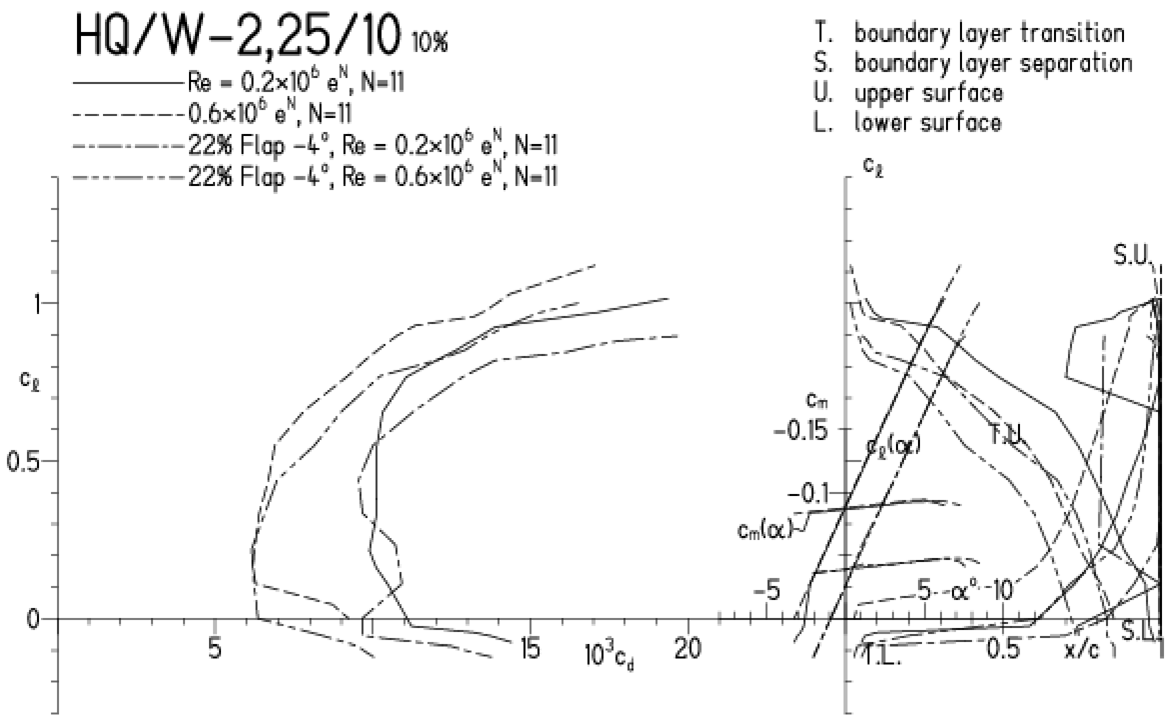


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

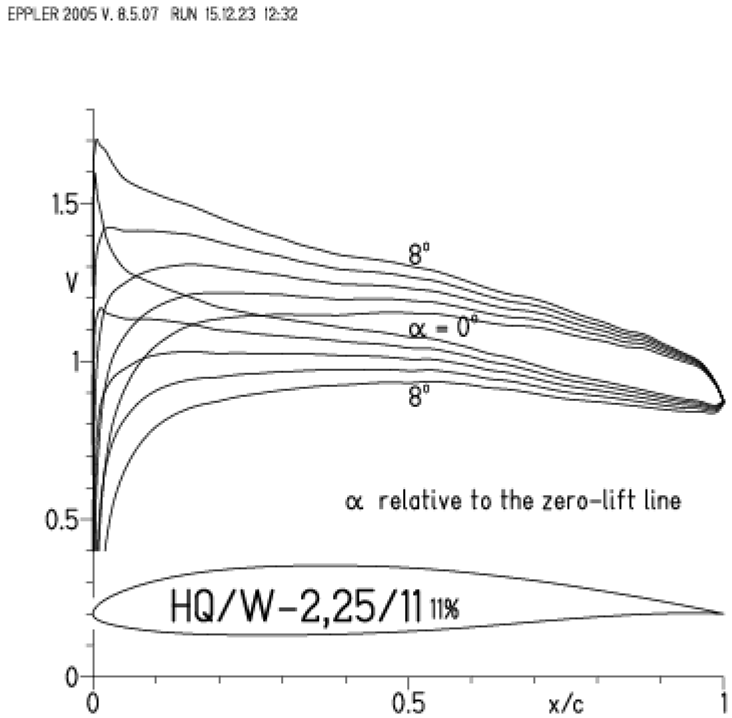
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

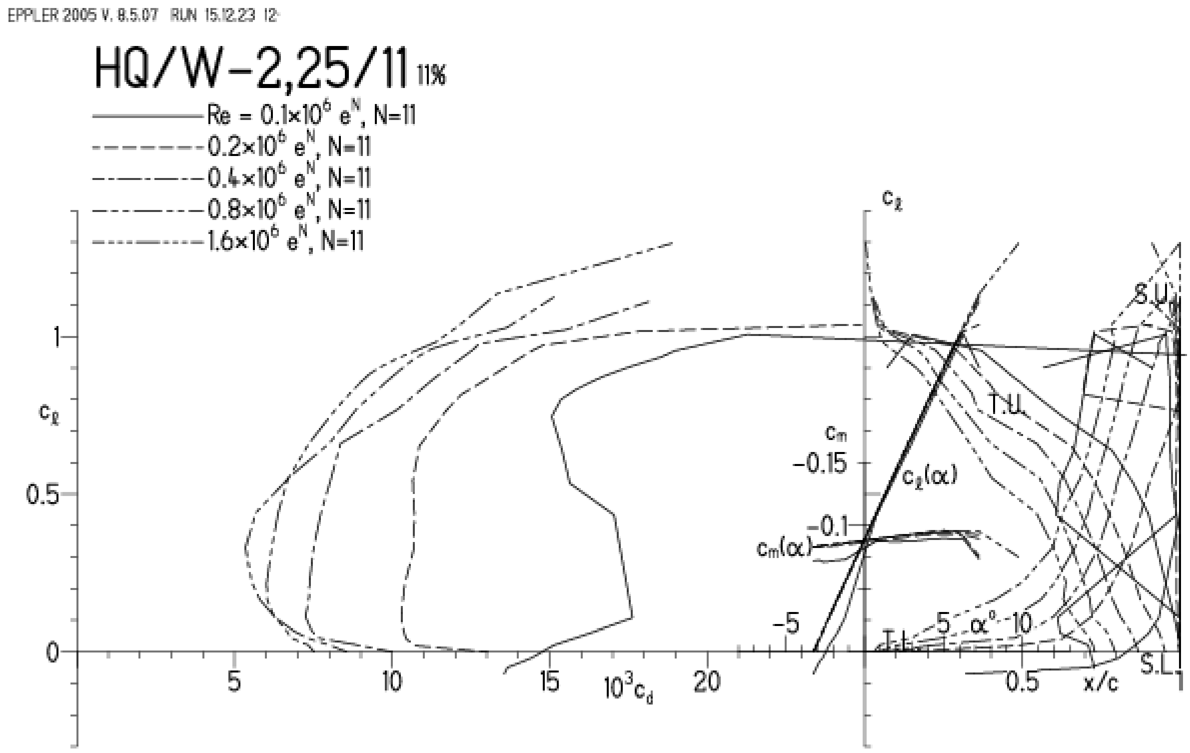


EPPLER 2005 V. 8.5.07 RUN



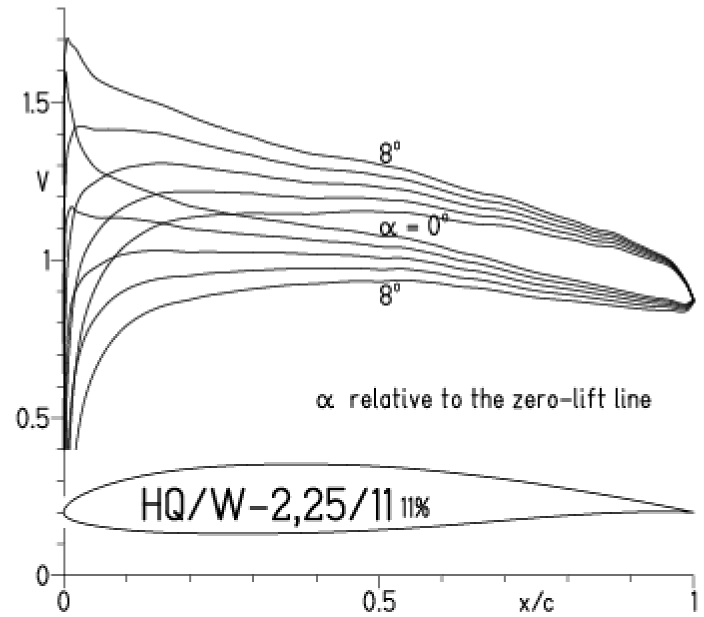
<u>HQ/W-2,25/11</u>, N=11



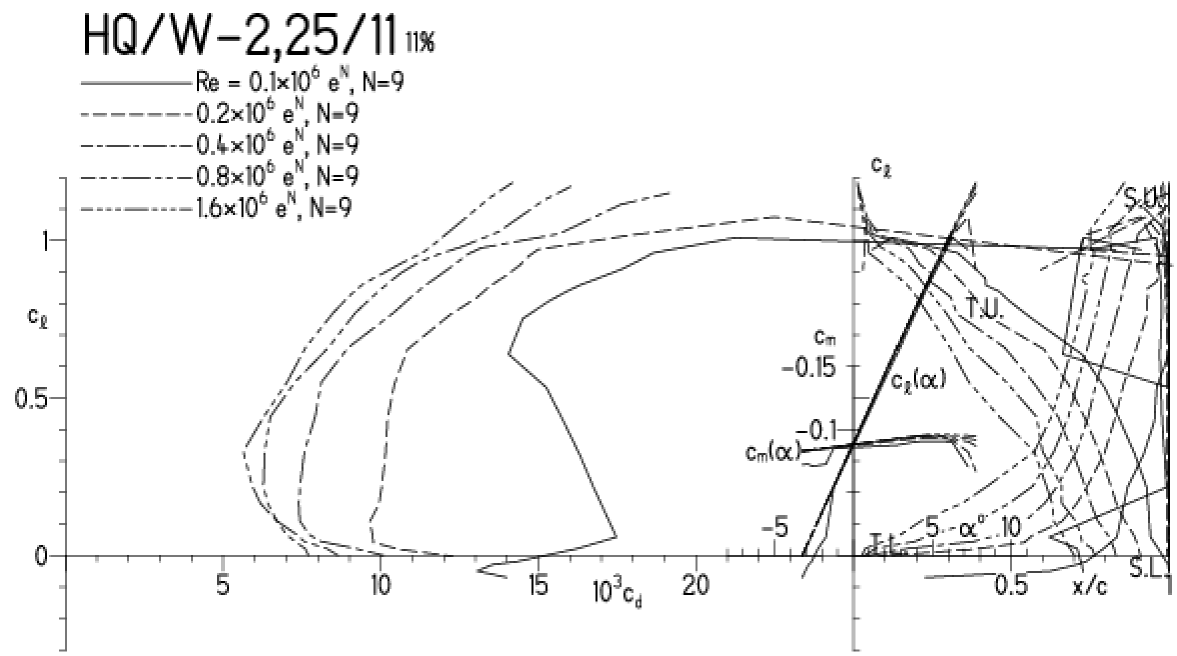


HQQ/W-2,25/11, N=9

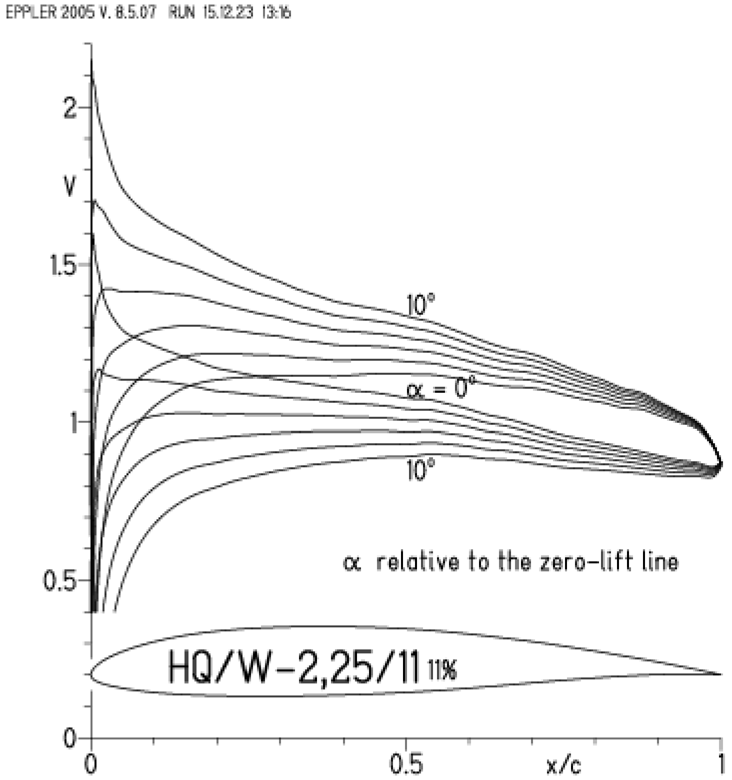
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

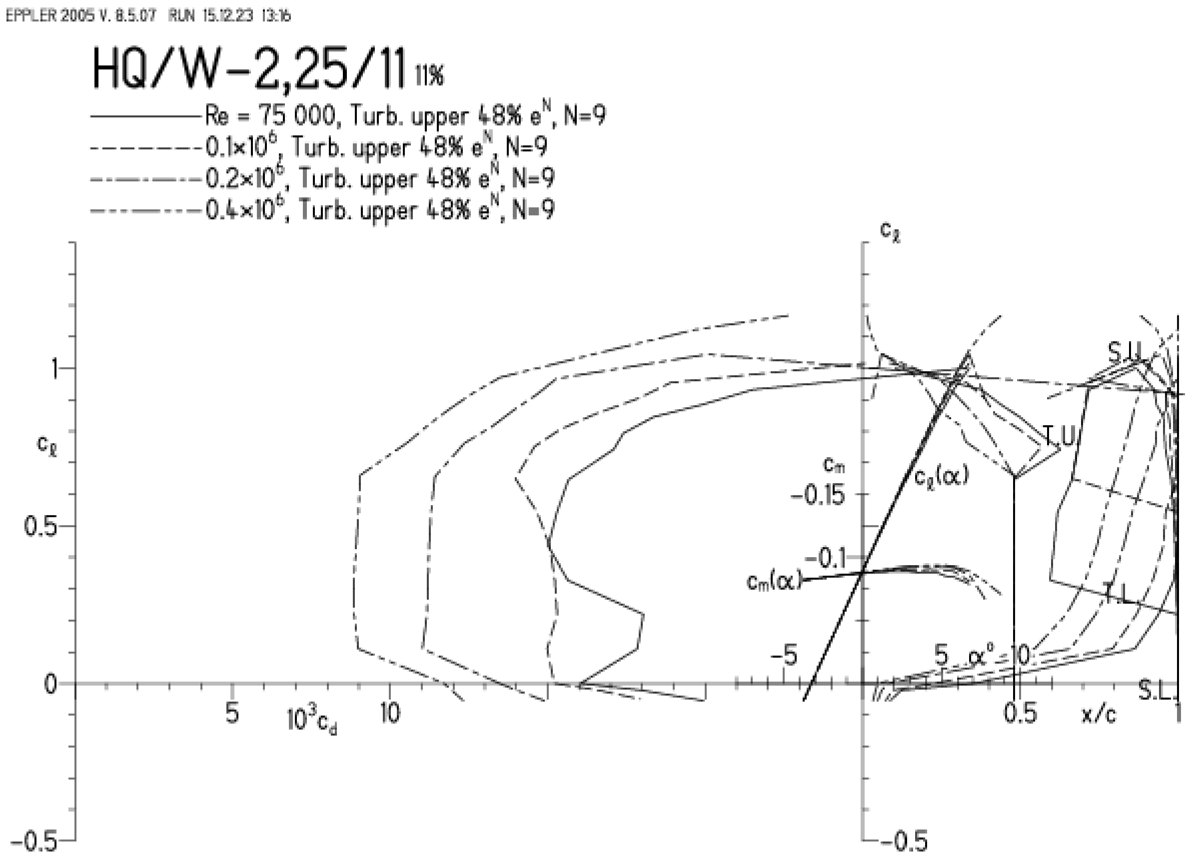


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



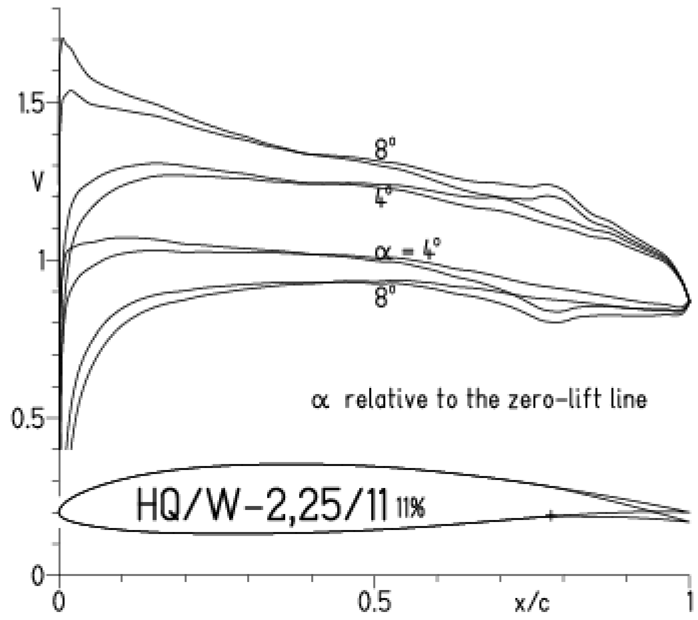
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



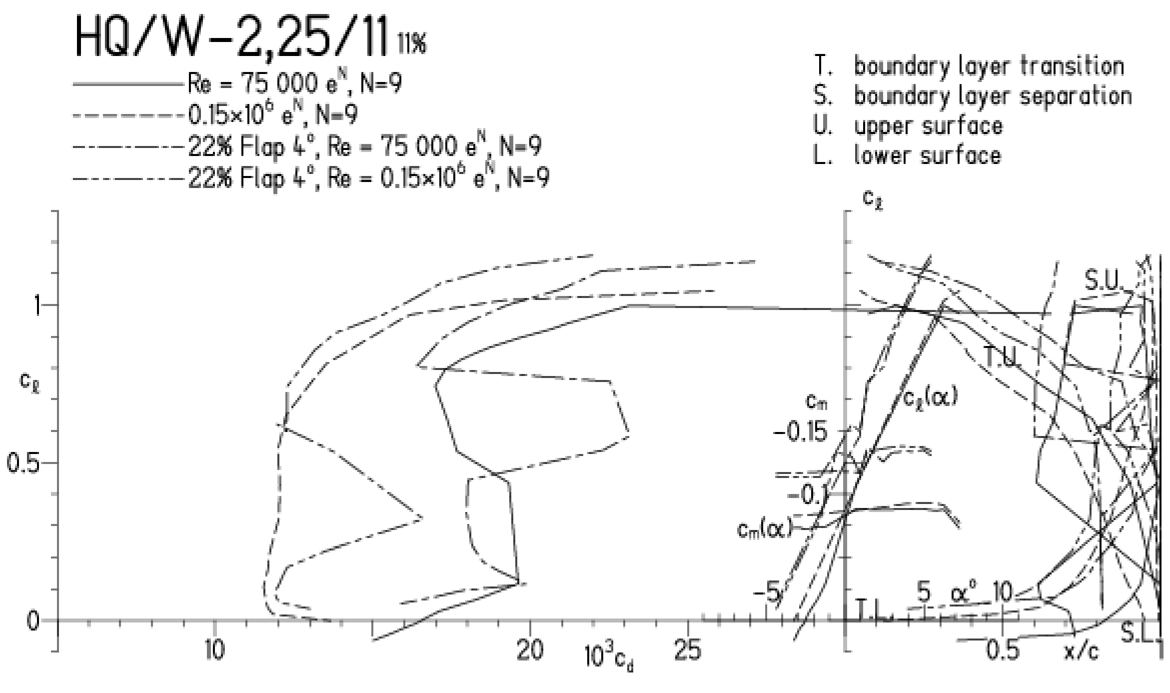


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

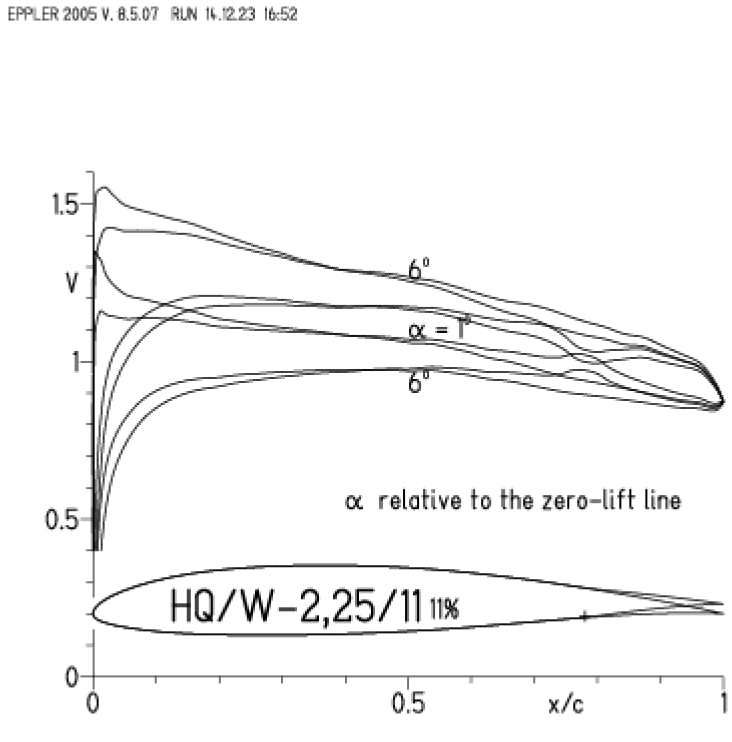
EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

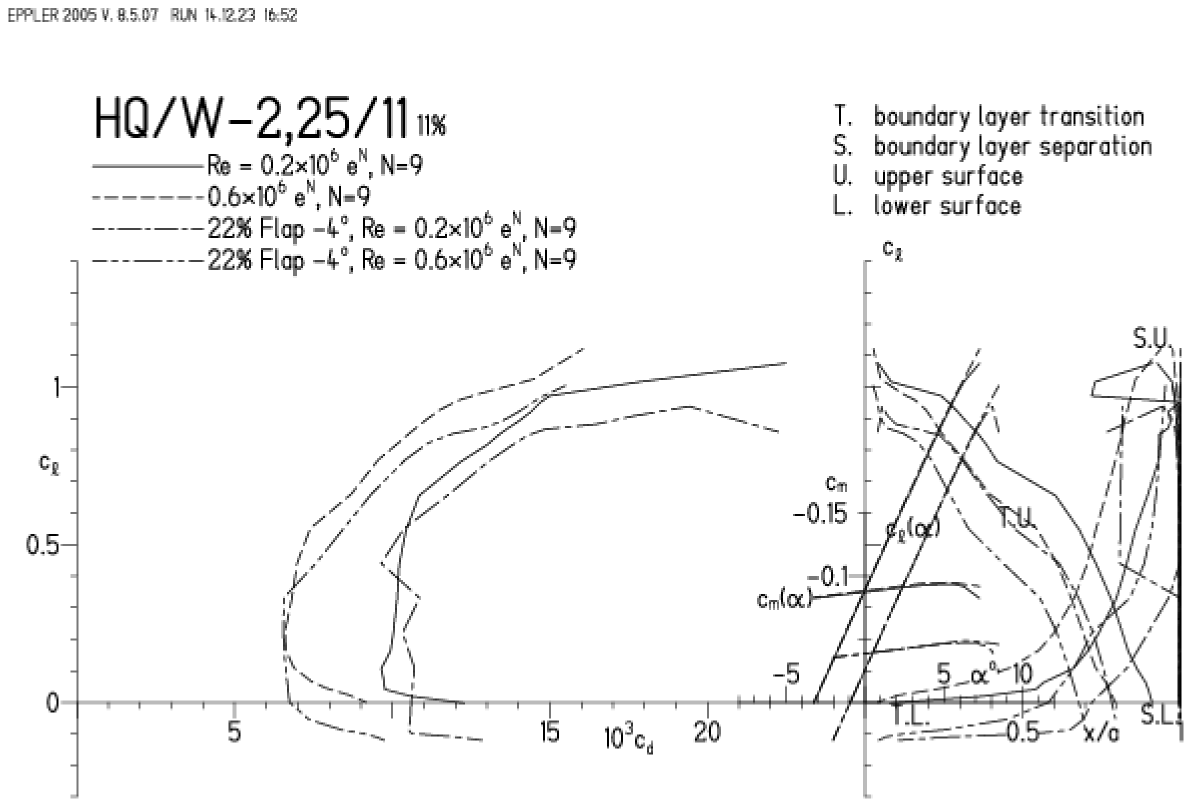


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

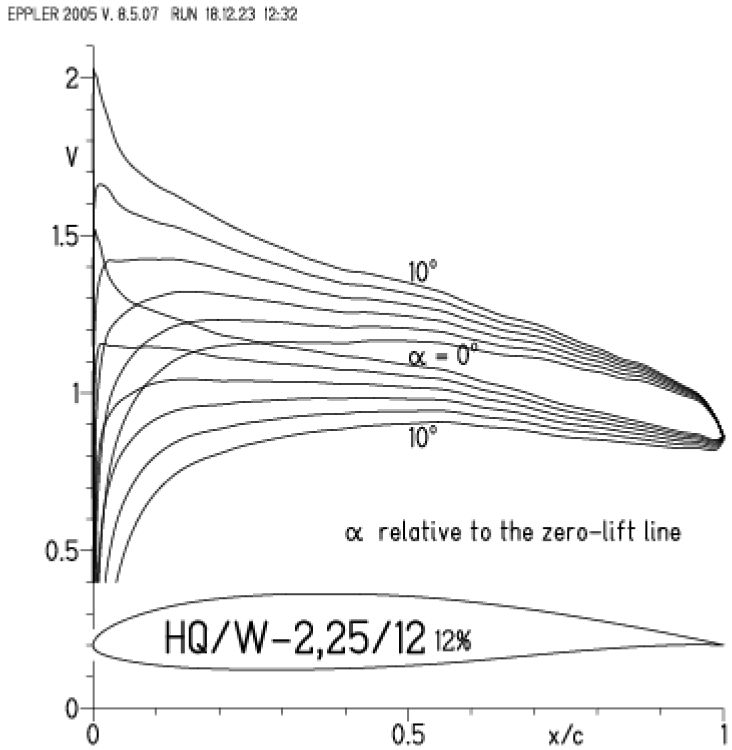


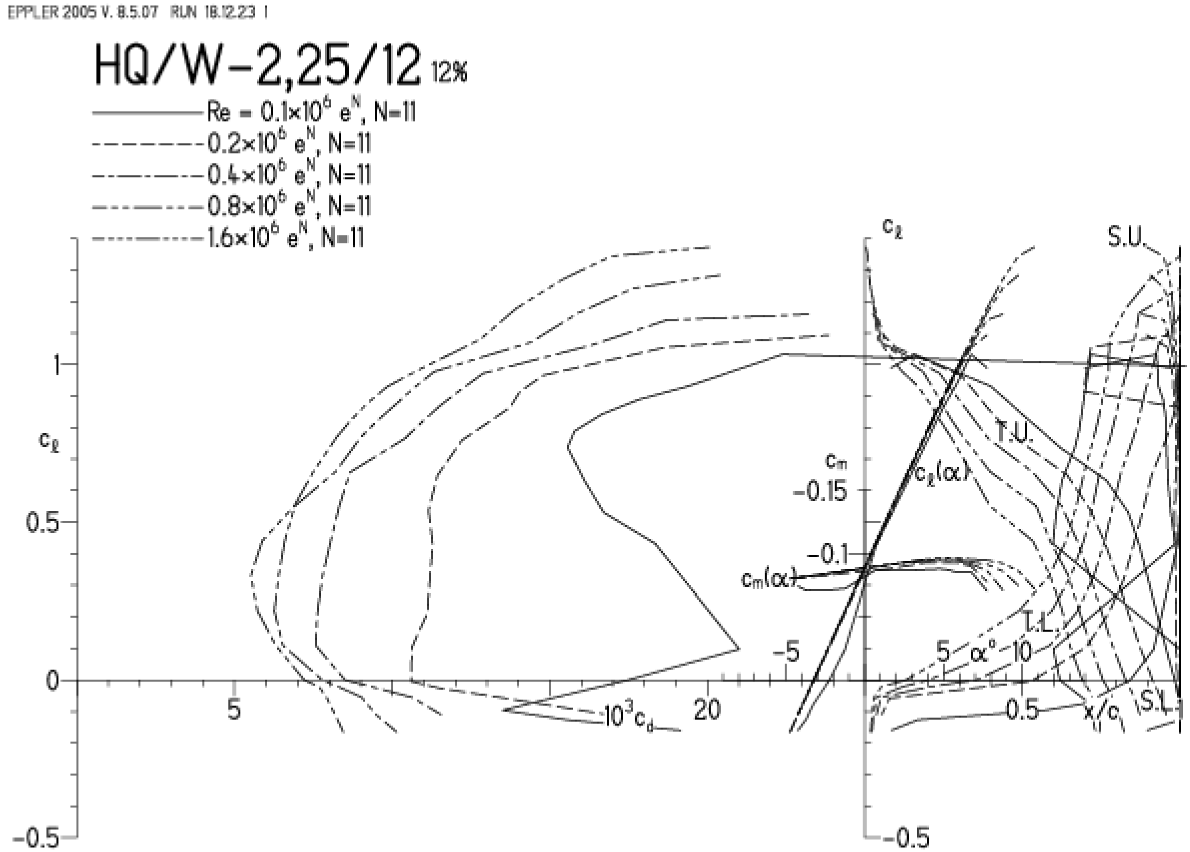
HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag



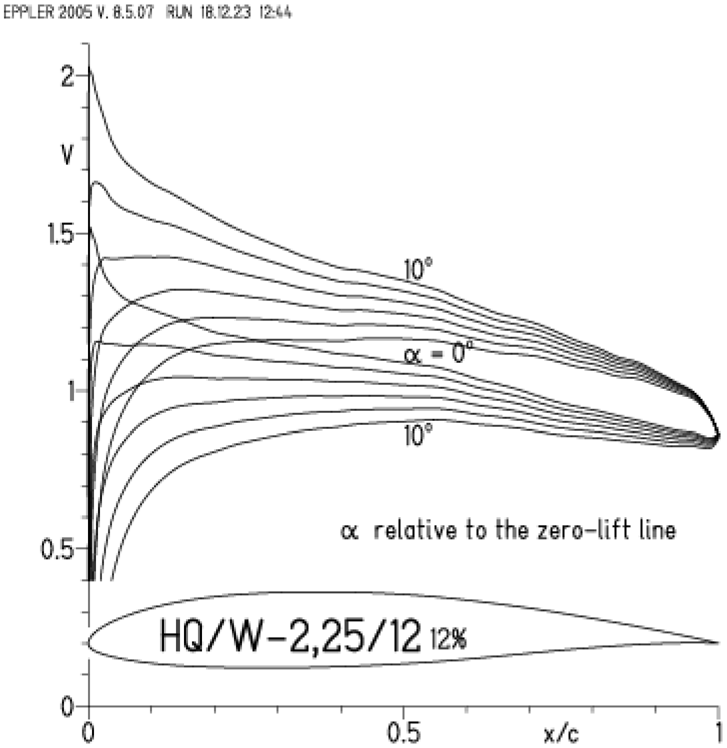


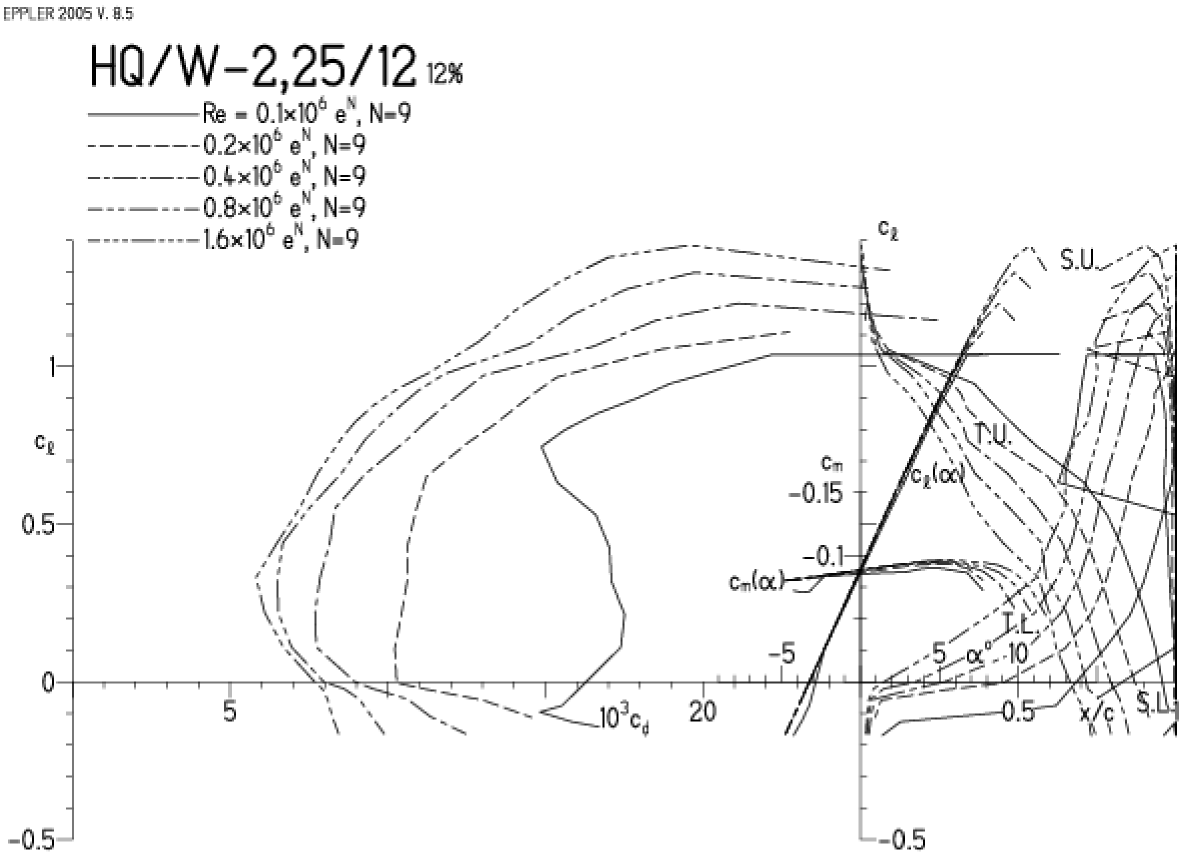
<u>HQ/W-2,25/12</u>, N=11



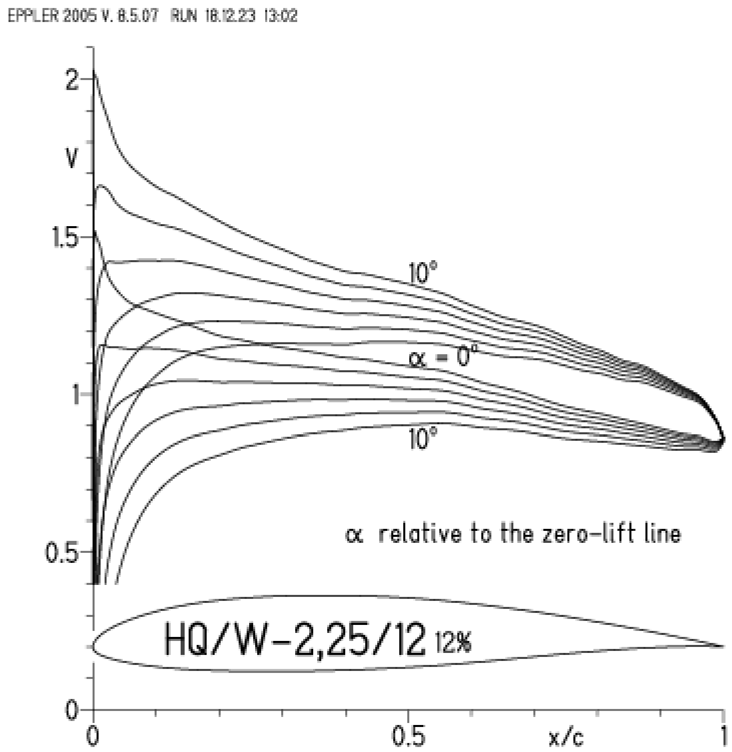


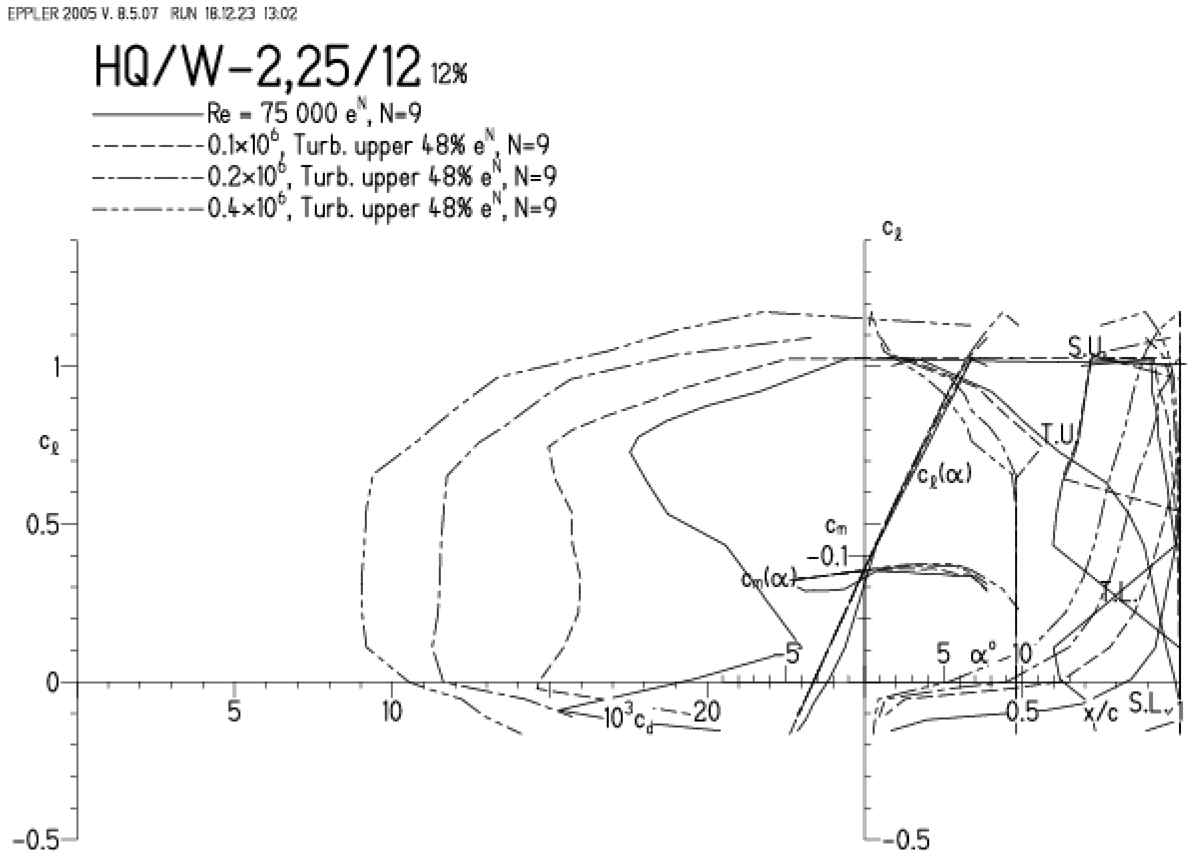
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c
0
0.5
1
1.5
2


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
cℓ
cm
−0.15
−0.1
cℓ(α)
cm(α)
S.U.
T.U.
T.L.
S.L.
α°
10³cd
x/c
−5
5
10
20
0.5
1
−0.5

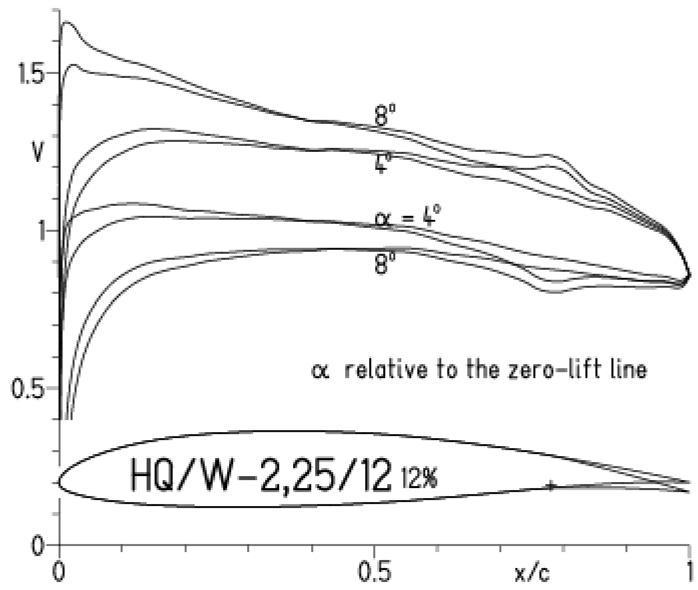
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



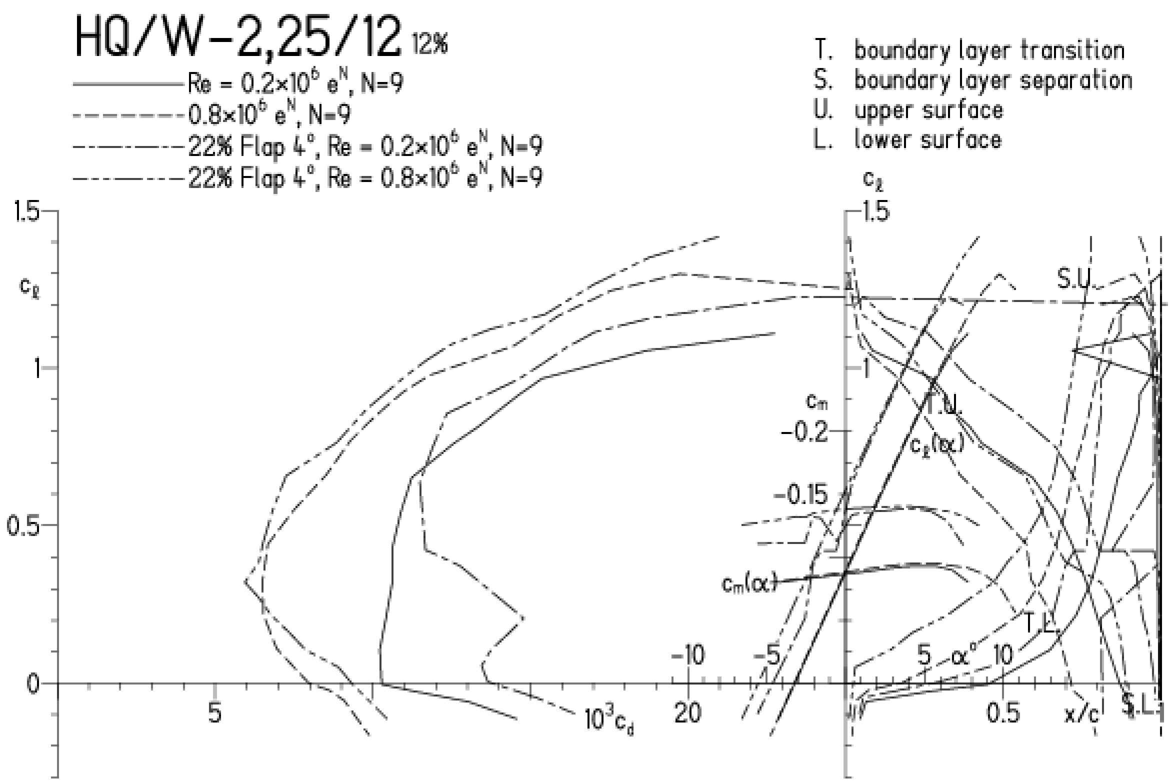


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

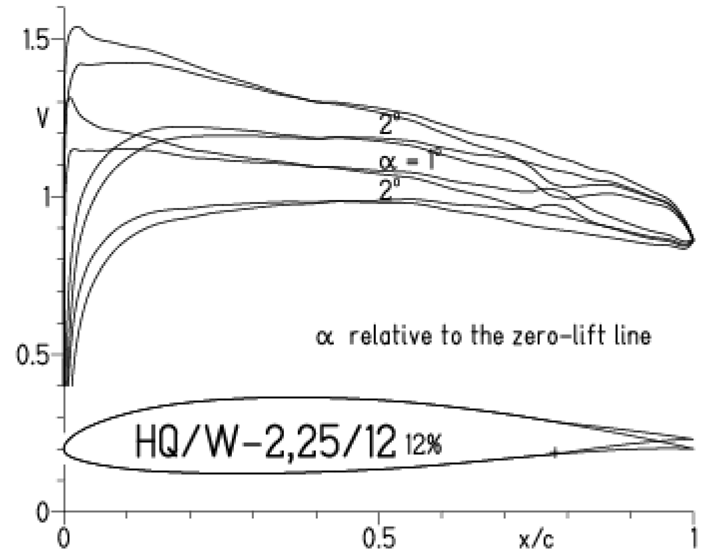


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

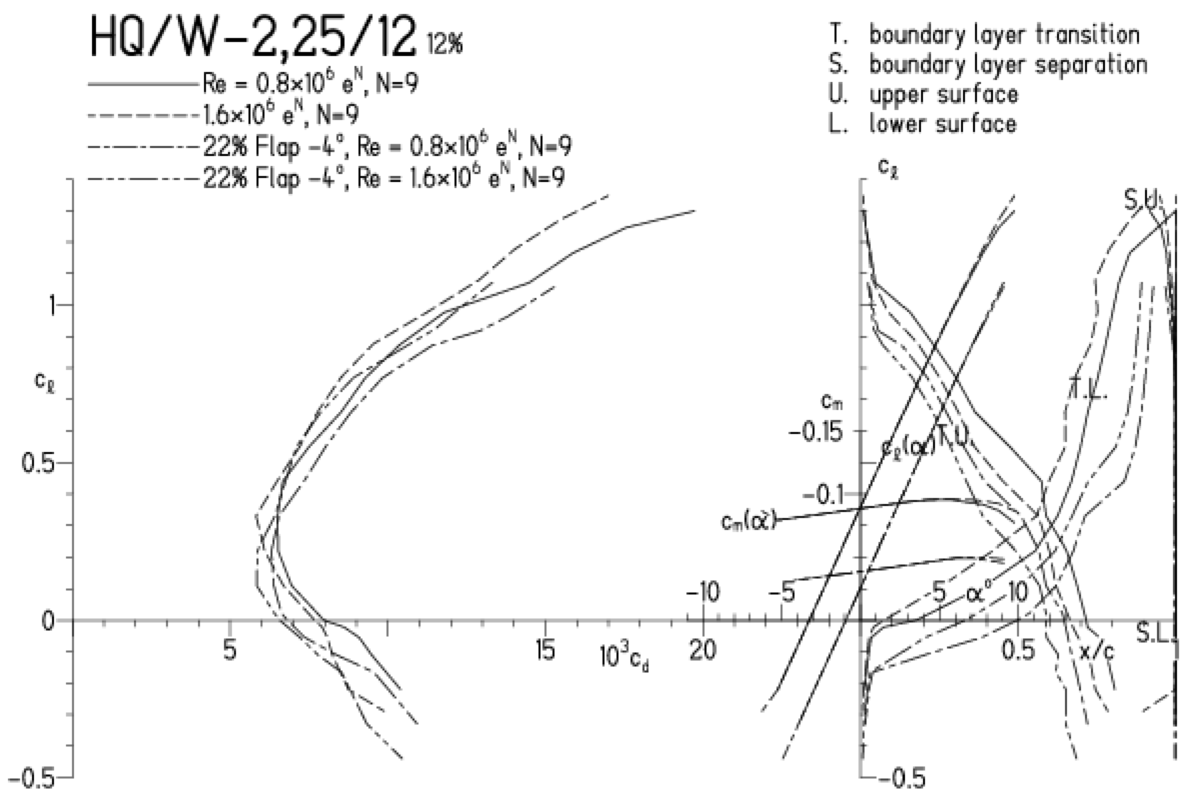


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

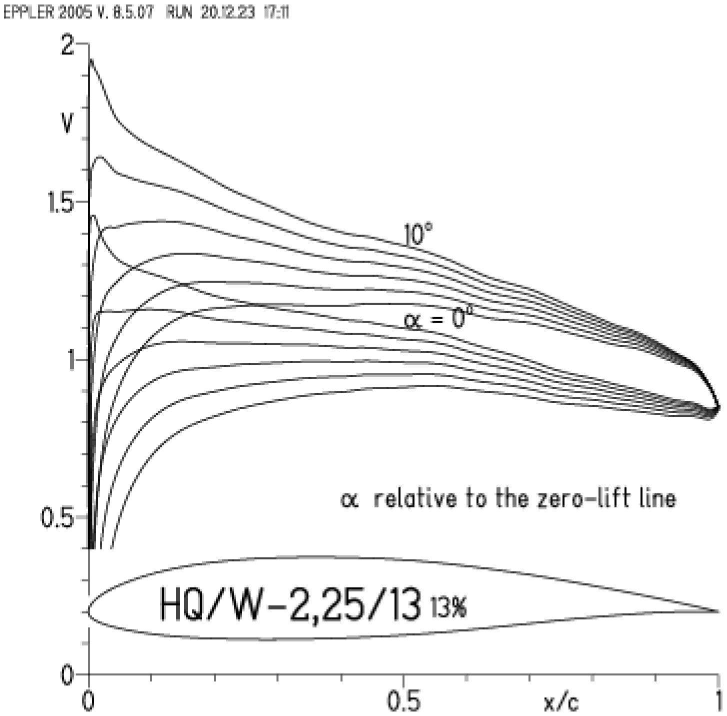
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

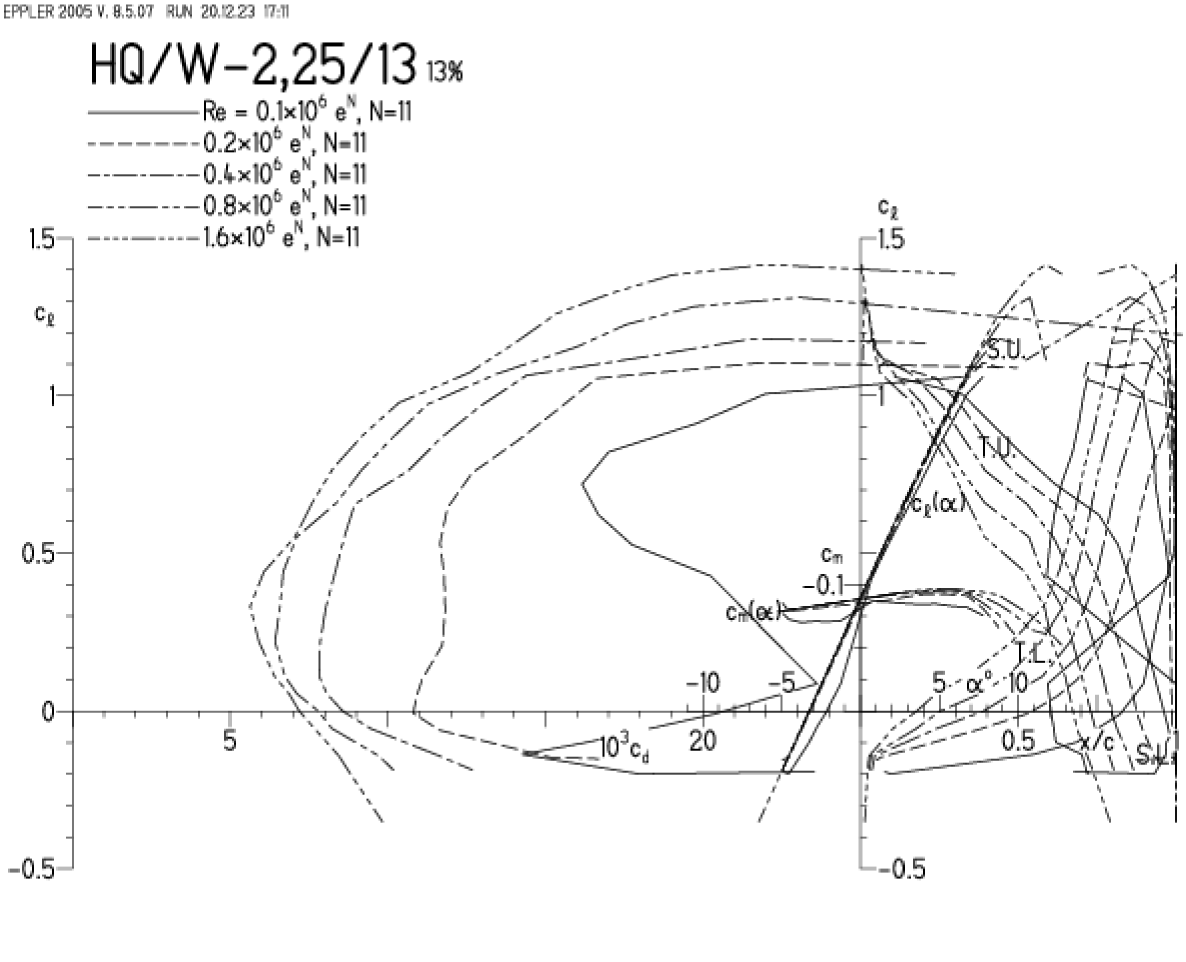


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

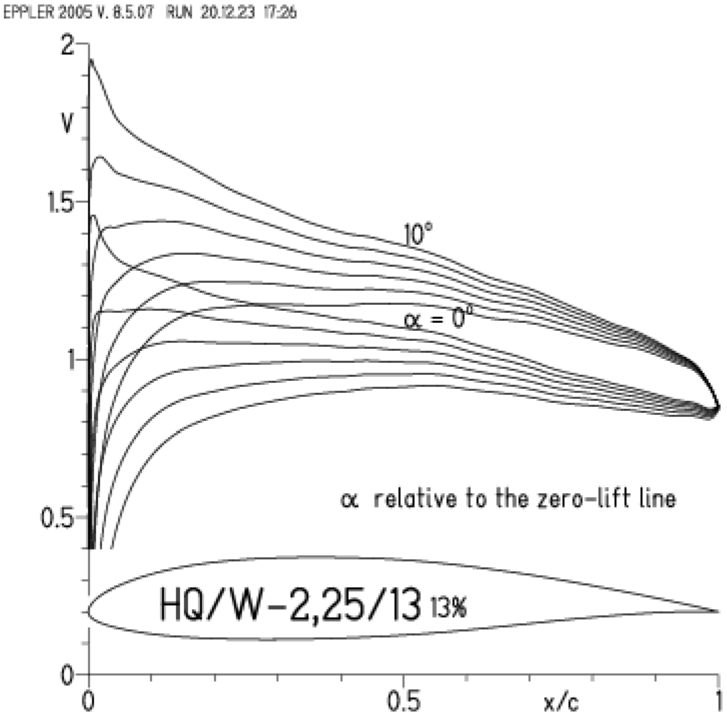


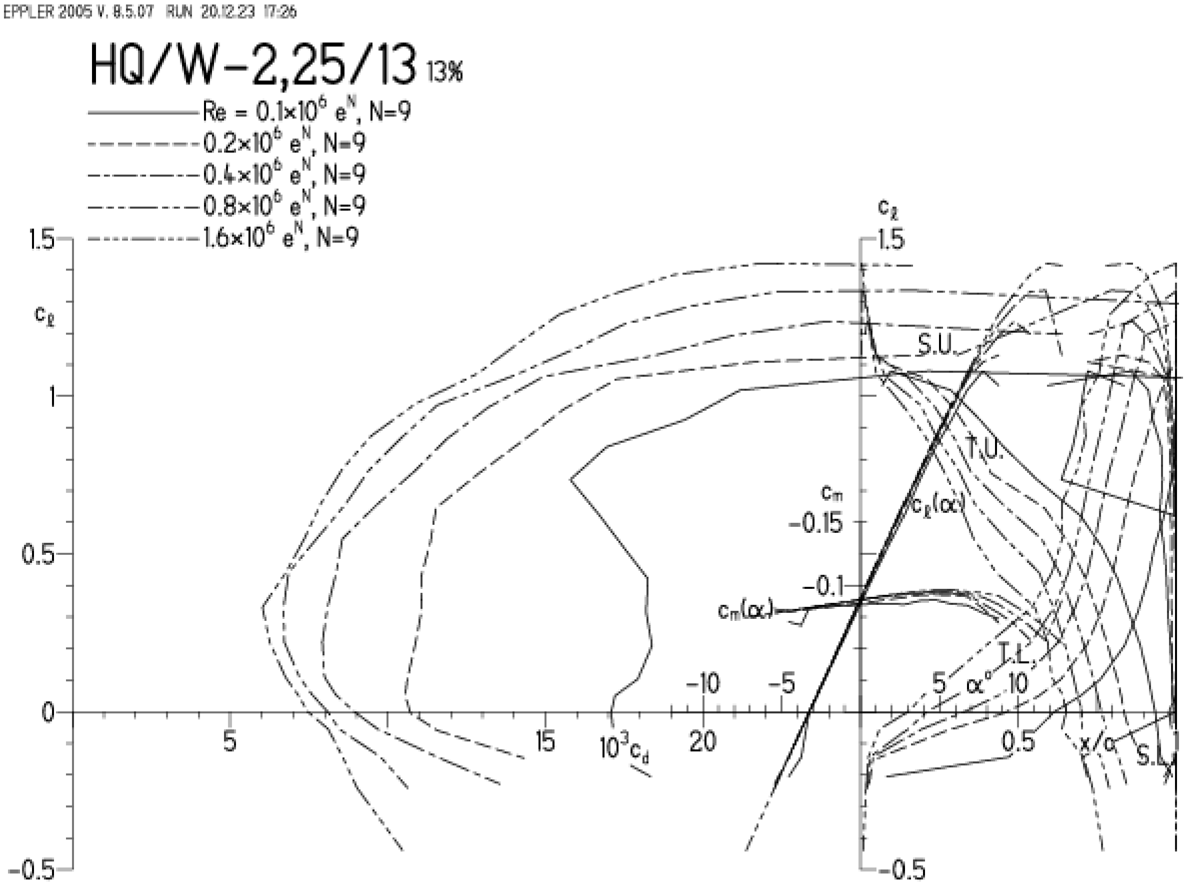
<u>HQ/W-2,25/13</u>, N=11



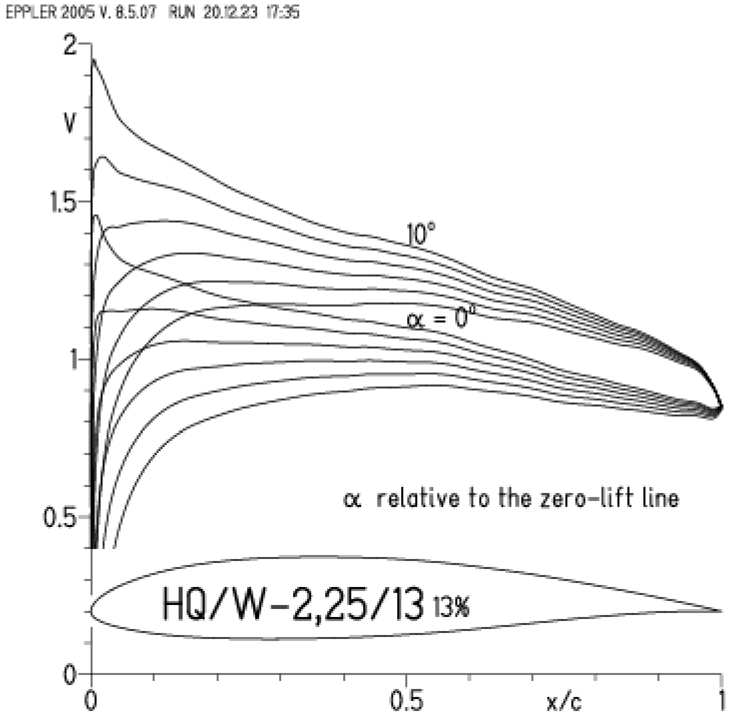


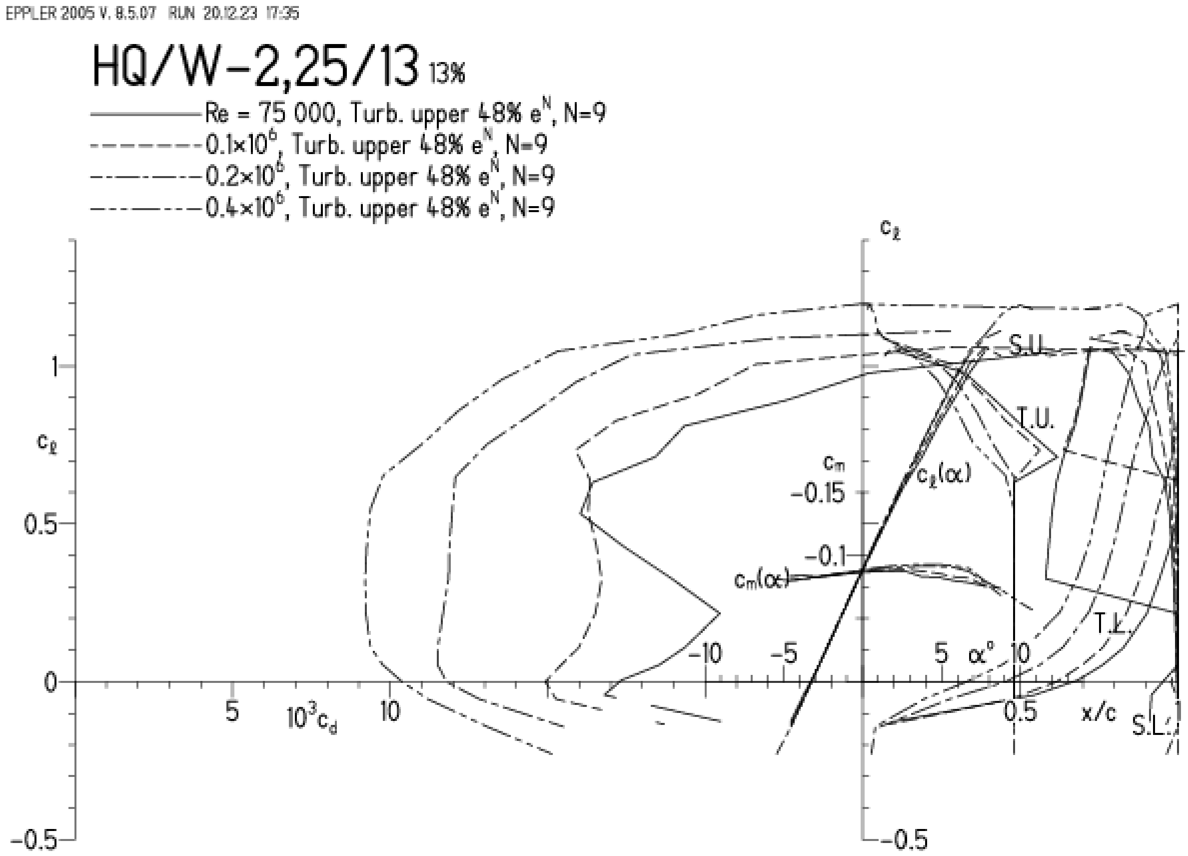
<u>HQ/W-2,25/13</u>, N=9





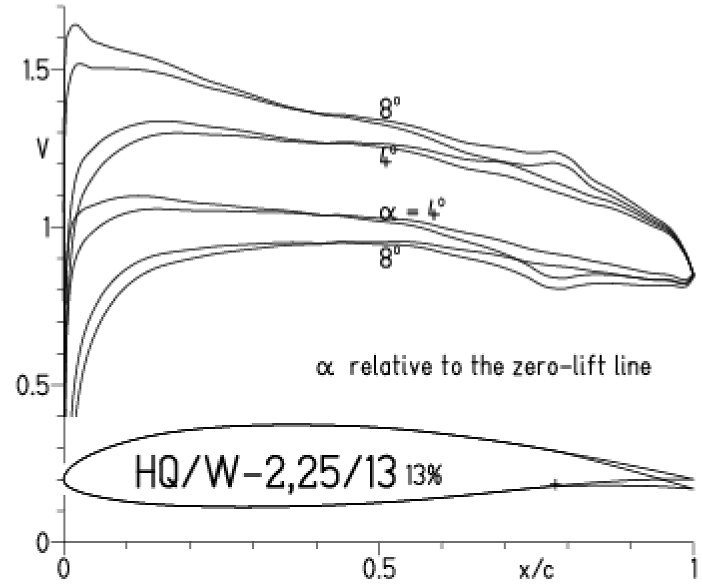
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



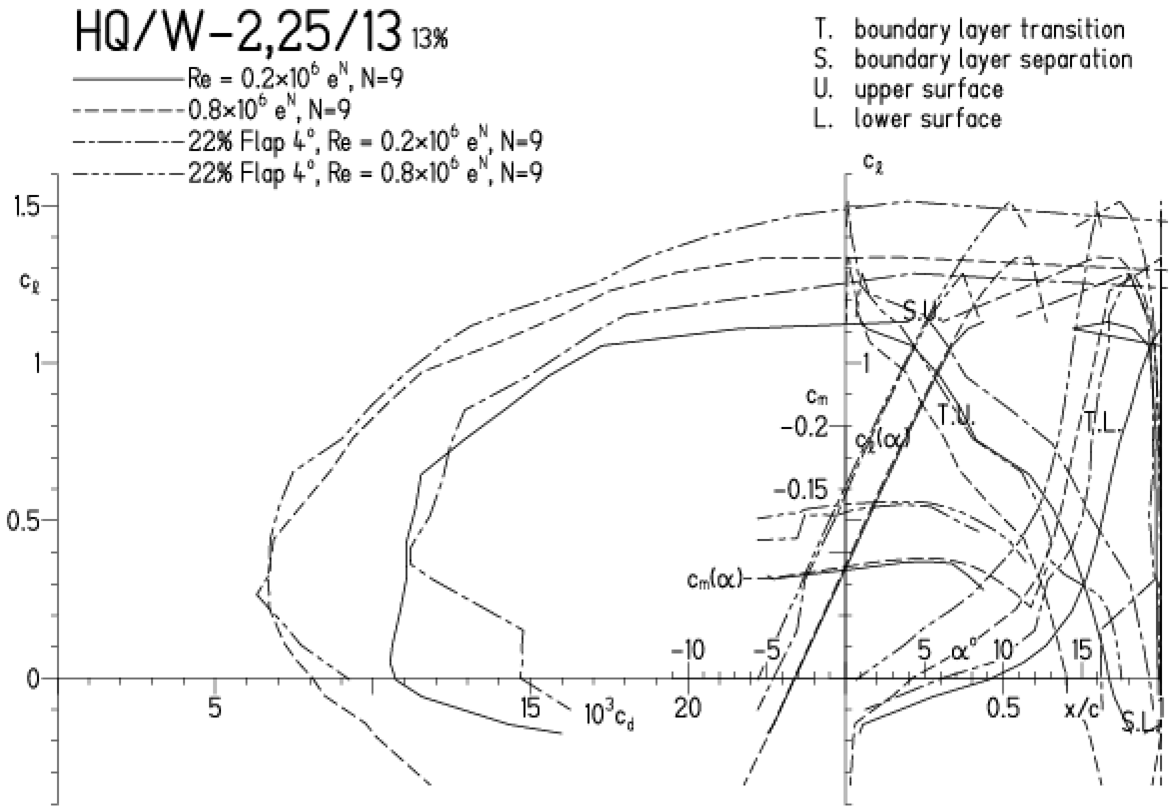


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

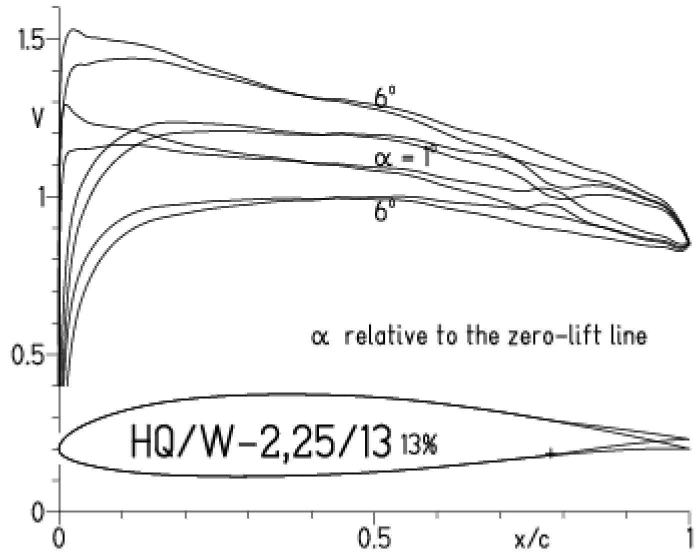


EPPLER 2005 V.

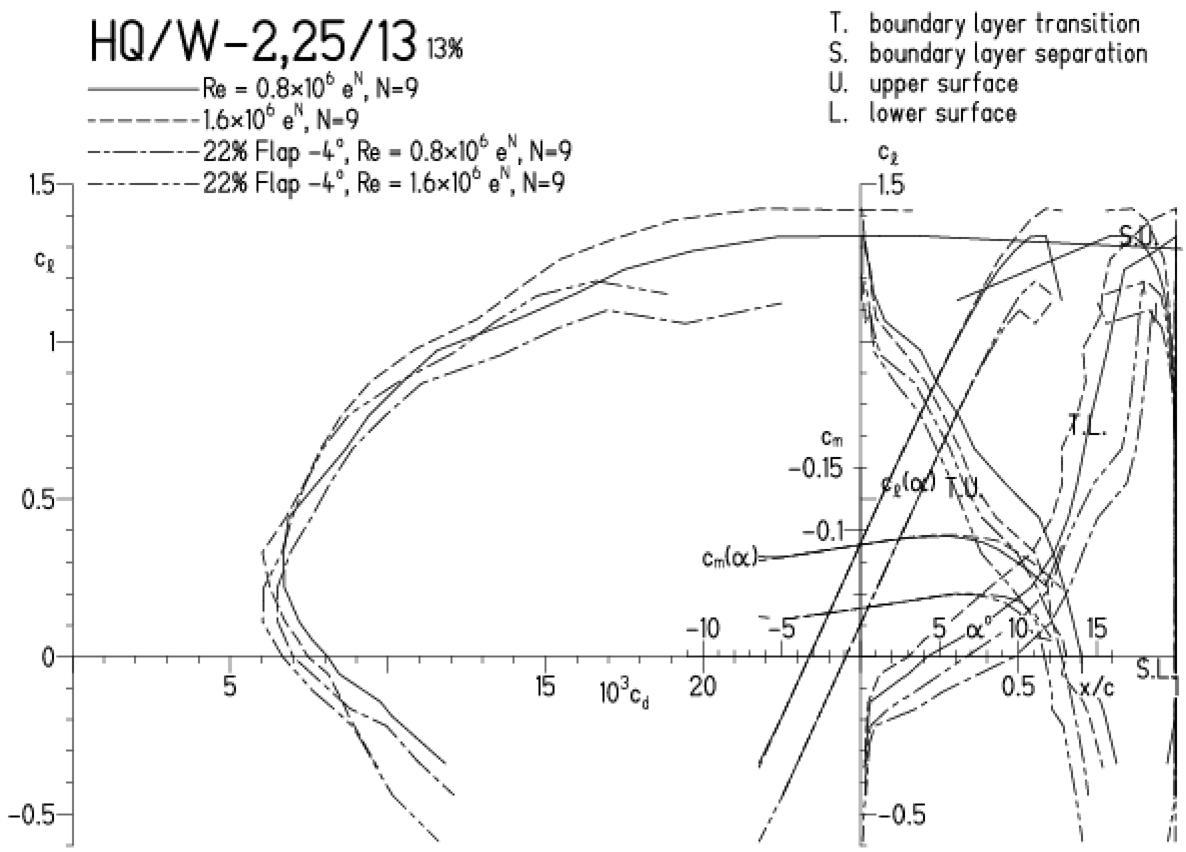


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

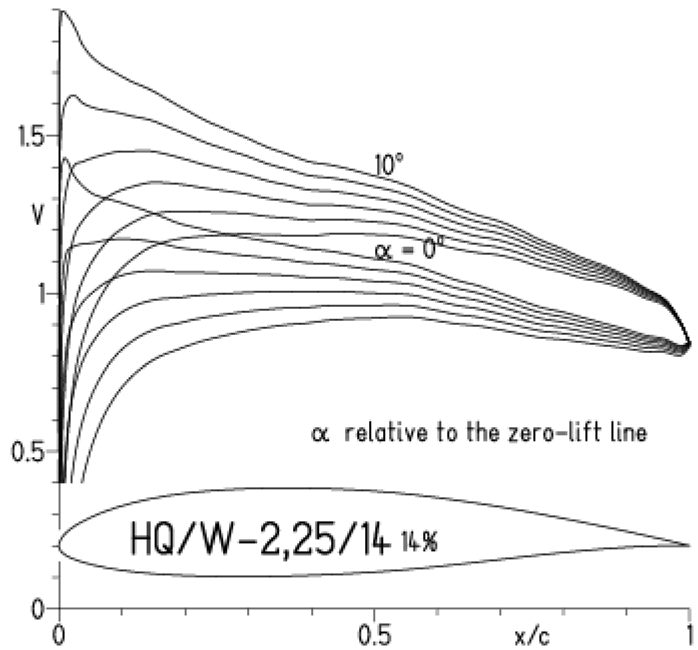


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

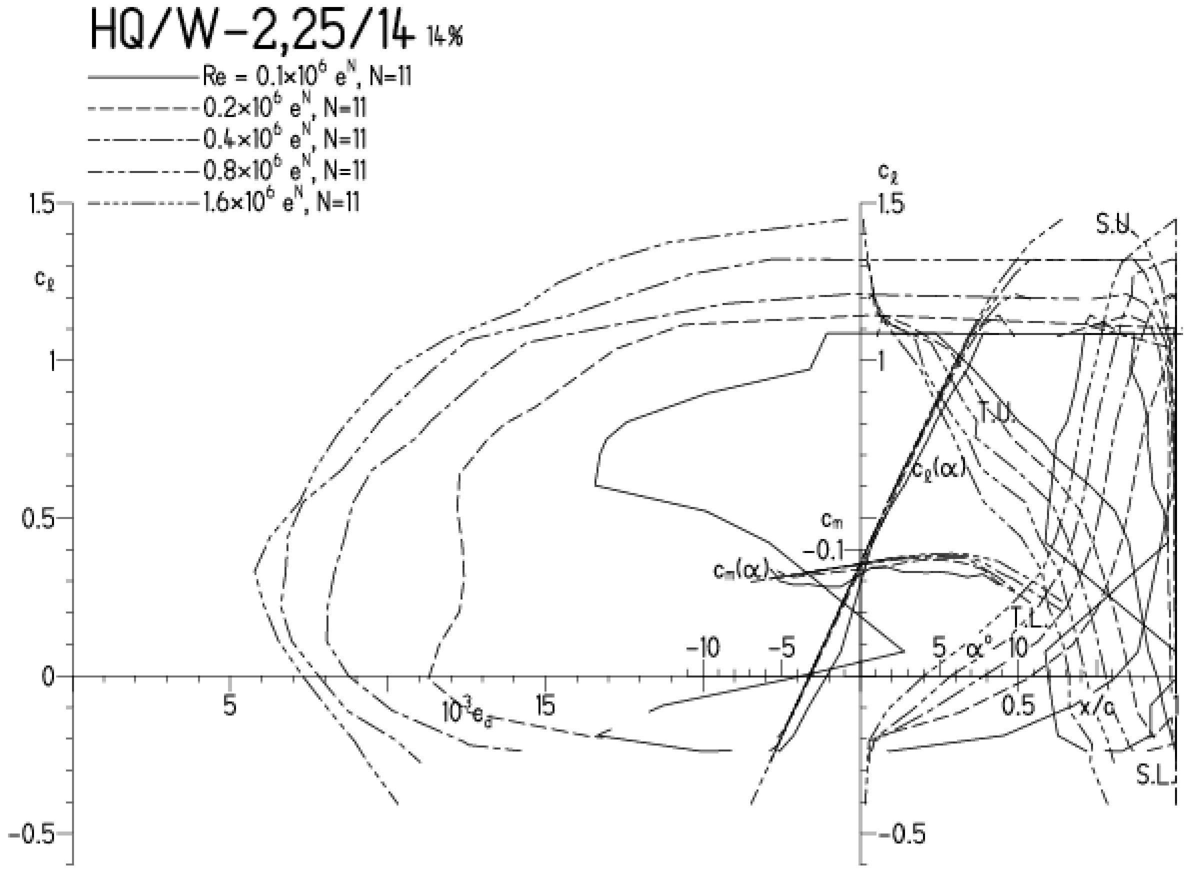


HQ/W-2,25/14, N=11

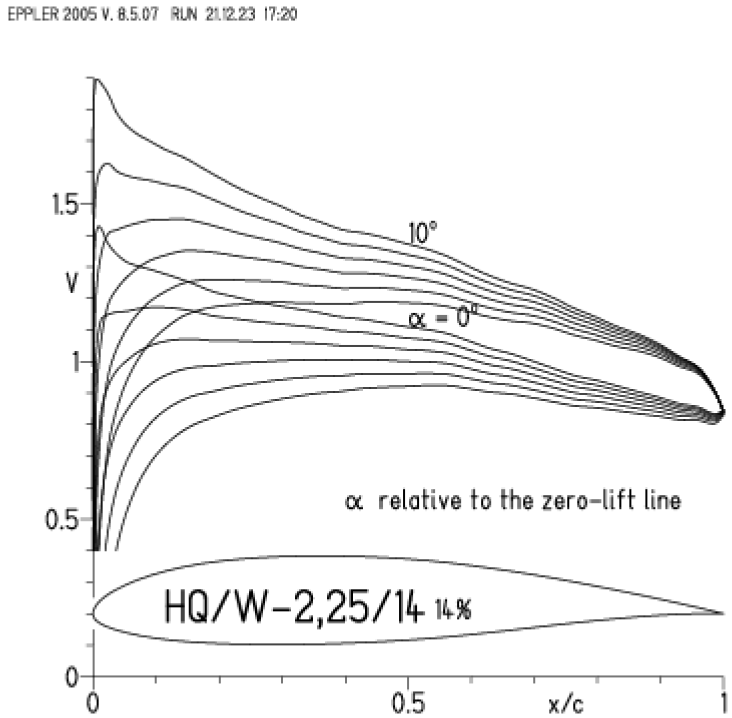
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

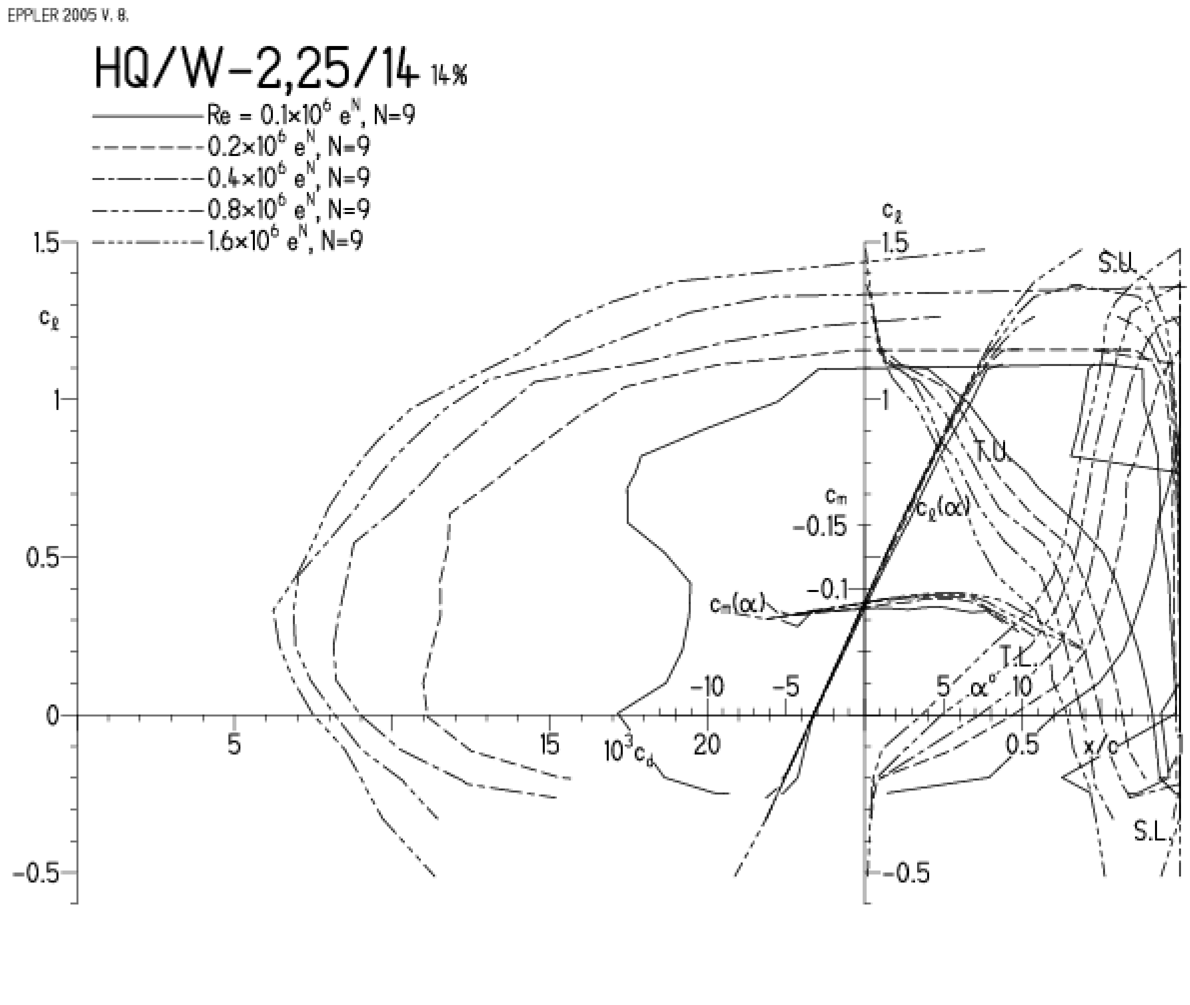


EPPLER 2005 V. 8.

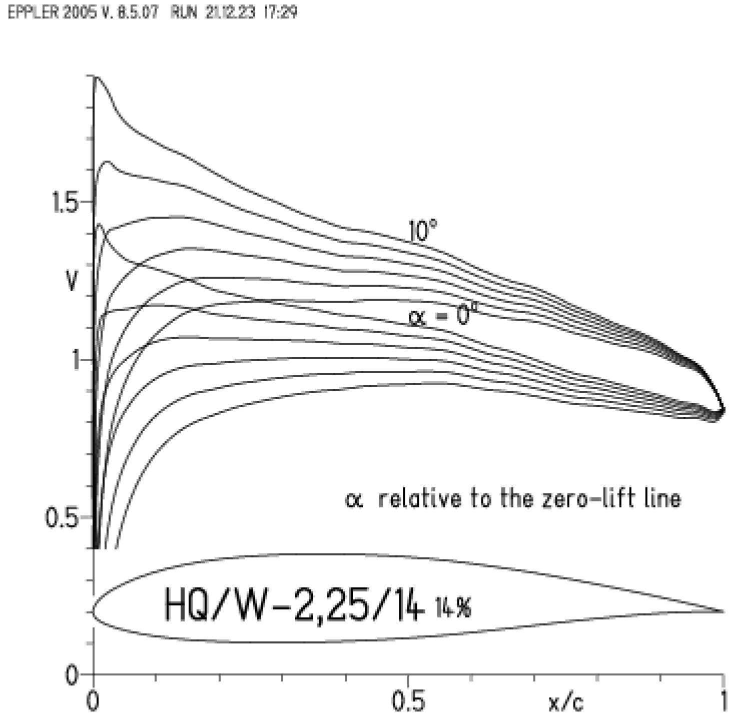


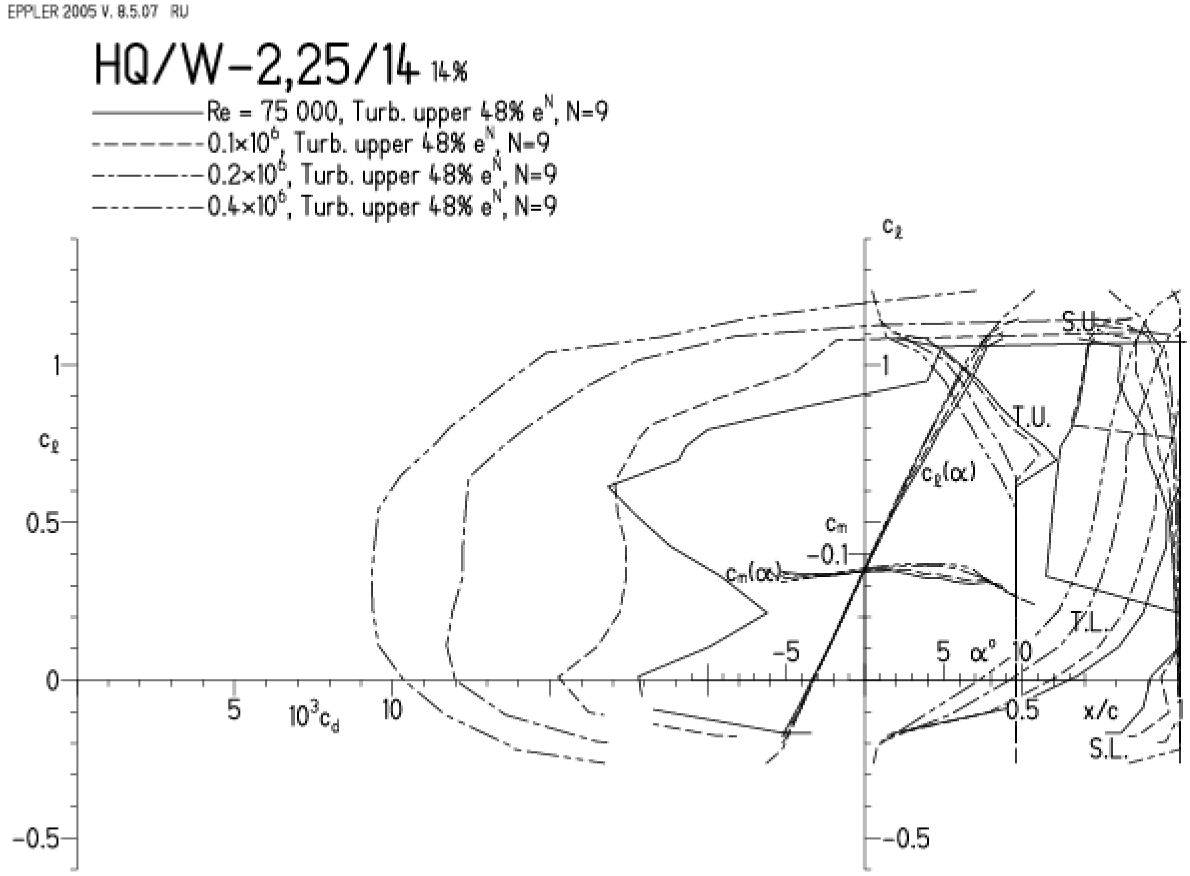
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

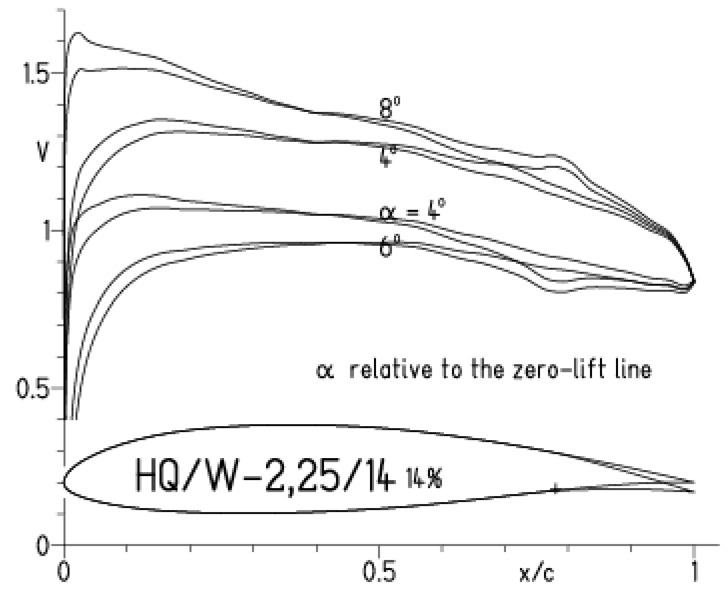
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



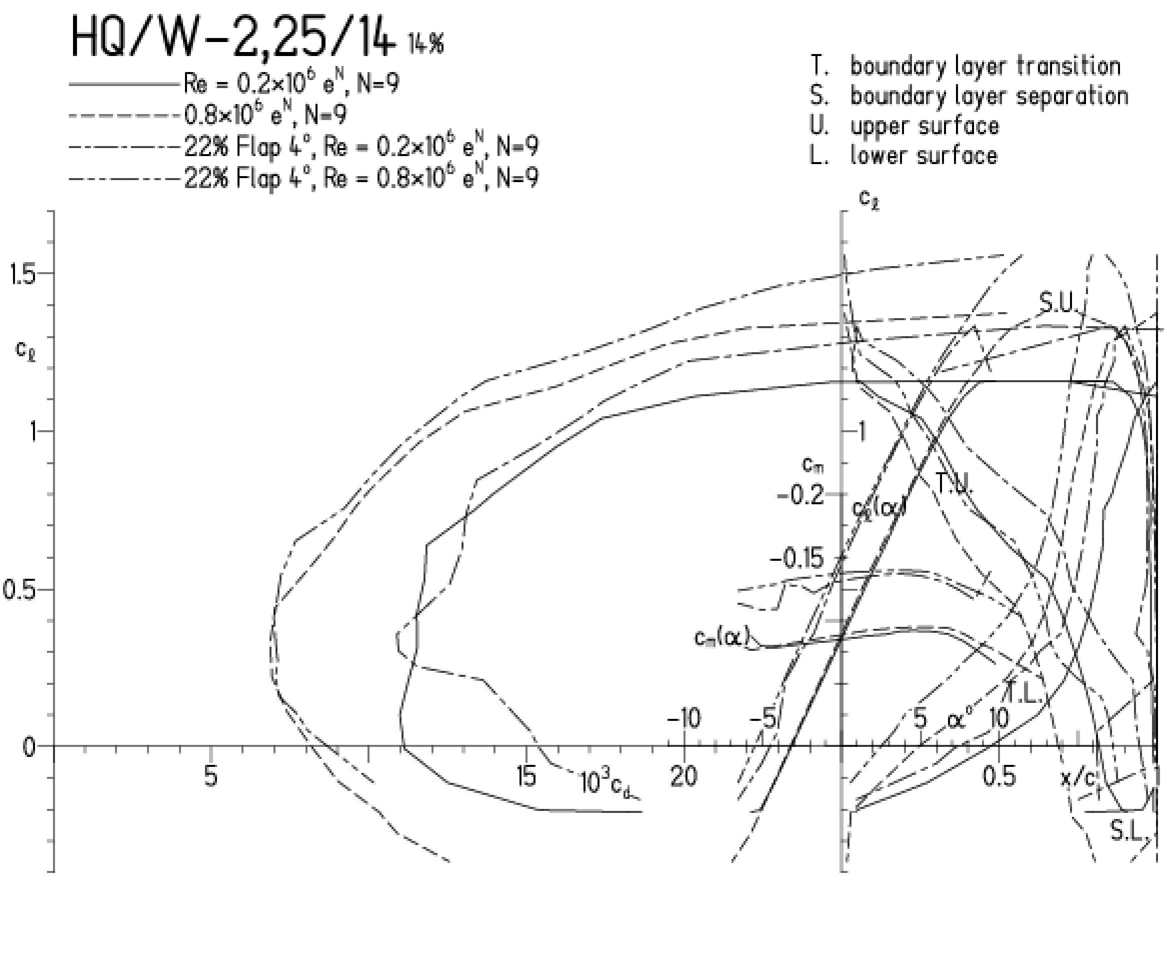


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

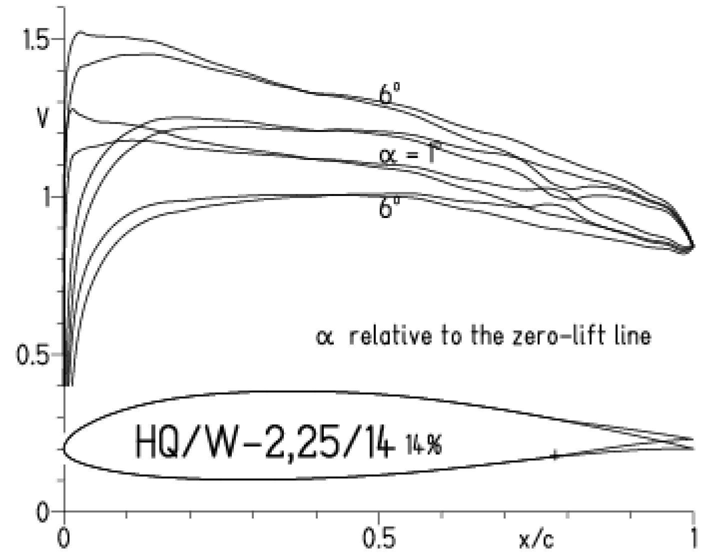


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

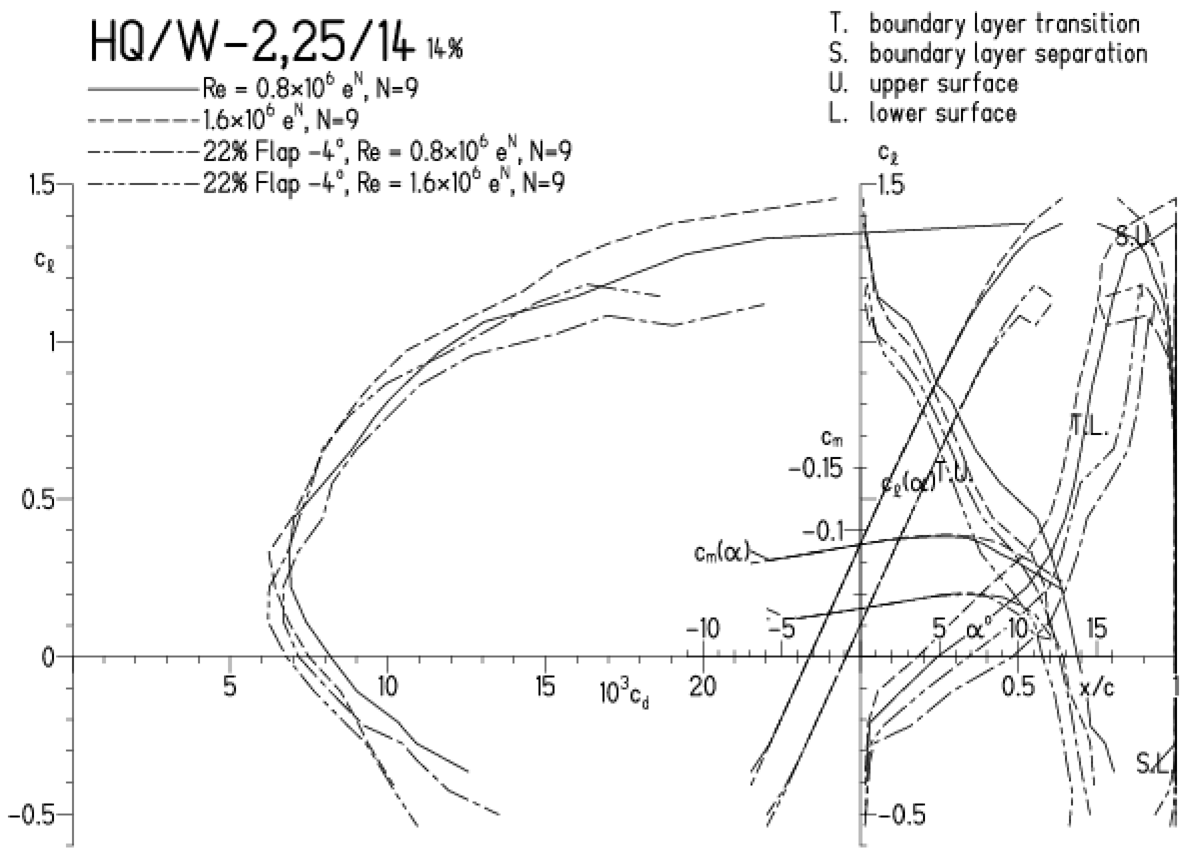


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

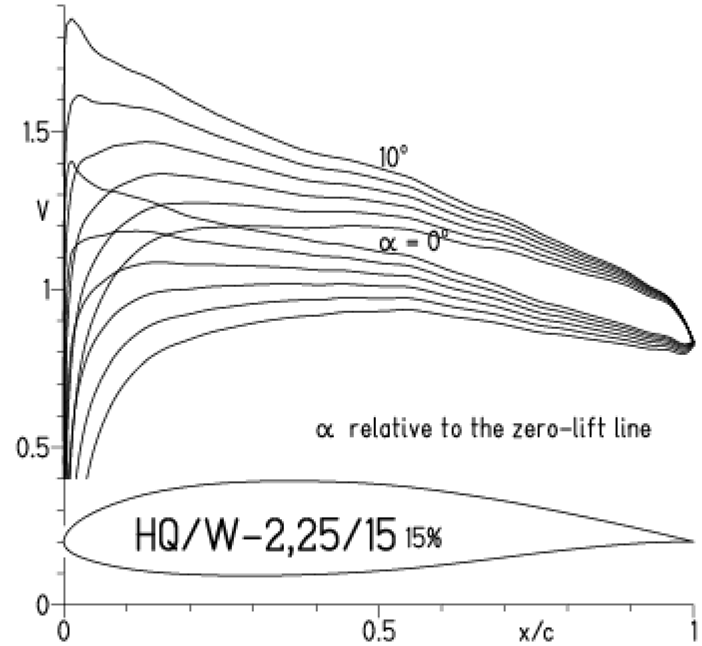


EPPLER 2005 V. 8.5.07

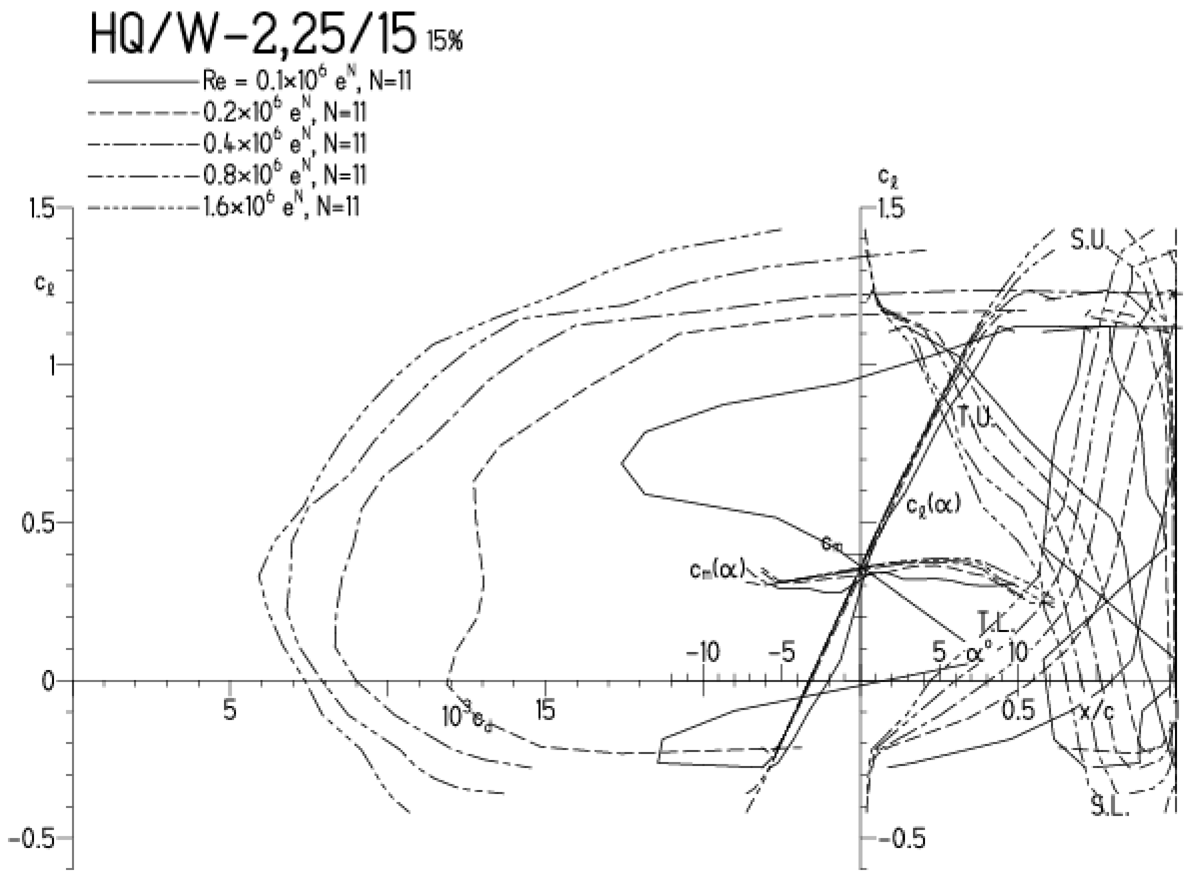


HQ/W-2,25/15, N=11

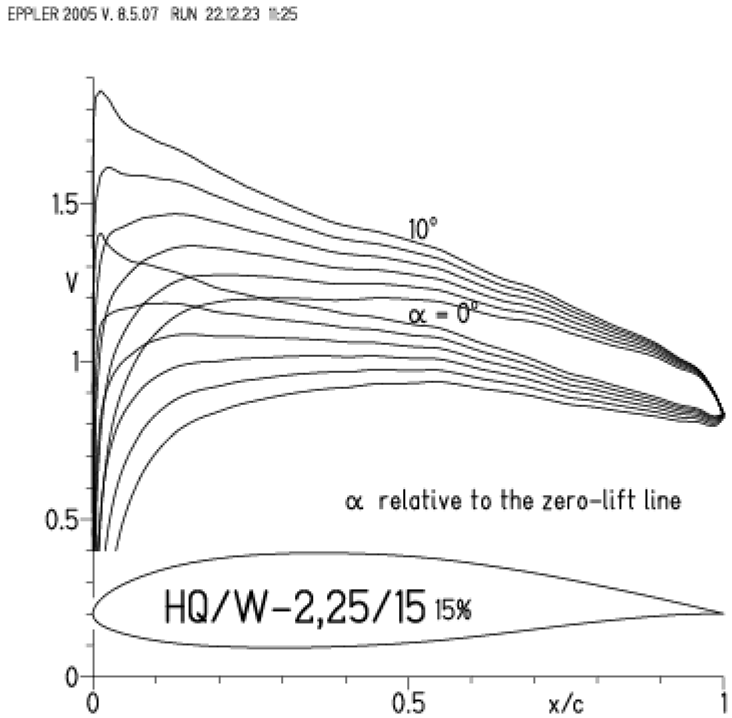
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

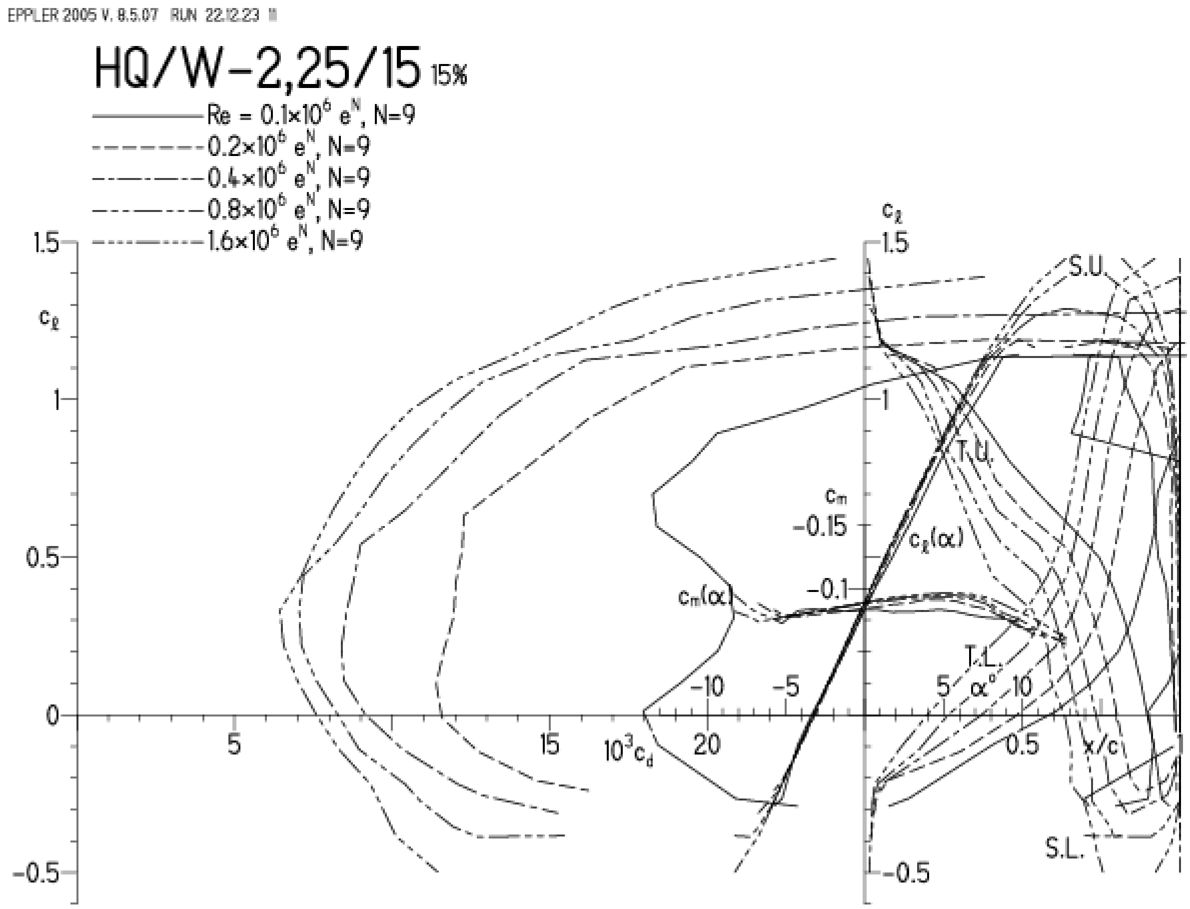


EPPLER 20

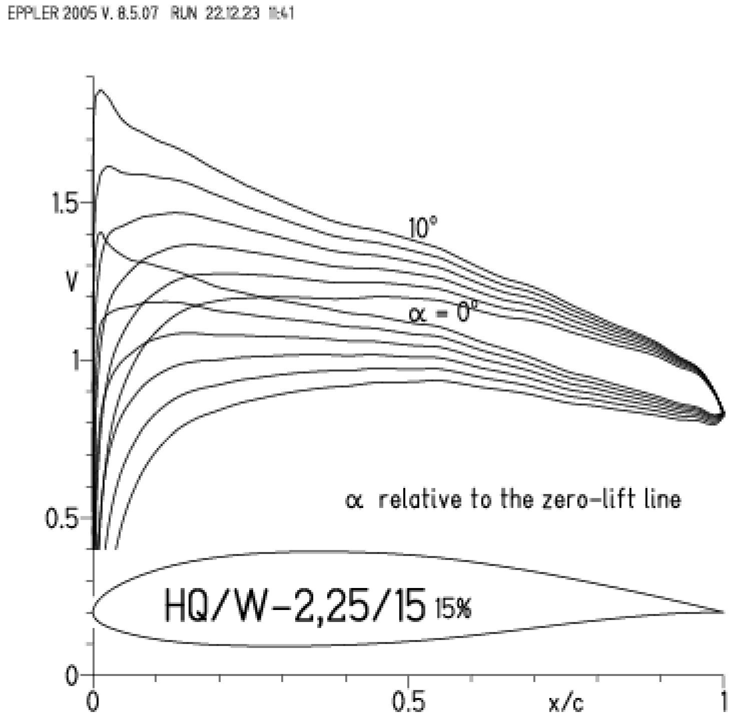


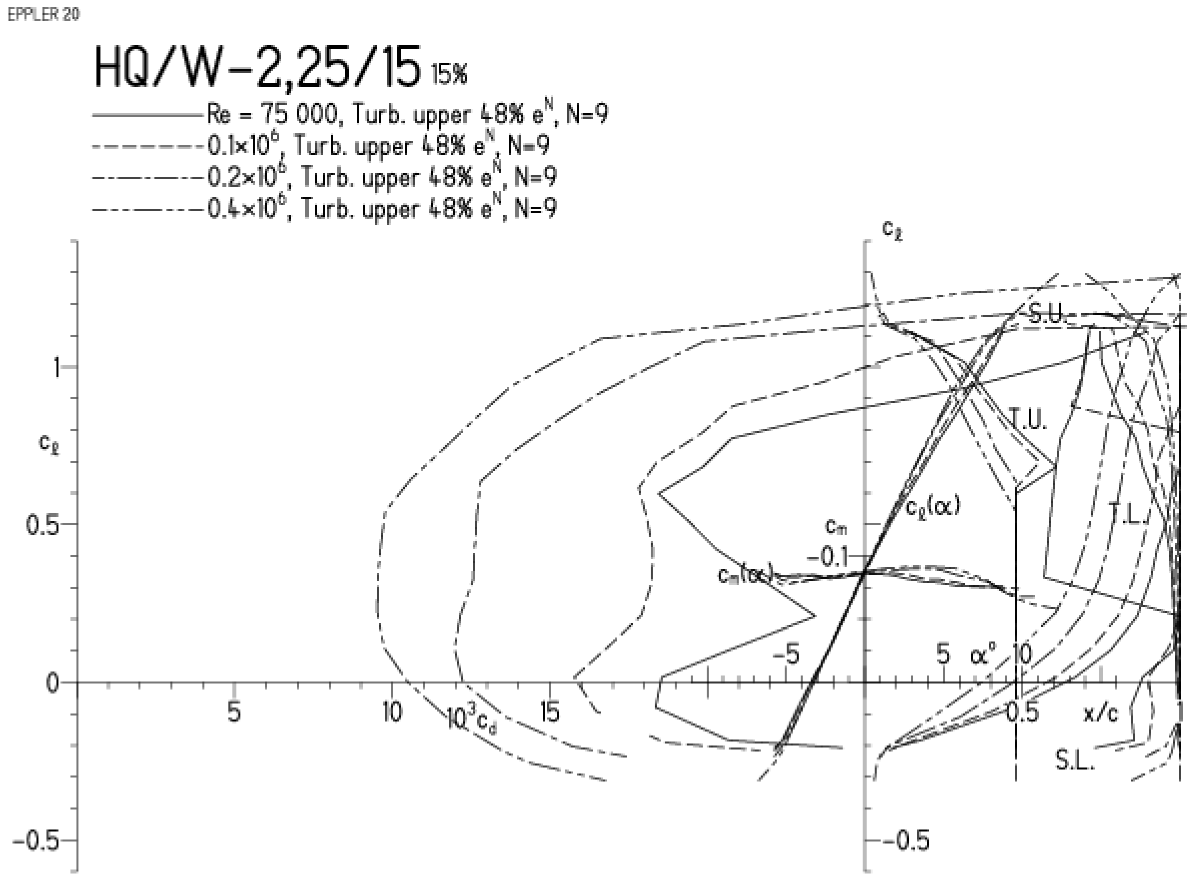
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



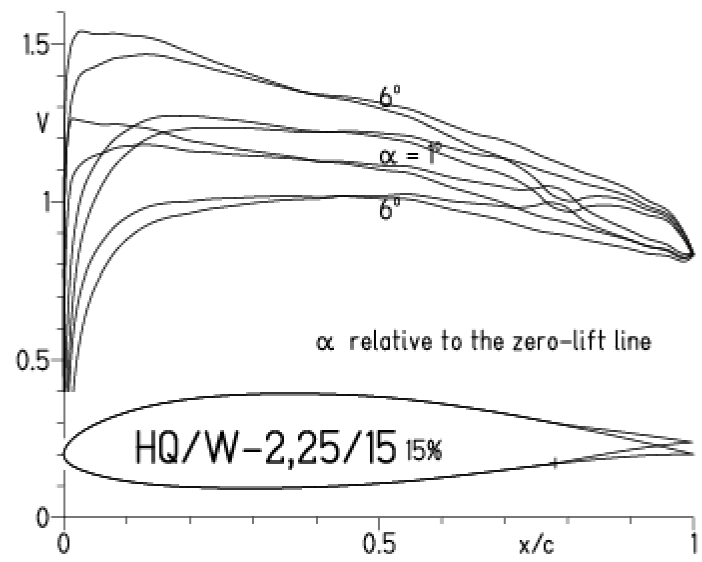


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

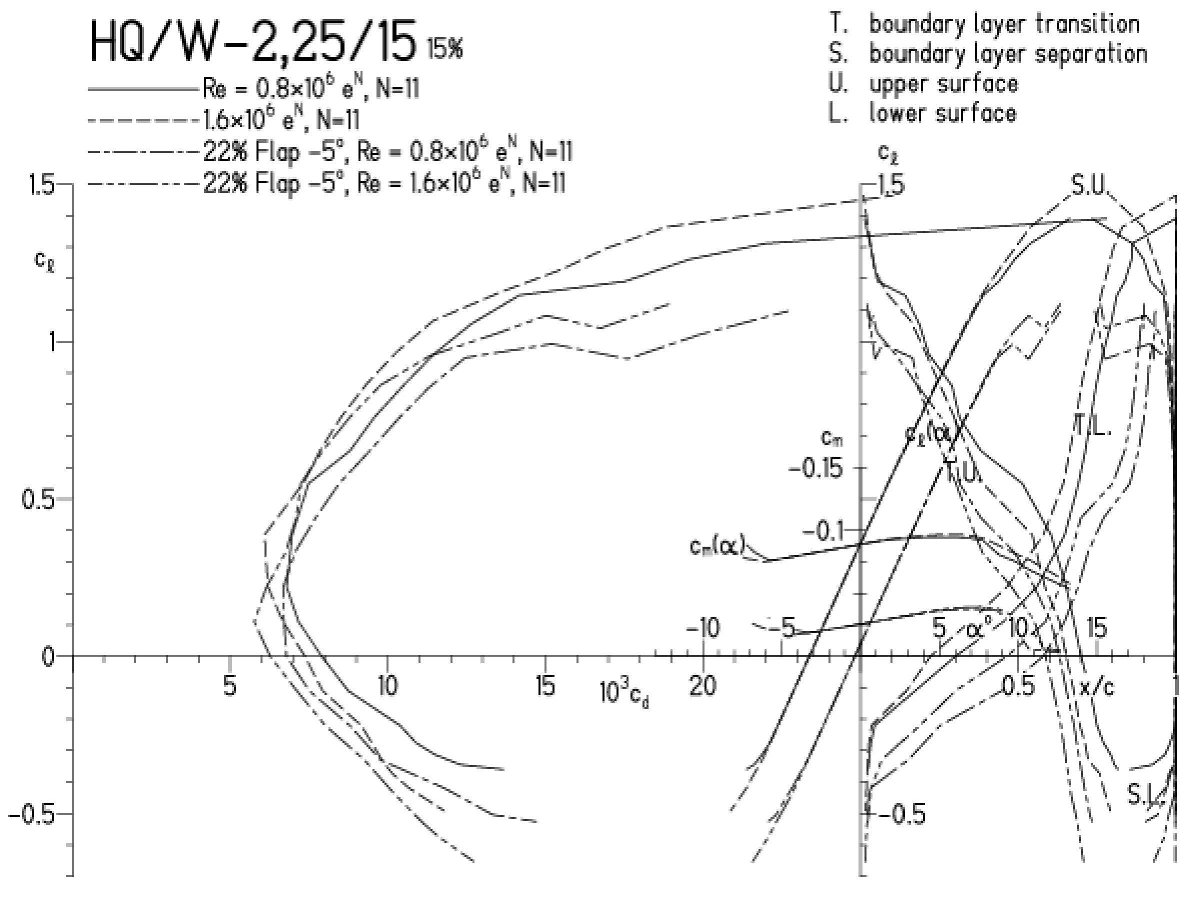
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

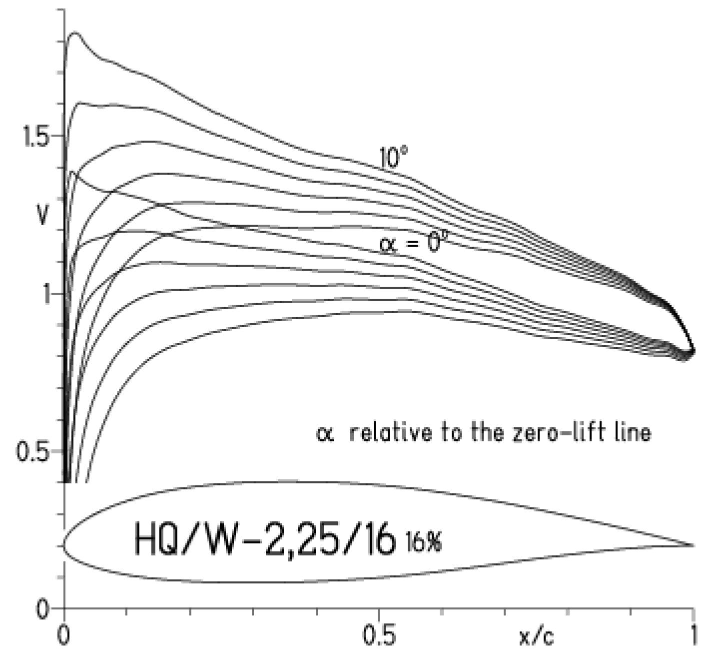


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

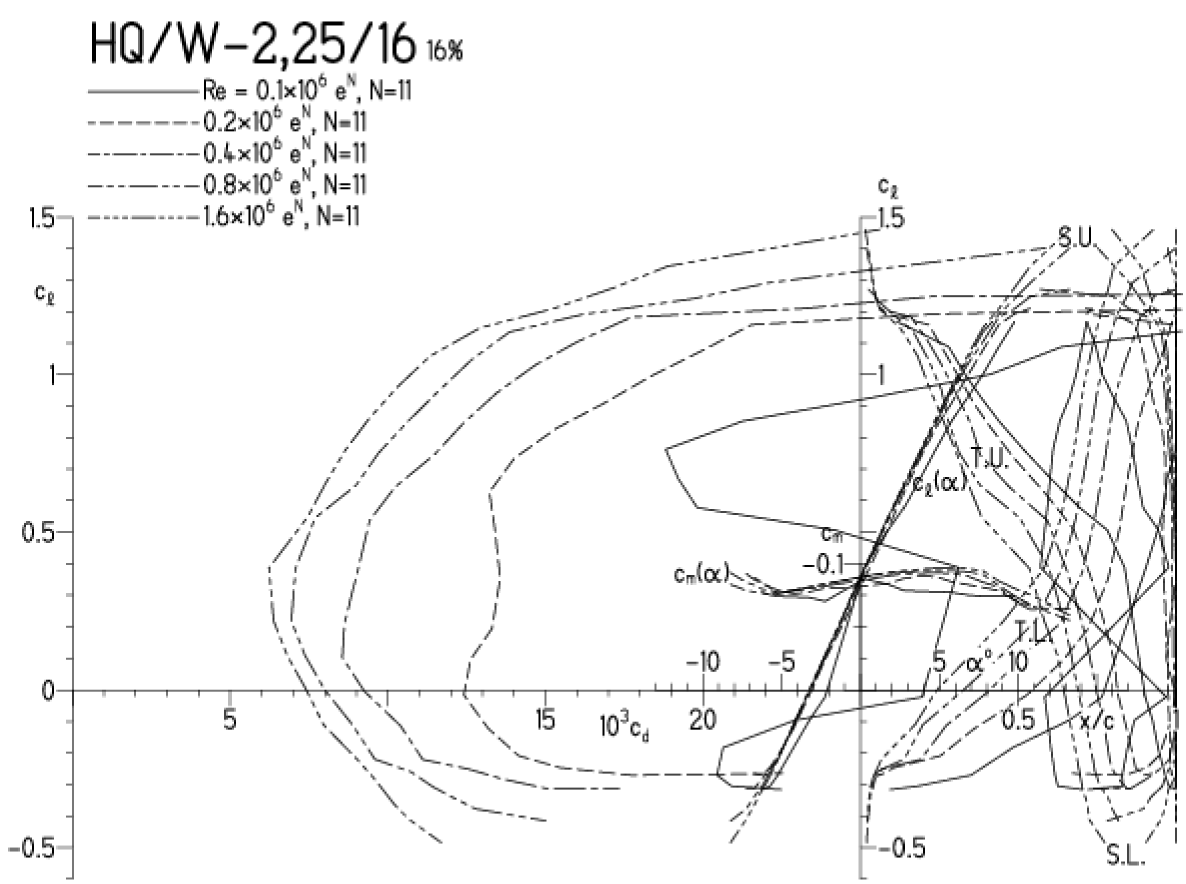


<u>HQ/W-2,25/16</u>, N=11

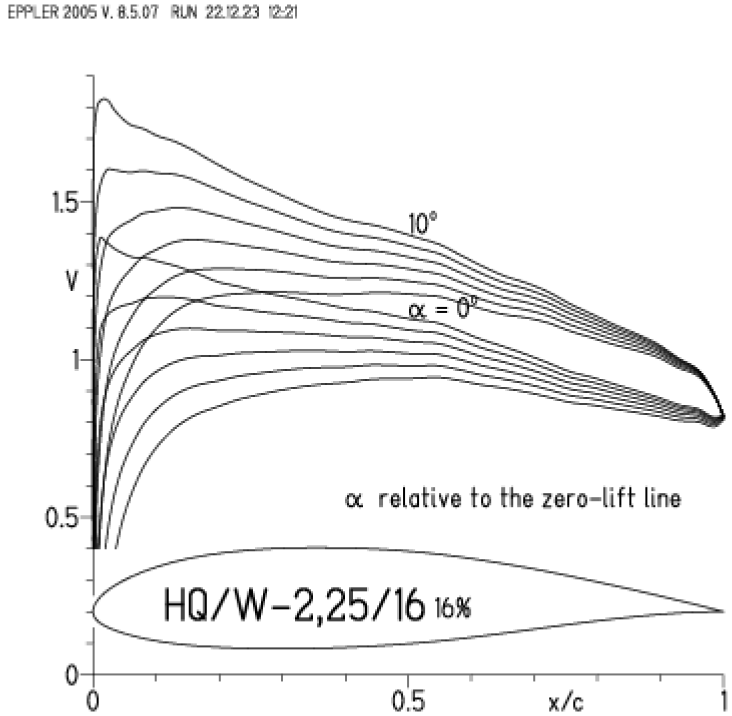
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

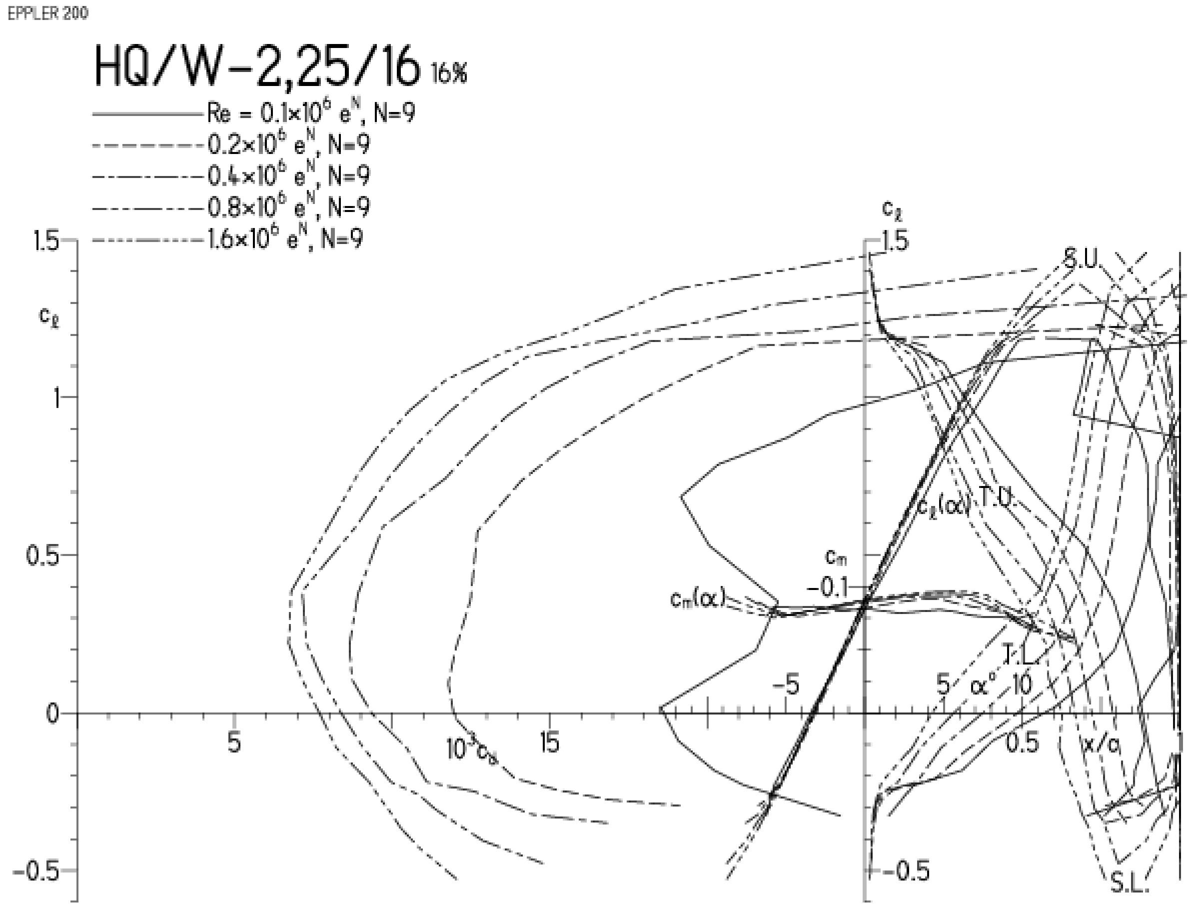


EPPLER 200

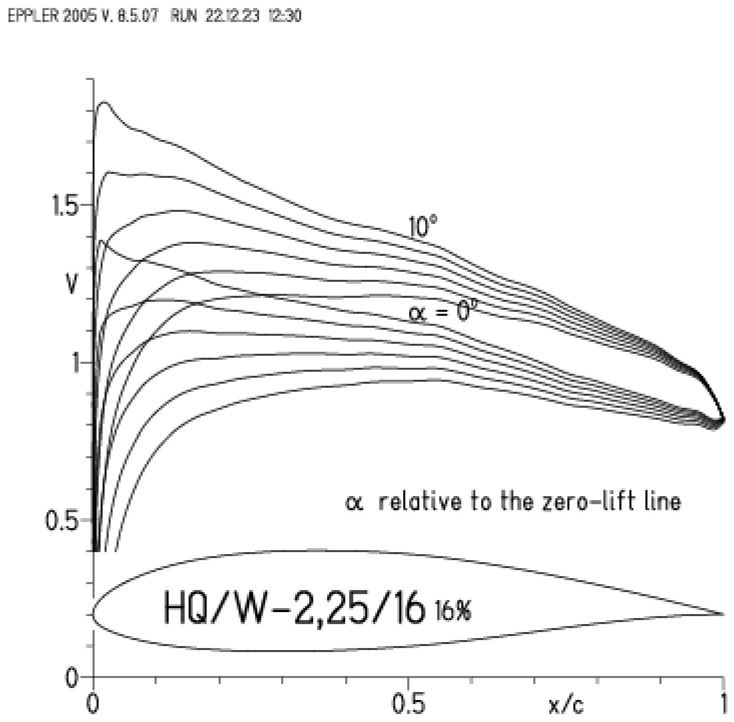


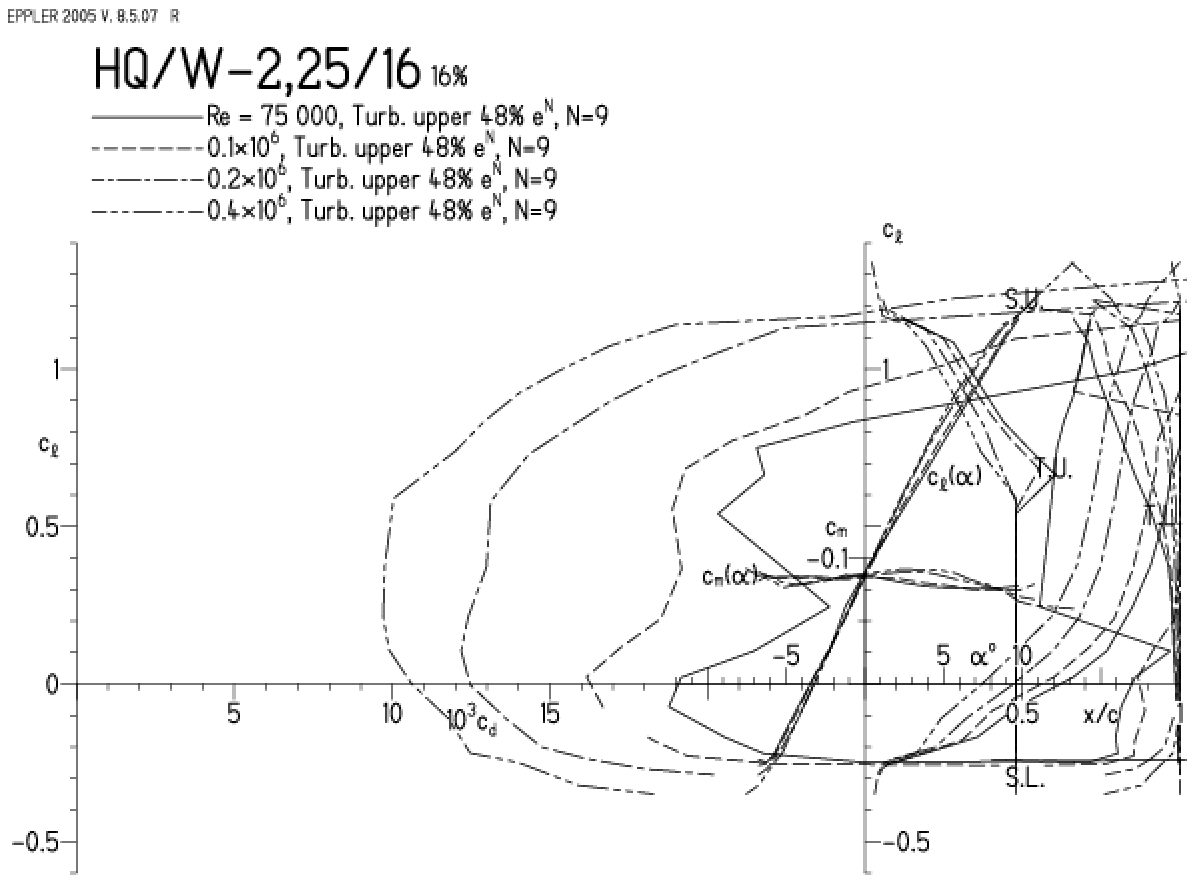
<u>HQ/W-2,25/16</u>, N=9





<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



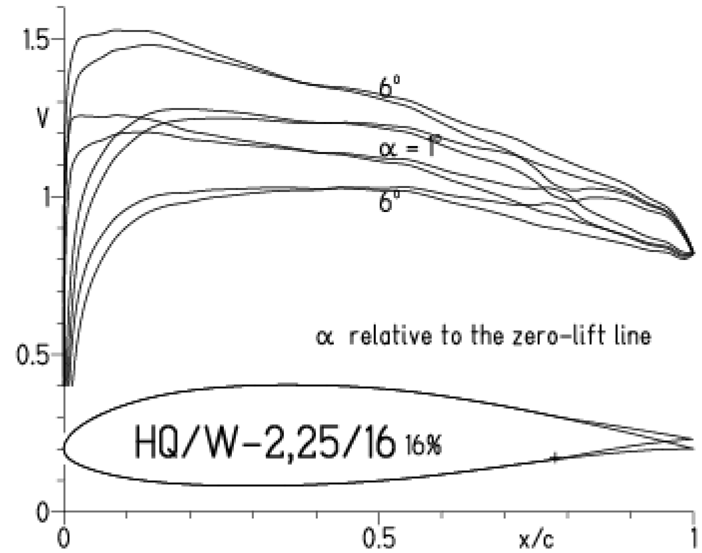


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

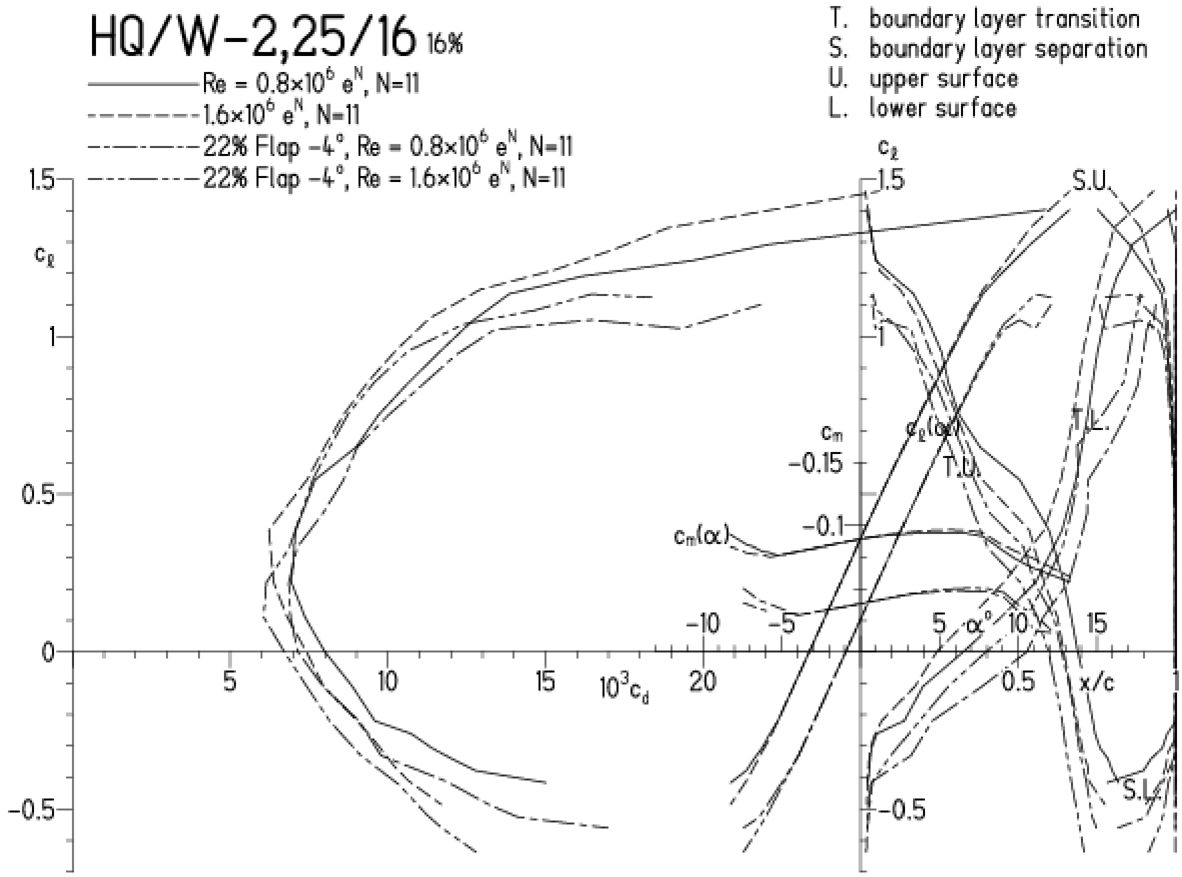
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

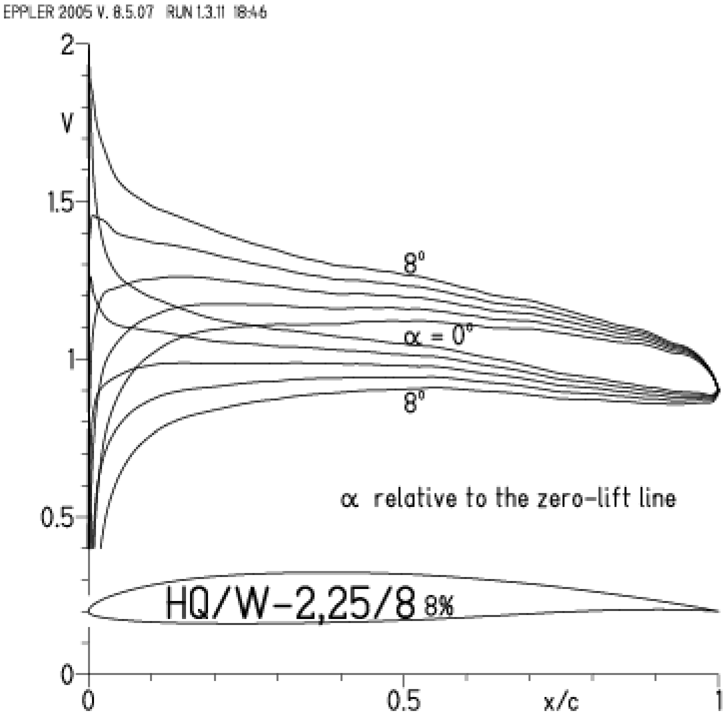
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

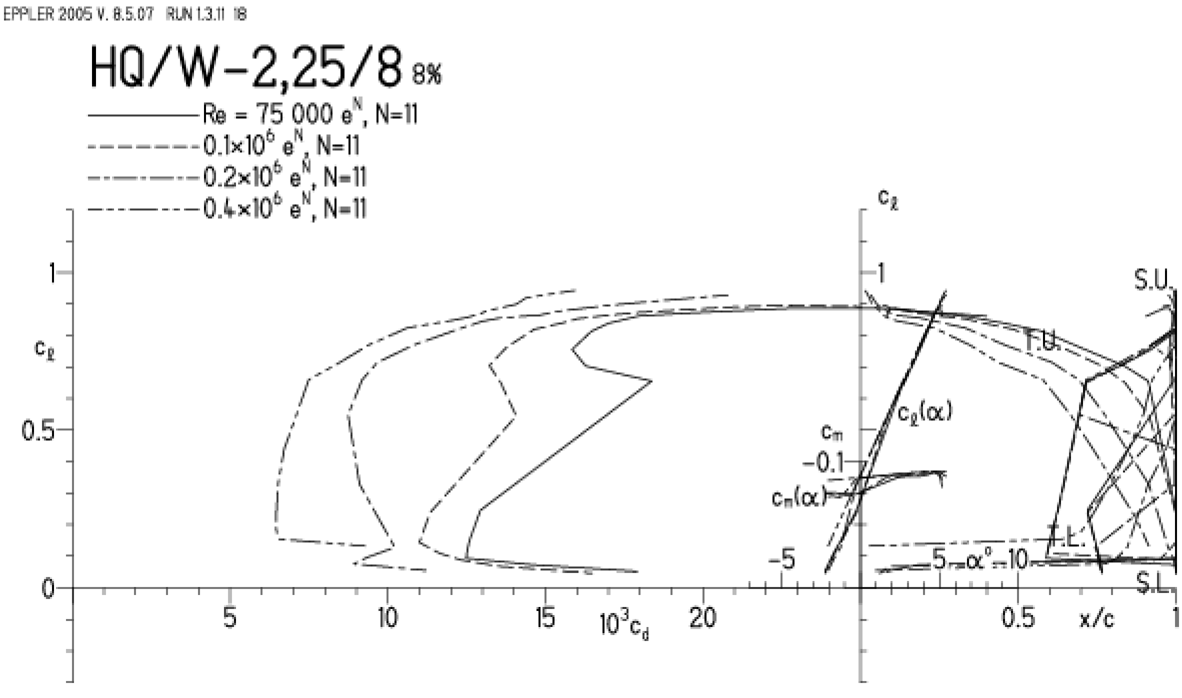


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

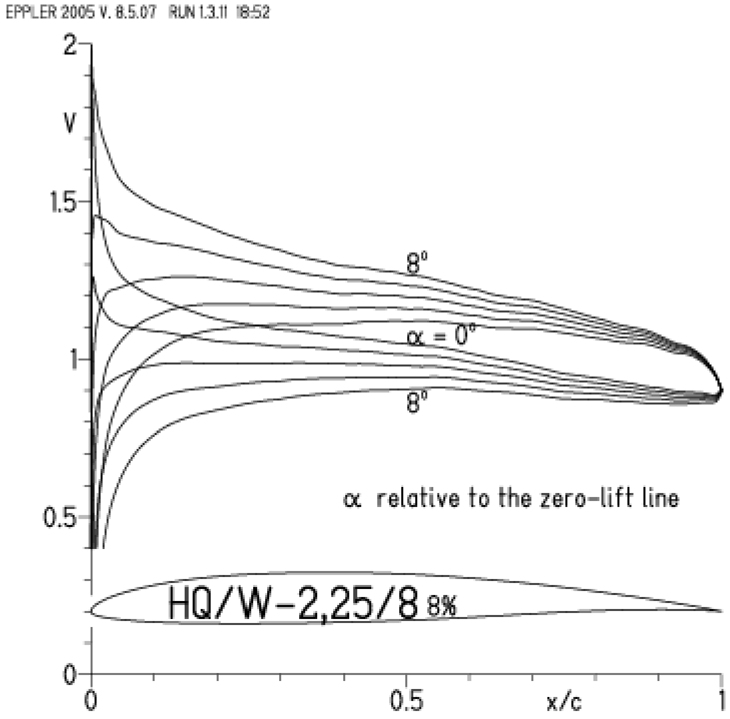


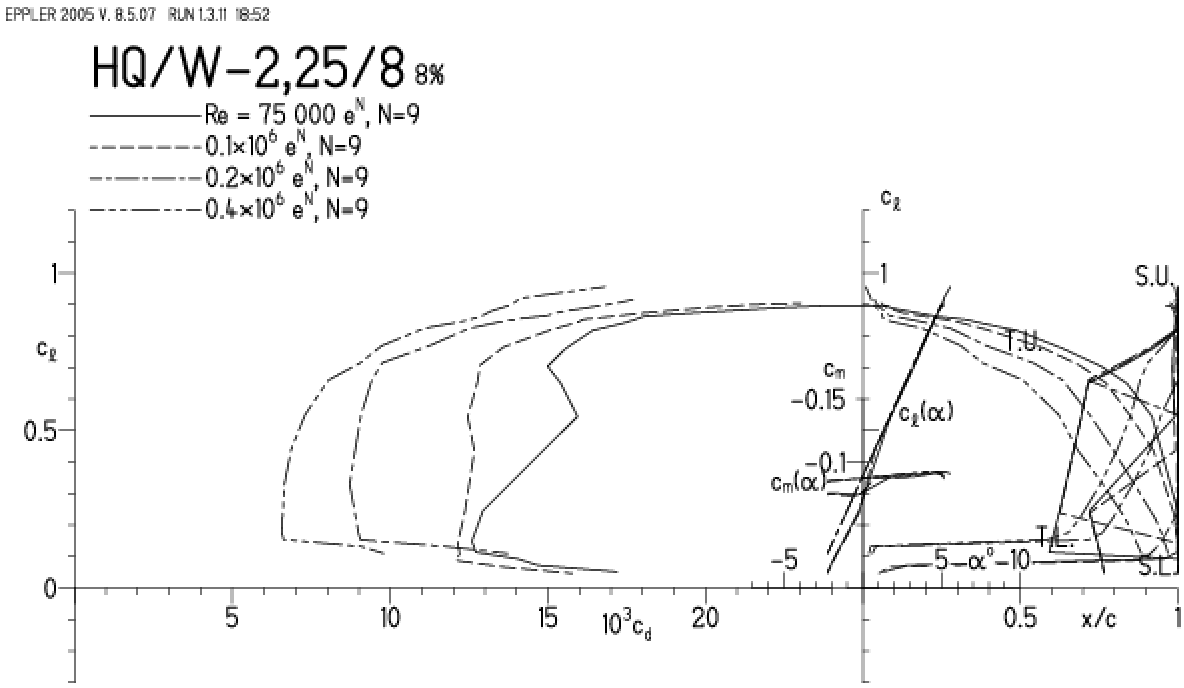
<u>HQ/W-2,25/8</u>, N=11



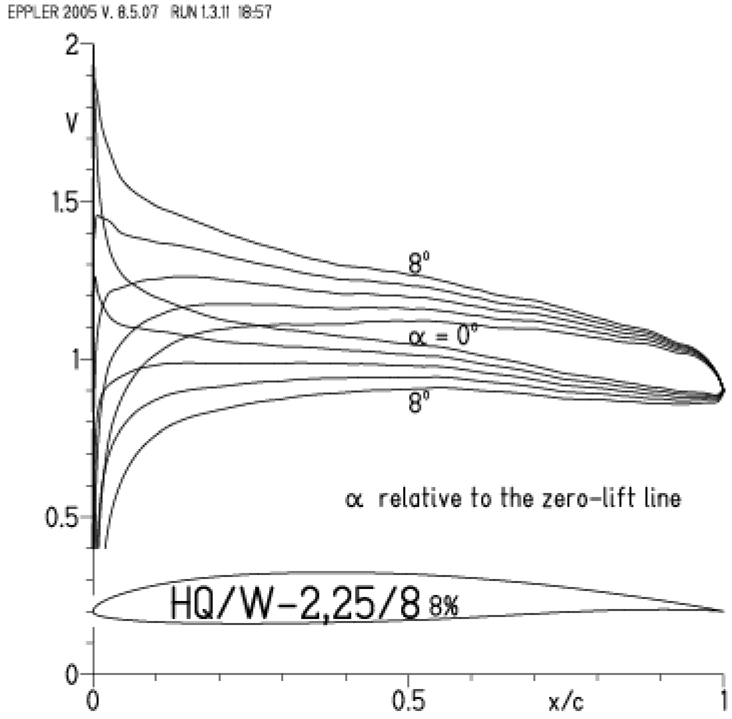


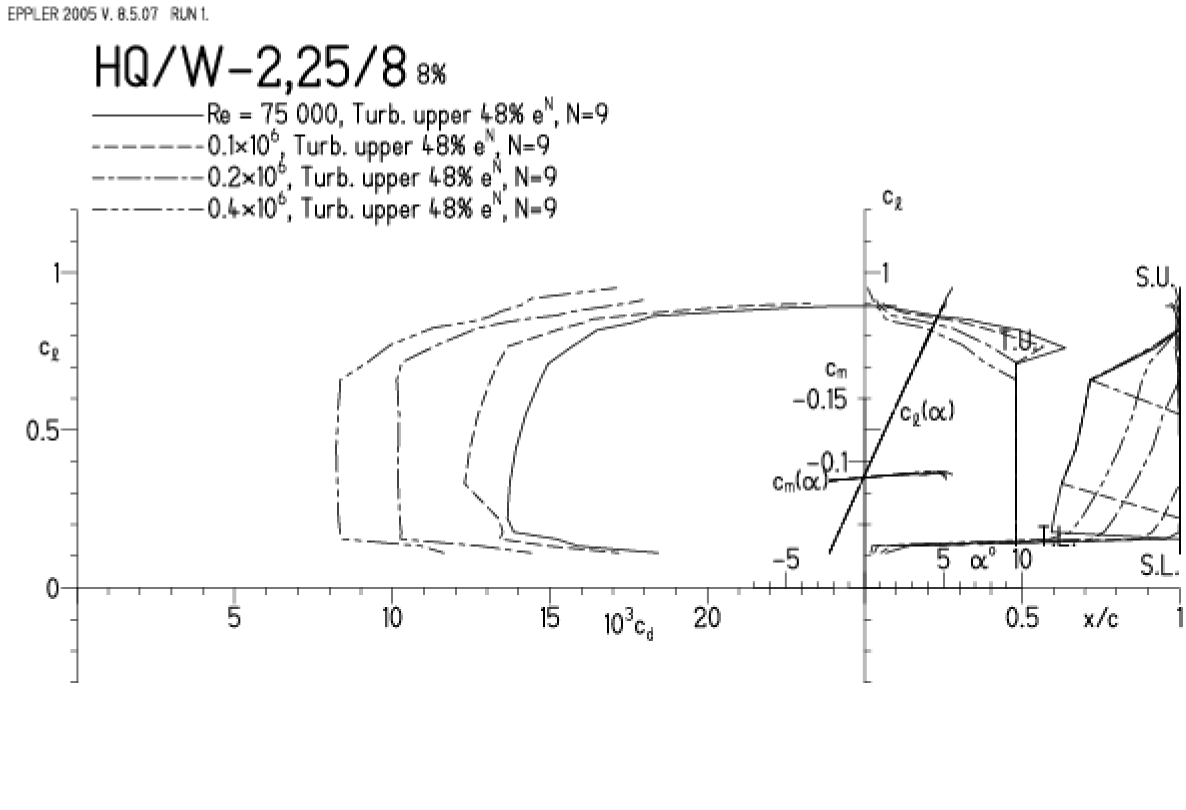
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
$c_l(\alpha)$
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
5 –α°– 10
x/c

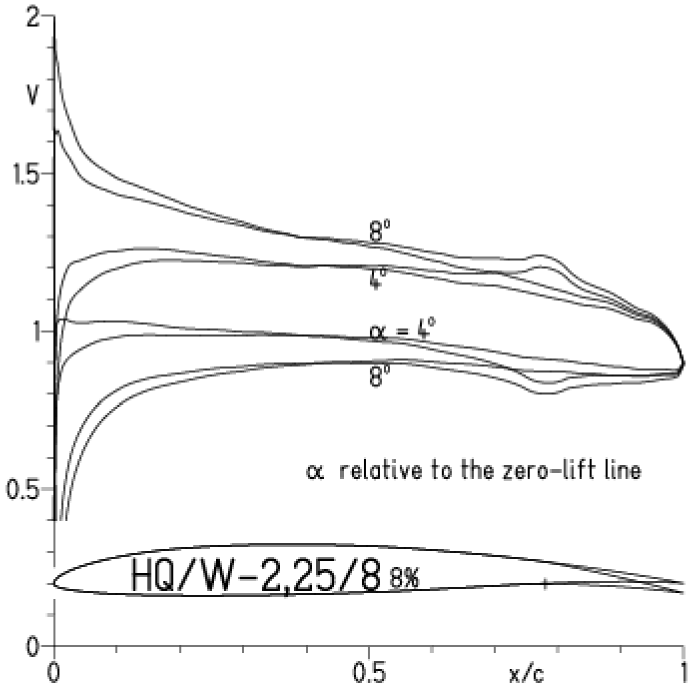
<u>HQ/W-2,25/8,</u> N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



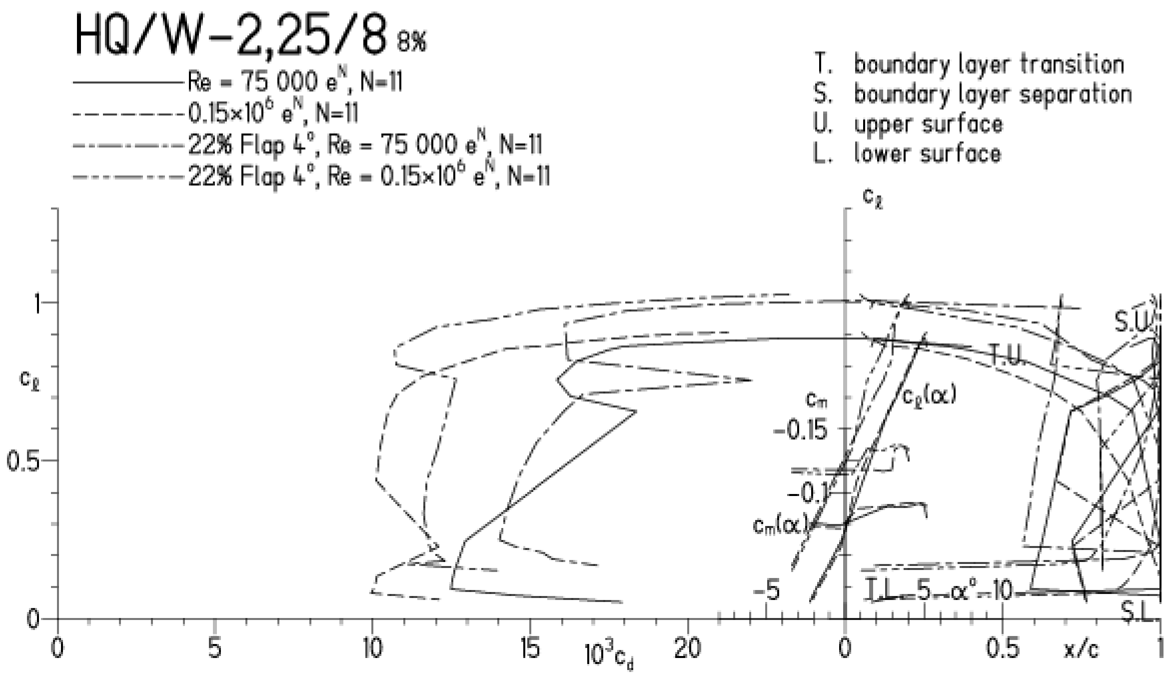


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

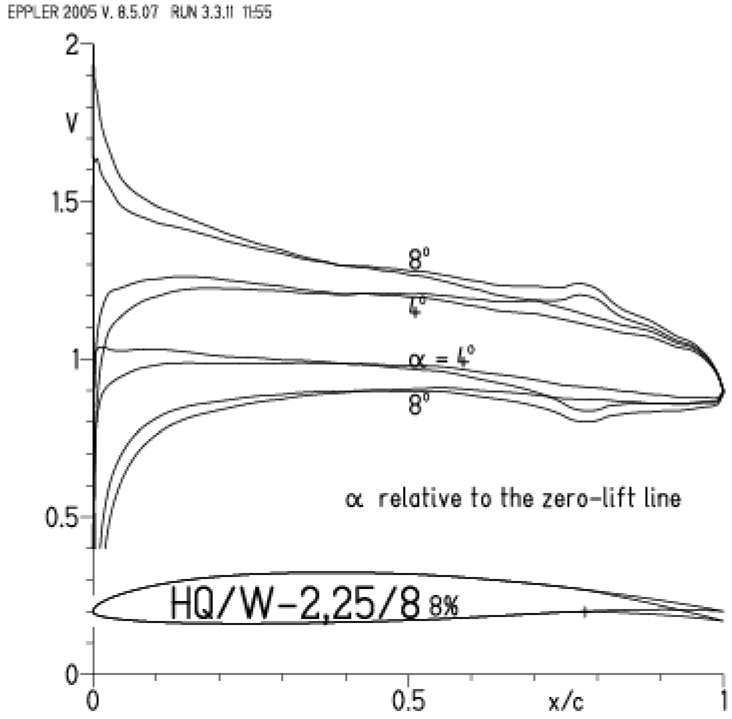
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

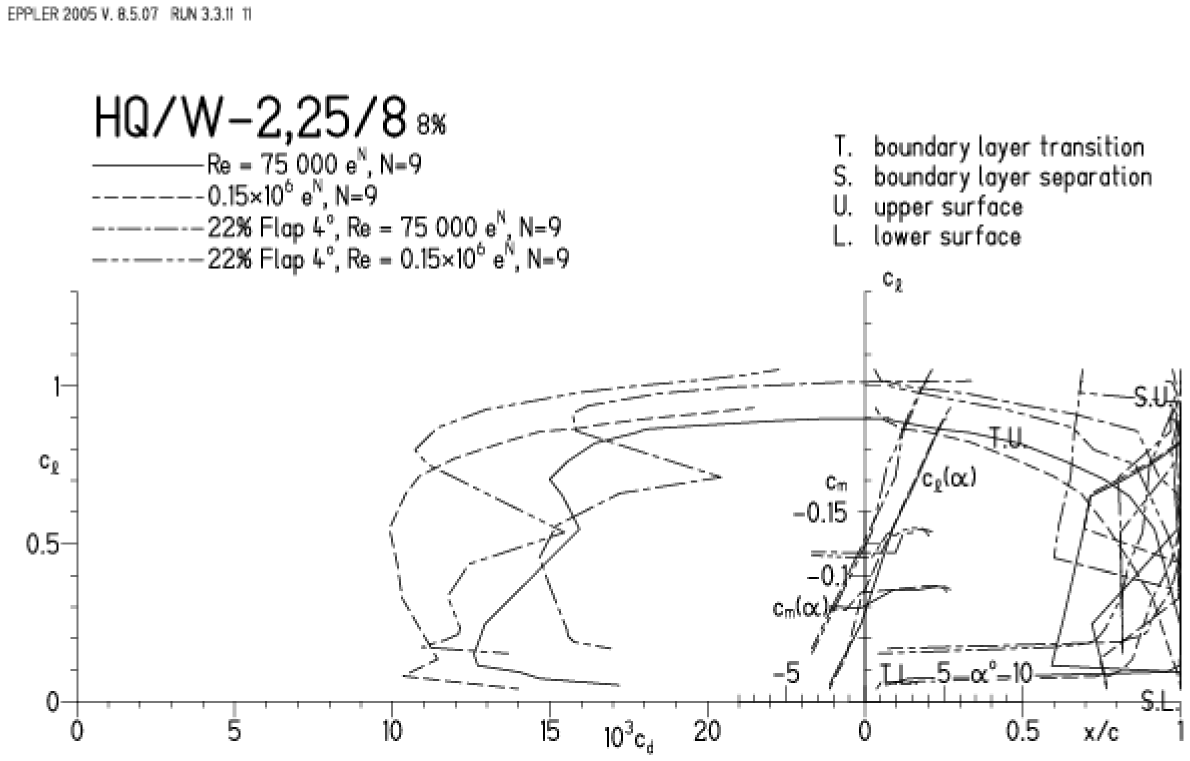


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

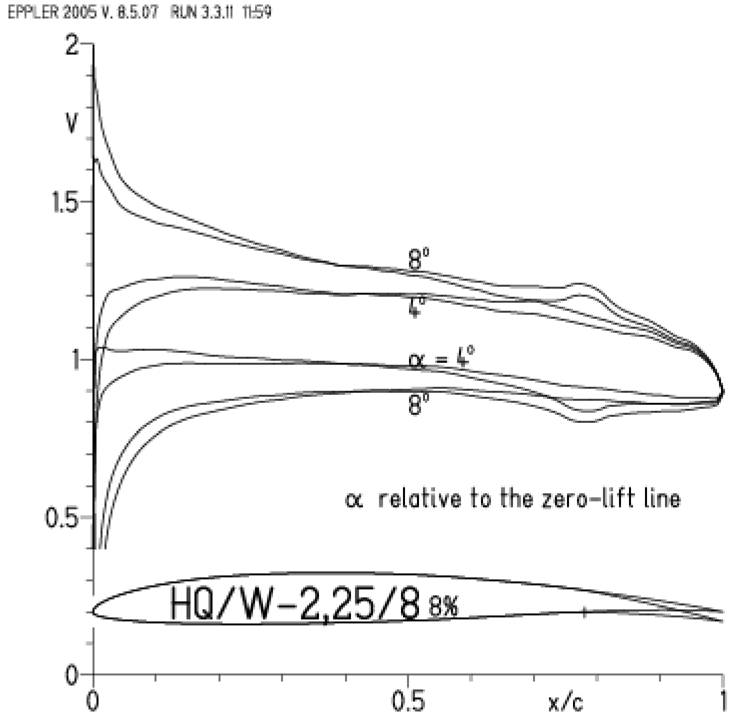


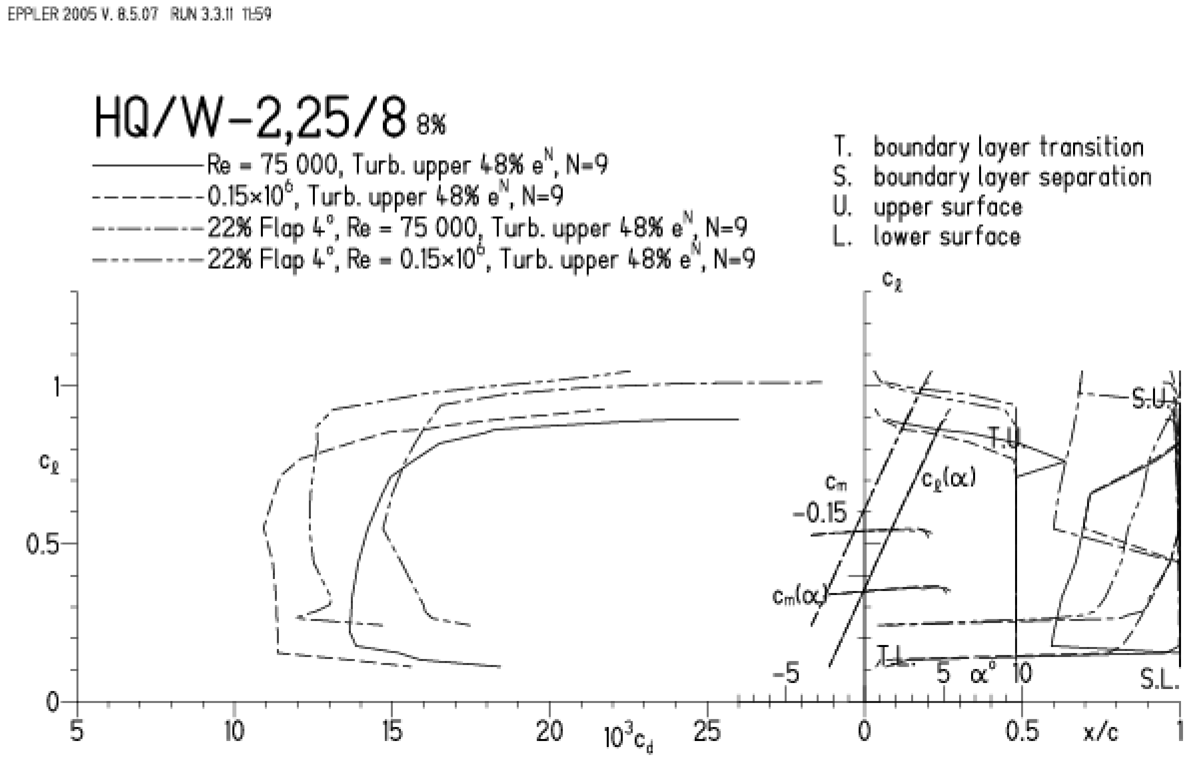
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





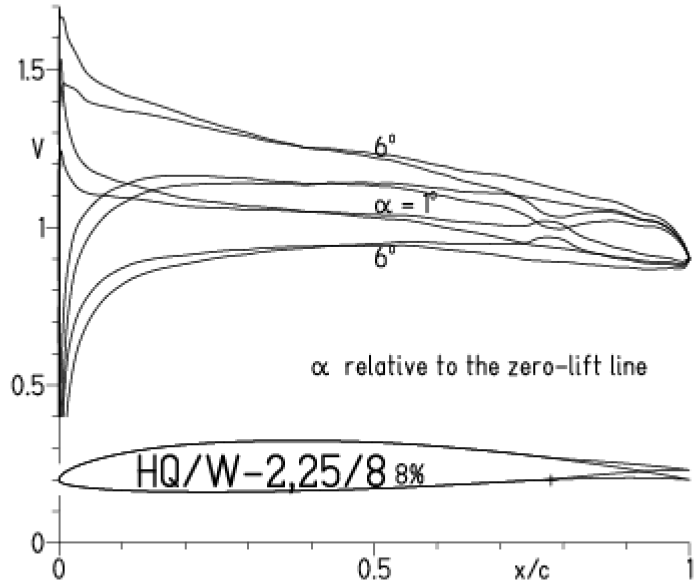
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



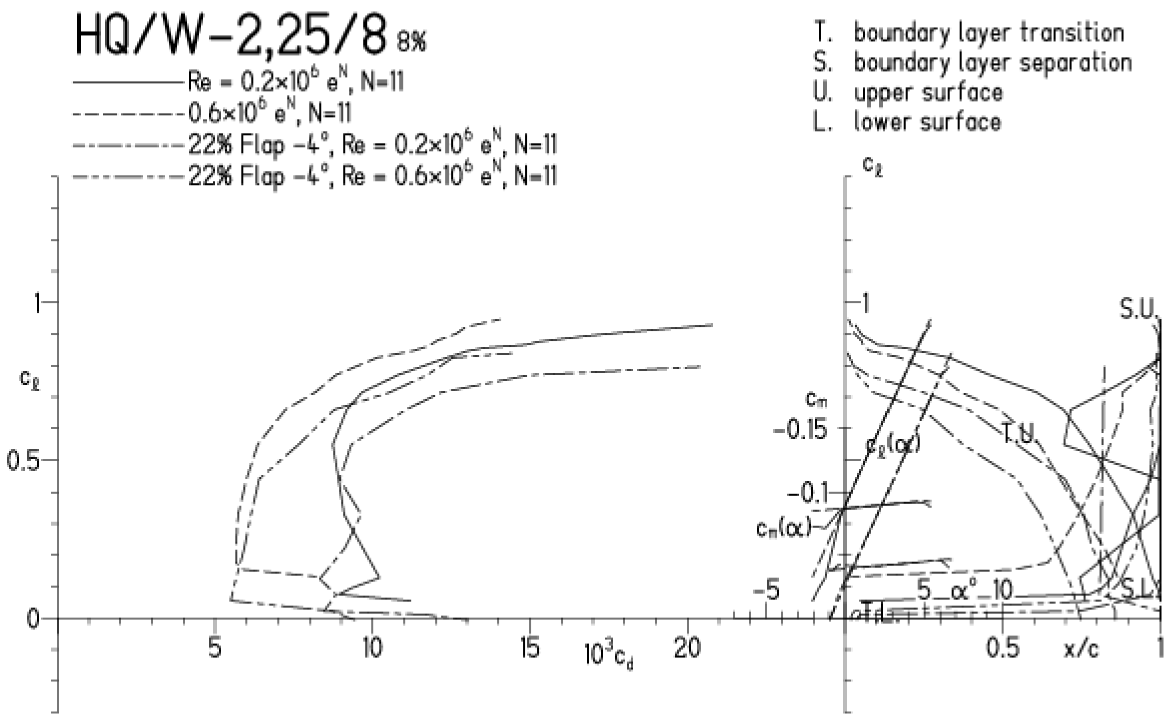


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

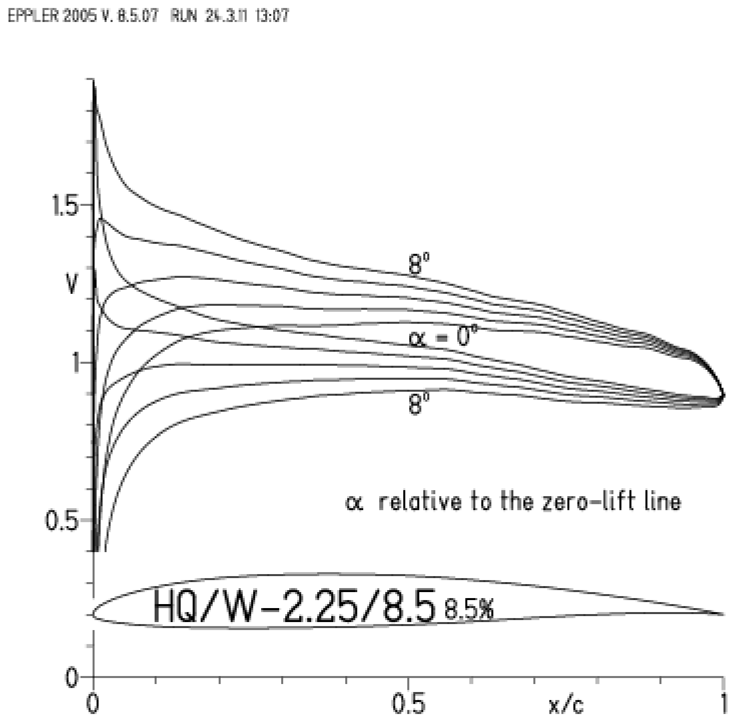
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

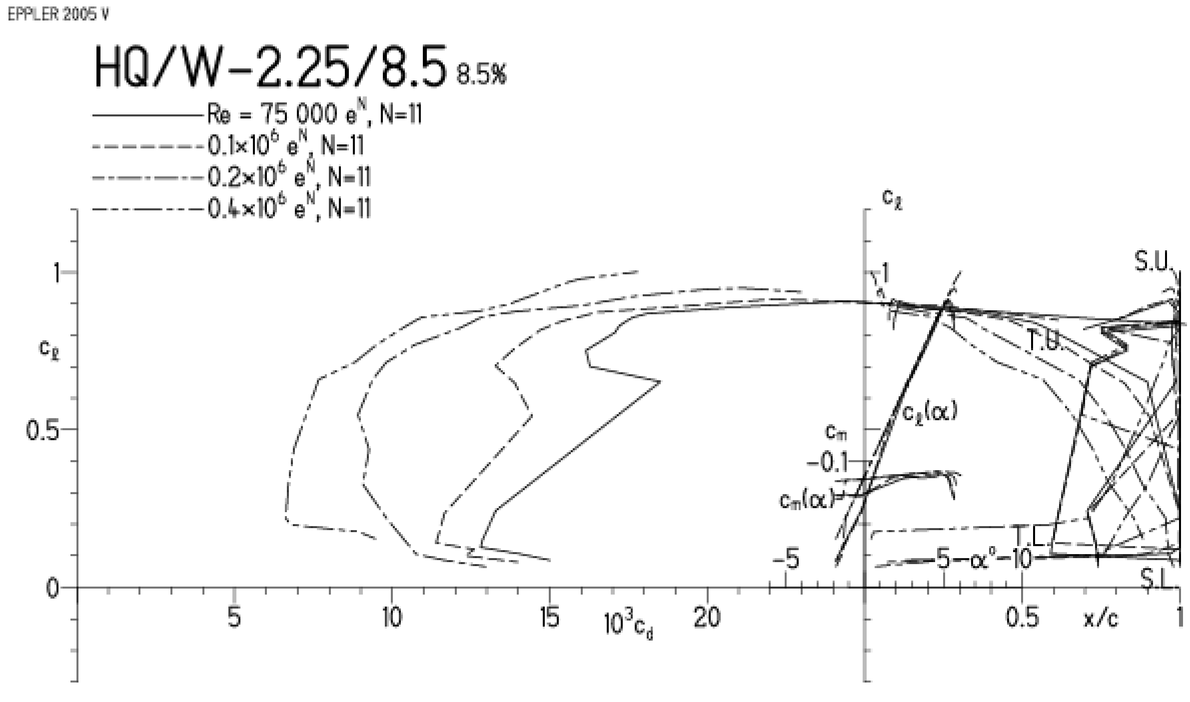


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



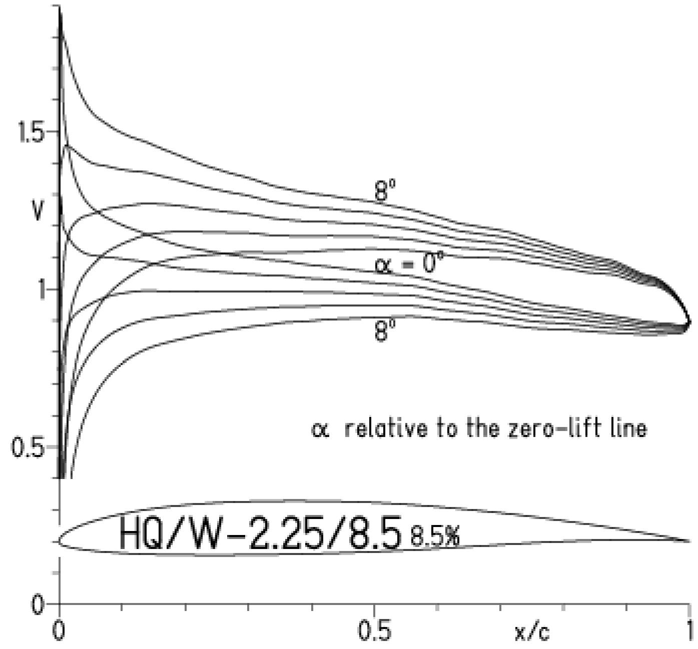
HQ/W-2,25/8,5, N=11



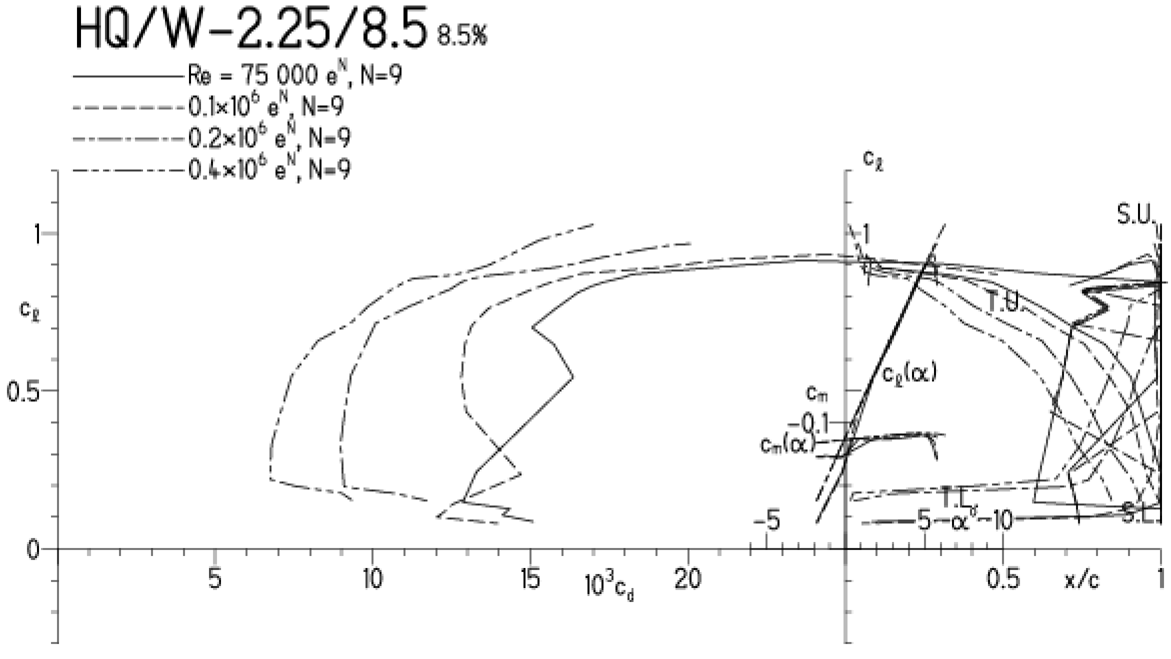


HQ/W-2,25/8,5, N=9

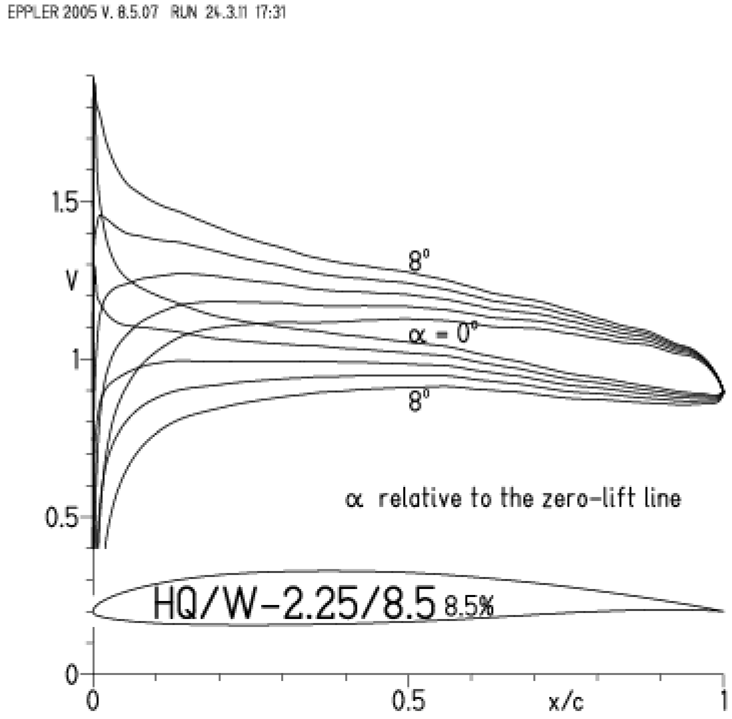
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

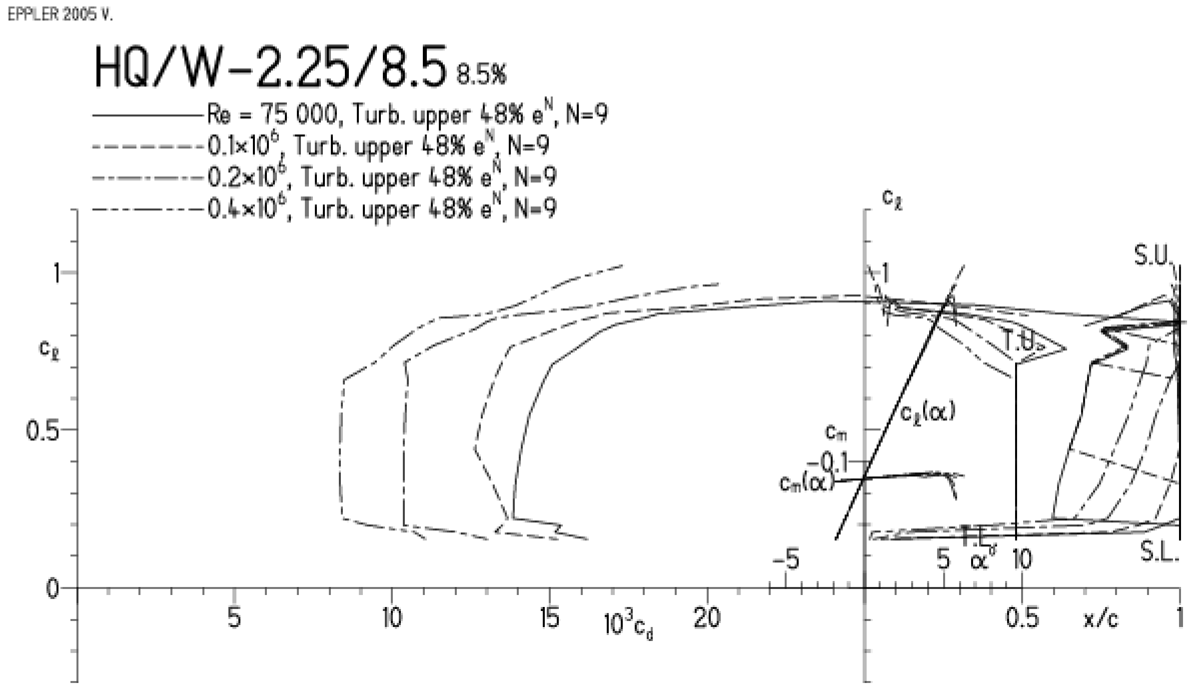


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



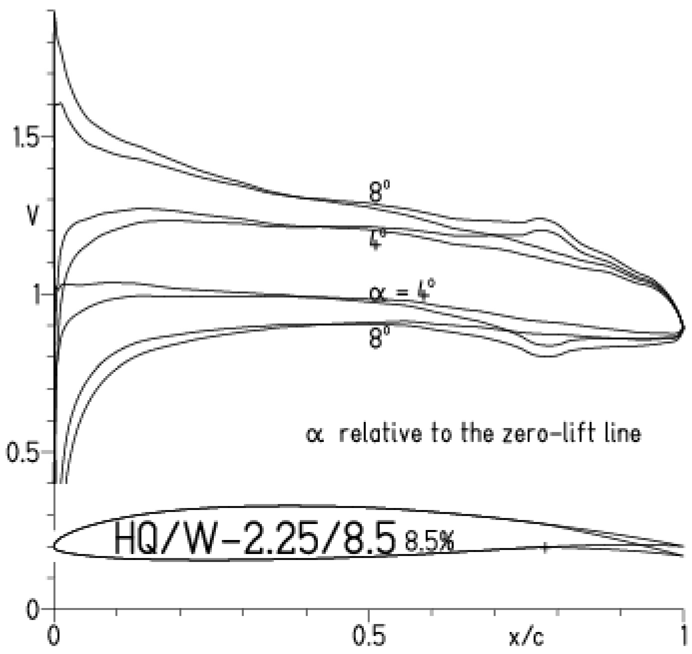
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



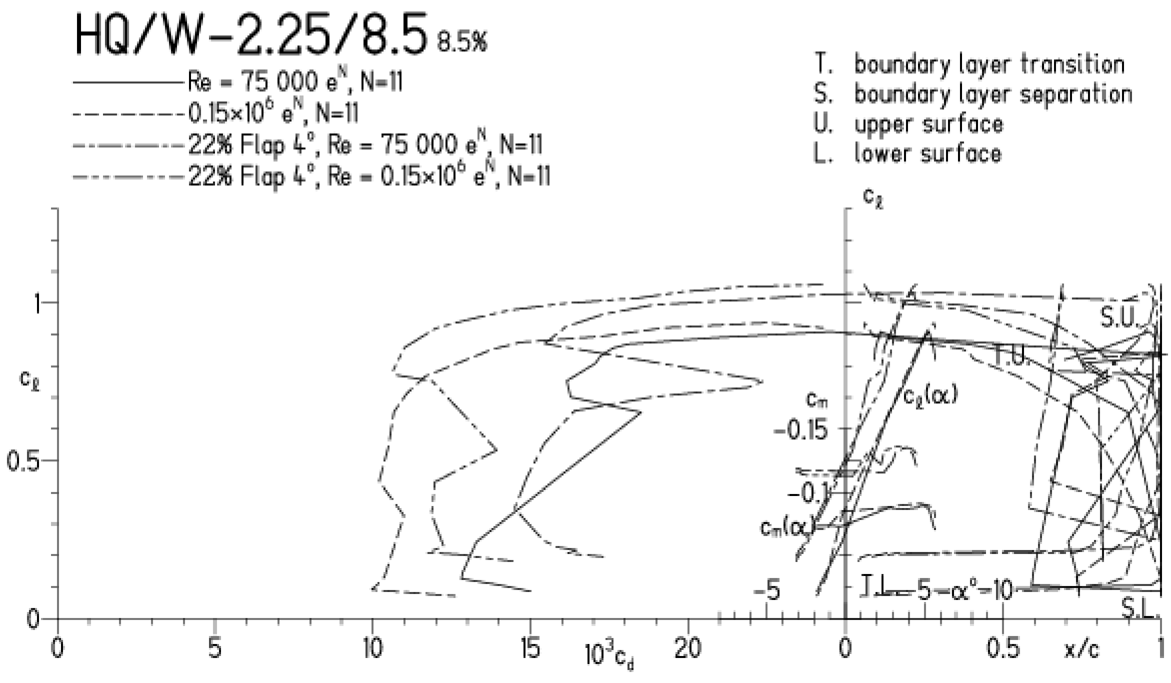


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

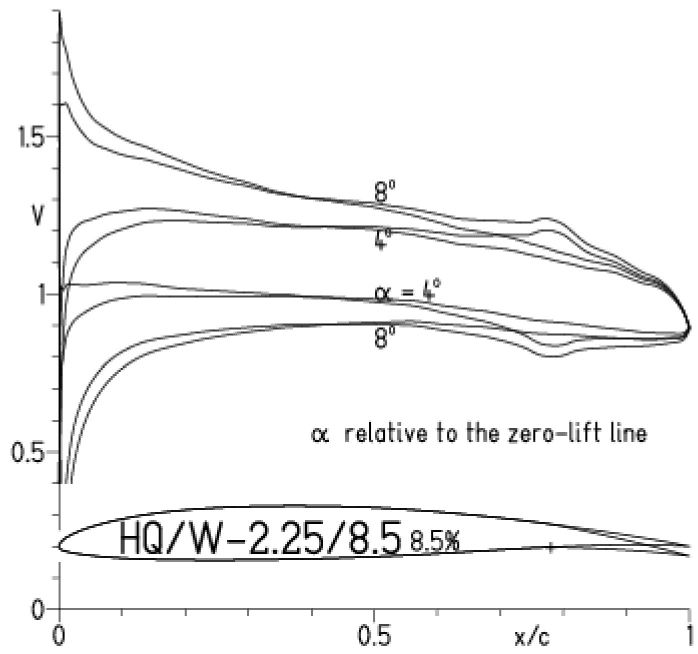


EPPLER 2005 V. 8.5.

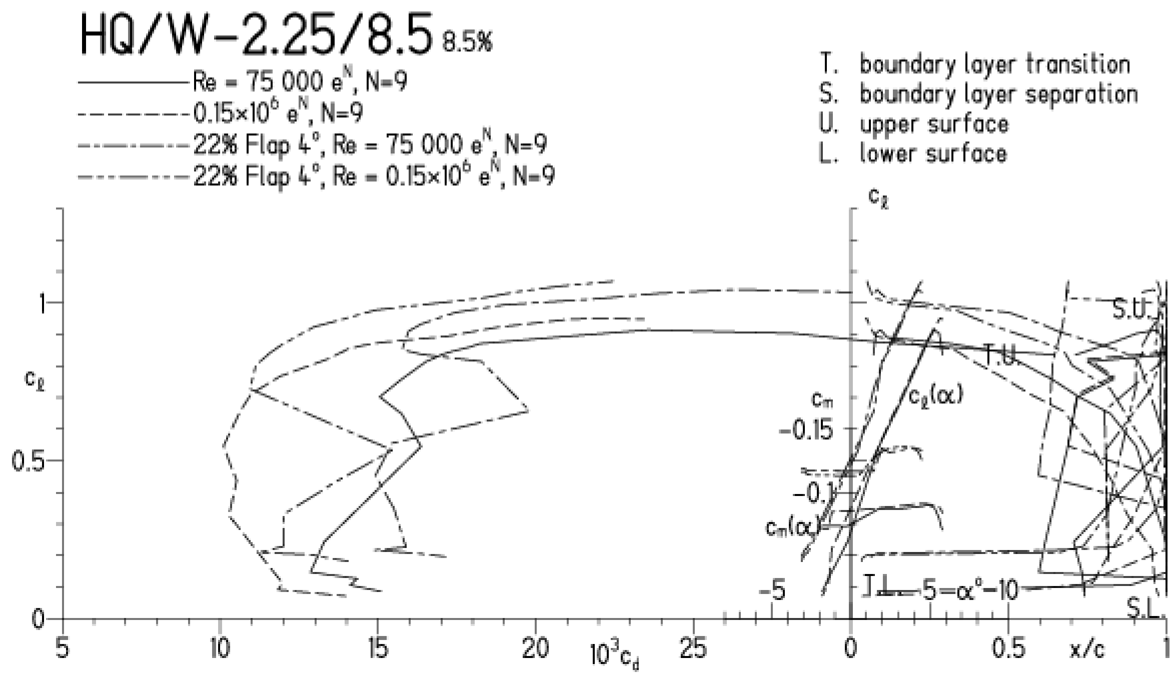


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

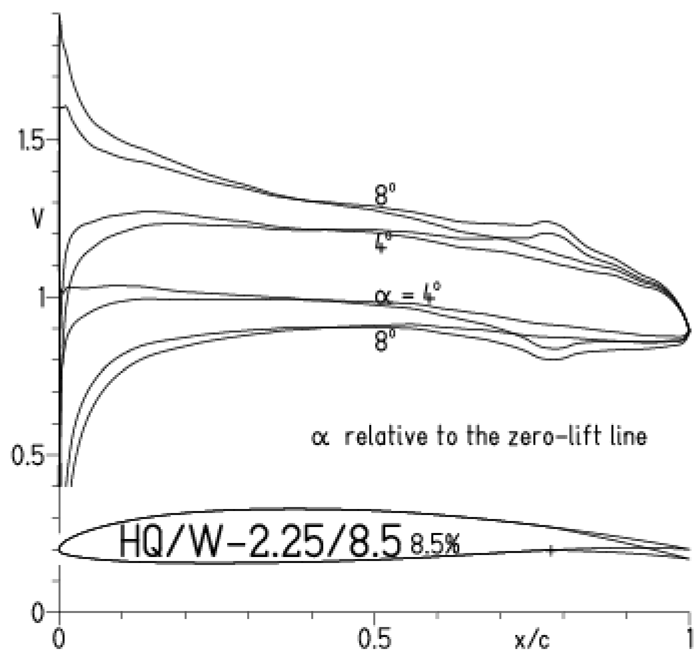


EPPLER 2005 V.

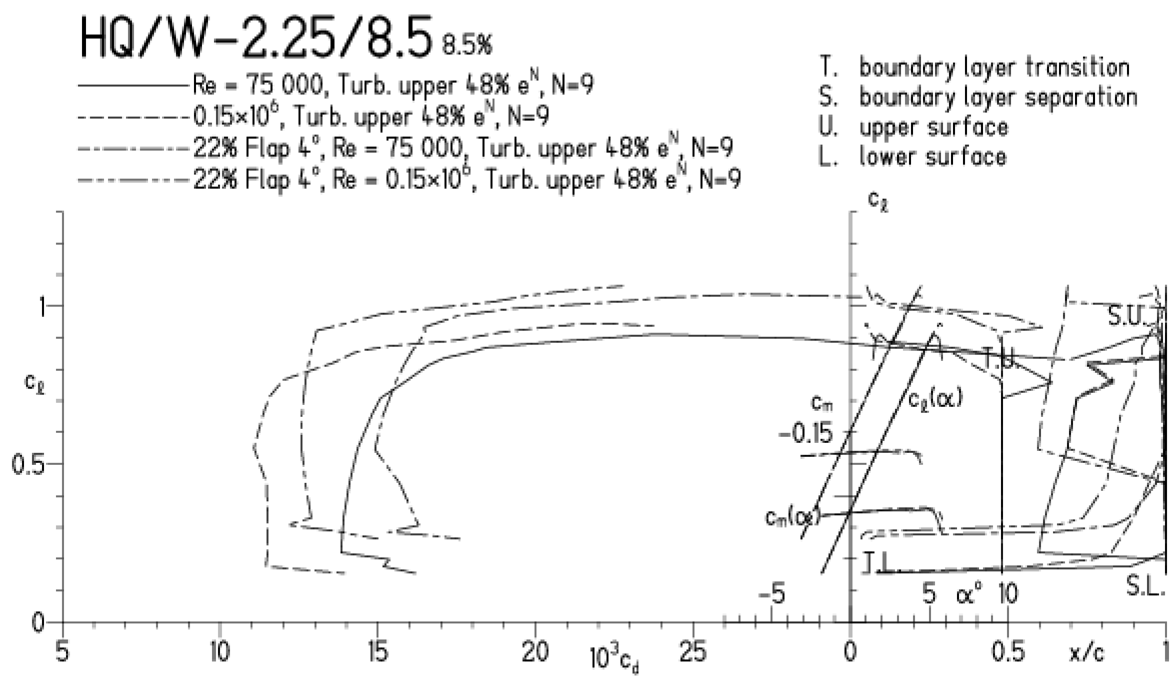


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

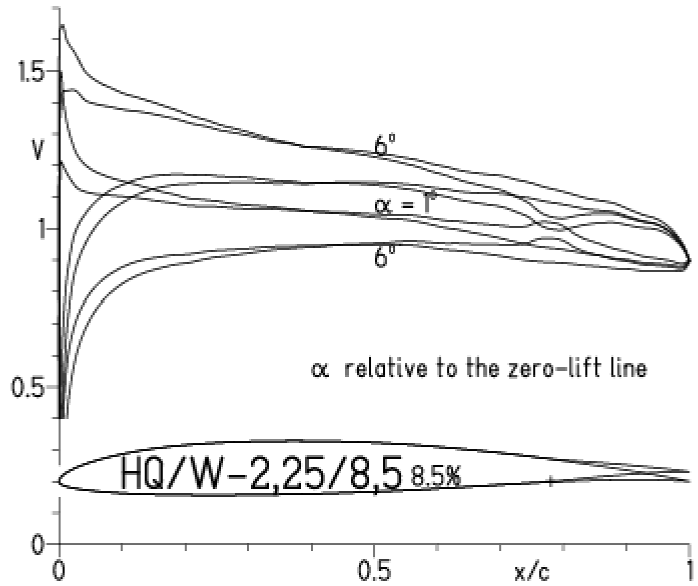


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

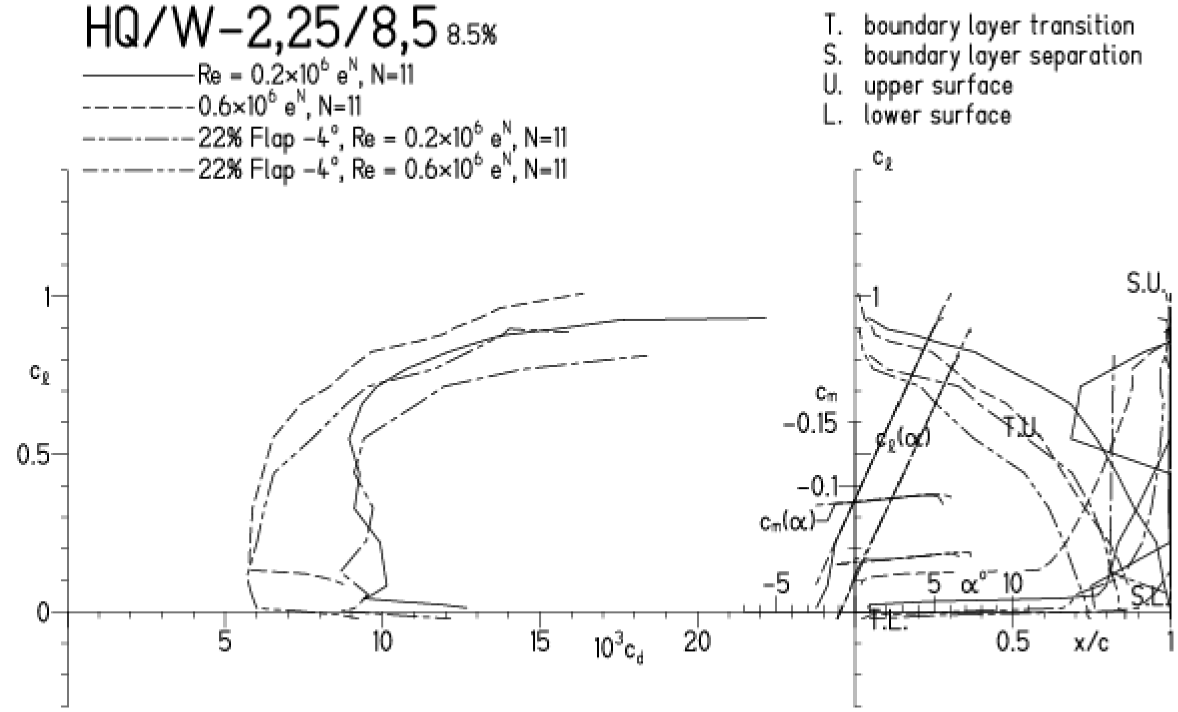


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

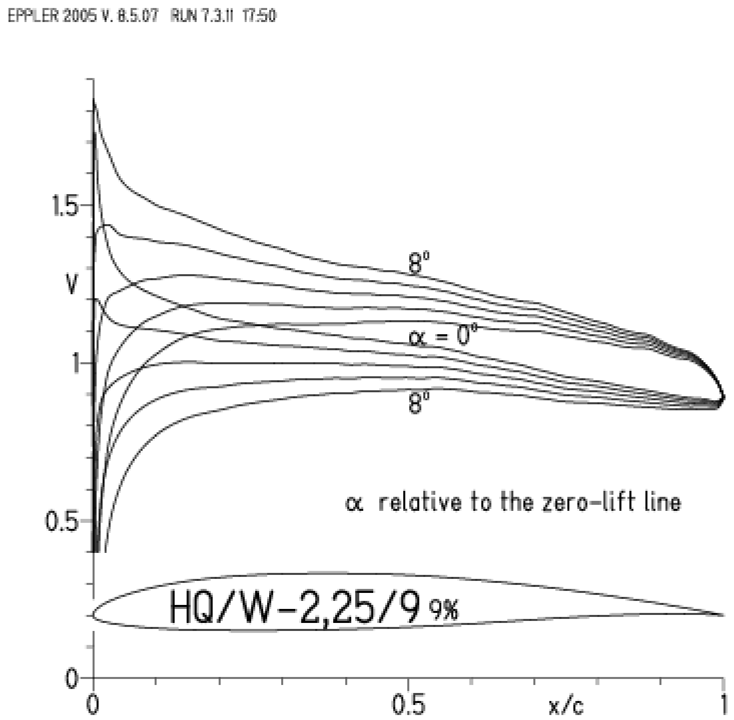
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

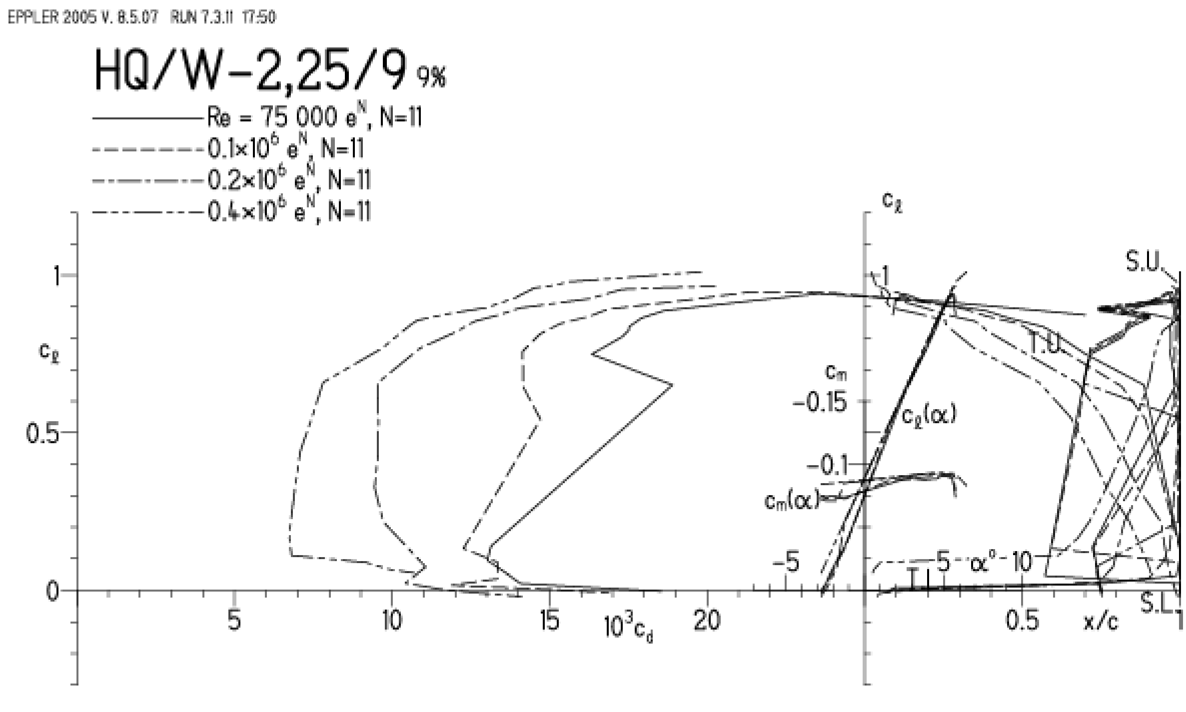


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



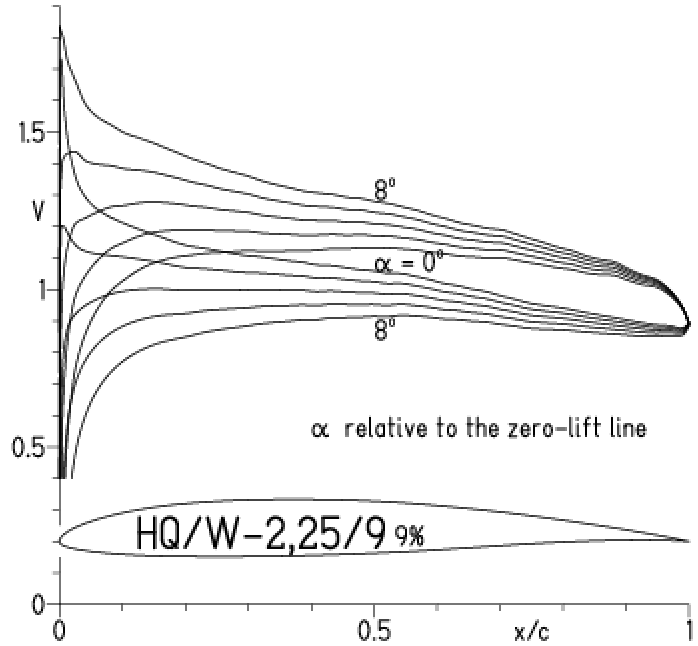
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

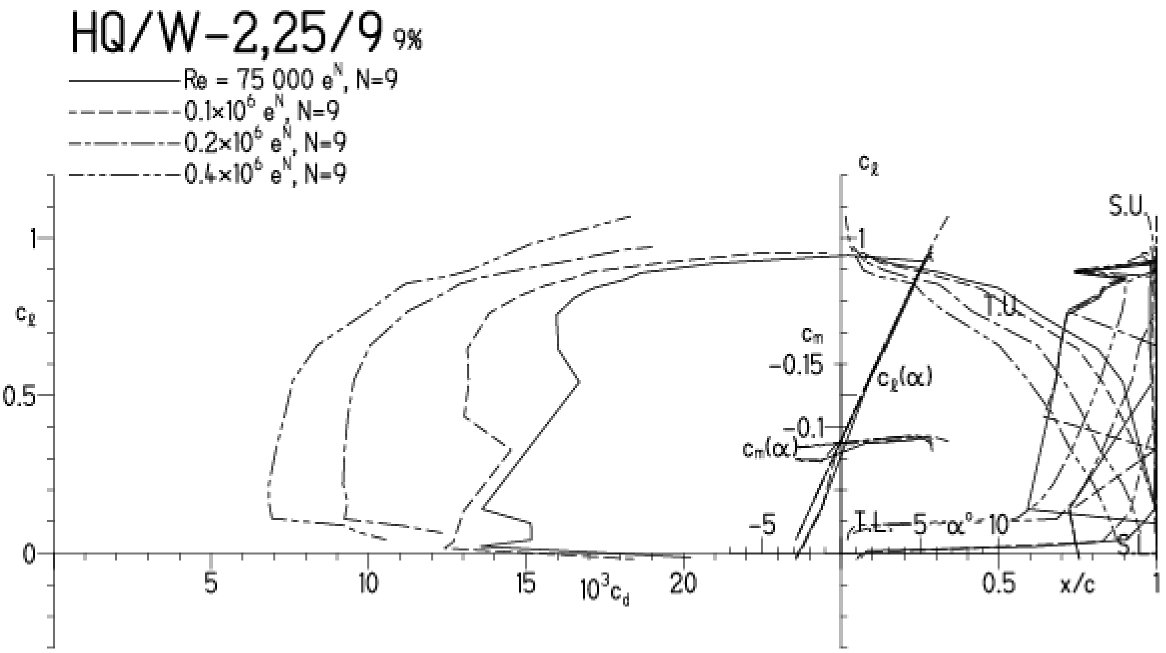

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
T.U.
S.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

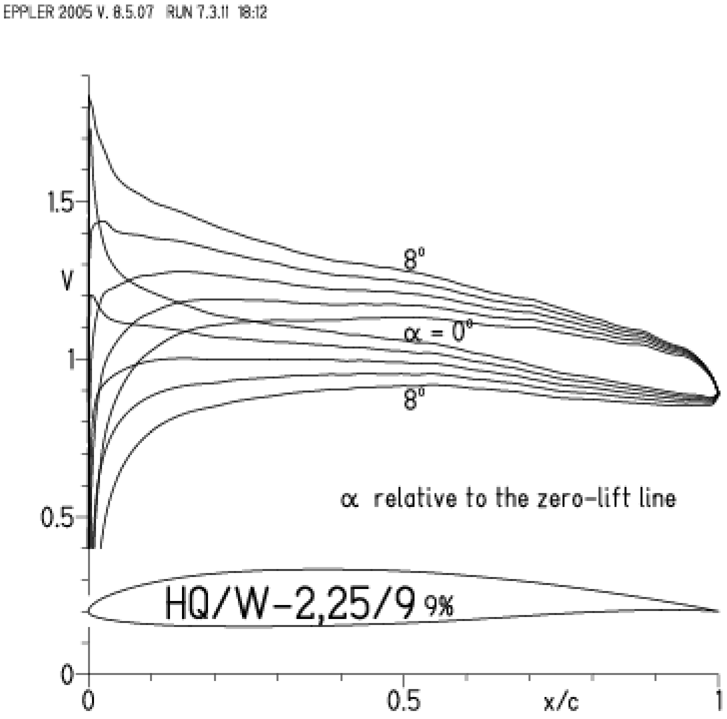
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

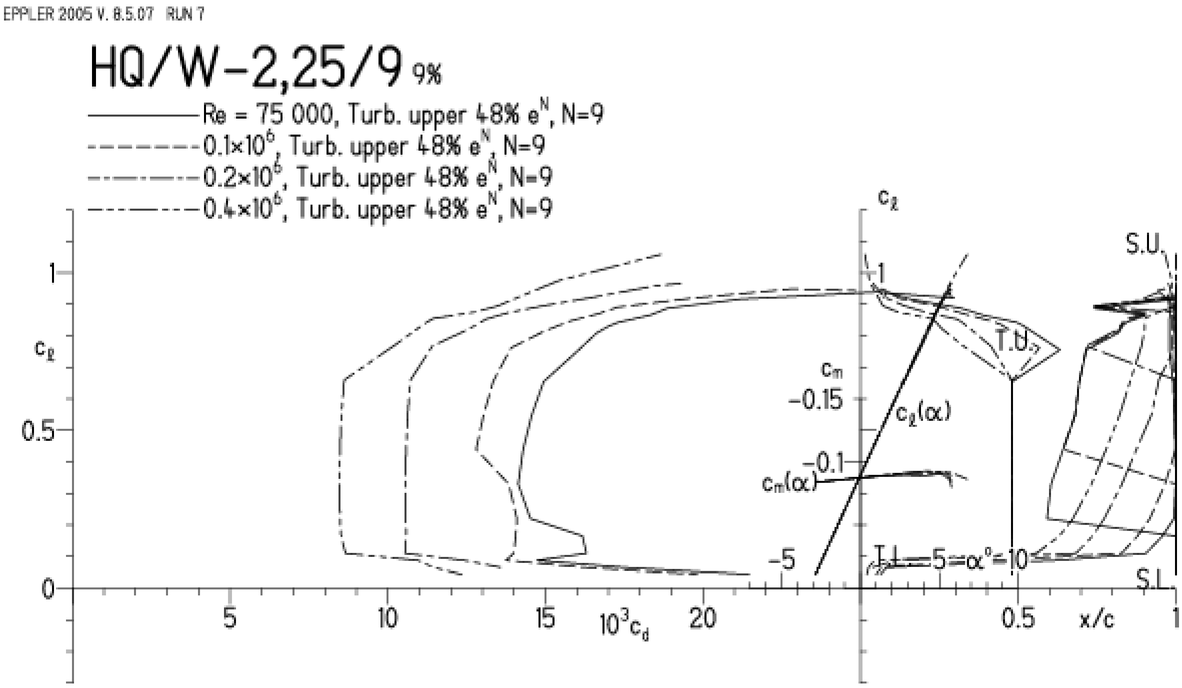


EPPLER 2005 V. 8.



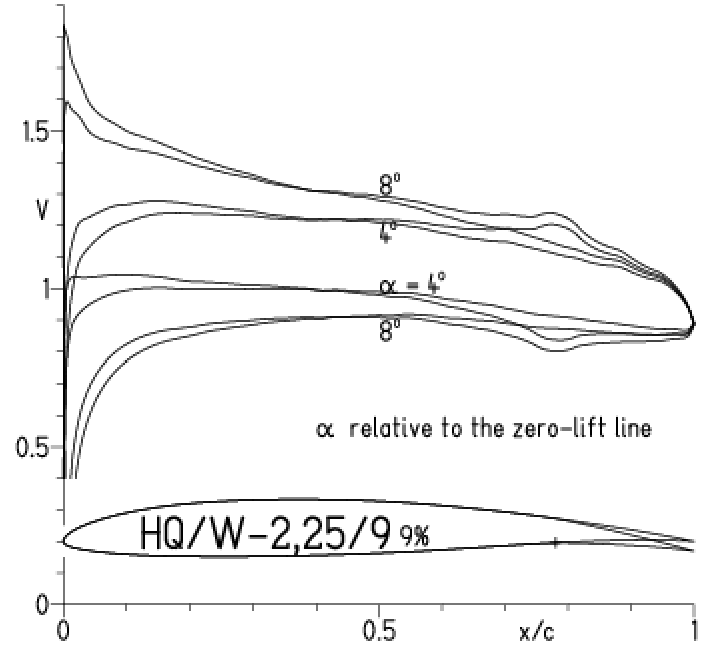
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



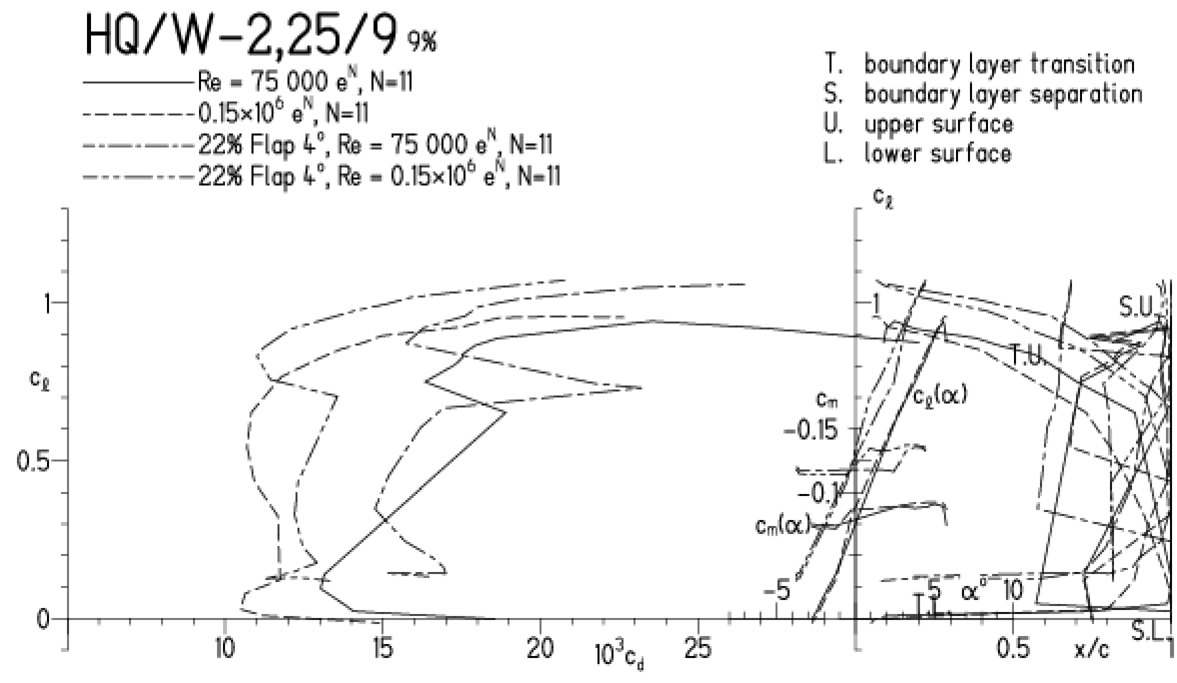


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

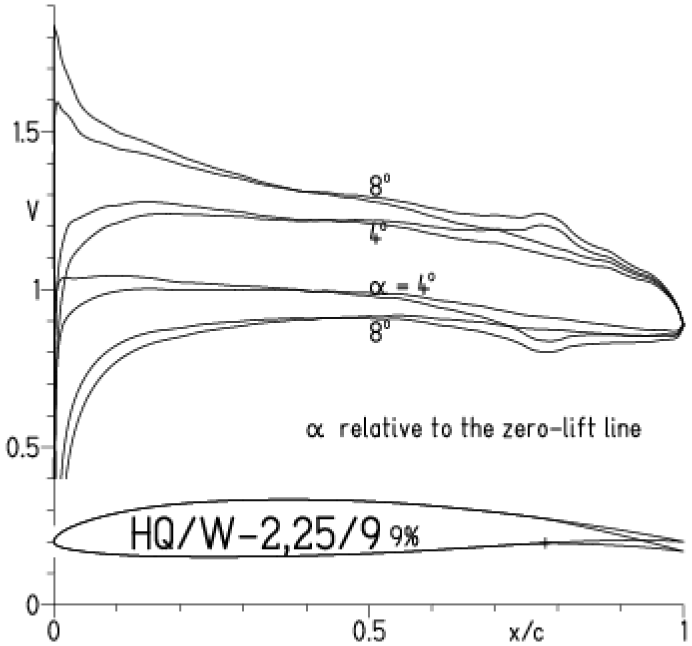


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

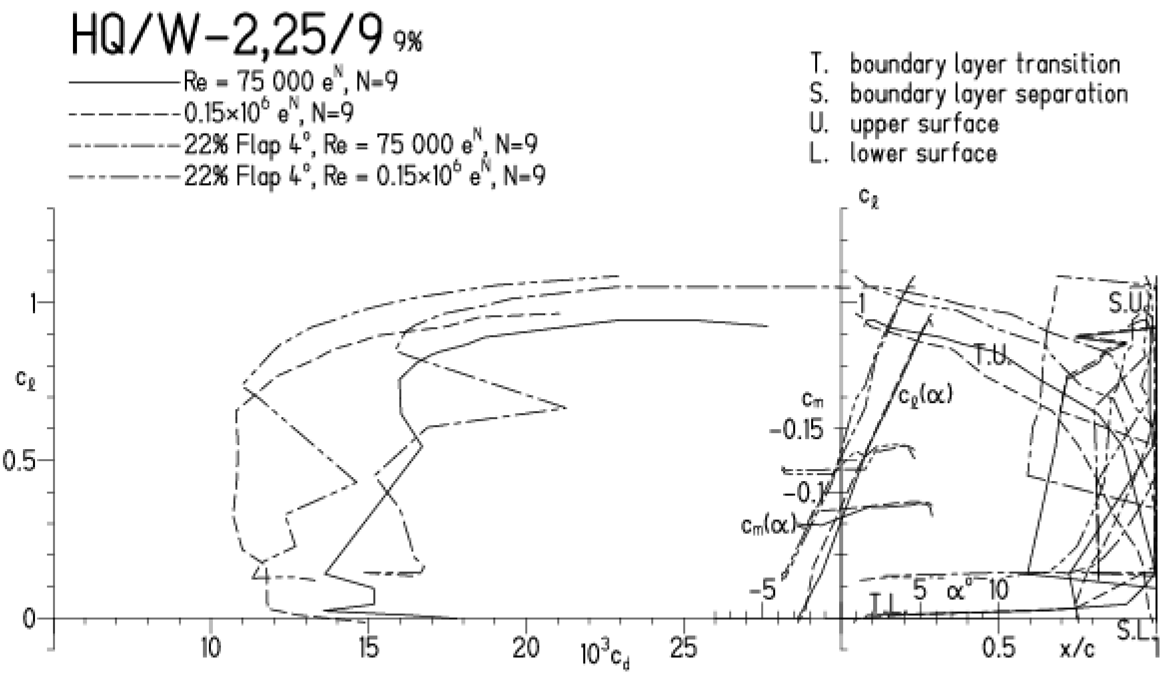


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

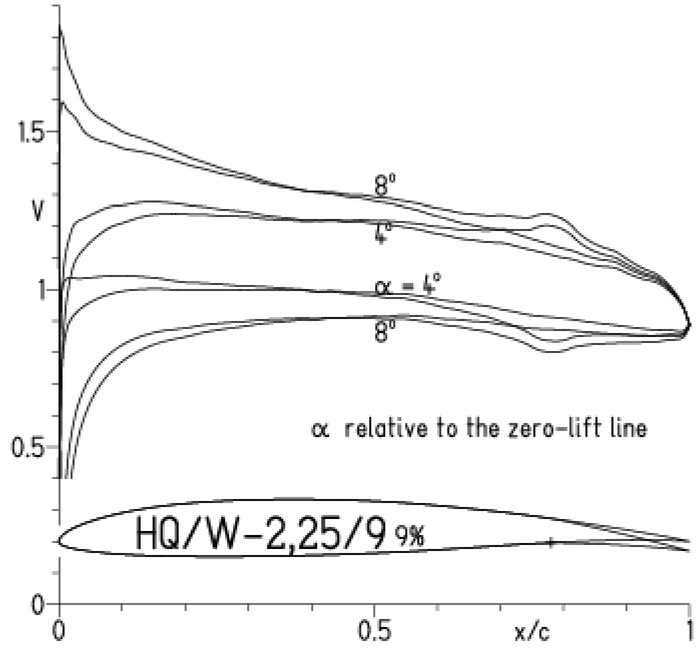


EPPLER 2005 V. 8.5.07 RUN 8.3.1

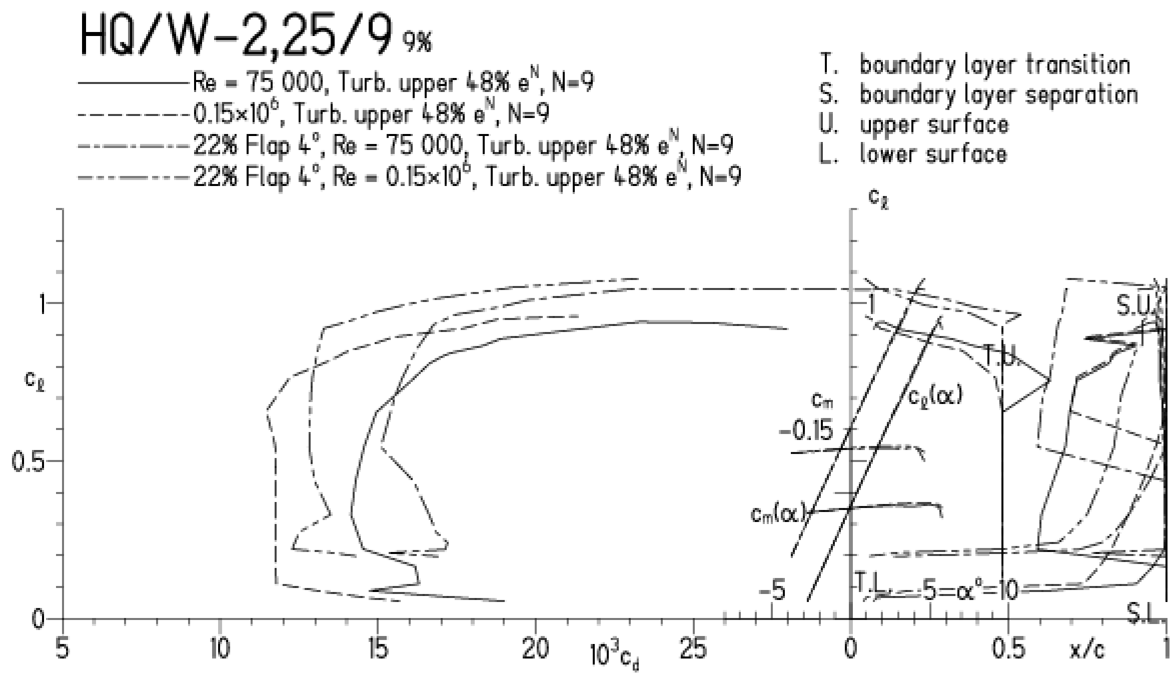


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

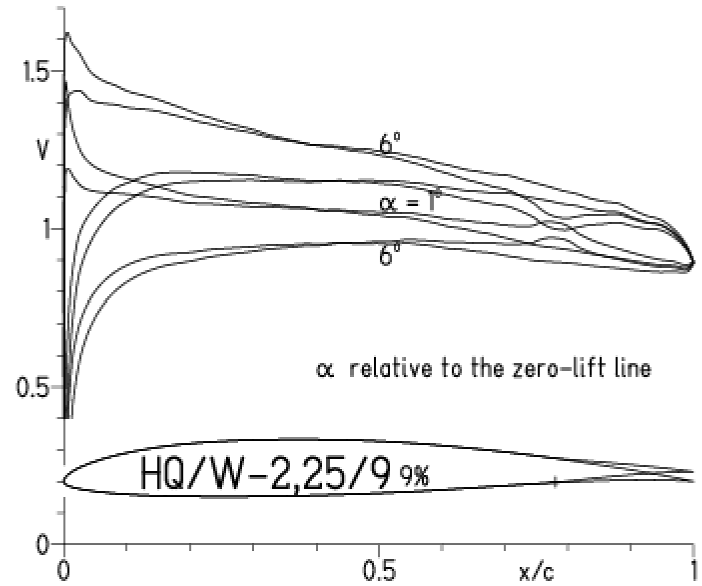


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

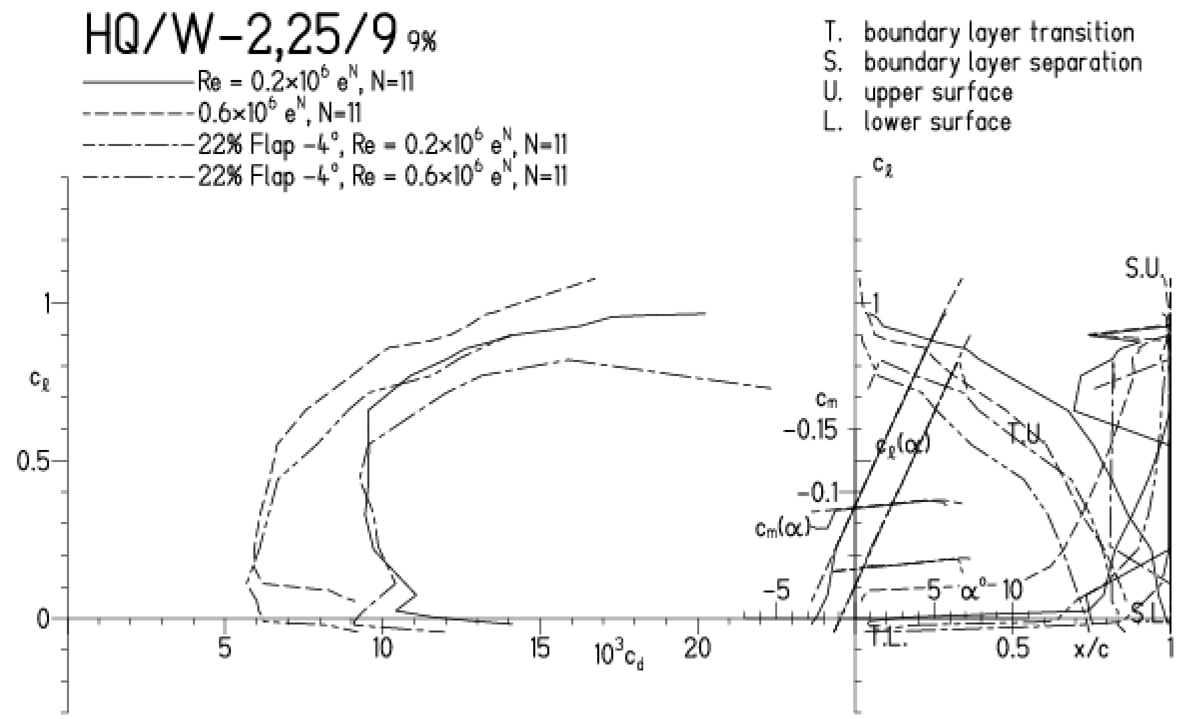


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

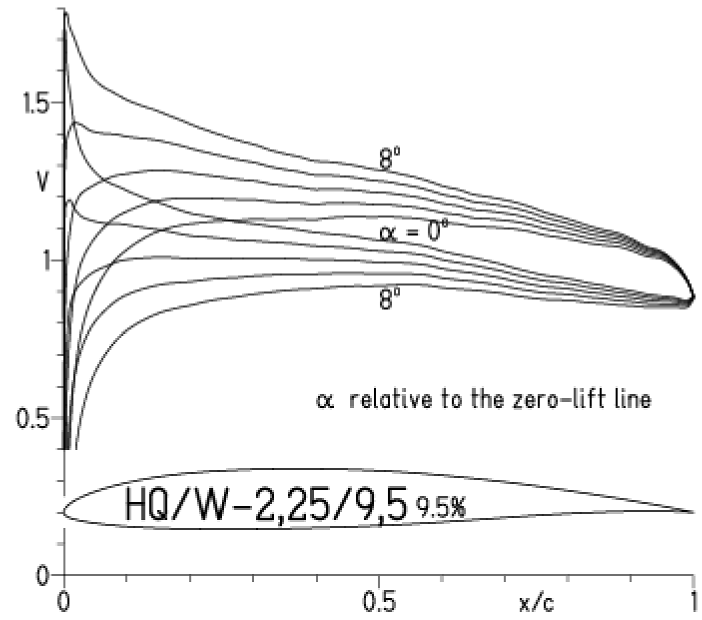


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

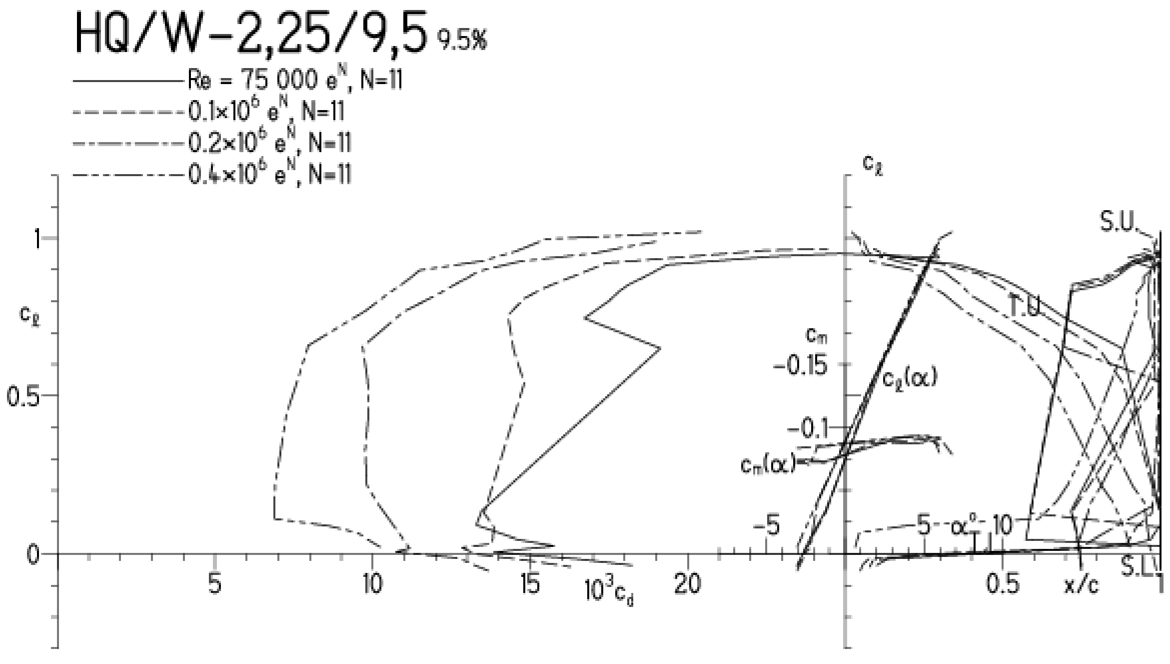


HQ/W-2,25/9,5, N=11

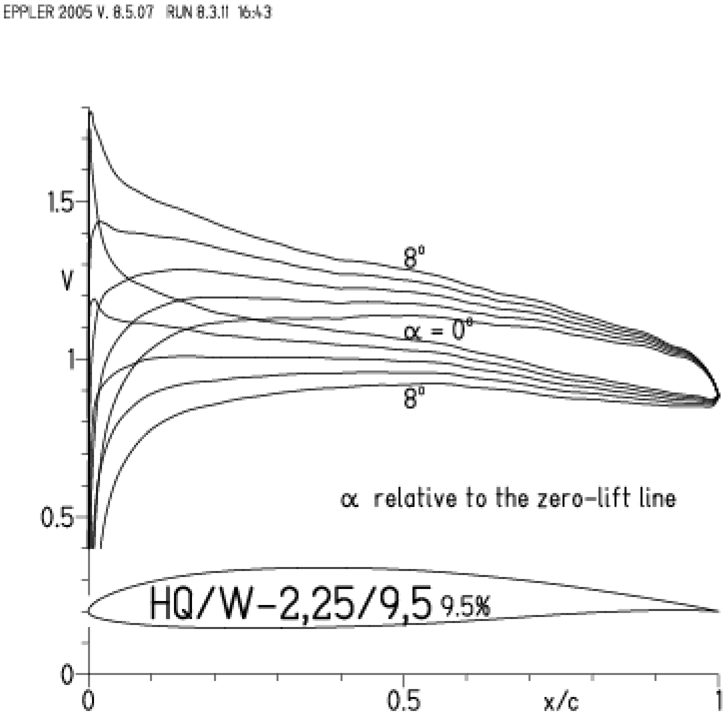
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

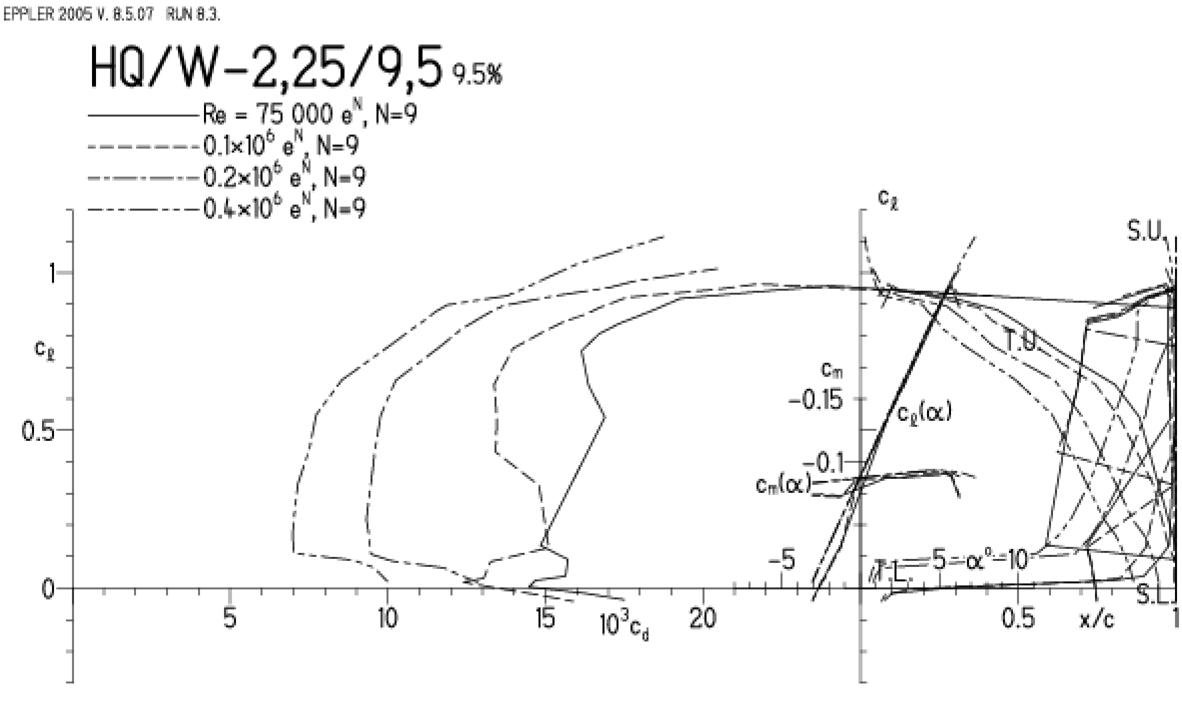


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

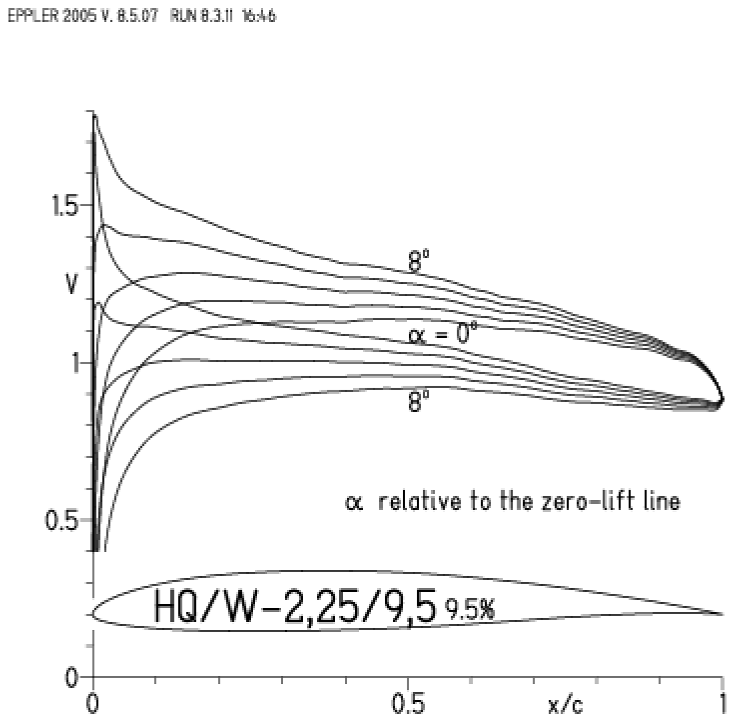


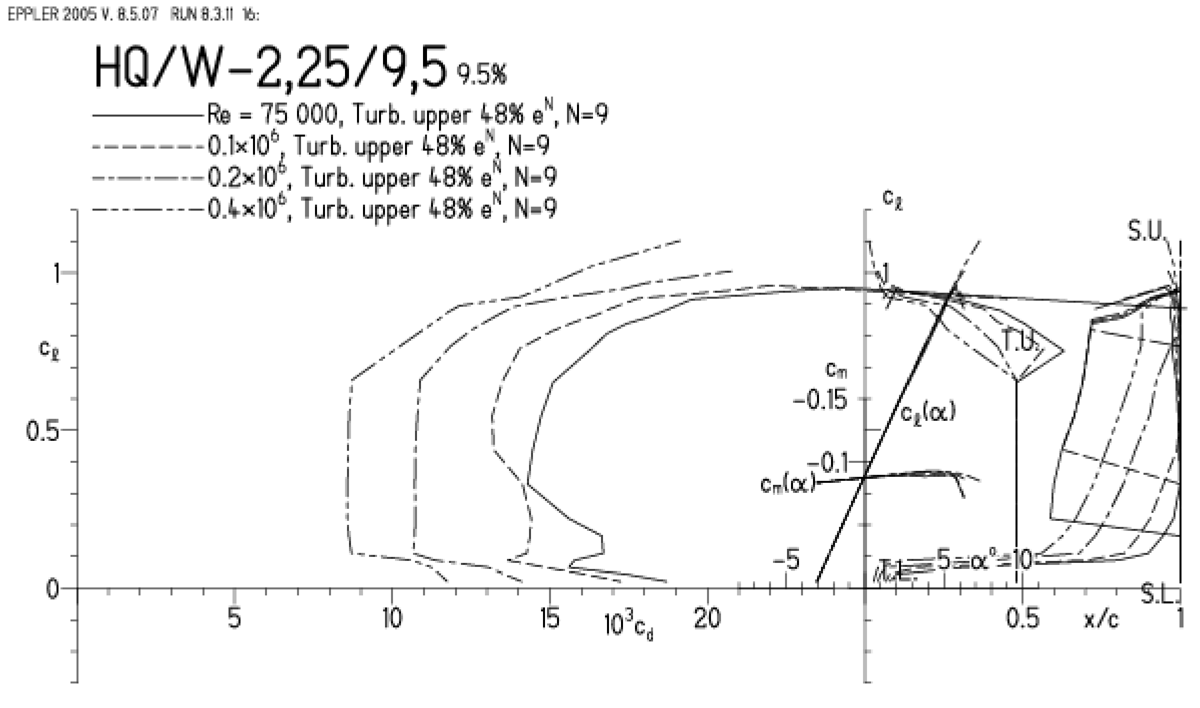
<u>HQ/W-2,25/9,5</u>, N=9





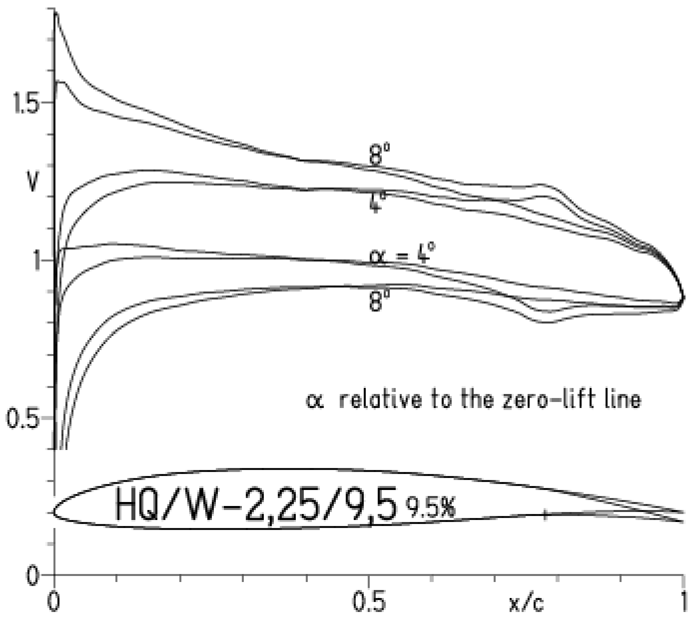
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



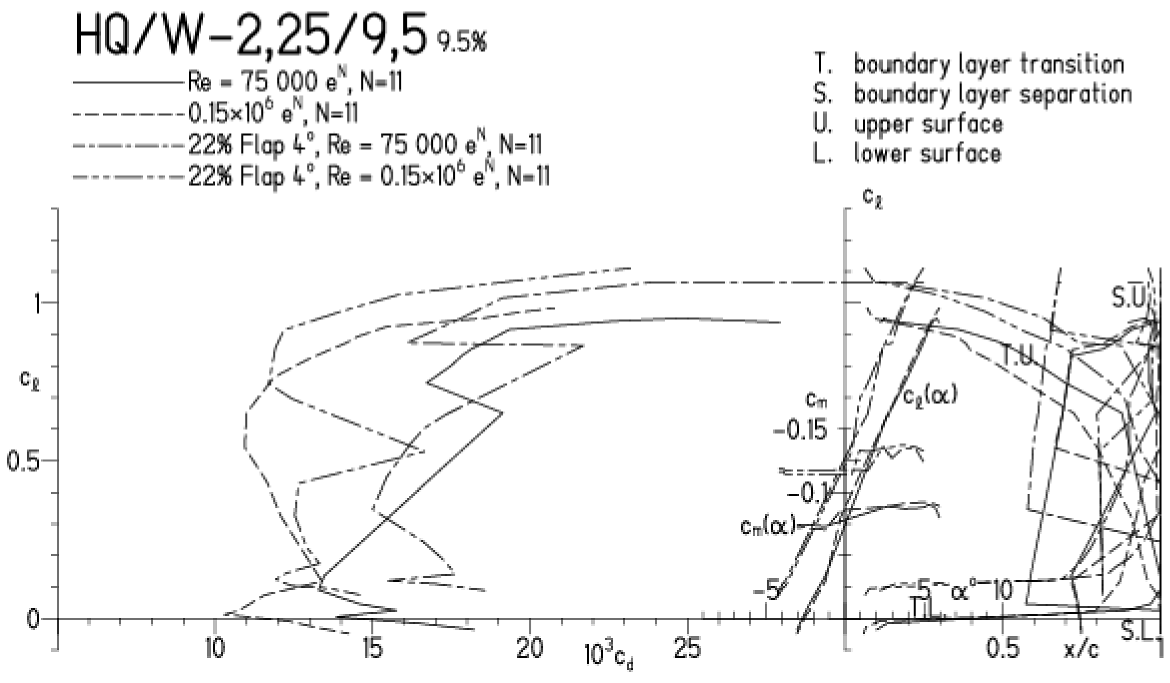


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

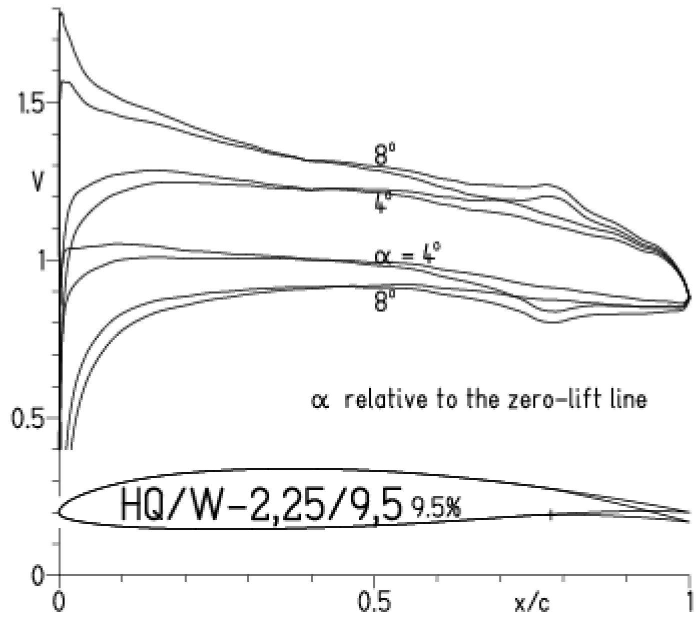


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

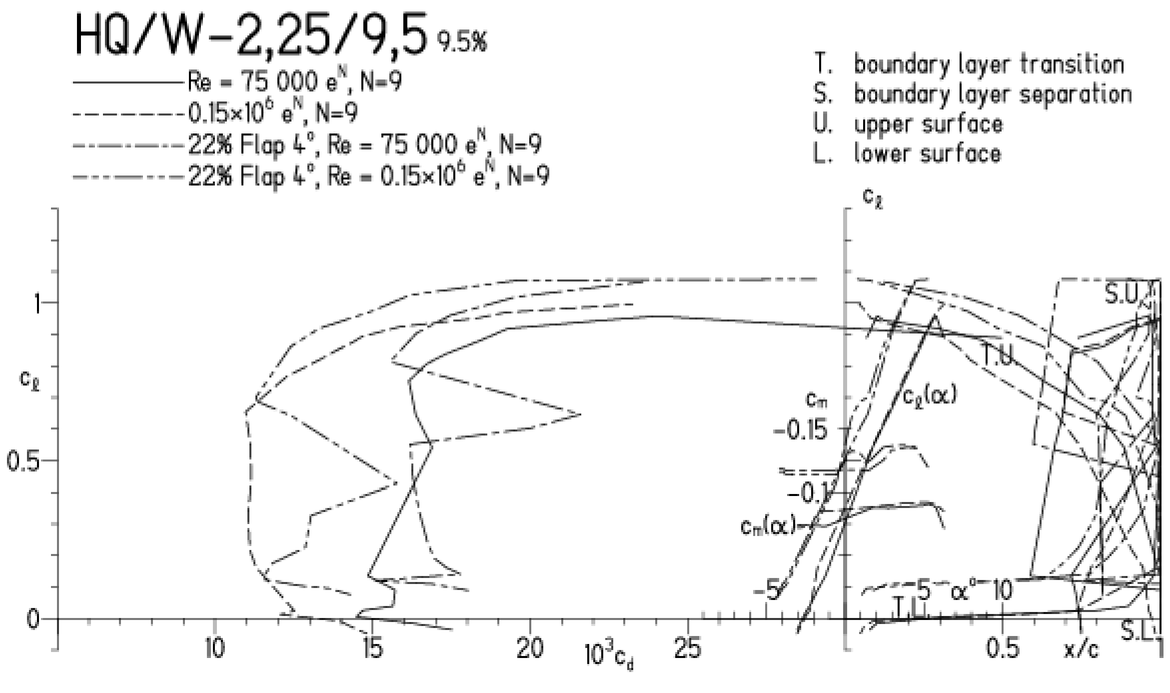


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

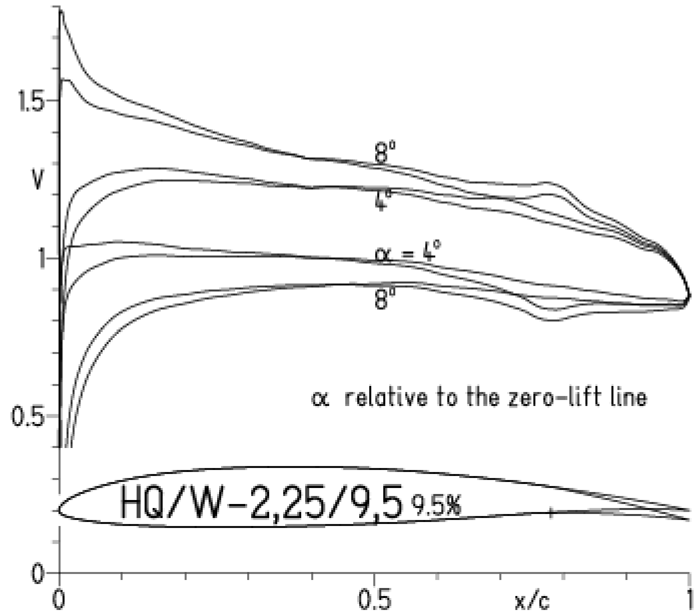


EPPLER 2005 V. 8.5.07 R

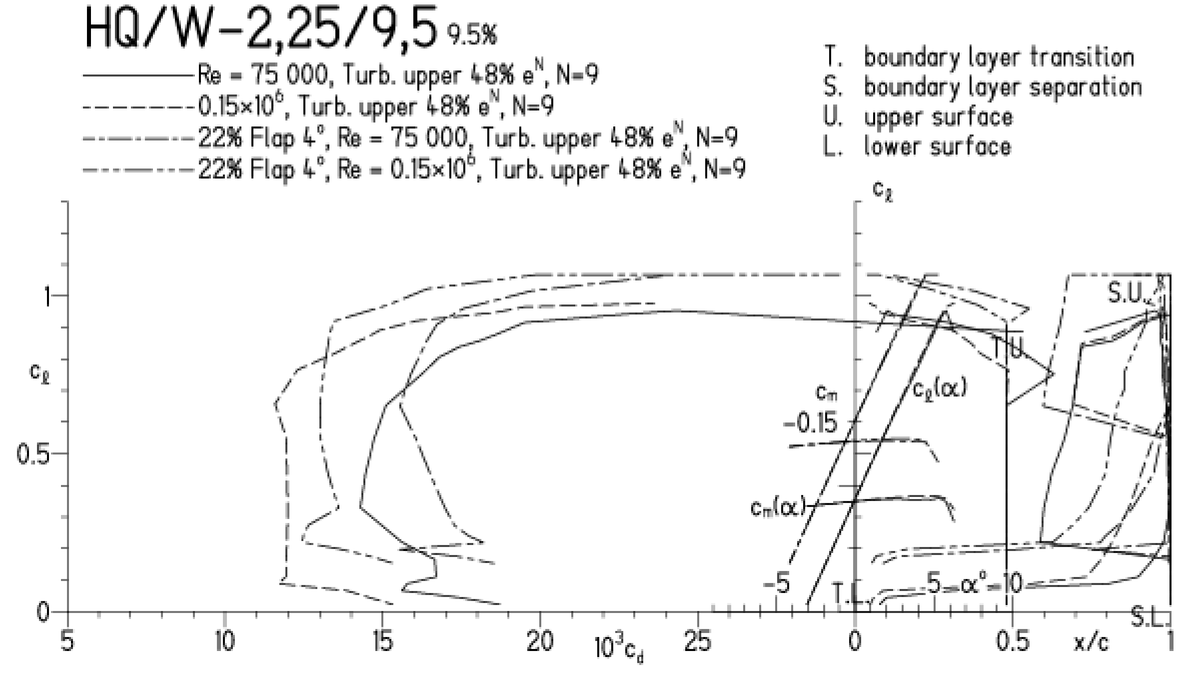


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

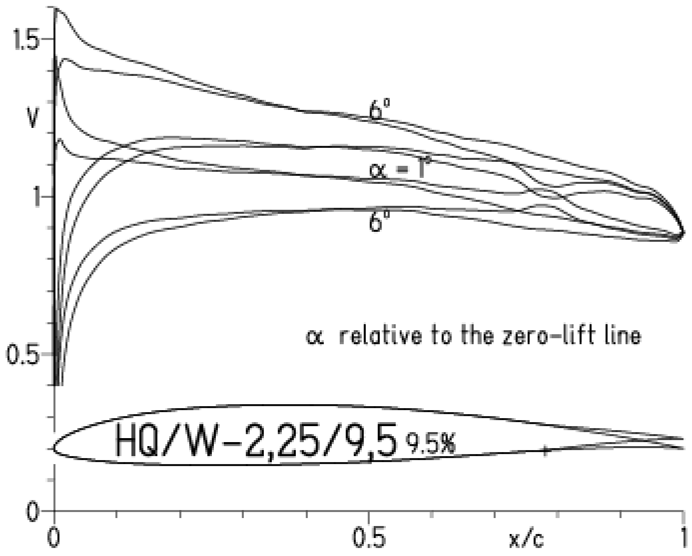


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

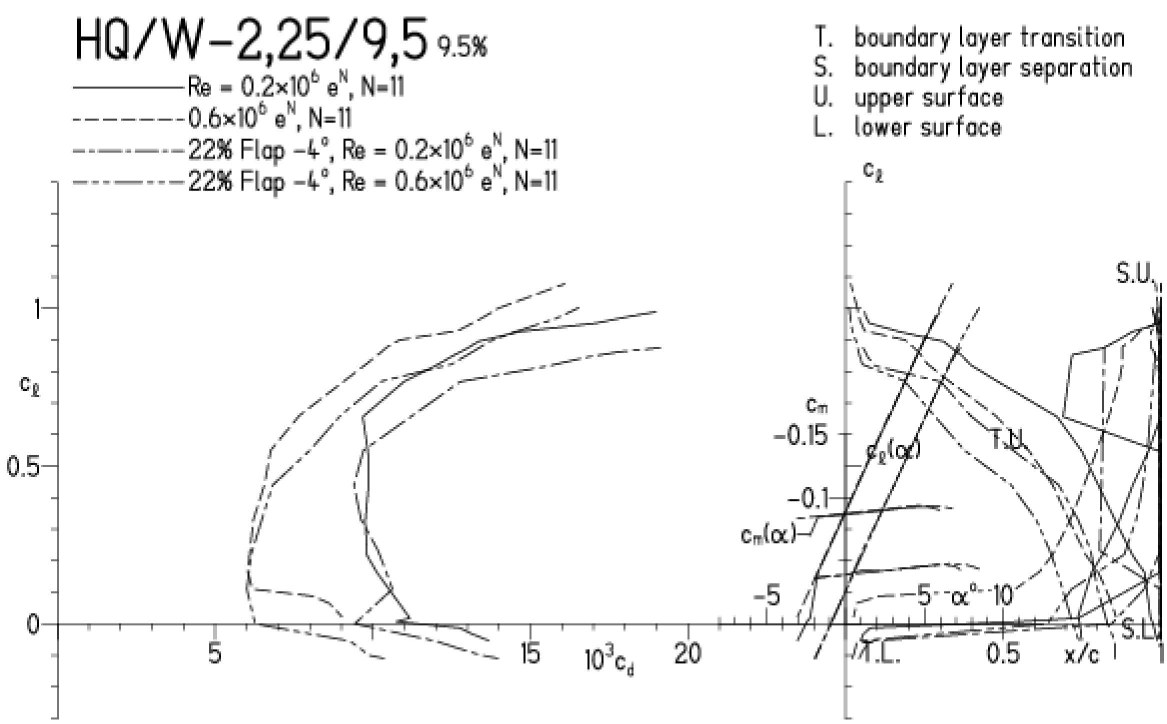


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

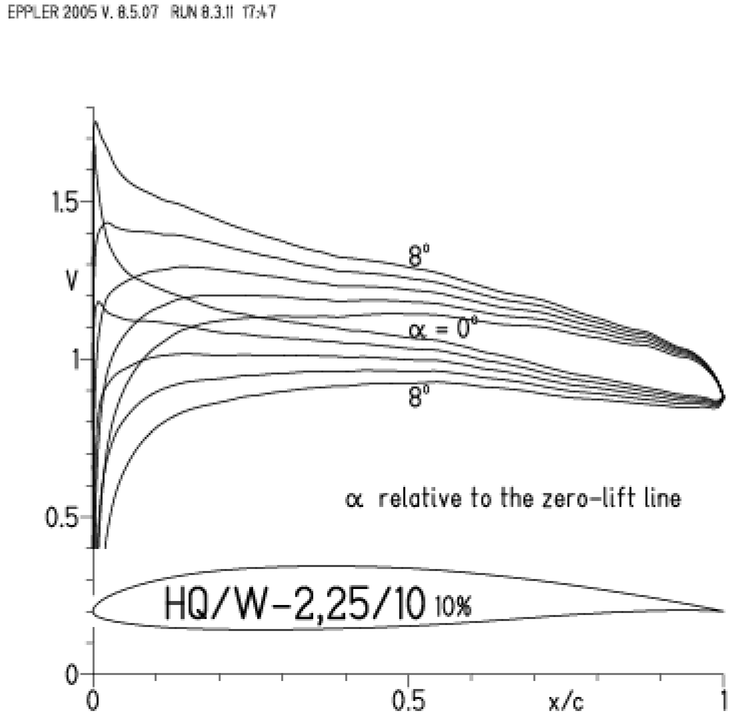
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

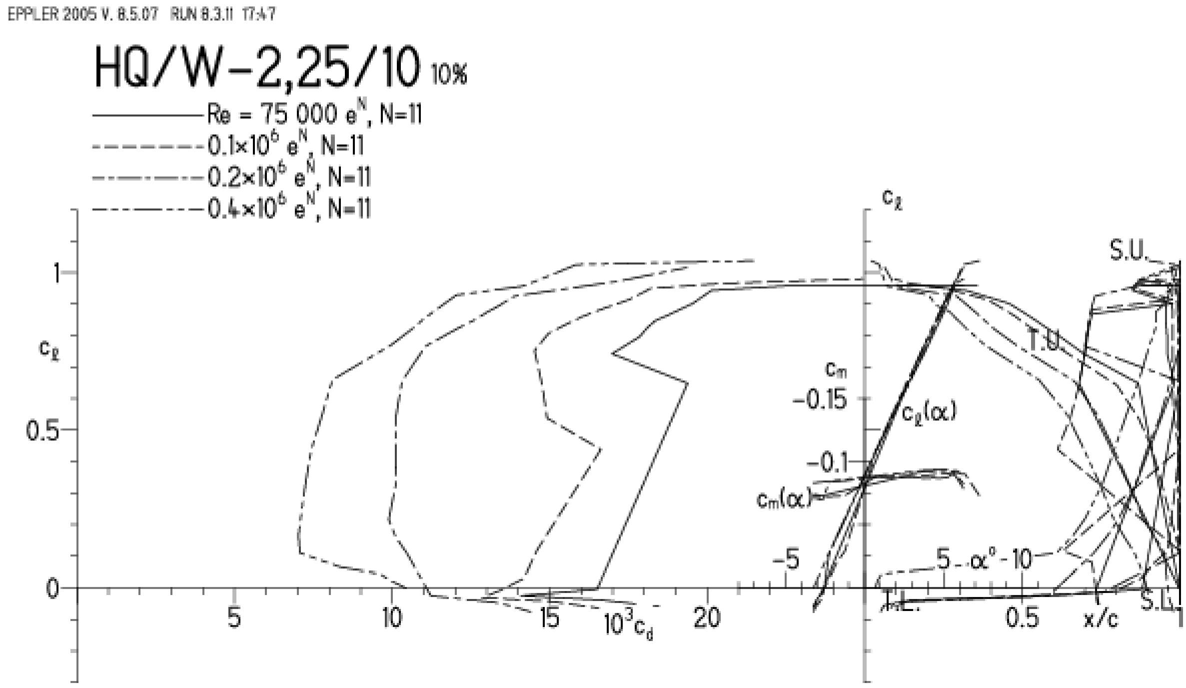


EPPLER 2005 V.



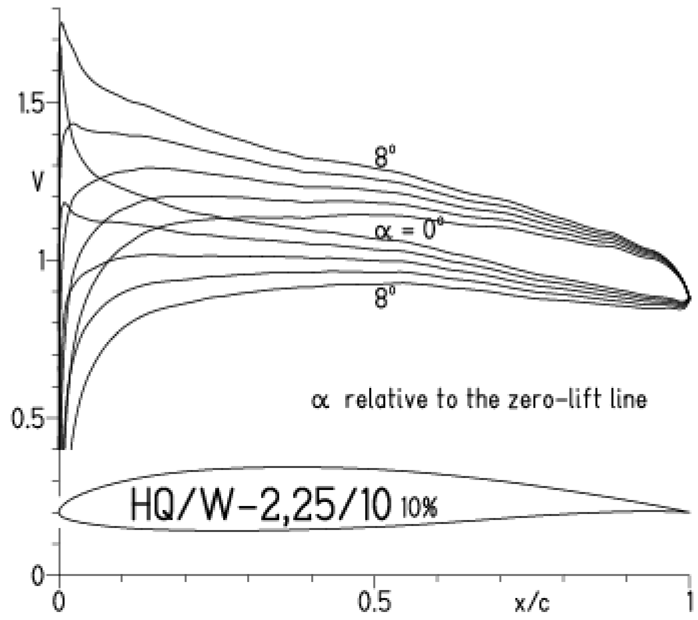
<u>HQ/W-2,25/10</u>, N=11



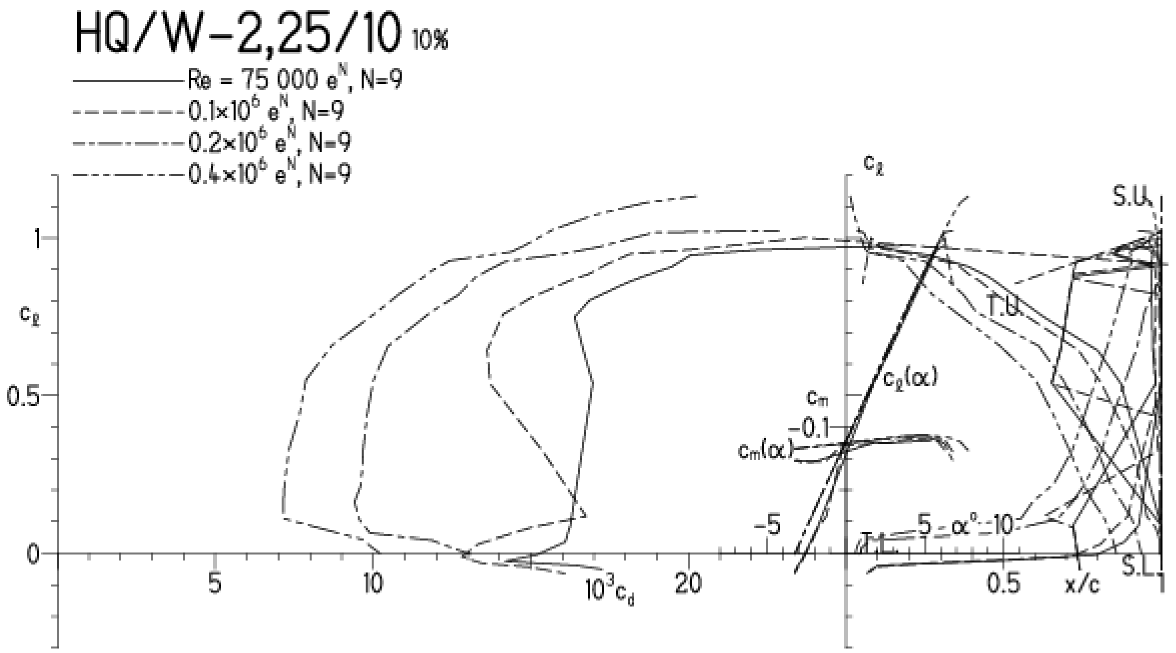


HQ/W-2,25/10, N=9

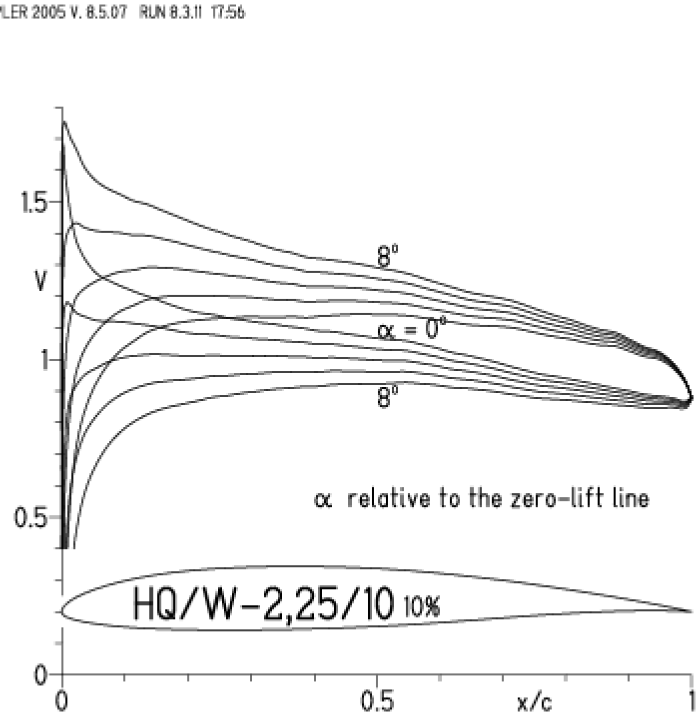
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

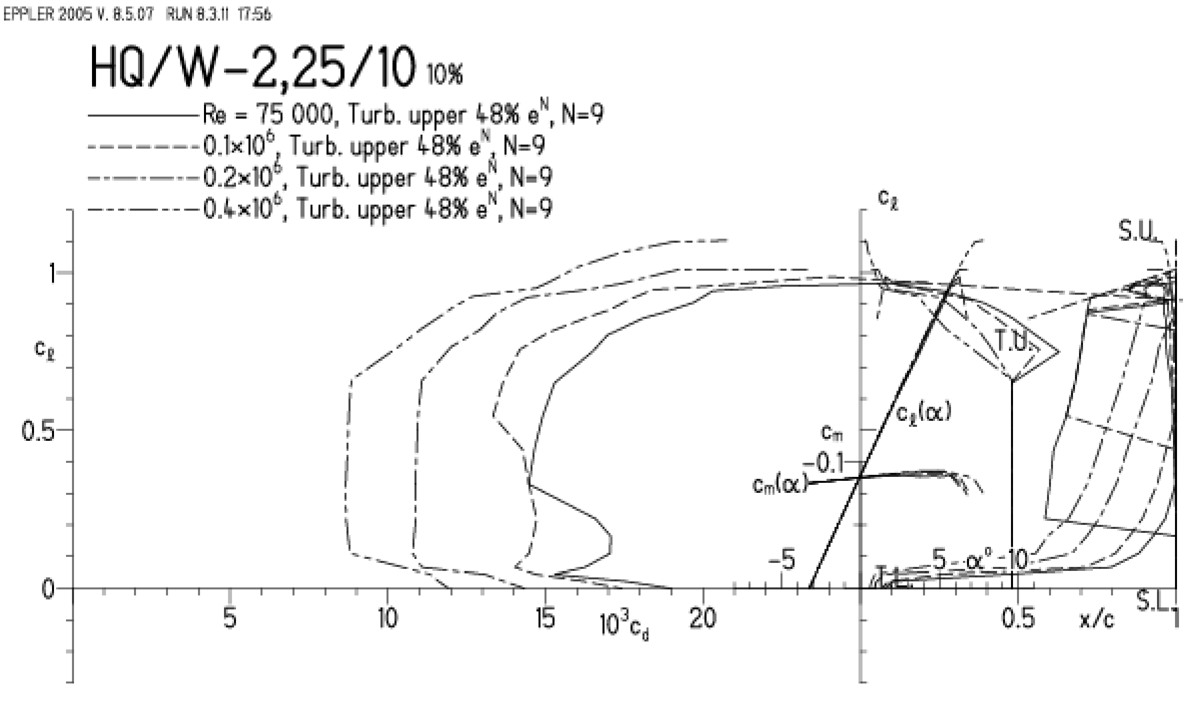


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



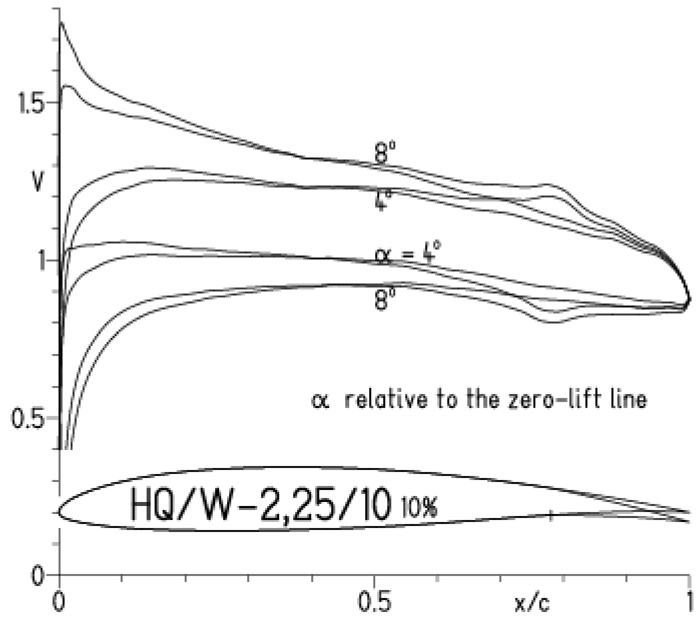
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



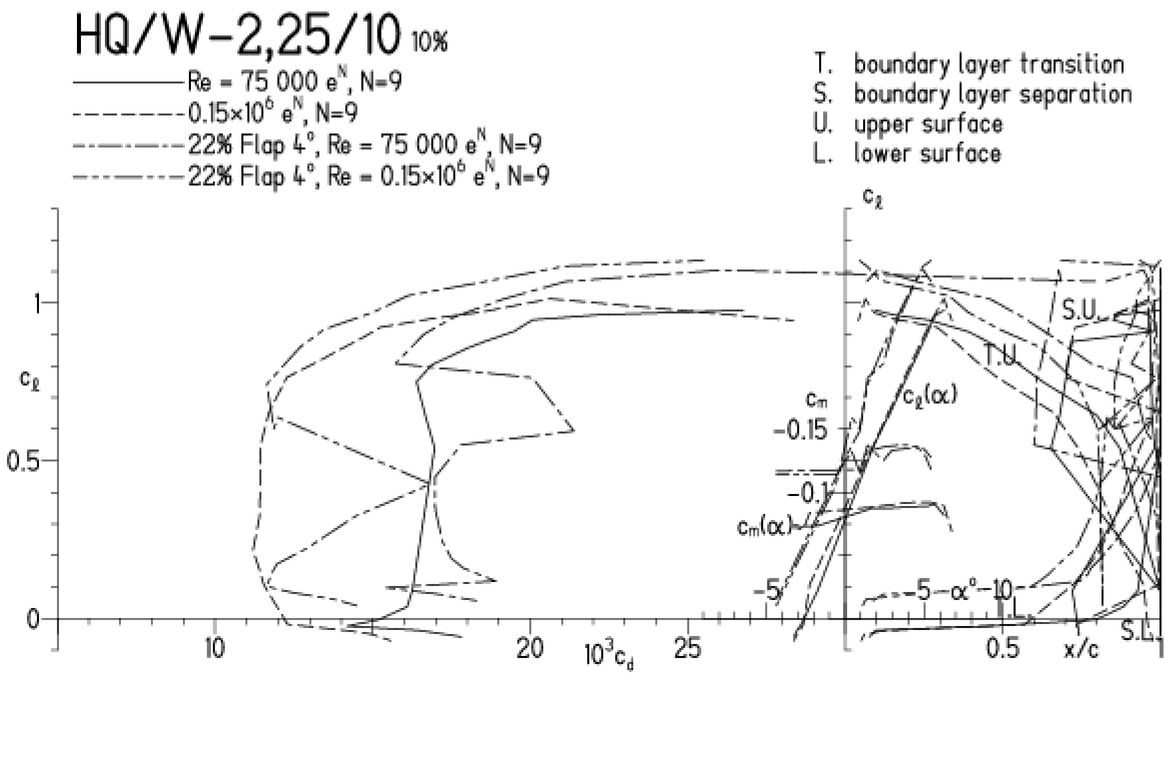


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

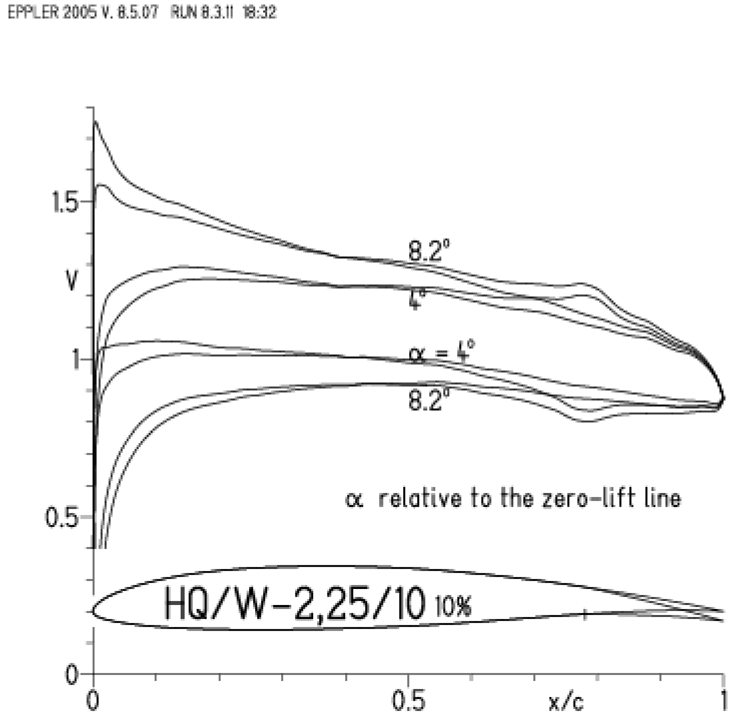
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

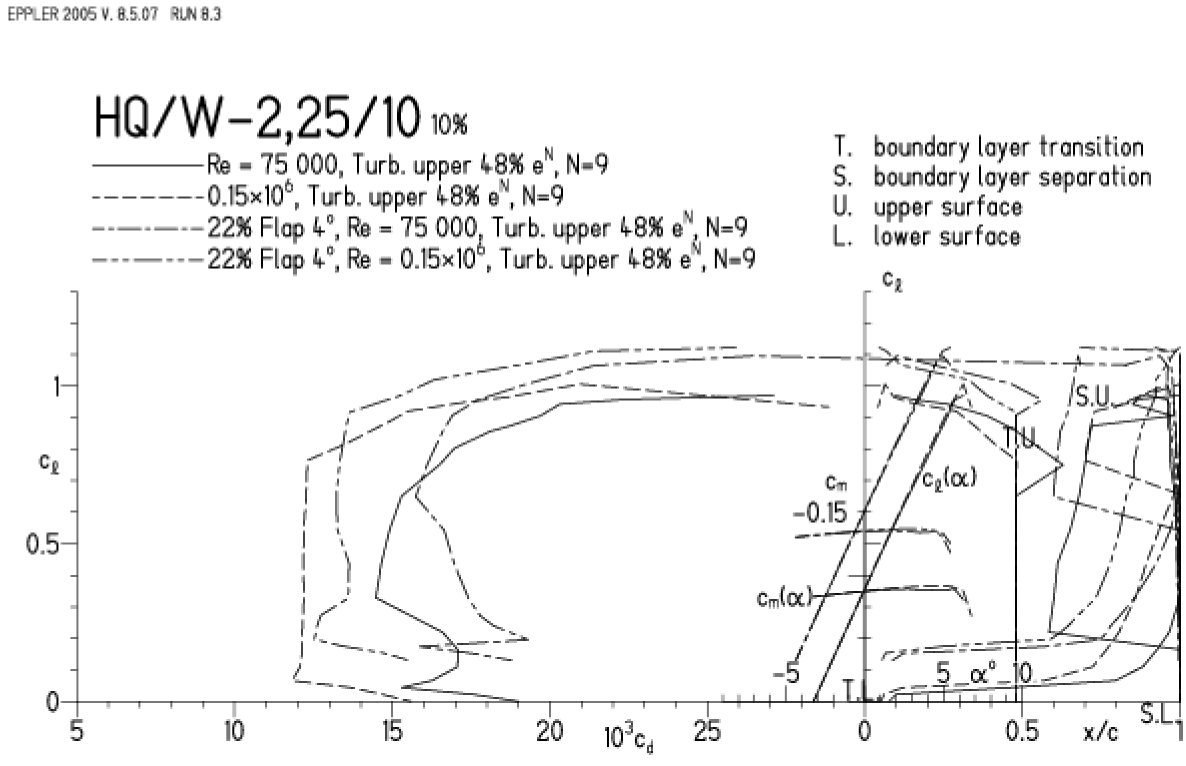


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



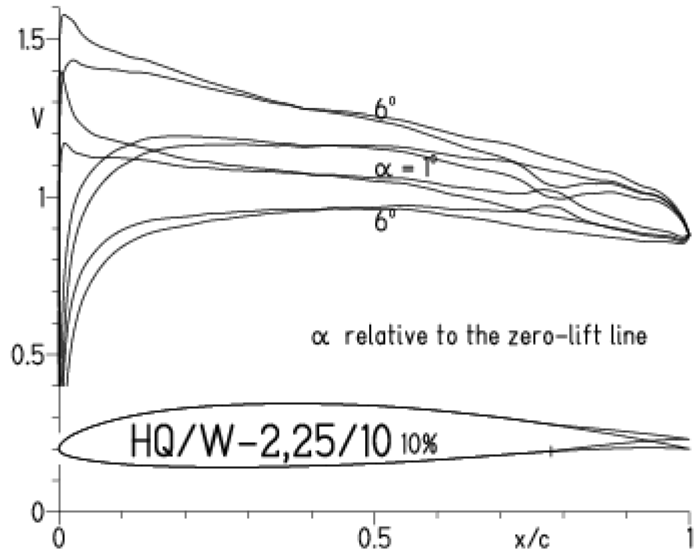
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



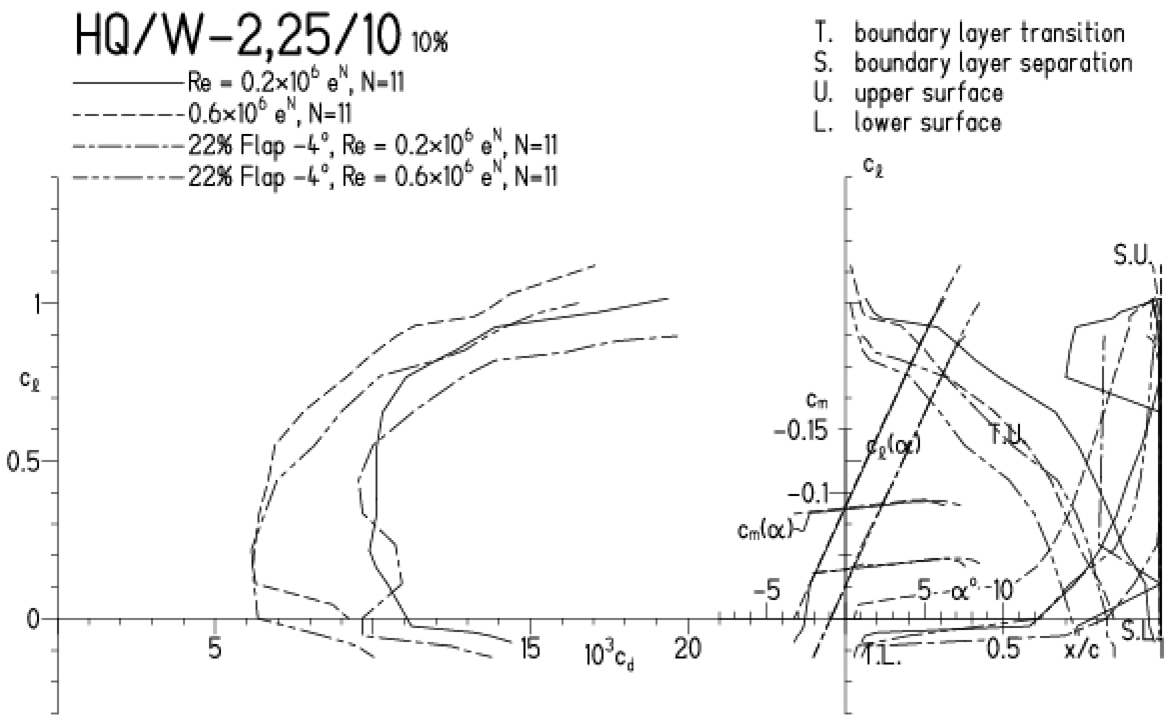


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

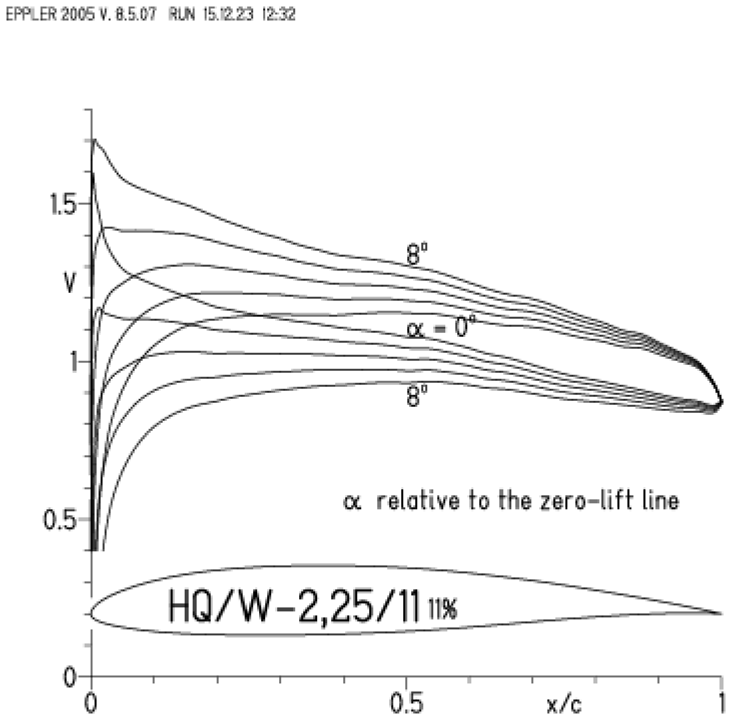
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

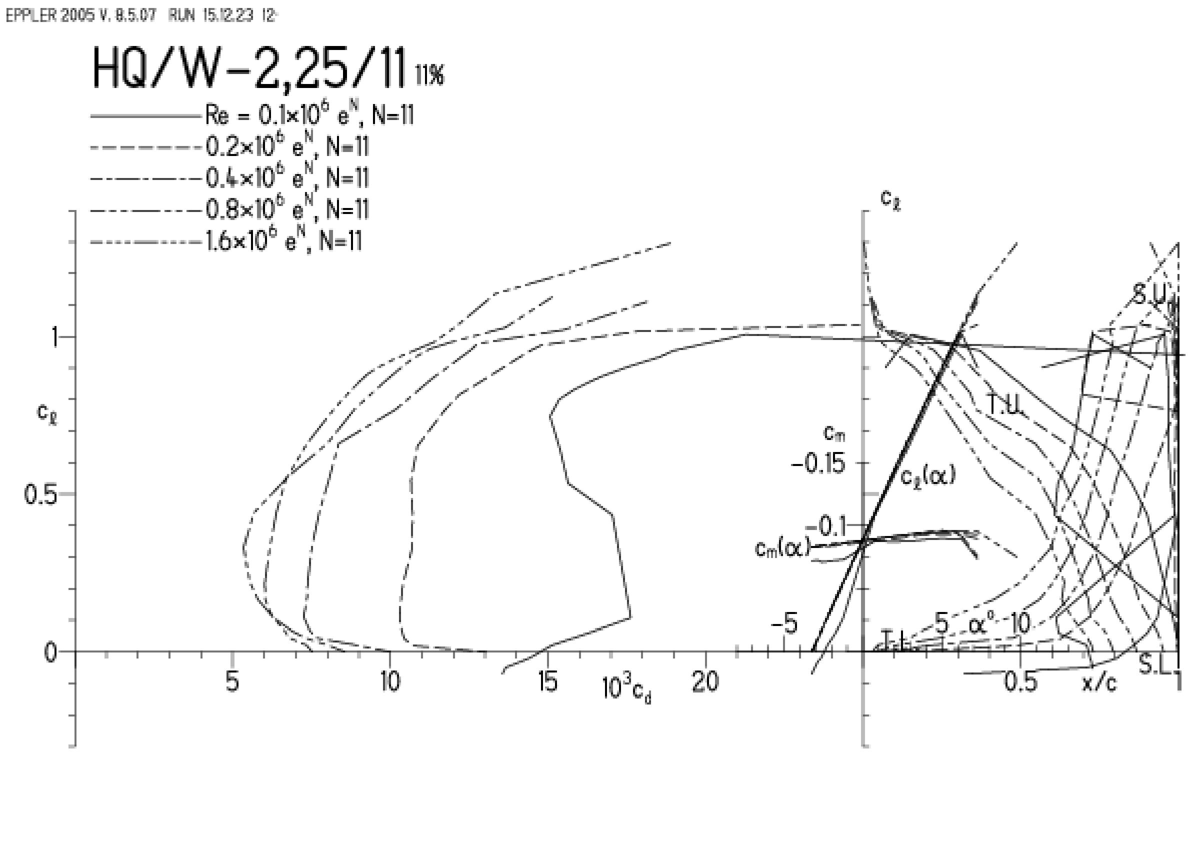


EPPLER 2005 V. 8.5.07 RUN

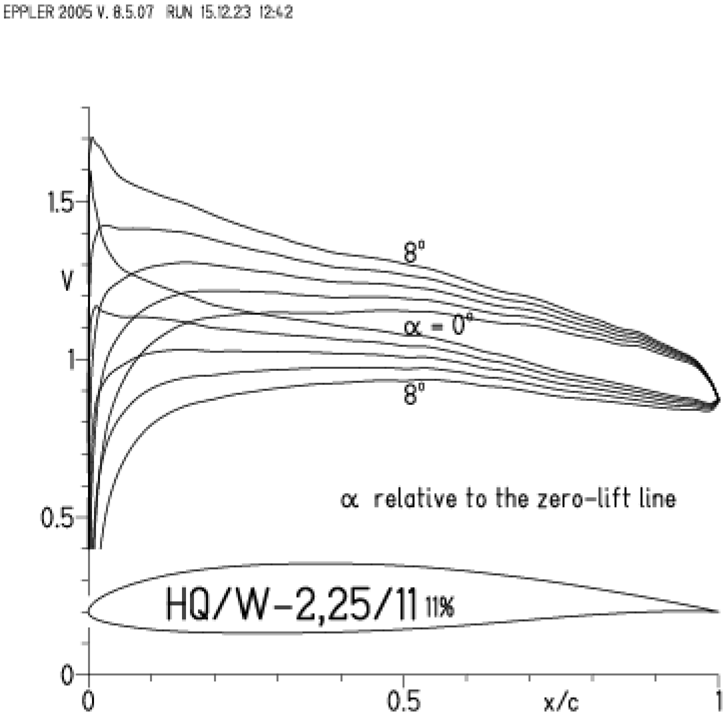


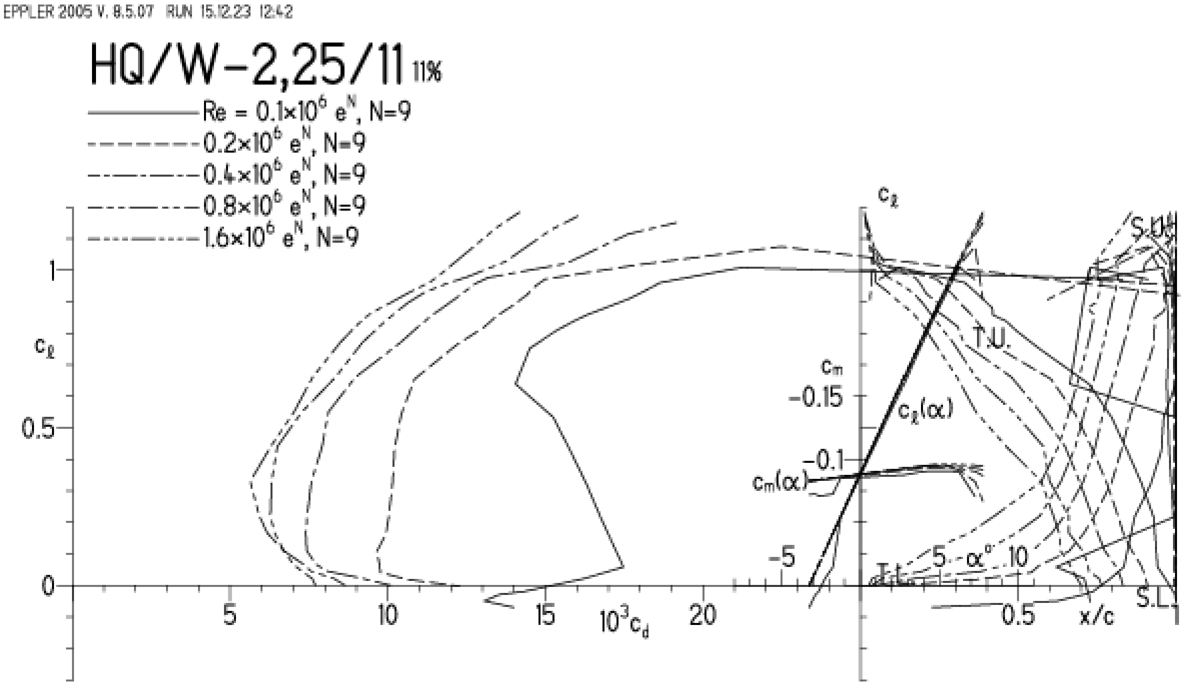
HQ/W-2,25/11, N=11



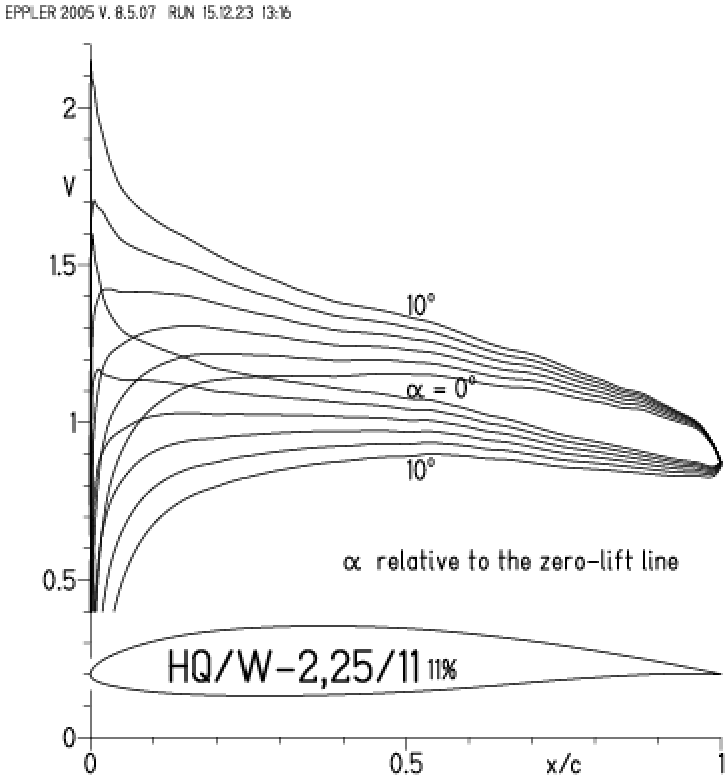


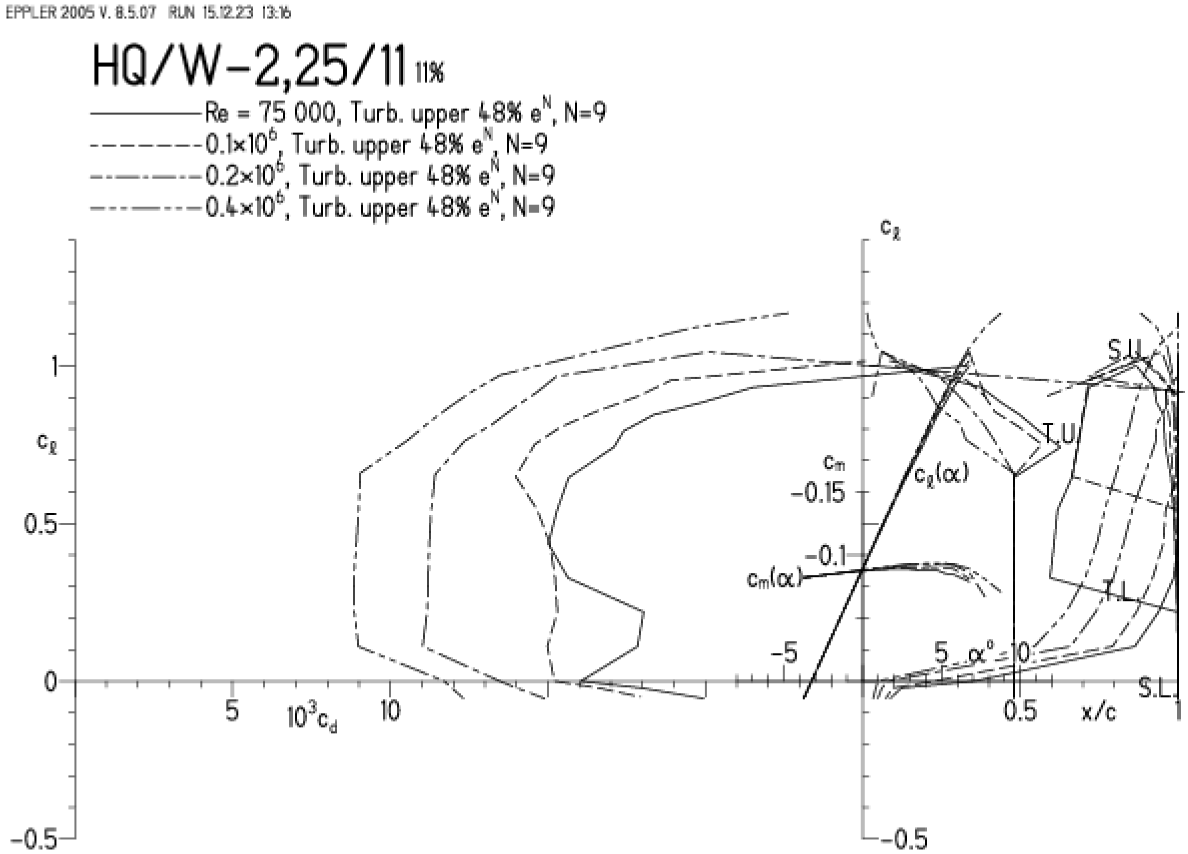
HQQ/W-2,25/11, N=9





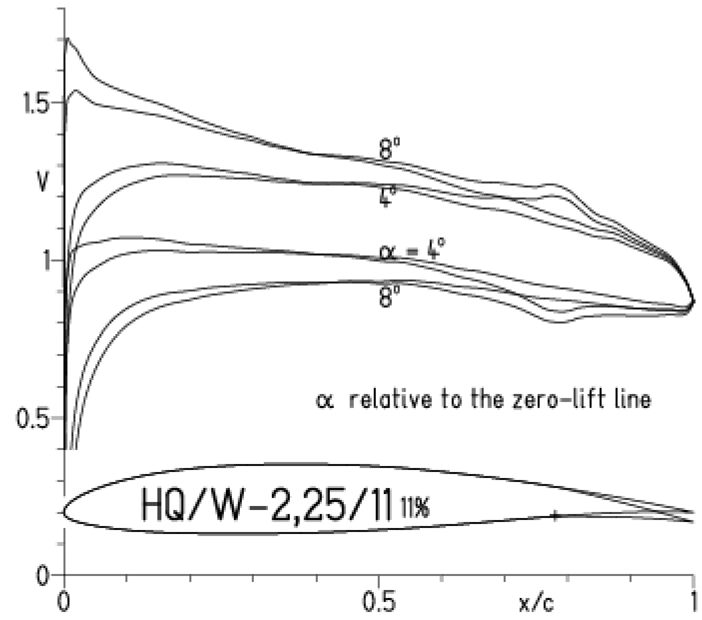
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



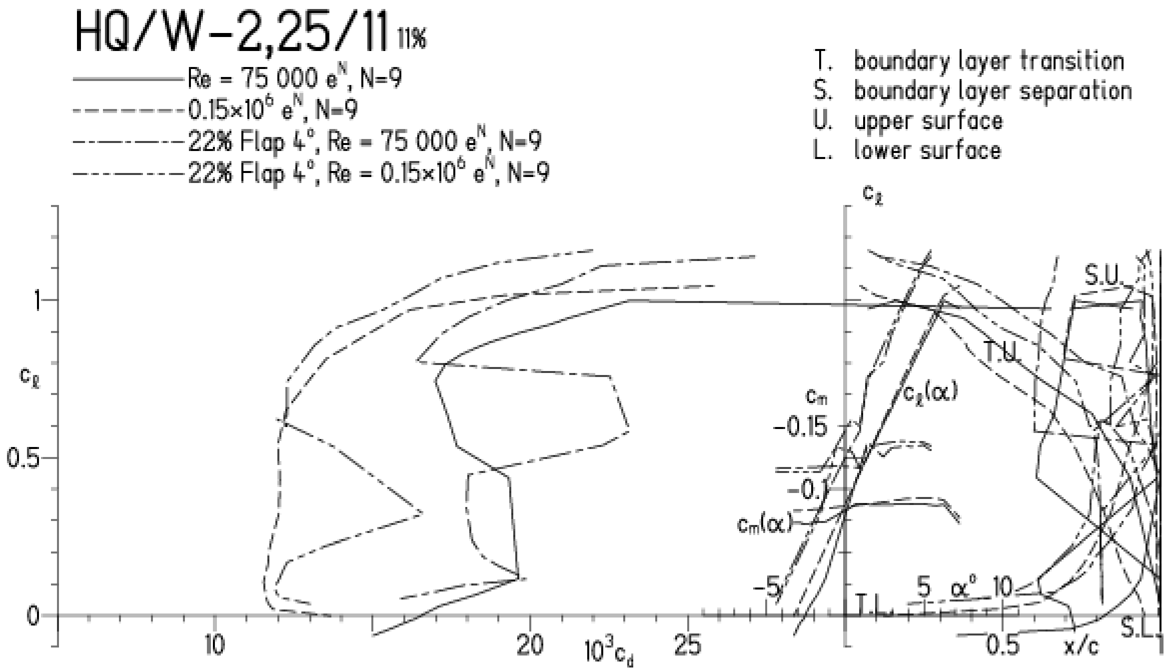


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

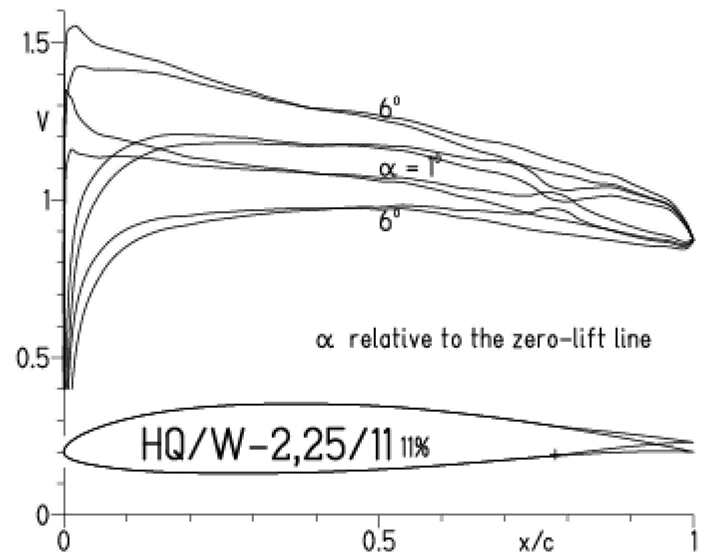


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

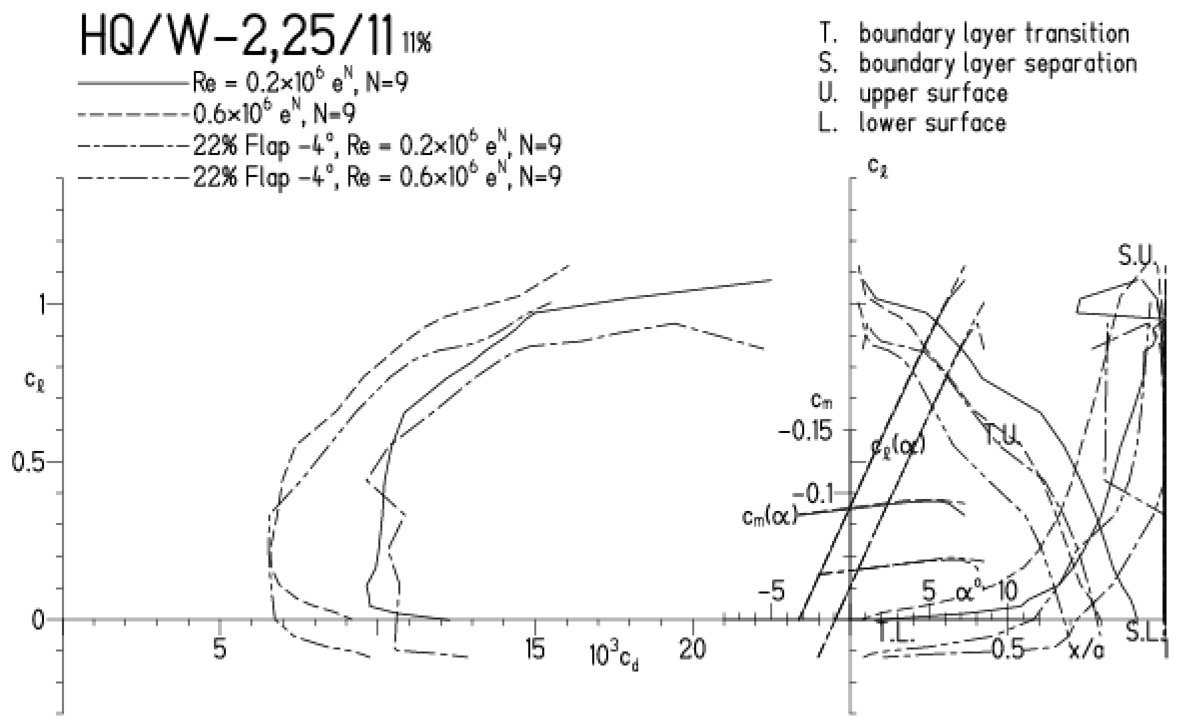


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

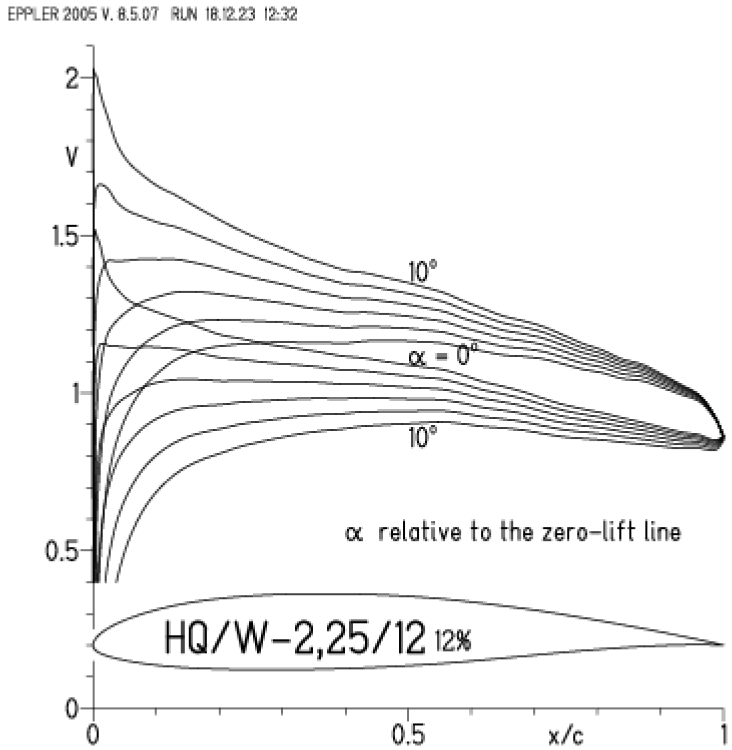
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

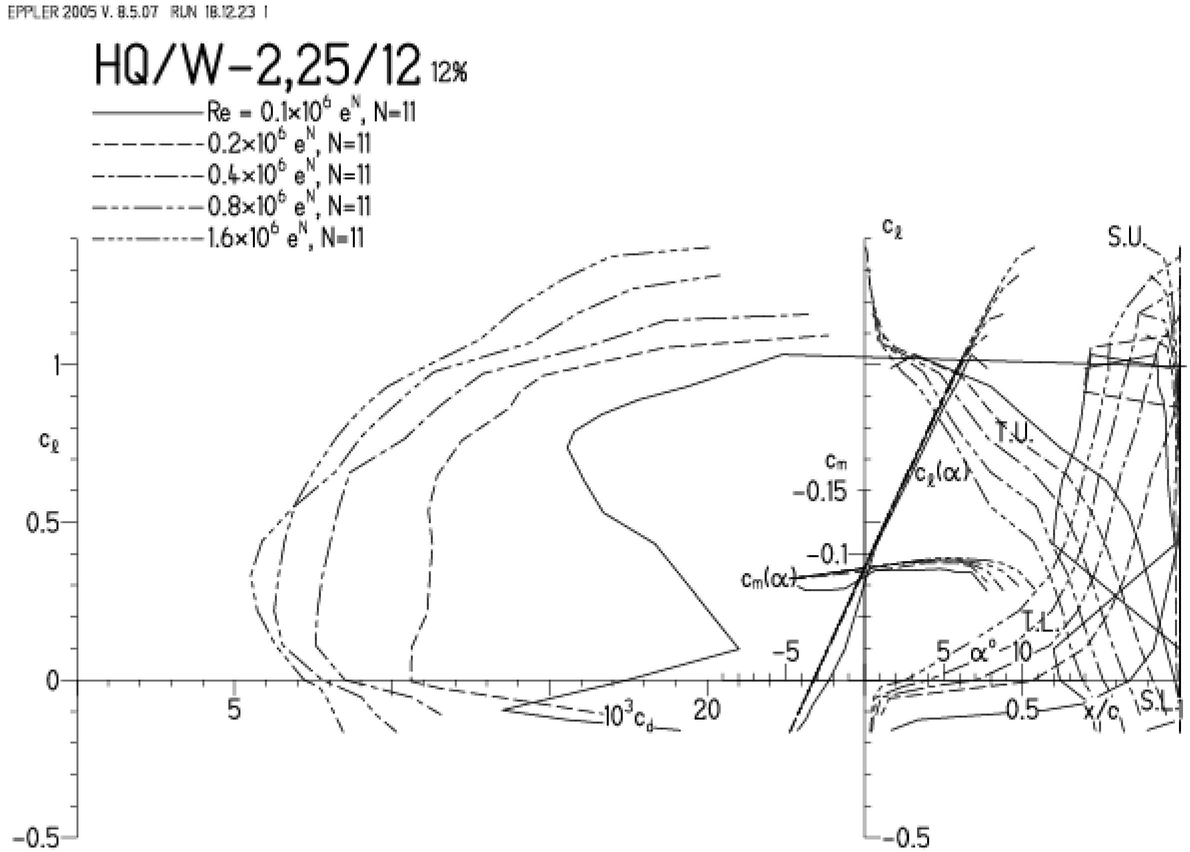


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

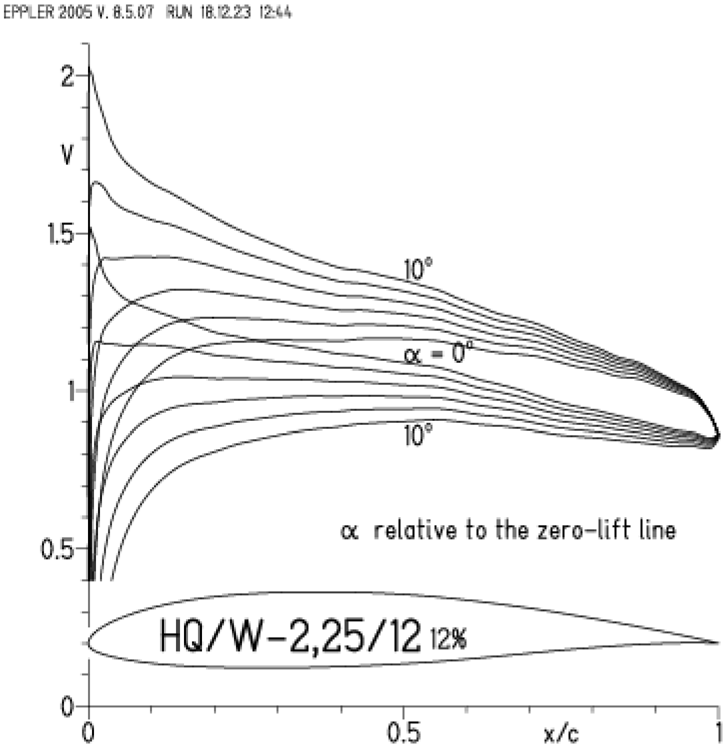


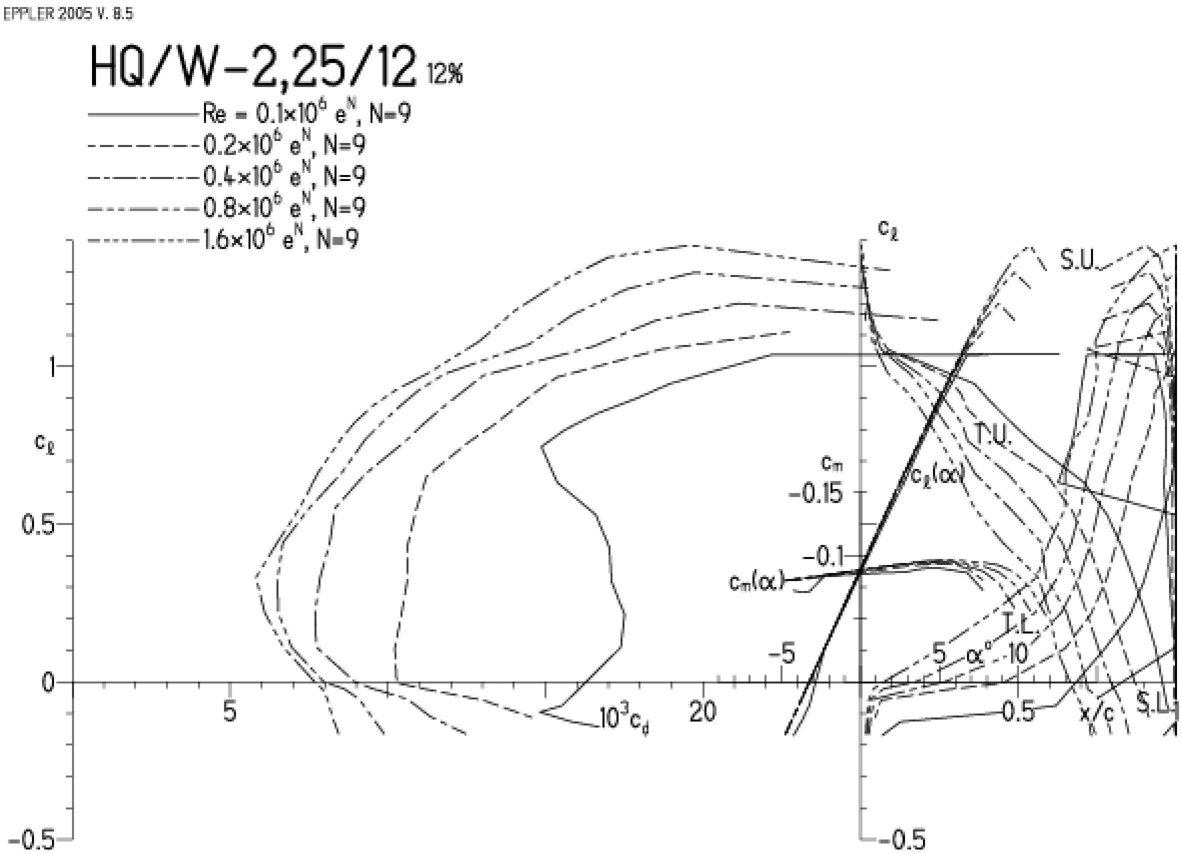
HQ/W-2,25/12, N=11



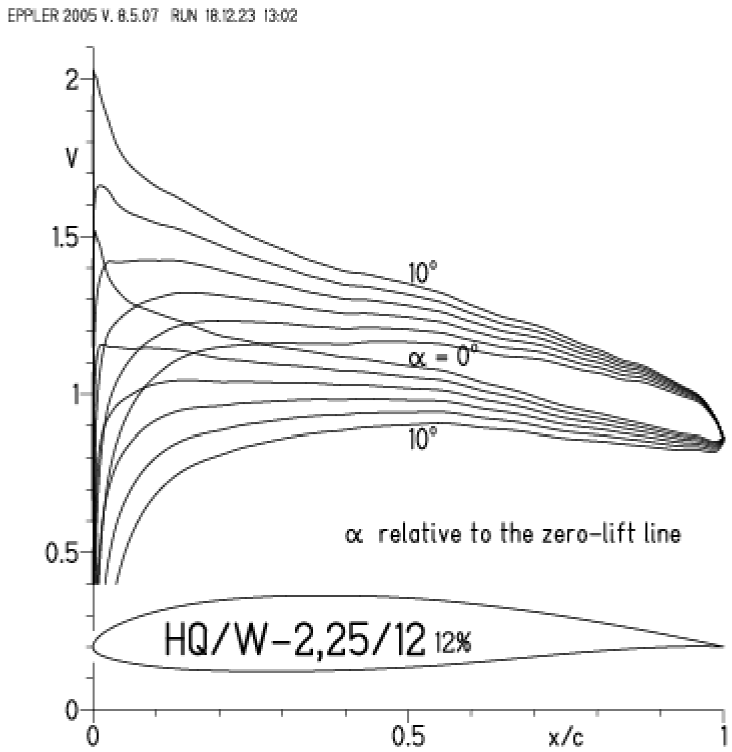


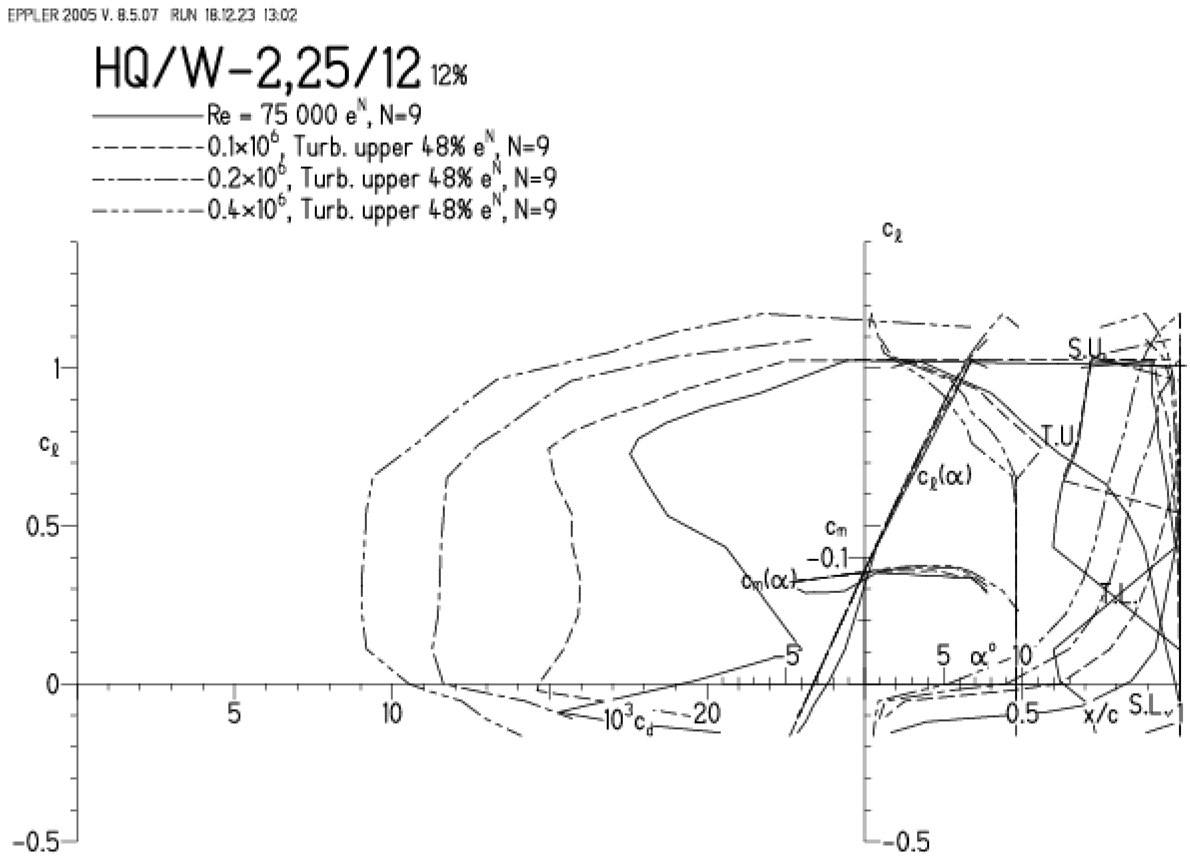
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
x/c
α°

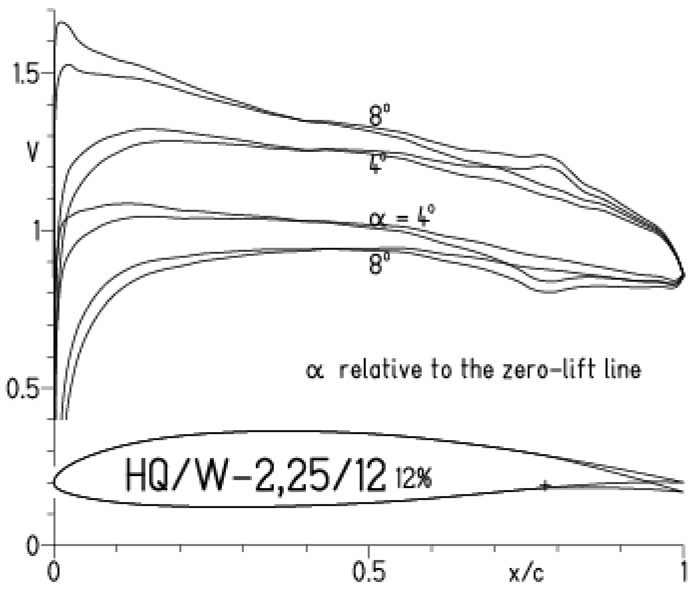
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



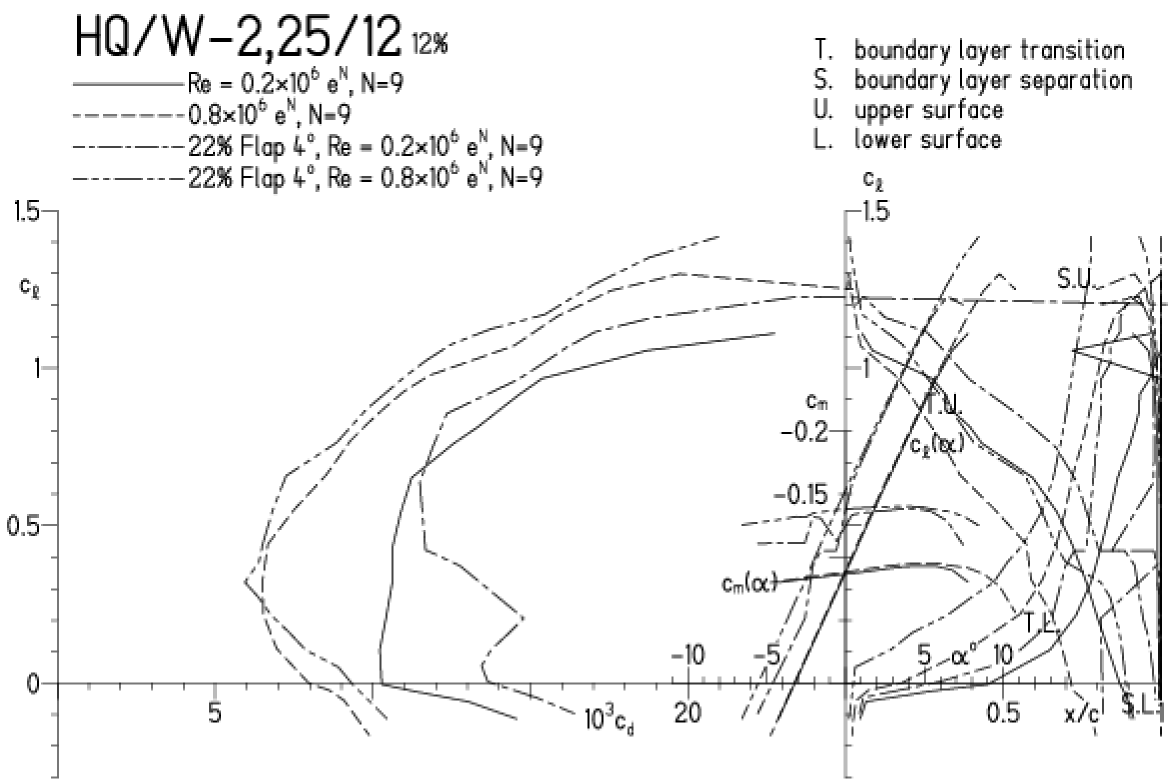


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

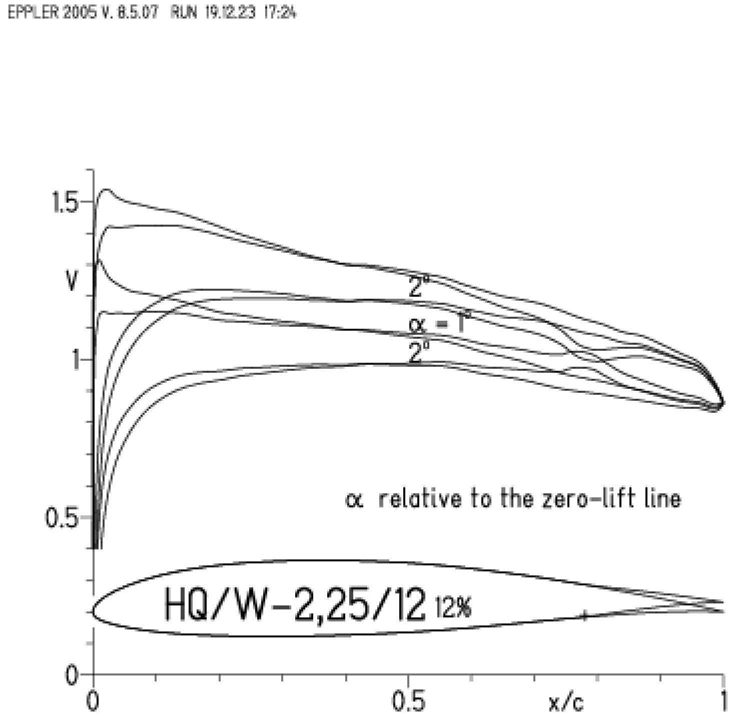
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

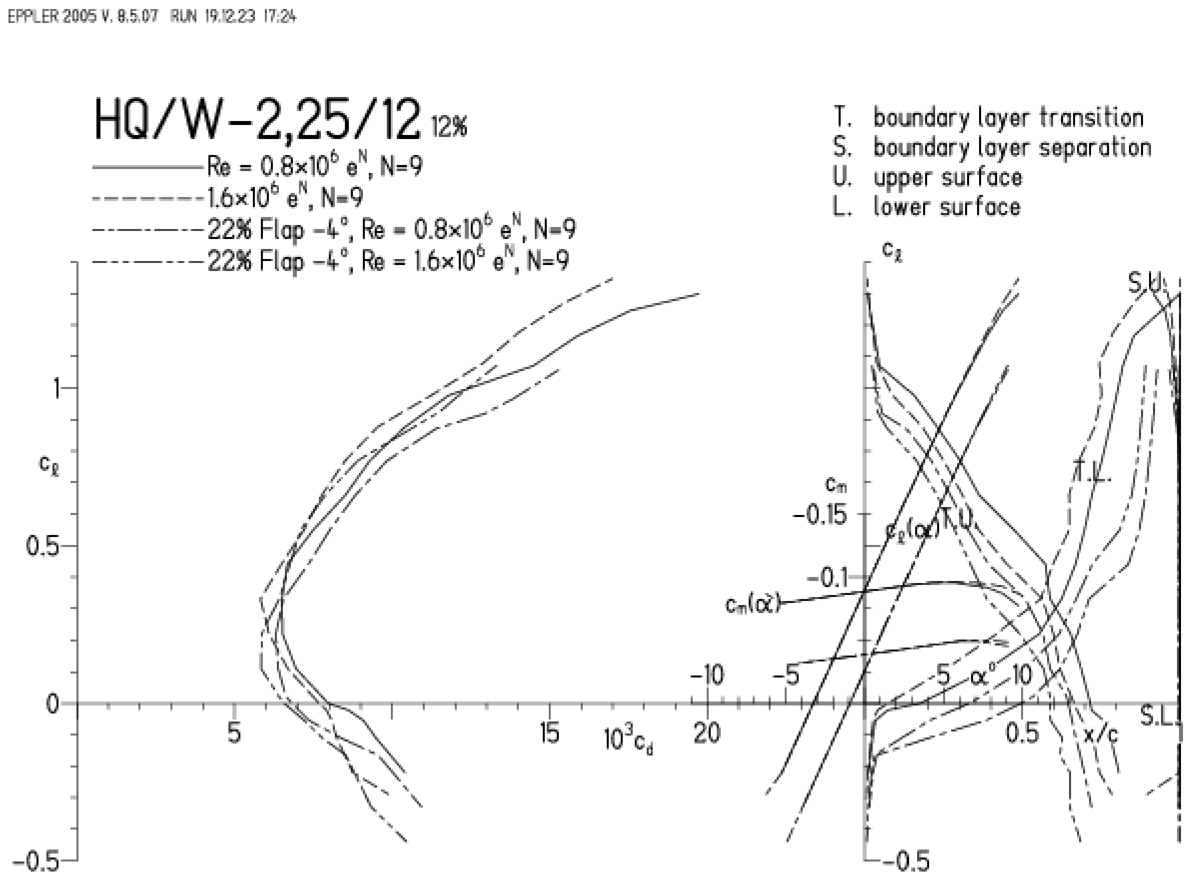


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

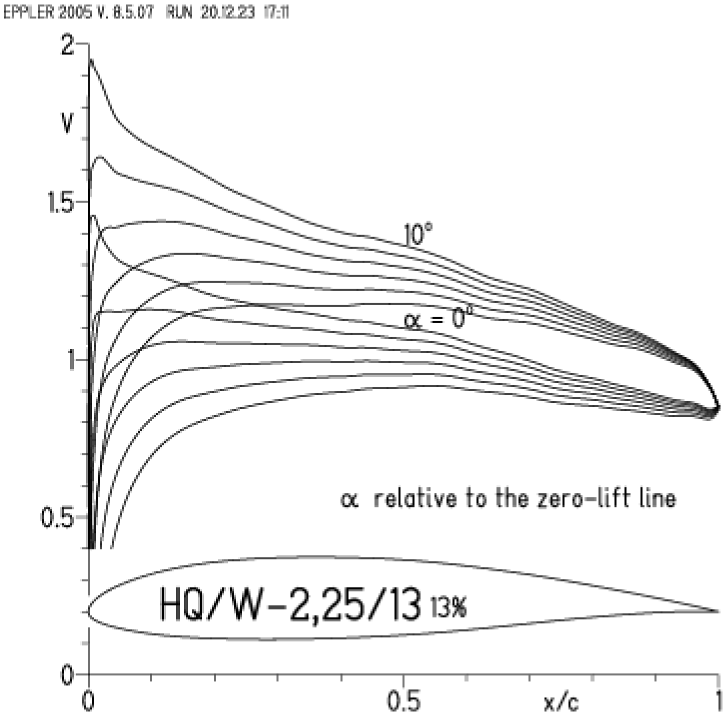


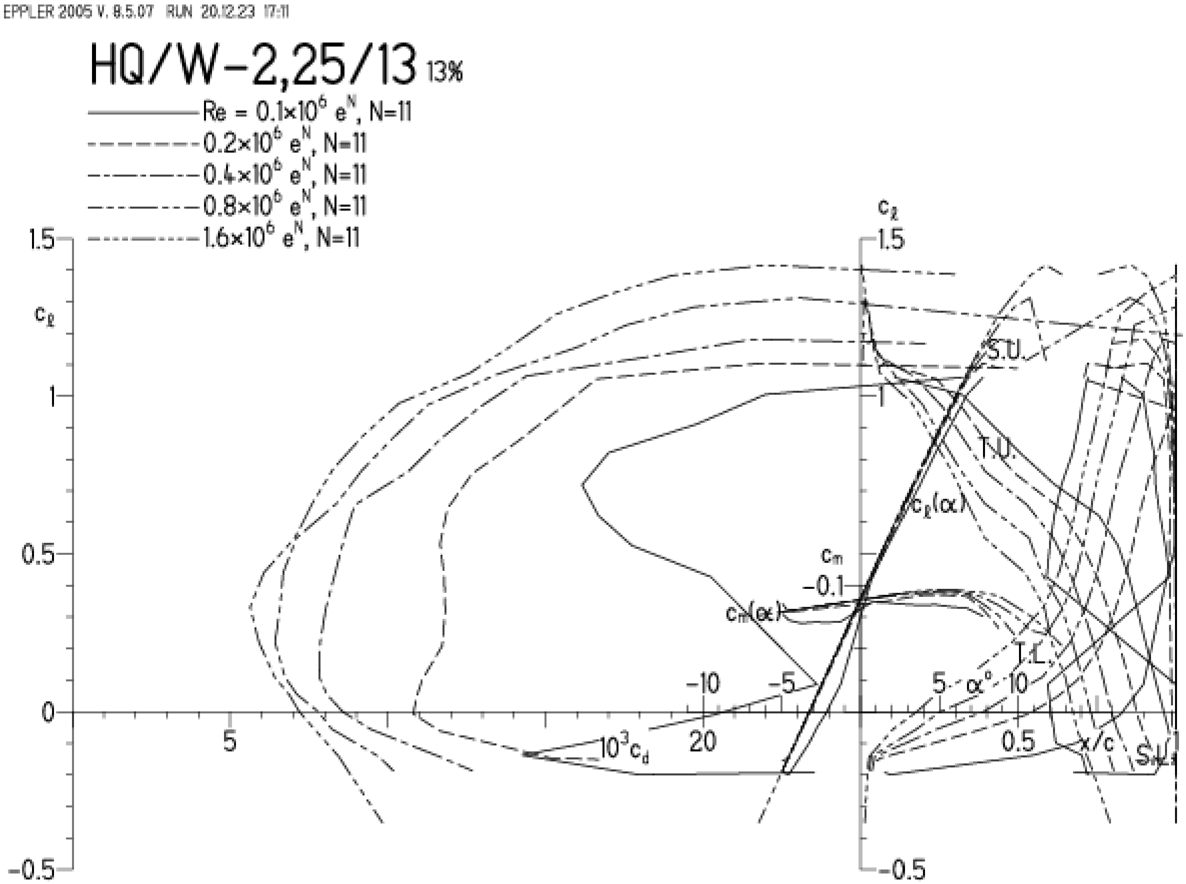
HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag



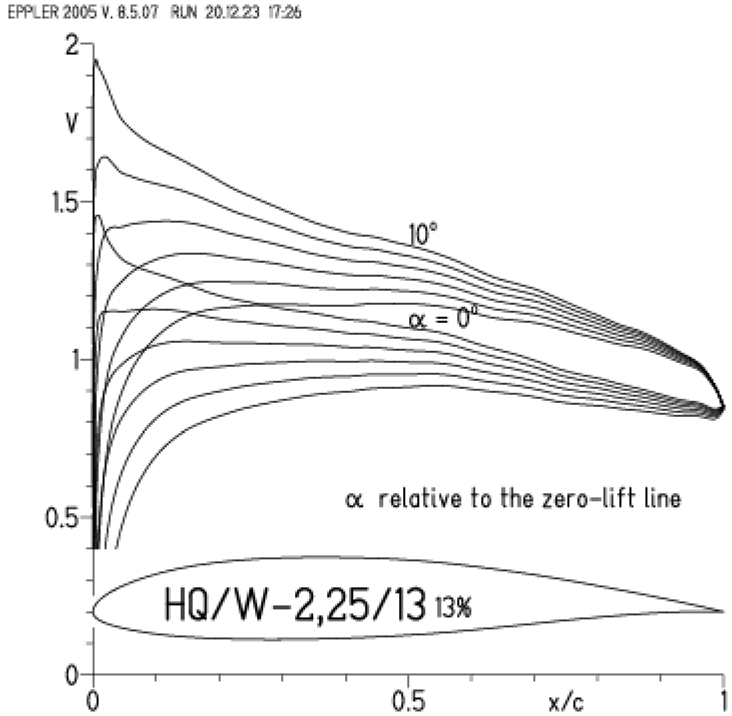


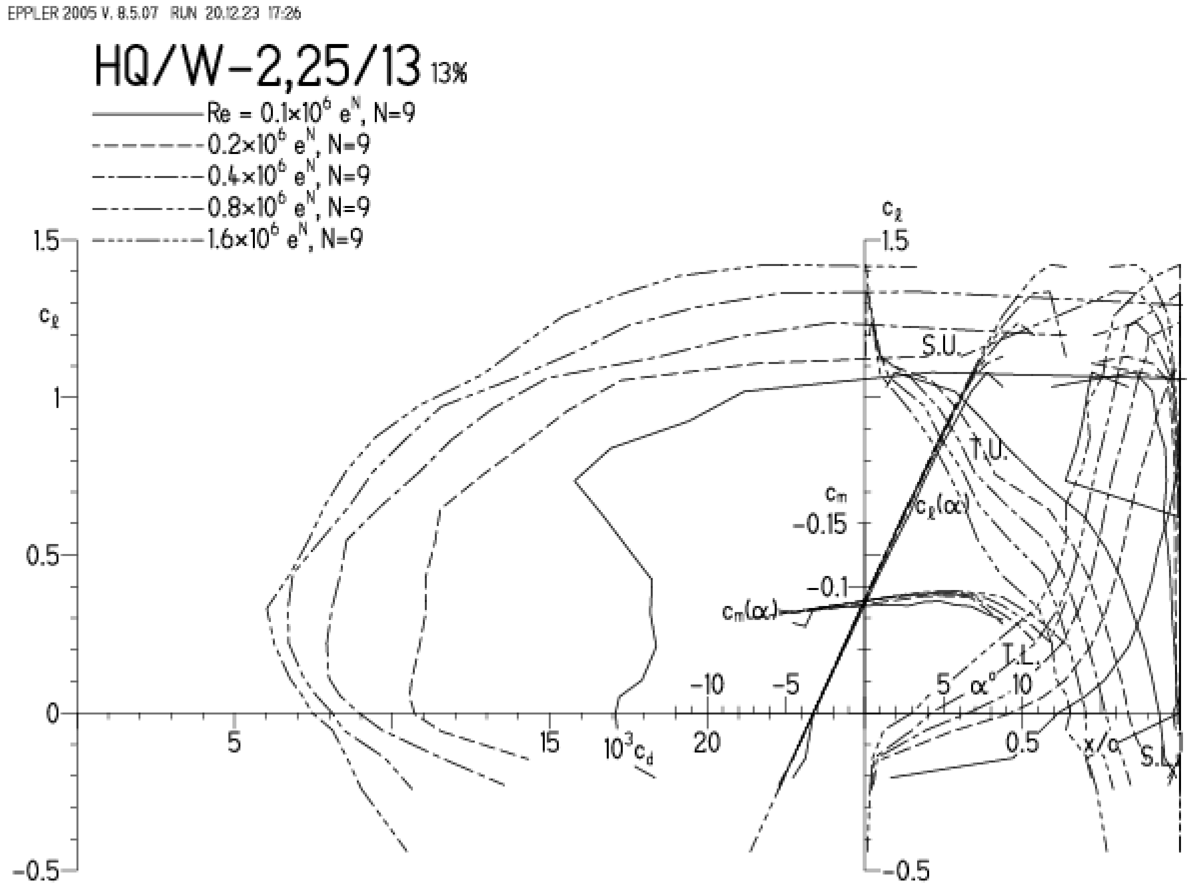
HQ/W-2,25/13, N=11



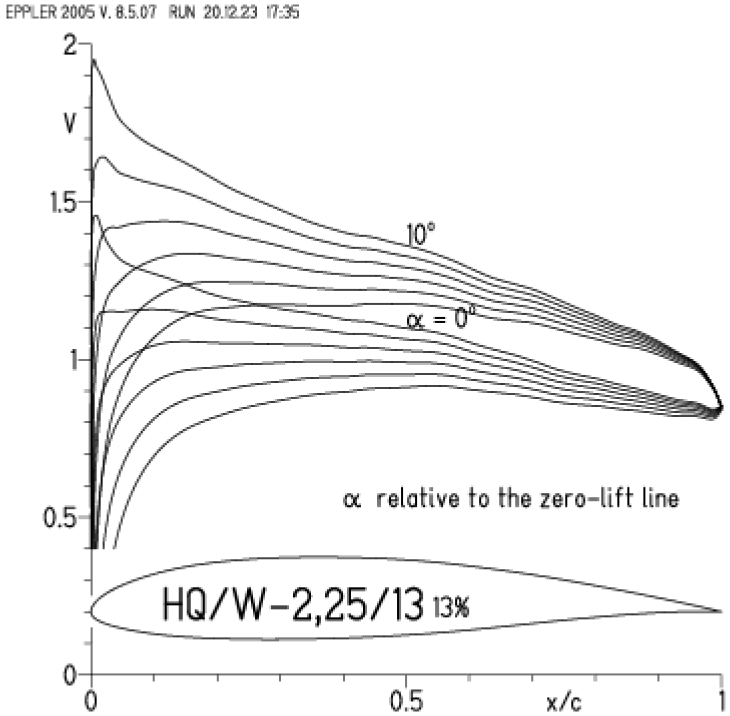


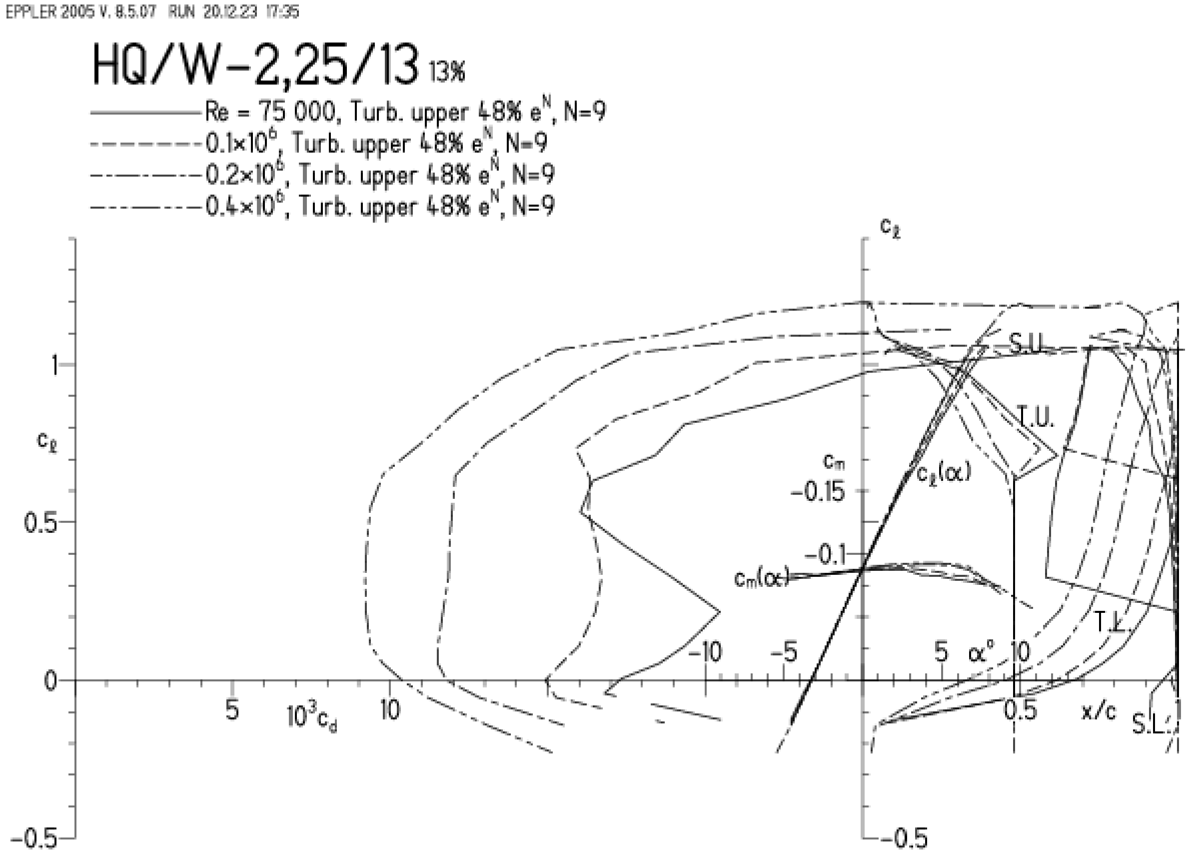
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
x/c
10^3 cd

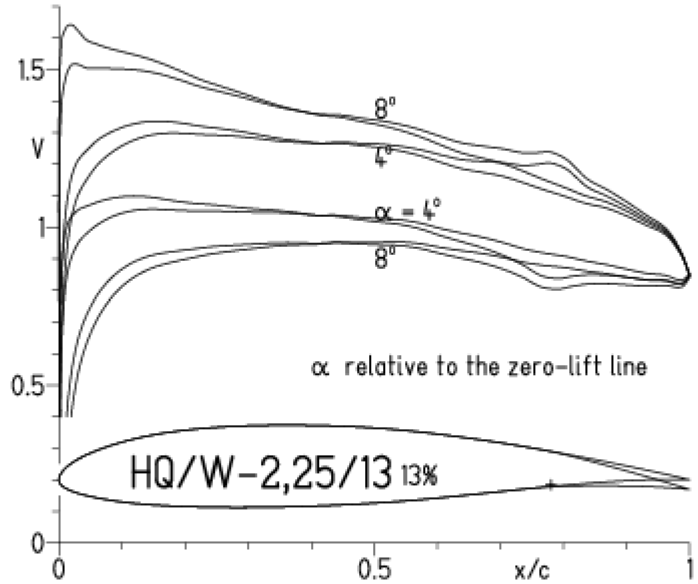
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



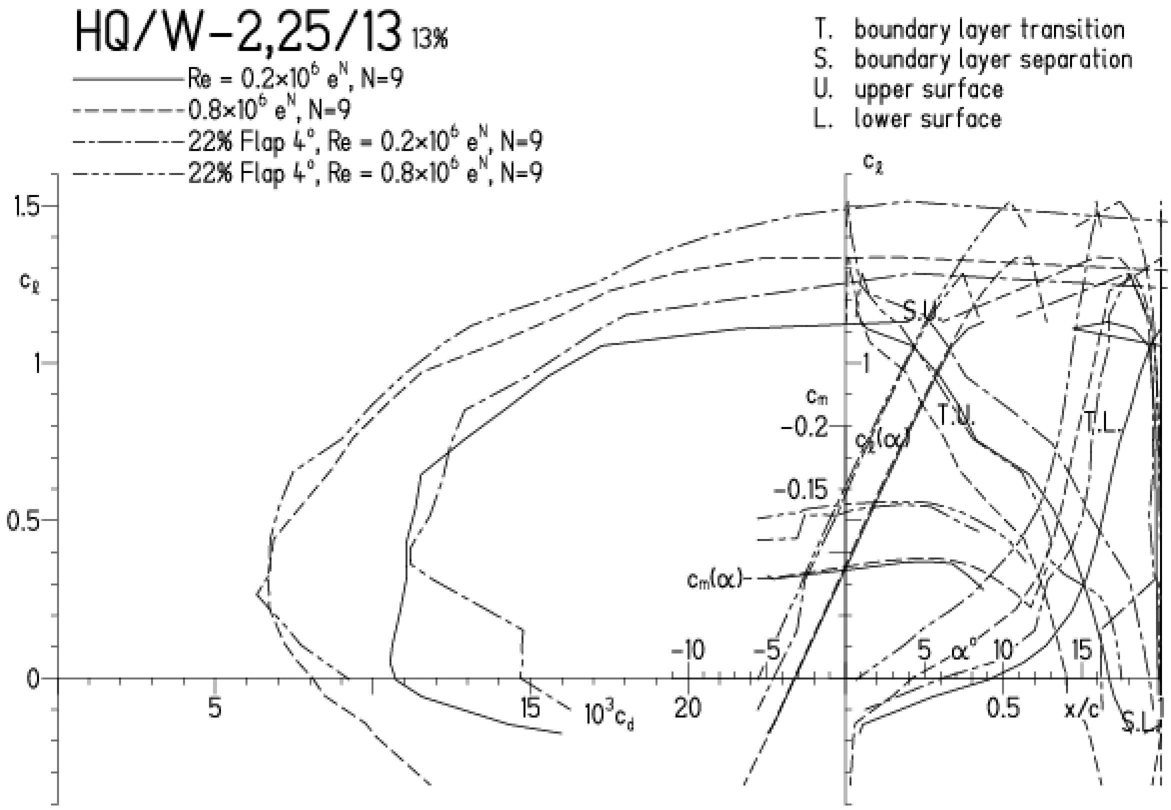


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

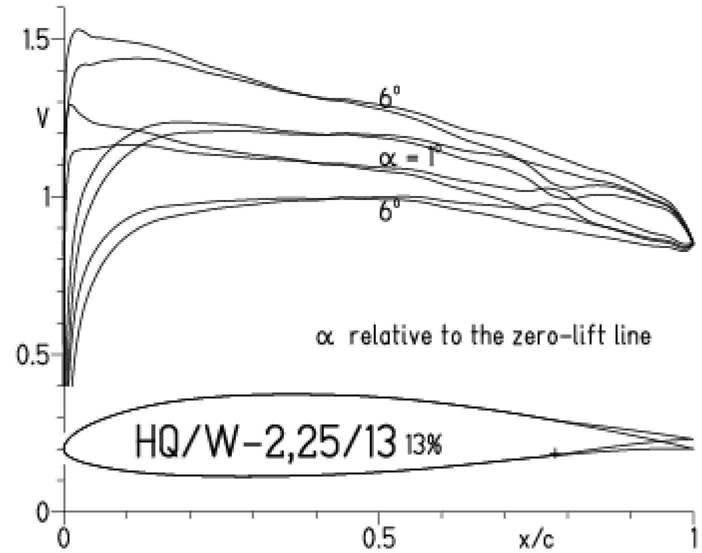


EPPLER 2005 V.

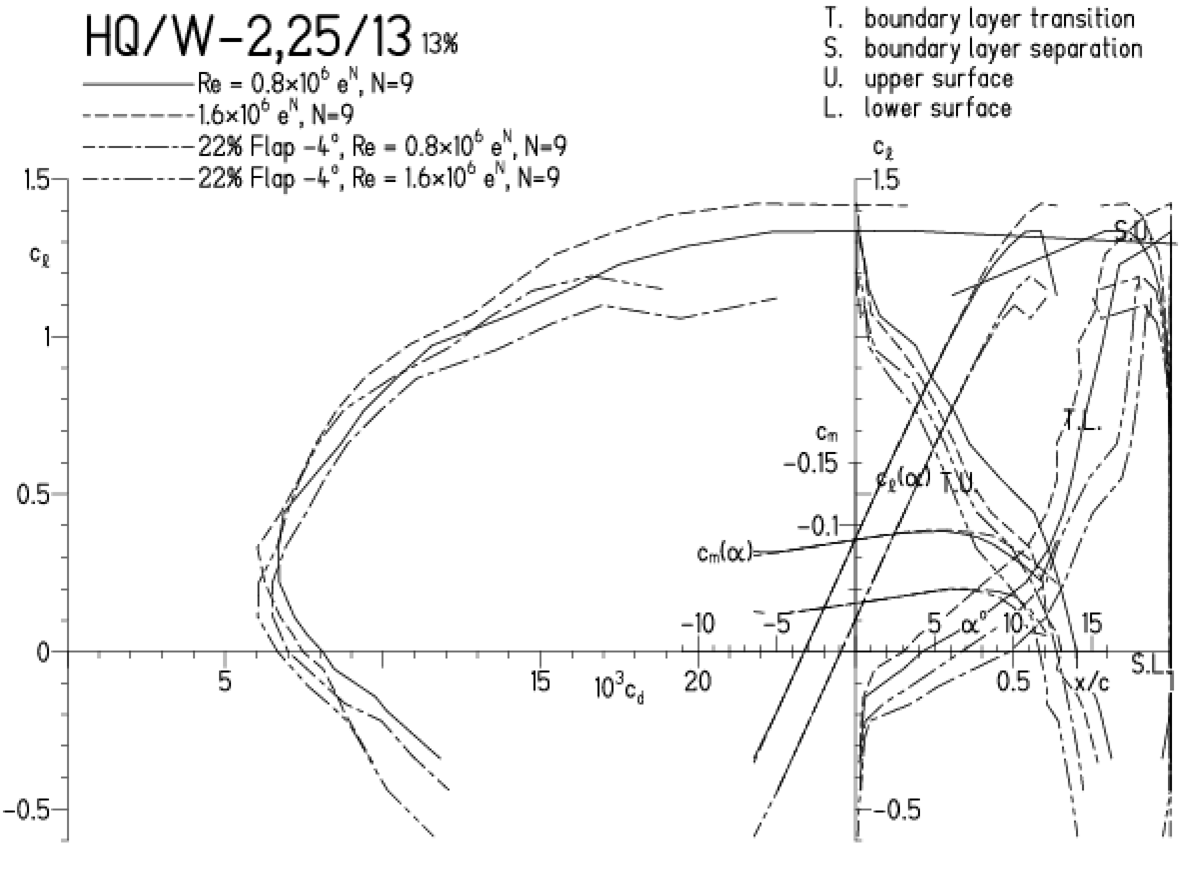


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

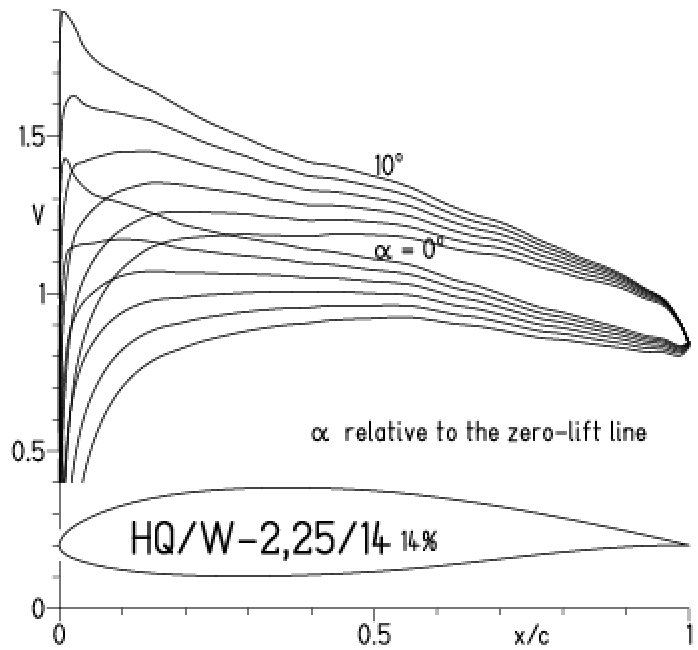


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

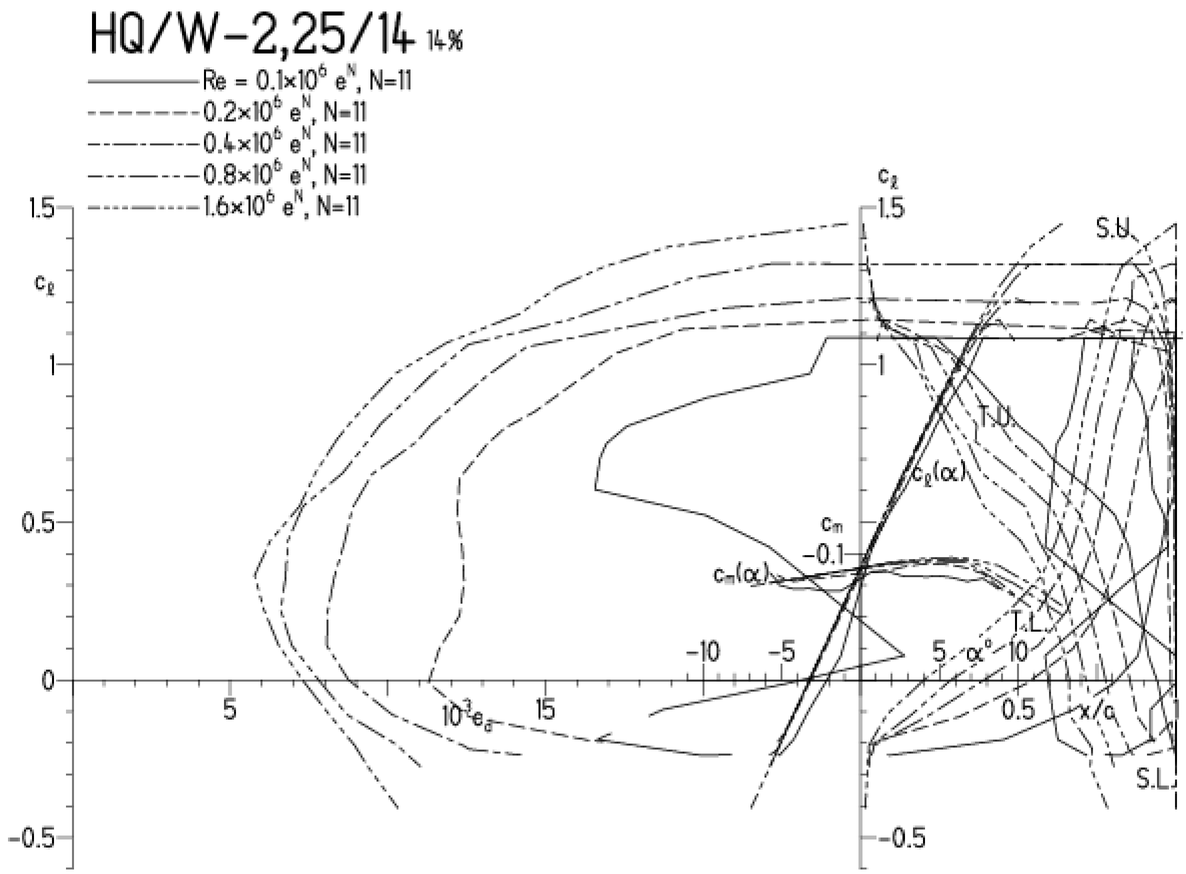


<u>HQ/W-2,25/14</u>, N=11

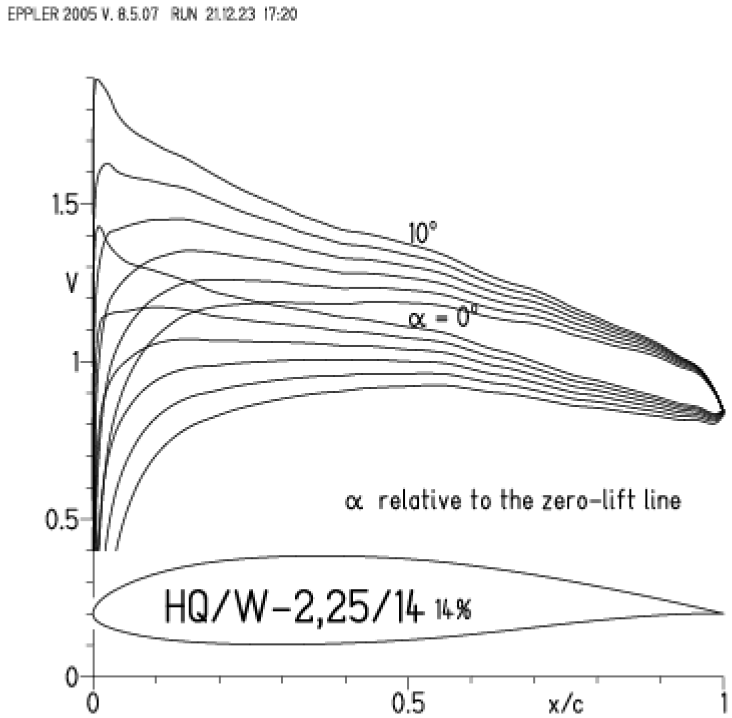
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

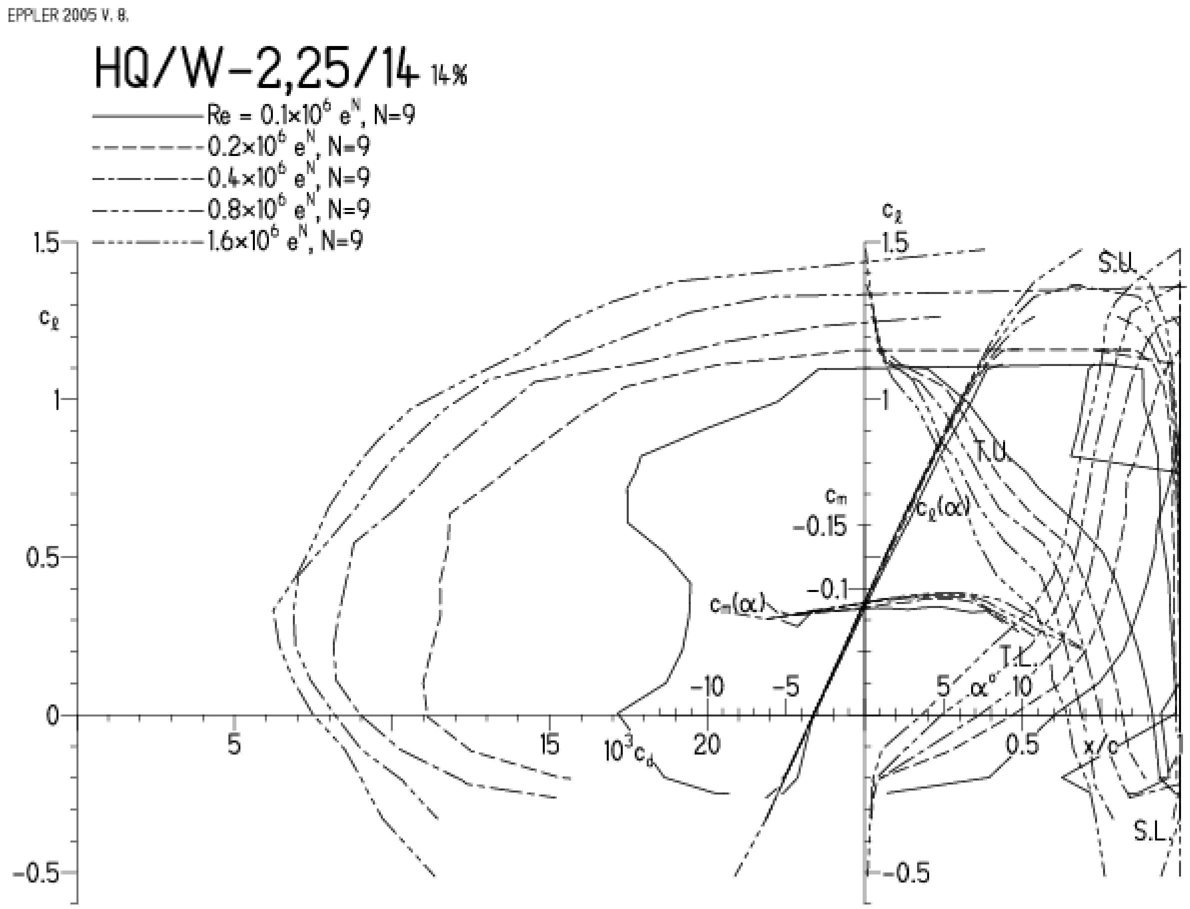


EPPLER 2005 V. 8.

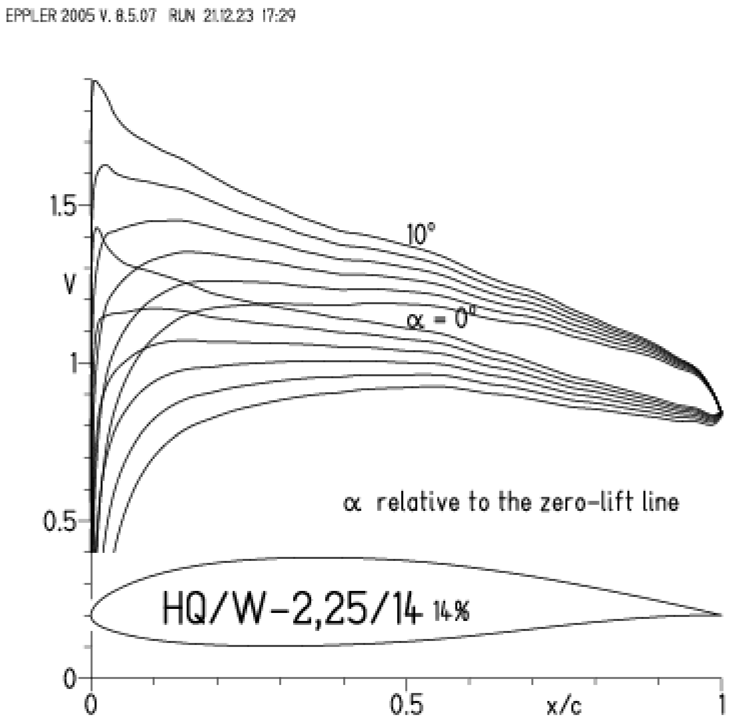


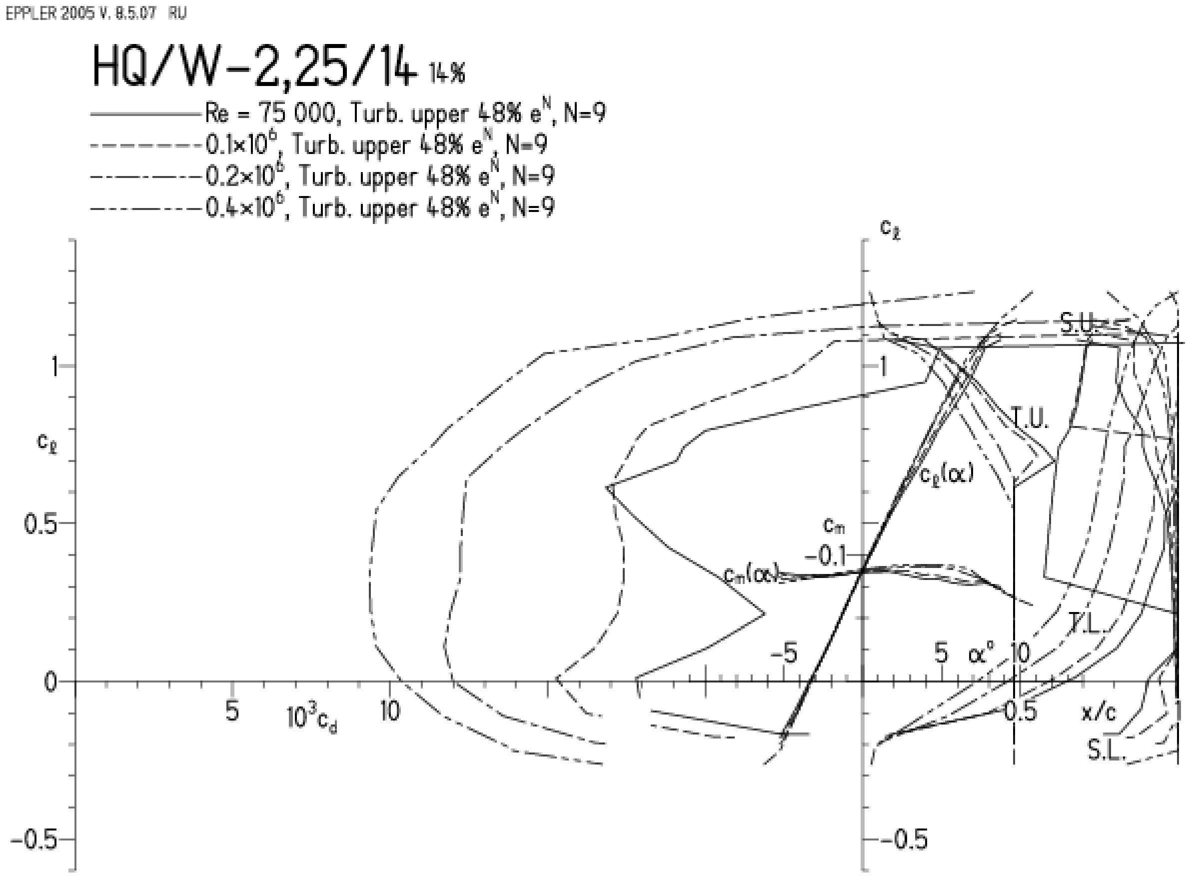
<u>HQ/W-2,25/14</u>, N=9





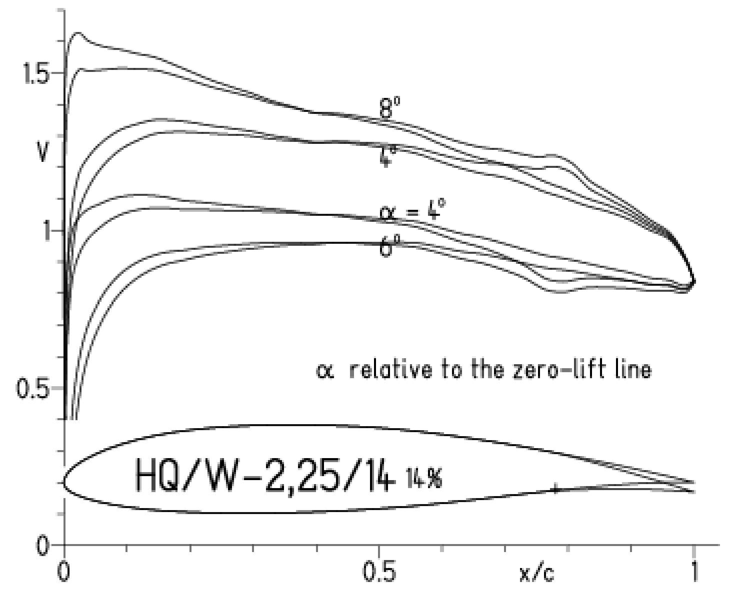
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



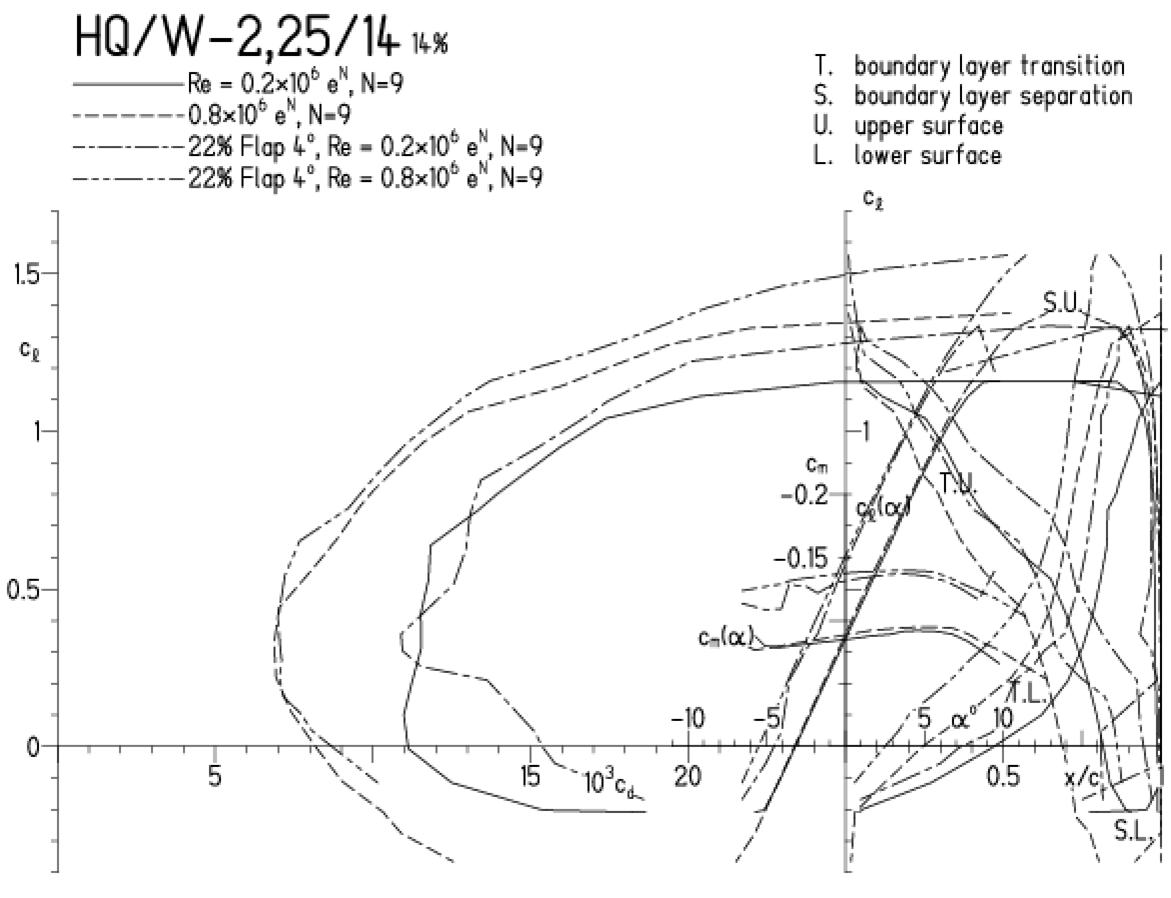


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

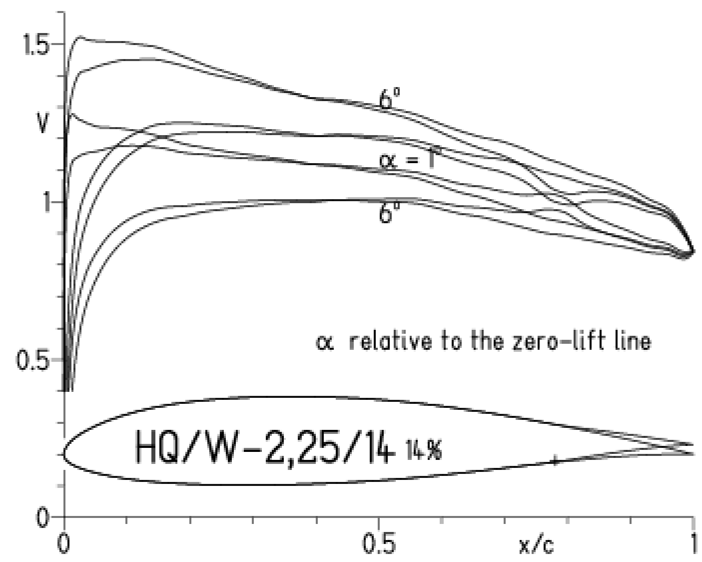


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

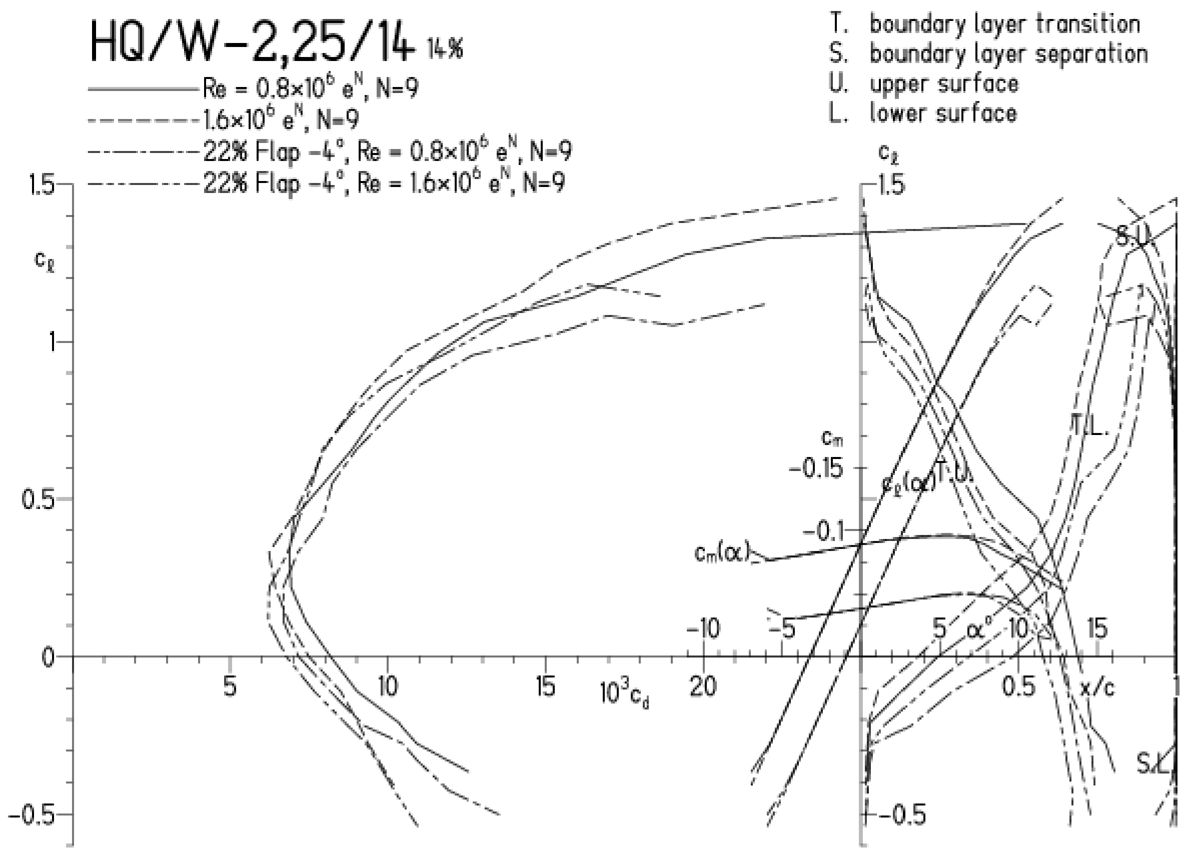


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

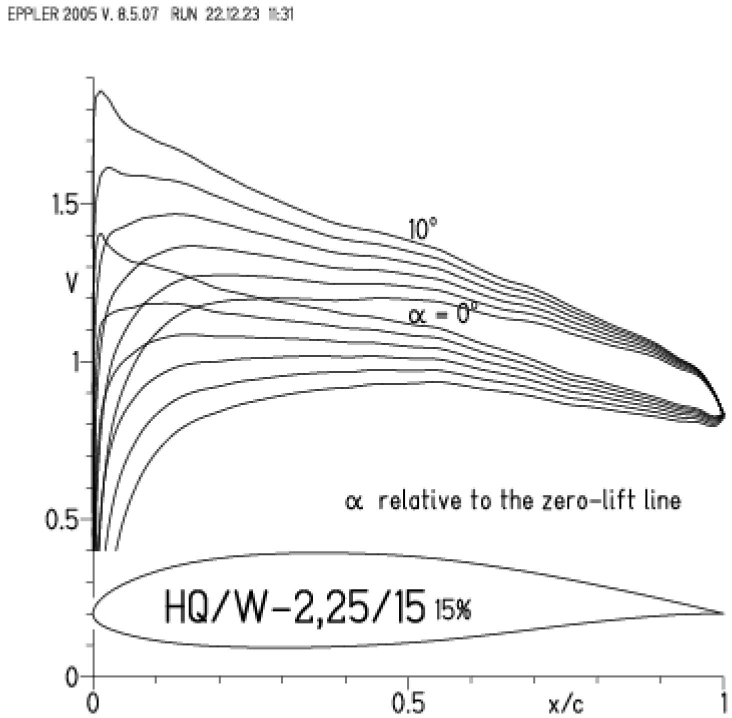
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

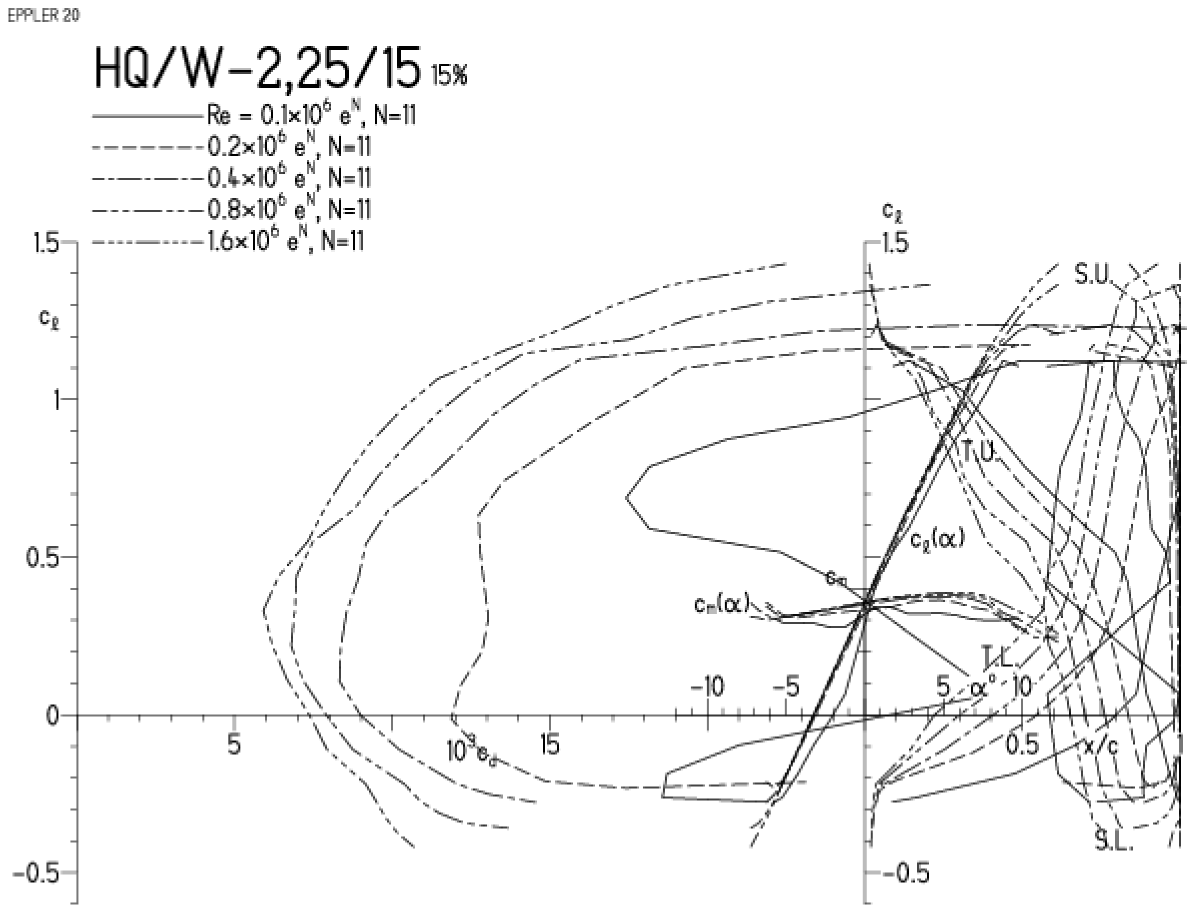


EPPLER 2005 V. 8.5.07



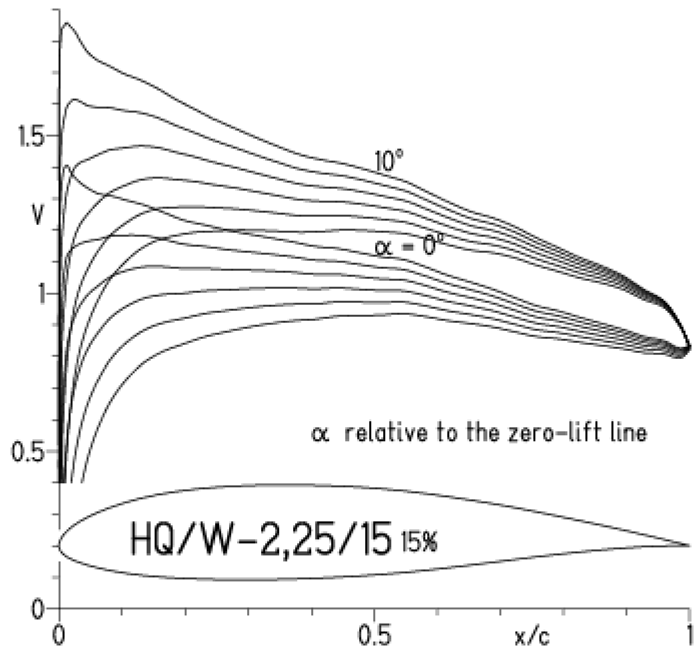
HQ/W-2,25/15, N=11



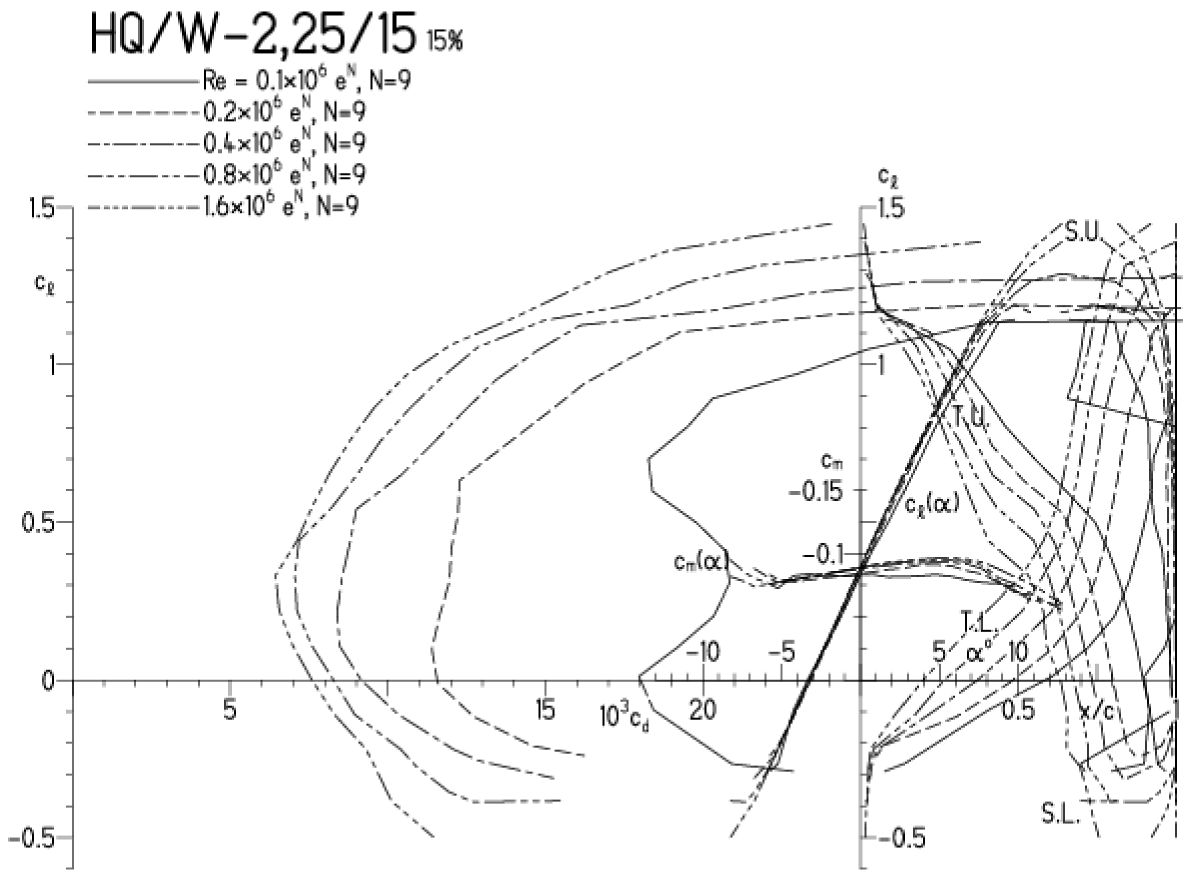


HQ/W-2,25/15, N=9

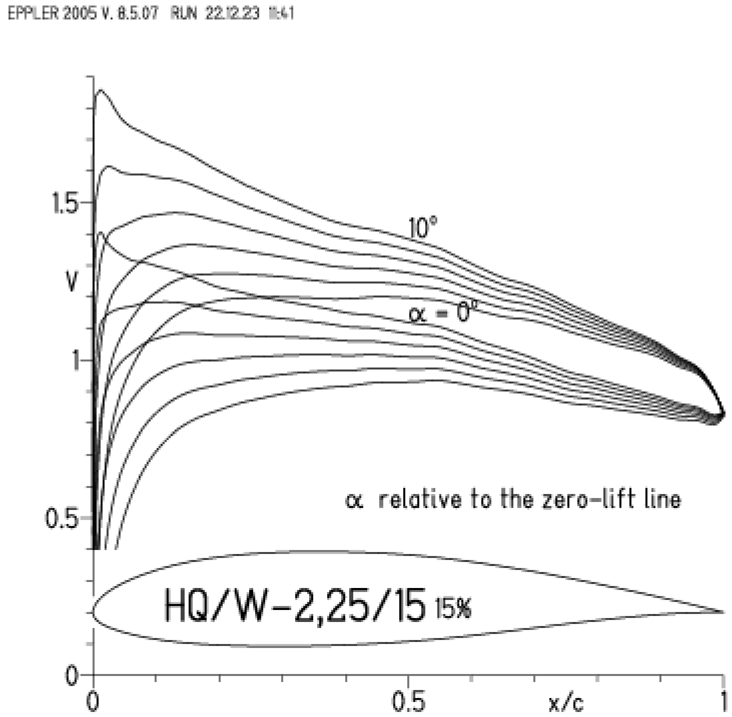
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

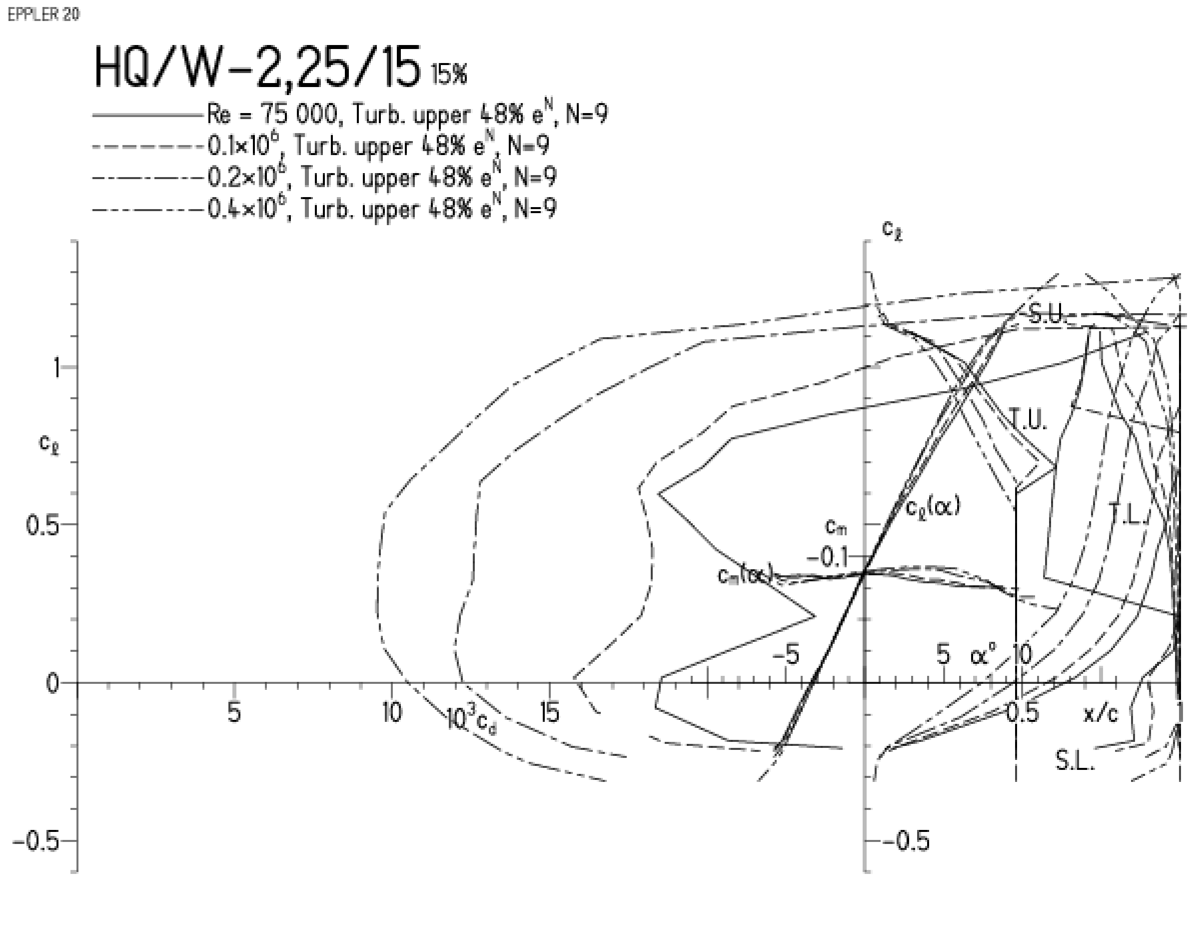


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



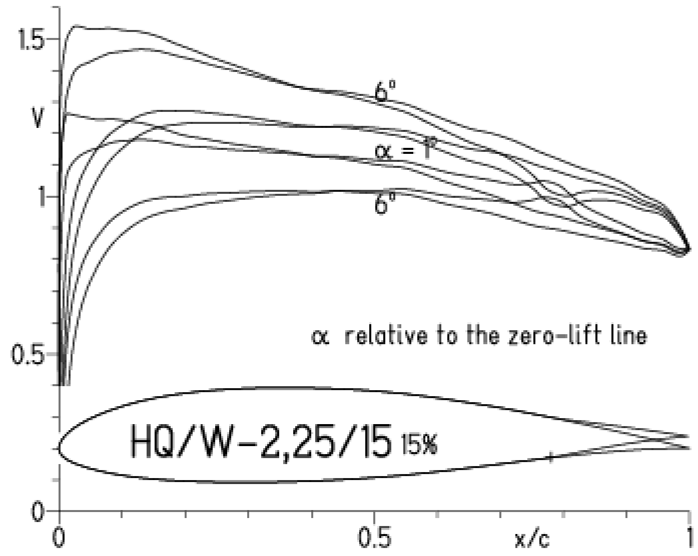


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

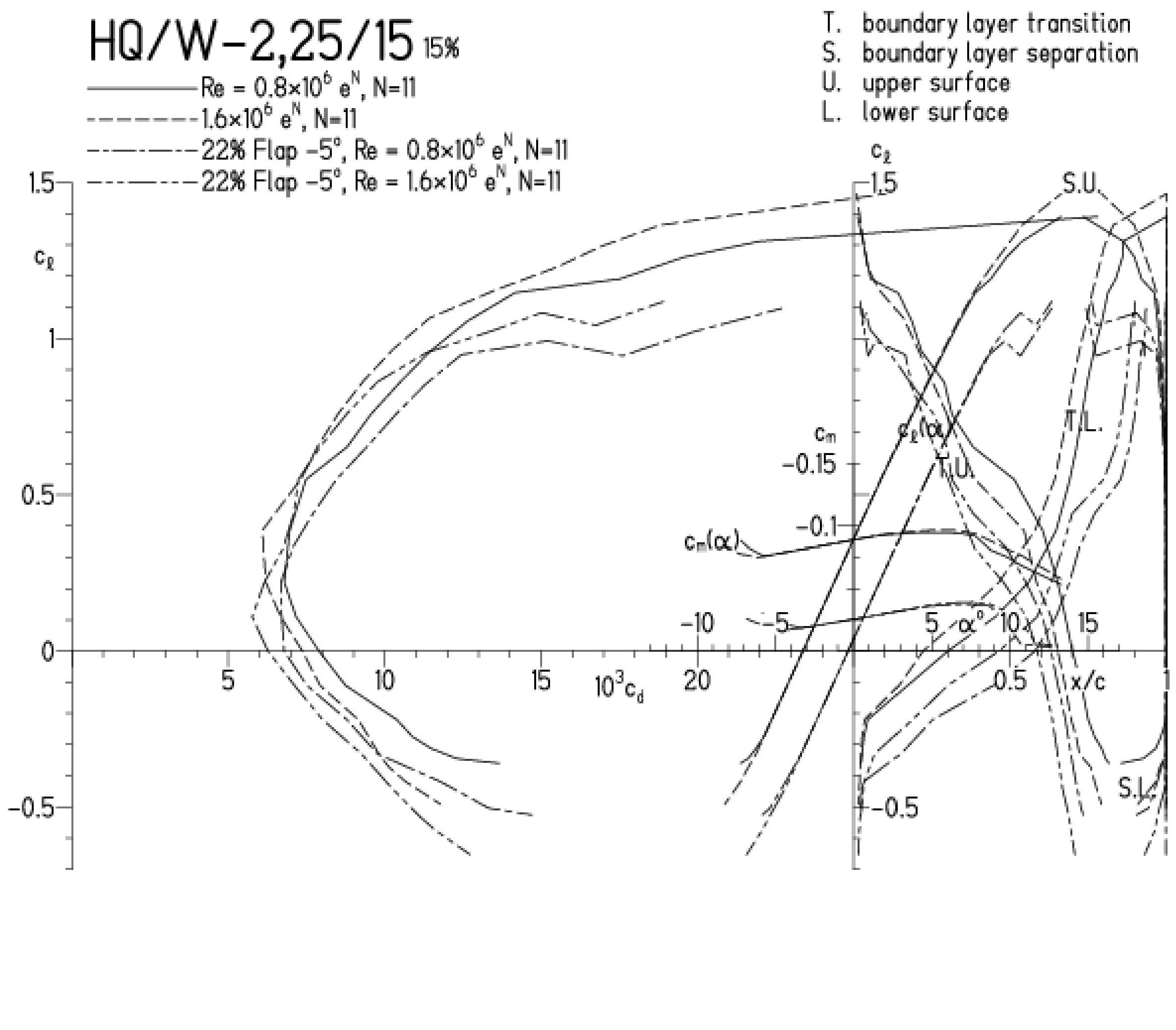
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

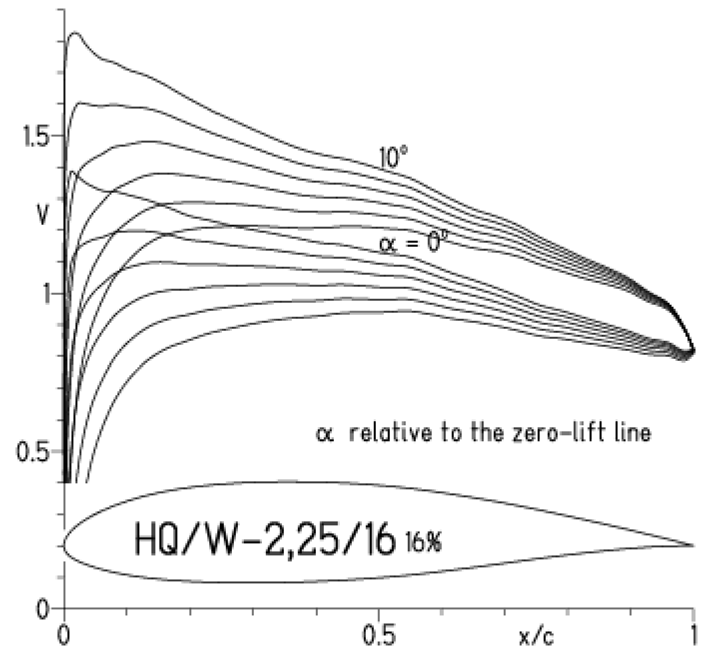


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

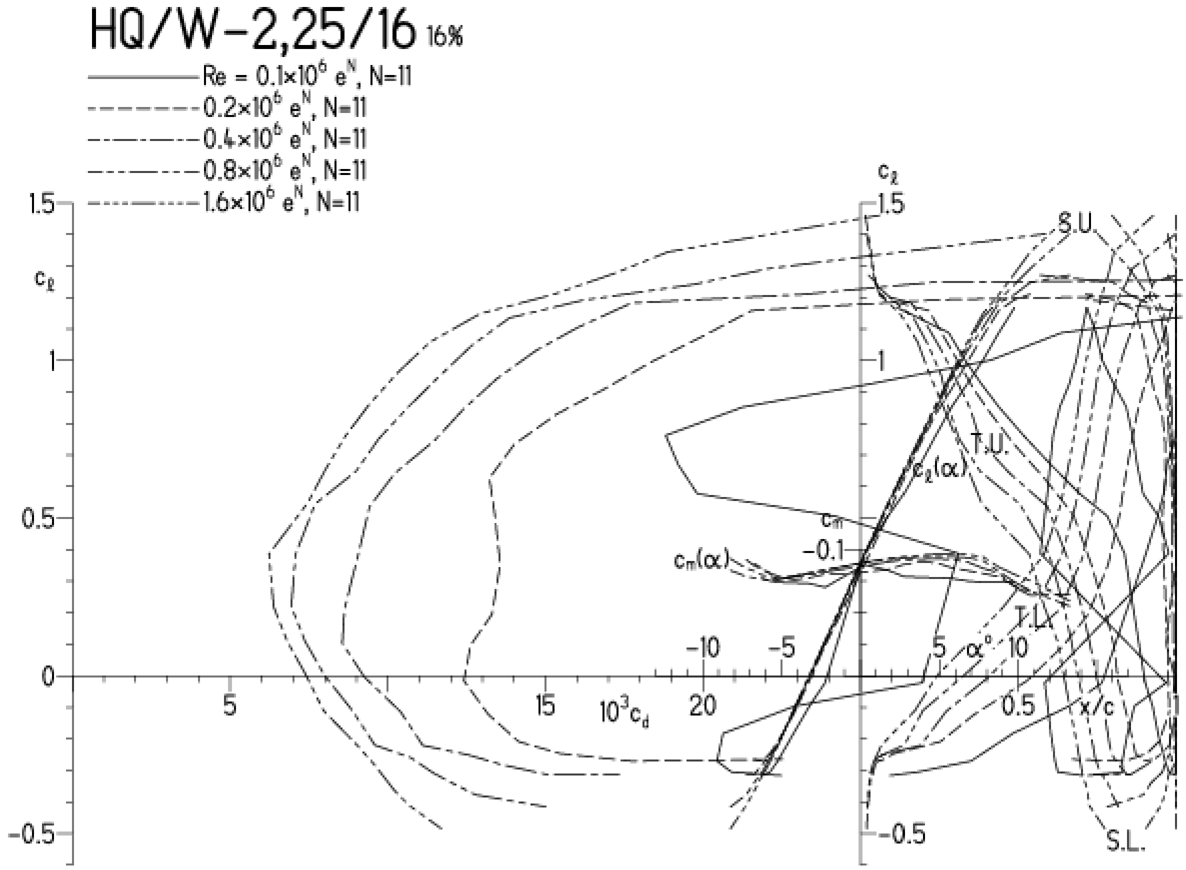


<u>HQ/W-2,25/16</u>, N=11

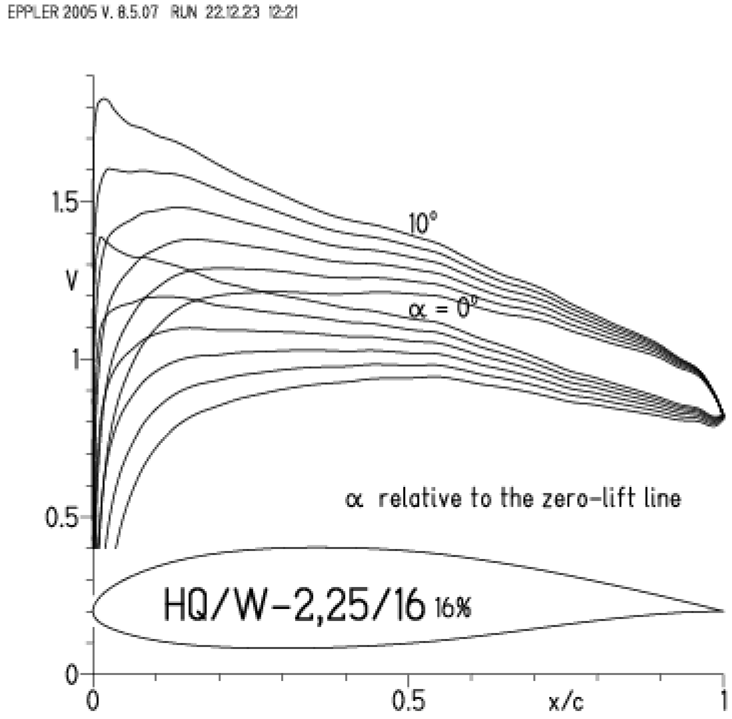
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

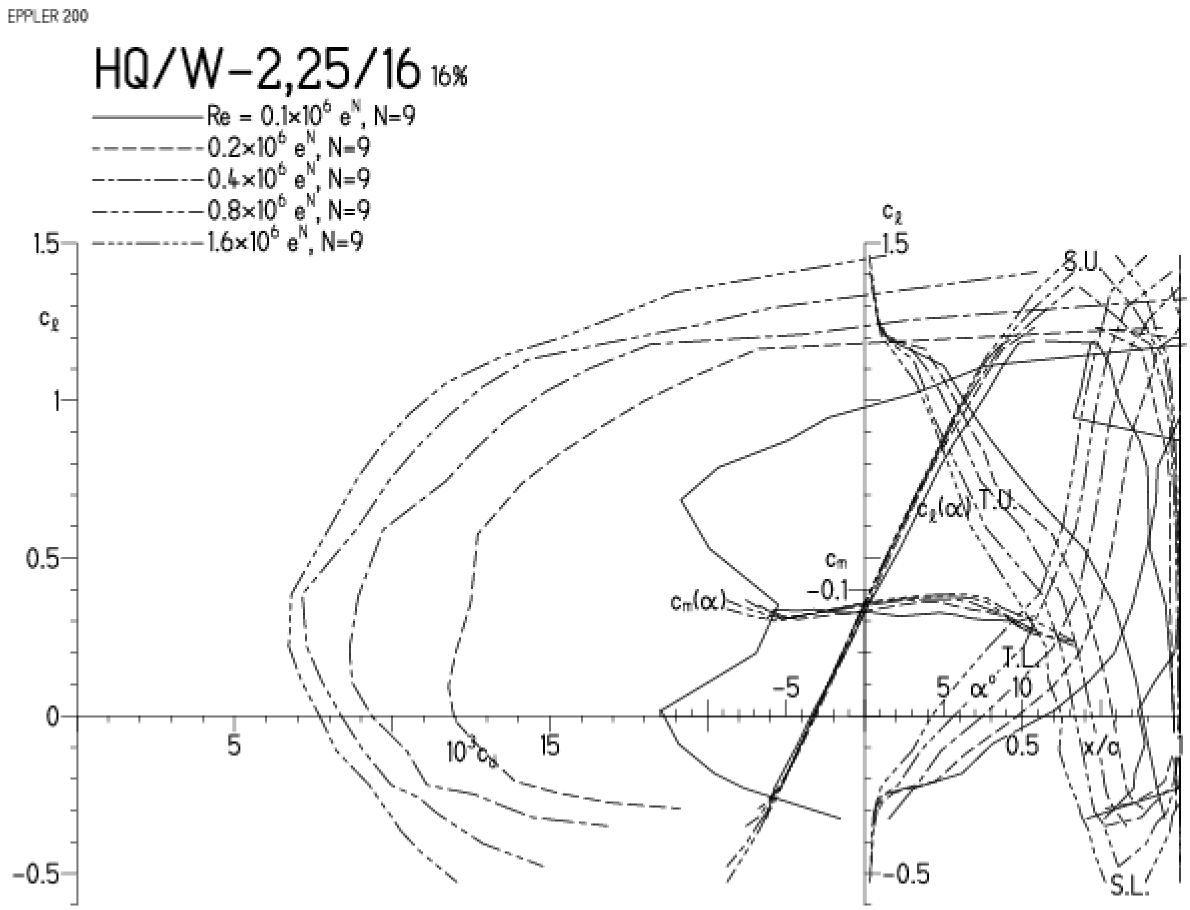


EPPLER 200

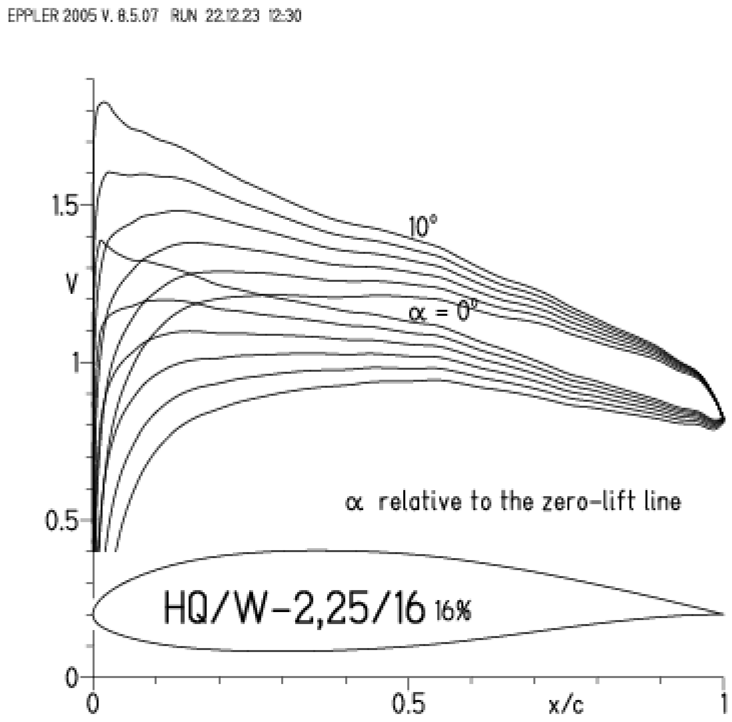


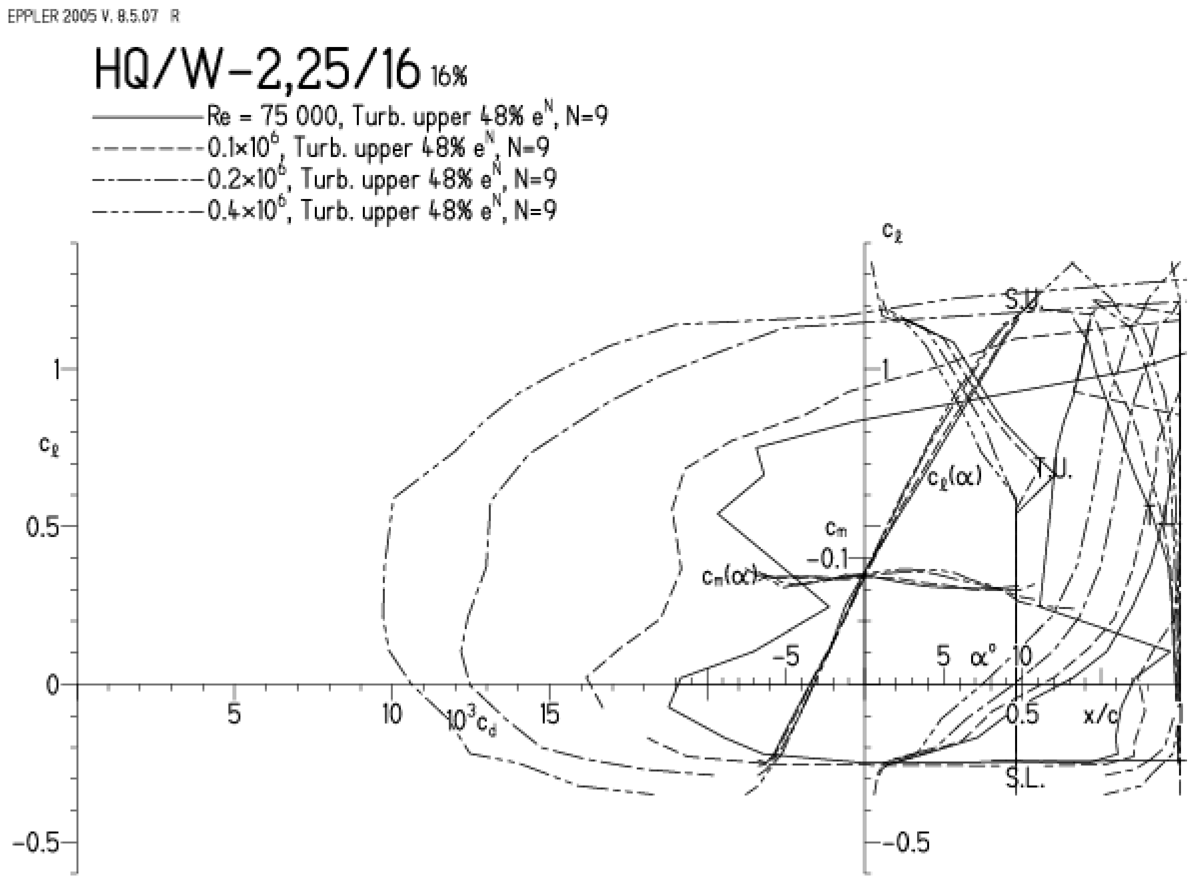
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10⁻³c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α) T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



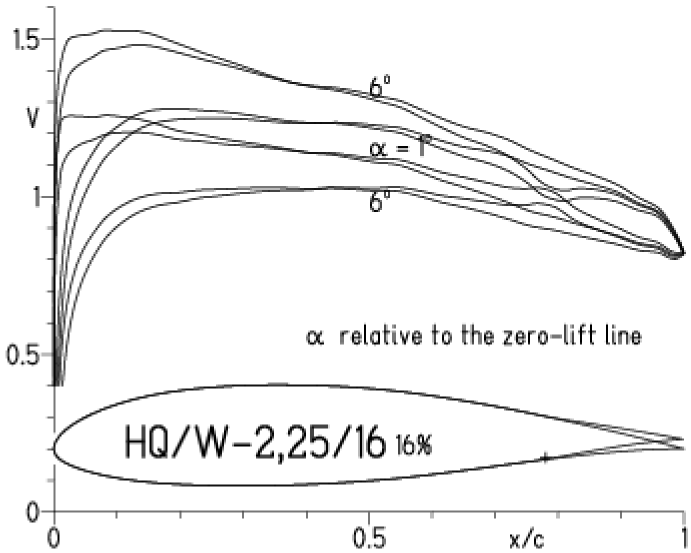


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

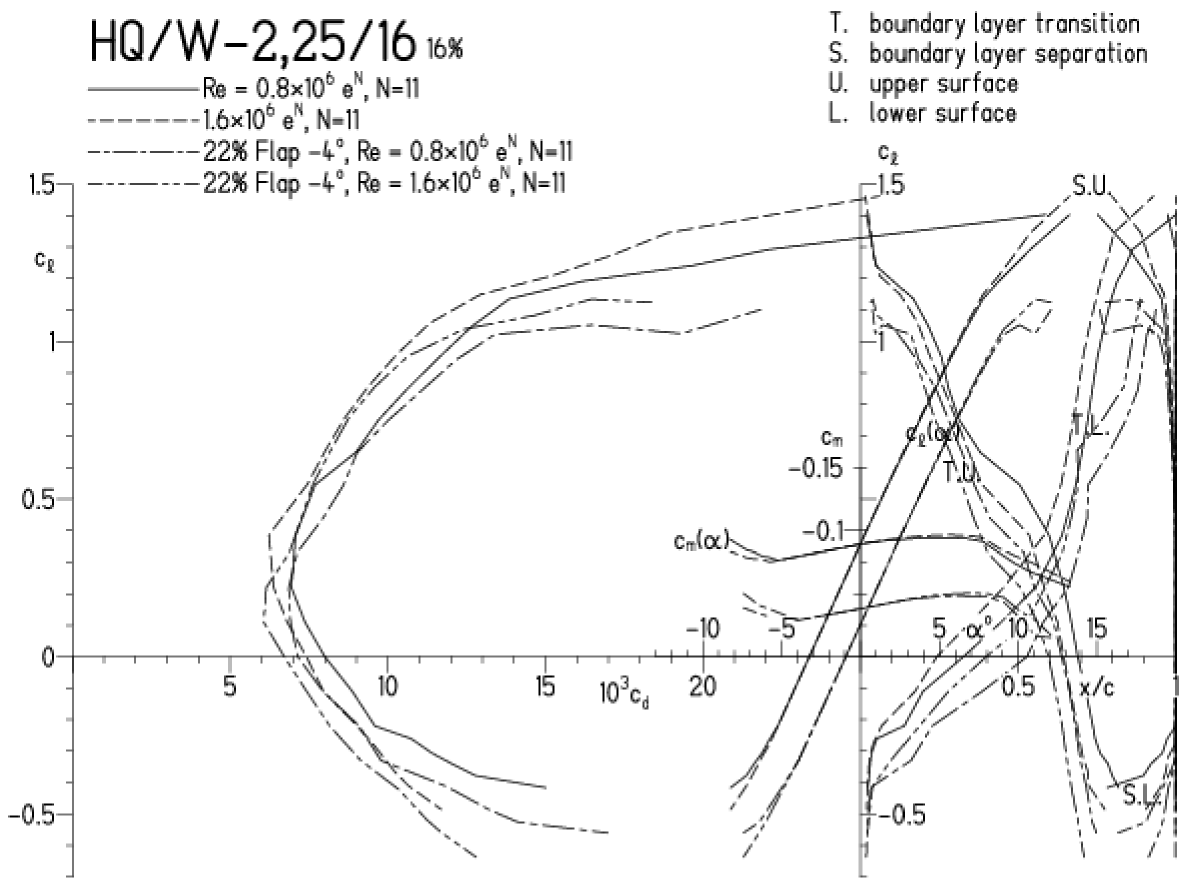
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

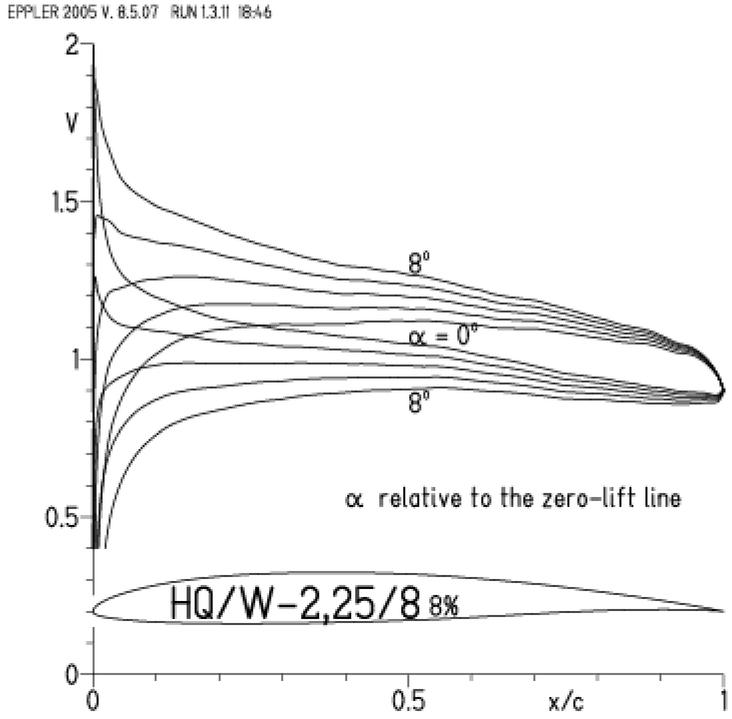
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

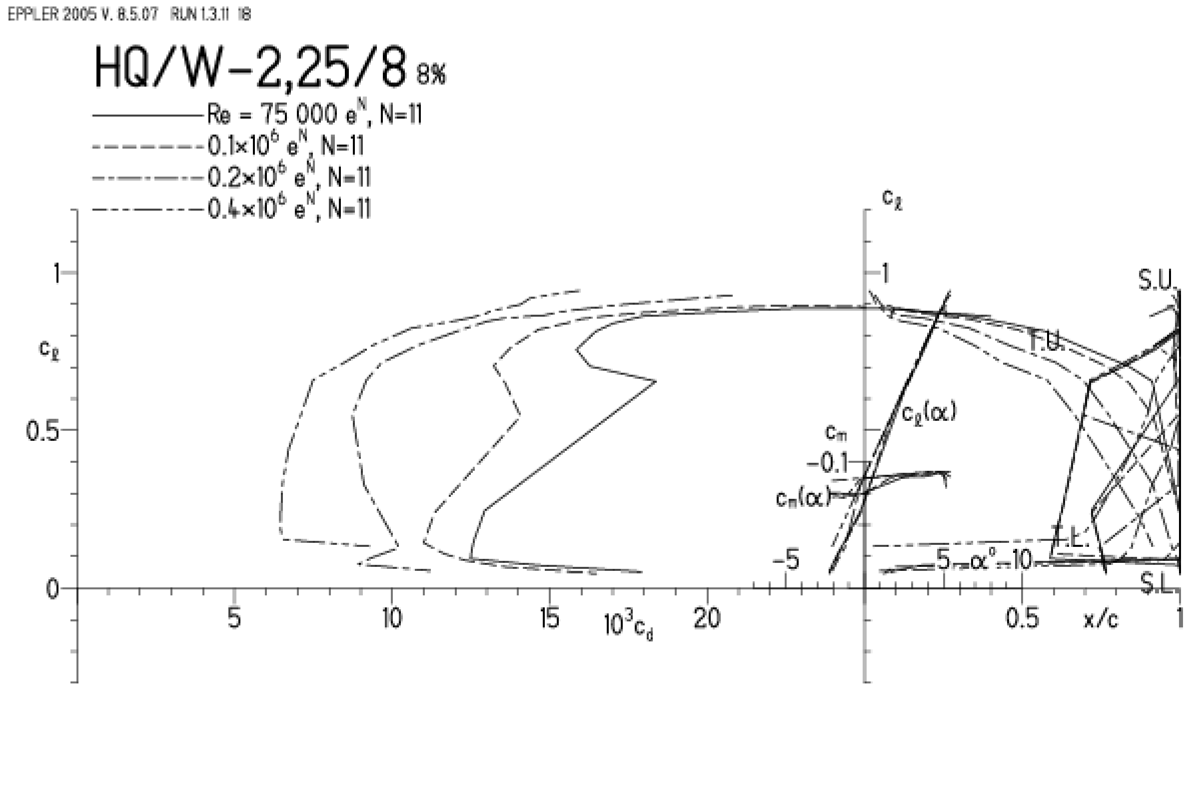


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

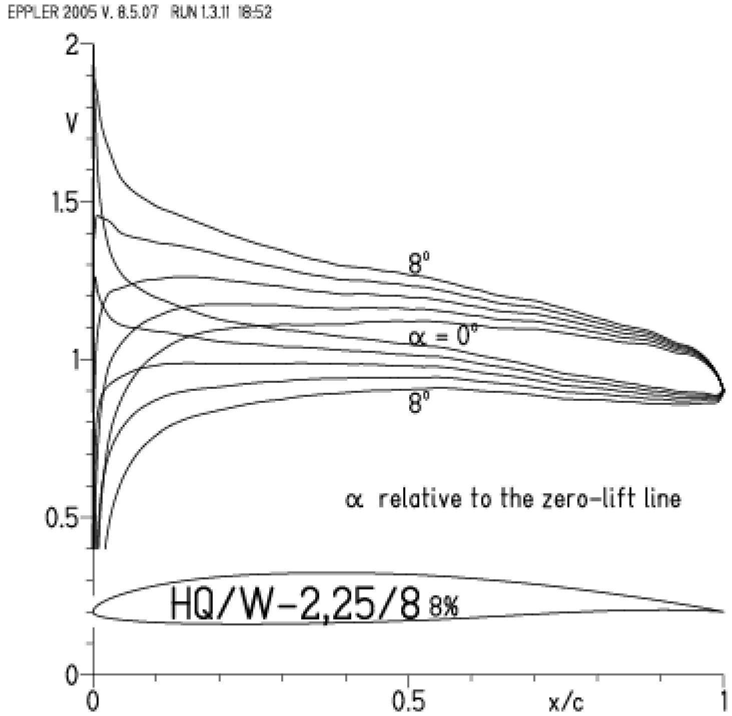


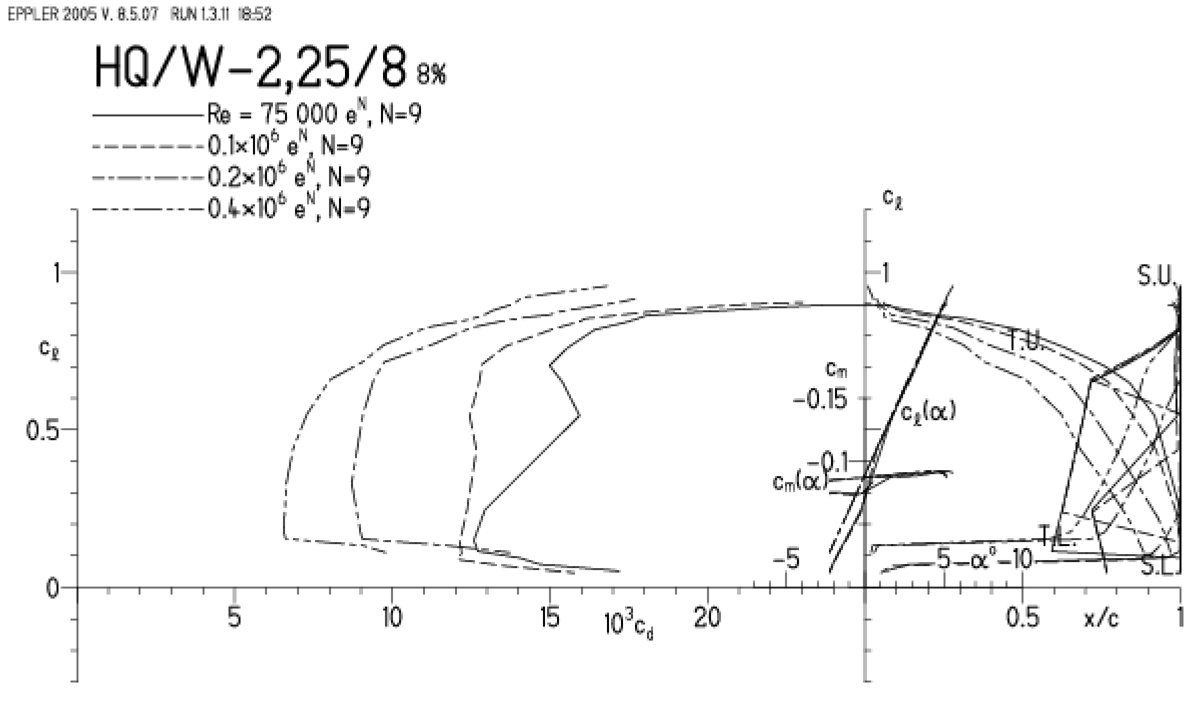
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

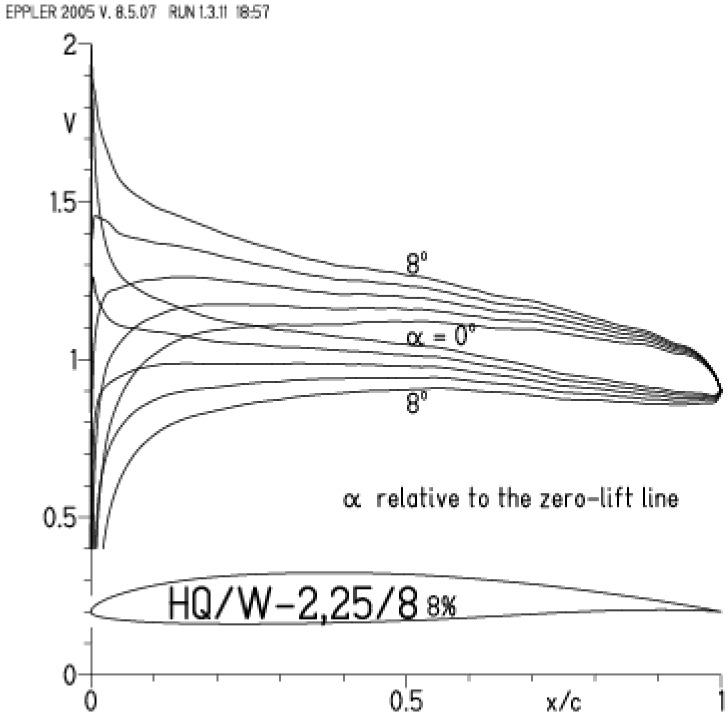

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
$c_\ell(\alpha)$
c_m
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
x/c

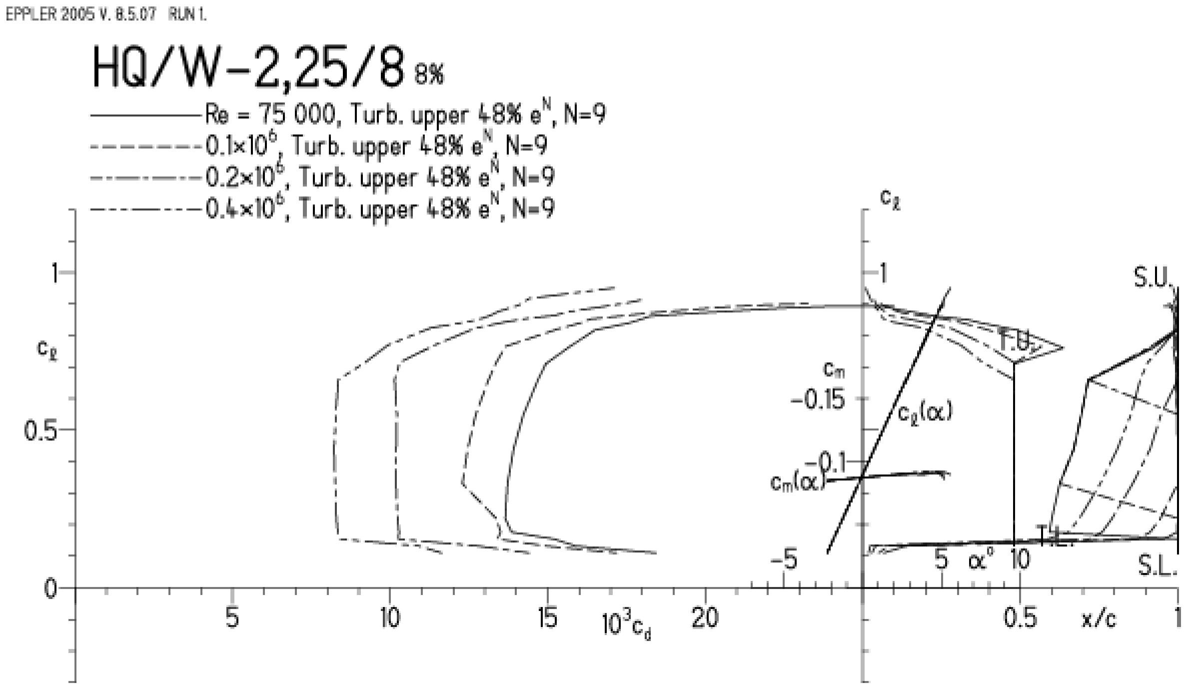
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
5–α°–10
10^3 c_d
x/c

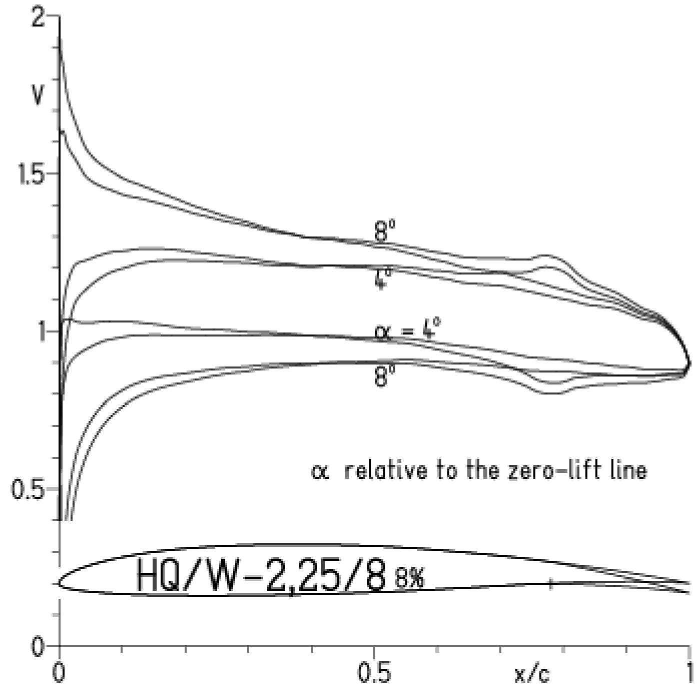
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



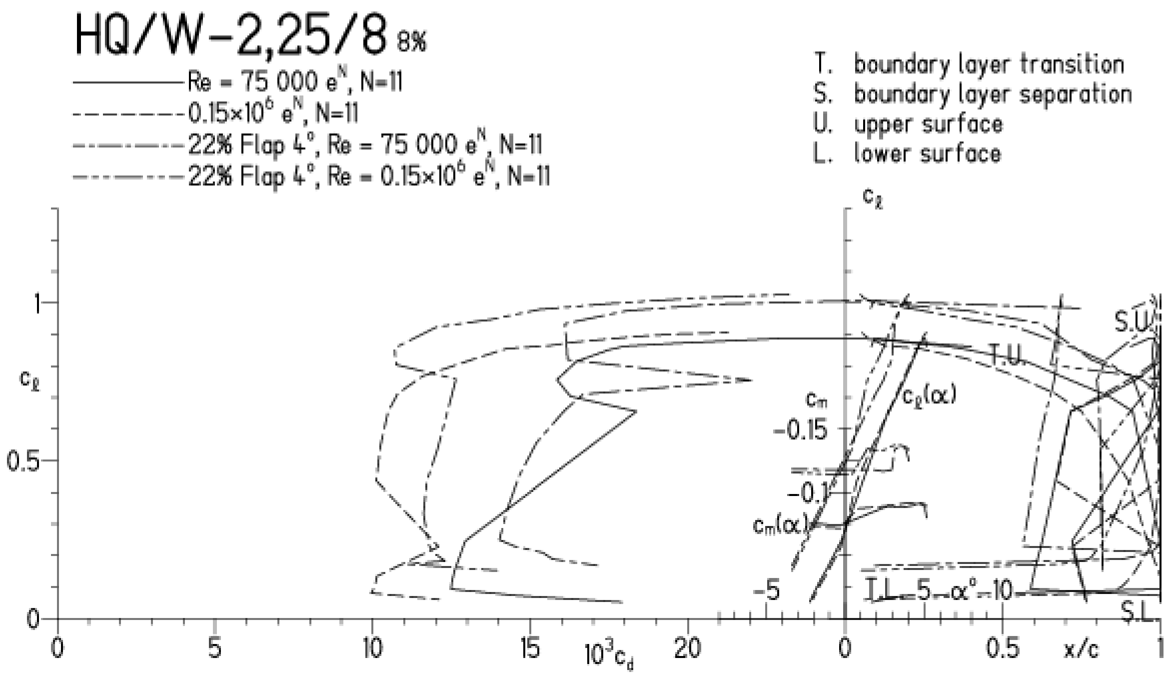


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

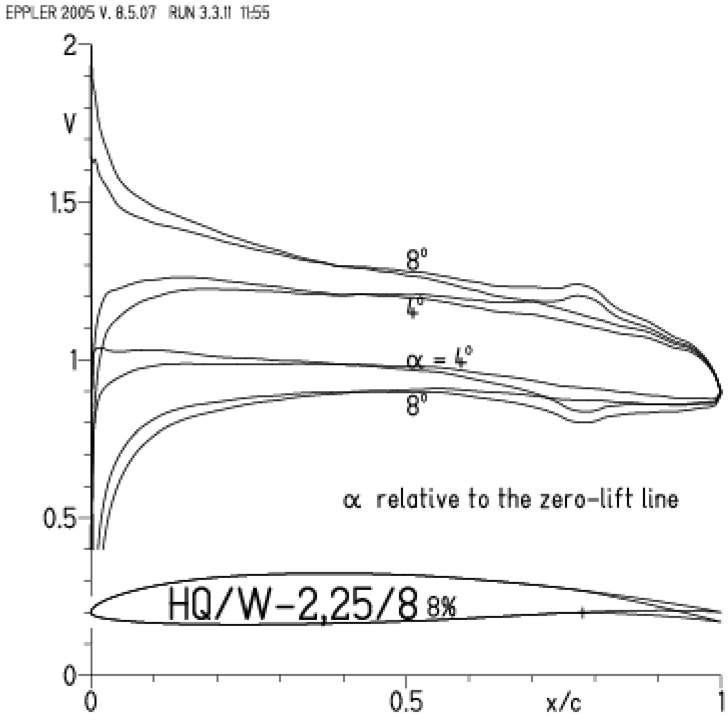
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

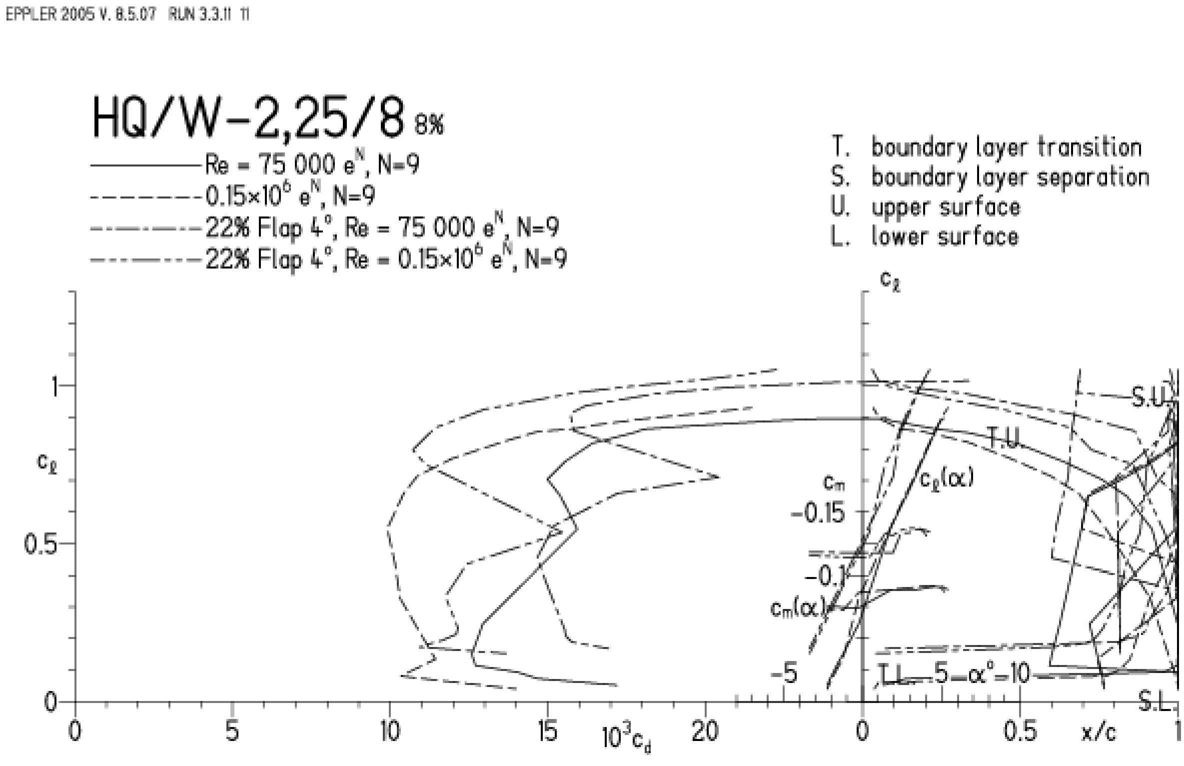


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

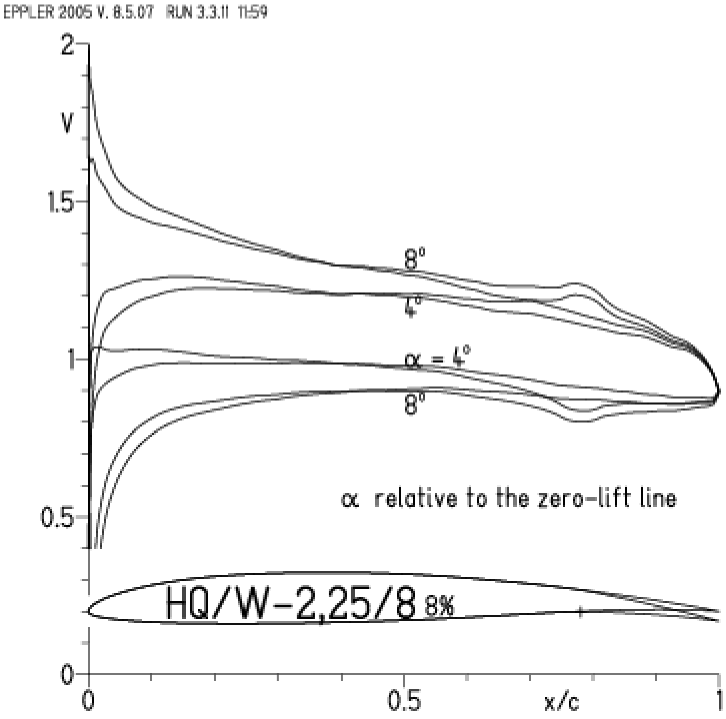


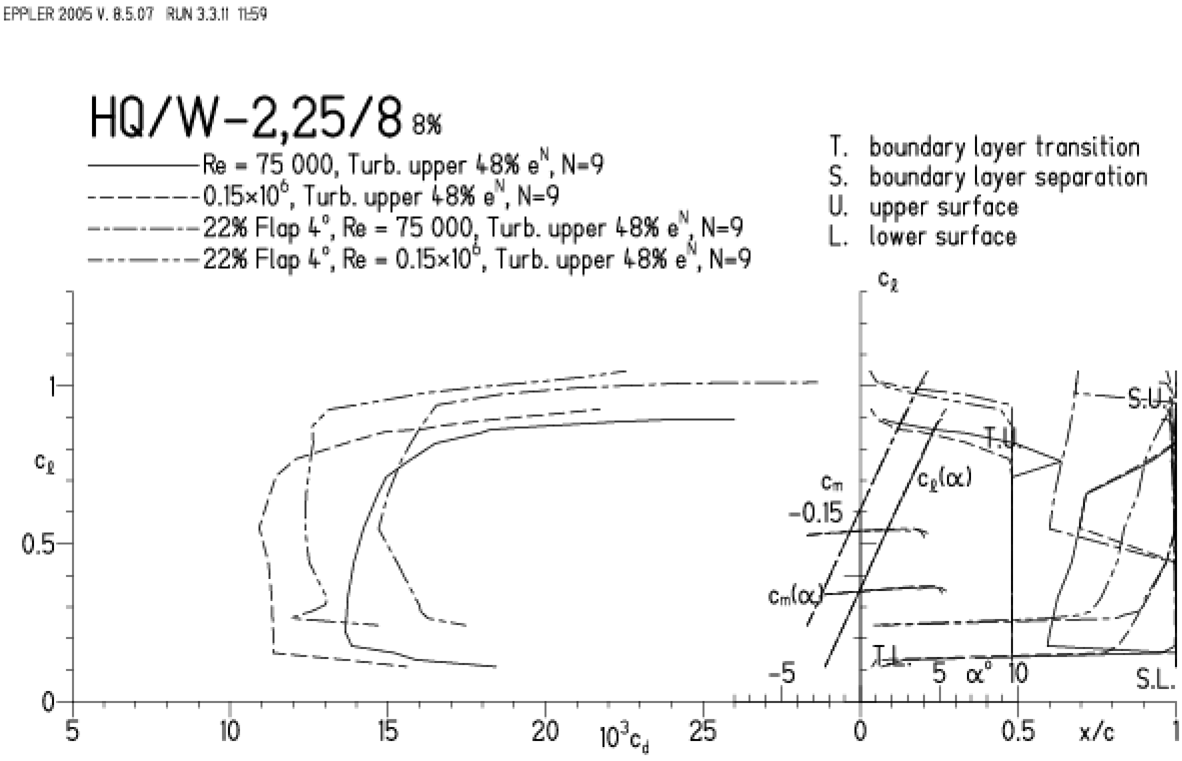
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





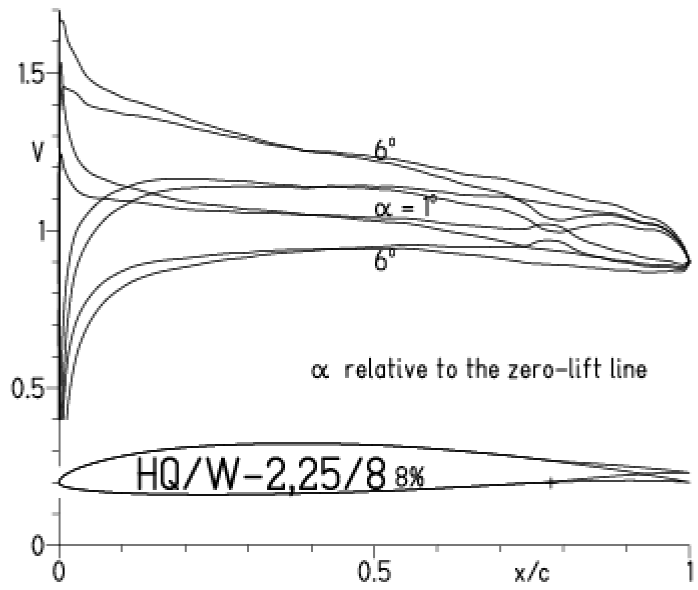
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



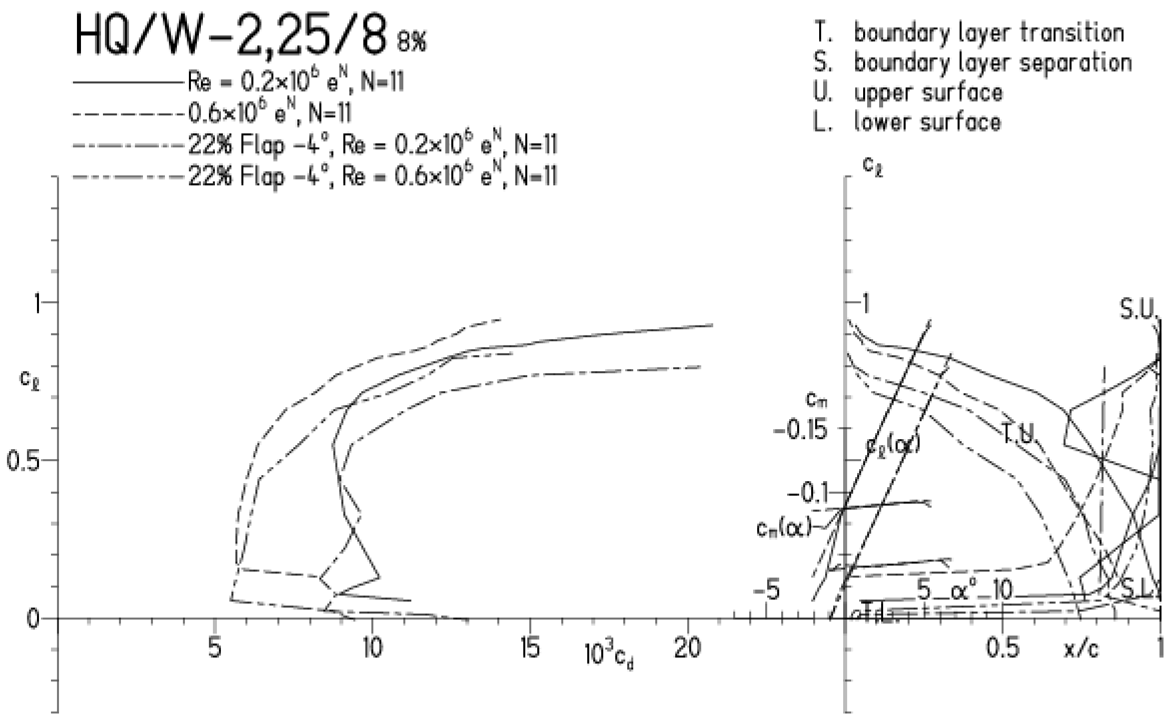


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

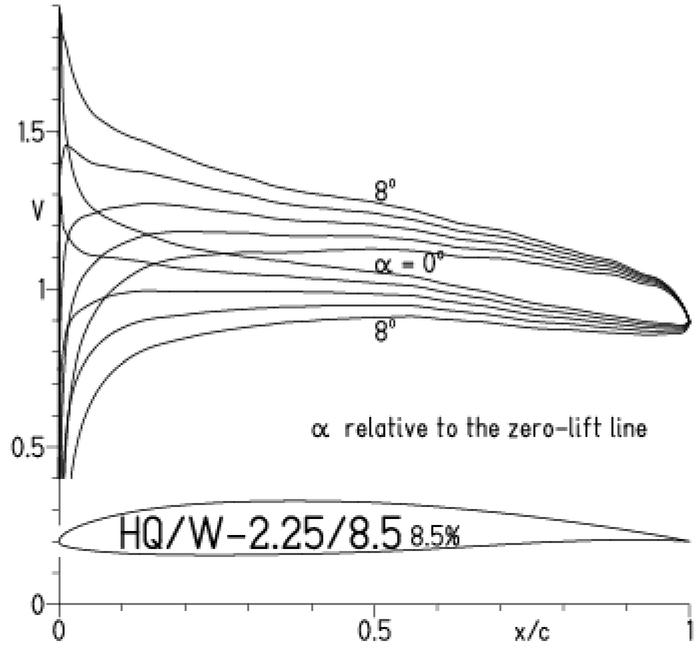


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

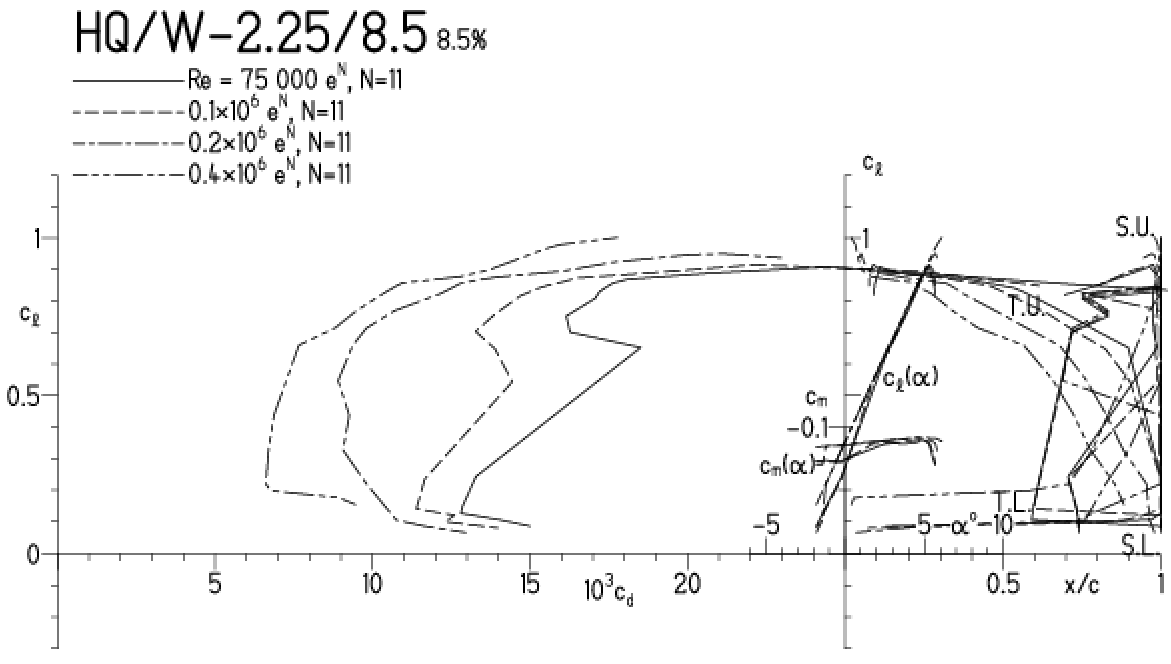


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

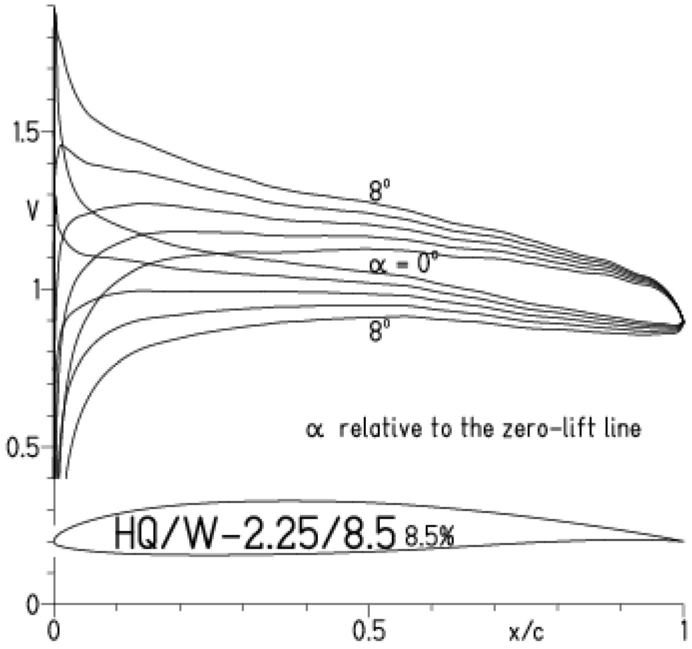


EPPLER 2005 V

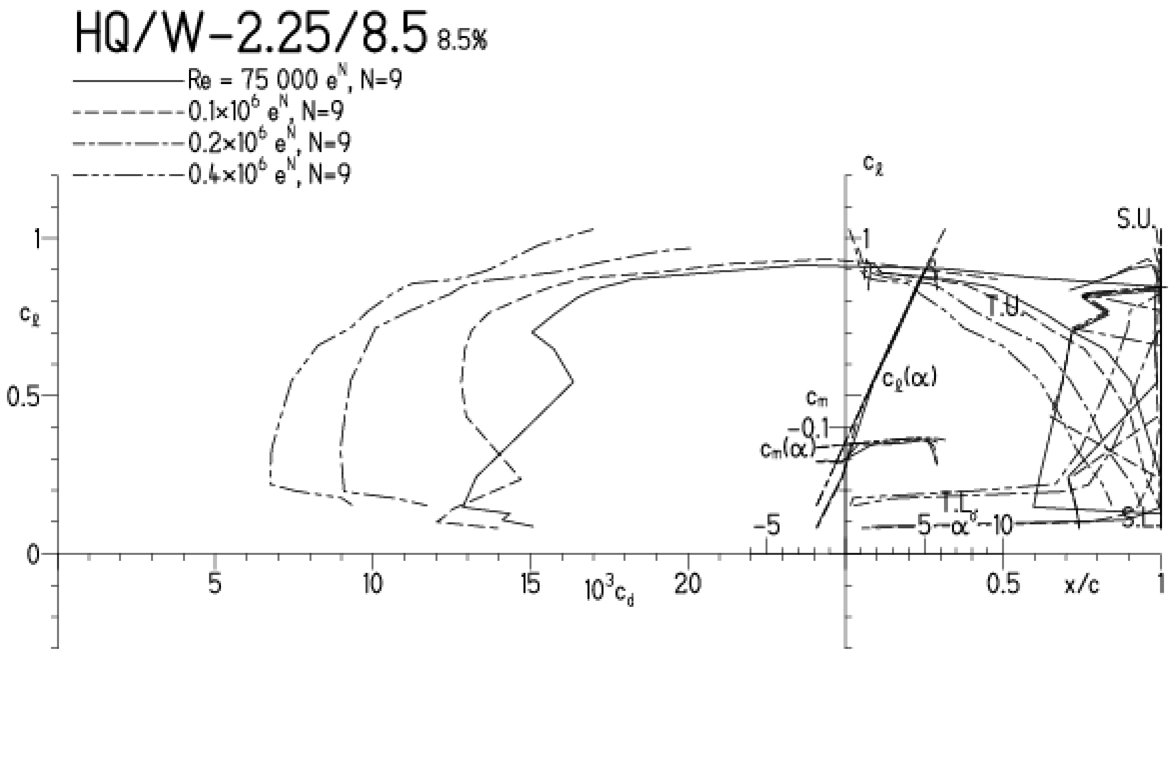


HQ/W-2,25/8,5, N=9

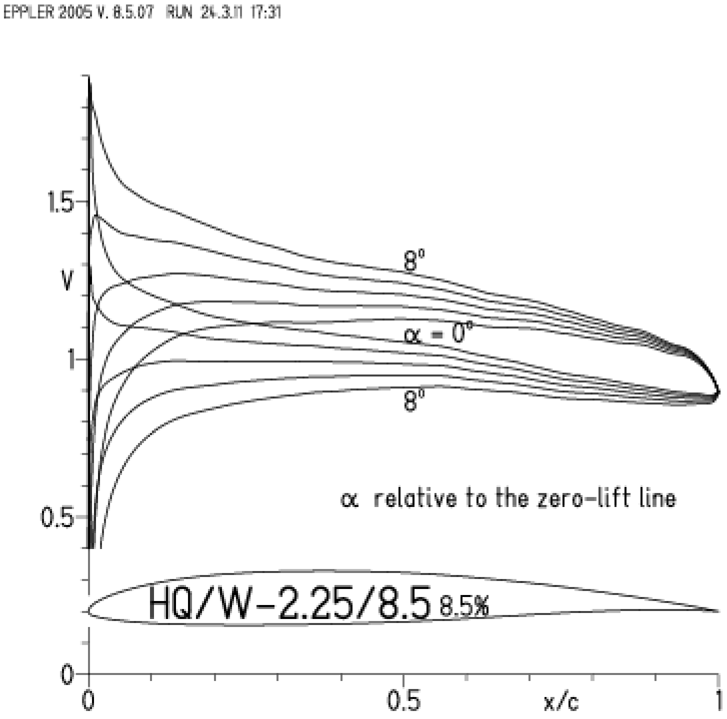
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

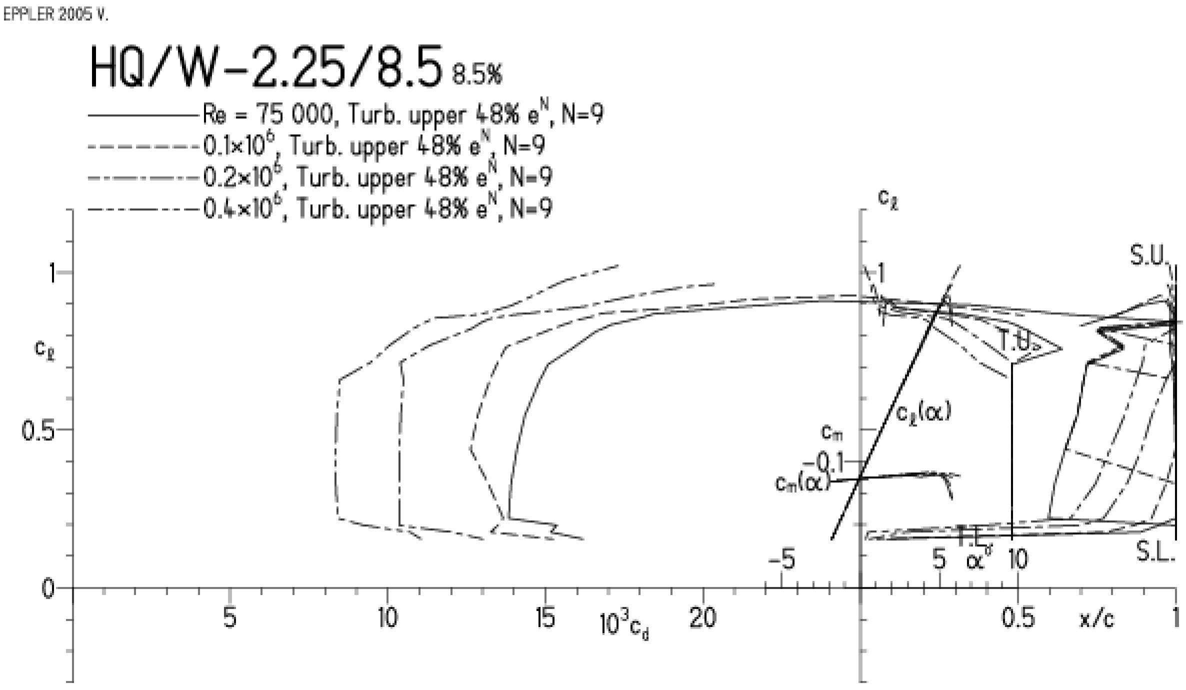


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



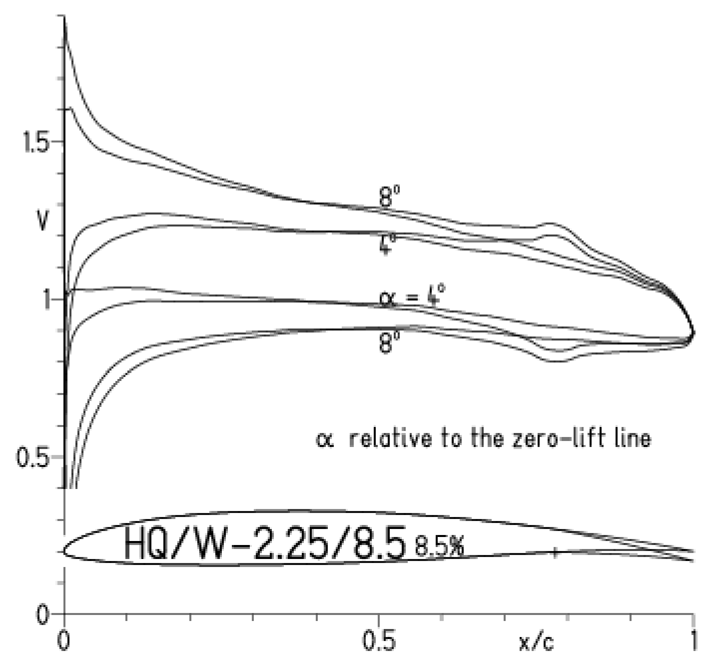
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



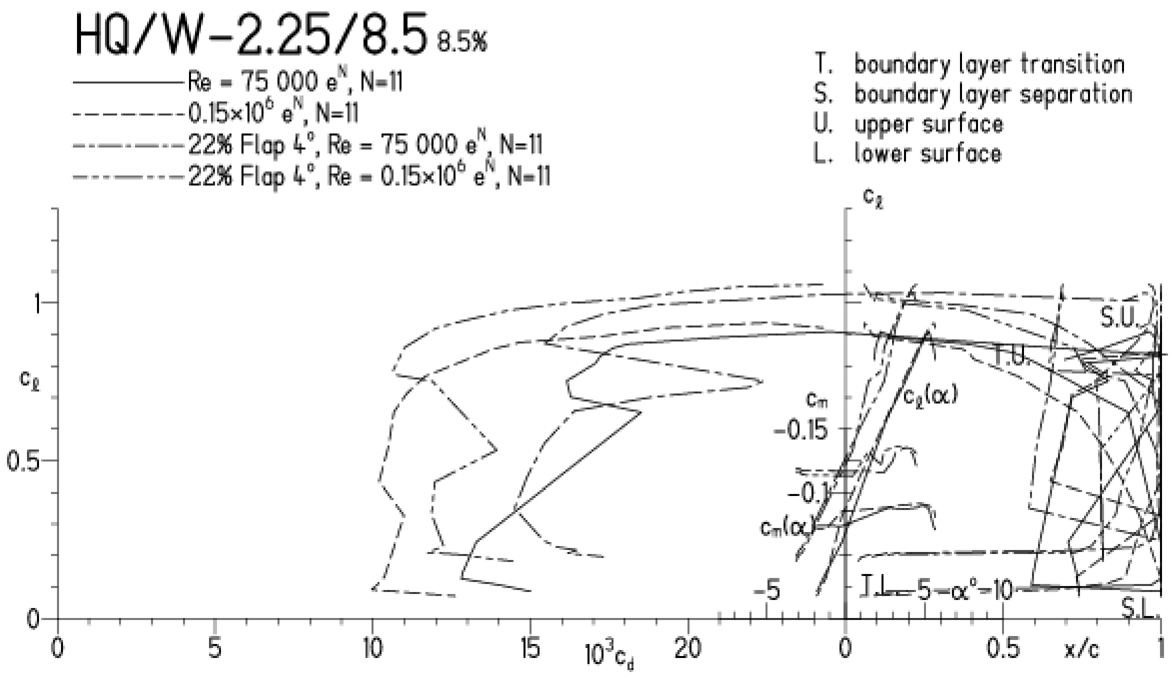


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

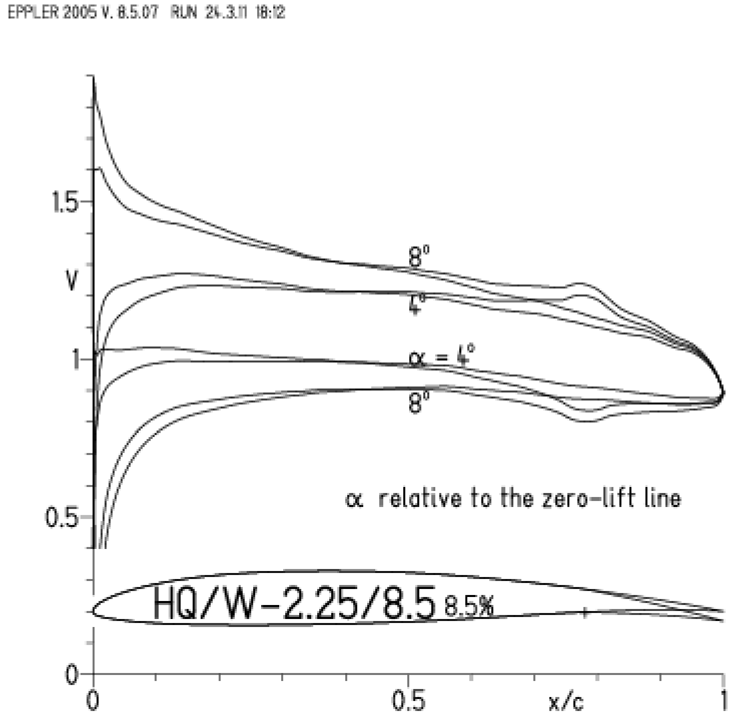
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

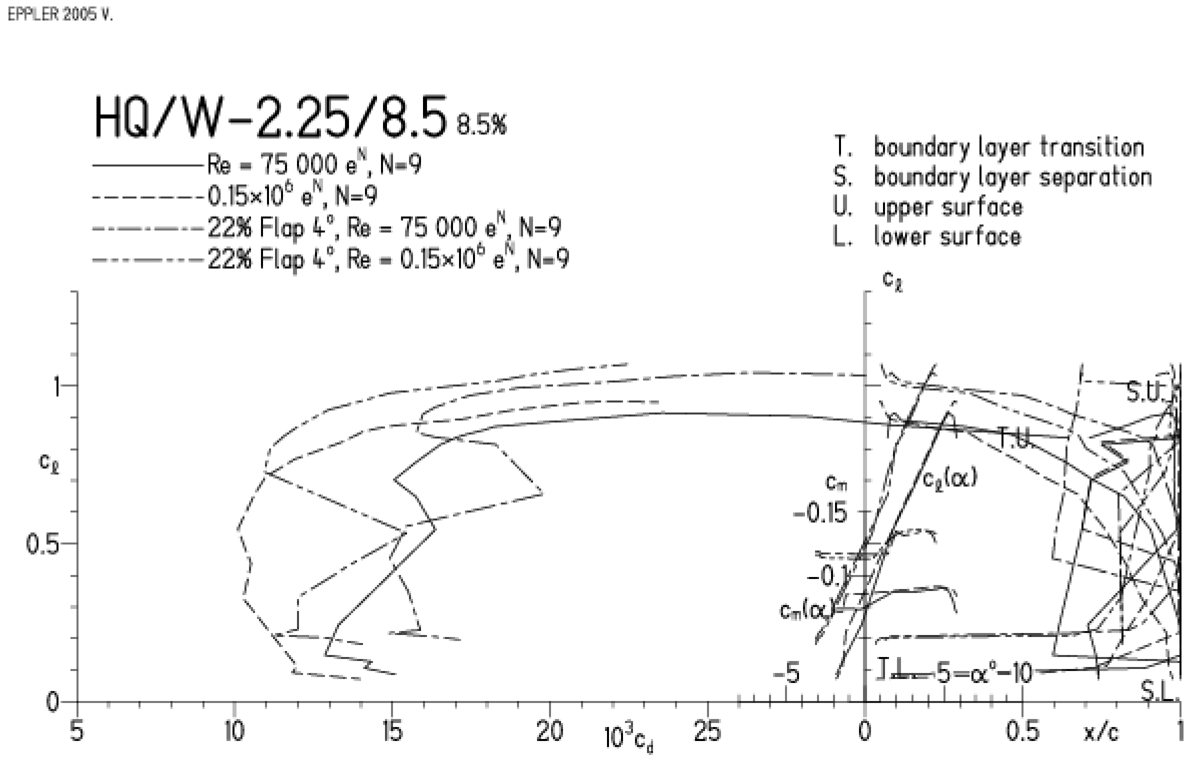


EPPLER 2005 V. 8.5.

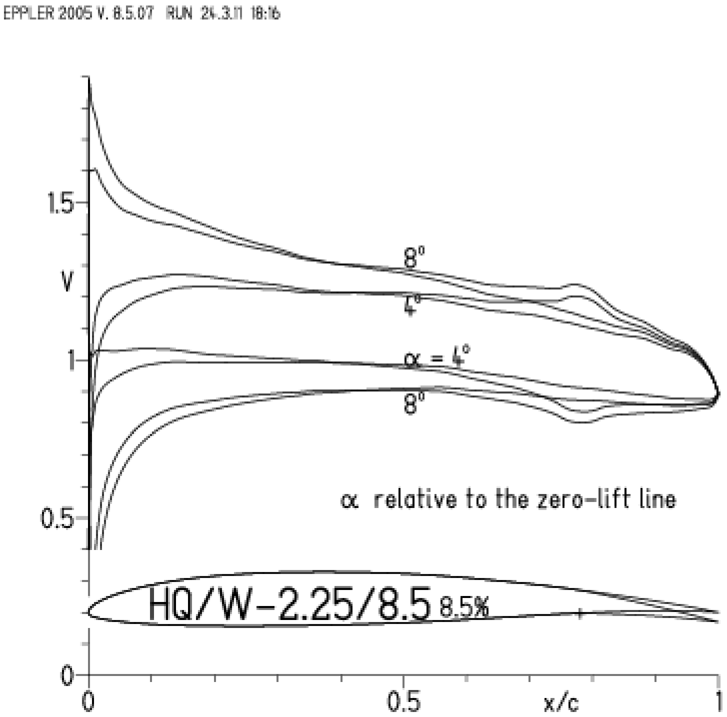


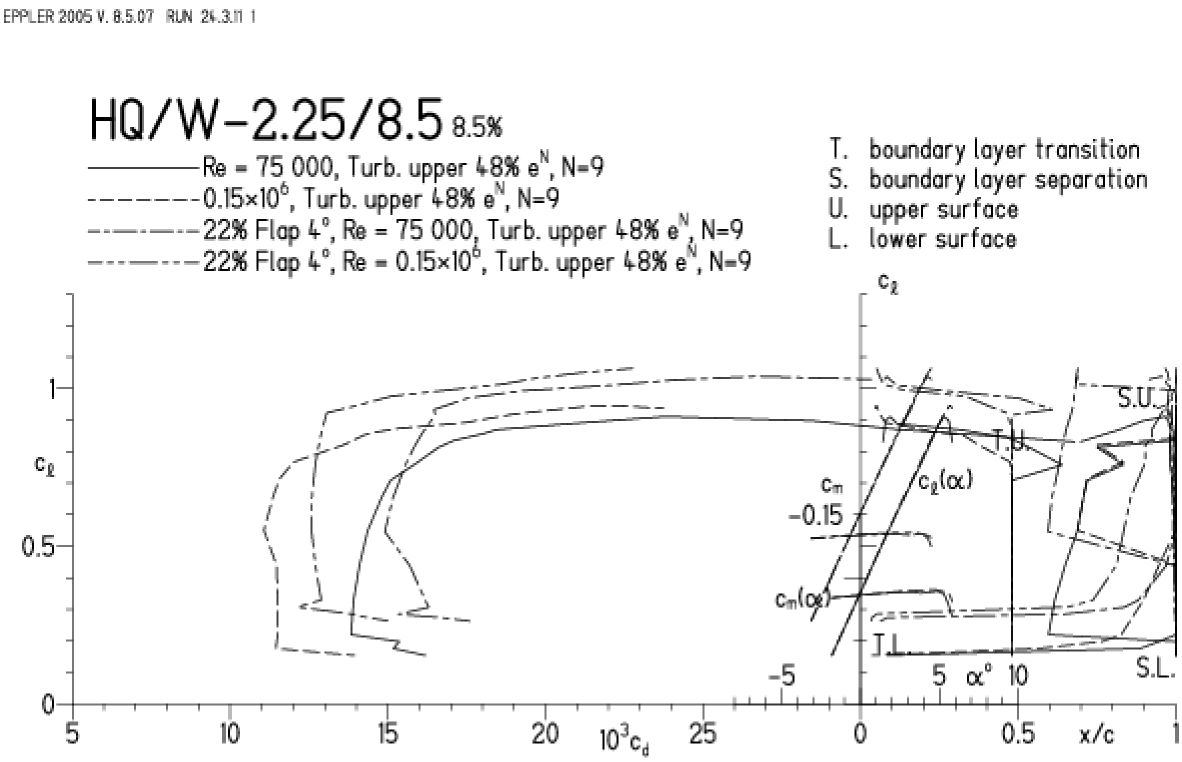
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag





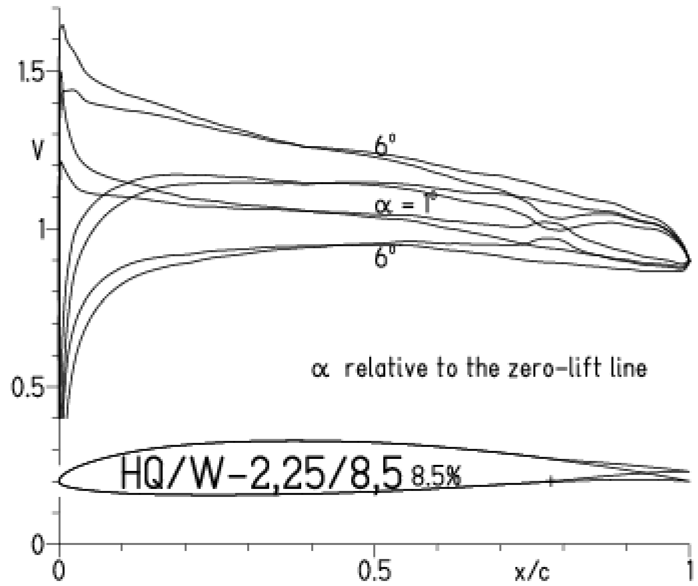
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



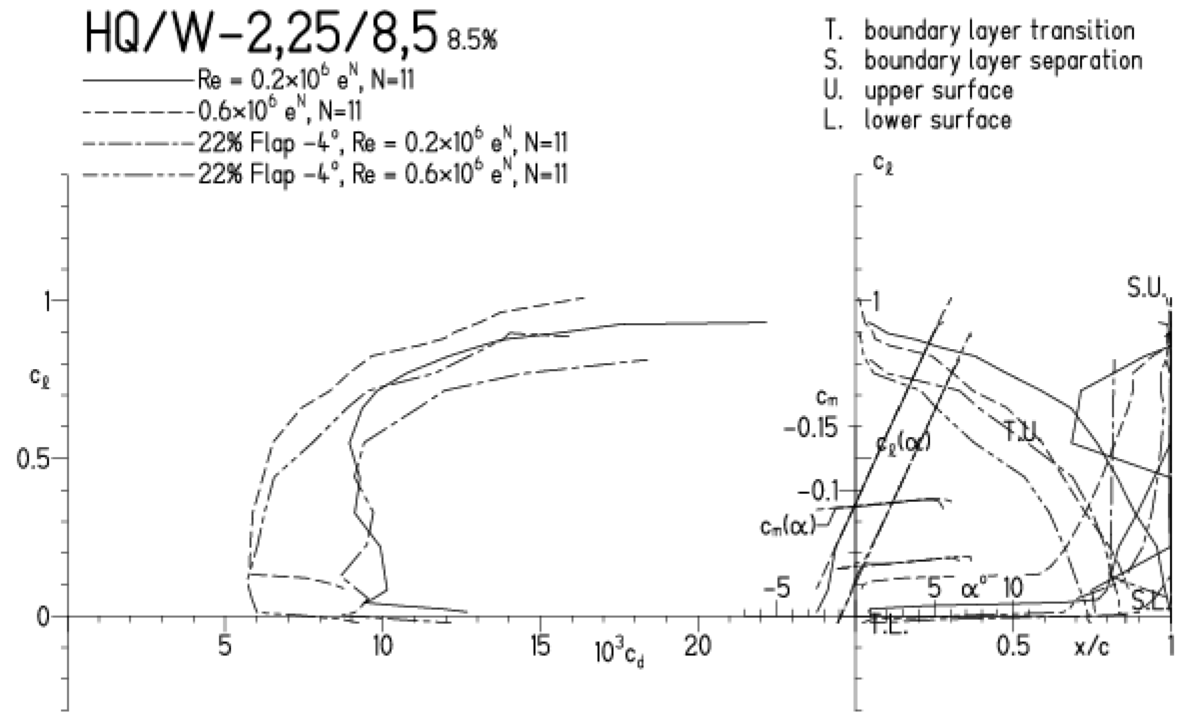


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

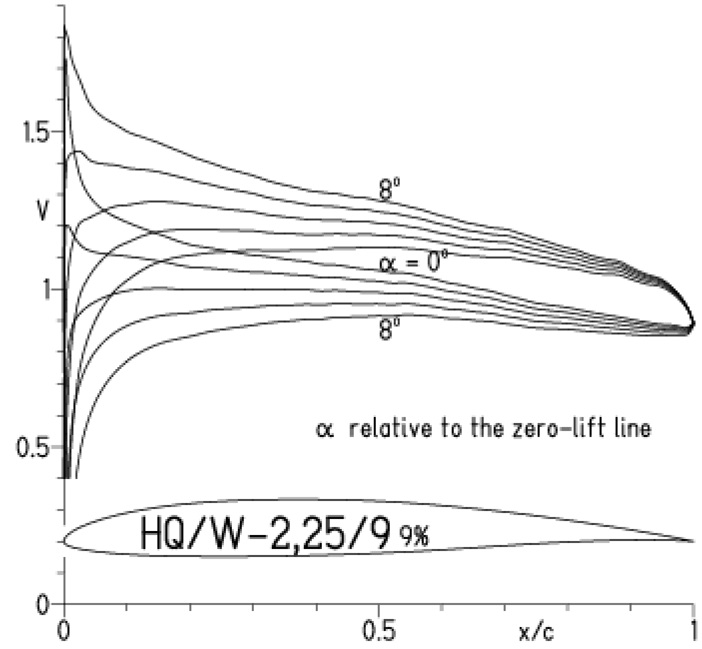


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

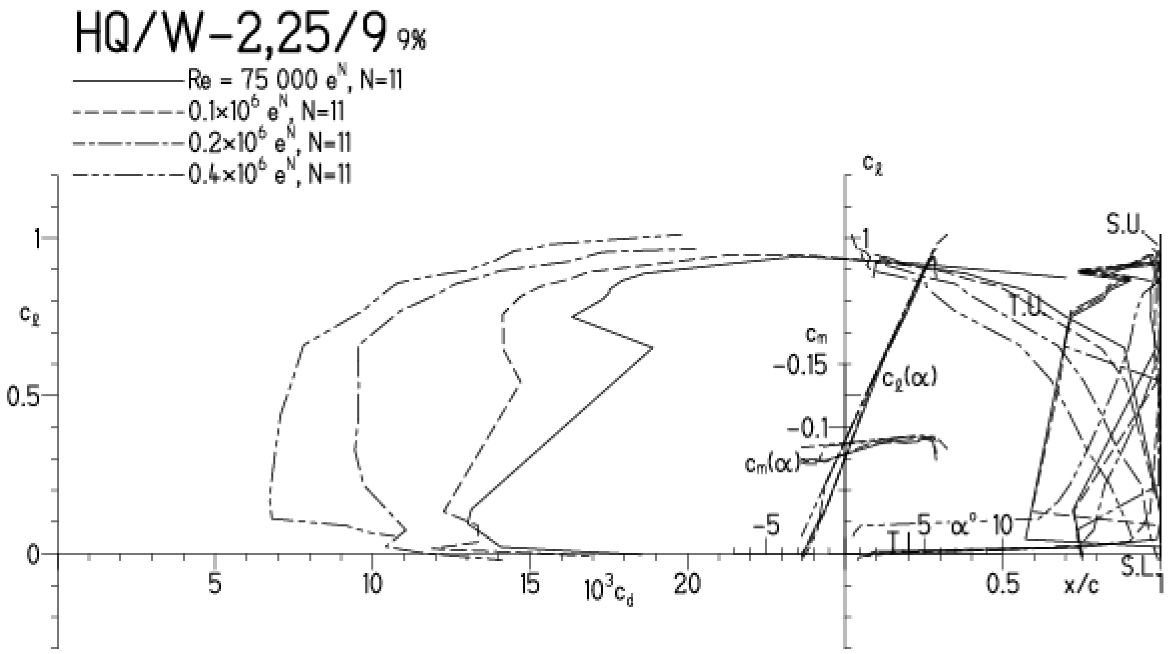


<u>HQ/W-2,25/9</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

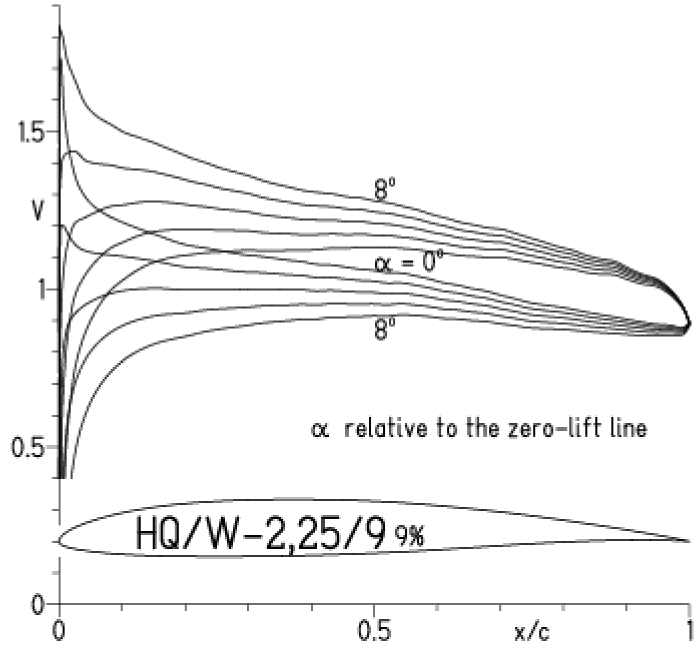


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

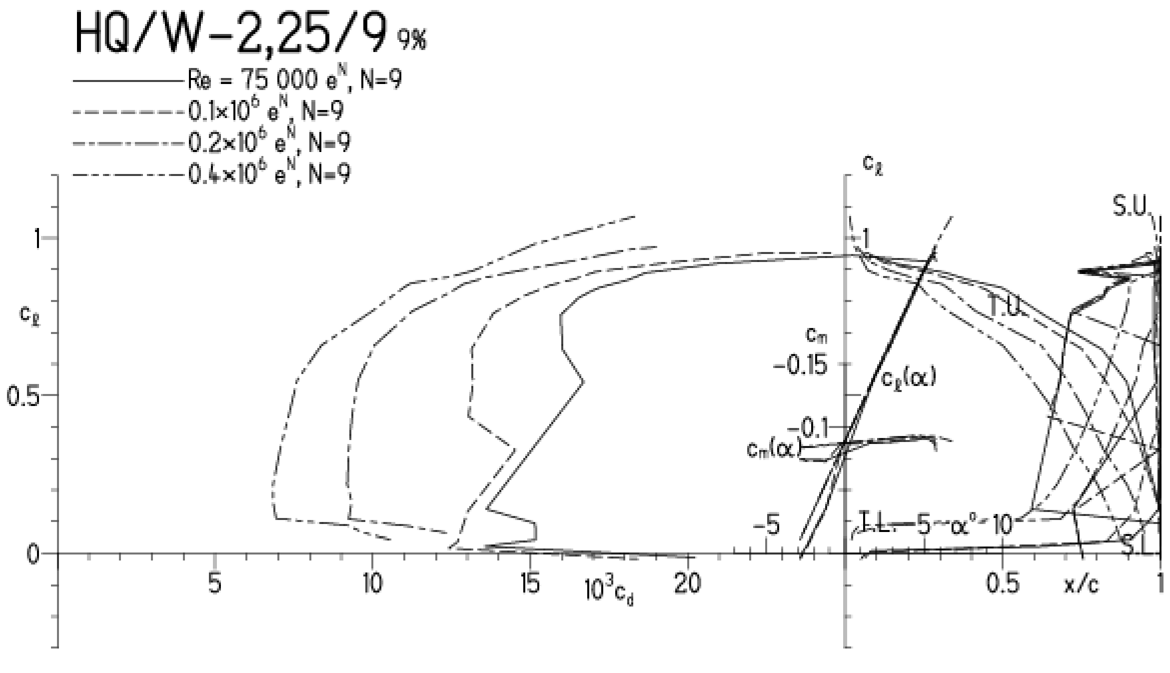


HQ/W-2,25/9, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

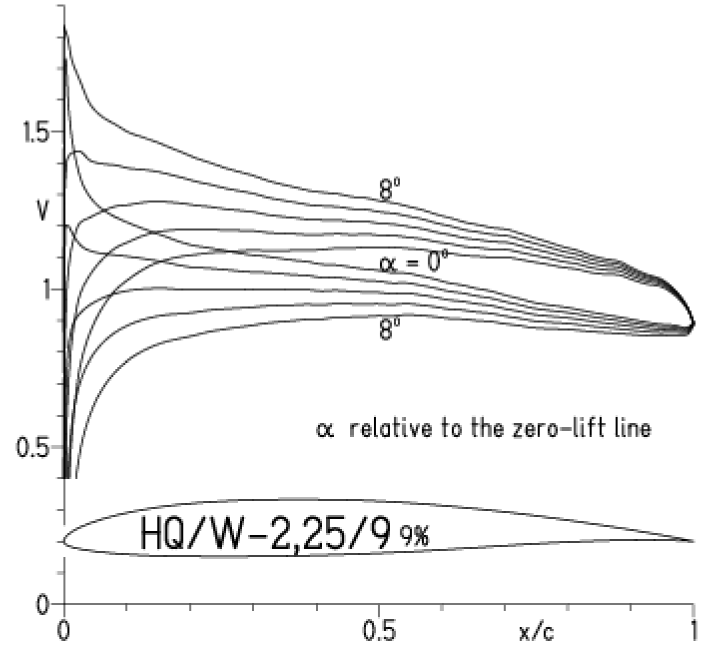


EPPLER 2005 V. 8.

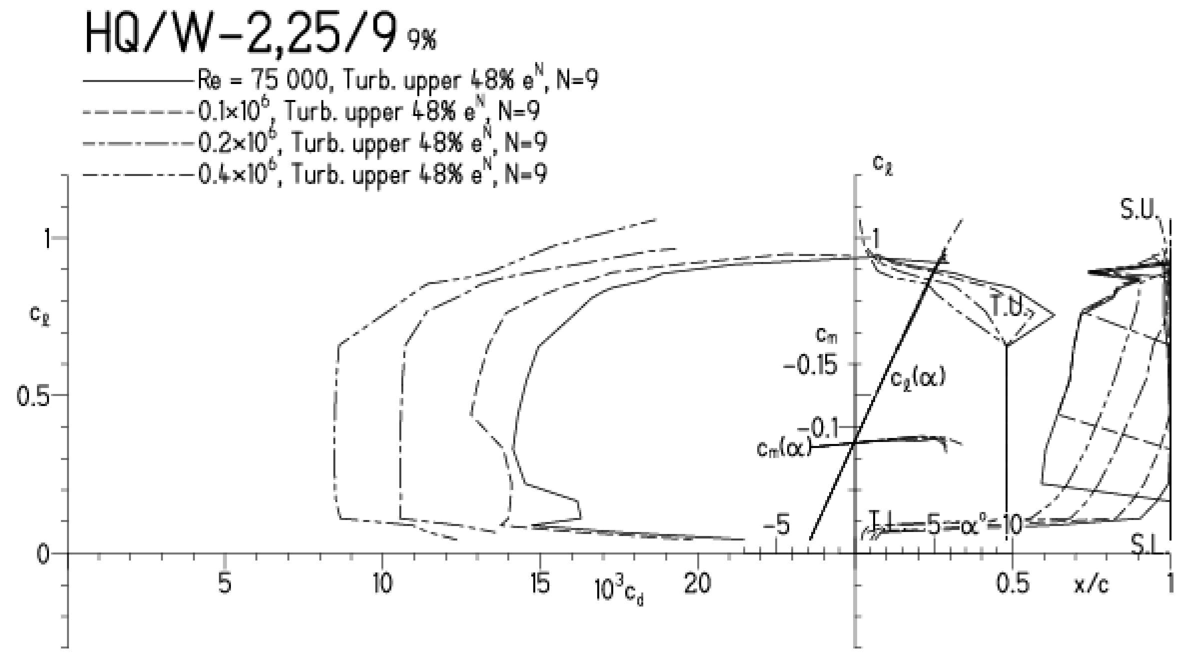


HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

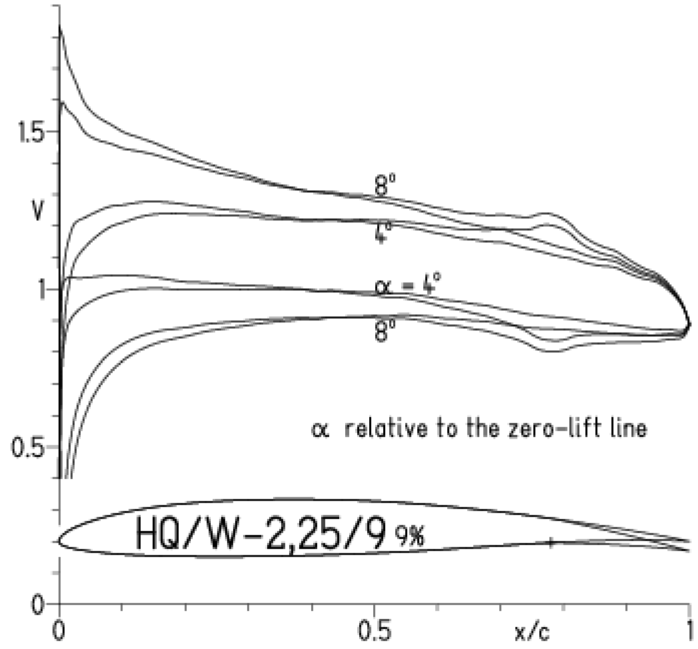


EPPLER 2005 V. 8.5.07 RUN 7

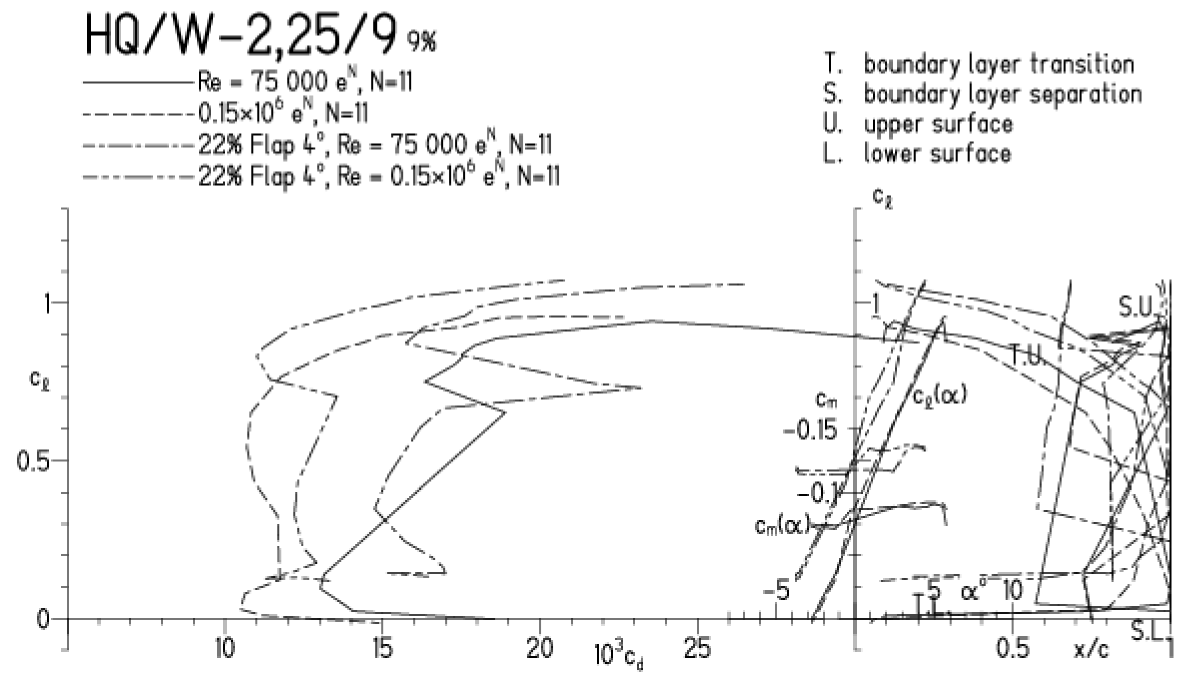


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

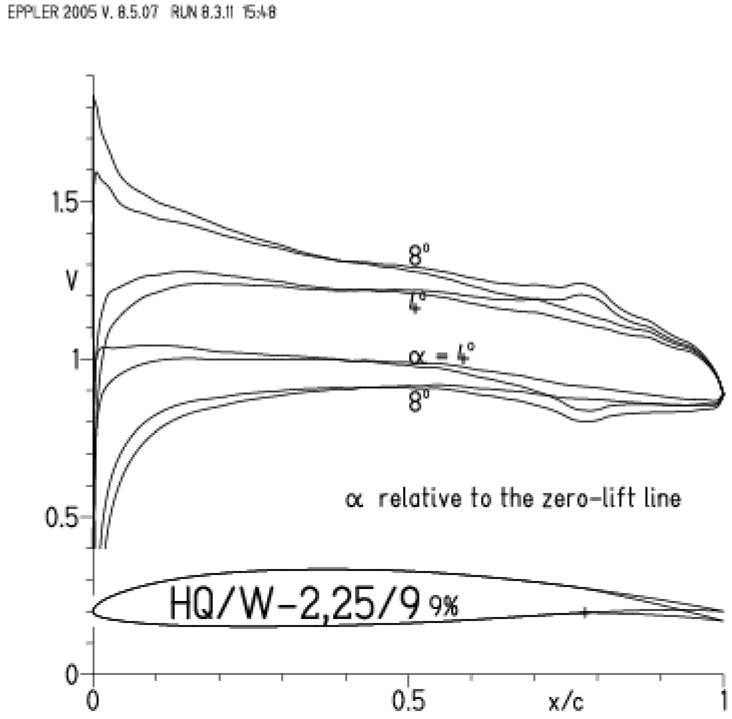
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

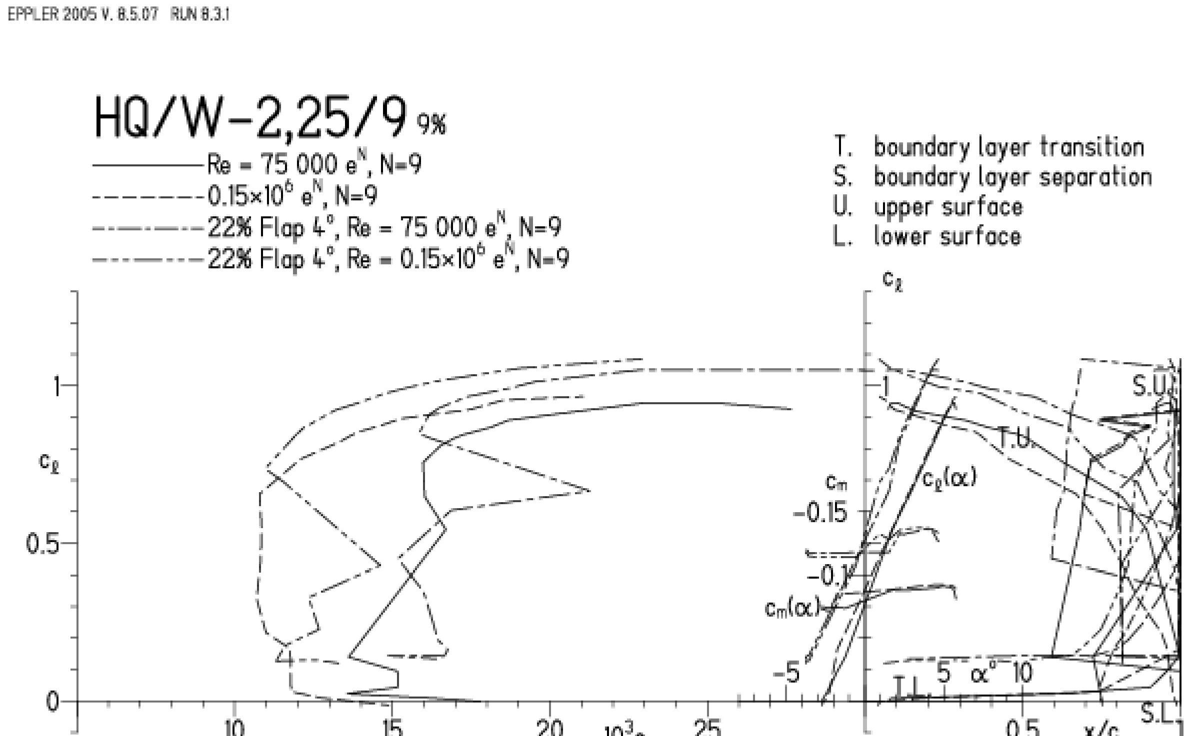


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

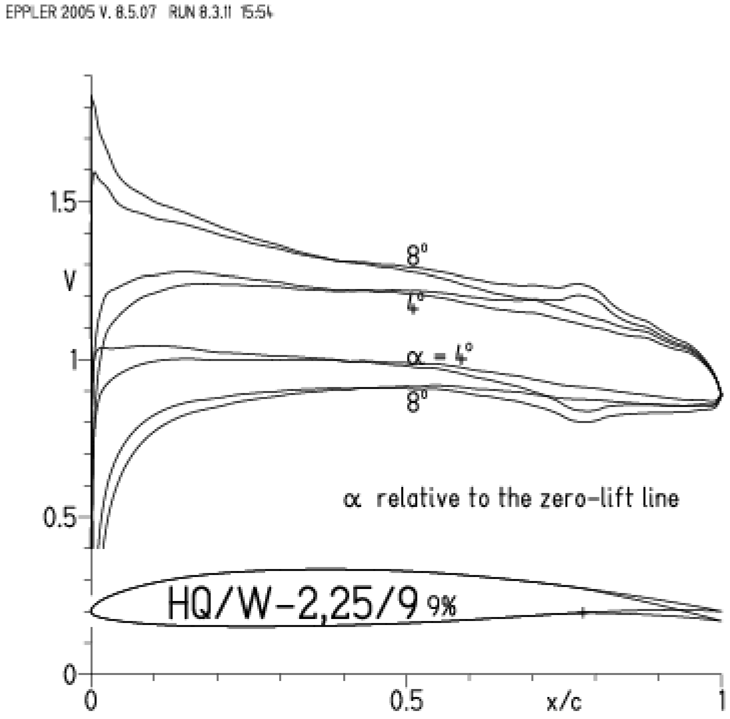


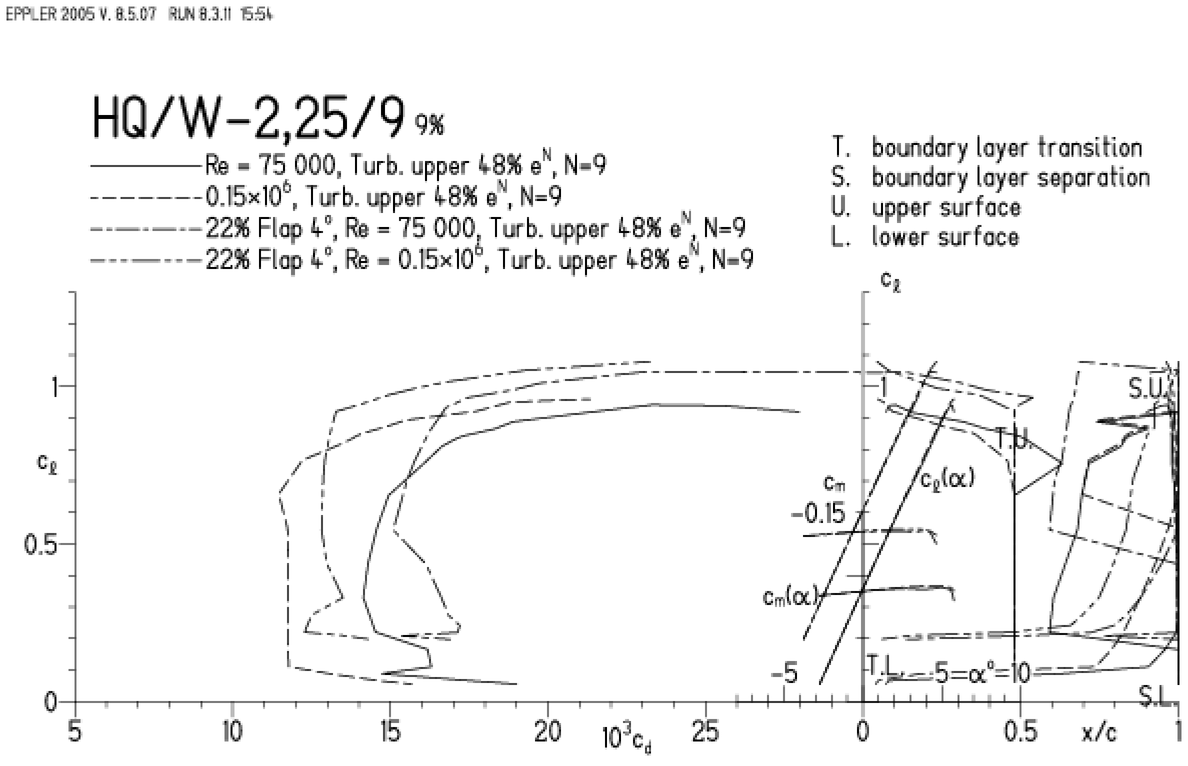
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





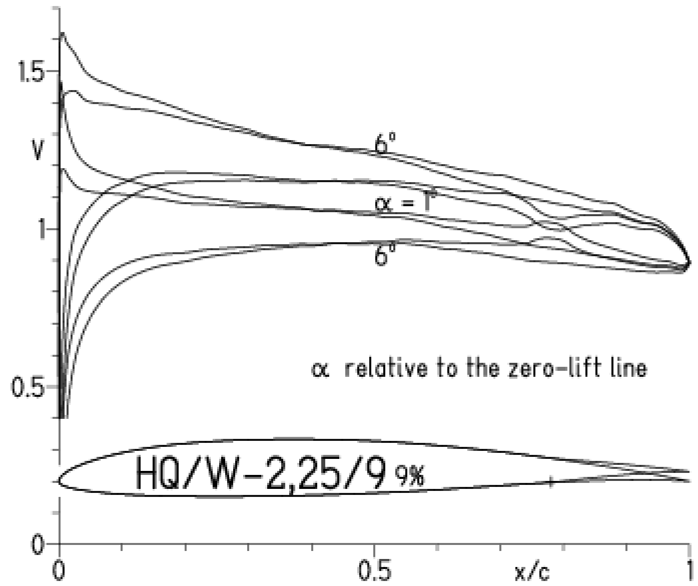
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



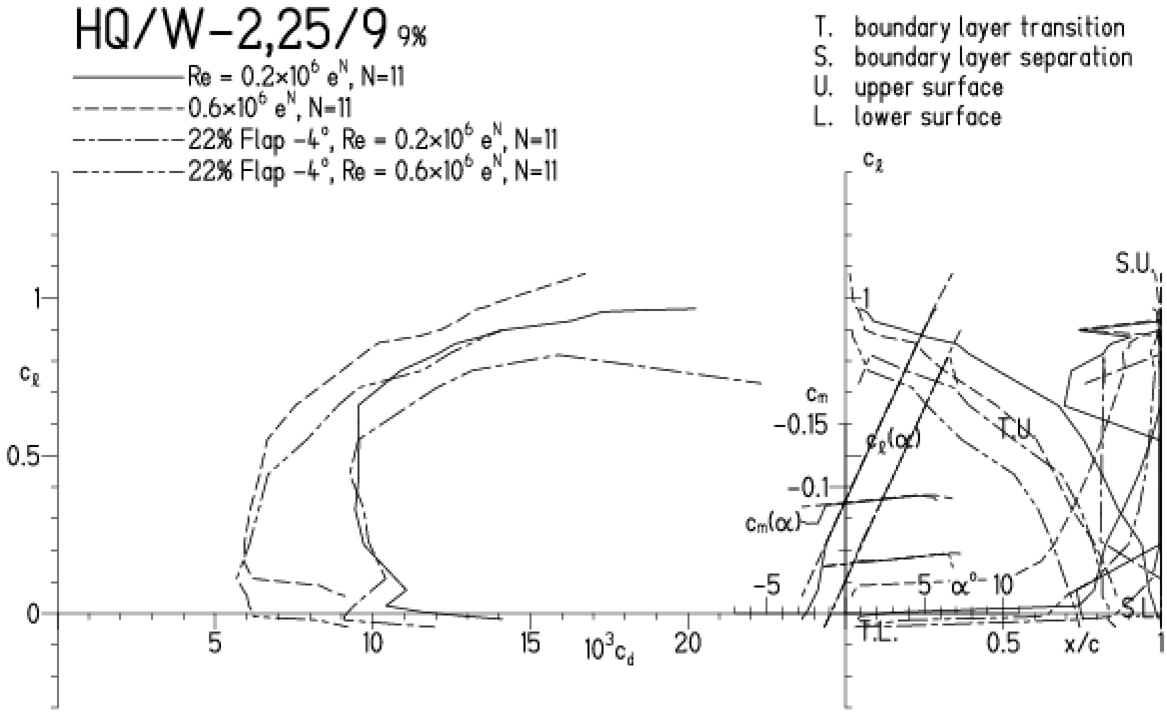


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

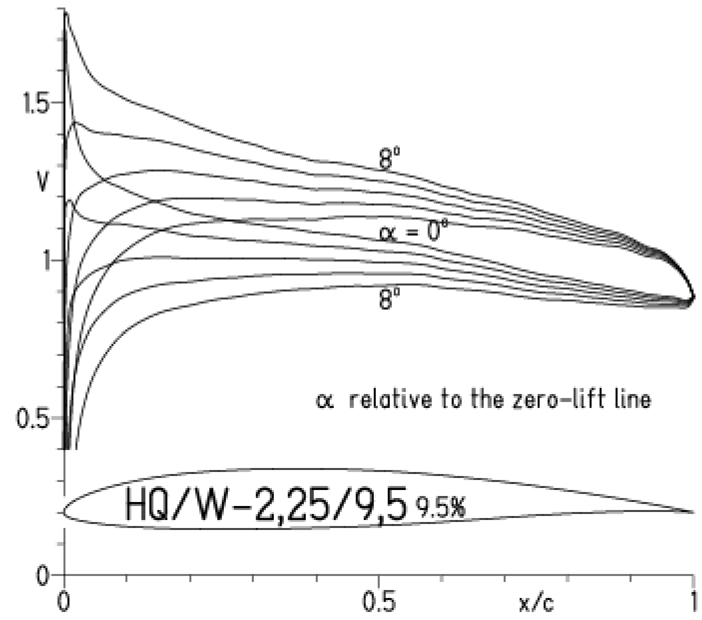


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

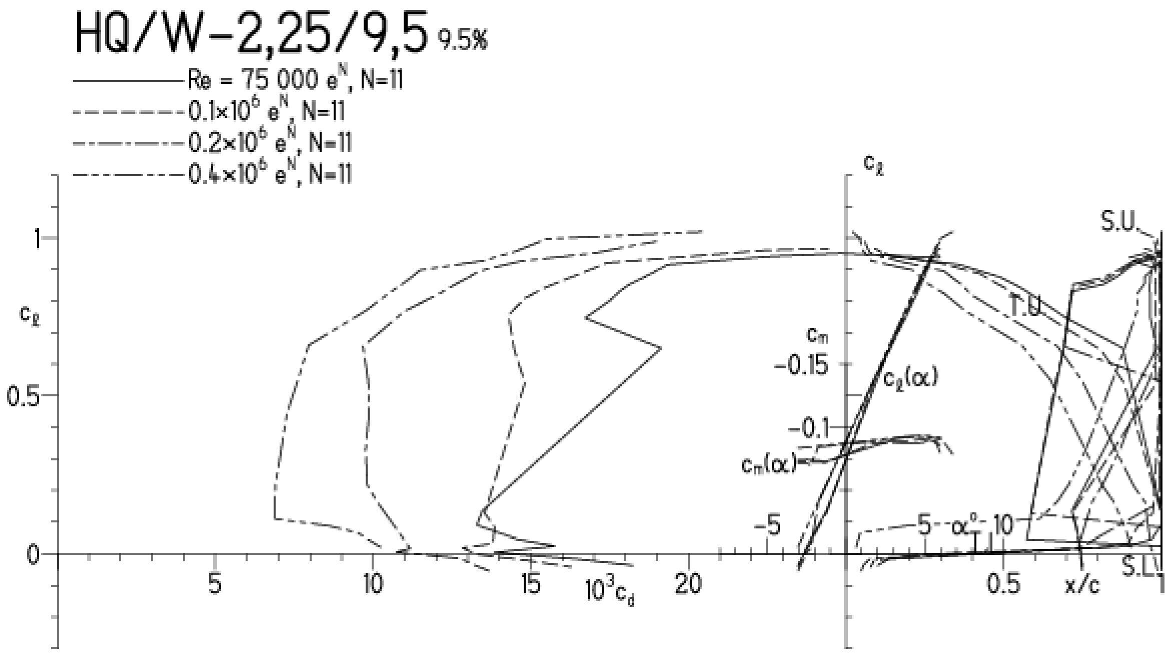


HQ/W-2,25/9,5, N=11

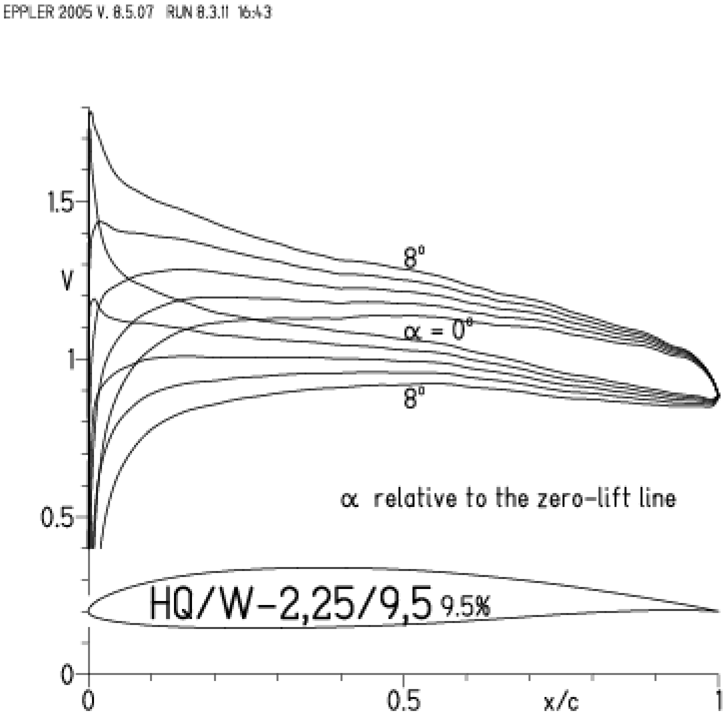
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

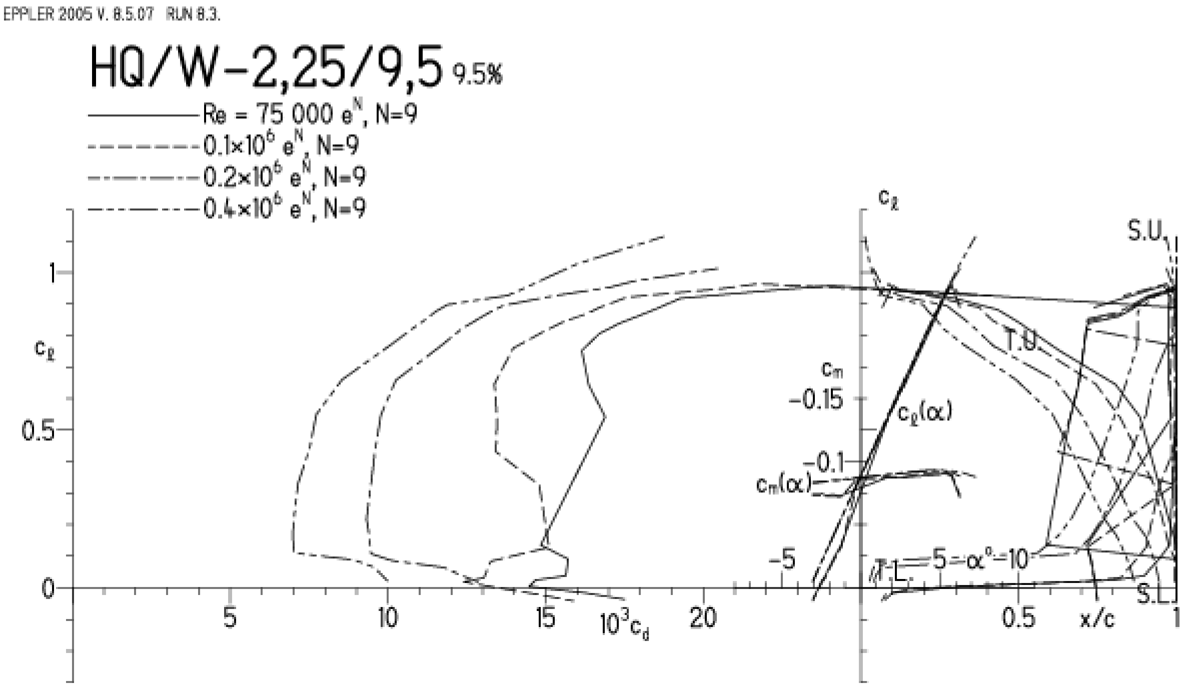


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



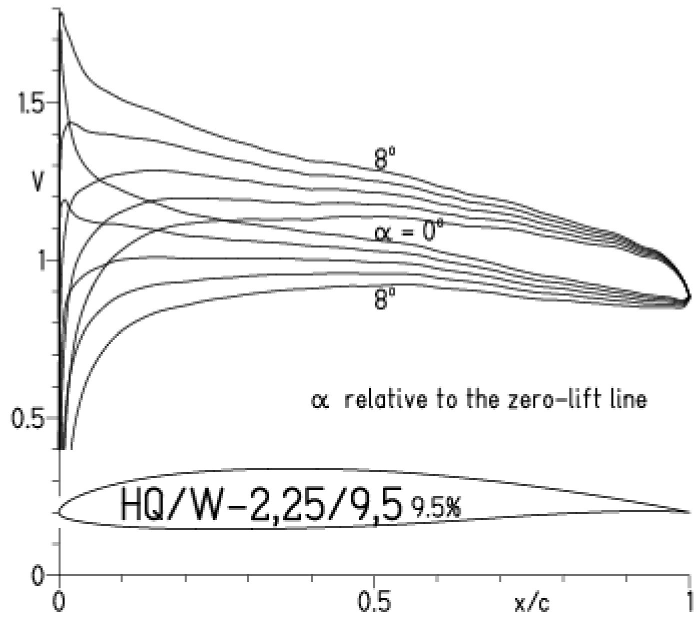
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

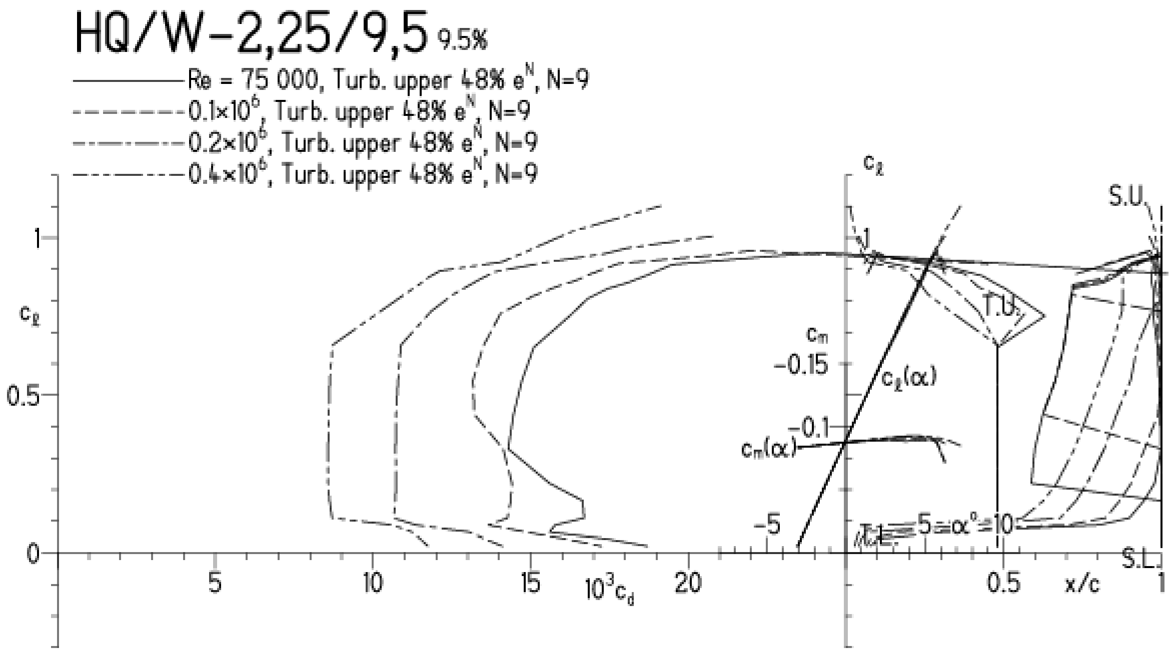

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

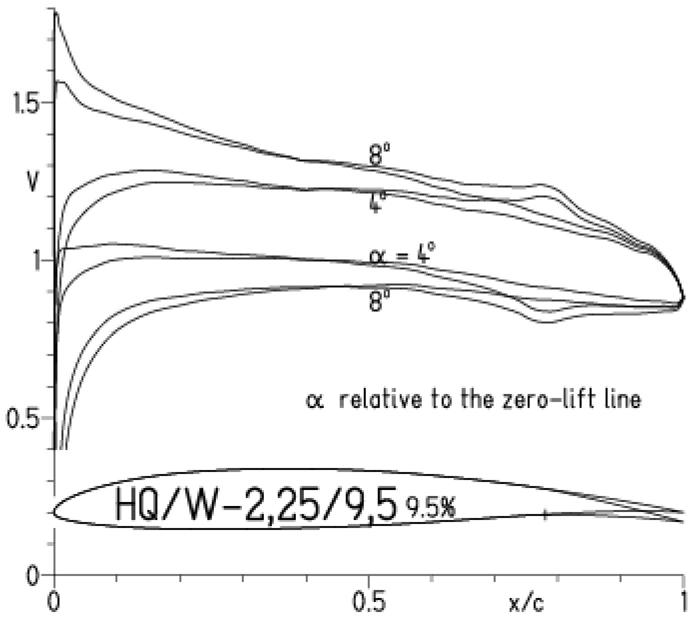


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

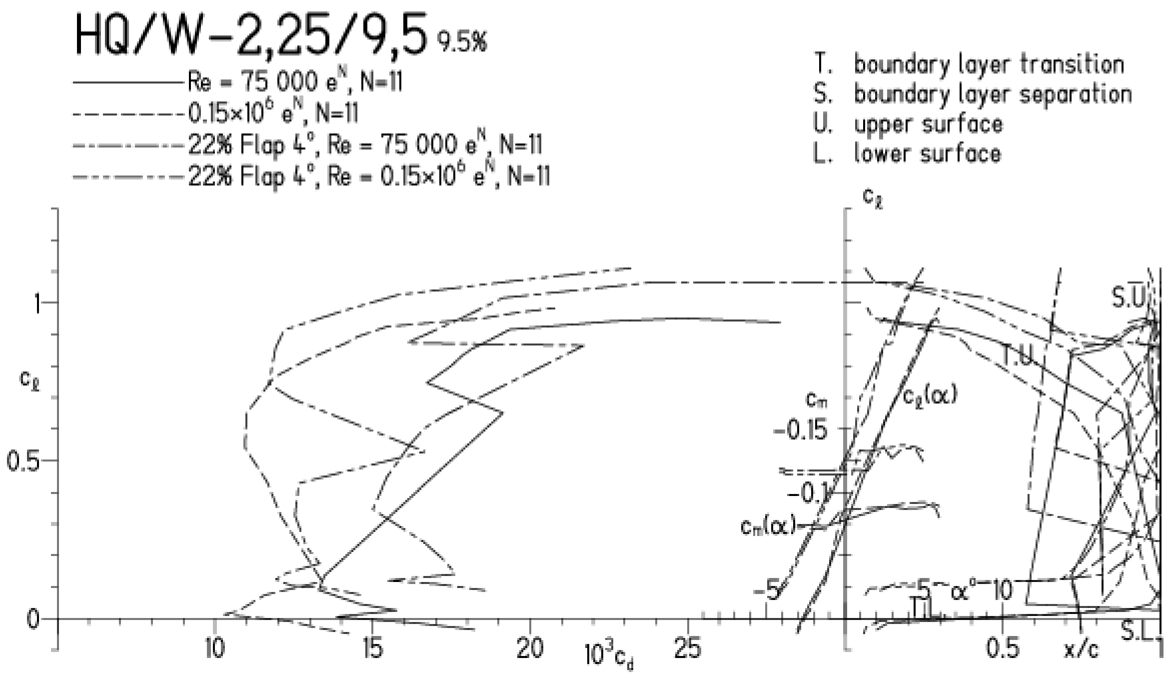


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

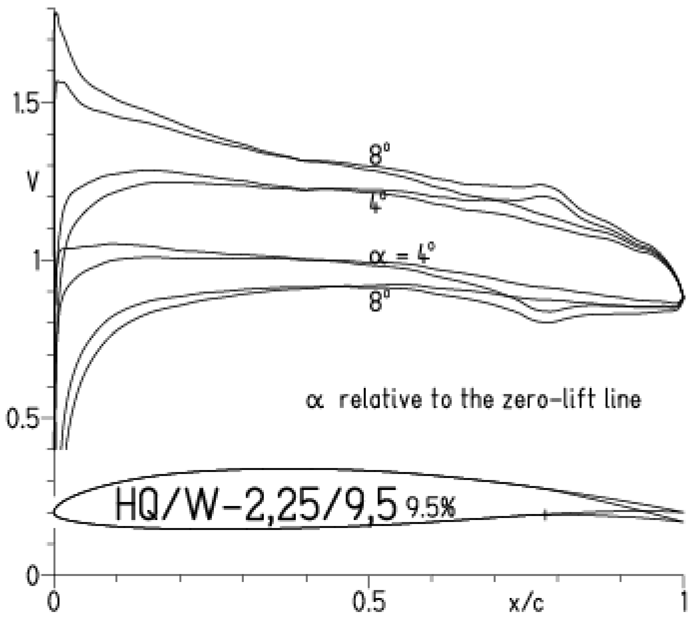


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

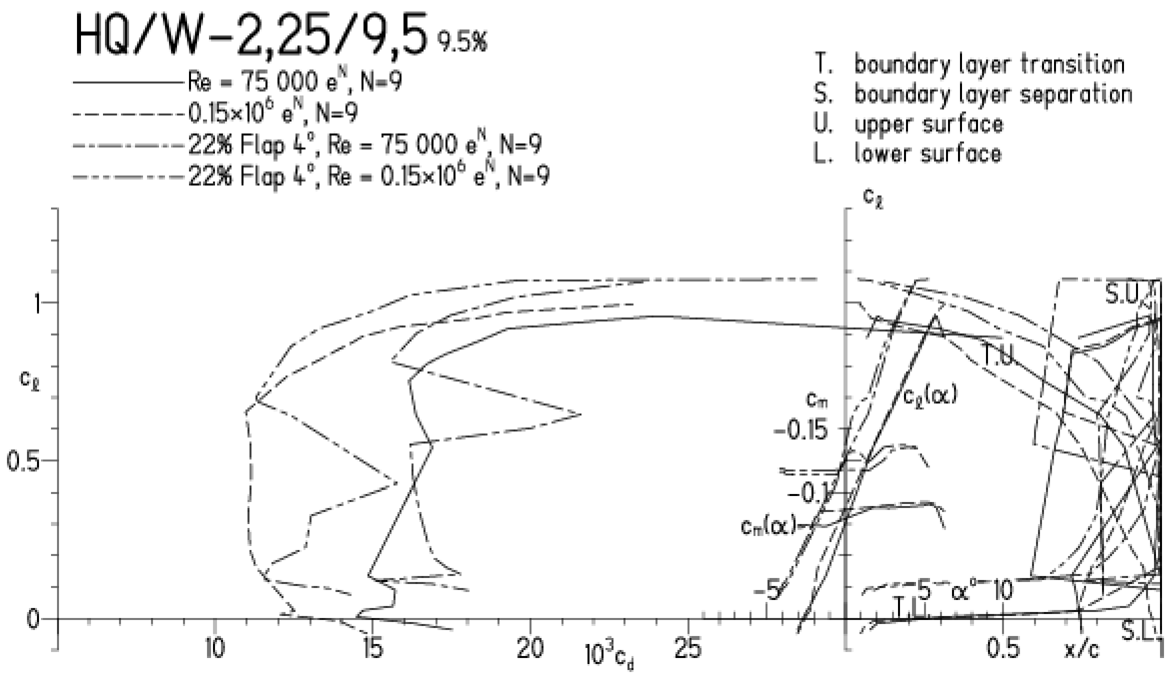


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

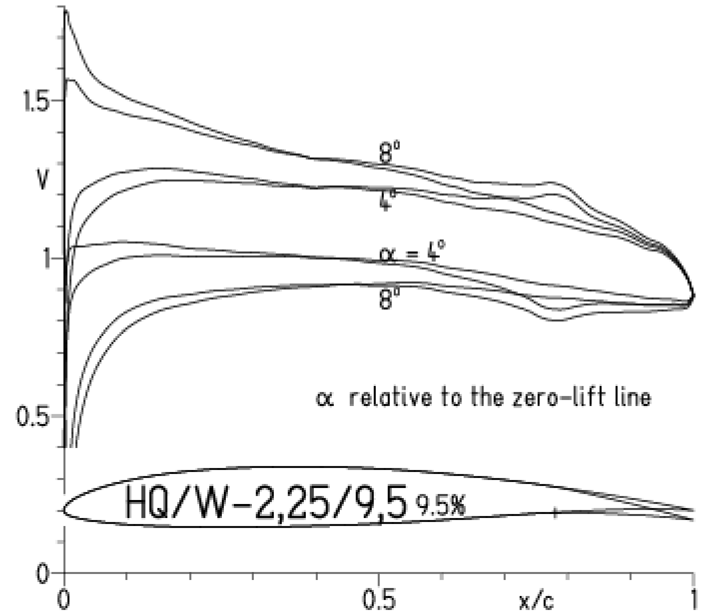


EPPLER 2005 V. 8.5.07 R

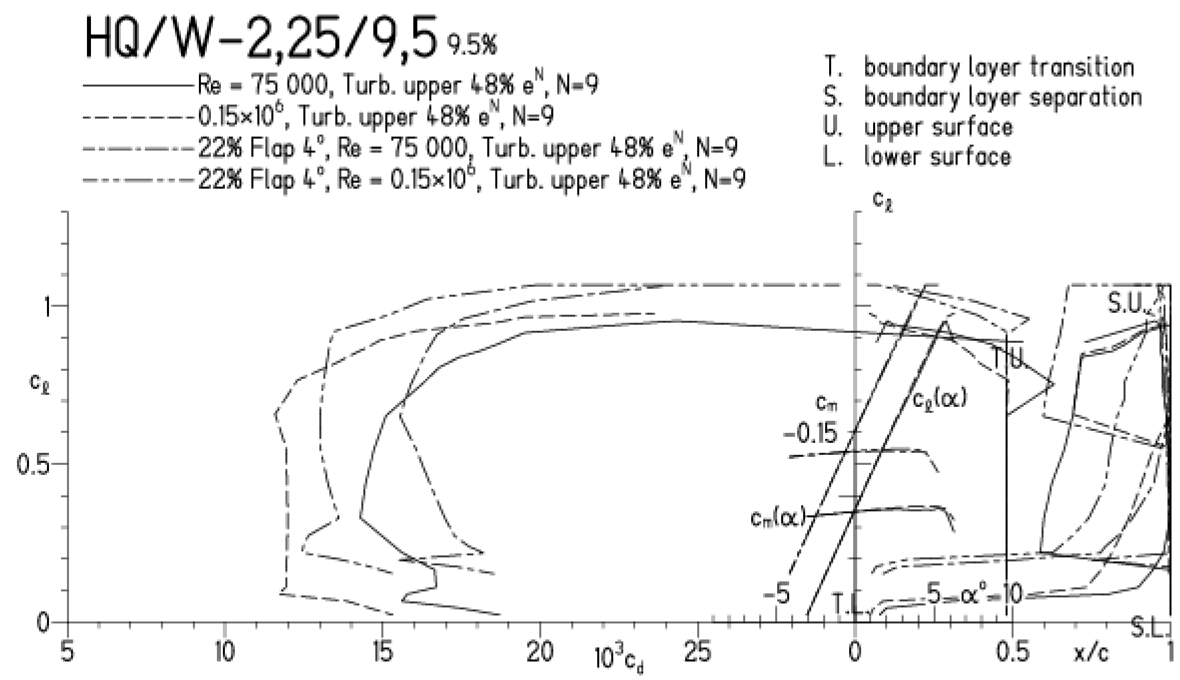


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

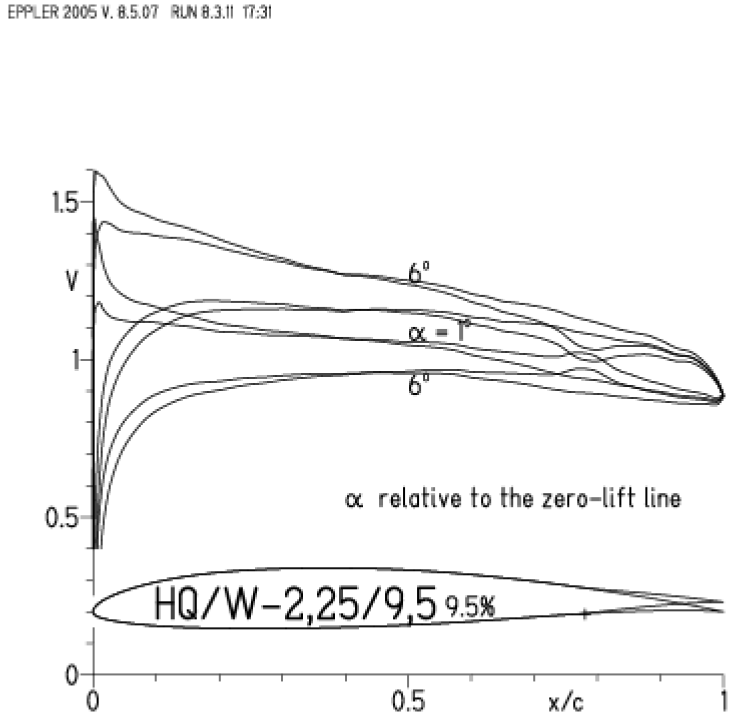
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

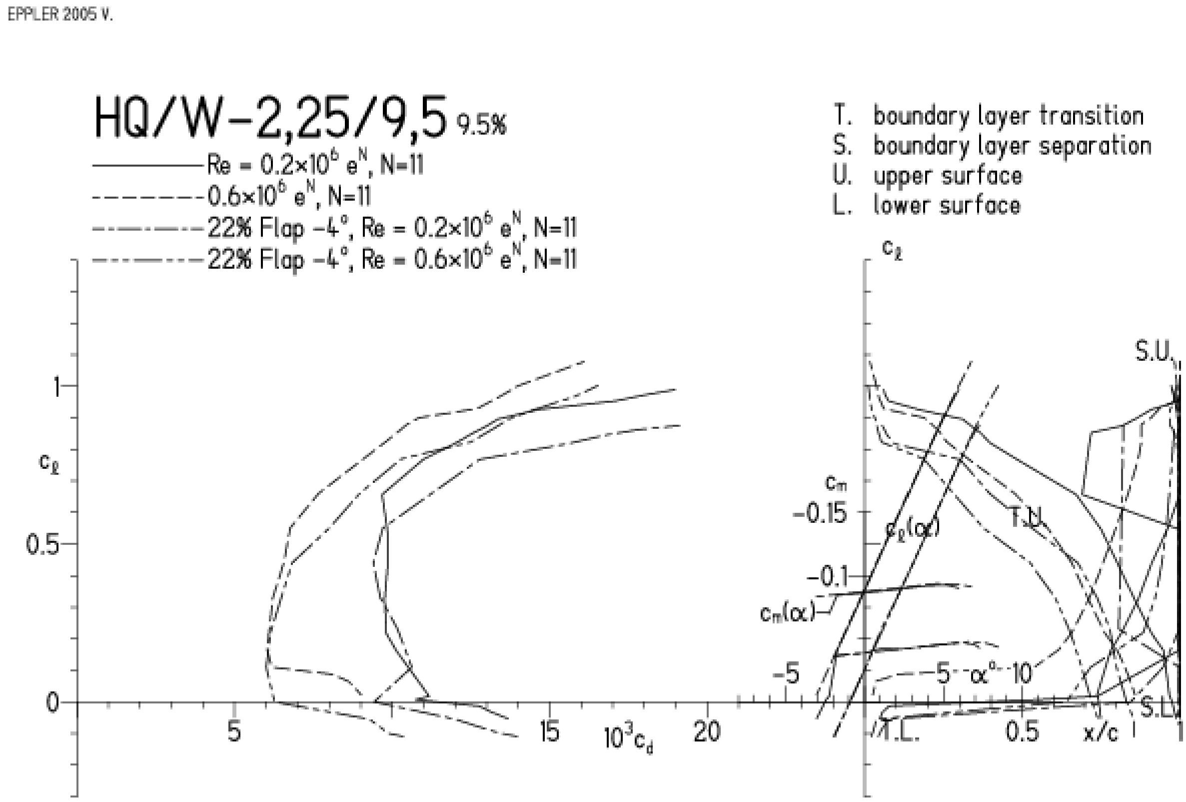


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



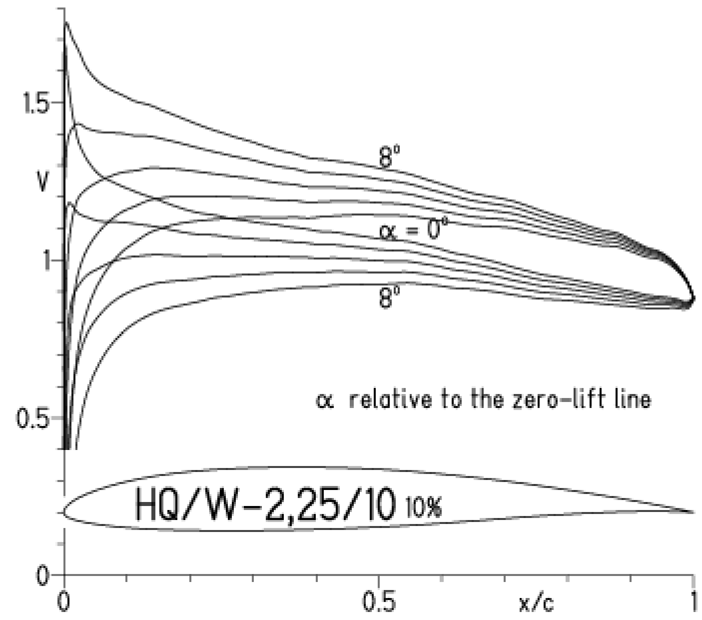
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



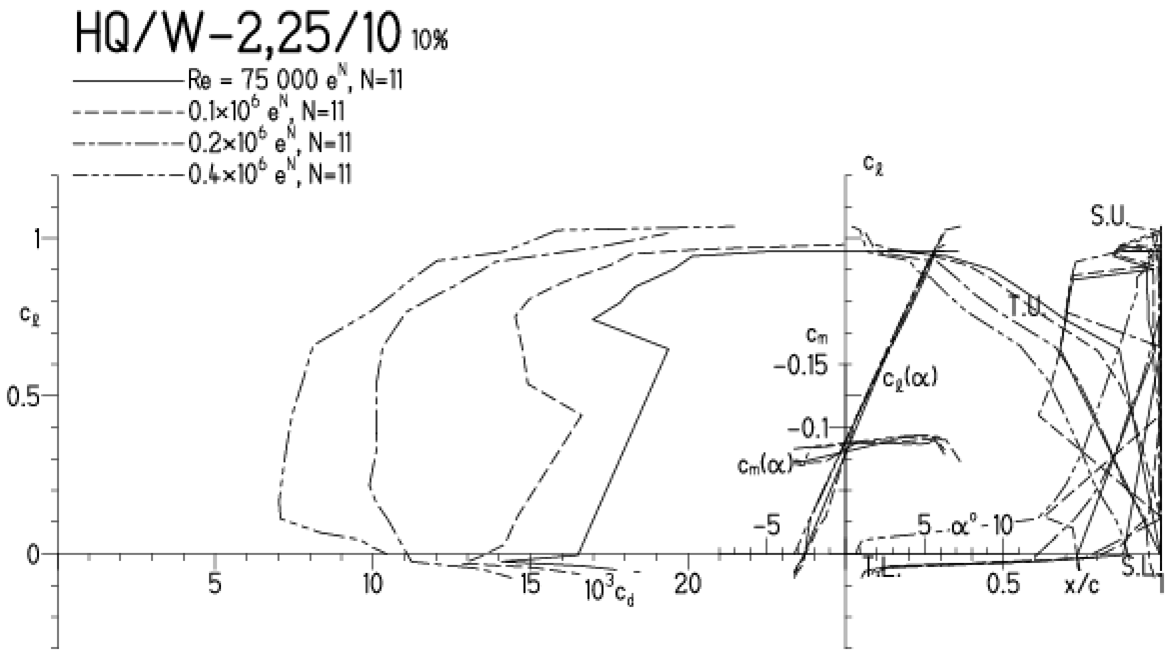


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

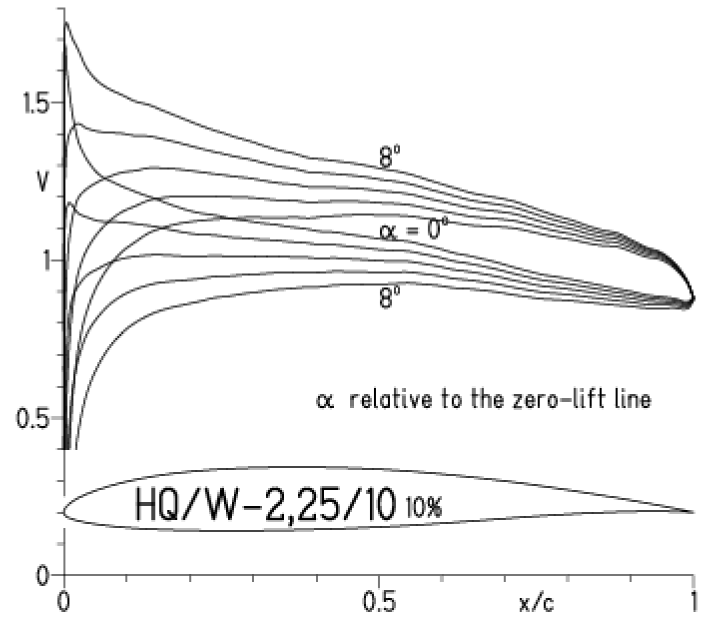


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

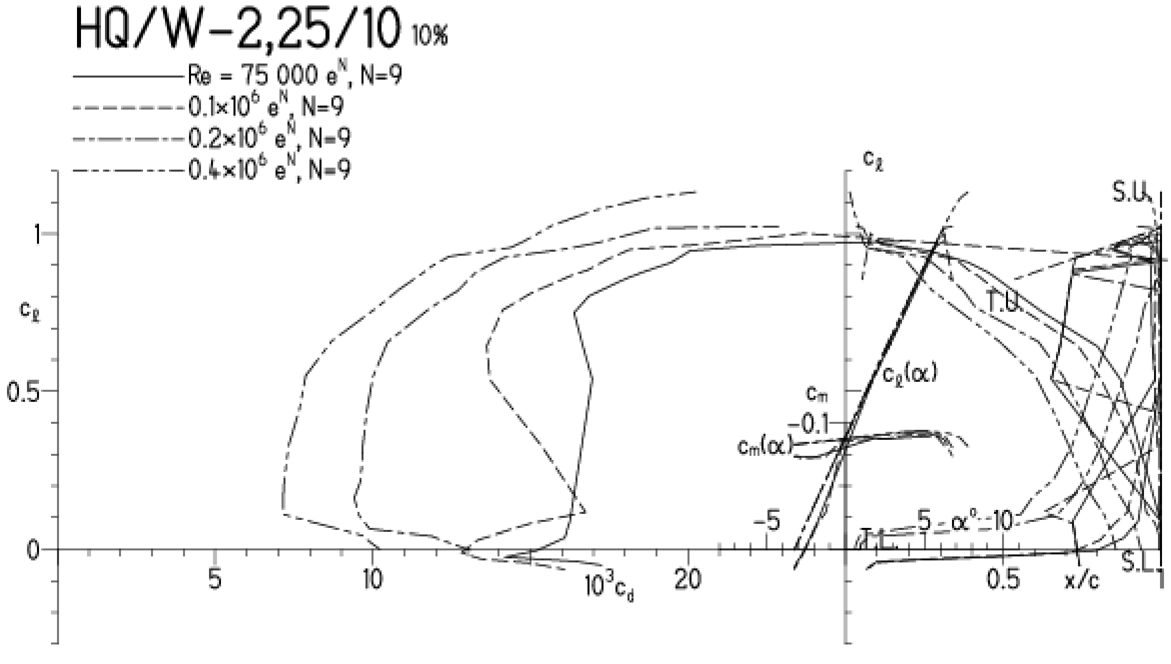


HQ/W-2,25/10, N=9

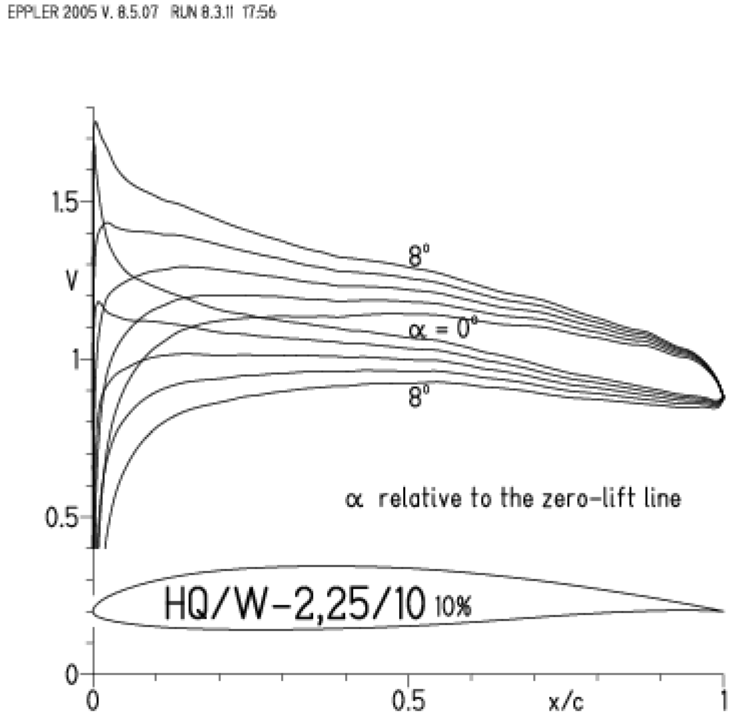
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

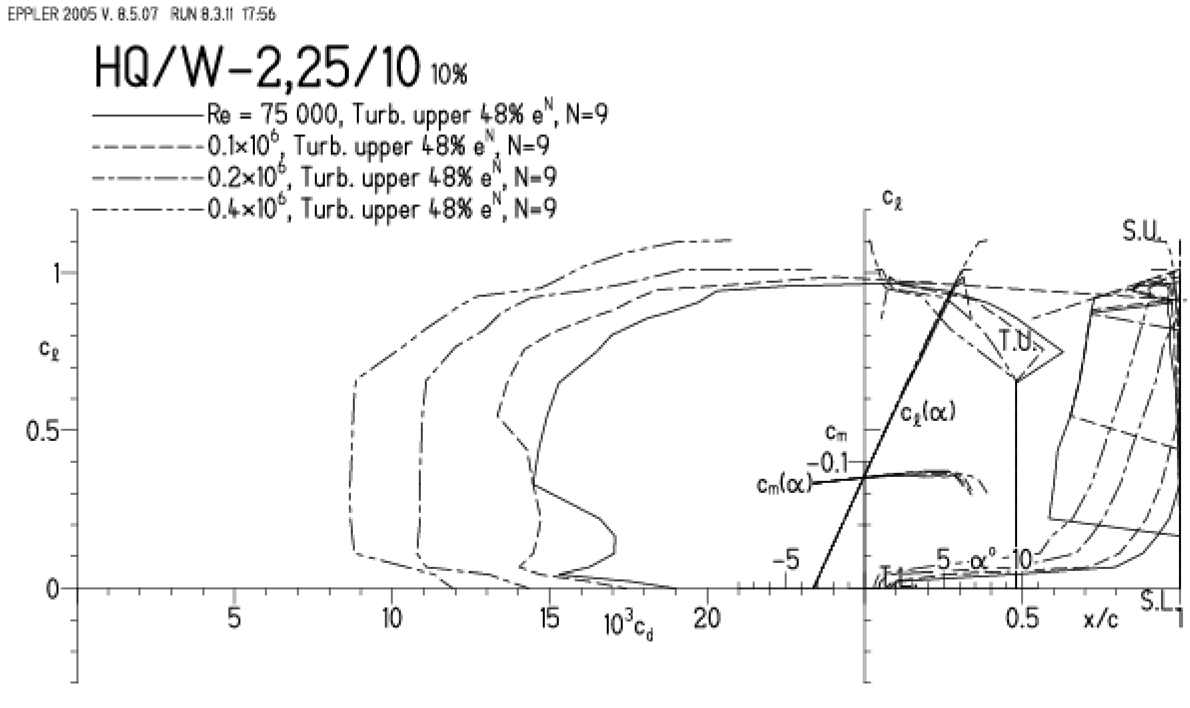


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



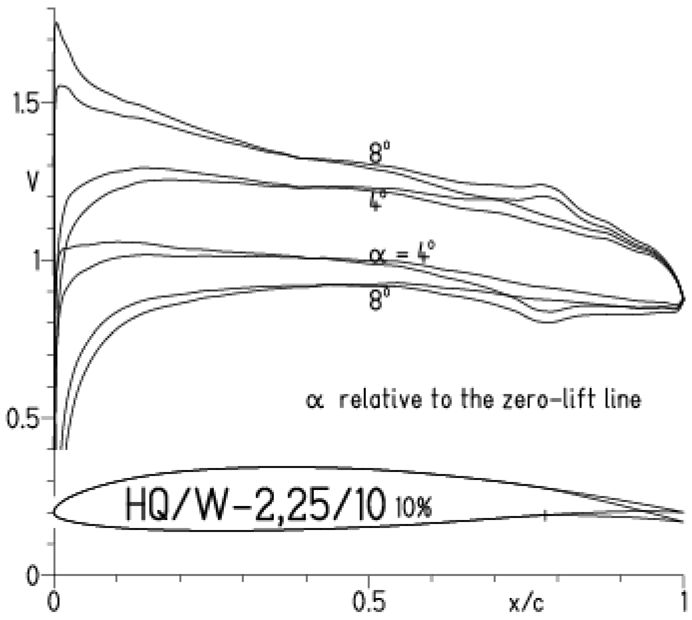
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



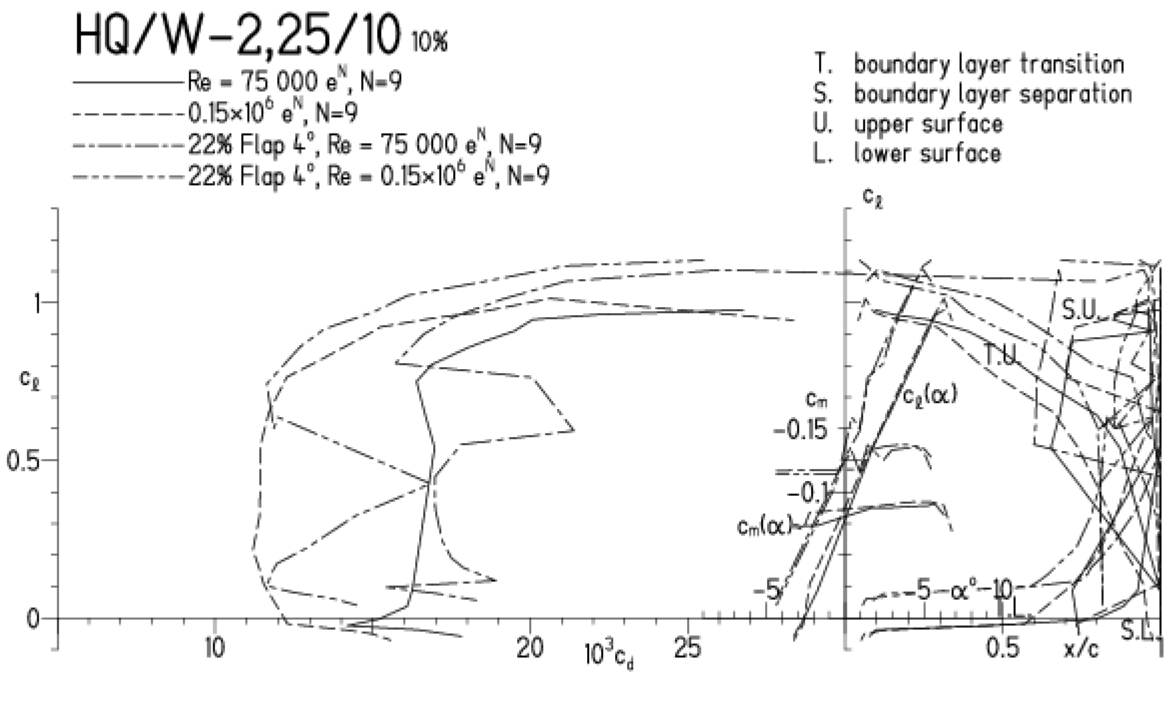


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

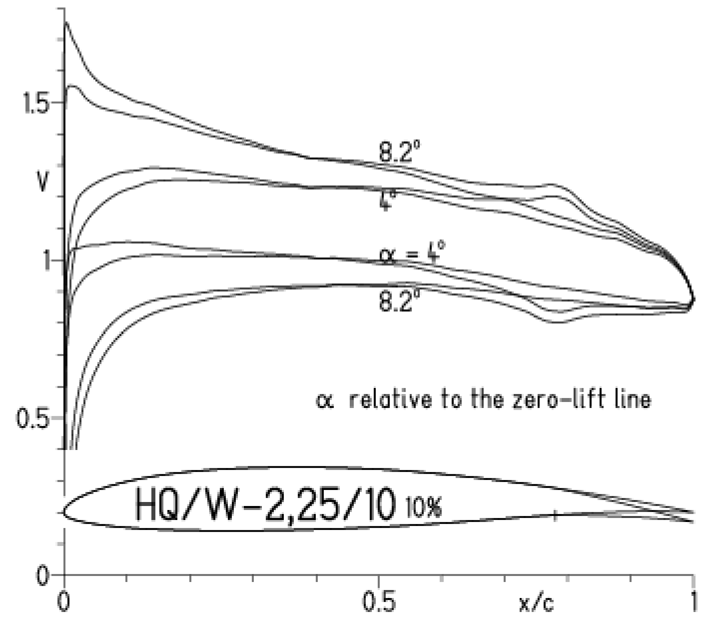


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

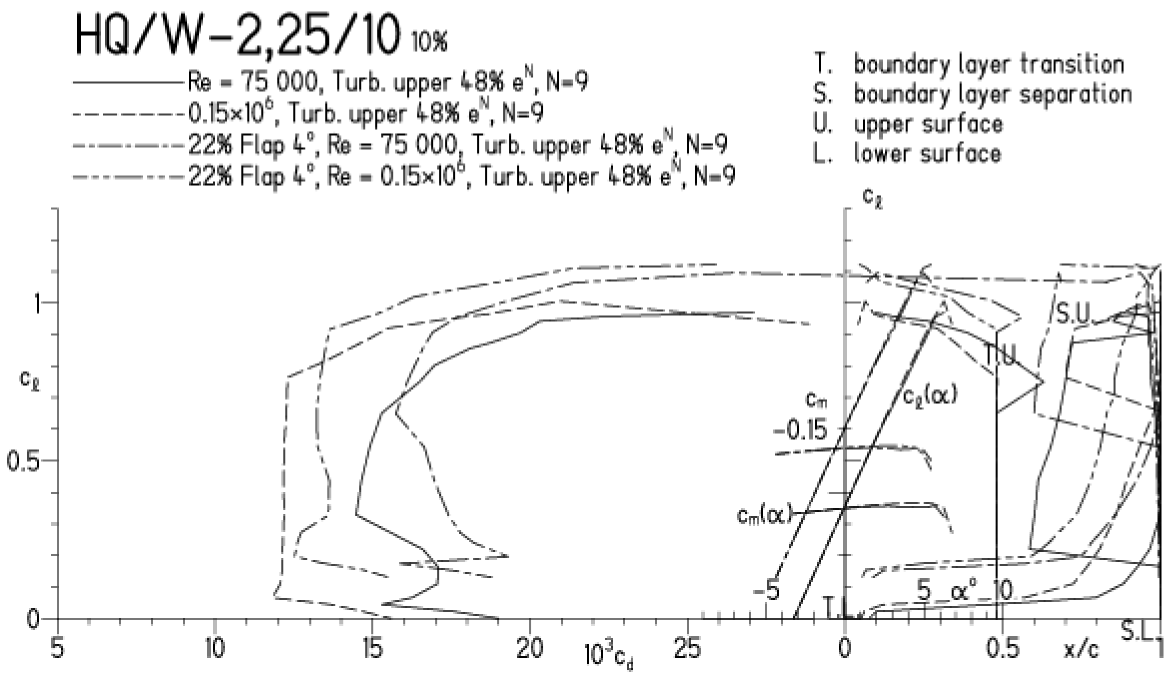


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

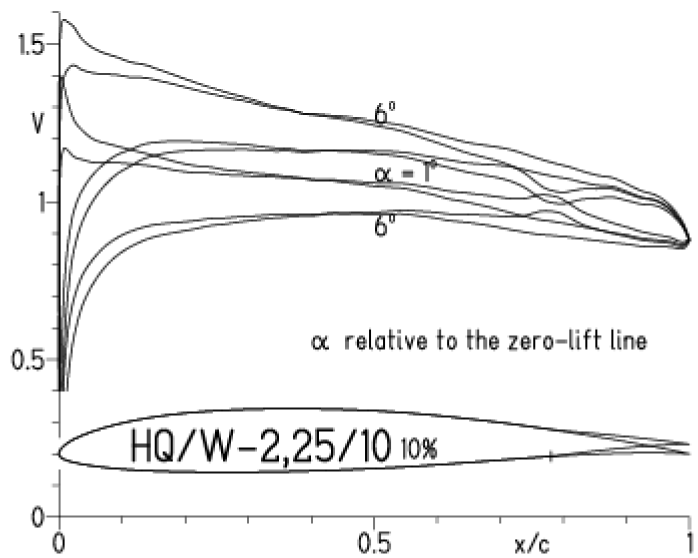


EPPLER 2005 V. 8.5.07 RUN 8.3

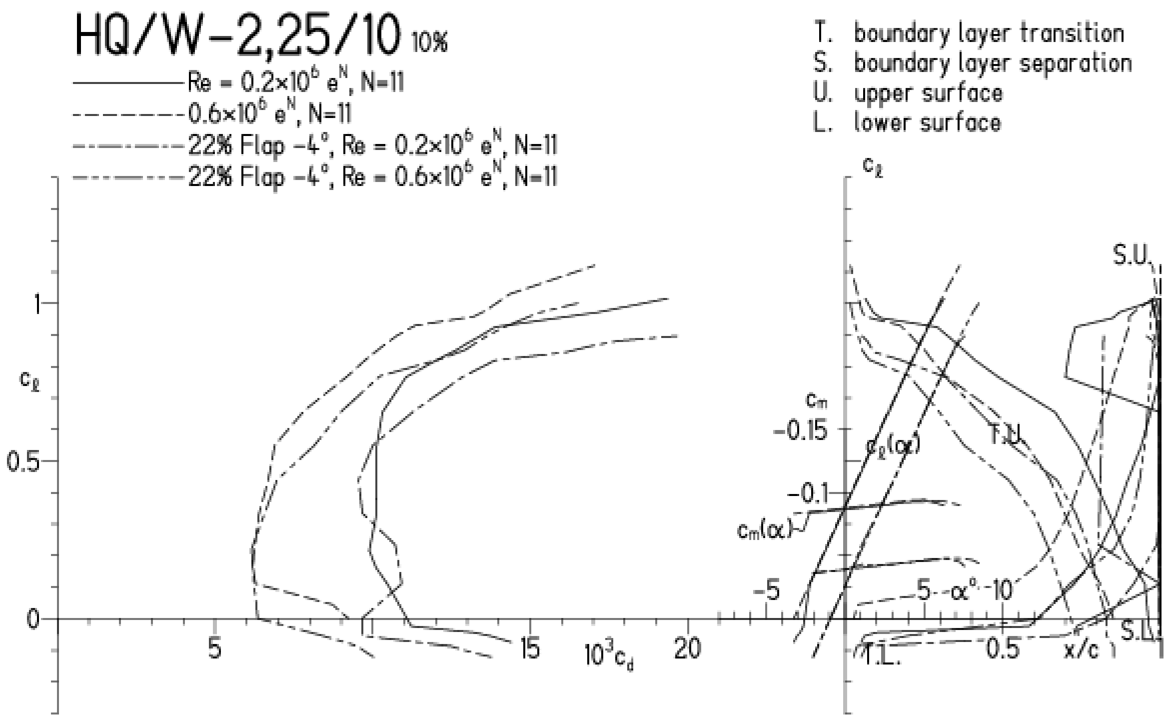


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

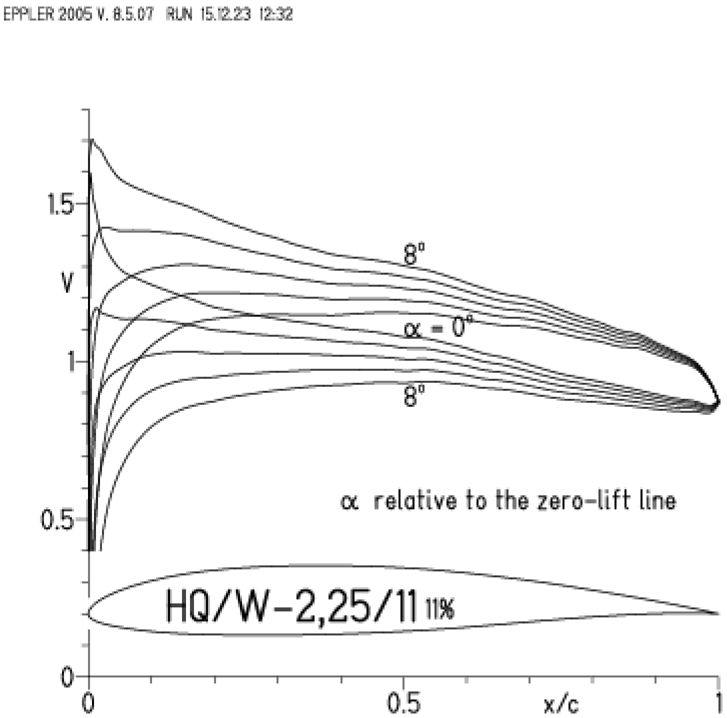
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

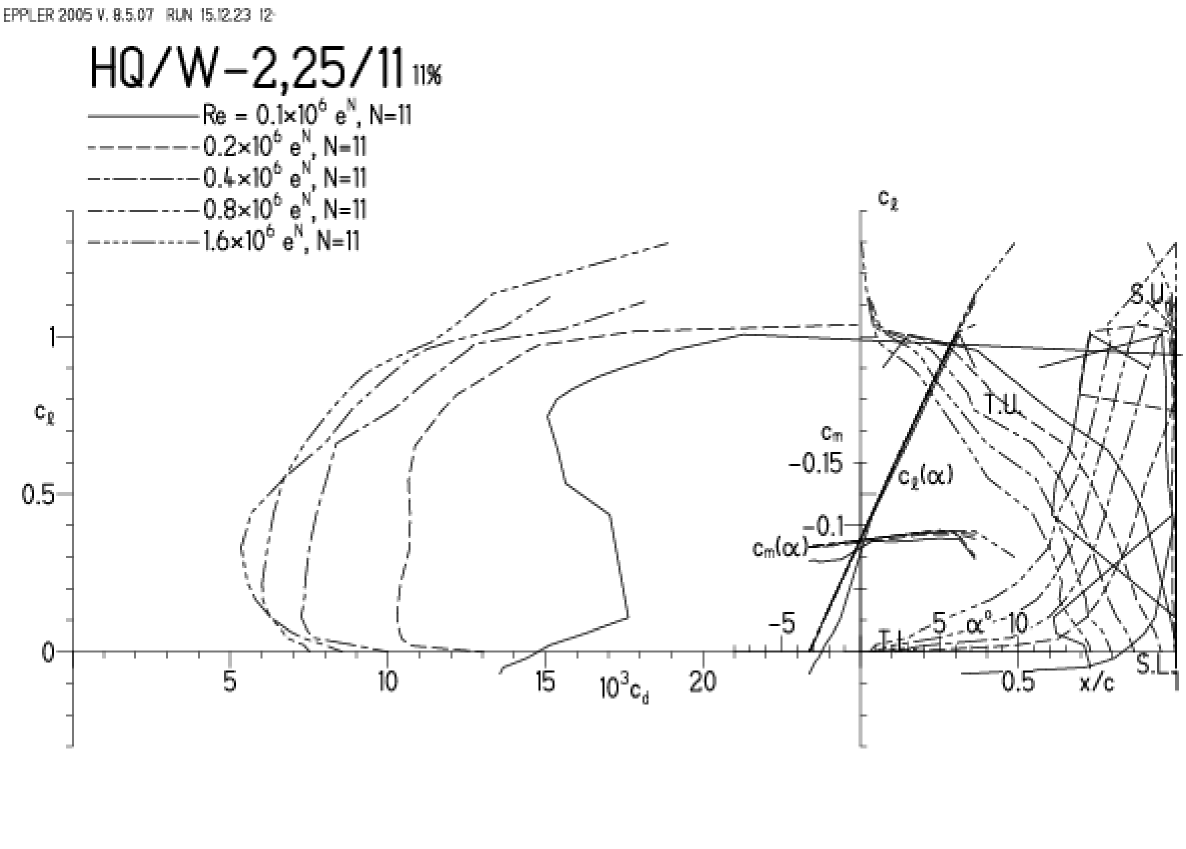


EPPLER 2005 V. 8.5.07 RUN



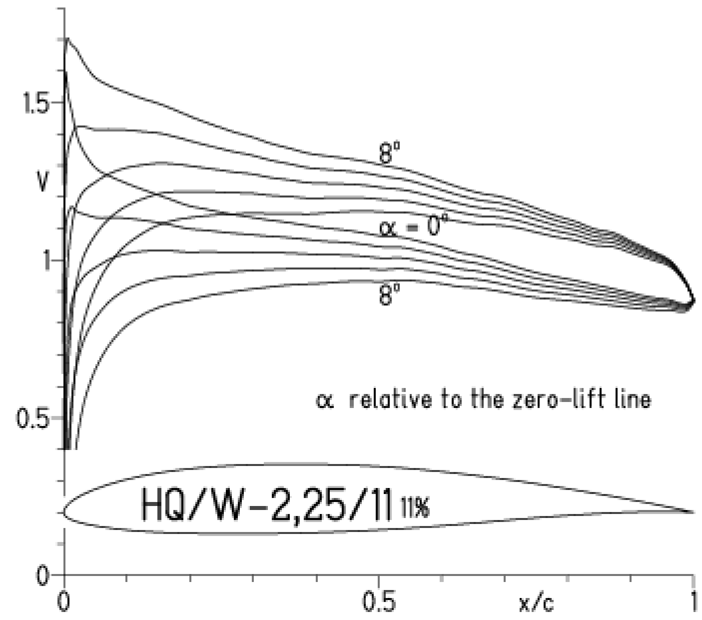
HQ/W-2,25/11, N=11



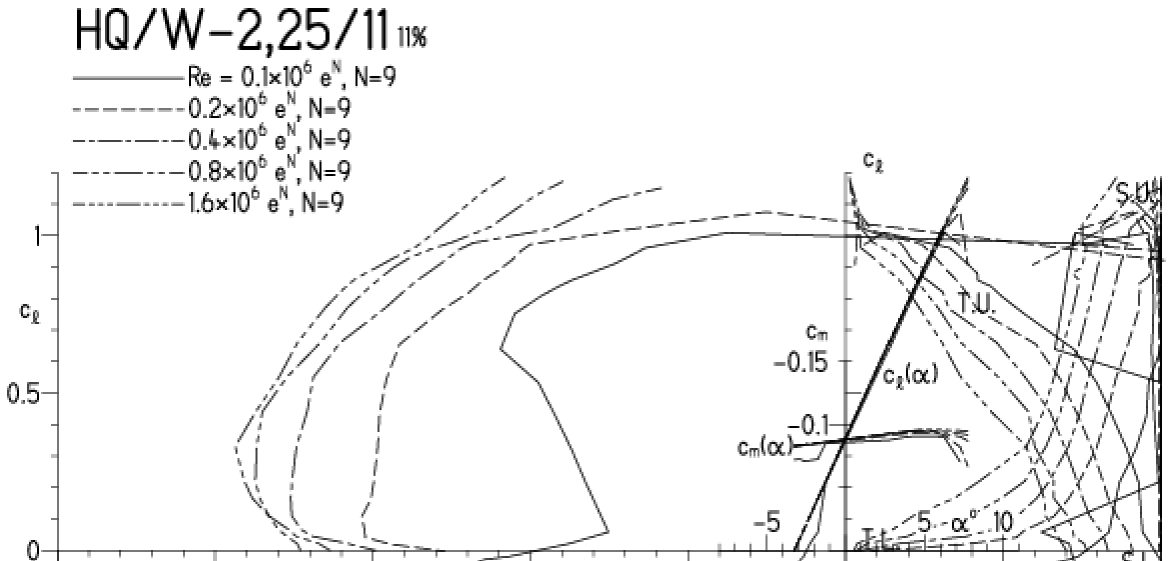


HQQ/W-2,25/11, N=9

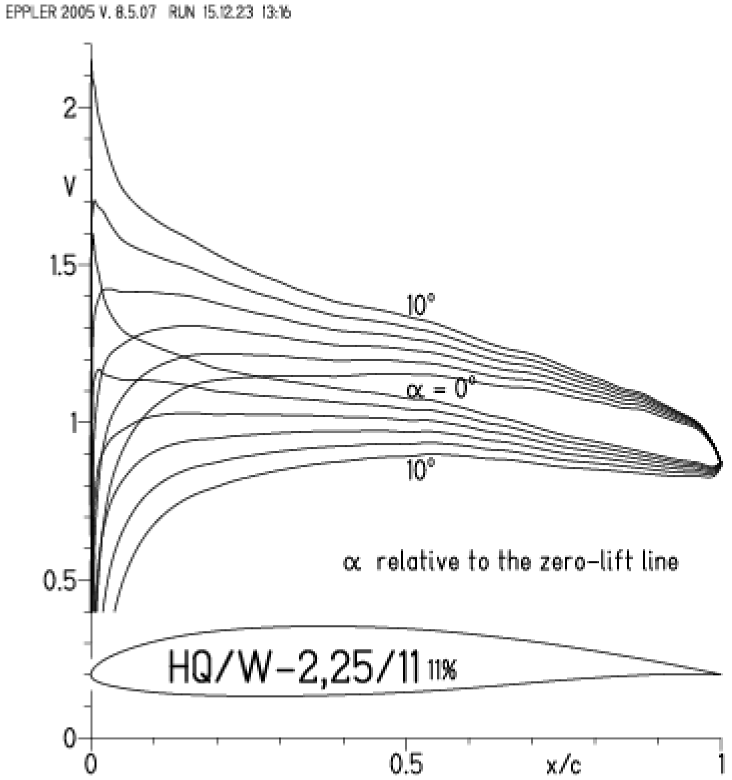
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

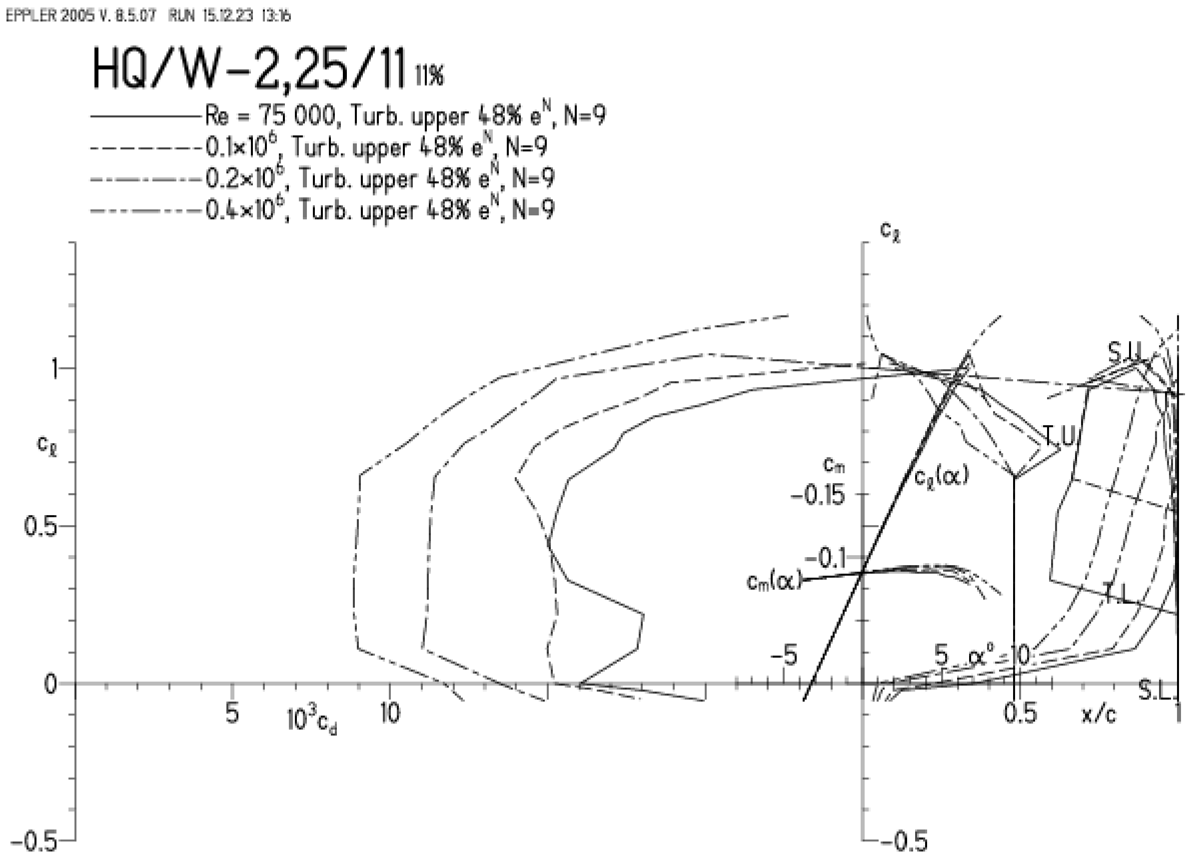


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



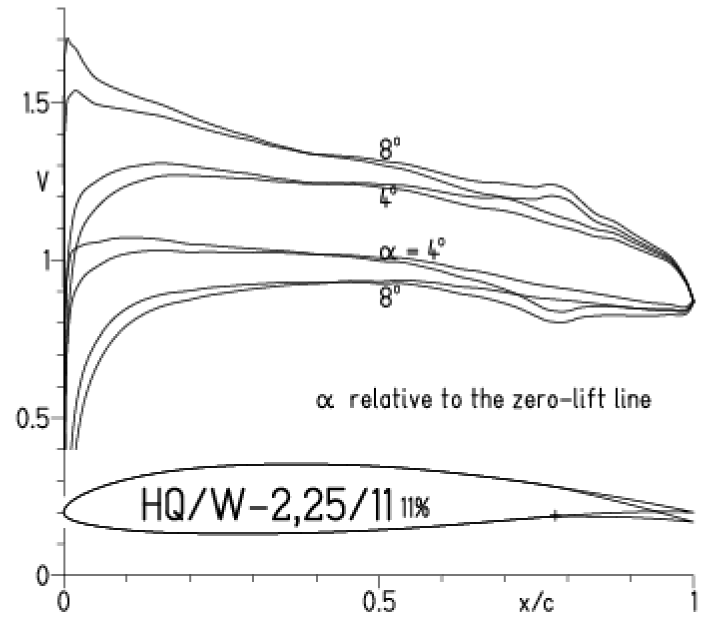
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



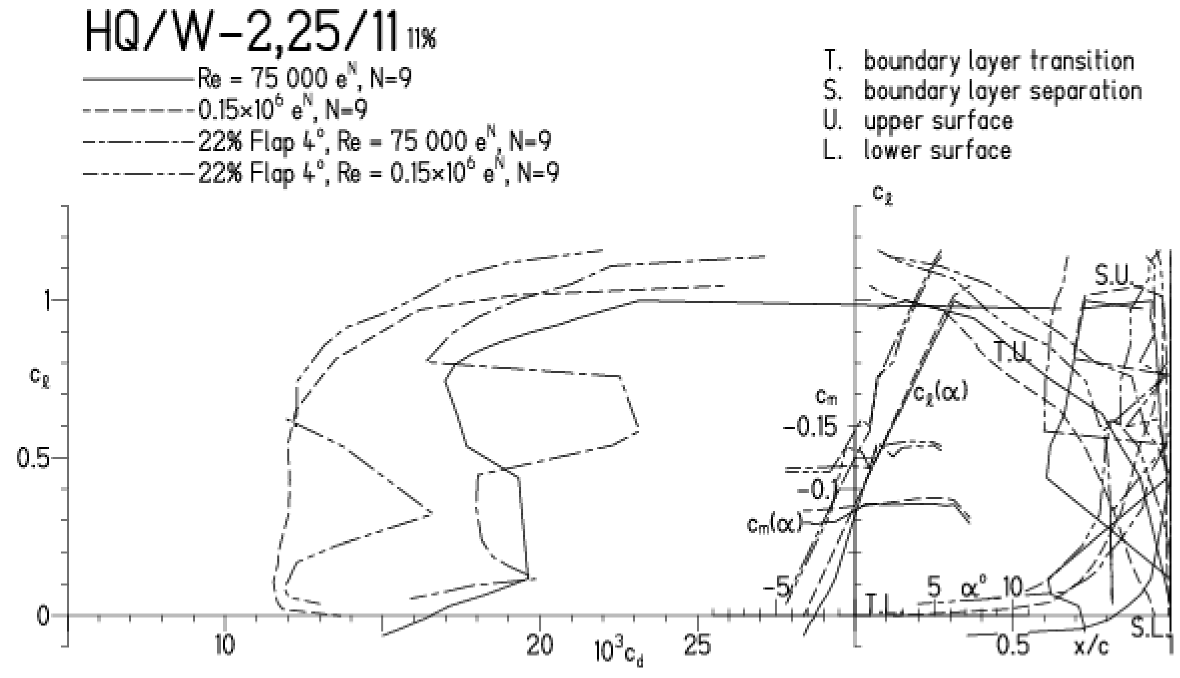


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

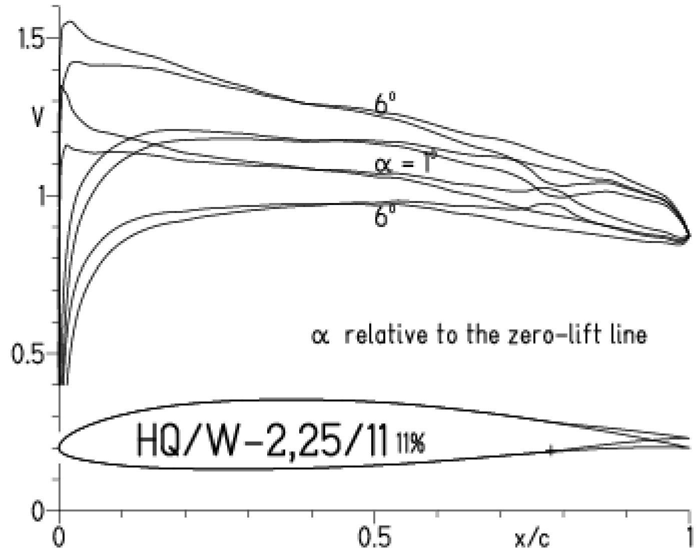


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

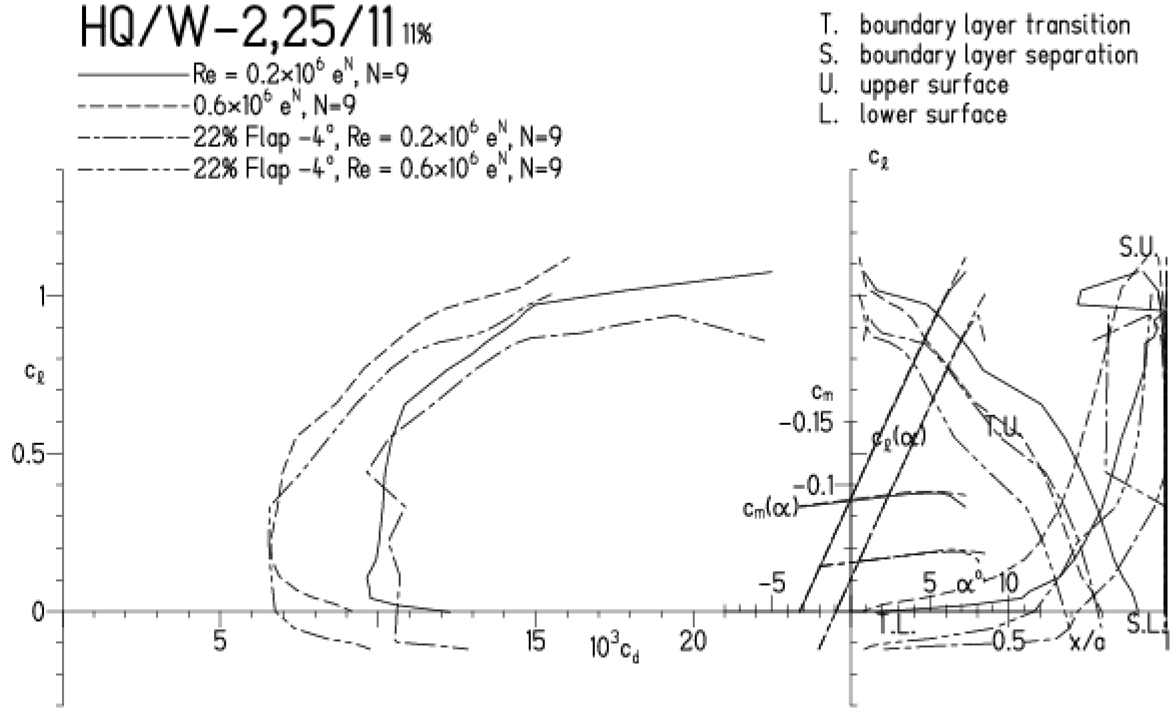


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

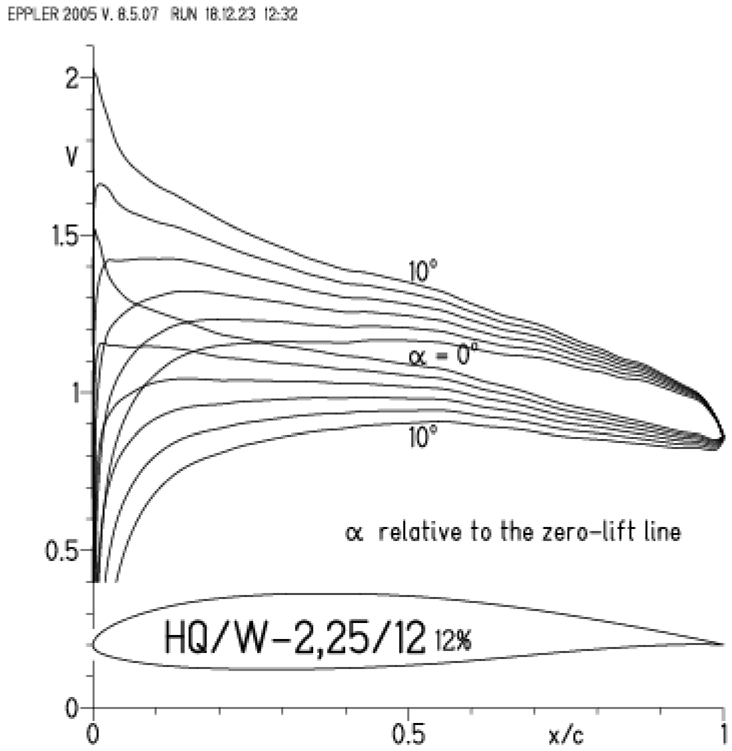
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

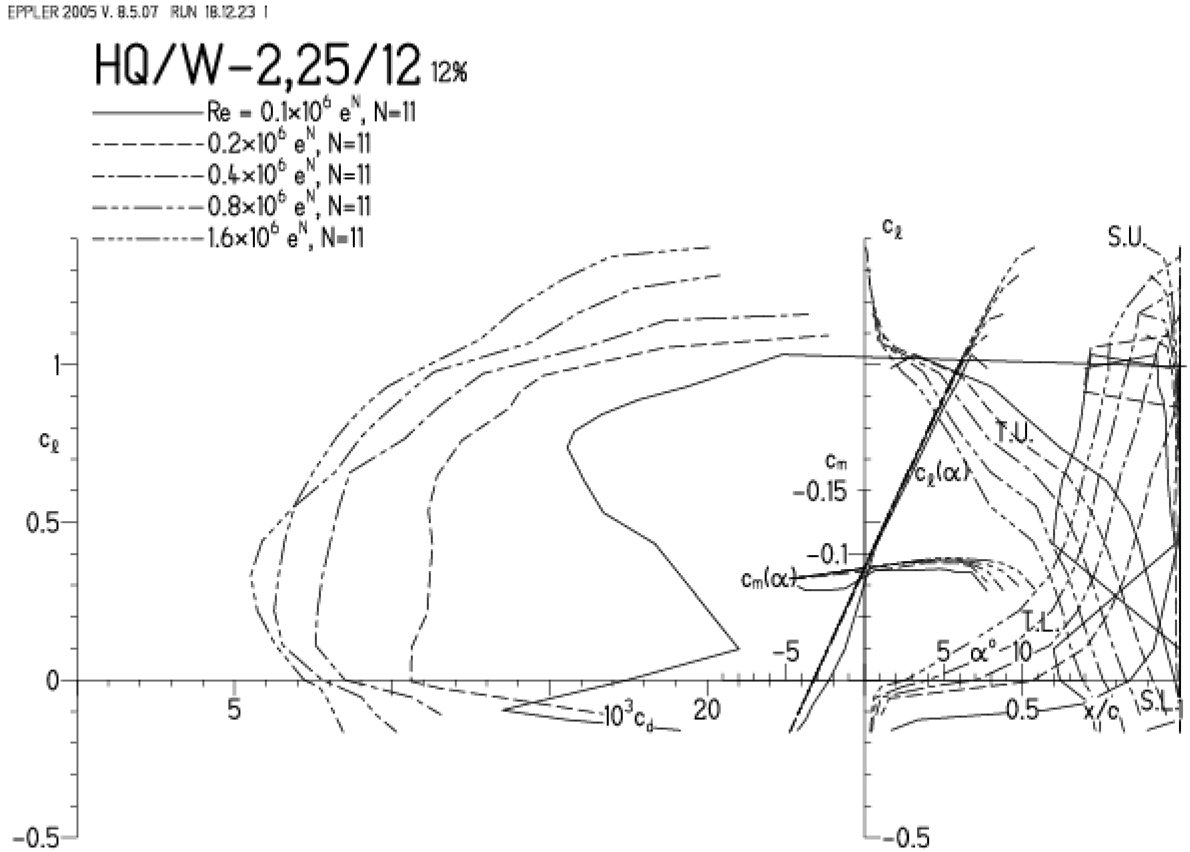


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

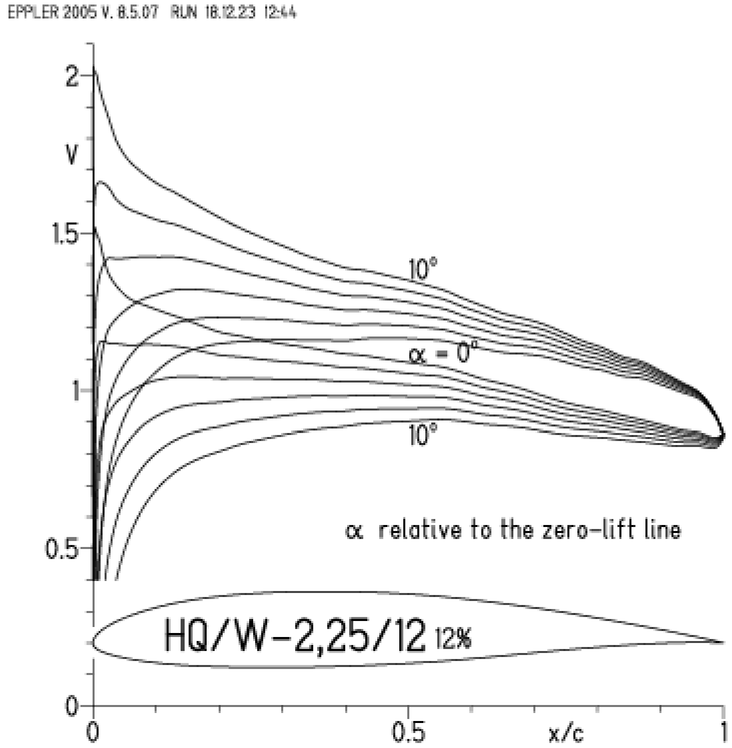


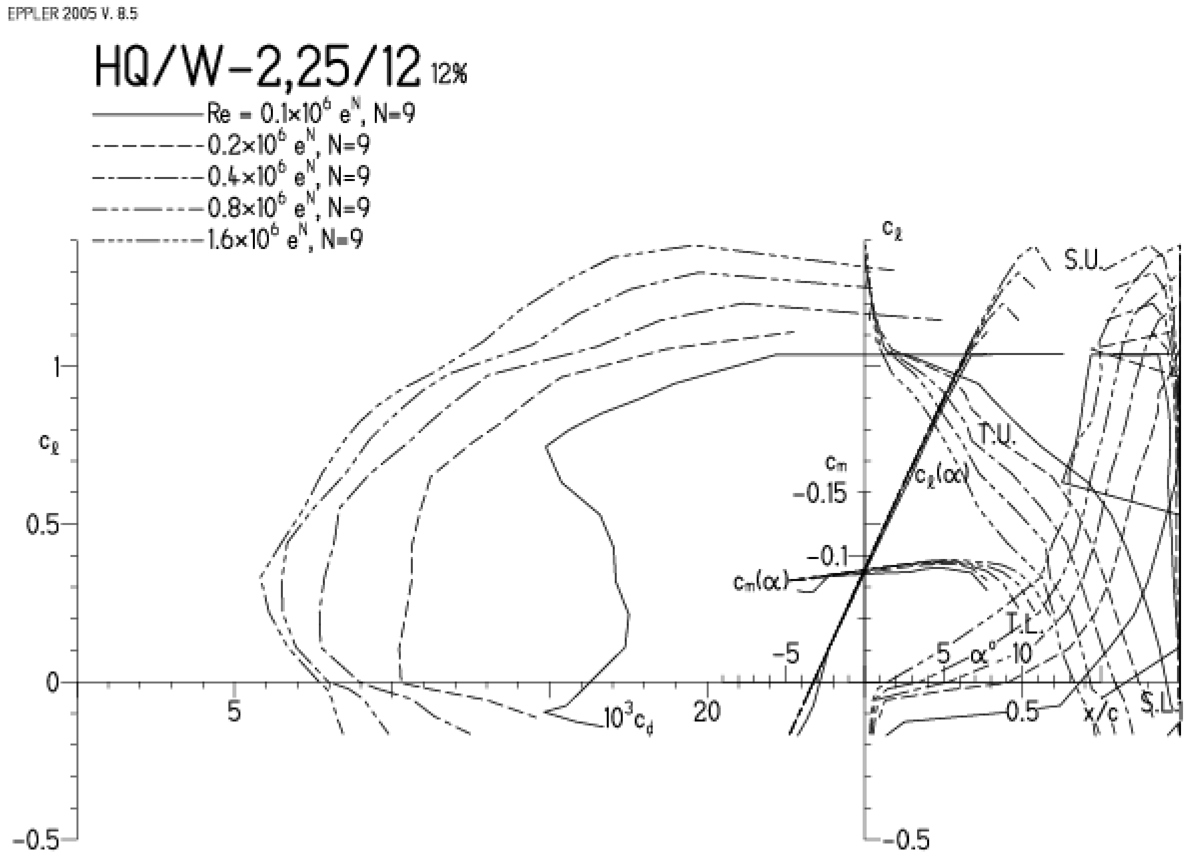
HQ/W-2,25/12, N=11



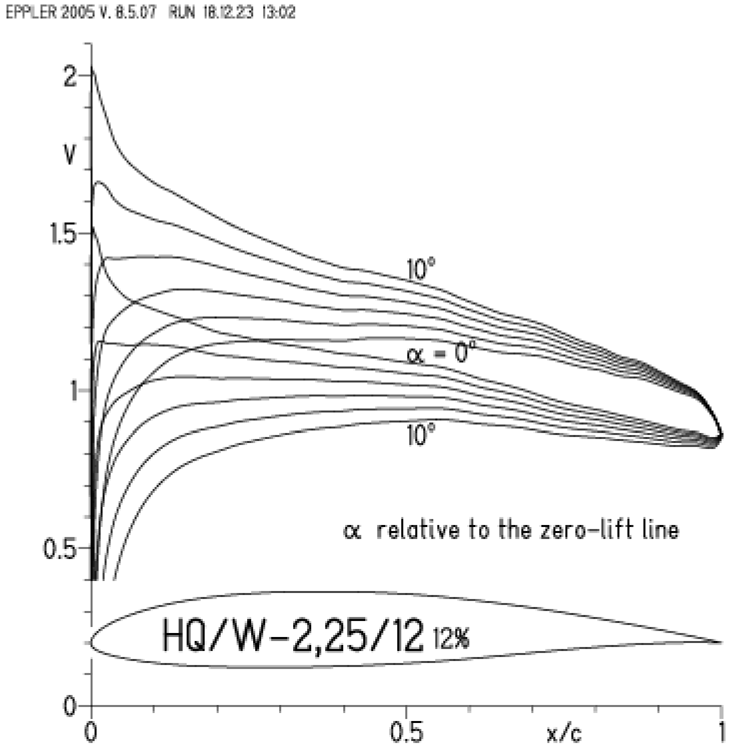


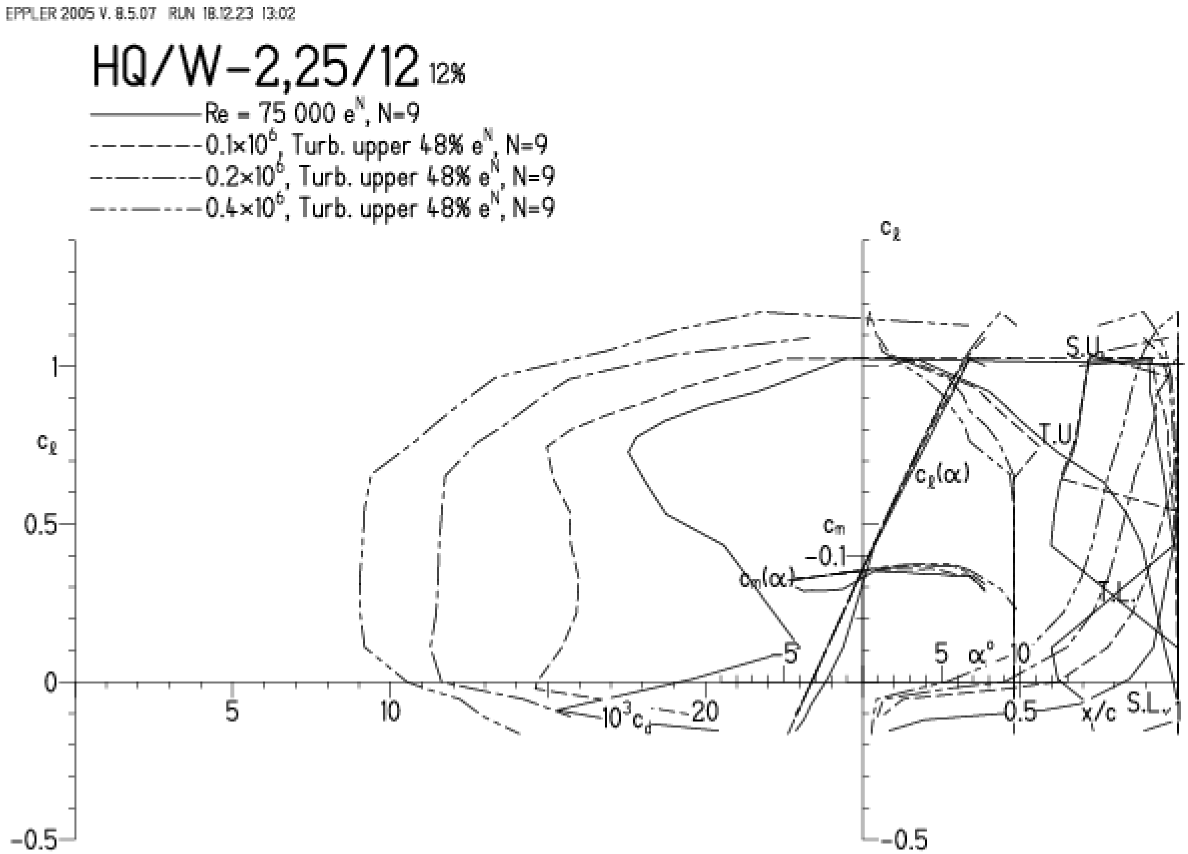
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_ℓ(α)
c_m(α)
10^3 c_d
α°
x/c

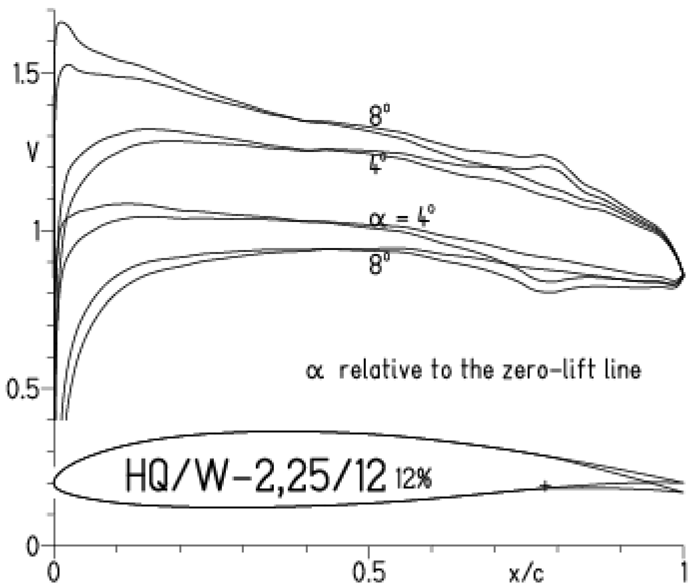
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



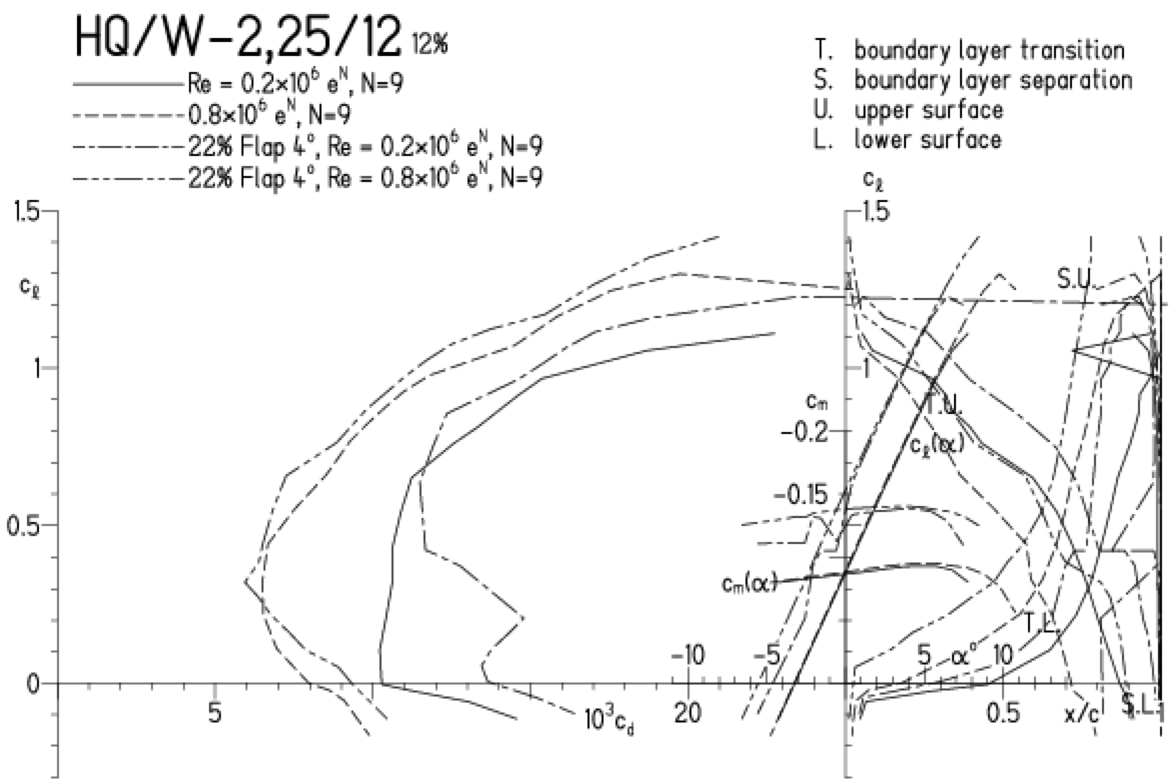


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

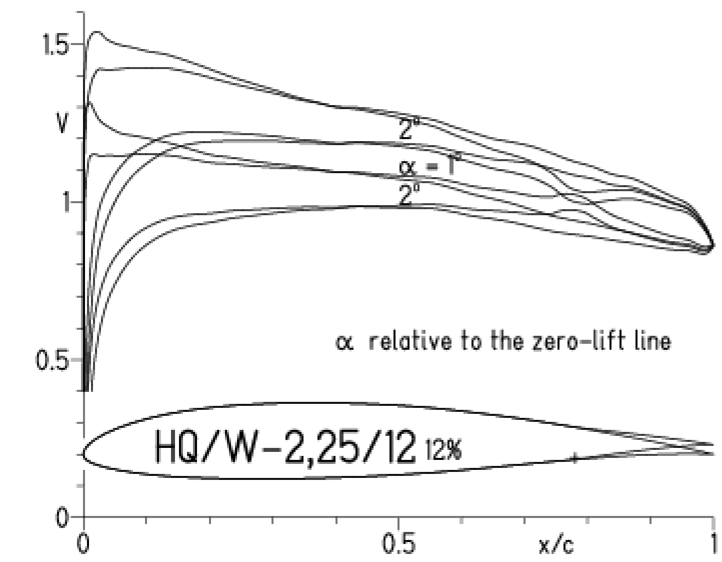


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

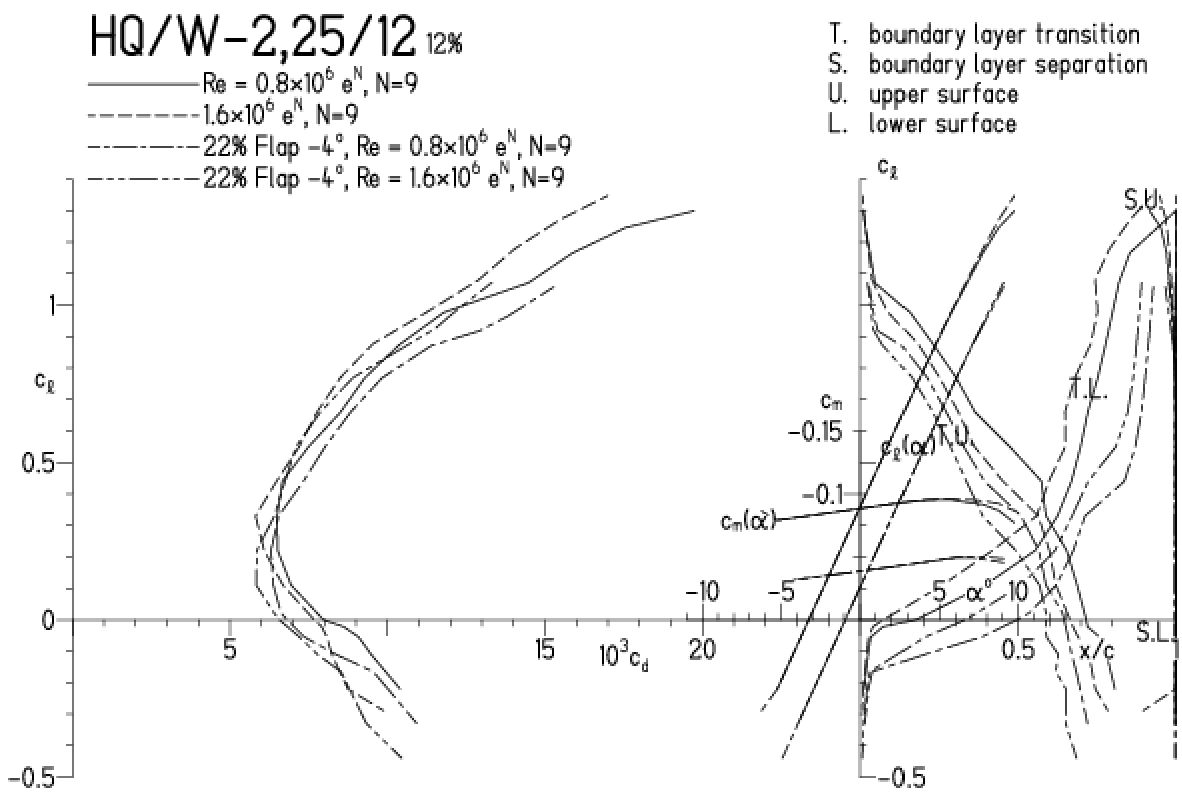


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

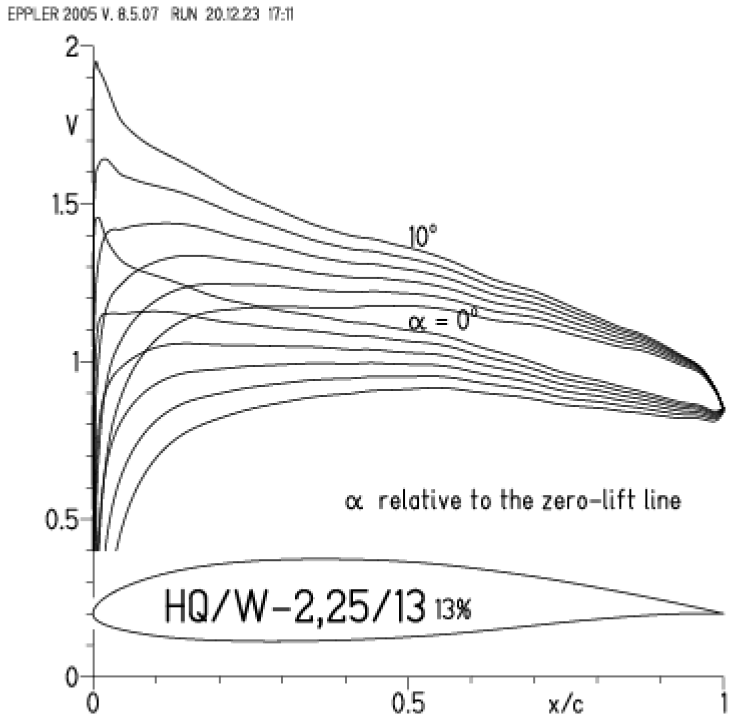
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

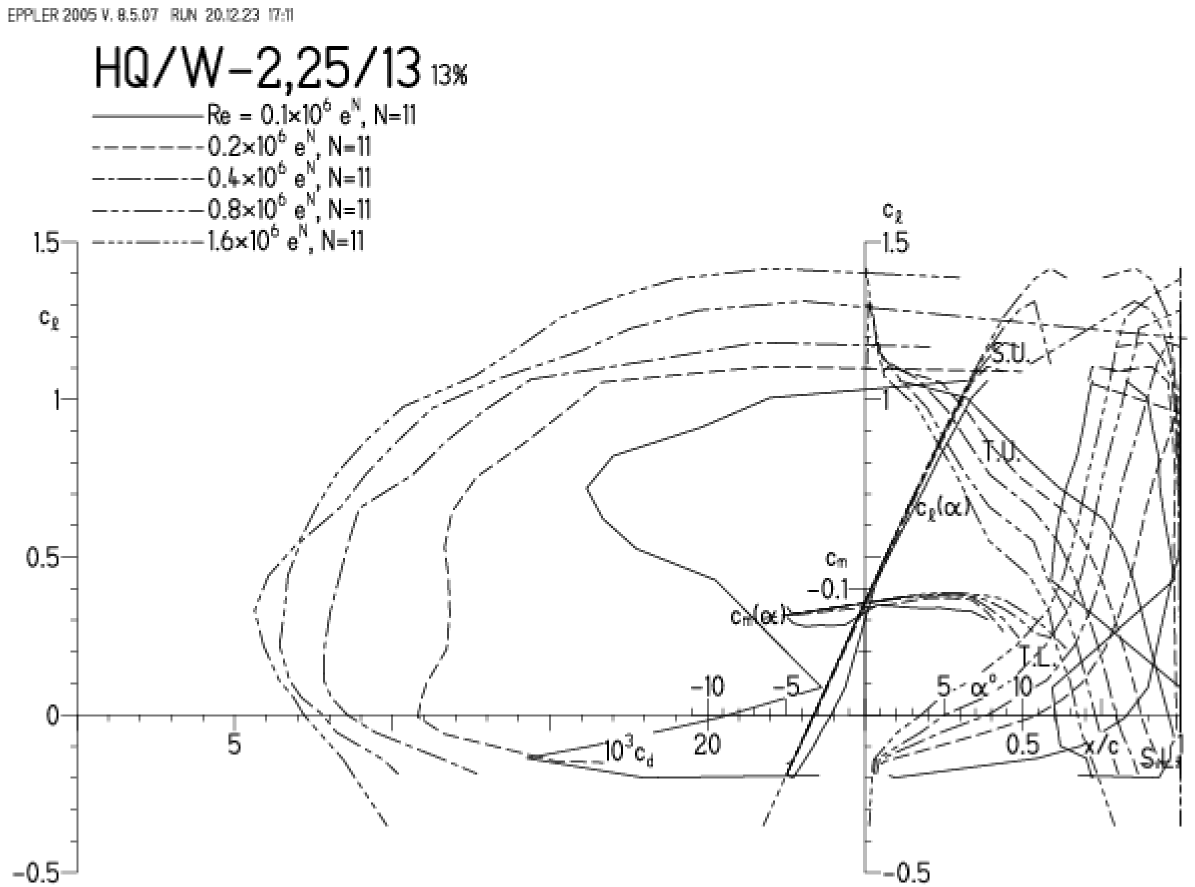


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

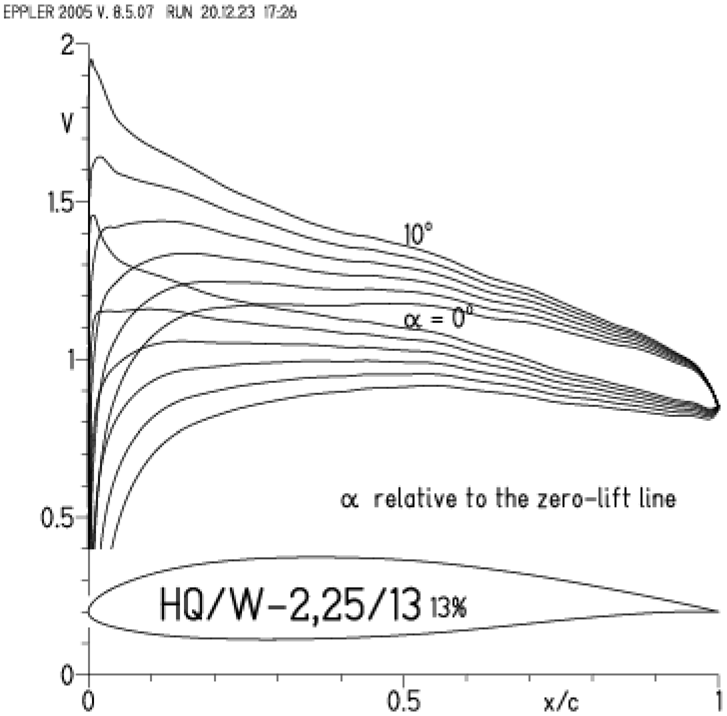


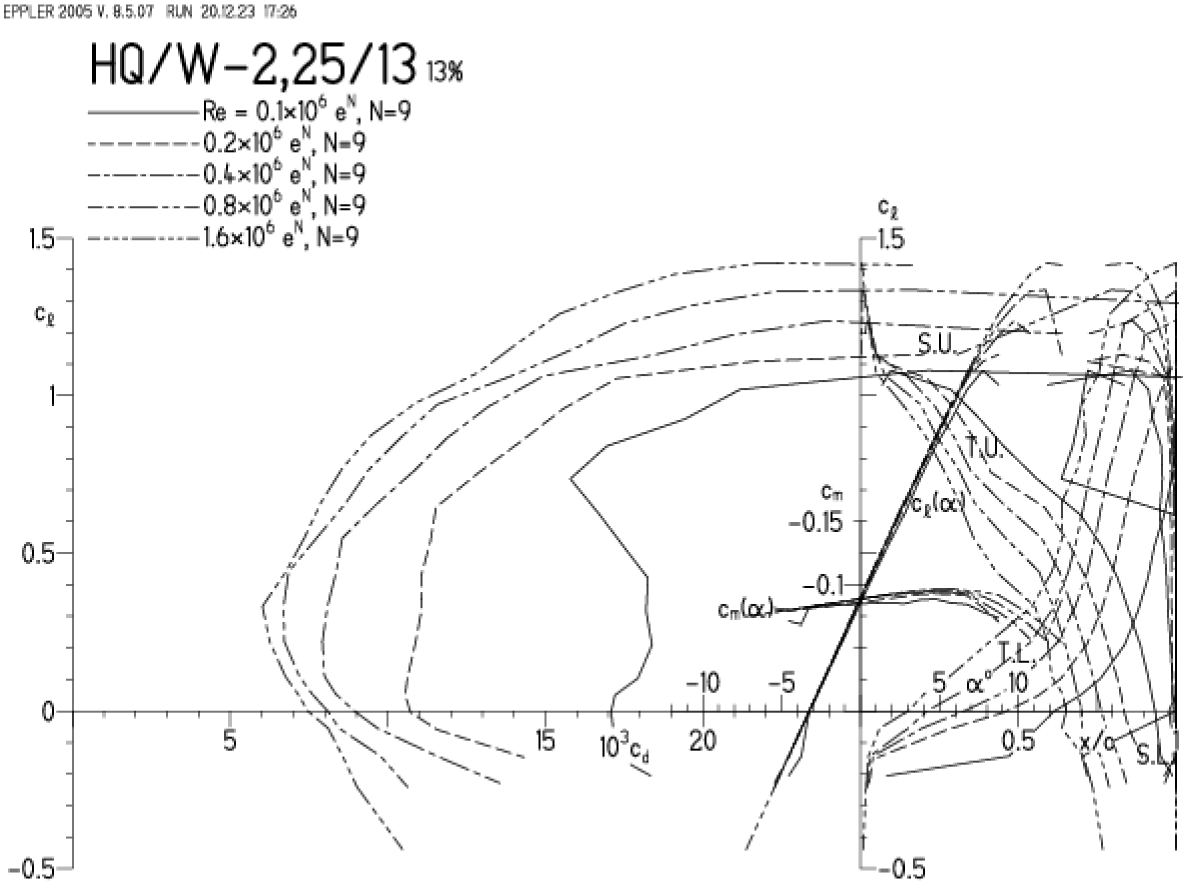
<u>HQ/W-2,25/13</u>, N=11



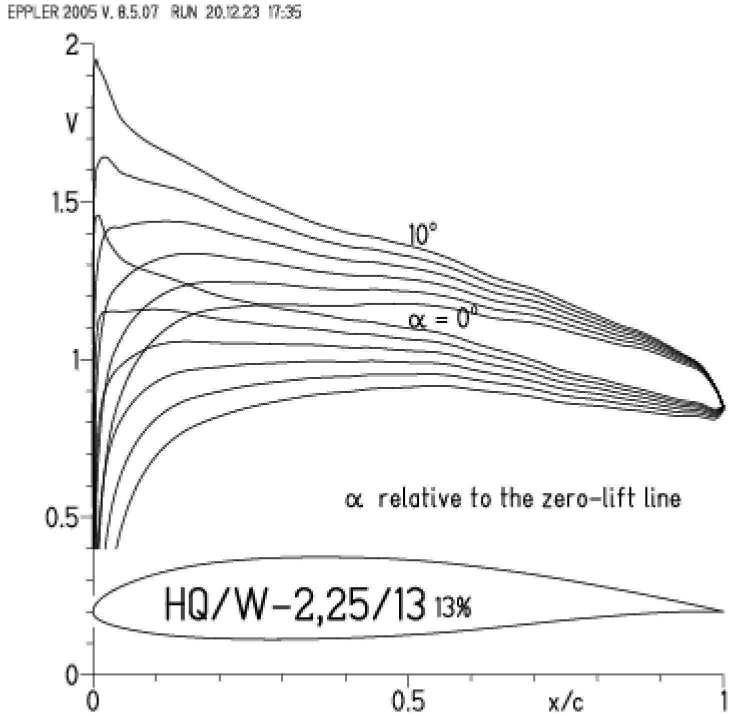


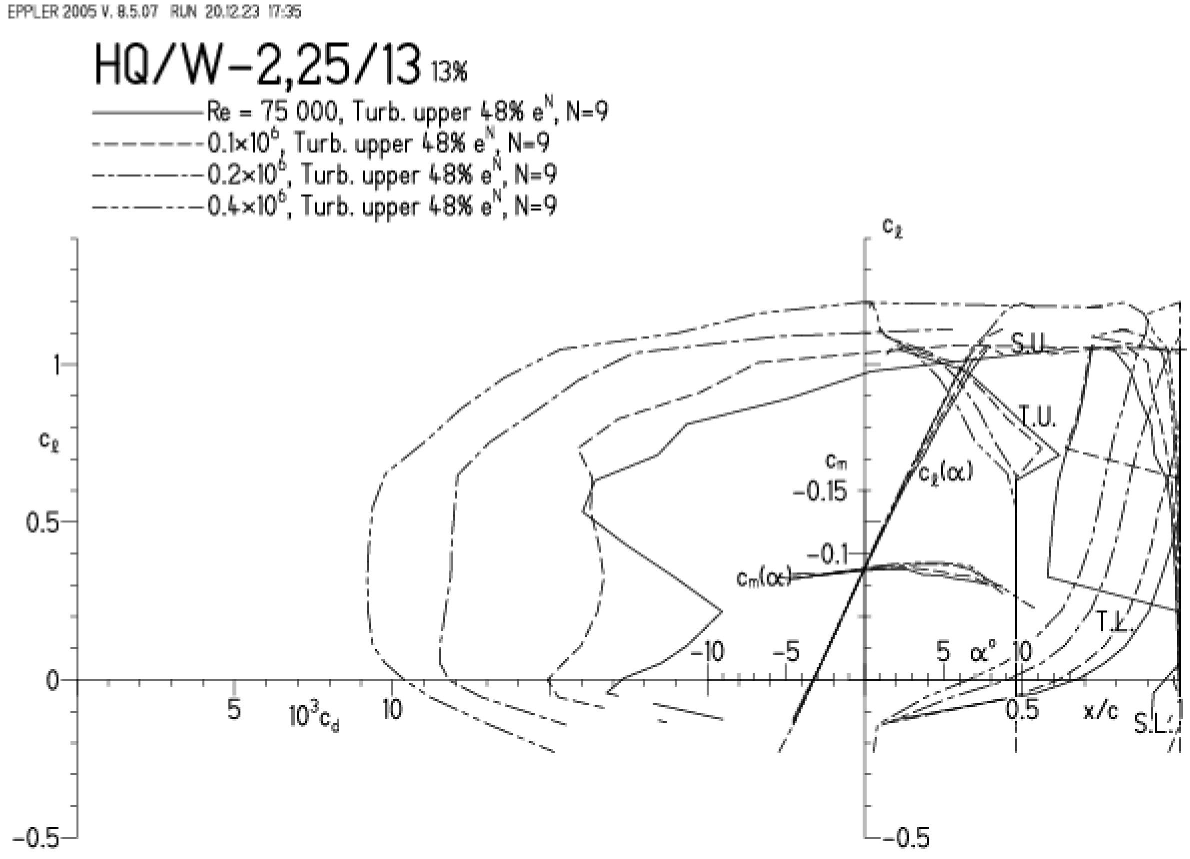
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
10³cd
x/c

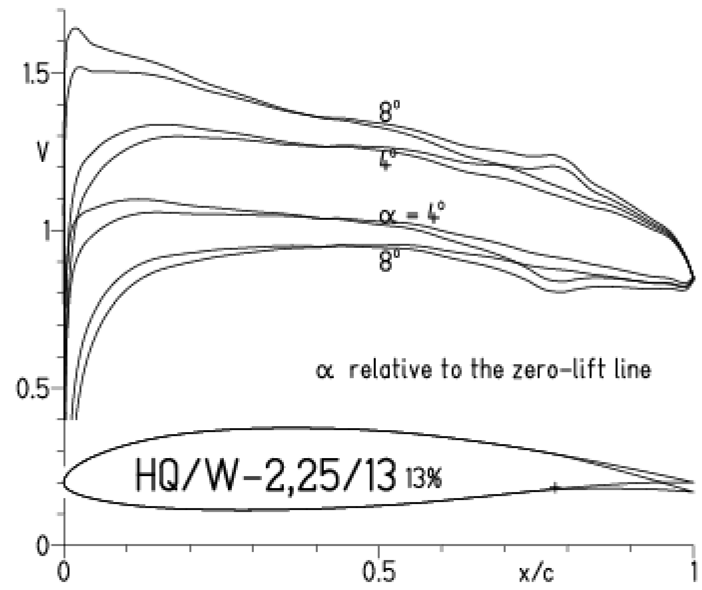
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



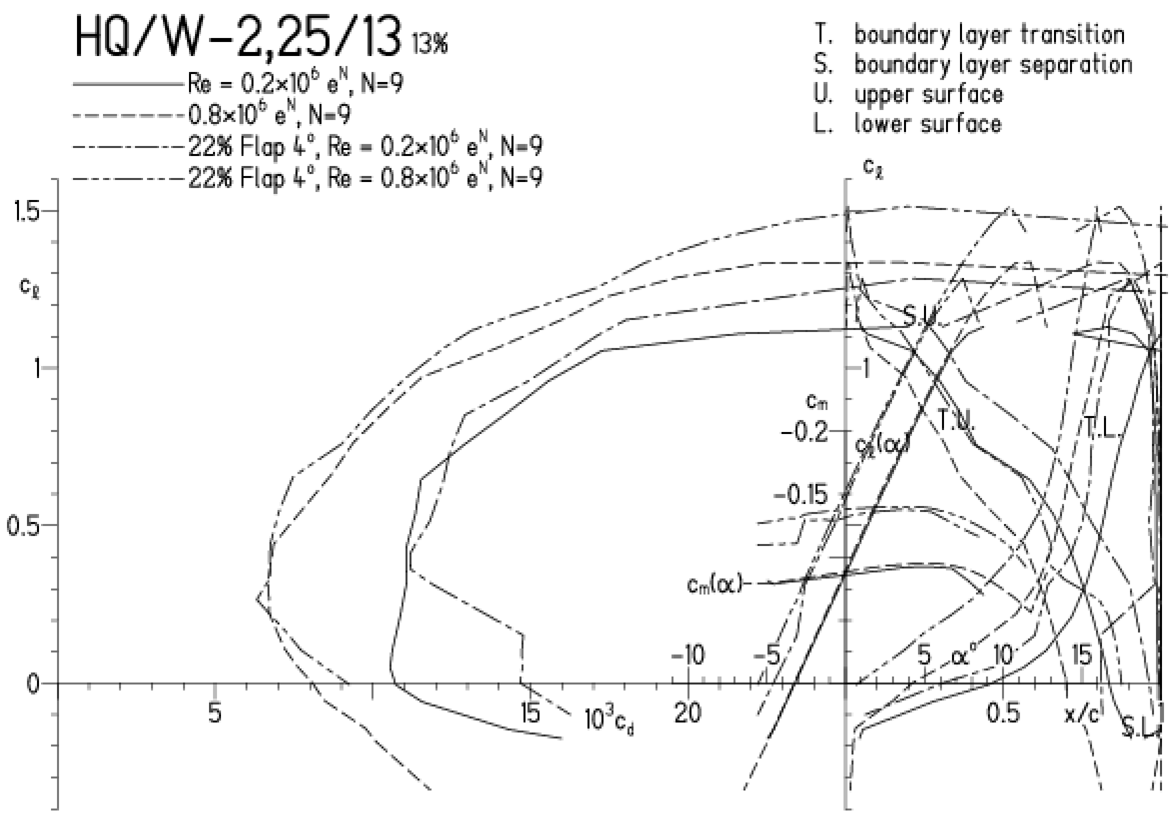


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

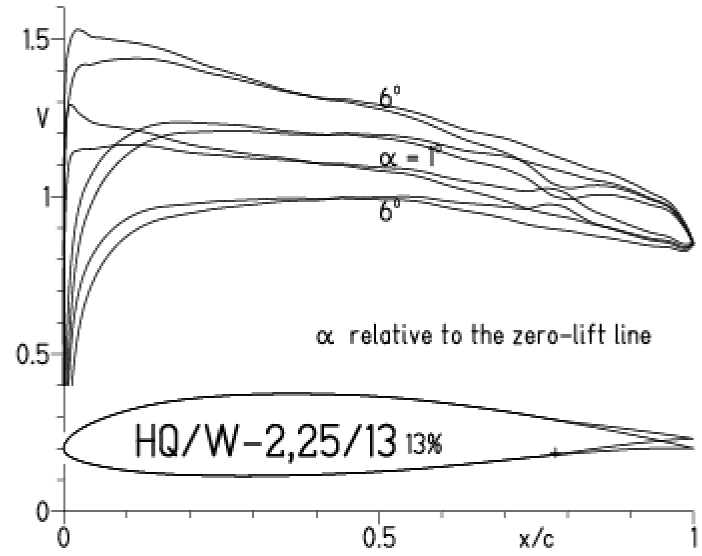


EPPLER 2005 V.

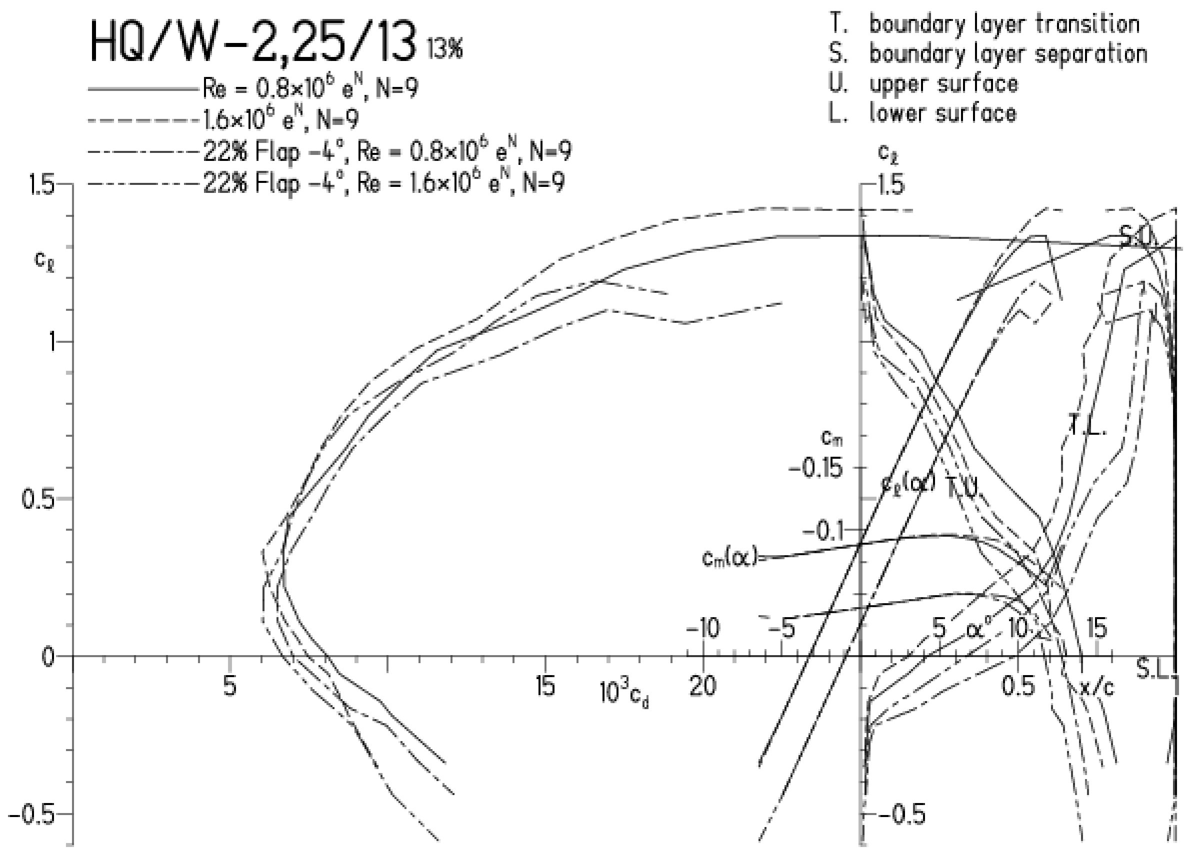


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

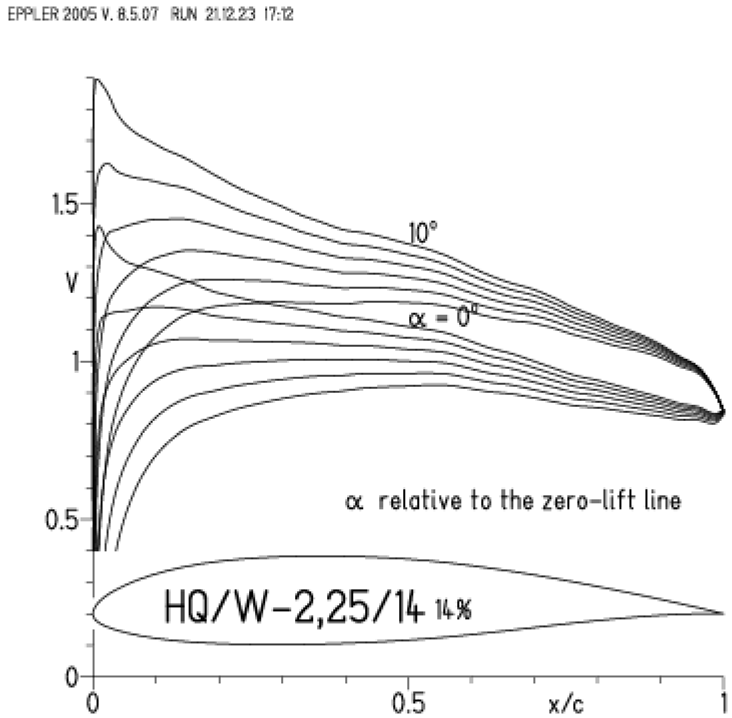
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

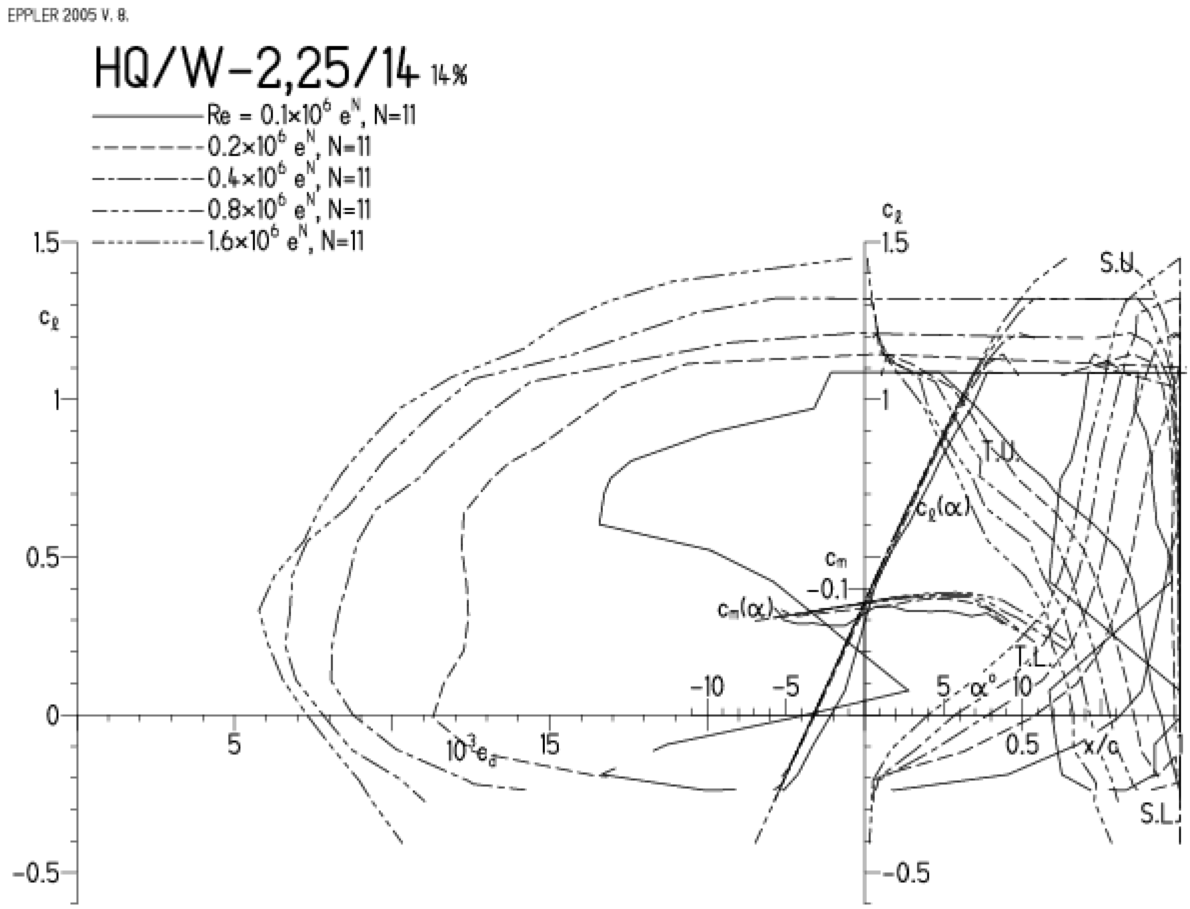


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

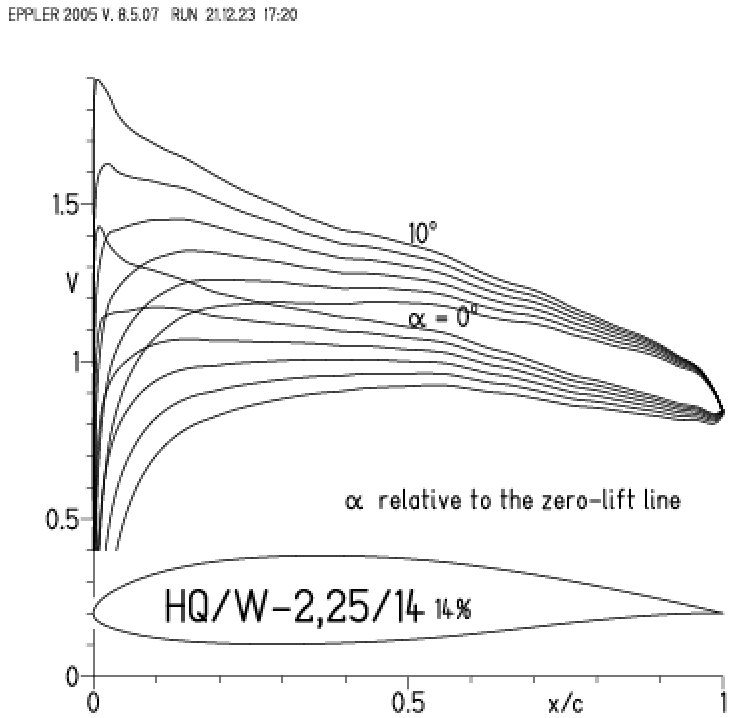


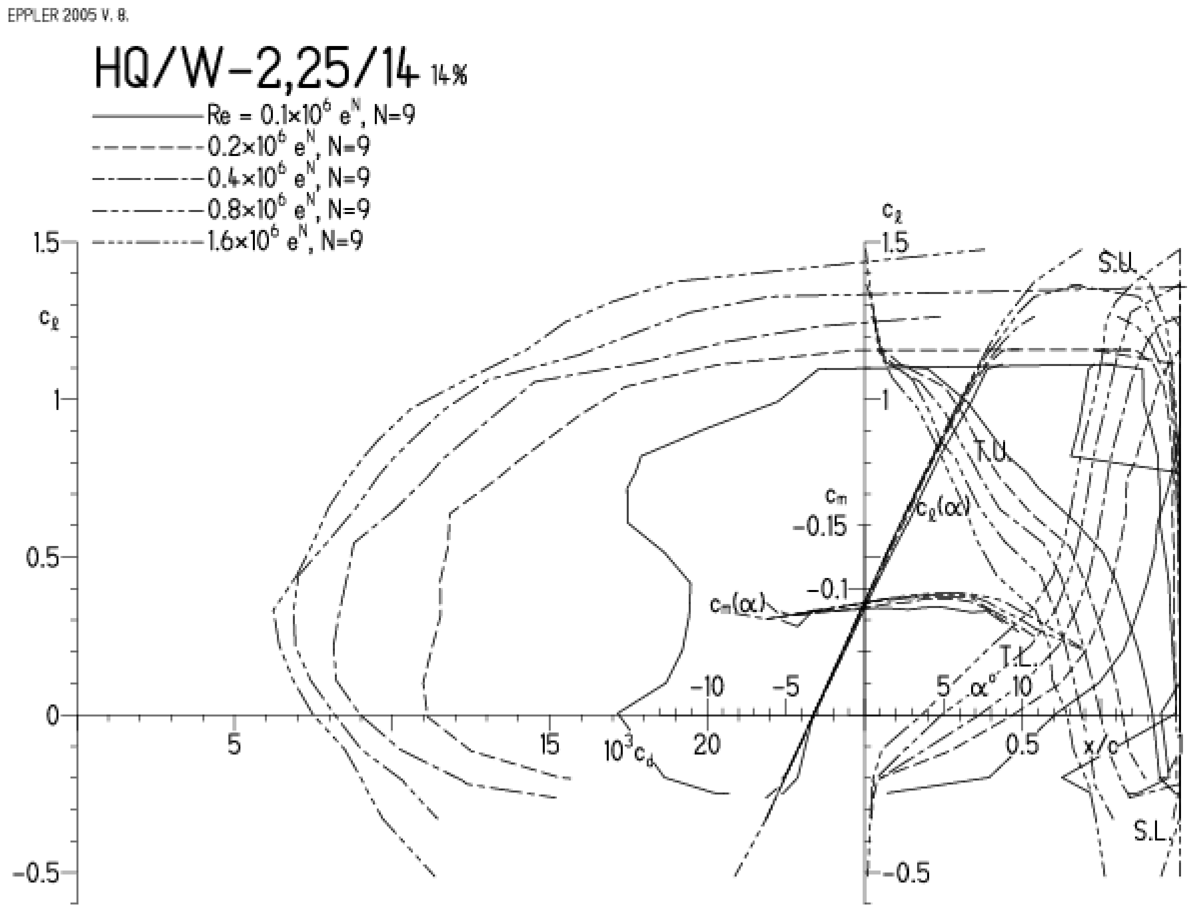
<u>HQ/W-2,25/14</u>, N=11



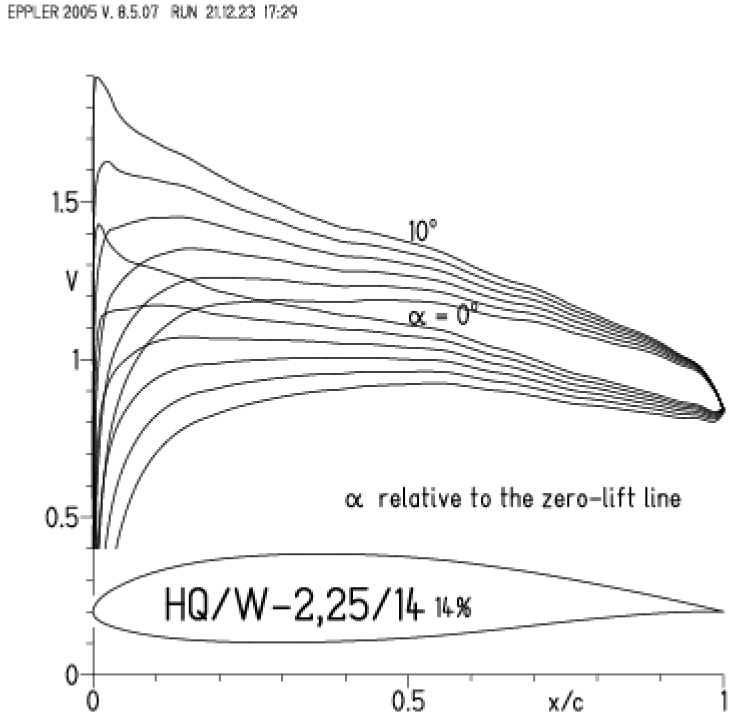


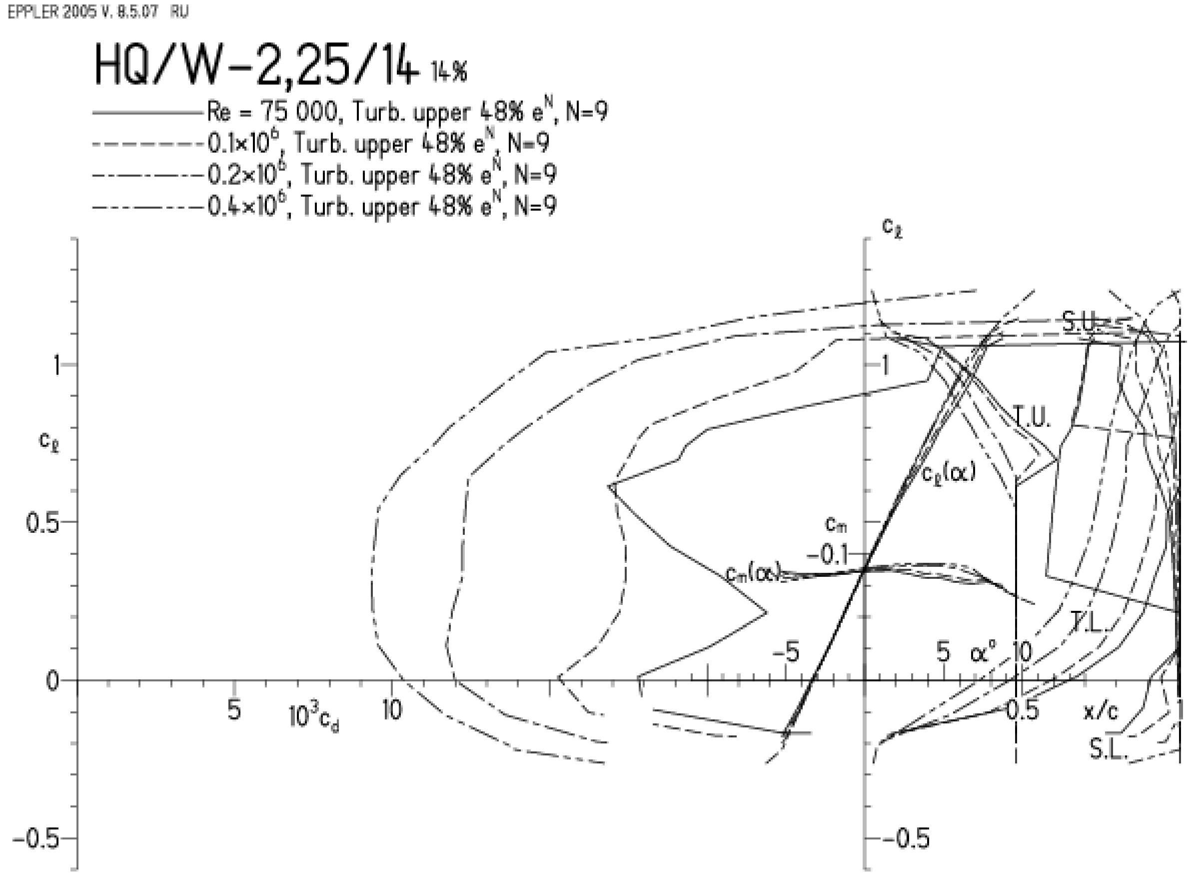
<u>HQ/W-2,25/14</u>, N=9





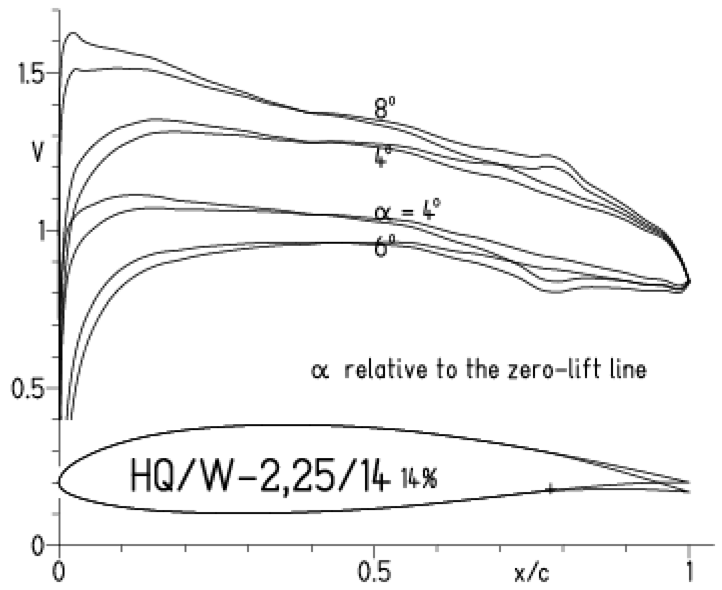
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



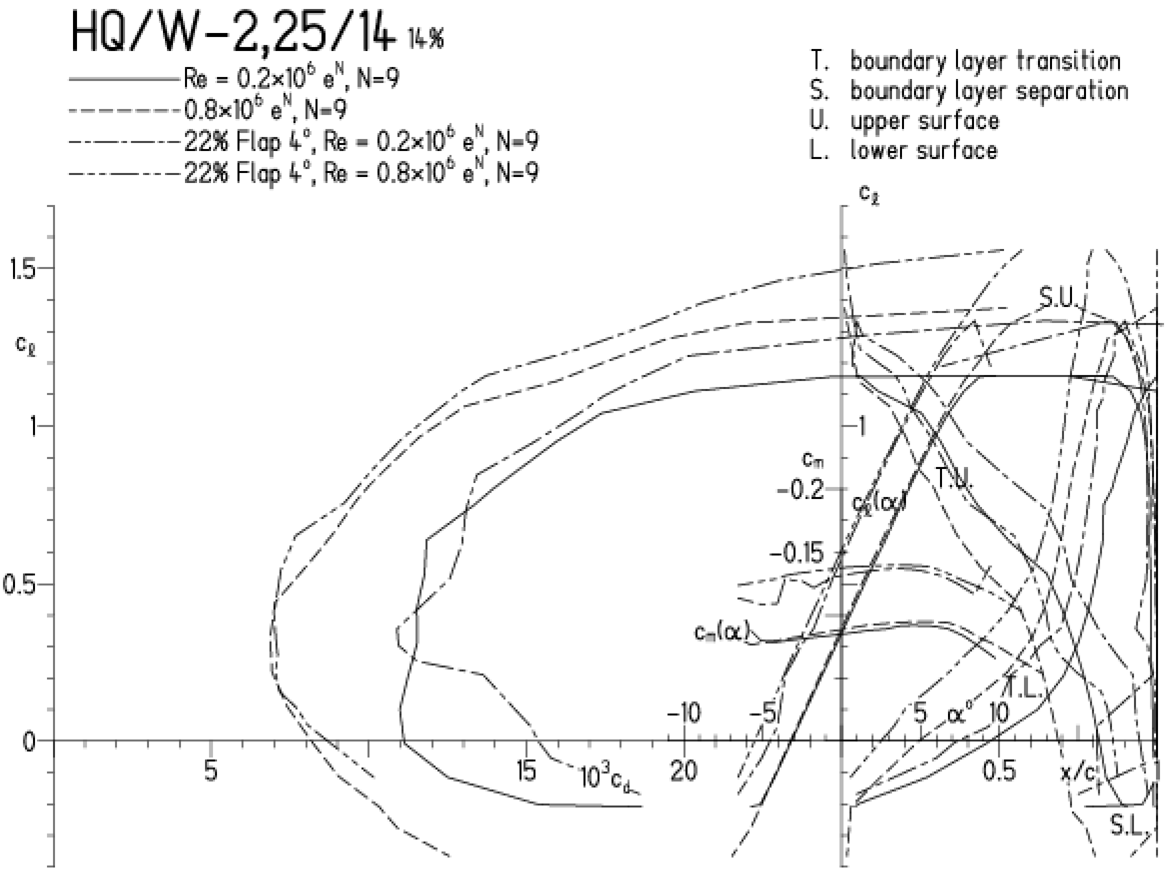


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

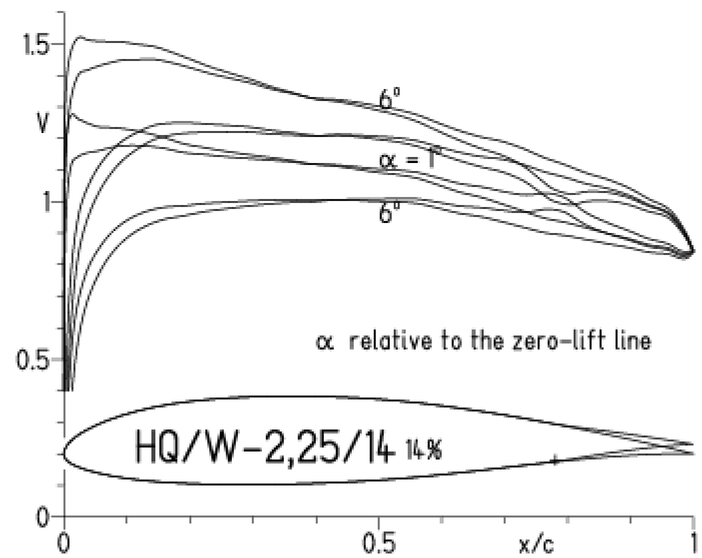


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

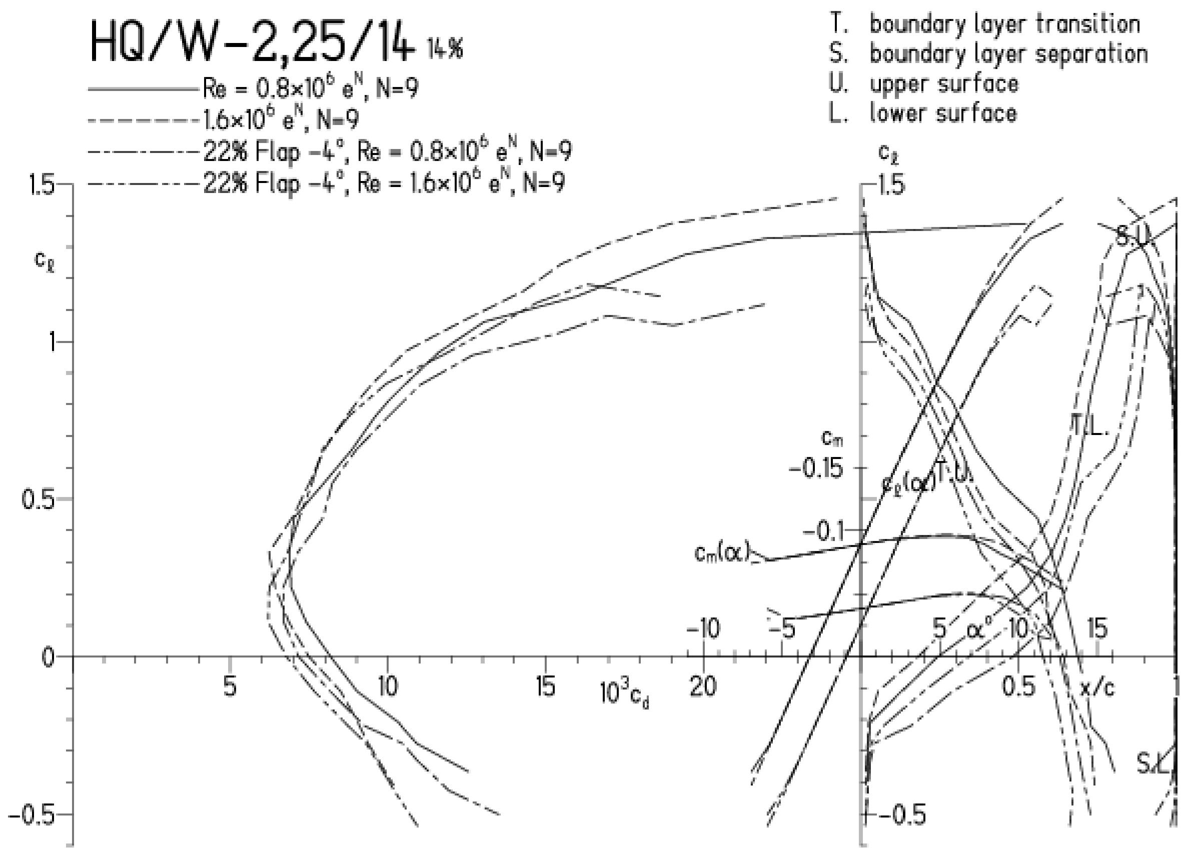


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

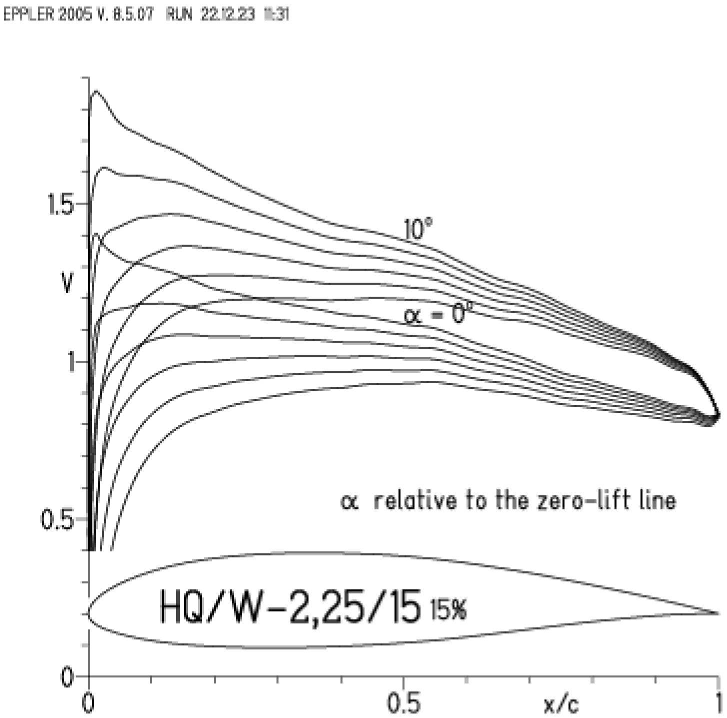
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

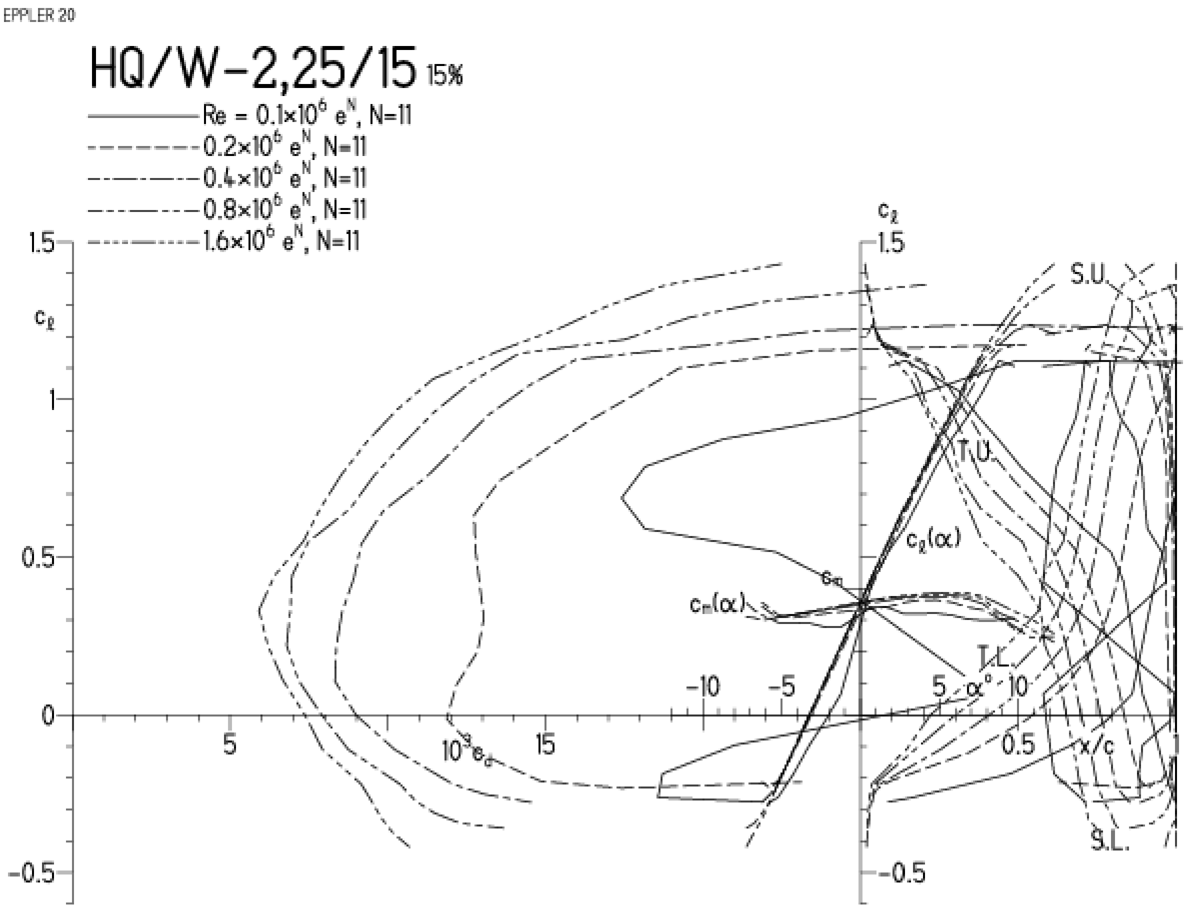


EPPLER 2005 V. 8.5.07

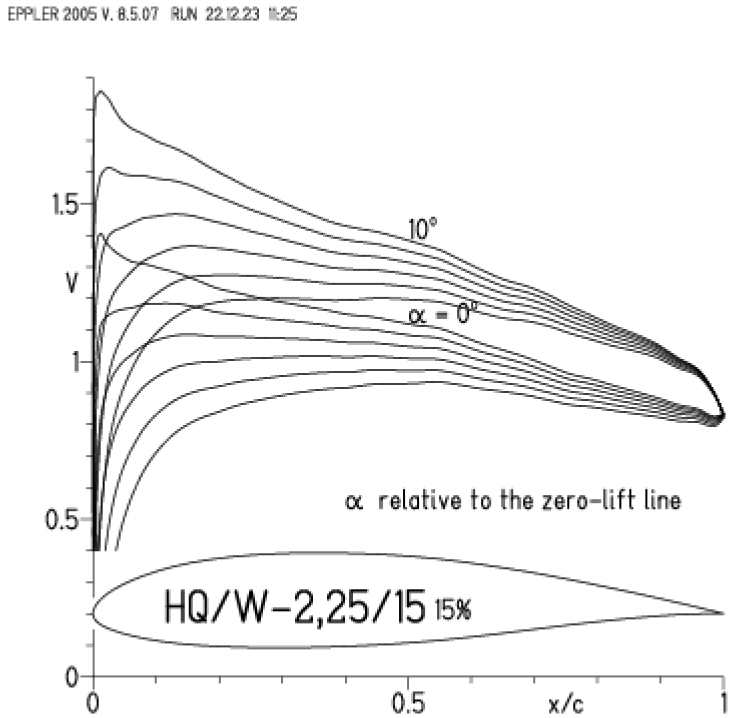


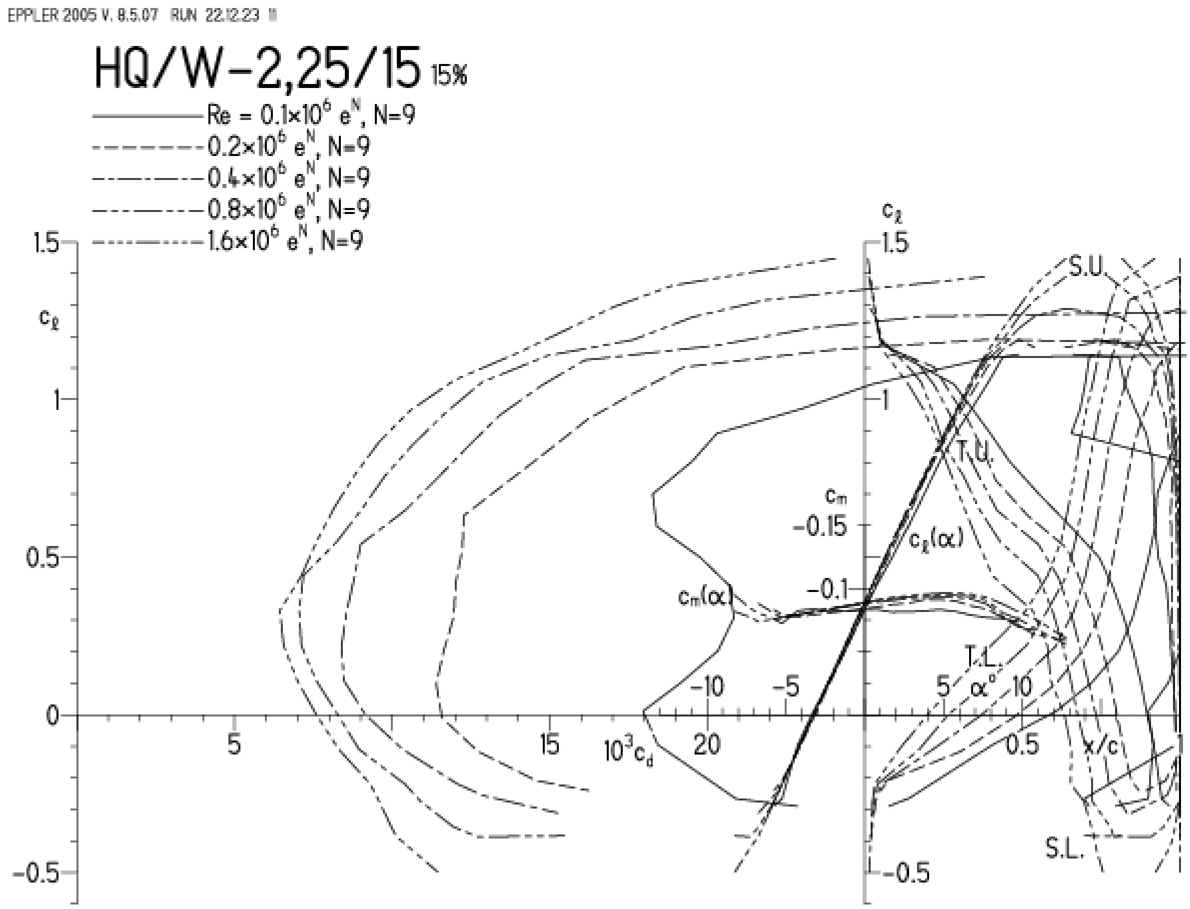
<u>HQ/W-2,25/15</u>, N=11



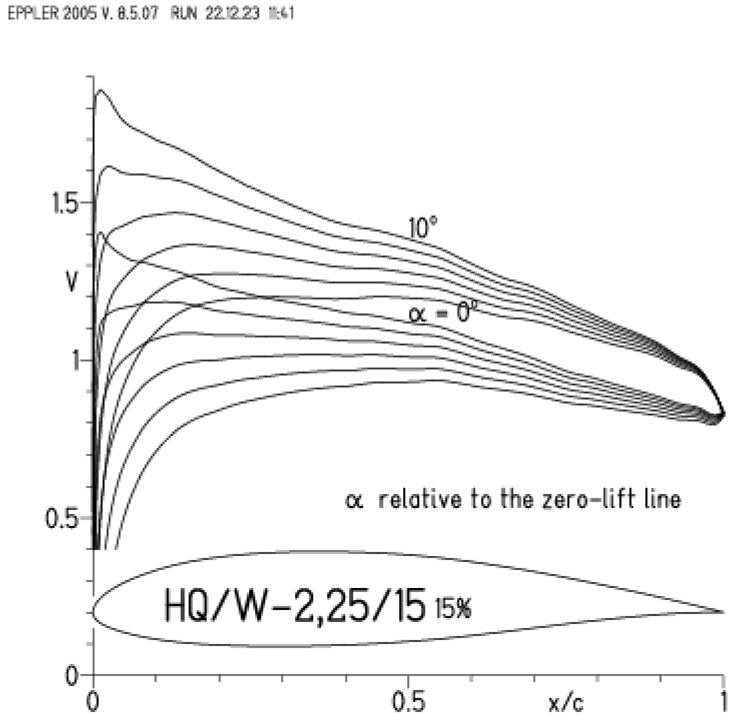


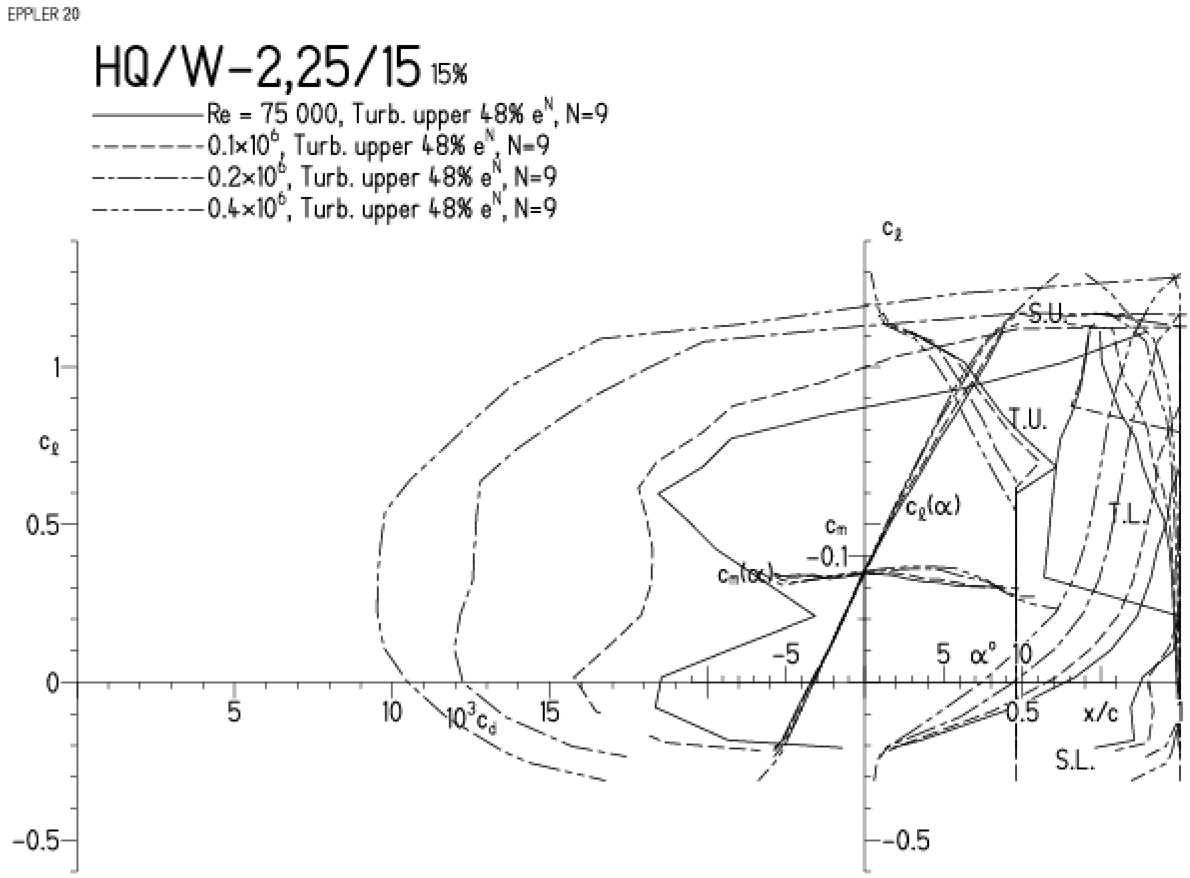
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



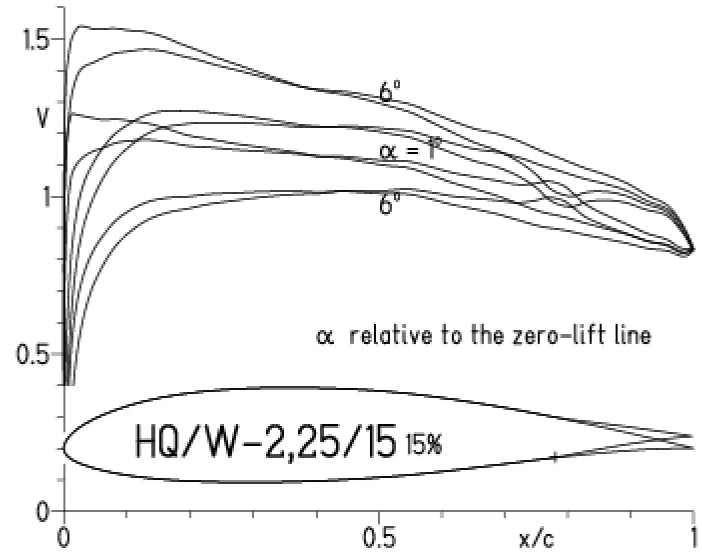


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

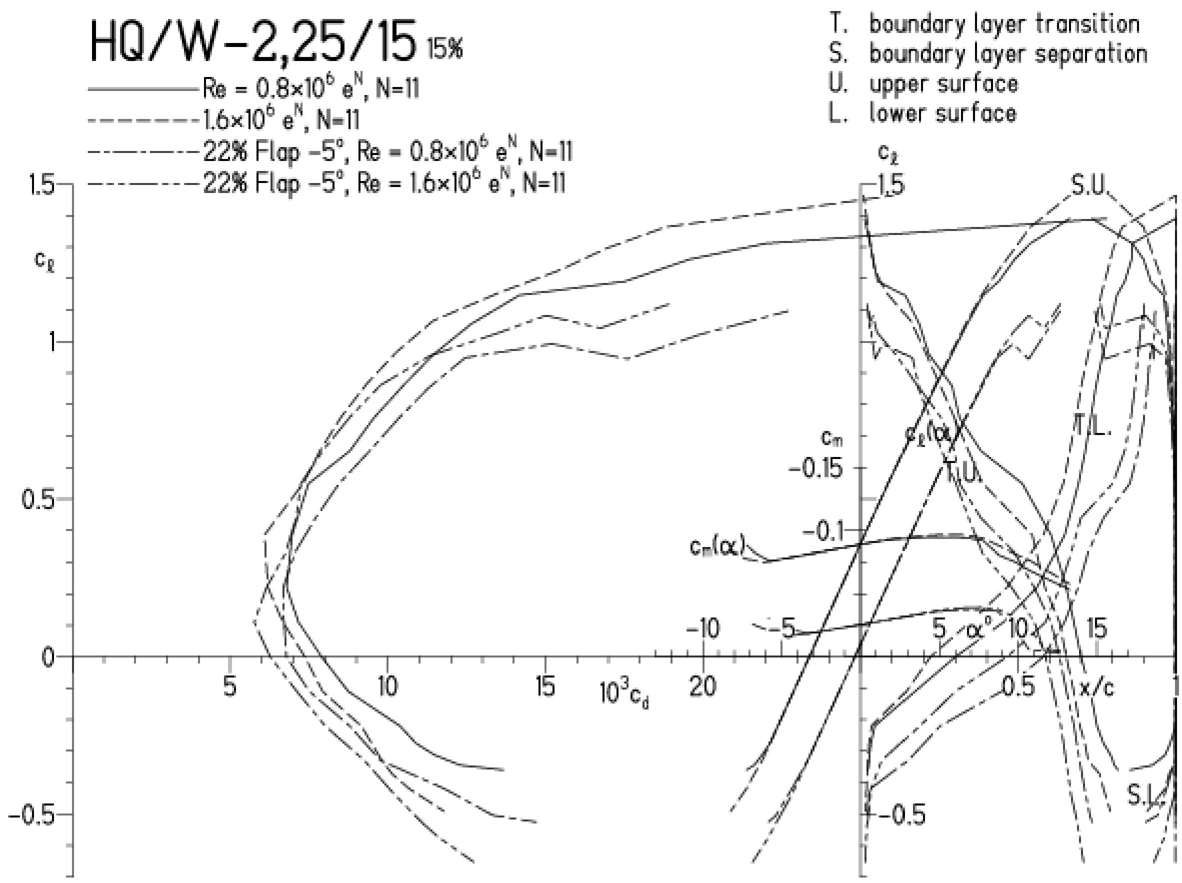
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

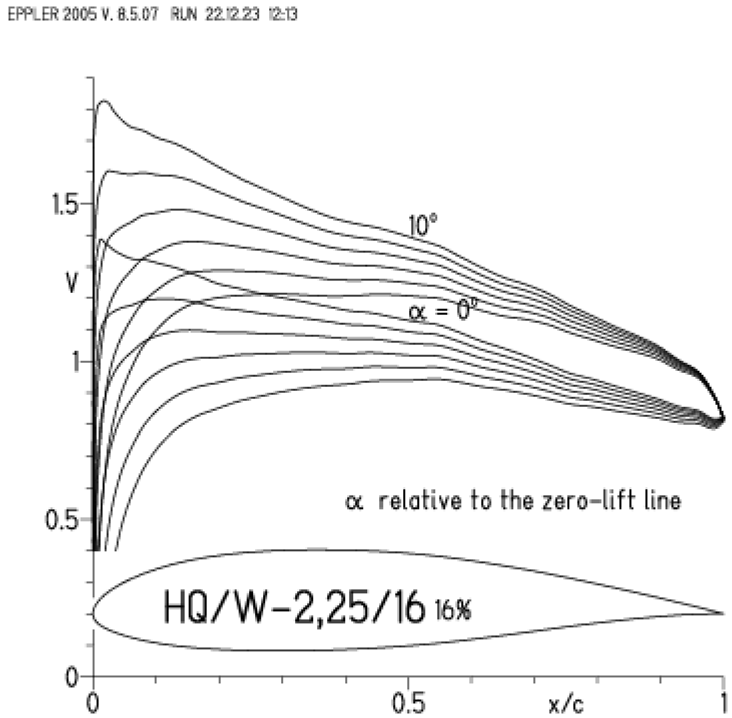
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

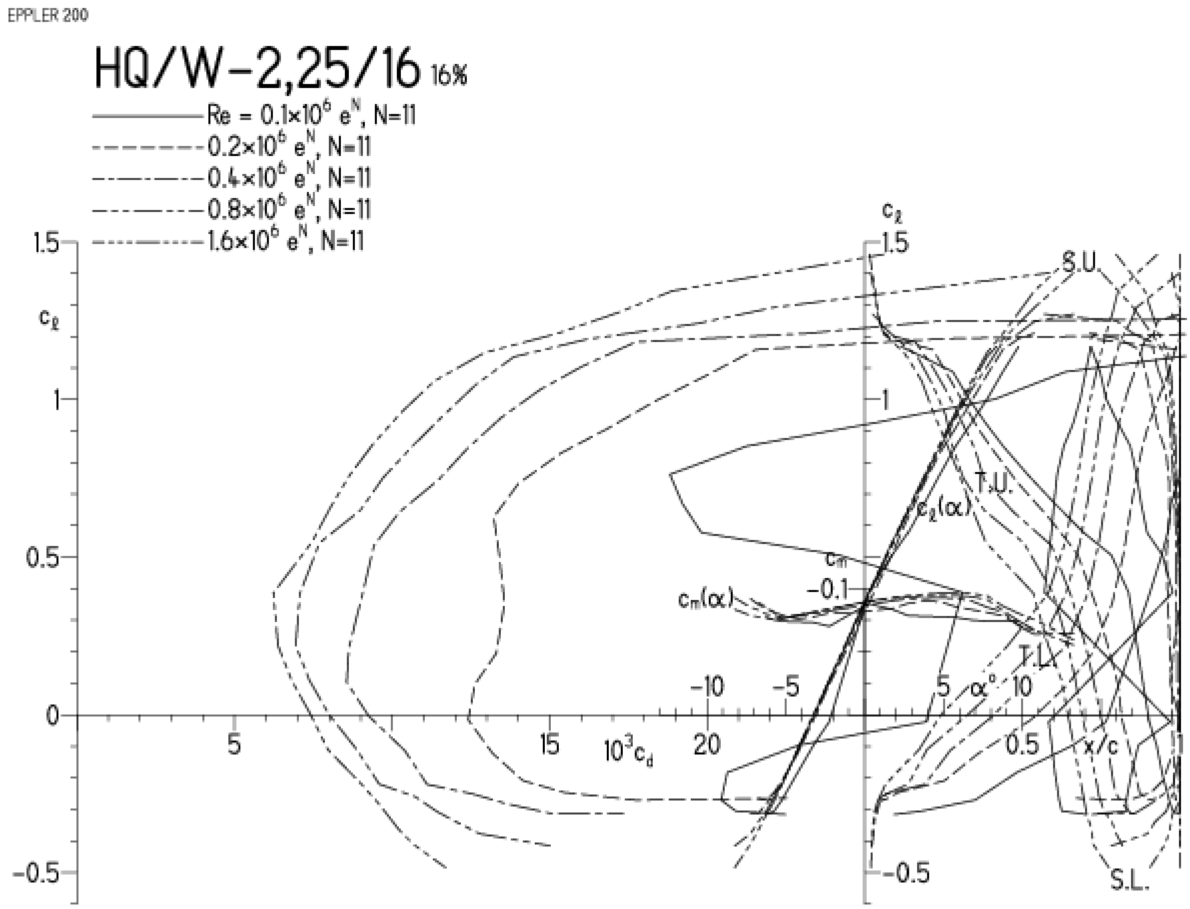


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



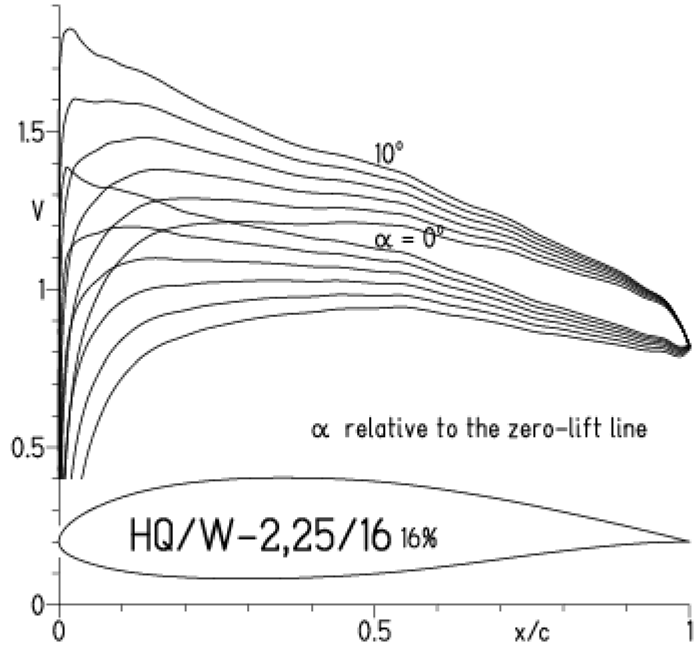
<u>HQ/W-2,25/16</u>, N=11



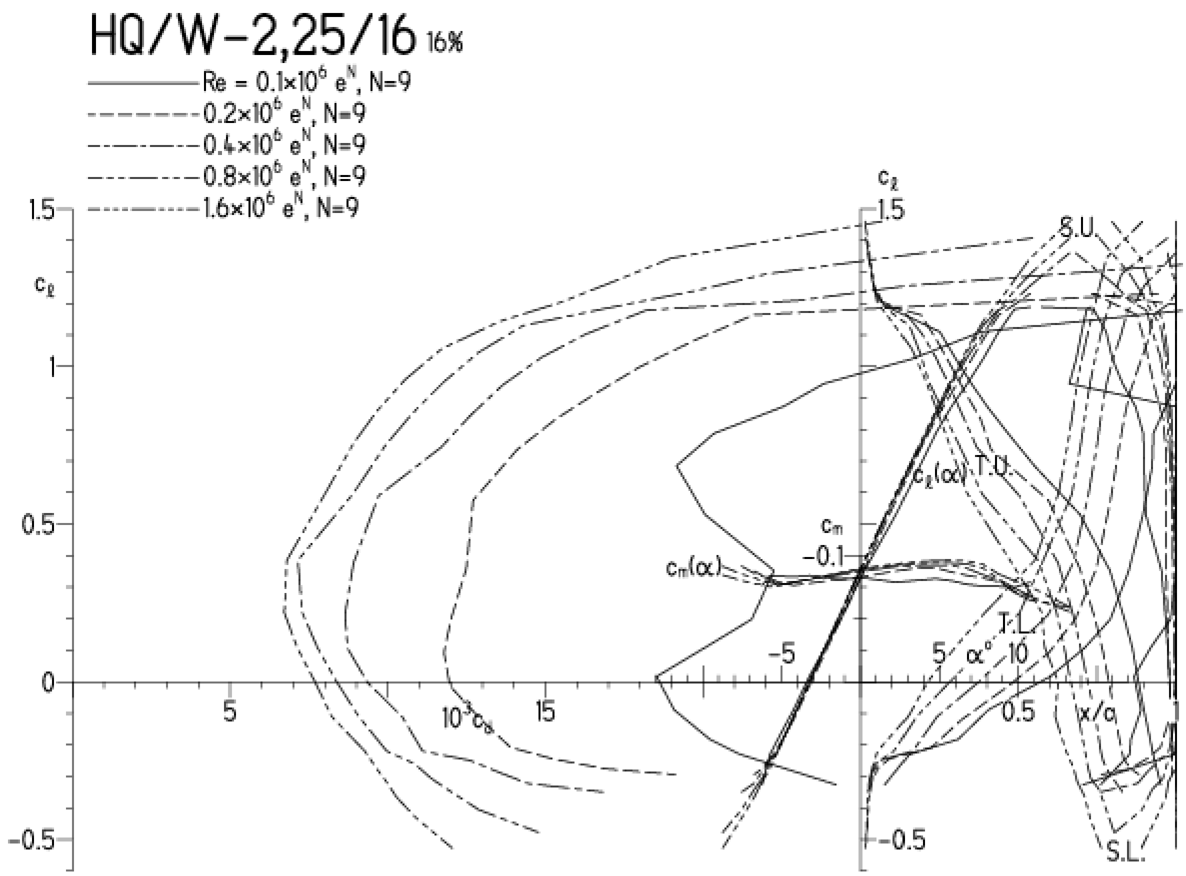


<u>HQ/W-2,25/16</u>, N=9

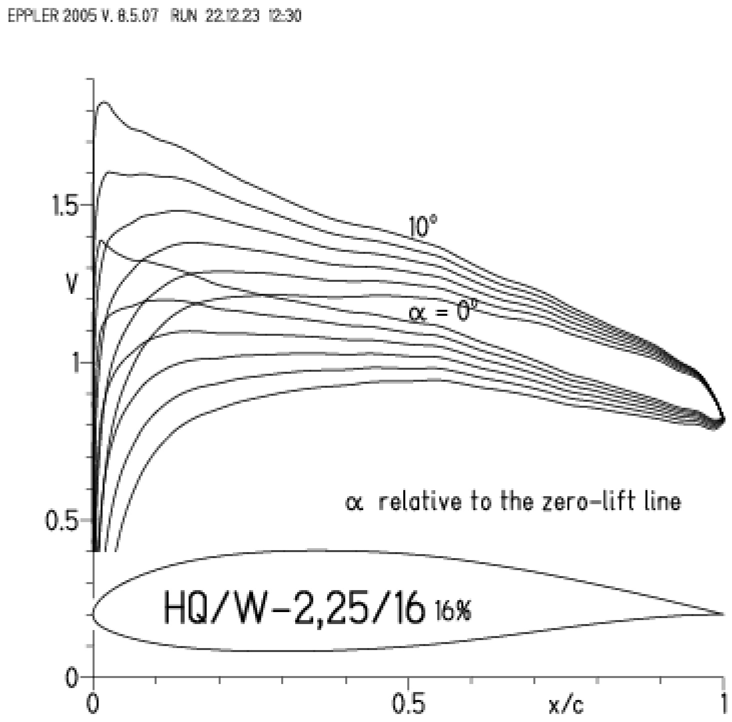
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

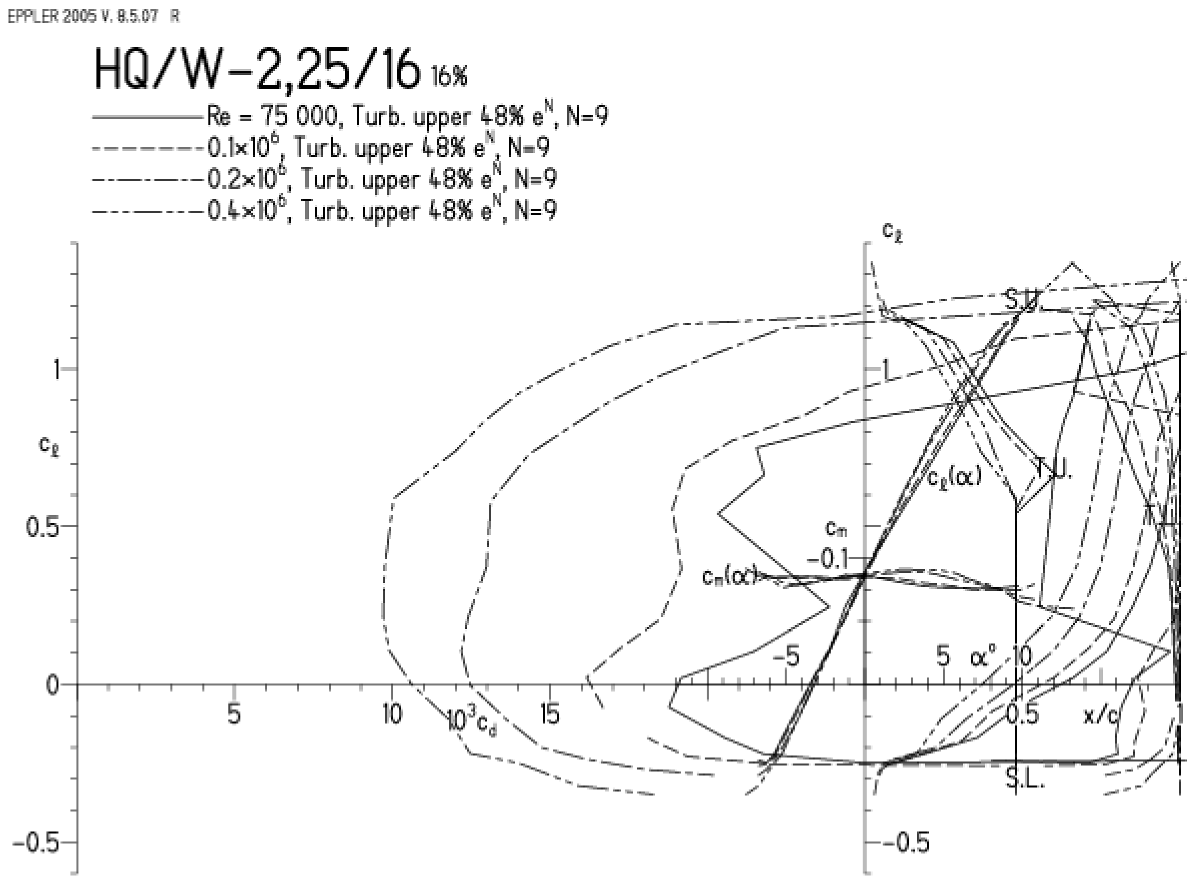


EPPLER 200



<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



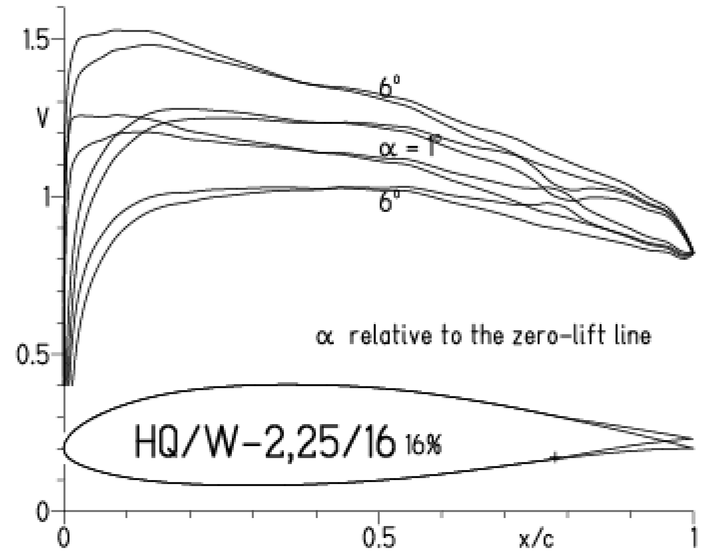


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

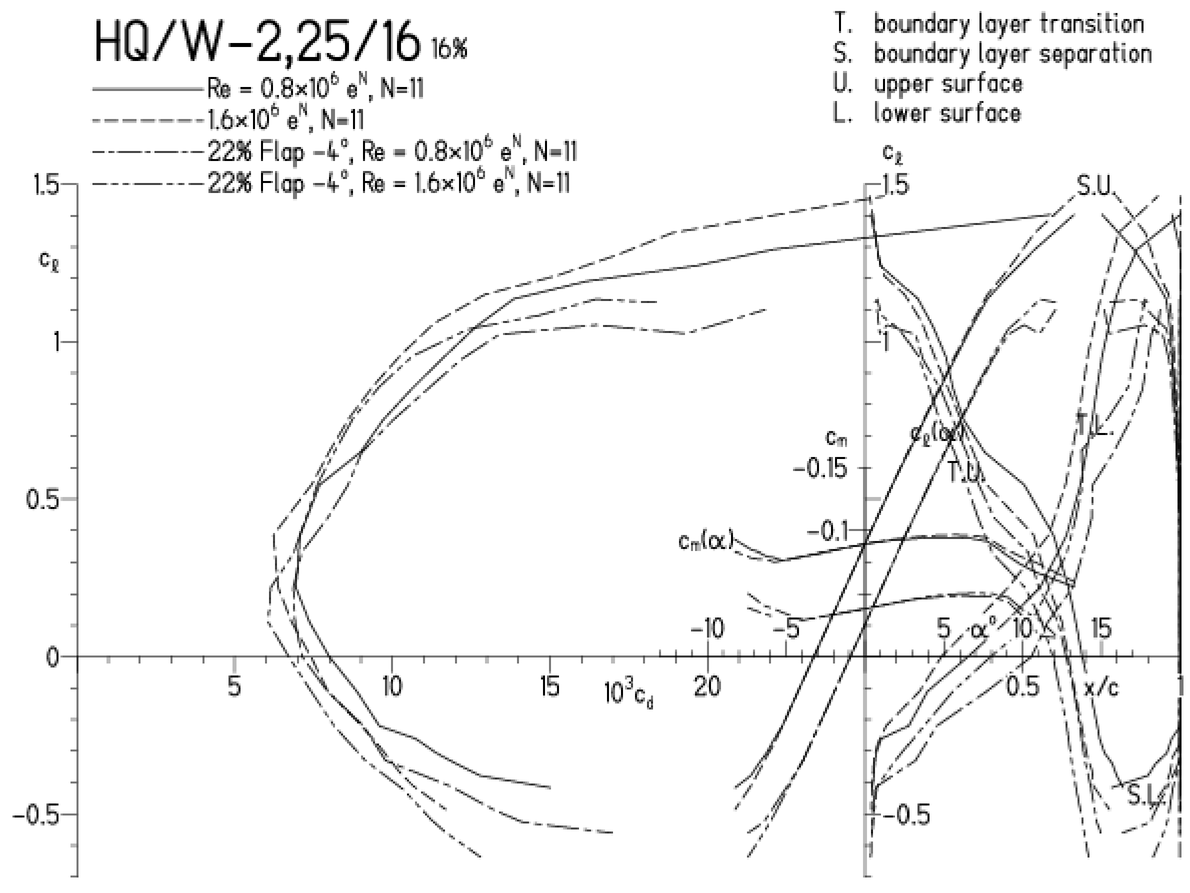
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

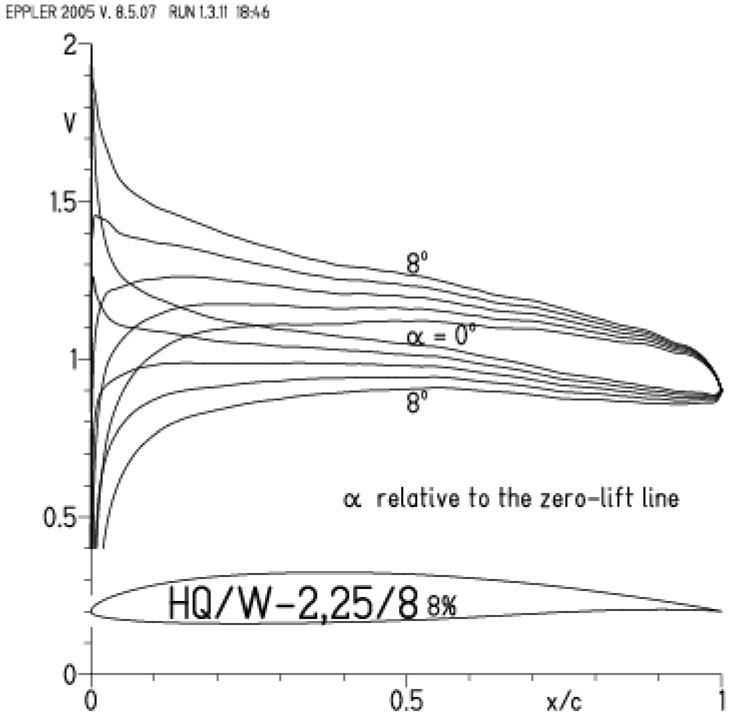
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

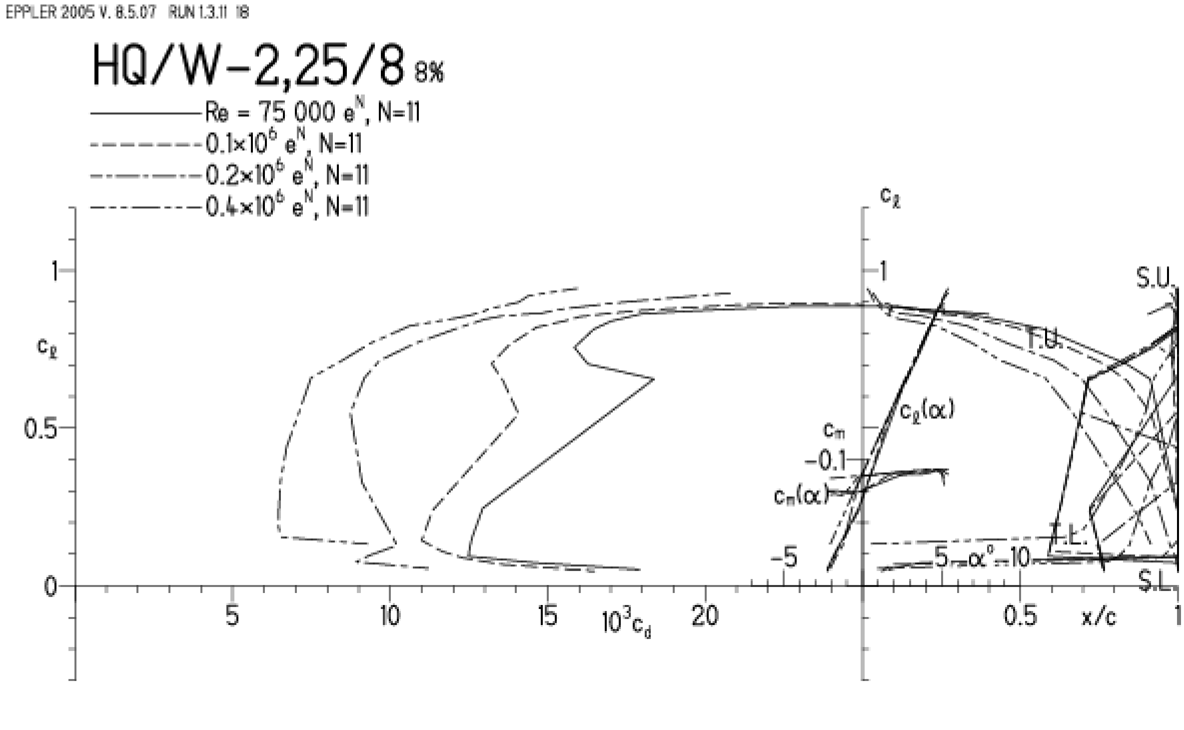


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

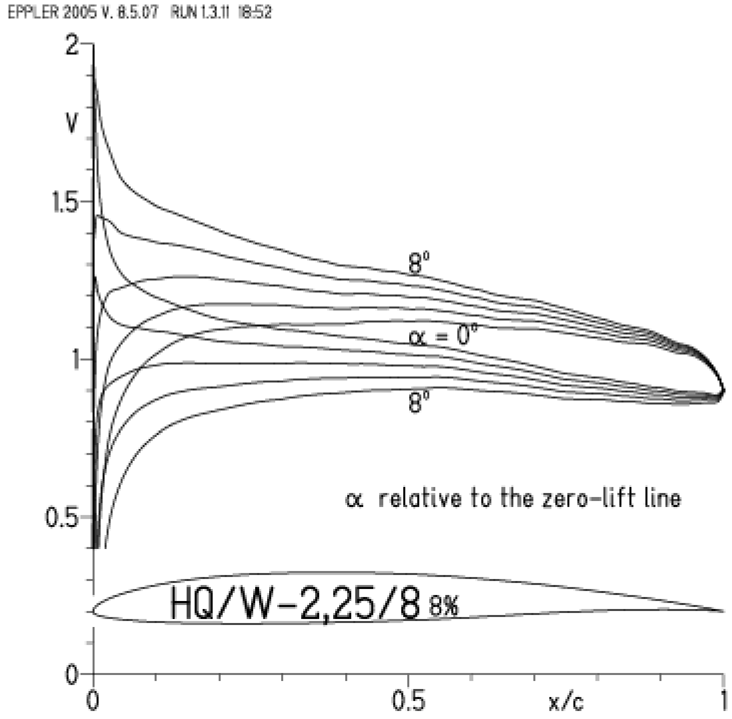


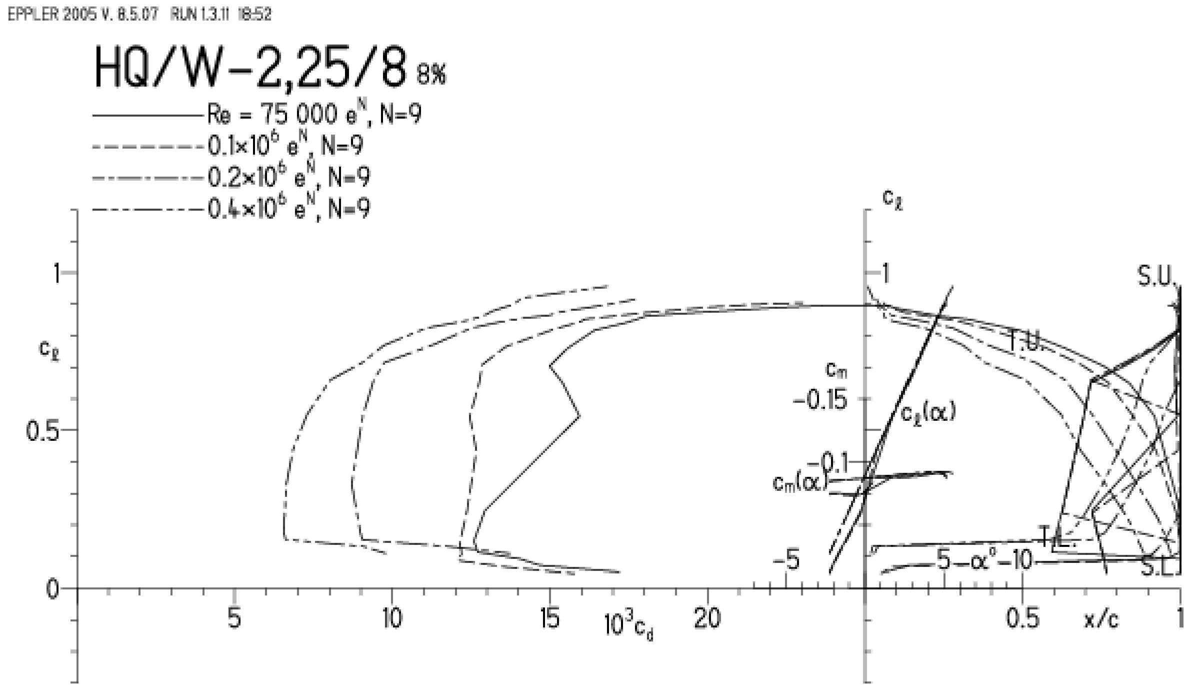
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

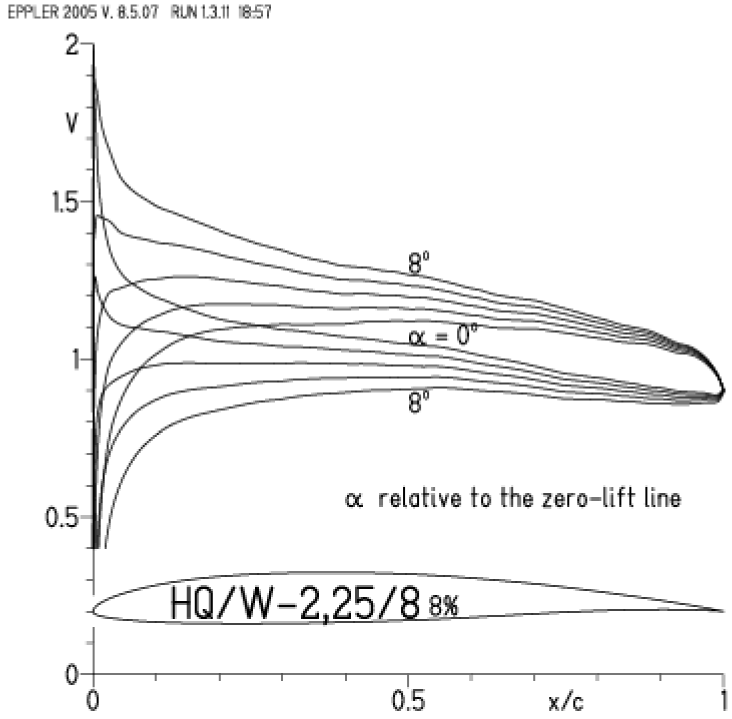

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
cℓ
1
cℓ
0.5
0
5
10
15
10³cd
20
cm
-0.1
cm(α)
cℓ(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

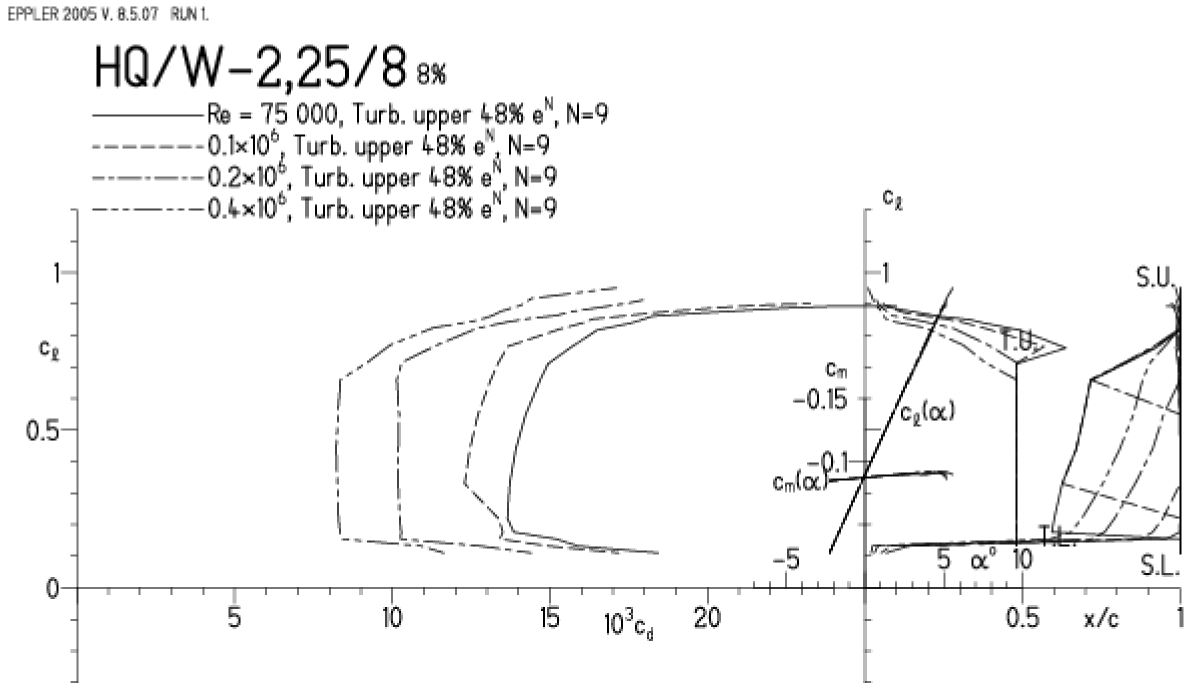
<u>HQ/W-2,25/8</u>, N=9



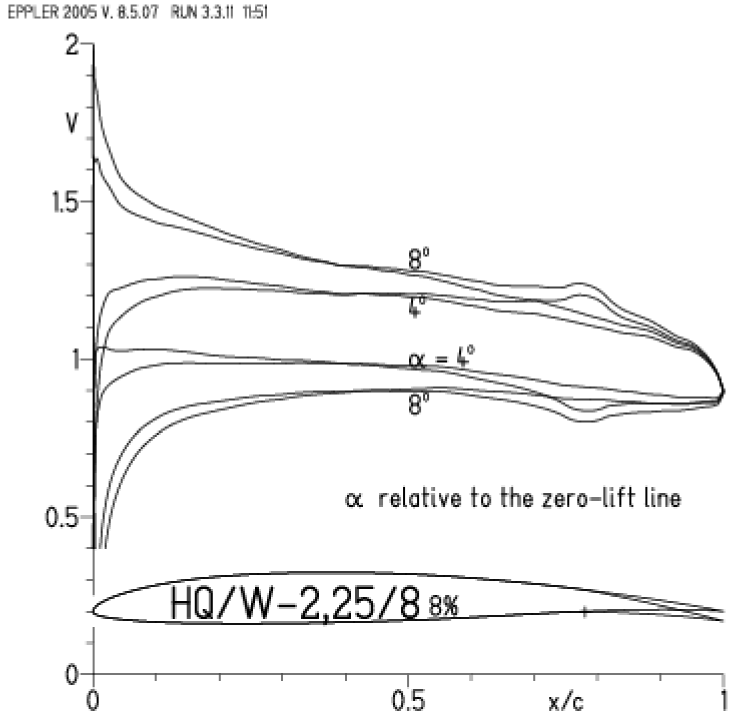


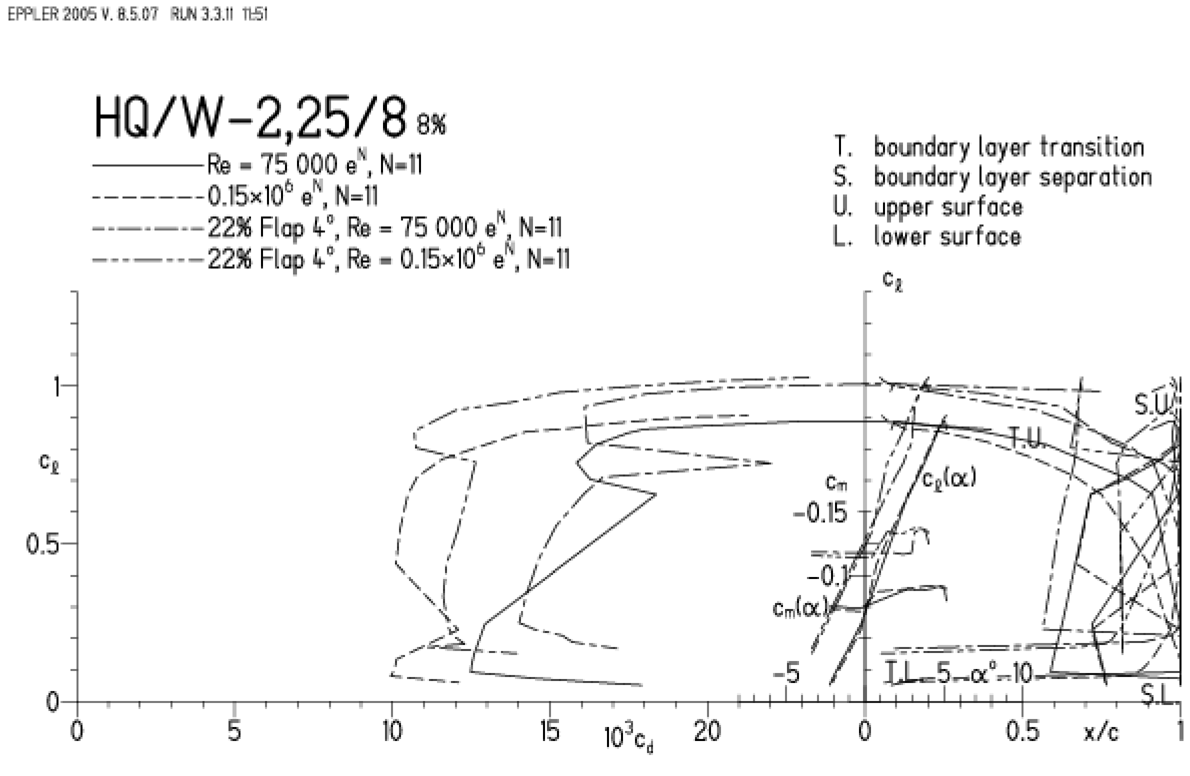
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



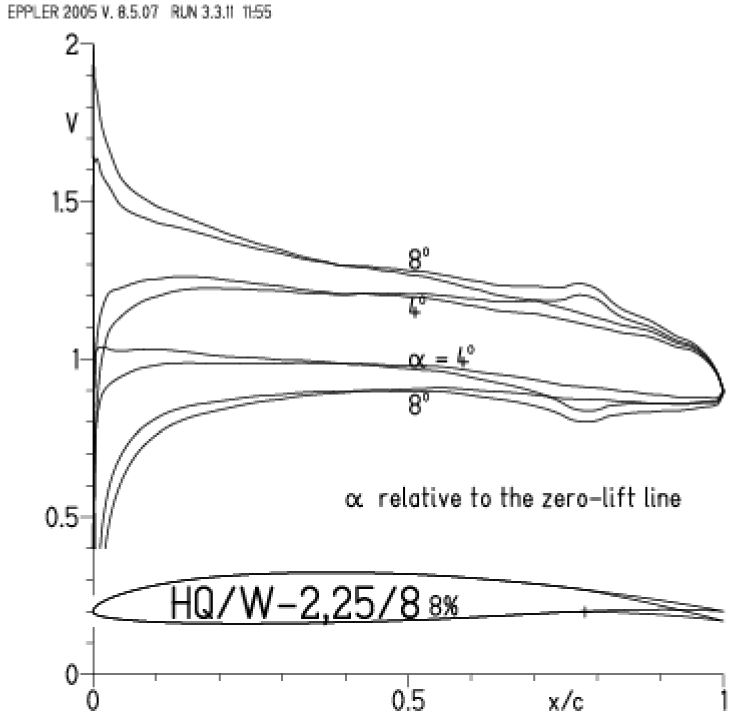


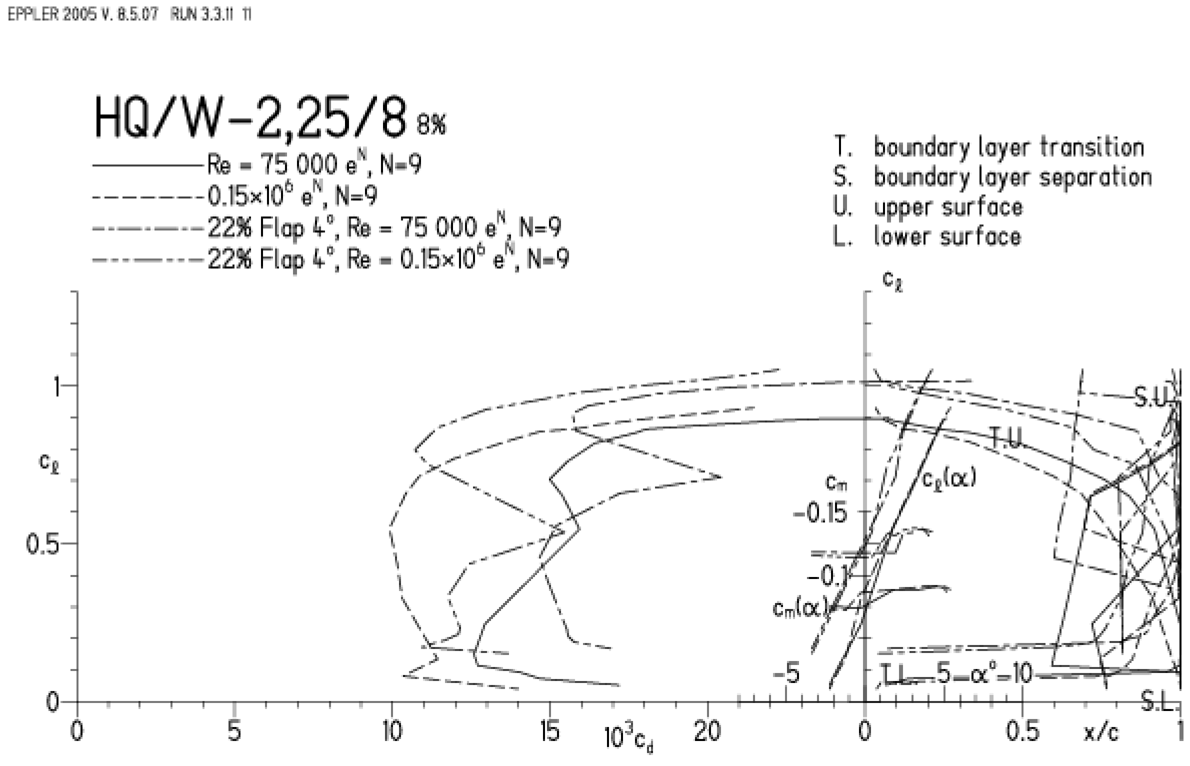
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



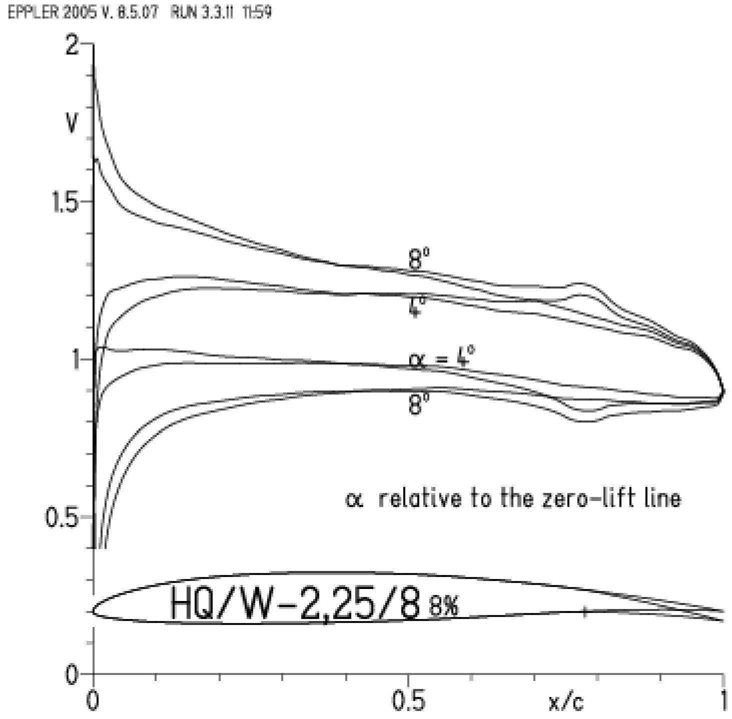


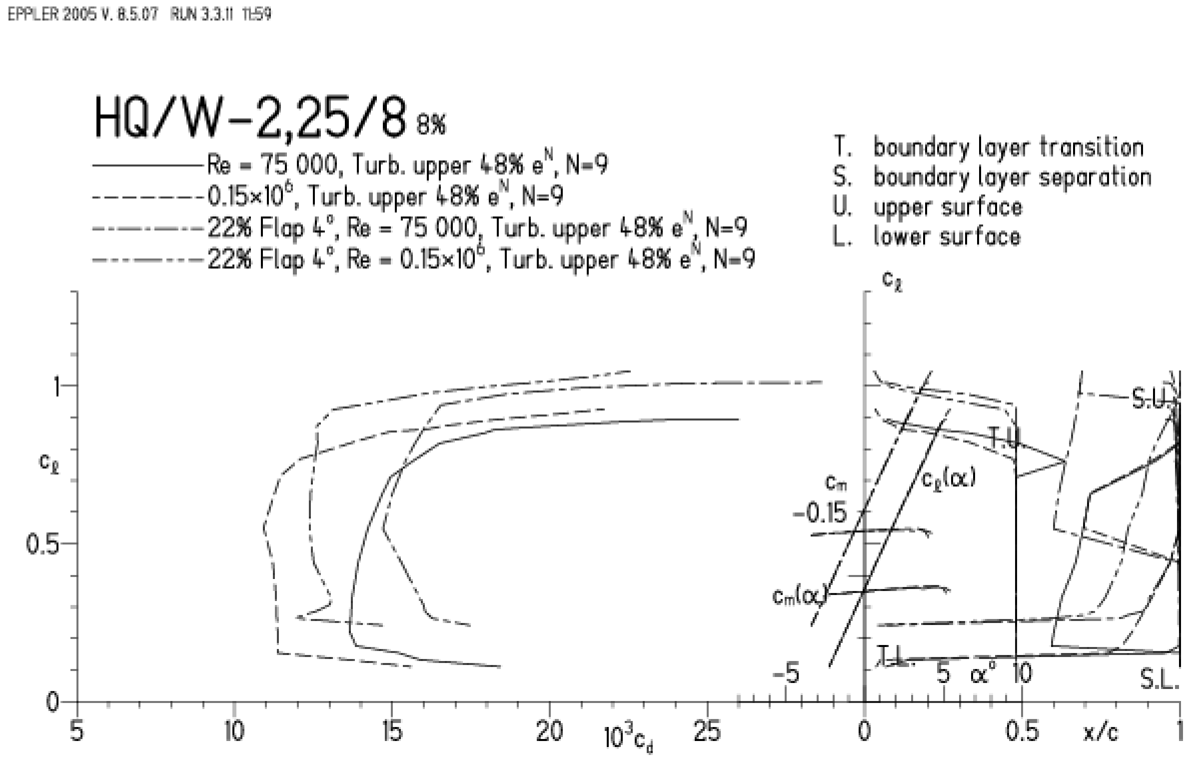
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag



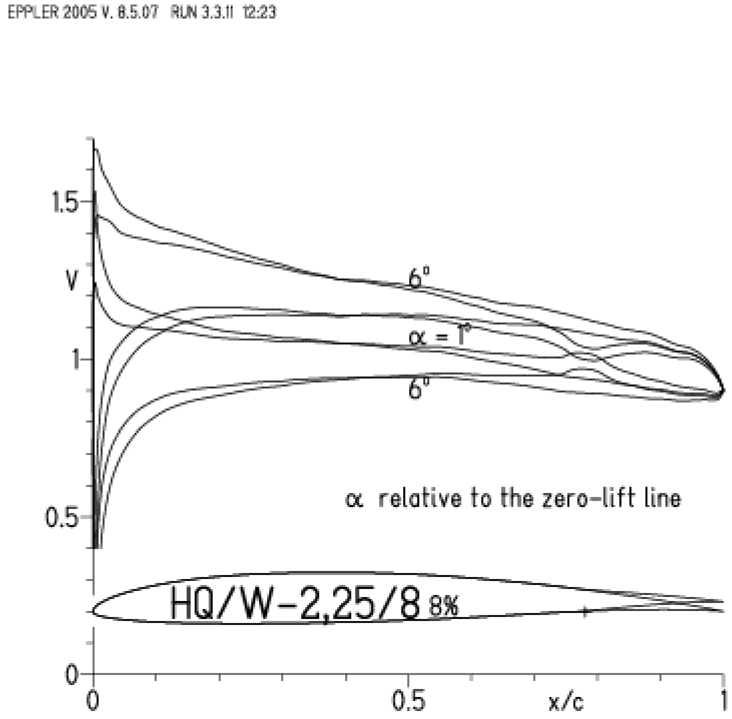


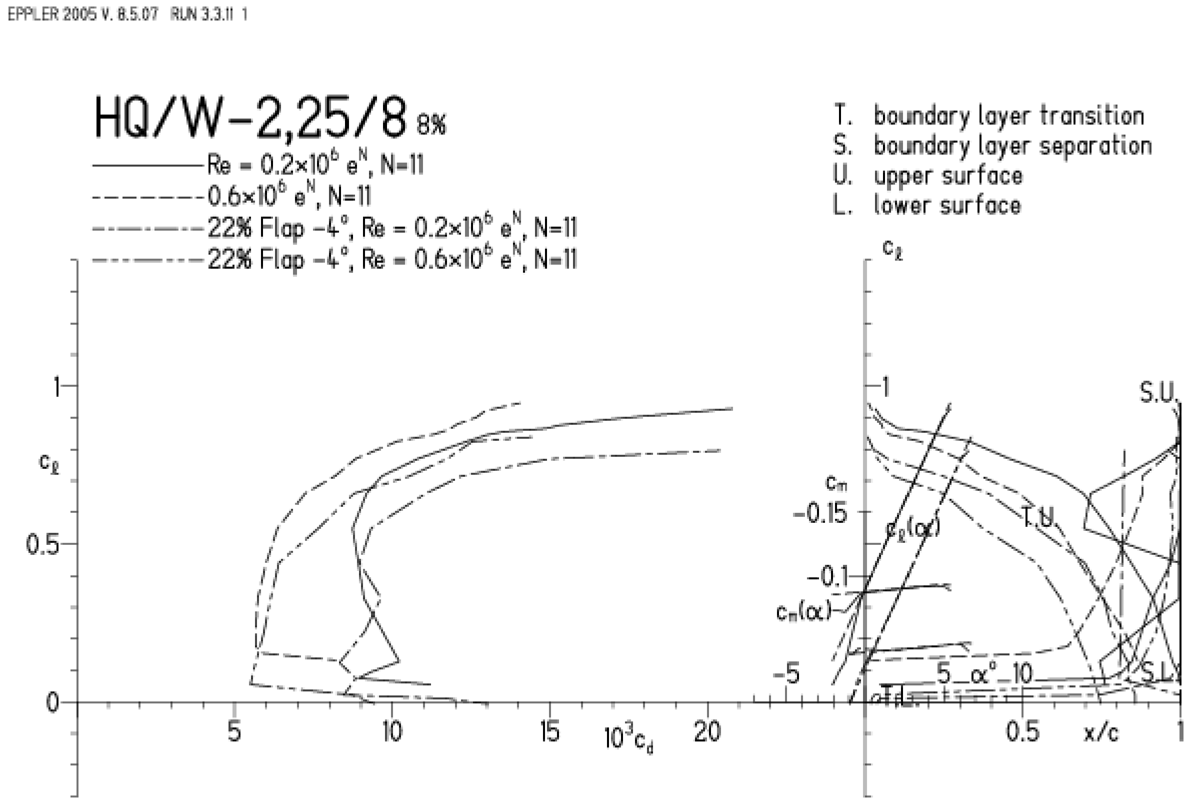
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



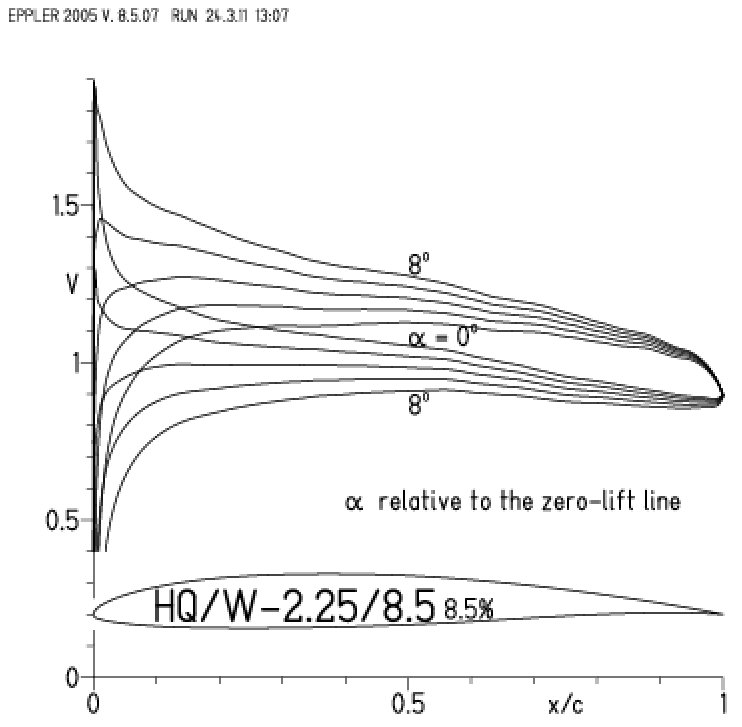


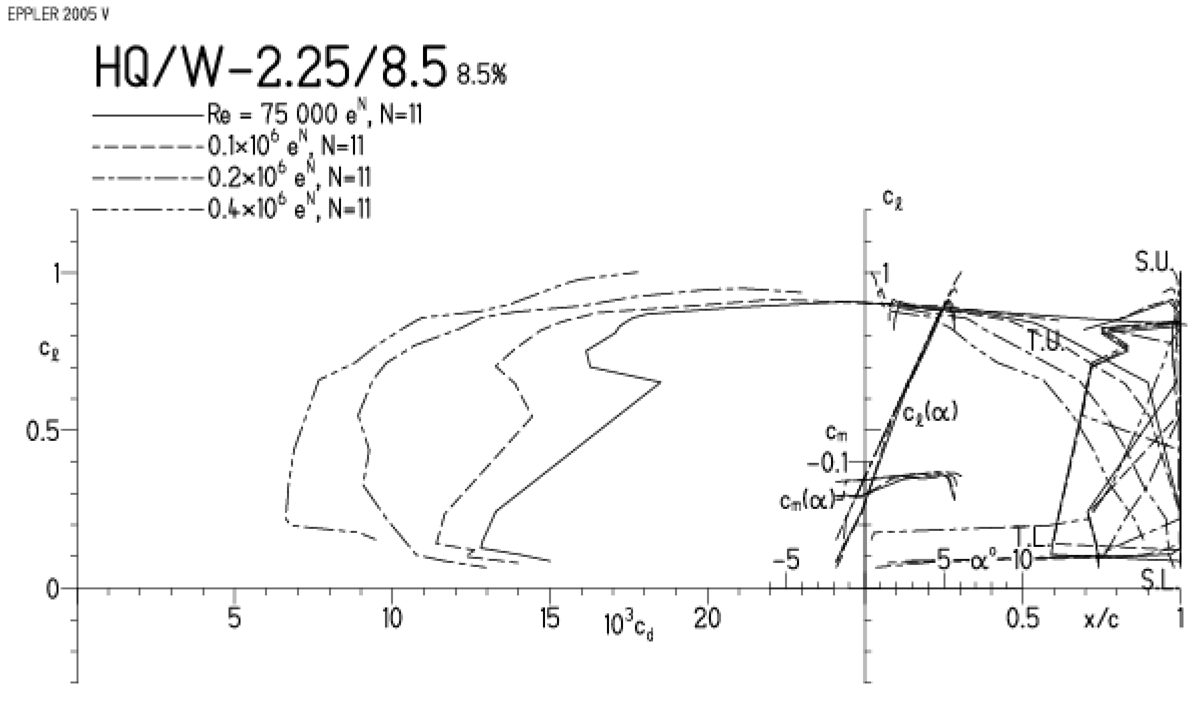
<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)





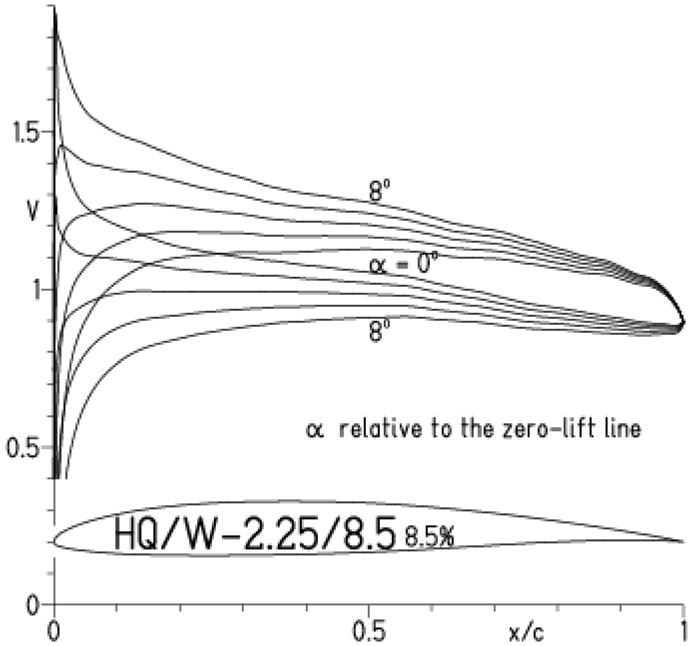
HQ/W-2,25/8,5, N=11



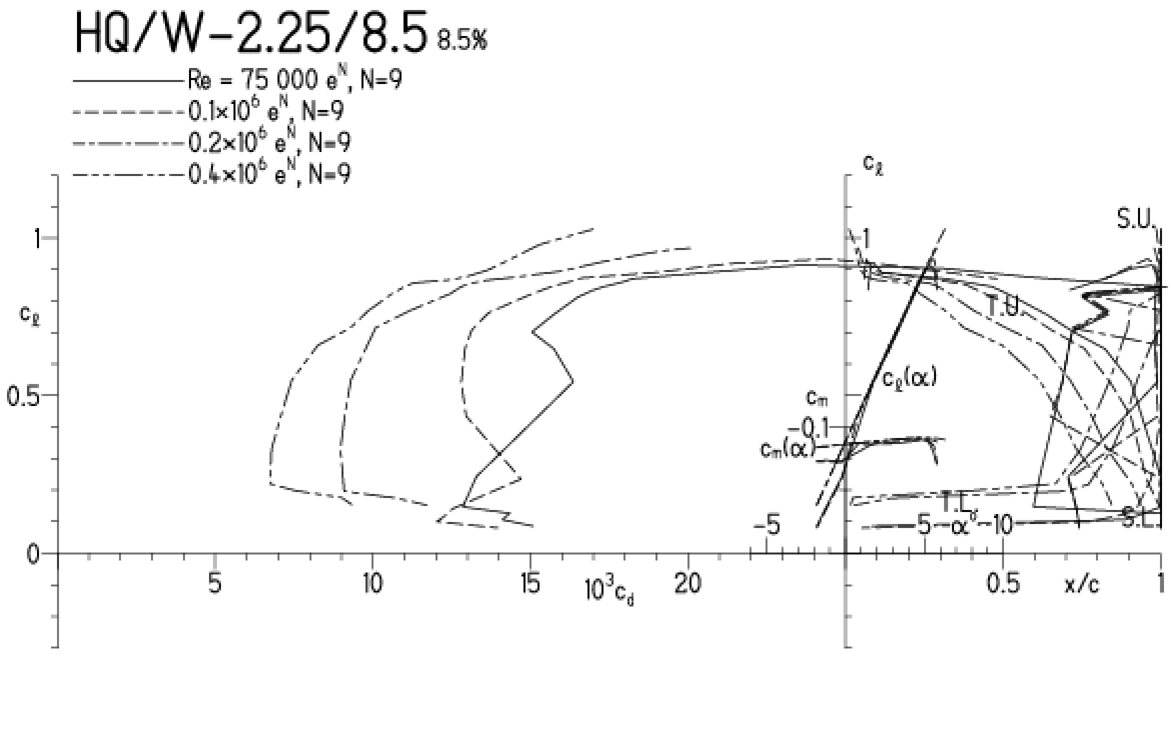


HQ/W-2,25/8,5, N=9

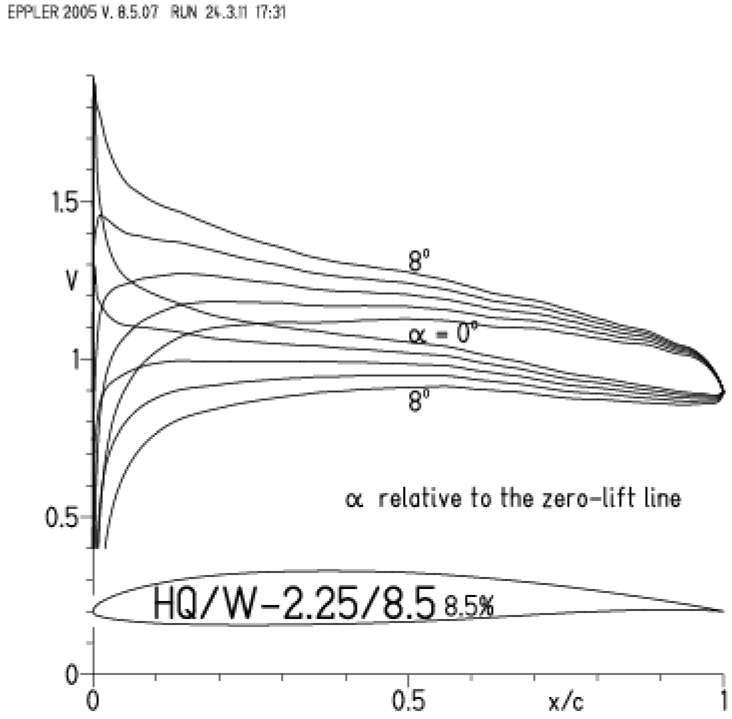
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

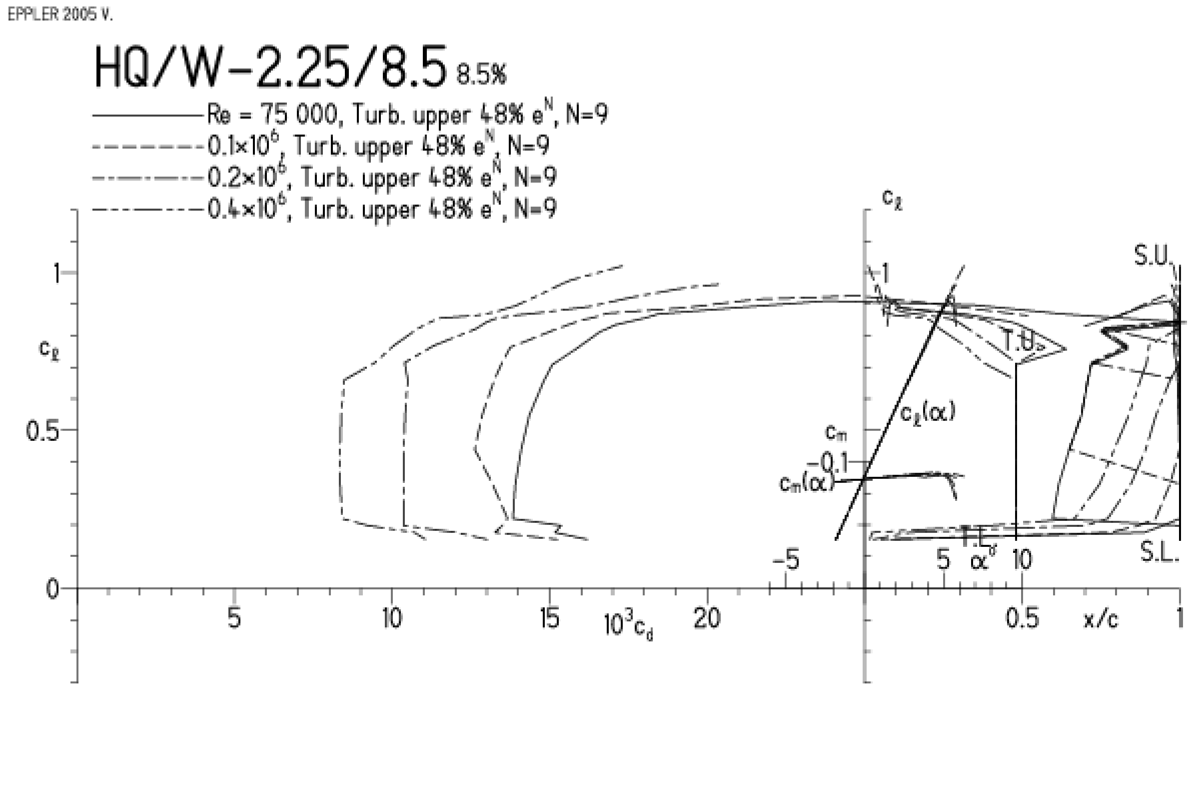


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



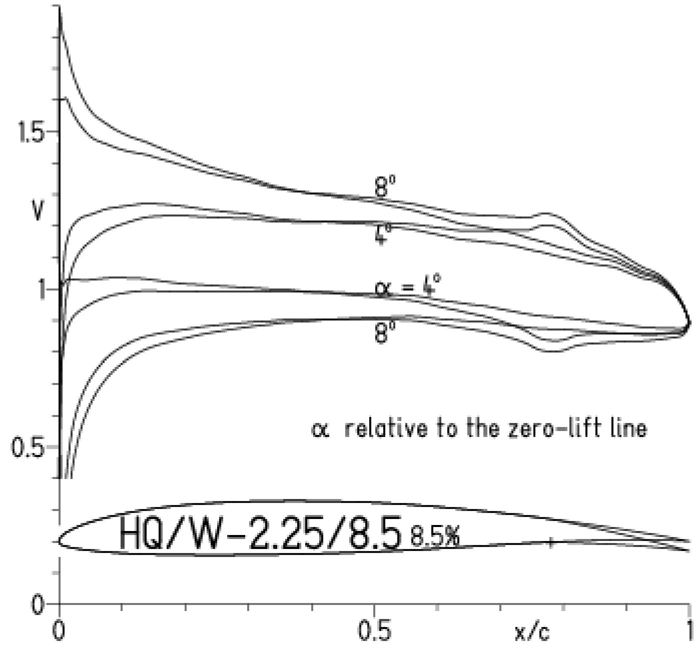
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



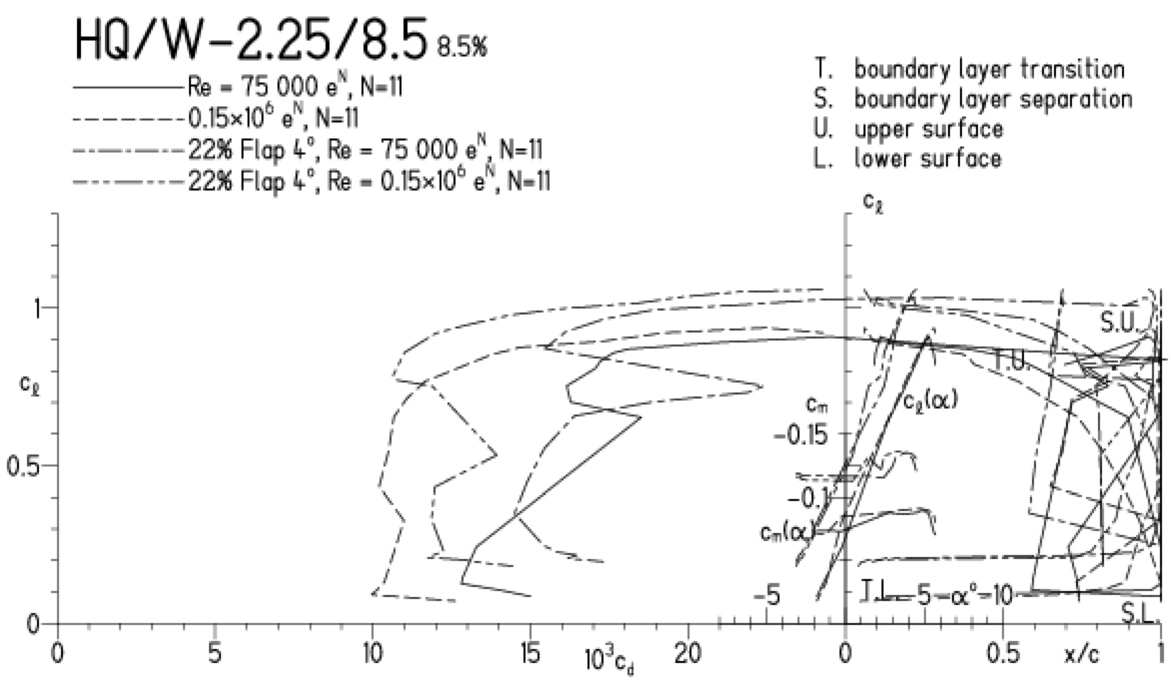


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

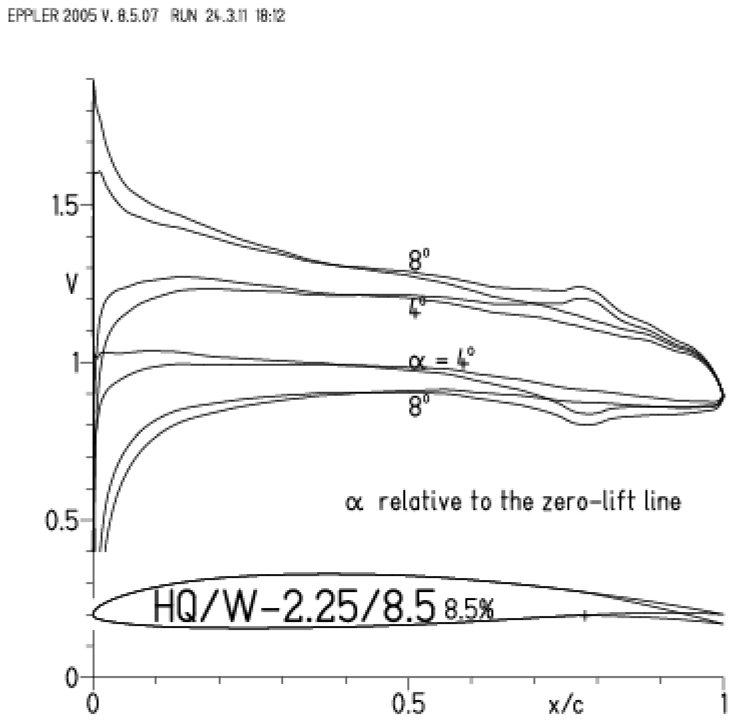
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

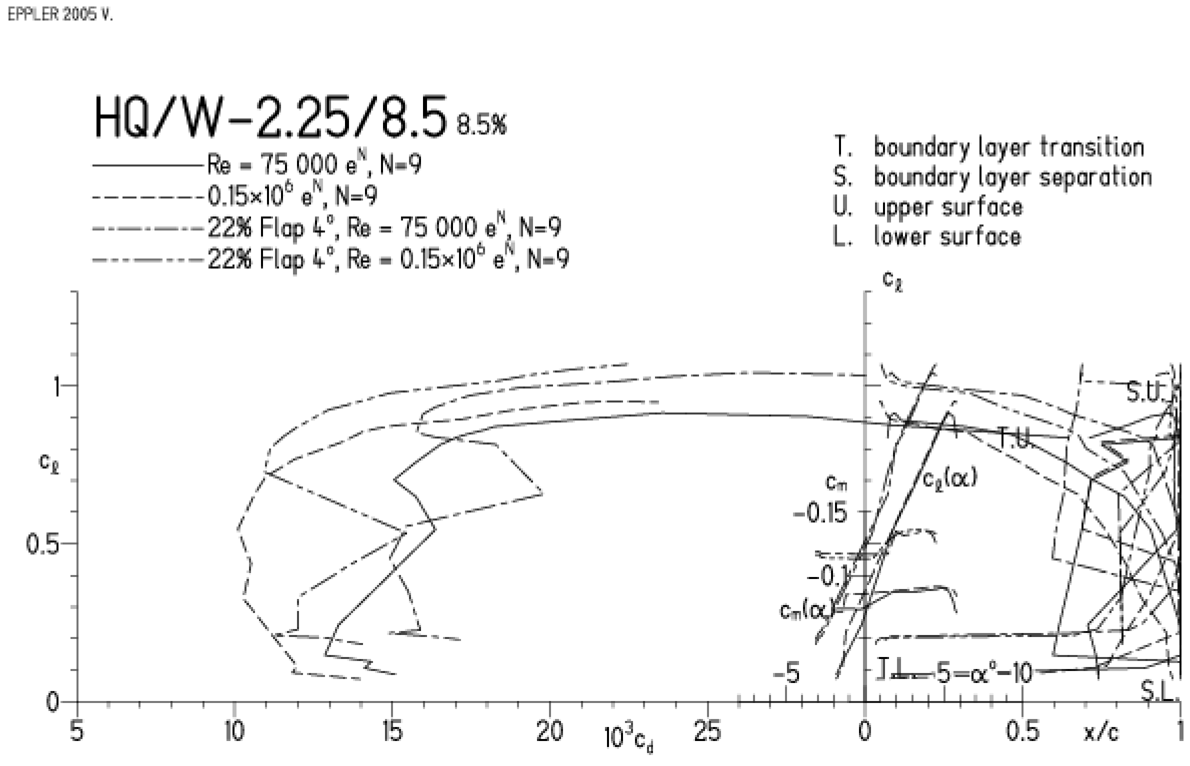


EPPLER 2005 V. 8.5.



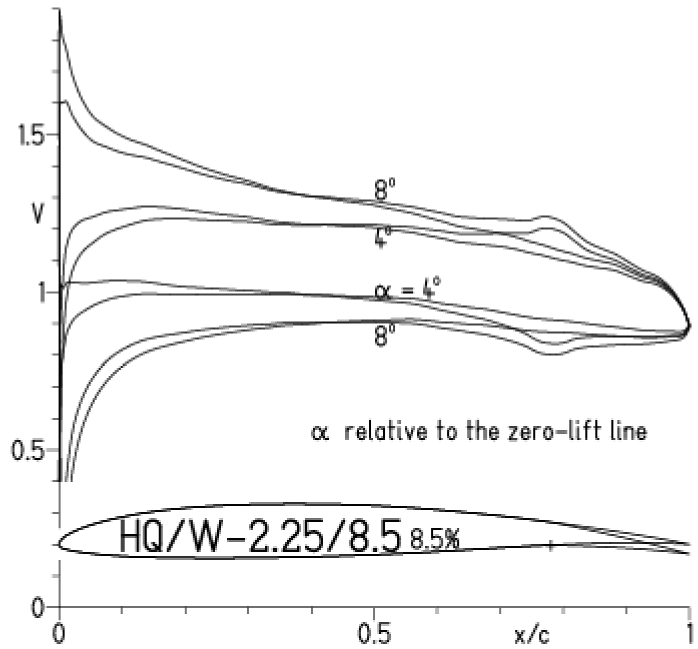
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



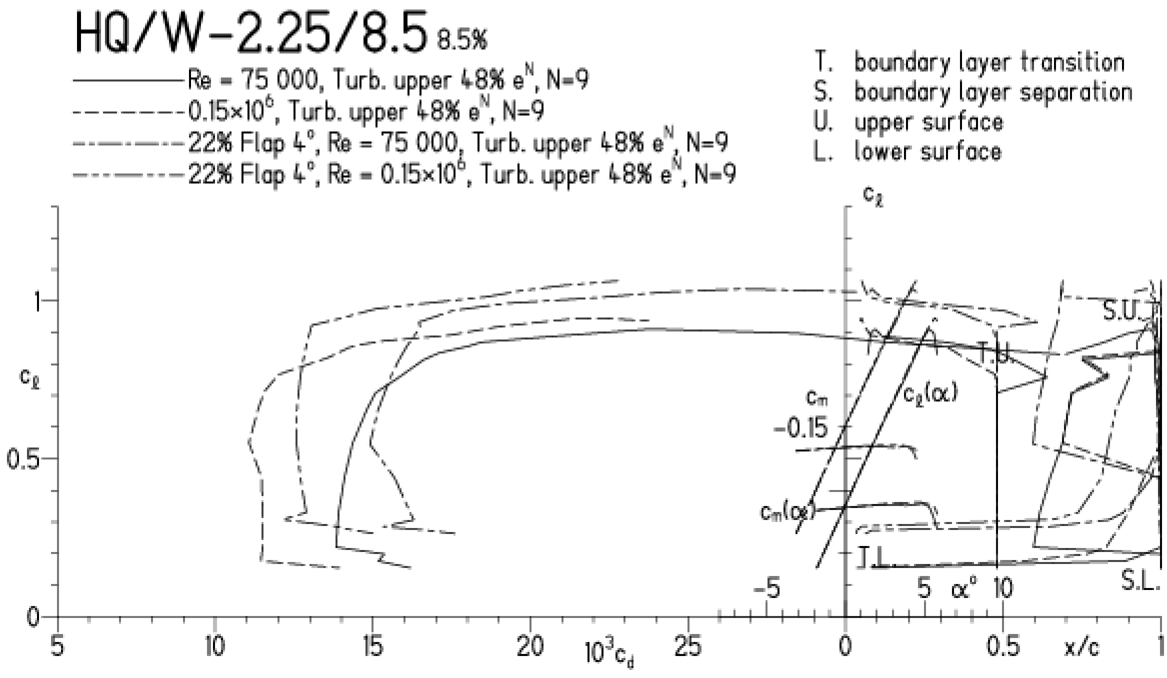


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

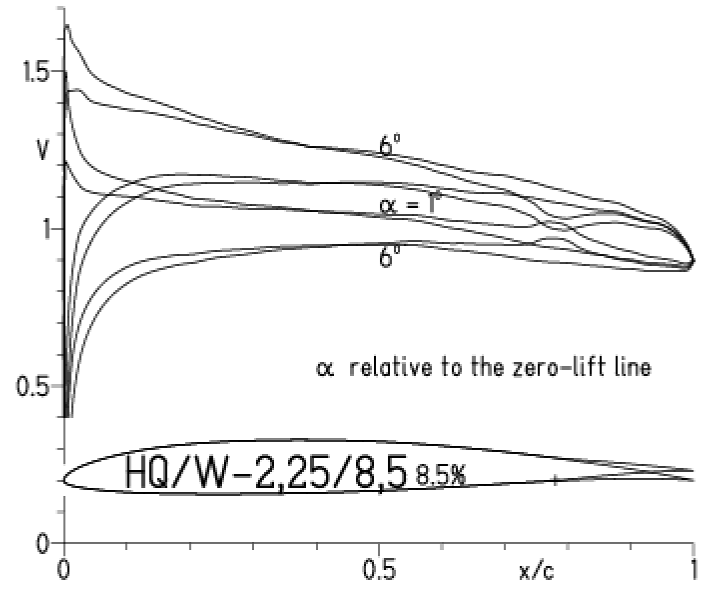


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

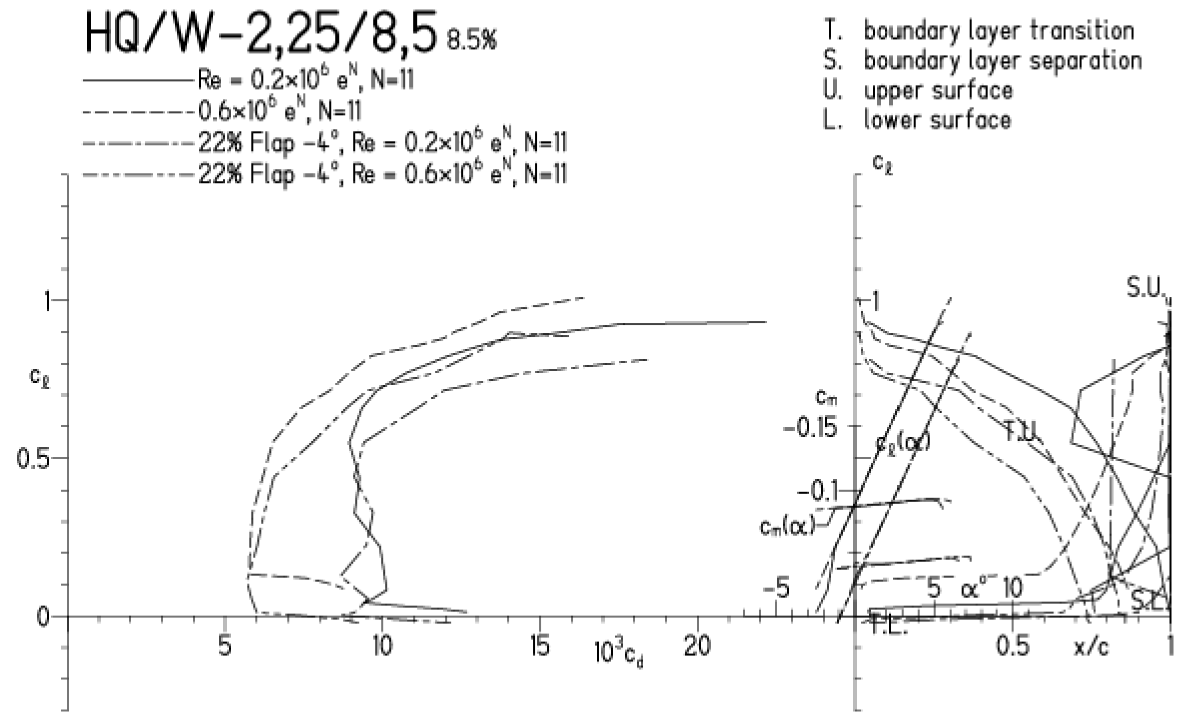


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

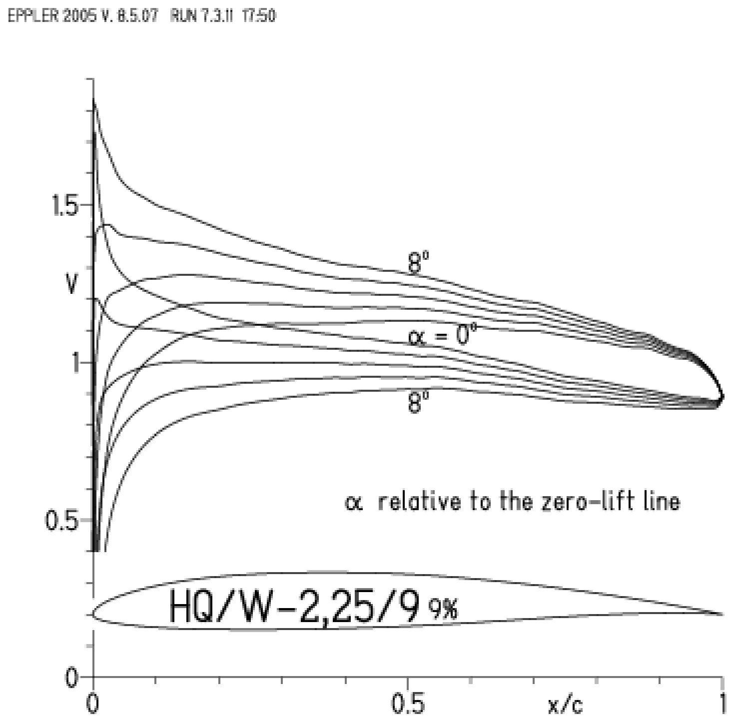
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

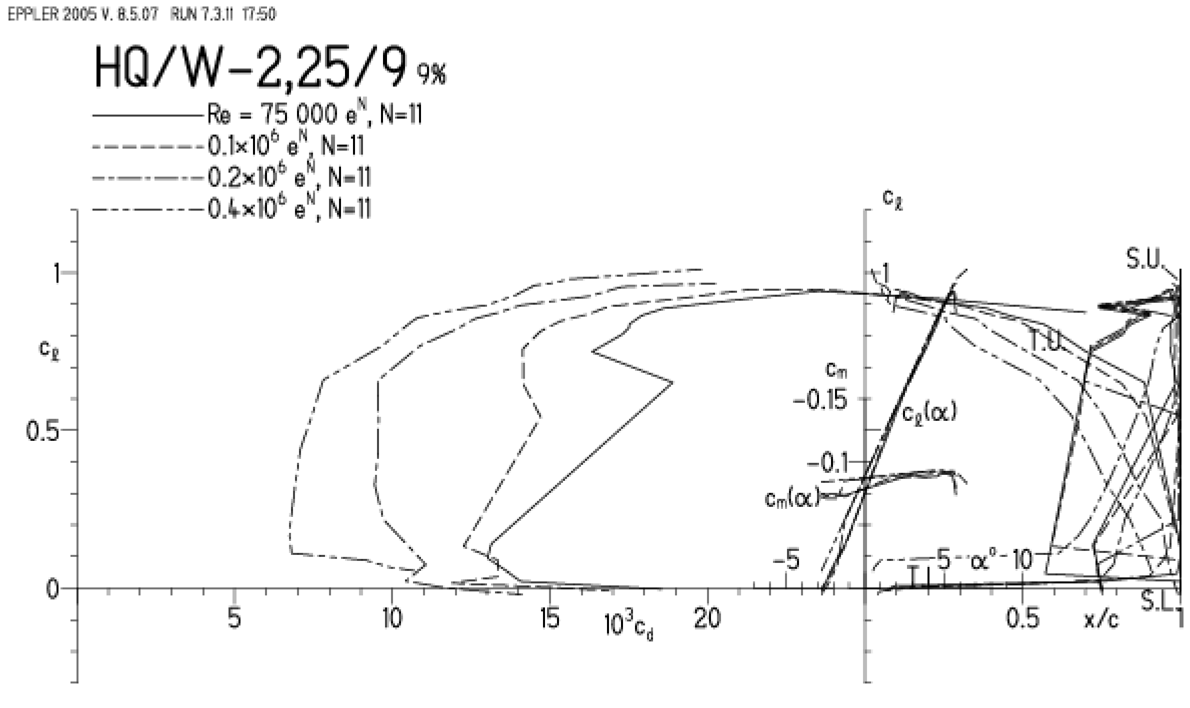


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



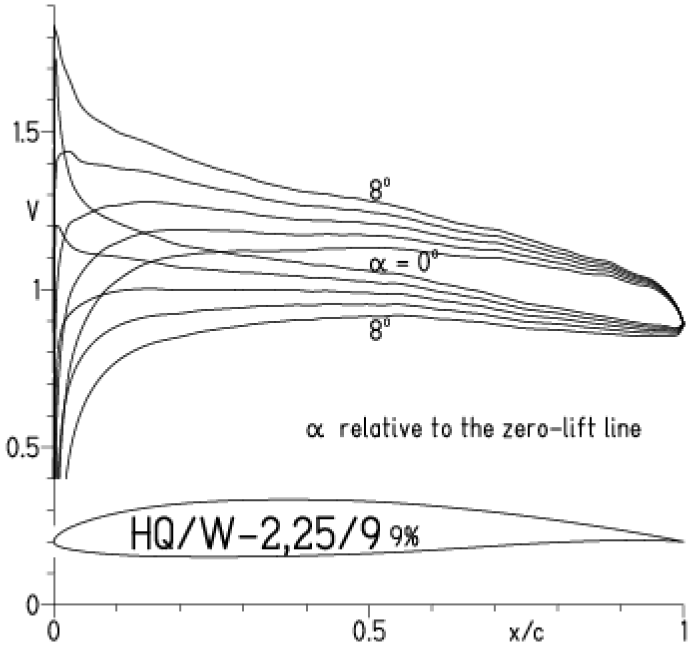
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

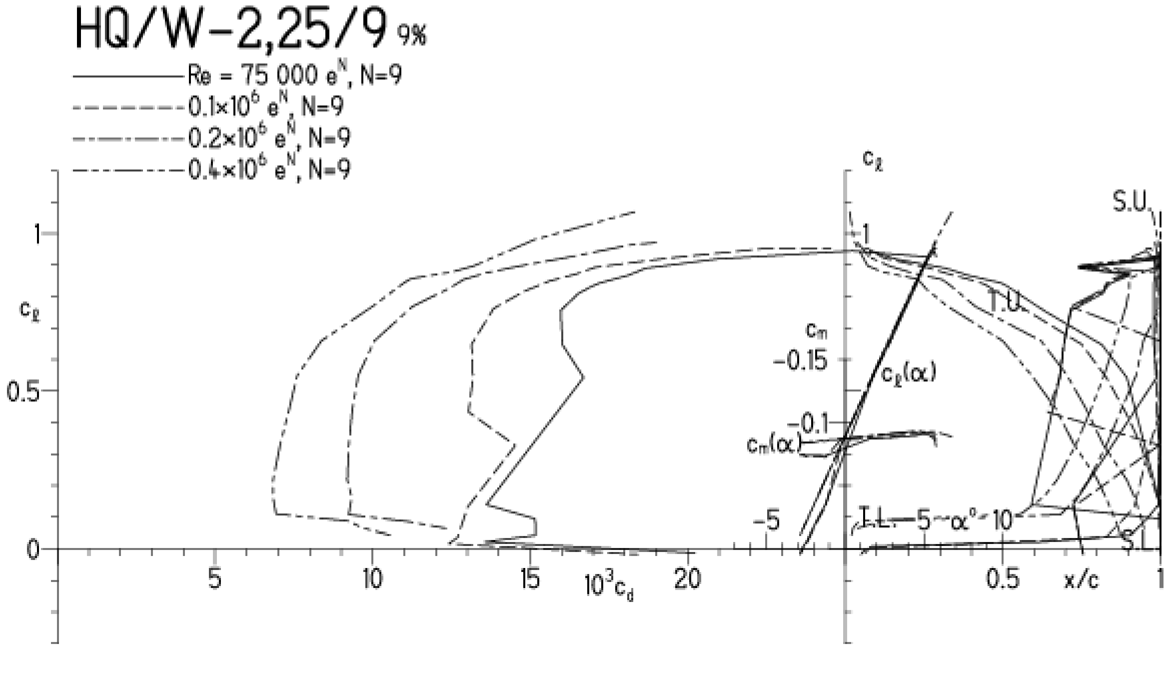

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

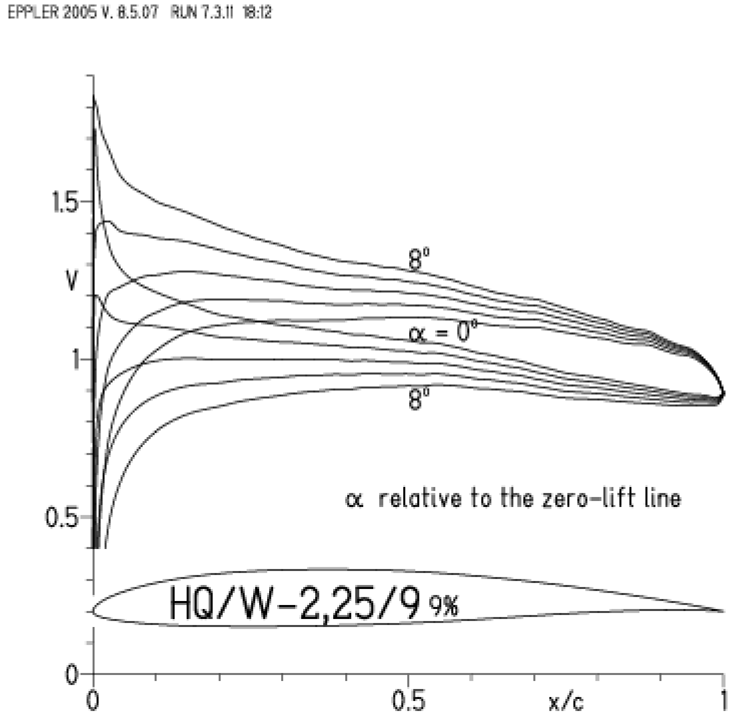
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

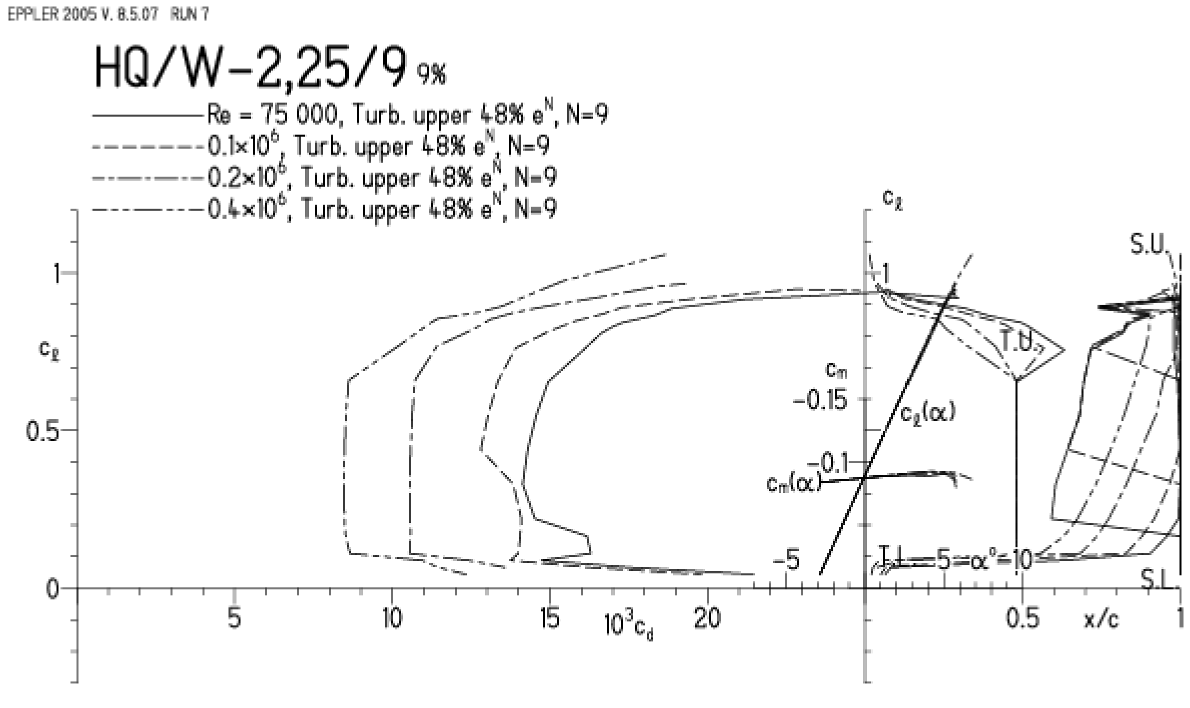


EPPLER 2005 V. 8.



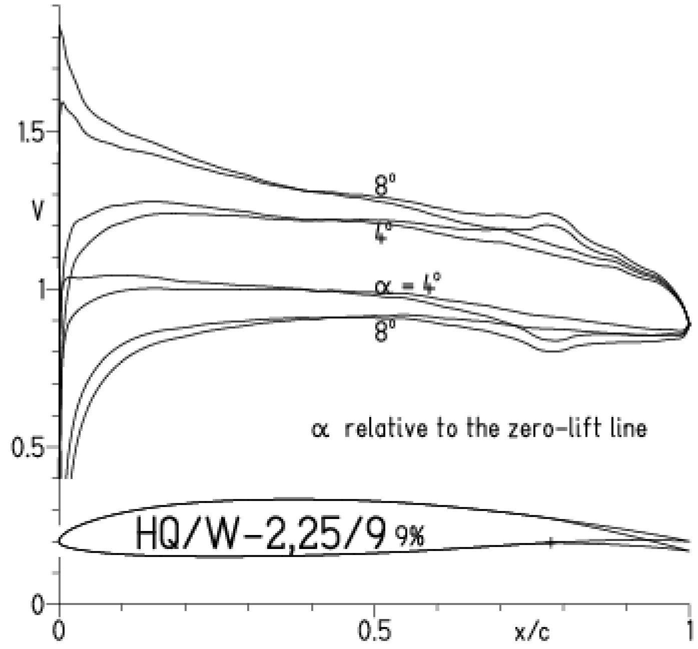
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



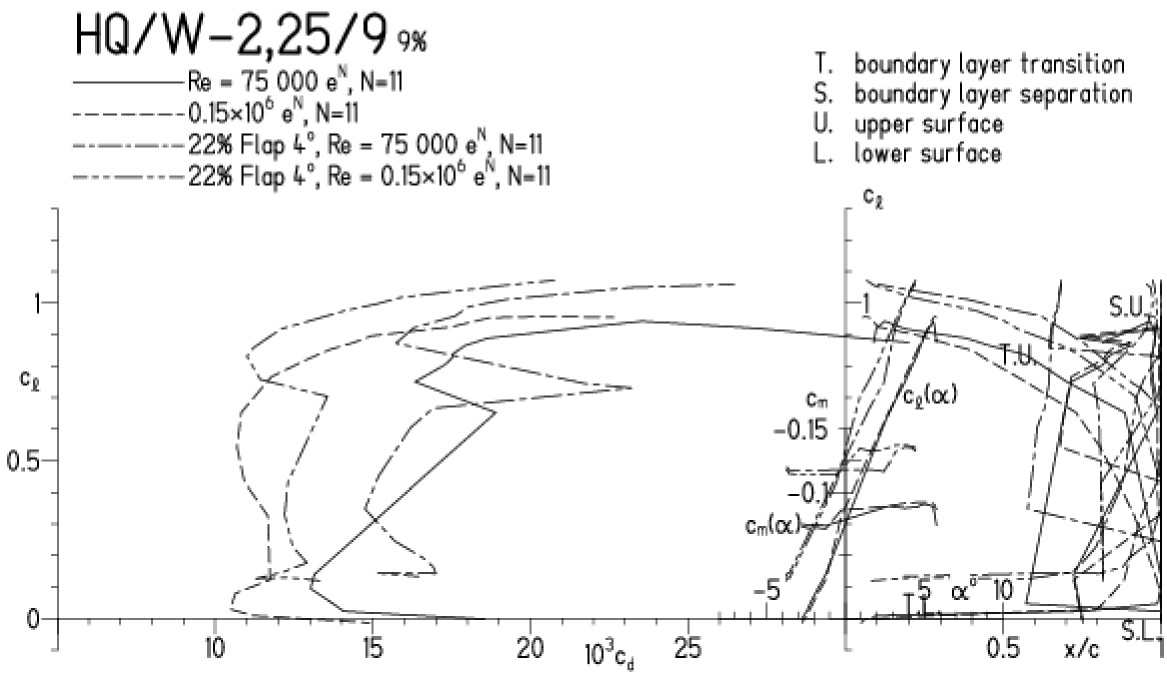


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

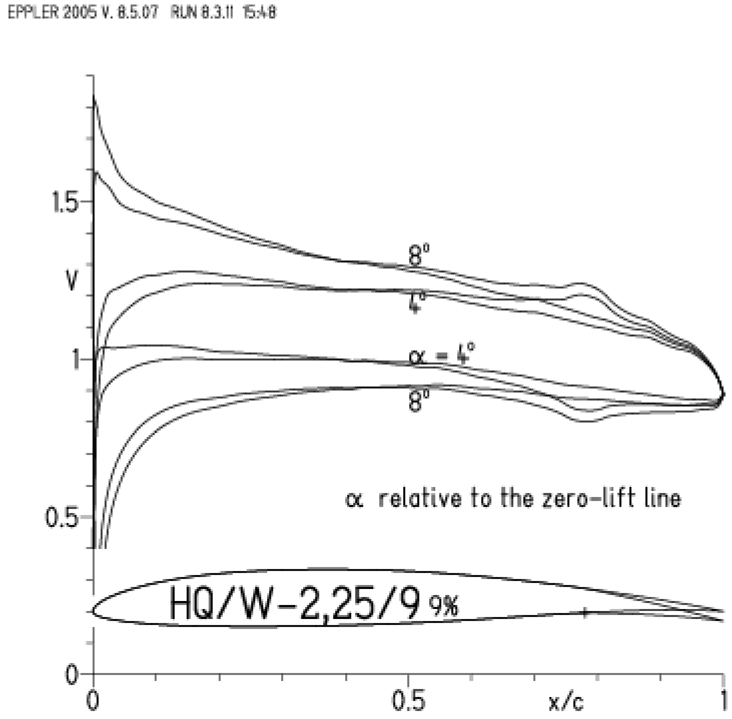
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

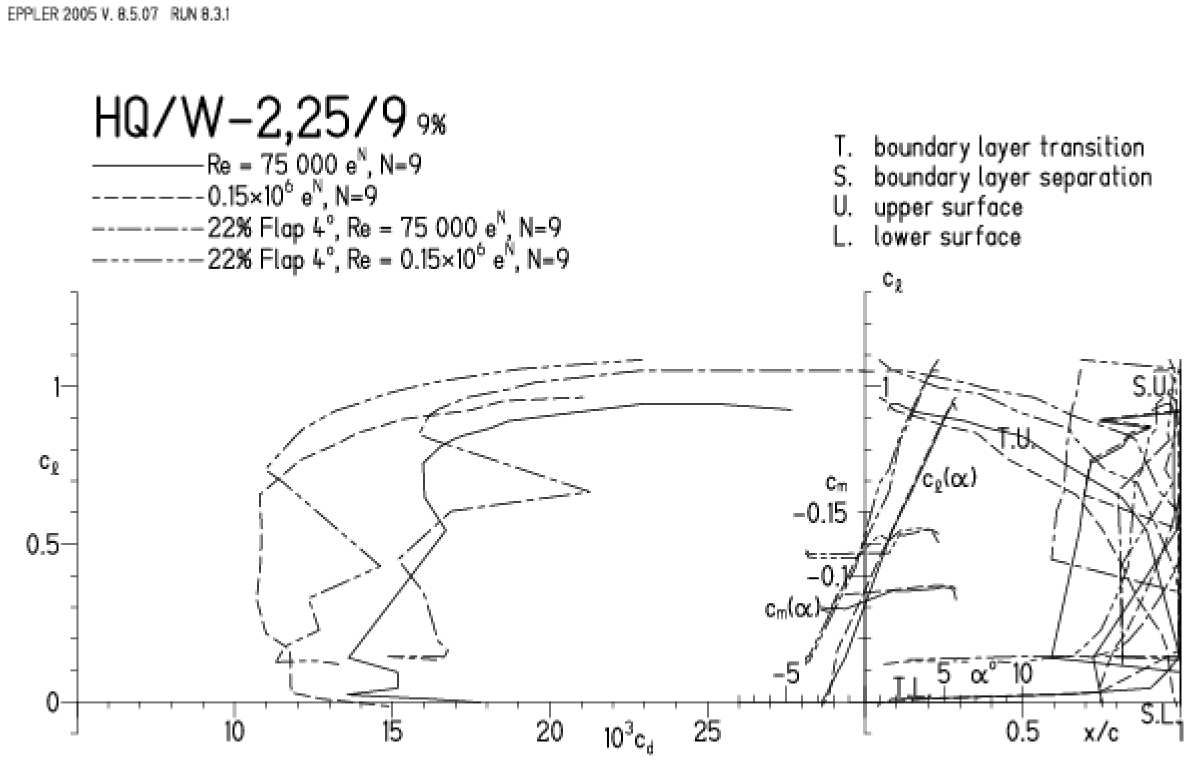


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



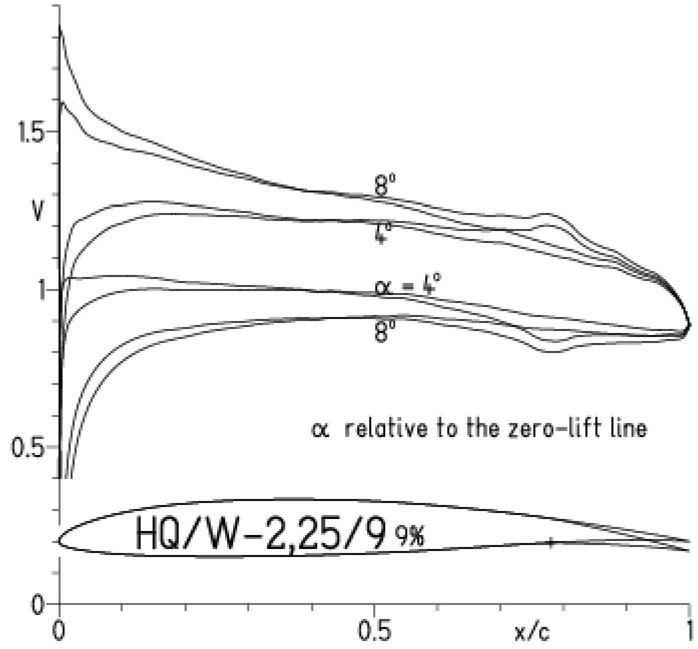
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag



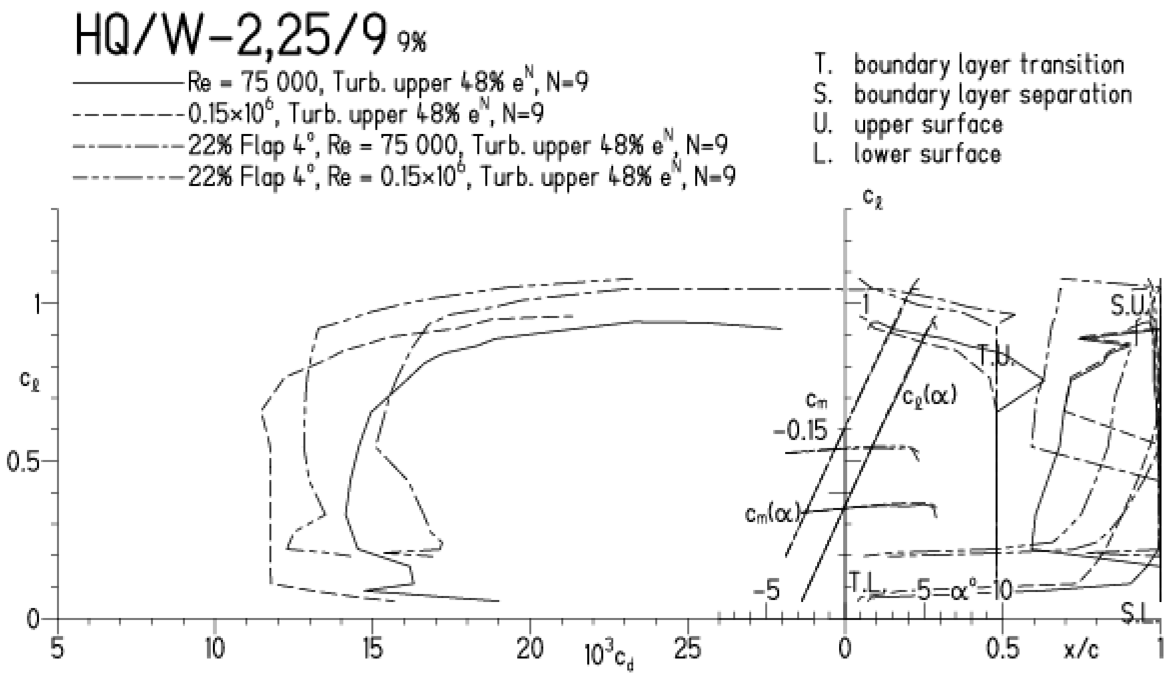


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

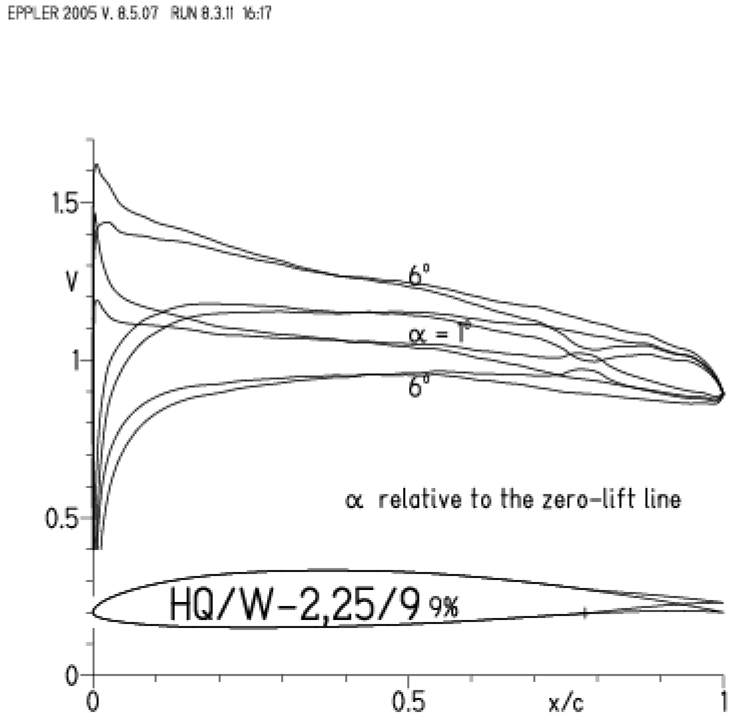
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

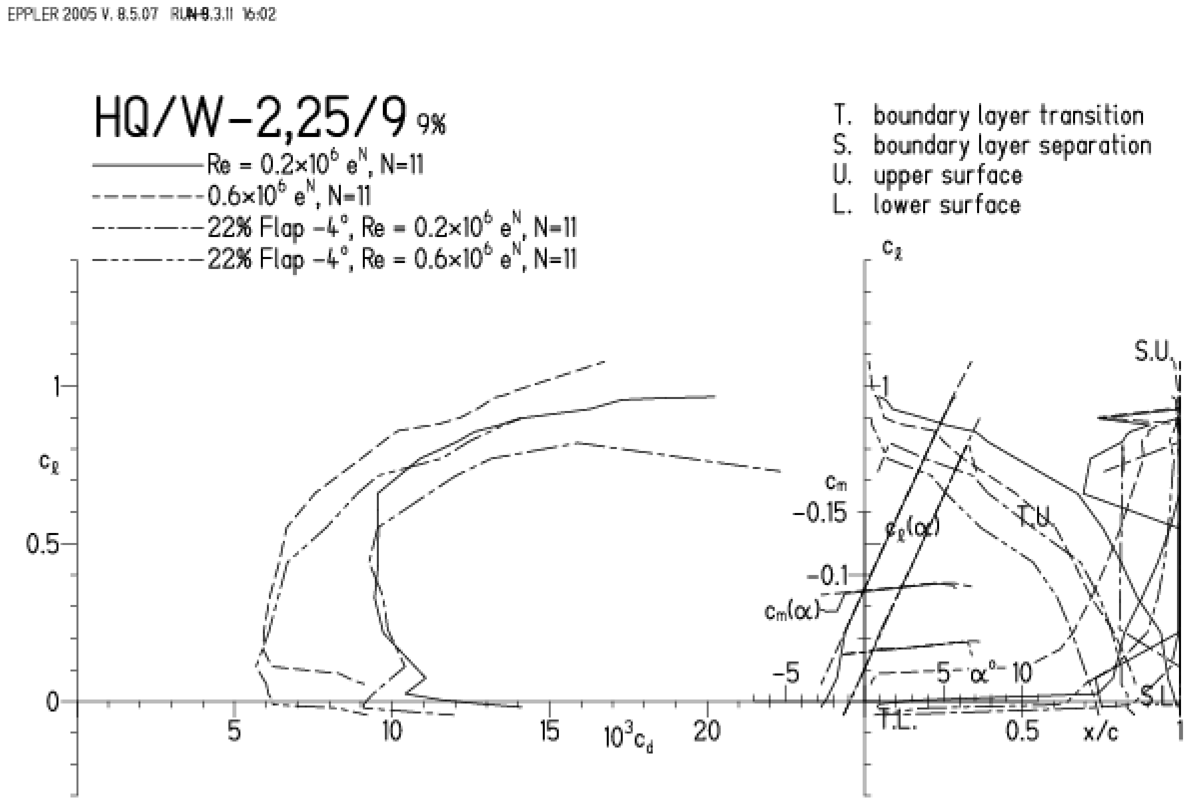


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

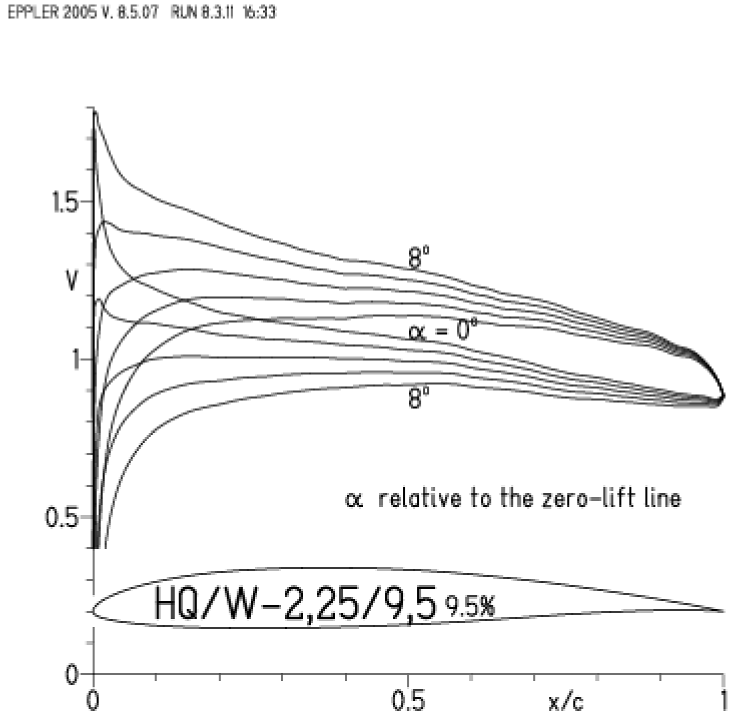


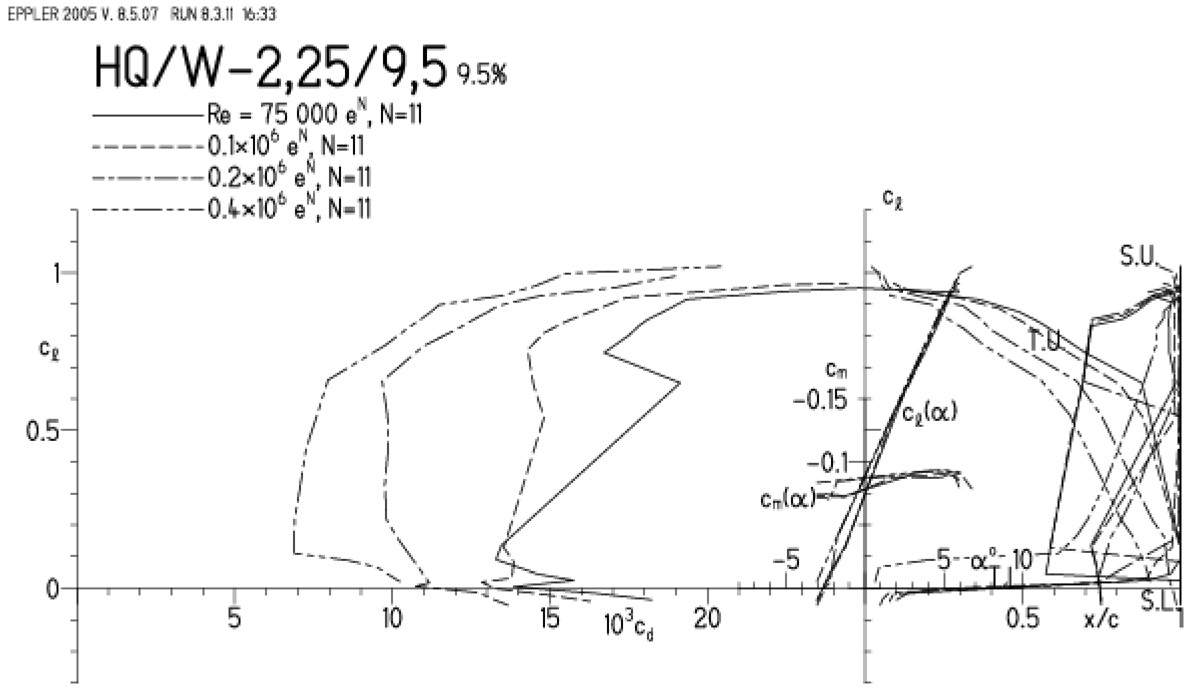
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm[2] erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





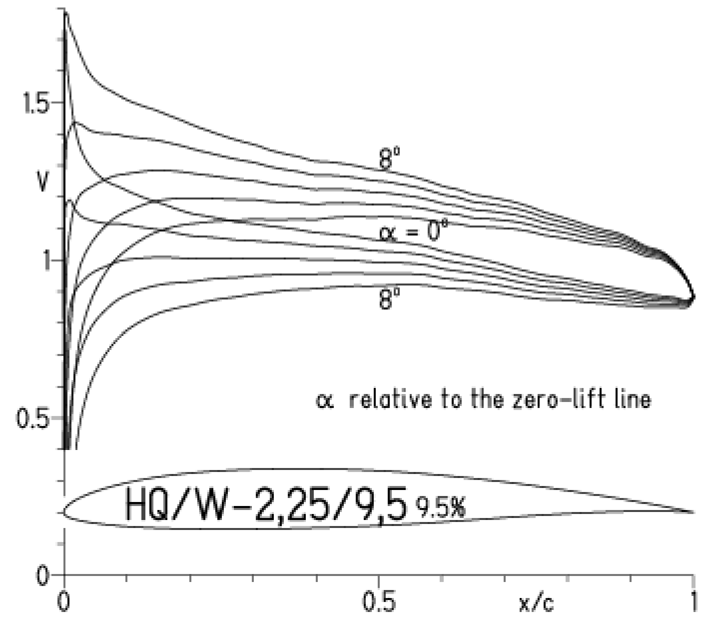
HQ/W-2,25/9,5, N=11



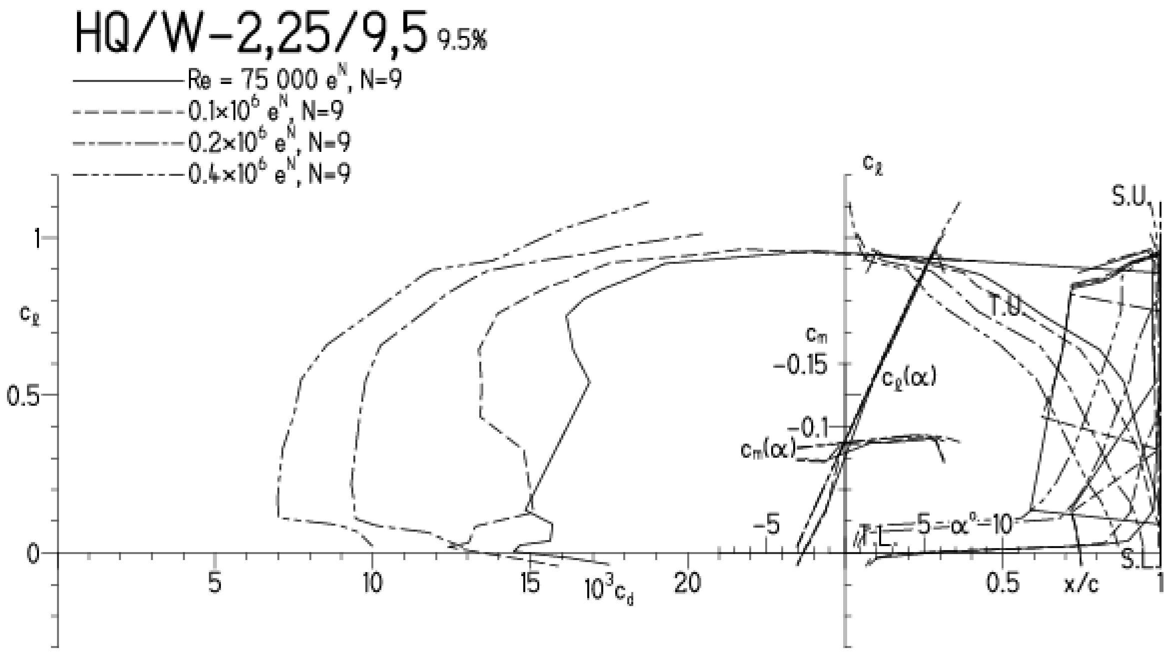


HQ/W-2,25/9,5, N=9

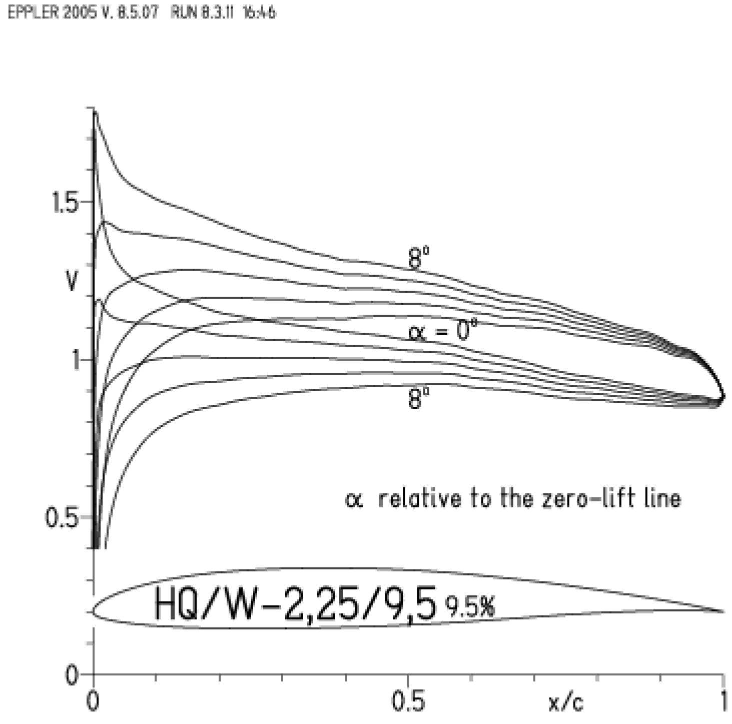
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

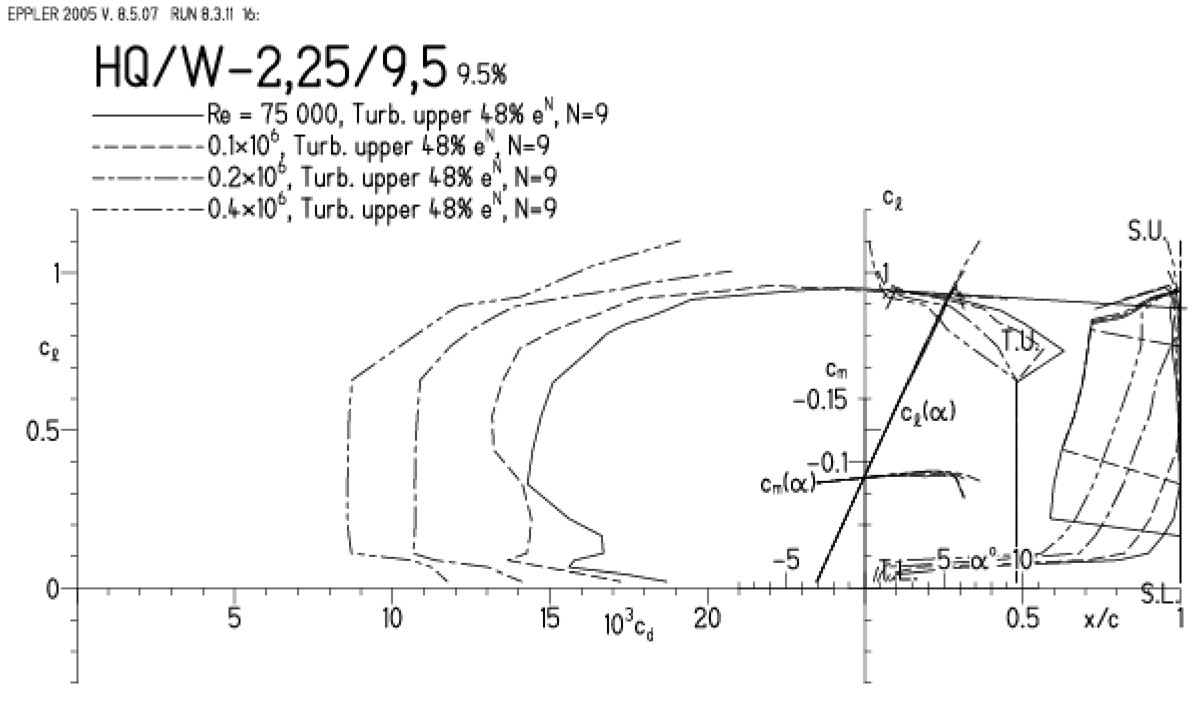


EPPLER 2005 V. 8.5.07 RUN 8.3.



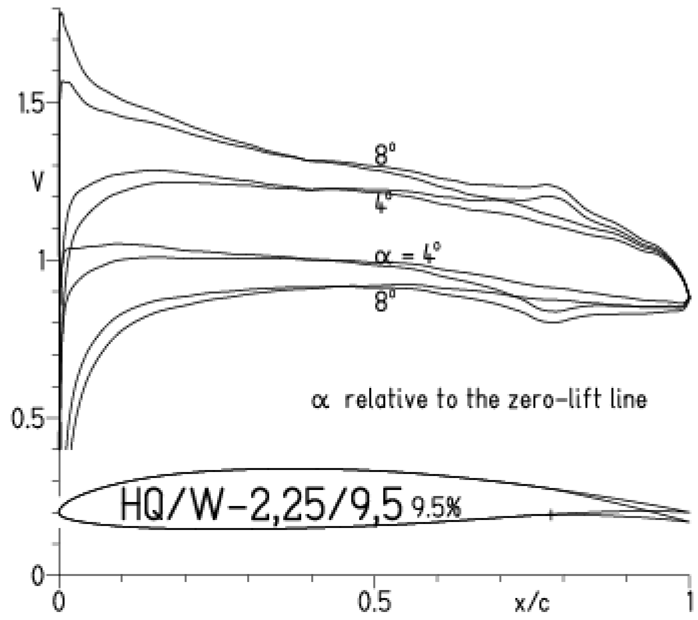
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



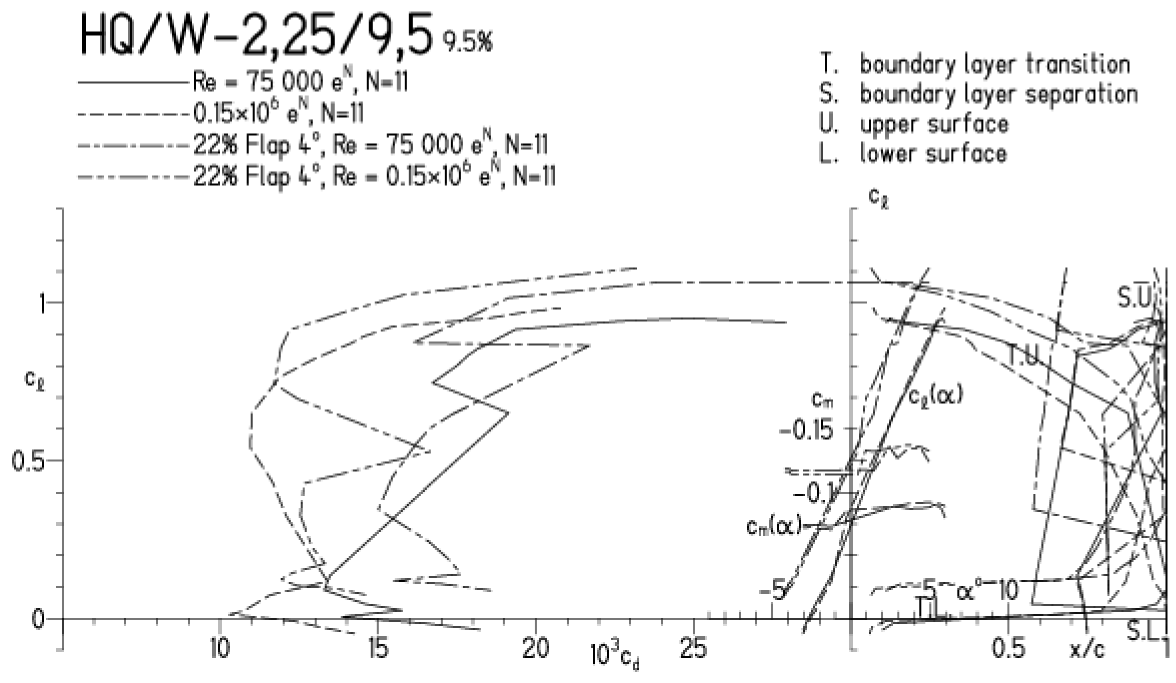


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

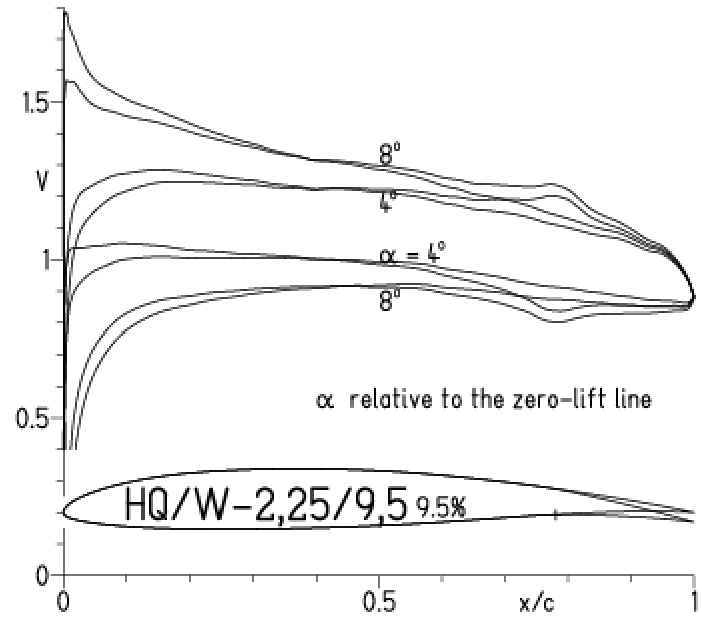


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

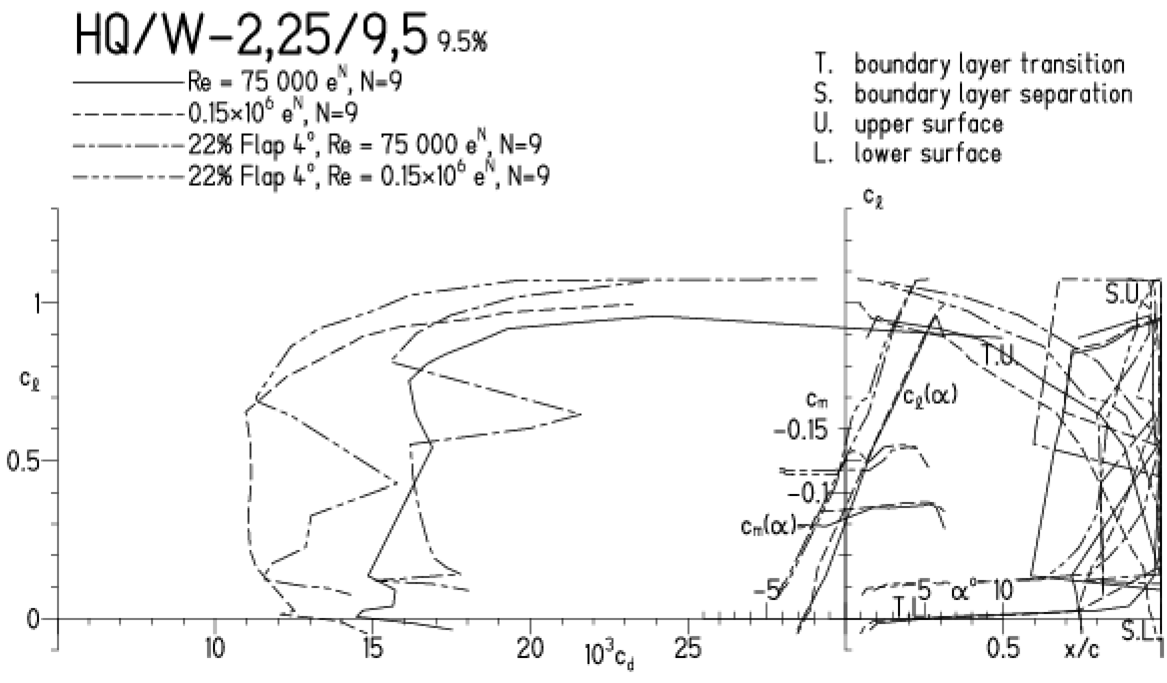


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

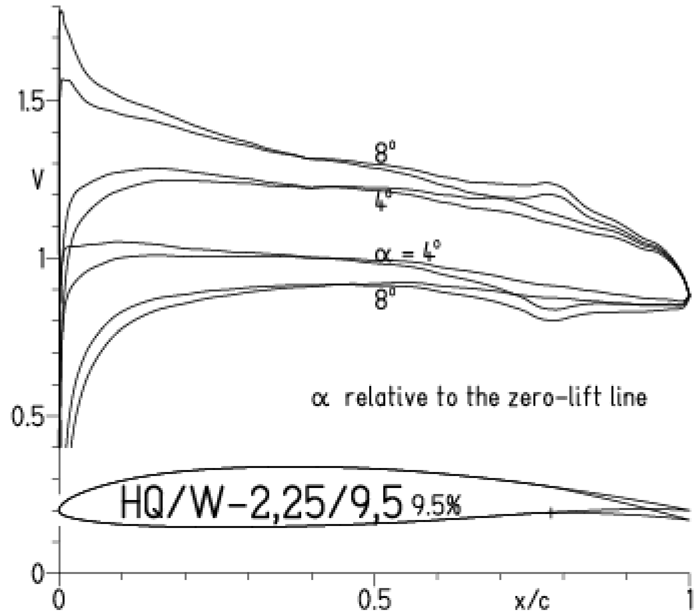


EPPLER 2005 V. 8.5.07 R

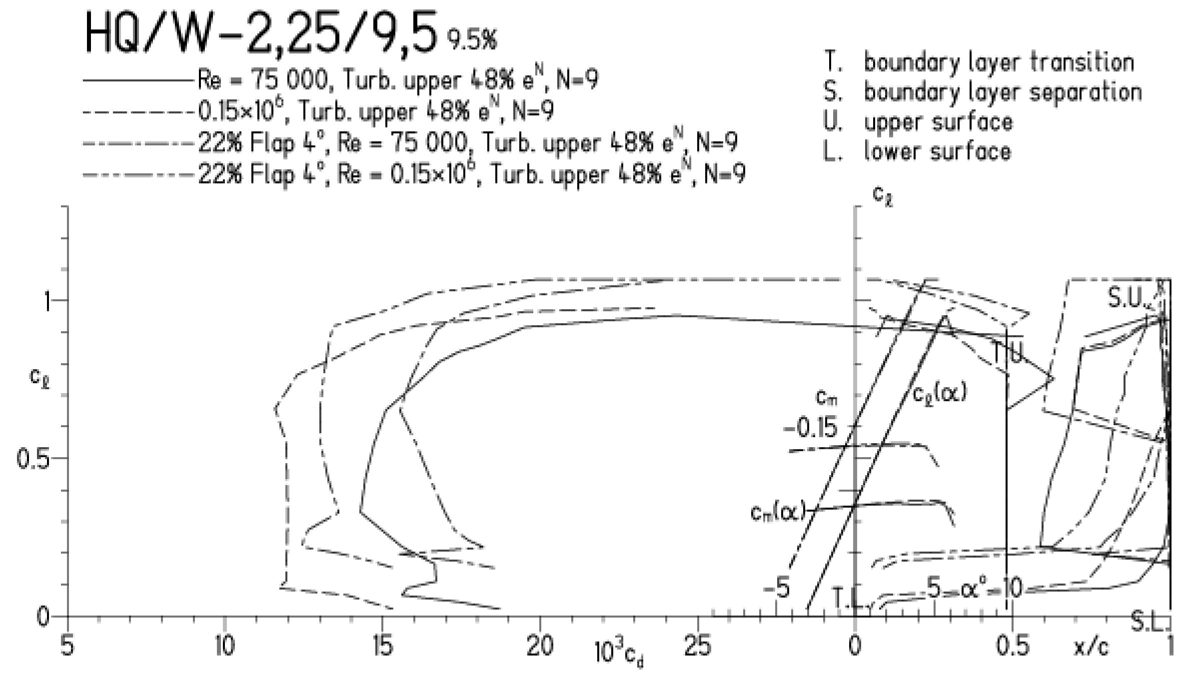


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

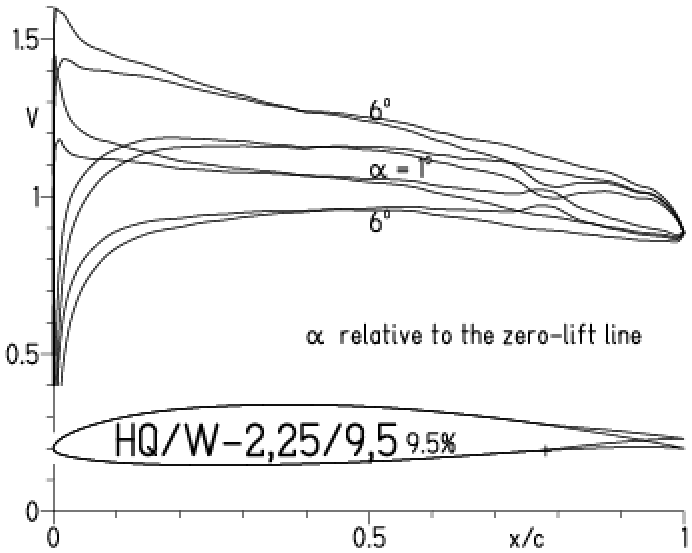


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

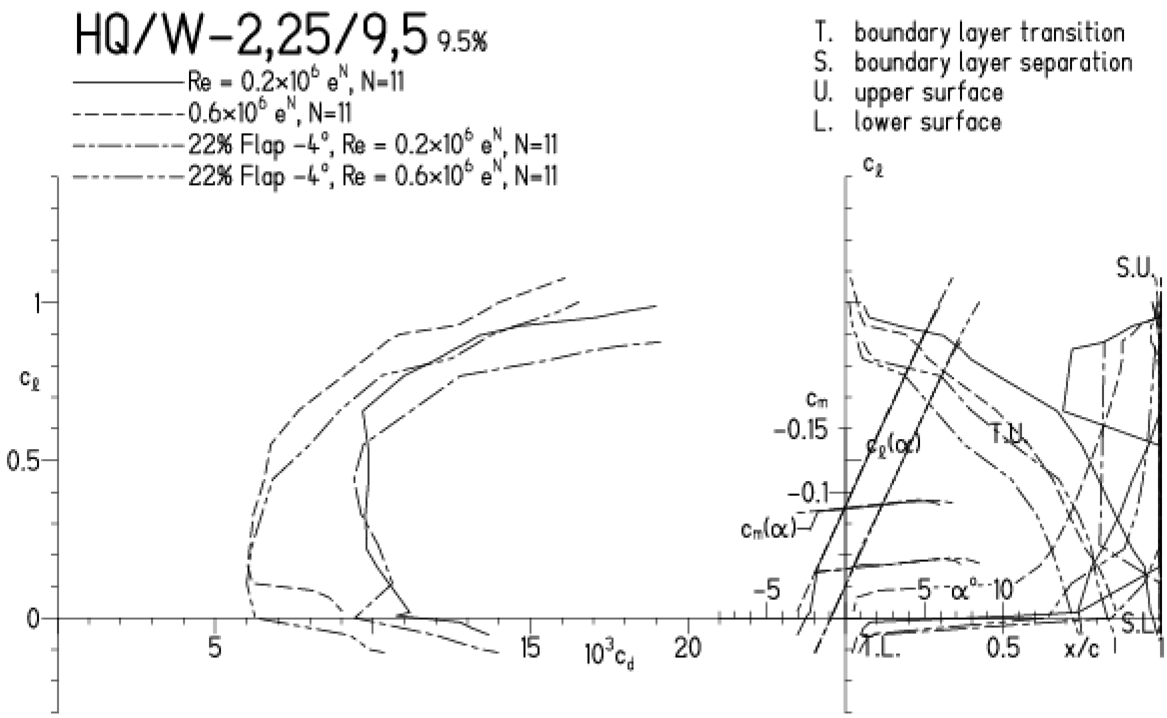


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

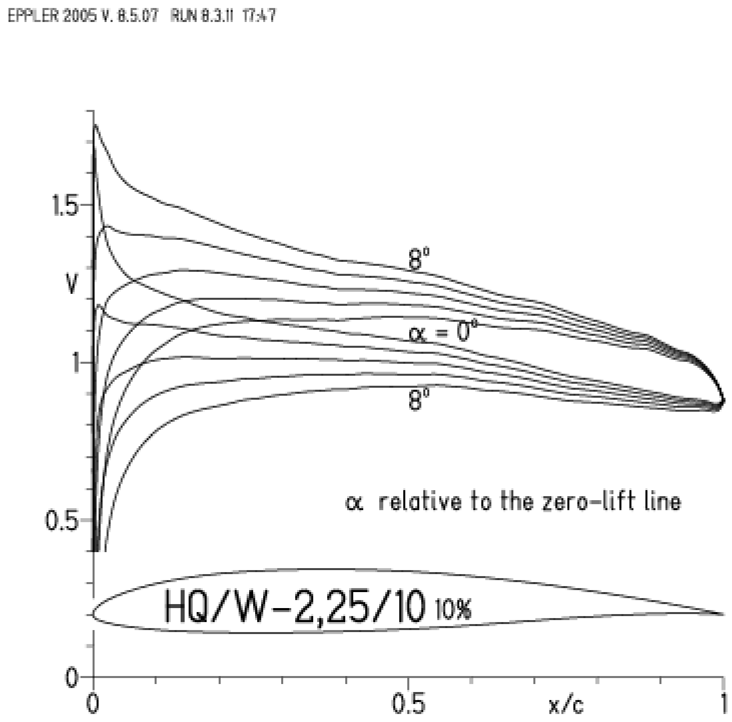
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

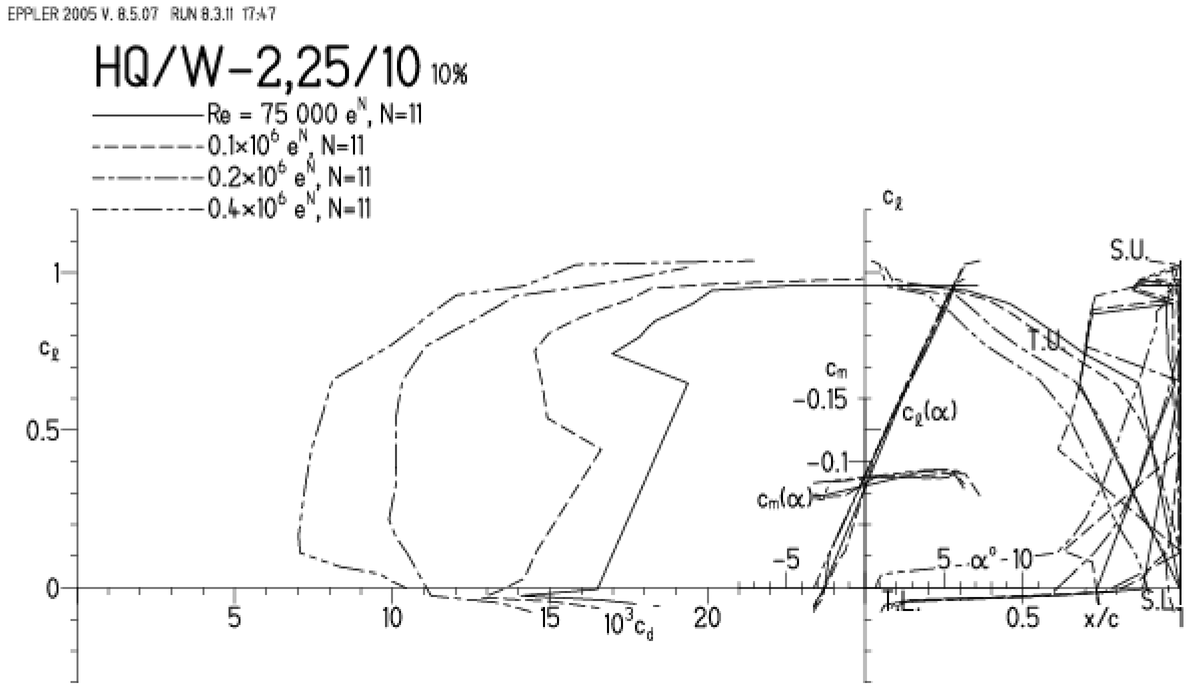


EPPLER 2005 V.



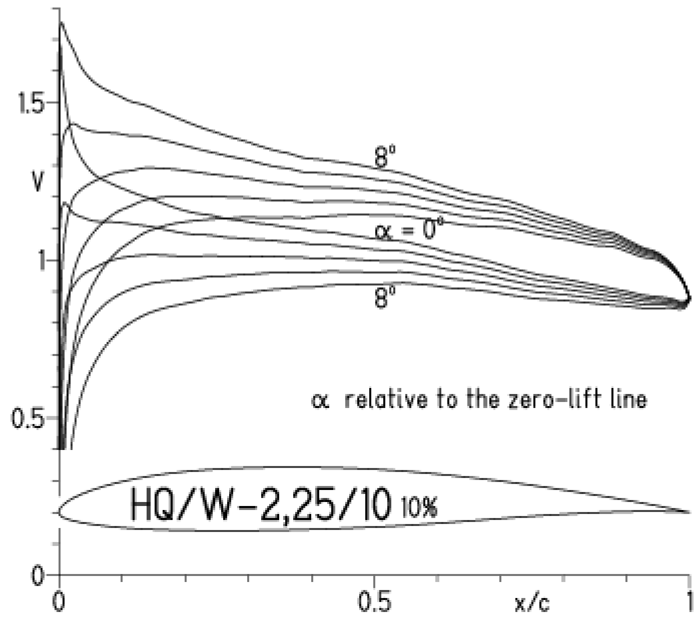
HQ/W-2,25/10, N=11



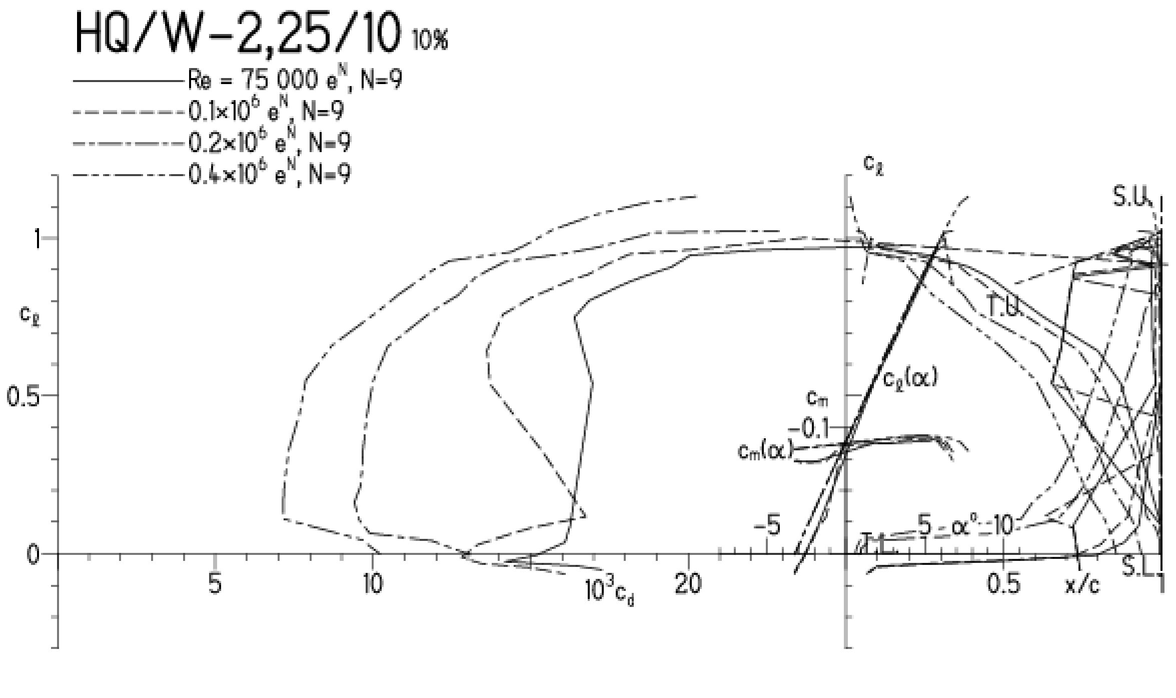


HQ/W-2,25/10, N=9

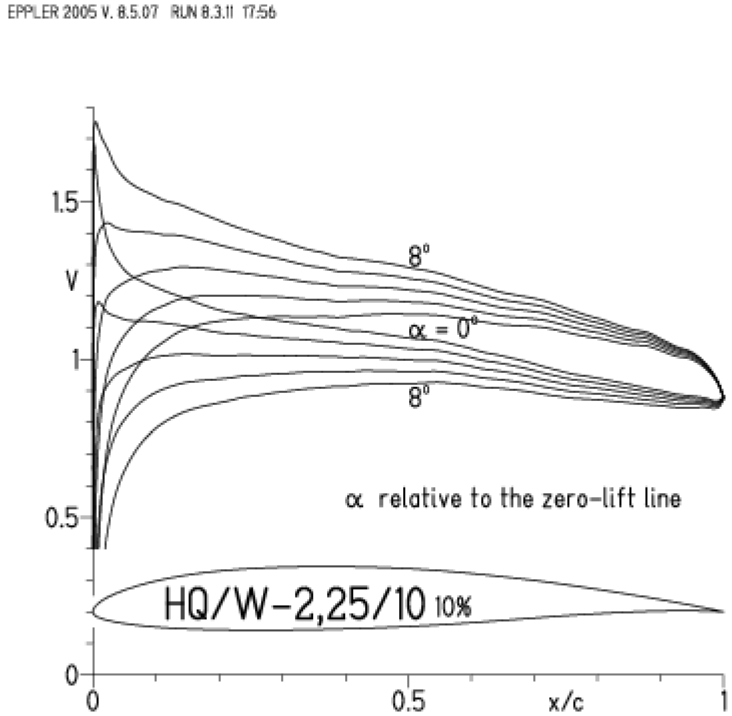
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

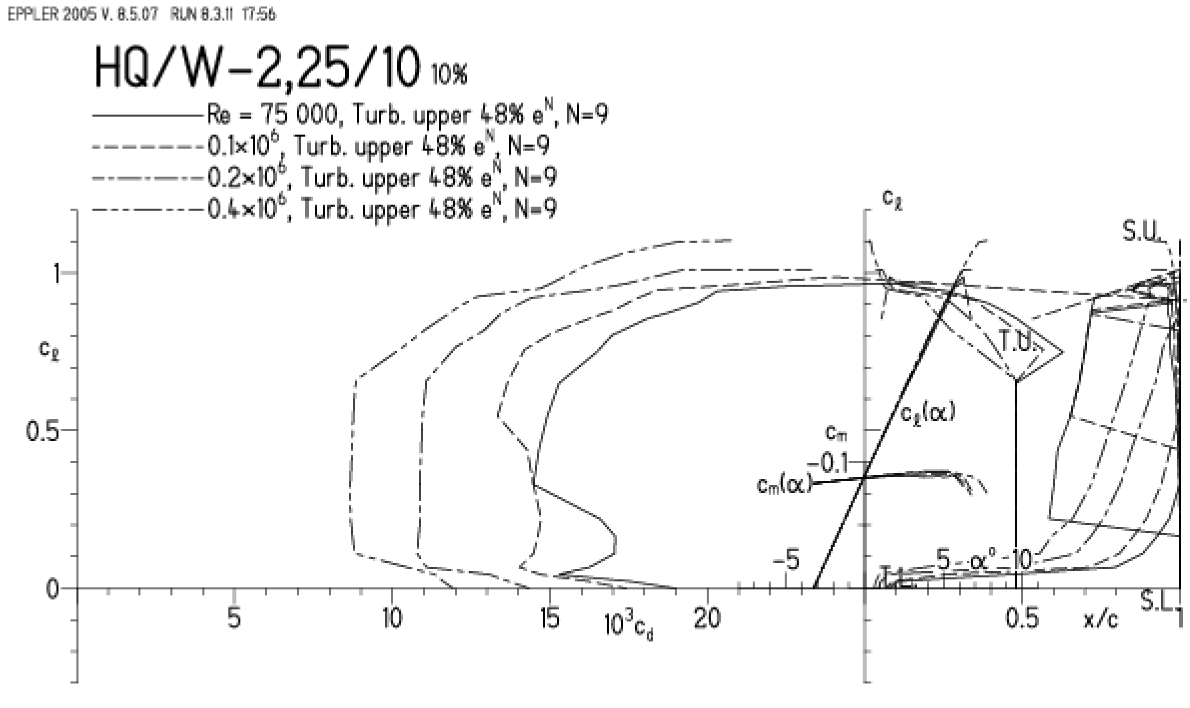


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



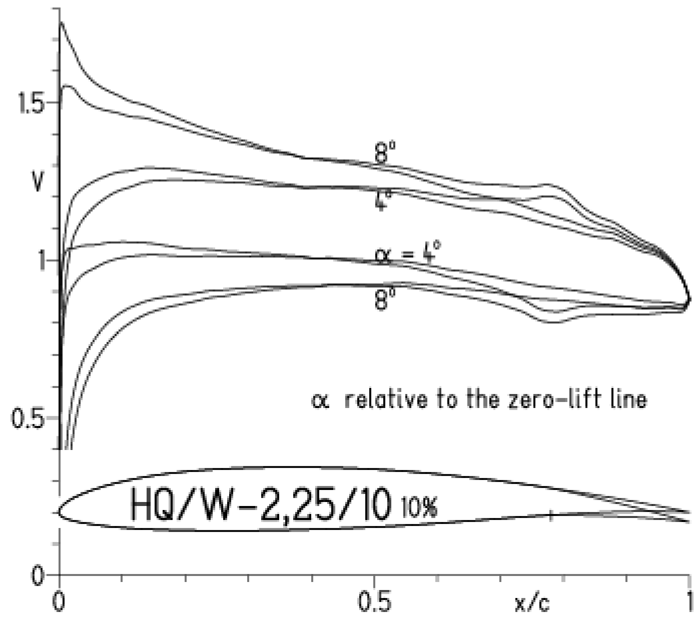
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



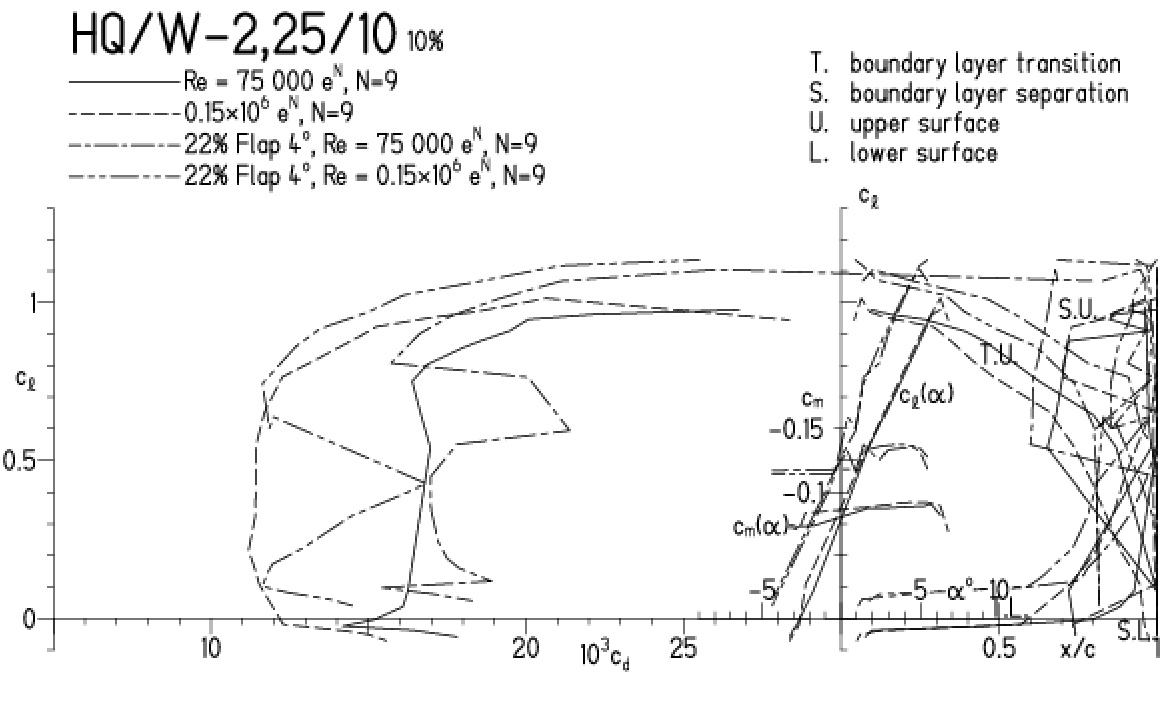


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

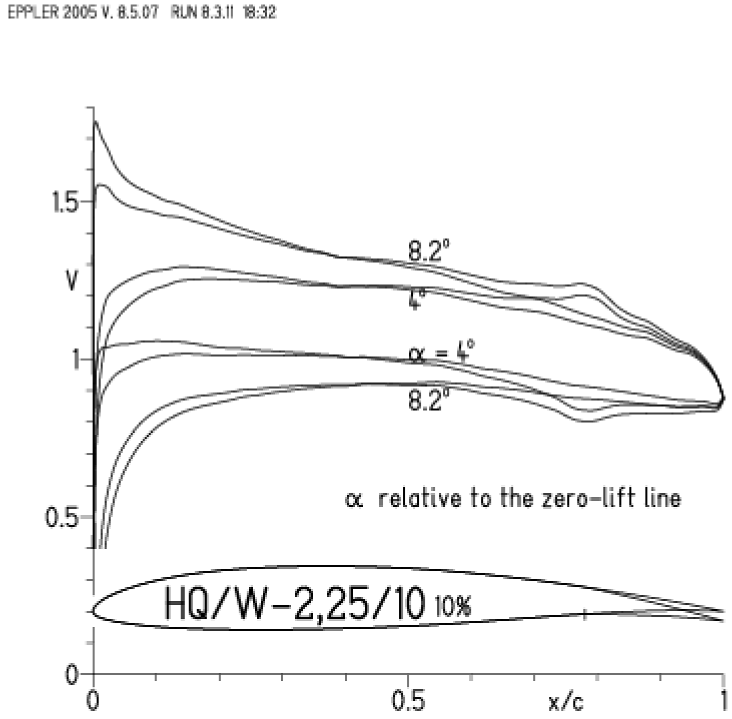
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

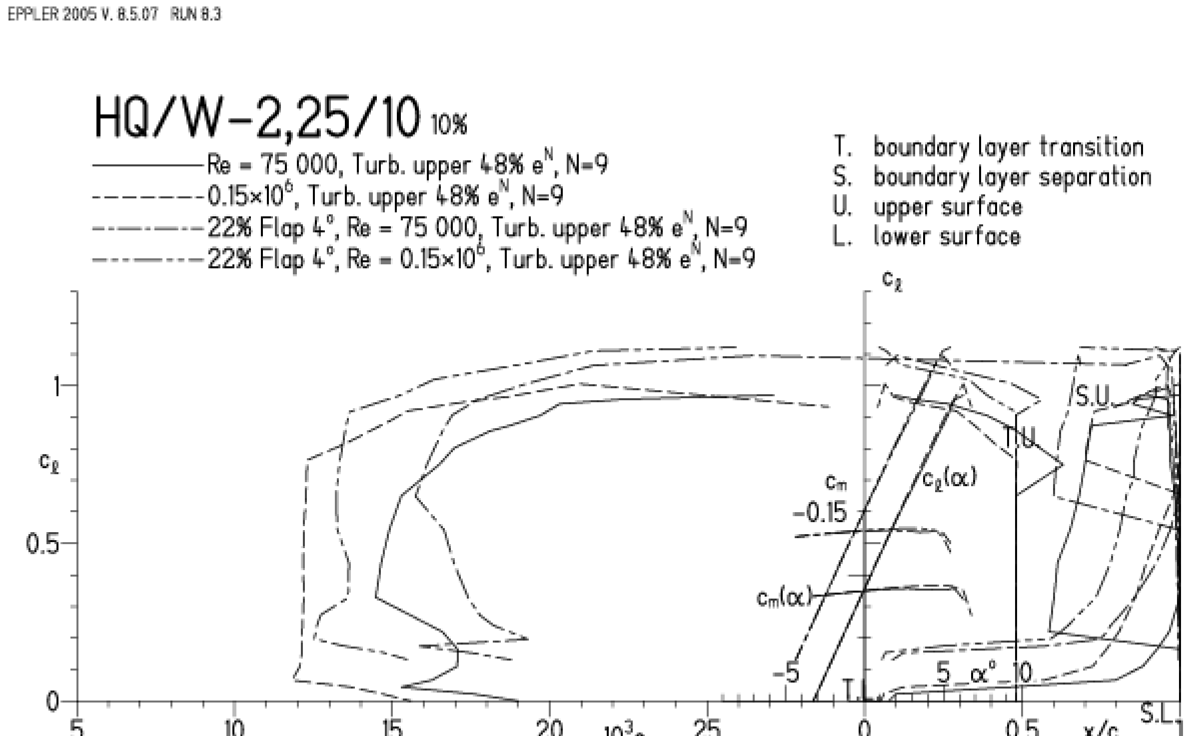


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

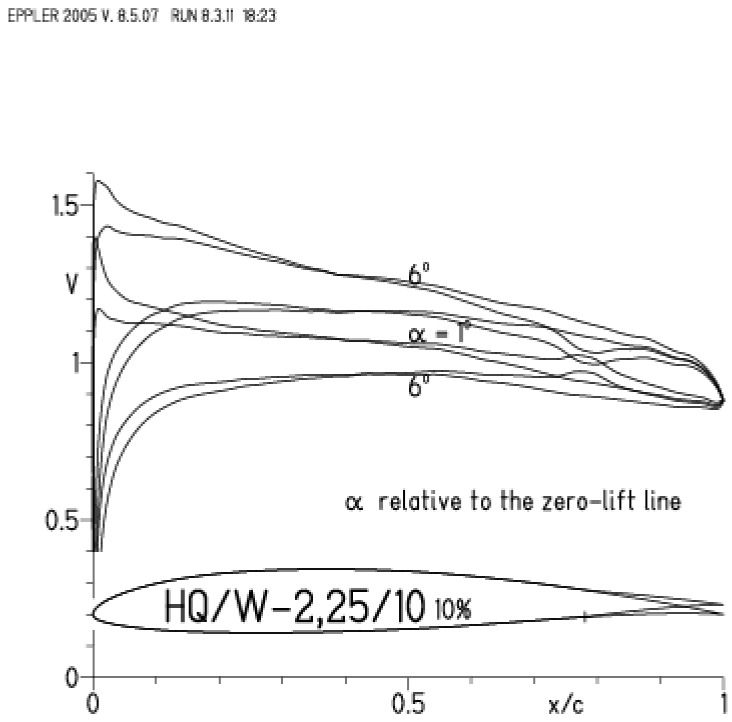


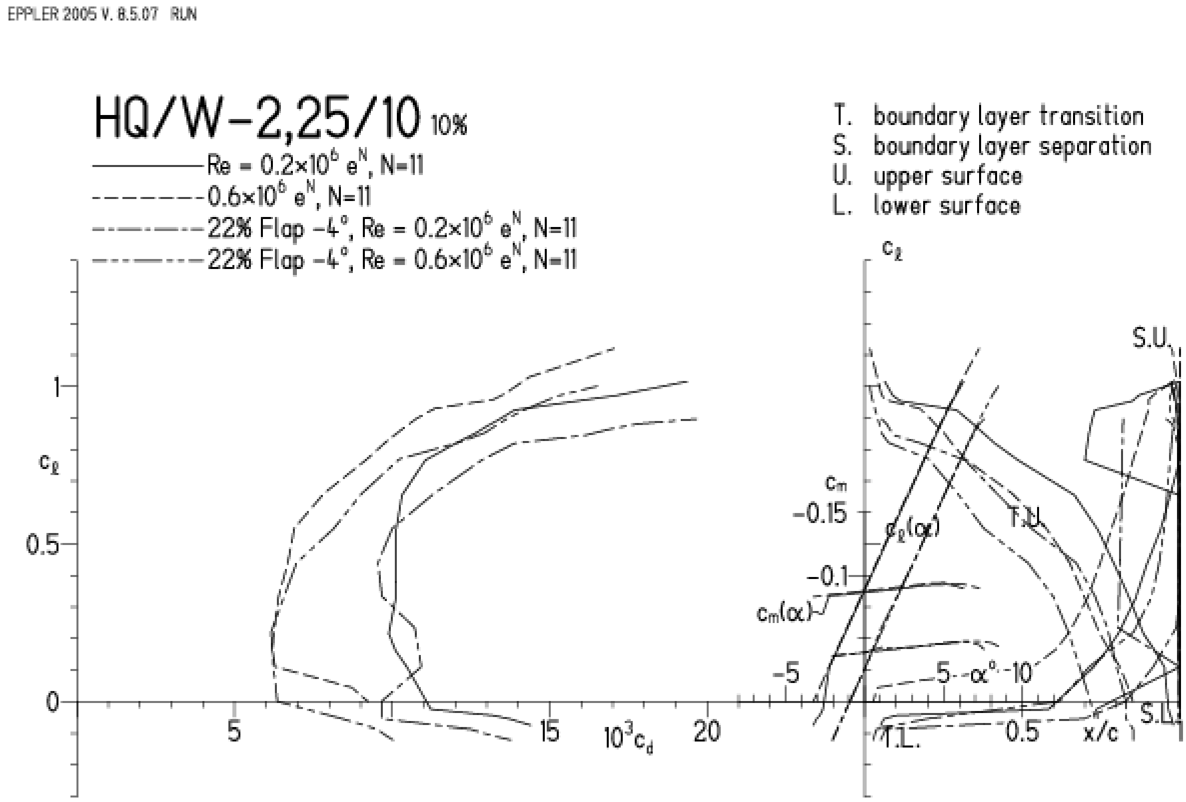
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt





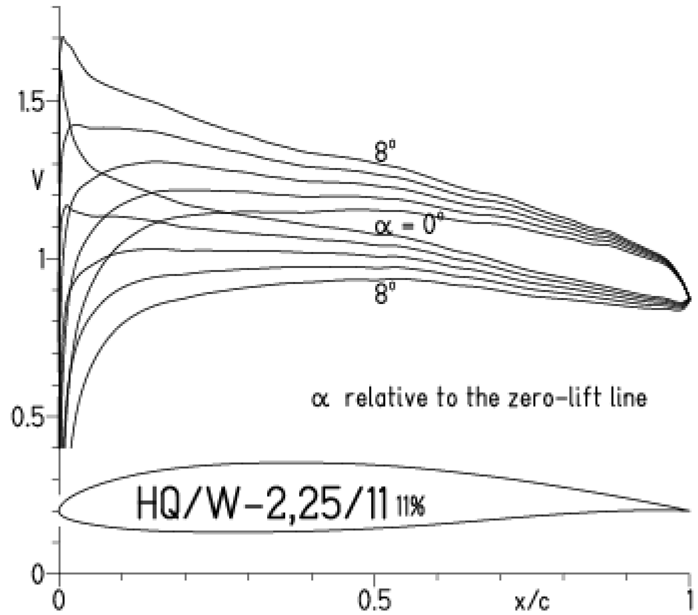
HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag



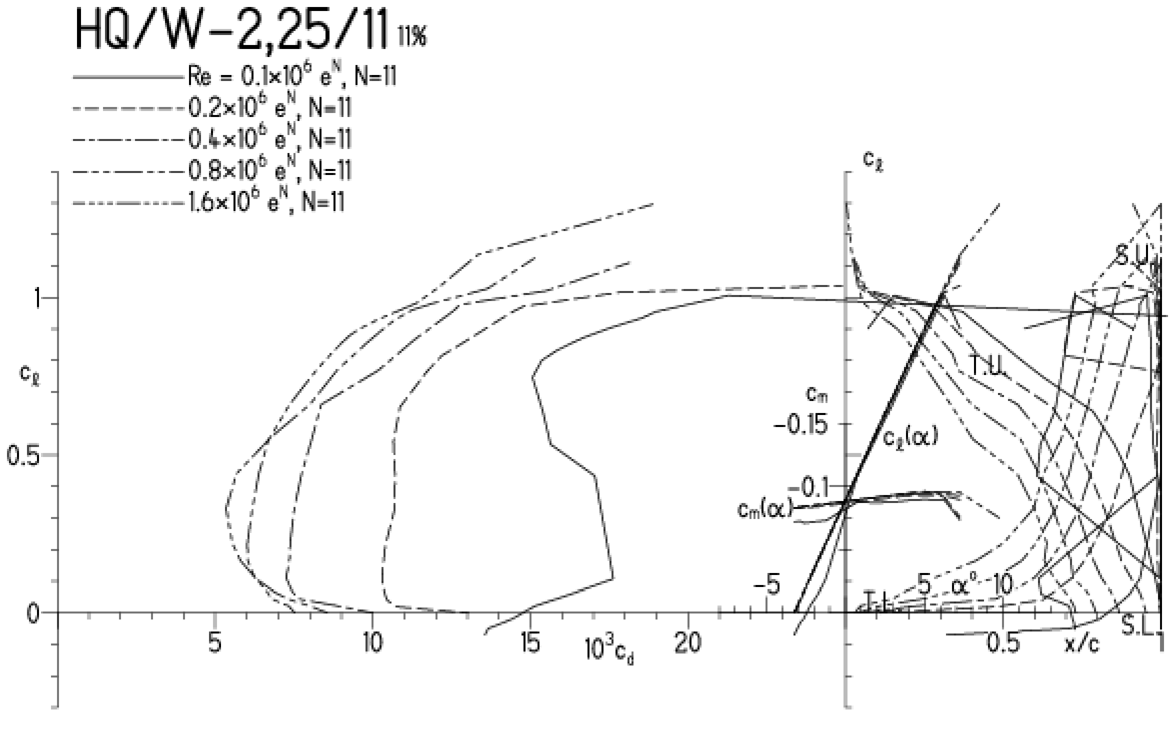


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

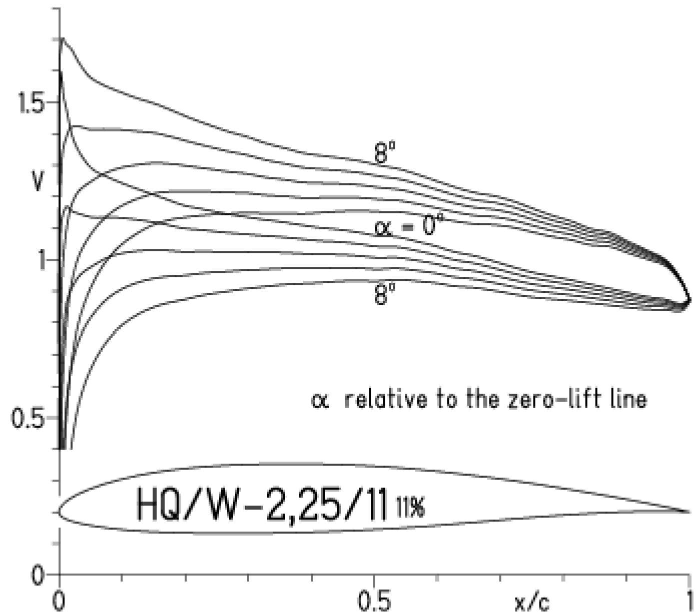


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

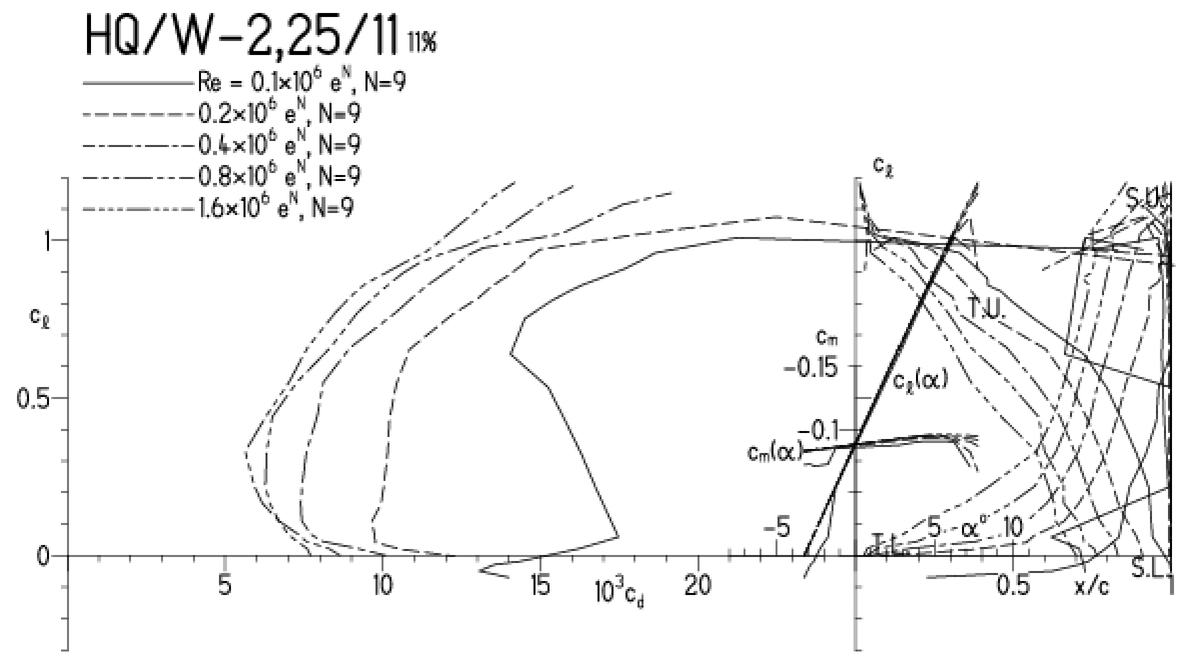


HQQ/W-2,25/11, N=9

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

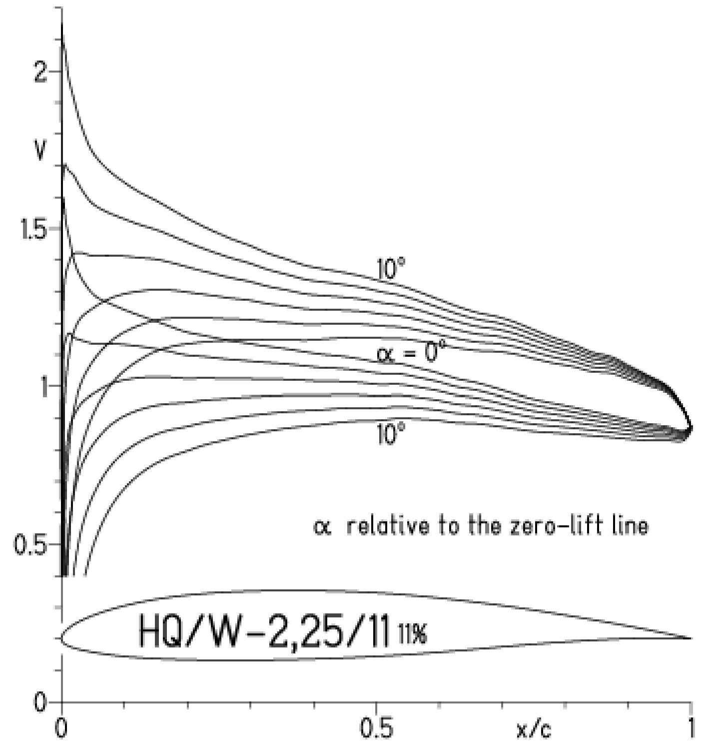


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

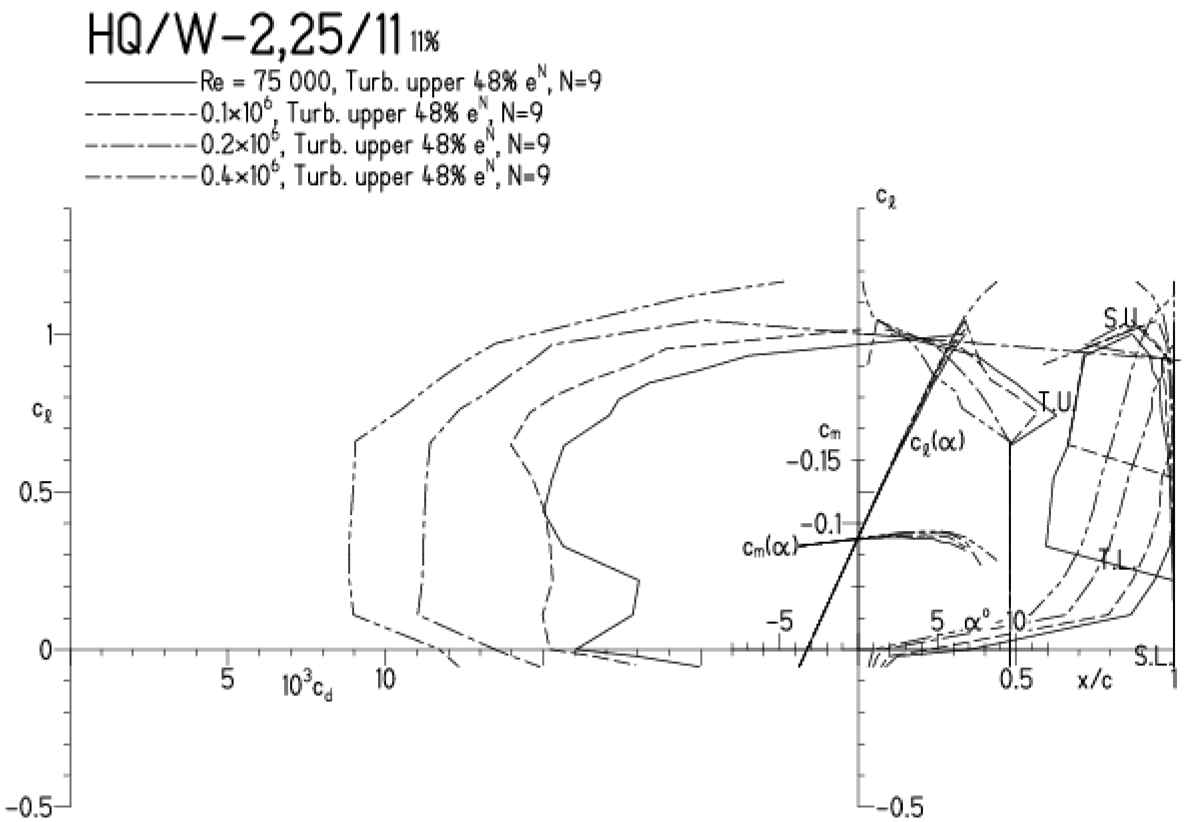


<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

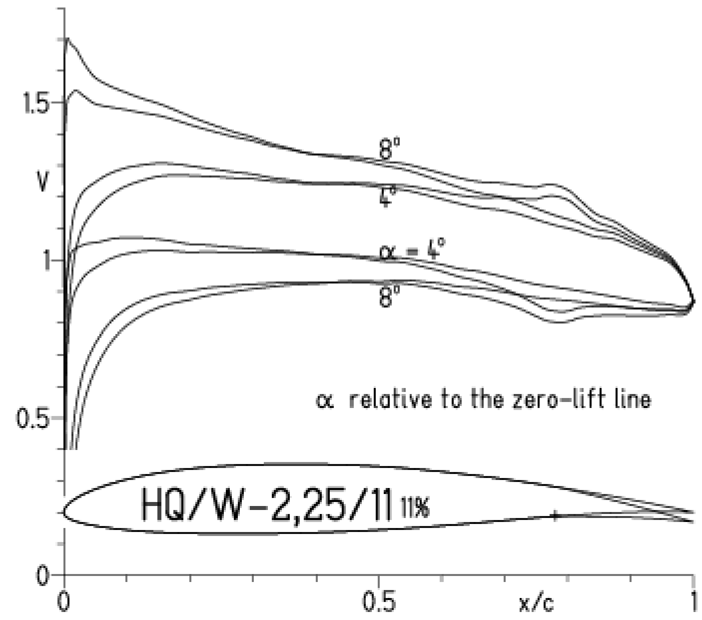


EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

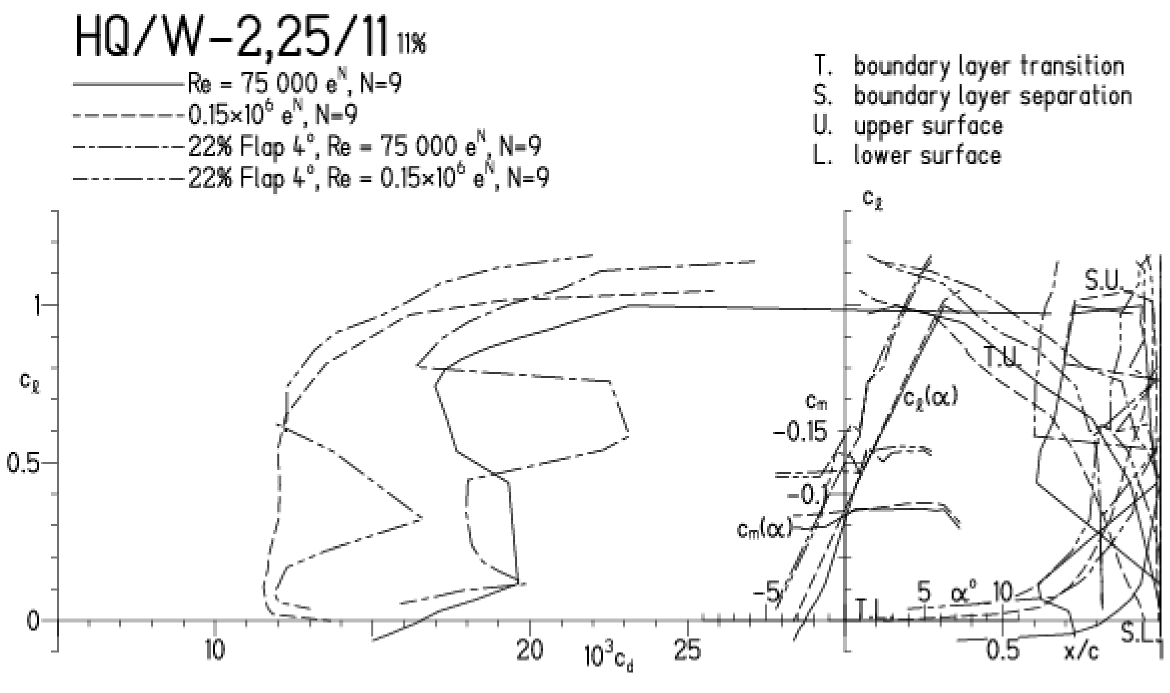


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

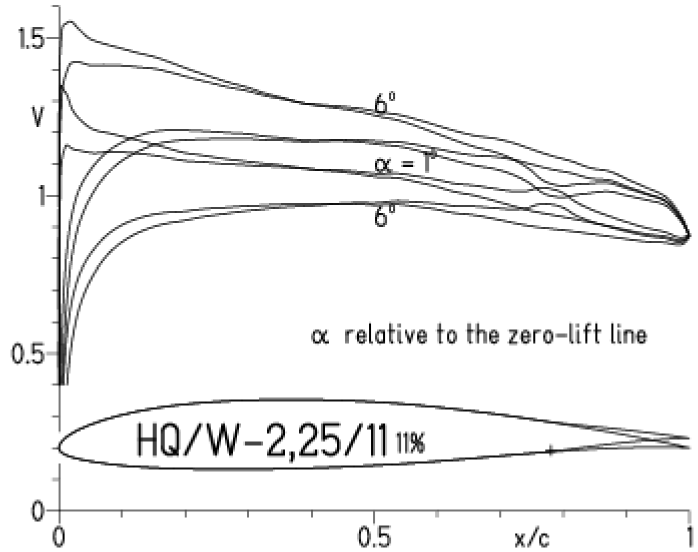


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

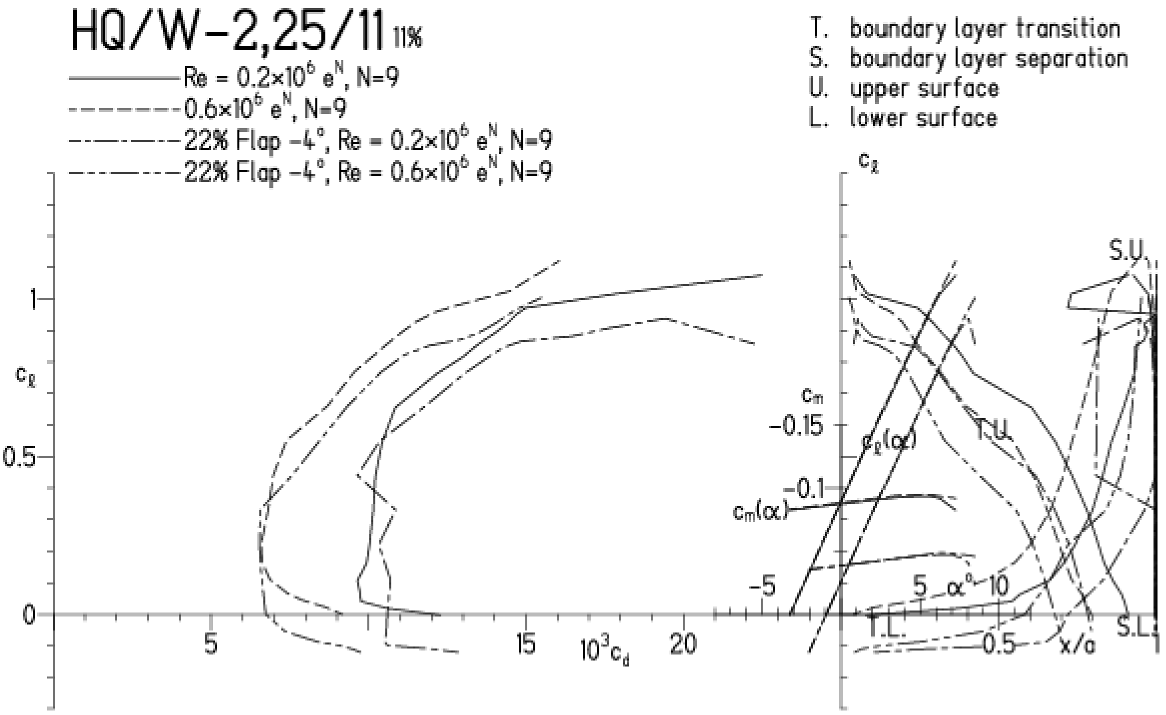


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

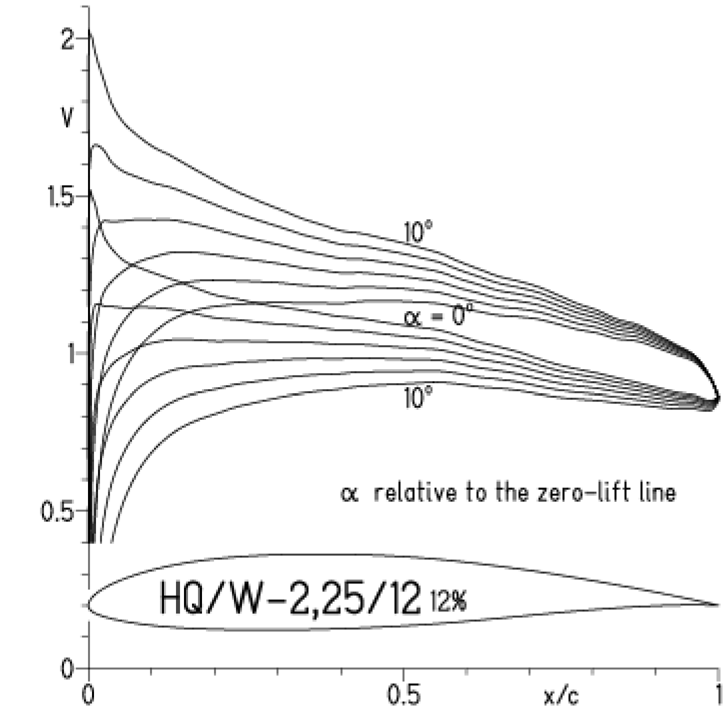


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

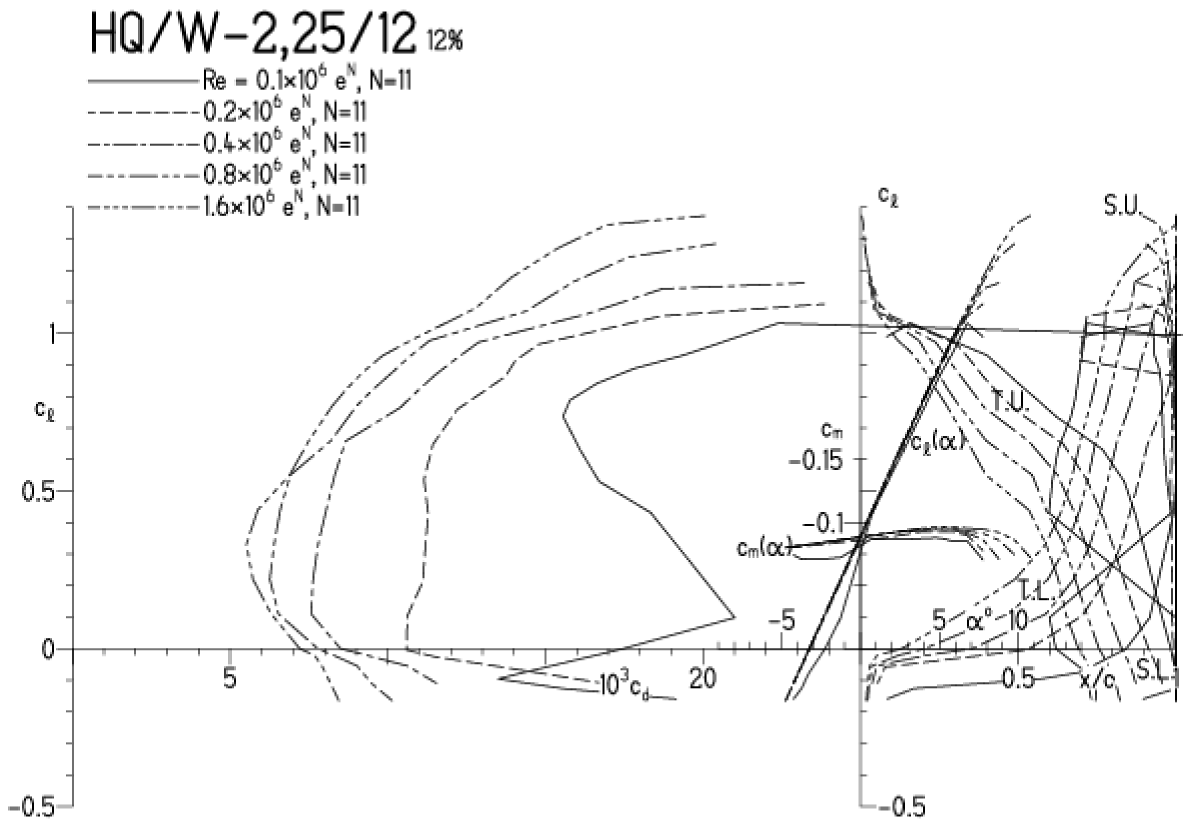


<u>HQ/W-2,25/12</u>, N=11

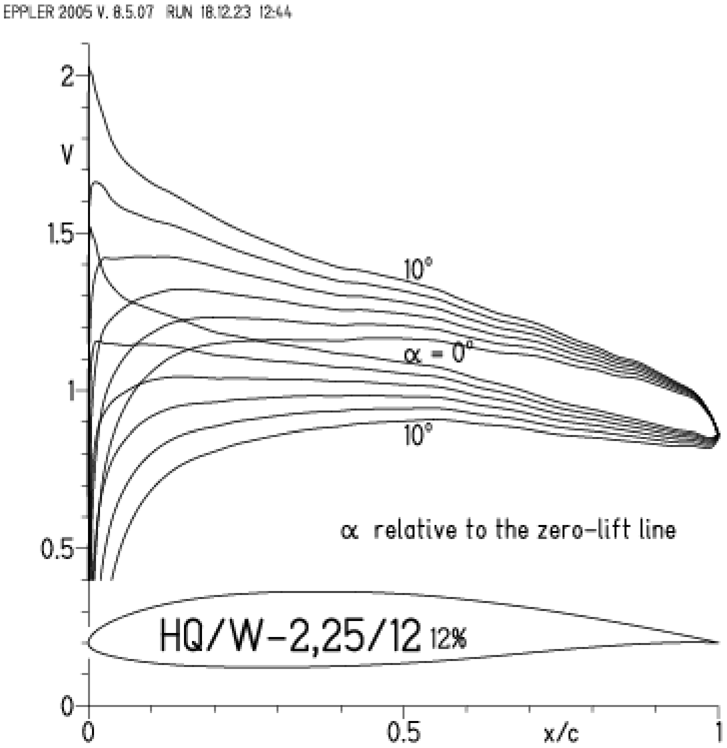
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

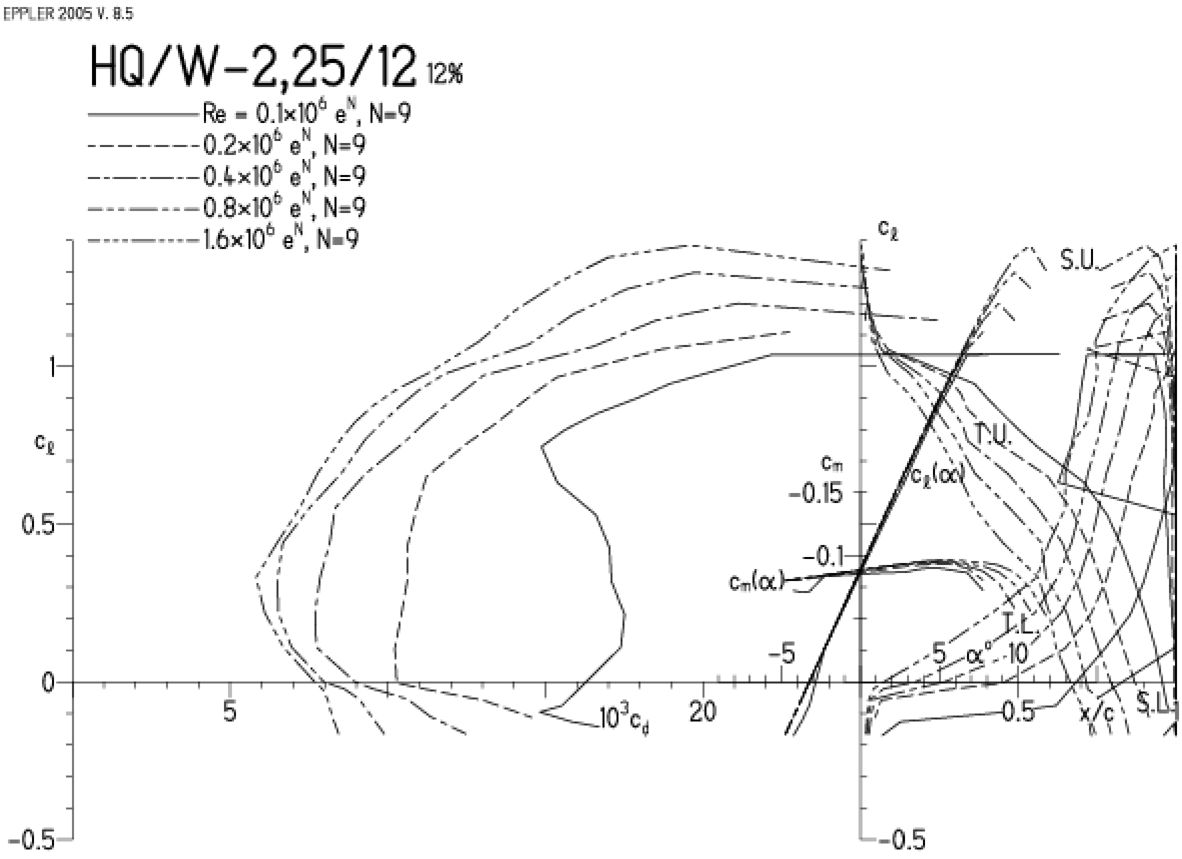


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

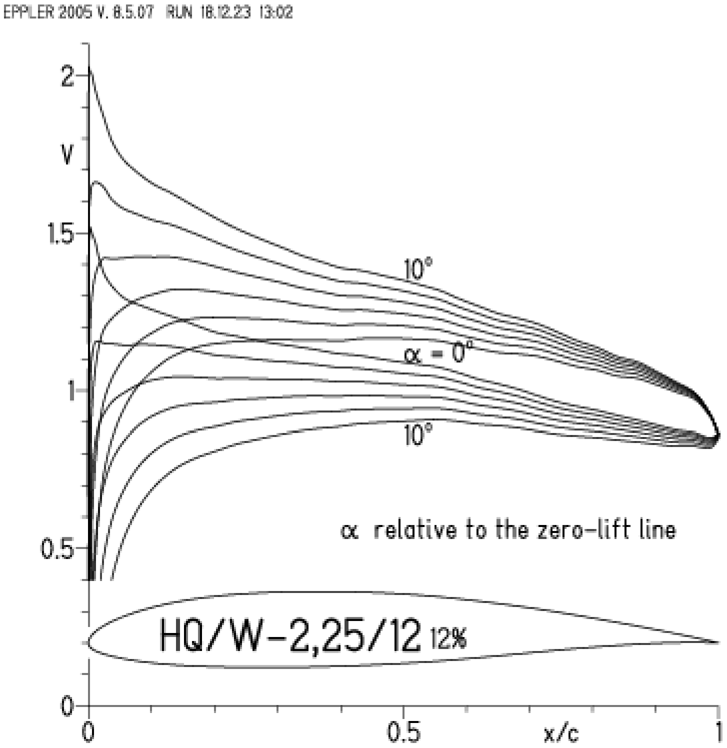


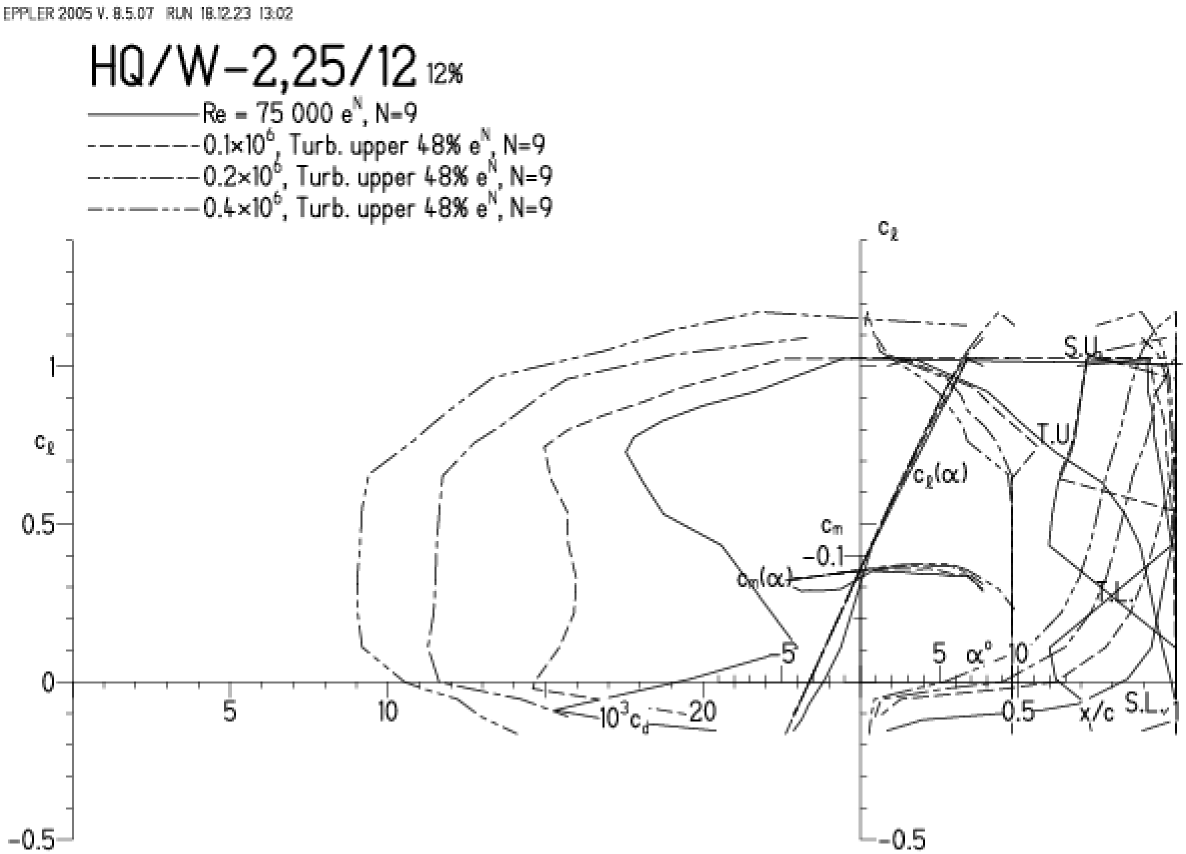
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_ℓ(α)
c_m(α)
α°
10^3 c_d
x/c

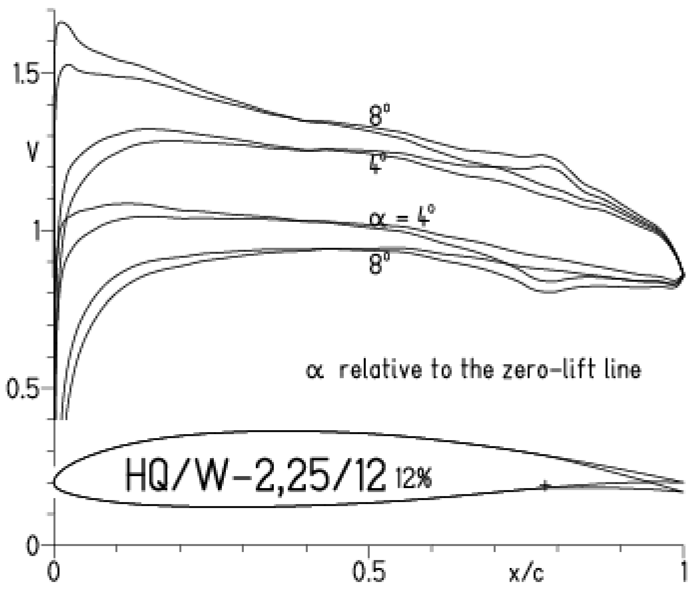
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



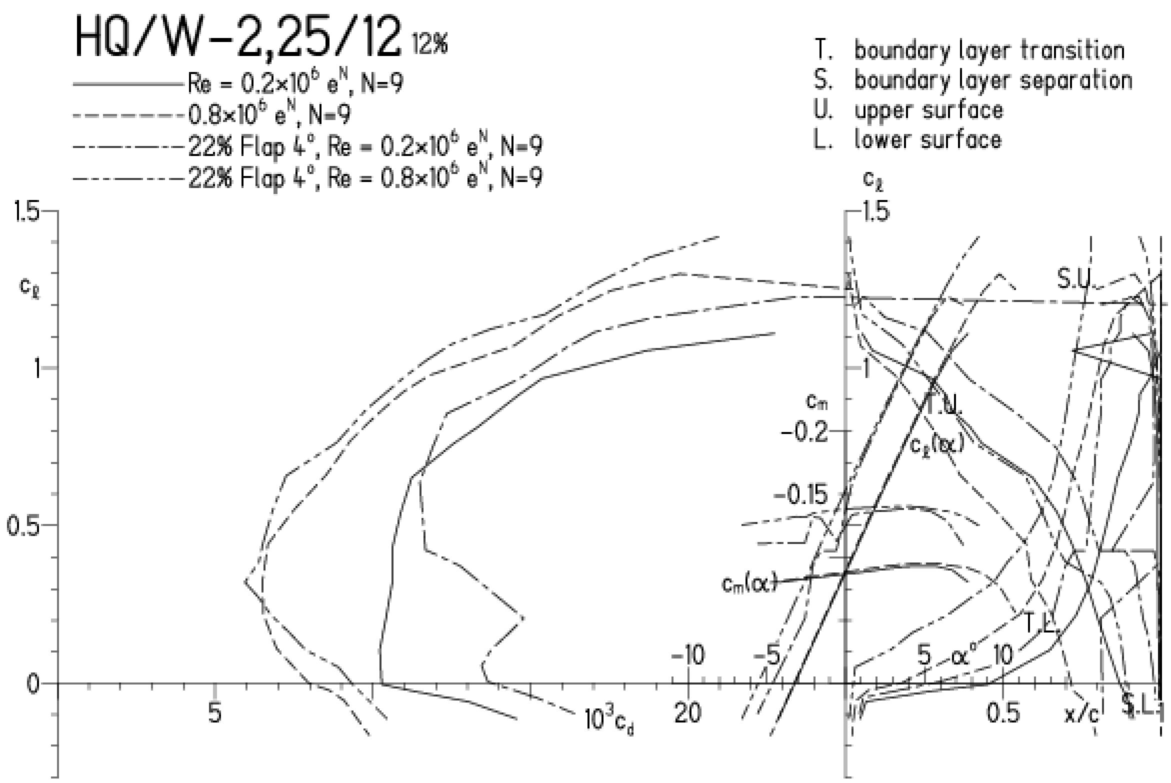


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

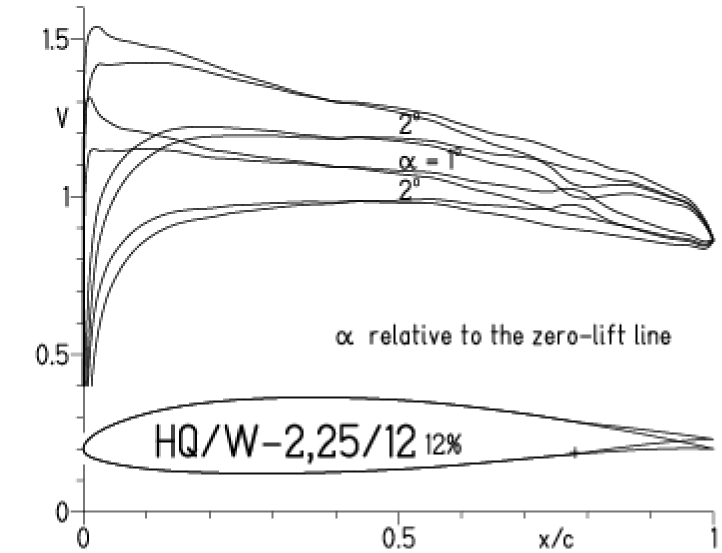


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

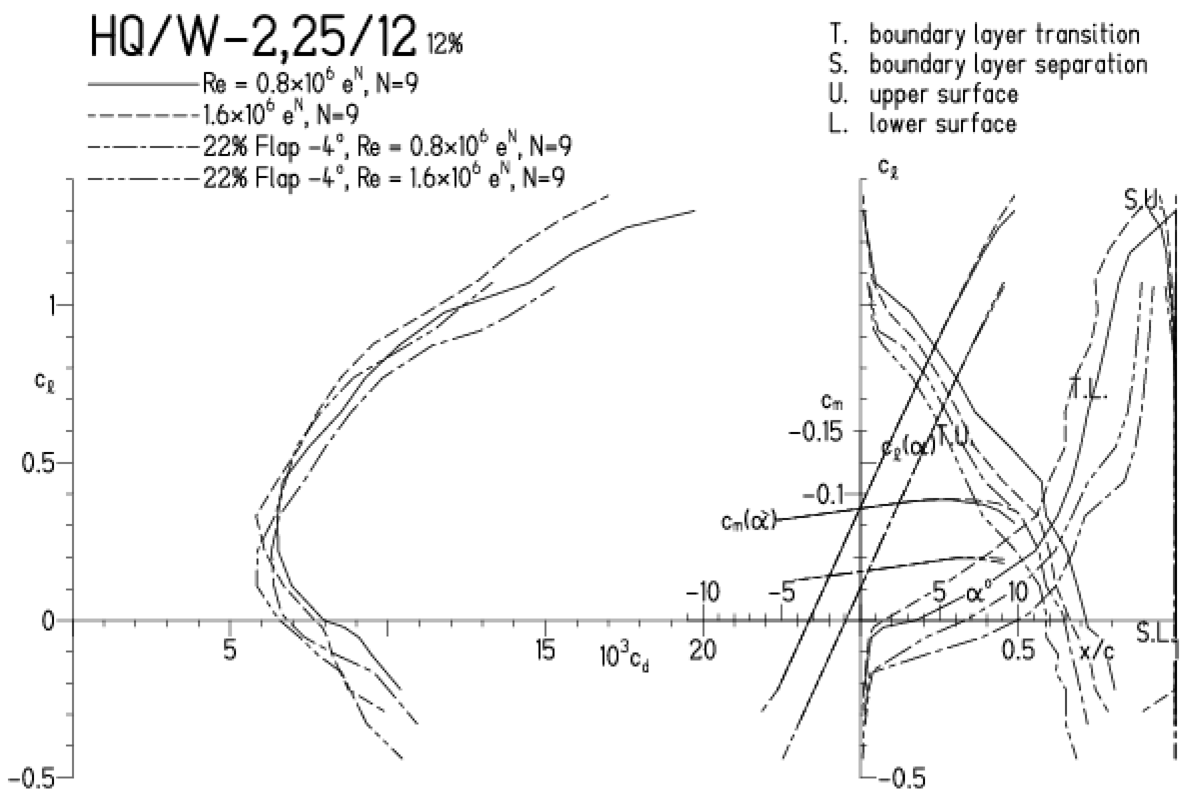


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

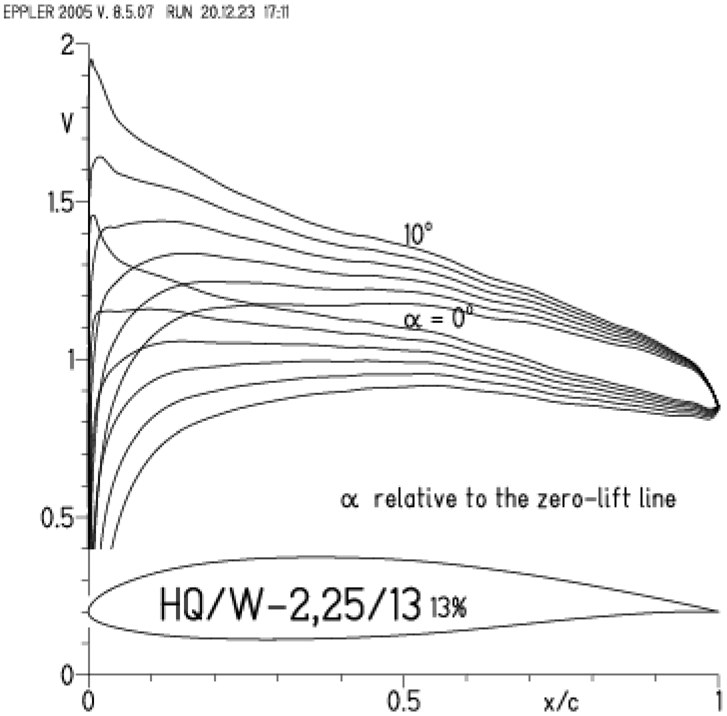
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

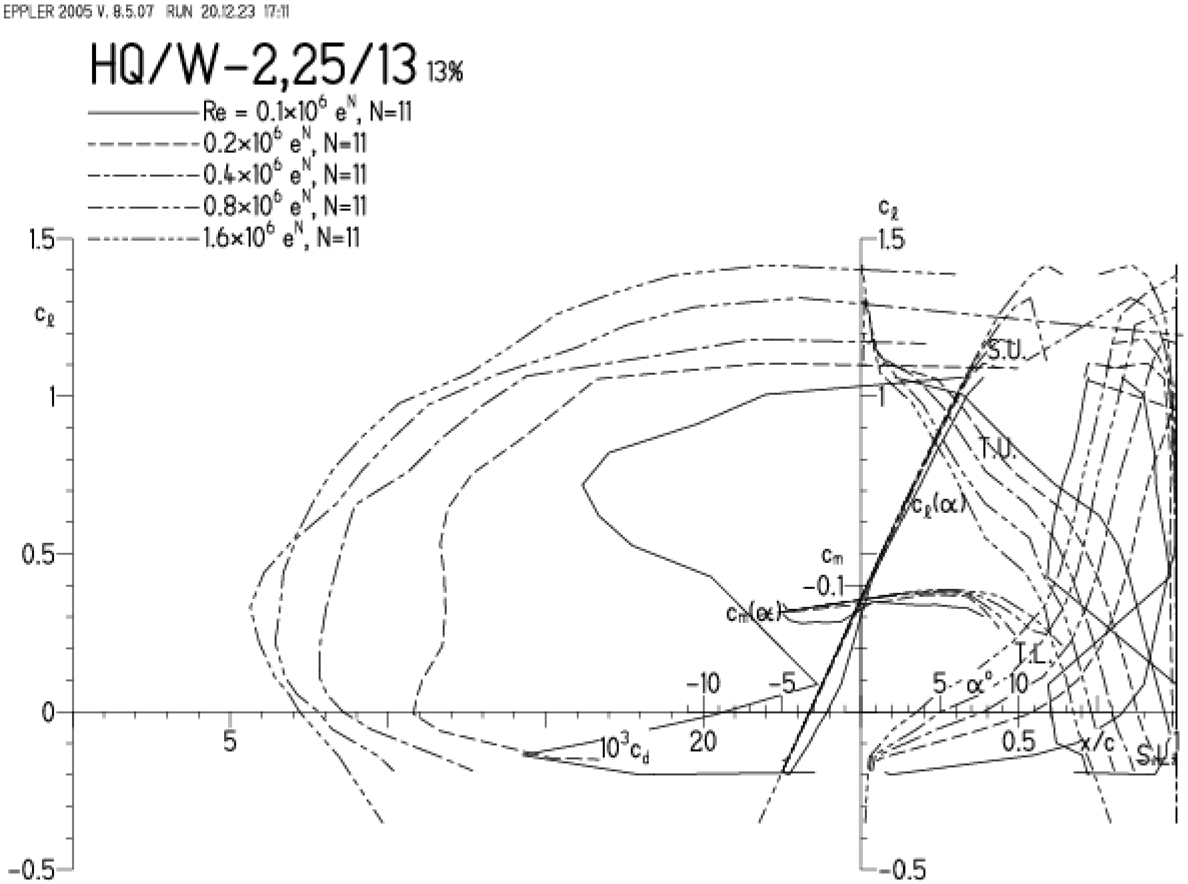


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

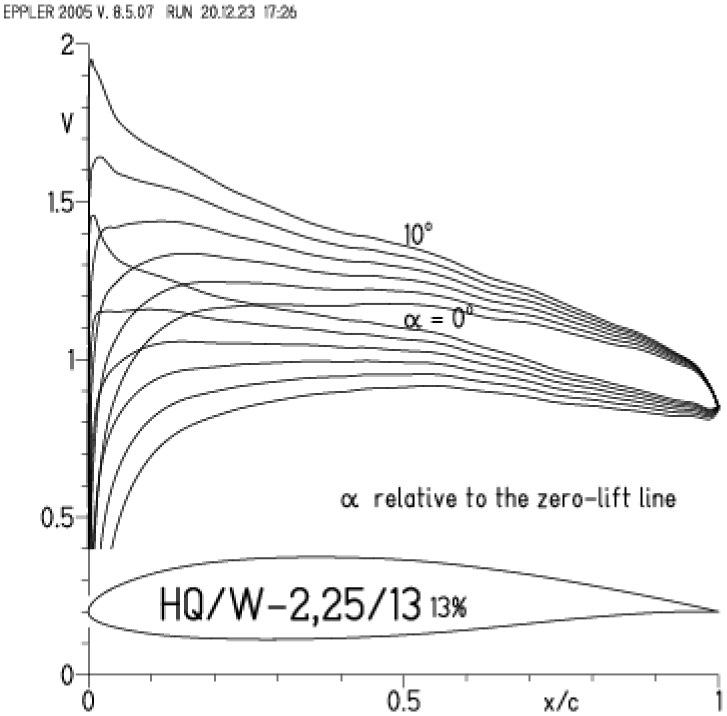


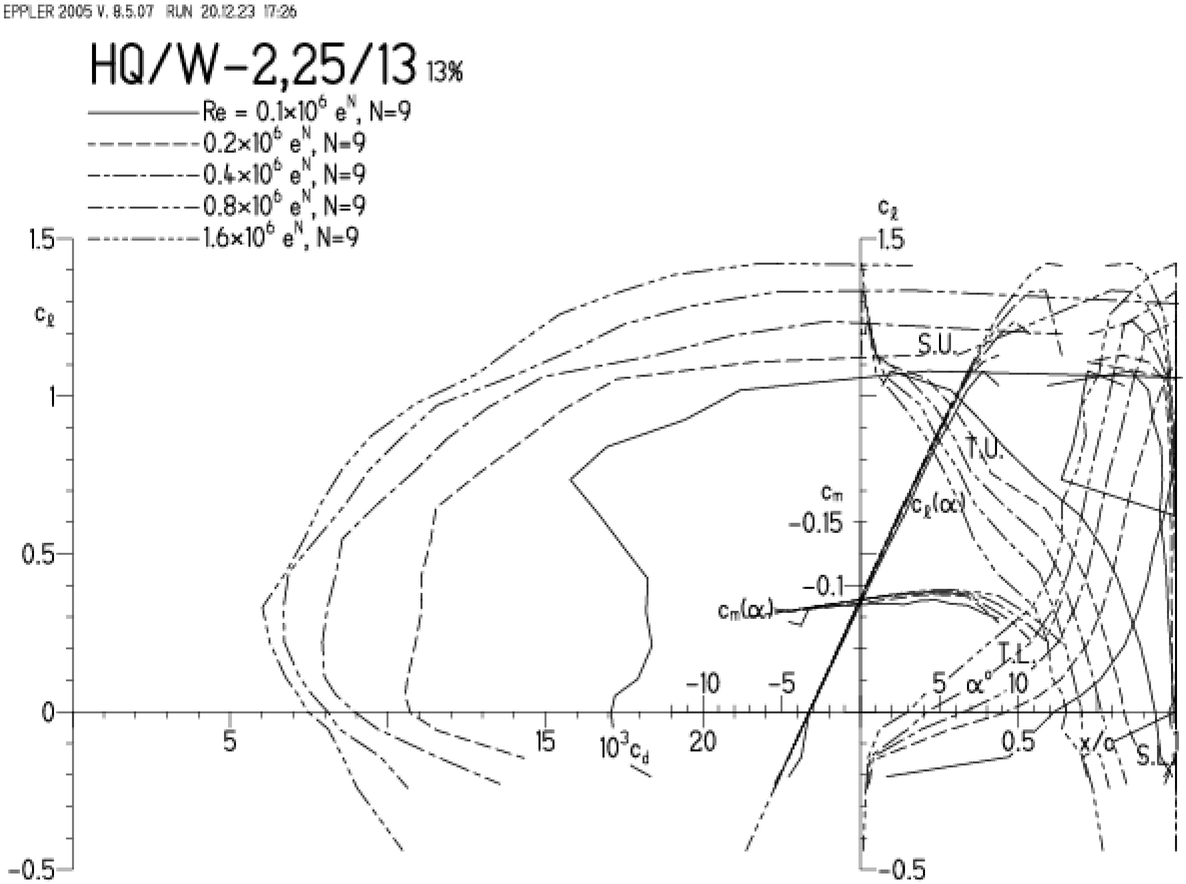
<u>HQ/W-2,25/13</u>, N=11



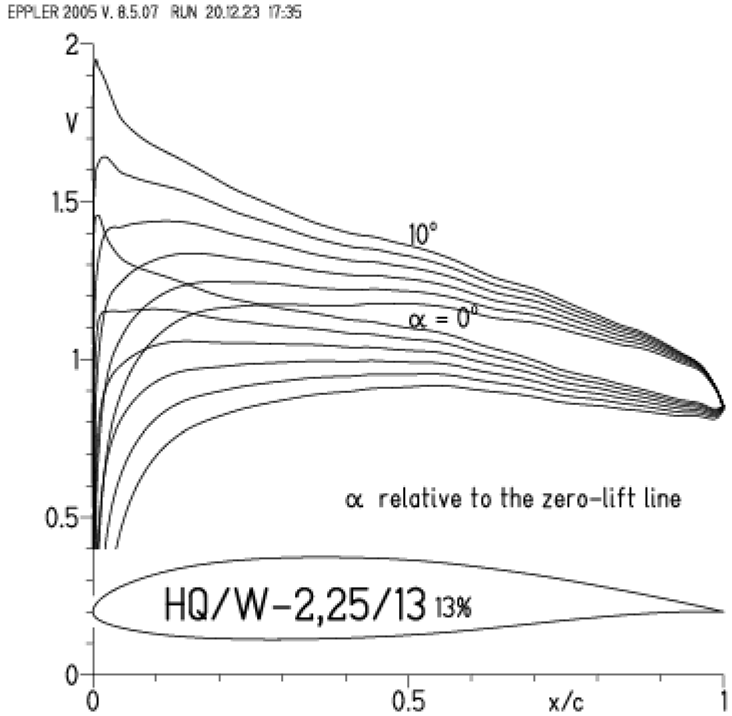


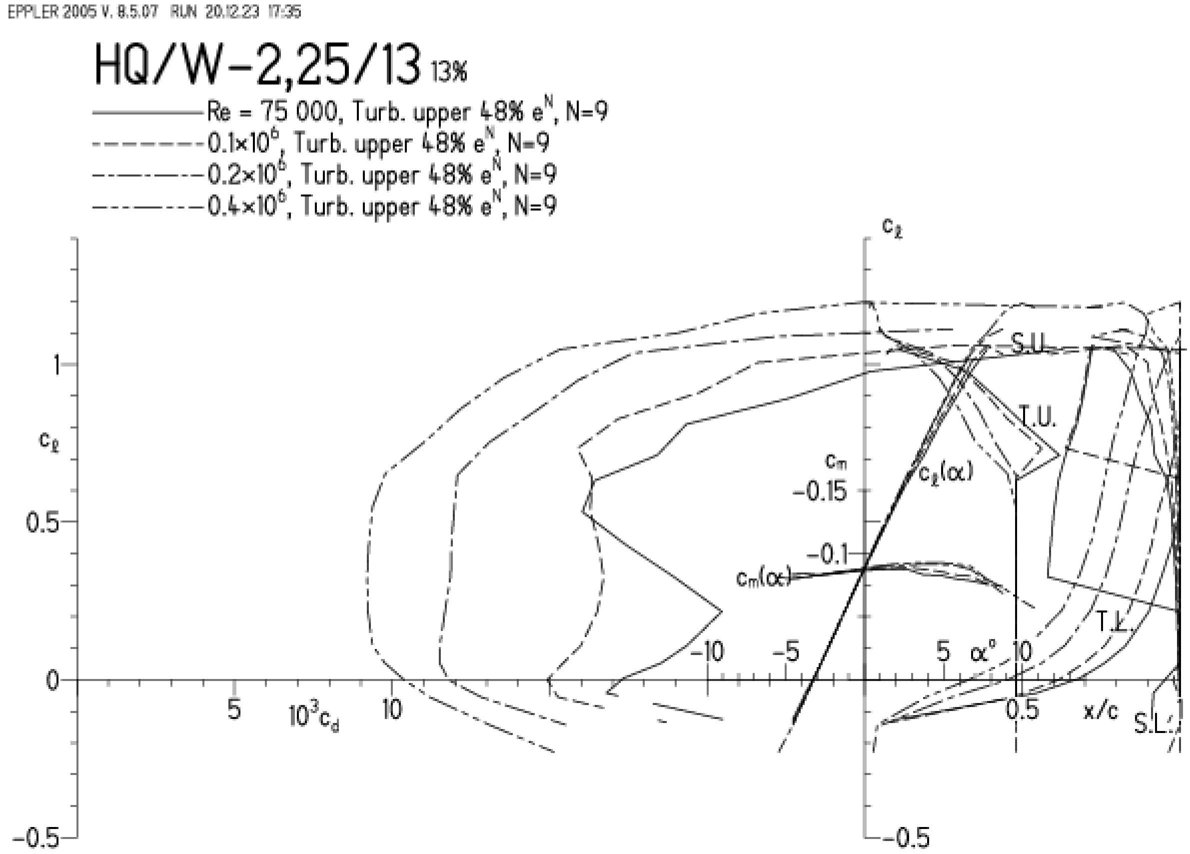
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
α°
x/c
S.L.
10³cd

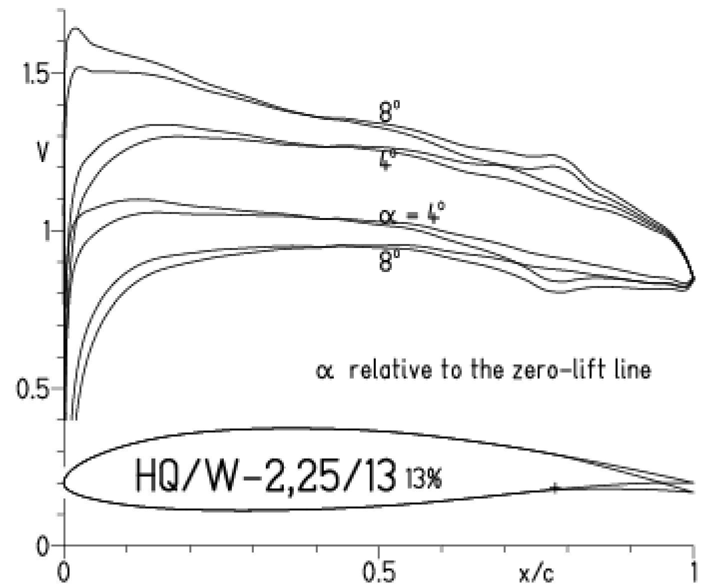
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



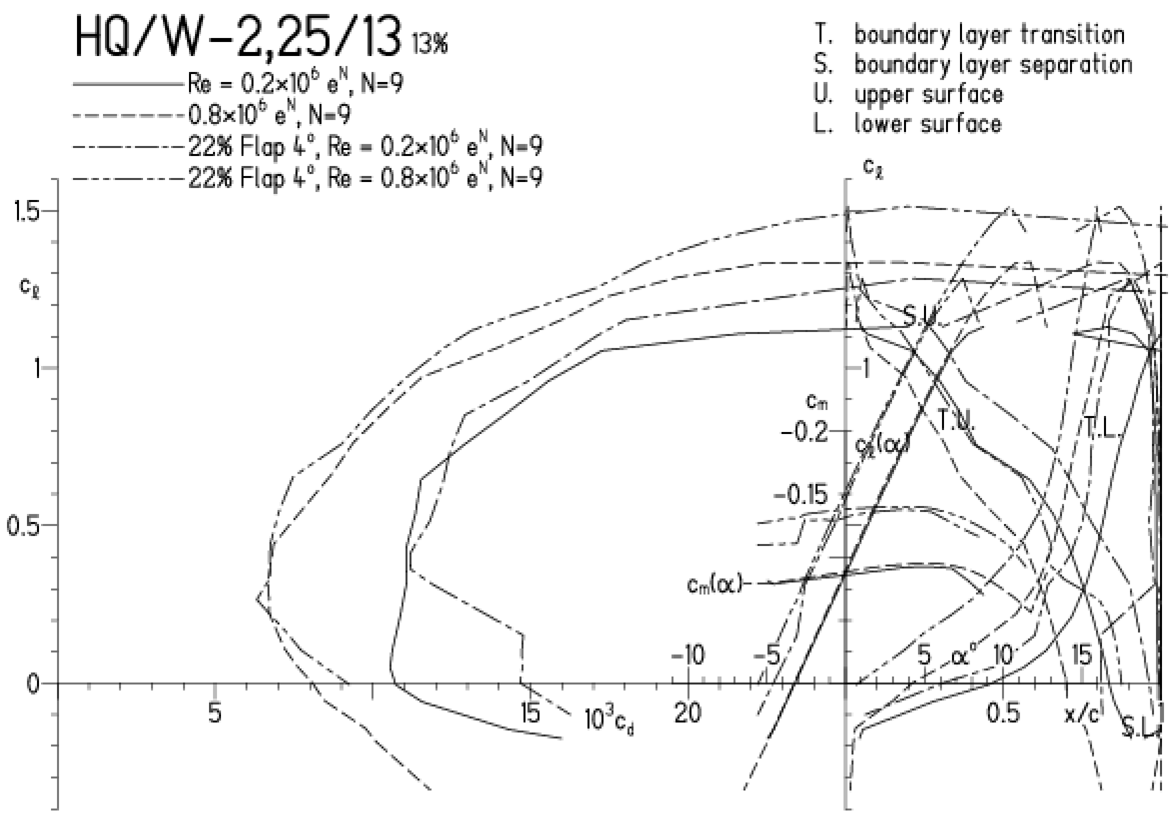


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

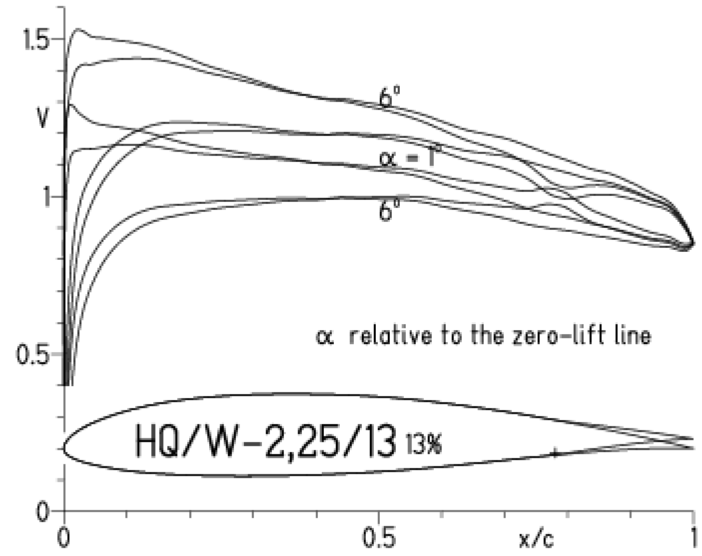


EPPLER 2005 V.

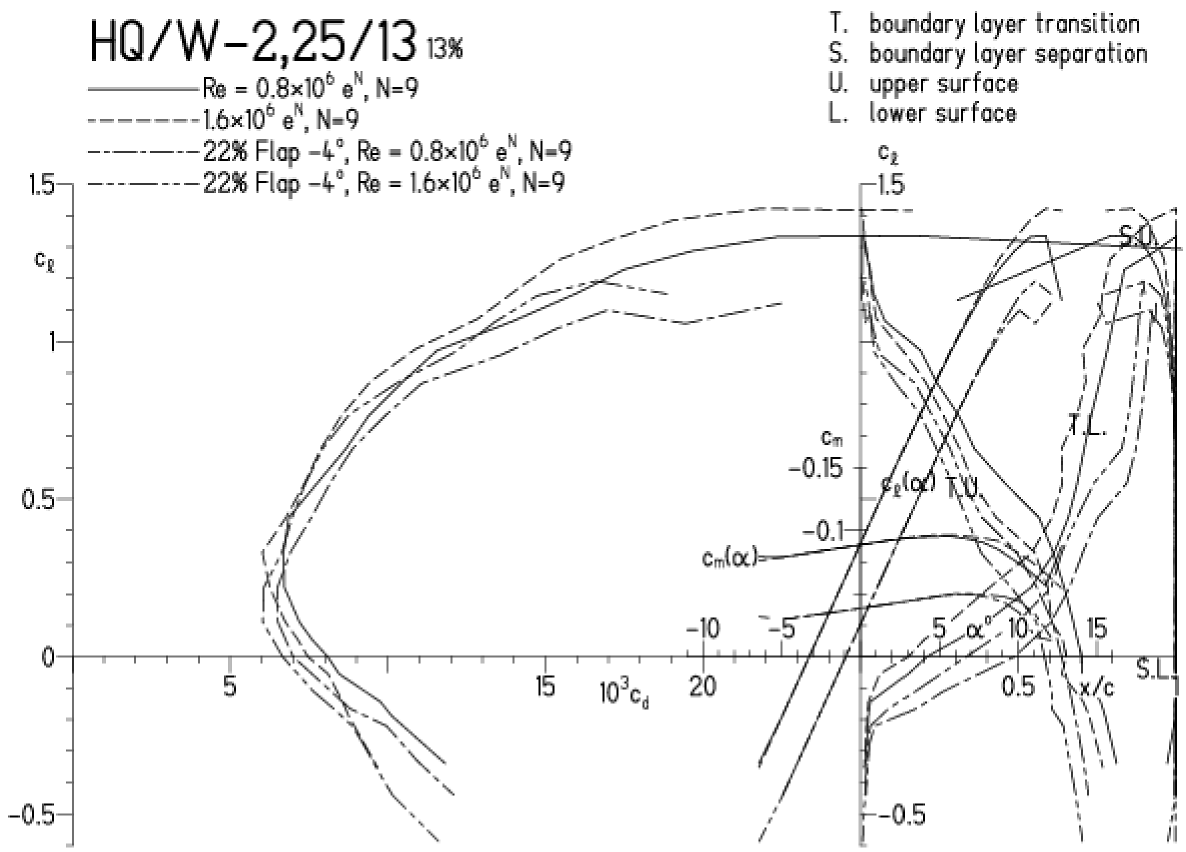


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

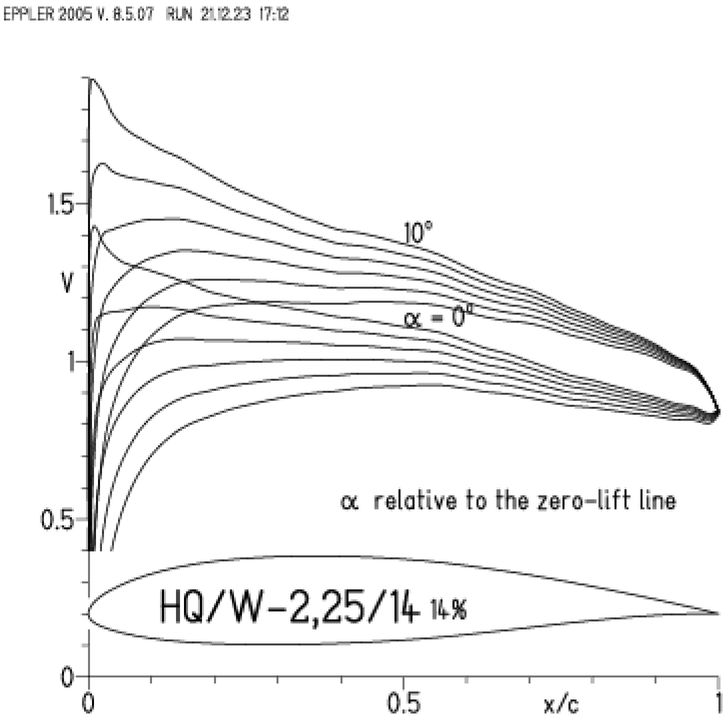
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

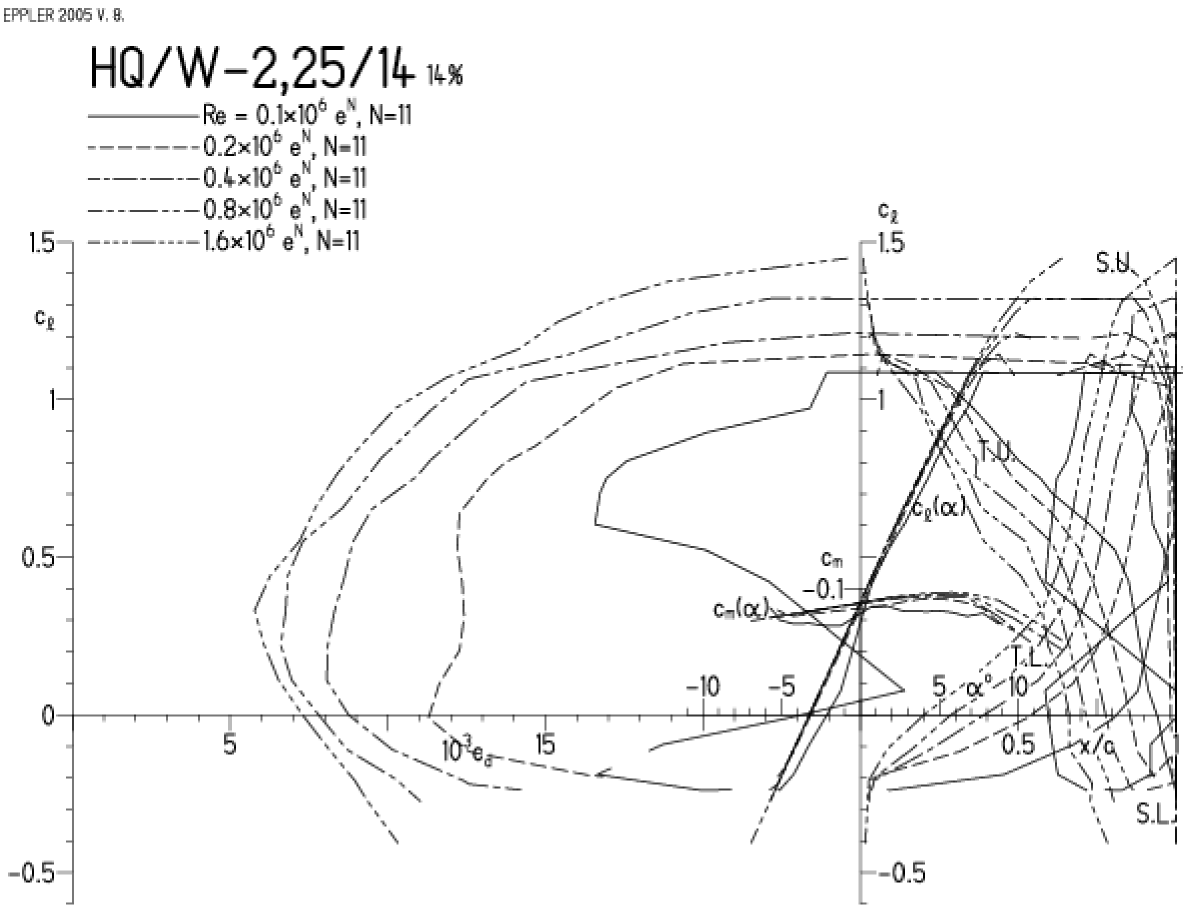


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

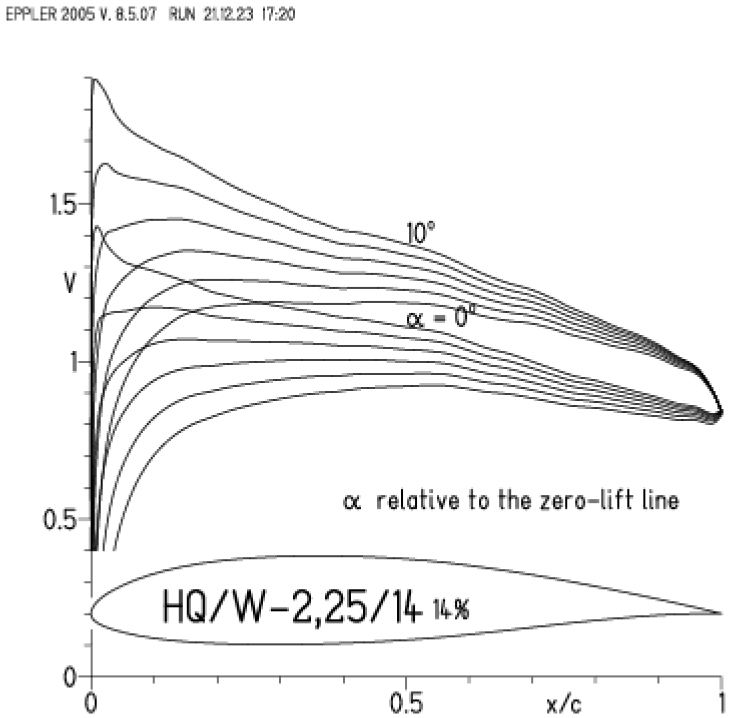


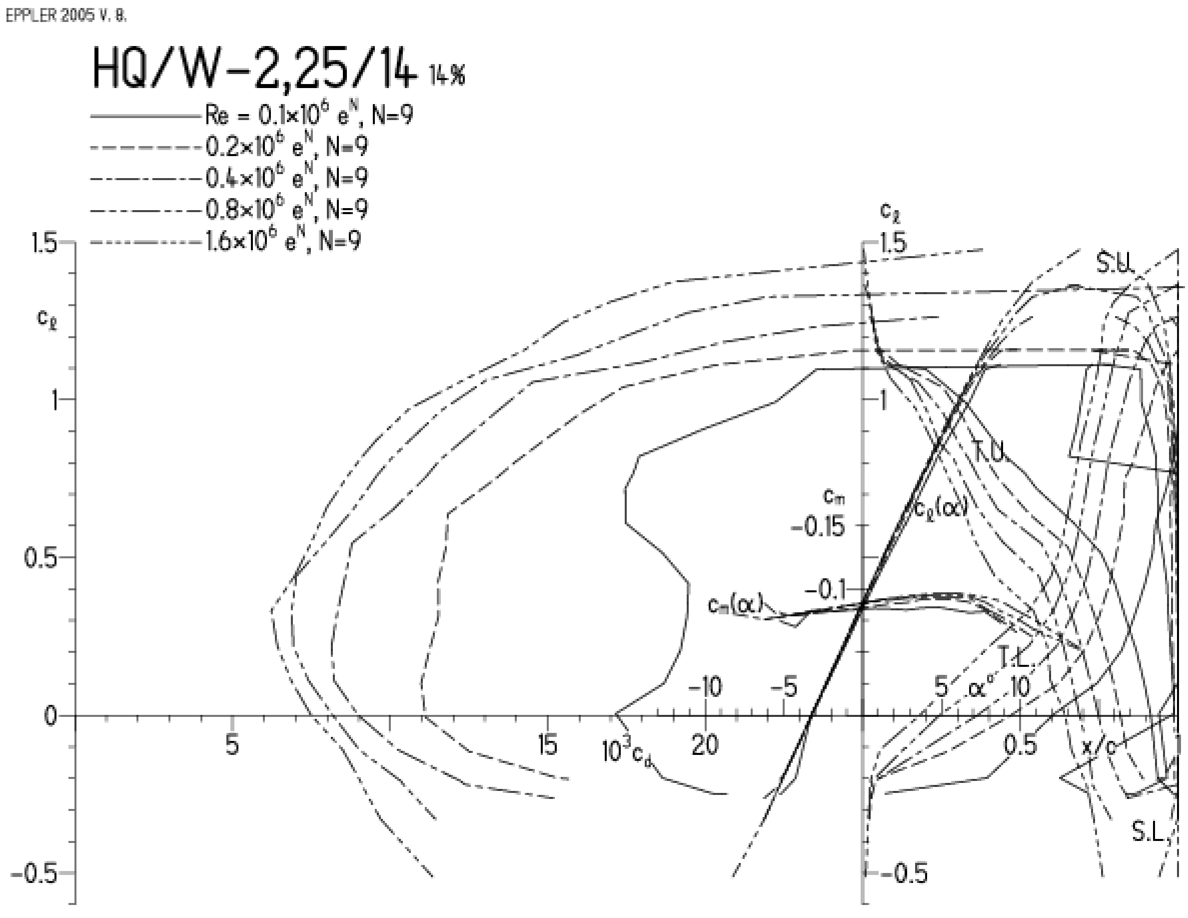
<u>HQ/W-2,25/14</u>, N=11



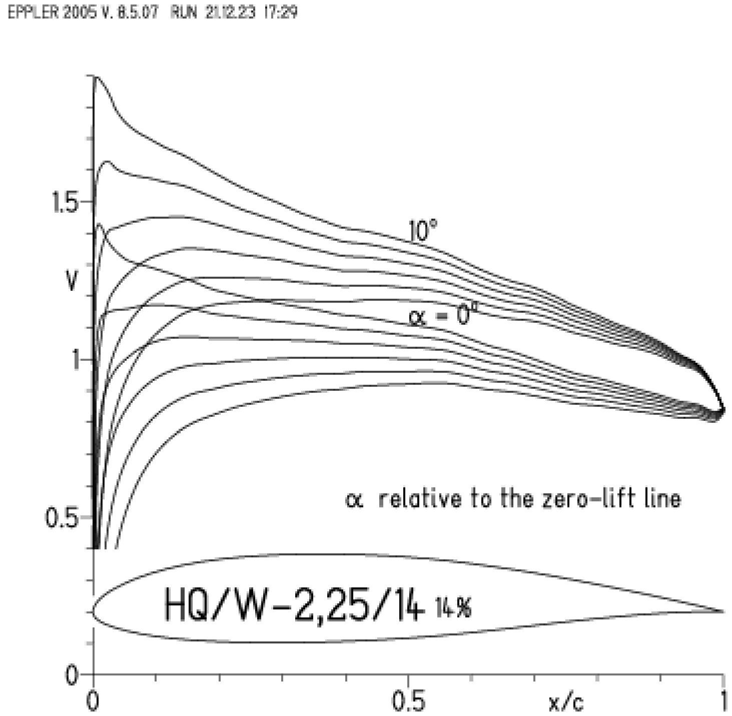


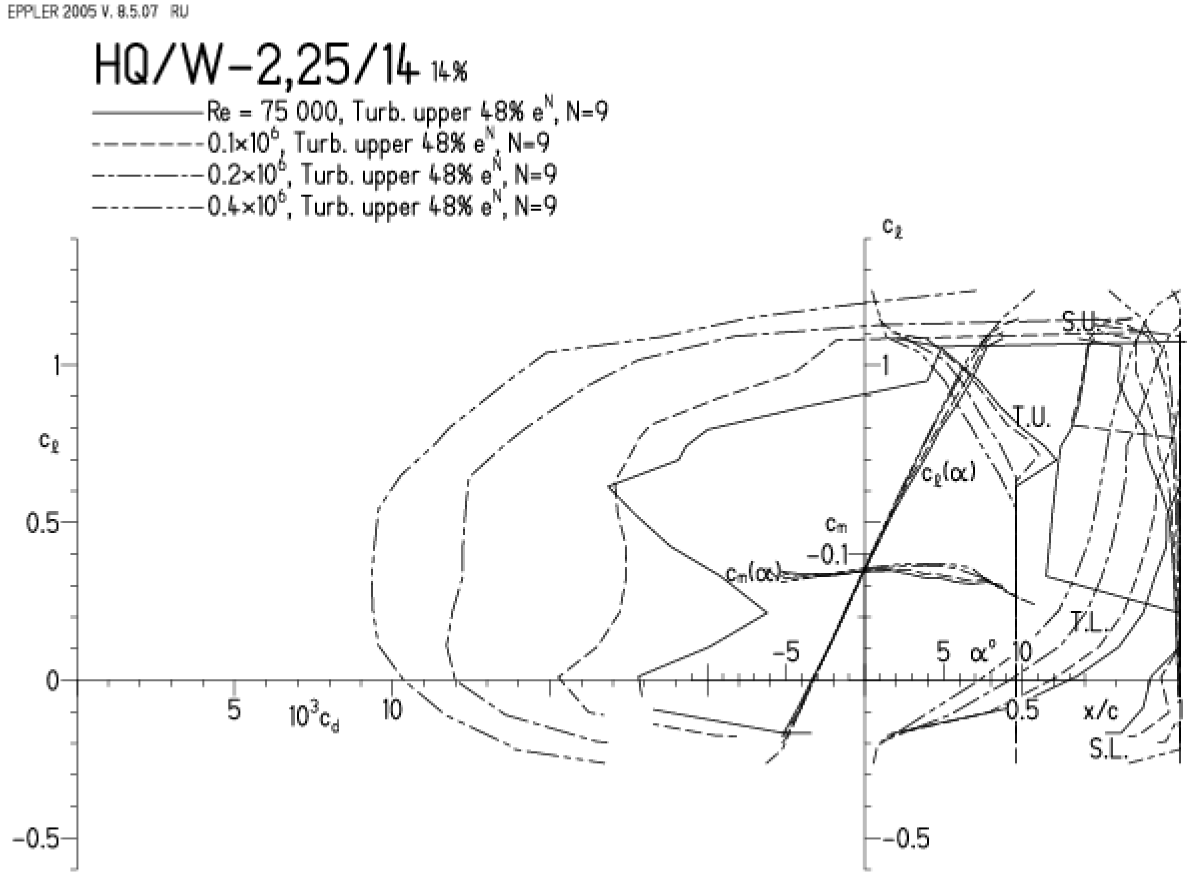
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
−0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

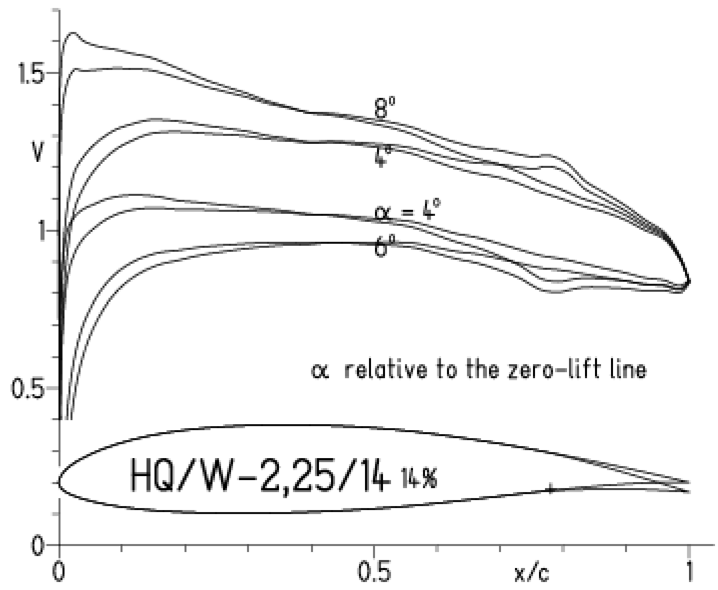
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



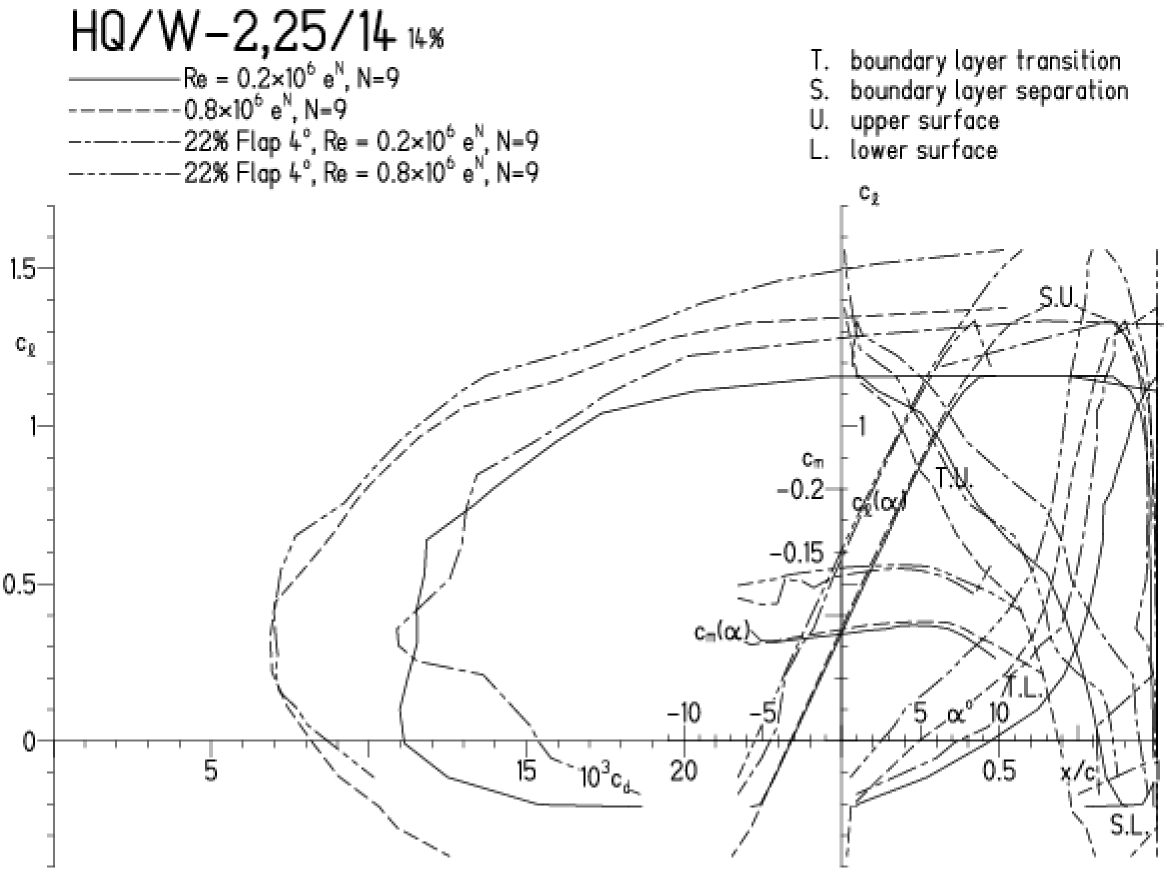


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

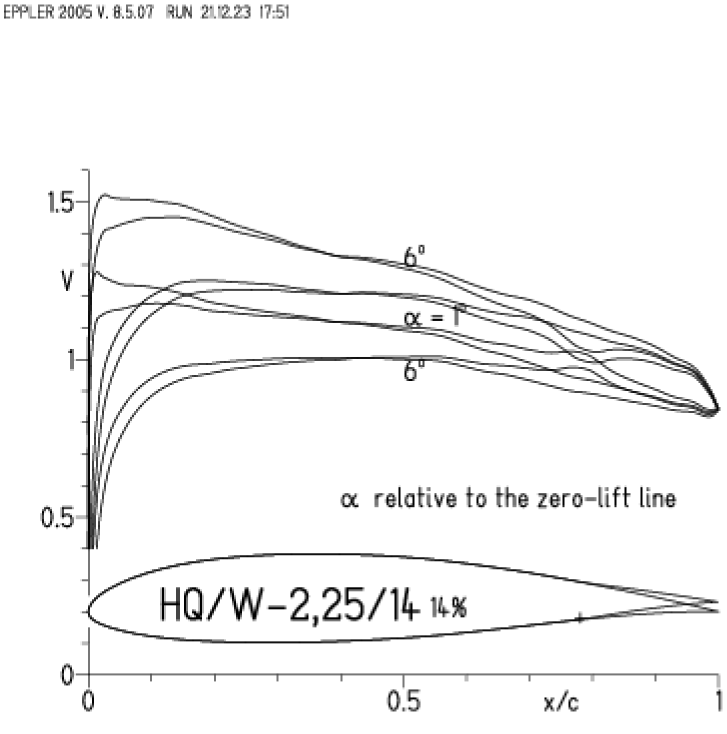
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

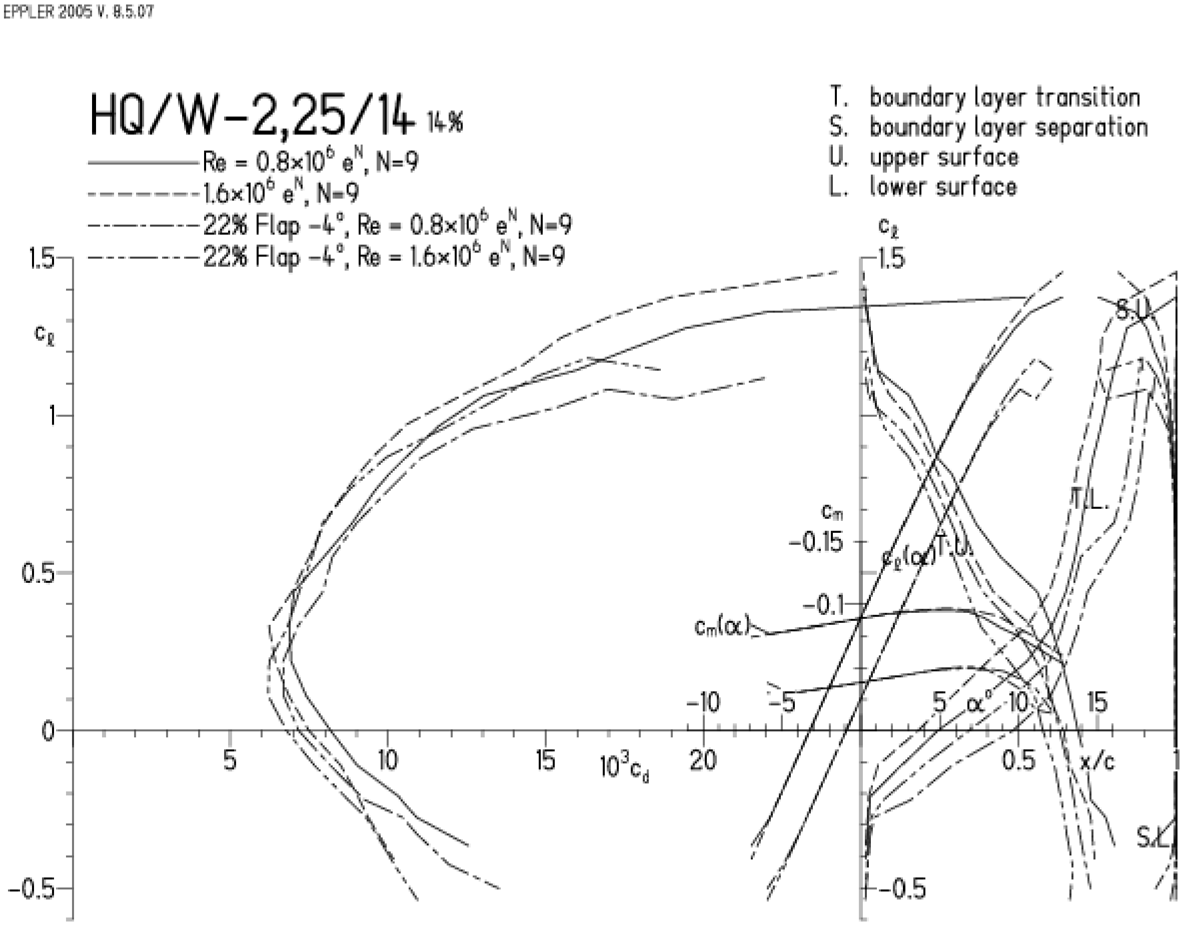


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

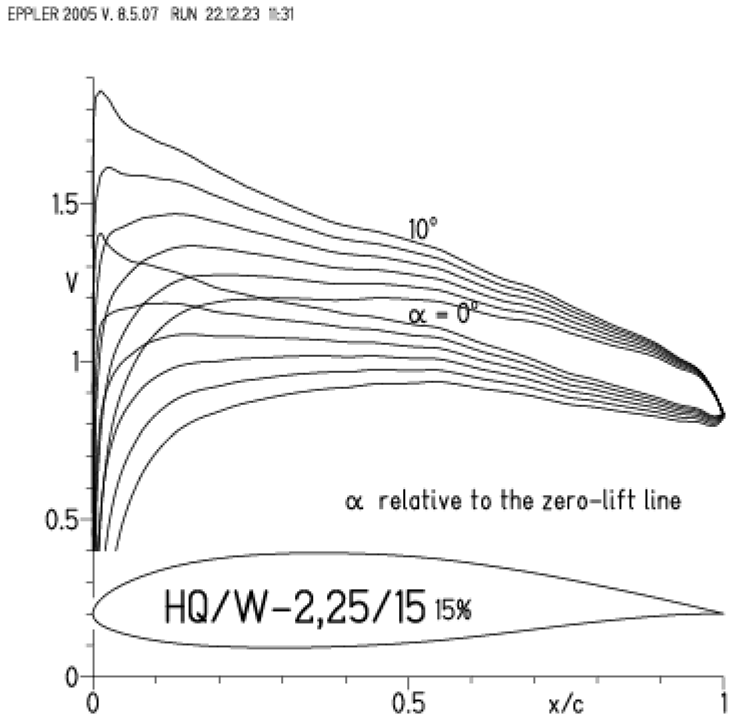


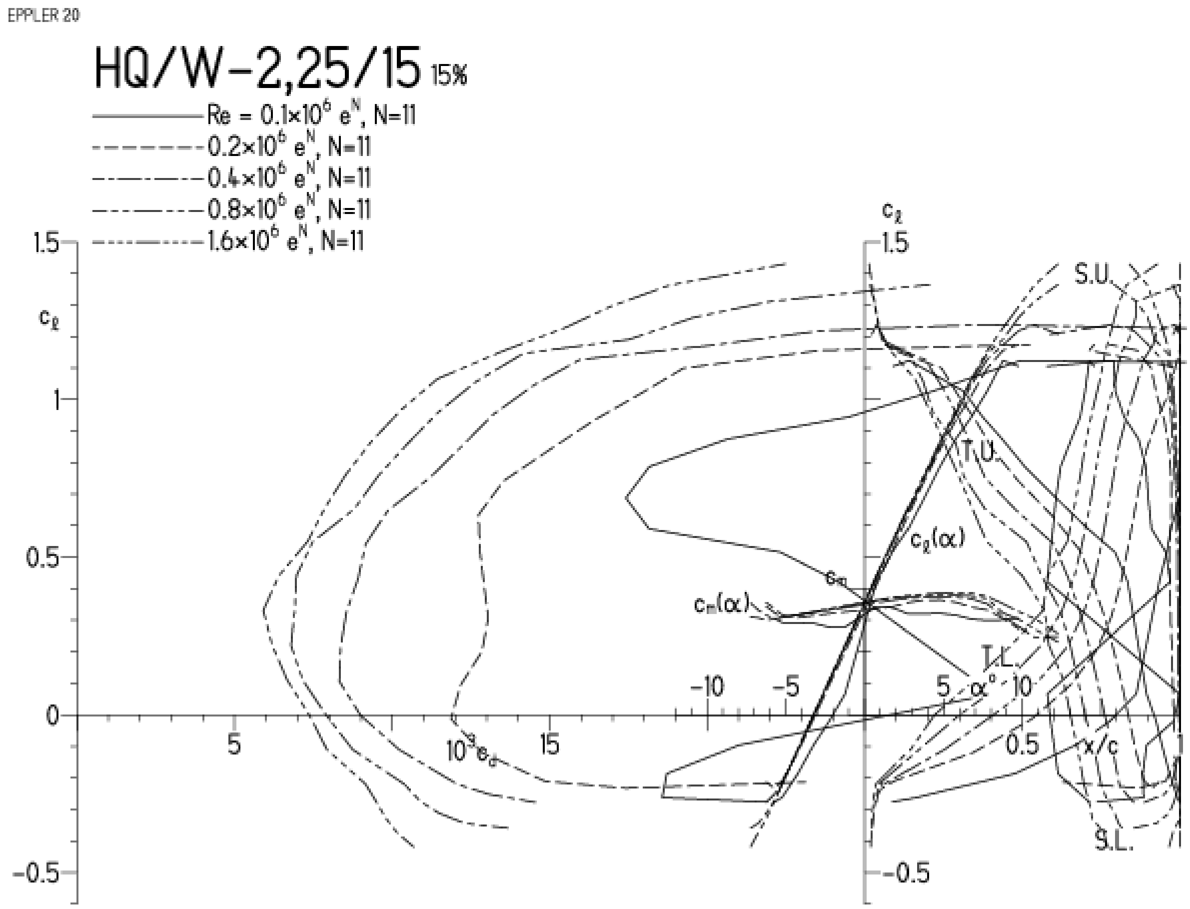
<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag





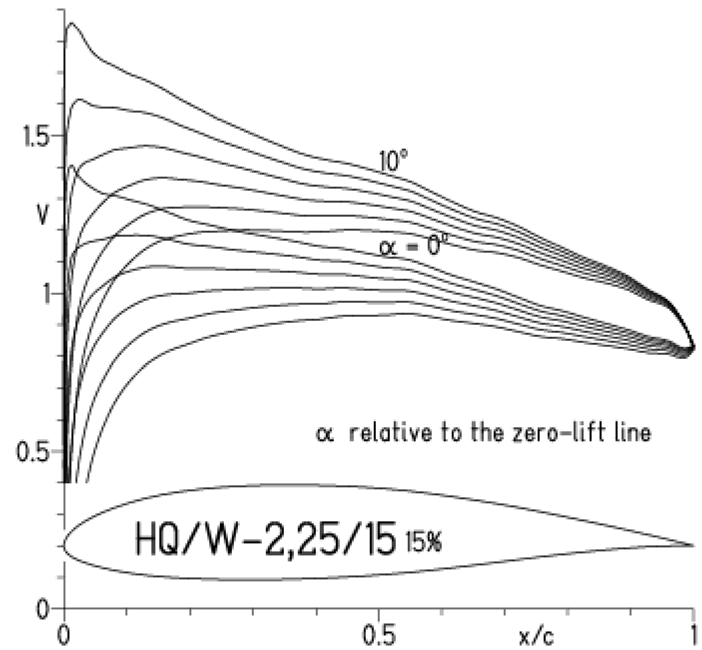
HQ/W-2,25/15, N=11



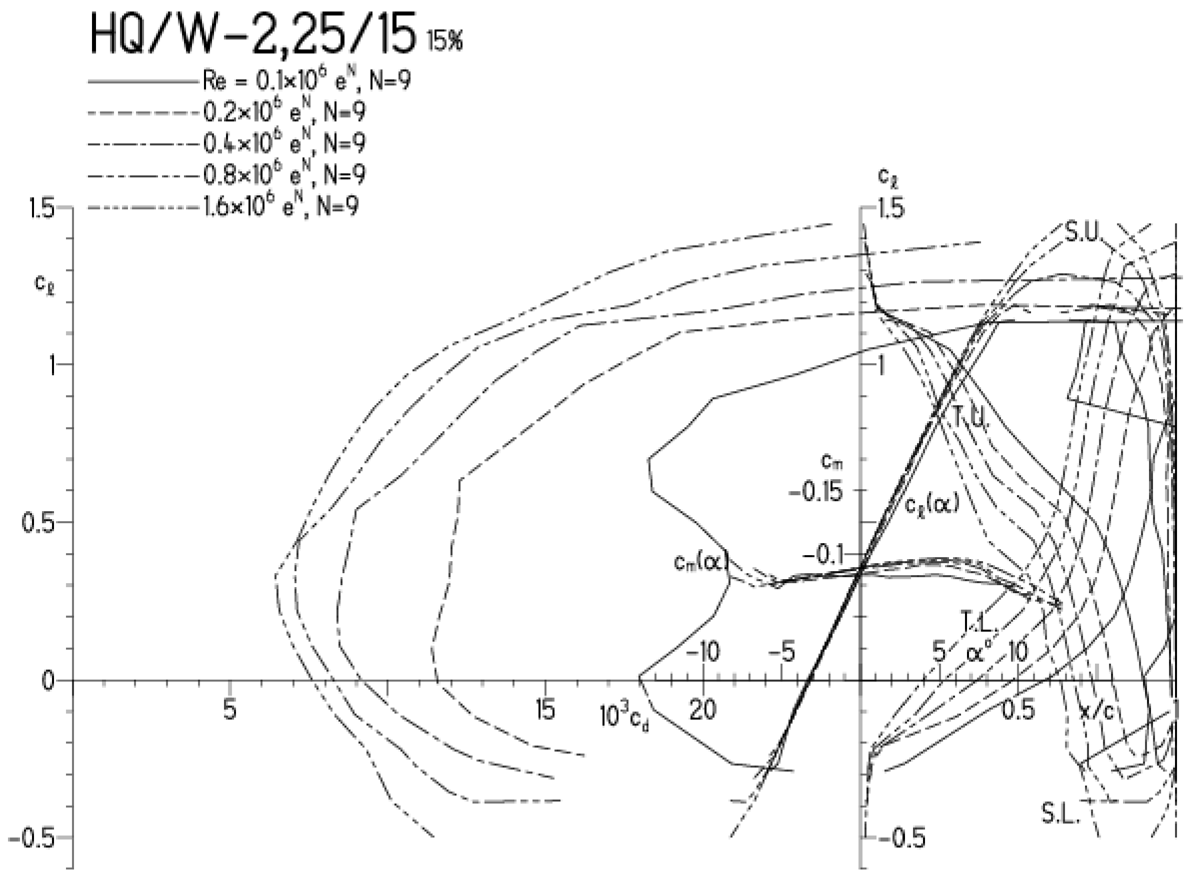


HQ/W-2,25/15, N=9

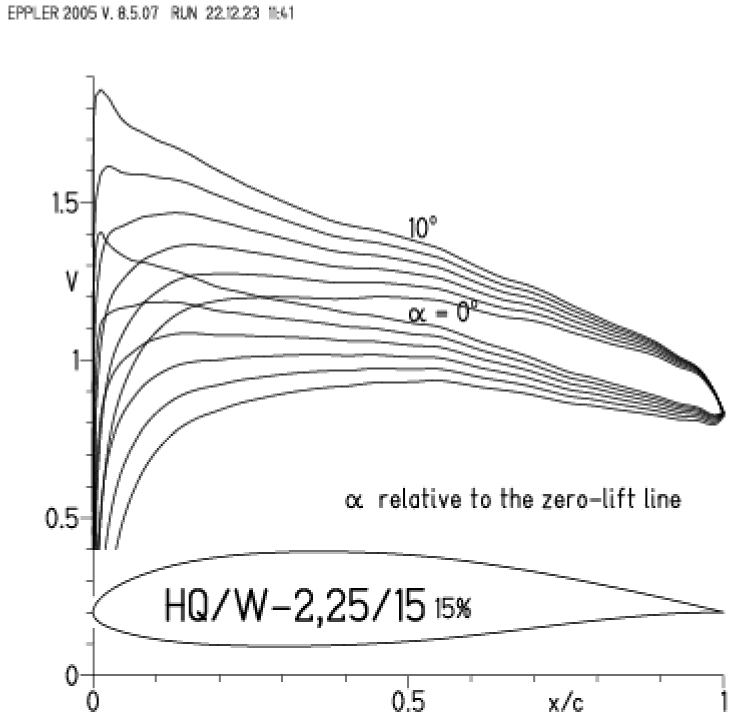
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

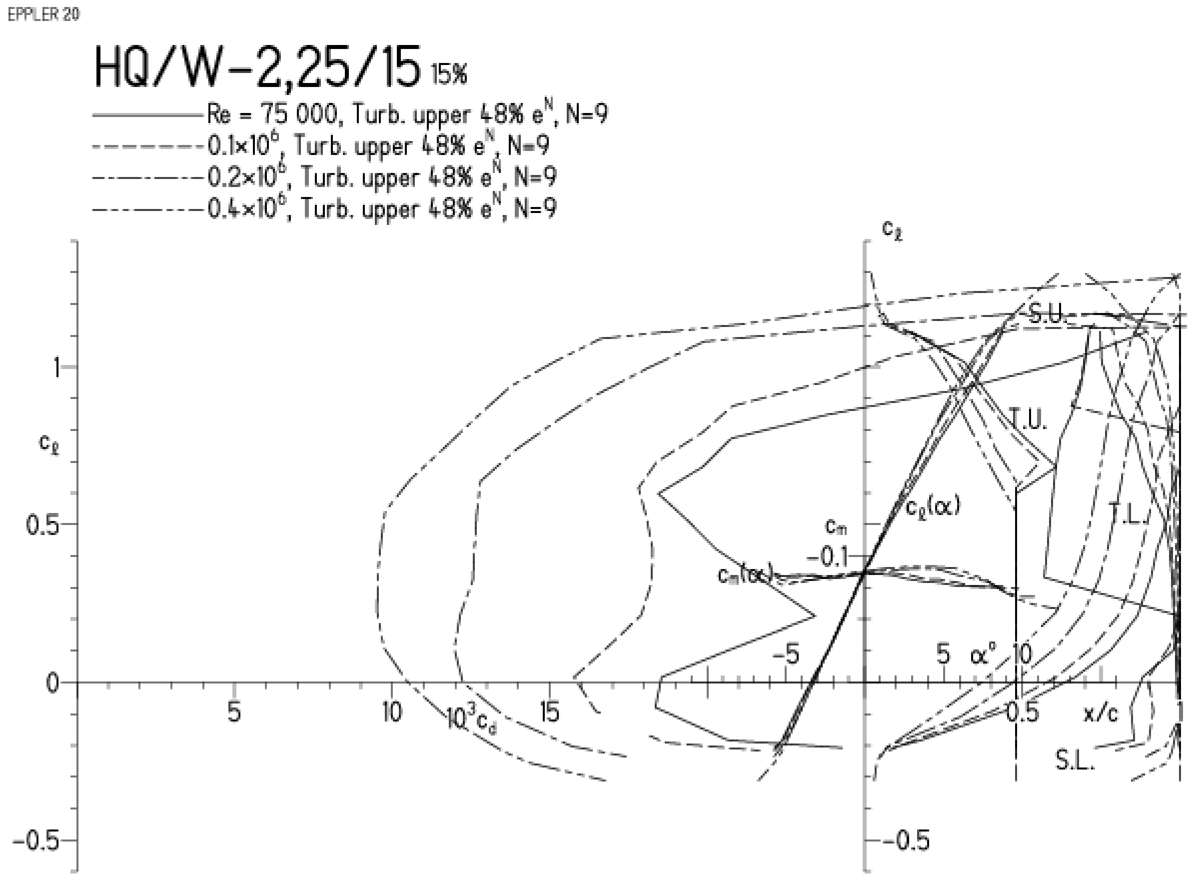


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



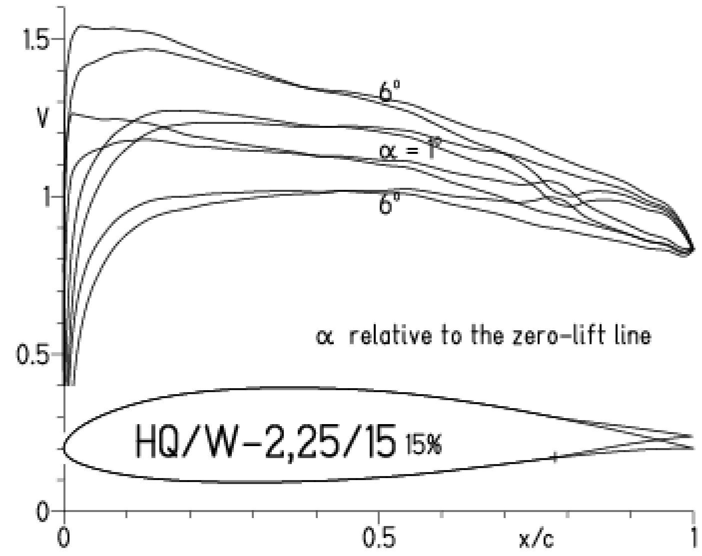


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

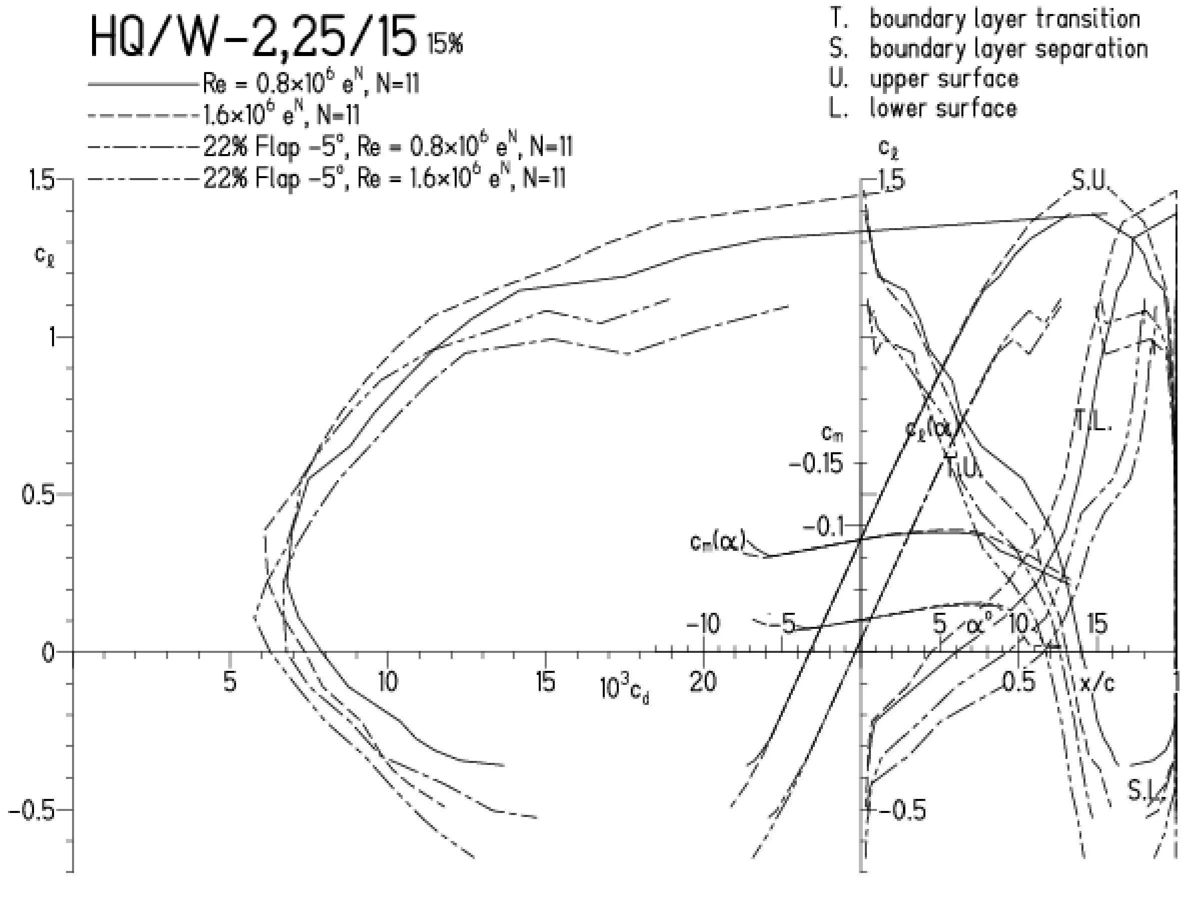
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

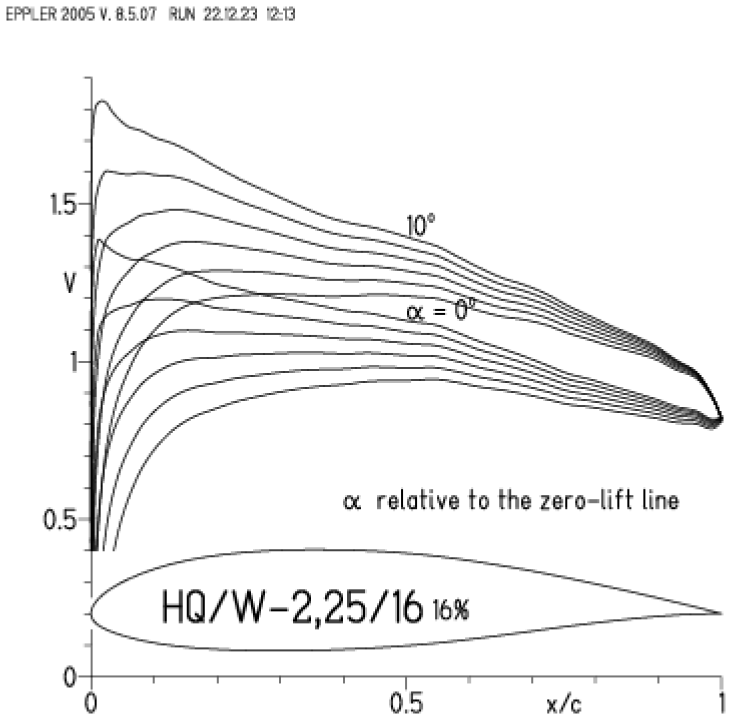
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

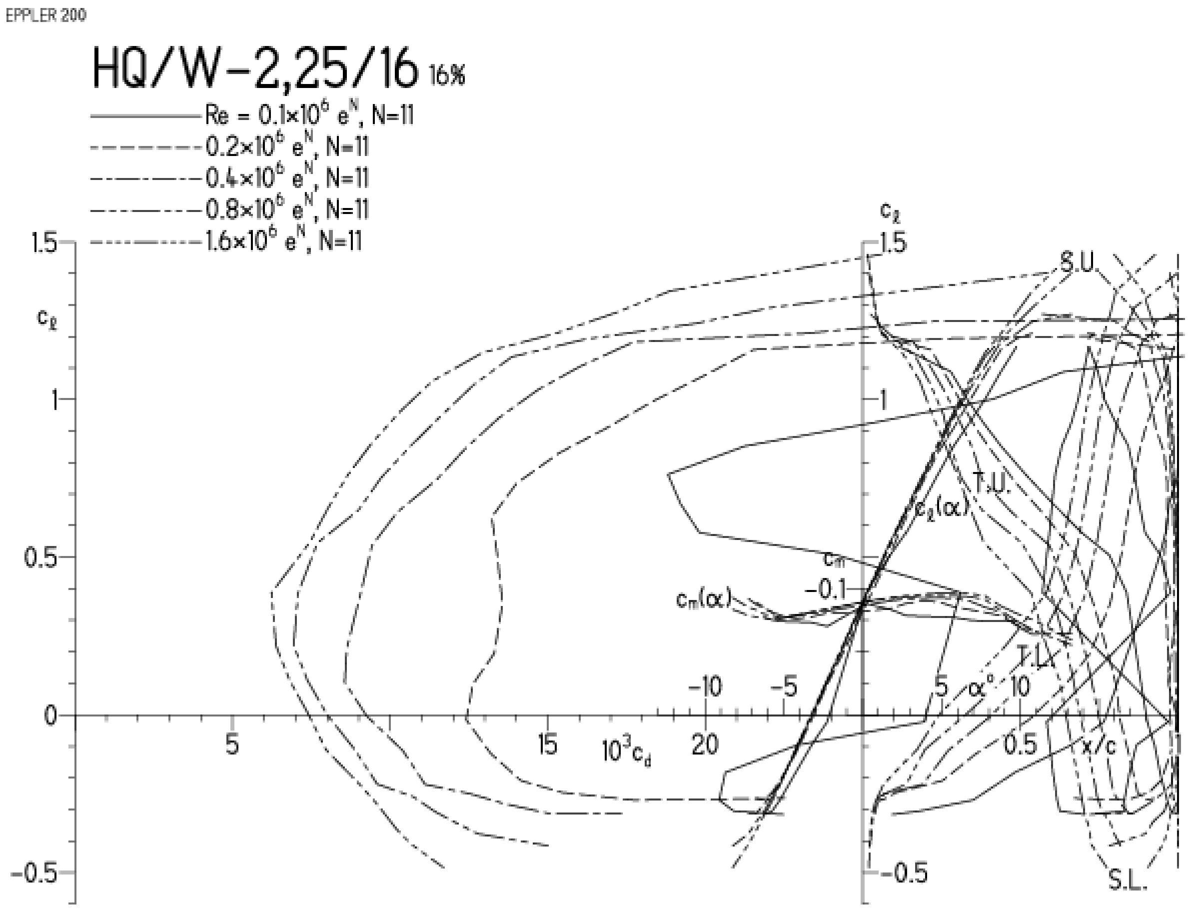


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

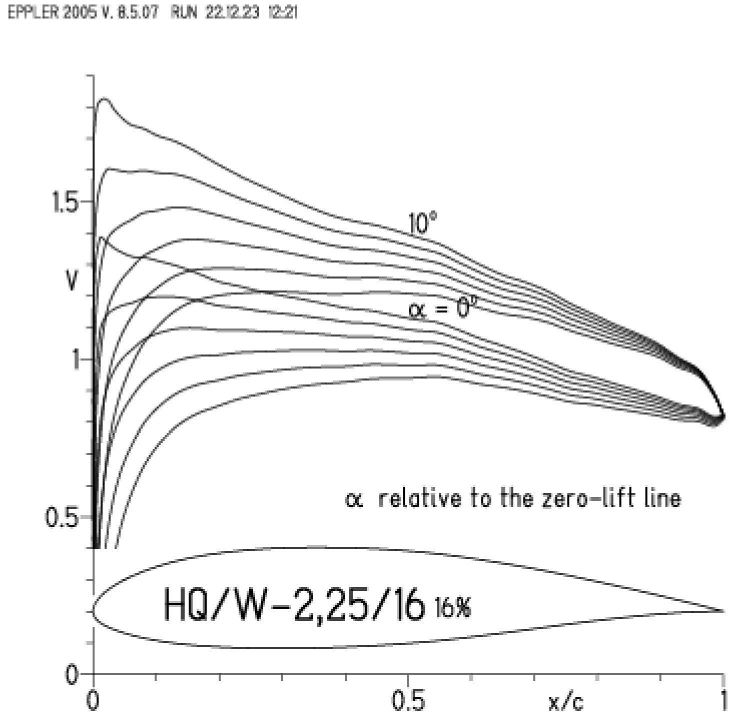


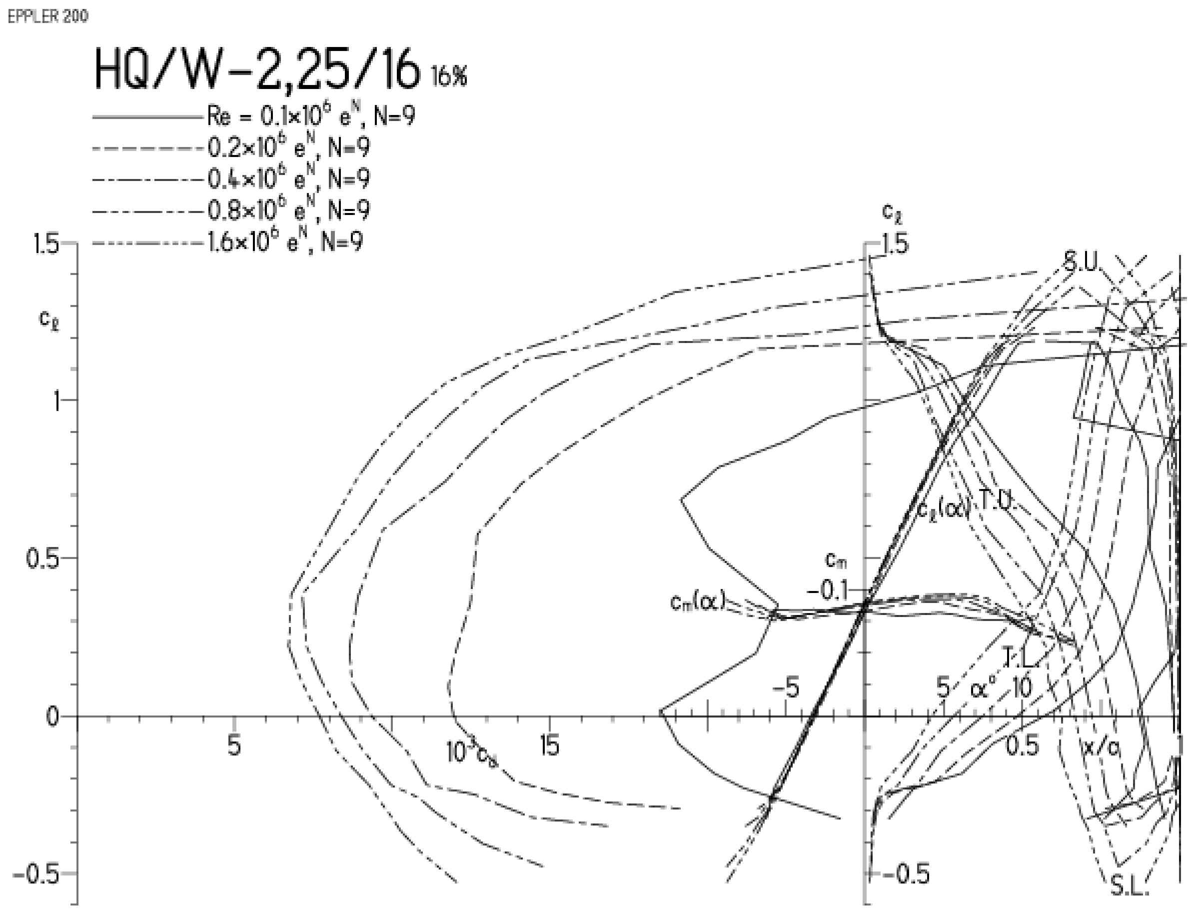
HQ/W-2,25/16, N=11



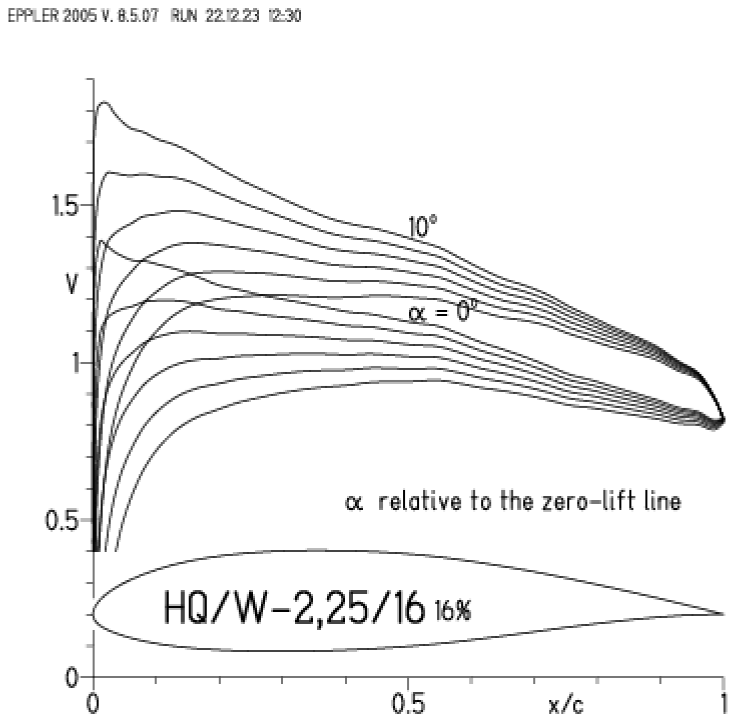


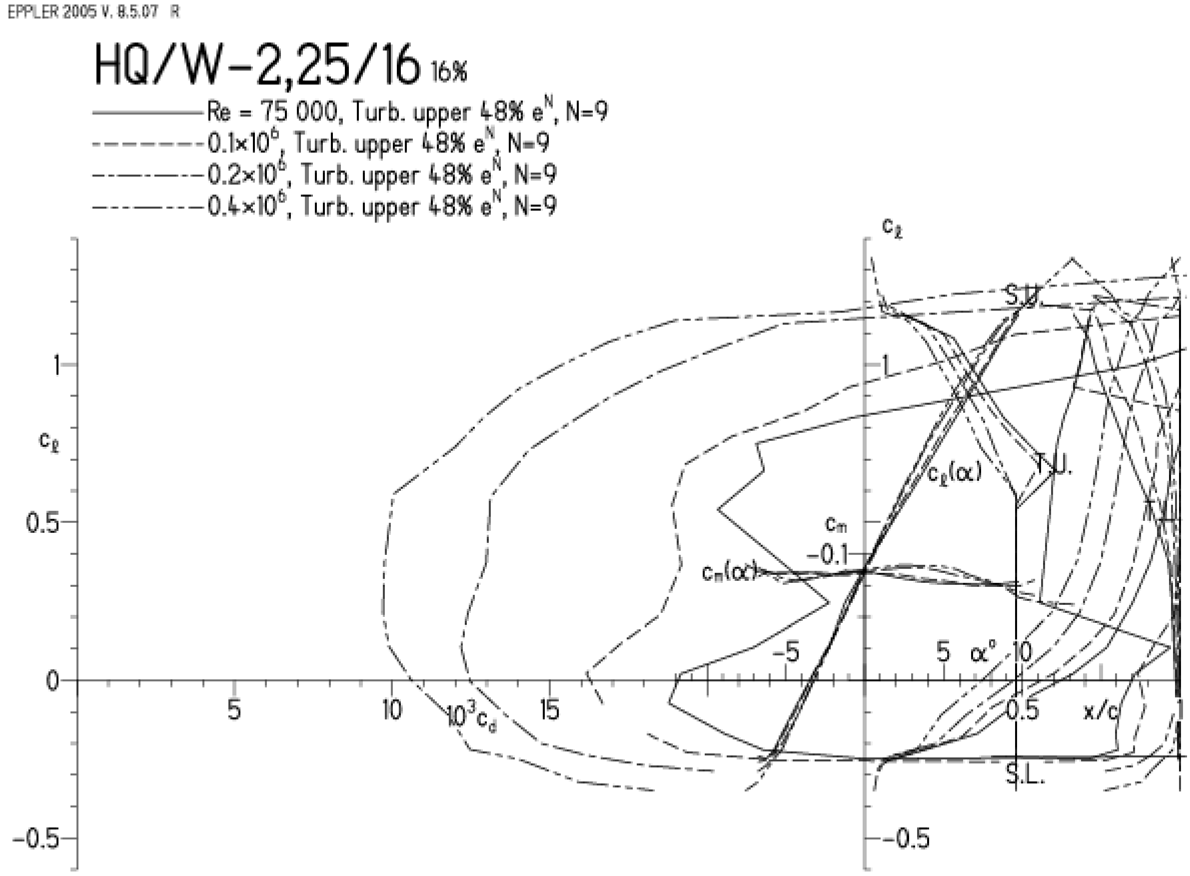
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/16 16%
x/c


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
cm
10^3 cd
α°
x/c

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



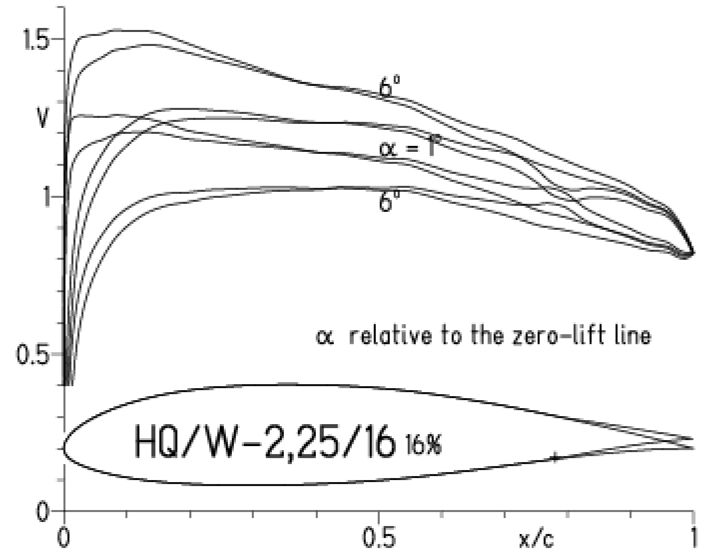


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

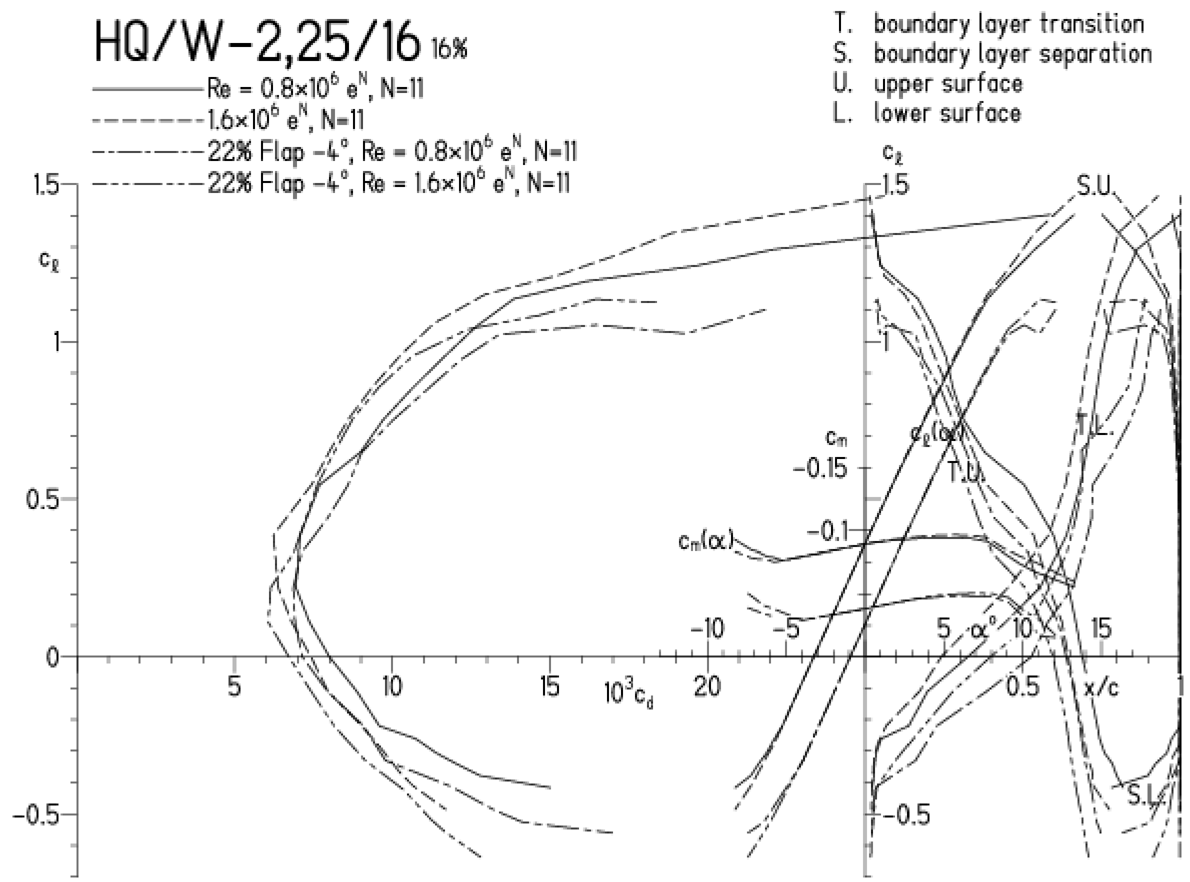
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

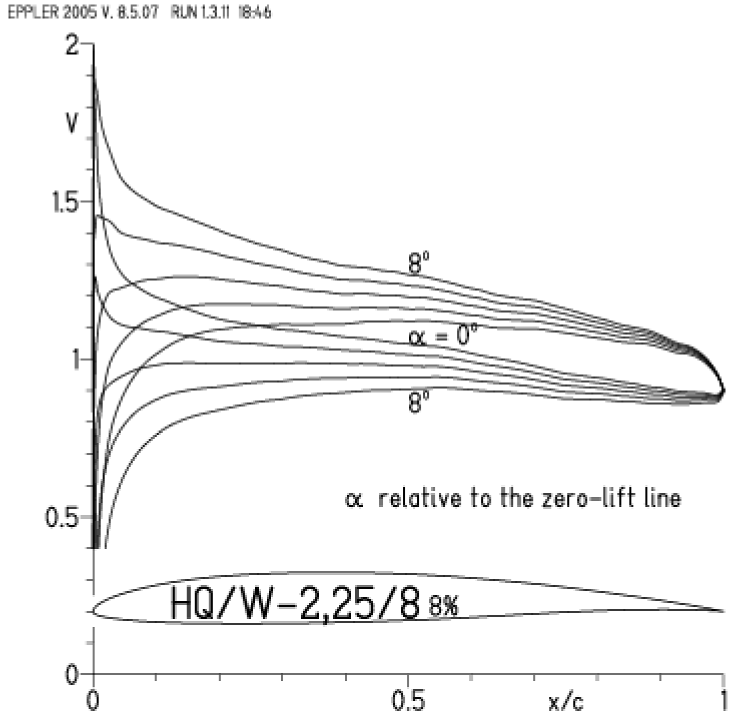
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

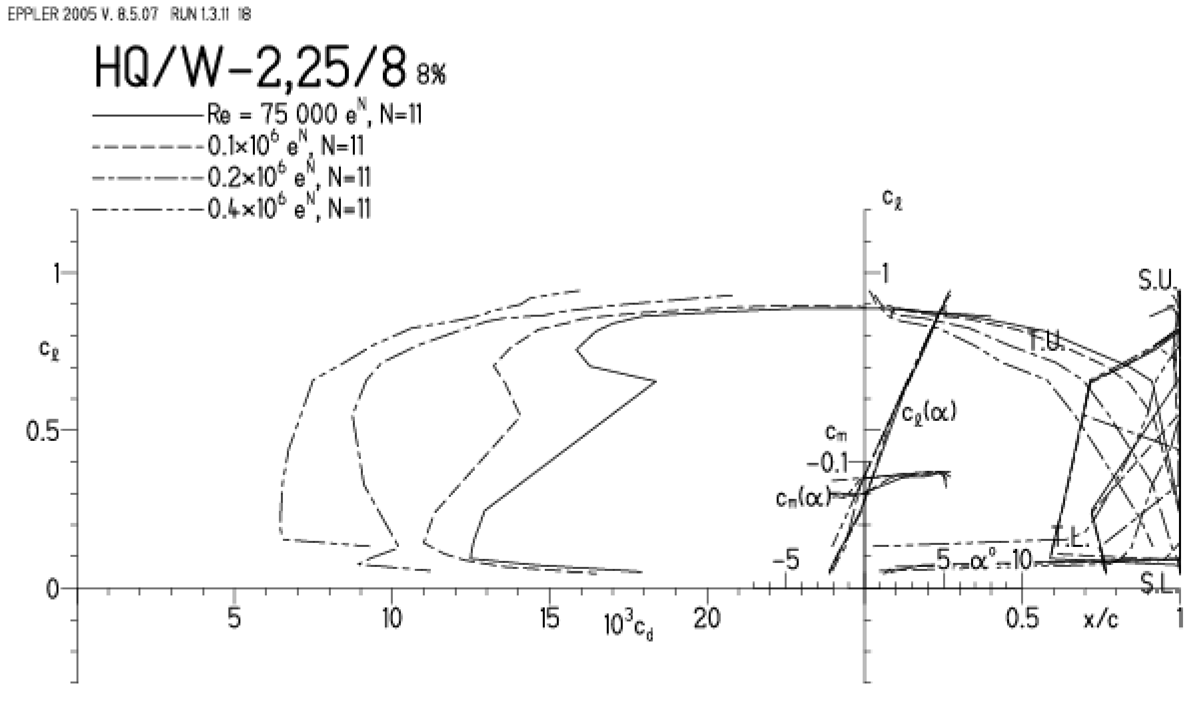


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

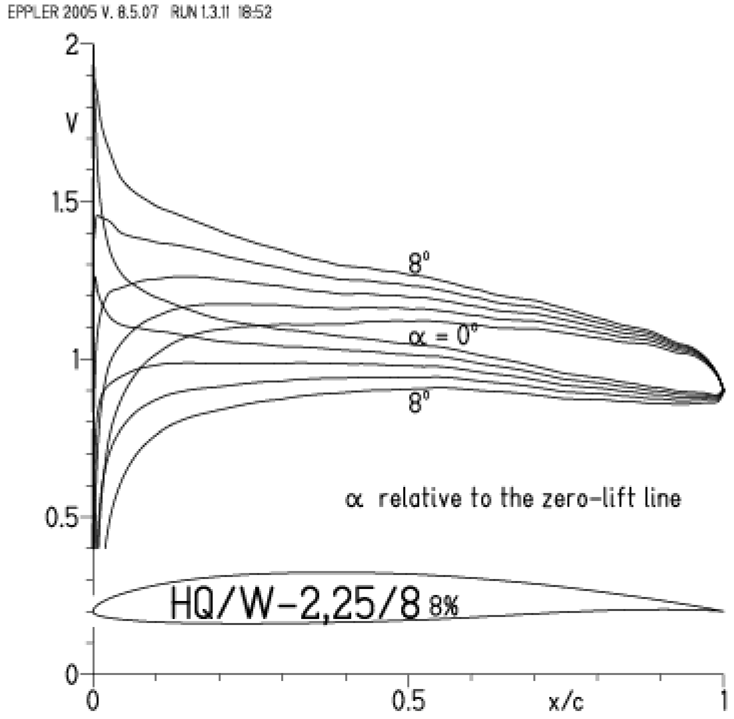


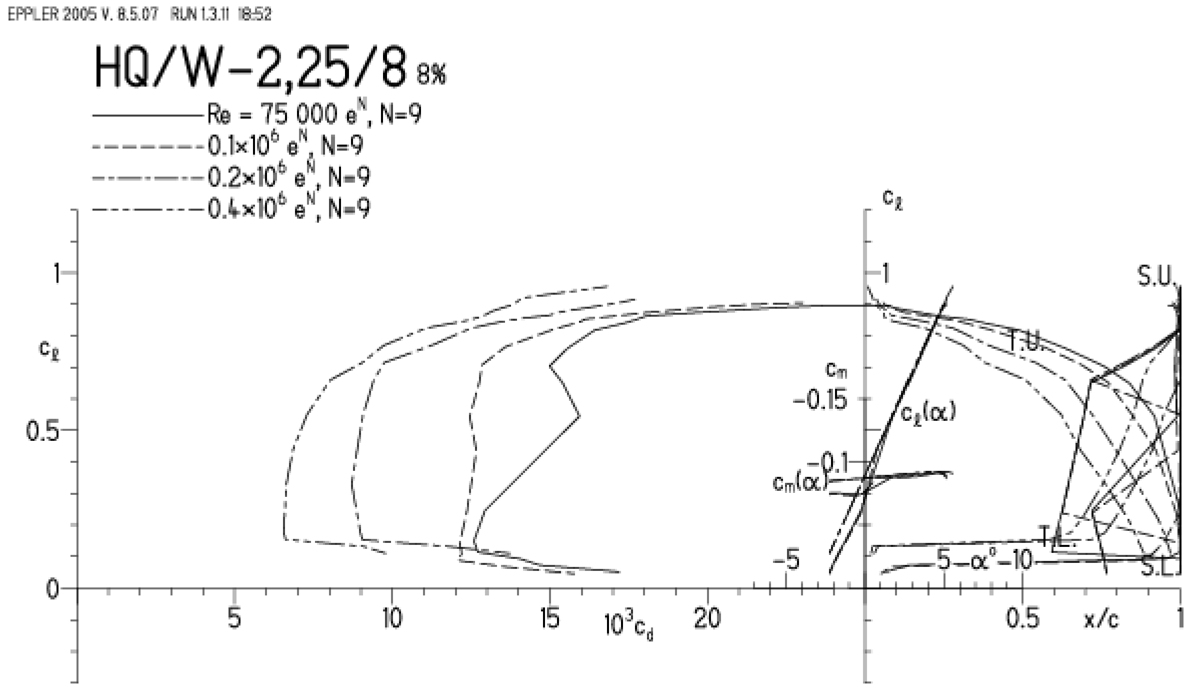
<u>HQ/W-2,25/8</u>, N=11



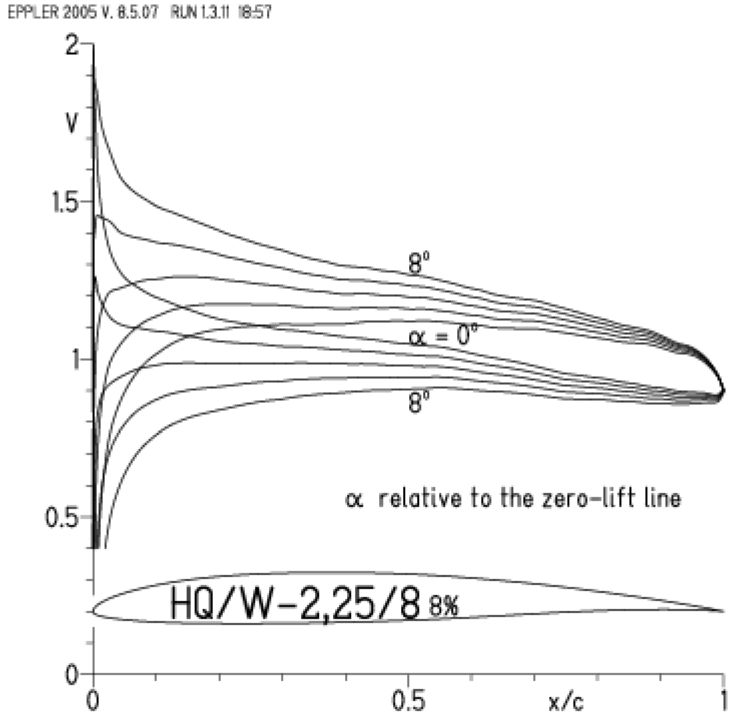


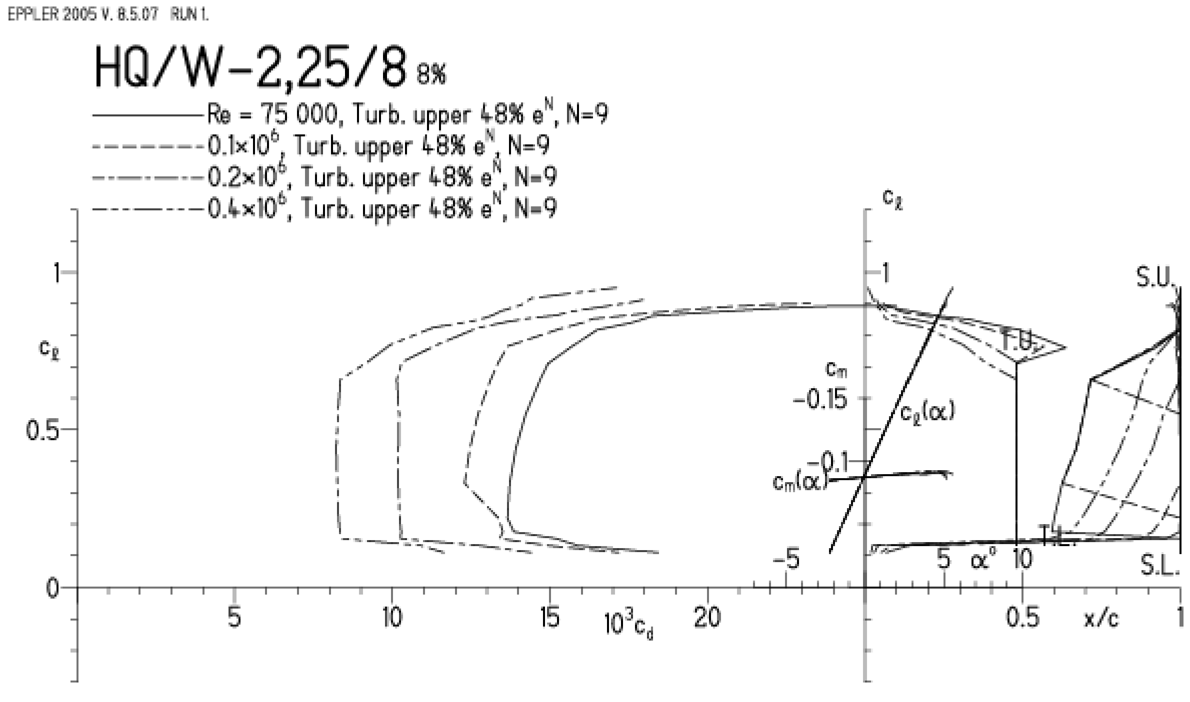
<u>HQ/W-2,25/8</u>, N=9





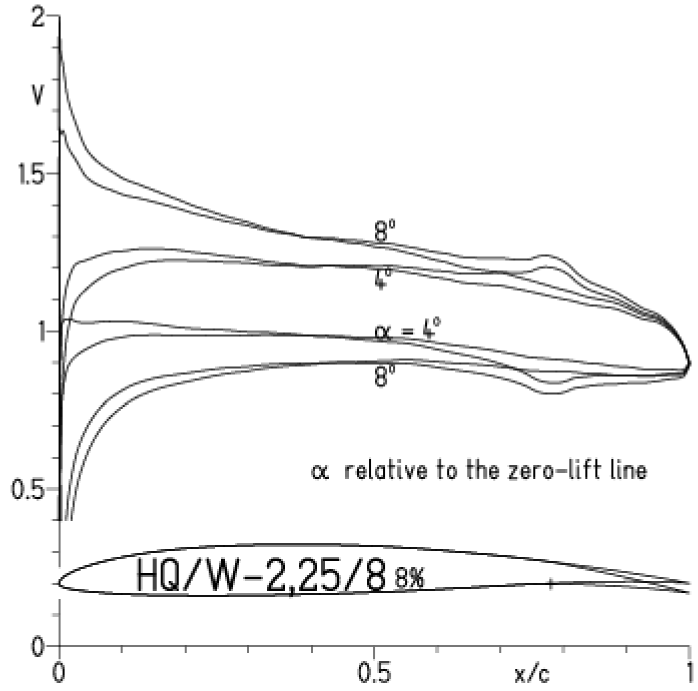
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



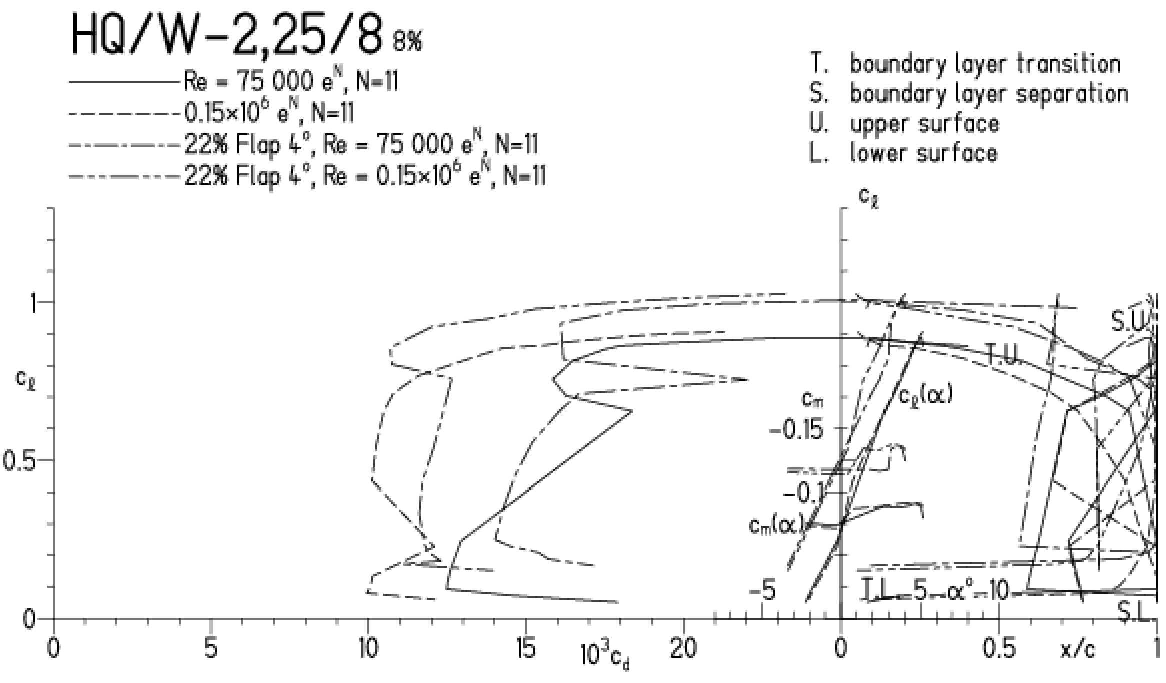


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

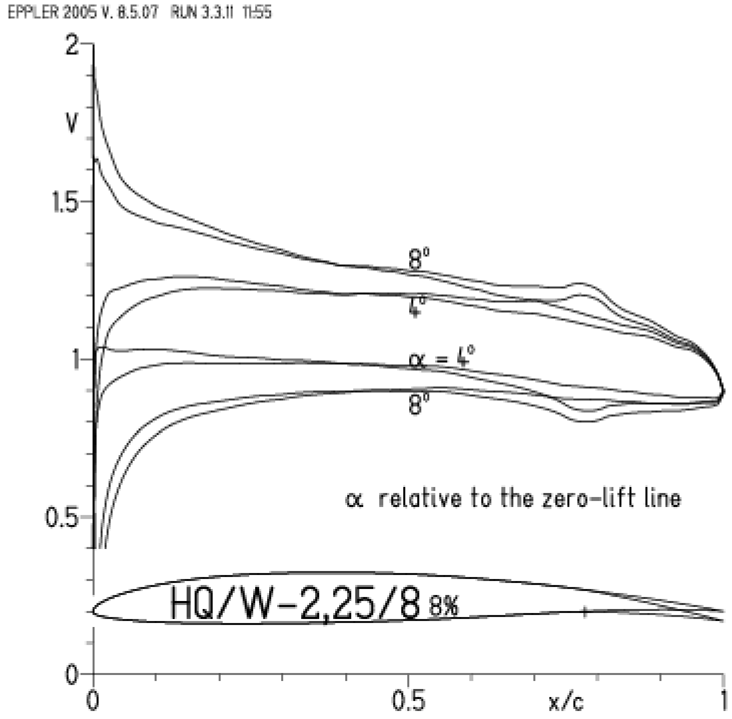
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

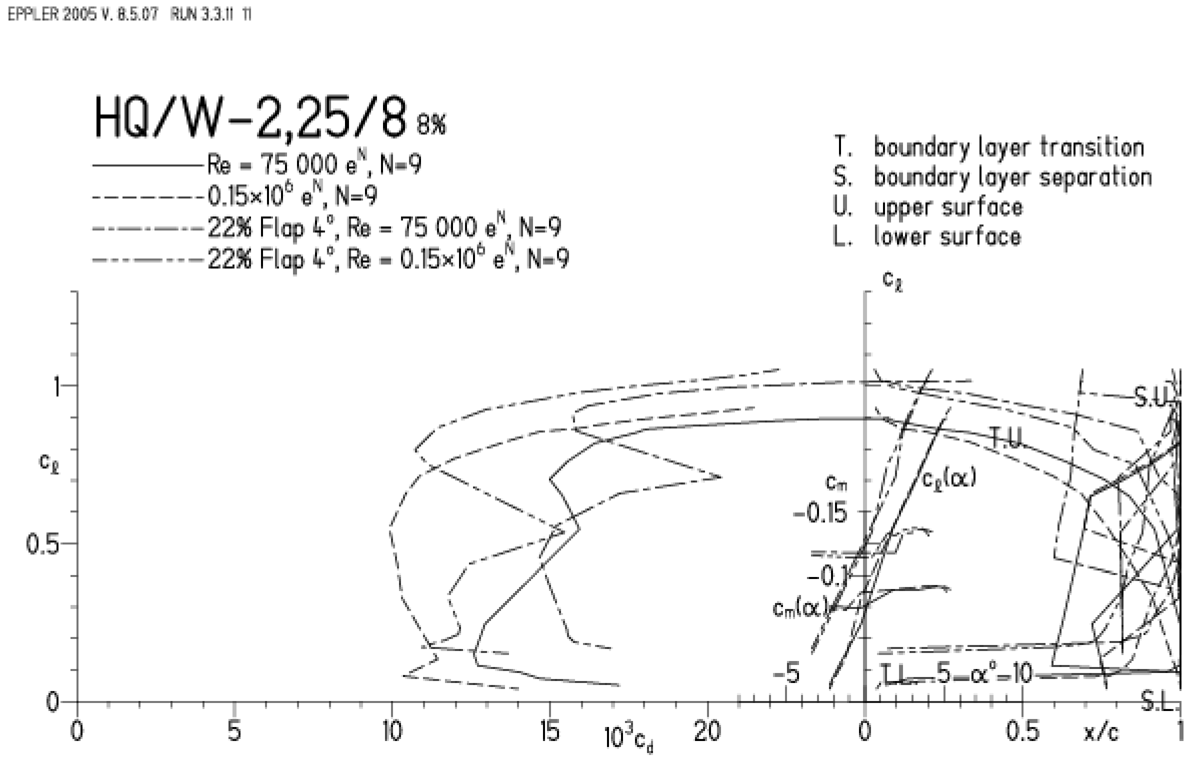


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

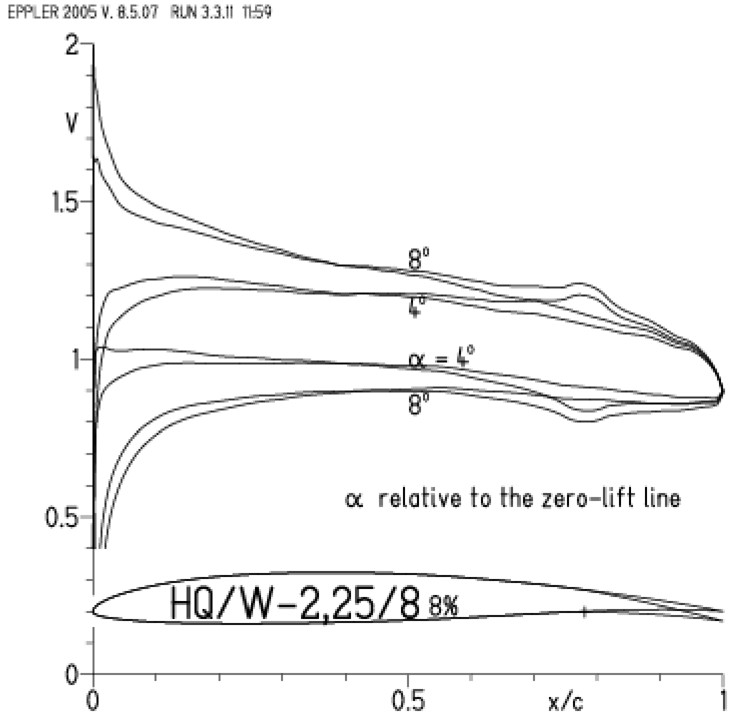


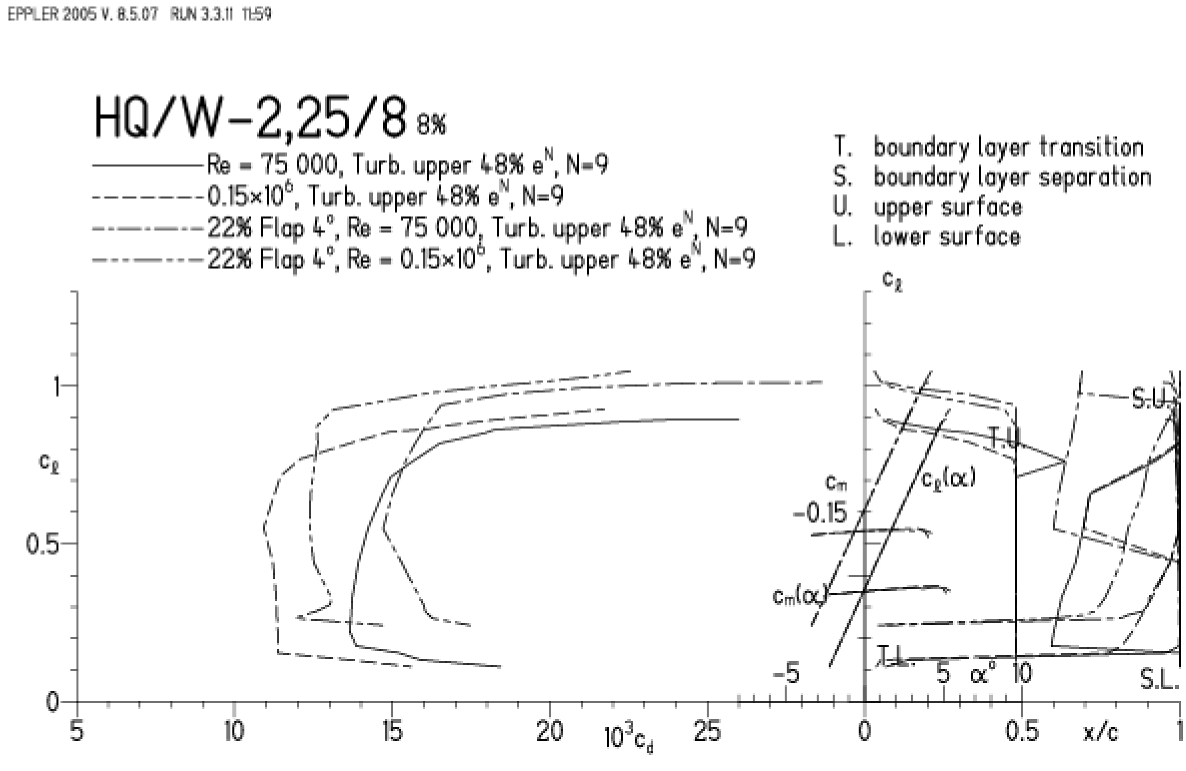
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





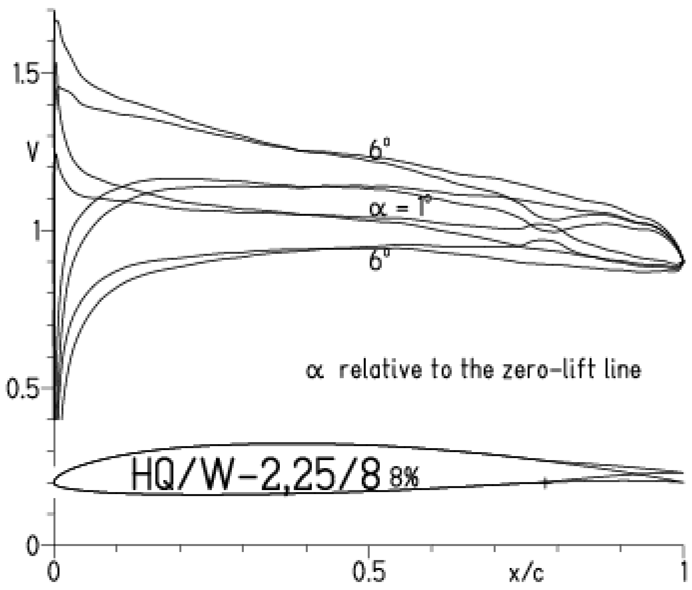
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



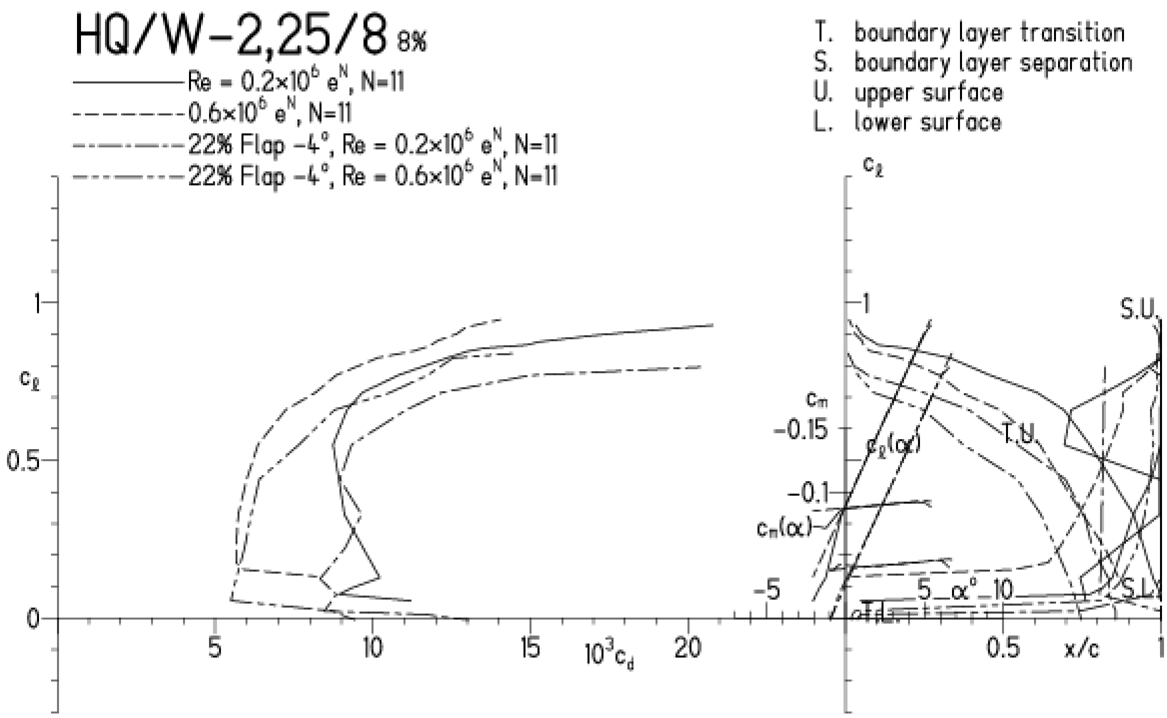


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

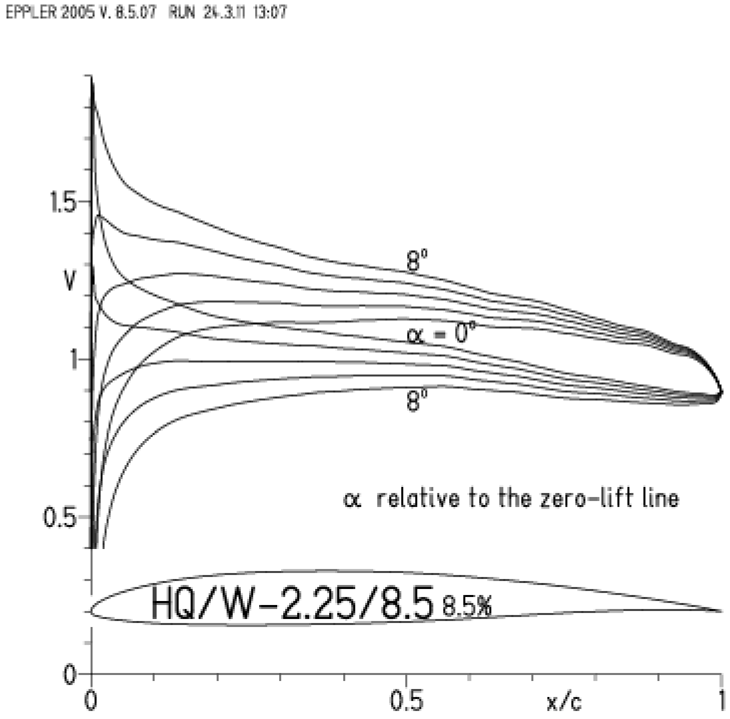
EPPLER 2005 V. 8.5.07   RUN 3.3.11 12:23

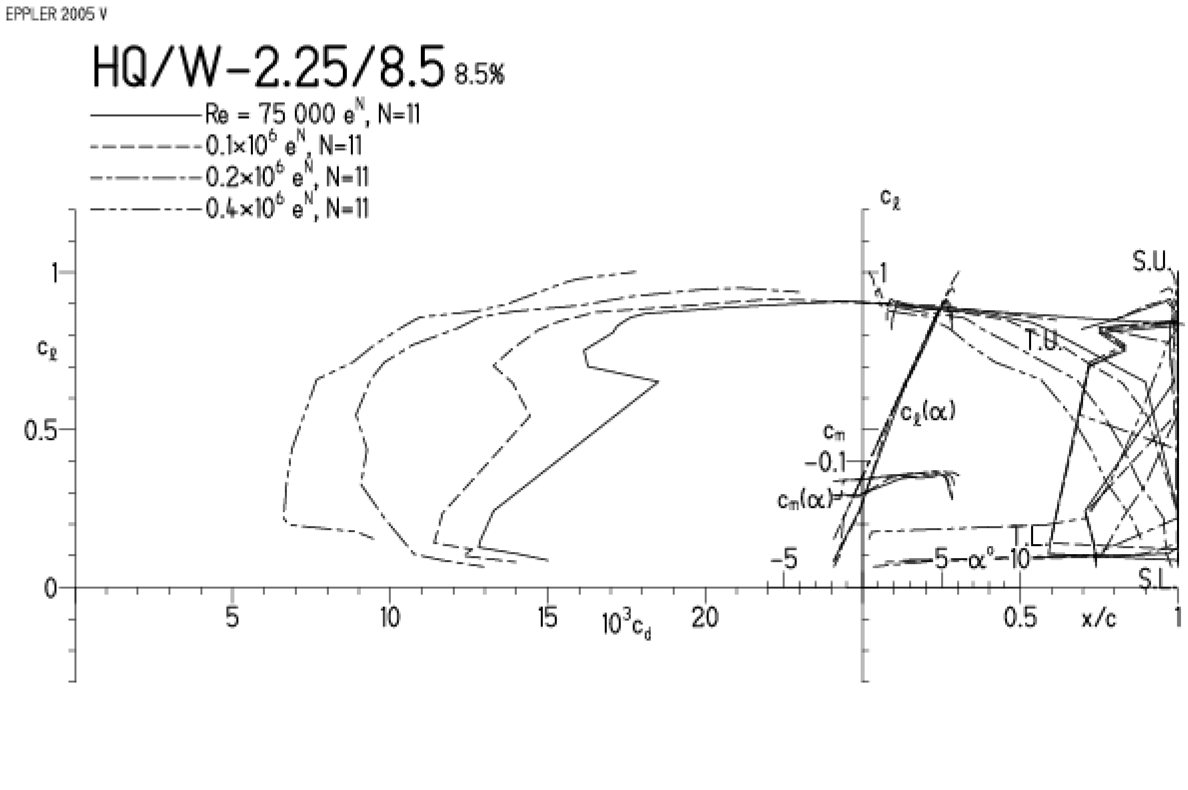


EPPLER 2005 V. 8.5.07   RUN 3.3.11 1

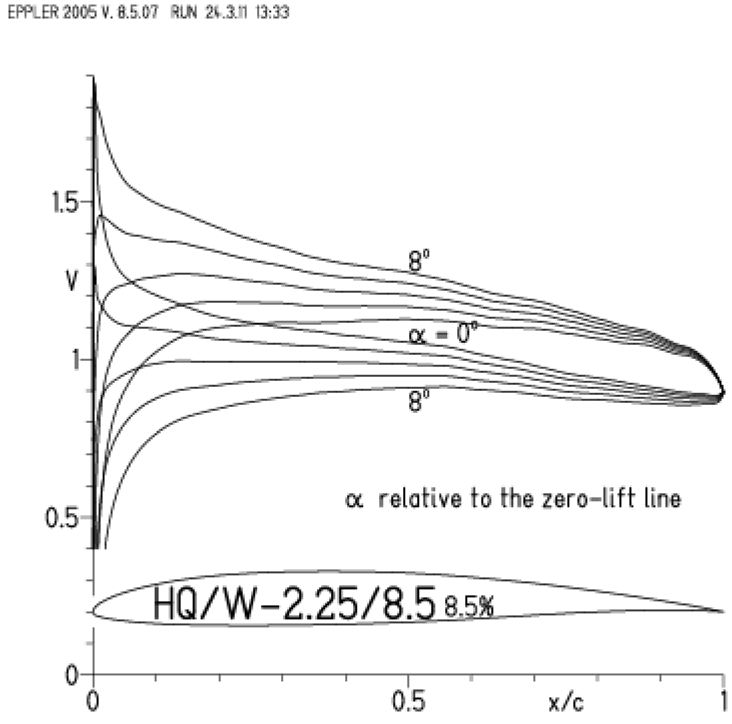


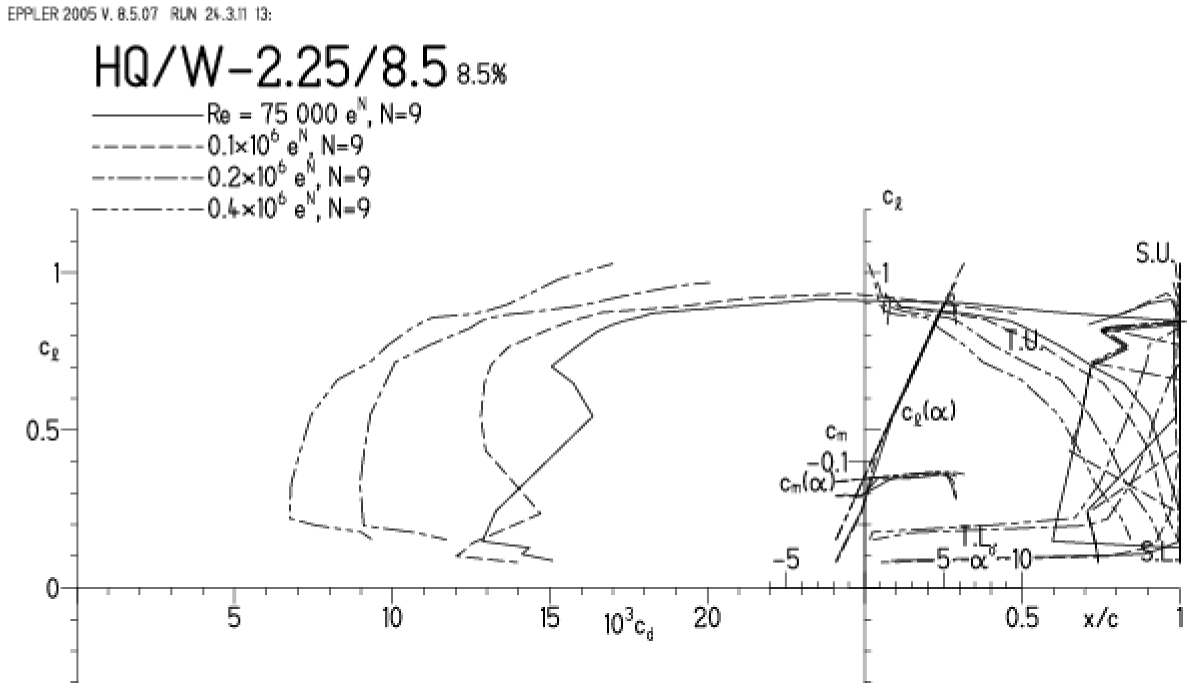
HQ/W-2,25/8,5, N=11



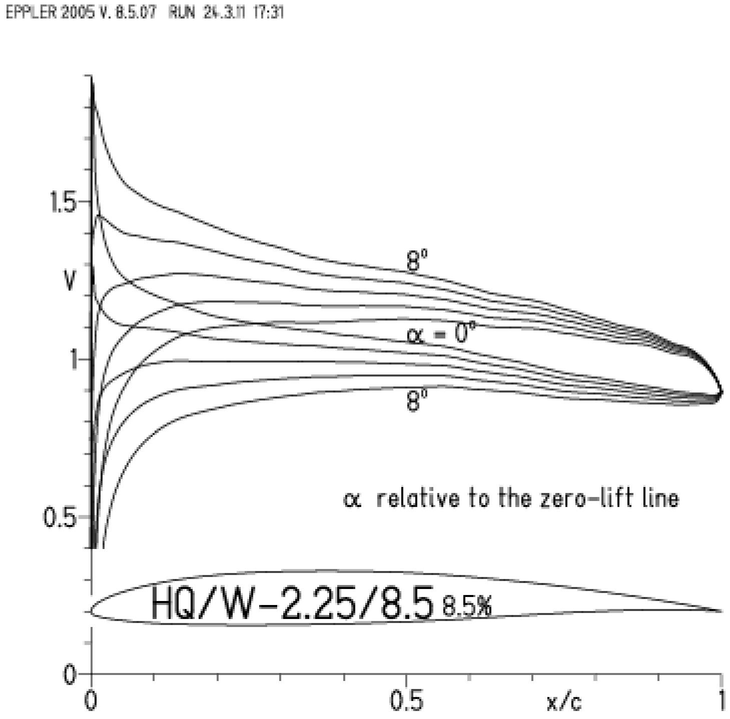


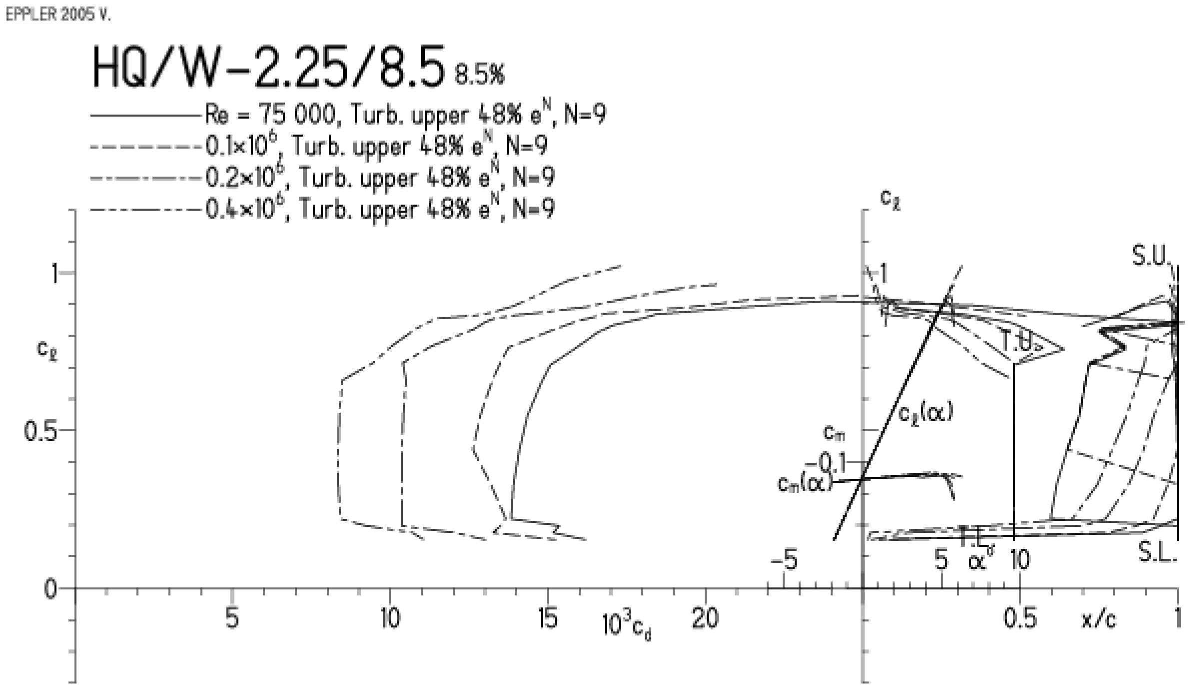
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_ℓ(α)
c_m
-0.1
c_m(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

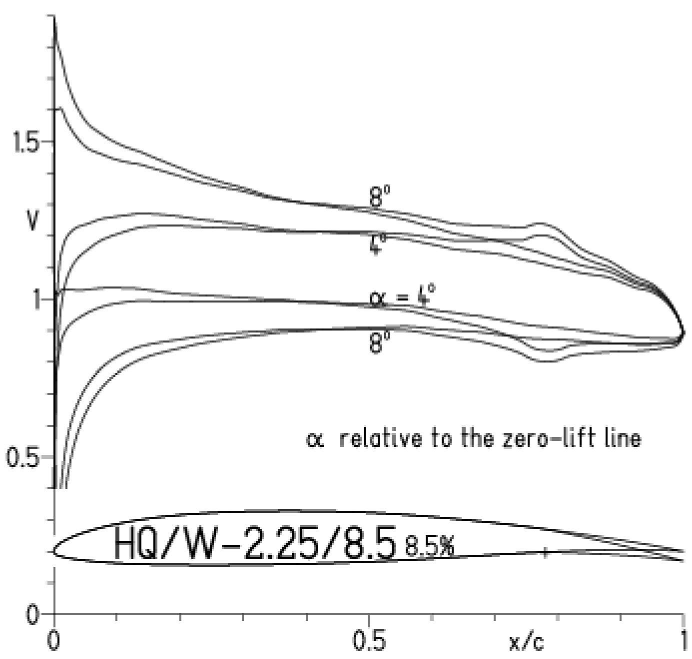
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



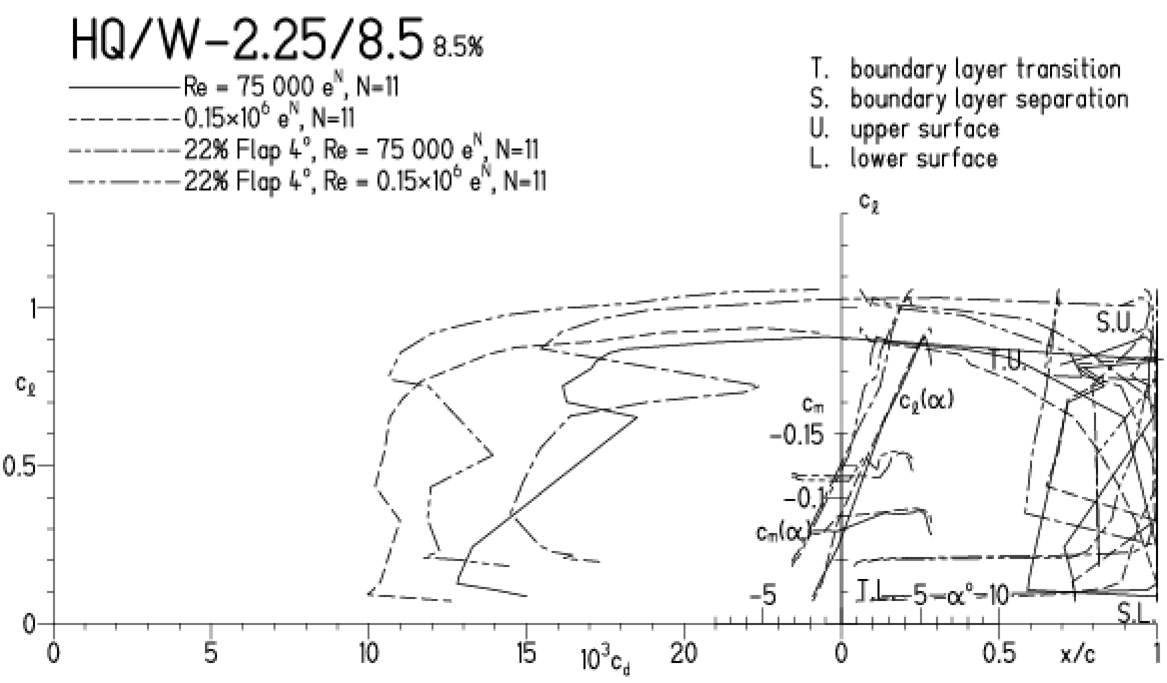


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

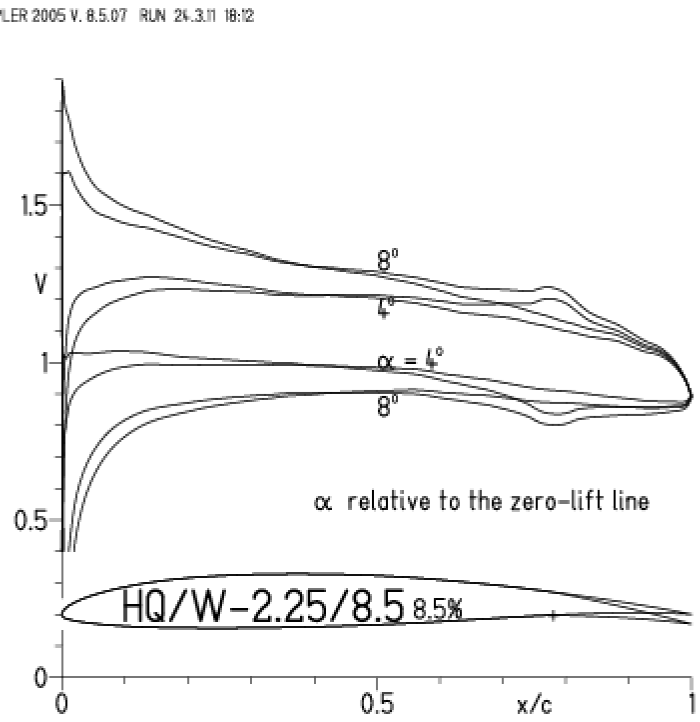
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

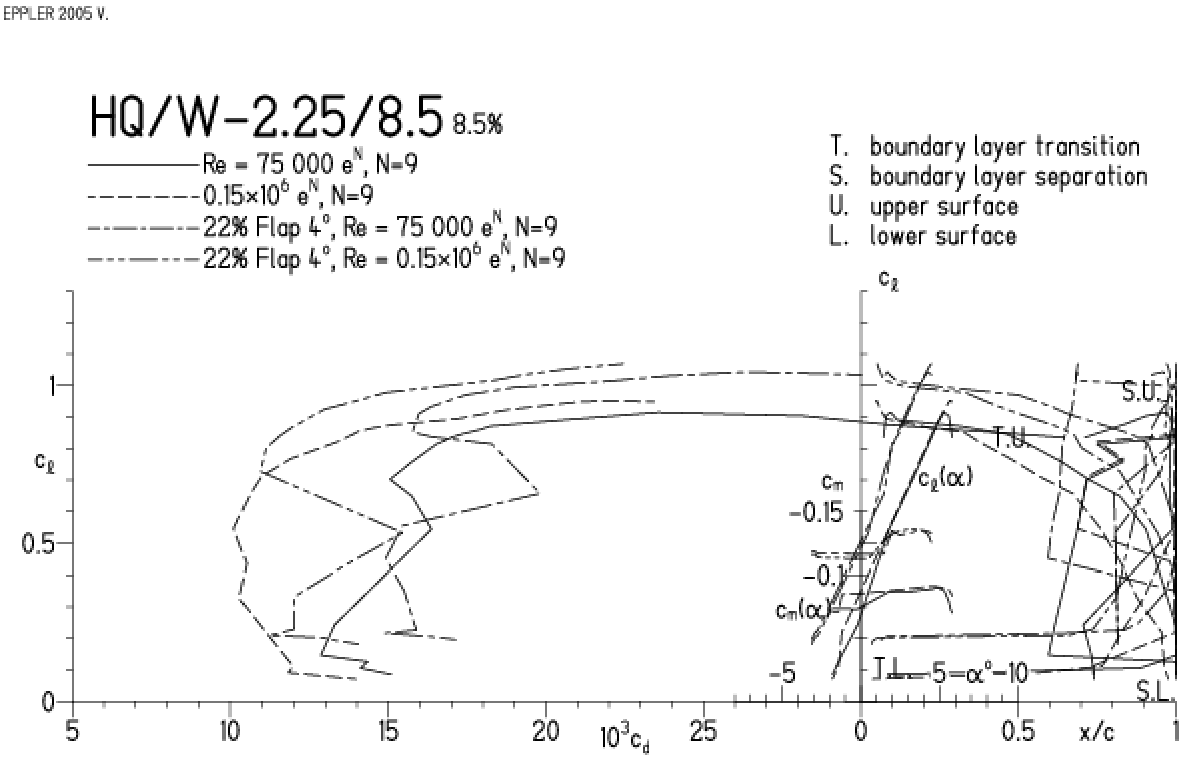


EPPLER 2005 V. 8.5.



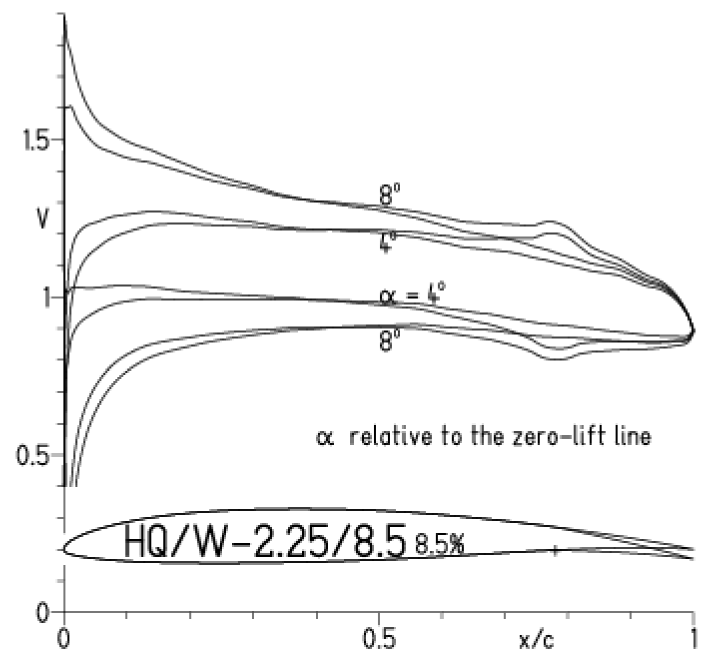
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



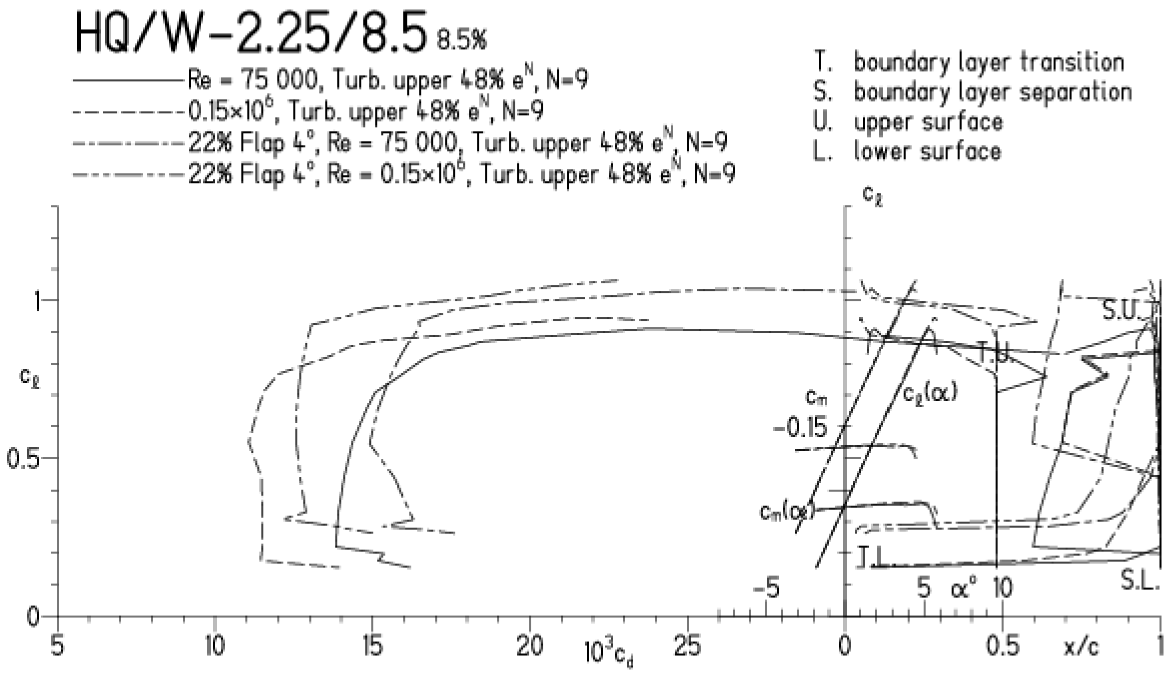


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

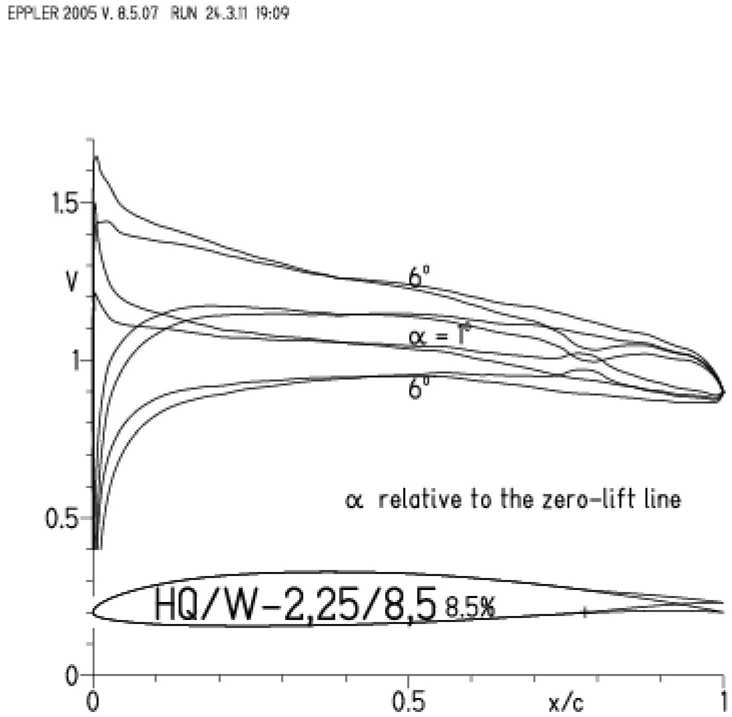
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

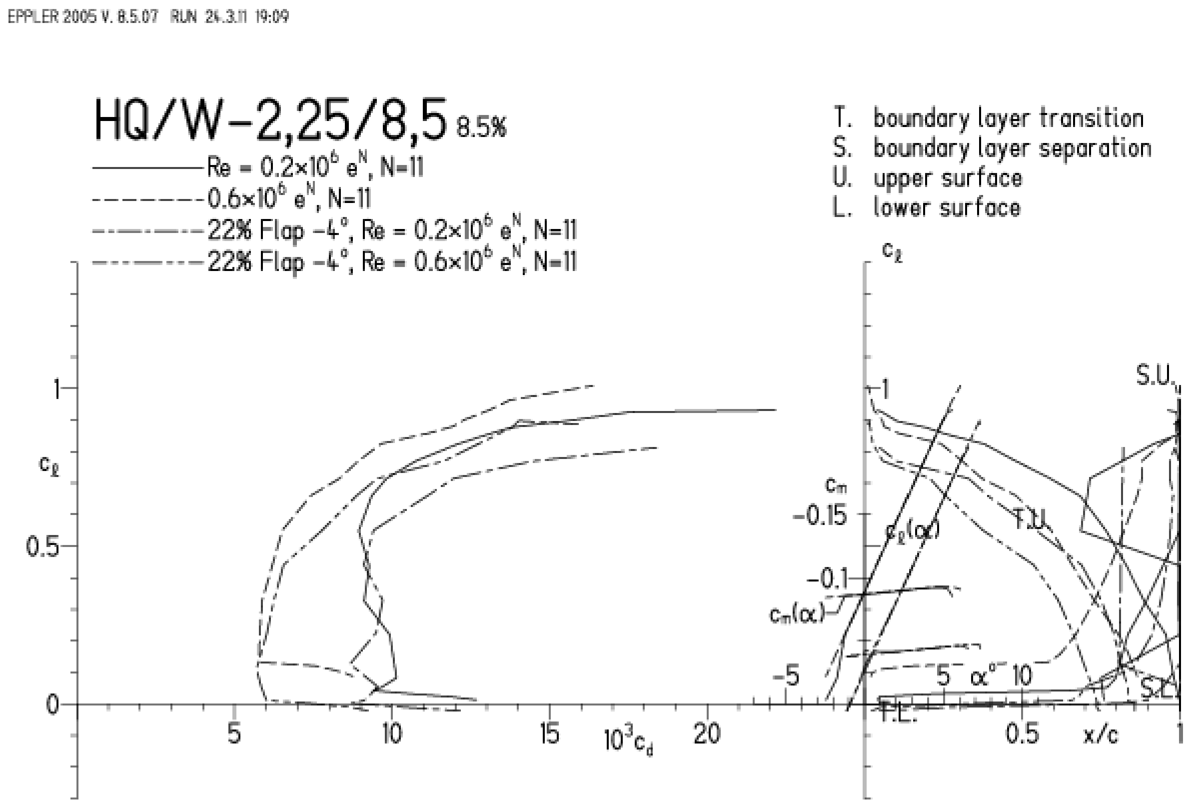


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



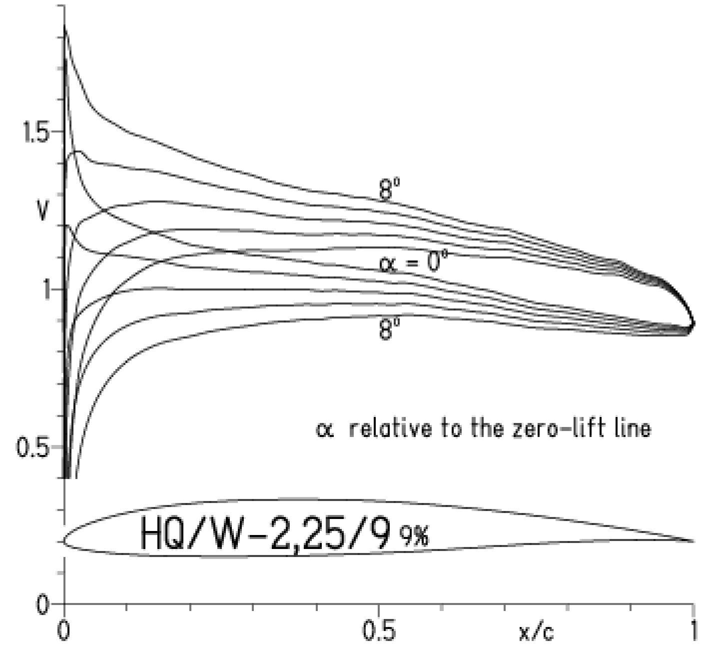
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



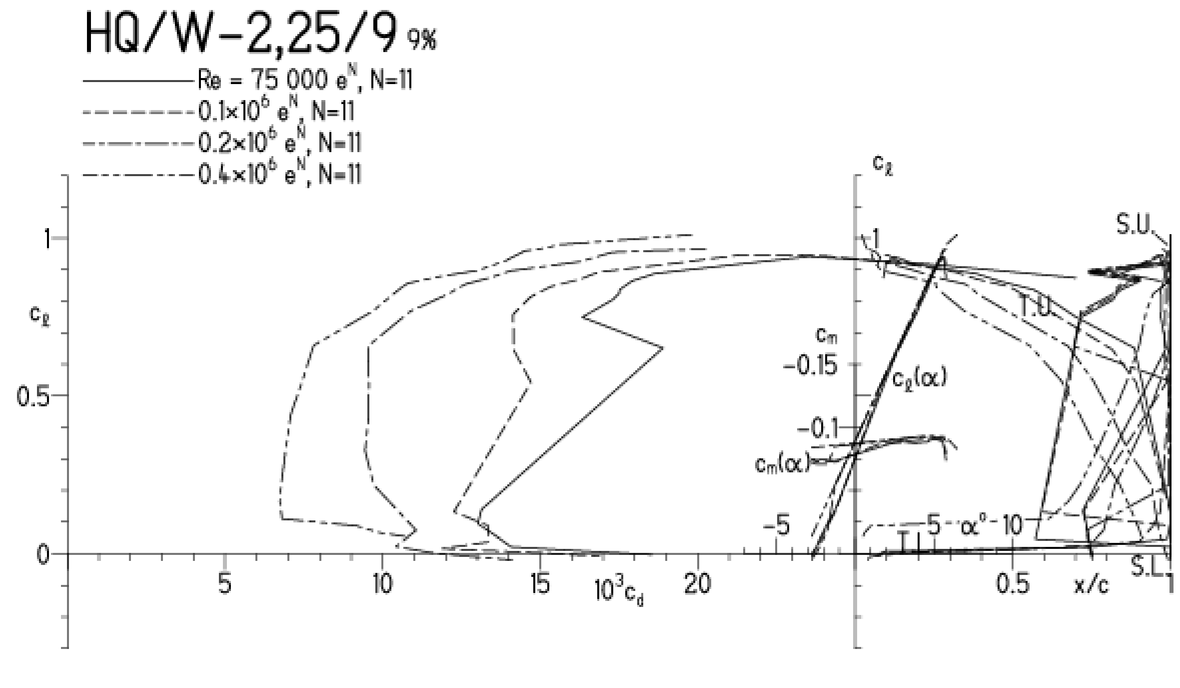


HQ/W-2,25/9, N=11

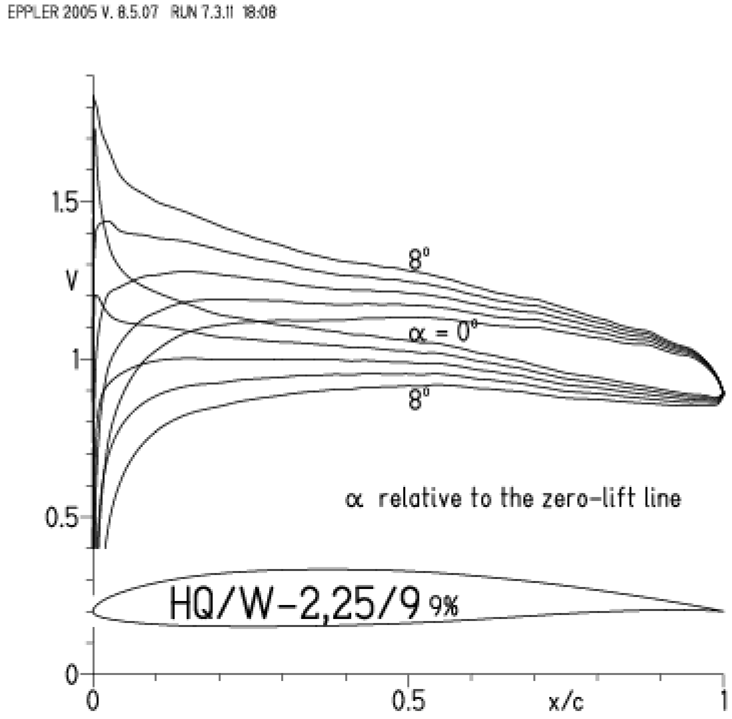
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

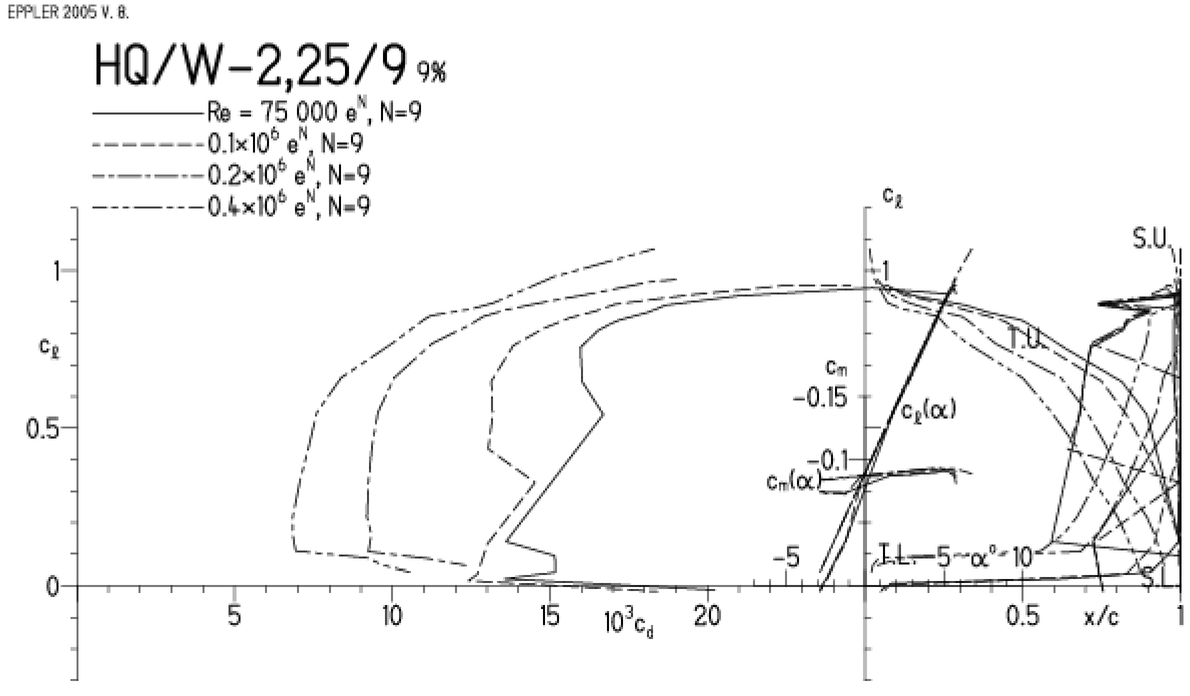


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

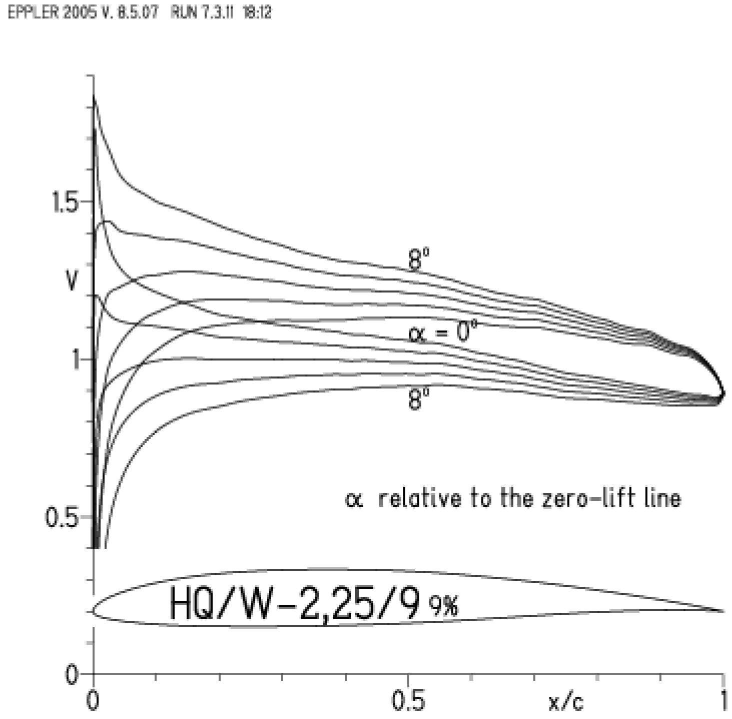


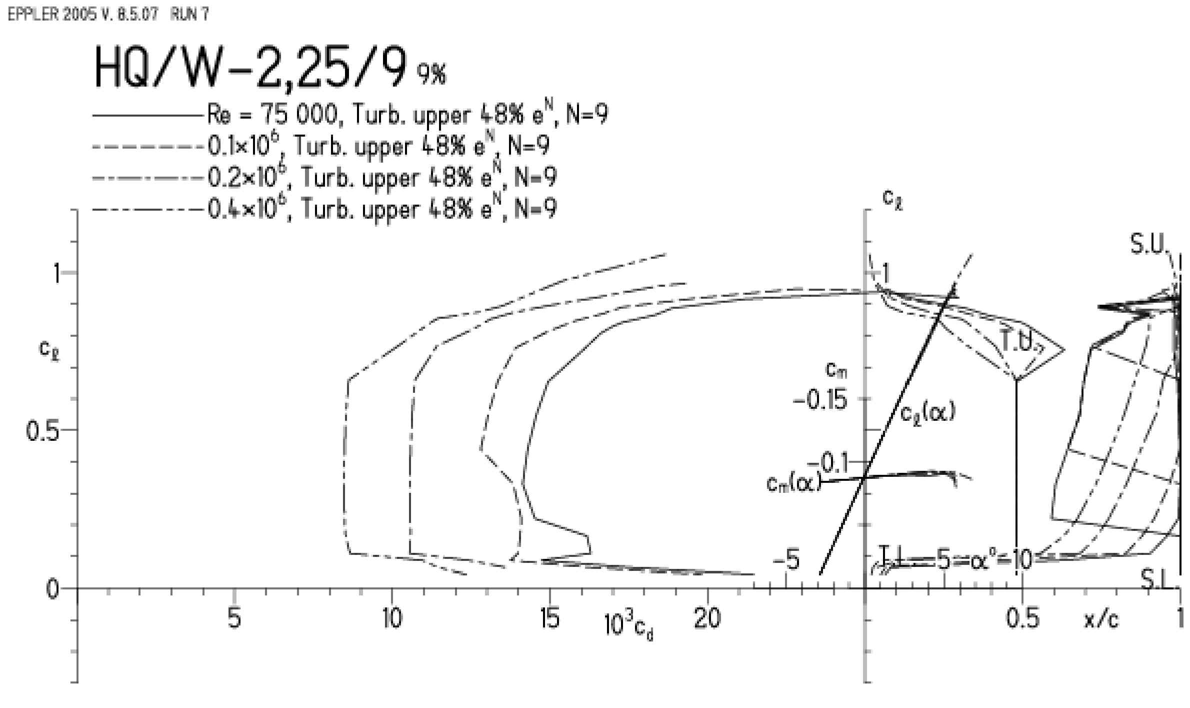
<u>HQ/W-2,25/9</u>, N=9





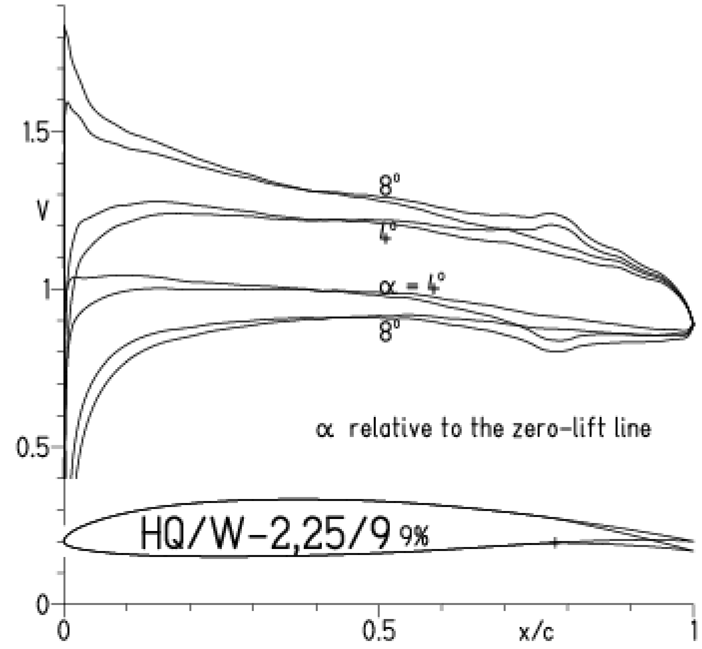
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



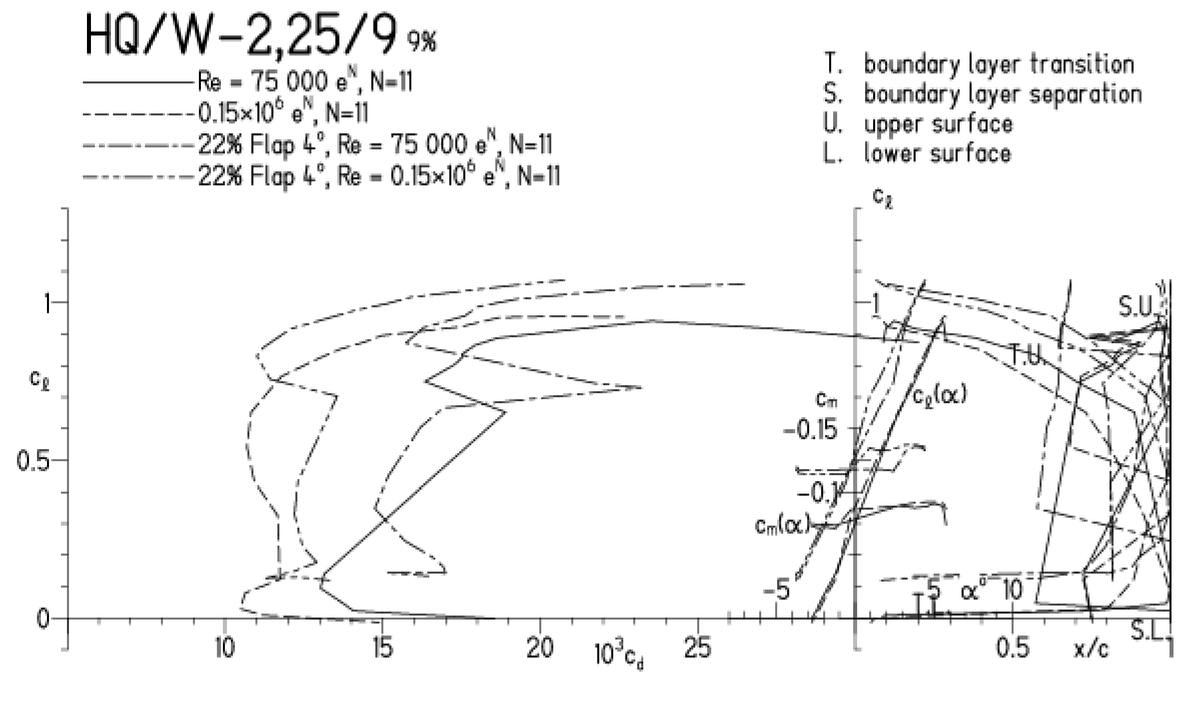


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

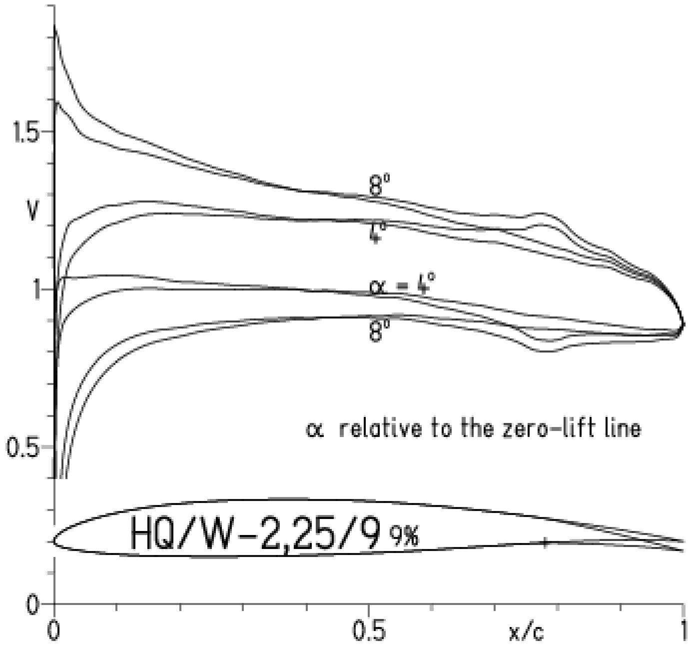


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

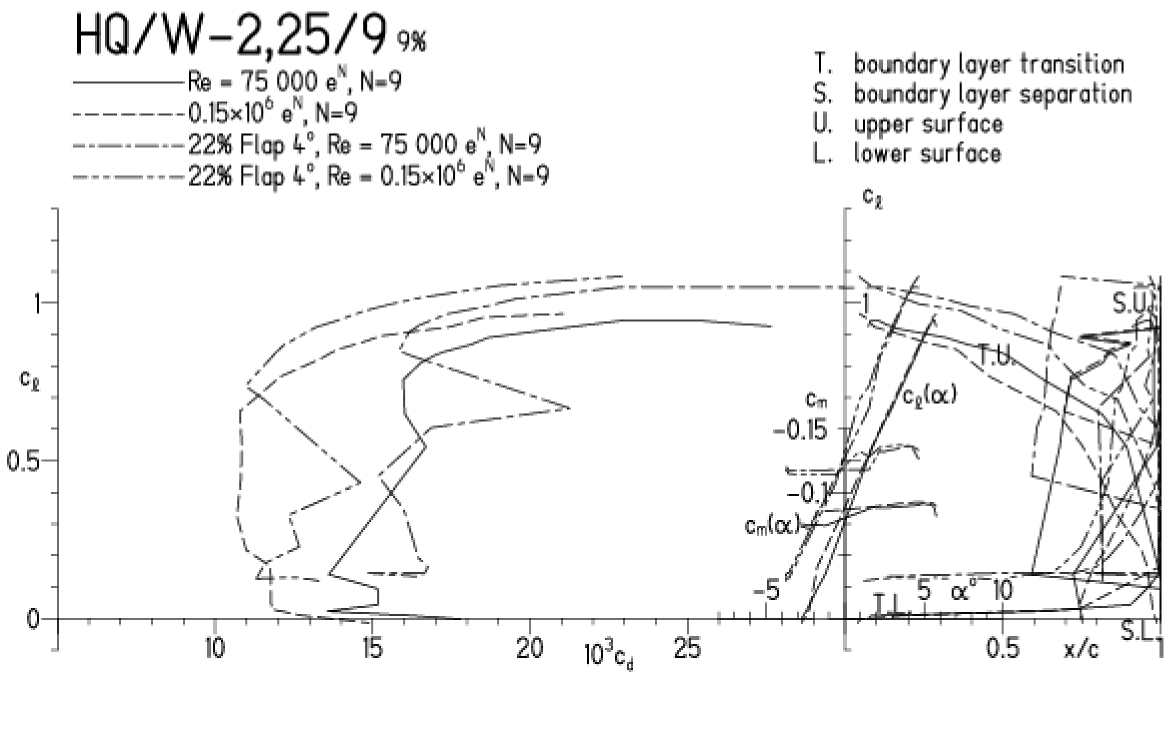


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

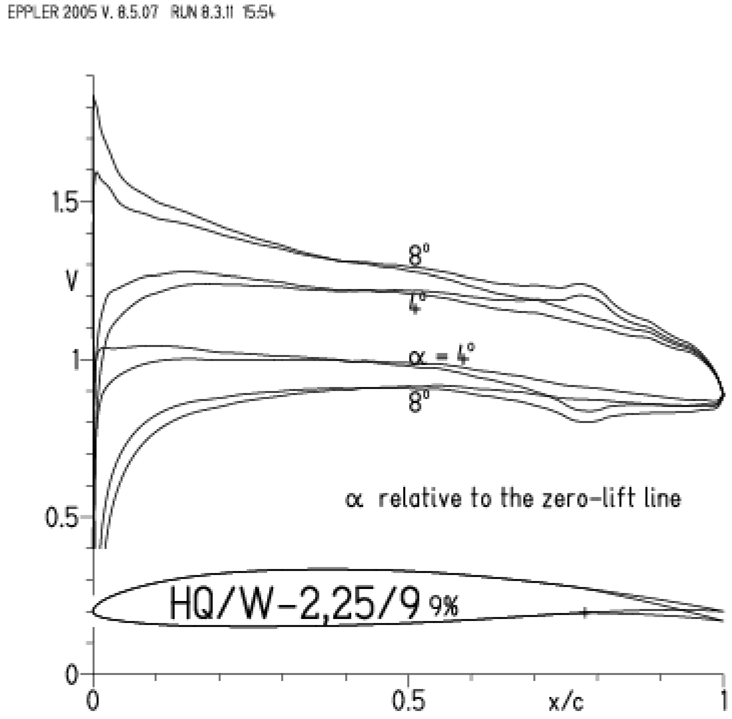
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

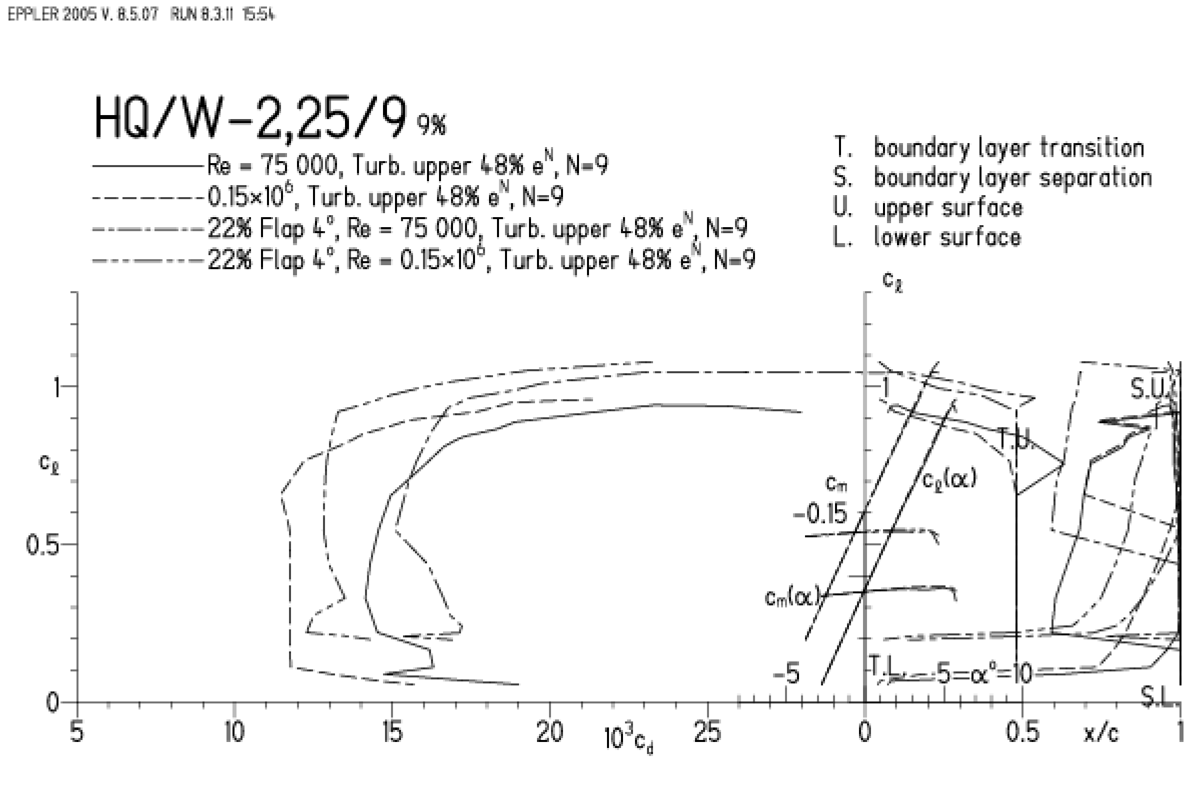


EPPLER 2005 V. 8.5.07 RUN 8.3.1



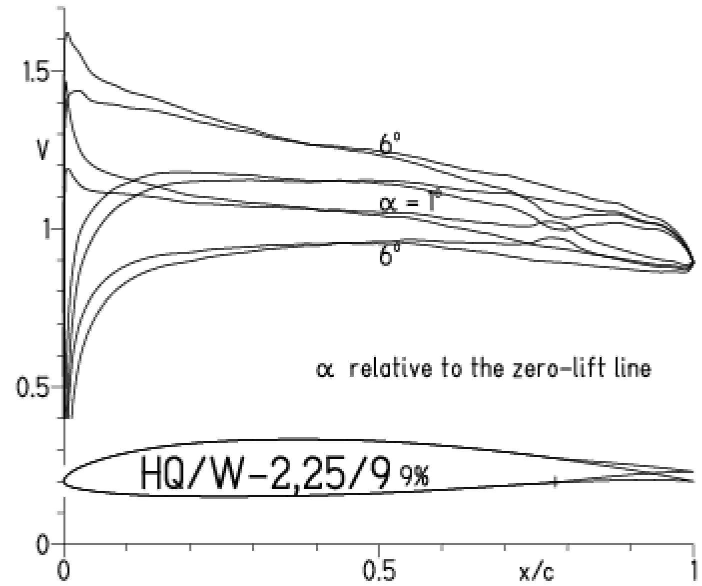
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



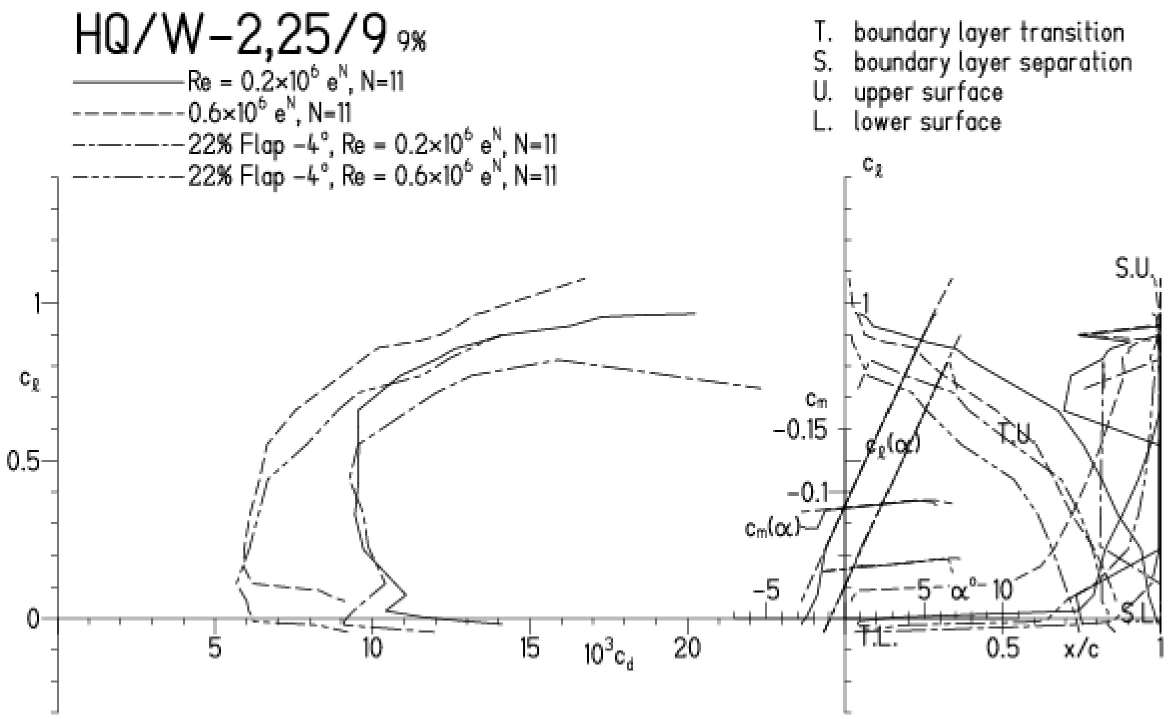


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

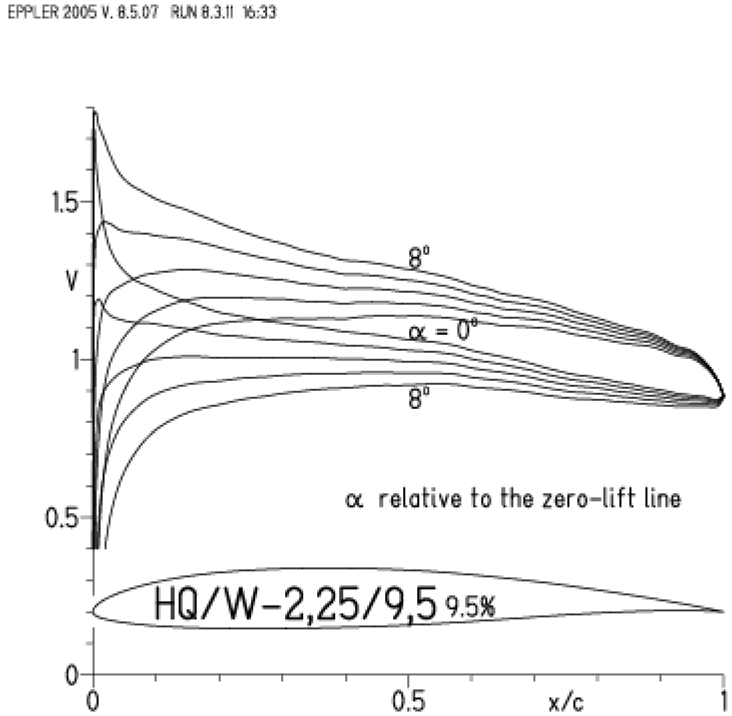
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

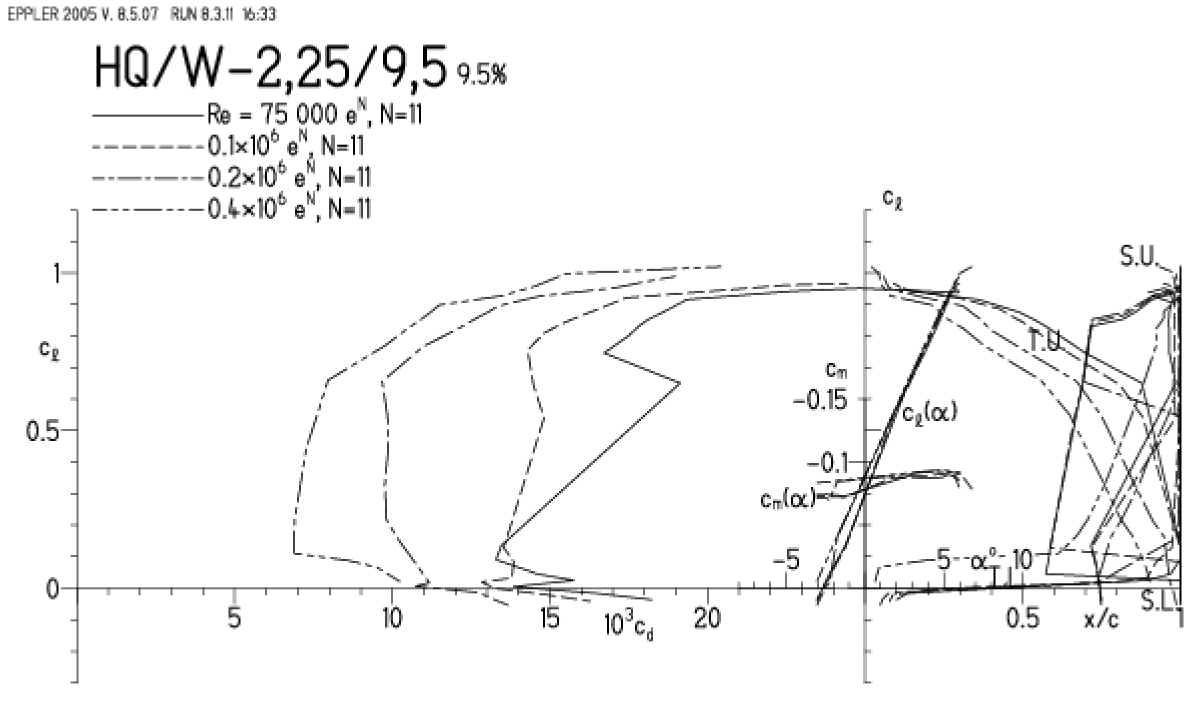


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



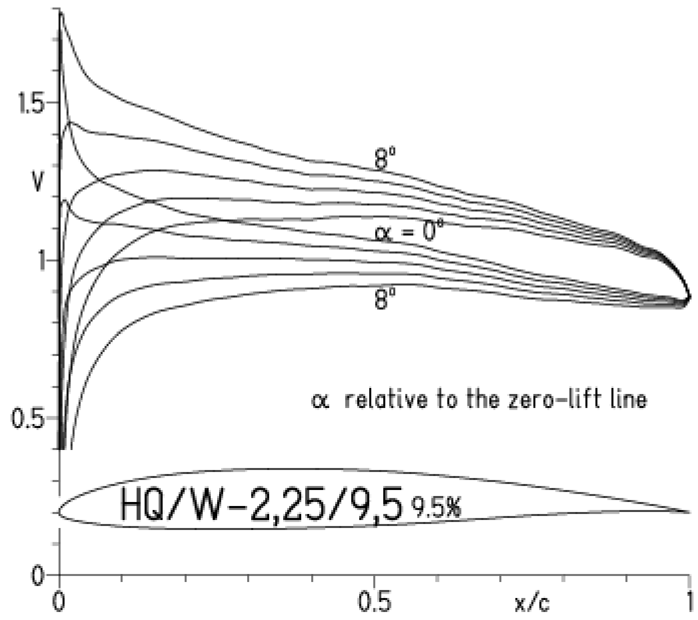
HQ/W-2,25/9,5, N=11



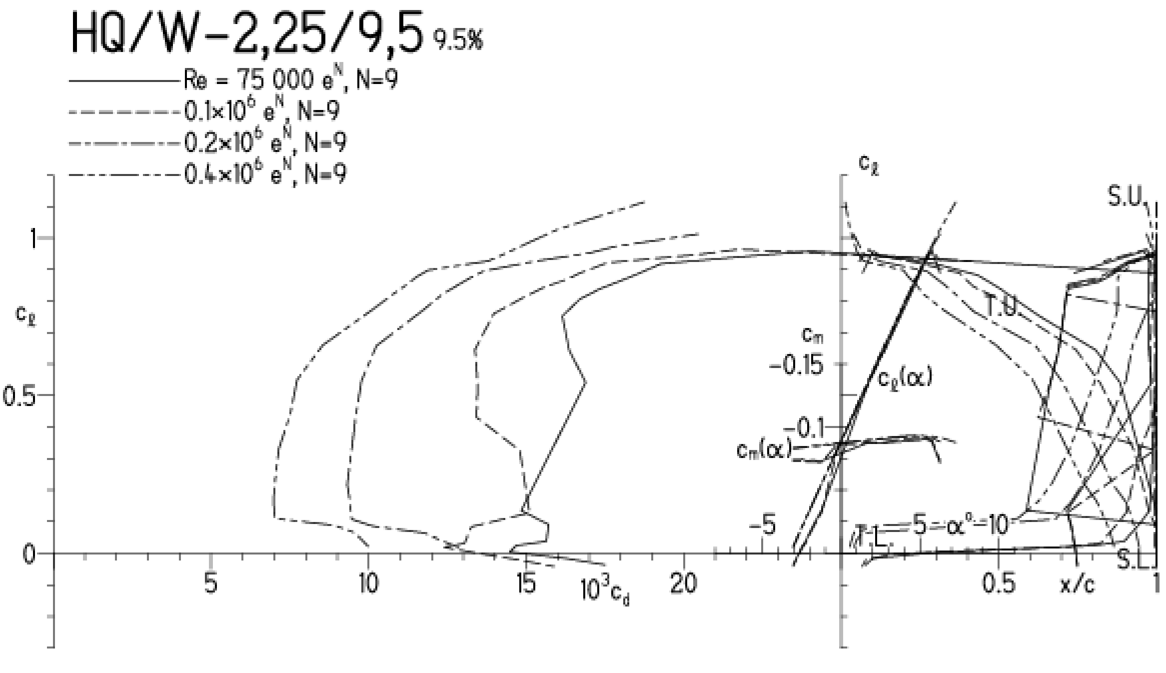


HQ/W-2,25/9,5, N=9

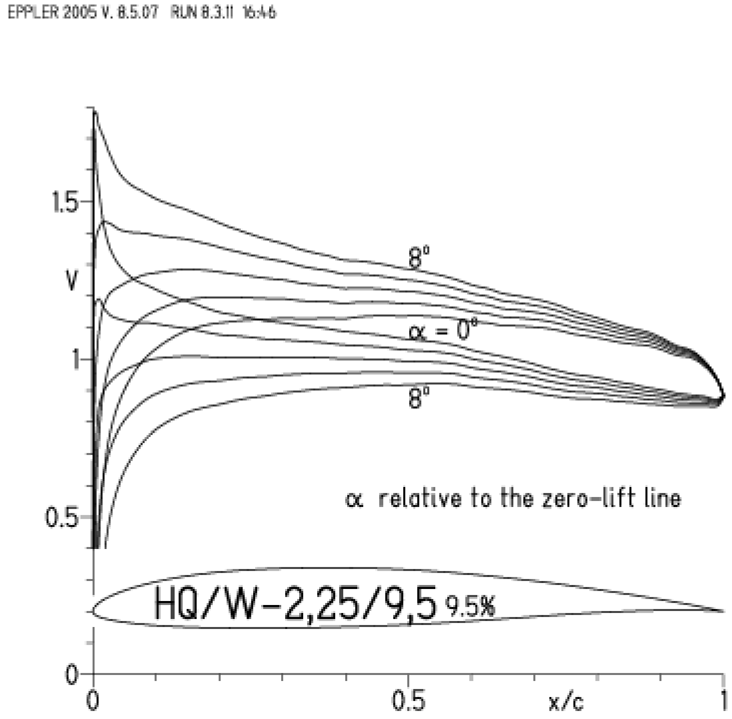
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

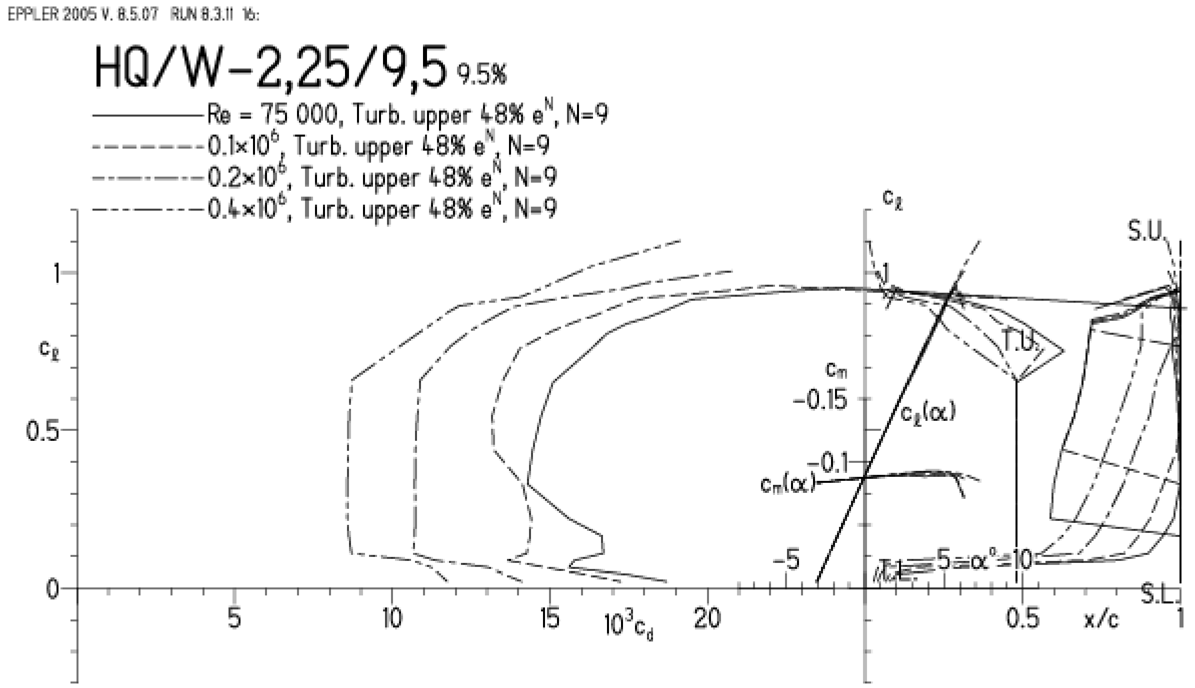


EPPLER 2005 V. 8.5.07 RUN 8.3.



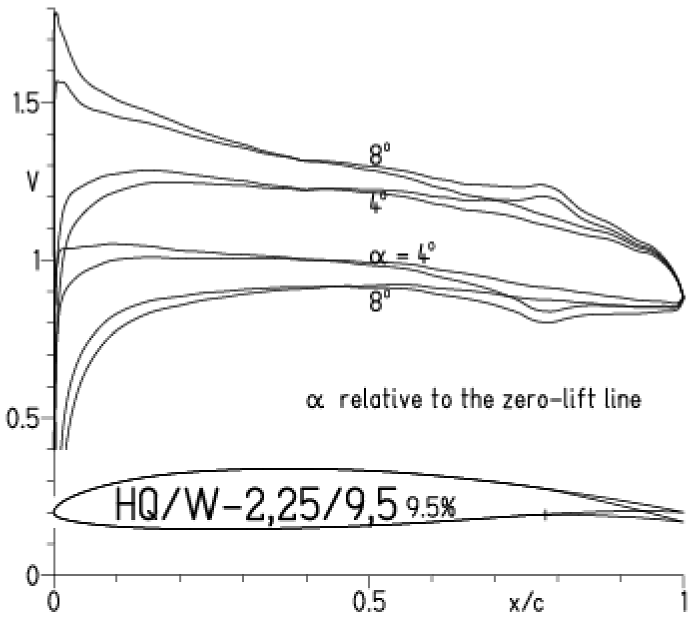
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



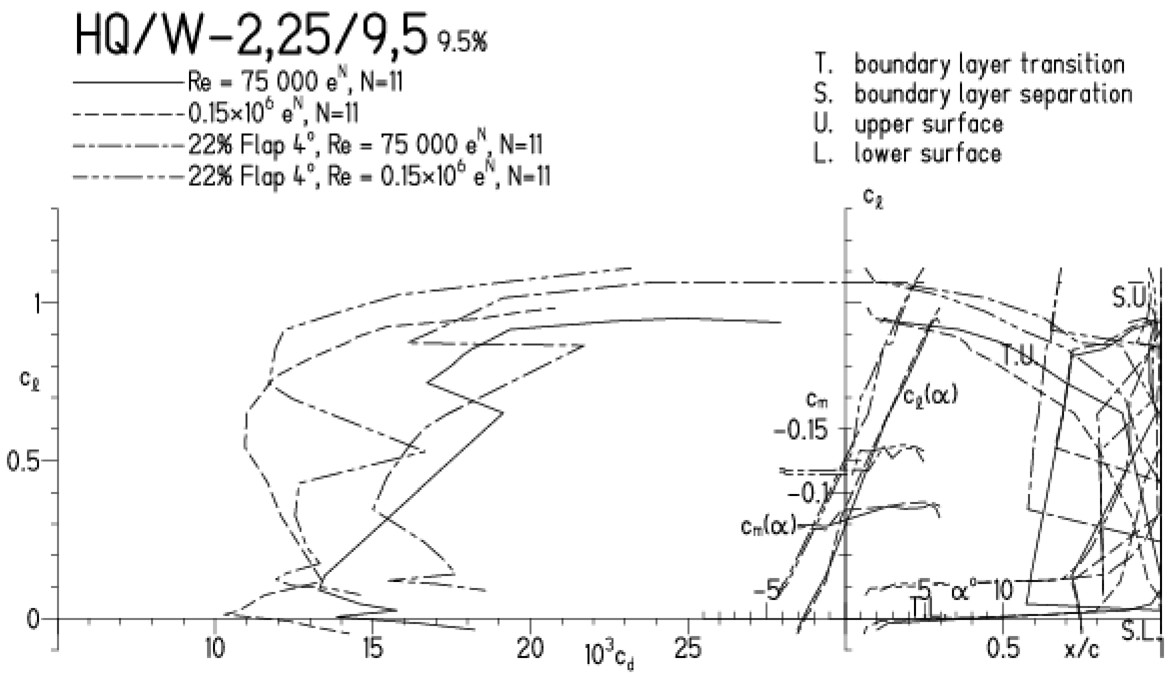


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

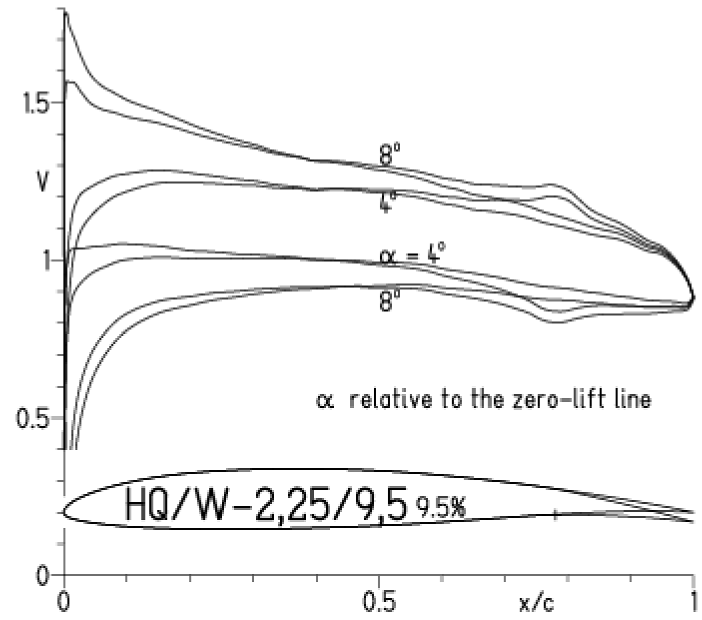


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

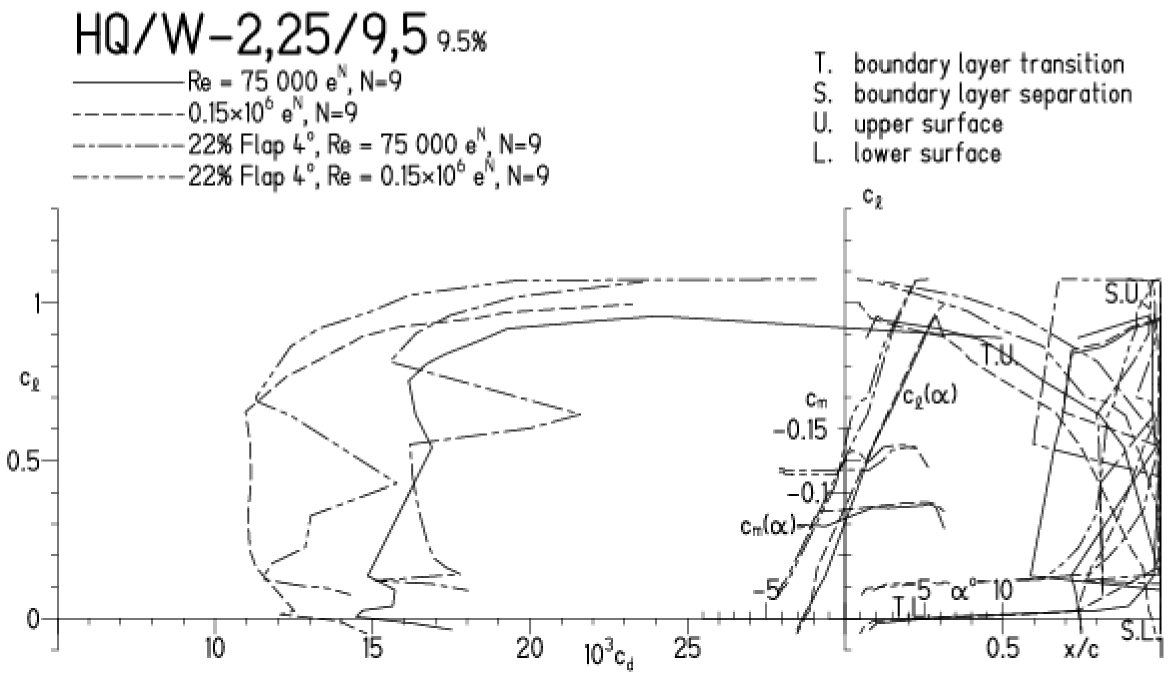


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

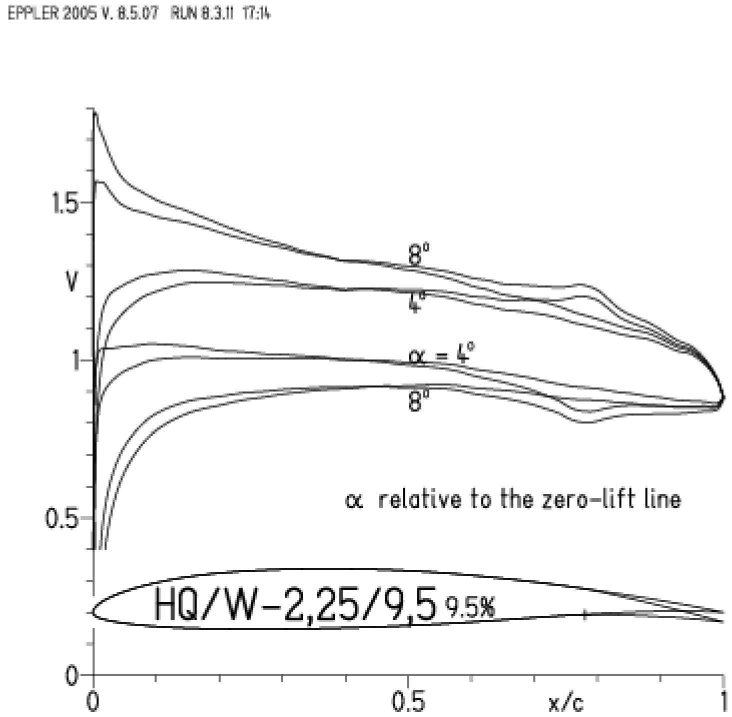
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

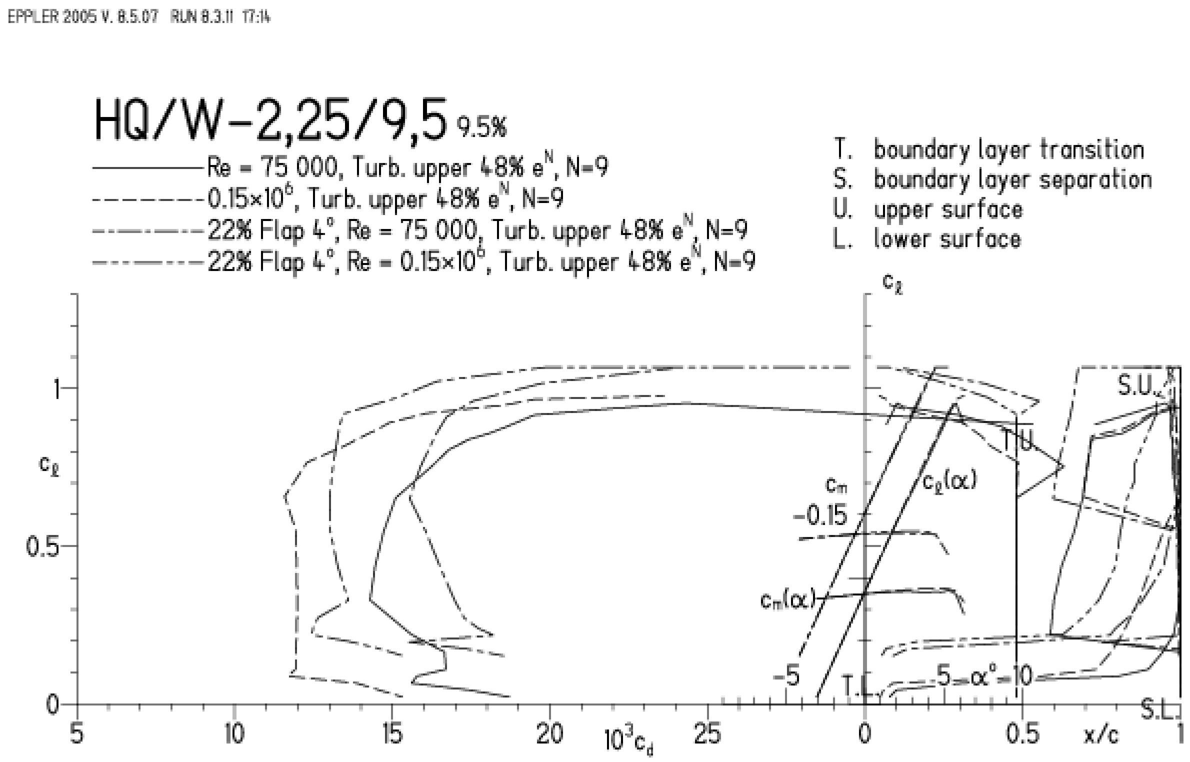


EPPLER 2005 V. 8.5.07 R



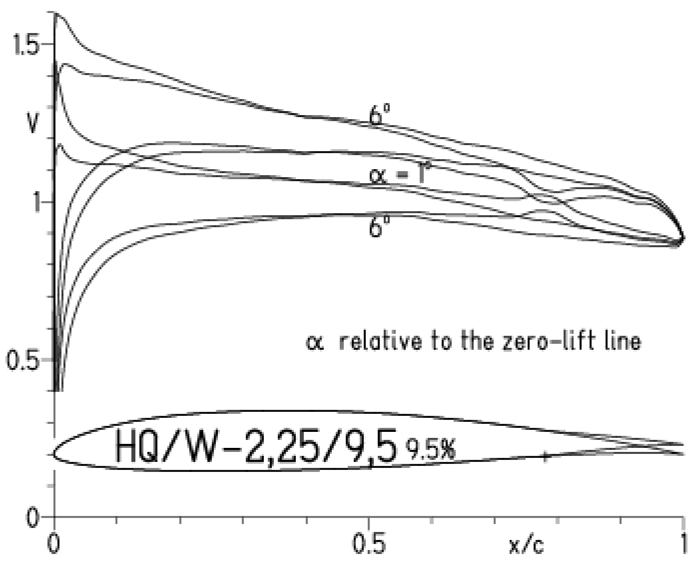
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



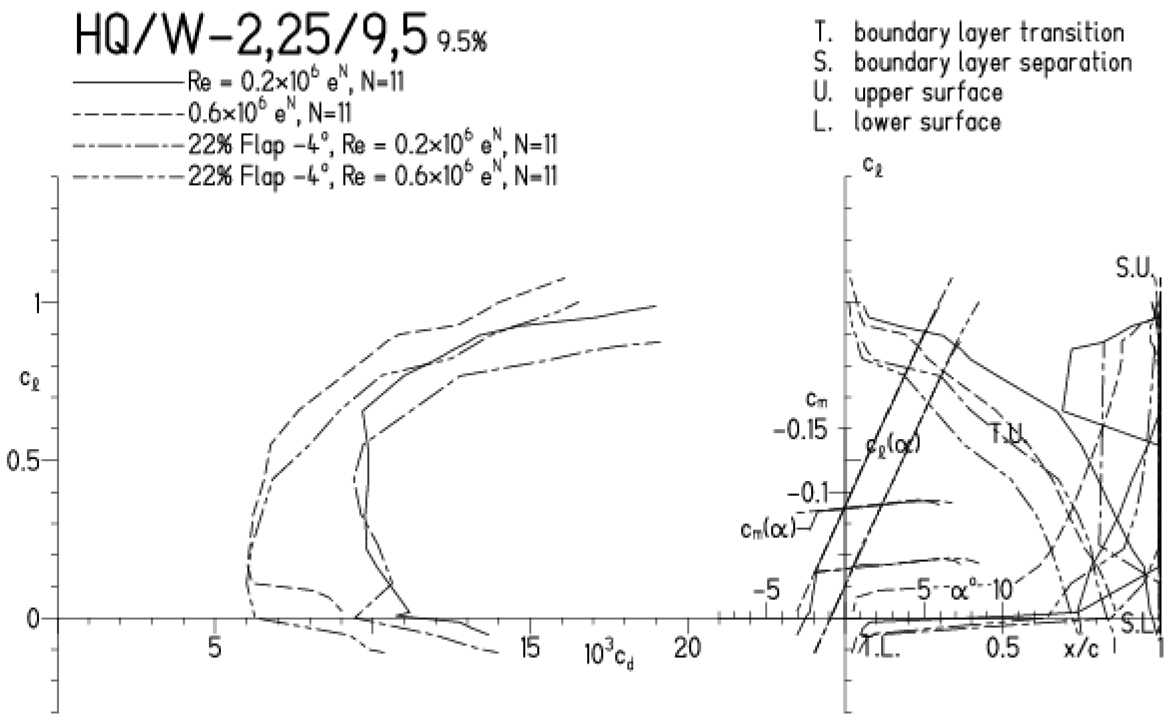


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

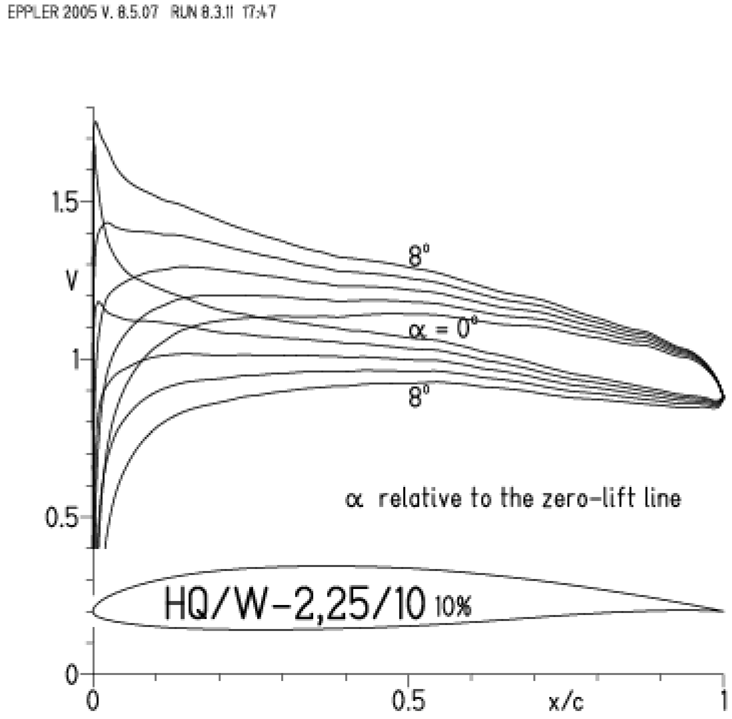
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

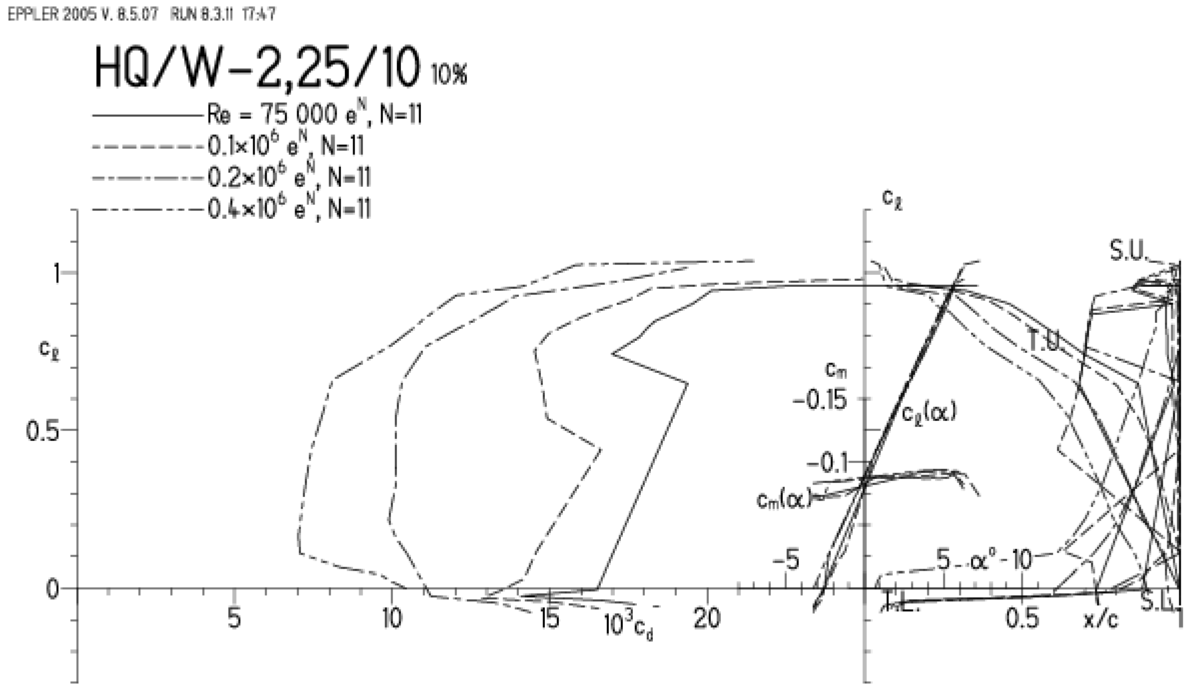


EPPLER 2005 V.



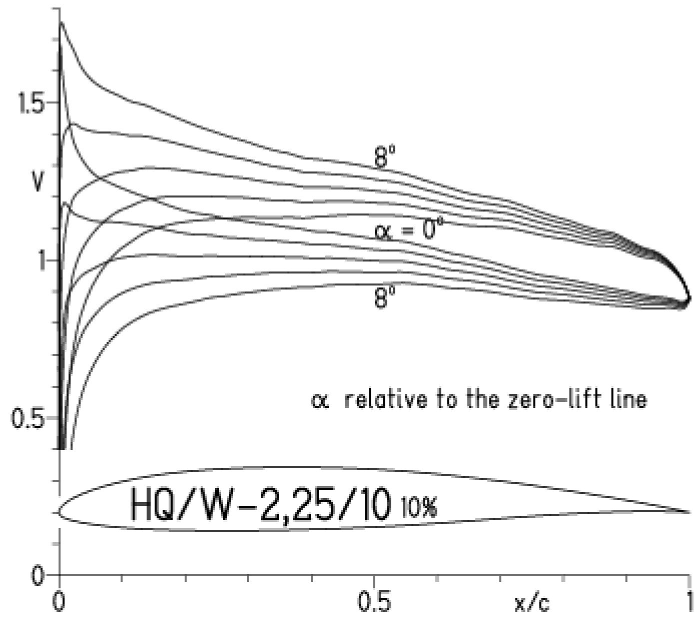
HQ/W-2,25/10, N=11



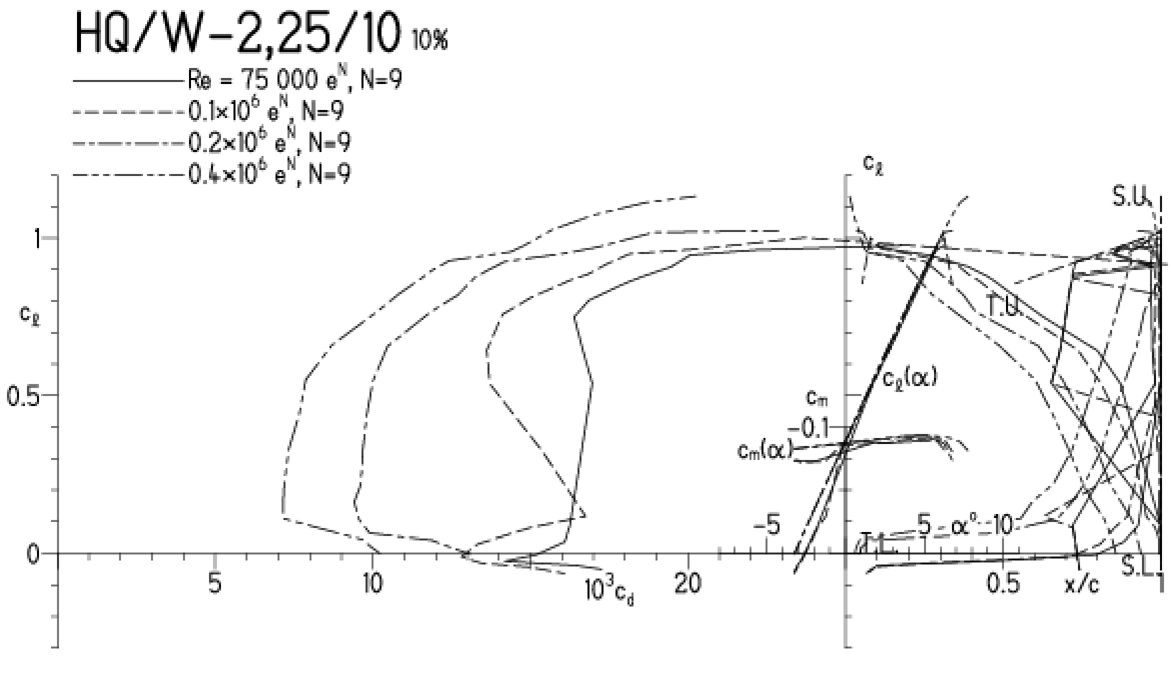


<u>HQ/W-2,25/10</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

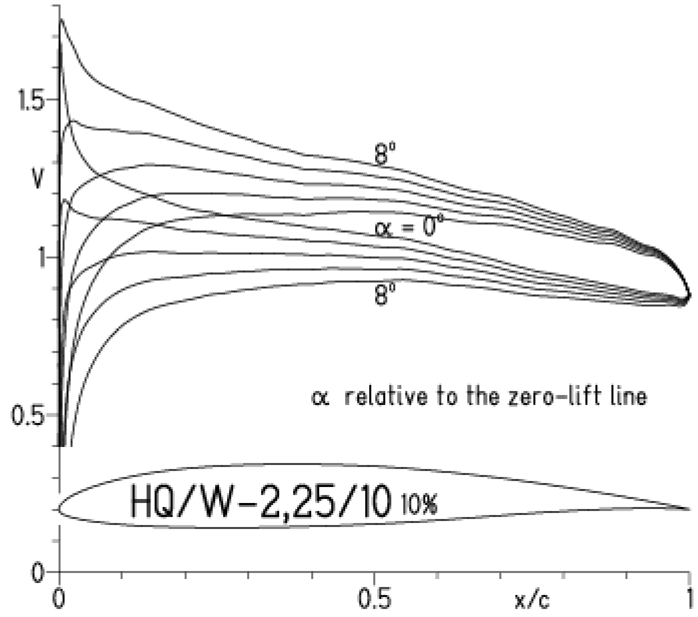


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

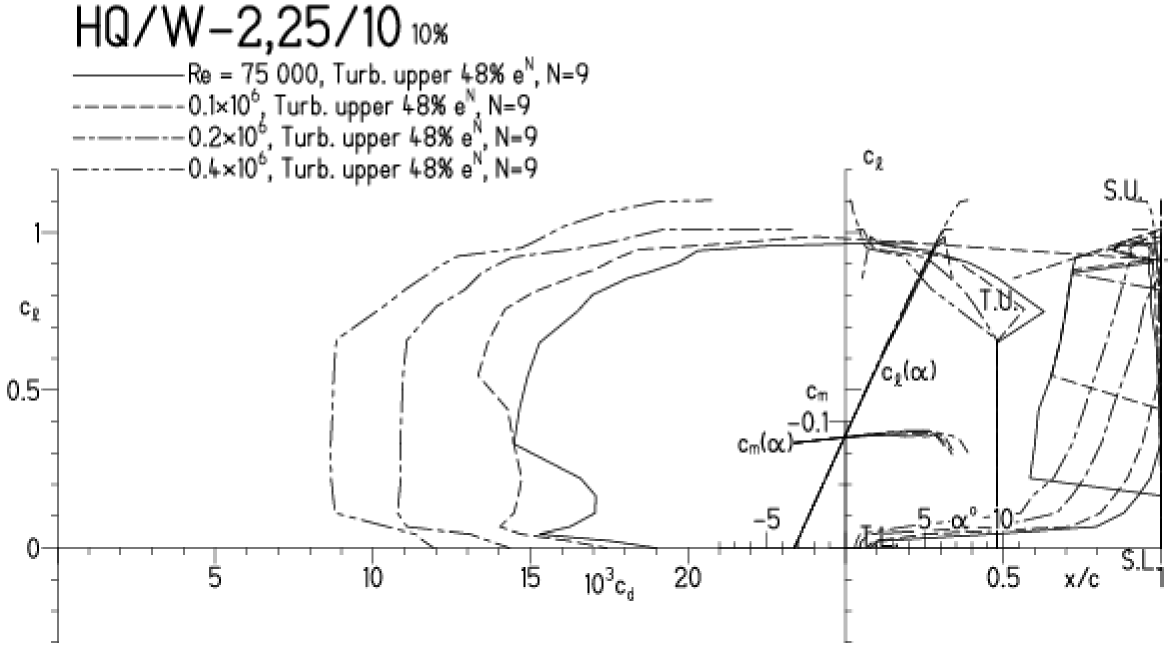


<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

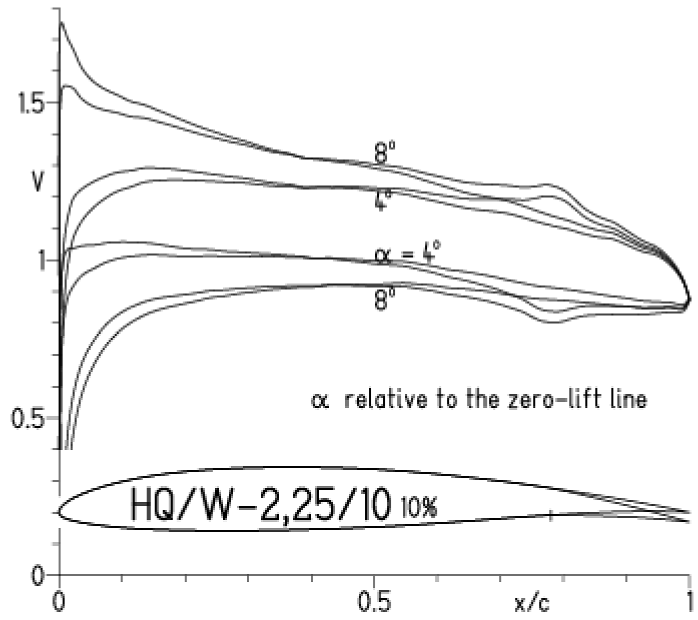


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

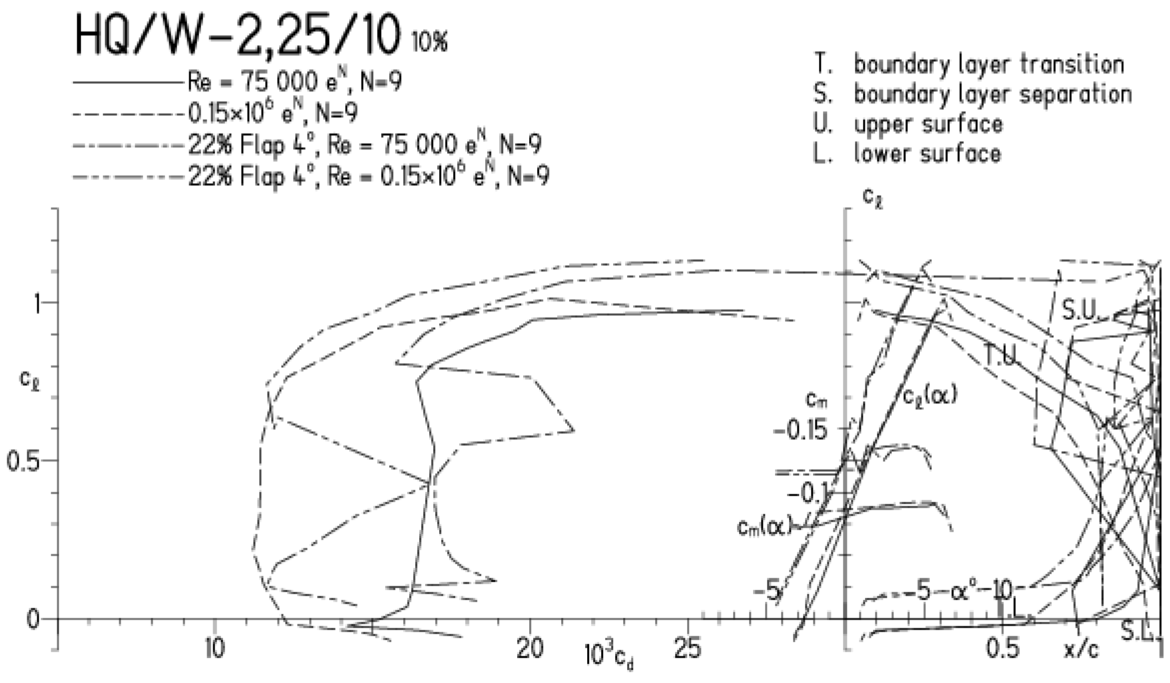


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

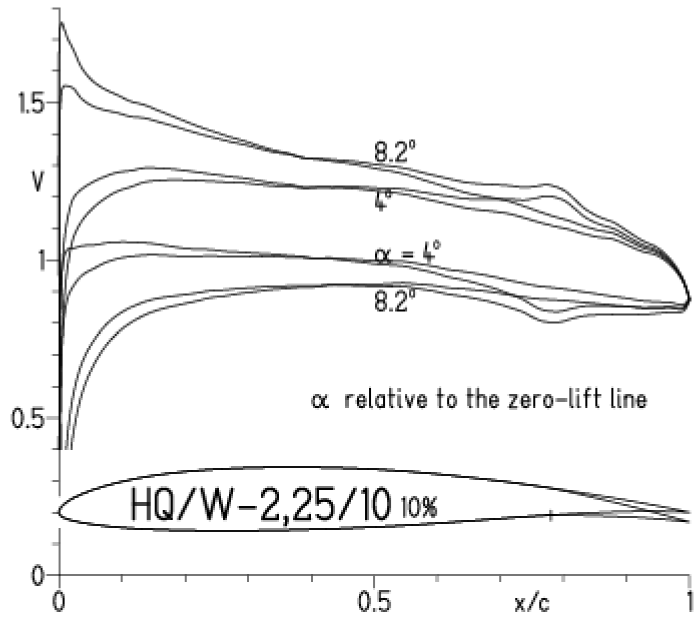


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

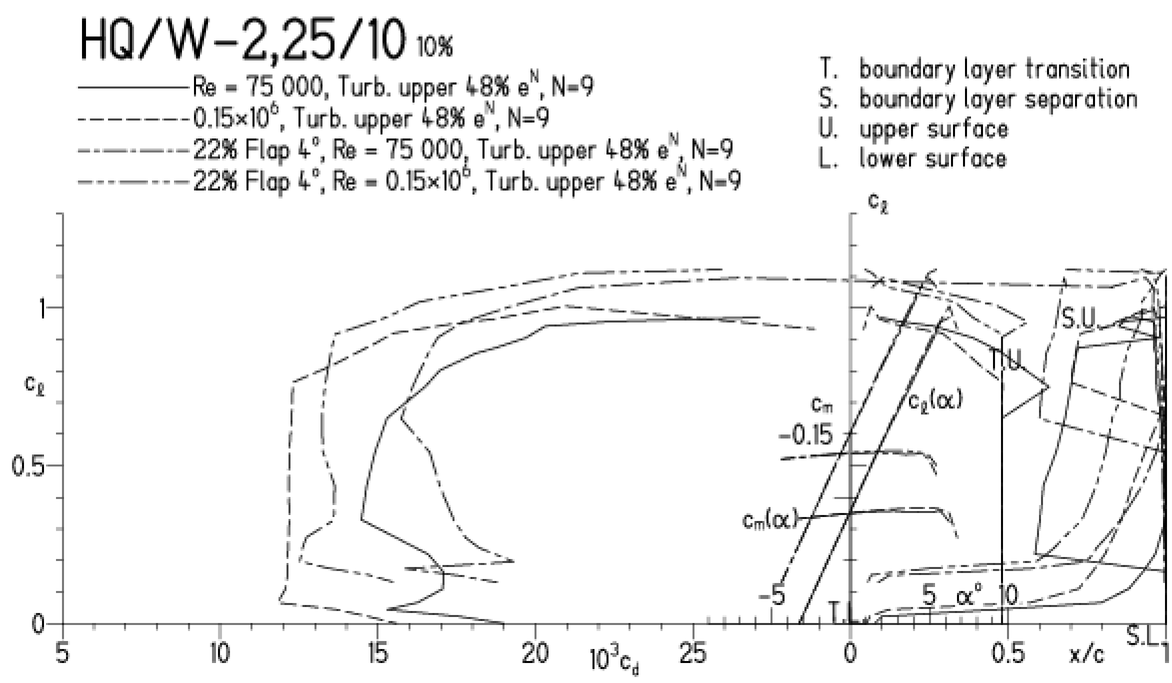


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

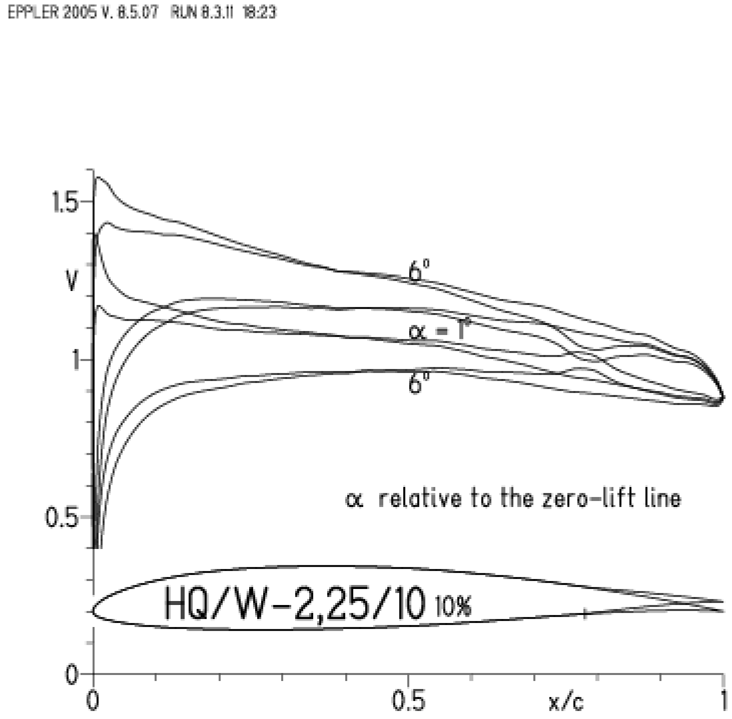
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

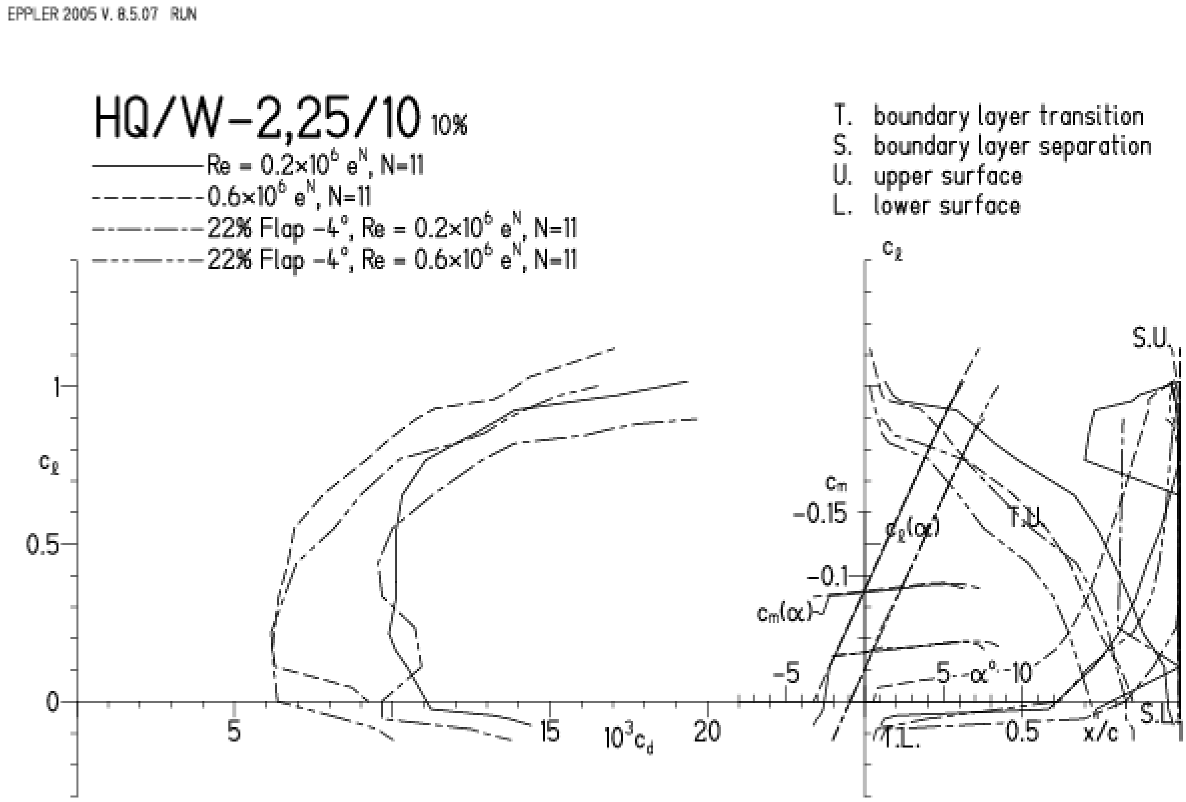


EPPLER 2005 V. 8.5.07 RUN 8.3



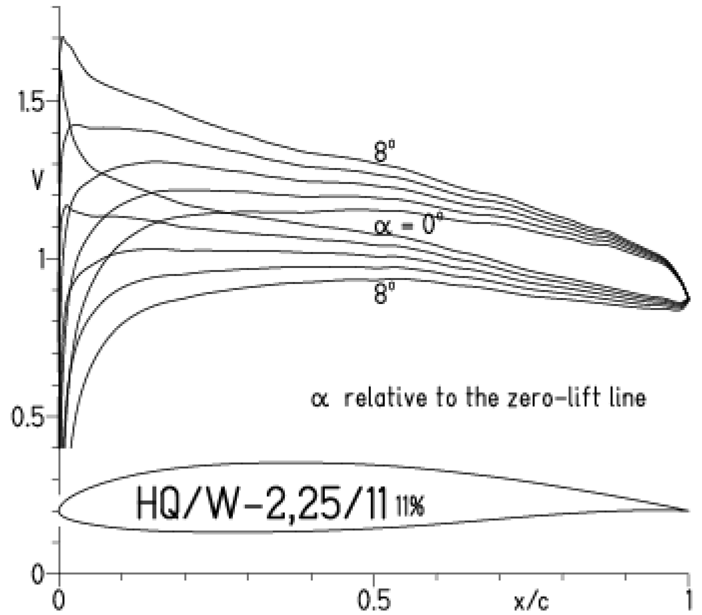
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



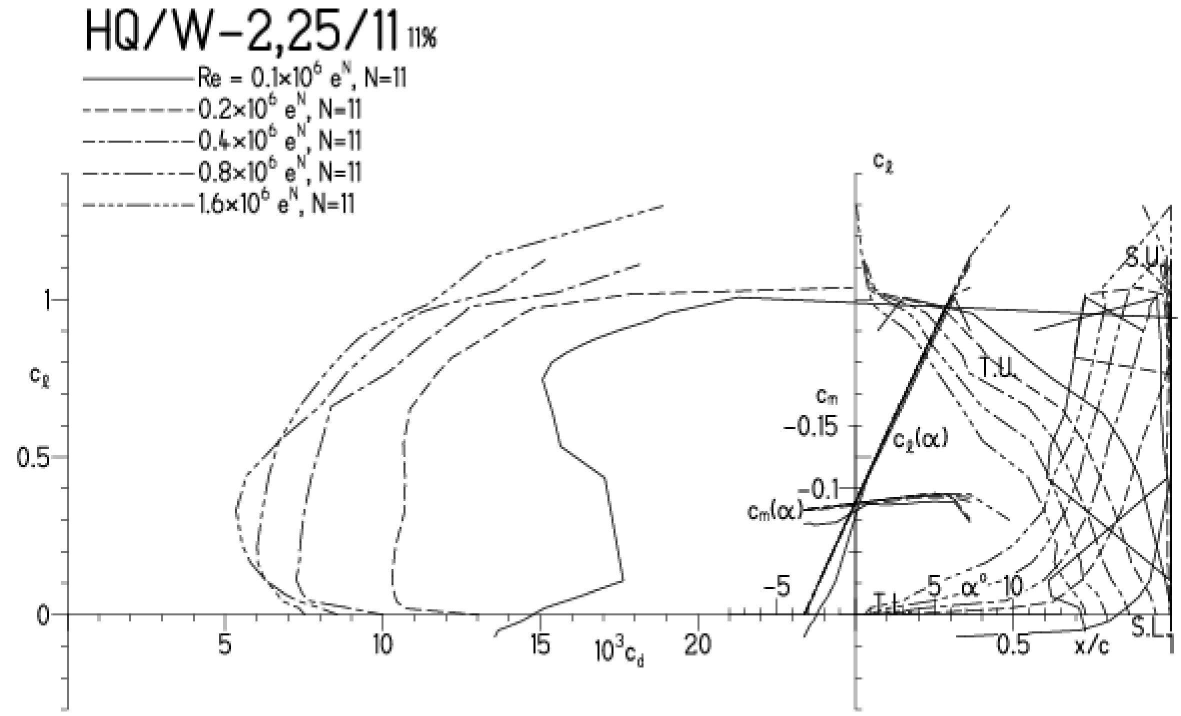


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

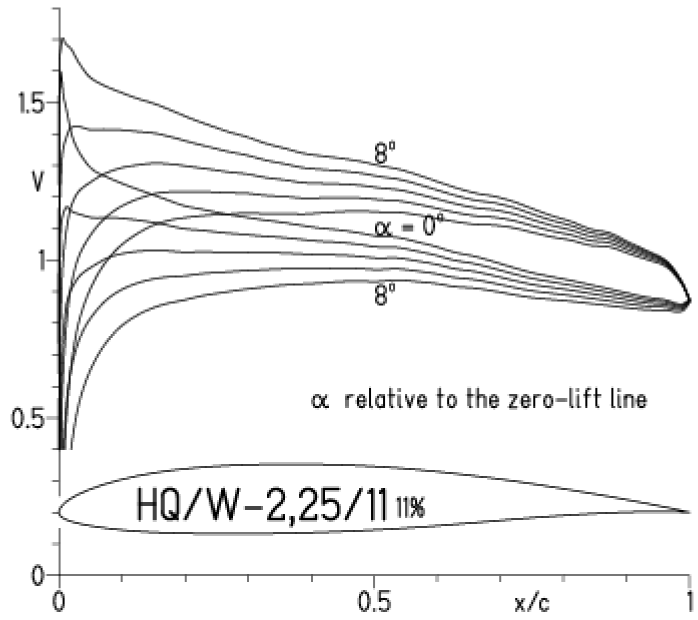


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12·

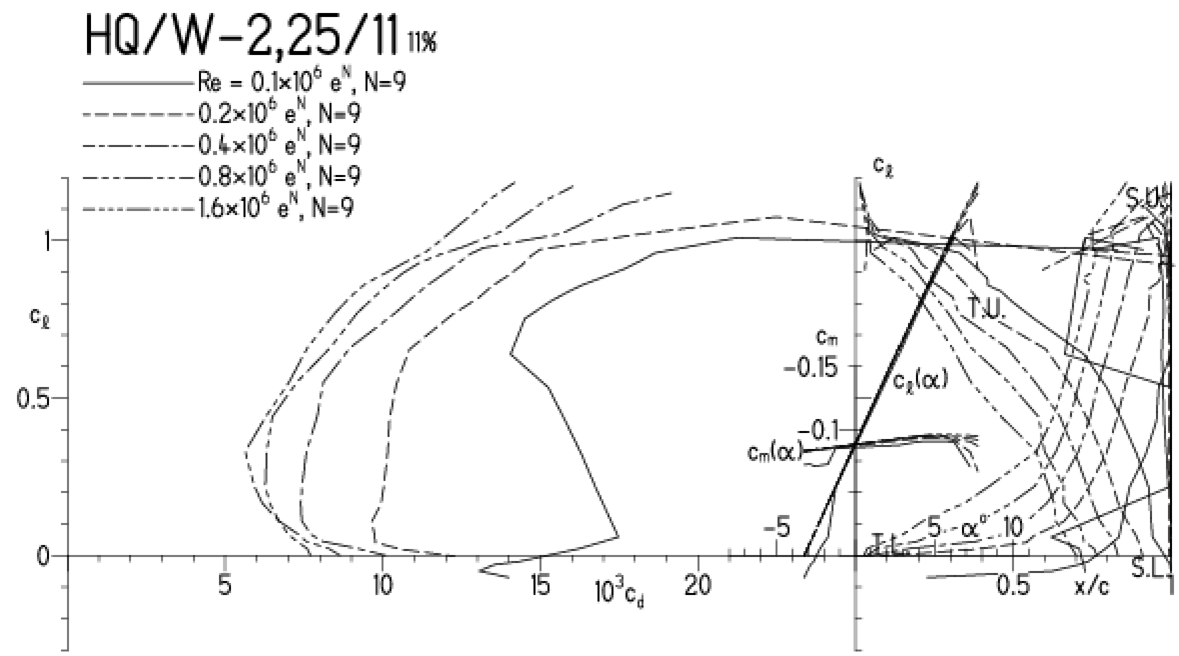


HQQ/W-2,25/11, N=9

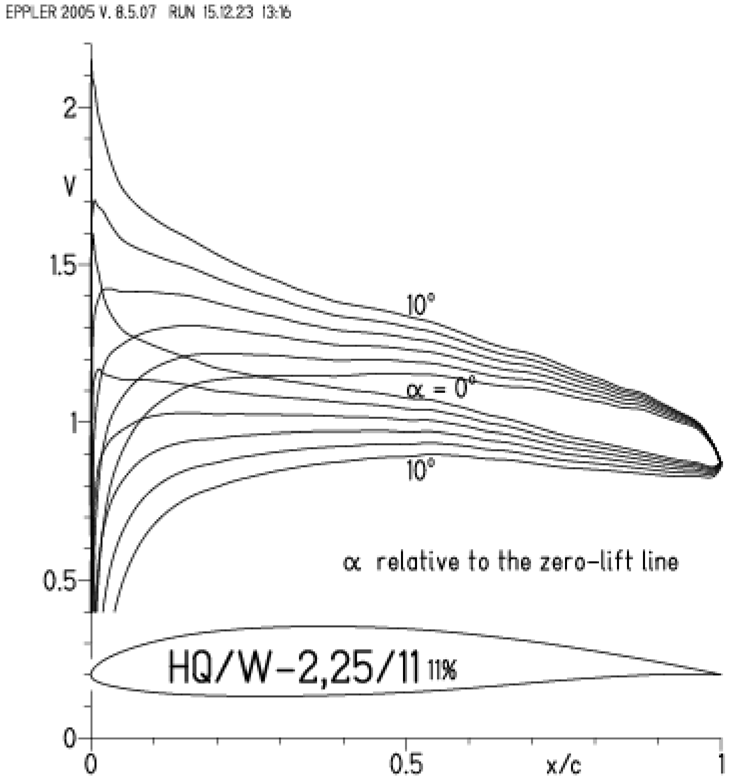
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

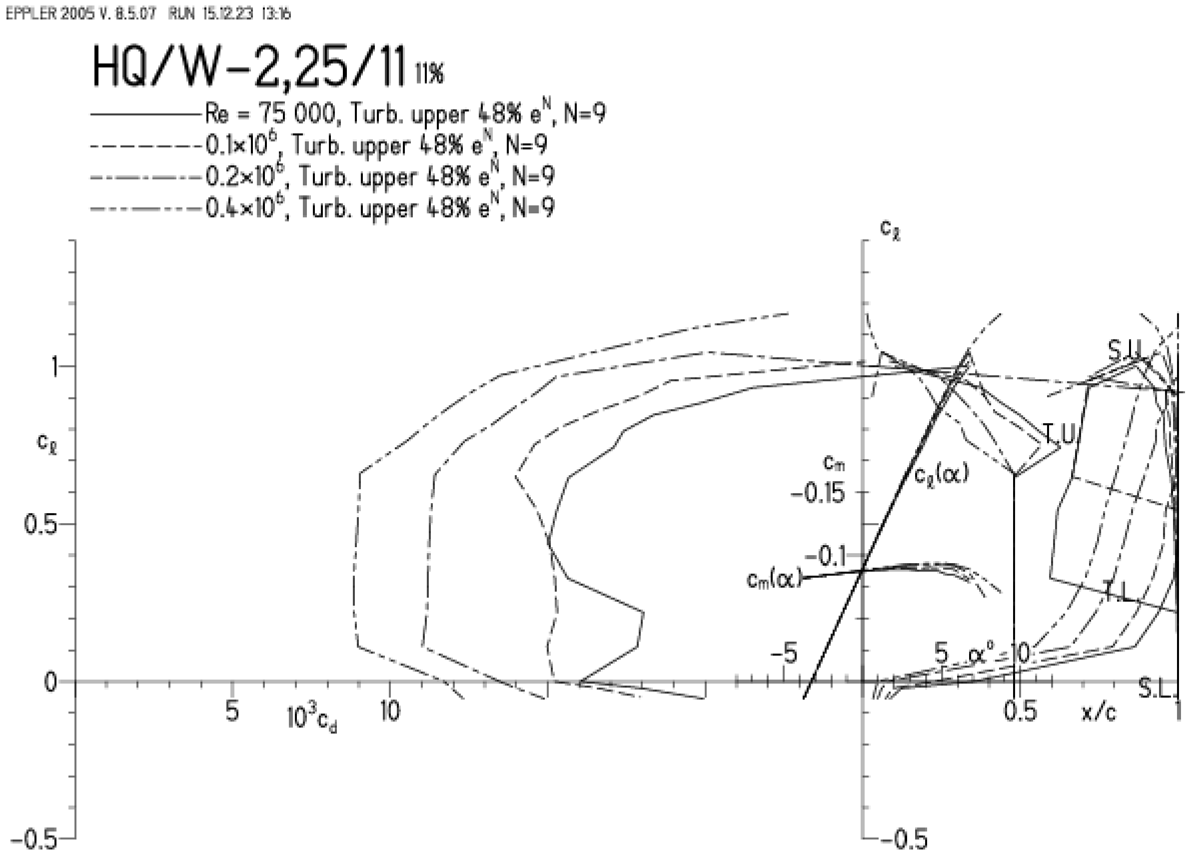


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



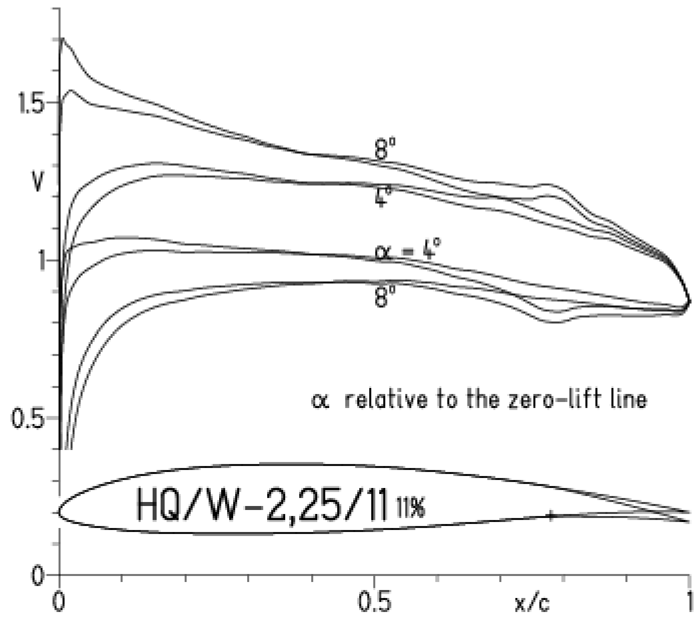
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



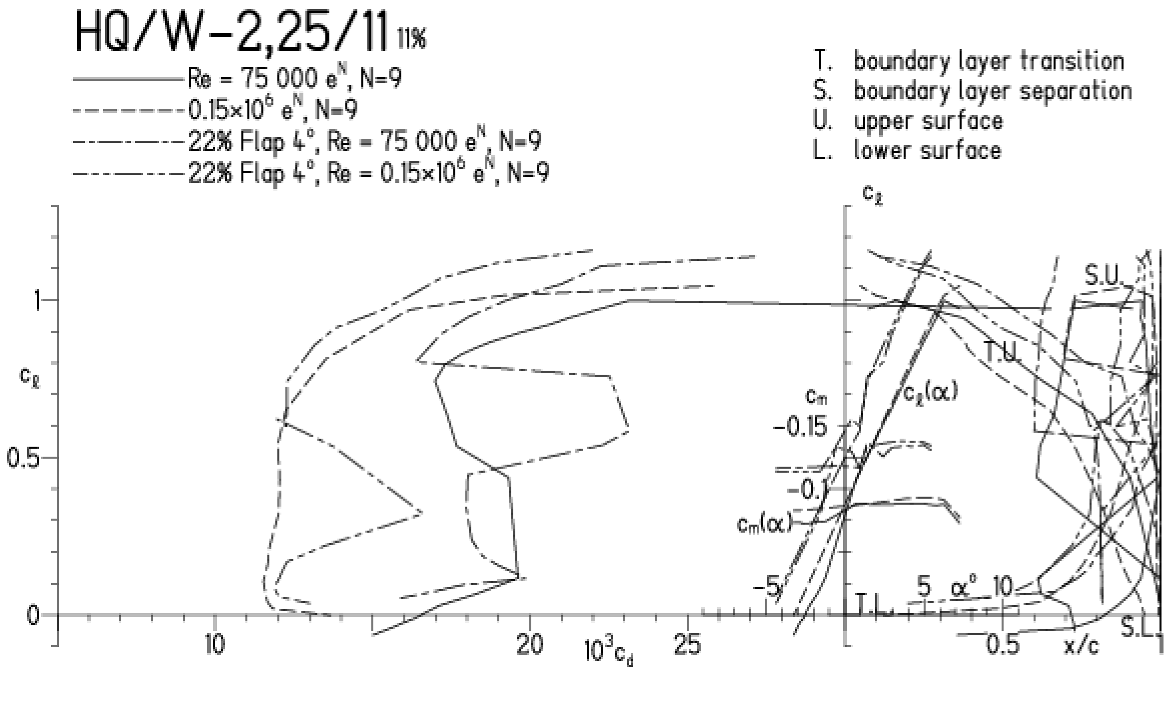


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

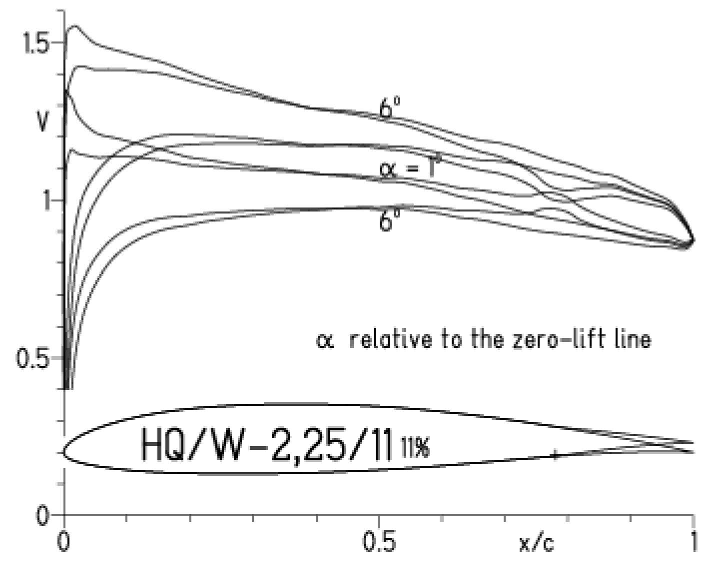


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

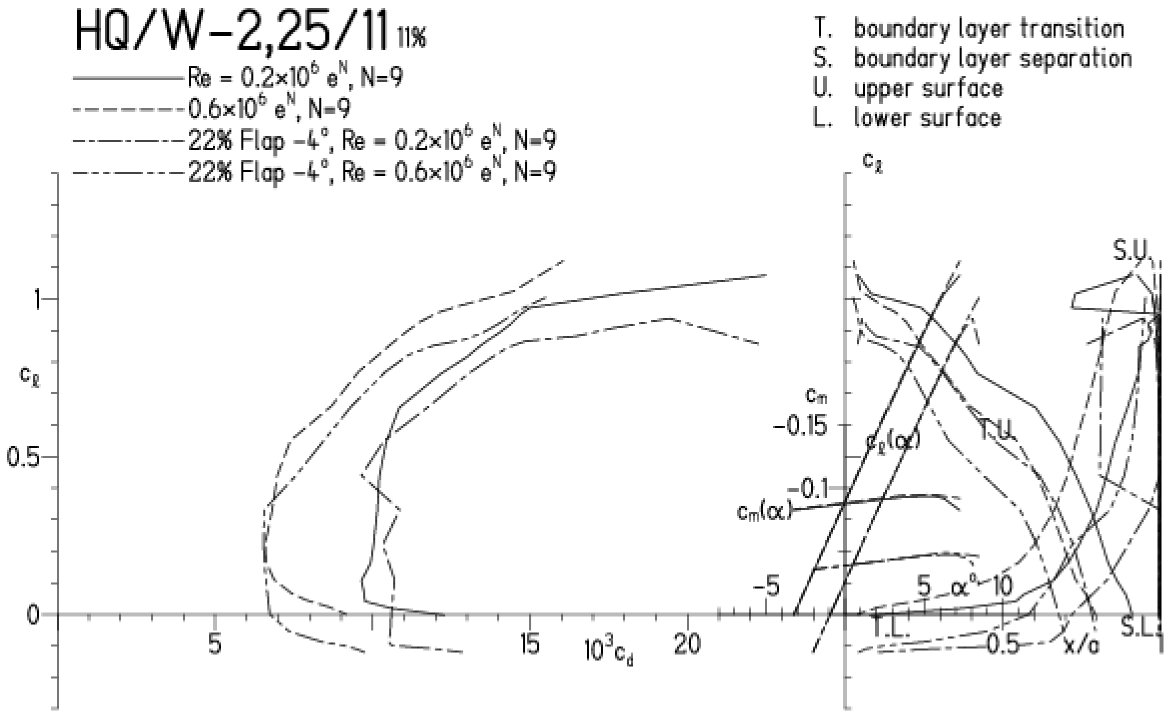


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

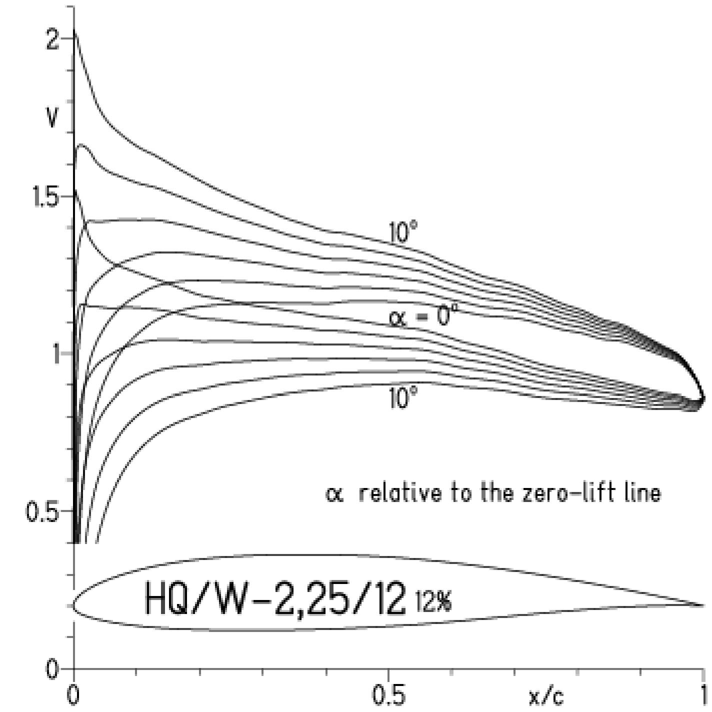


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

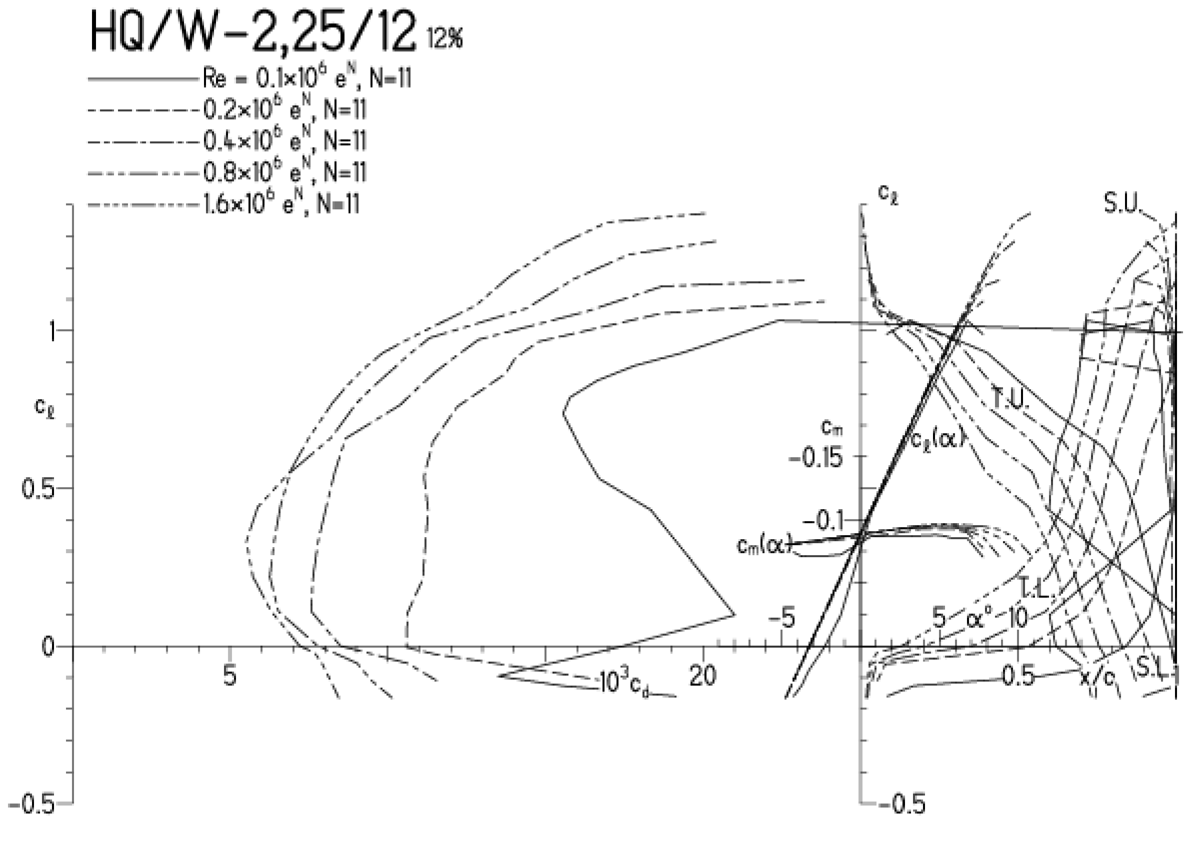


HQ/W-2,25/12, N=11

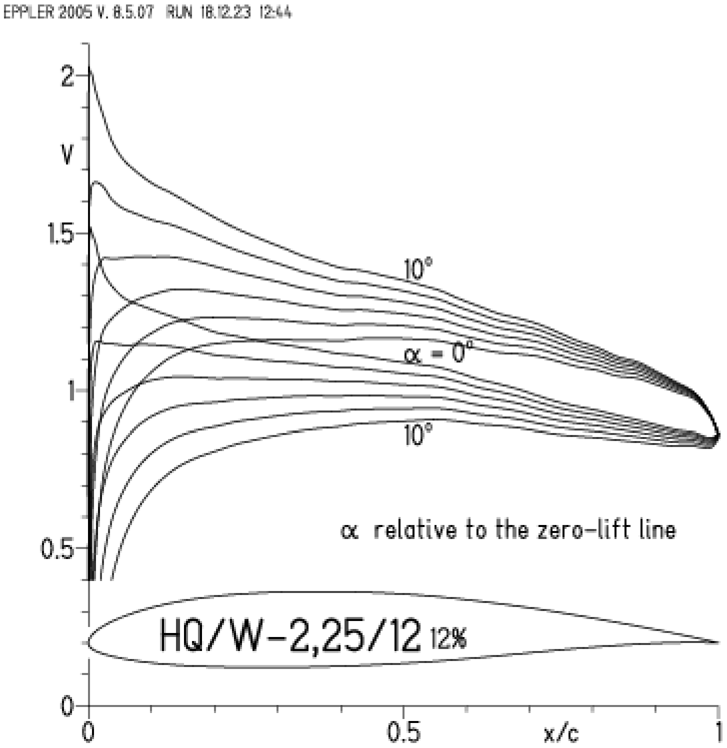
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

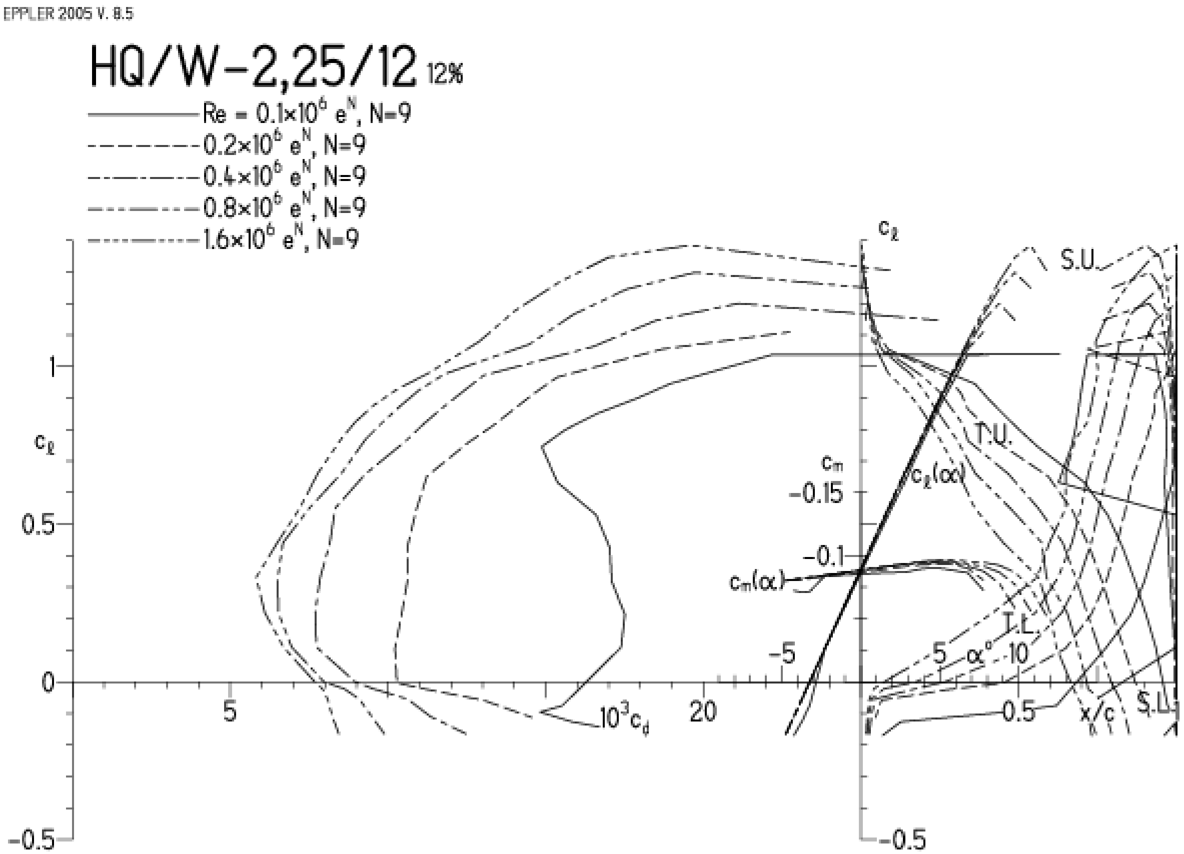


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

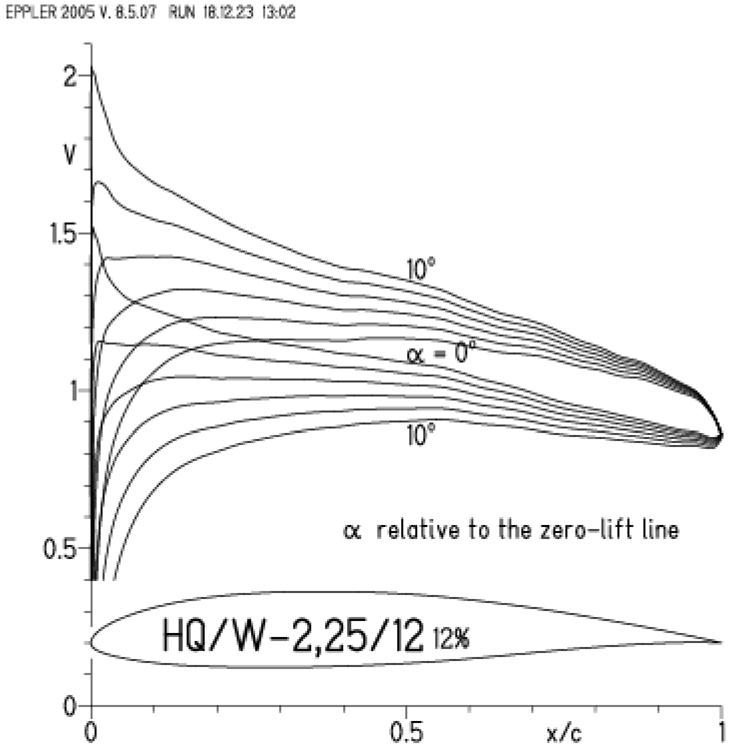


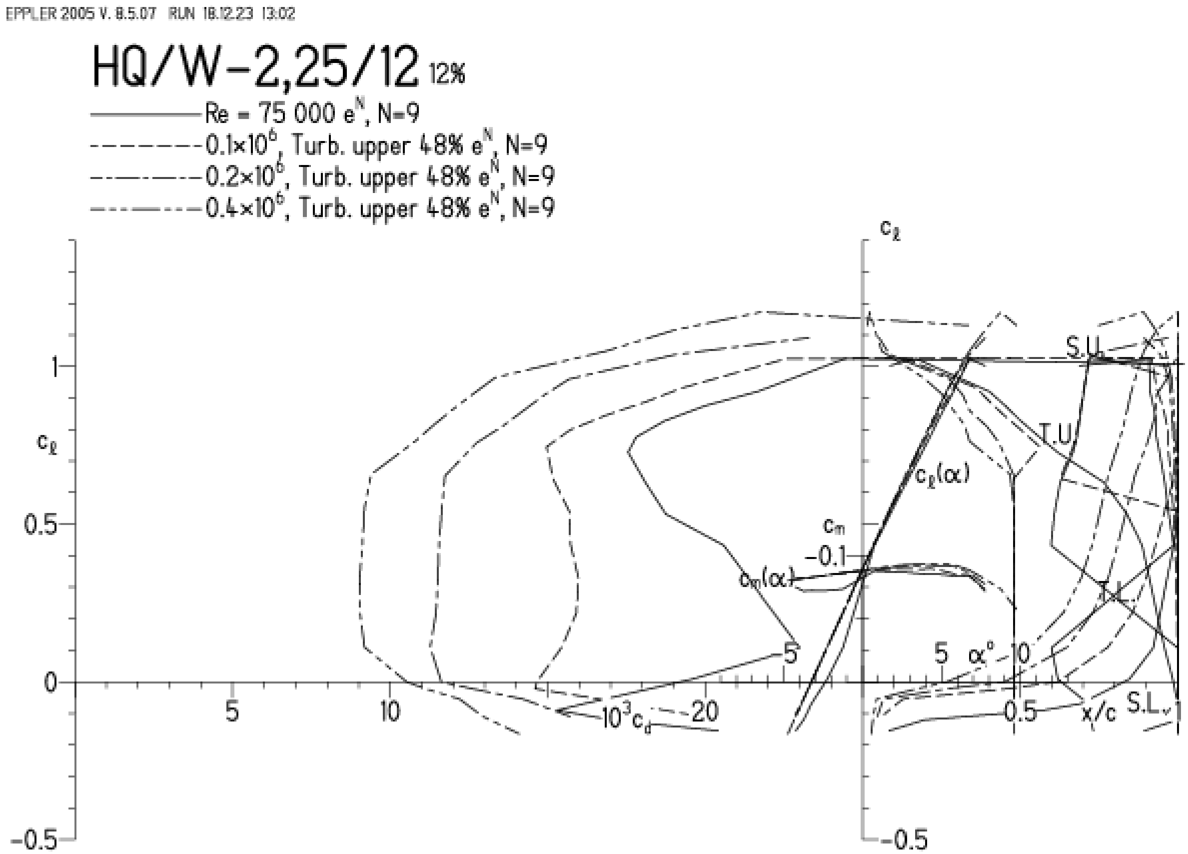
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
10^3 c_d
x/c

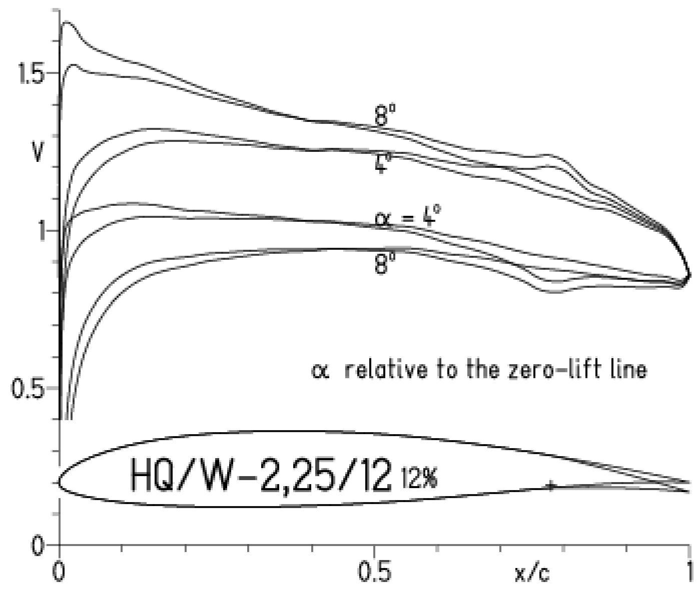
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



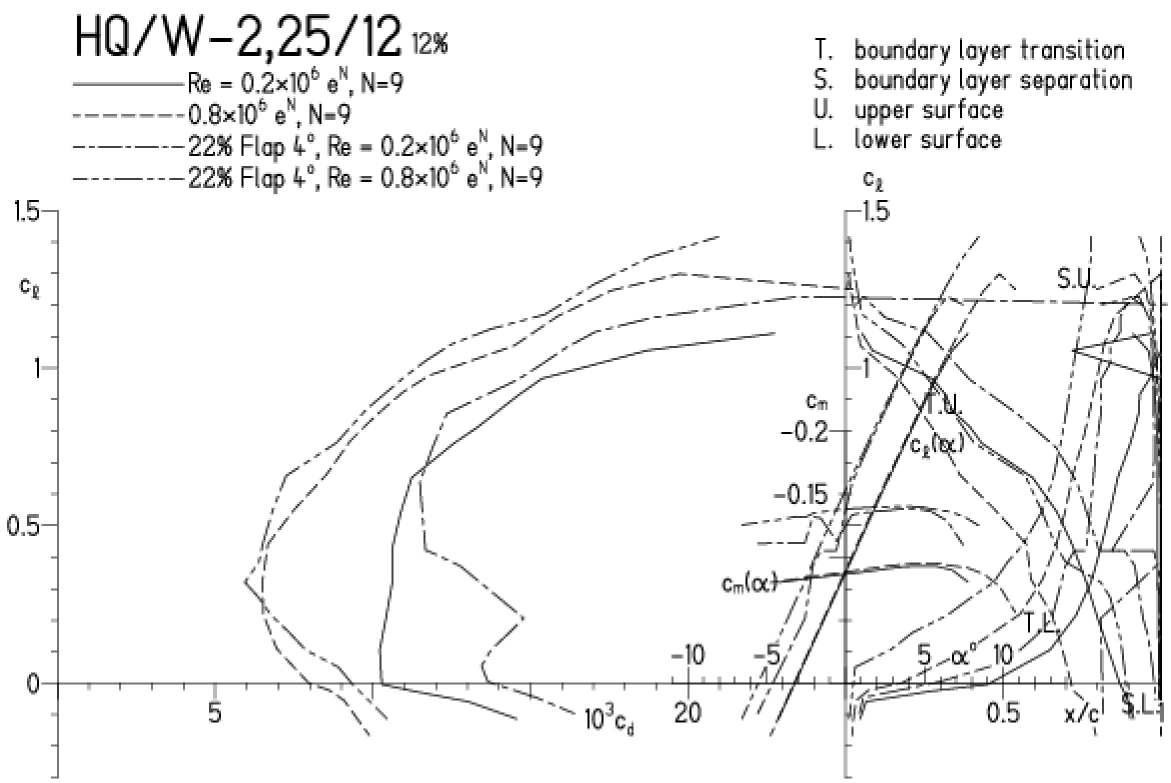


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

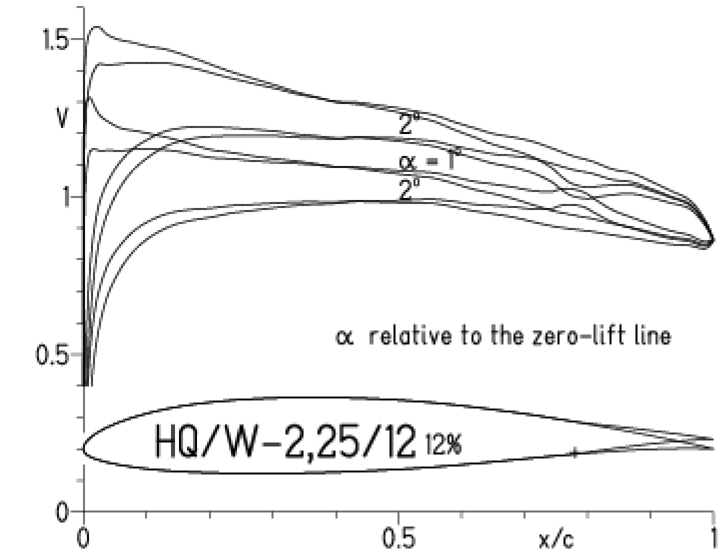


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

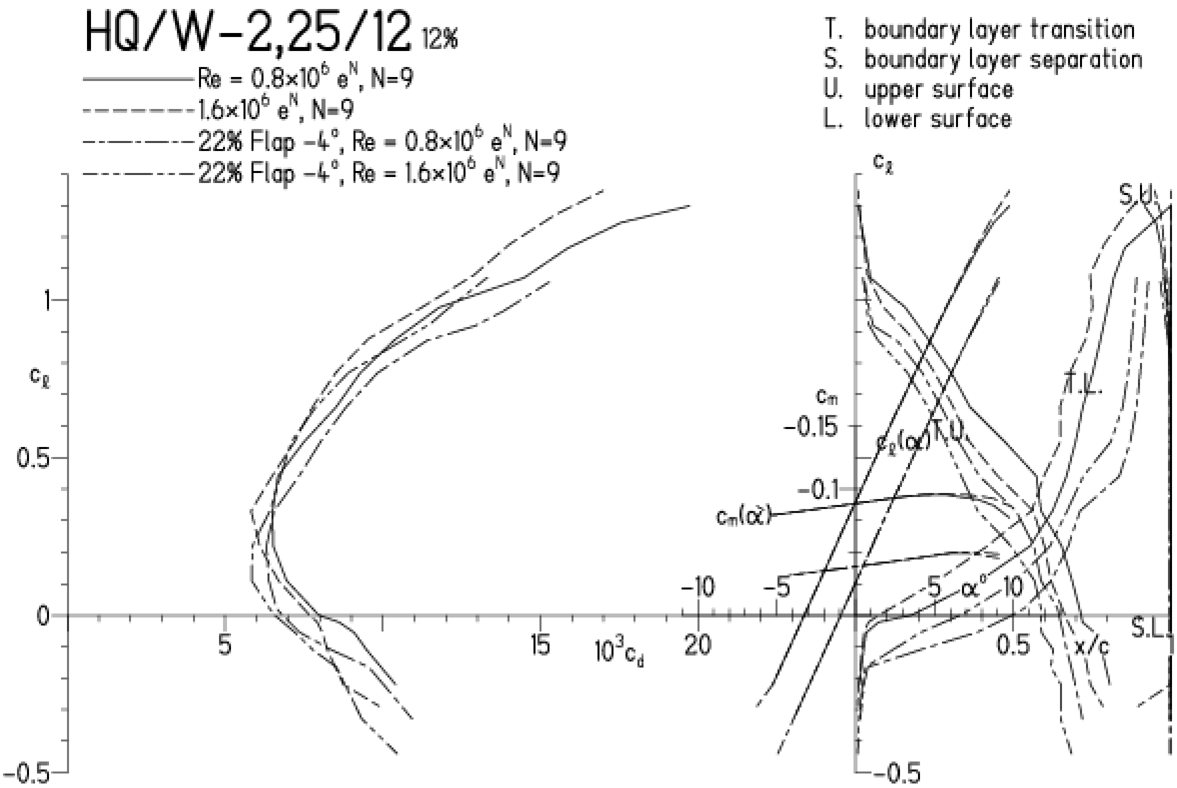


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

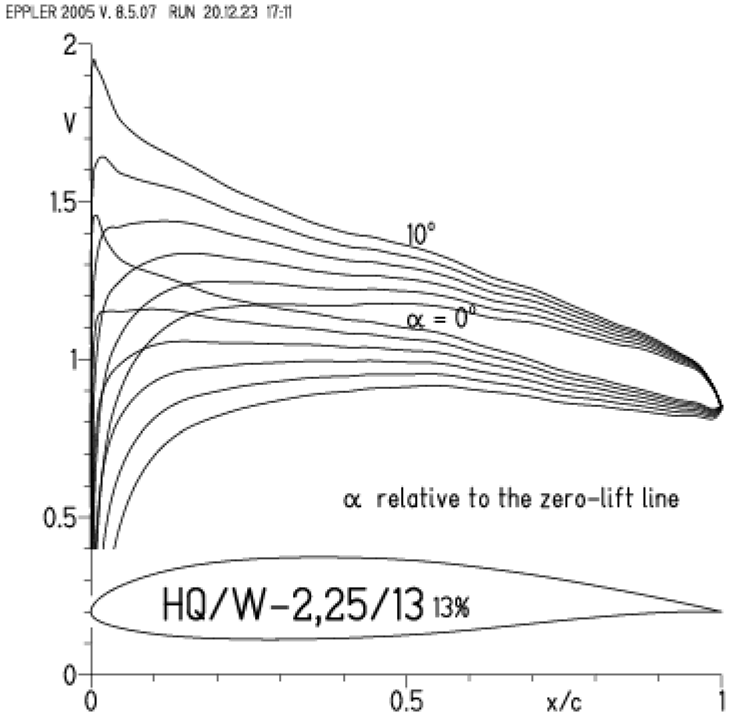
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

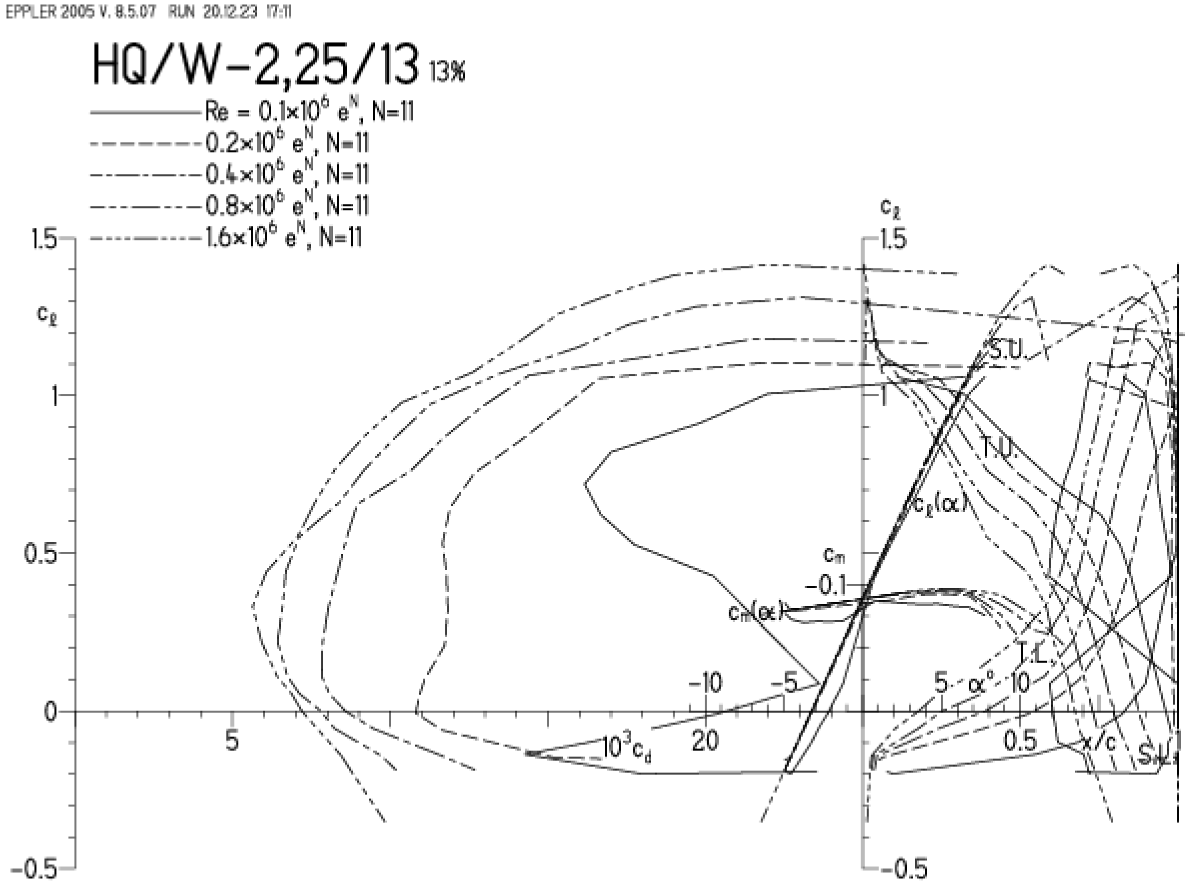


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

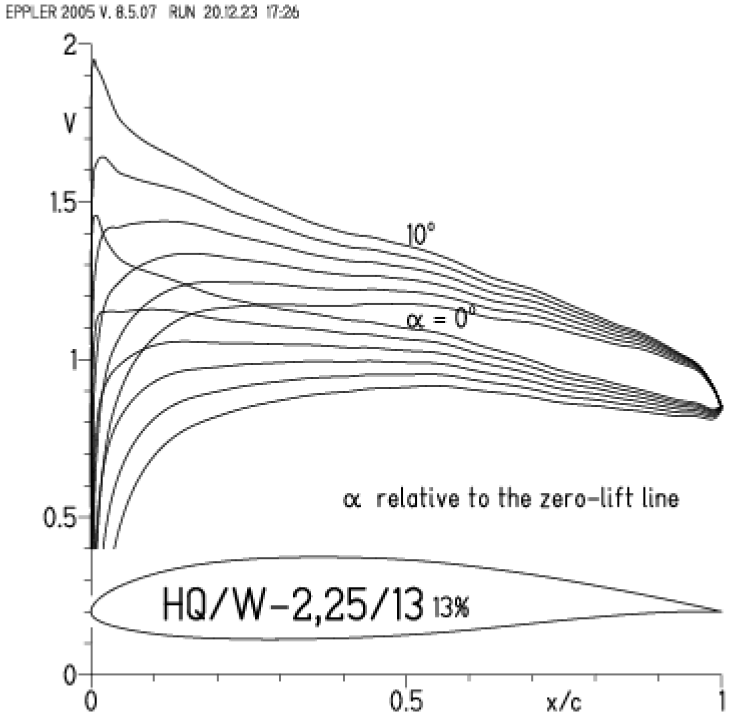


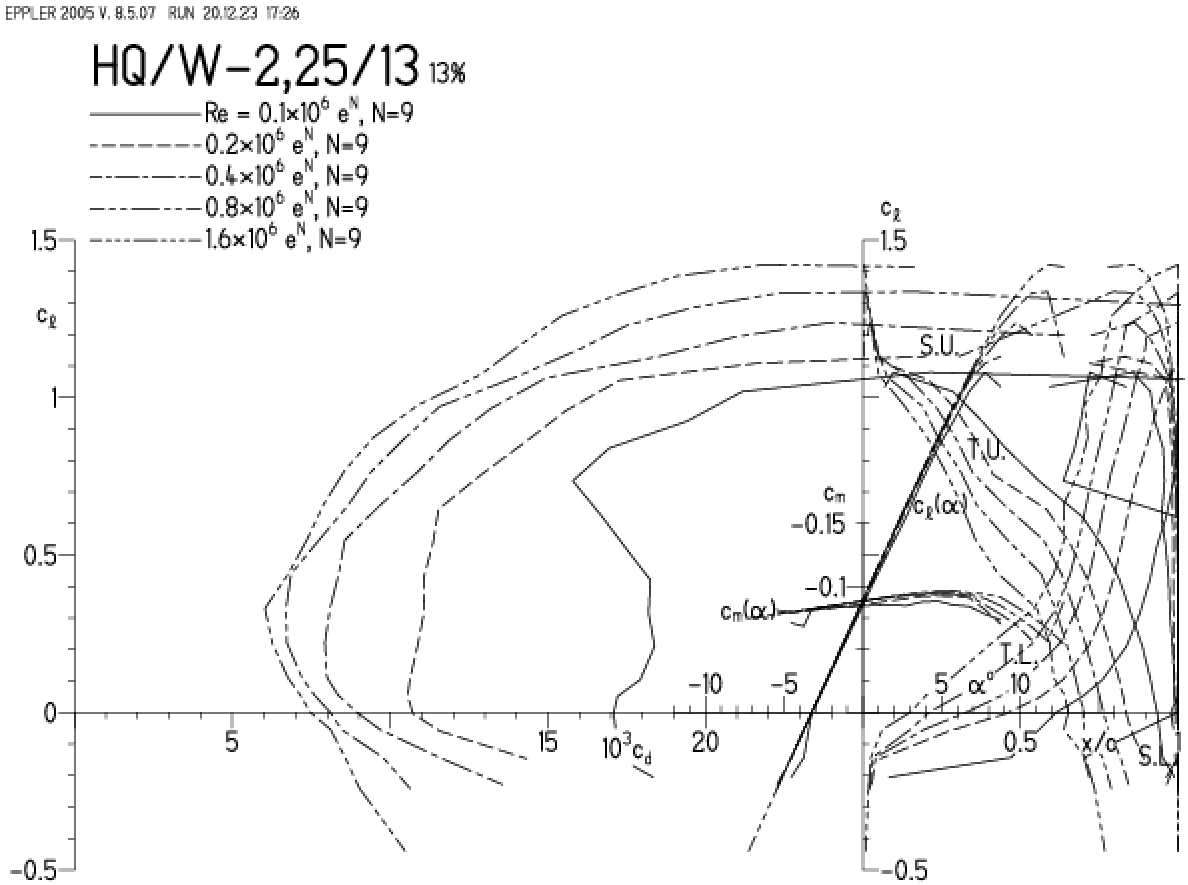
HQ/W-2,25/13, N=11



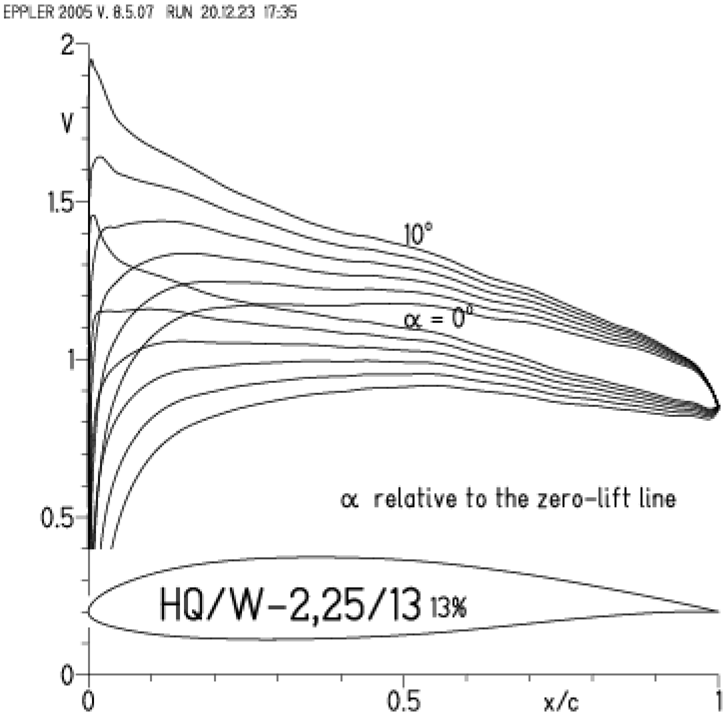


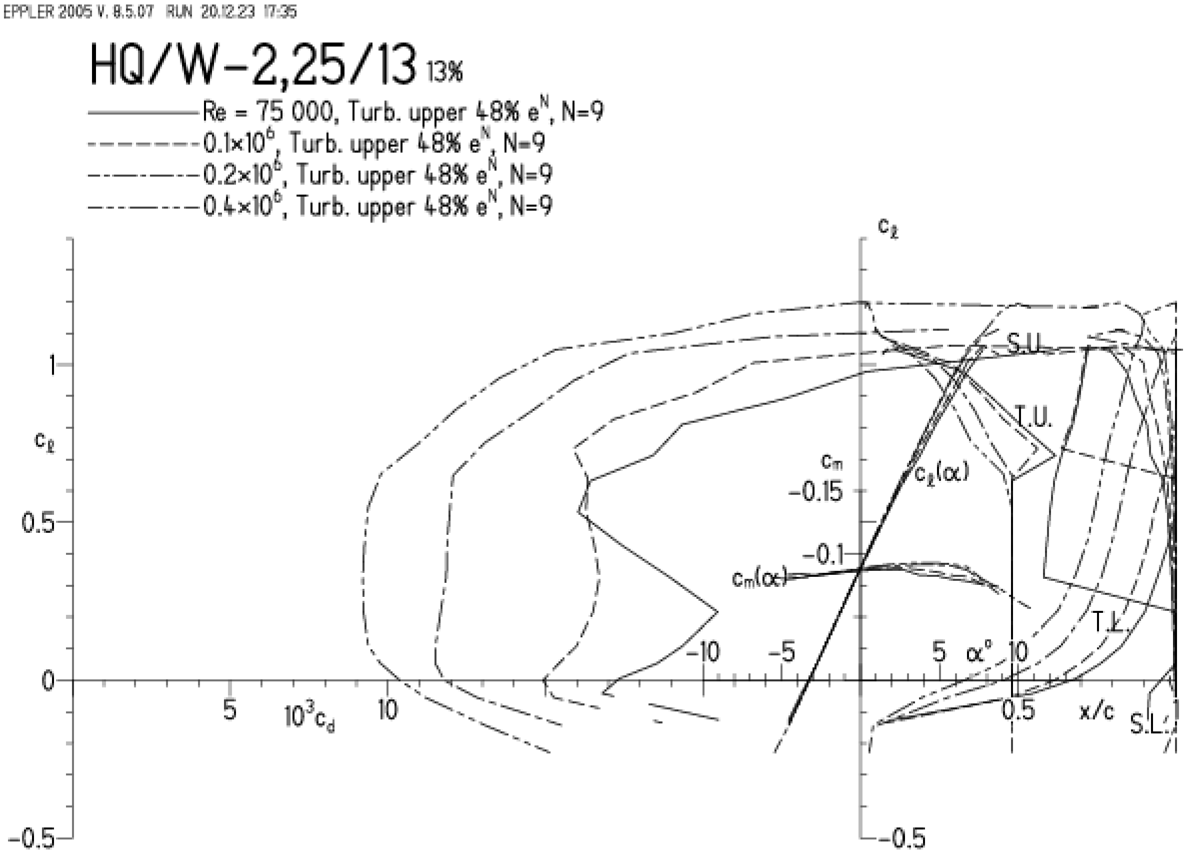
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
10³cd
x/c

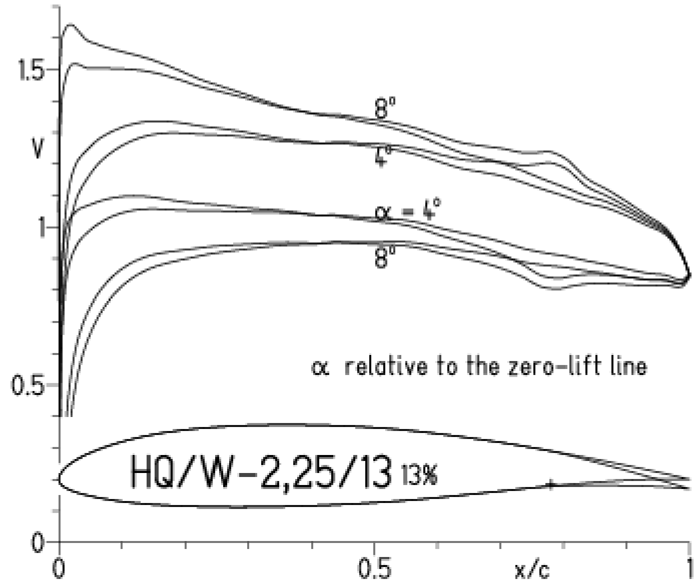
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



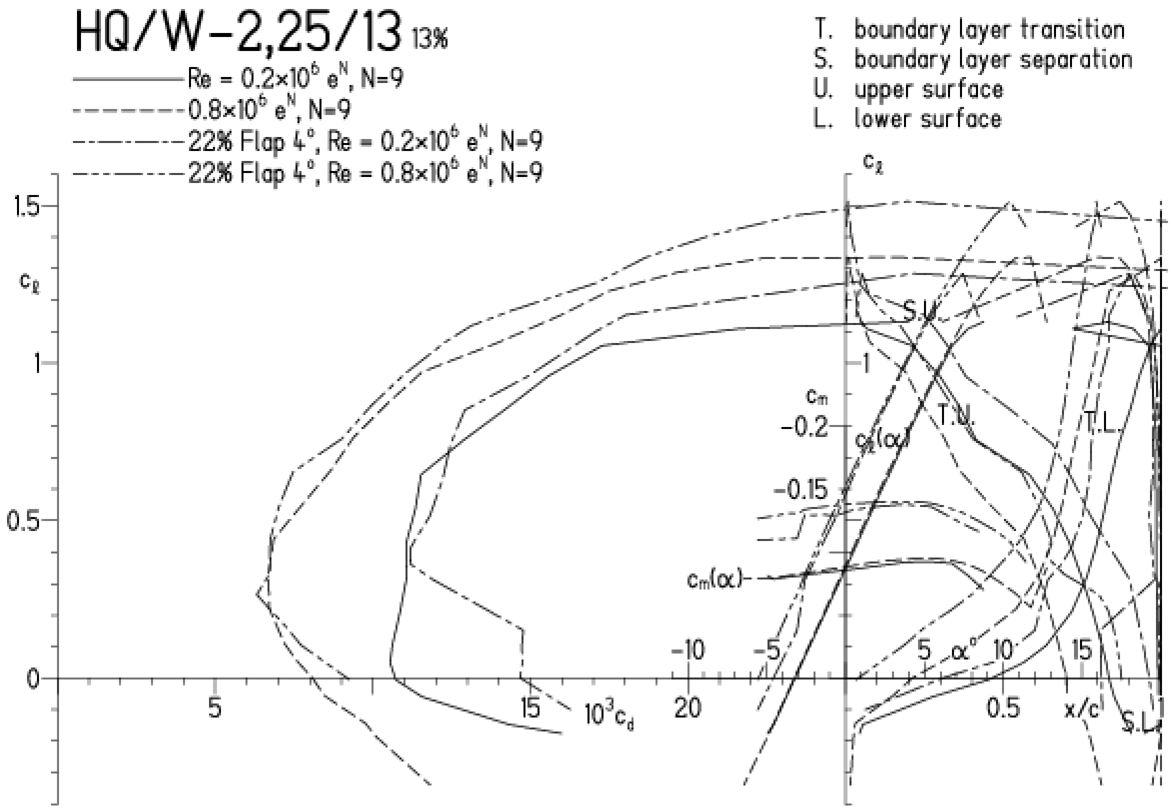


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

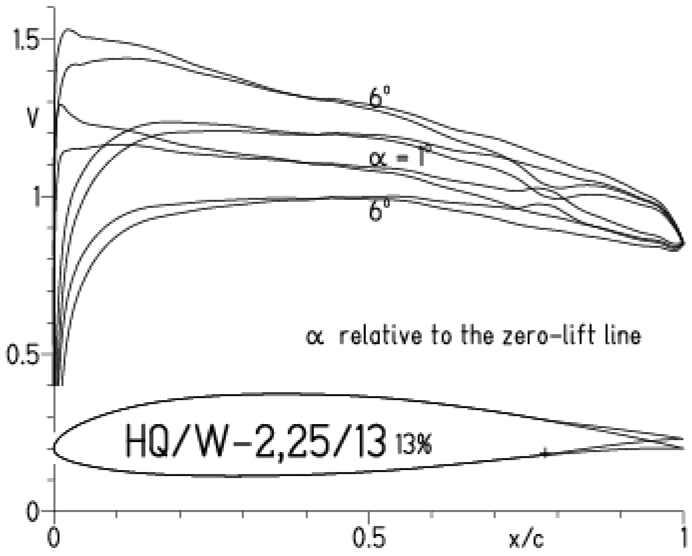


EPPLER 2005 V.

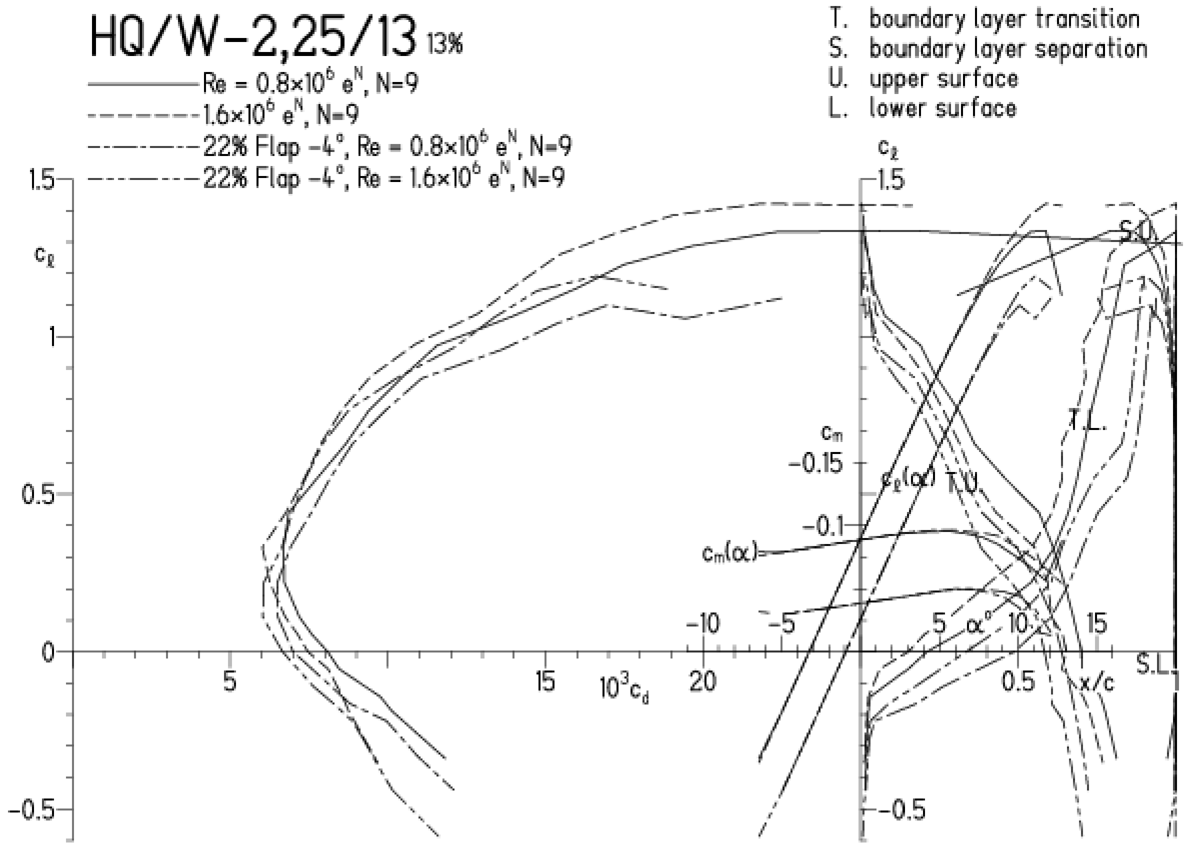


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

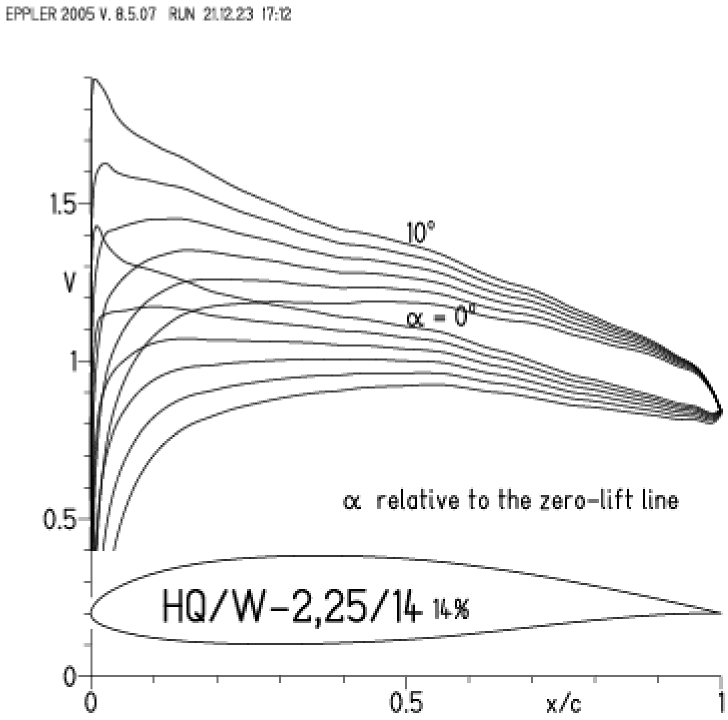
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

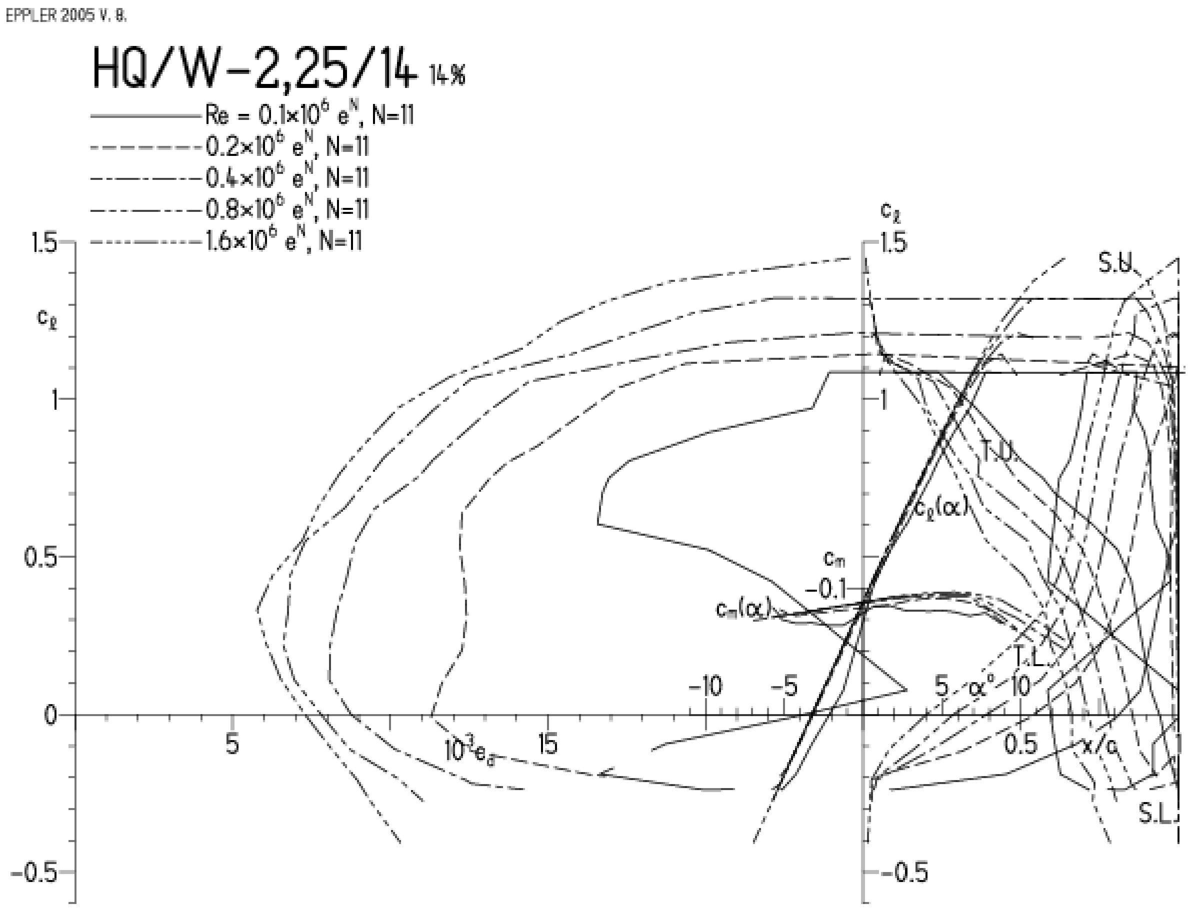


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



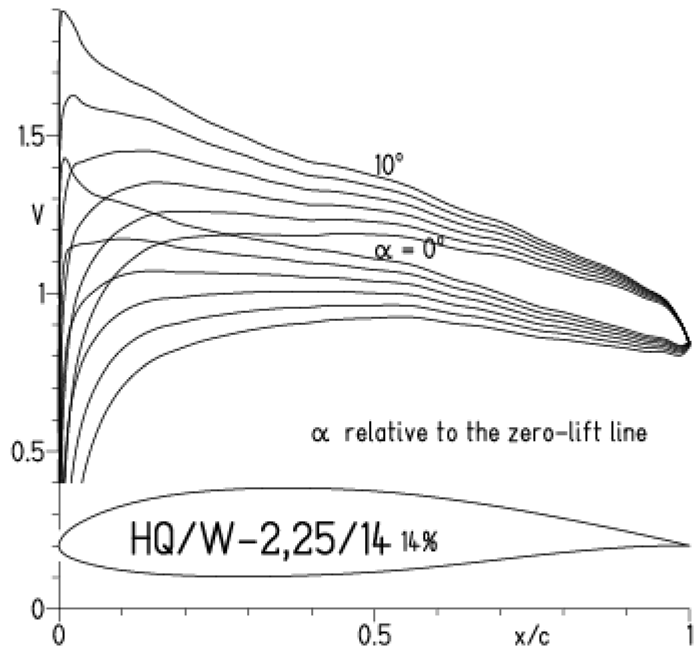
<u>HQ/W-2,25/14</u>, N=11



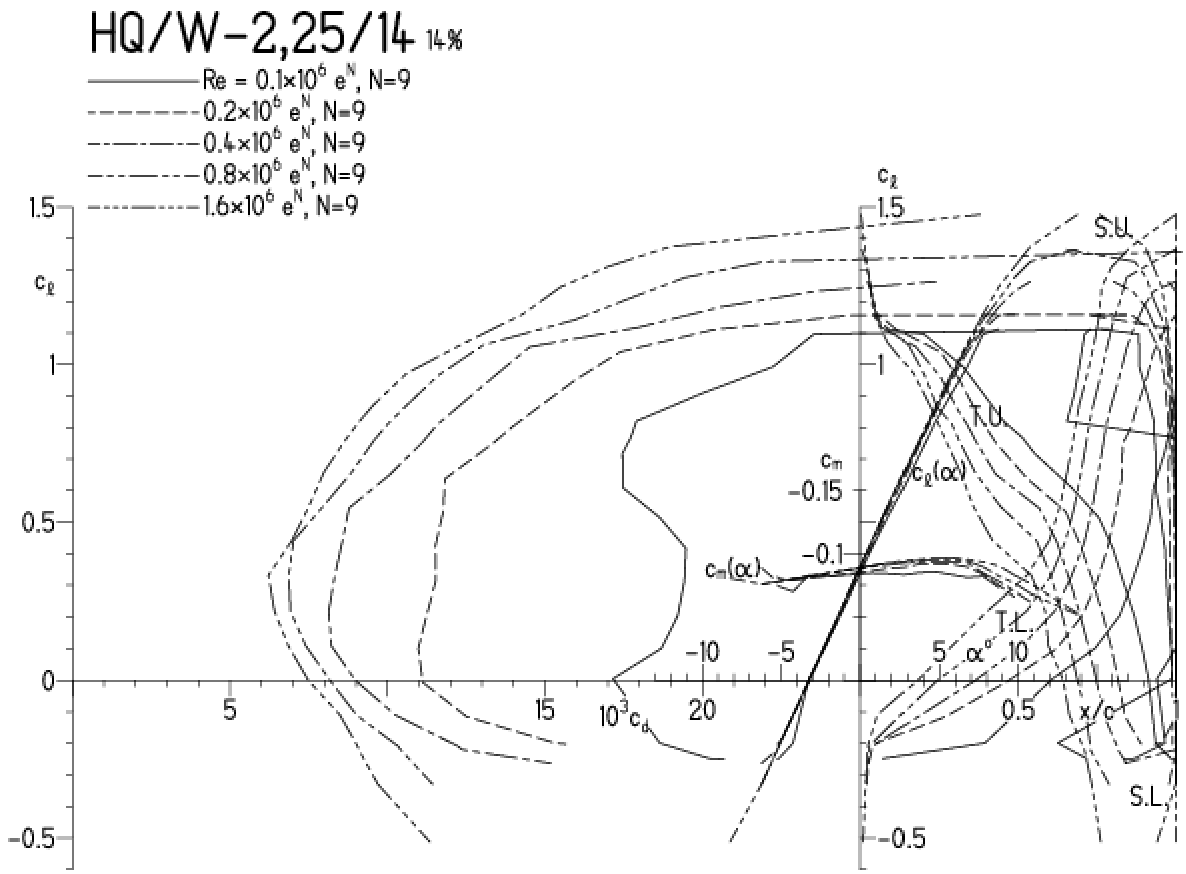


<u>HQ/W-2,25/14</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

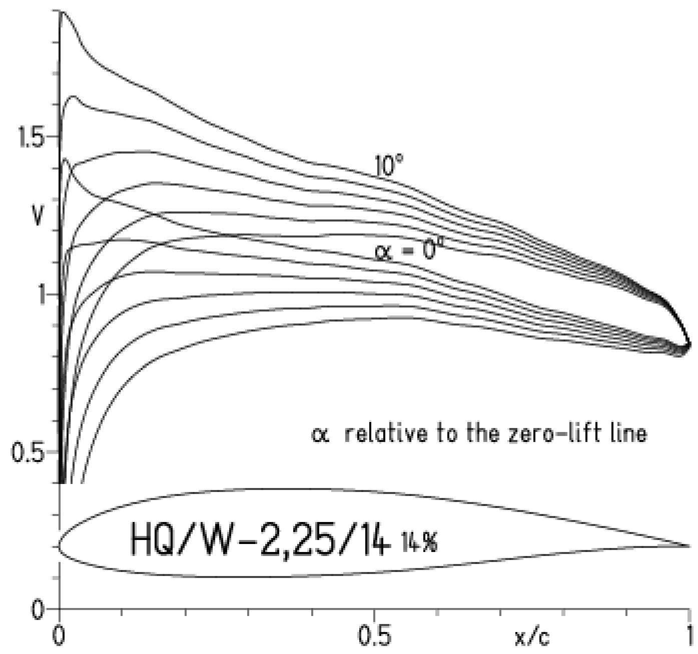


EPPLER 2005 V. 8.

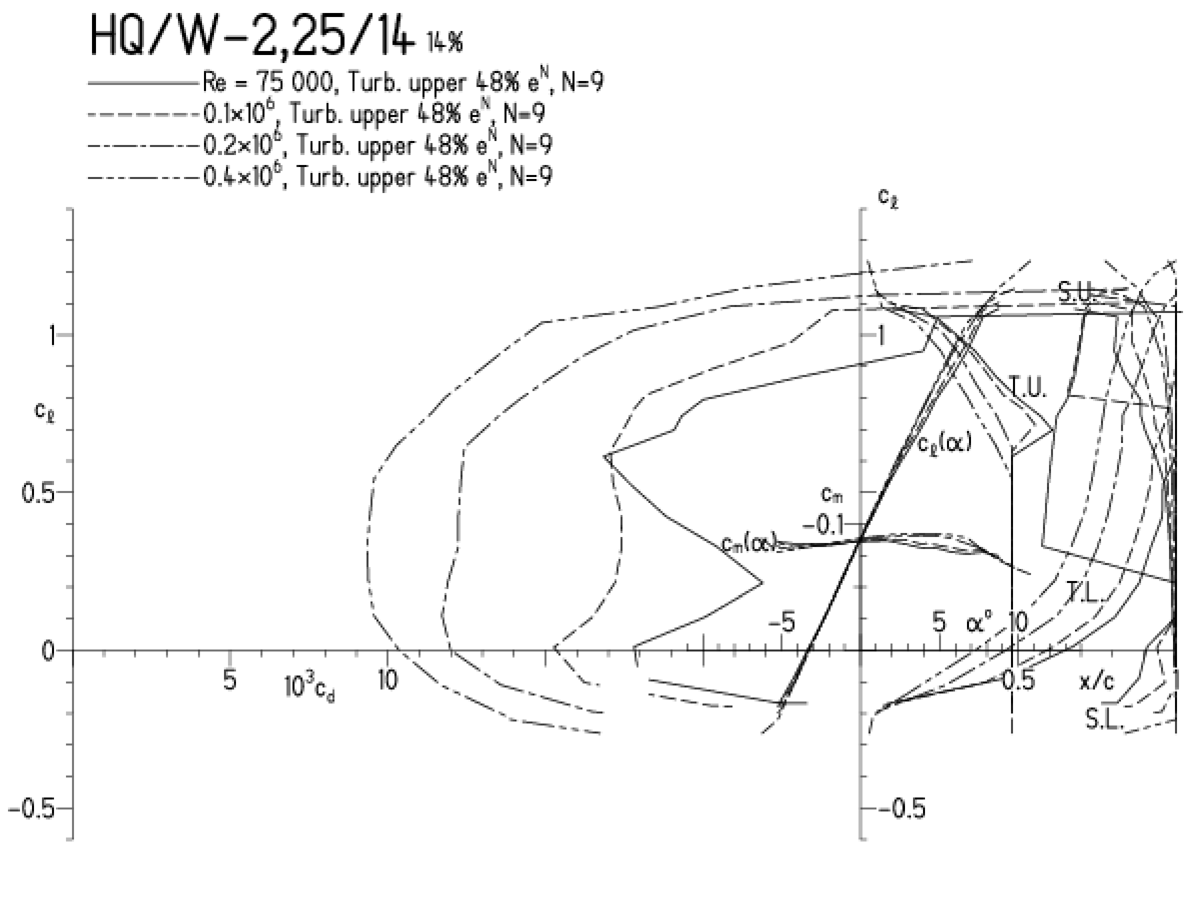


<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

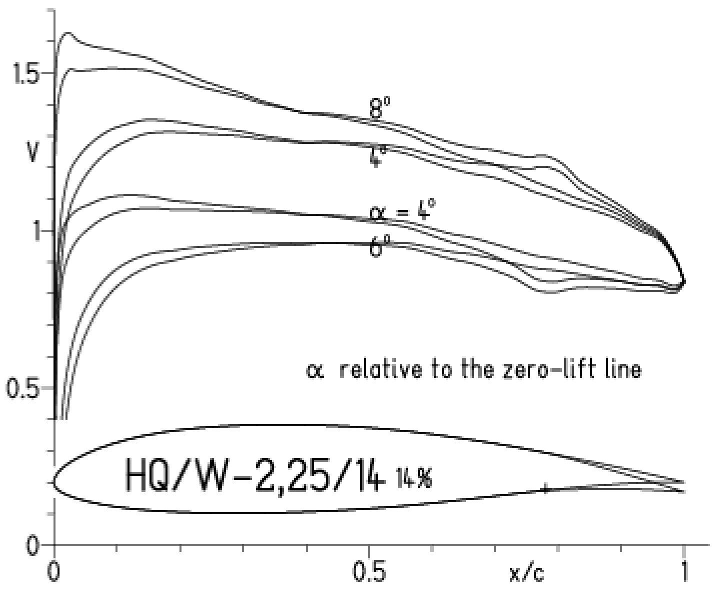


EPPLER 2005 V. 8.5.07 RU

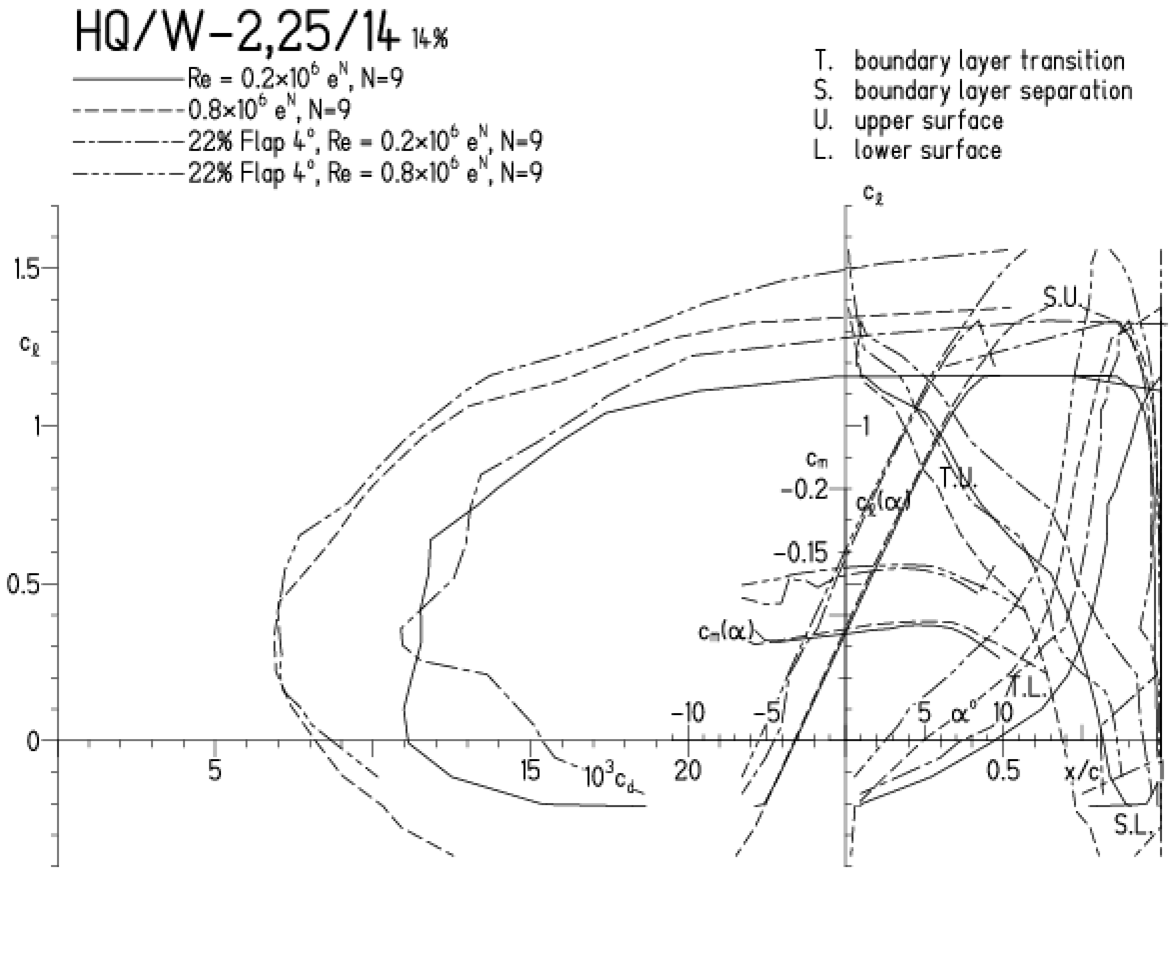


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

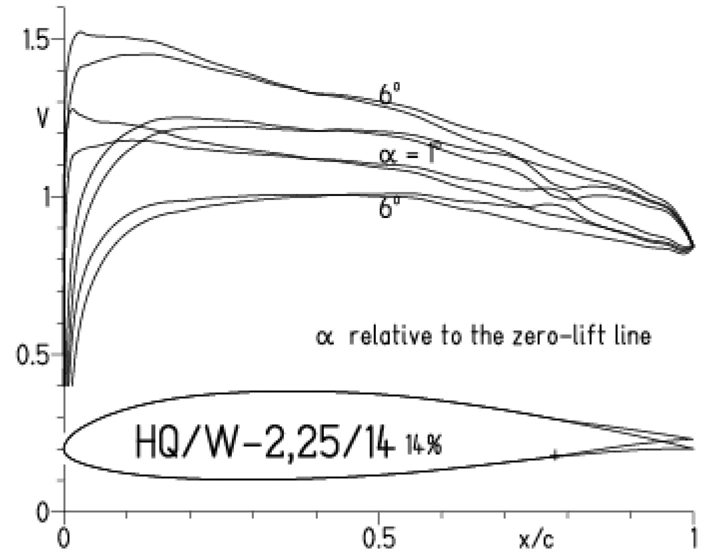


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

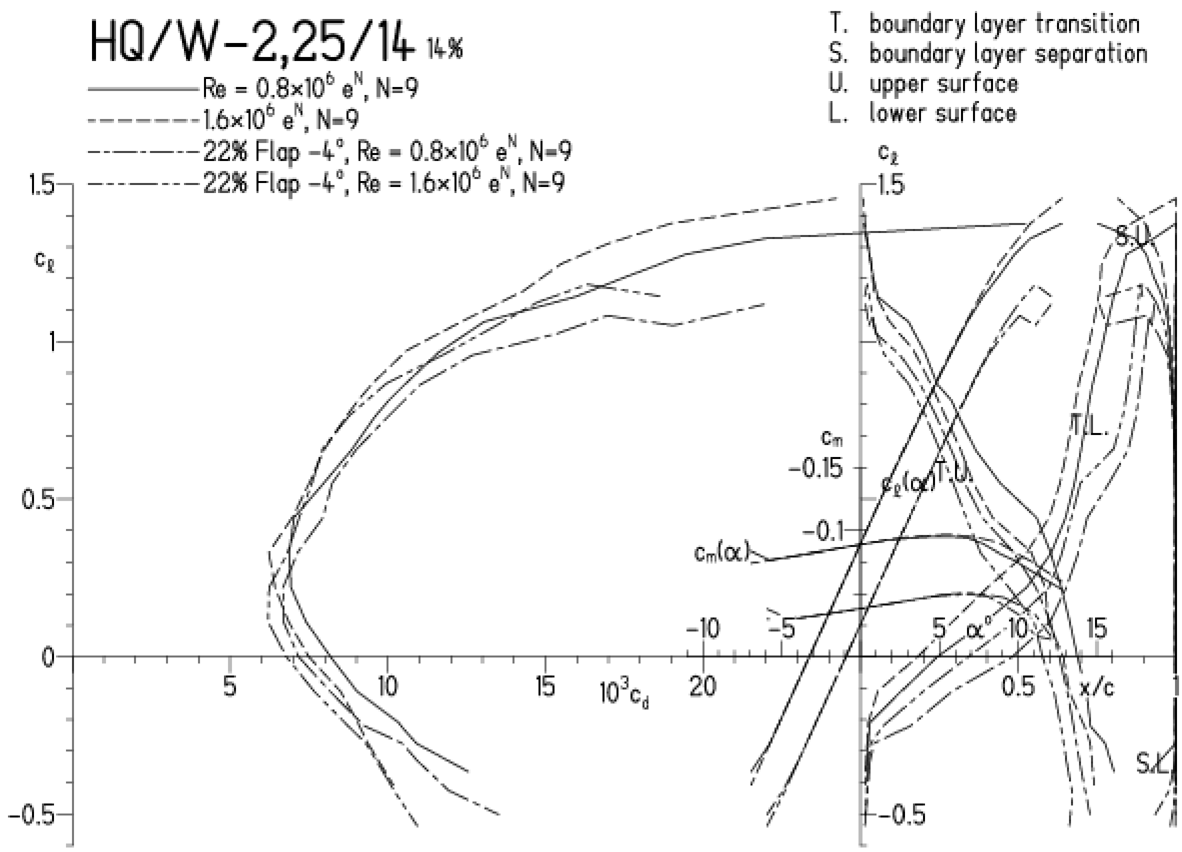


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

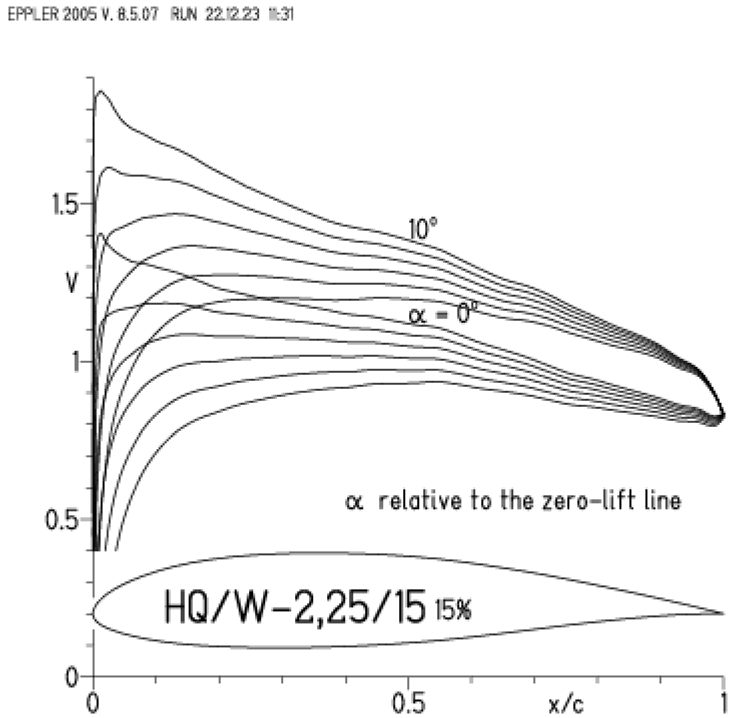
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

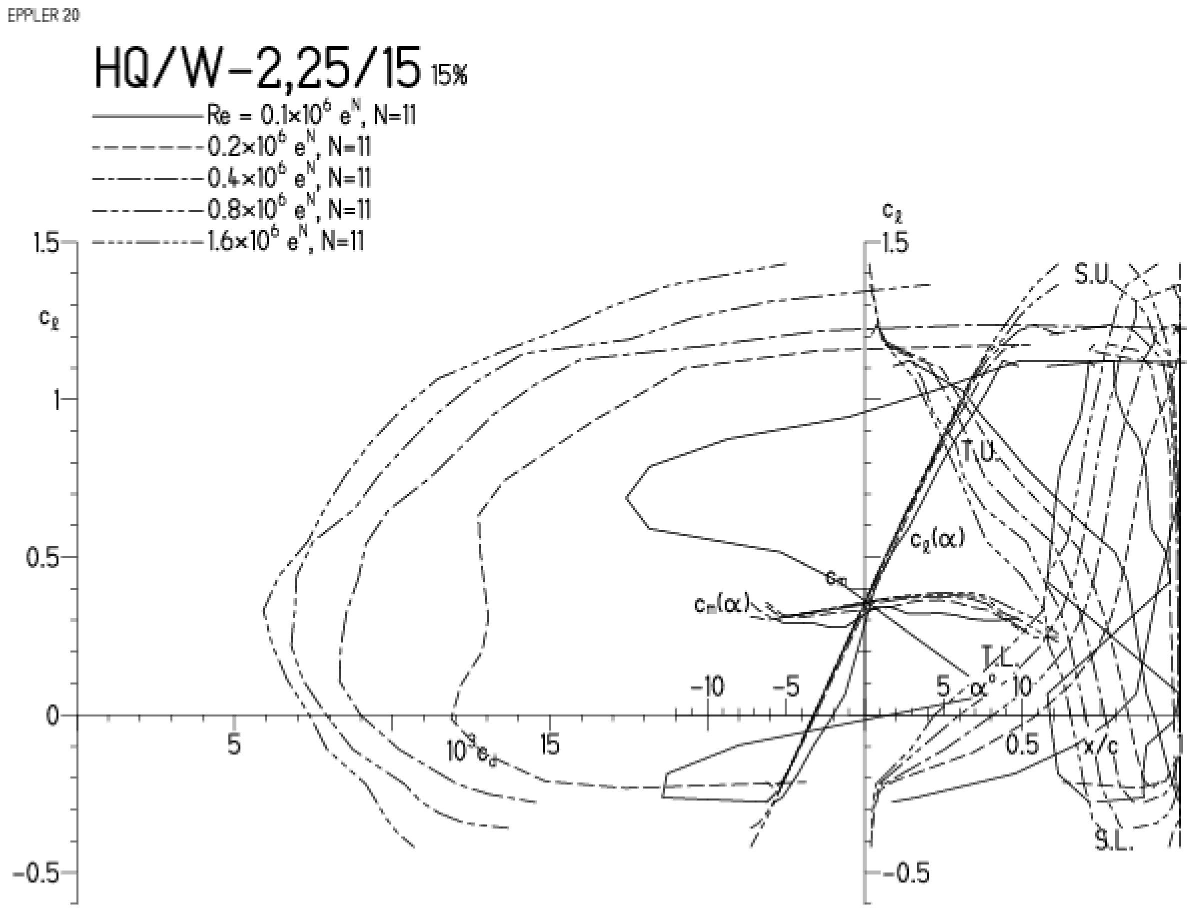


EPPLER 2005 V. 8.5.07



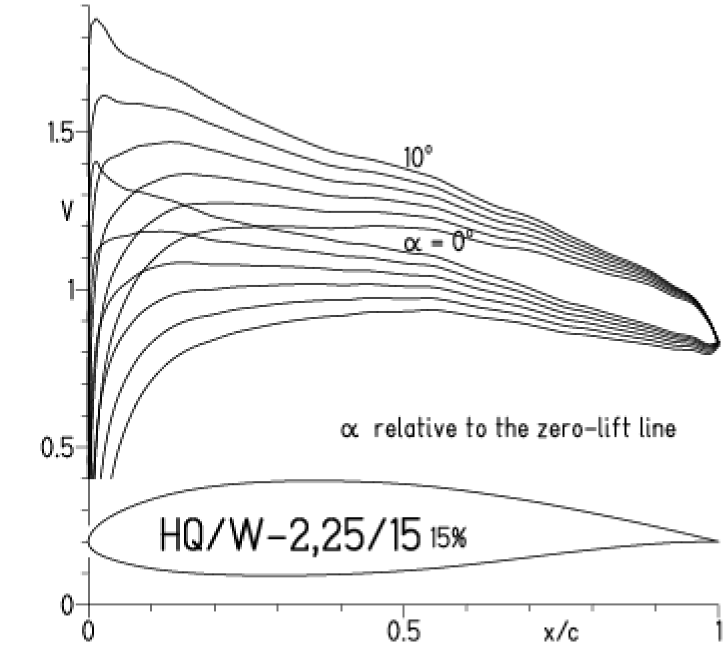
HQ/W-2,25/15, N=11



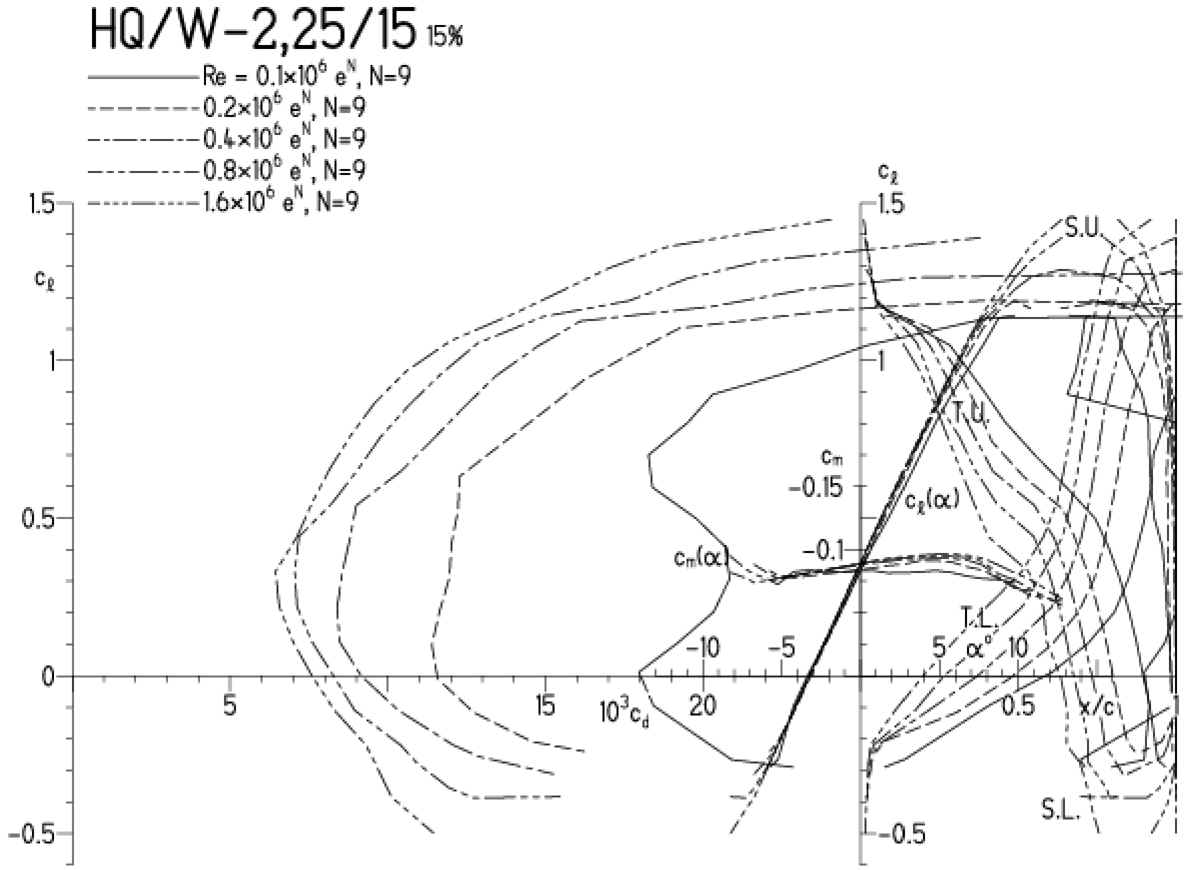


<u>HQ/W-2,25/15</u>, N=9

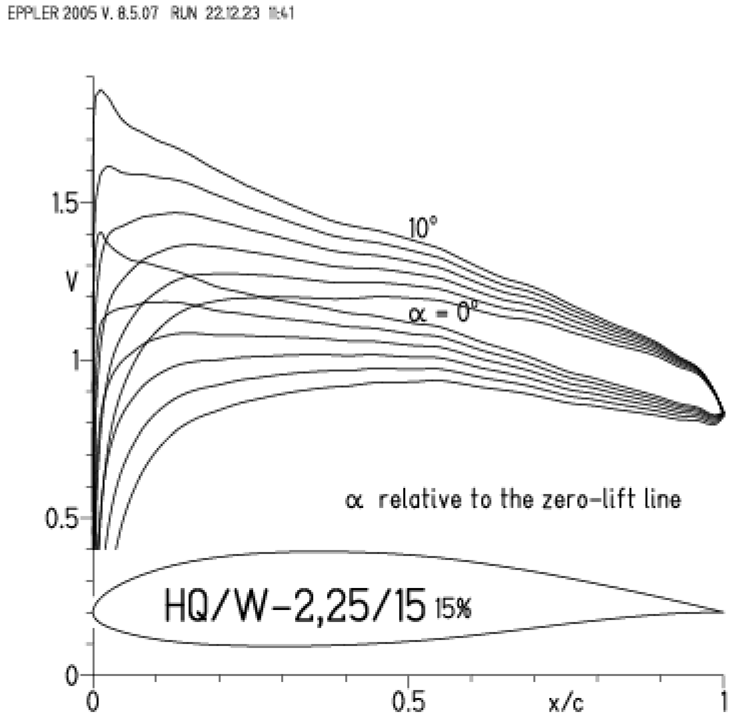
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

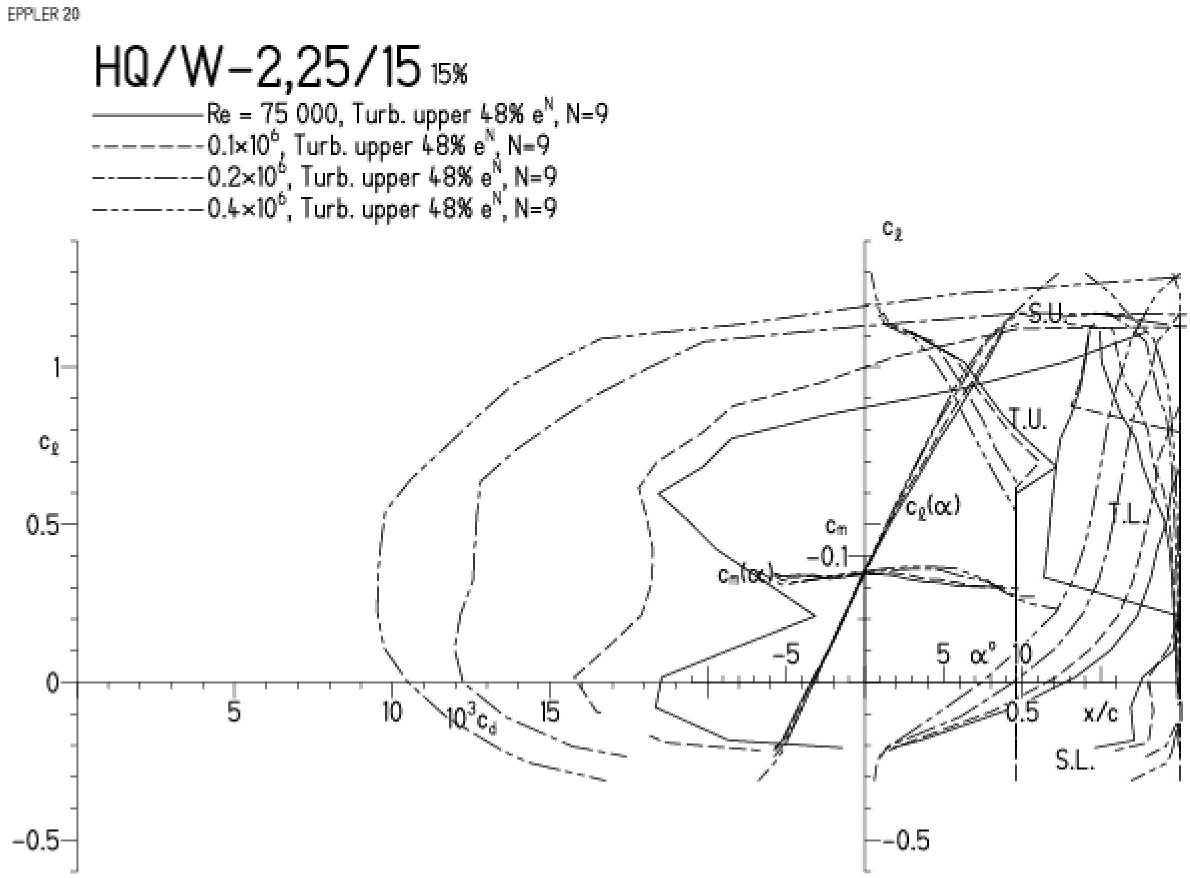


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



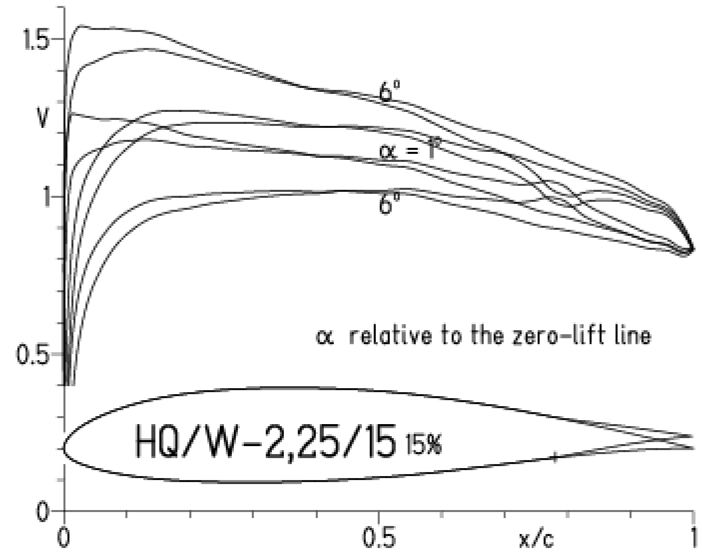


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

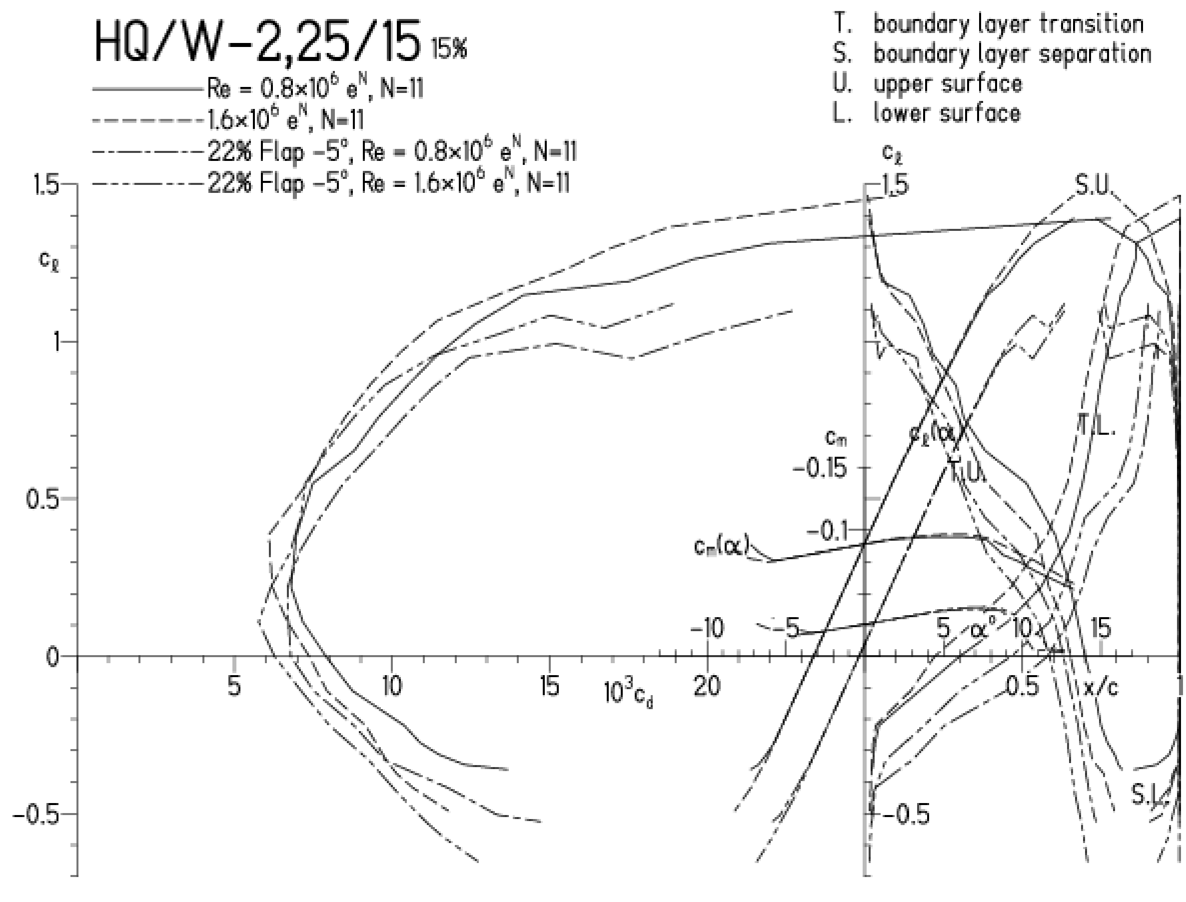
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

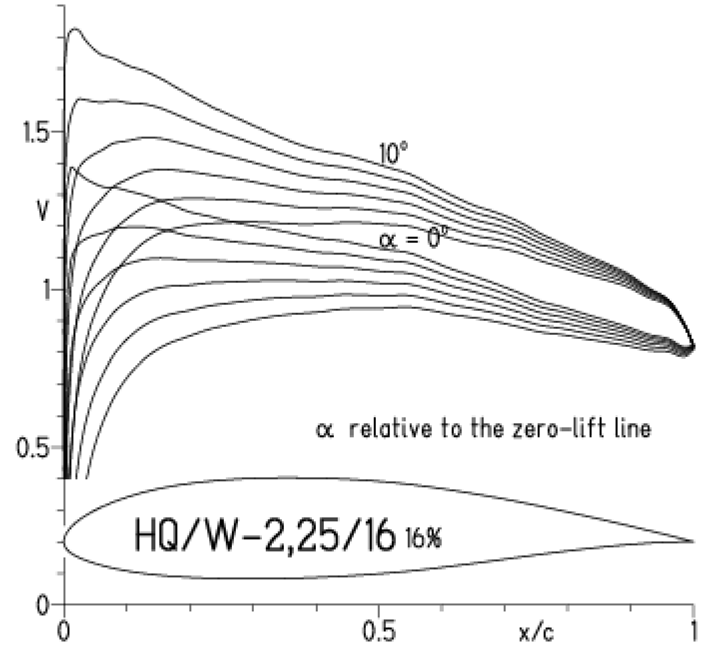


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

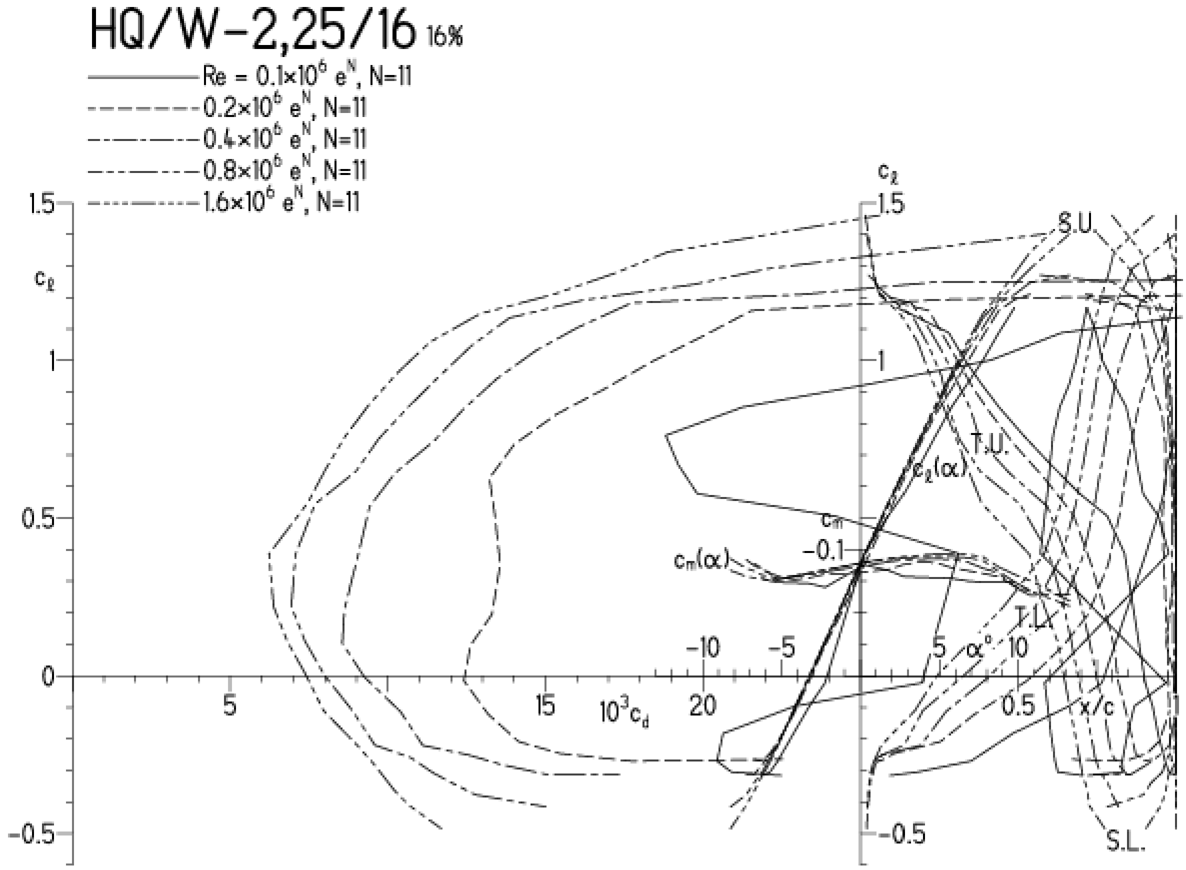


<u>HQ/W-2,25/16</u>, N=11

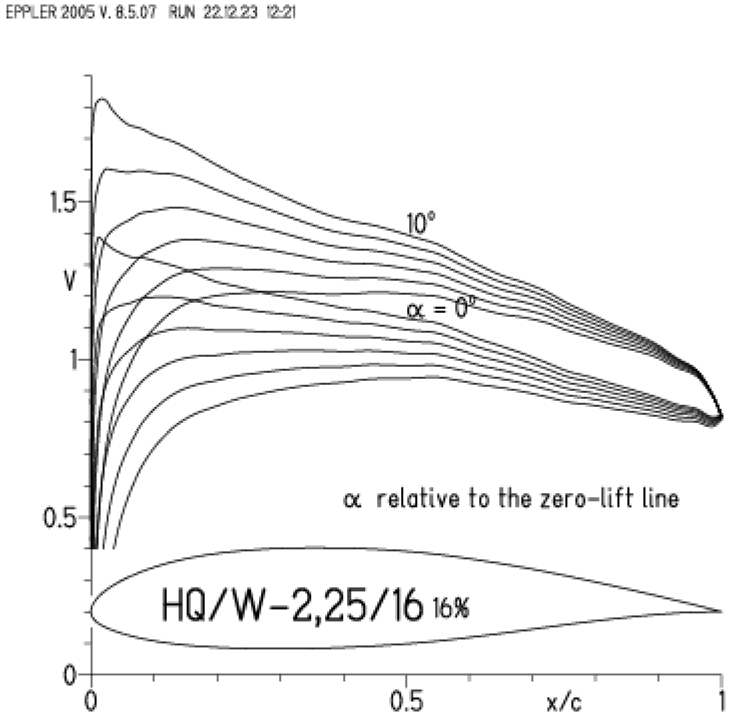
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

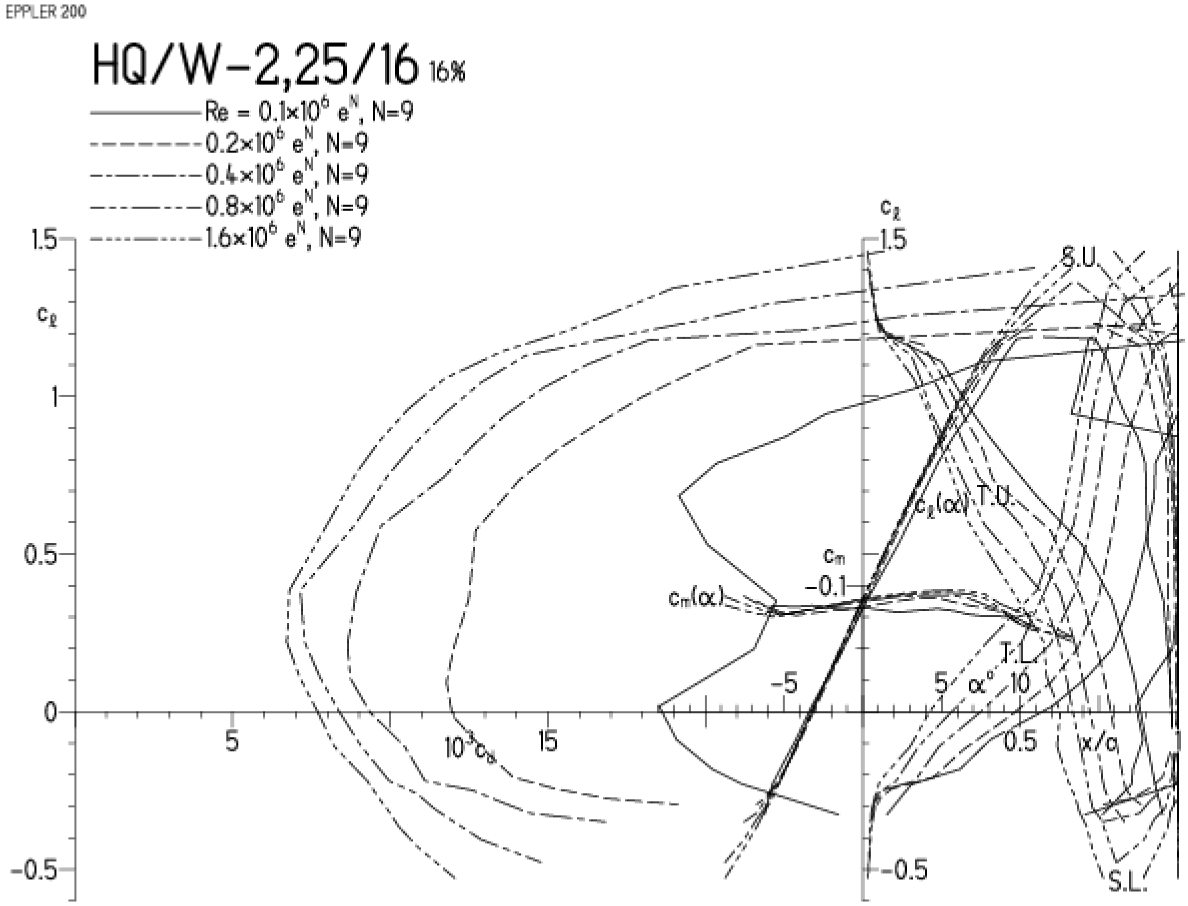


EPPLER 200

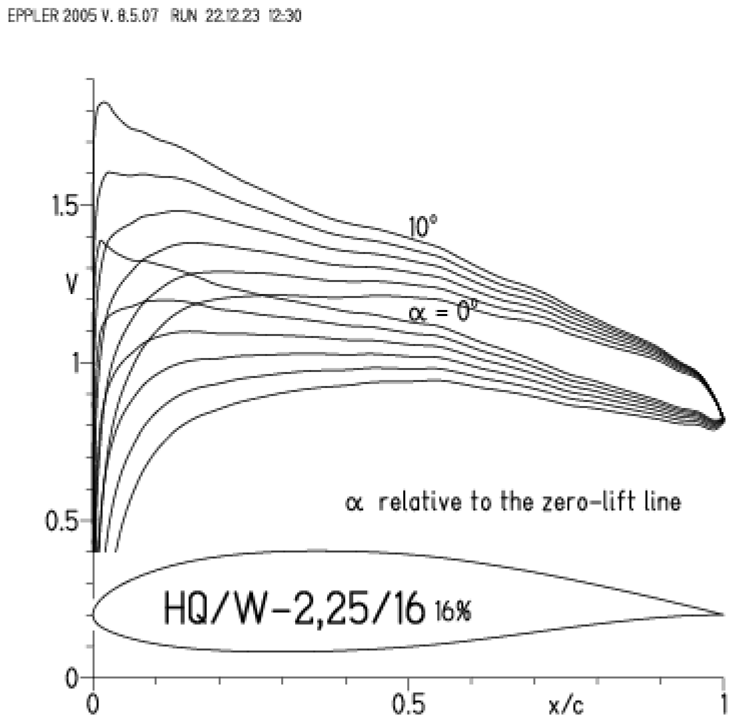


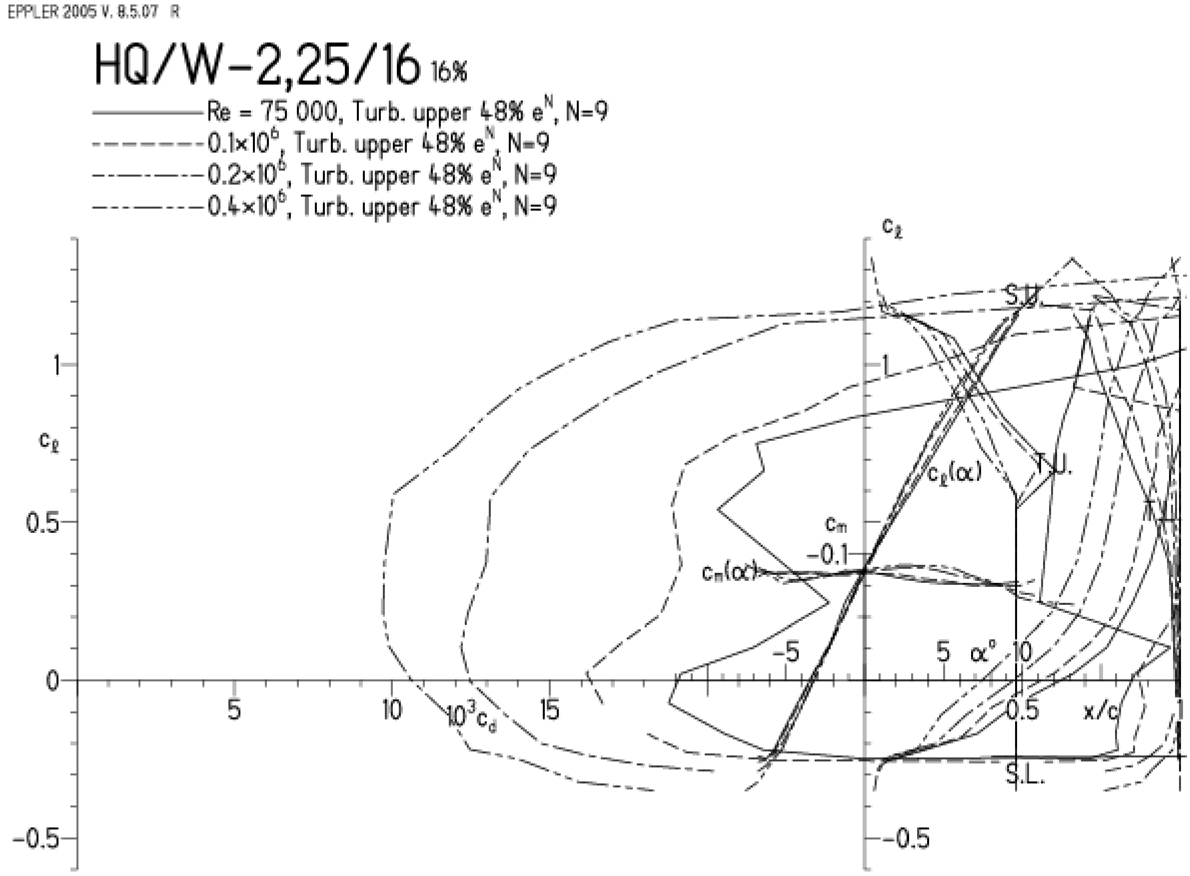
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



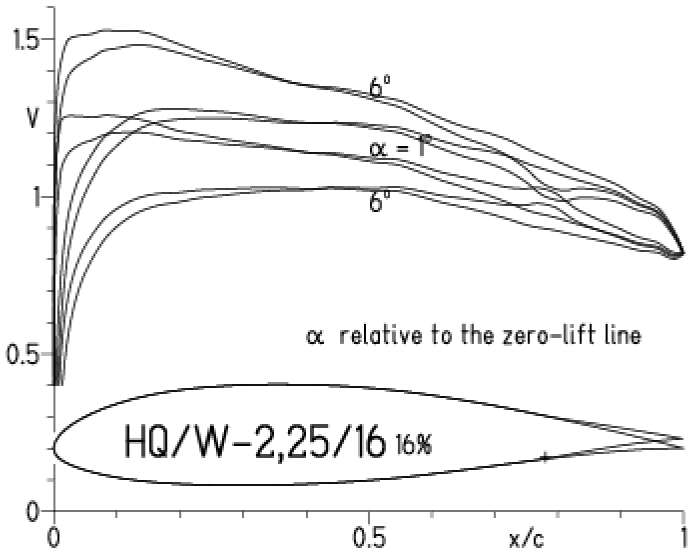


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

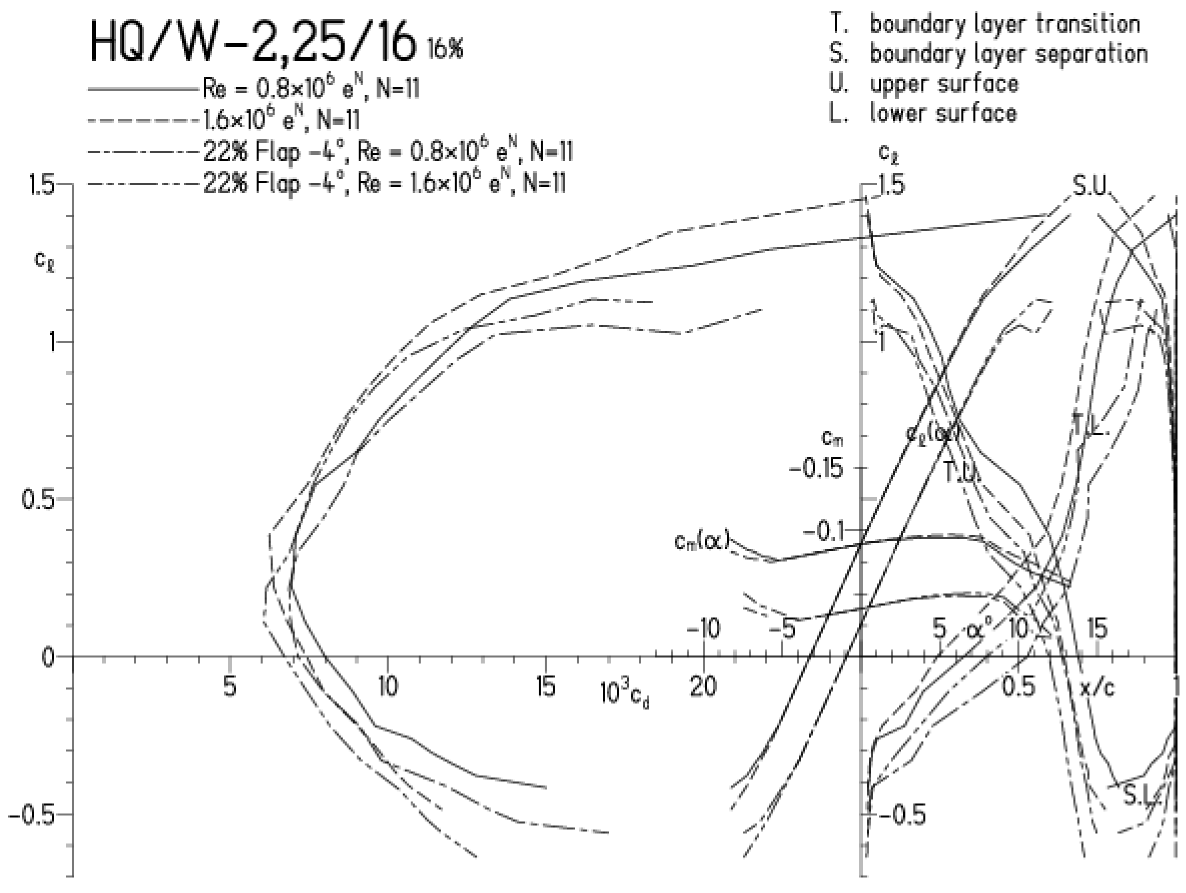
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

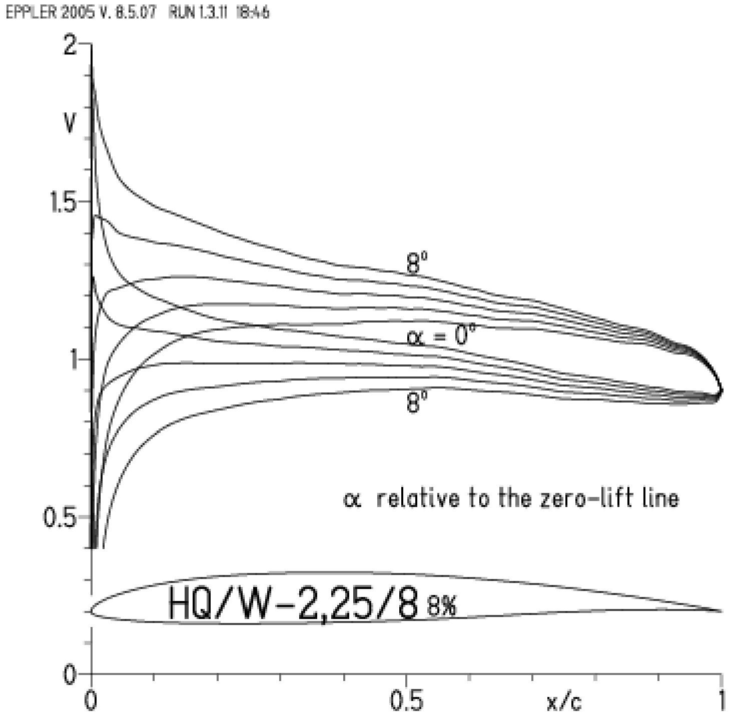
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

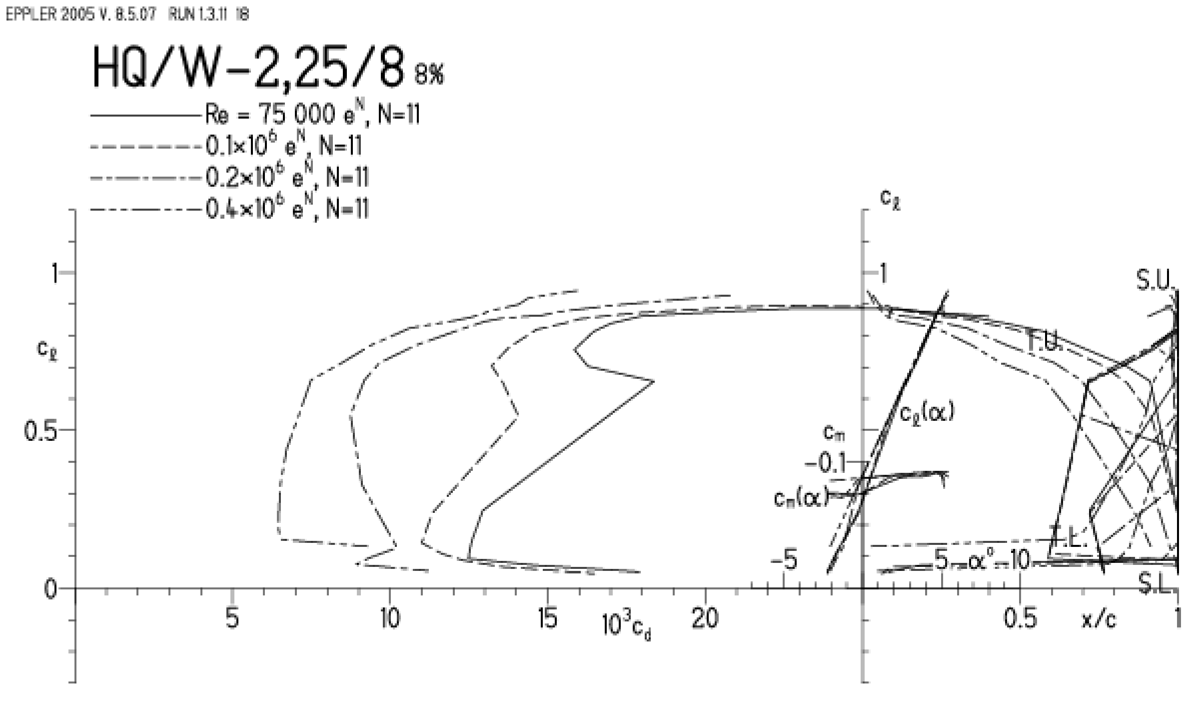


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

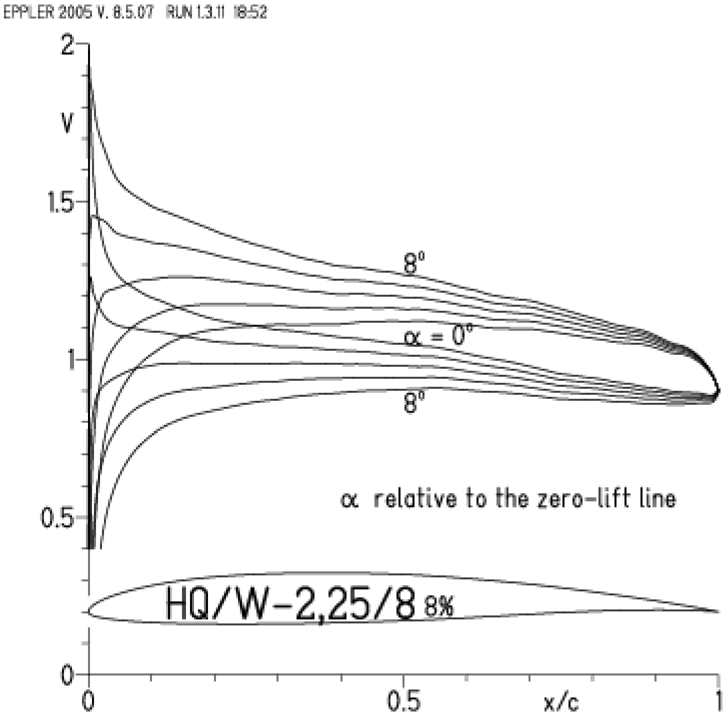


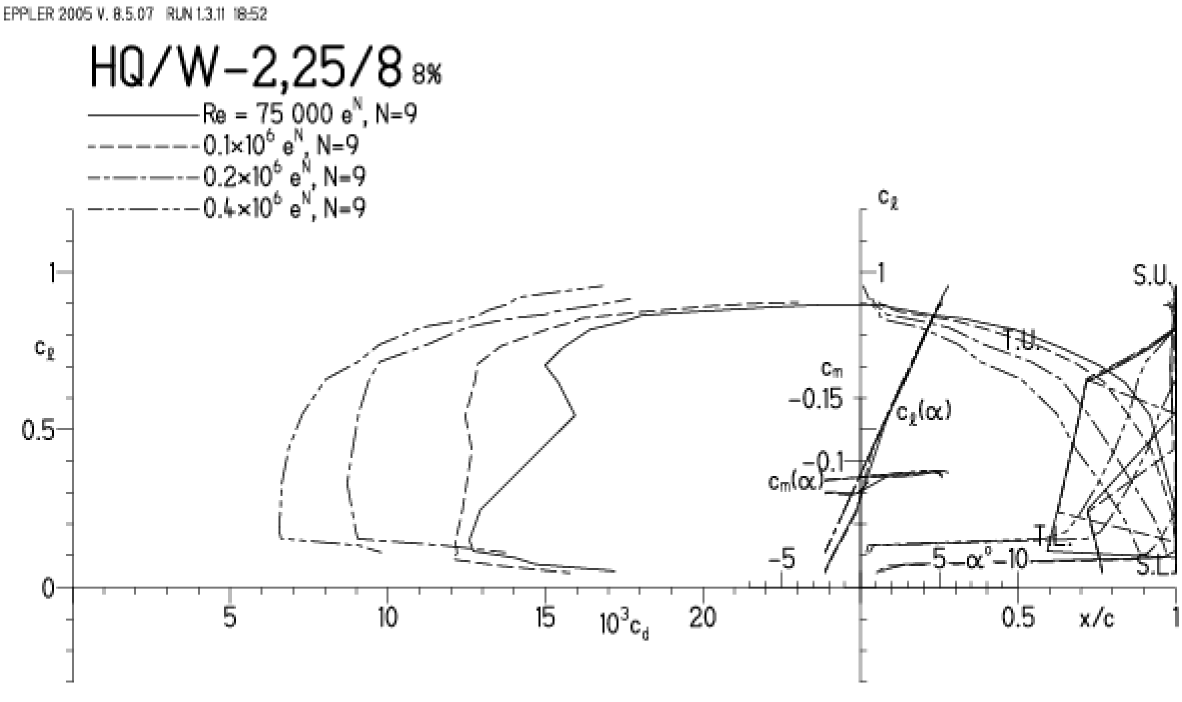
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

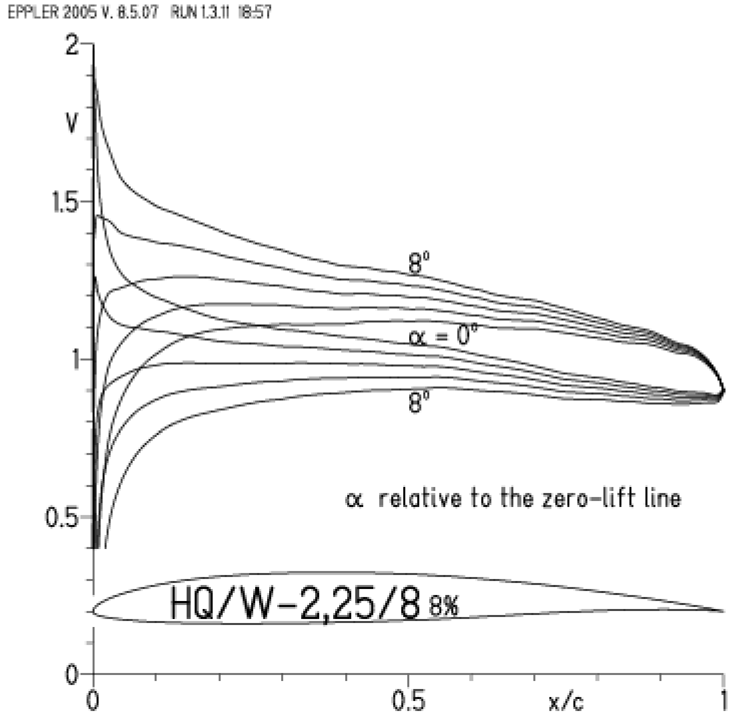

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

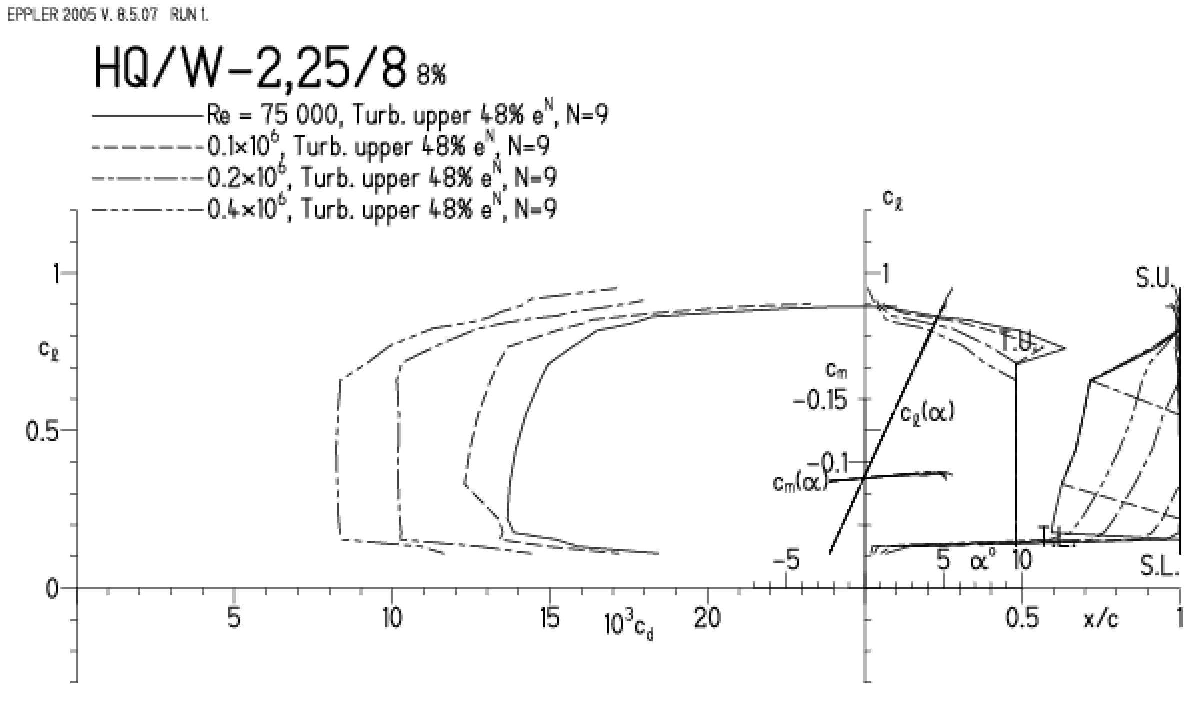
<u>HQ/W-2,25/8</u>, N=9



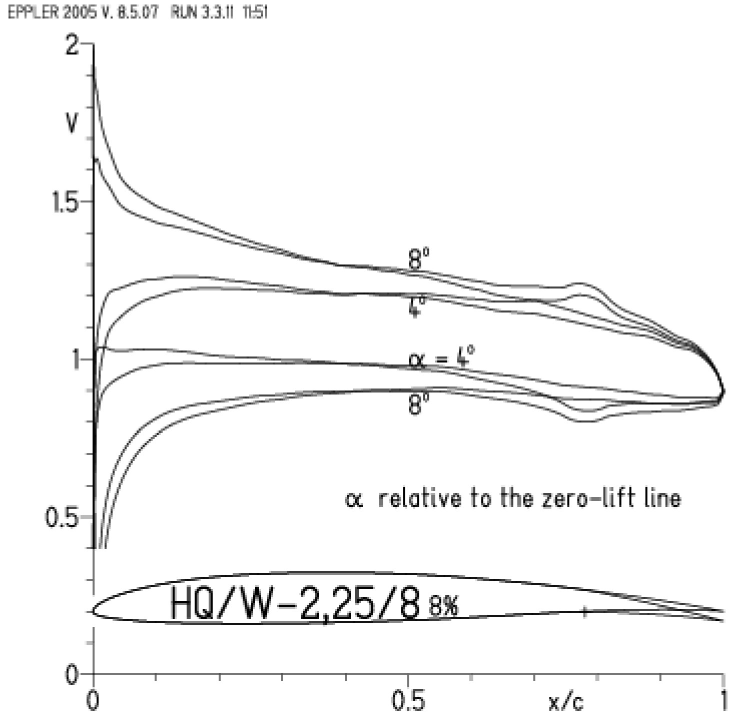


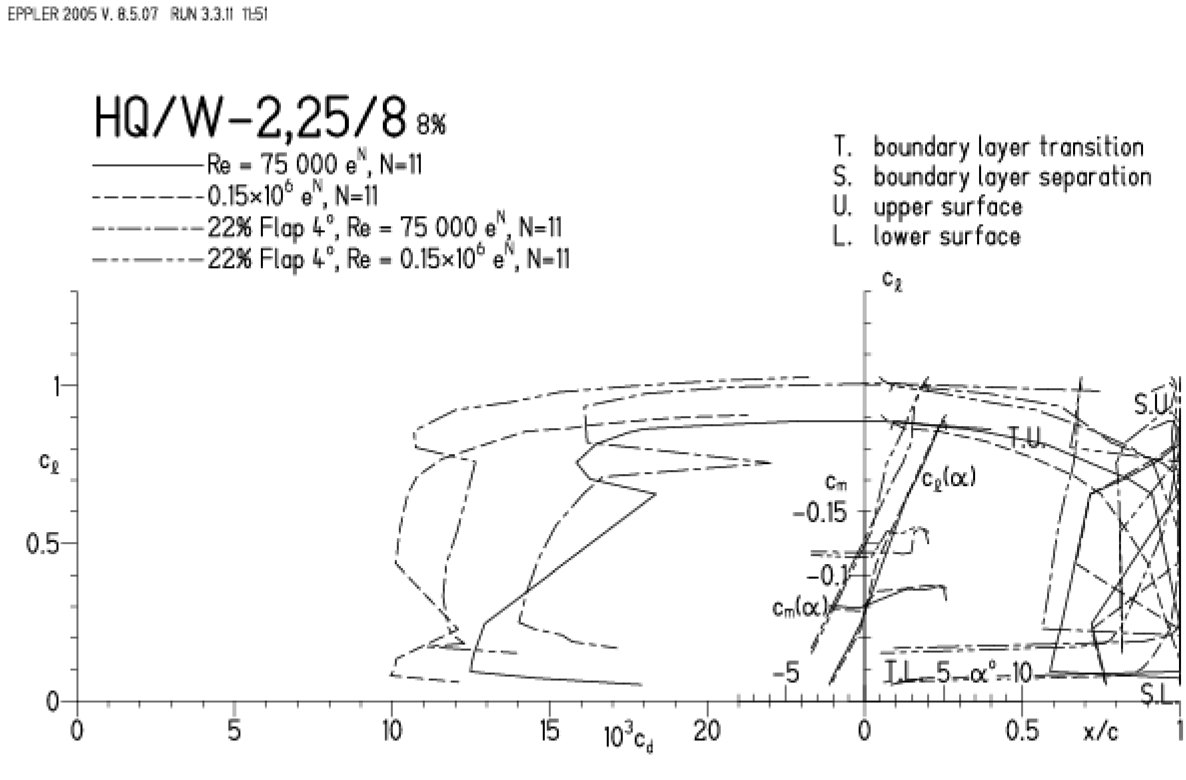
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





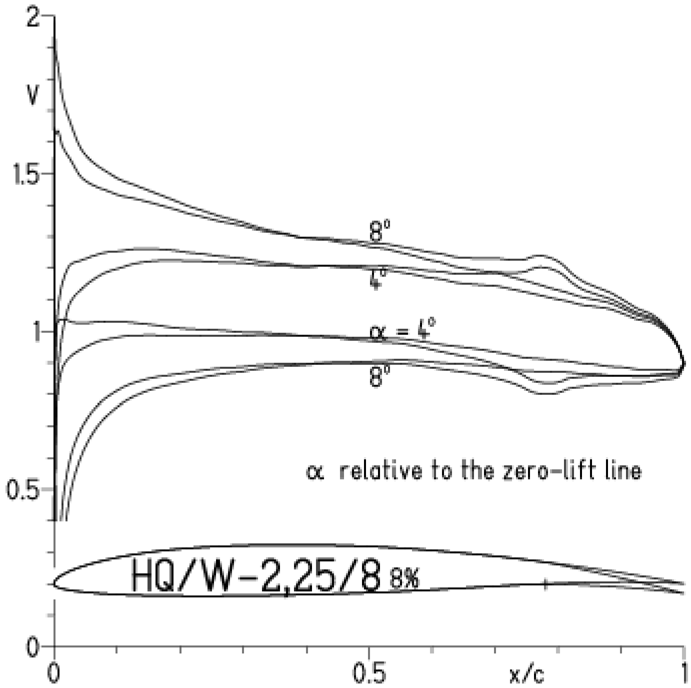
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



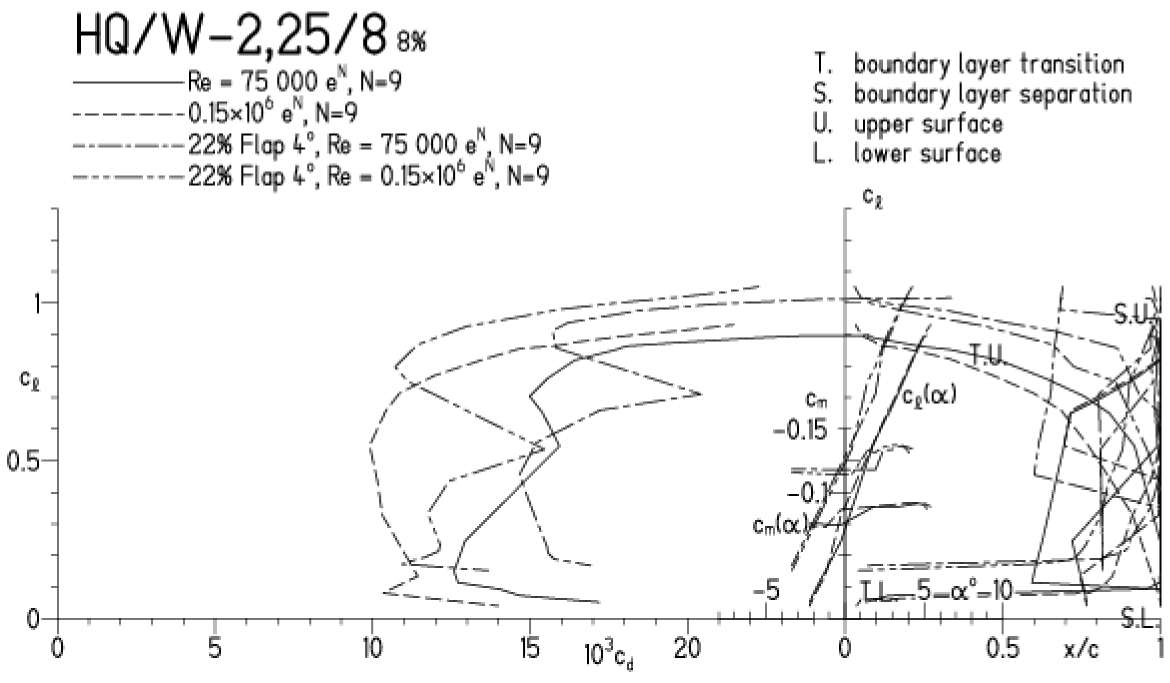


HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag

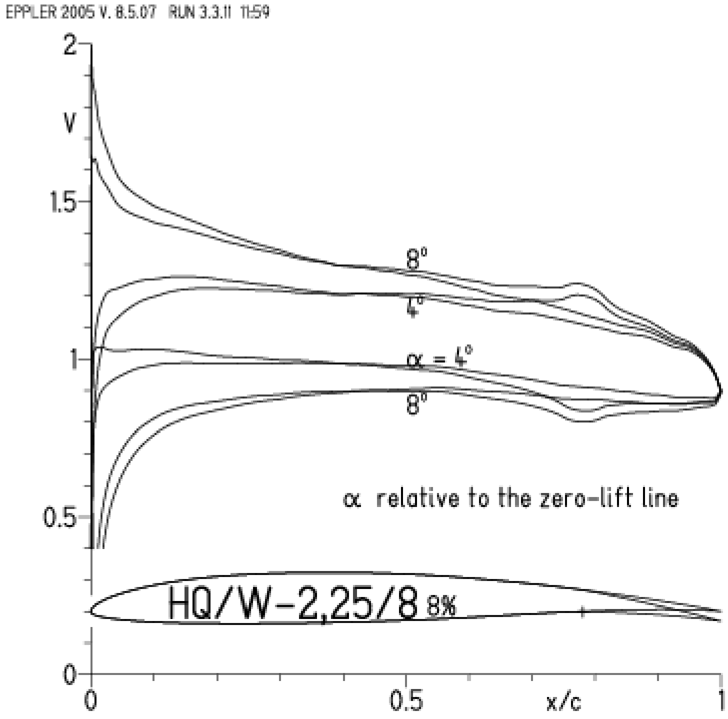
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

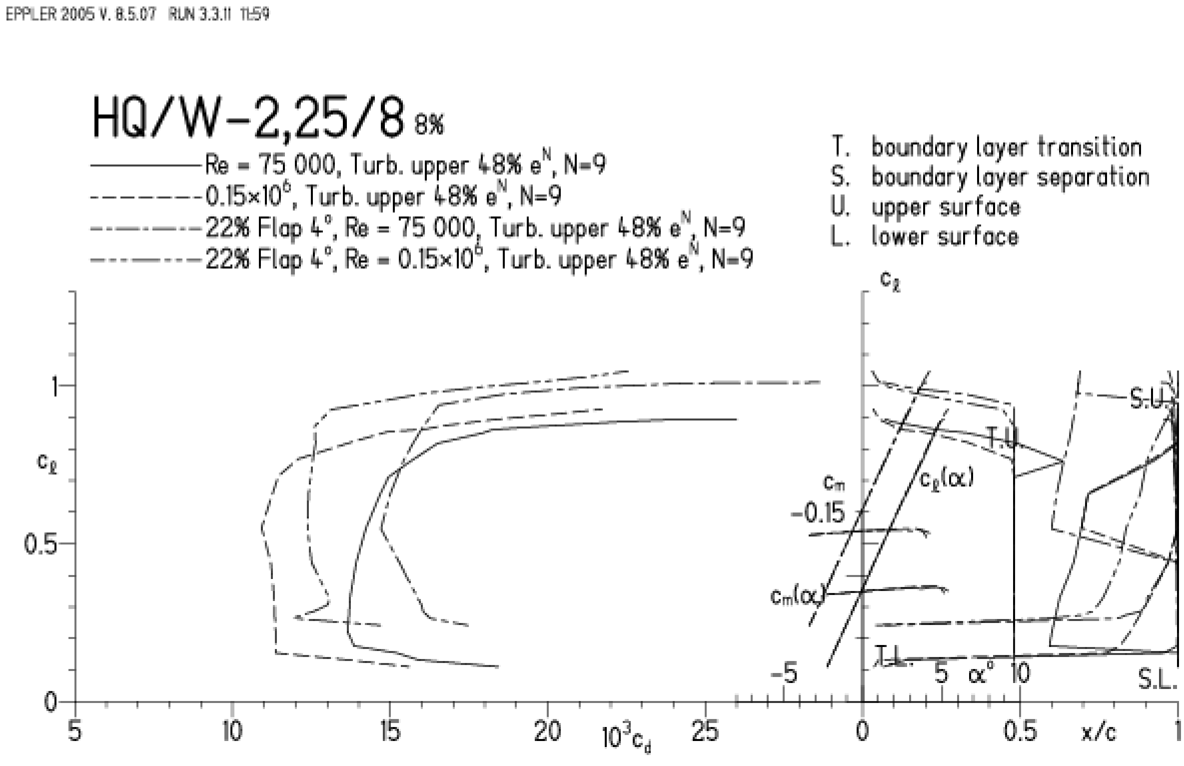


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



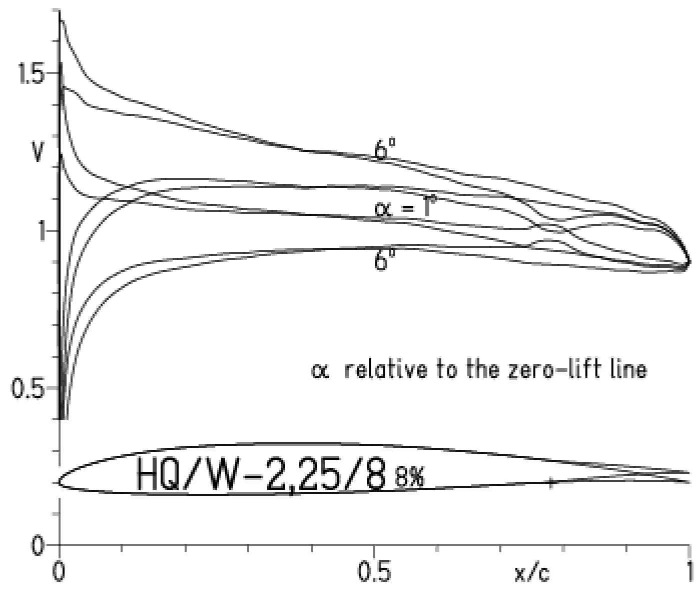
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



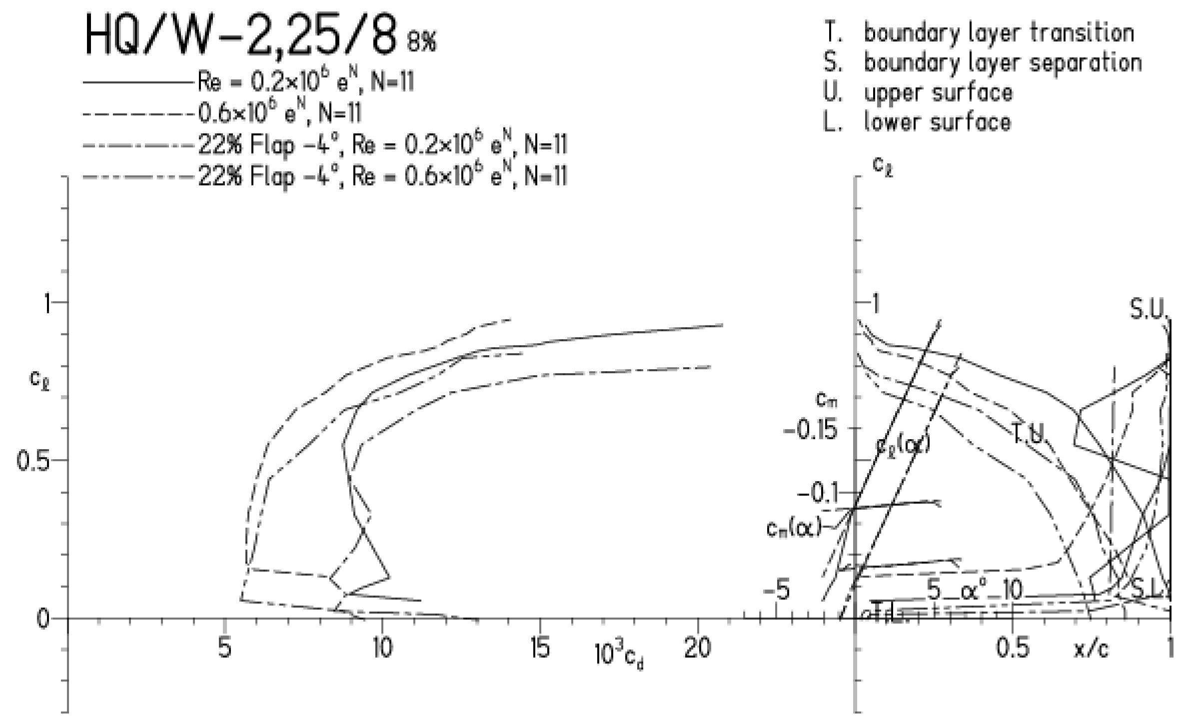


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

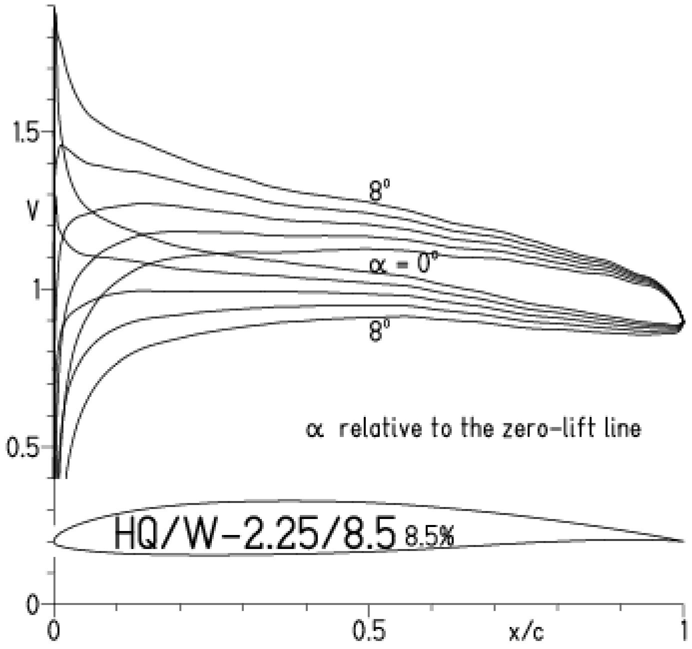


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

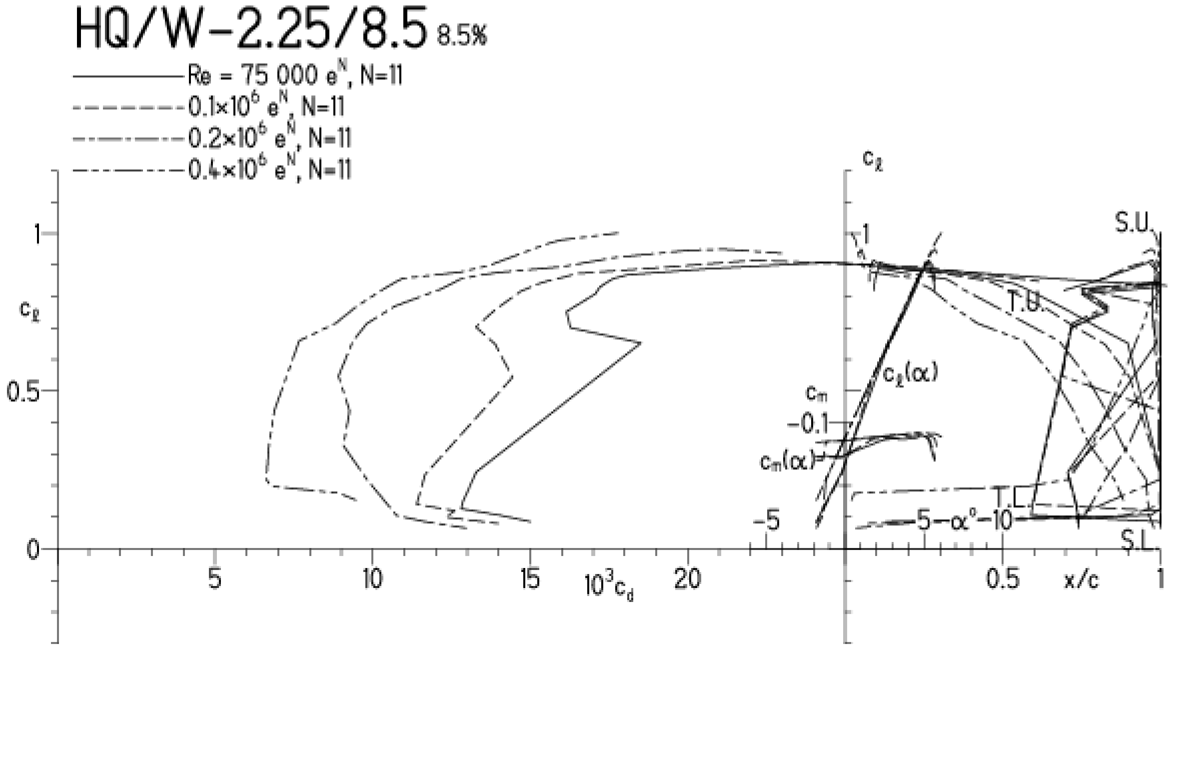


HQ/W-2,25/8,5, N=11

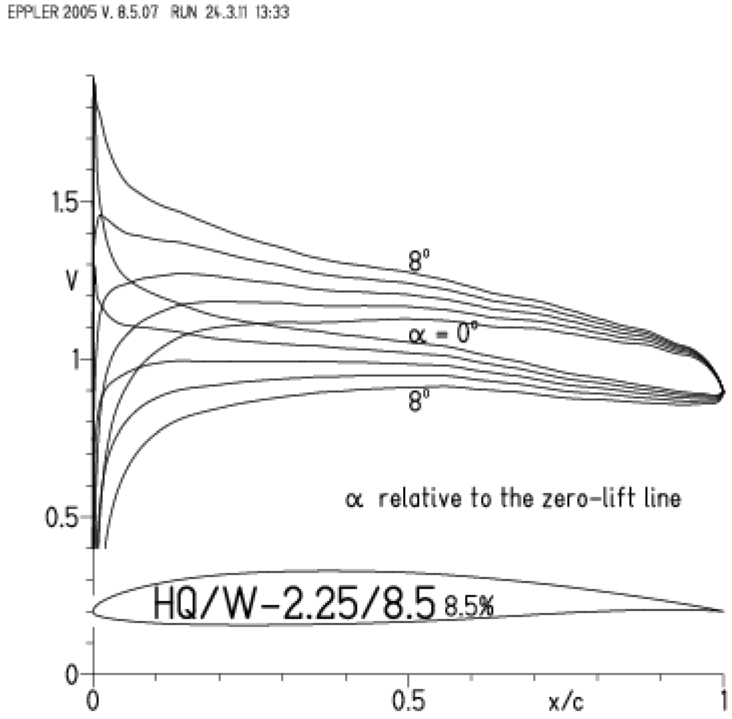
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

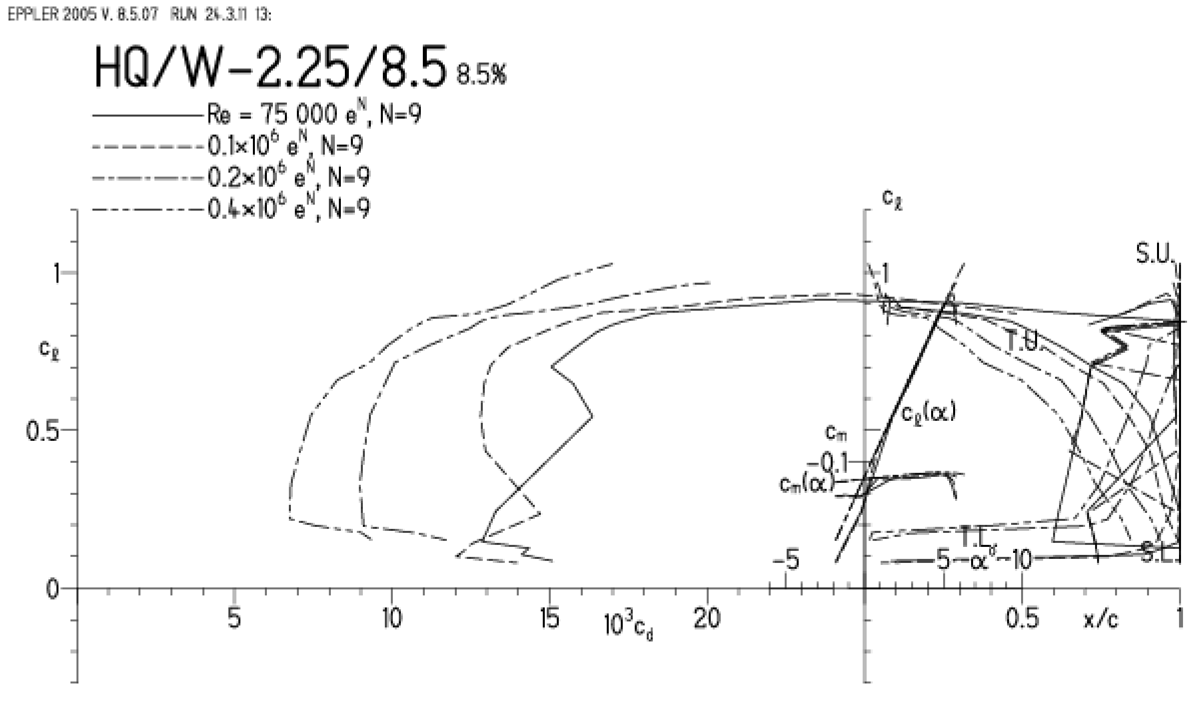


EPPLER 2005 V

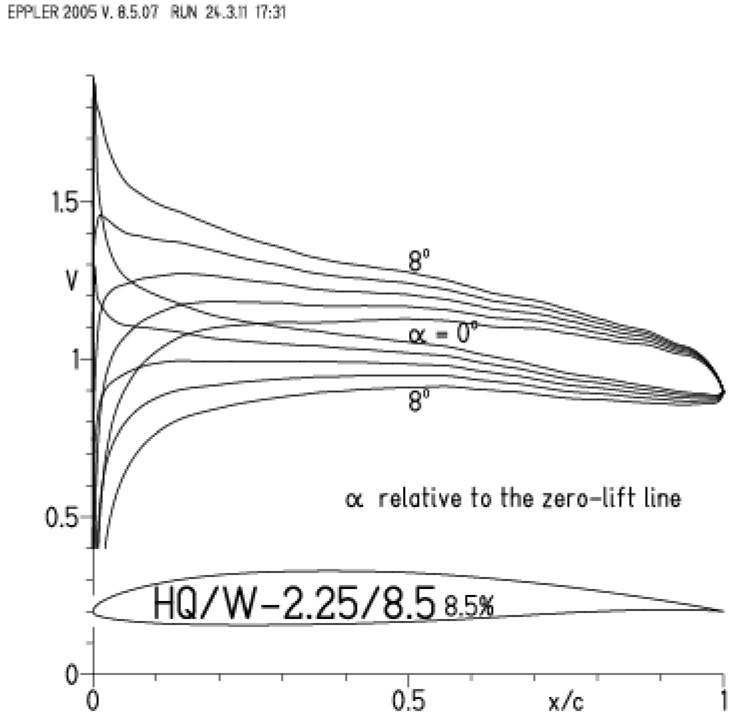


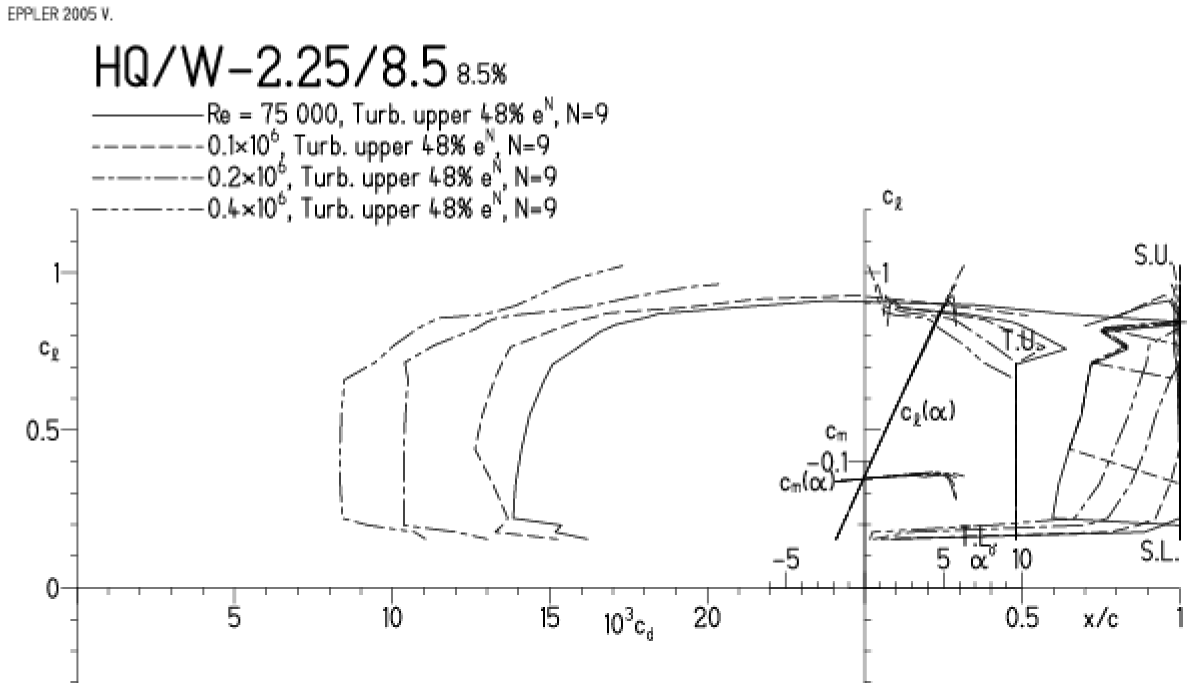
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
S.U.
T.U.
T.L.
S.L.
5 α° 10
0.5
x/c
1

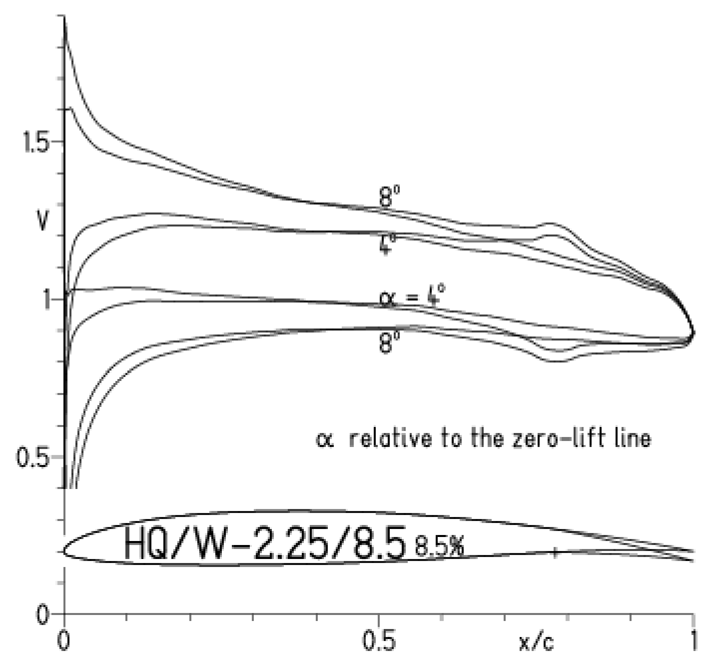
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



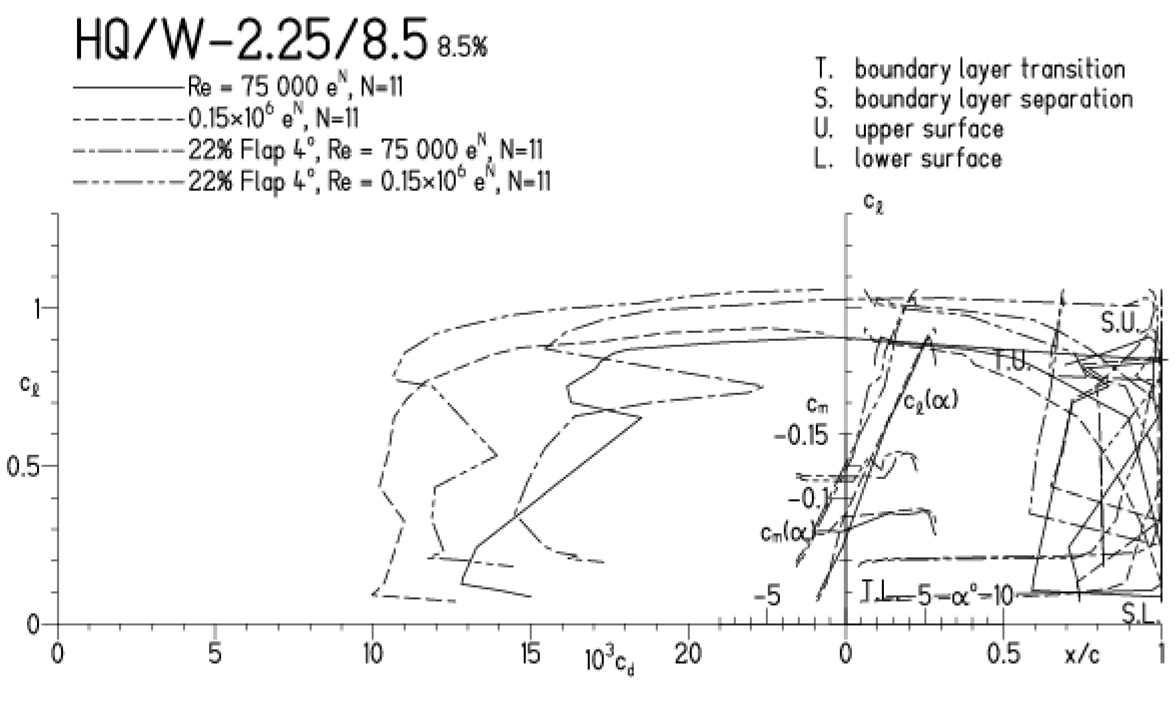


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

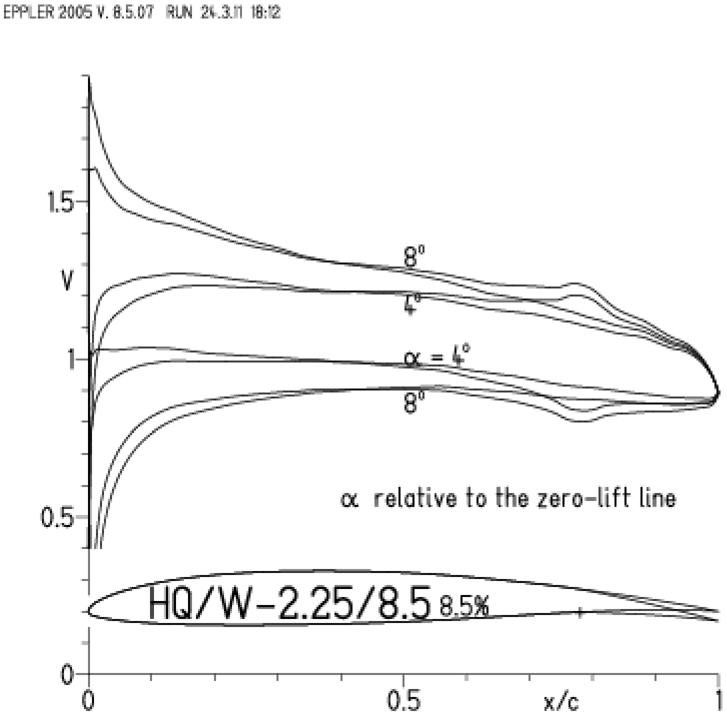
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

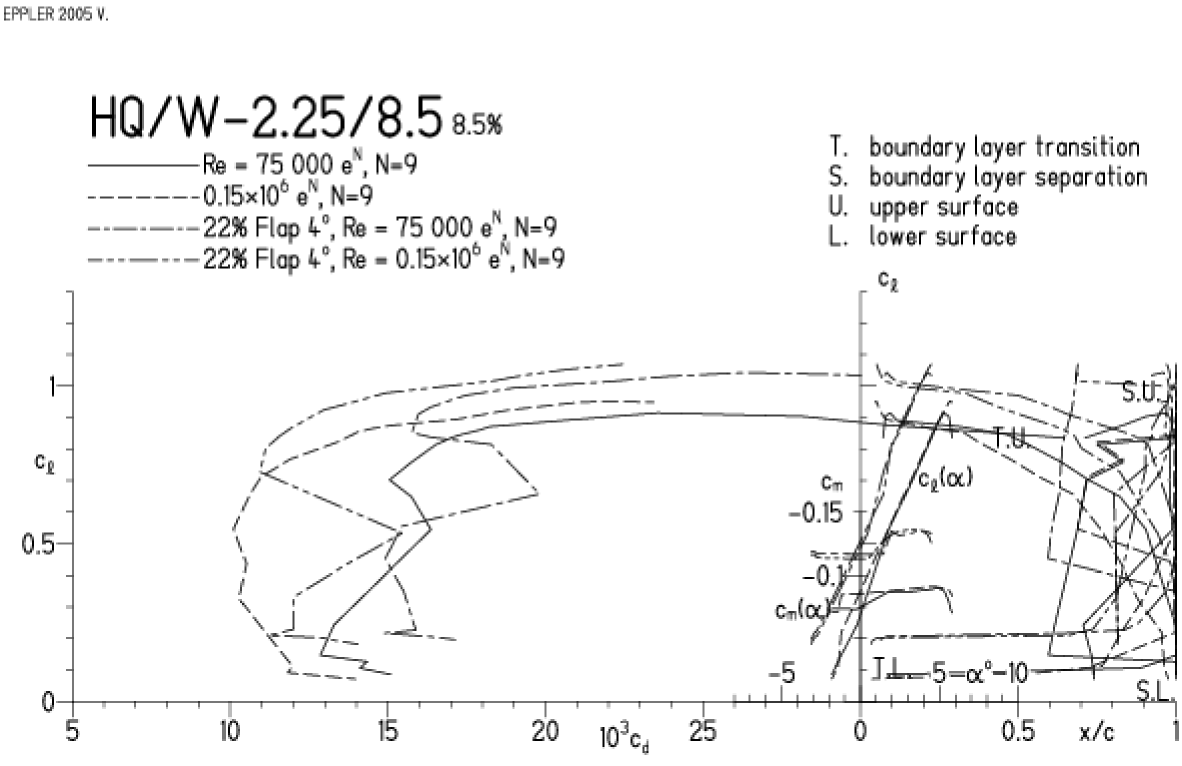


EPPLER 2005 V. 8.5.



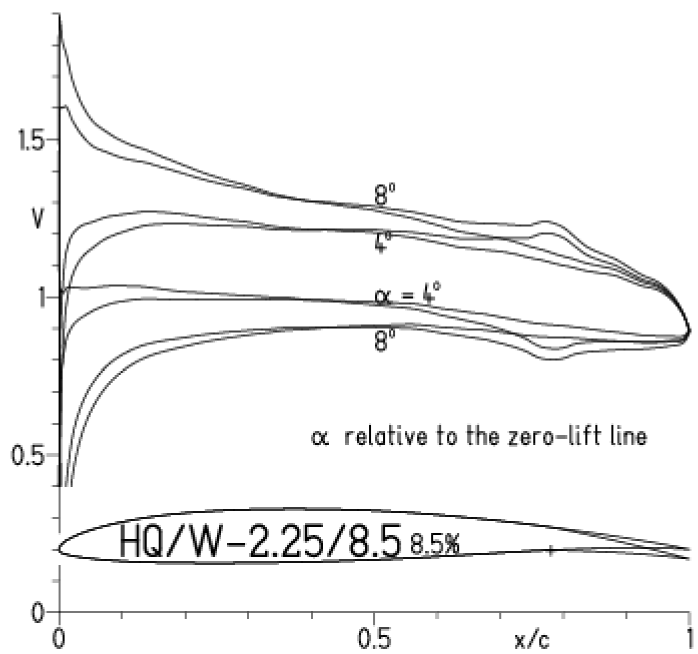
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



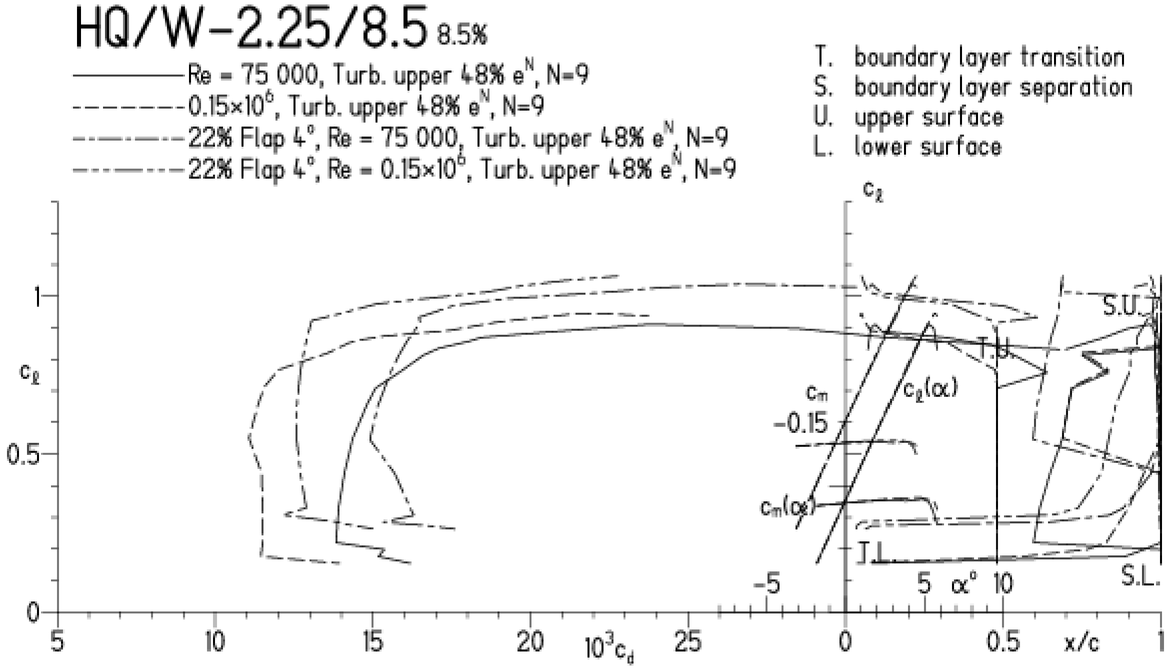


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

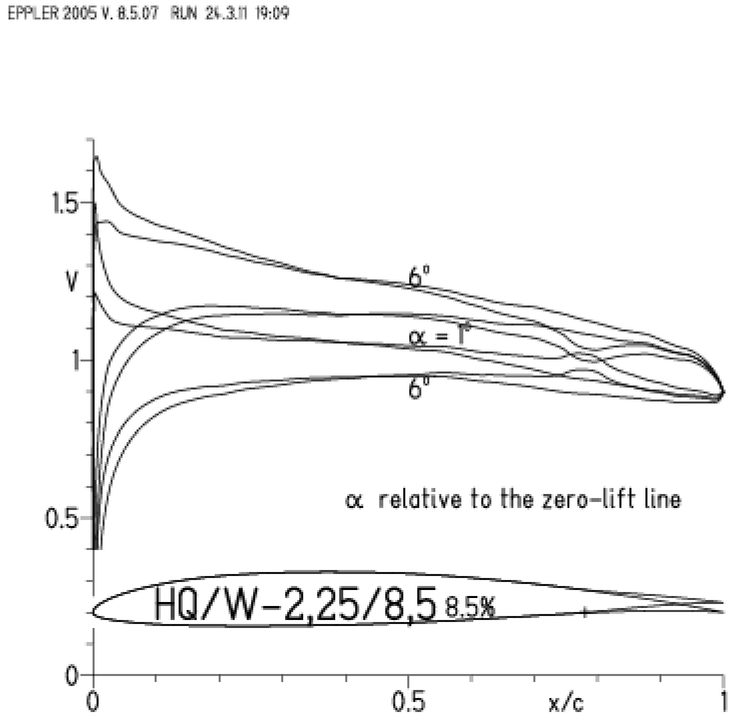
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

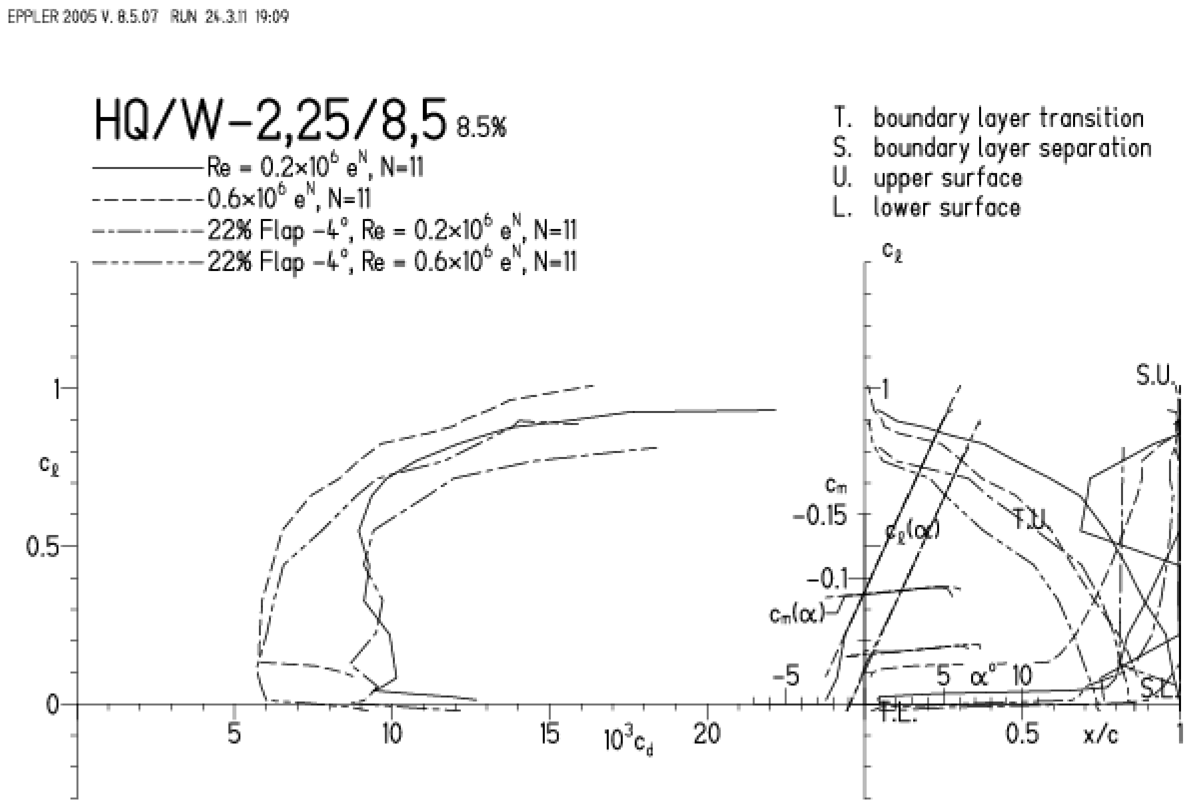


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



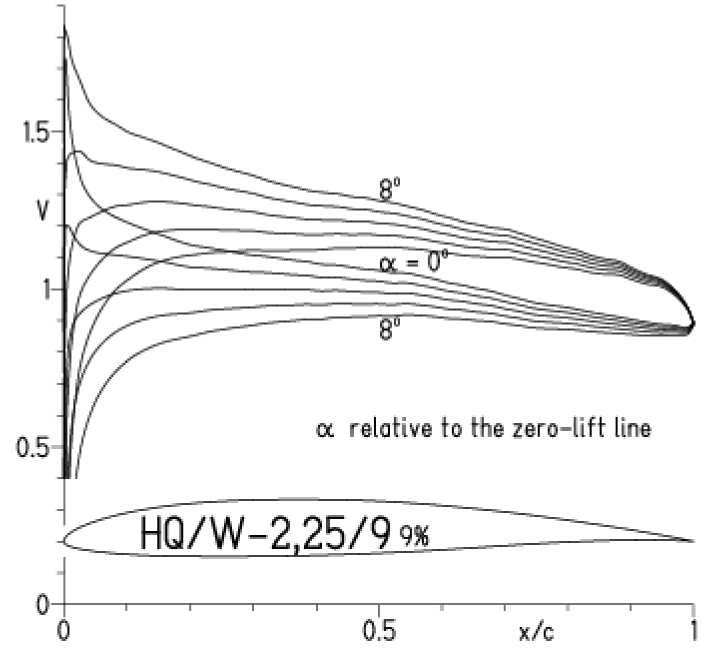
HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



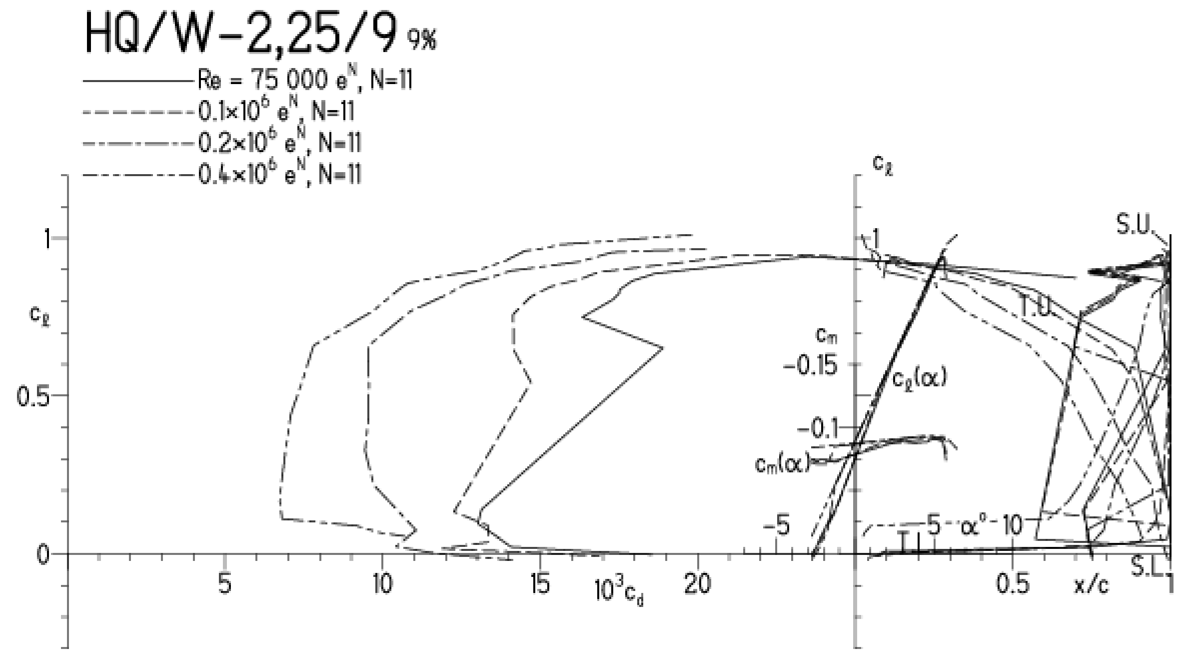


HQ/W-2,25/9, N=11

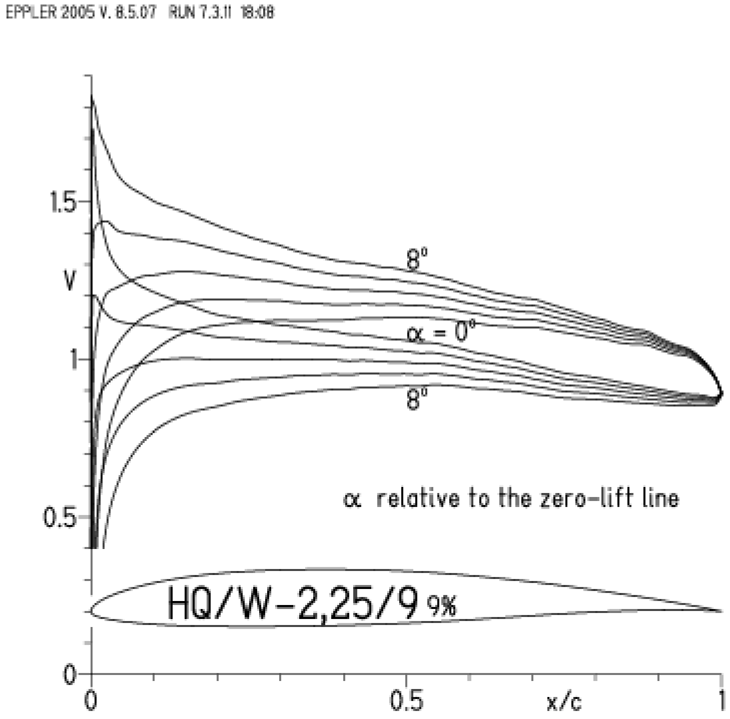
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

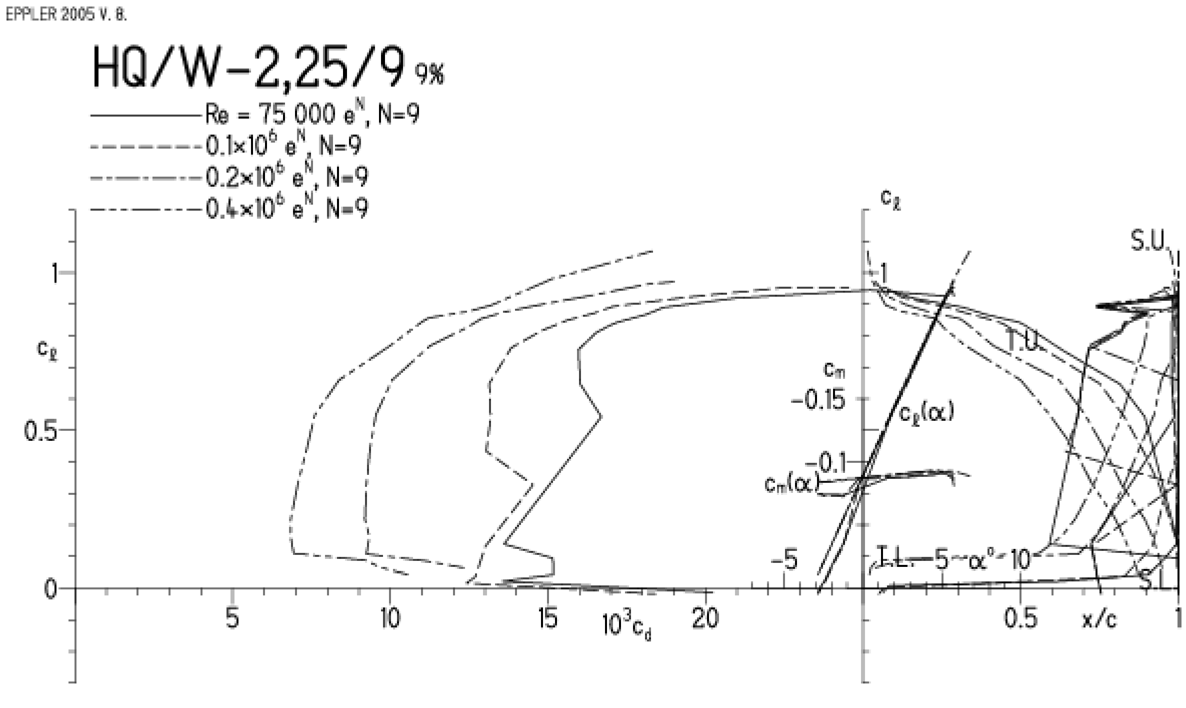


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

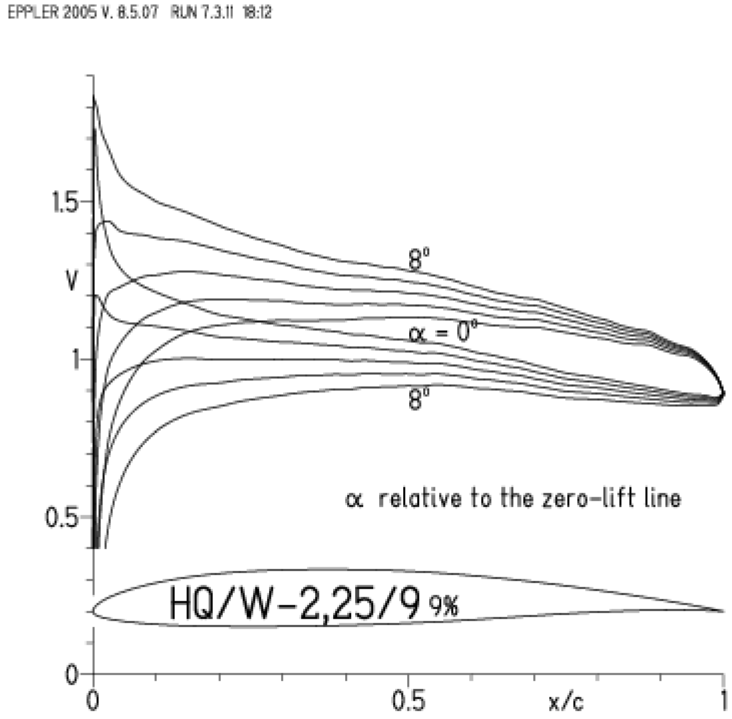


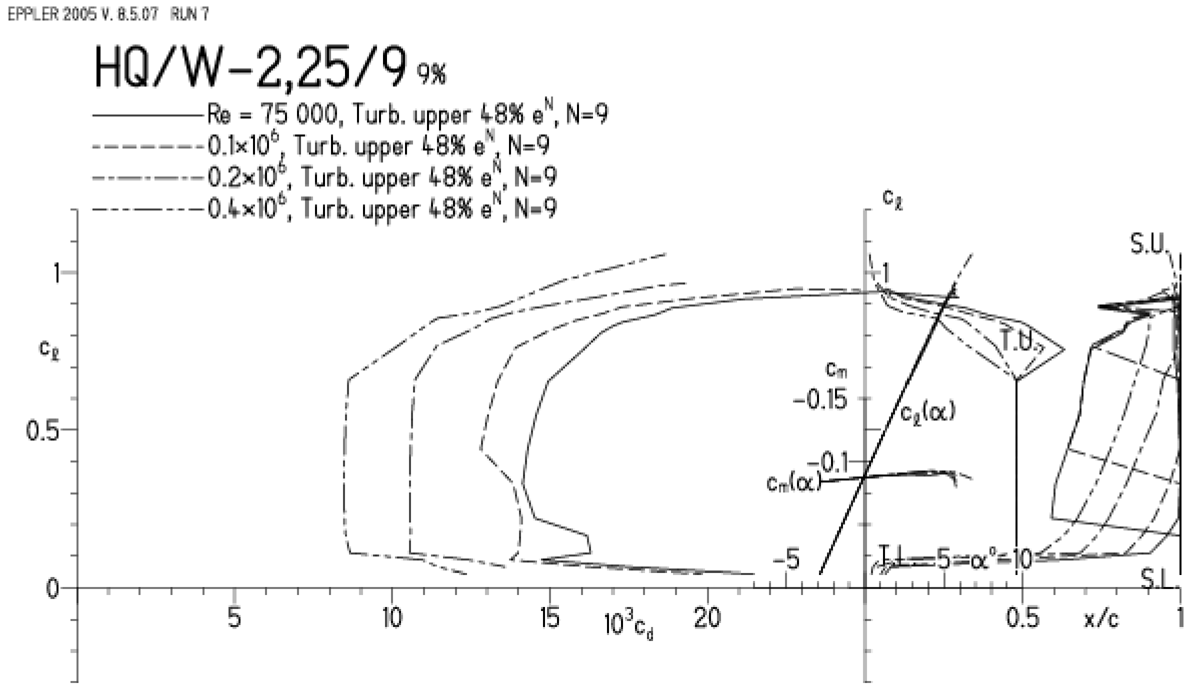
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

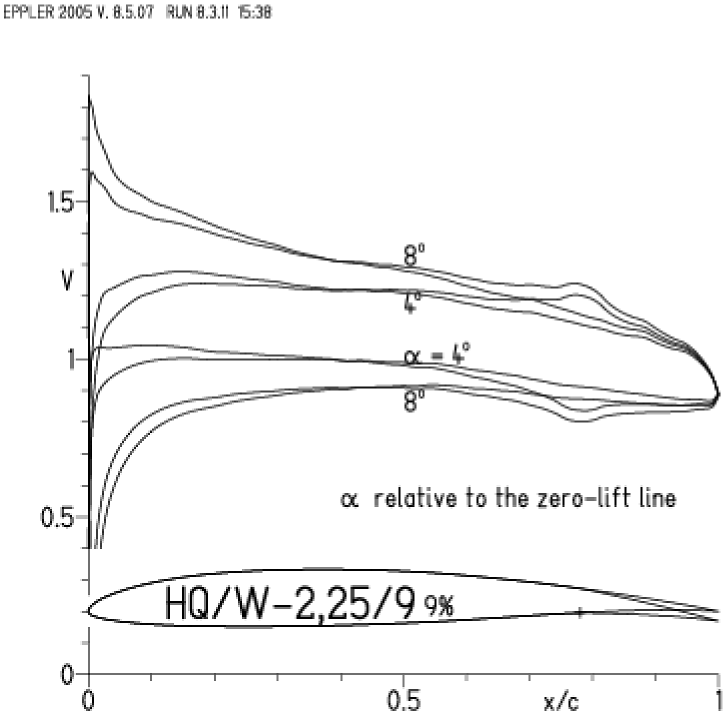

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
S.U.
T.U.
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.L.
0.5
x/c
1

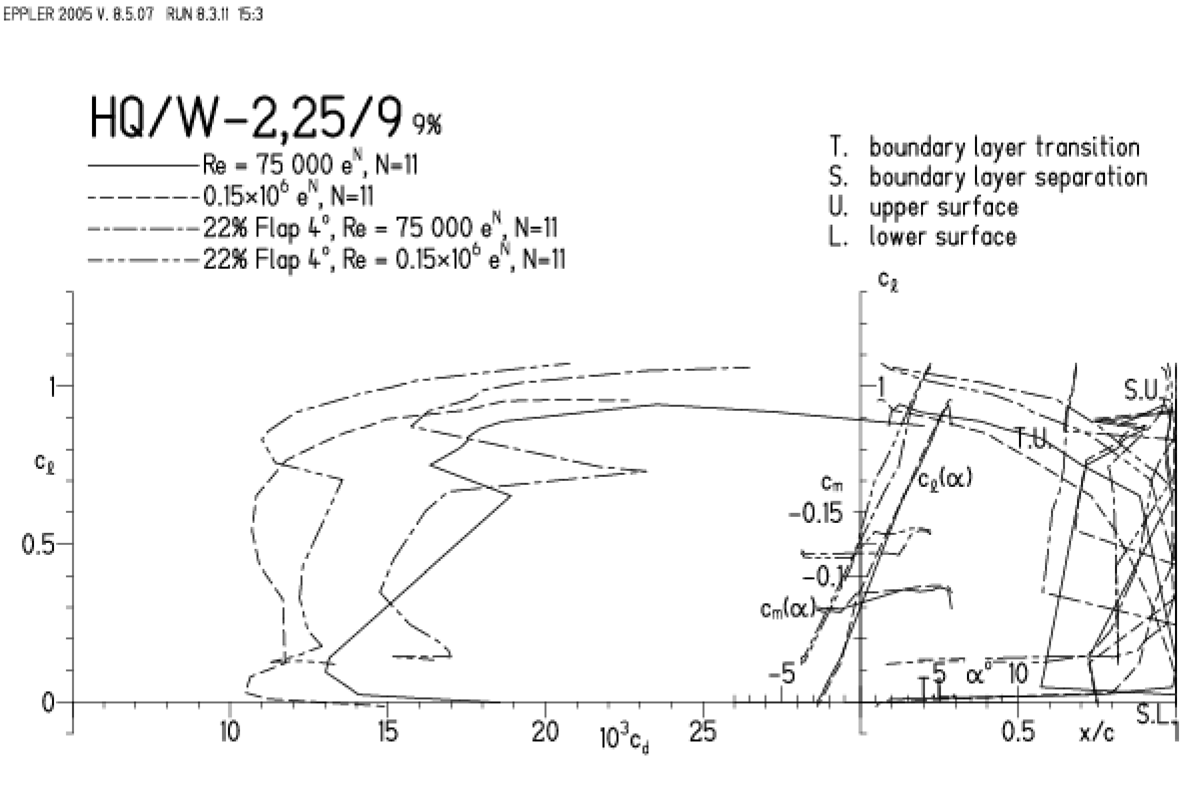
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



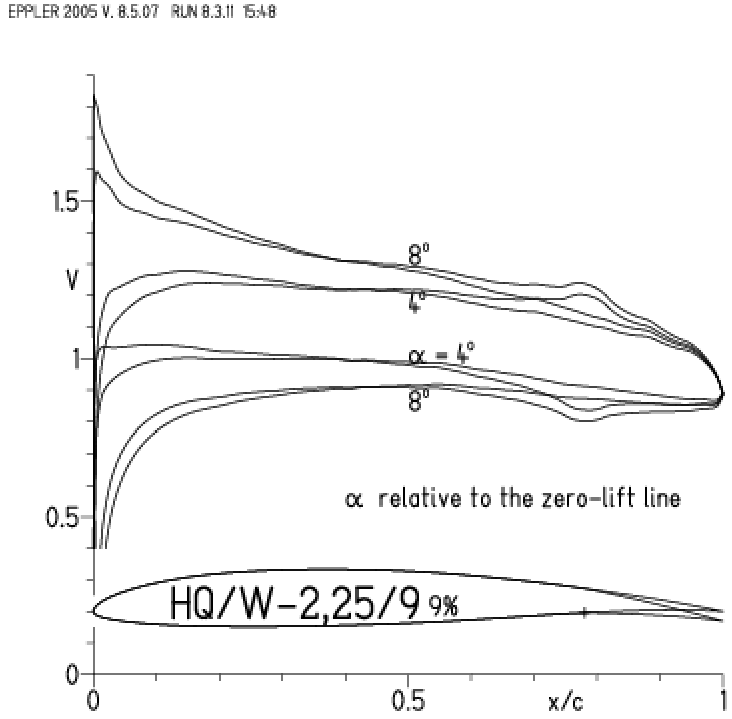


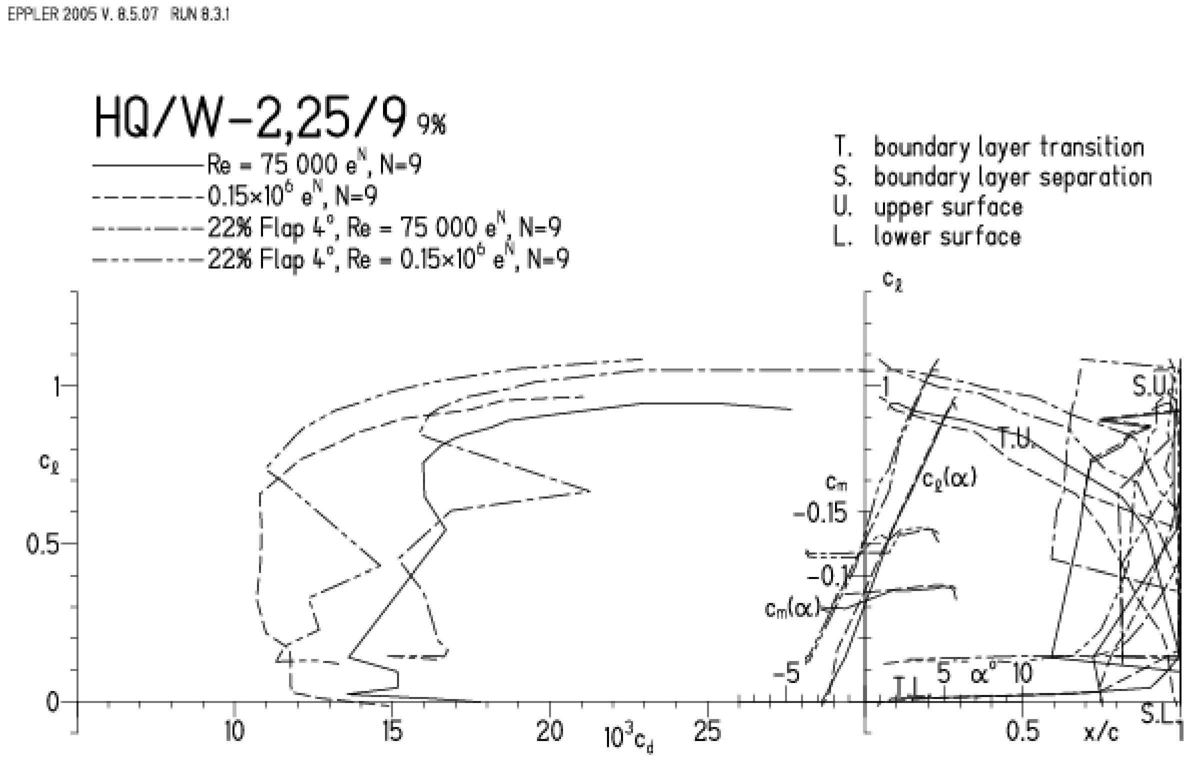
HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag



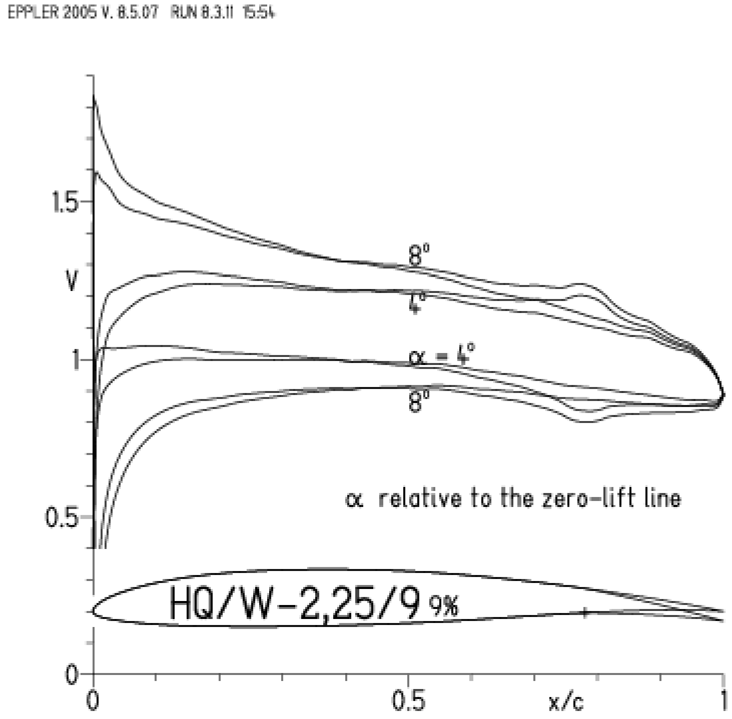


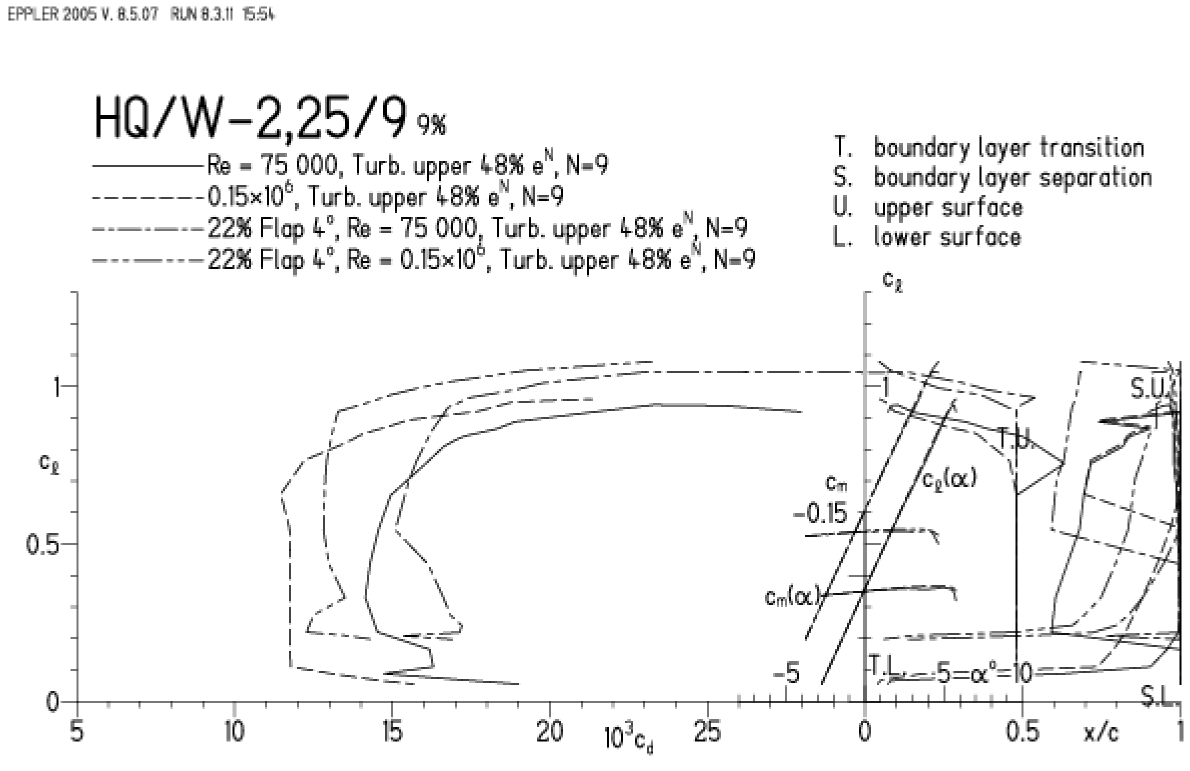
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag





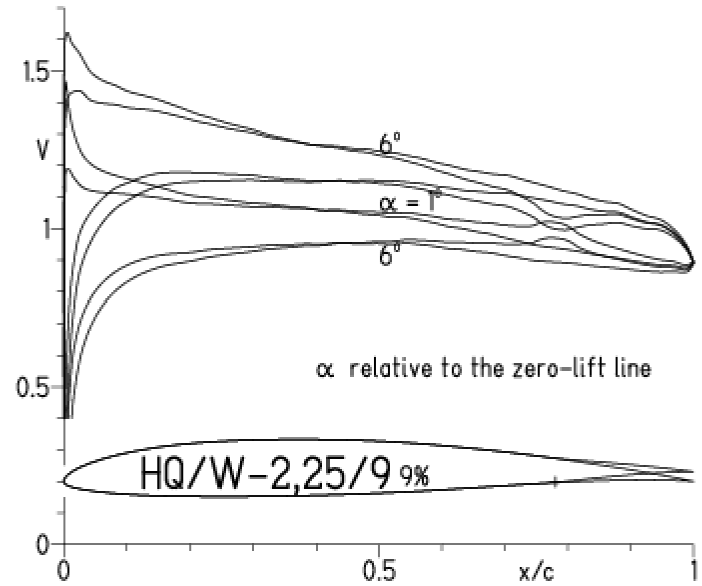
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



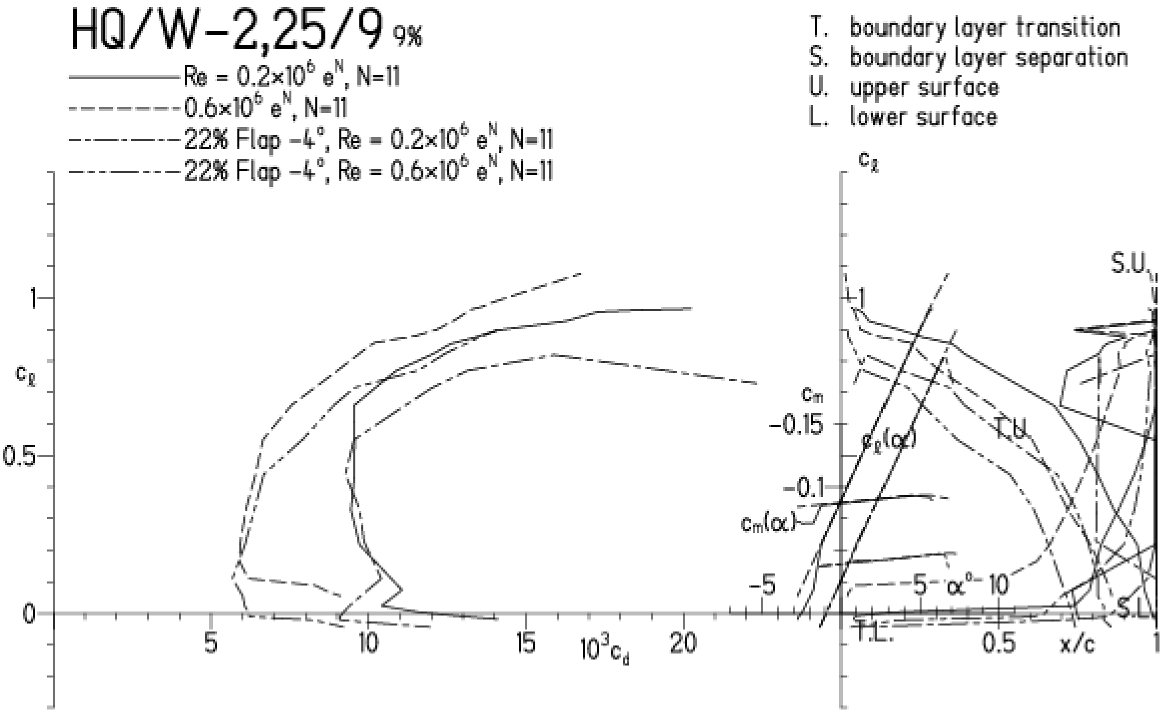


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

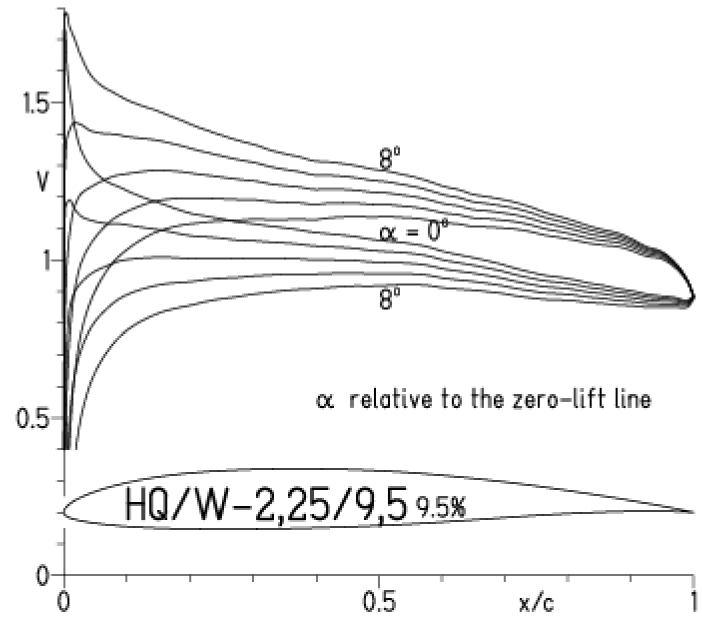


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

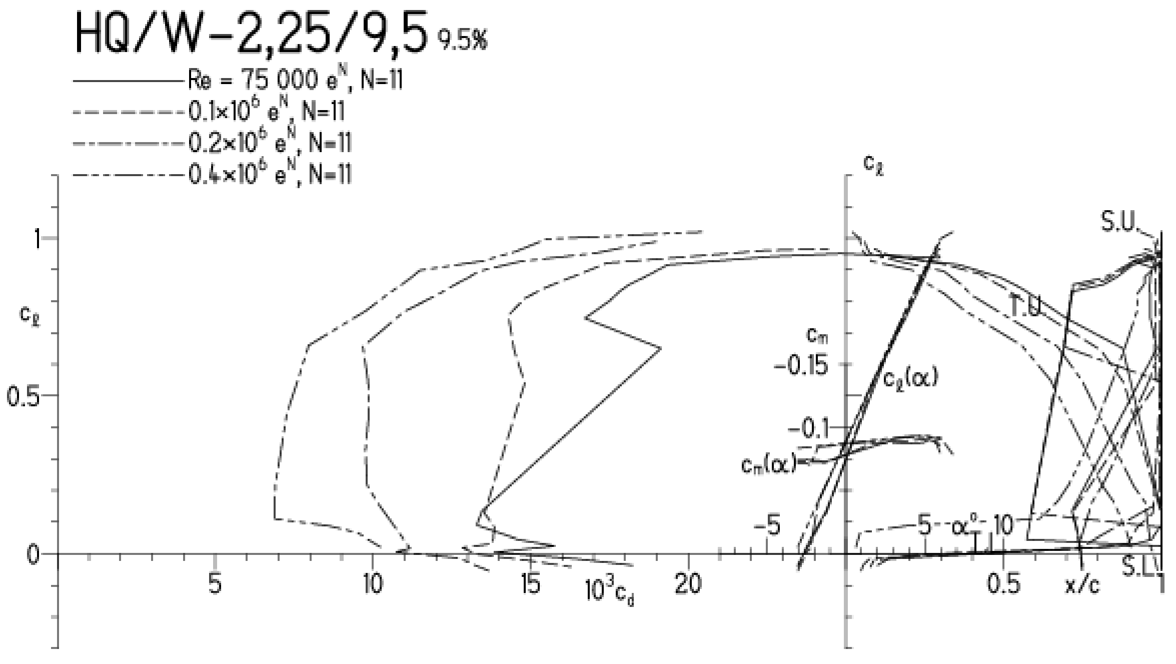


HQ/W-2,25/9,5, N=11

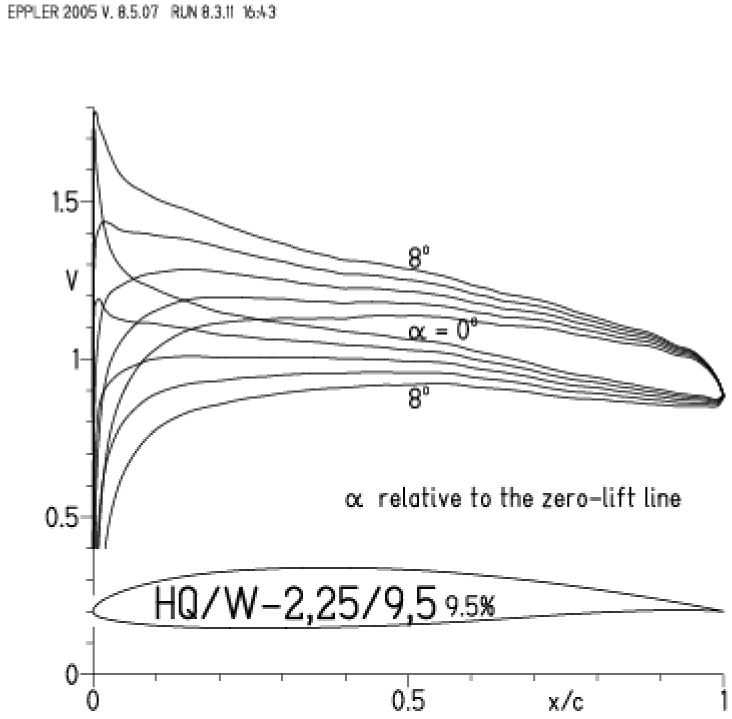
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

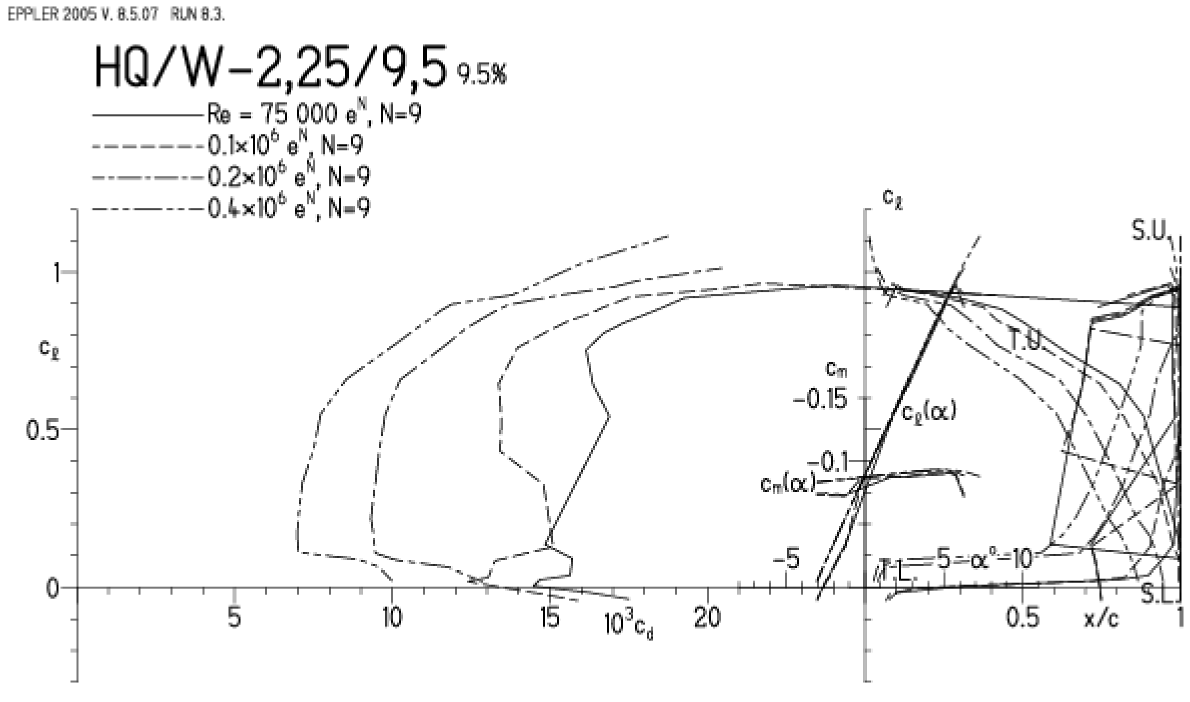


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



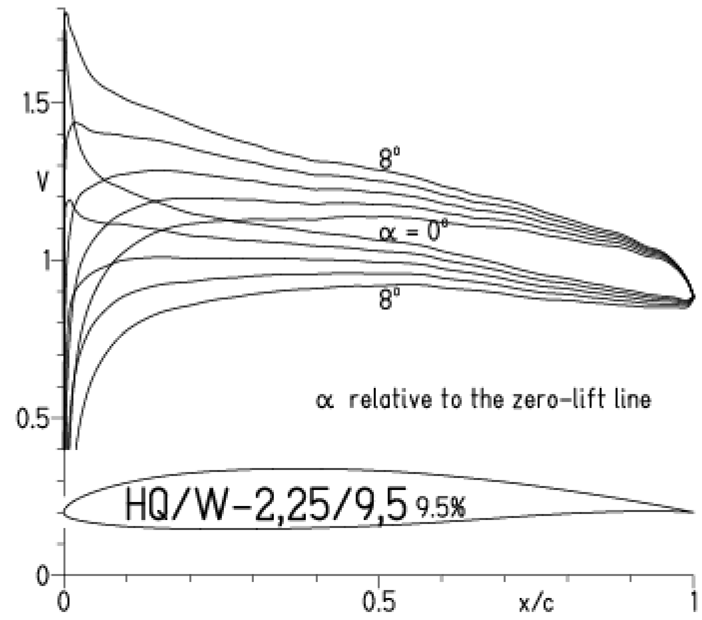
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

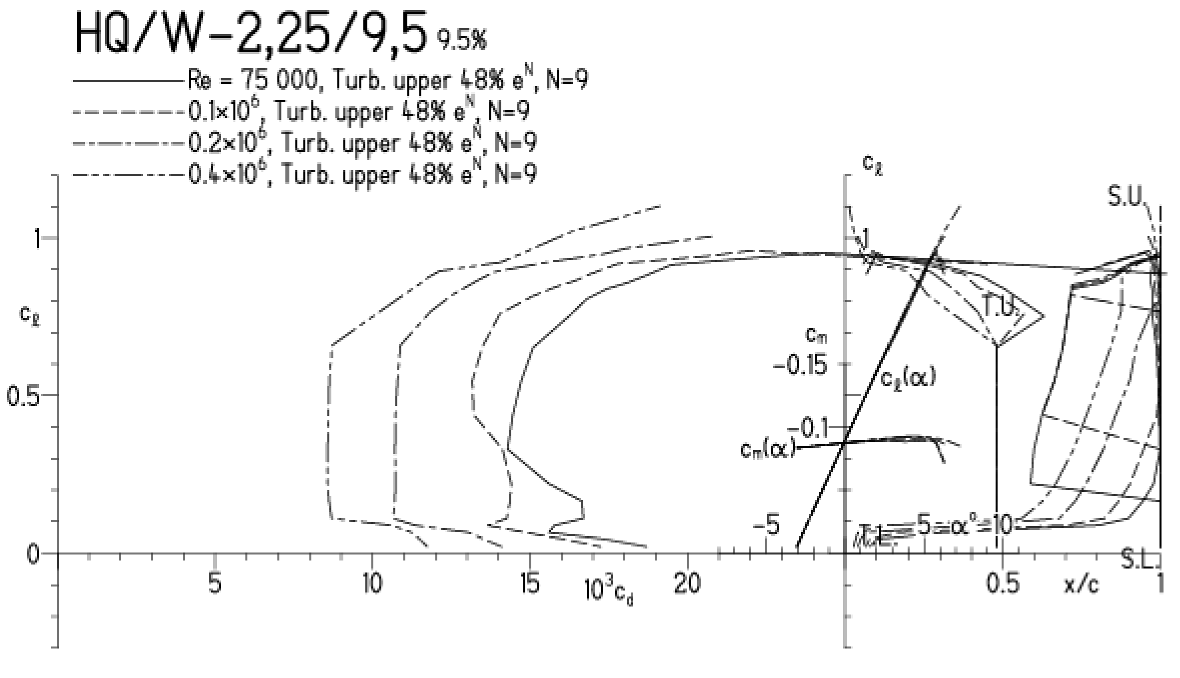

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

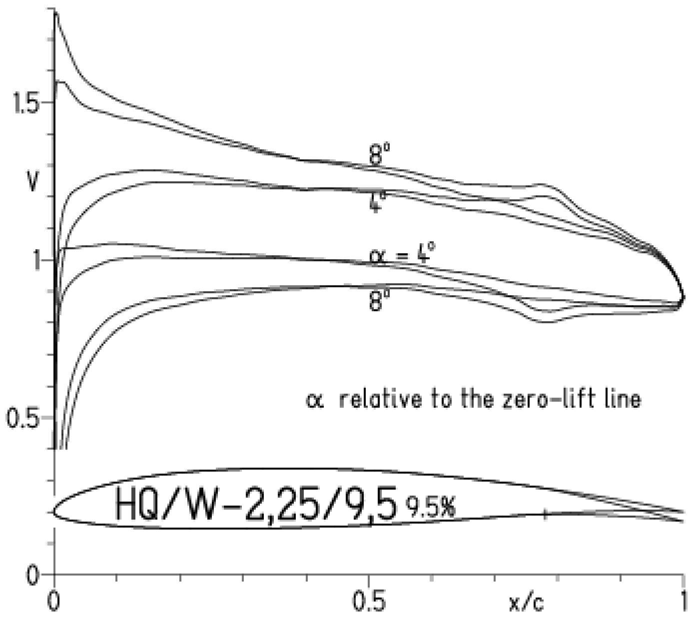


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

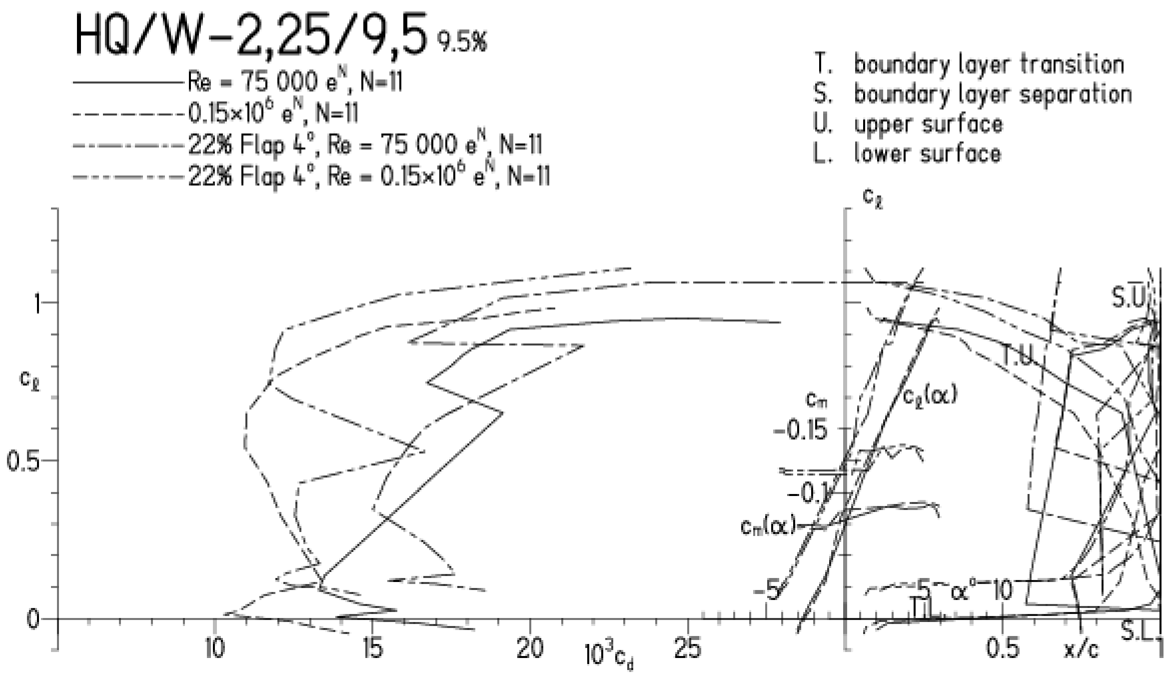


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

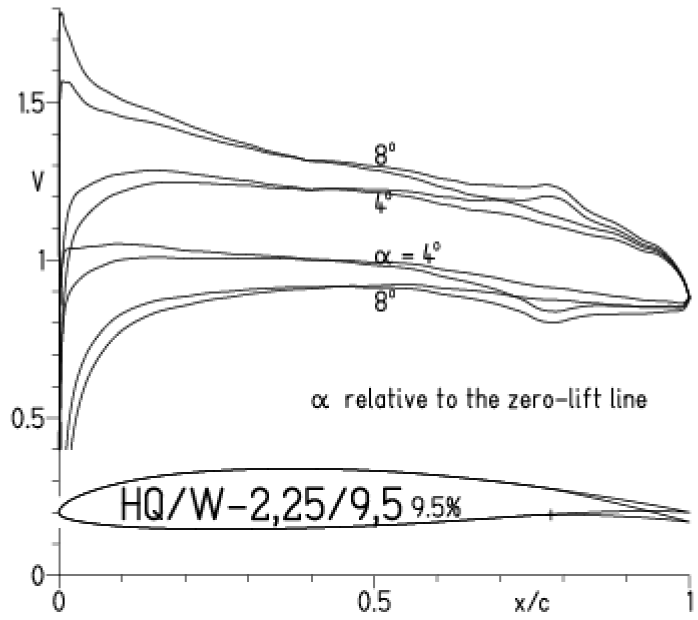


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

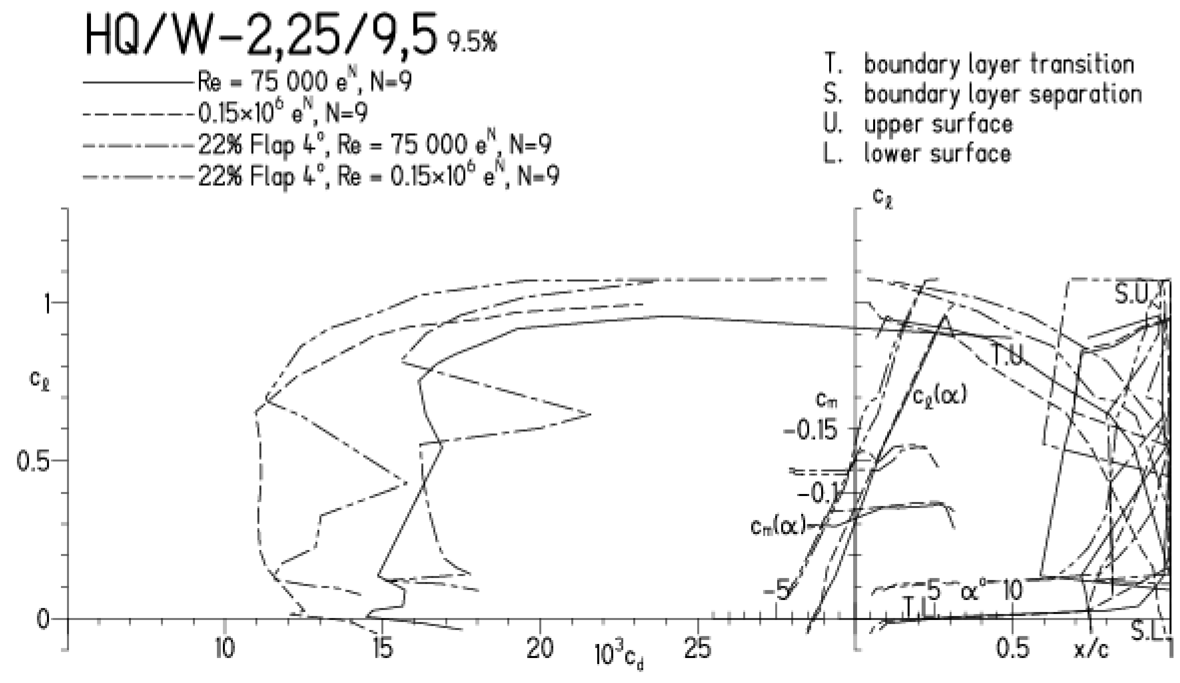


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

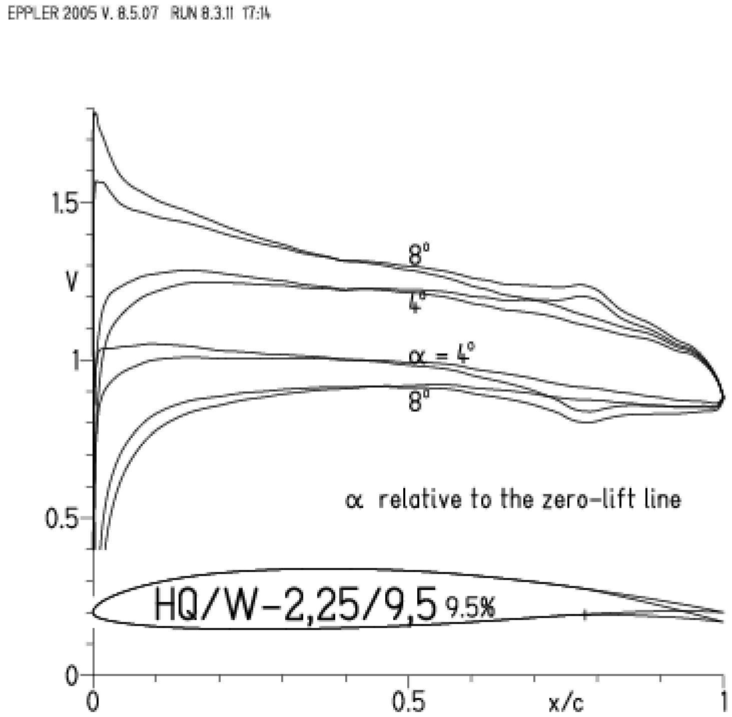
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

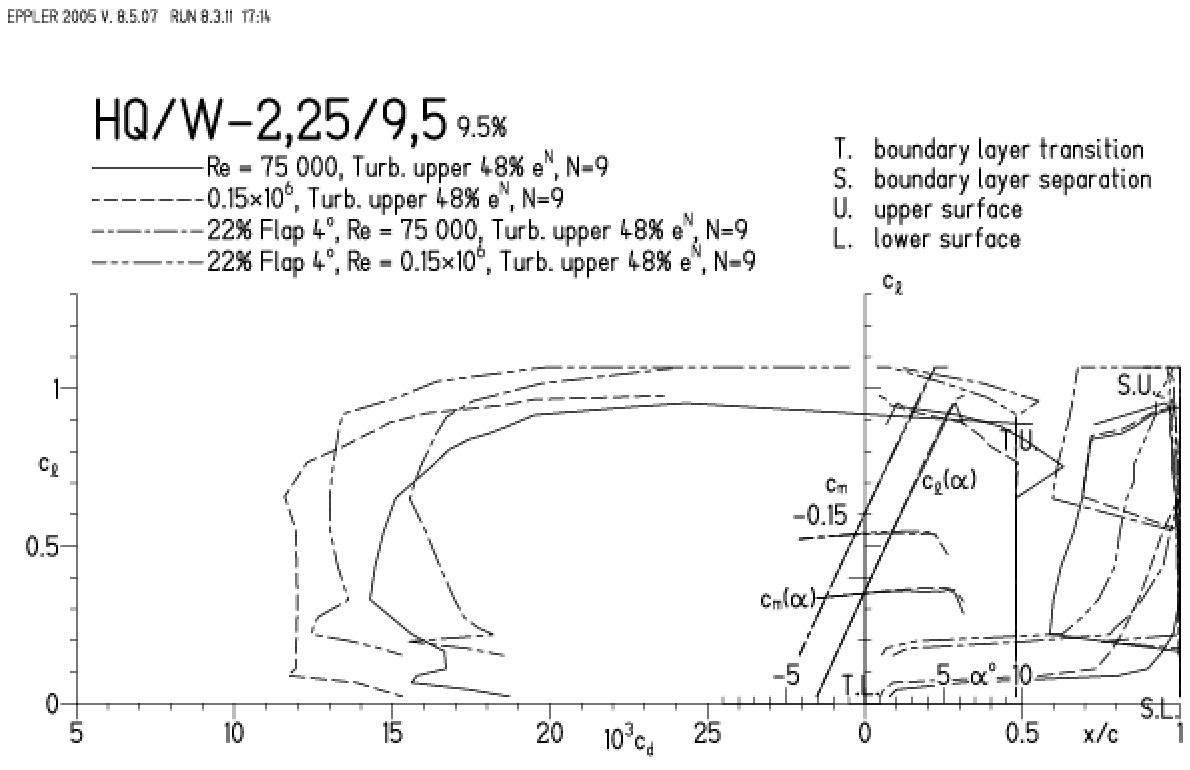


EPPLER 2005 V. 8.5.07 R



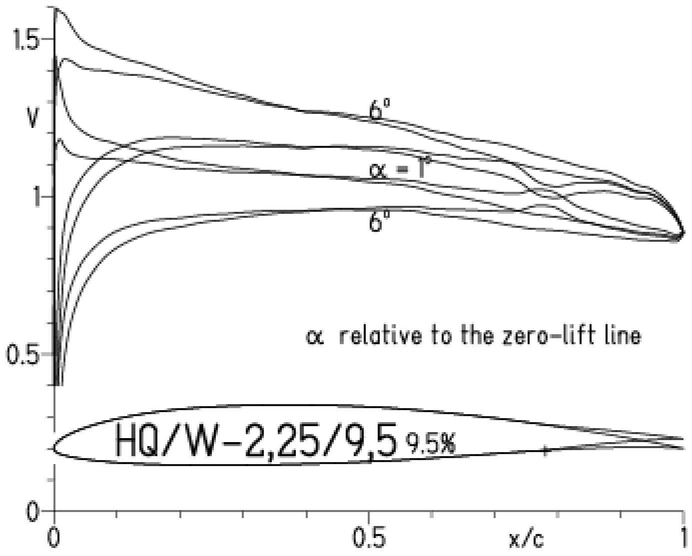
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



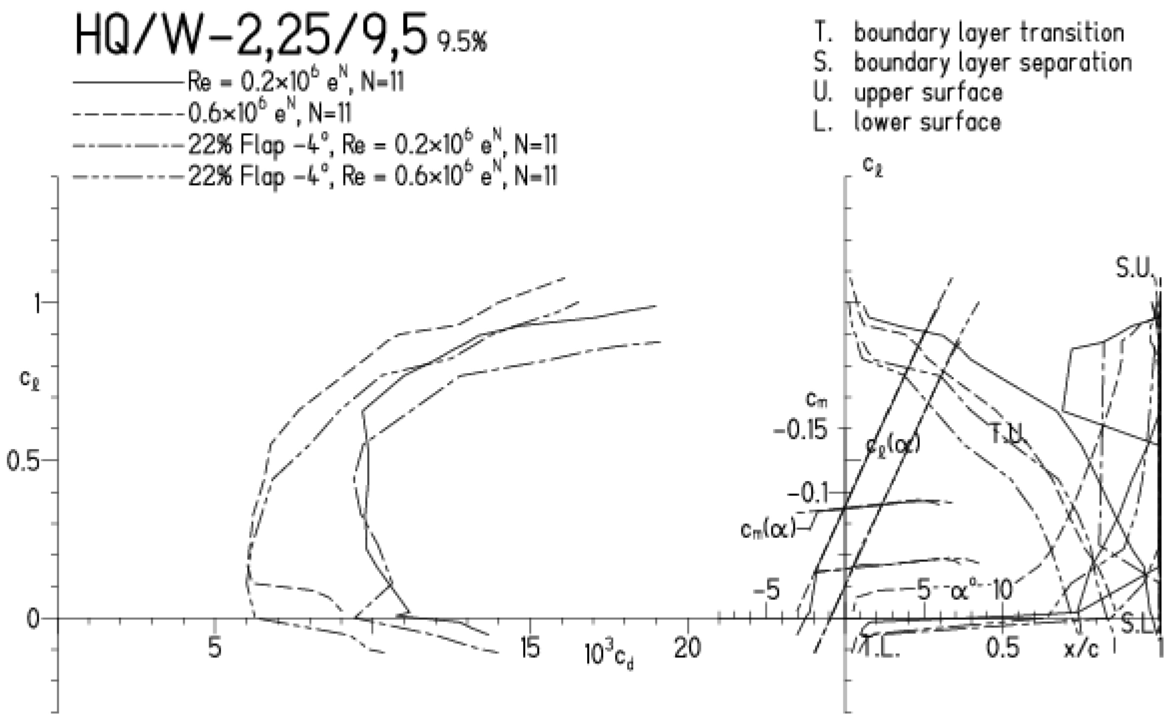


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

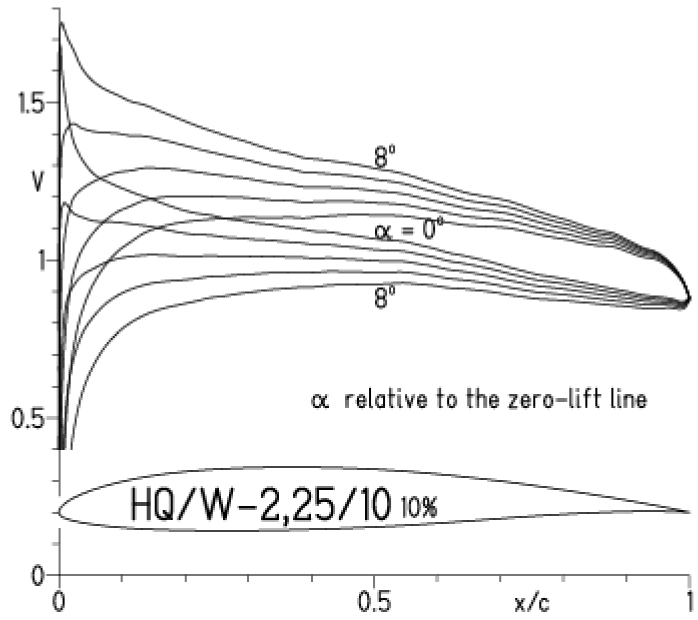


EPPLER 2005 V.

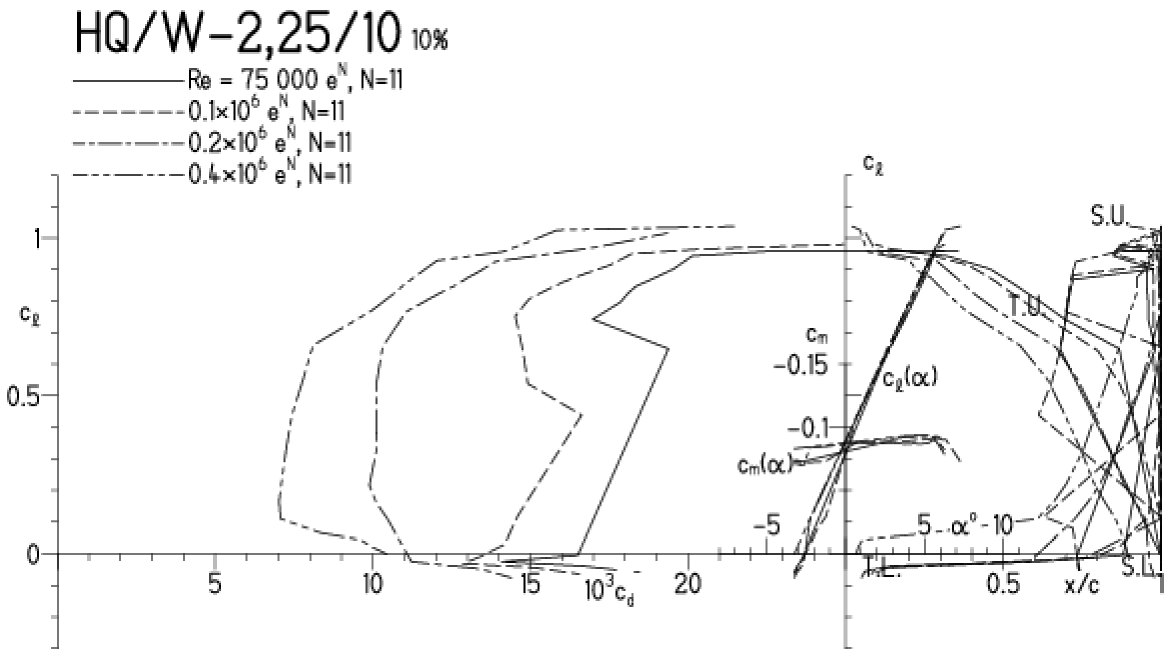


HQ/W-2,25/10, N=11

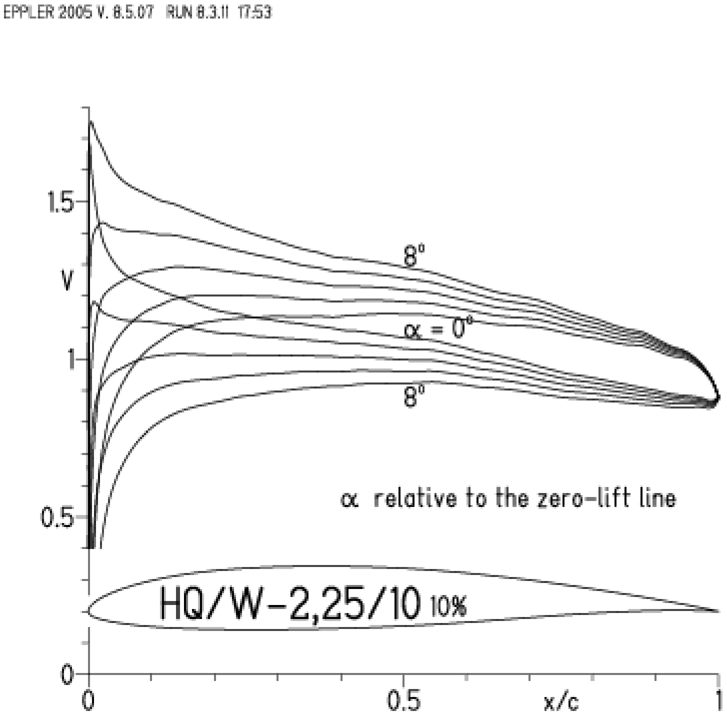
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

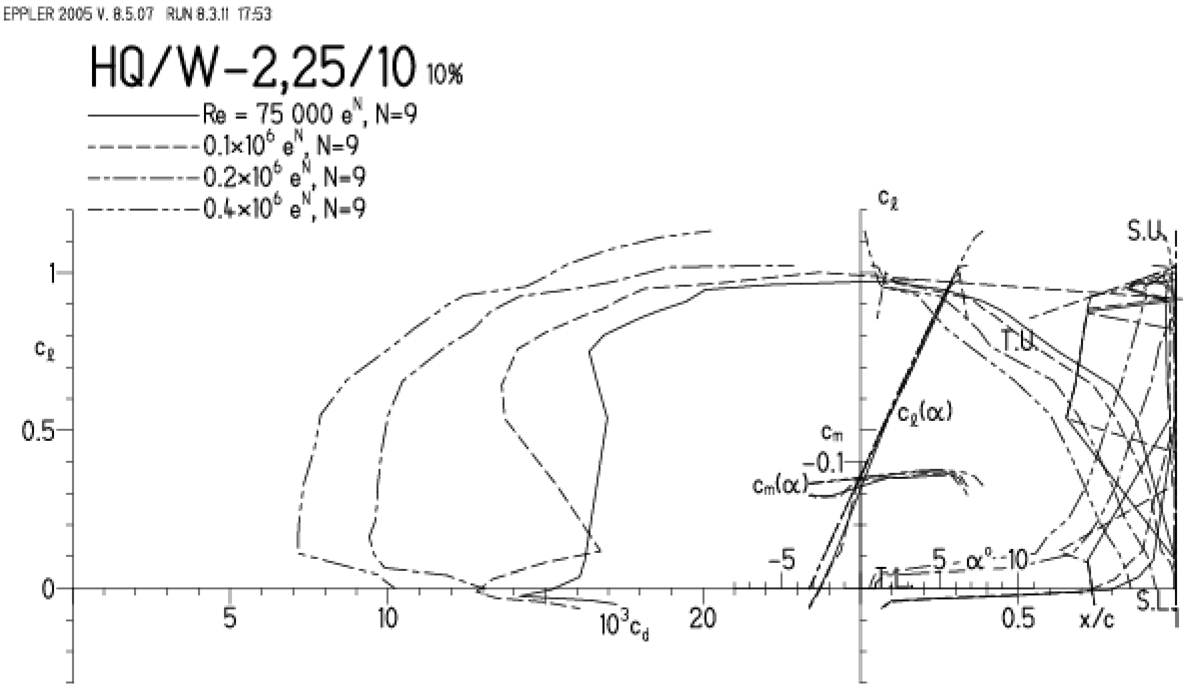


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

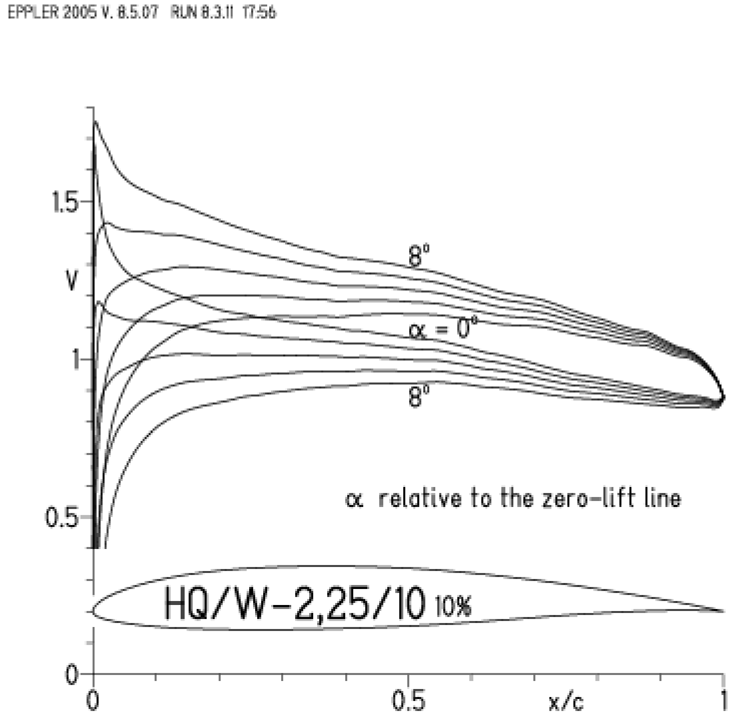


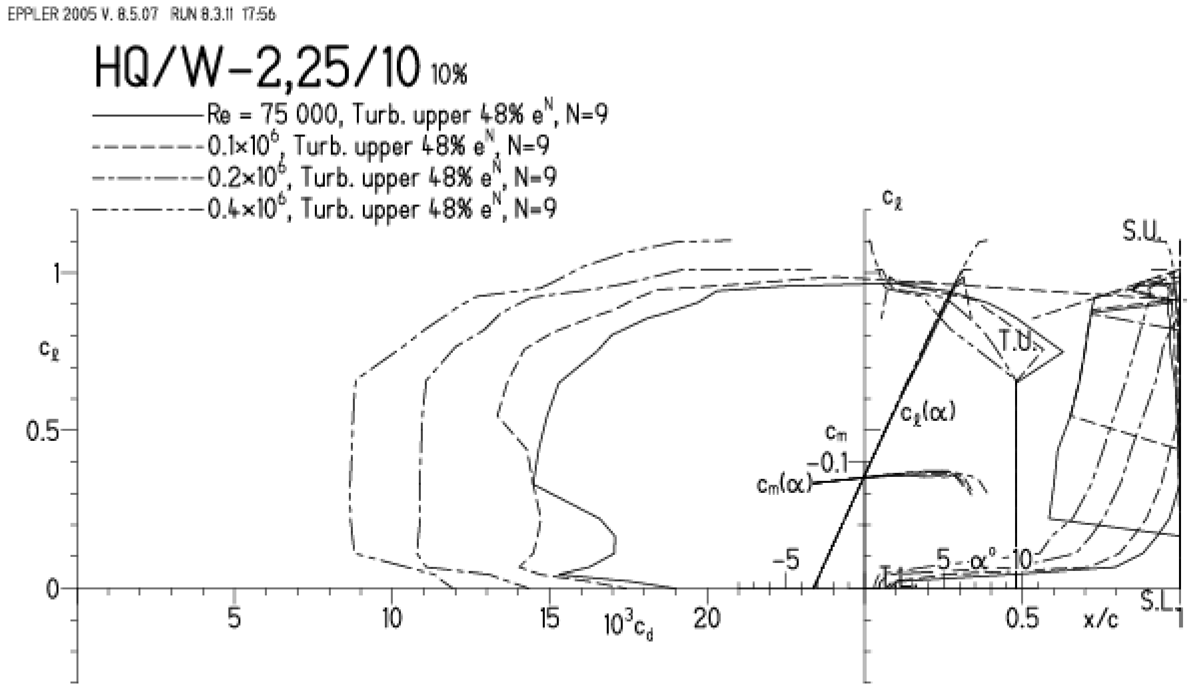
HQ/W-2,25/10, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/10 10%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
HQ/W-2,25/10 10%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

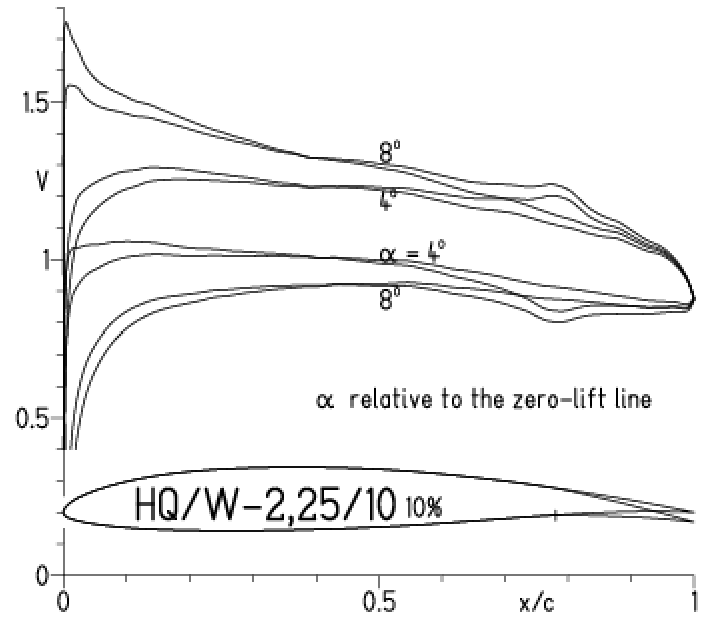
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



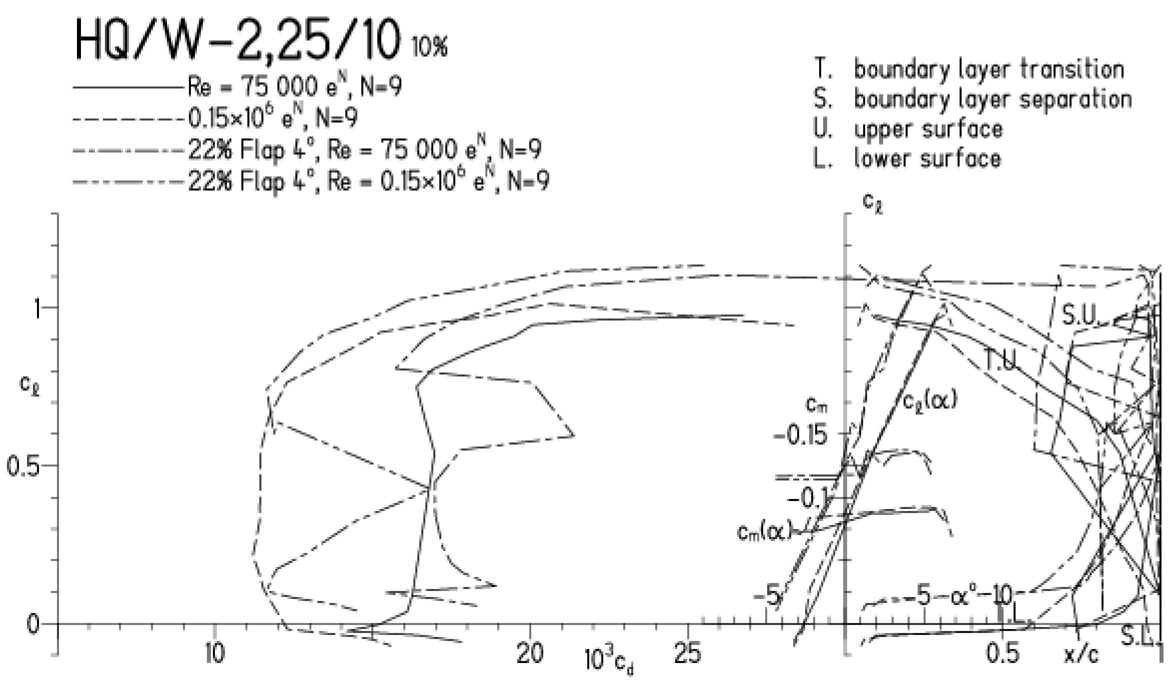


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

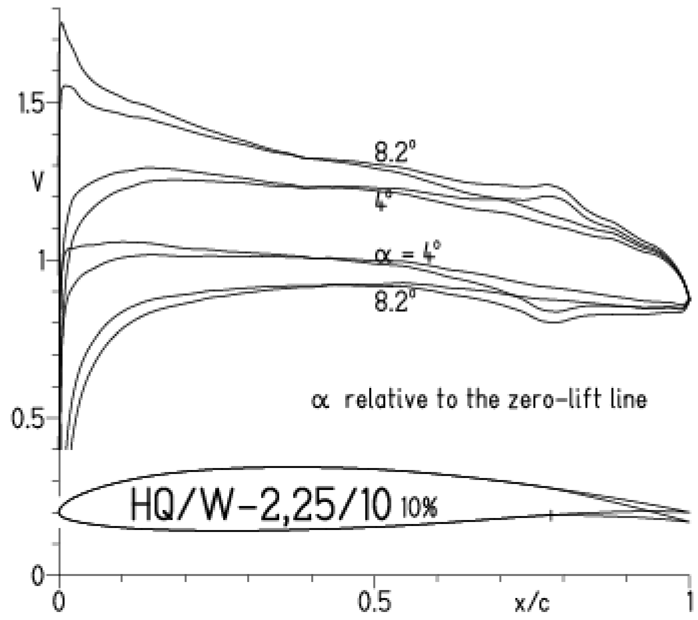


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

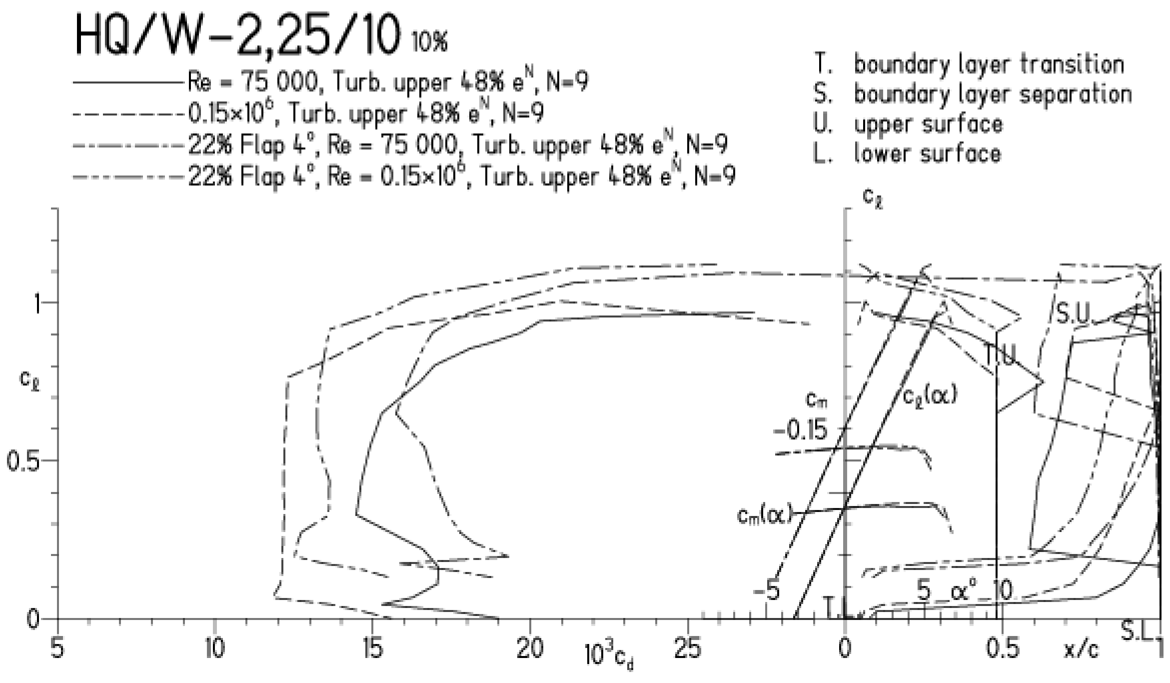


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

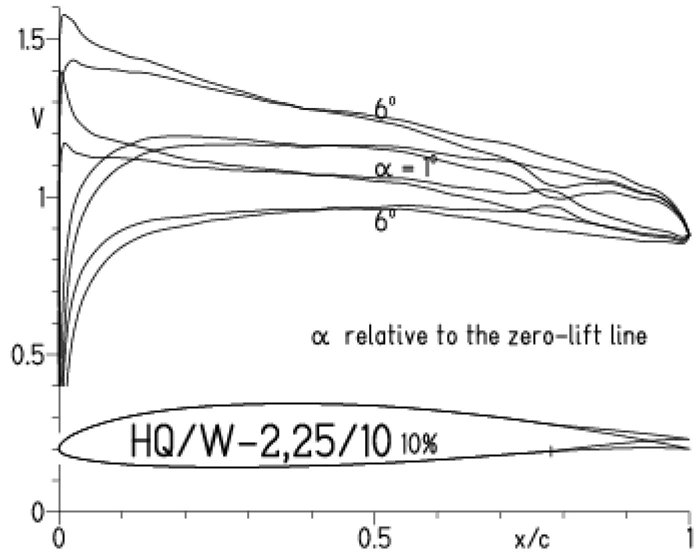


EPPLER 2005 V. 8.5.07 RUN 8.3

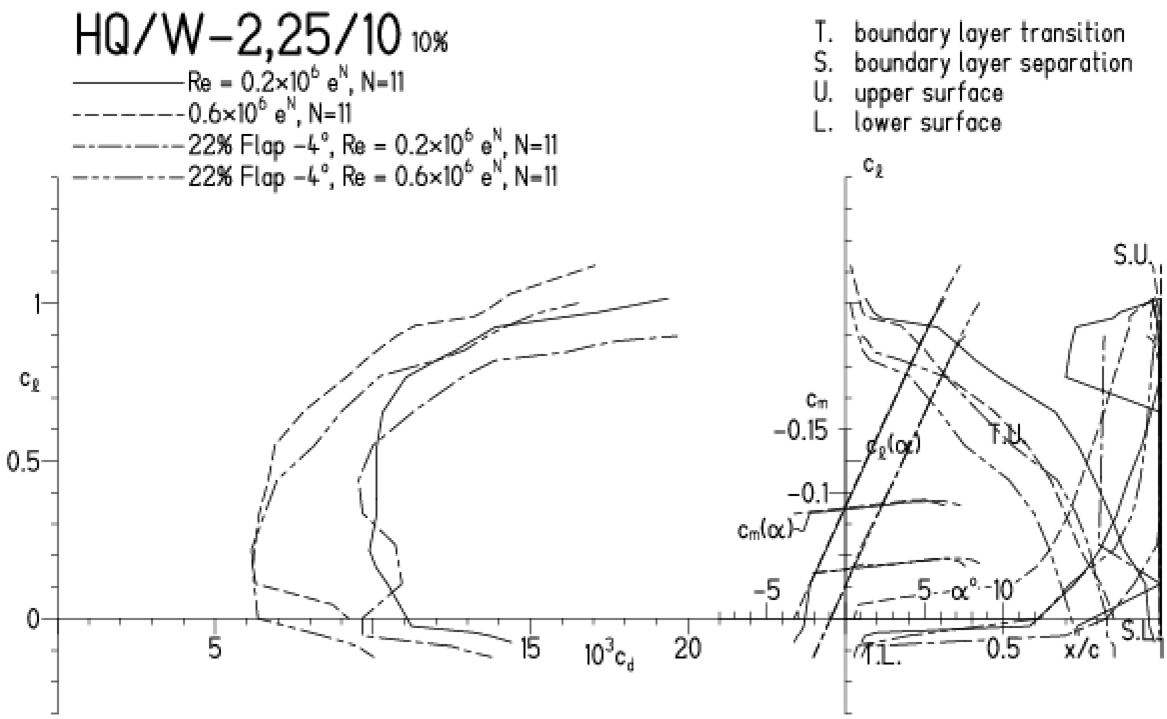


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

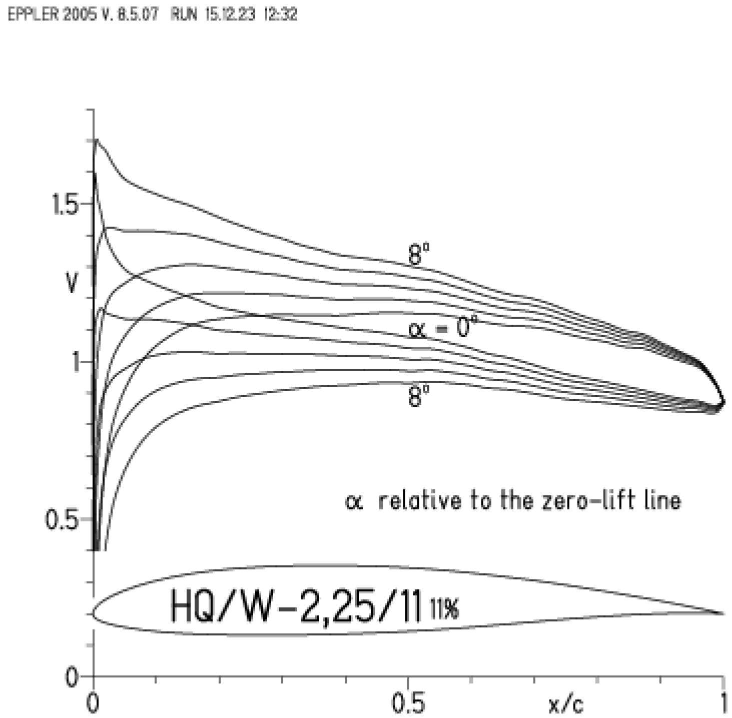
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

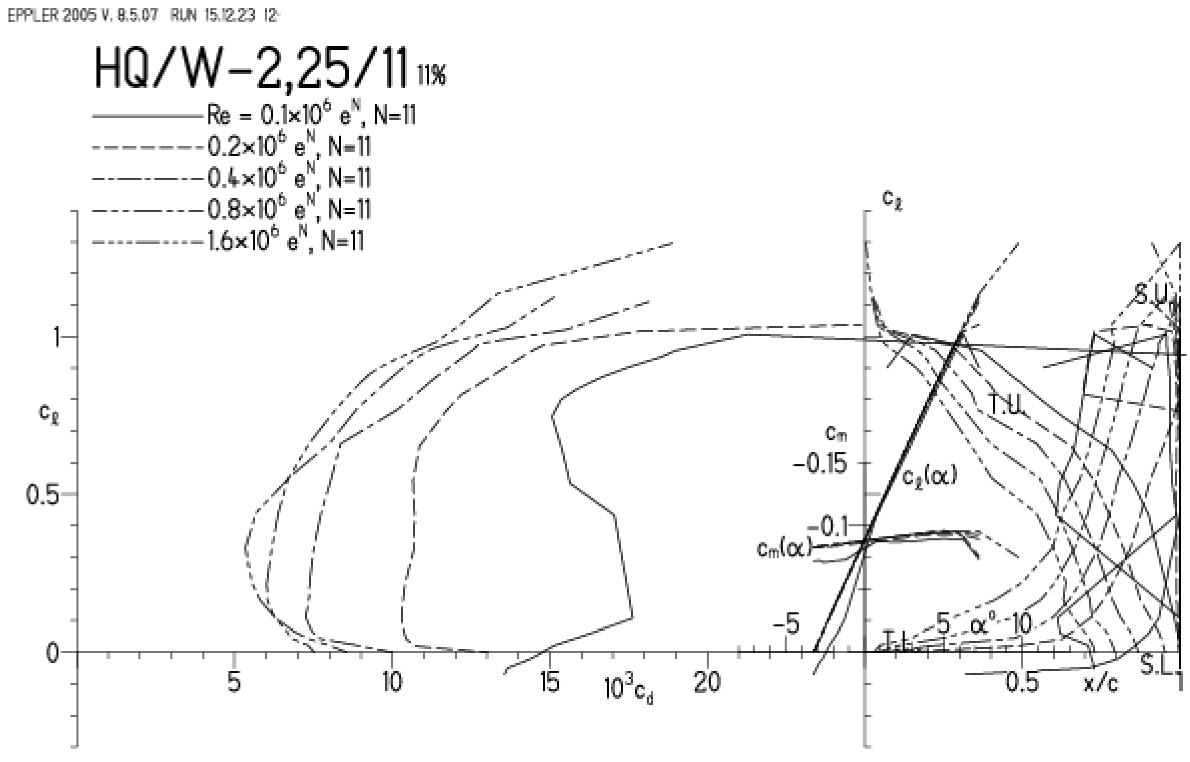


EPPLER 2005 V. 8.5.07 RUN



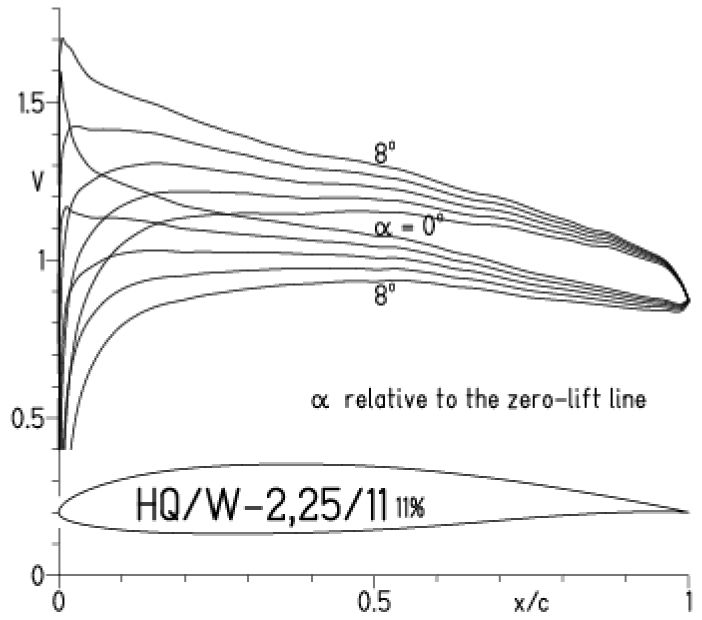
HQ/W-2,25/11, N=11



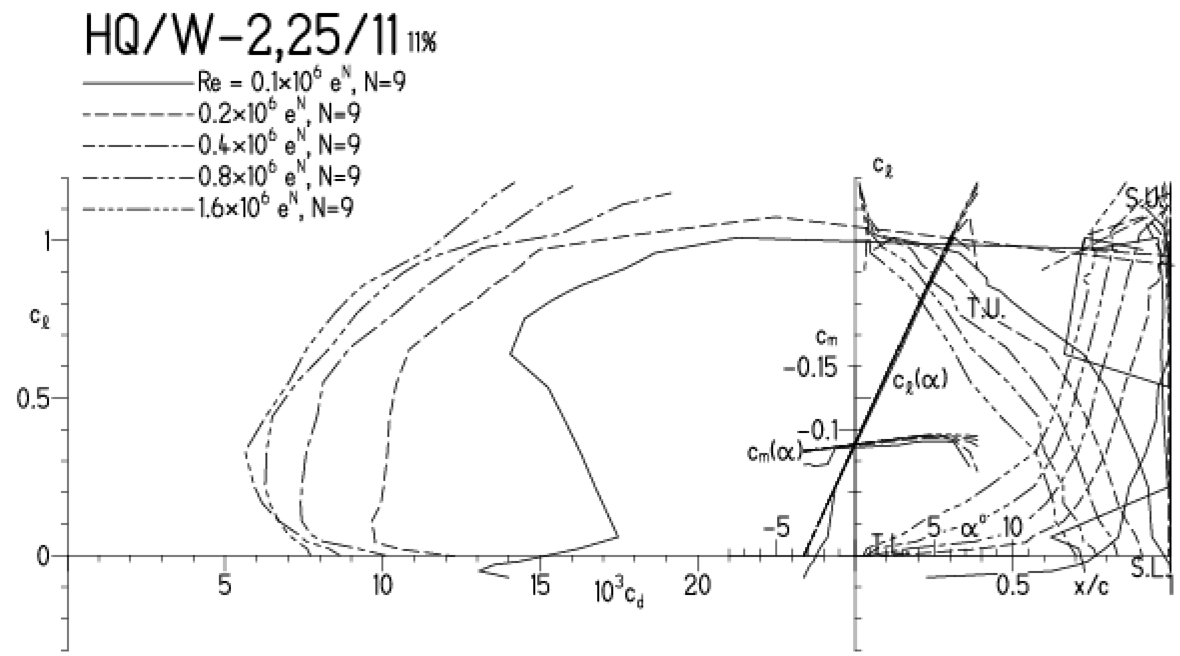


HQQ/W-2,25/11, N=9

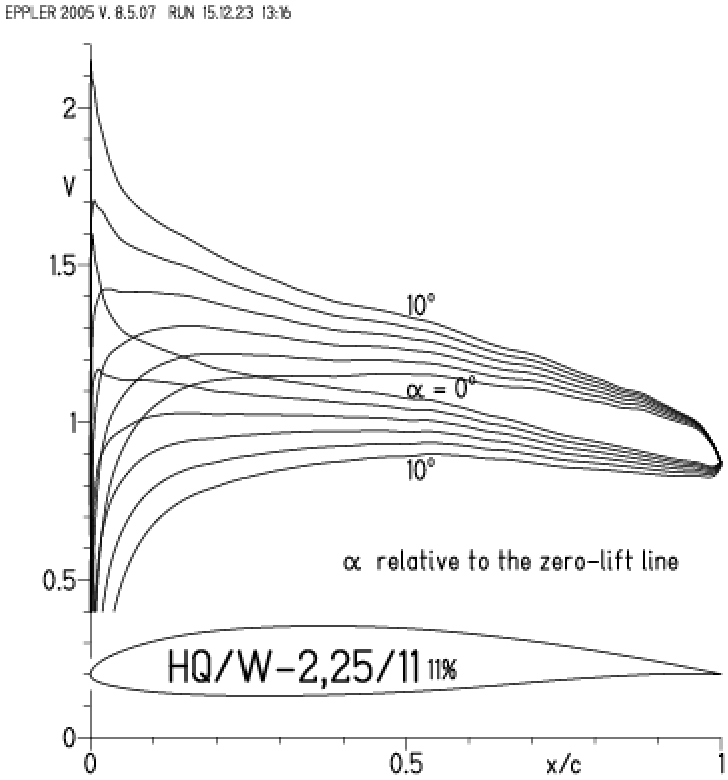
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

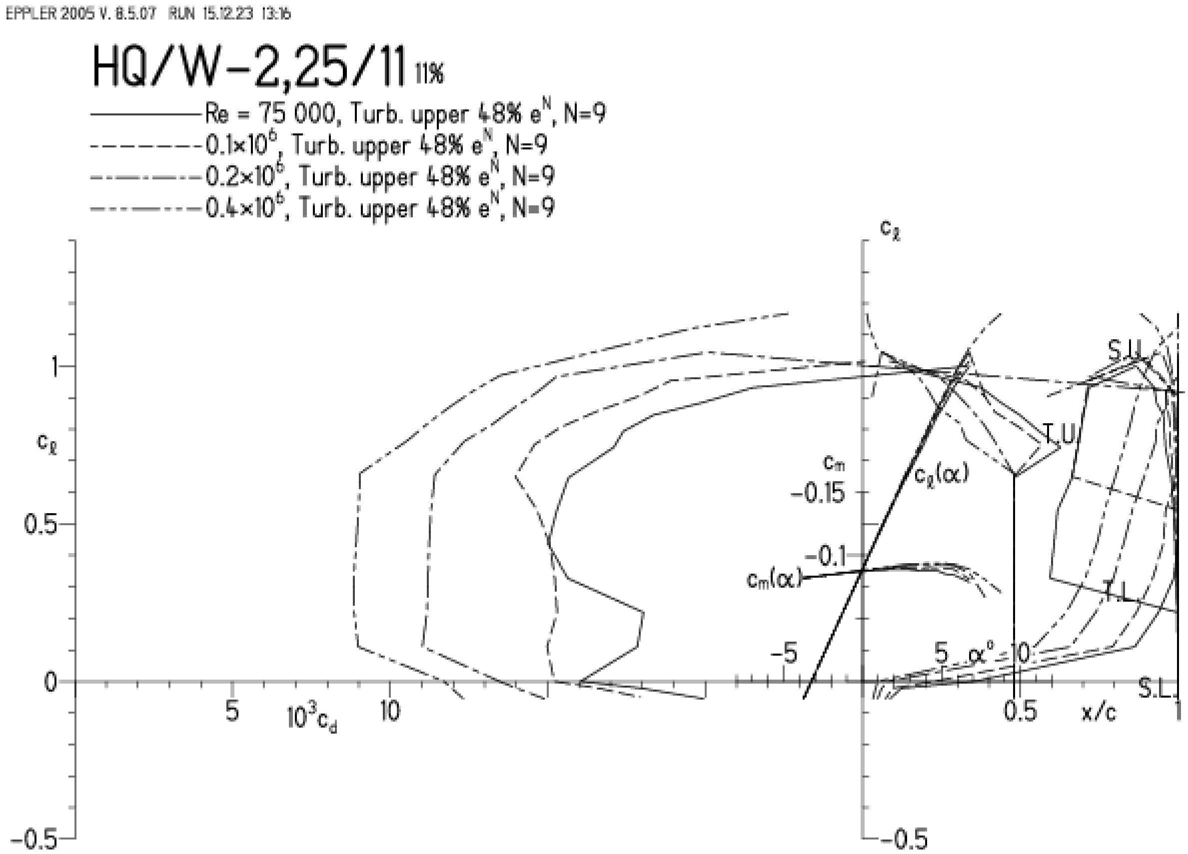


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



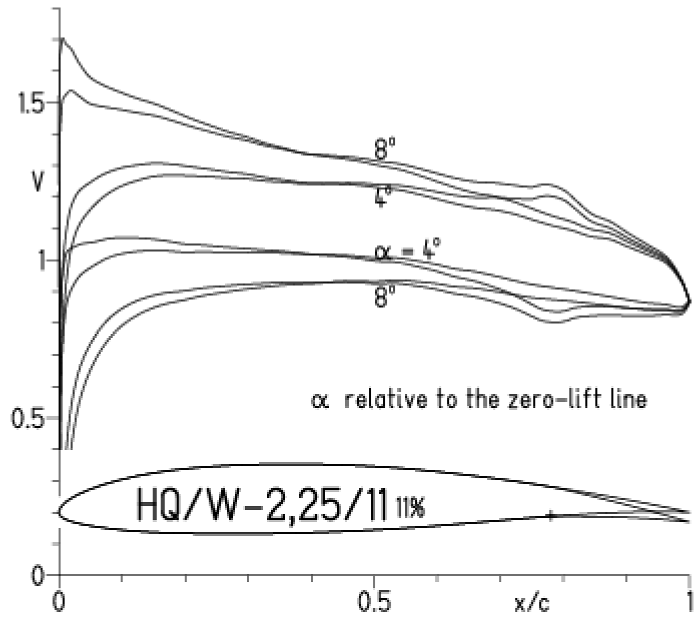
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



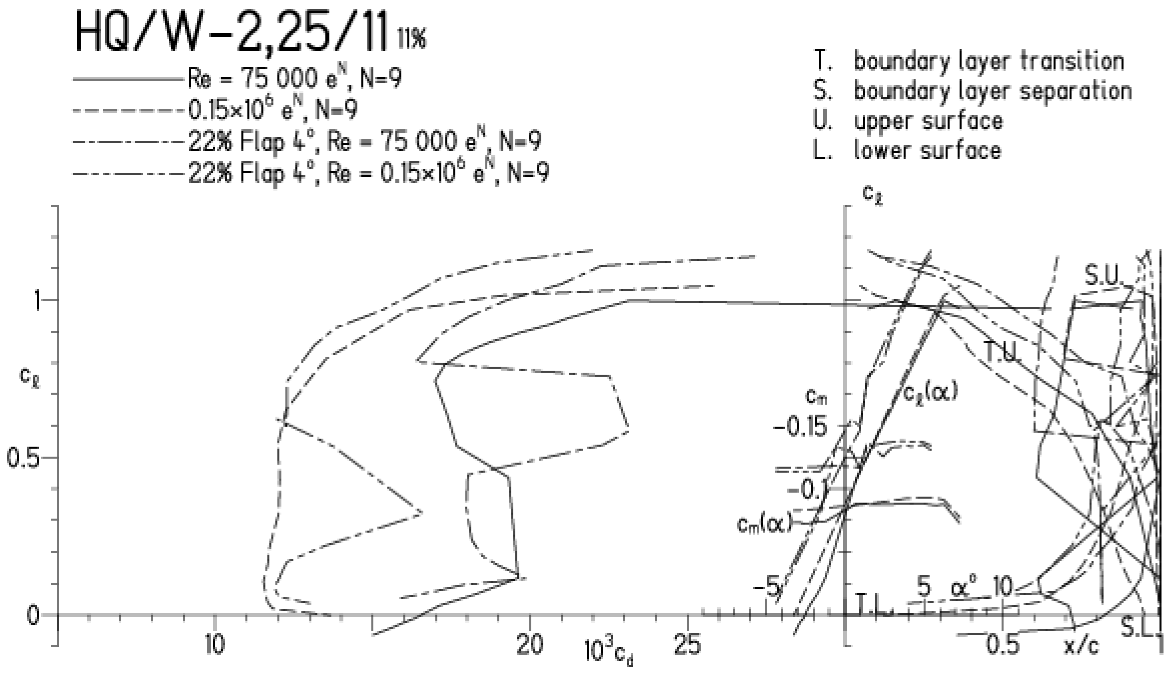


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

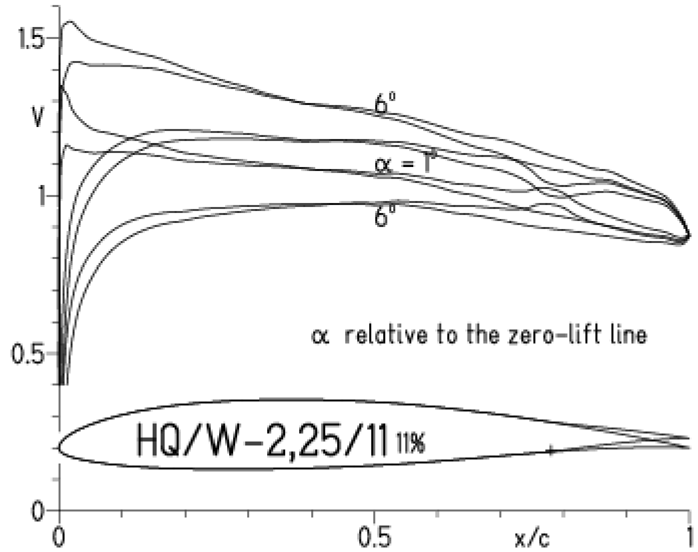


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

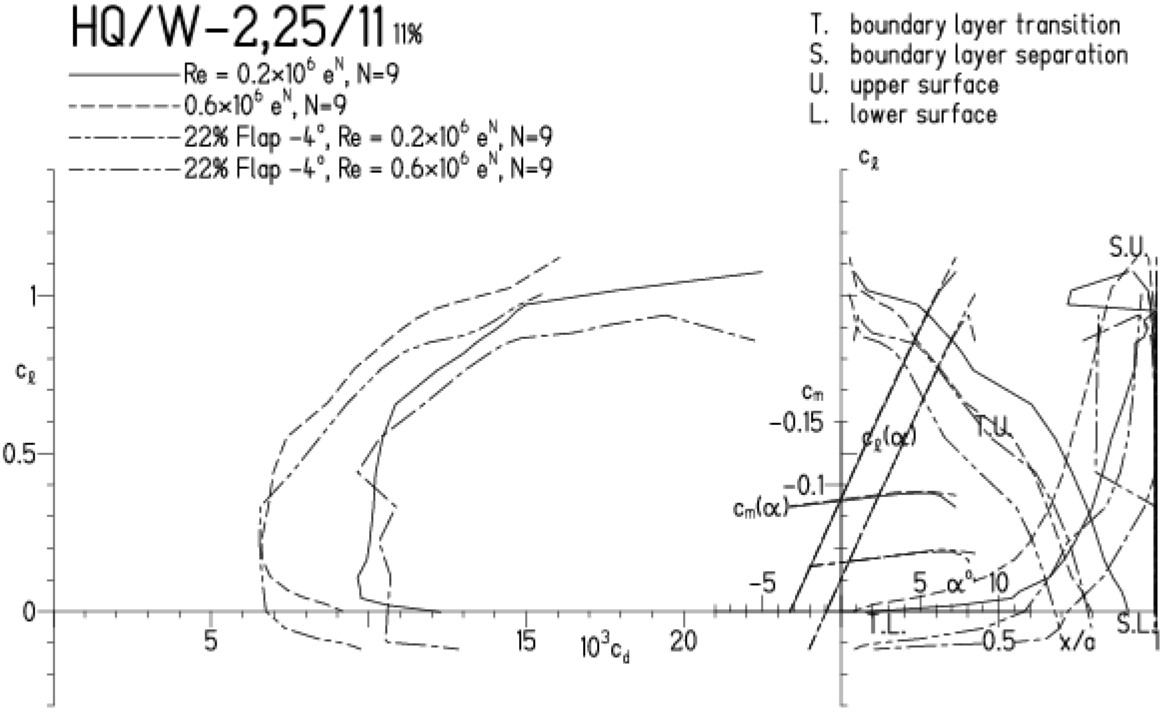


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

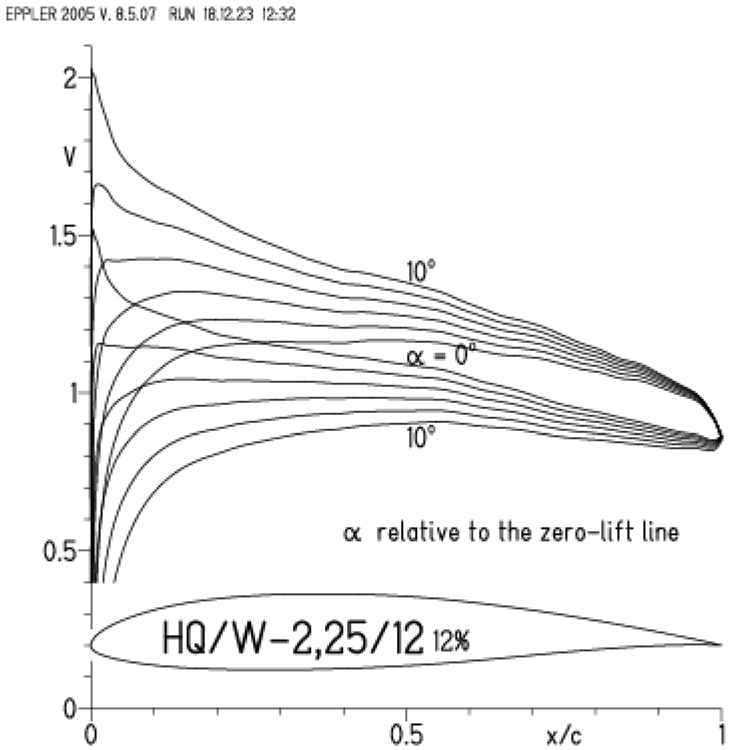
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

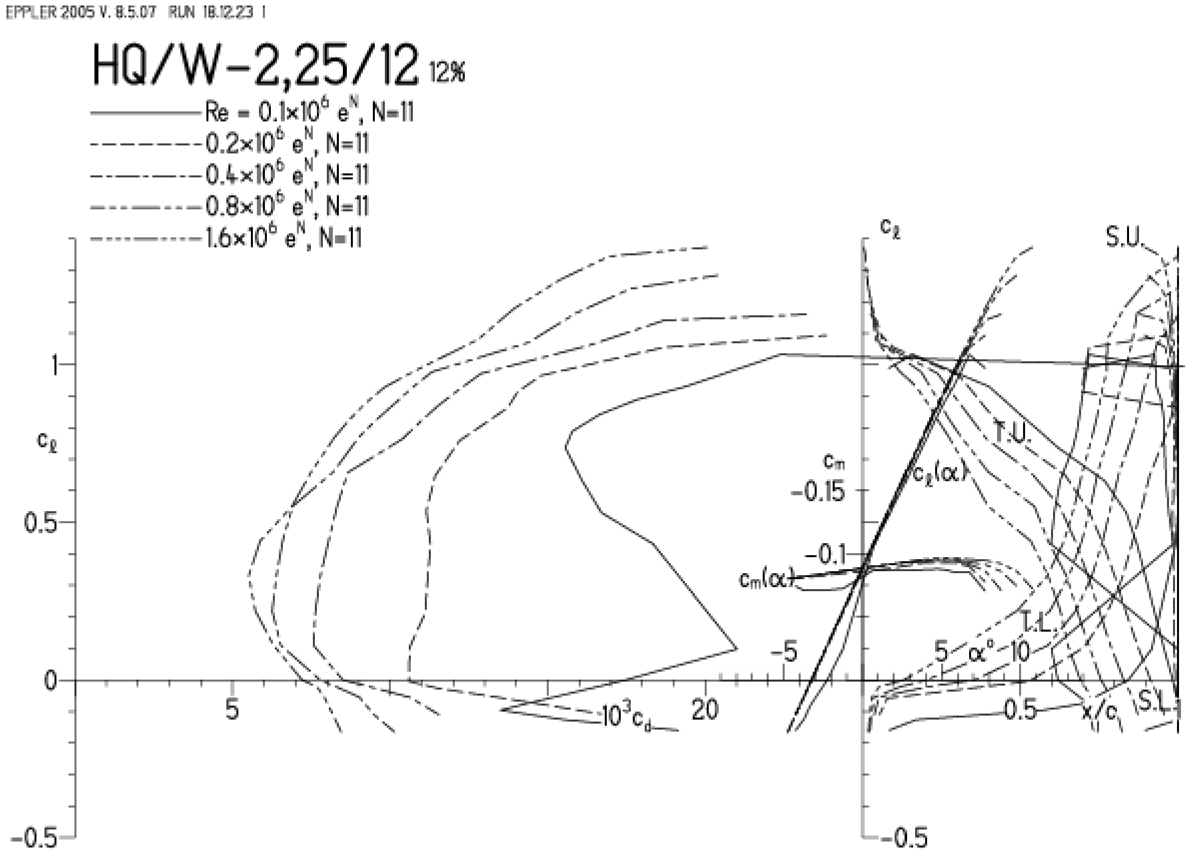


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

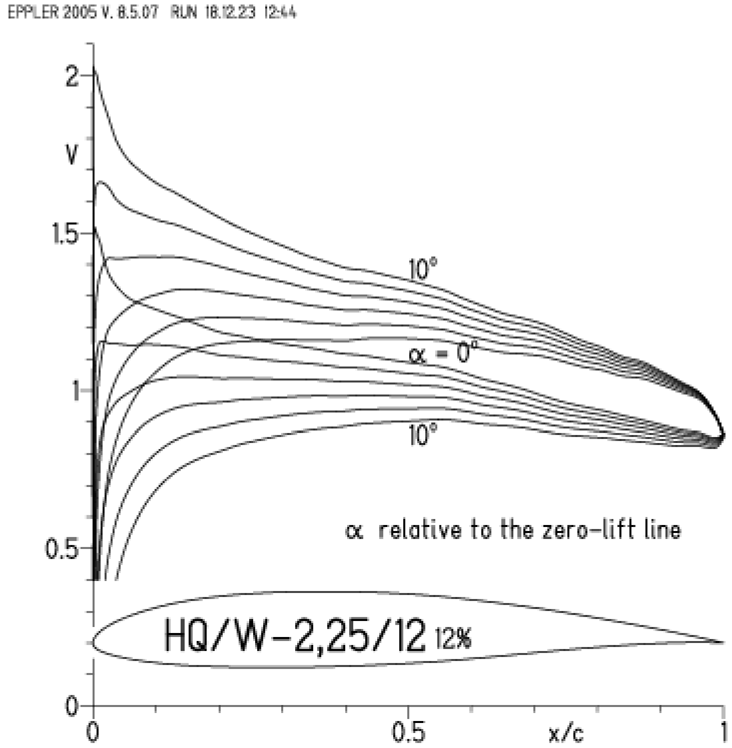


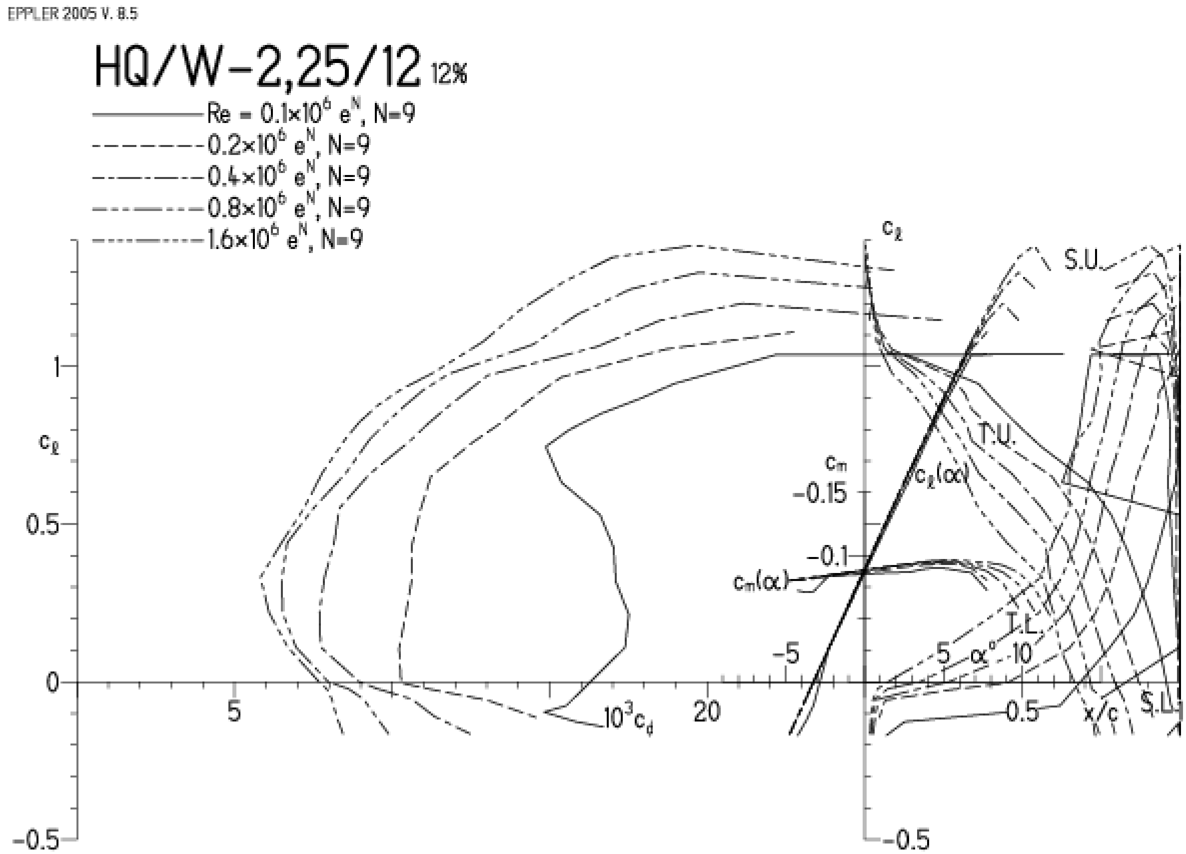
<u>HQ/W-2,25/12</u>, N=11



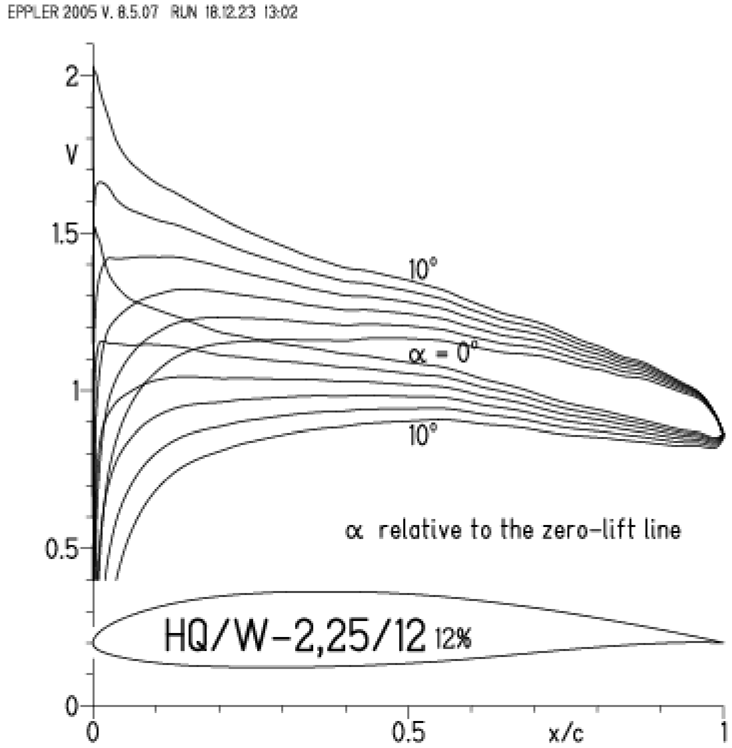


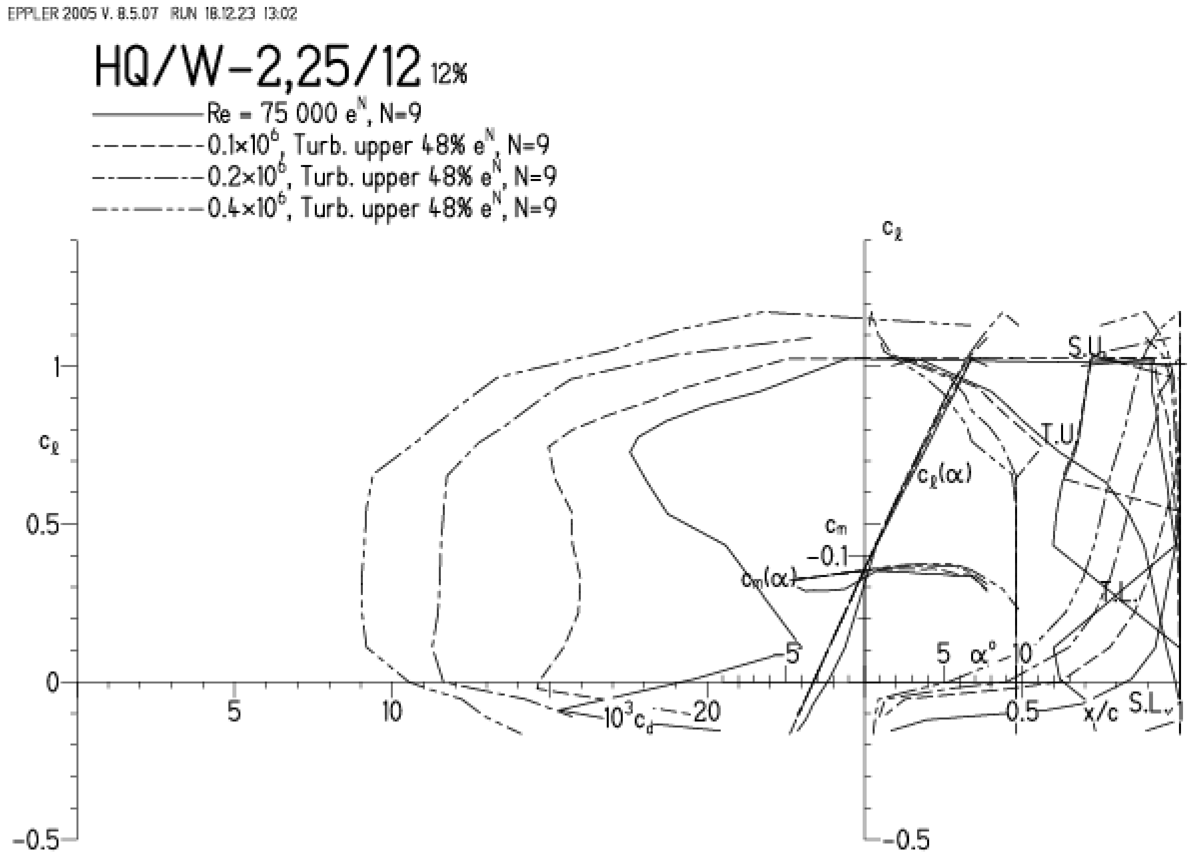
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_ℓ(α)
c_m
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

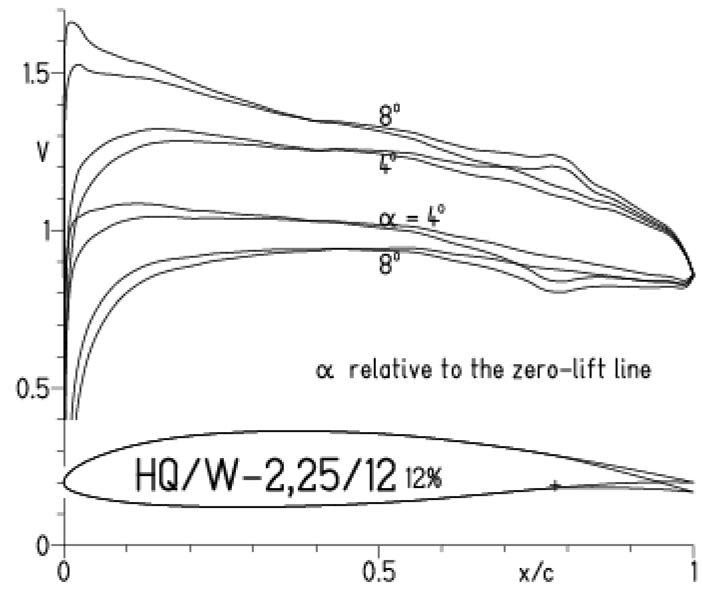
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



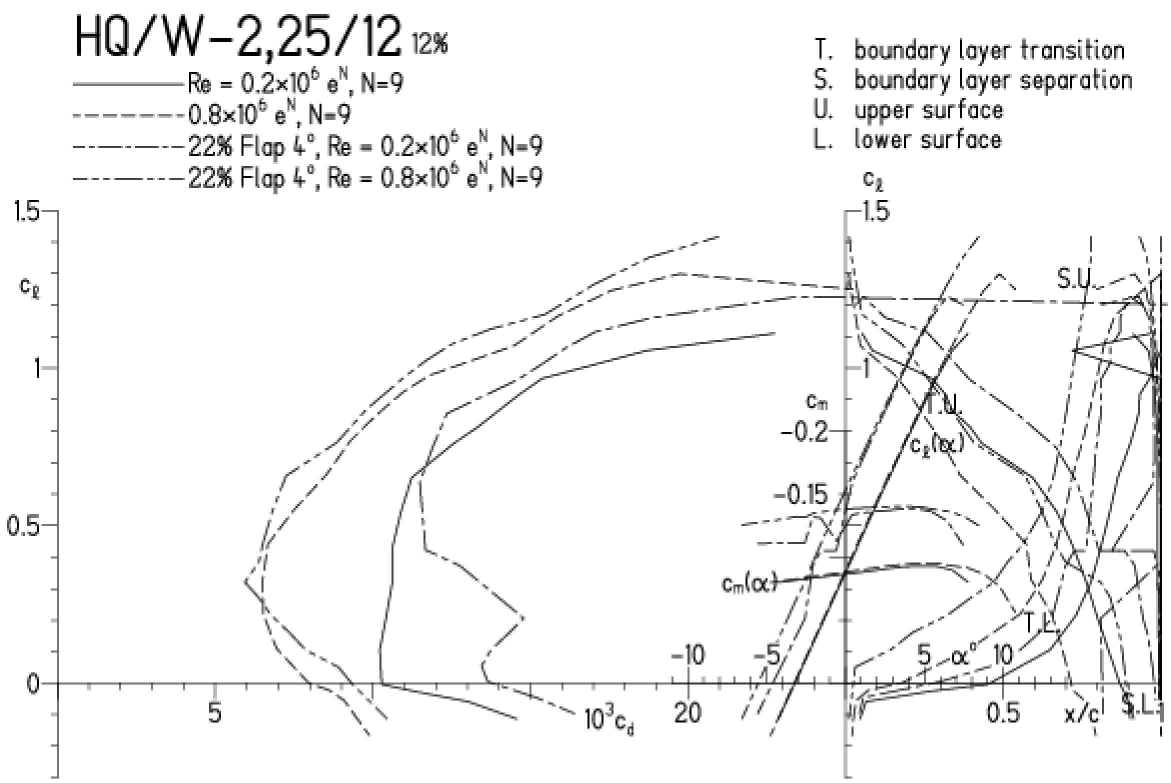


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

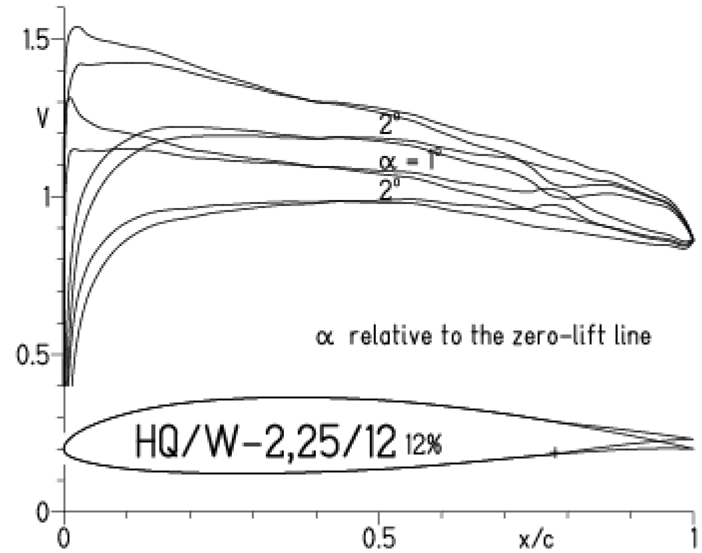


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

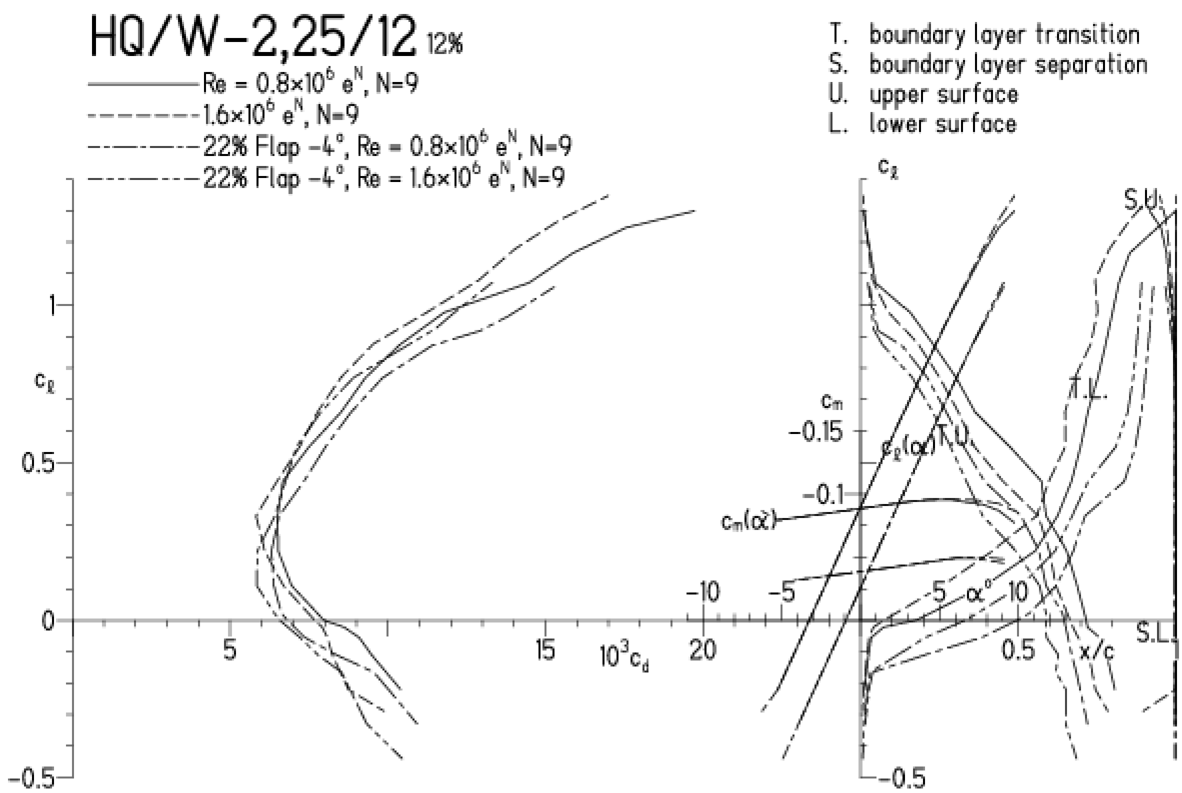


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

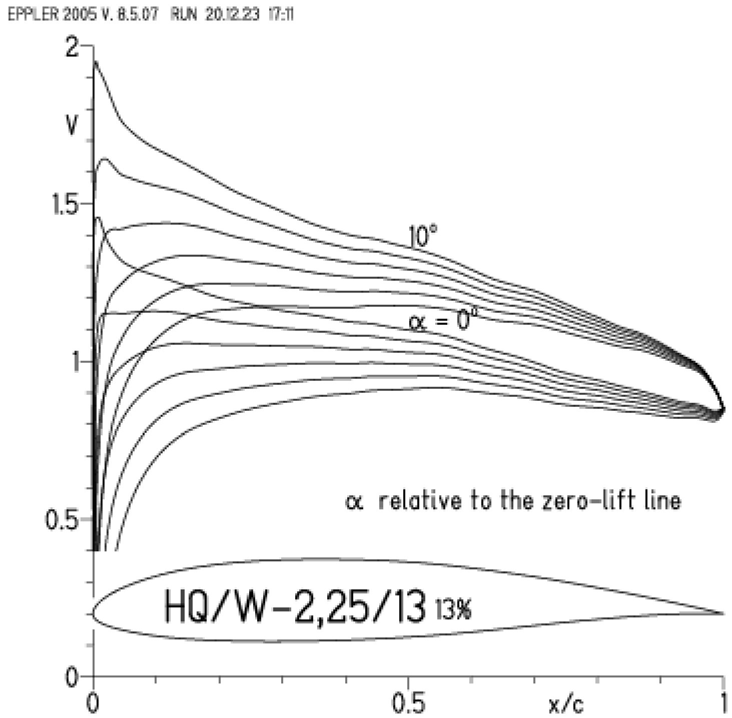
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

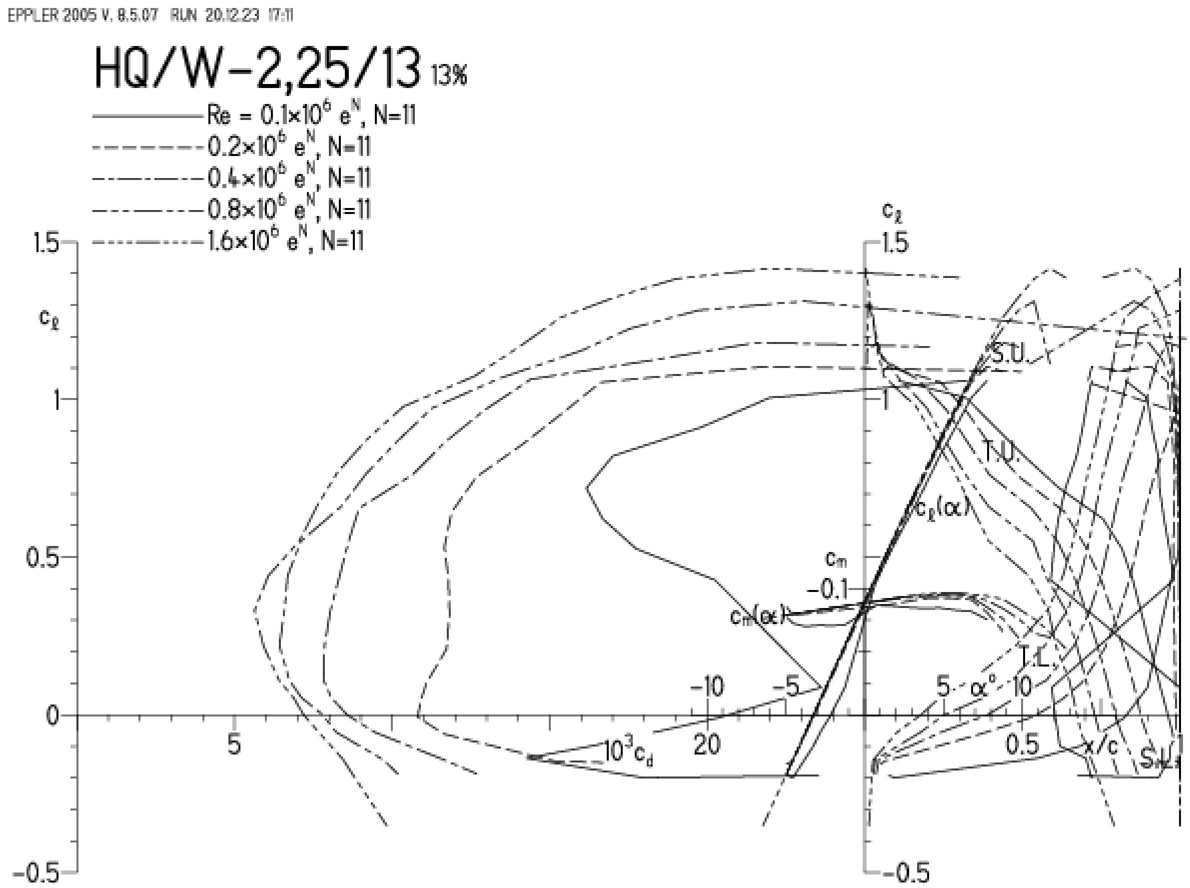


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

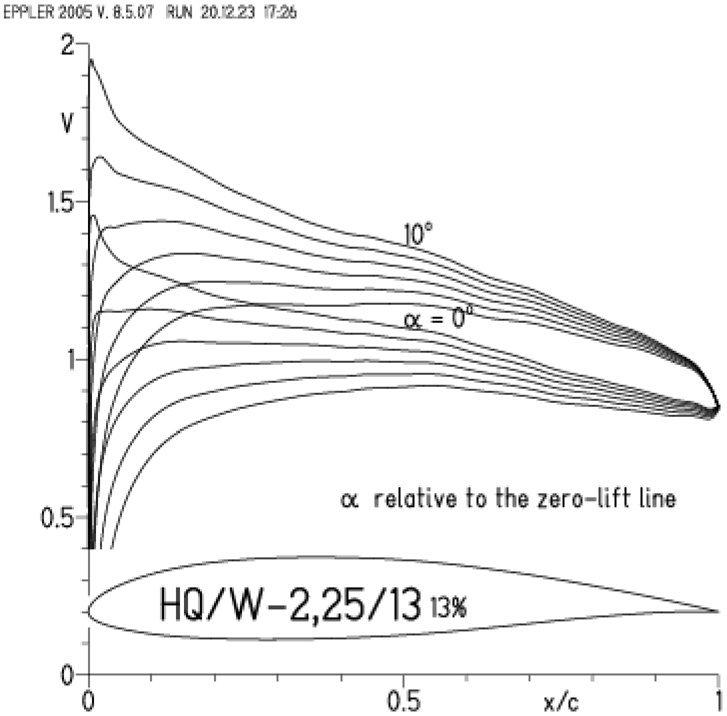


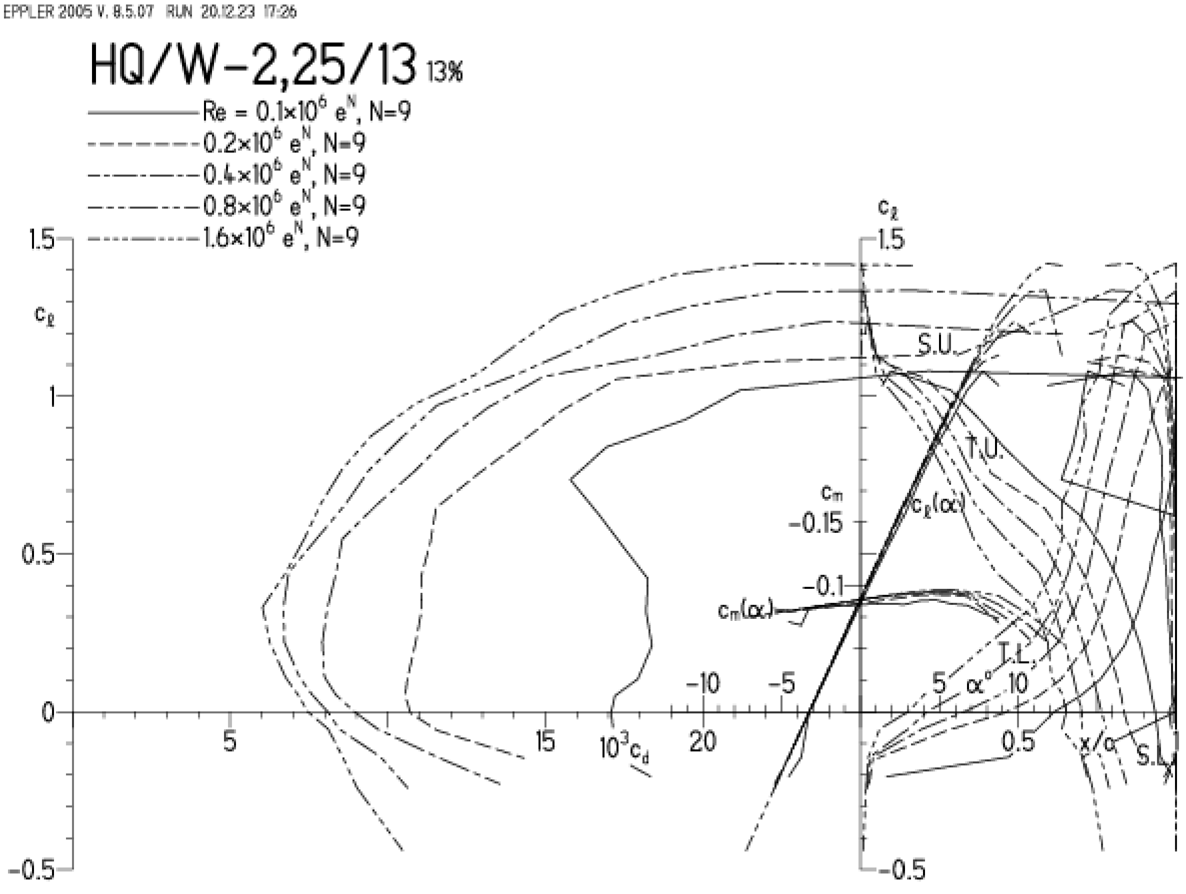
HQ/W-2,25/13, N=11



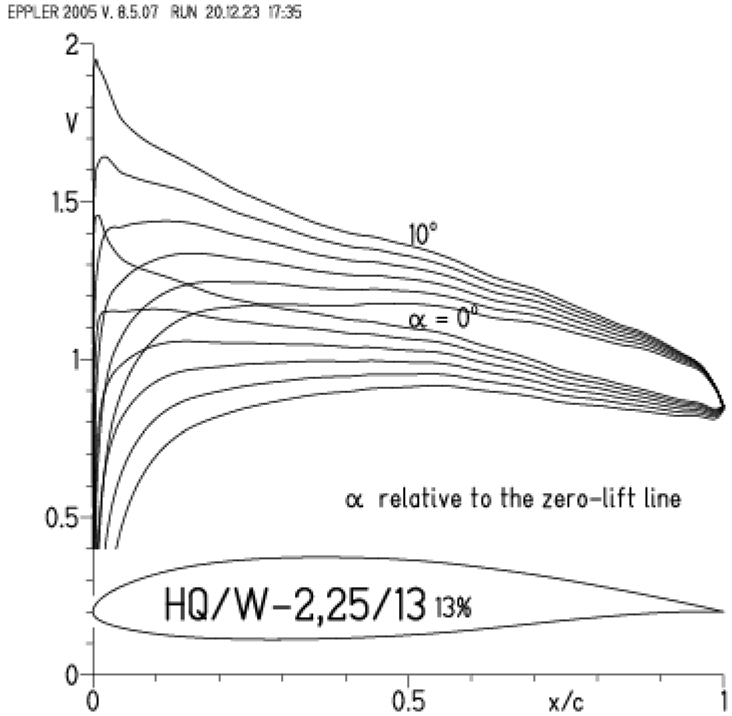


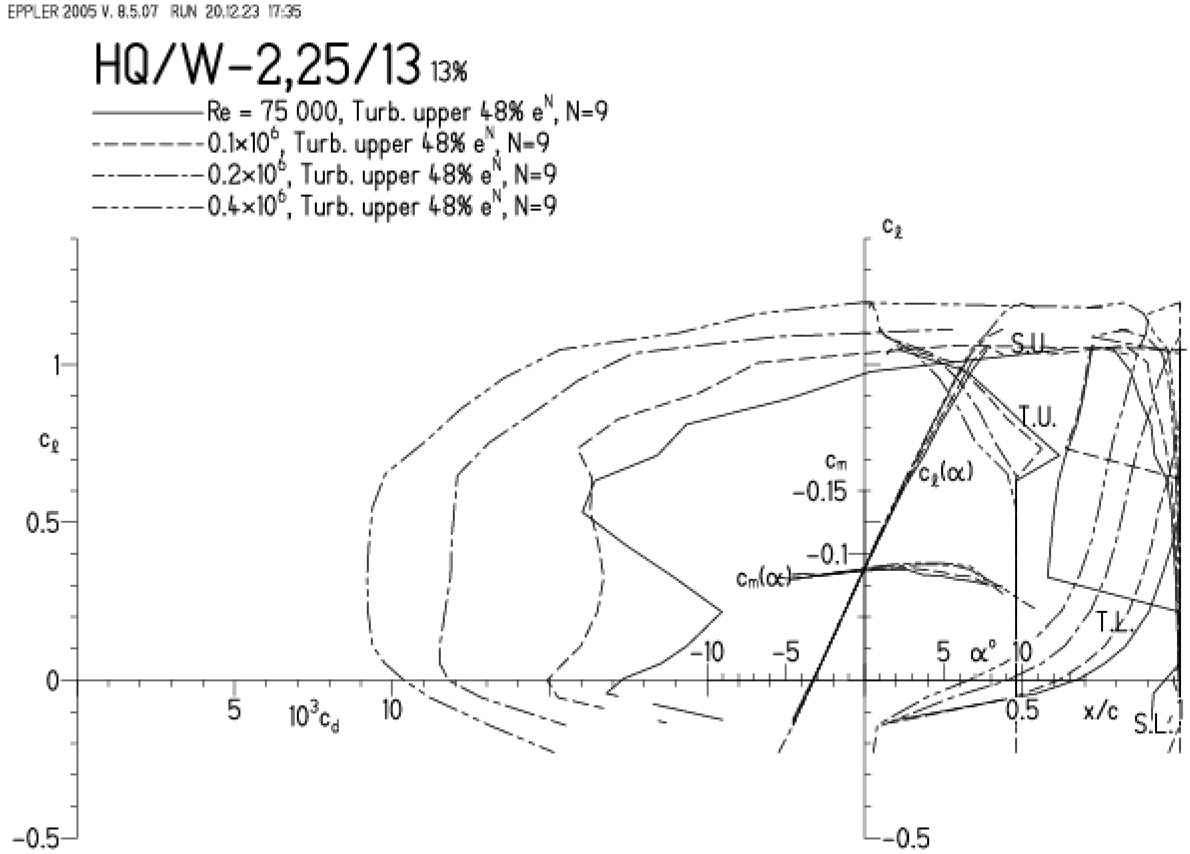
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
x/c
10³cd

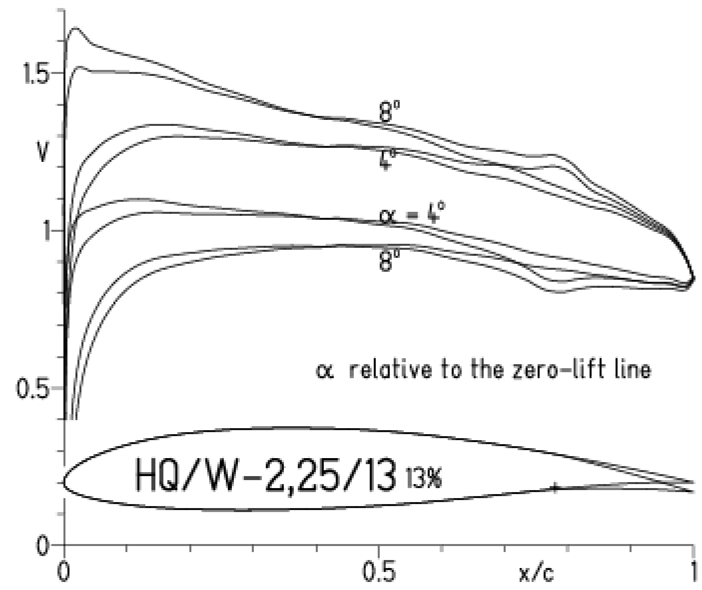
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



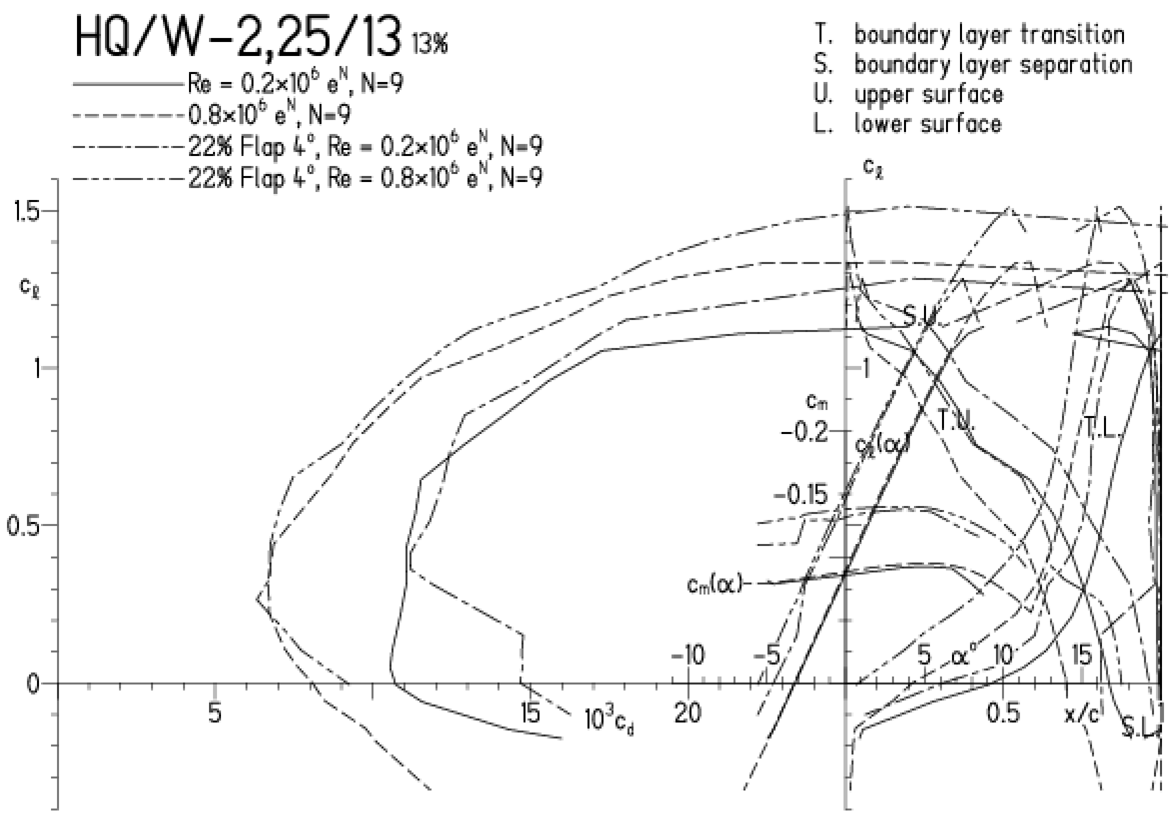


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

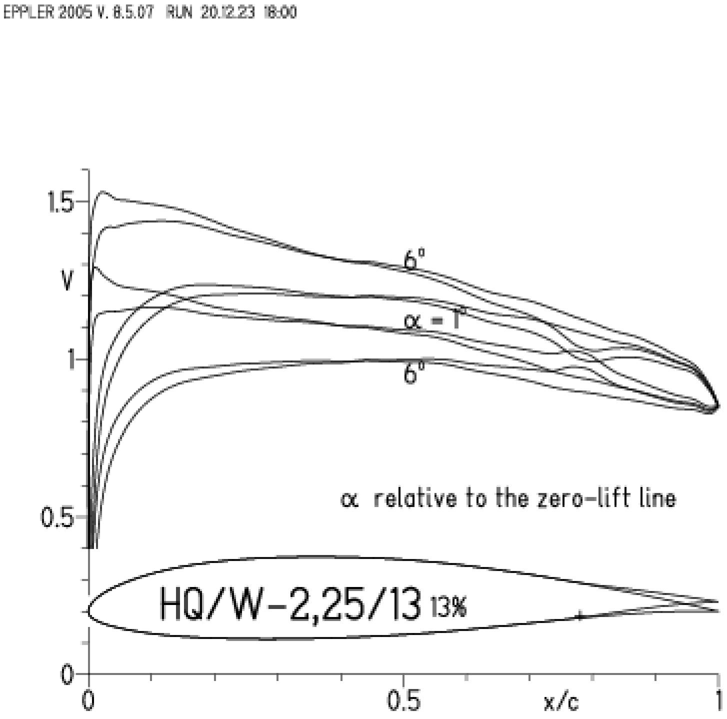
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

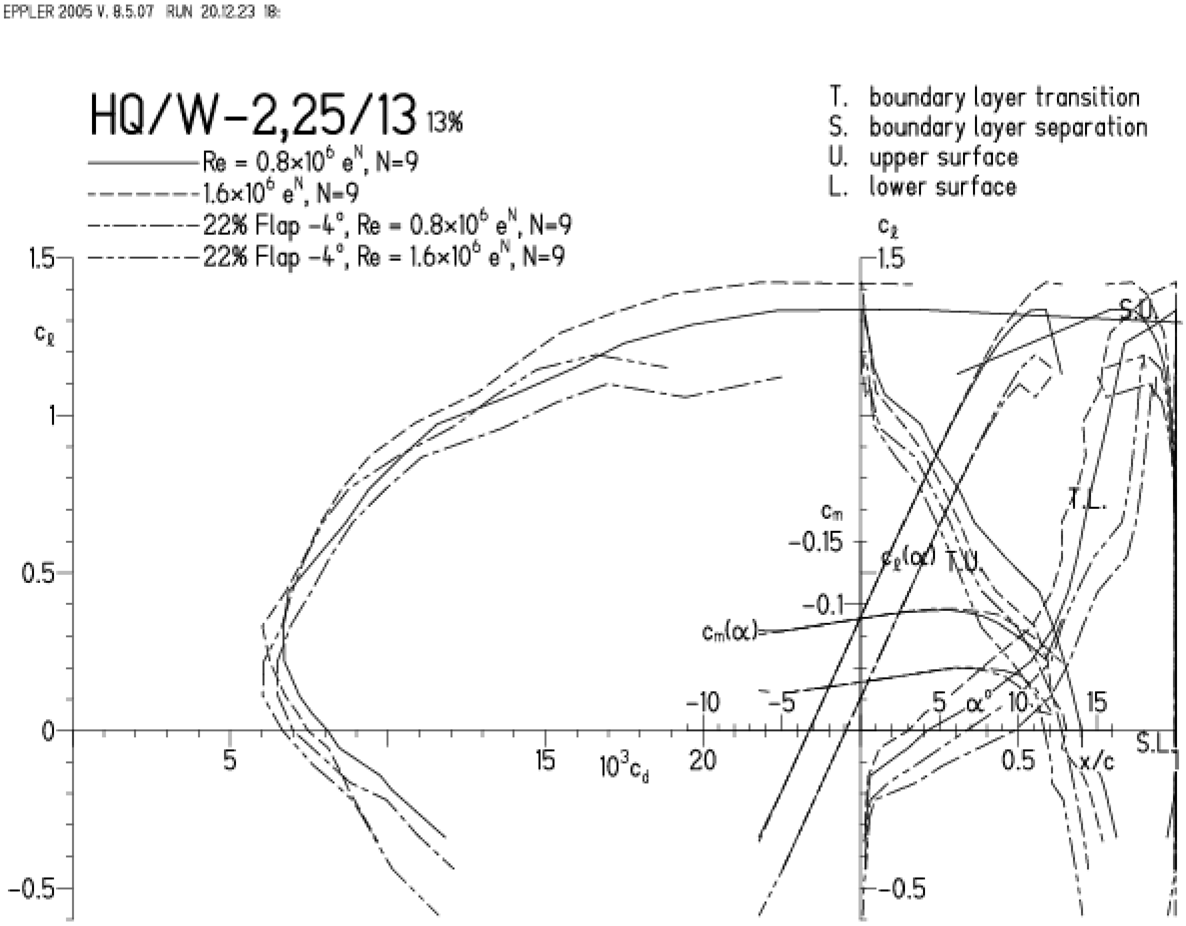


EPPLER 2005 V.

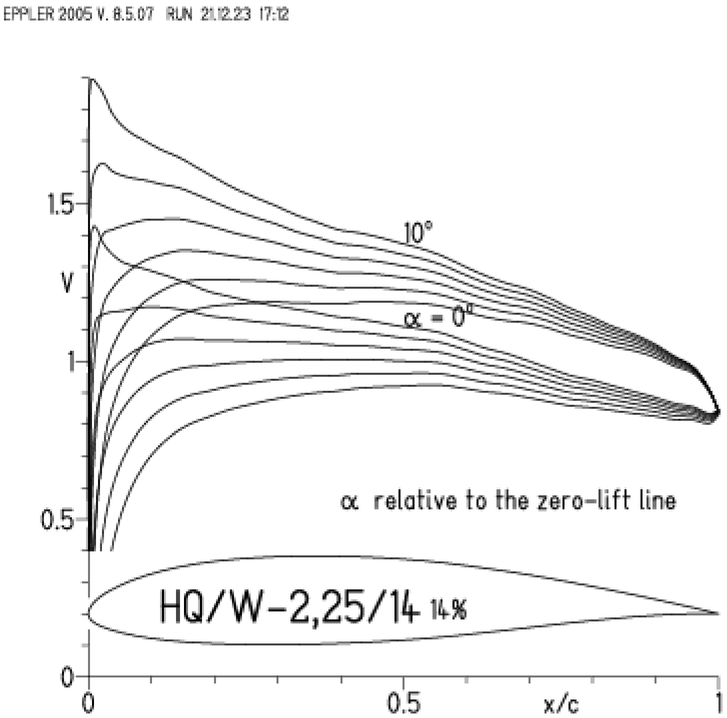


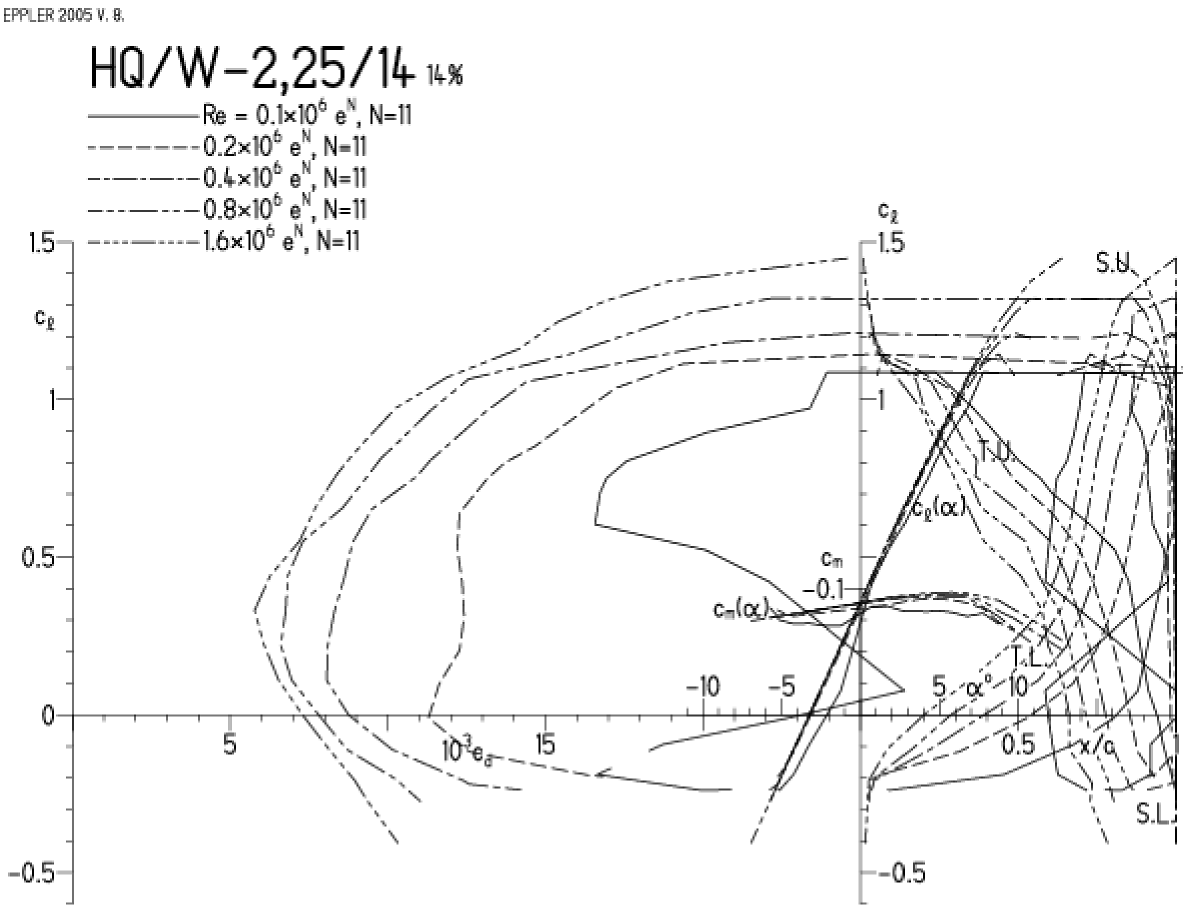
HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag



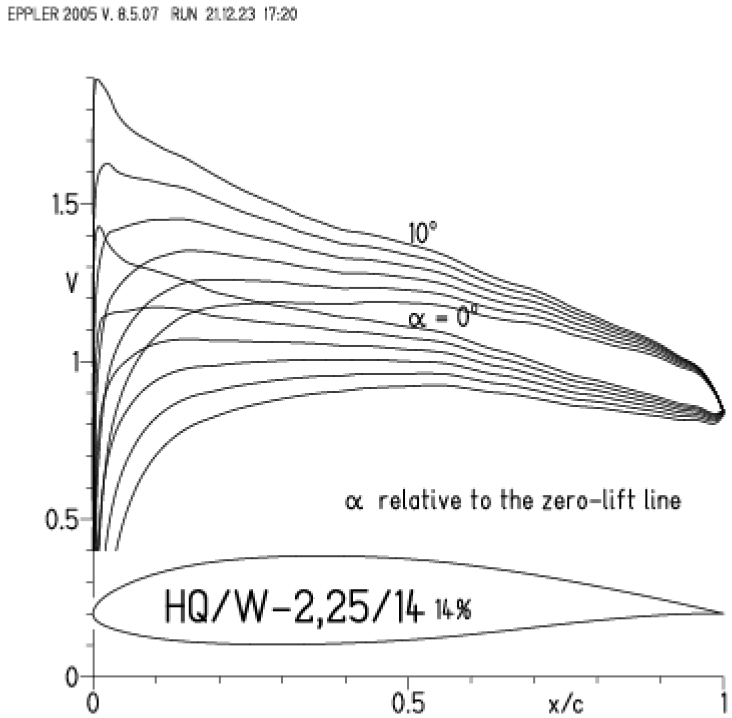


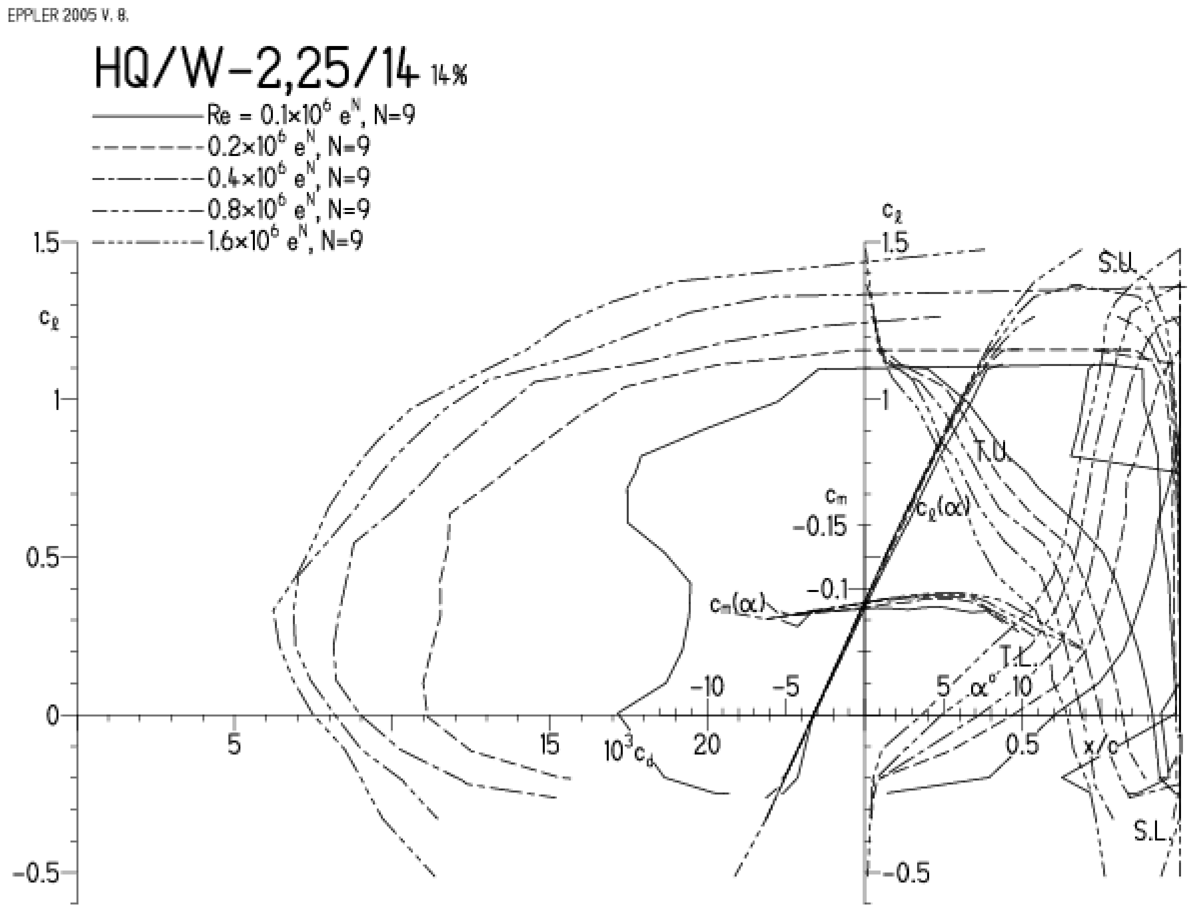
HQ/W-2,25/14, N=11



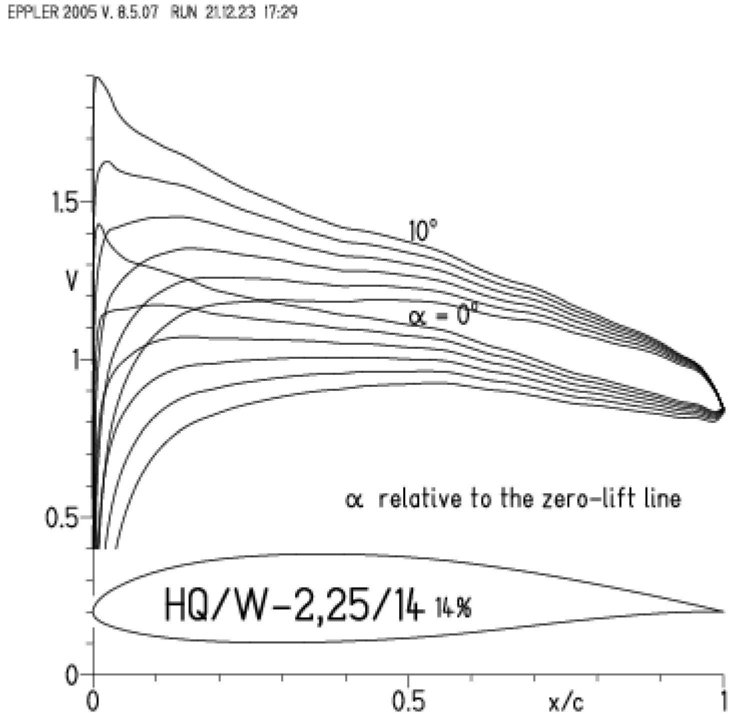


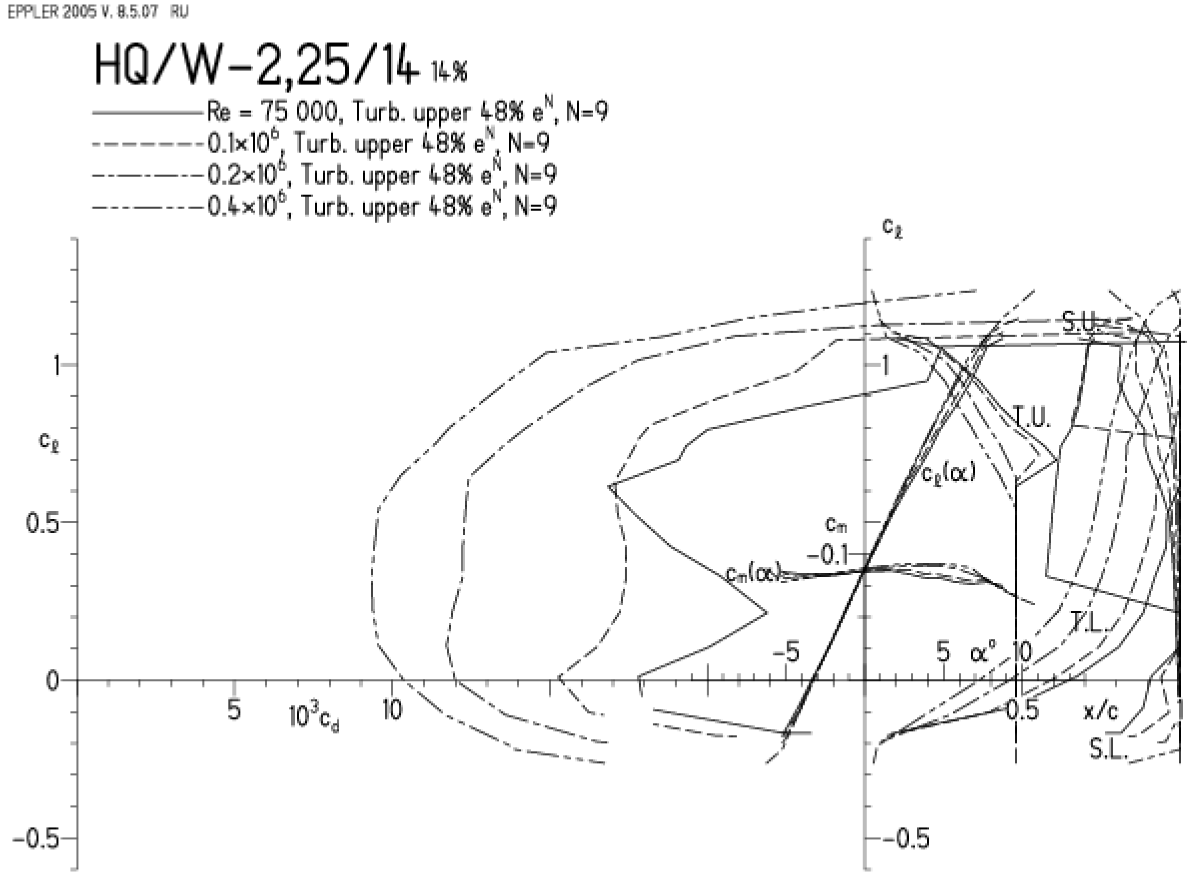
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_l
1.5
1
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−10
−5
5
α°
10
−0.5
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

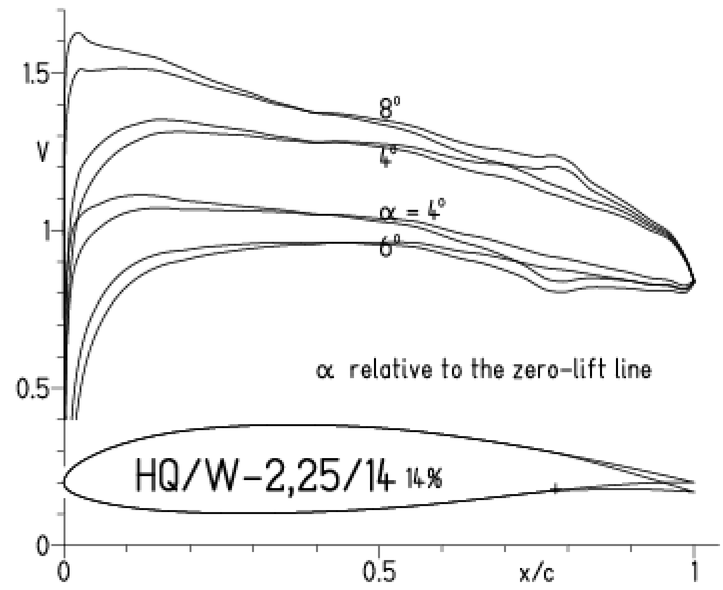
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



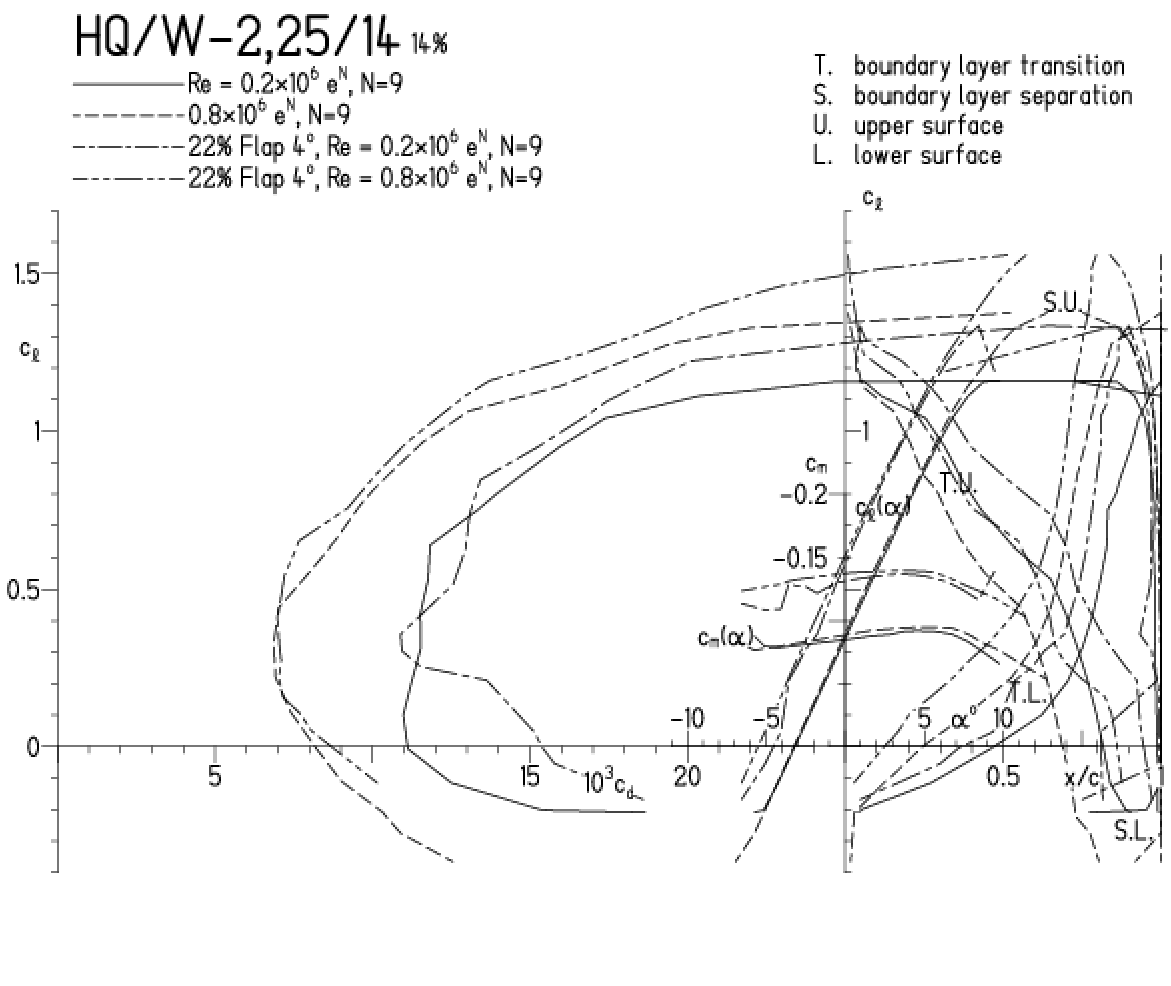


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

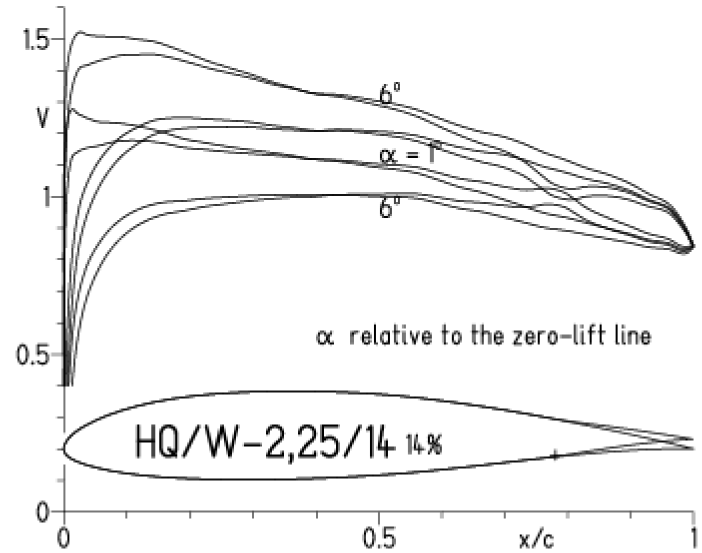


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

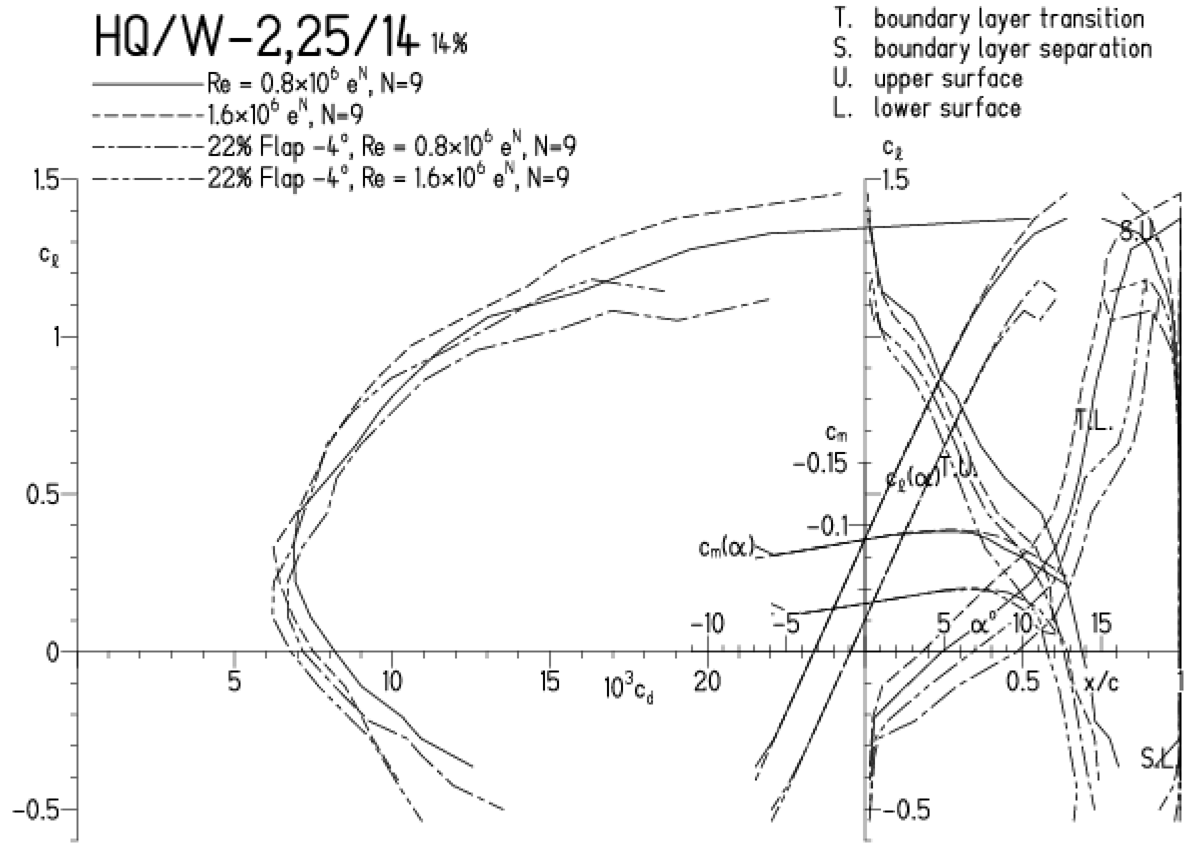


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

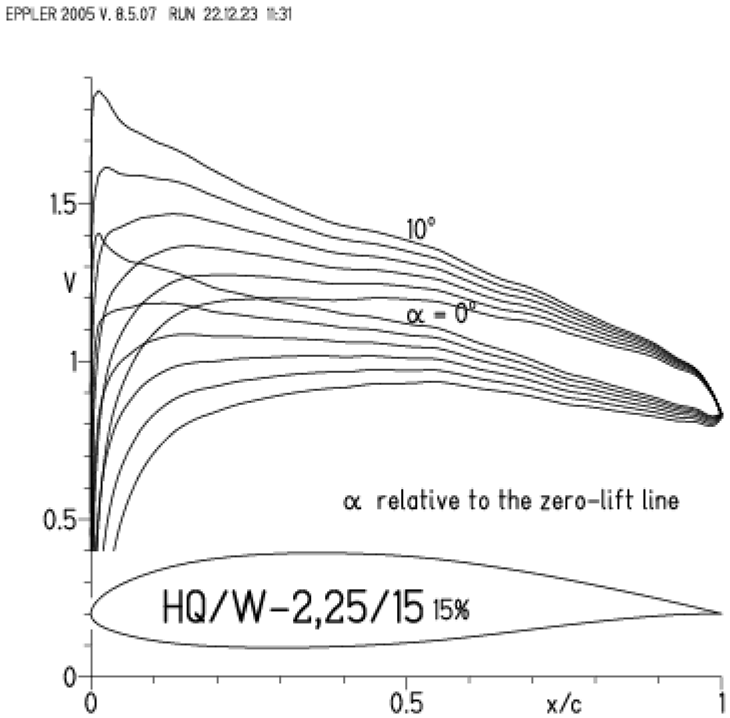
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

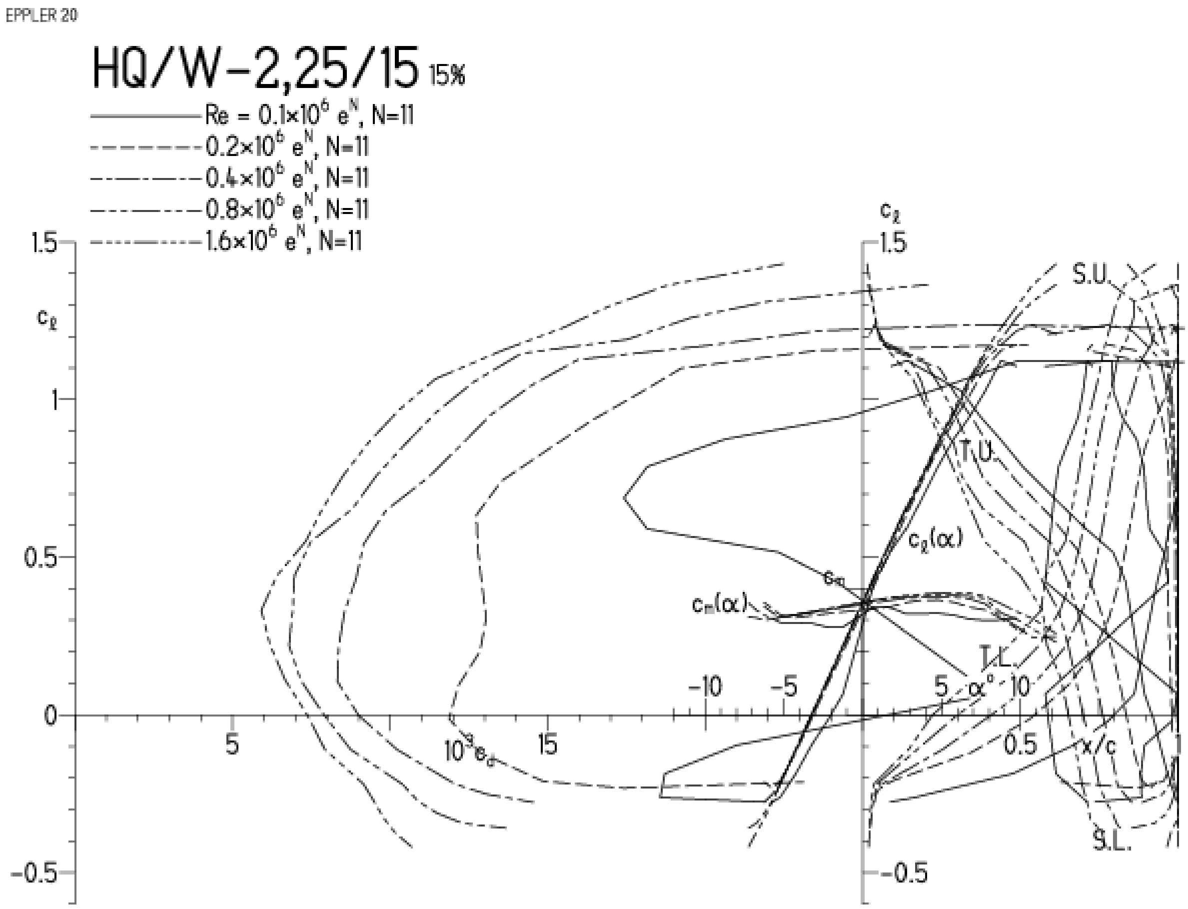


EPPLER 2005 V. 8.5.07

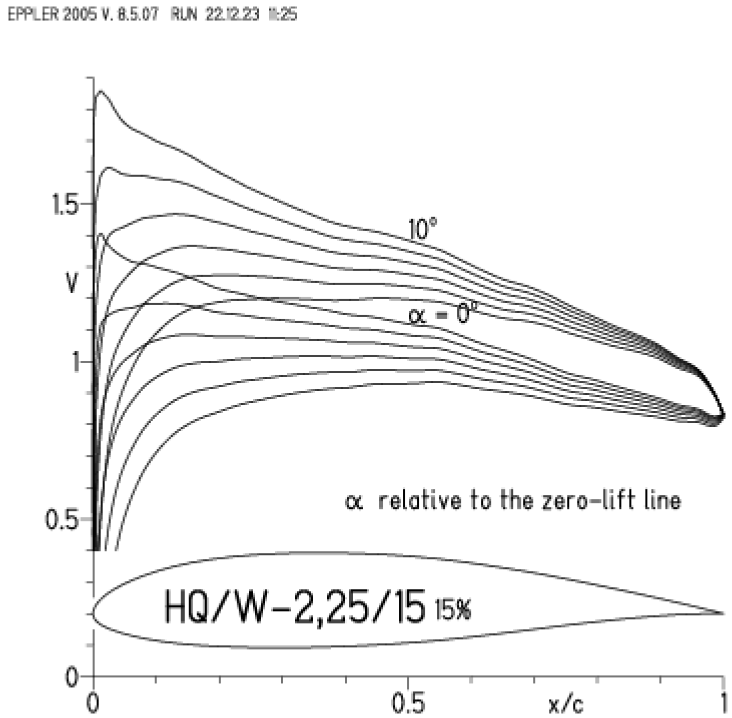


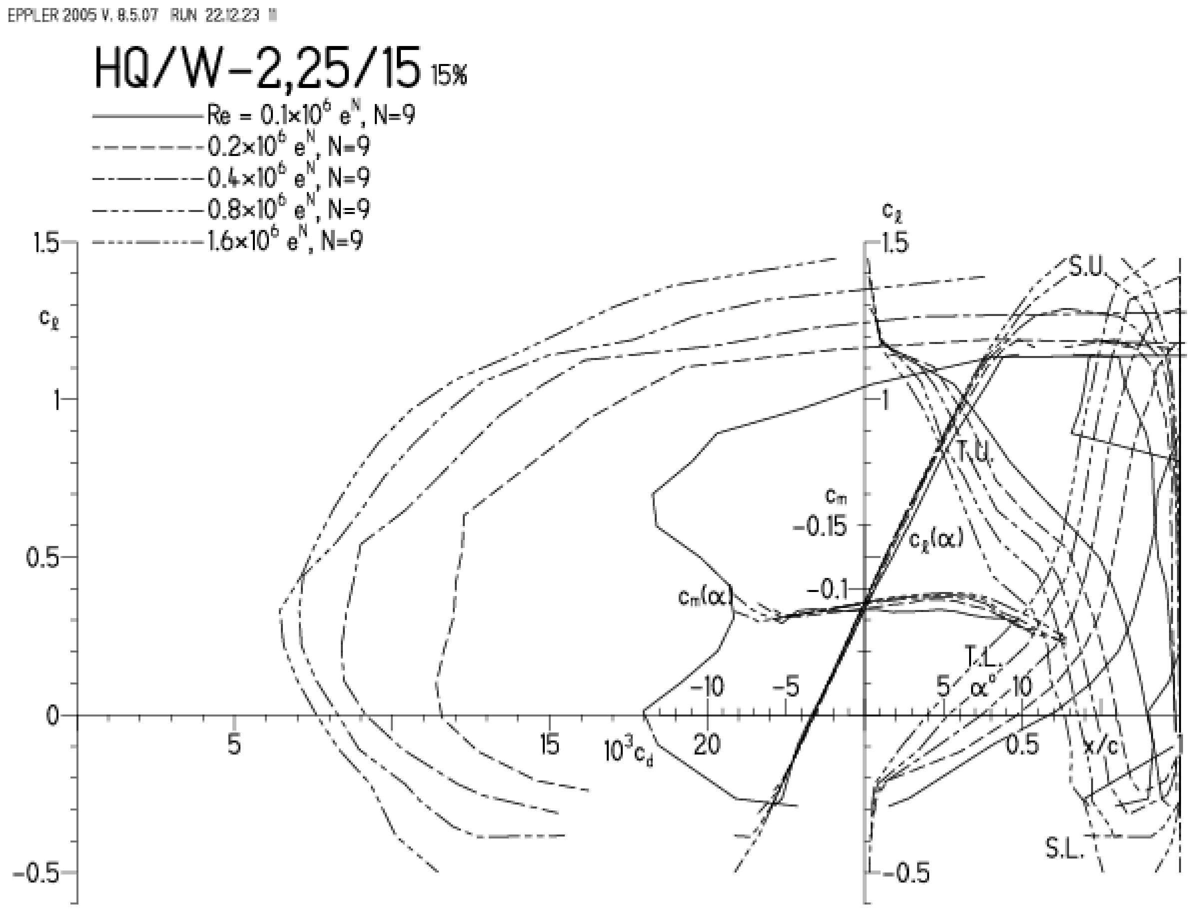
HQ/W-2,25/15, N=11



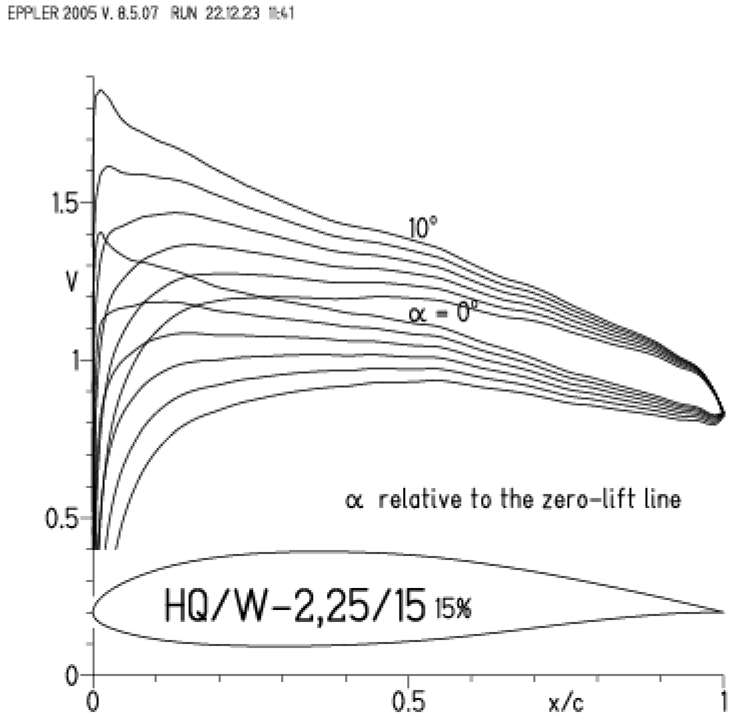


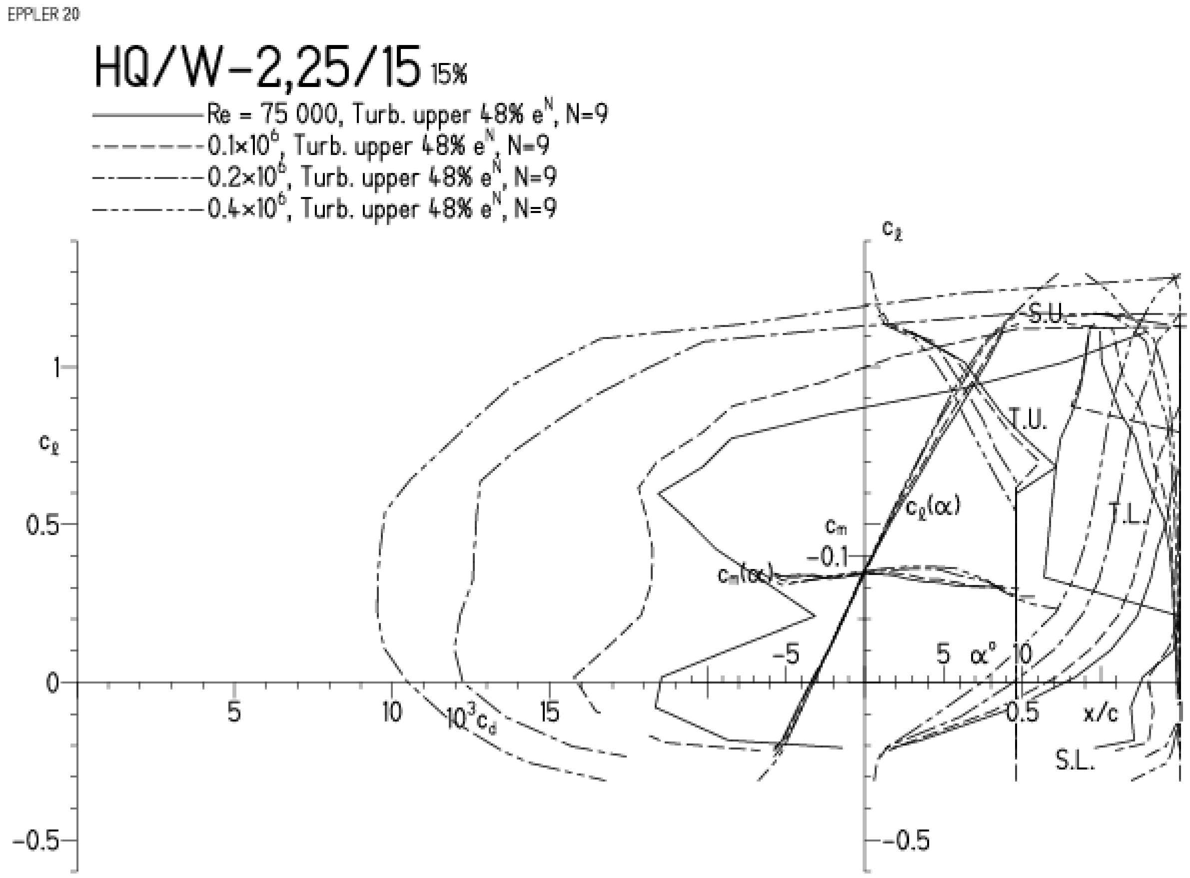
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



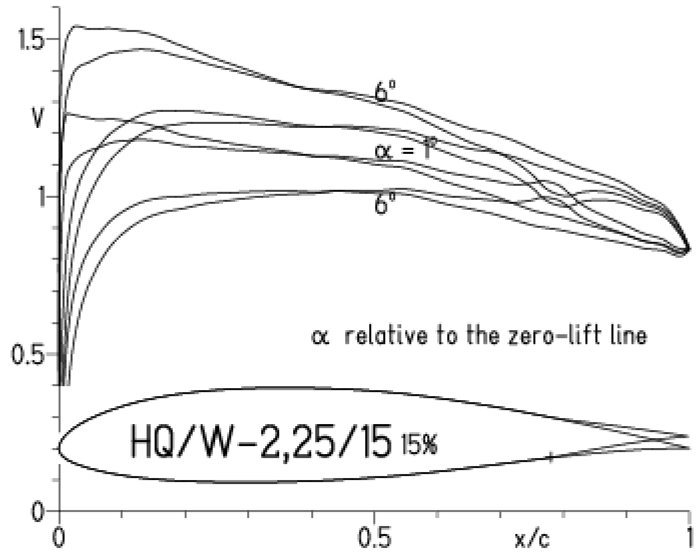


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

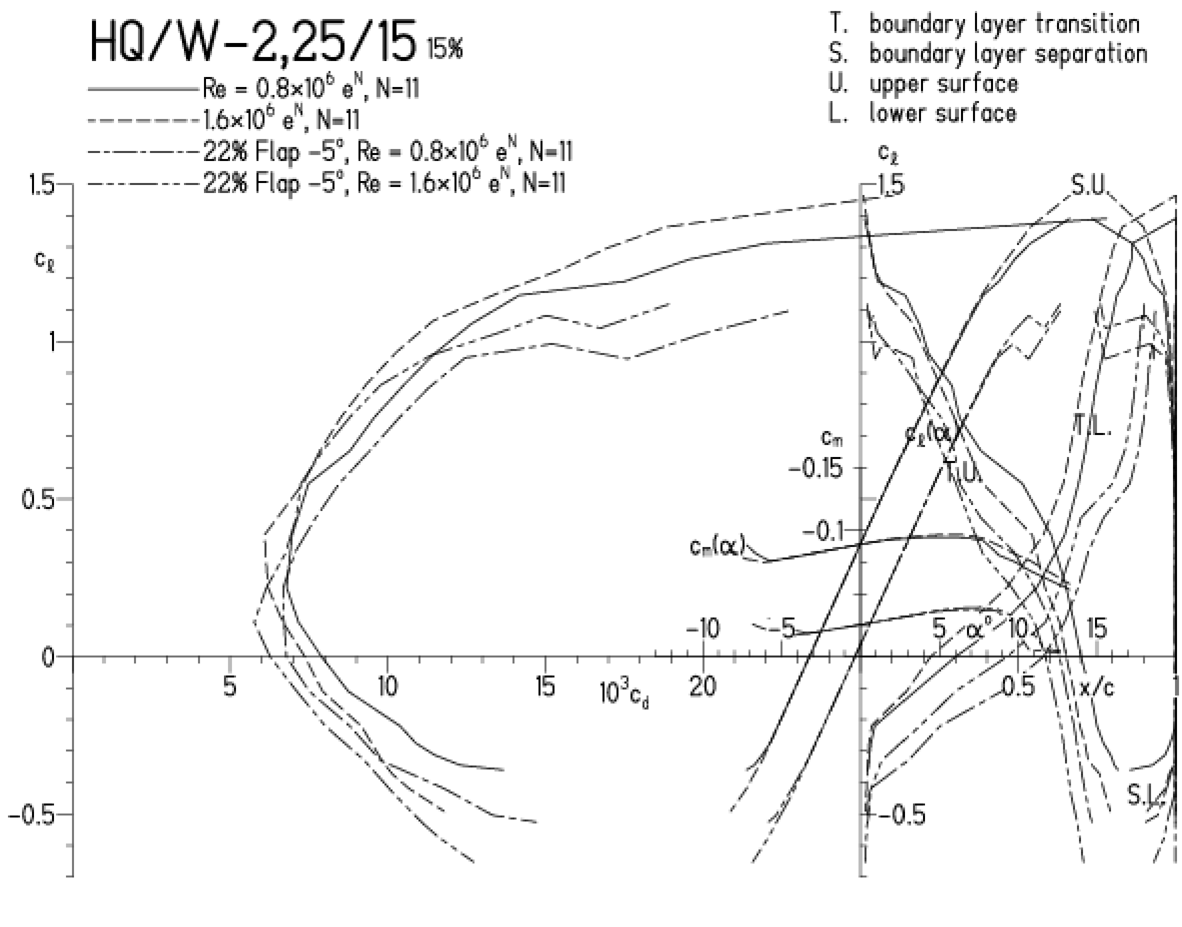
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

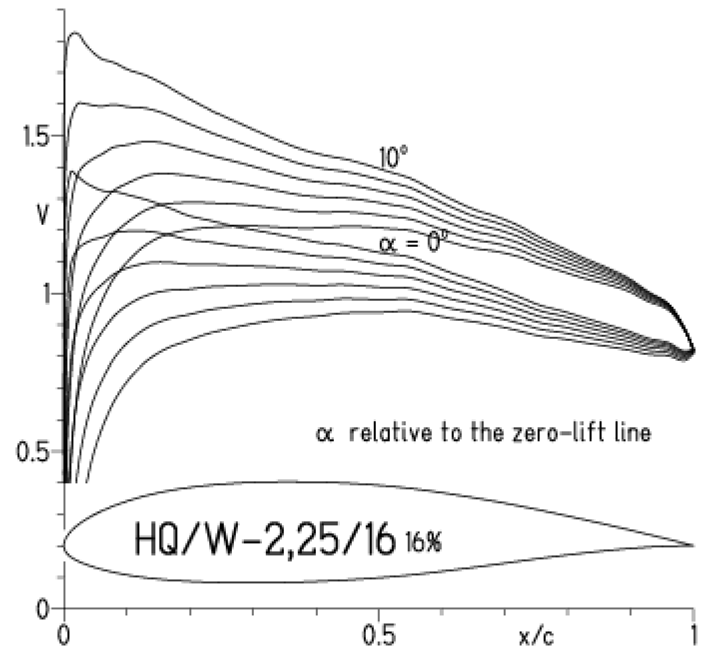


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

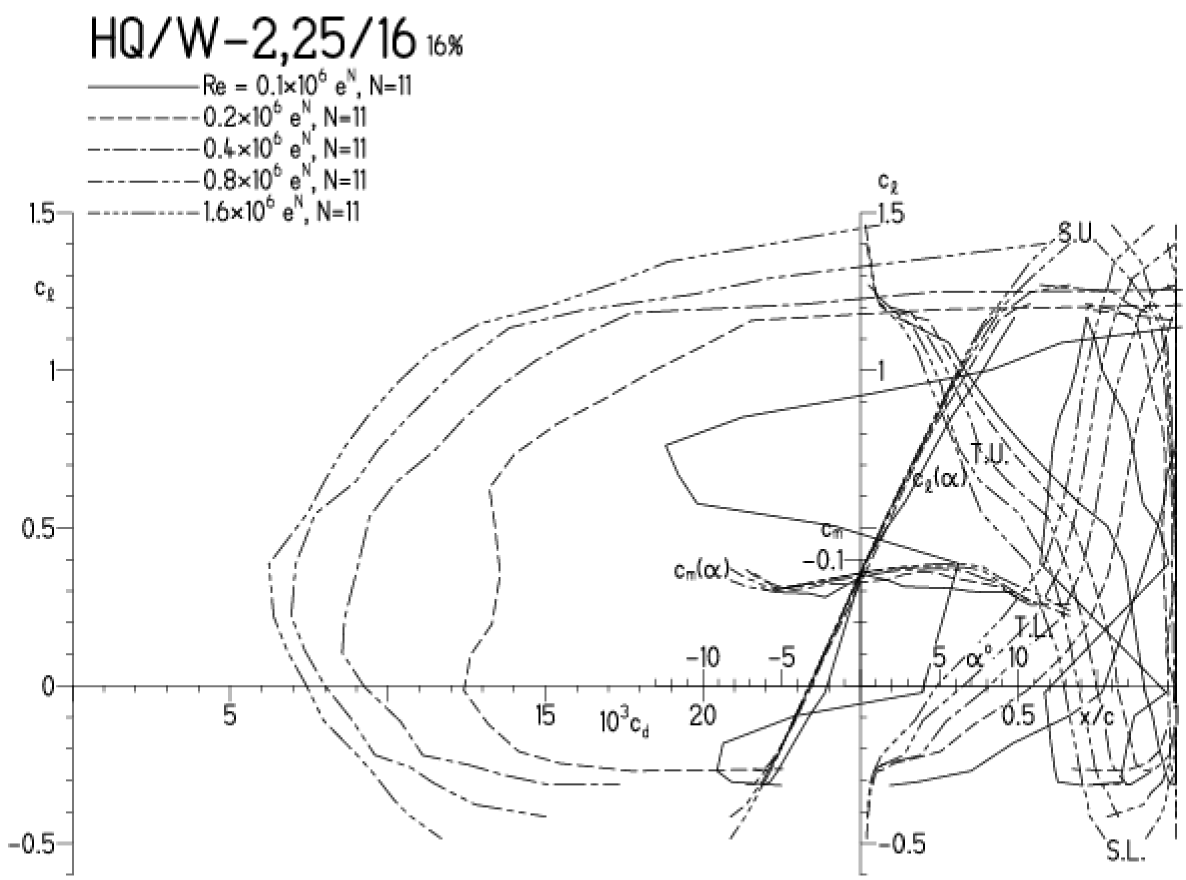


<u>HQ/W-2,25/16</u>, N=11

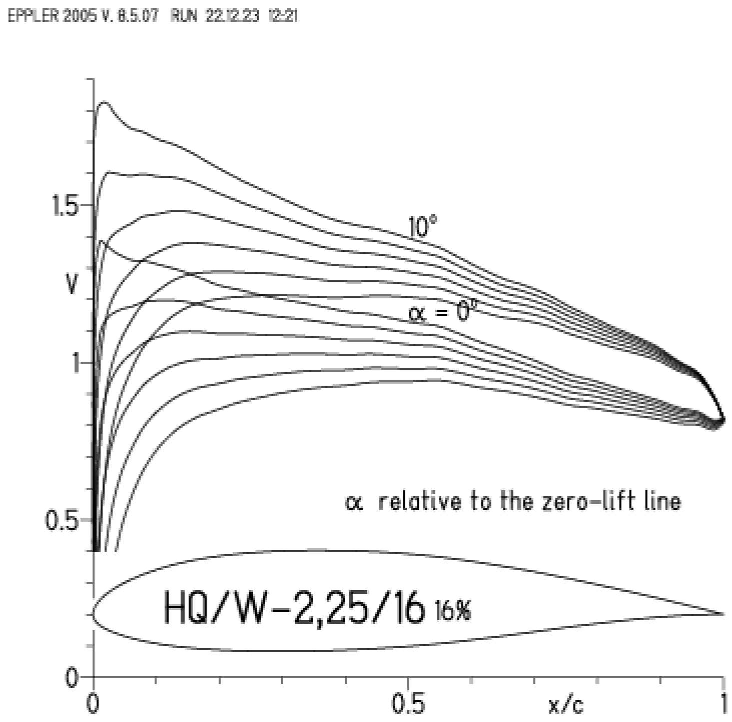
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

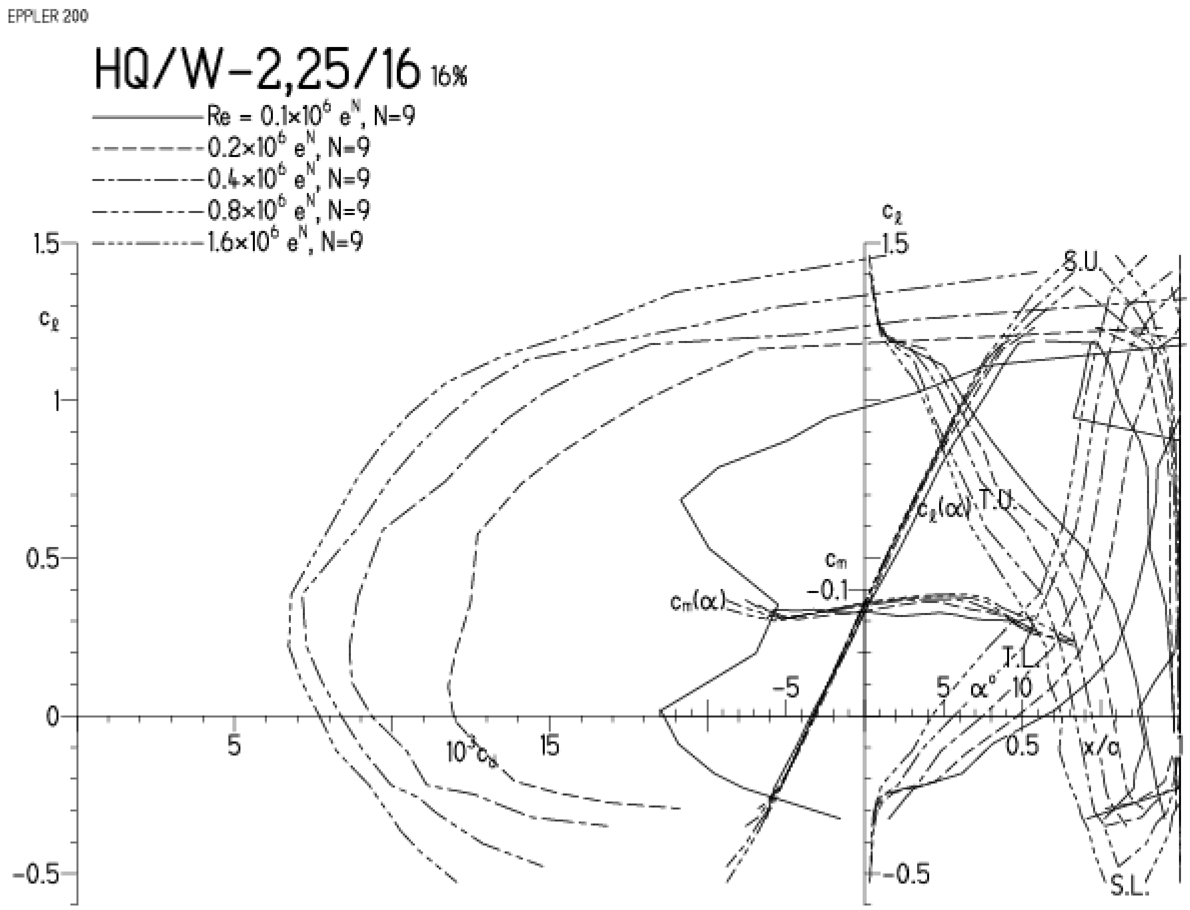


EPPLER 200

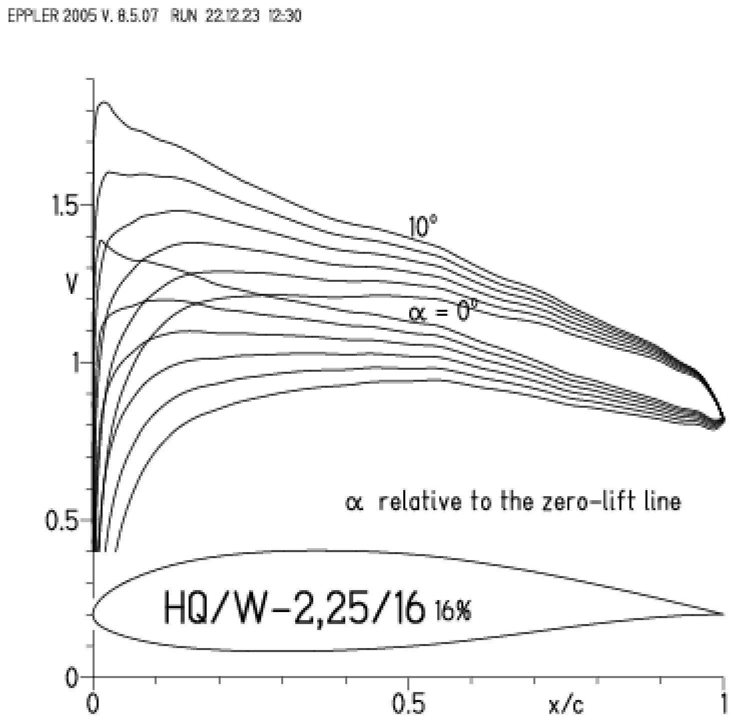


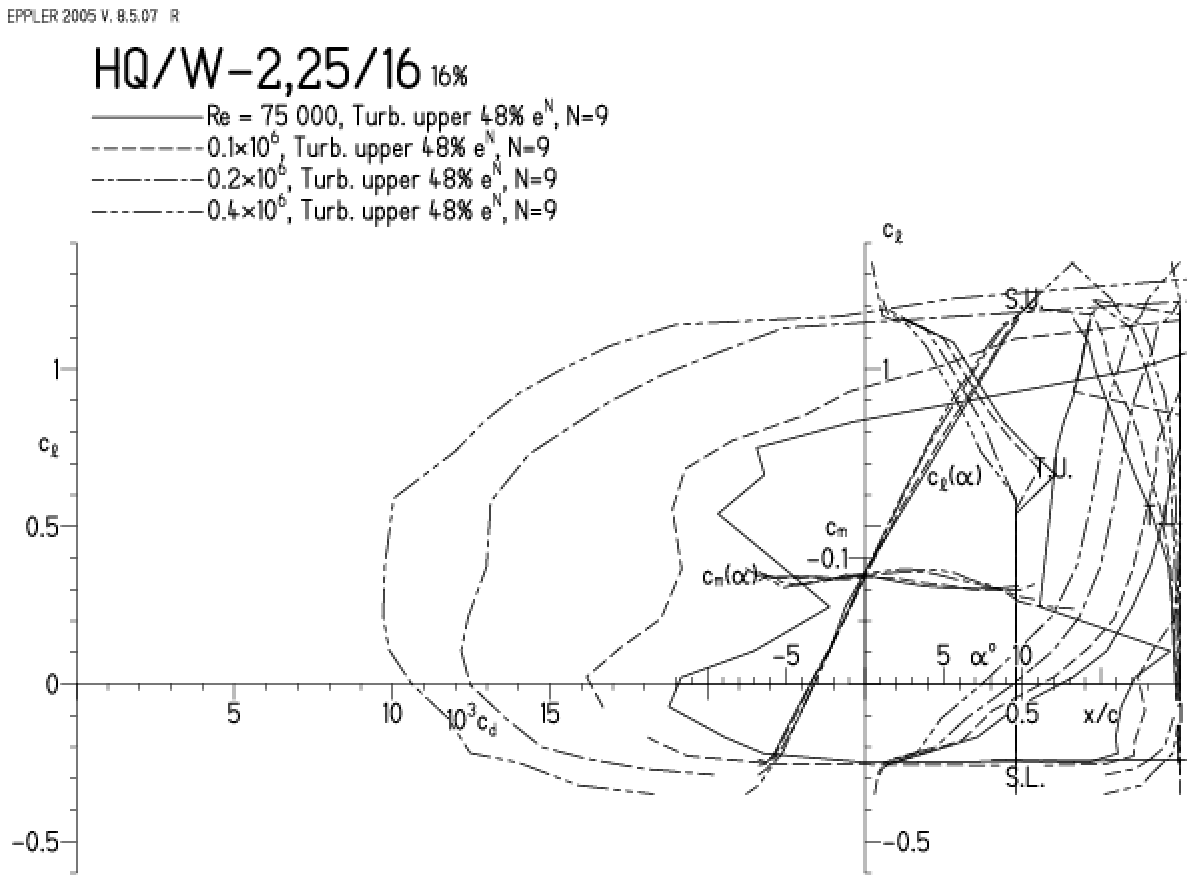
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



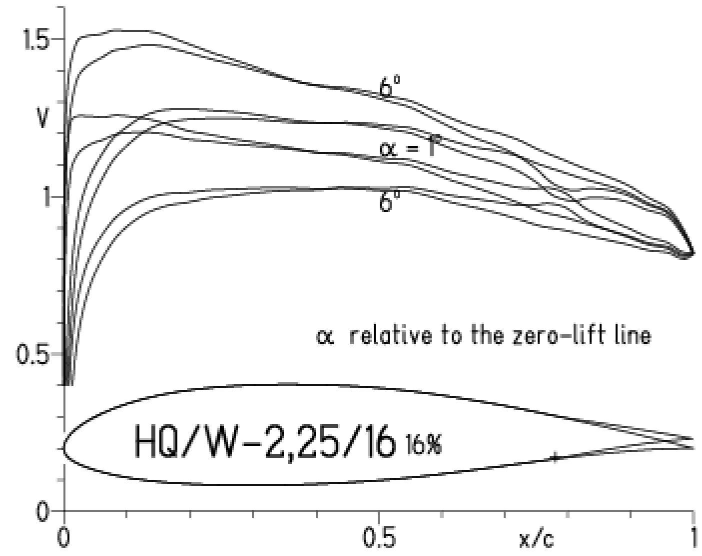


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

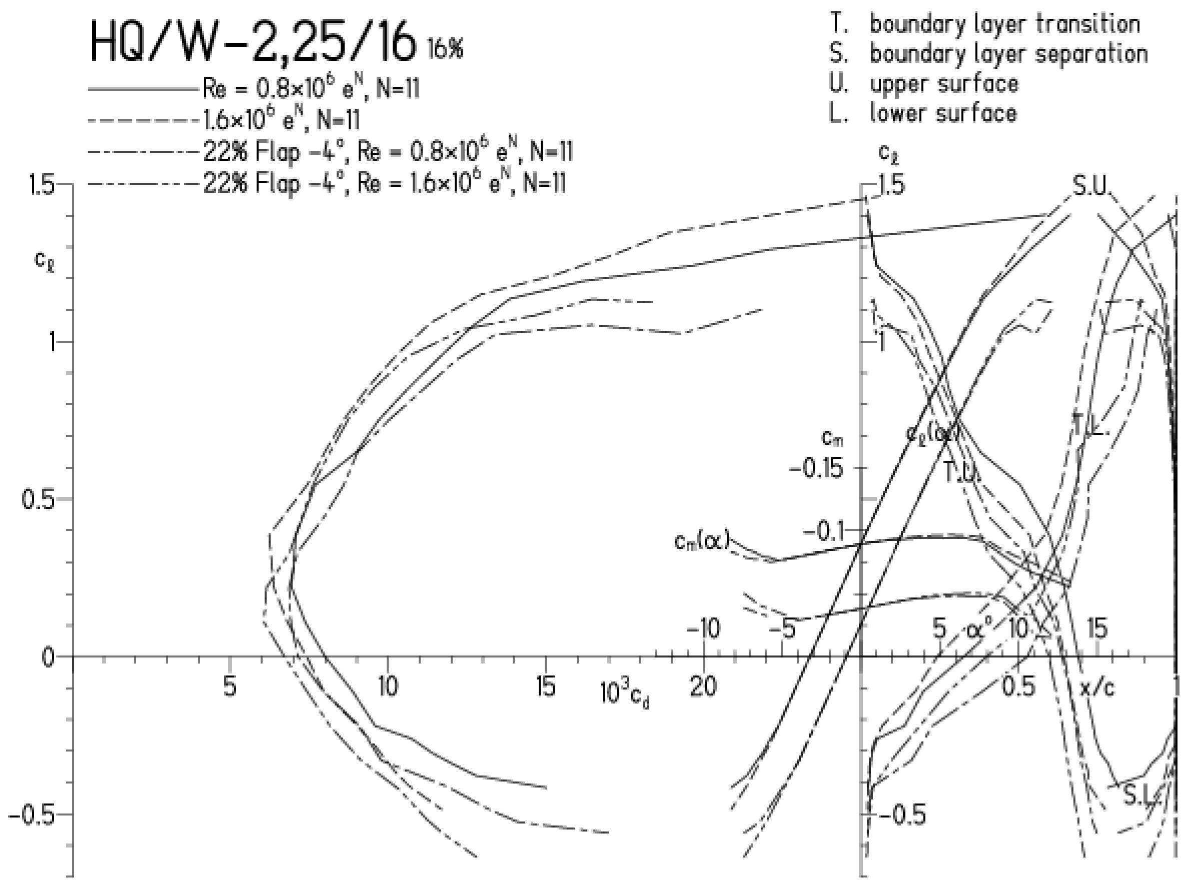
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

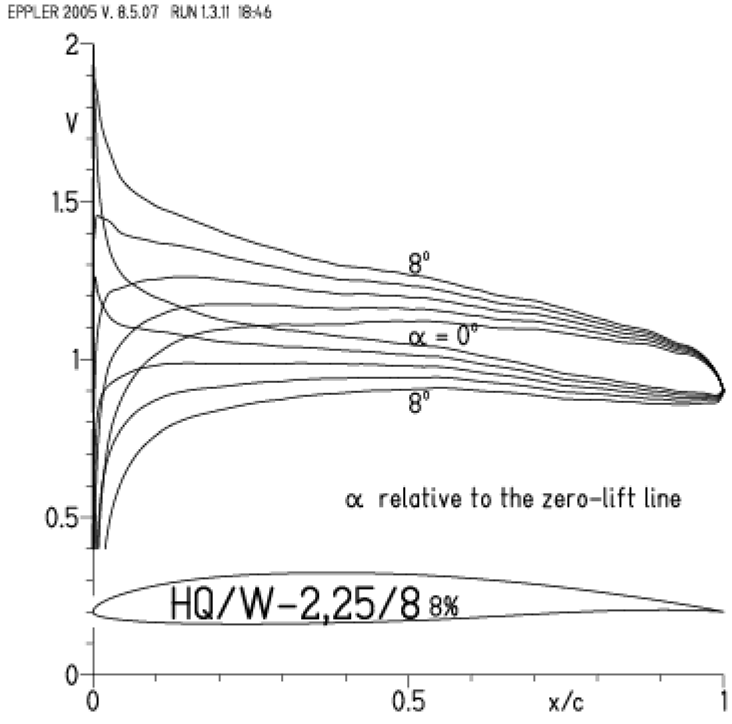
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

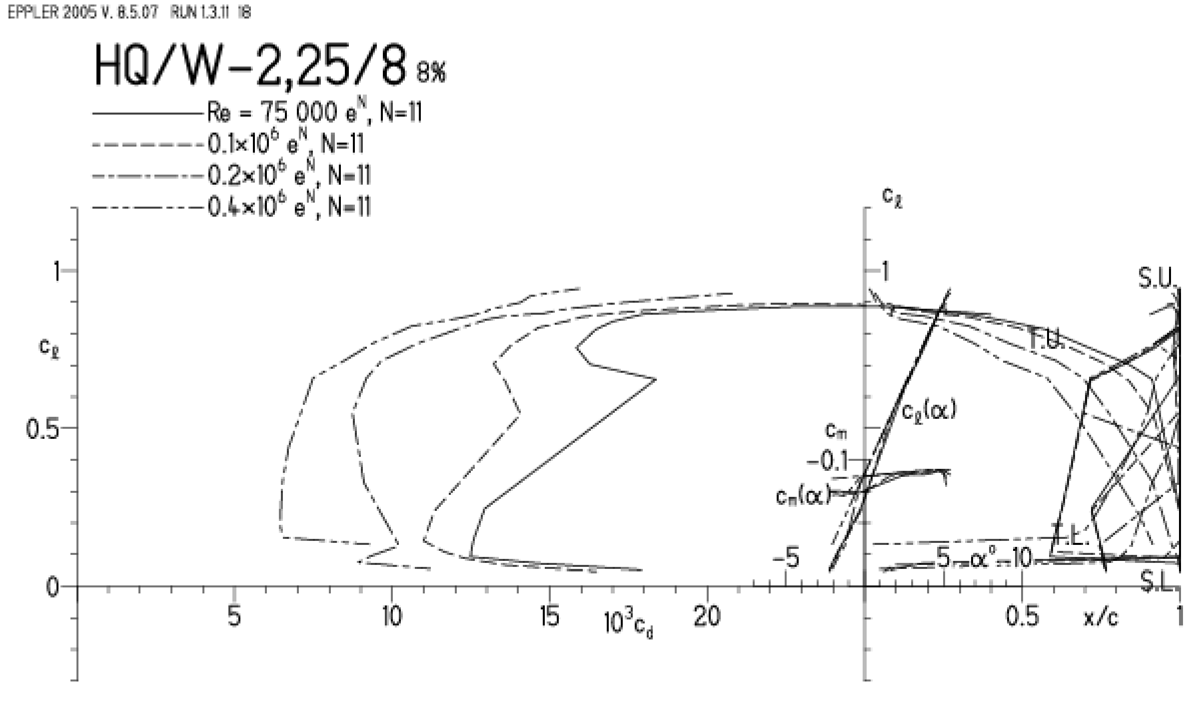


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

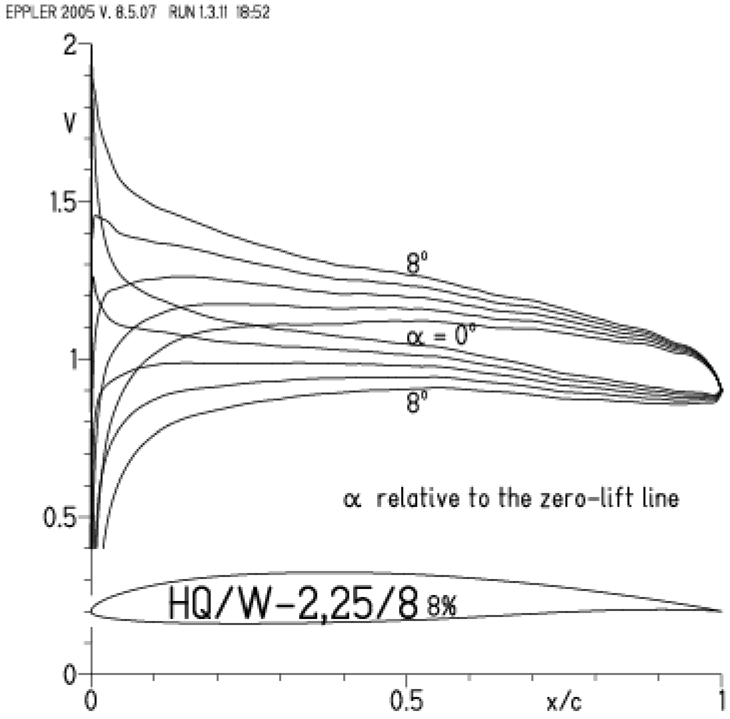


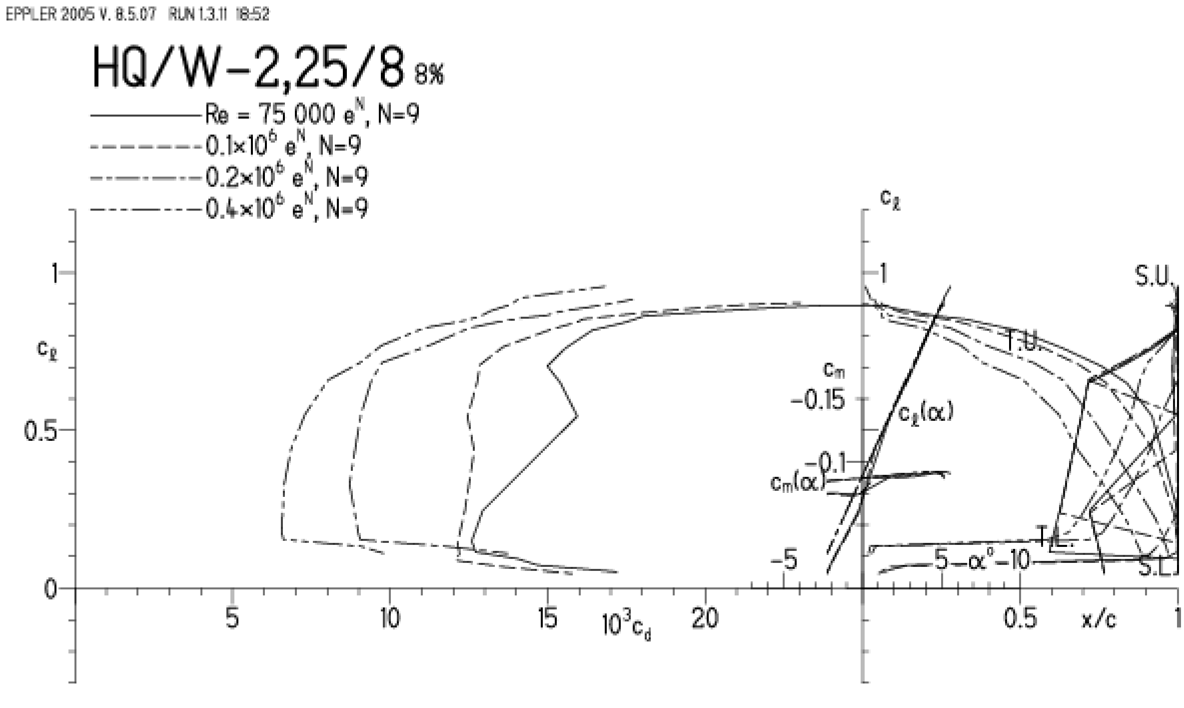
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

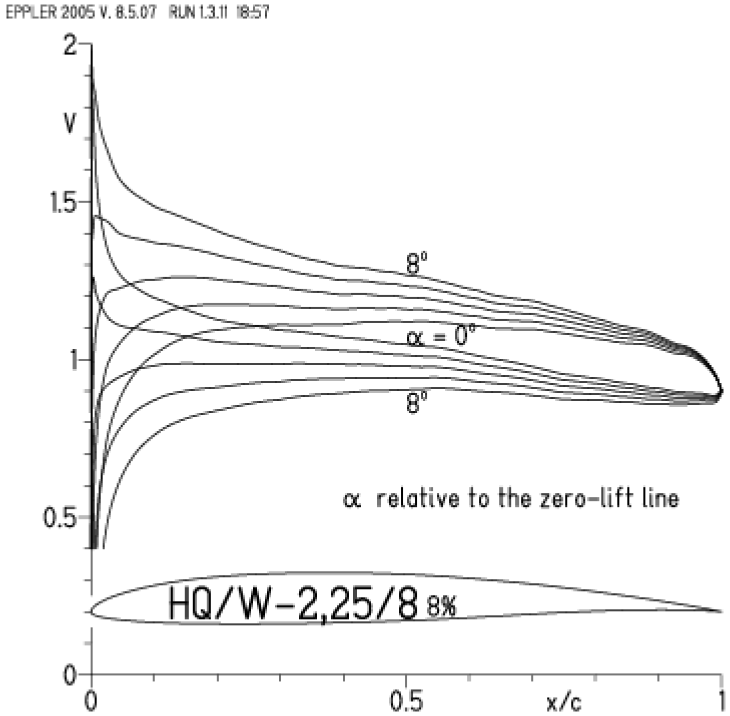

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
−0.1
c_m(α)
−5
5
α°
10
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

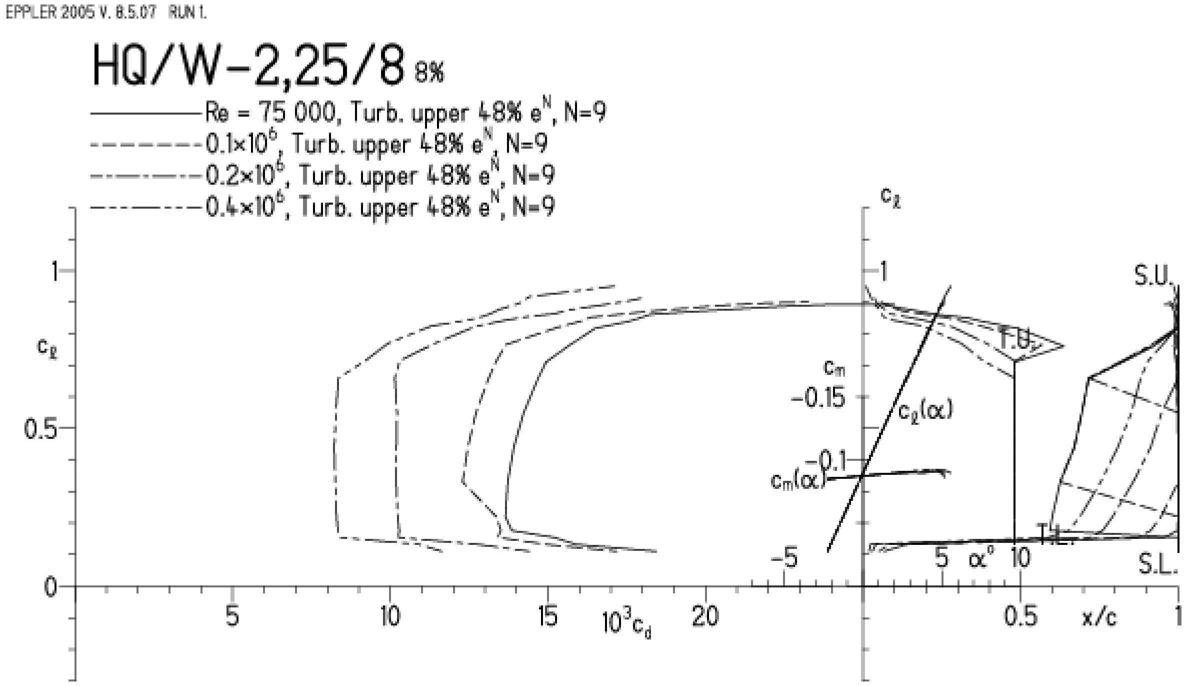
<u>HQ/W-2,25/8</u>, N=9





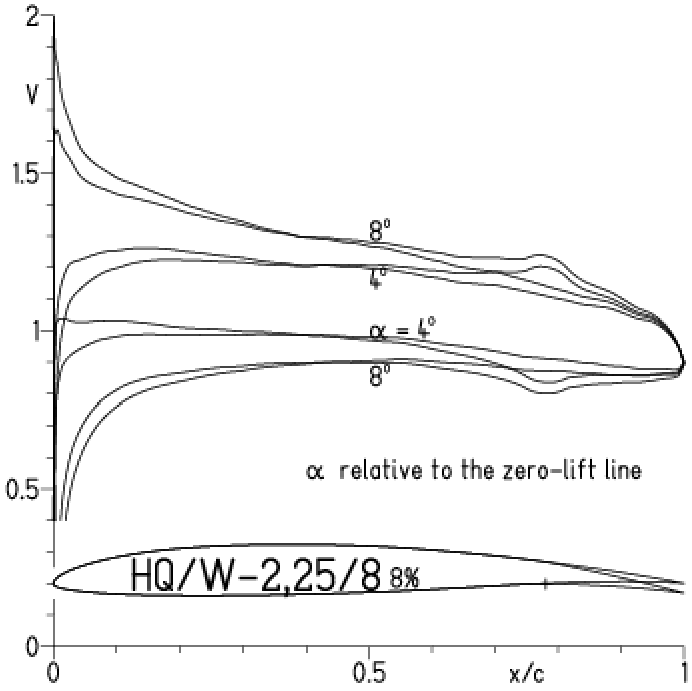
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



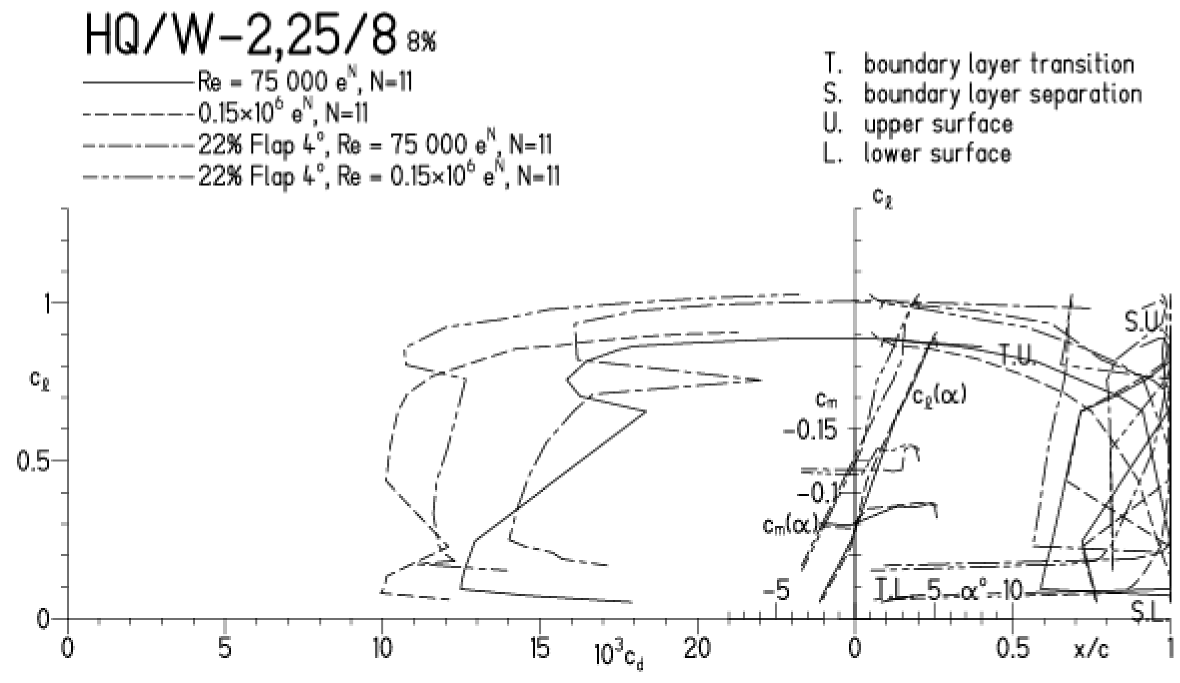


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

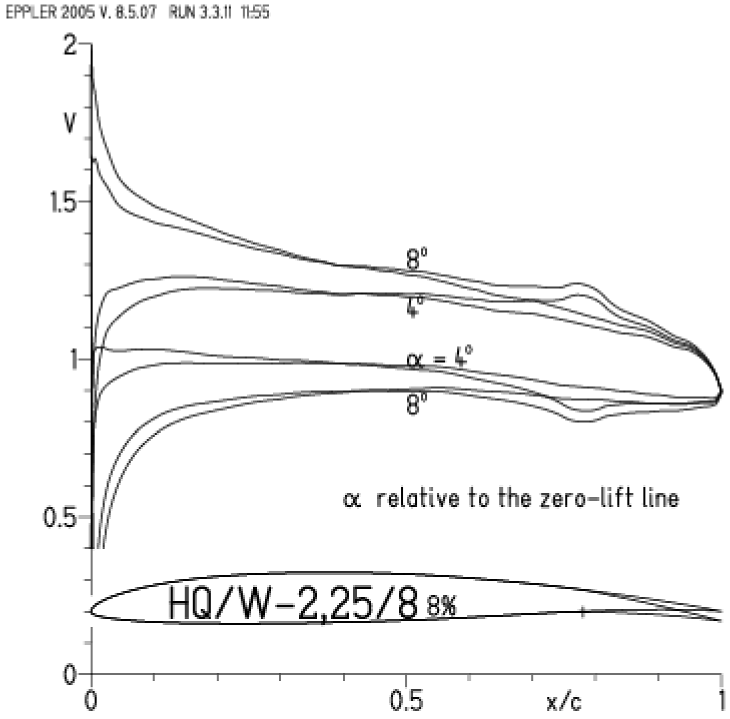
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

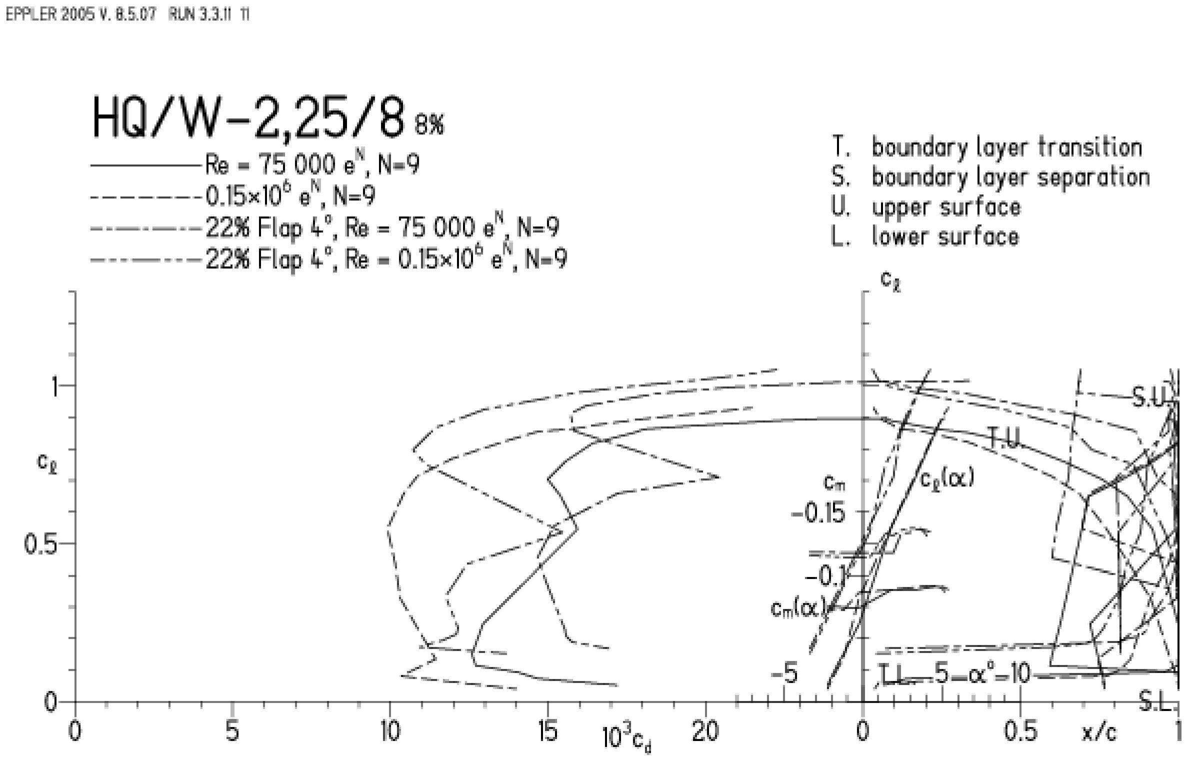


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

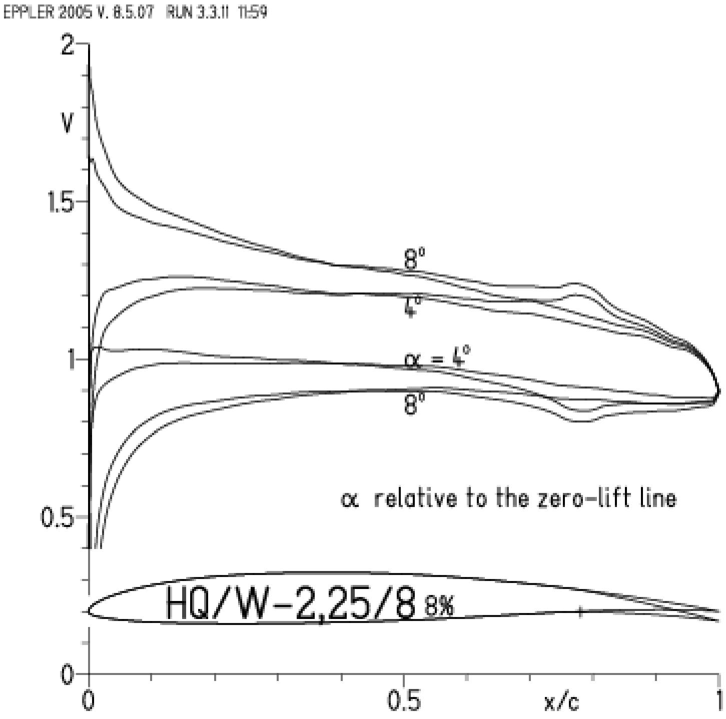


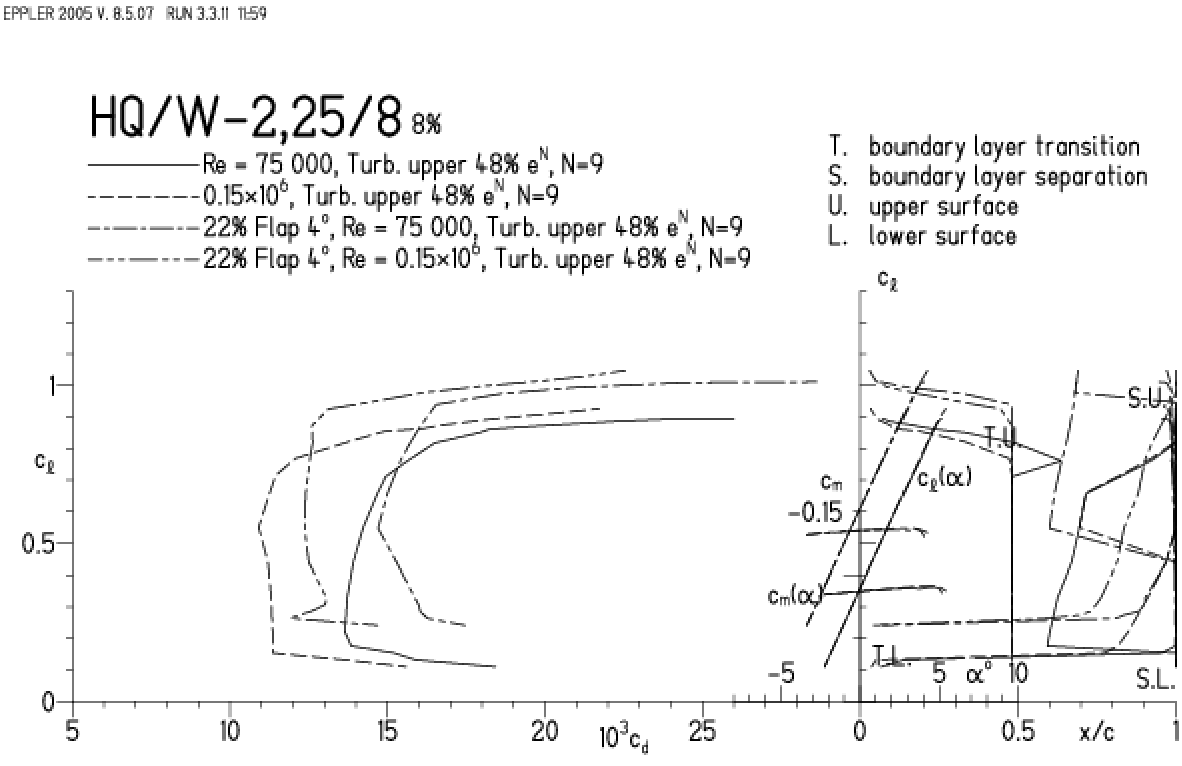
<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag





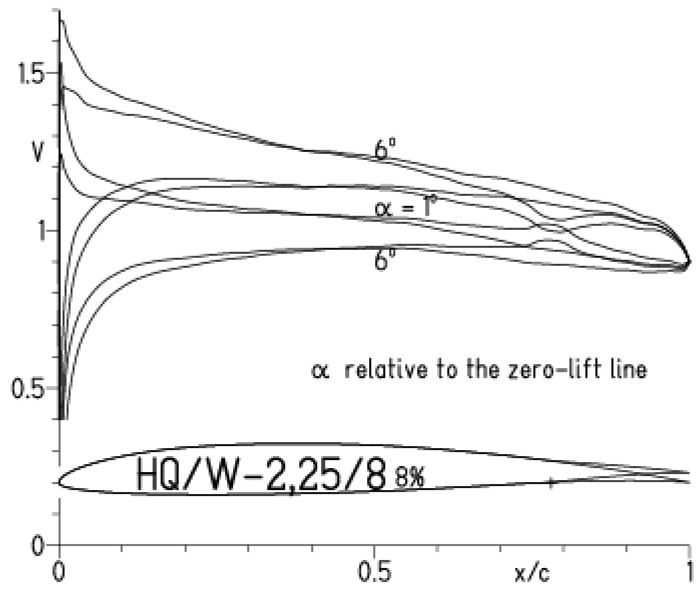
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



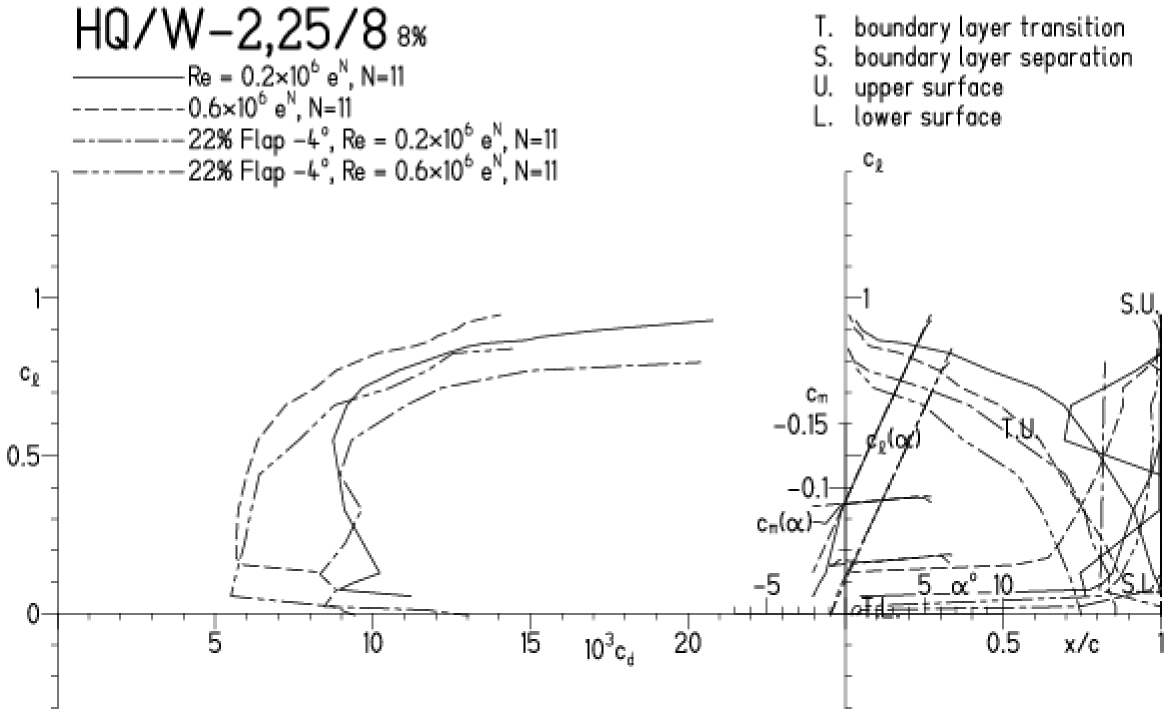


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

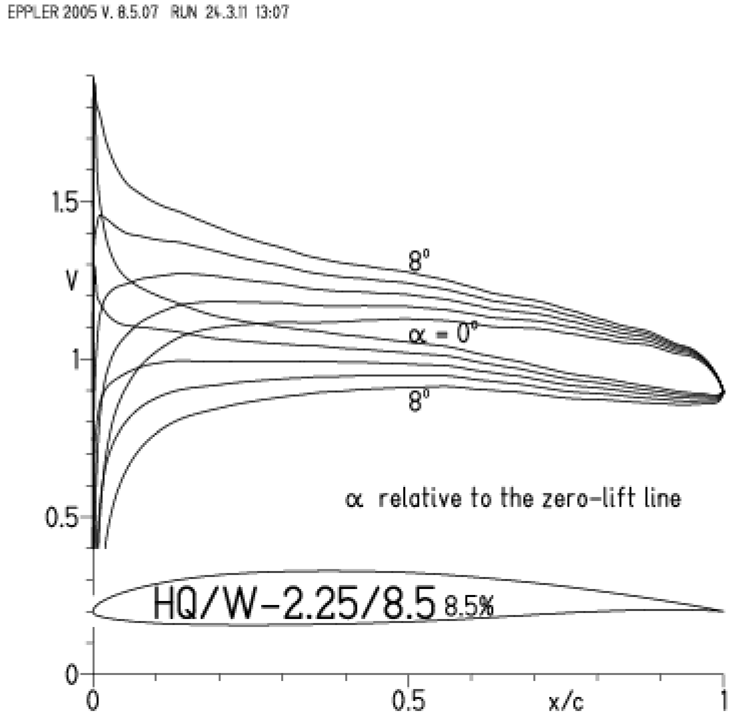
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

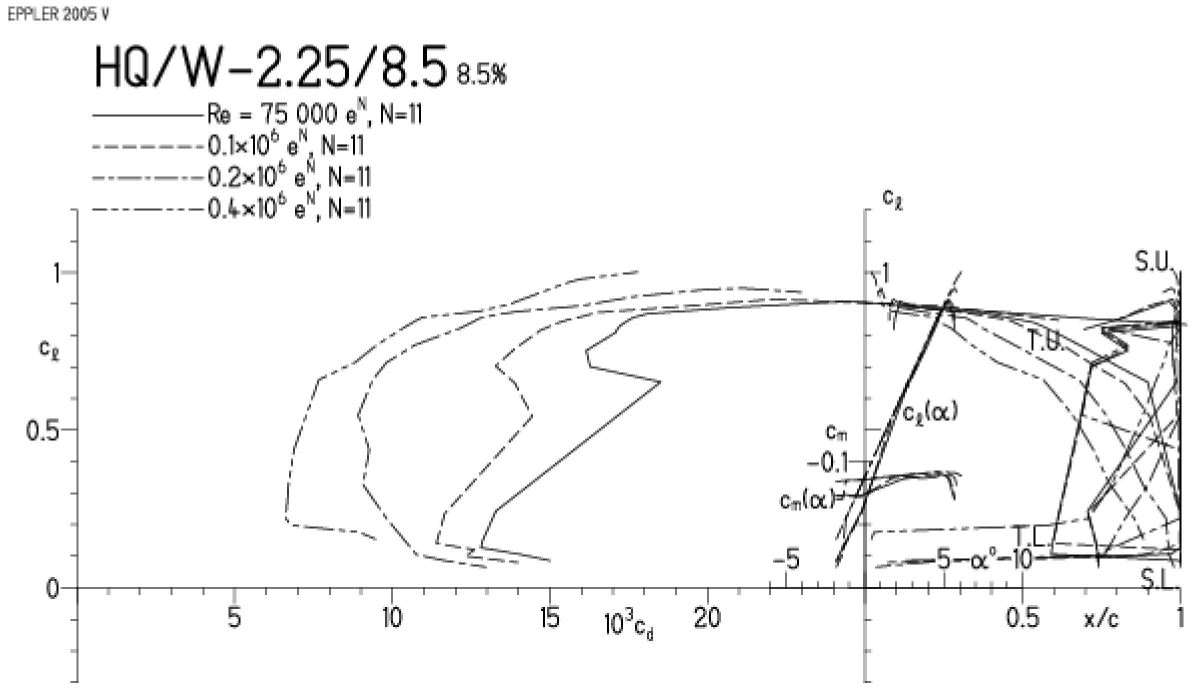


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



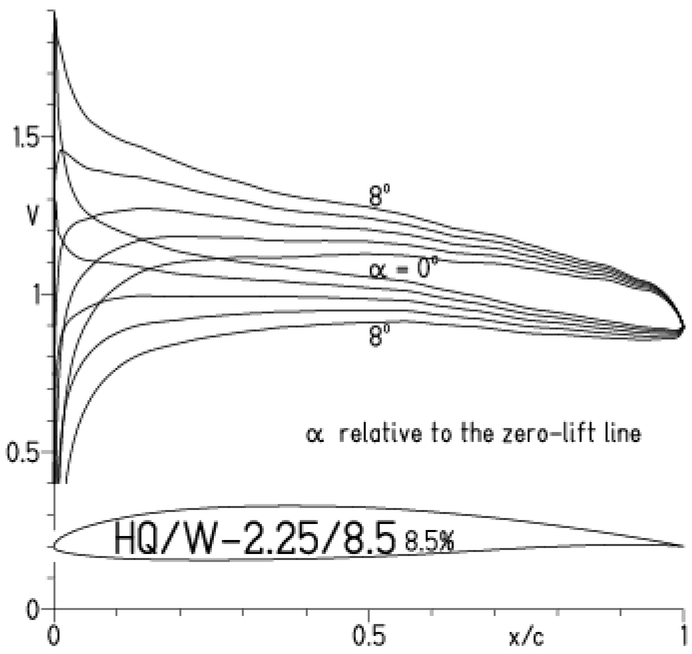
HQ/W-2,25/8,5, N=11



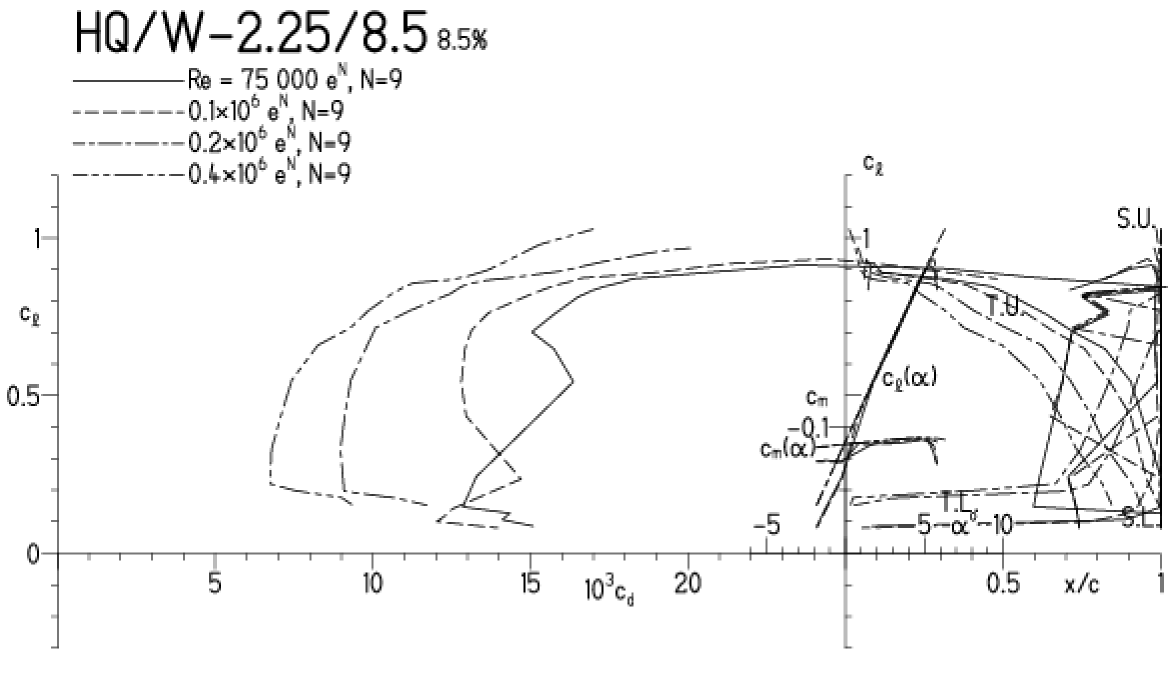


HQ/W-2,25/8,5, N=9

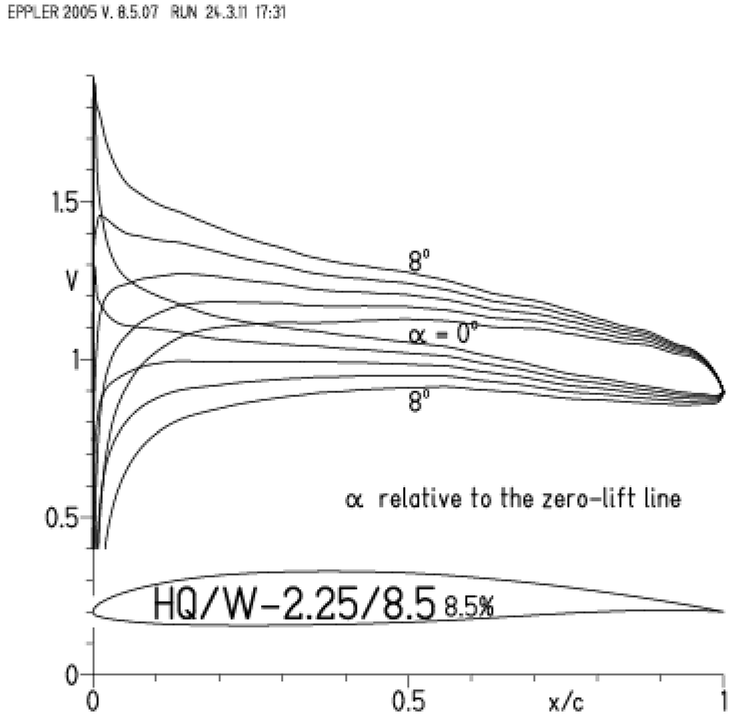
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

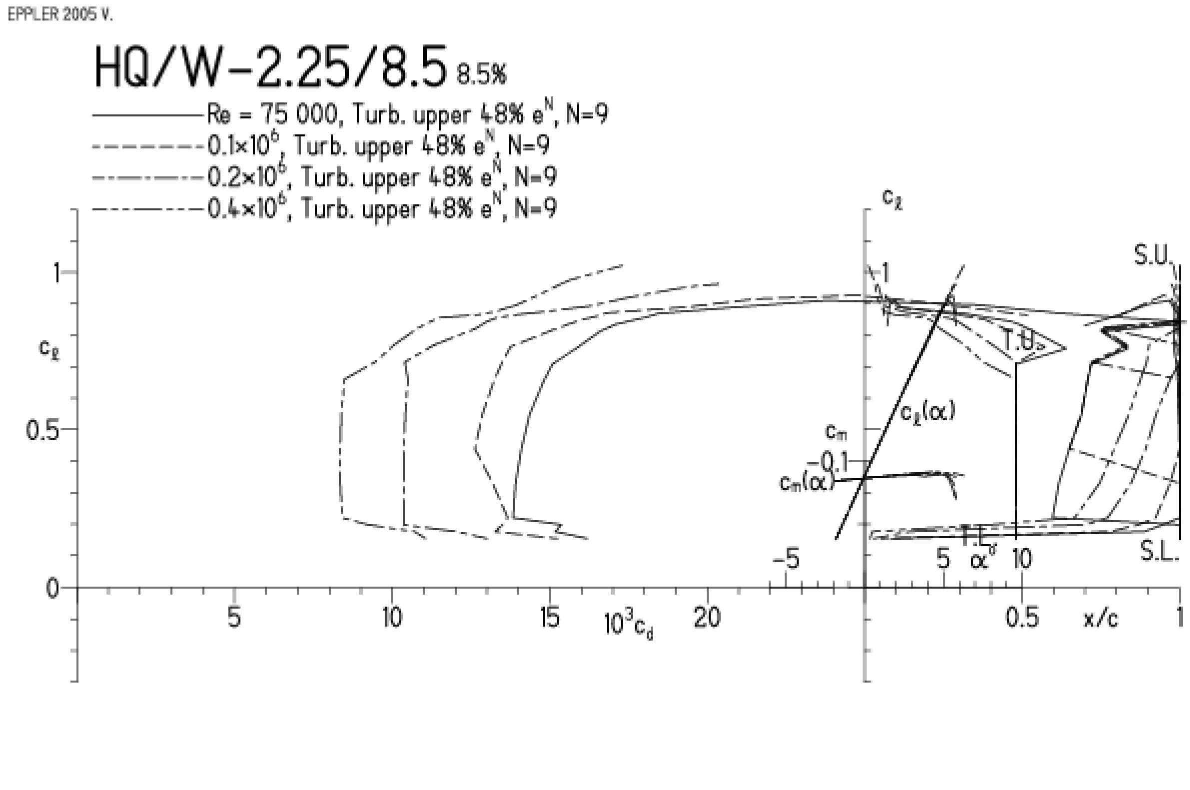


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



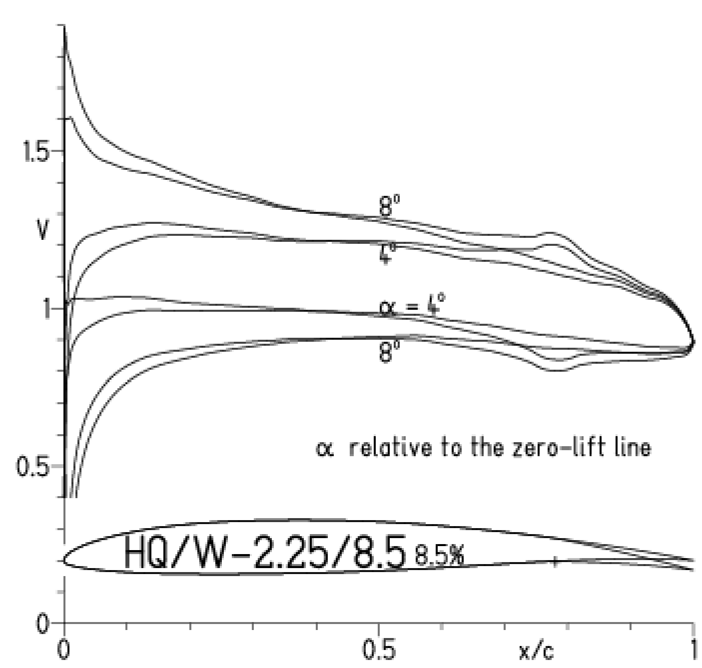
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



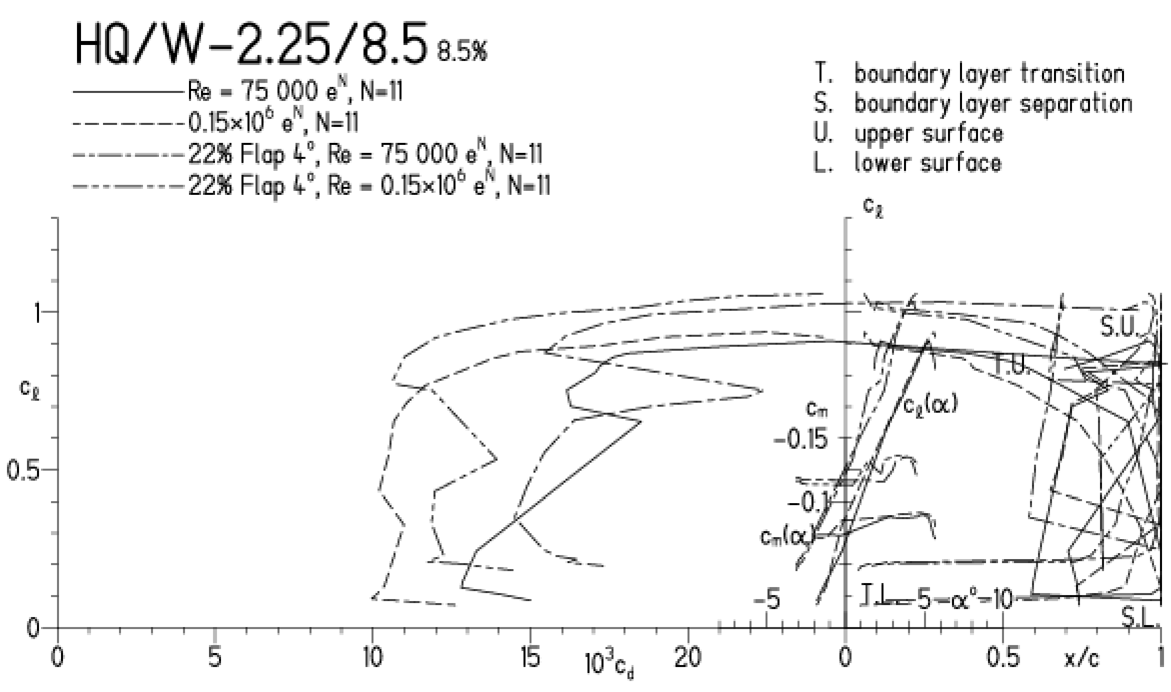


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

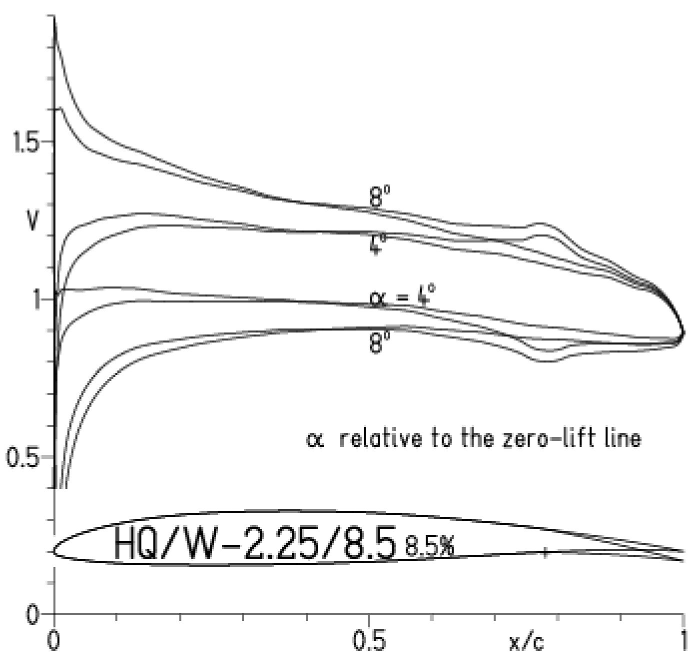


EPPLER 2005 V. 8.5.

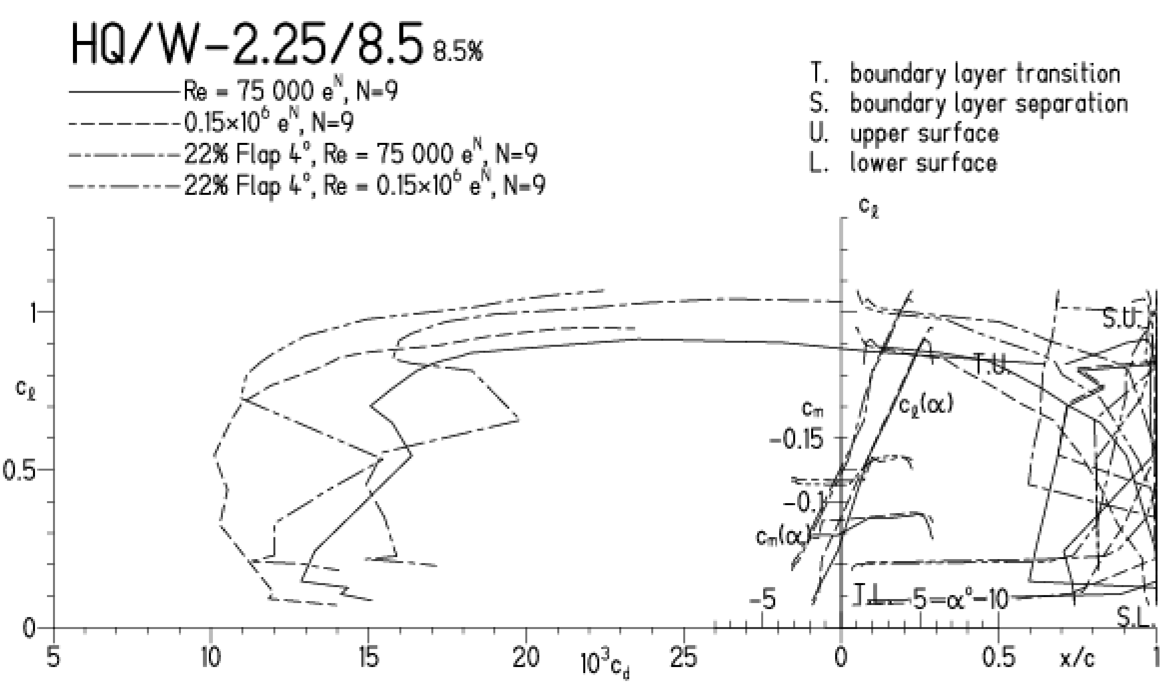


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

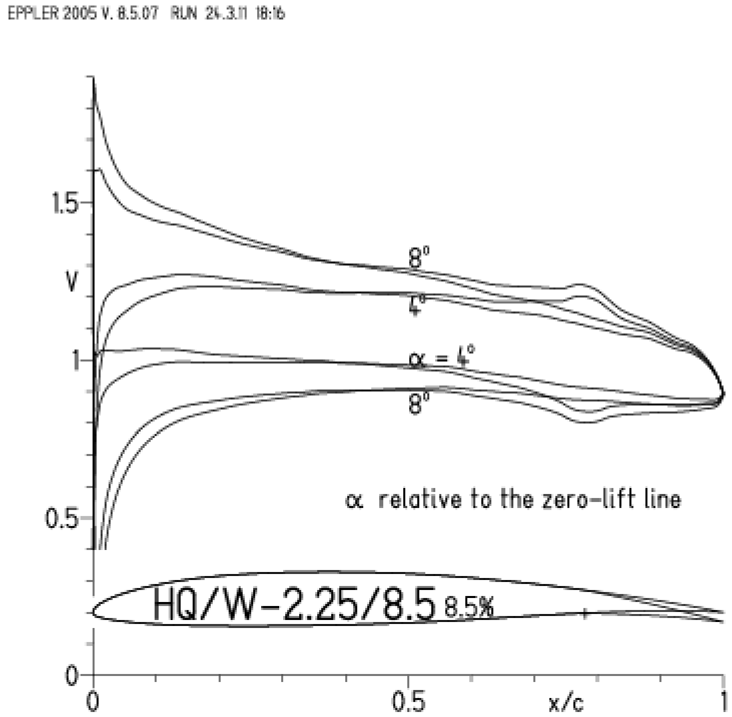
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

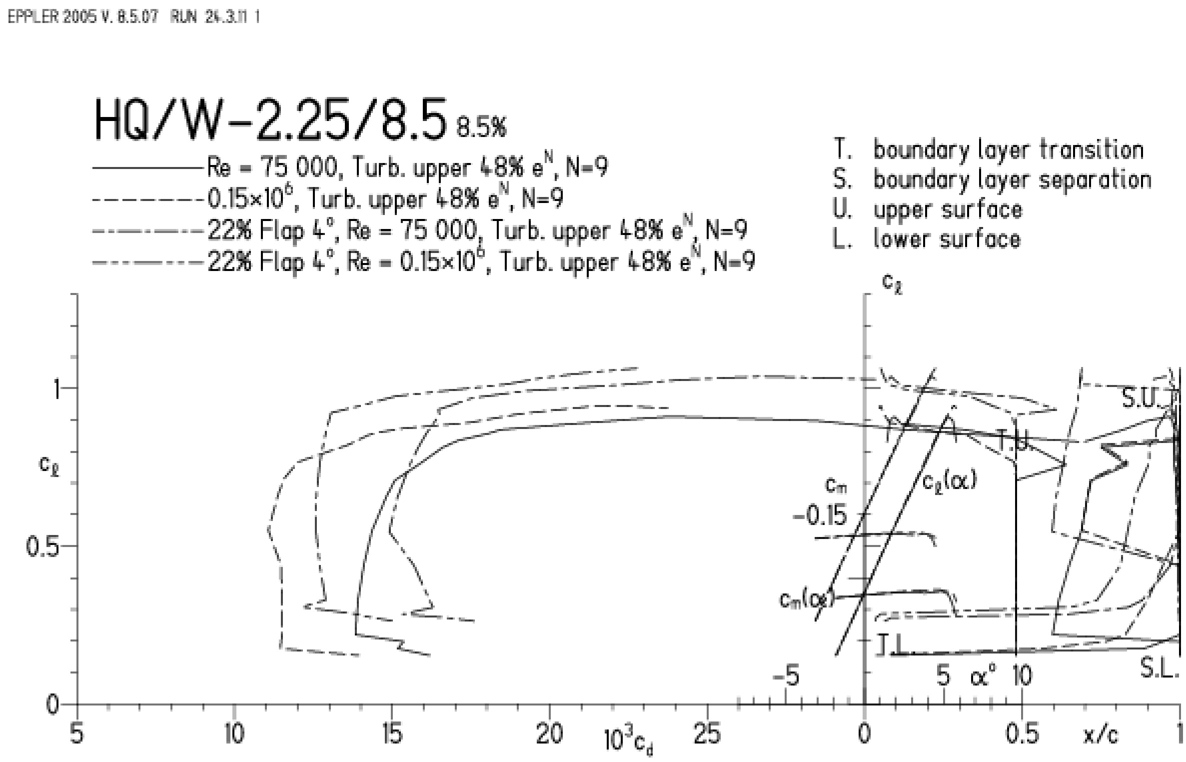


EPPLER 2005 V.



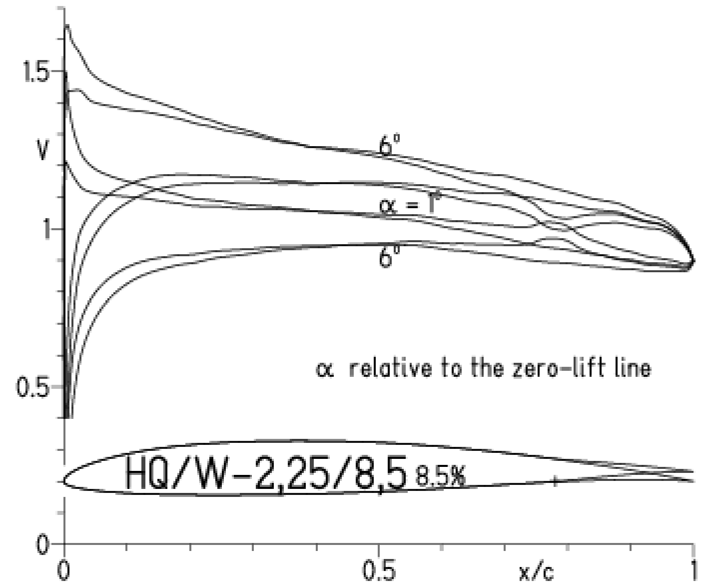
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



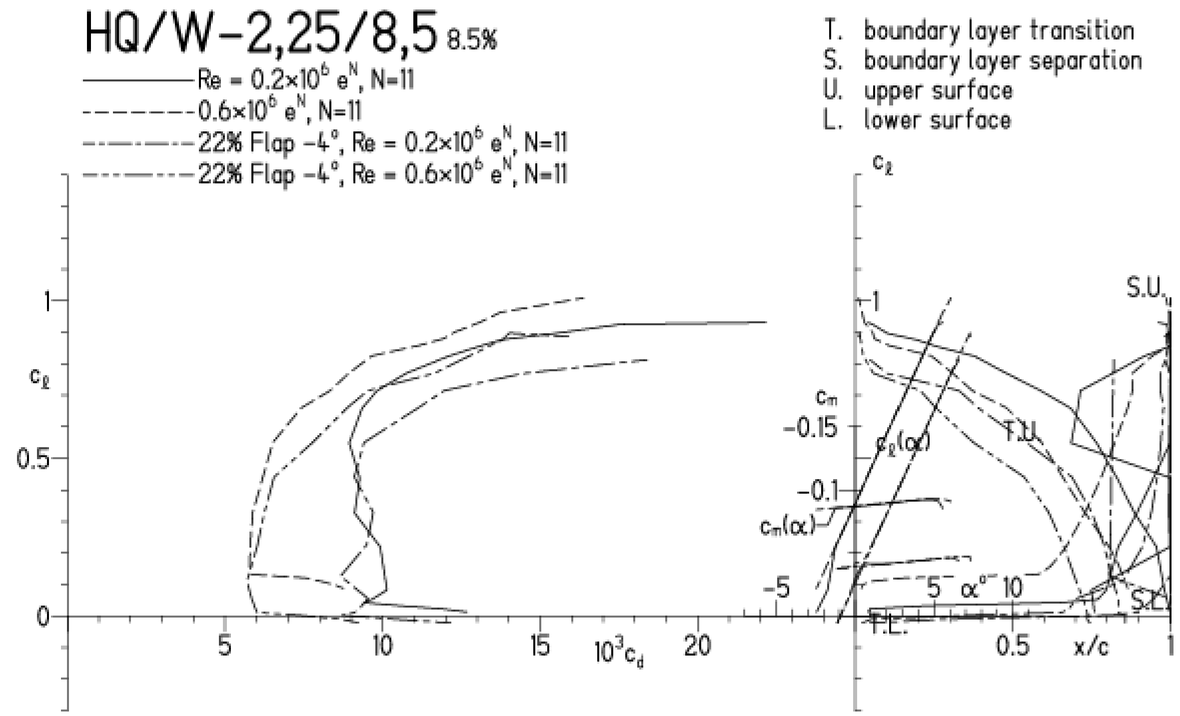


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

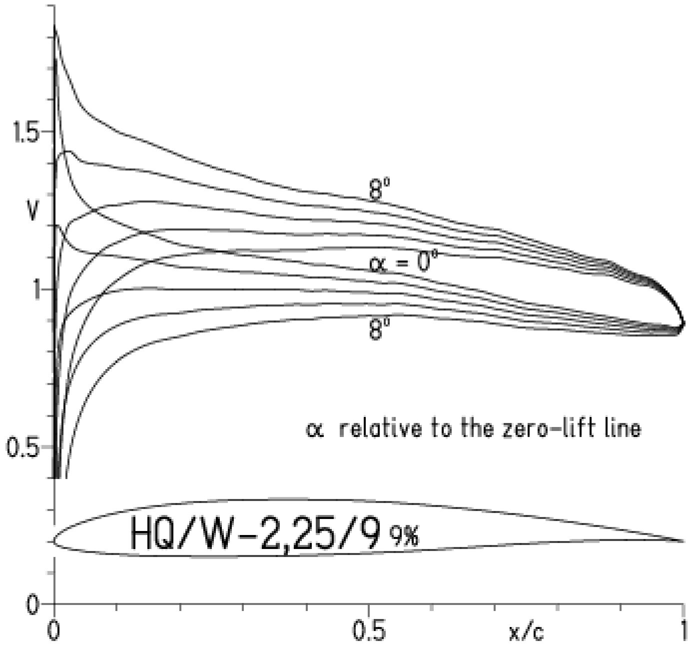


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

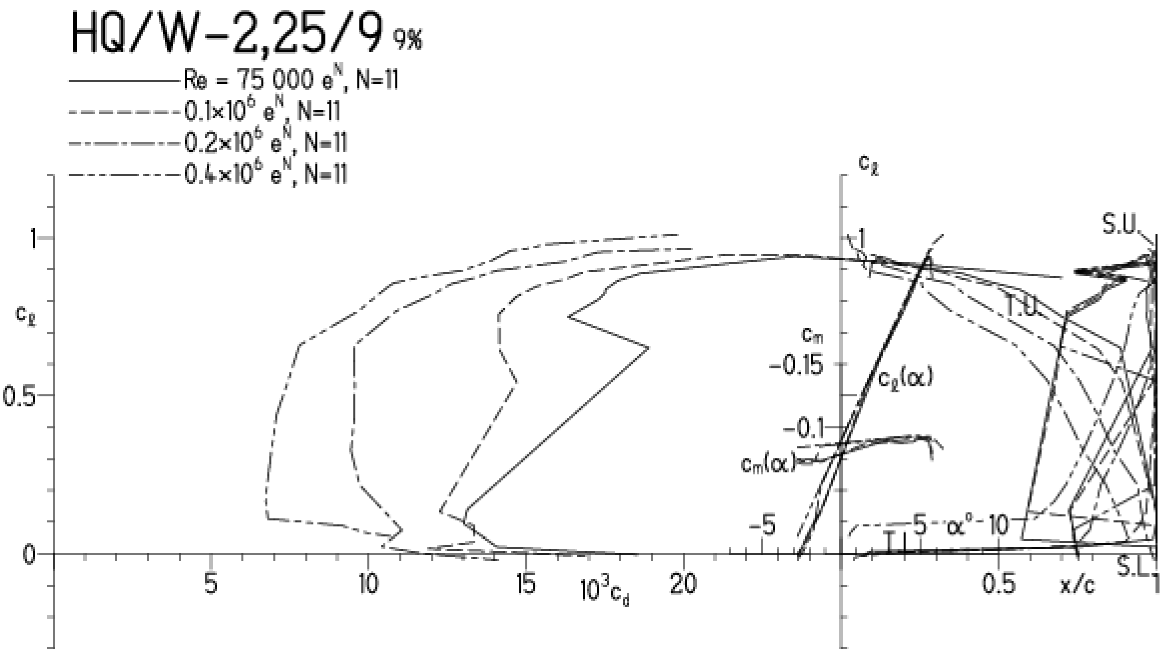


HQ/W-2,25/9, N=11

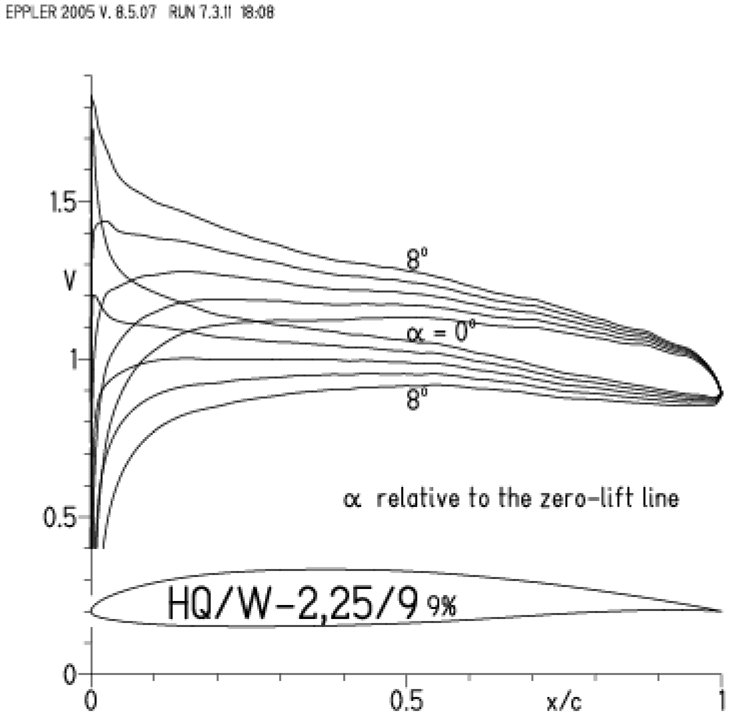
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

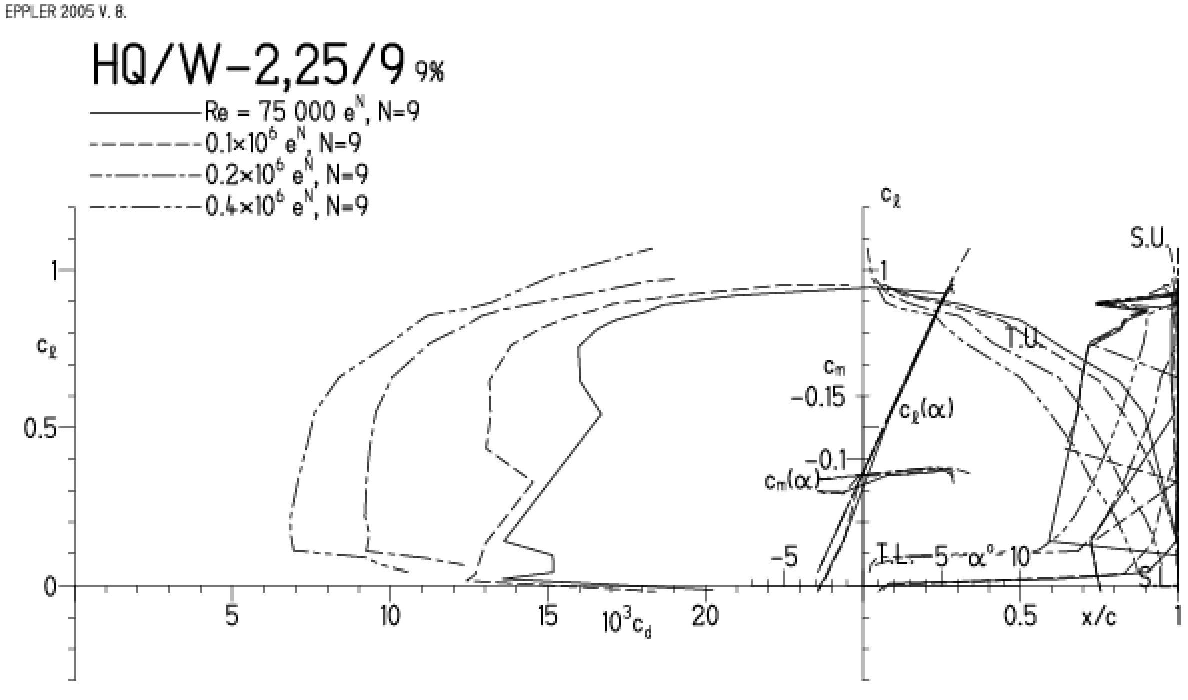


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



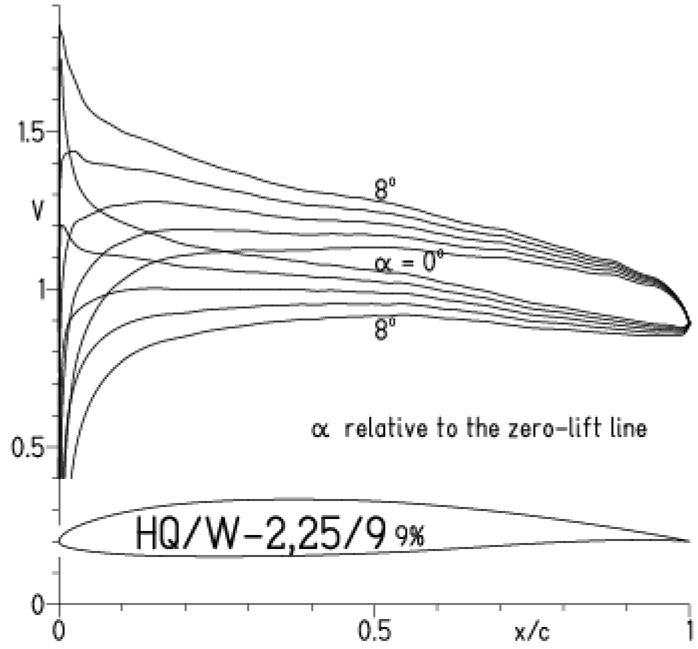
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

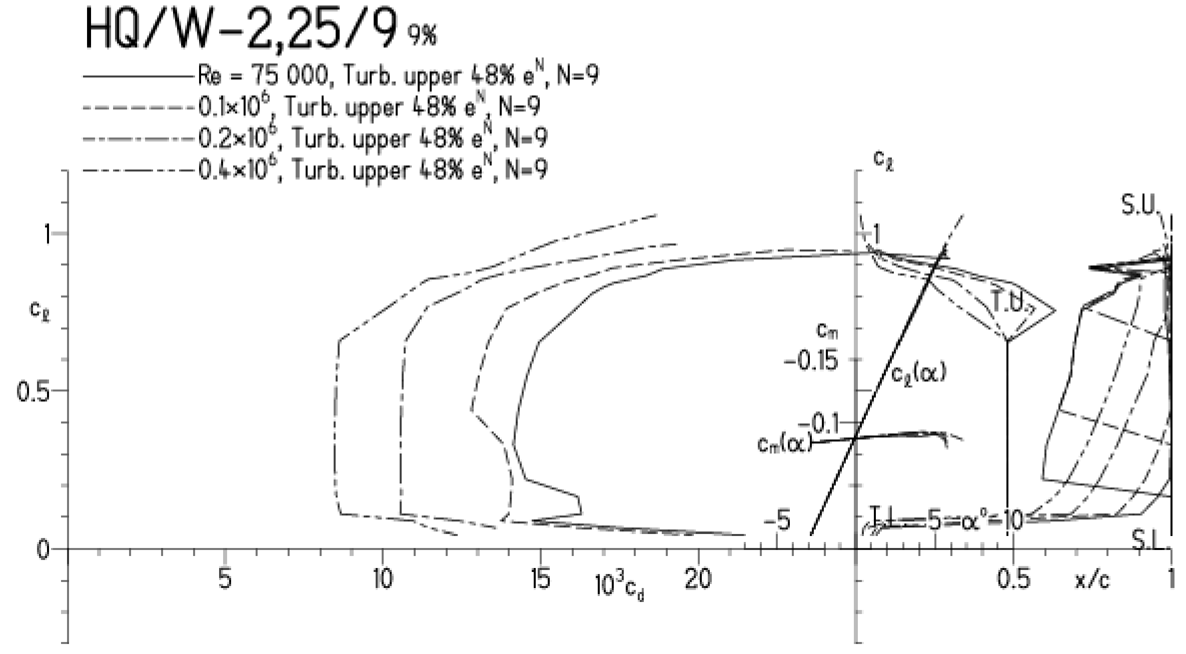

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

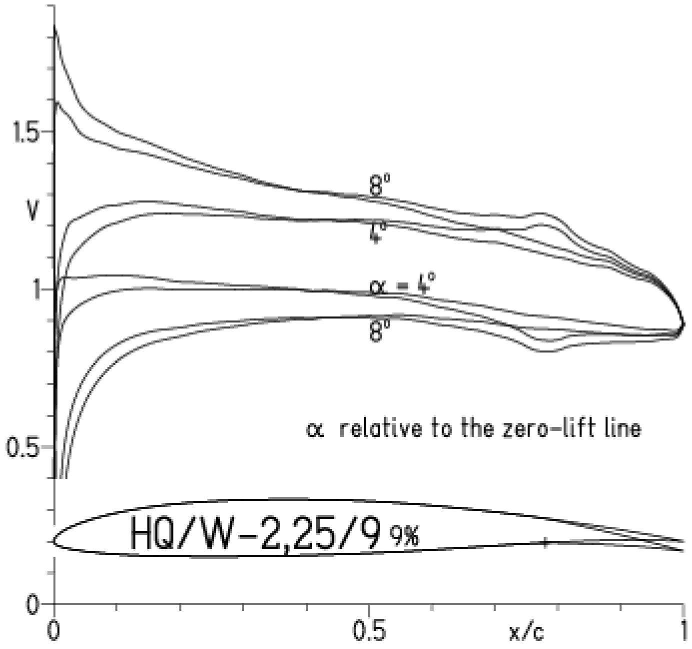


EPPLER 2005 V. 8.5.07 RUN 7

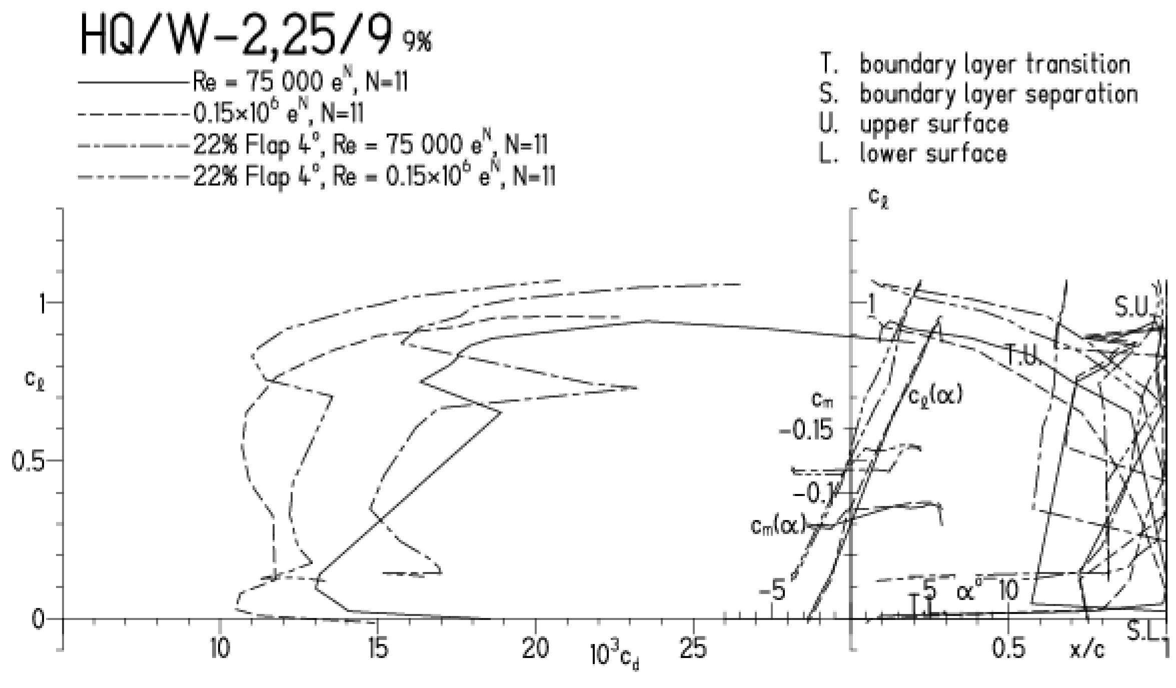


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

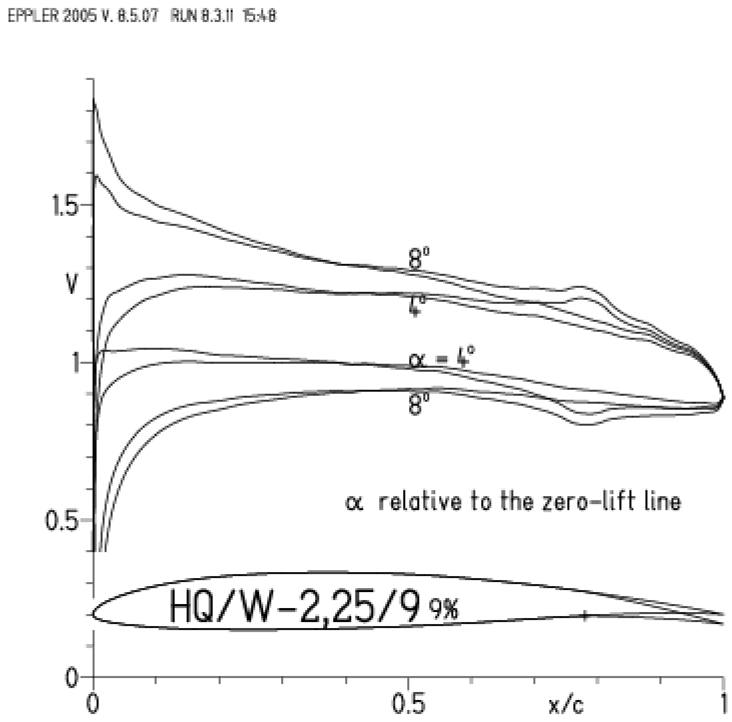
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

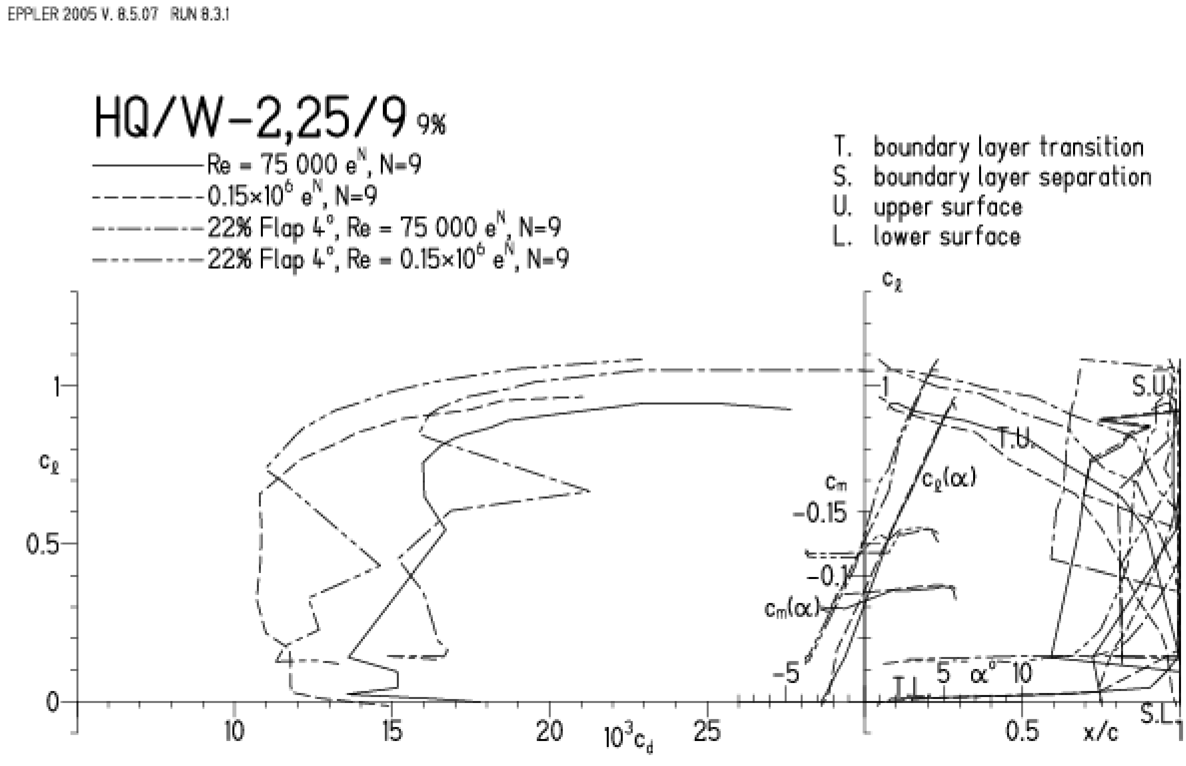


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

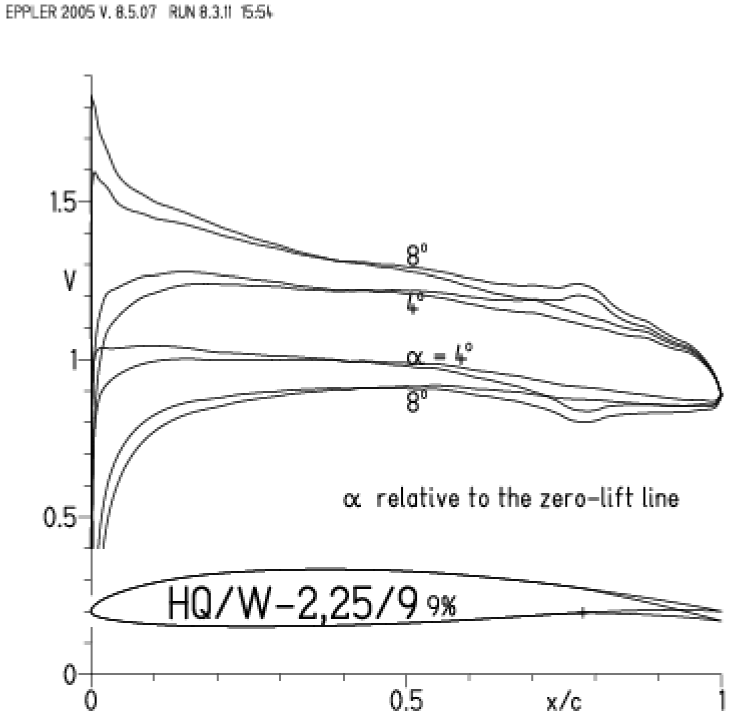


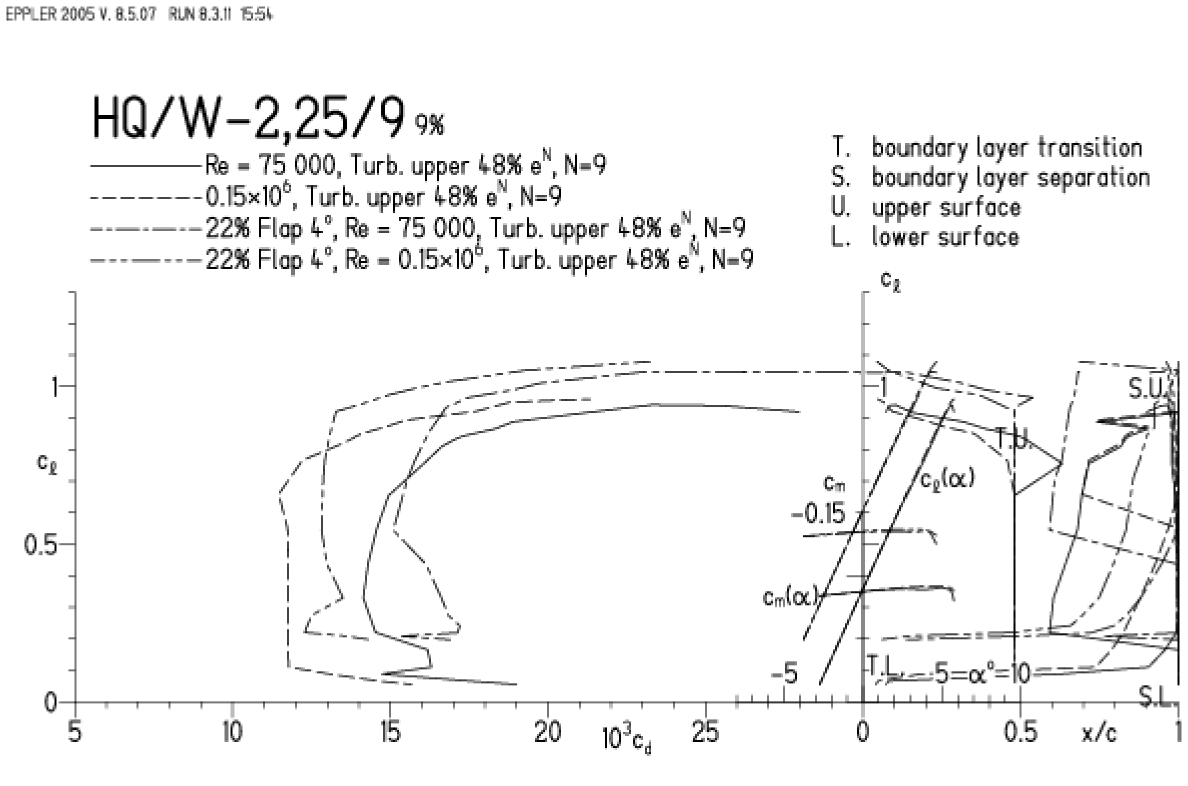
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





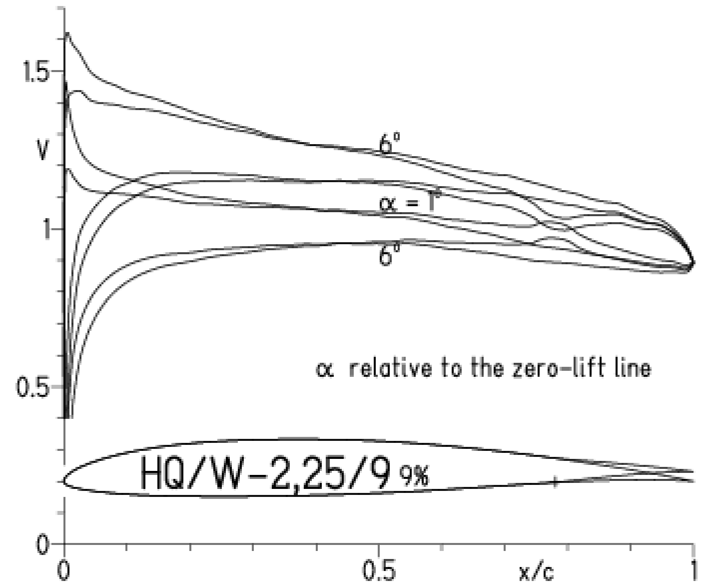
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



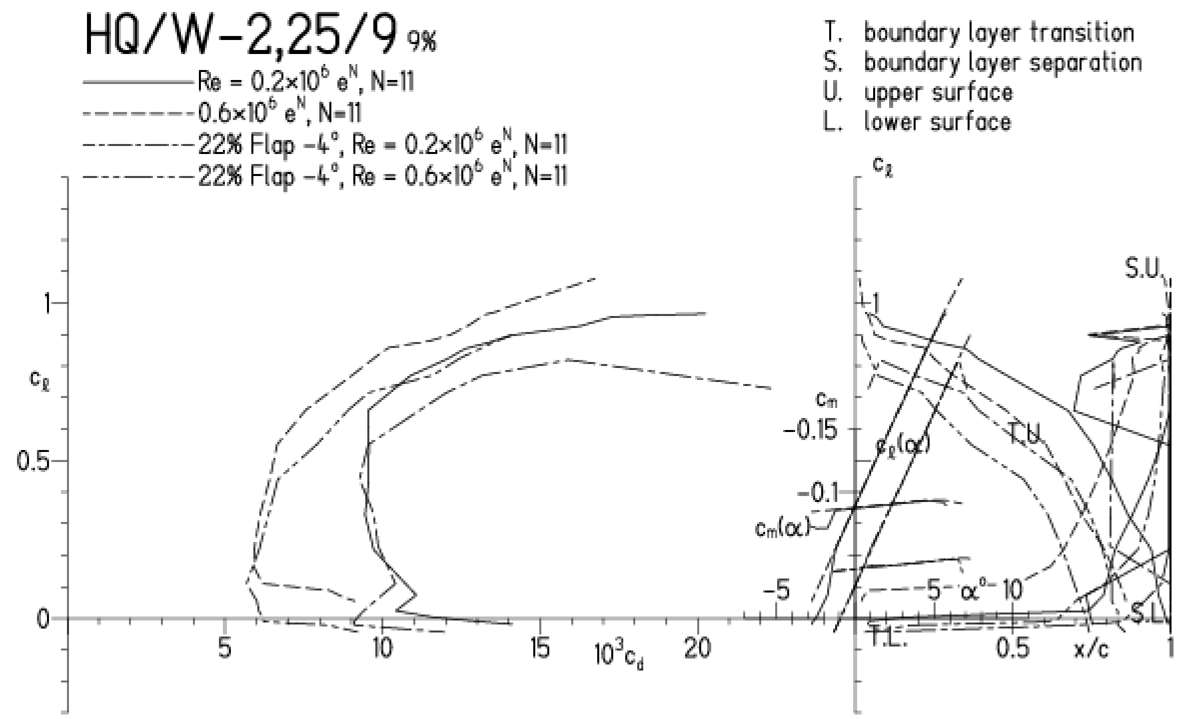


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

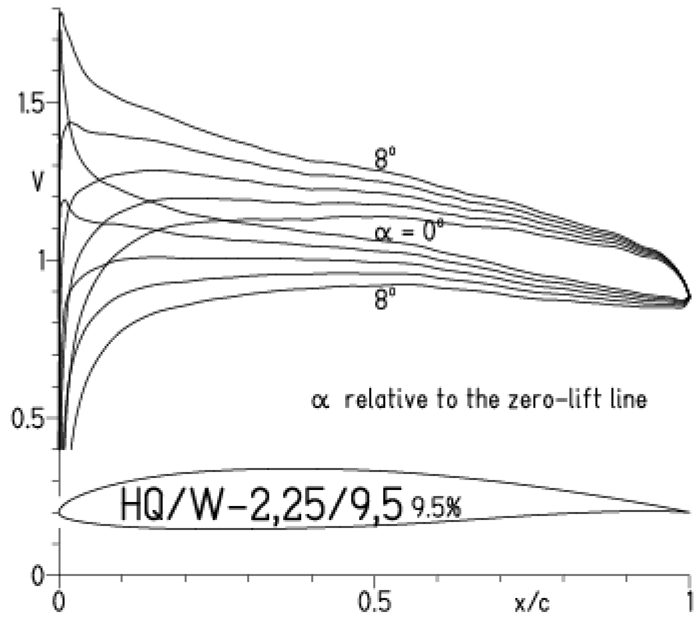


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

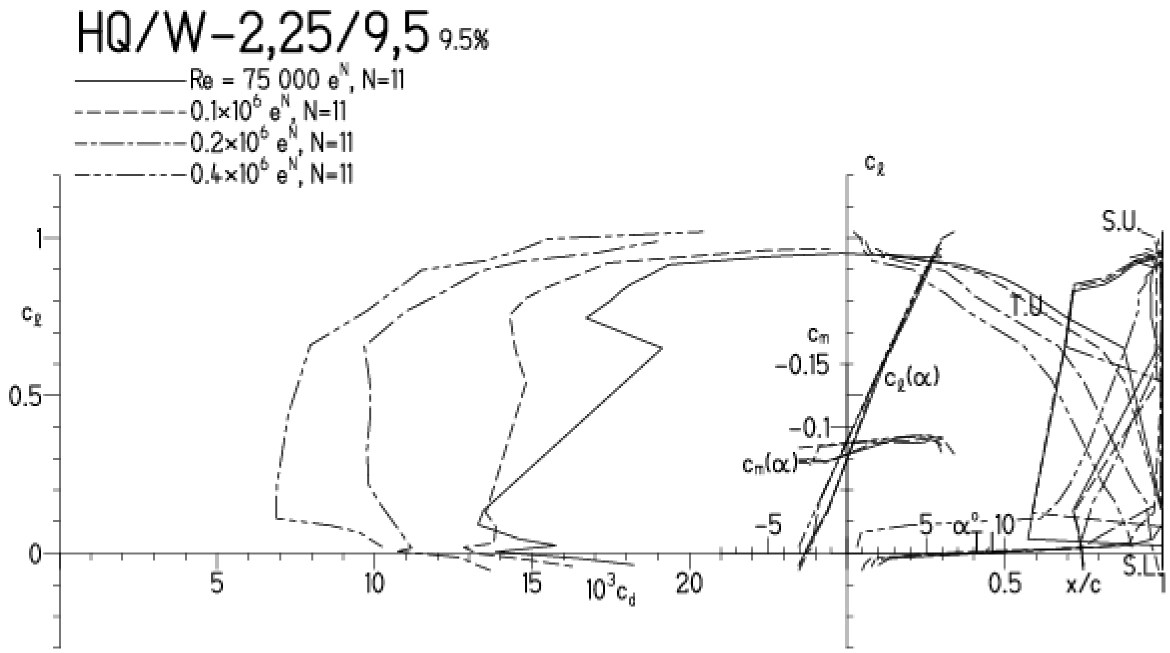


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

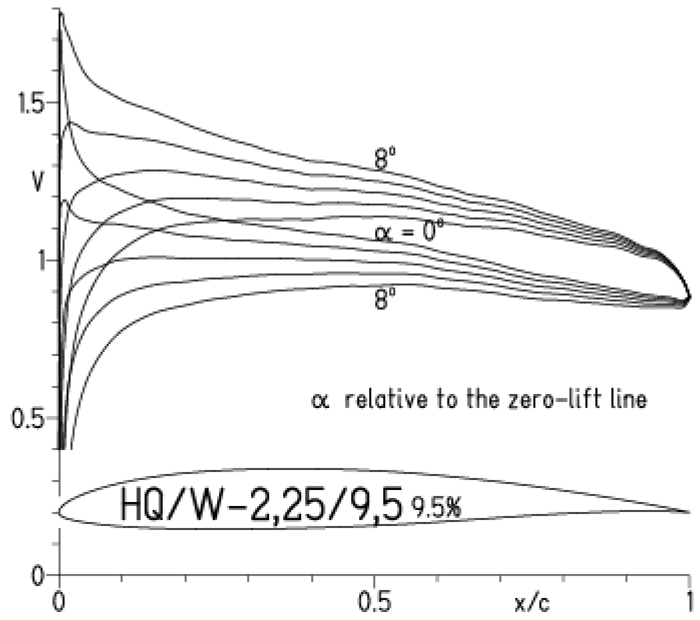


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

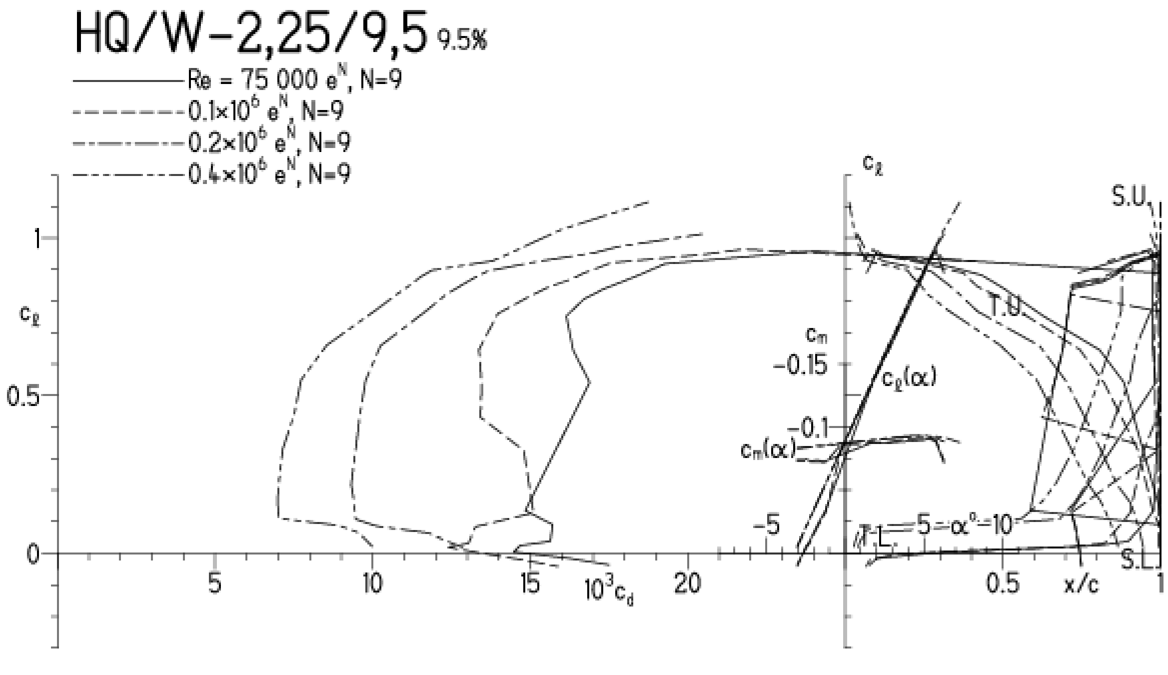


HQ/W-2,25/9,5, N=9

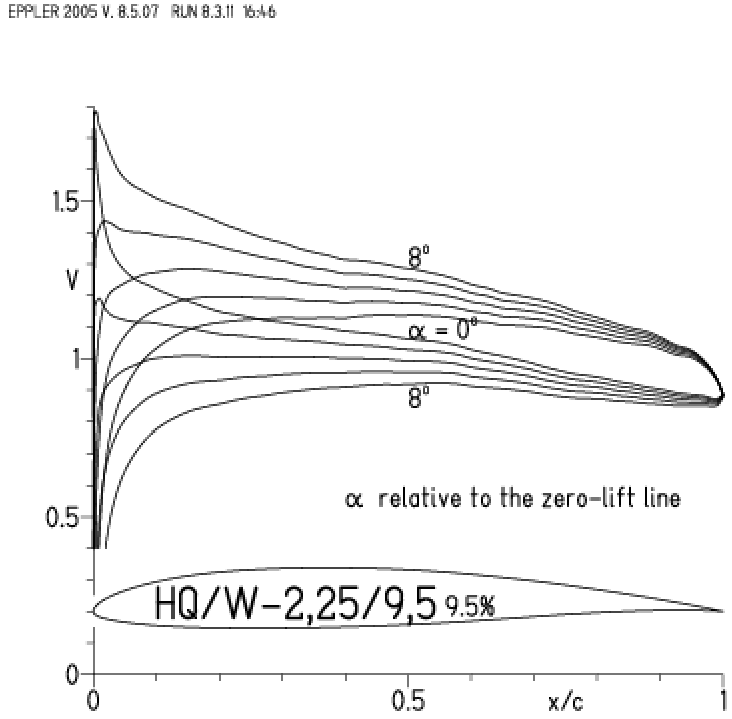
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

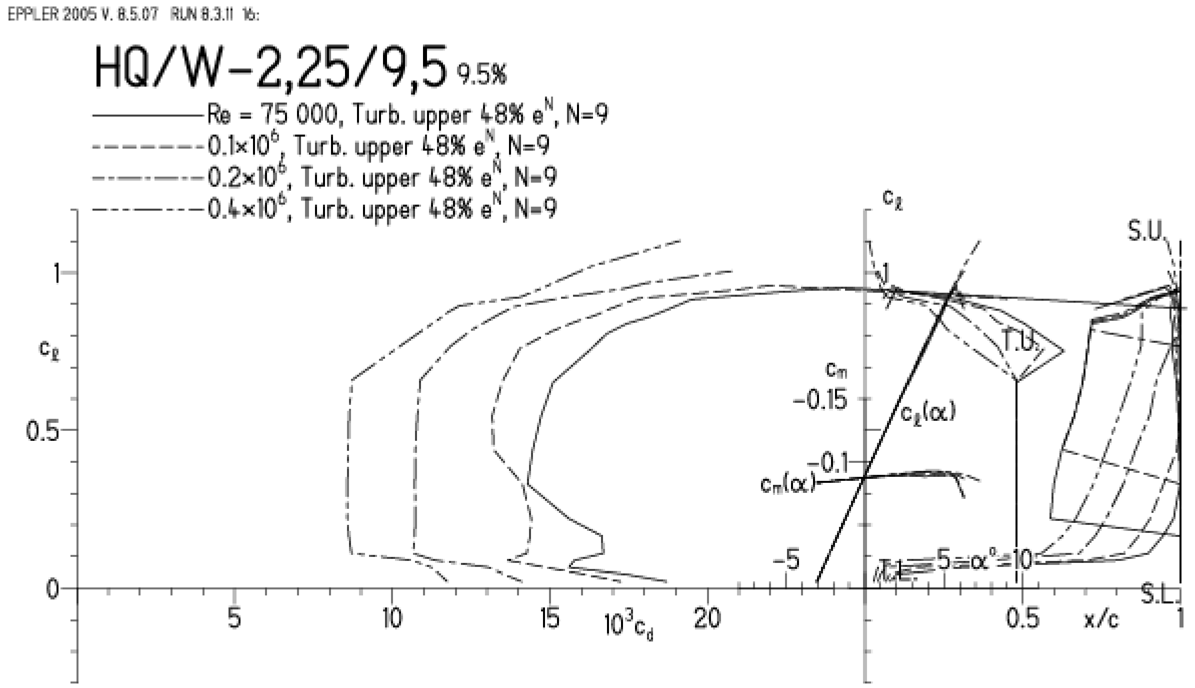


EPPLER 2005 V. 8.5.07 RUN 8.3.



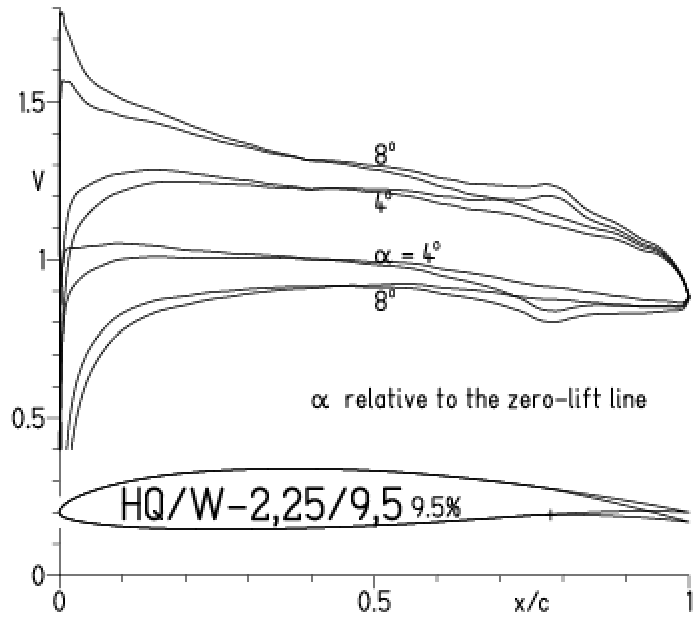
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



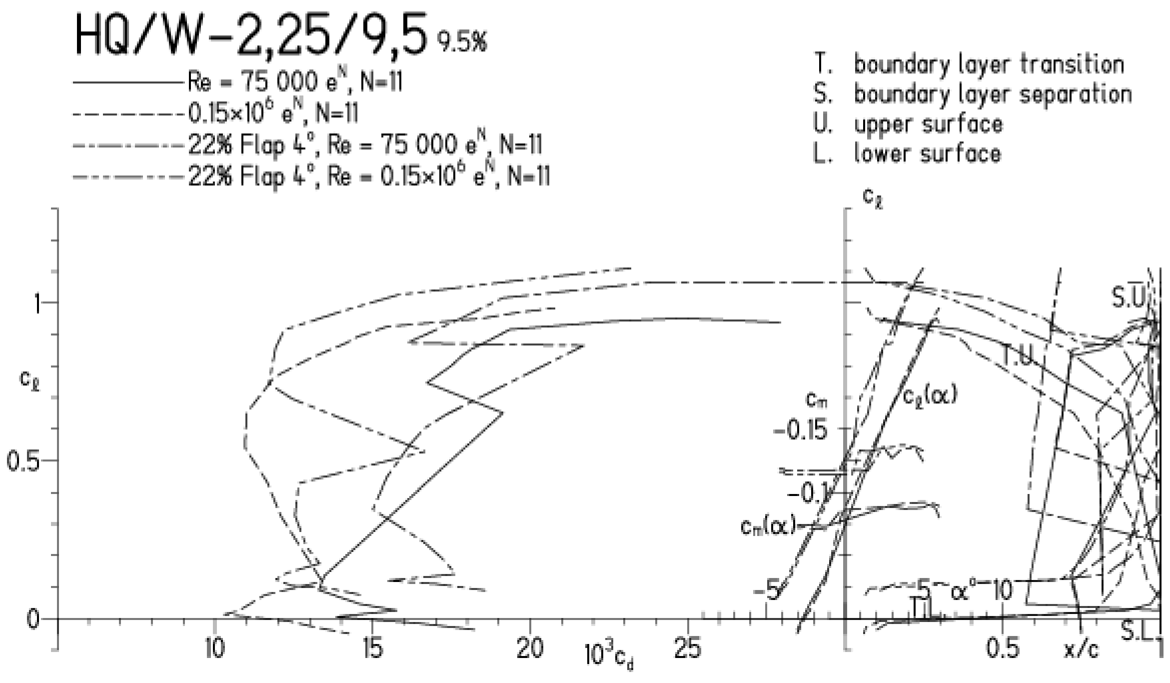


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

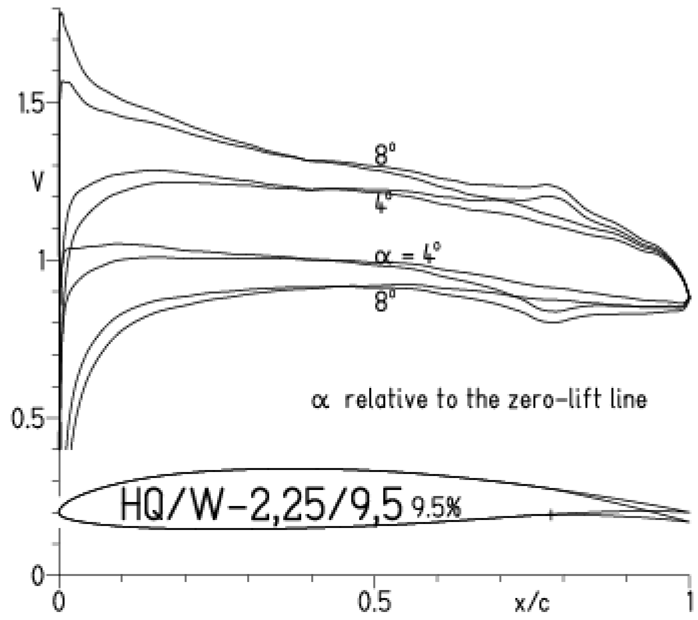


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

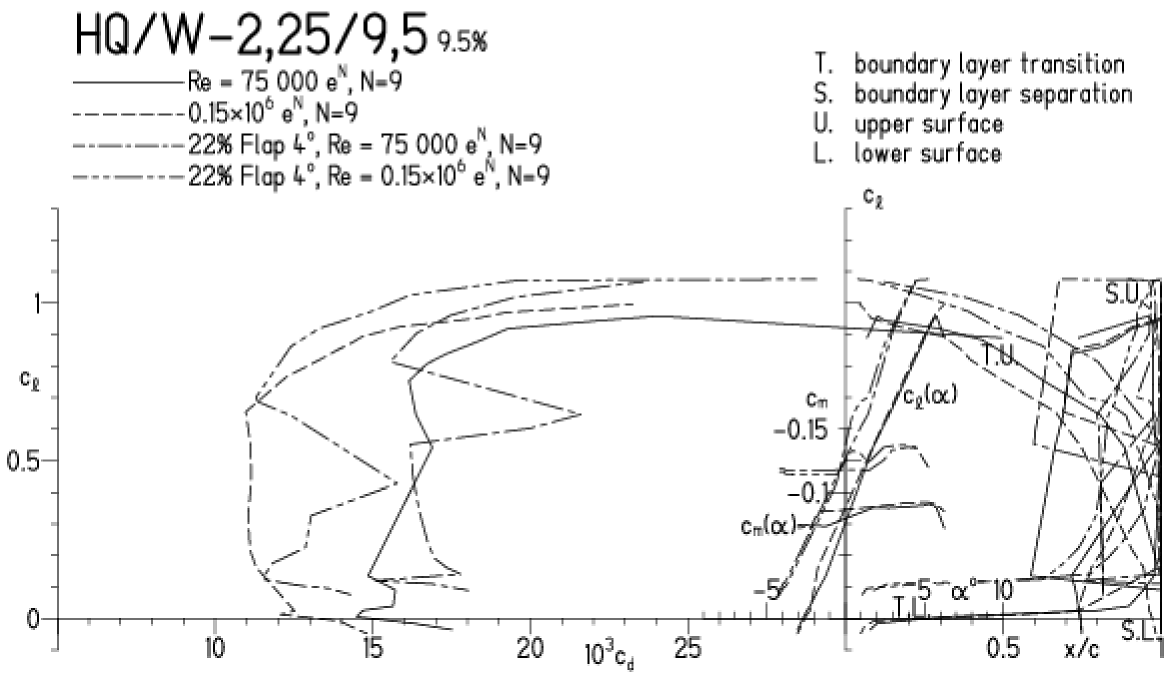


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

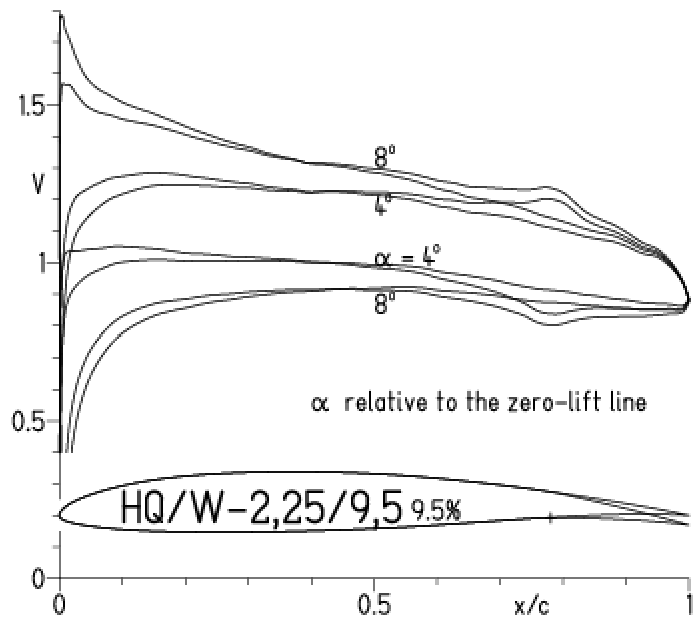


EPPLER 2005 V. 8.5.07 R

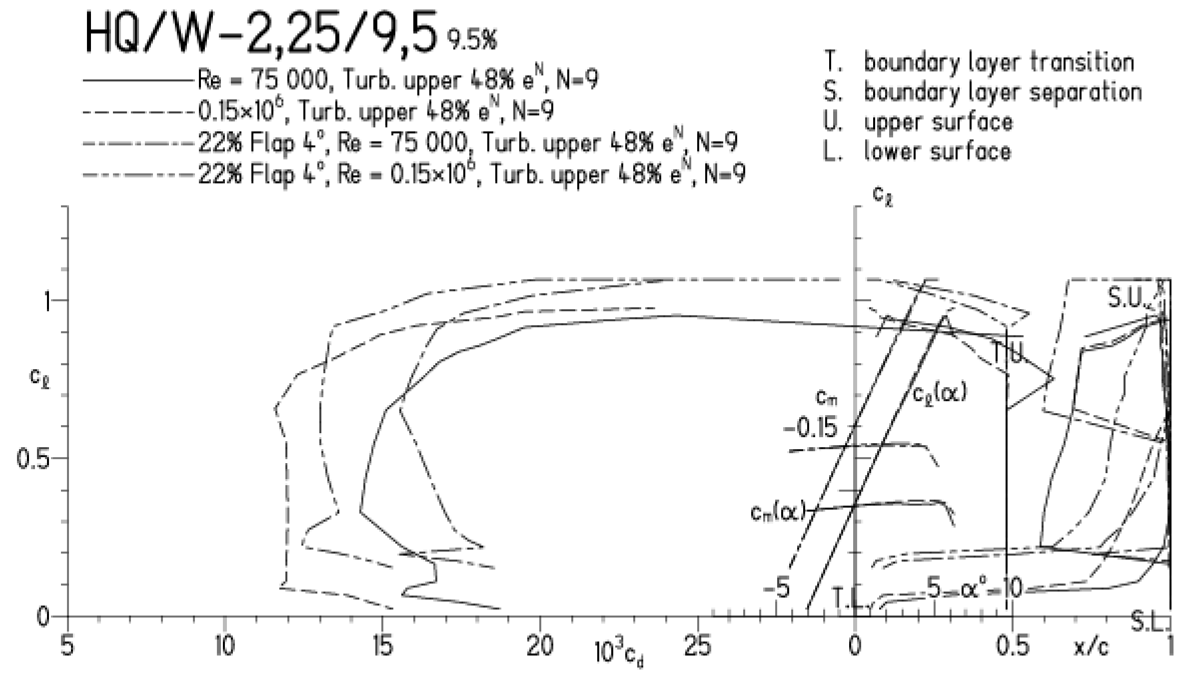


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

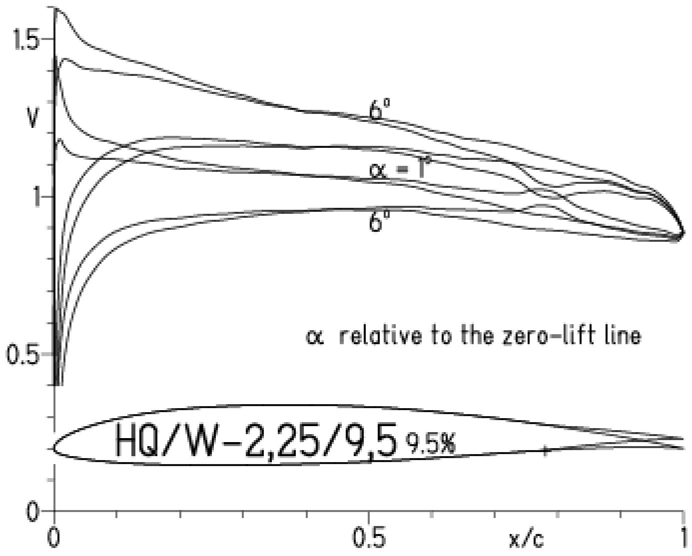


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

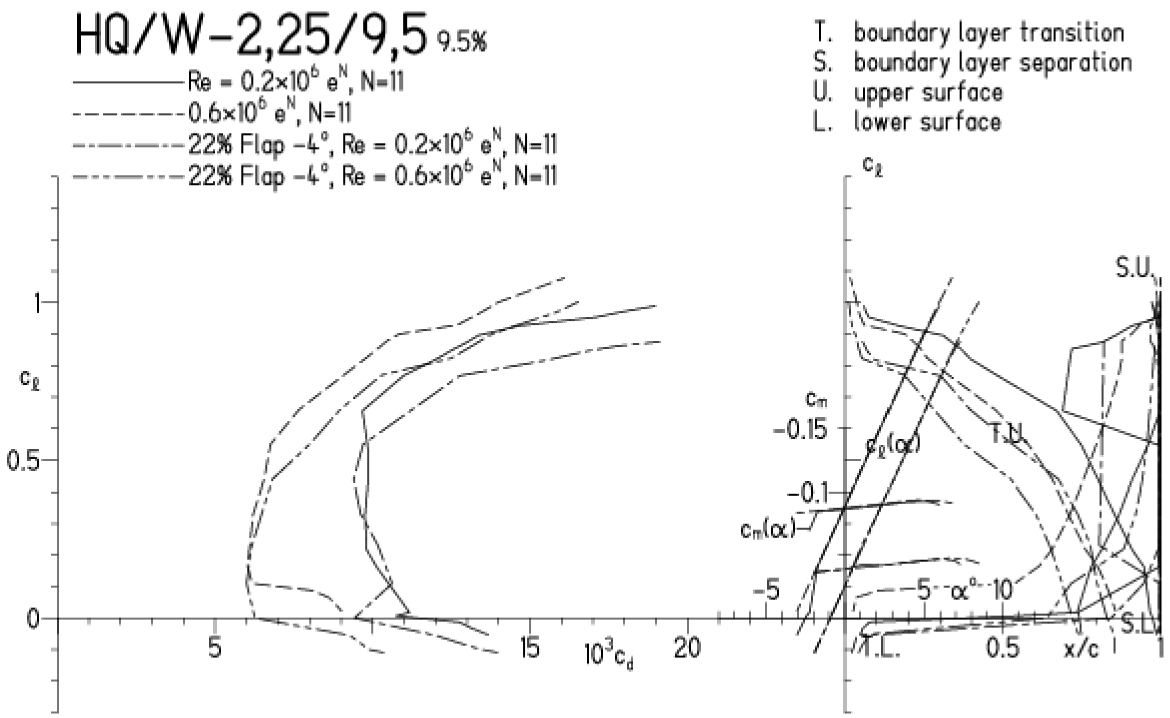


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

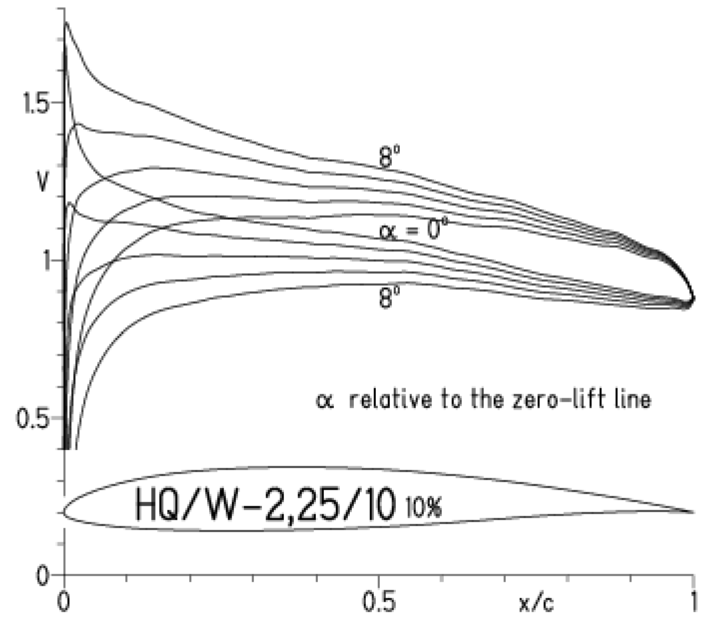


EPPLER 2005 V.

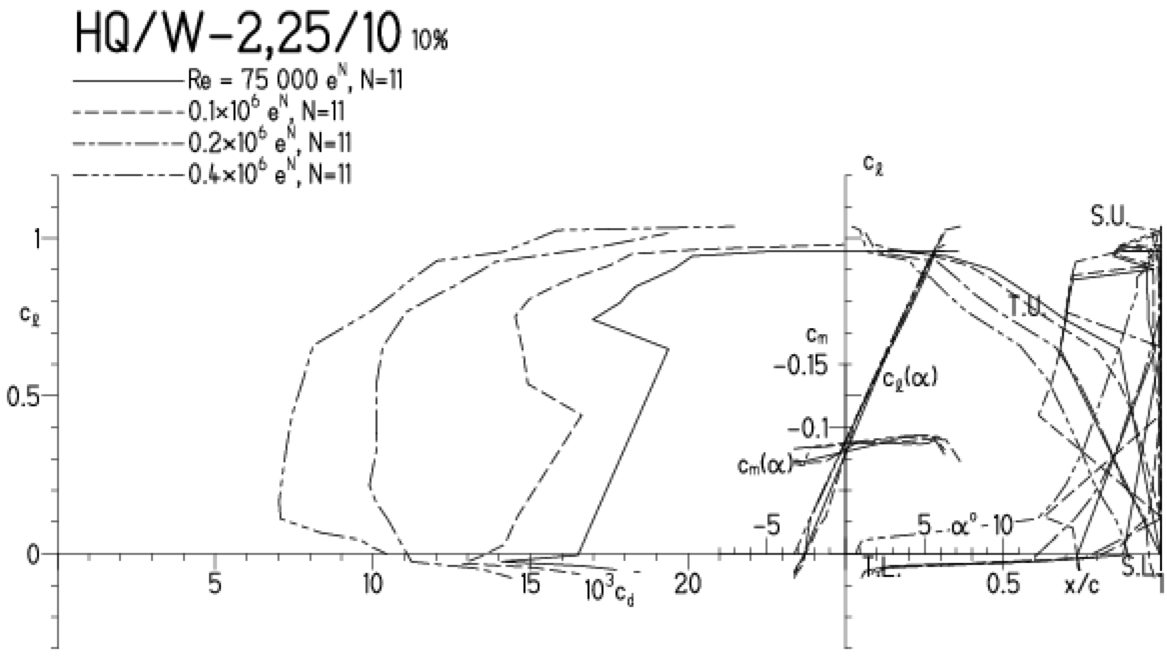


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

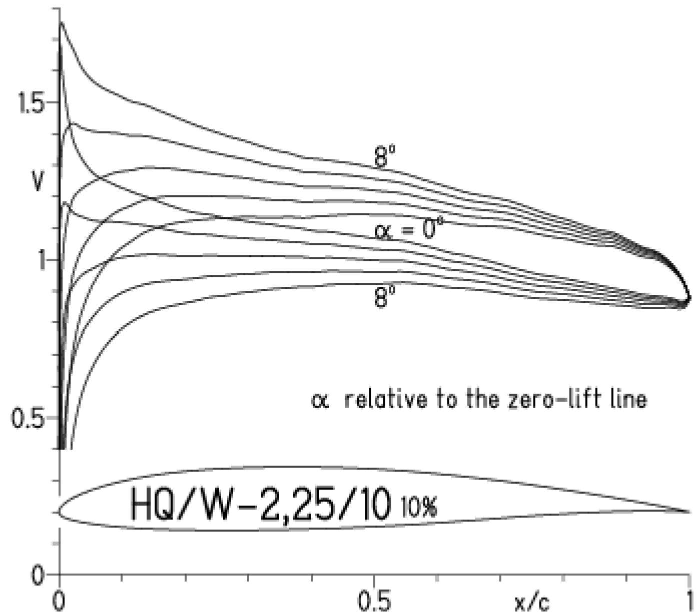


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

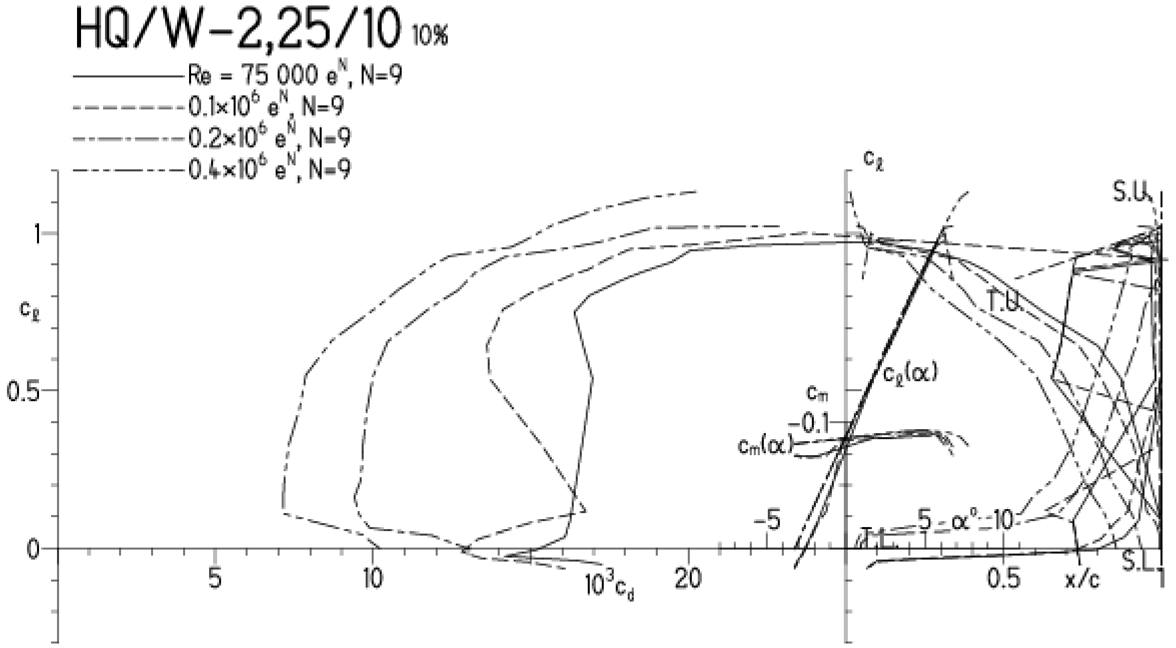


HQ/W-2,25/10, N=9

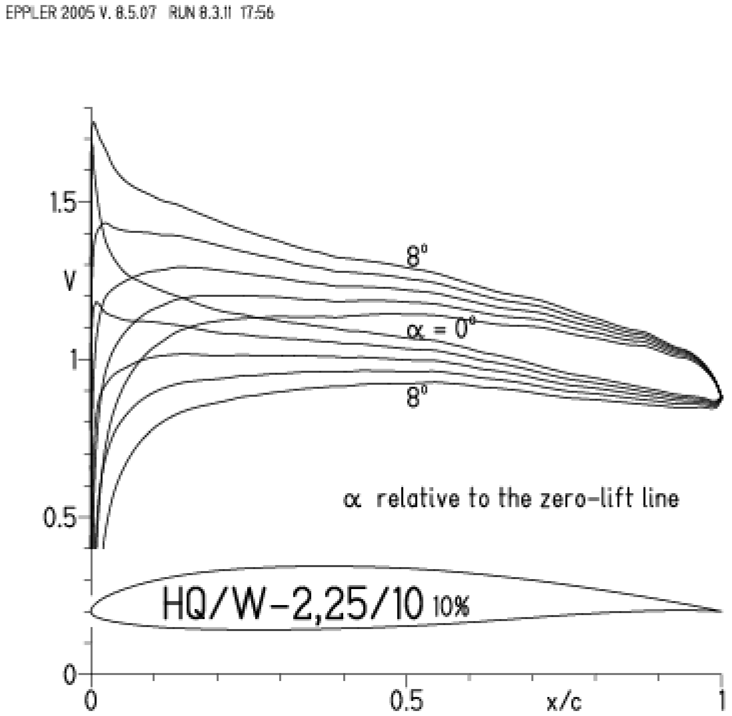
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

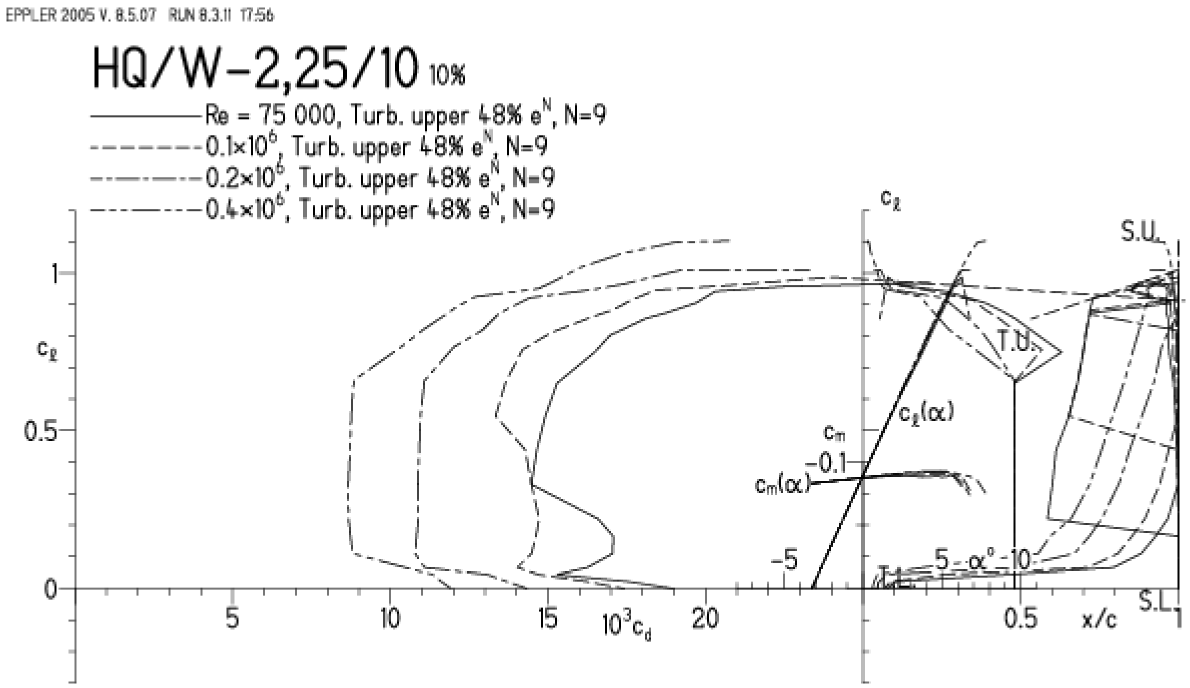


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



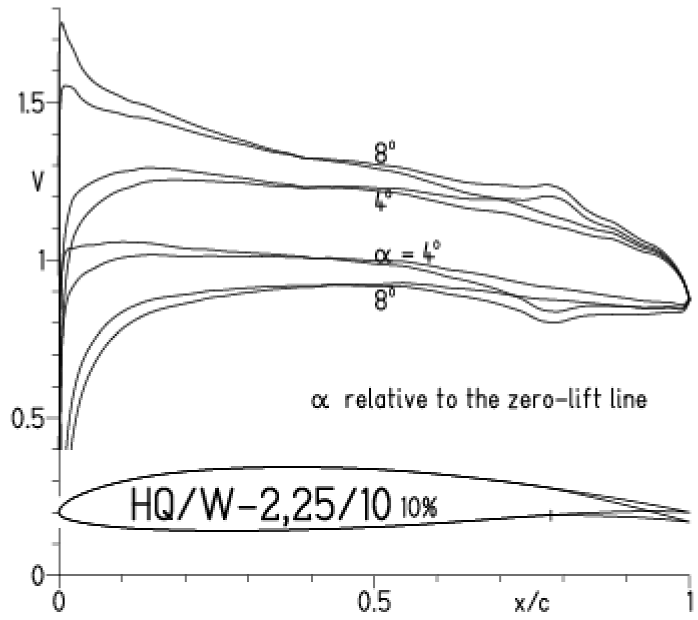
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



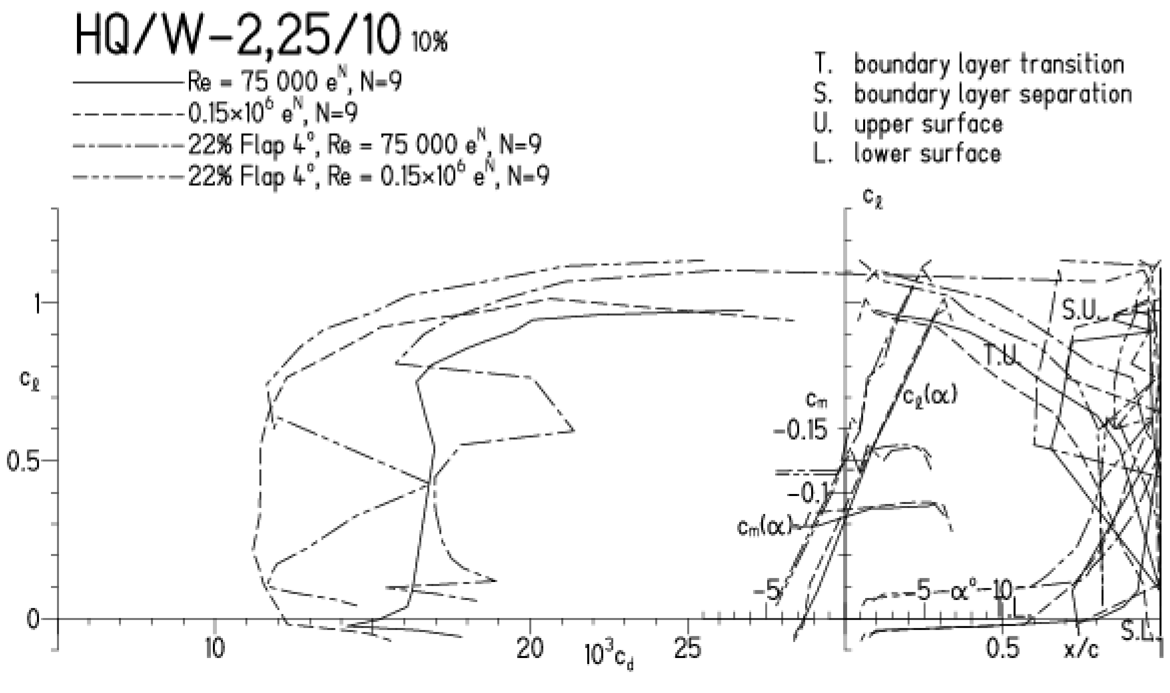


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

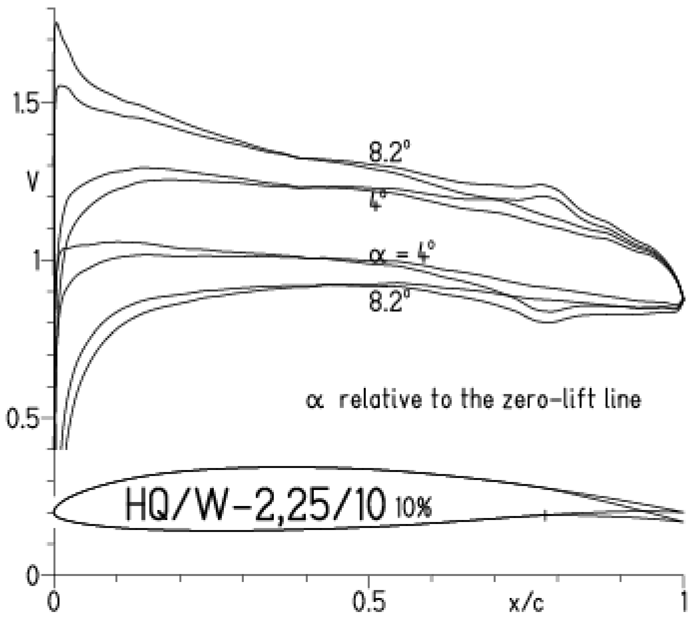


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

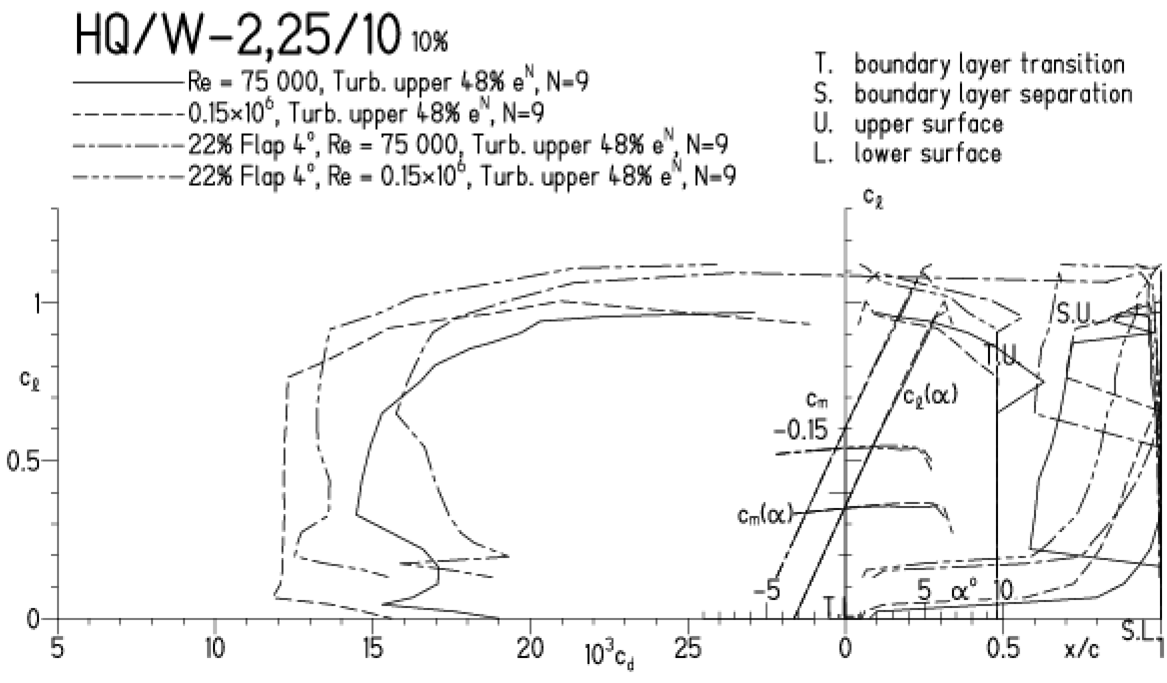


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

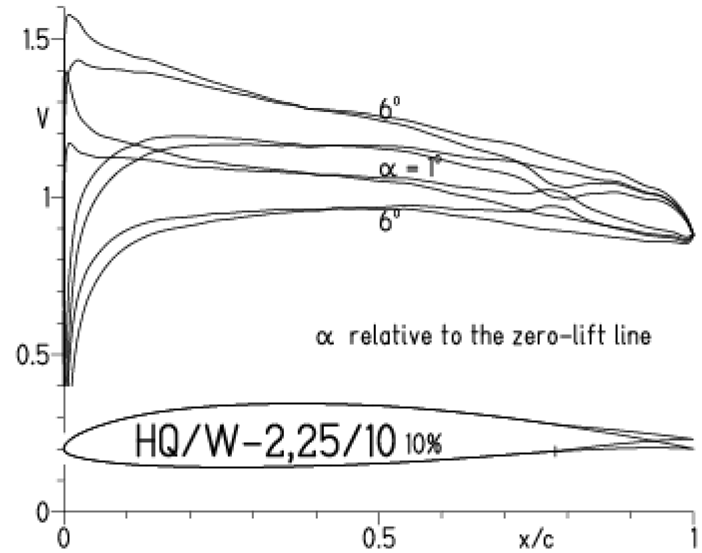


EPPLER 2005 V. 8.5.07 RUN 8.3

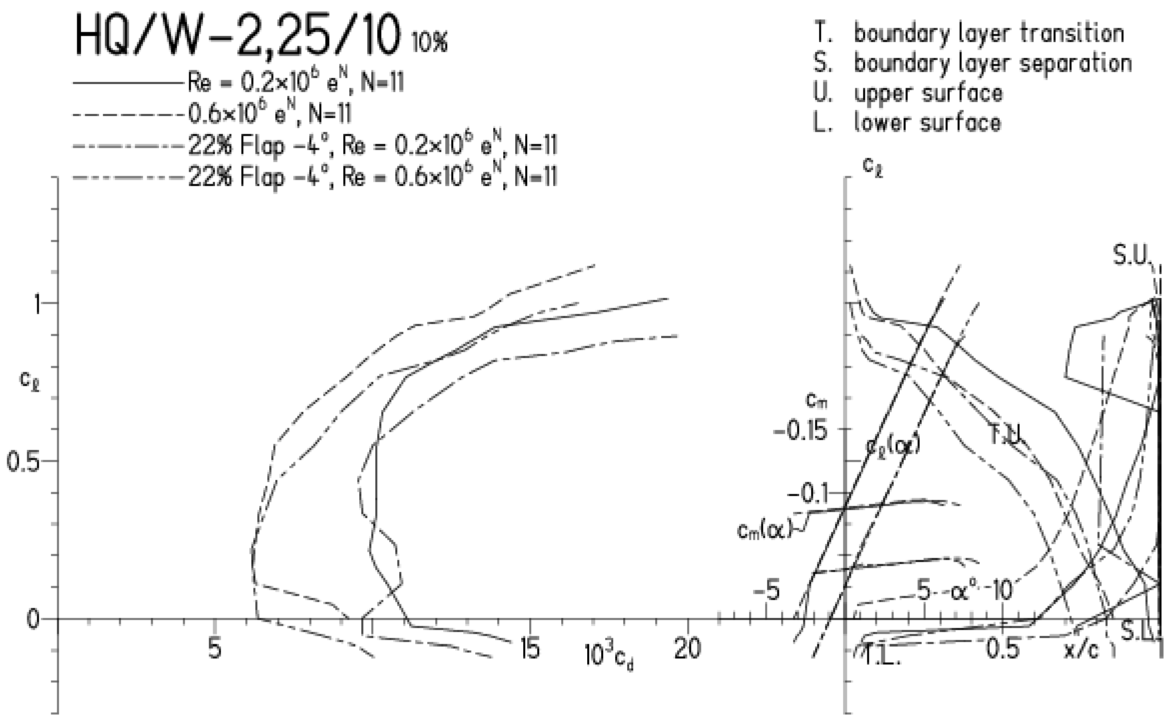


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

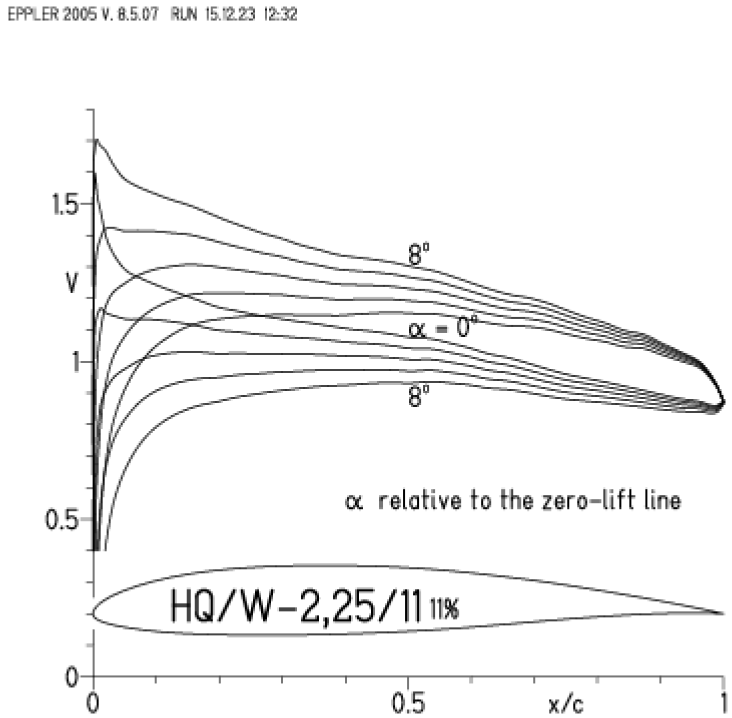
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

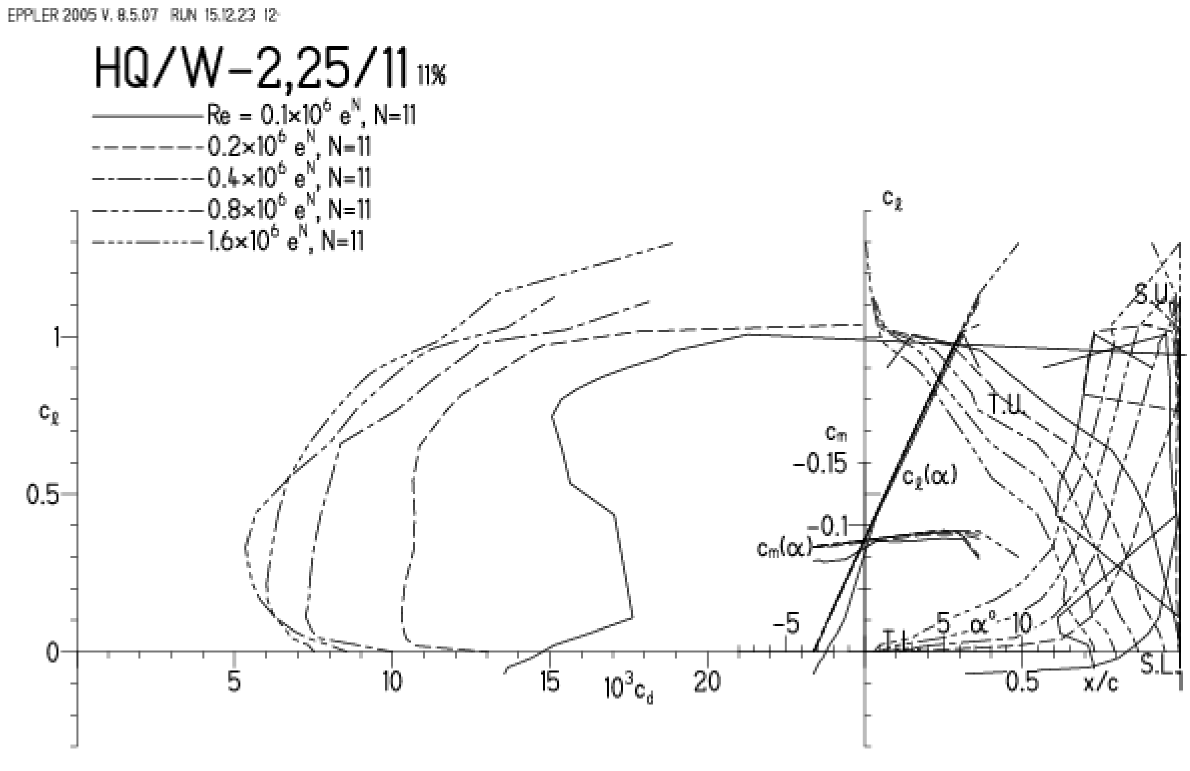


EPPLER 2005 V. 8.5.07 RUN



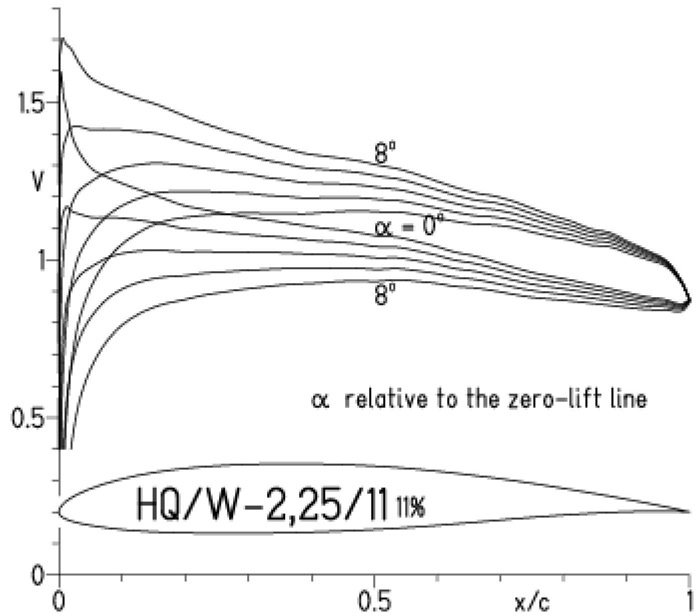
<u>HQ/W-2,25/11</u>, N=11



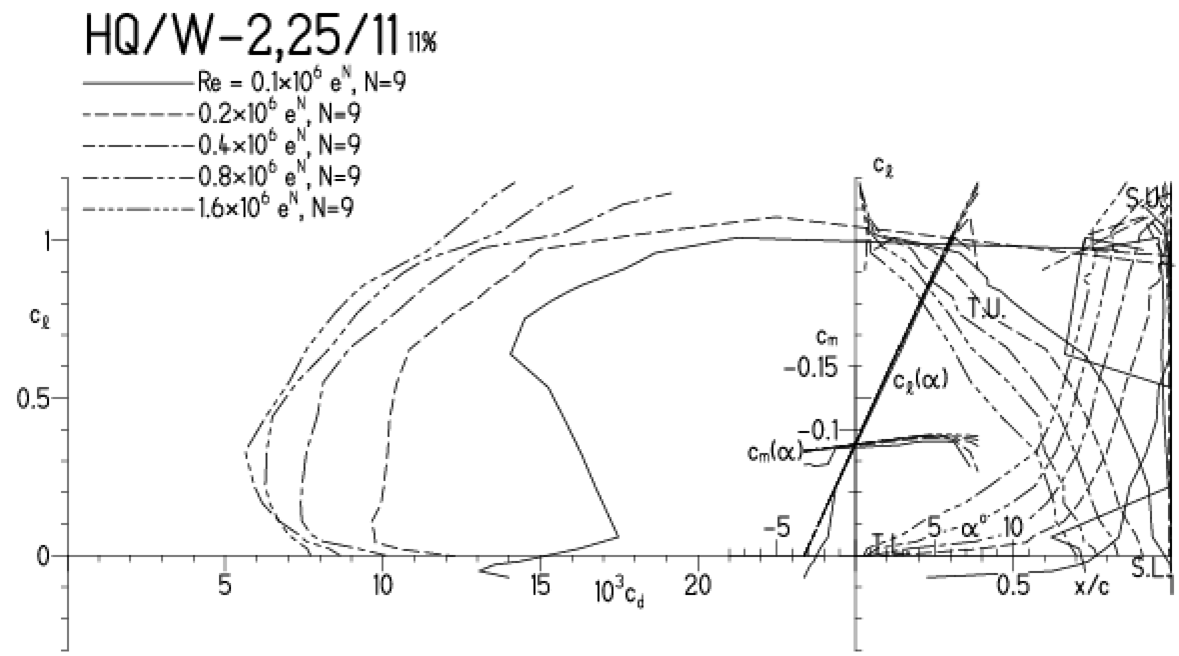


HQQ/W-2,25/11, N=9

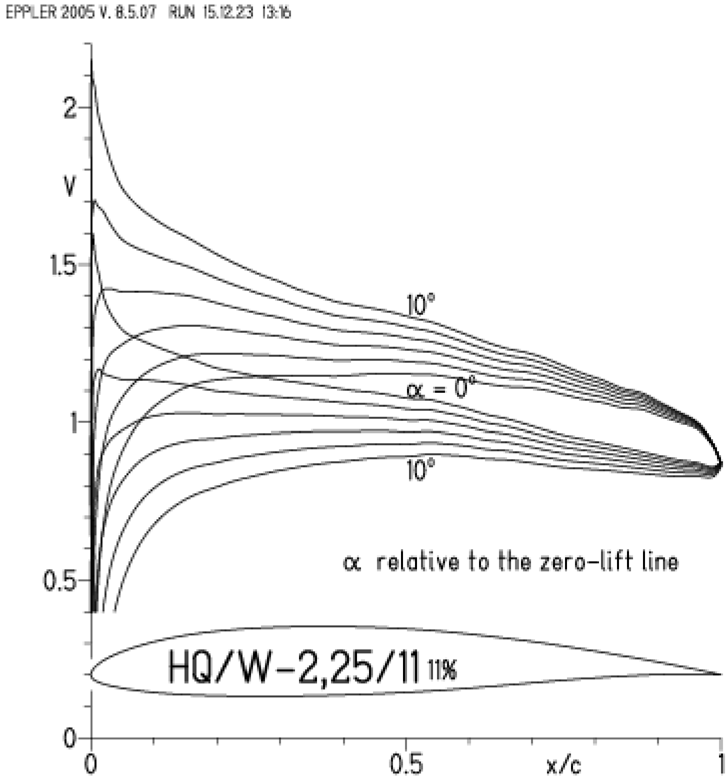
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

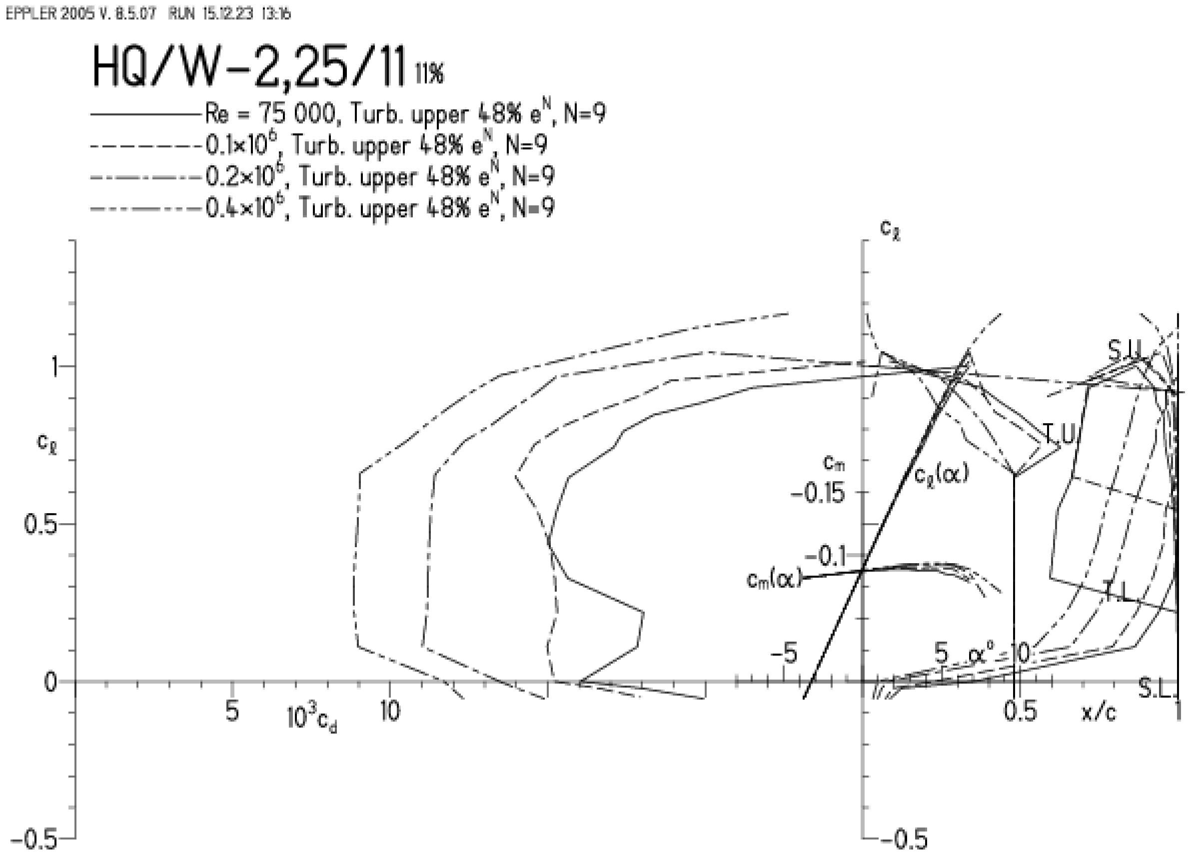


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



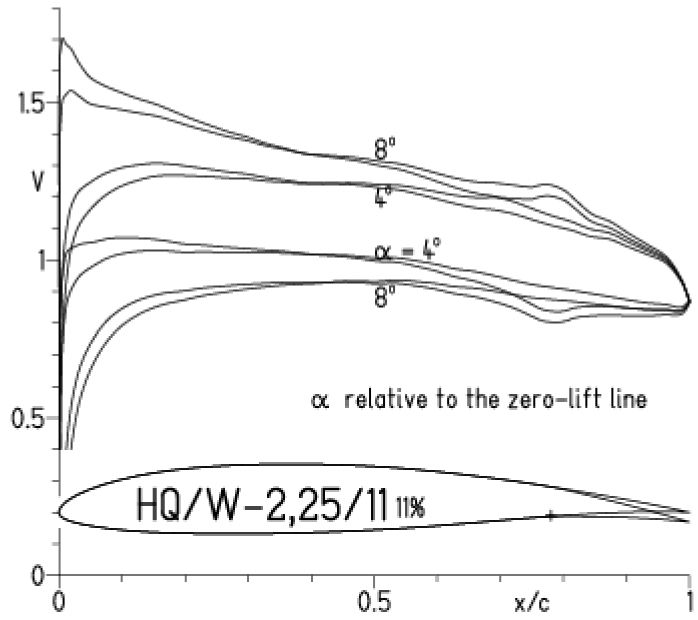
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



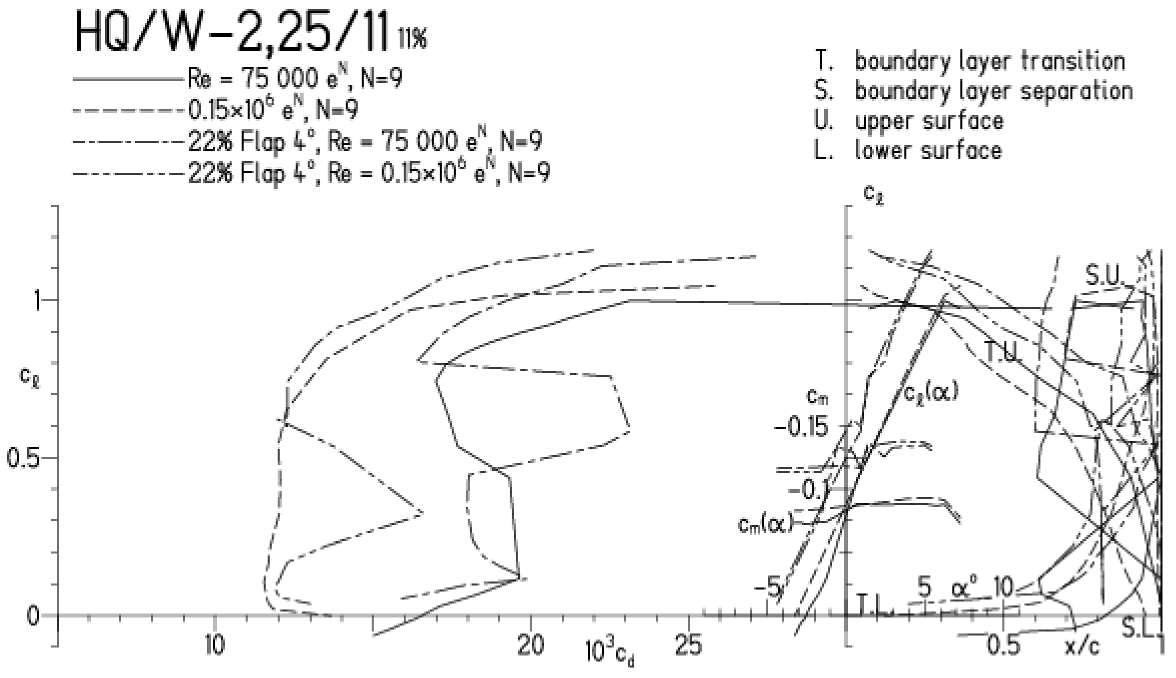


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

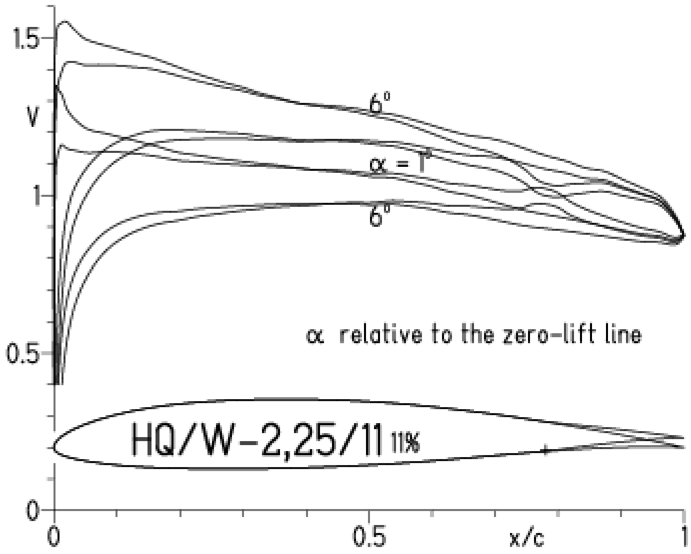


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

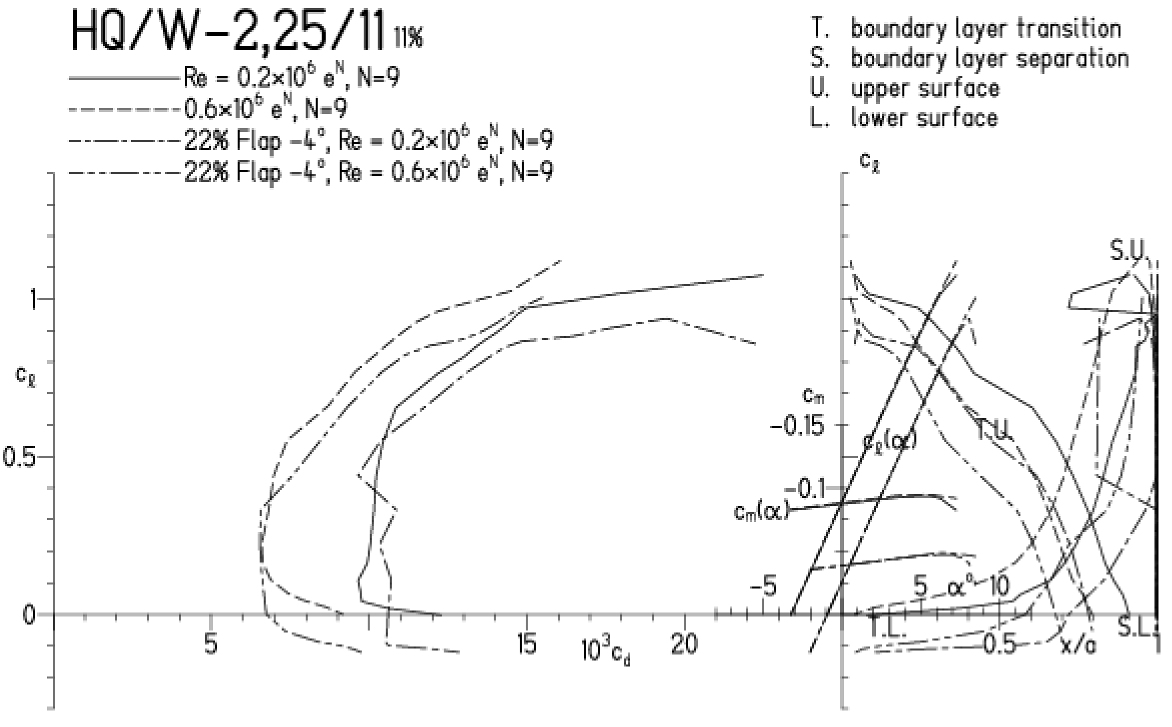


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

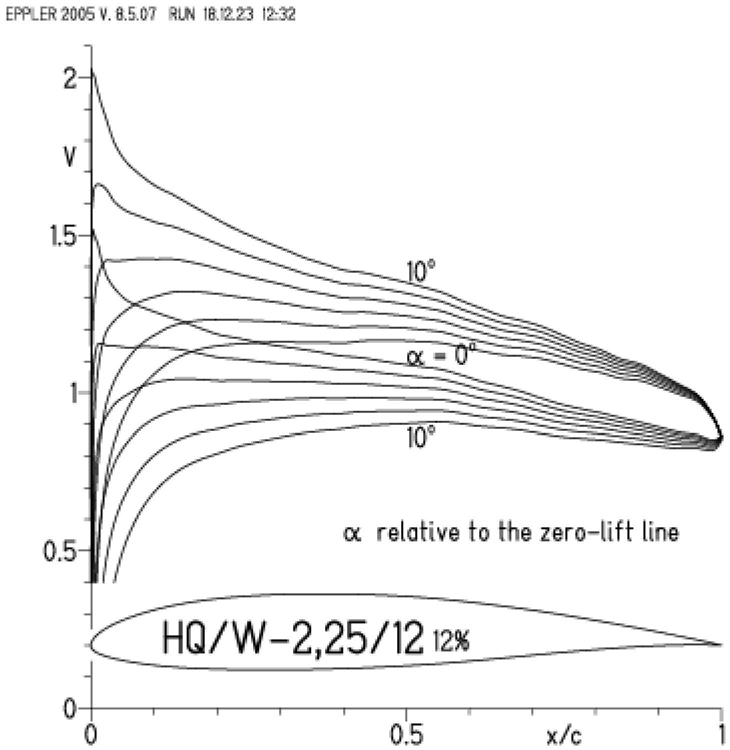
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

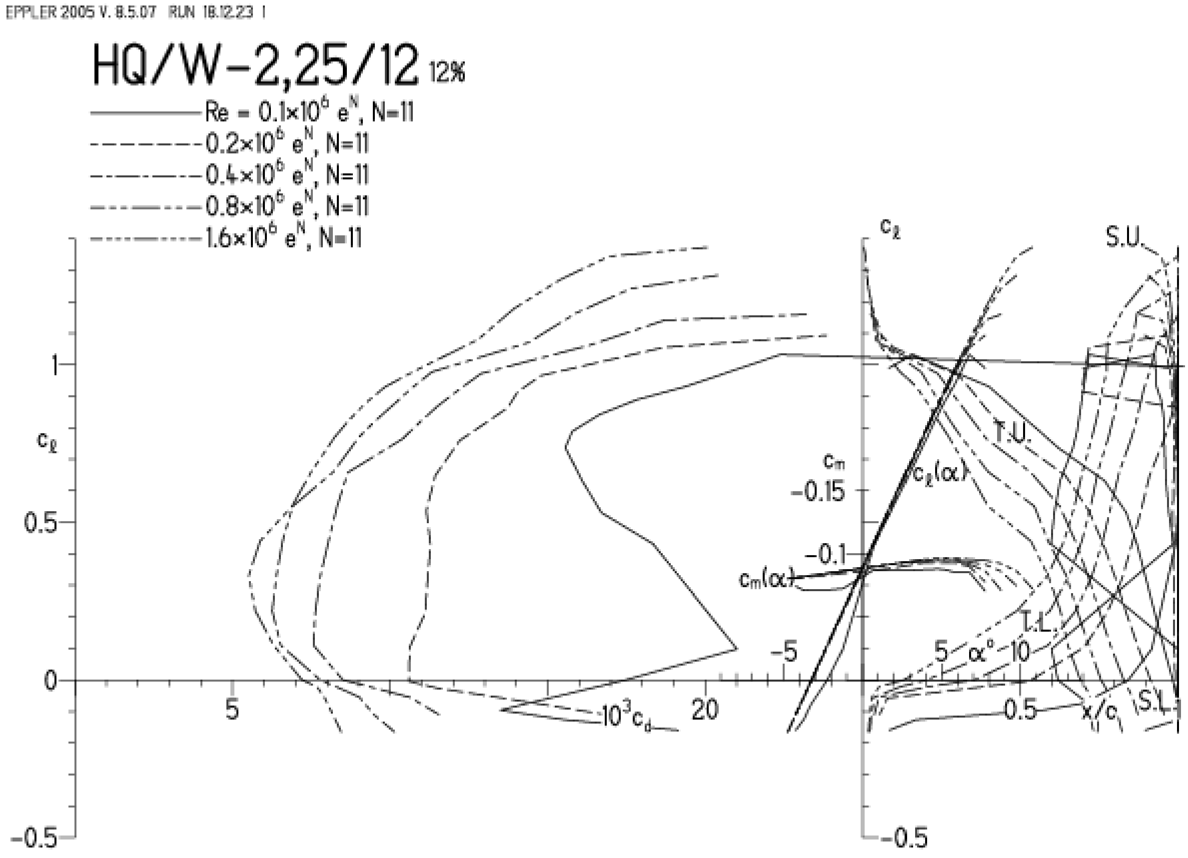


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

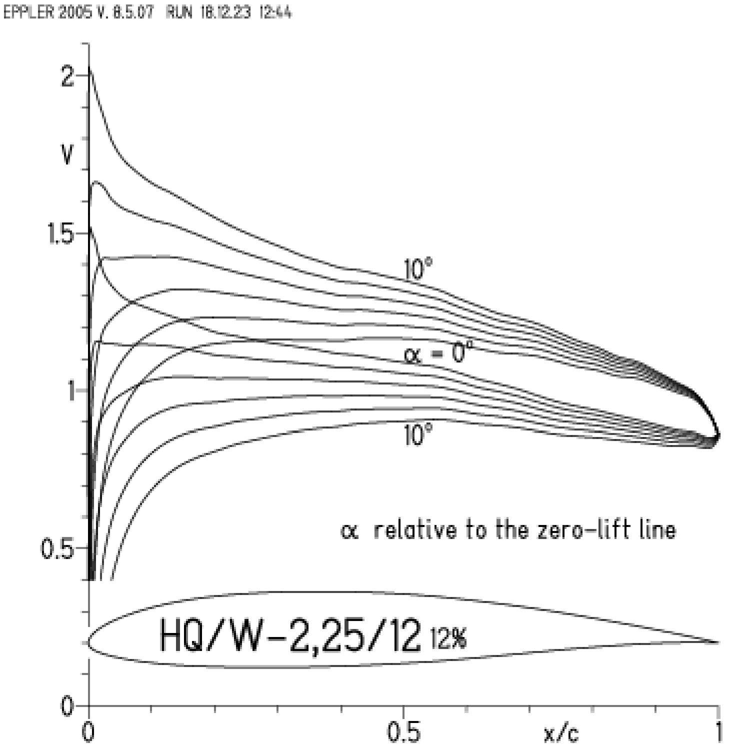


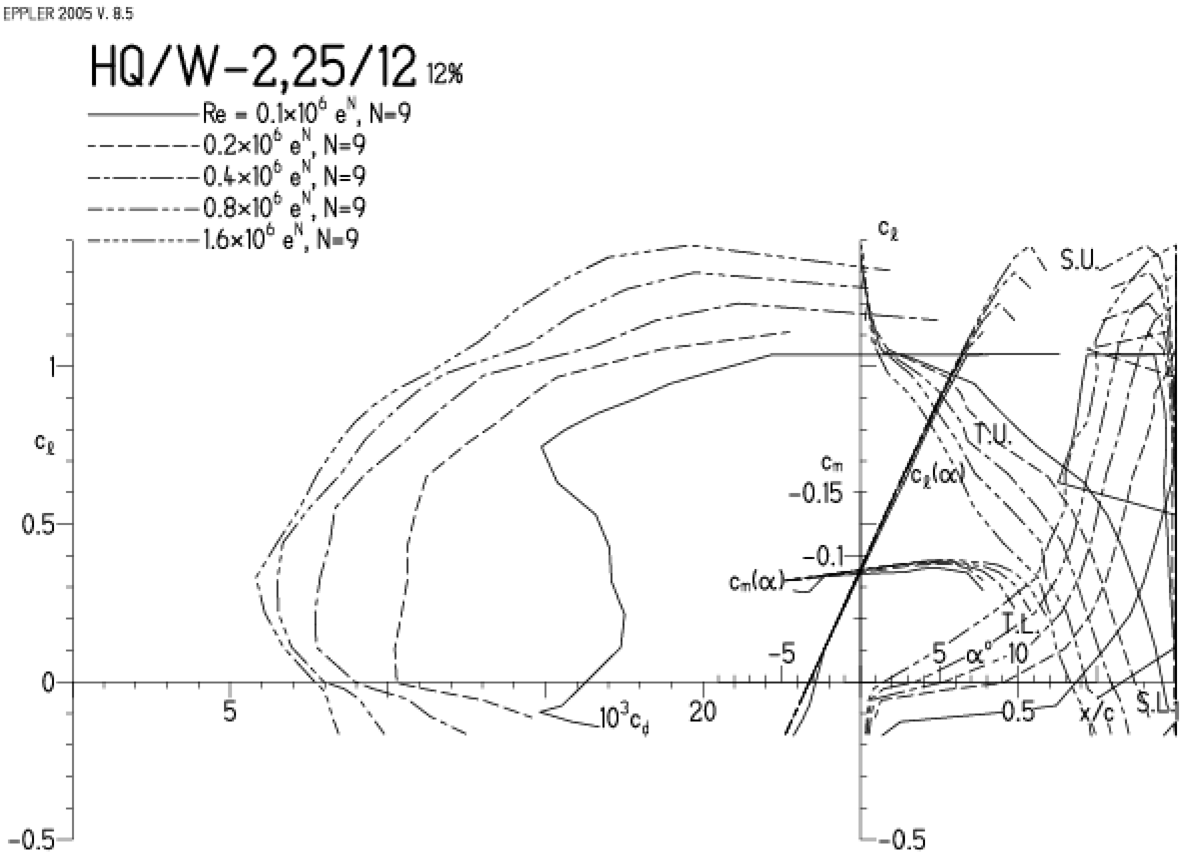
HQ/W-2,25/12, N=11



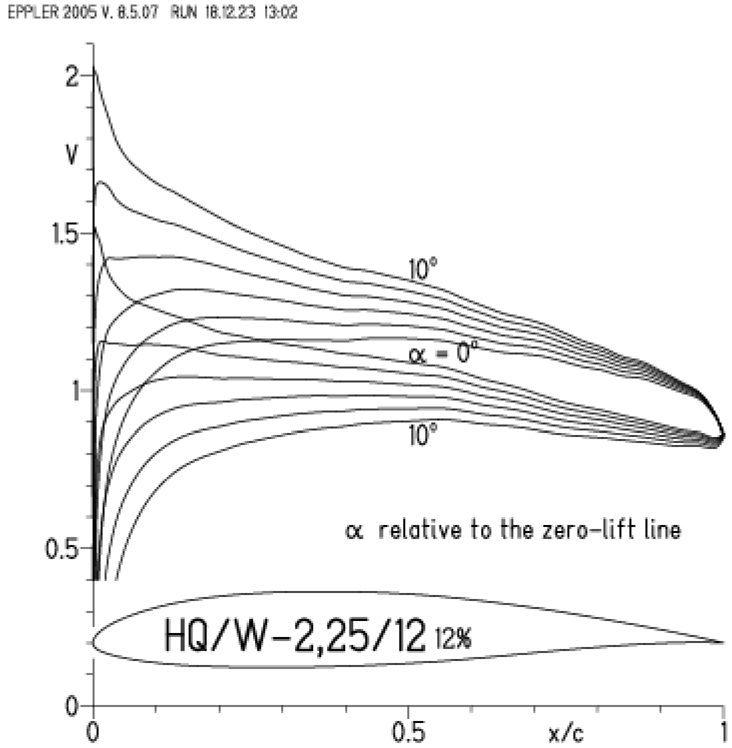


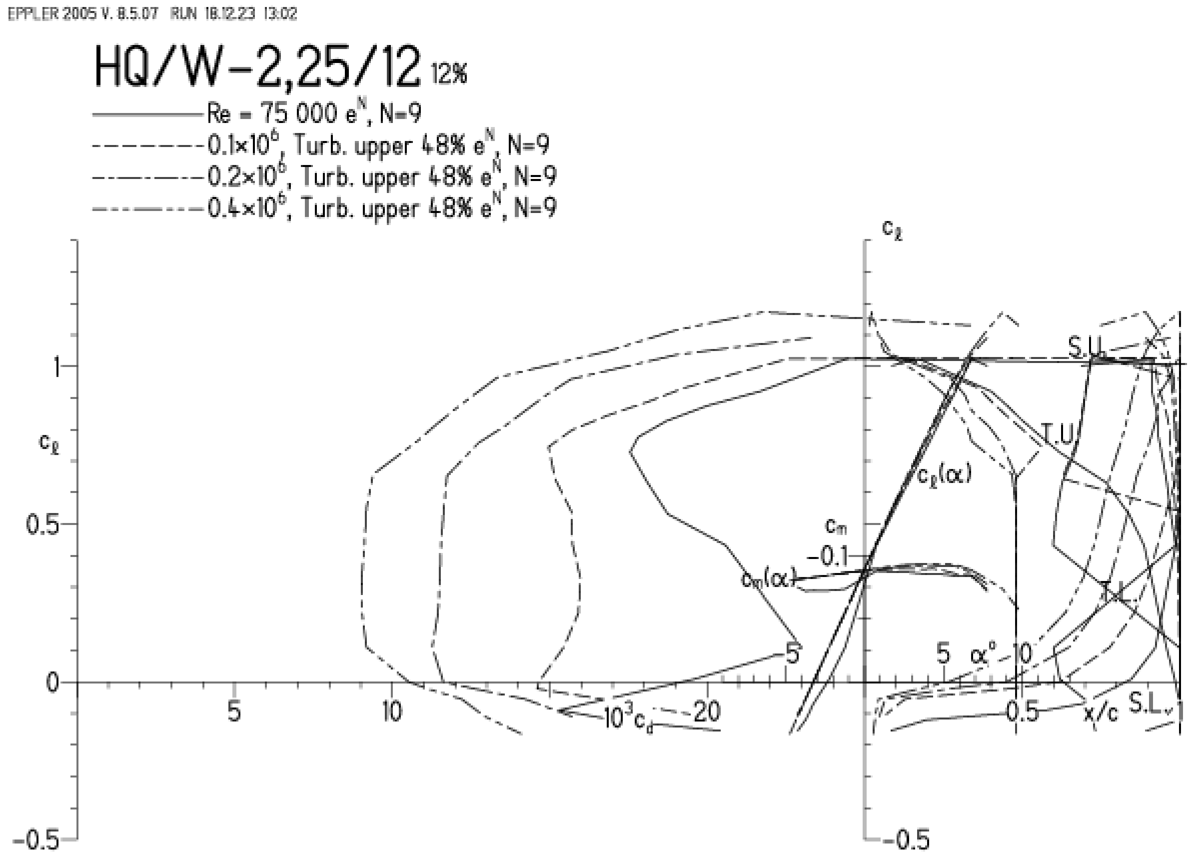
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c
0
0.5
1
1.5
2

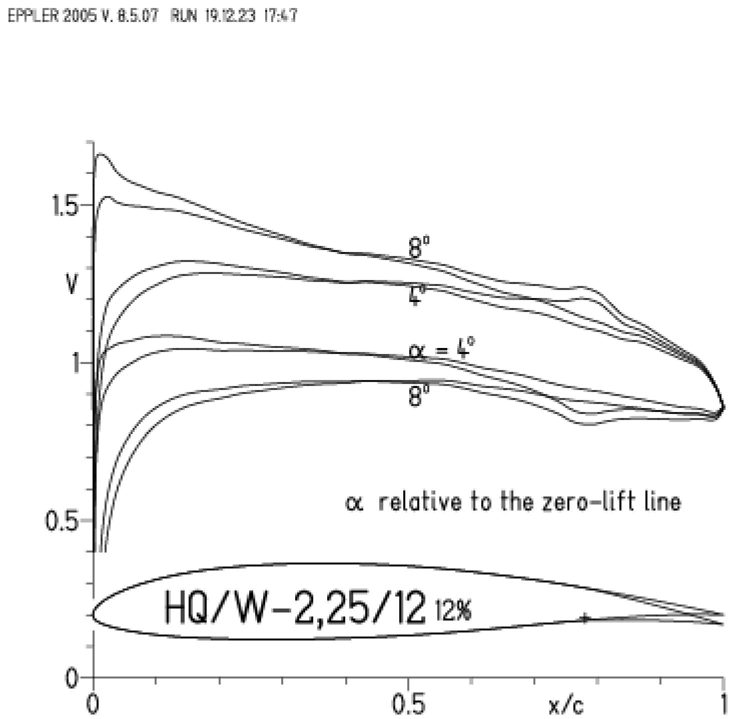

EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
−5
5
10
0.5
x/c
10^3 c_d
20
−0.5

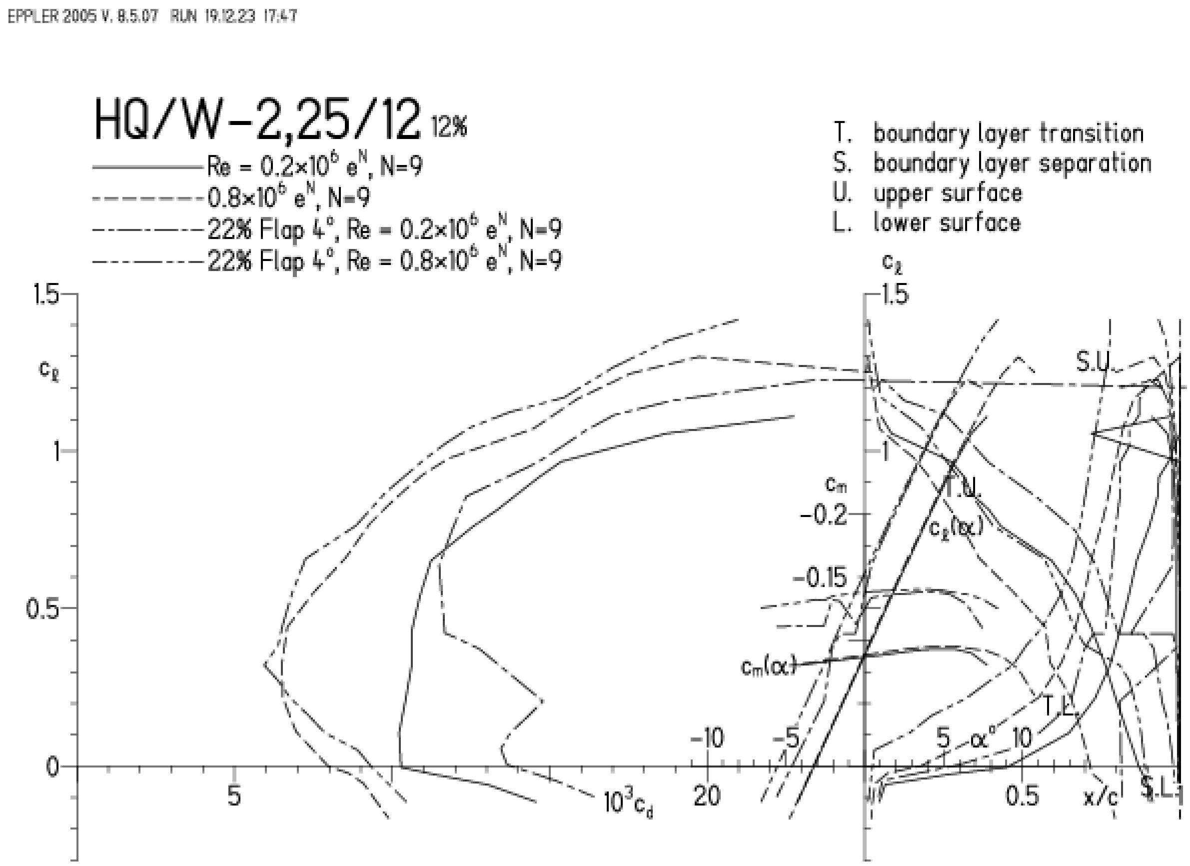
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





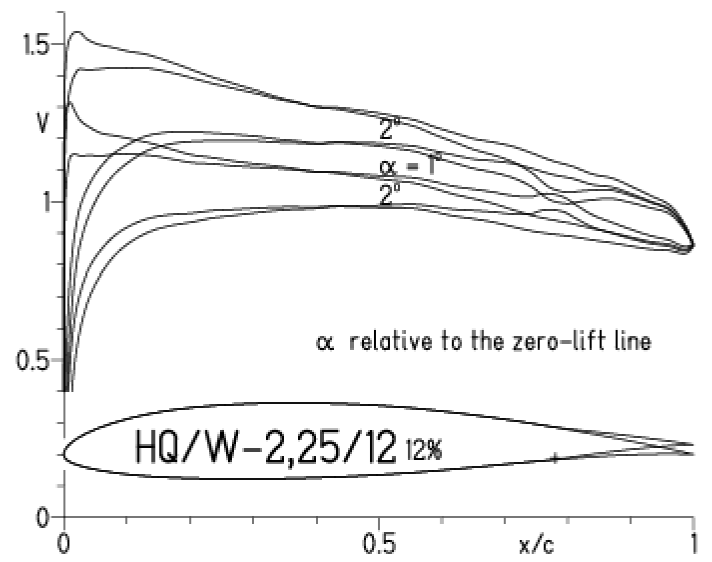
HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag



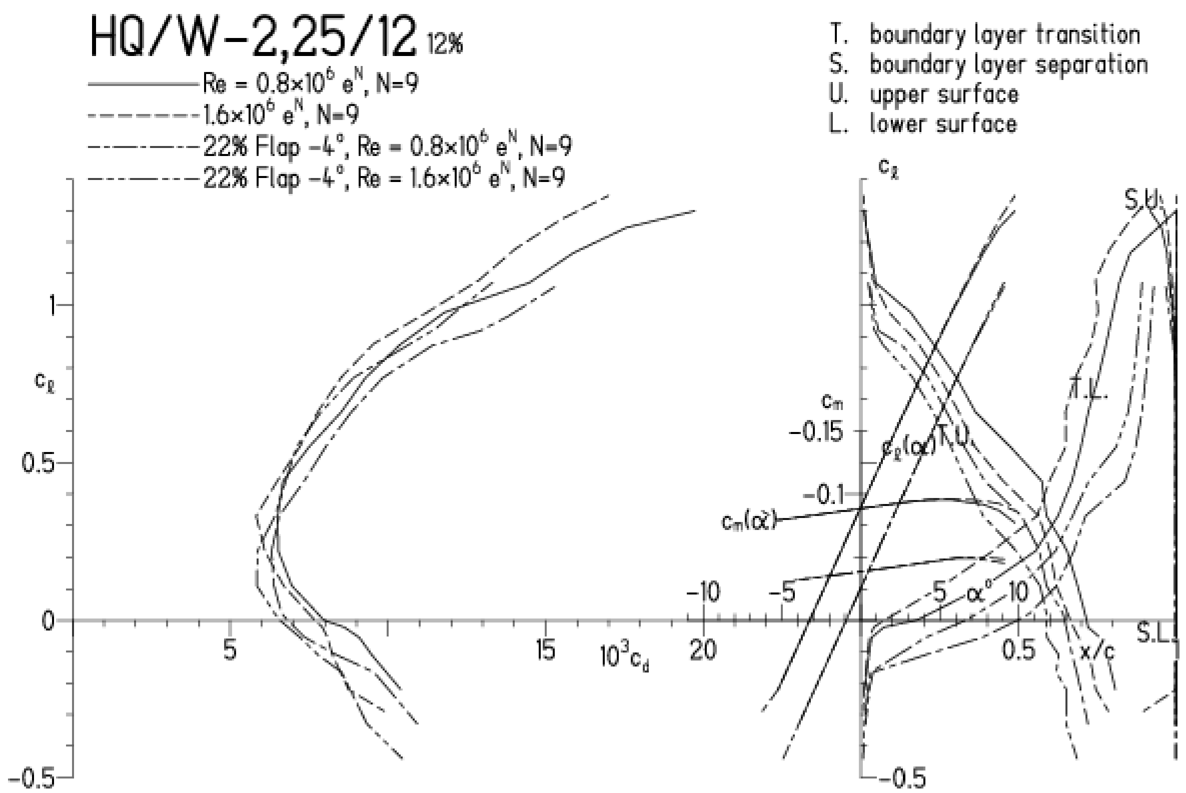


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

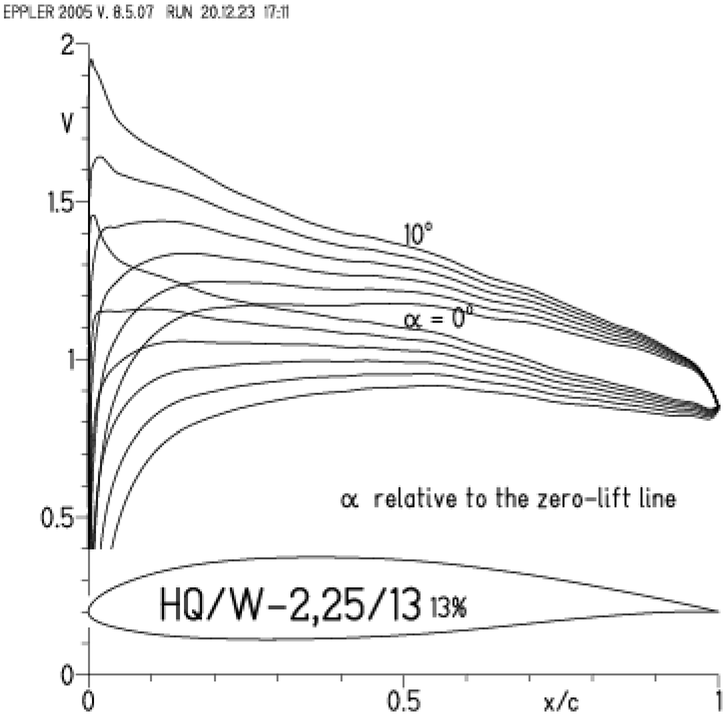
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

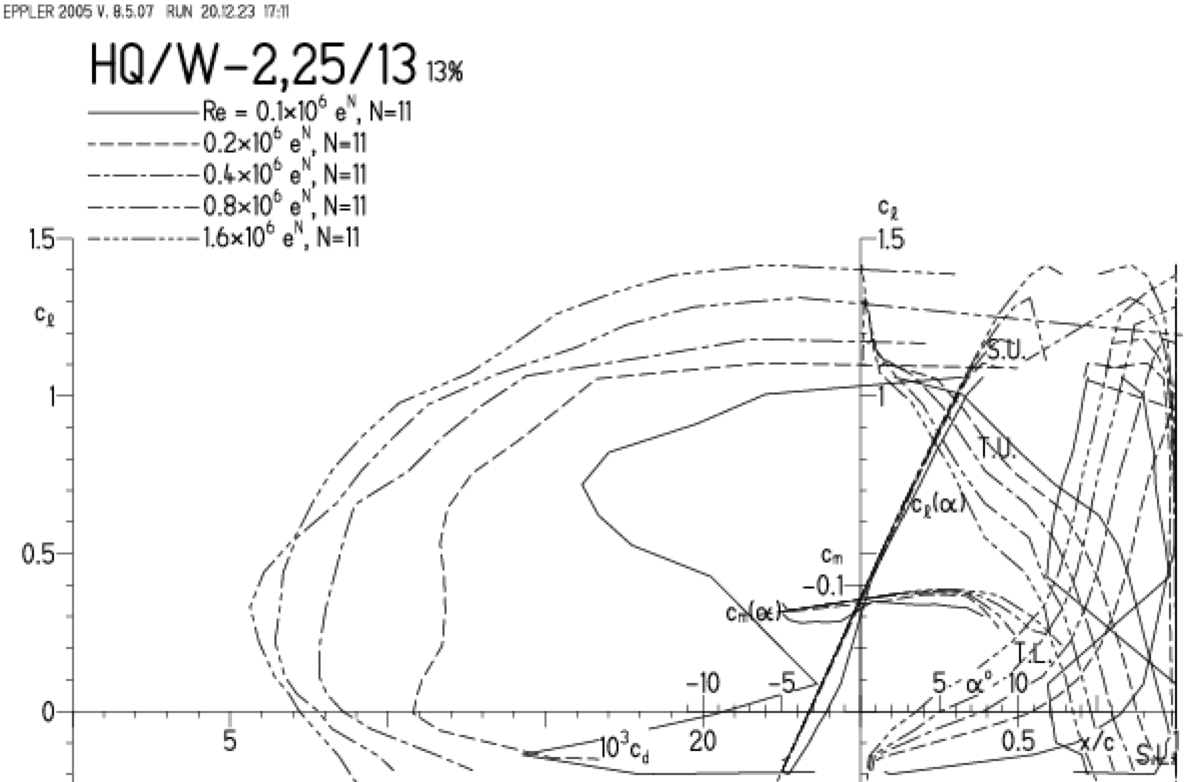


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

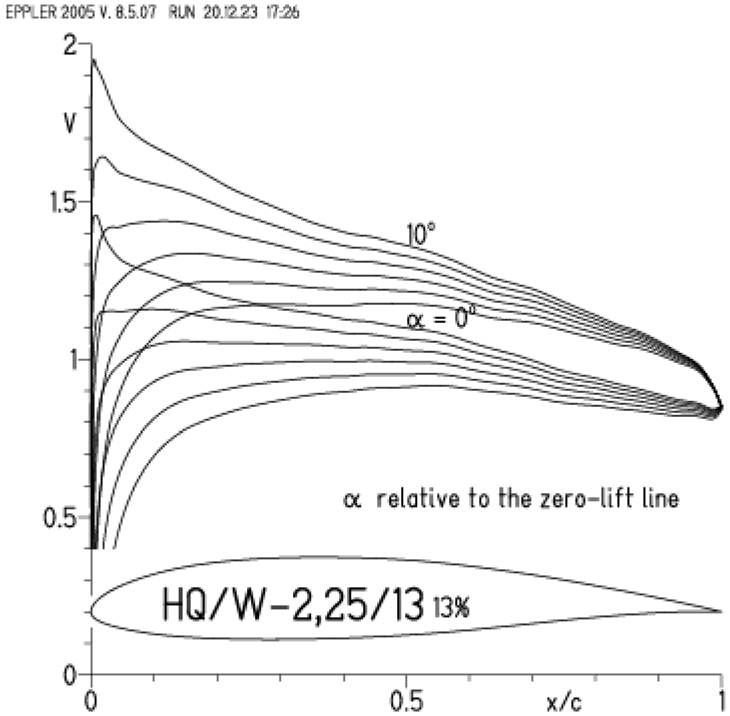


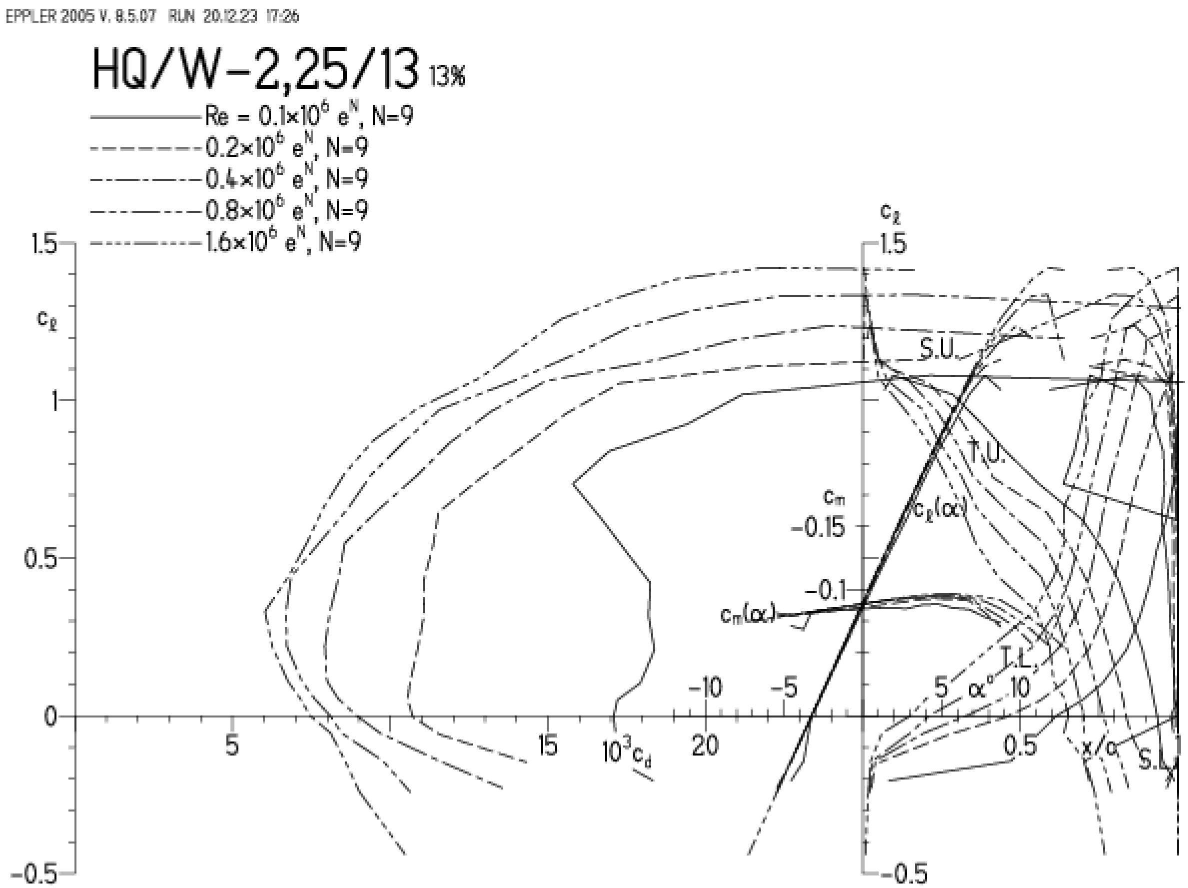
<u>HQ/W-2,25/13</u>, N=11



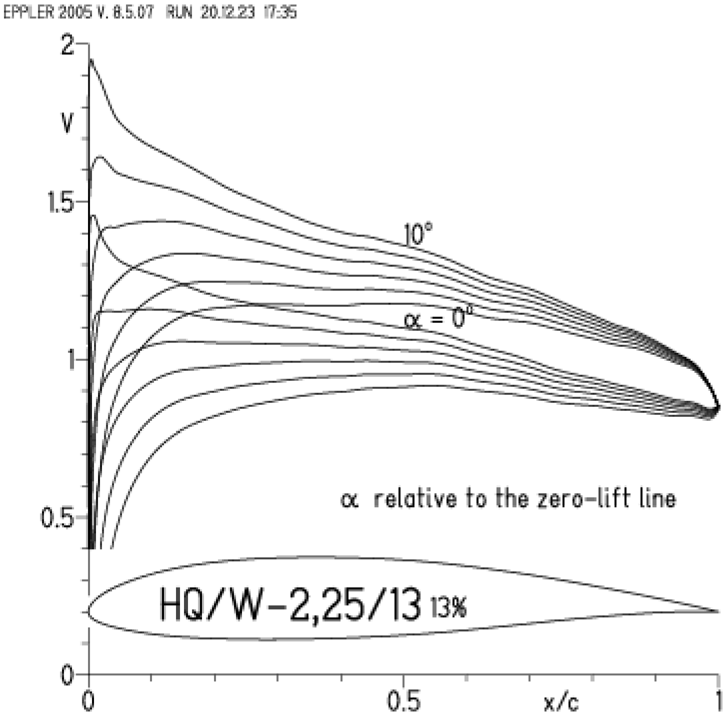


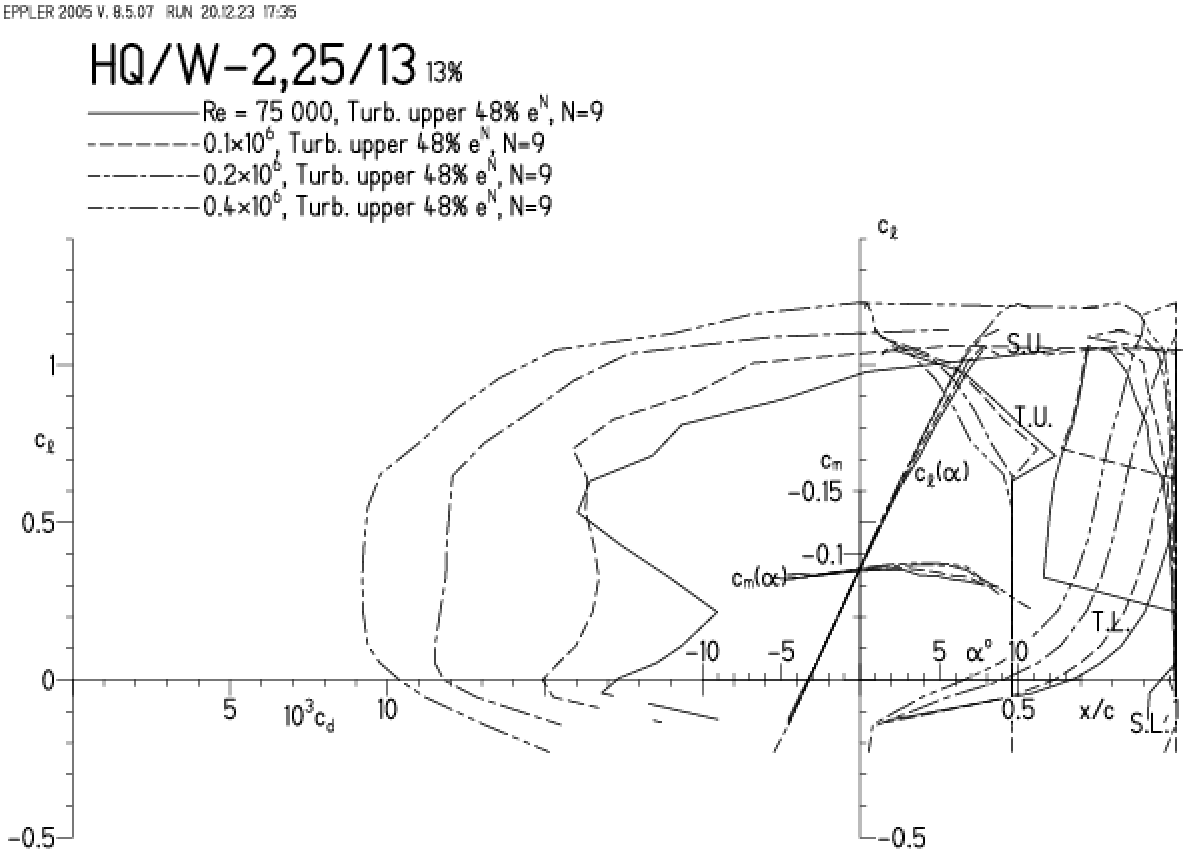
<u>HQ/W-2,25/13</u>, N=9





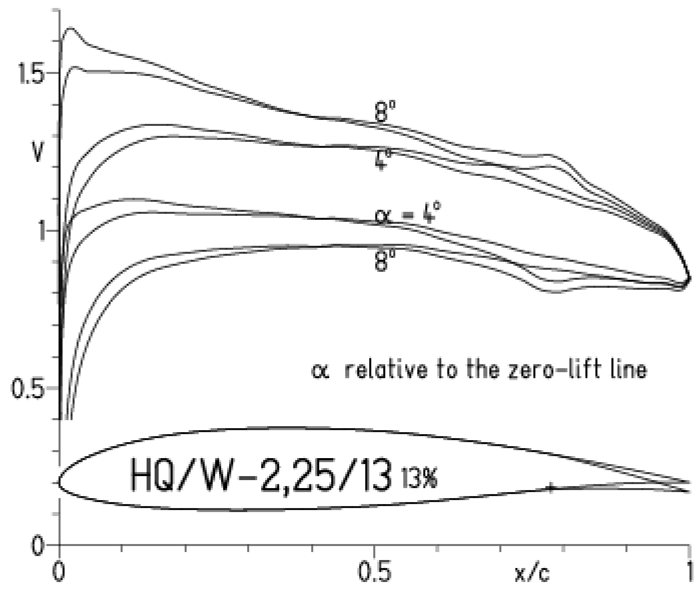
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



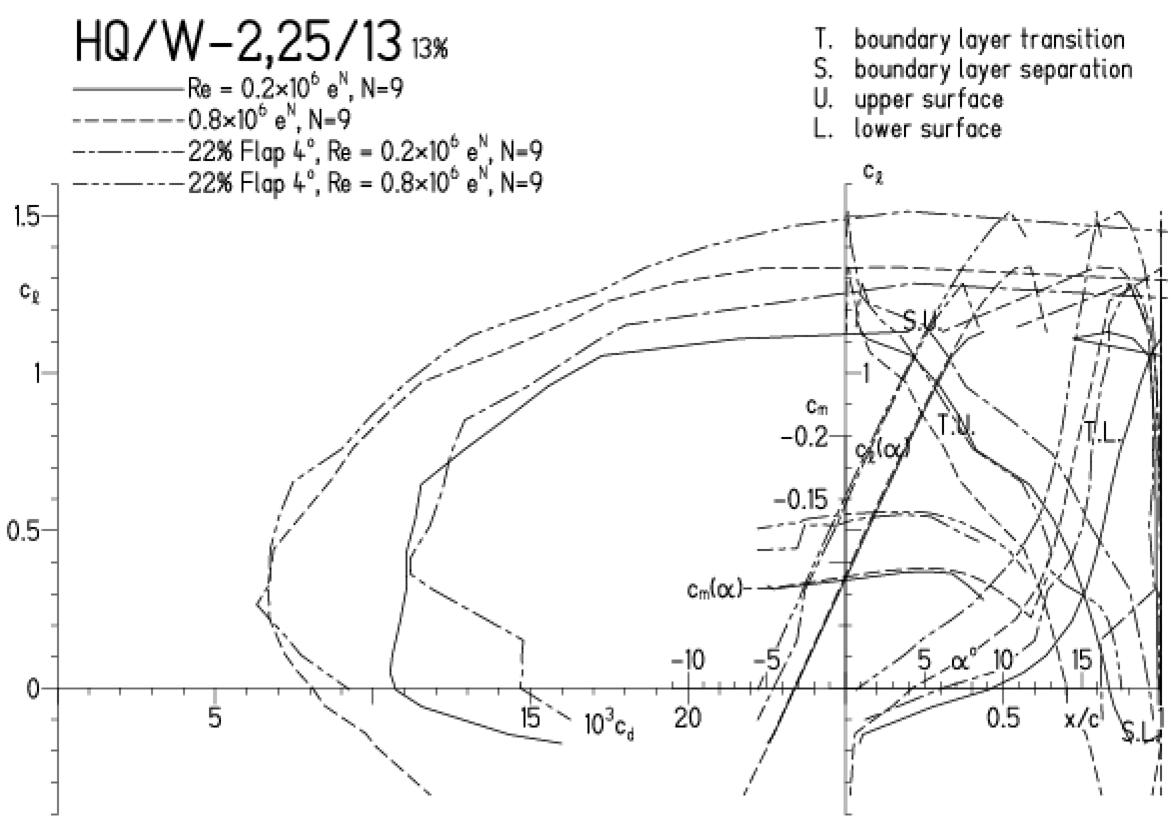


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

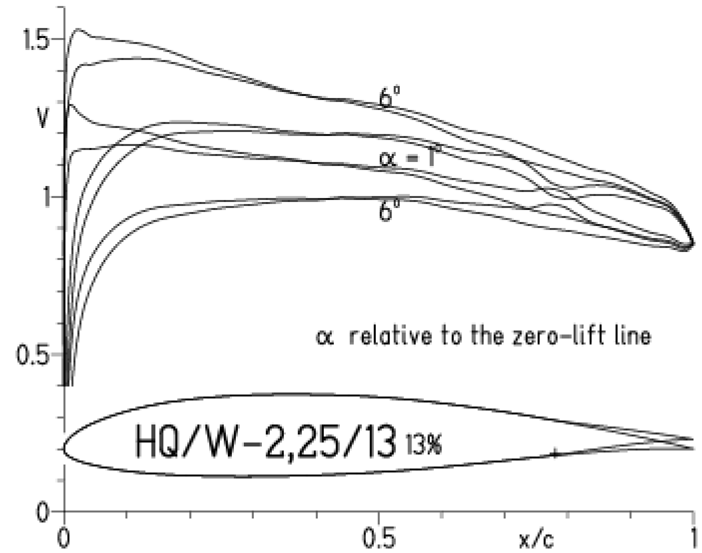


EPPLER 2005 V.

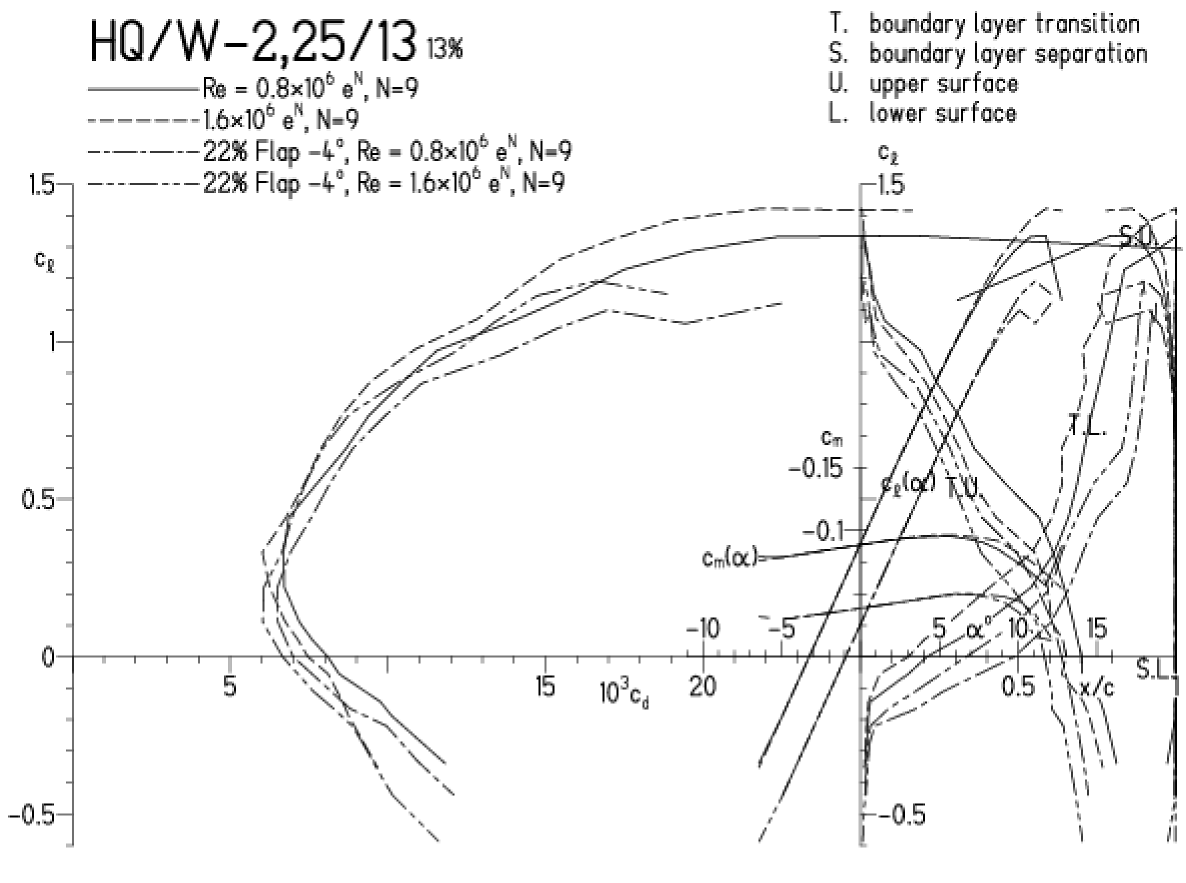


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

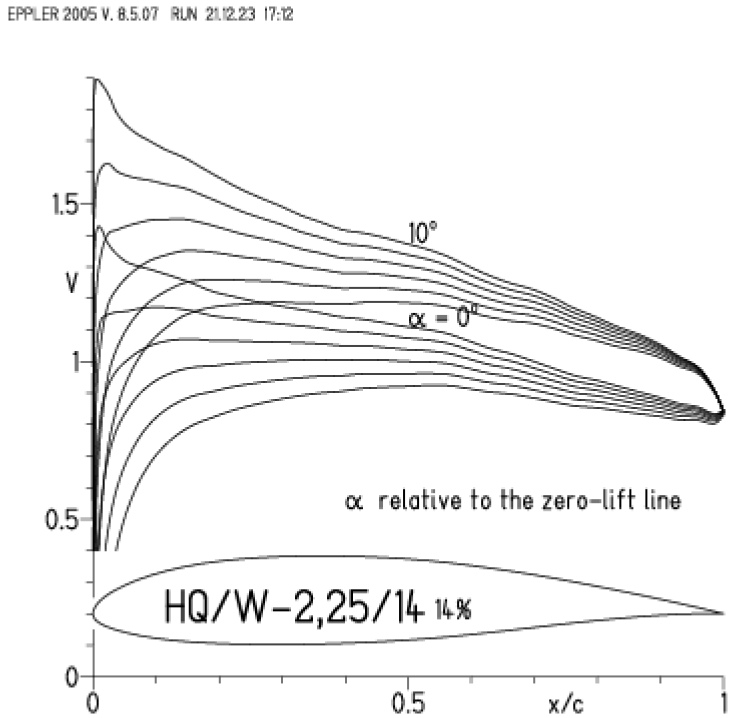
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

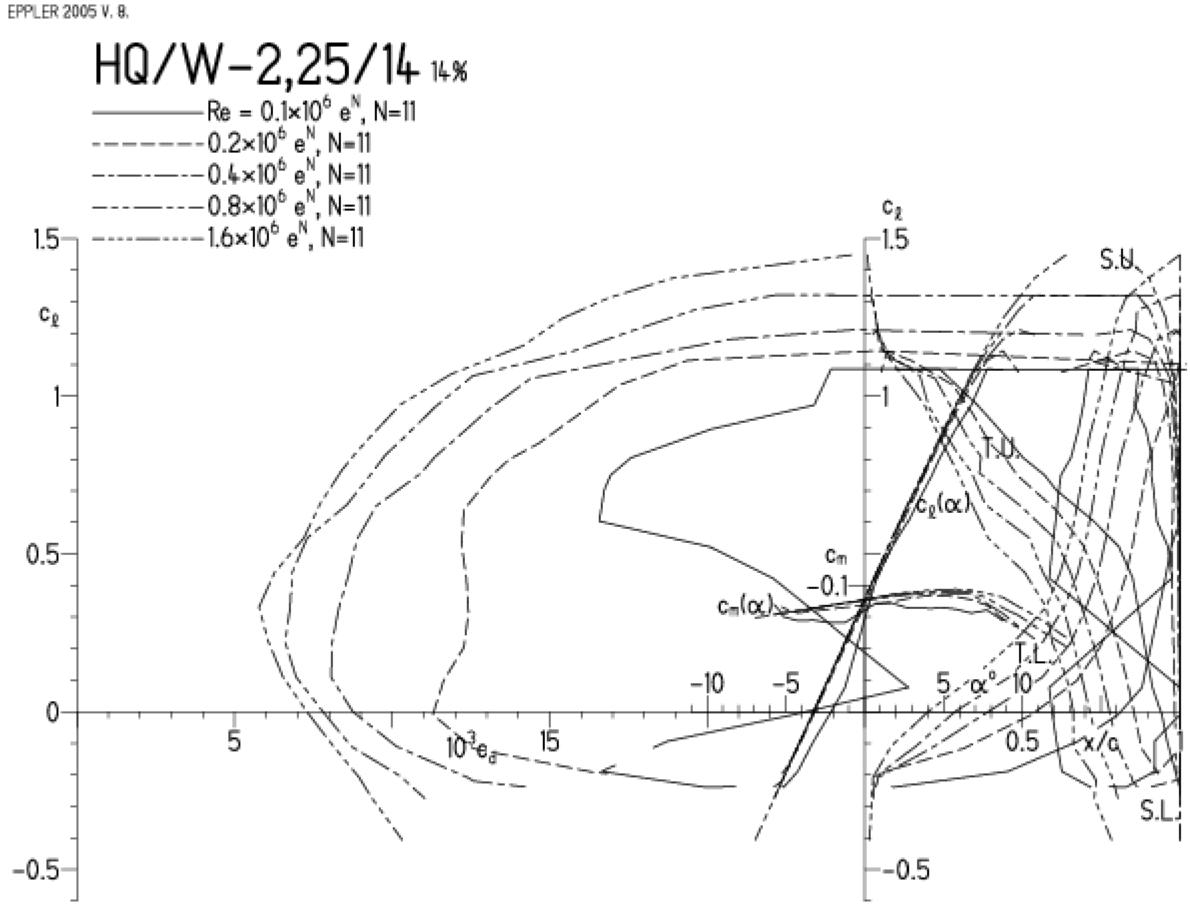


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

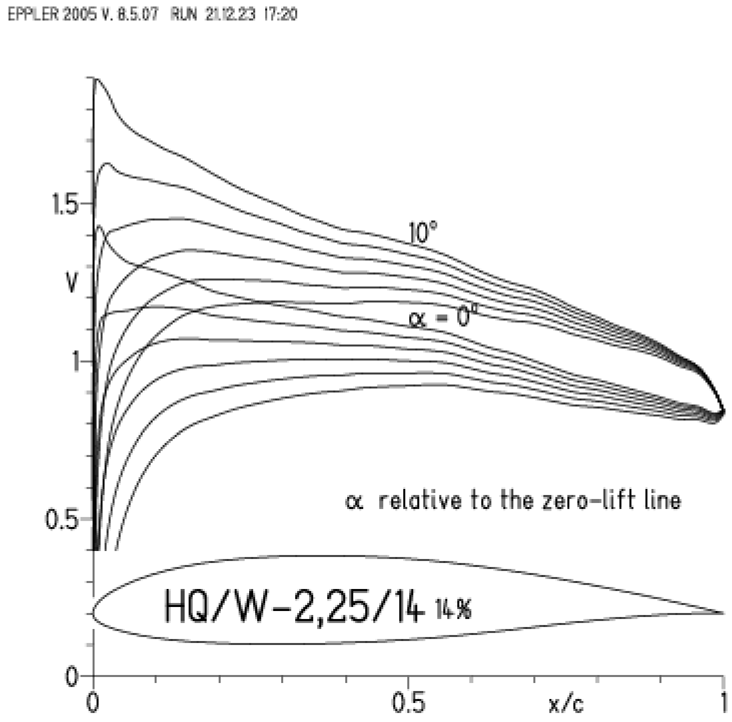


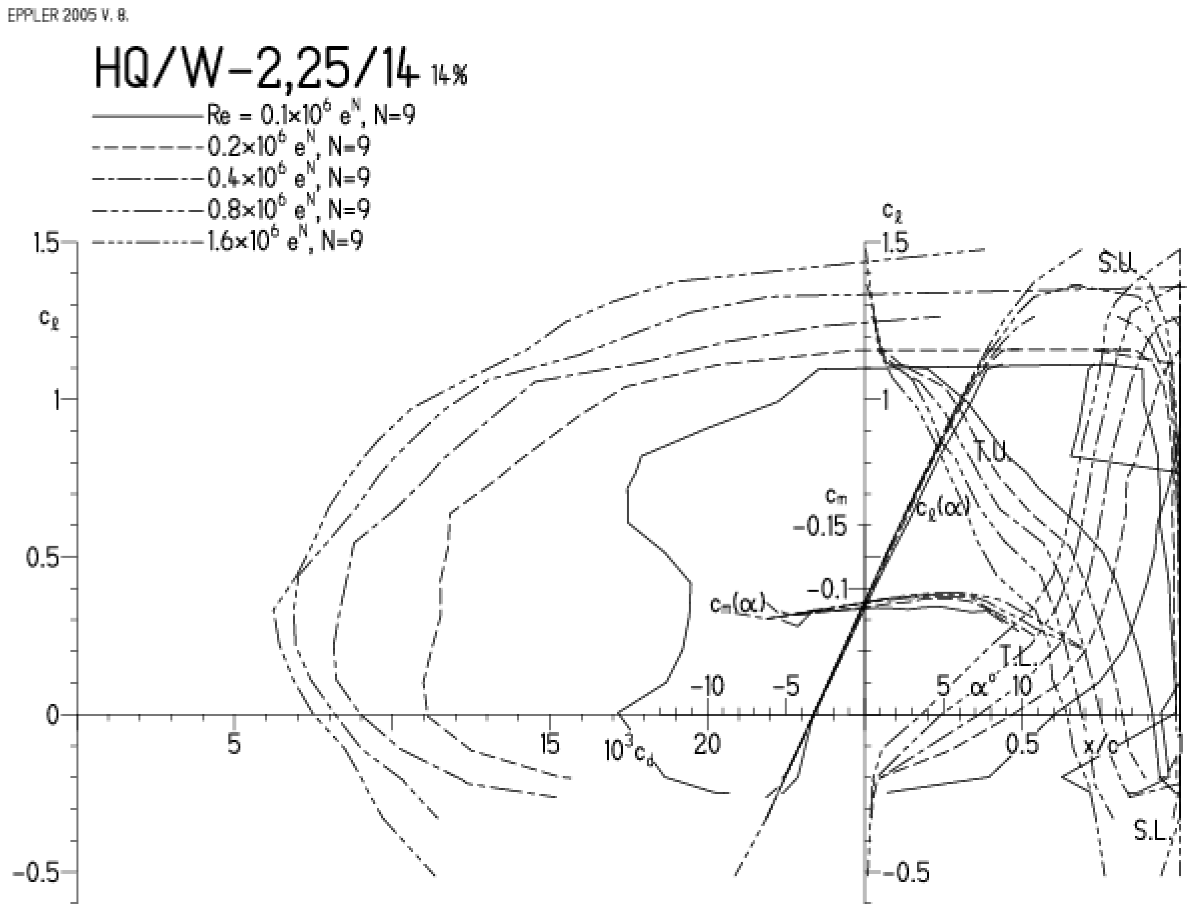
<u>HQ/W-2,25/14</u>, N=11



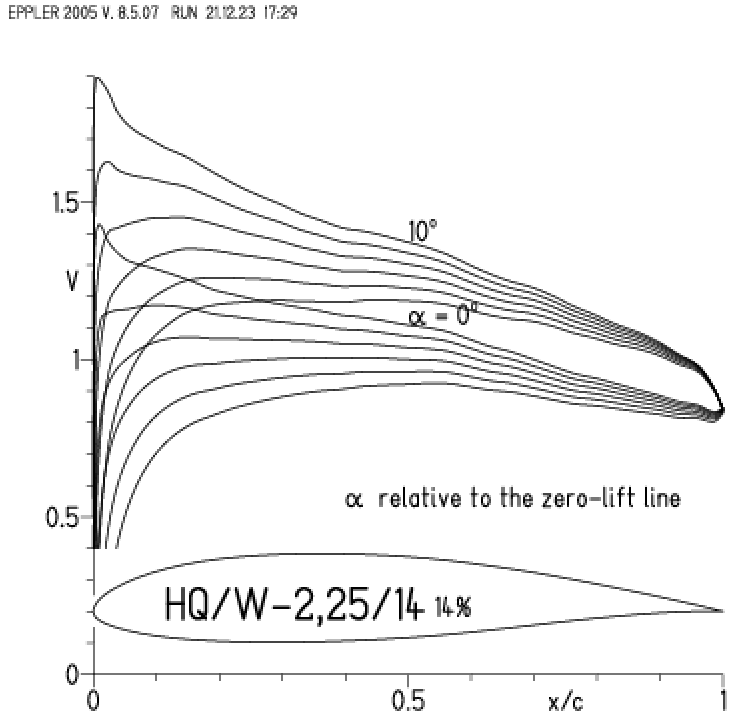


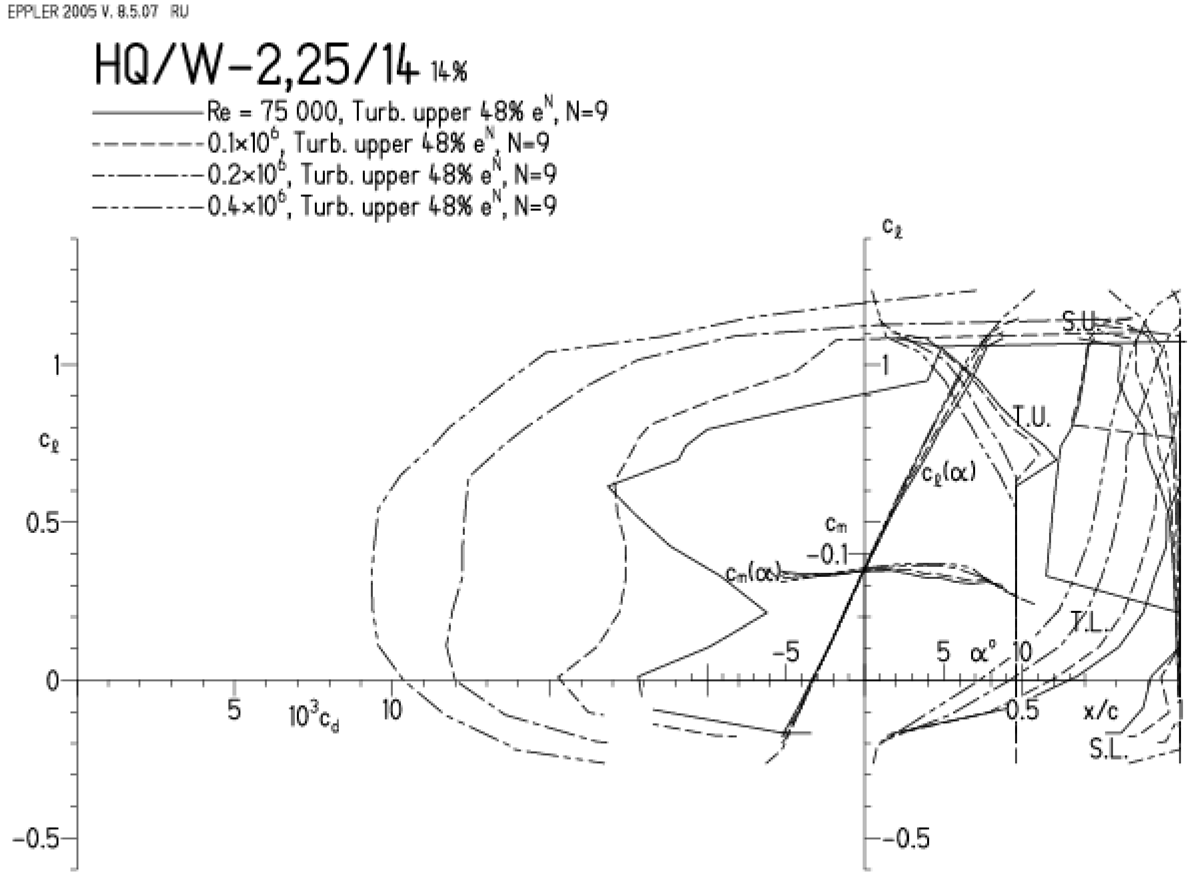
<u>HQ/W-2,25/14</u>, N=9





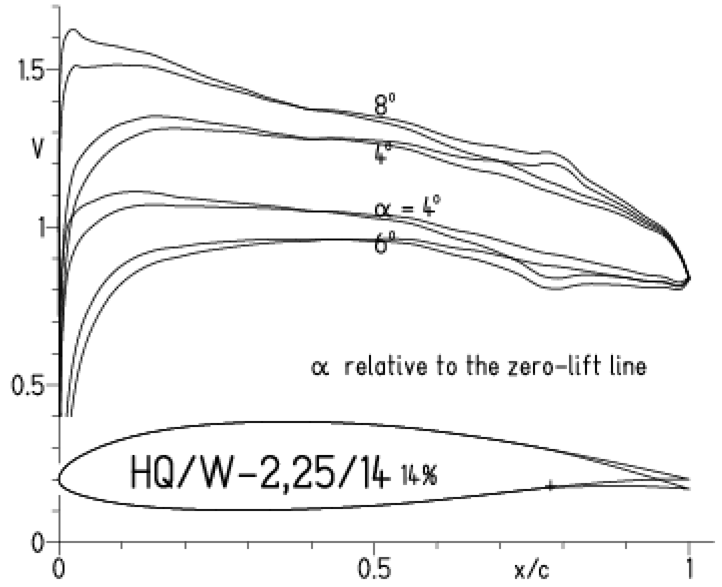
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



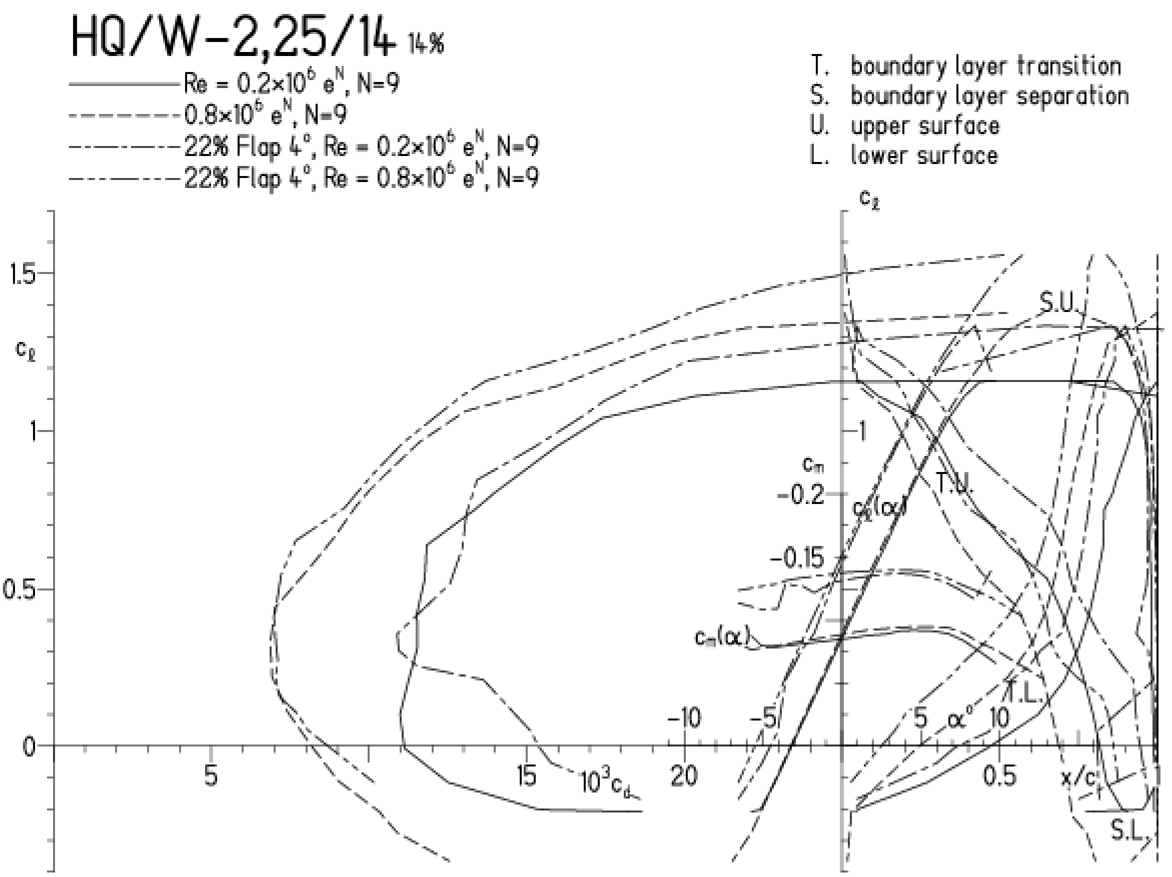


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

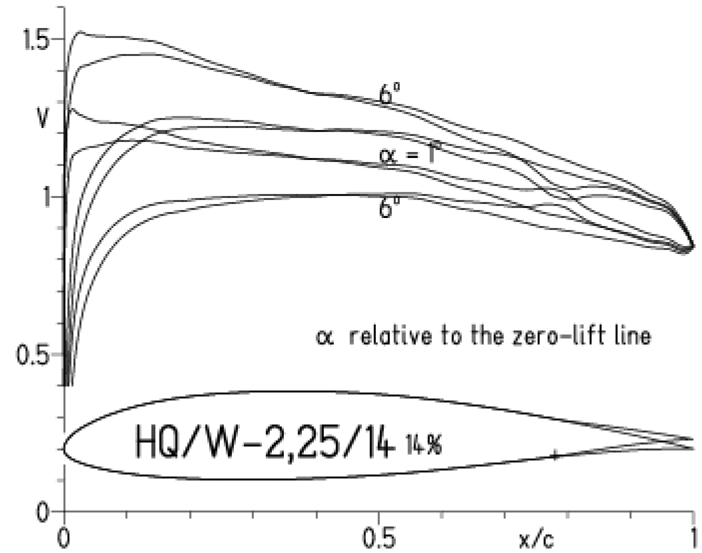


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

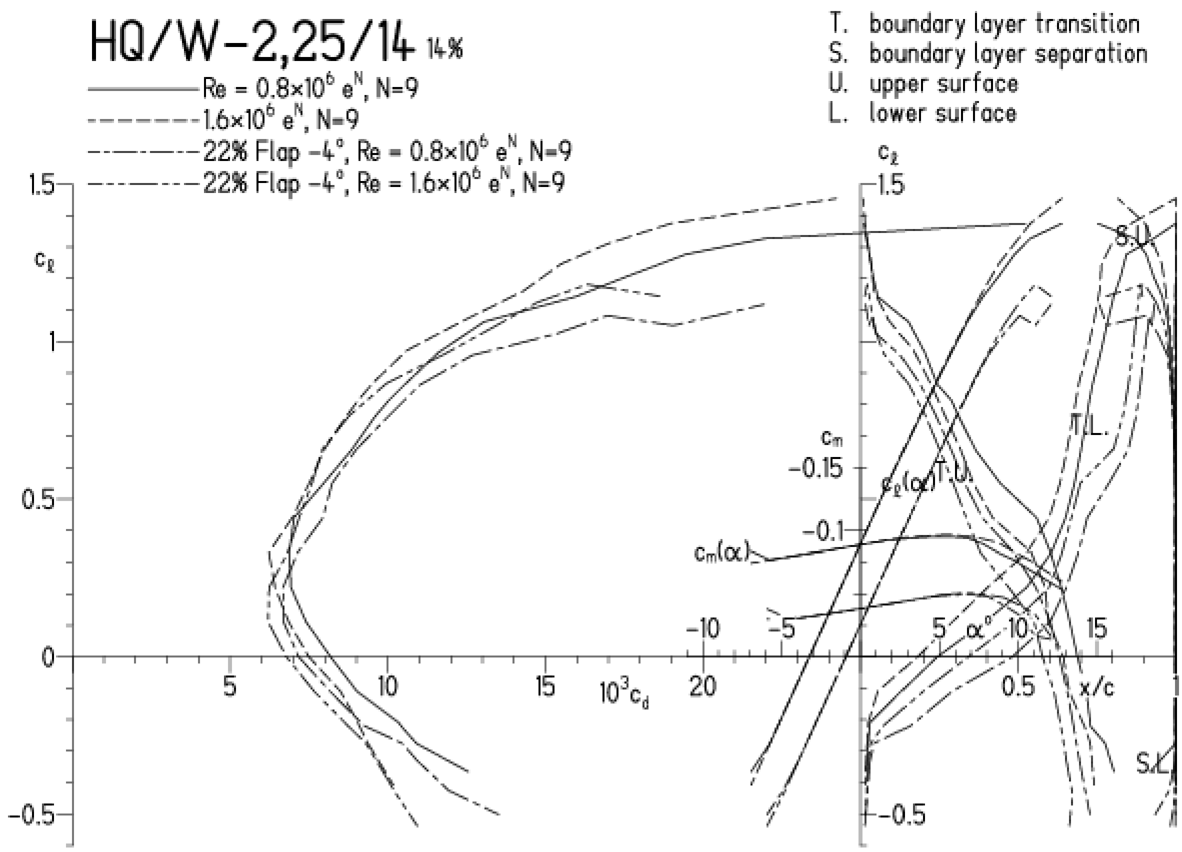


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

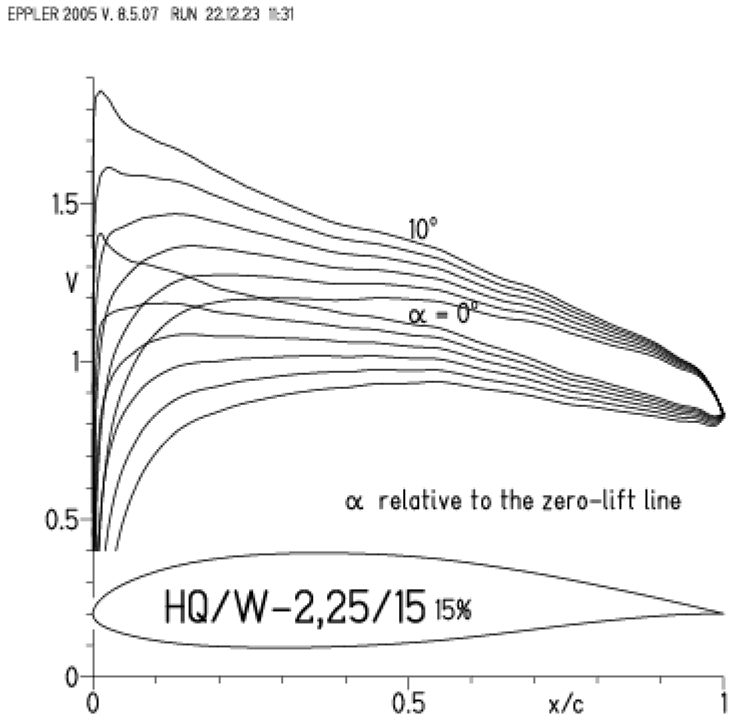
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

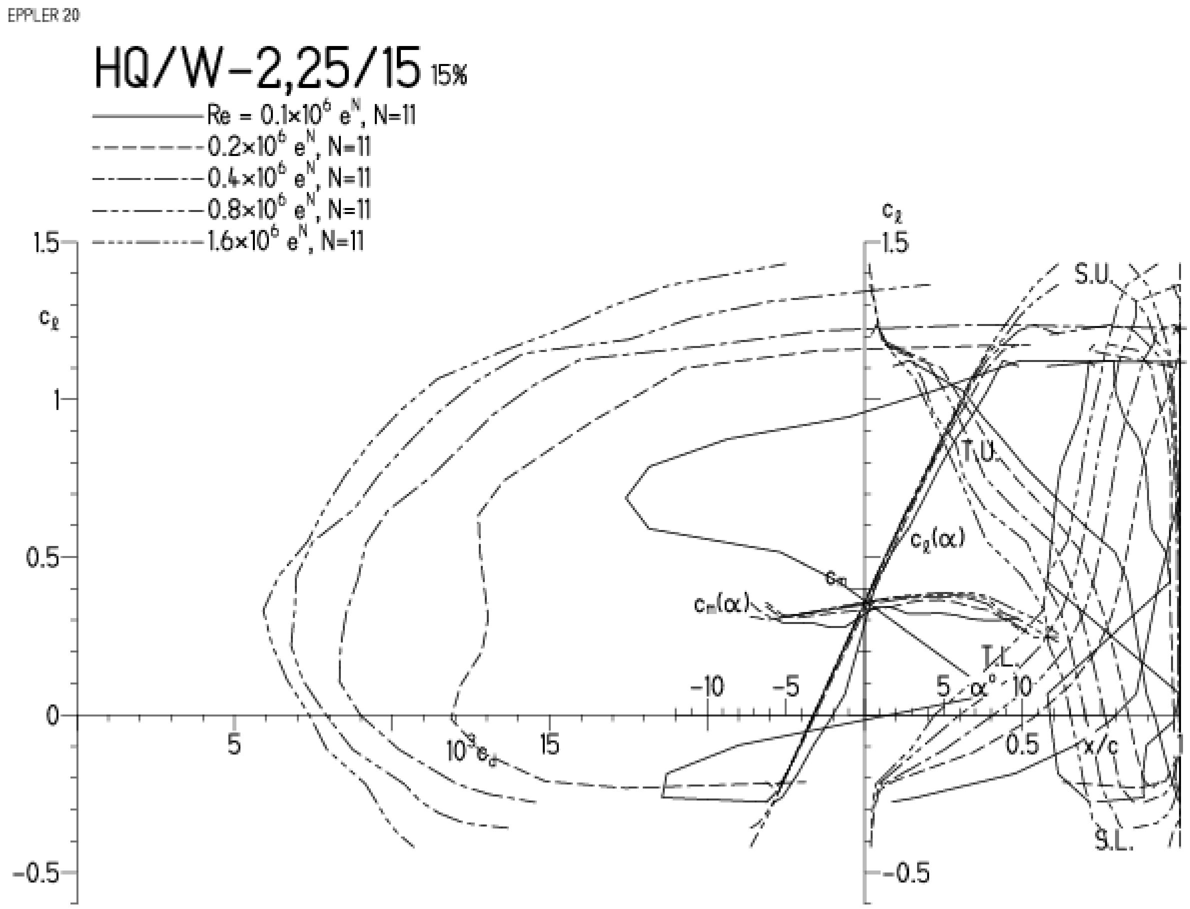


EPPLER 2005 V. 8.5.07



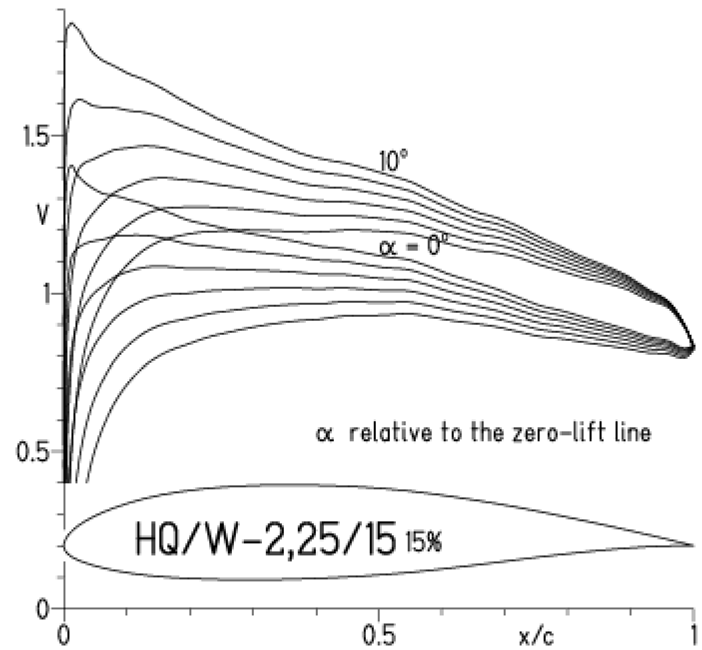
HQ/W-2,25/15, N=11



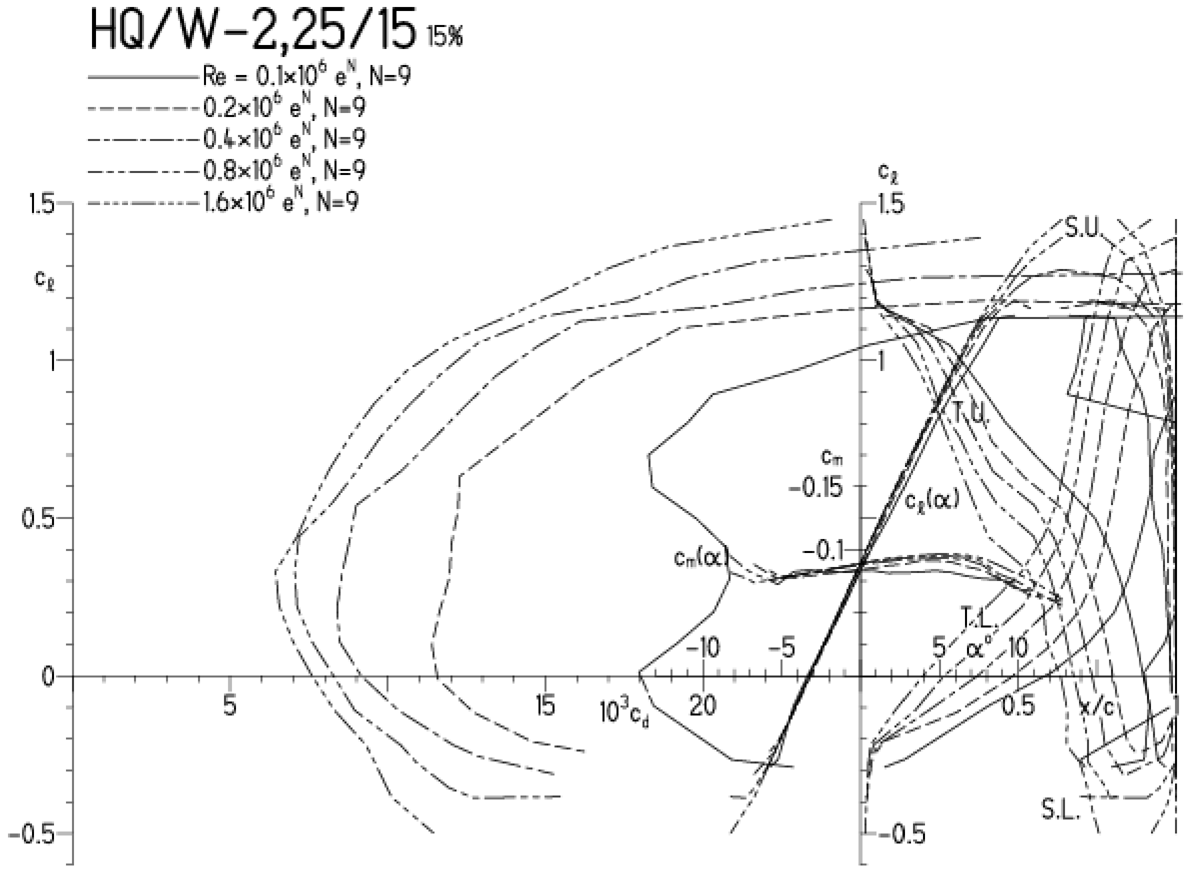


<u>HQ/W-2,25/15</u>, N=9

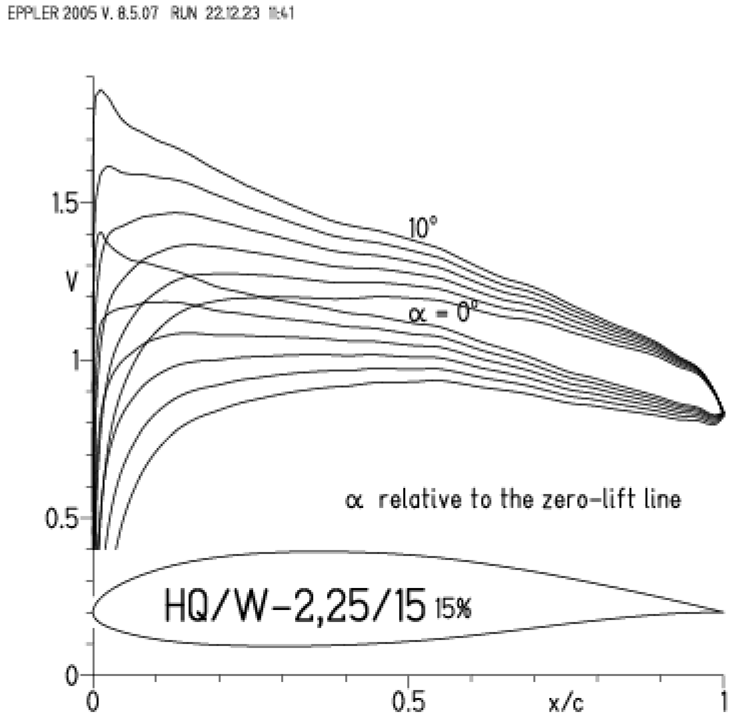
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

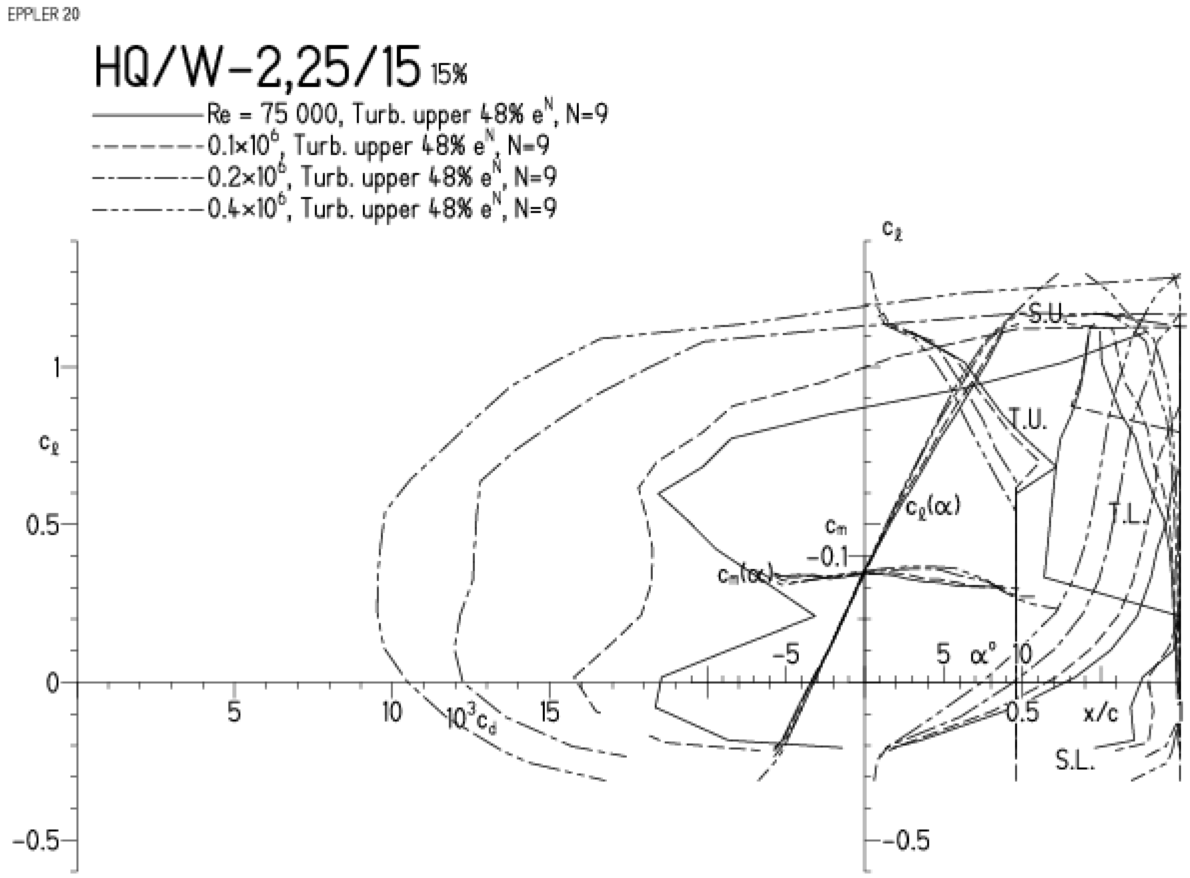


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



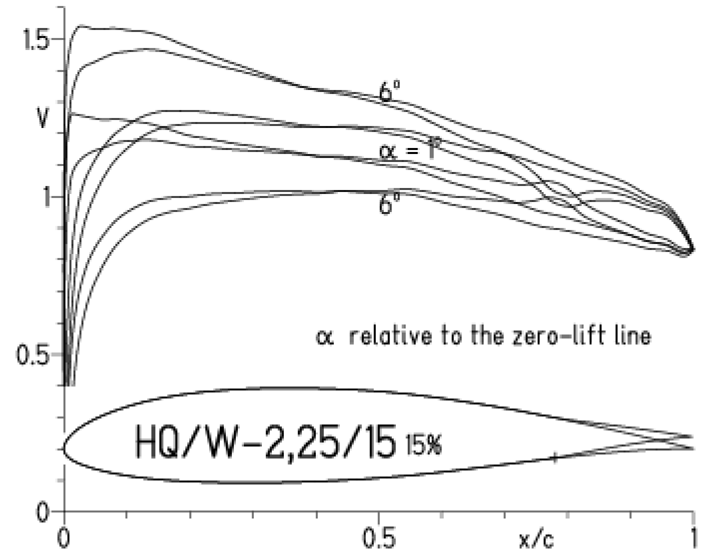


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

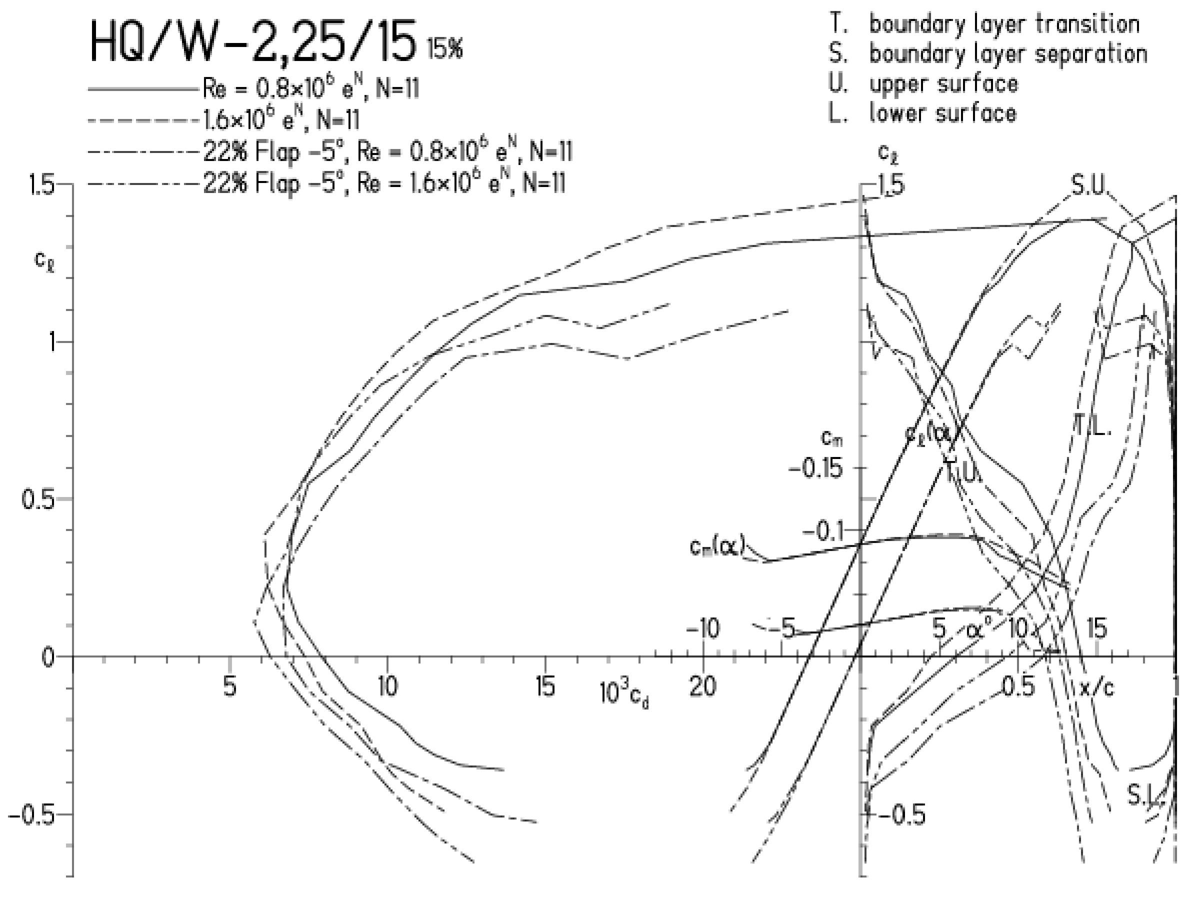
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

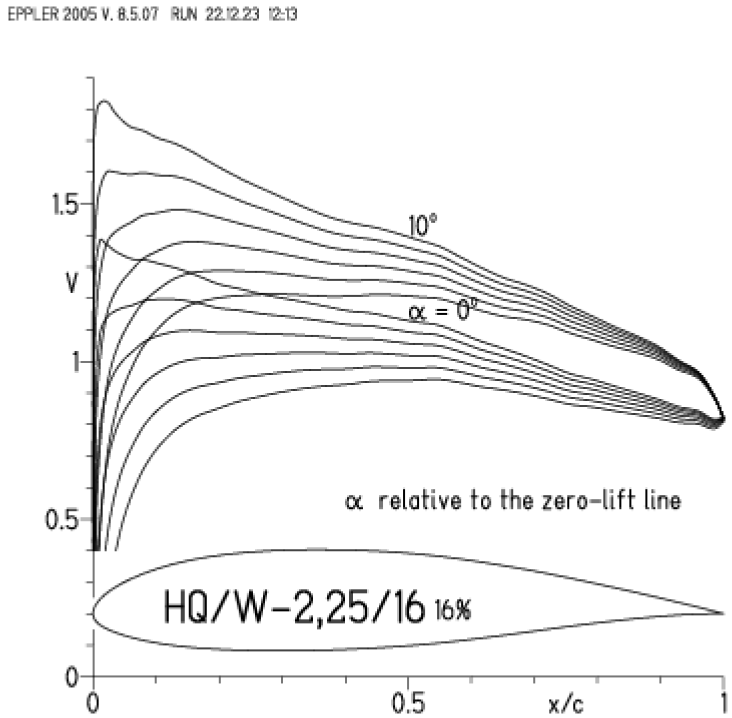
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

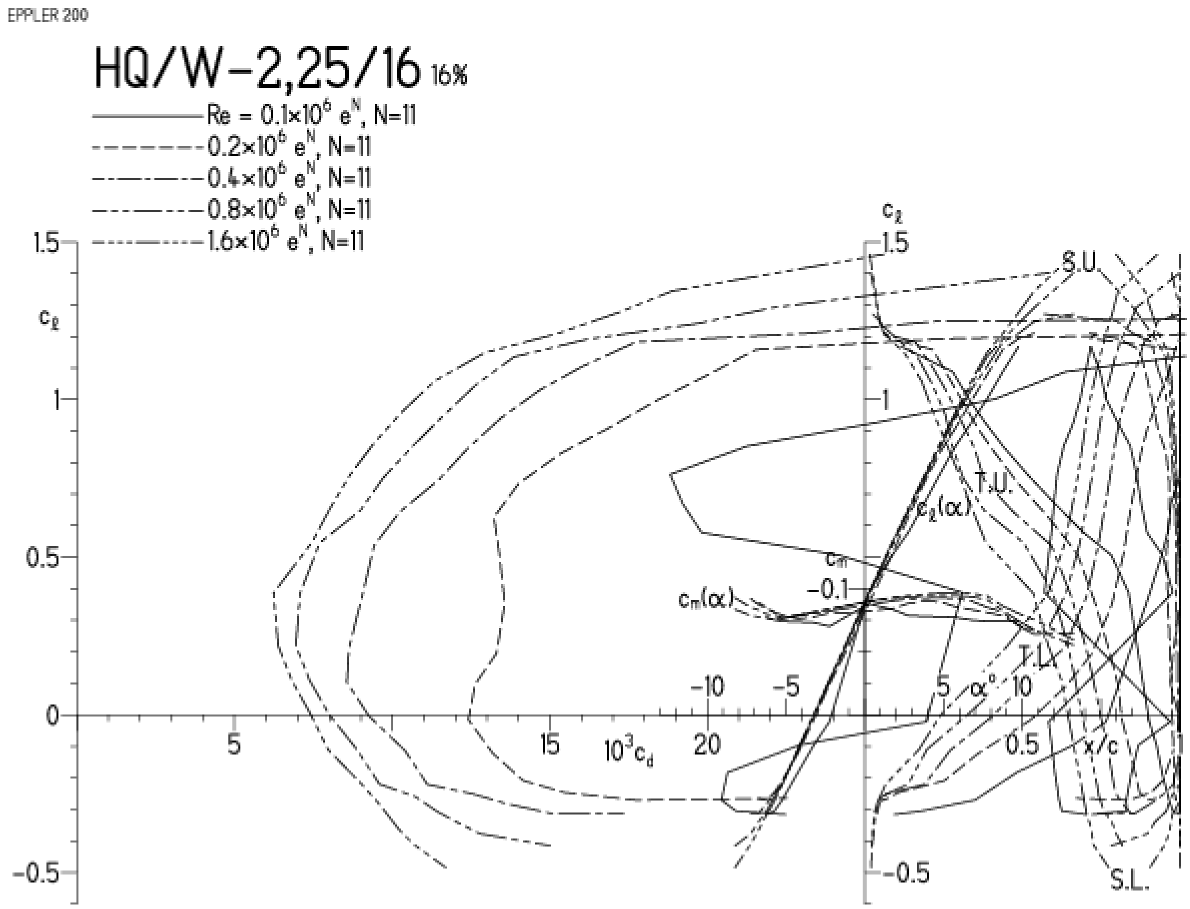


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



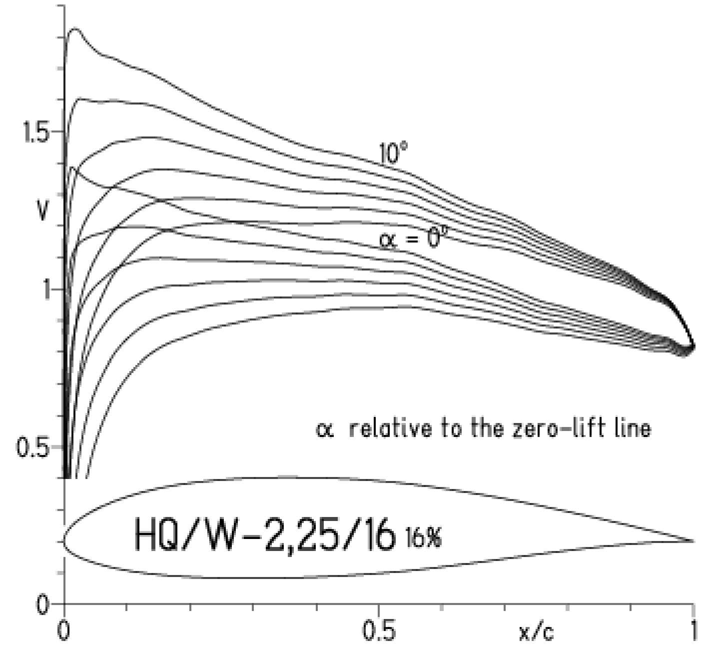
HQ/W-2,25/16, N=11



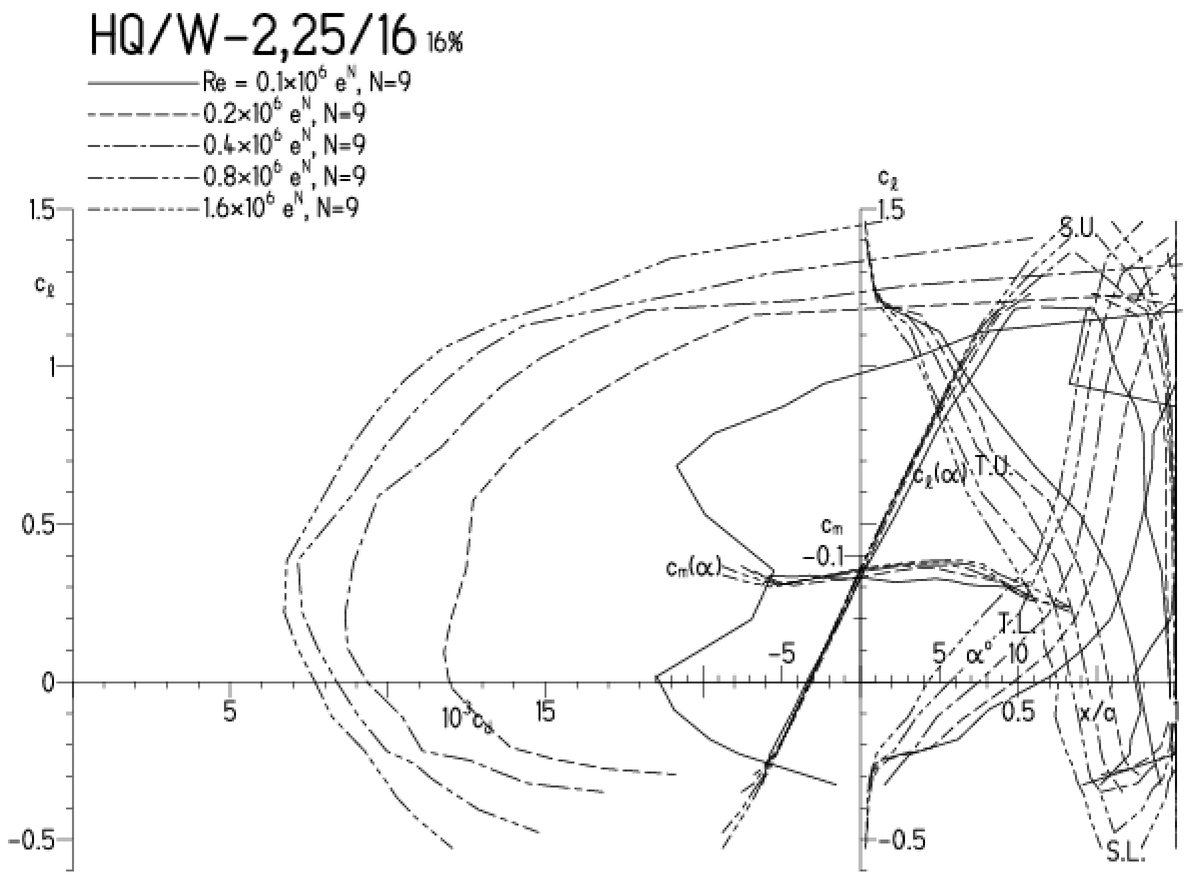


HQ/W-2,25/16, N=9

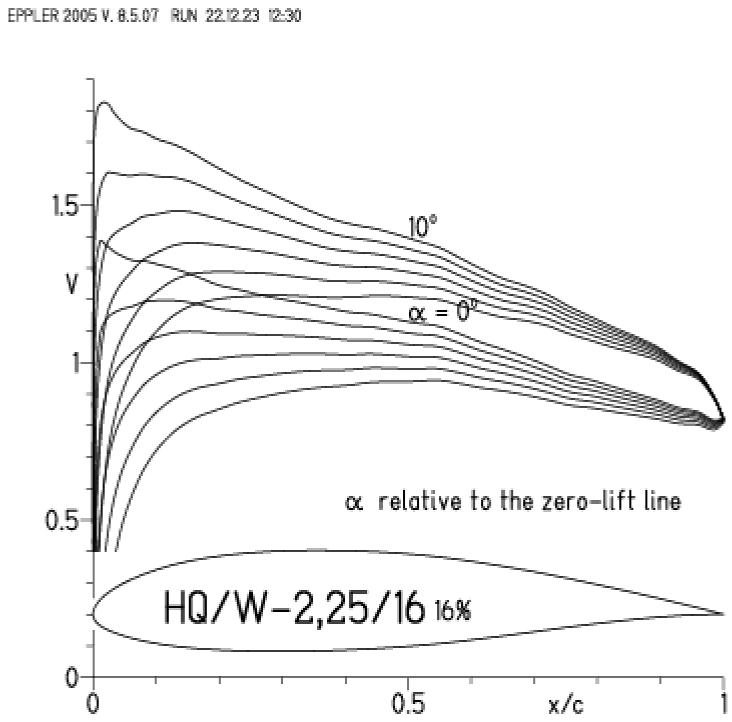
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

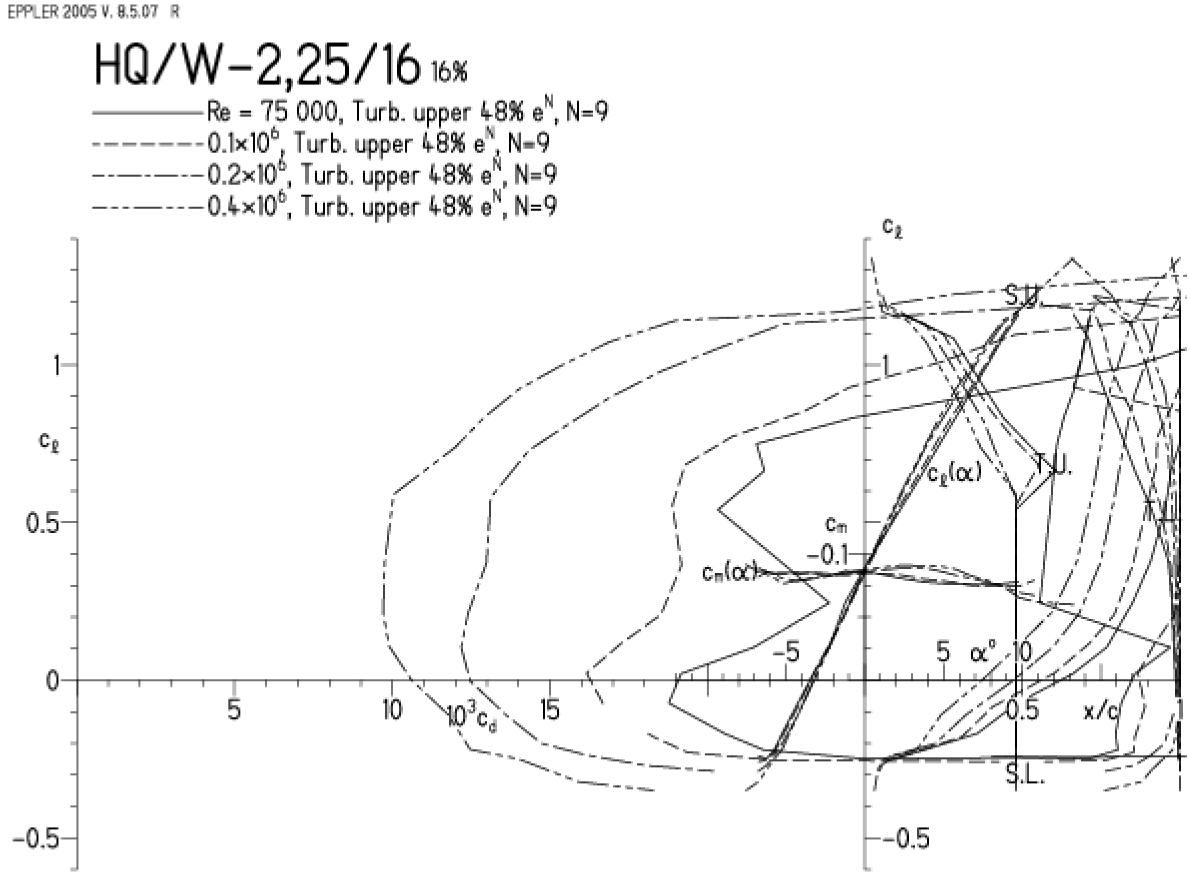


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



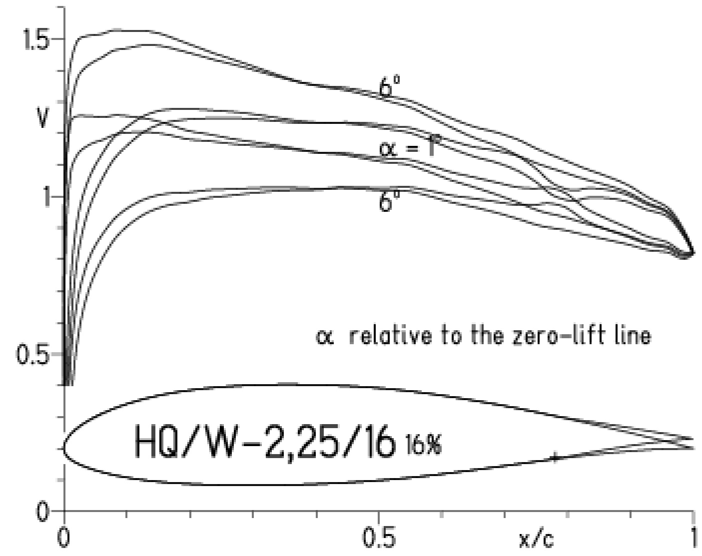


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

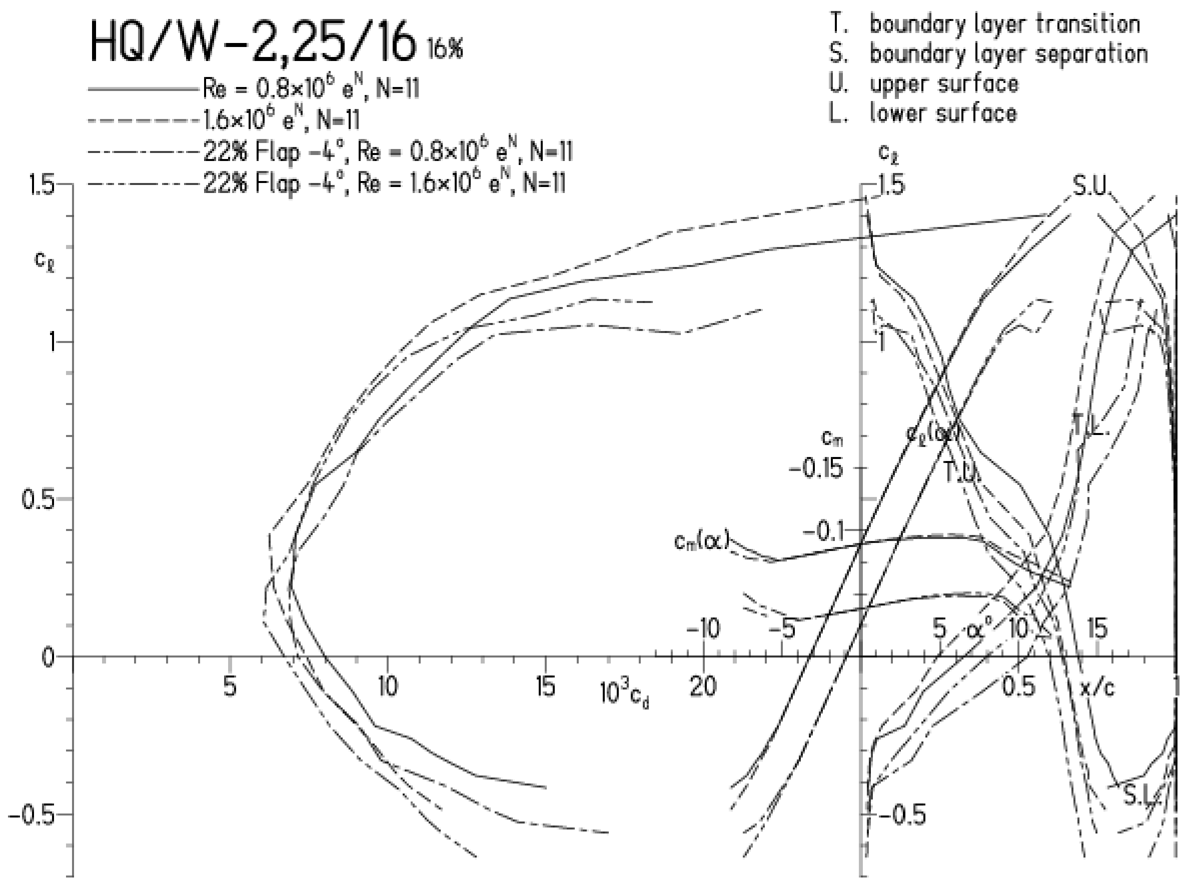
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

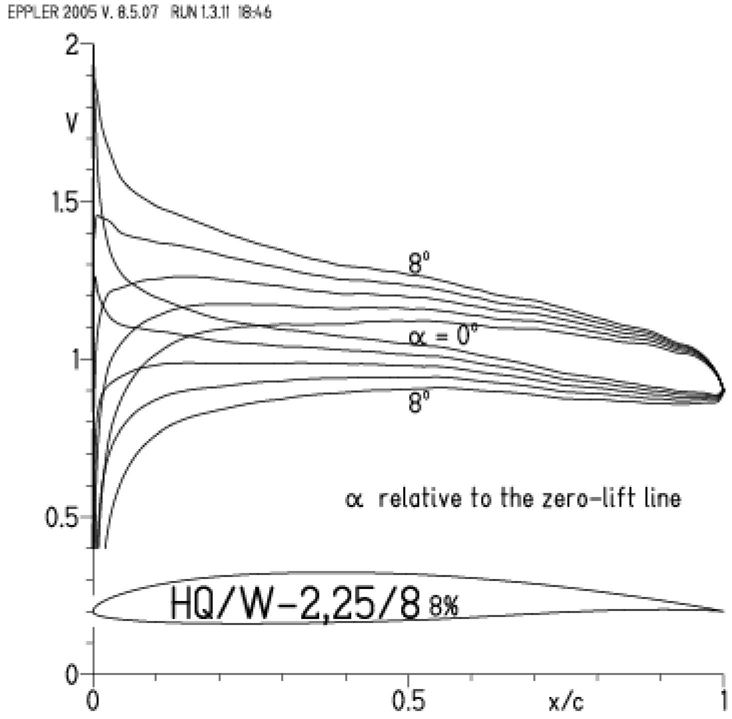
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

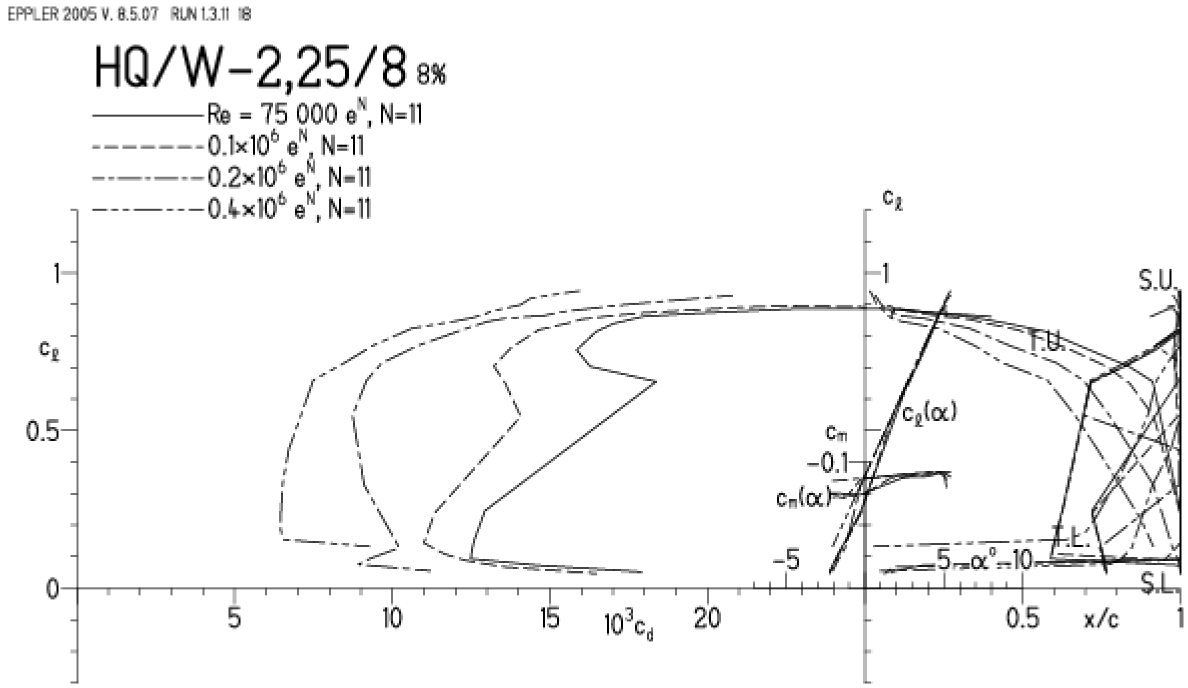


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

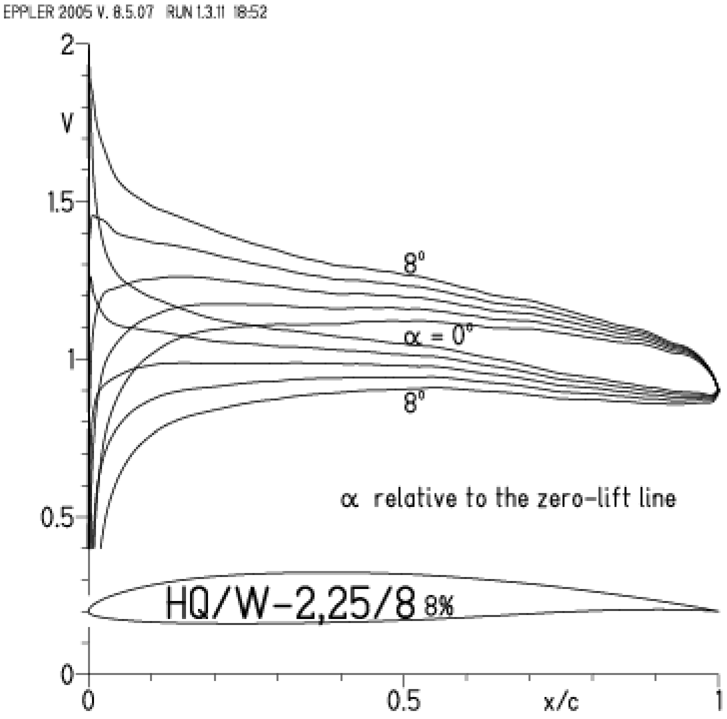


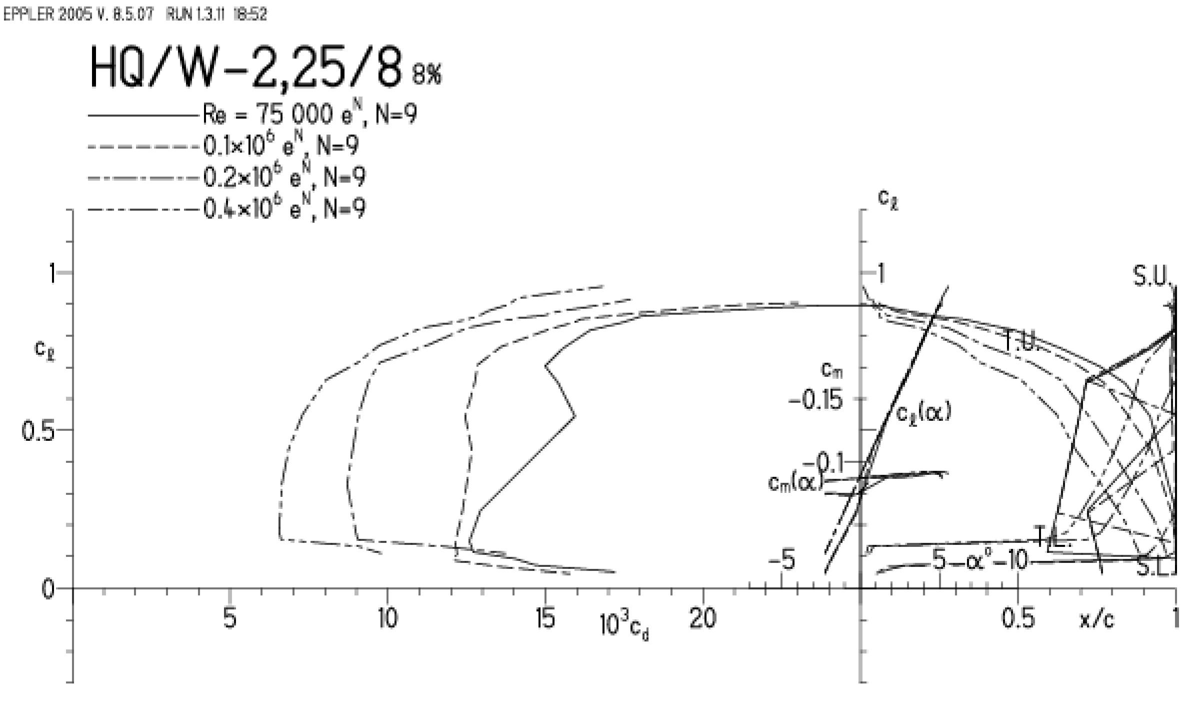
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

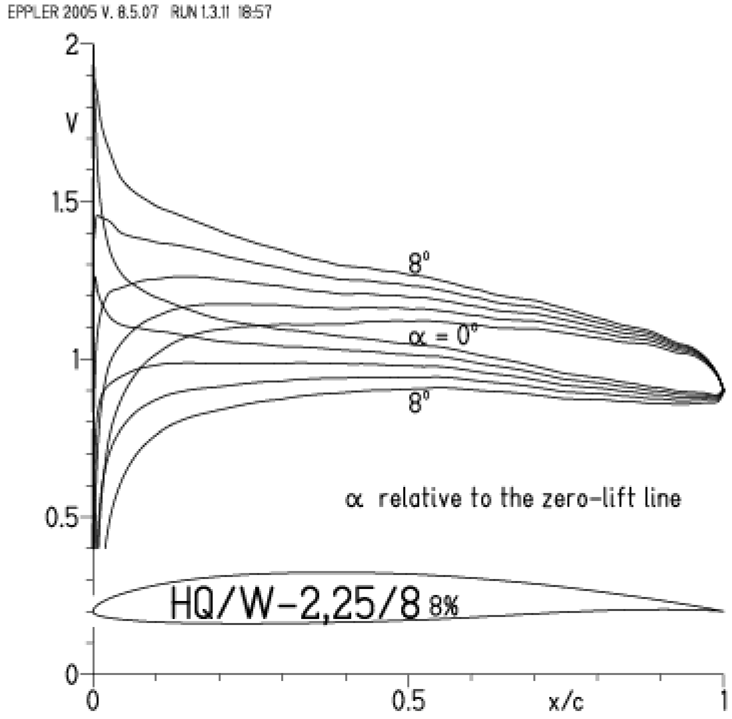

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
-0.1
c_l(α)
c_m(α)
-5
5 α° 10
10^3 c_d
x/c
S.U.
T.U.
T.L.
S.L.

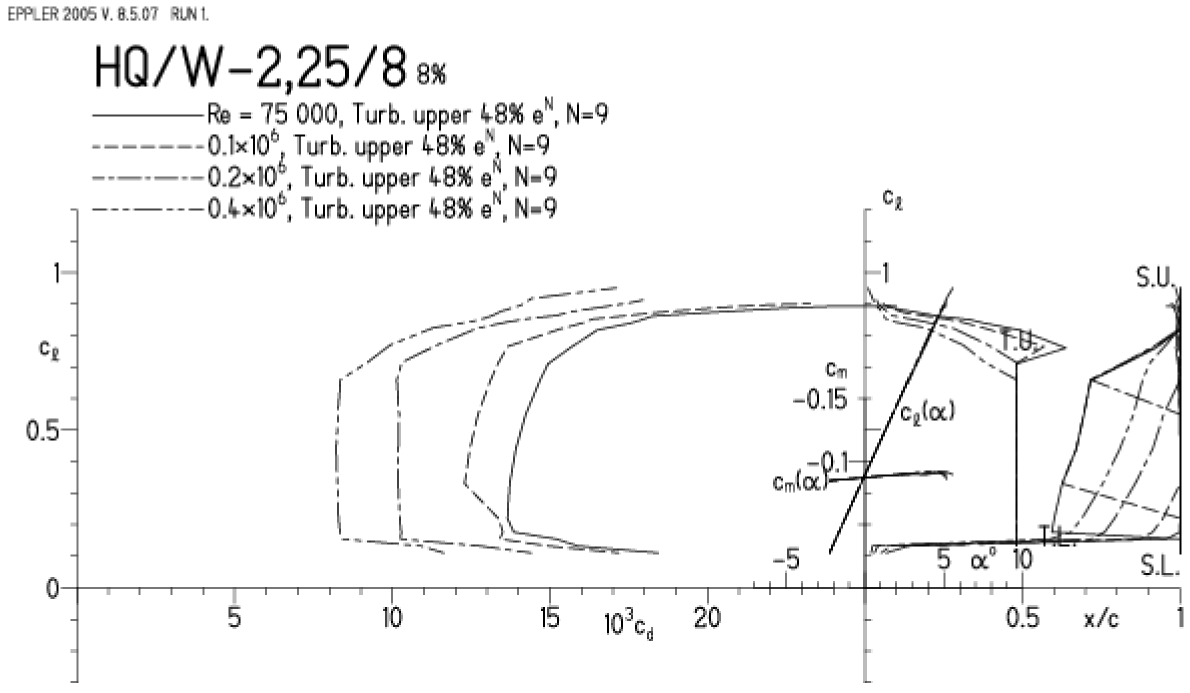
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
$10^3 c_d$
20
c_l
1
c_m
−0.15
$c_l(\alpha)$
−0.1
$c_m(\alpha)$
−5
5 −α° −10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

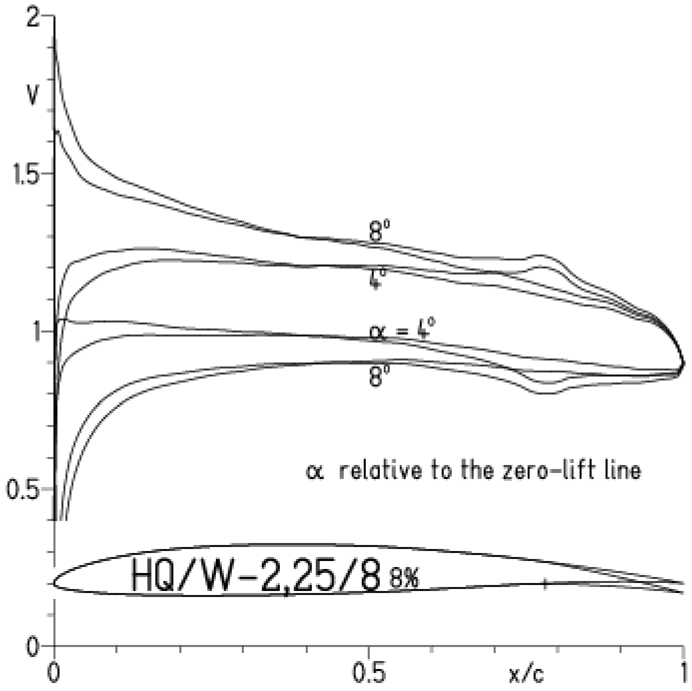
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



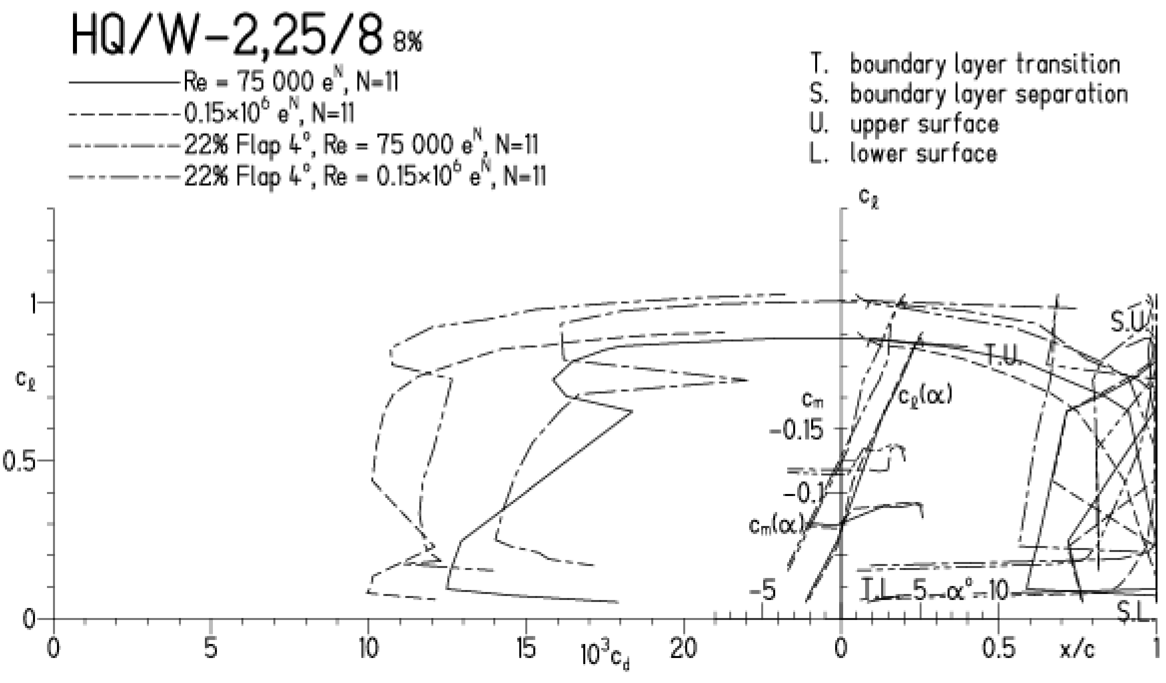


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

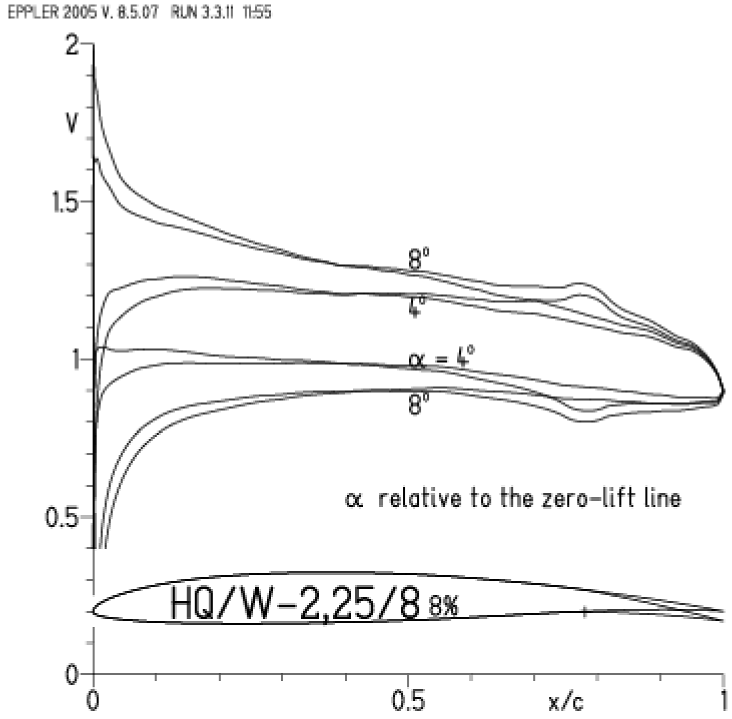
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

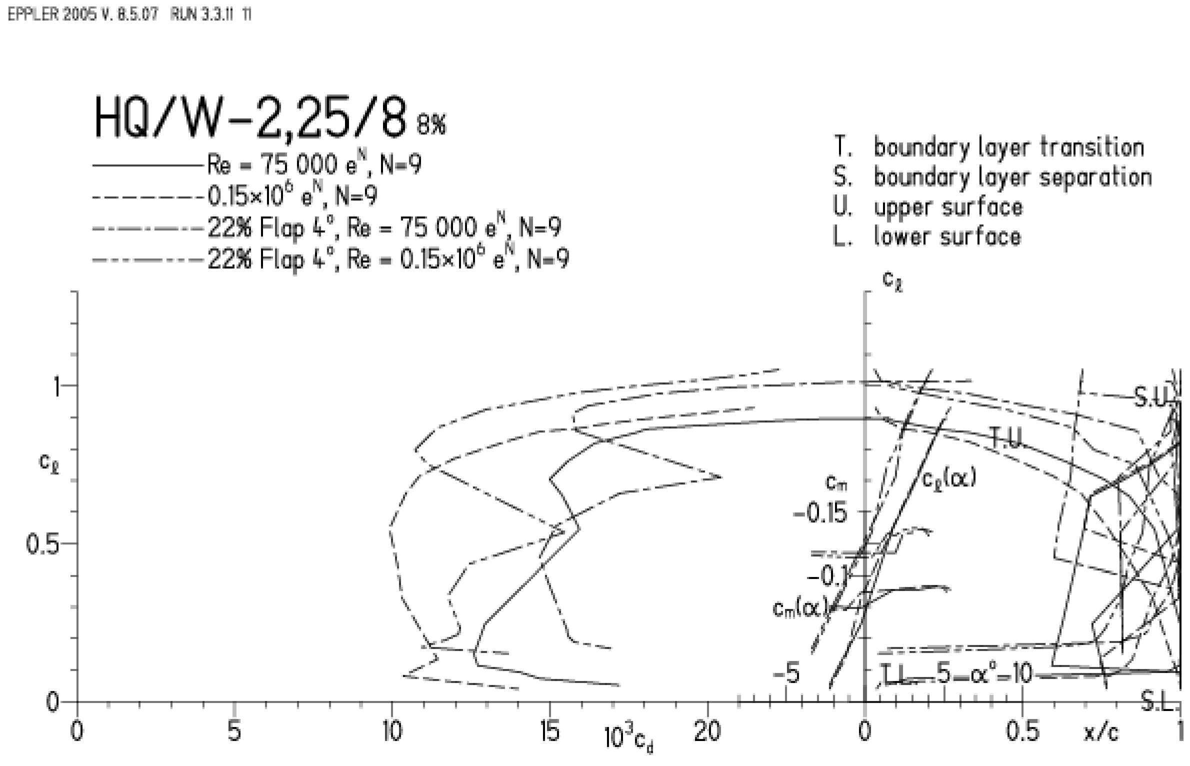


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

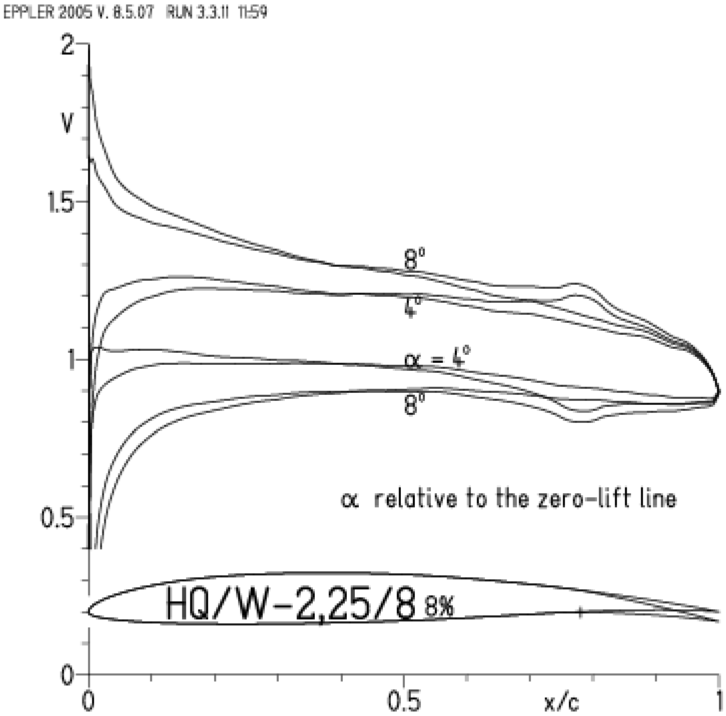


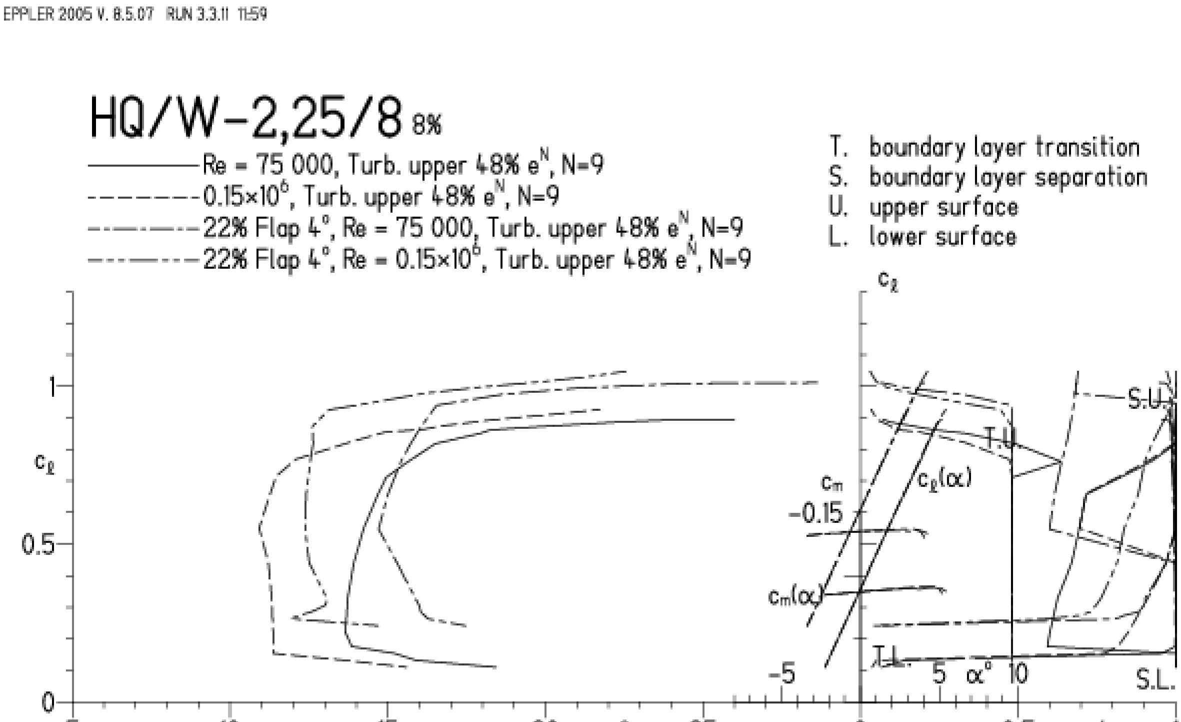
<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag





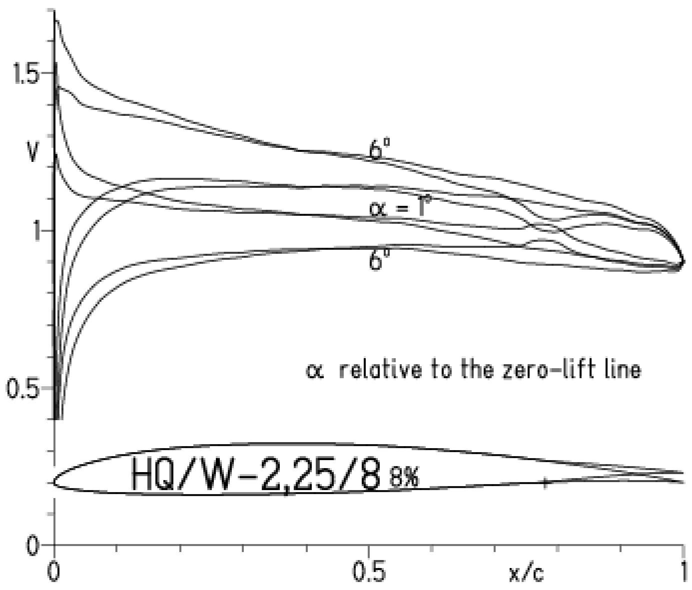
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



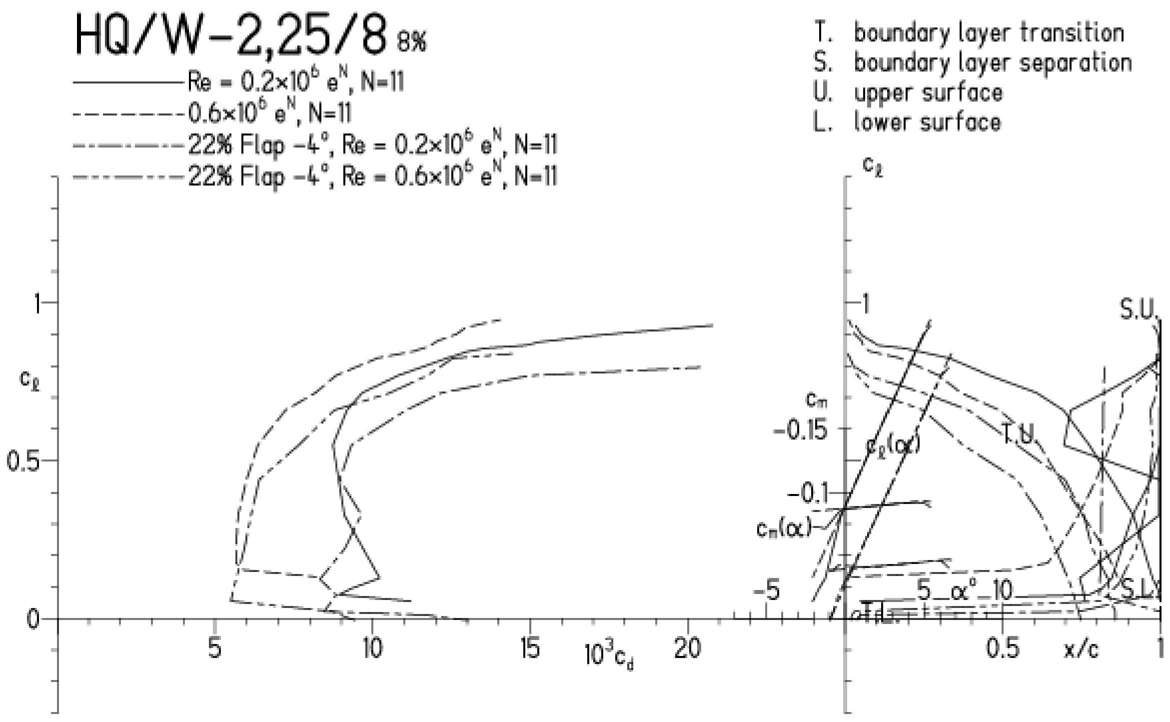


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

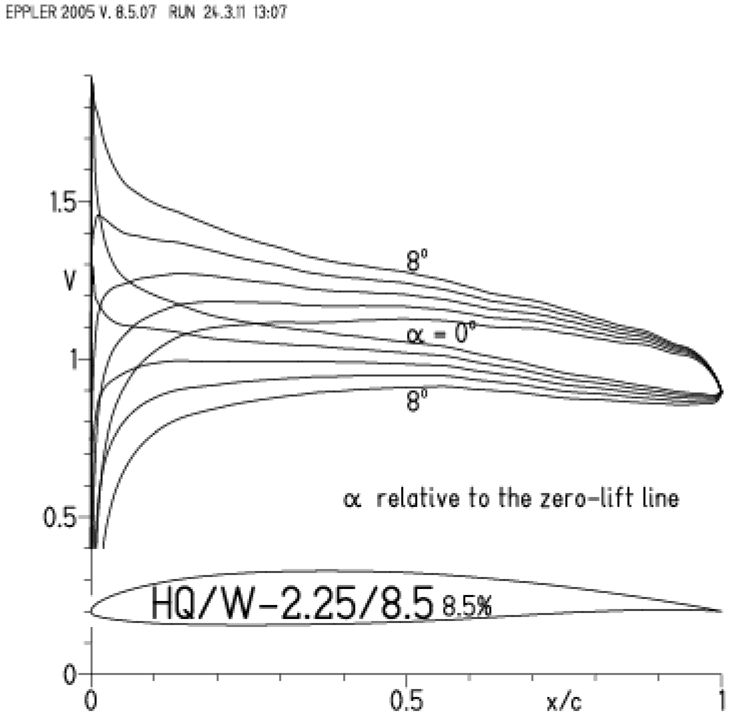
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

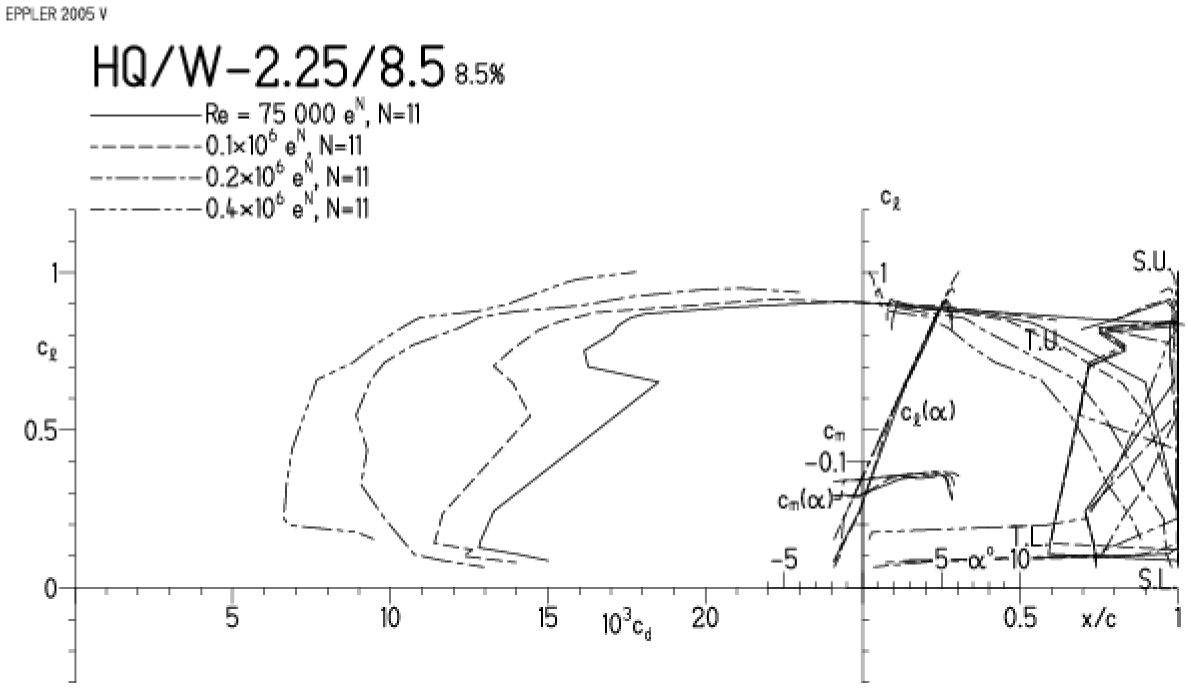


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

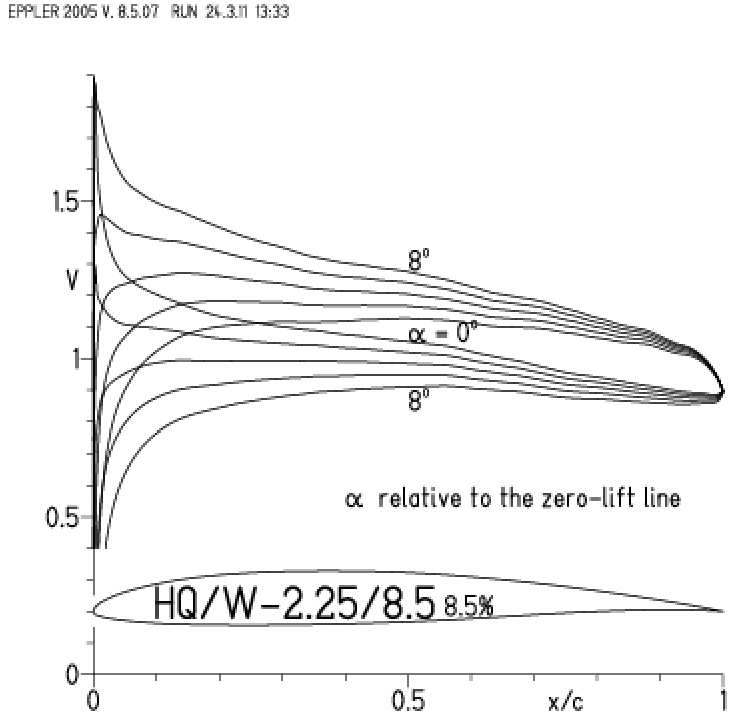


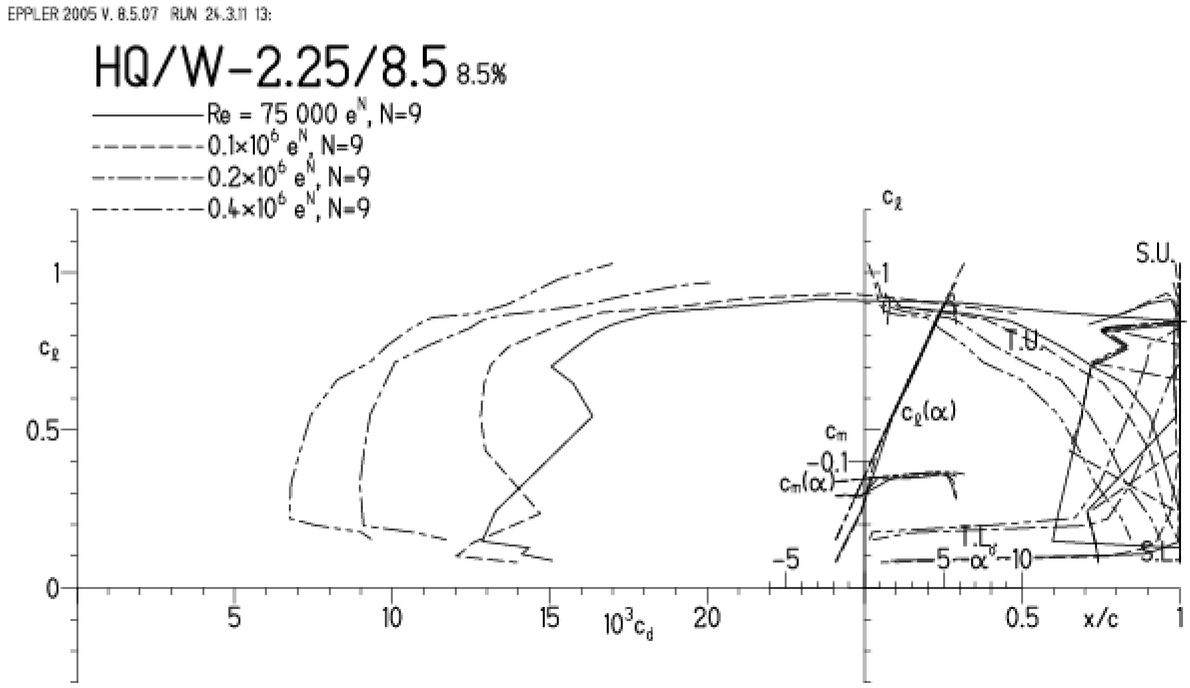
HQ/W-2,25/8,5, N=11



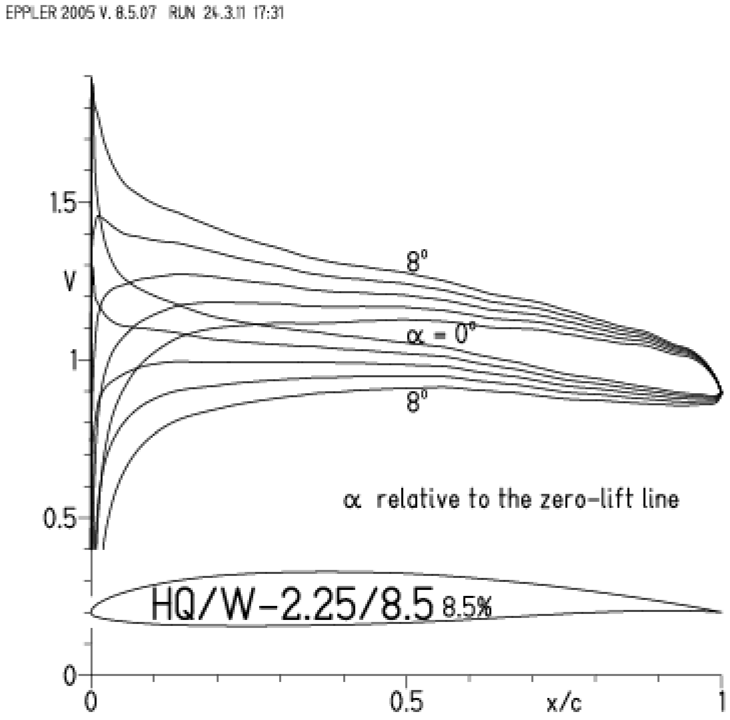


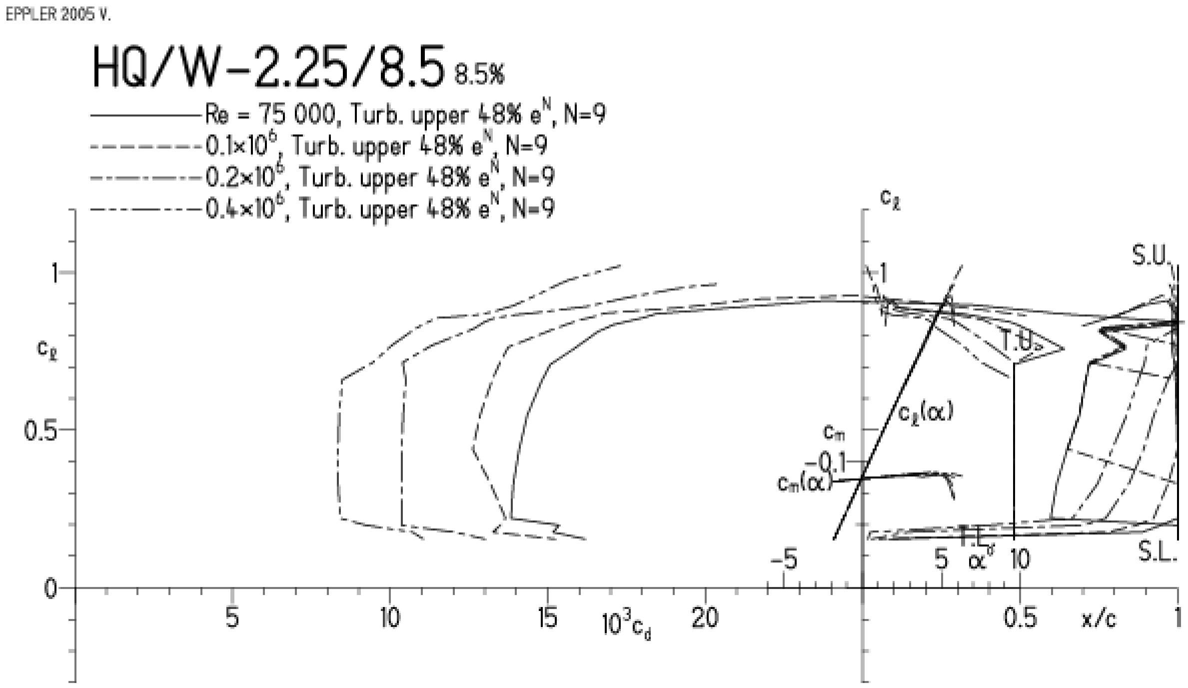
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
S.U.
T.U.
c_l(α)
c_m
-0.1
c_m(α)
-5
T.L.
5 α° 10
S.L.
0.5
x/c
1

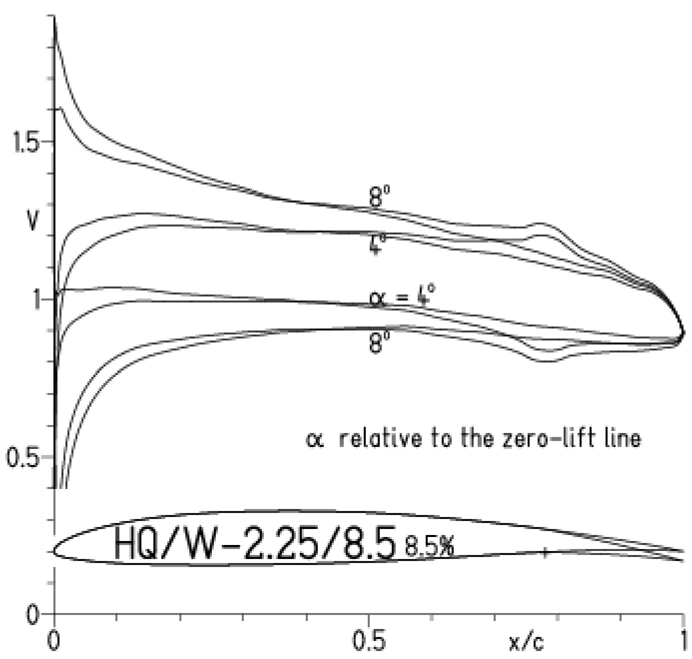
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



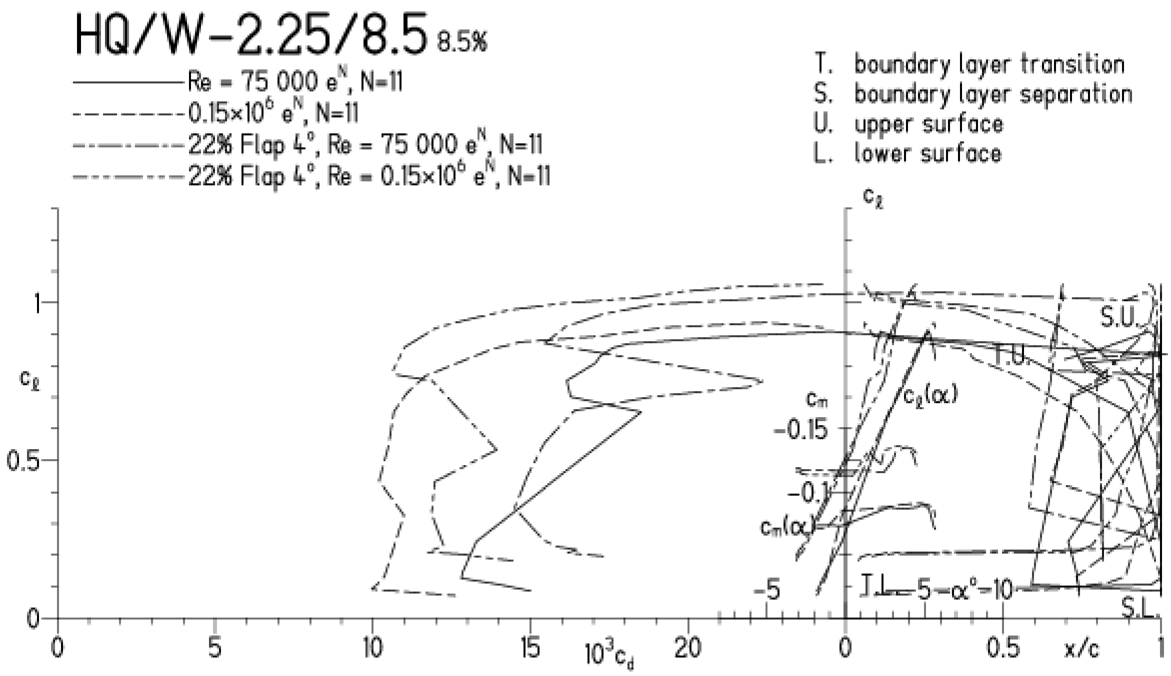


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

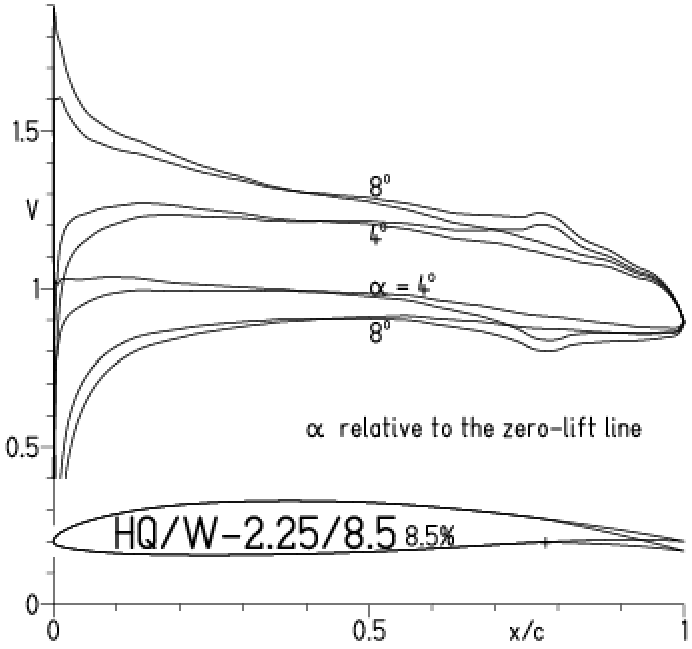


EPPLER 2005 V. 8.5.

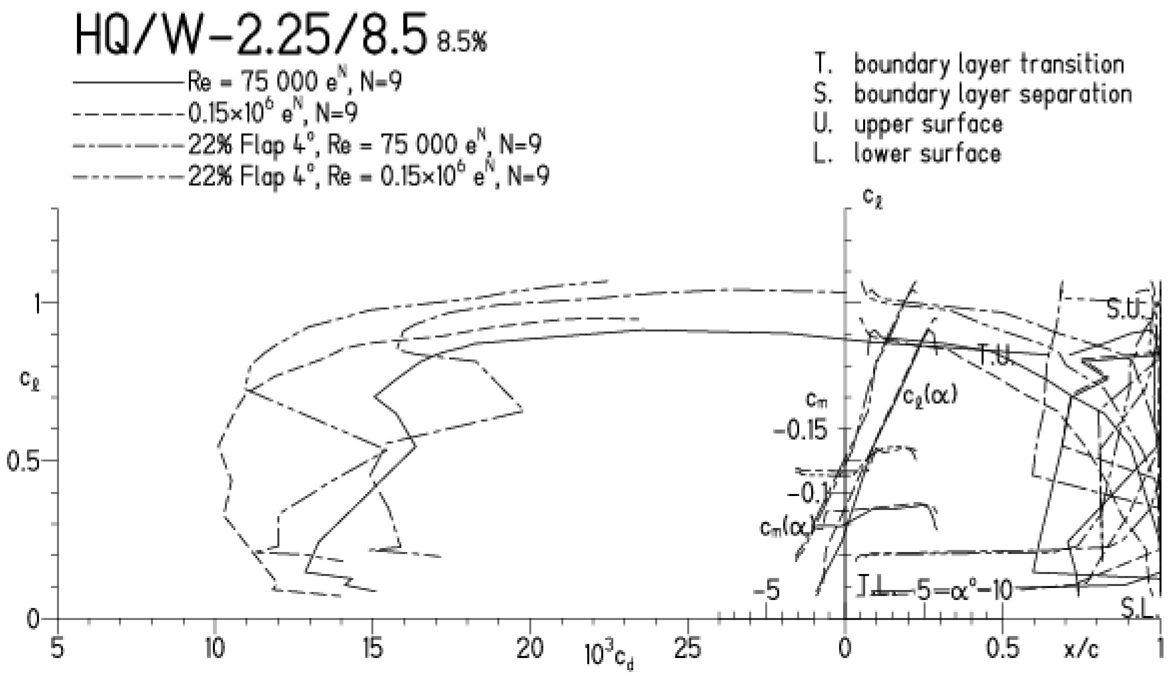


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

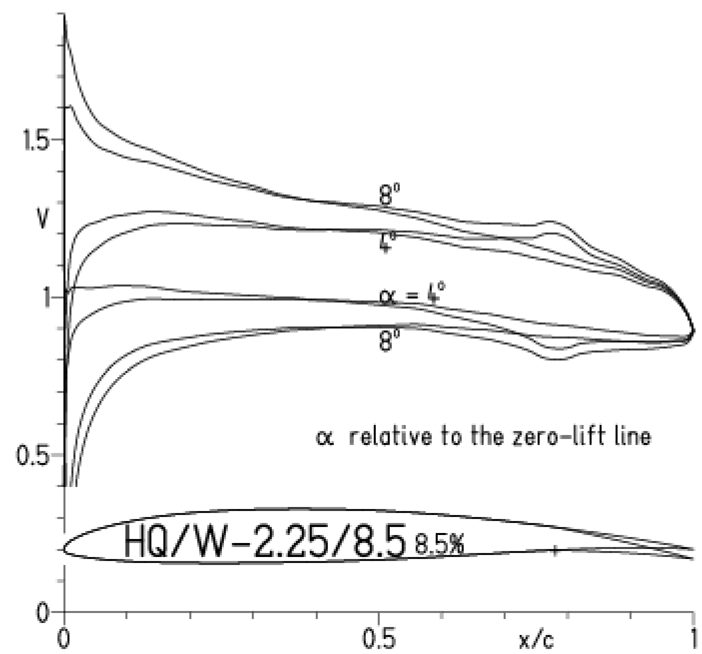


EPPLER 2005 V.

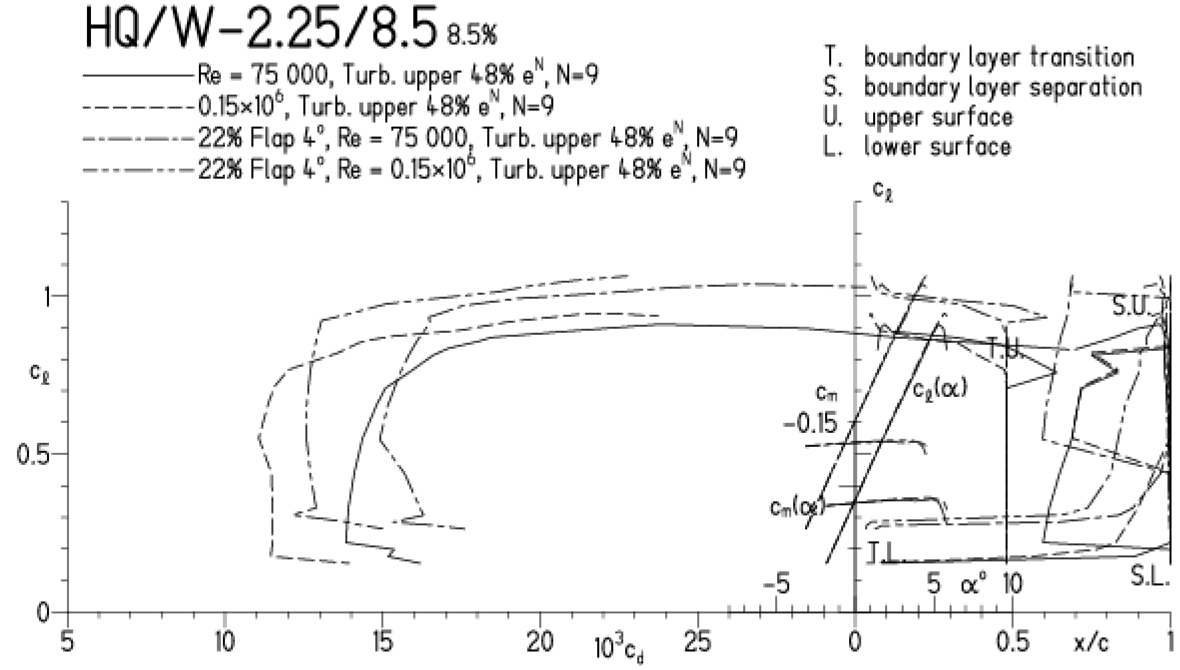


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

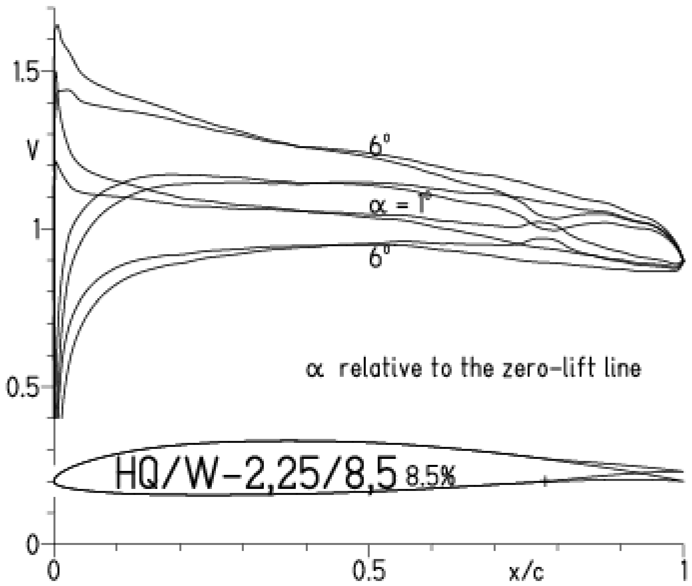


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

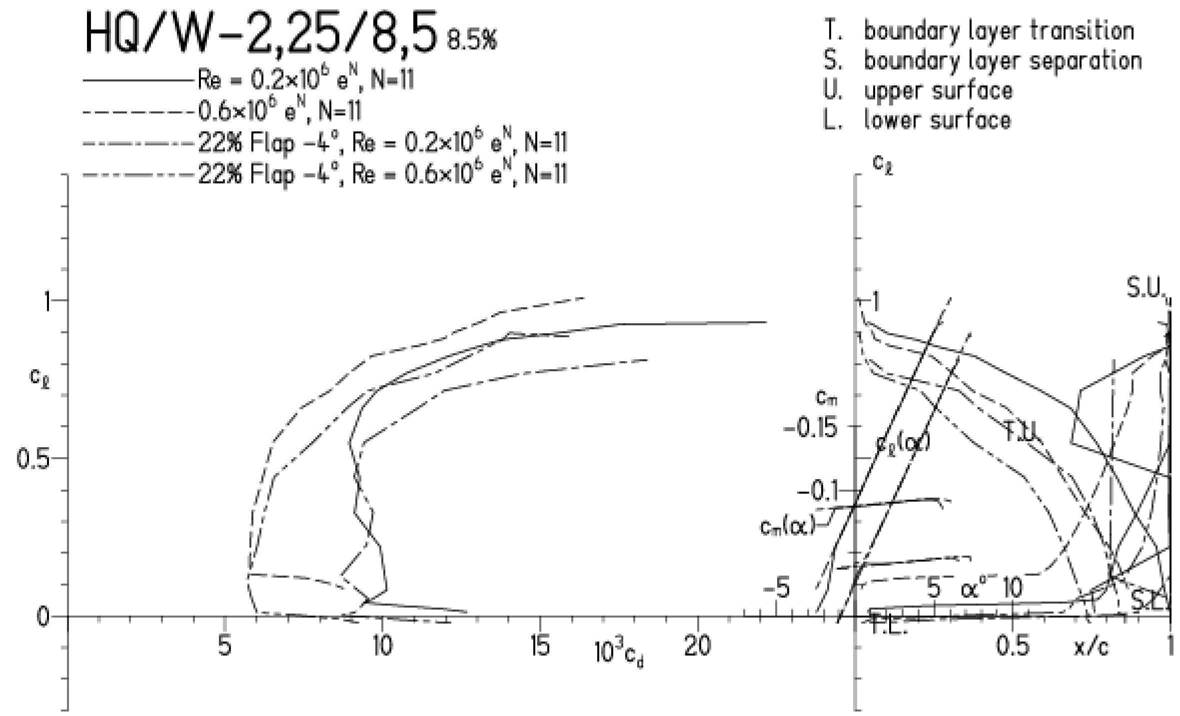


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

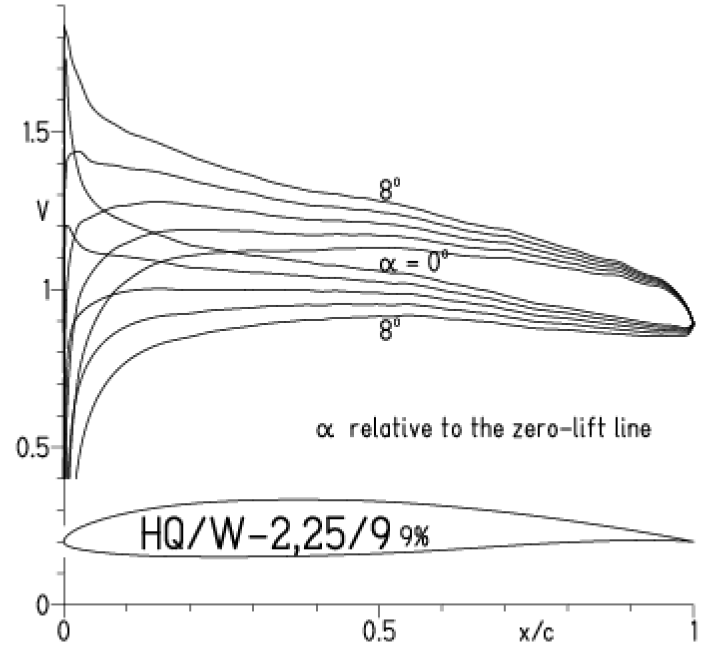


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

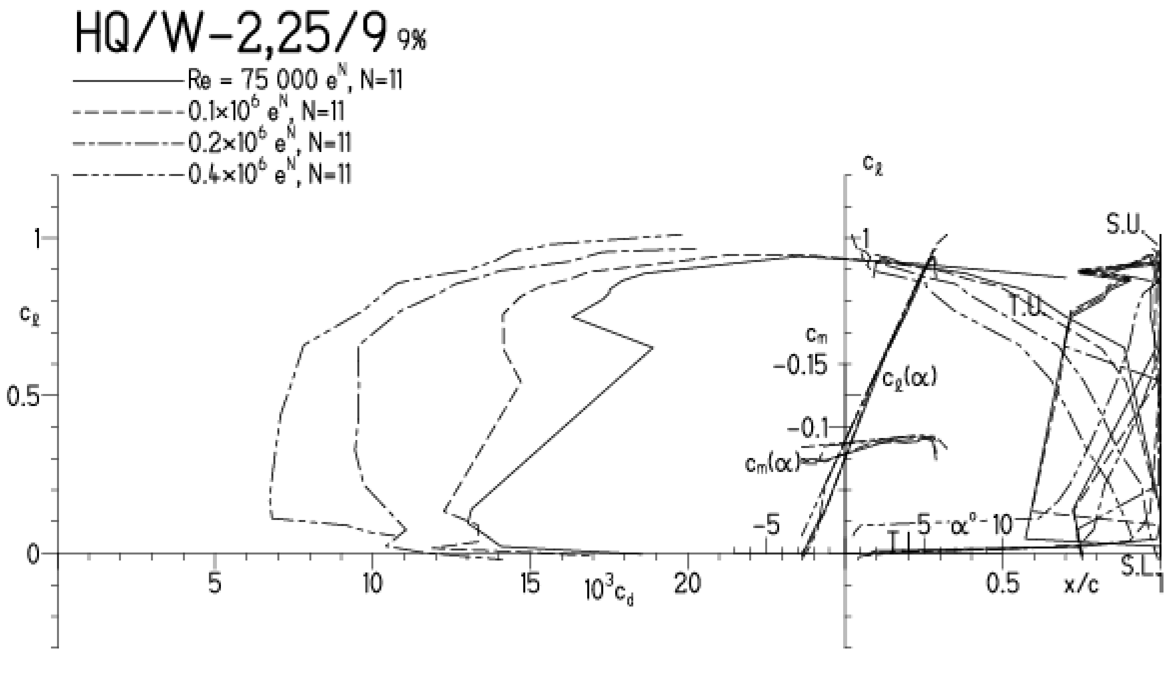


HQ/W-2,25/9, N=11

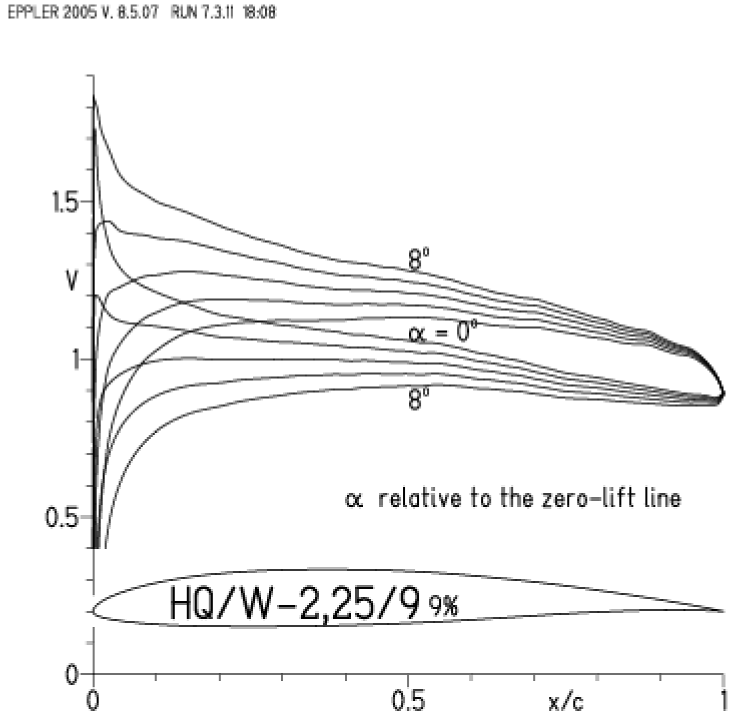
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

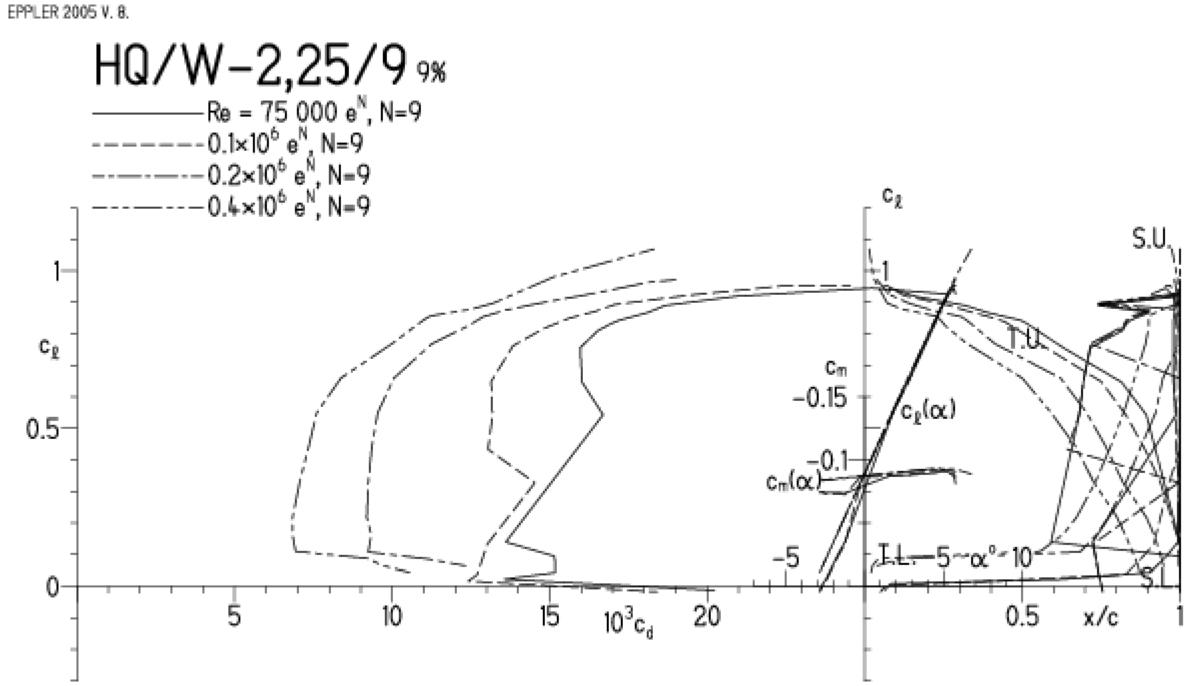


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



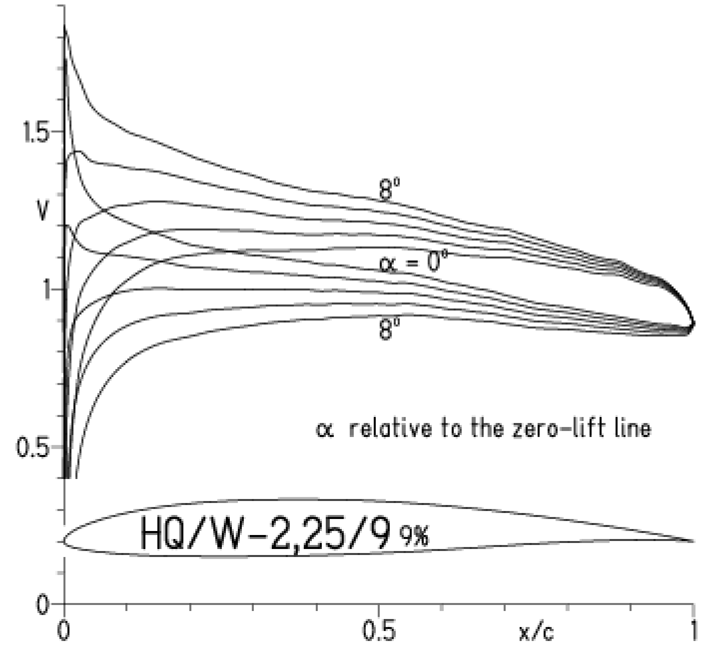
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

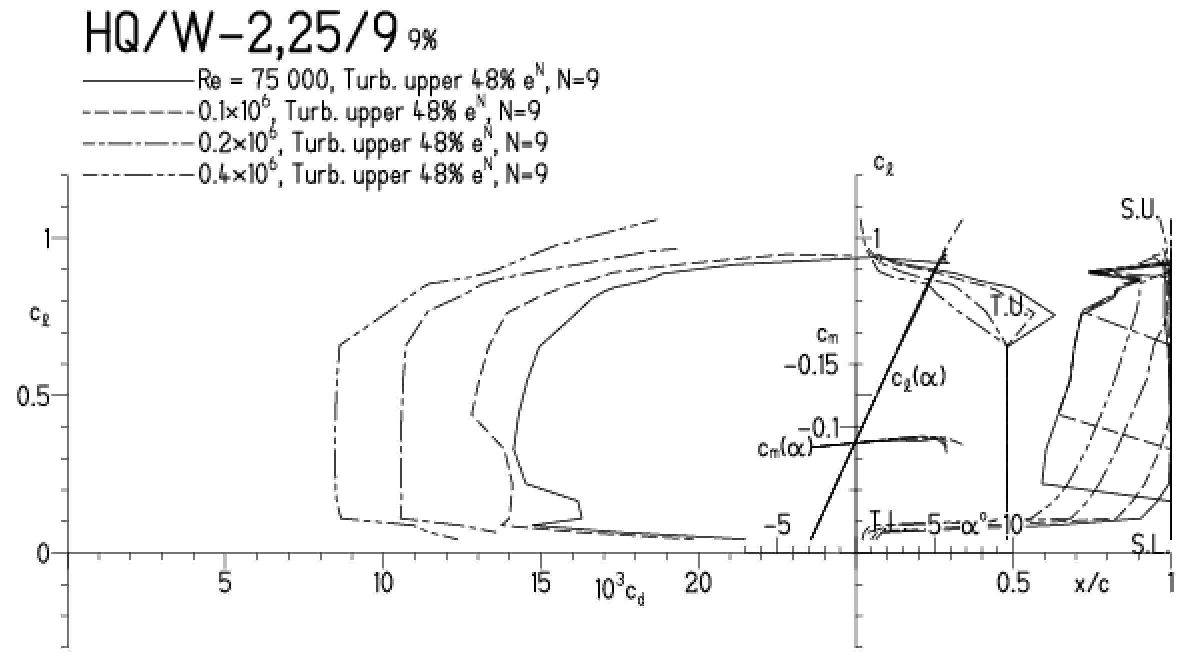

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

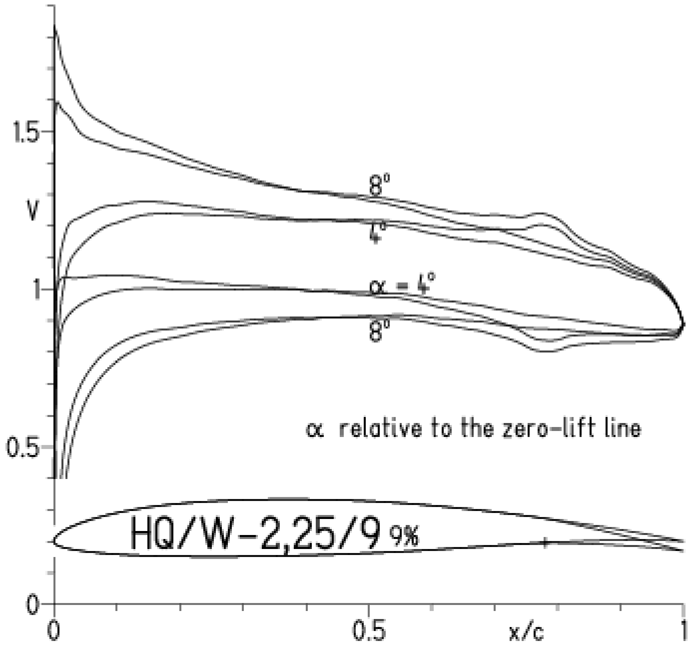


EPPLER 2005 V. 8.5.07 RUN 7

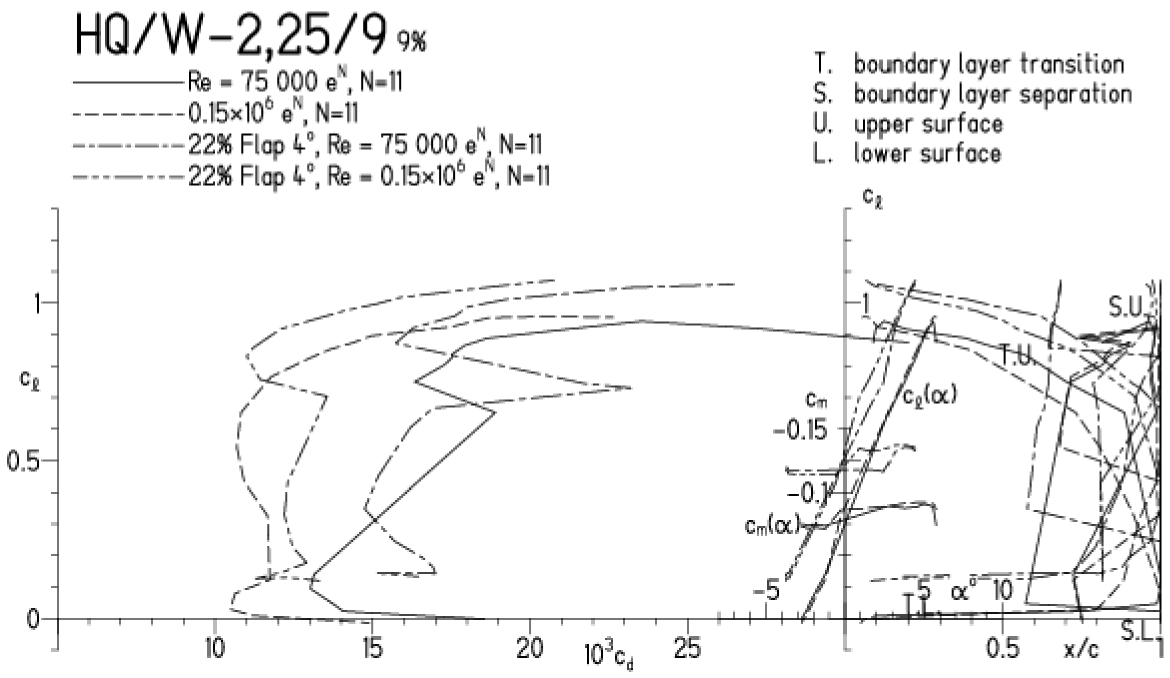


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

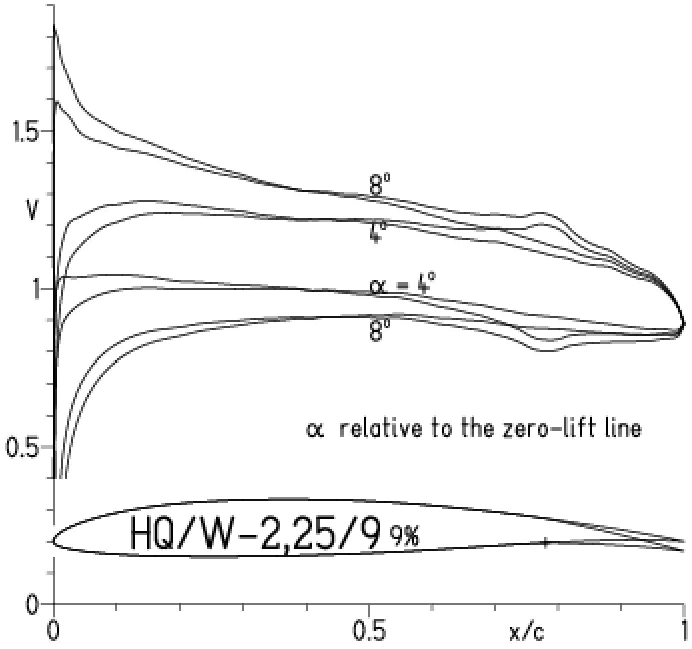


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

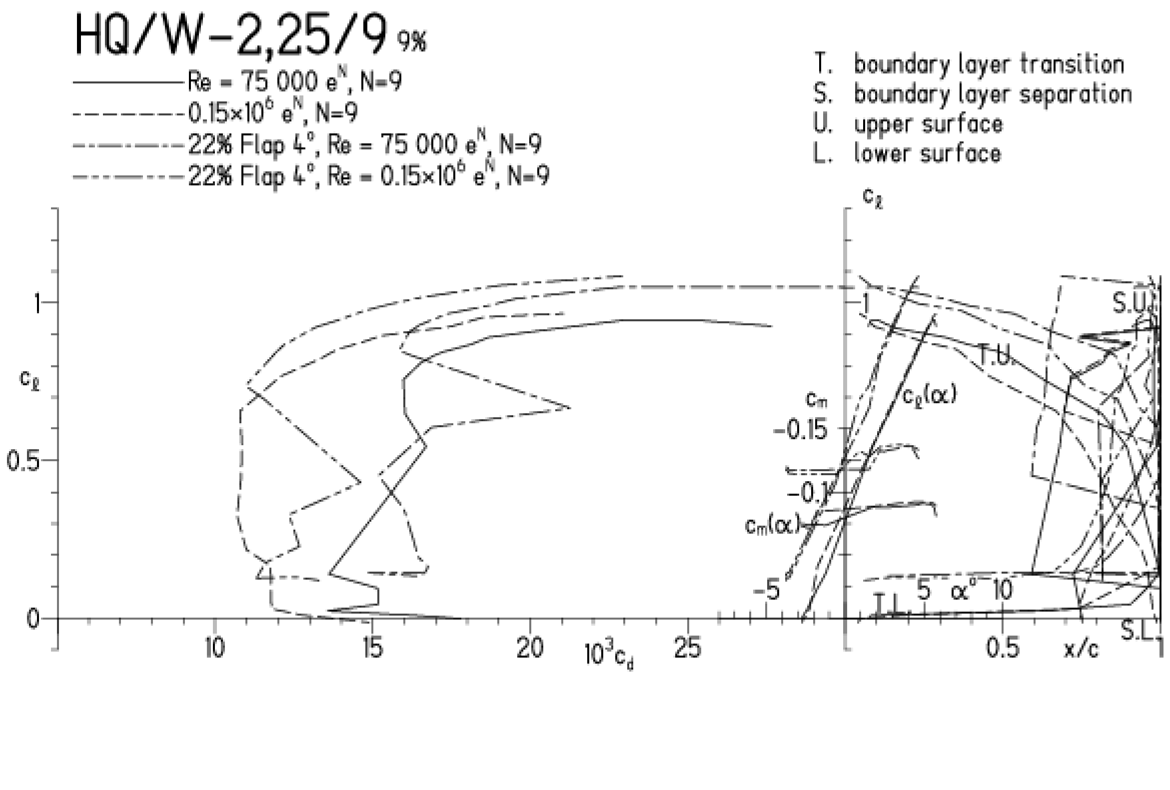


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

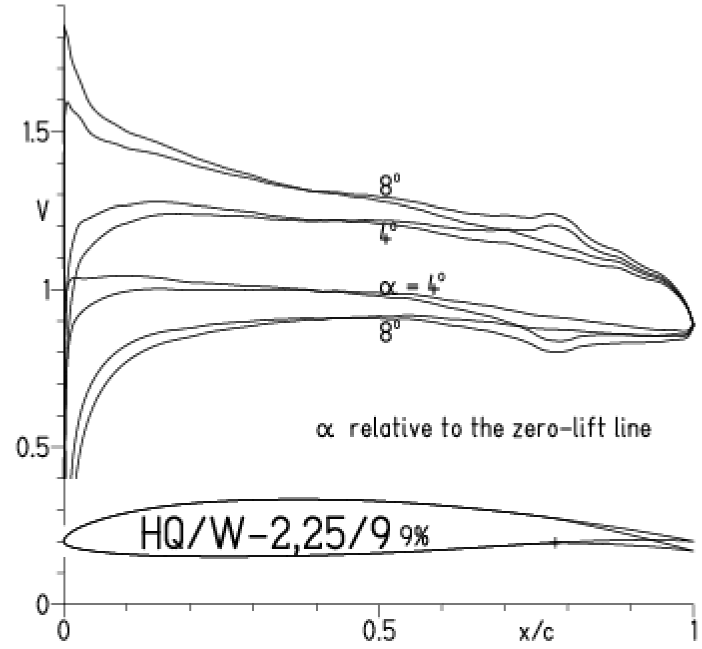


EPPLER 2005 V. 8.5.07 RUN 8.3.1

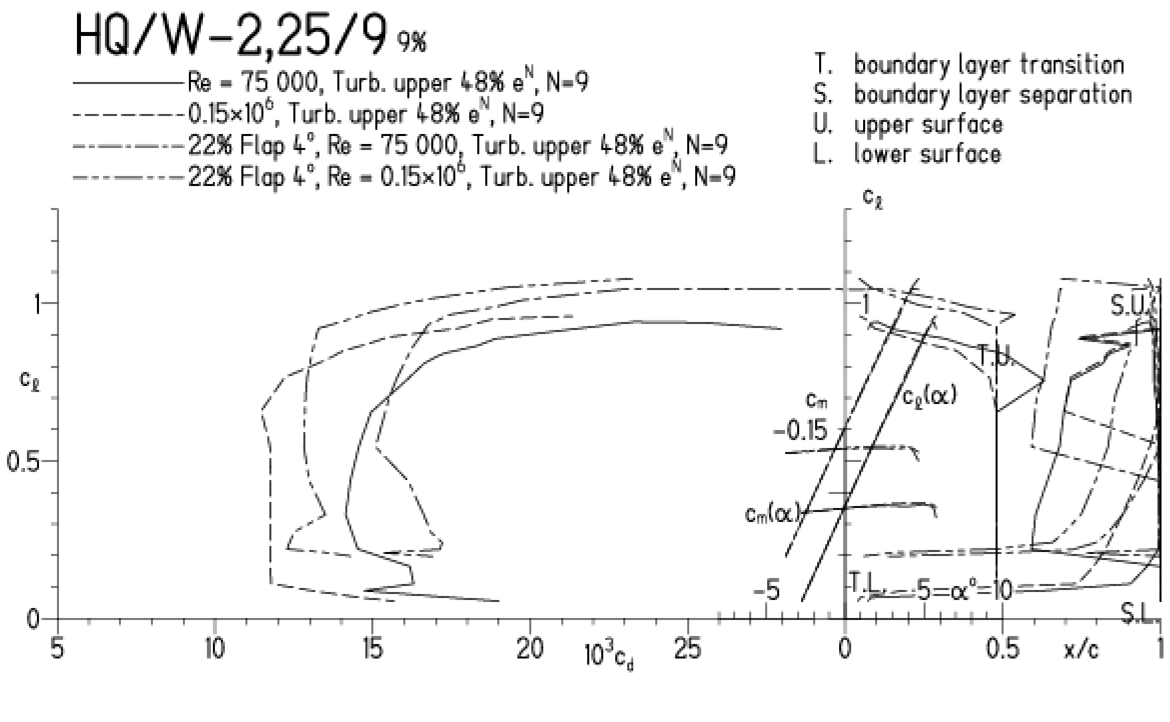


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

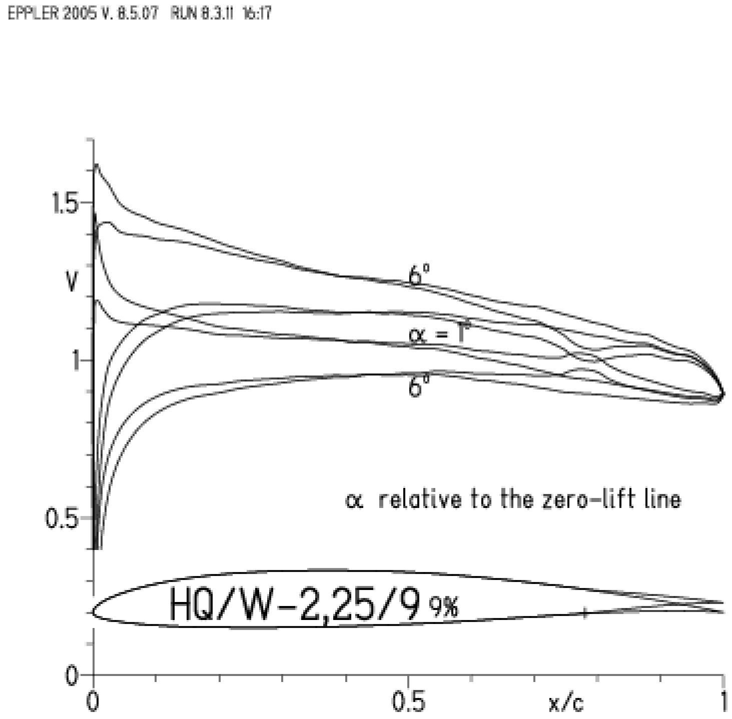
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

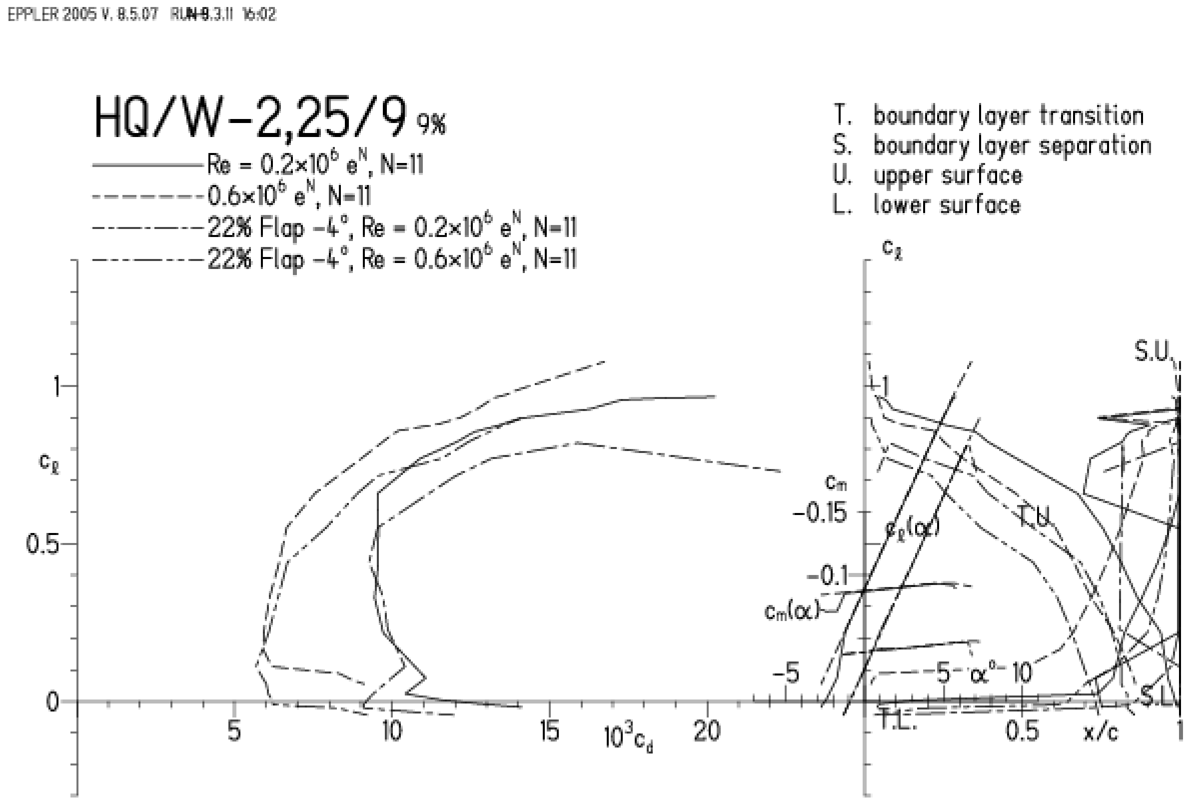


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

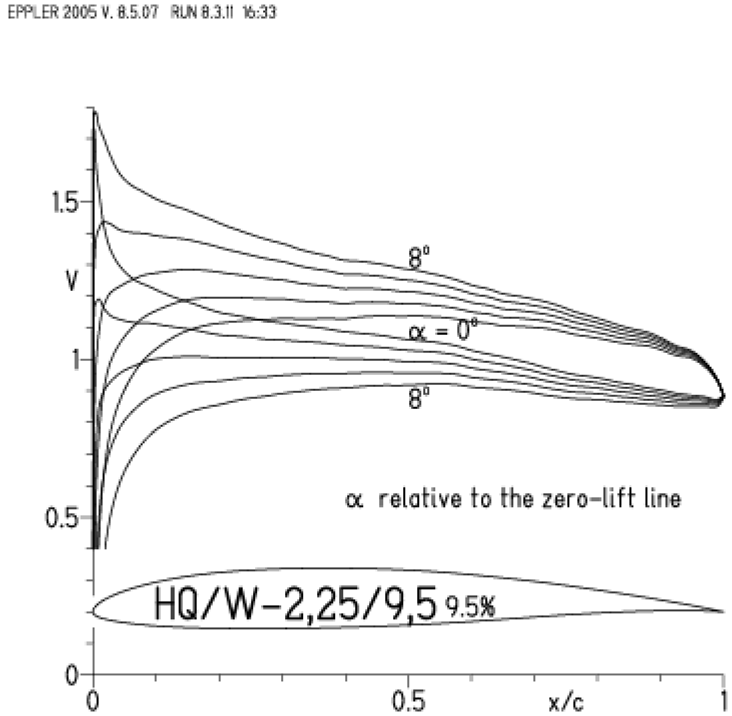


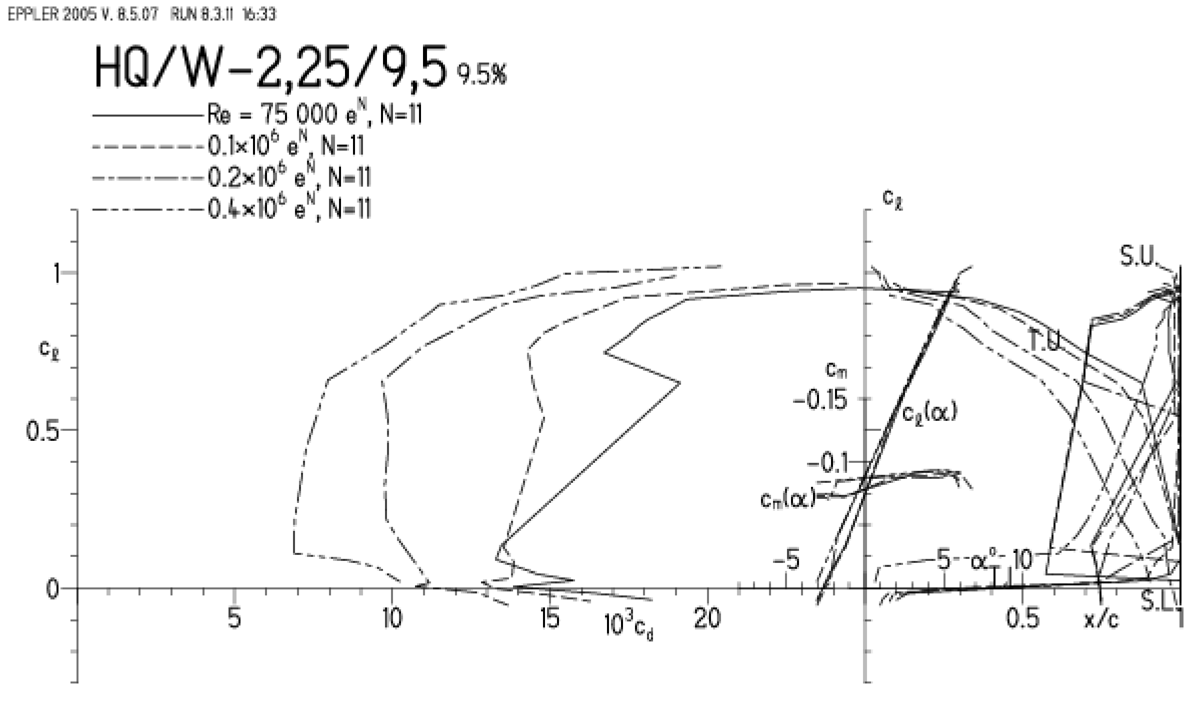
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





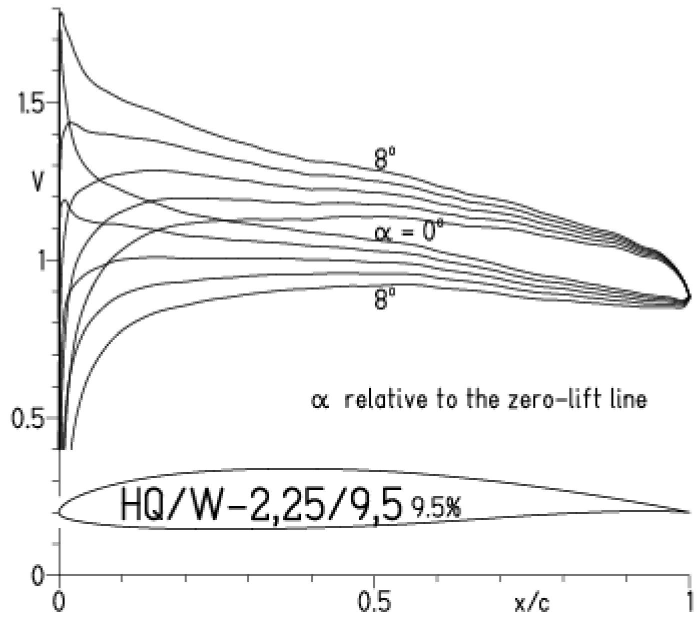
HQ/W-2,25/9,5, N=11



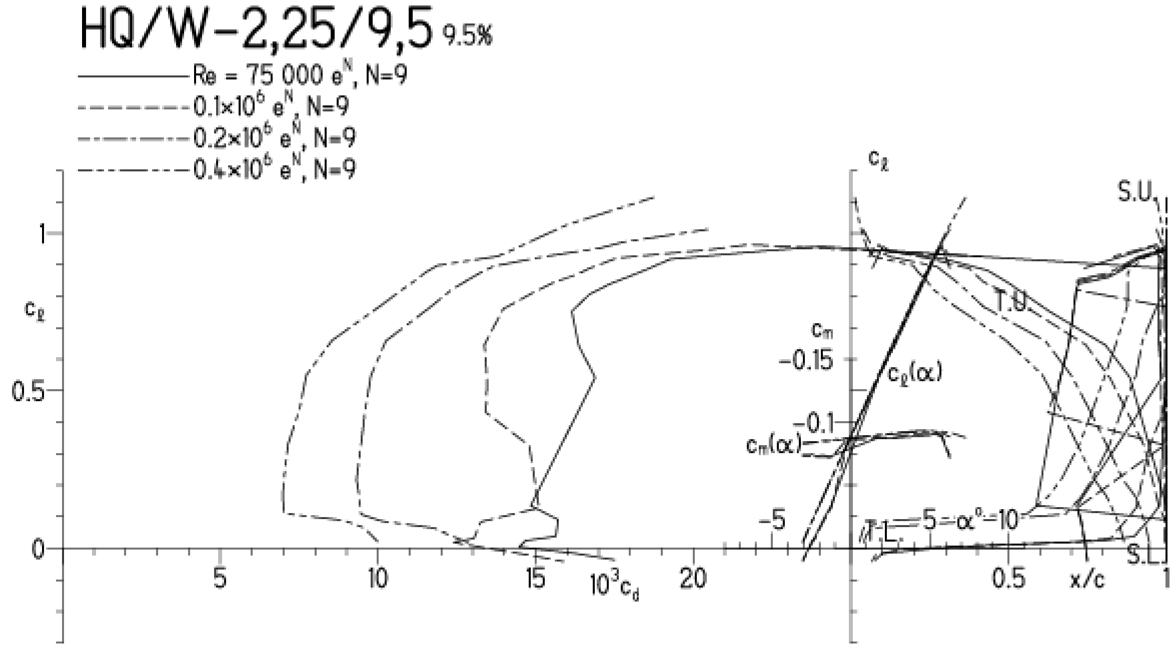


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

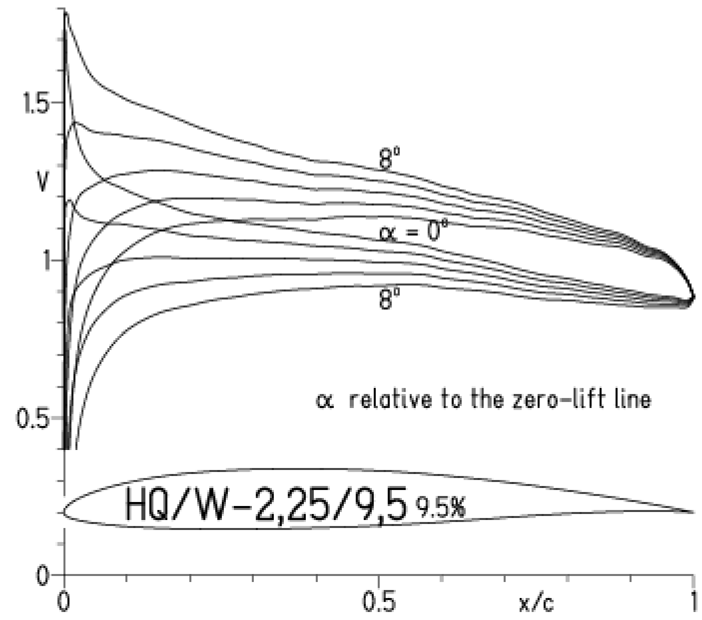


EPPLER 2005 V. 8.5.07 RUN 8.3.

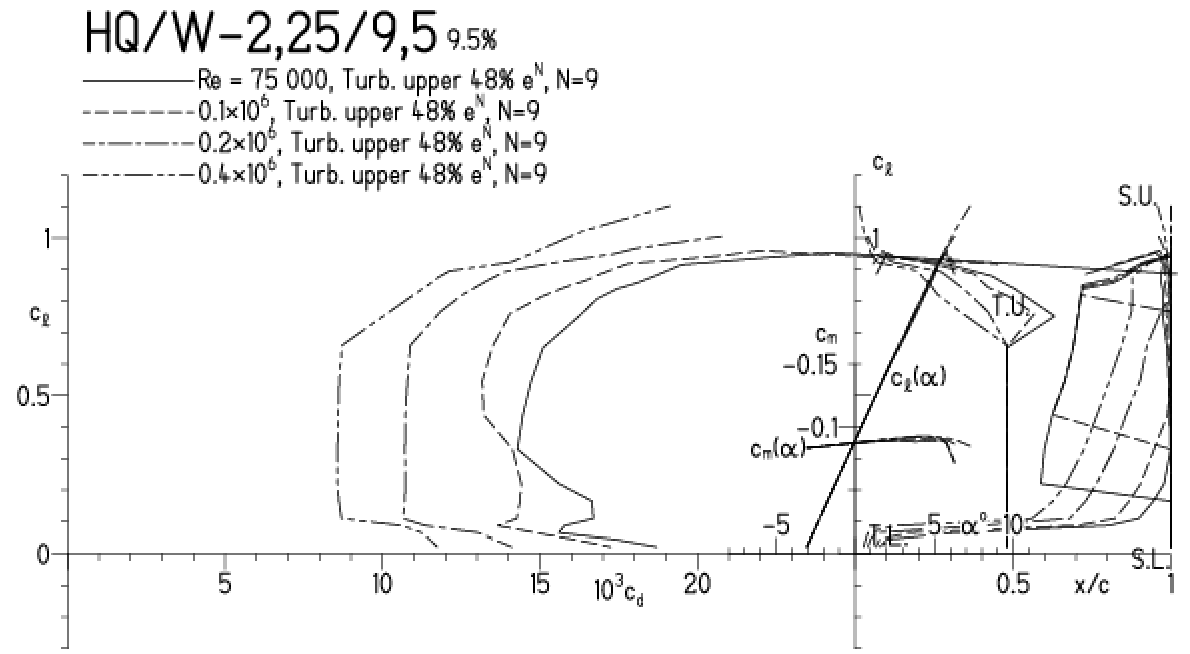


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

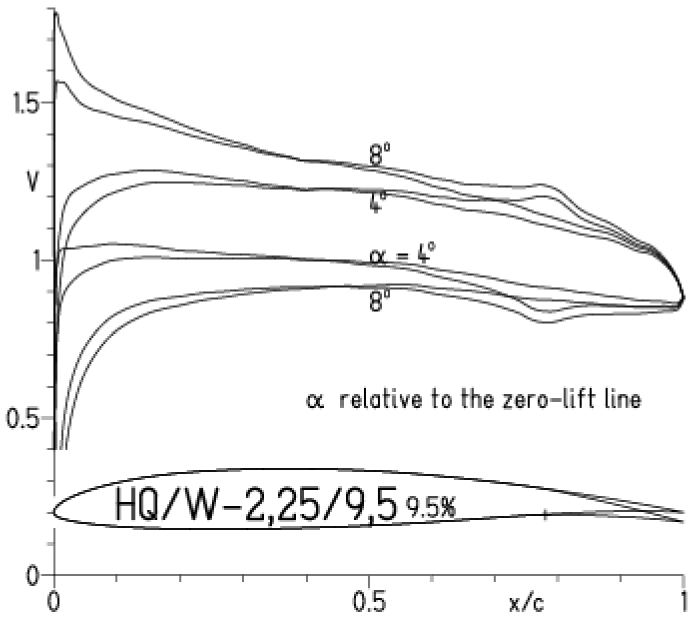


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

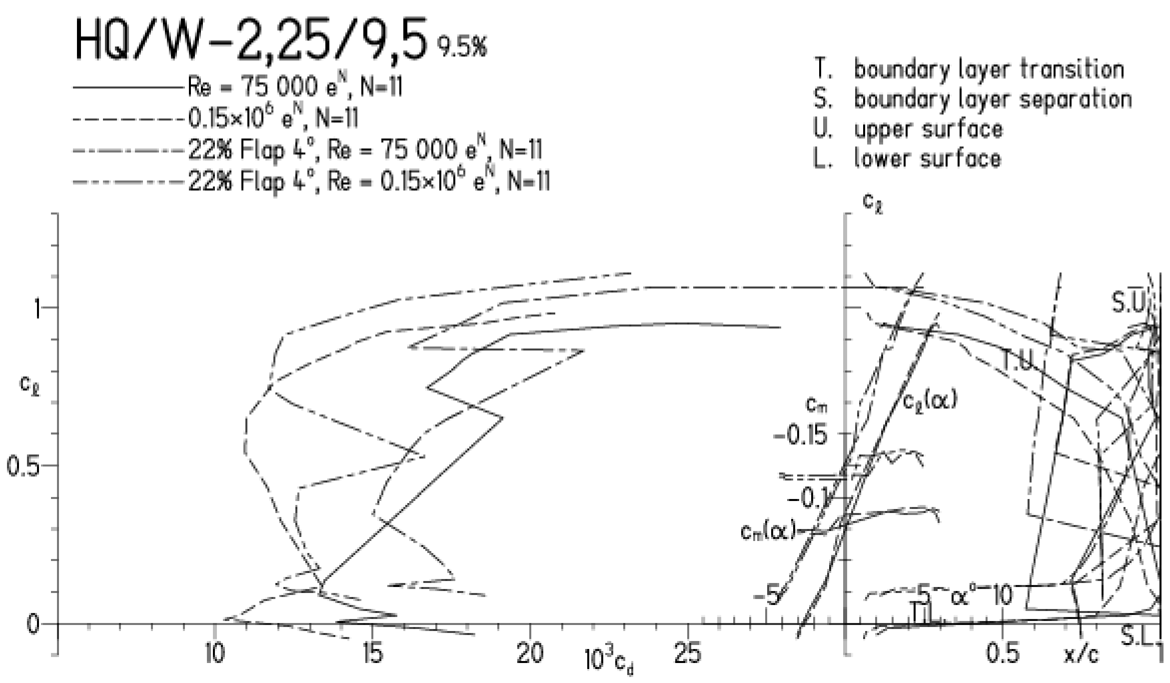


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

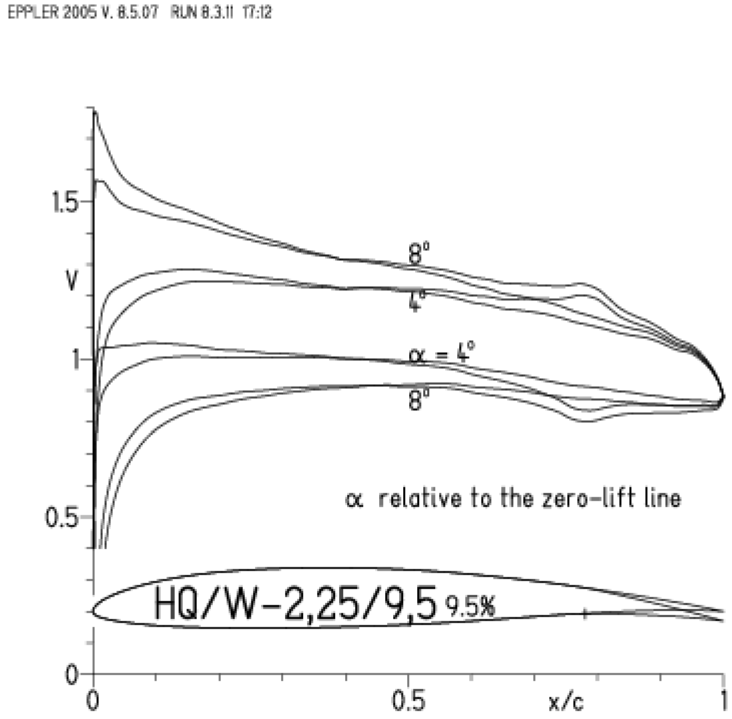
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

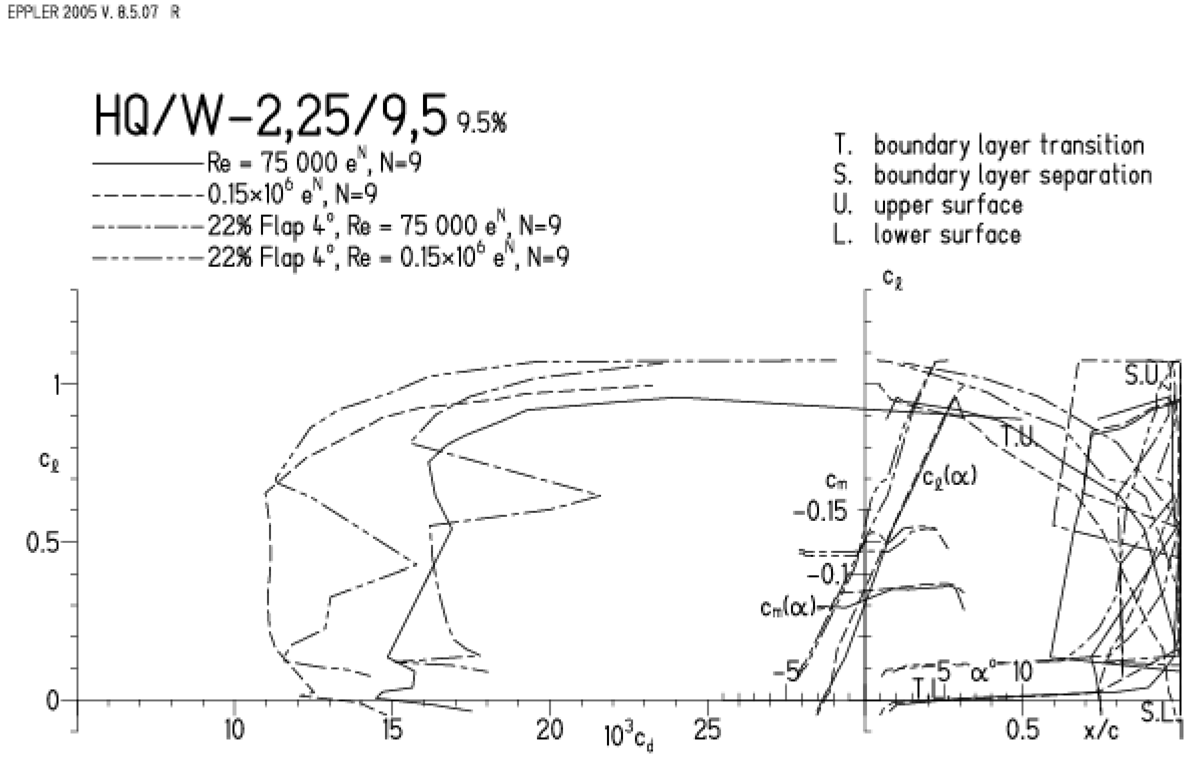


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



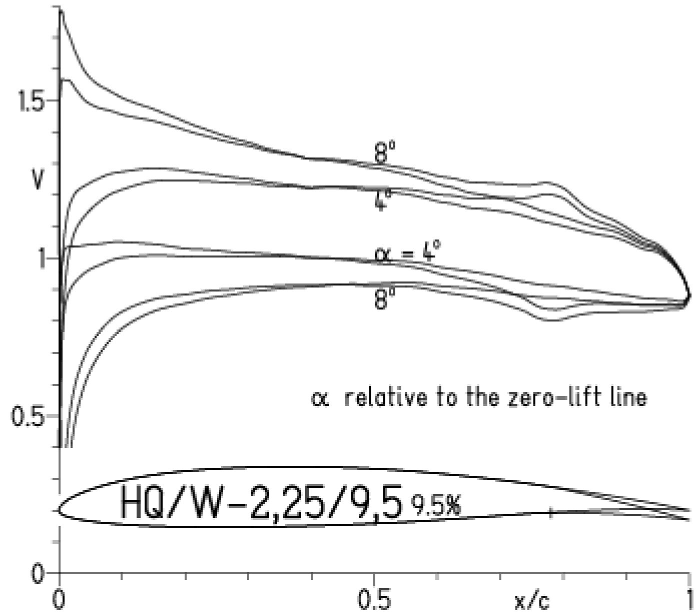
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



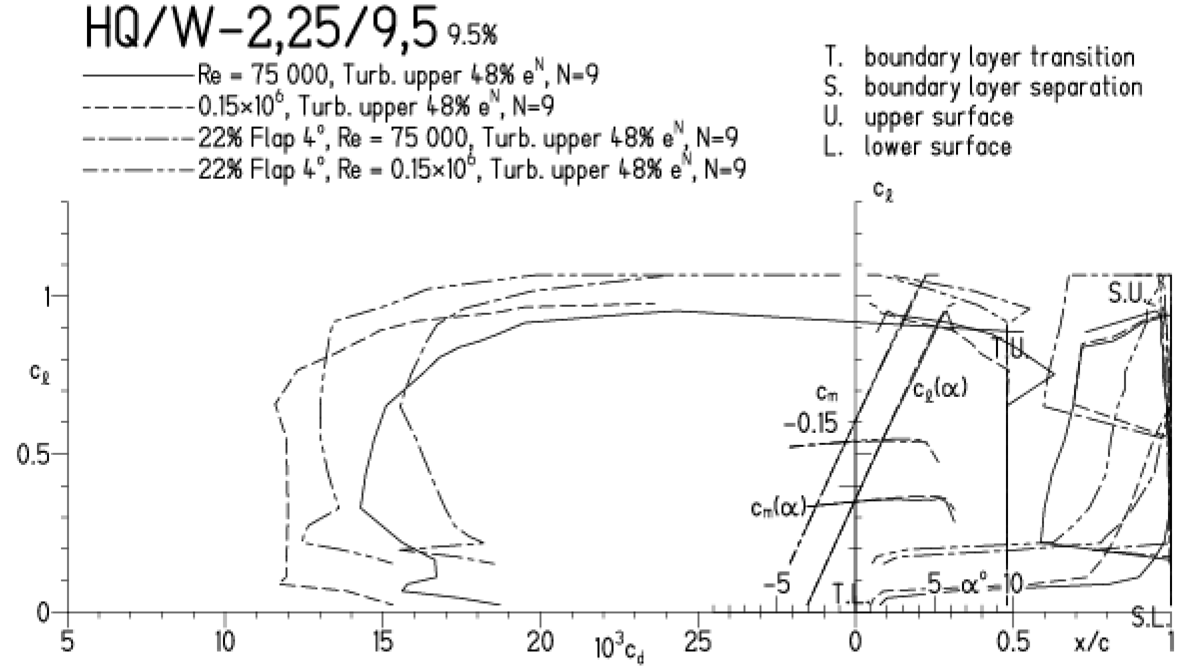


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

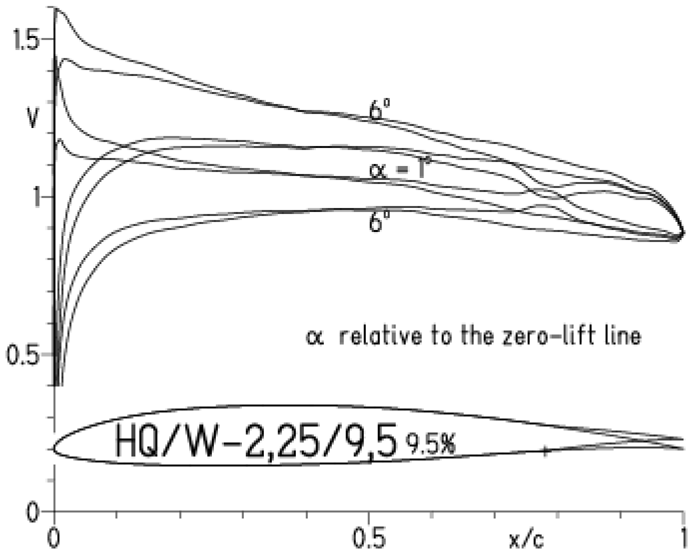


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

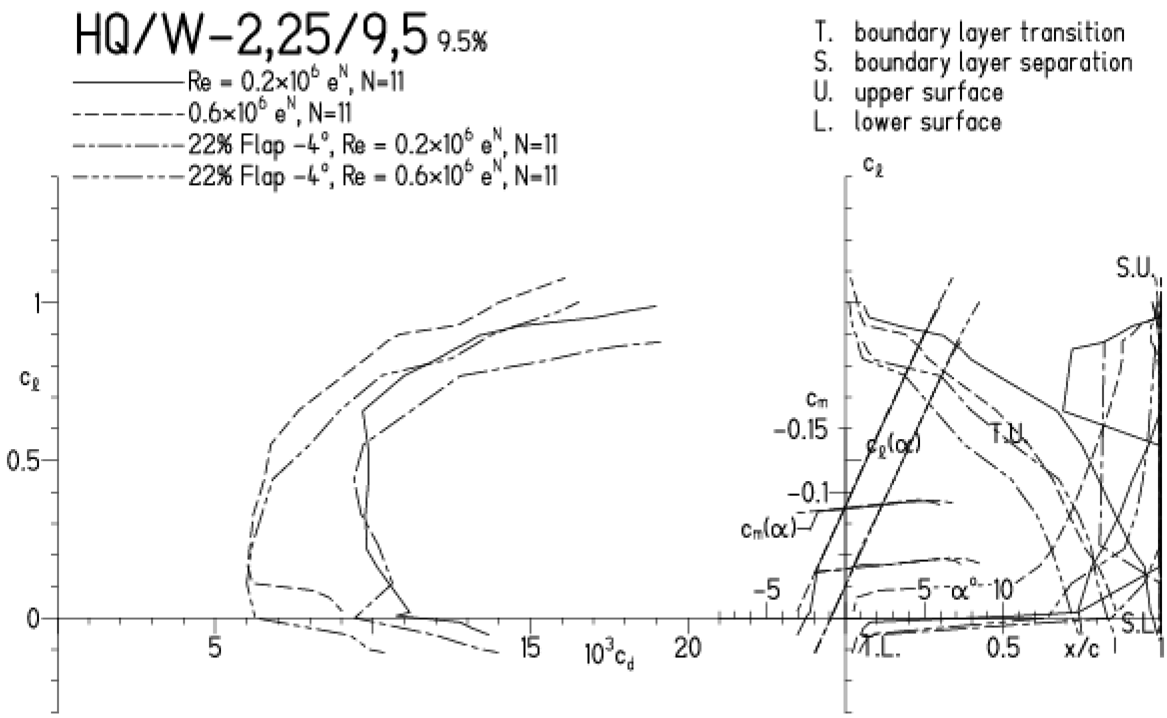


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

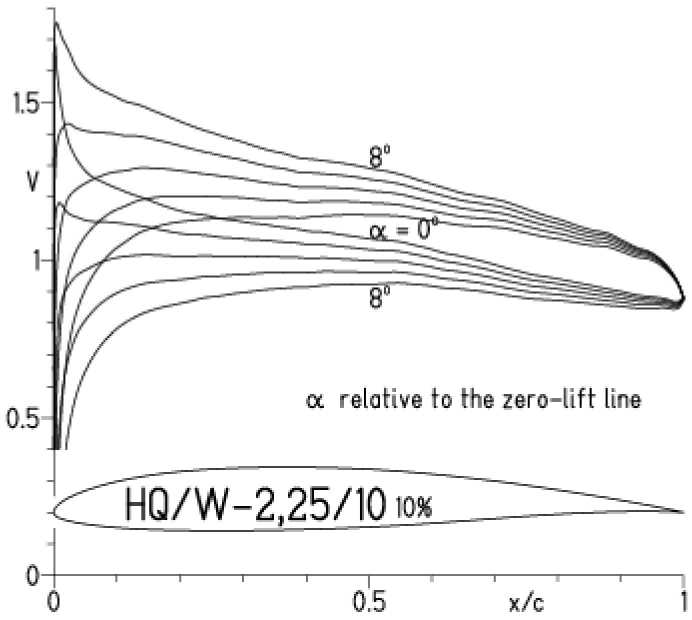


EPPLER 2005 V.

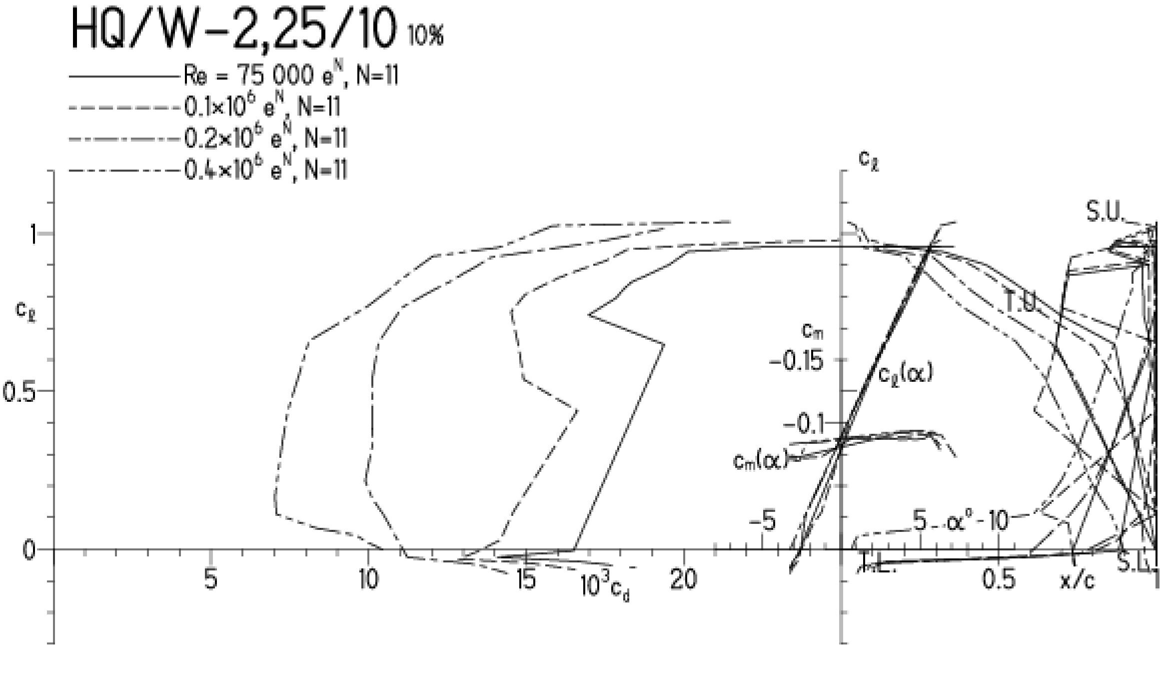


HQ/W-2,25/10, N=11

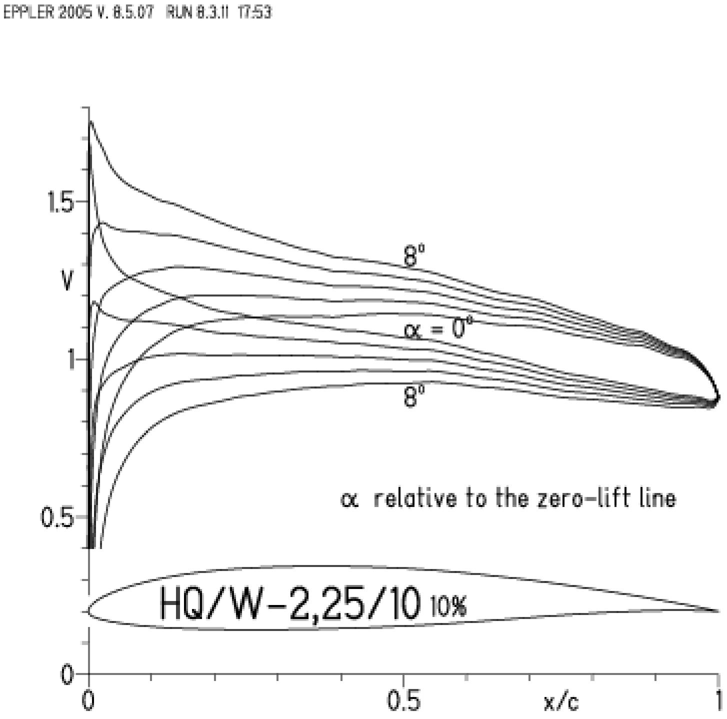
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

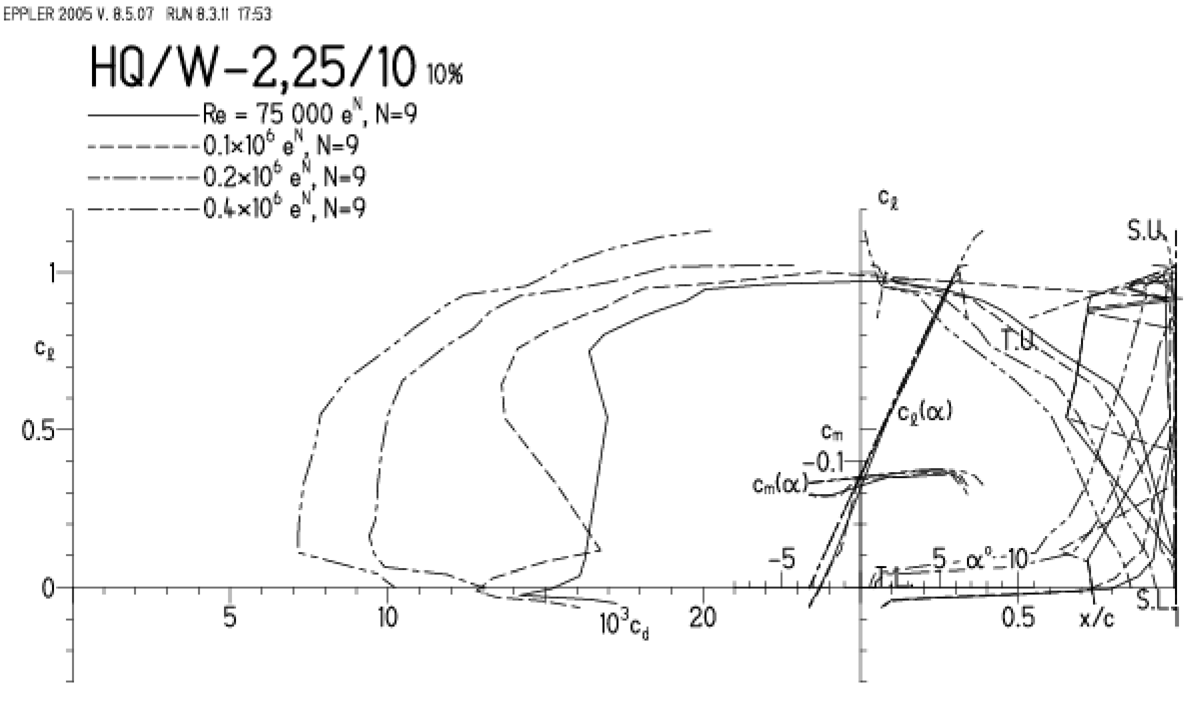


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47



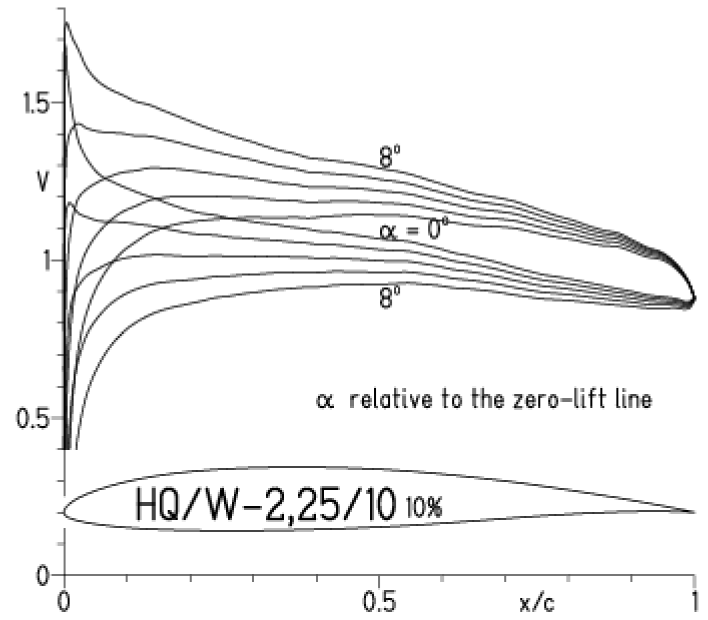
HQ/W-2,25/10, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/10 10%
0
0.5
x/c
1

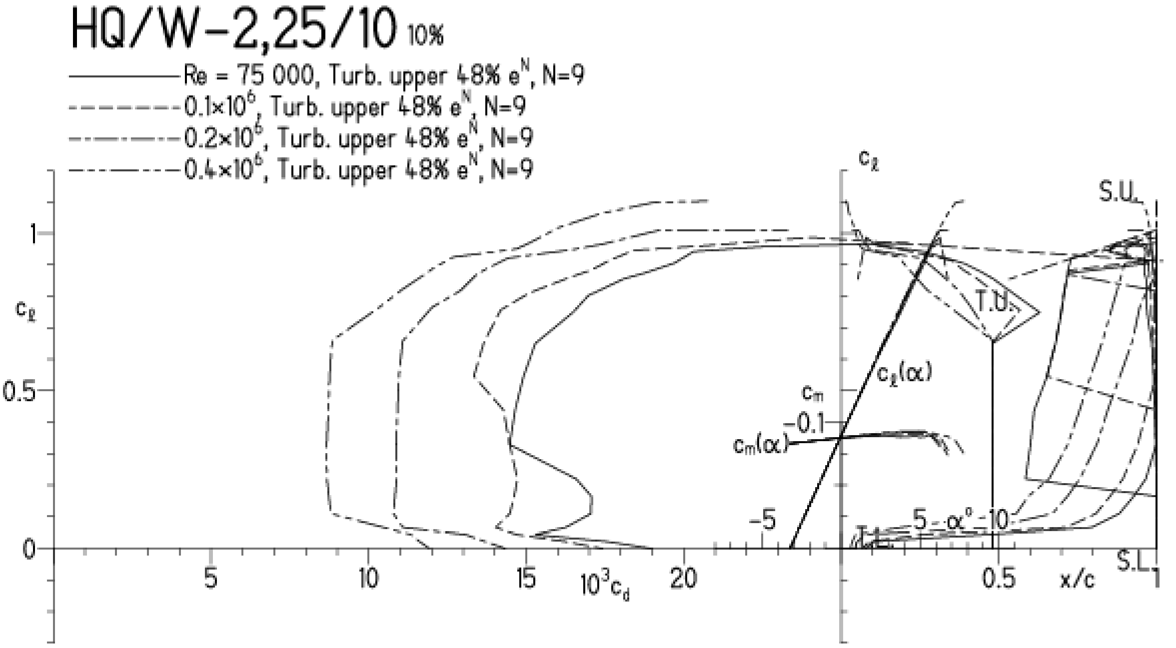

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
HQ/W-2,25/10 10%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
10^3 c_d
20
S.U.
T.U.
c_l(α)
c_m
-0.1
c_m(α)
-5
T.L.
5
α°
10
0.5
x/c
S.L.
1

HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

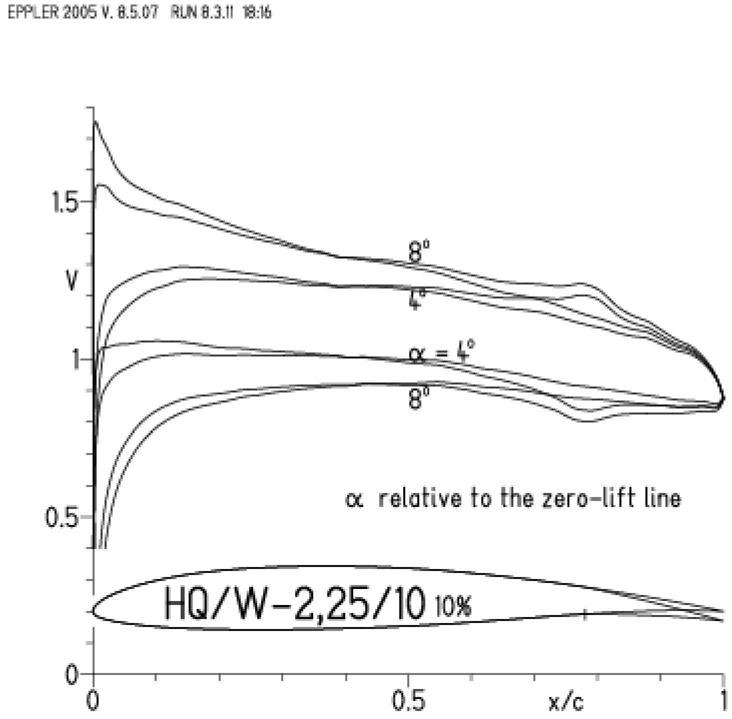
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

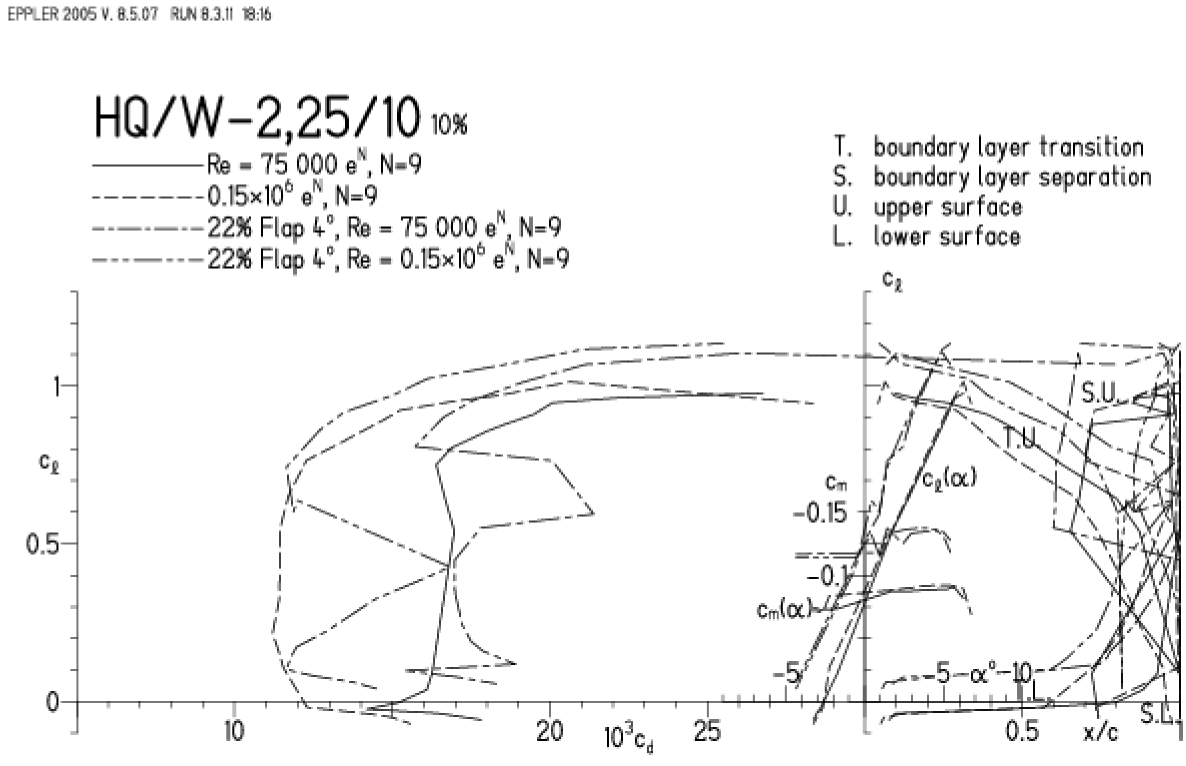


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

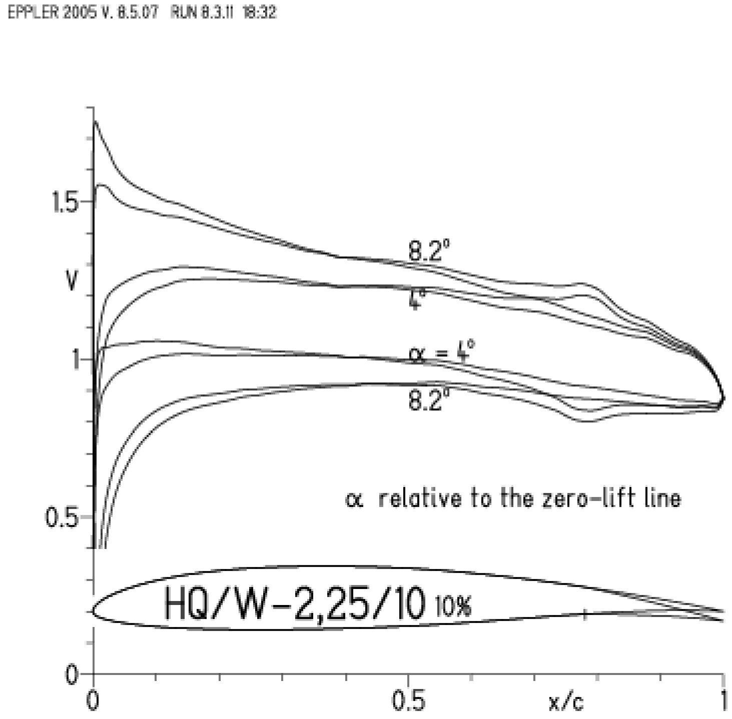


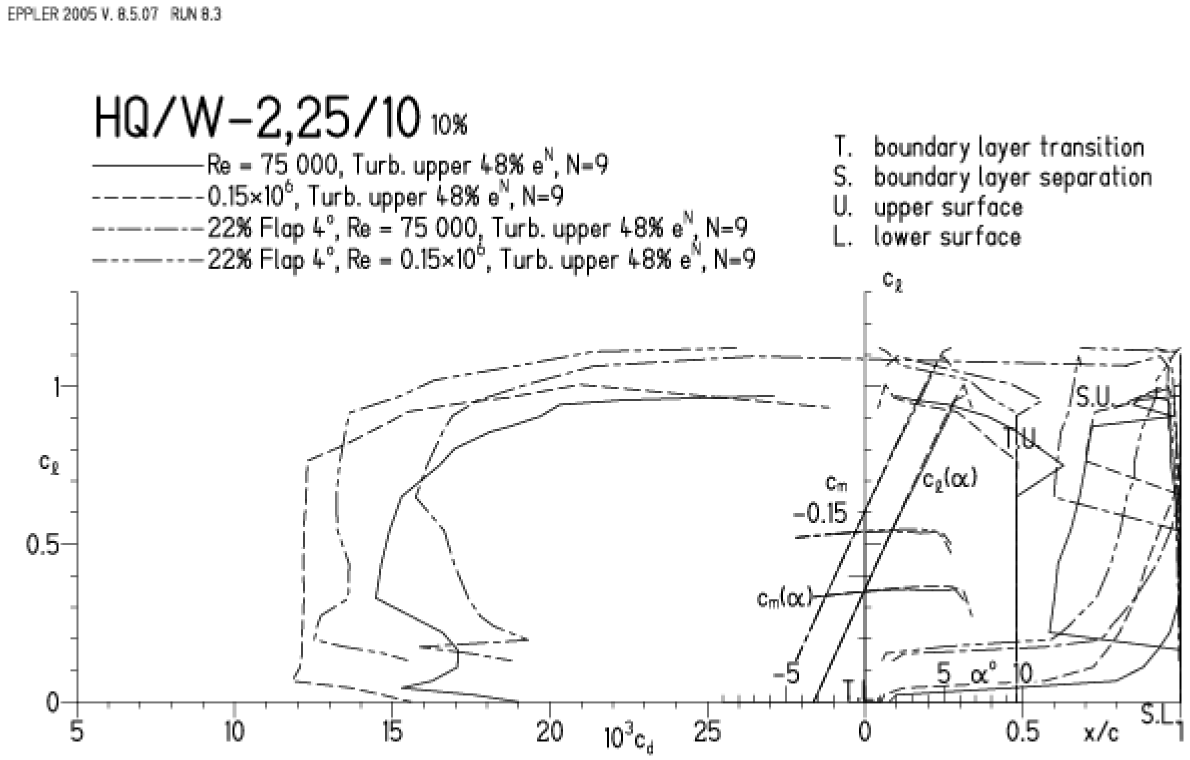
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag





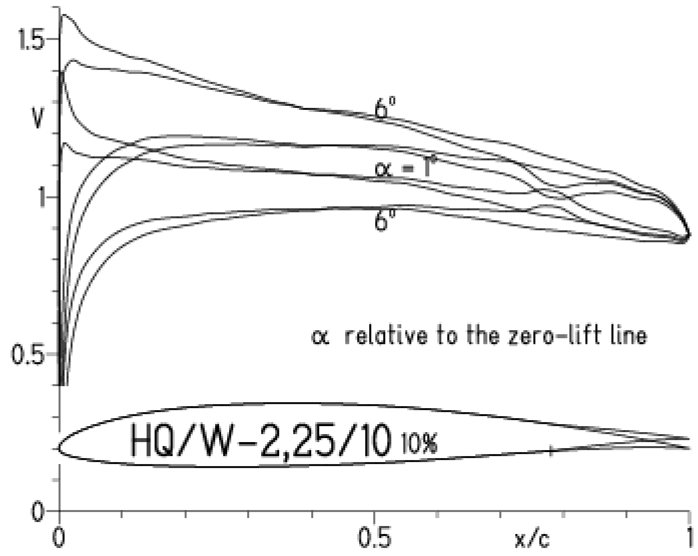
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



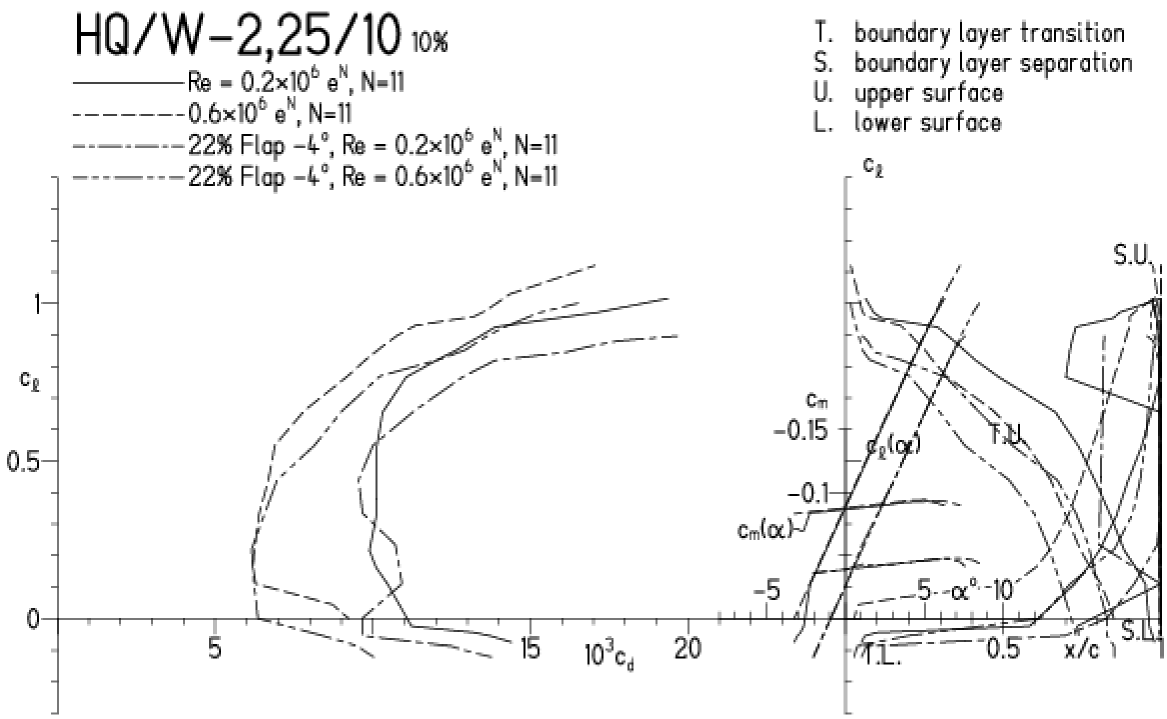


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

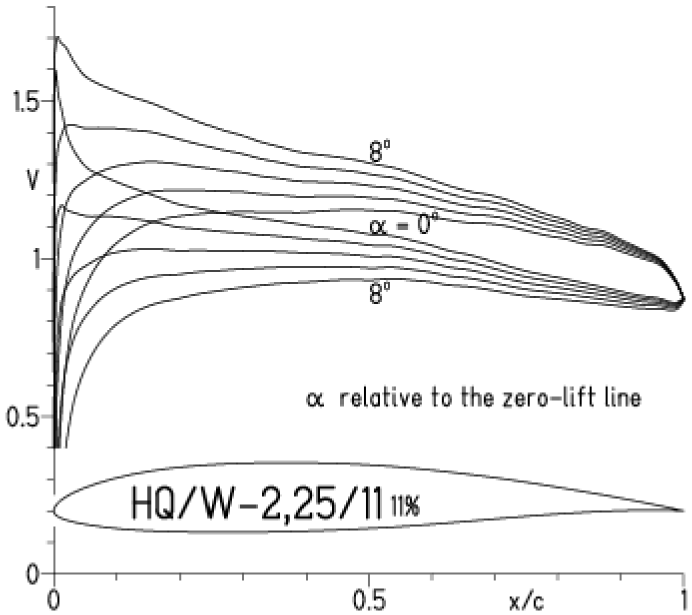


EPPLER 2005 V. 8.5.07 RUN

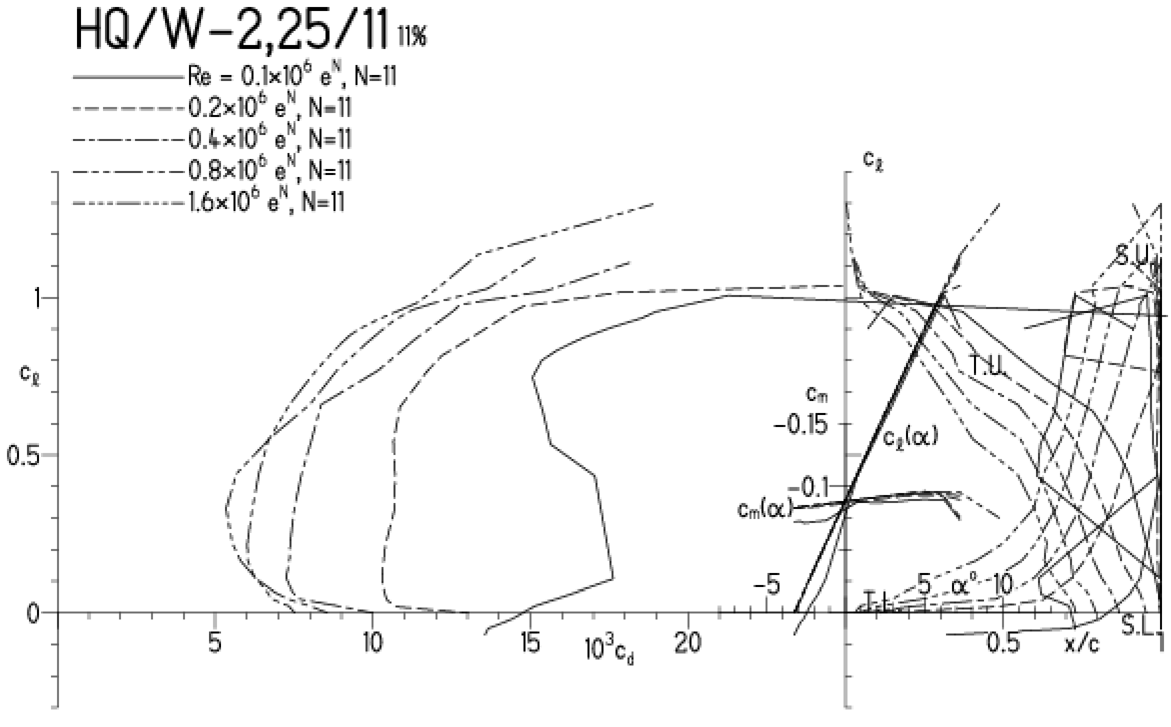


HQ/W-2,25/11, N=11

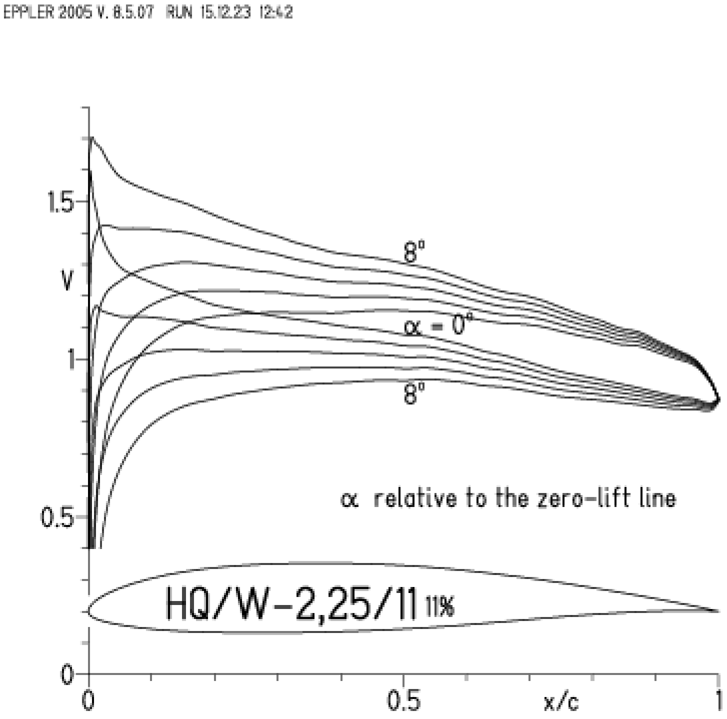
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

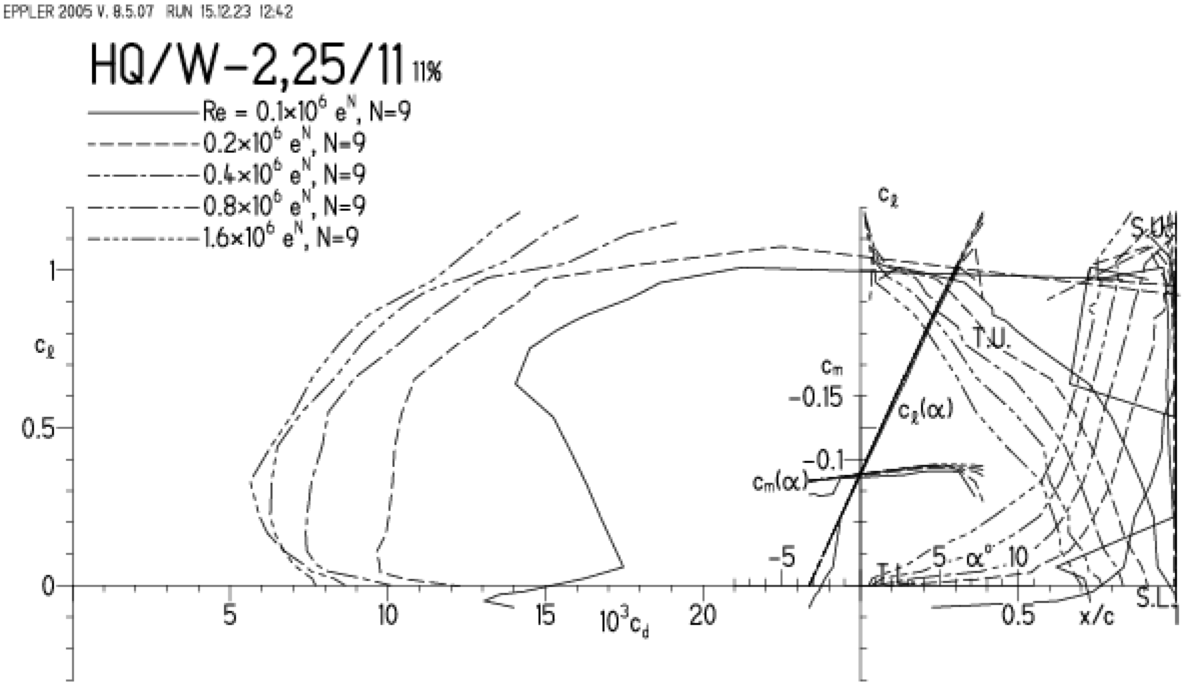


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

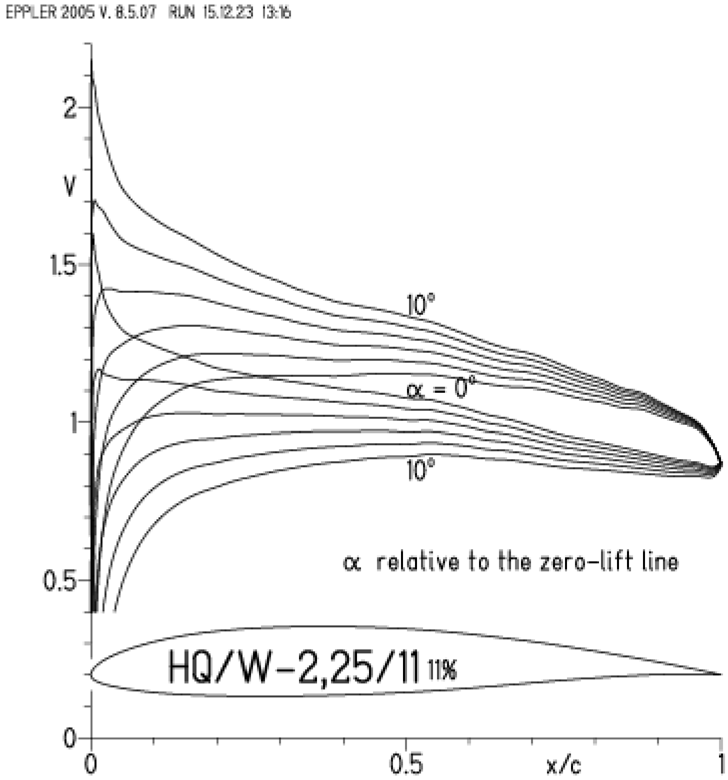


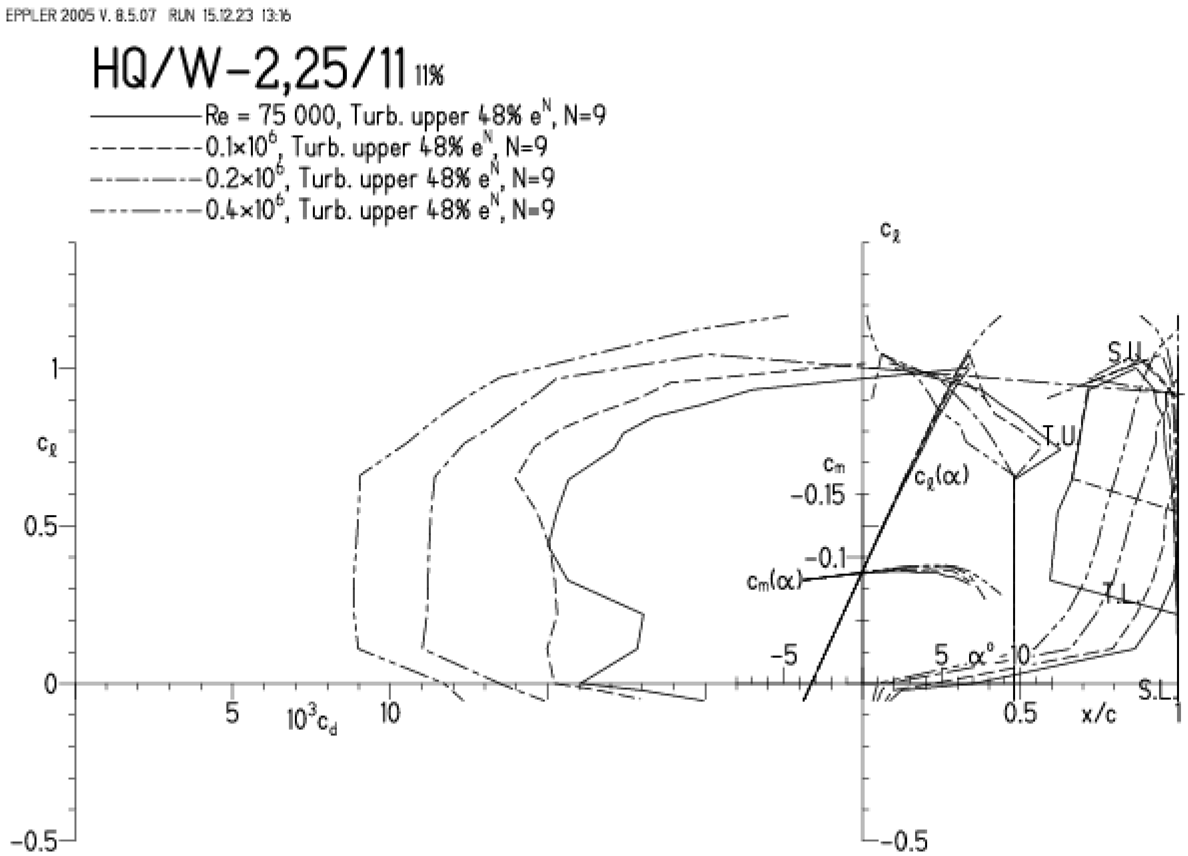
HQQ/W-2,25/11, N=9





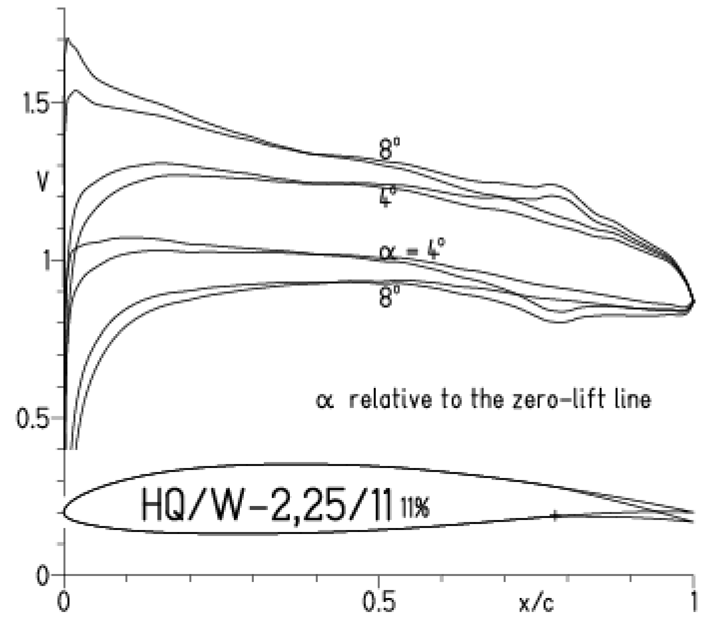
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



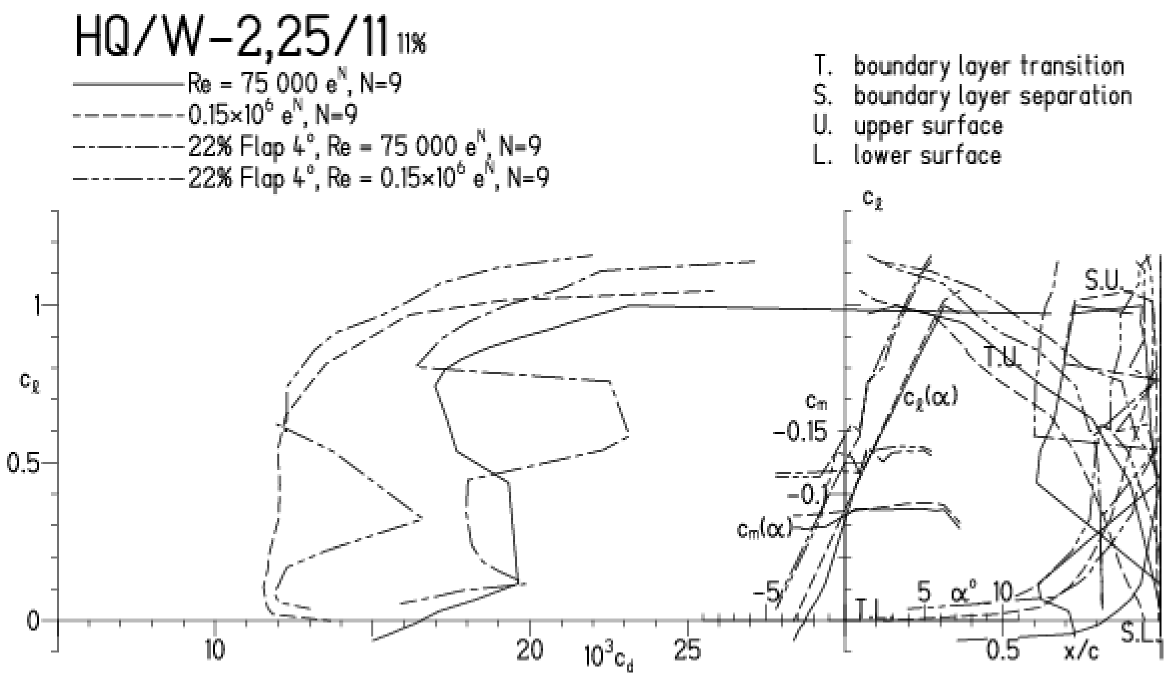


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

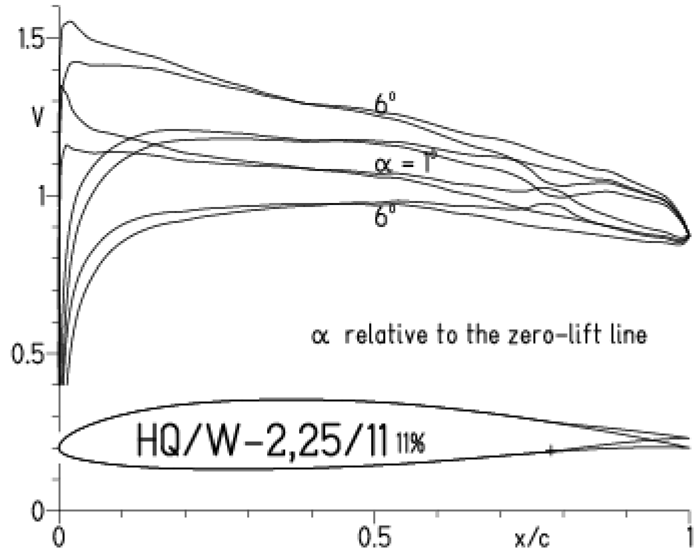


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

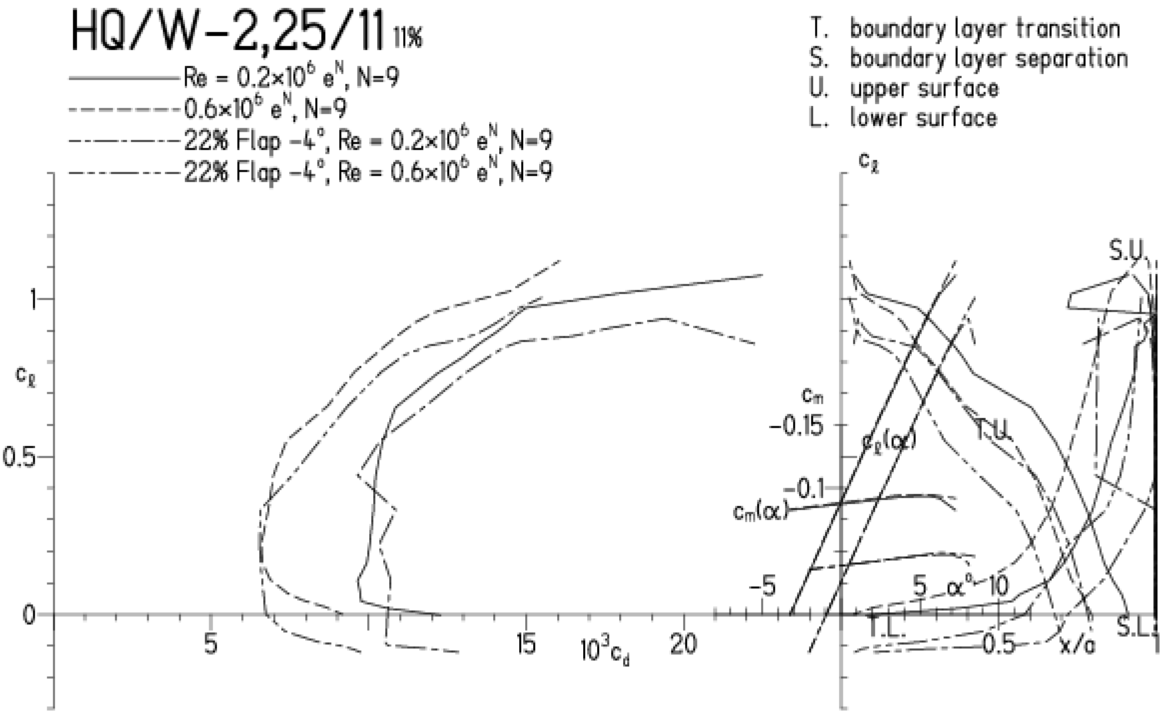


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

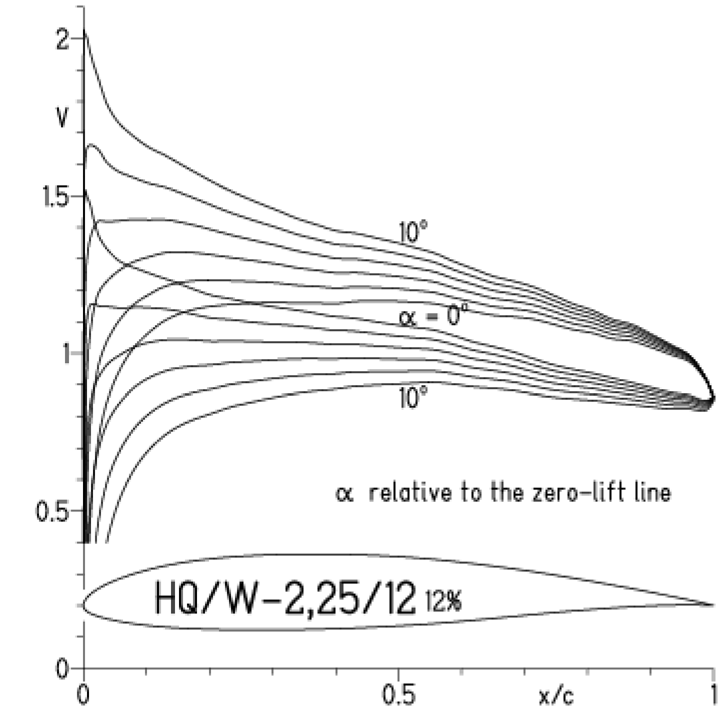


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

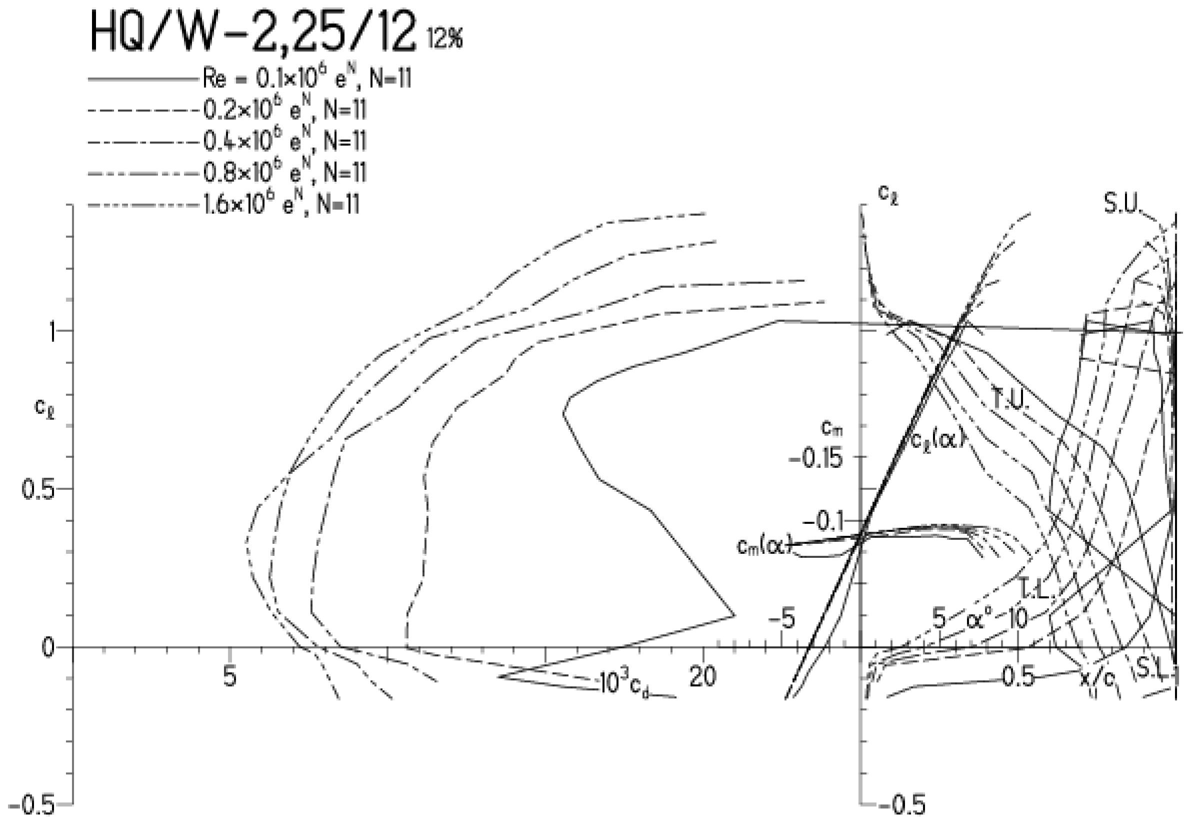


HQ/W-2,25/12, N=11

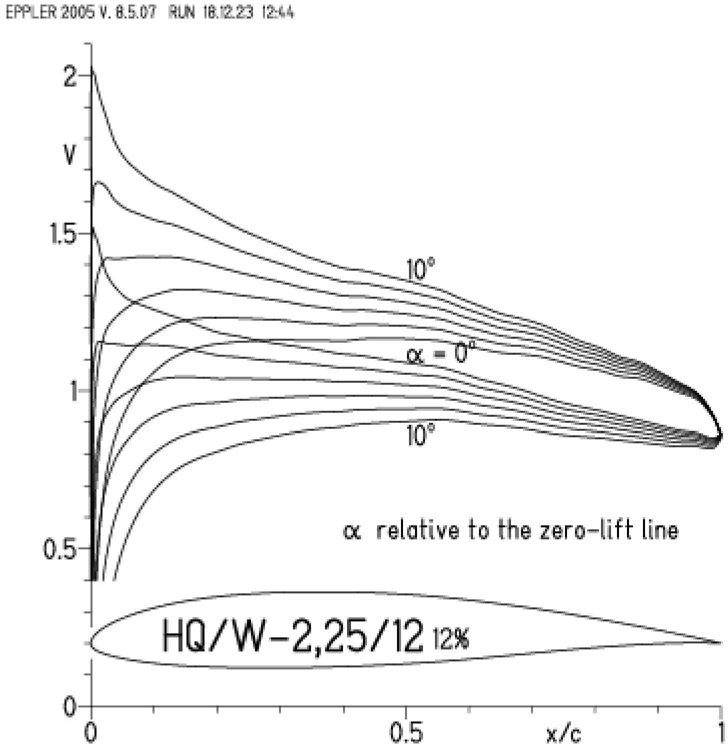
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

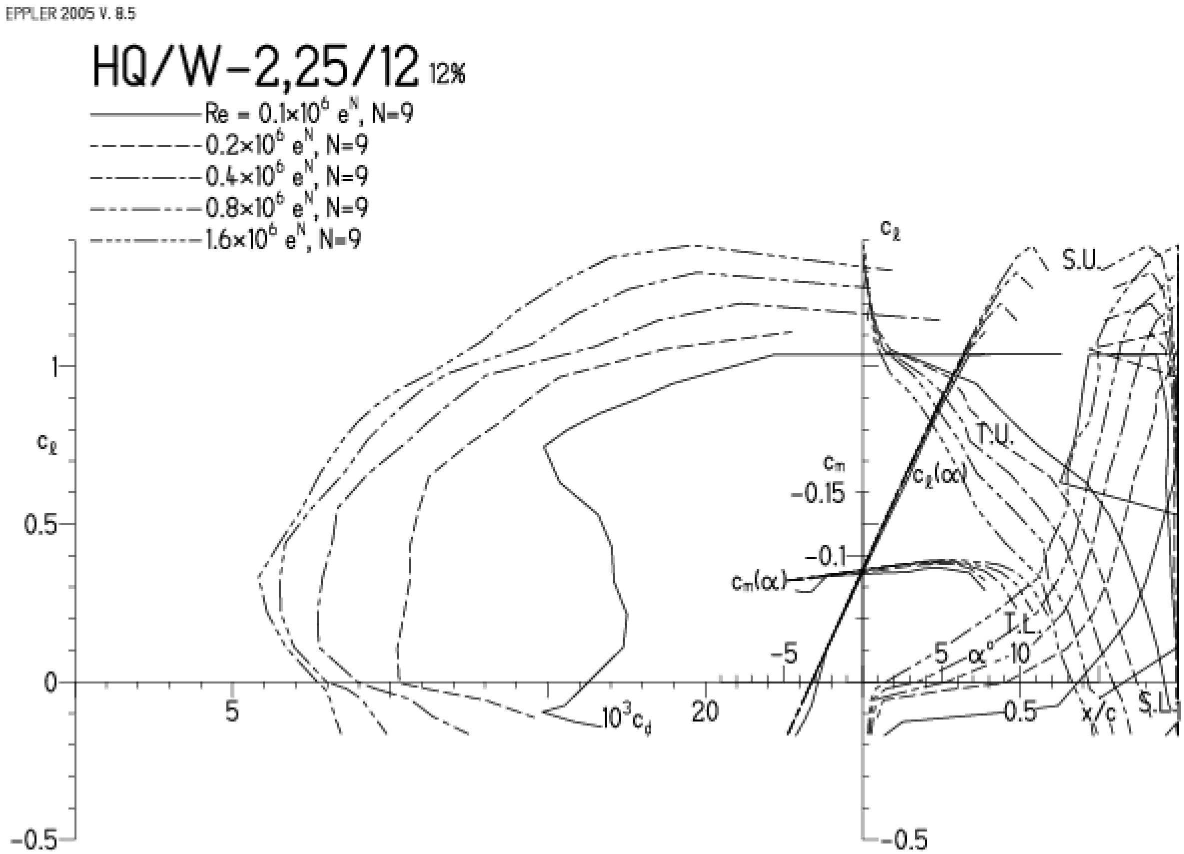


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

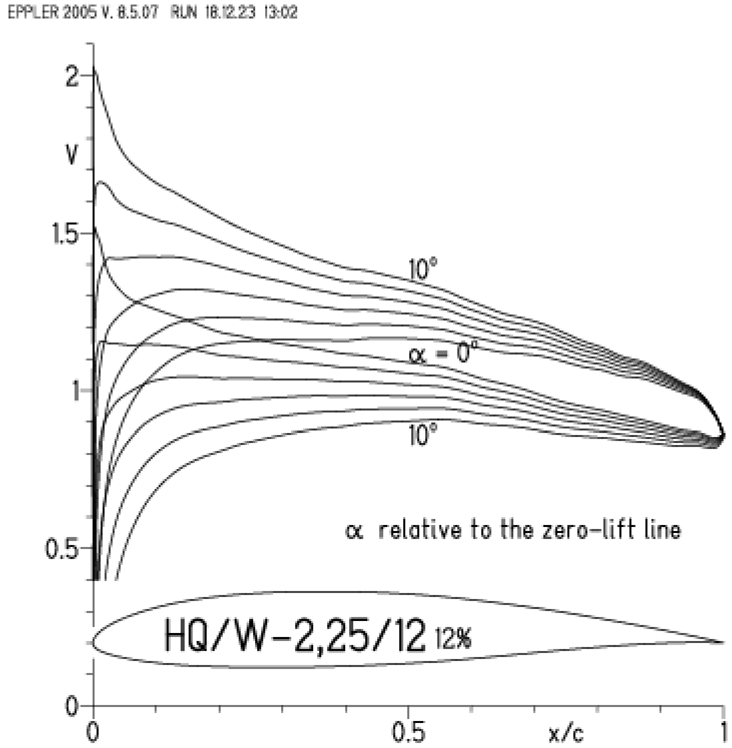


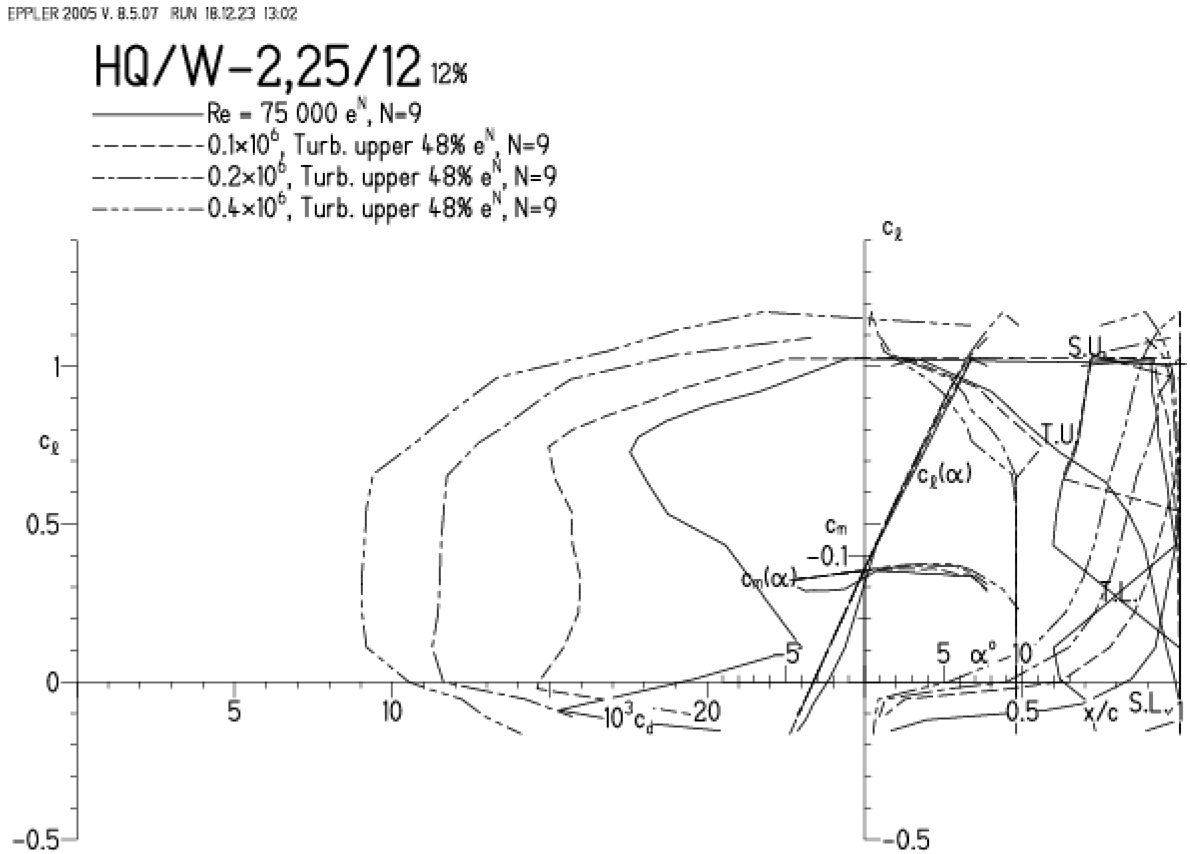
<u>HQ/W-2,25/12</u>, N=9



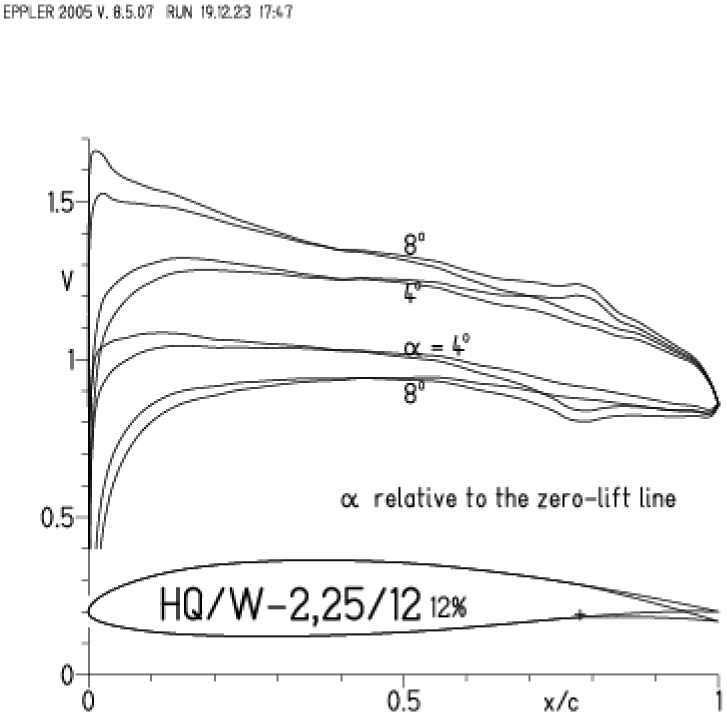


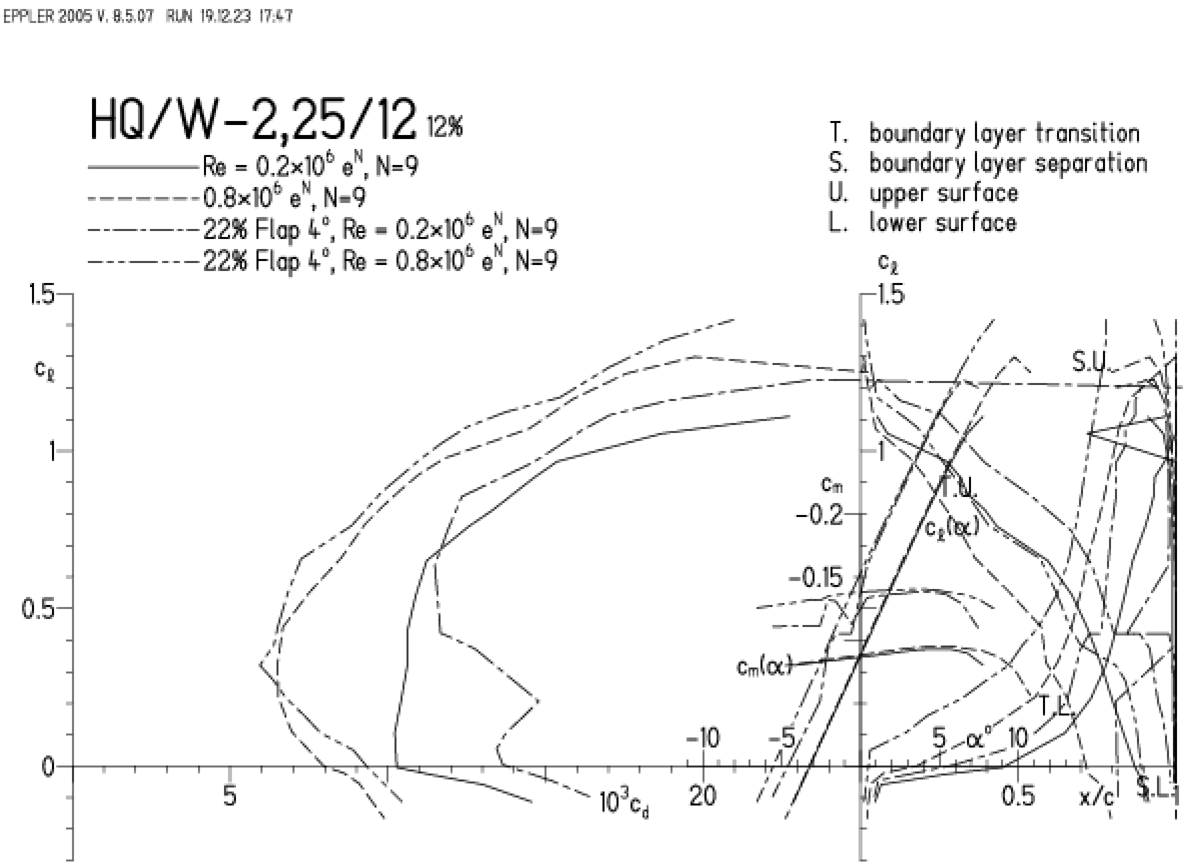
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





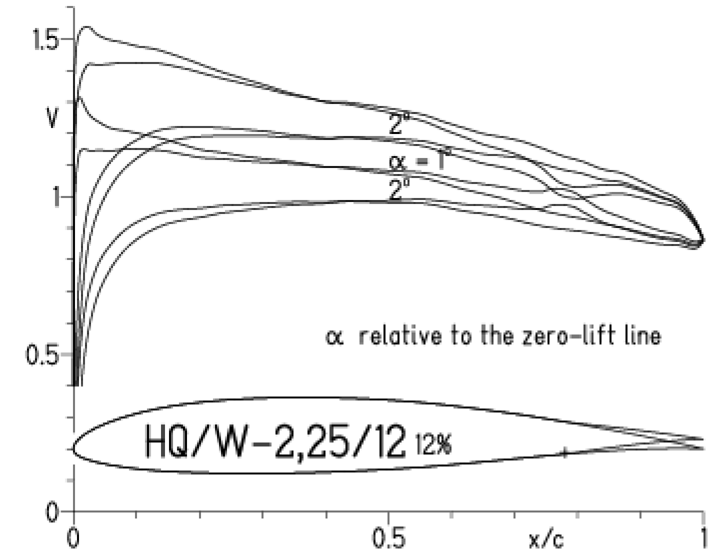
HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag



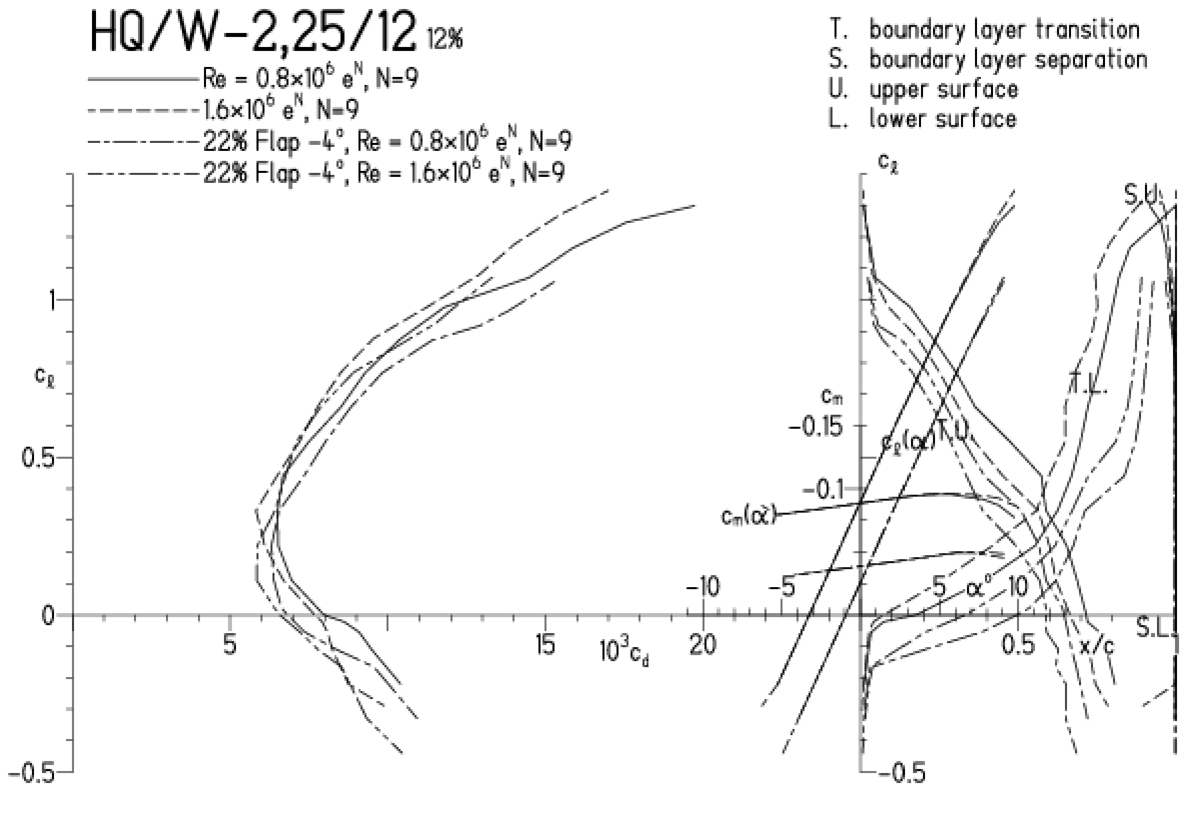


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

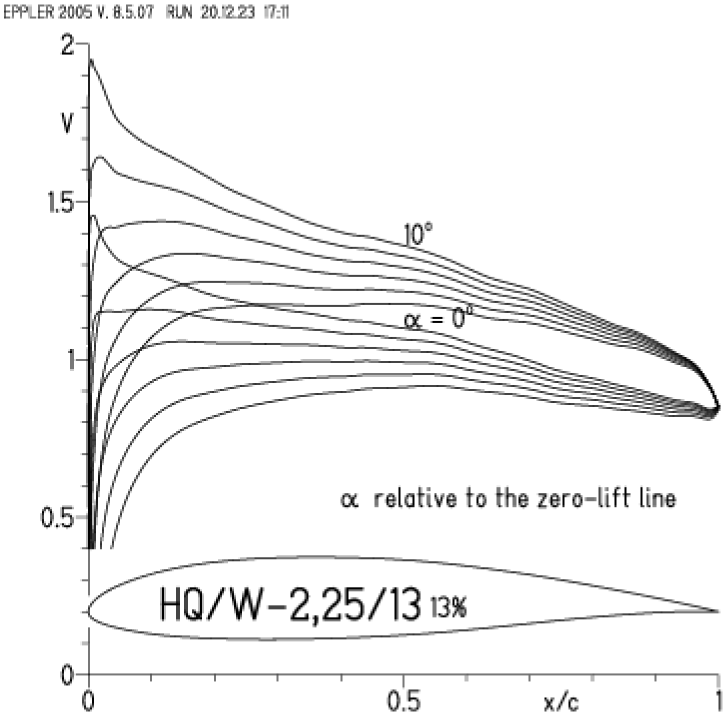
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

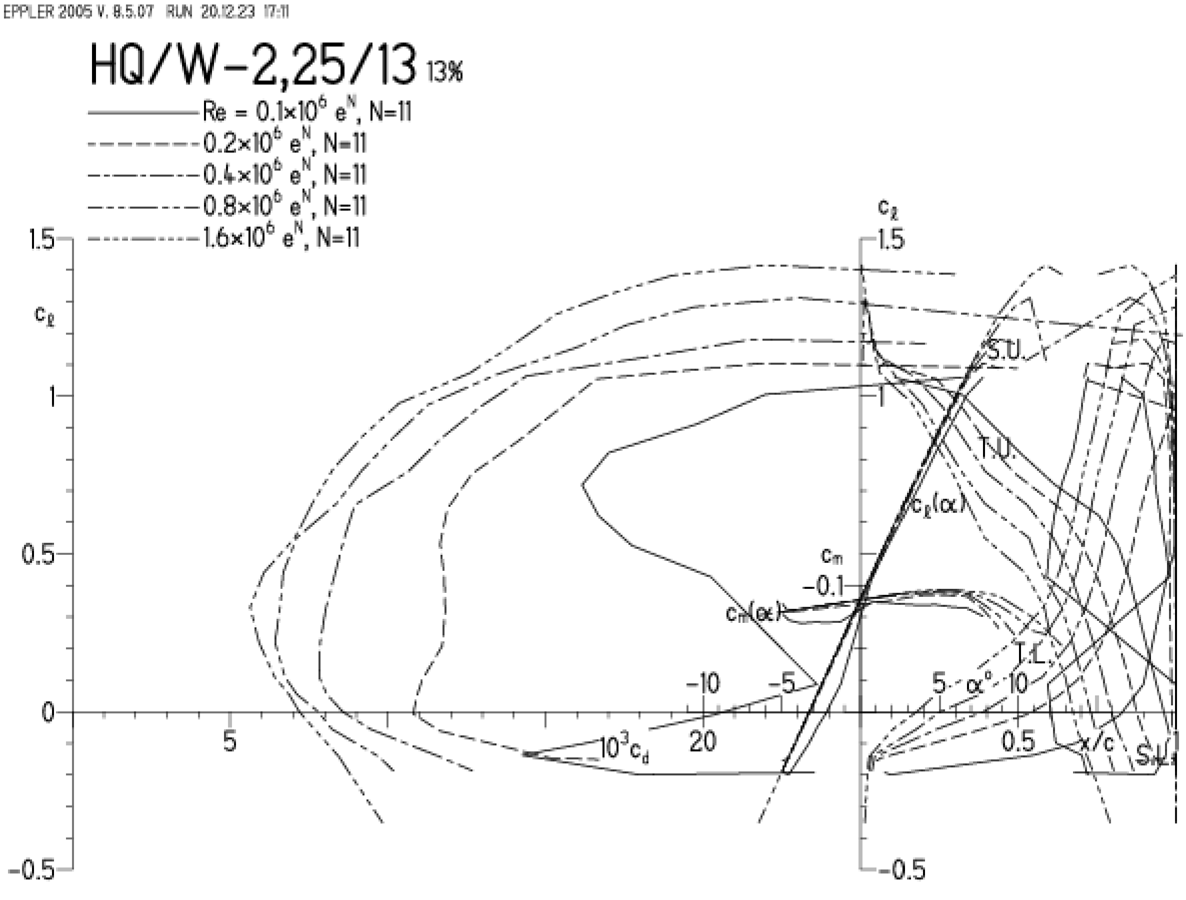


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

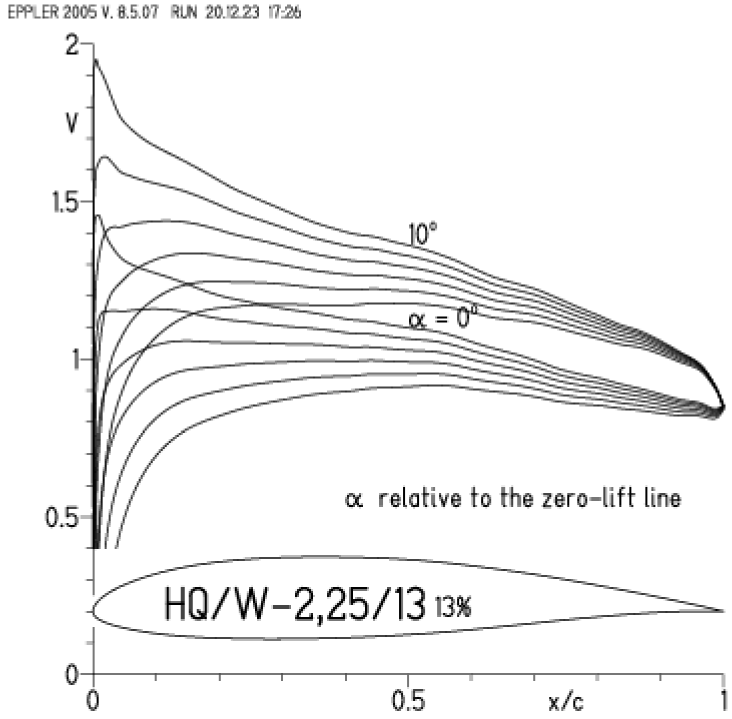


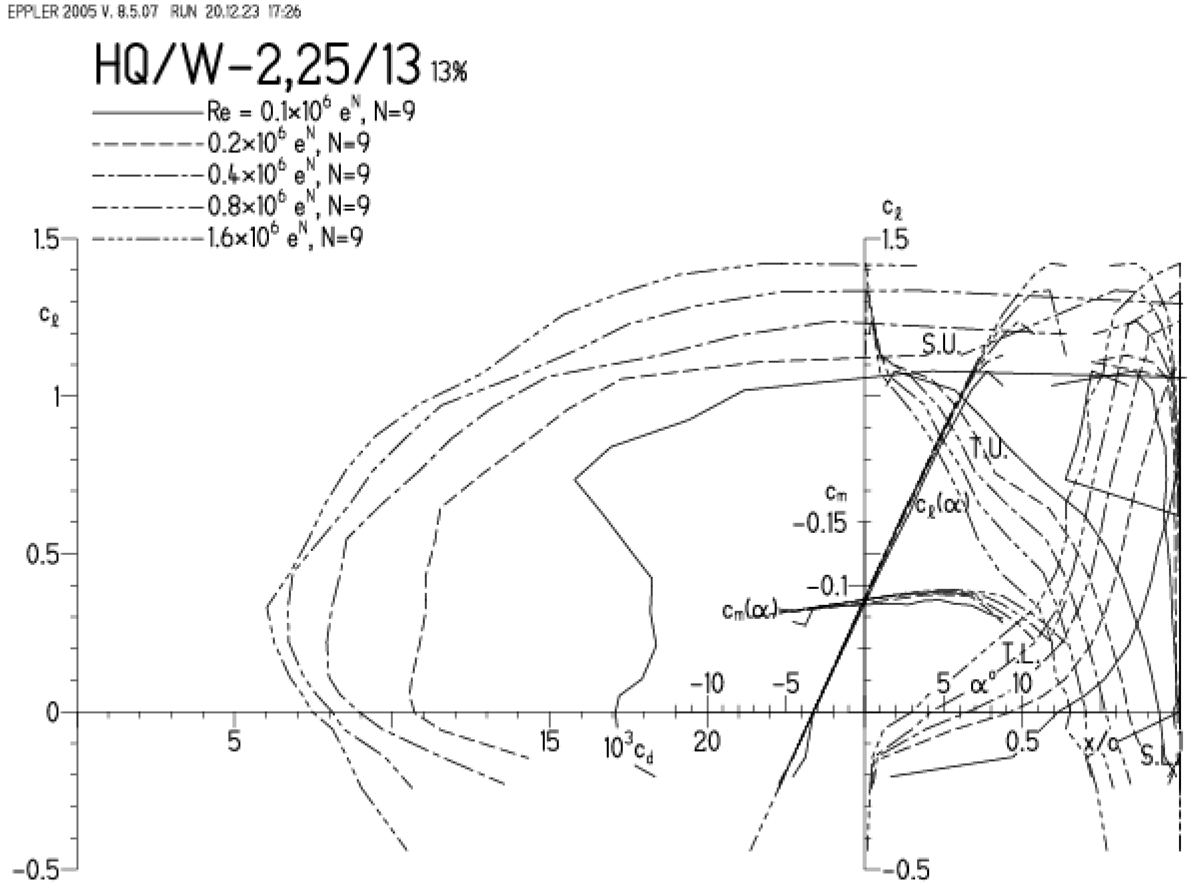
HQ/W-2,25/13, N=11



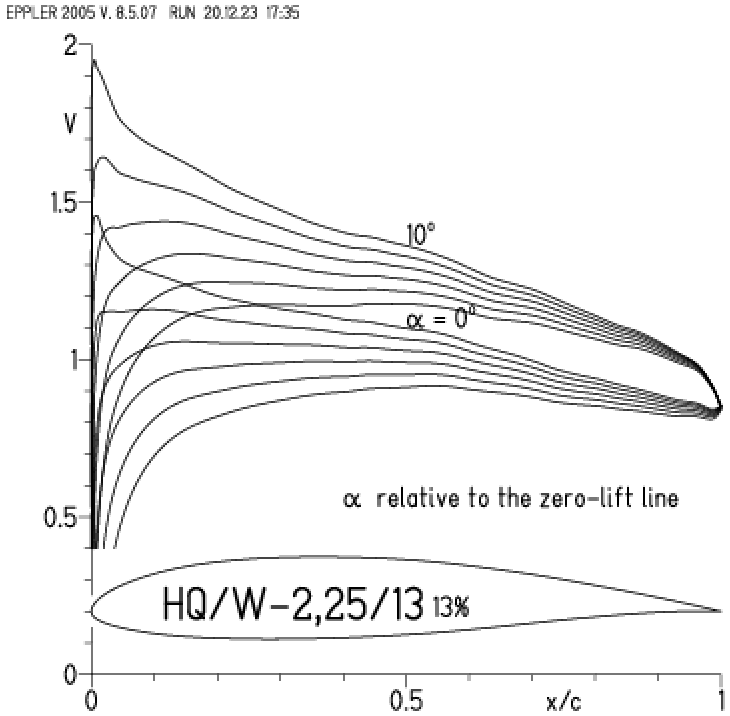


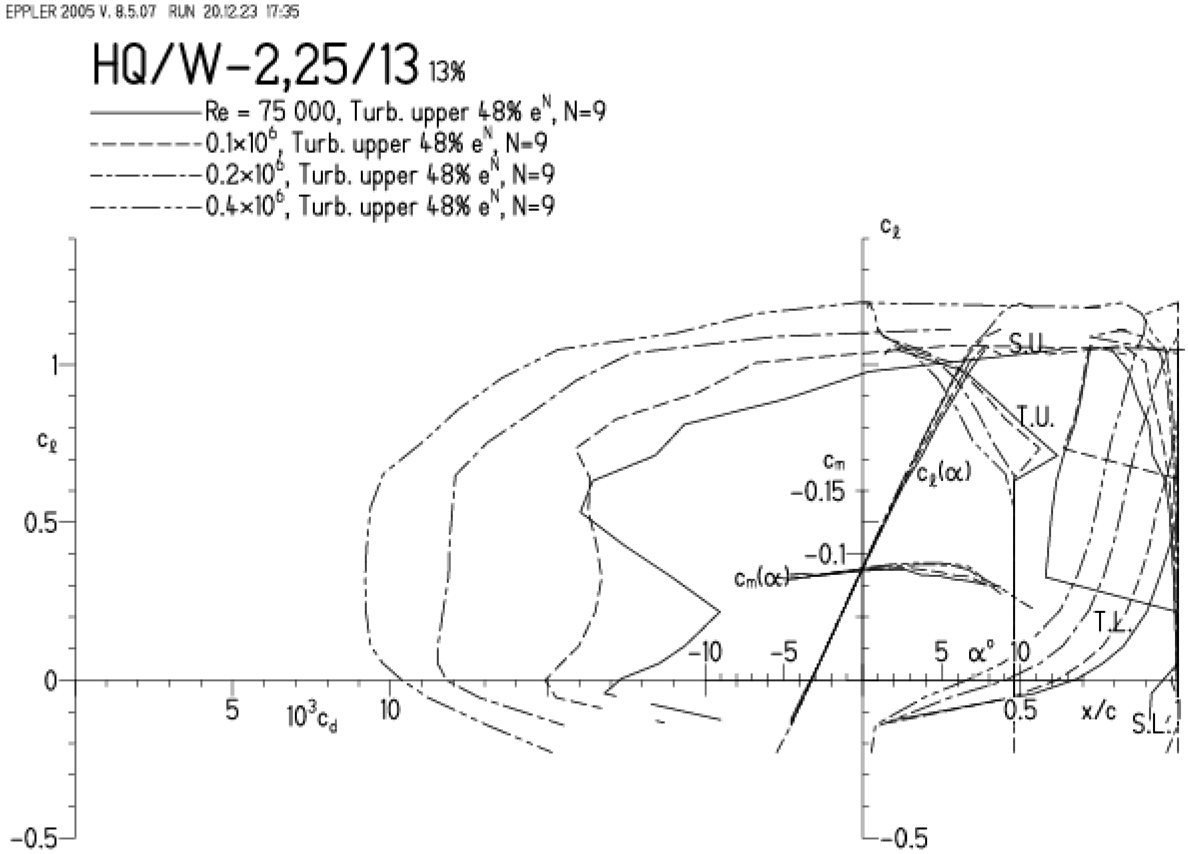
<u>HQ/W-2,25/13</u>, N=9



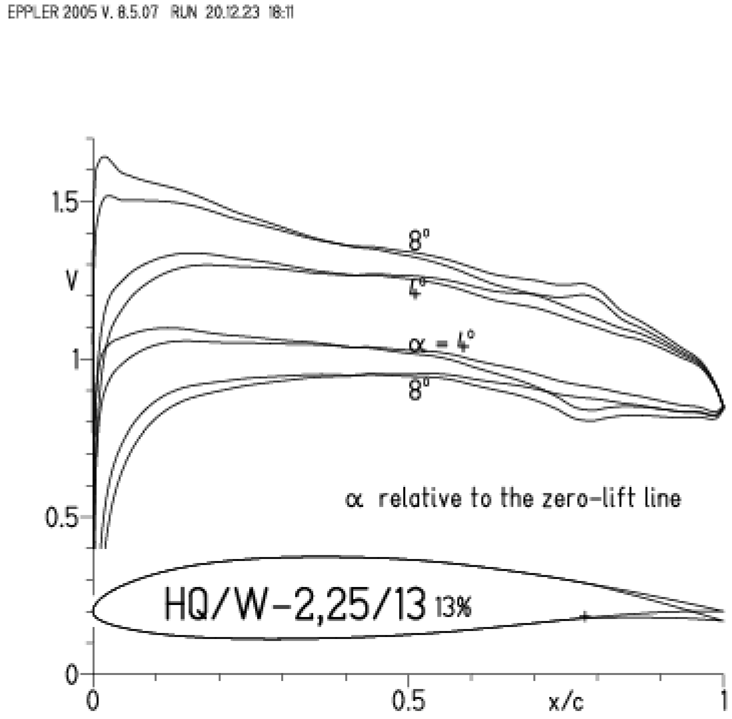


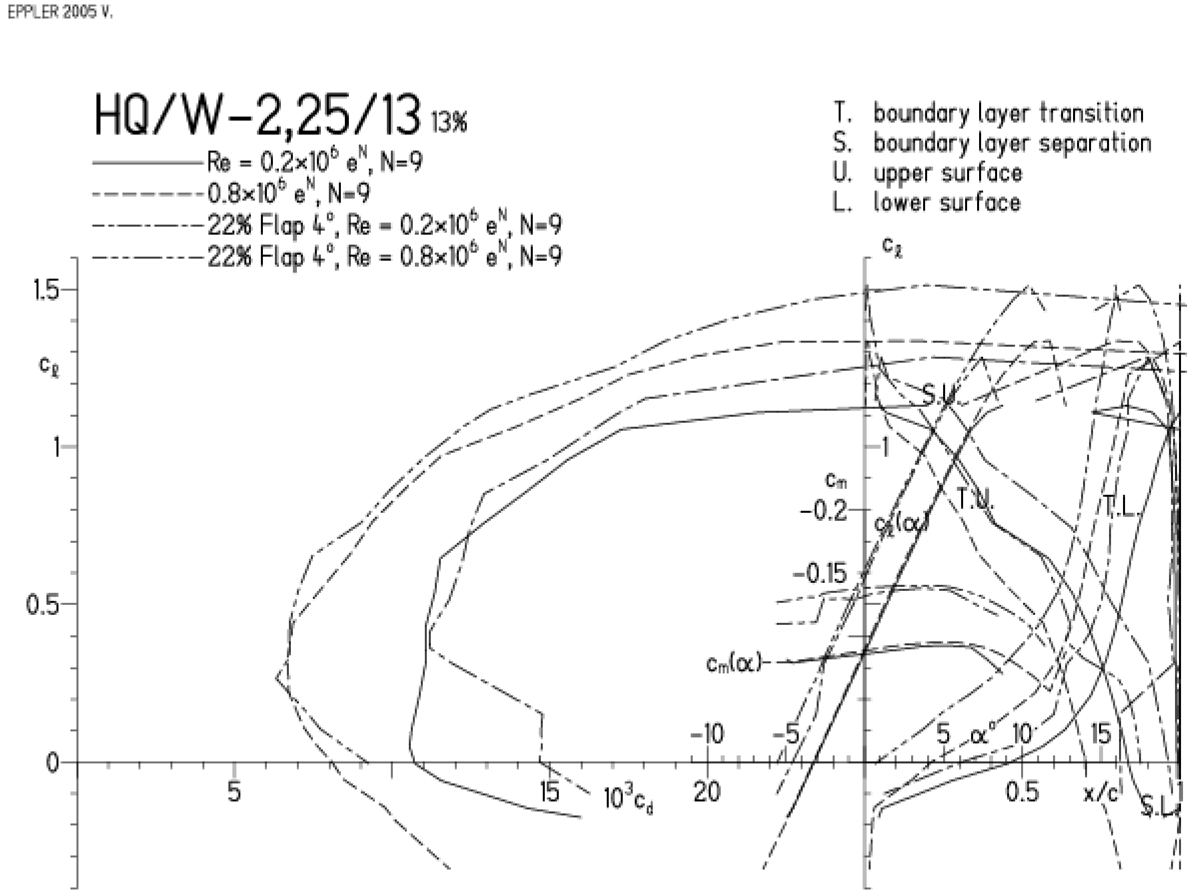
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





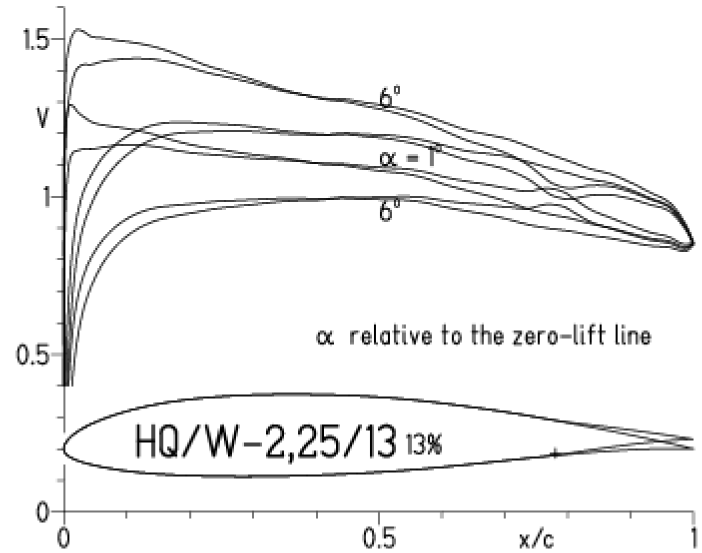
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



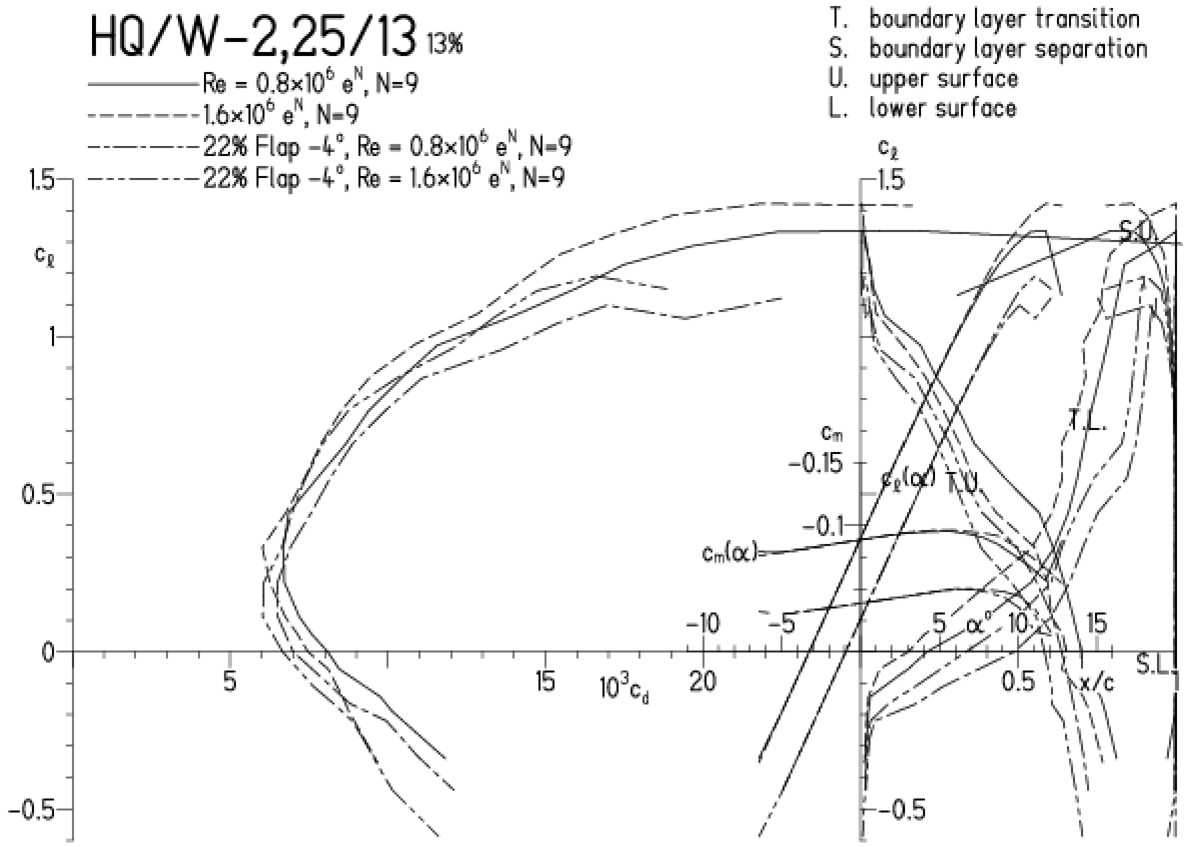


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

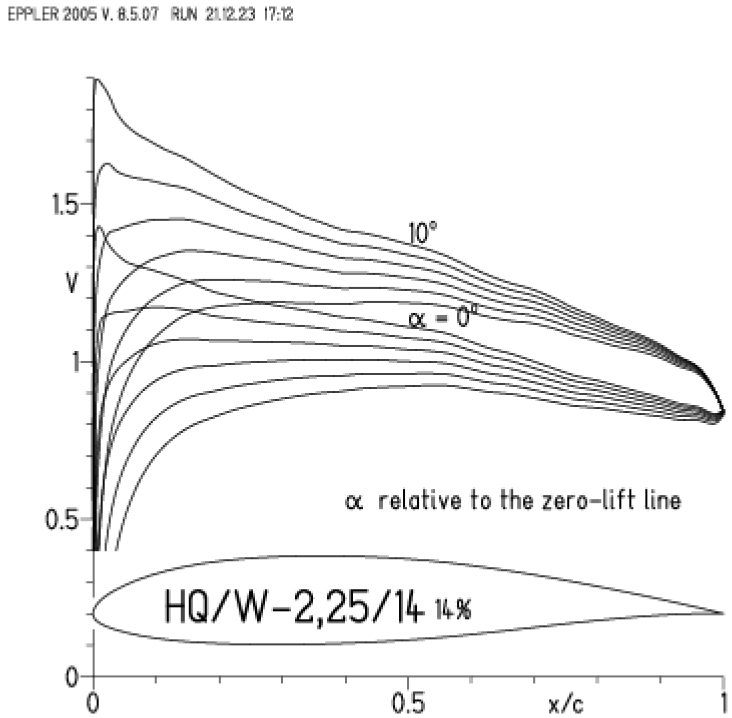
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

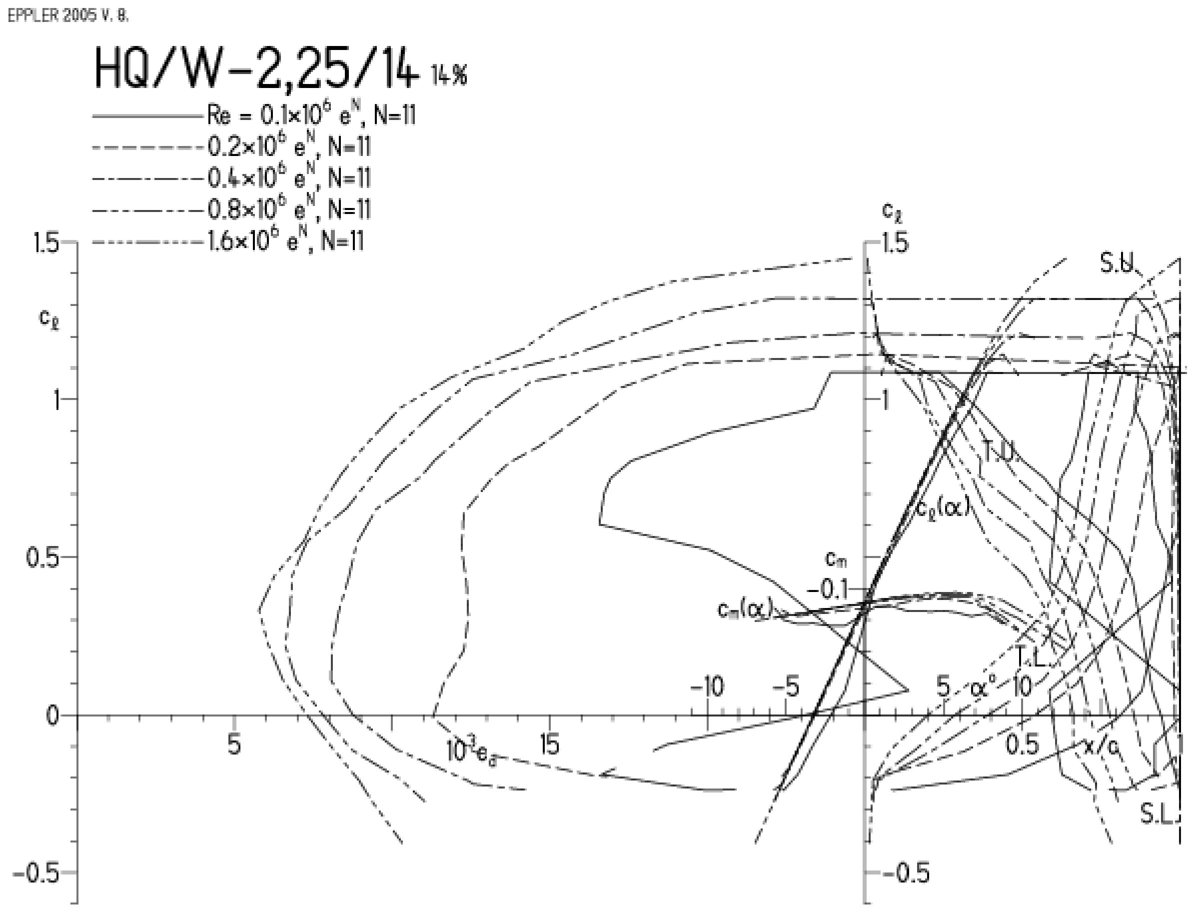


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

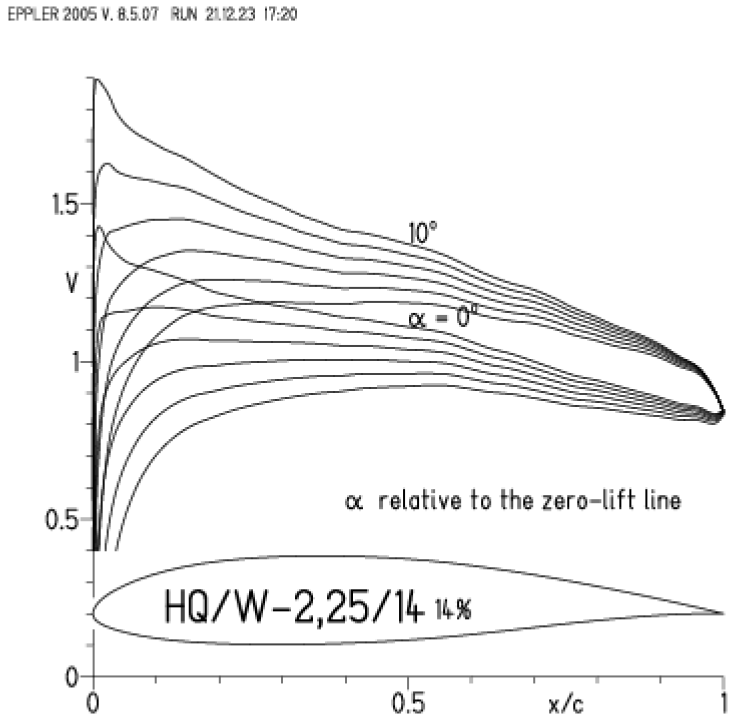


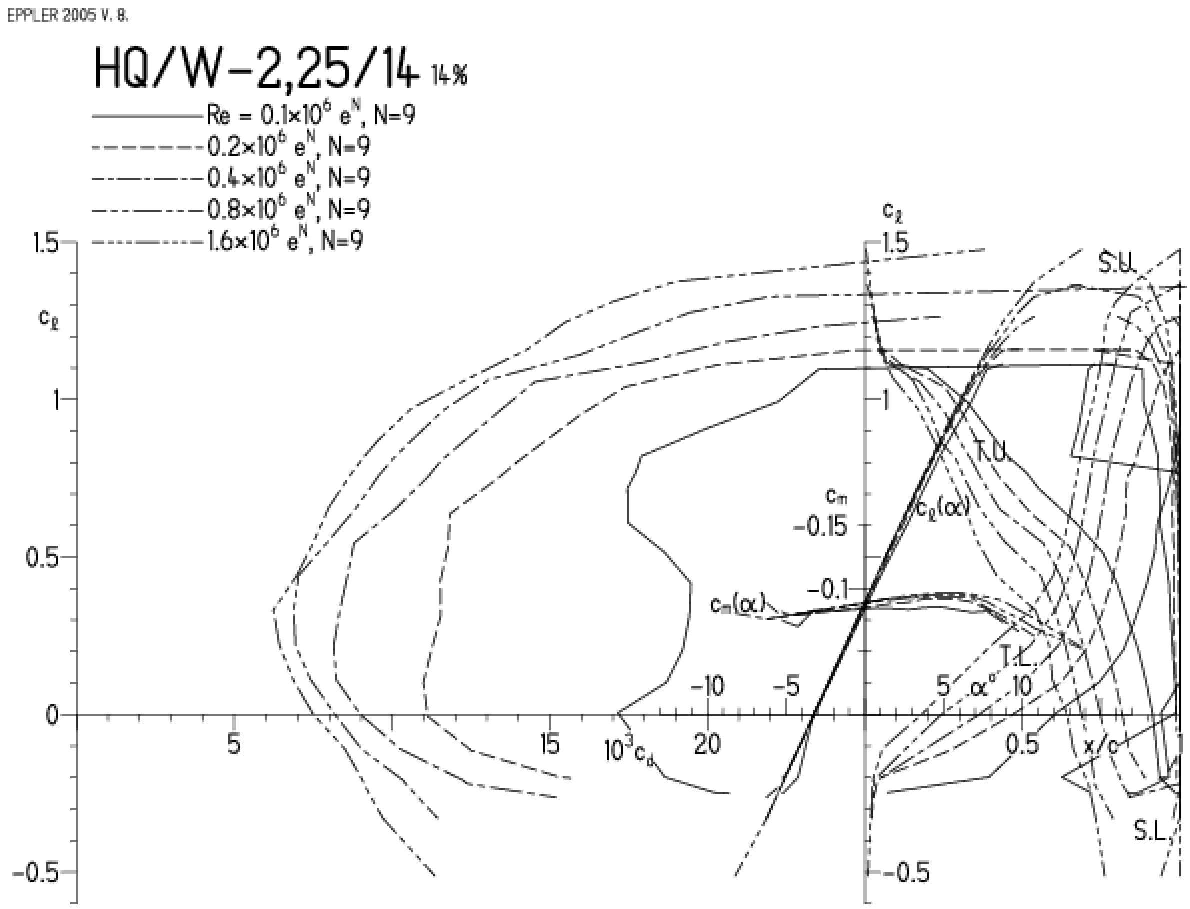
HQ/W-2,25/14, N=11





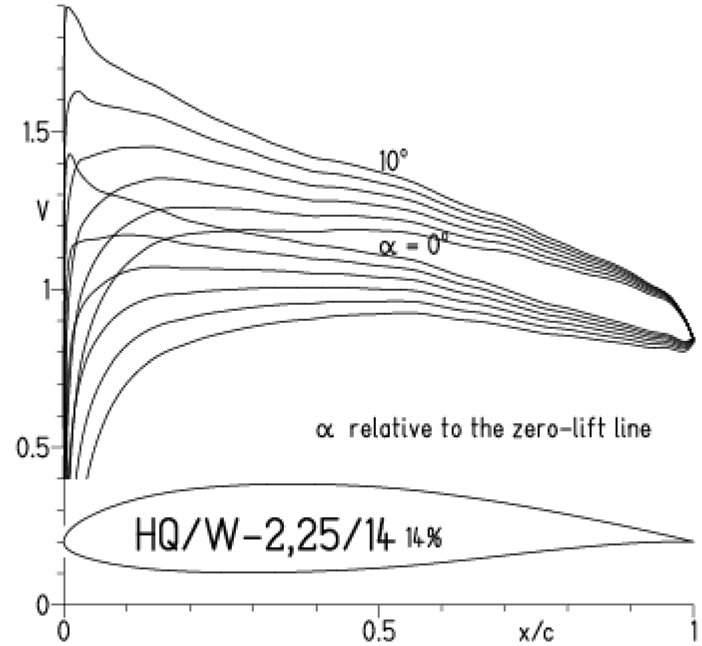
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

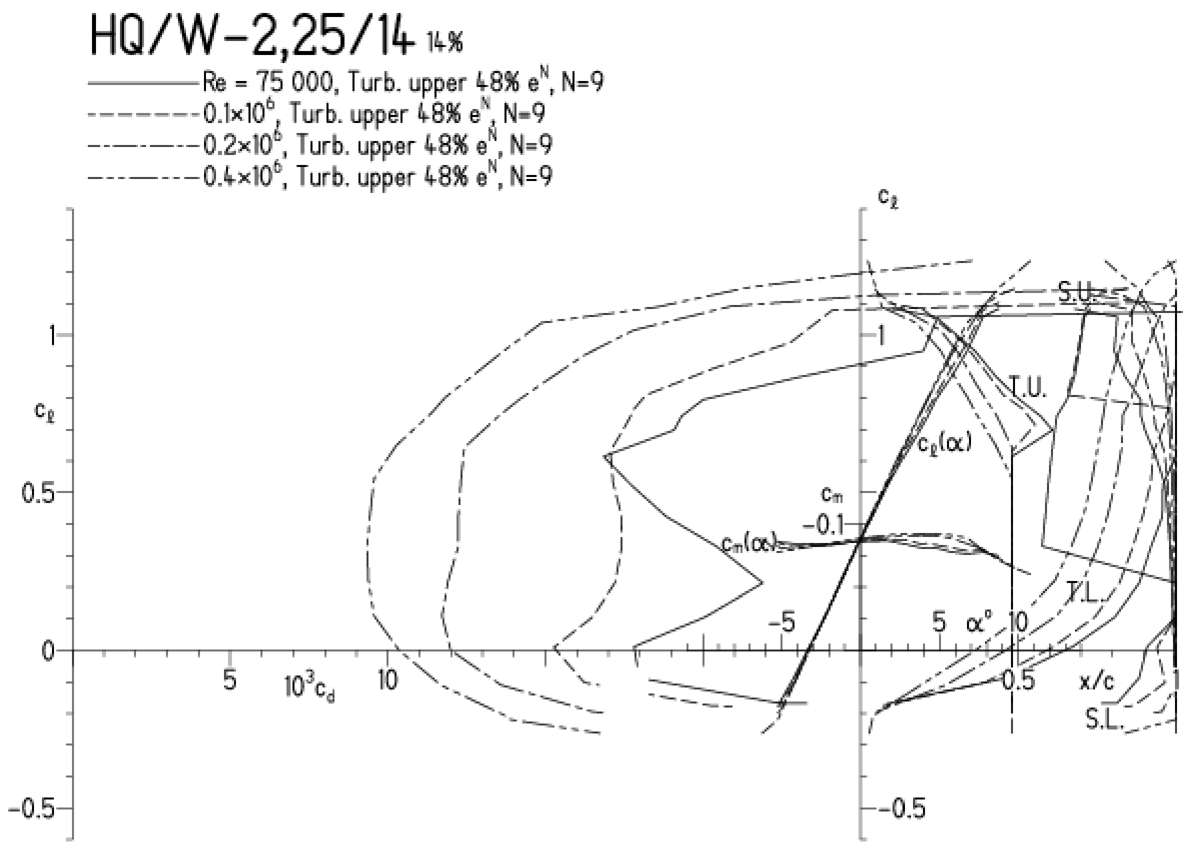

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_l(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

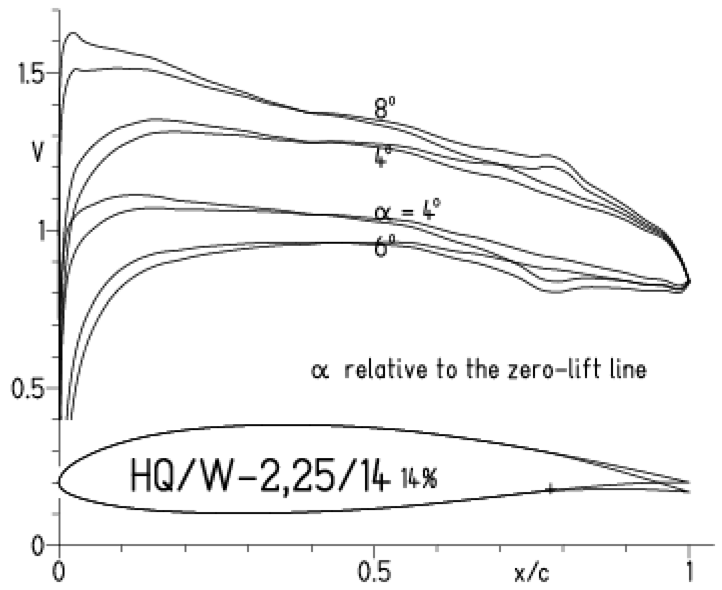


EPPLER 2005 V. 8.5.07 RU

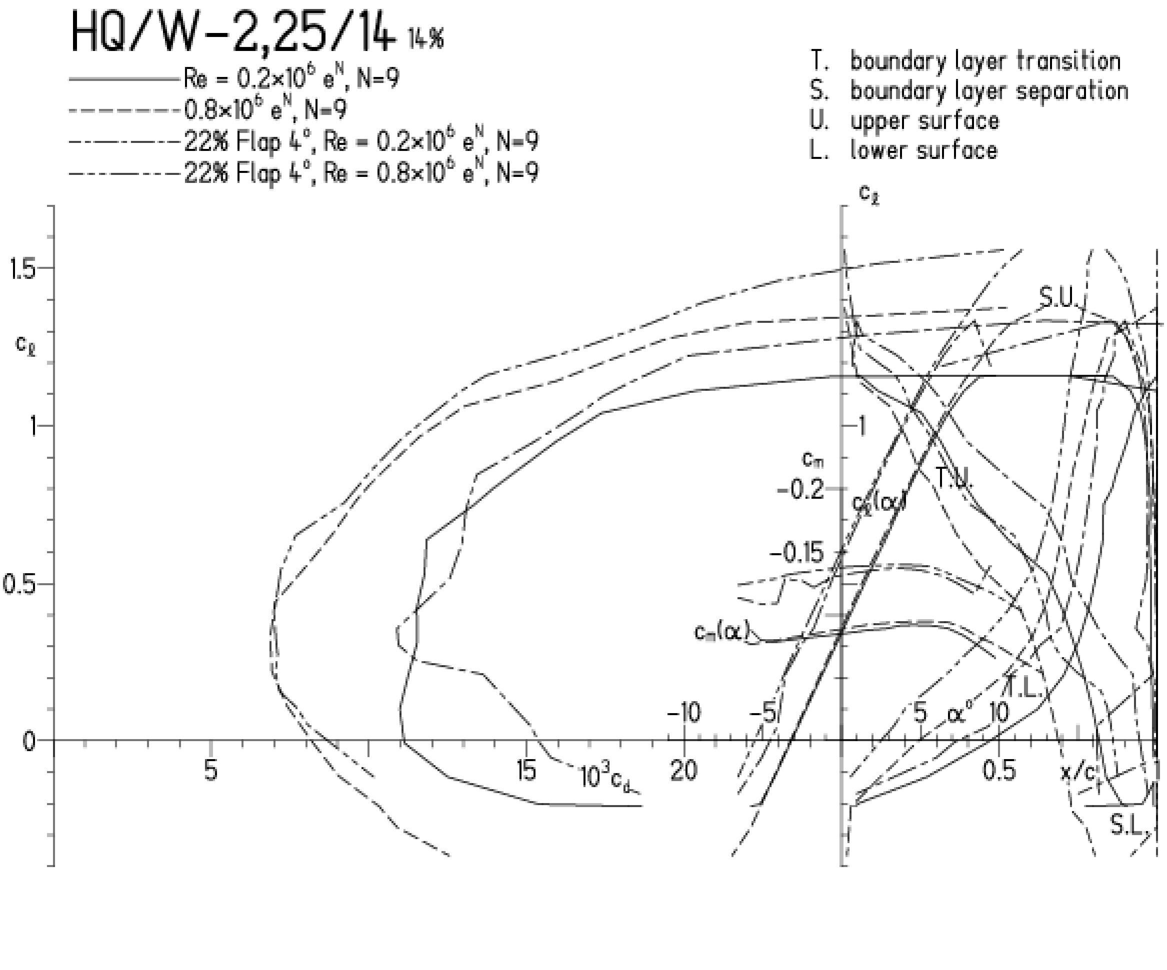


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

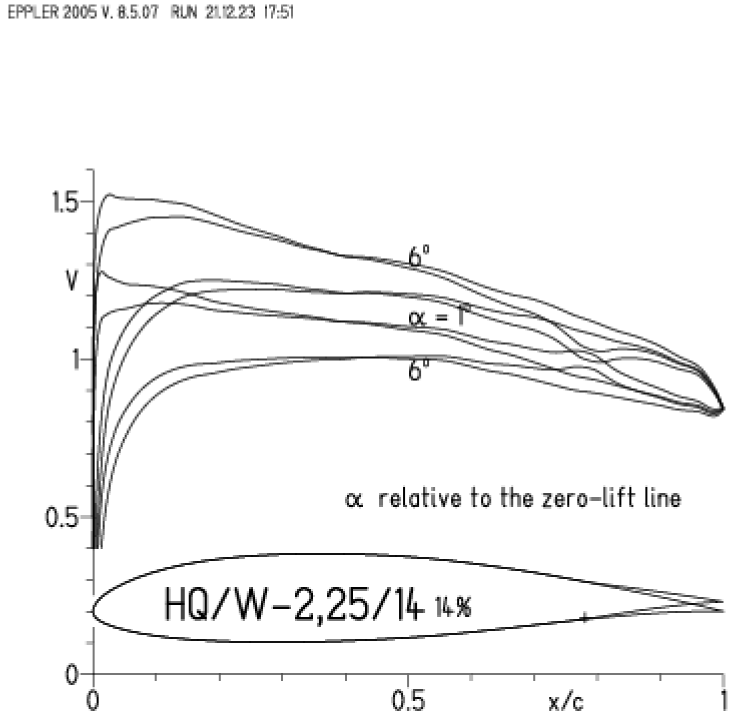
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

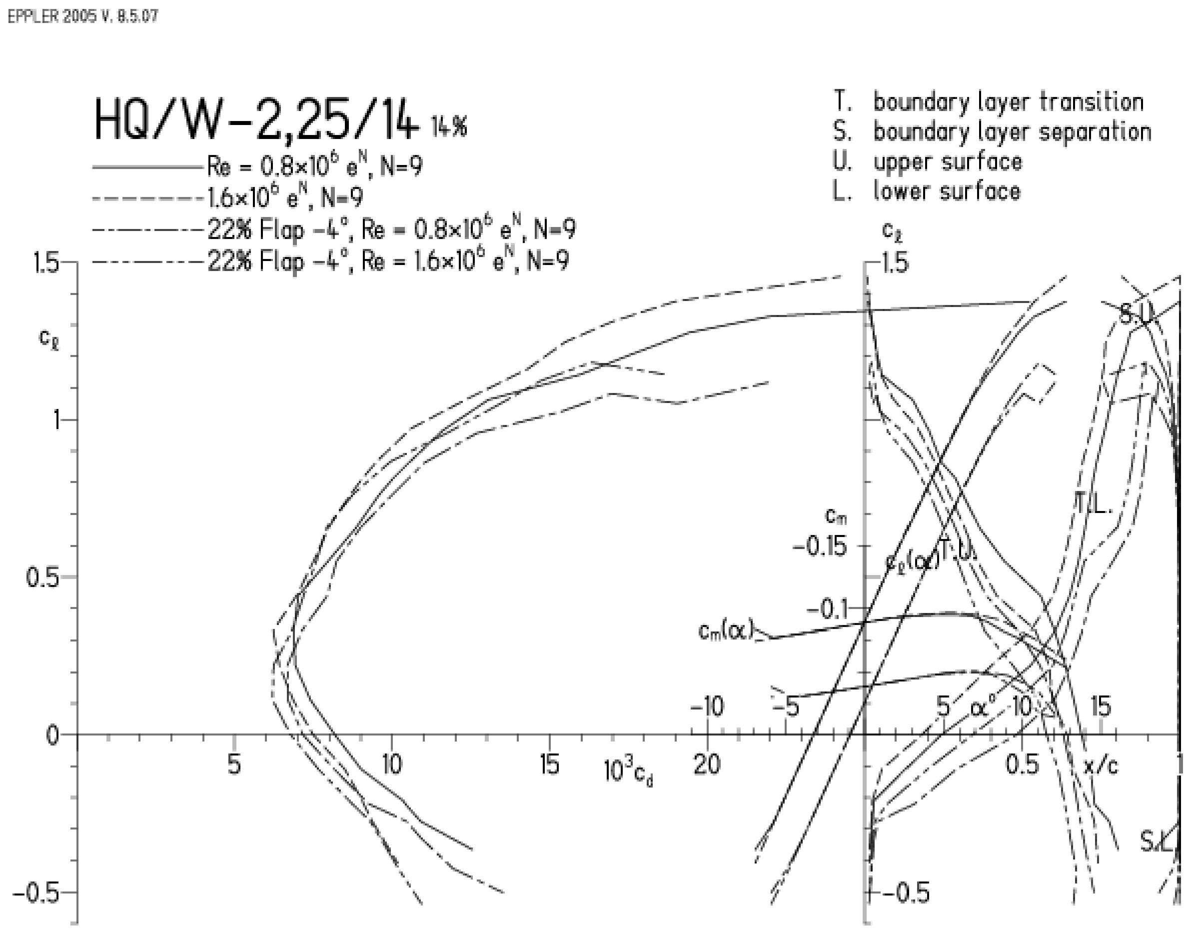


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56



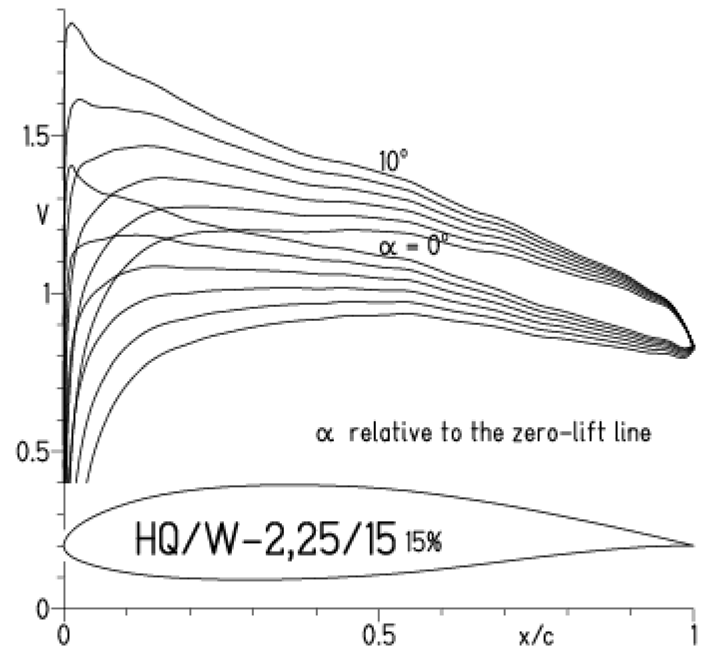
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



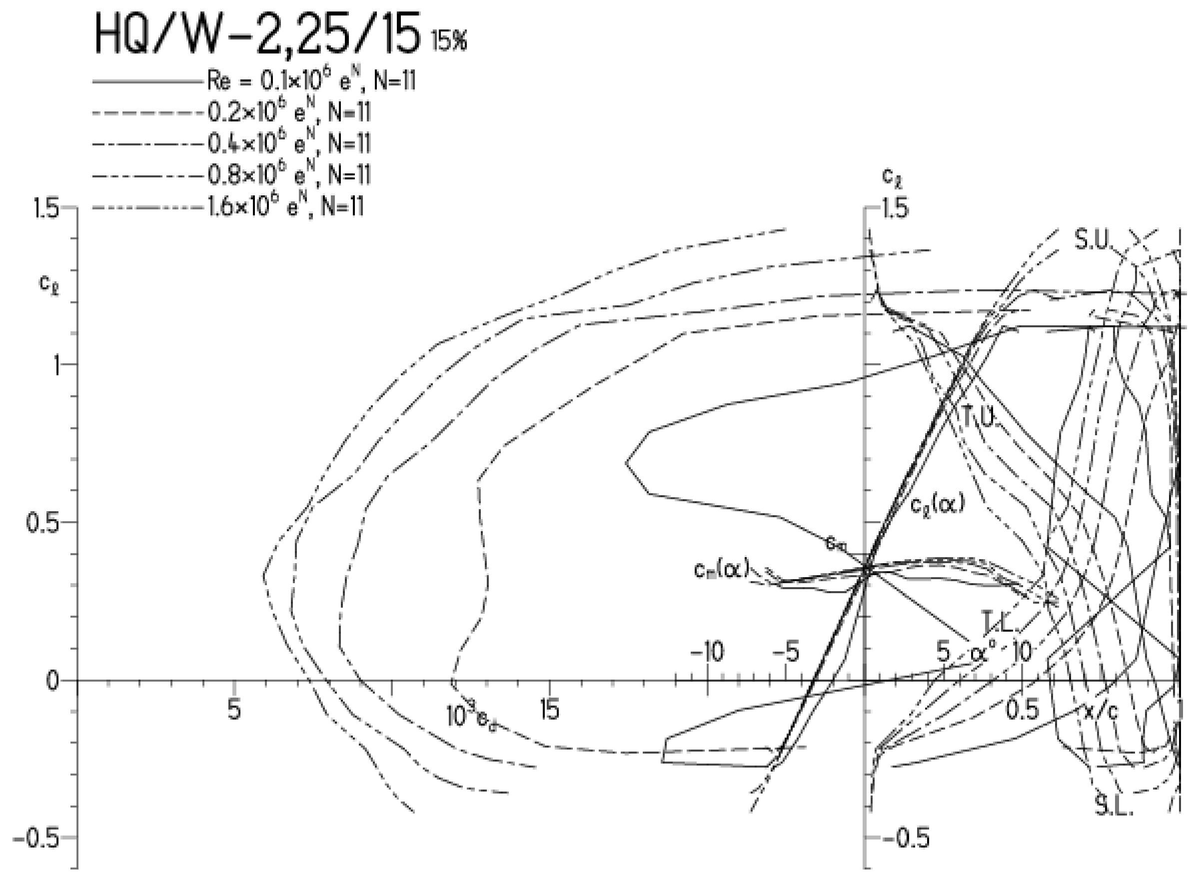


HQ/W-2,25/15, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

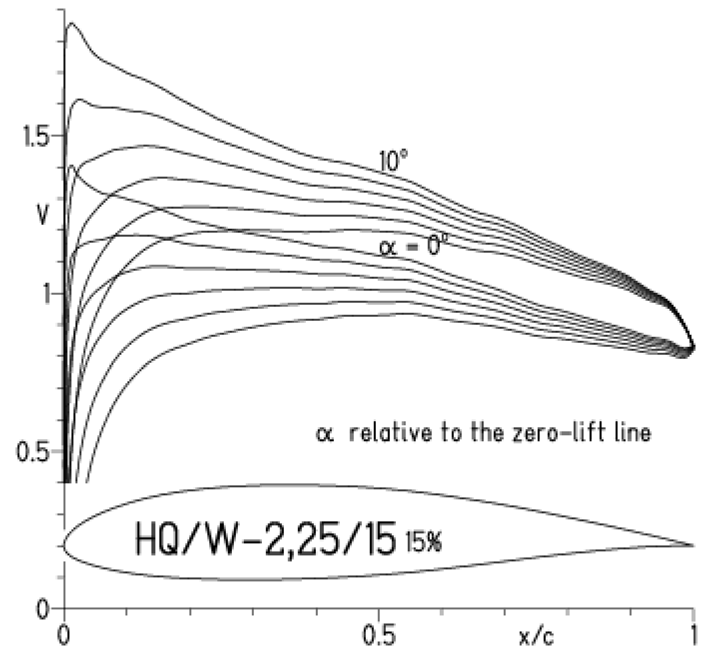


EPPLER 20

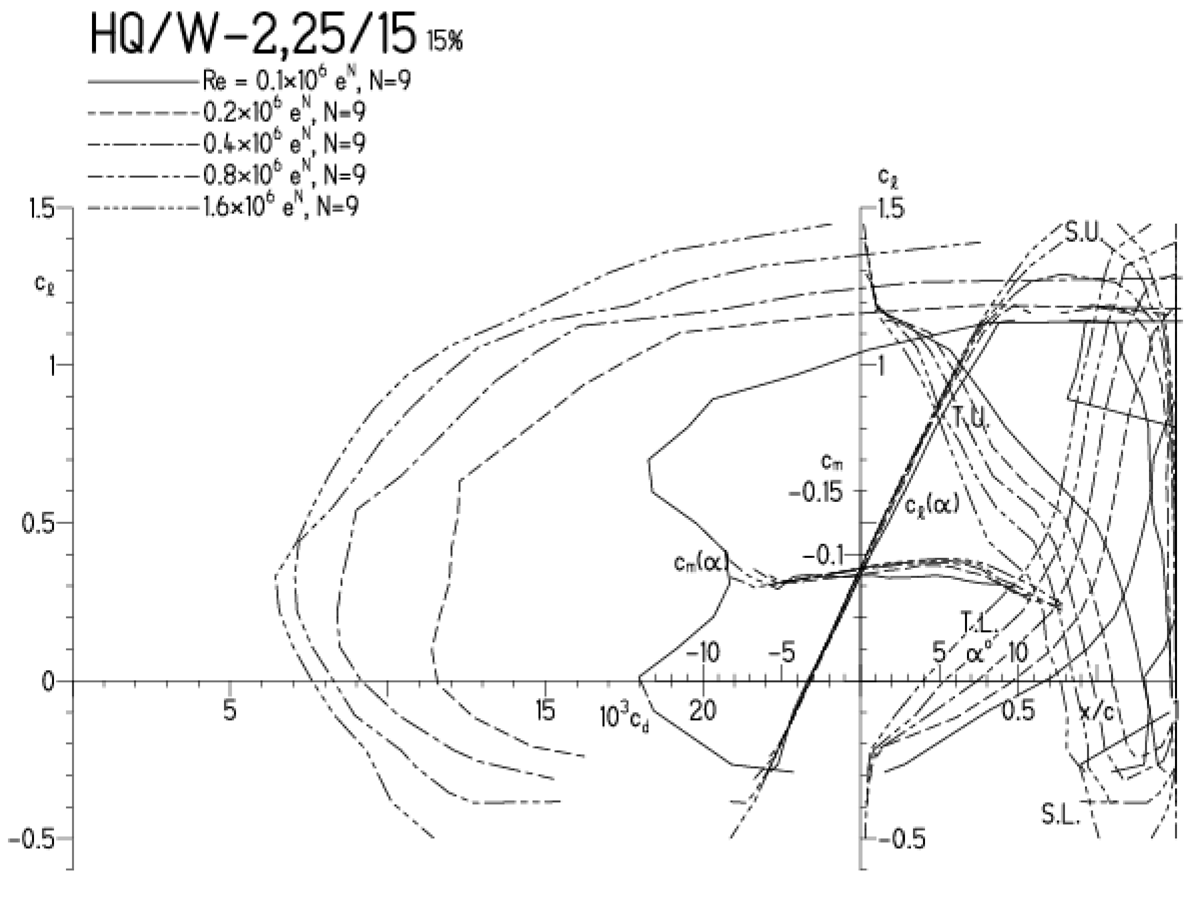


HQ/W-2,25/15, N=9

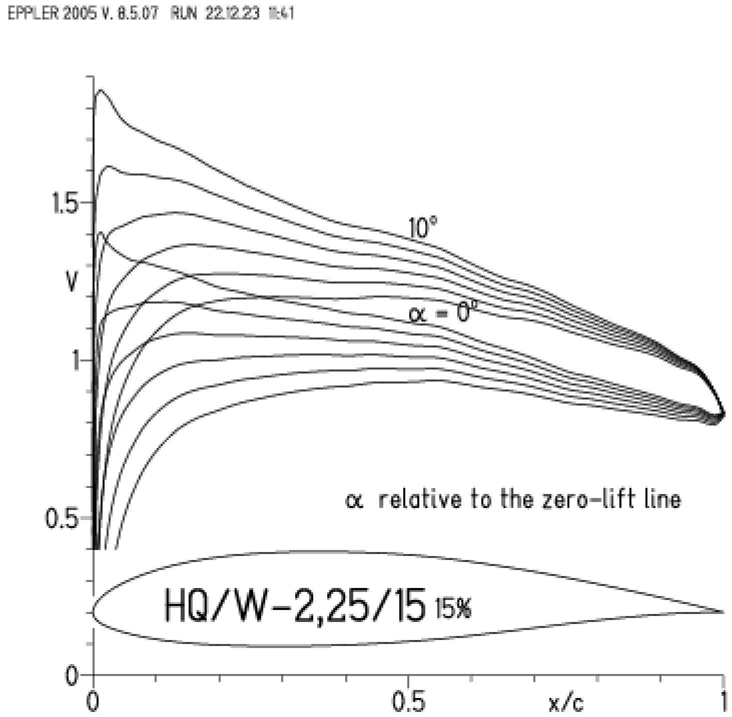
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

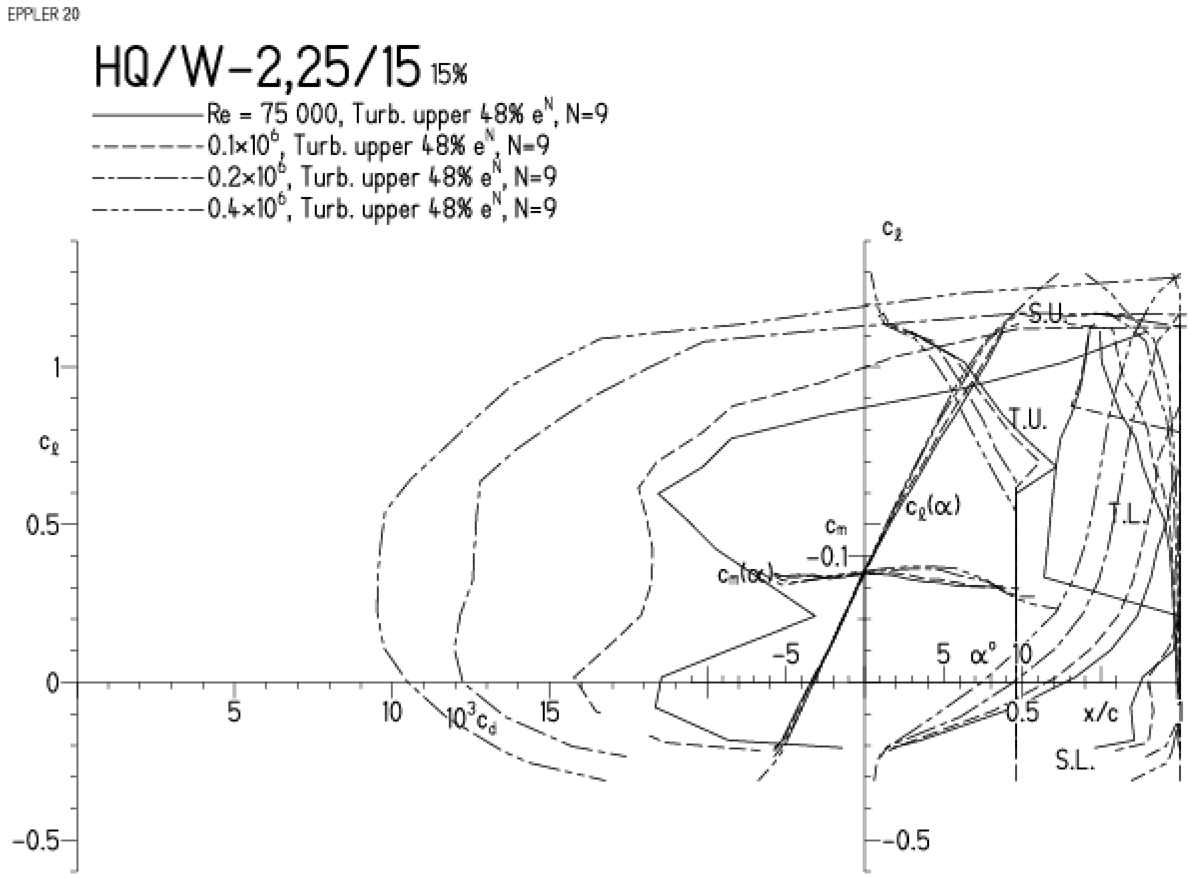


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



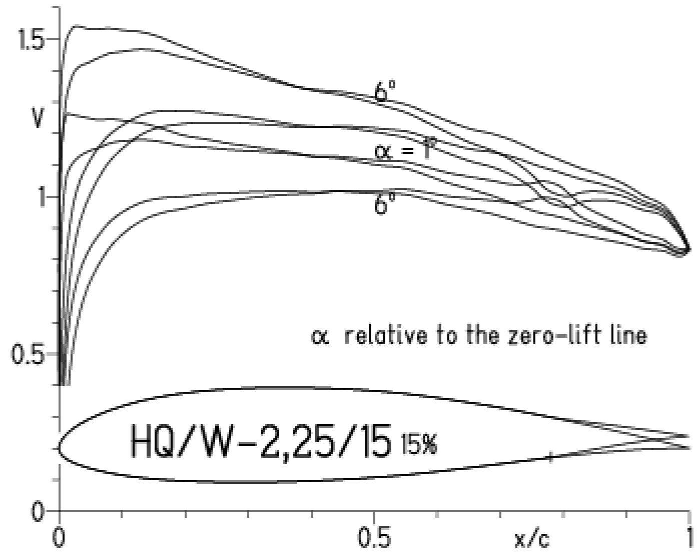


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

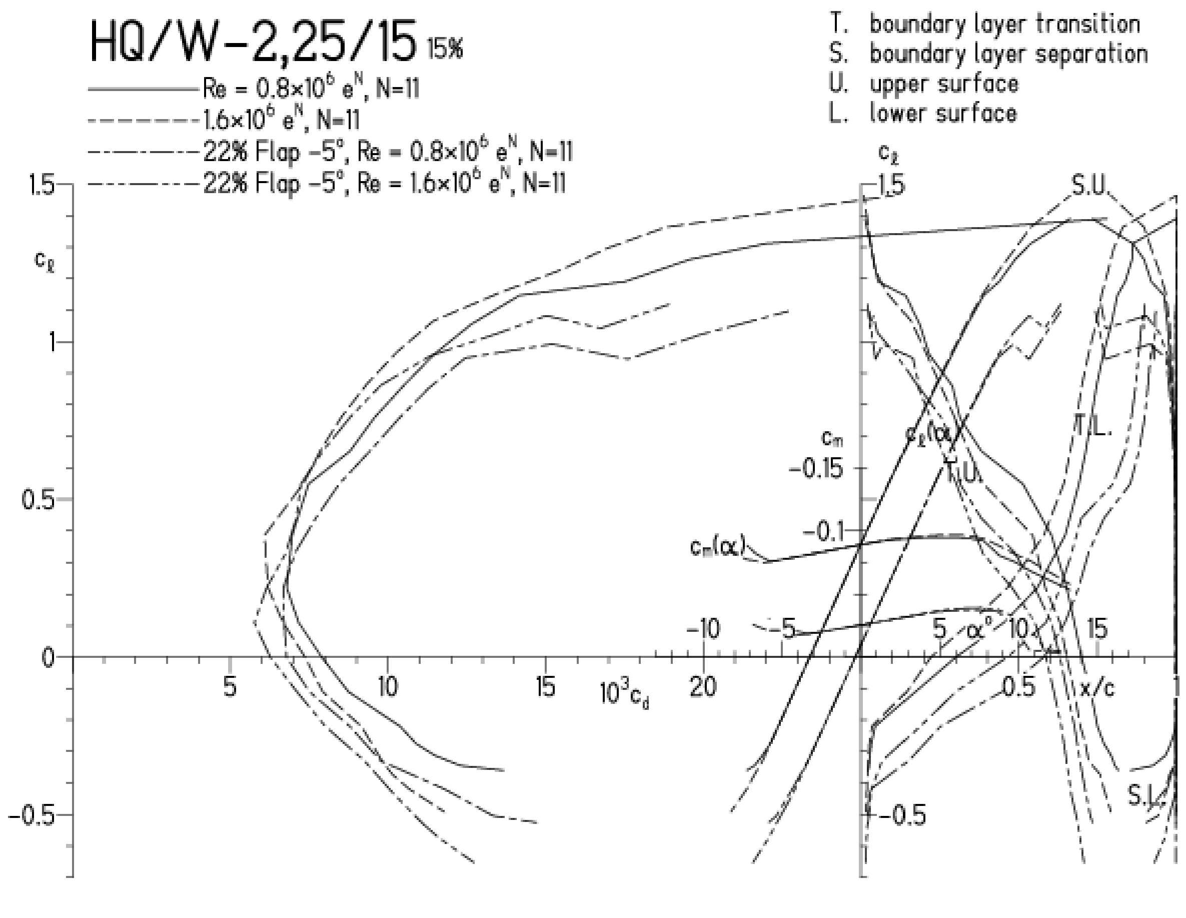
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

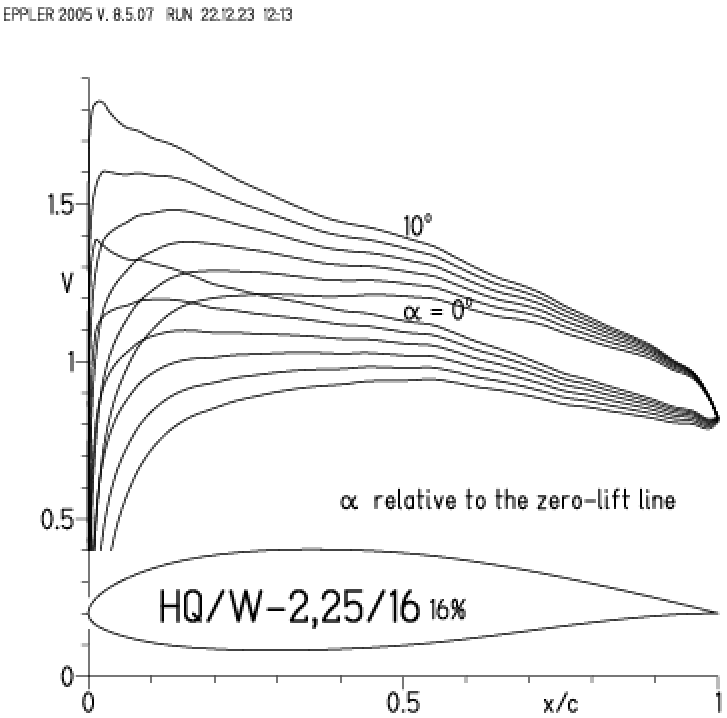
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

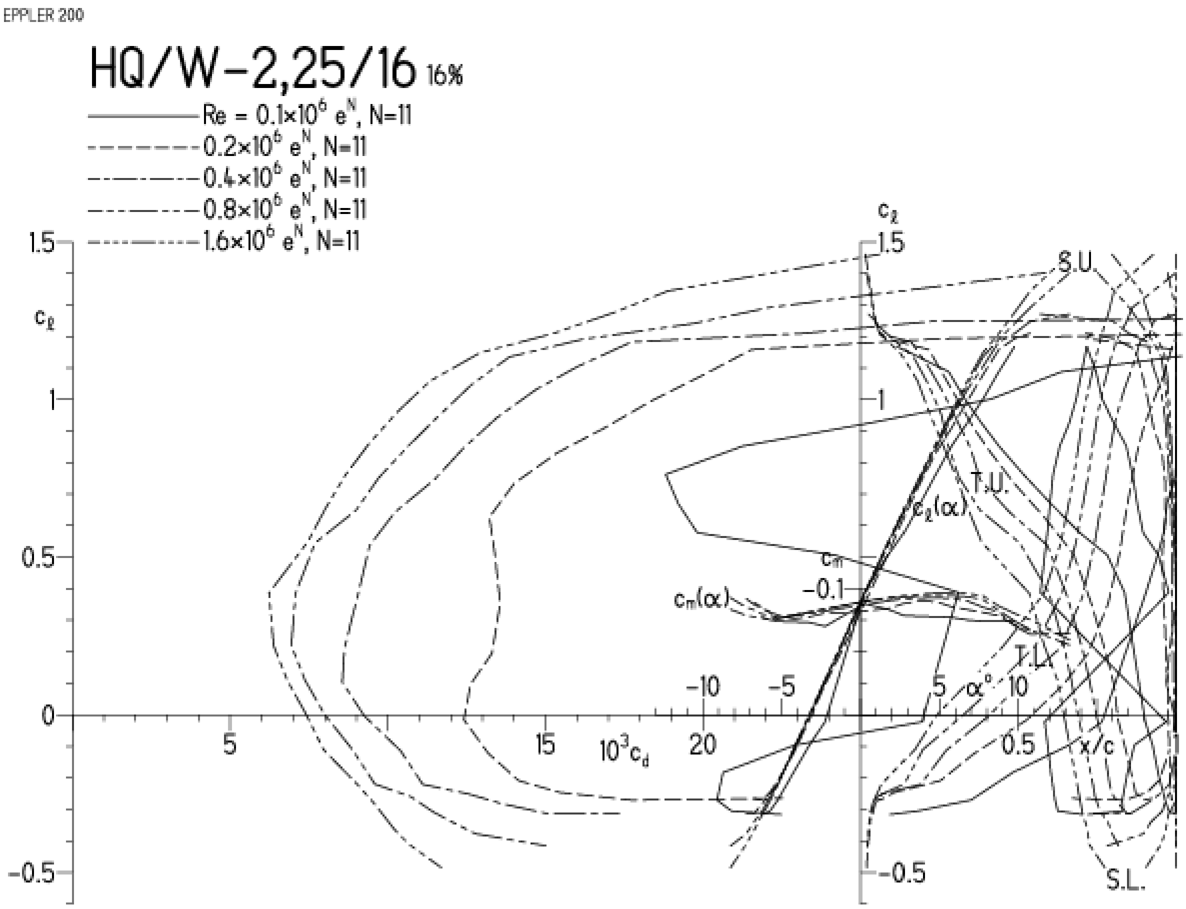


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



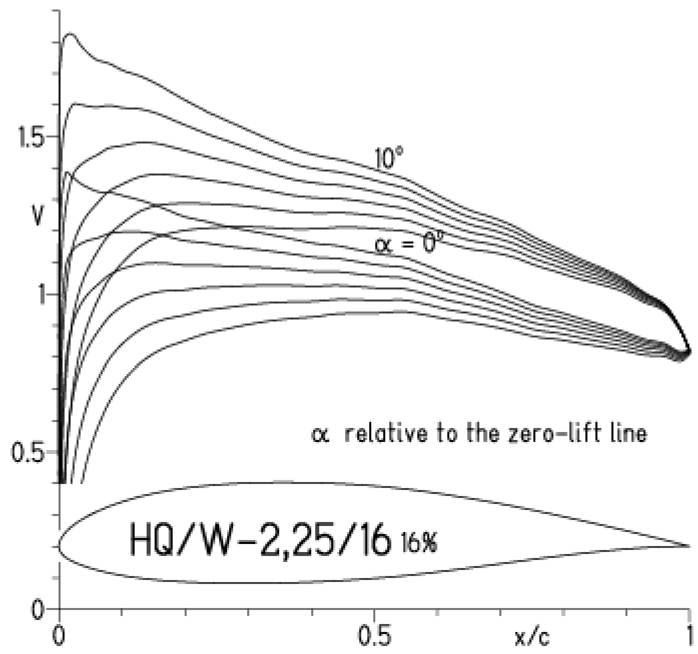
<u>HQ/W-2,25/16</u>, N=11



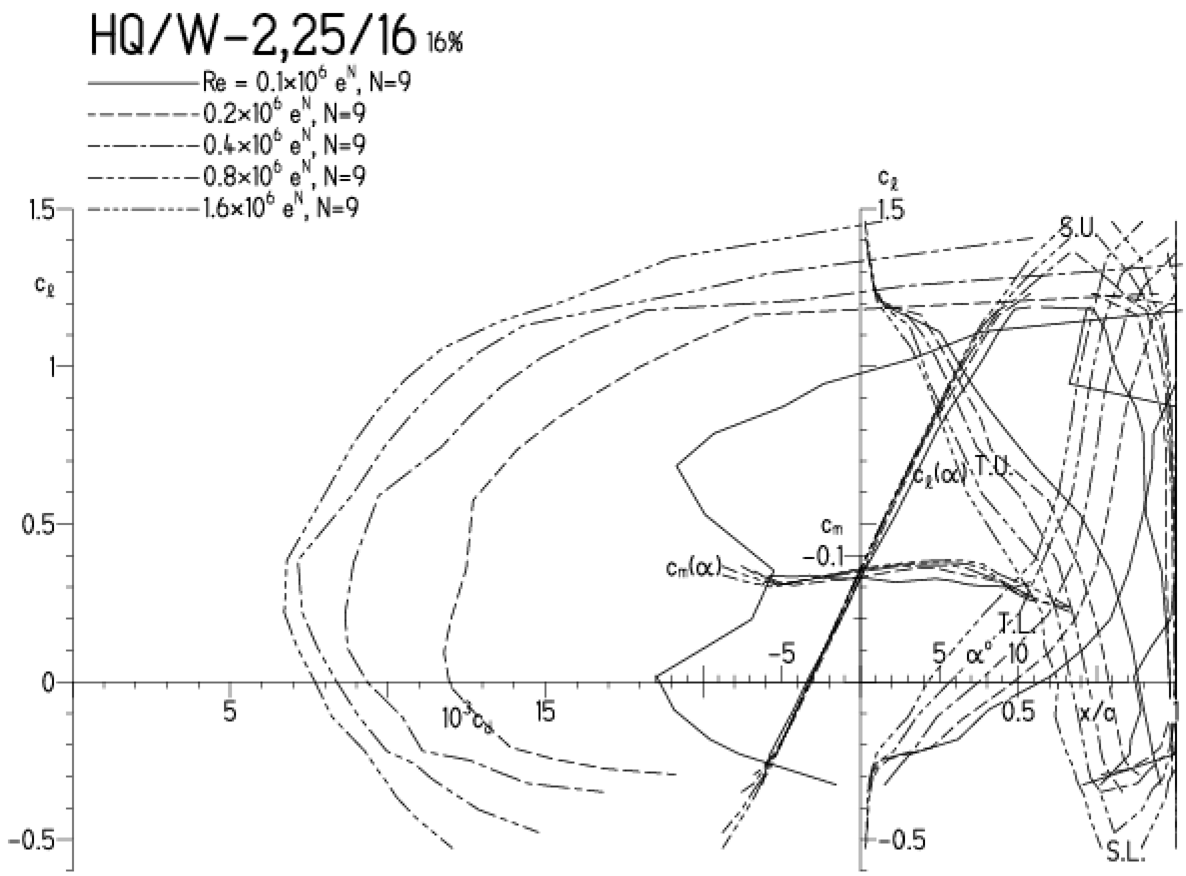


HQ/W-2,25/16, N=9

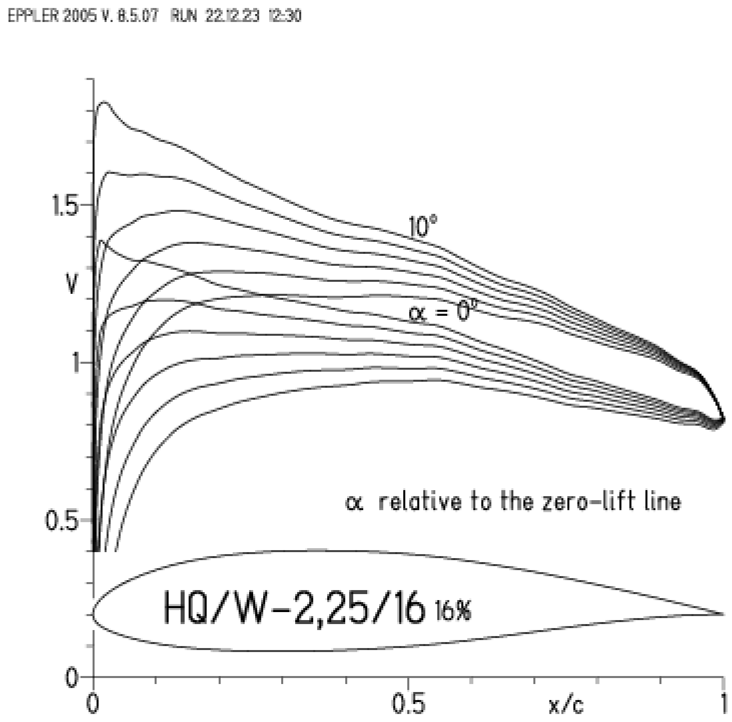
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

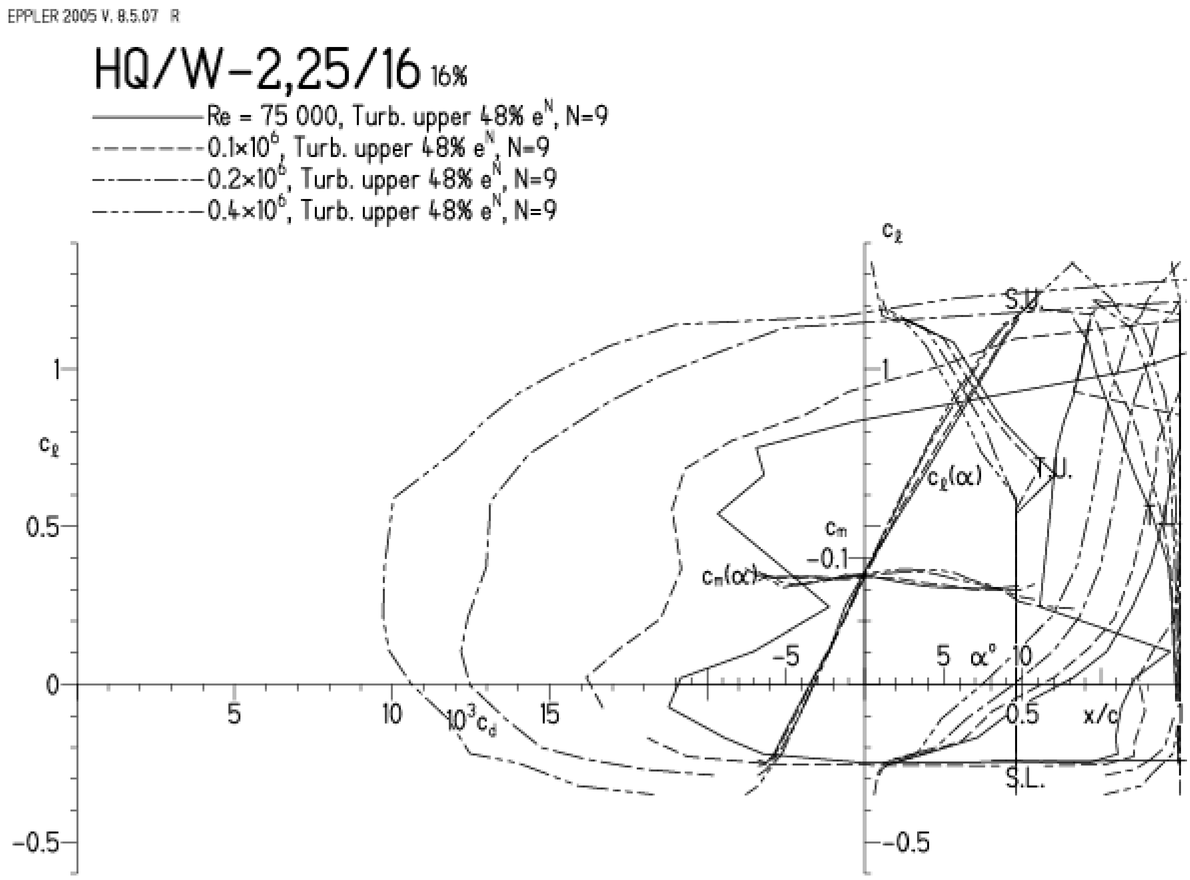


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



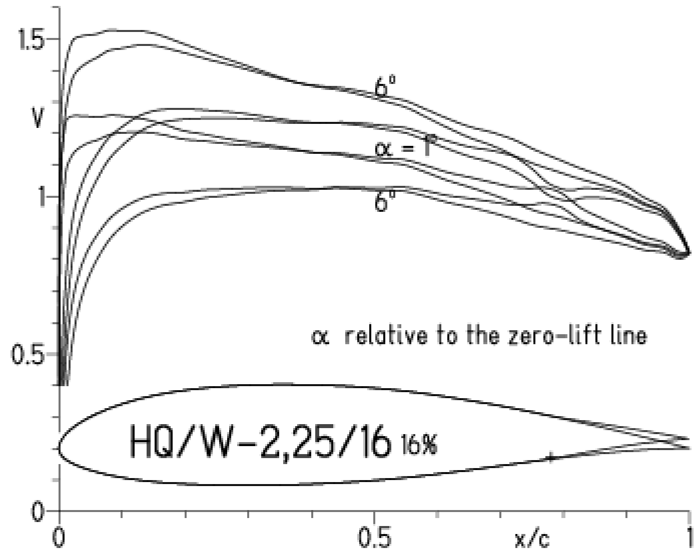


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

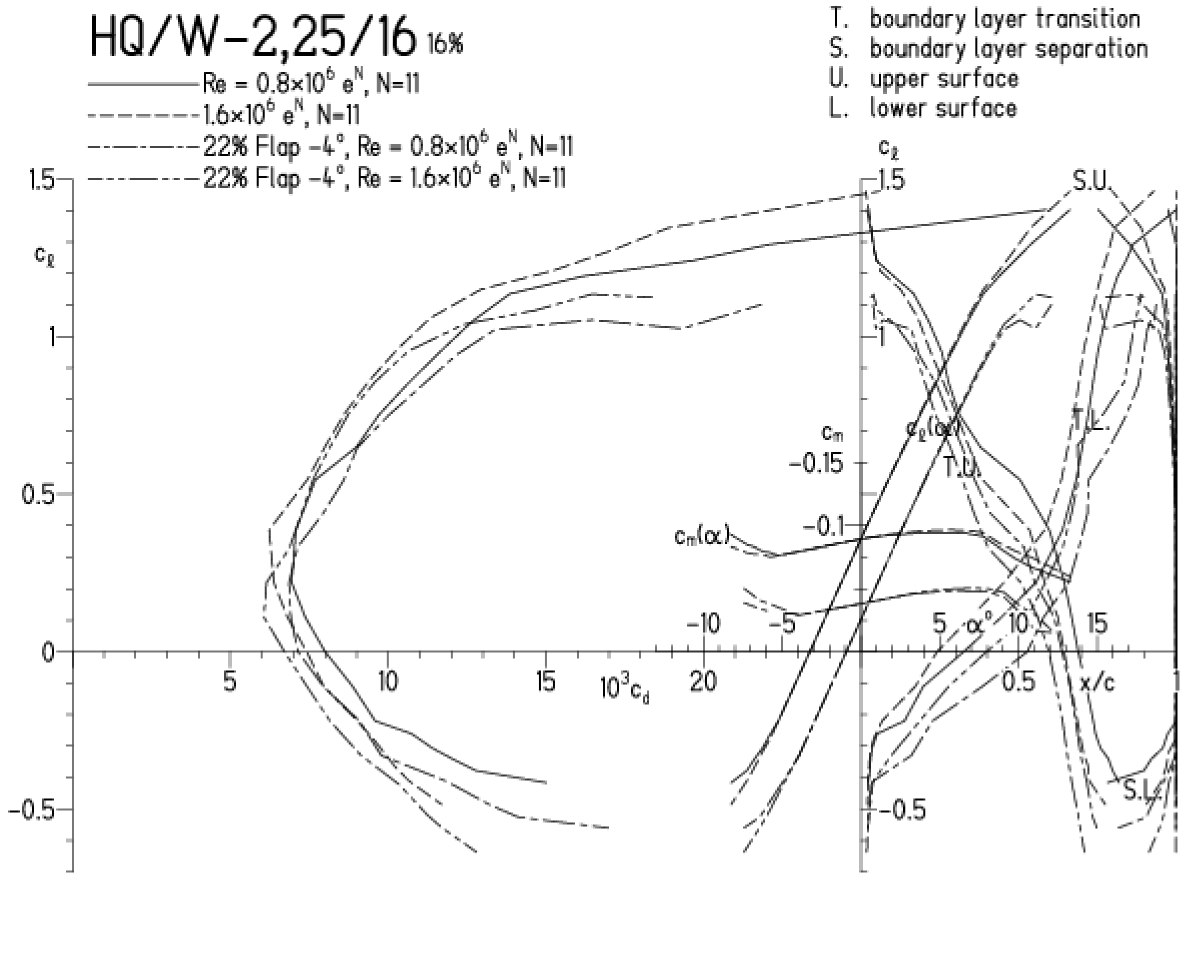
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

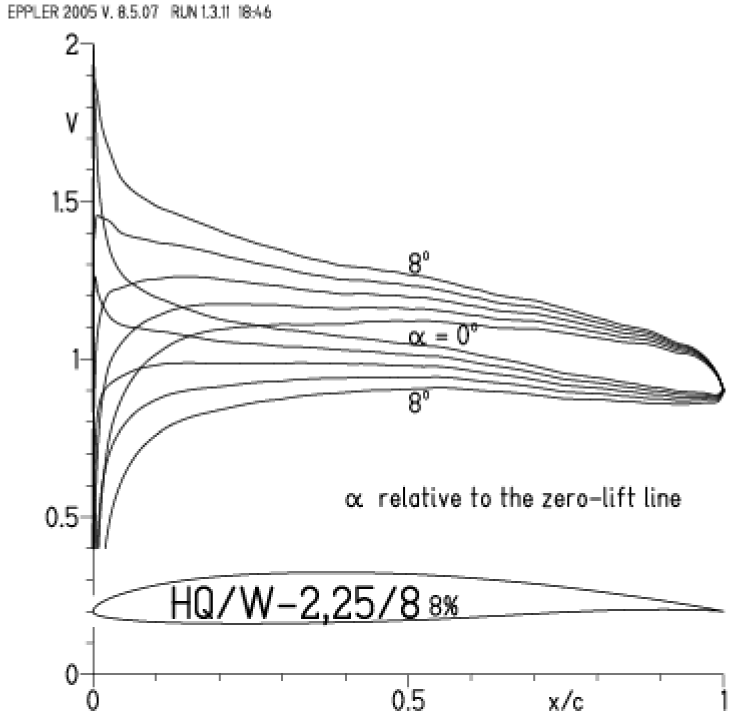
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

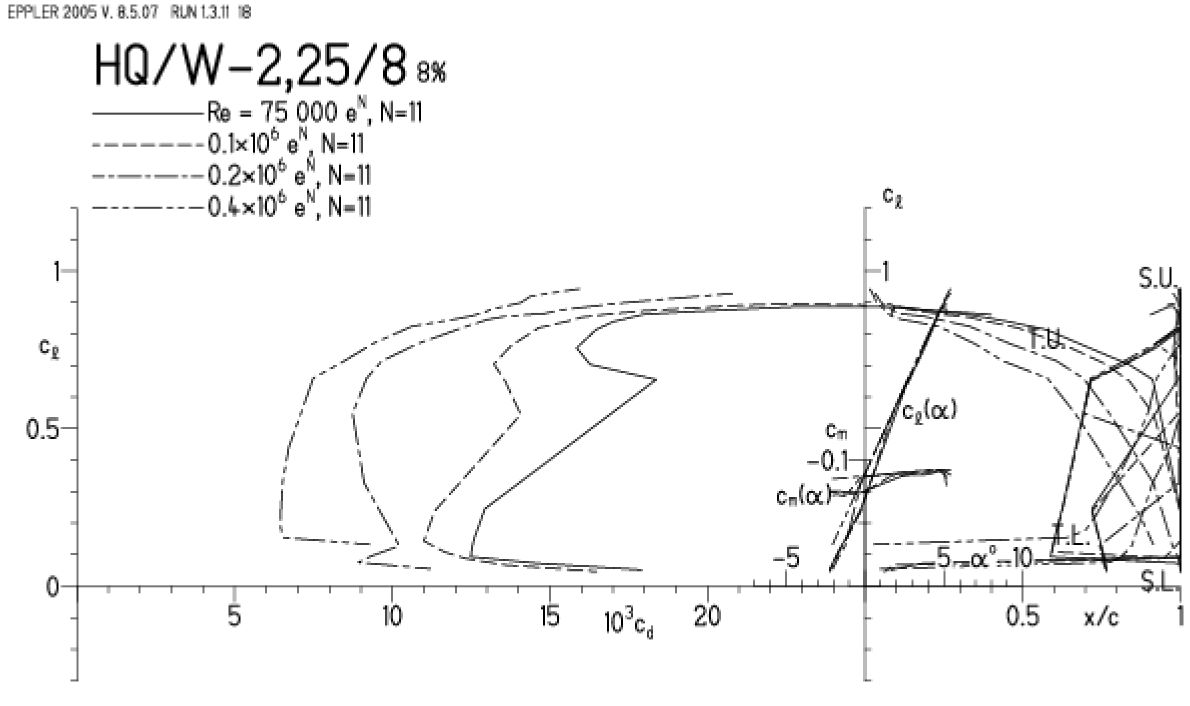


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

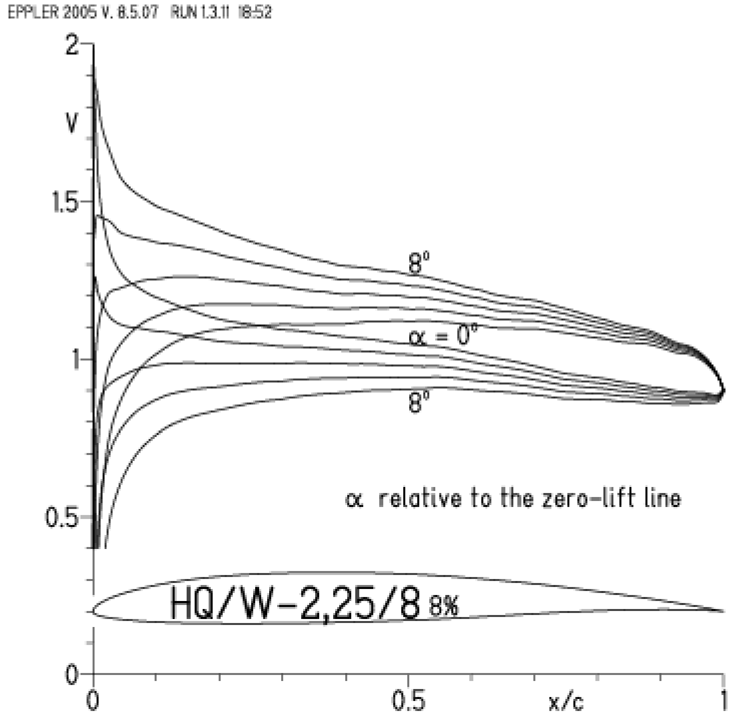


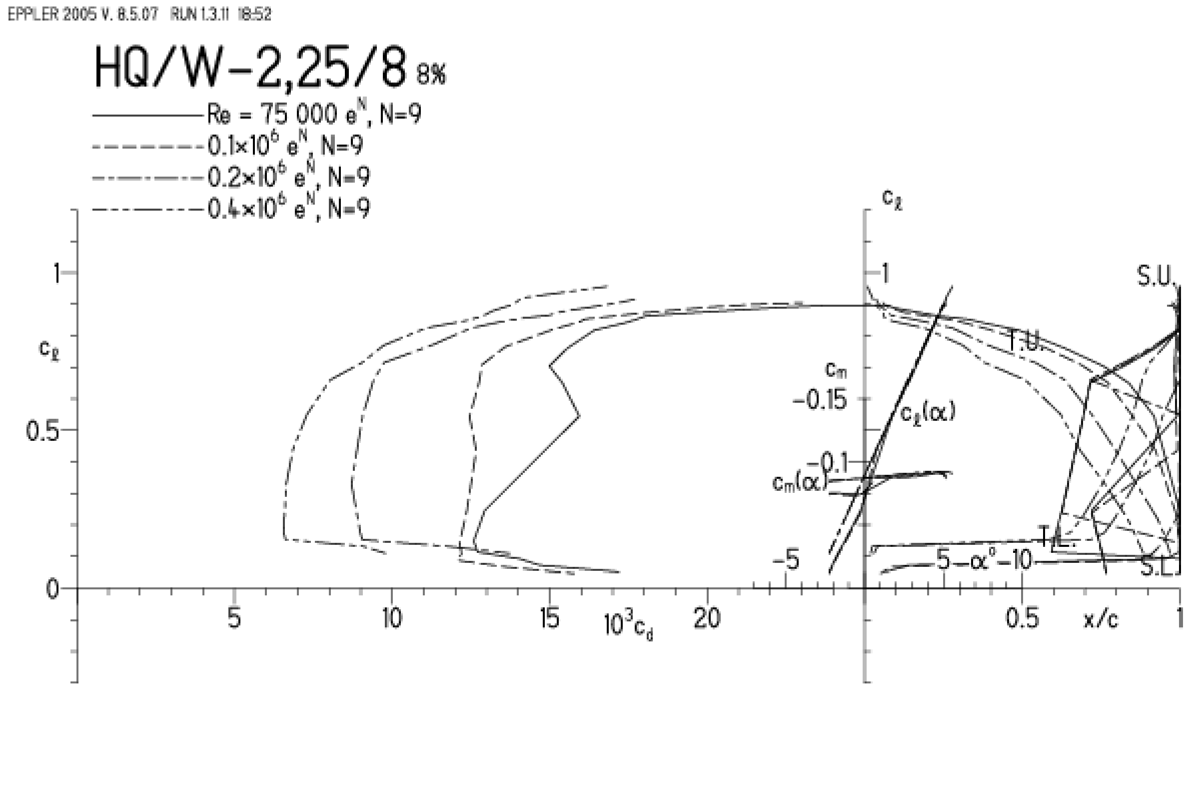
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

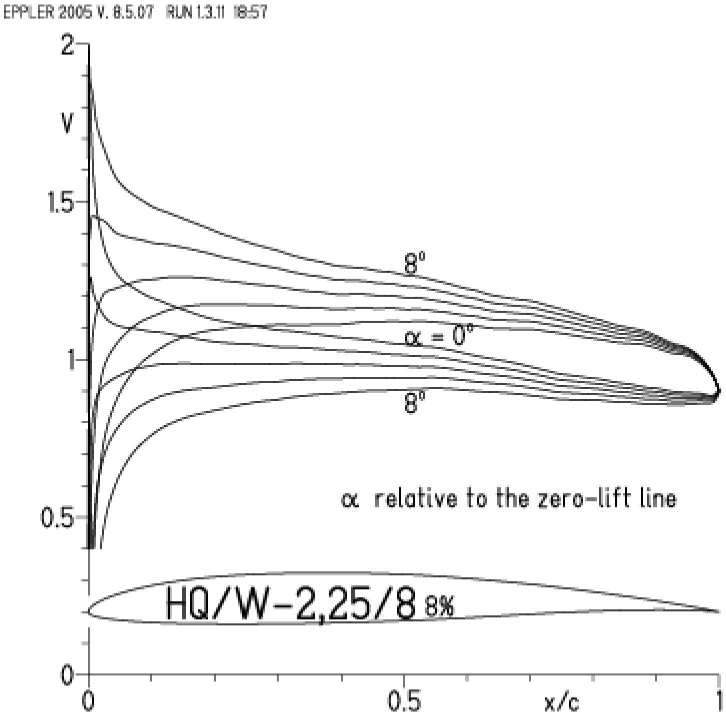

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
-0.1
c_m(α)
-5
5 α° 10
10^3 c_d
x/c
S.U.
T.U.
T.L.
S.L.

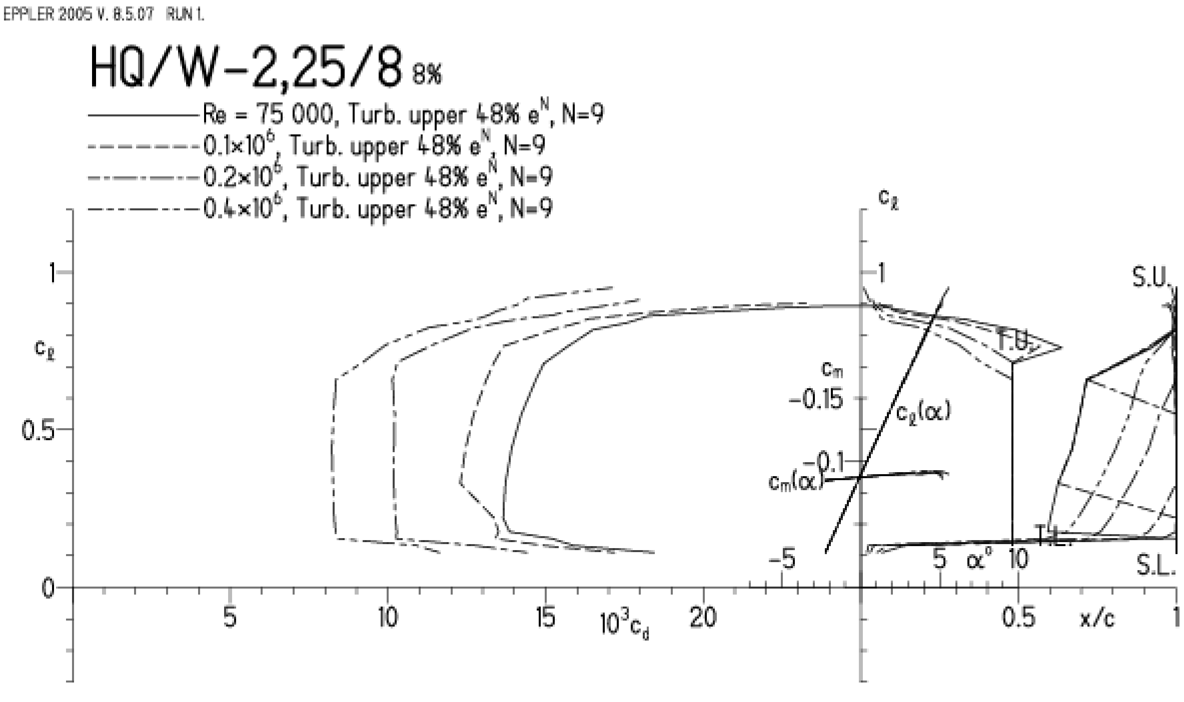
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

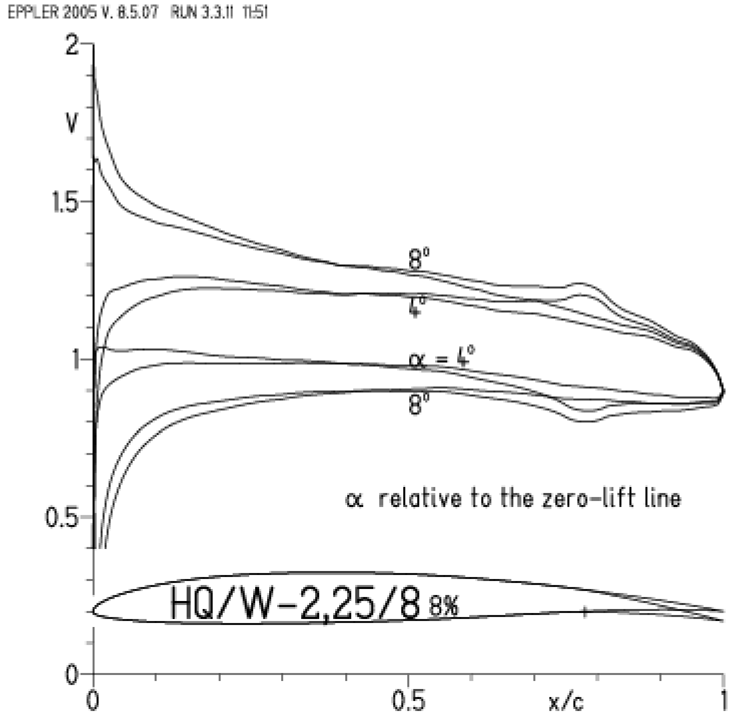

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-5
5 α° 10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

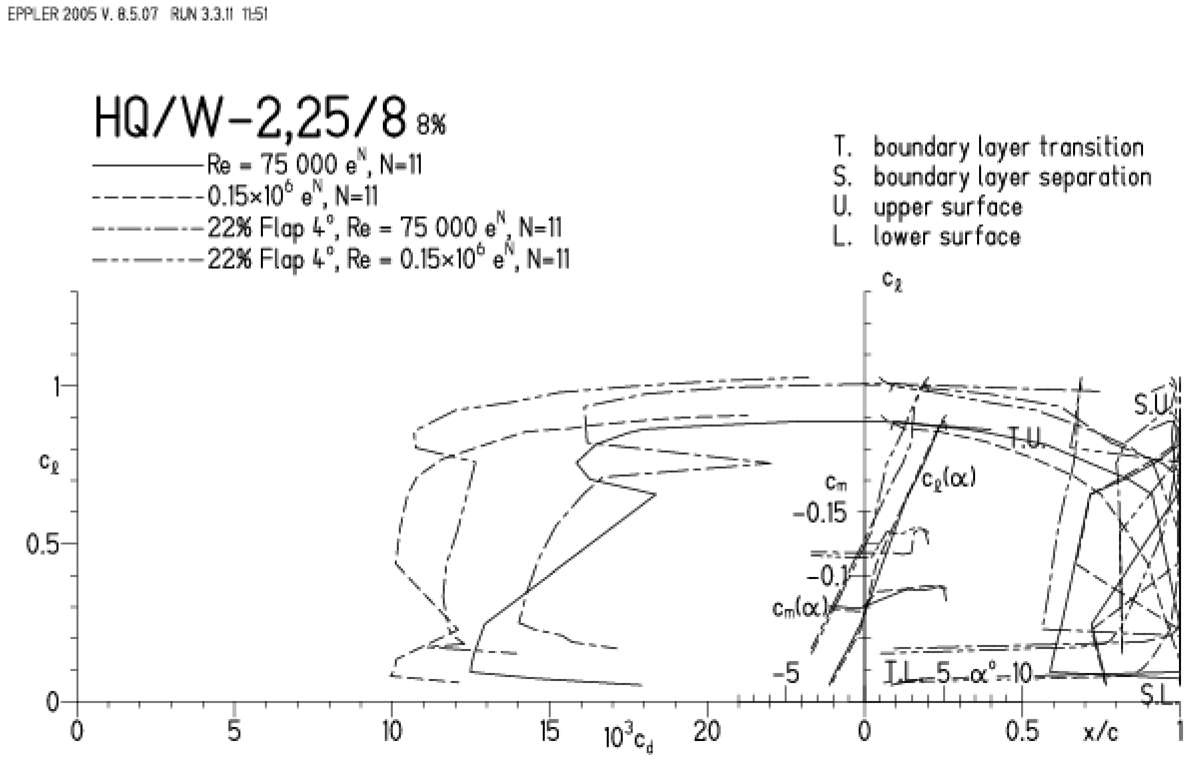
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



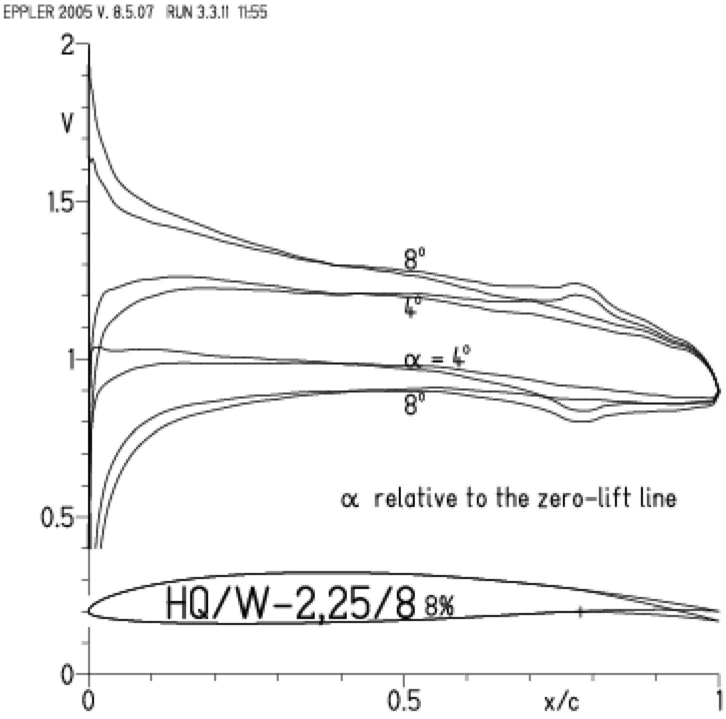


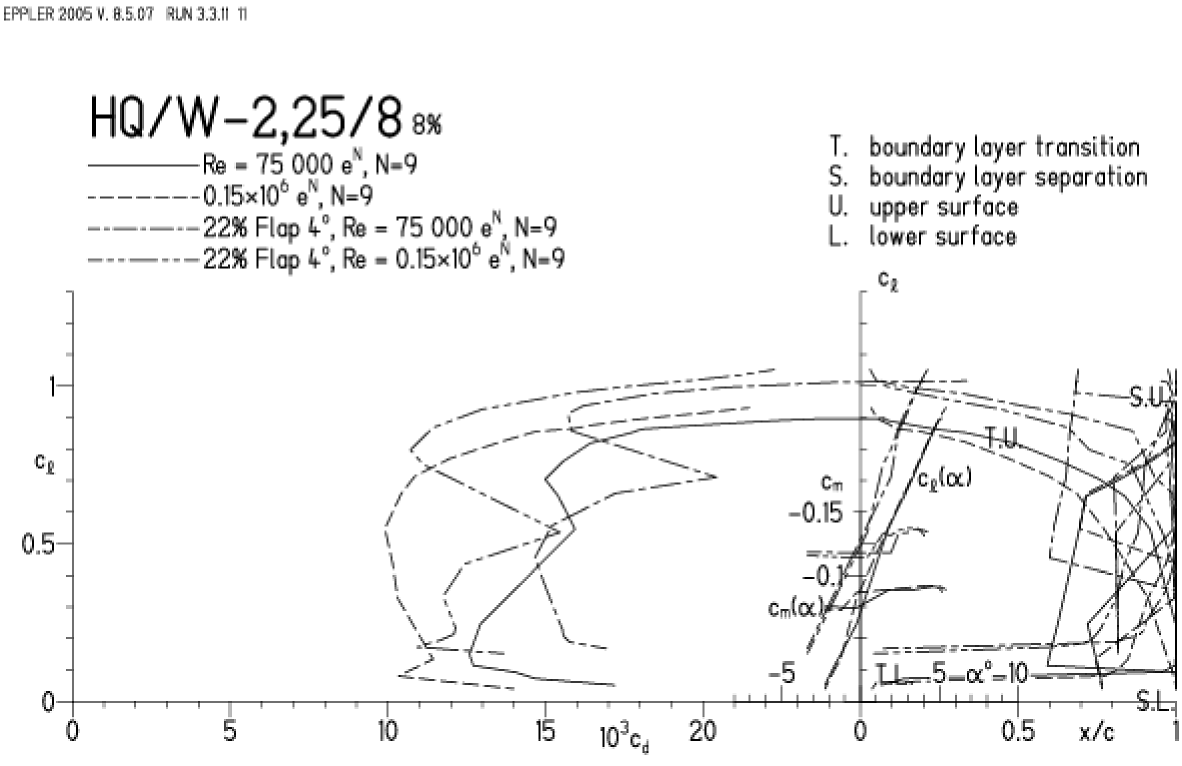
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



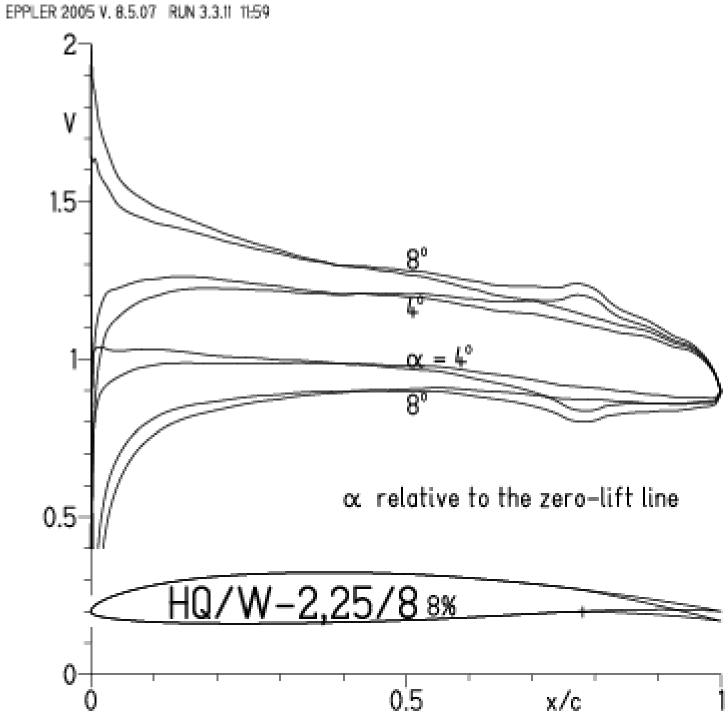


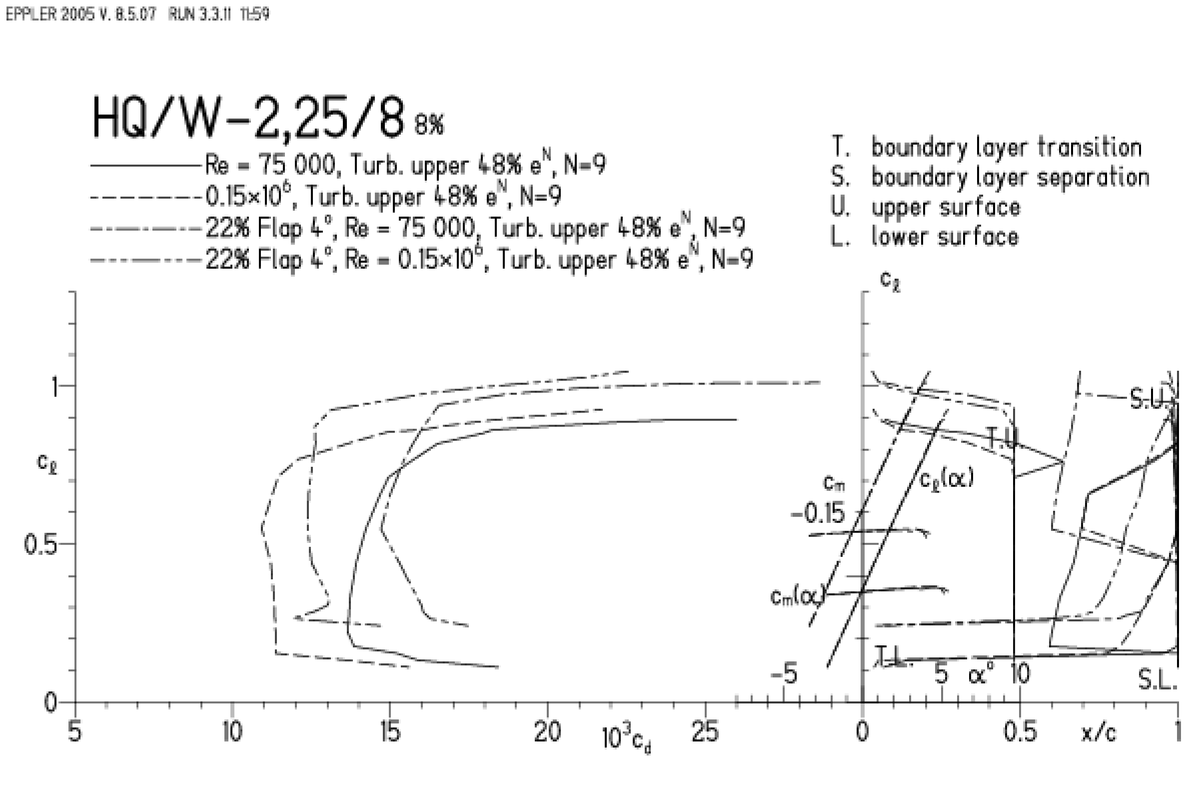
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





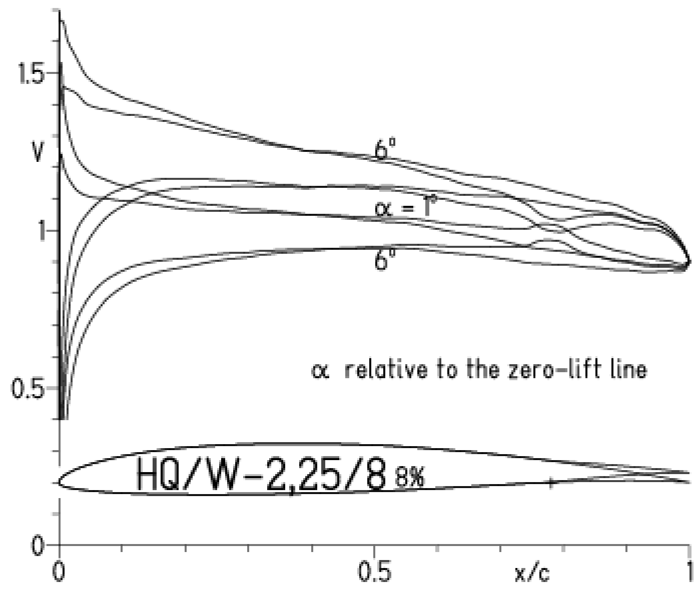
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



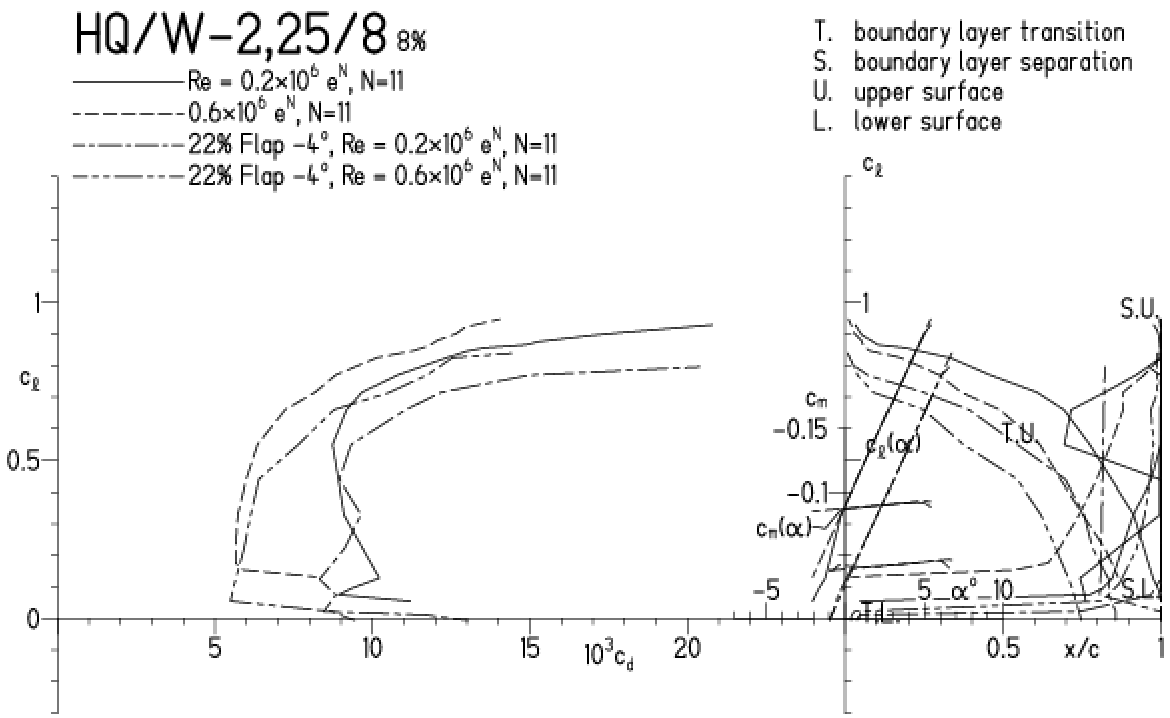


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

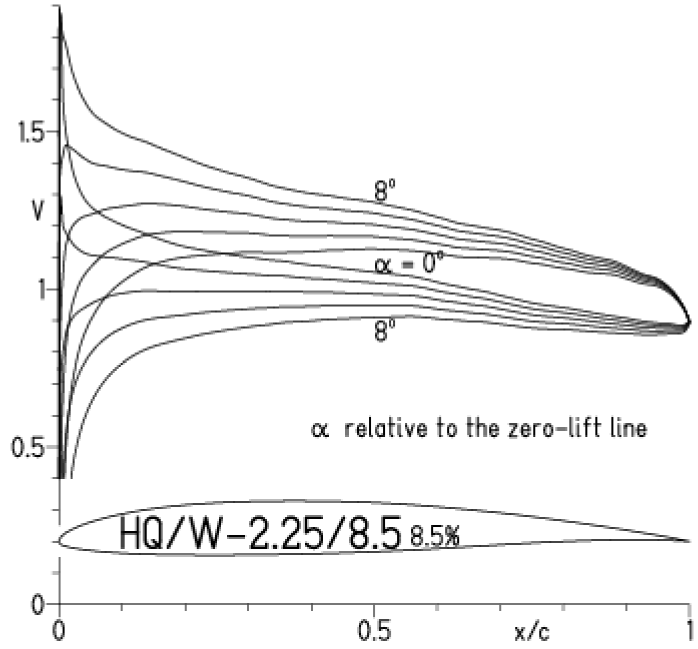


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

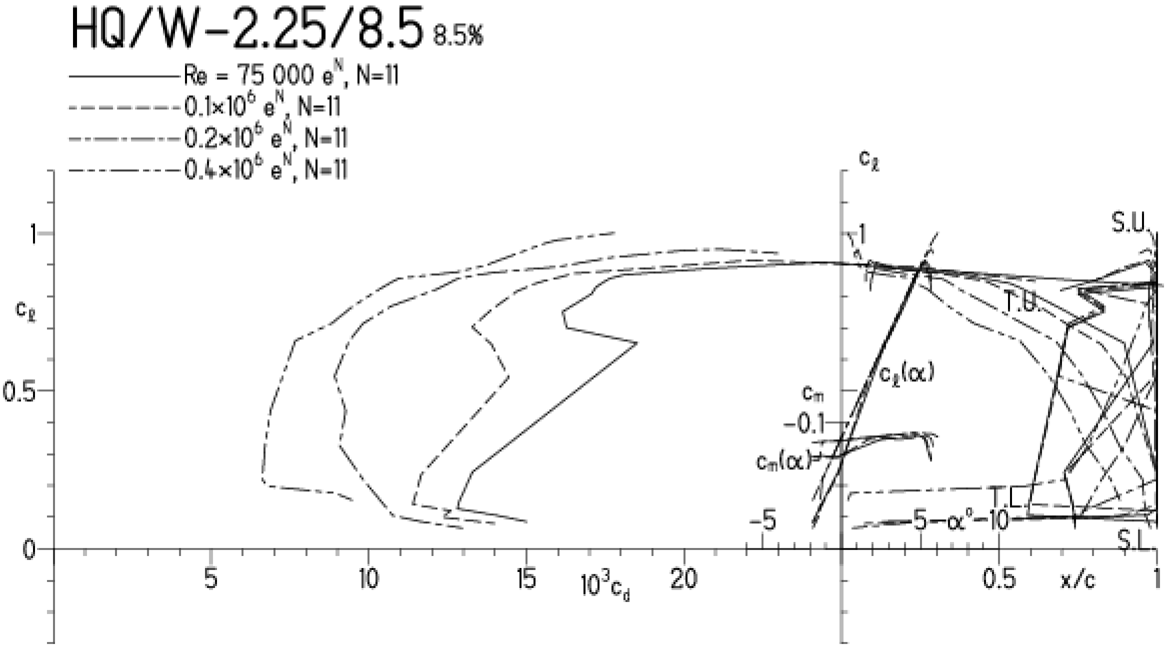


HQ/W-2,25/8,5, N=11

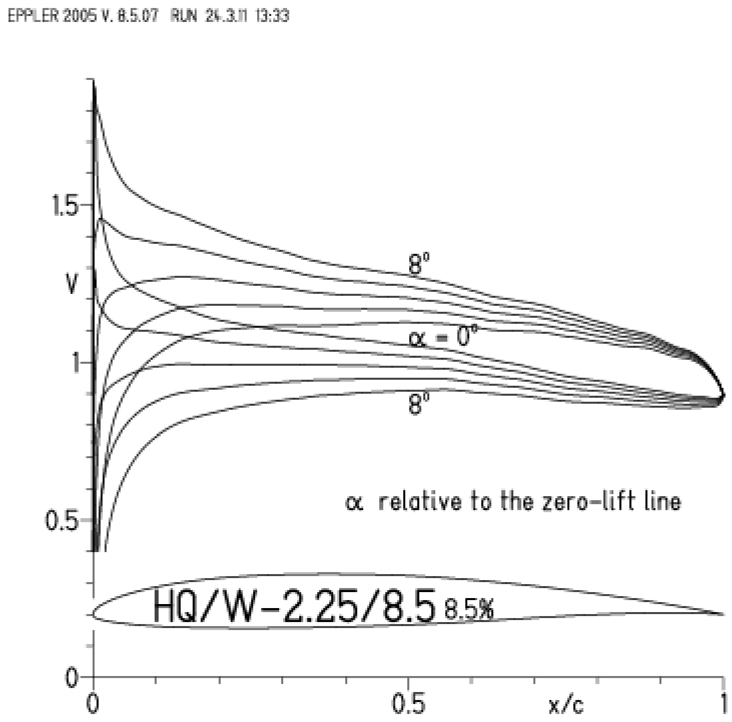
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

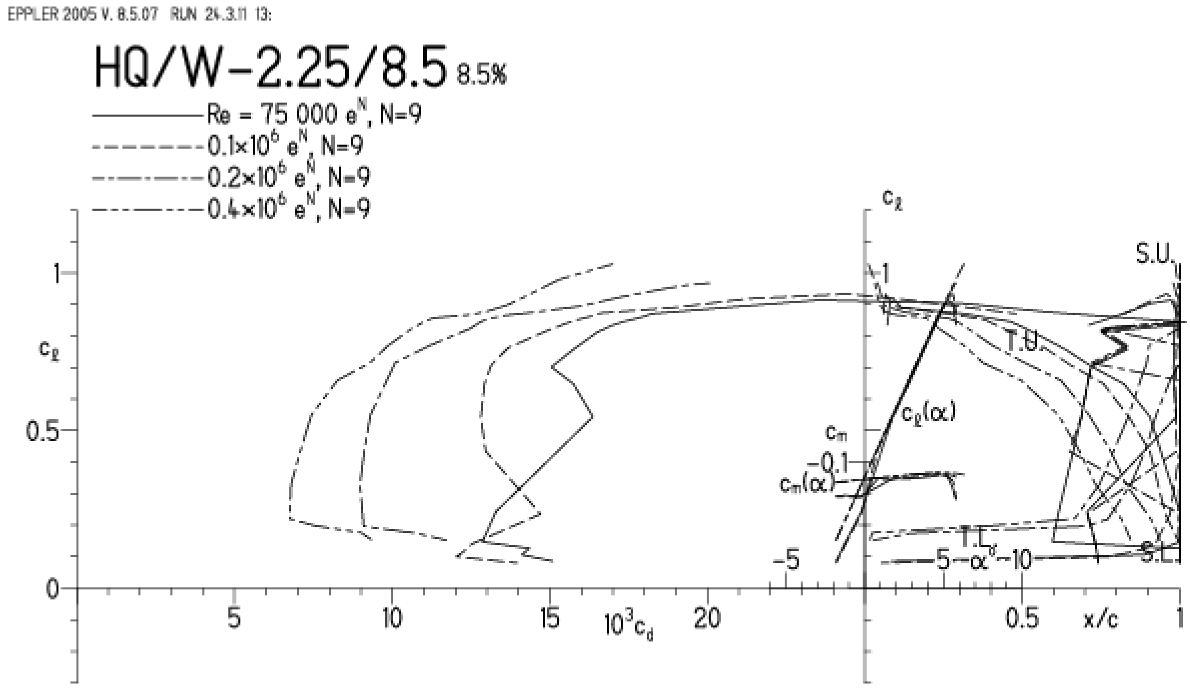


EPPLER 2005 V

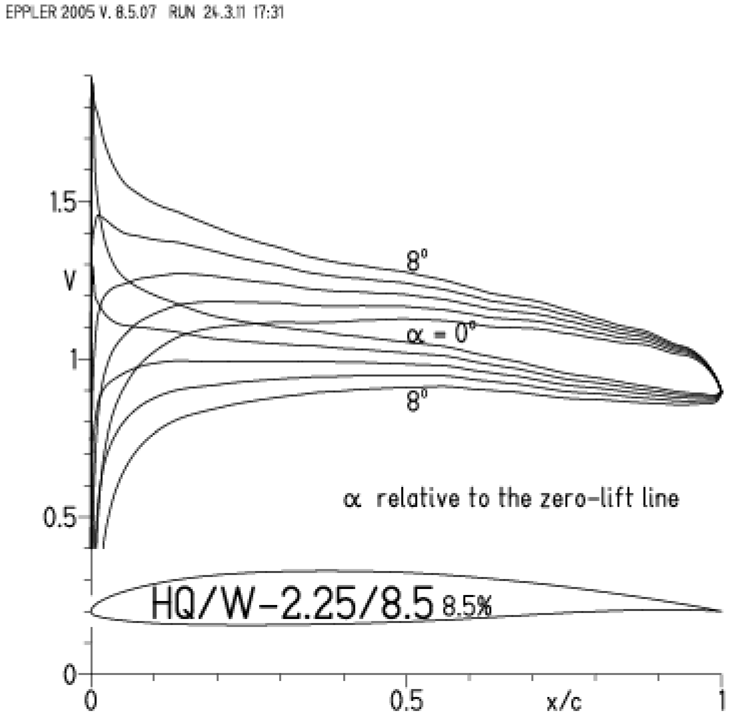


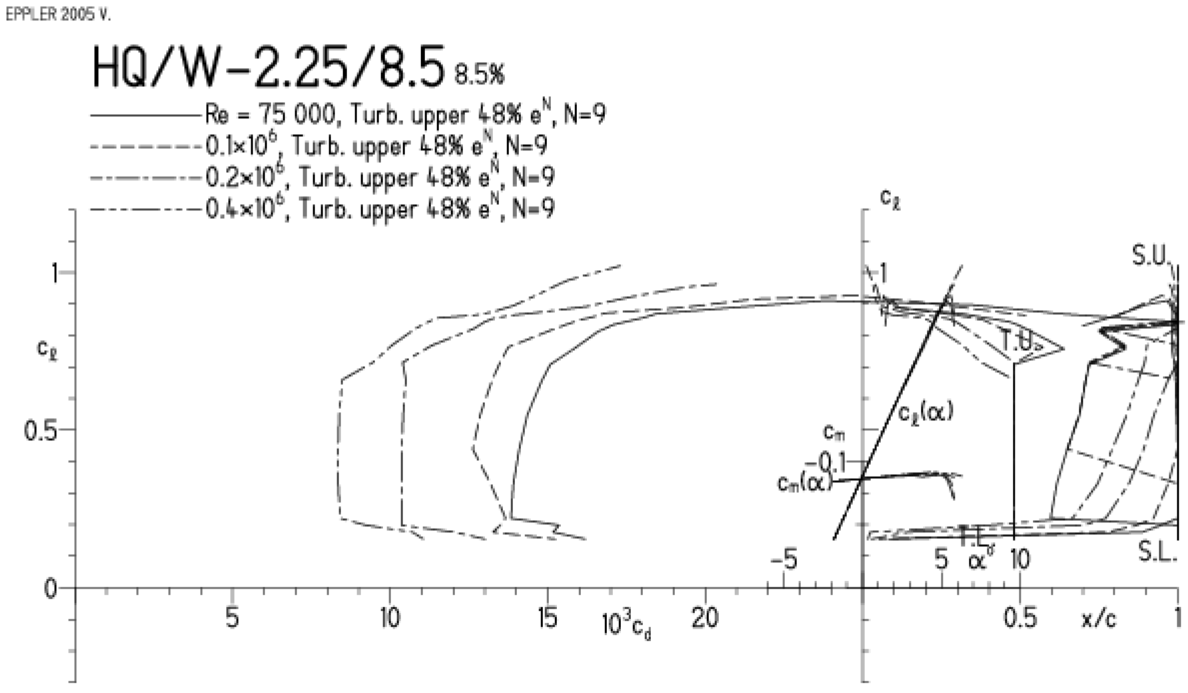
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
V
1.5
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10³c_d
20
c_m
-0.1
c_m(α)
c_ℓ(α)
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

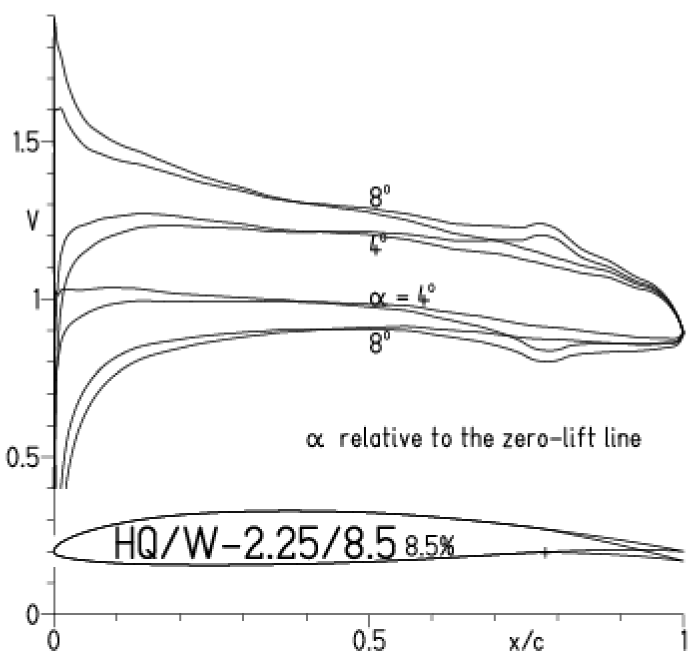
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



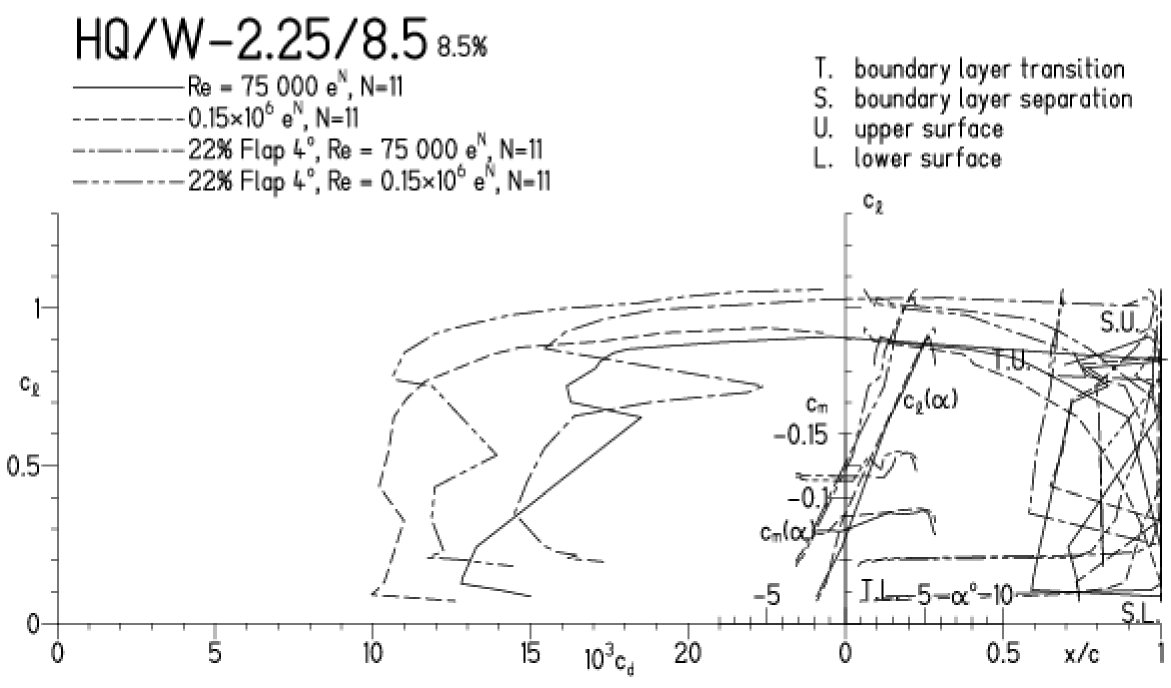


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

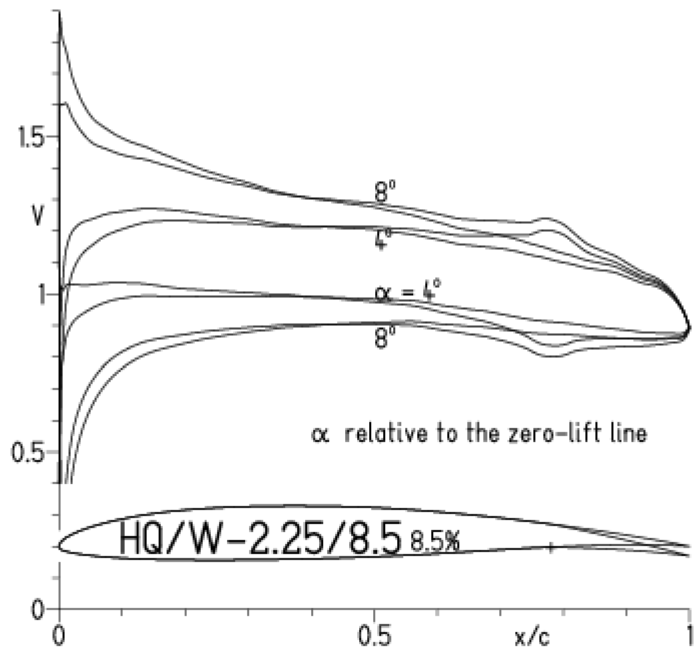


EPPLER 2005 V. 8.5.

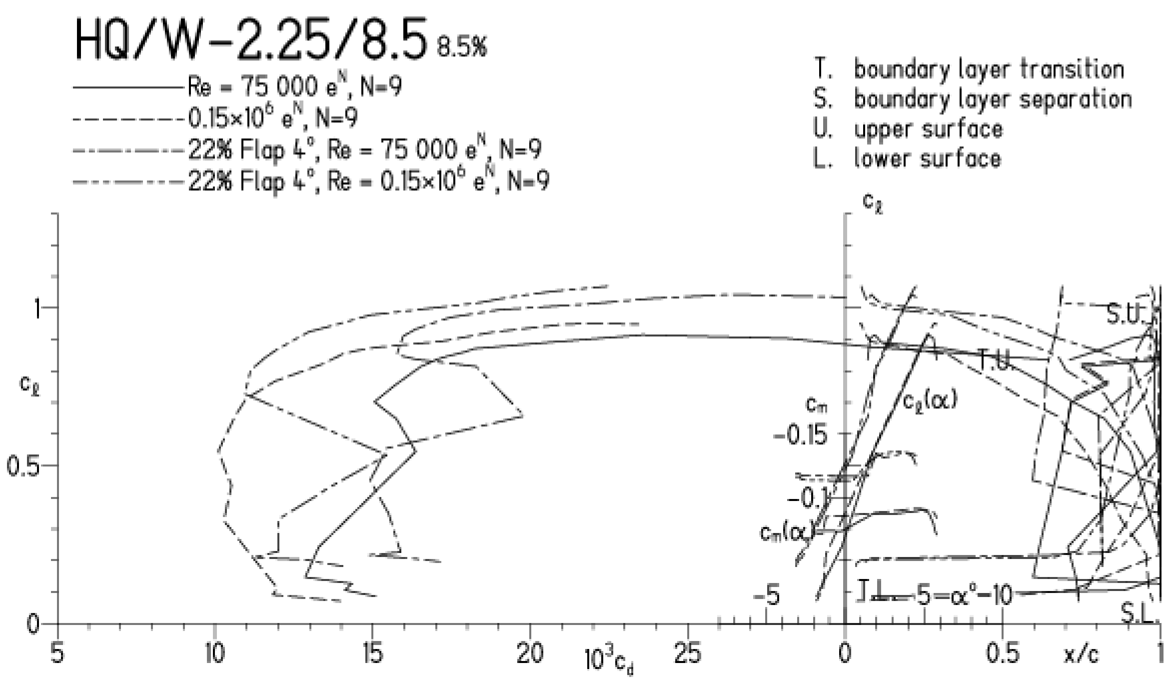


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

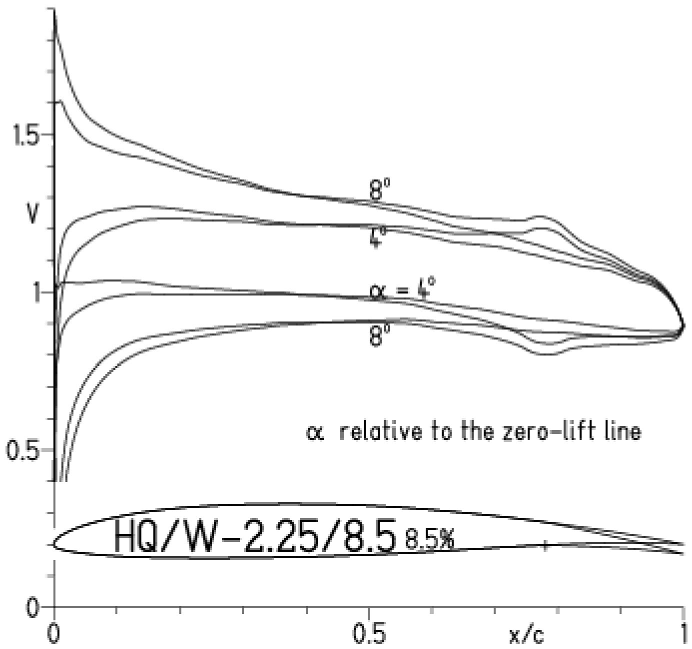


EPPLER 2005 V.

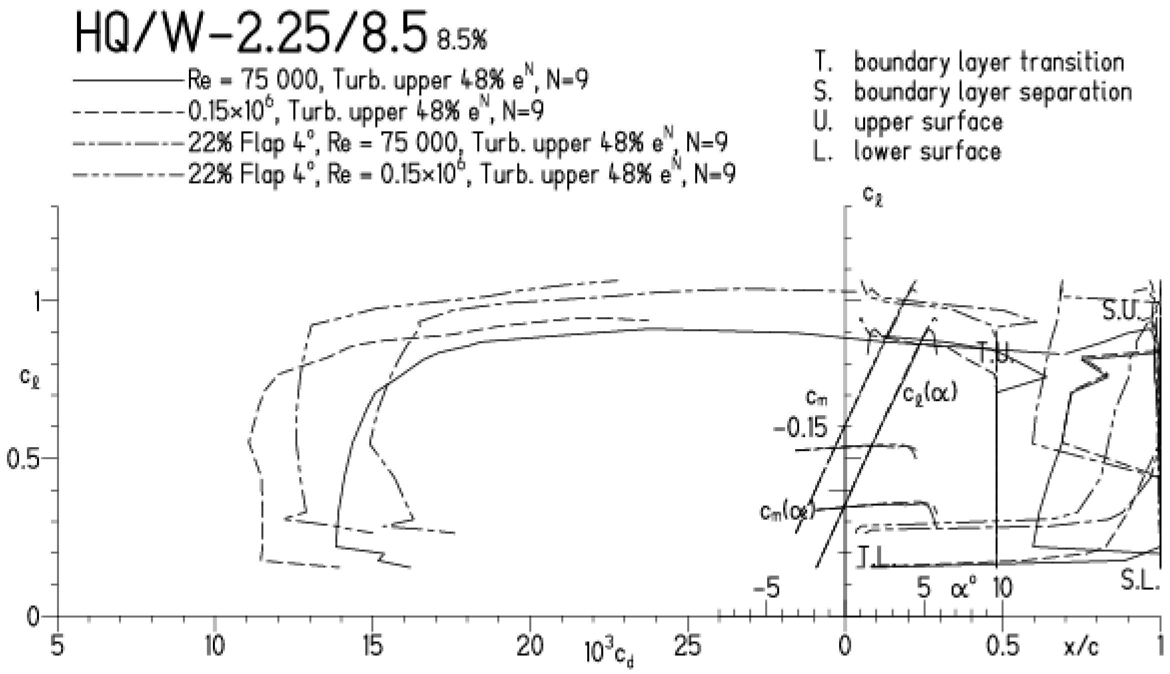


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

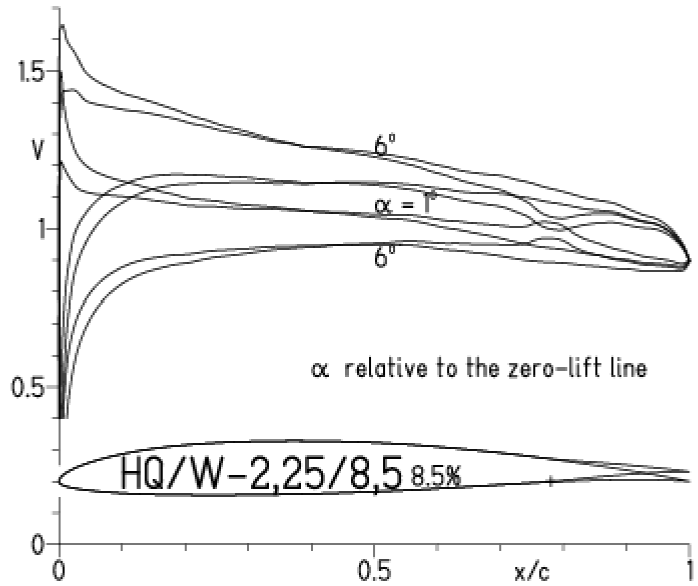


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

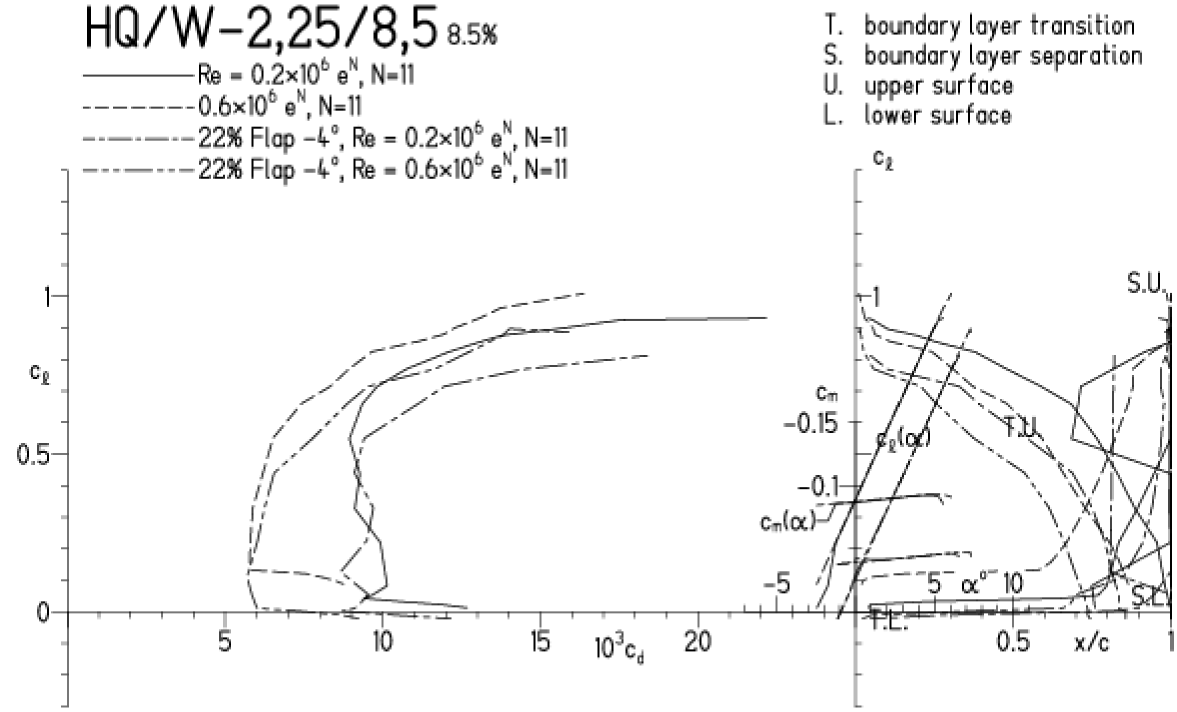


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

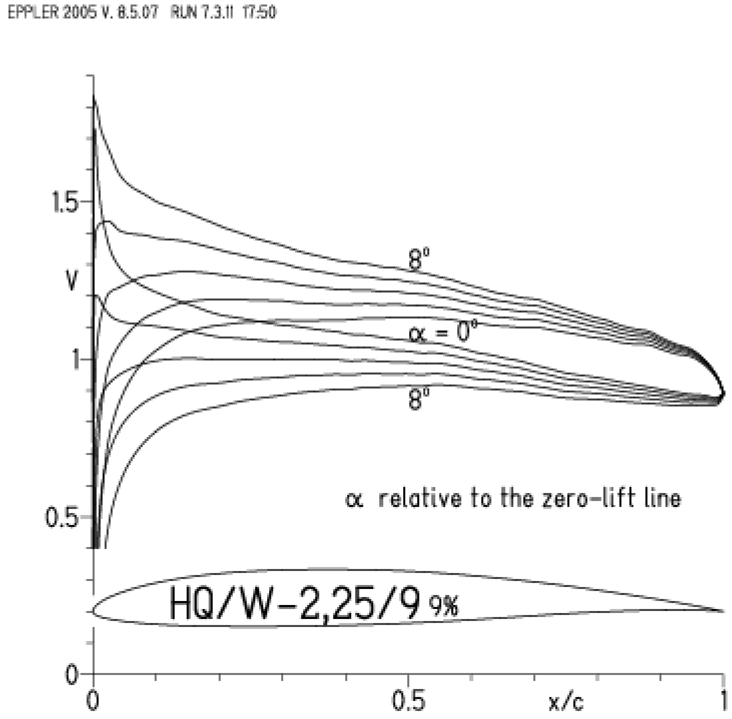
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

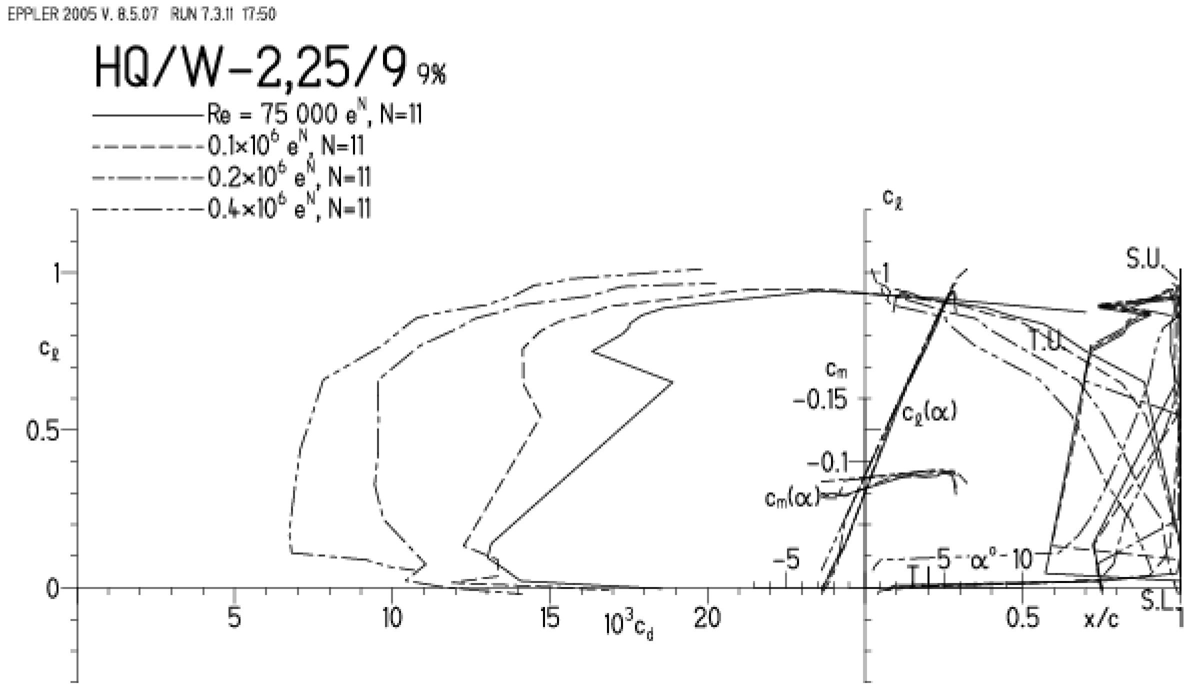


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

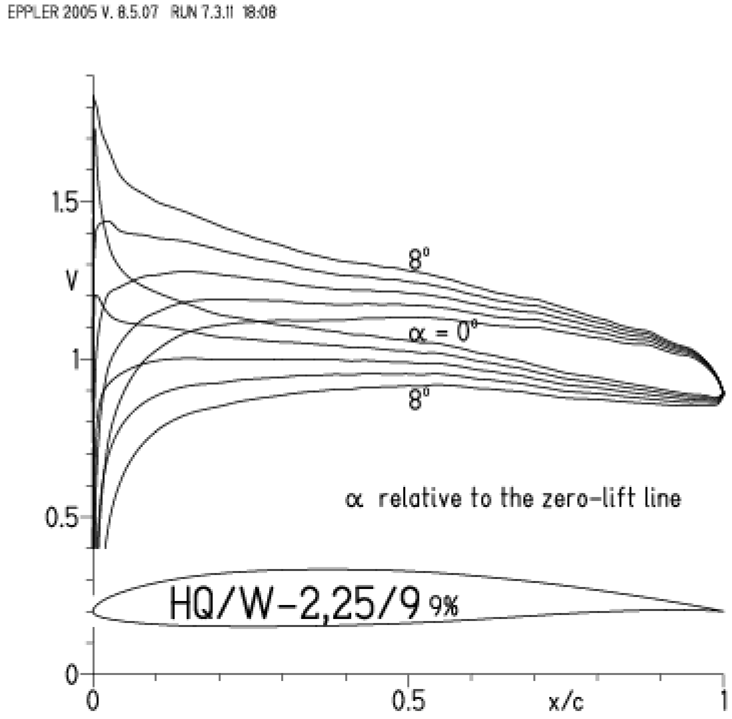


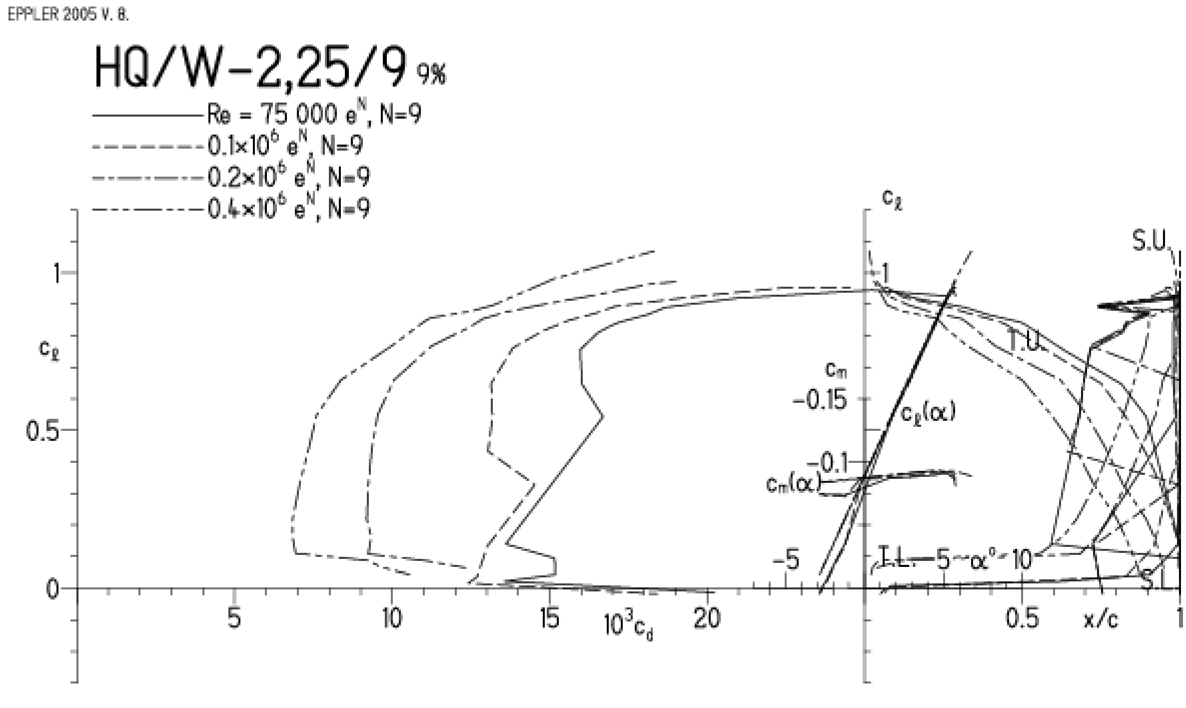
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

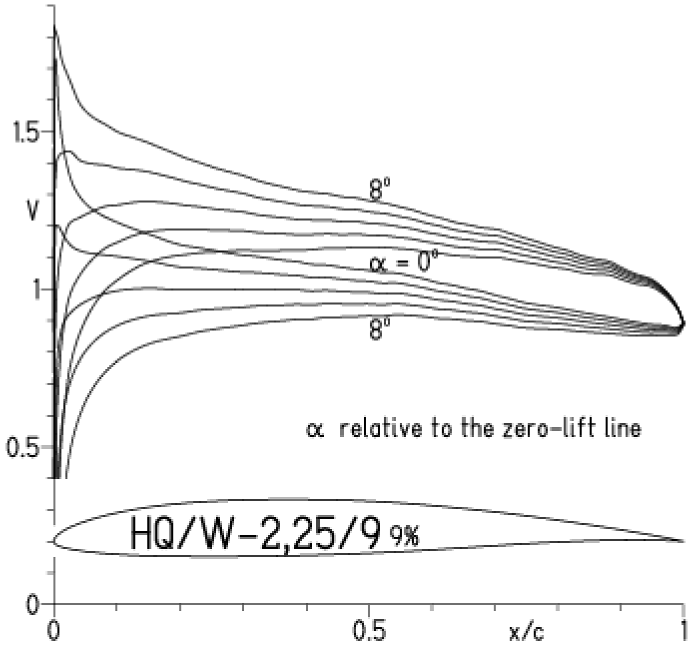
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

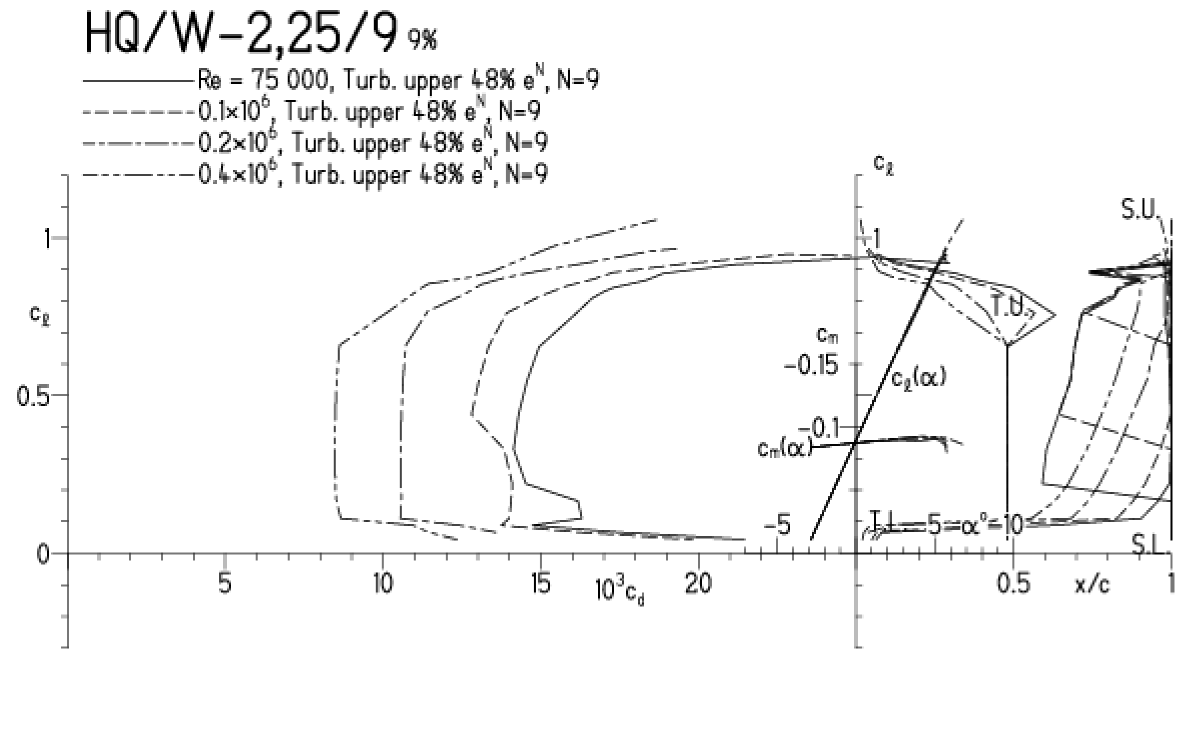

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

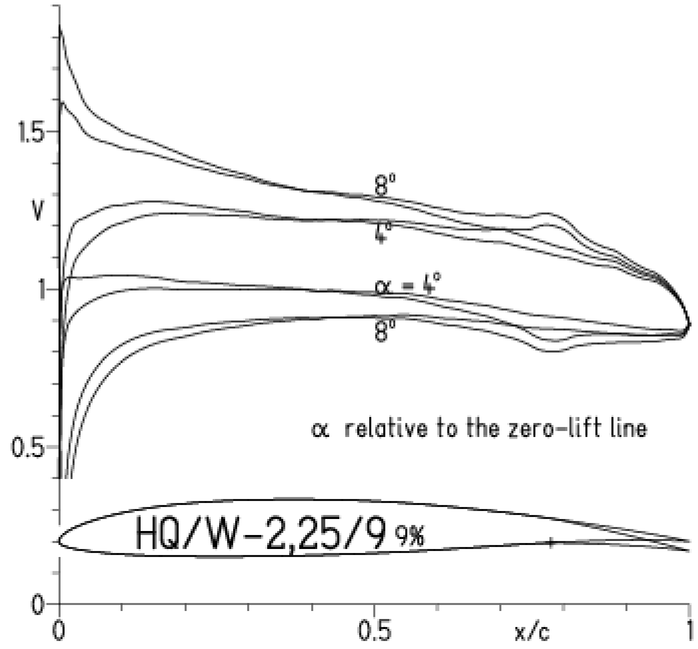


EPPLER 2005 V. 8.5.07 RUN 7

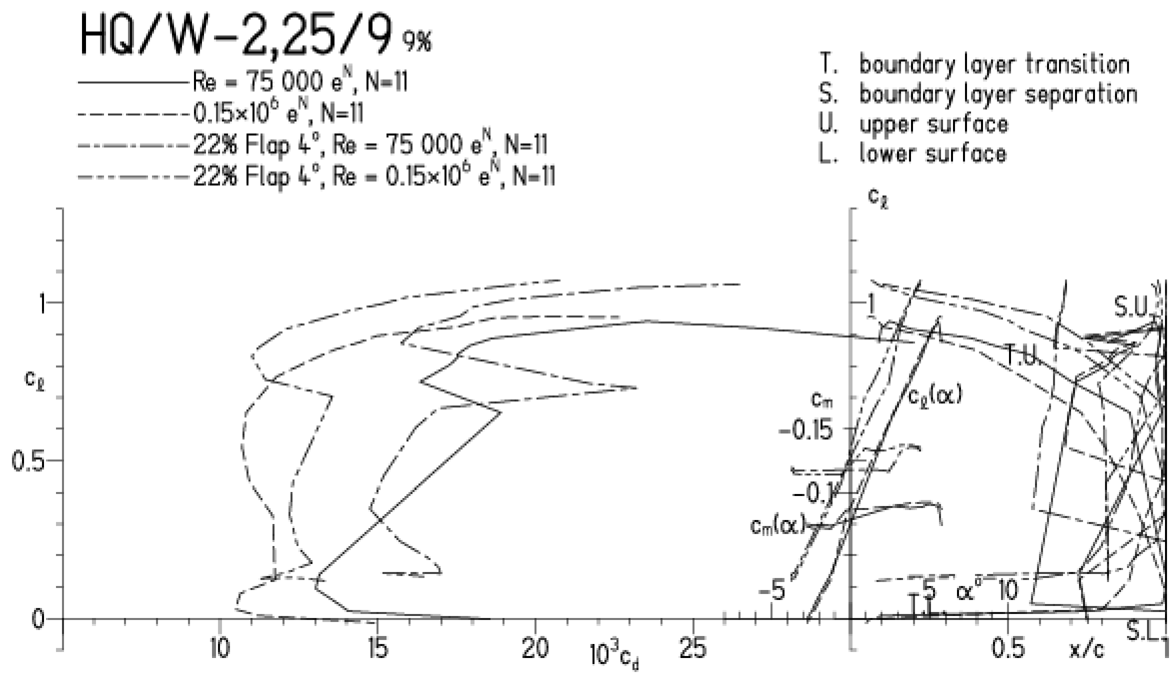


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

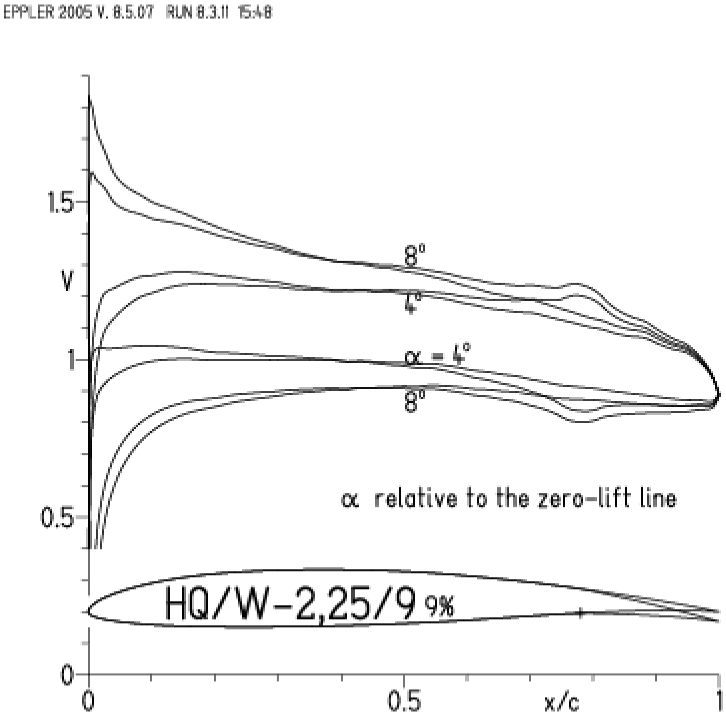
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

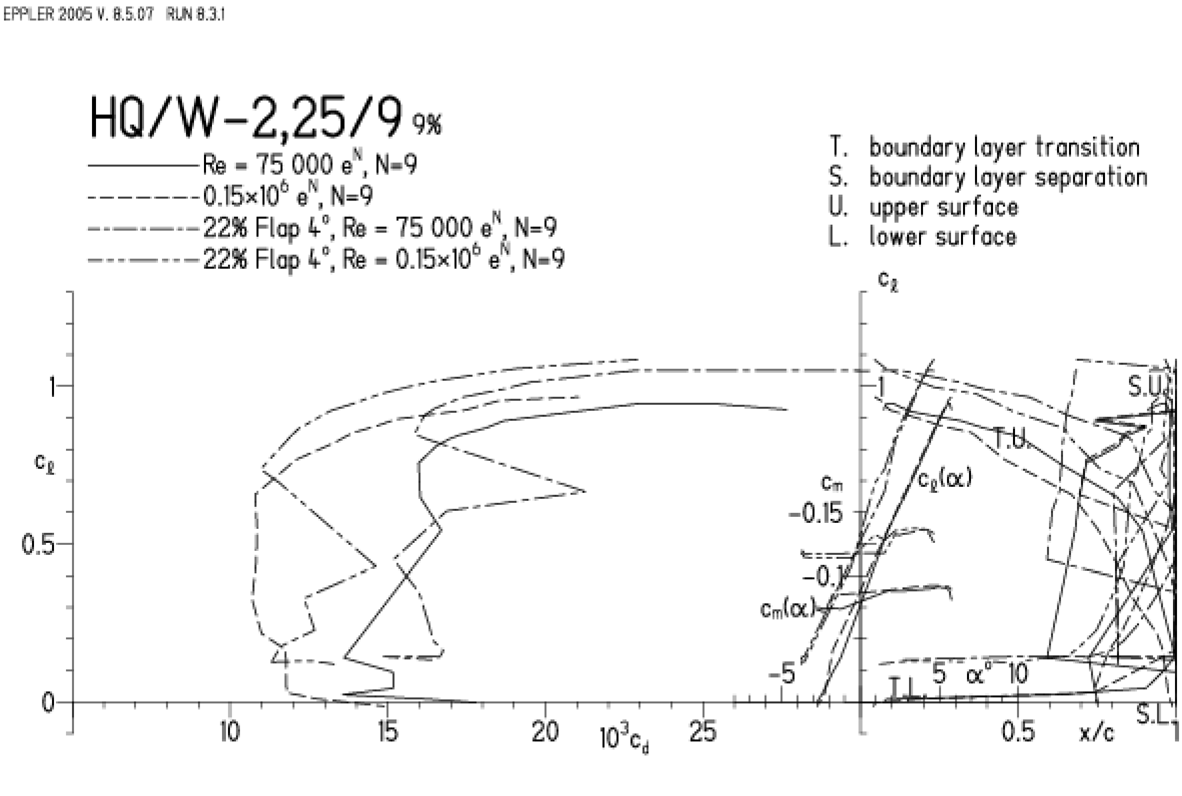


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



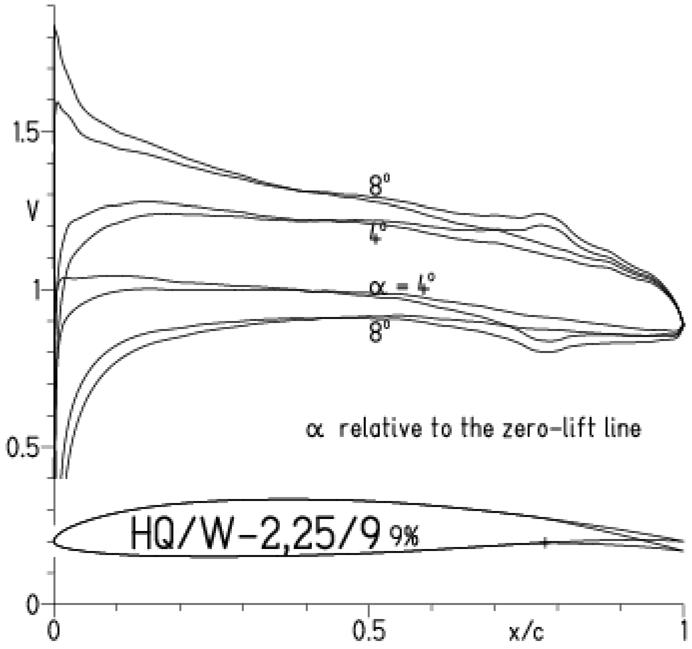
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



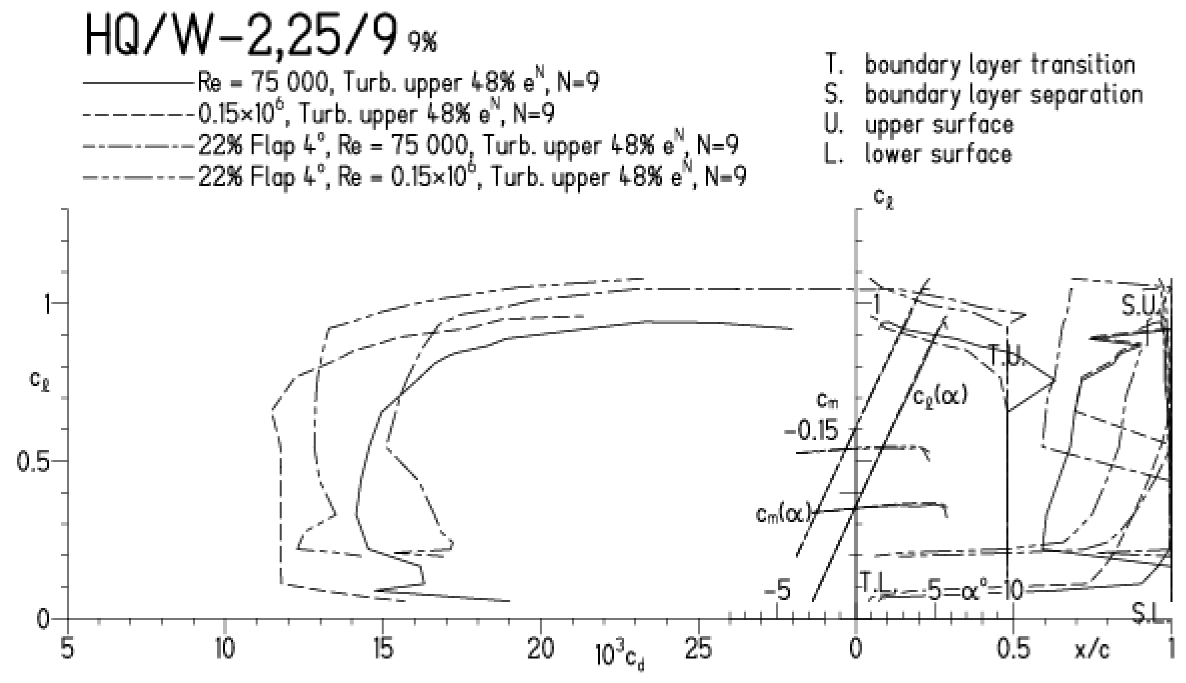


<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

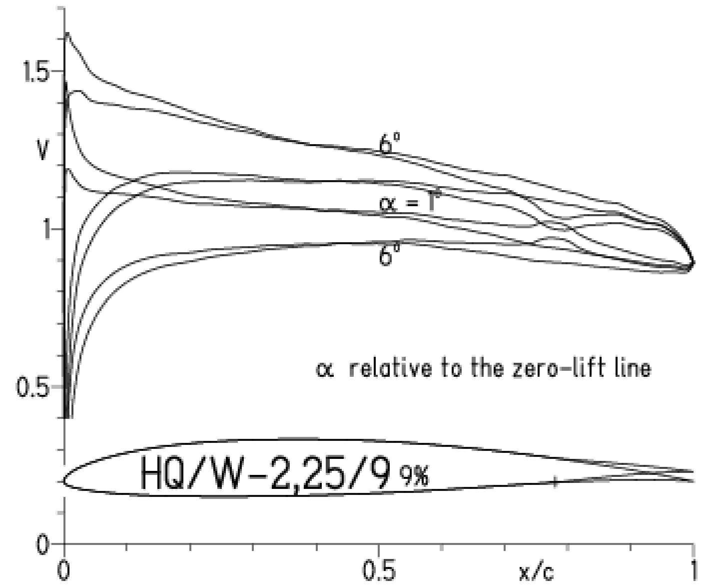


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

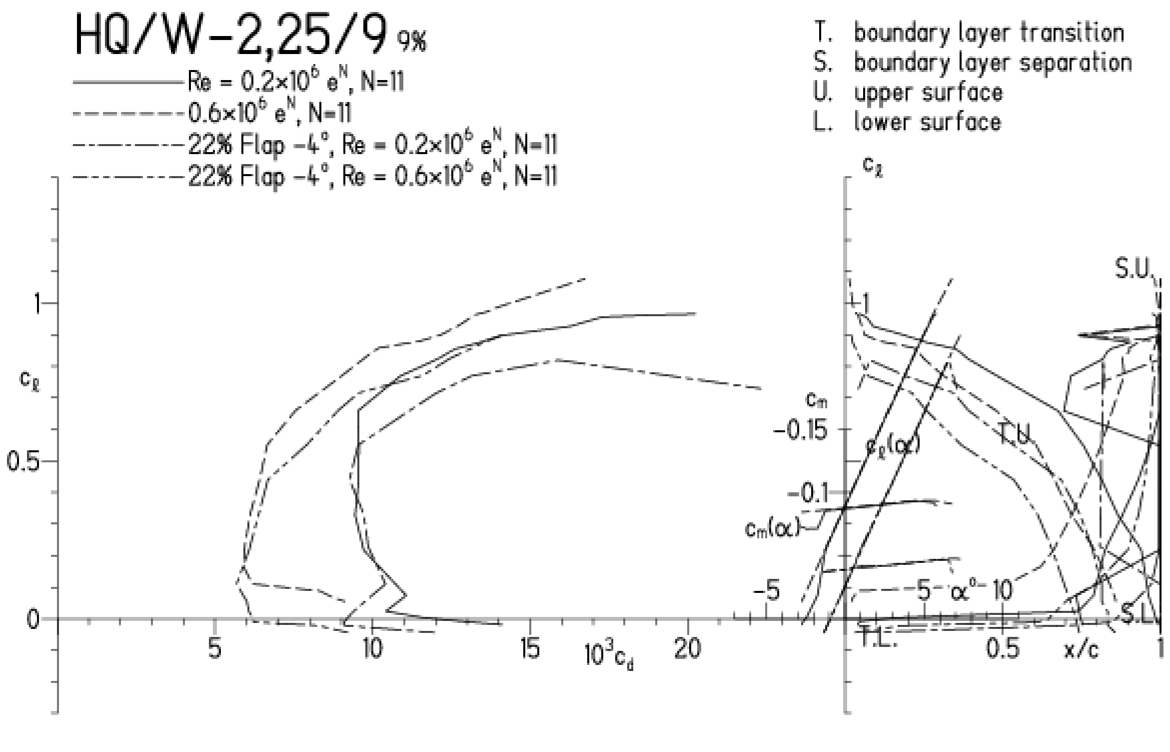


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

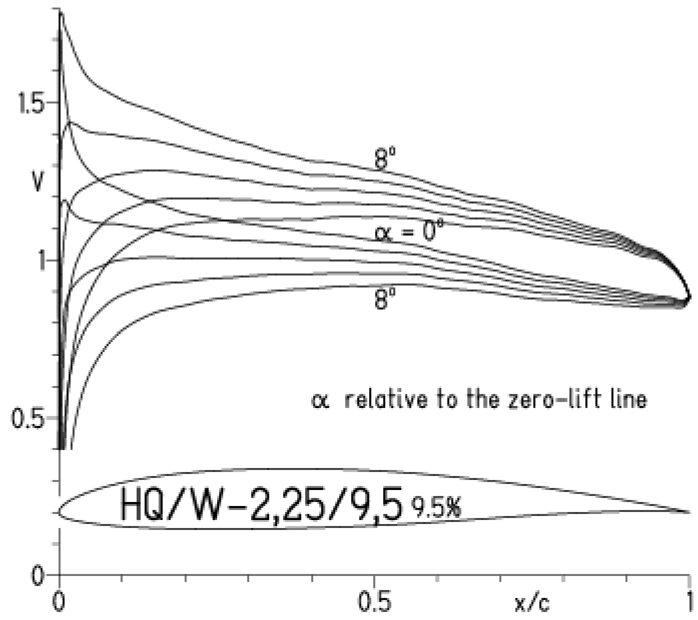


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

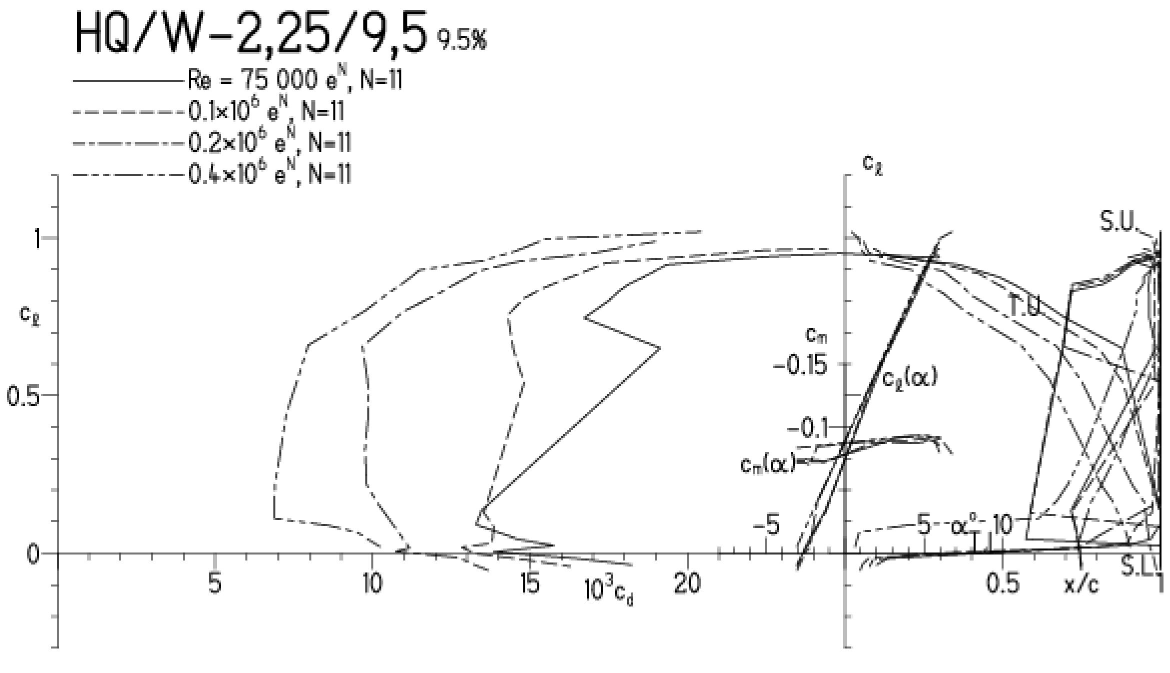


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

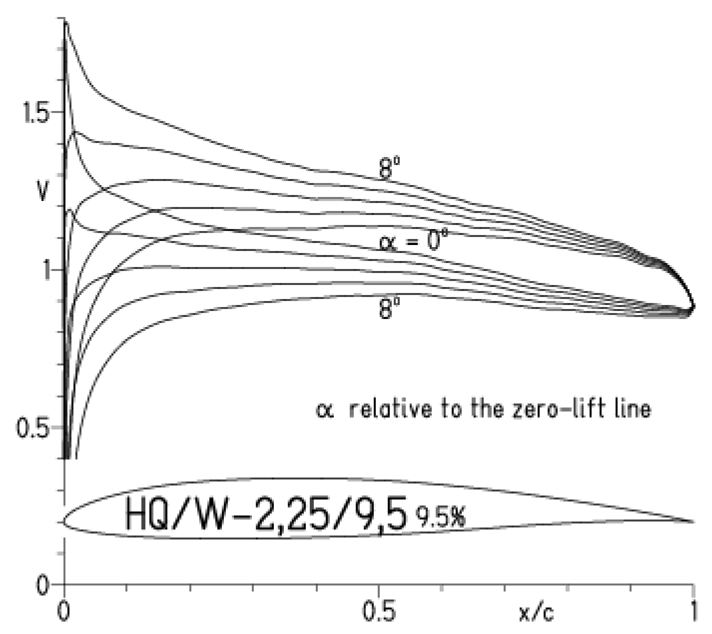


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

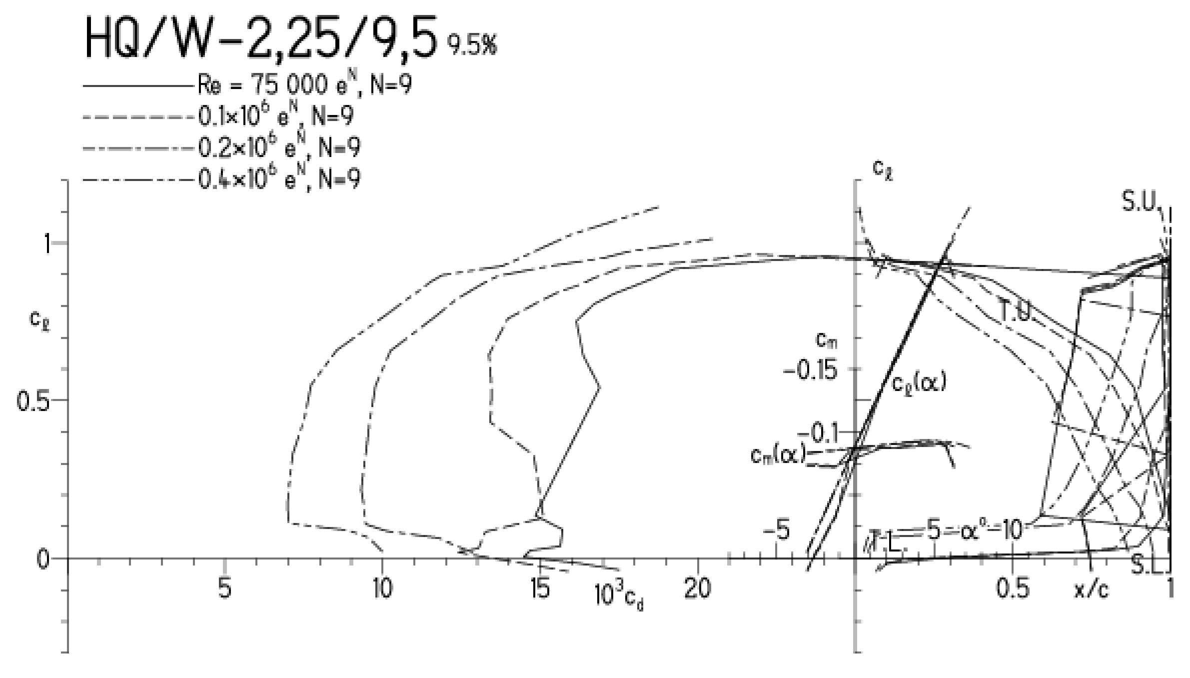


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

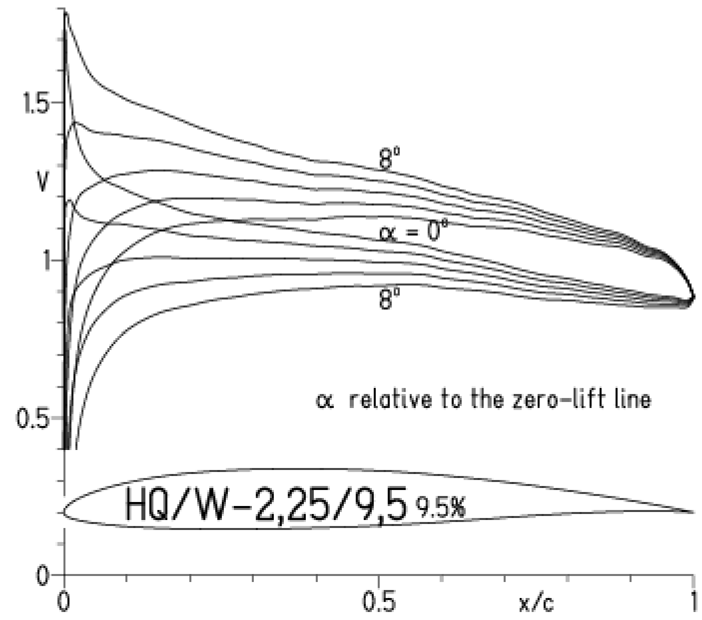


EPPLER 2005 V. 8.5.07 RUN 8.3.

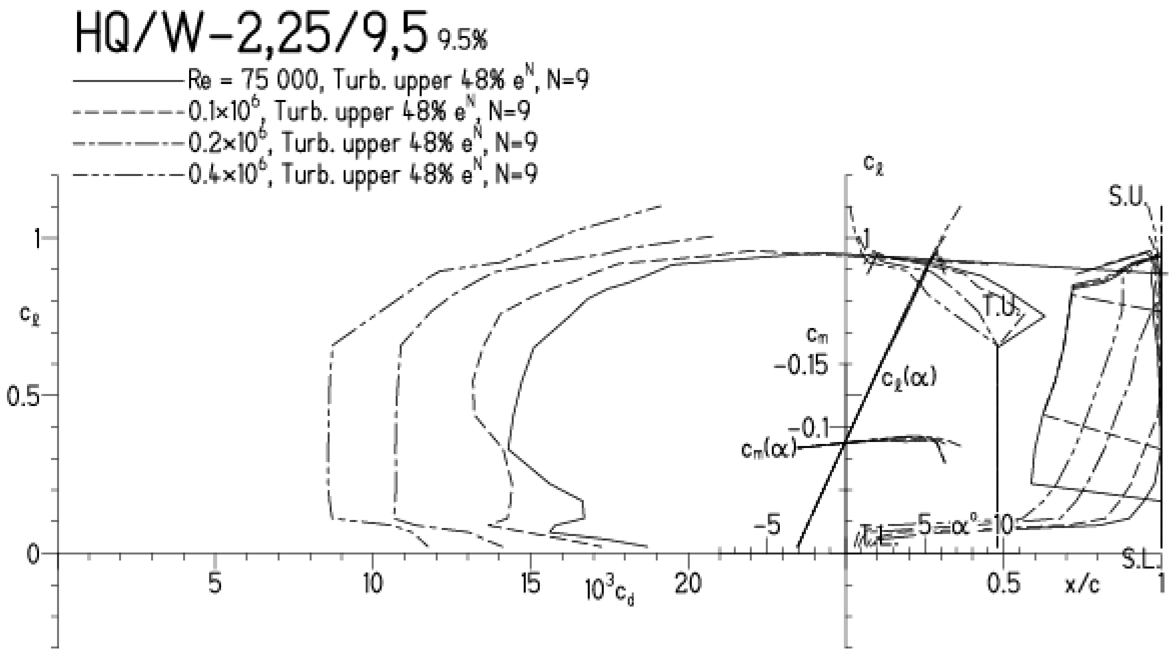


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

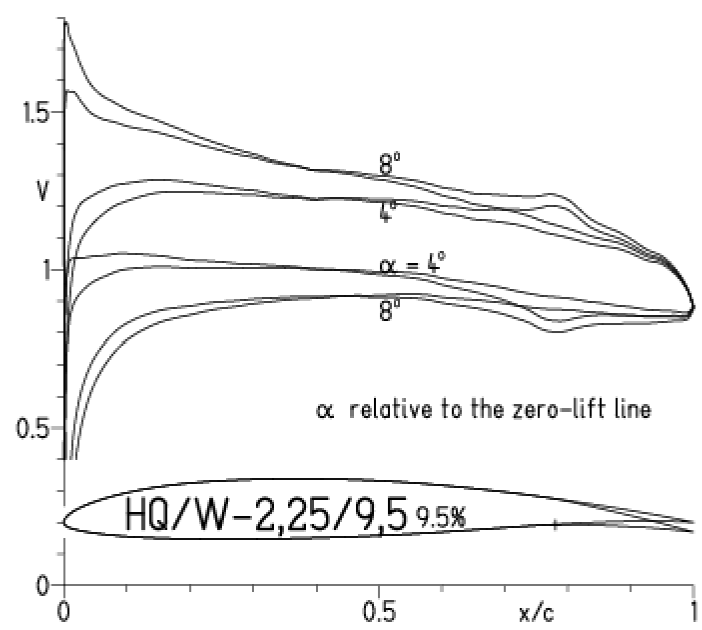


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

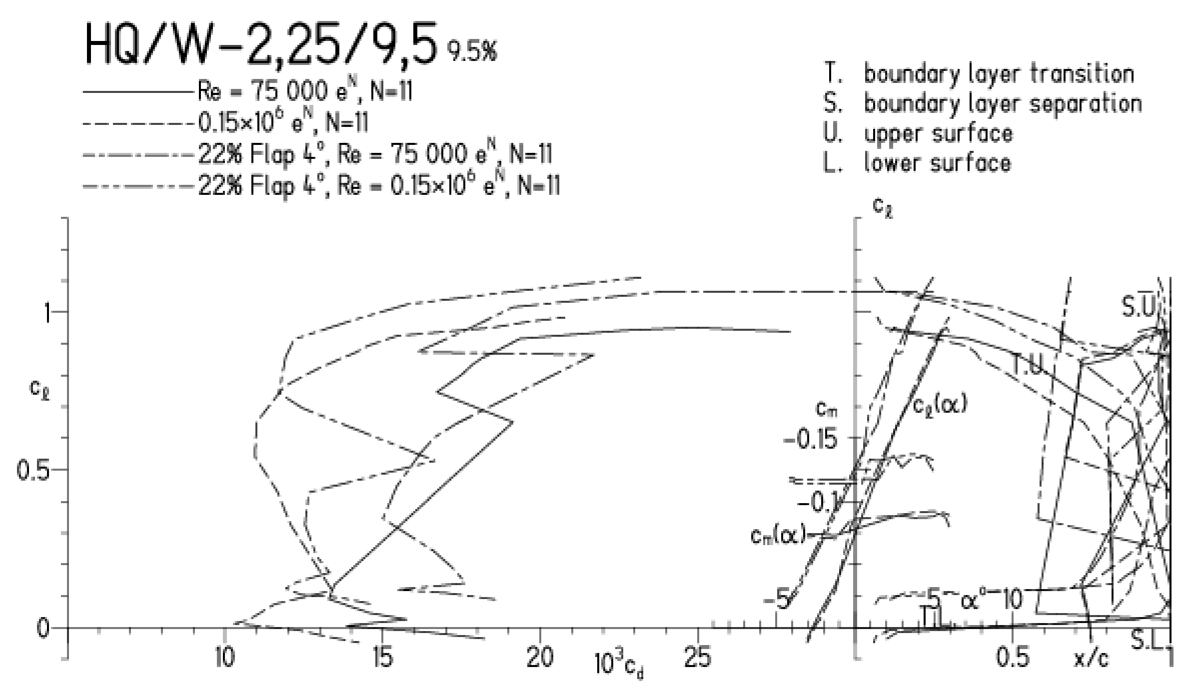


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

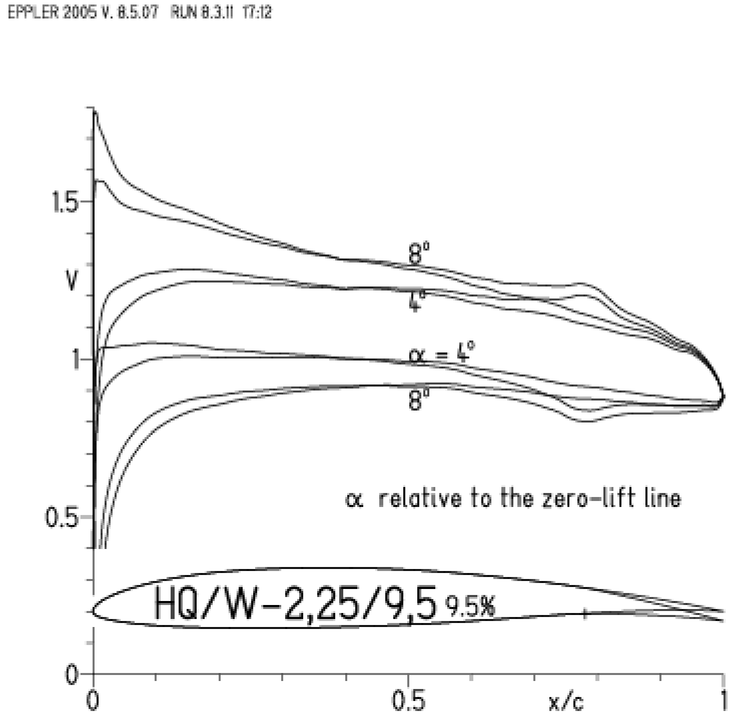
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

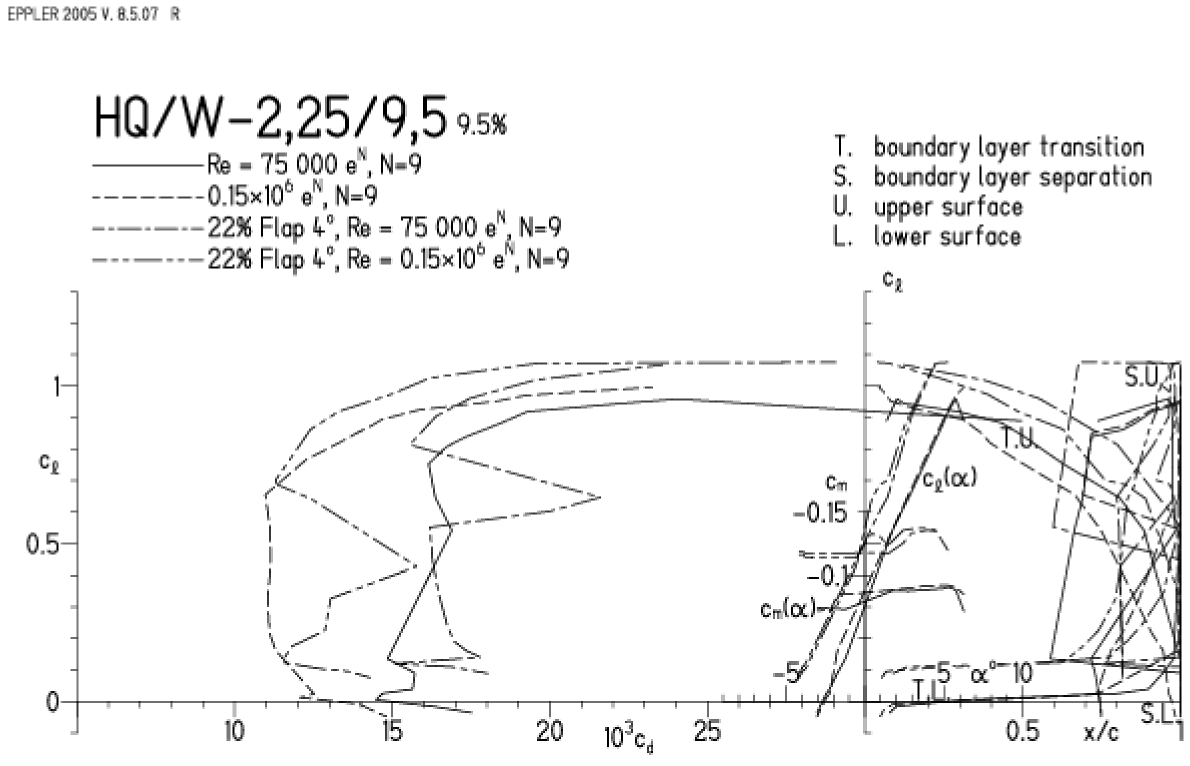


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



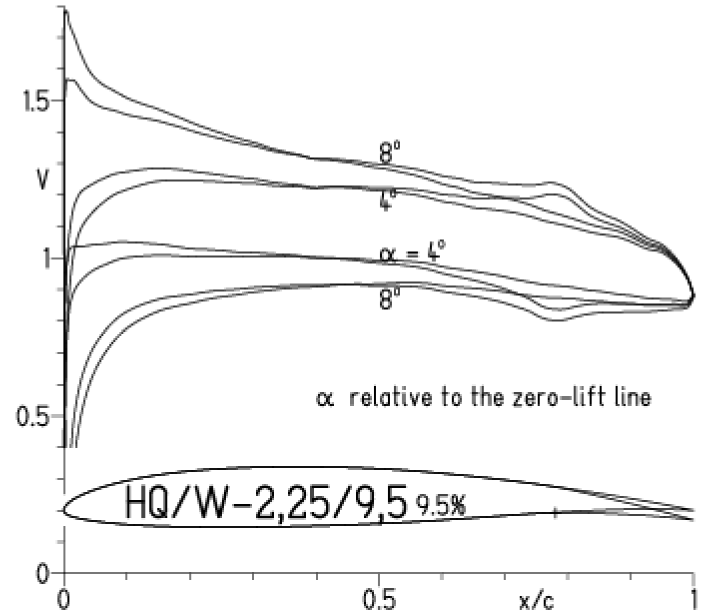
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



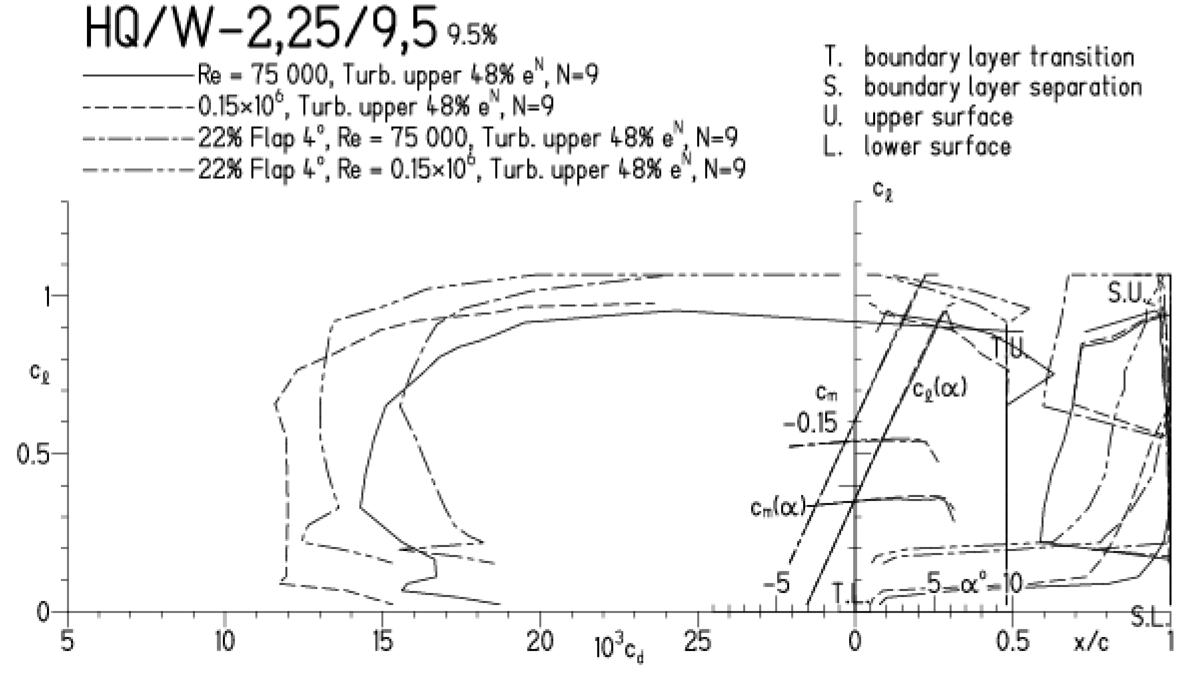


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

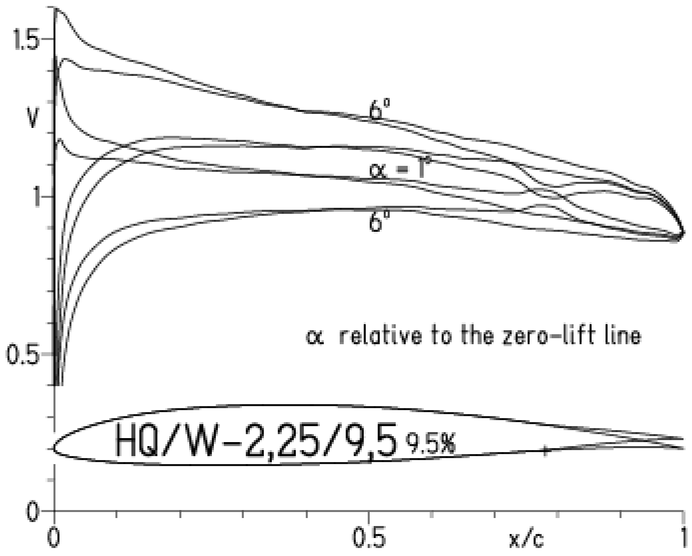


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

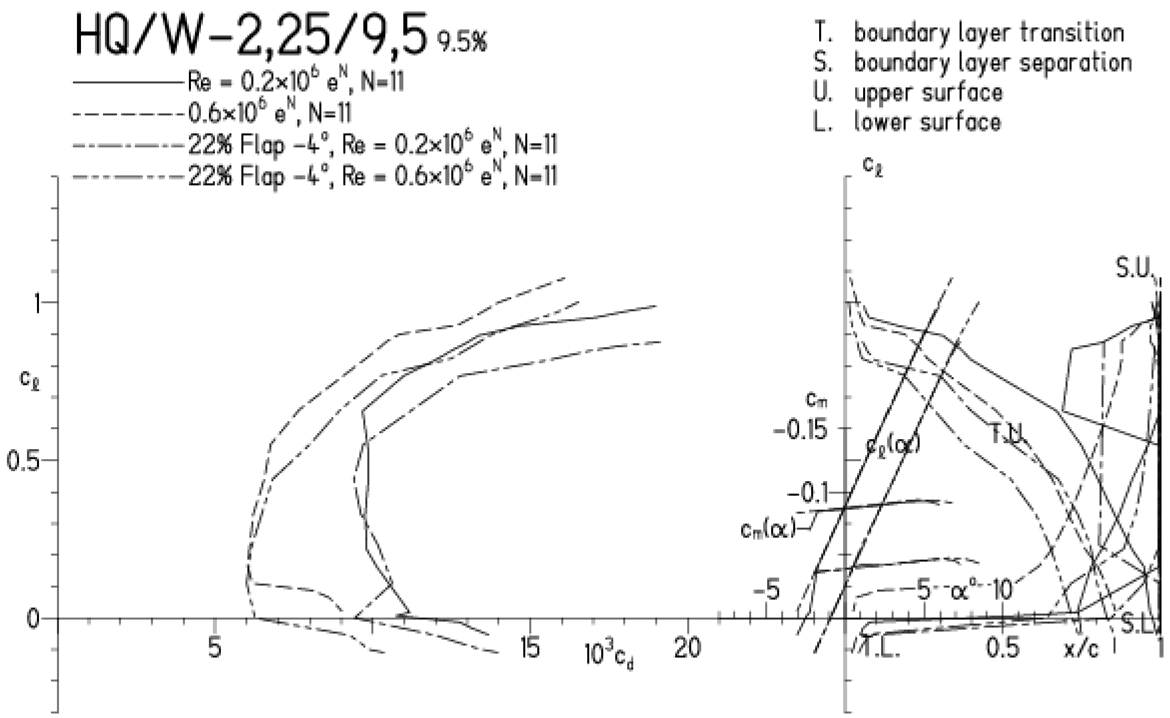


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

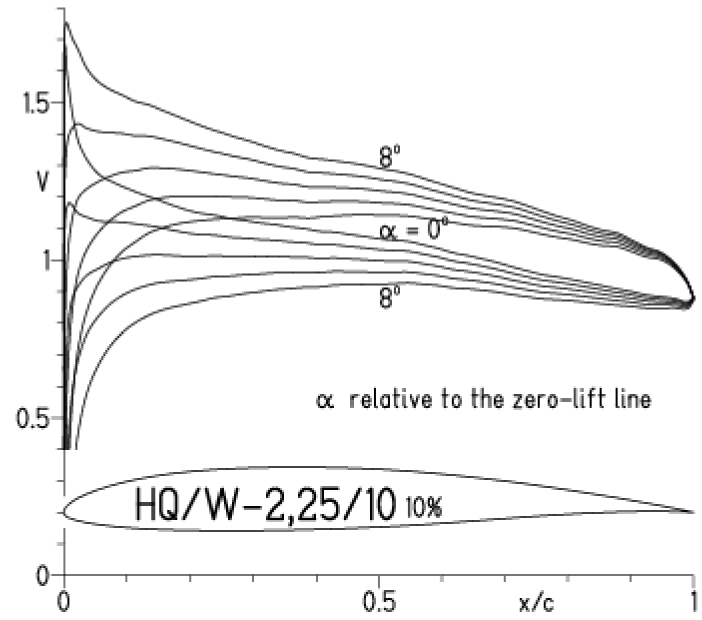


EPPLER 2005 V.

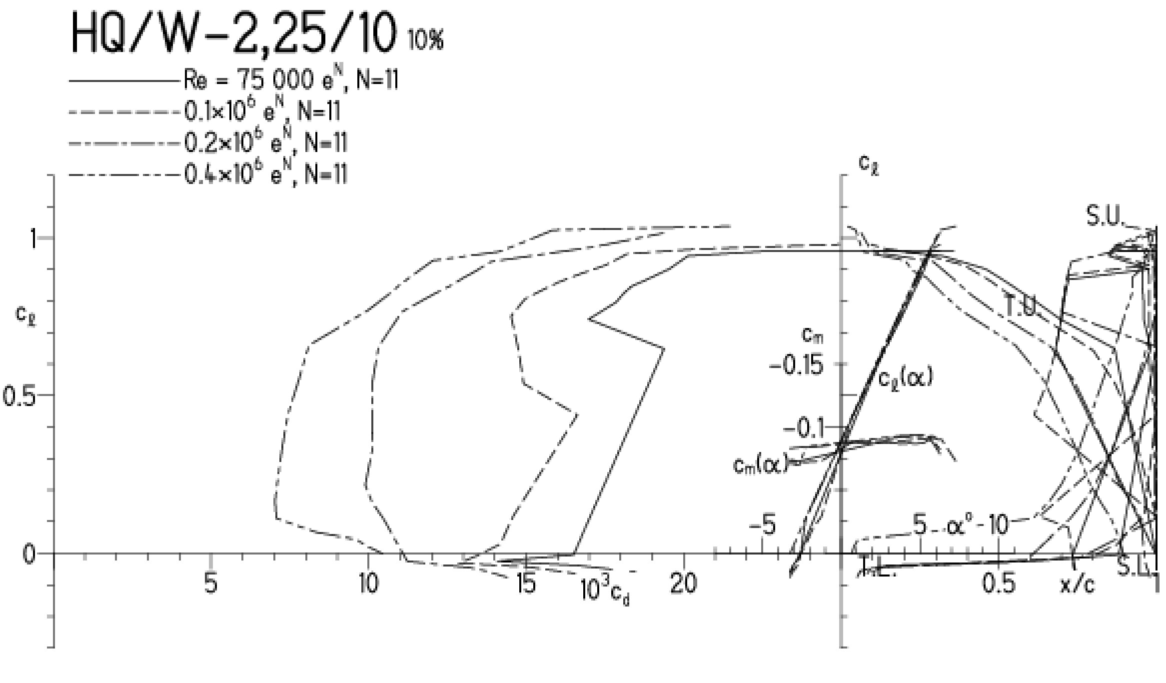


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

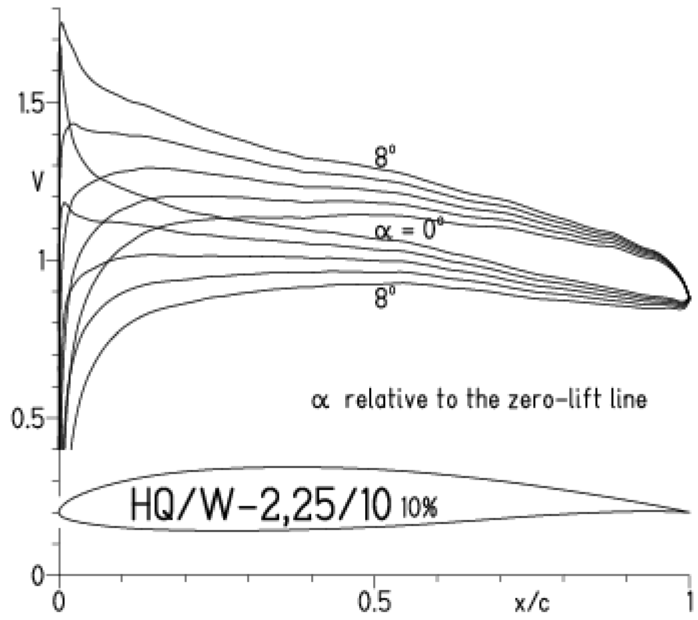


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

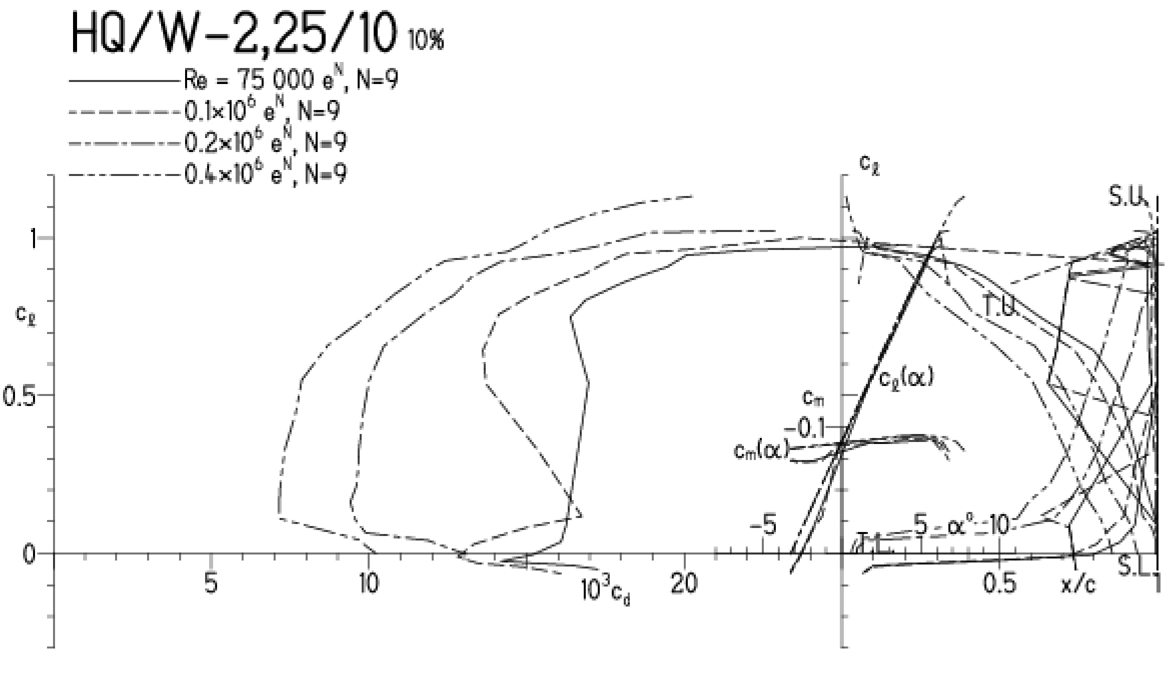


HQ/W-2,25/10, N=9

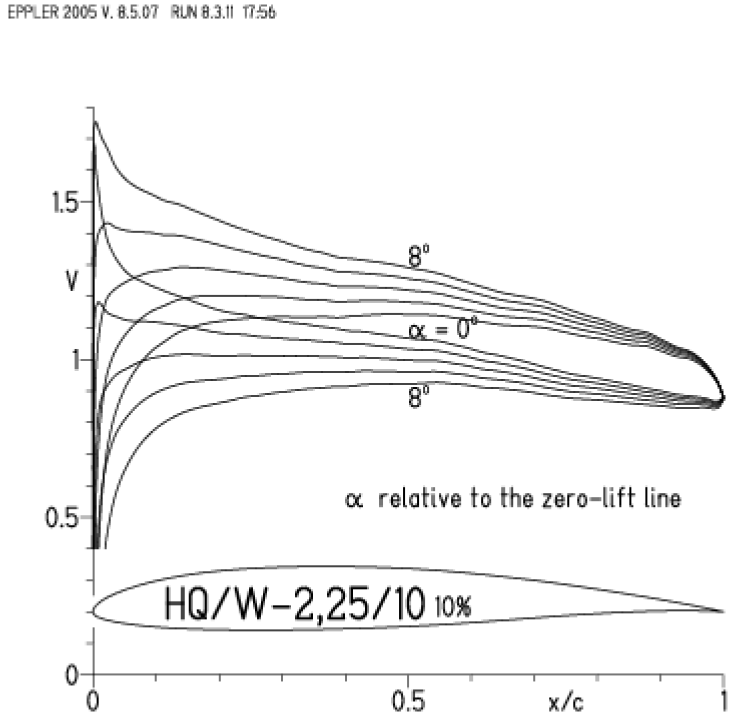
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

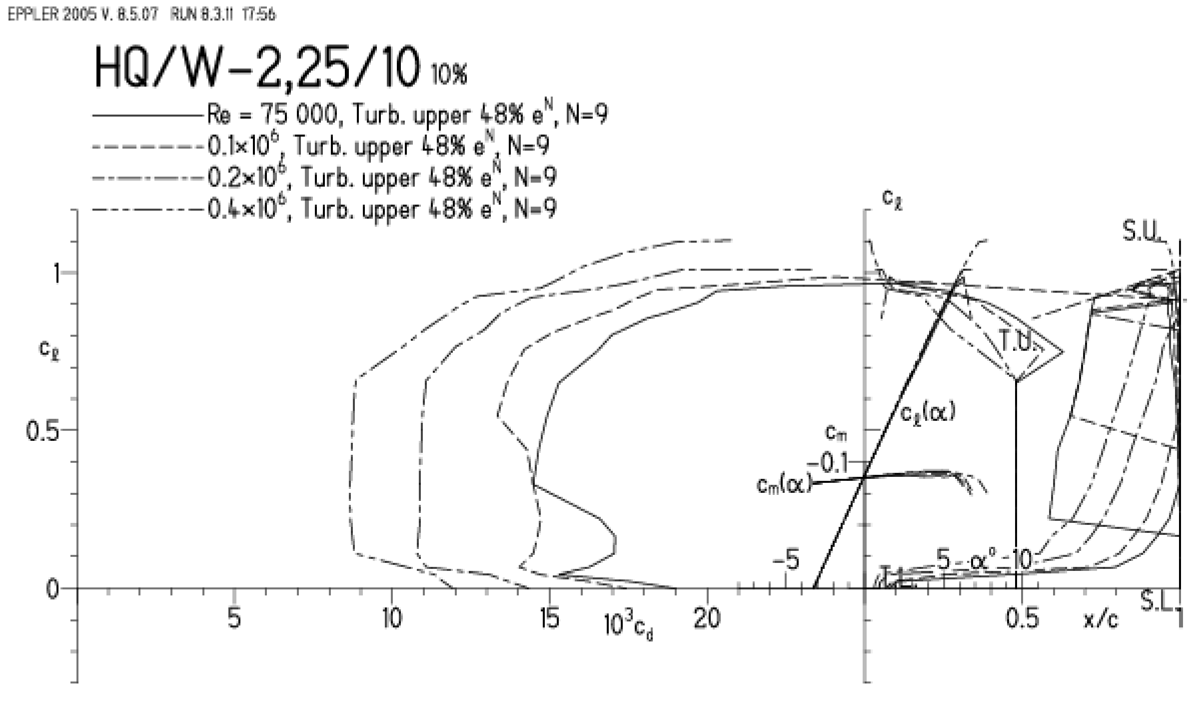


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



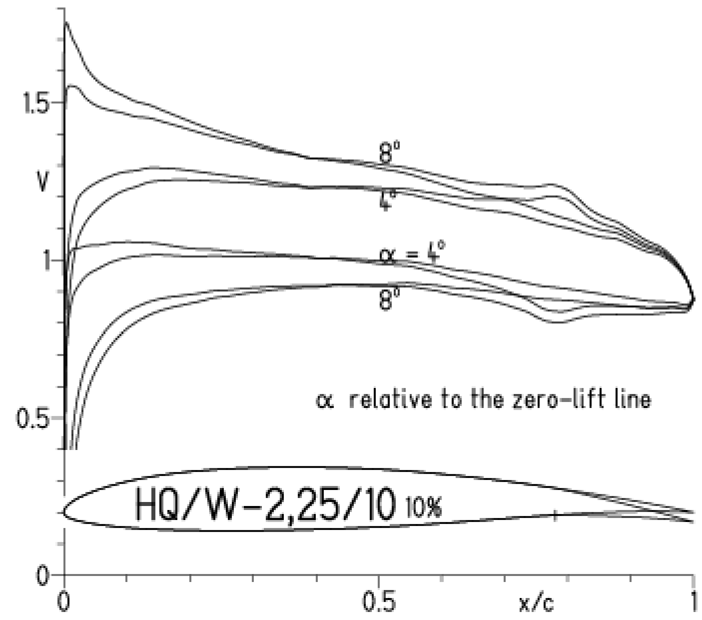
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



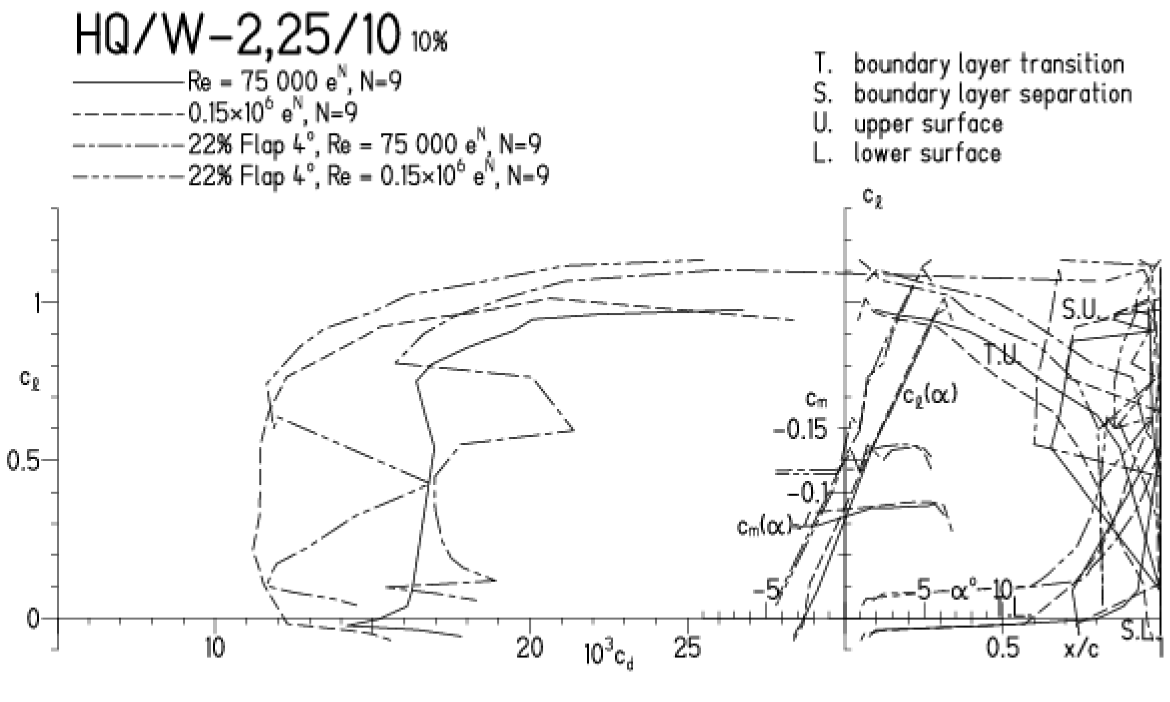


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

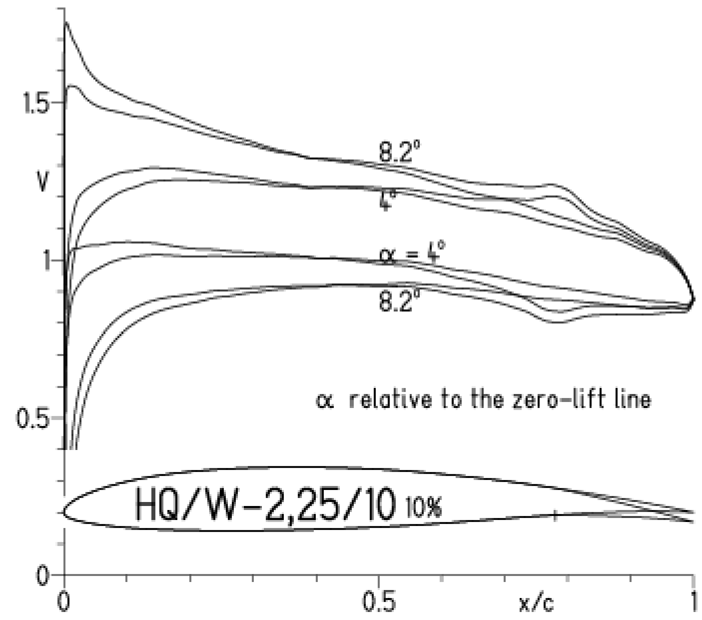


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

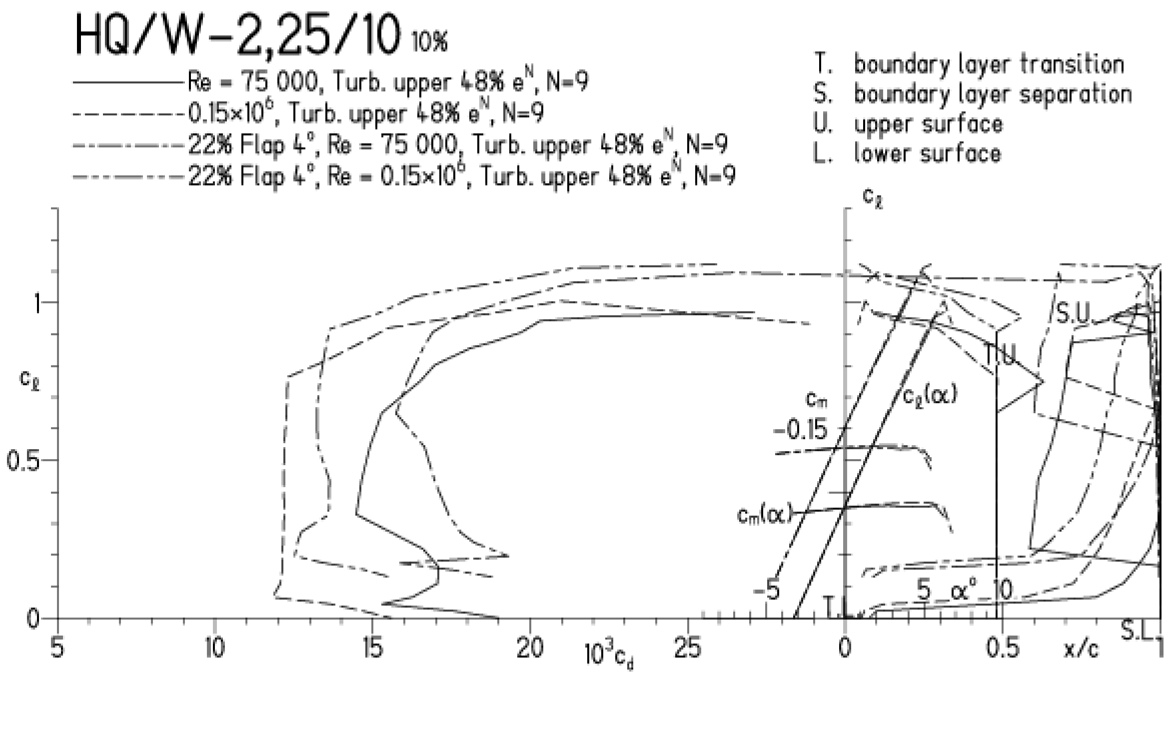


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

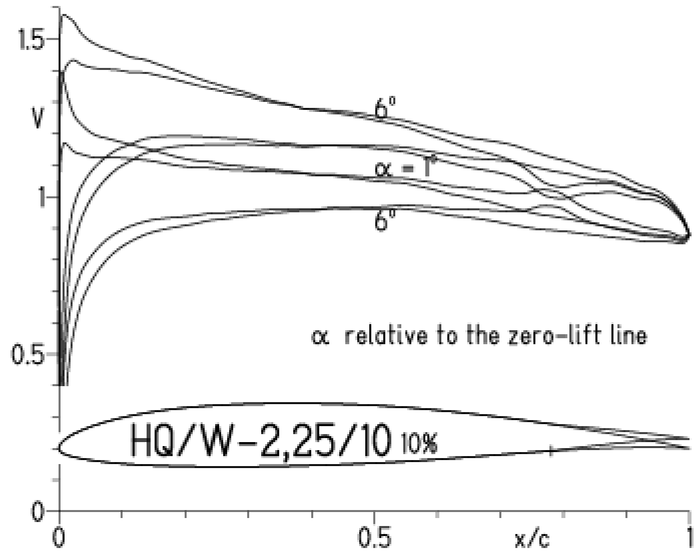


EPPLER 2005 V. 8.5.07 RUN 8.3

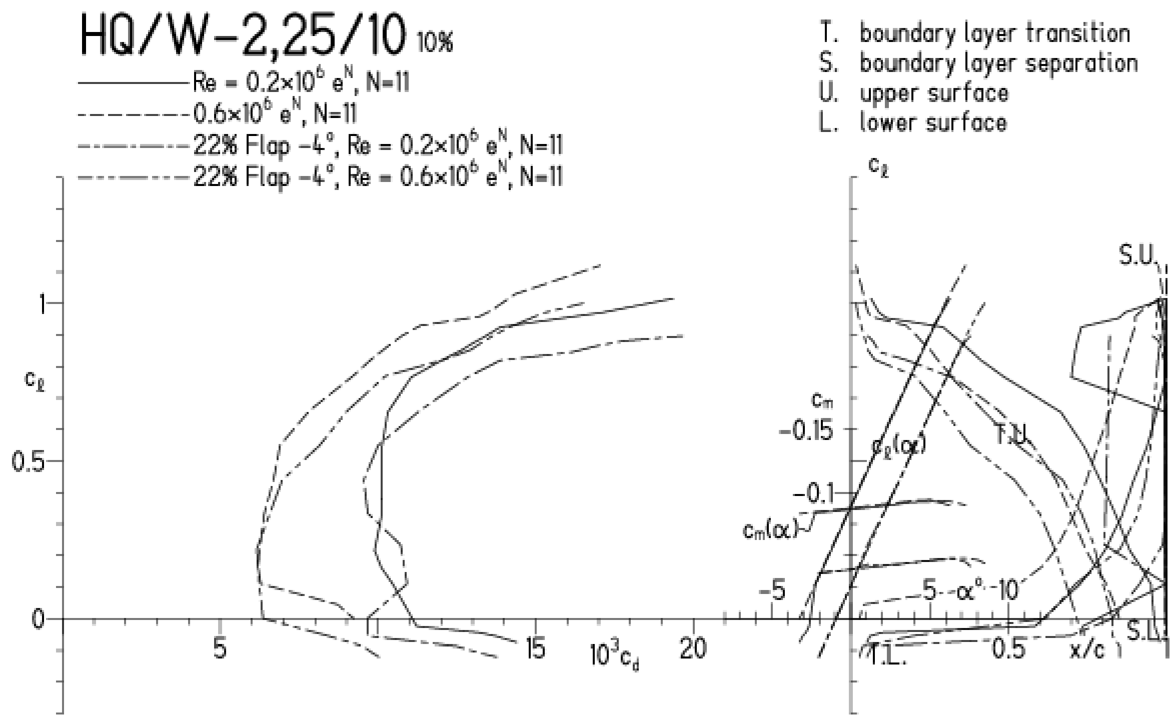


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

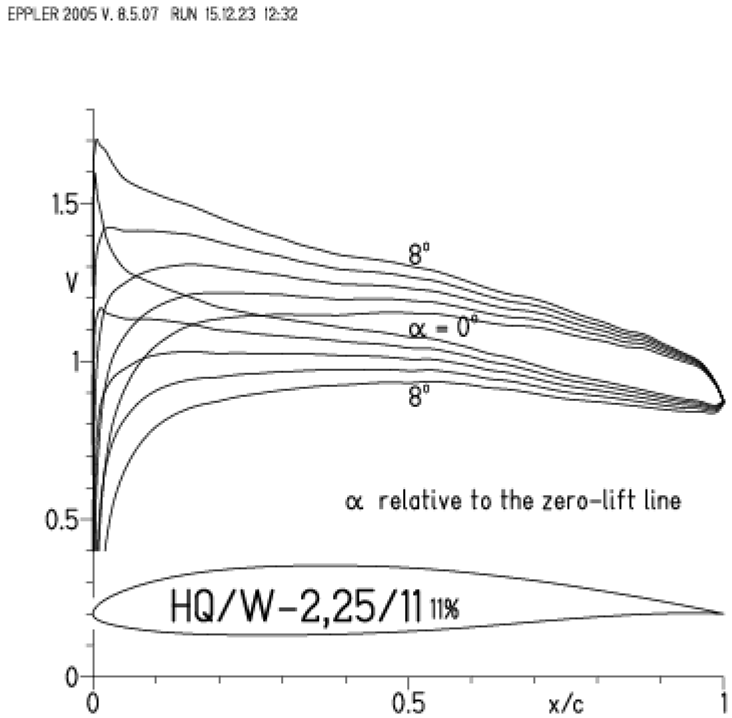
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

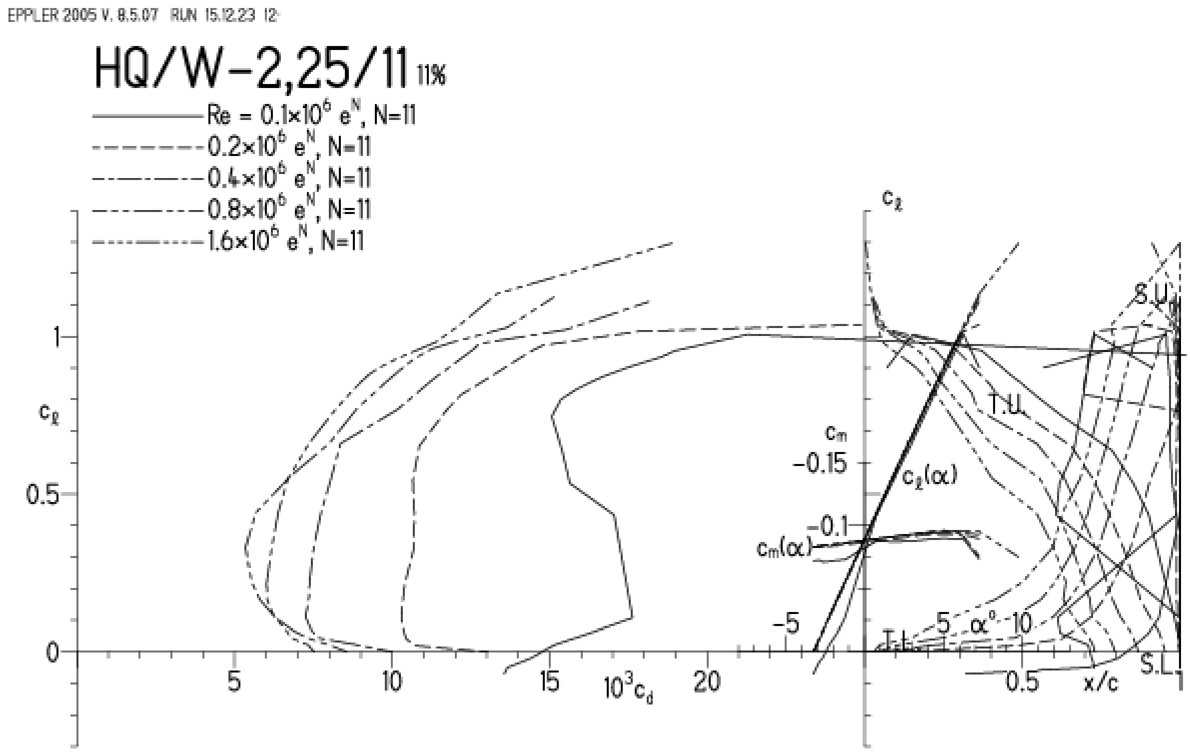


EPPLER 2005 V. 8.5.07 RUN



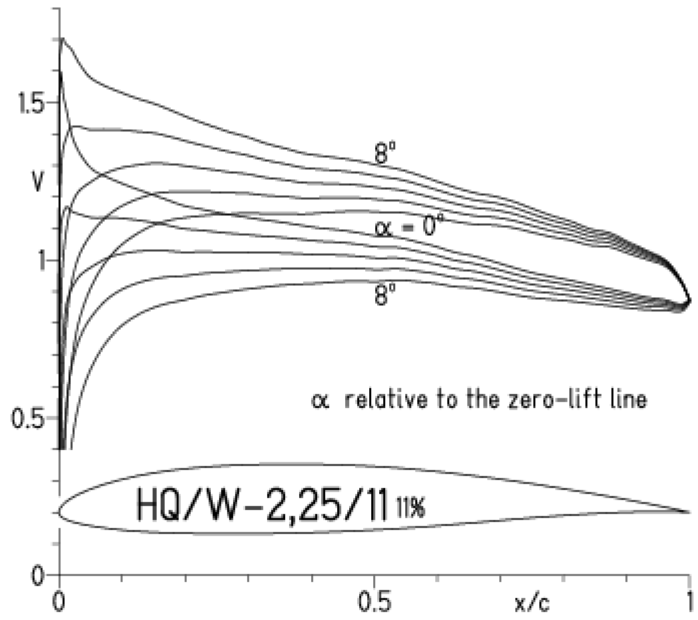
HQ/W-2,25/11, N=11



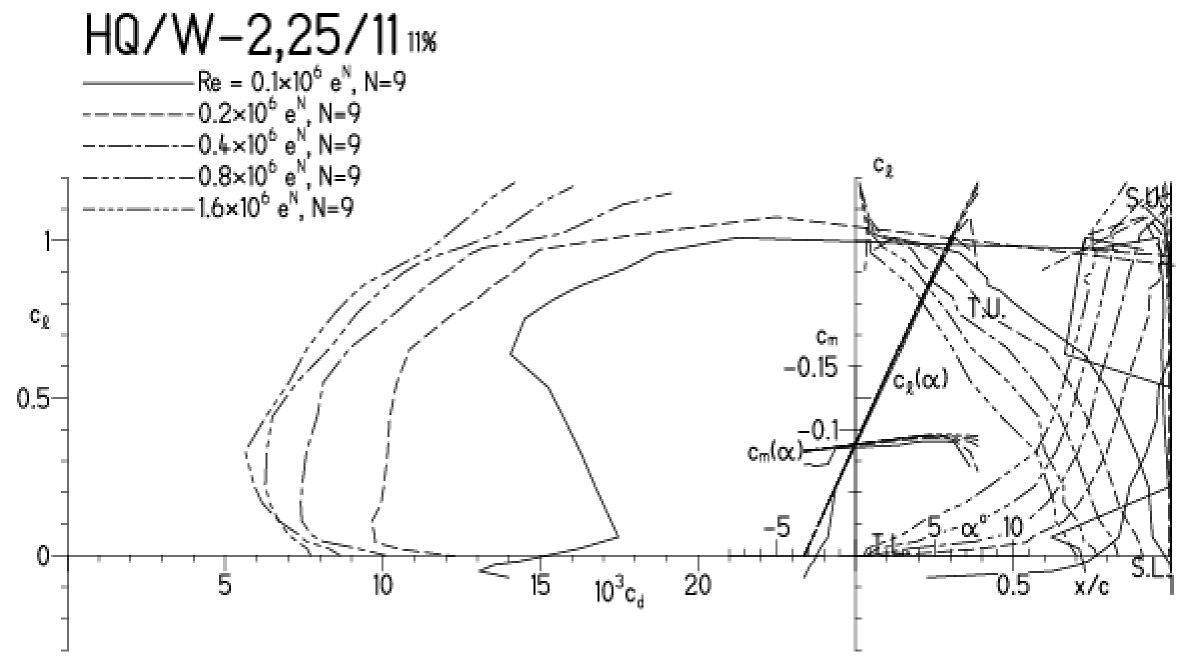


HQQ/W-2,25/11, N=9

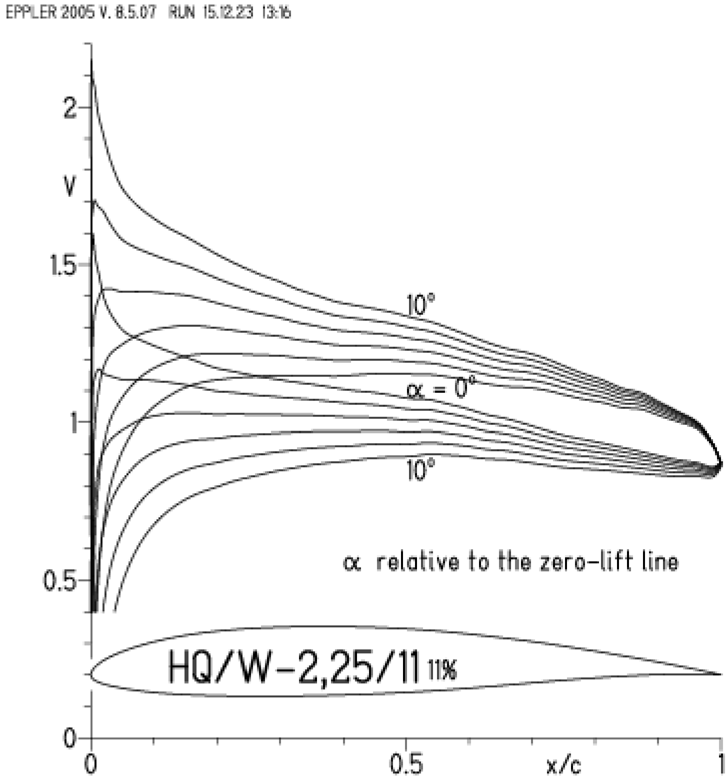
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

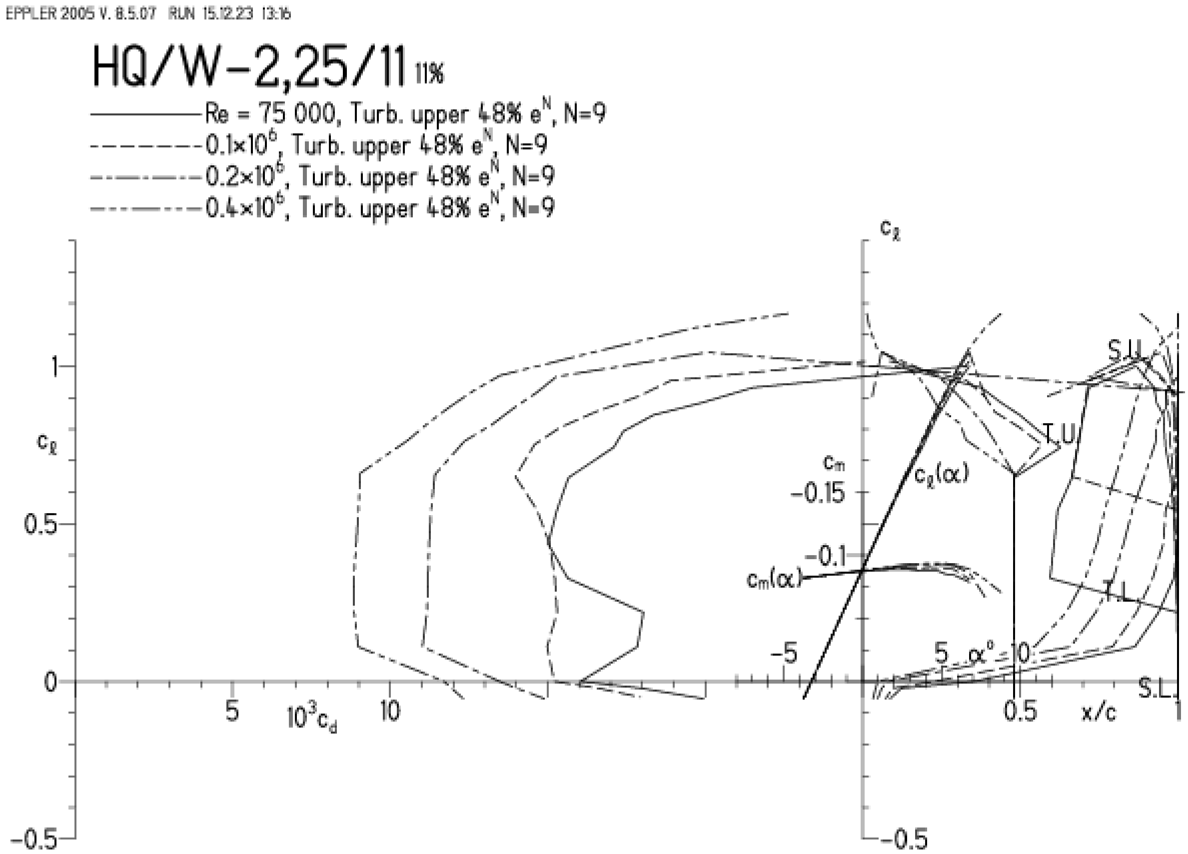


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



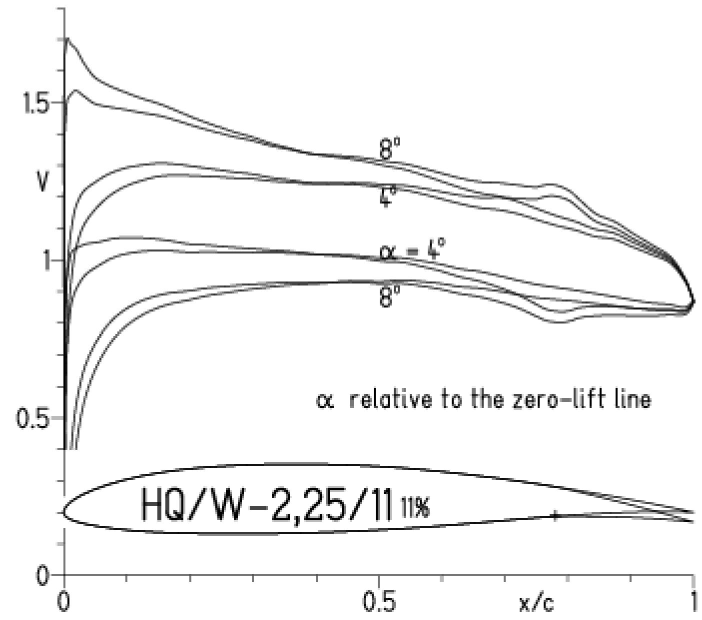
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



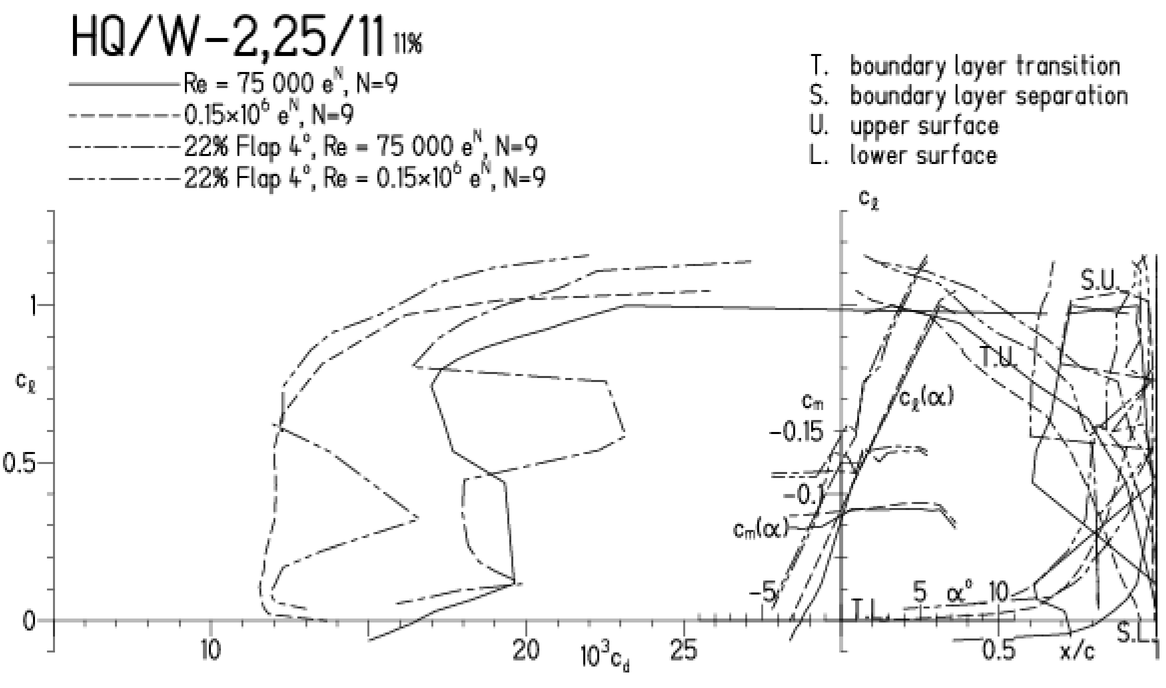


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

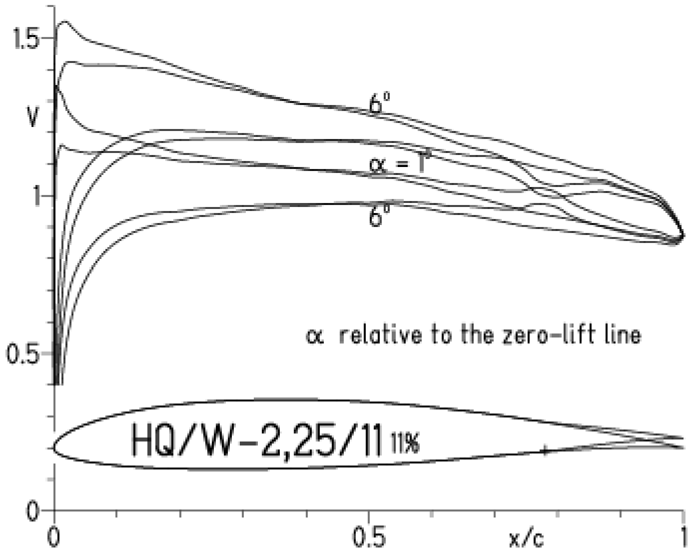


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

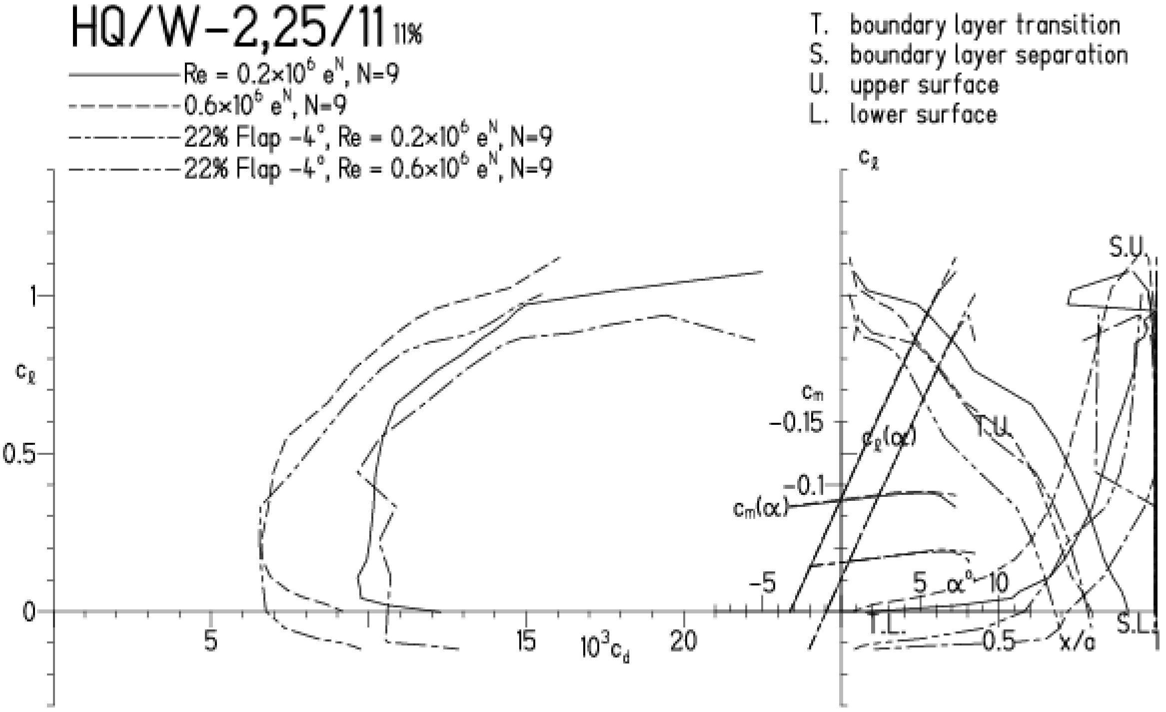


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

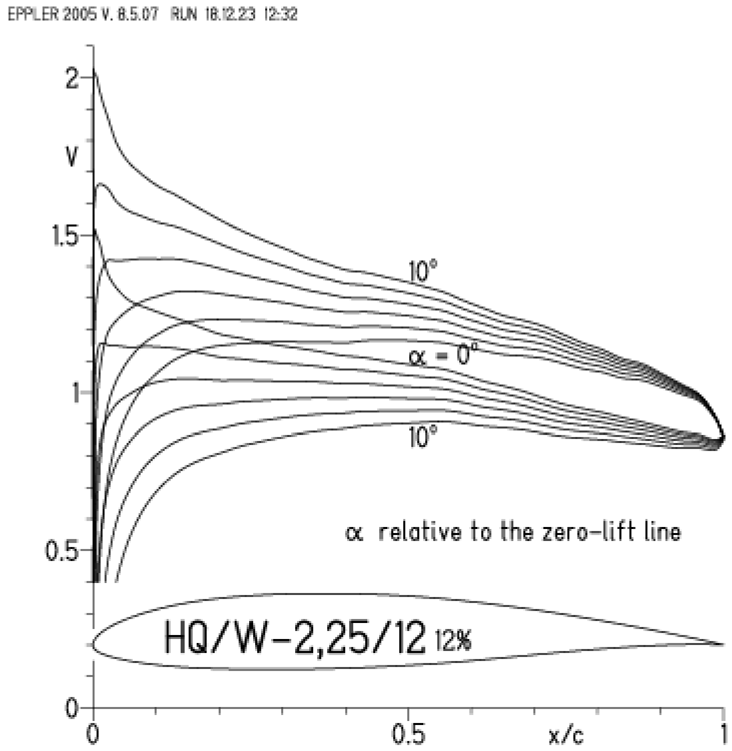
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

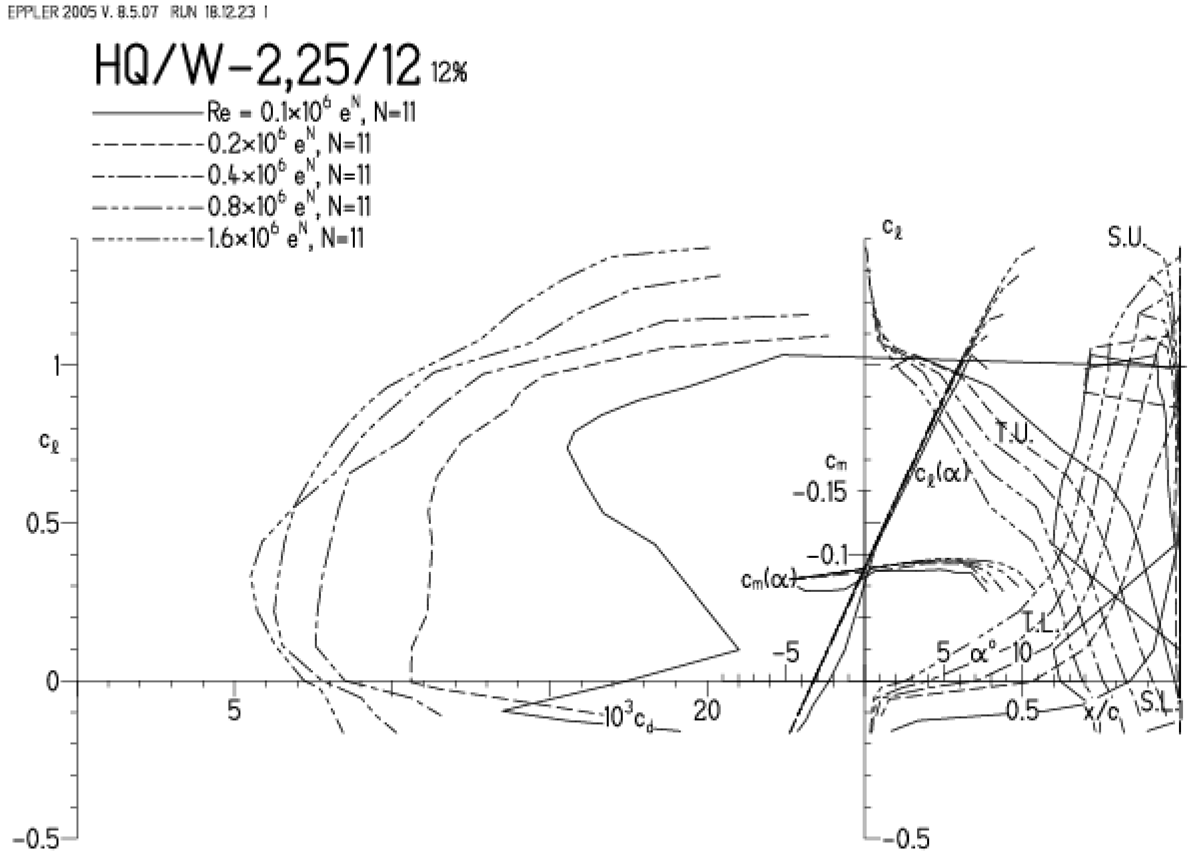


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

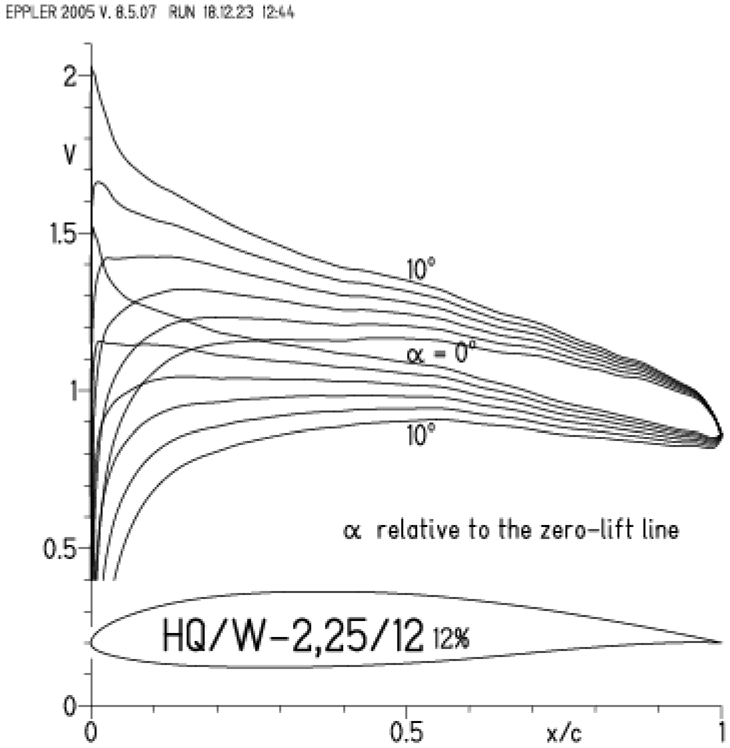


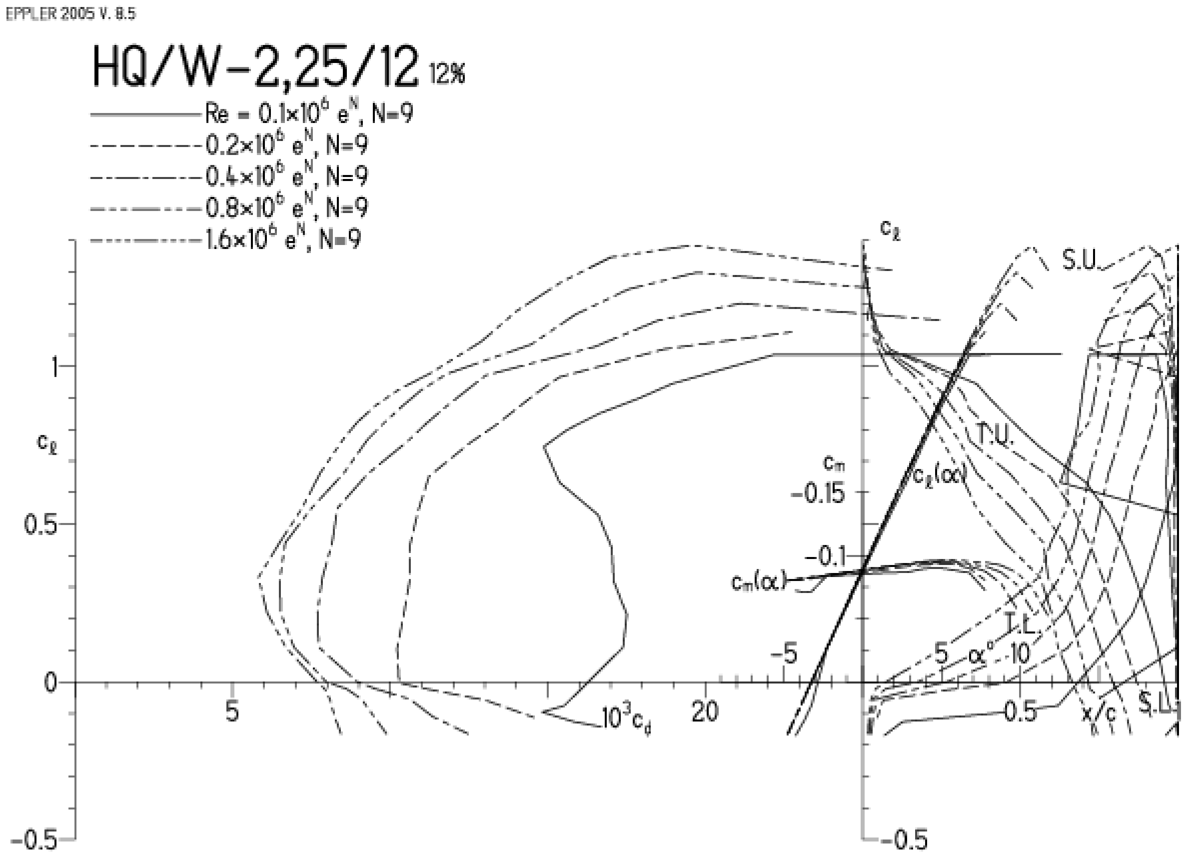
<u>HQ/W-2,25/12</u>, N=11



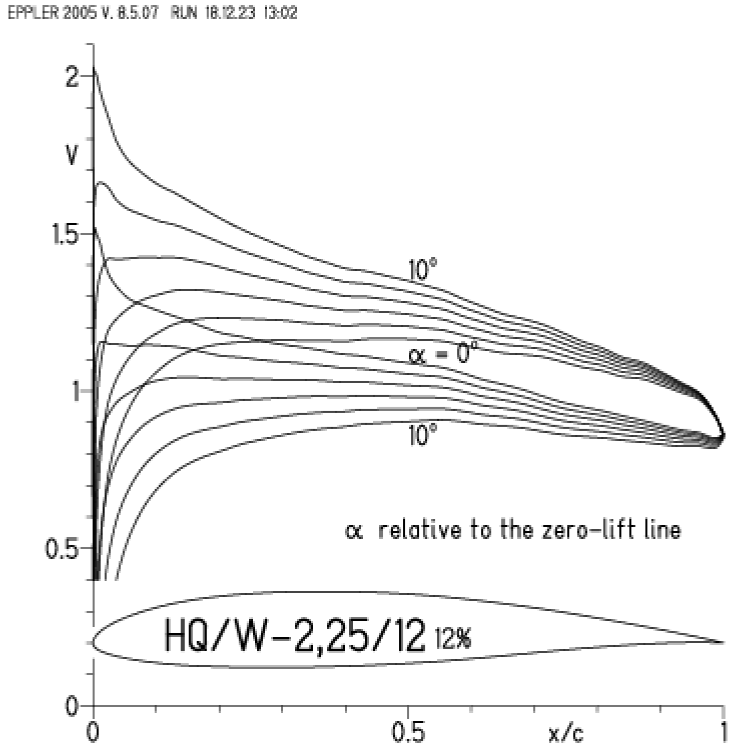


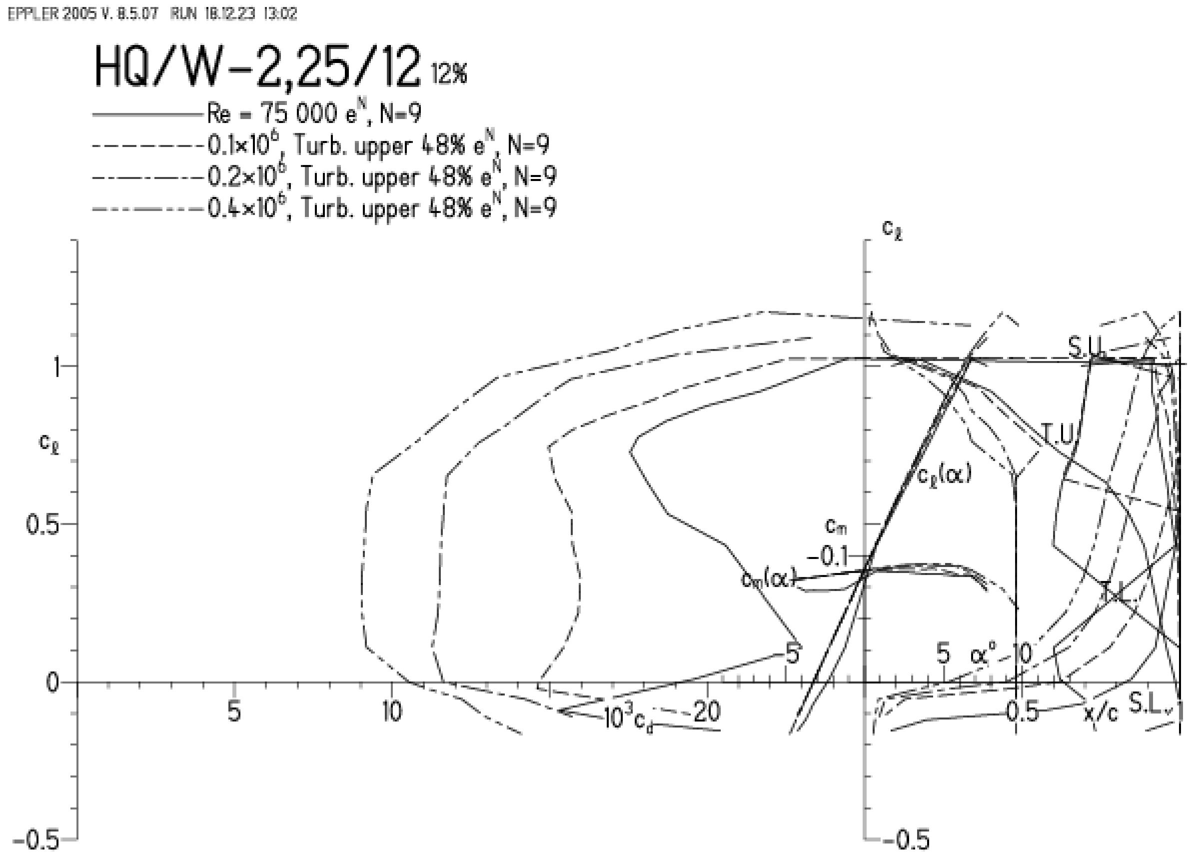
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c
10^3 c_d

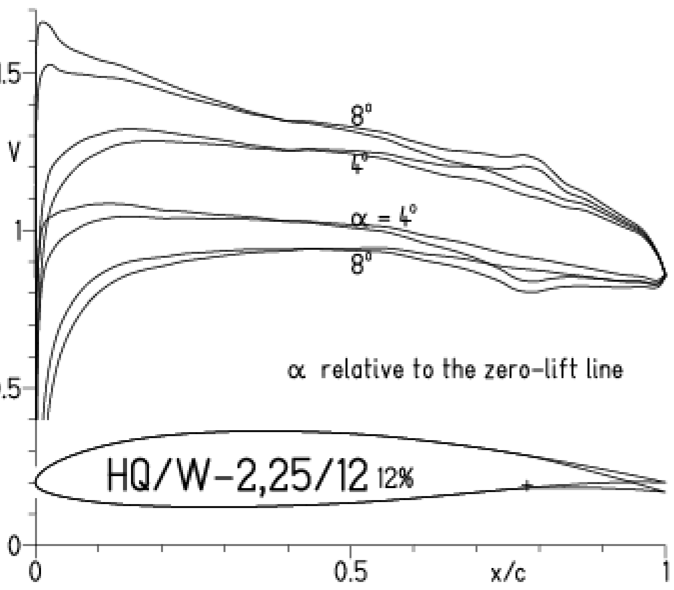
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



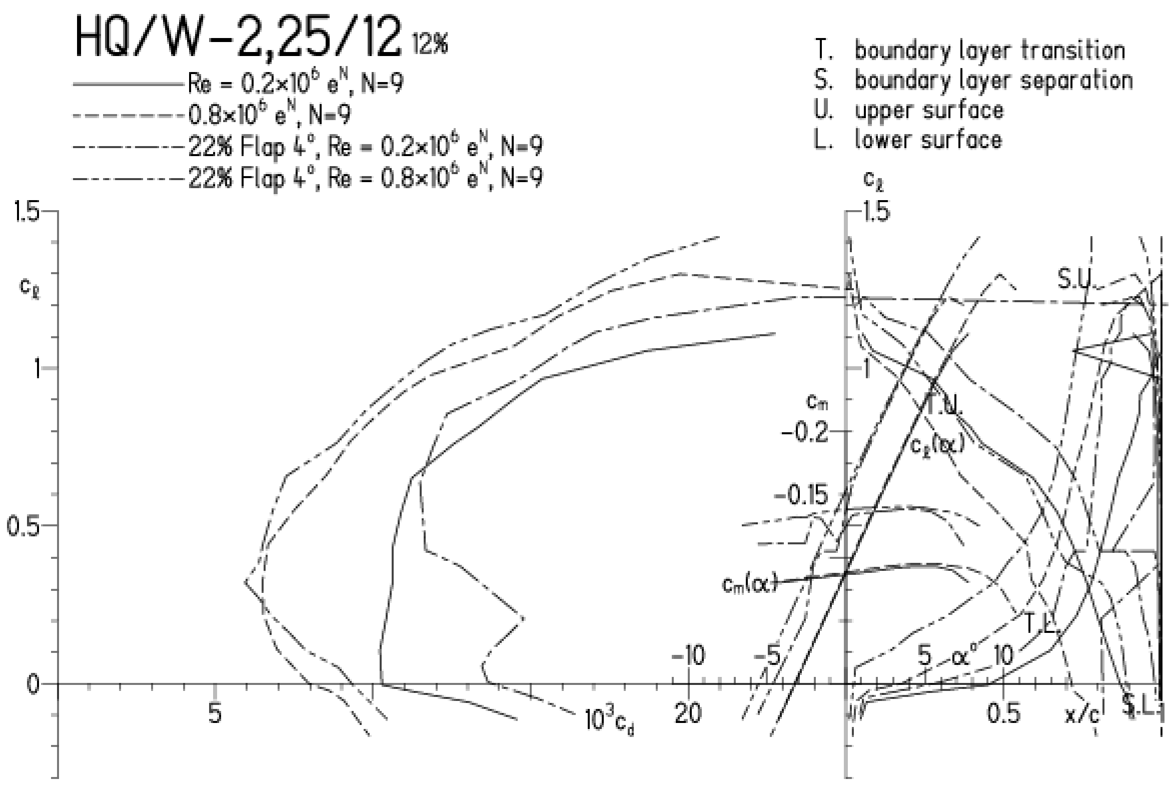


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

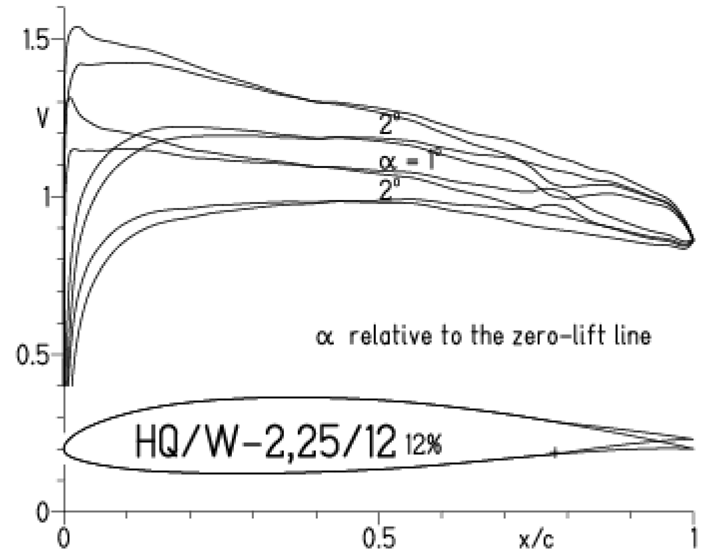


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

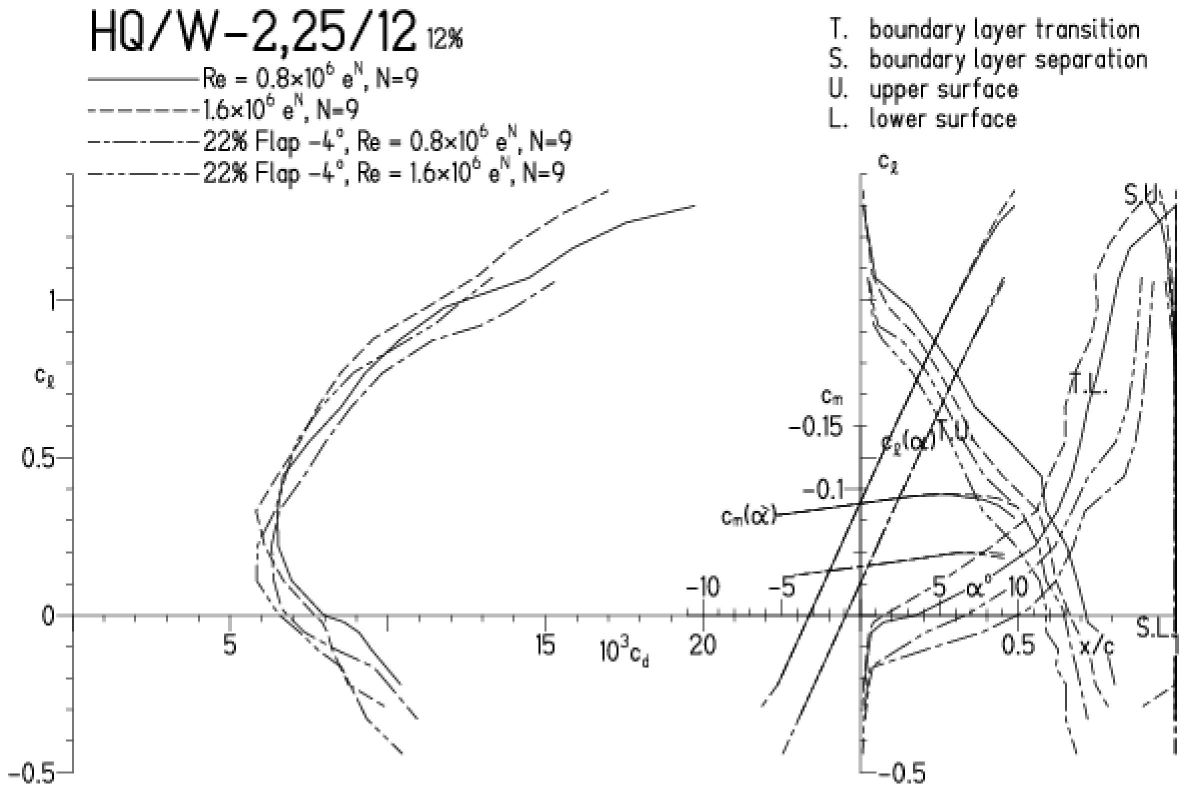


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

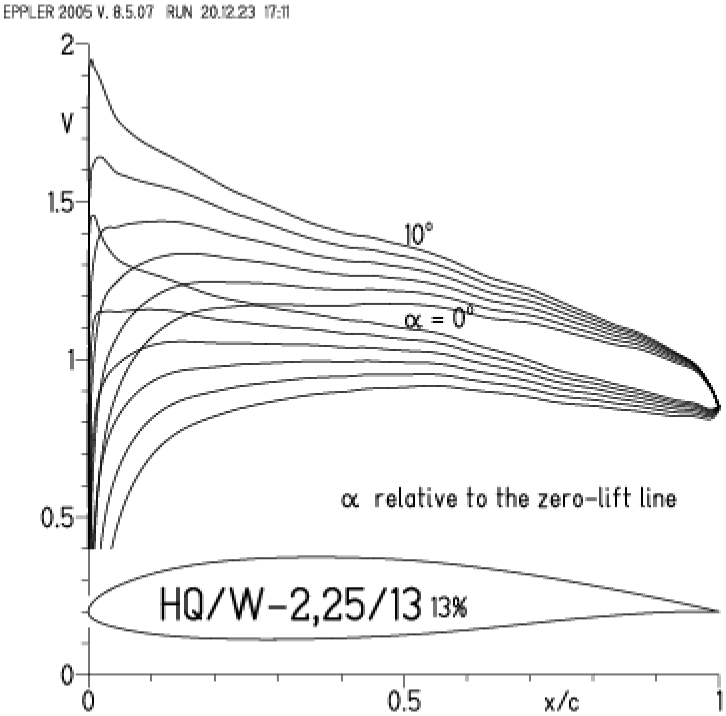
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

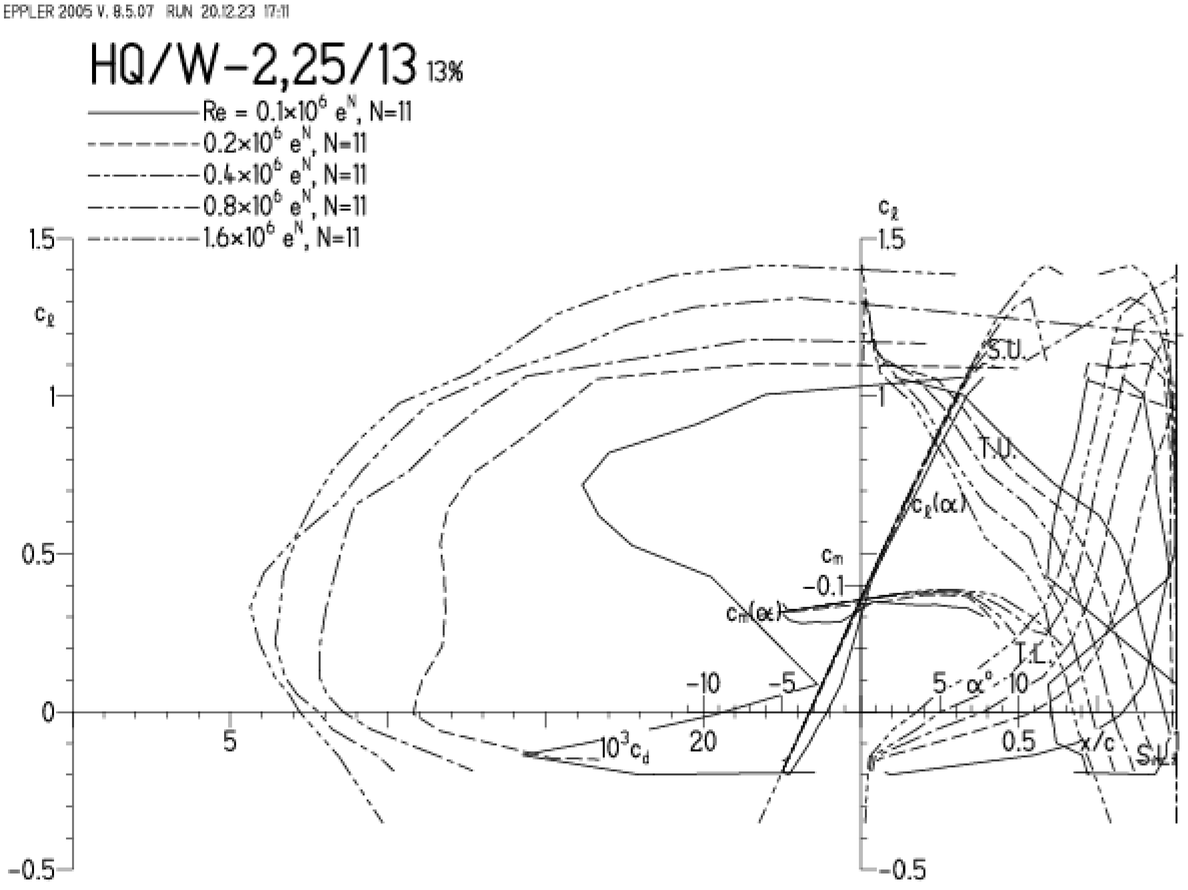


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

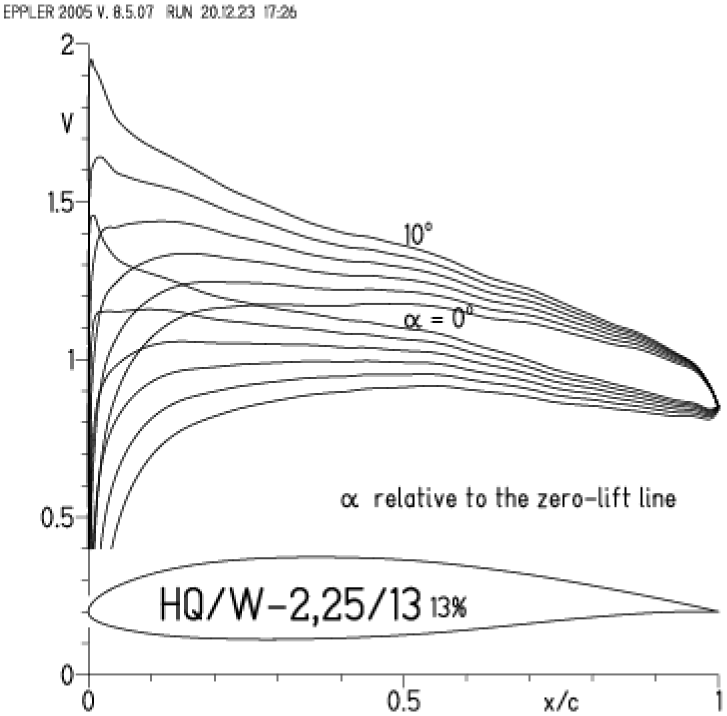


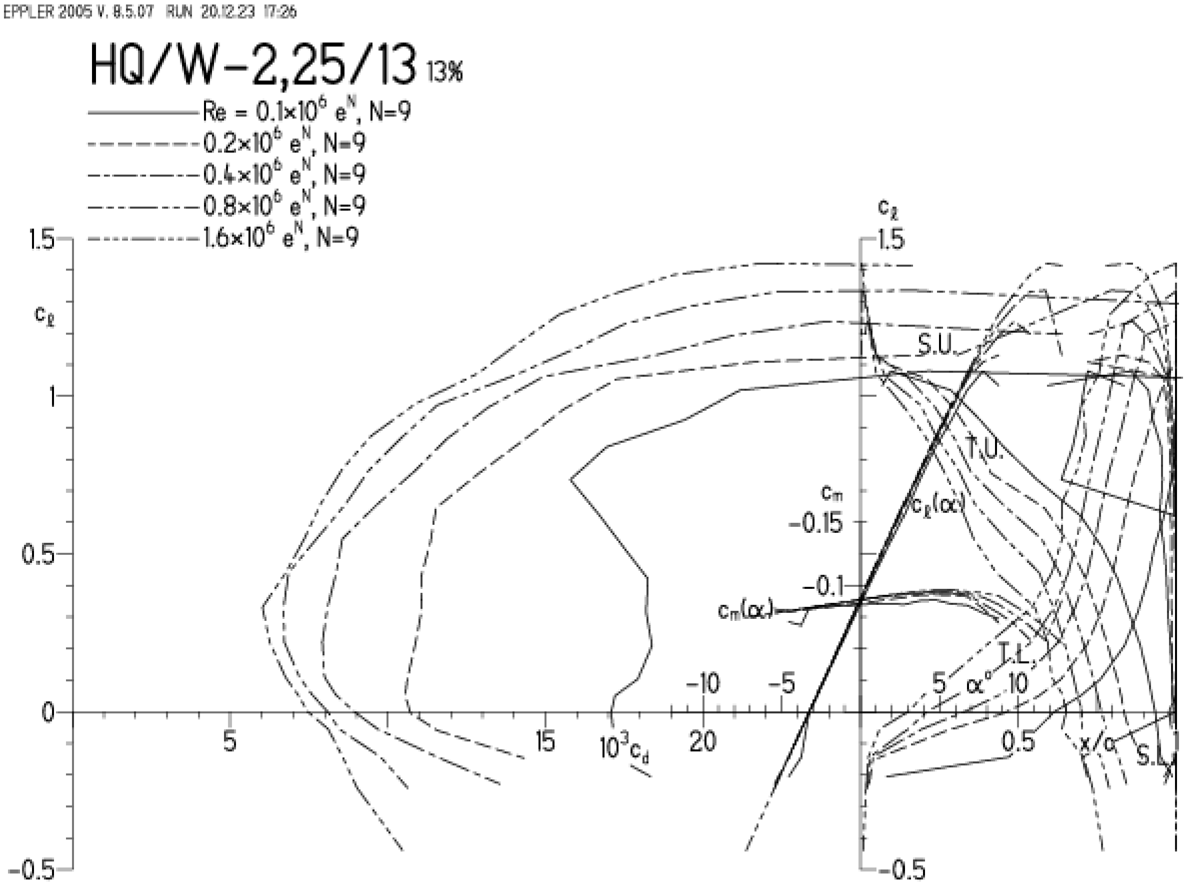
HQ/W-2,25/13, N=11



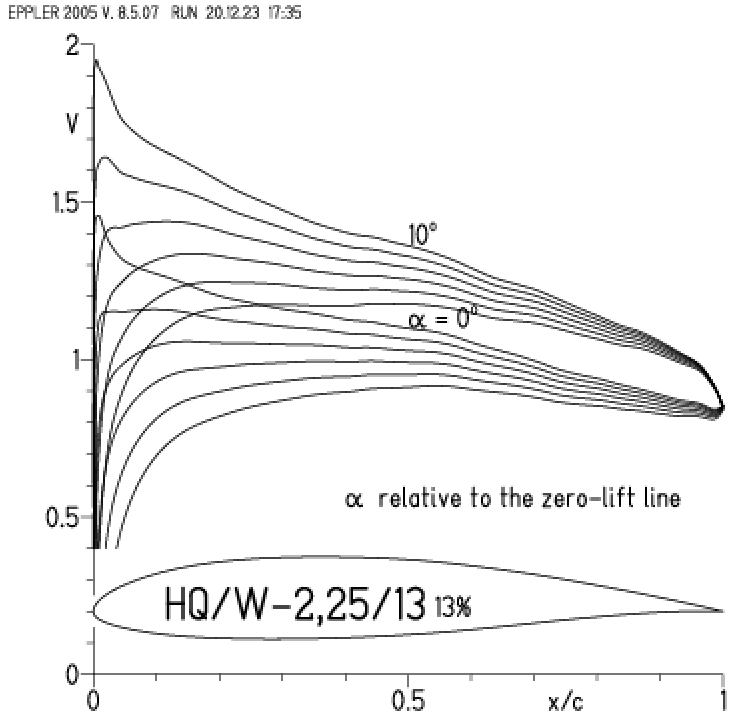


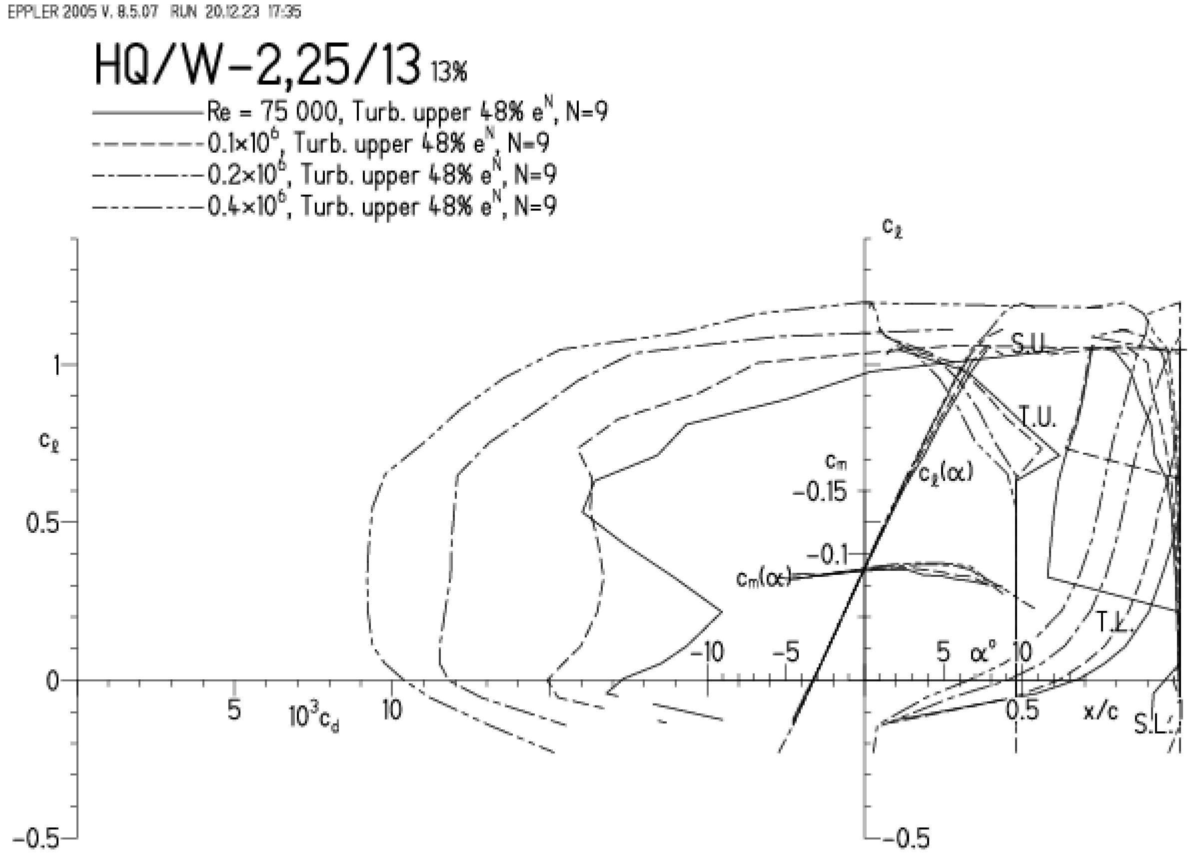
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_ℓ(α)
c_m
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

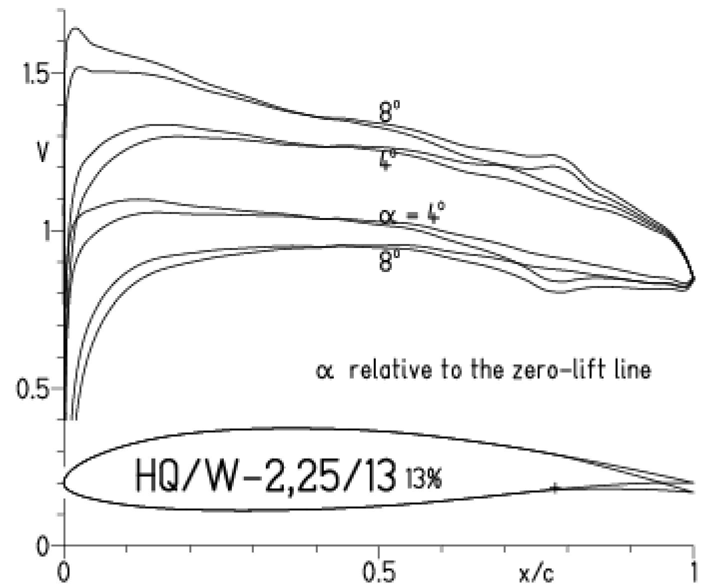
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



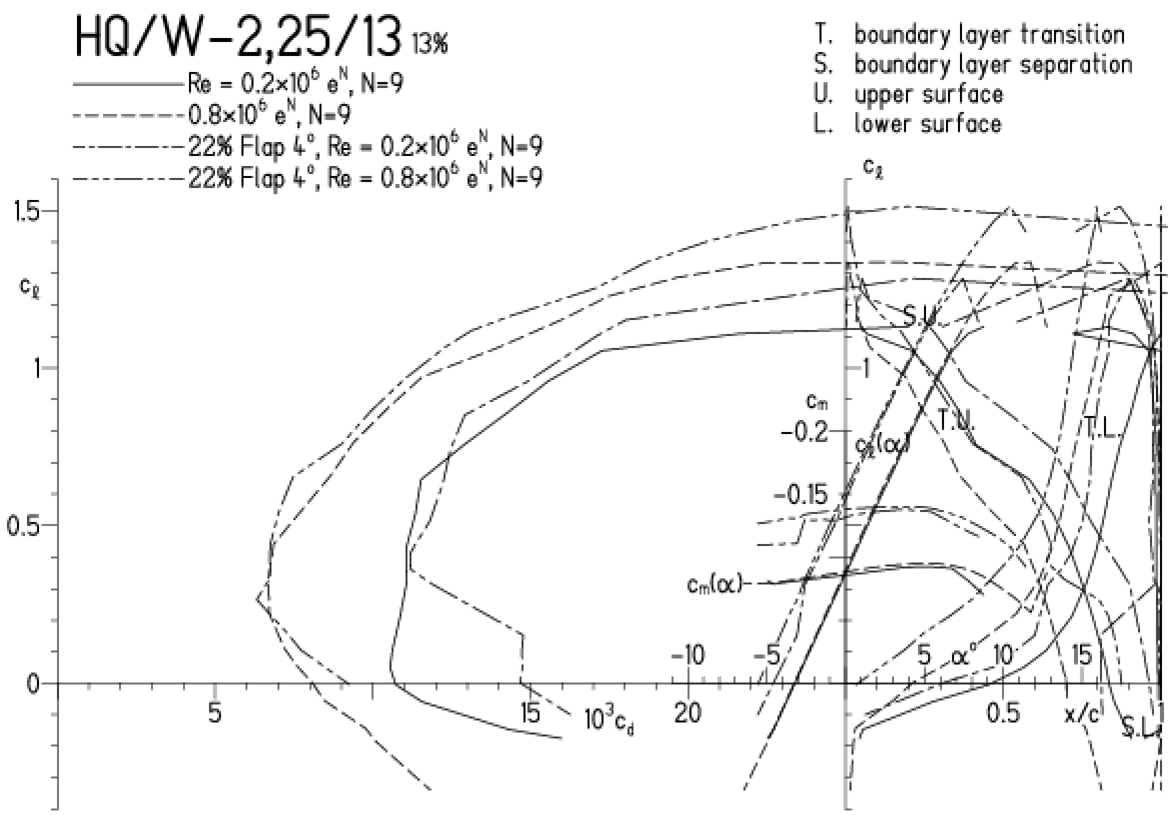


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

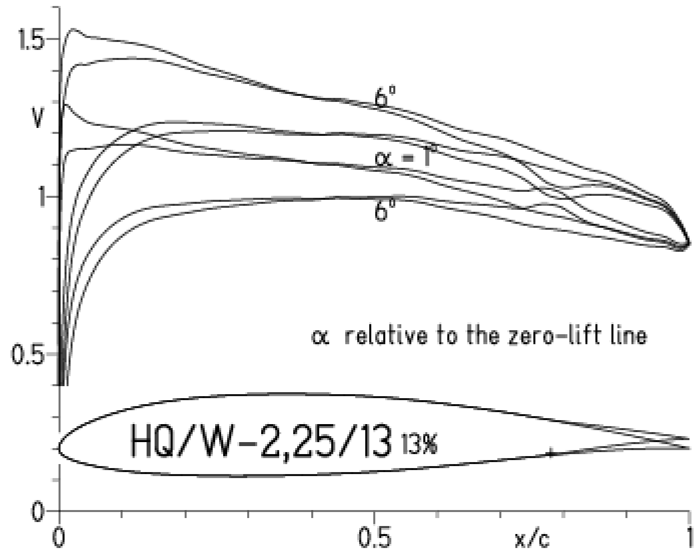


EPPLER 2005 V.

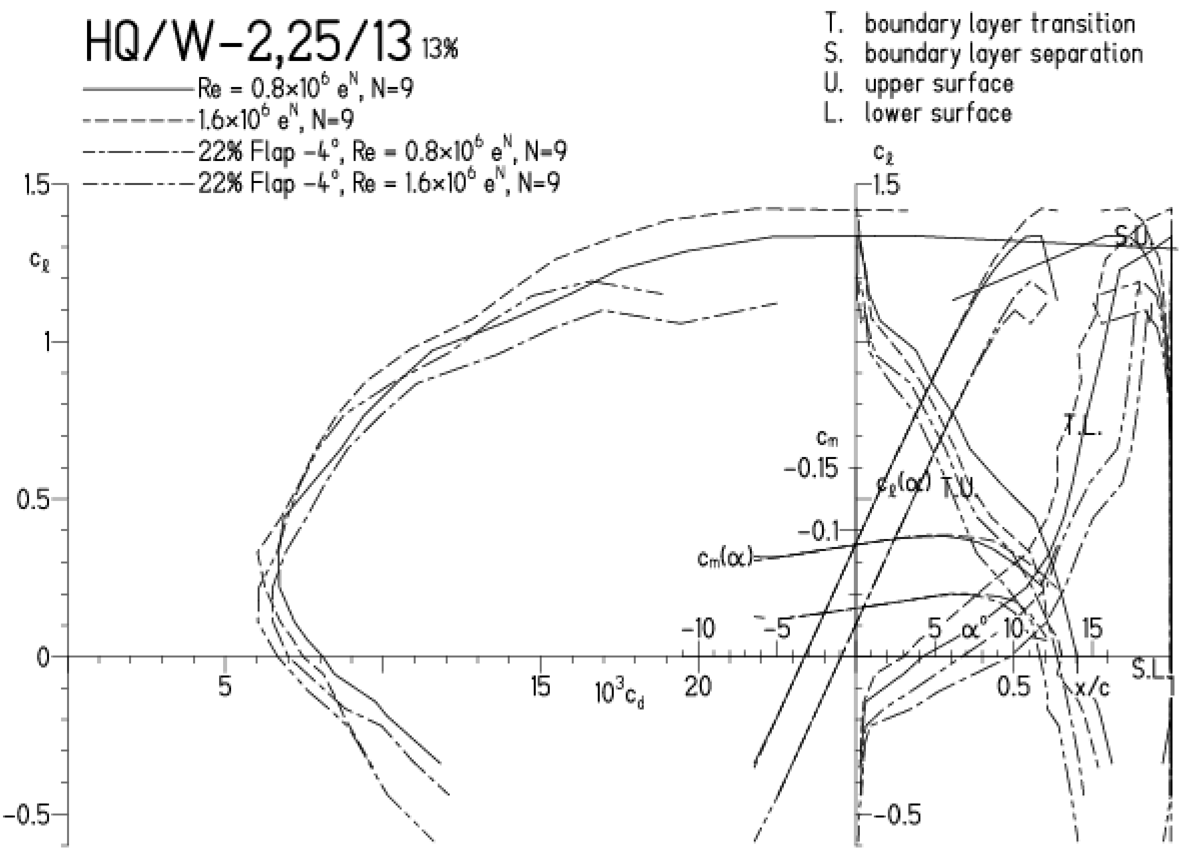


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

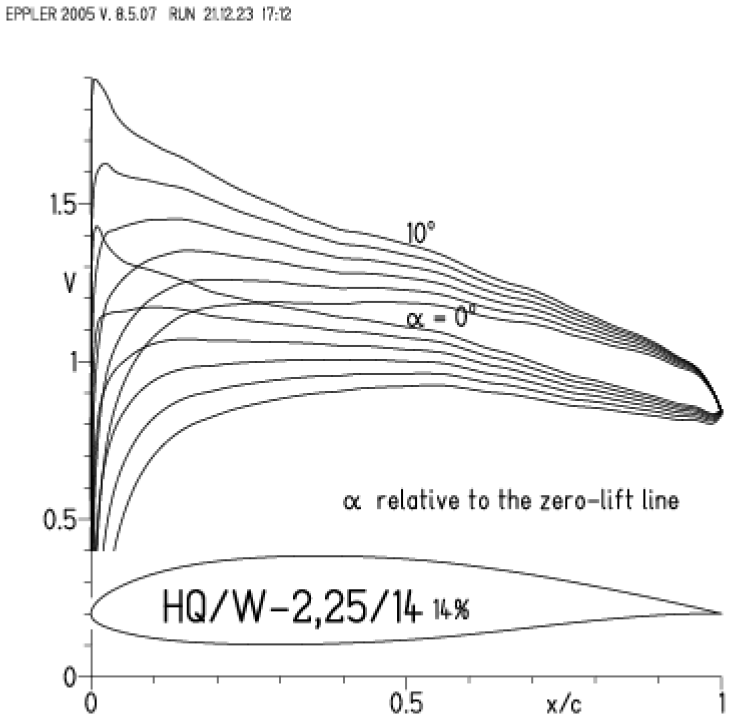
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

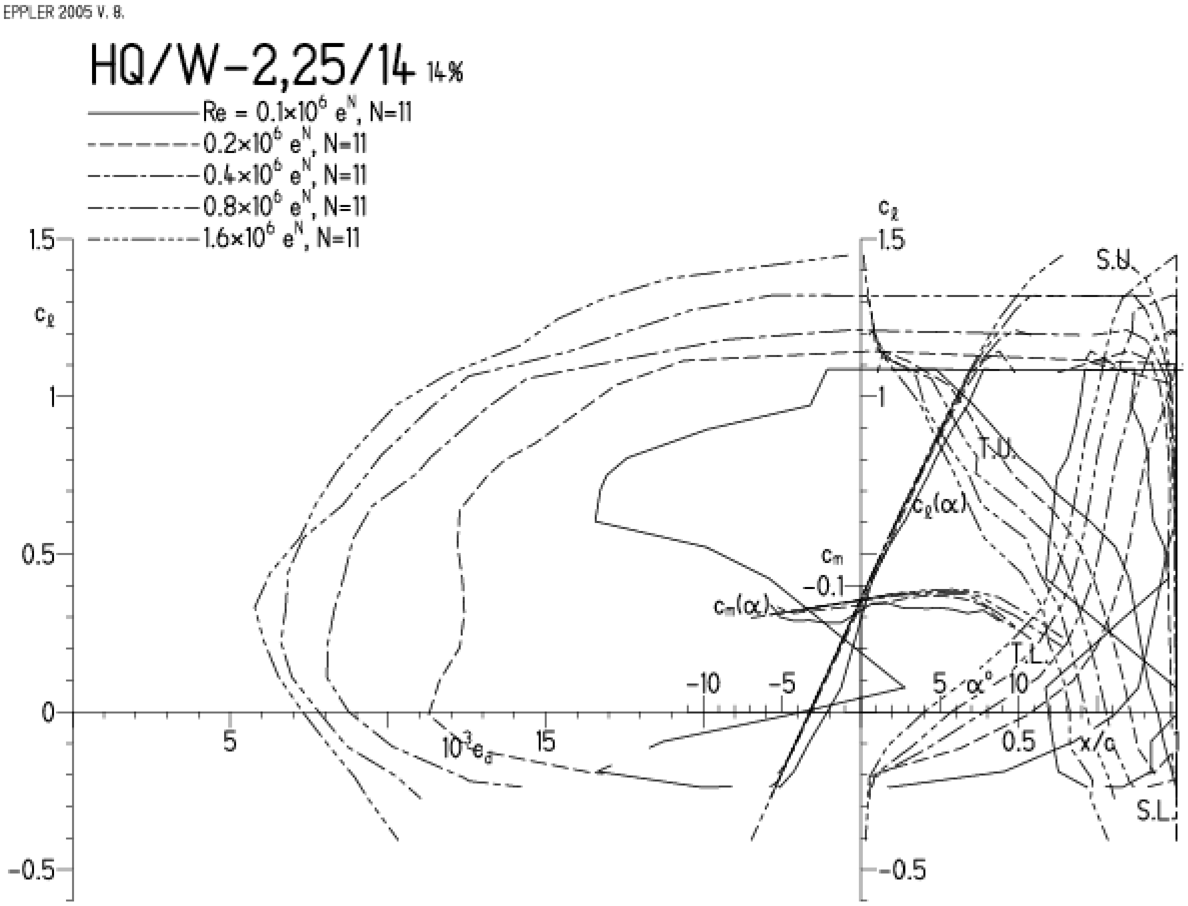


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

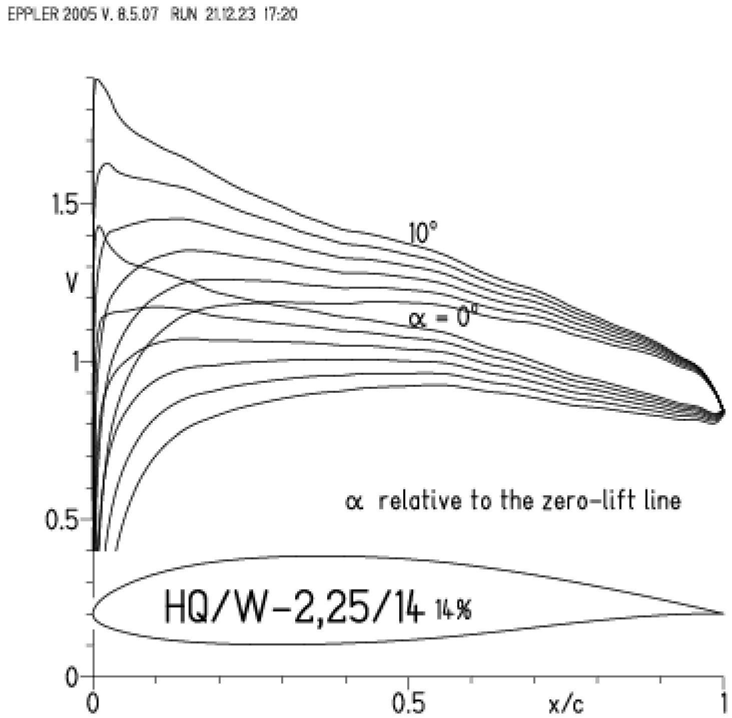


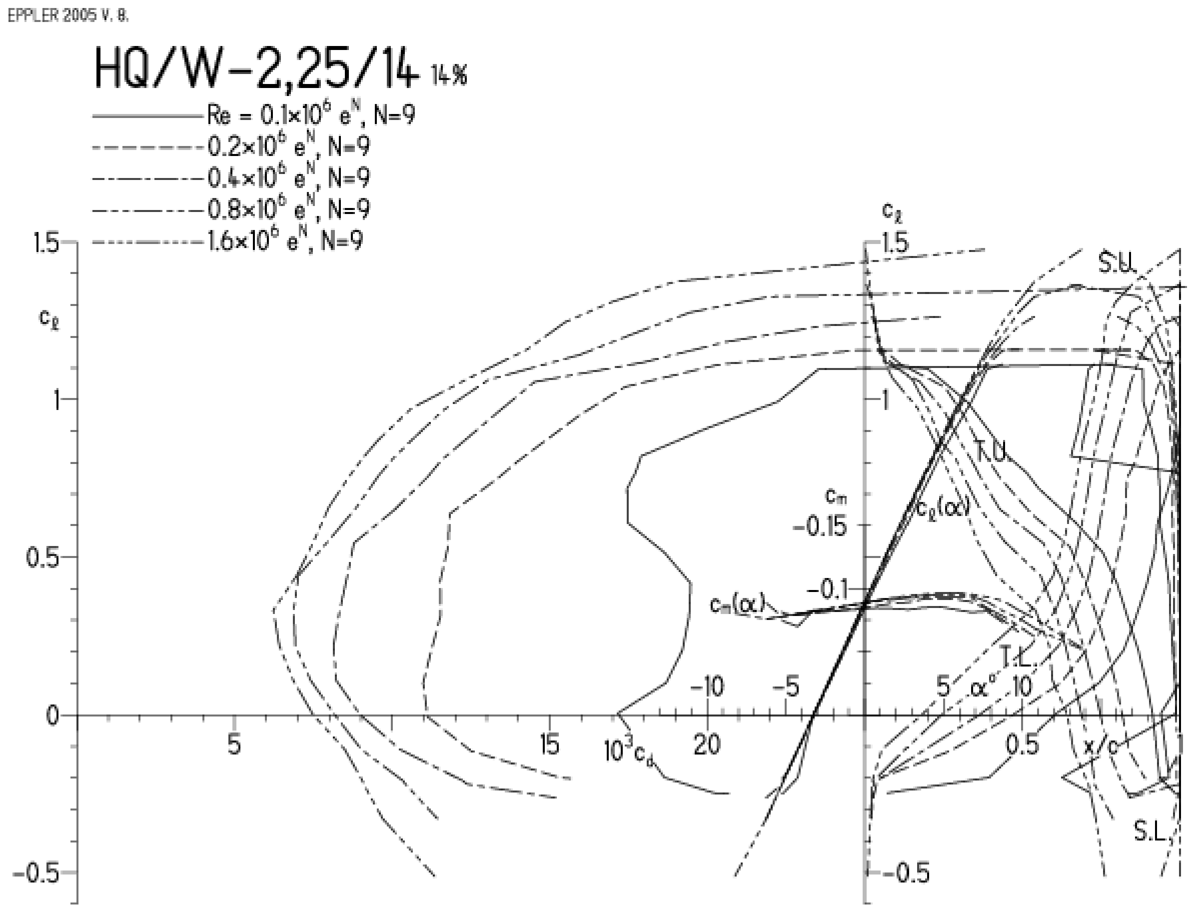
HQ/W-2,25/14, N=11



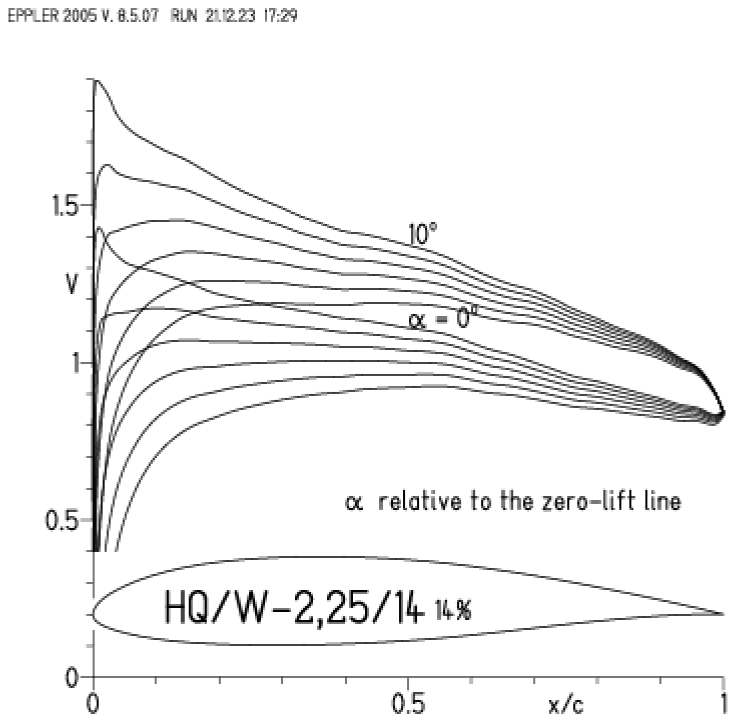


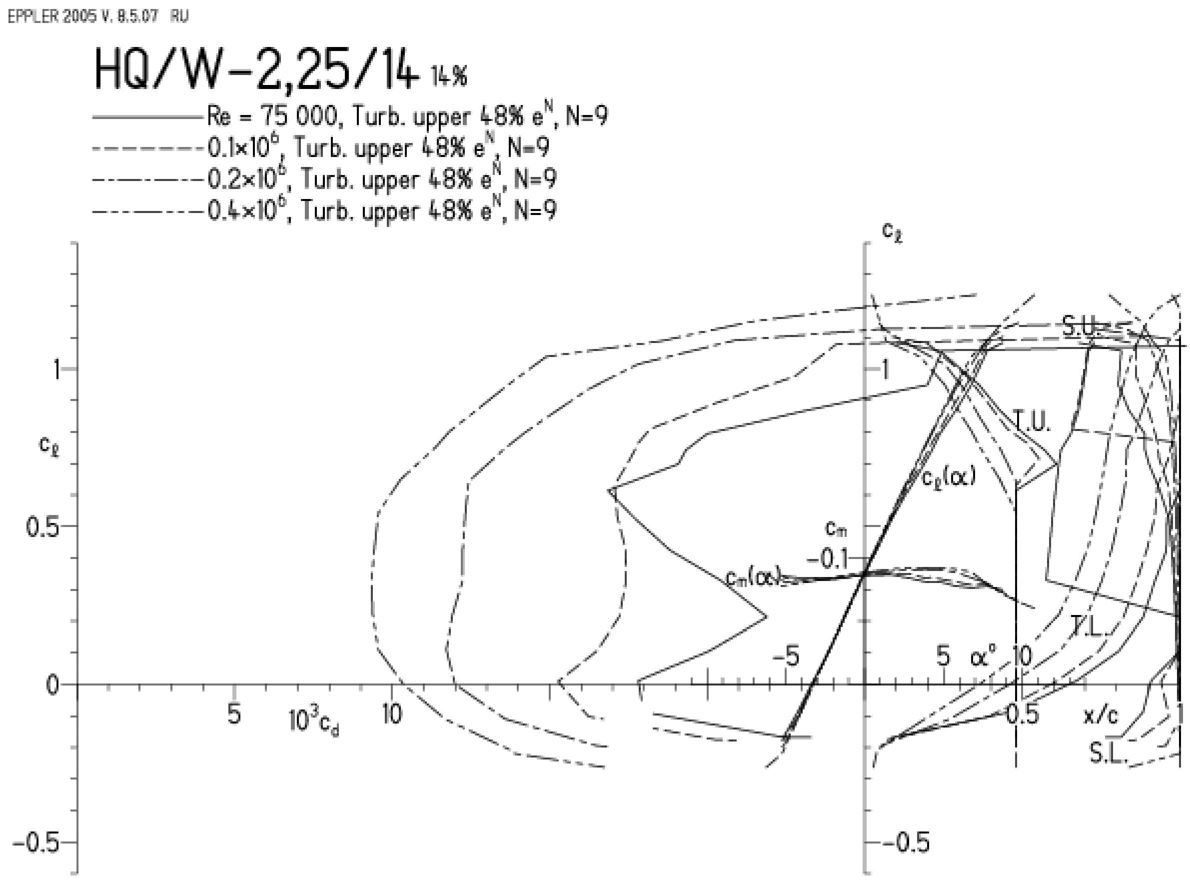
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

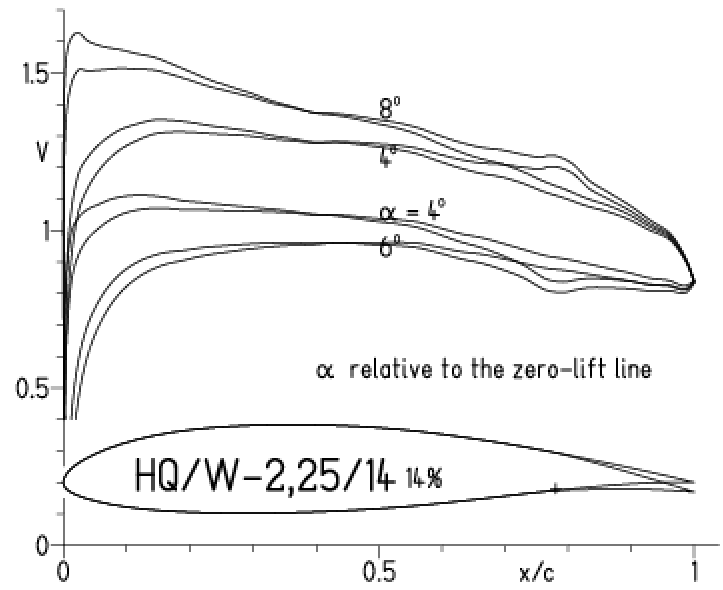
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



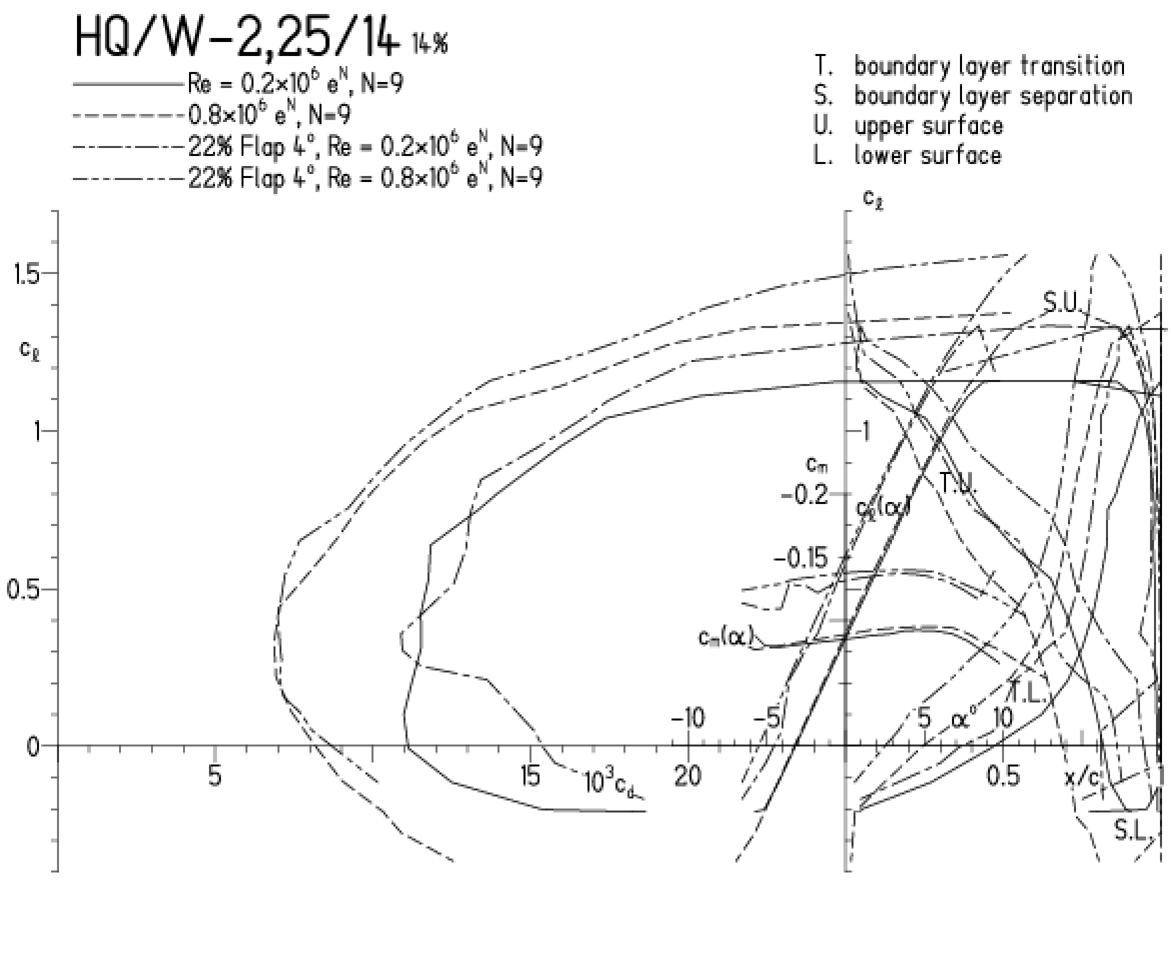


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

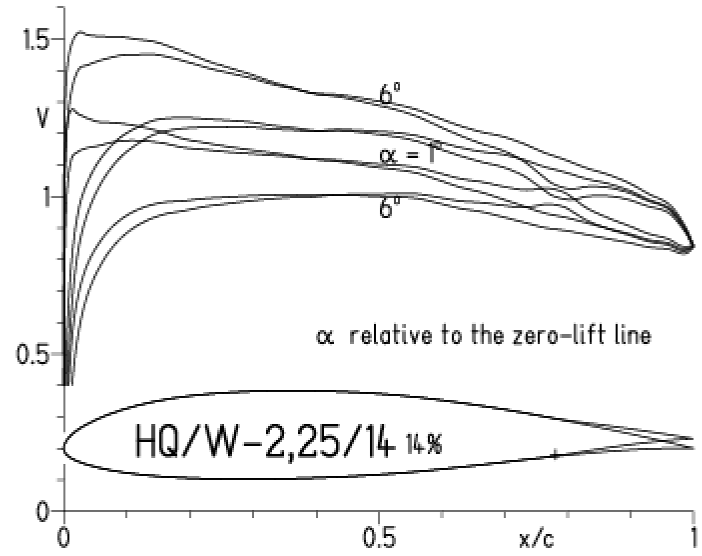


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

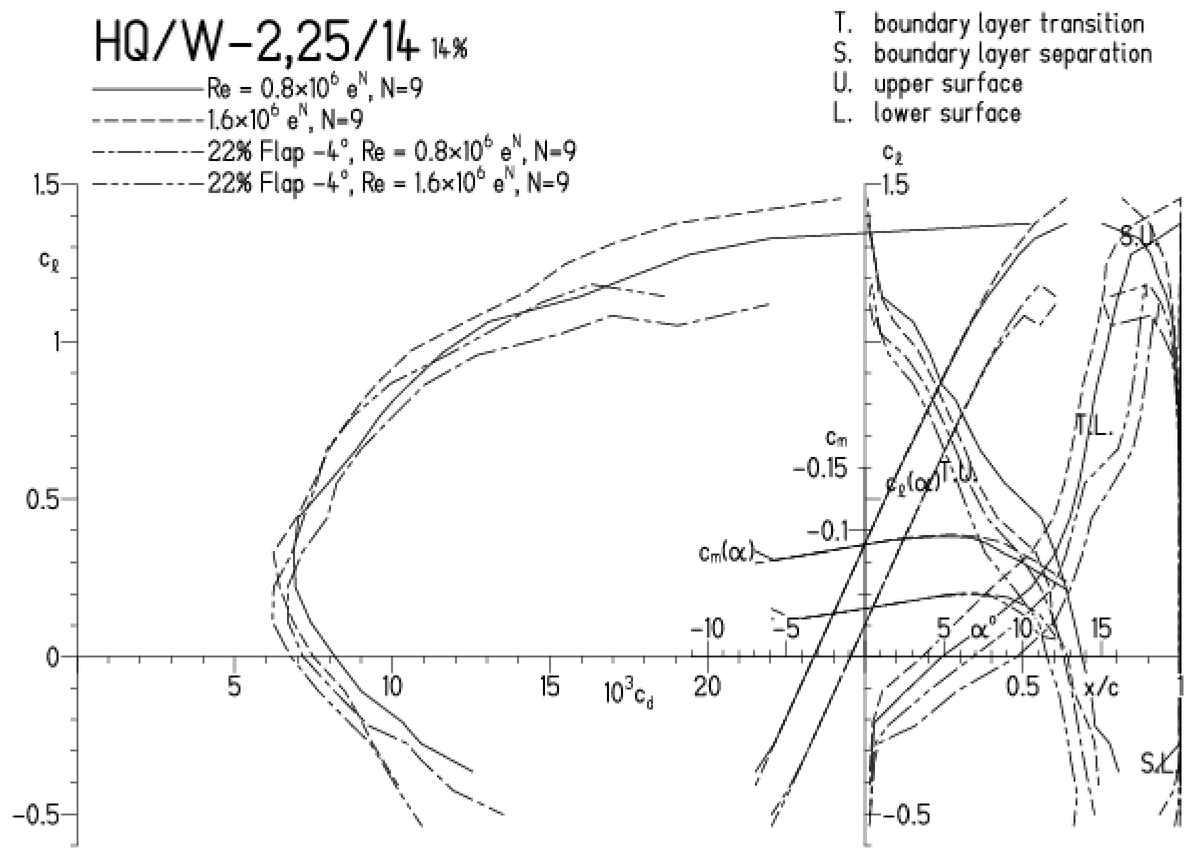


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

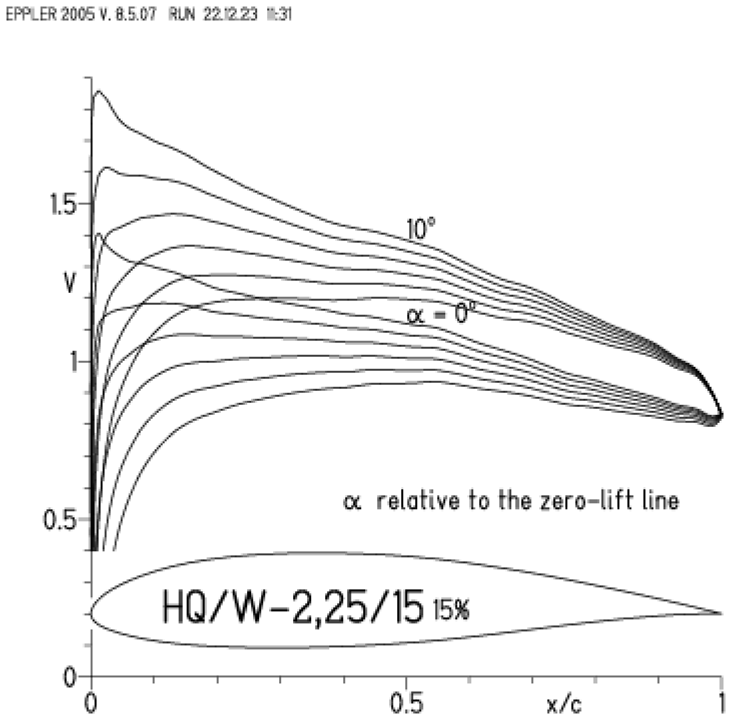
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

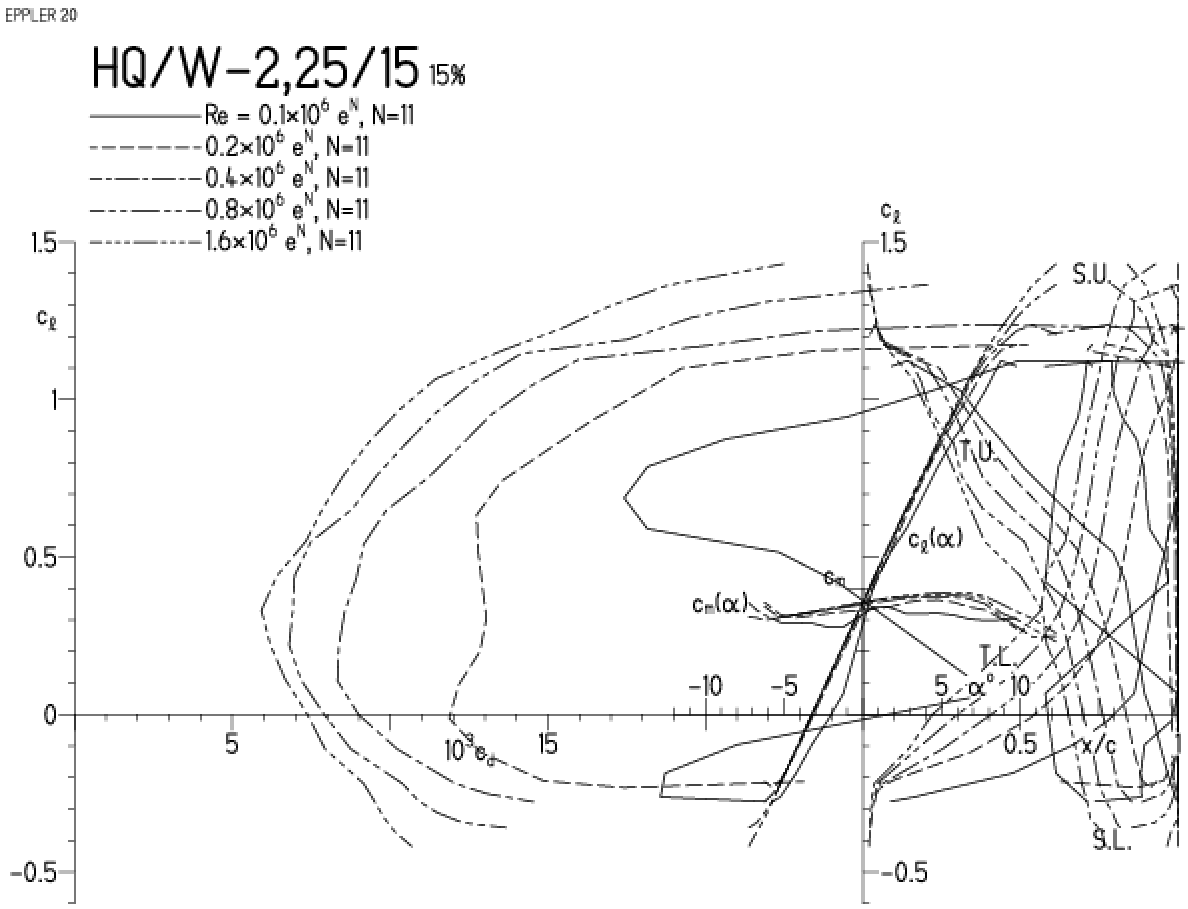


EPPLER 2005 V. 8.5.07

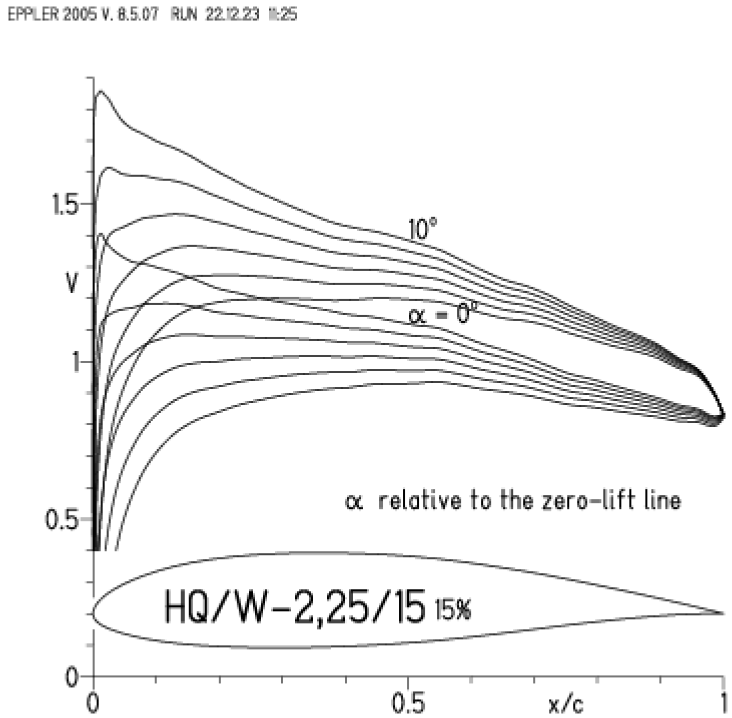


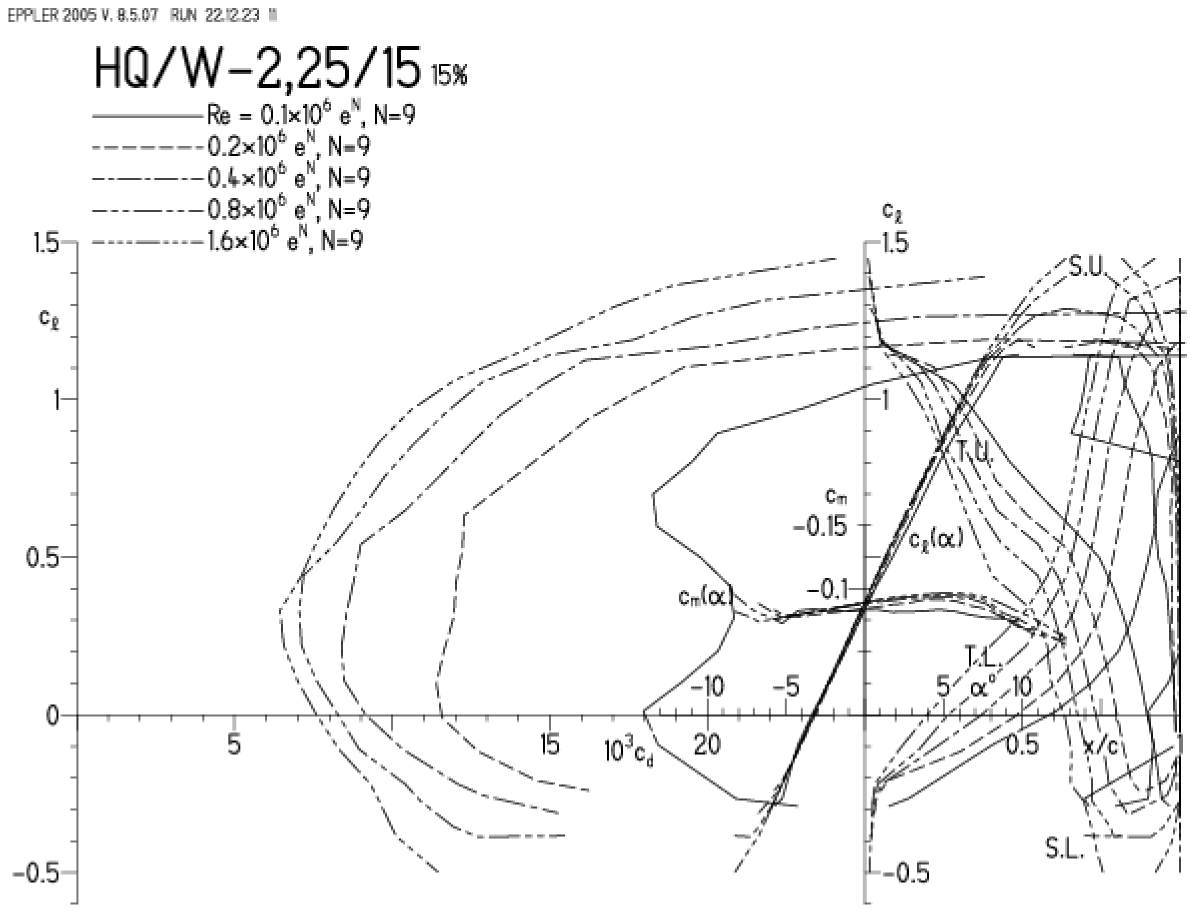
HQ/W-2,25/15, N=11



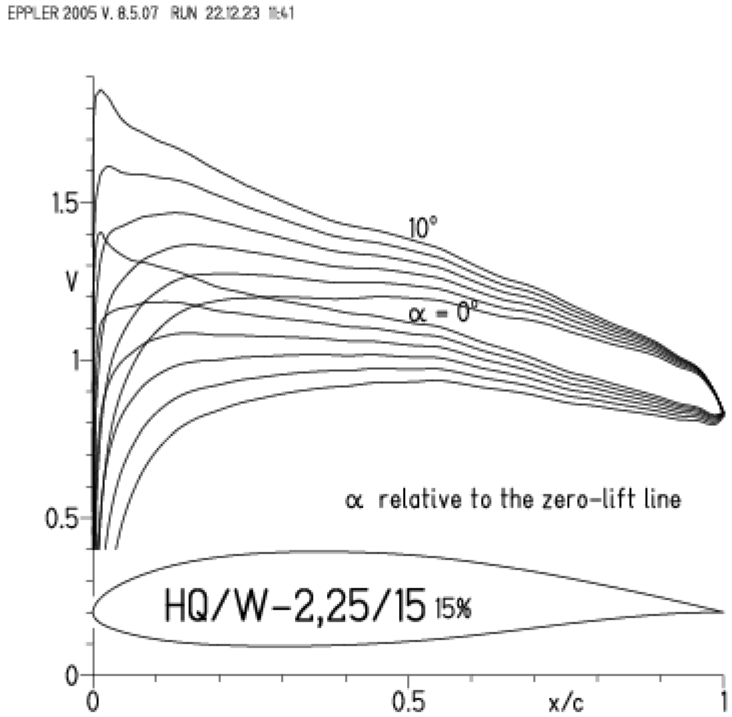


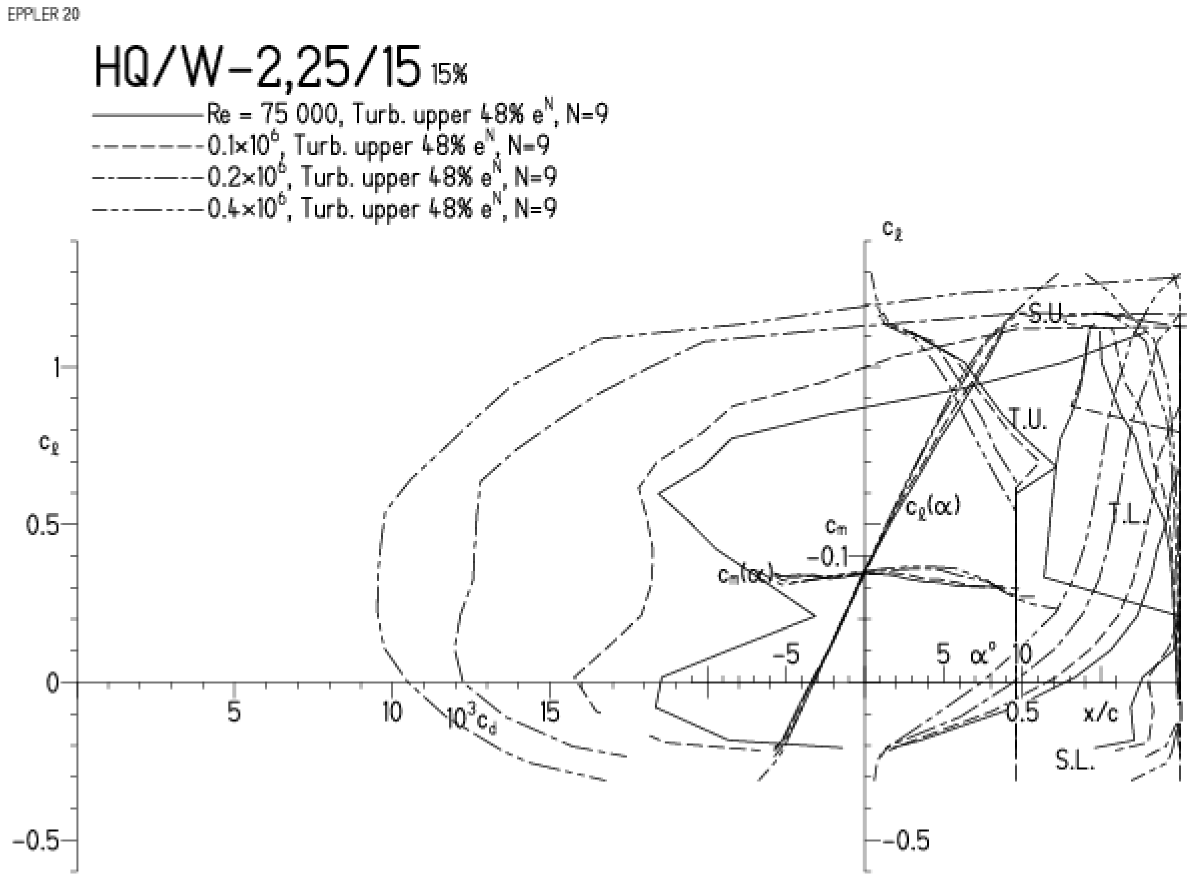
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cm
-0.15
-0.1
cl(α)
cm(α)
10³cd
α°
x/c

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



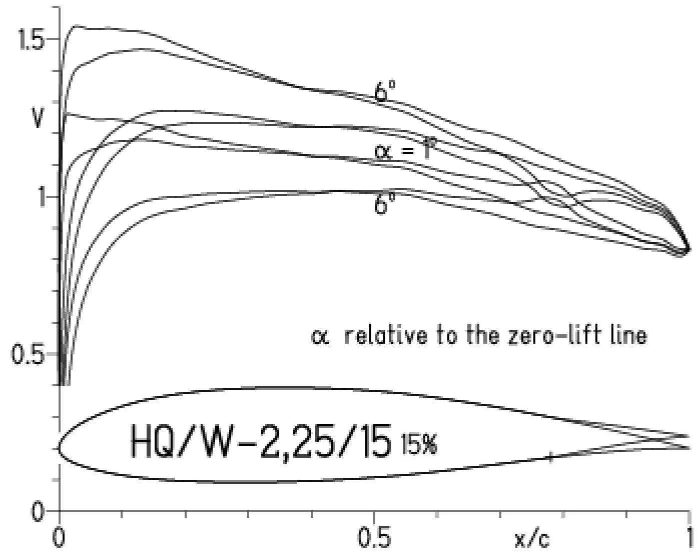


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

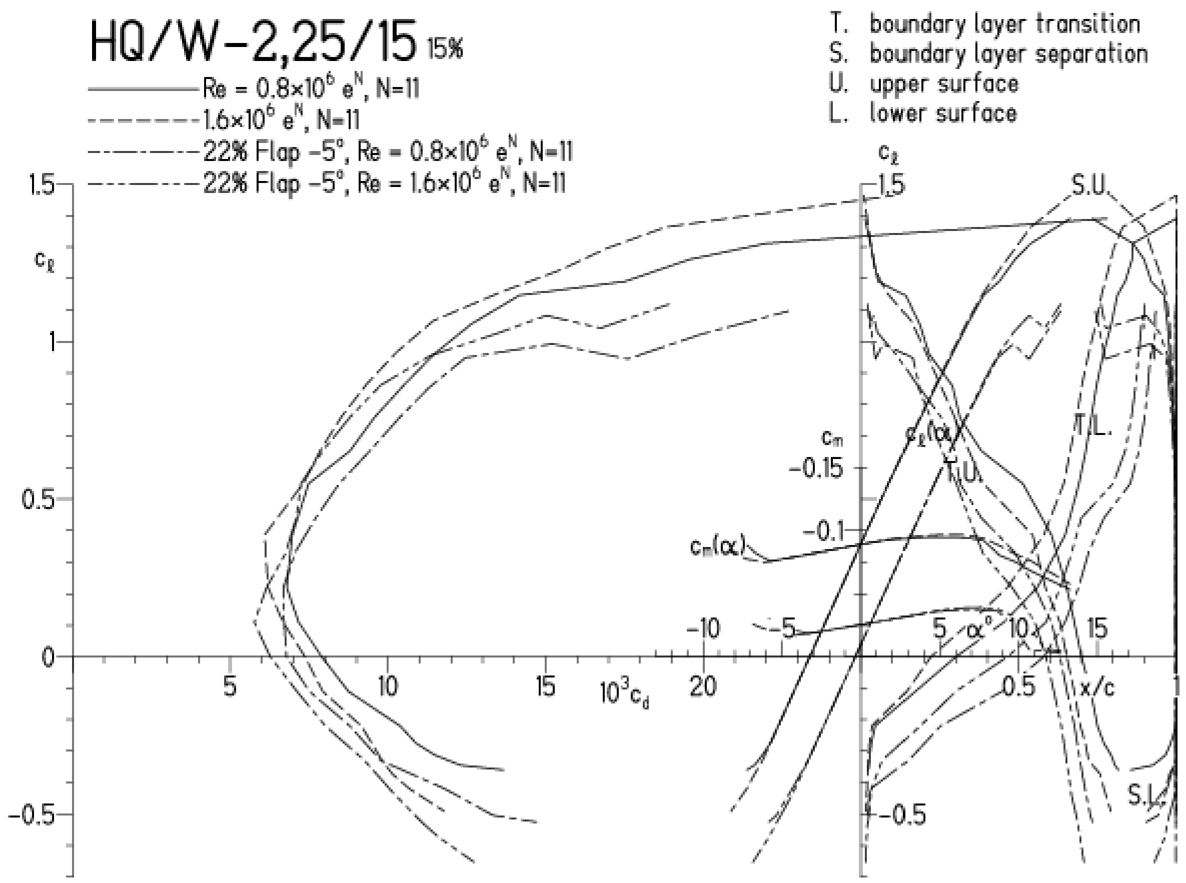
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

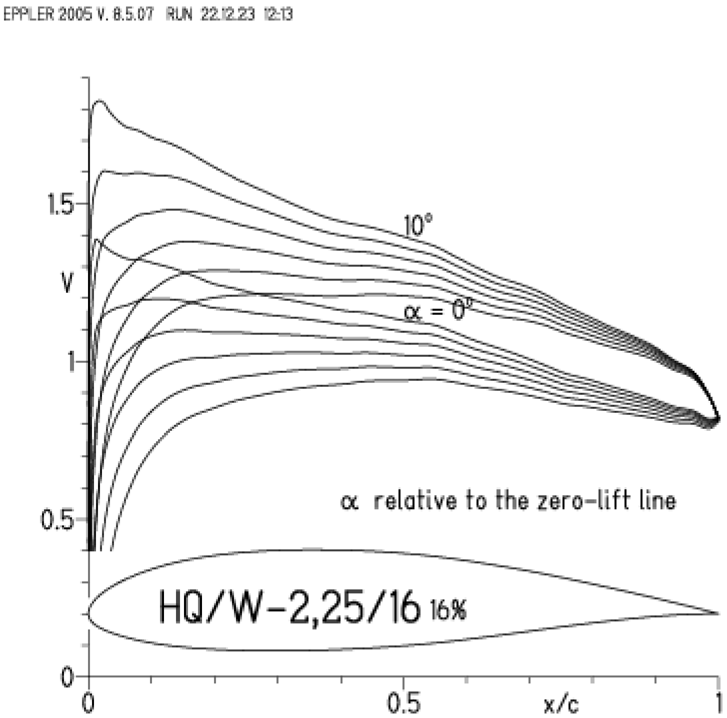
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

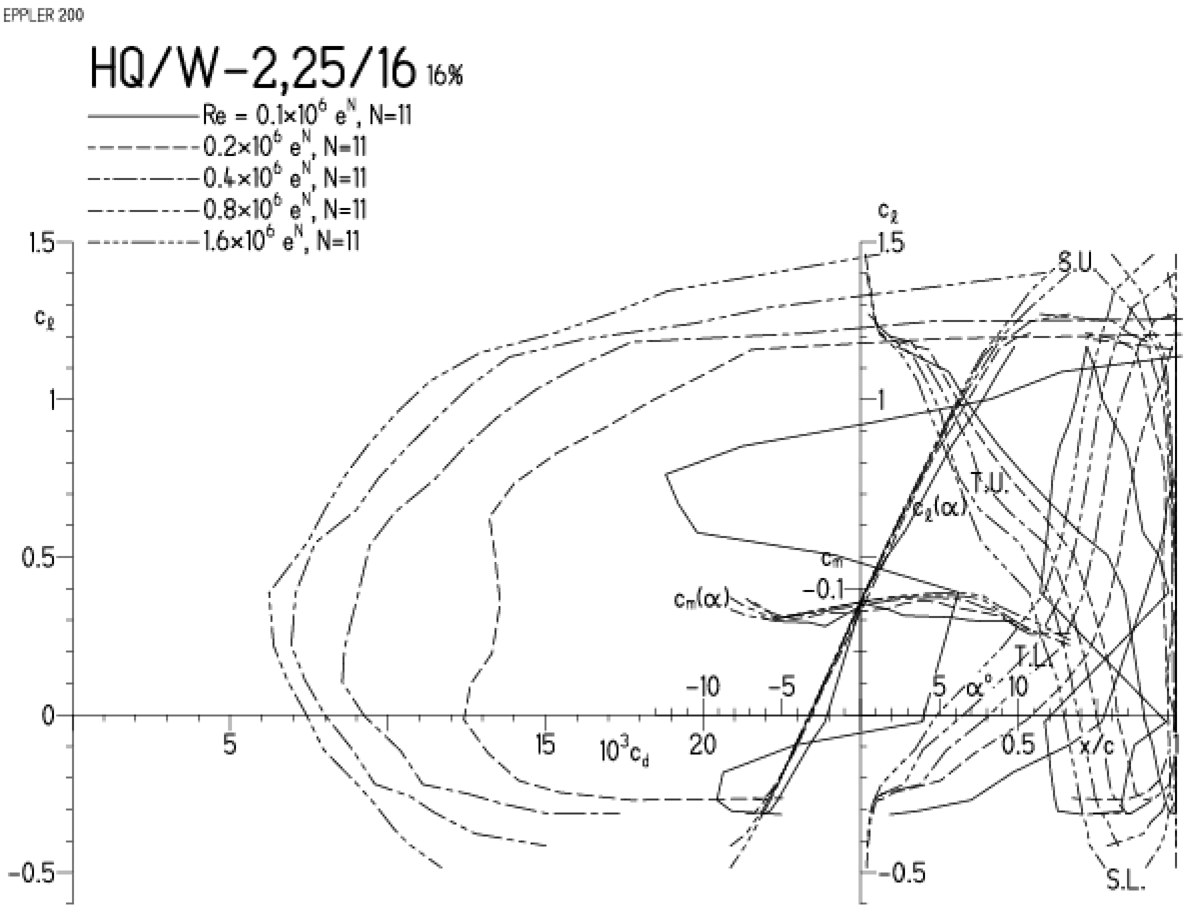


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



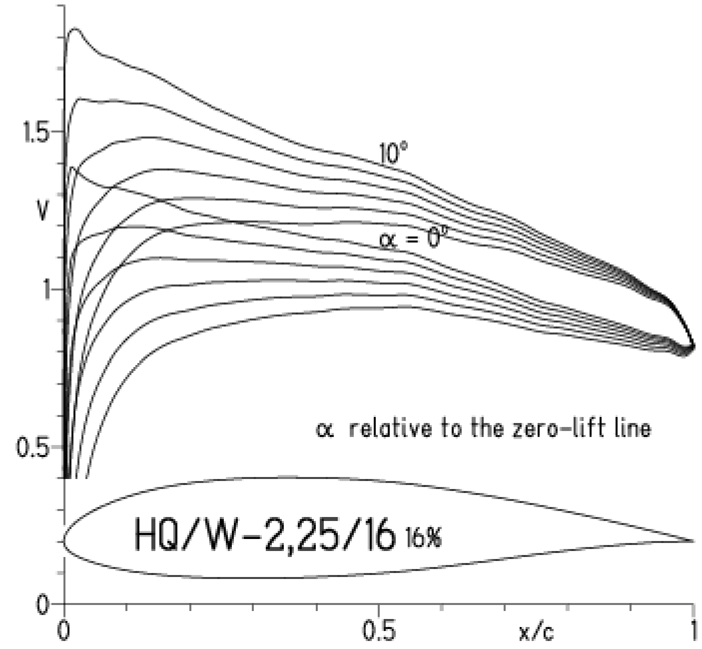
HQ/W-2,25/16, N=11



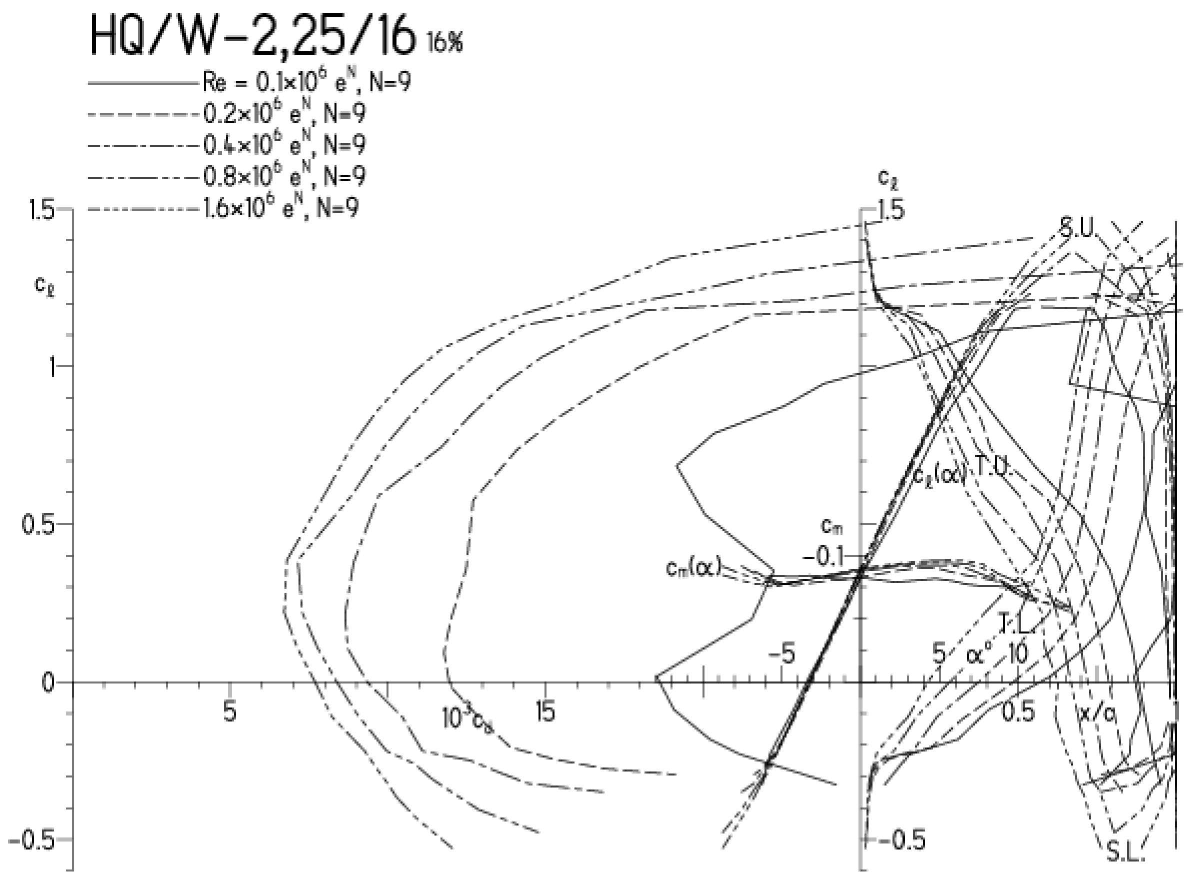


<u>HQ/W-2,25/16</u>, N=9

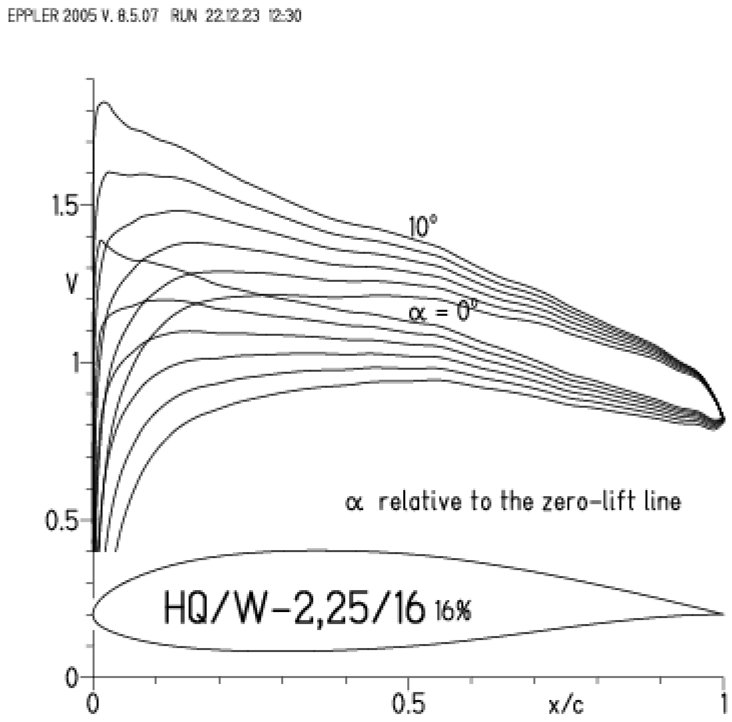
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

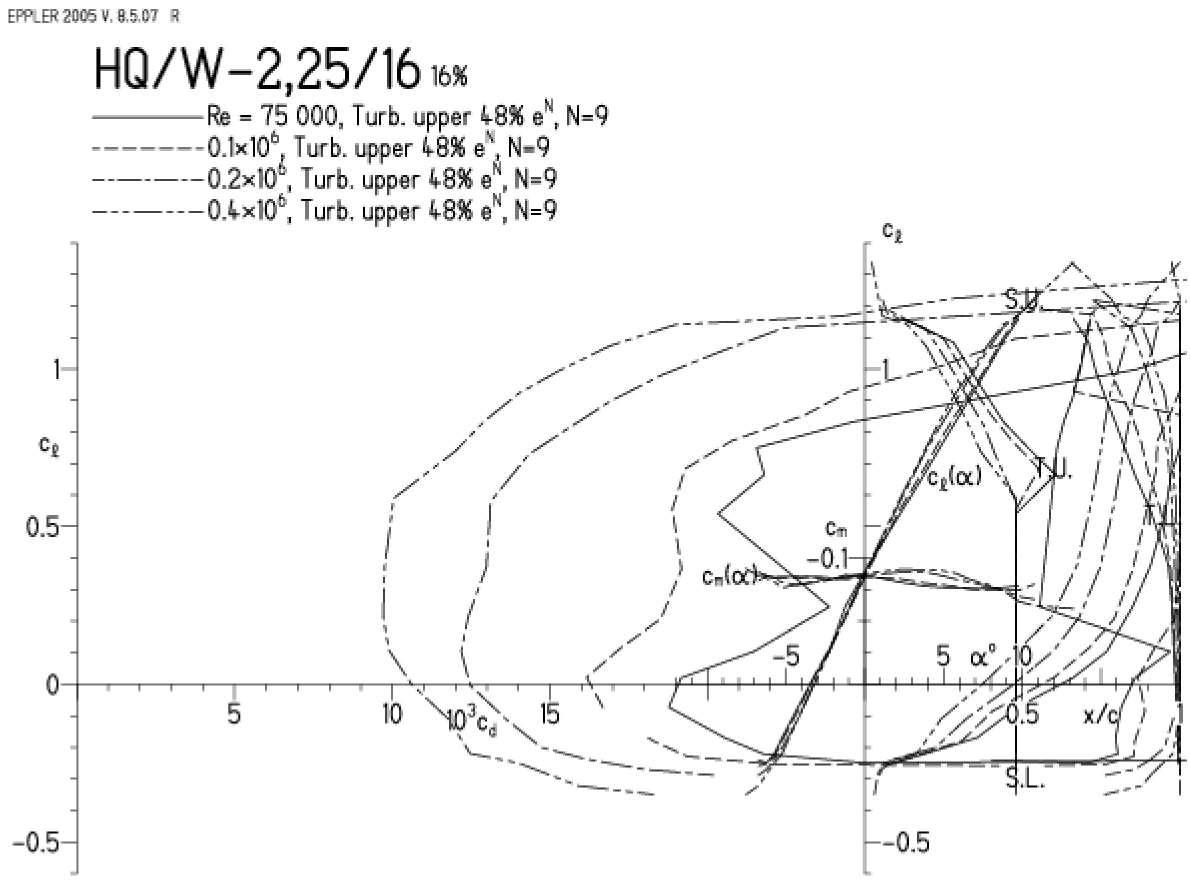


EPPLER 200



<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



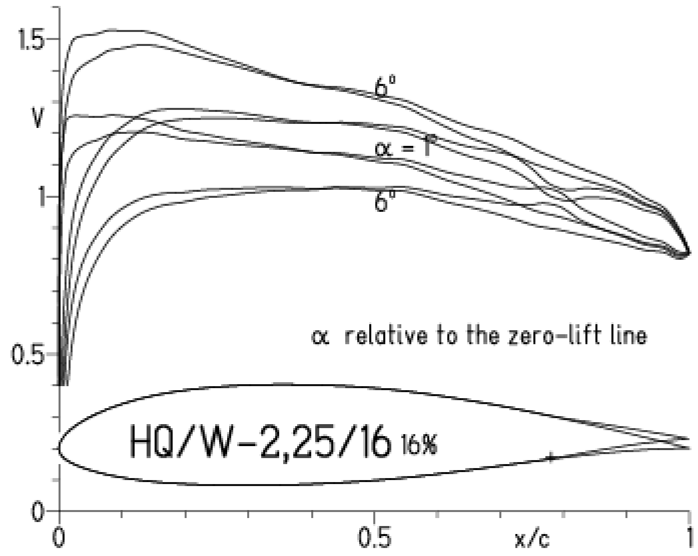


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

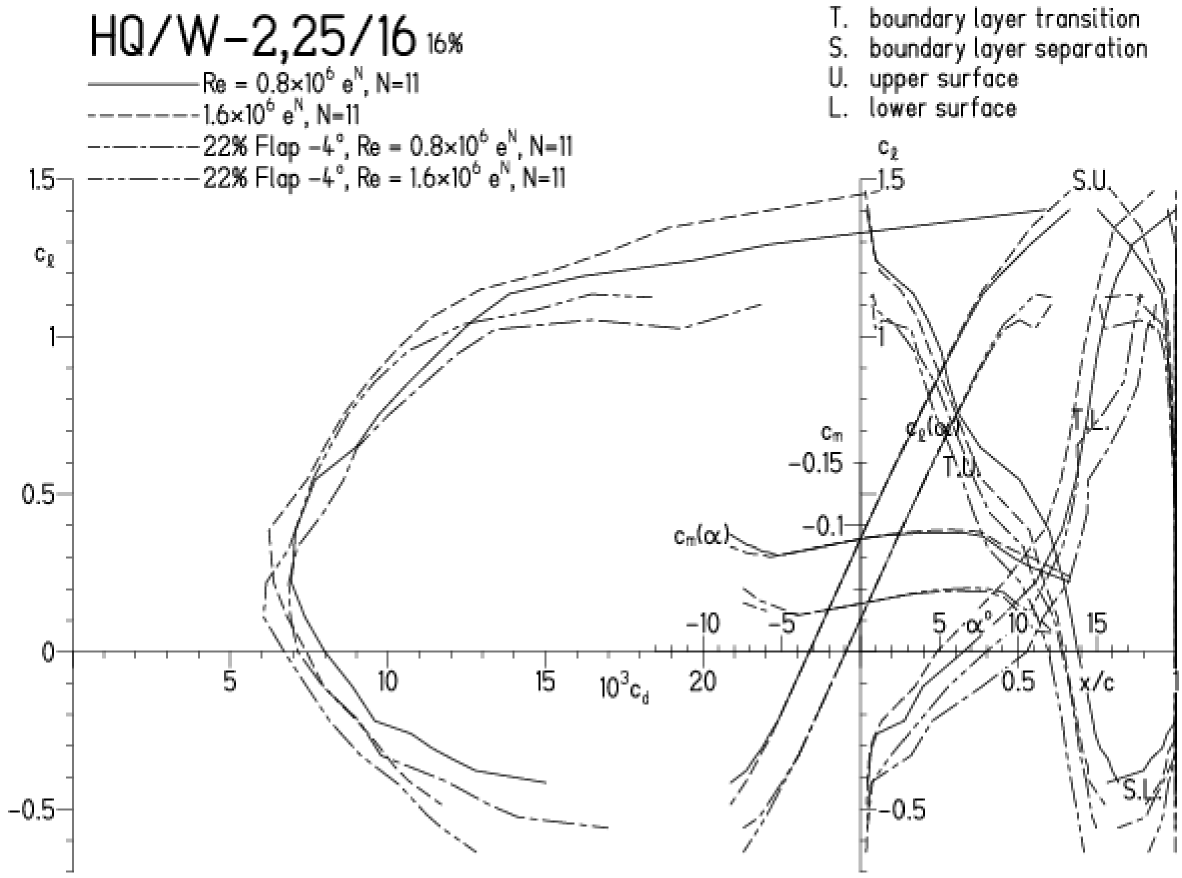
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

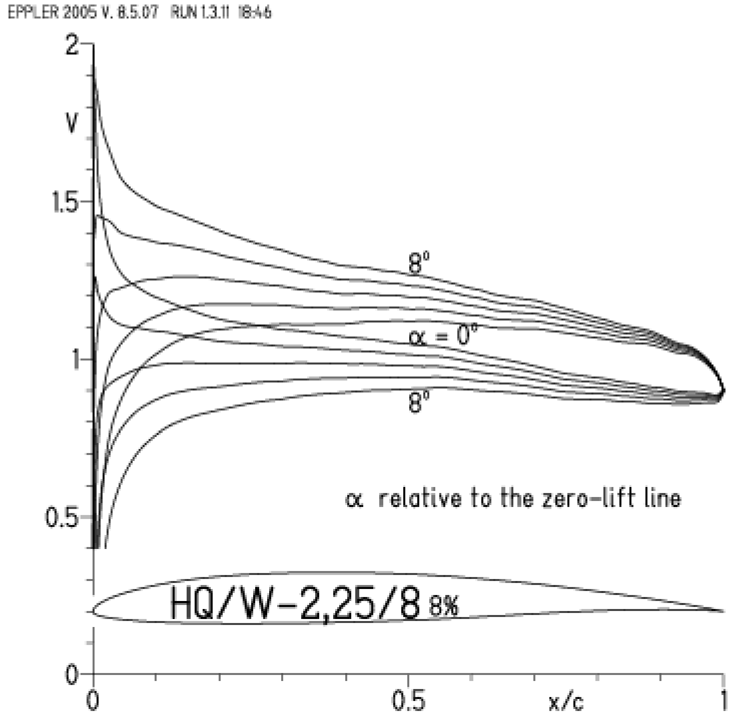
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

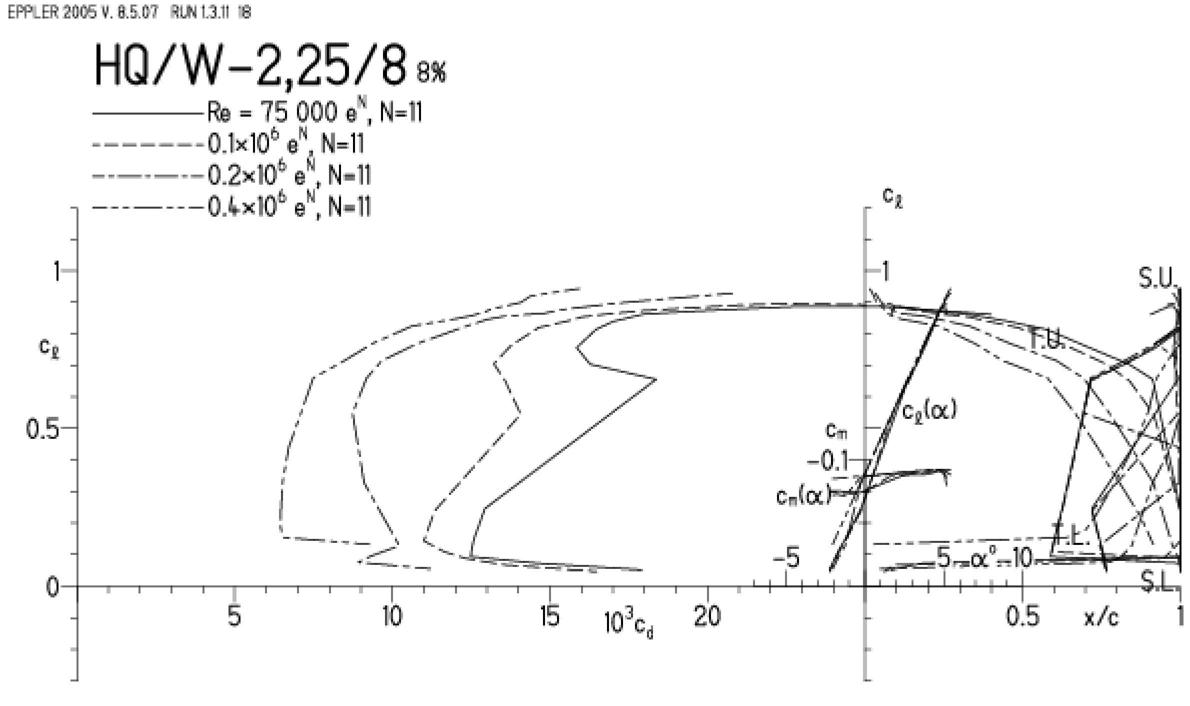


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

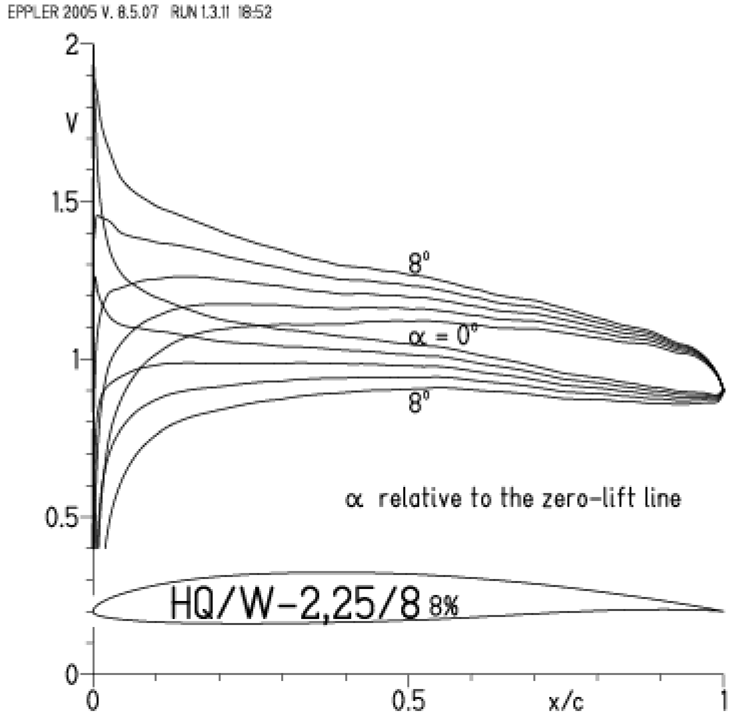


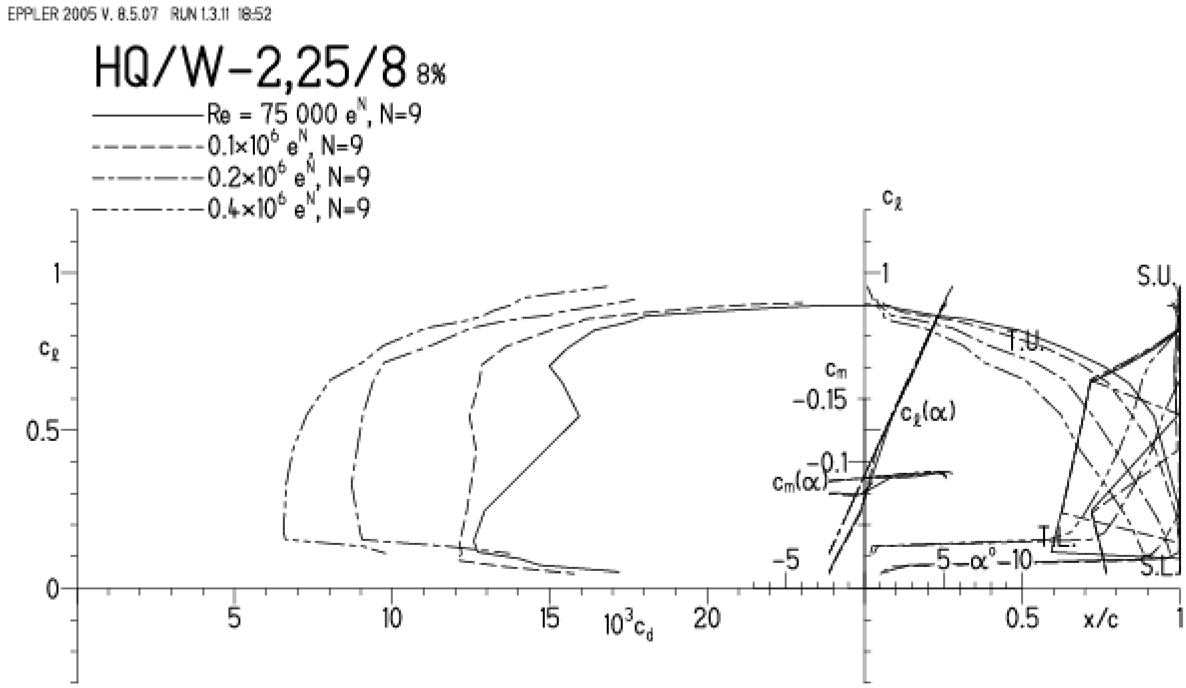
<u>HQ/W-2,25/8</u>, N=11



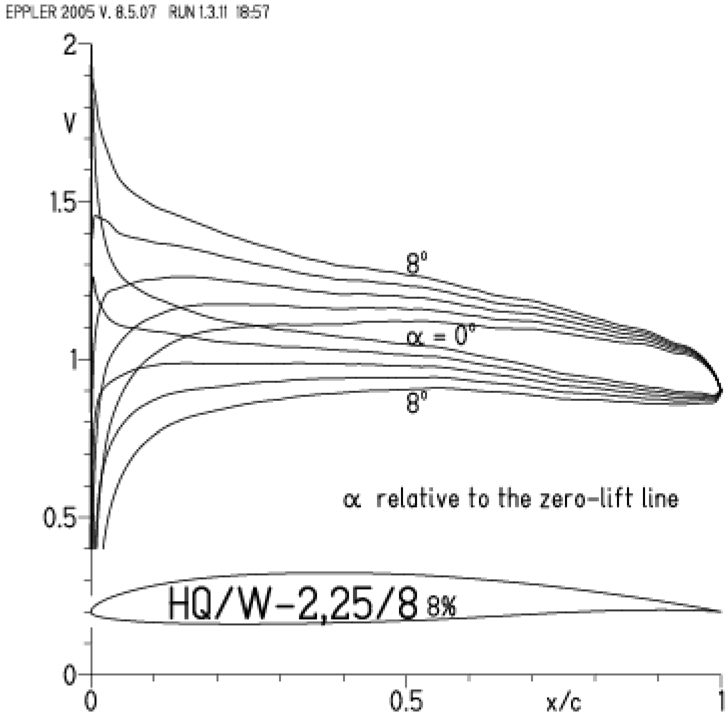


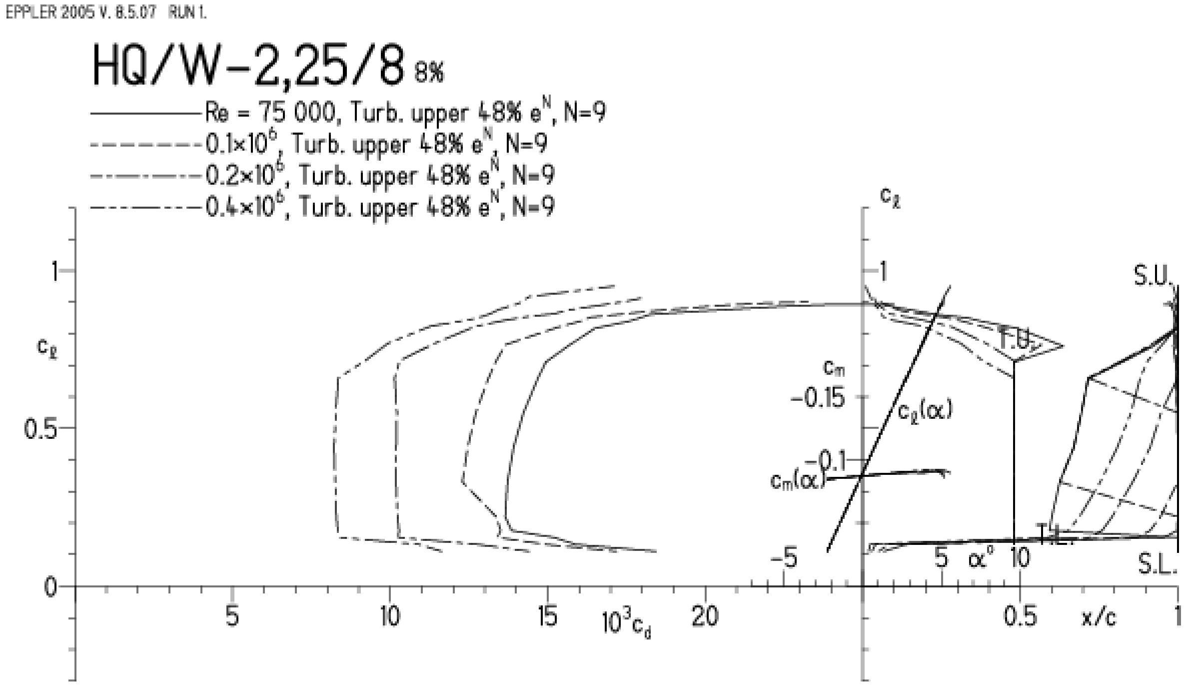
<u>HQ/W-2,25/8</u>, N=9



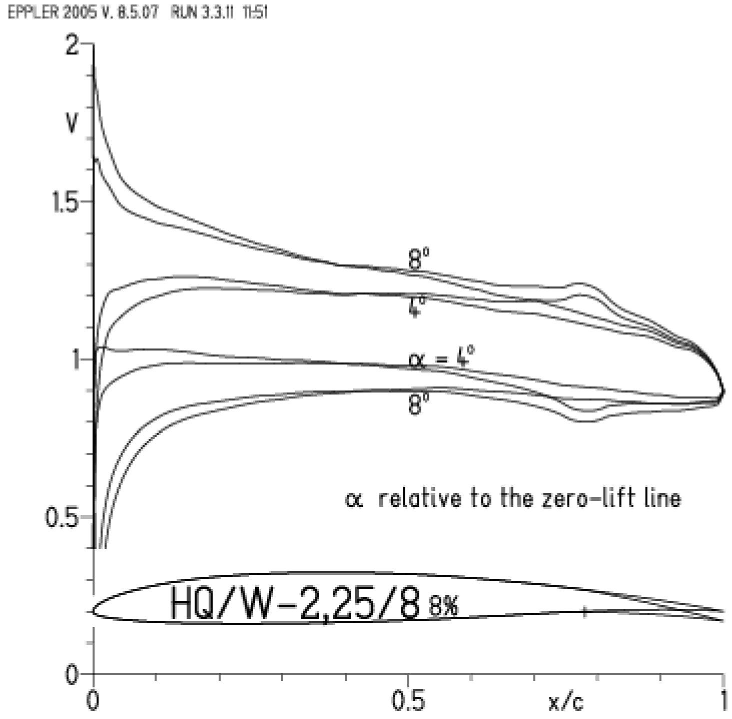


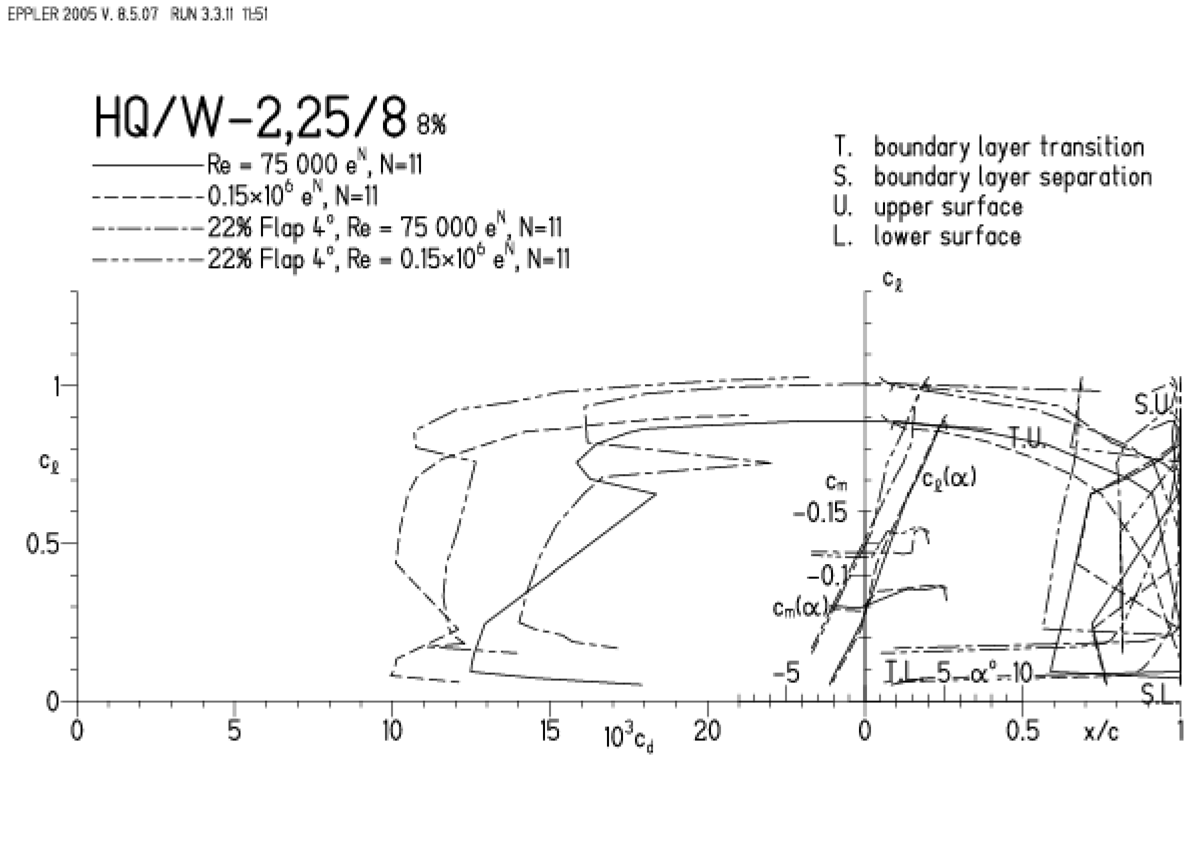
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



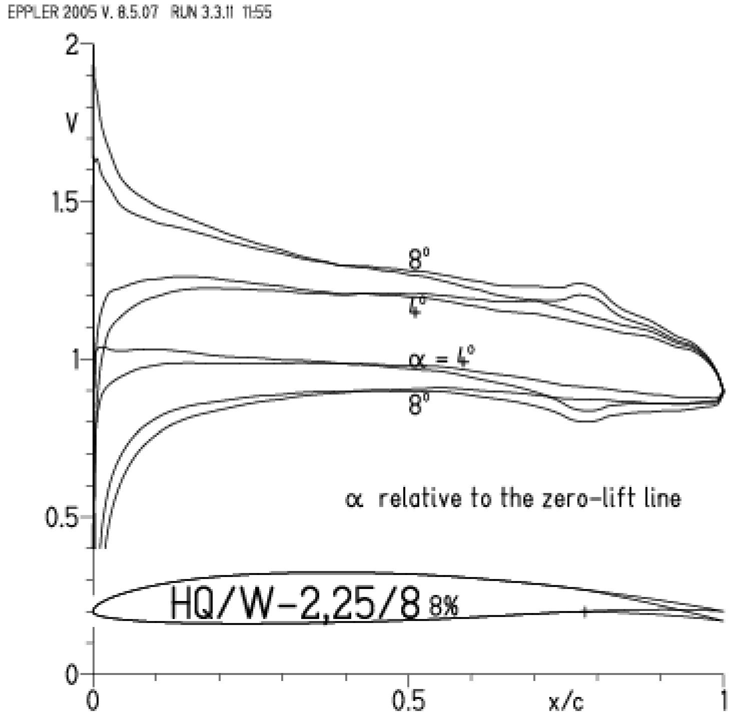


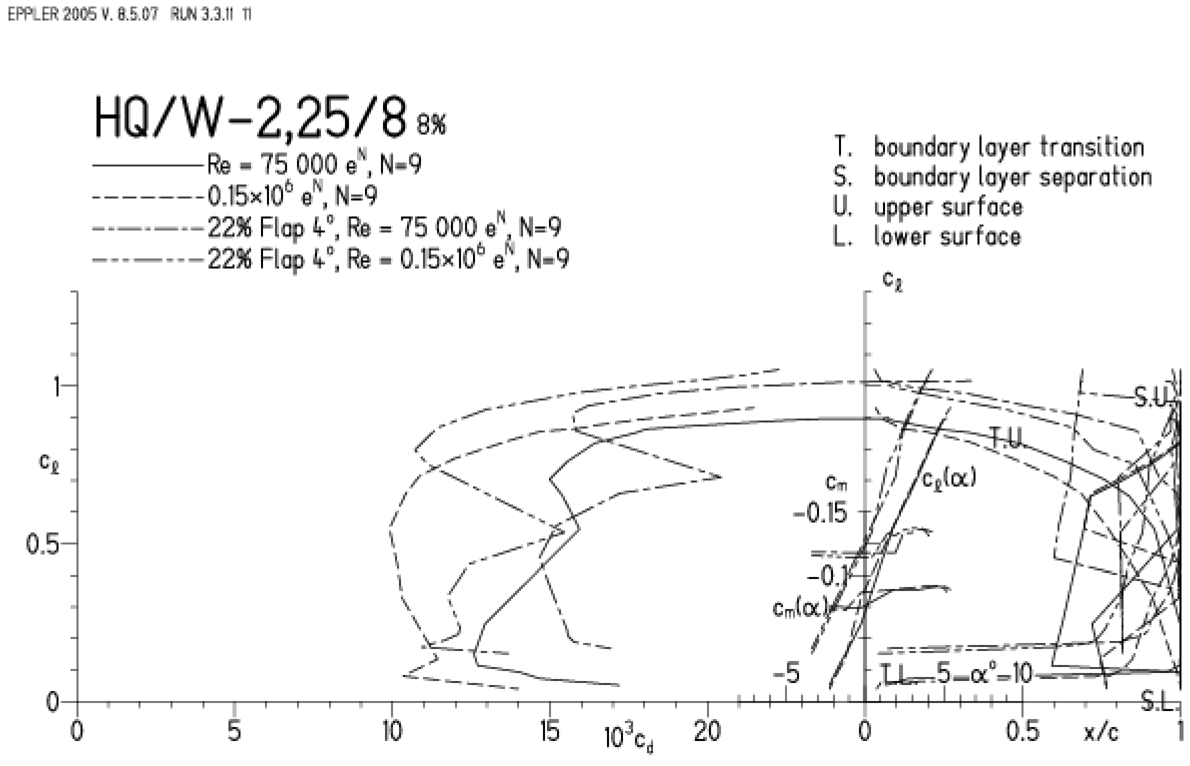
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



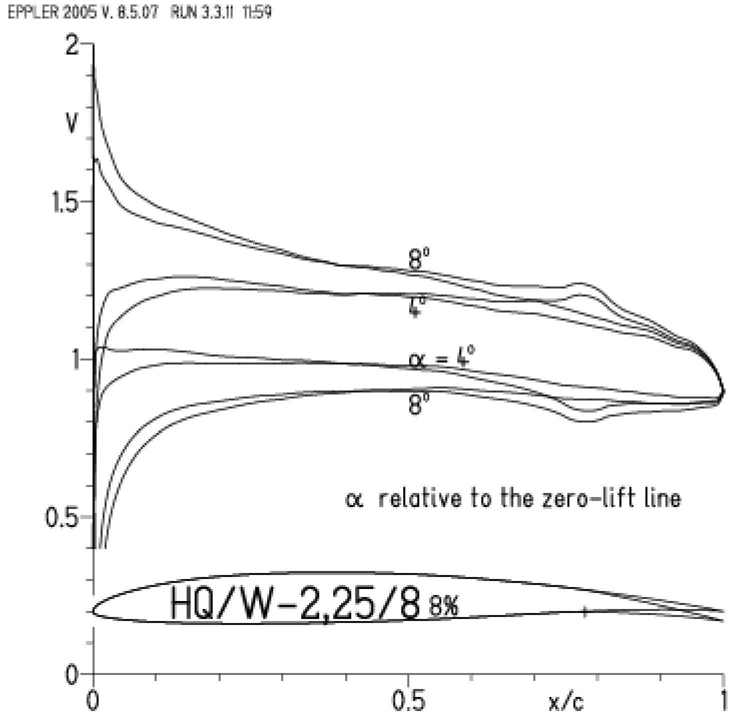


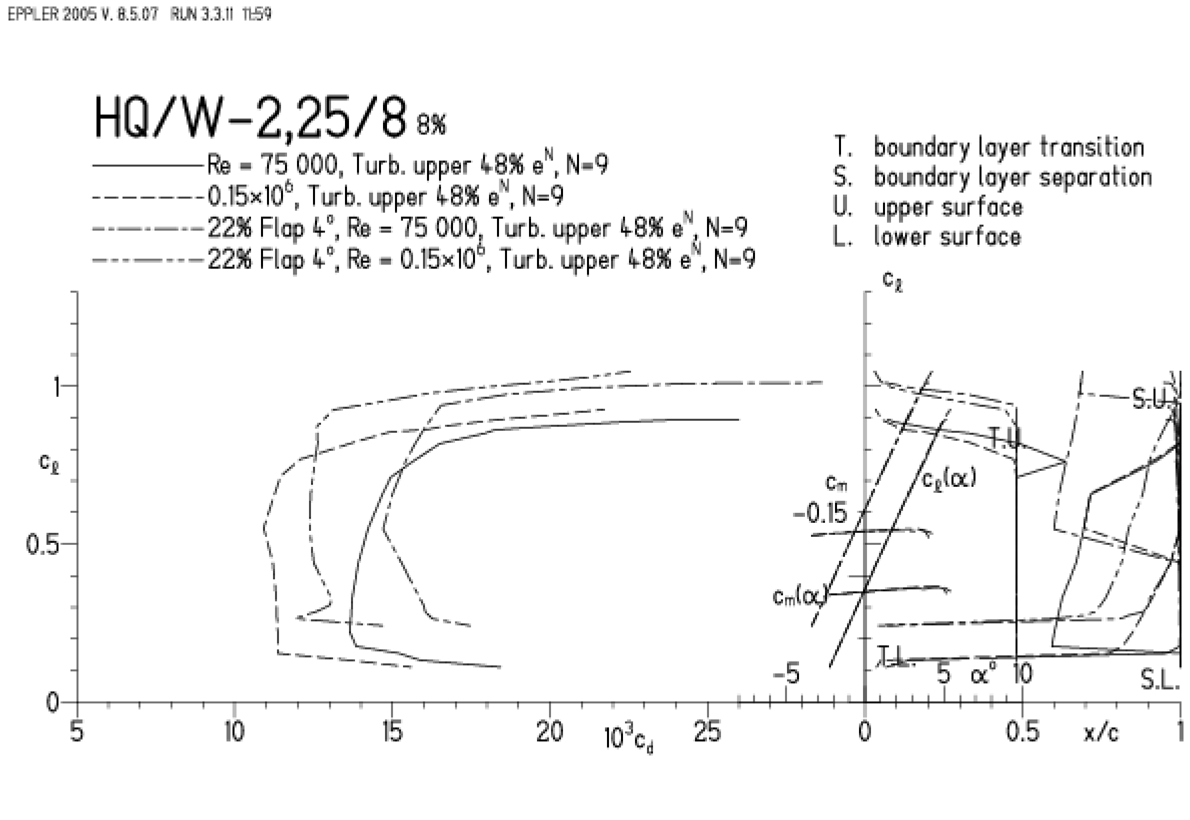
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





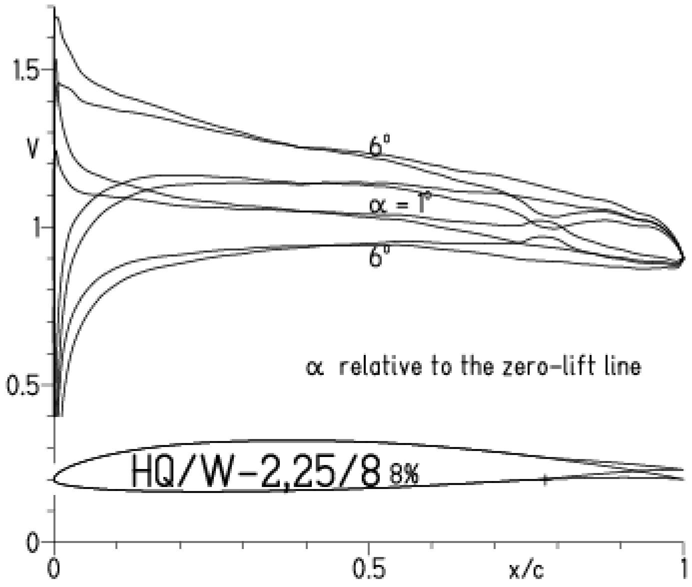
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



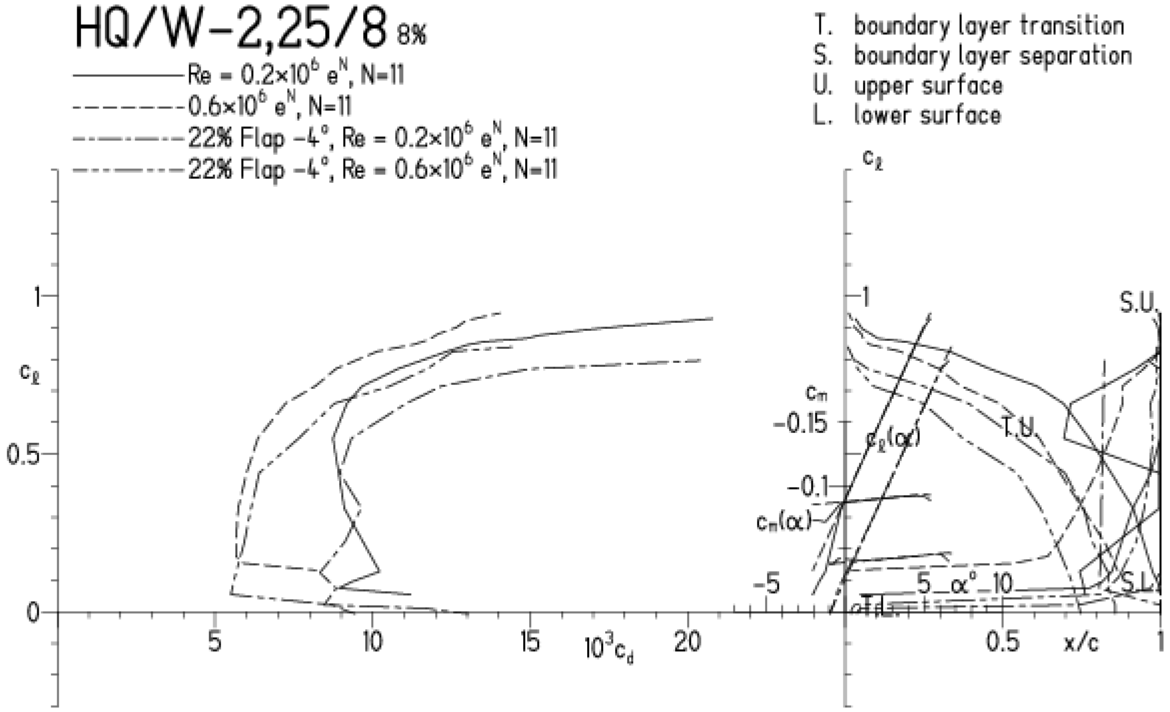


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07   RUN 3.3.11 12:23

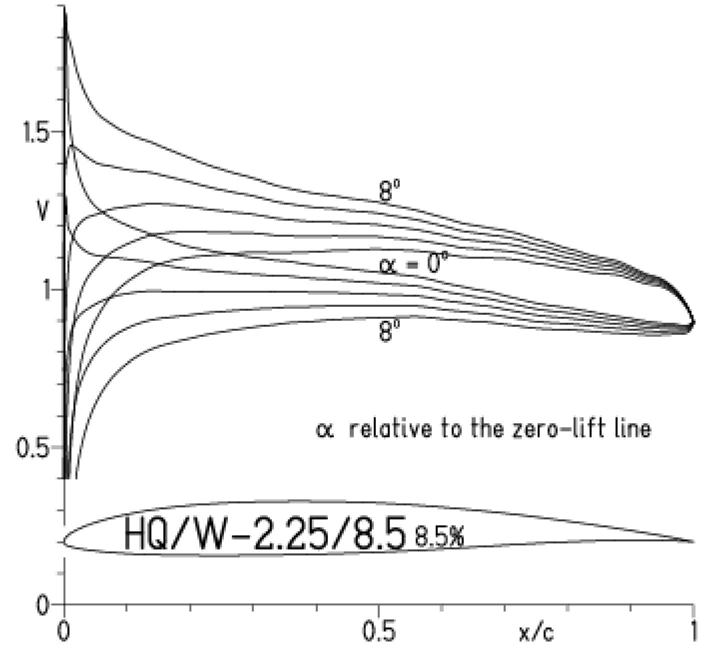


EPPLER 2005 V. 8.5.07   RUN 3.3.11 1

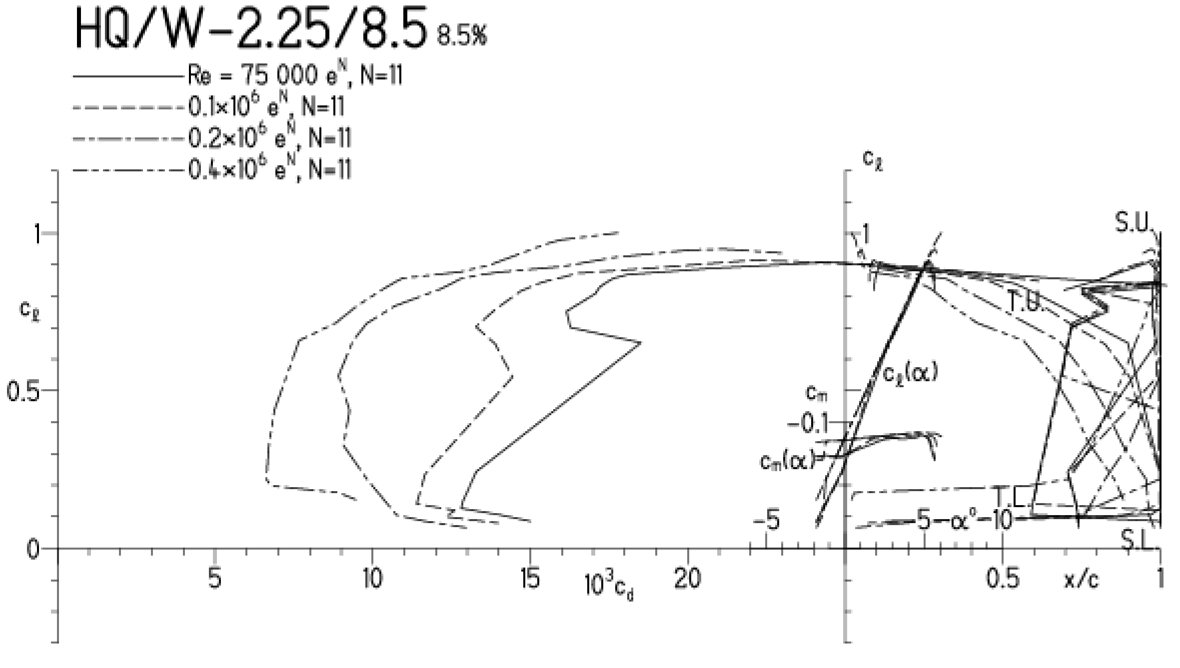


<u>HQ/W-2,25/8,5</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

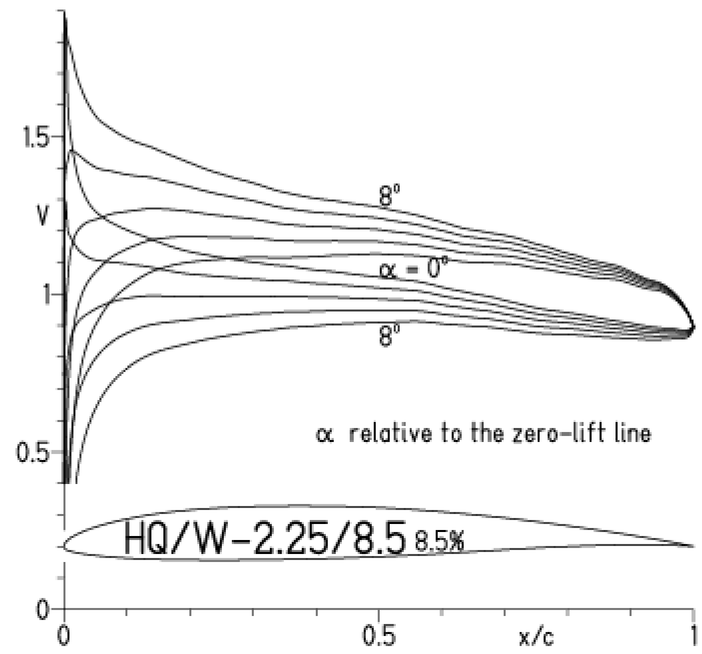


EPPLER 2005 V

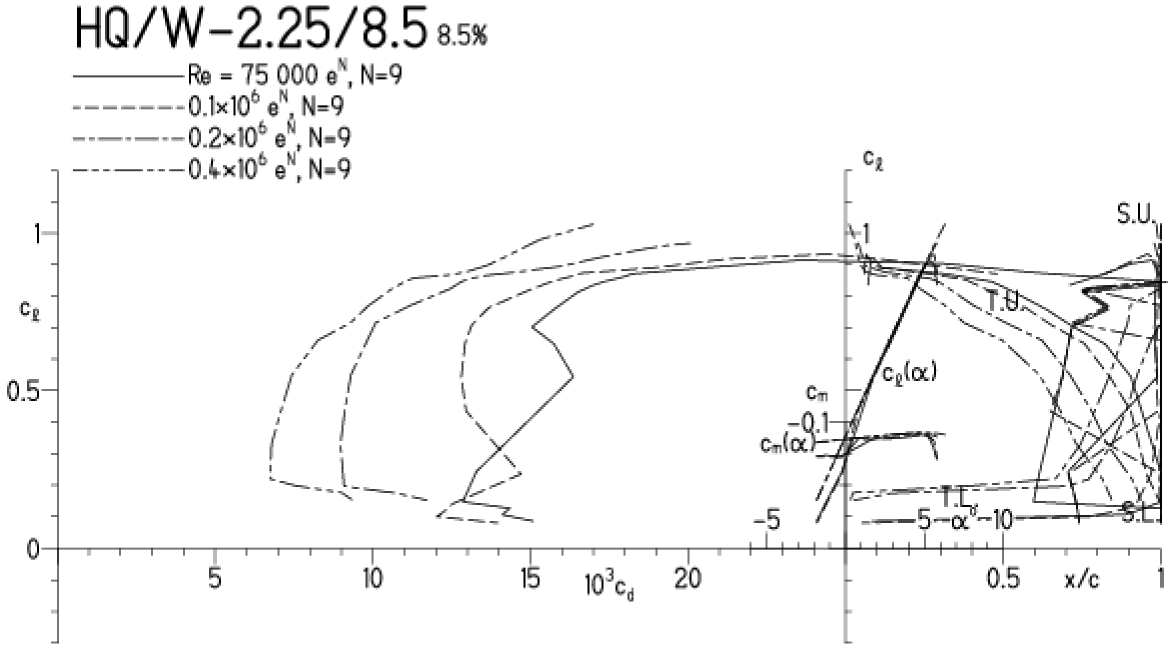


HQ/W-2,25/8,5, N=9

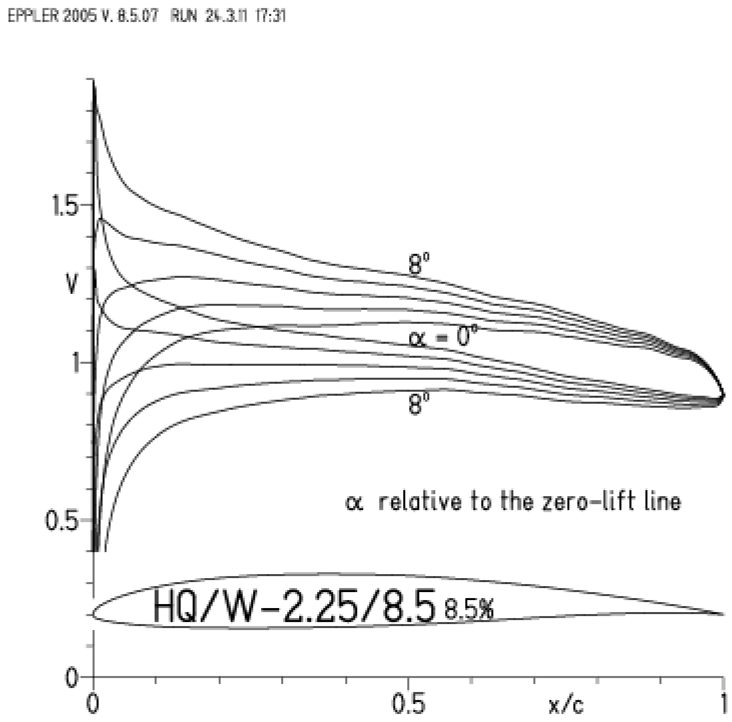
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

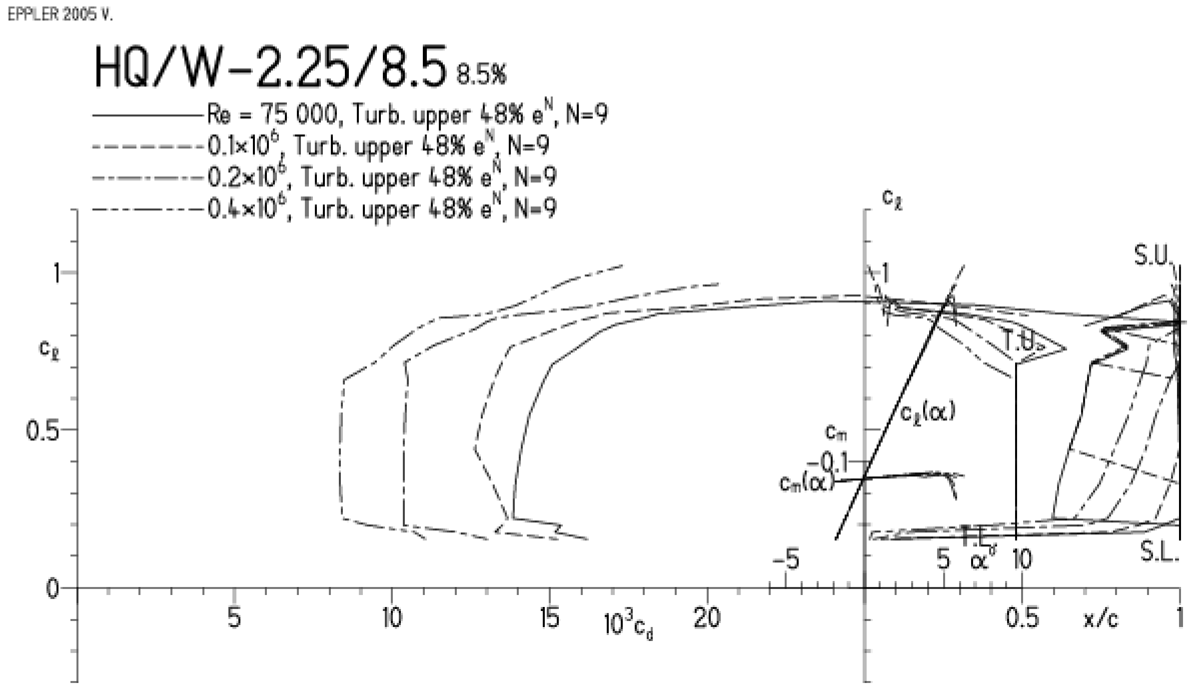


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



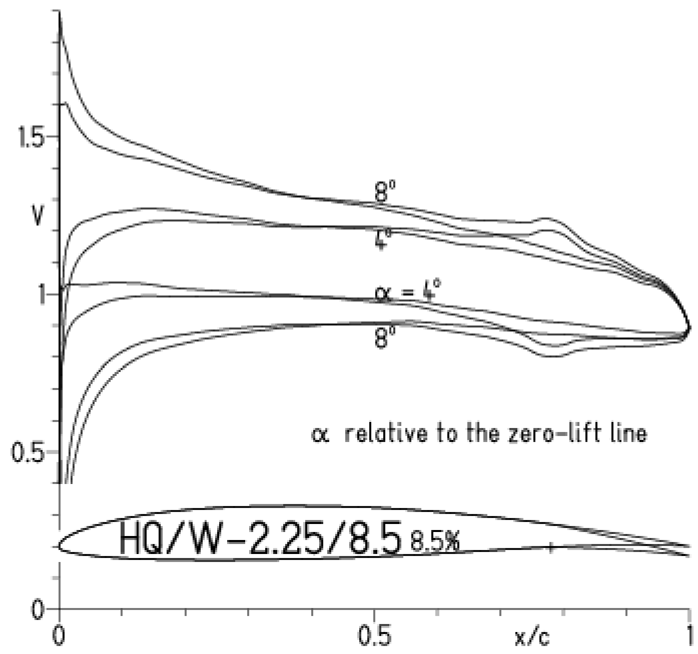
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



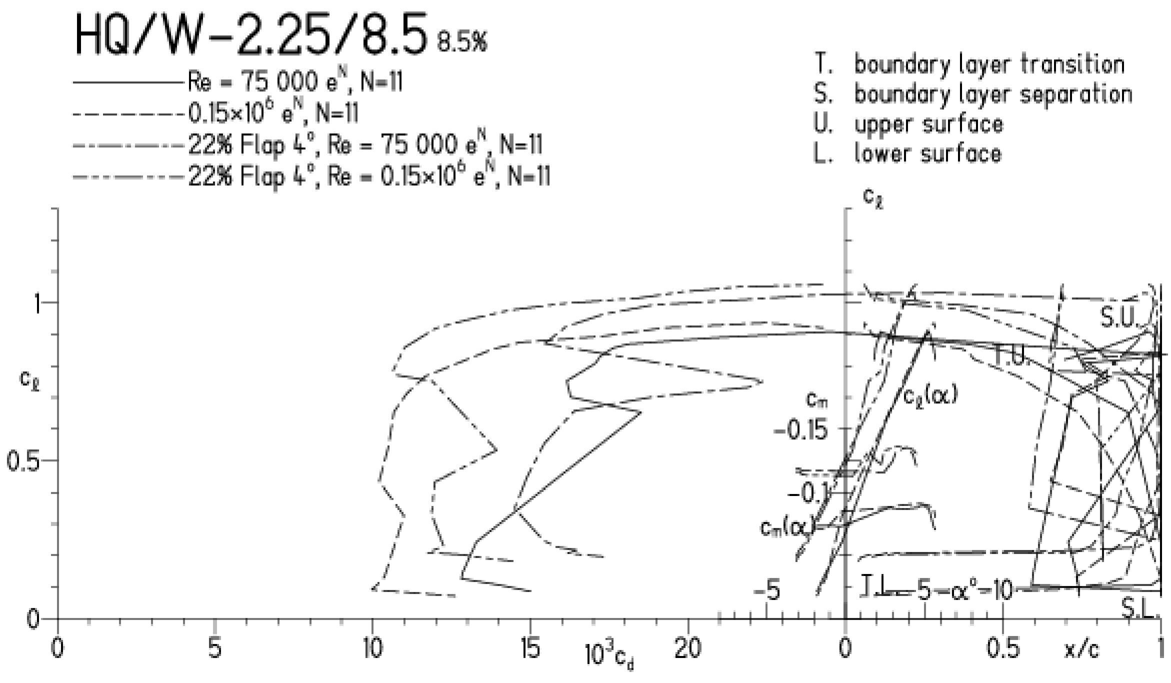


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

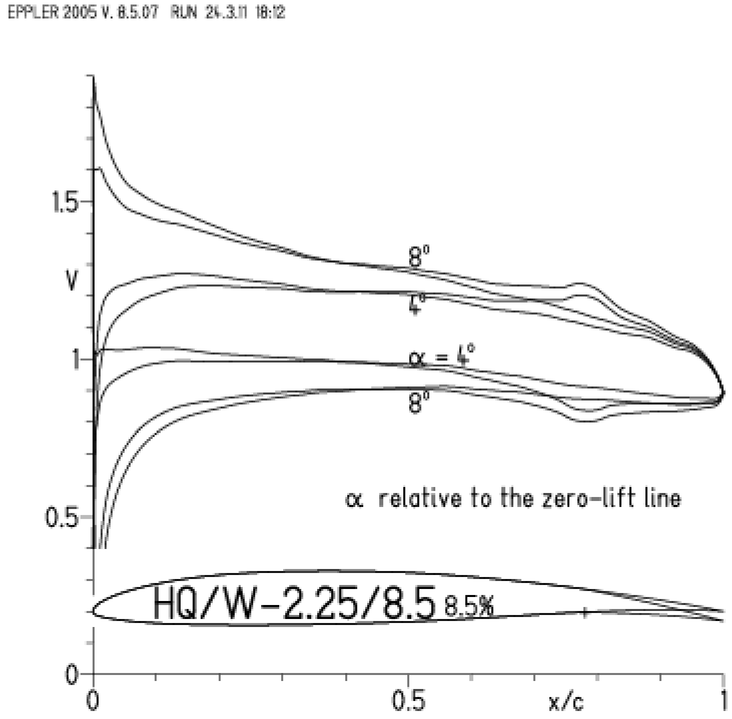
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

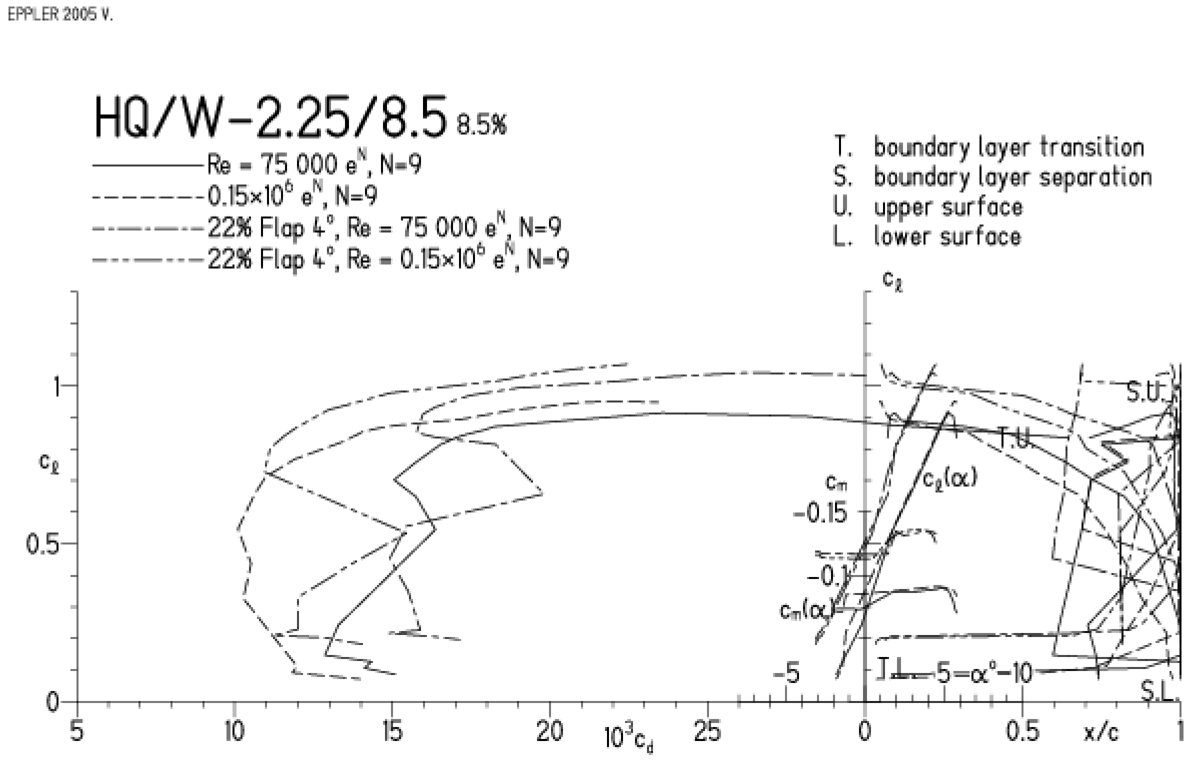


EPPLER 2005 V. 8.5.

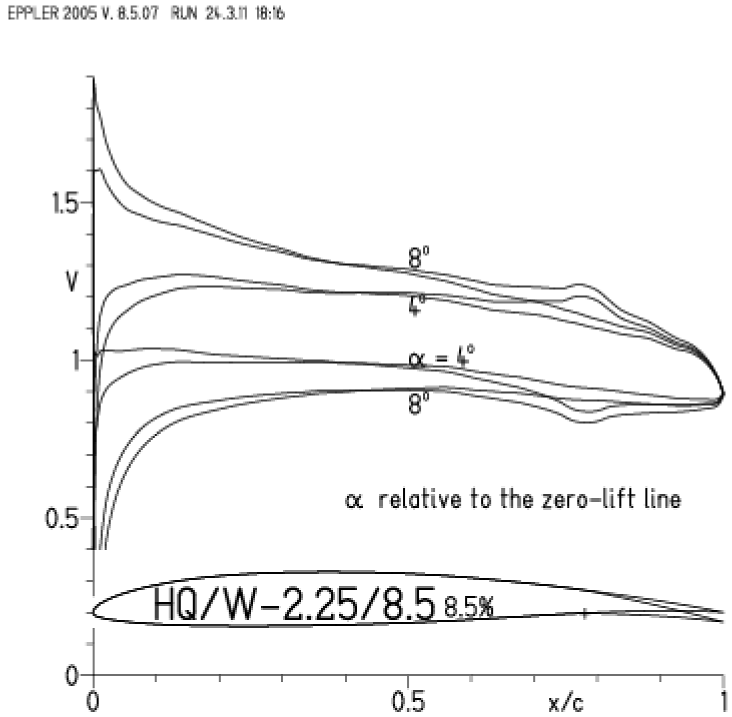


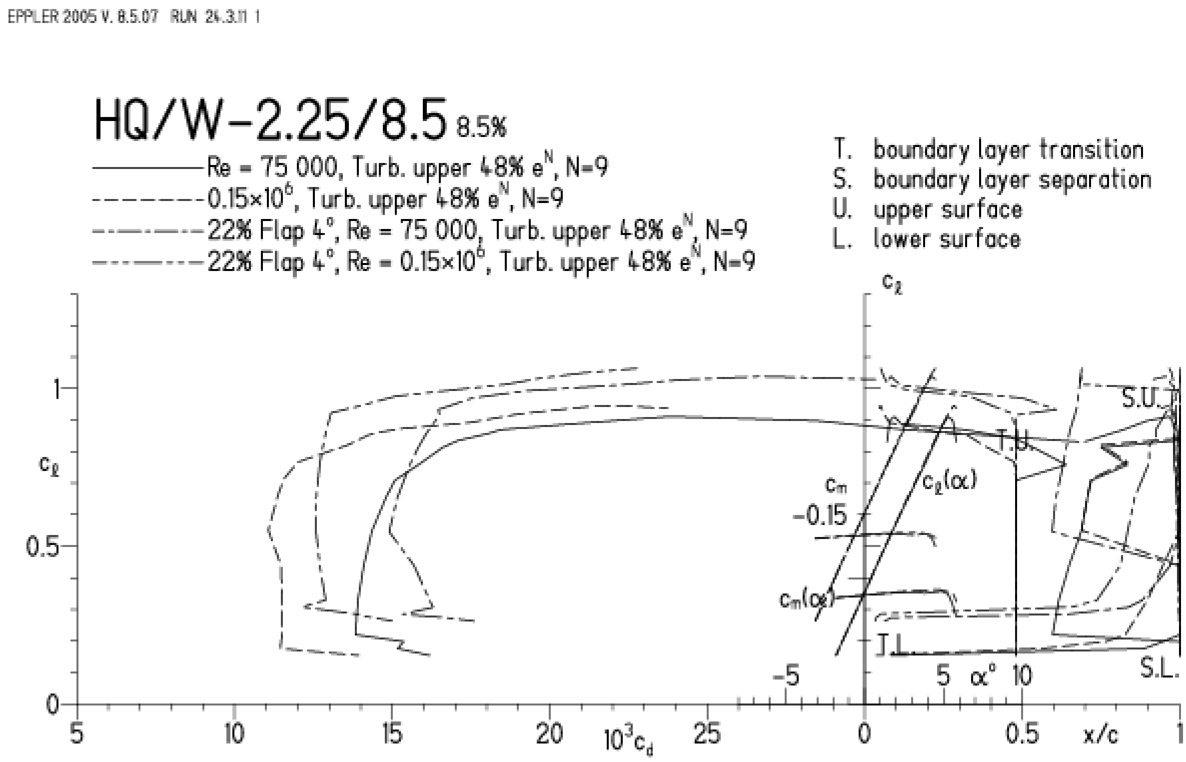
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



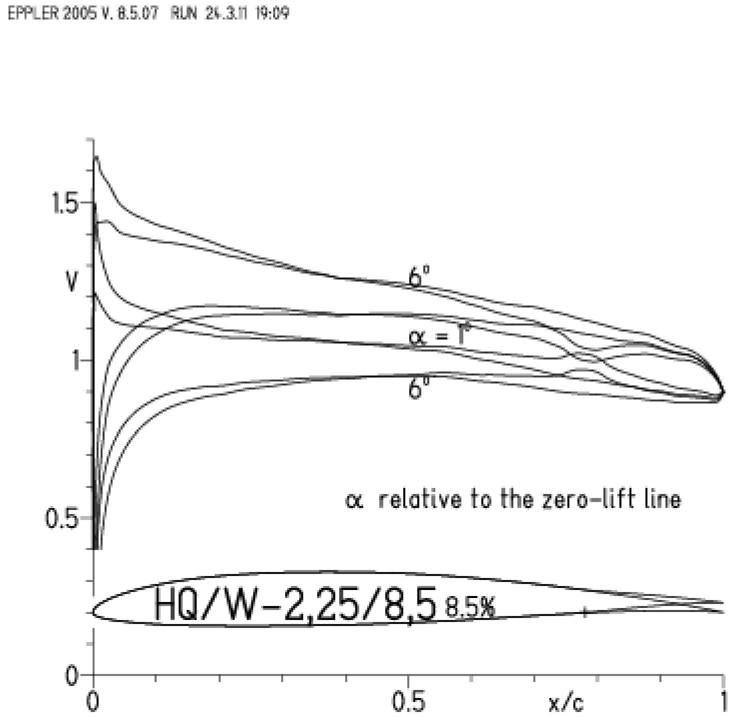


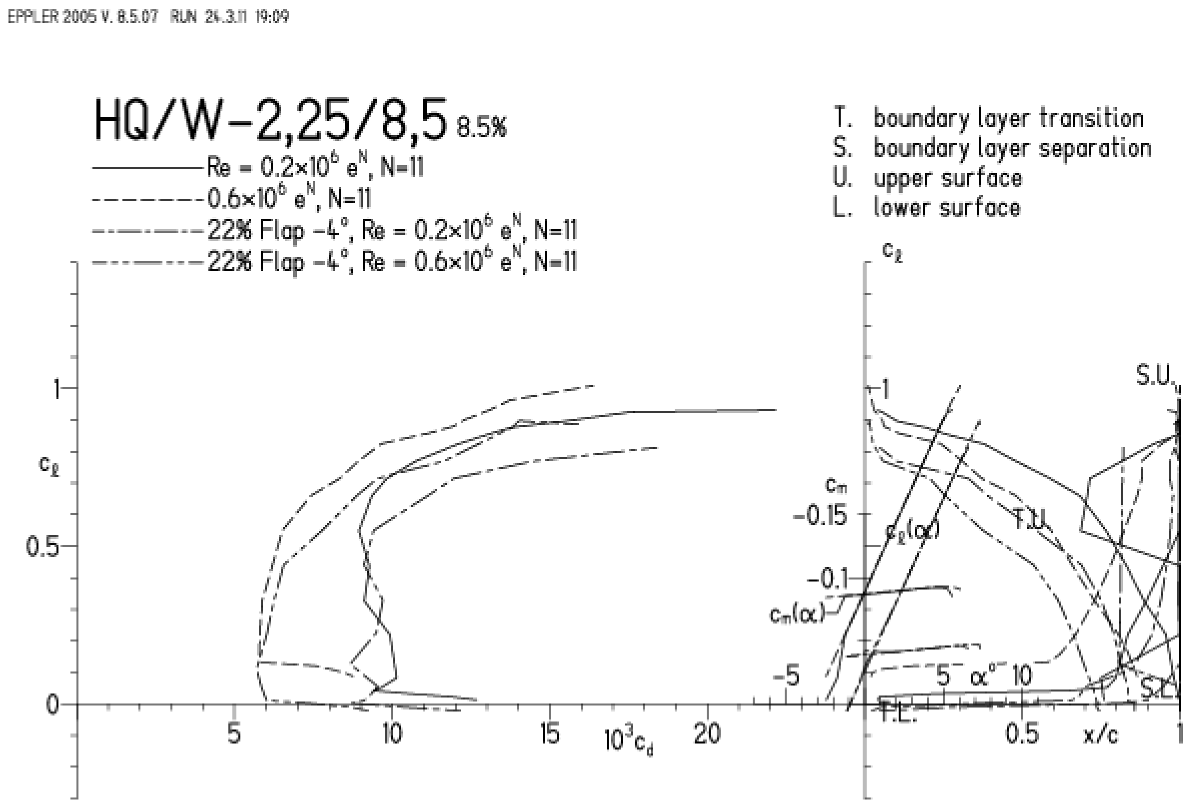
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



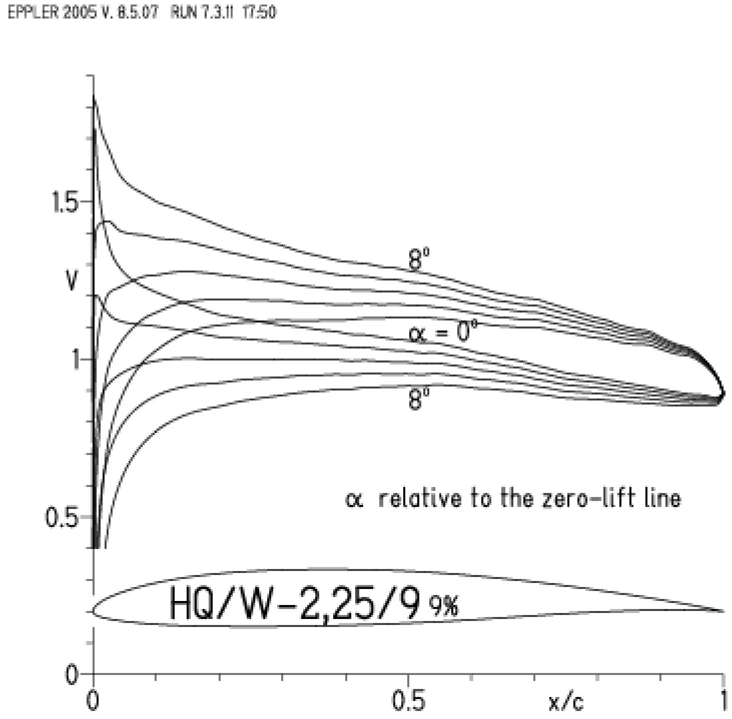


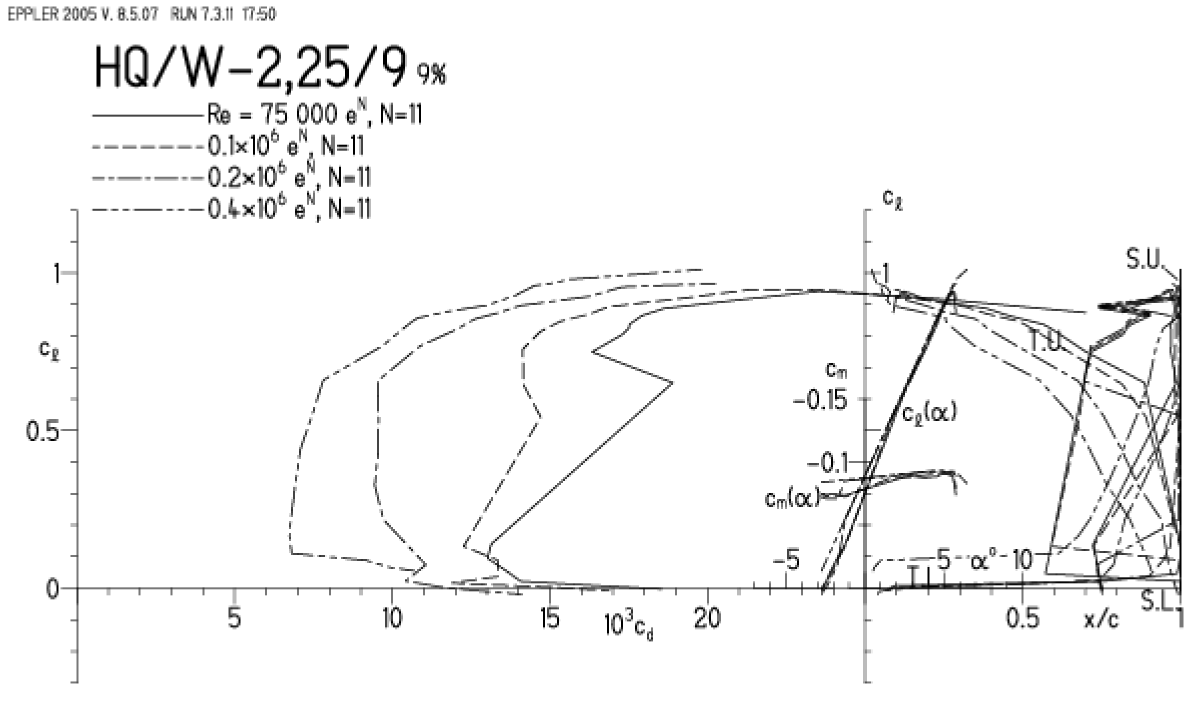
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





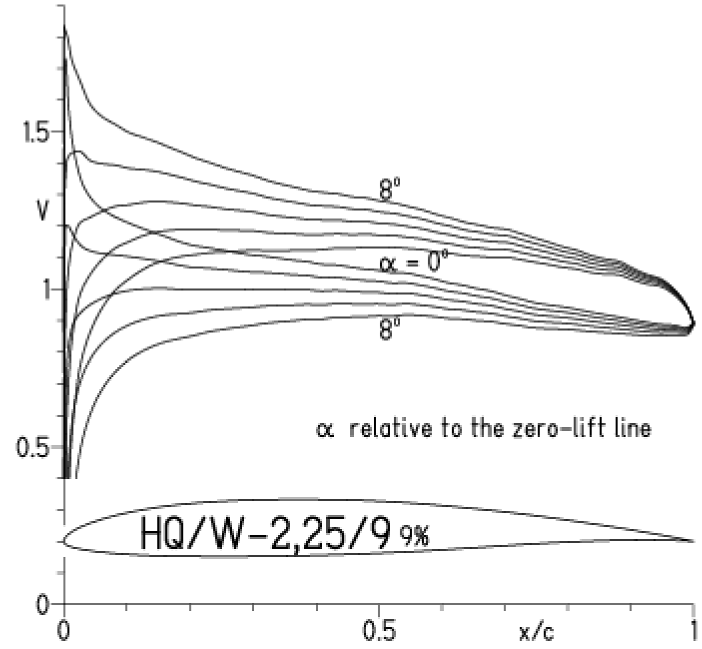
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

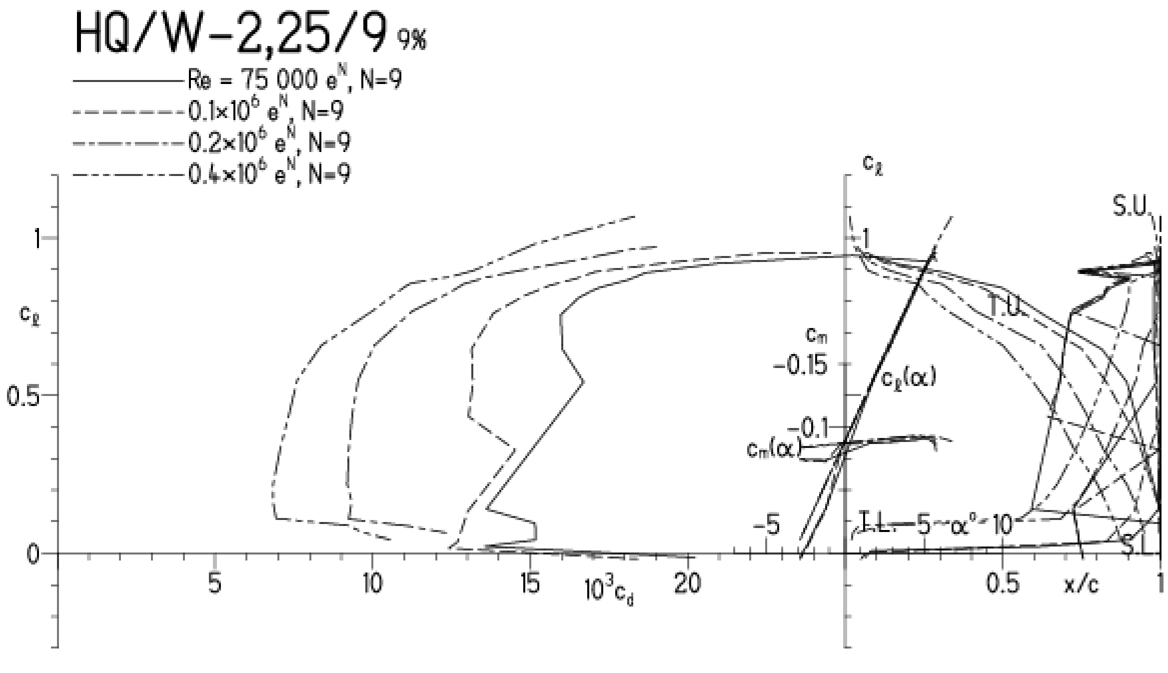

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

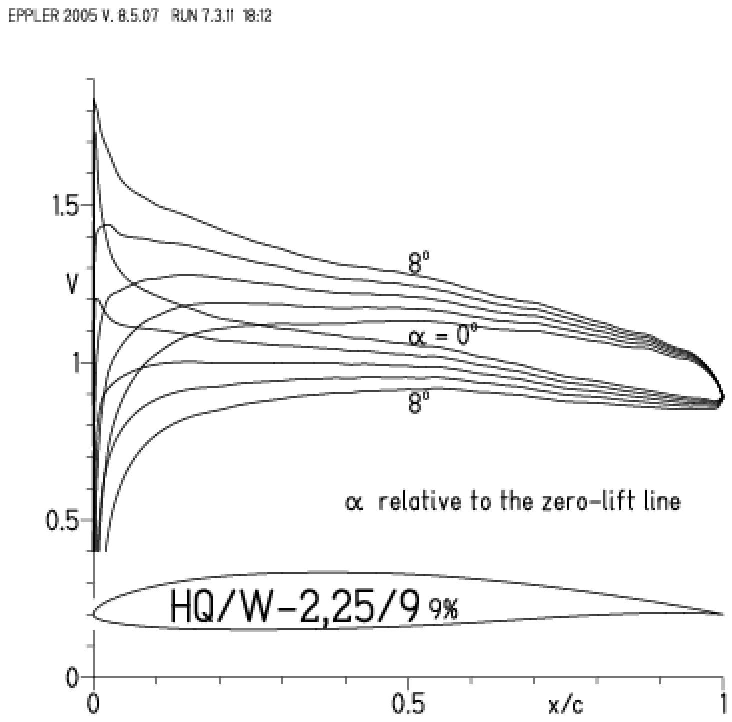
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

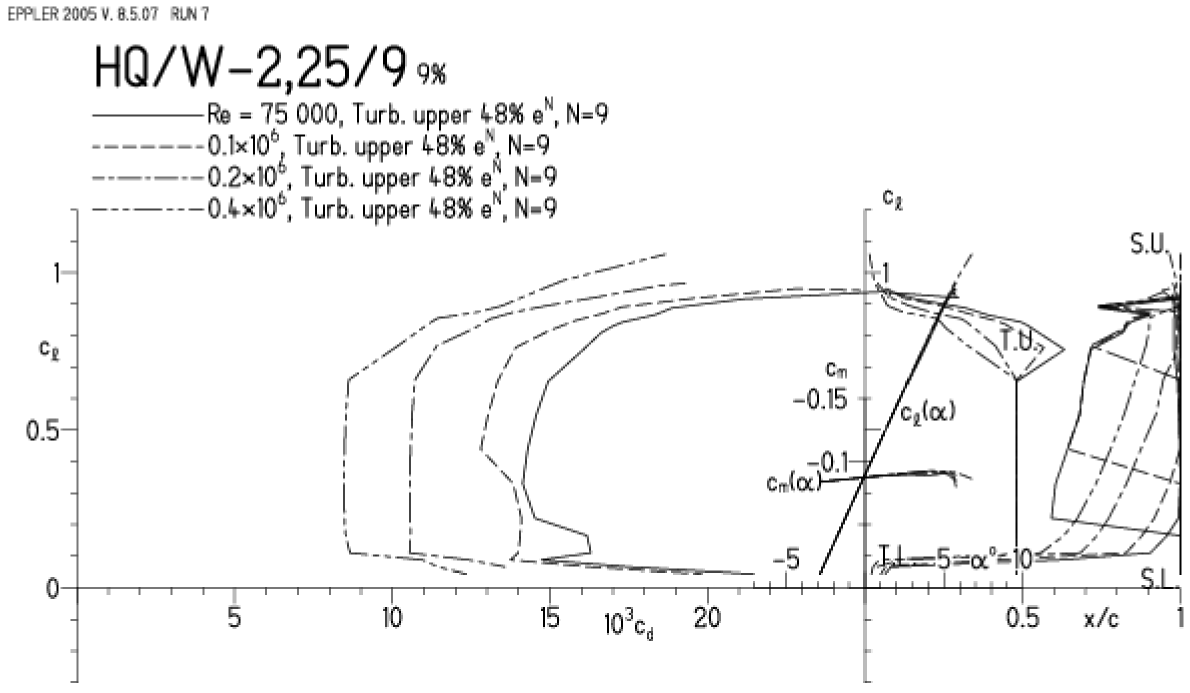


EPPLER 2005 V. 8.



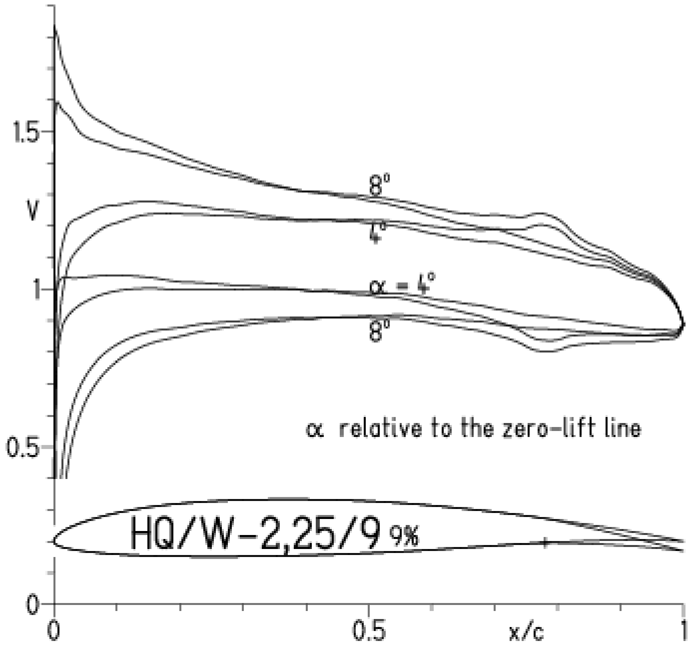
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



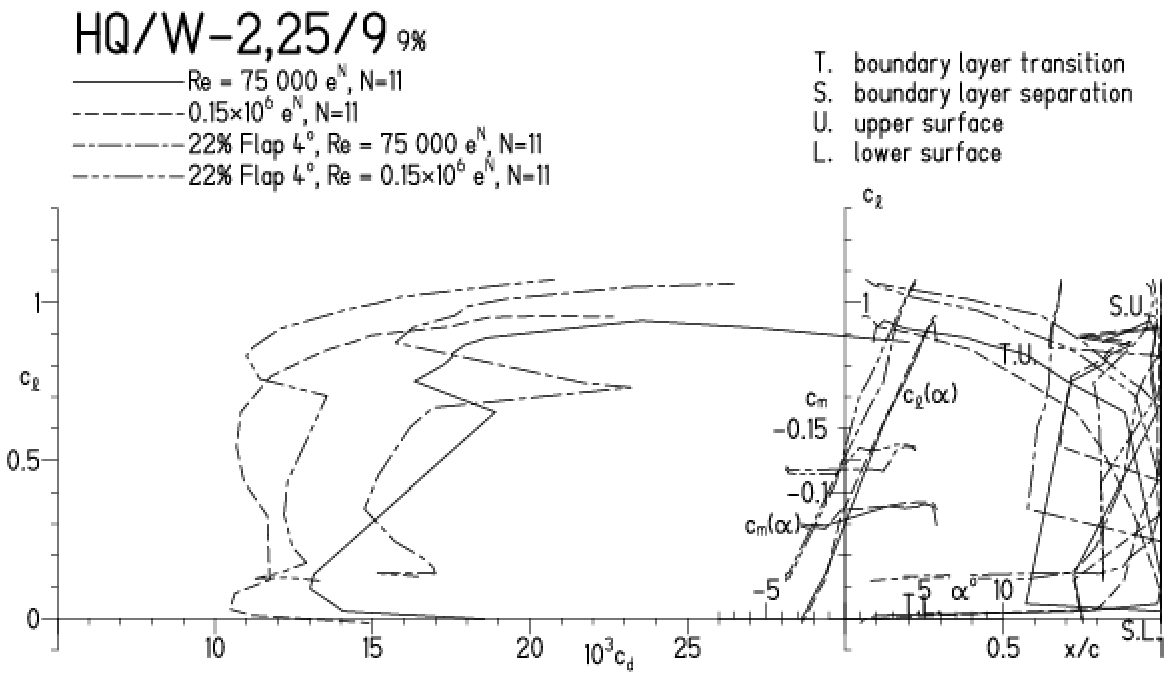


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

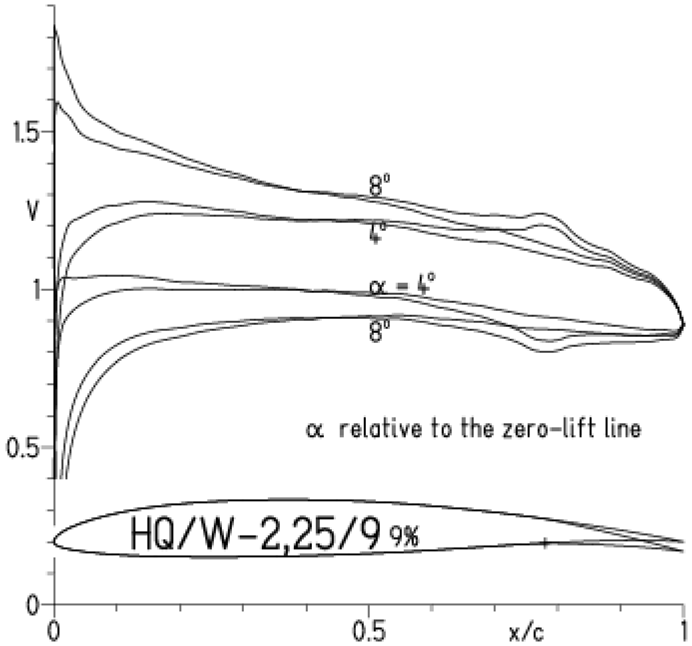


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

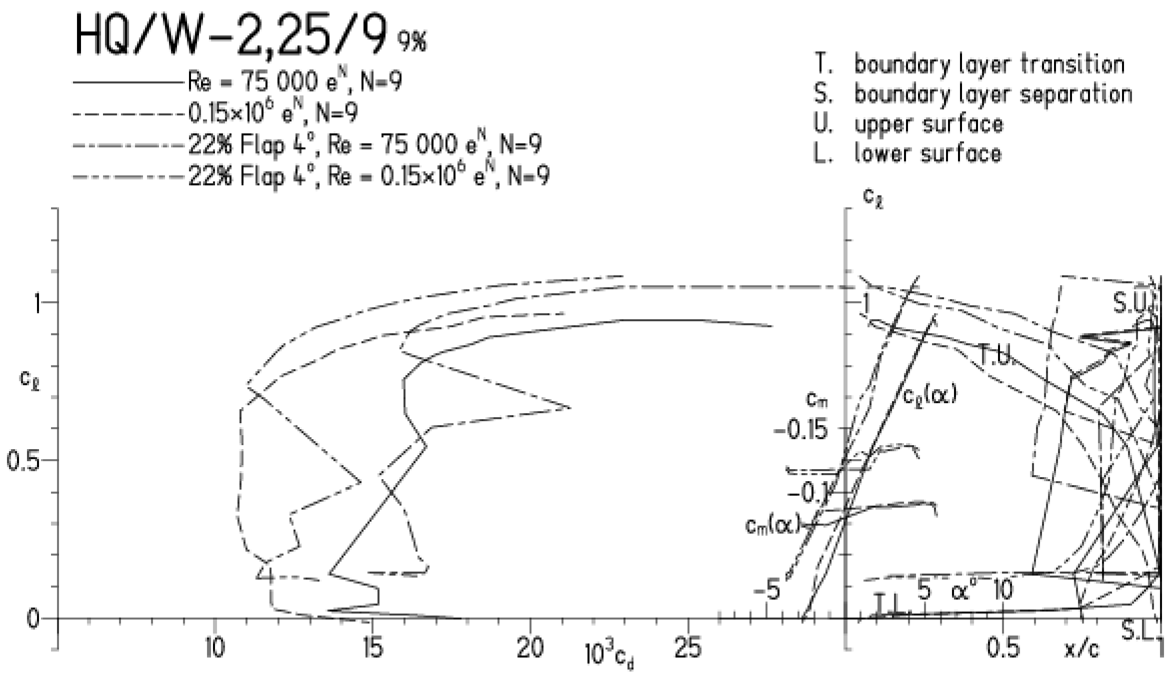


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

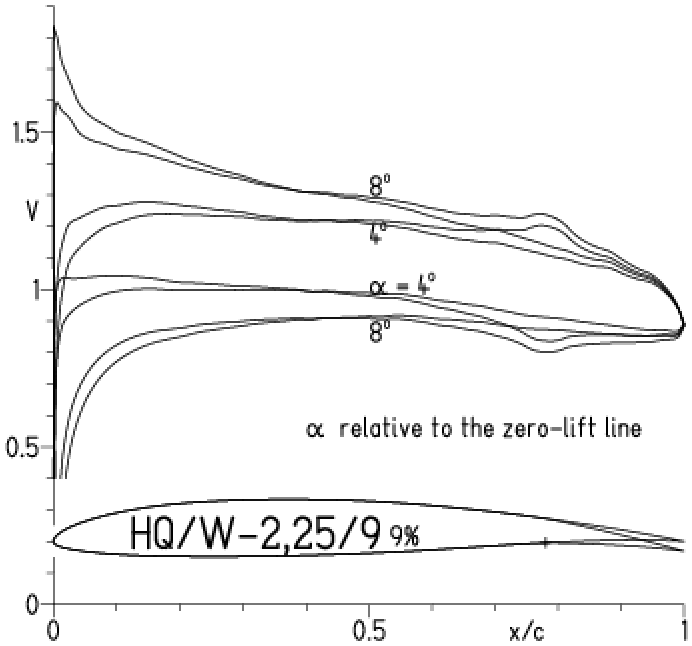


EPPLER 2005 V. 8.5.07 RUN 8.3.1

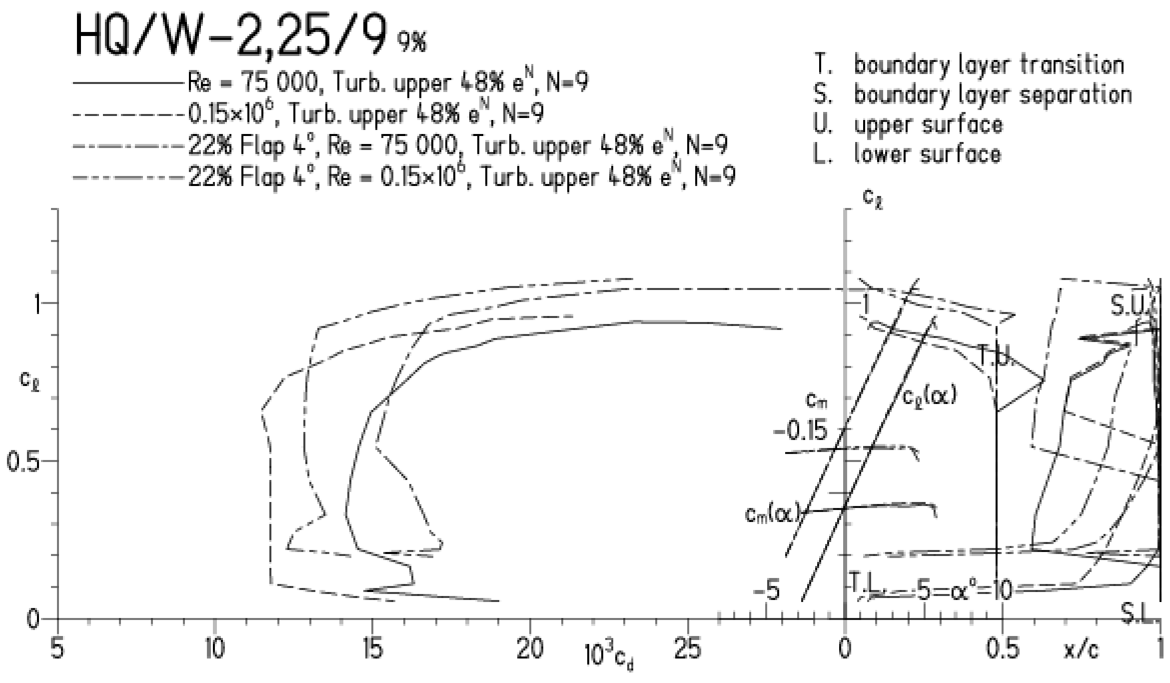


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

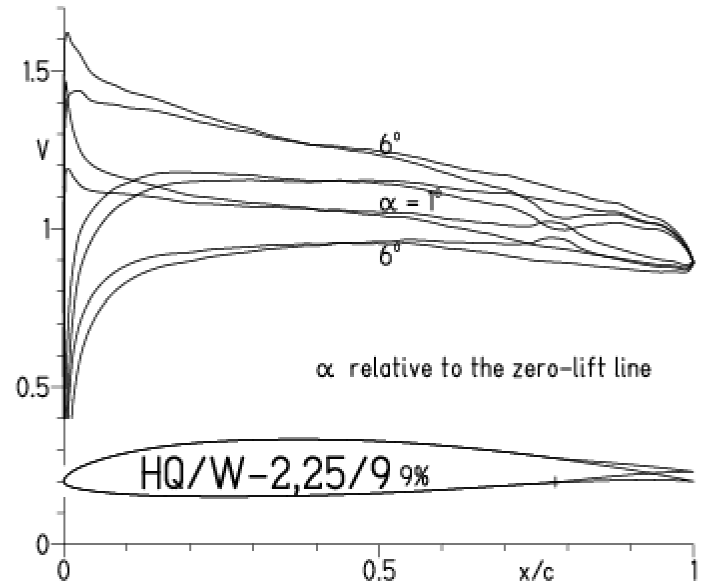


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

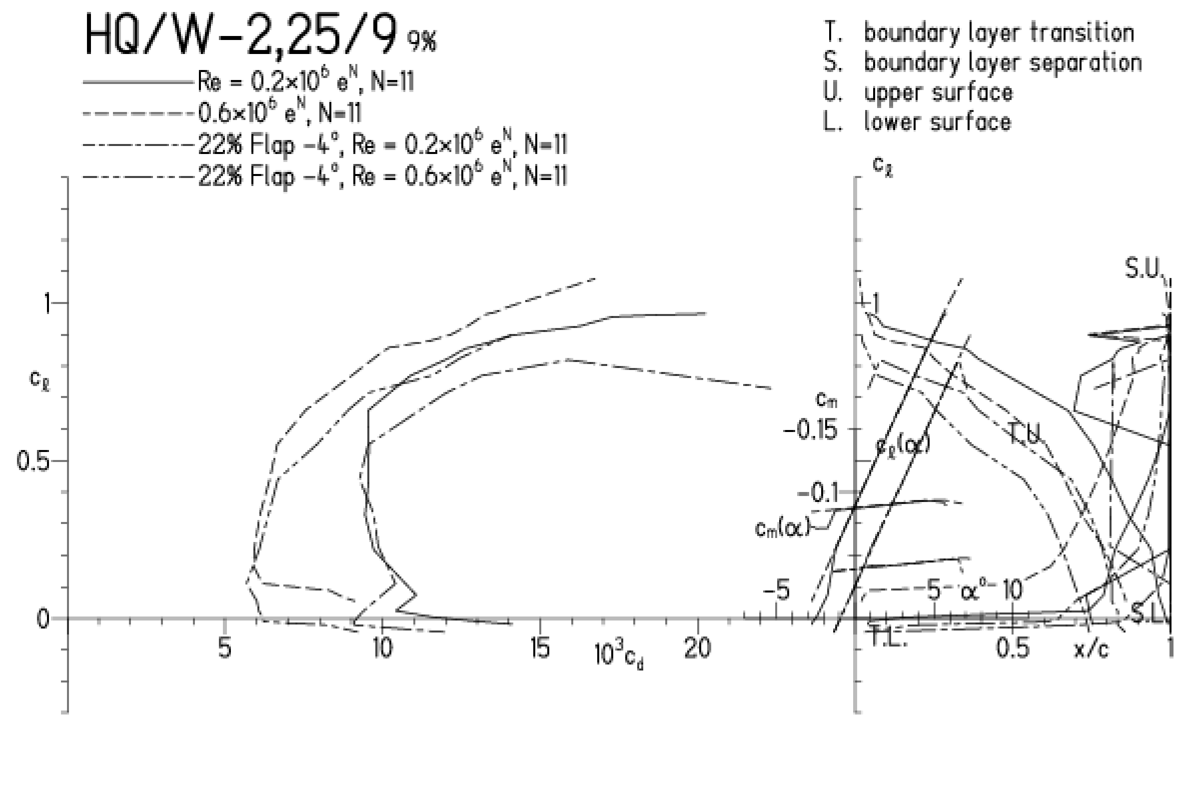


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

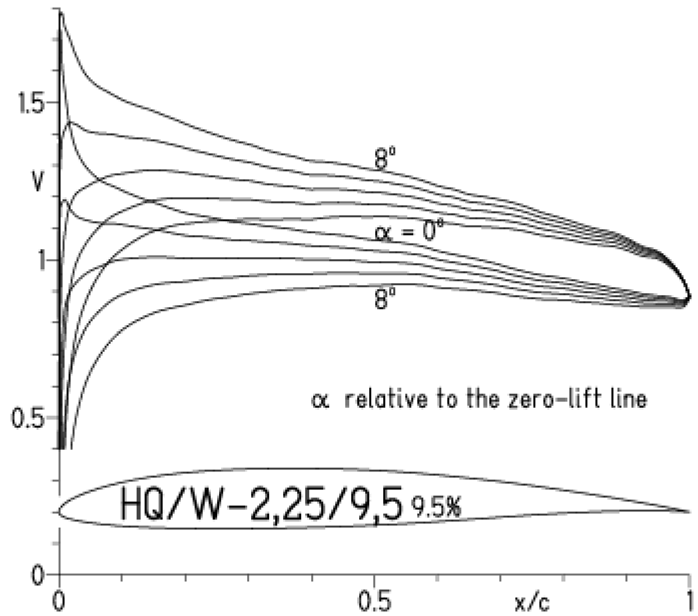


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

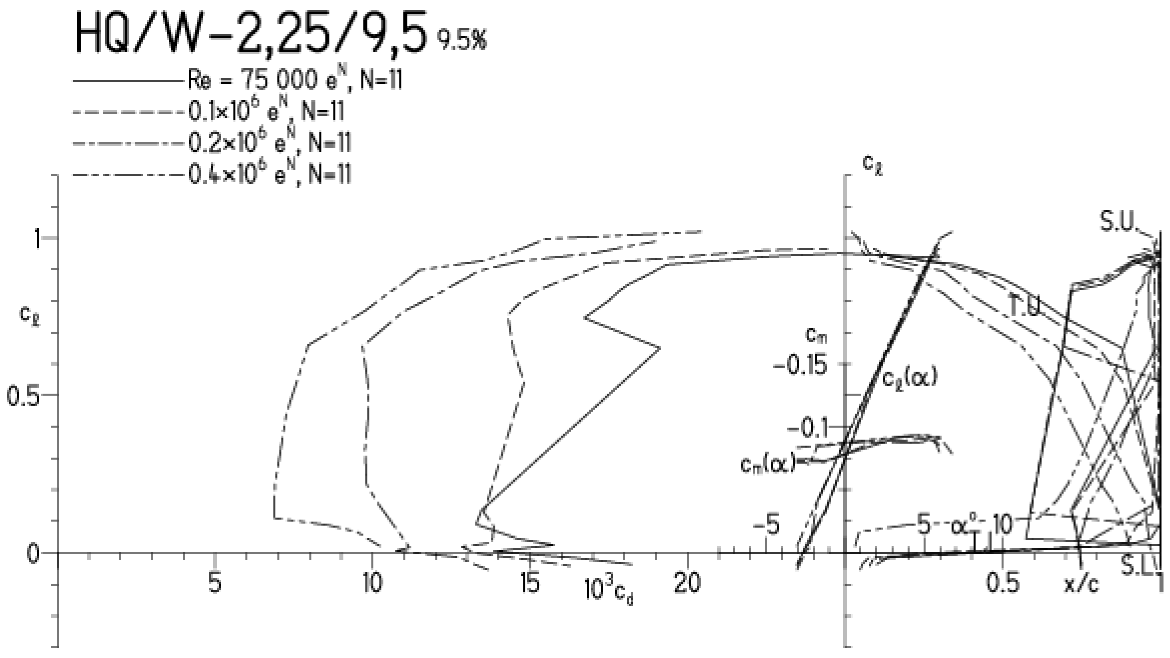


HQ/W-2,25/9,5, N=11

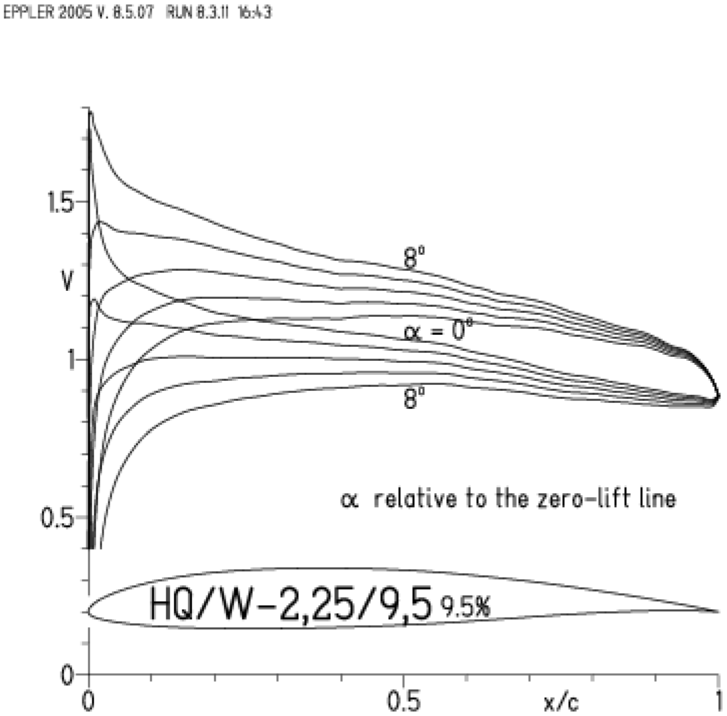
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

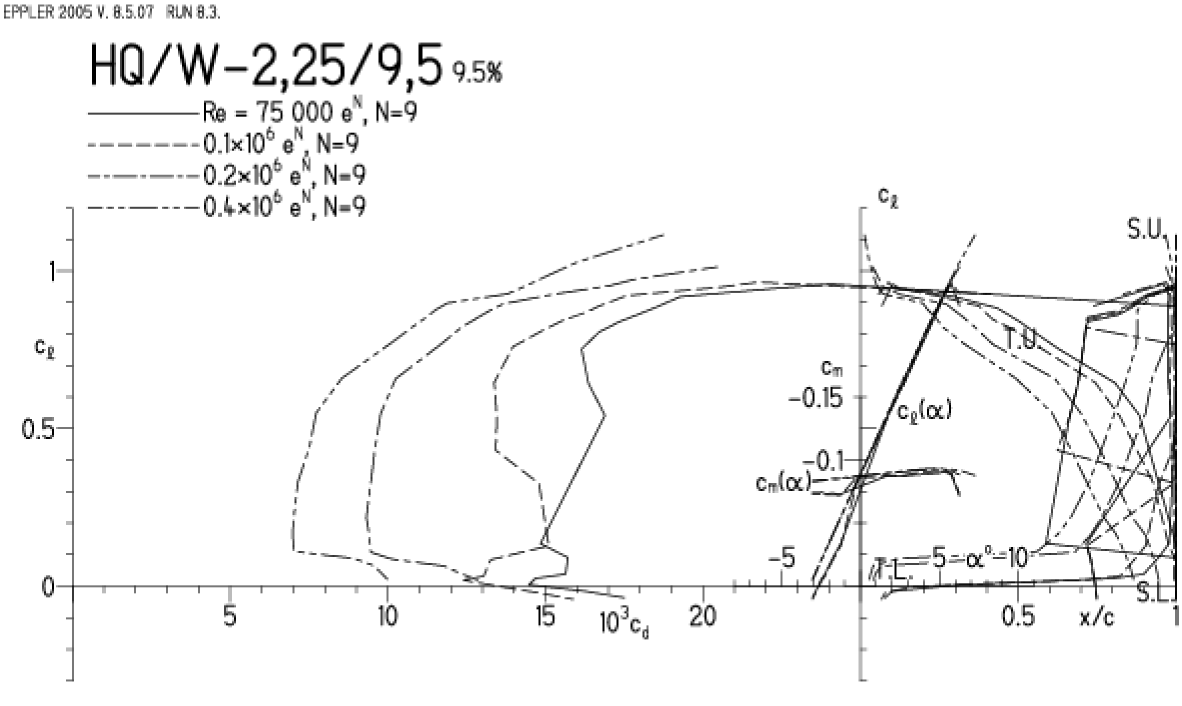


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

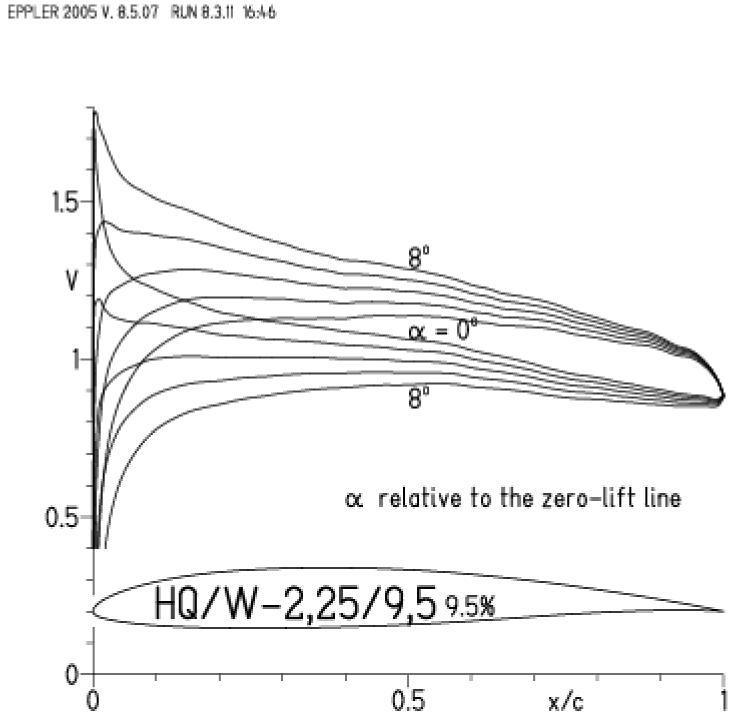


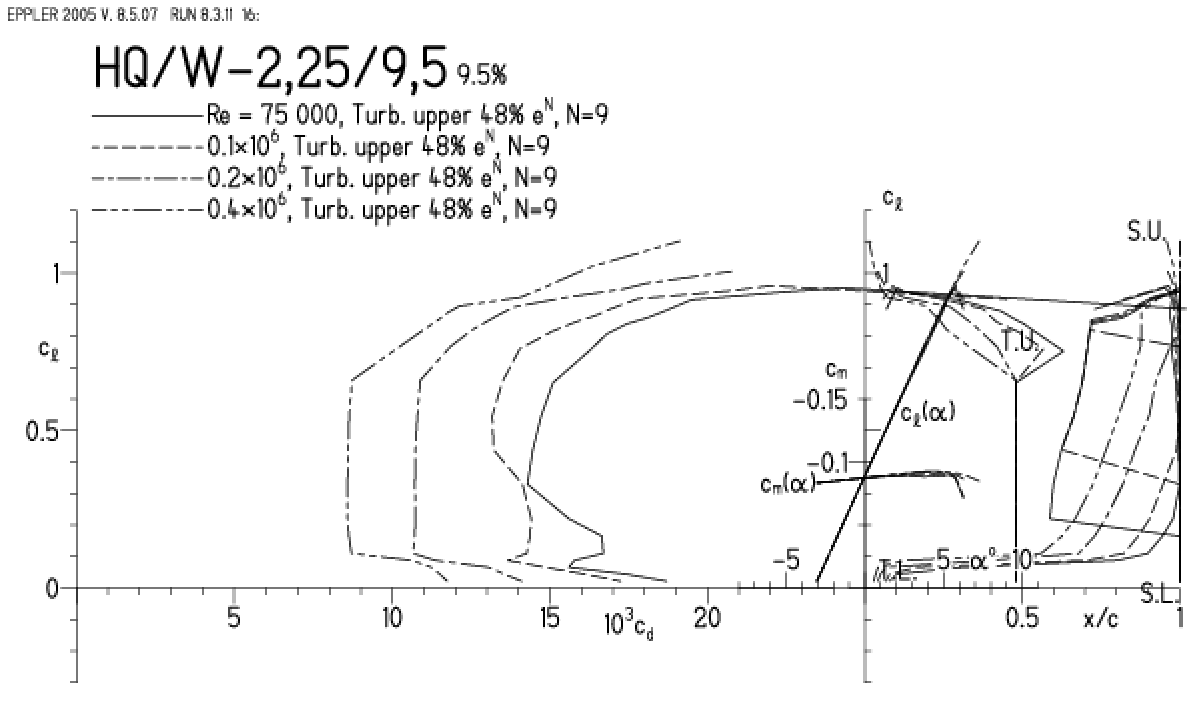
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

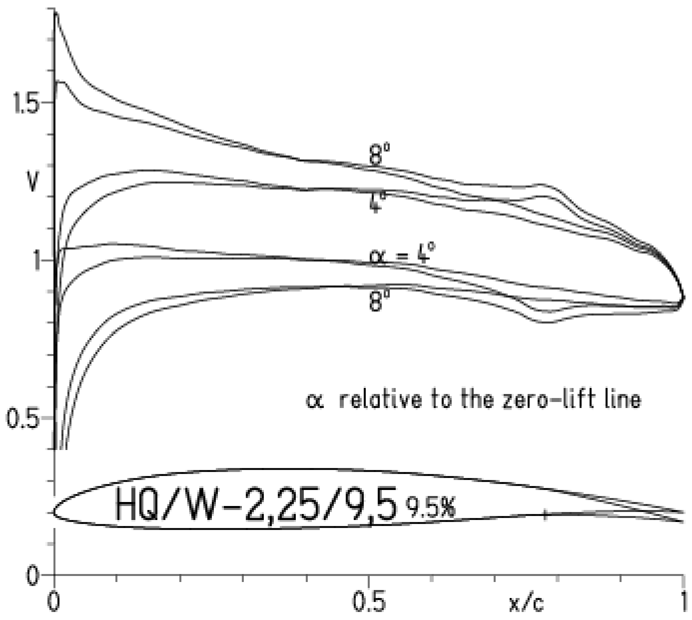
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



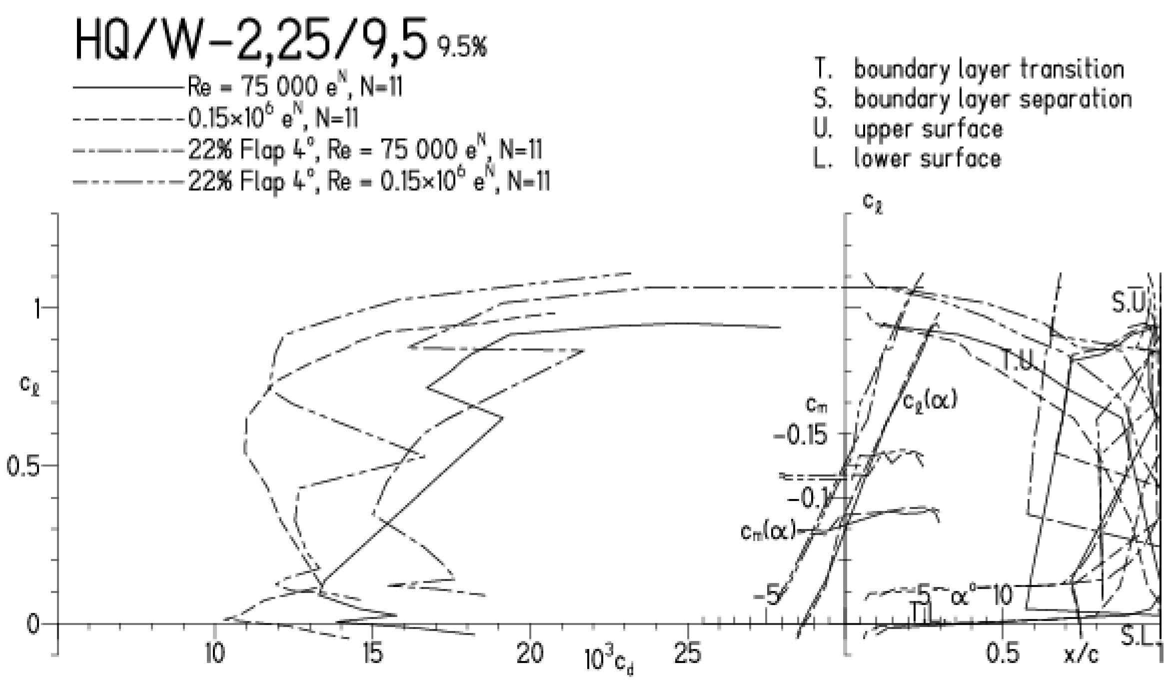


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

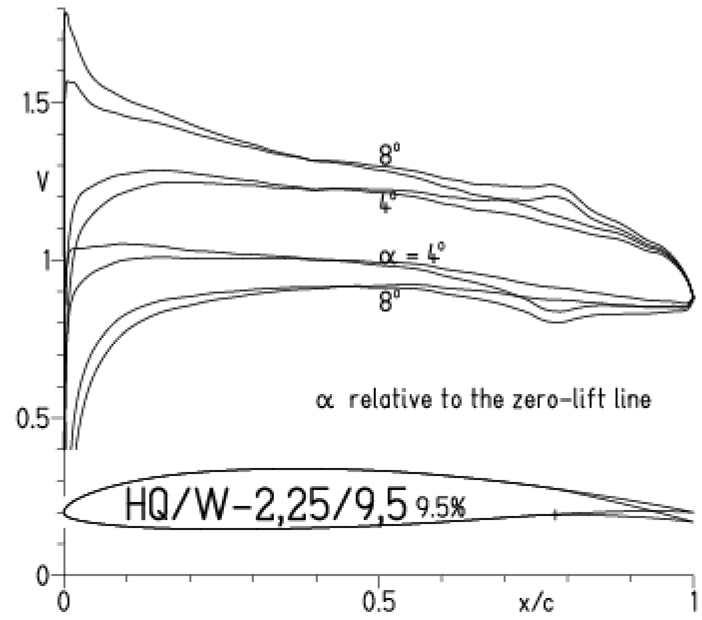


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

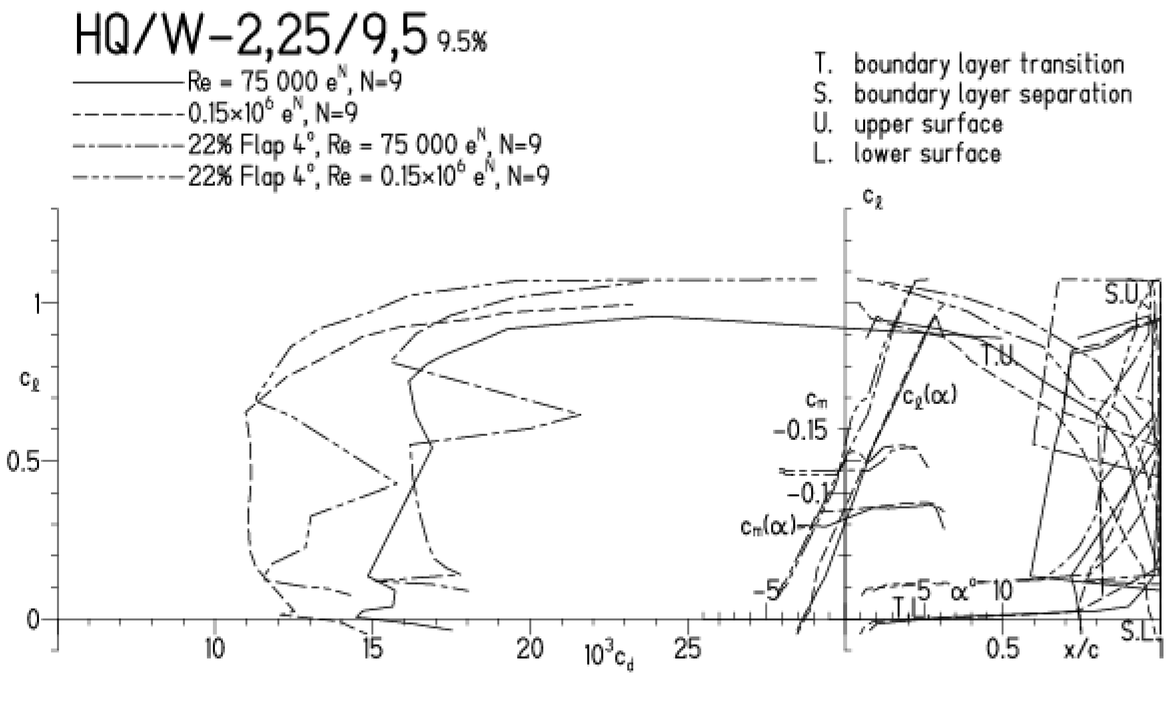


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

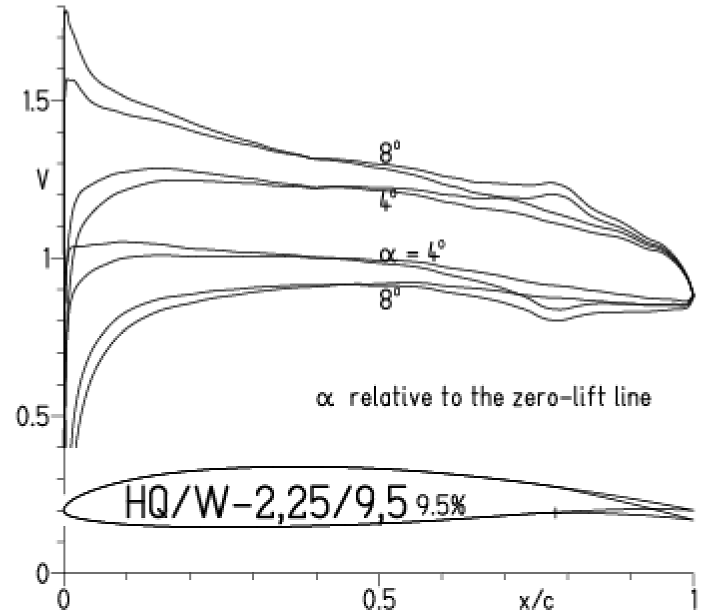


EPPLER 2005 V. 8.5.07 R

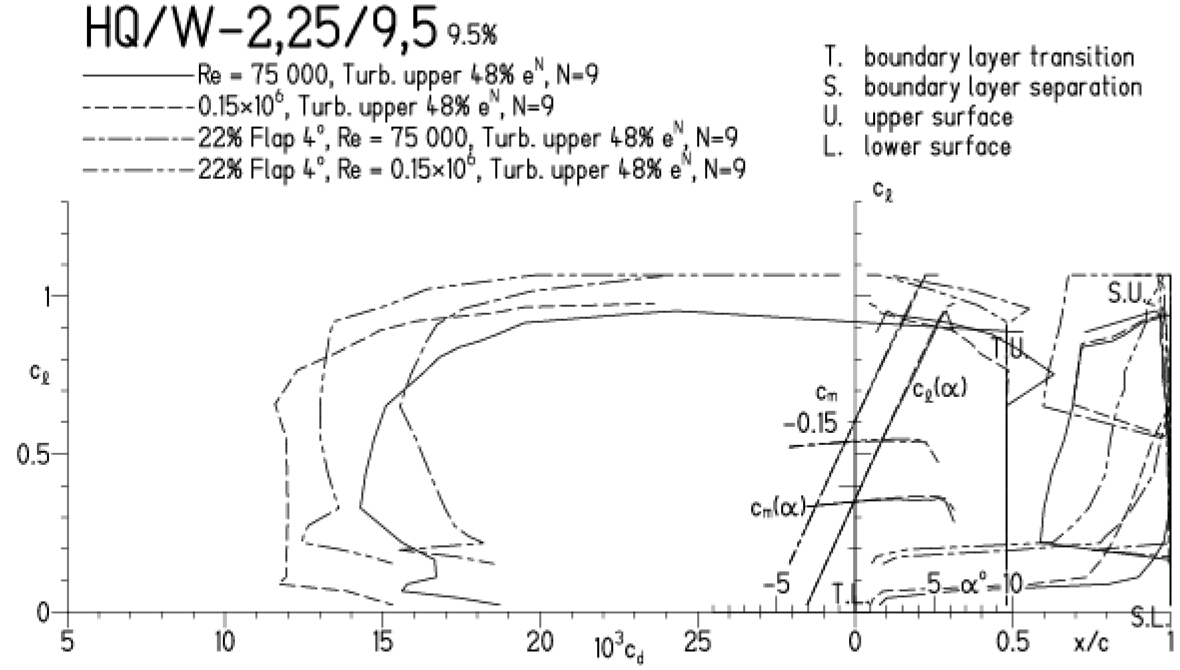


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

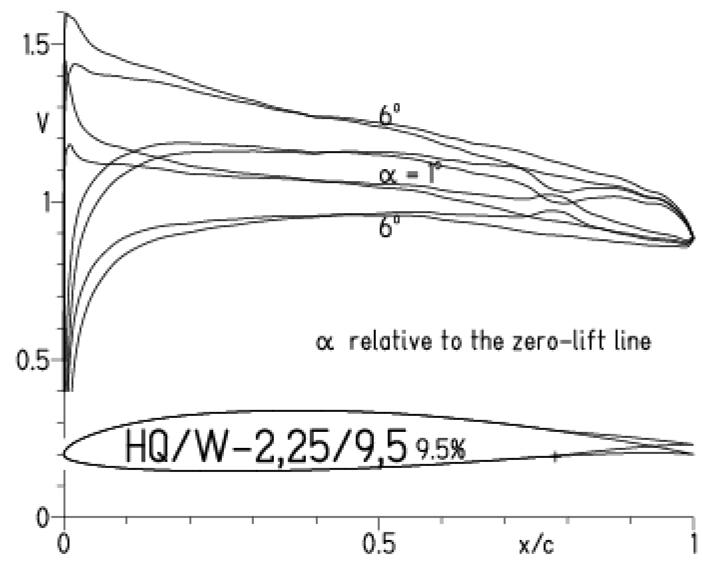


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

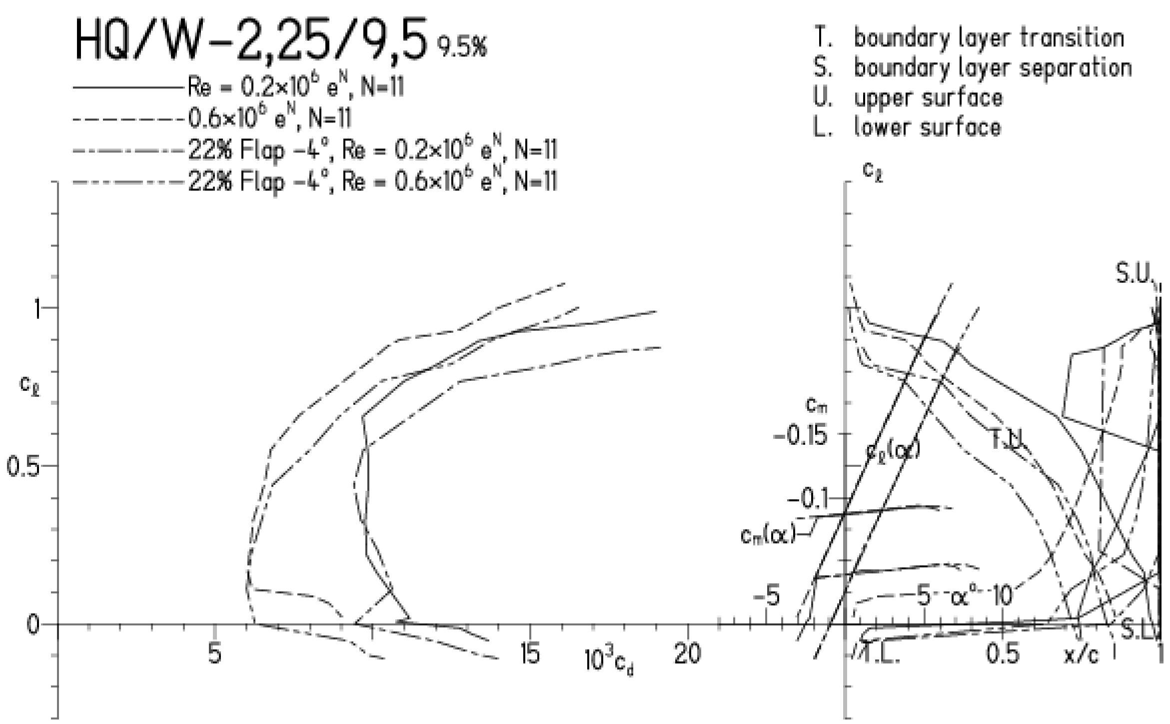


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

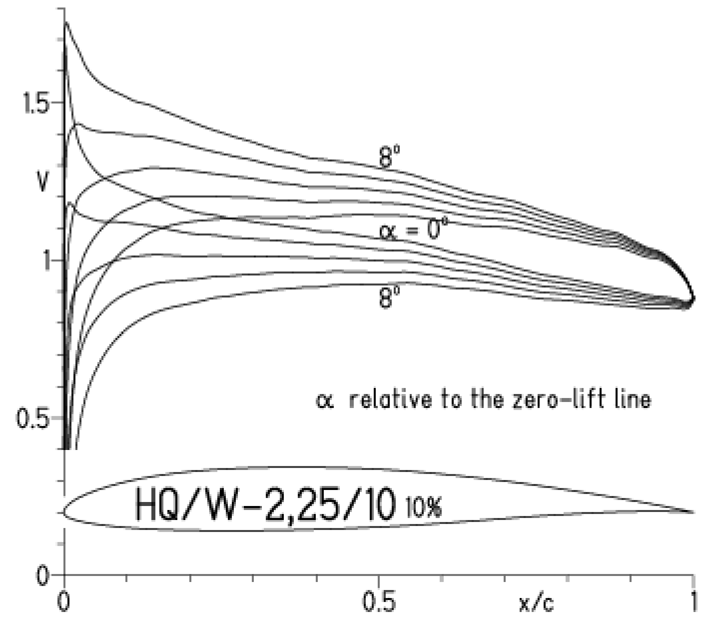


EPPLER 2005 V.

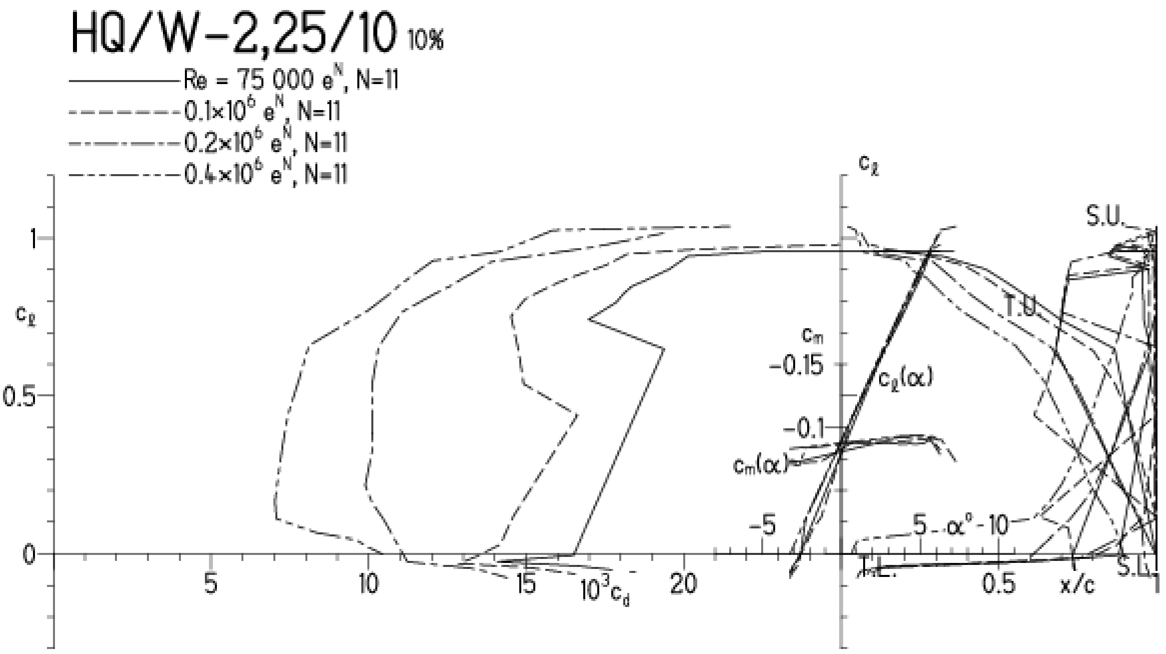


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

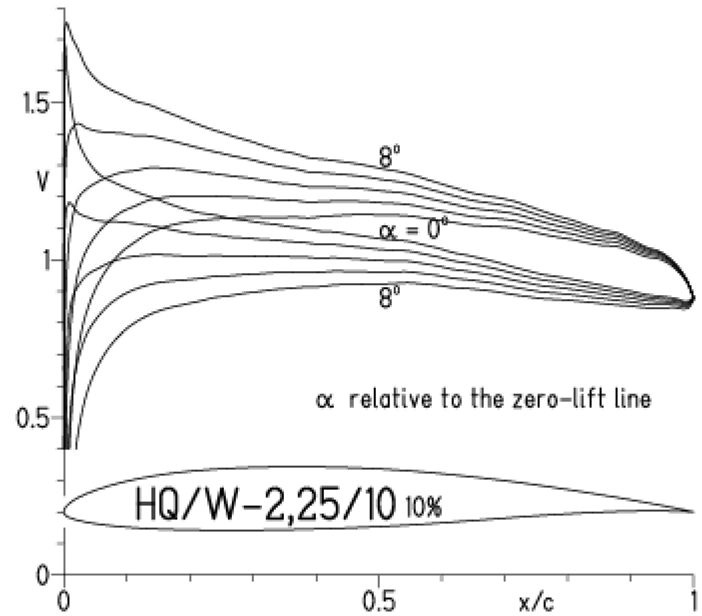


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

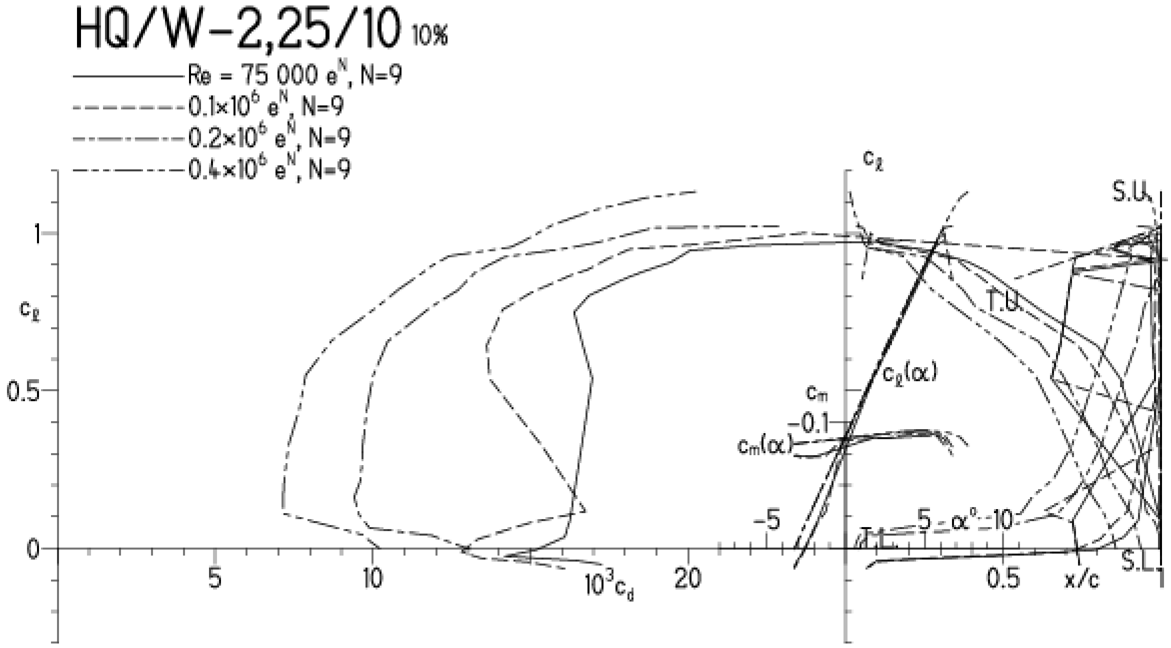


HQ/W-2,25/10, N=9

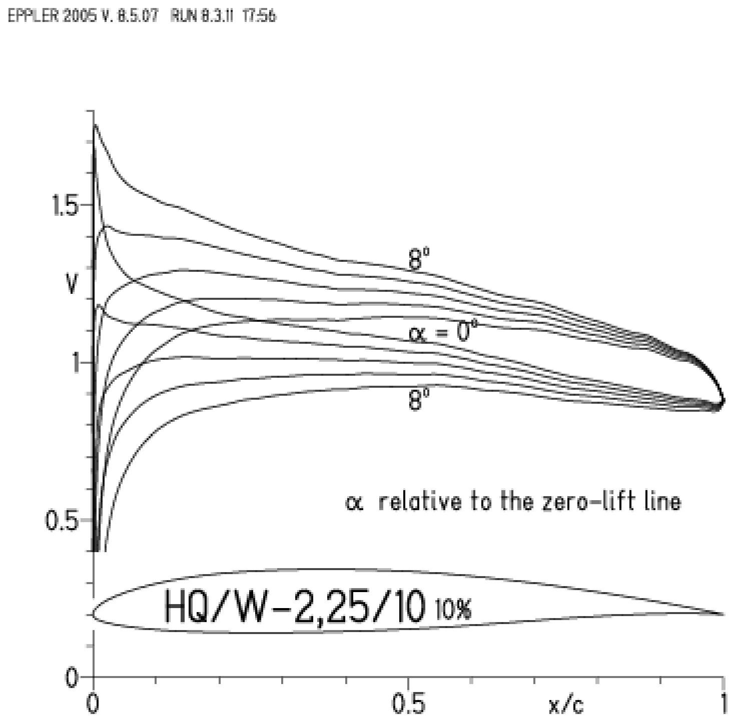
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

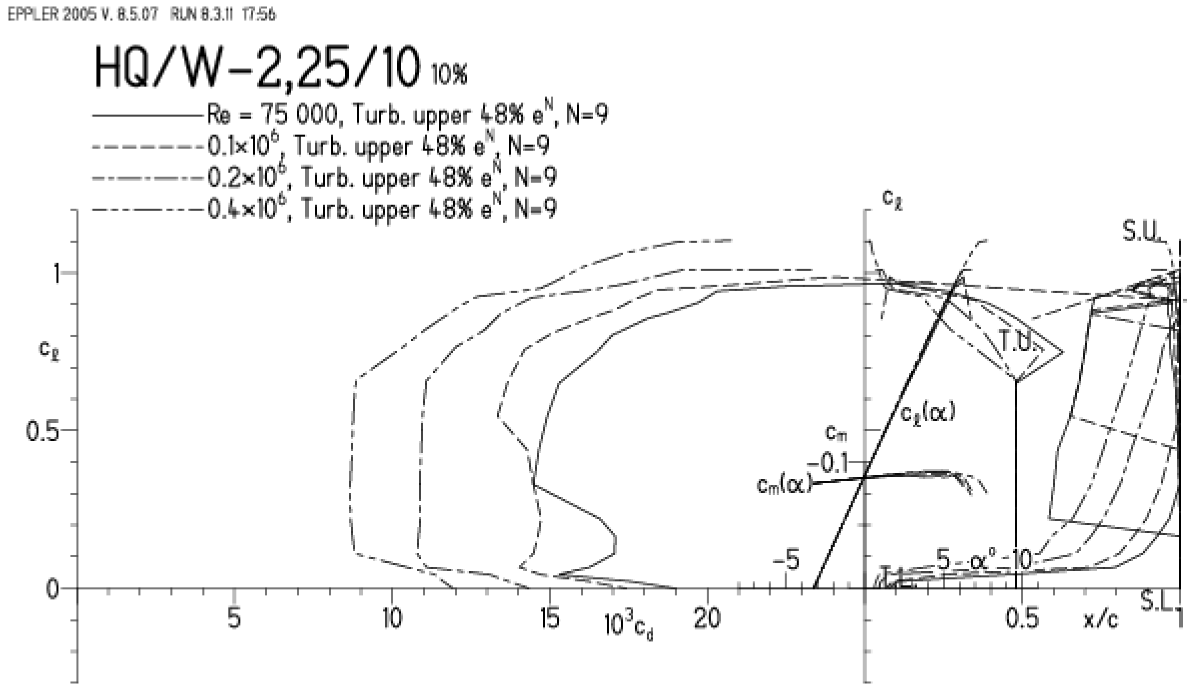


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



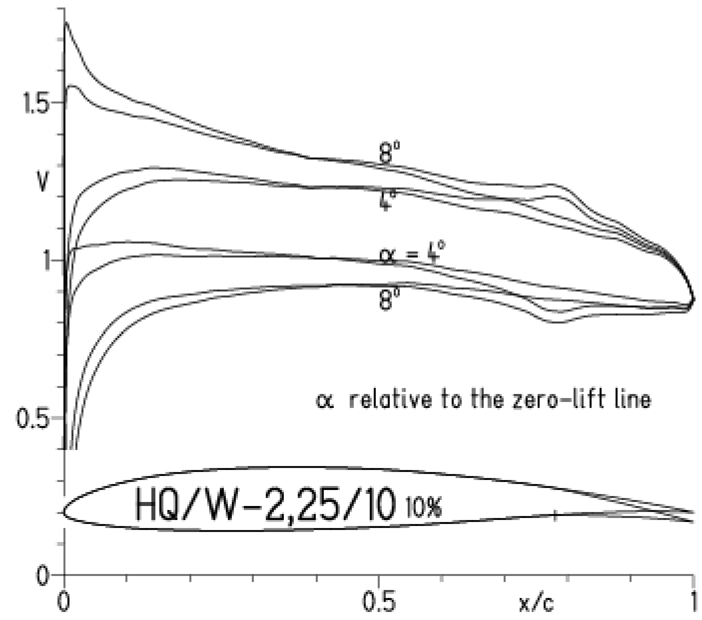
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



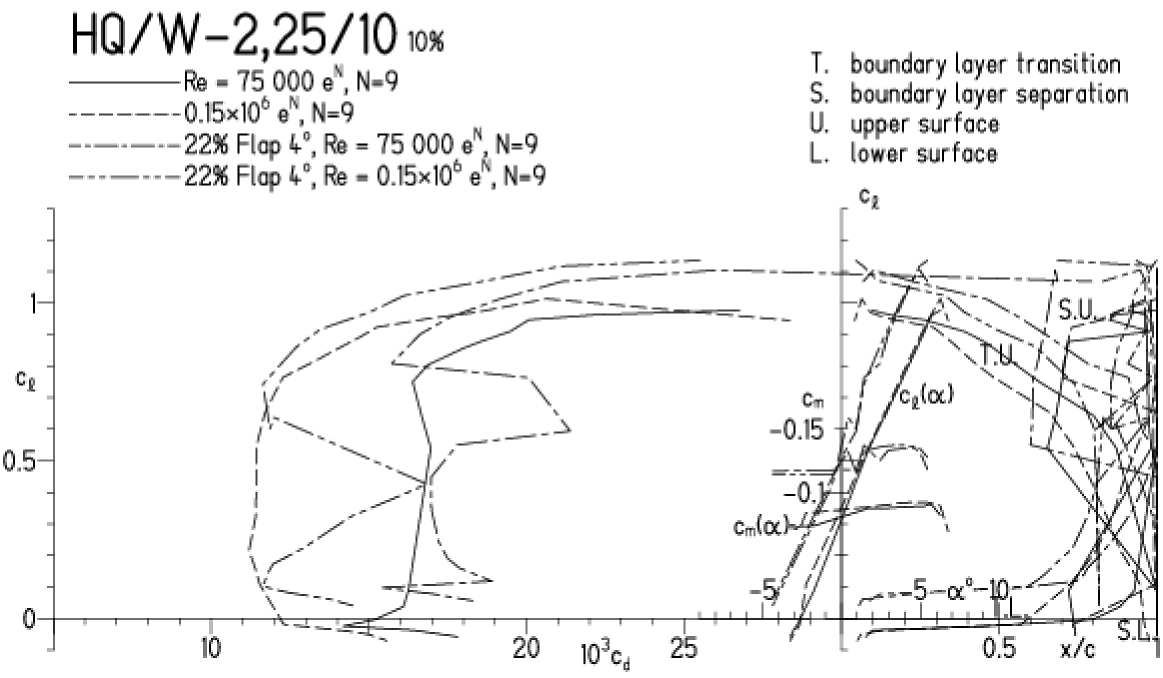


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

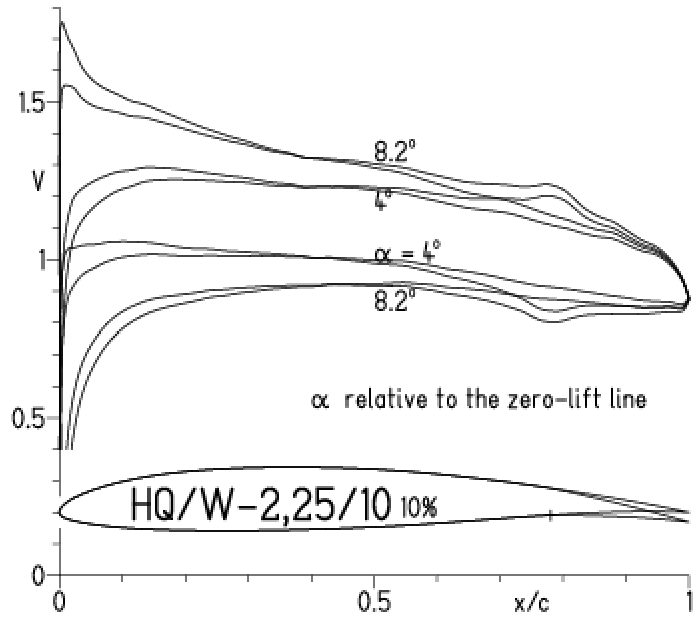


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

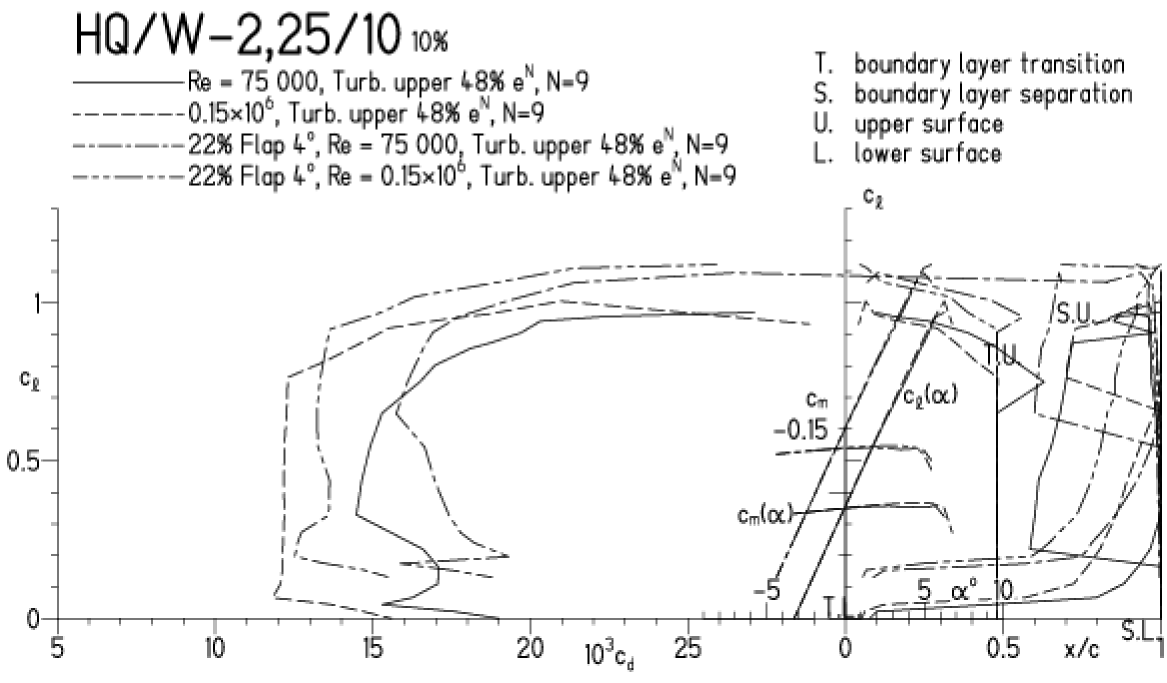


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

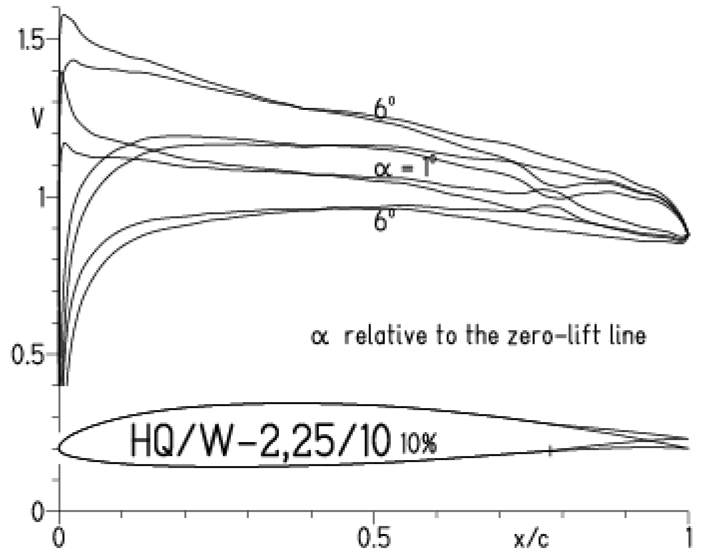


EPPLER 2005 V. 8.5.07 RUN 8.3

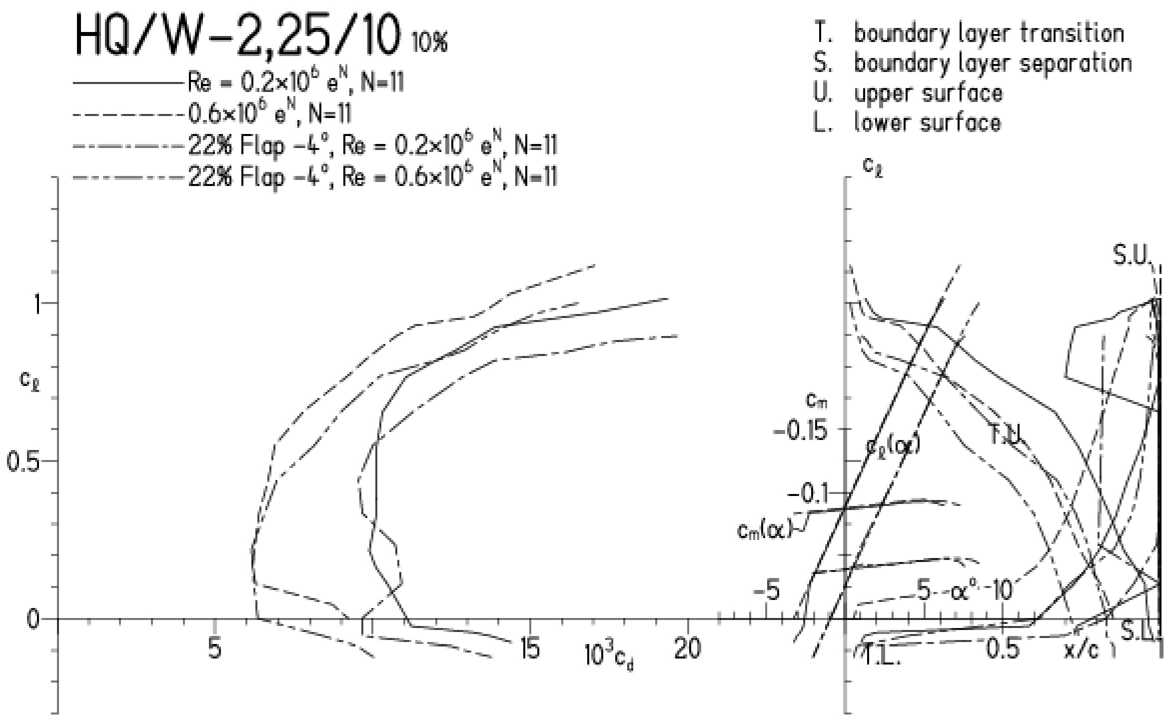


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

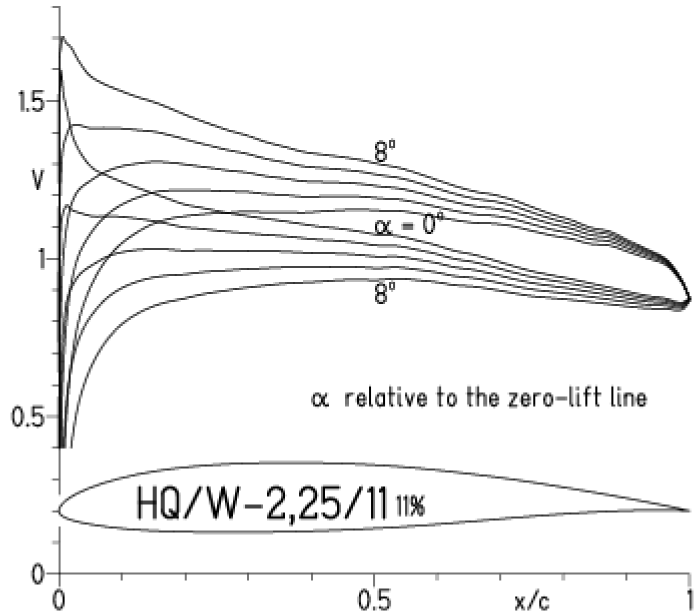


EPPLER 2005 V. 8.5.07 RUN

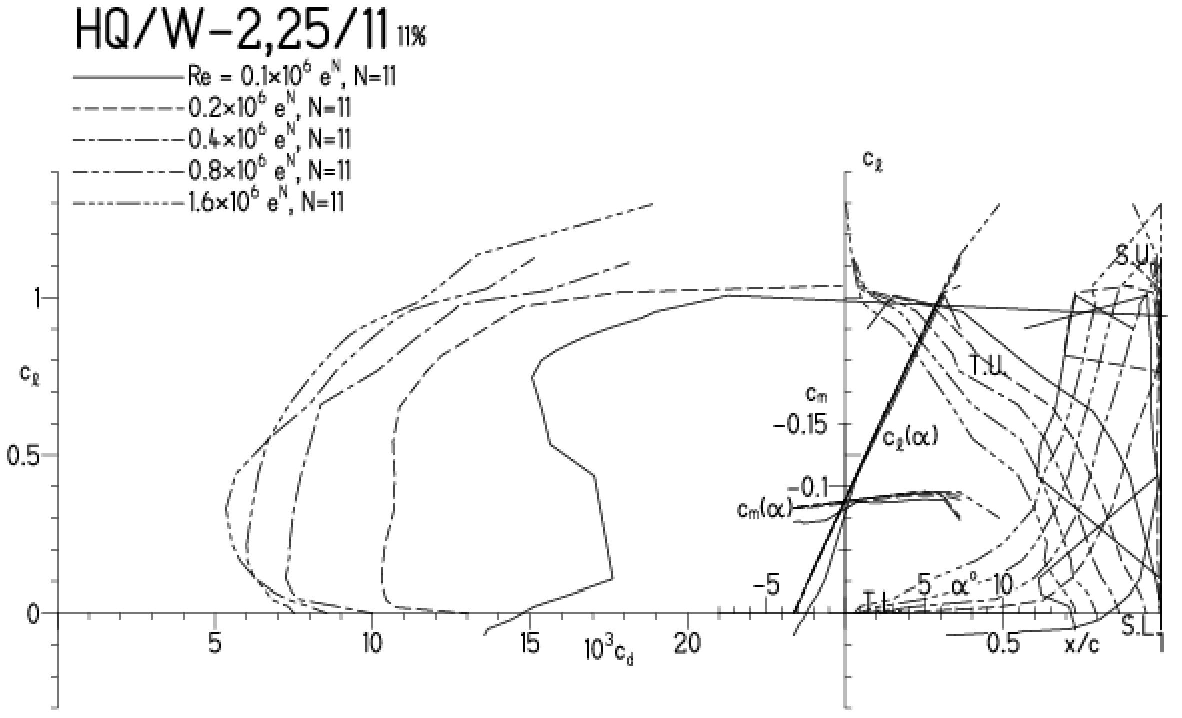


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

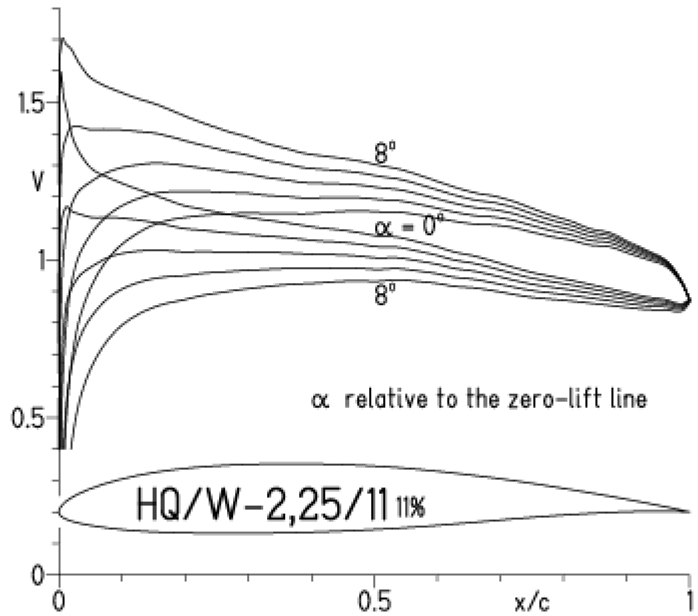


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12

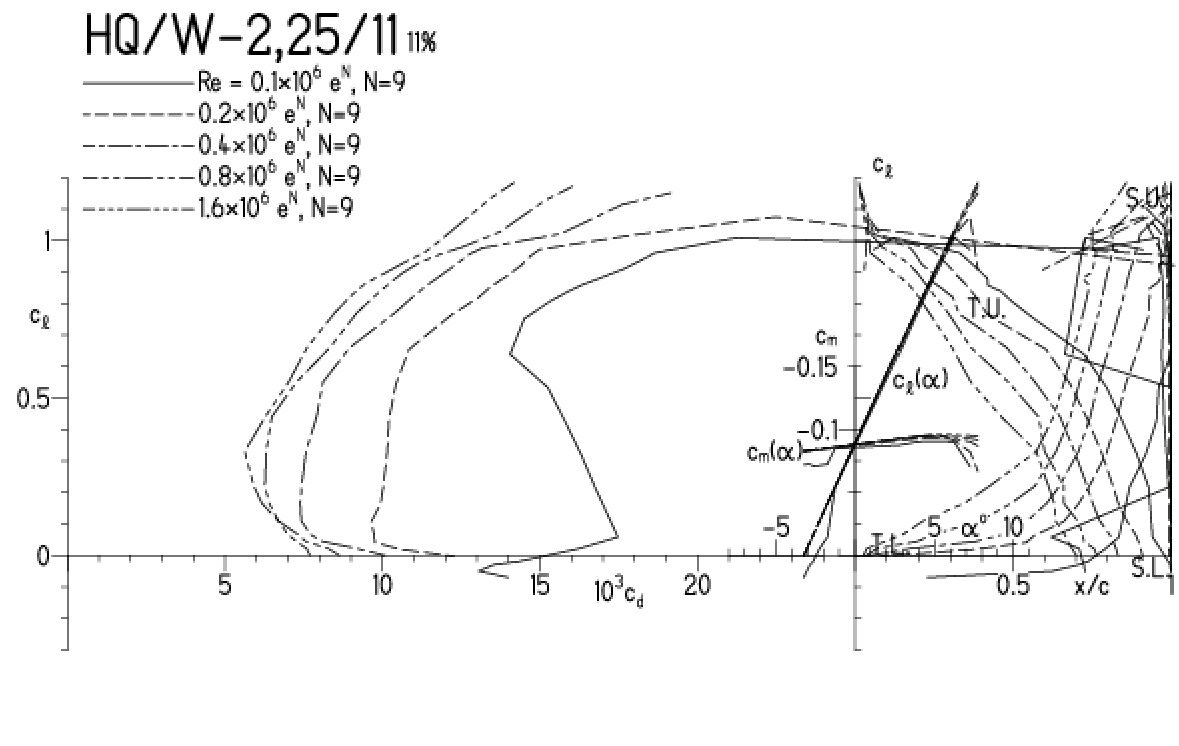


HQQ/W-2,25/11, N=9

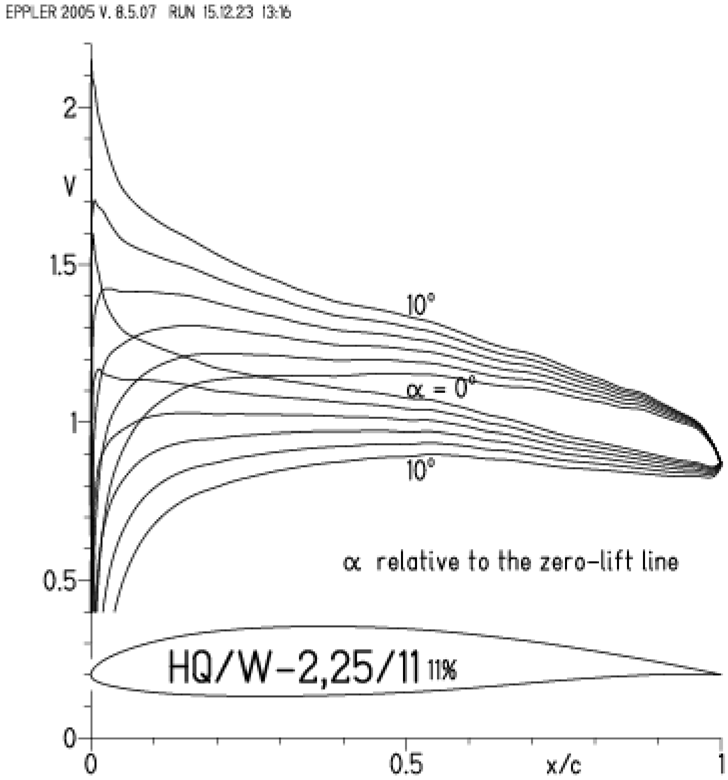
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

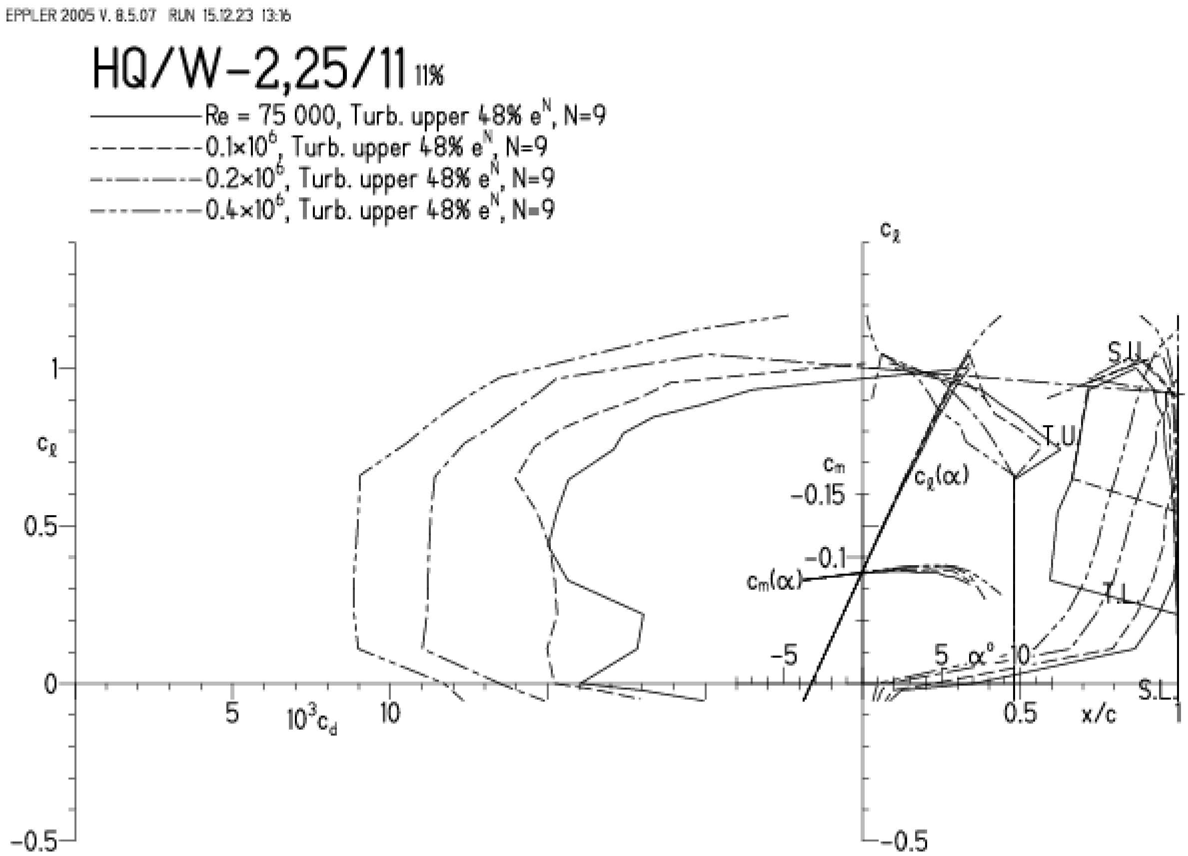


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



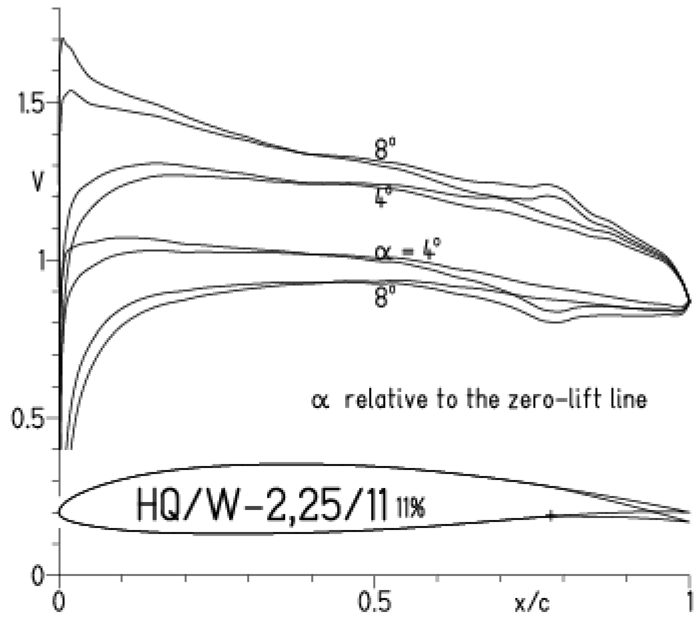
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



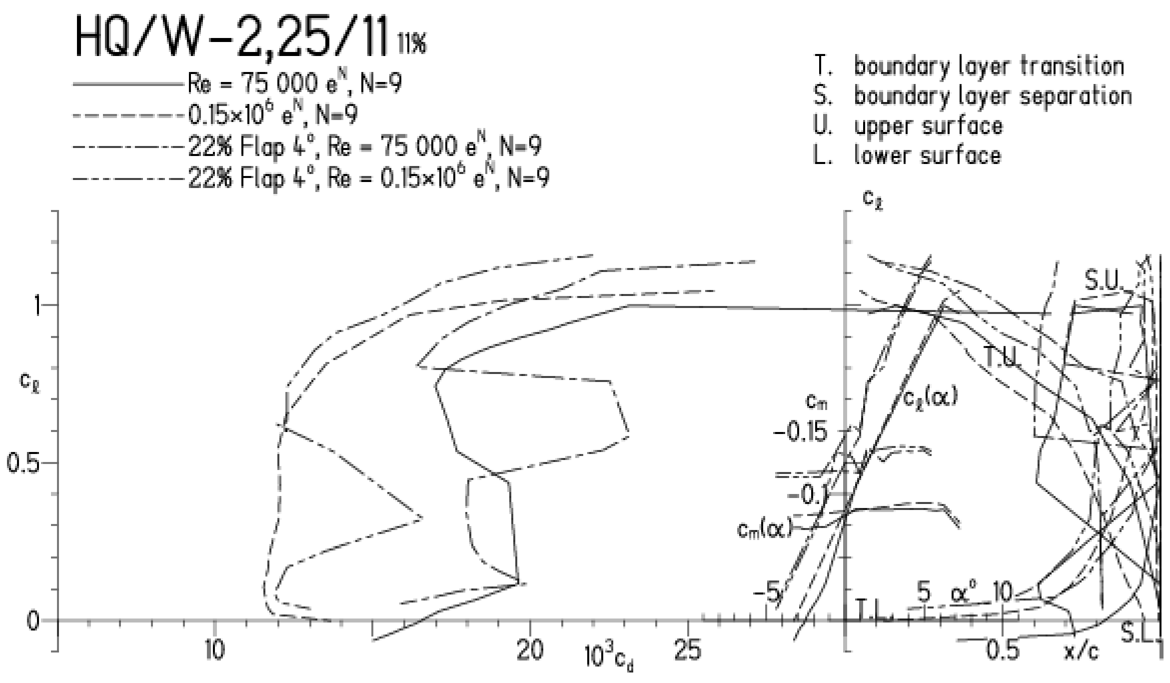


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

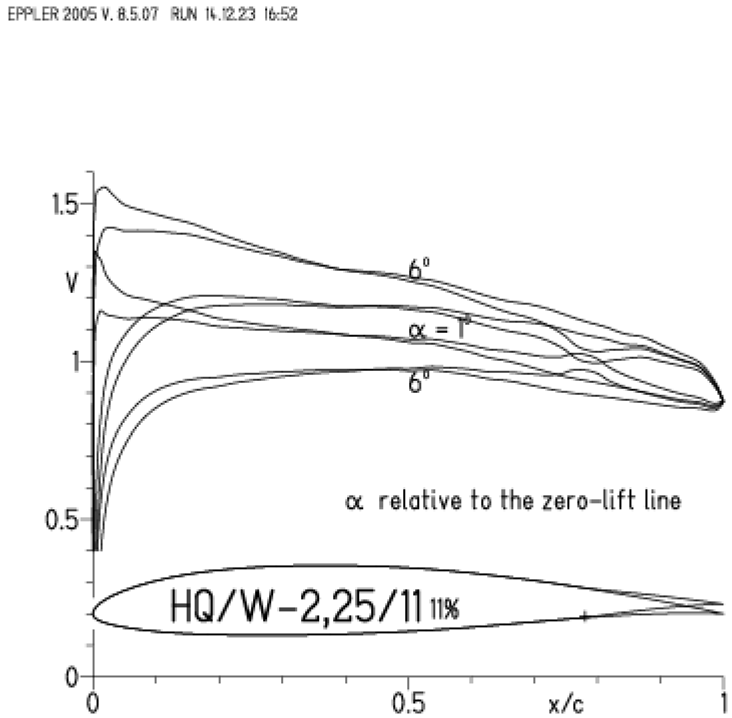
EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

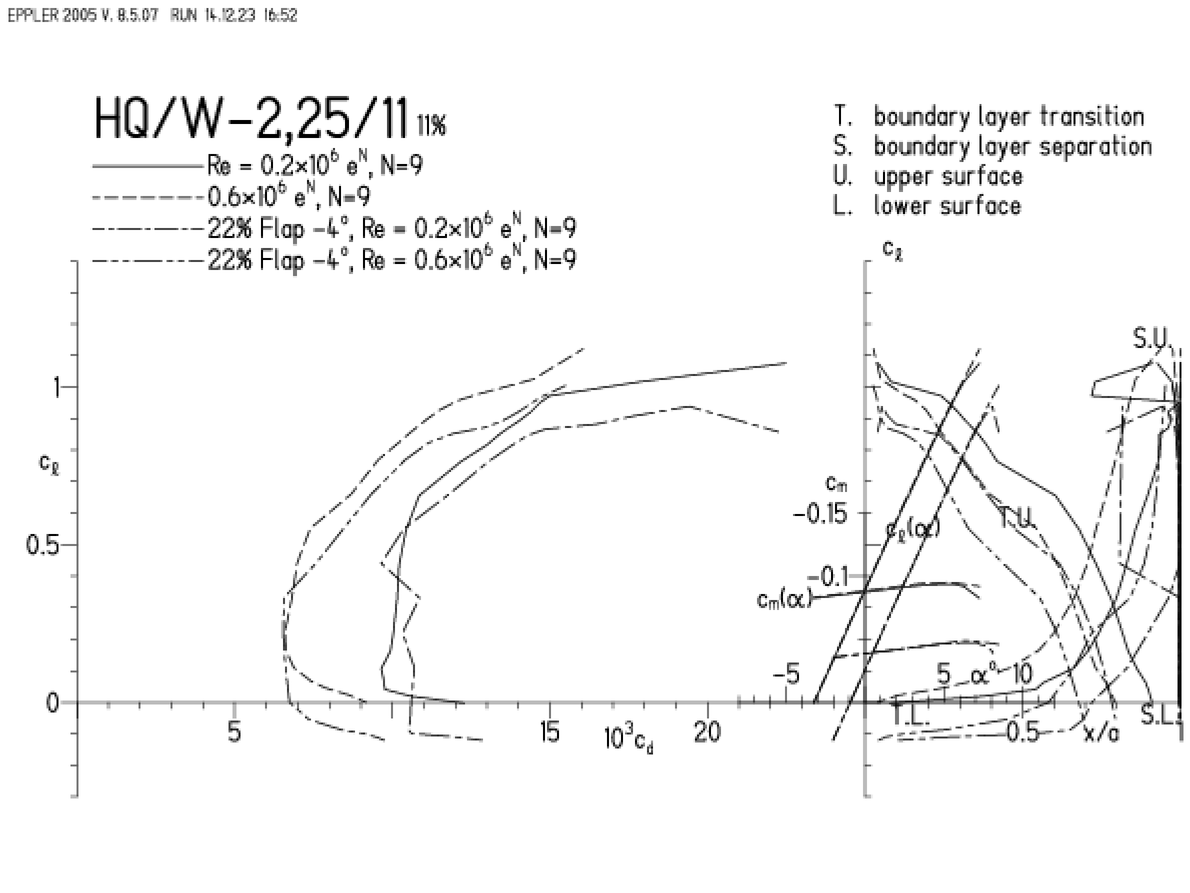


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17



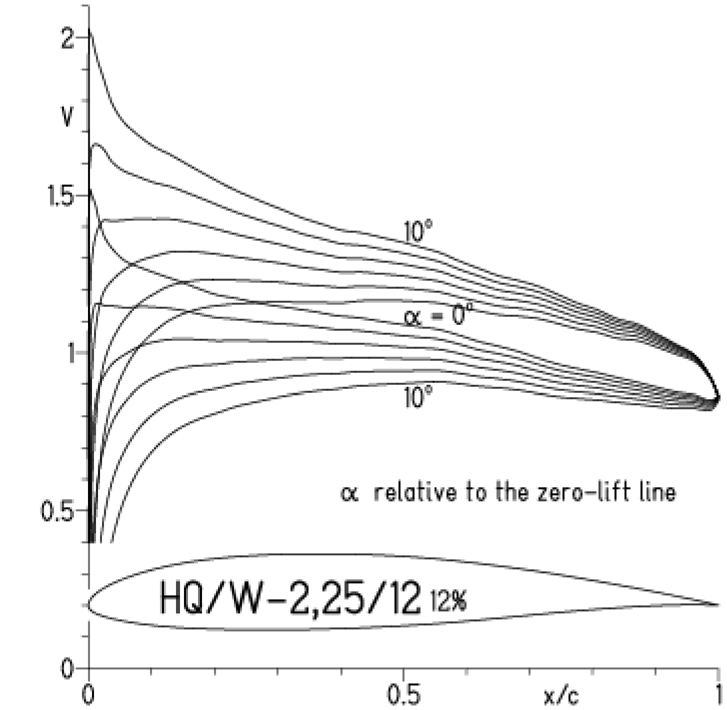
HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag



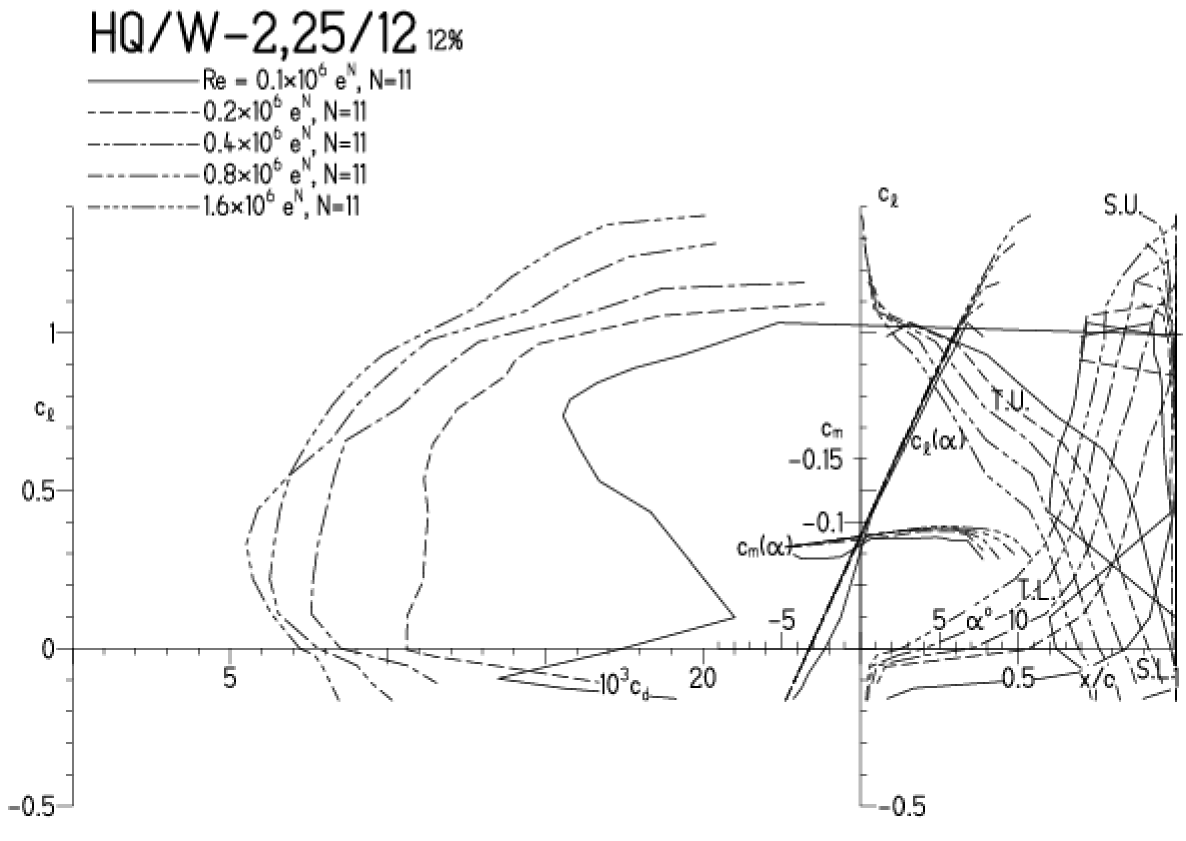


<u>HQ/W-2,25/12</u>, N=11

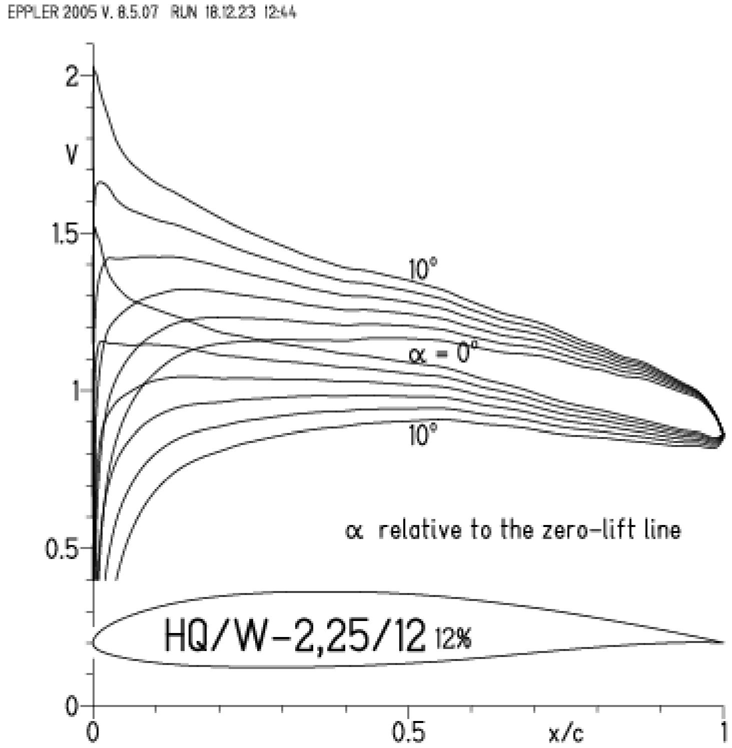
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

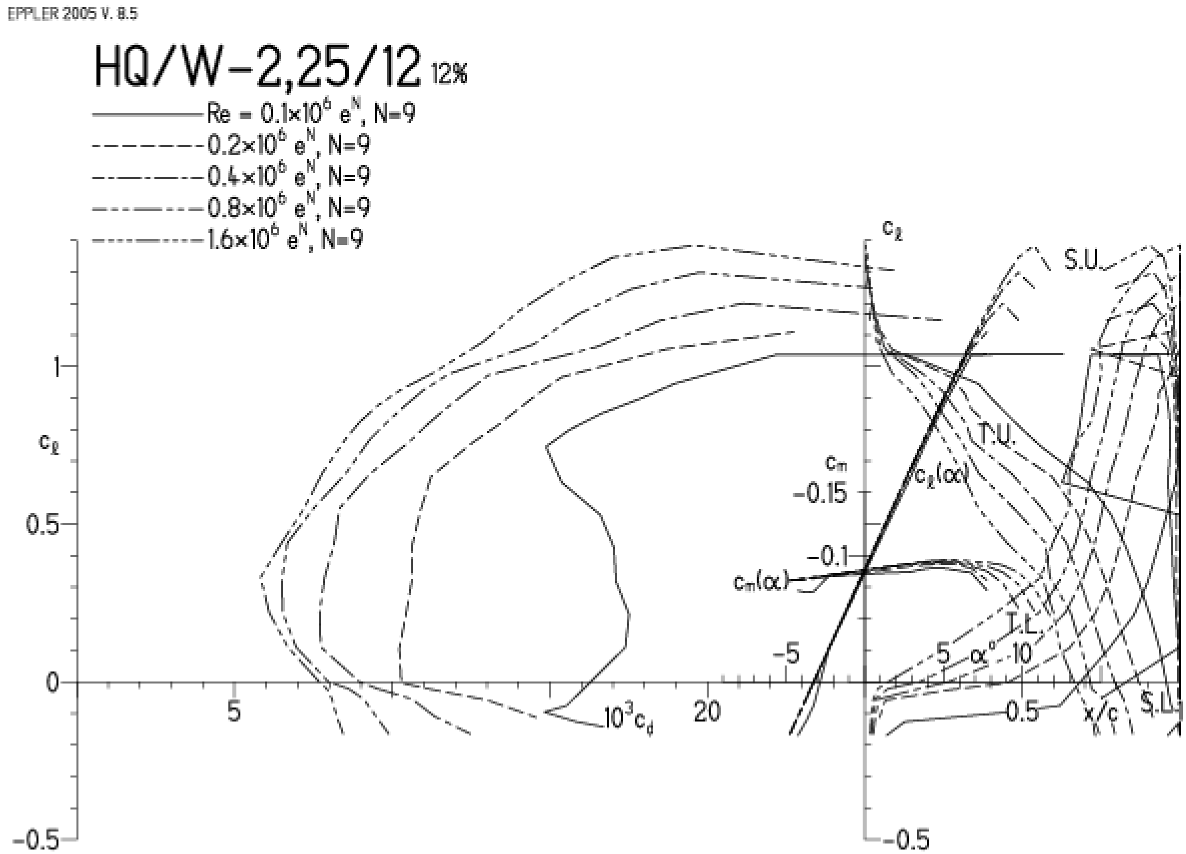


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

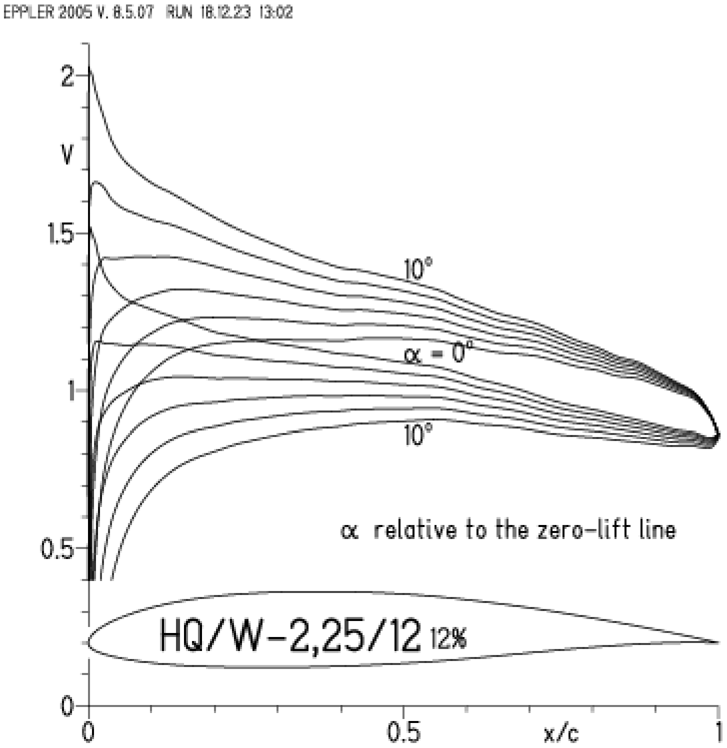


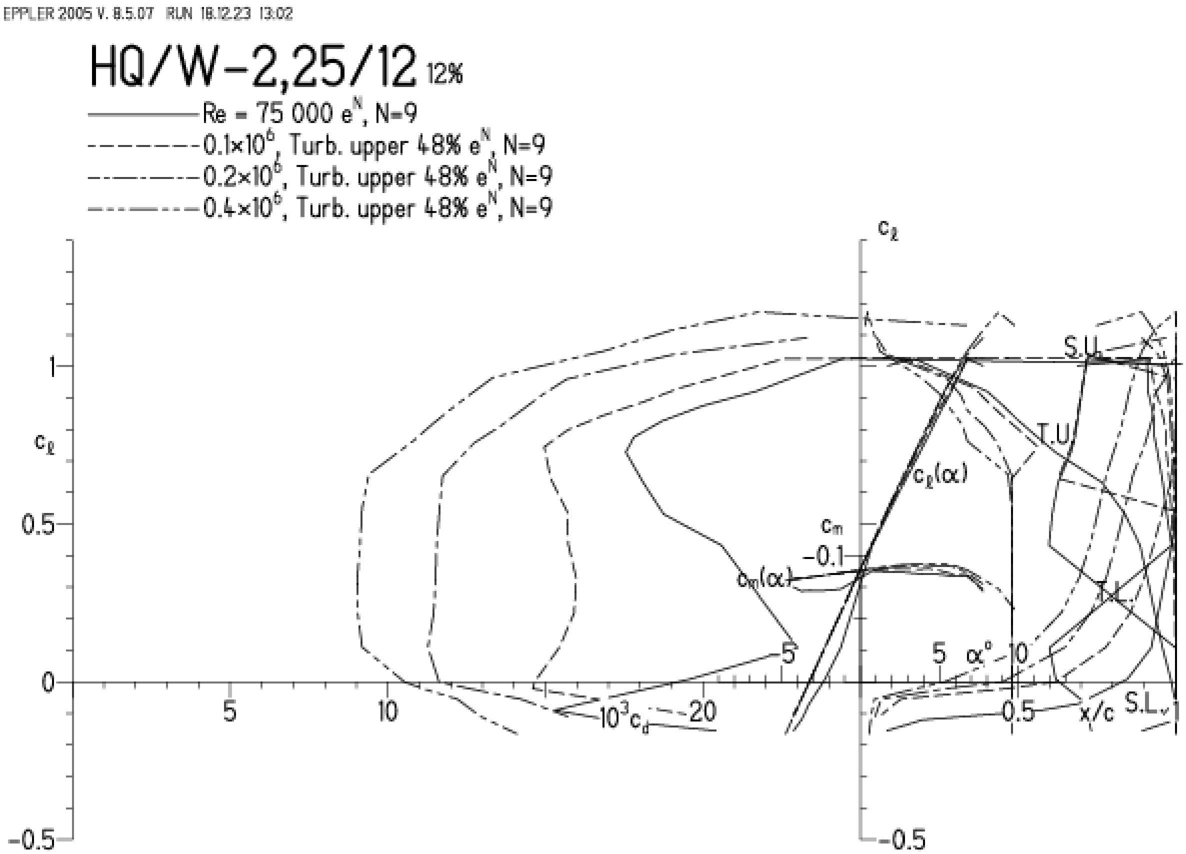
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
cℓ
cm
cℓ(α)
cm(α)
S.U.
T.U.
T.L.
S.L.
α°
10³cd
x/c

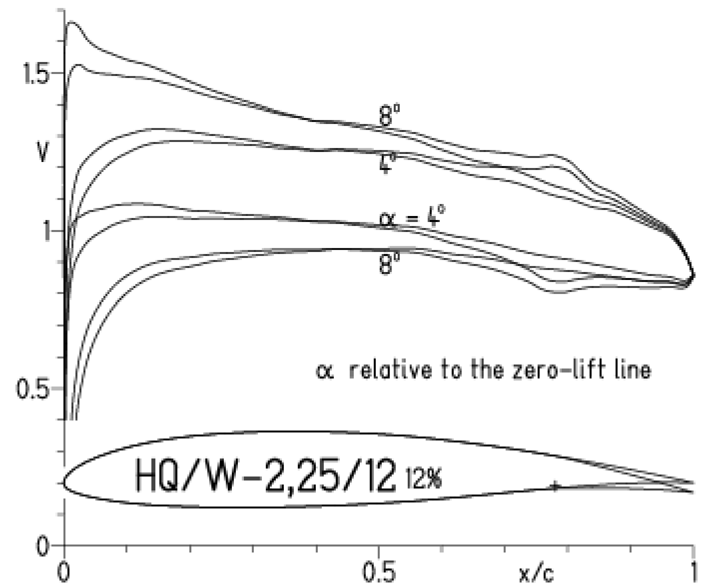
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



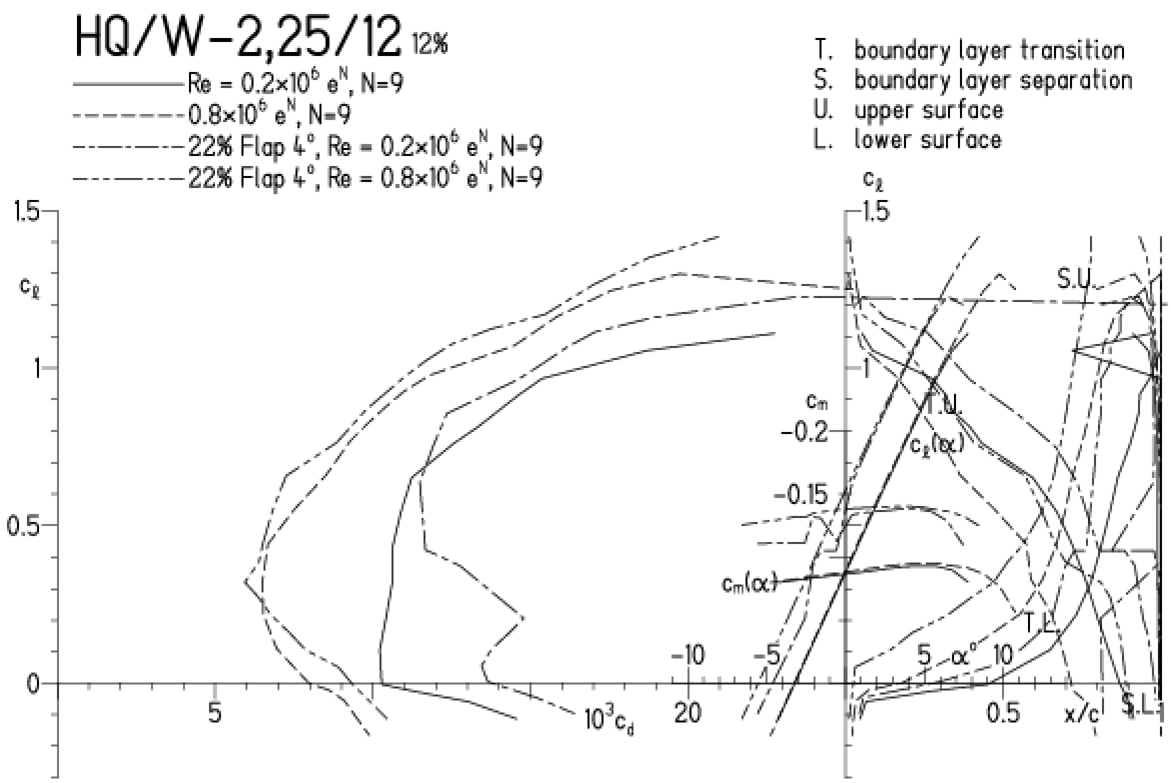


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

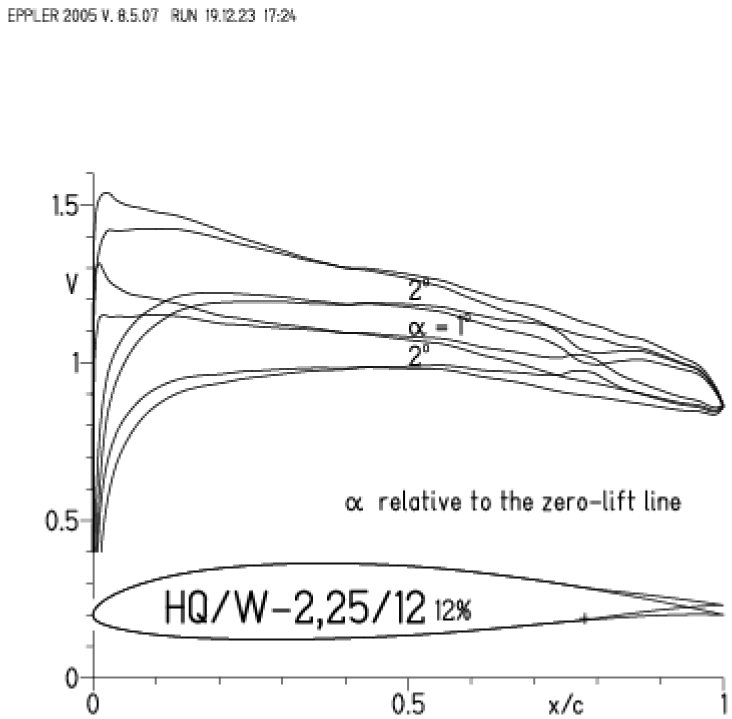
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

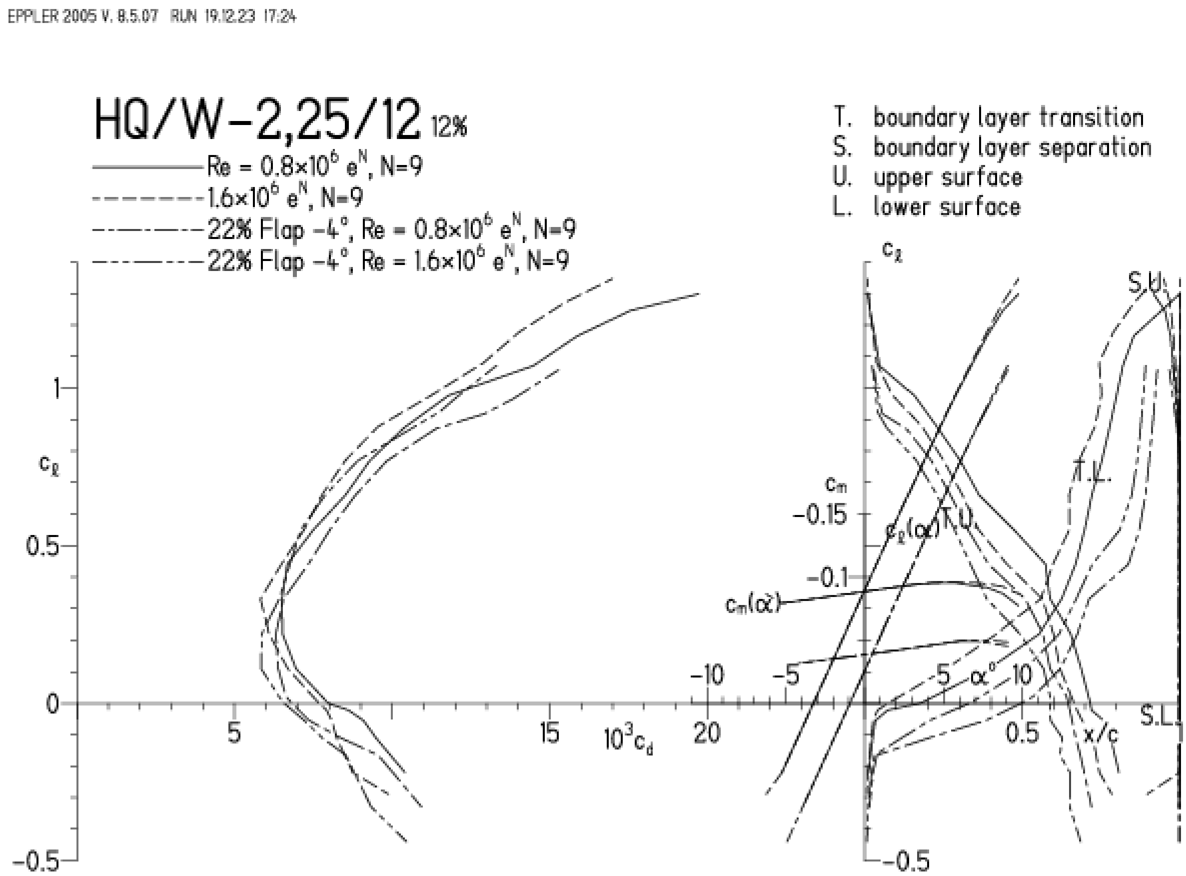


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

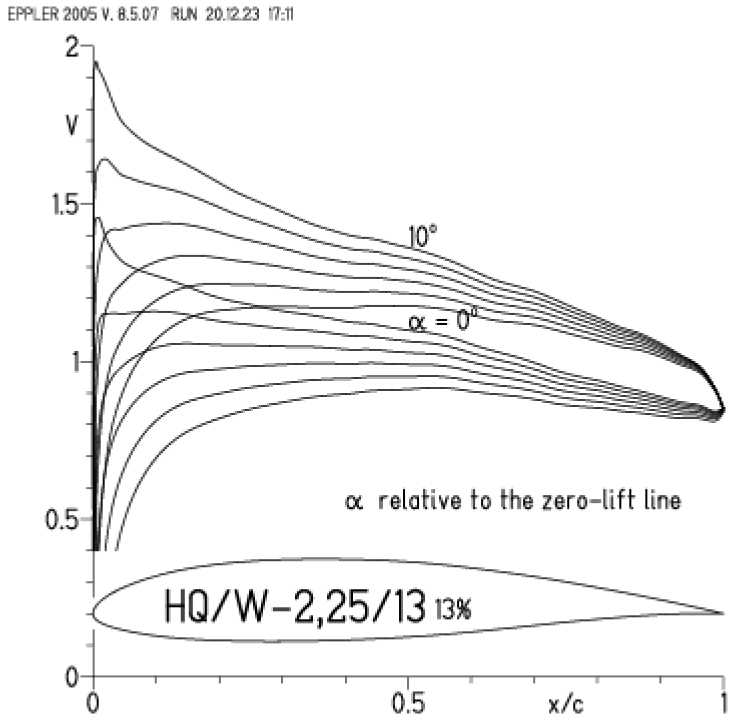


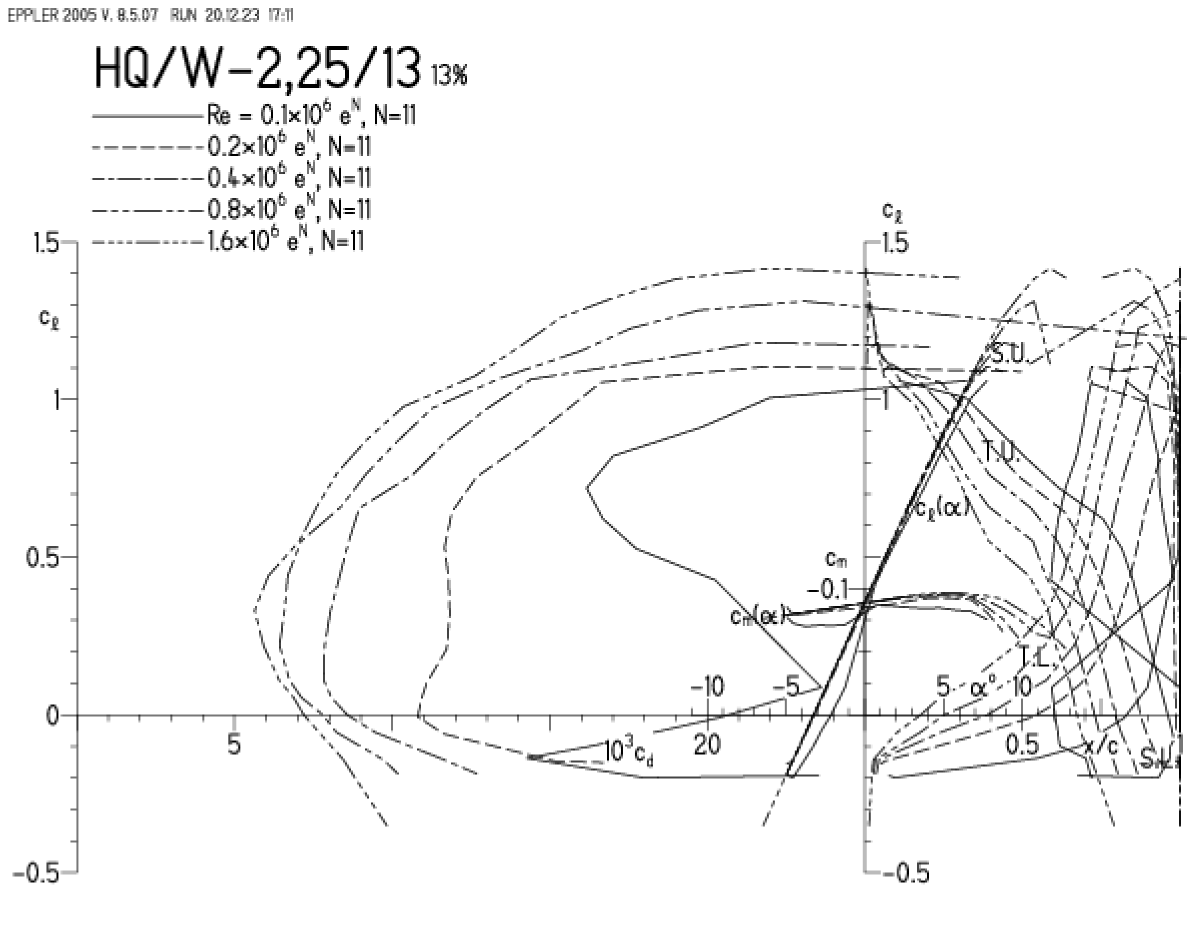
<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag



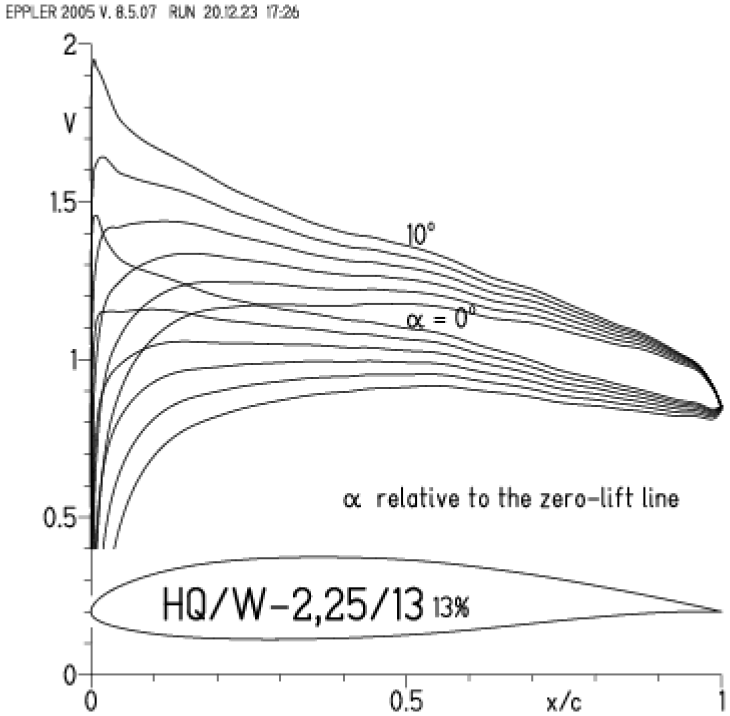


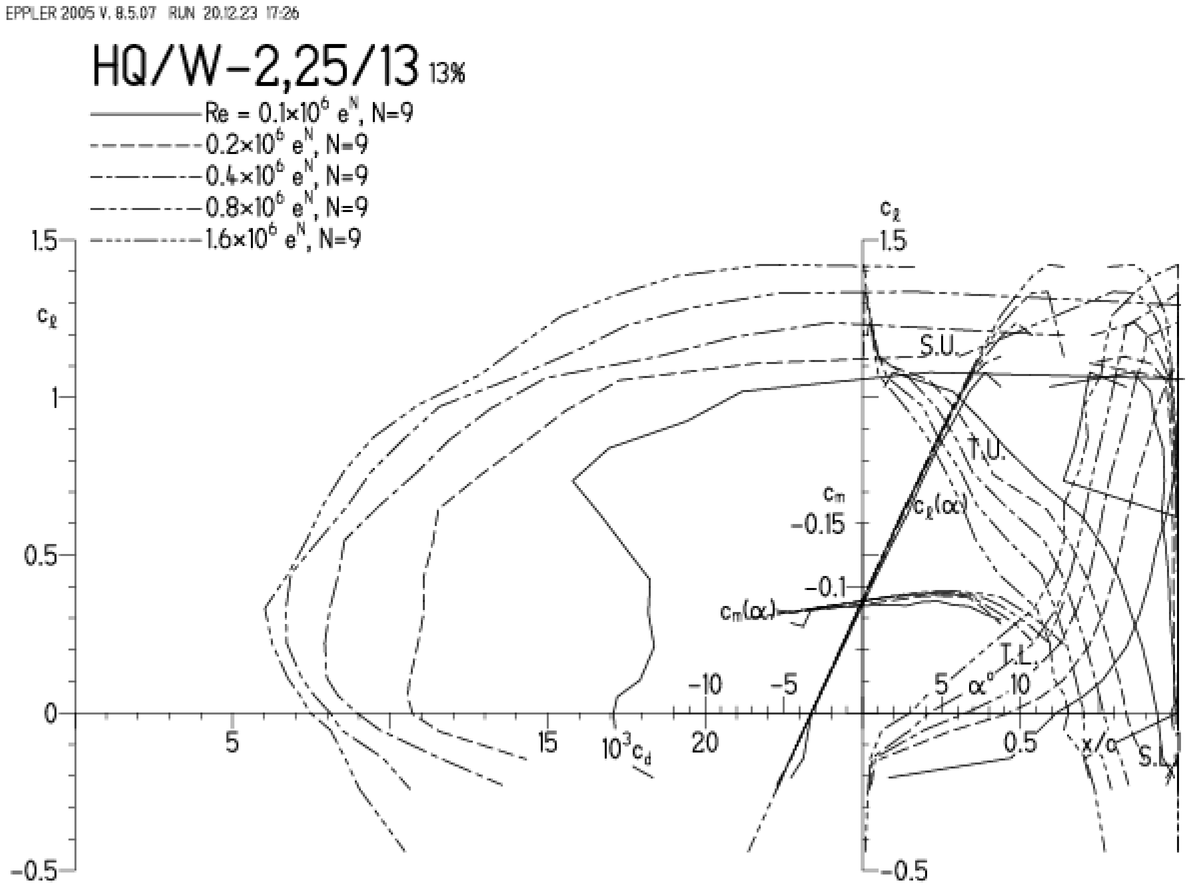
HQ/W-2,25/13, N=11



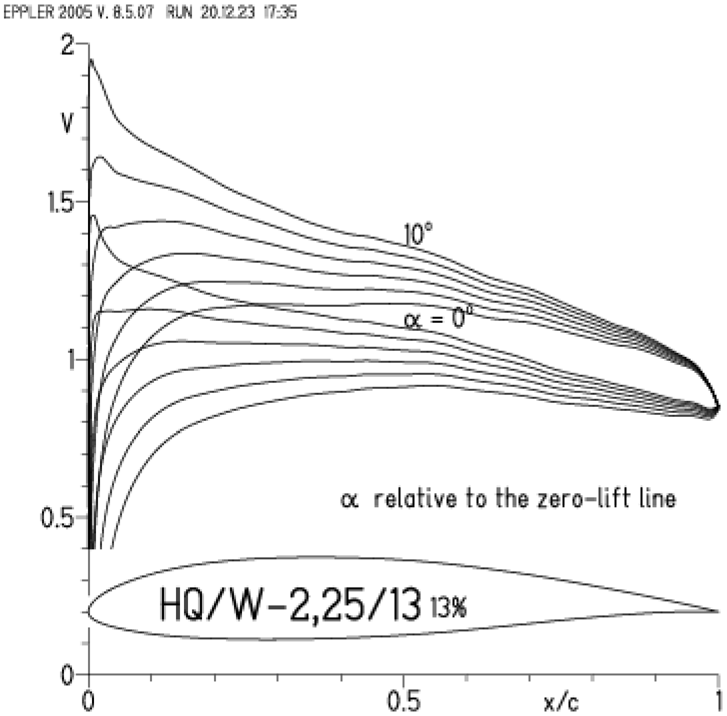


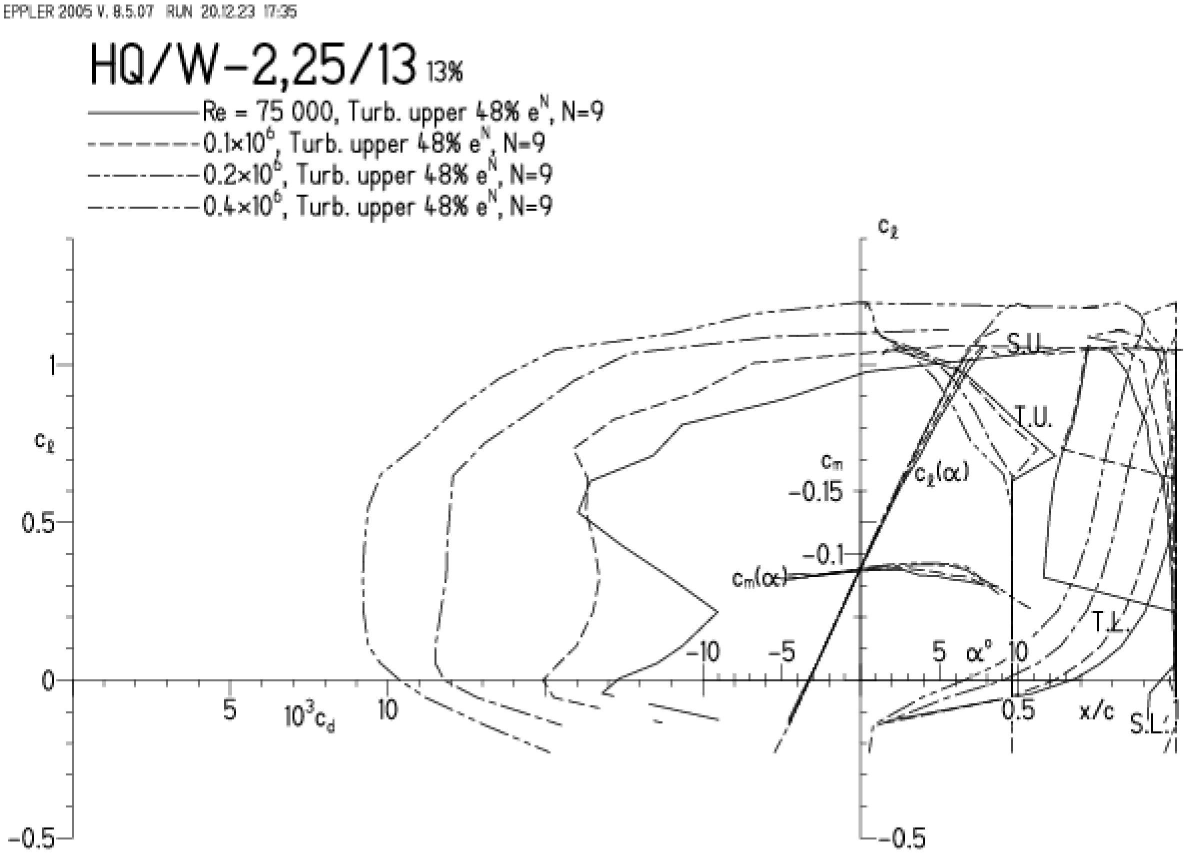
<u>HQ/W-2,25/13</u>, N=9





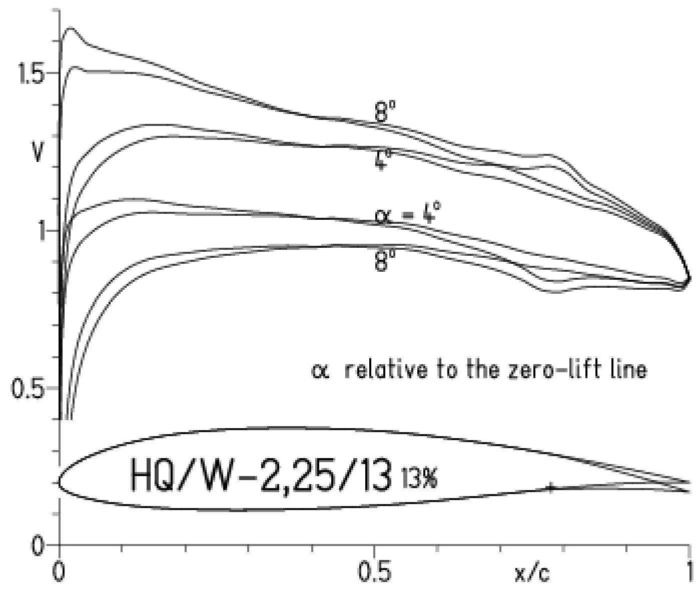
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



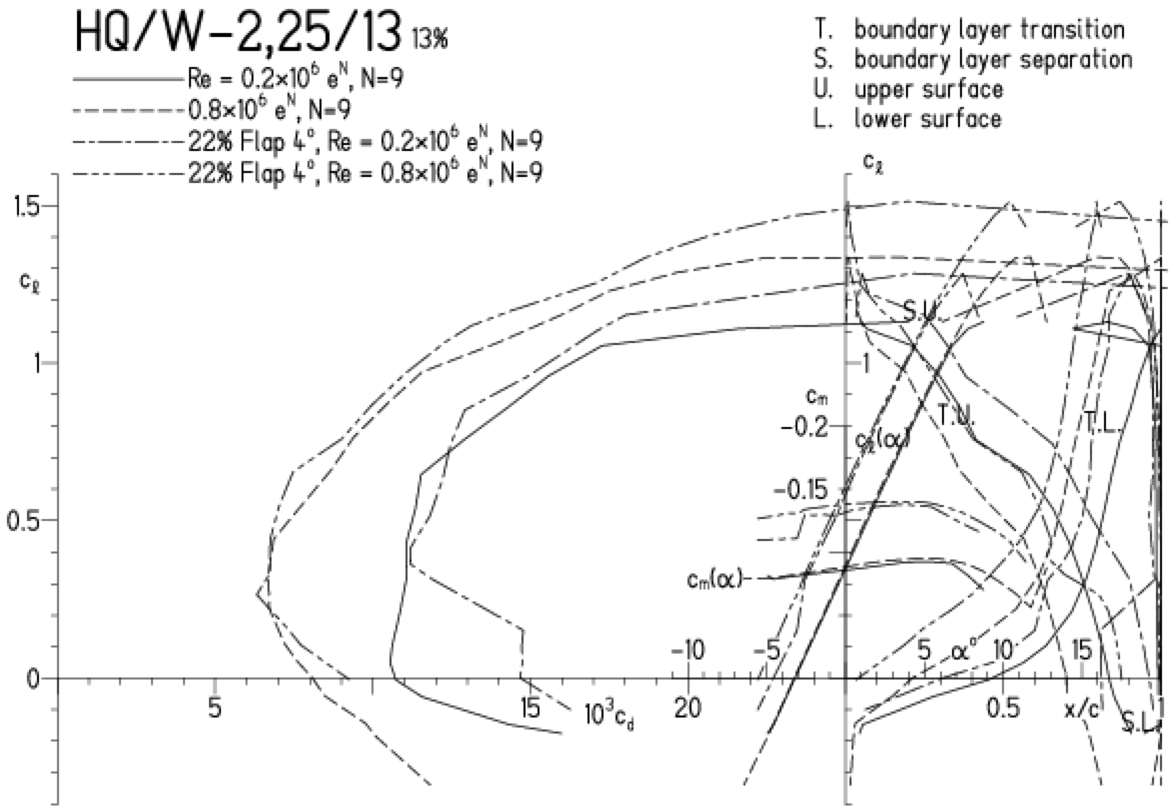


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

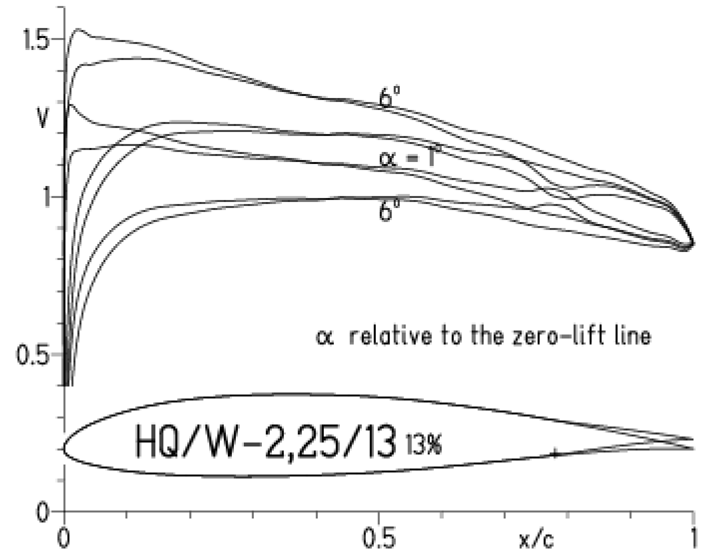


EPPLER 2005 V.

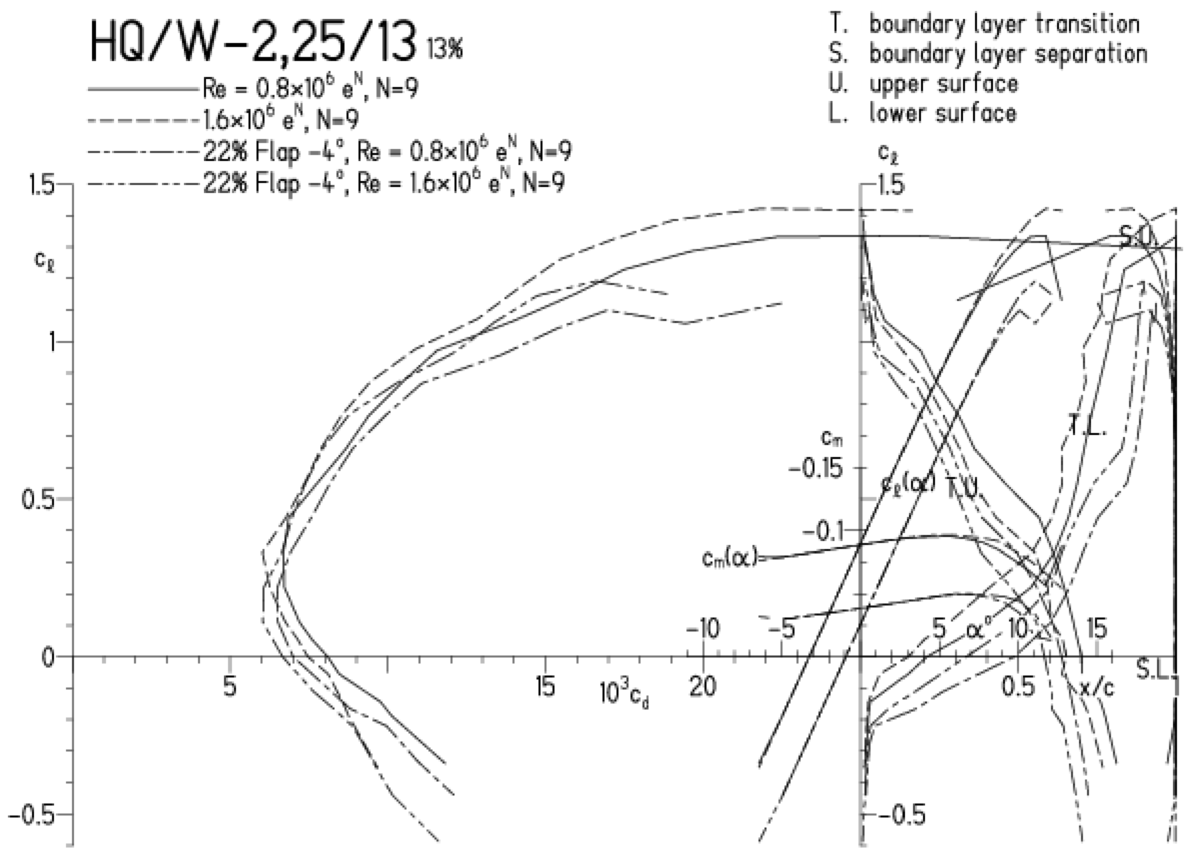


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

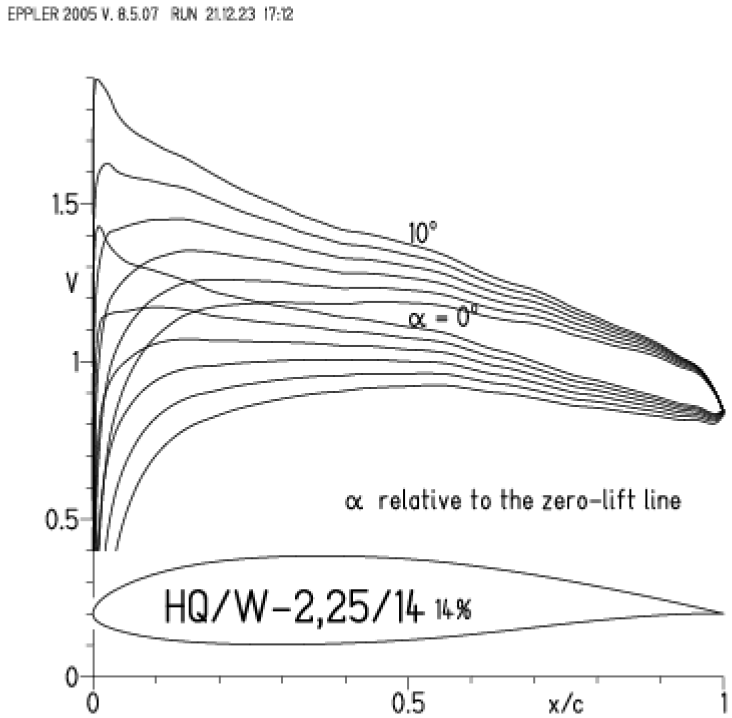
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

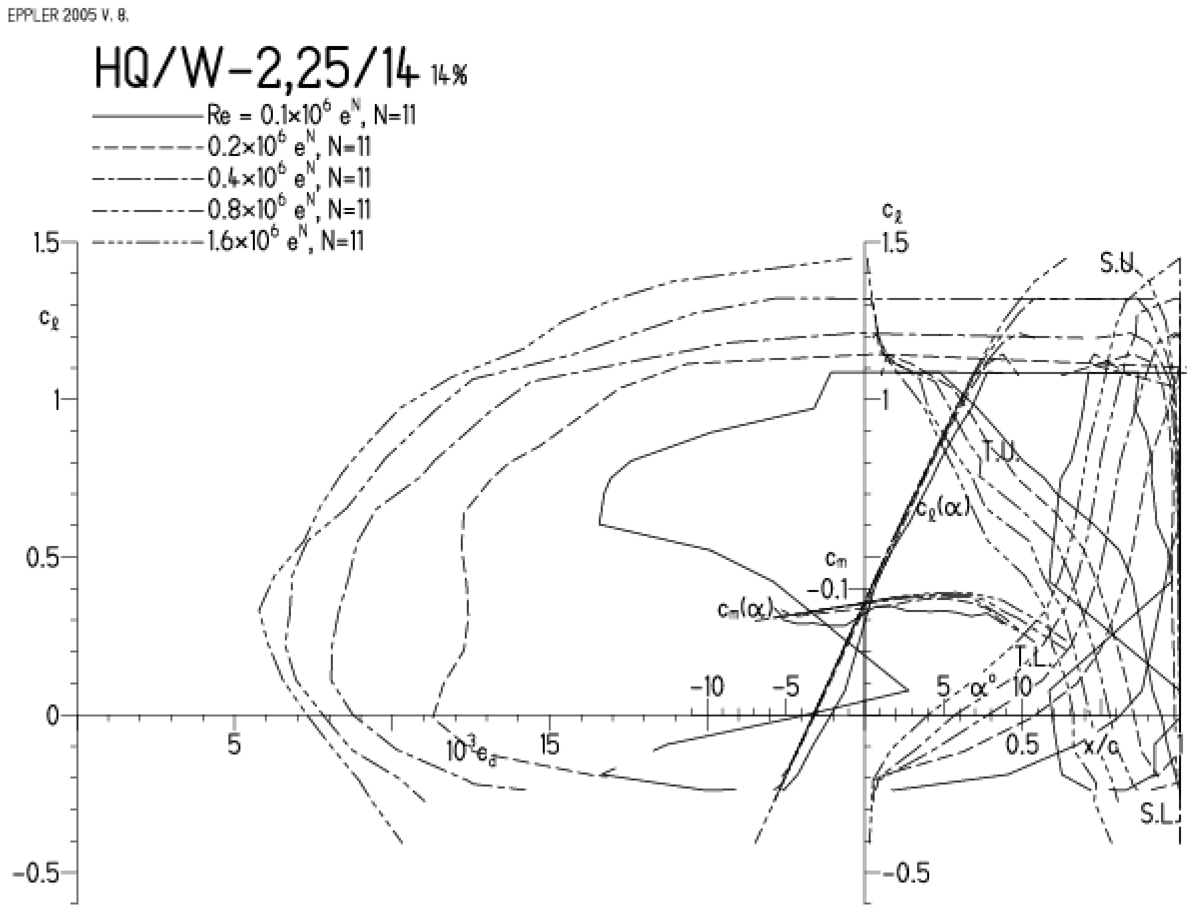


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

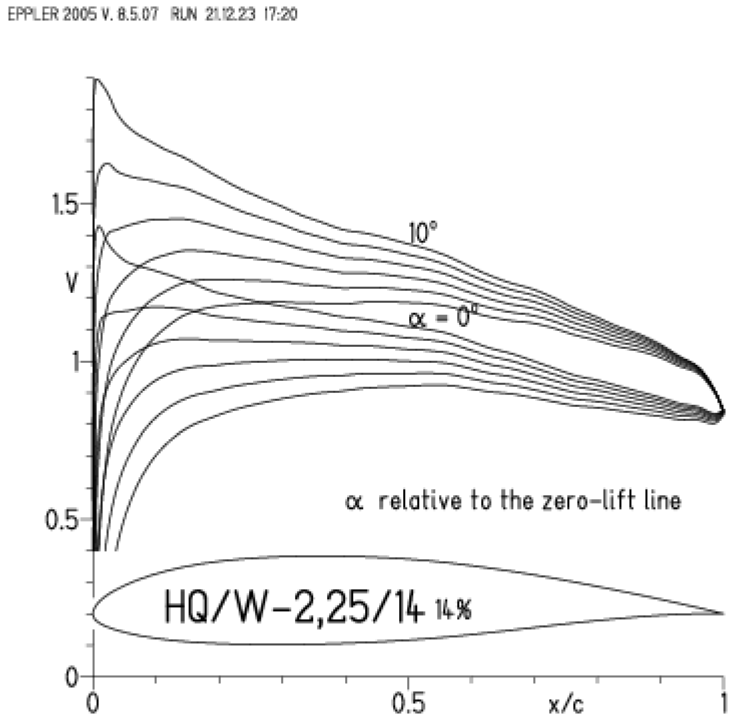


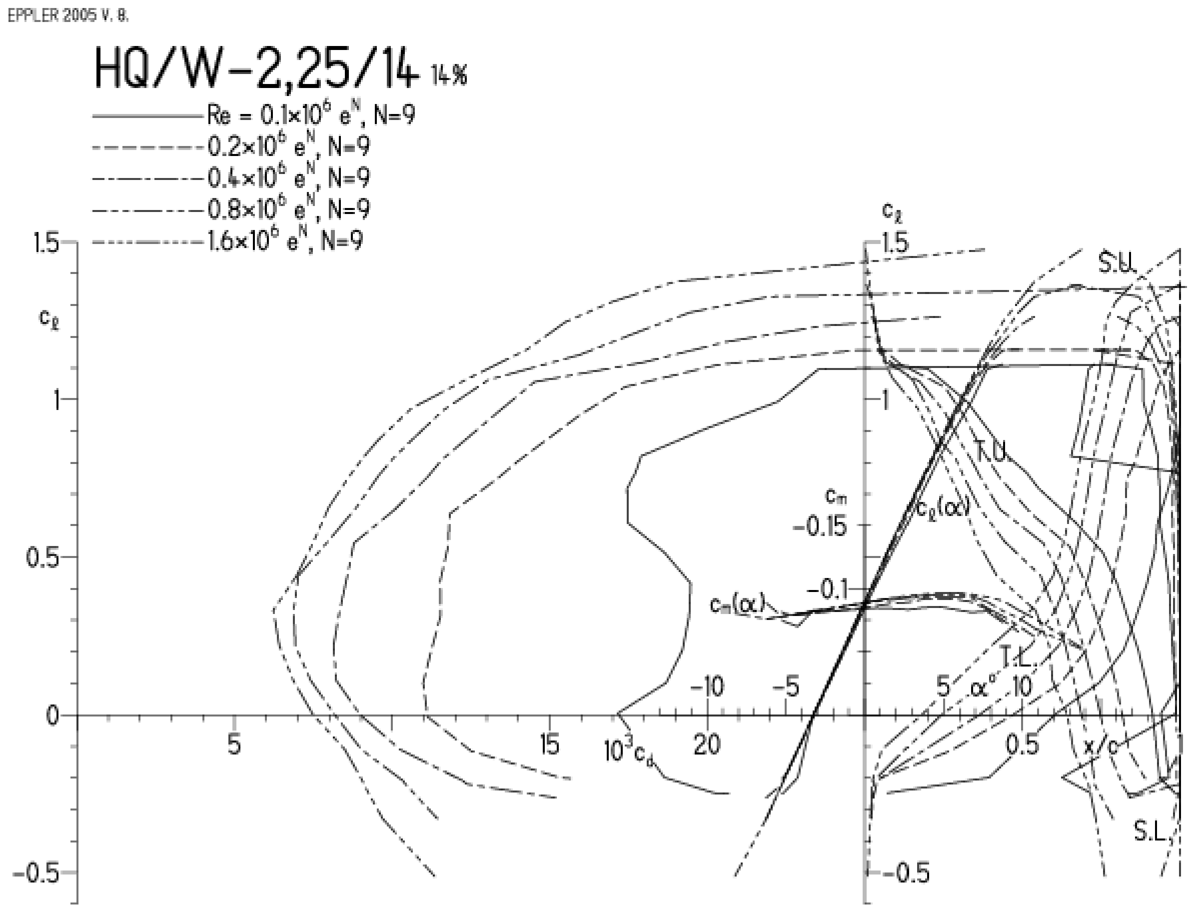
HQ/W-2,25/14, N=11



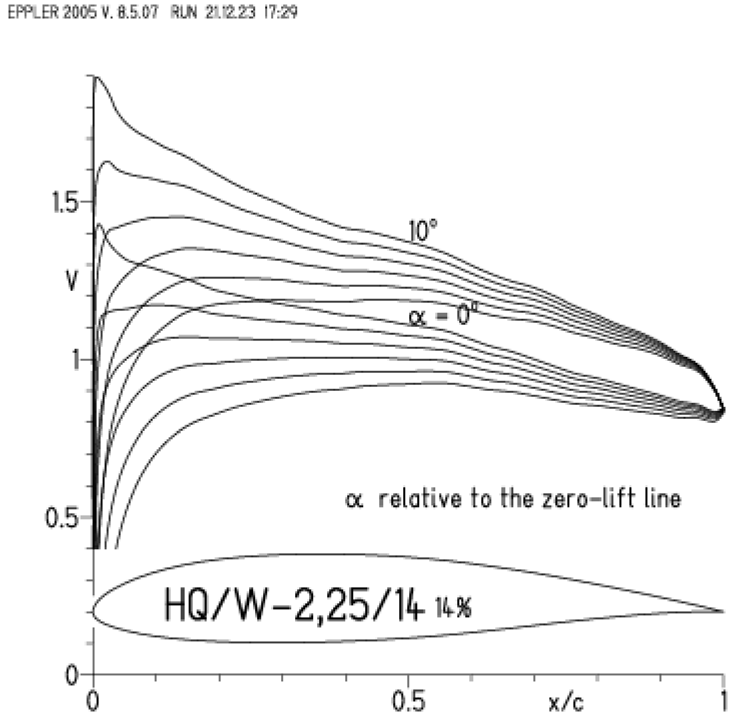


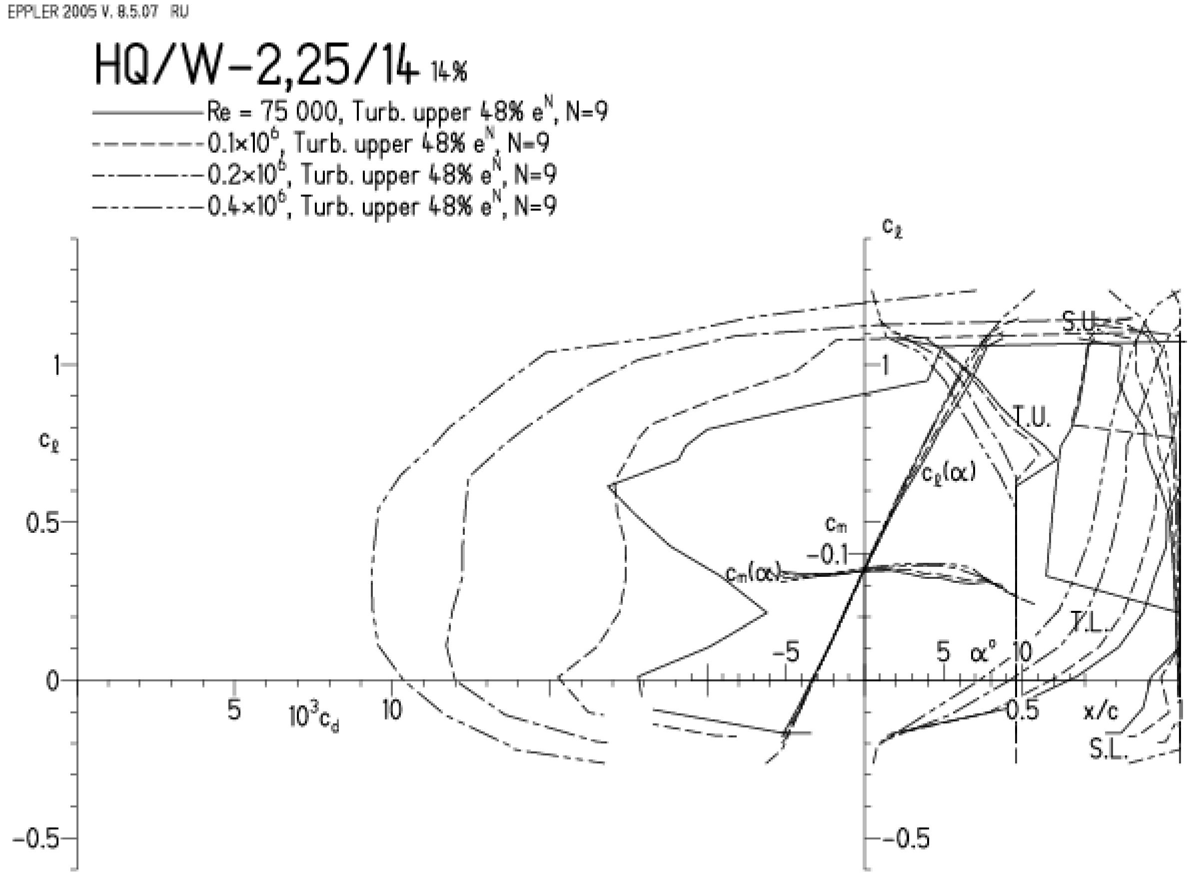
<u>HQ/W-2,25/14</u>, N=9





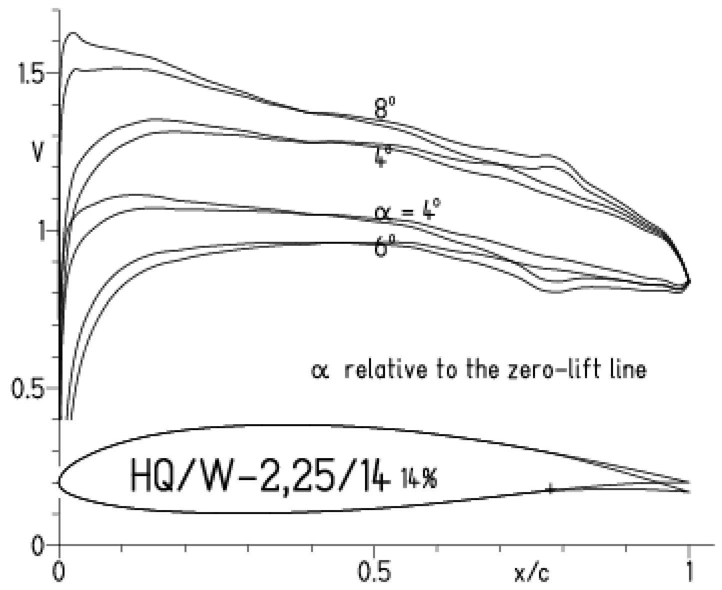
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



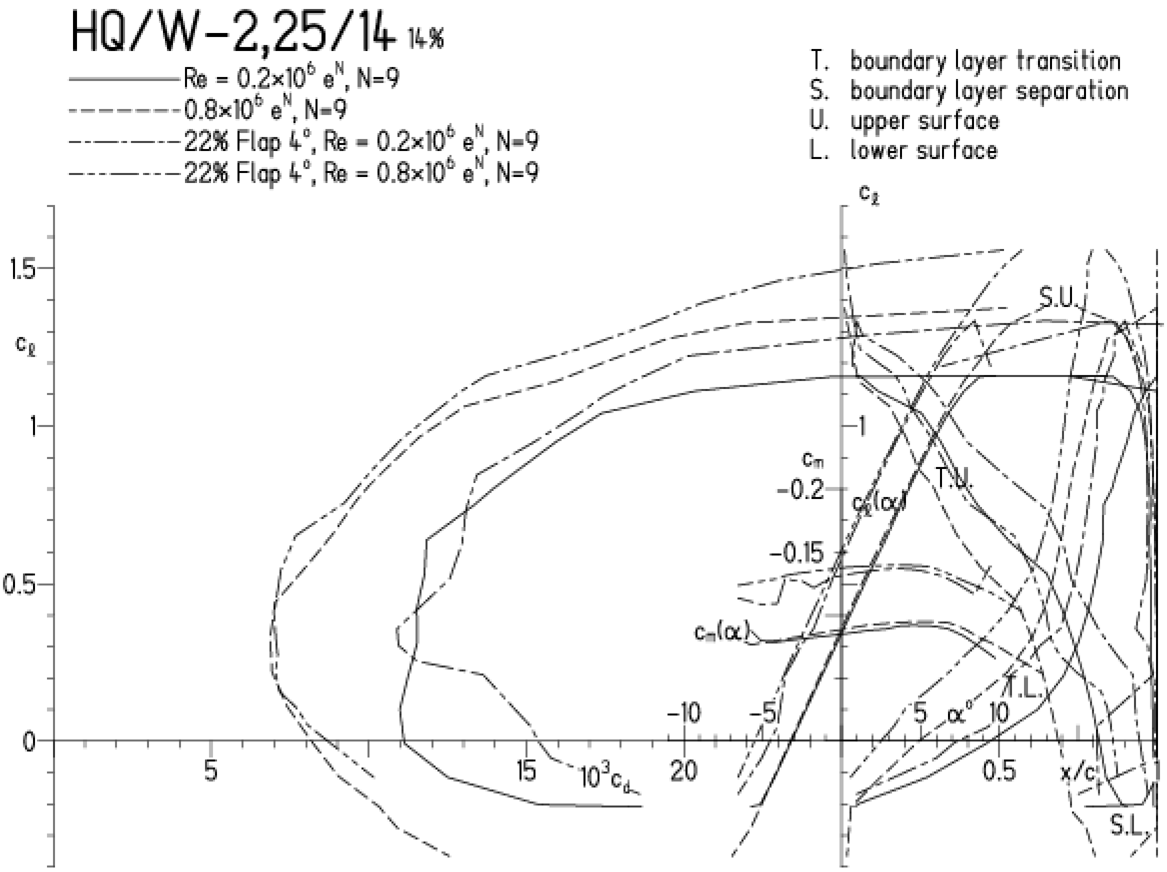


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

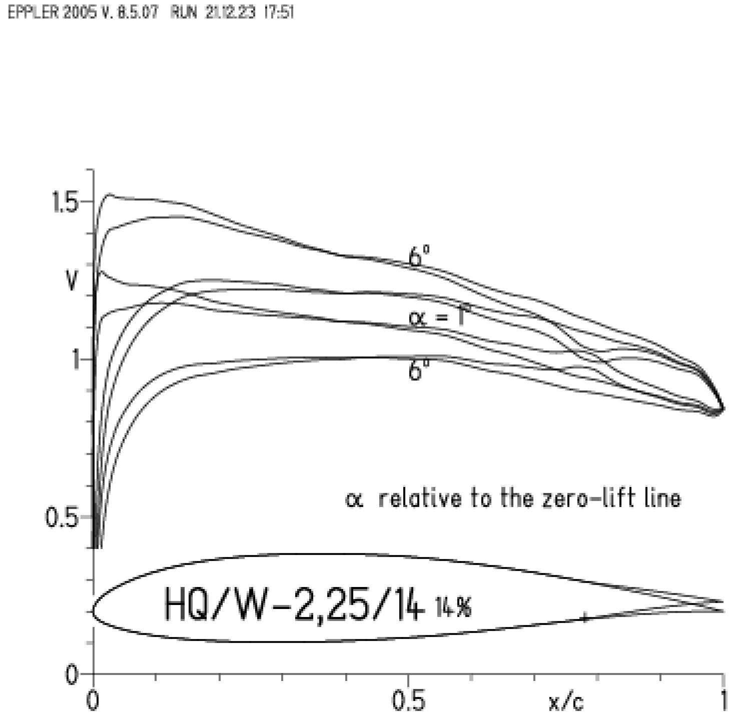
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

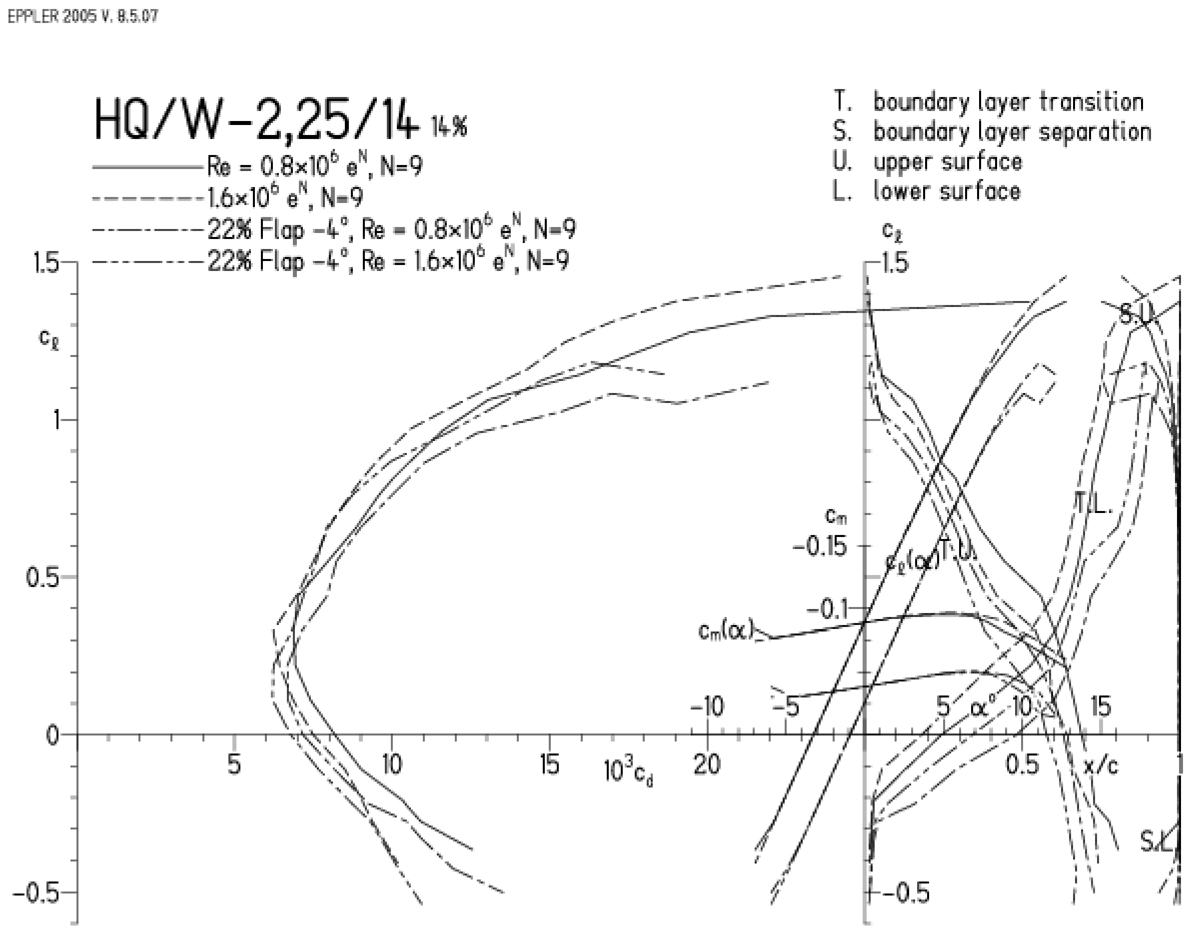


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

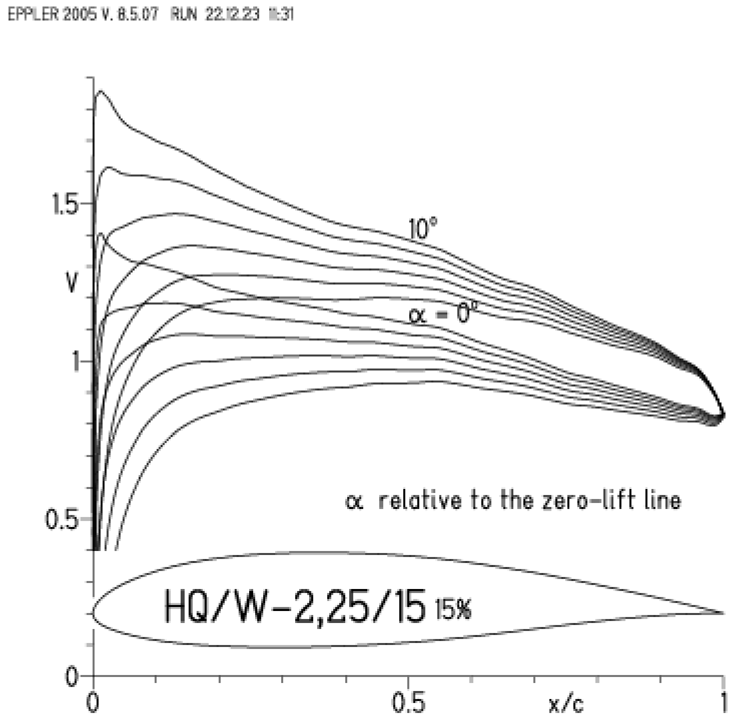


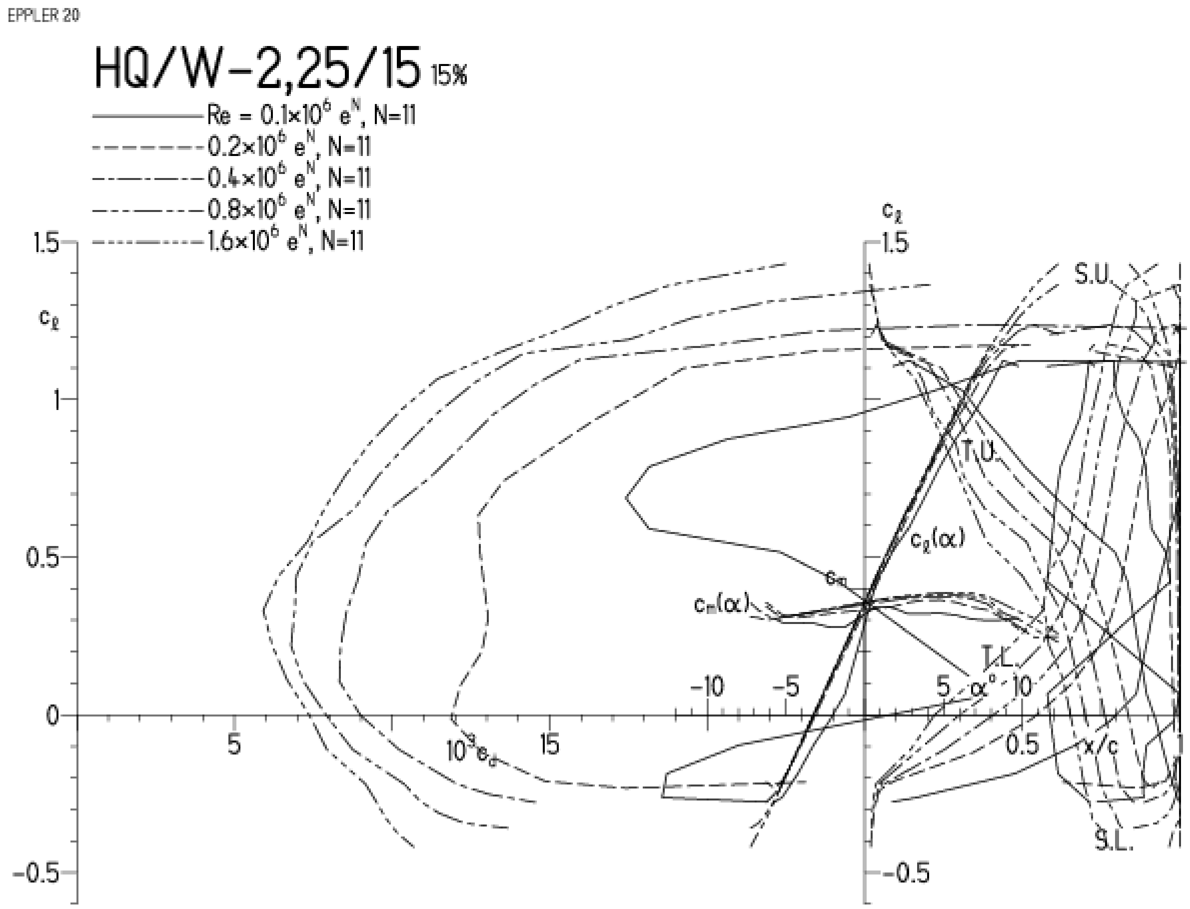
<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag



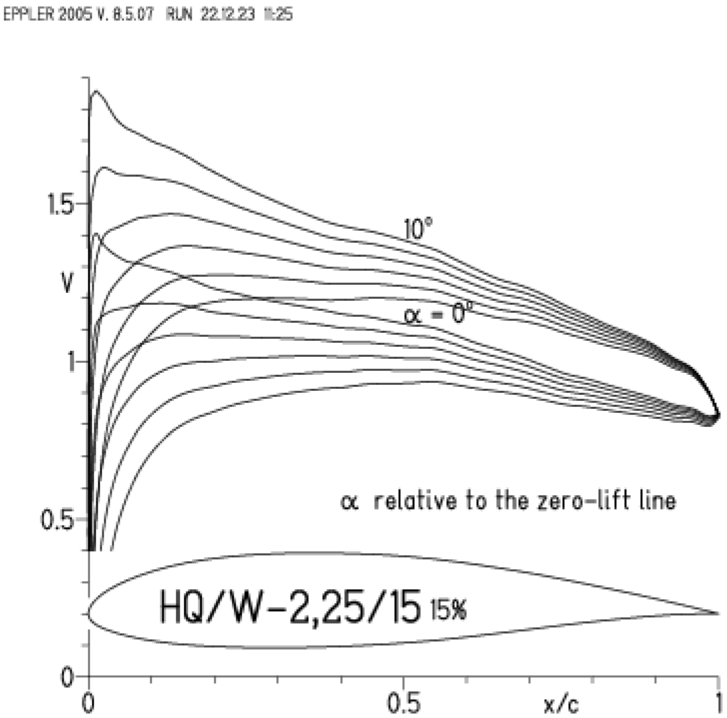


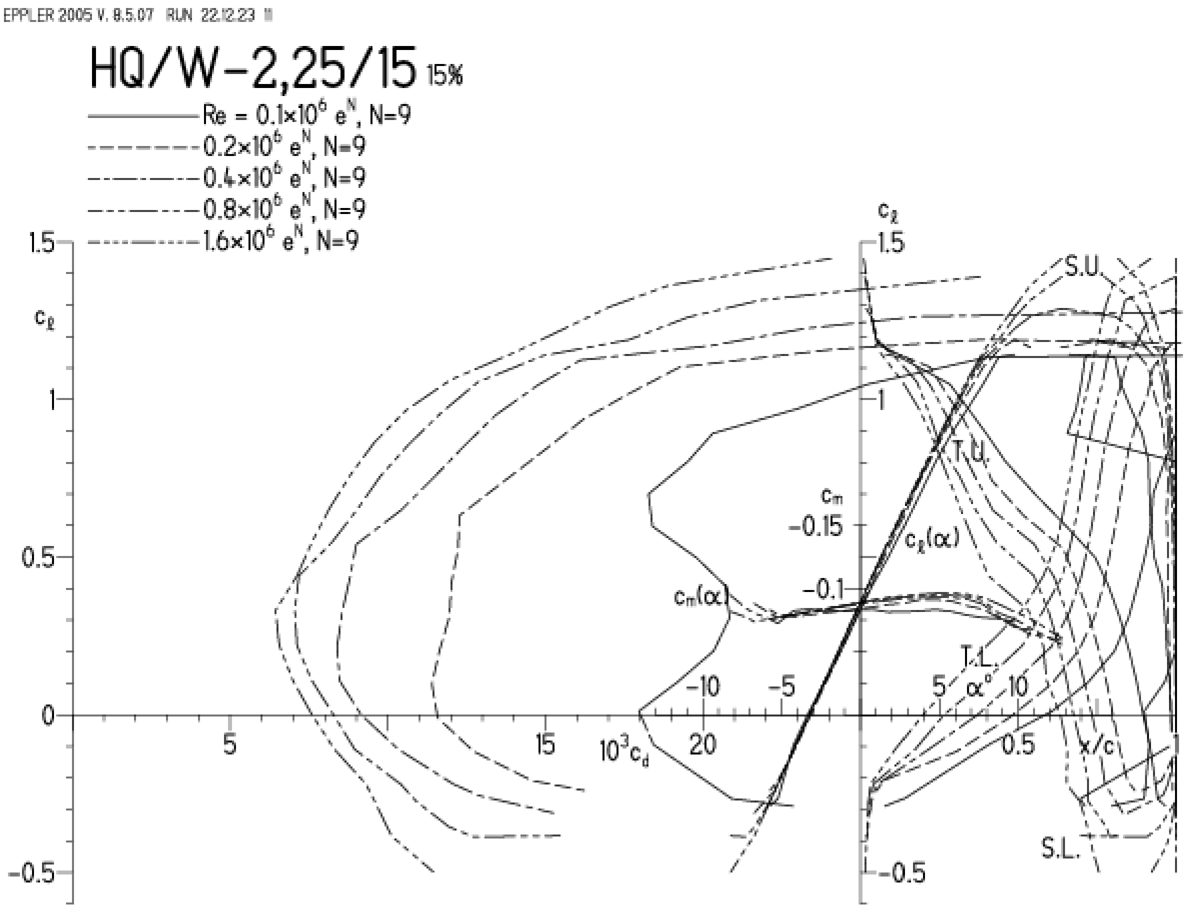
<u>HQ/W-2,25/15</u>, N=11



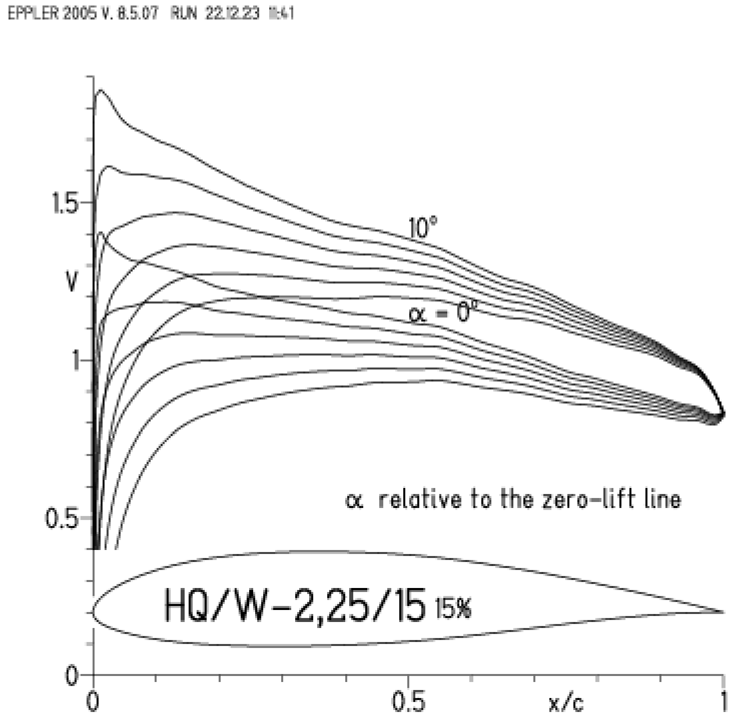


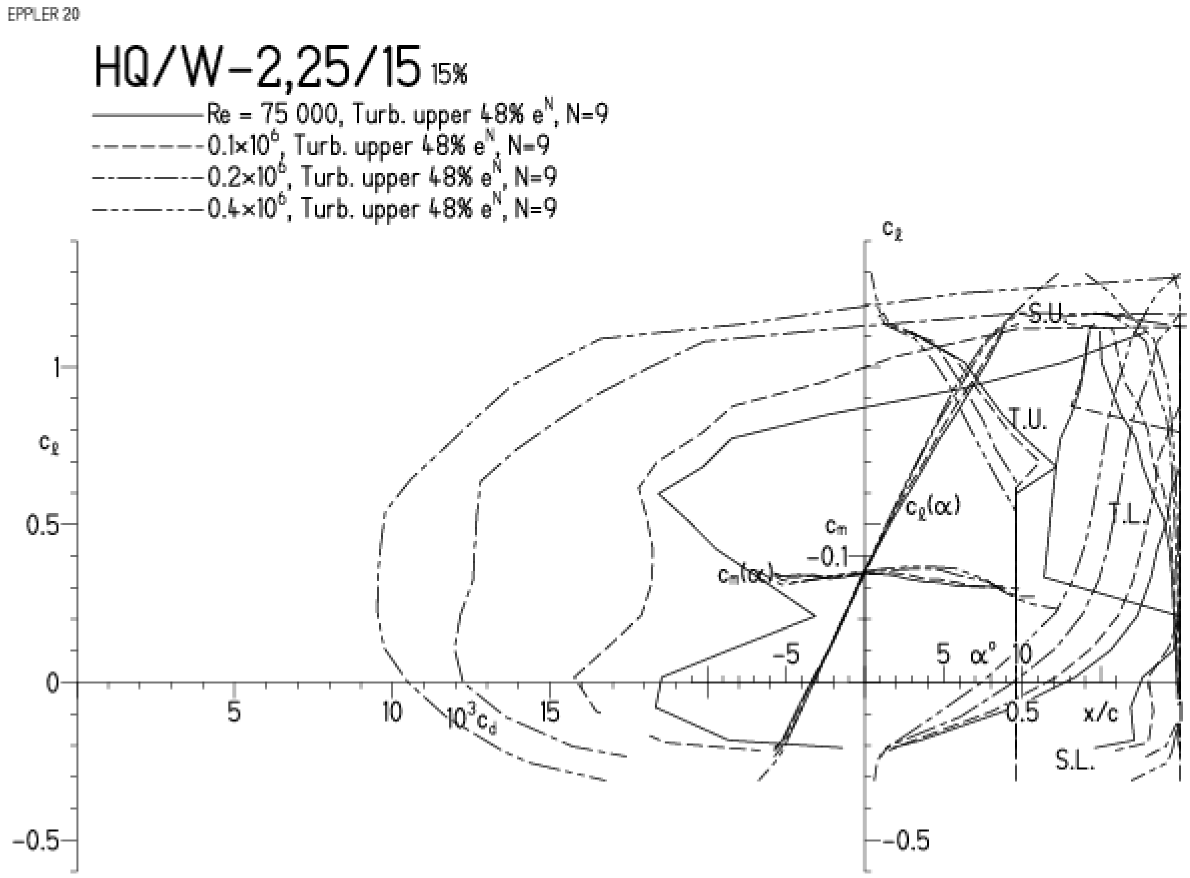
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



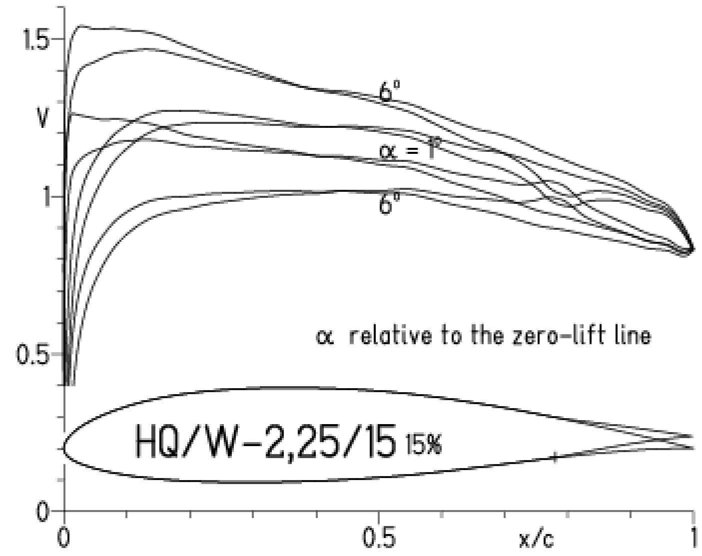


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

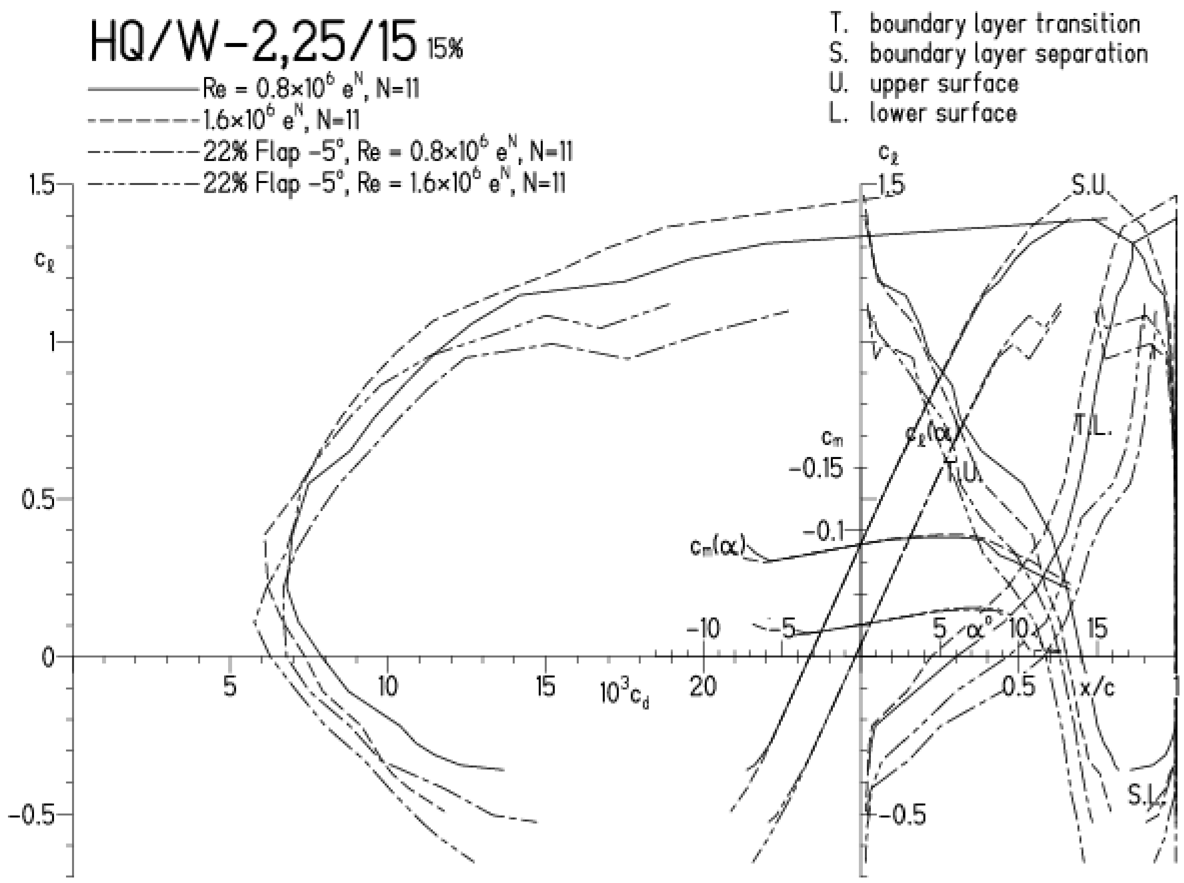
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

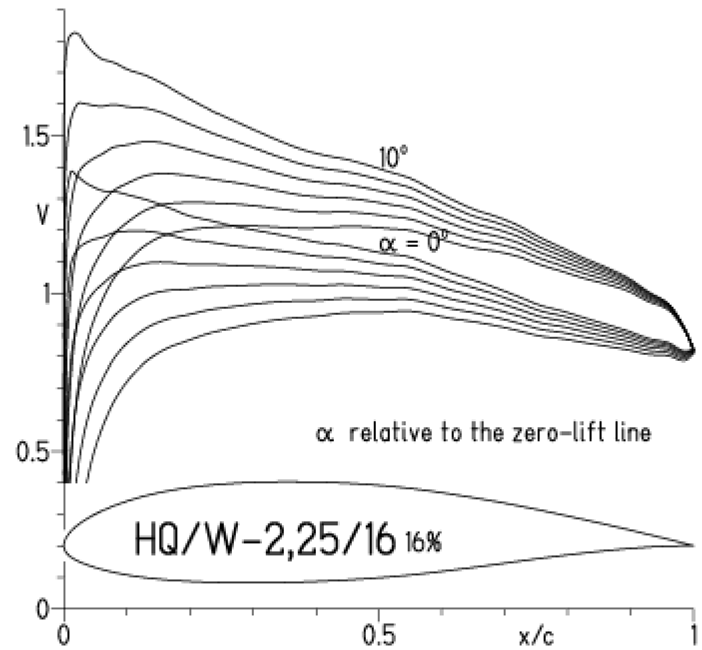


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

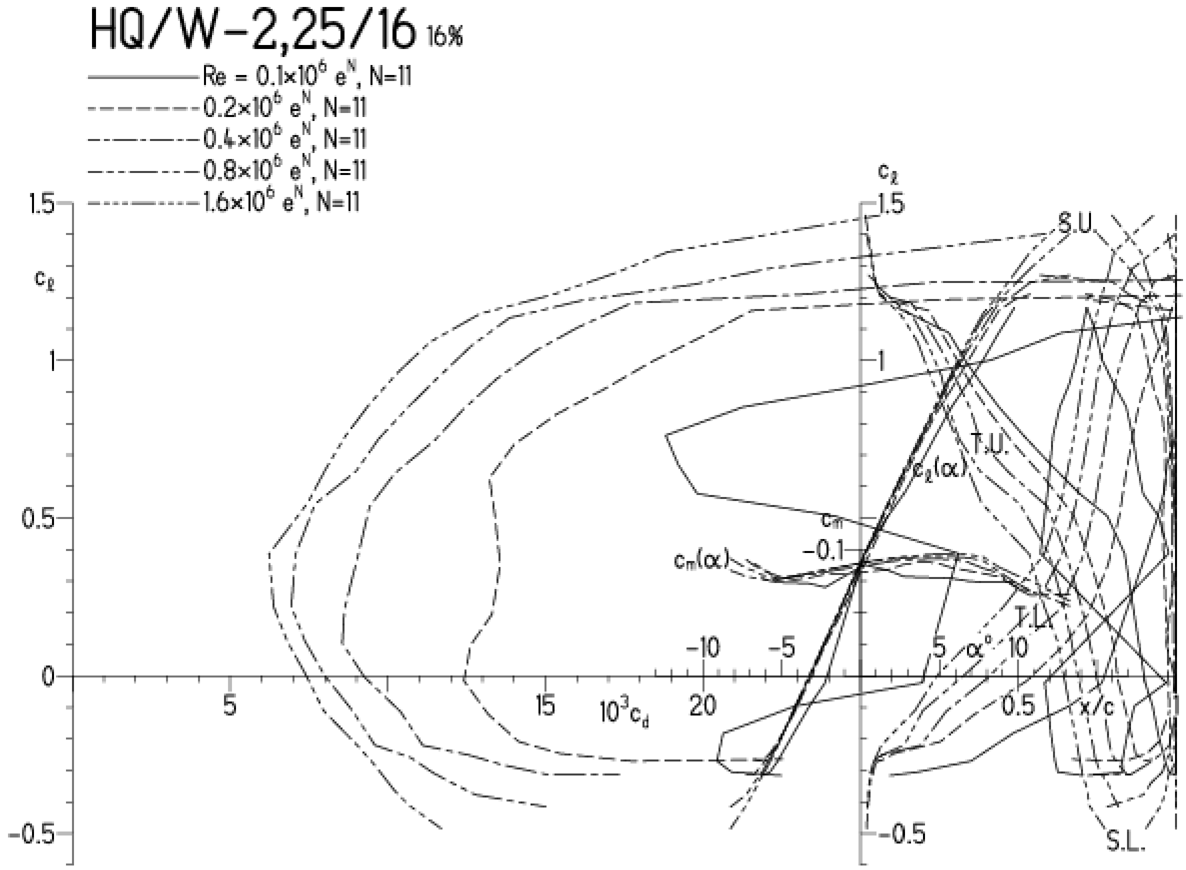


HQ/W-2,25/16, N=11

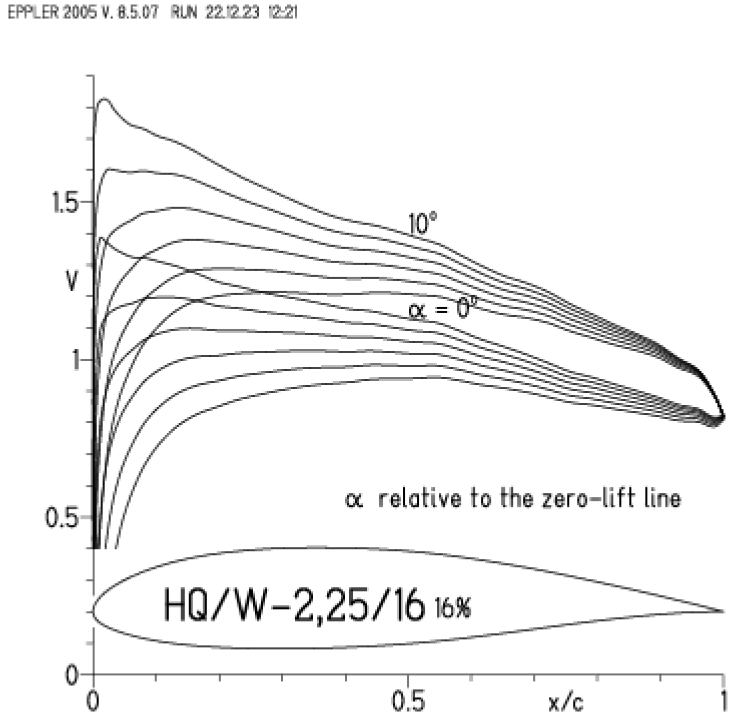
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

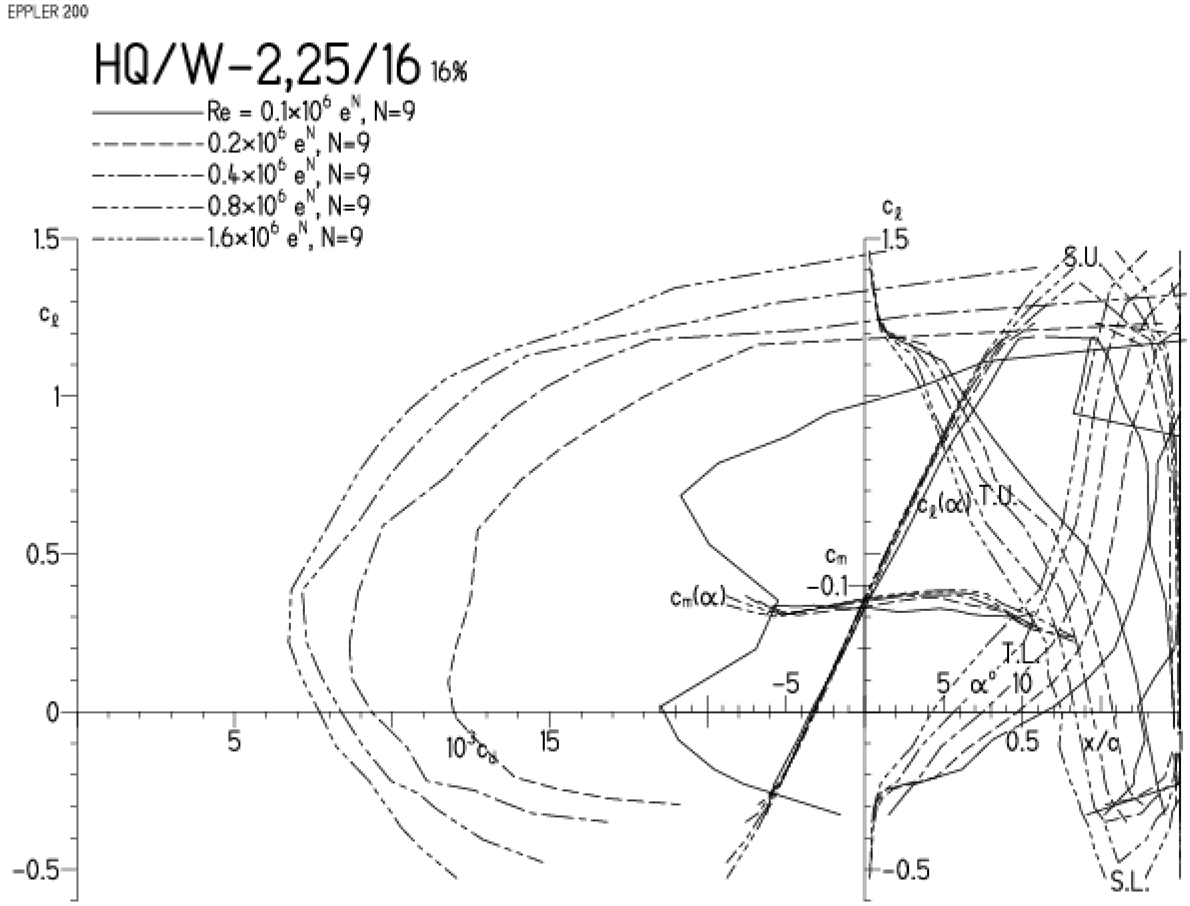


EPPLER 200



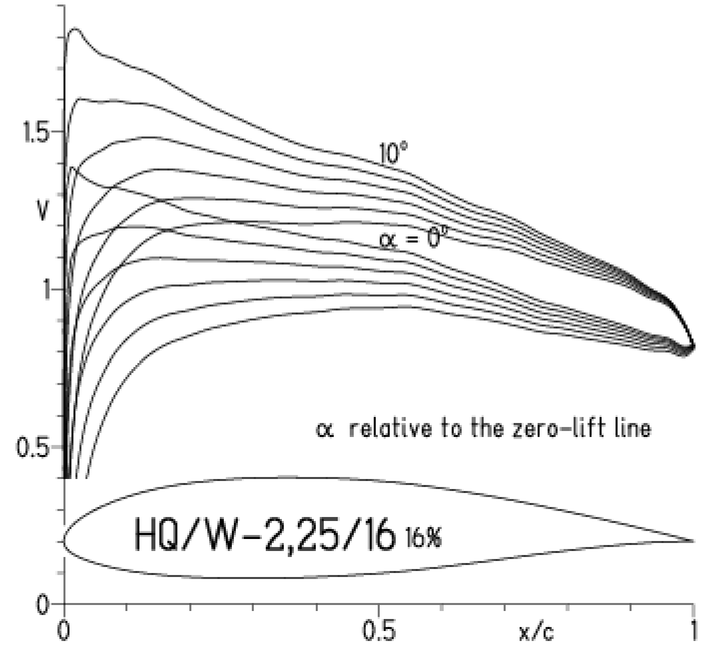
<u>HQ/W-2,25/16</u>, N=9



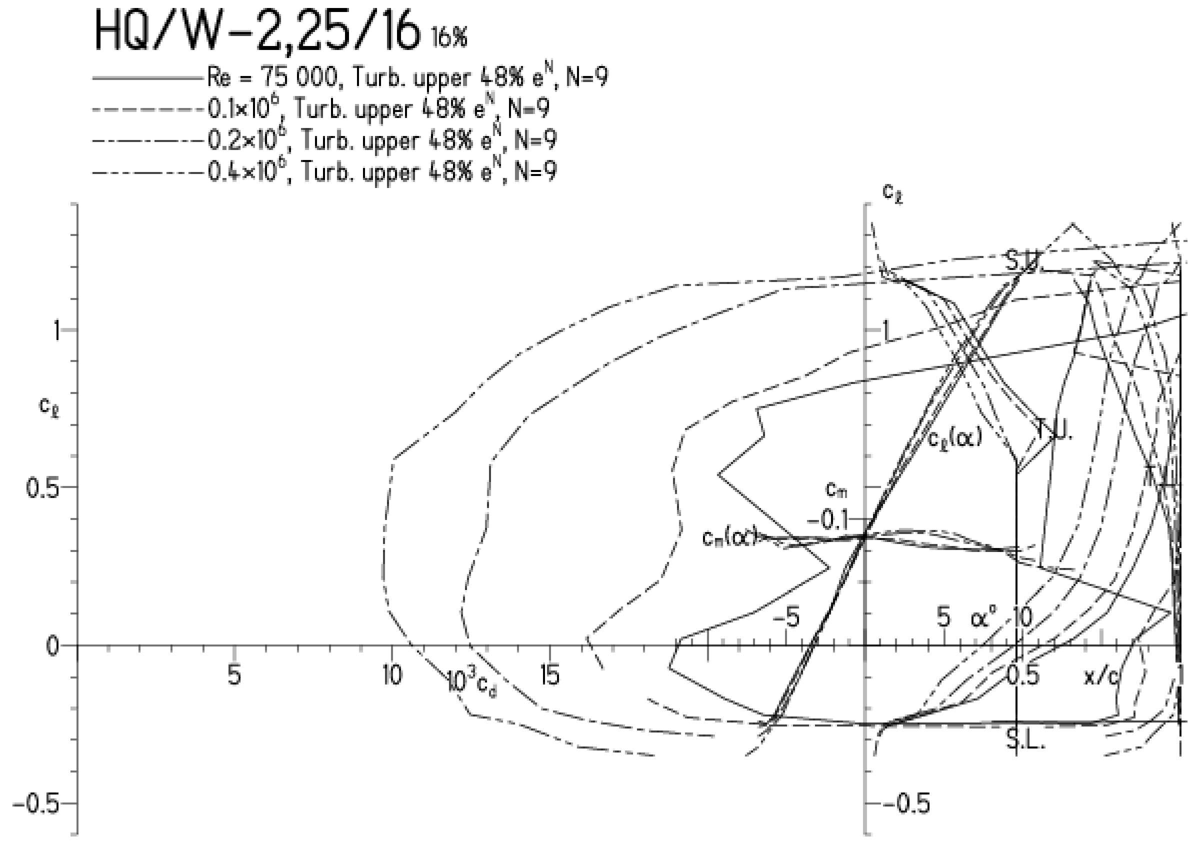


HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

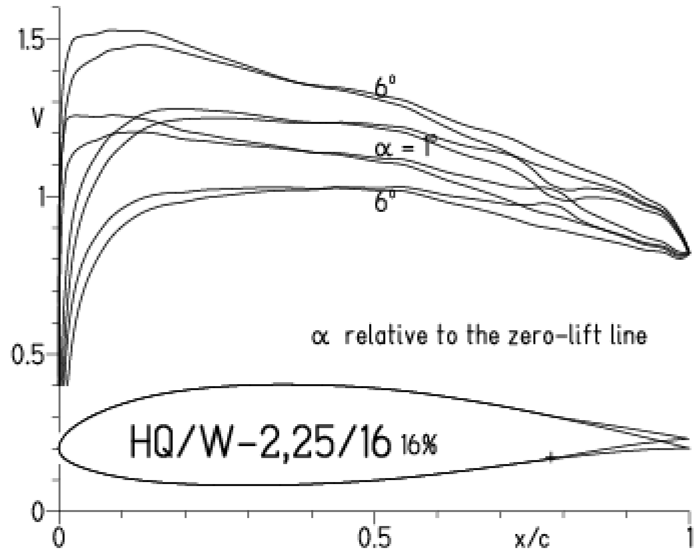


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

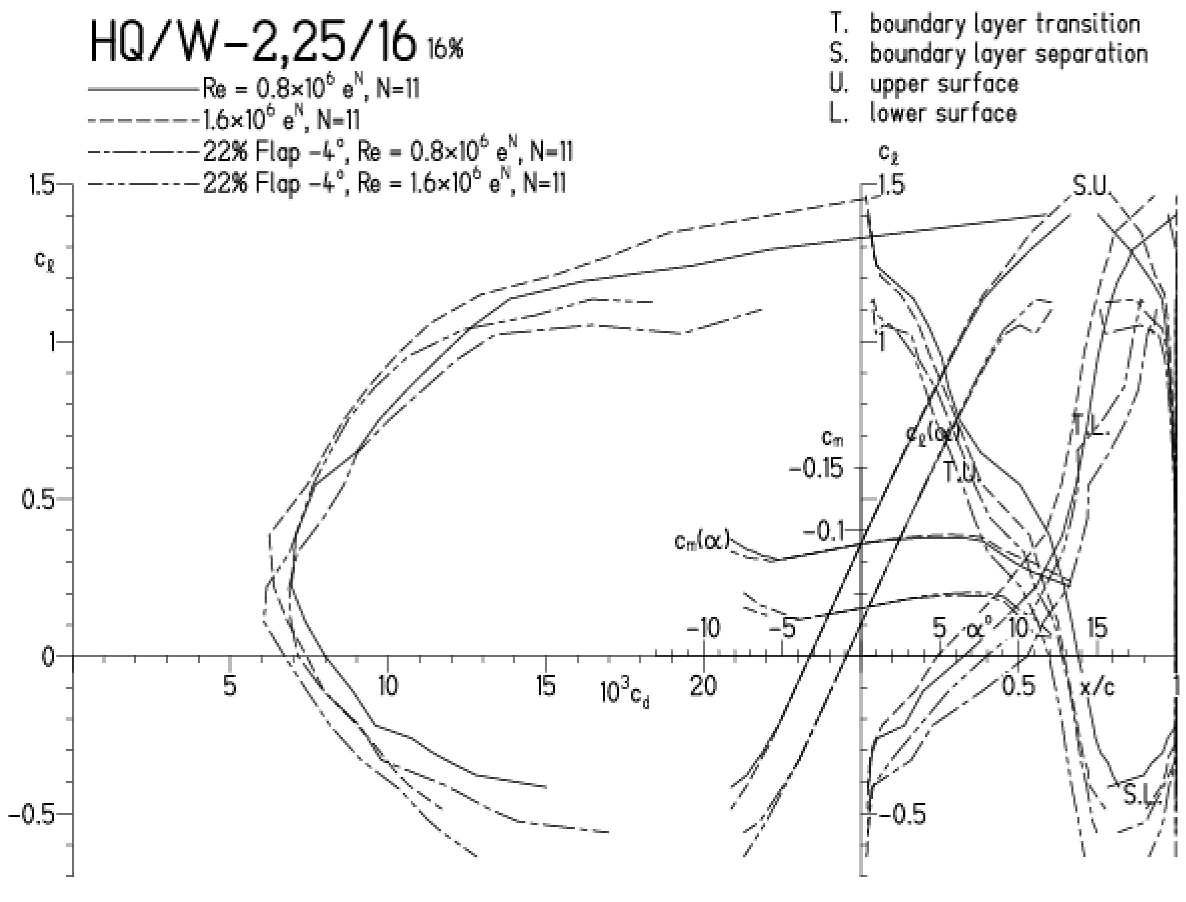
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

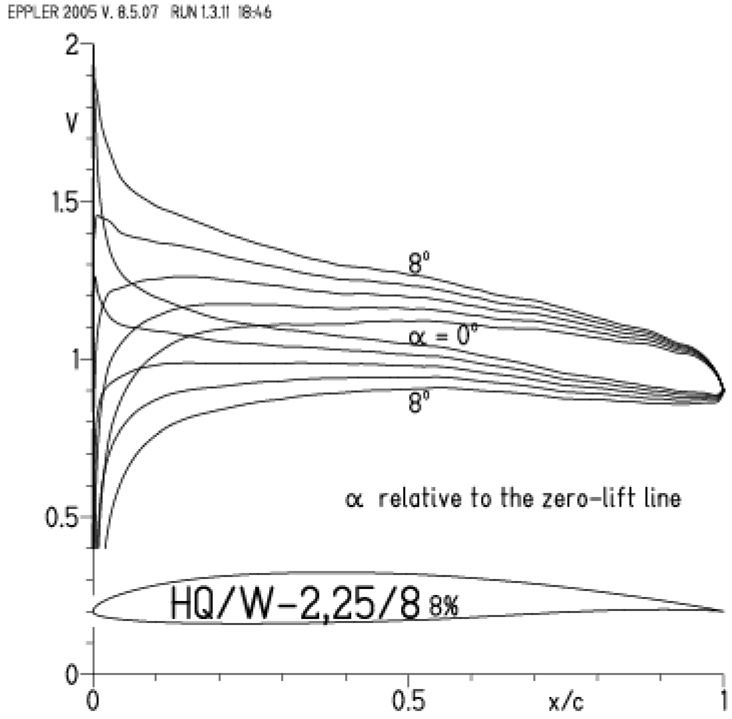
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

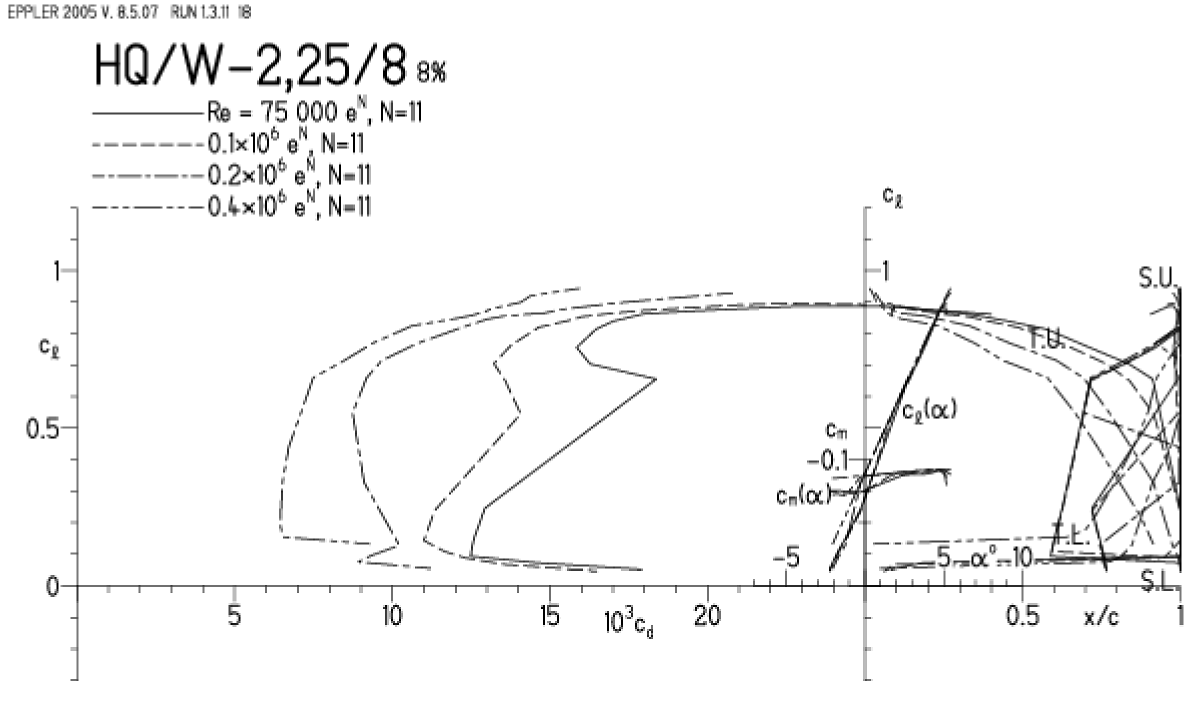


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

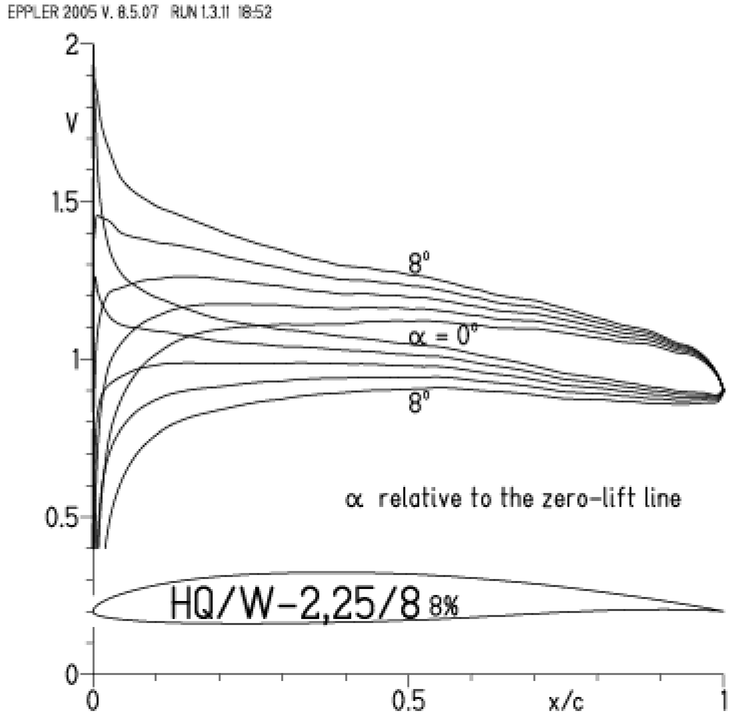


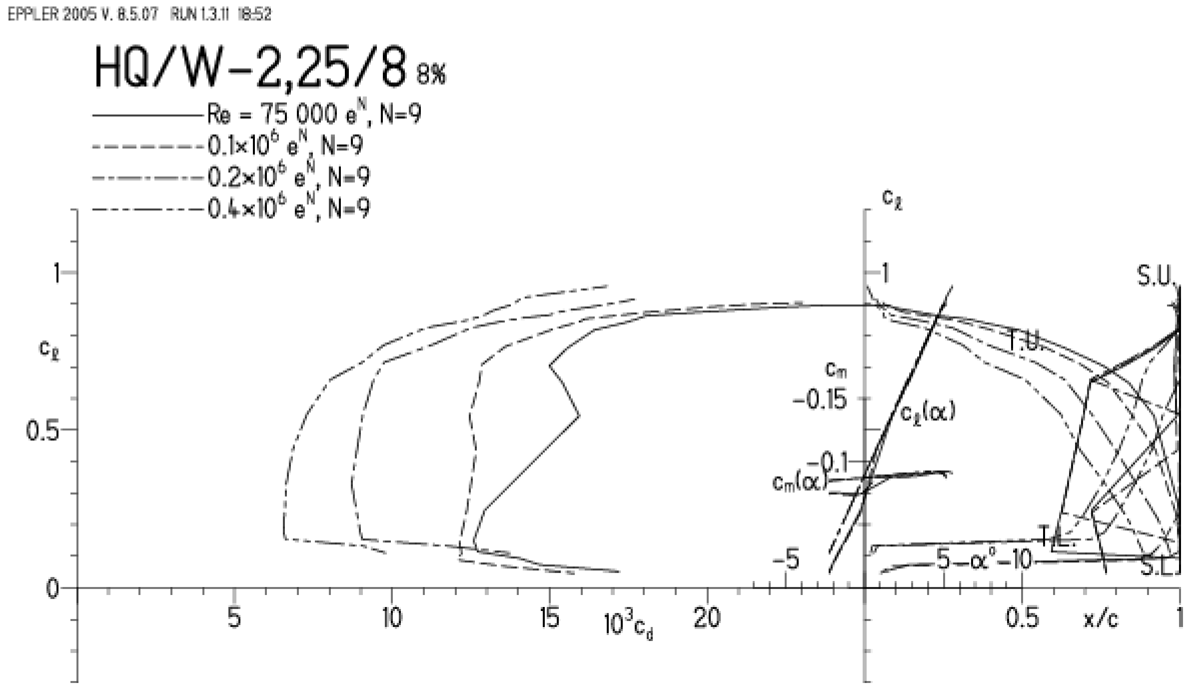
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

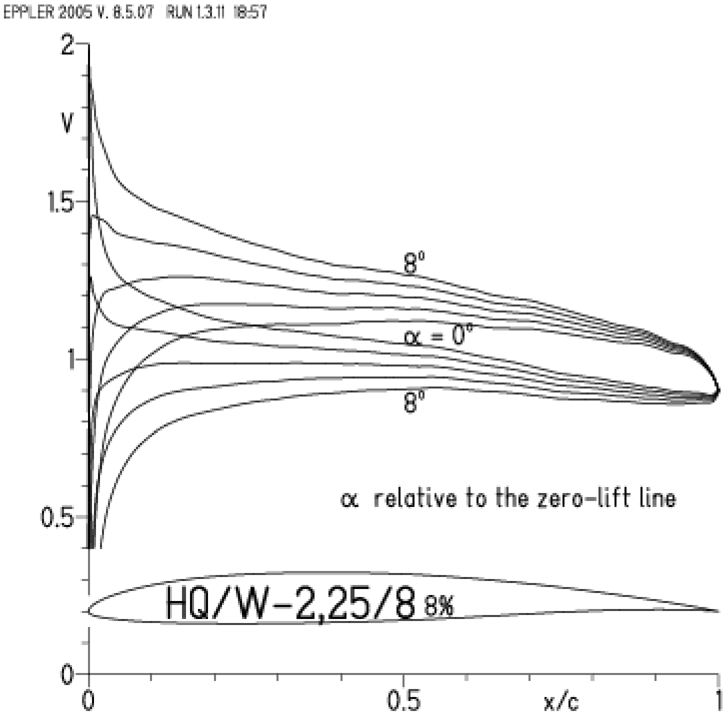

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
10^3 c_d
T.U.
S.U.
T.L.
S.L.
α°
x/c

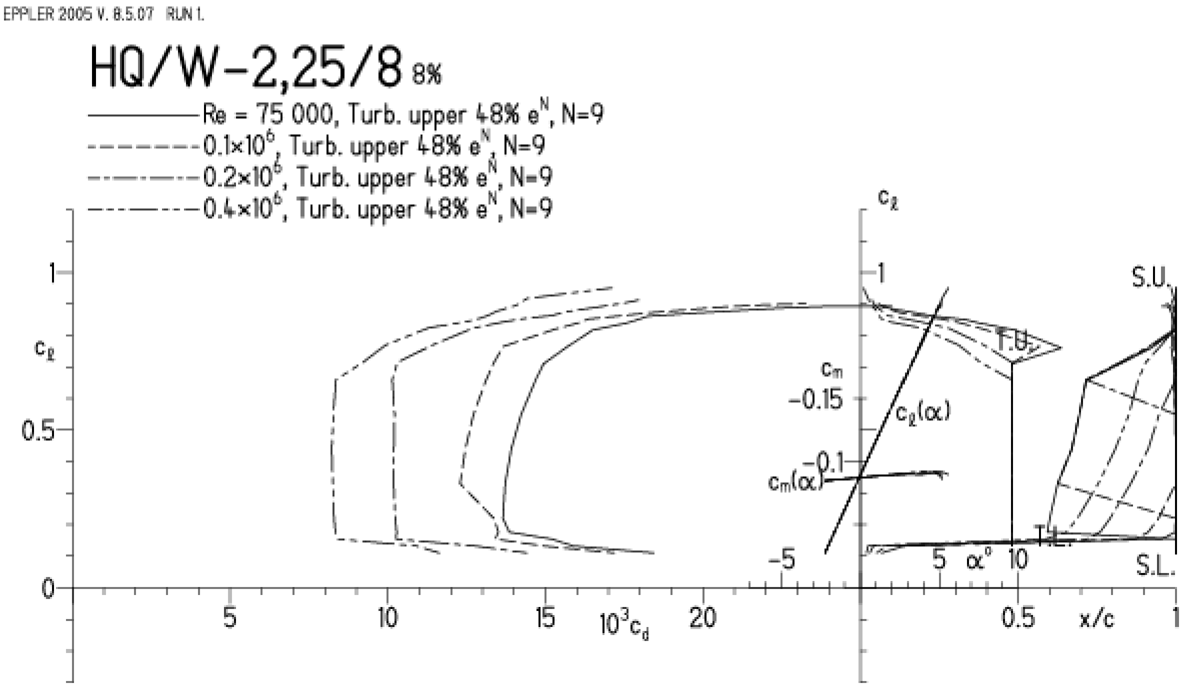
<u>HQ/W-2,25/8</u>, N=9



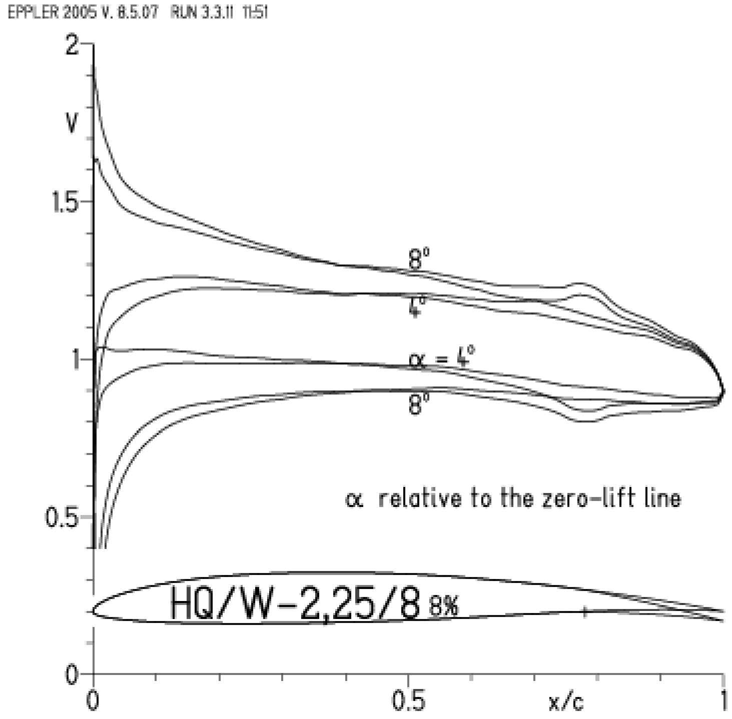


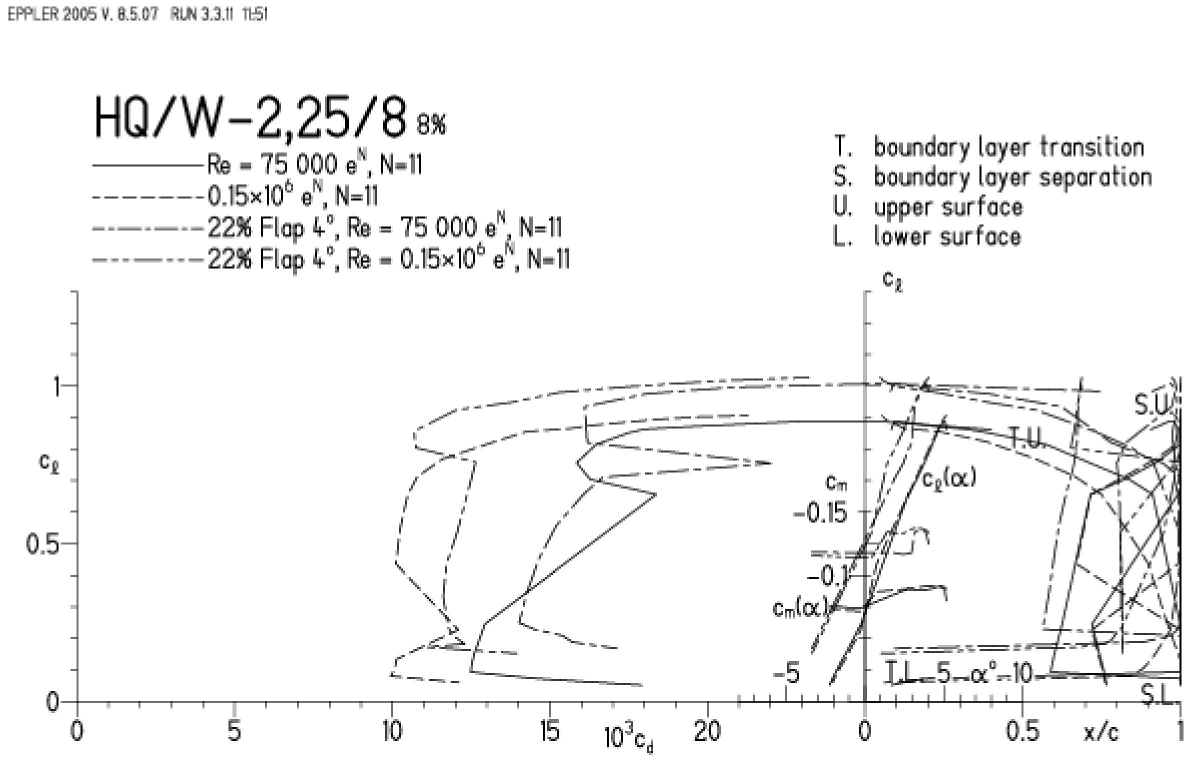
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



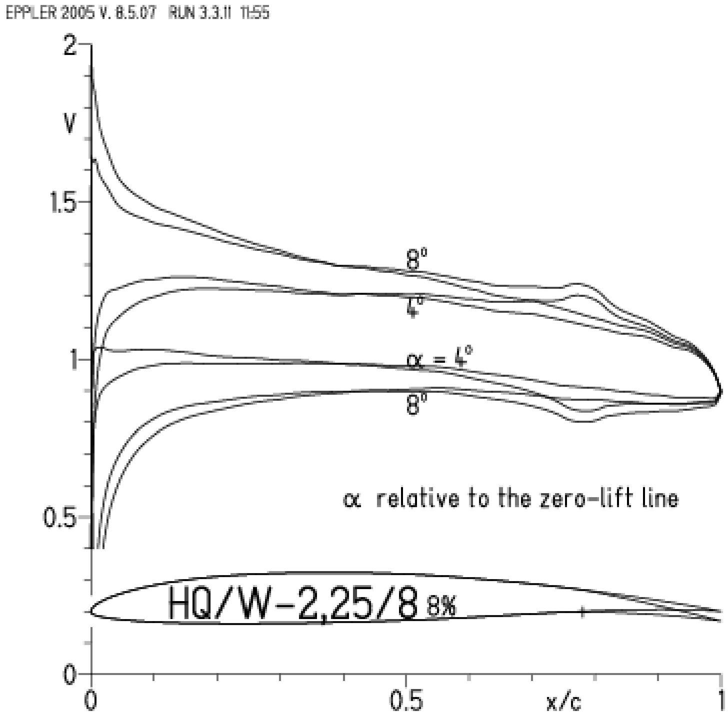


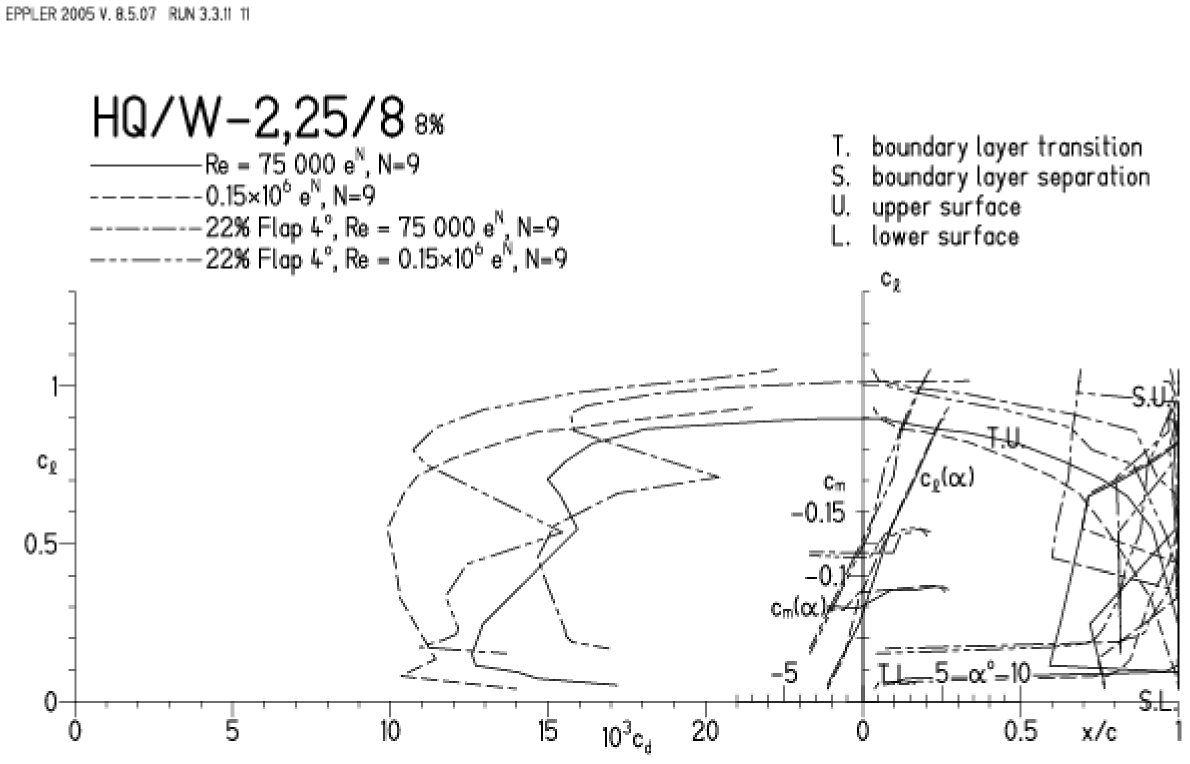
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



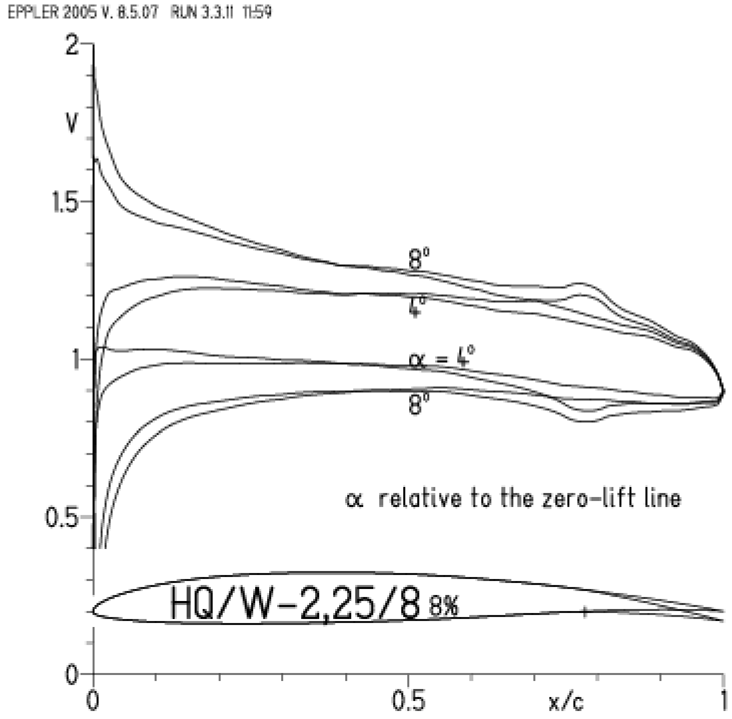


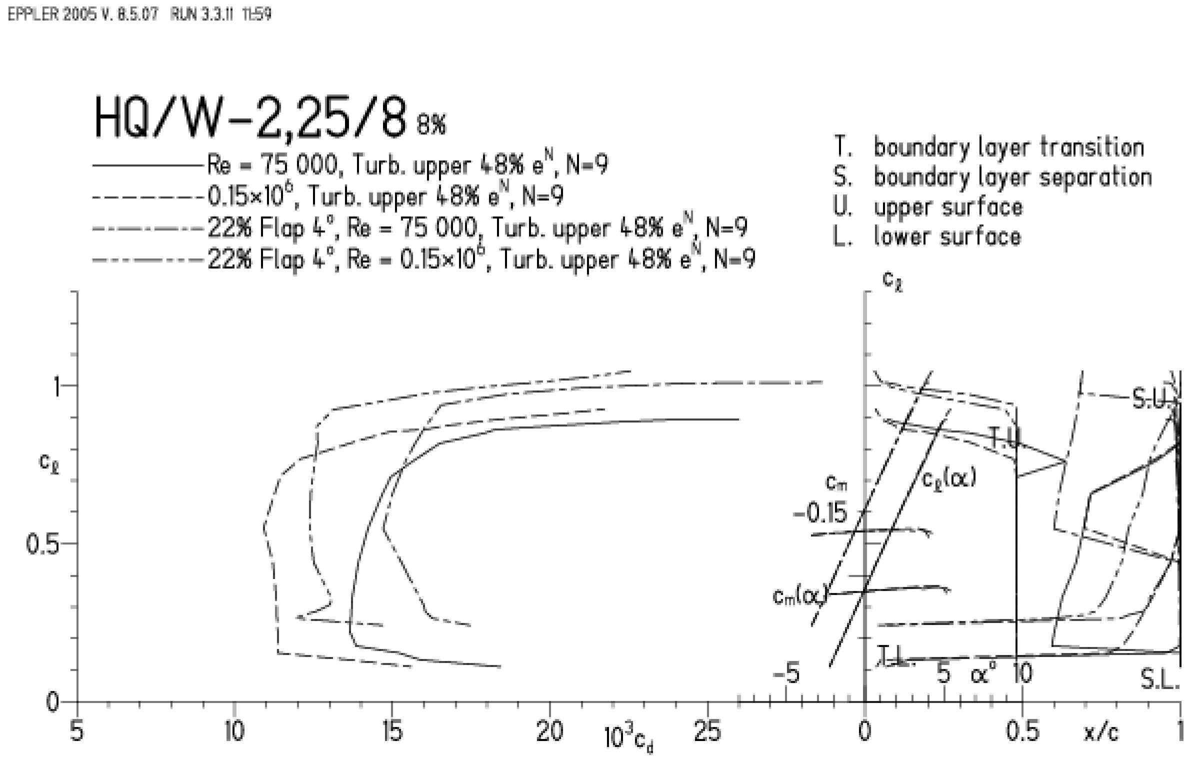
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag



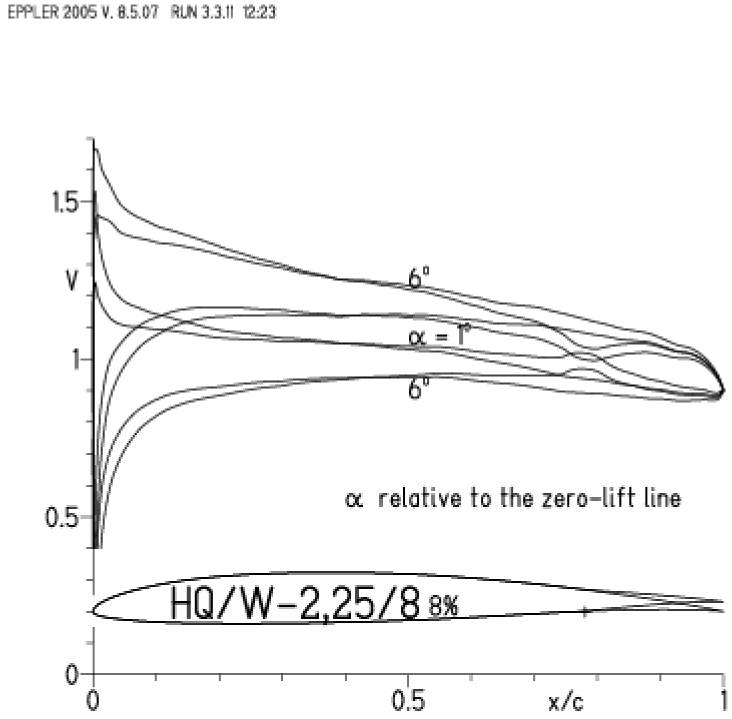


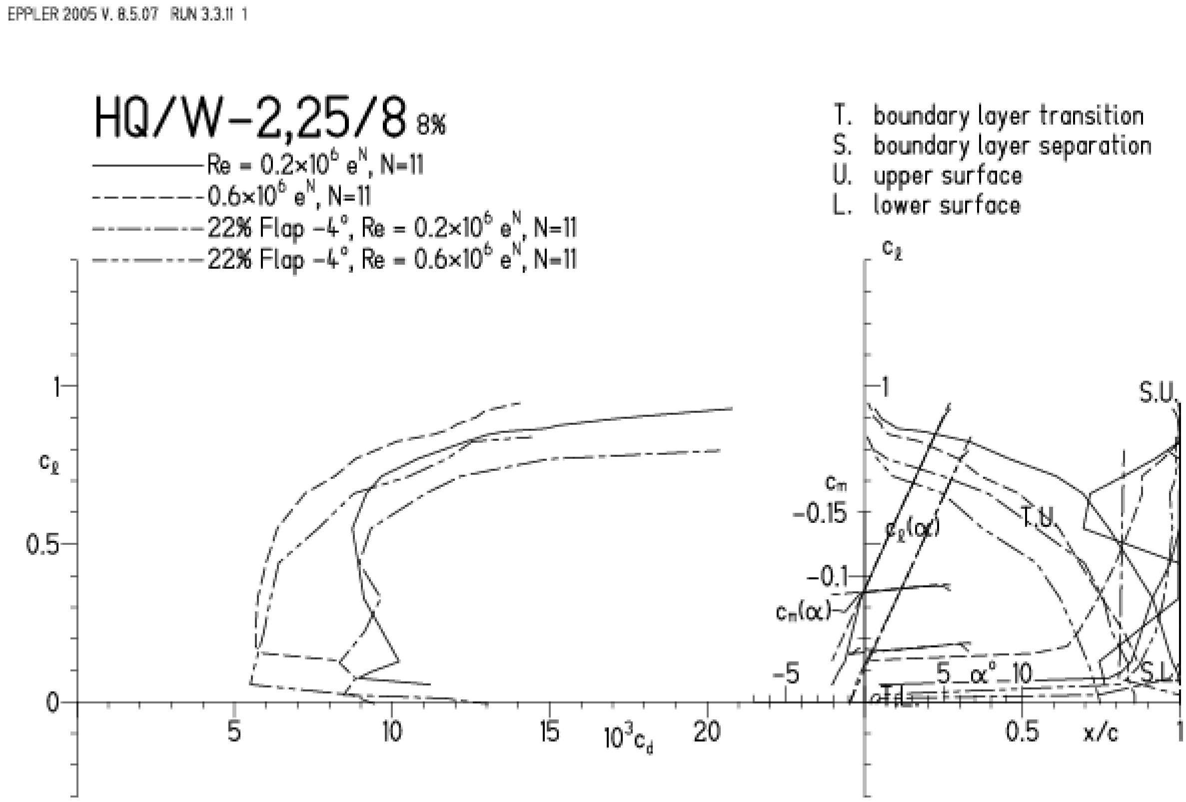
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



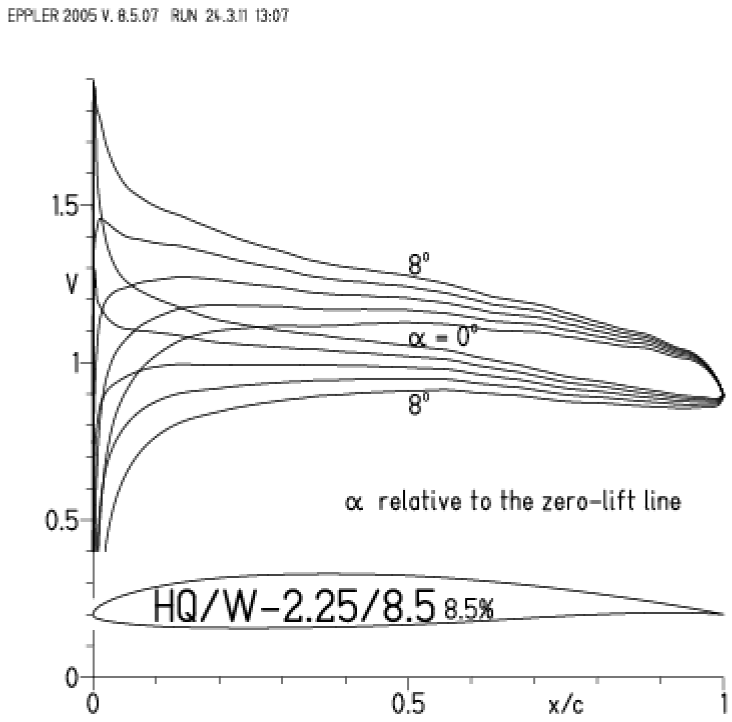


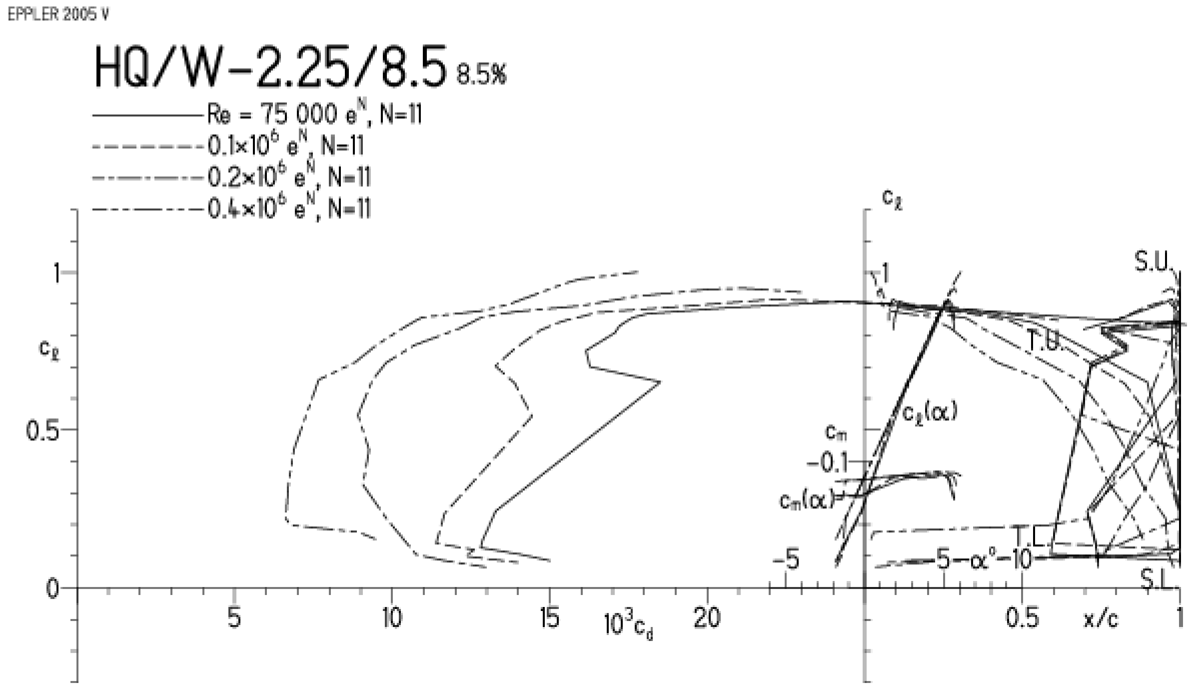
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



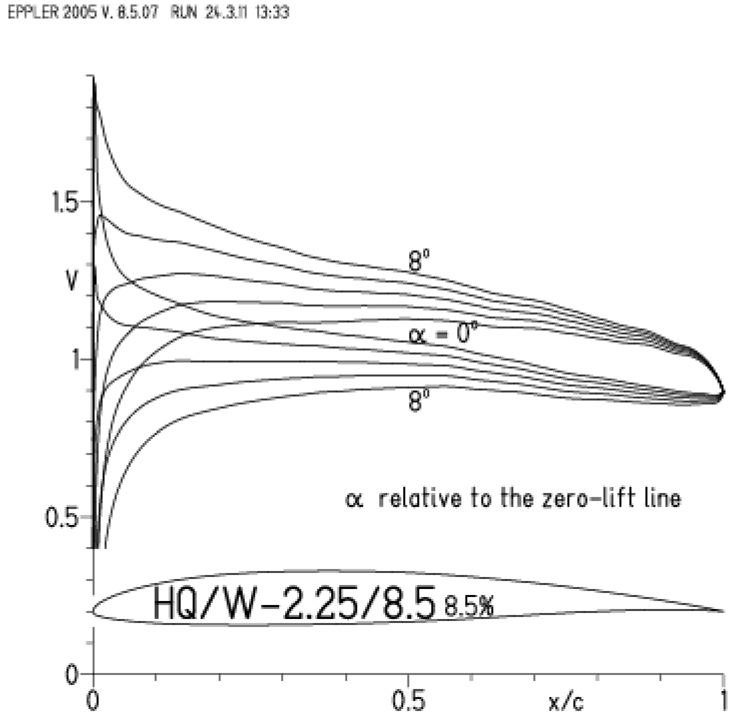


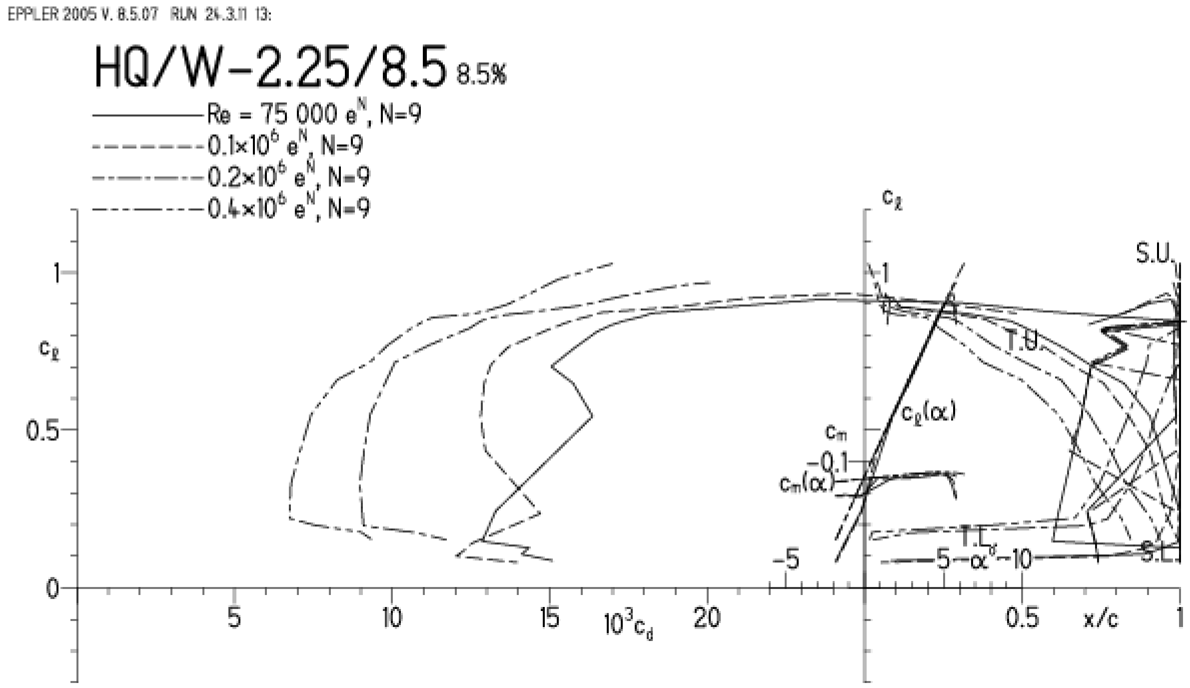
<u>HQ/W-2,25/8,5</u>, N=11



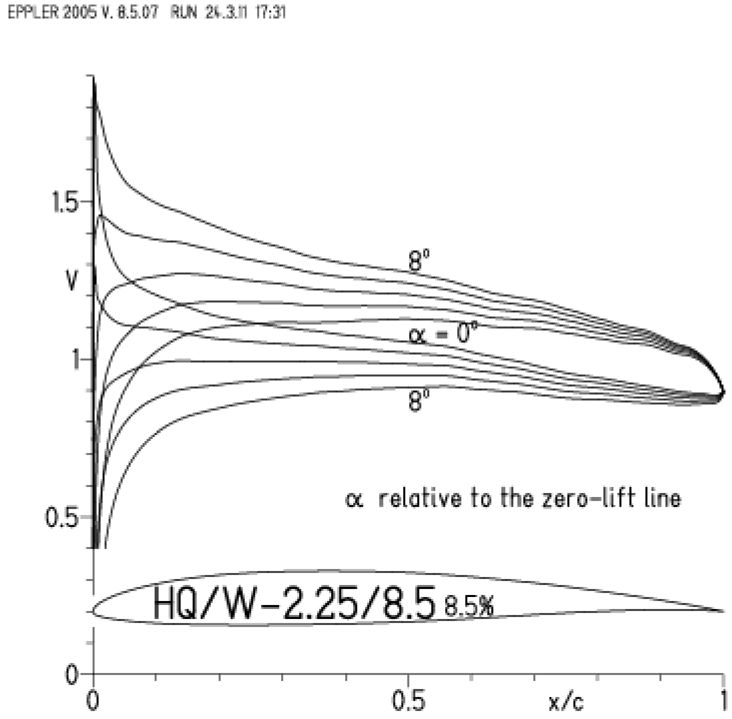


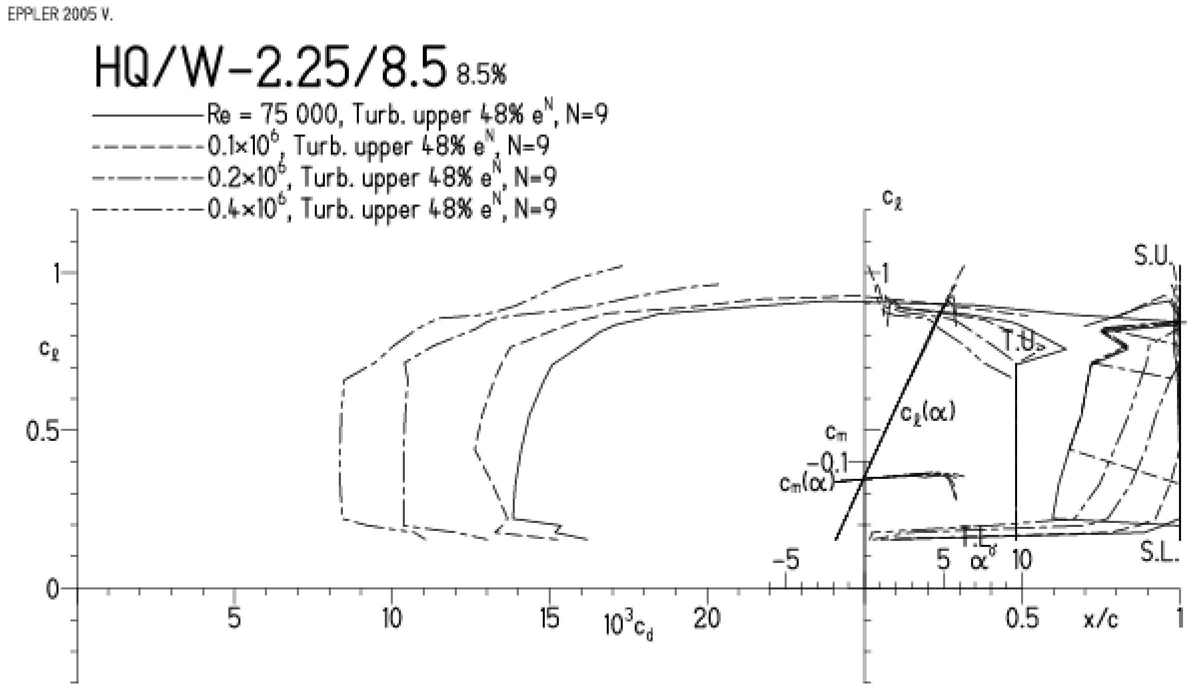
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_ℓ(α)
c_m
−0.1
c_m(α)
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

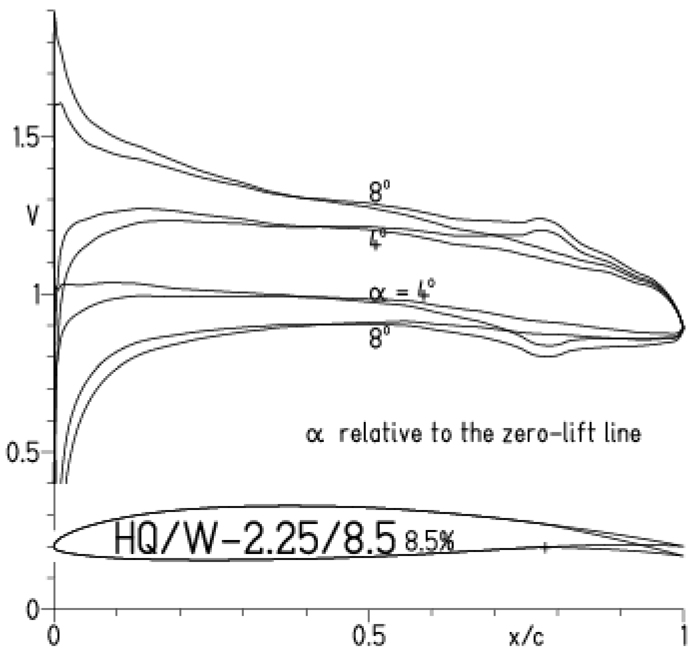
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



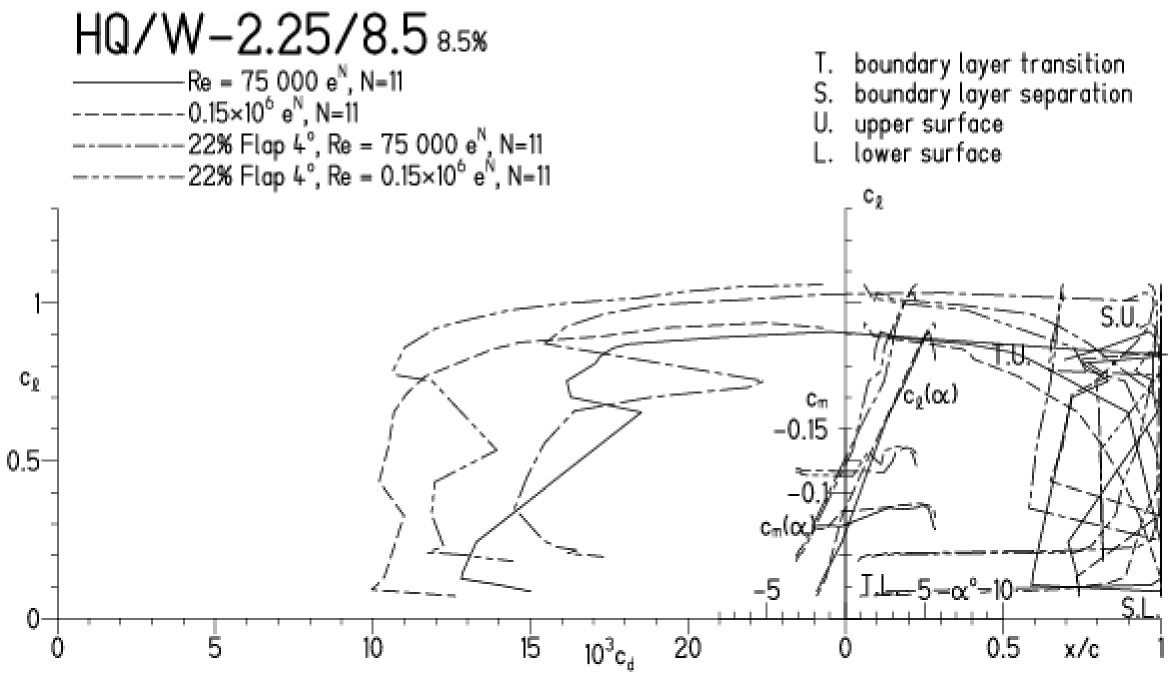


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

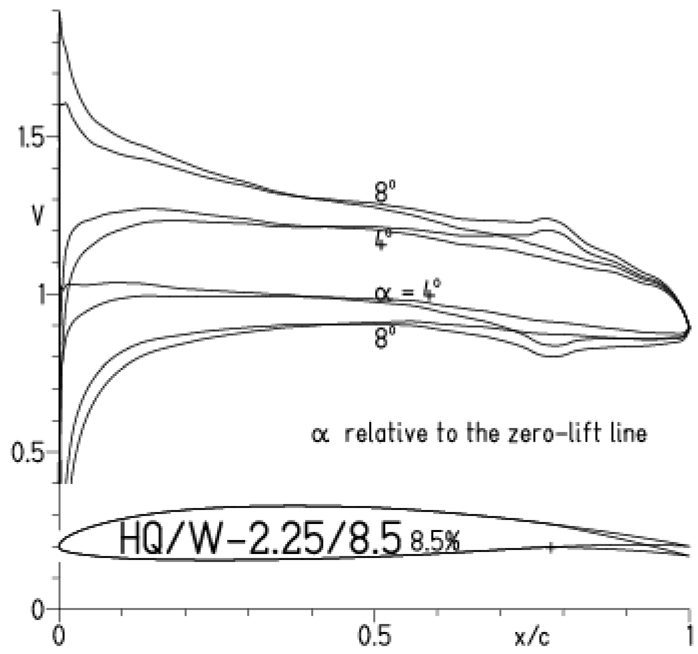


EPPLER 2005 V. 8.5.

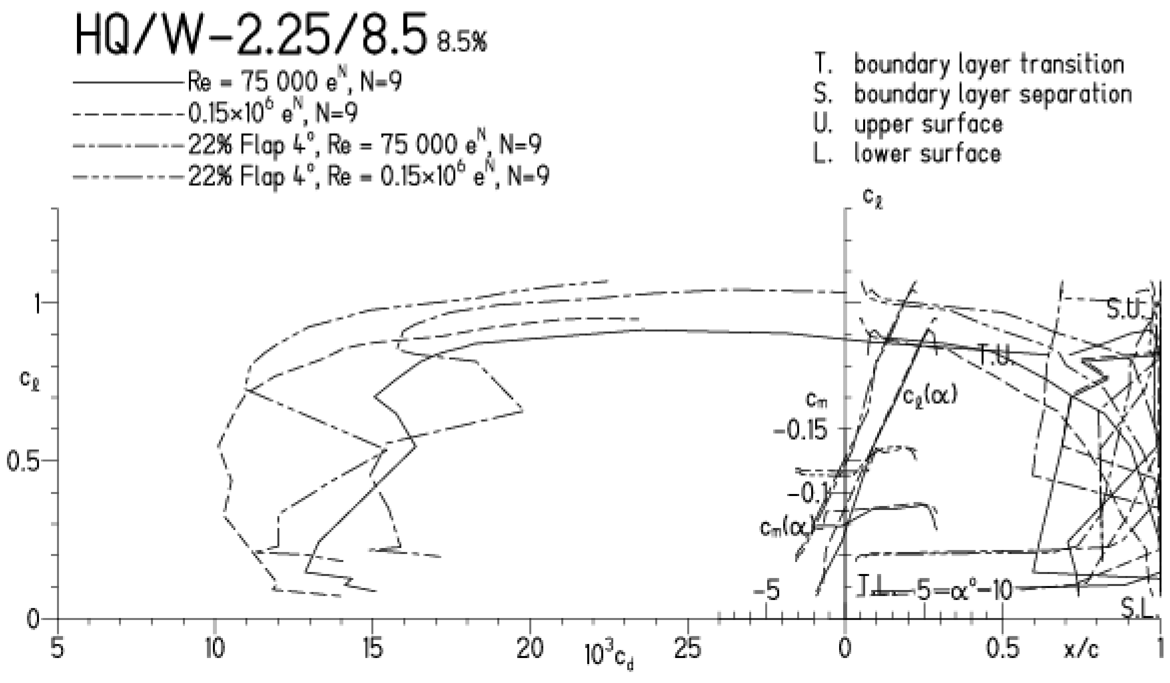


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

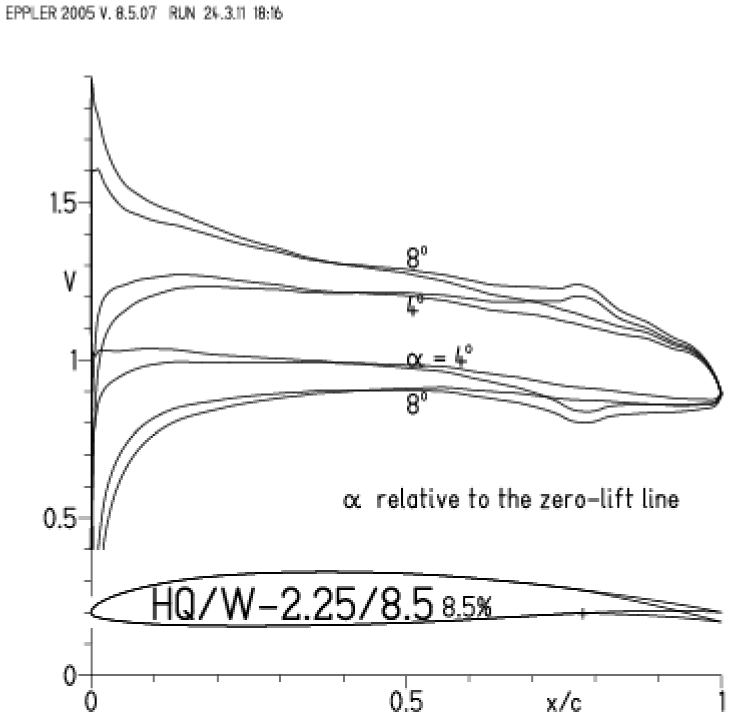
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

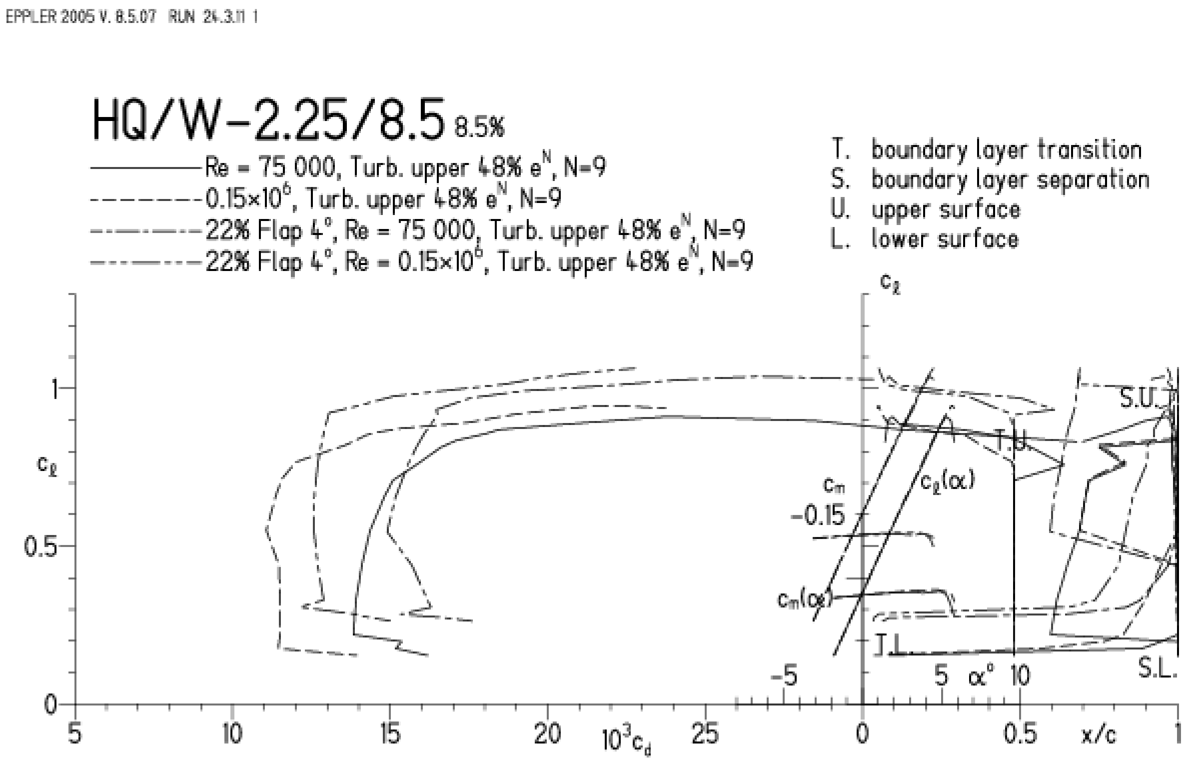


EPPLER 2005 V.



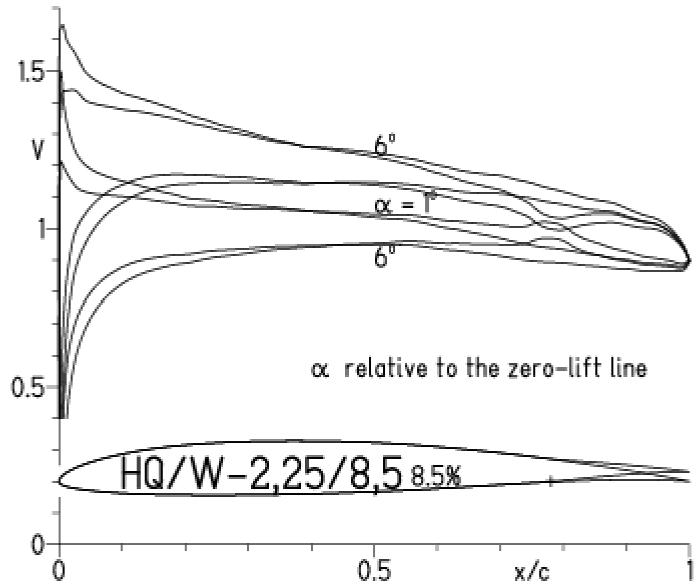
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



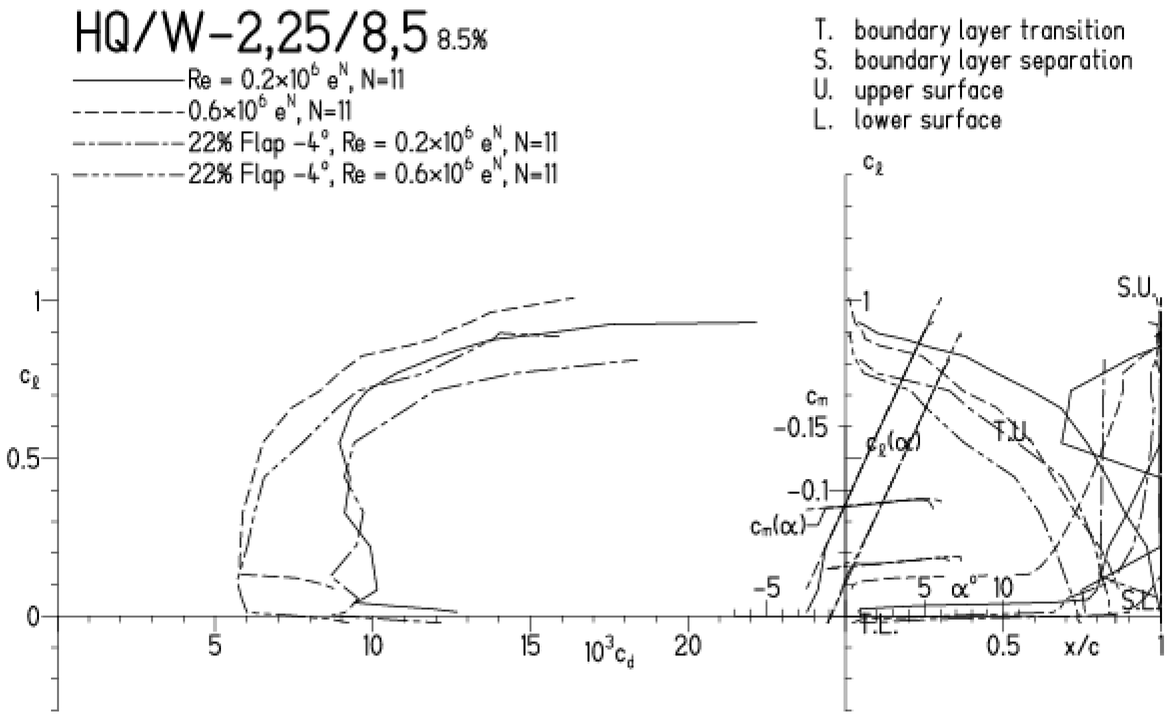


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

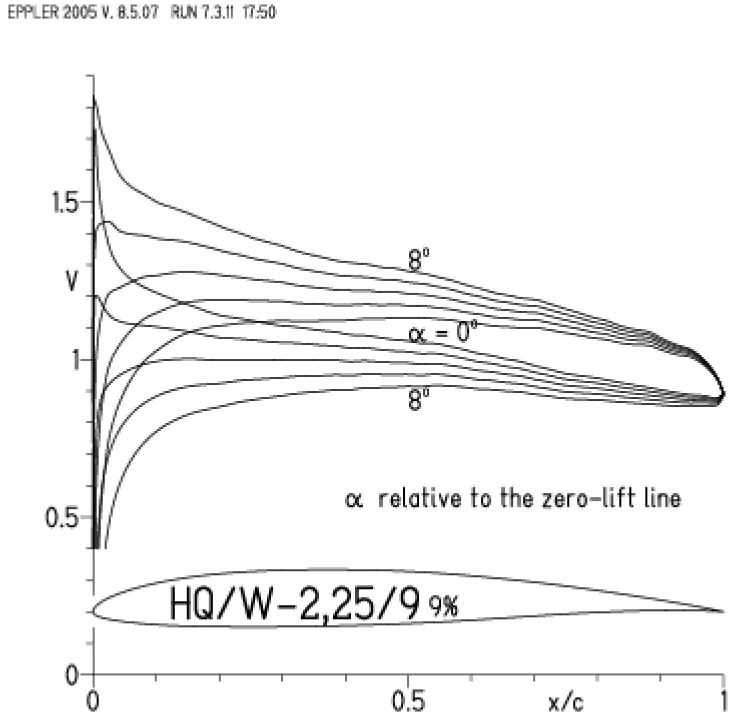
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

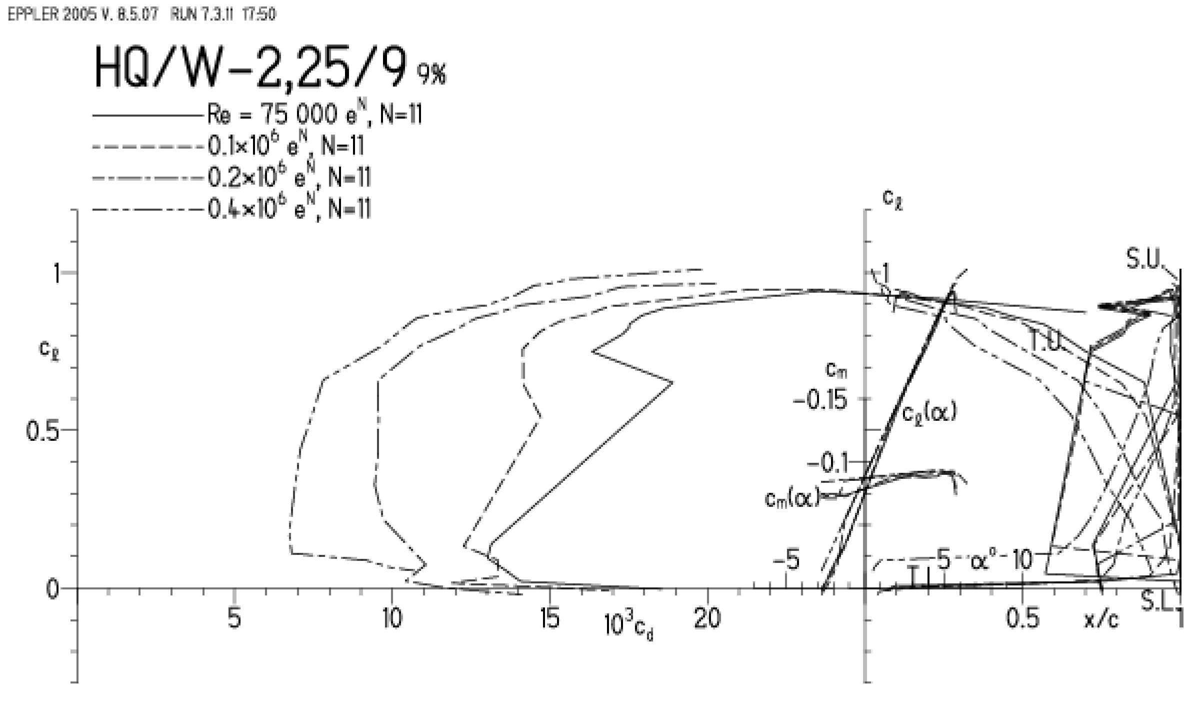


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

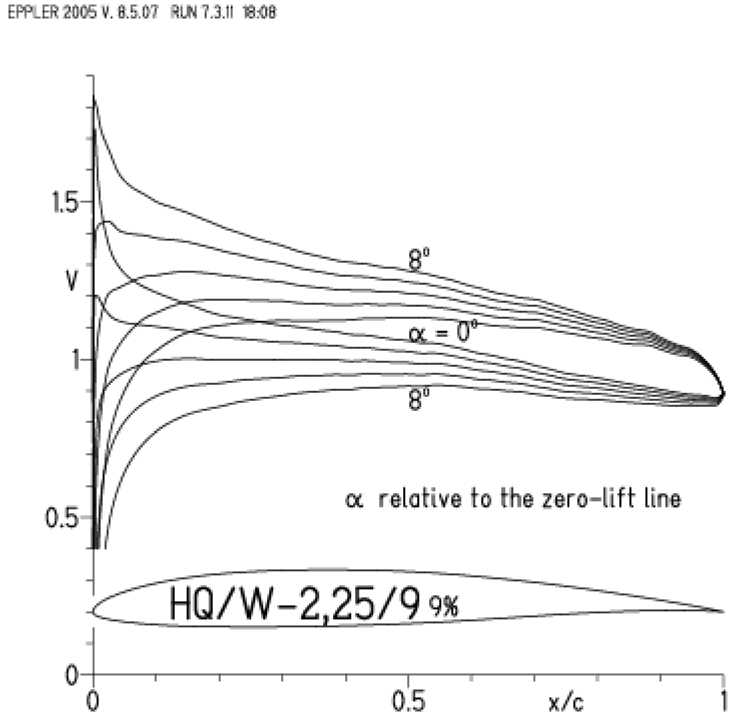


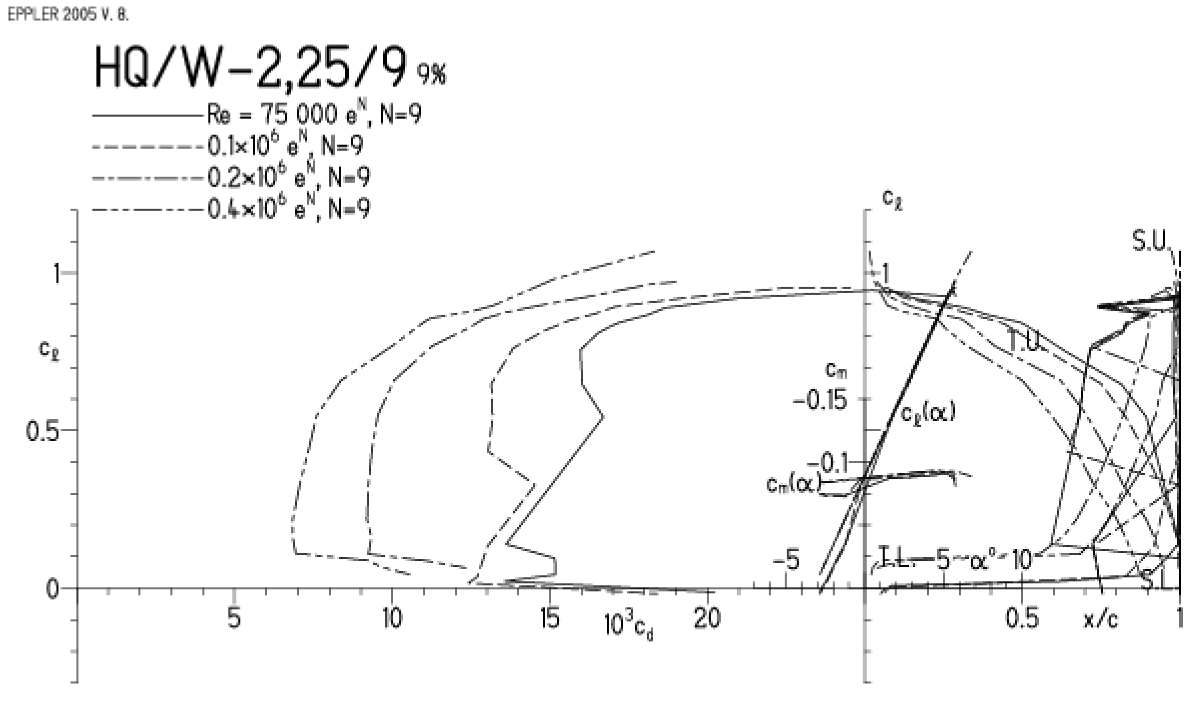
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

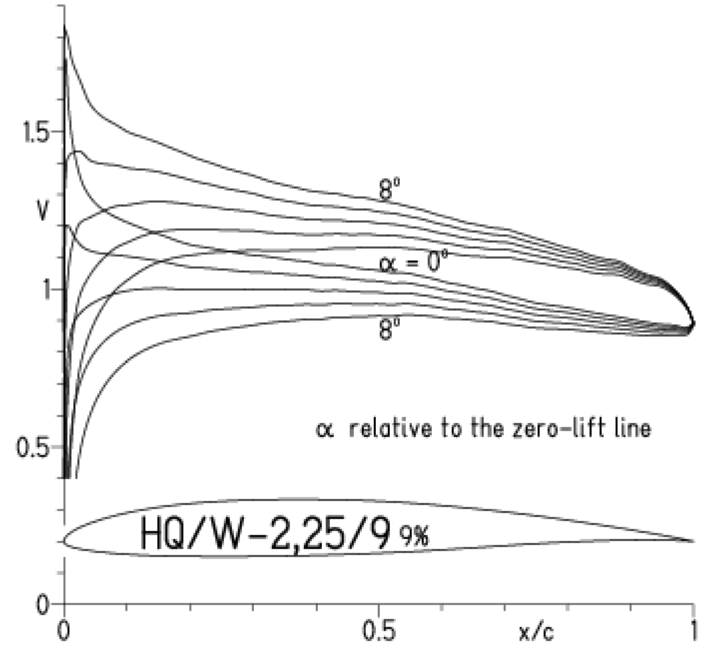
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

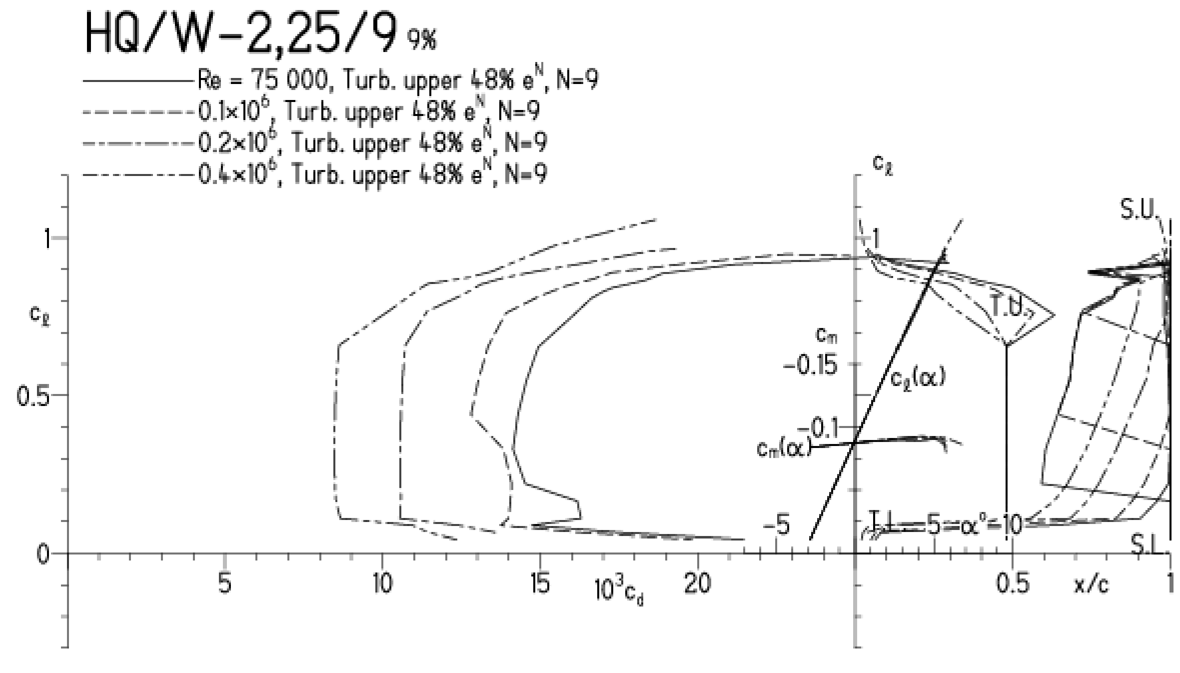

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

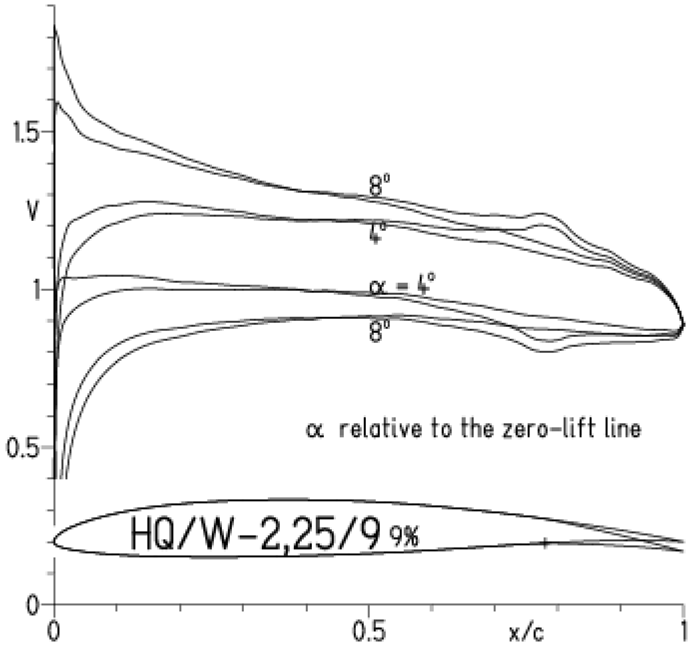


EPPLER 2005 V. 8.5.07 RUN 7

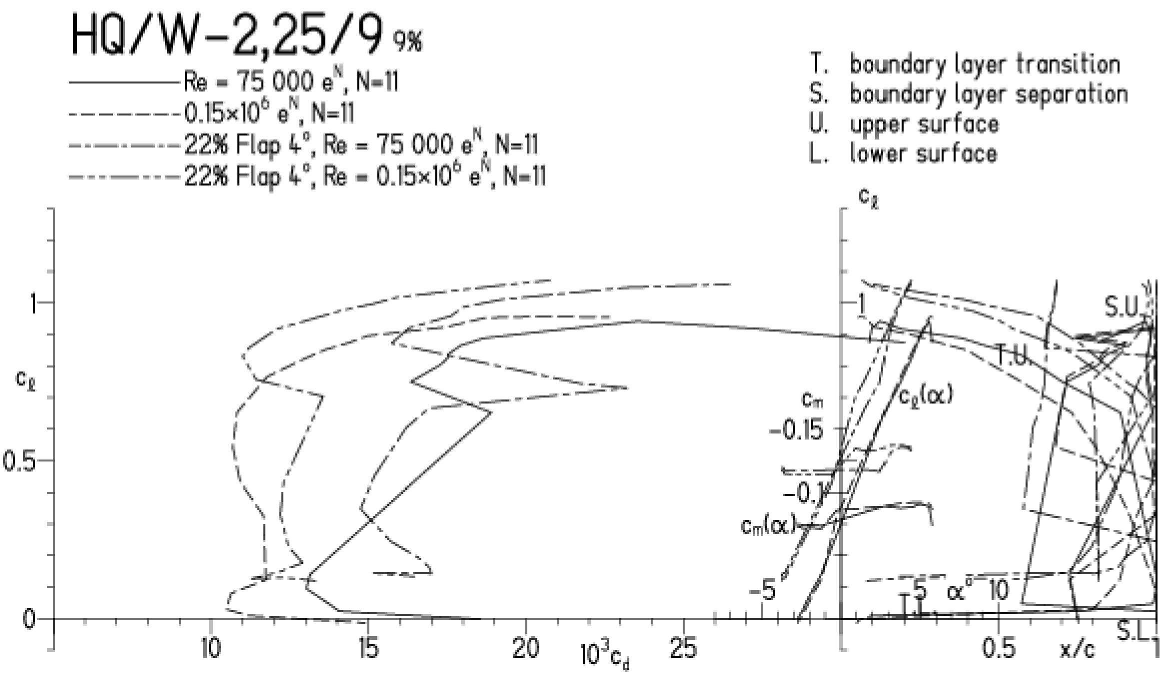


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

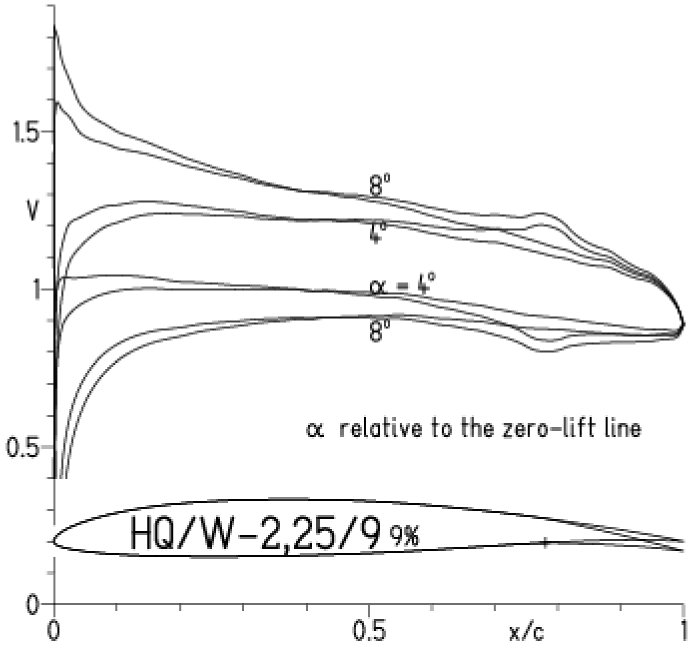


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

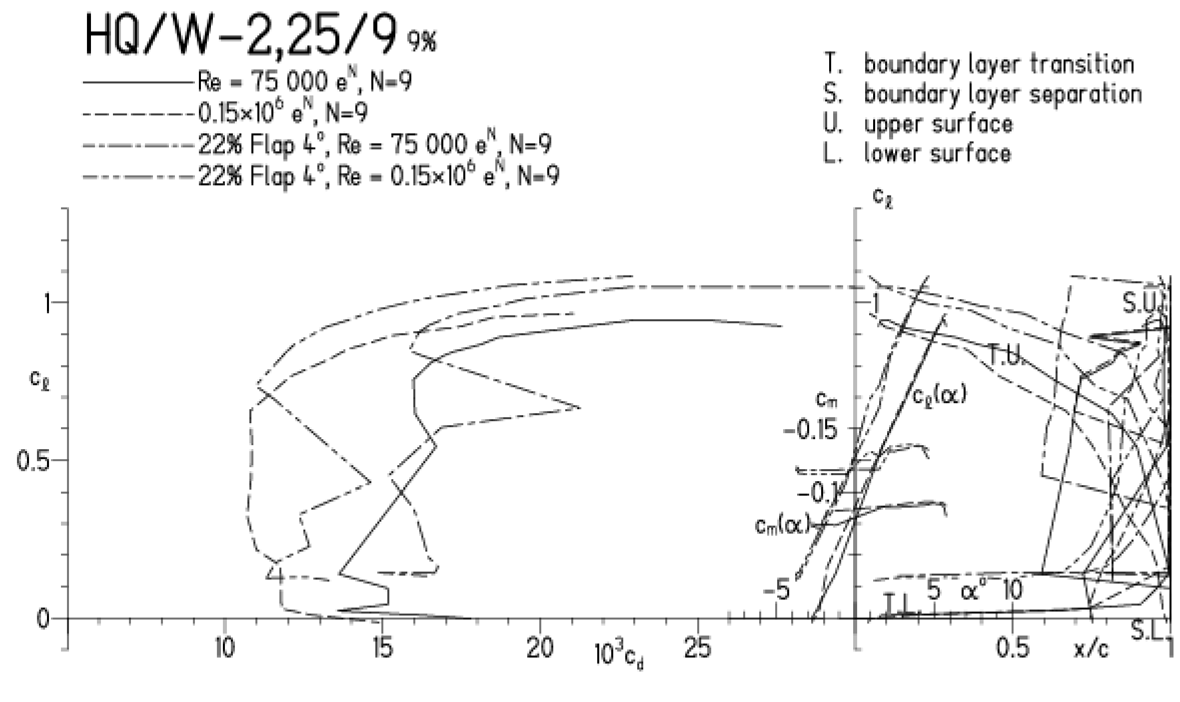


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

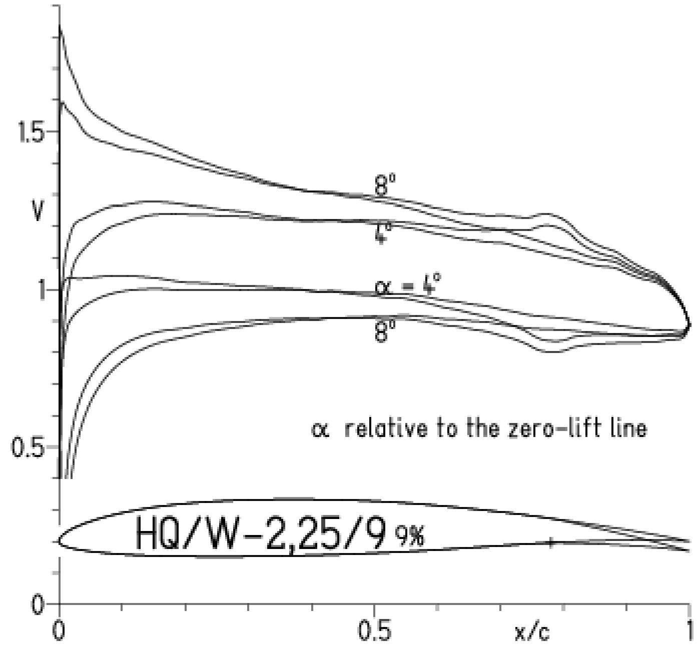


EPPLER 2005 V. 8.5.07 RUN 8.3.1

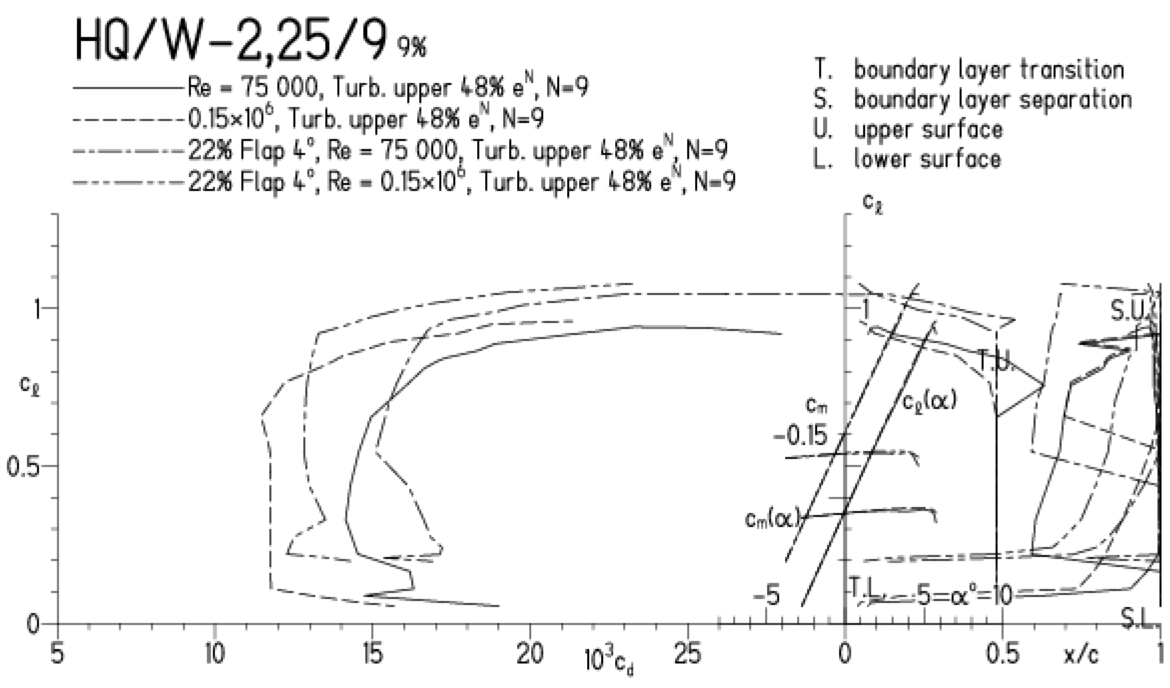


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

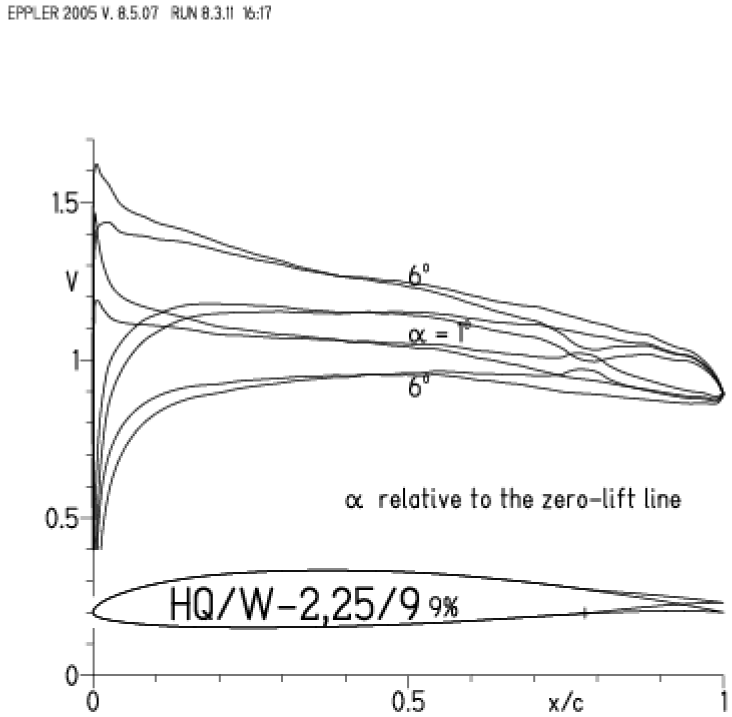
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

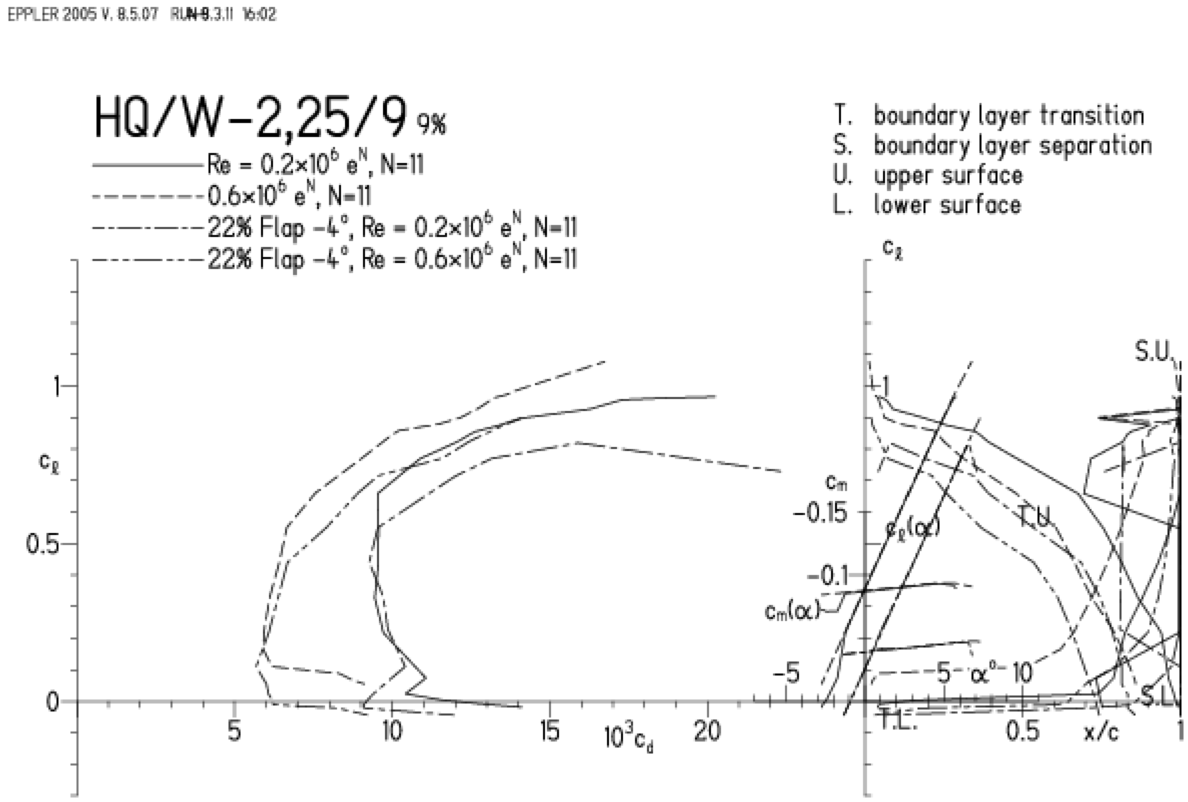


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

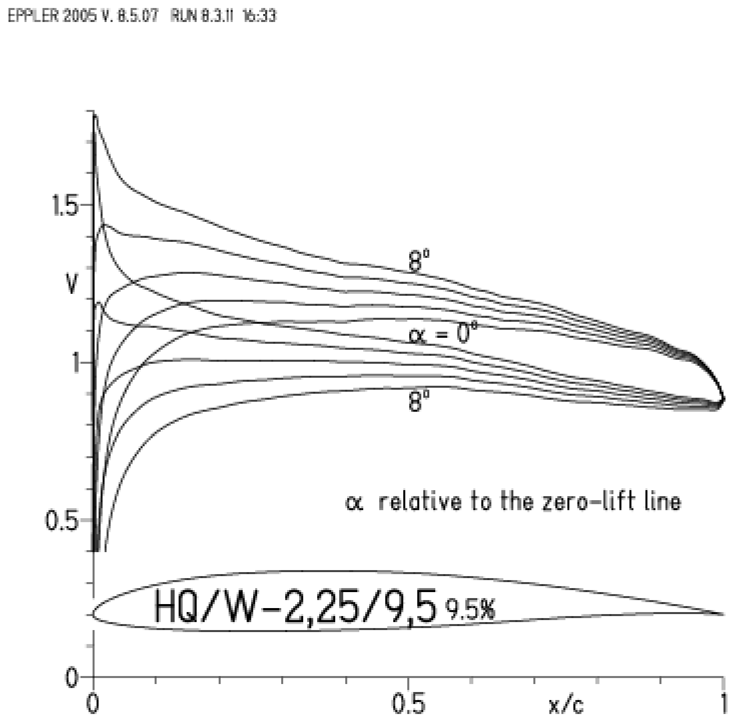


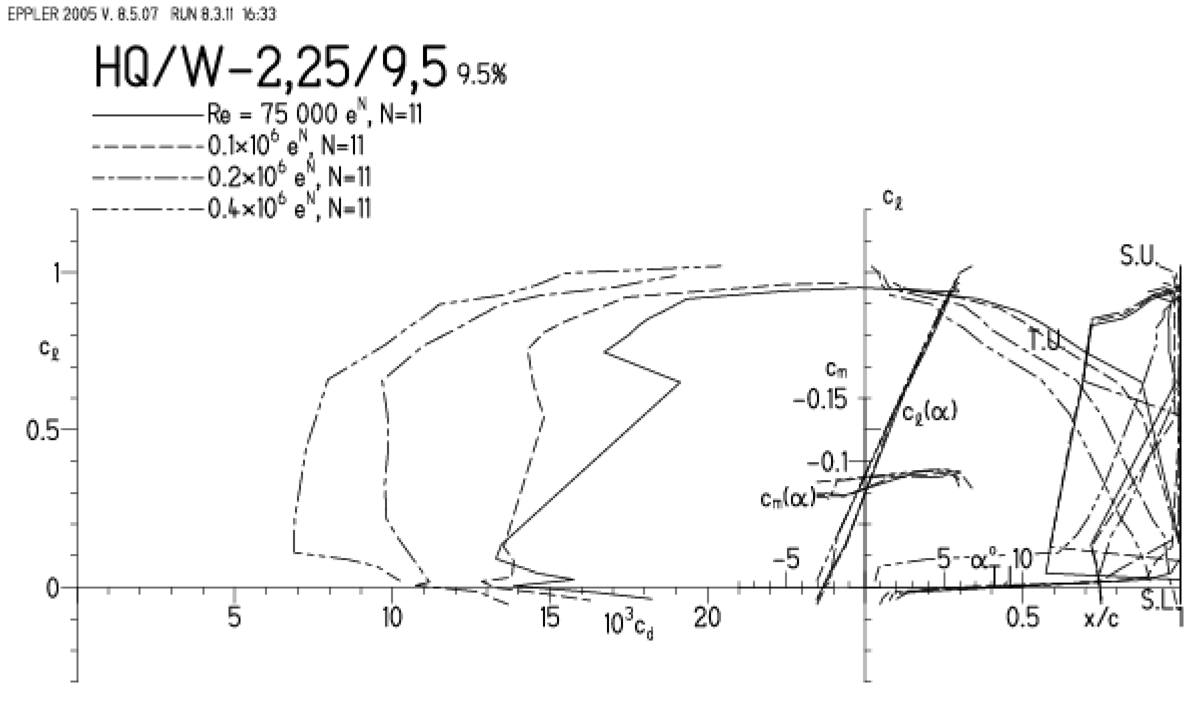
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



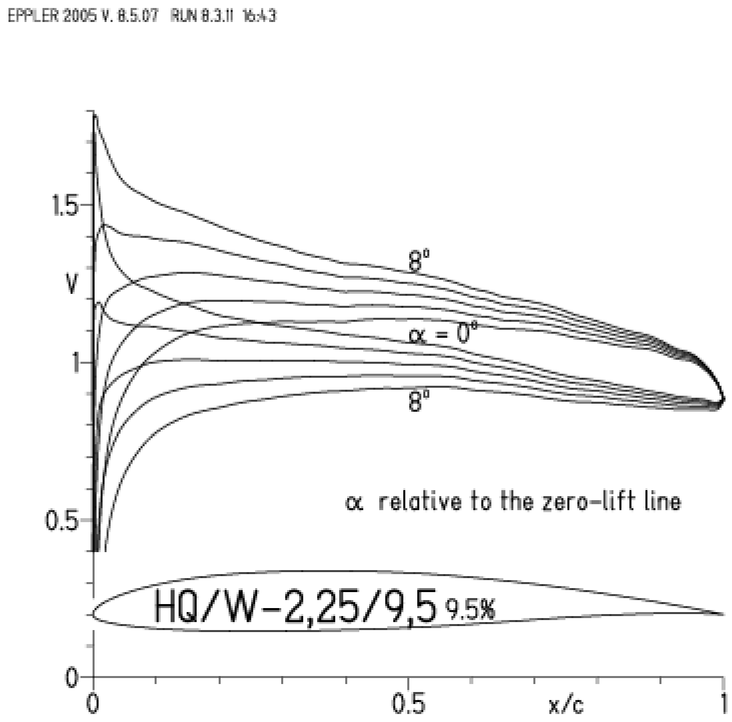


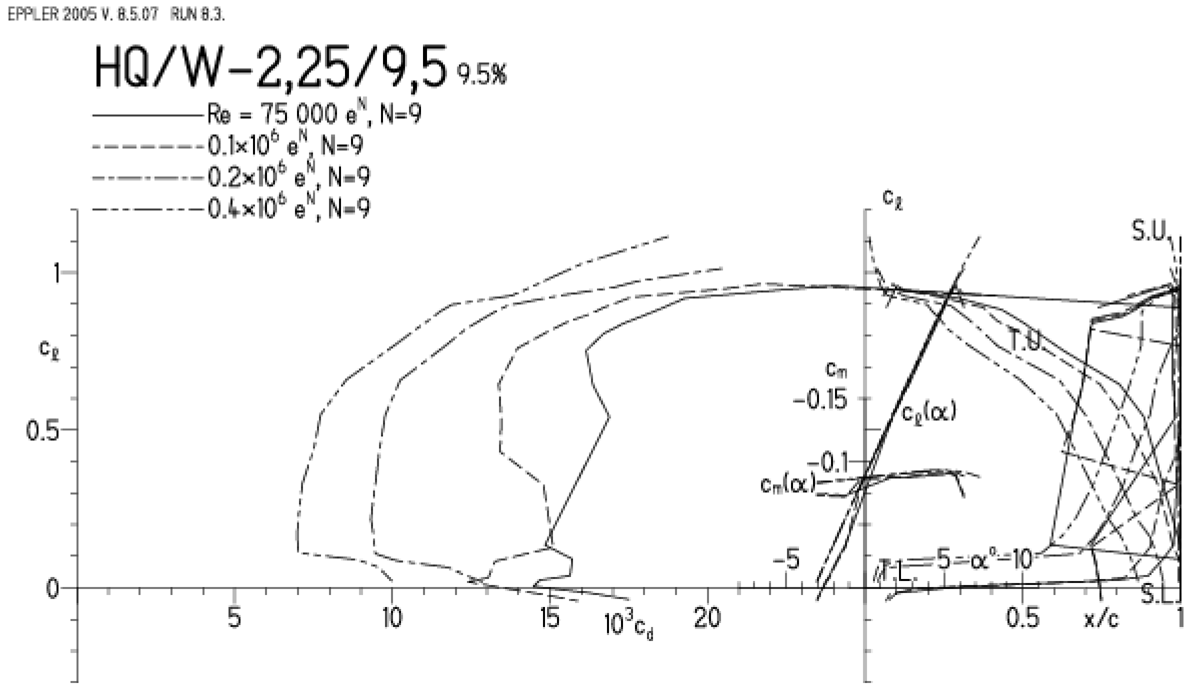
HQ/W-2,25/9,5, N=11





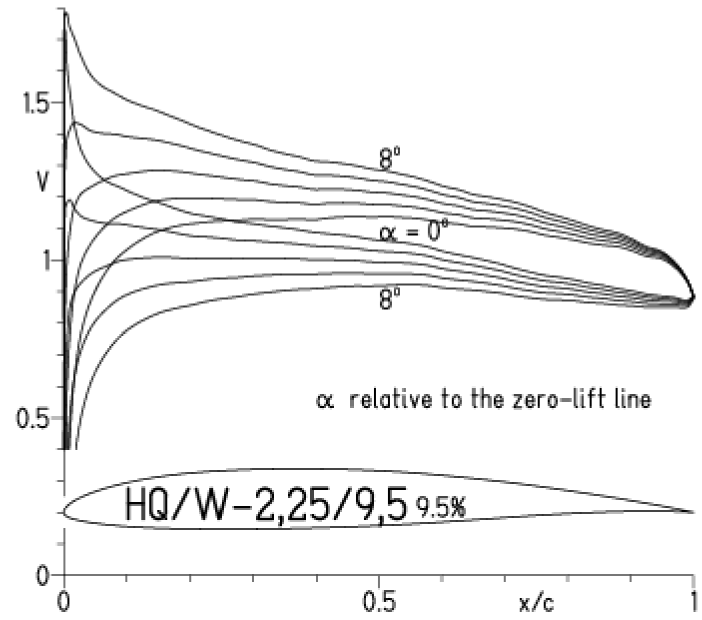
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

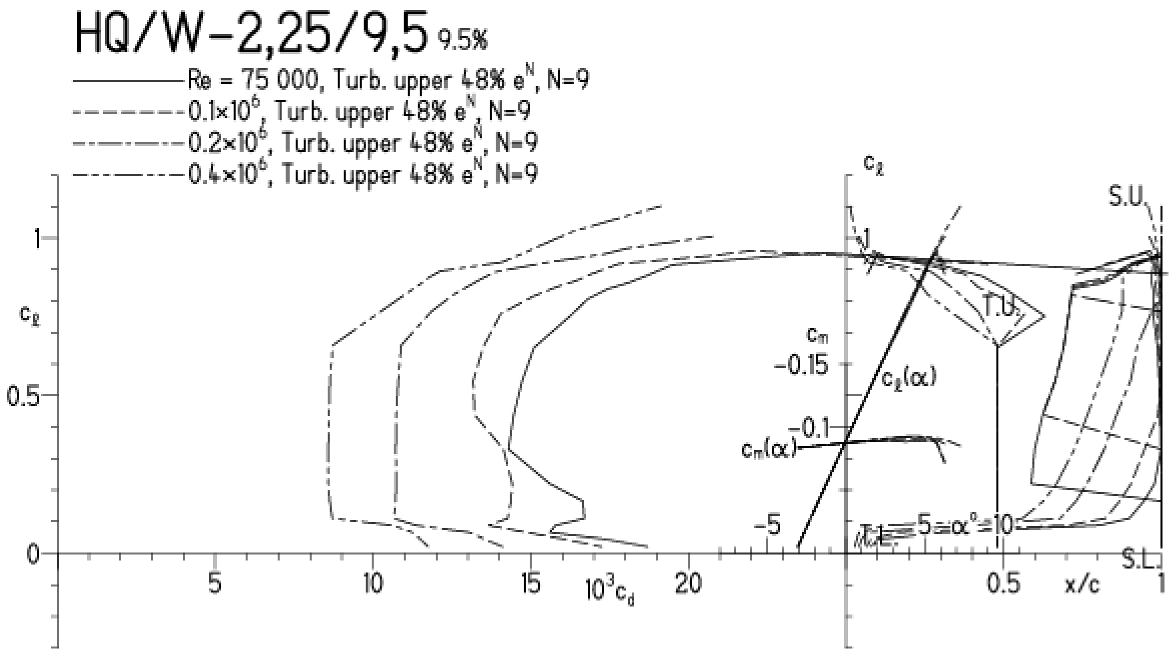

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

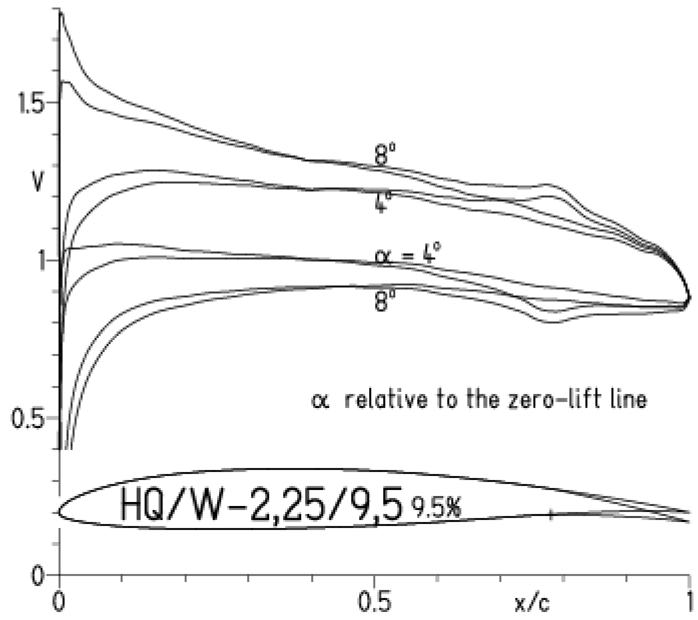


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

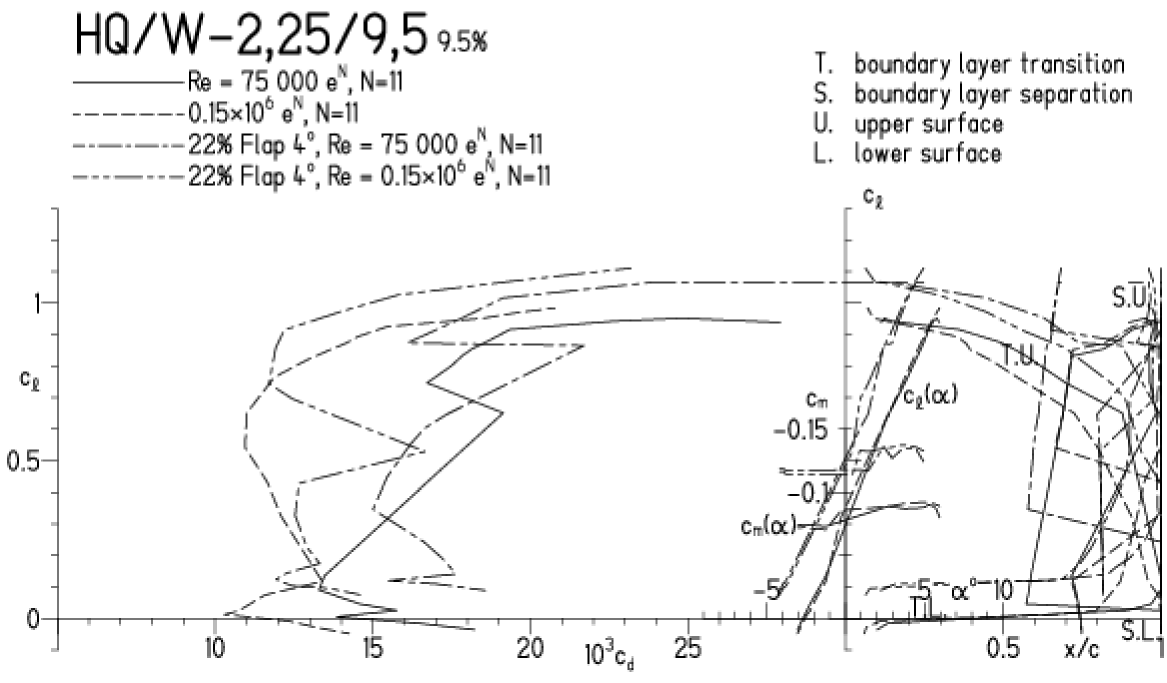


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

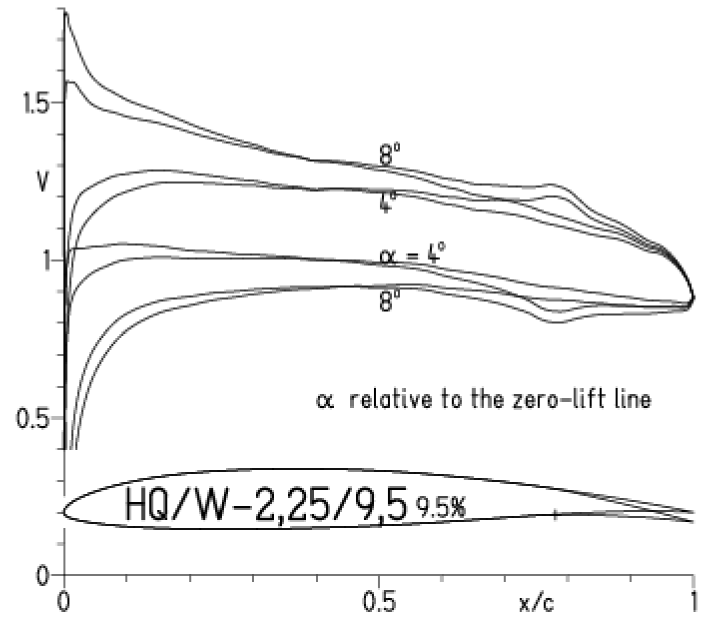


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

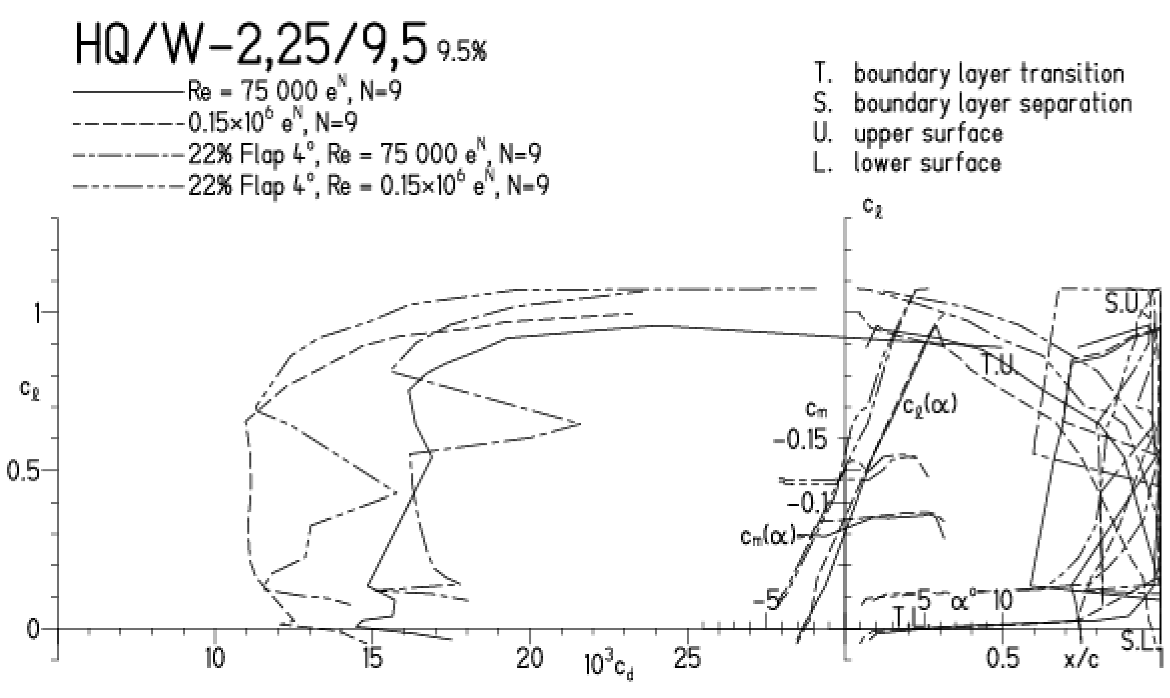


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

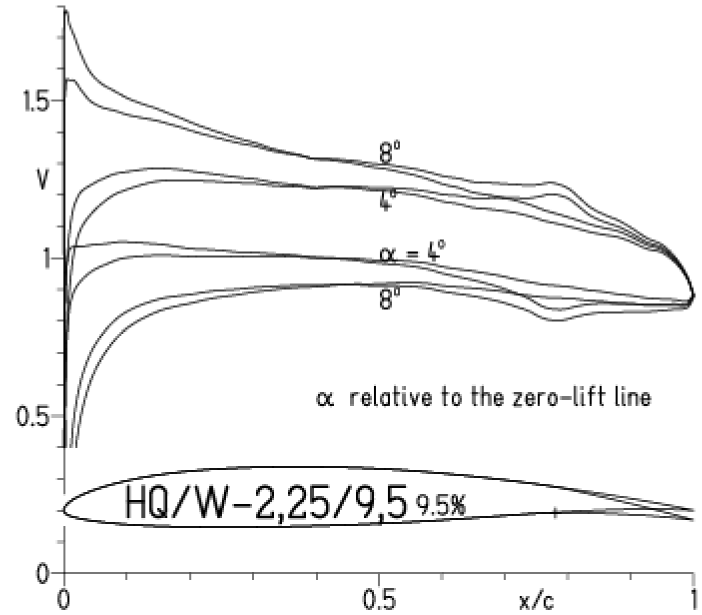


EPPLER 2005 V. 8.5.07 R

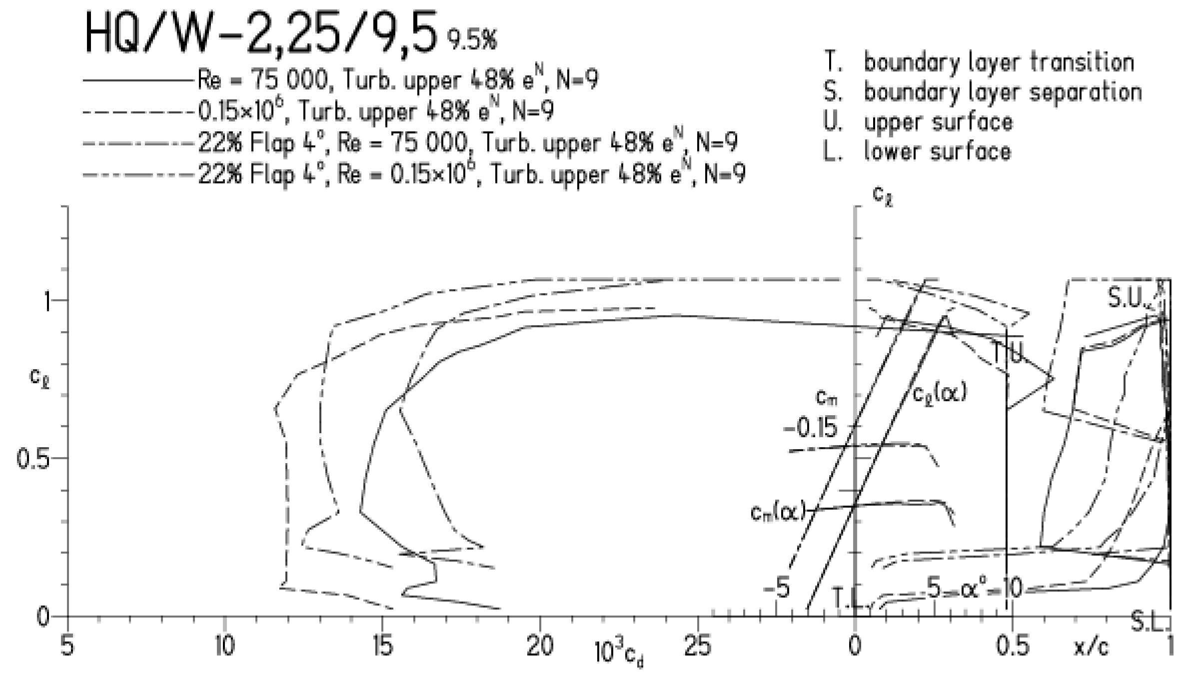


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

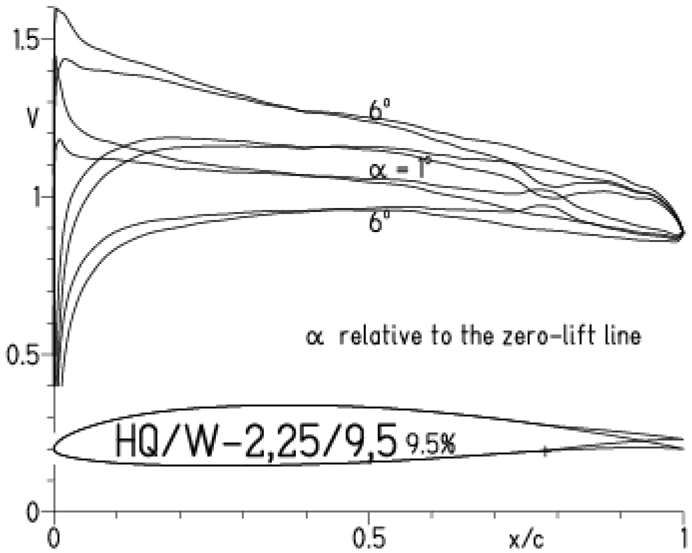


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

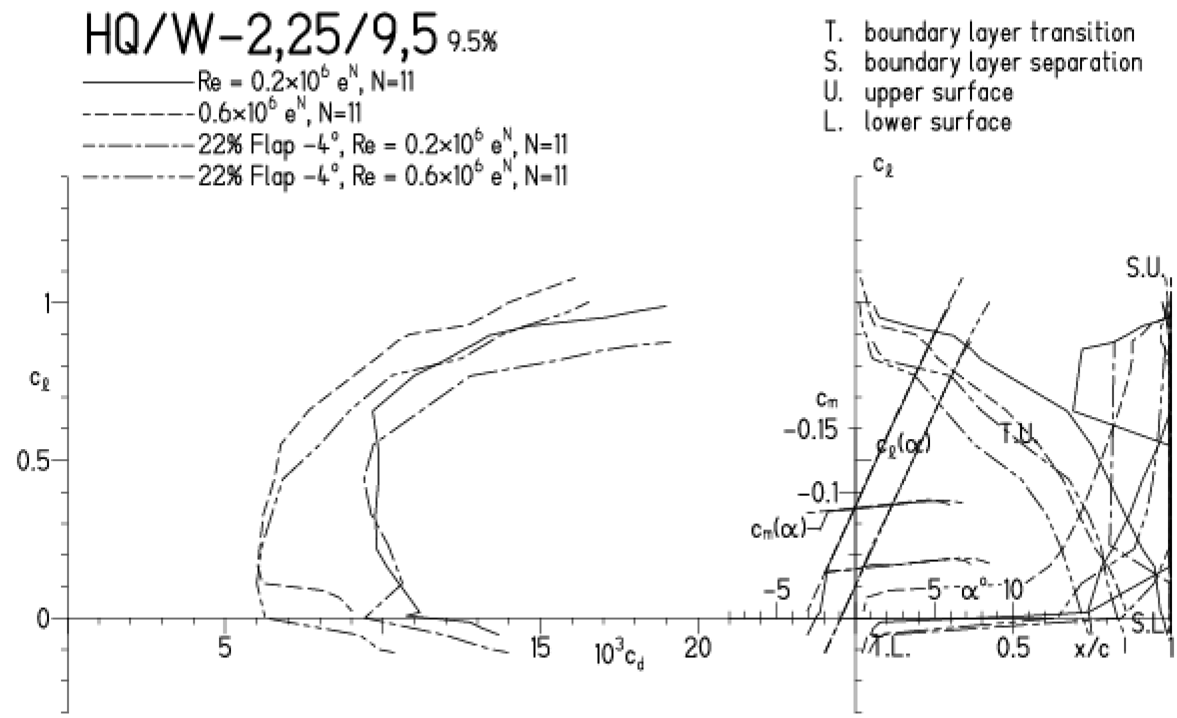


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

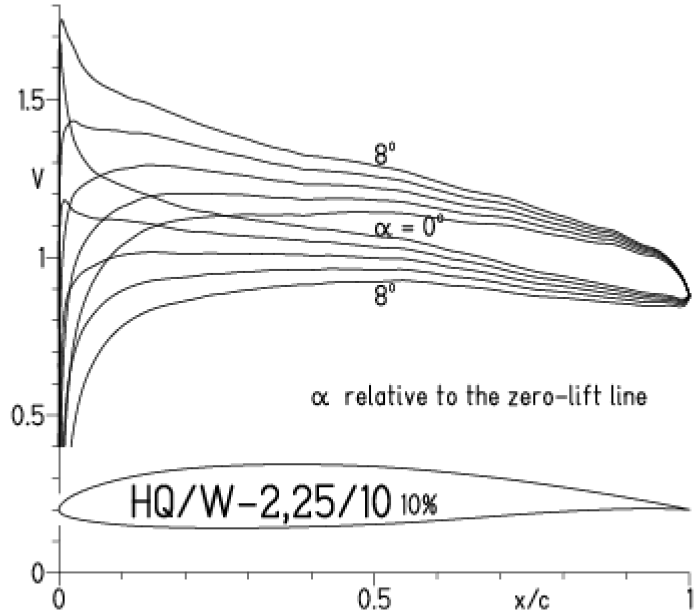


EPPLER 2005 V.

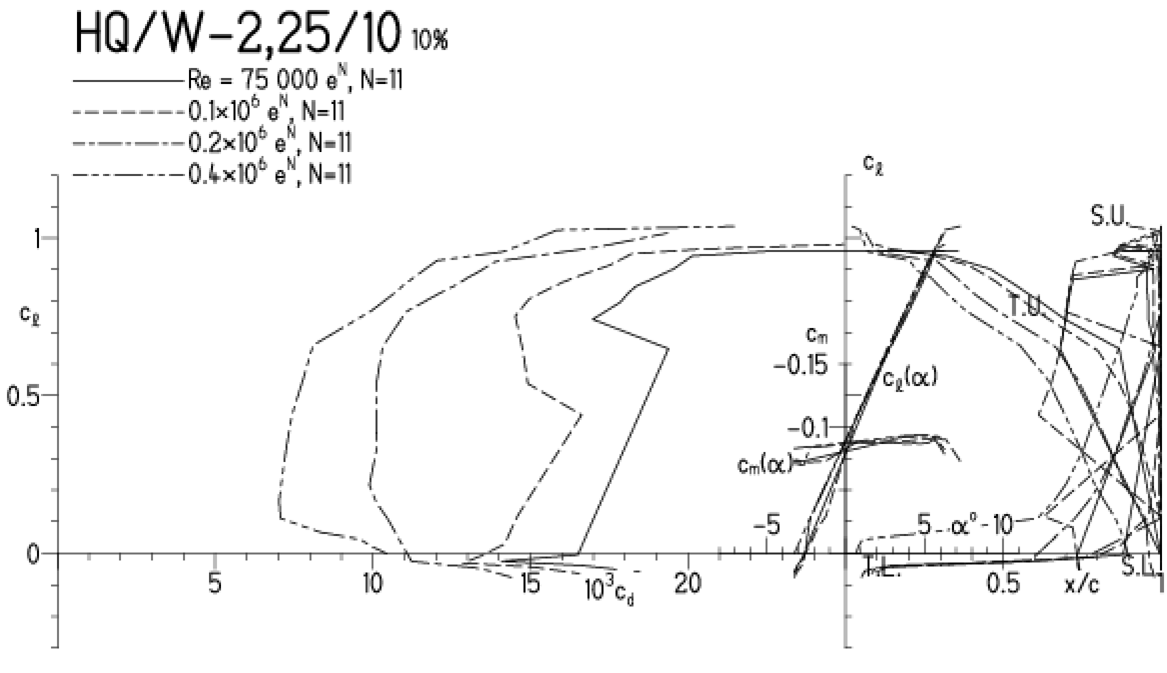


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

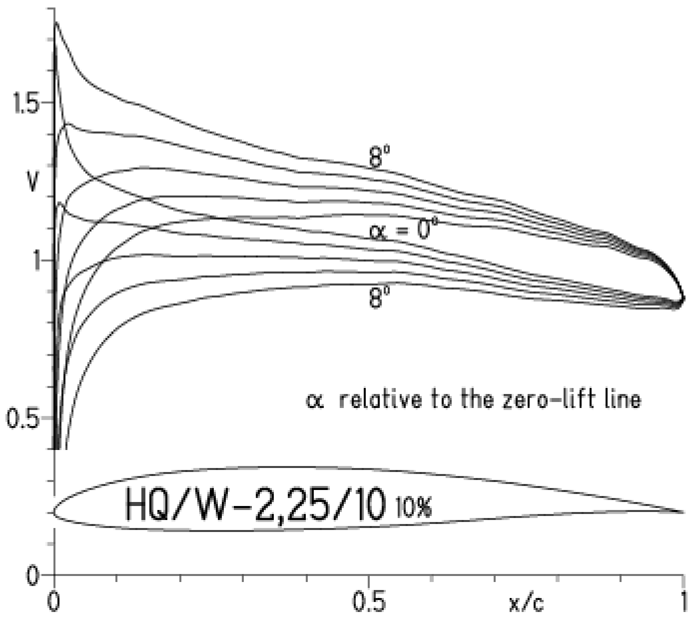


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

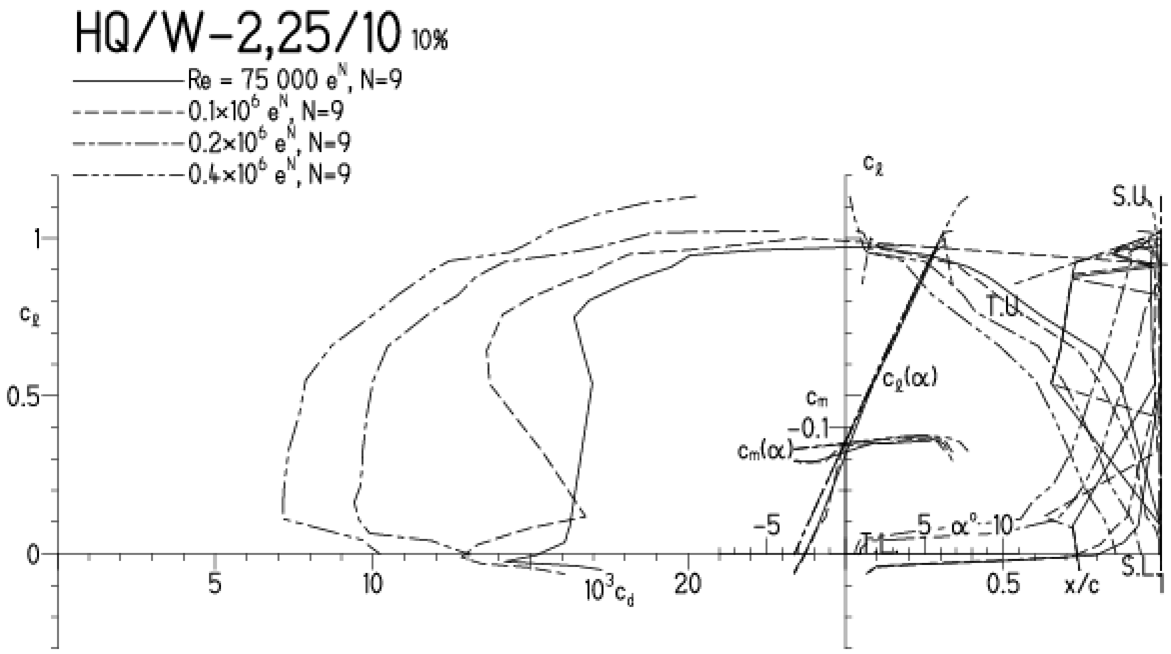


HQ/W-2,25/10, N=9

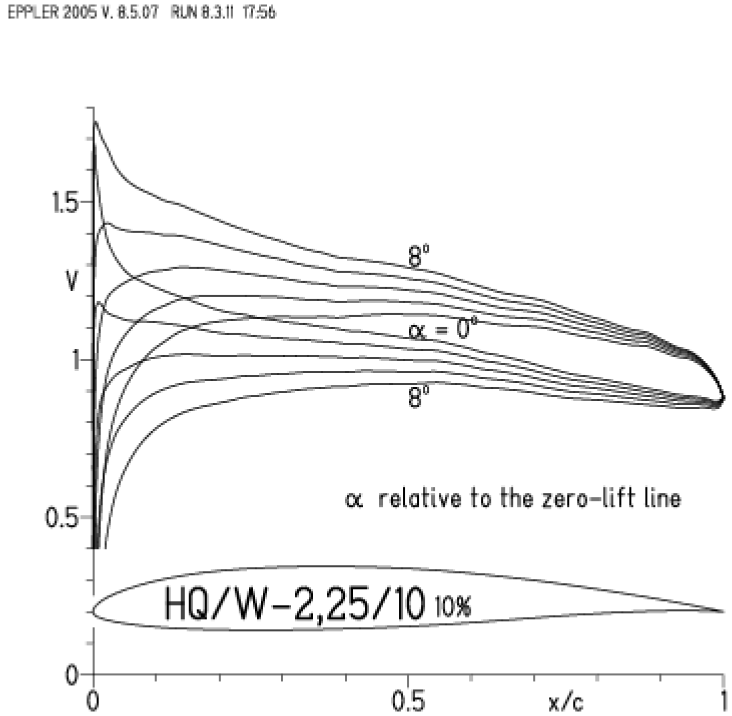
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

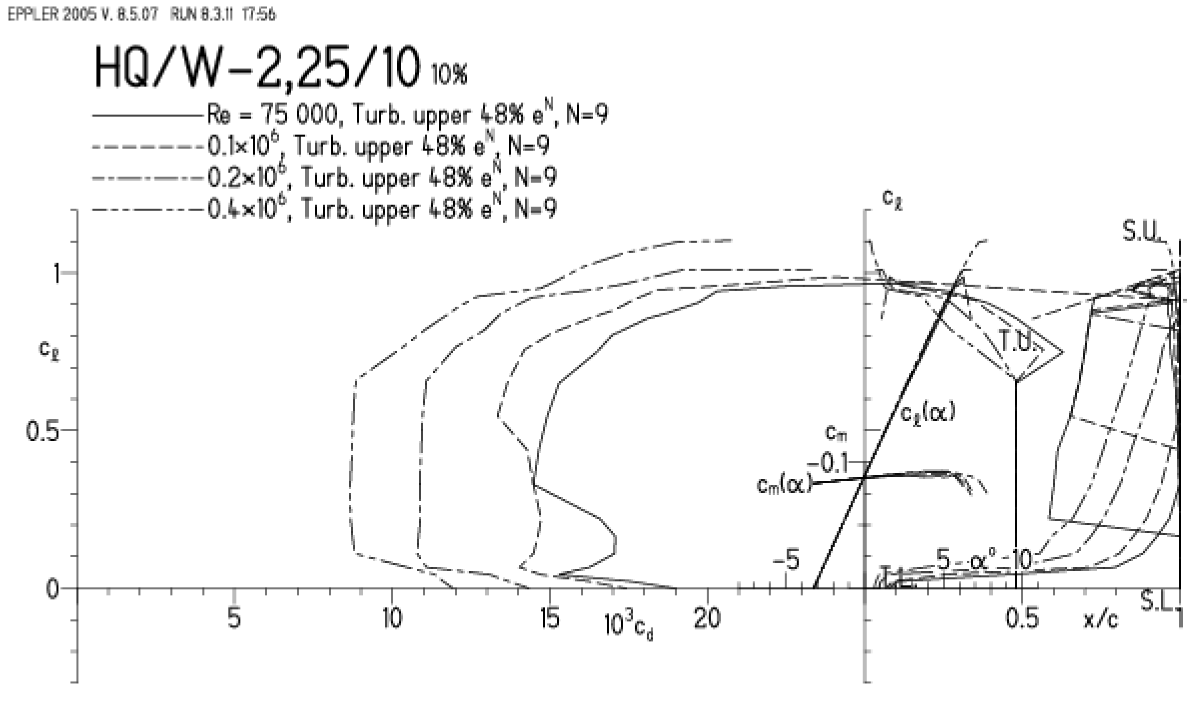


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



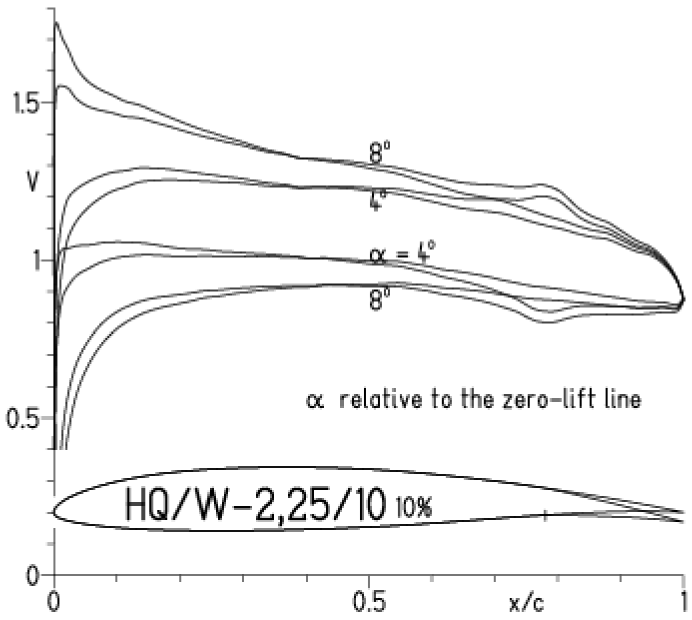
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



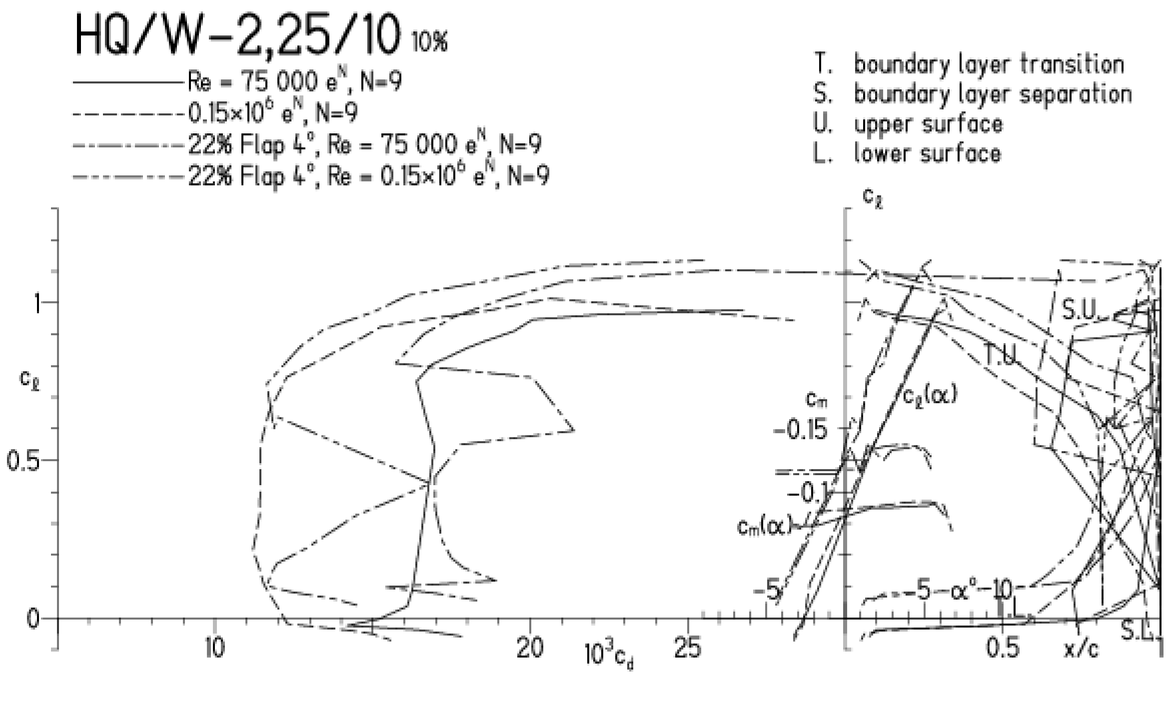


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

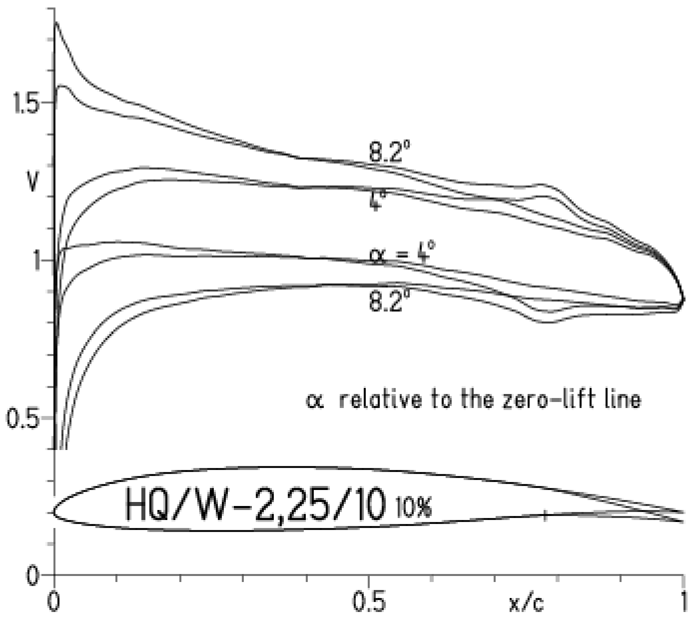


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

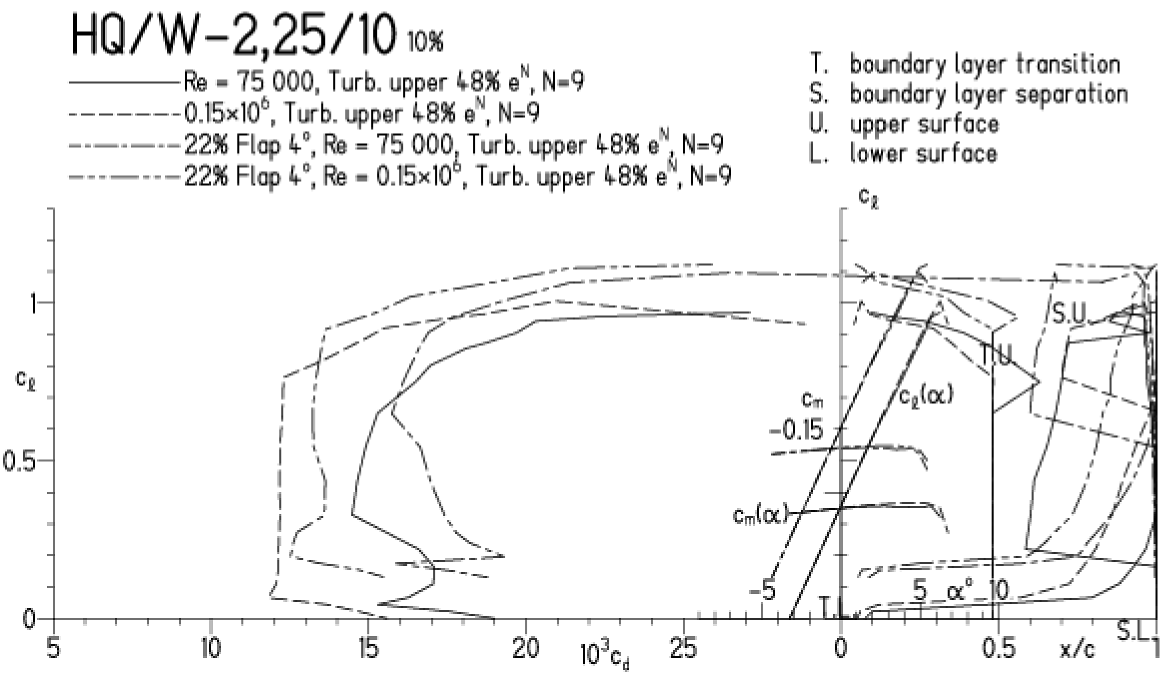


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

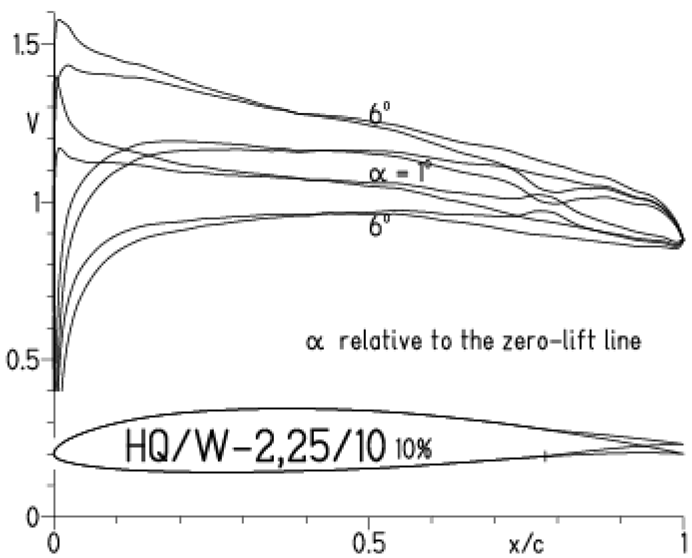


EPPLER 2005 V. 8.5.07 RUN 8.3

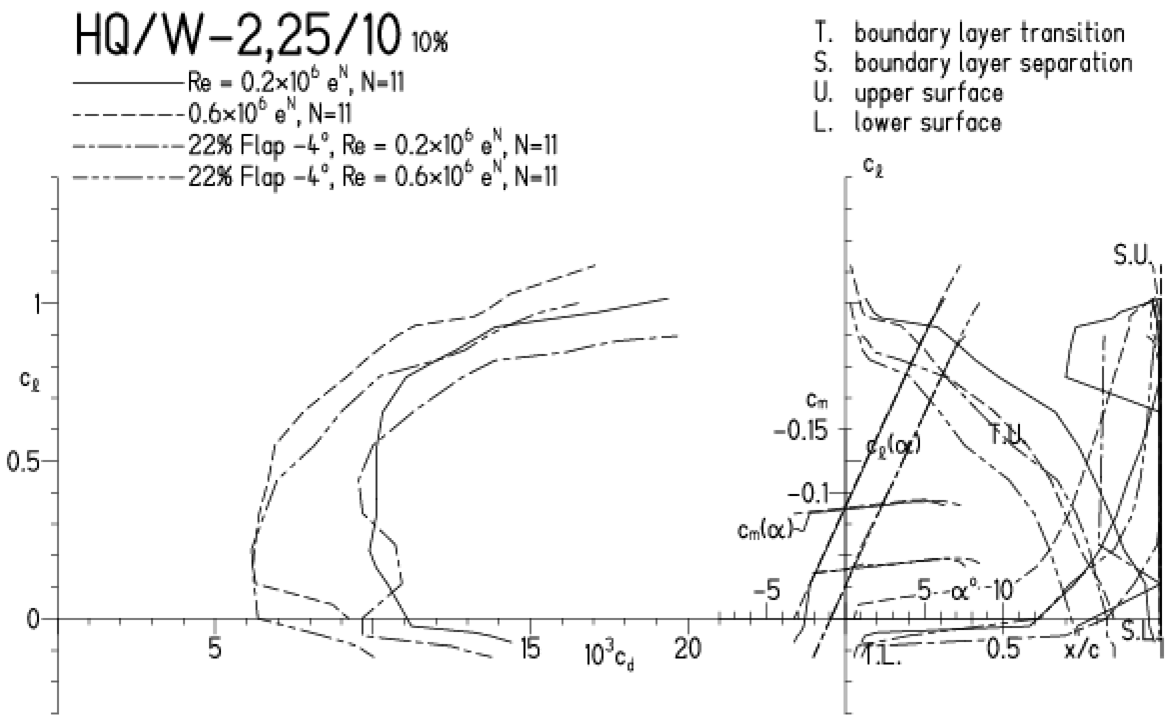


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

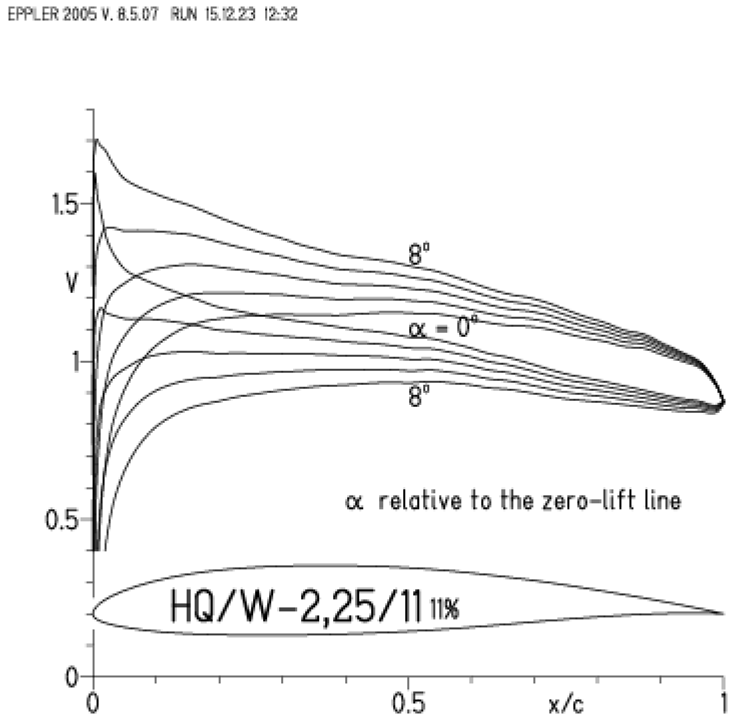
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

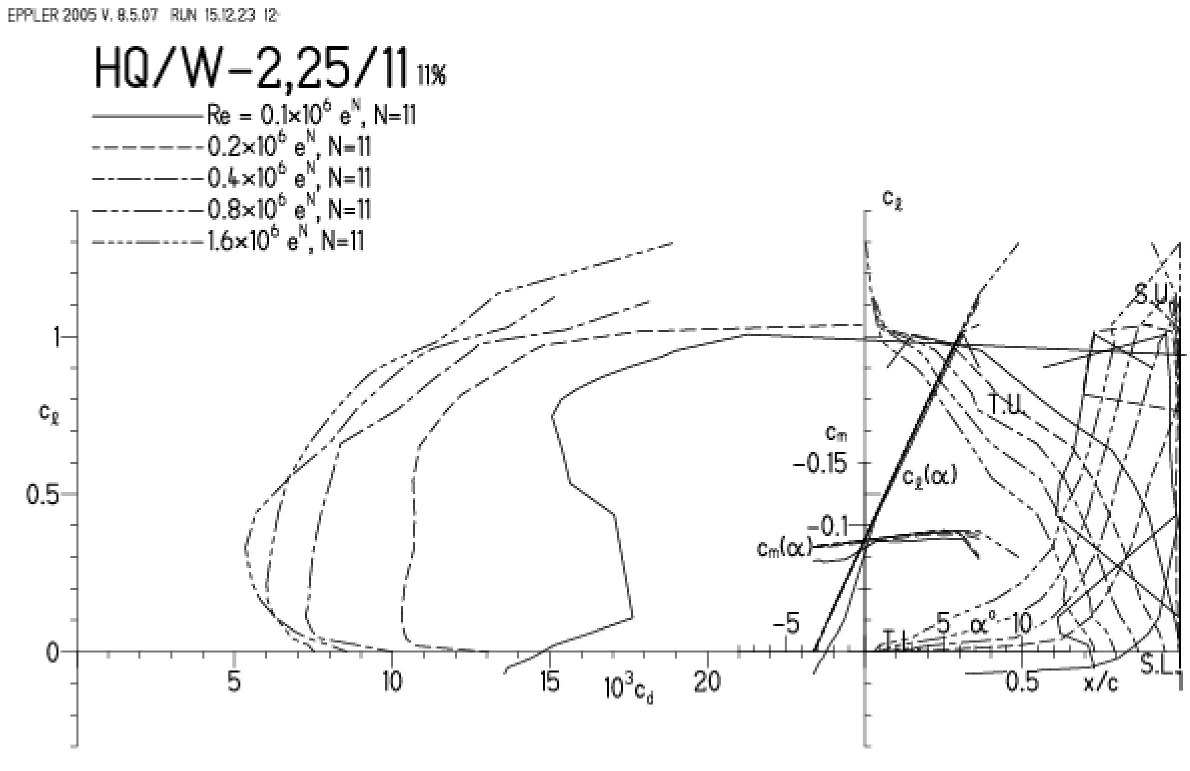


EPPLER 2005 V. 8.5.07 RUN

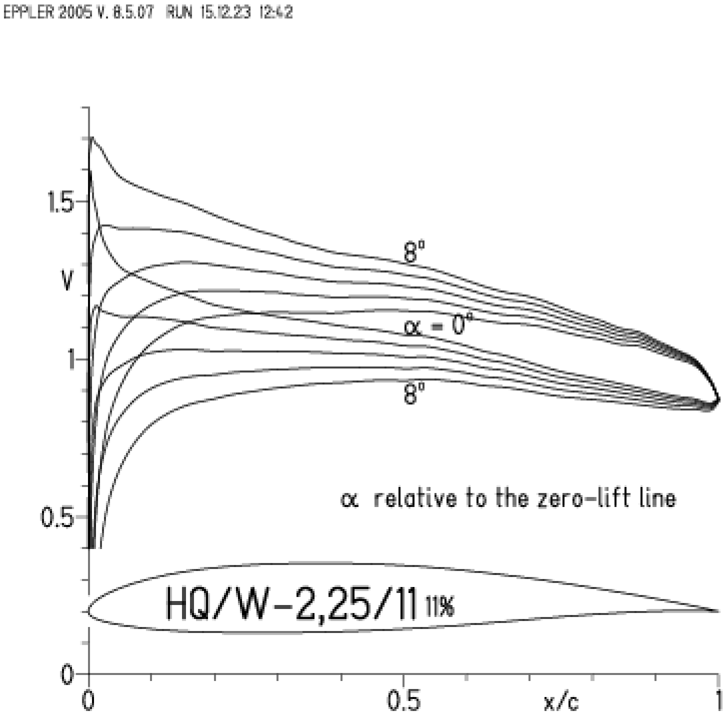


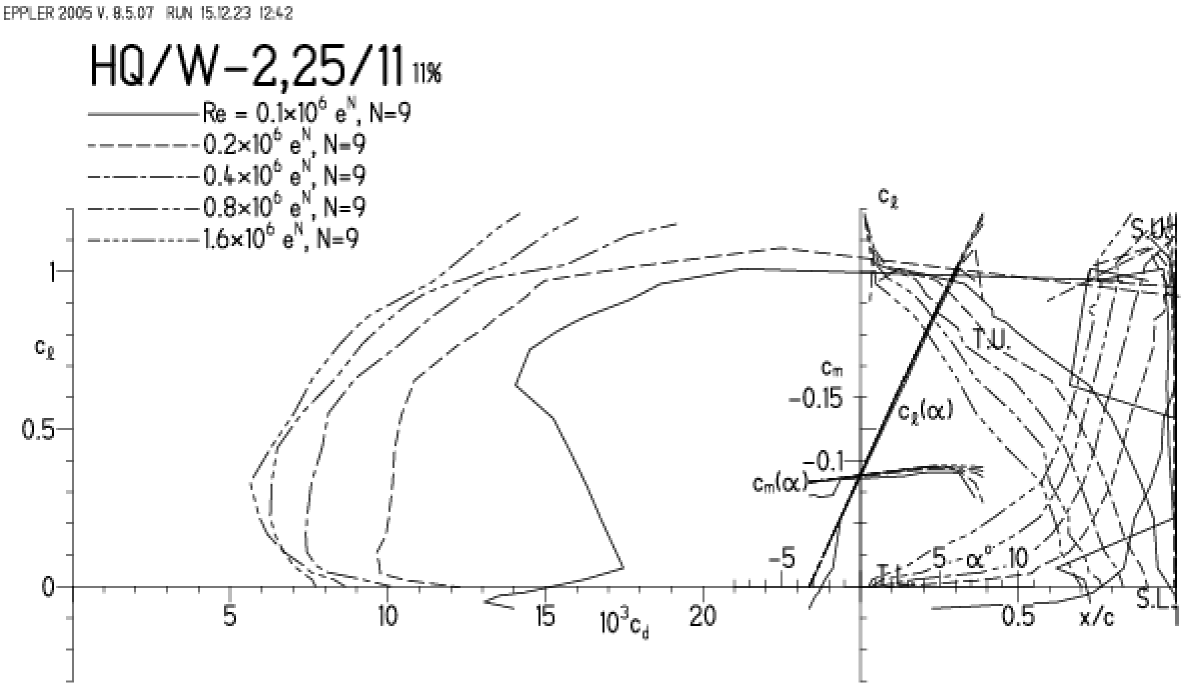
HQ/W-2,25/11, N=11



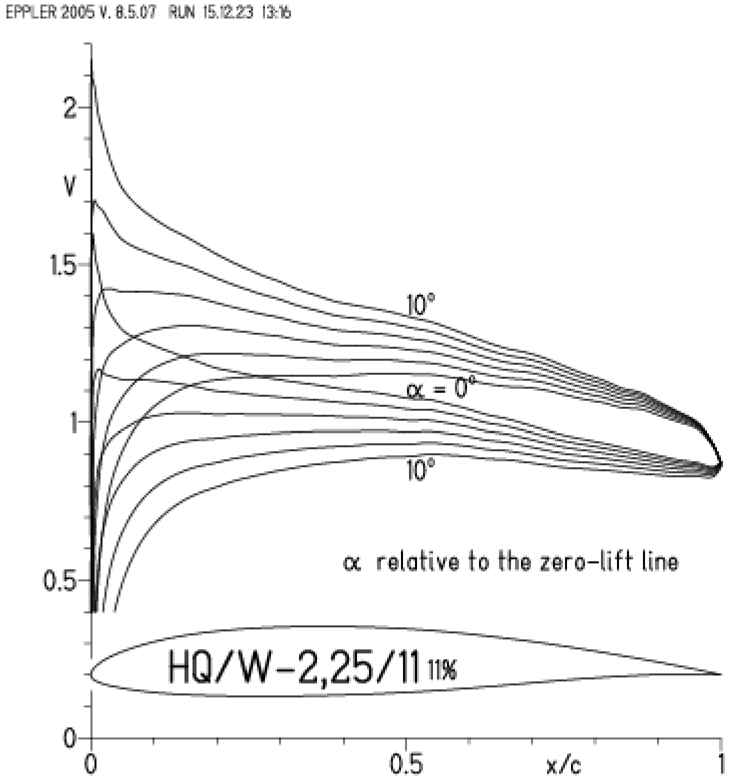


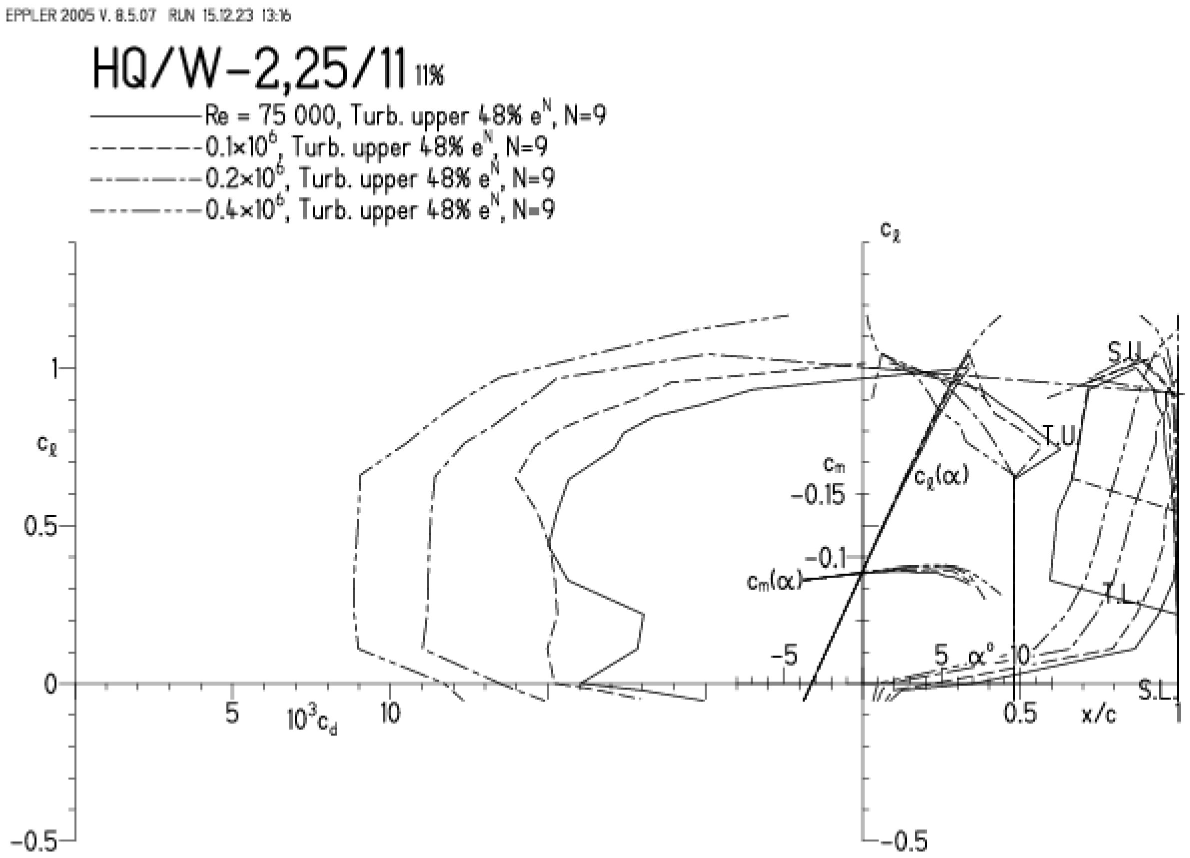
HQQ/W-2,25/11, N=9





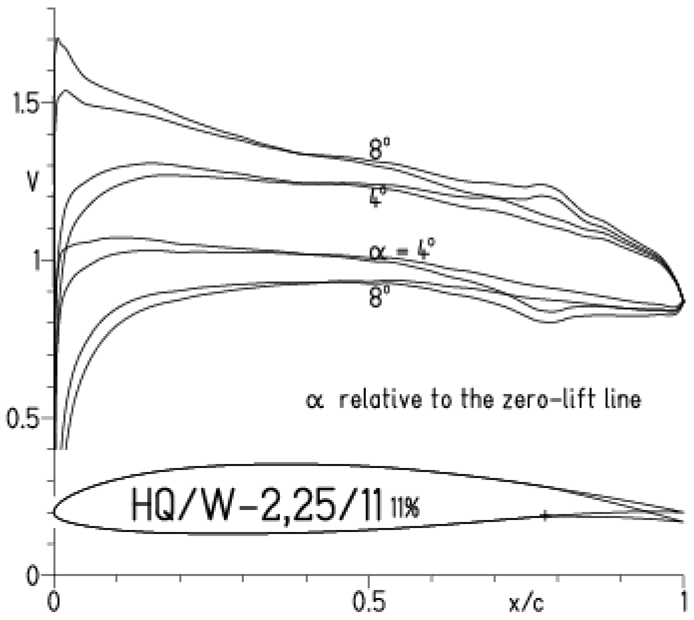
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



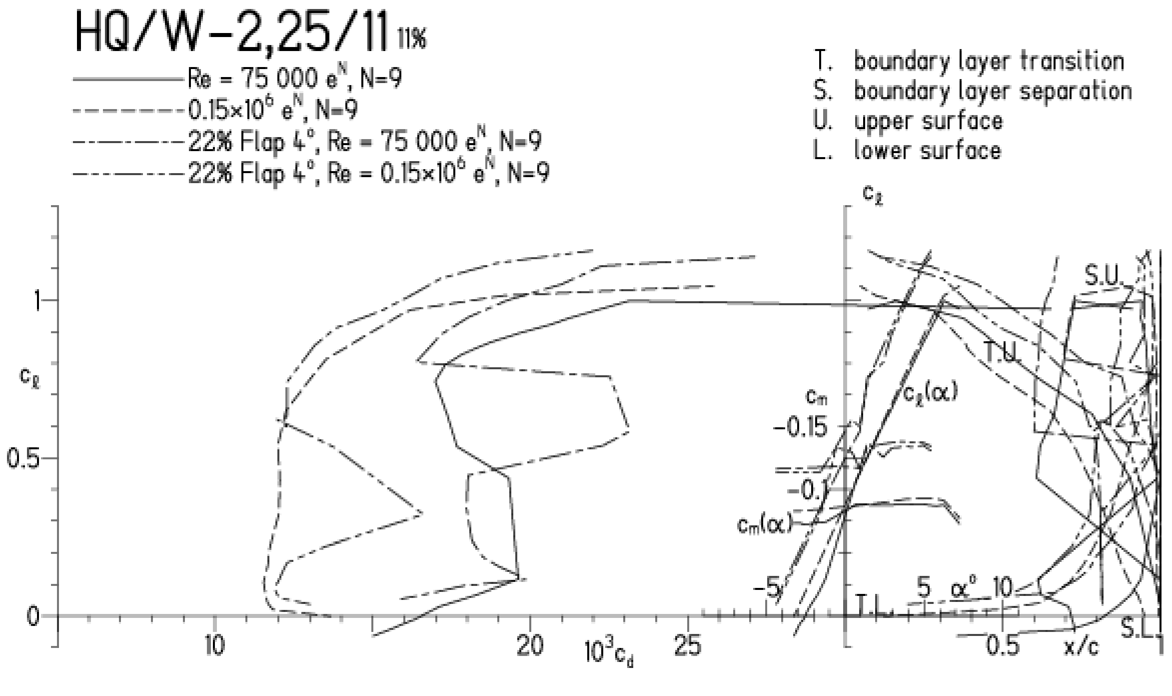


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

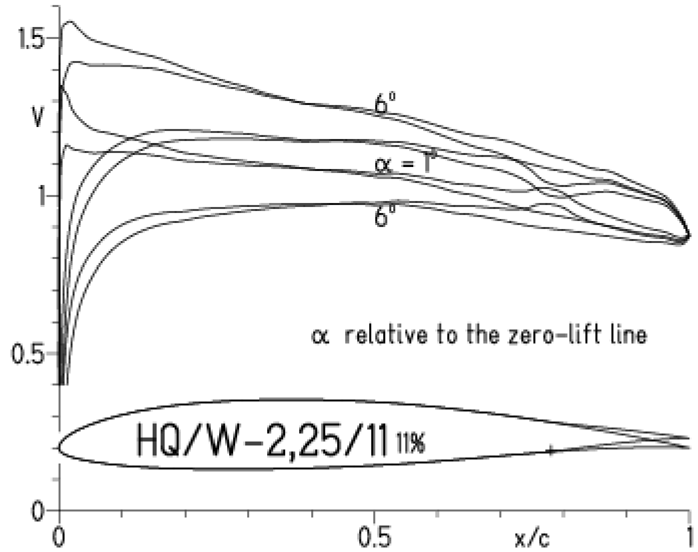


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

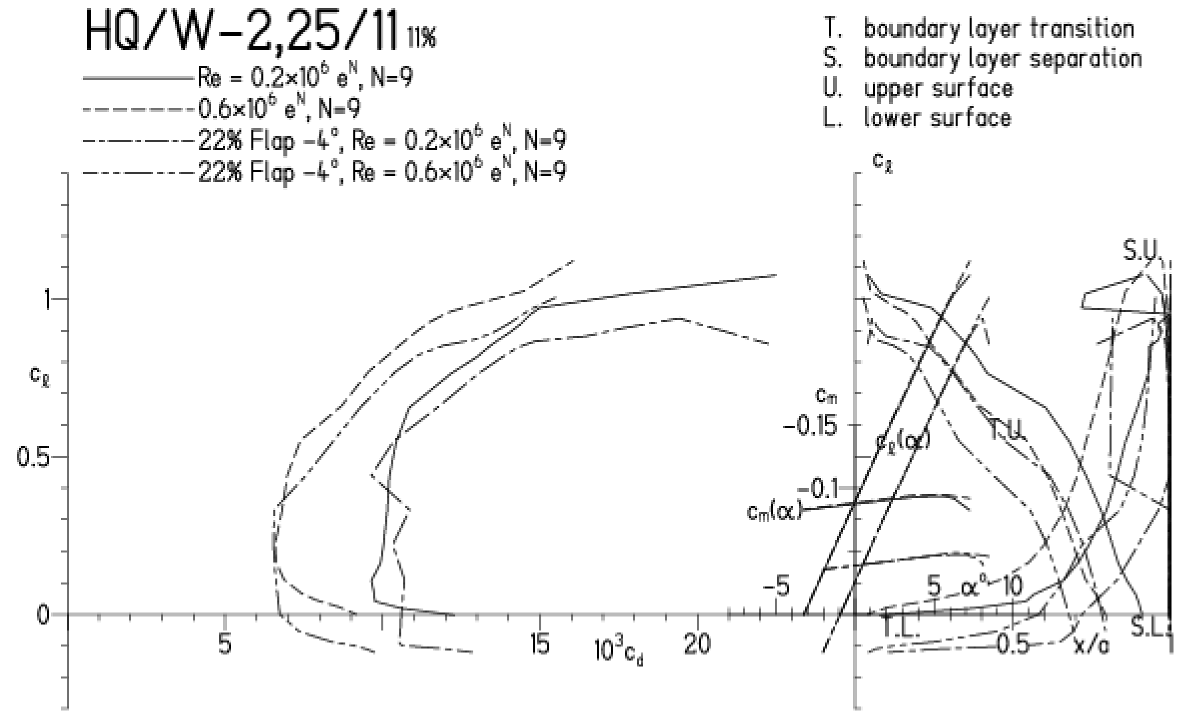


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

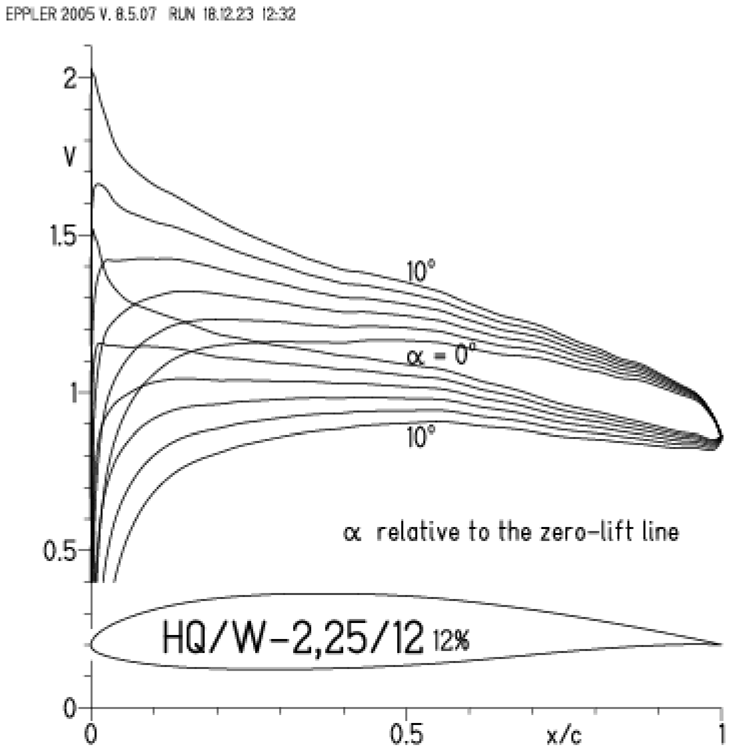
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

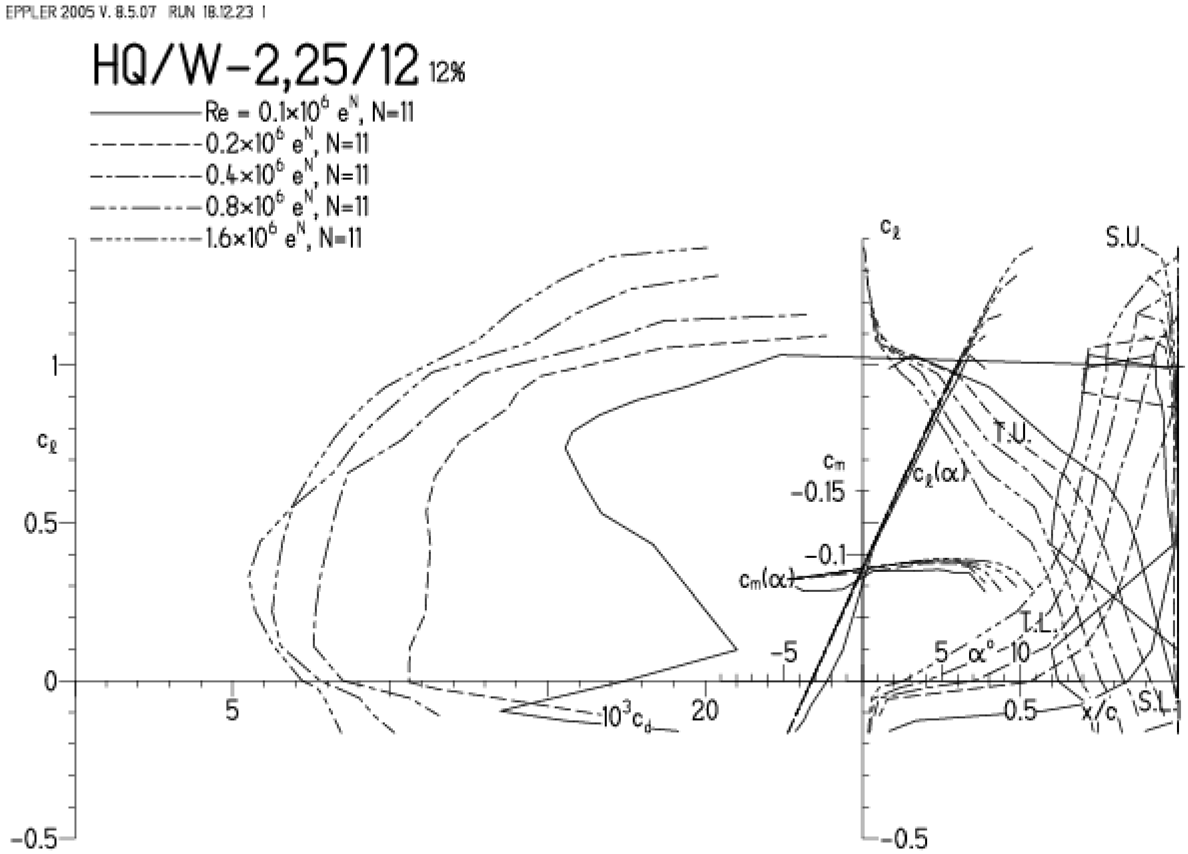


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

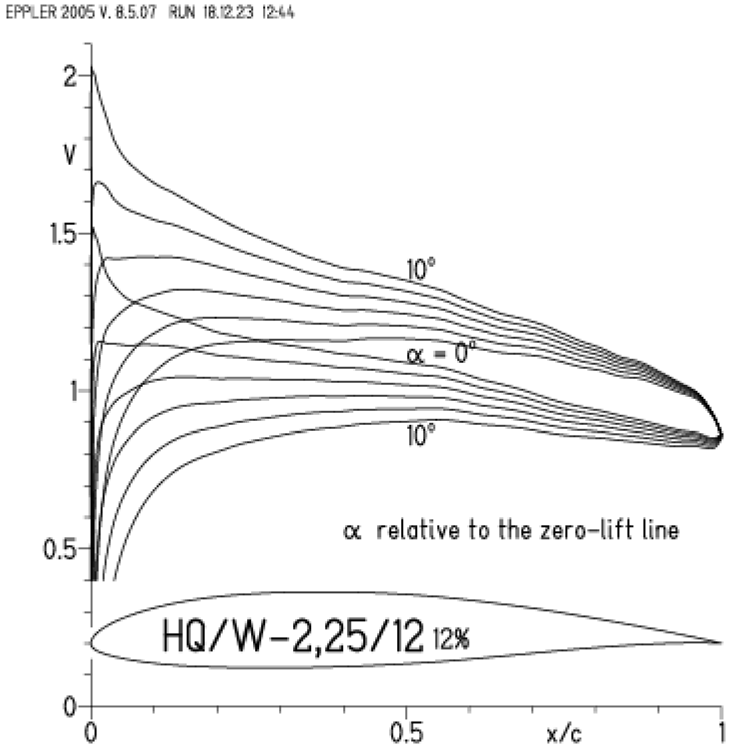


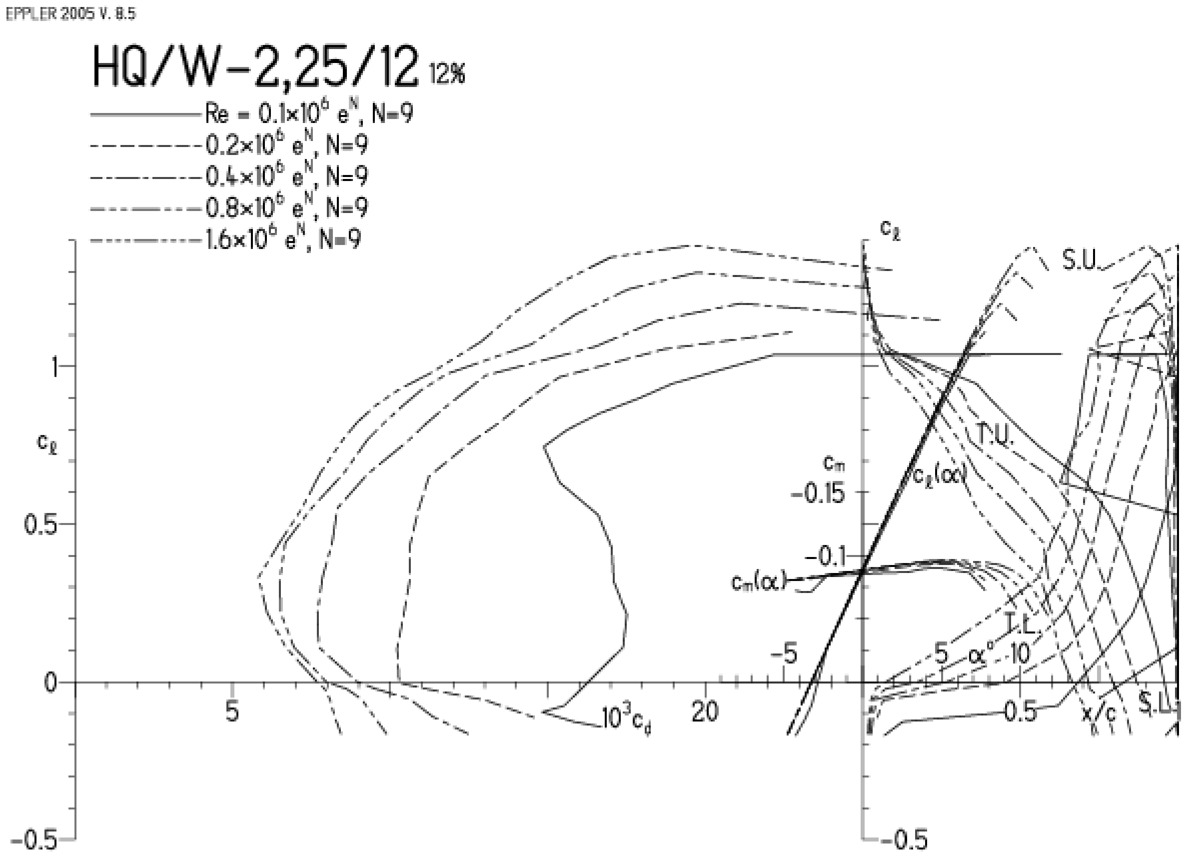
<u>HQ/W-2,25/12</u>, N=11



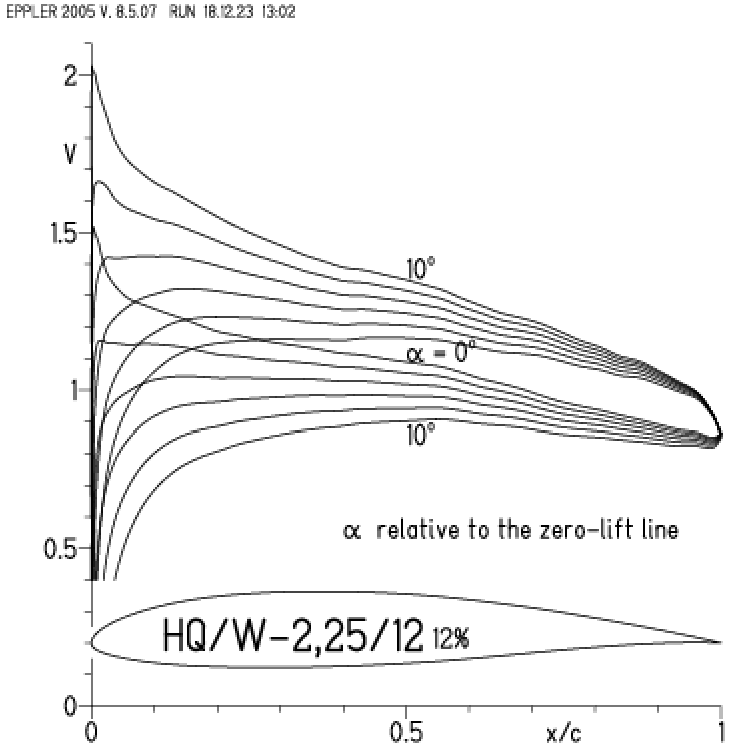


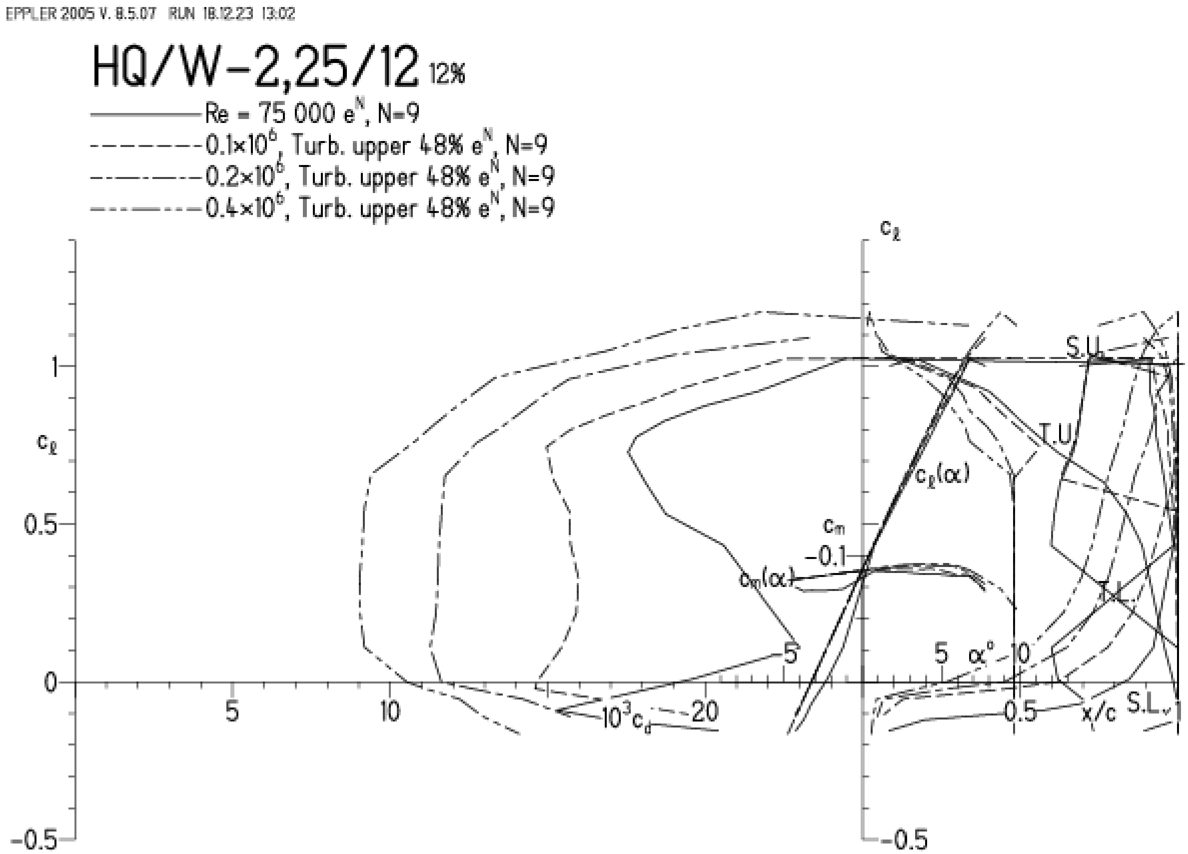
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
2
V
1.5
10°
α = 0°
1
10°
α relative to the zero-lift line
0.5
HQ/W-2,25/12 12%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
1
c_ℓ
T.U.
c_m
-0.15
c_ℓ(α)
0.5
-0.1
c_m(α)
T.L.
-5
5
α°
10
0
5
10^3 c_d
20
0.5
x/c
S.L.
-0.5
-0.5

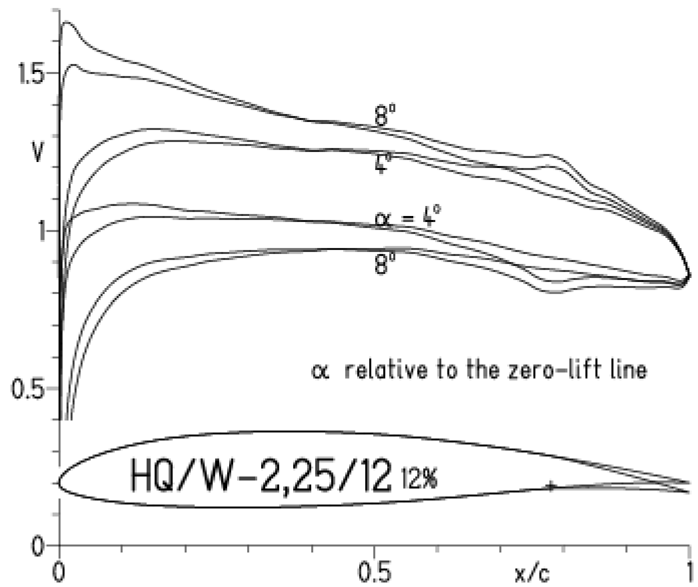
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



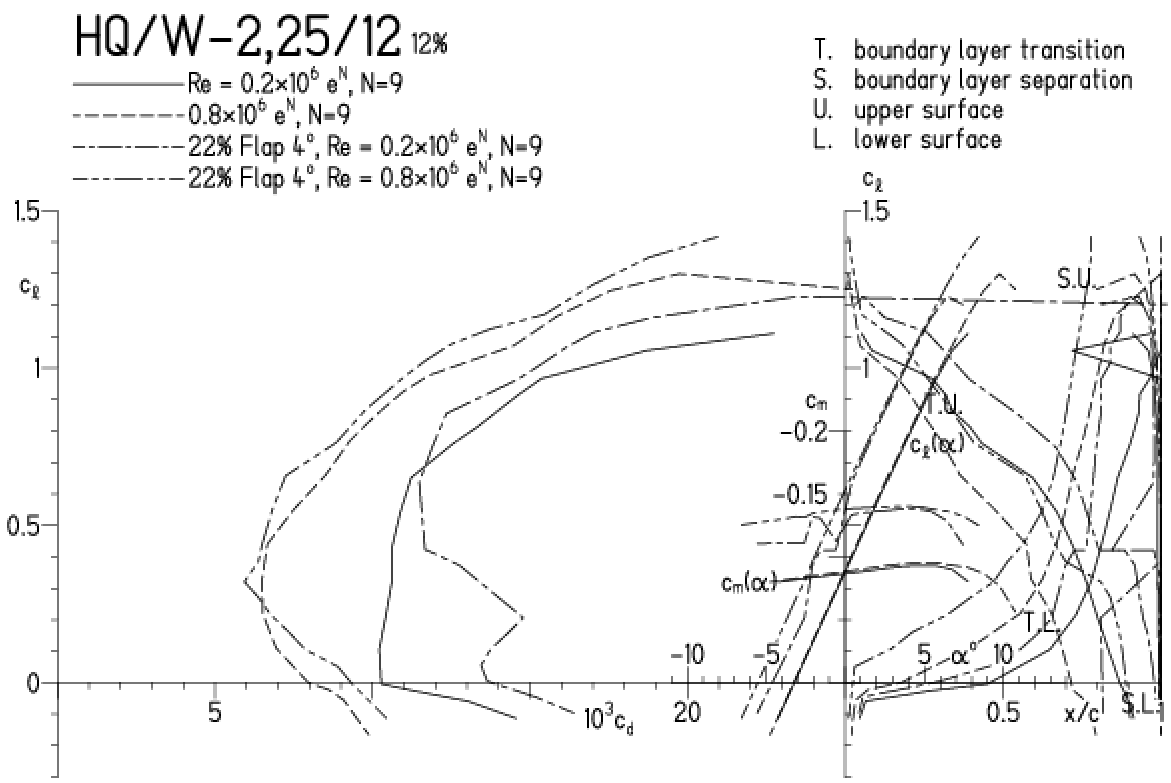


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

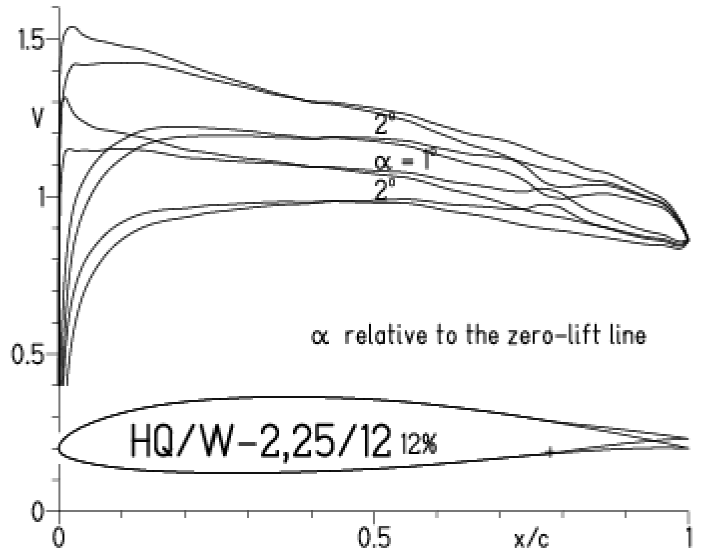


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

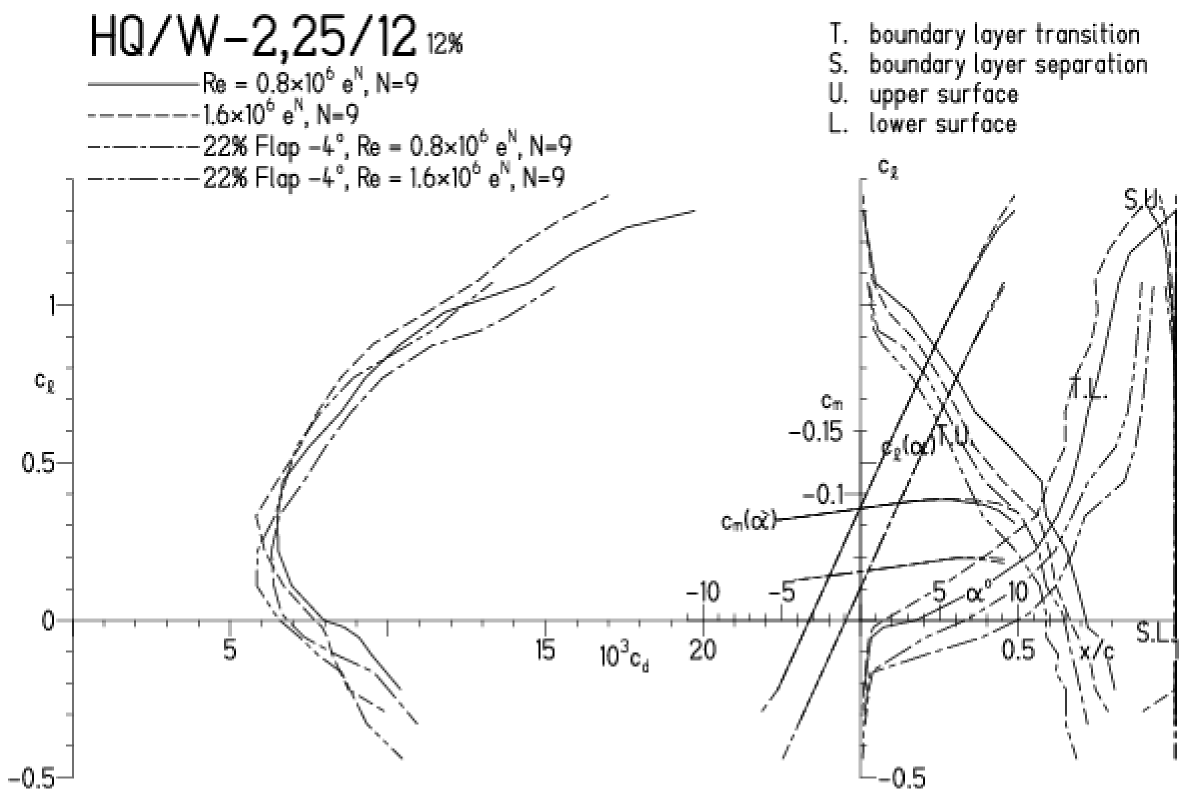


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

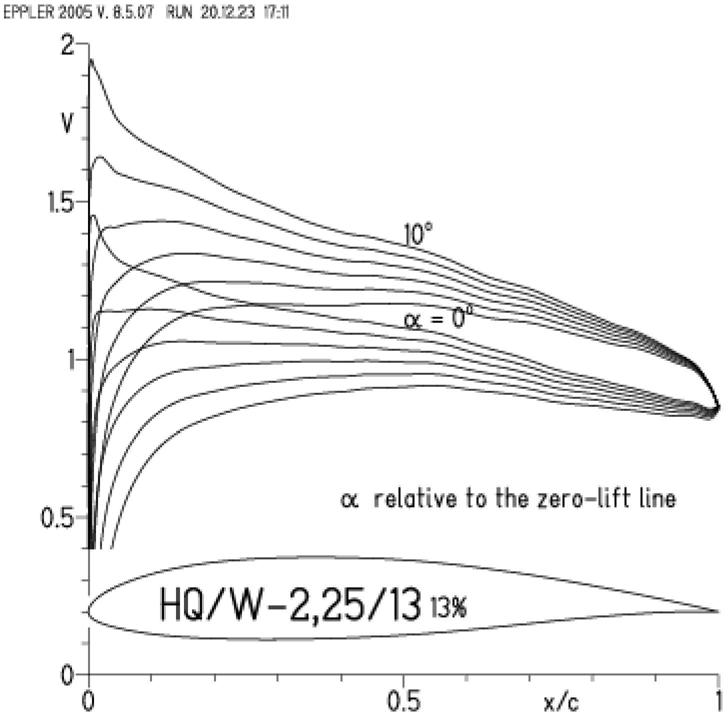
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

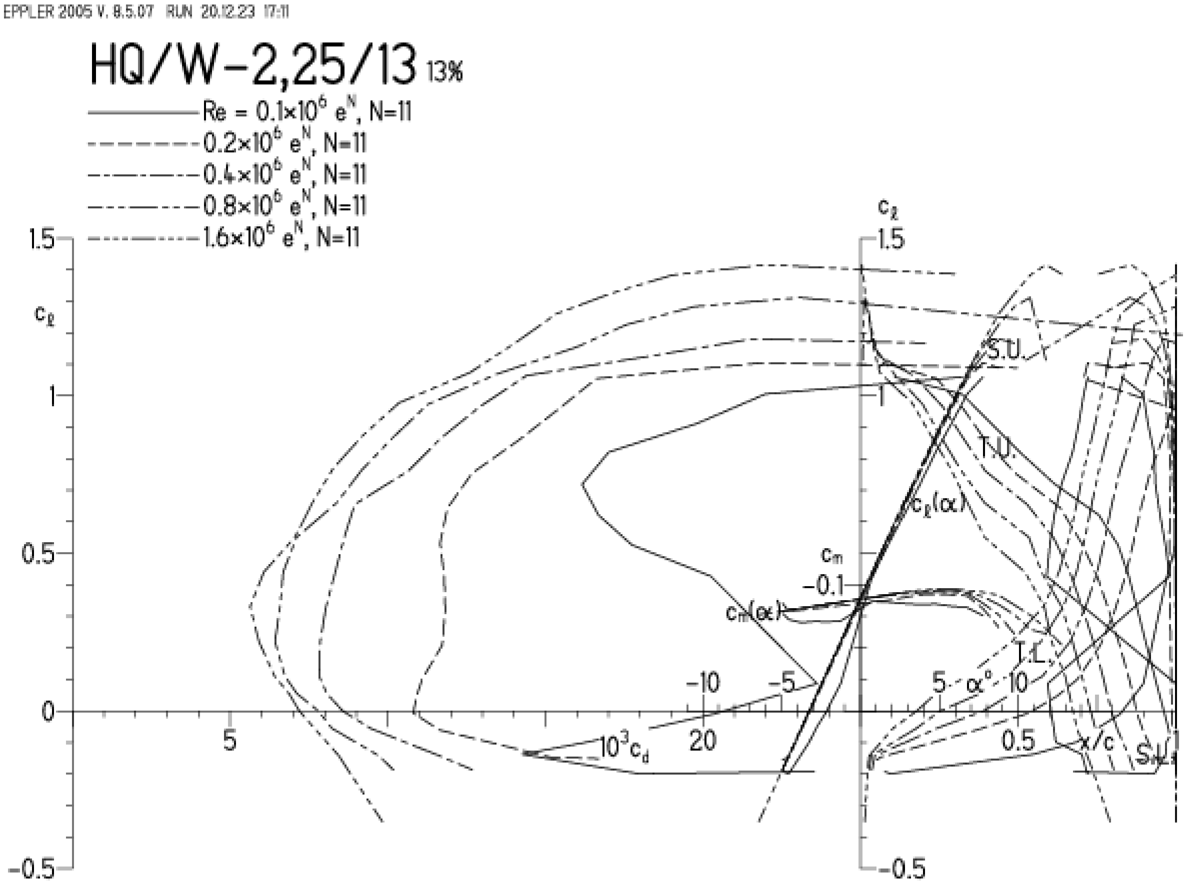


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

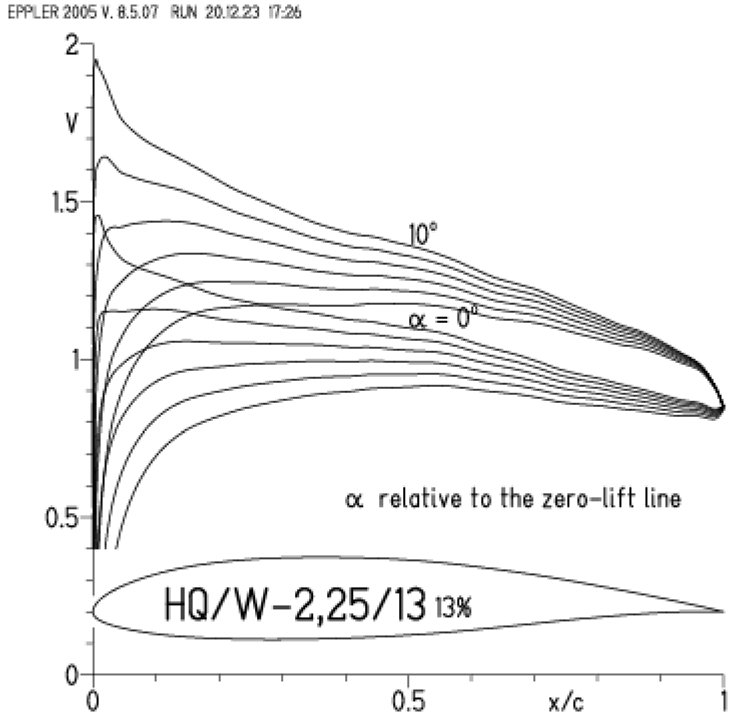


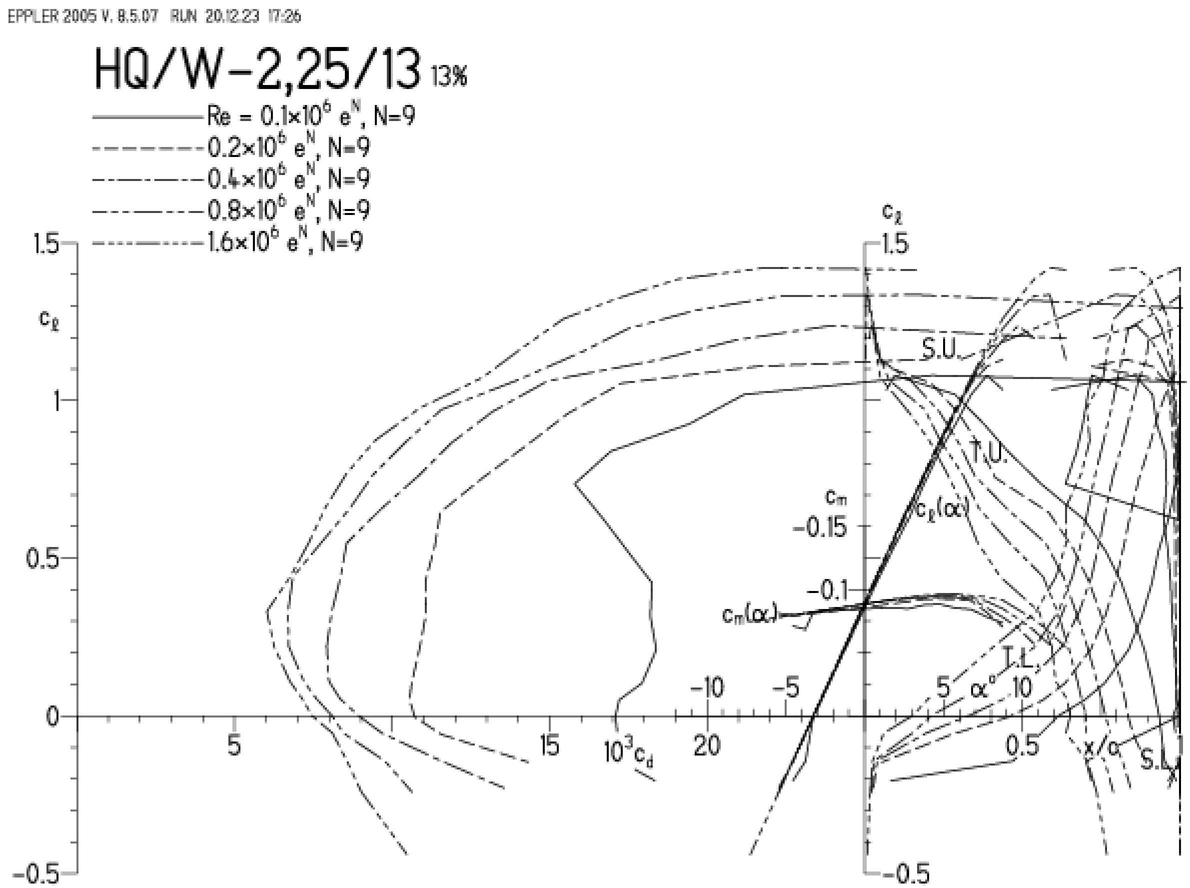
<u>HQ/W-2,25/13</u>, N=11



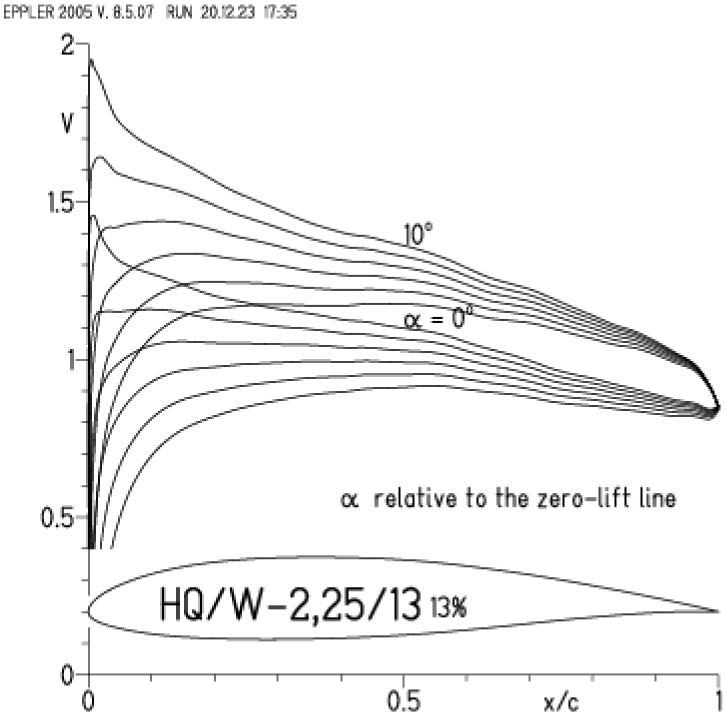


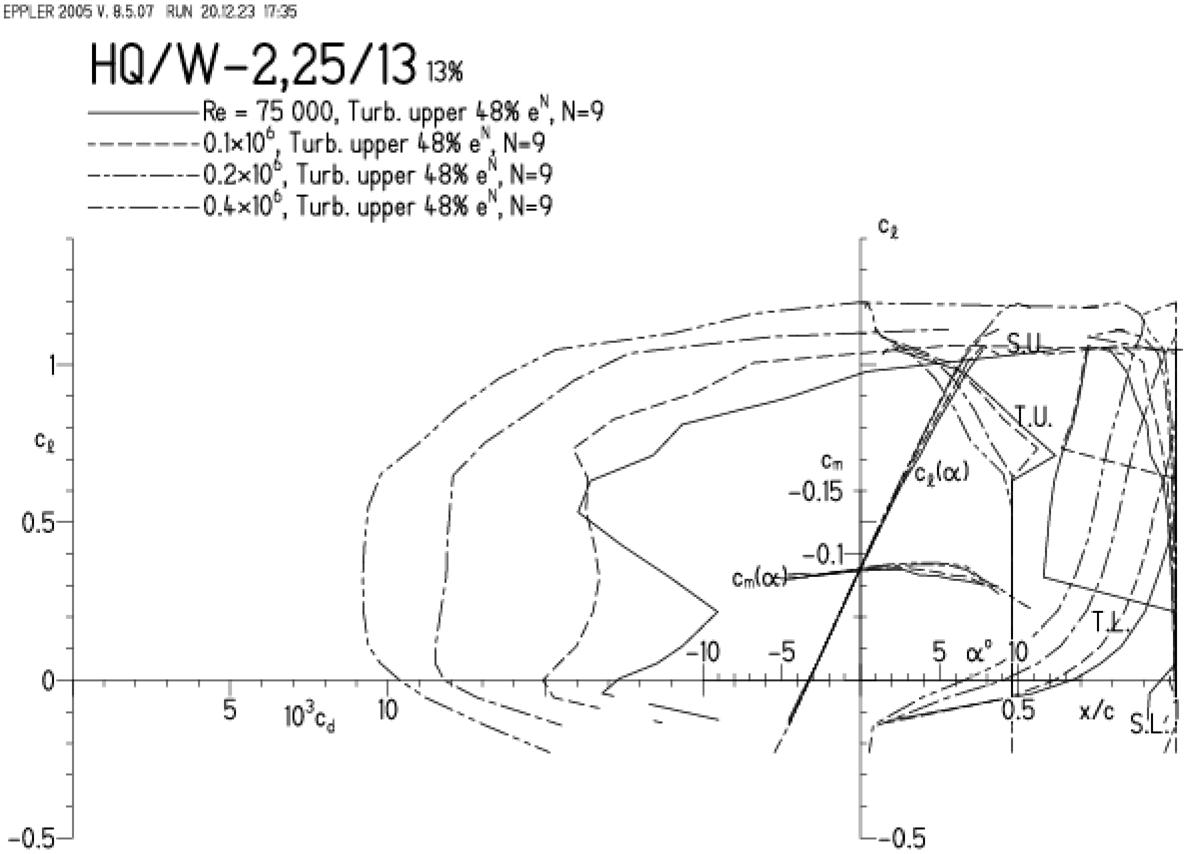
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
x/c
10^3 c_d

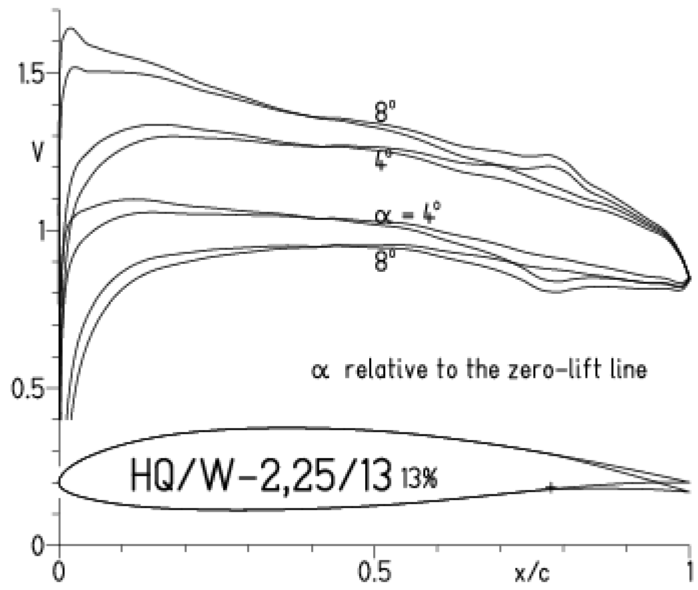
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



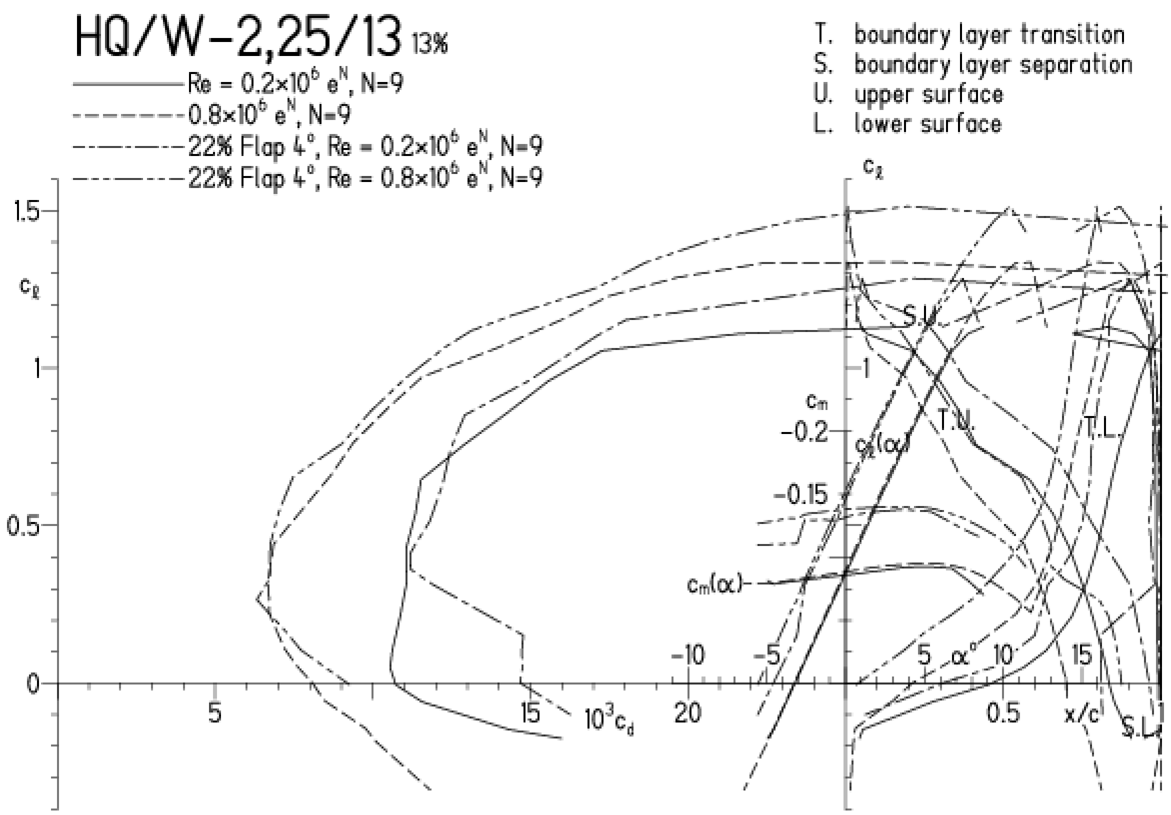


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

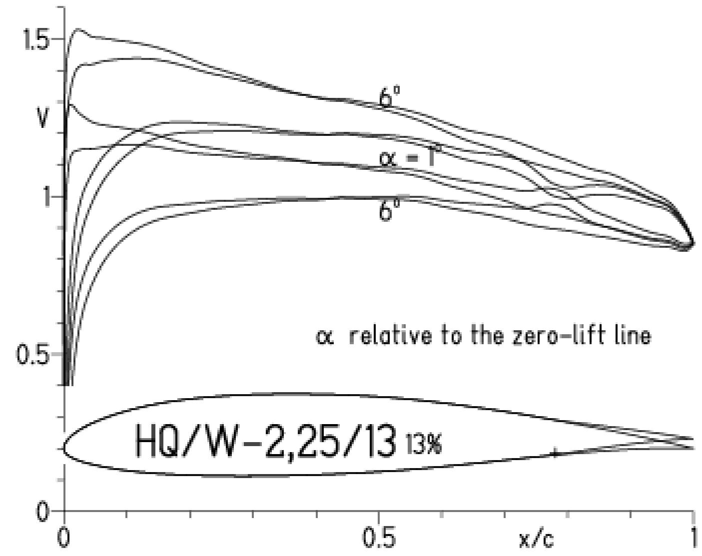


EPPLER 2005 V.

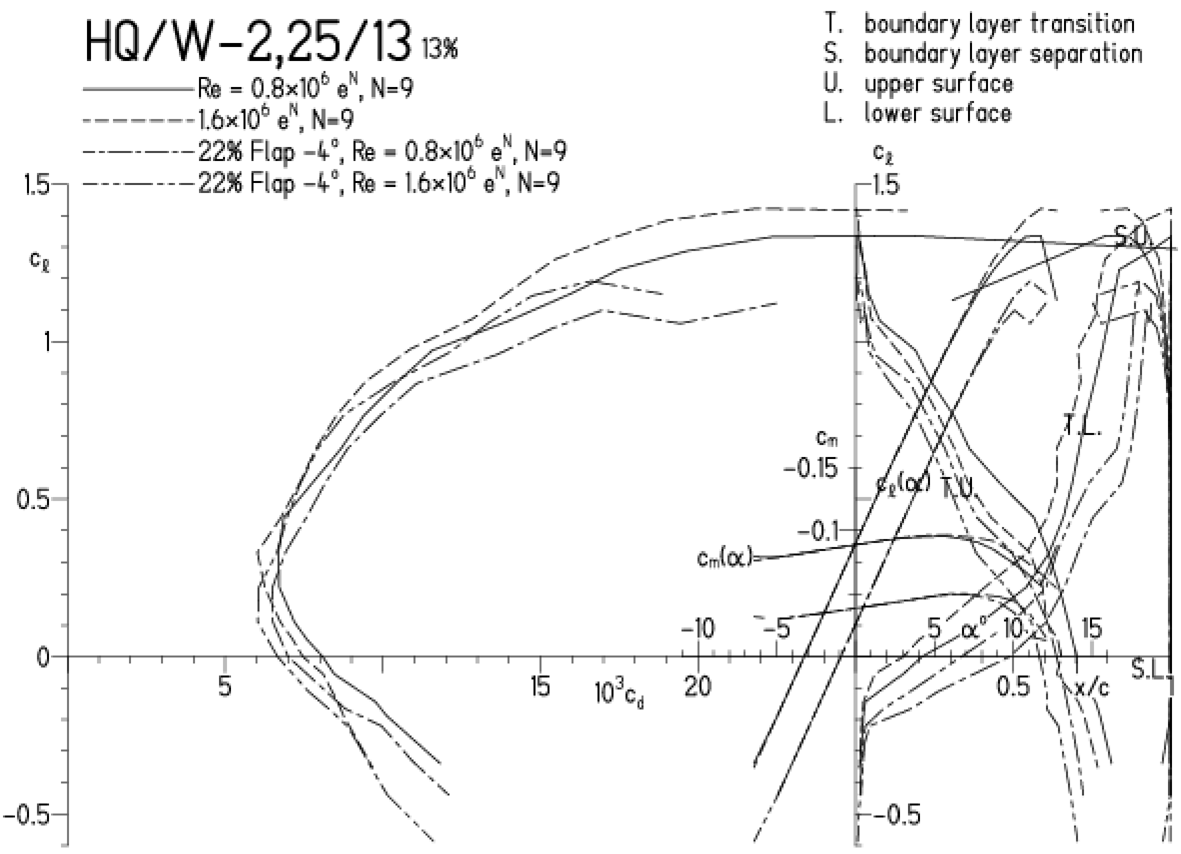


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

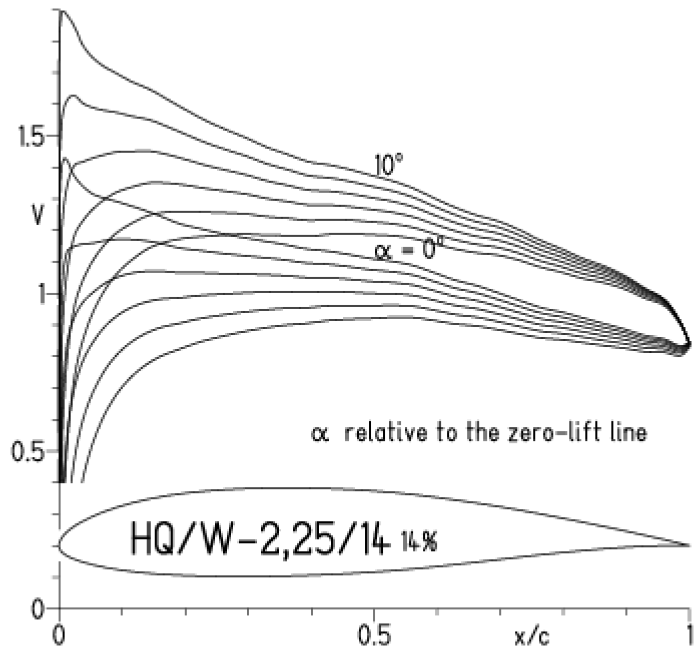


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

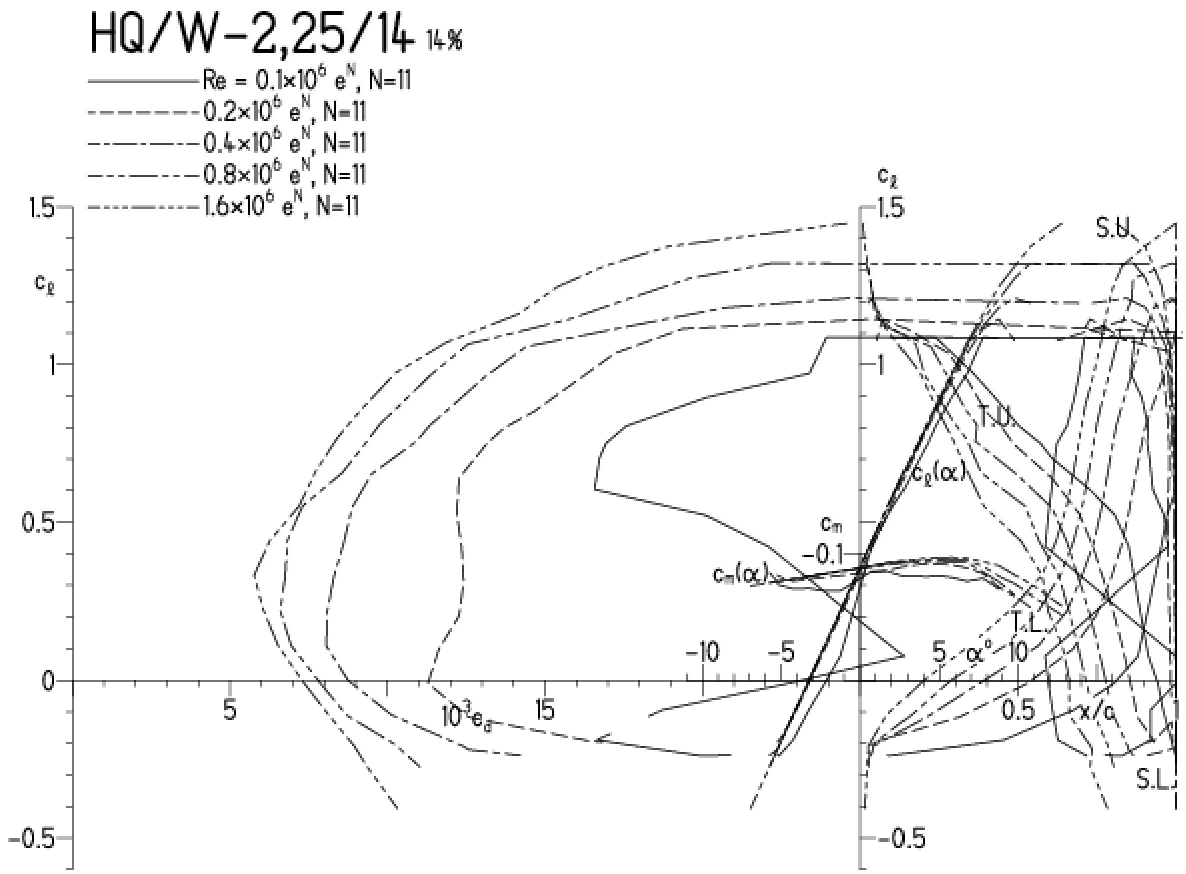


<u>HQ/W-2,25/14</u>, N=11

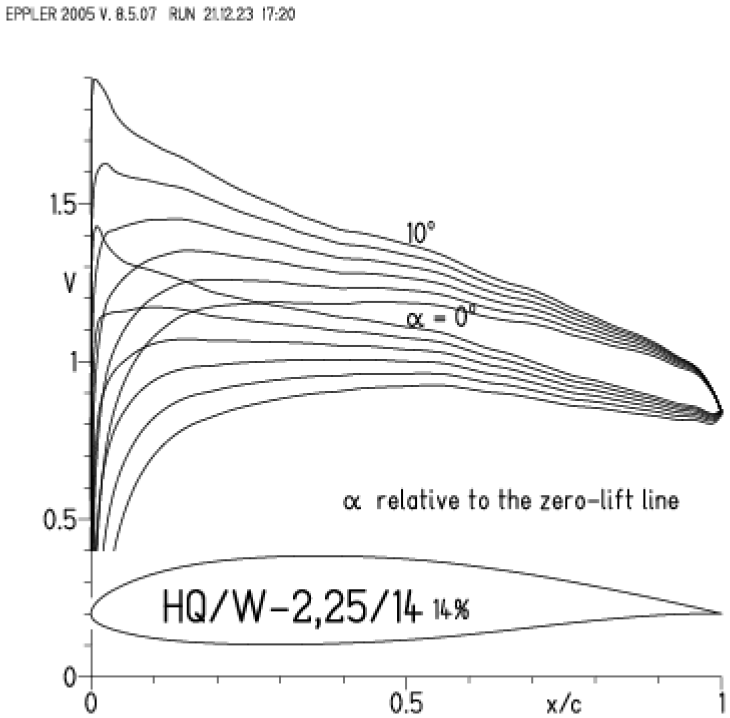
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12



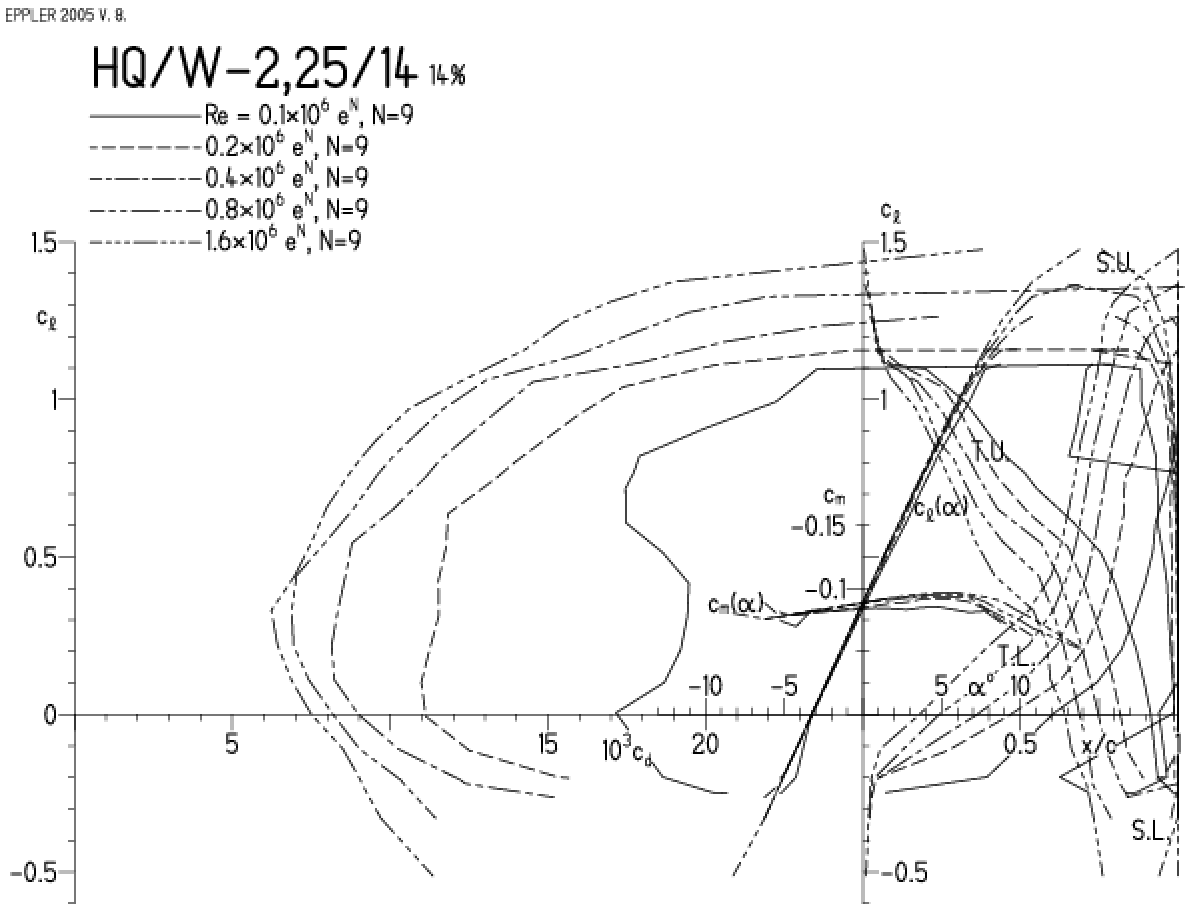
EPPLER 2005 V. 8.



HQ/W-2,25/14, N=9

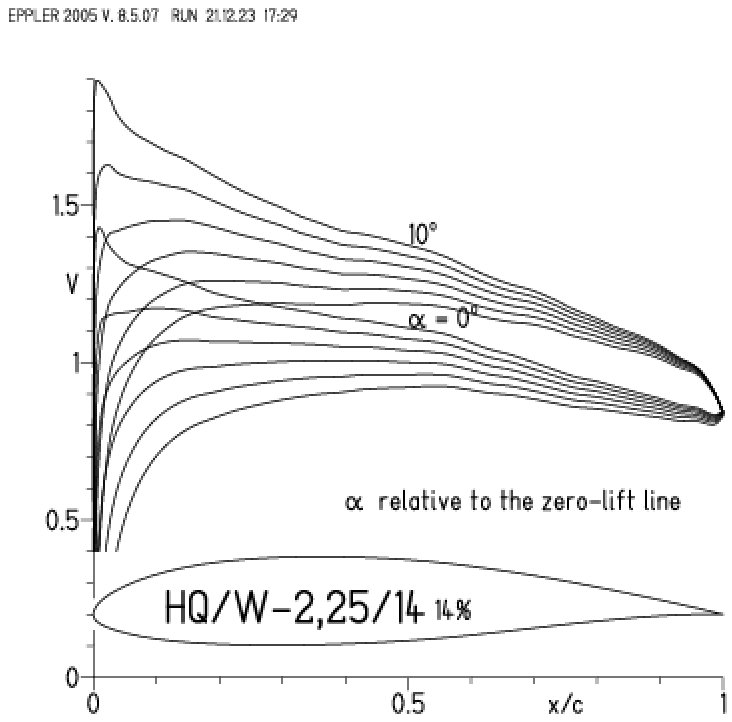


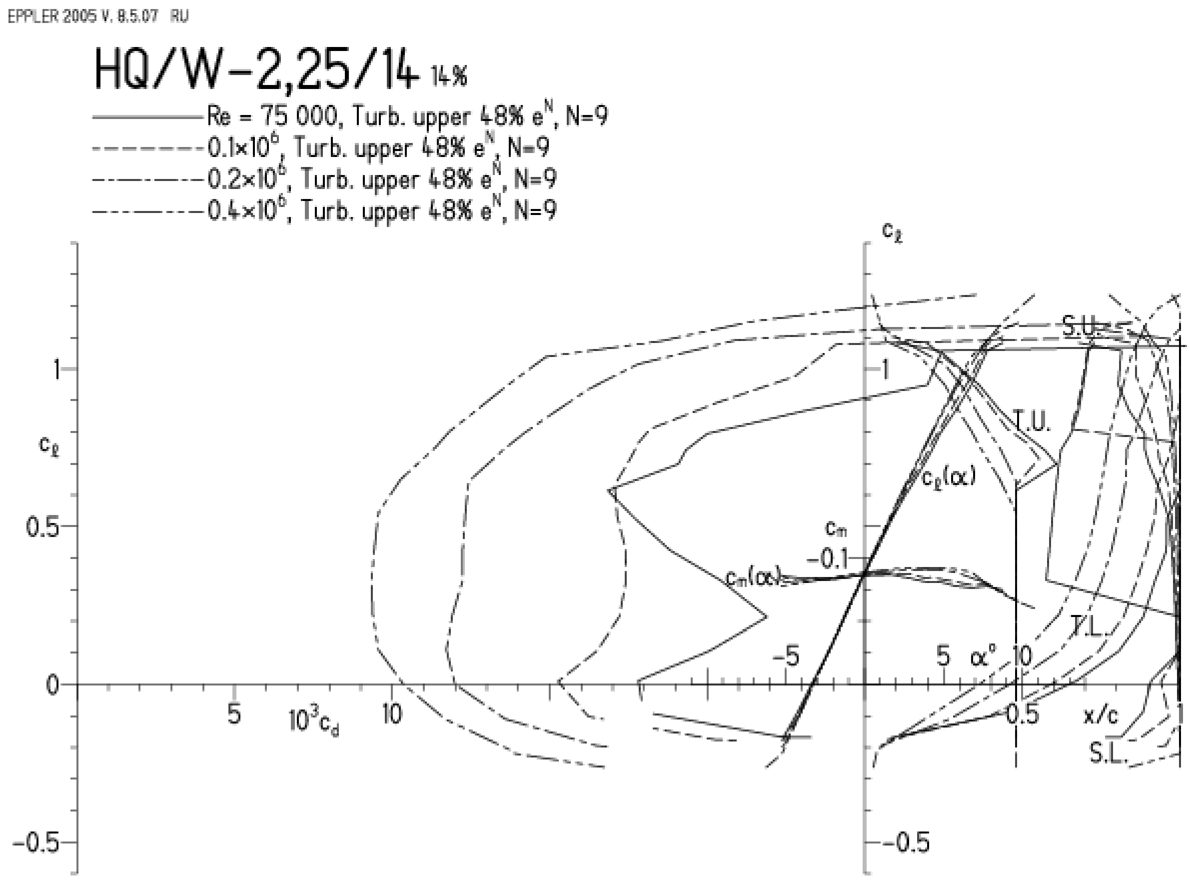
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0.5
x/c



EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
T.U.
T.L.
S.U.
S.L.
α°
10^3 c_d
x/c
-0.5

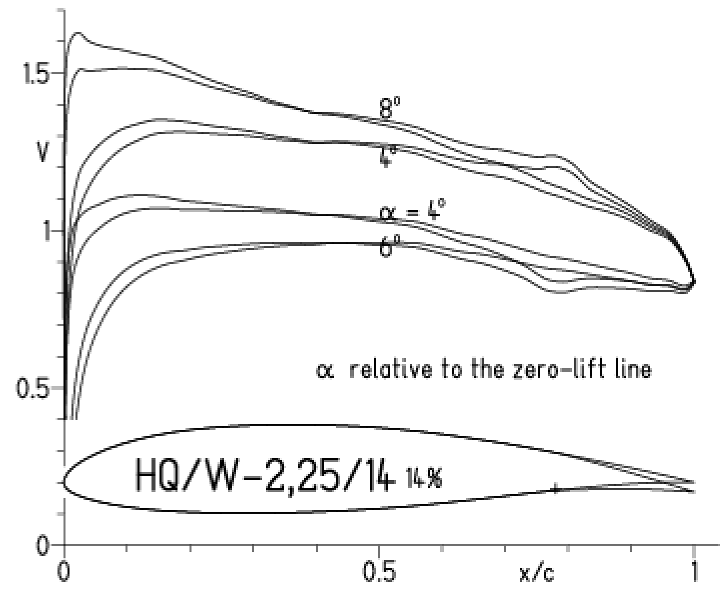
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



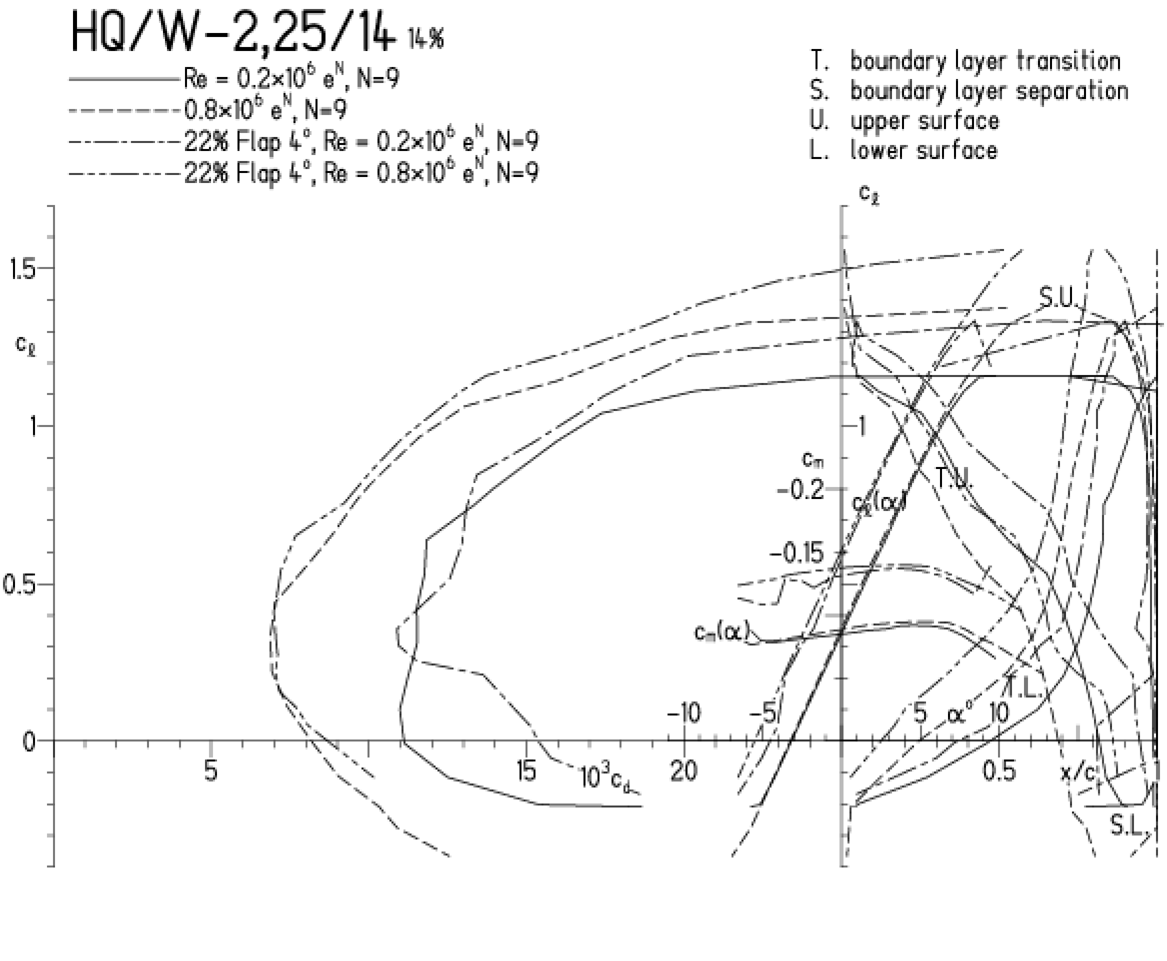


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

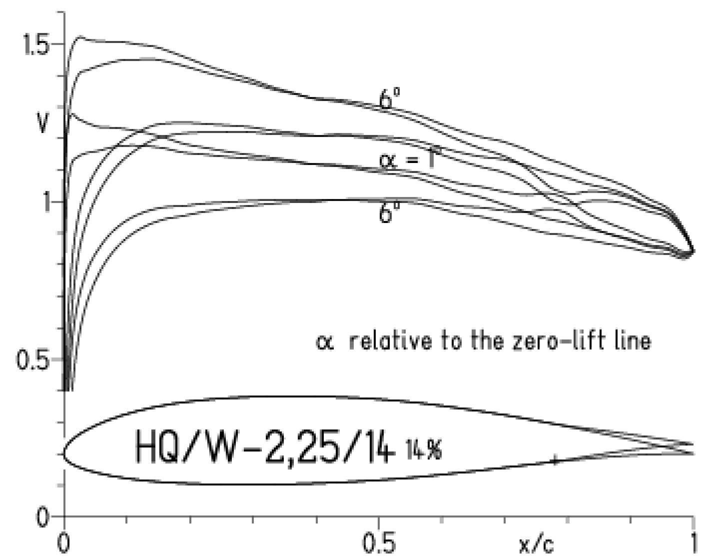


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

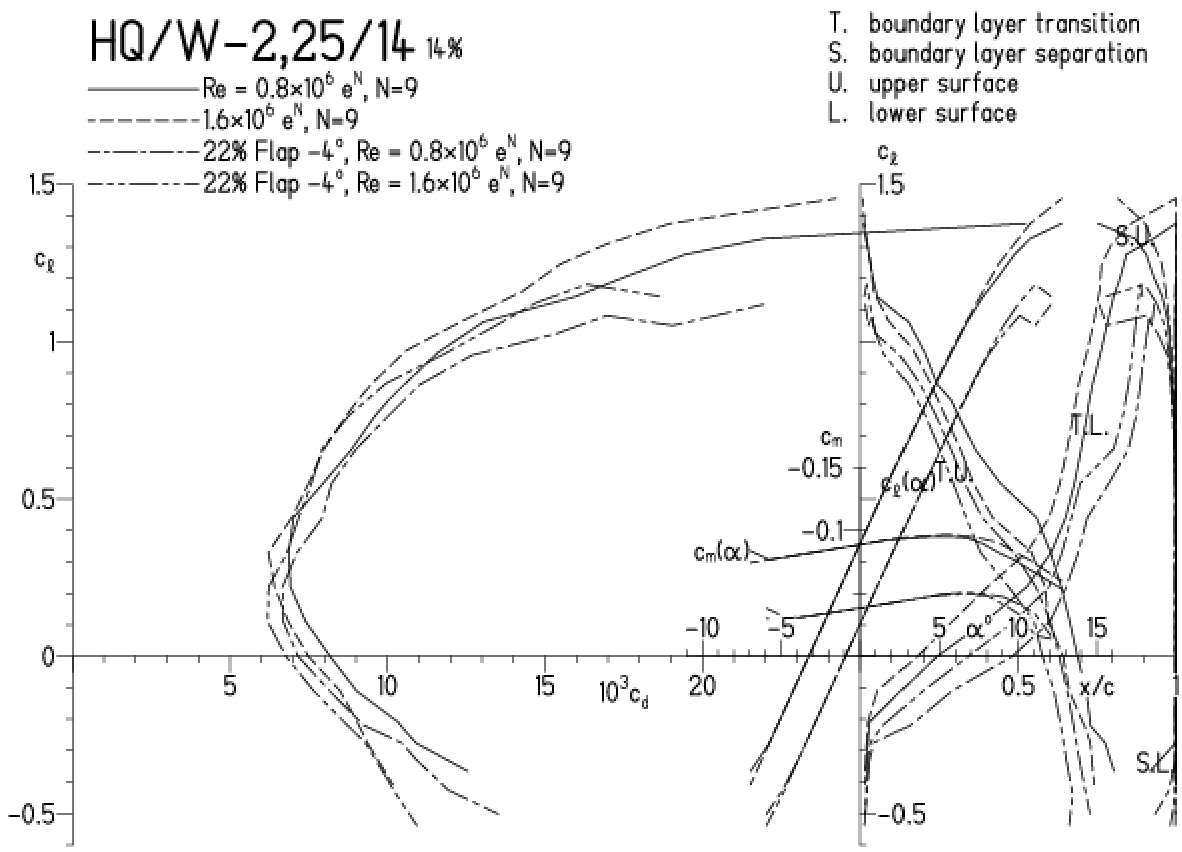


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

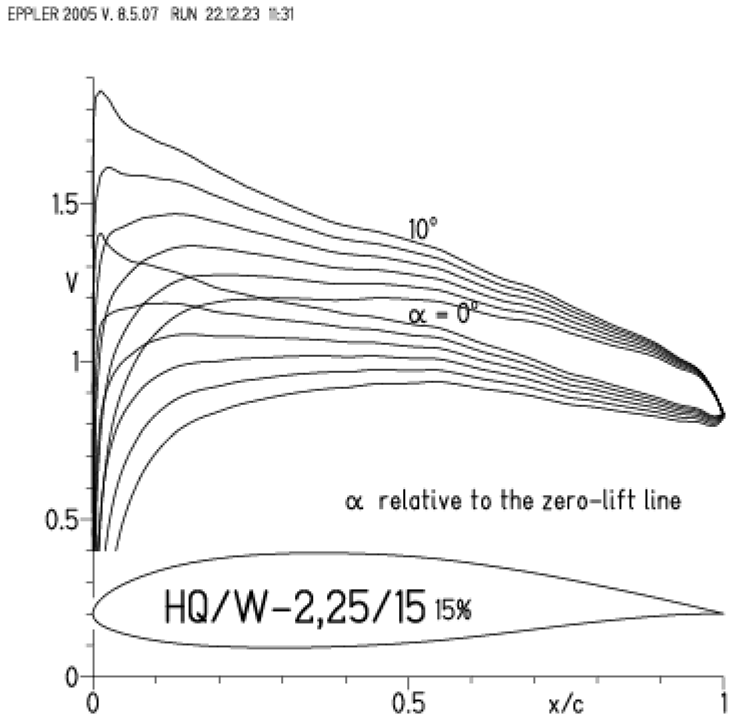
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

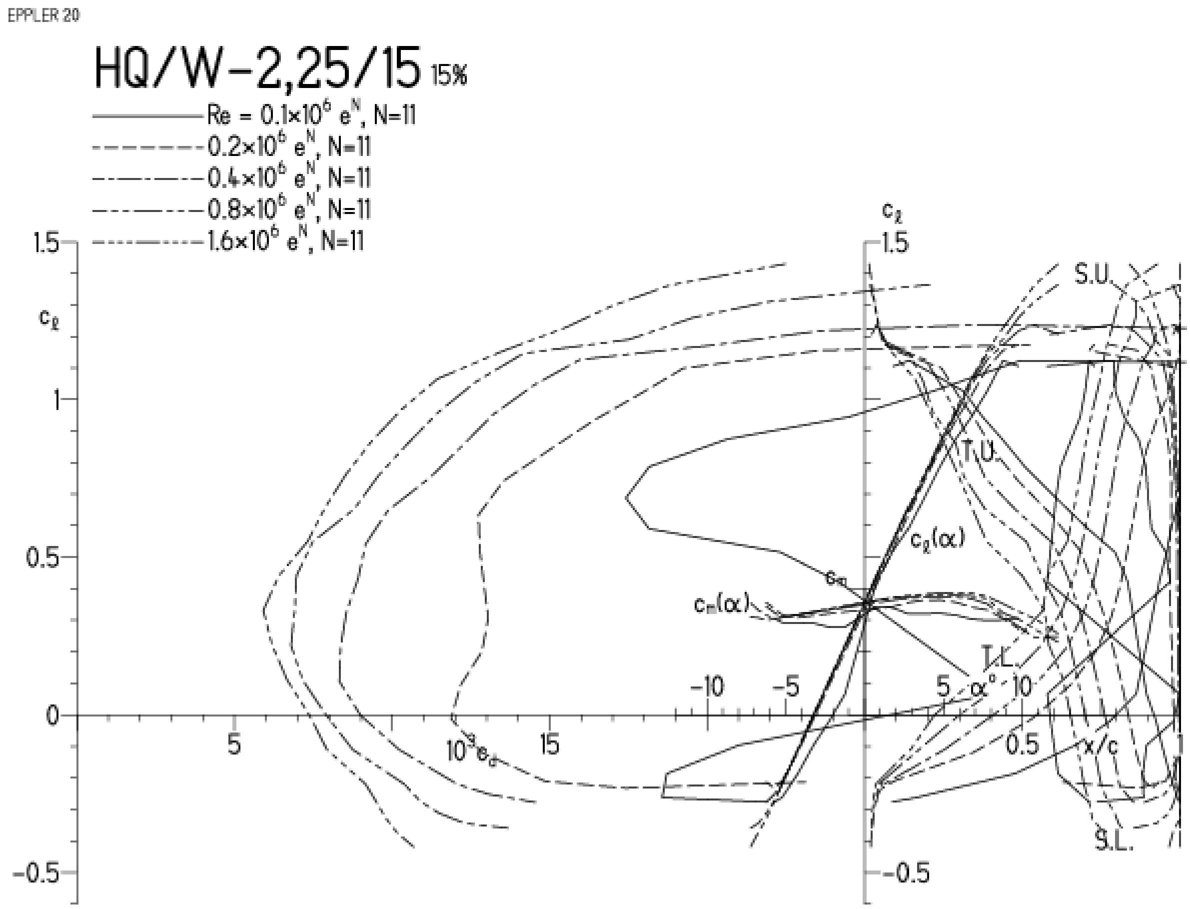


EPPLER 2005 V. 8.5.07

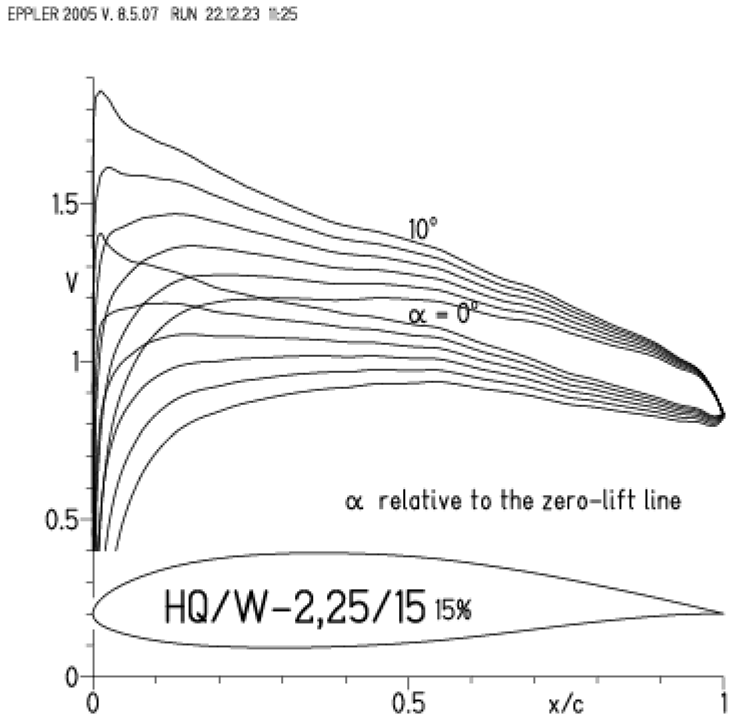


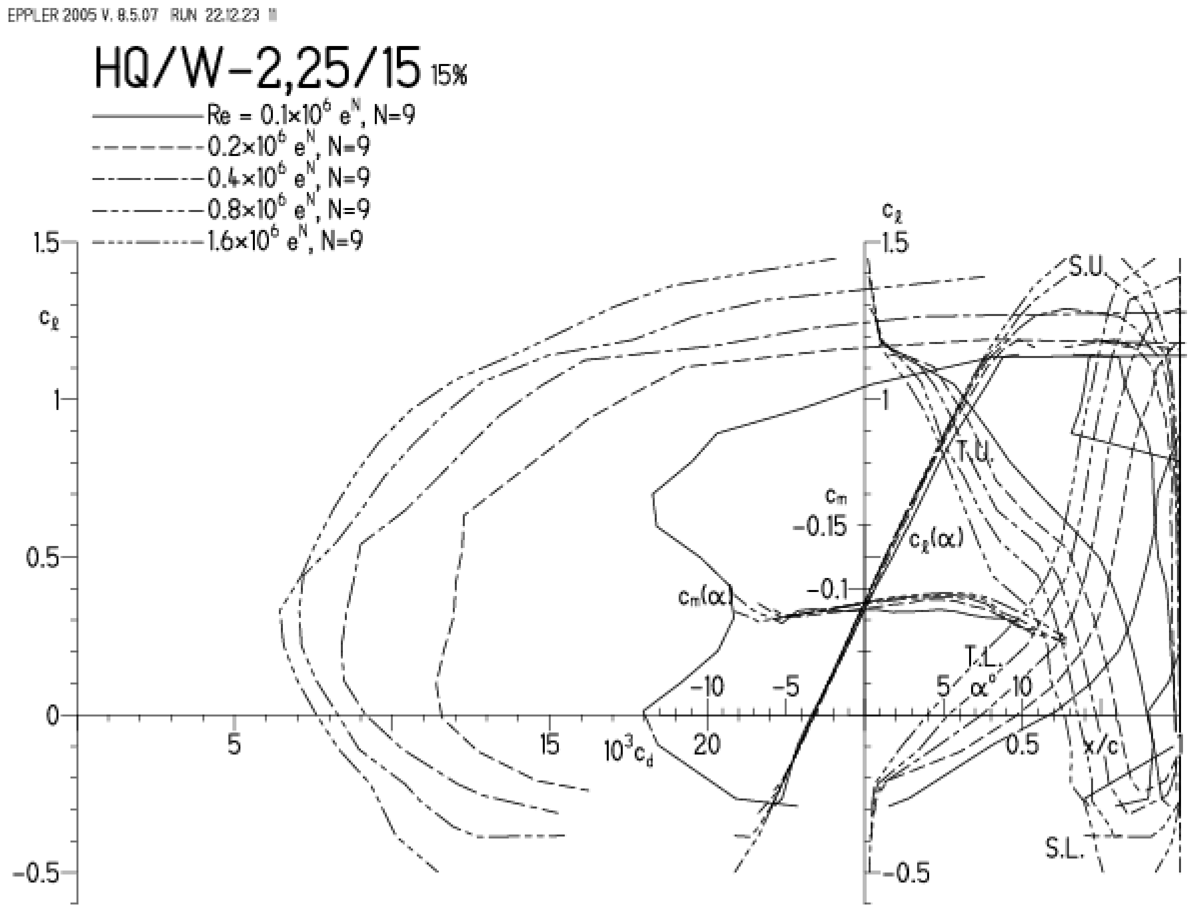
HQ/W-2,25/15, N=11





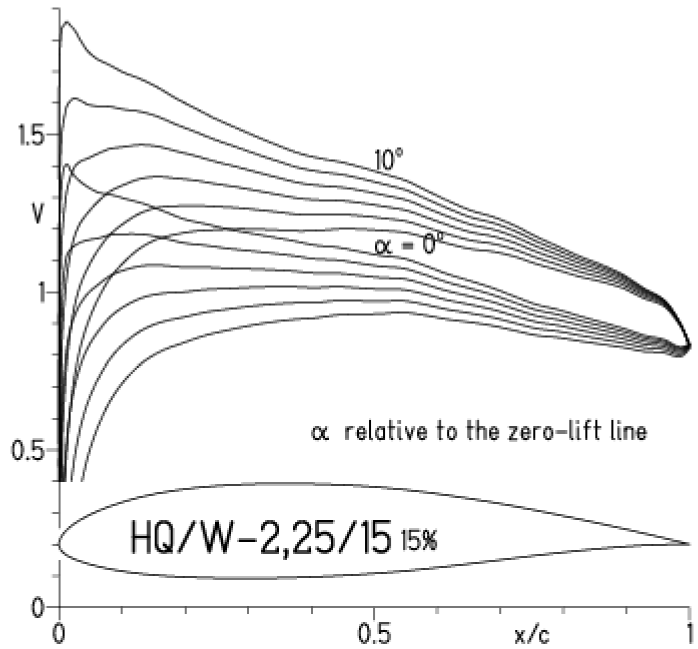
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1

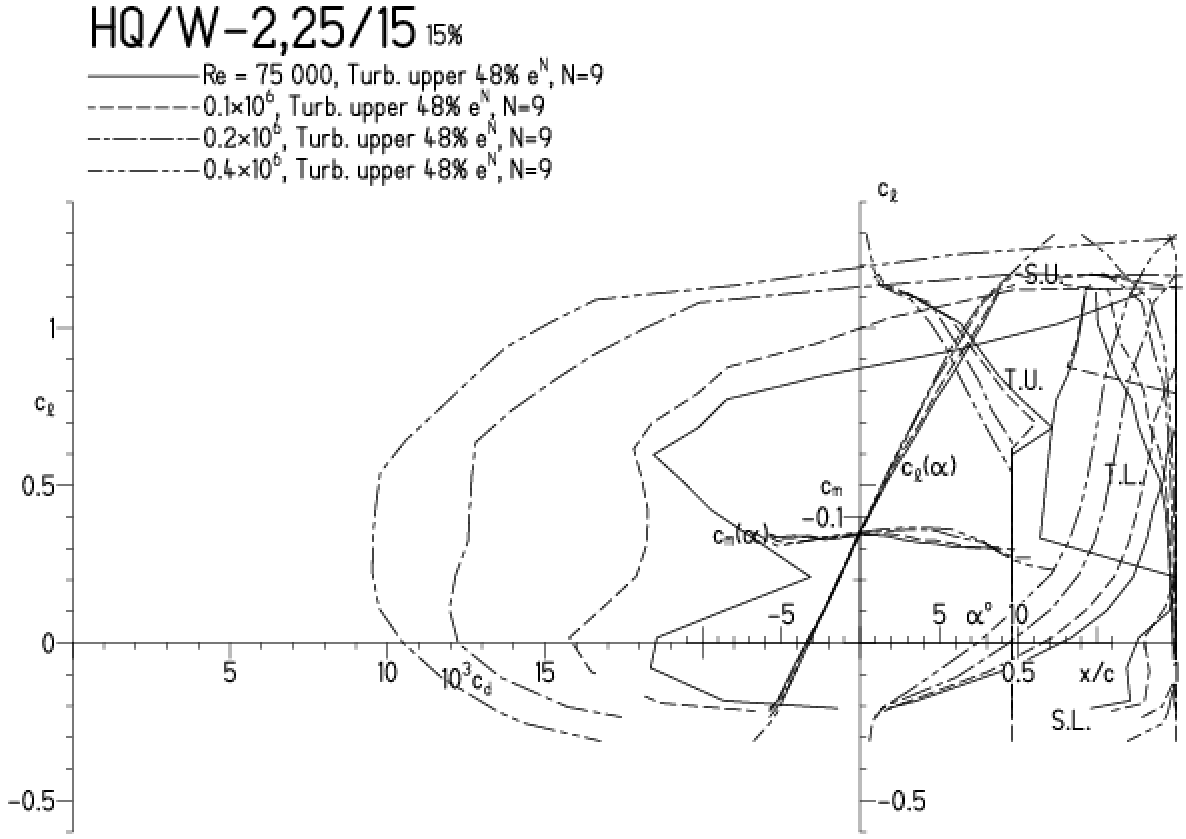

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:41



EPPLER 20

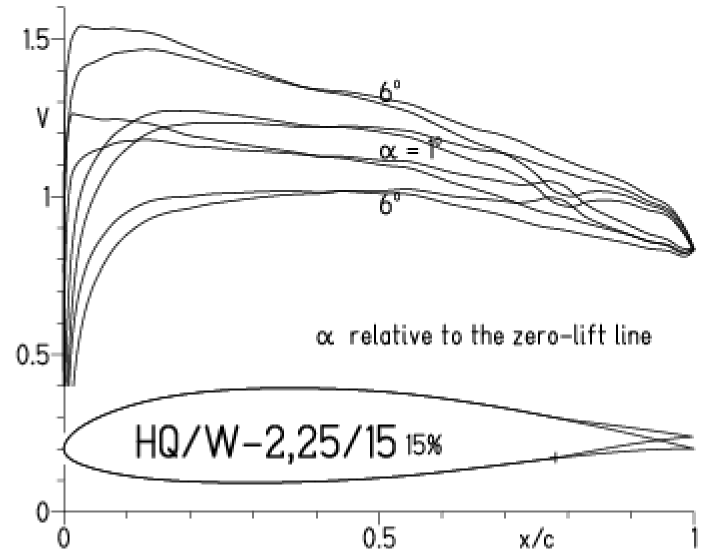


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

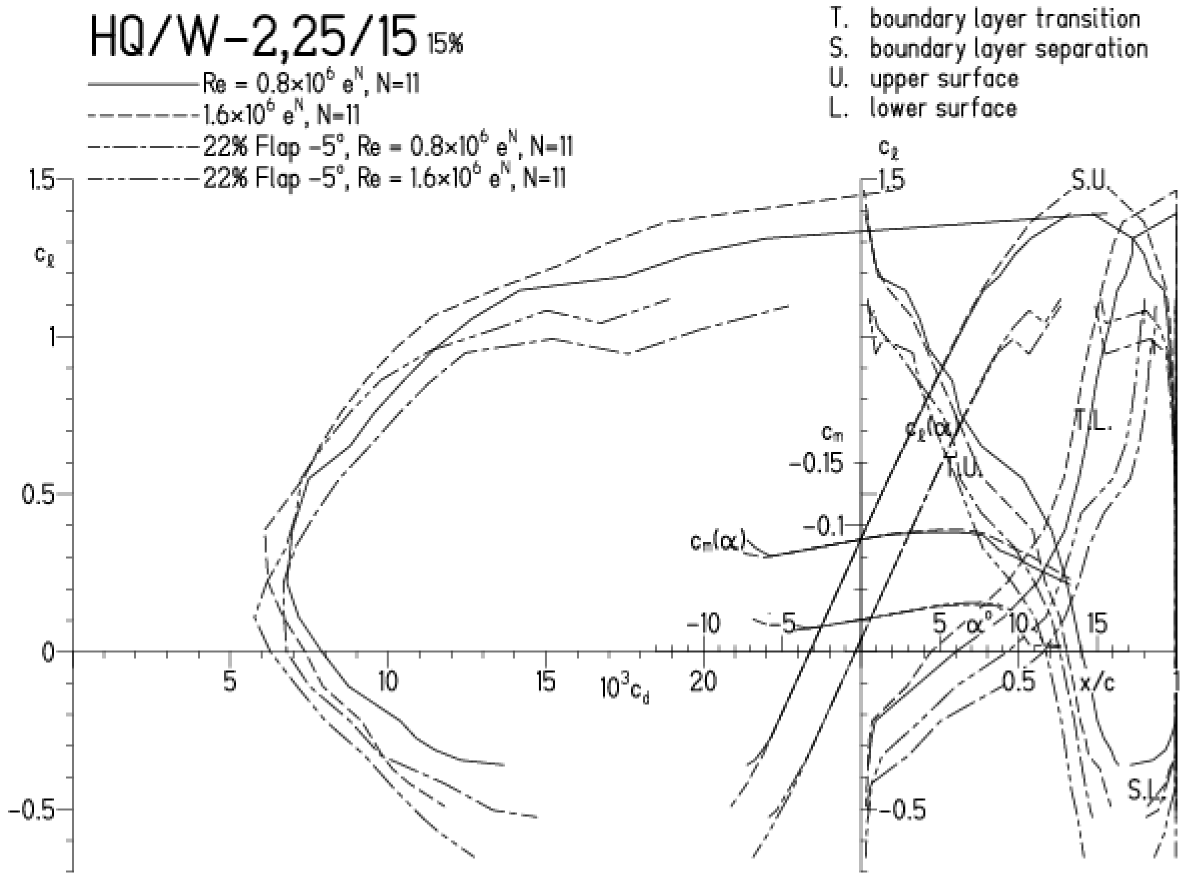
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

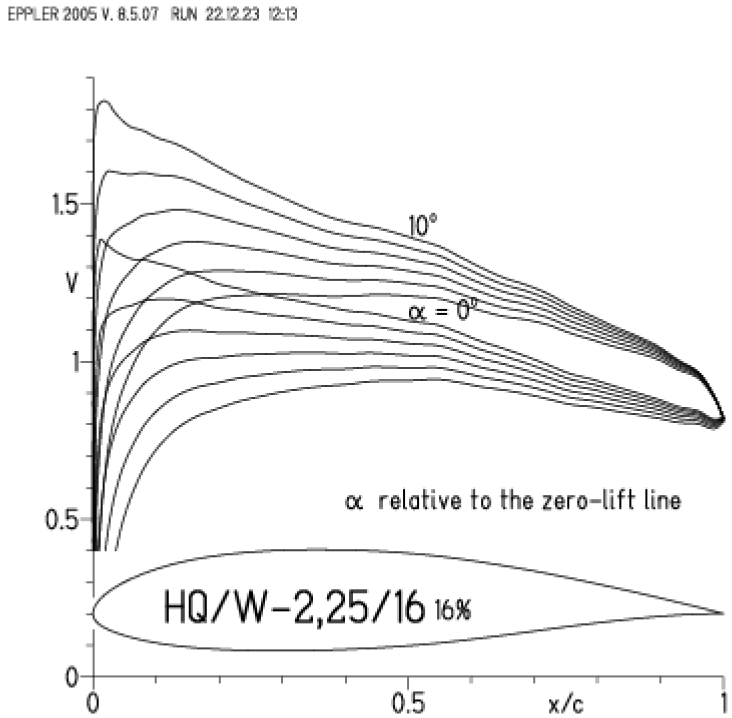
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

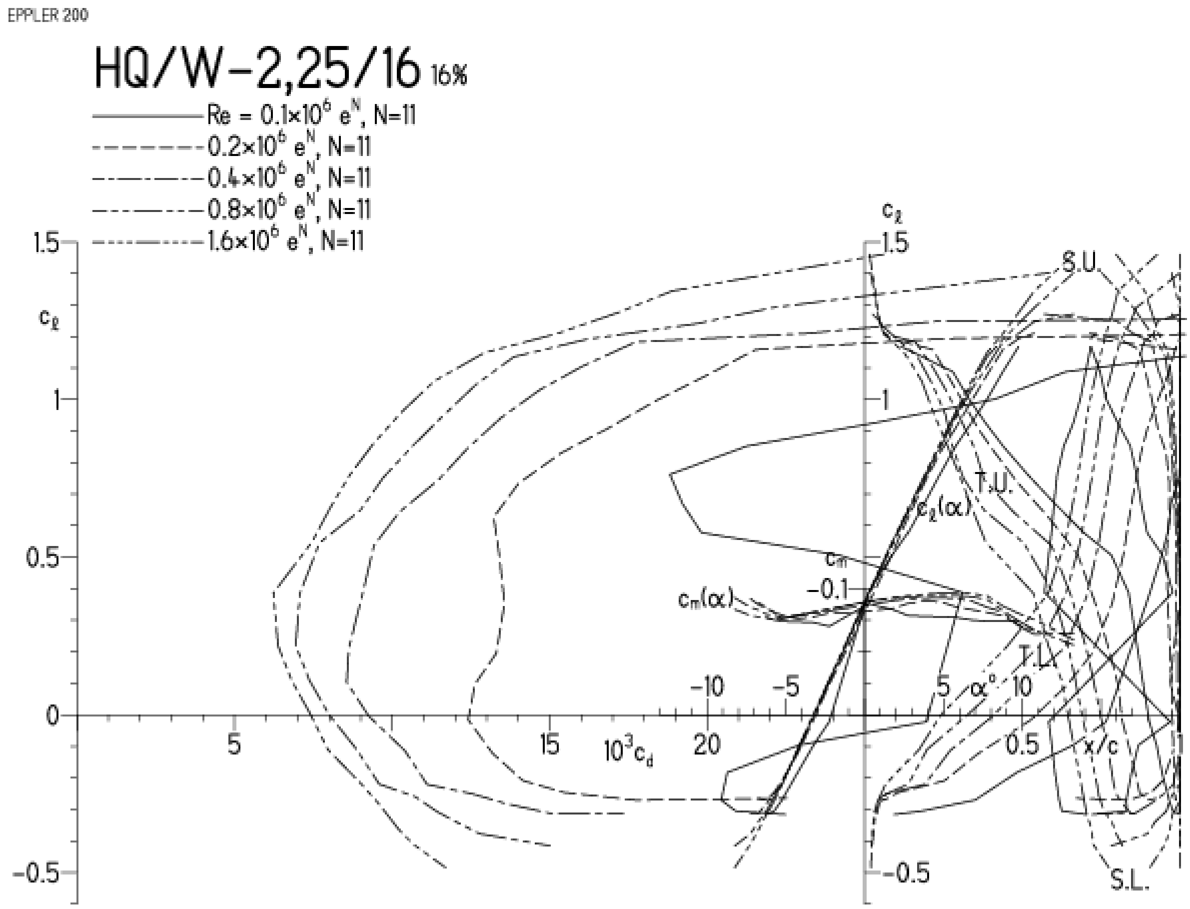


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

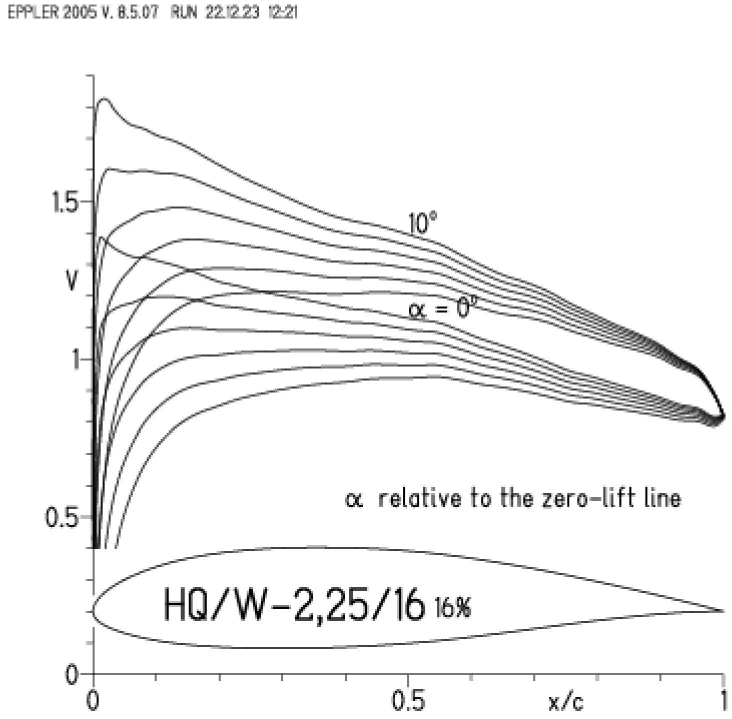


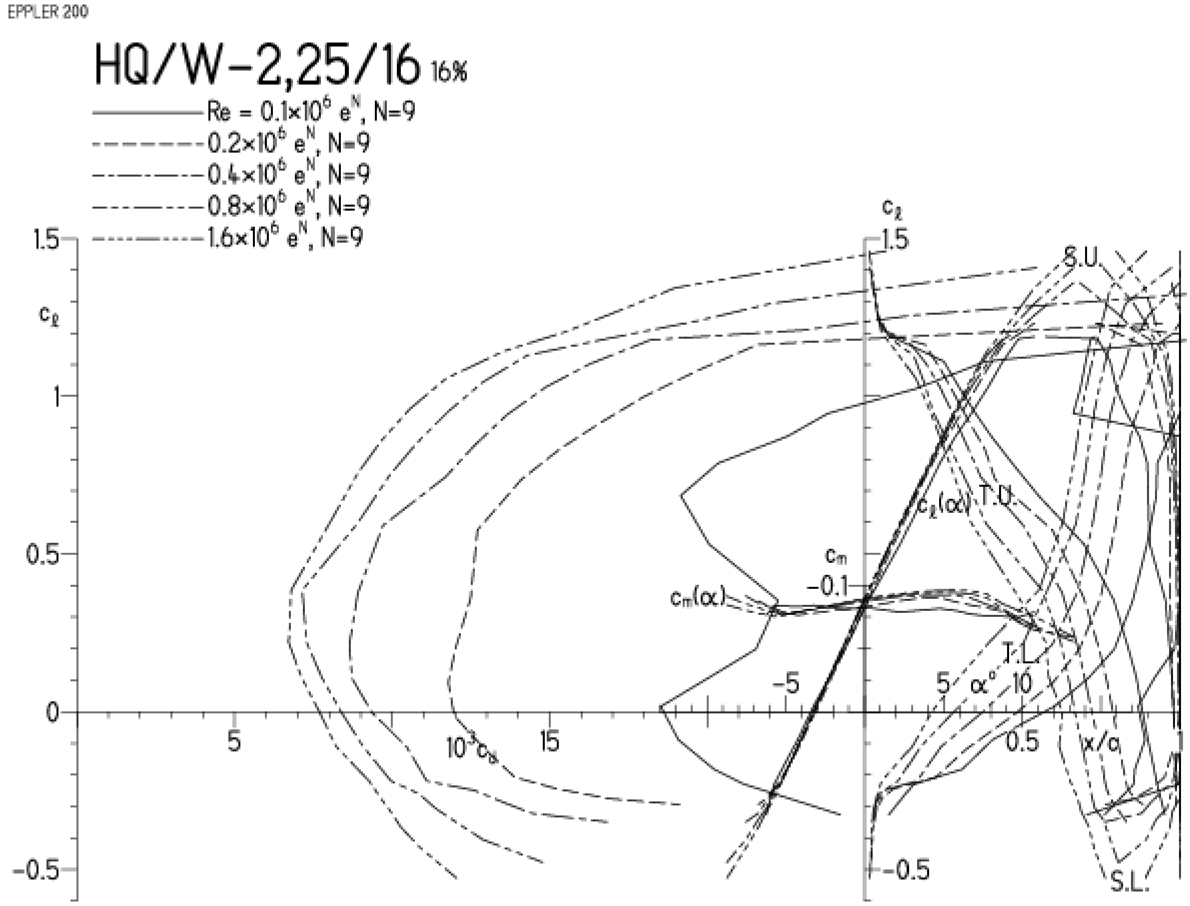
HQ/W-2,25/16, N=11



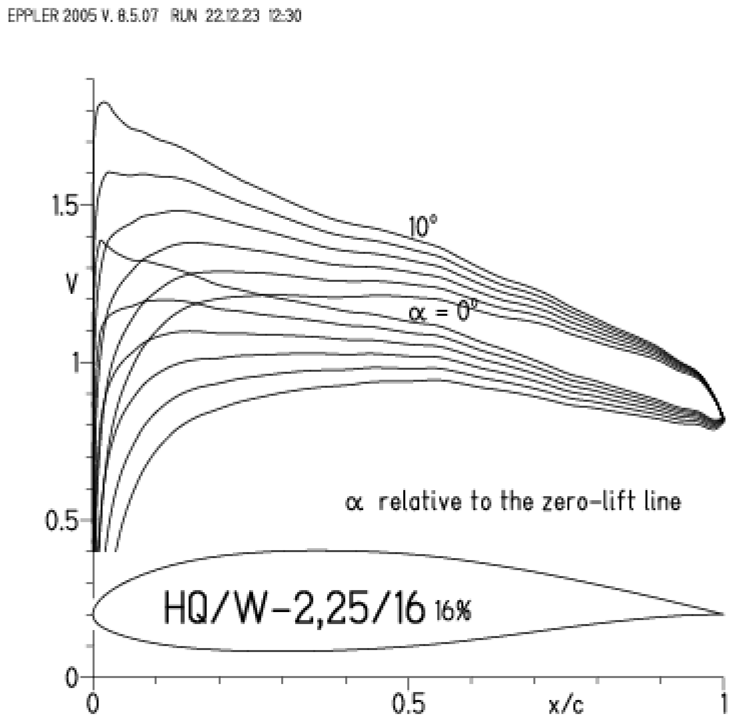


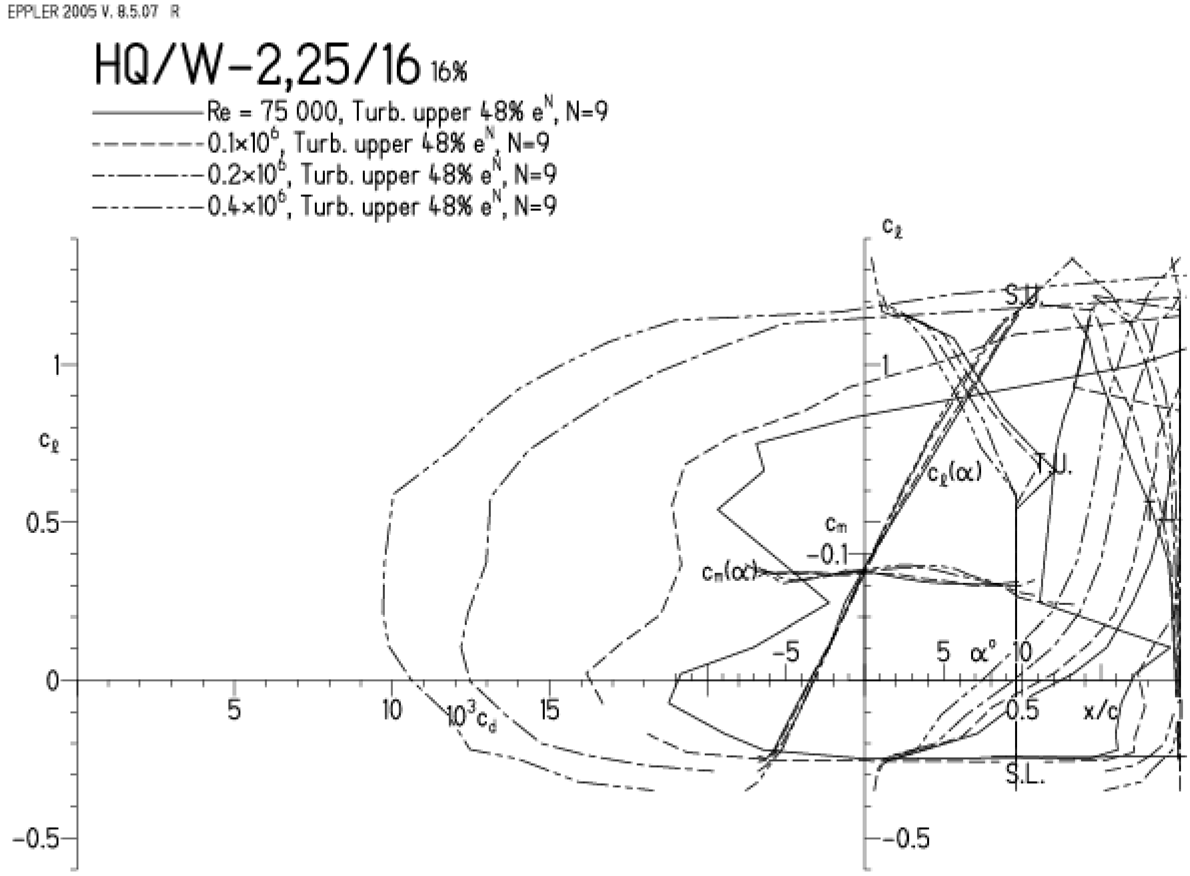
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



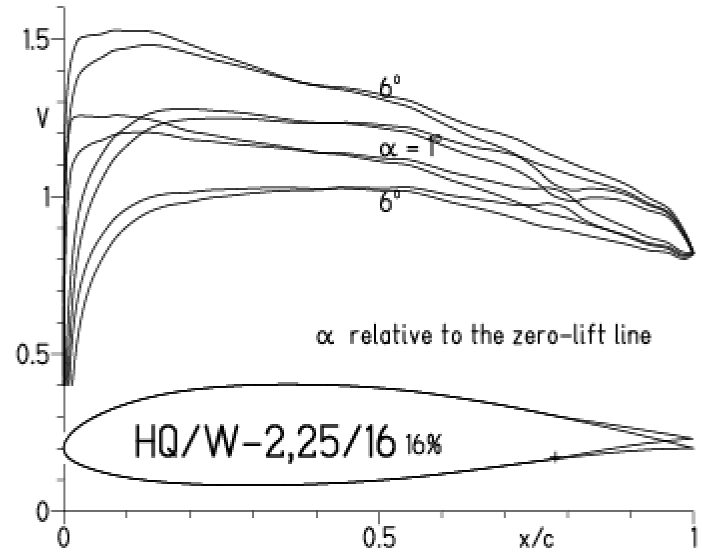


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

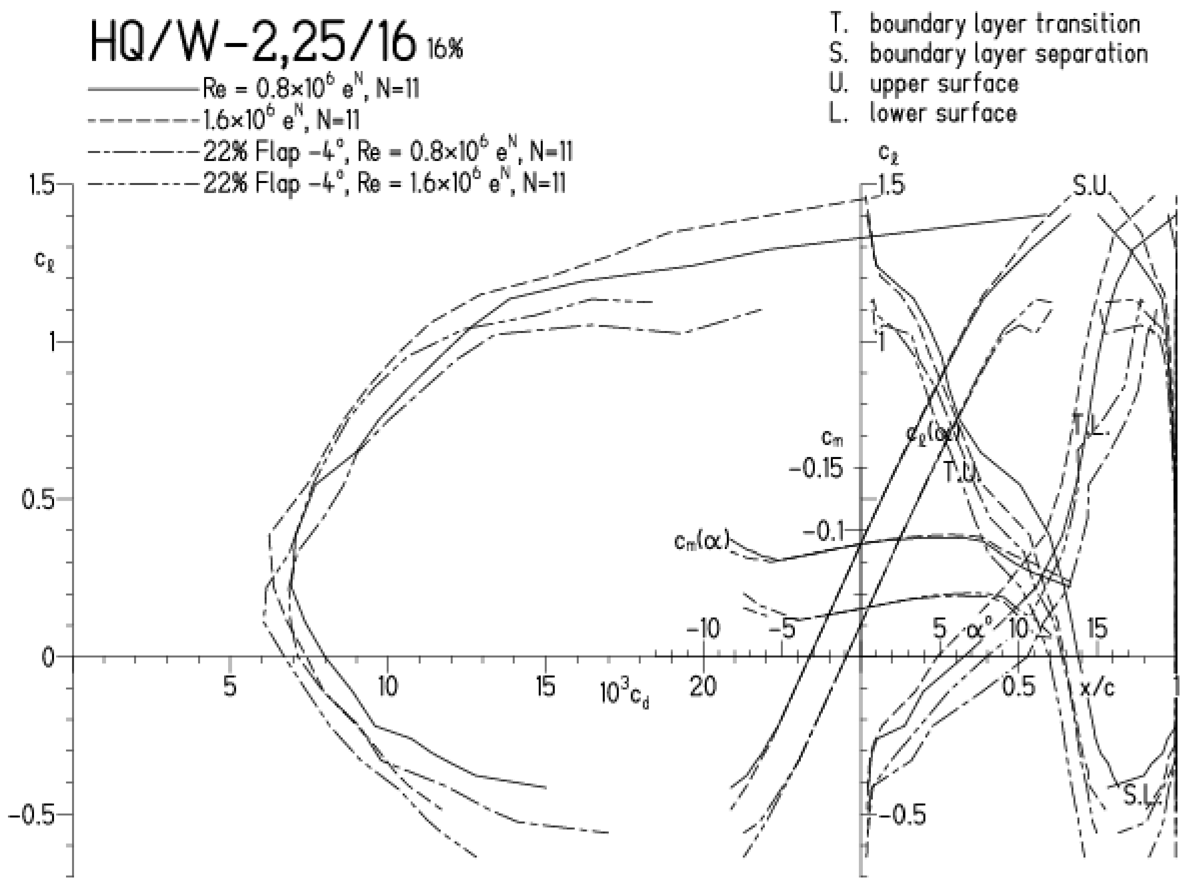
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

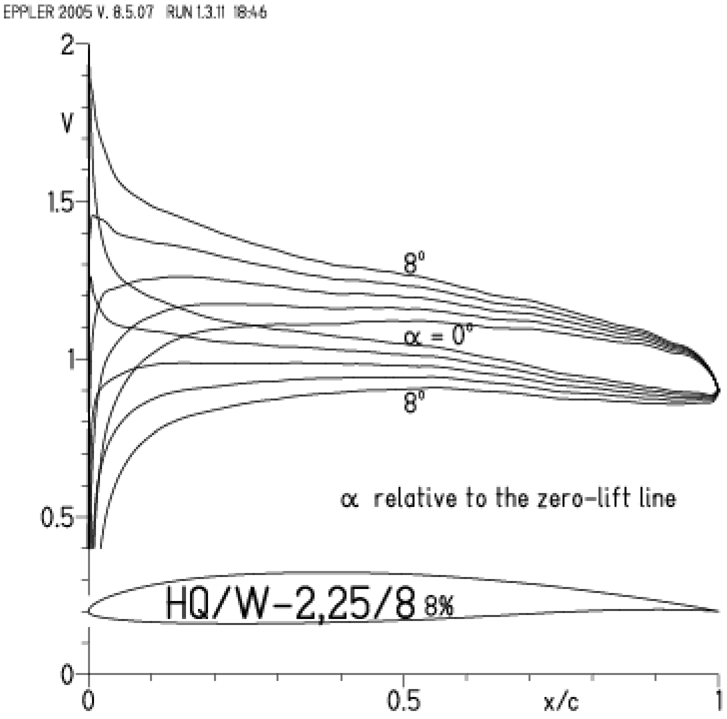
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

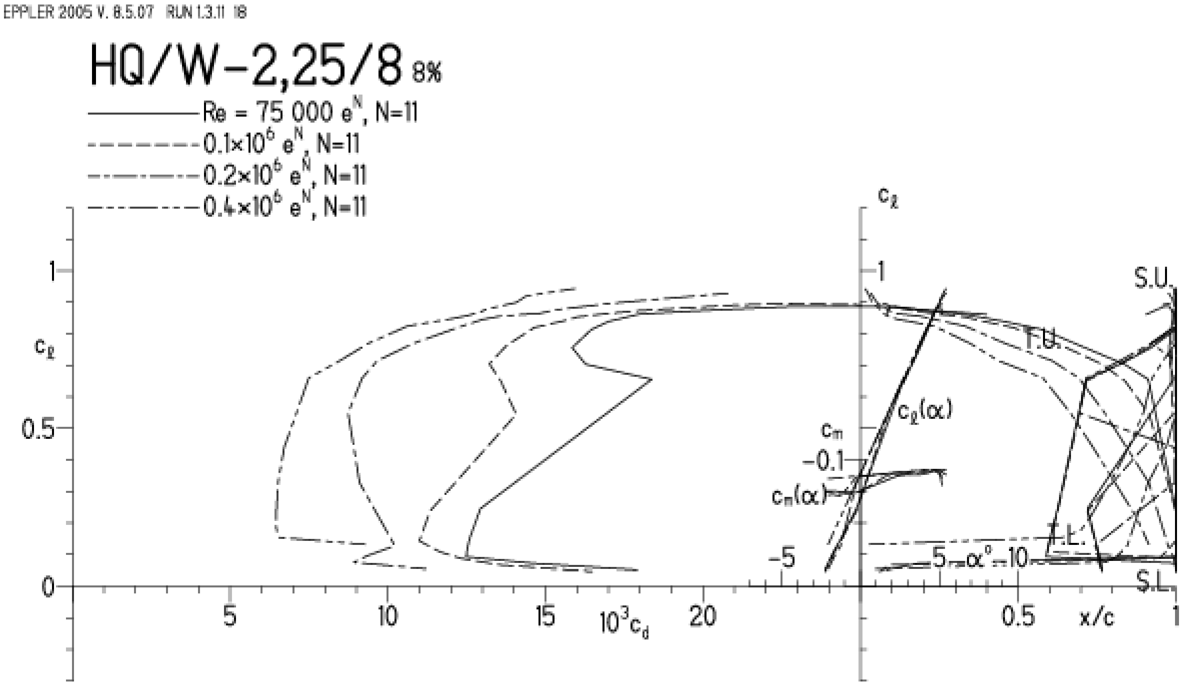


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

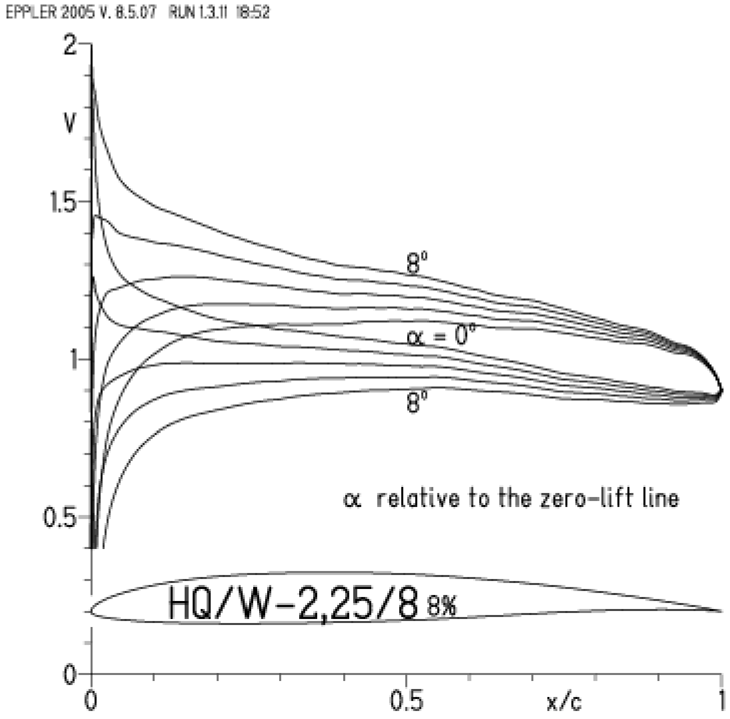


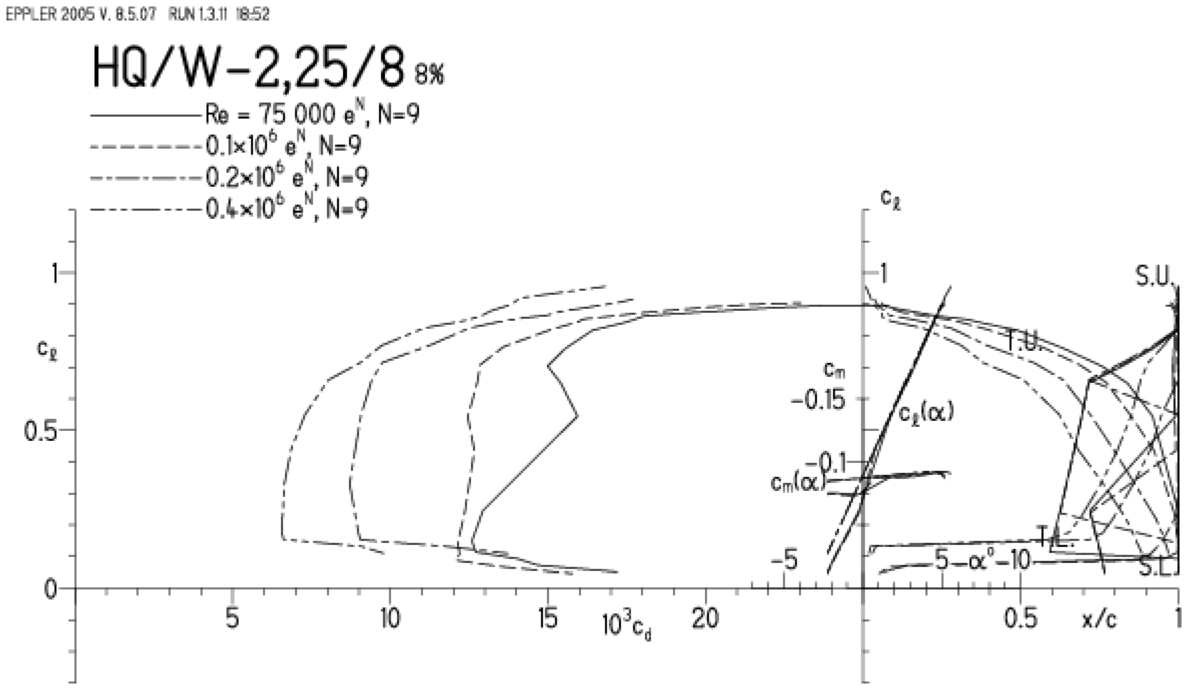
<u>HQ/W-2,25/8</u>, N=11



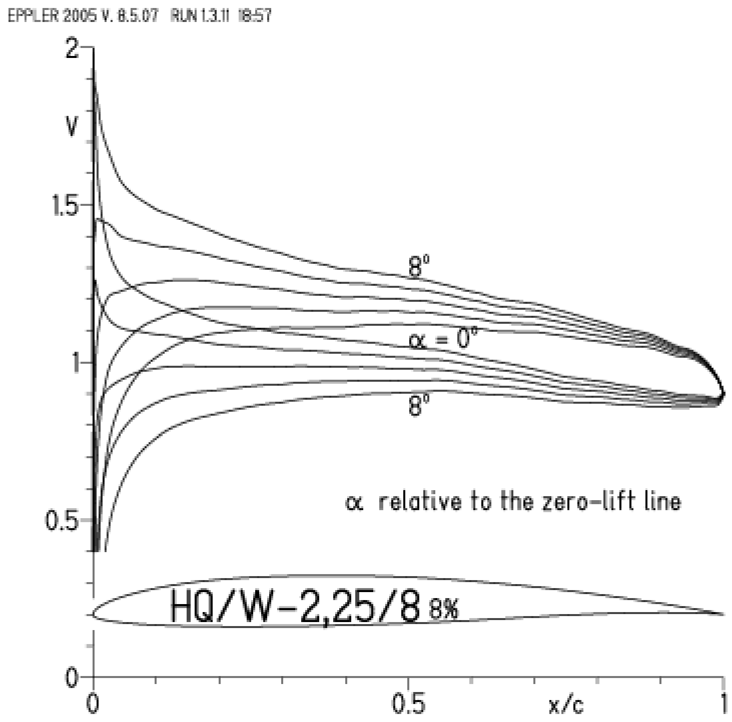


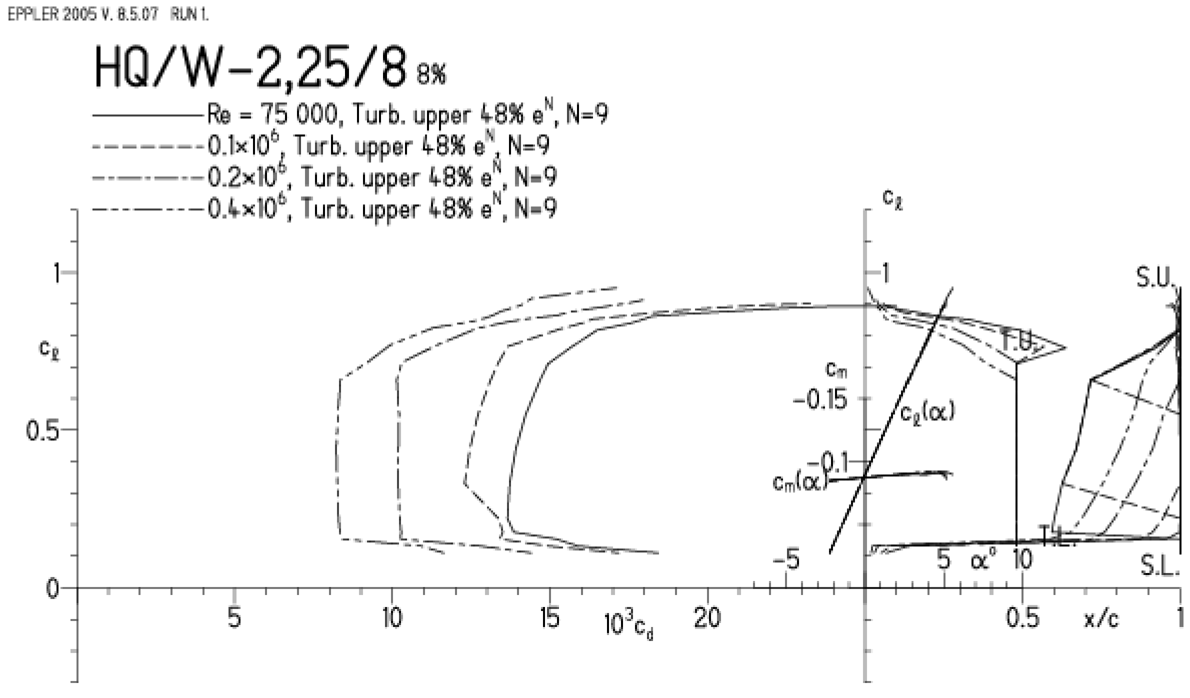
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

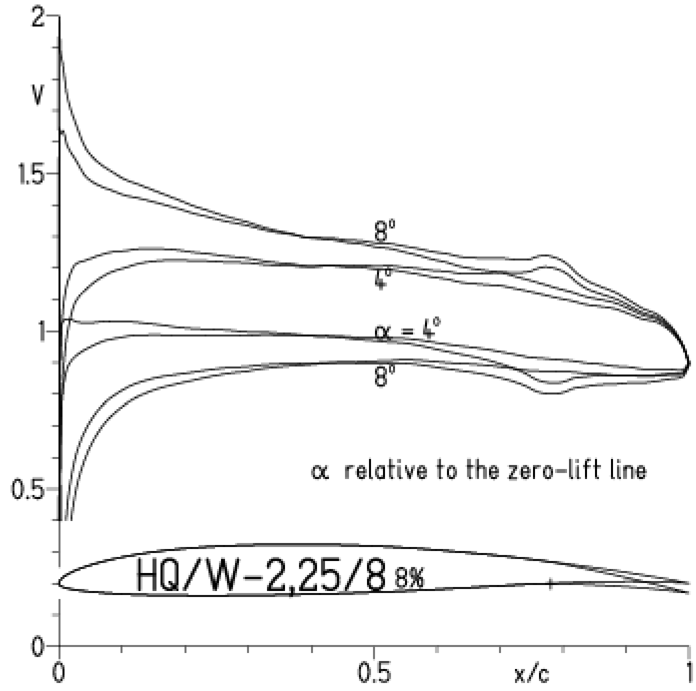
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



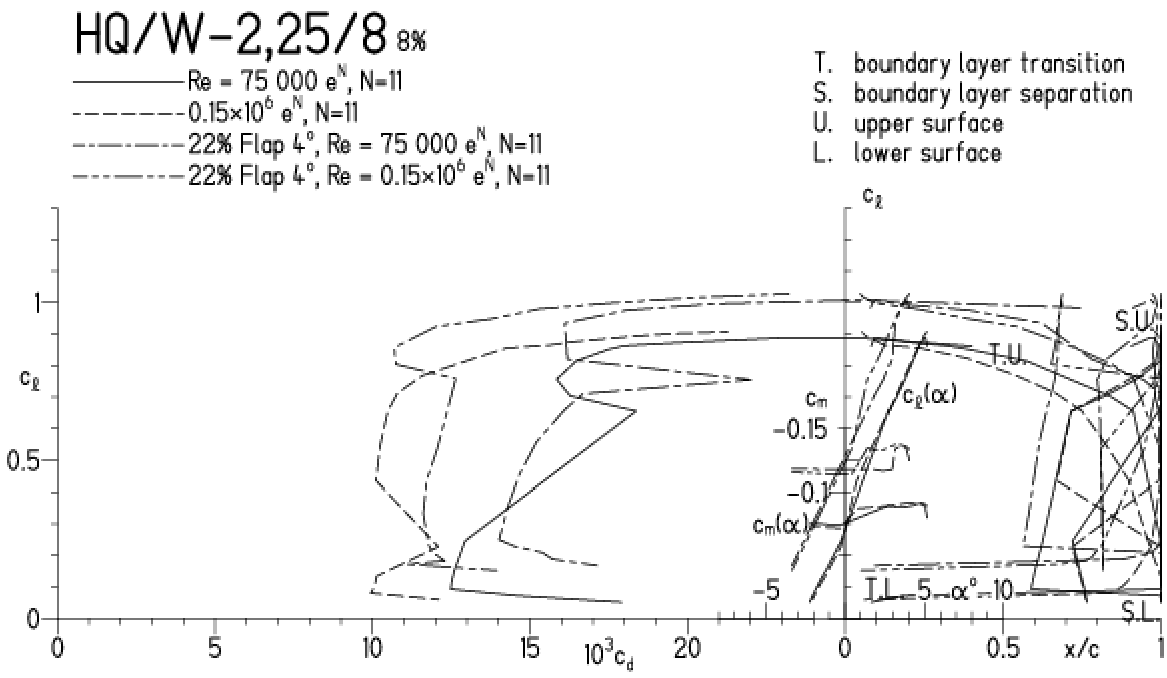


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

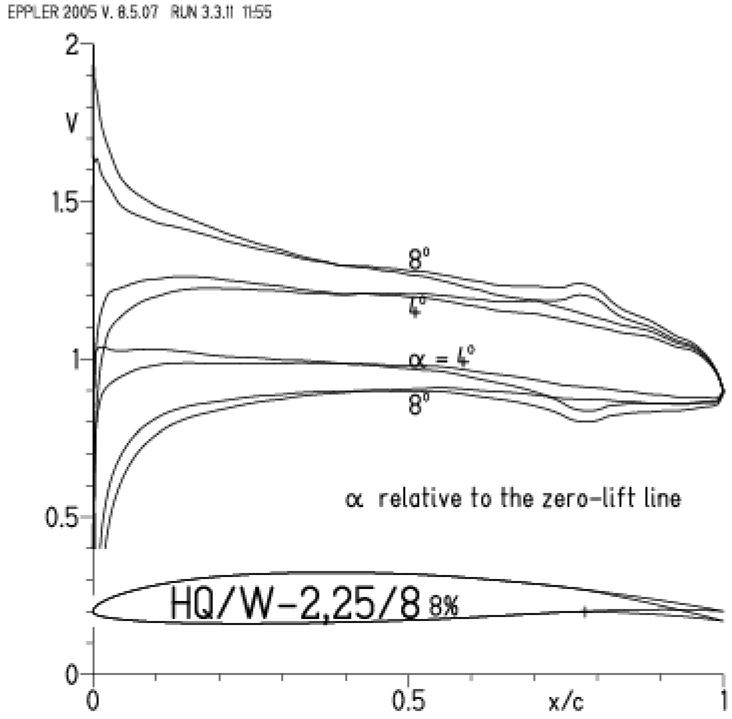
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

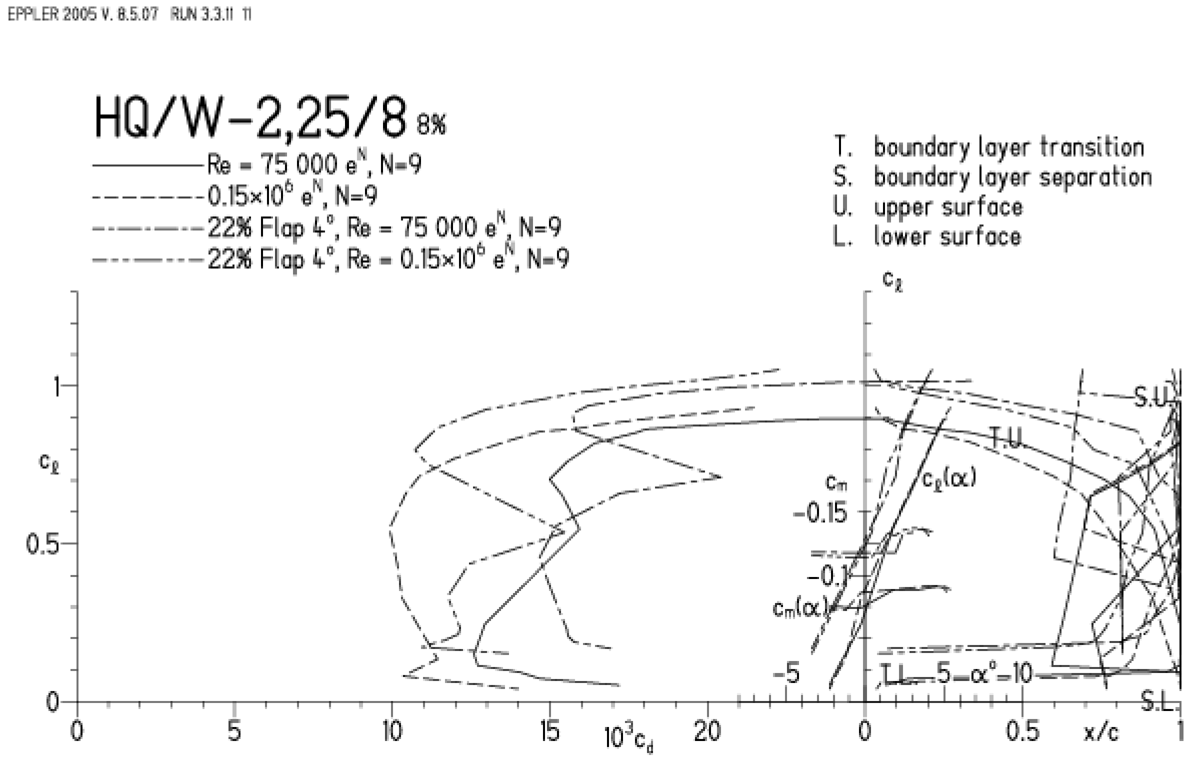


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

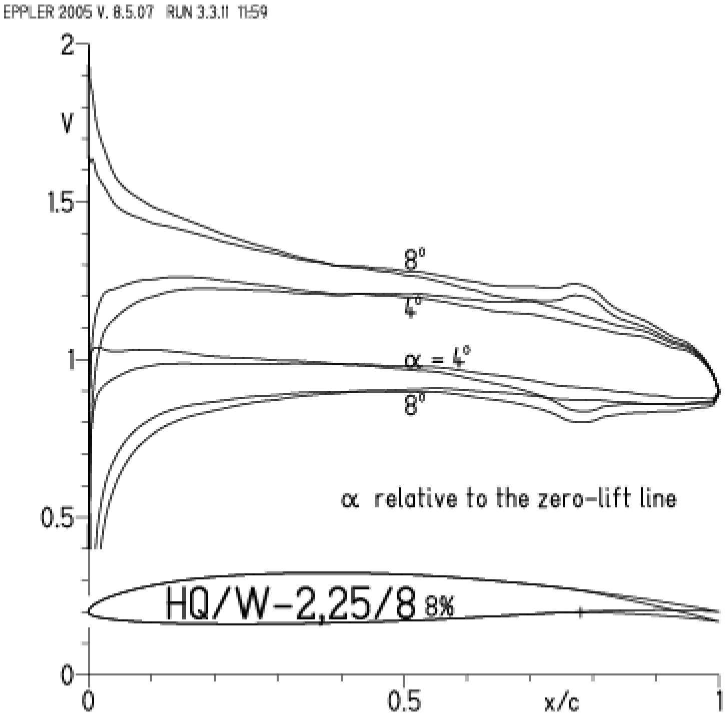


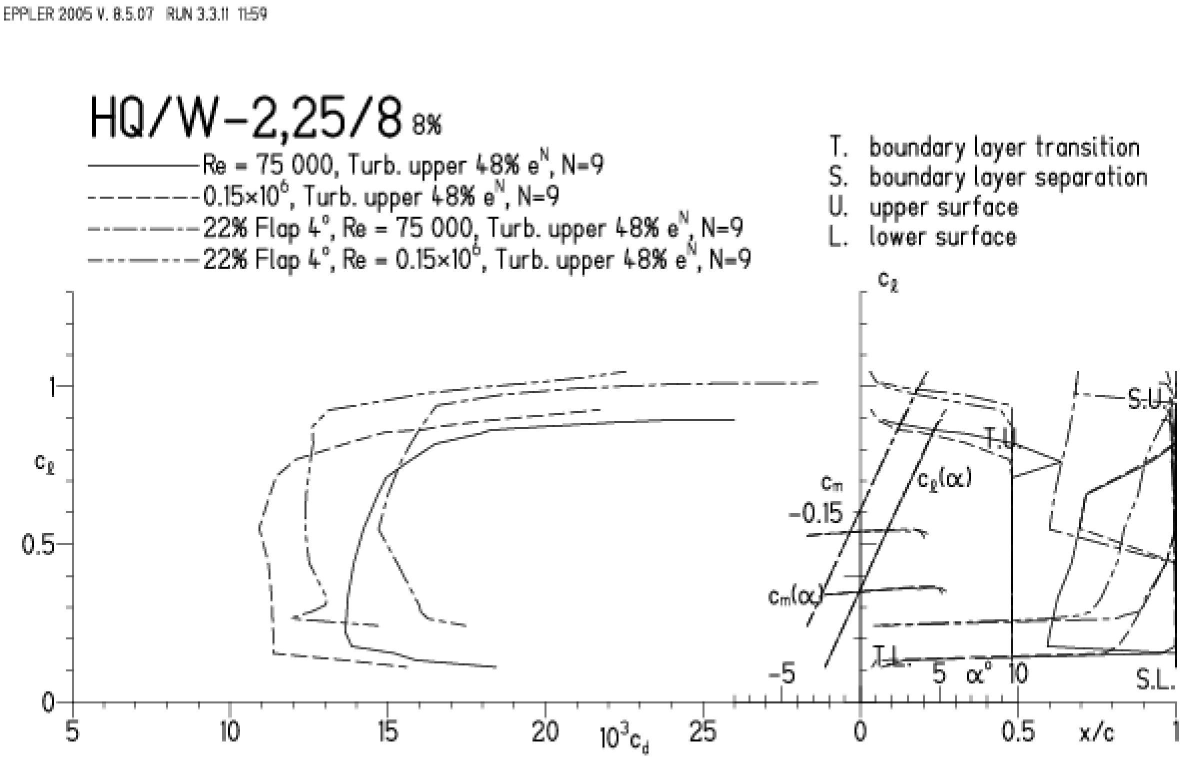
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





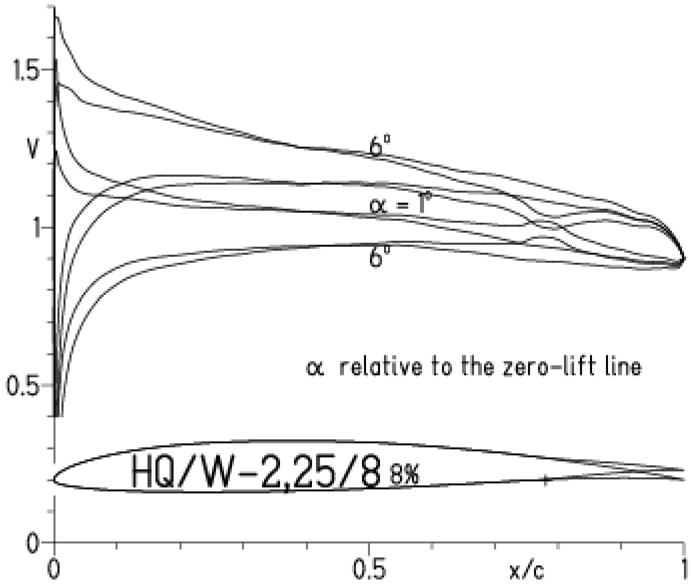
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



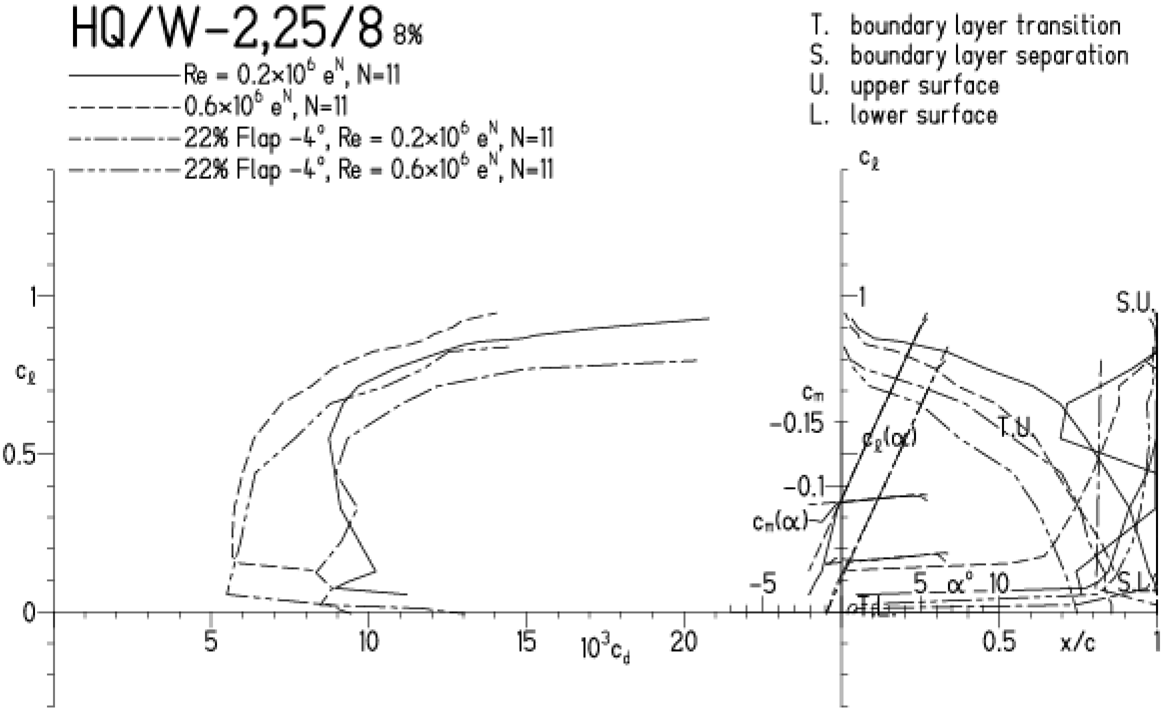


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

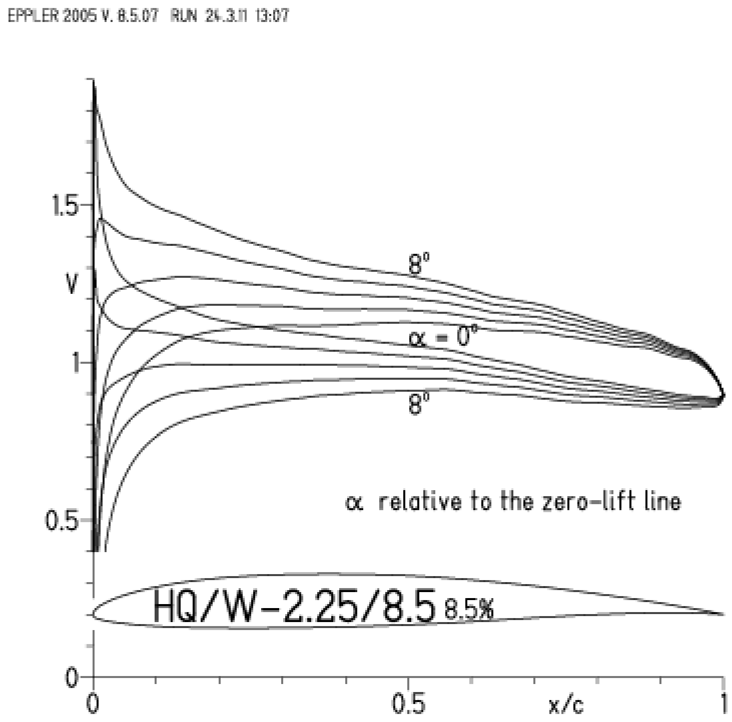
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

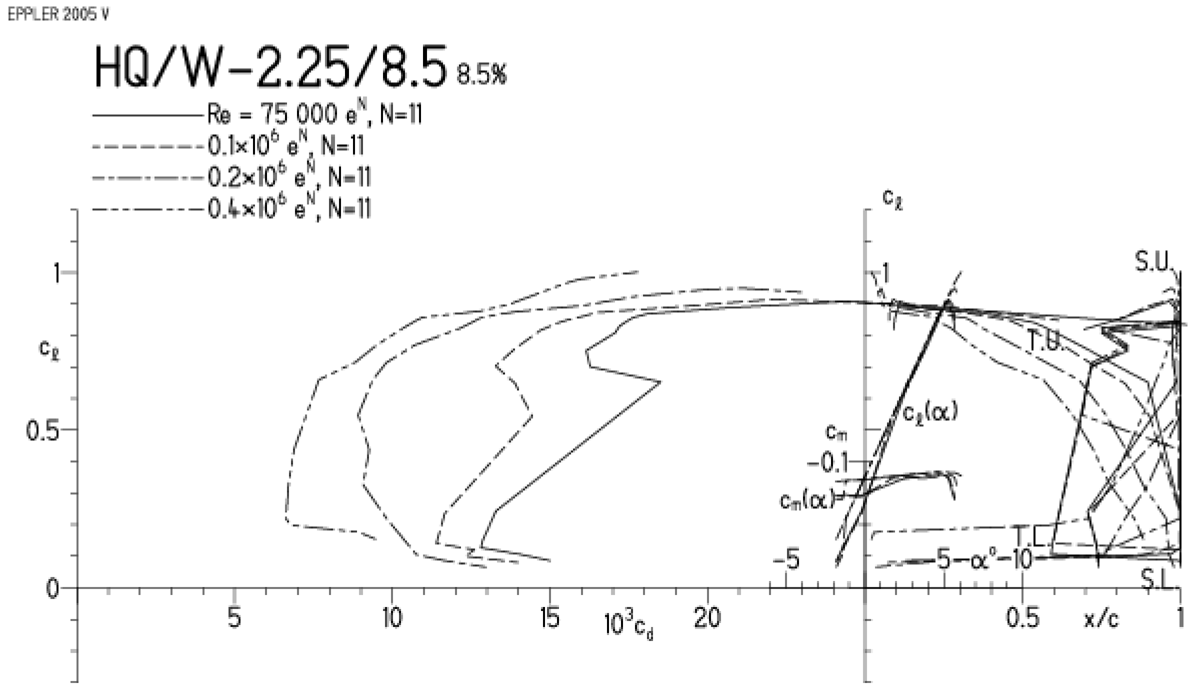


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



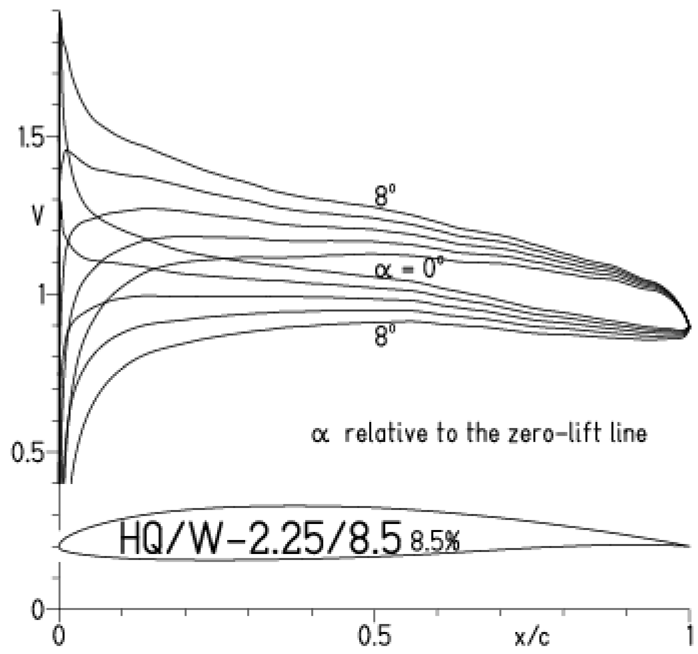
HQ/W-2,25/8,5, N=11



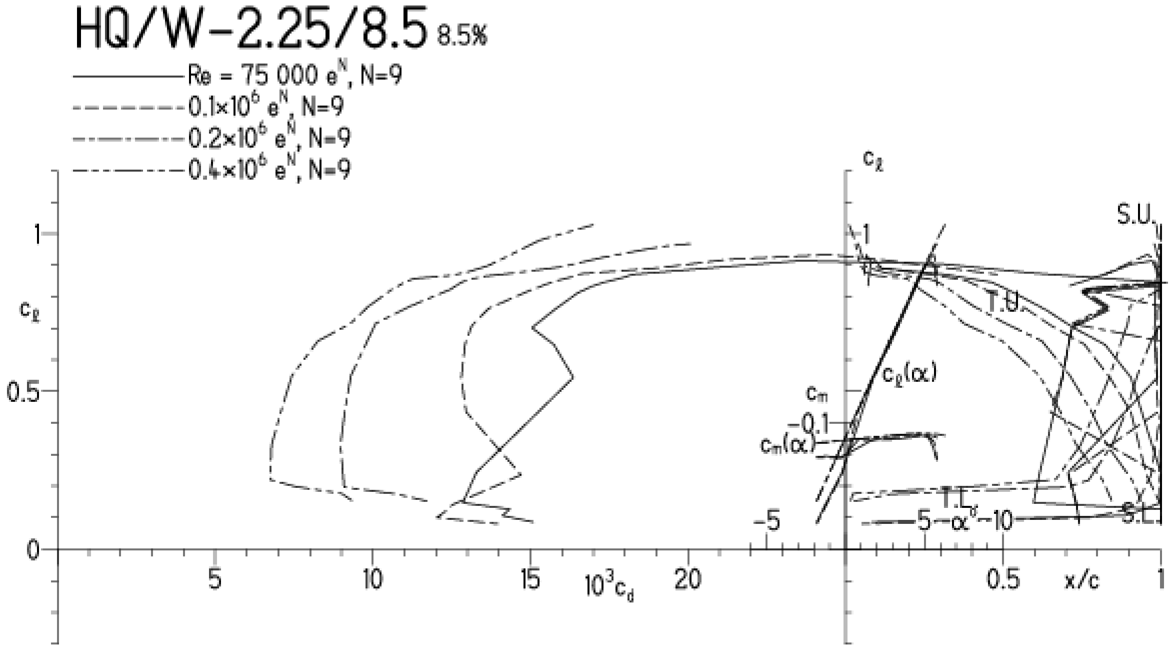


HQ/W-2,25/8,5, N=9

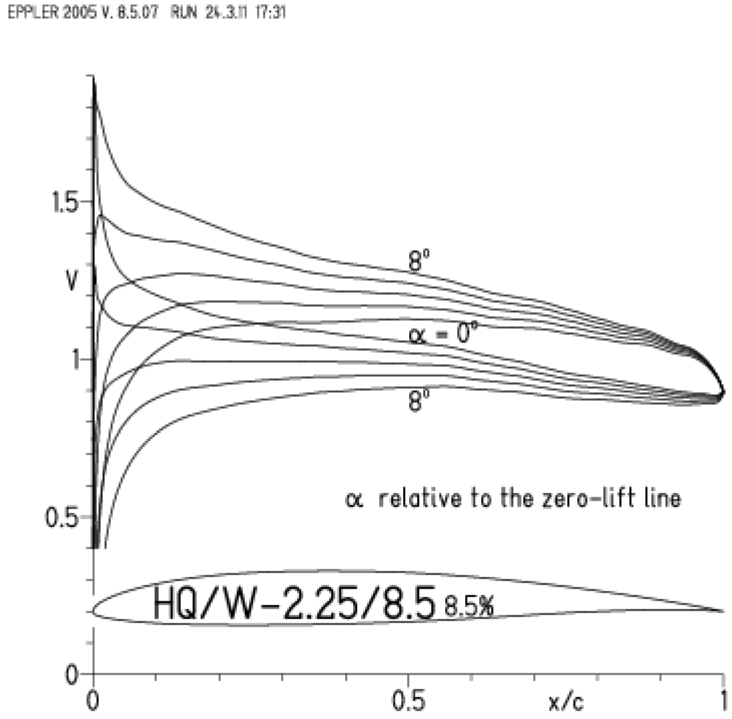
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

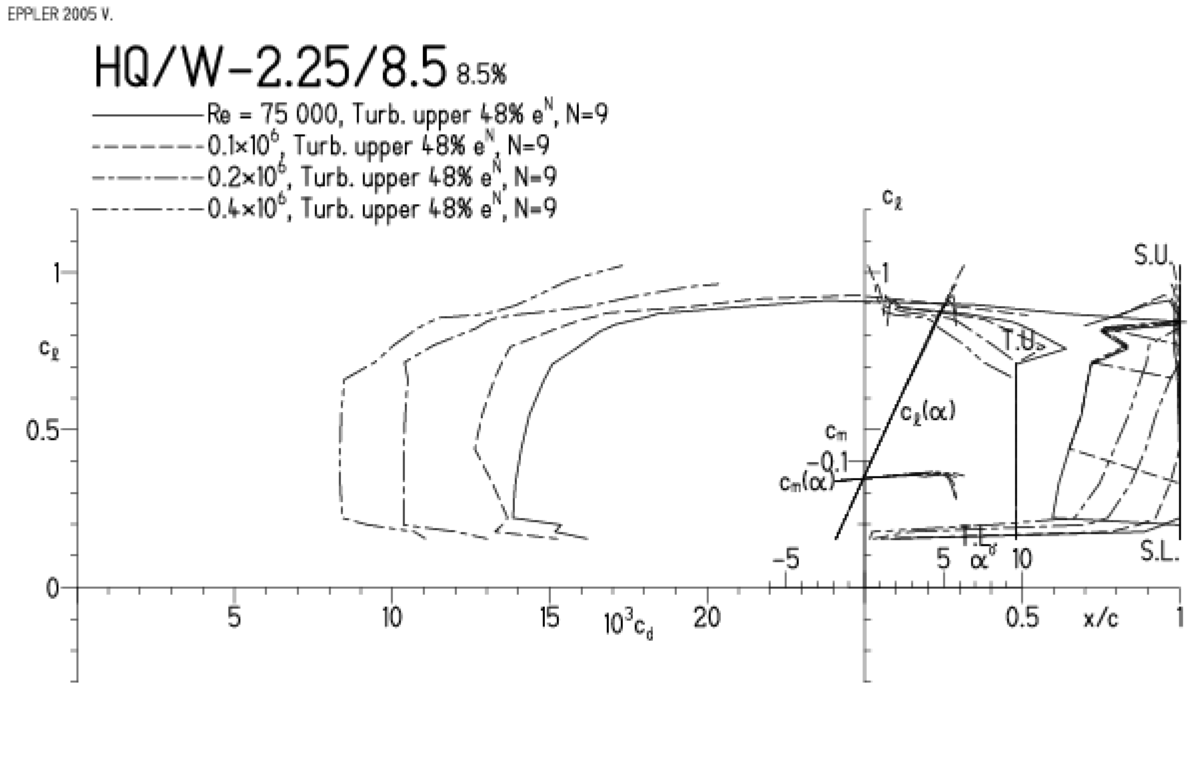


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



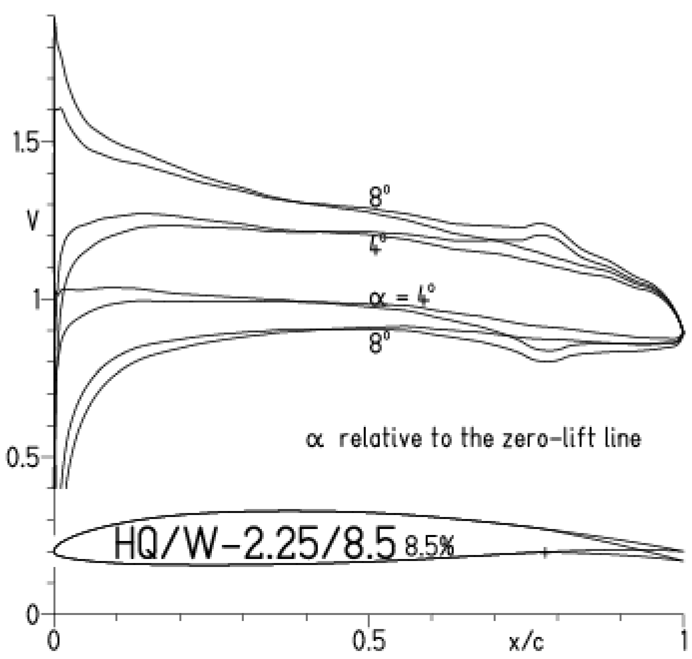
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



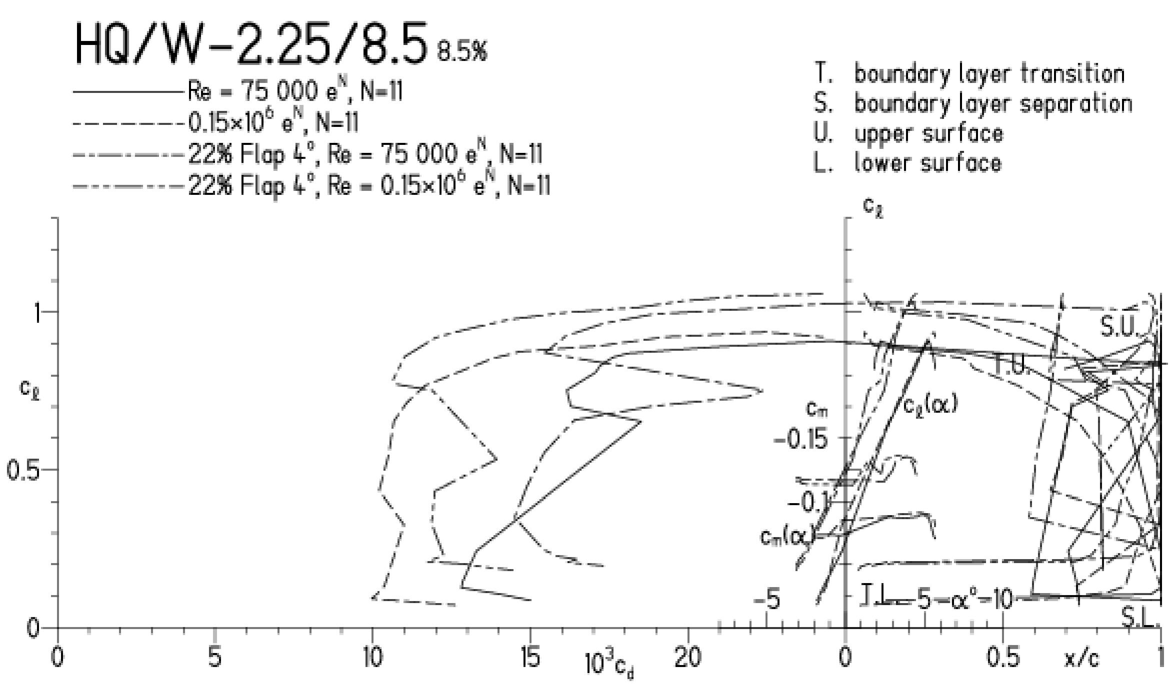


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

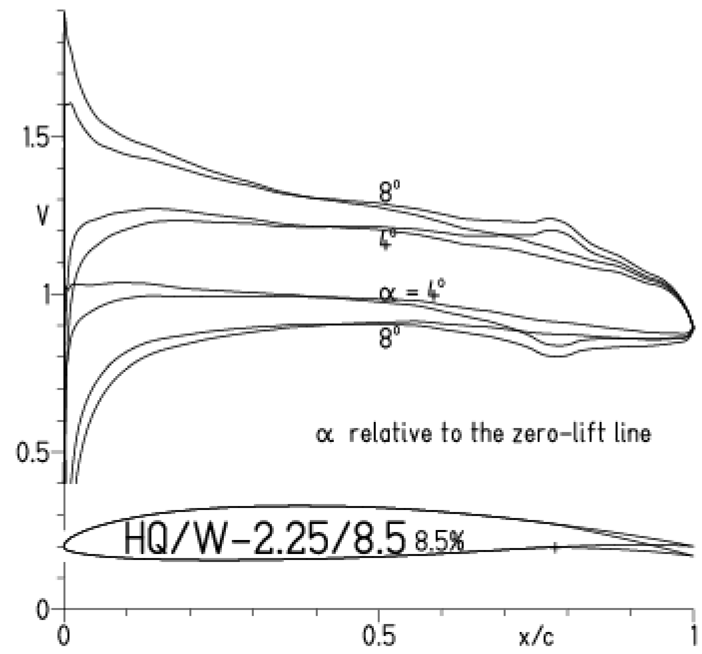


EPPLER 2005 V. 8.5.

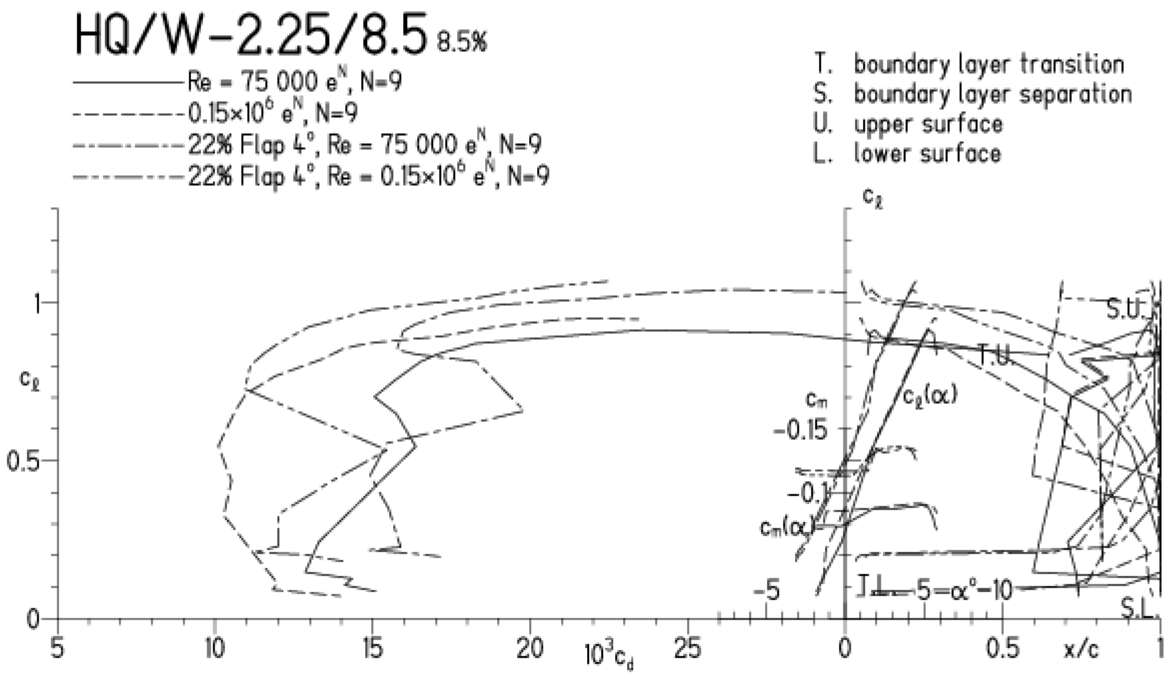


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

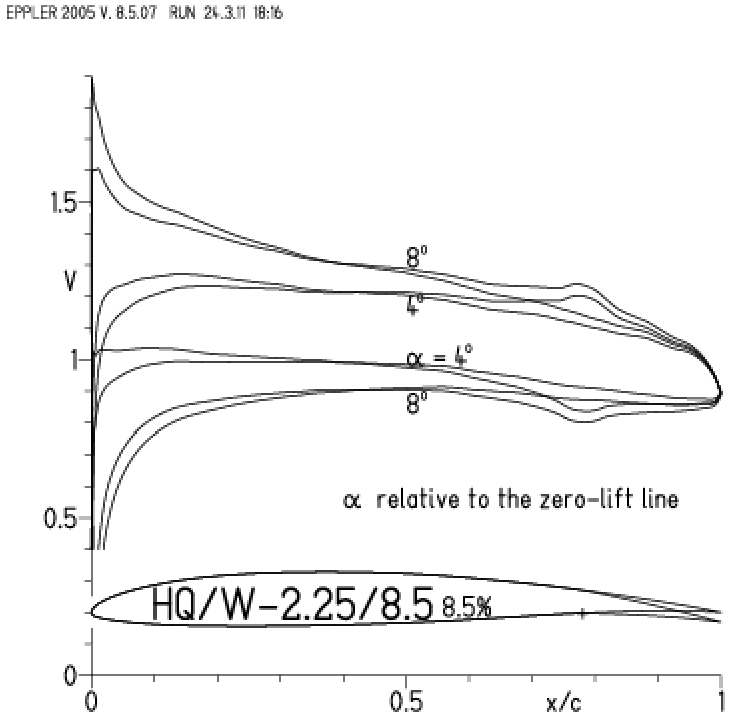
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

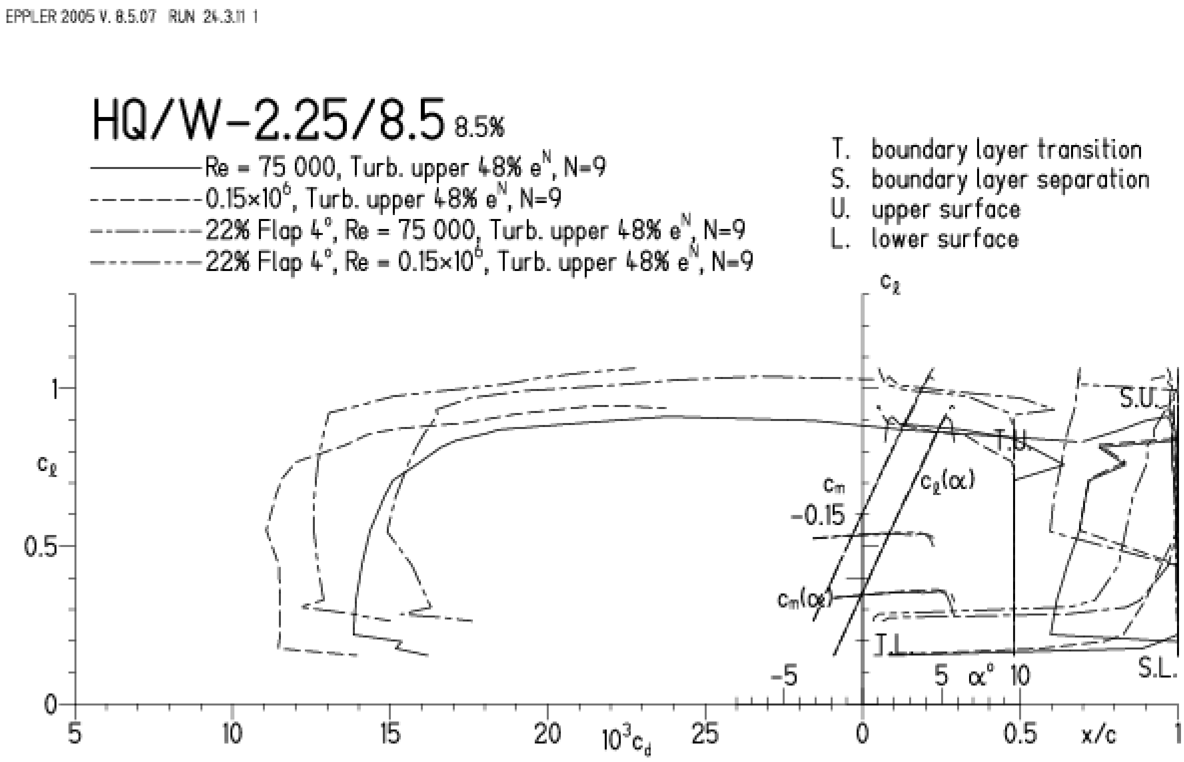


EPPLER 2005 V.



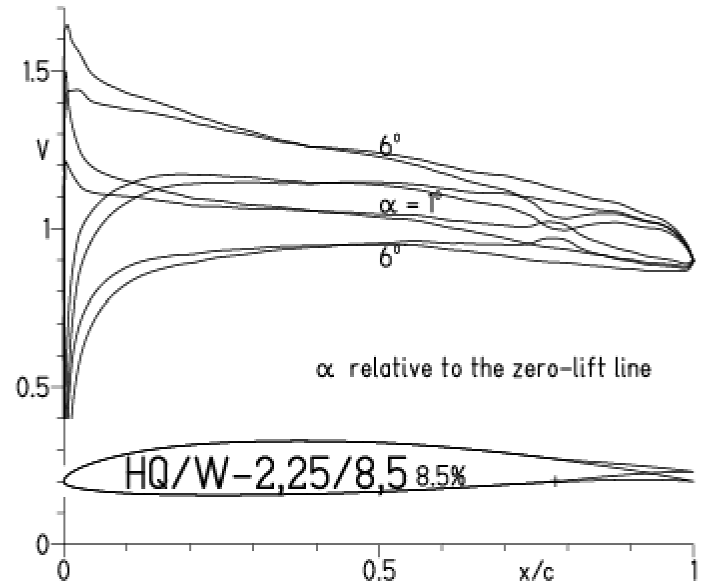
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



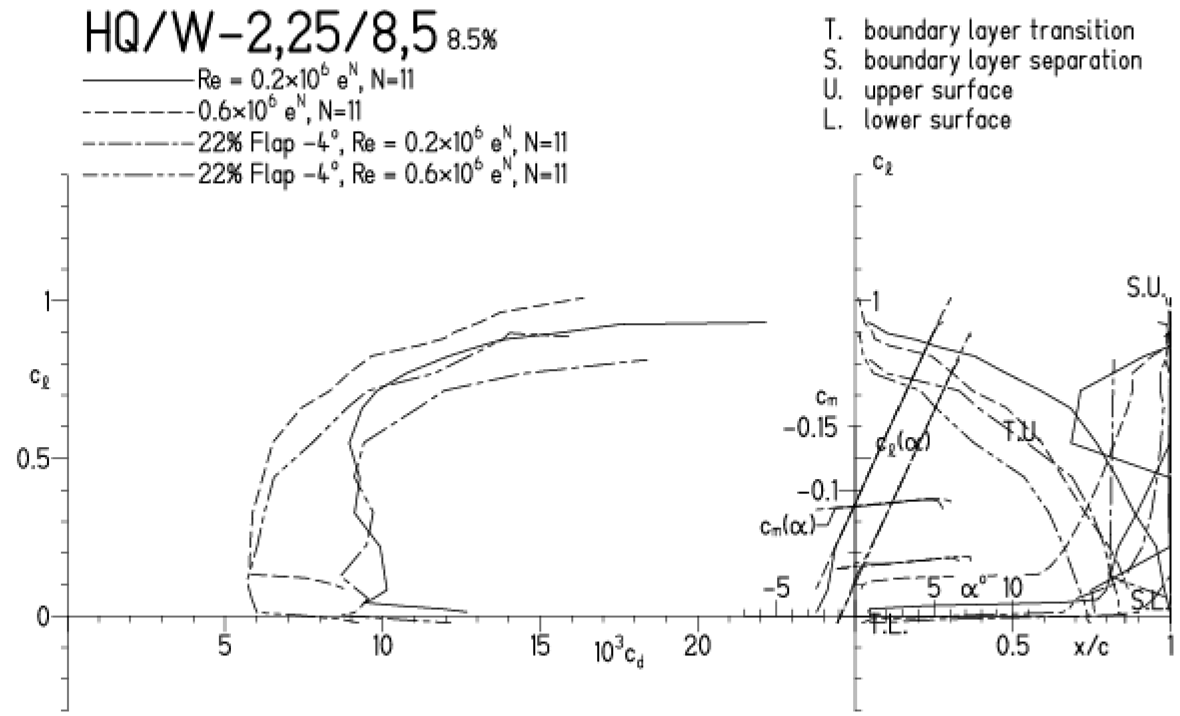


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

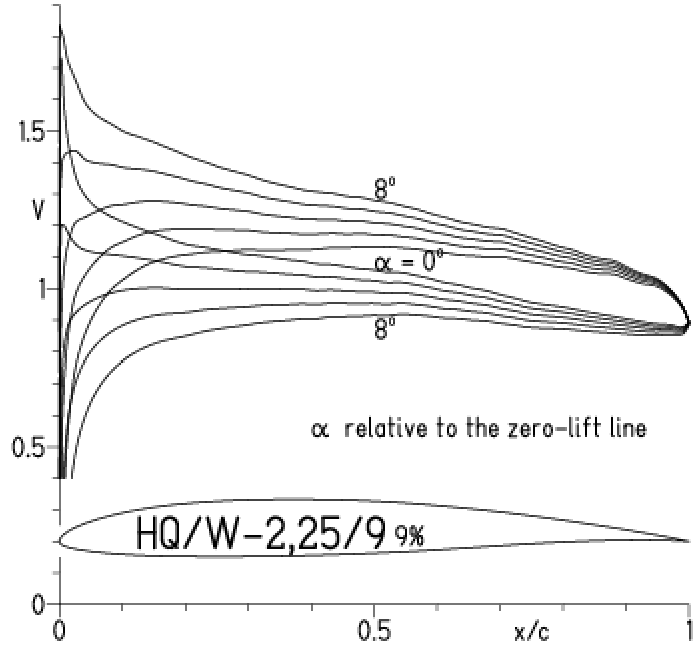


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

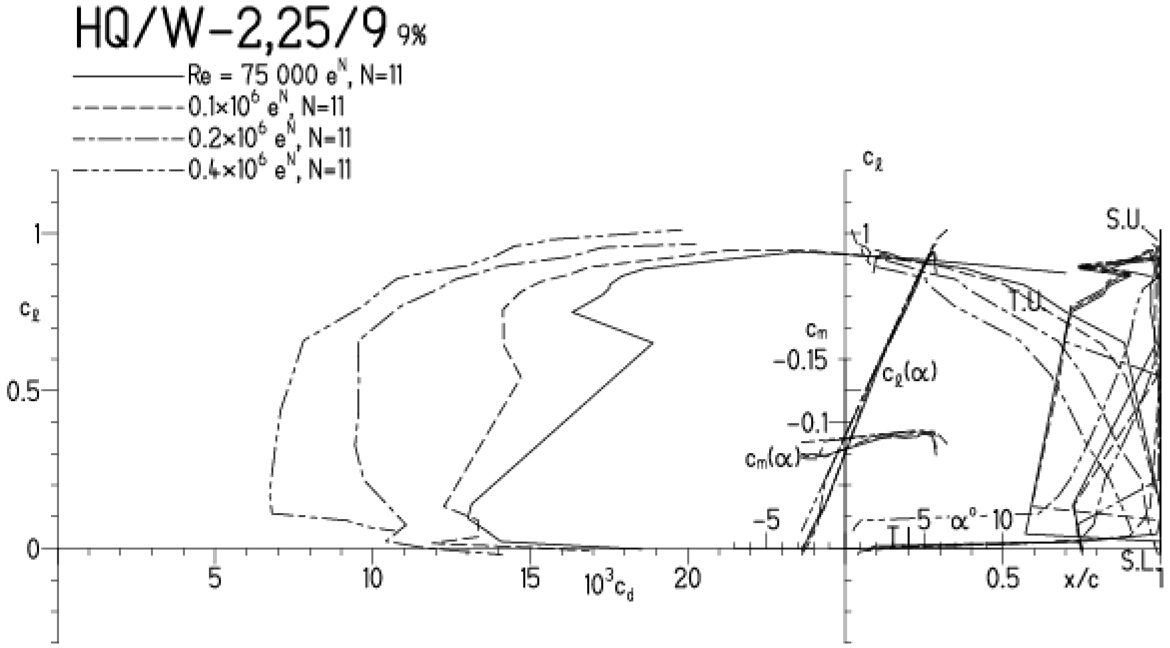


HQ/W-2,25/9, N=11

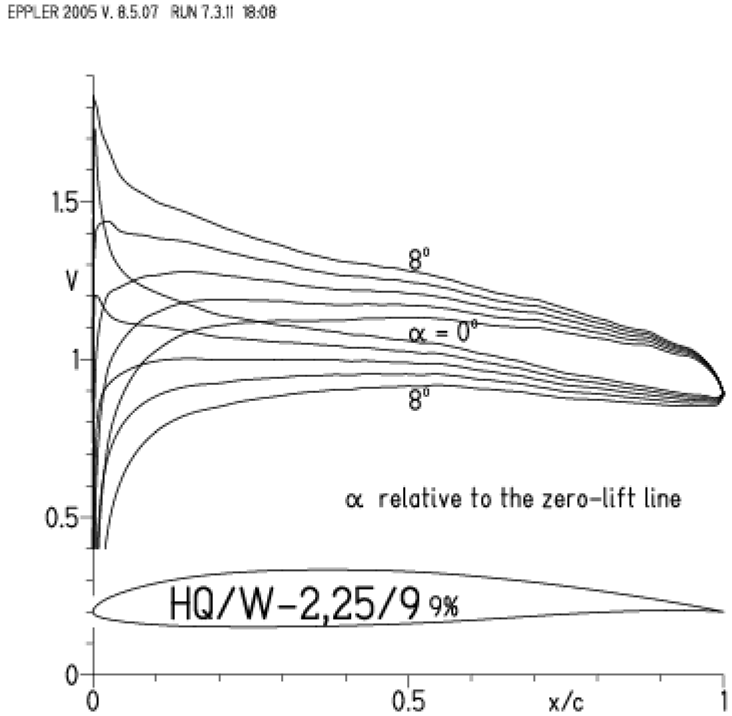
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

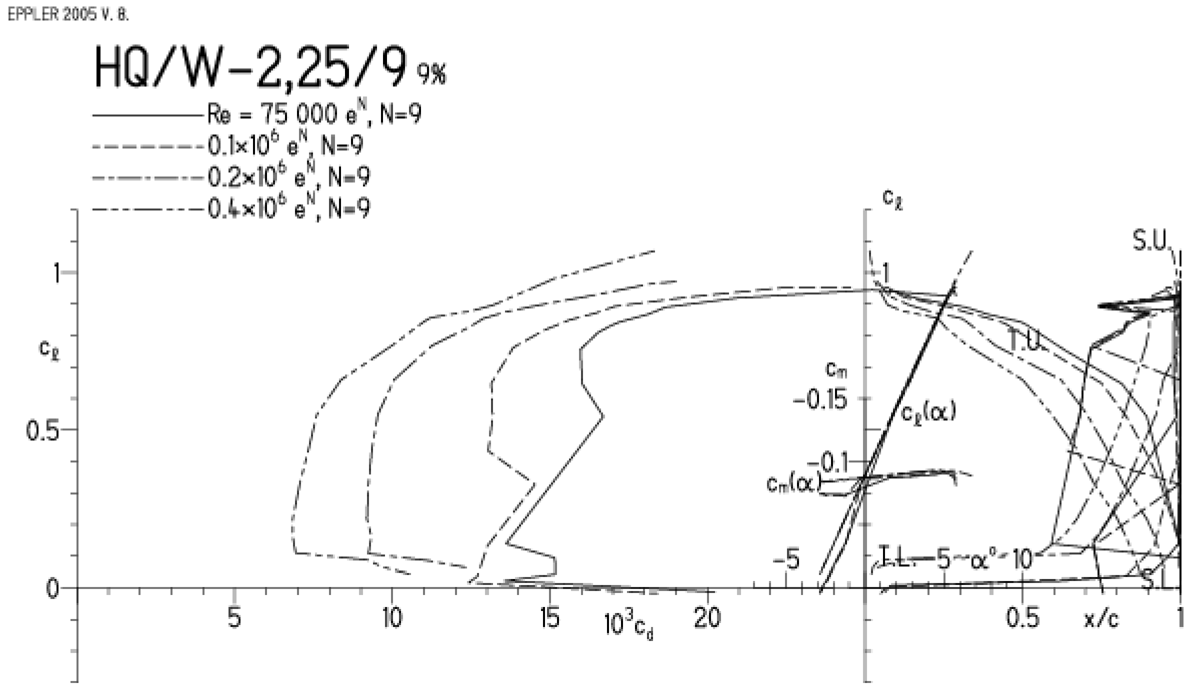


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



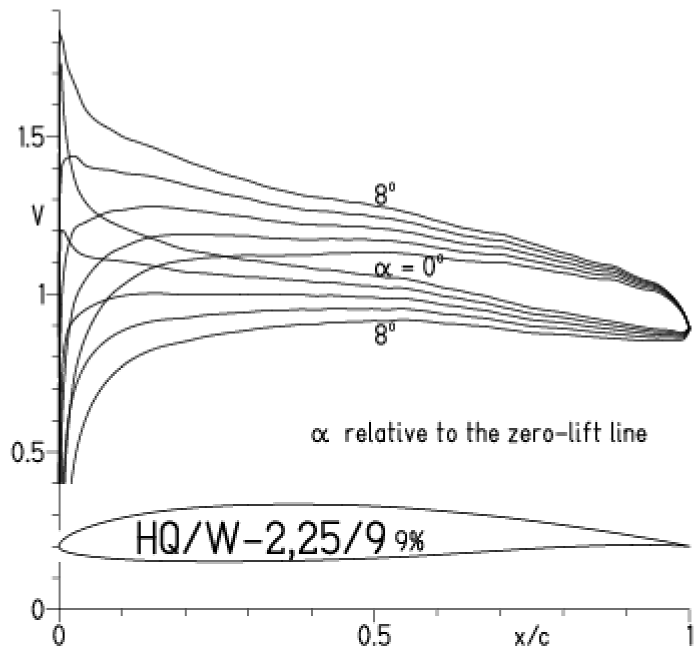
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

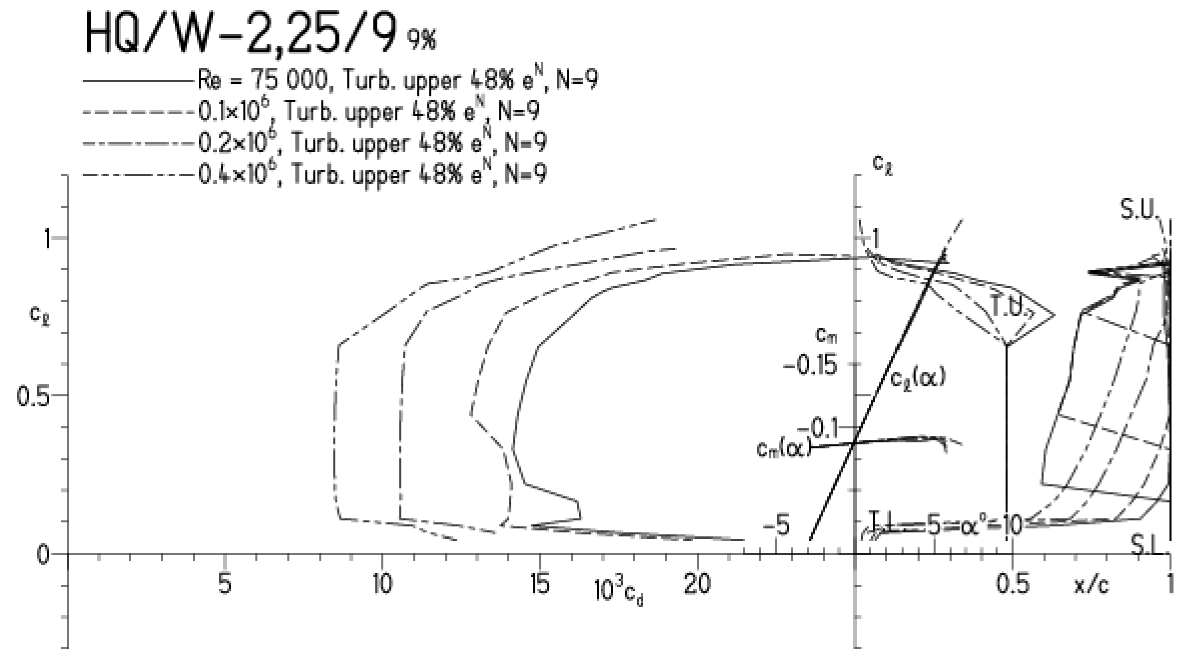

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

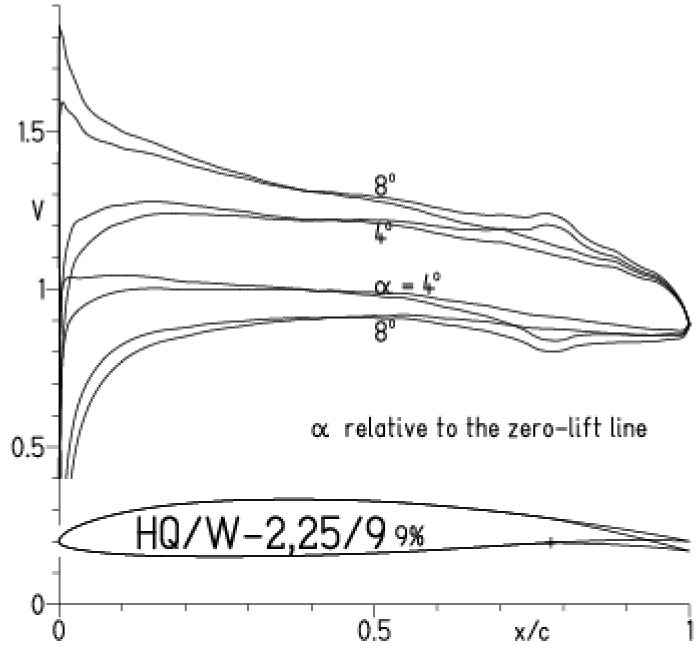


EPPLER 2005 V. 8.5.07 RUN 7

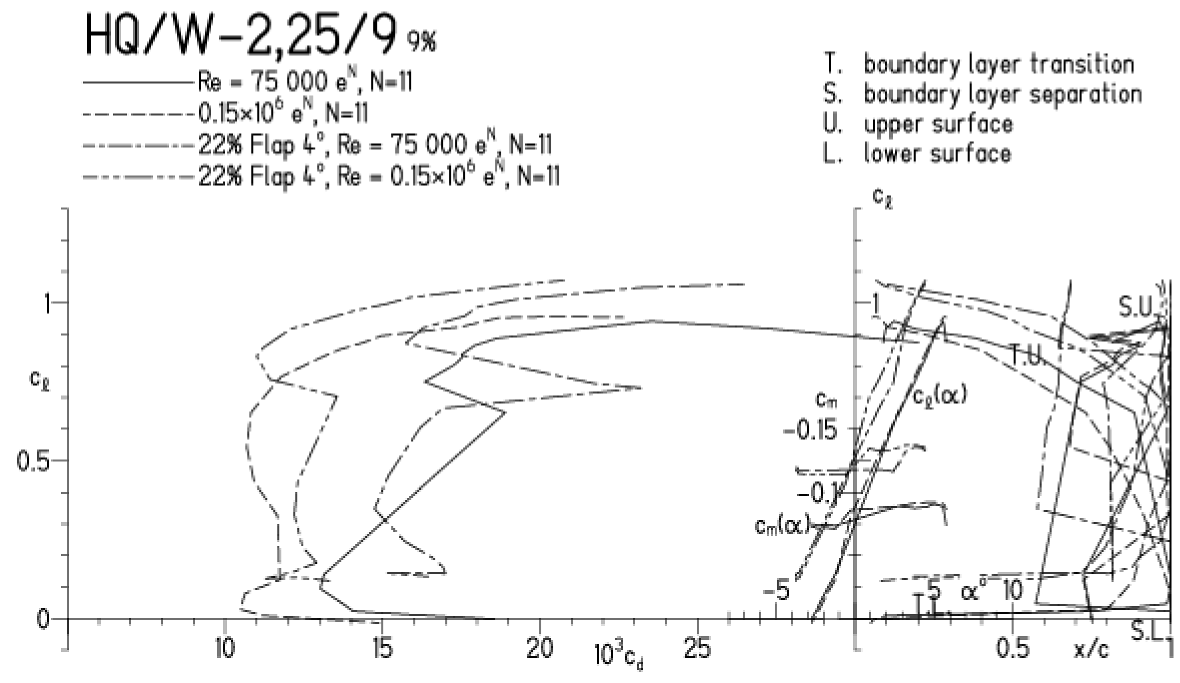


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

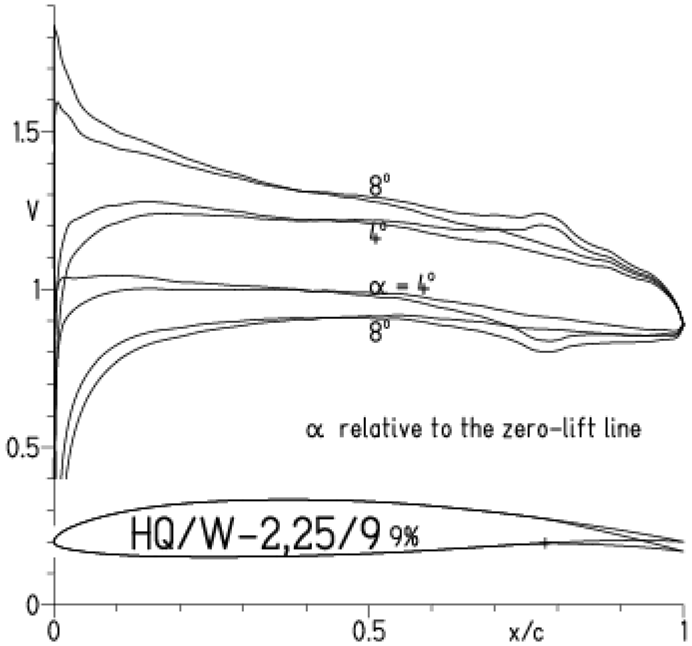


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

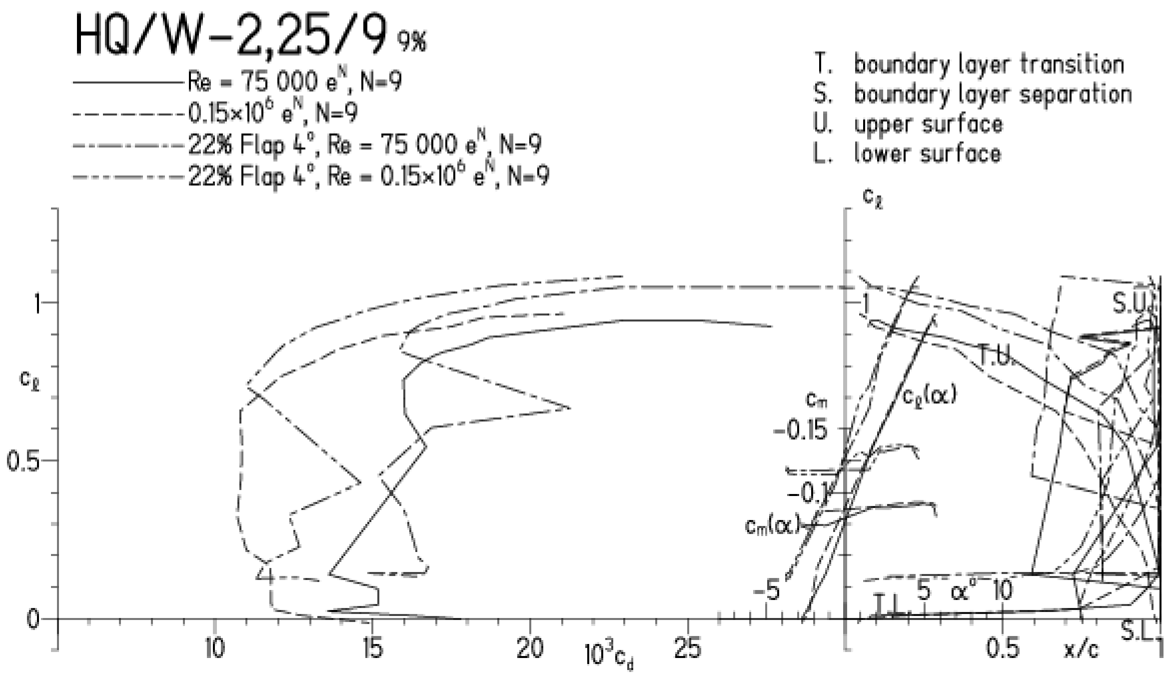


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

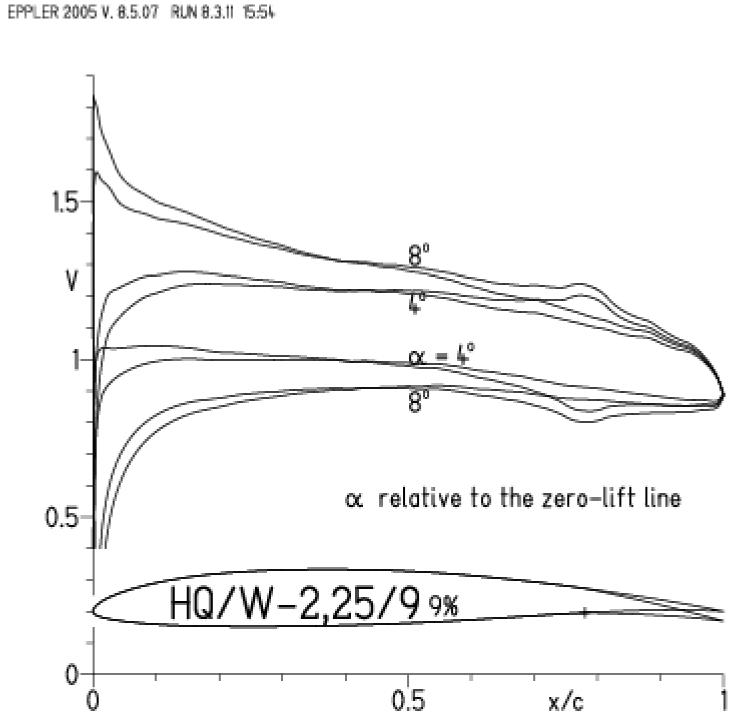
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

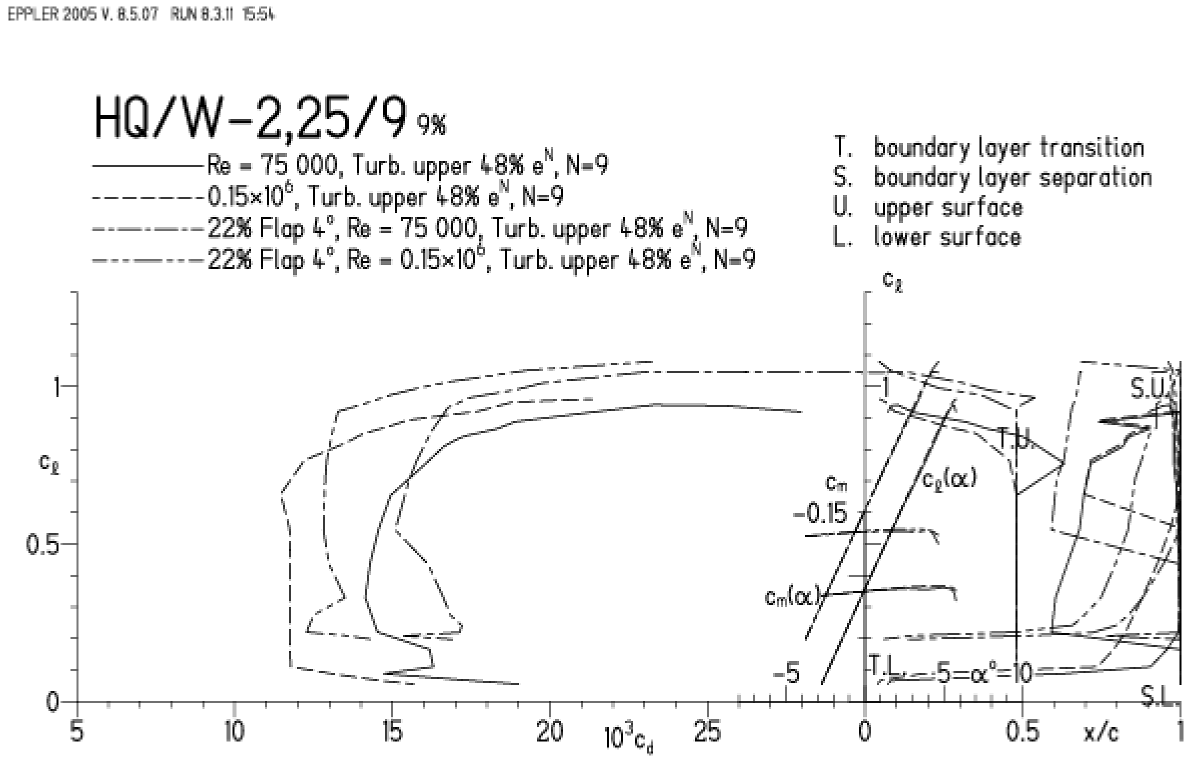


EPPLER 2005 V. 8.5.07 RUN 8.3.1

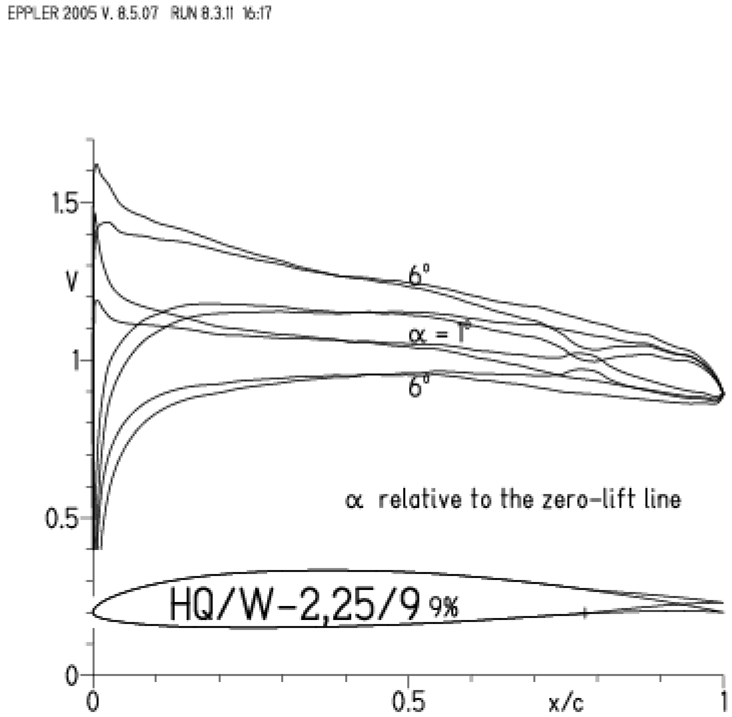


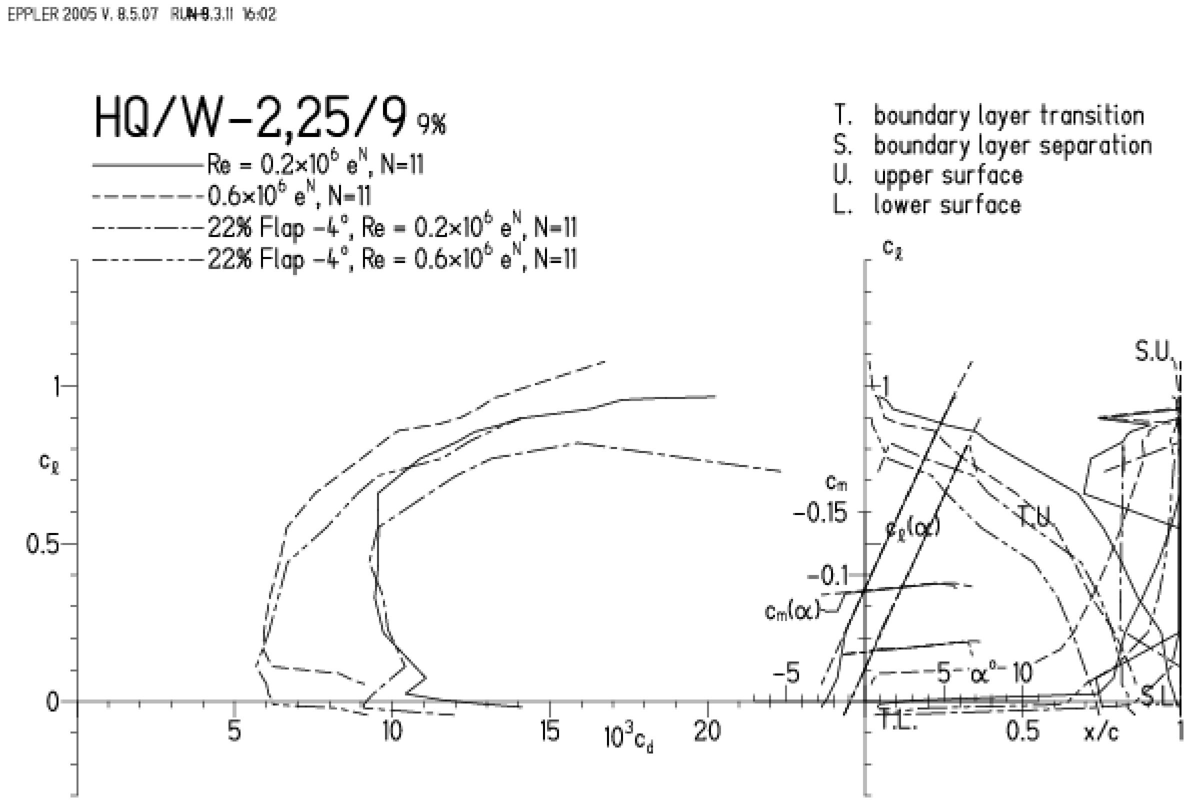
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





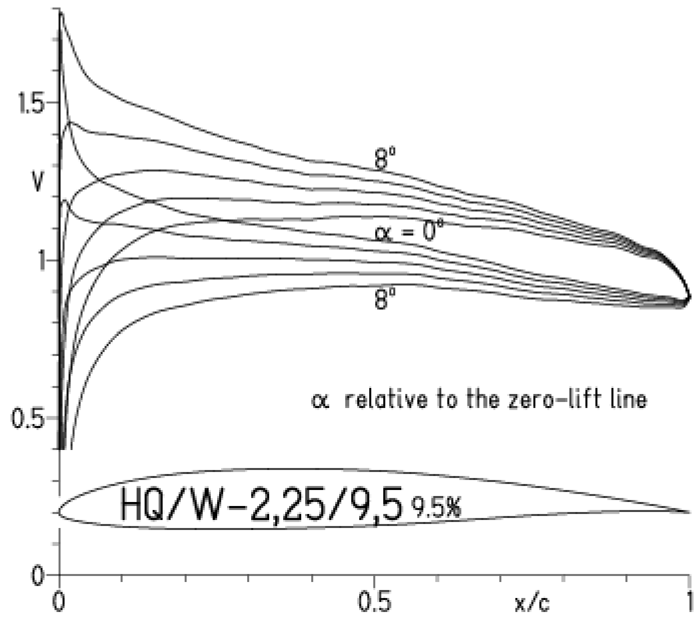
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



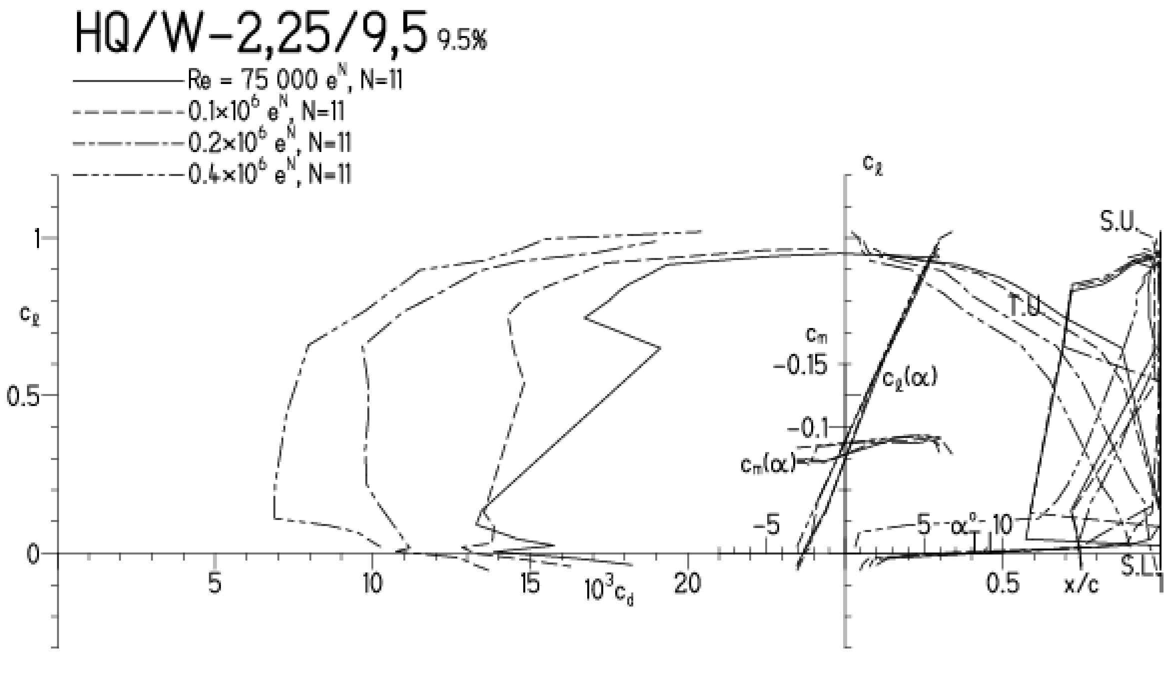


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

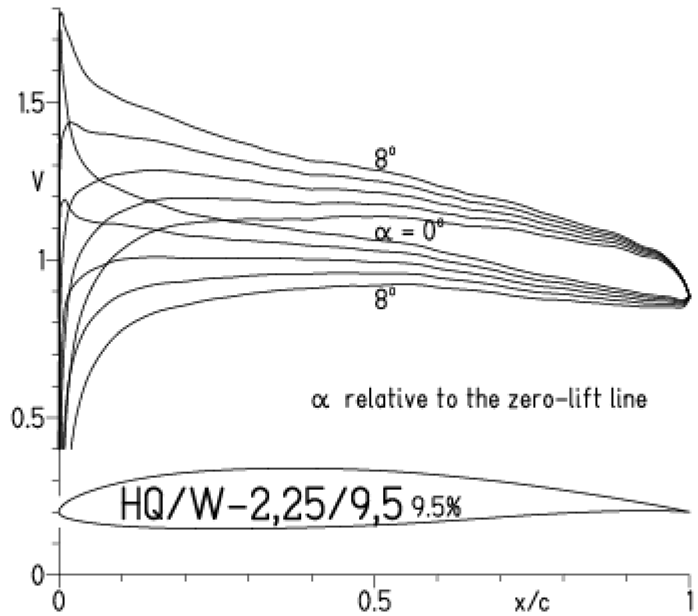


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

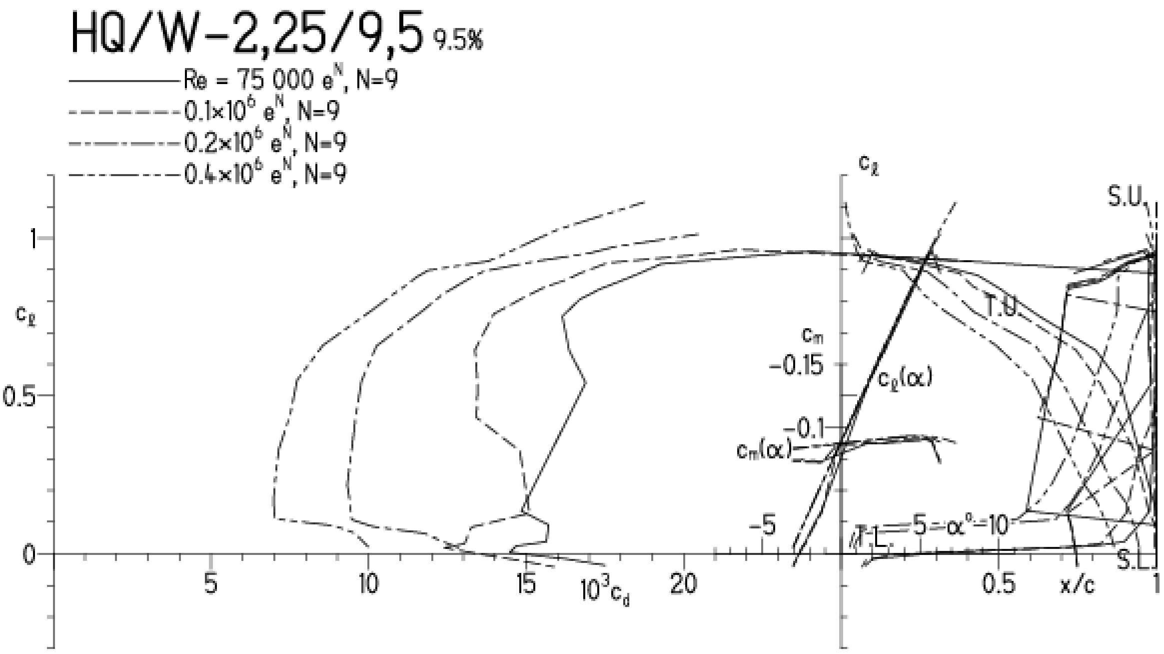


HQ/W-2,25/9,5, N=9

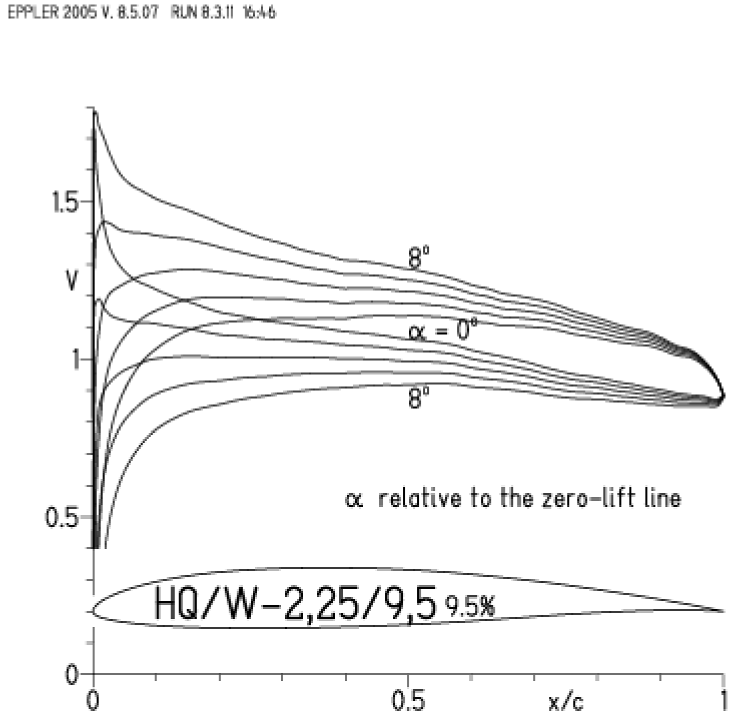
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

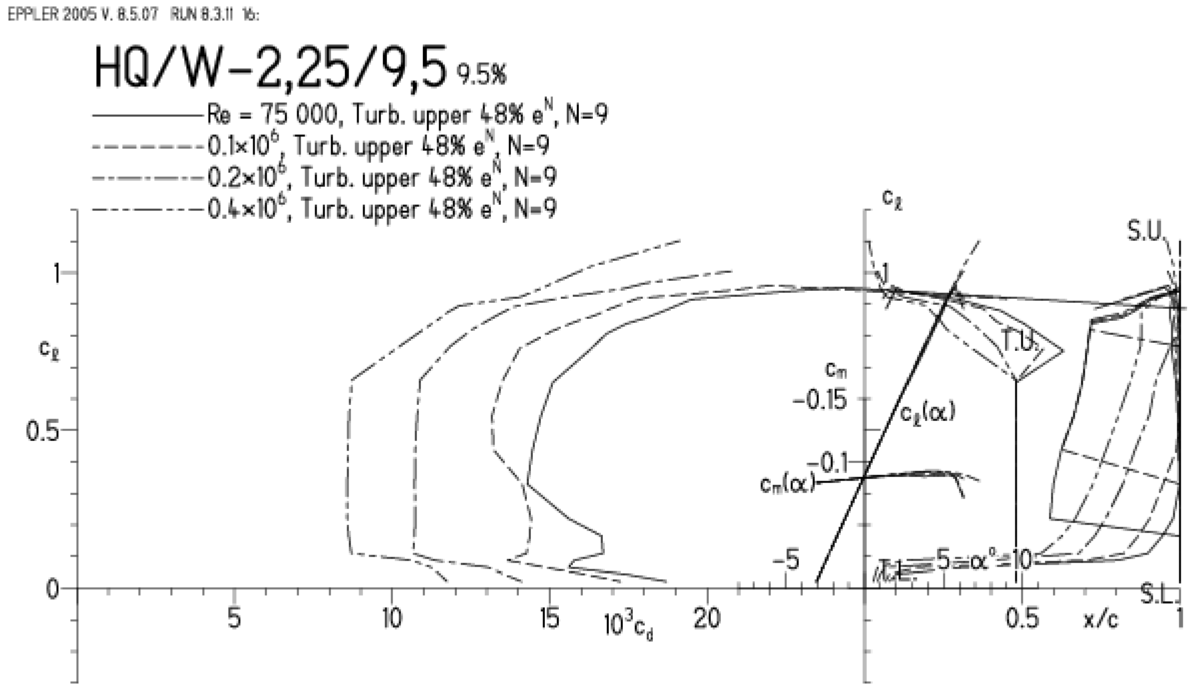


EPPLER 2005 V. 8.5.07 RUN 8.3.



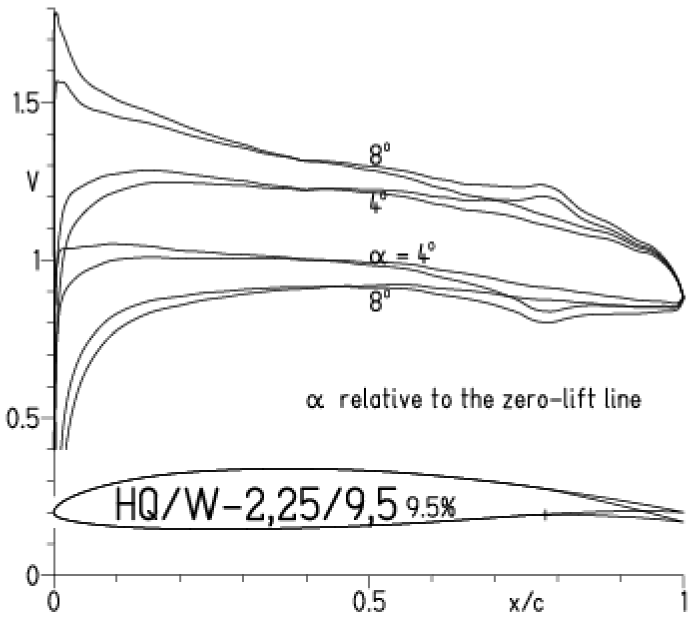
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



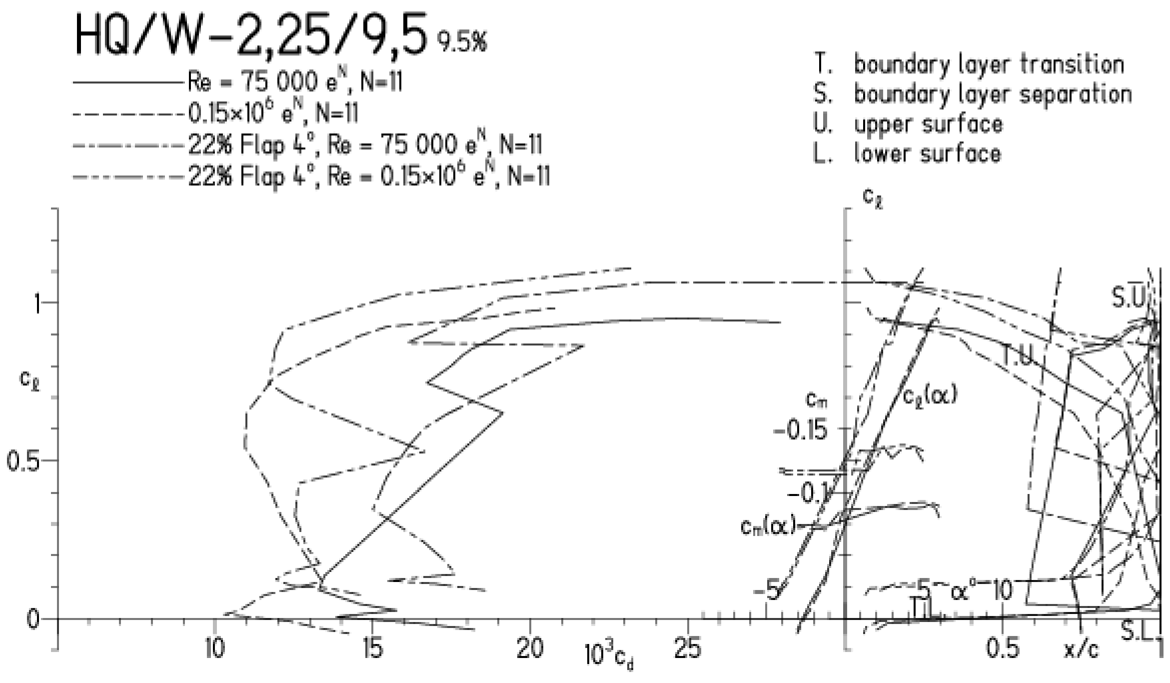


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

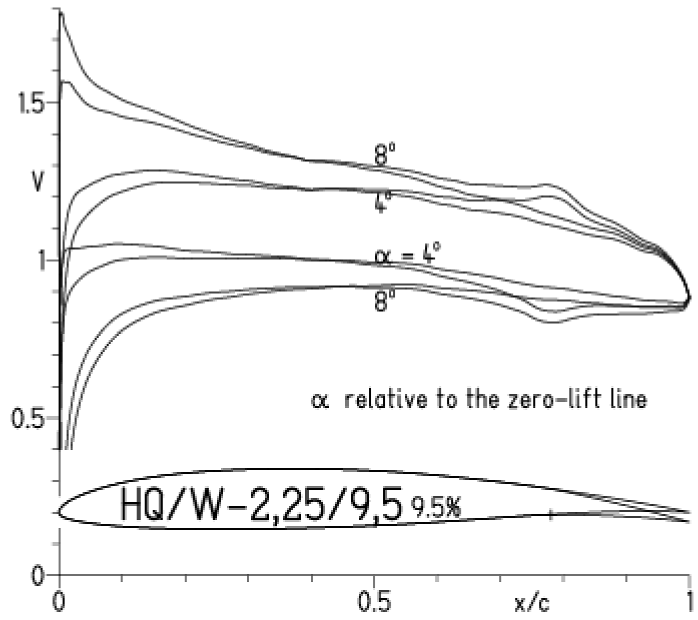


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

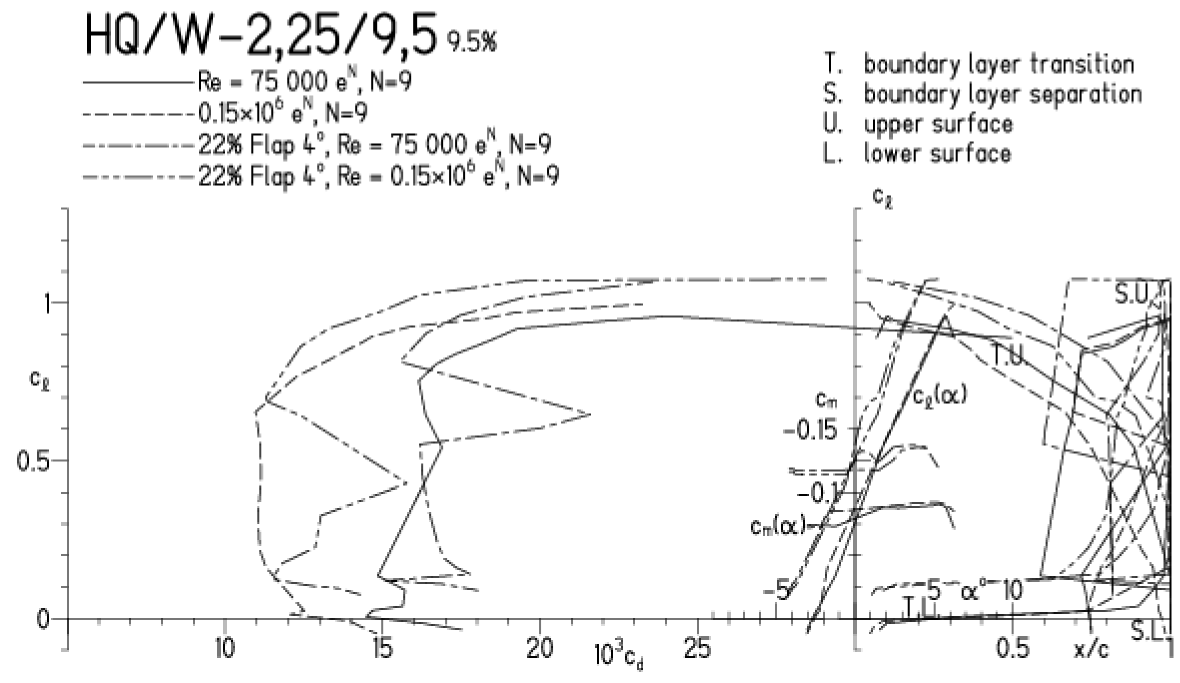


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

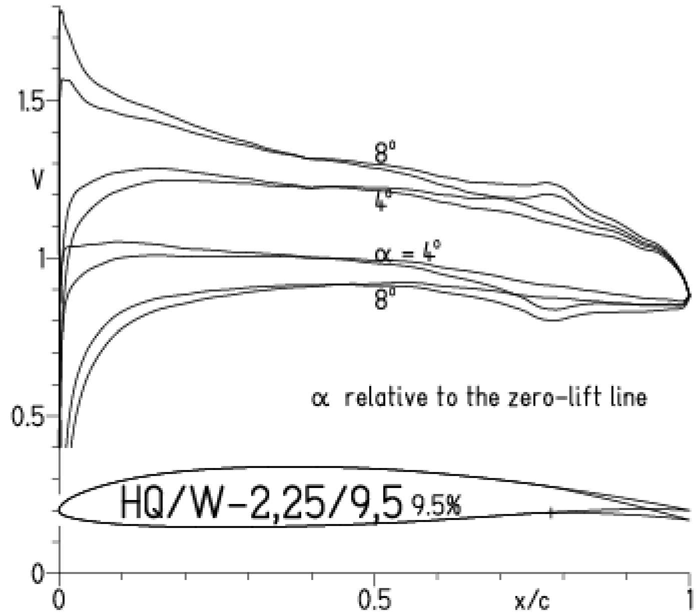


EPPLER 2005 V. 8.5.07 R

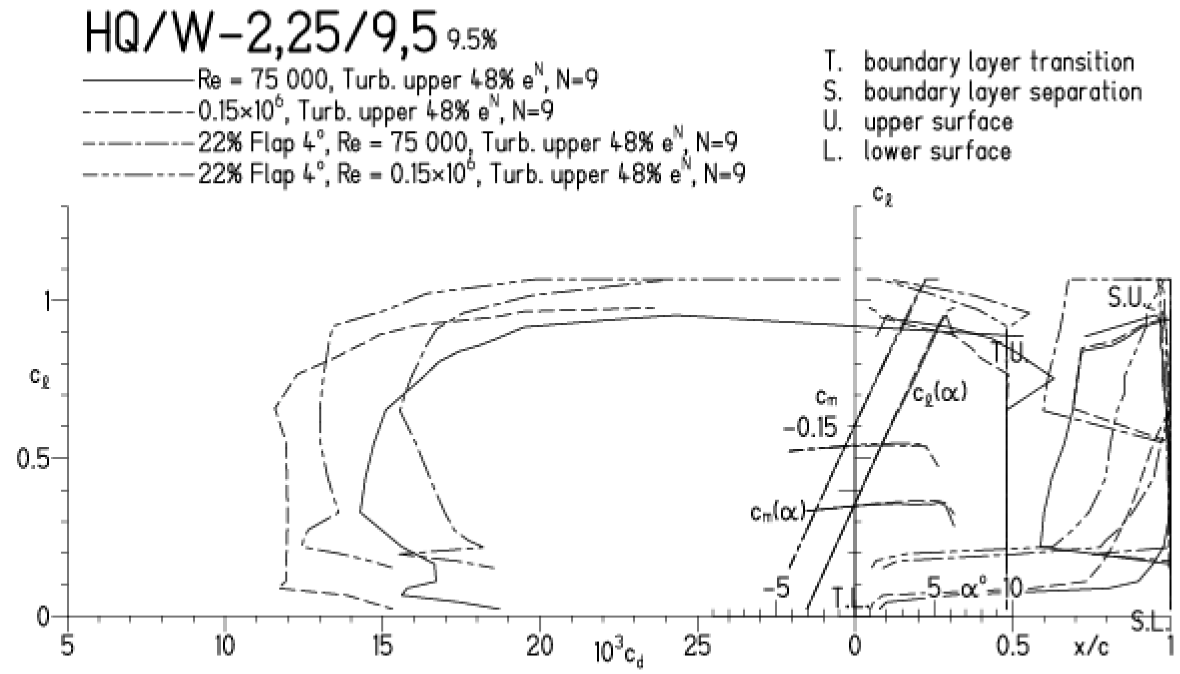


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

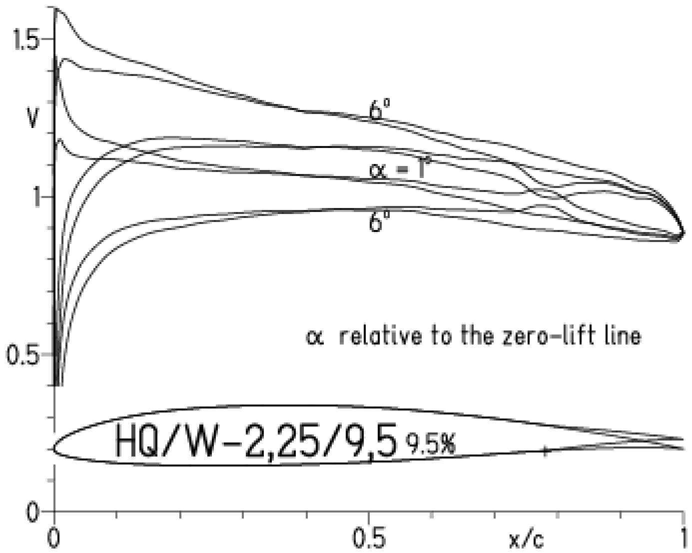


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

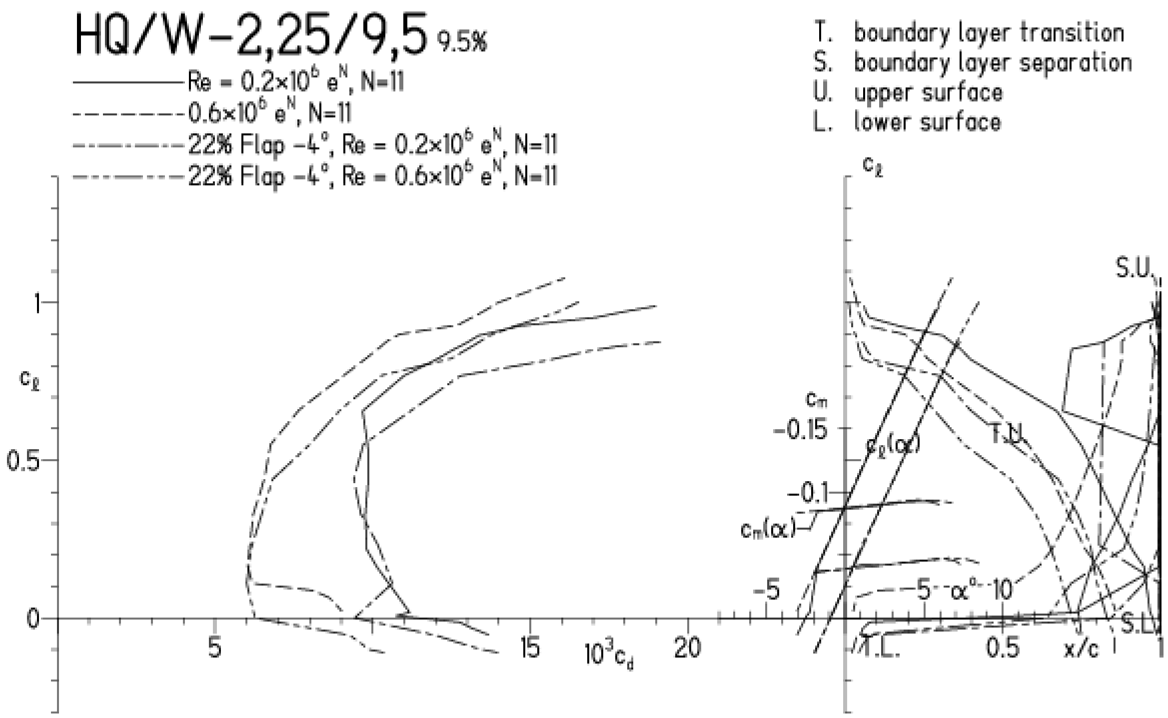


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

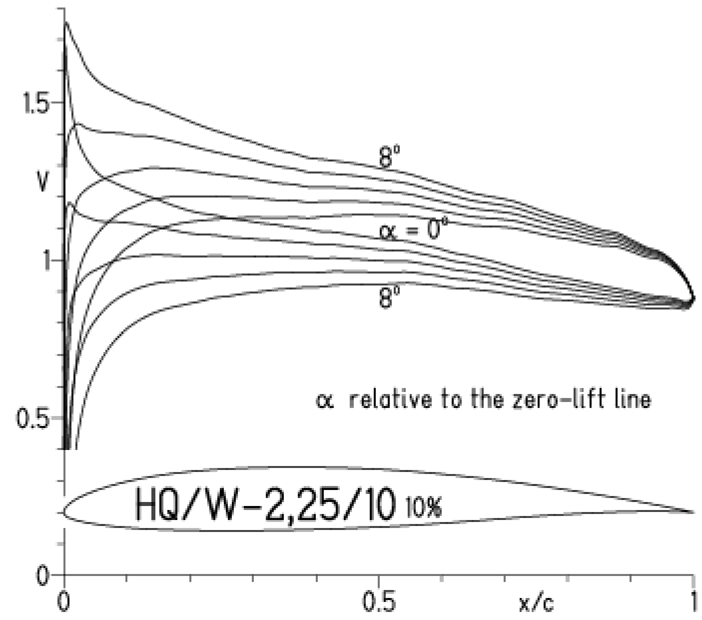


EPPLER 2005 V.

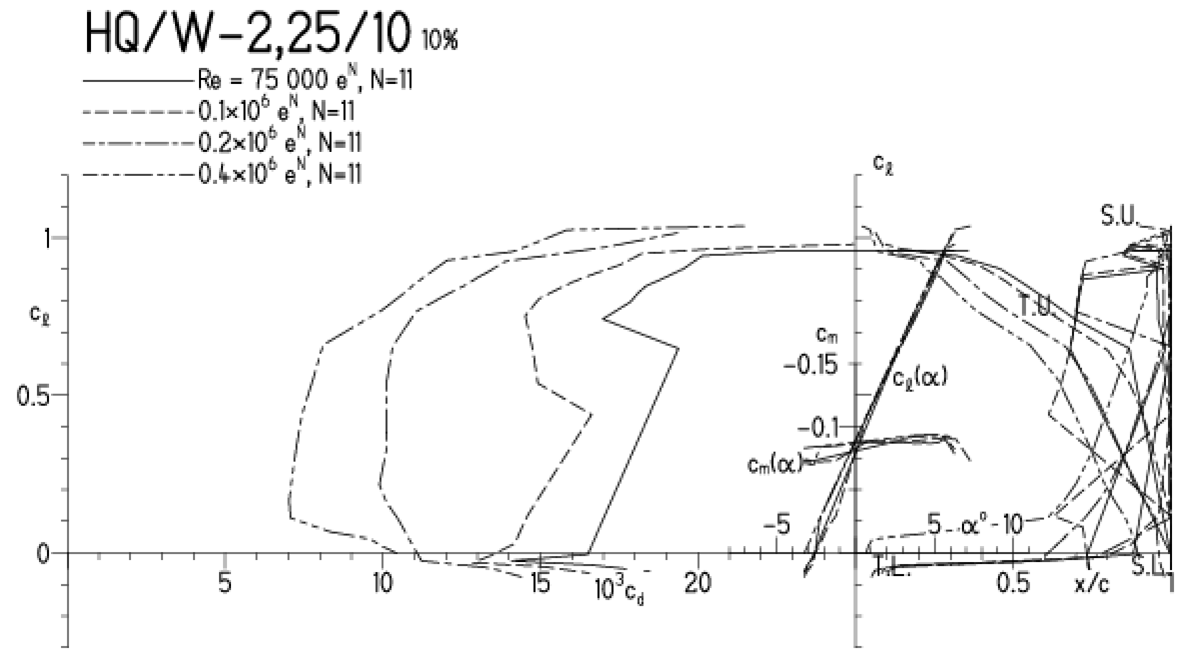


<u>HQ/W-2,25/10</u>, N=11

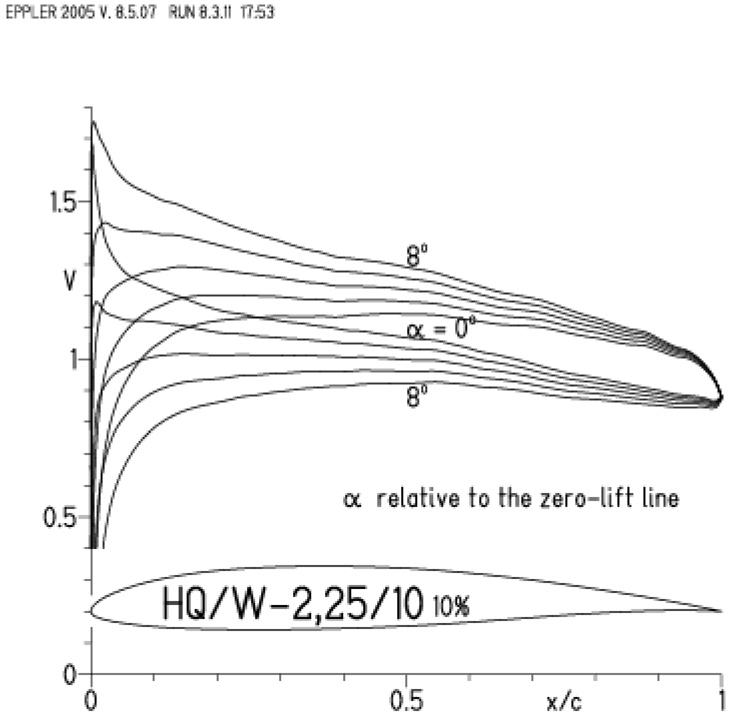
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

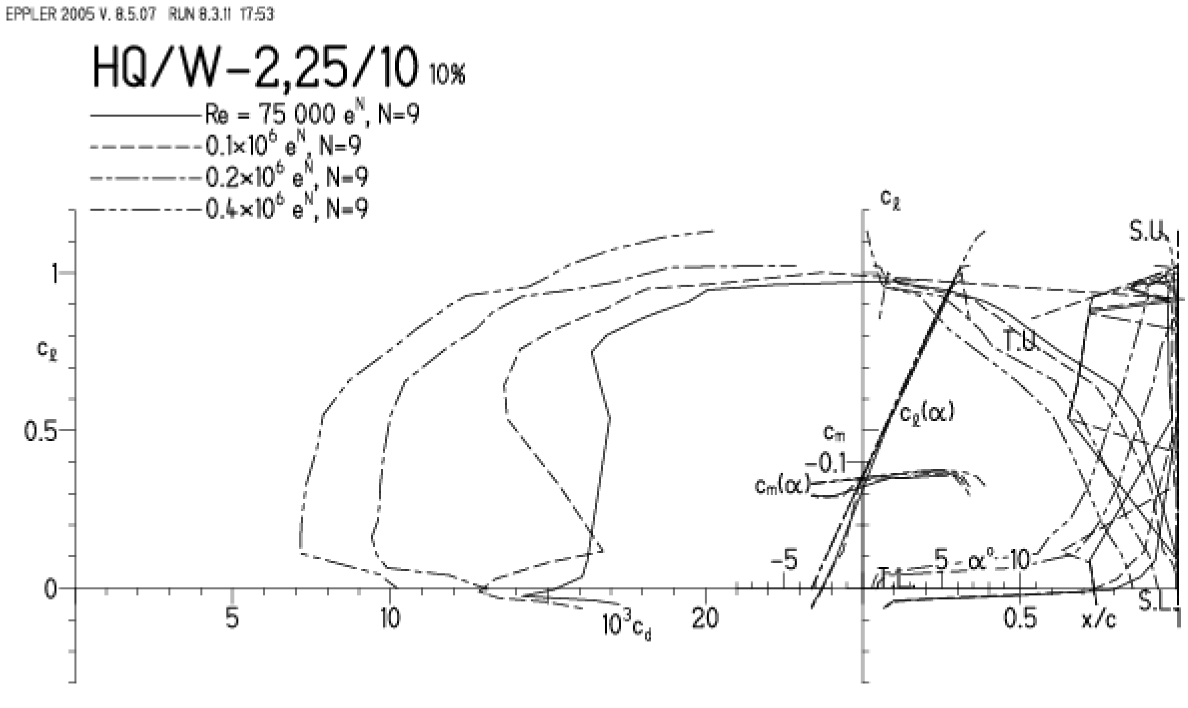


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

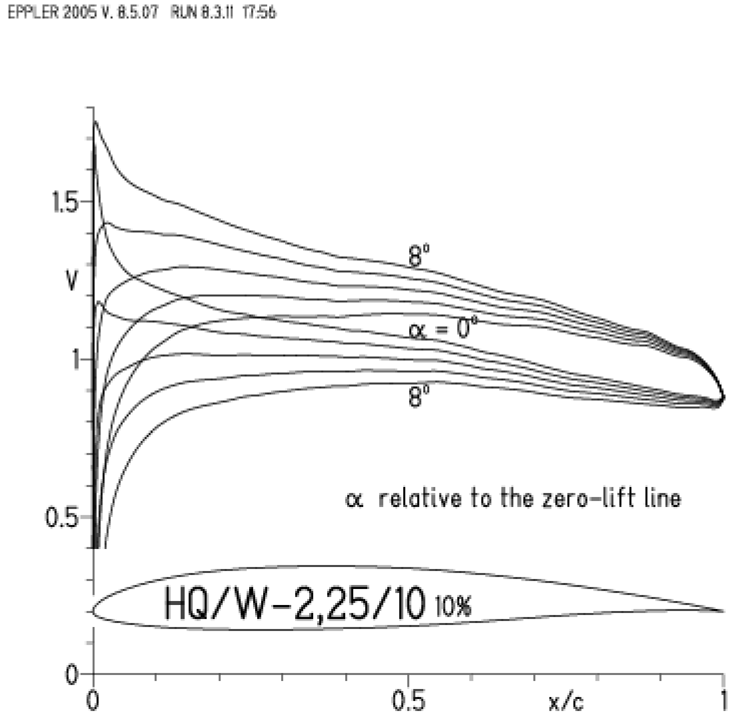


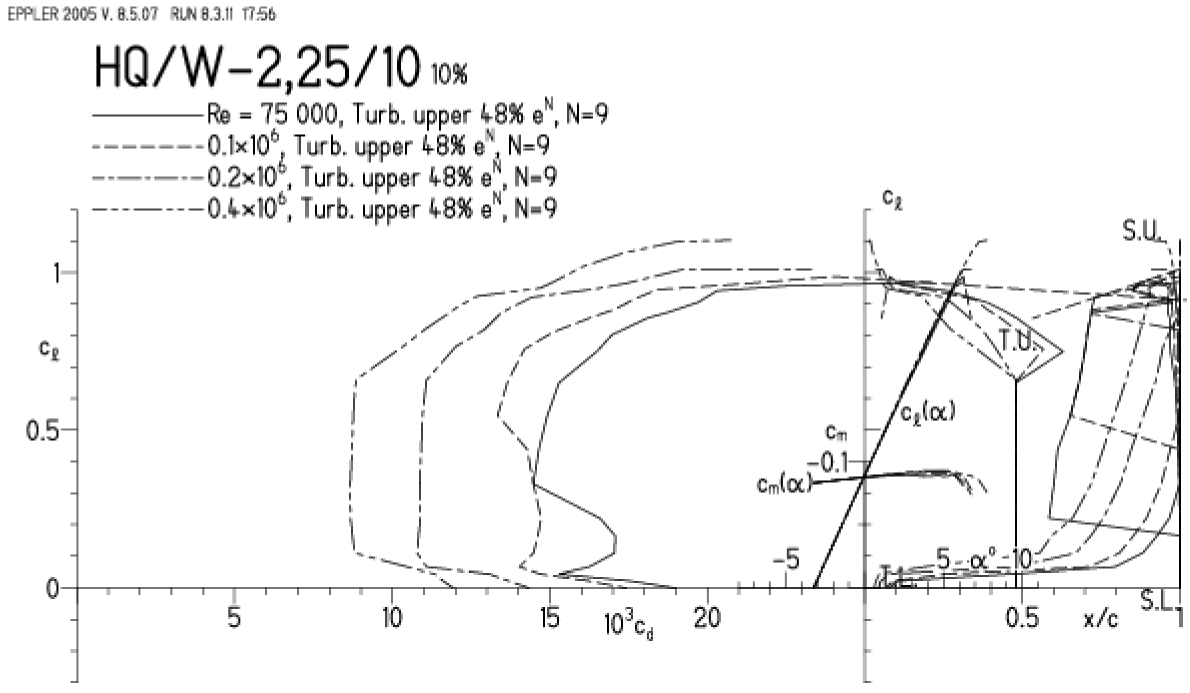
<u>HQ/W-2,25/10</u>, N=9





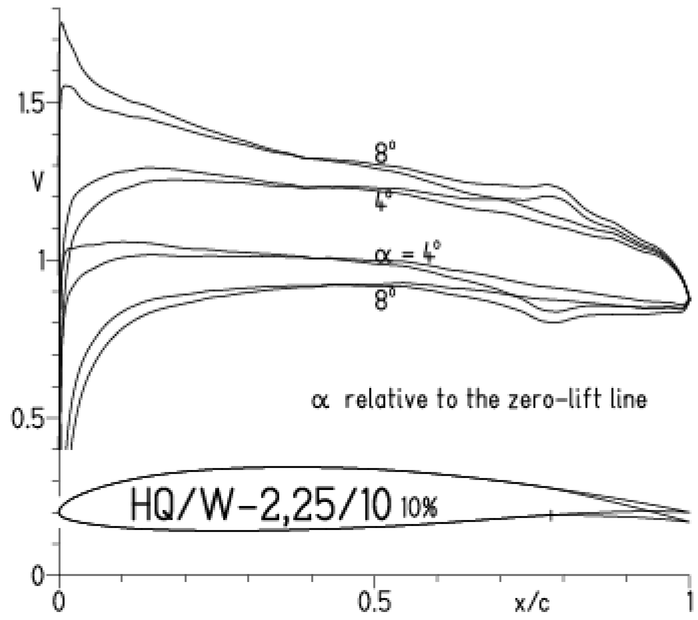
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



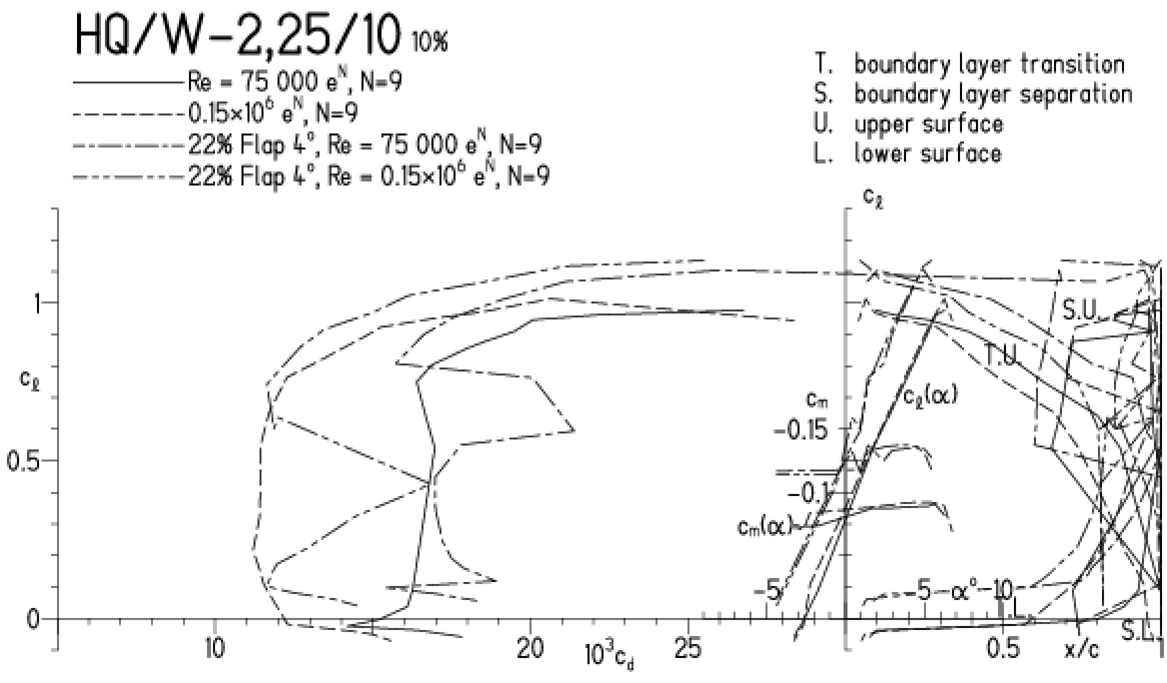


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

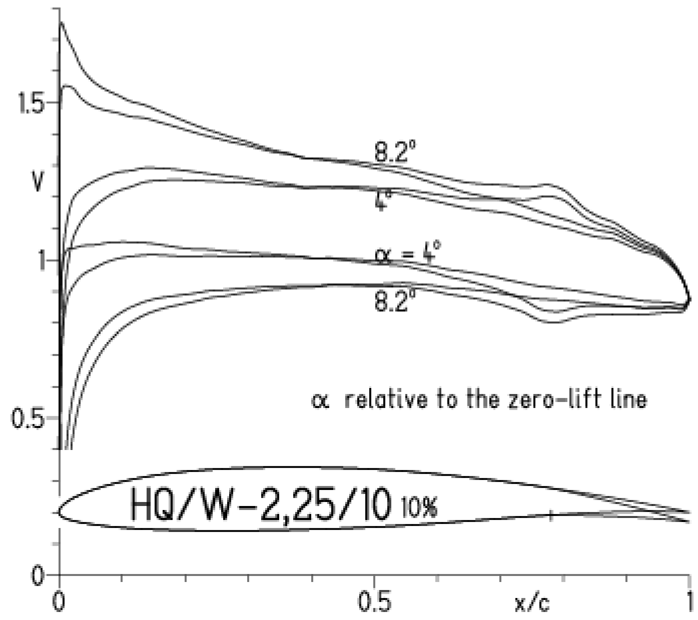


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

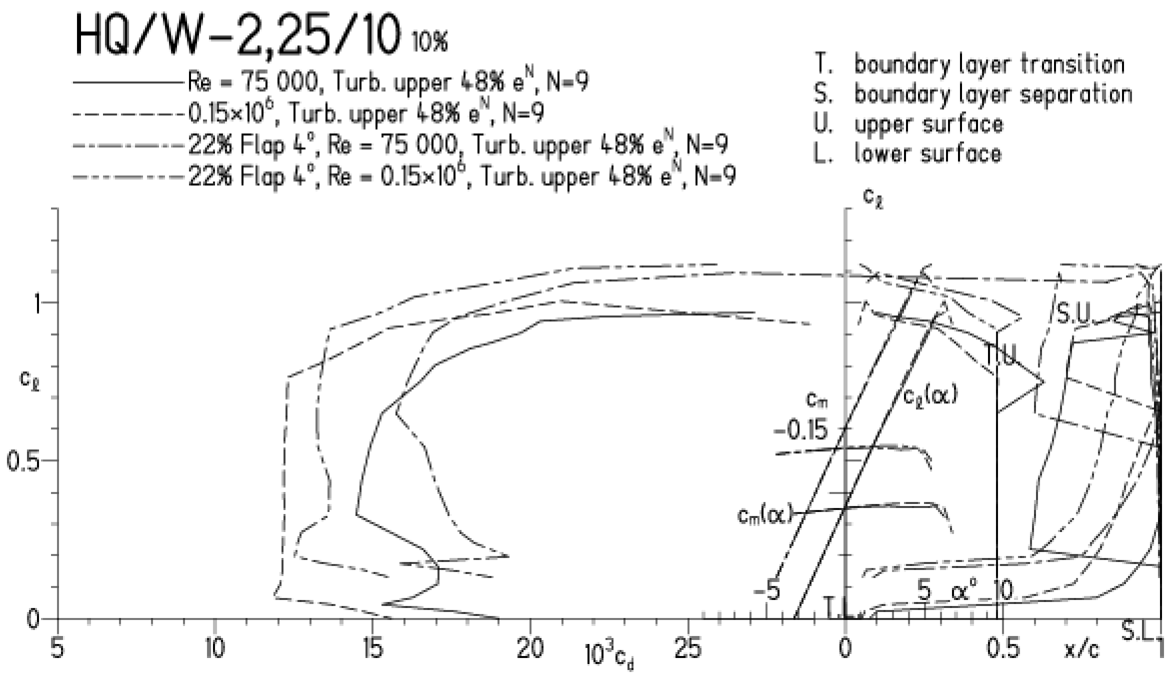


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

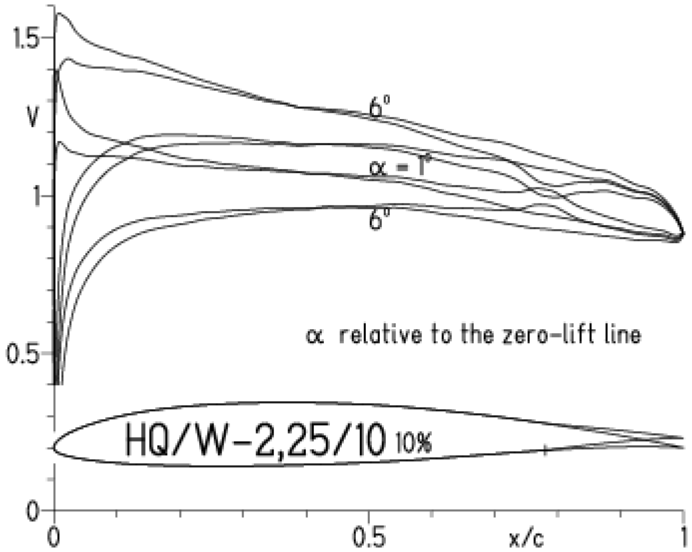


EPPLER 2005 V. 8.5.07 RUN 8.3

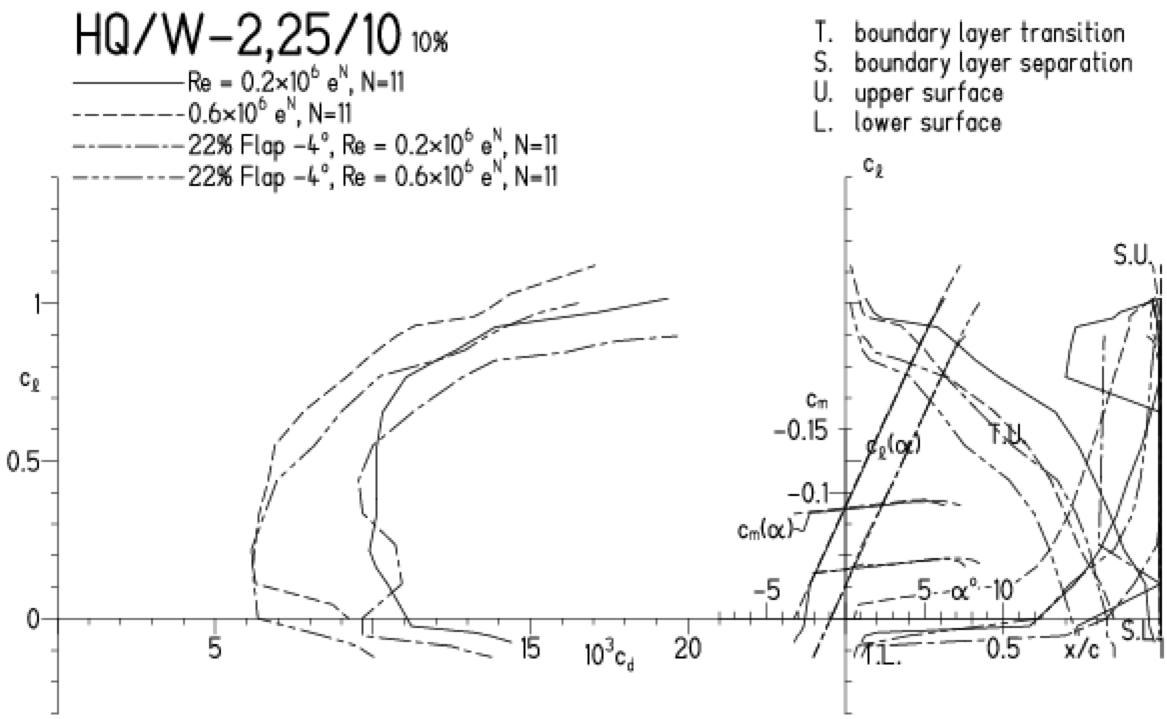


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

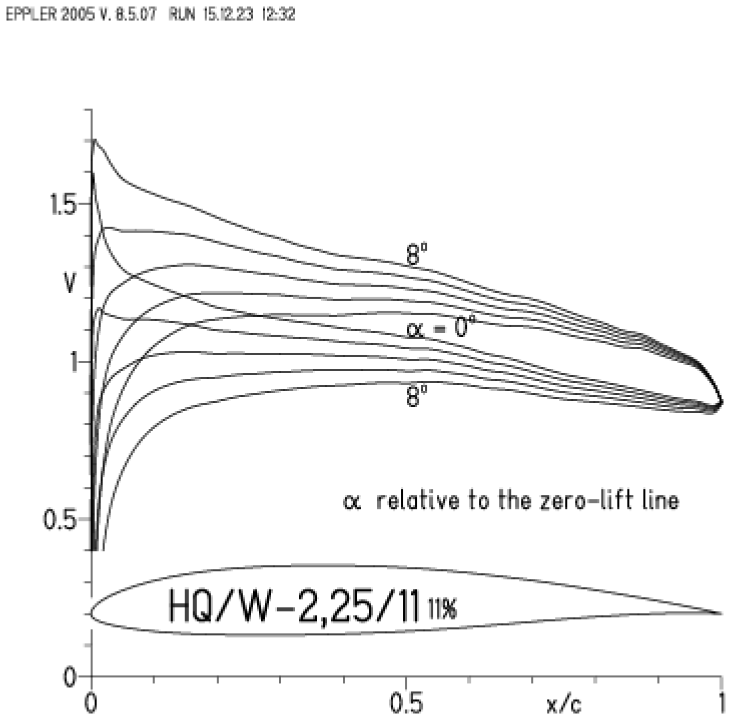
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

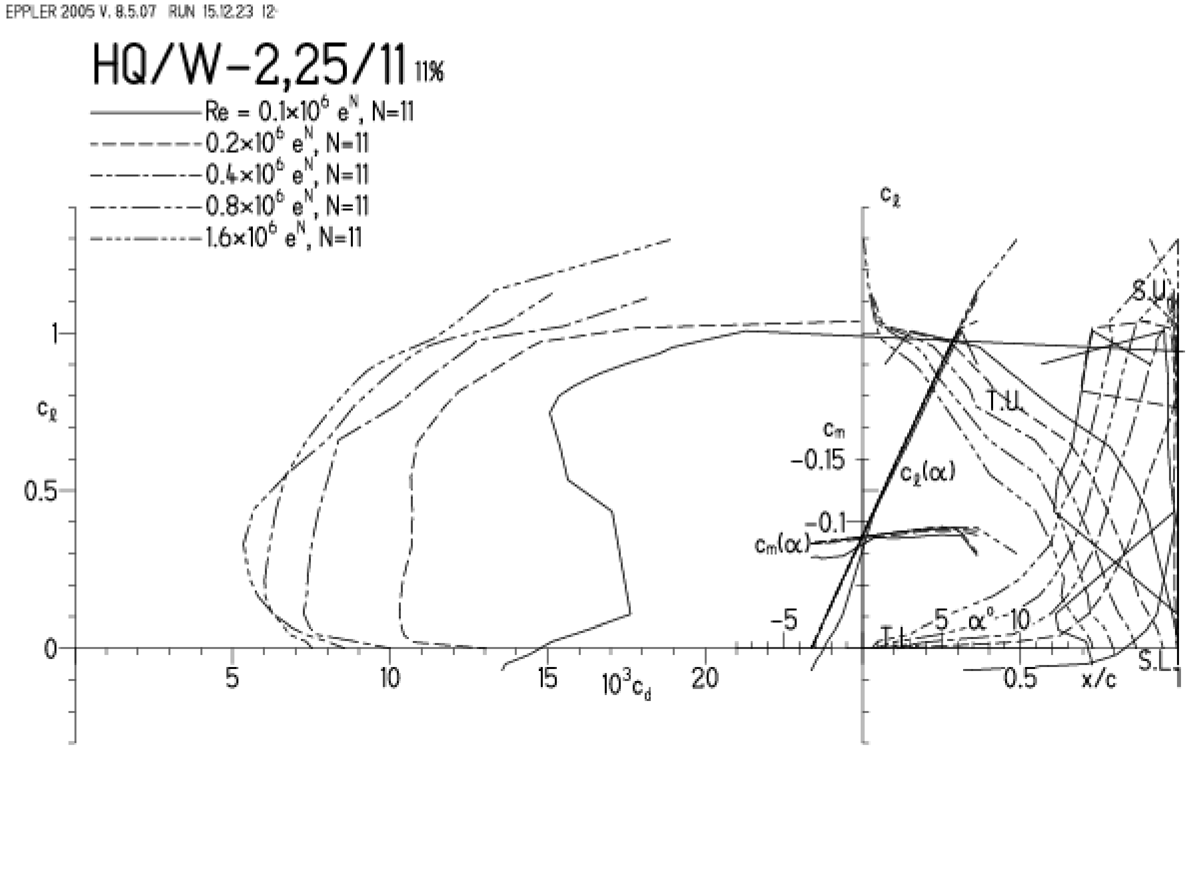


EPPLER 2005 V. 8.5.07 RUN

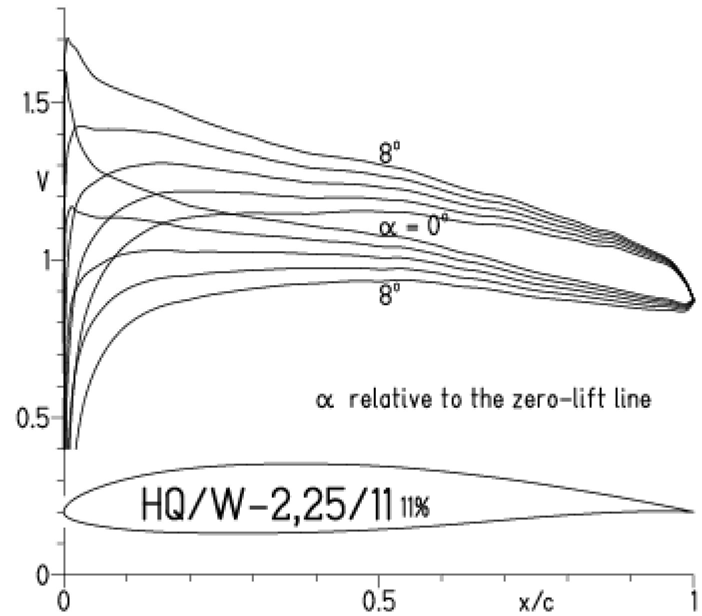


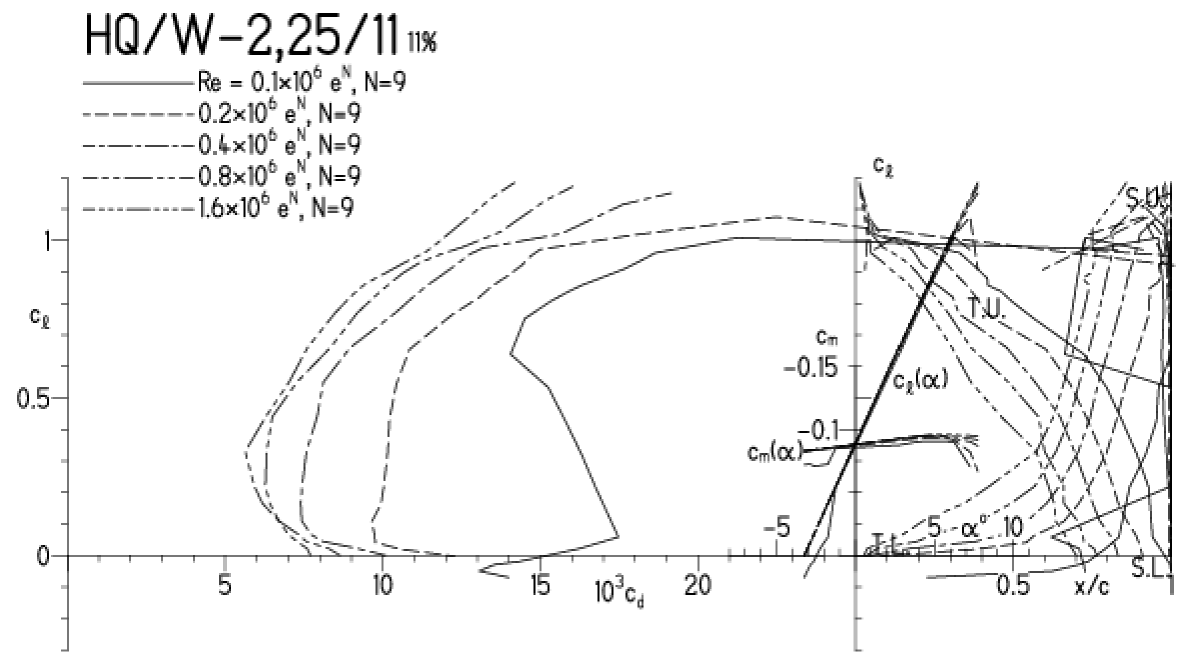
HQ/W-2,25/11, N=11



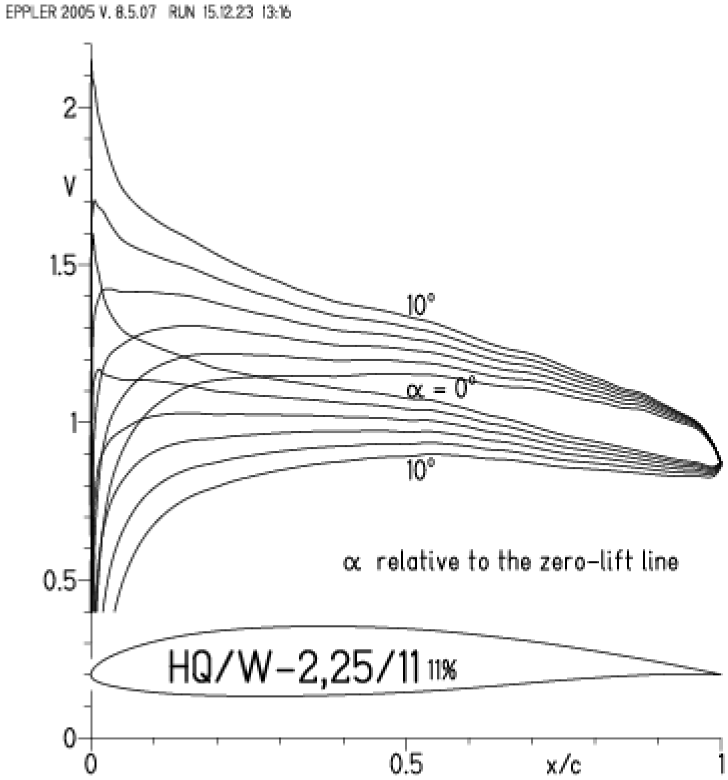


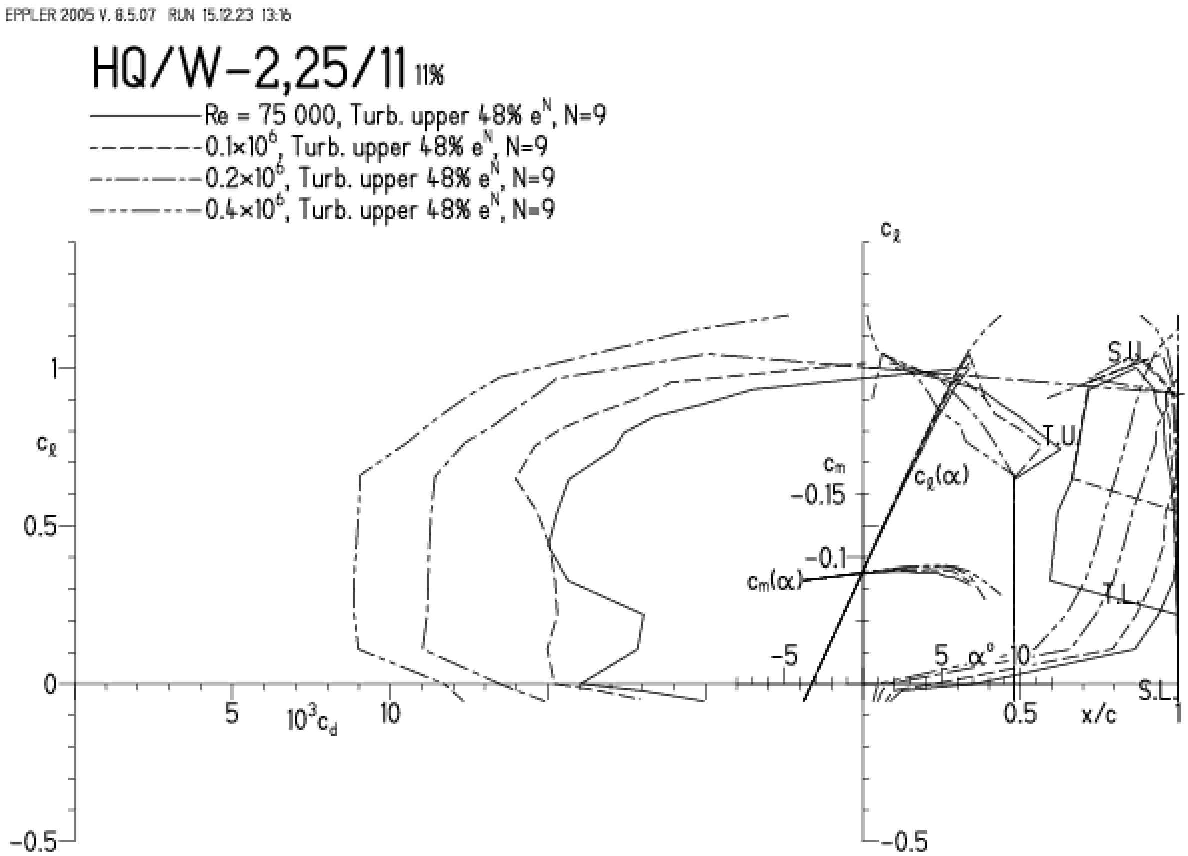
HQQ/W-2,25/11, N=9





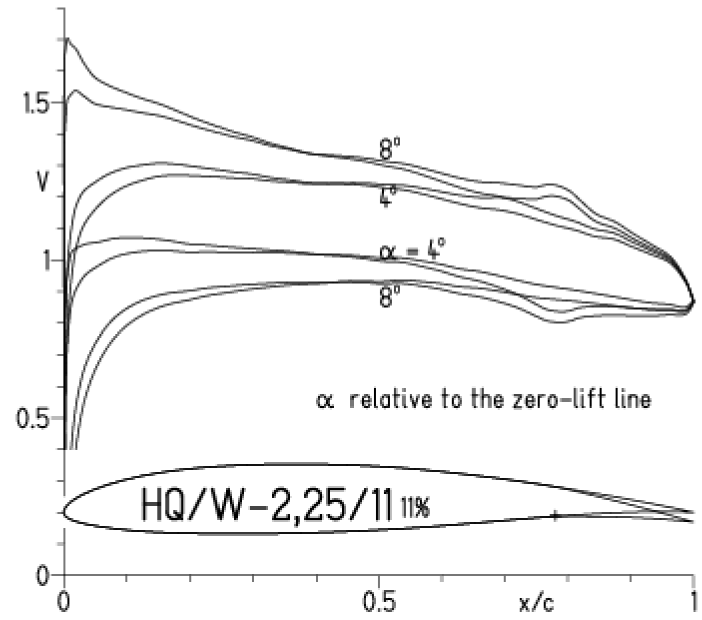
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



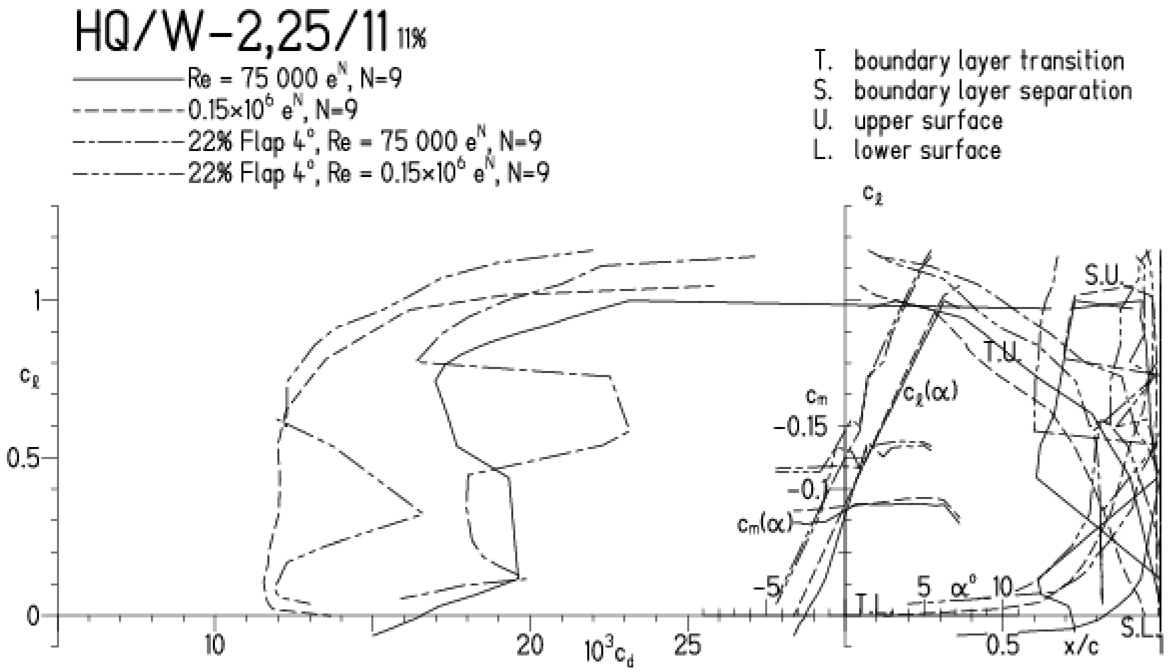


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

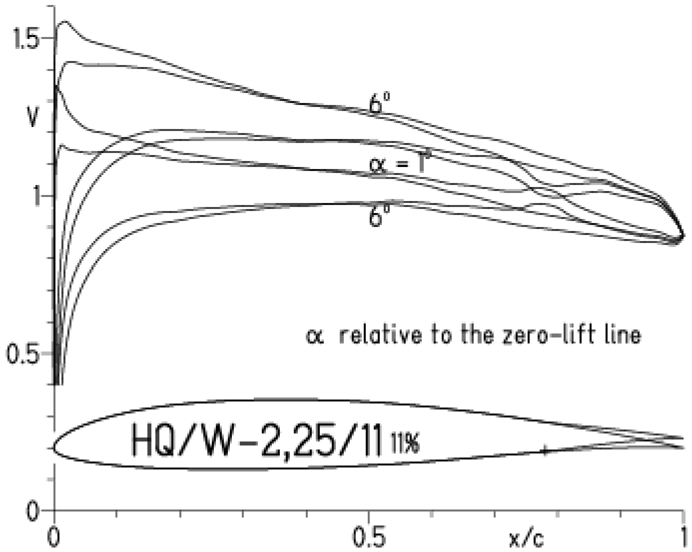


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

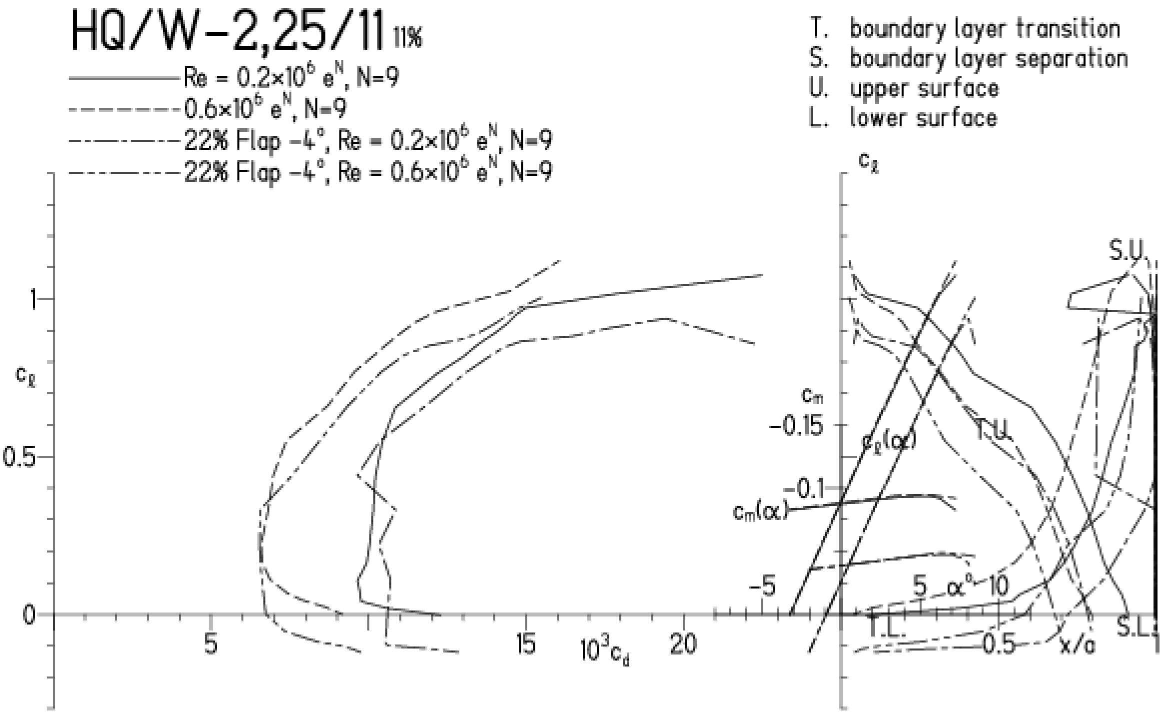


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

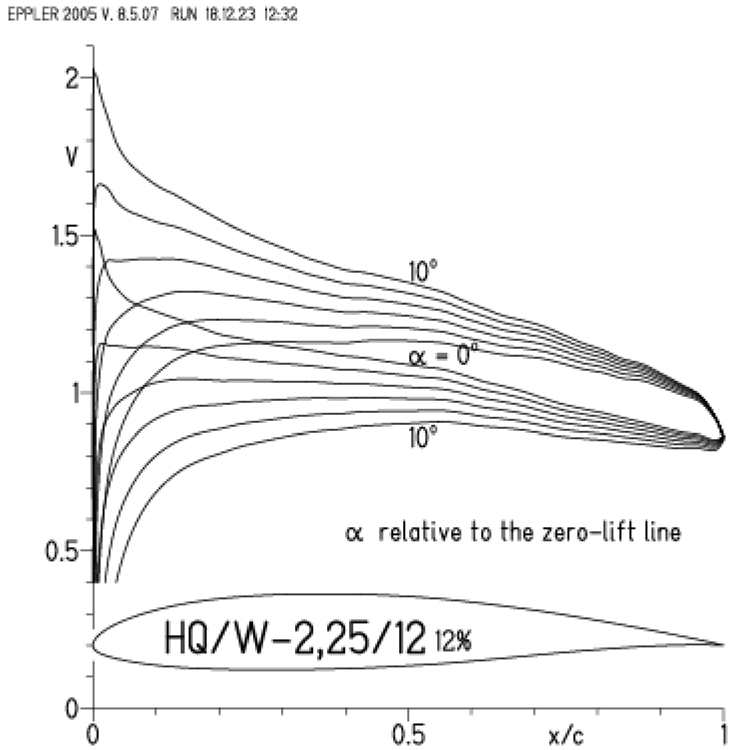
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

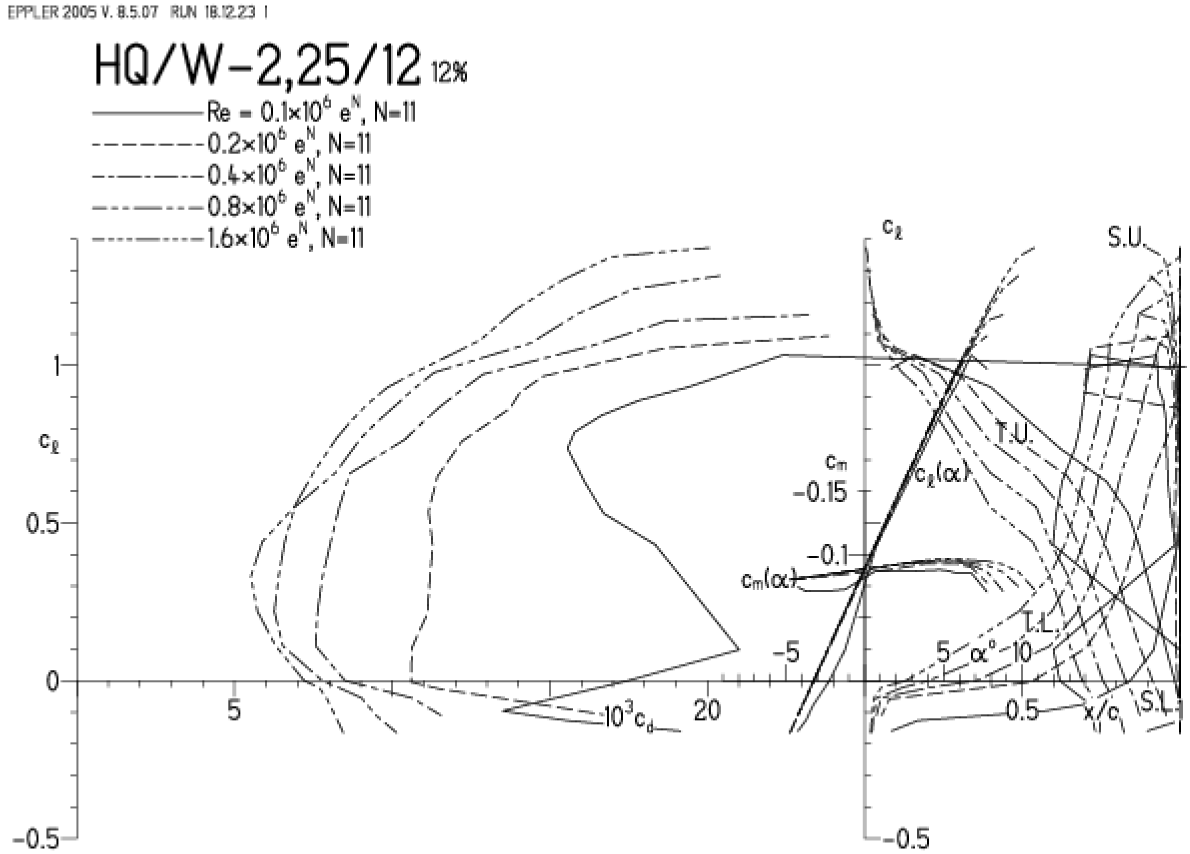


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

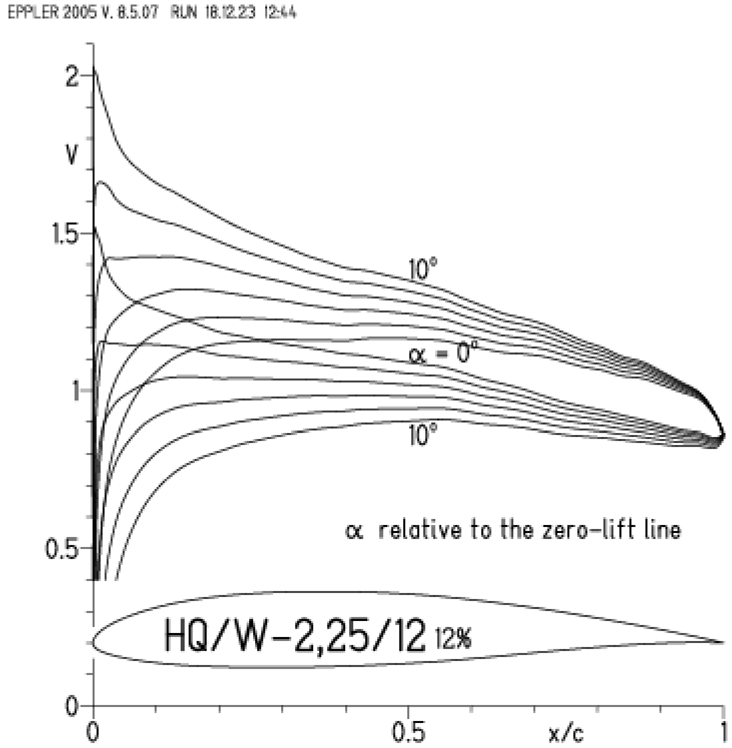


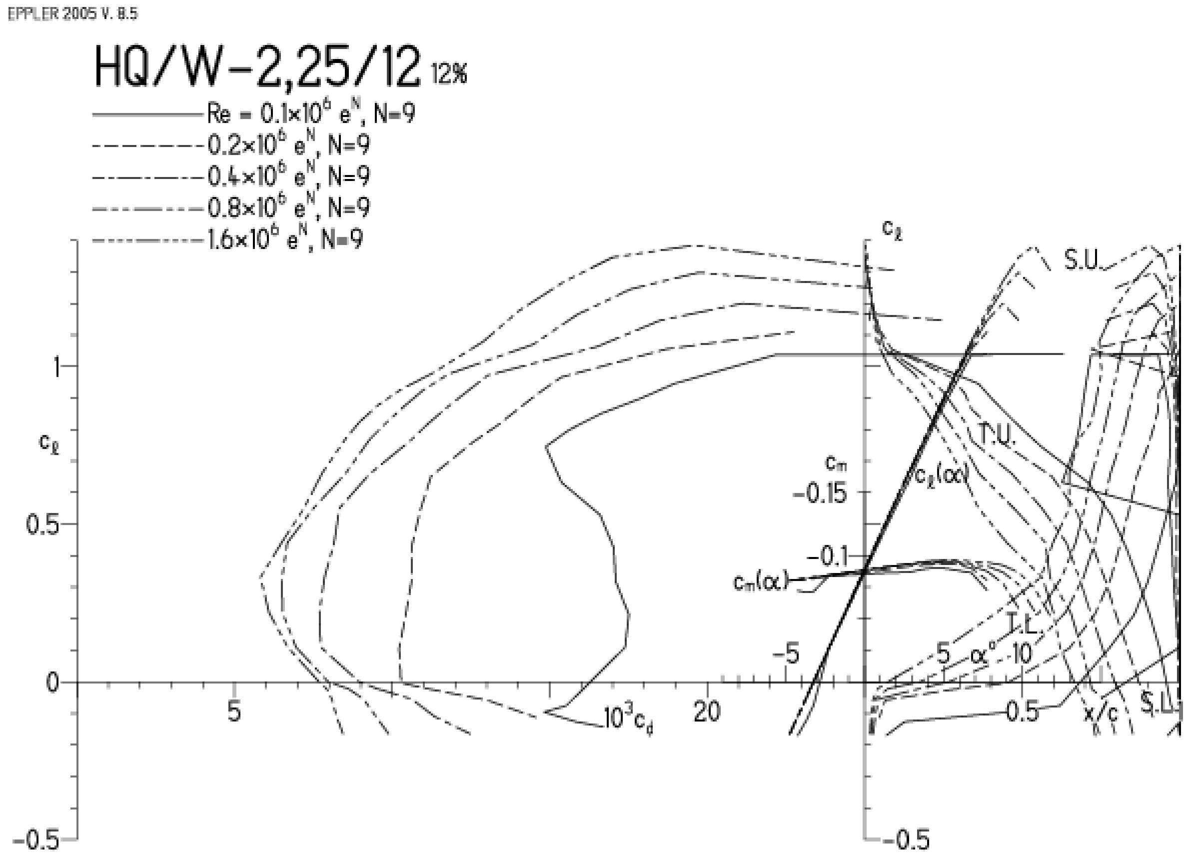
<u>HQ/W-2,25/12</u>, N=11



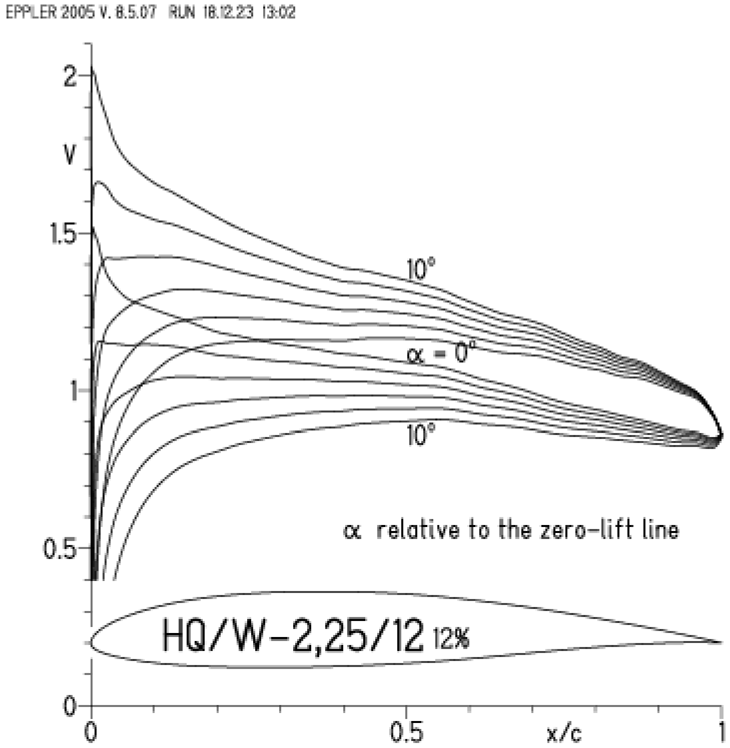


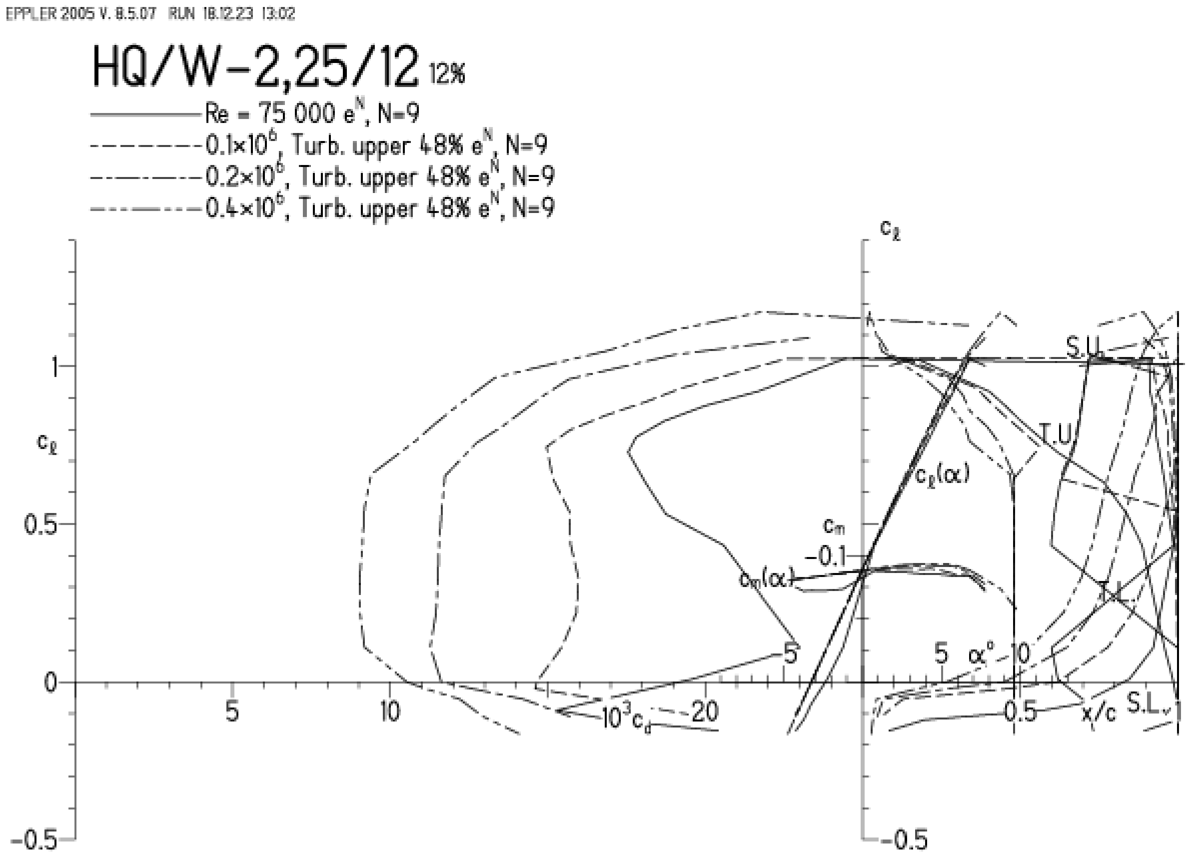
<u>HQ/W-2,25/12</u>, N=9





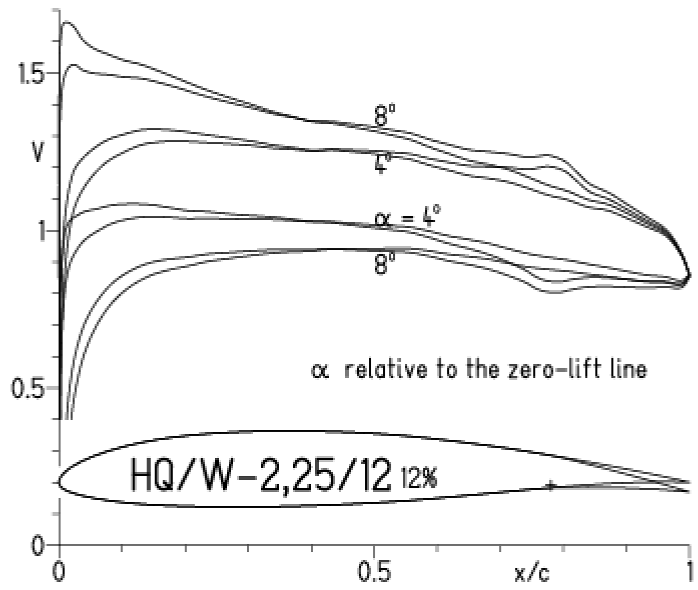
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



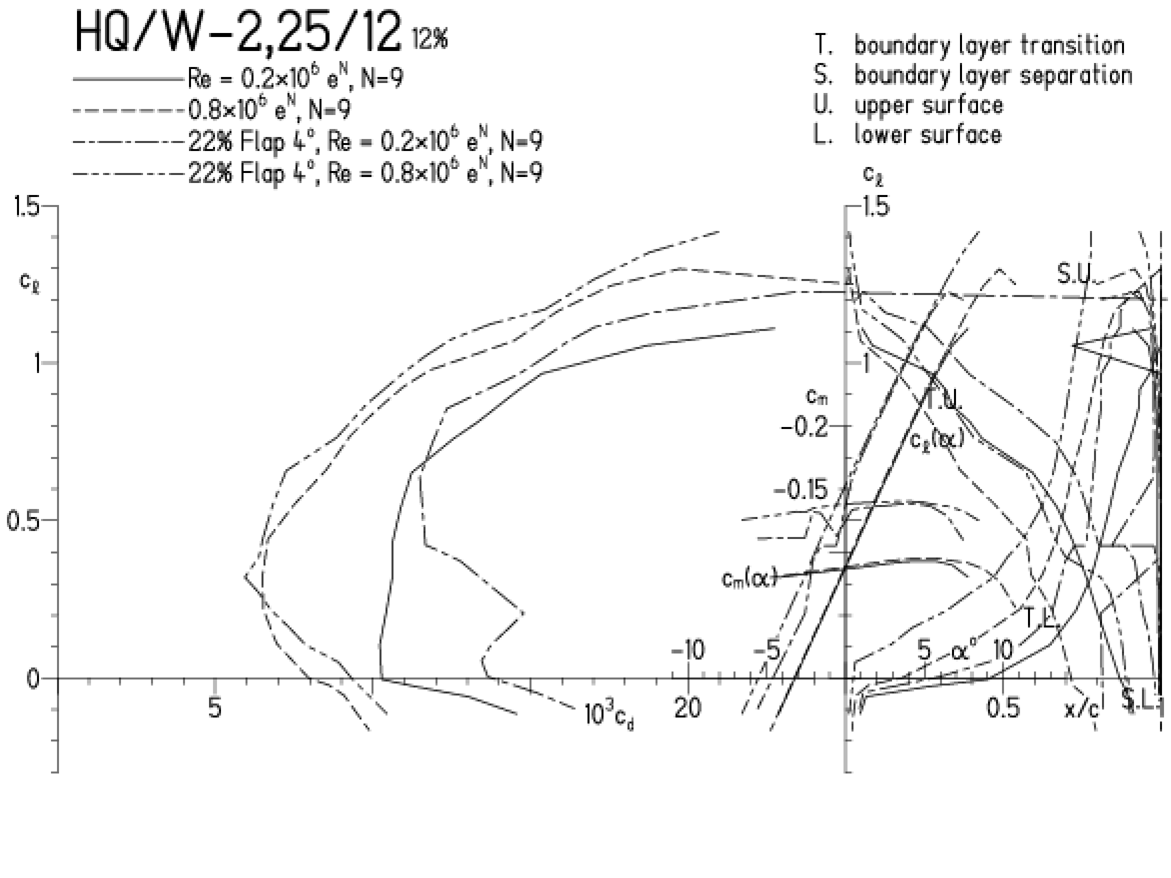


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

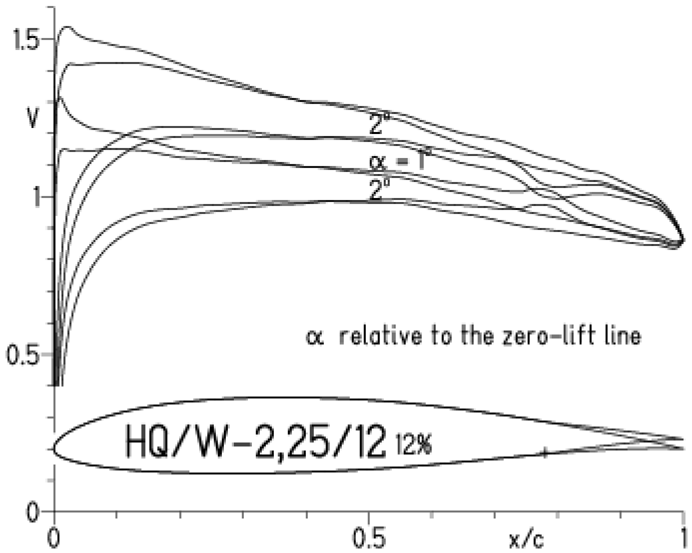


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

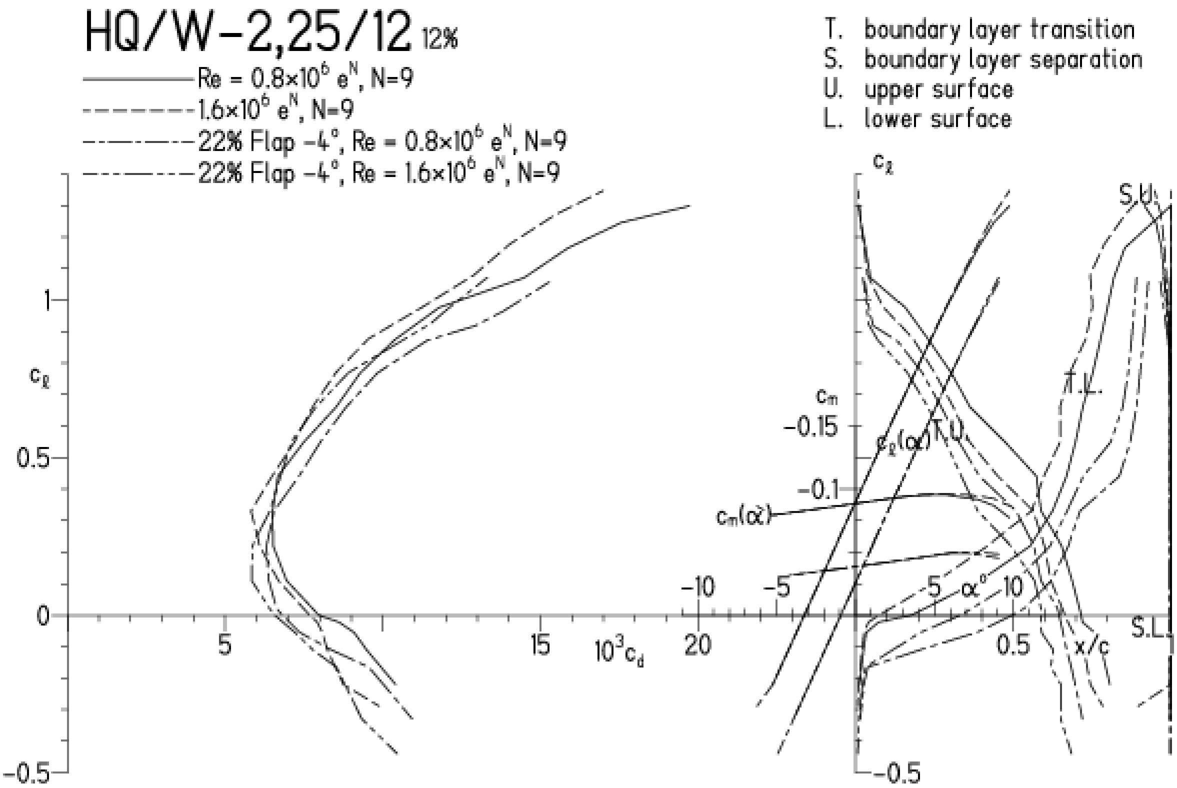


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

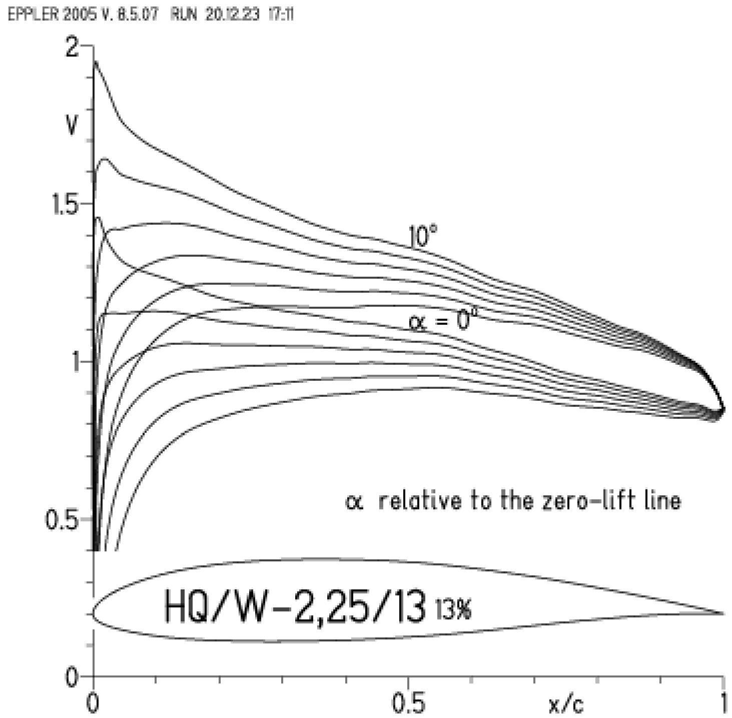
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

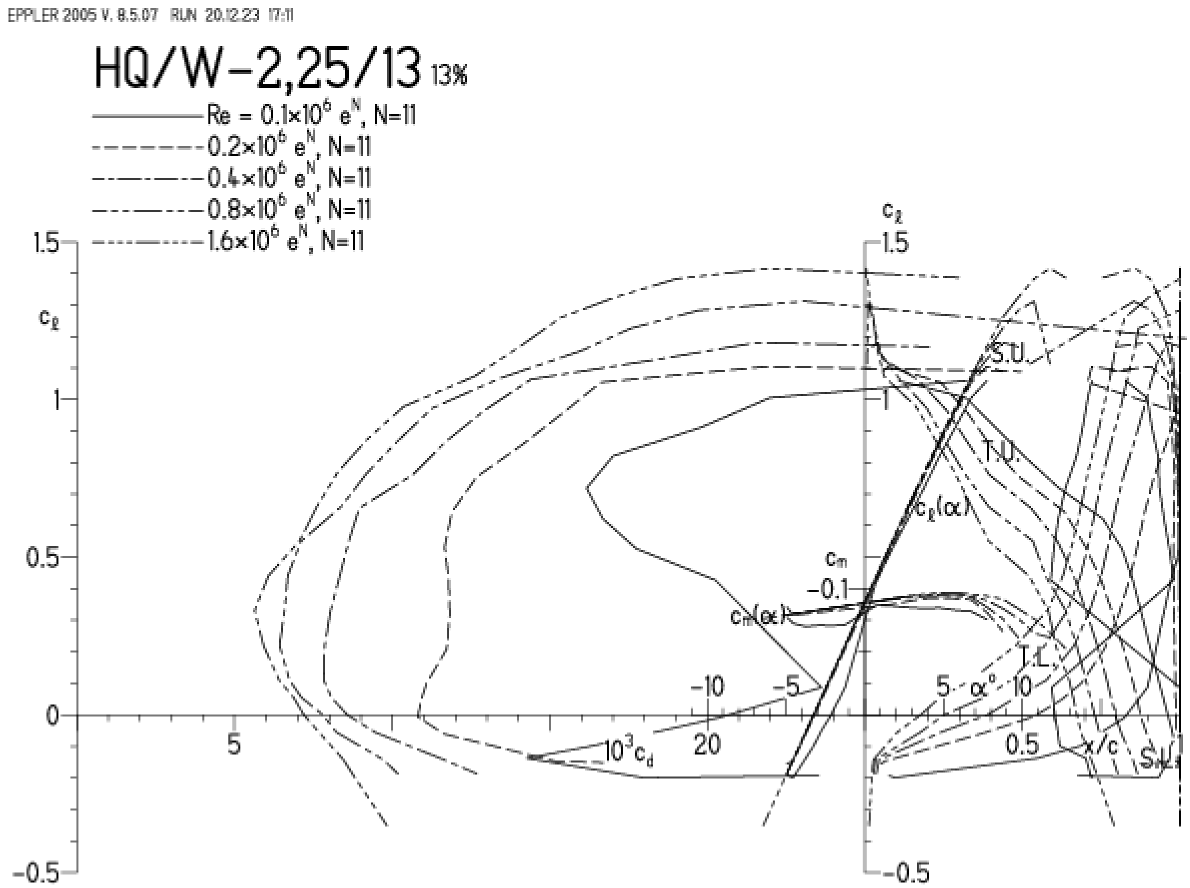


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

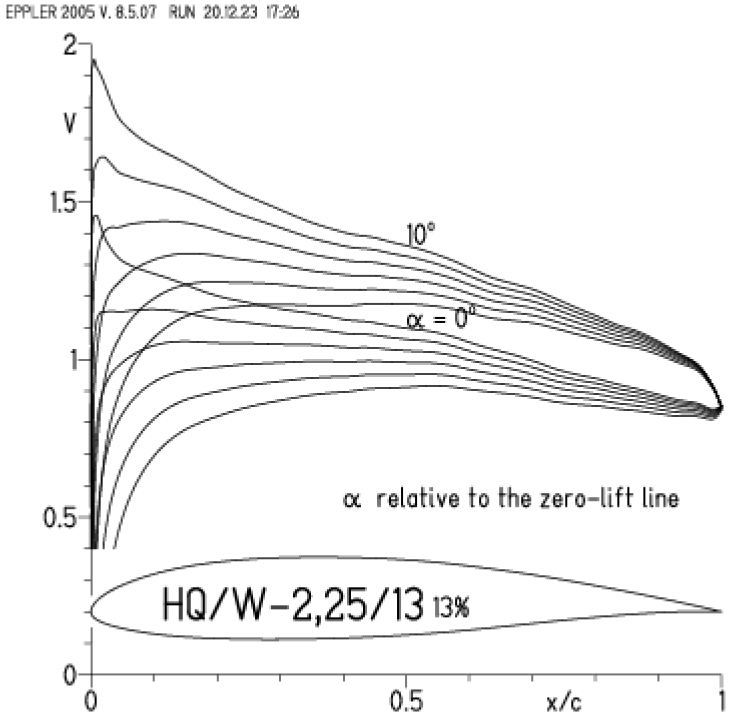


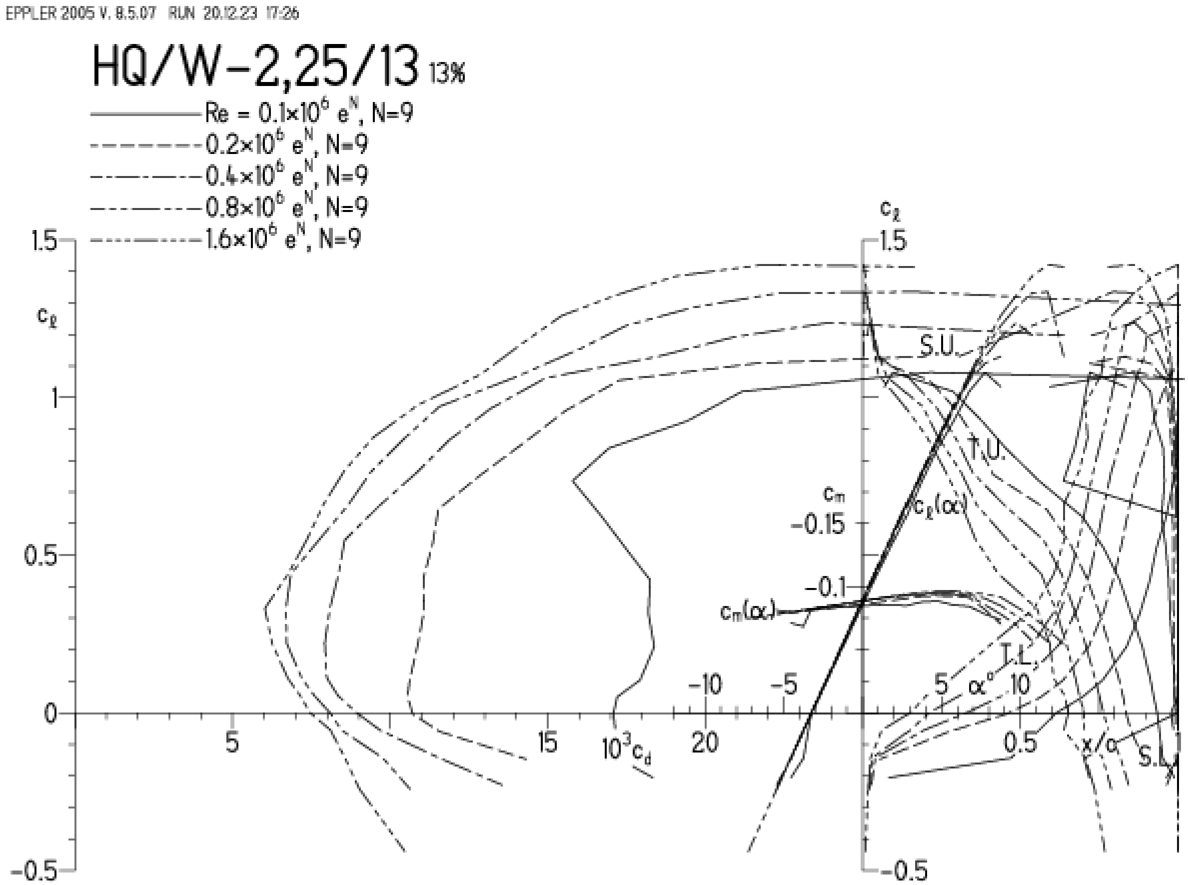
<u>HQ/W-2,25/13</u>, N=11



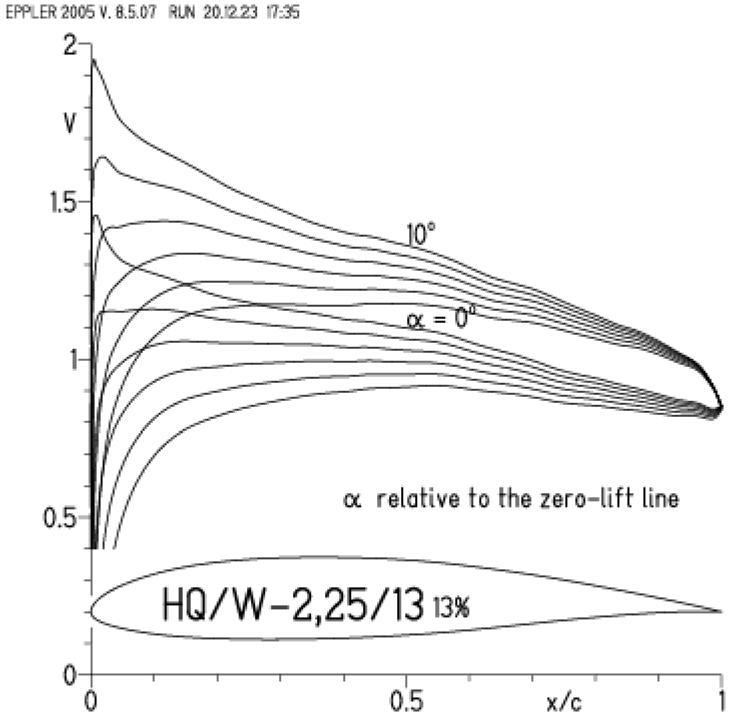


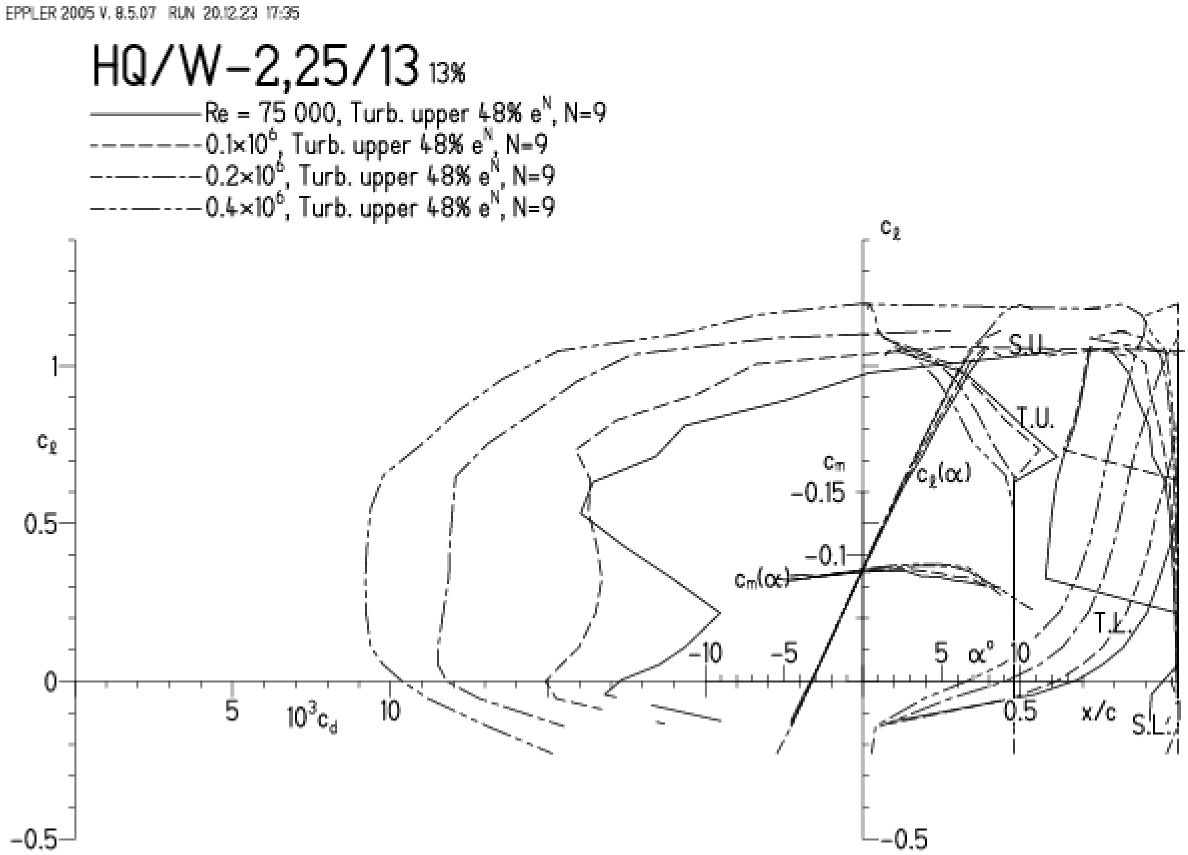
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
v
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

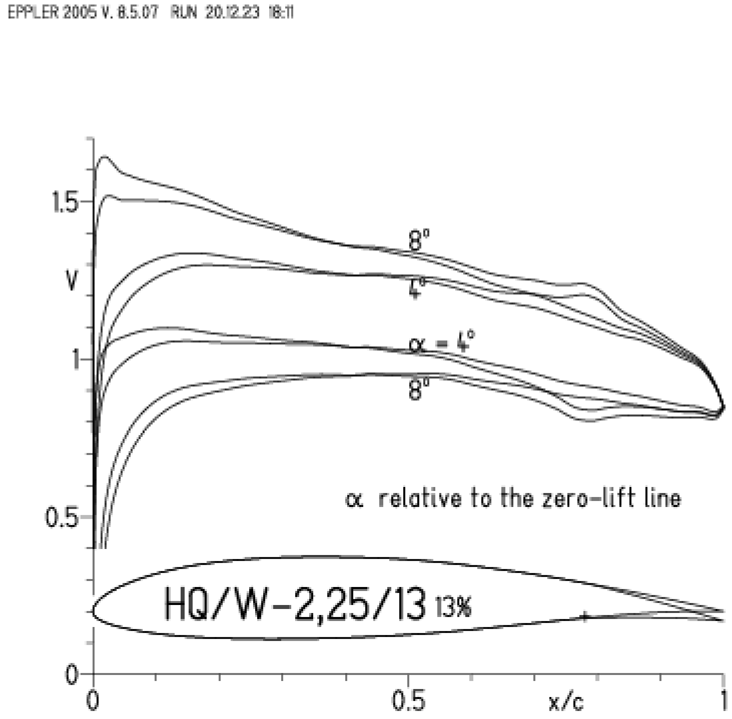

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
10³c_d
x/c

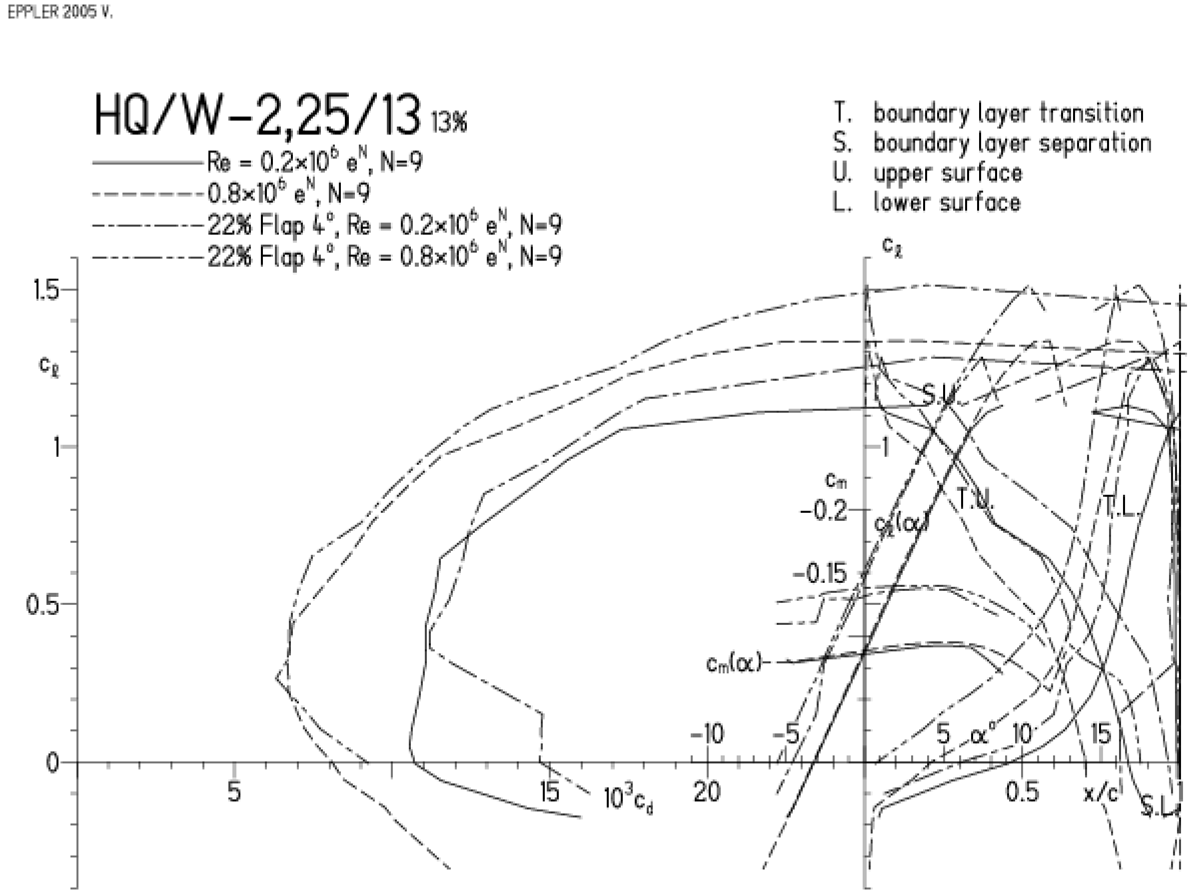
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



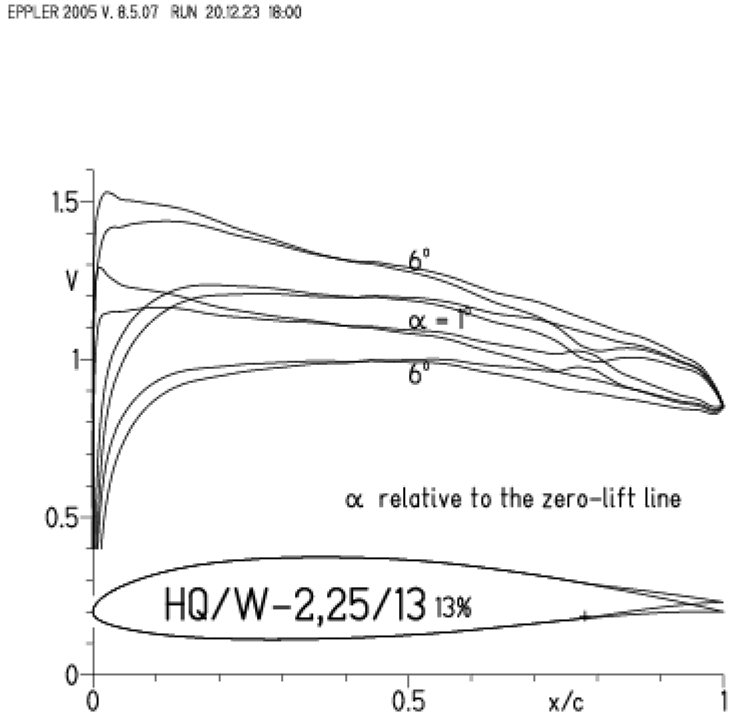


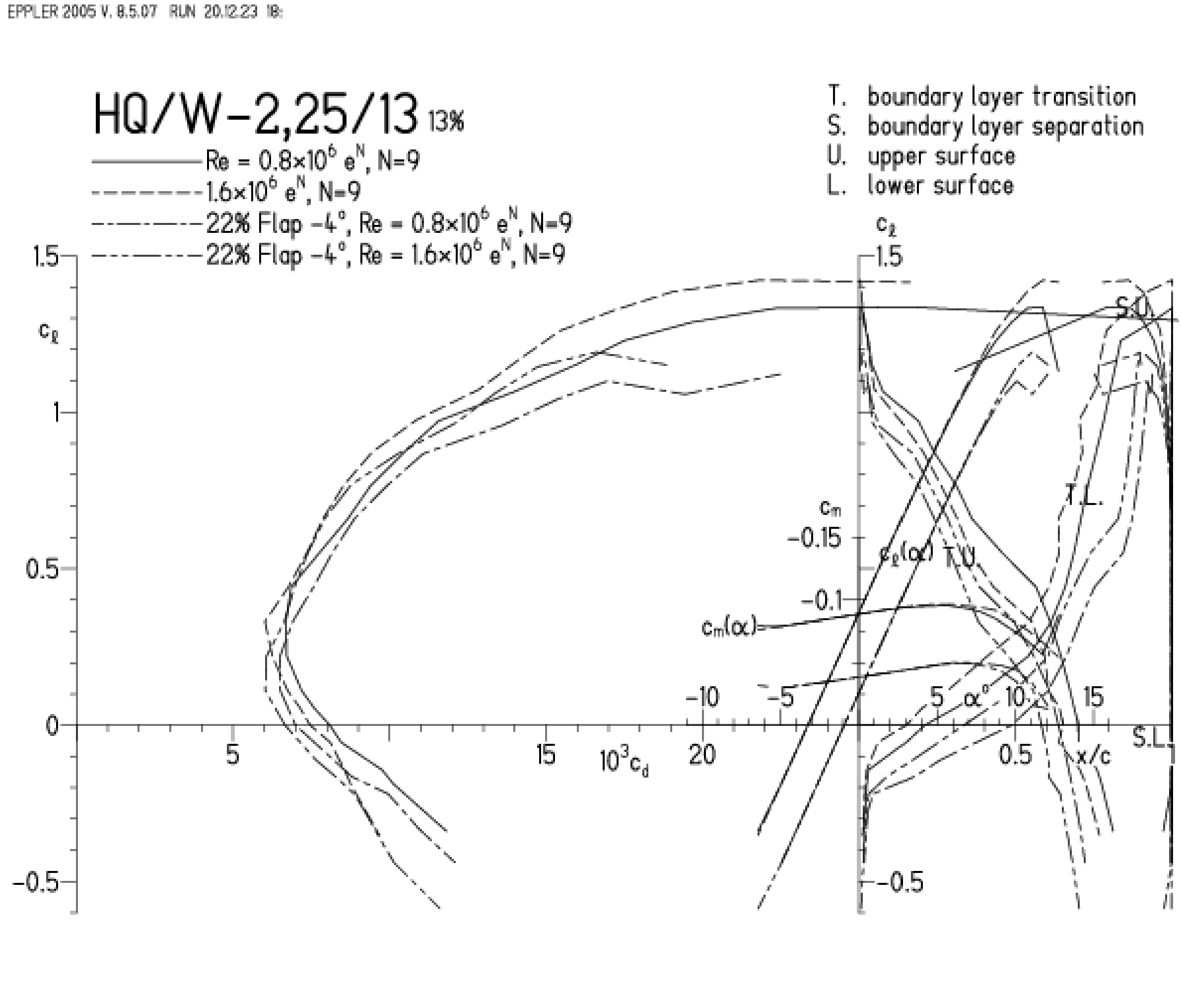
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



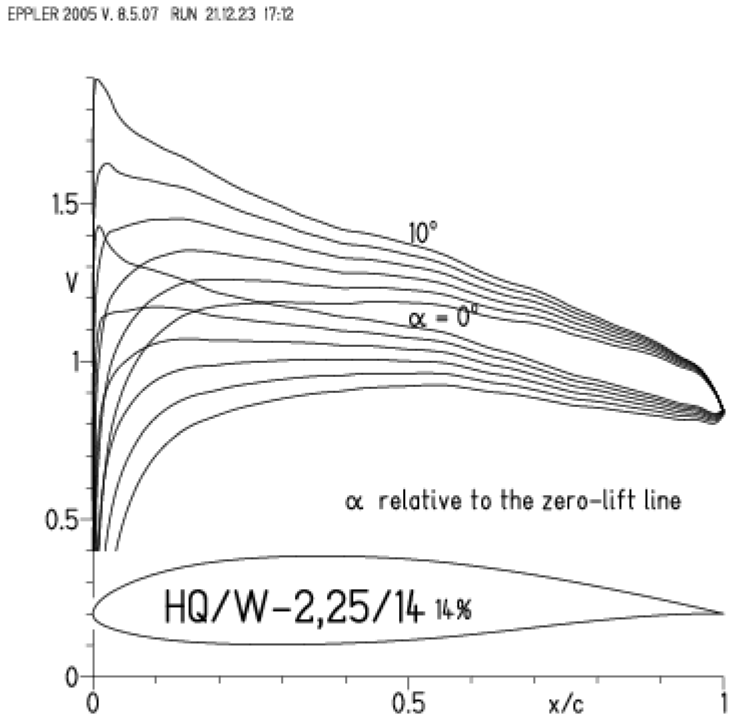


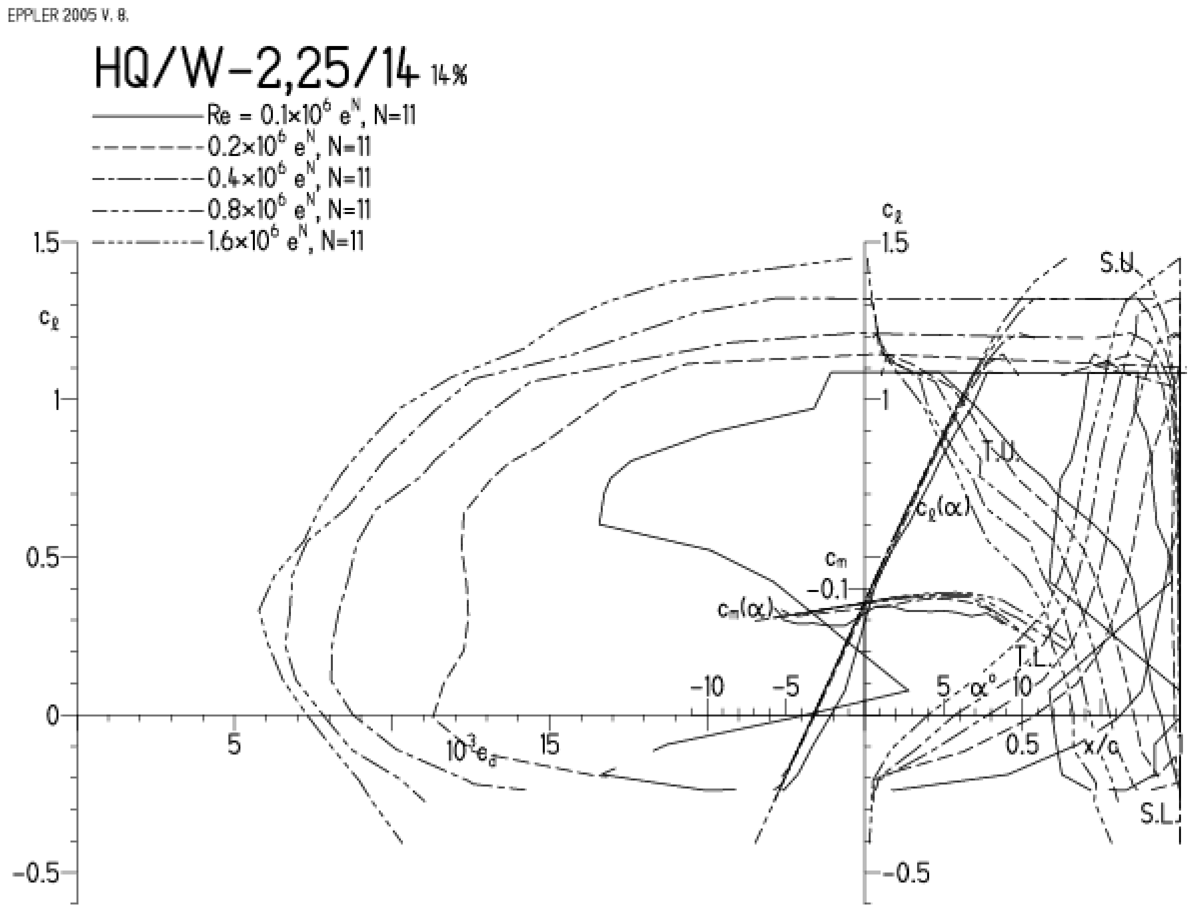
<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag



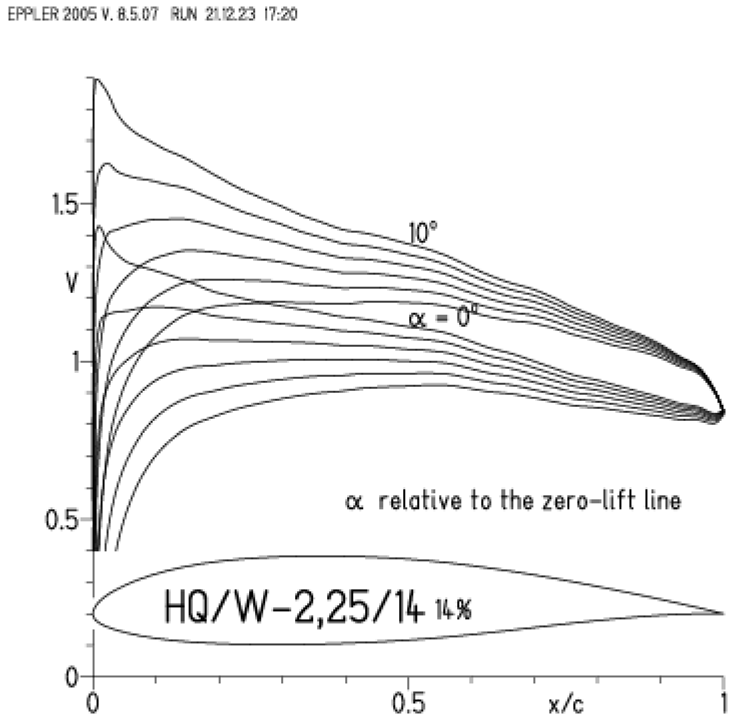


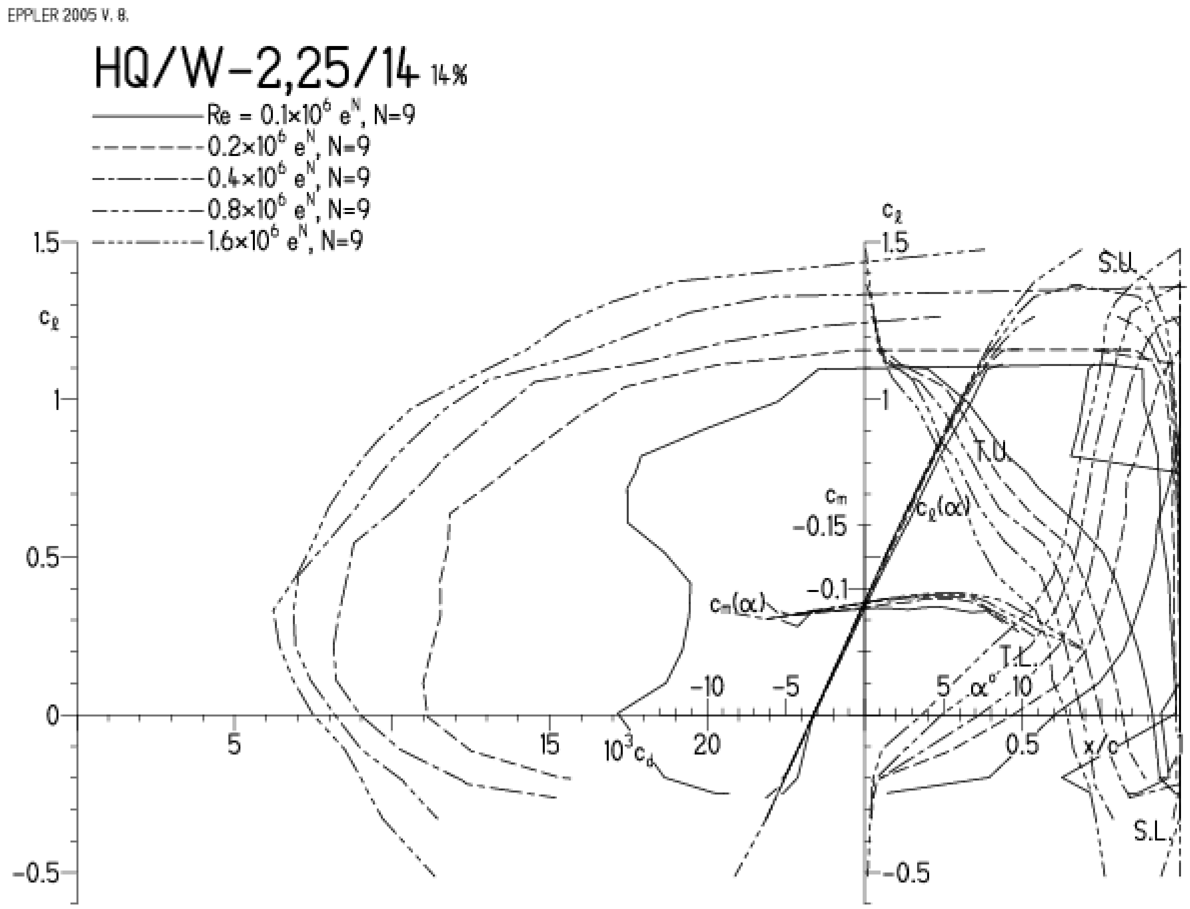
HQ/W-2,25/14, N=11



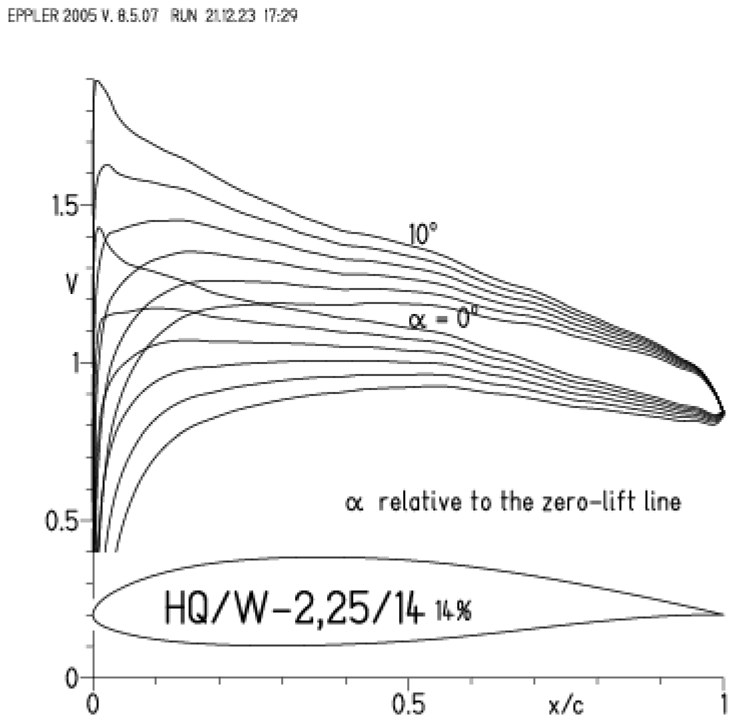


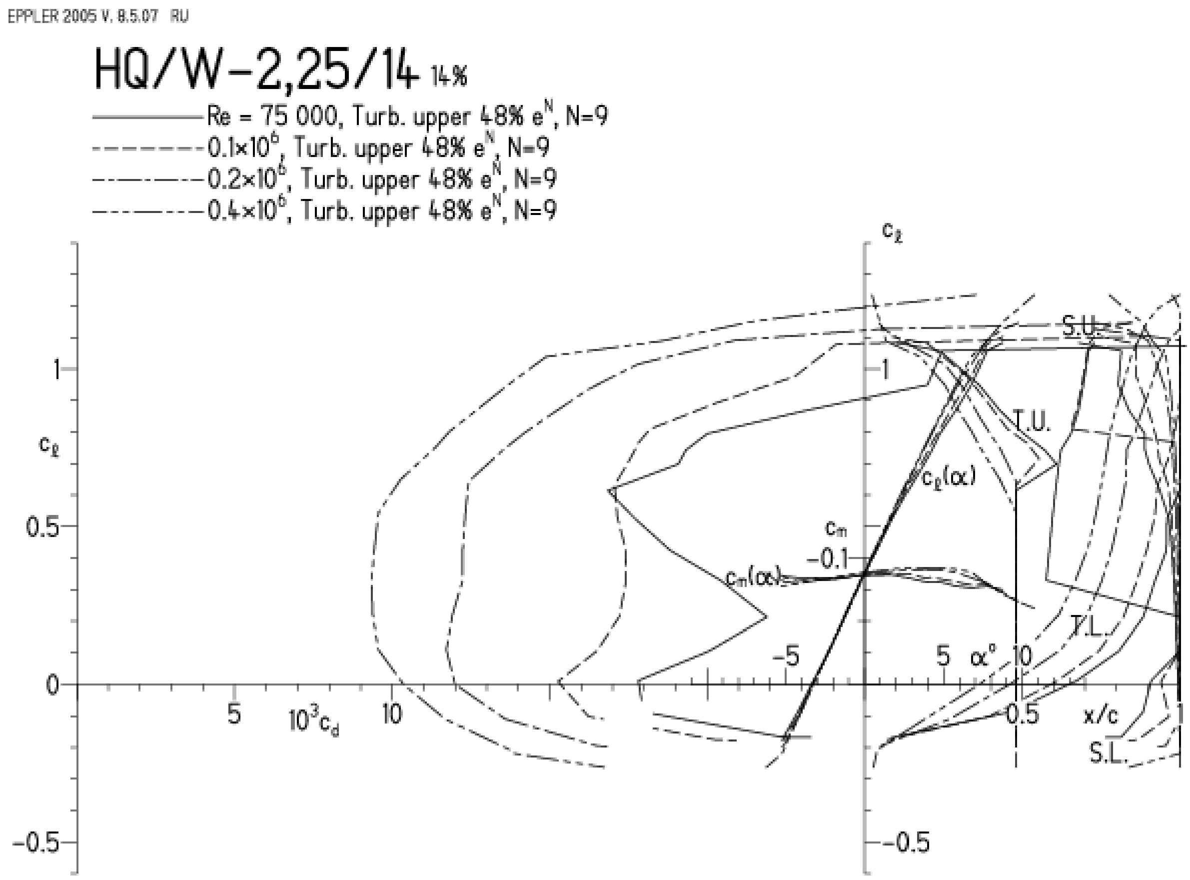
<u>HQ/W-2,25/14</u>, N=9





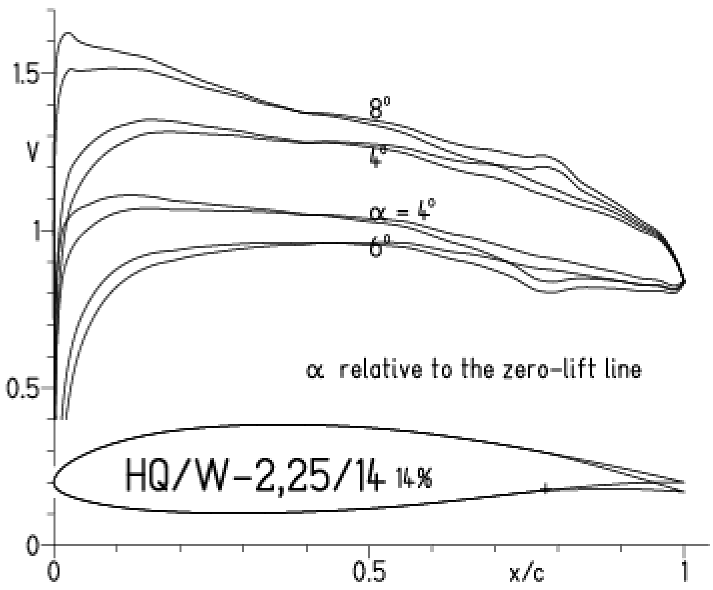
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



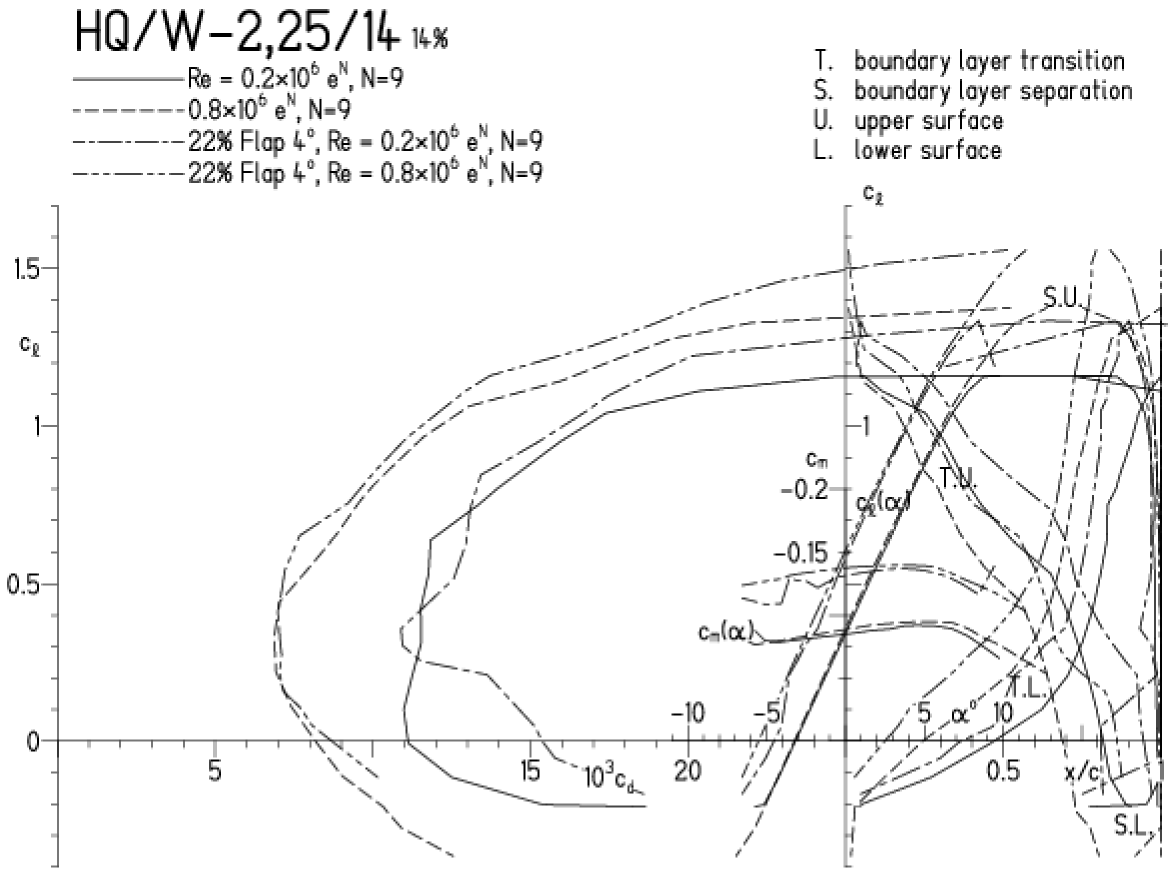


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

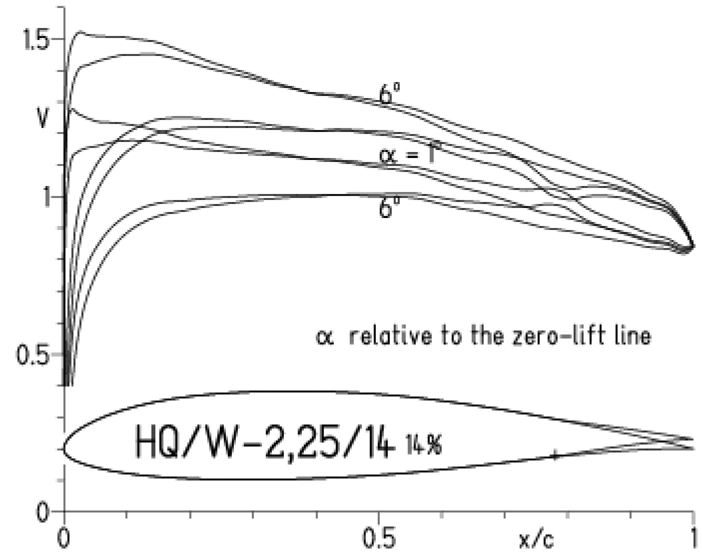


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

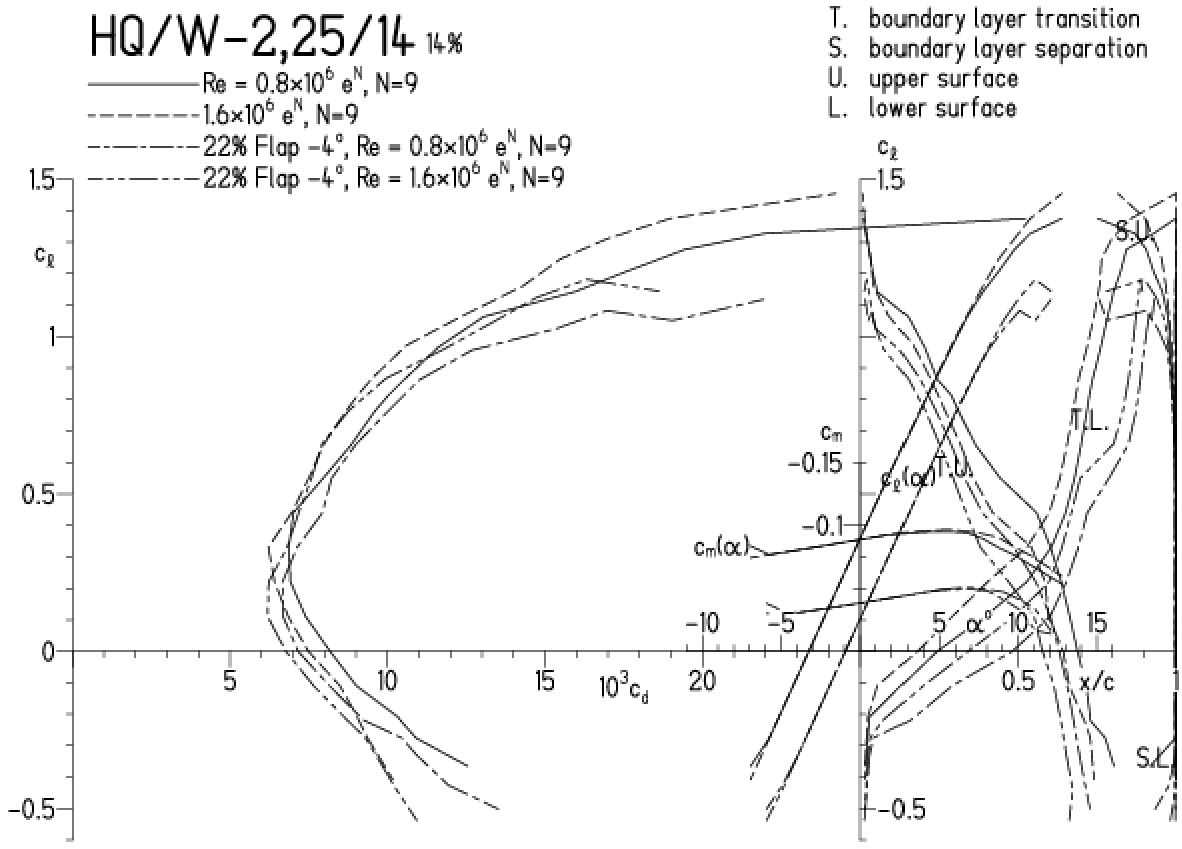


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

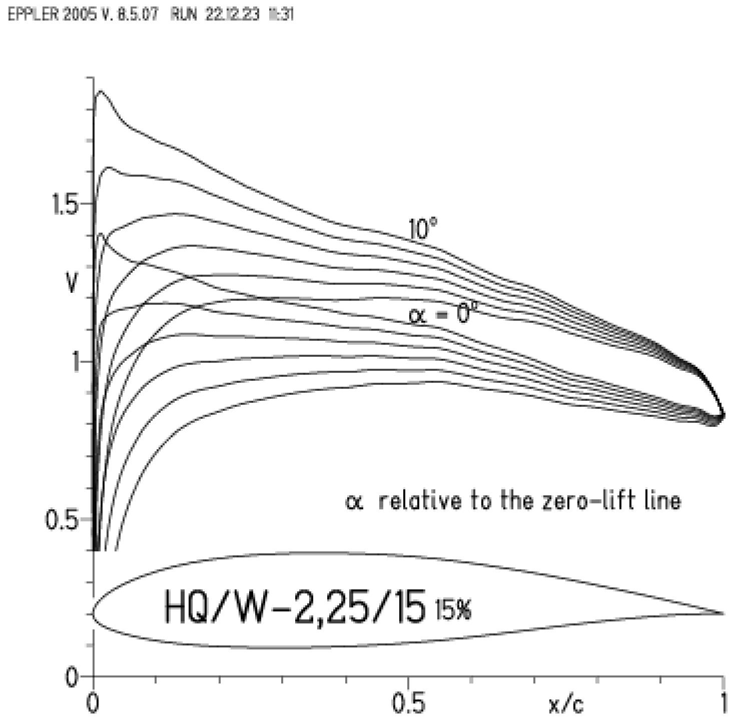
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

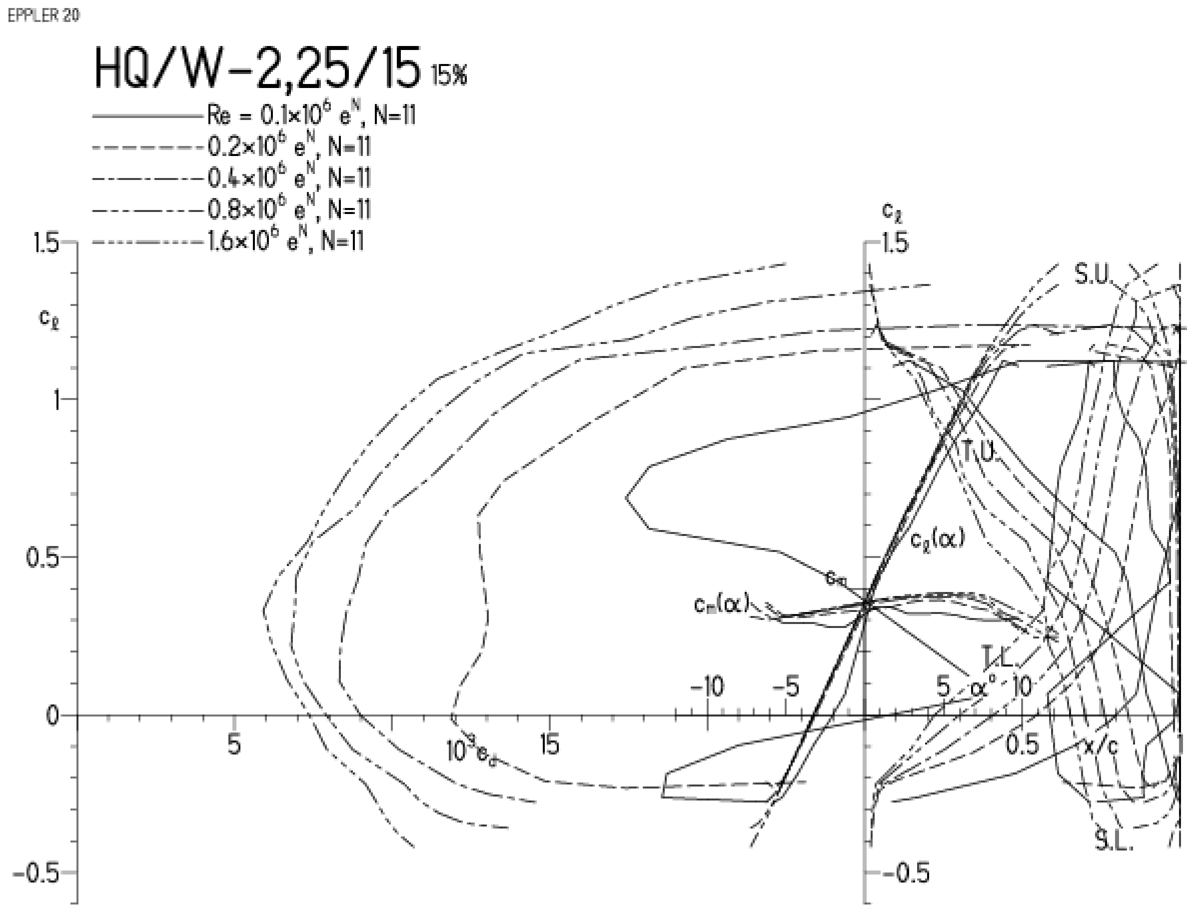


EPPLER 2005 V. 8.5.07



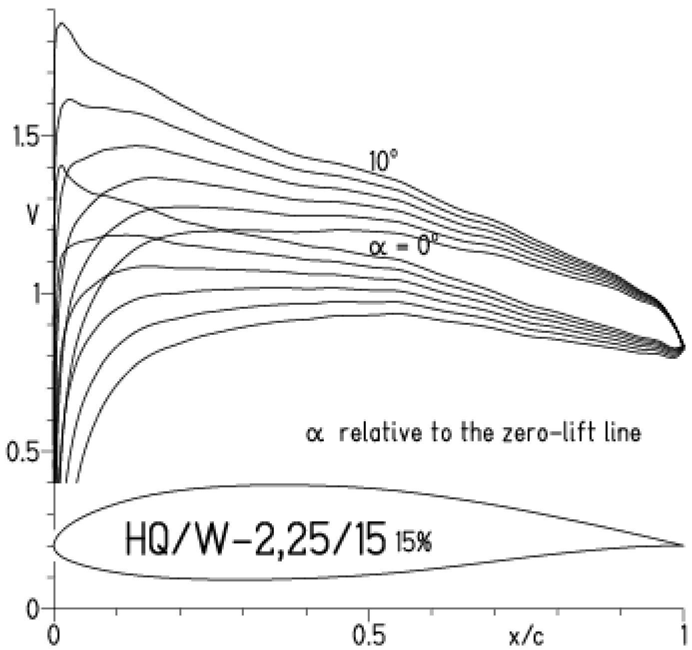
<u>HQ/W-2,25/15</u>, N=11



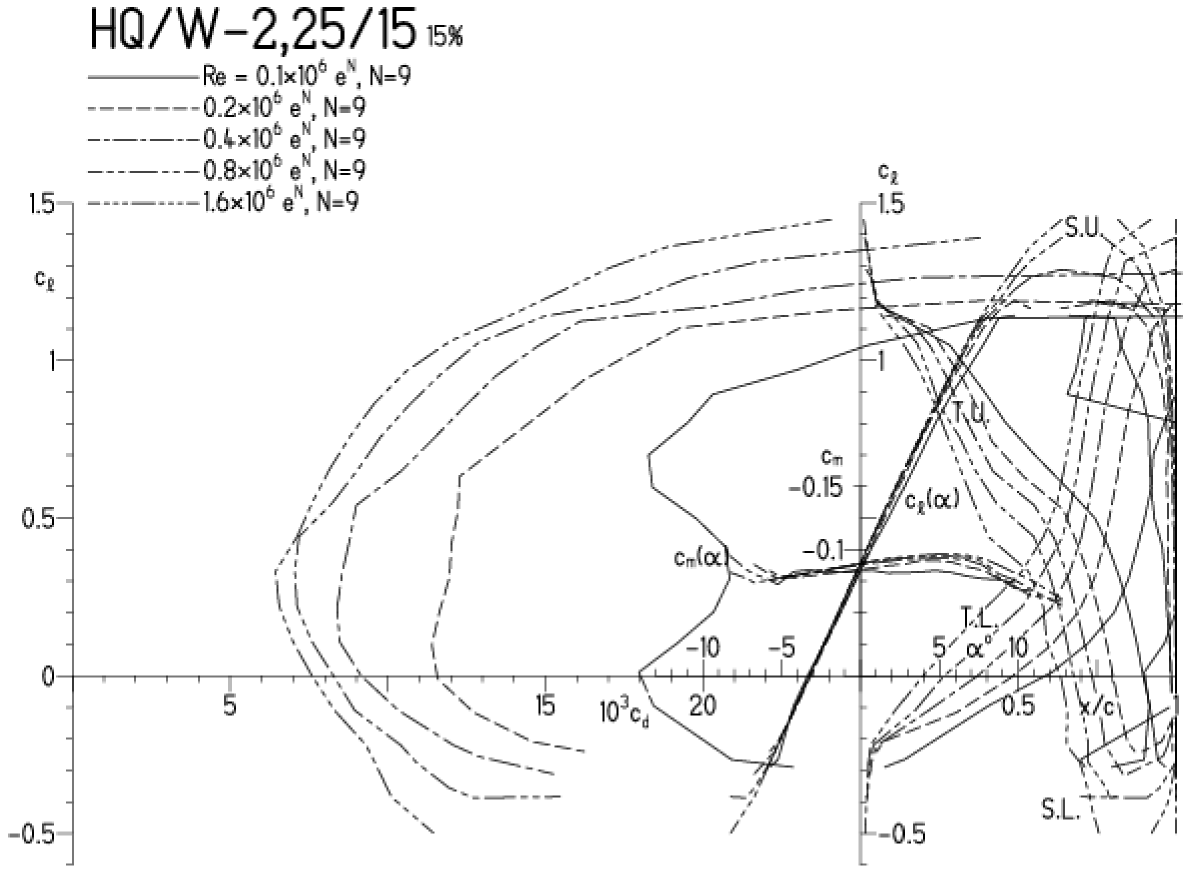


HQ/W-2,25/15, N=9

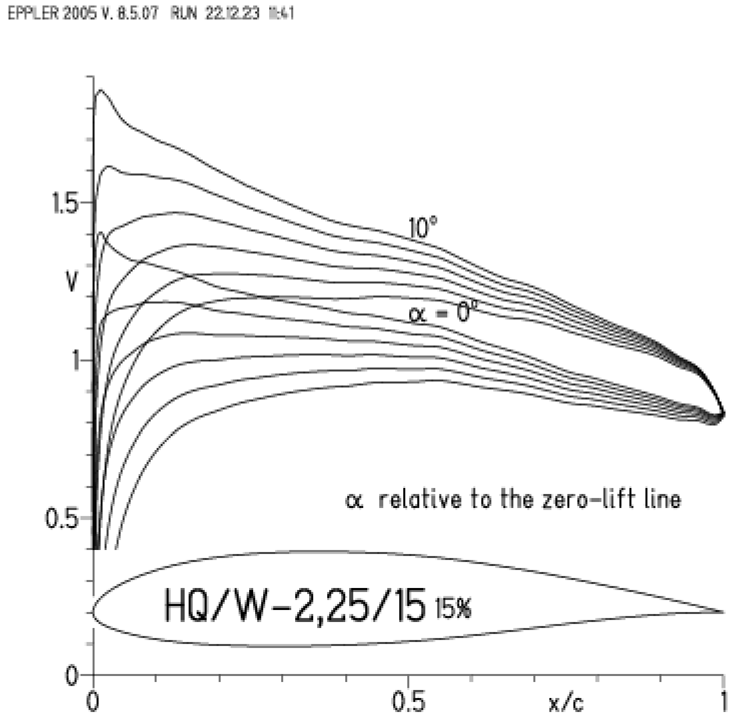
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

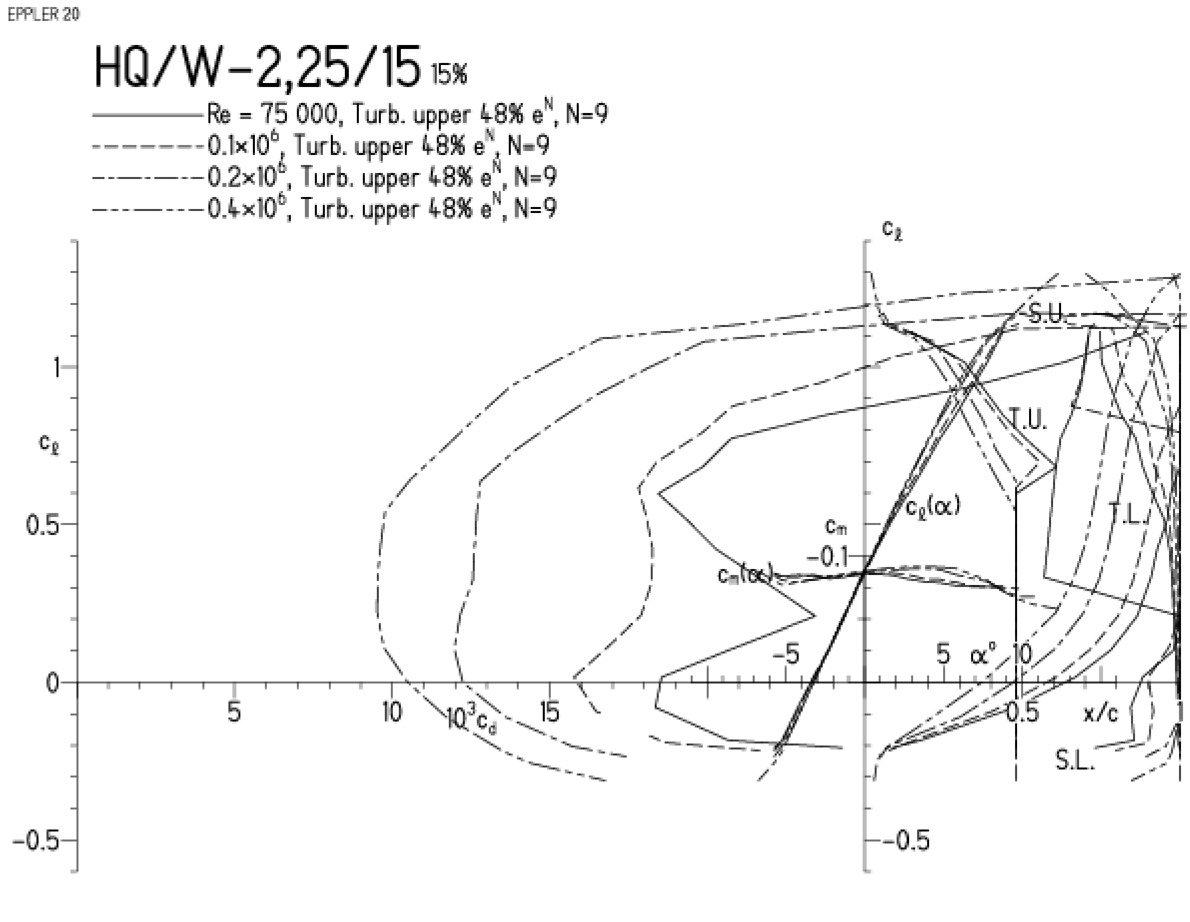


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



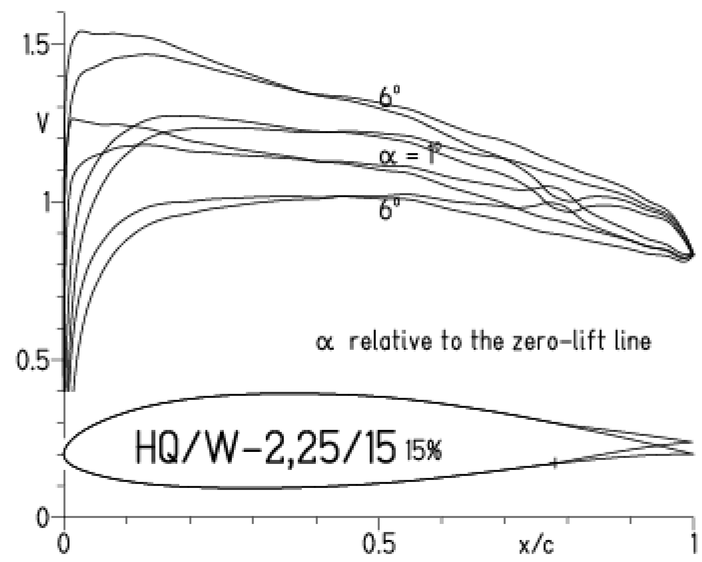


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

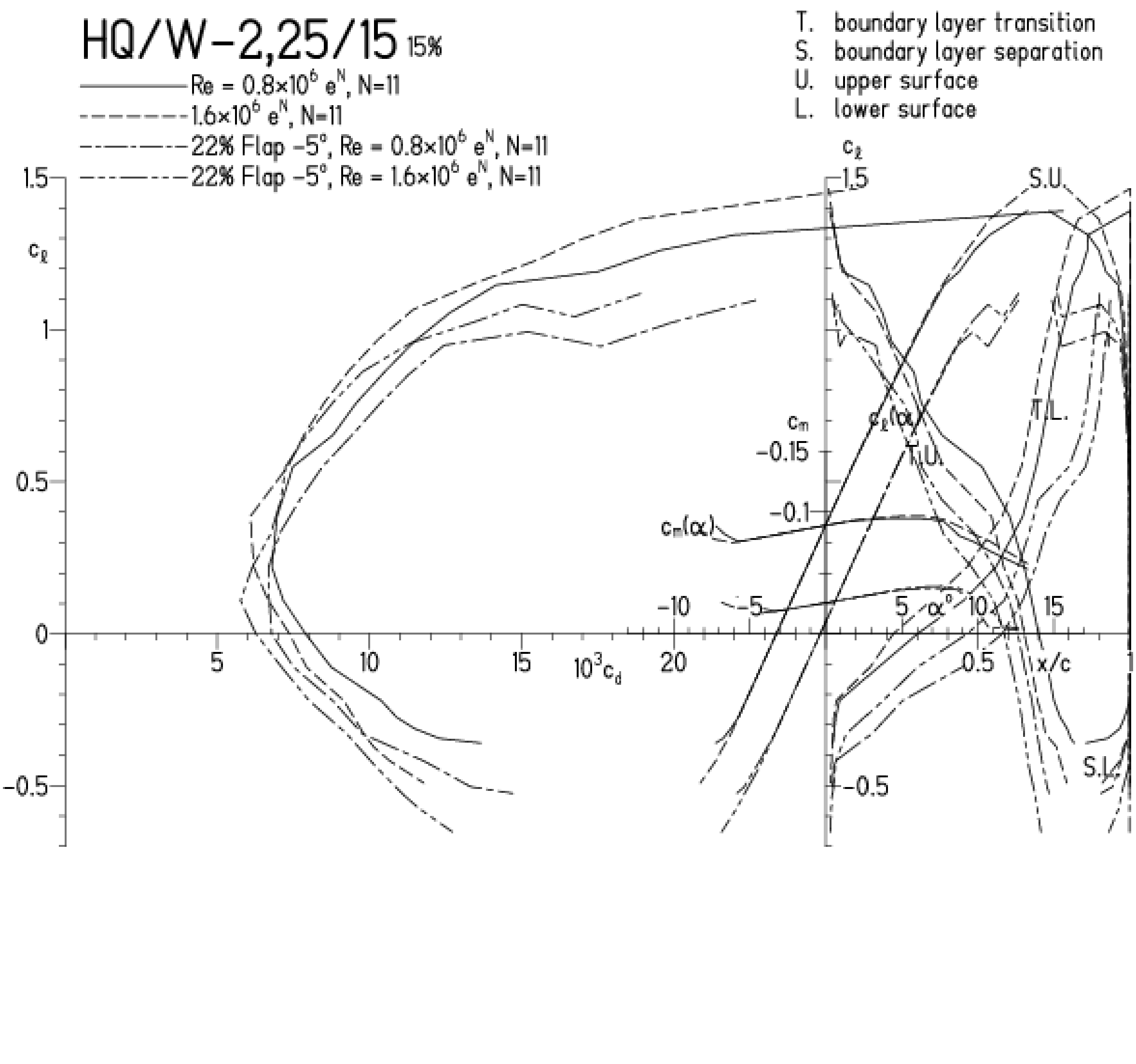
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

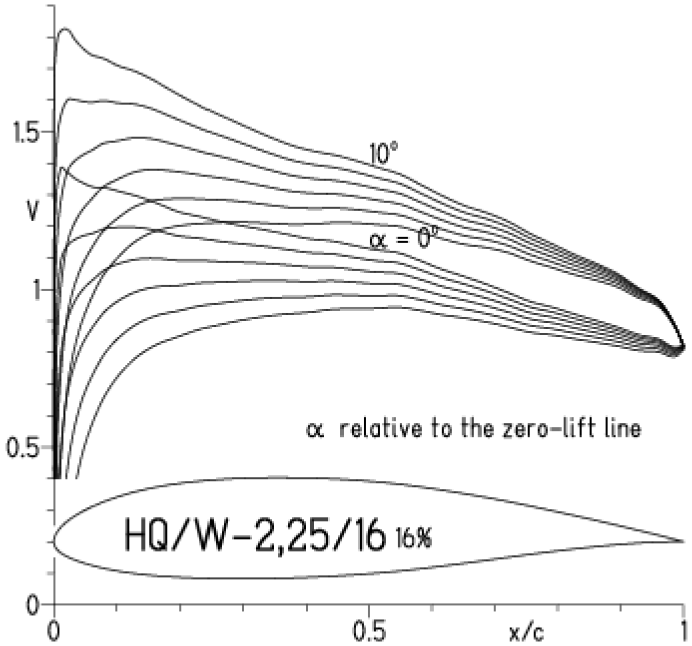


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

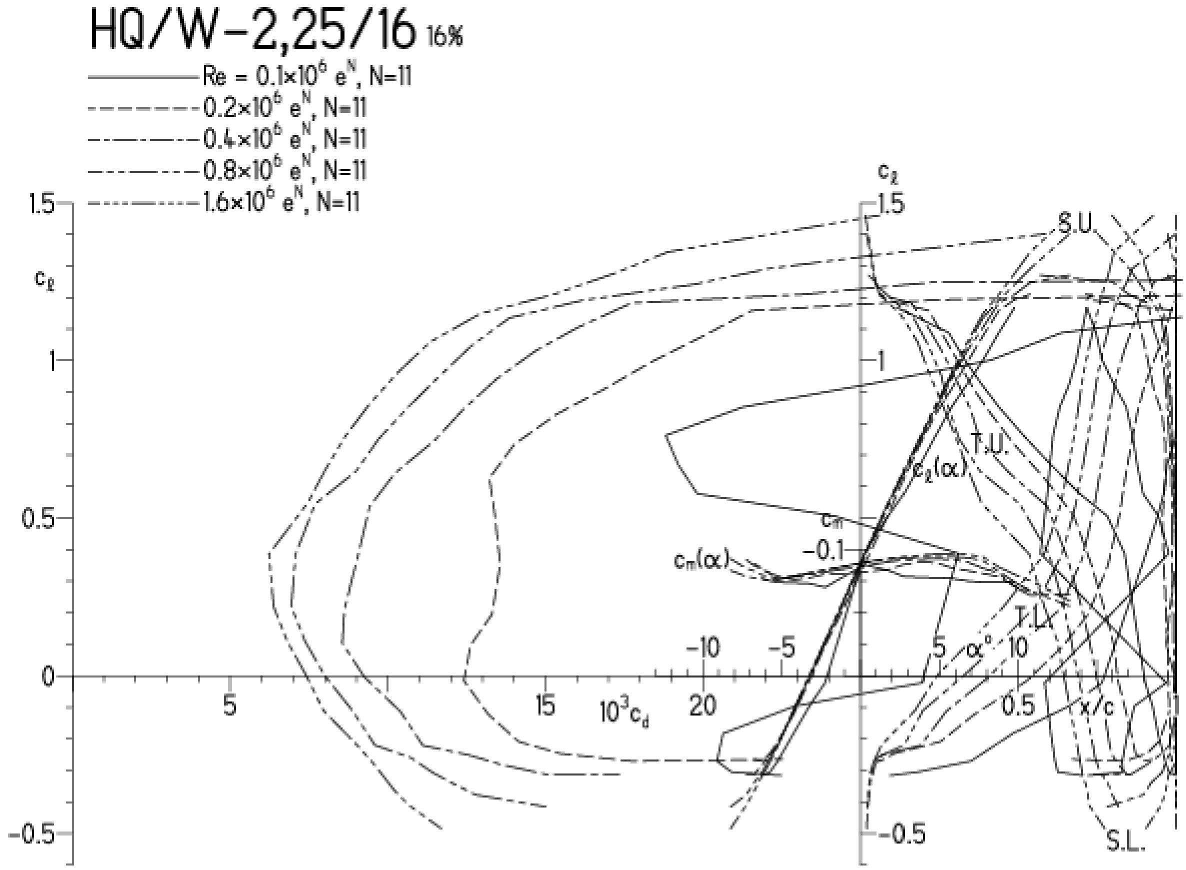


HQ/W-2,25/16, N=11

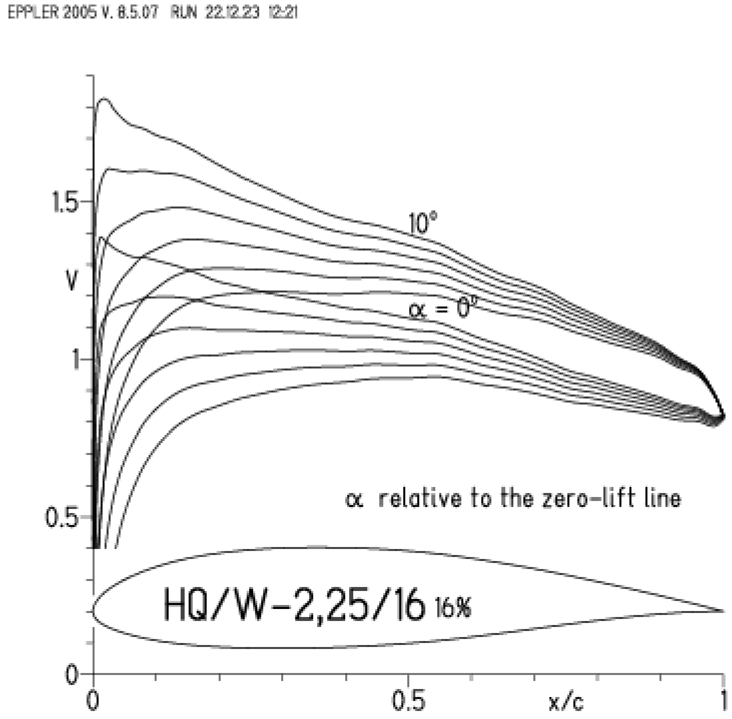
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

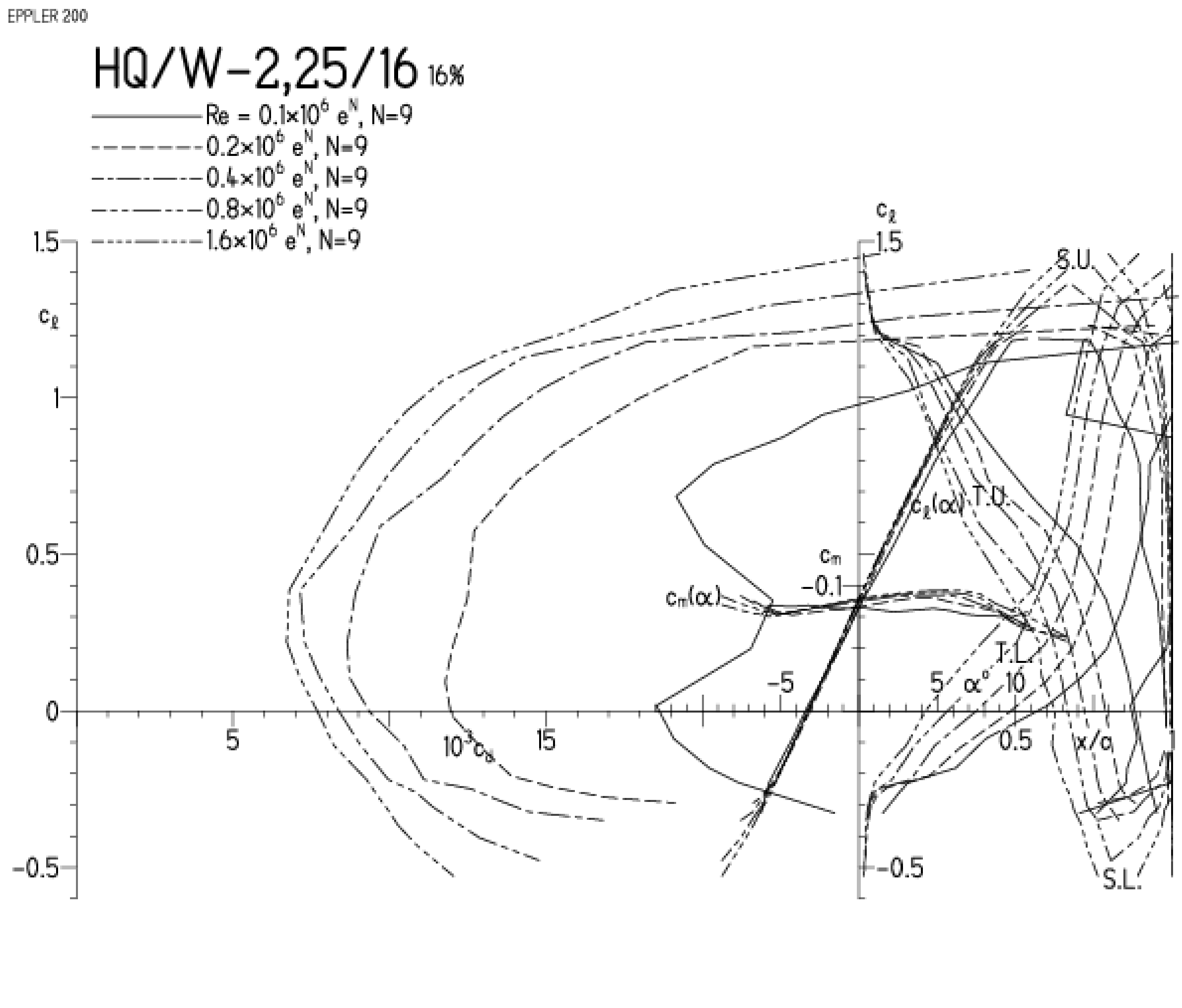


EPPLER 200

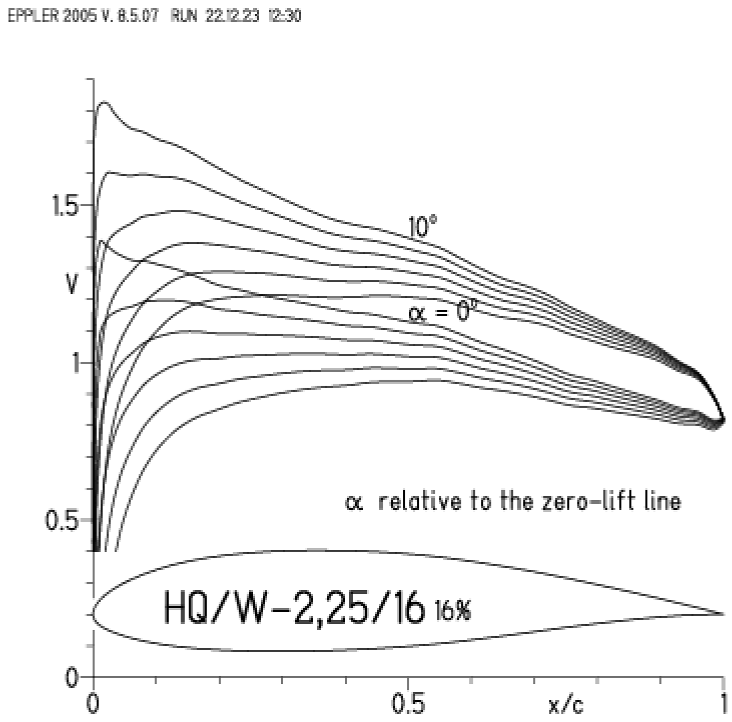


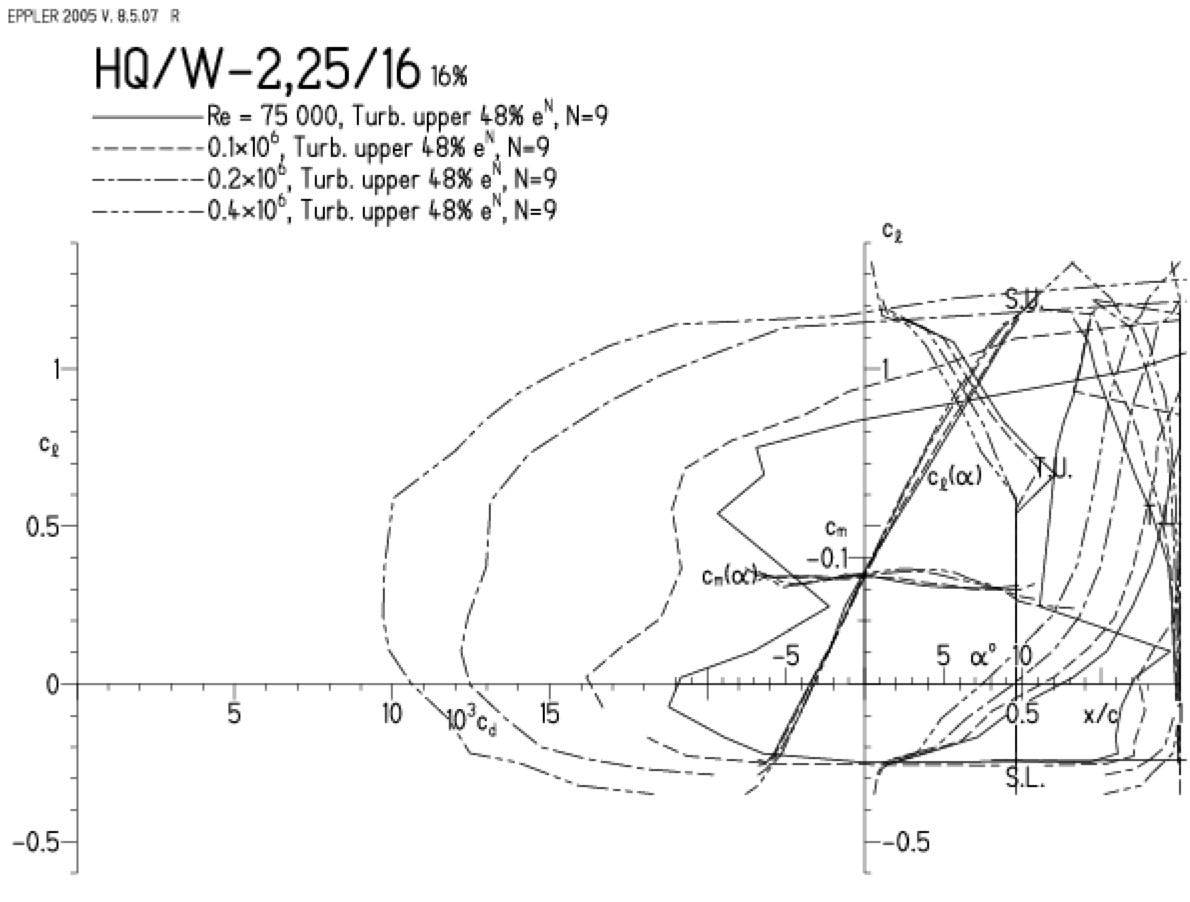
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/16 16%
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cₗ(α)
cₘ(α)
cₘ
-0.1
-5
5
α°
10
0.5
x/c
10⁻³c_d
15
1.5
1
0.5
0
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



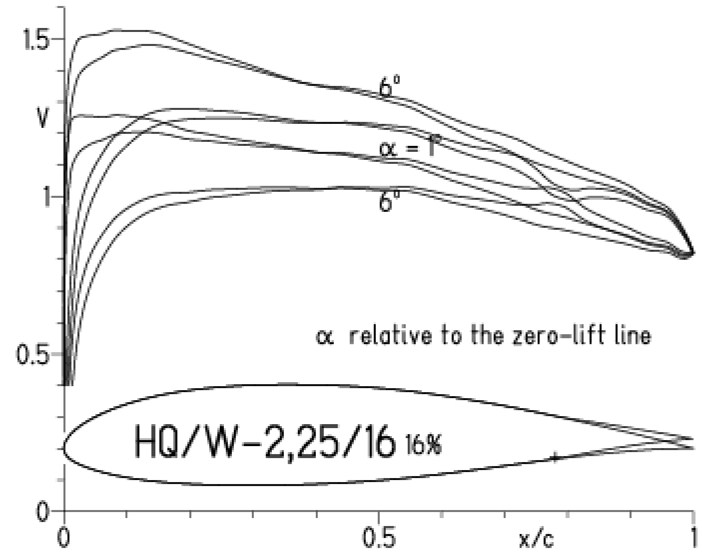


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

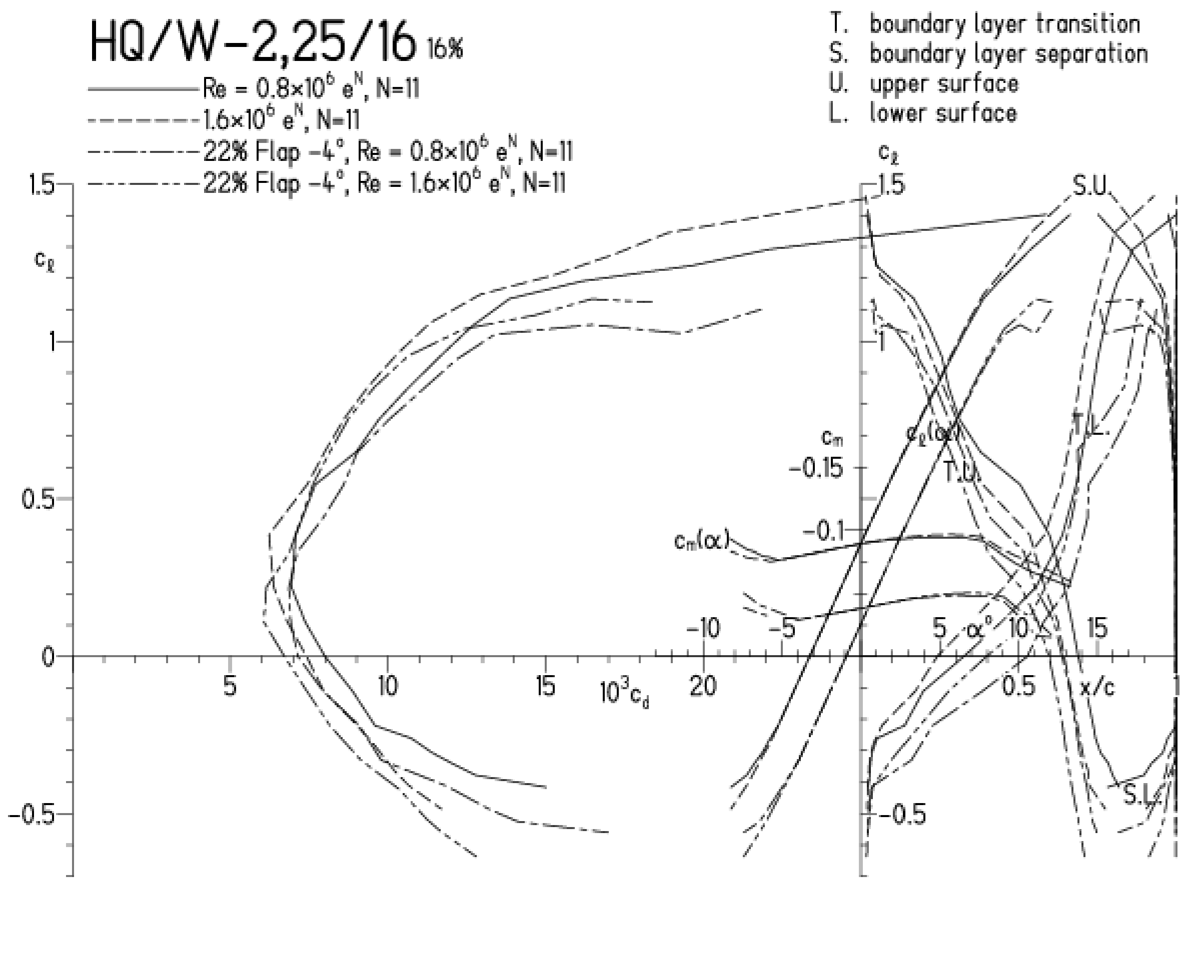
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

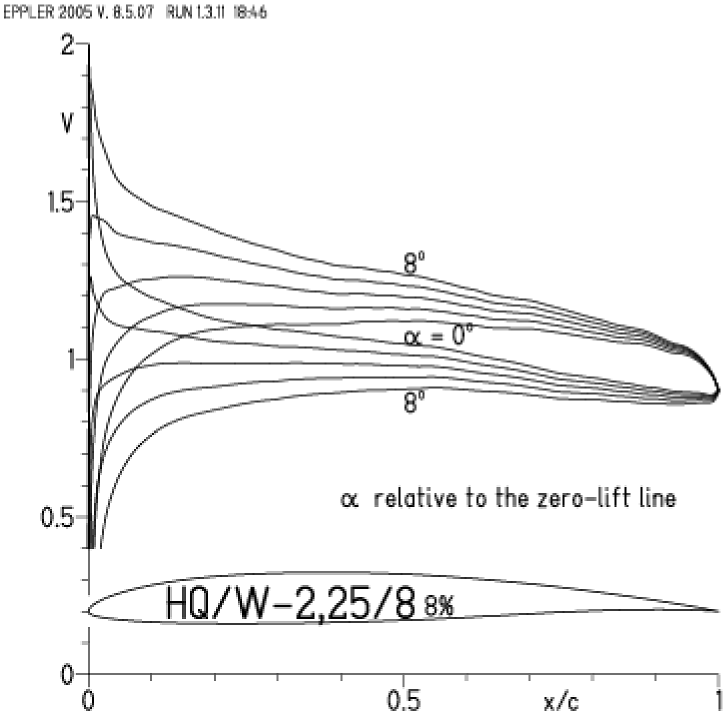
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

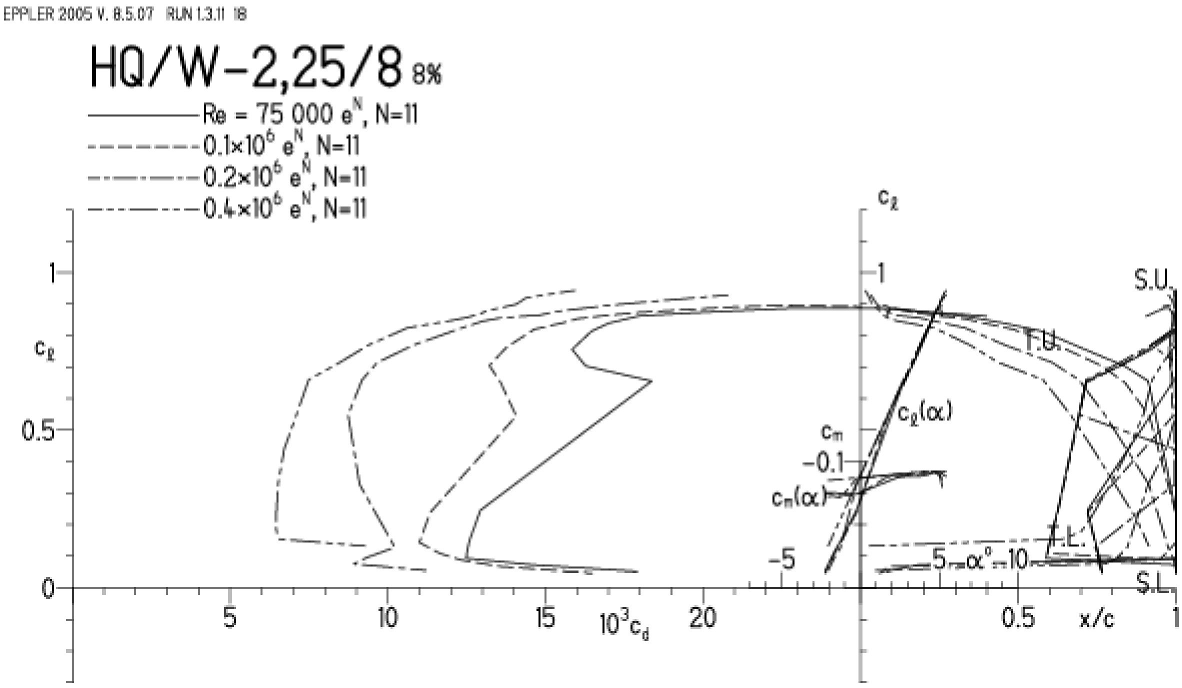


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

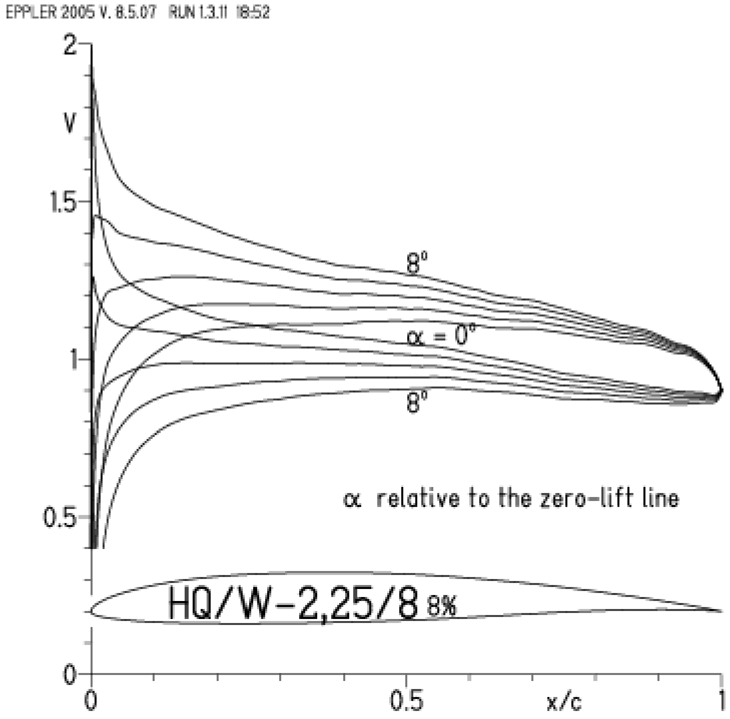


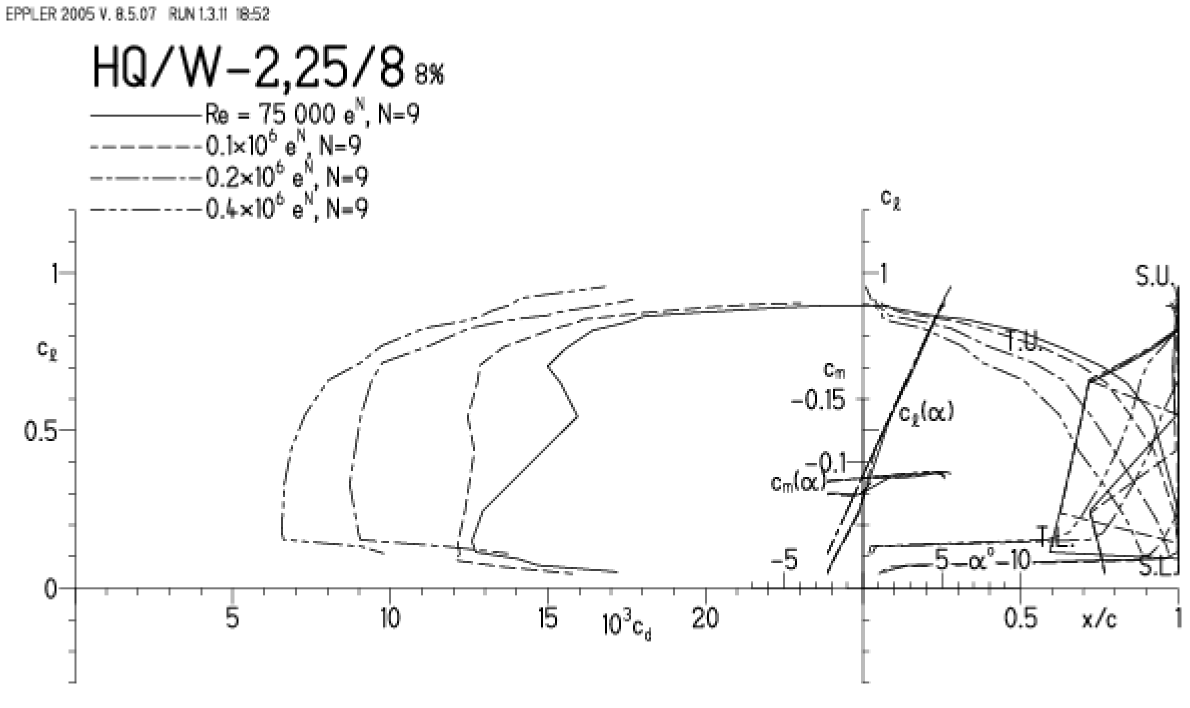
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

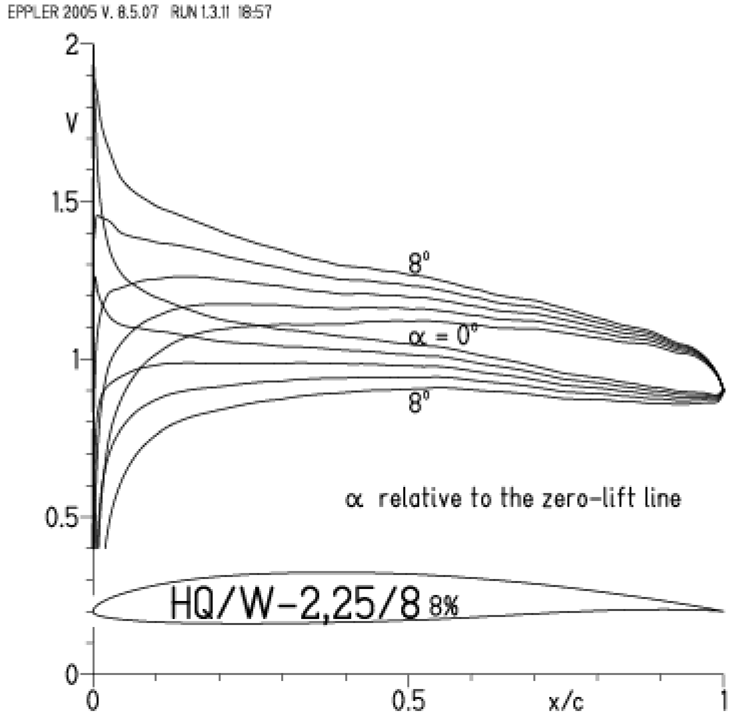

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_m
c_ℓ(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

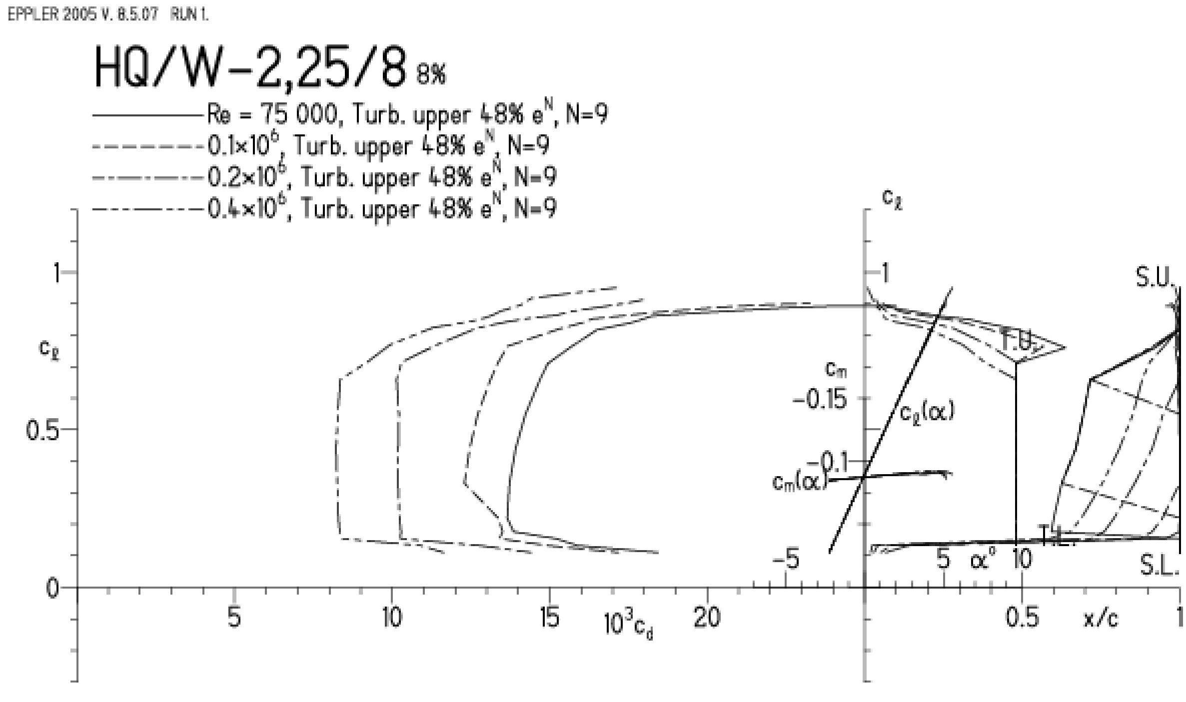
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

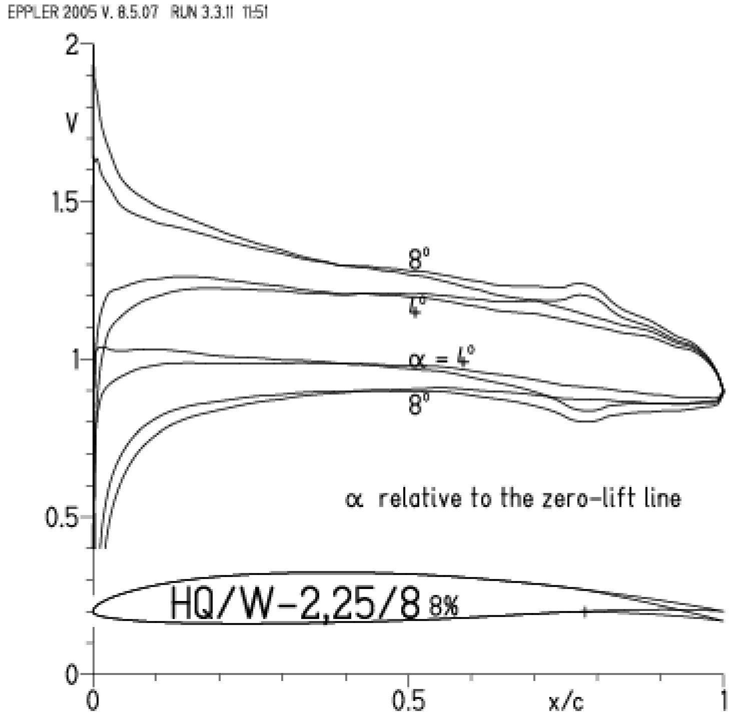

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

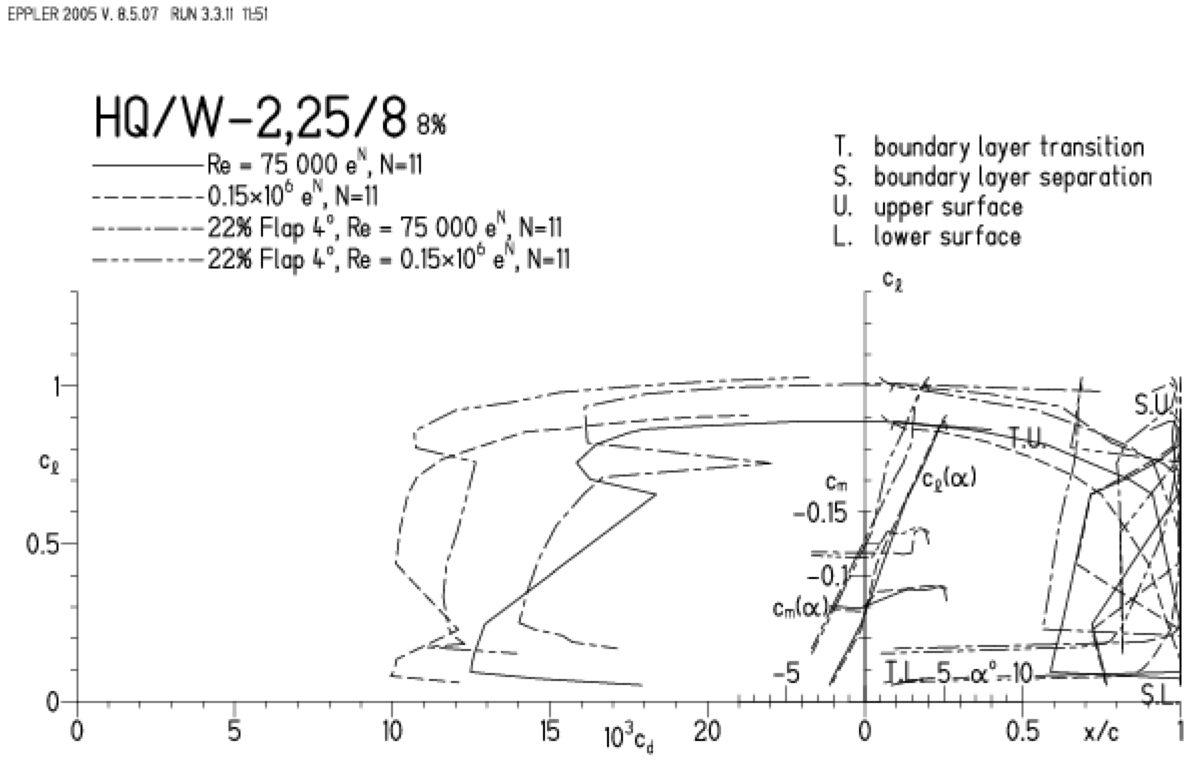
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



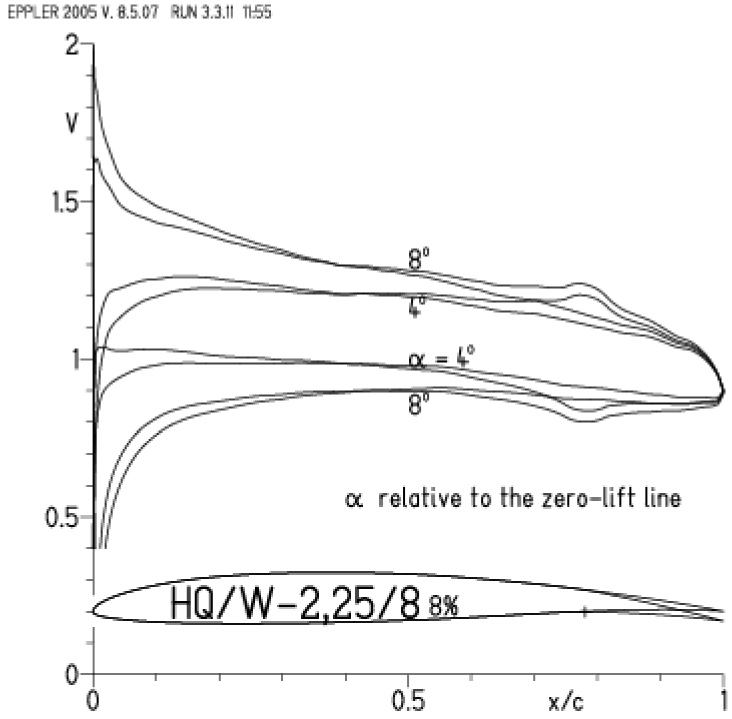


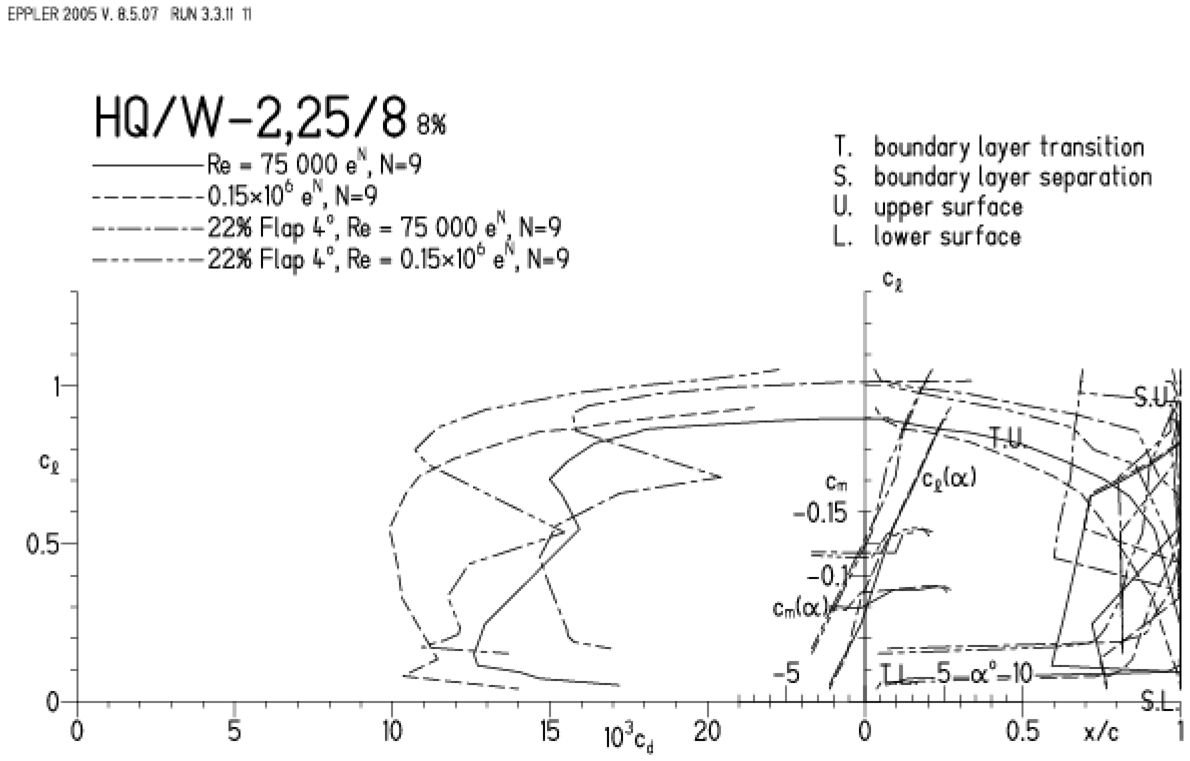
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



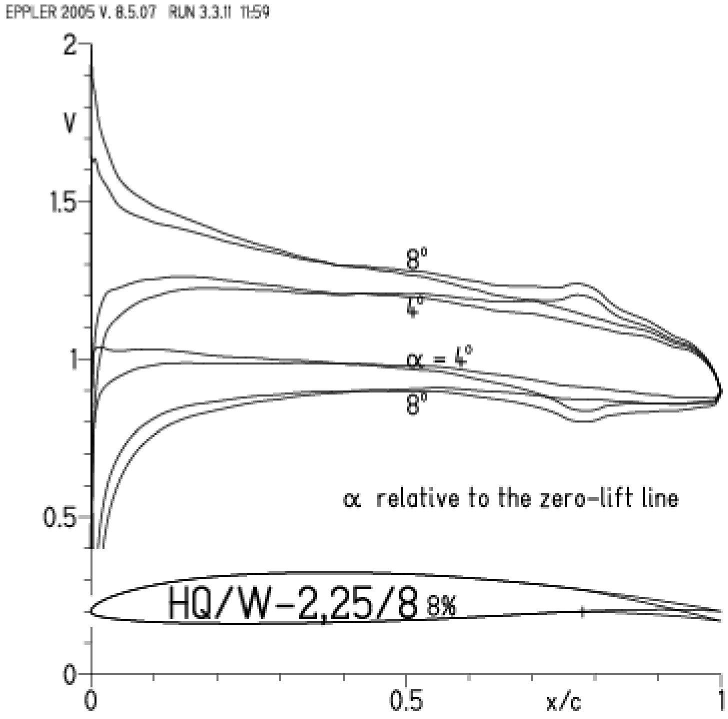


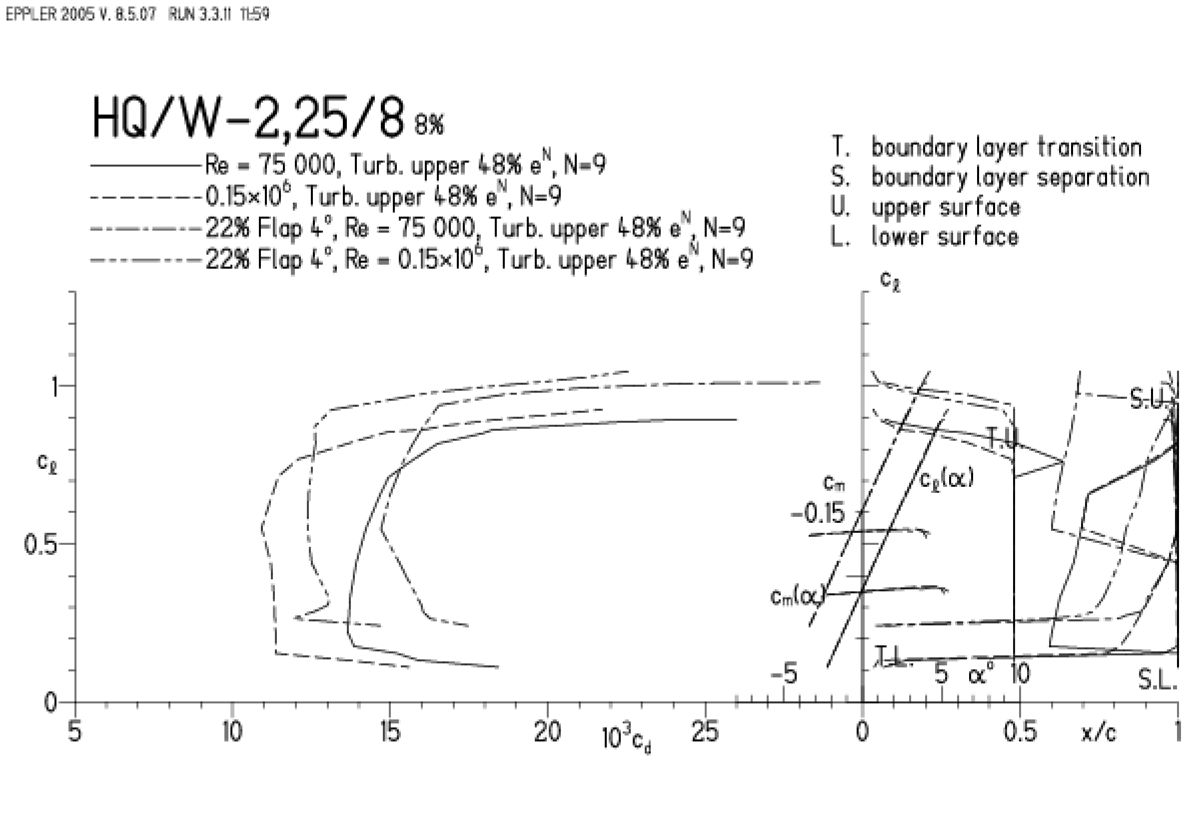
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





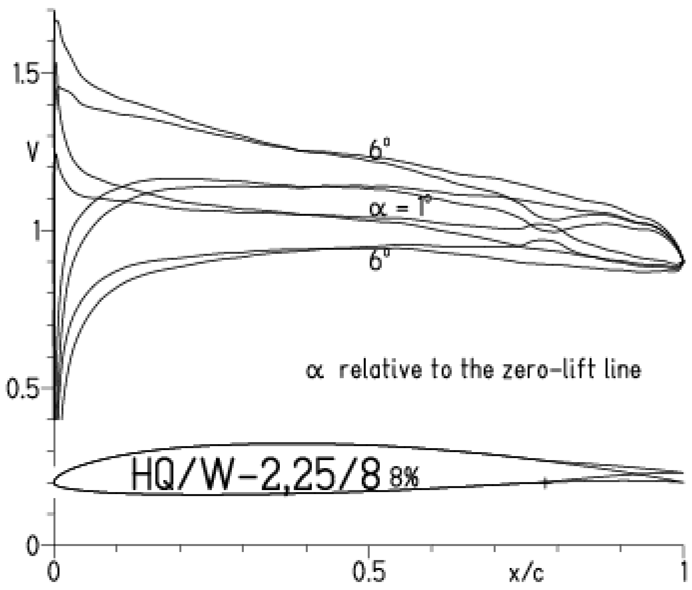
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



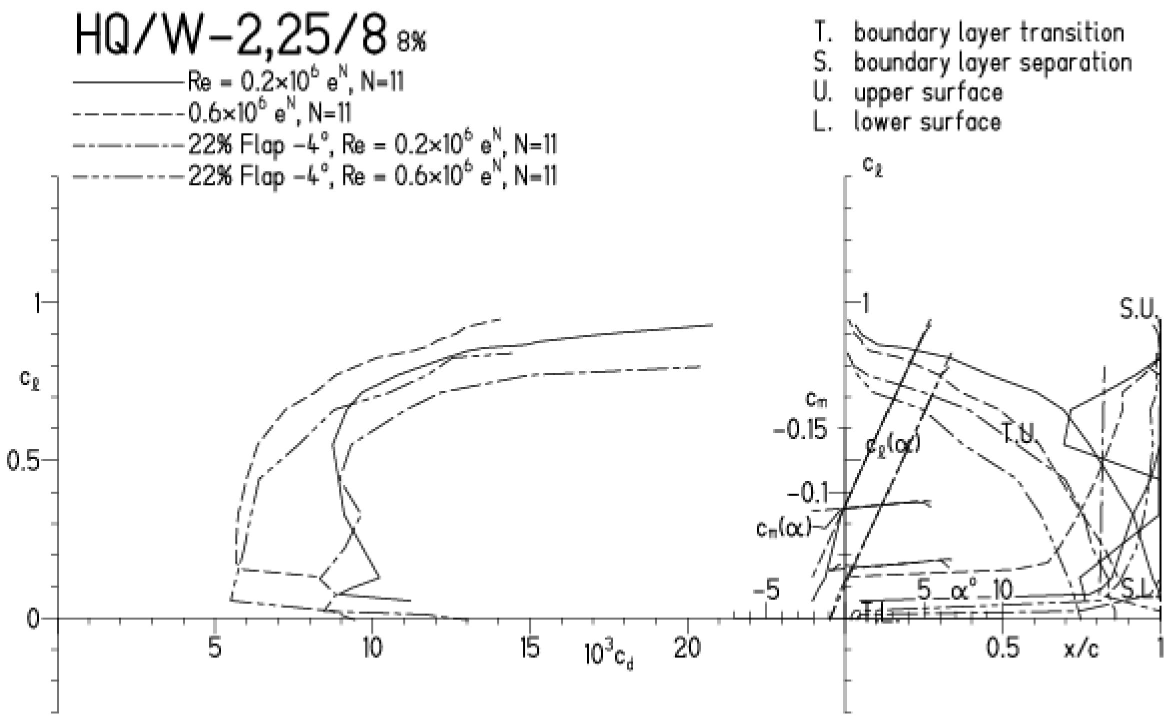


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

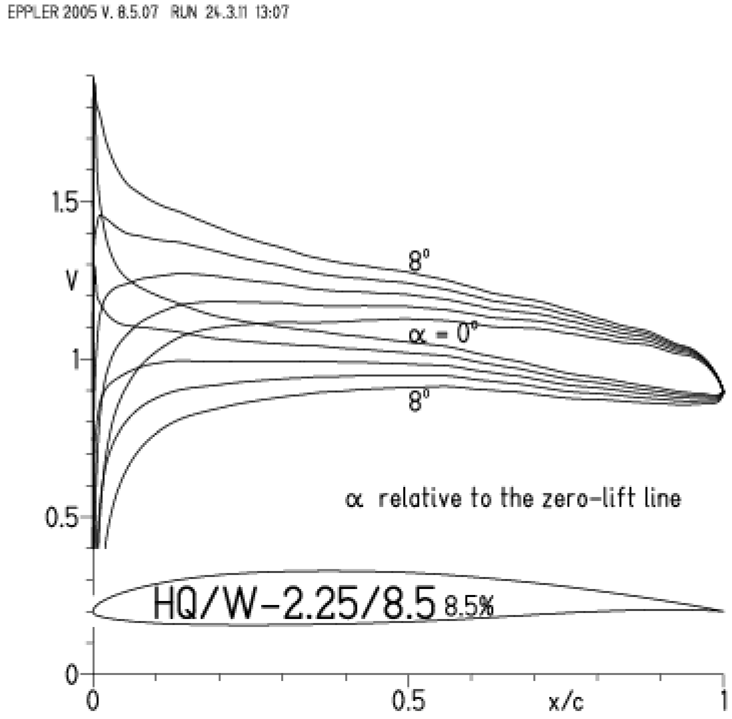
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

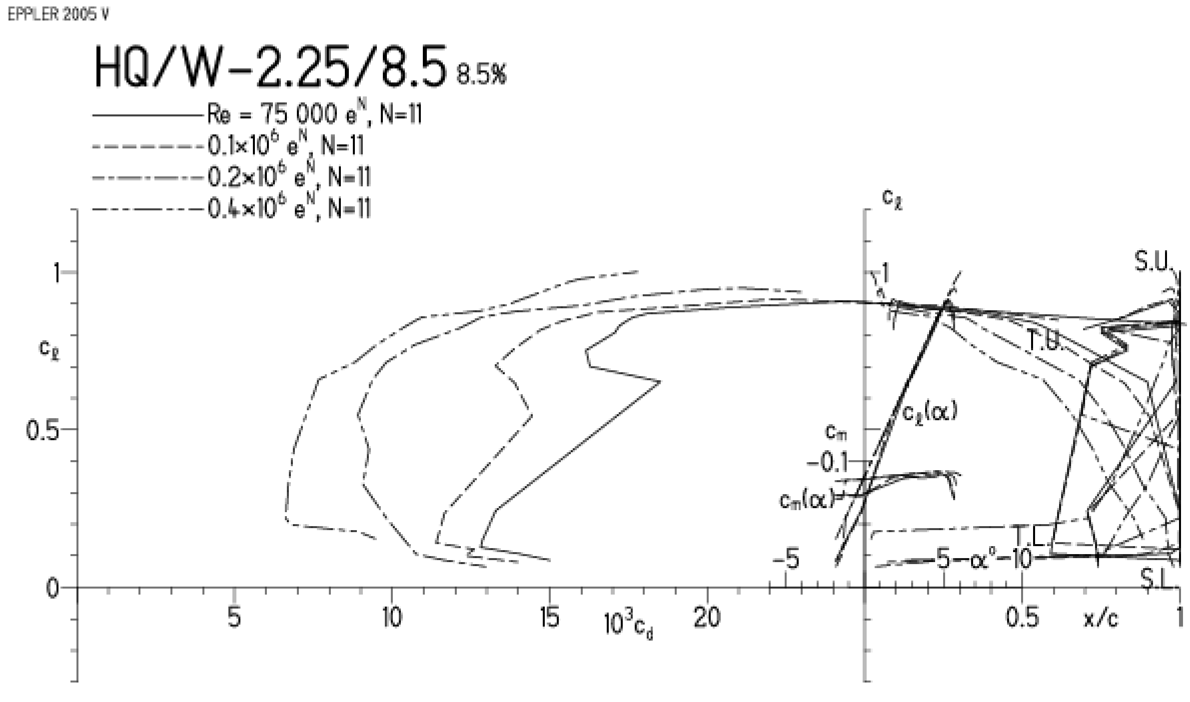


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



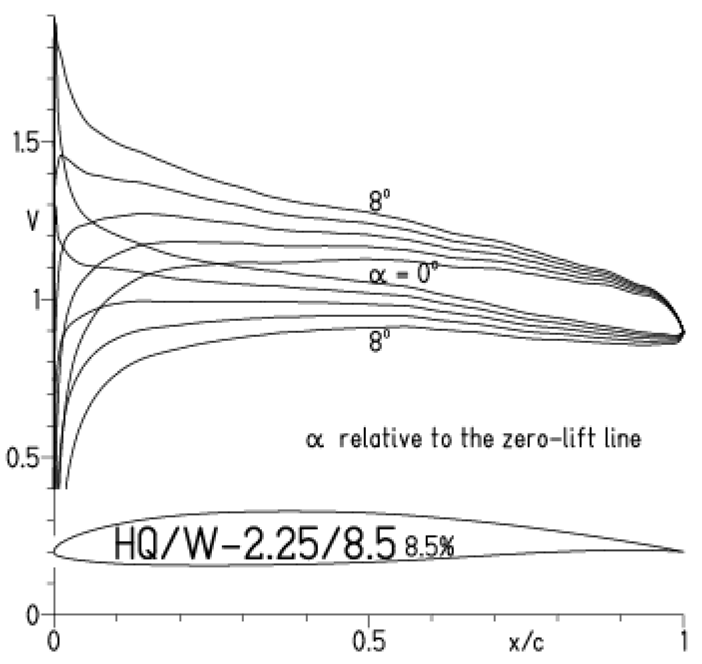
HQ/W-2,25/8,5, N=11



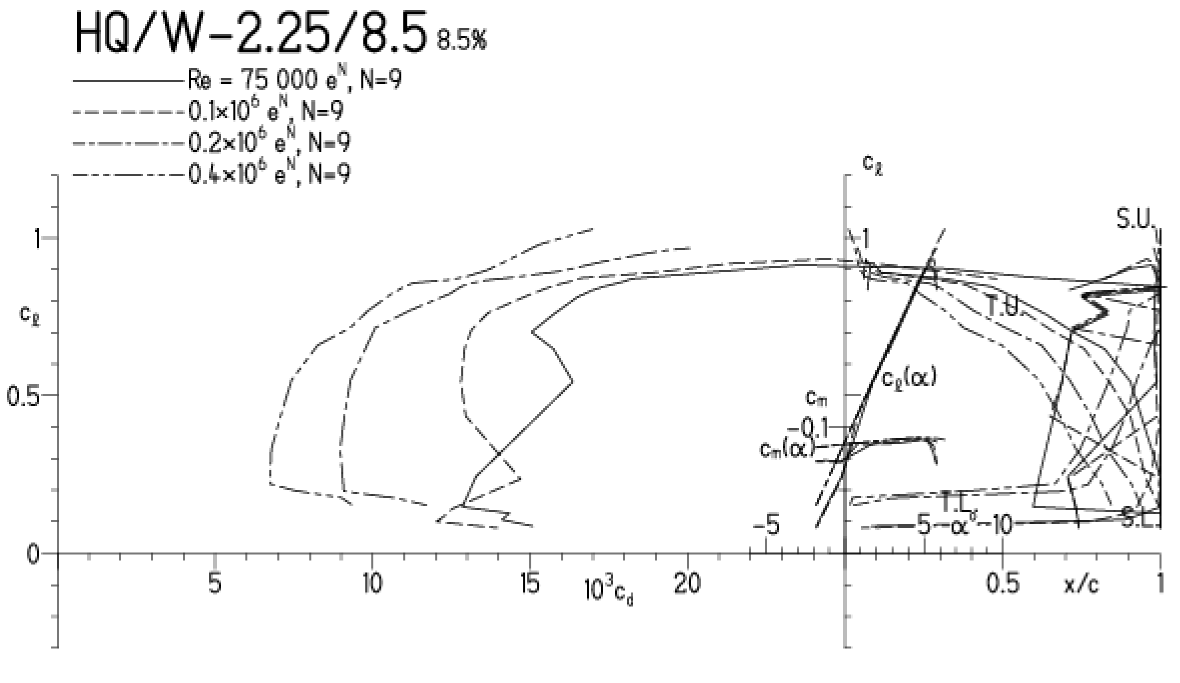


HQ/W-2,25/8,5, N=9

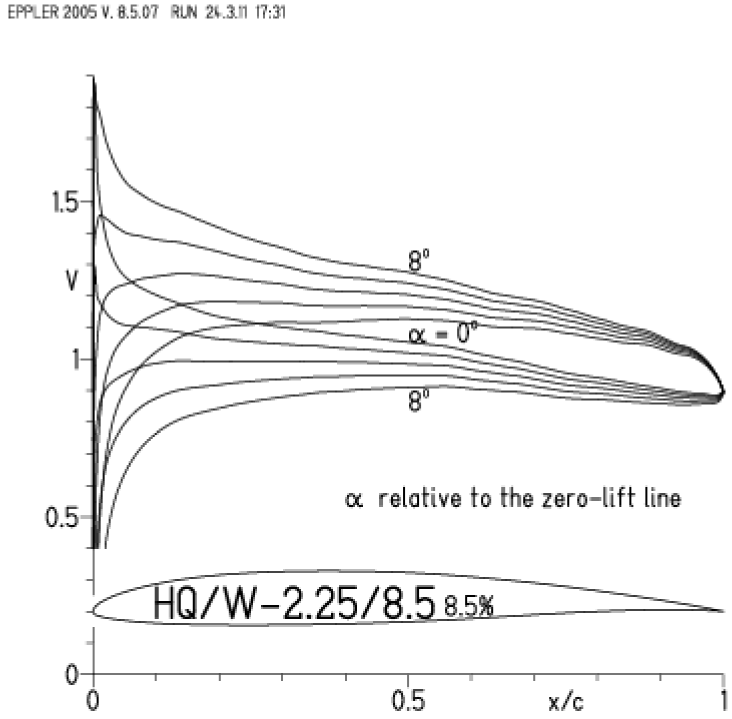
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

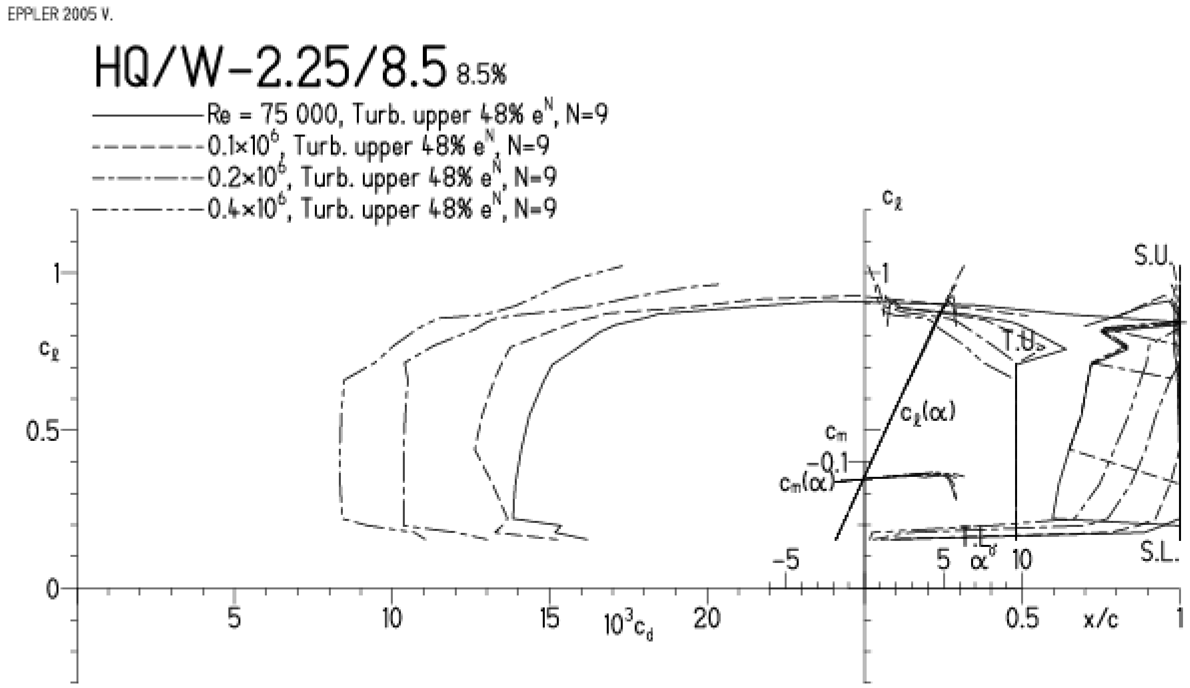


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

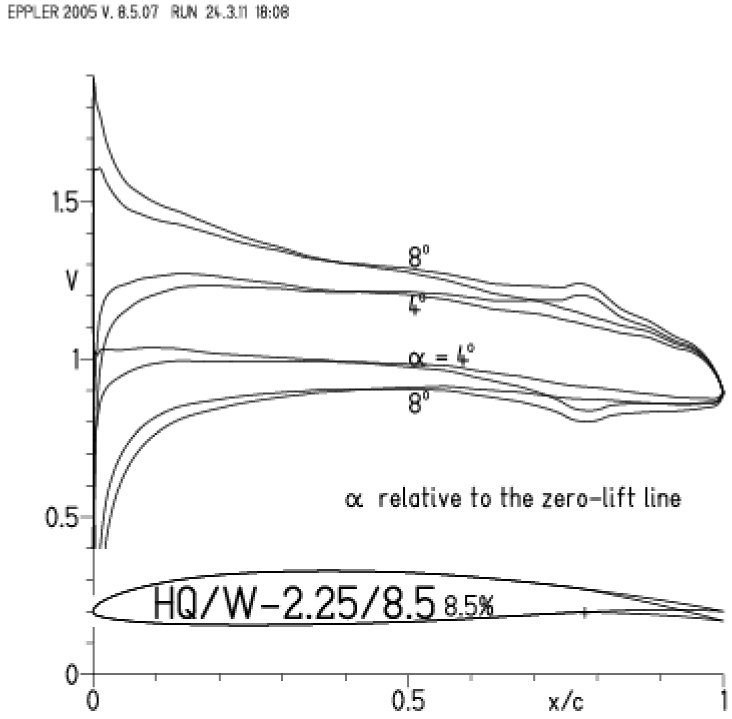


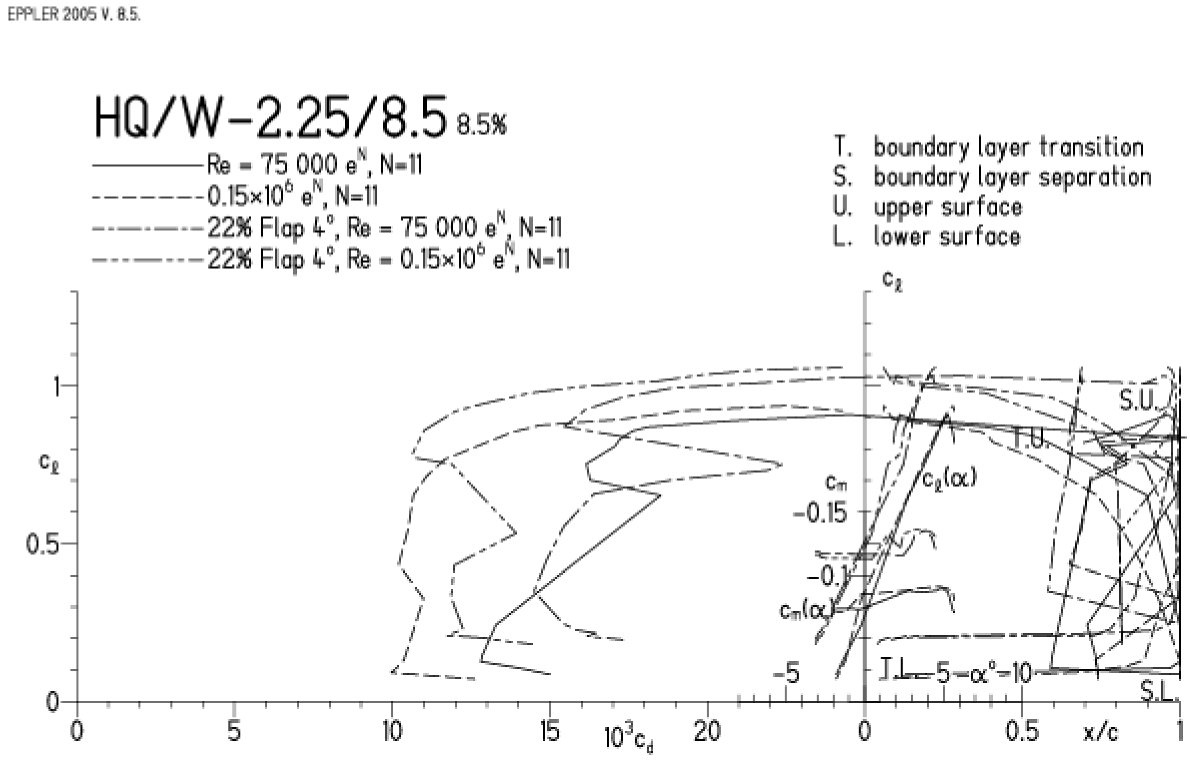
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





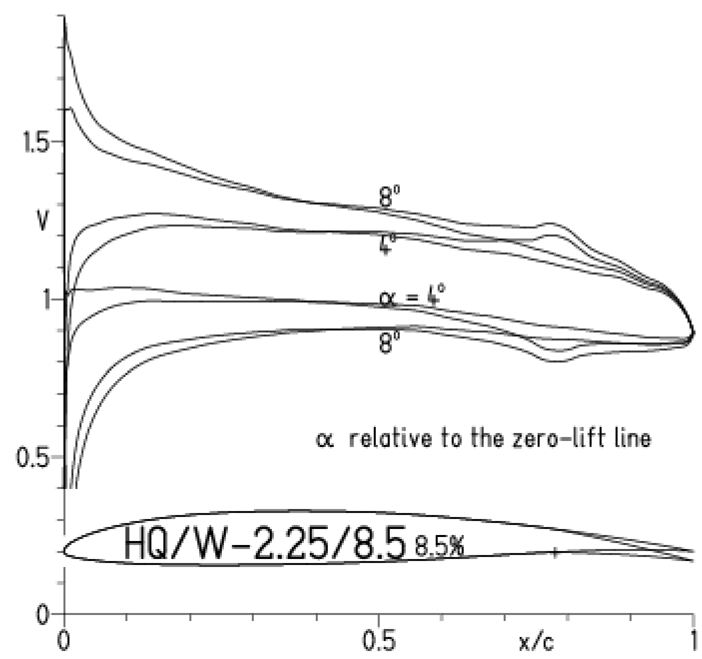
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



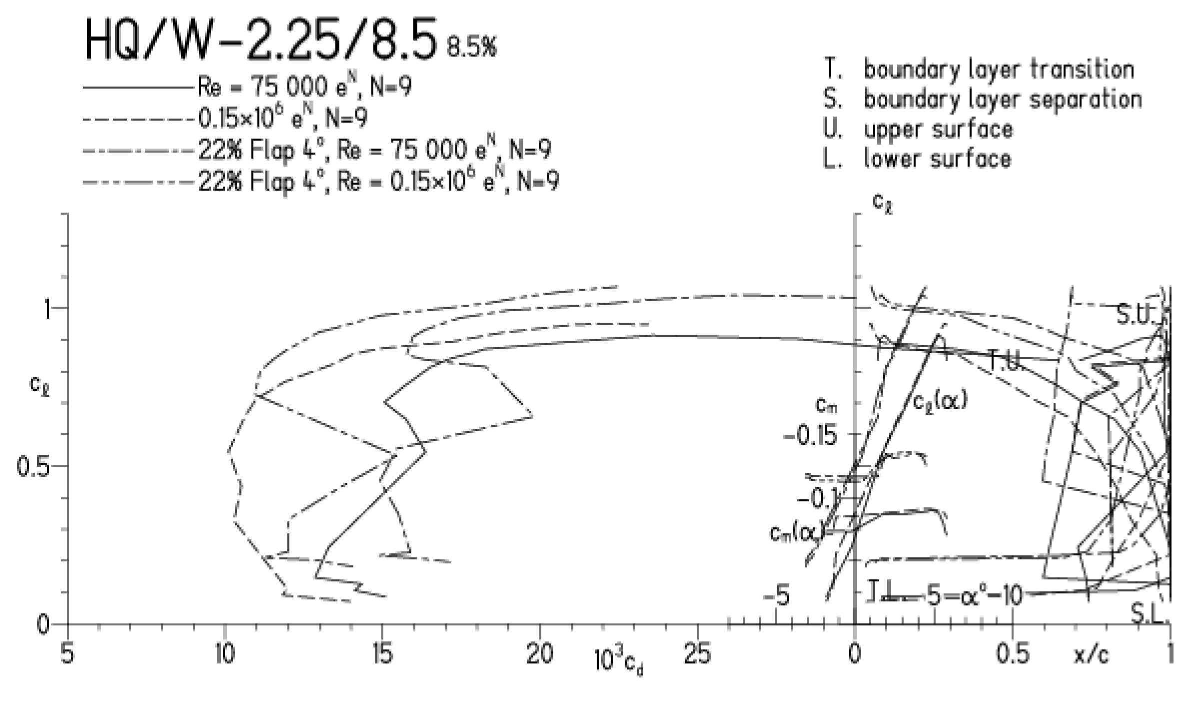


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

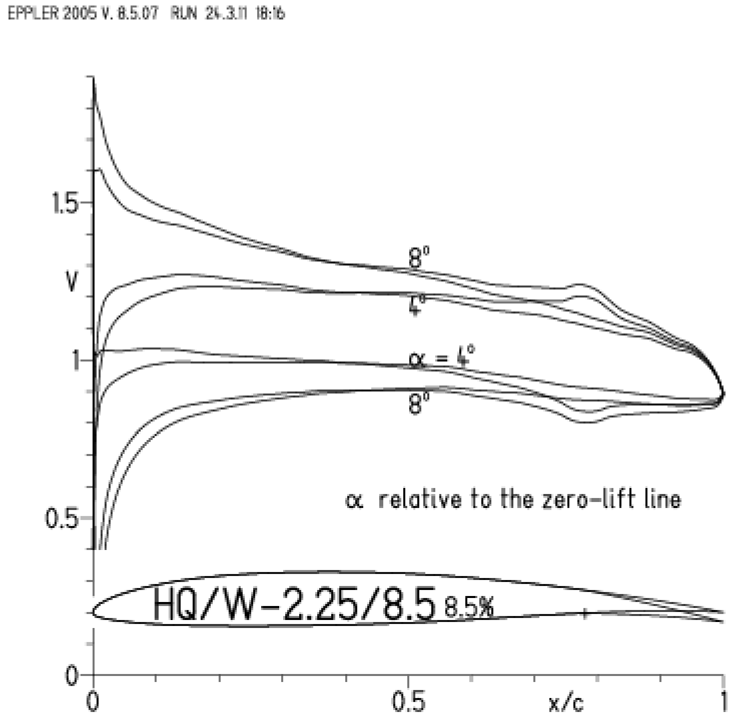
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

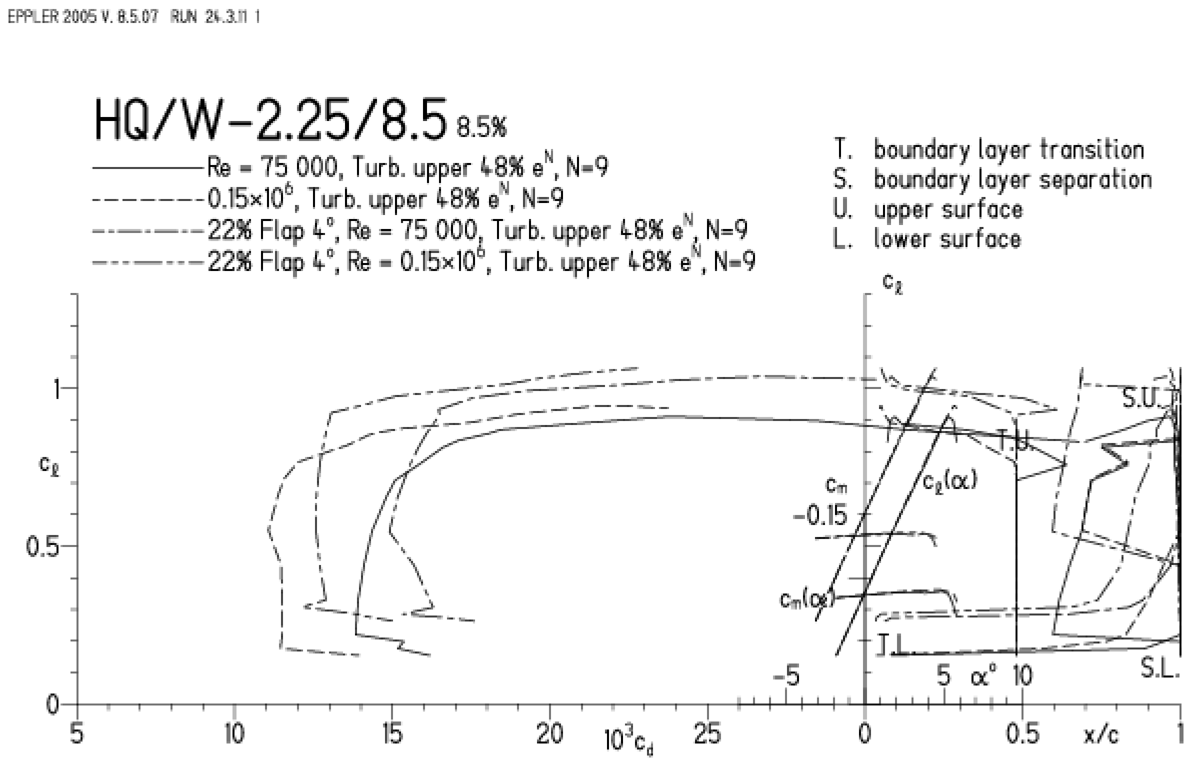


EPPLER 2005 V.



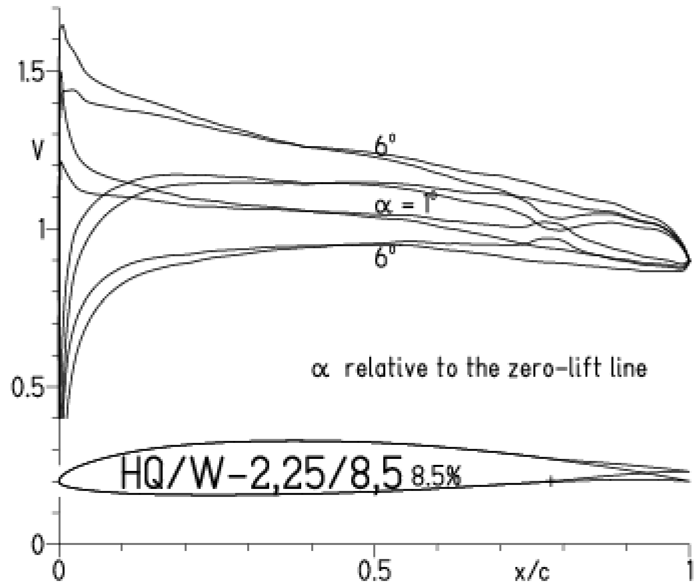
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



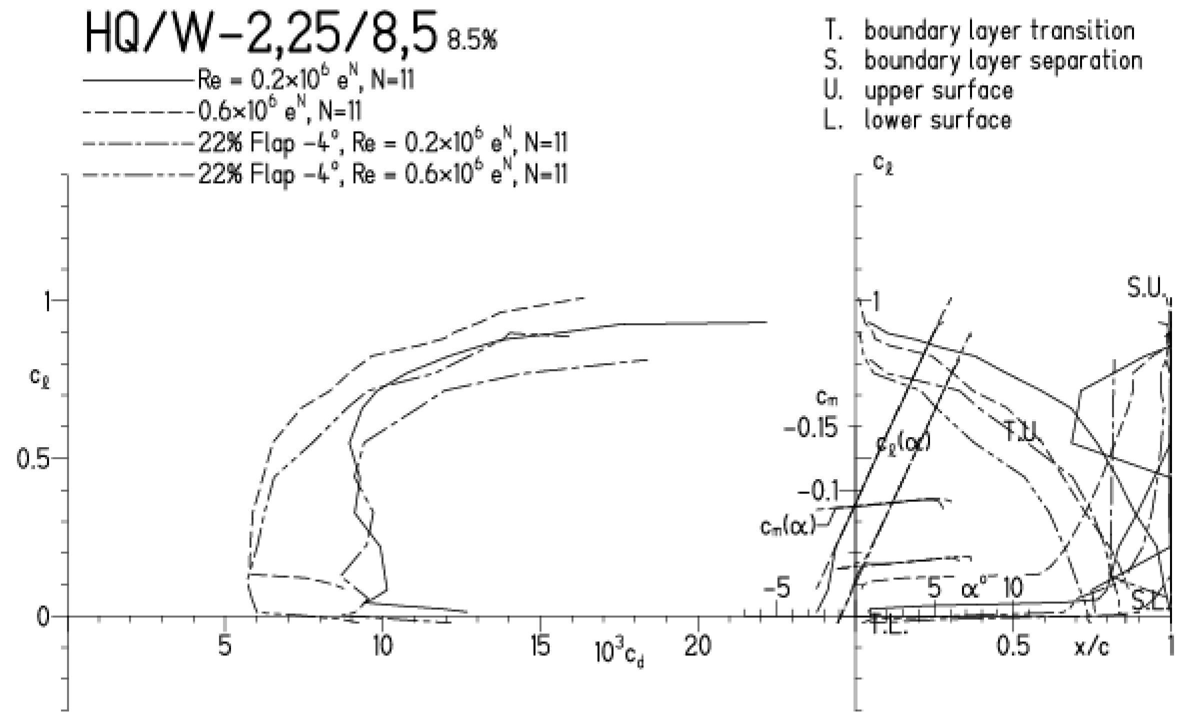


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

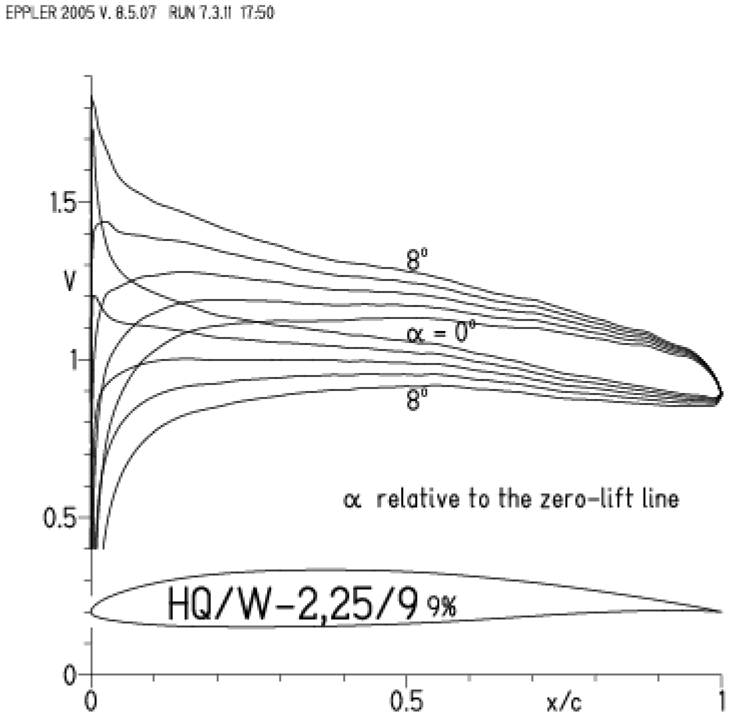
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

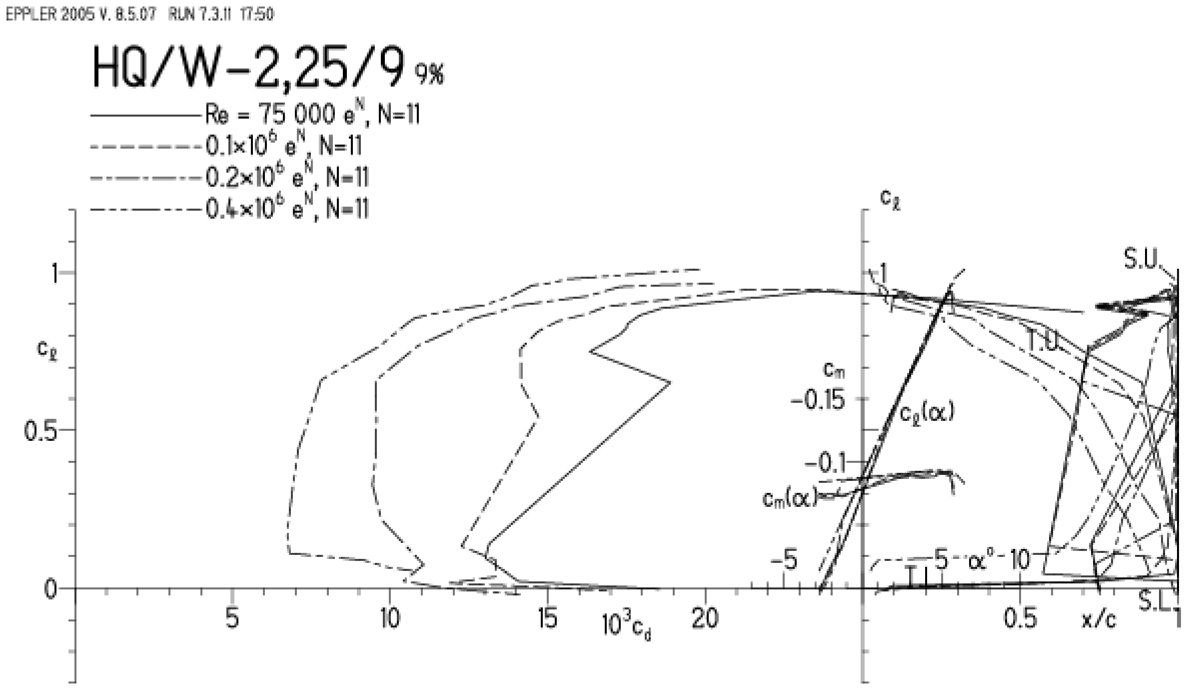


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



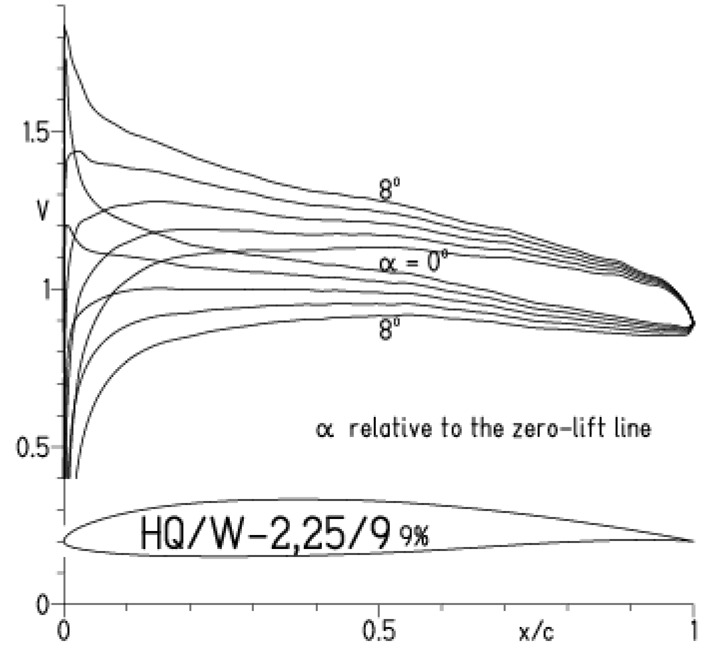
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

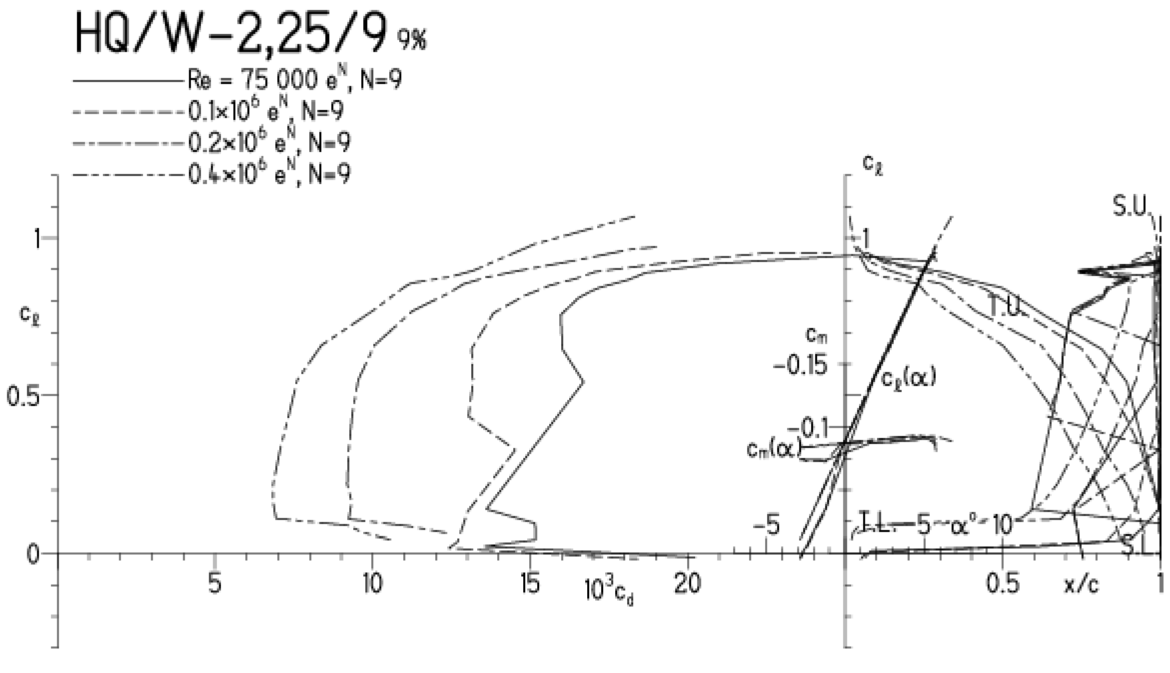

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

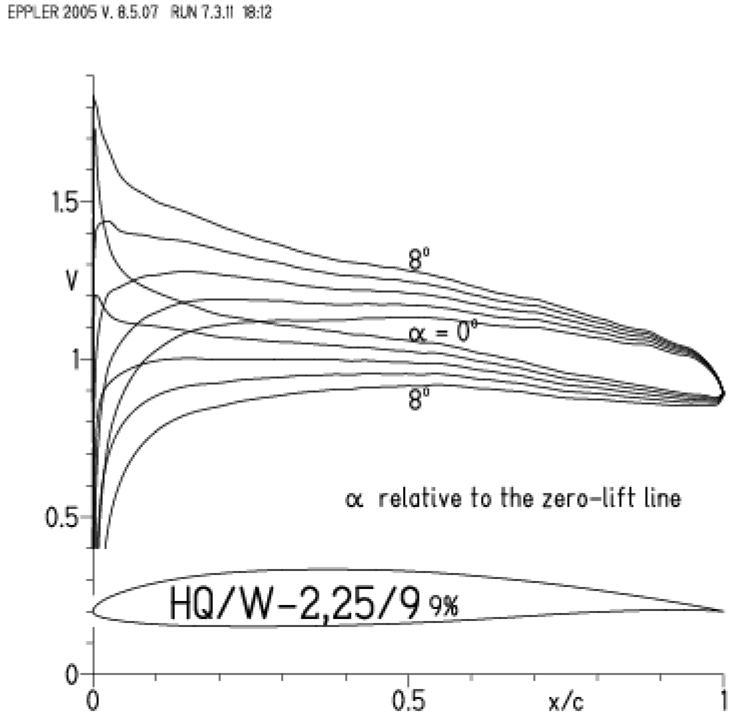
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

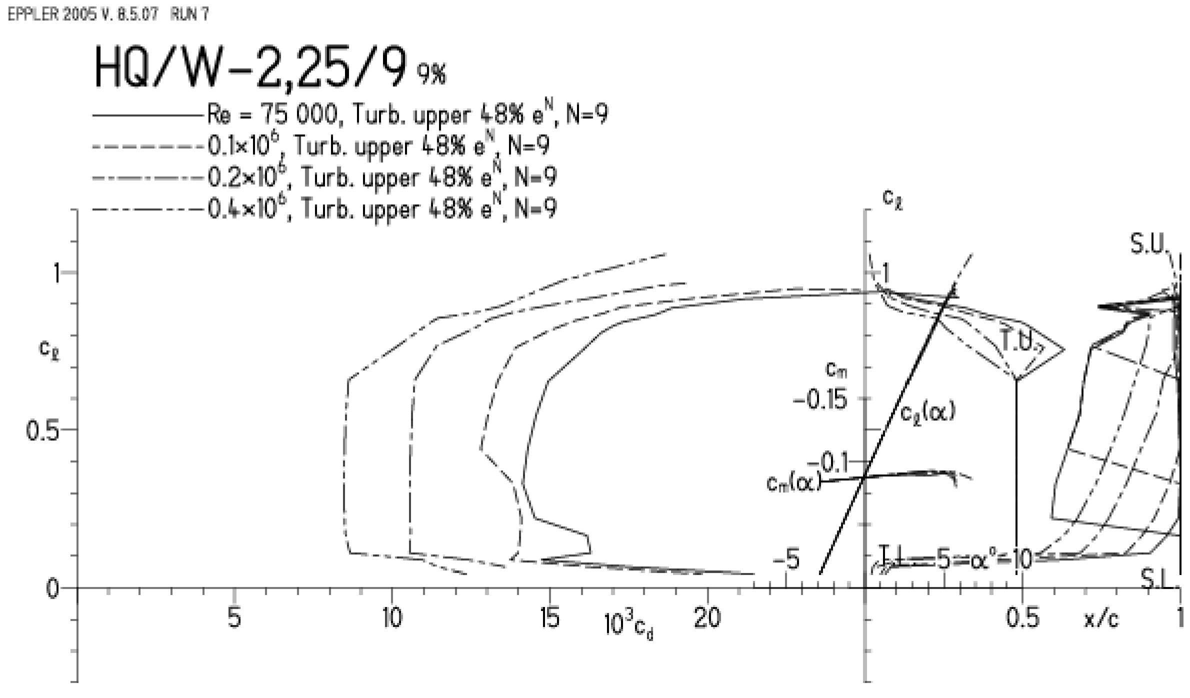


EPPLER 2005 V. 8.



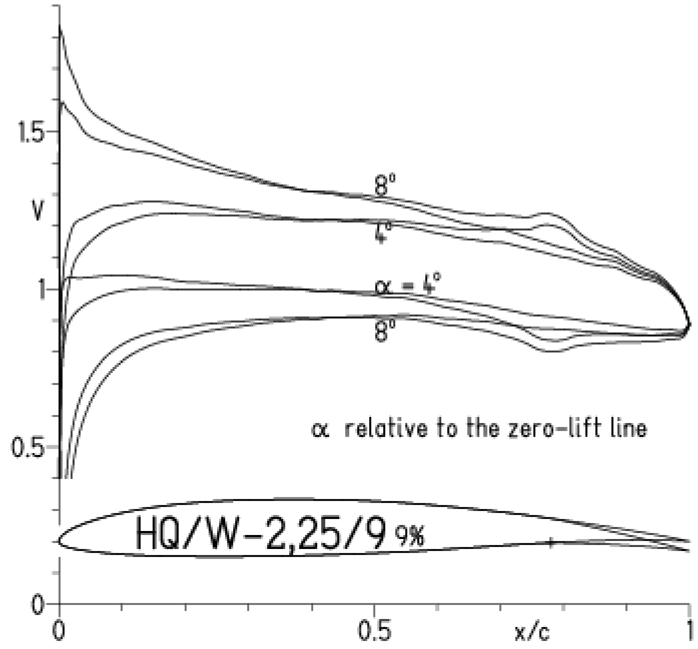
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



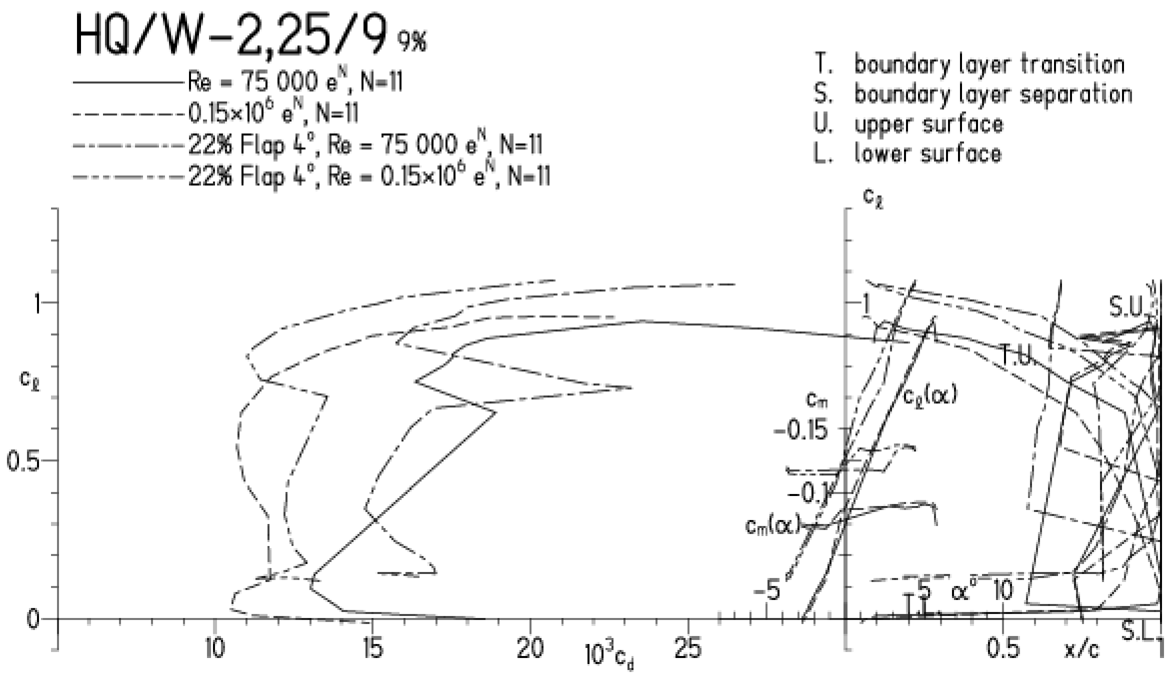


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

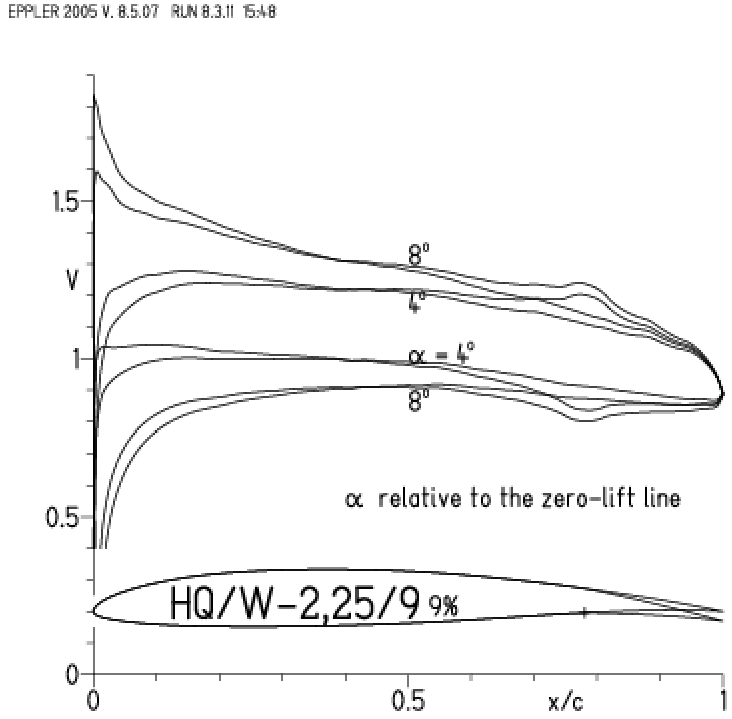
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

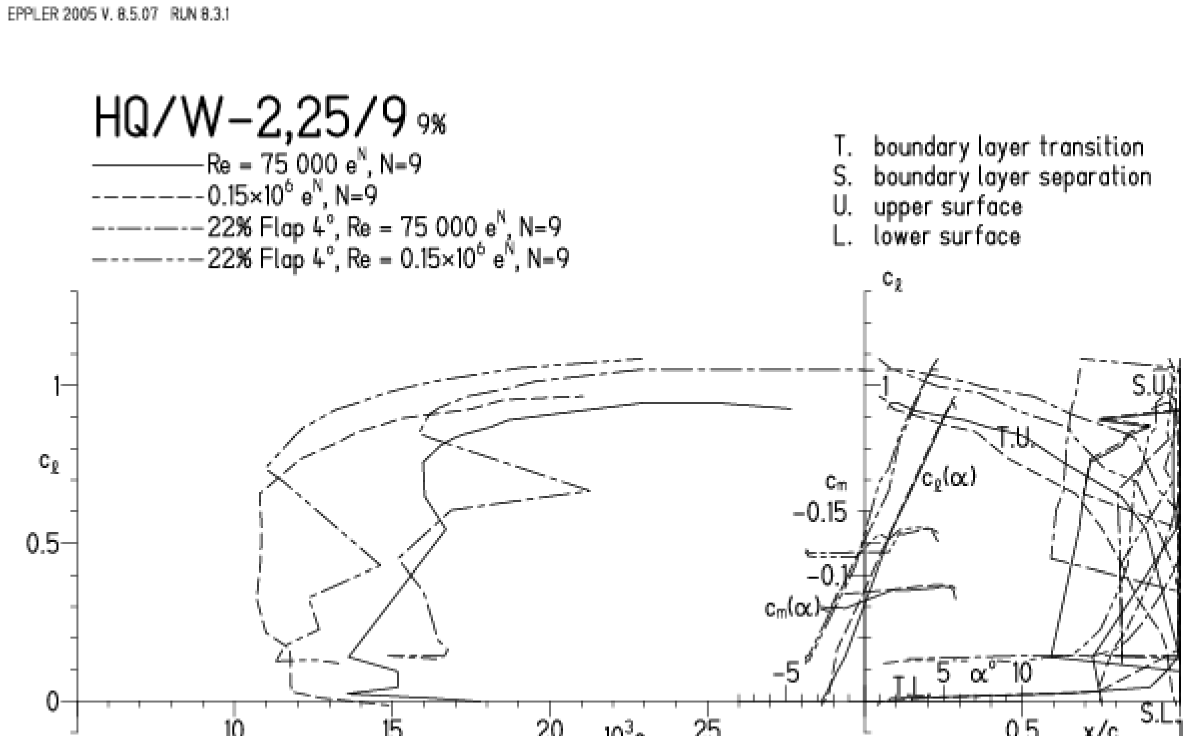


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

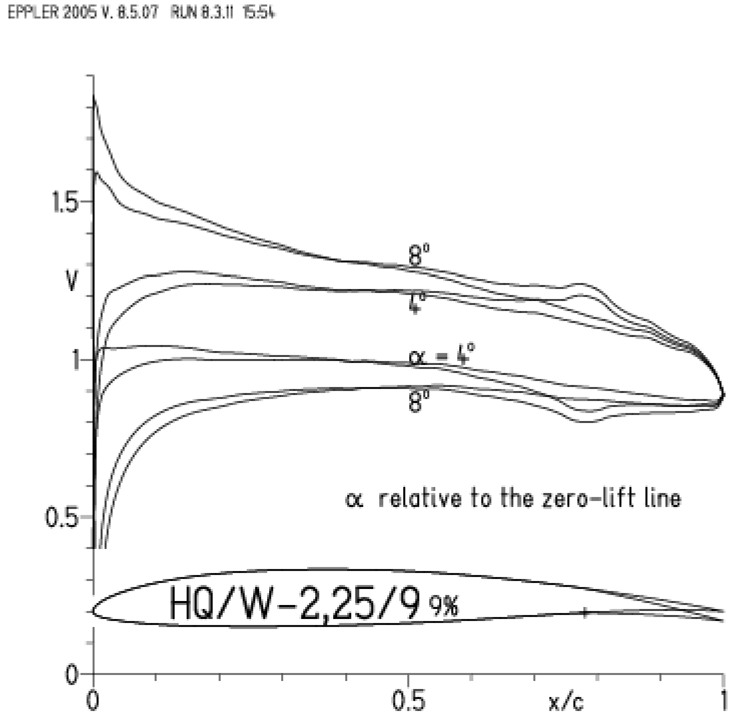


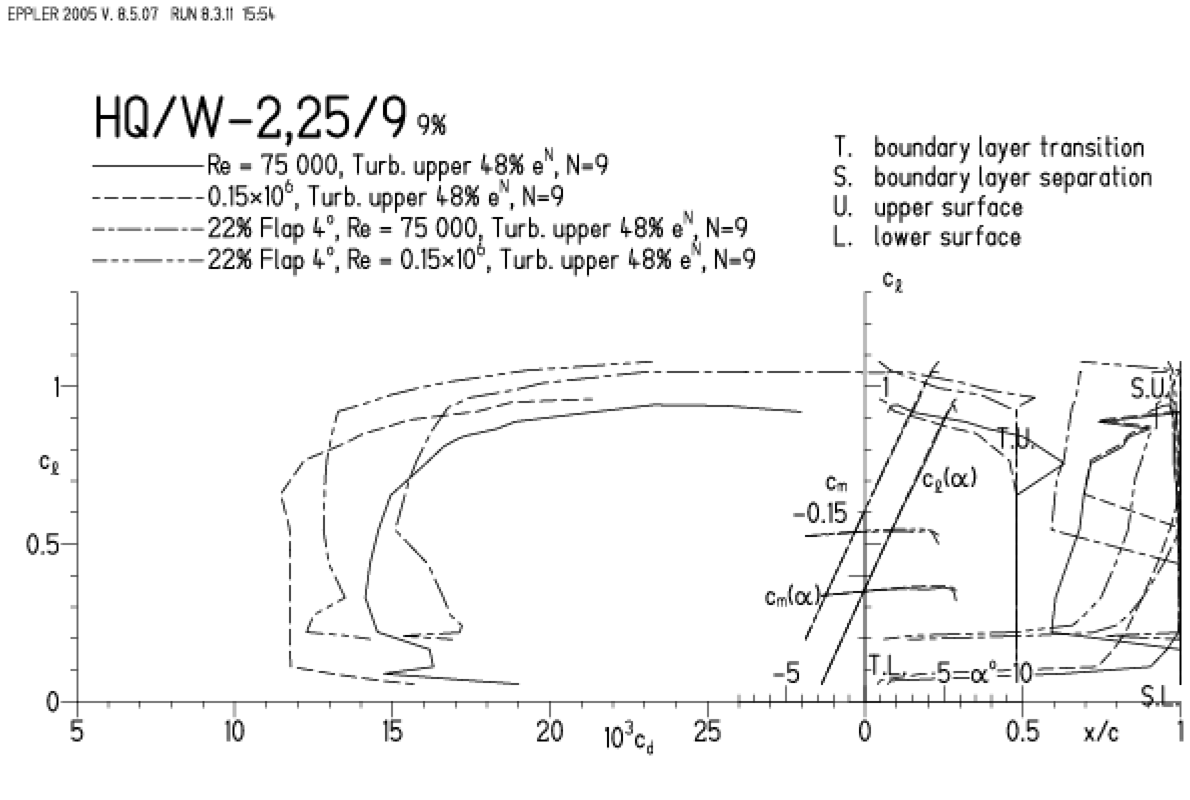
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





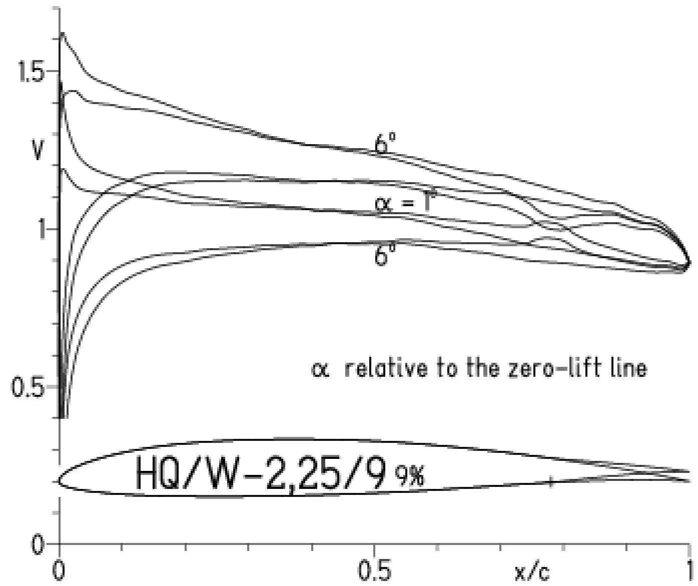
<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



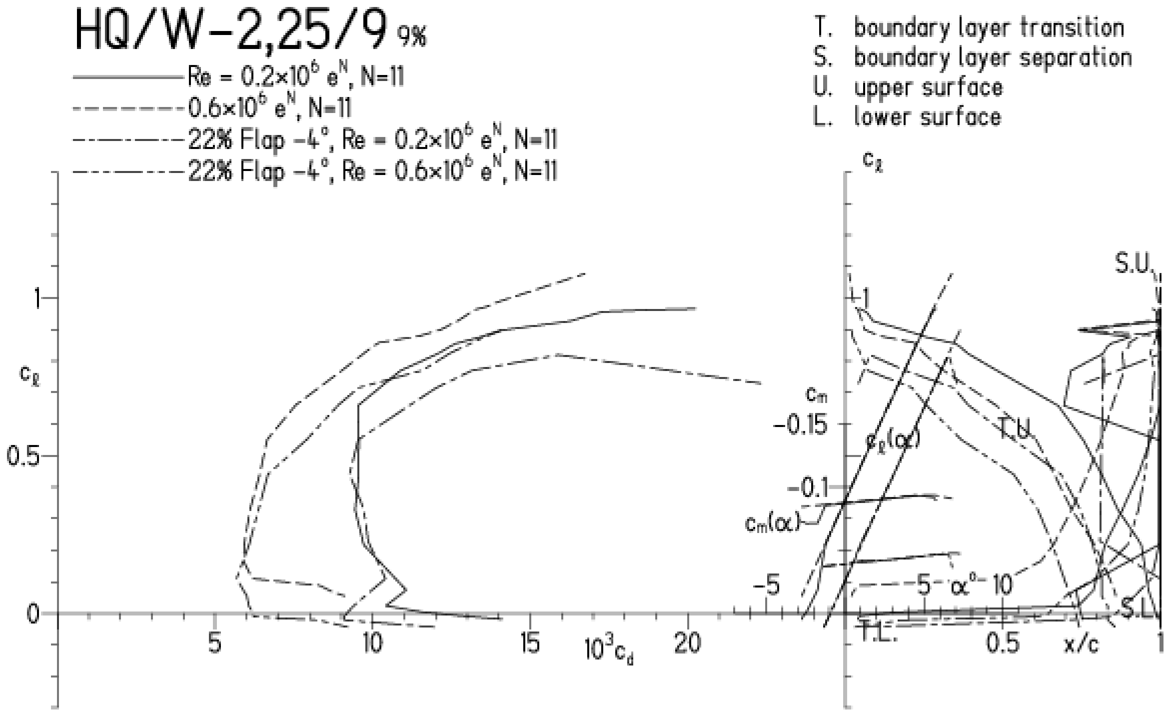


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

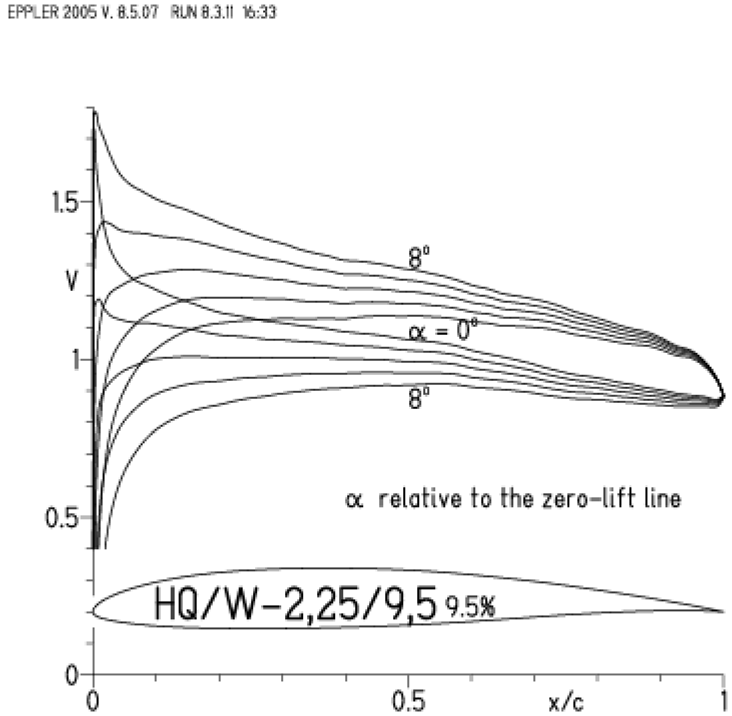
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

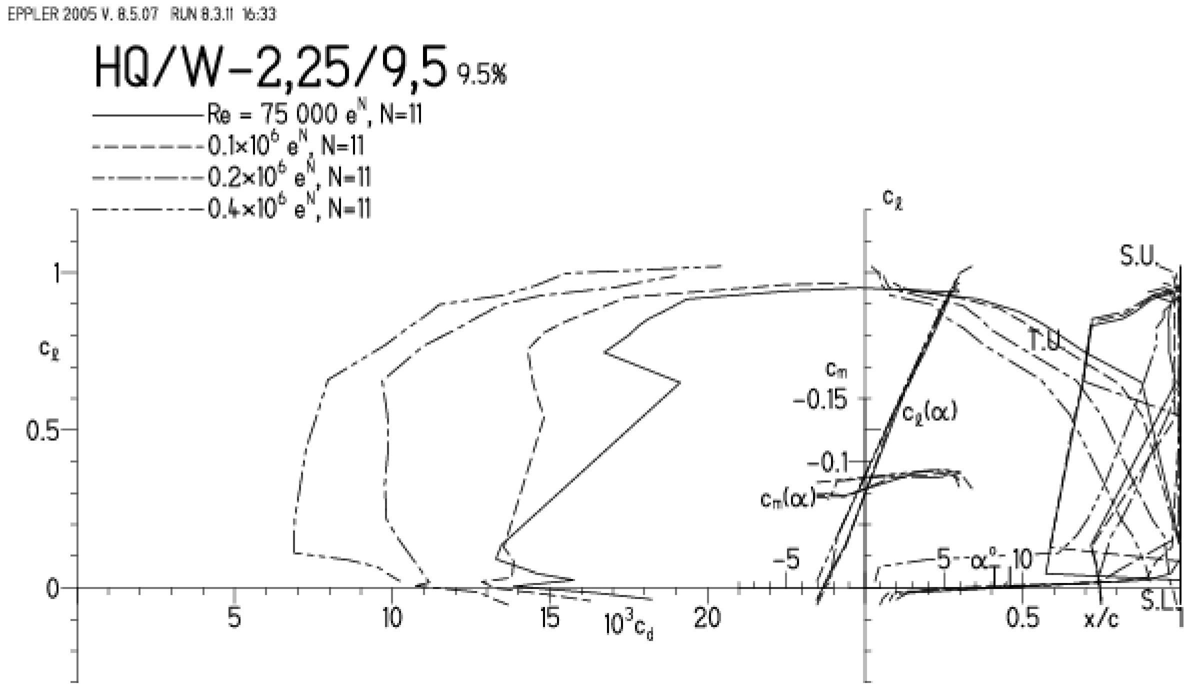


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

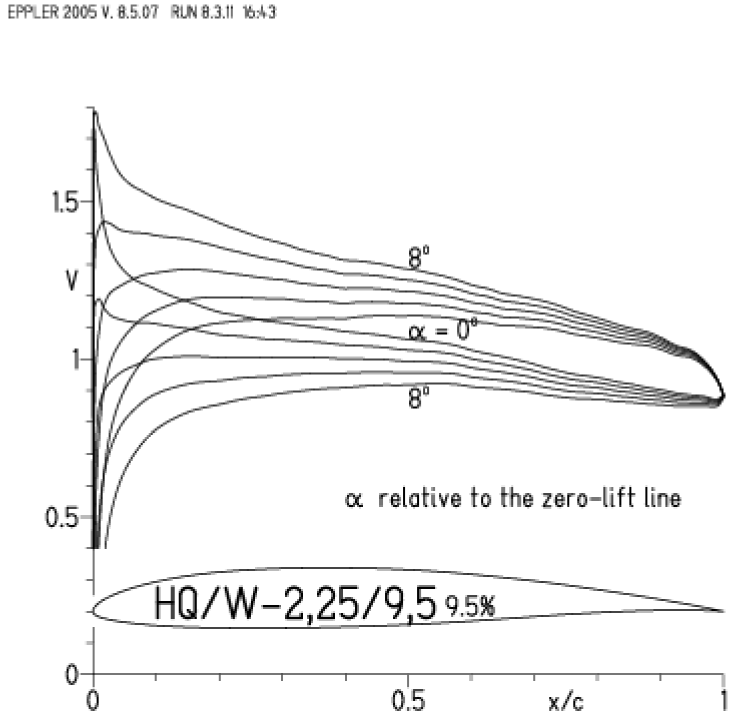


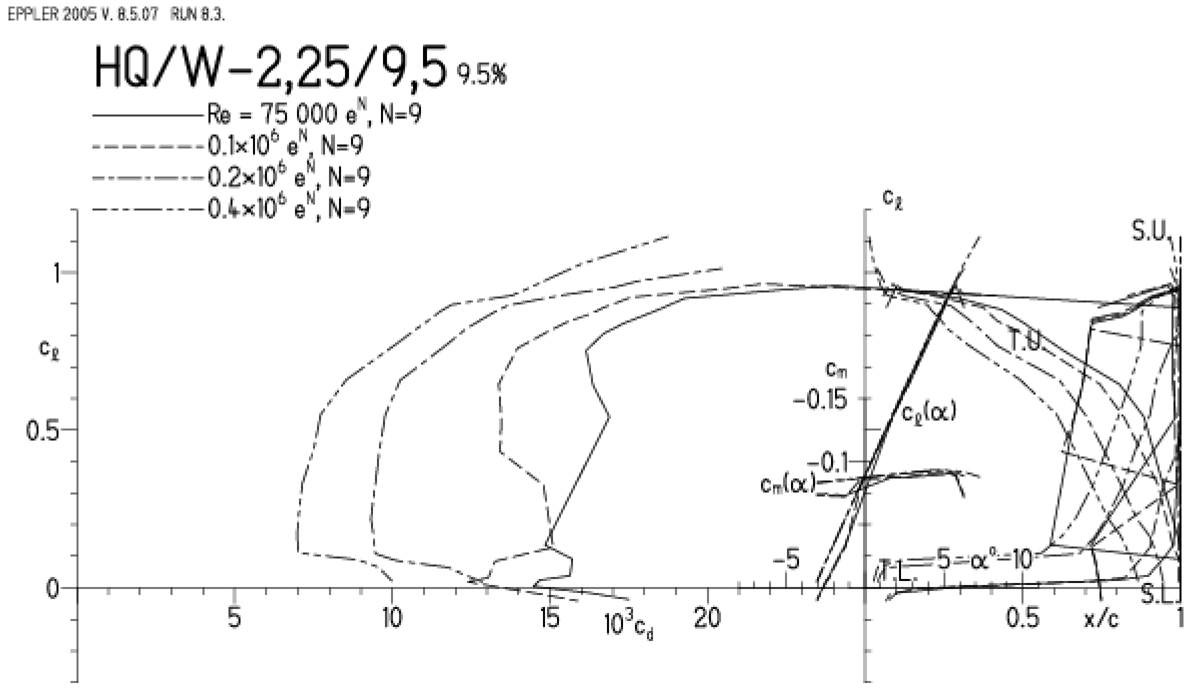
HQ/W-2,25/9,5, N=11



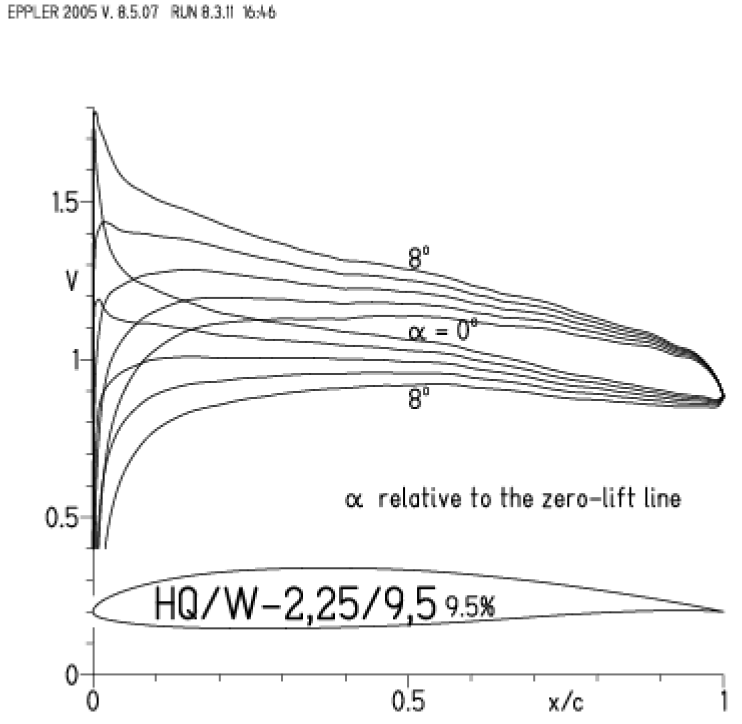


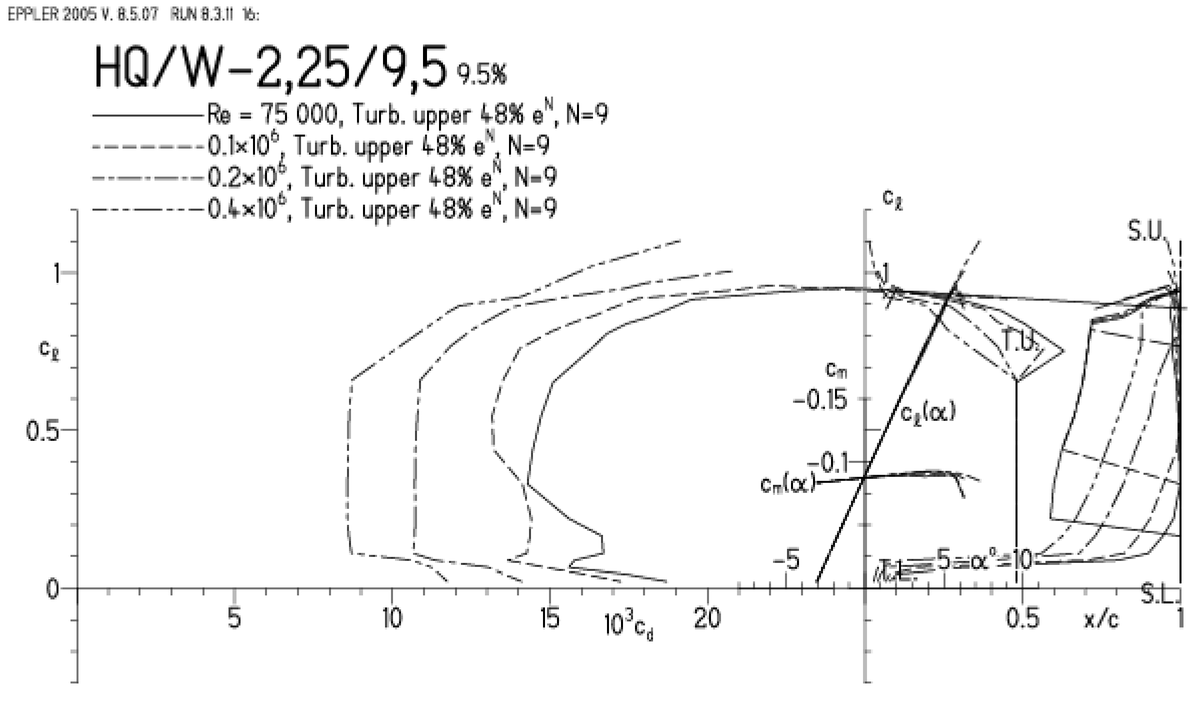
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
20
10^3 c_d
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

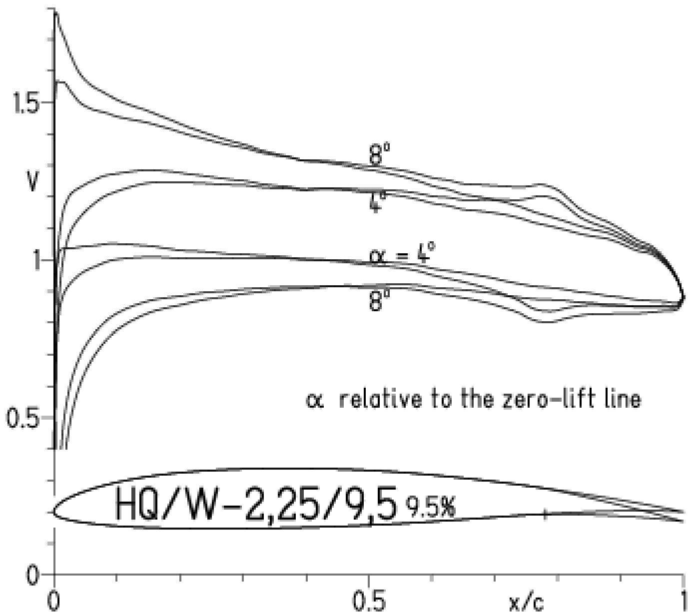
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



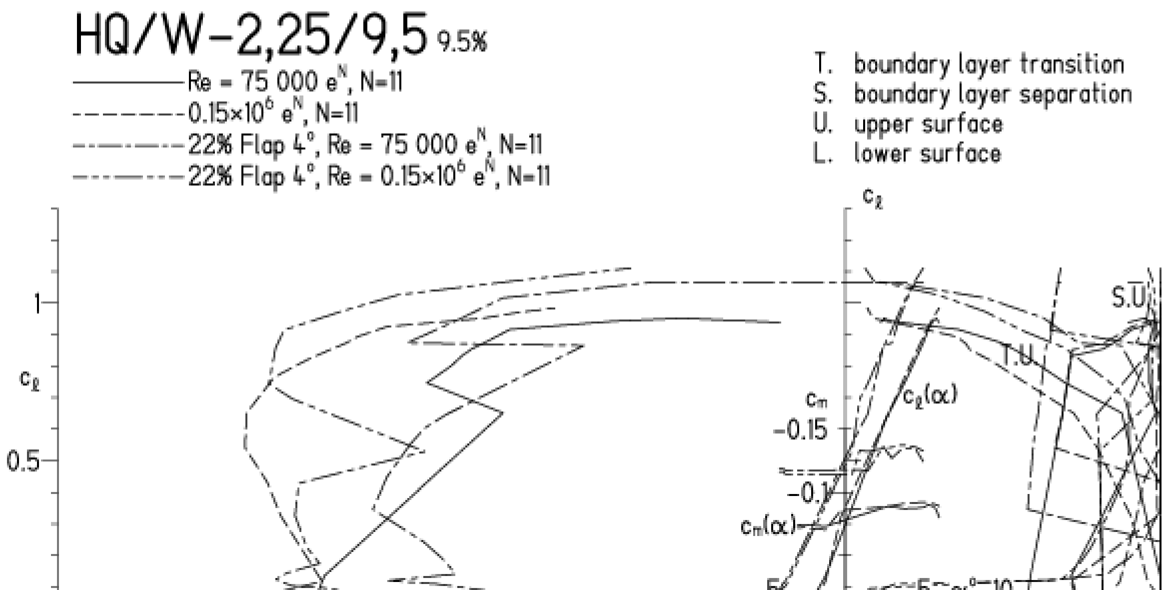


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

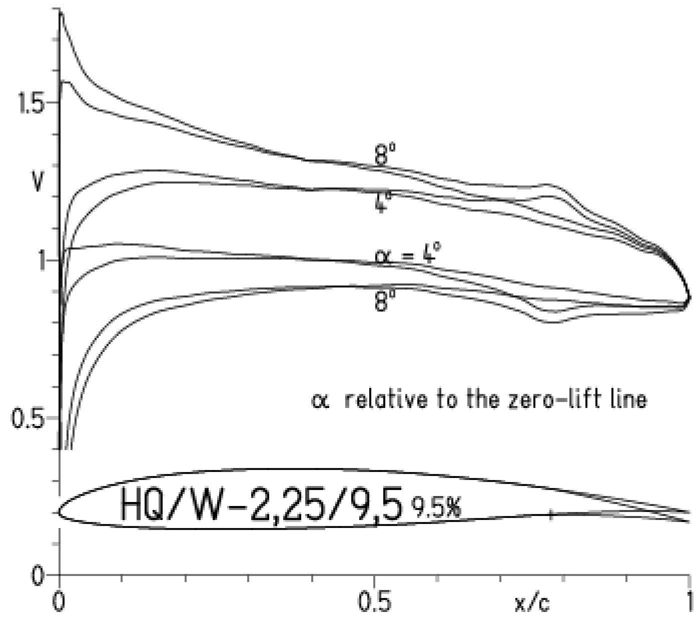


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

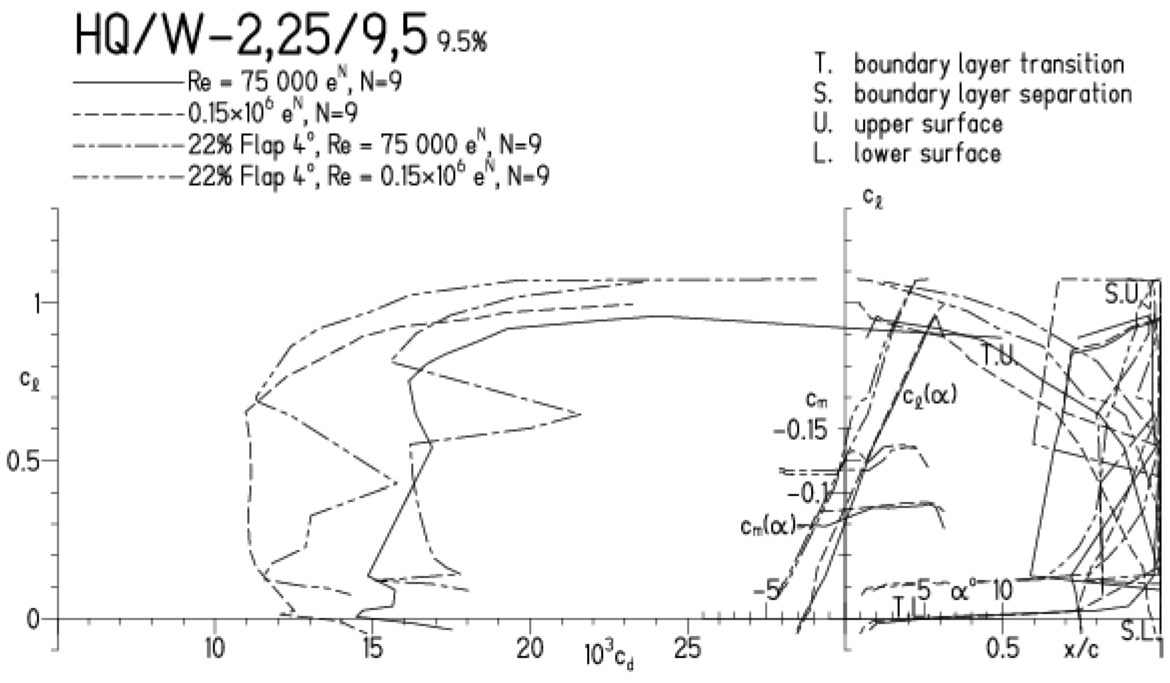


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

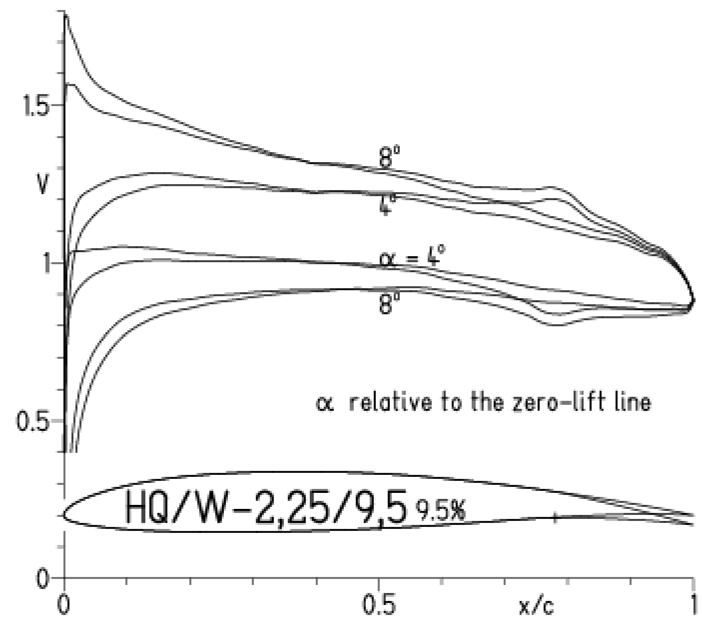


EPPLER 2005 V. 8.5.07 R

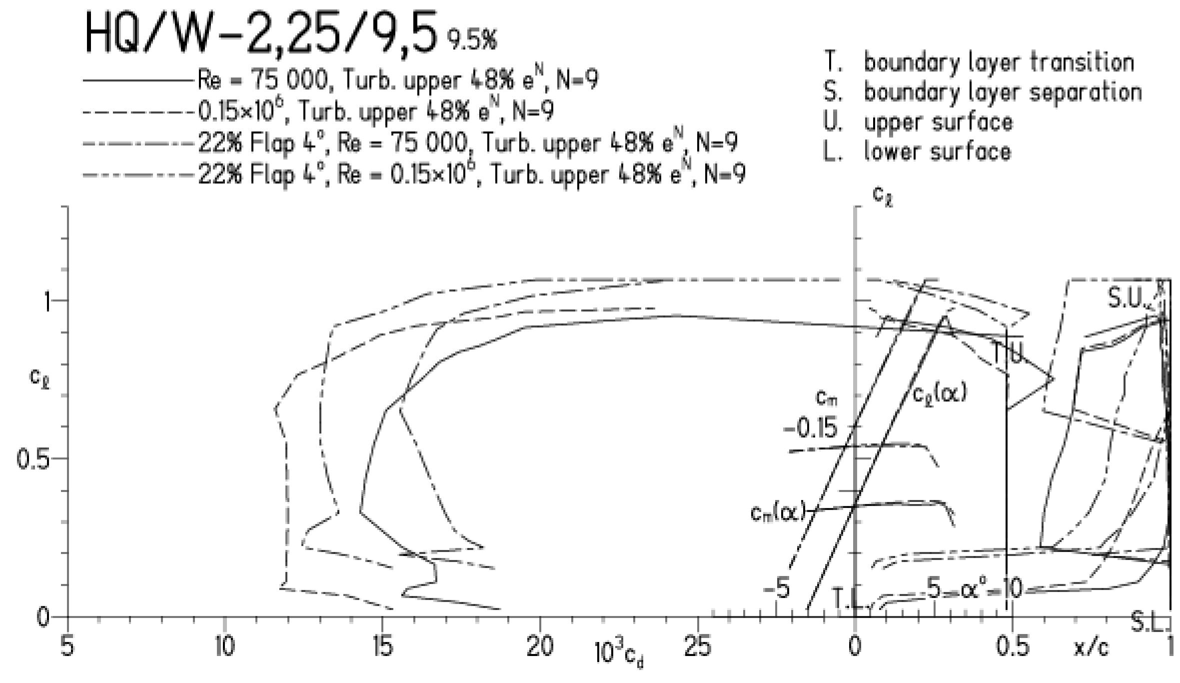


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

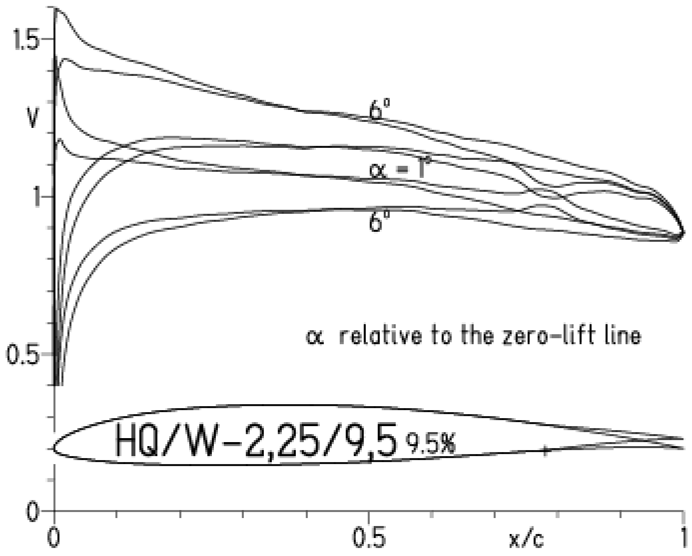


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

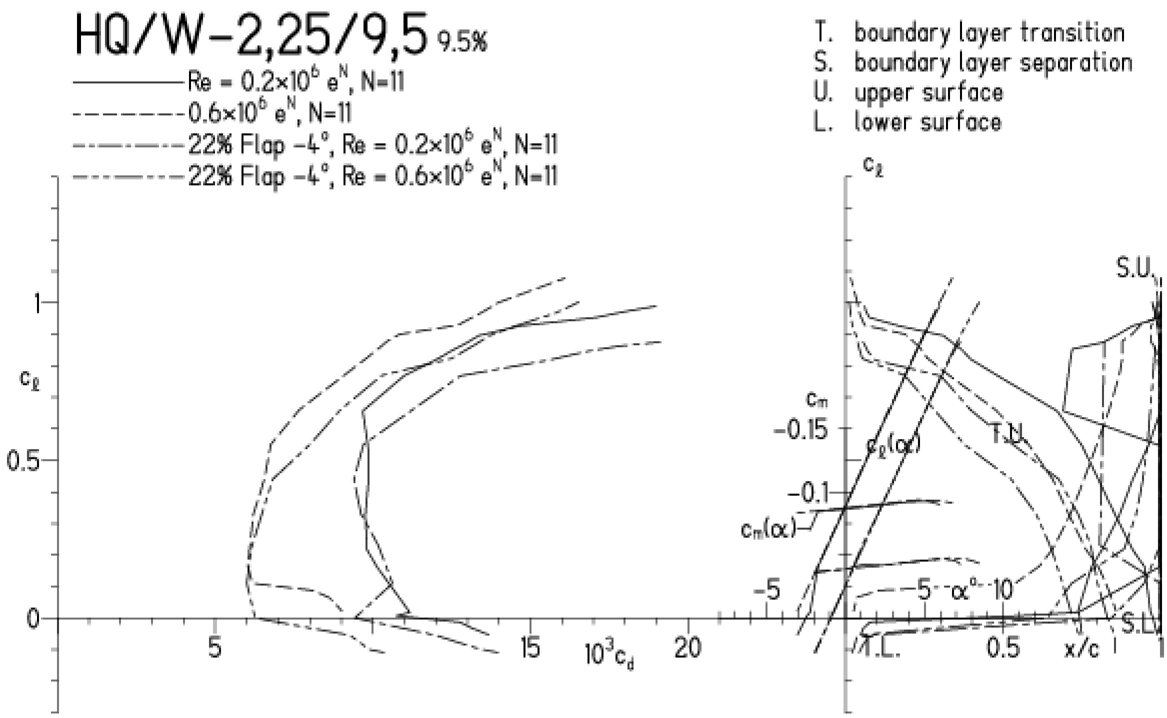


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

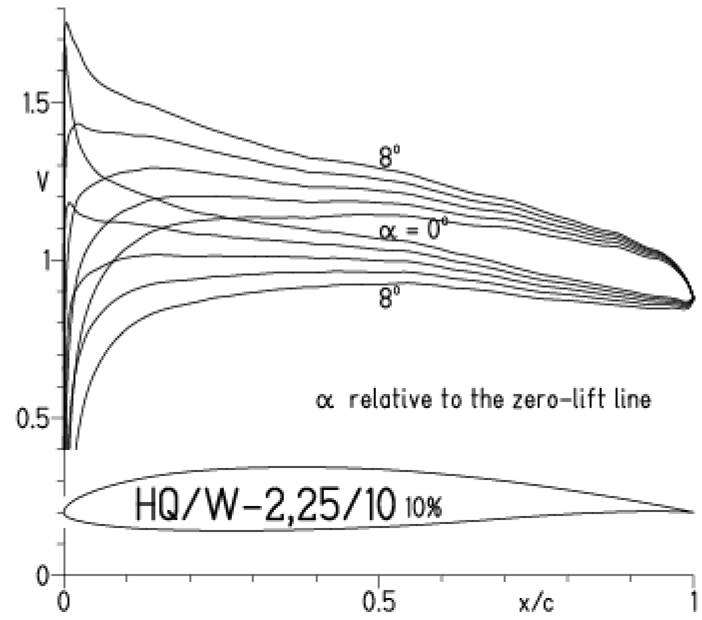


EPPLER 2005 V.

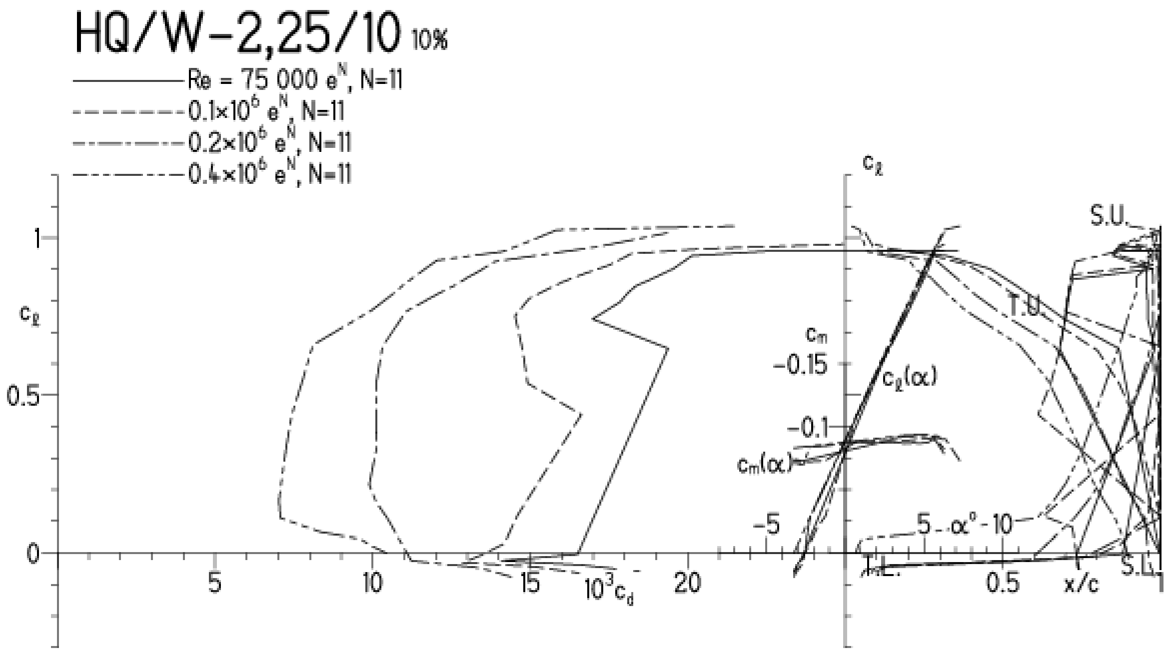


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

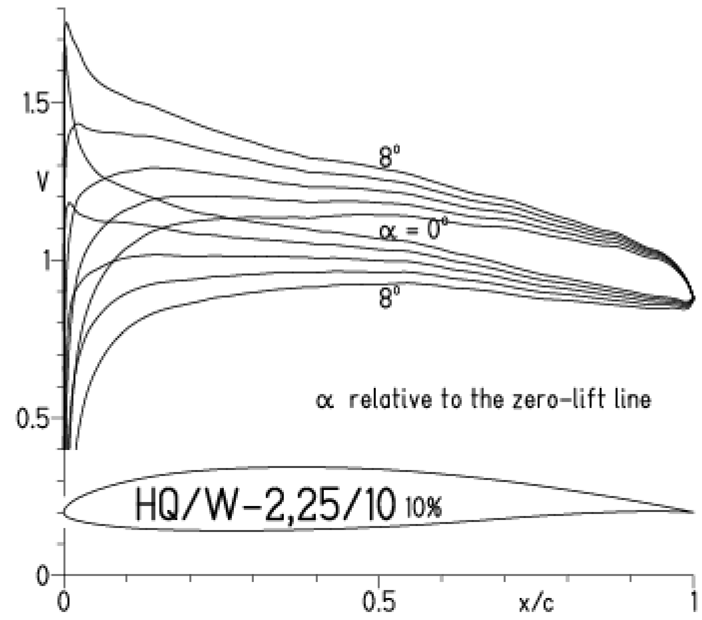


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

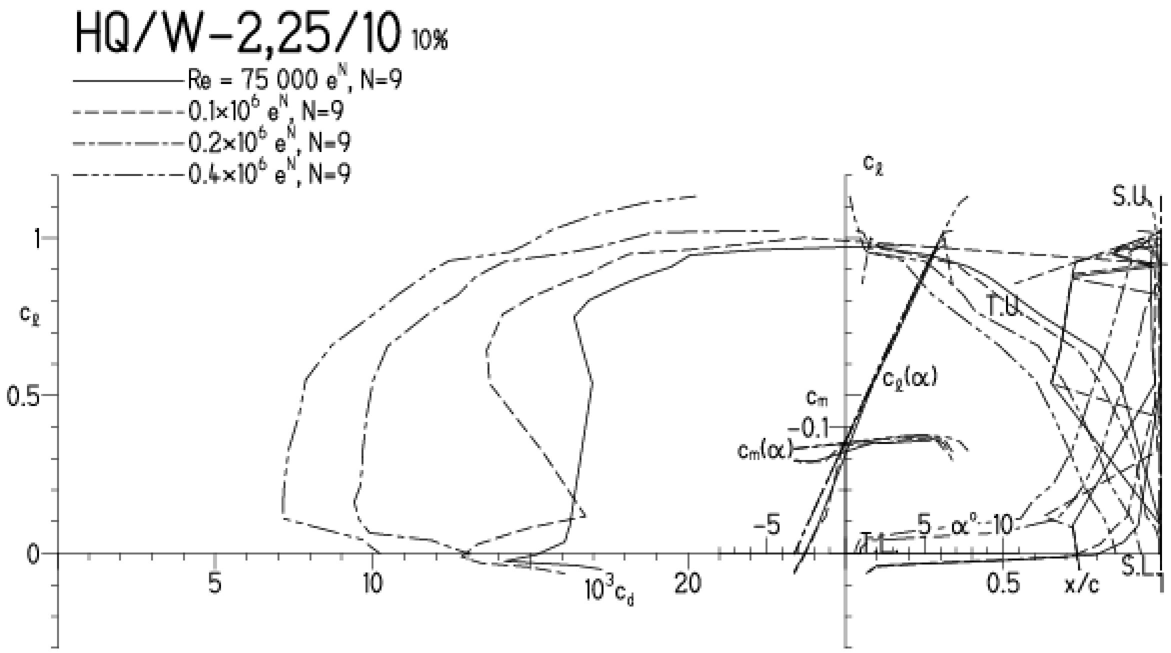


<u>HQ/W-2,25/10</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

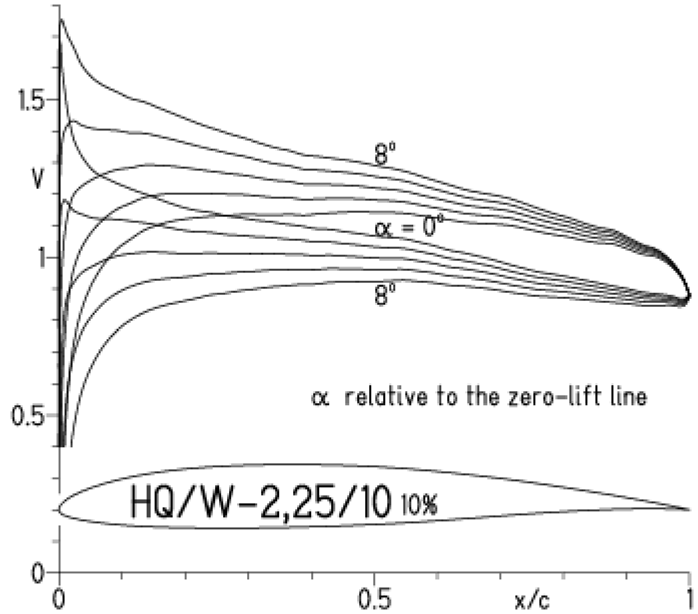


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

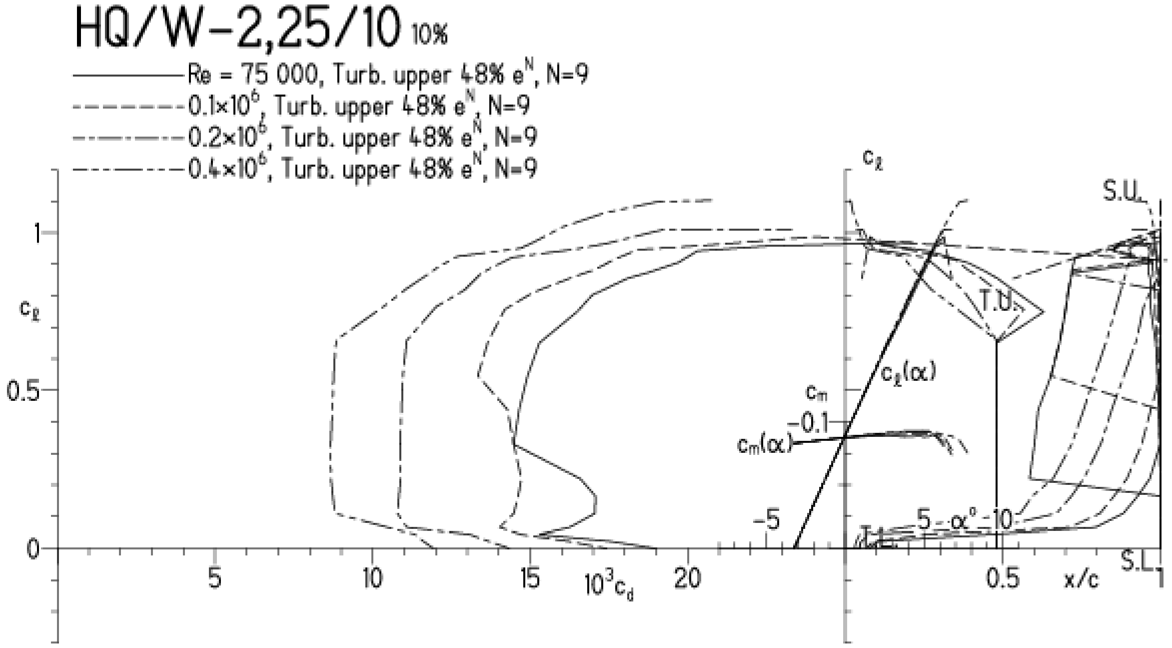


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

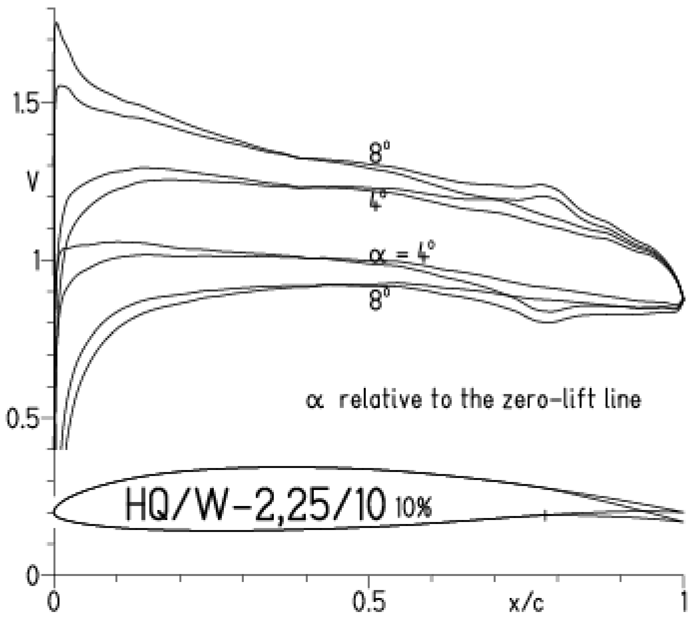


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

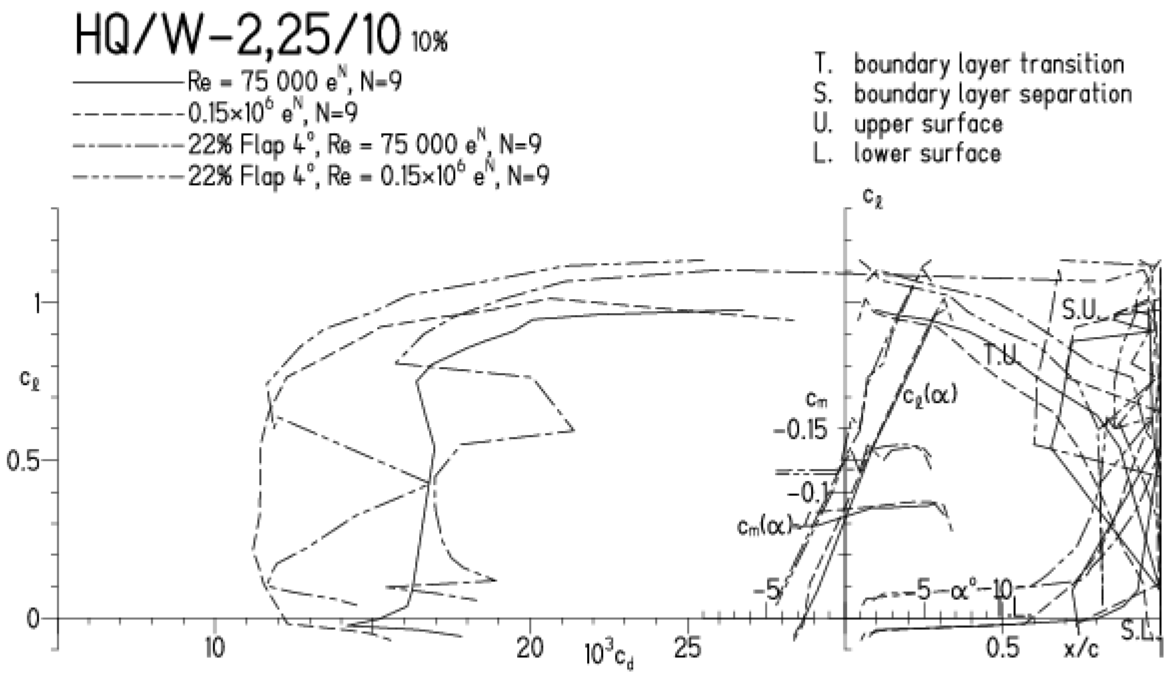


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

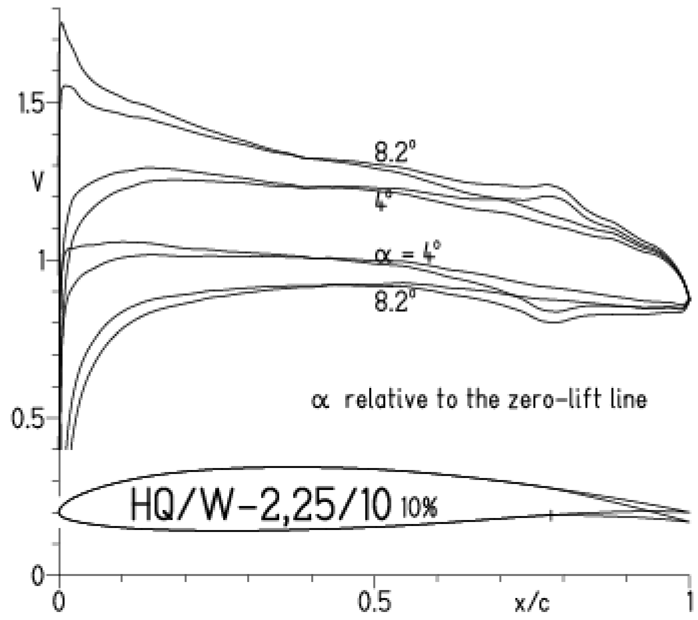


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

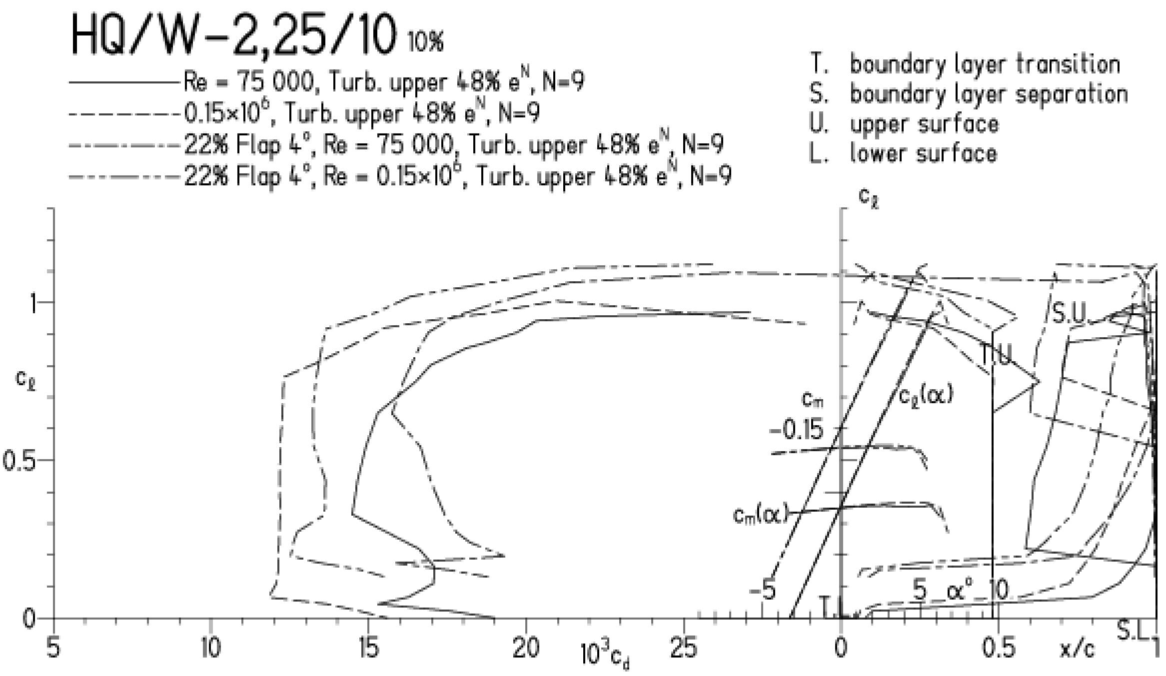


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

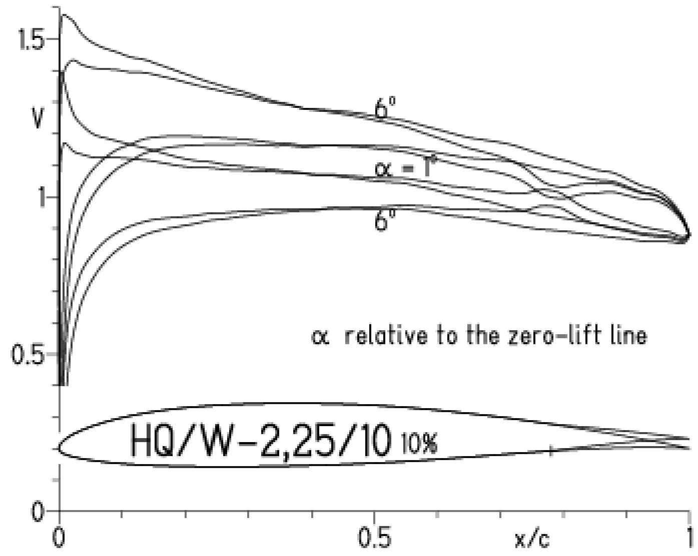


EPPLER 2005 V. 8.5.07 RUN 8.3

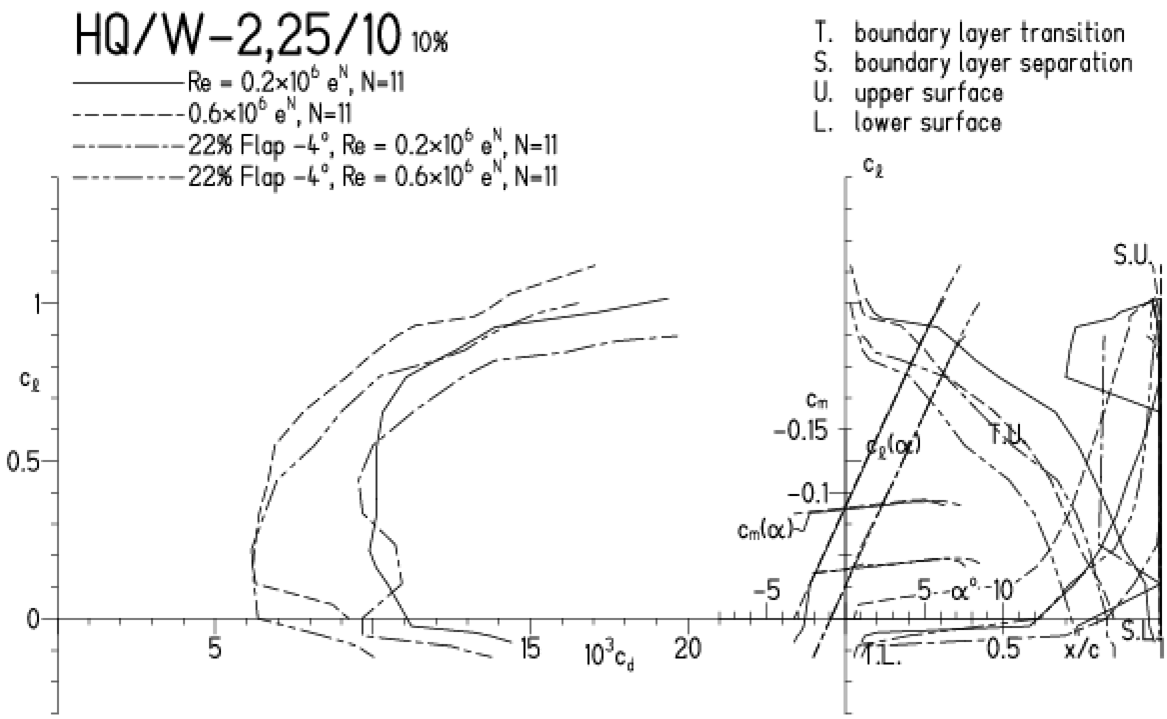


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

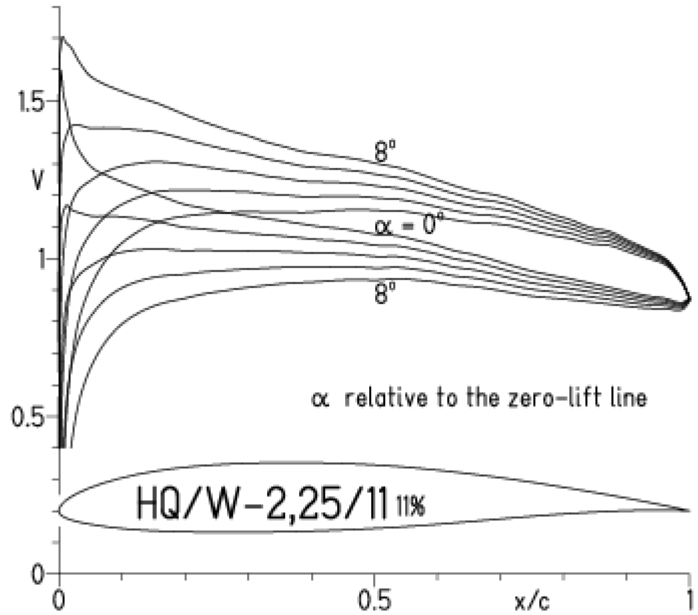


EPPLER 2005 V. 8.5.07 RUN

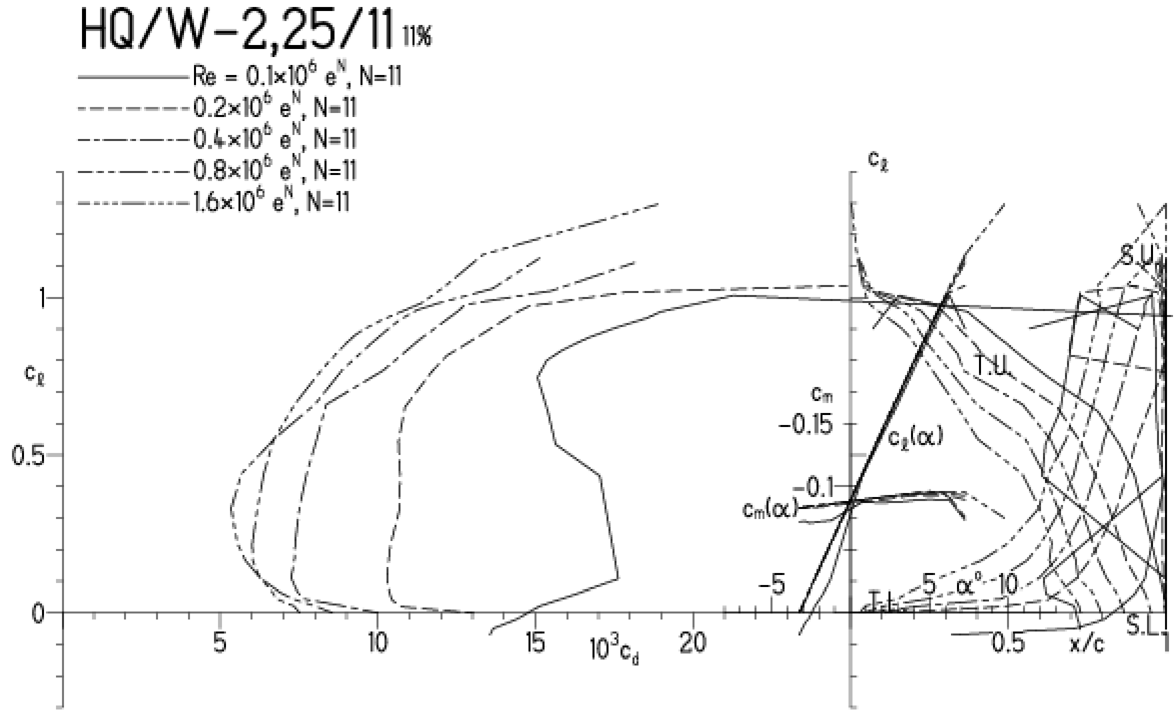


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

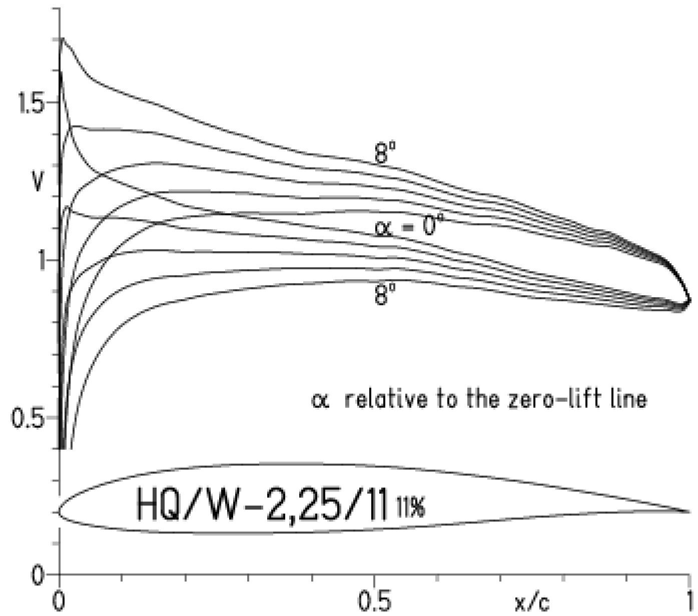


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12

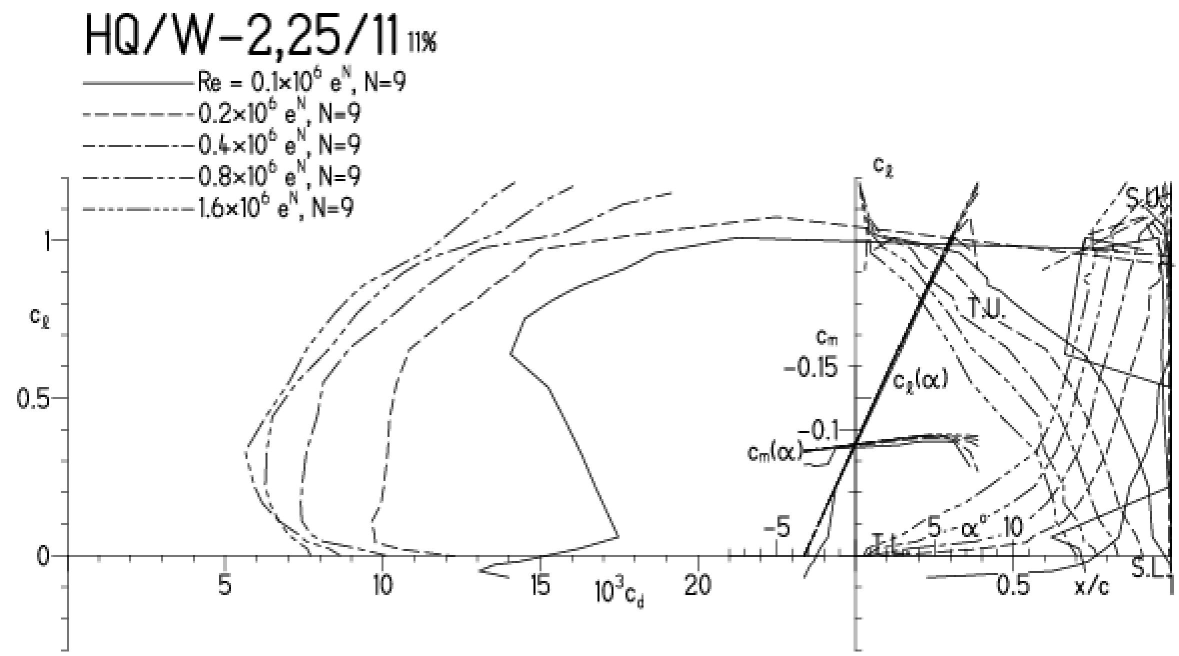


<u>HQQ/W-2,25/11</u>, N=9

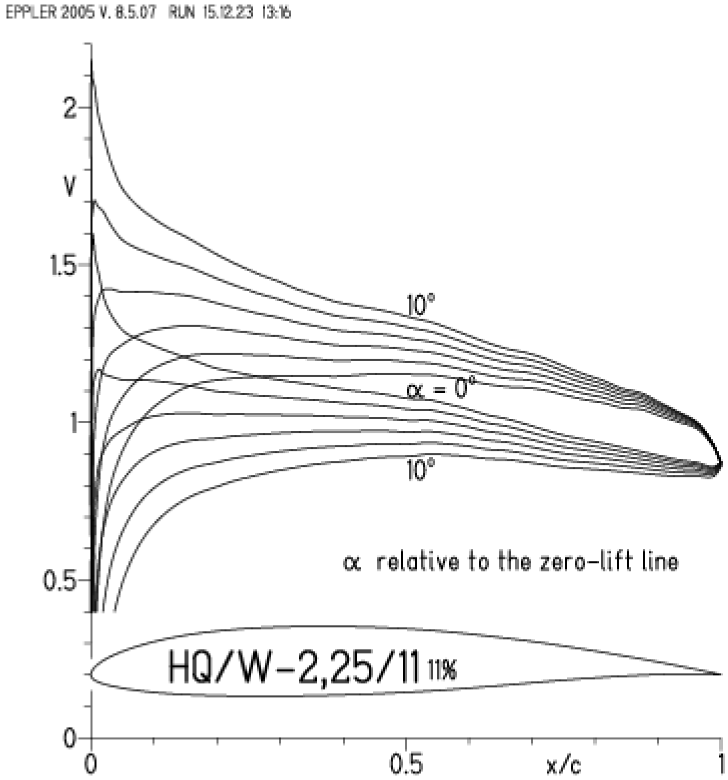
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

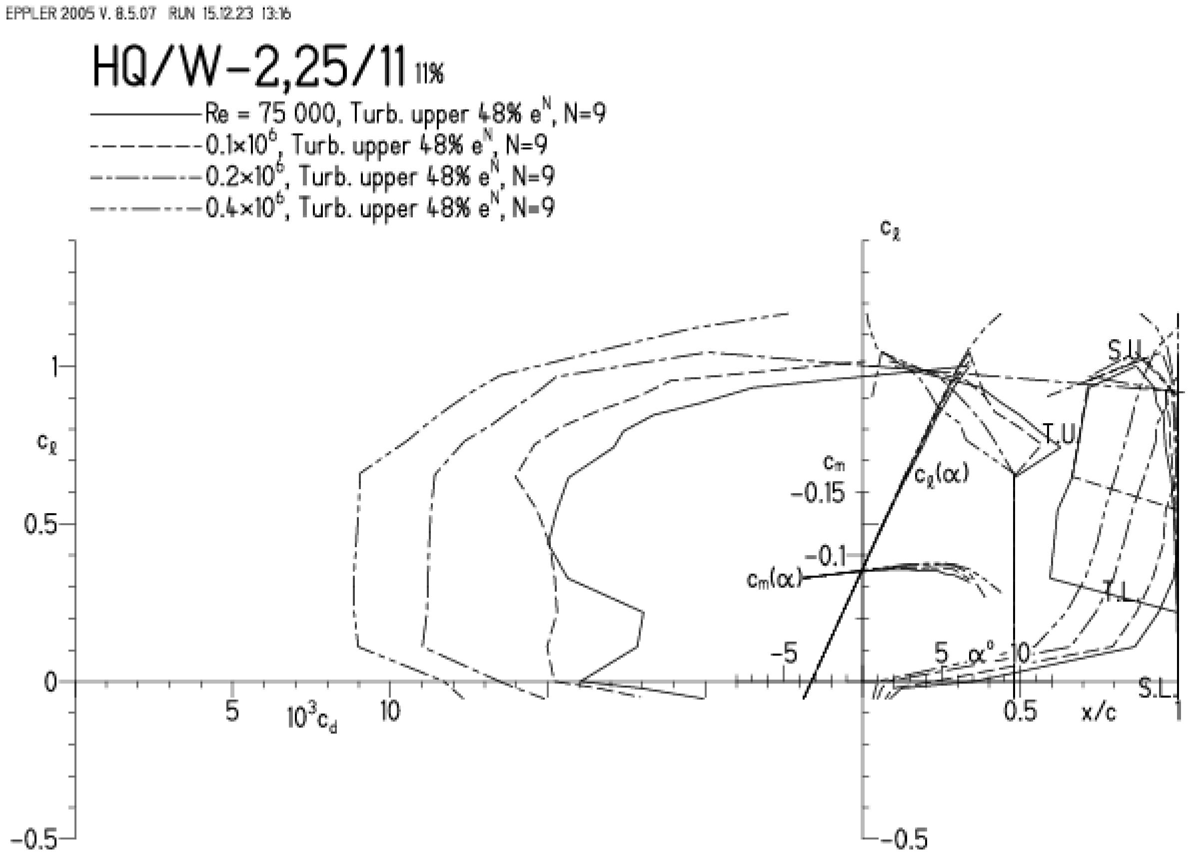


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



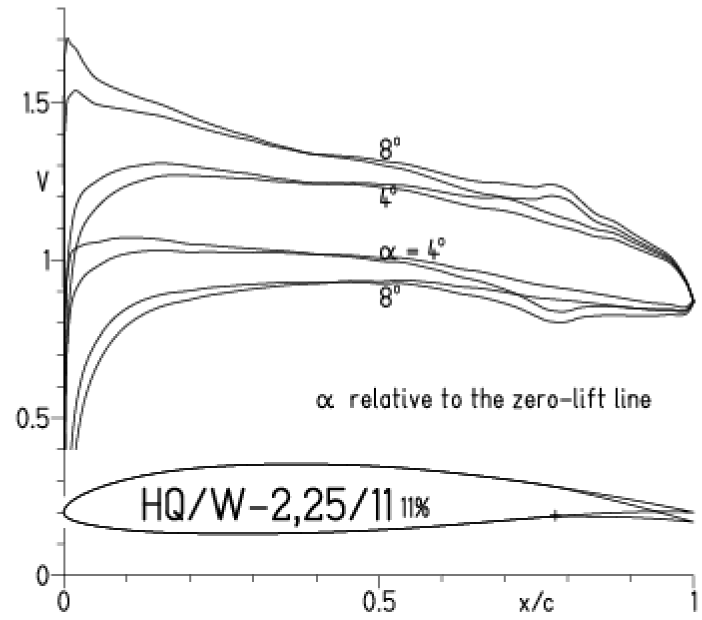
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



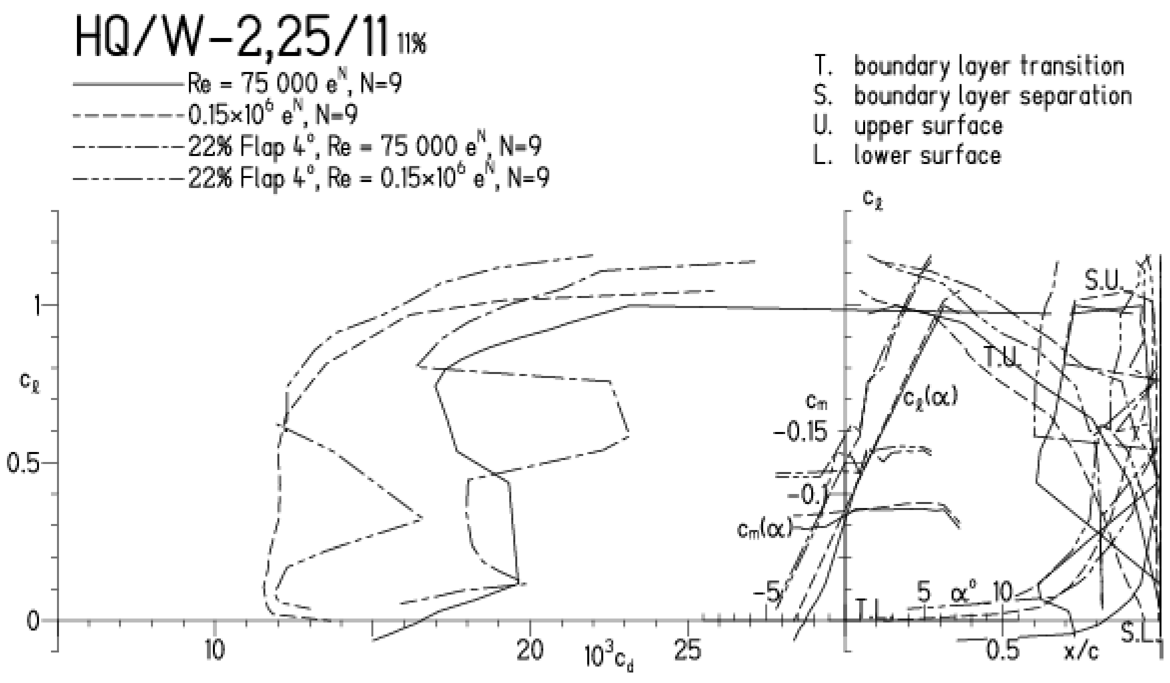


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

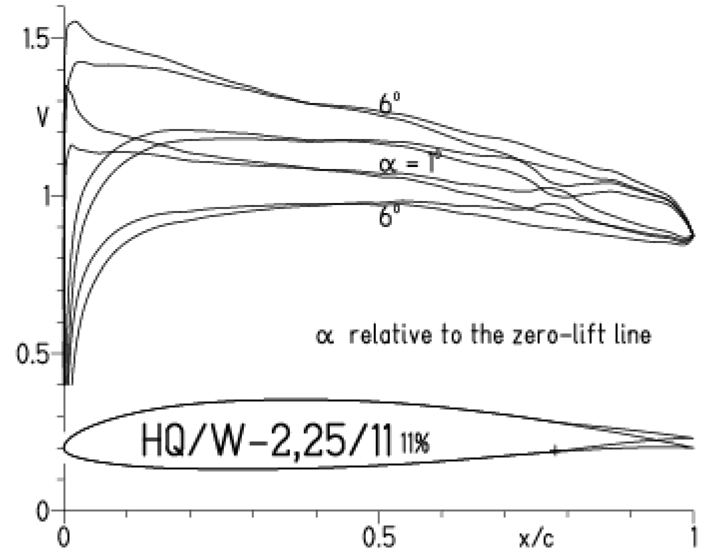


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

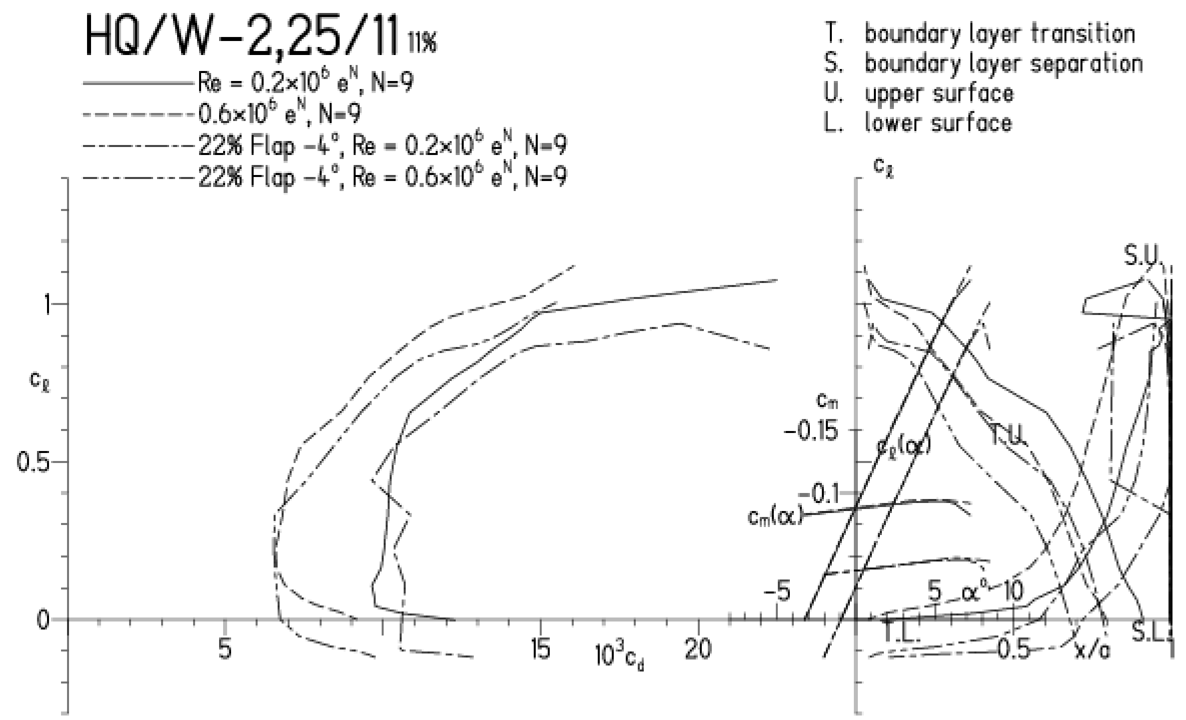


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

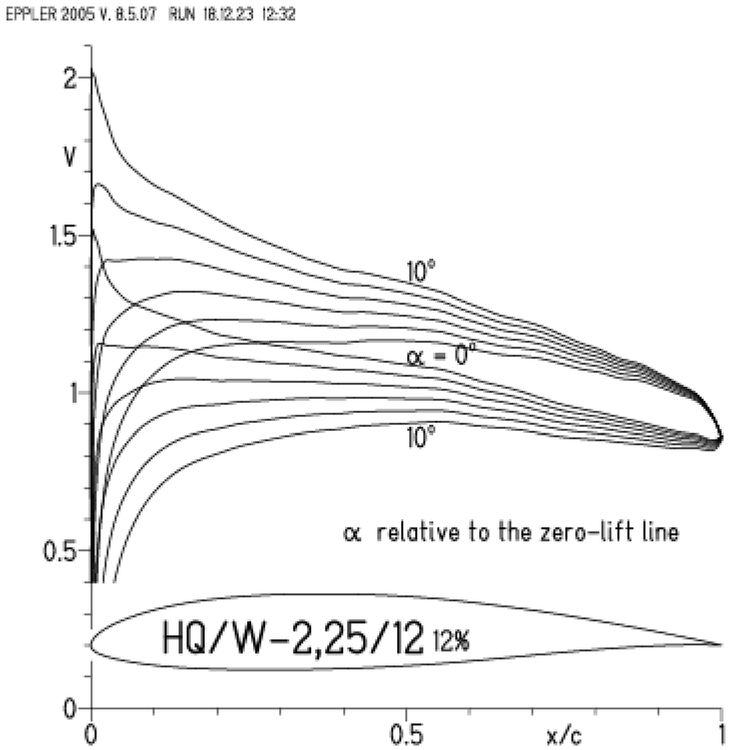
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

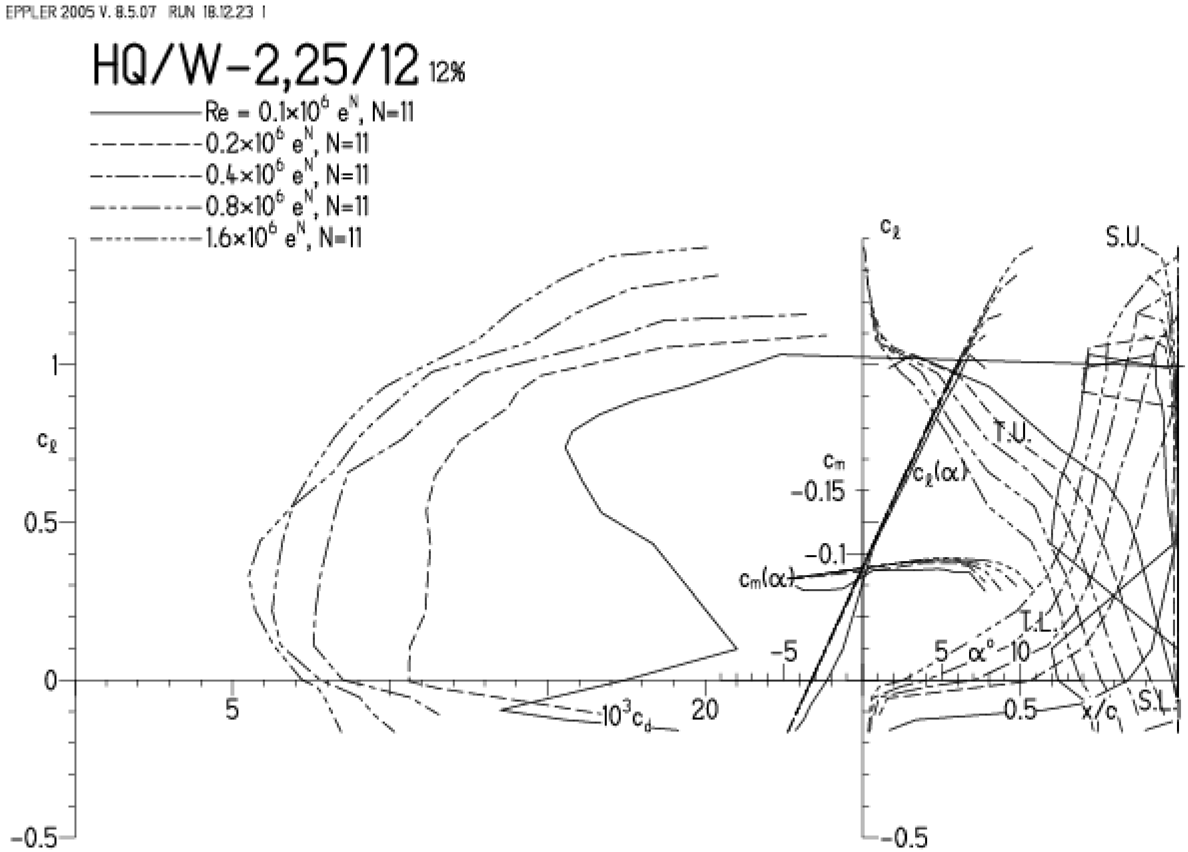


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

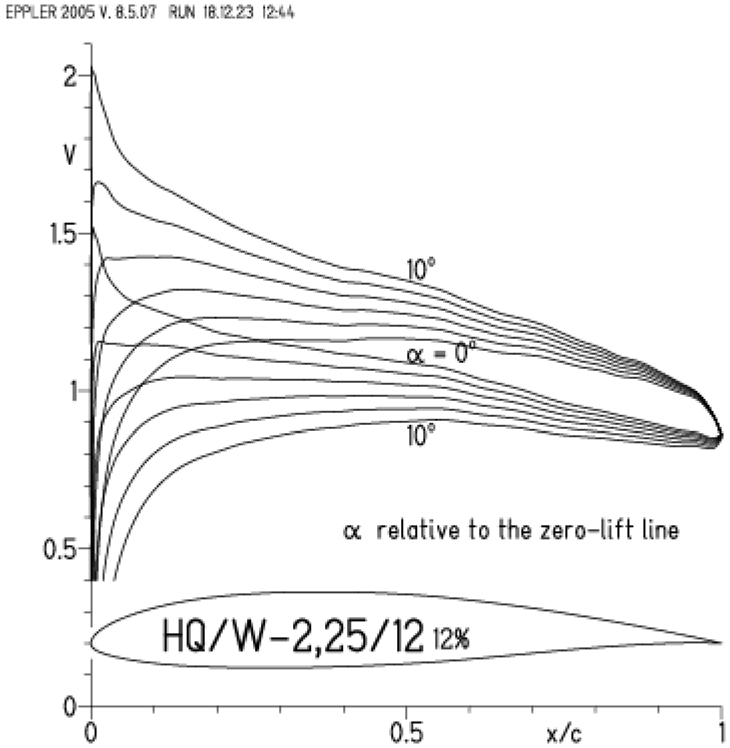


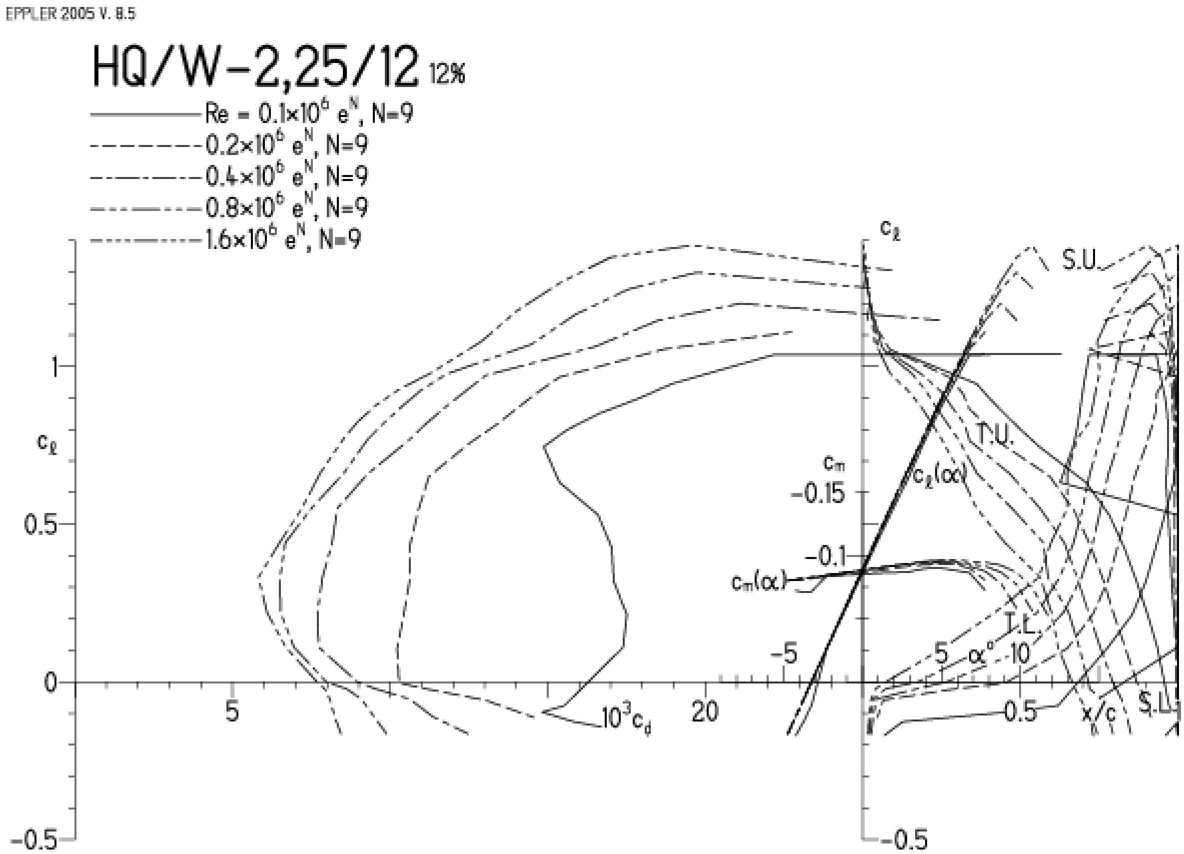
HQ/W-2,25/12, N=11



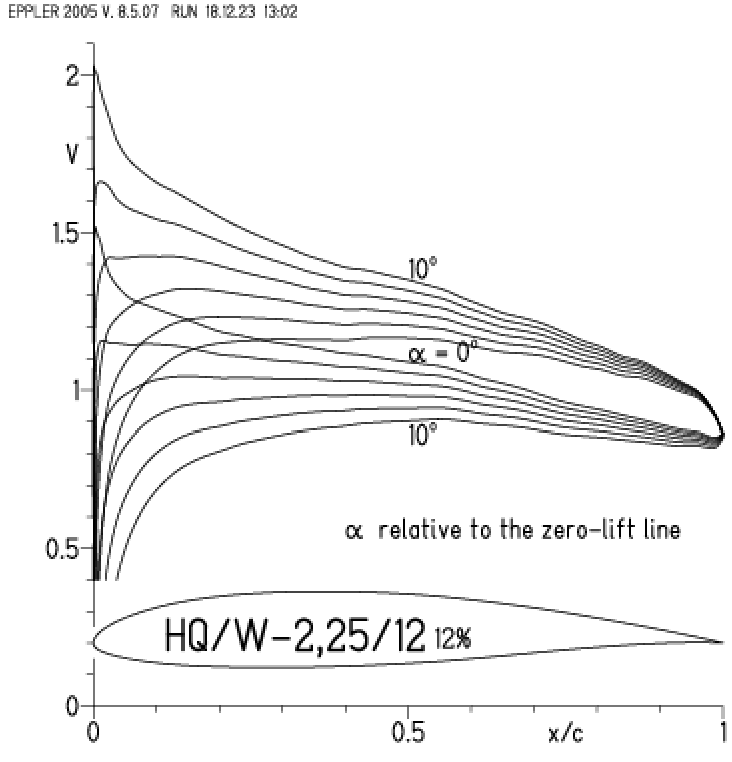


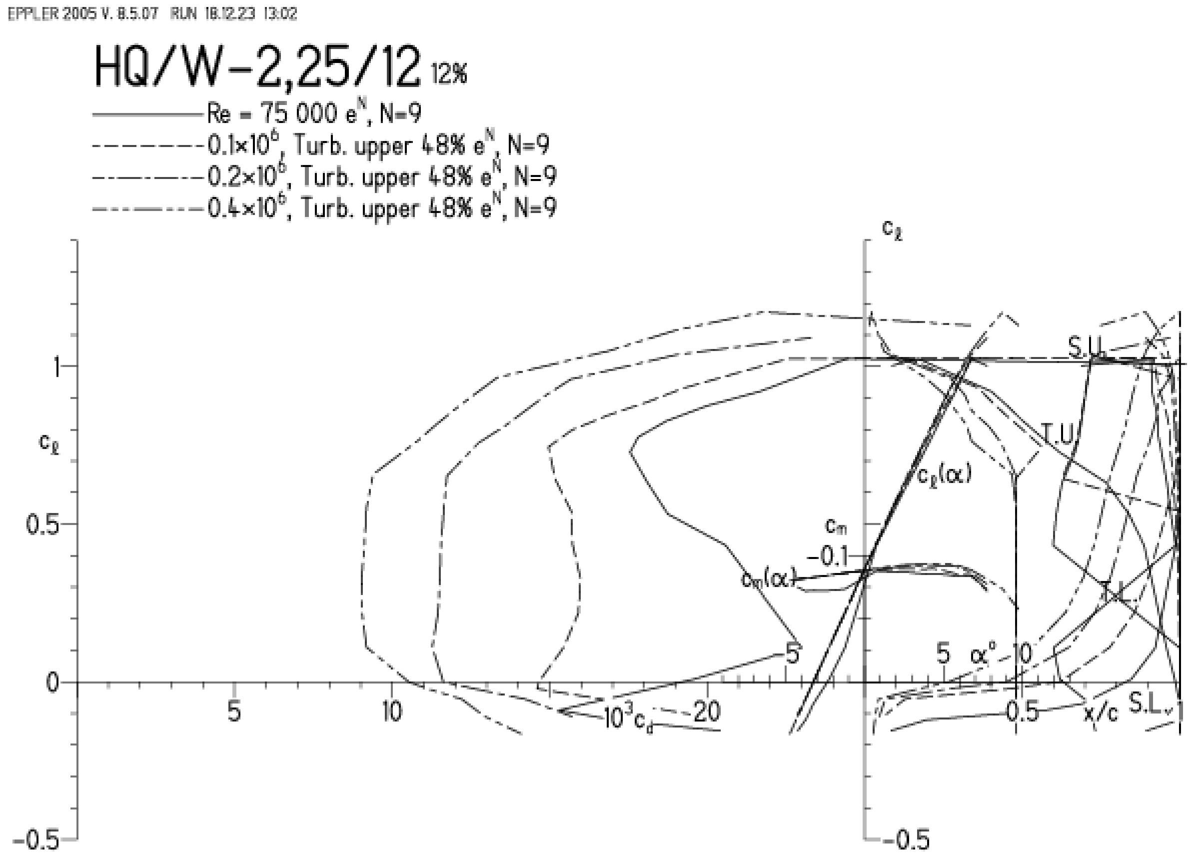
<u>HQ/W-2,25/12</u>, N=9





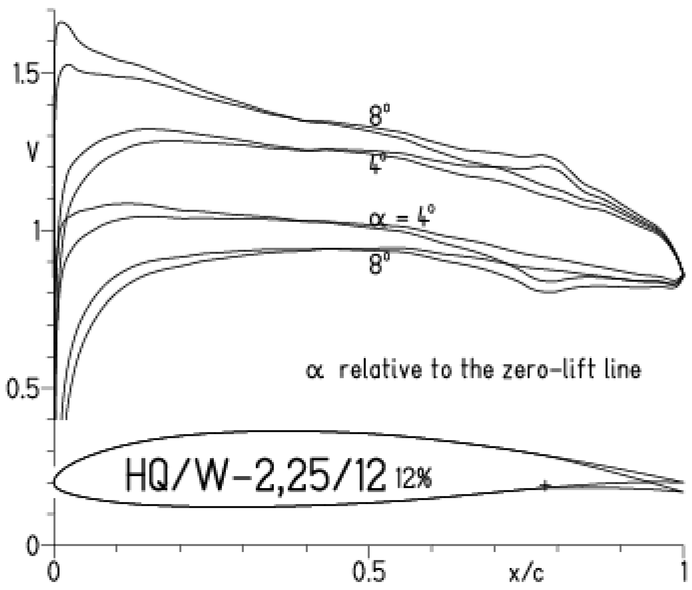
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



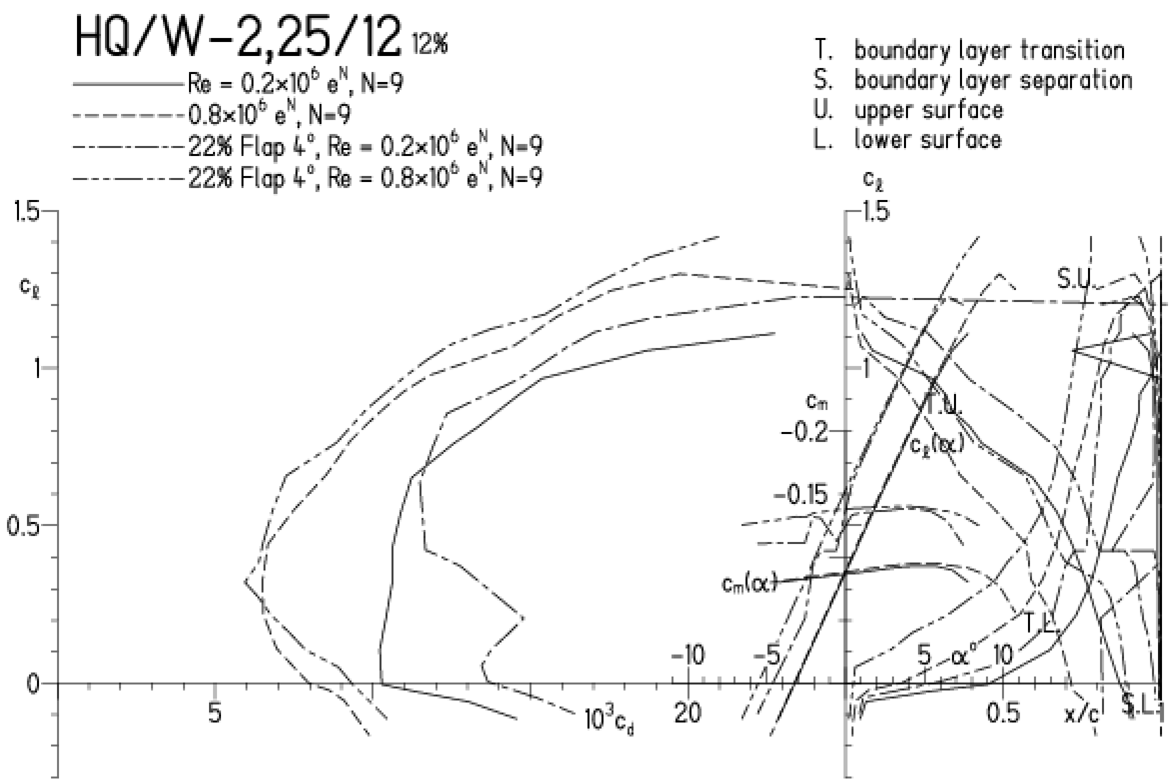


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

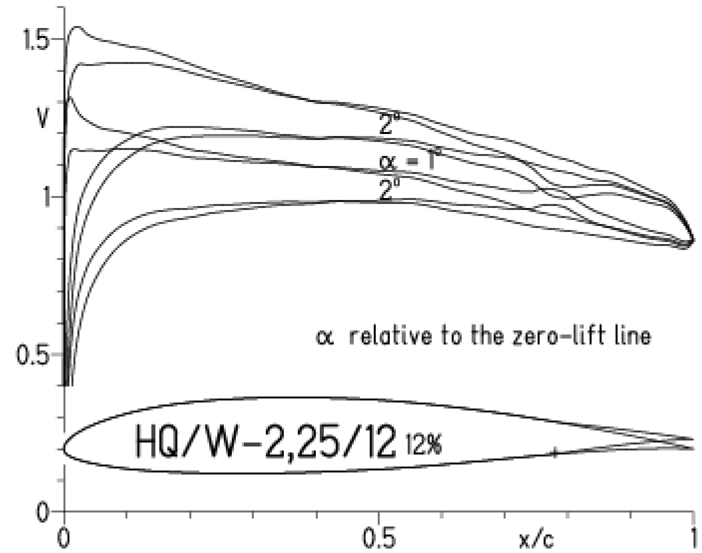


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

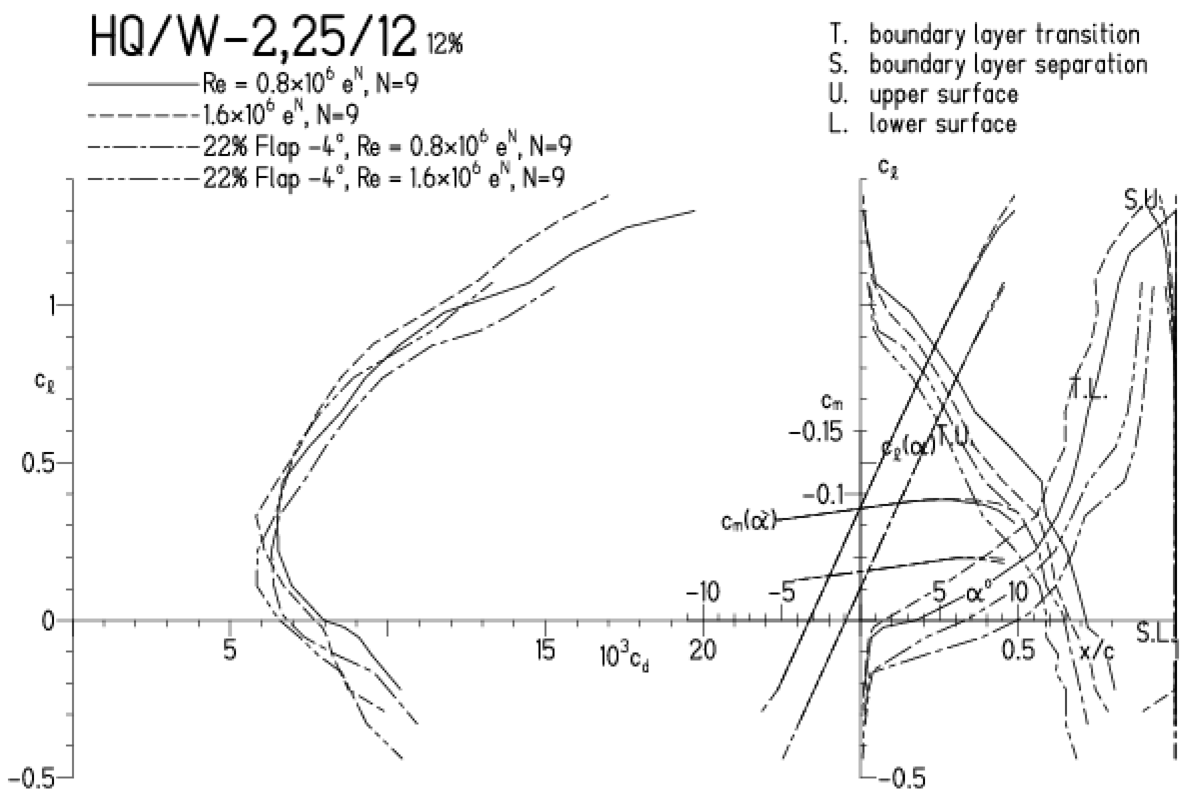


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

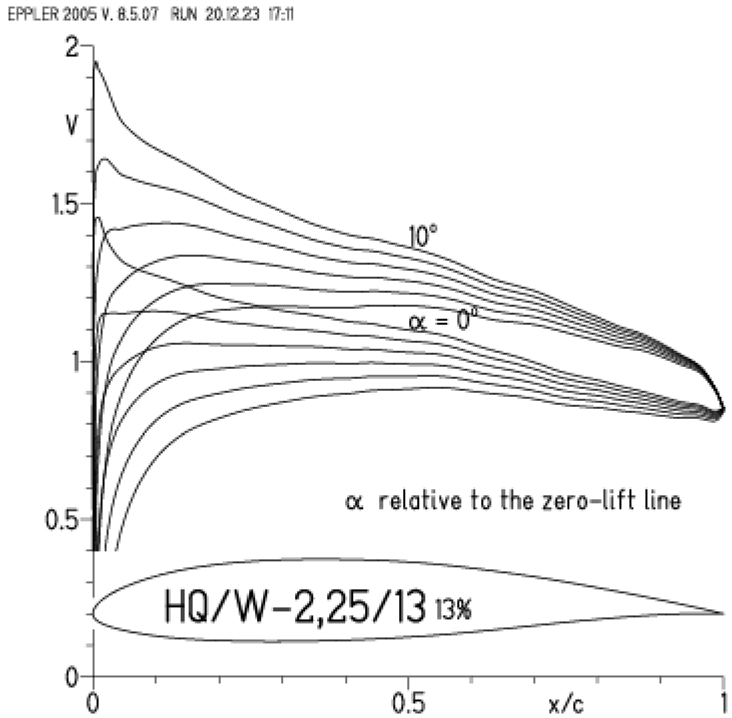
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

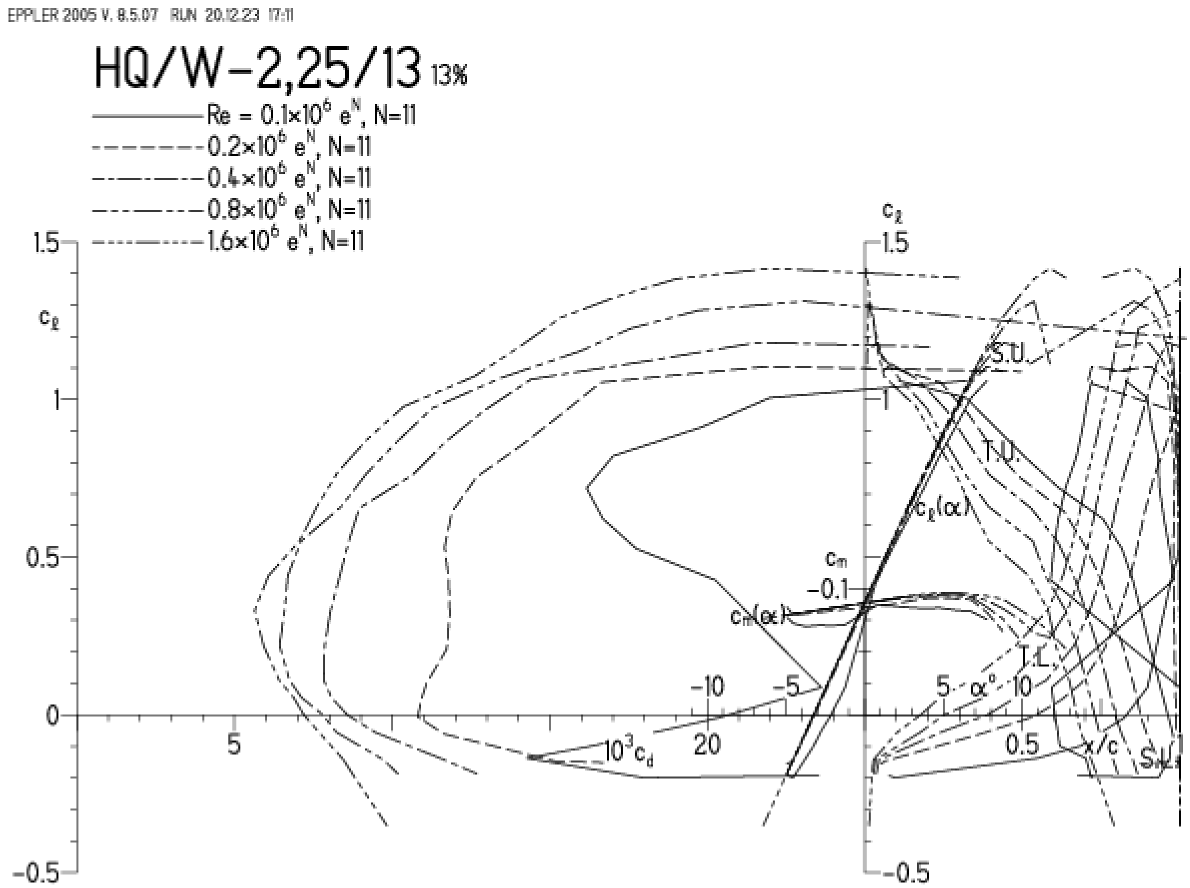


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

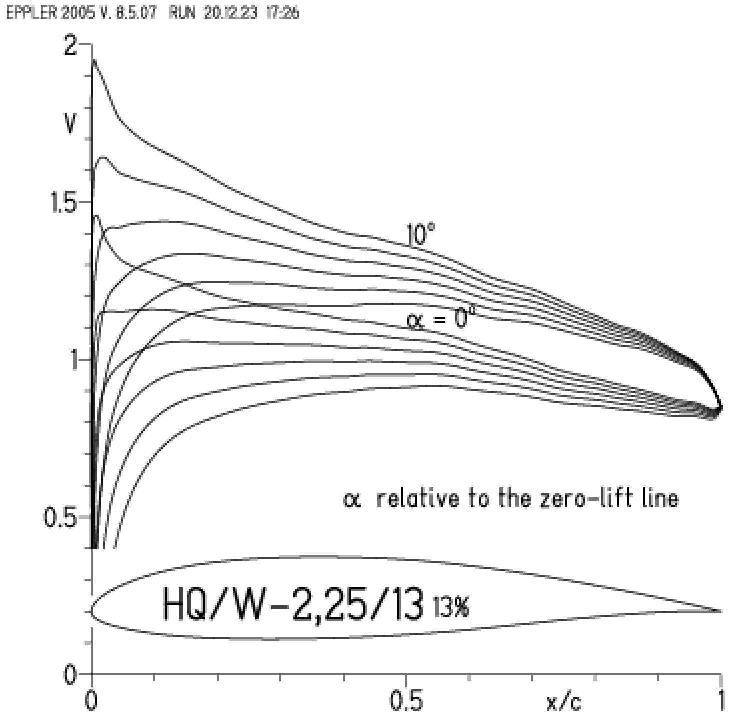


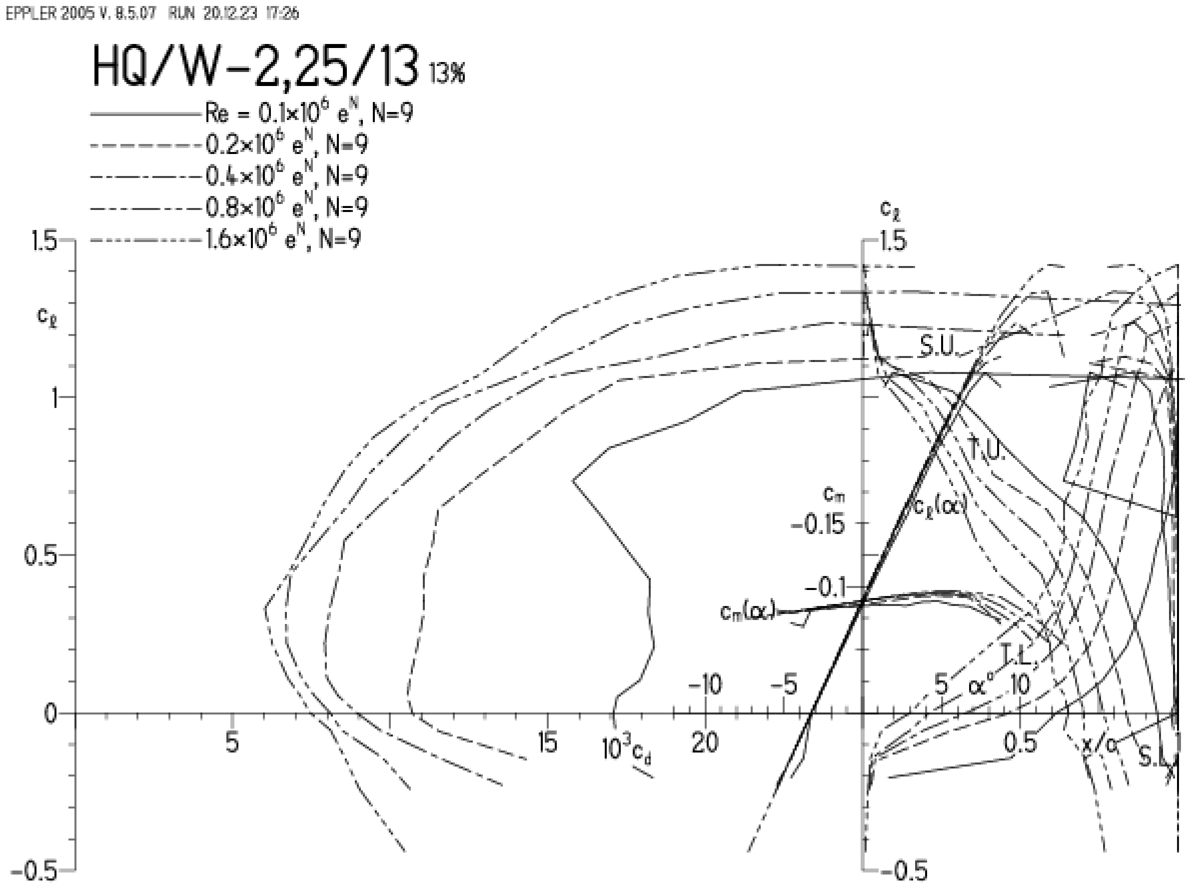
<u>HQ/W-2,25/13</u>, N=11



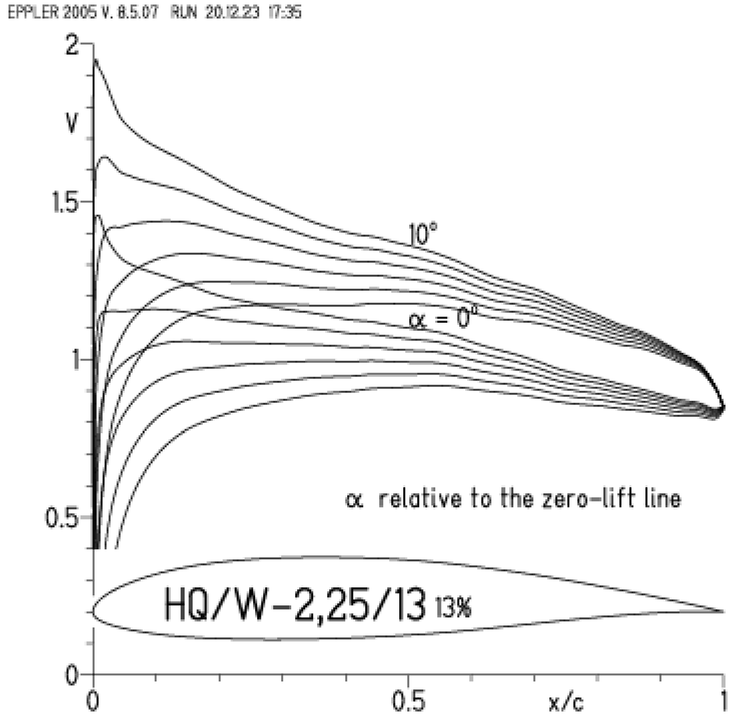


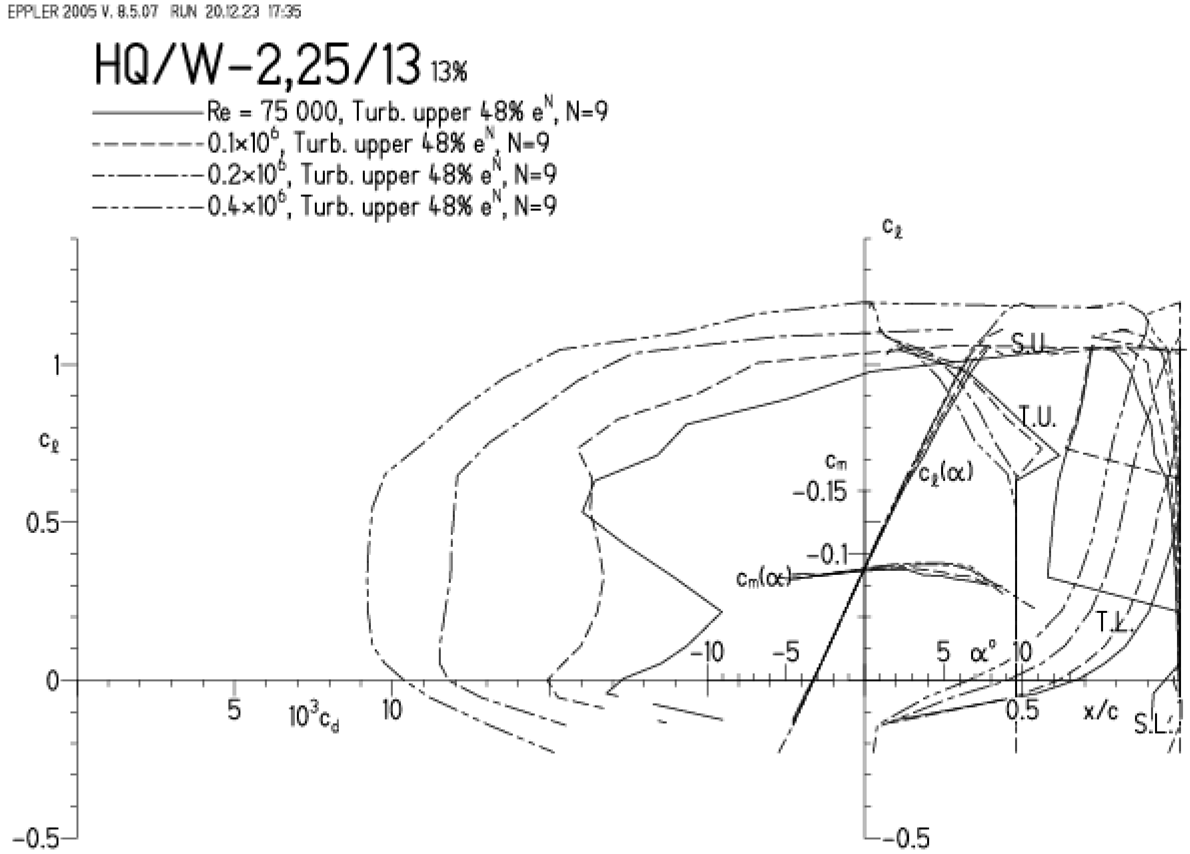
<u>HQ/W-2,25/13</u>, N=9





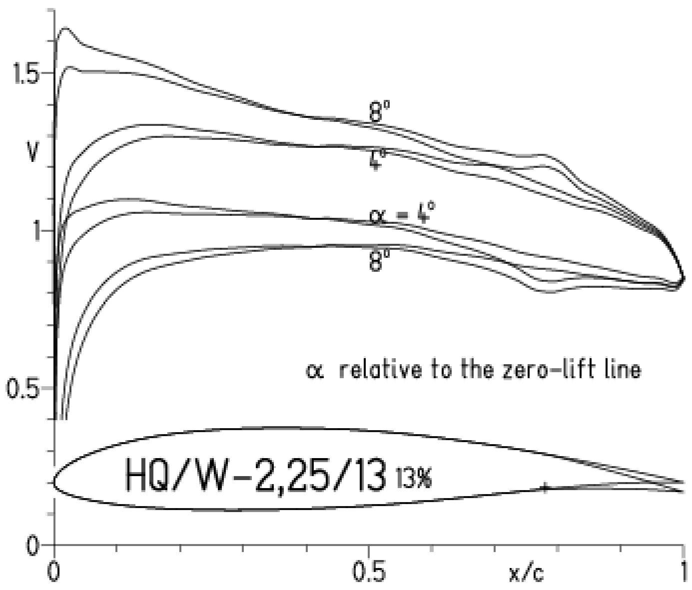
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



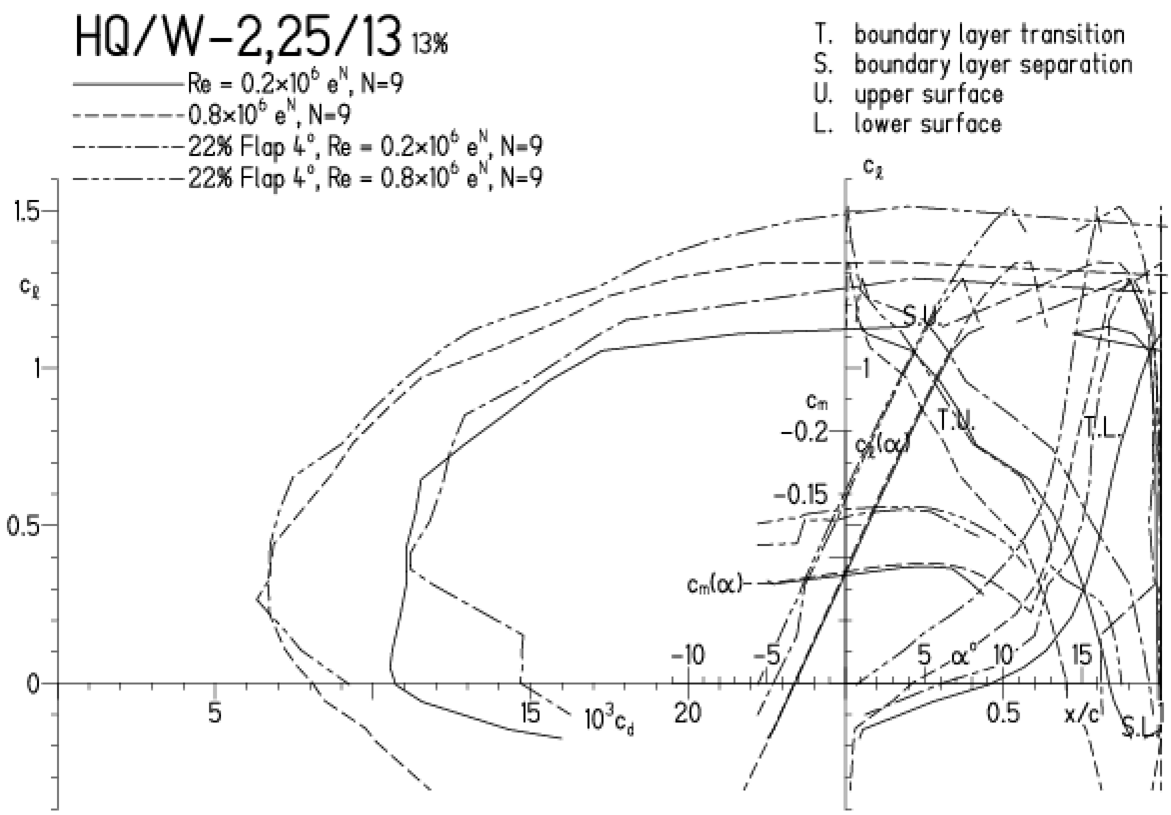


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

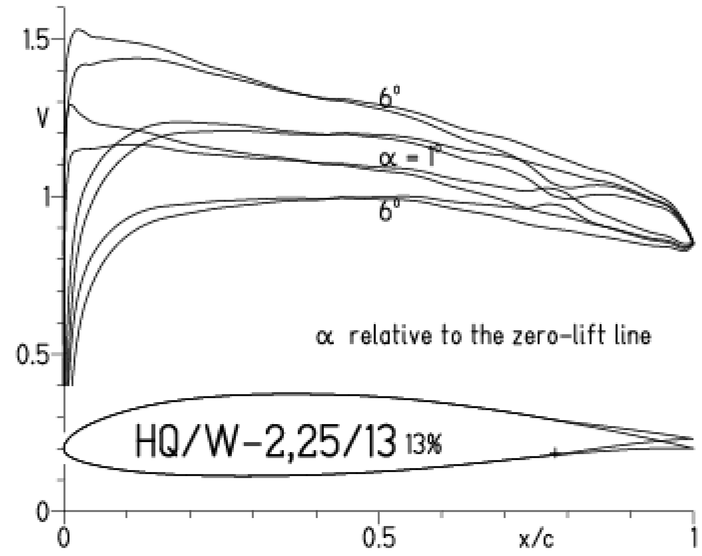


EPPLER 2005 V.

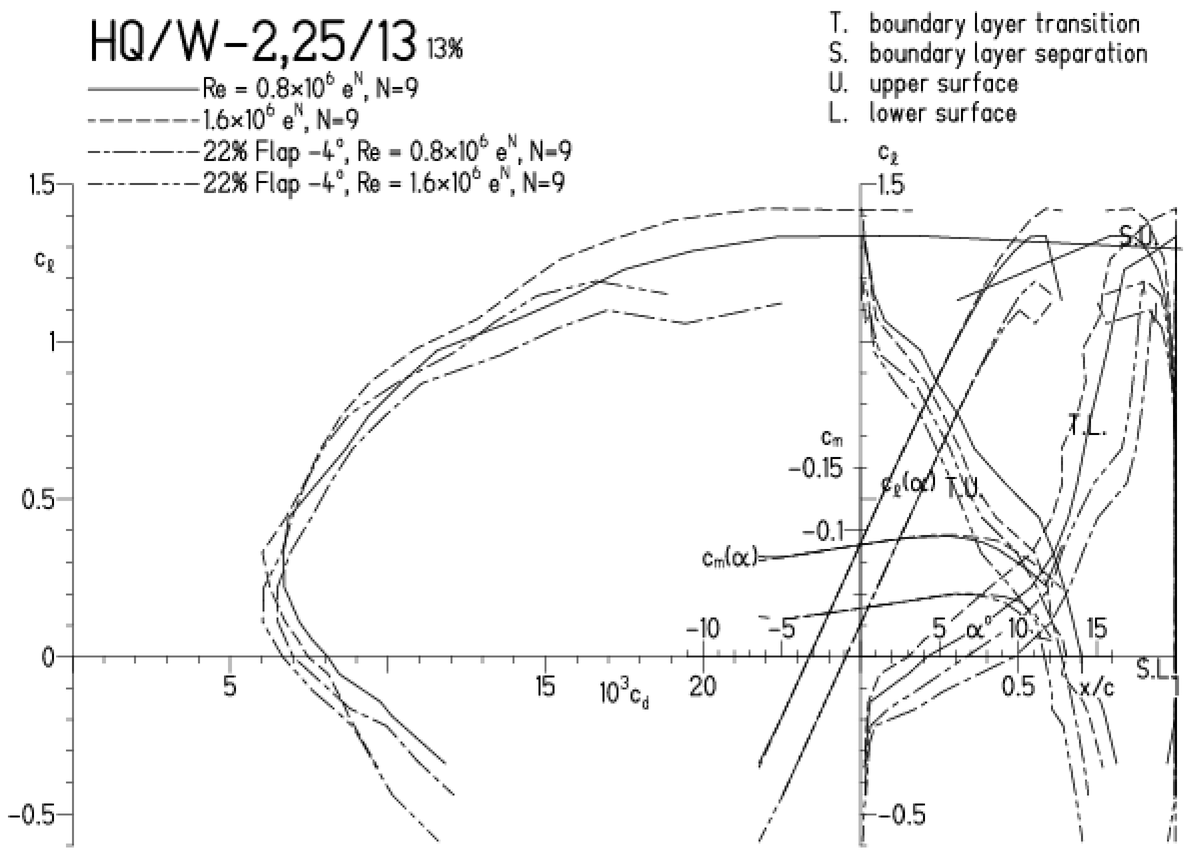


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

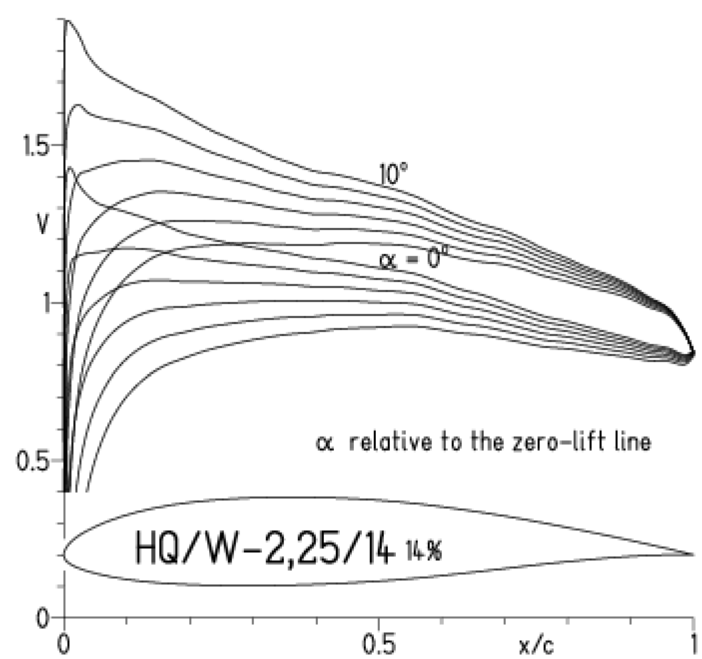


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

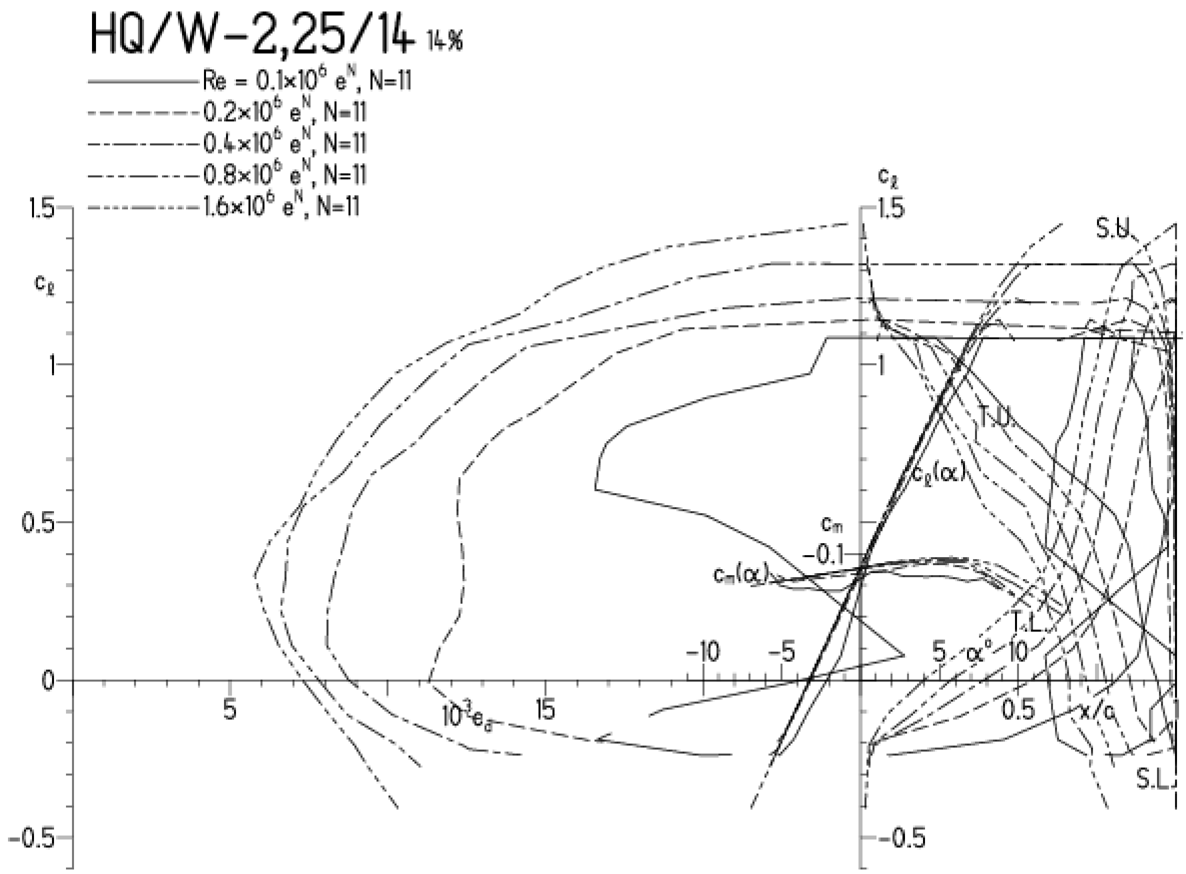


HQ/W-2,25/14, N=11

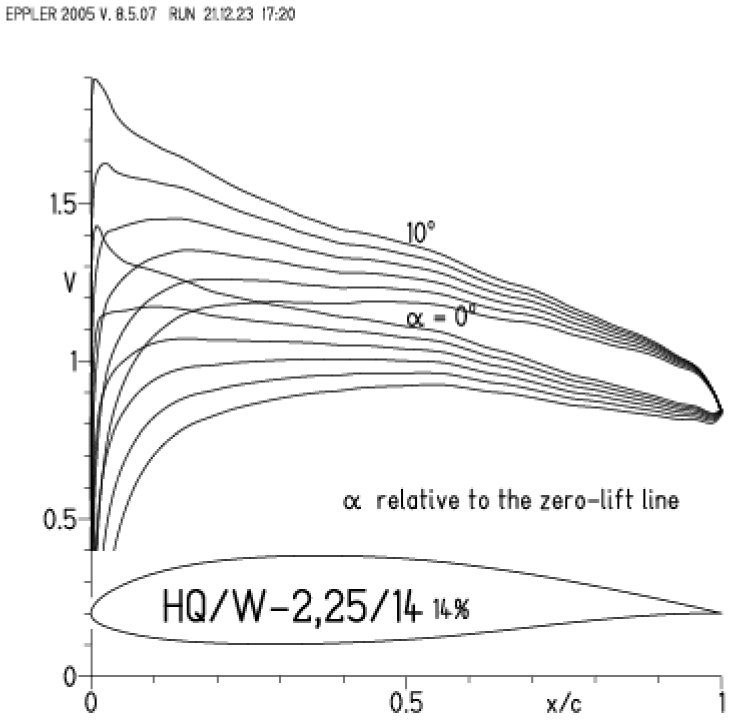
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

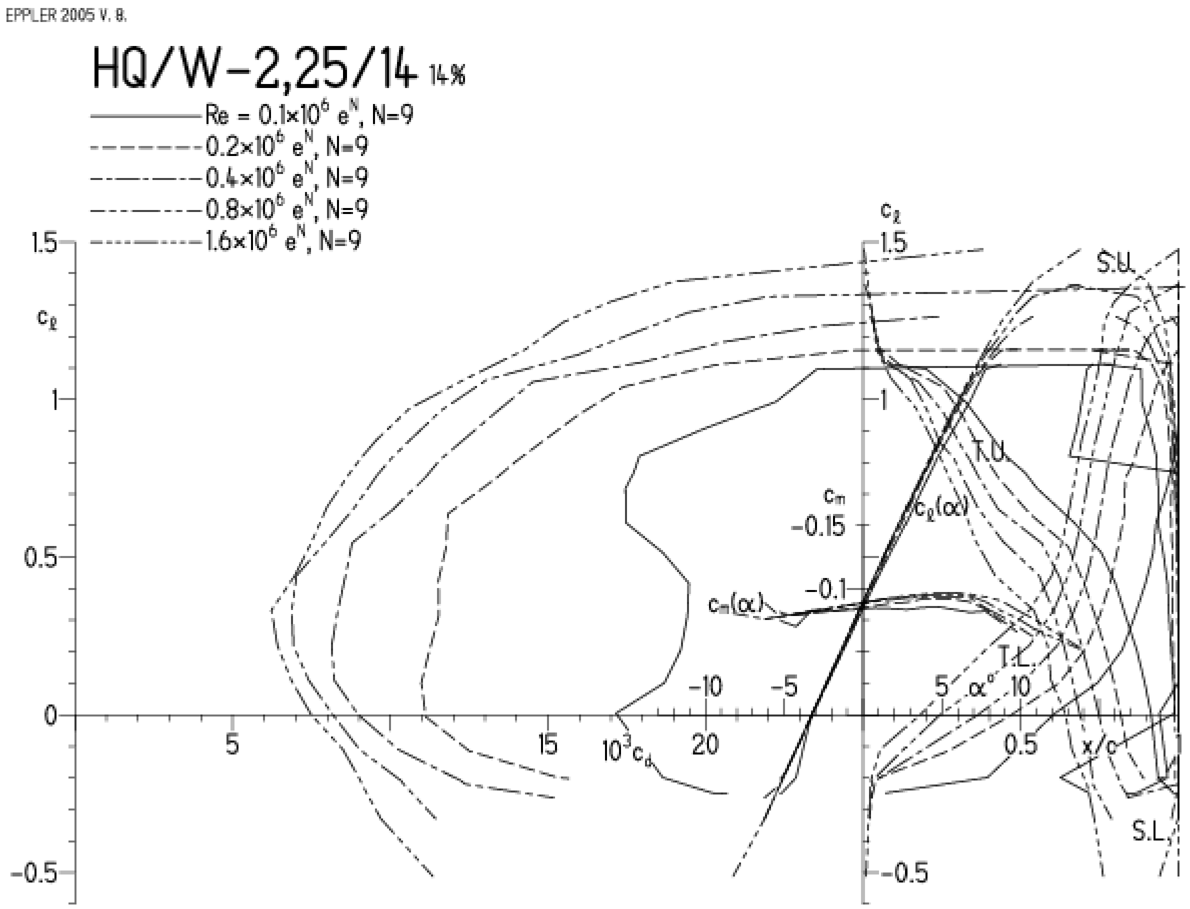


EPPLER 2005 V. 8.

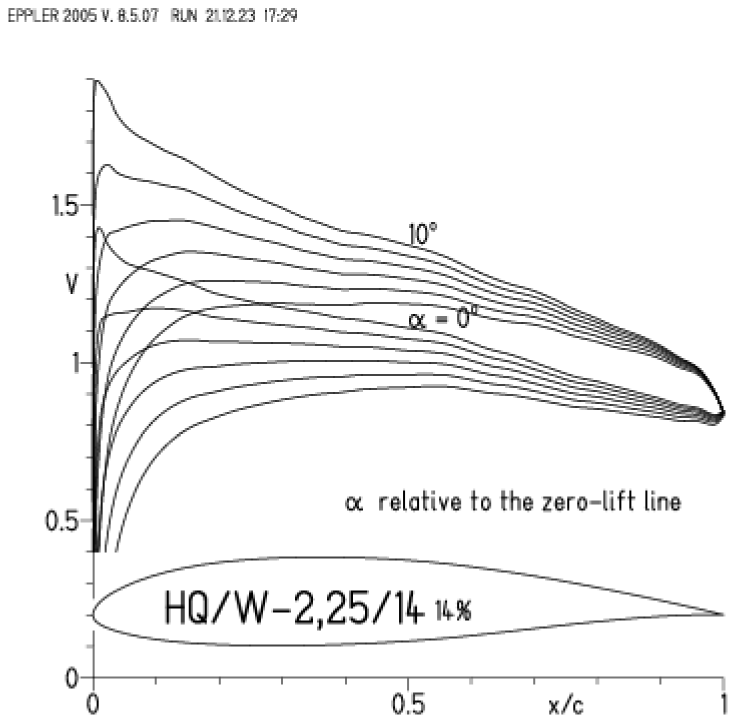


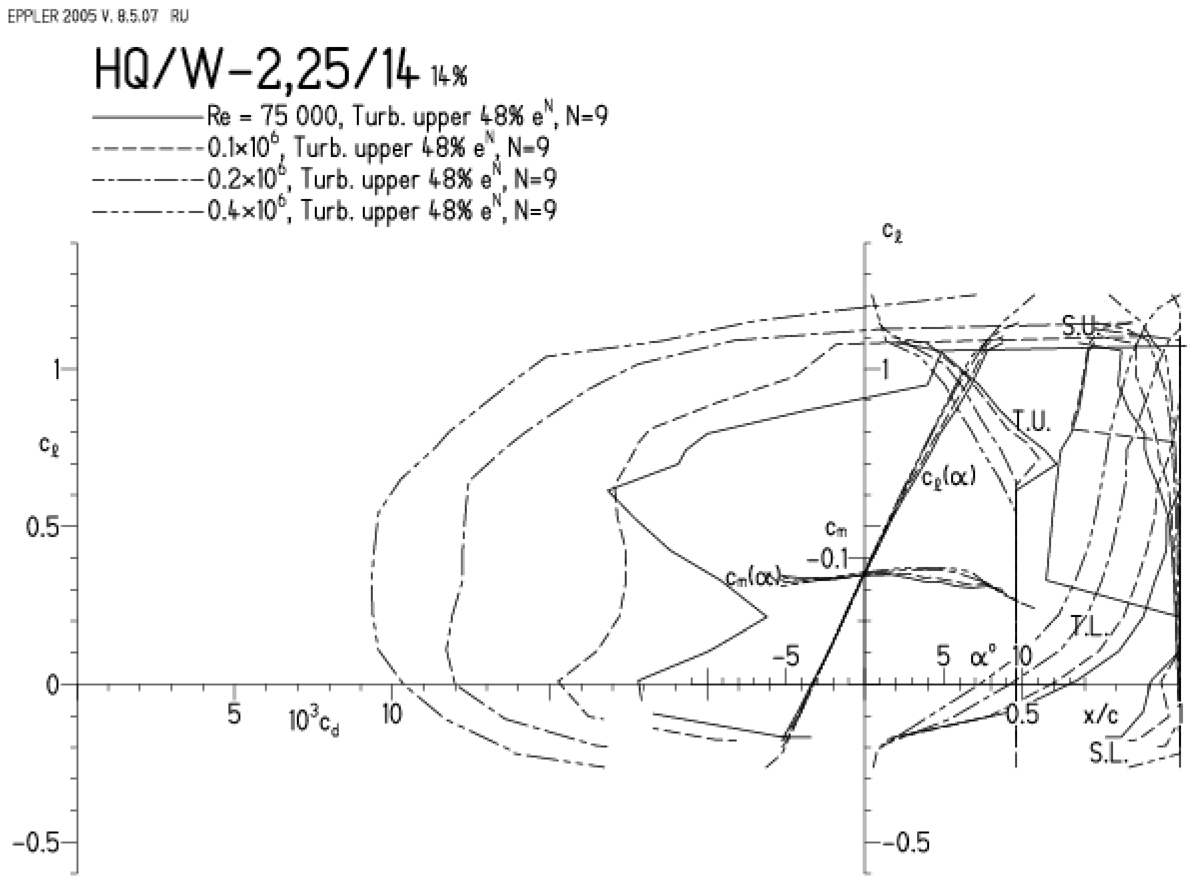
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
-0.15
-0.1
c_ℓ(α)
c_m(α)
-10
-5
5
α°
10
-0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

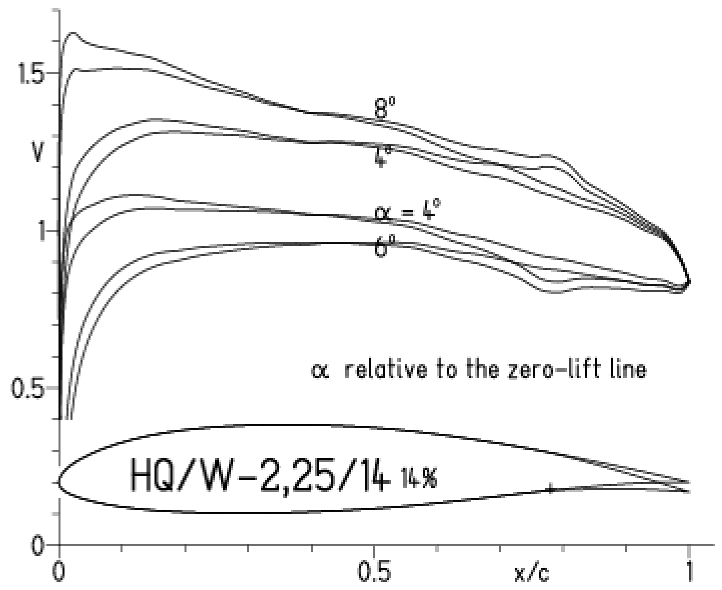
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



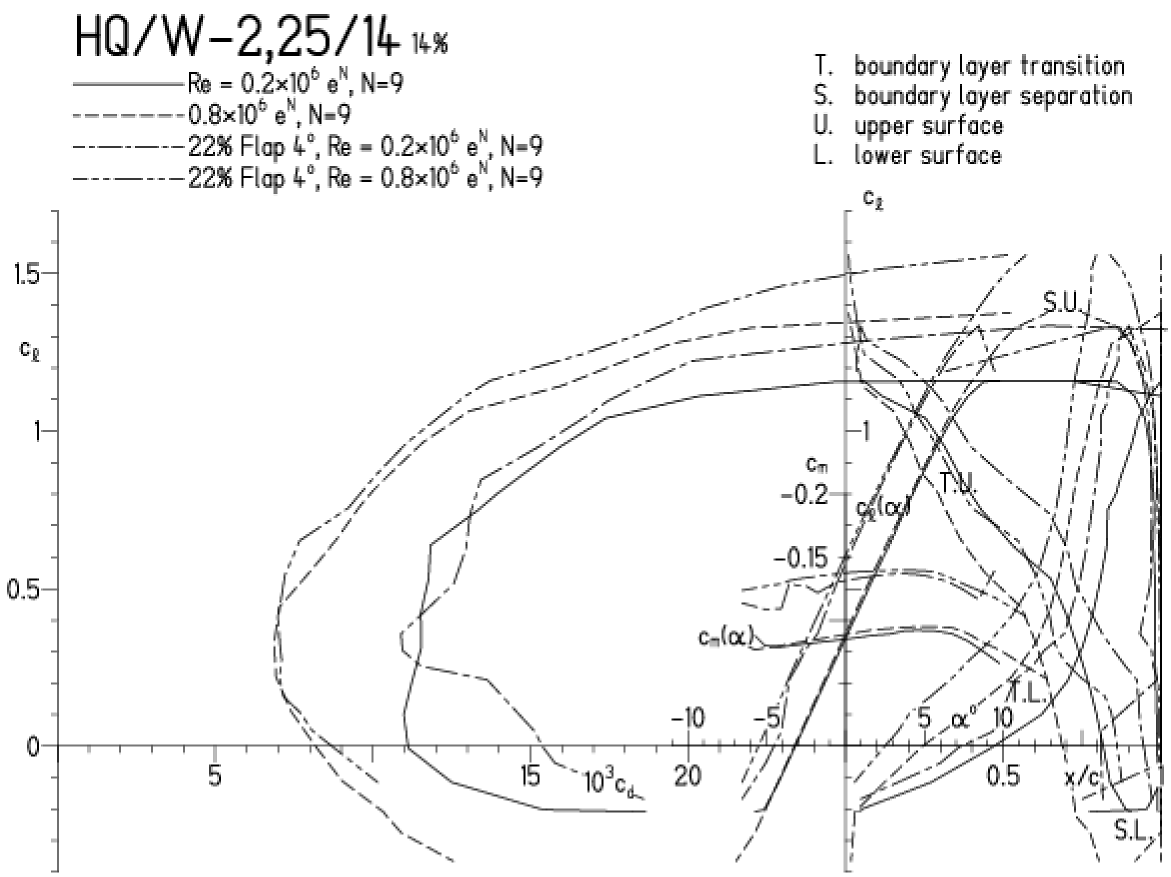


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

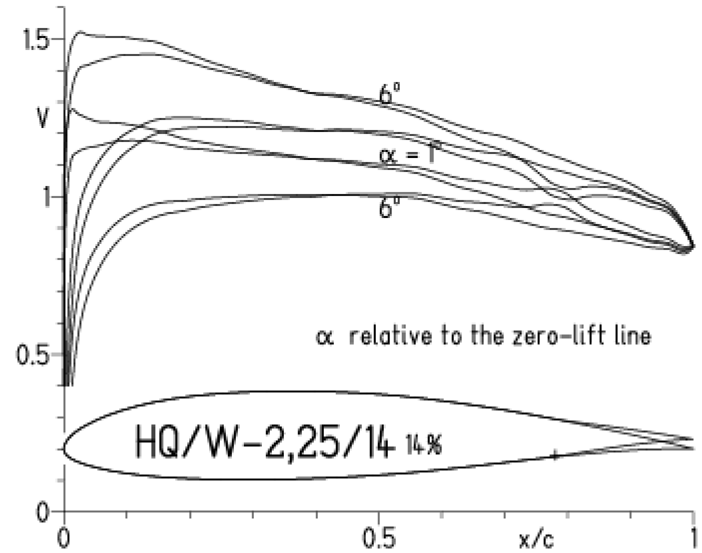


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

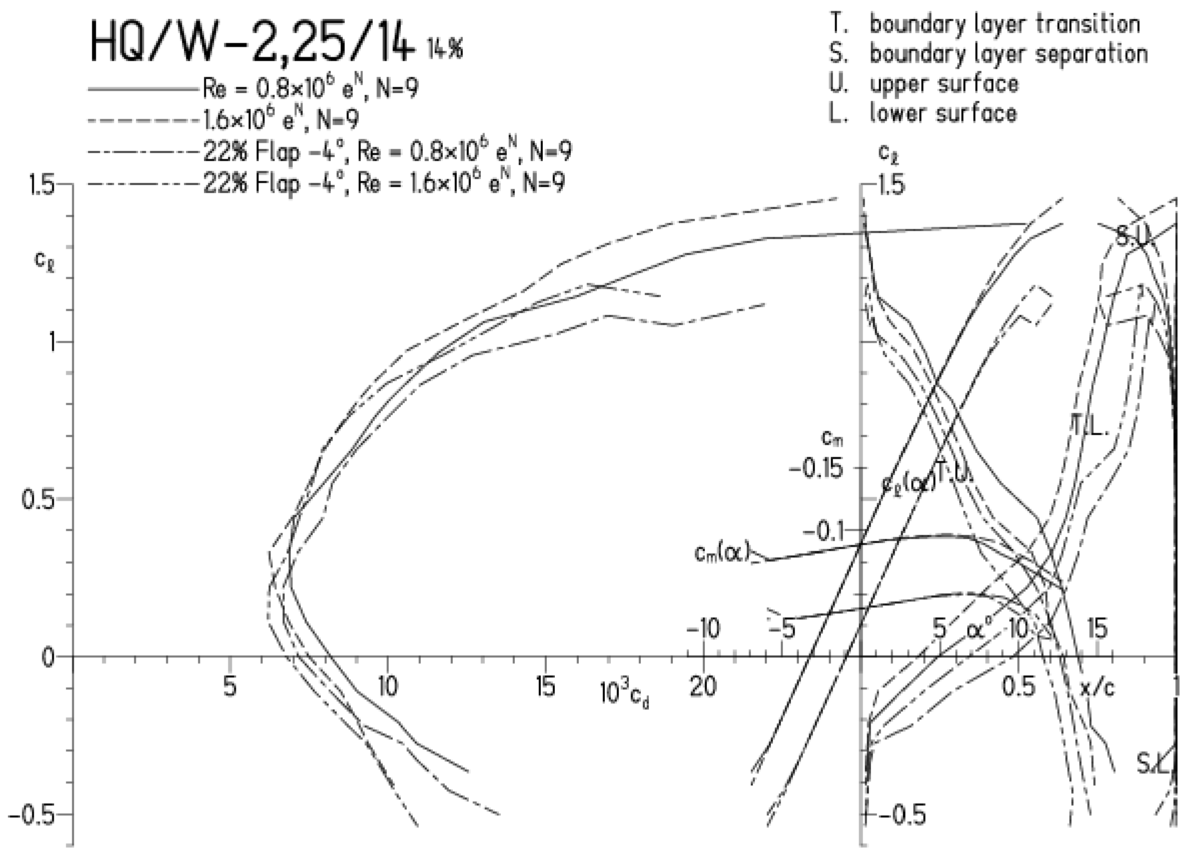


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

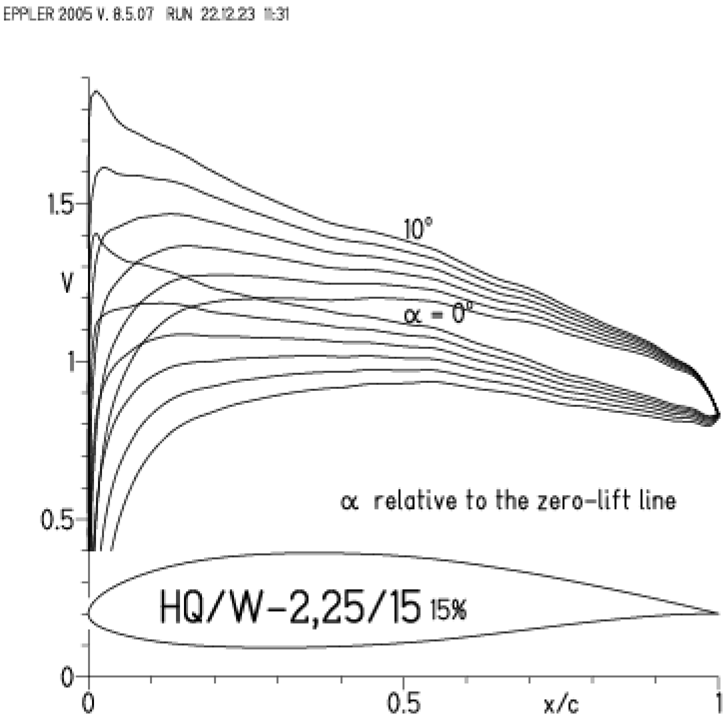
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

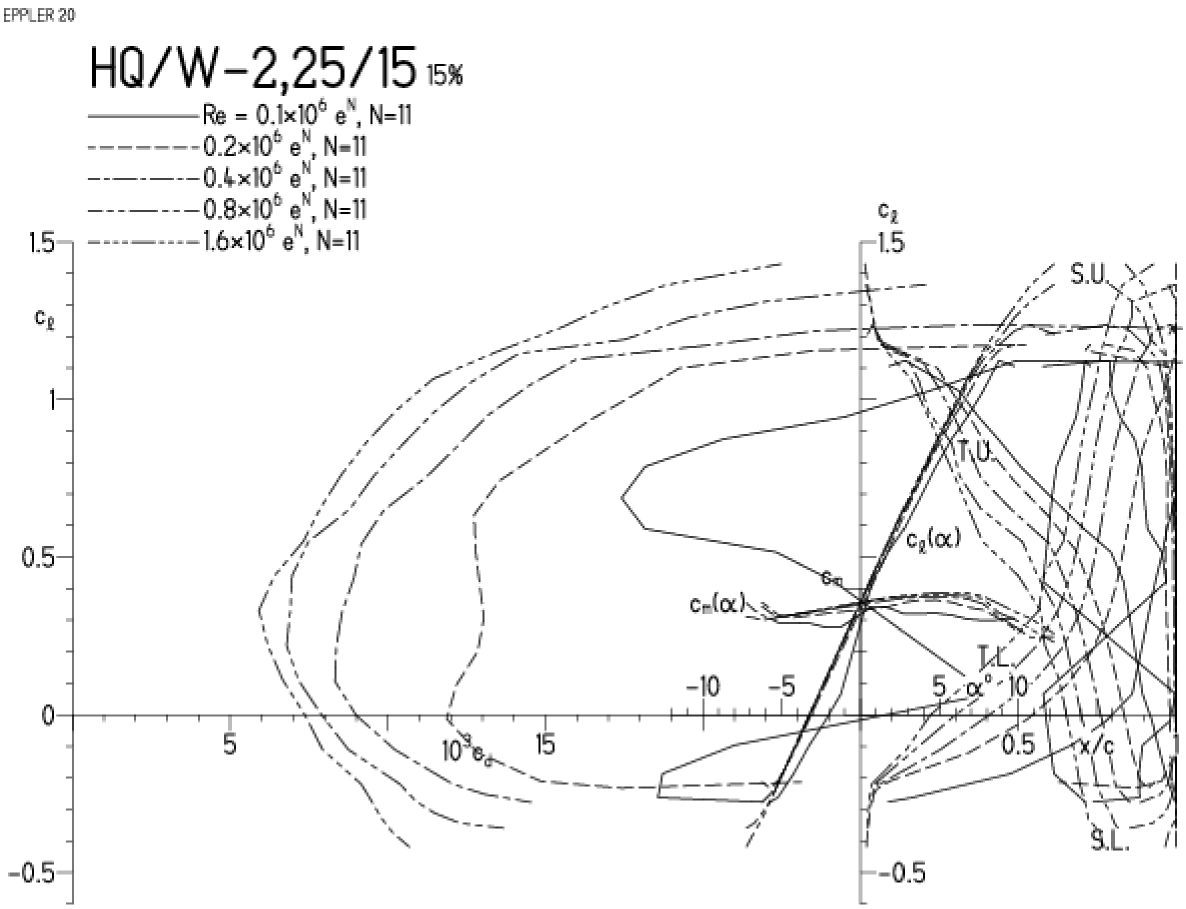


EPPLER 2005 V. 8.5.07

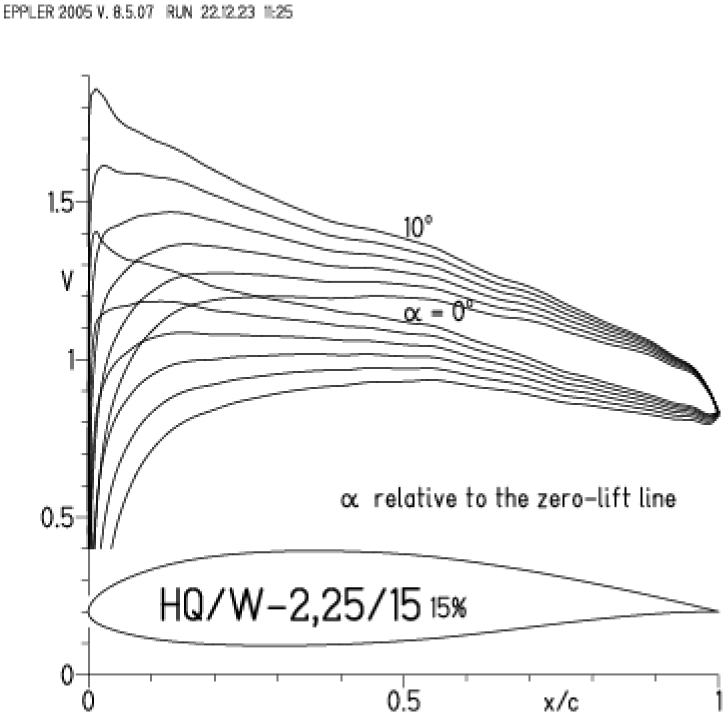


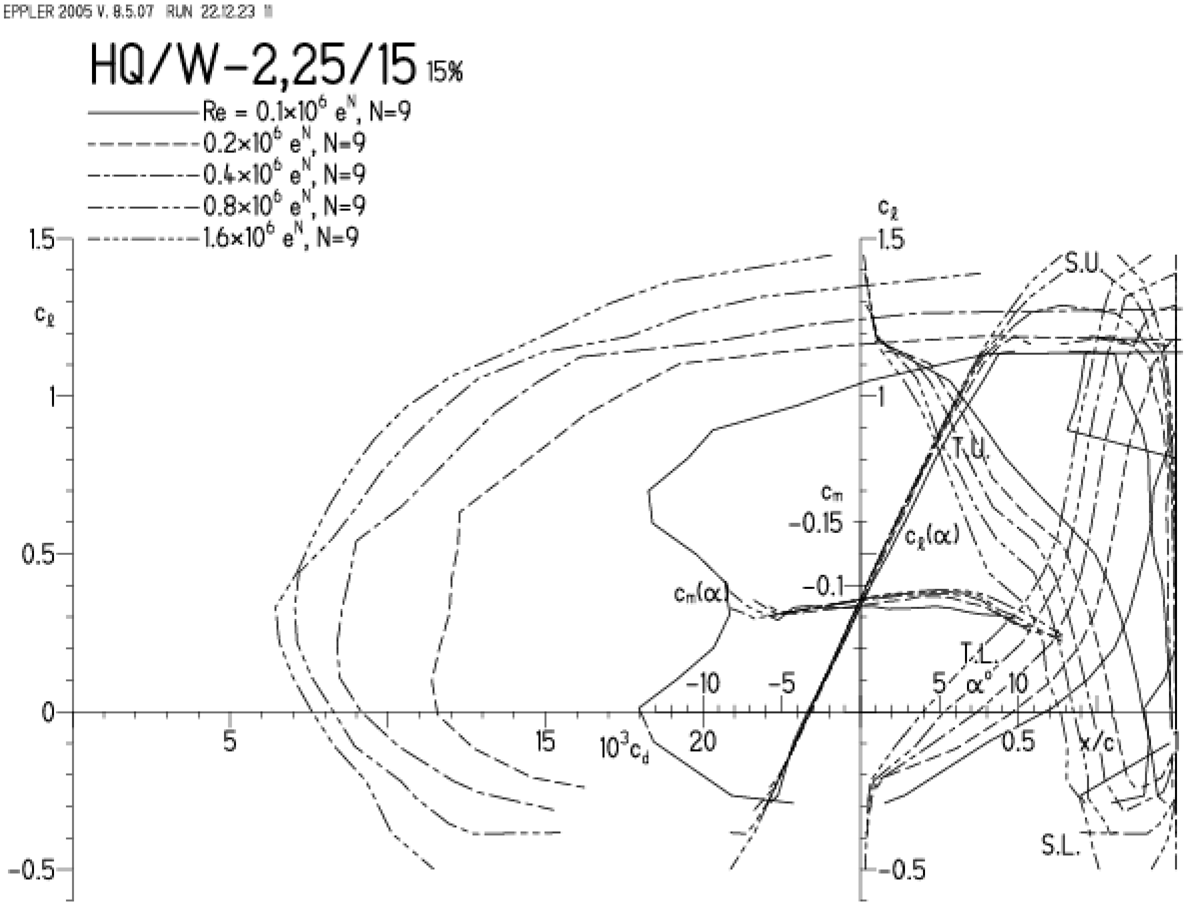
<u>HQ/W-2,25/15</u>, N=11



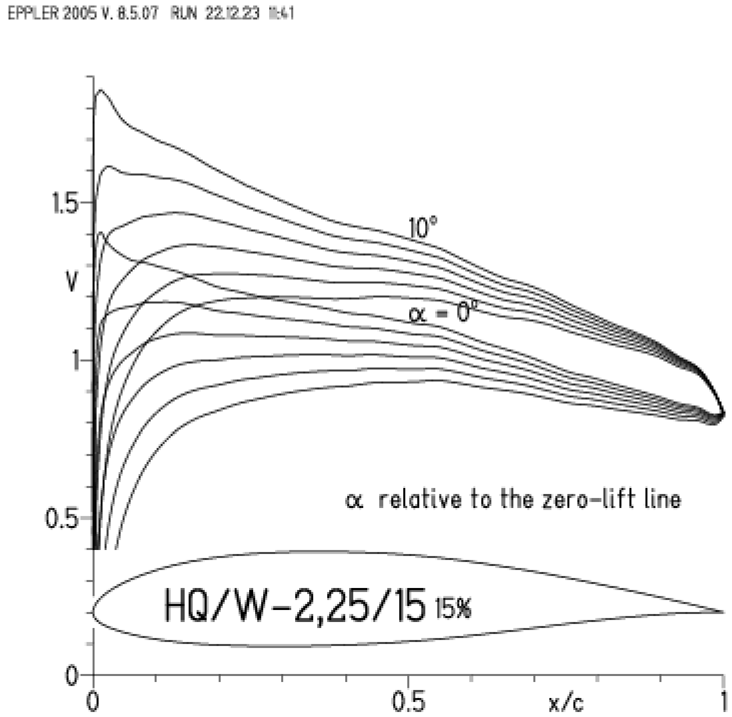


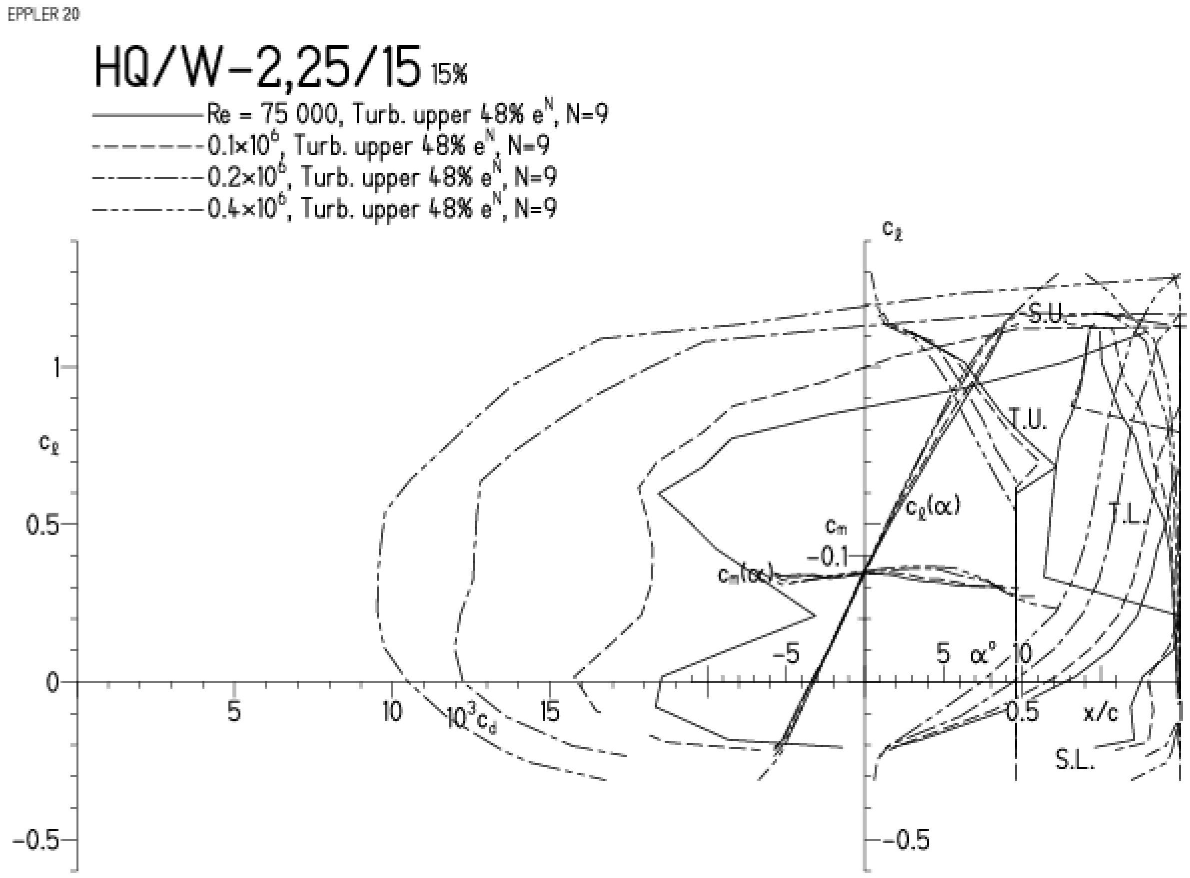
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
$10^3 c_d$
20
c_ℓ
1.5
1
c_m
-0.15
-0.1
$c_\ell(\alpha)$
$c_m(\alpha)$
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



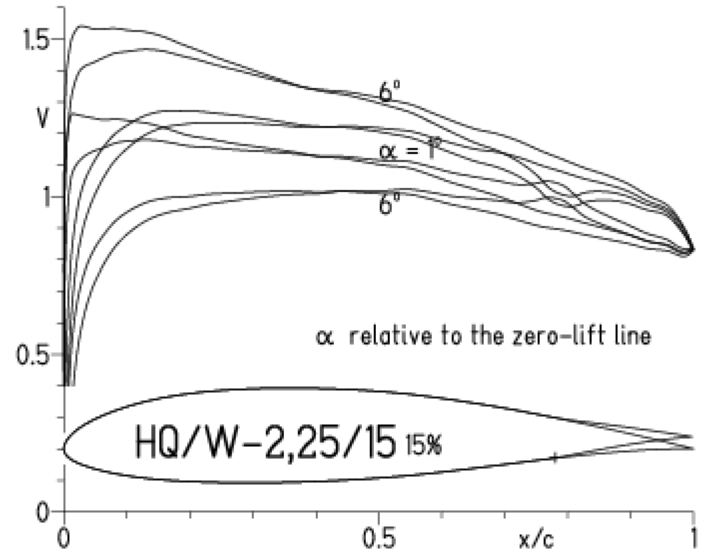


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

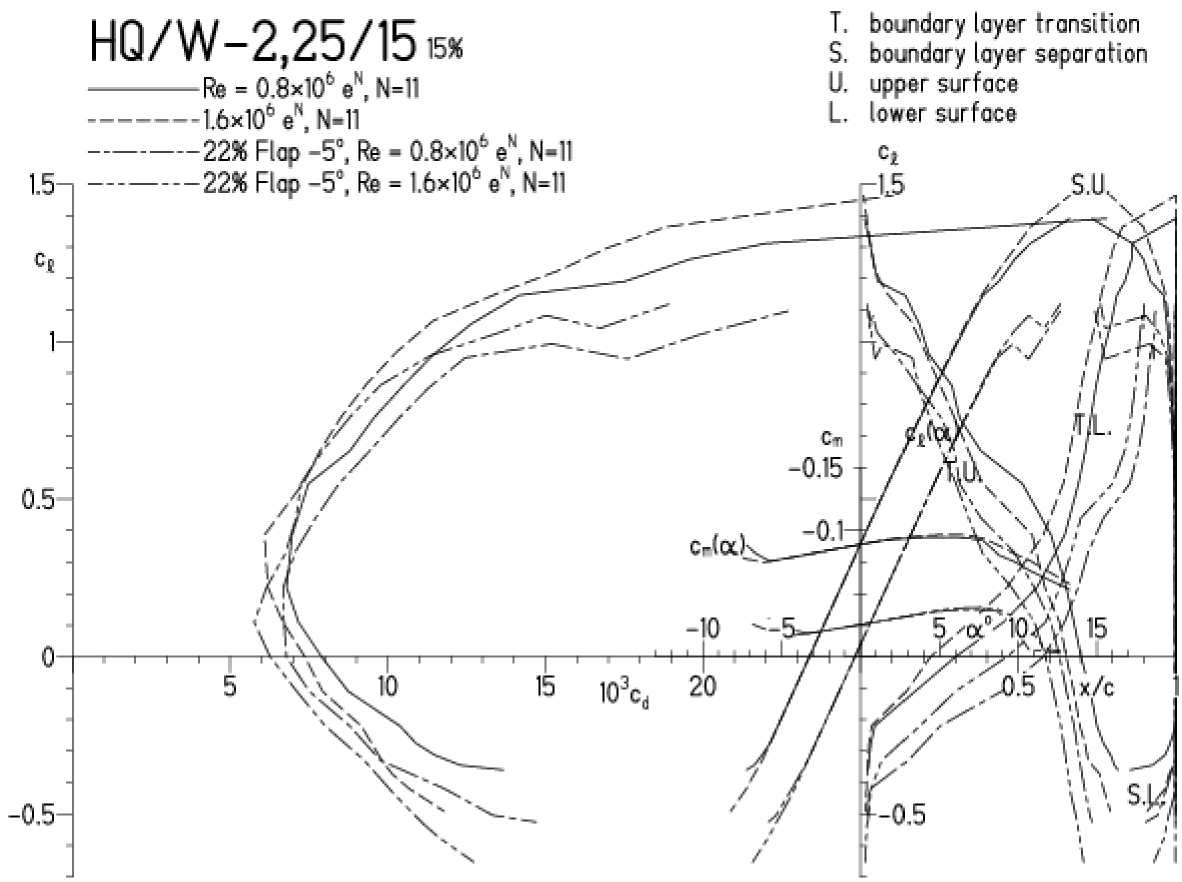
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

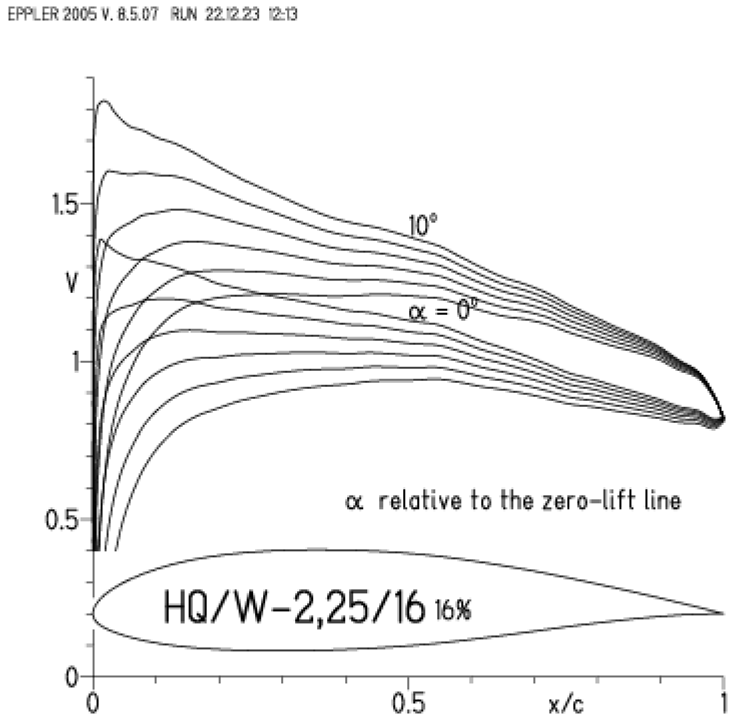
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

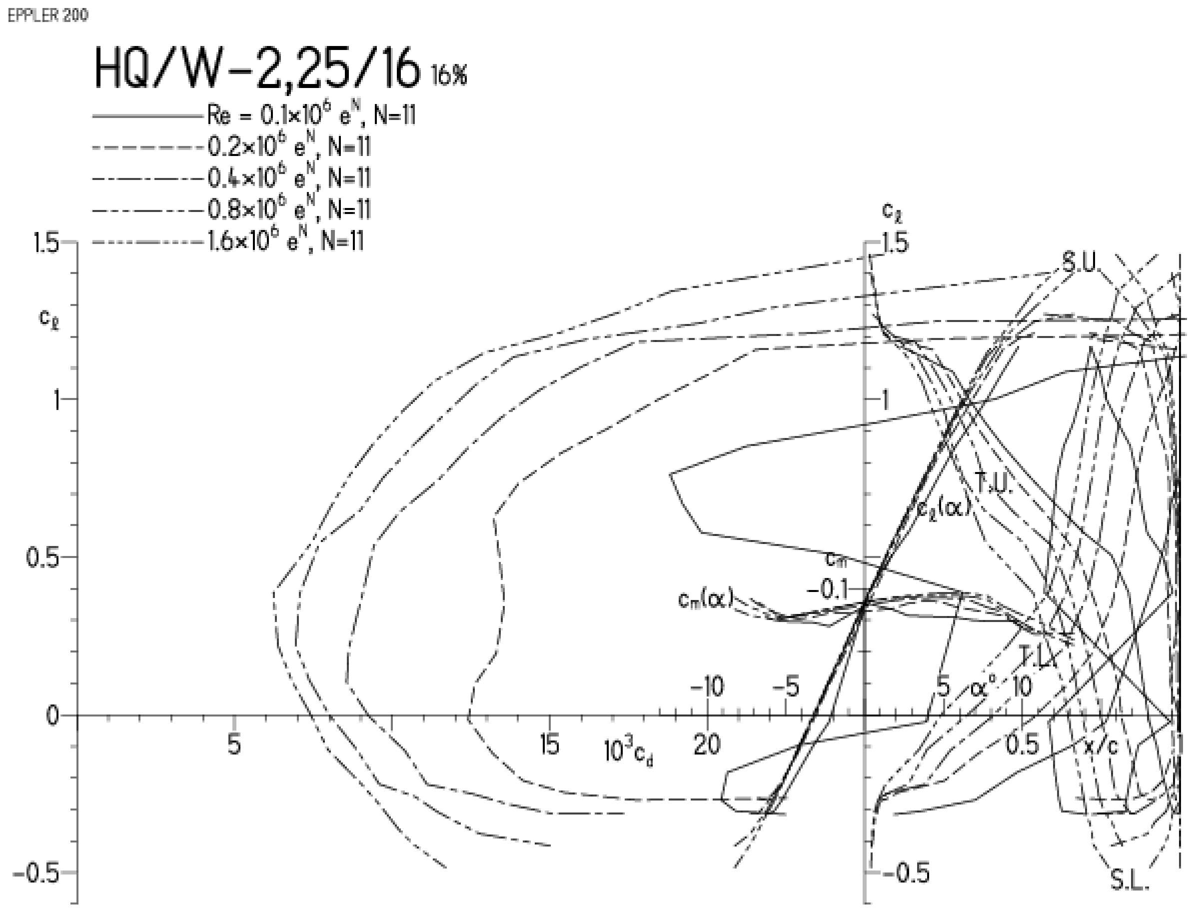


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

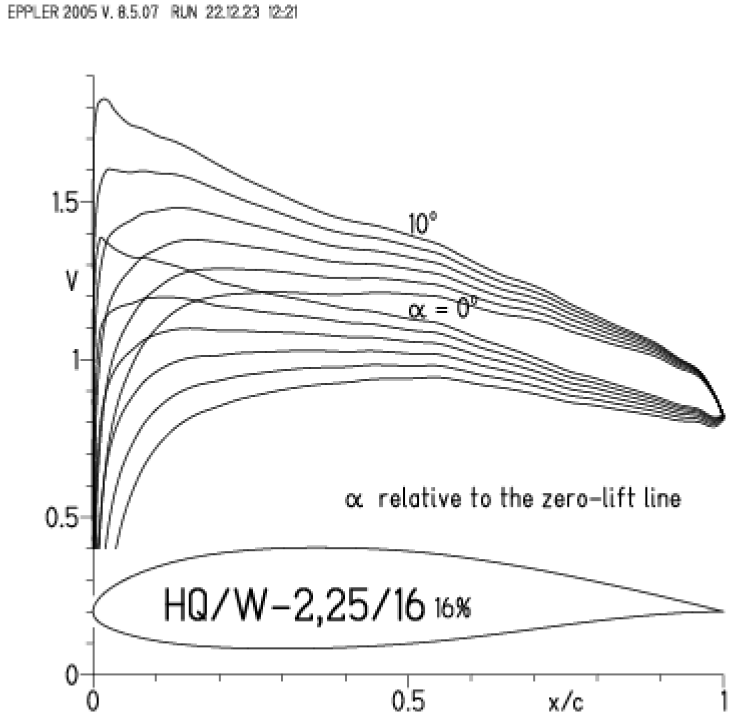


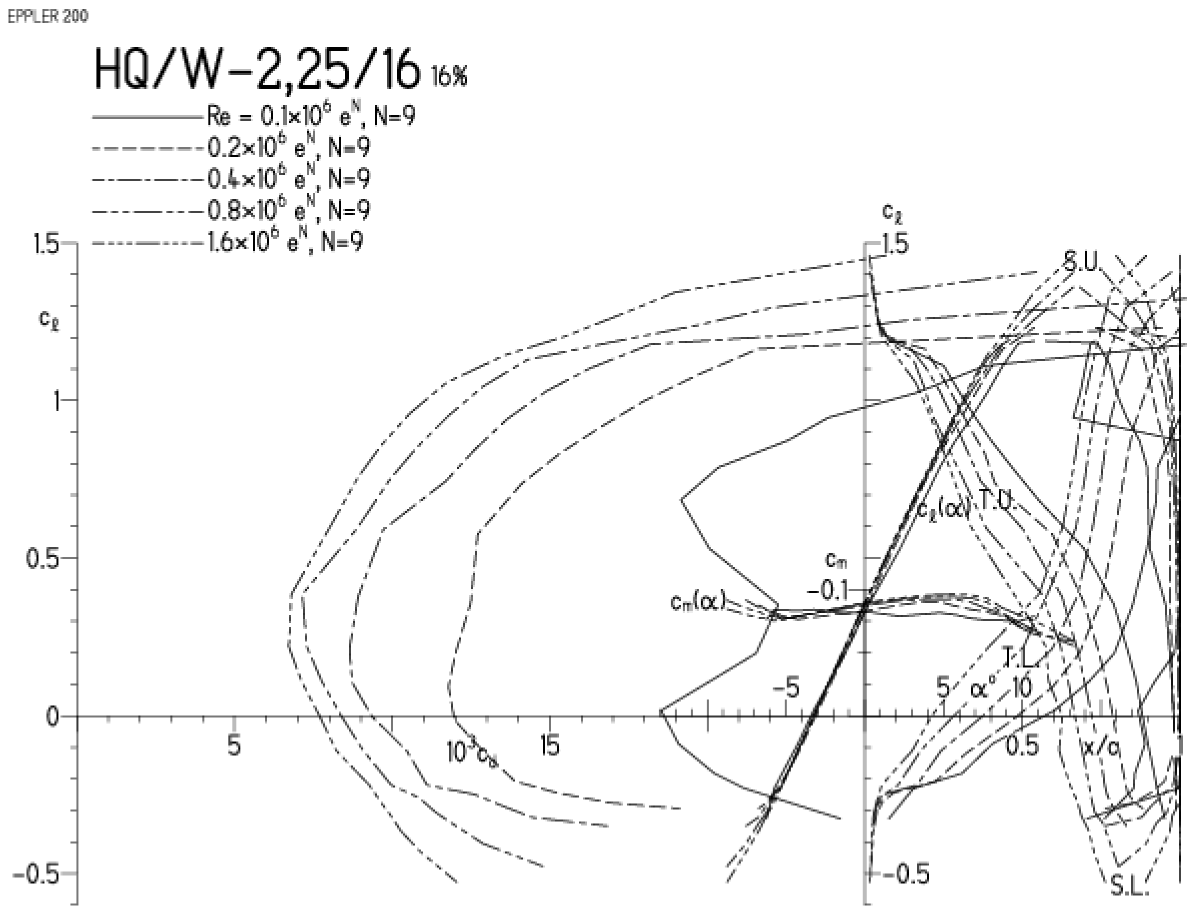
<u>HQ/W-2,25/16</u>, N=11



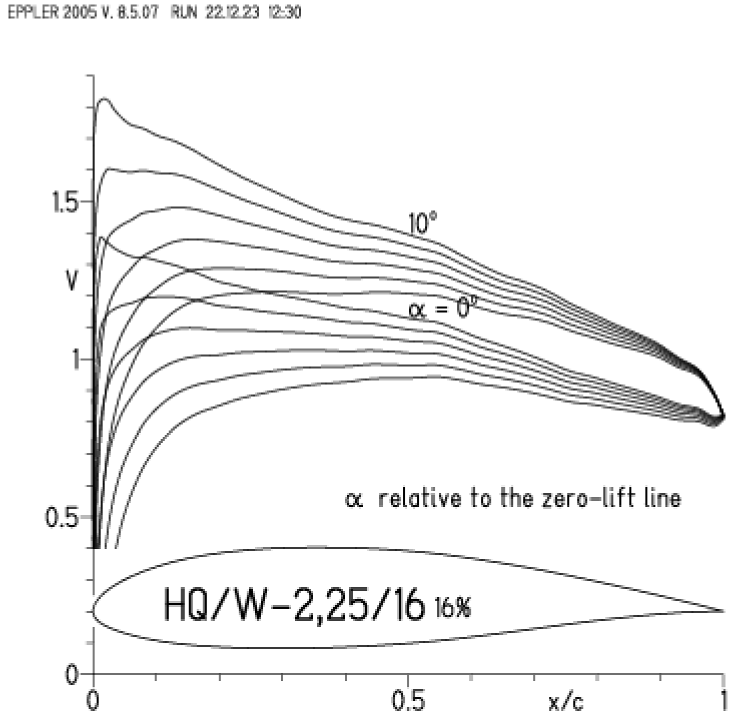


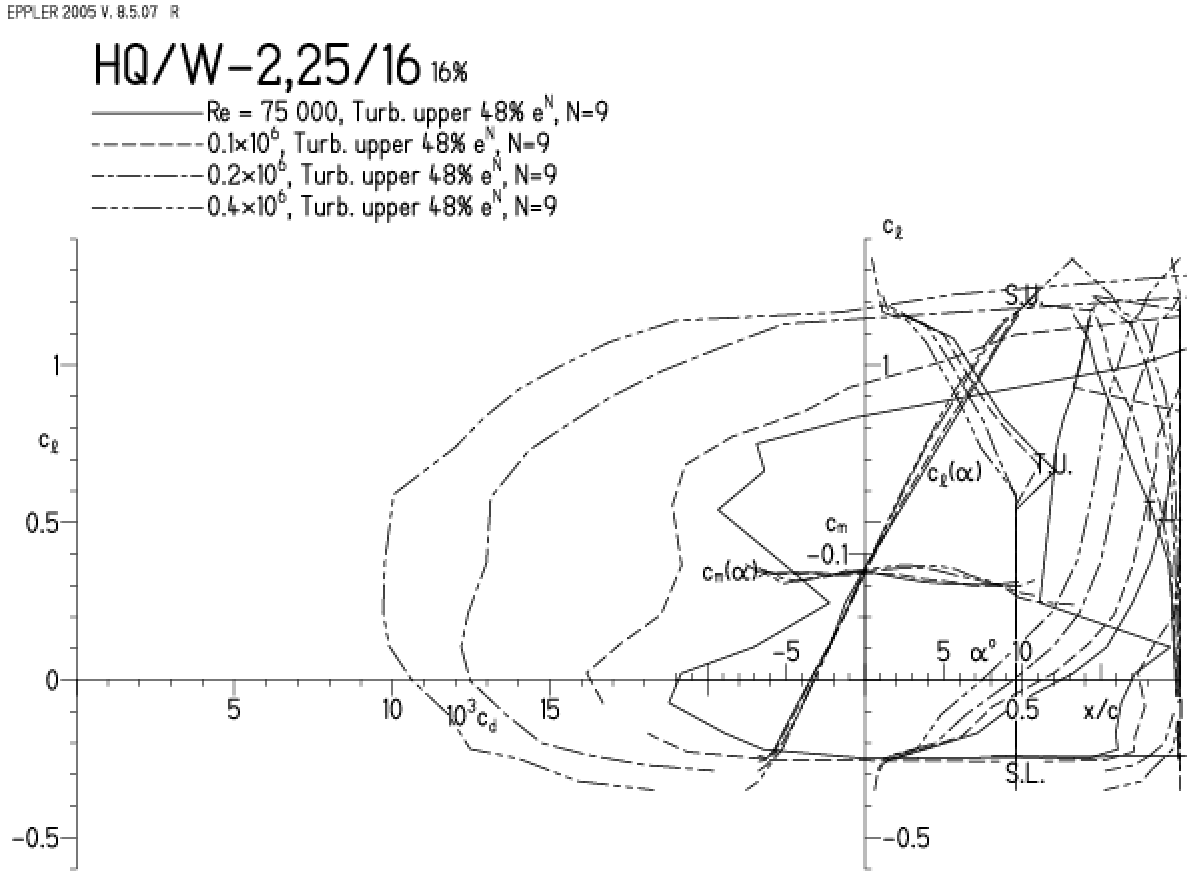
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



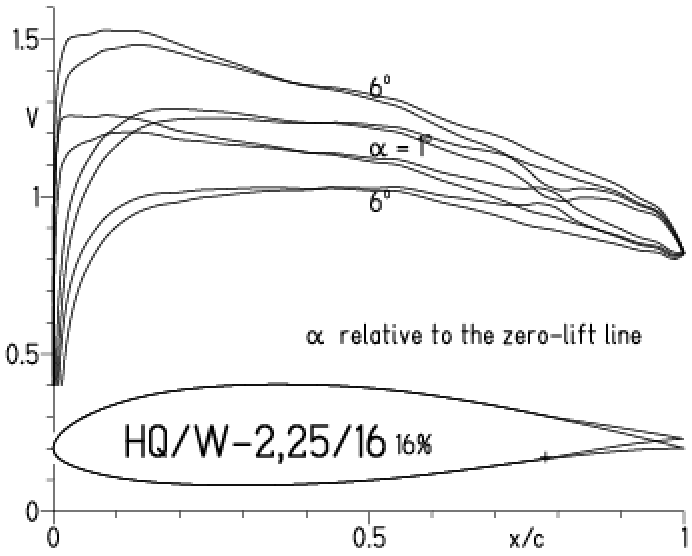


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

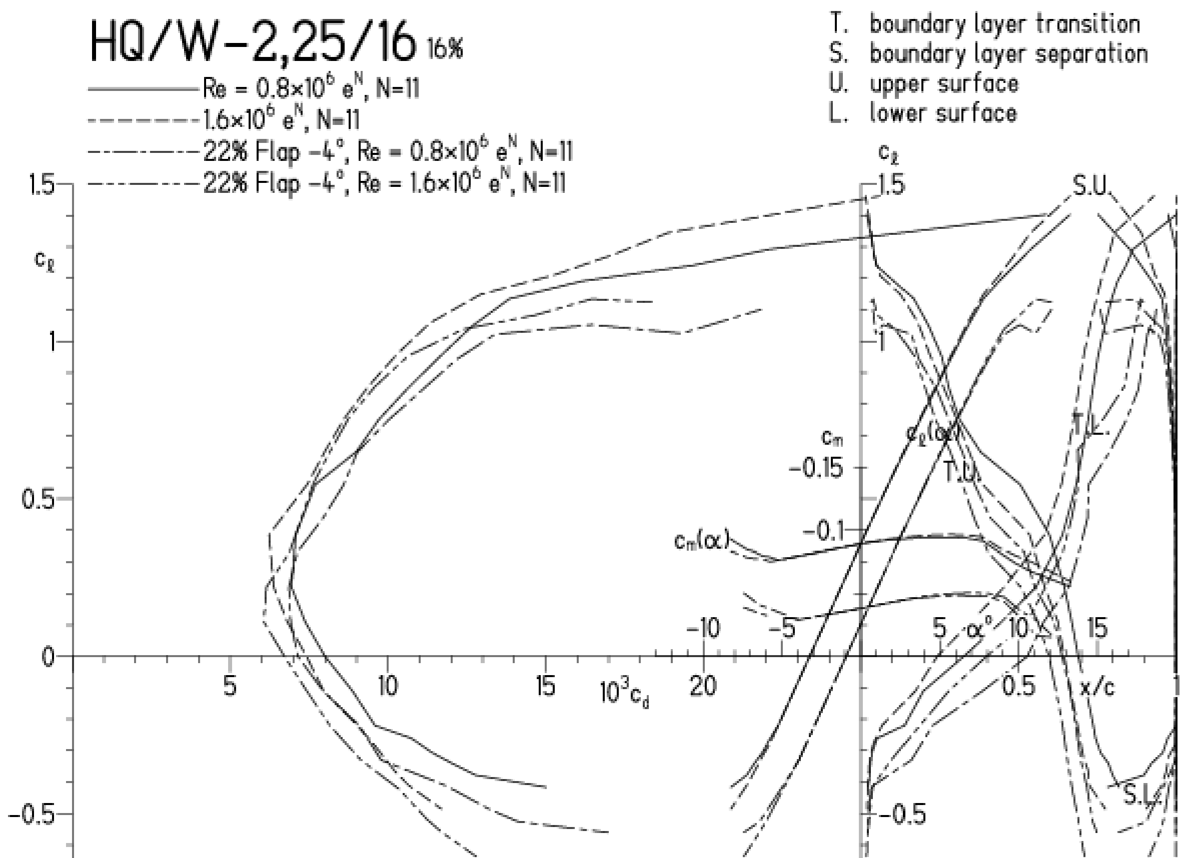
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

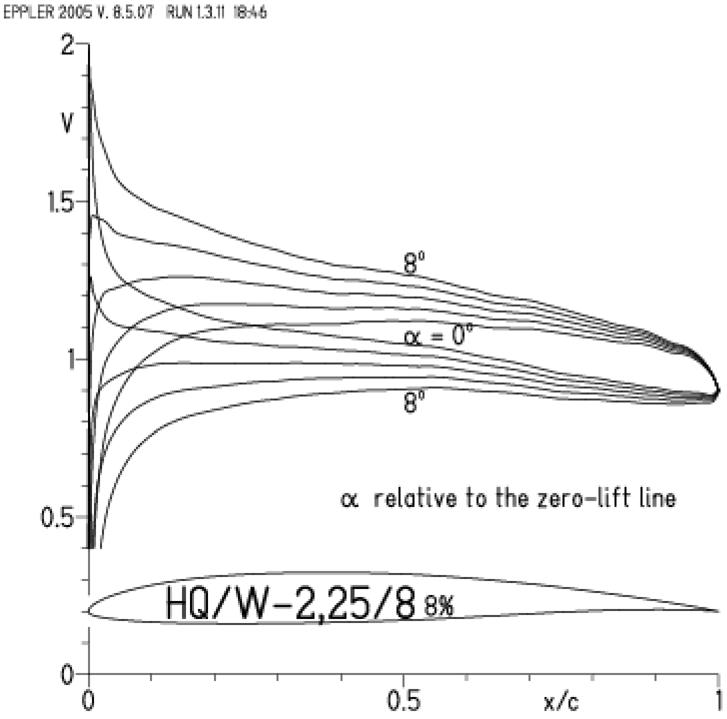
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

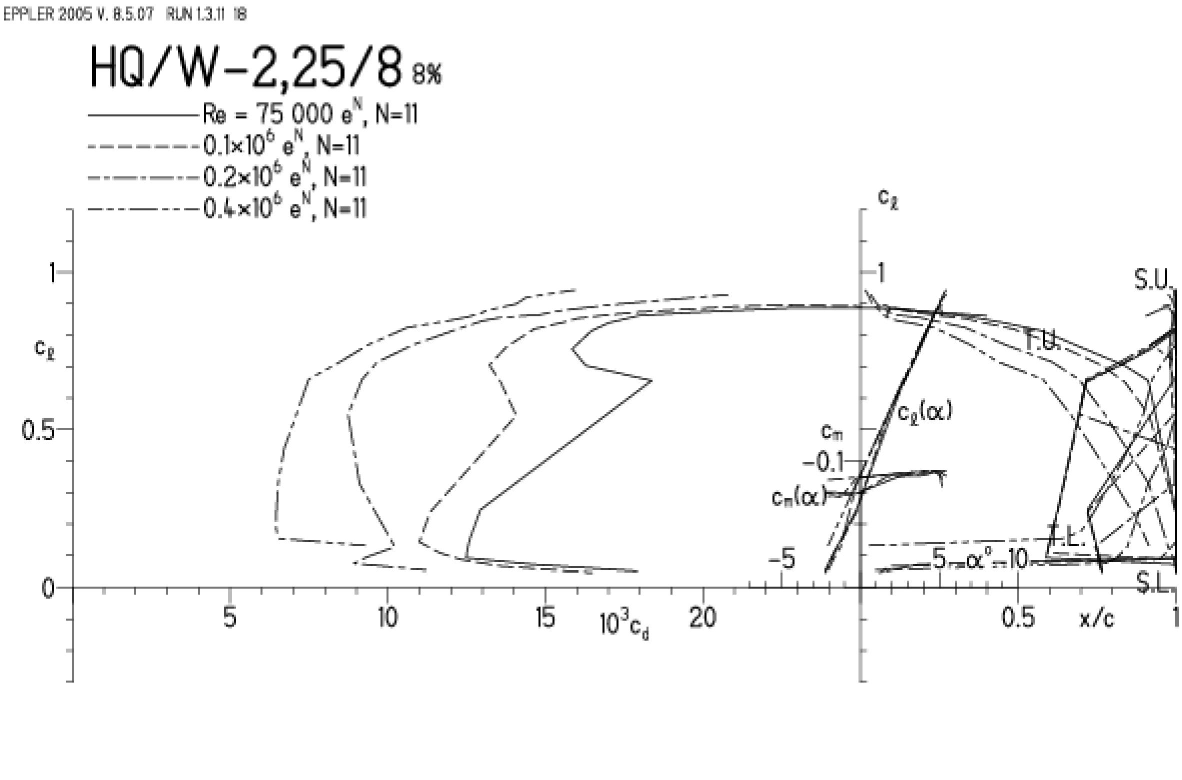


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

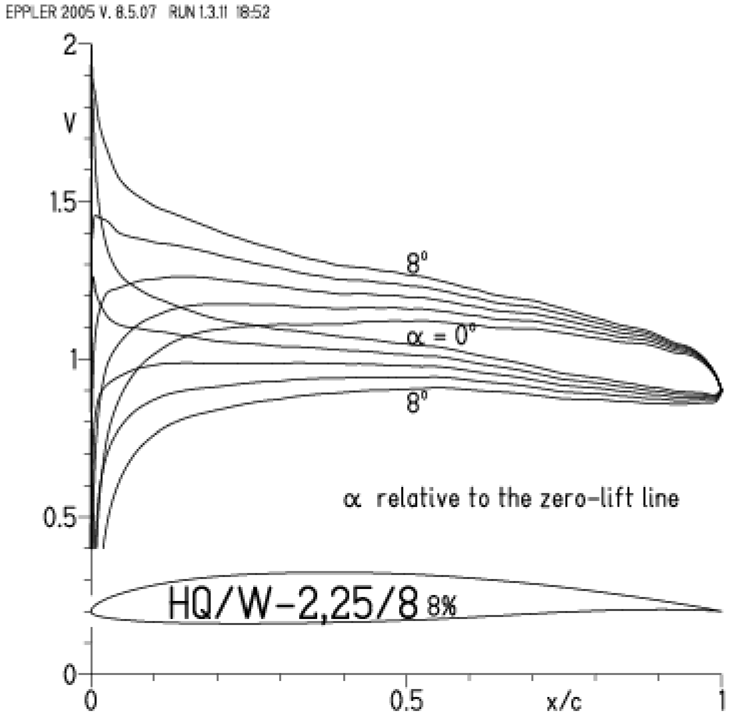


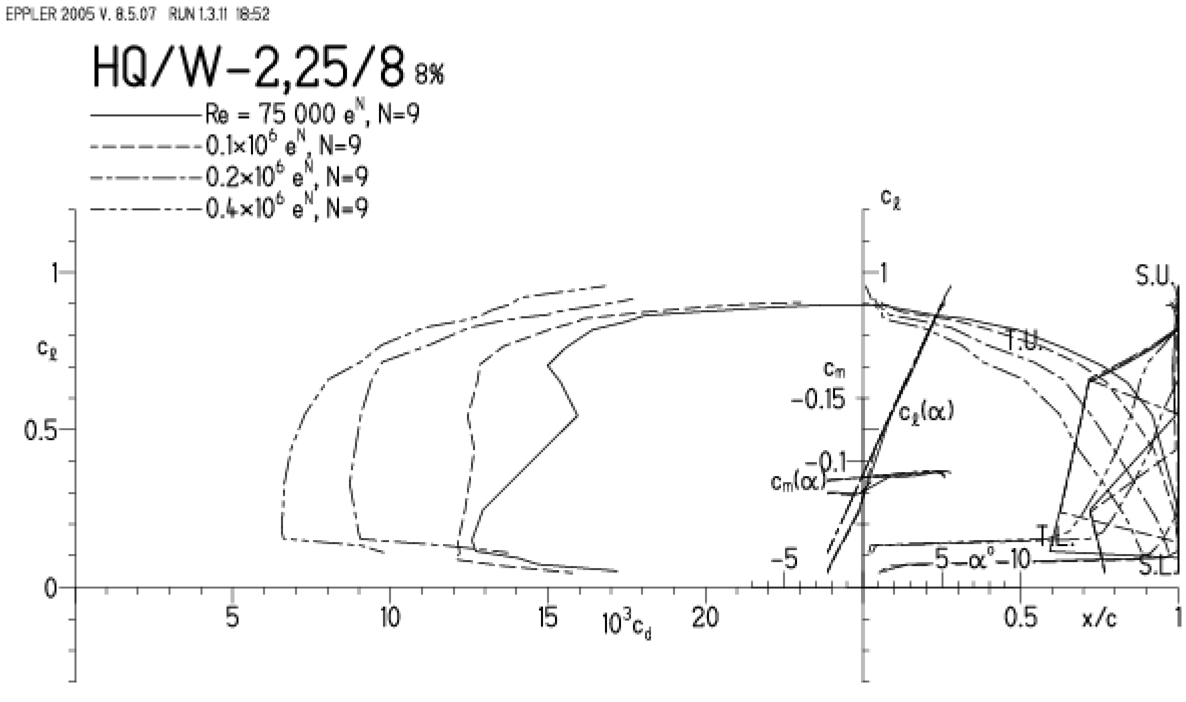
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

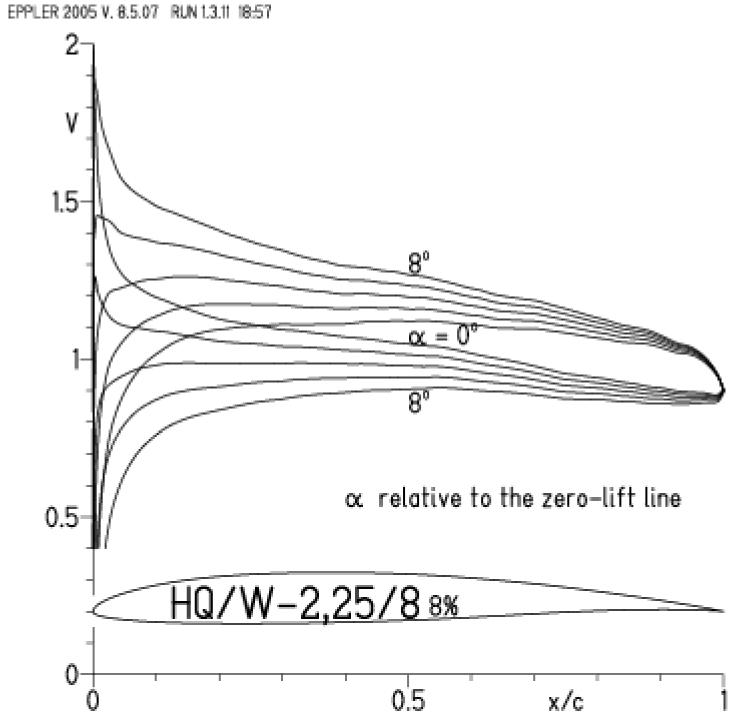

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
$c_\ell(\alpha)$
c_m
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
α°
x/c

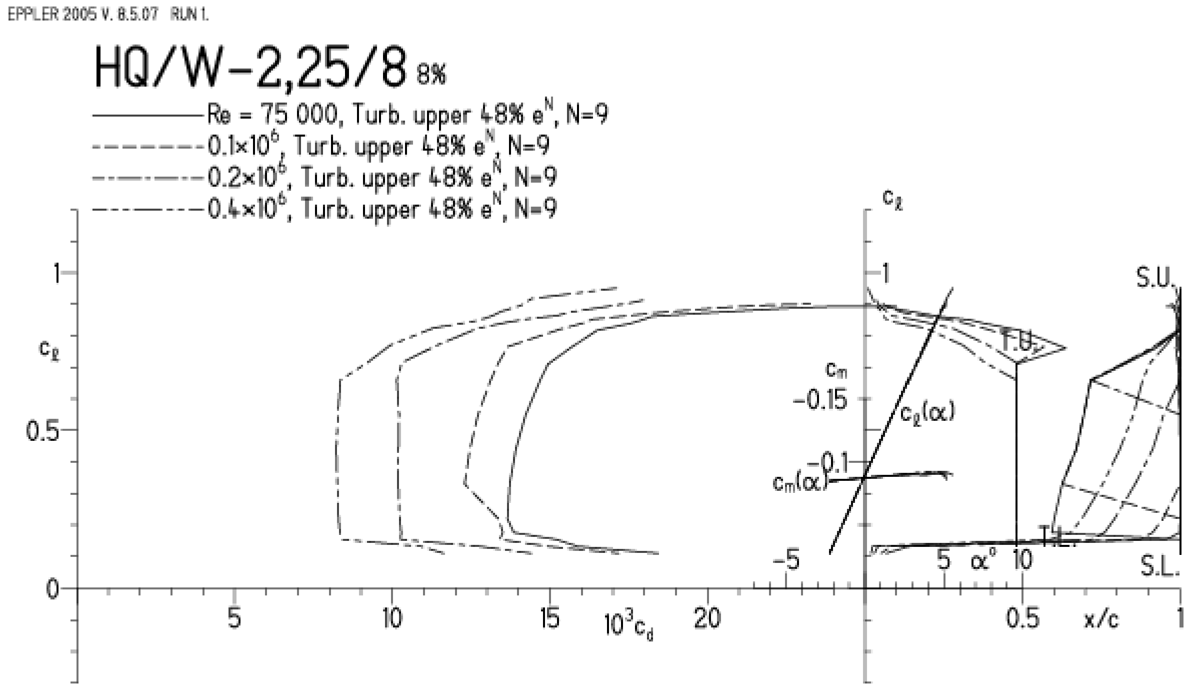
<u>HQ/W-2,25/8</u>, N=9





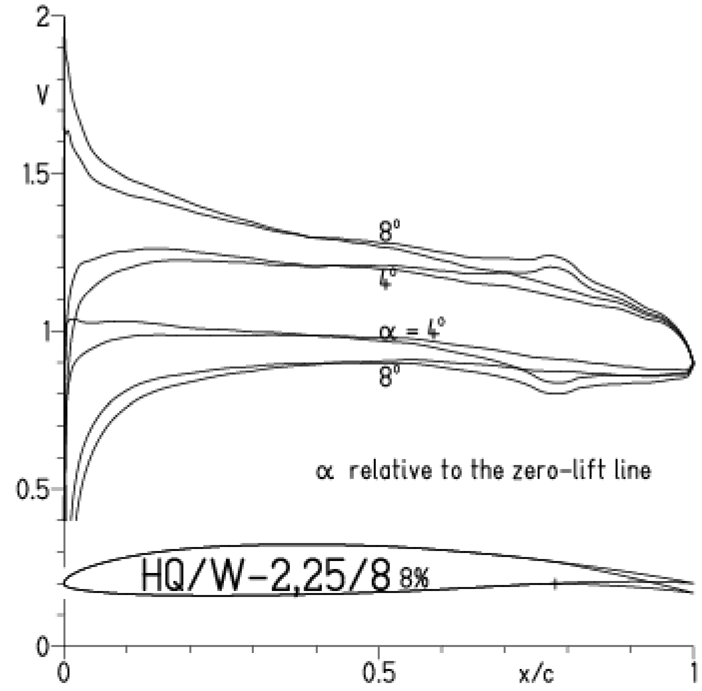
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



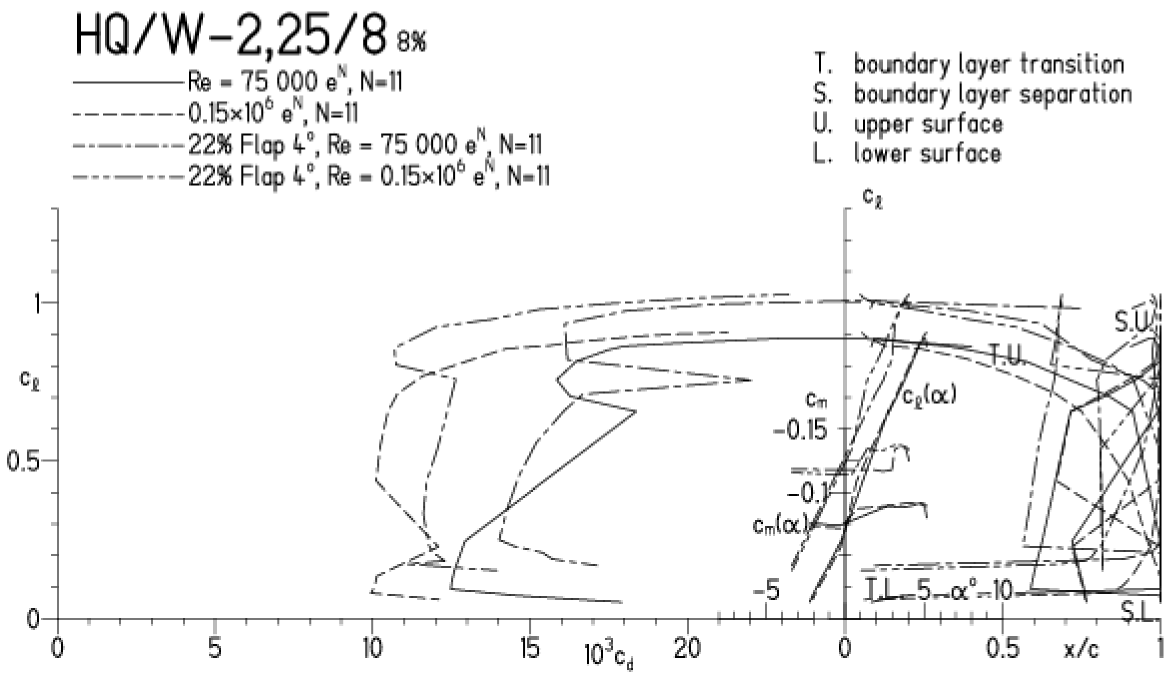


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

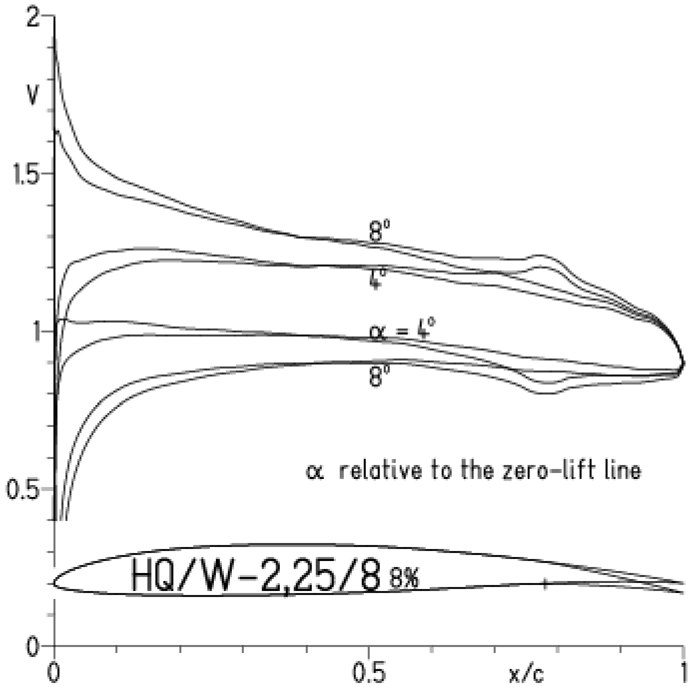


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

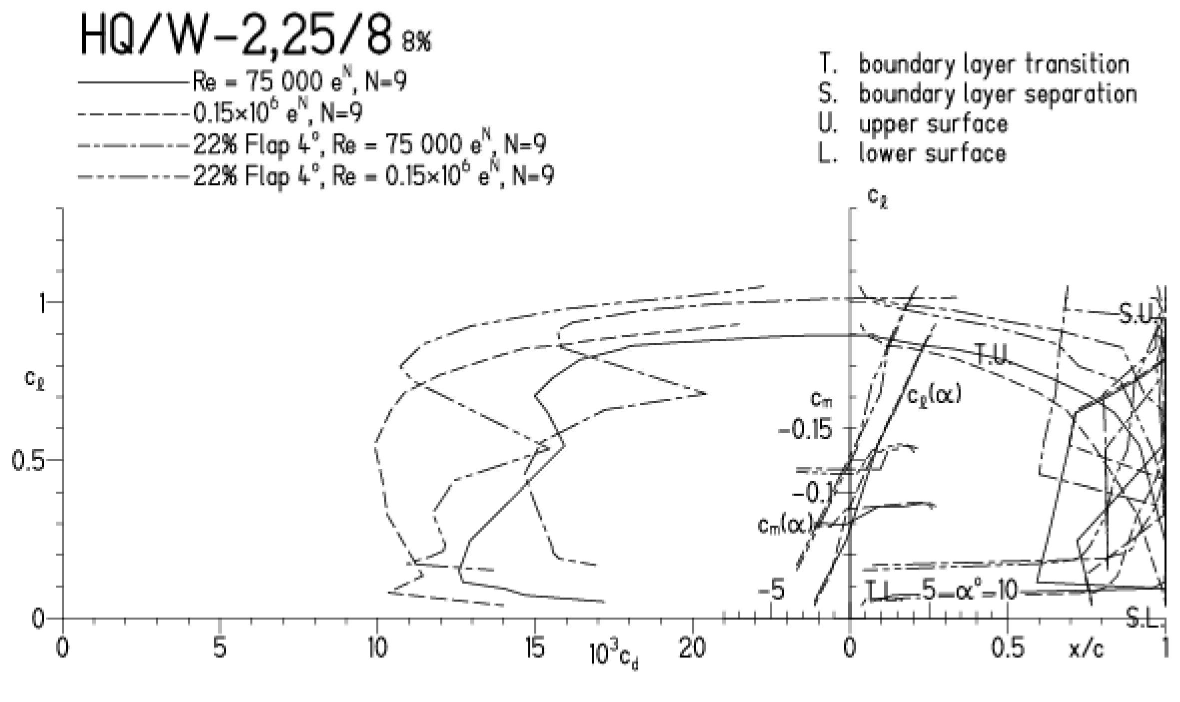


<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag

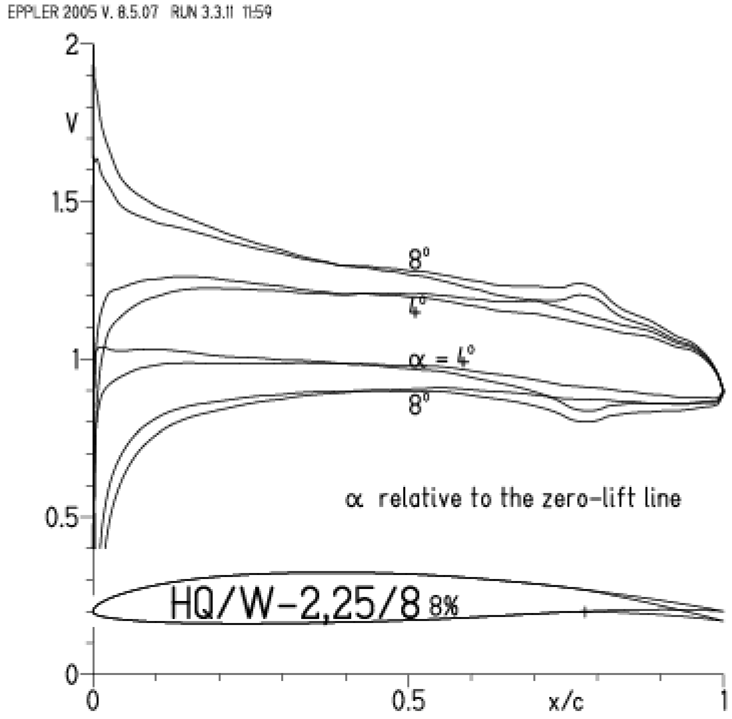
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

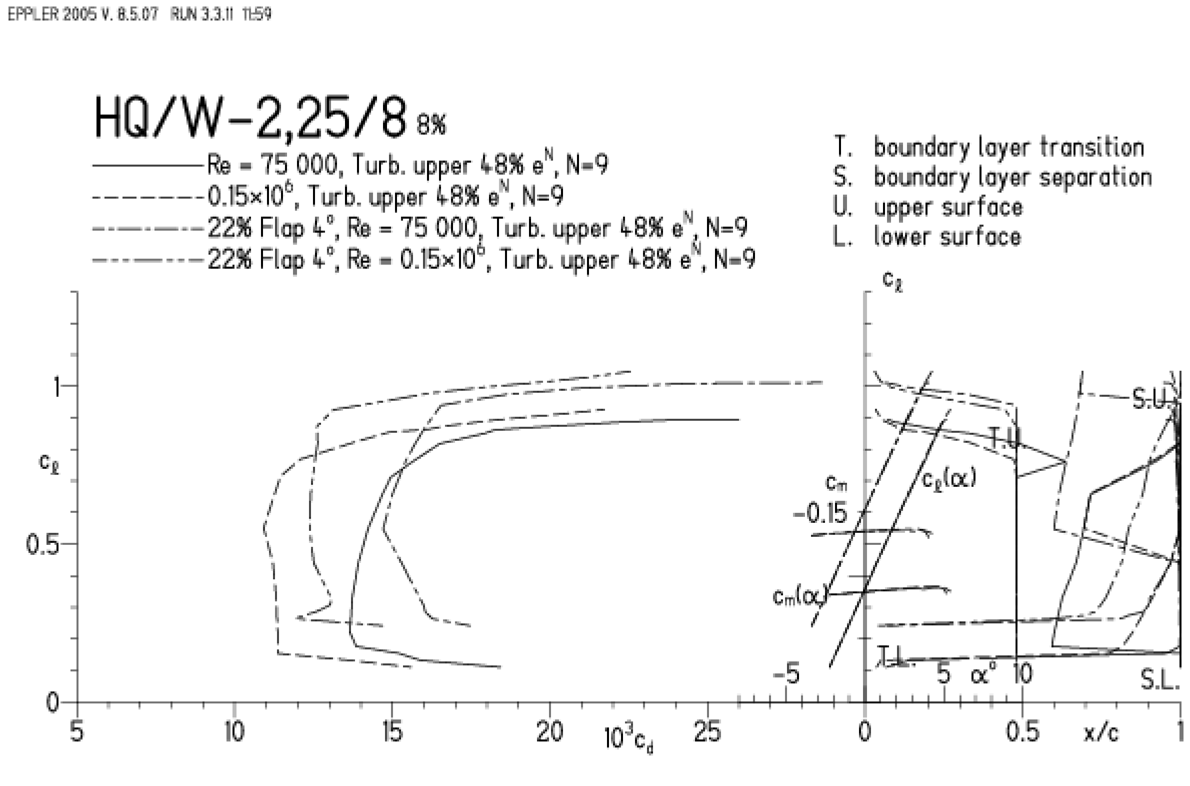


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



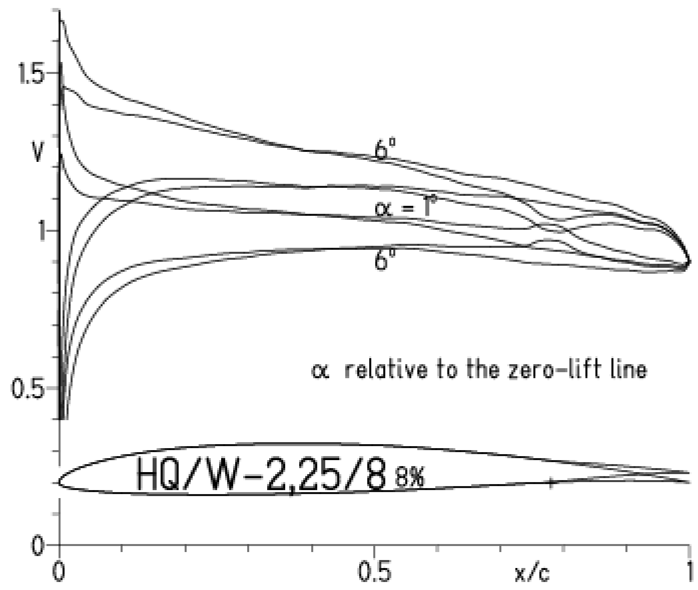
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



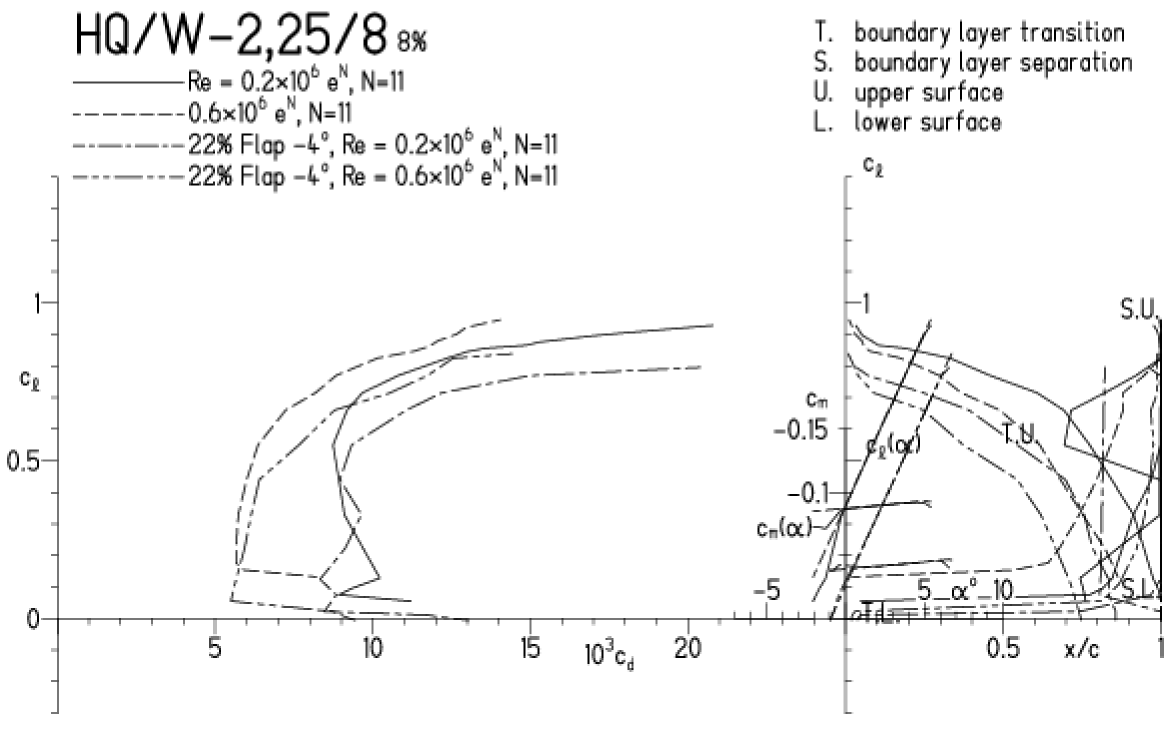


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

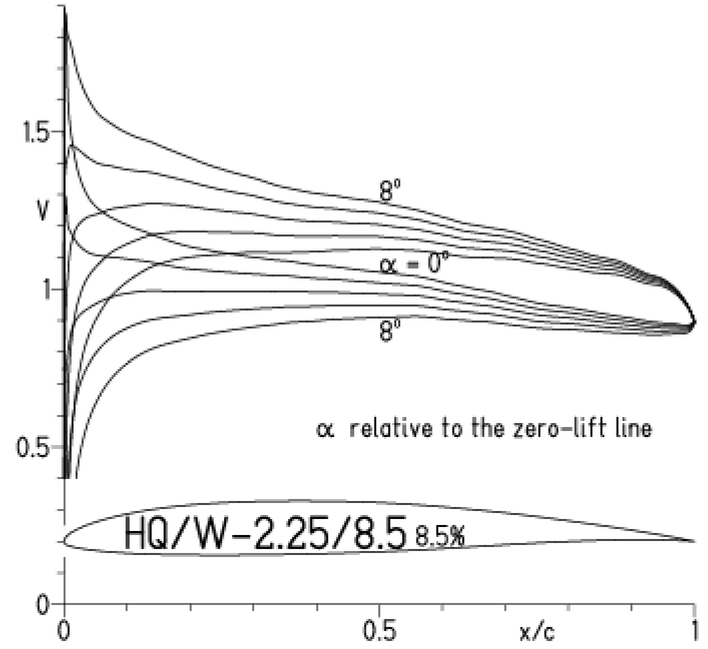


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

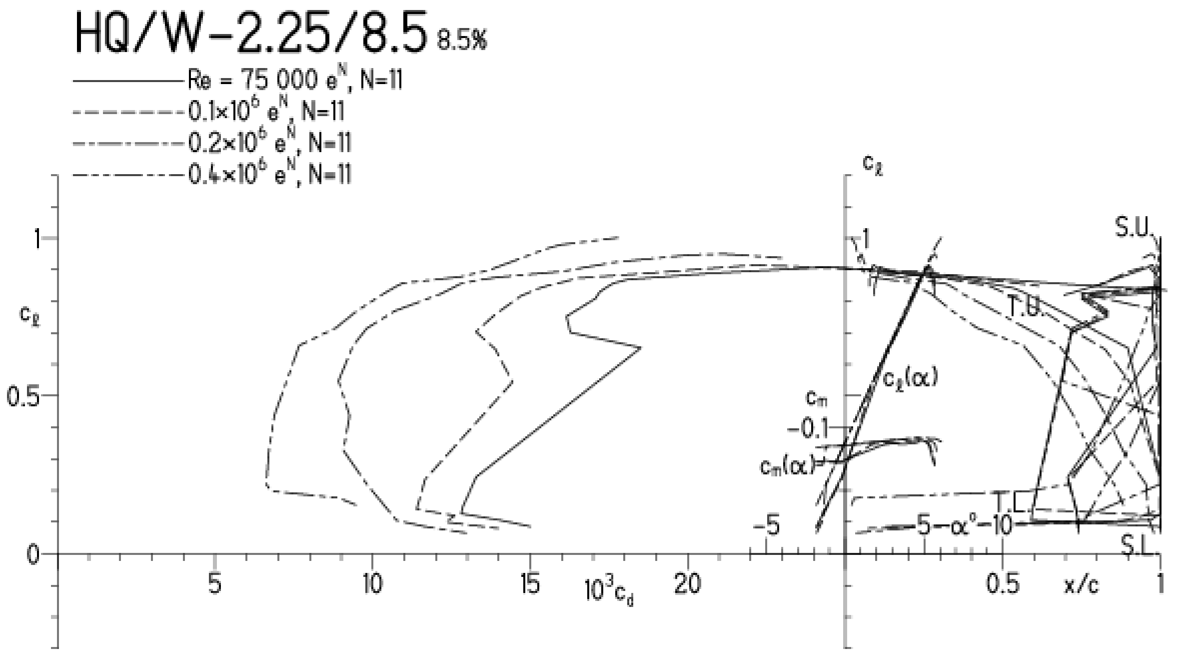


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

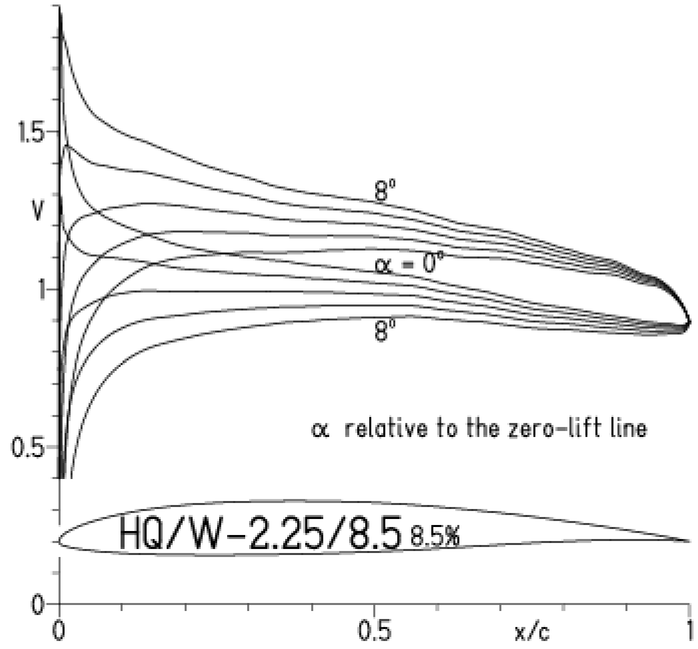


EPPLER 2005 V

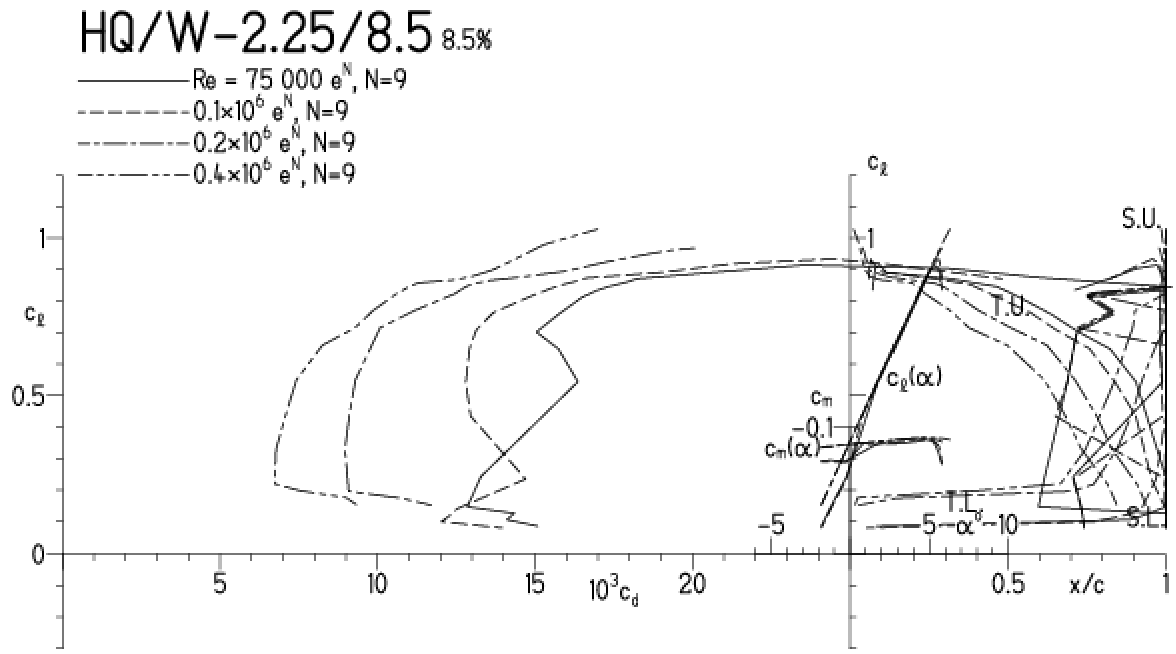


HQ/W-2,25/8,5, N=9

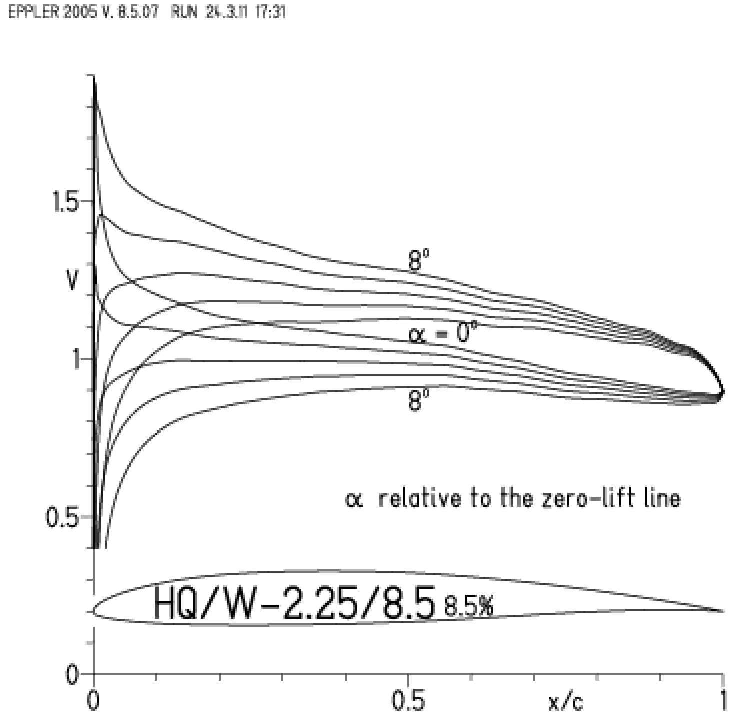
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

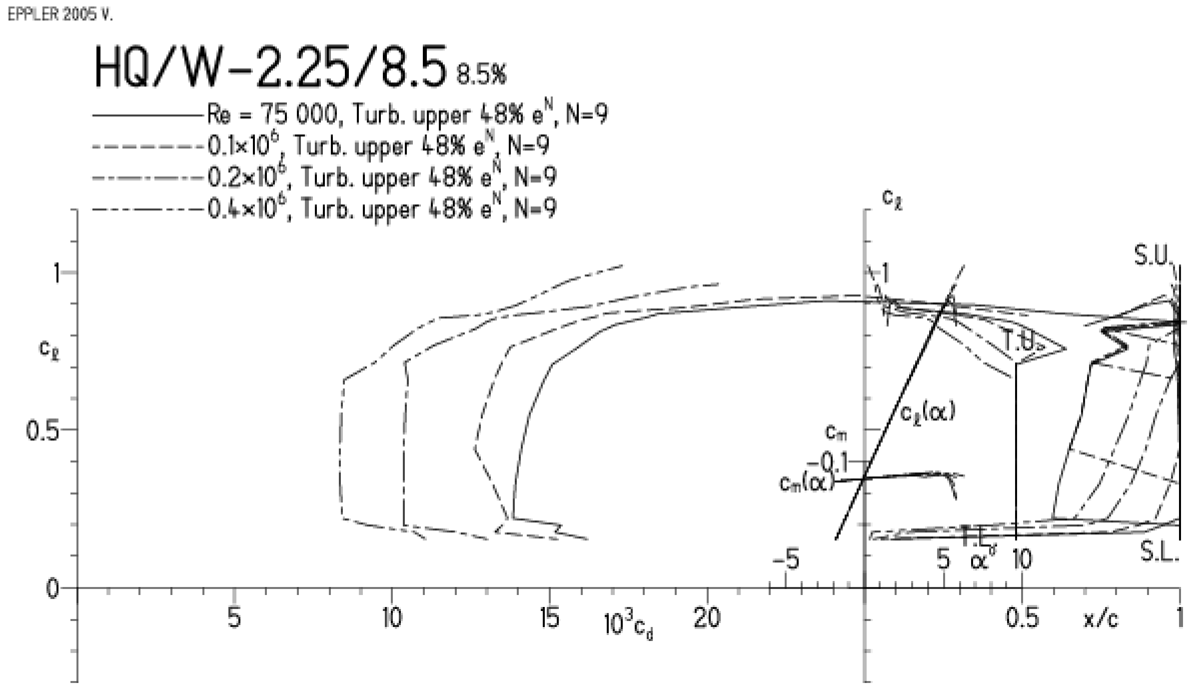


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



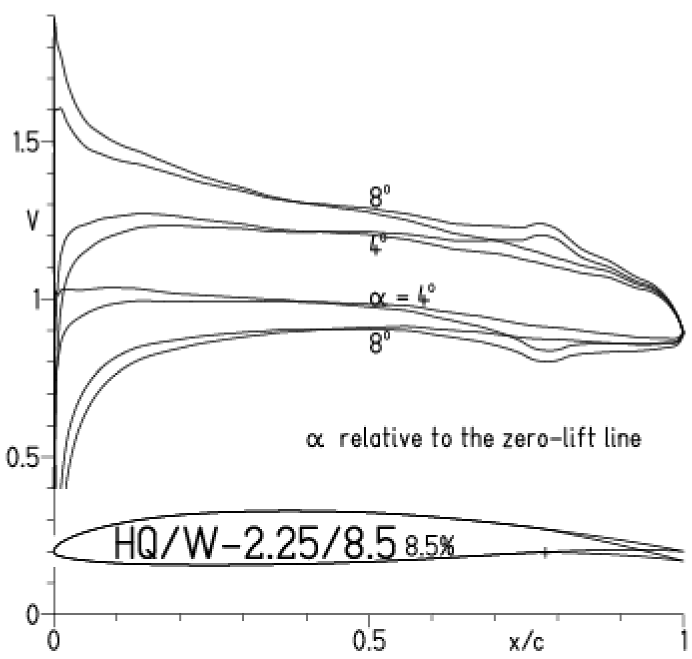
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



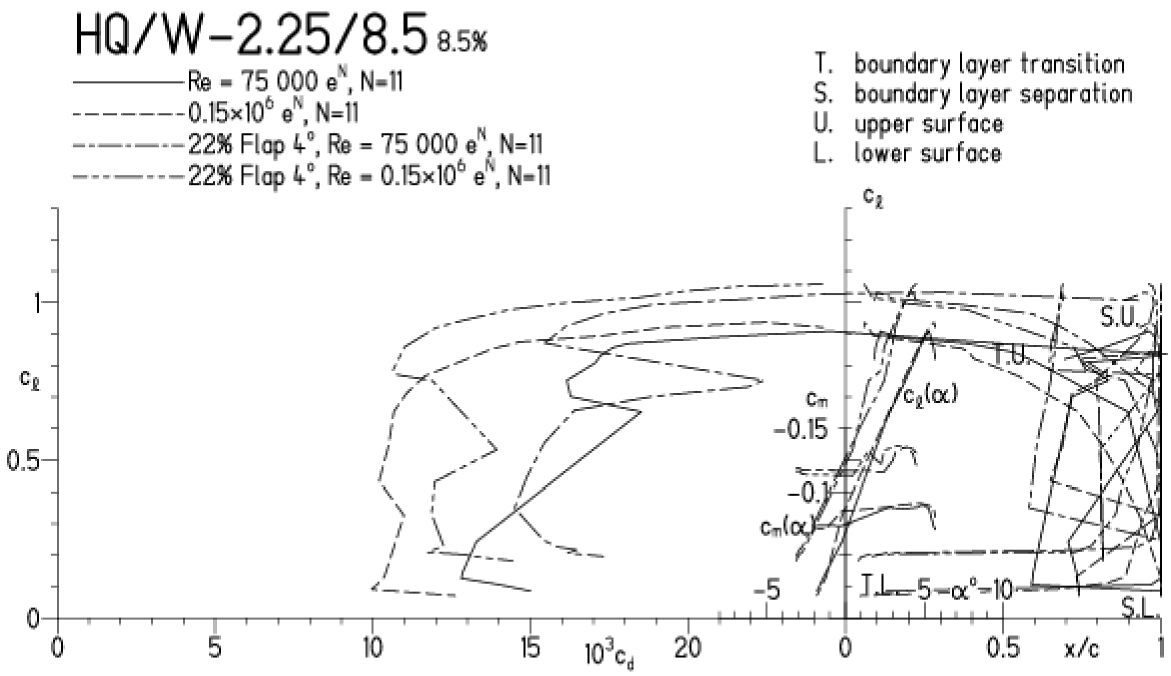


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

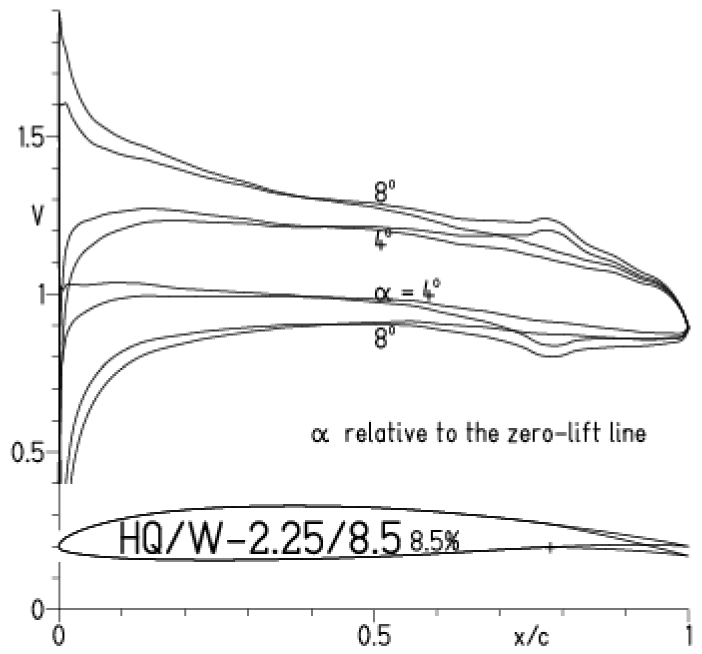


EPPLER 2005 V. 8.5.

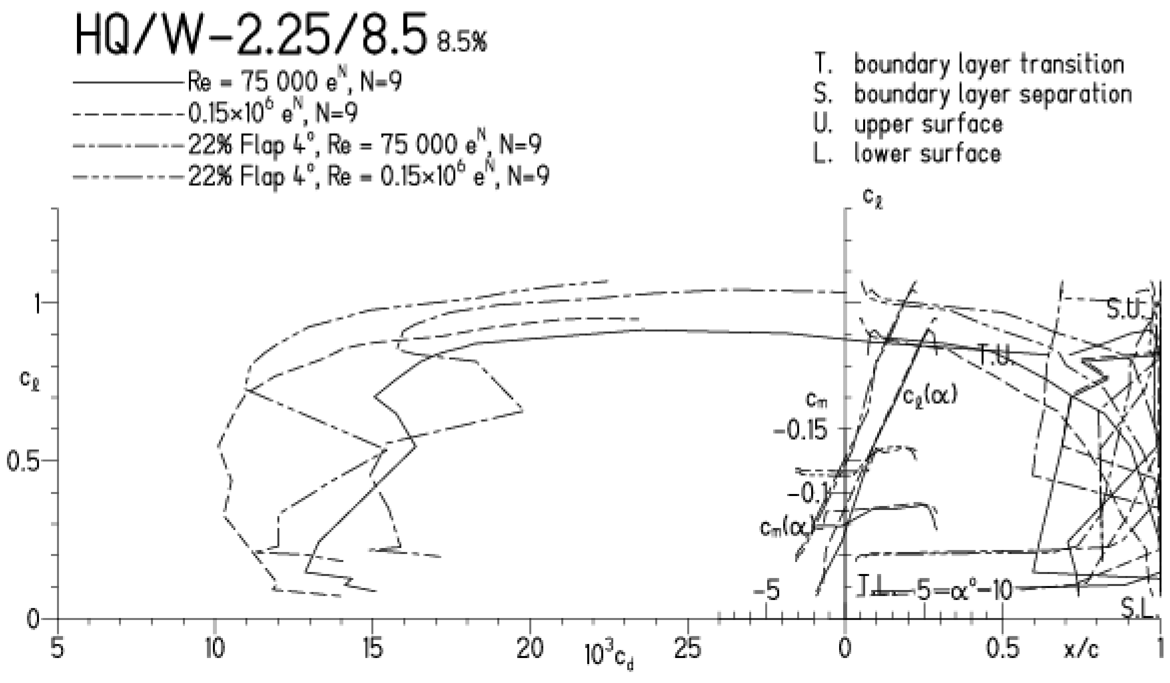


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

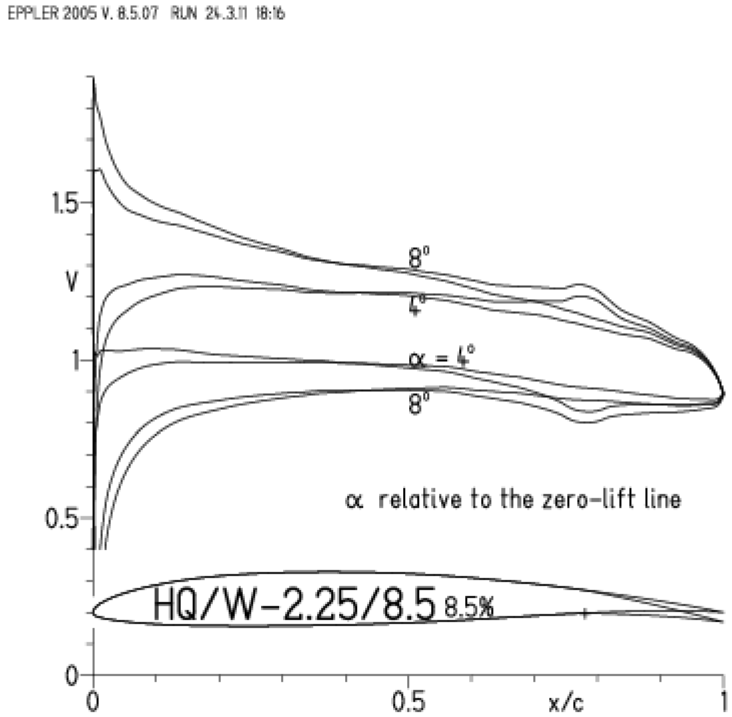
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

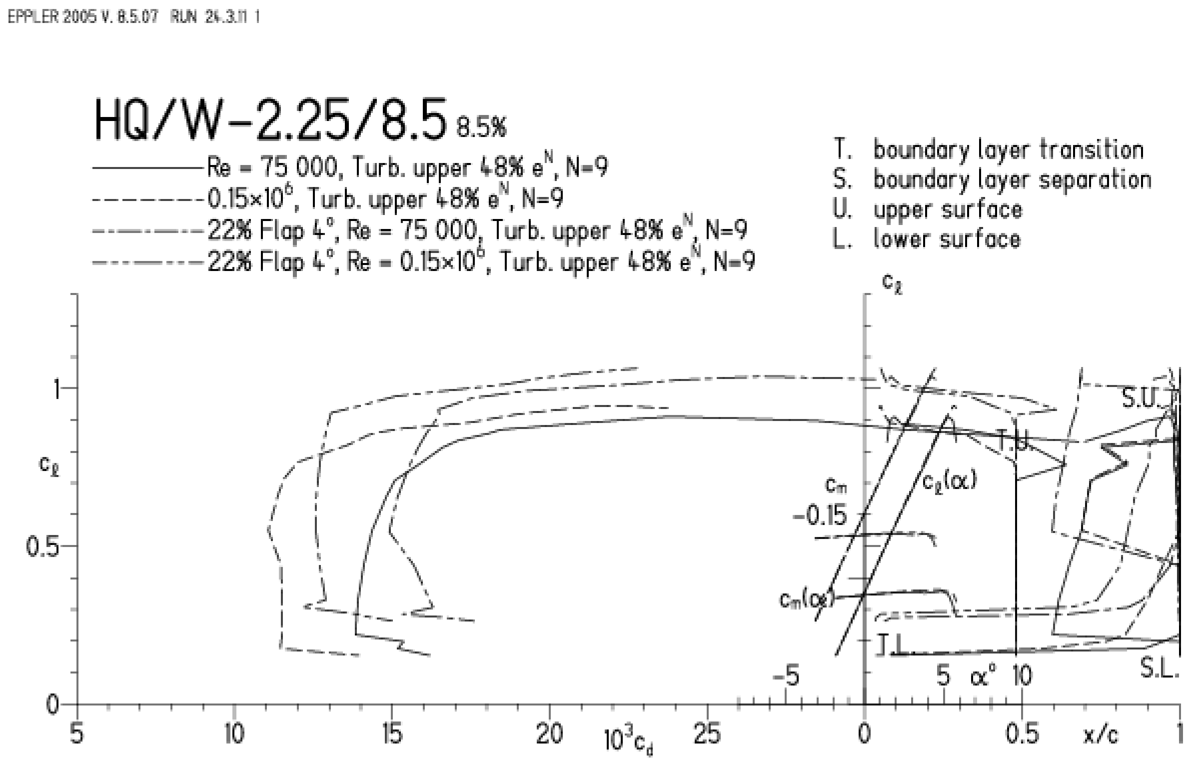


EPPLER 2005 V.



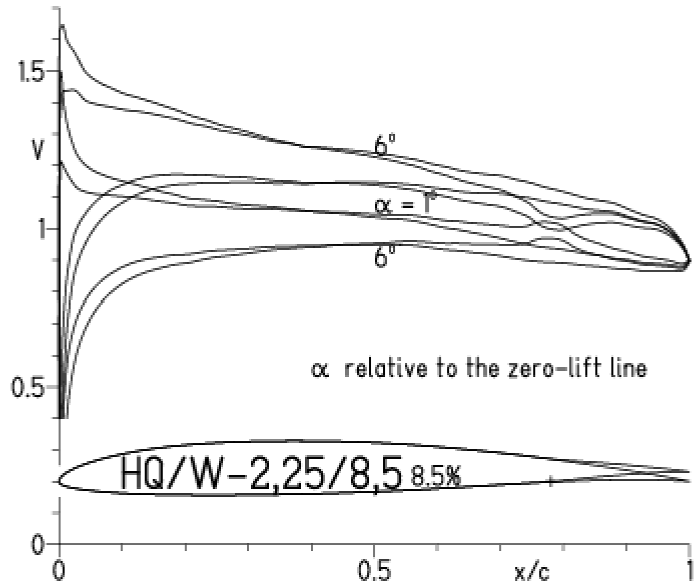
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



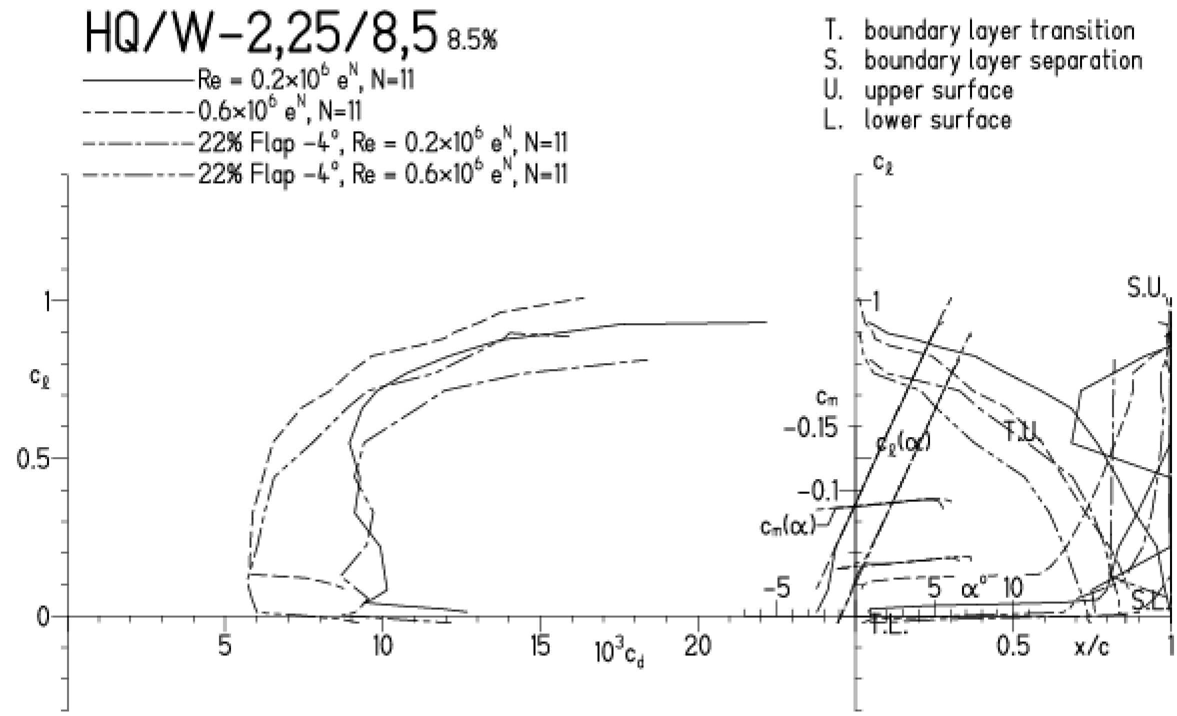


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

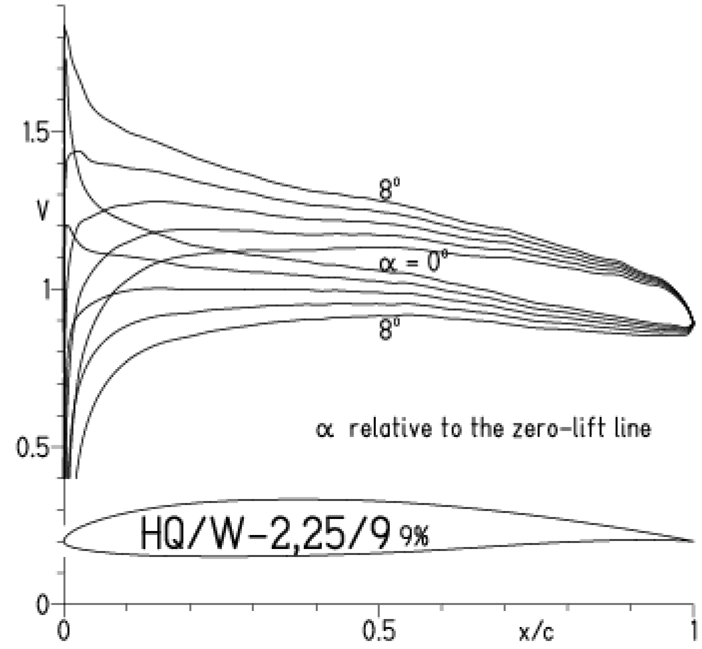


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

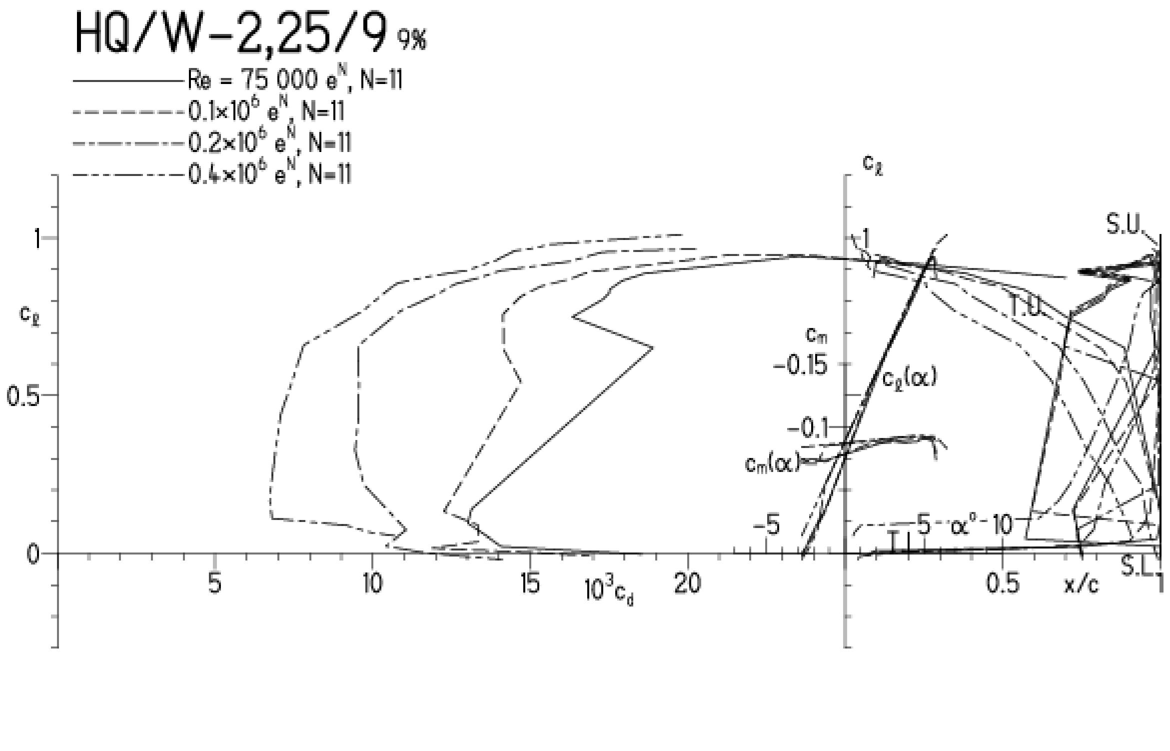


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

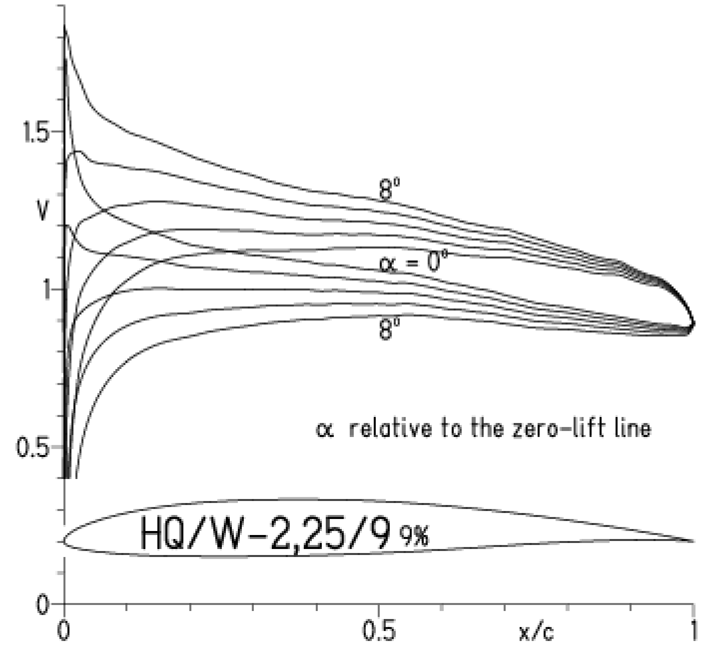


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

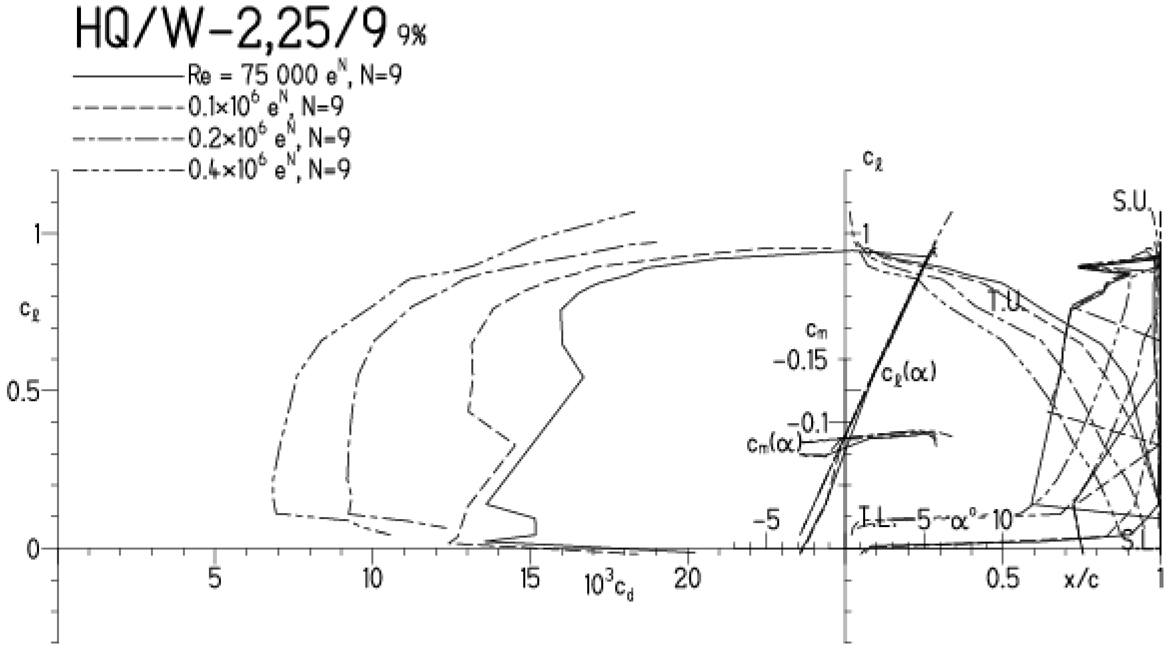


<u>HQ/W-2,25/9</u>, N=9

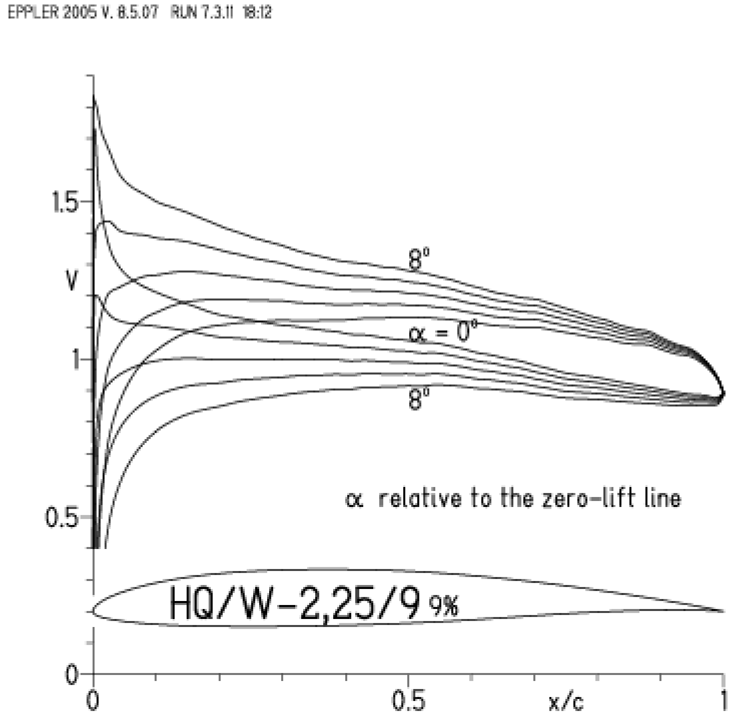
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

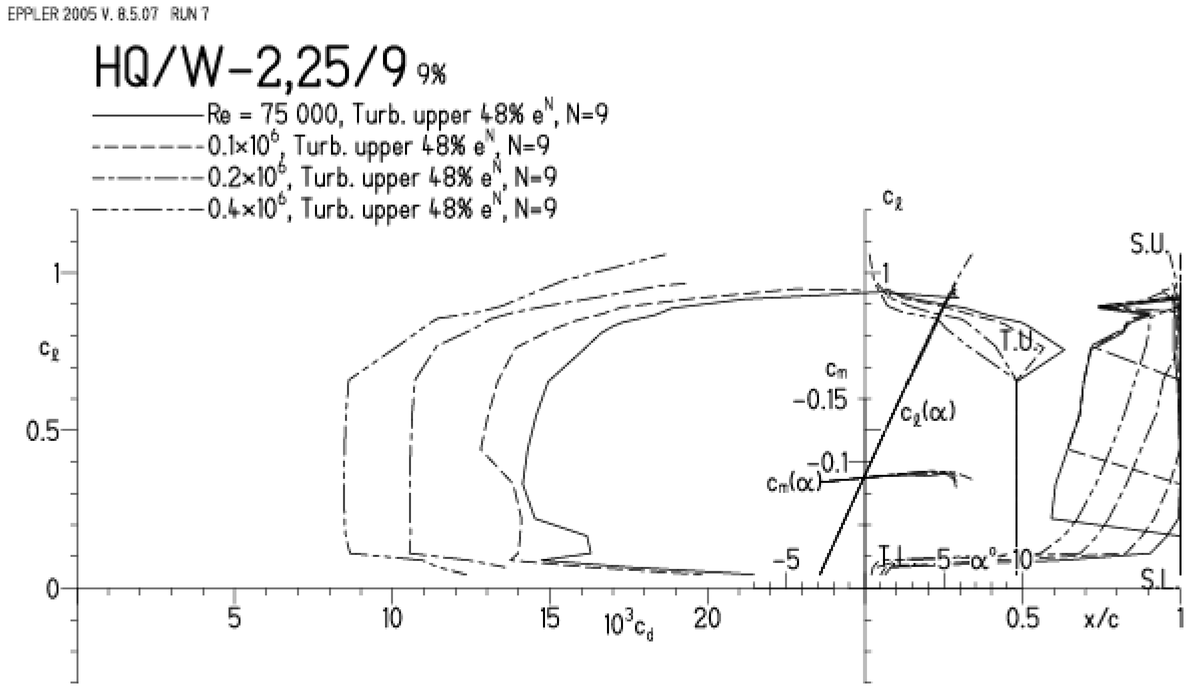


EPPLER 2005 V. 8.



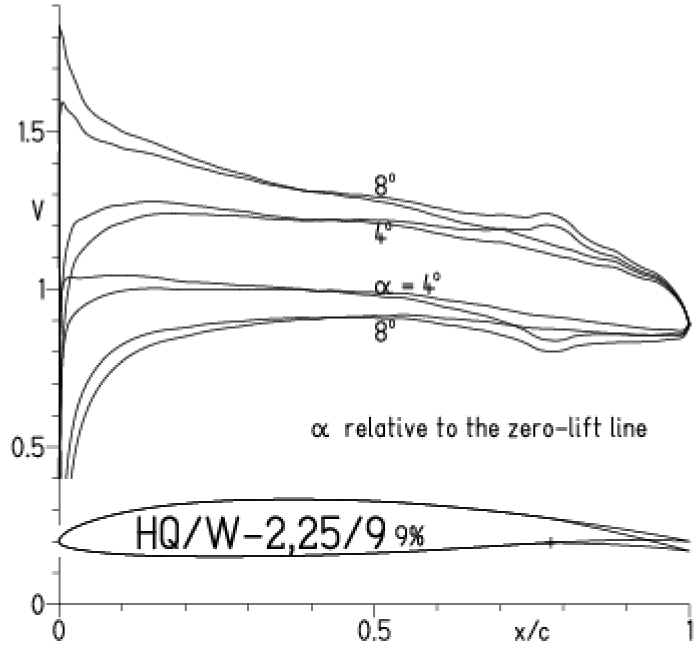
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



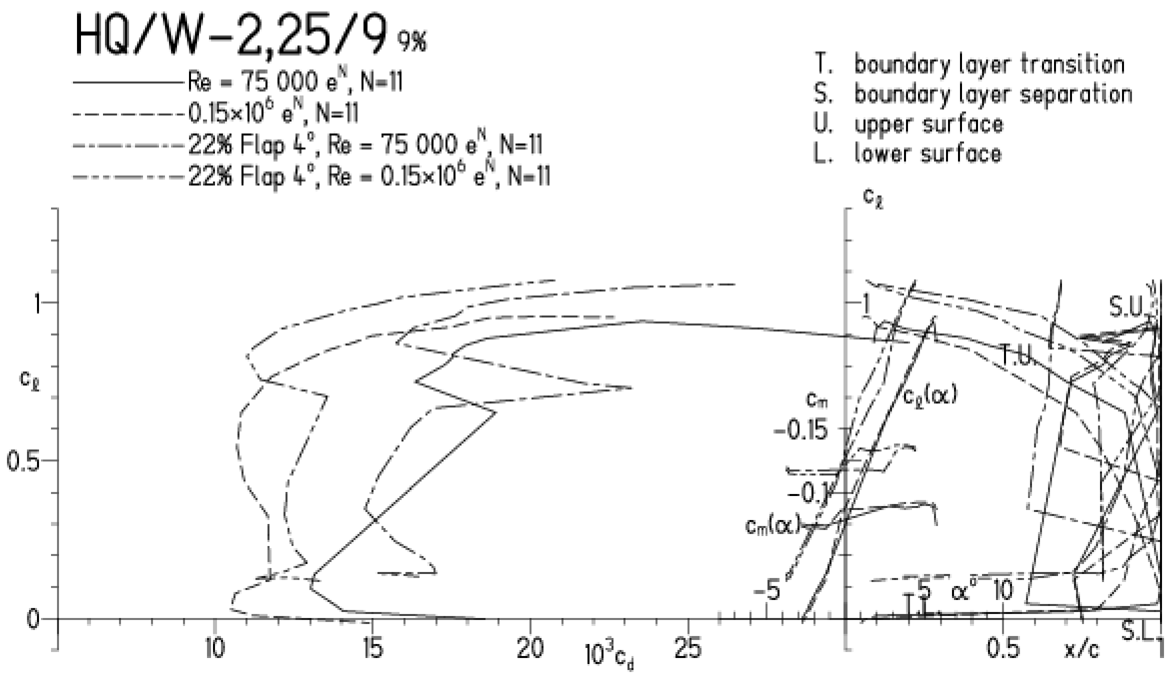


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

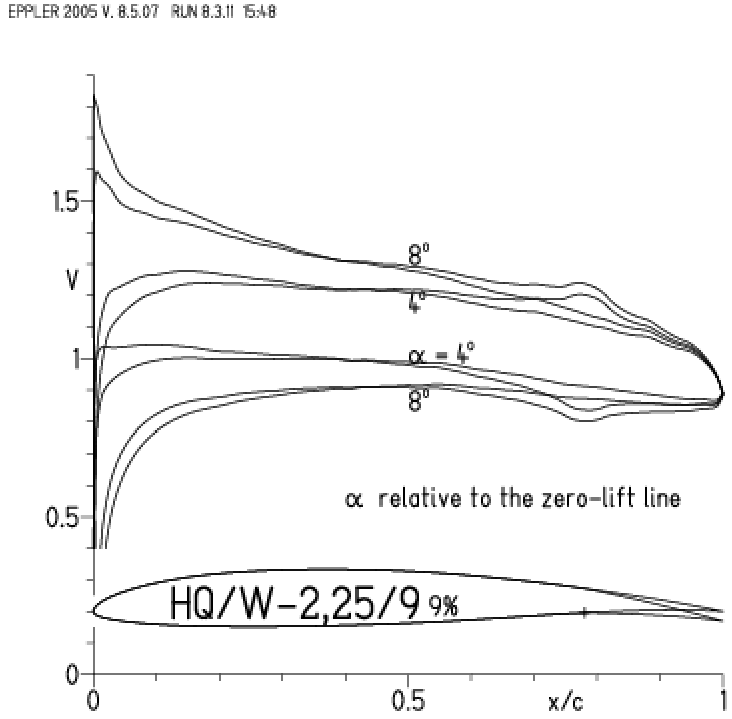
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

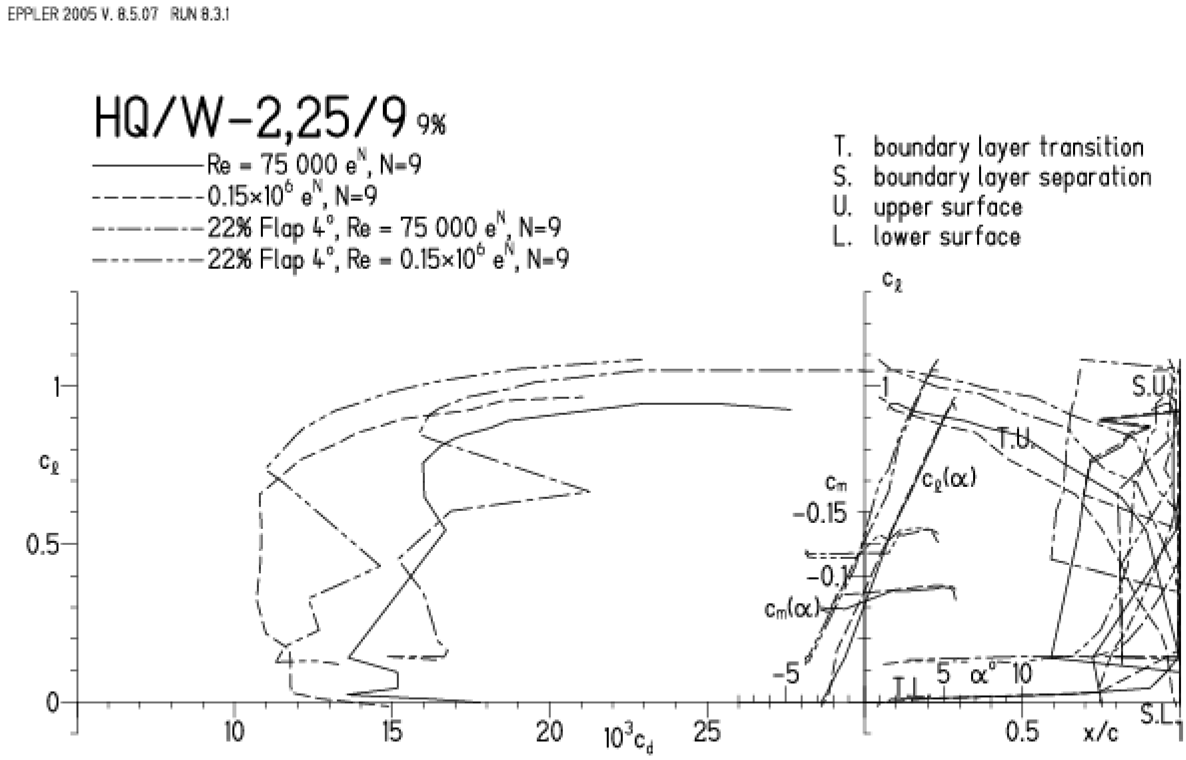


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



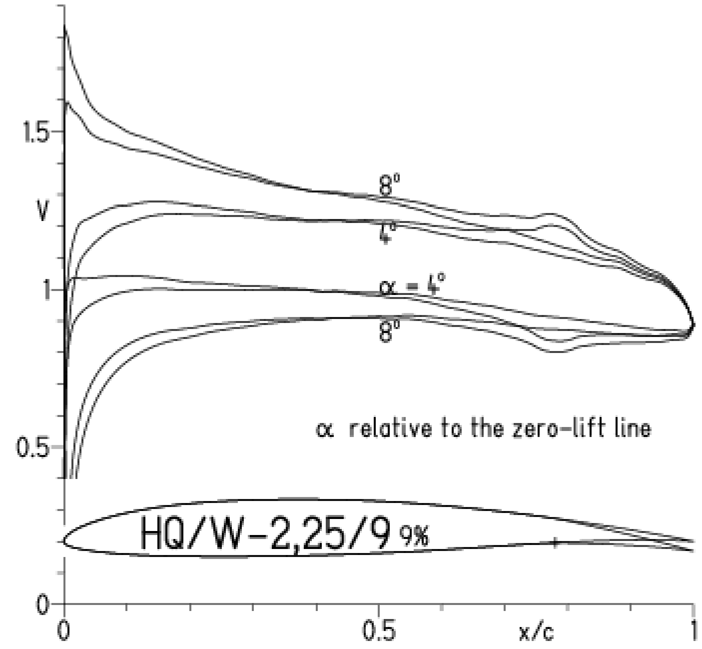
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag



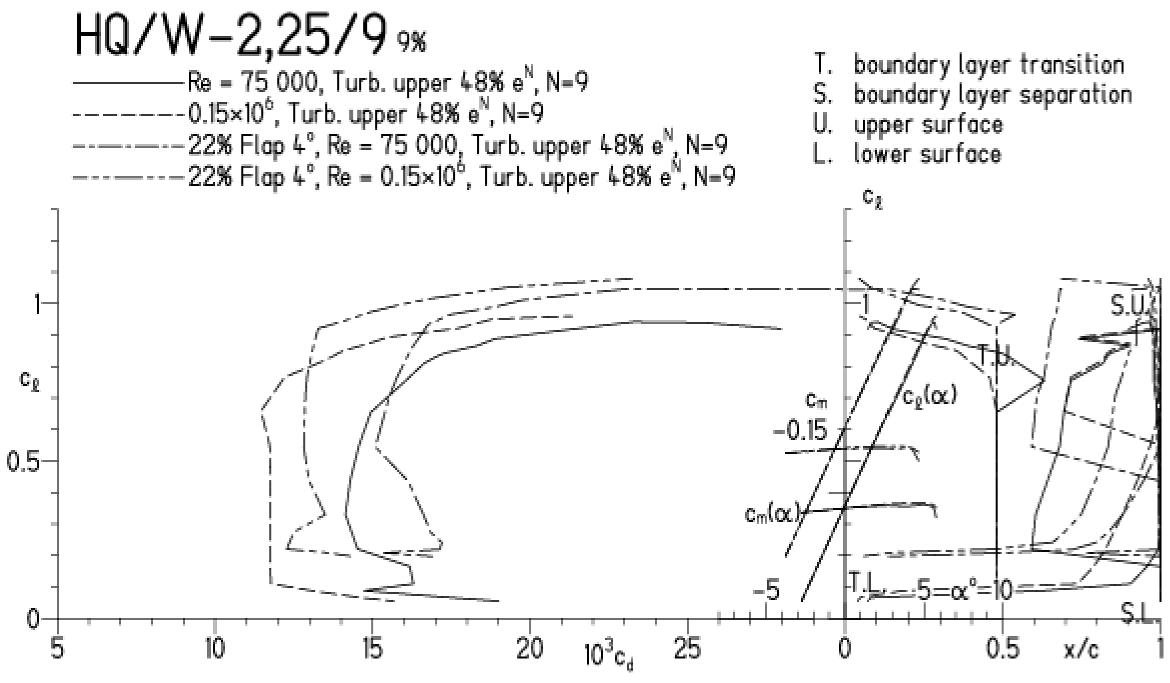


<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

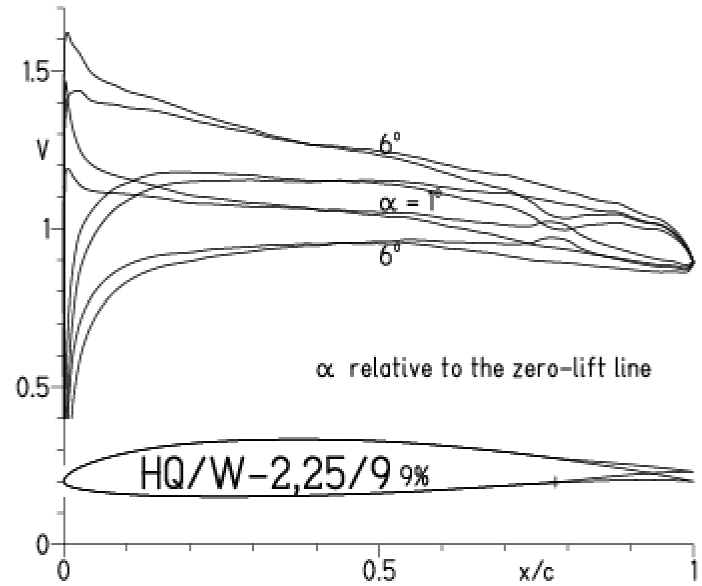


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

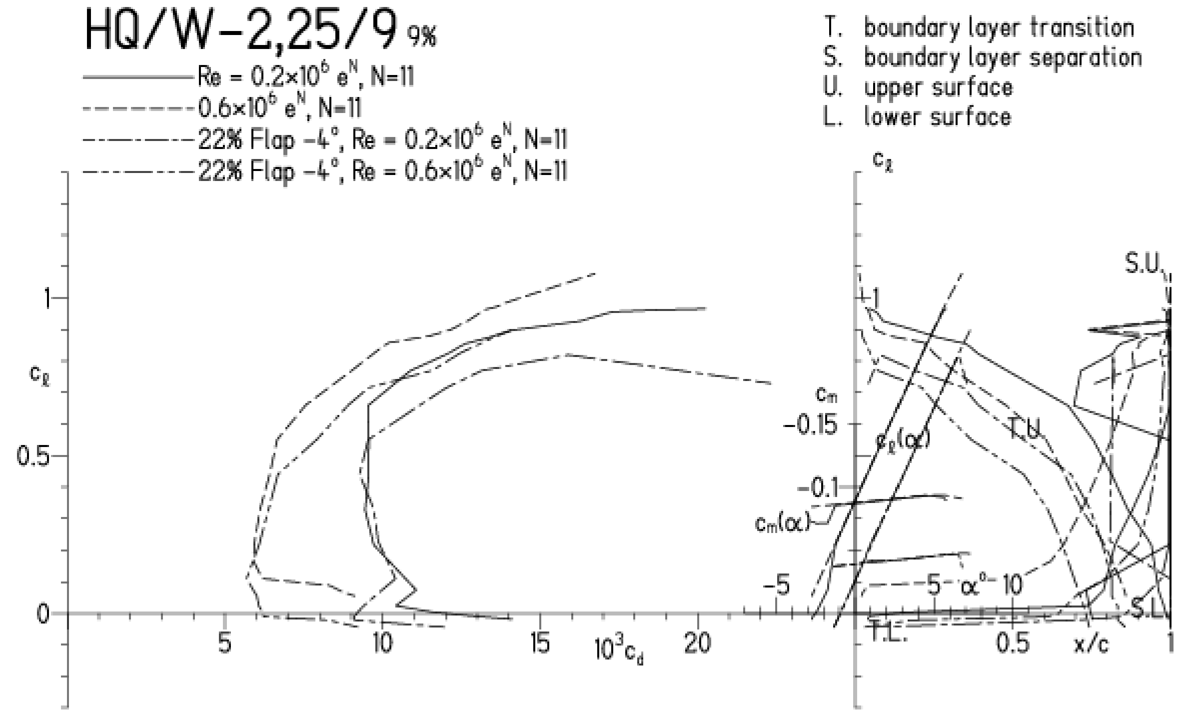


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

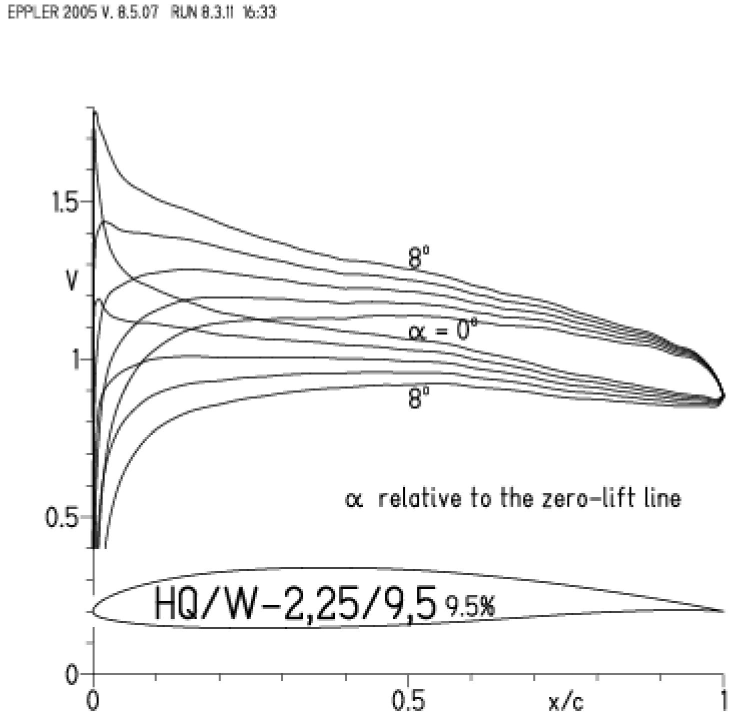
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

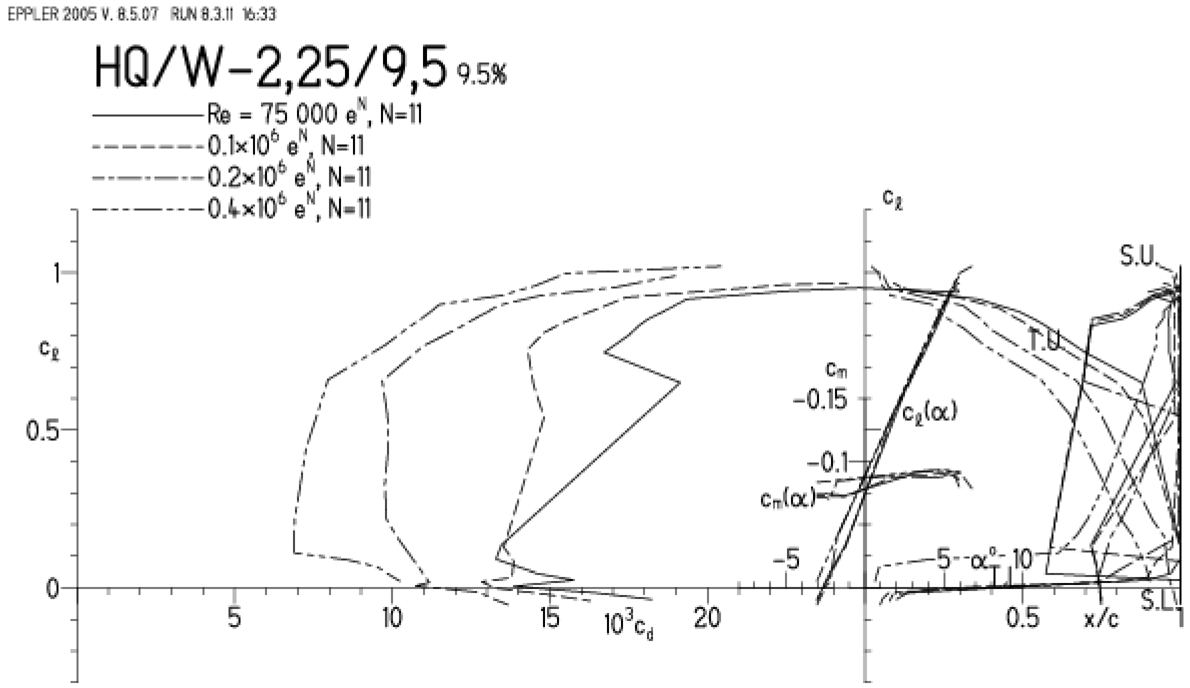


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



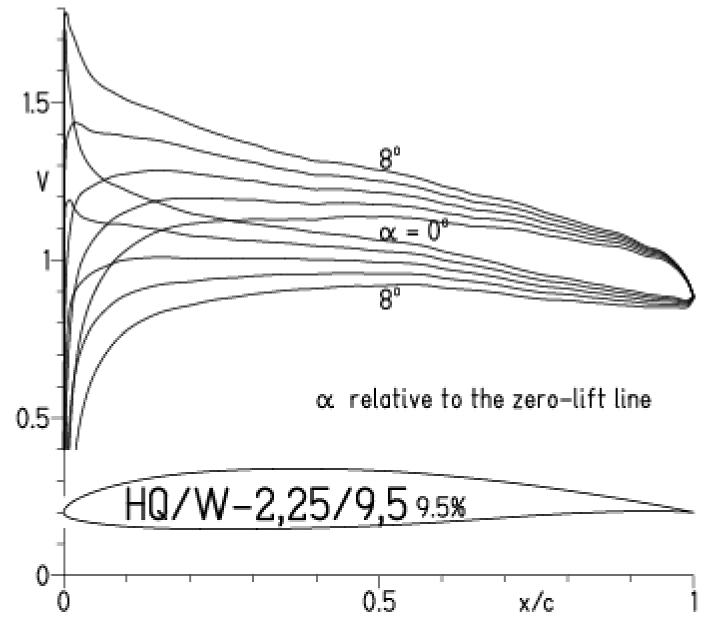
HQ/W-2,25/9,5, N=11



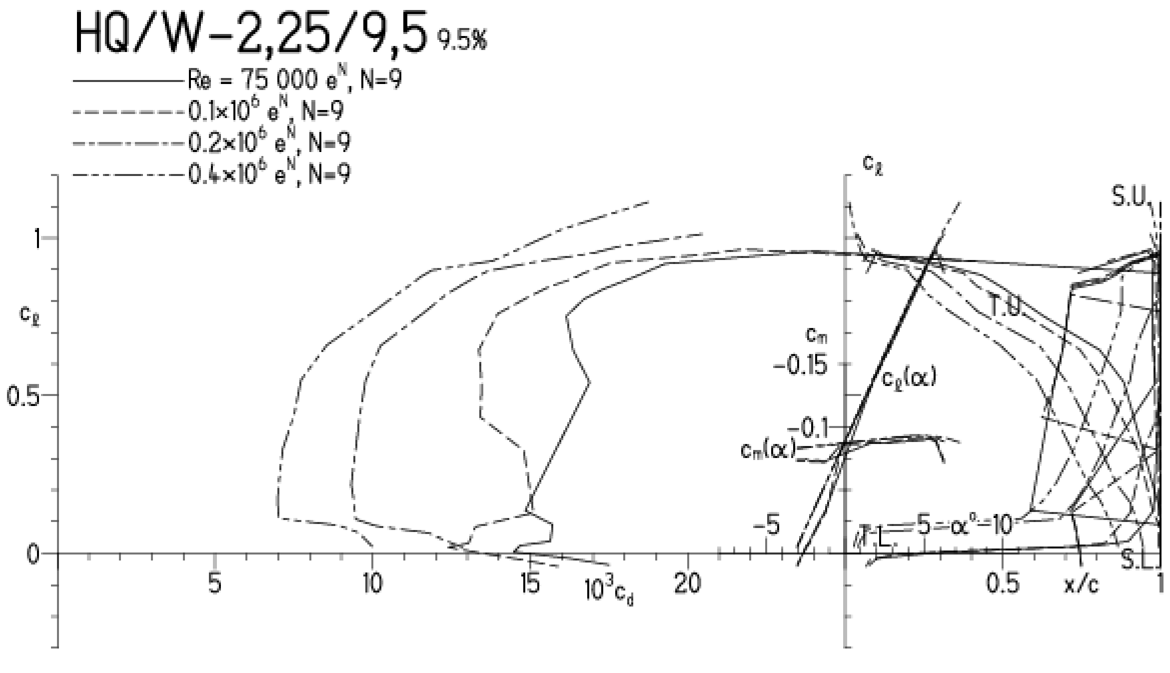


HQ/W-2,25/9,5, N=9

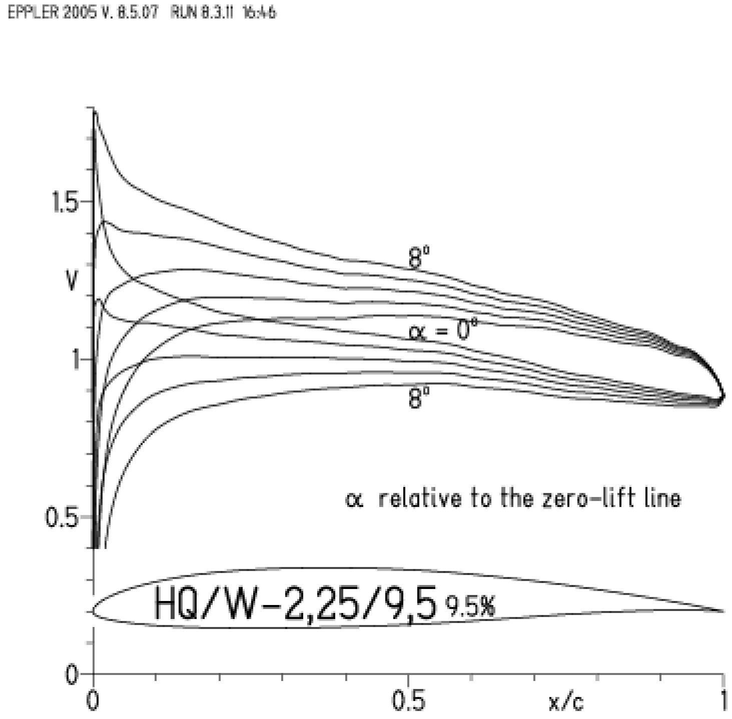
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

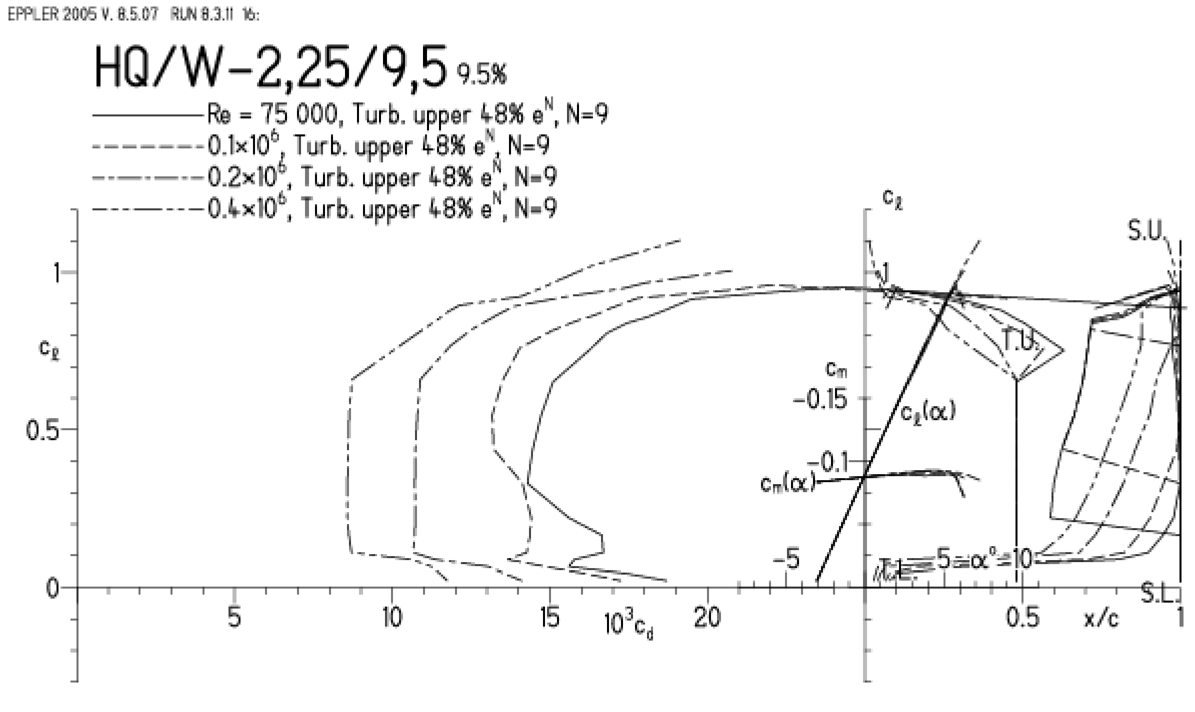


EPPLER 2005 V. 8.5.07 RUN 8.3.



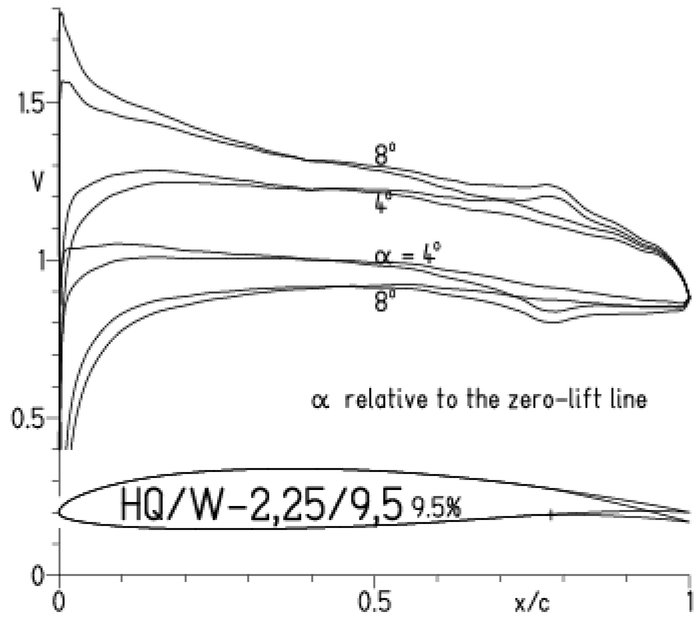
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



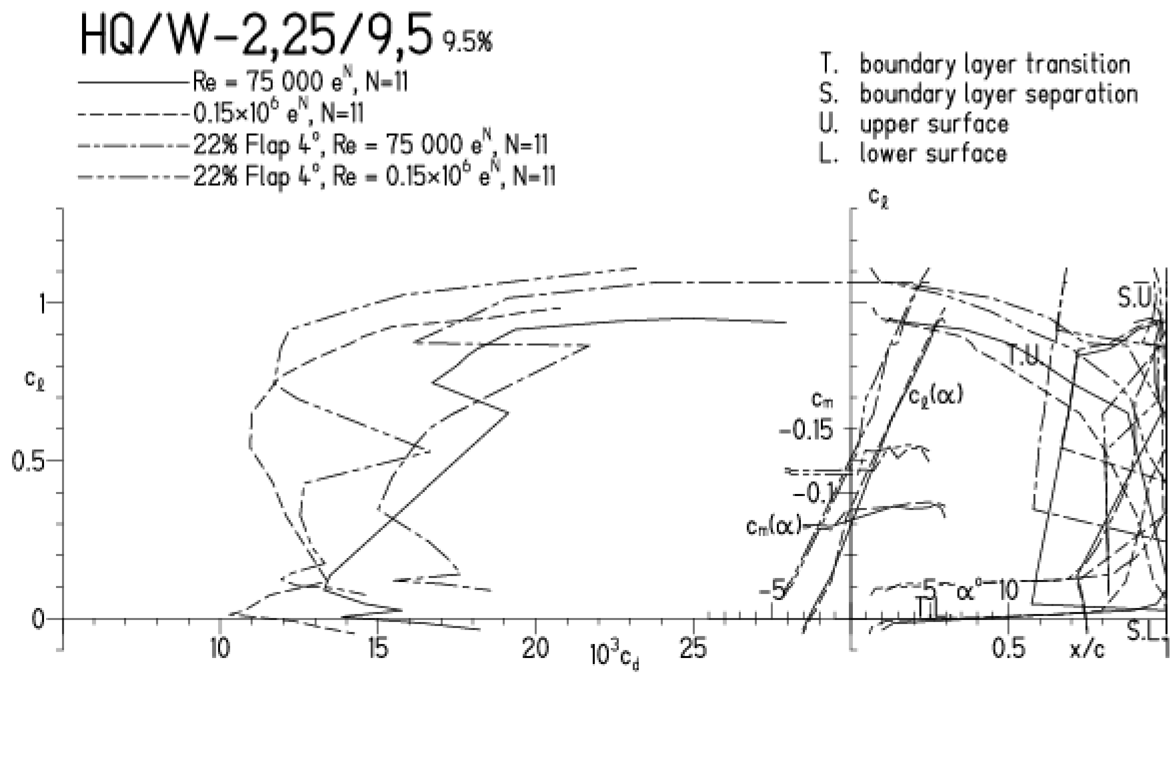


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

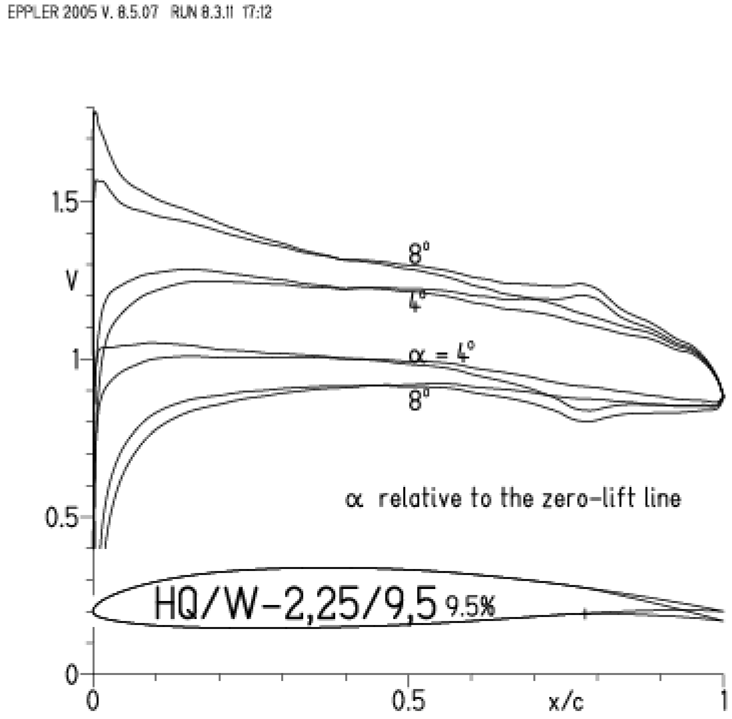
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

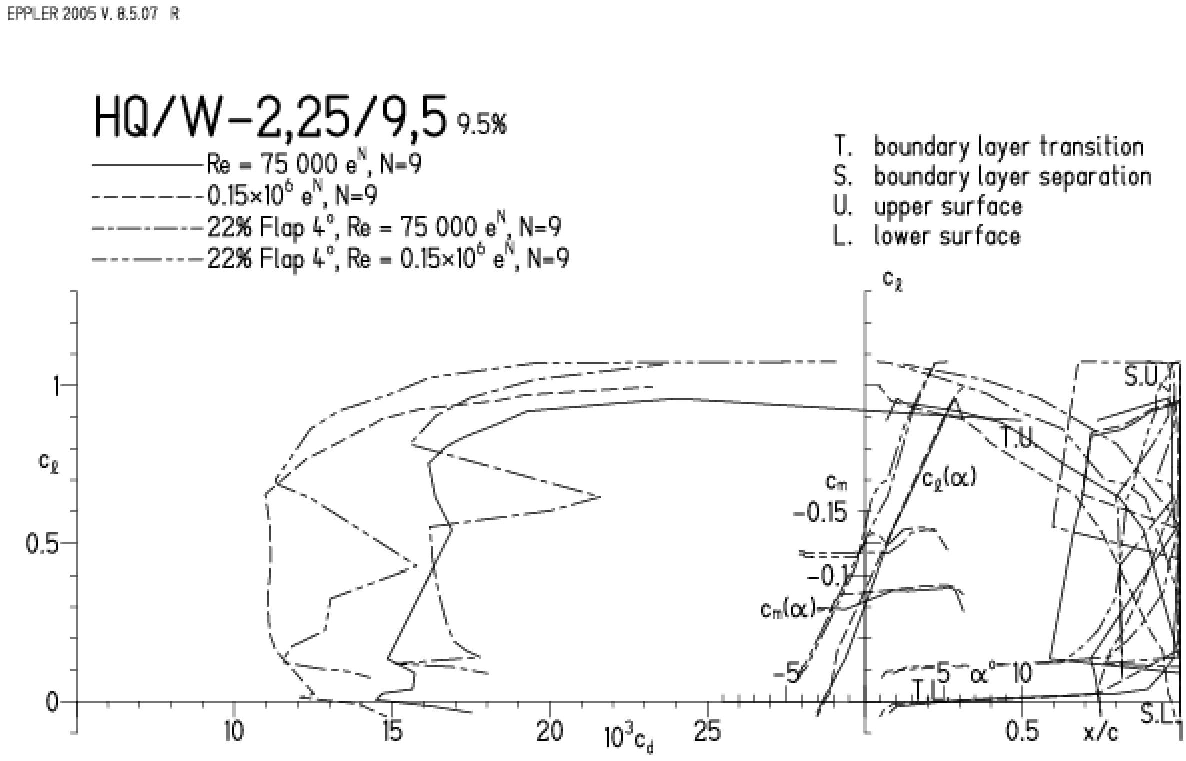


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



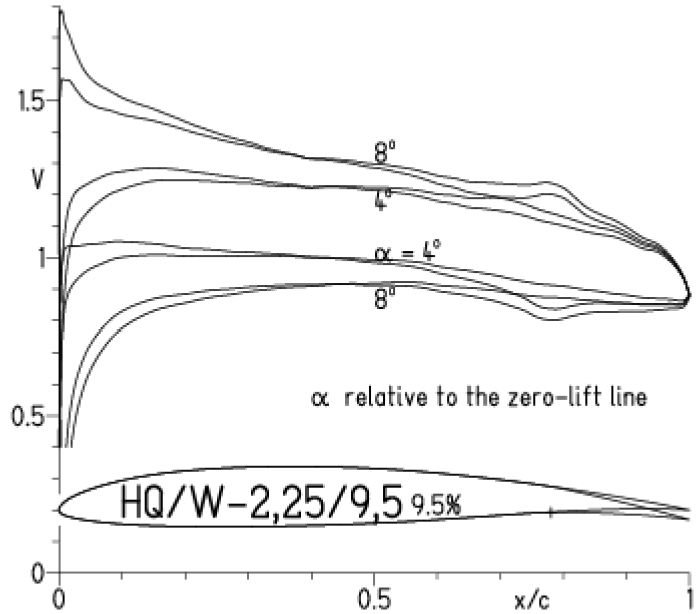
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



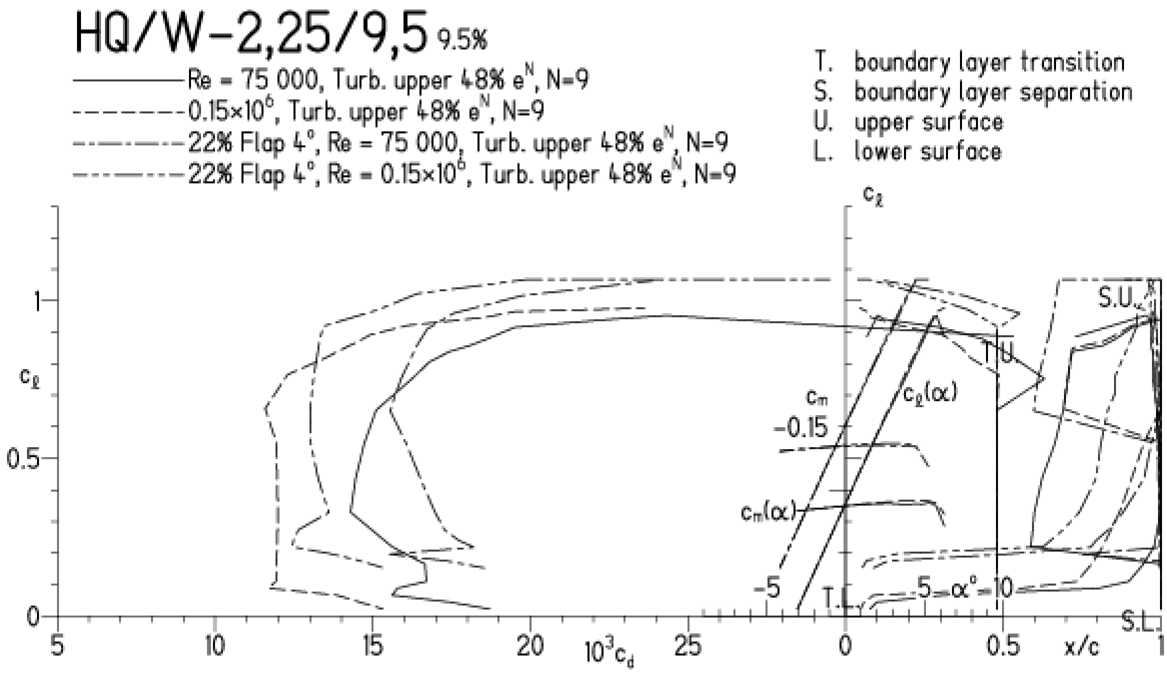


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

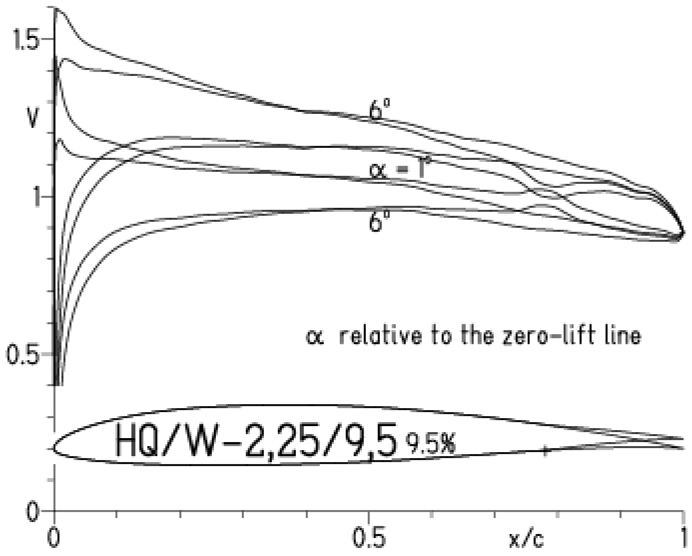


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

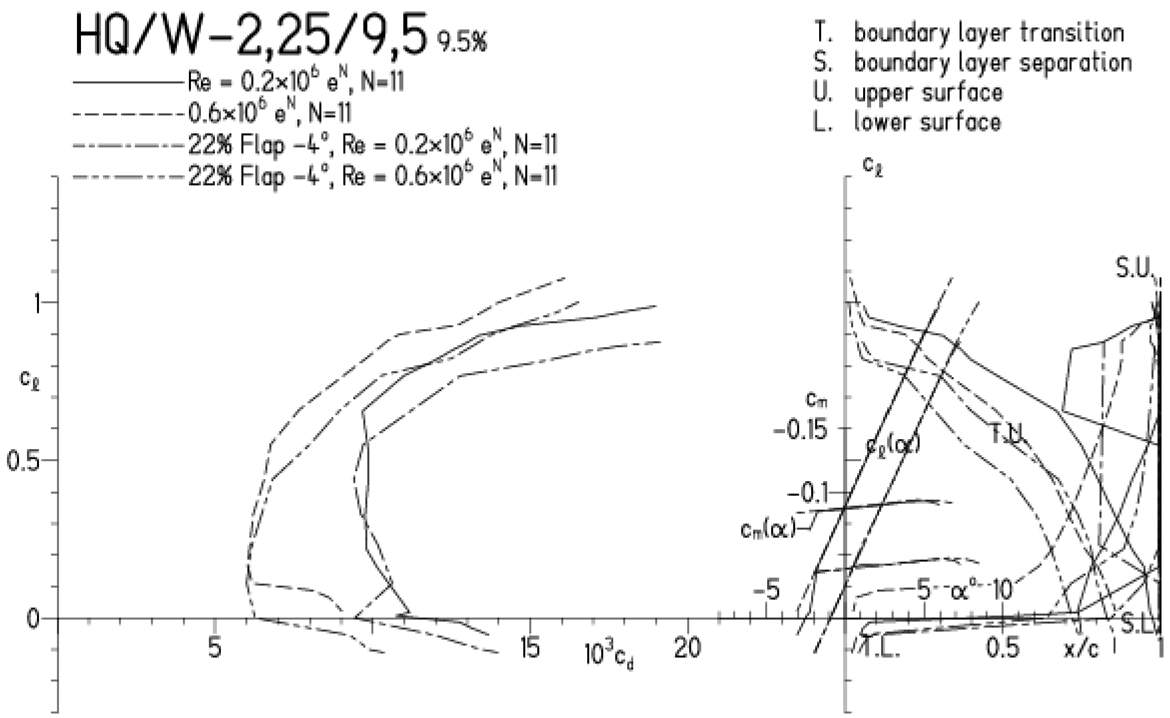


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

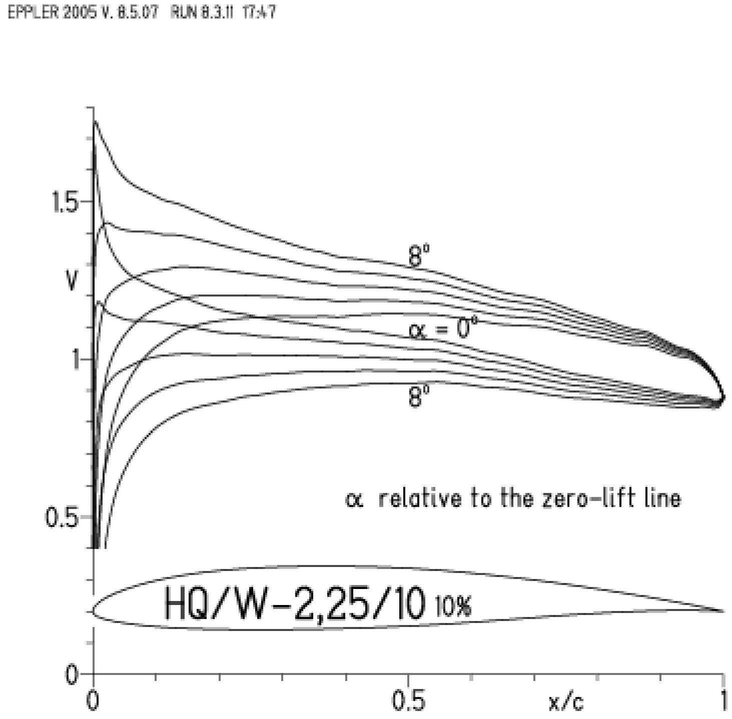
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

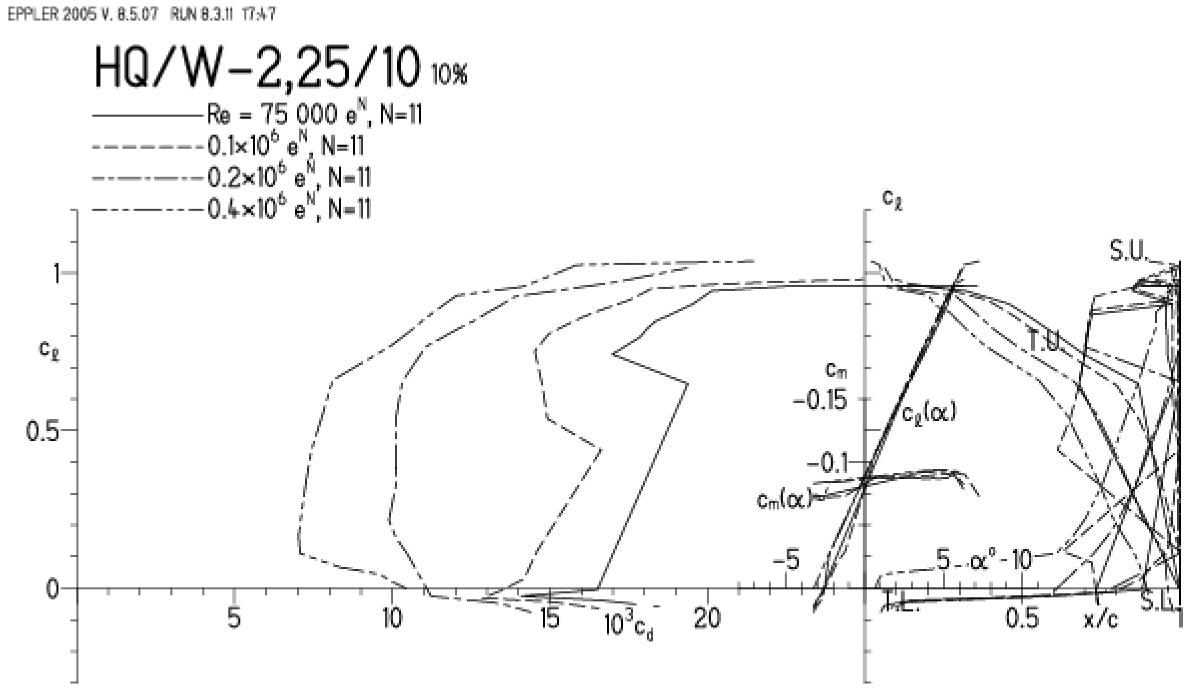


EPPLER 2005 V.

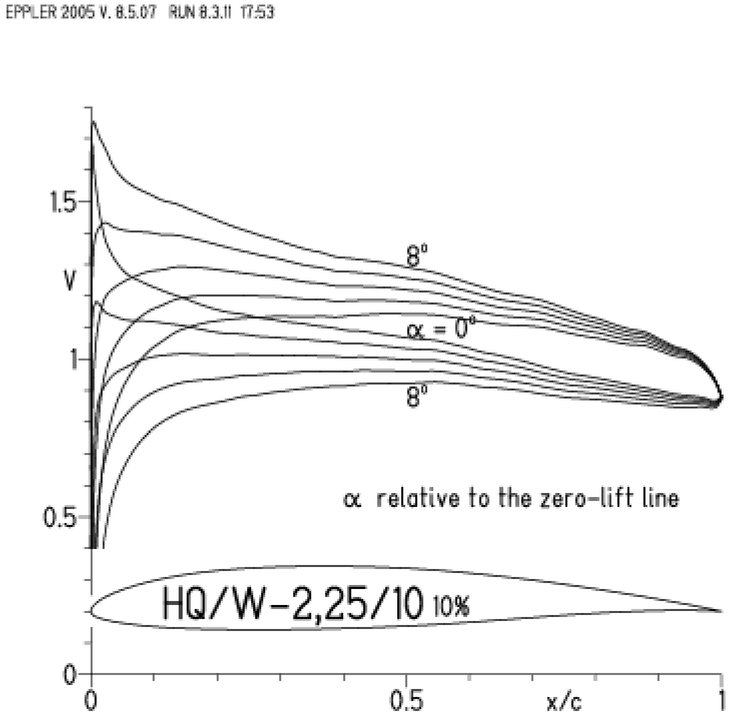


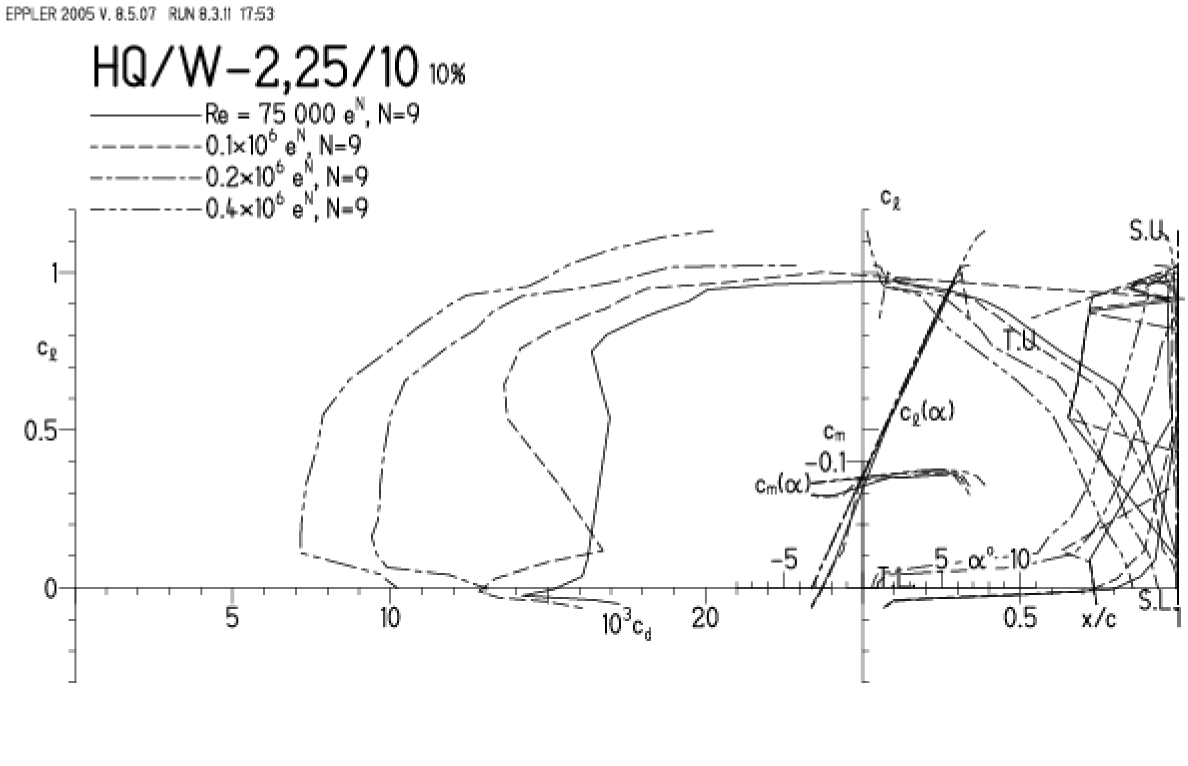
HQ/W-2,25/10, N=11



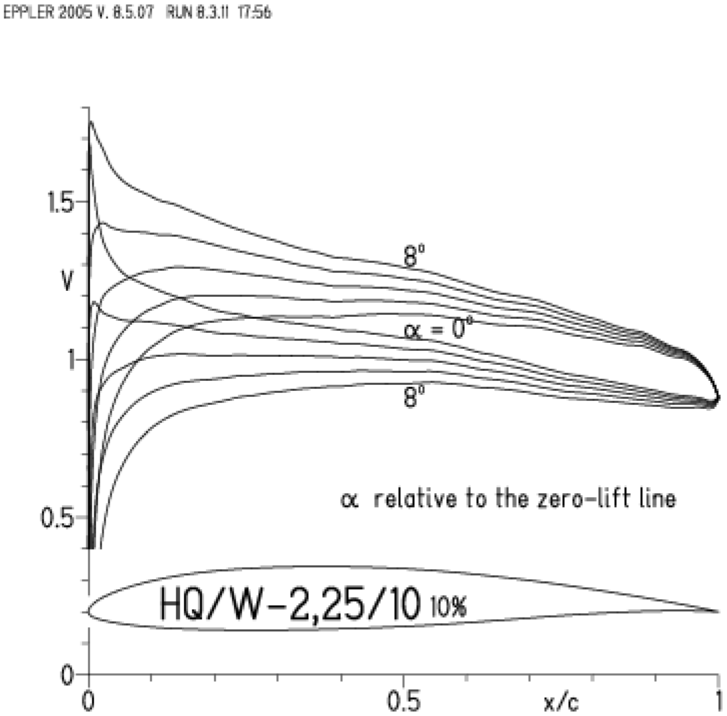


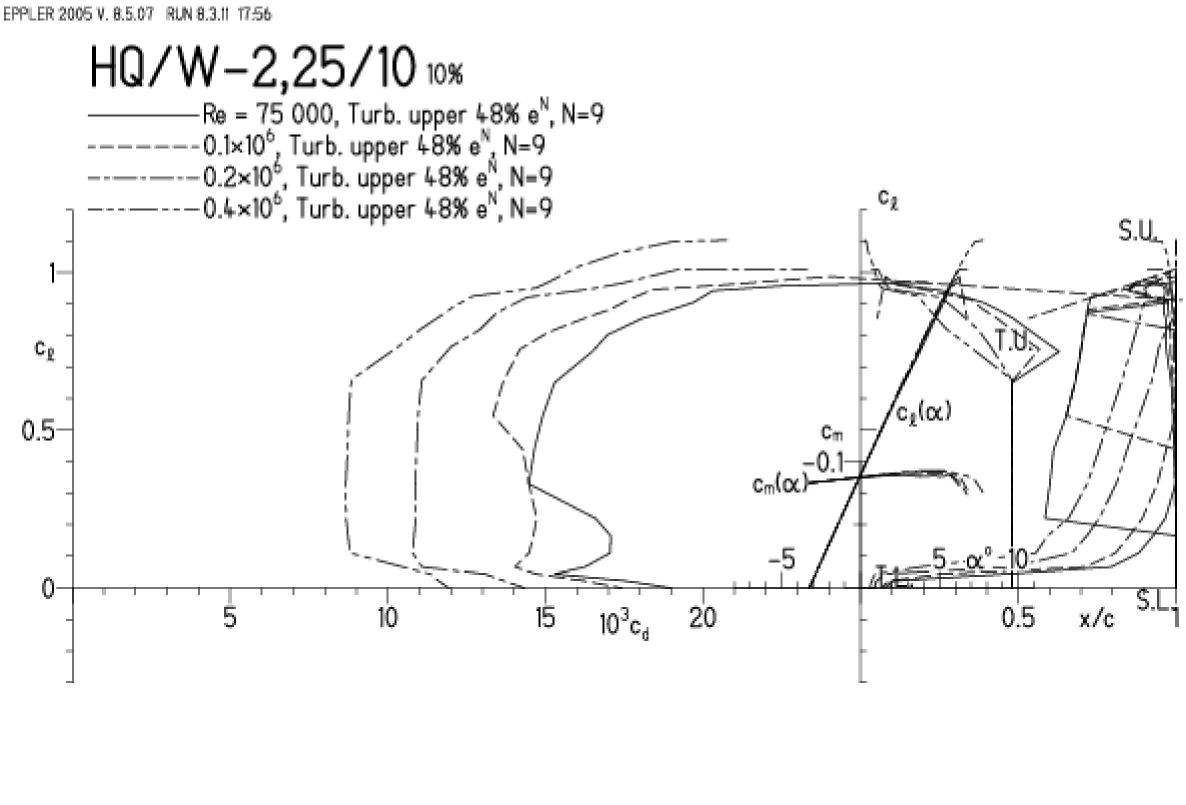
<u>HQ/W-2,25/10</u>, N=9



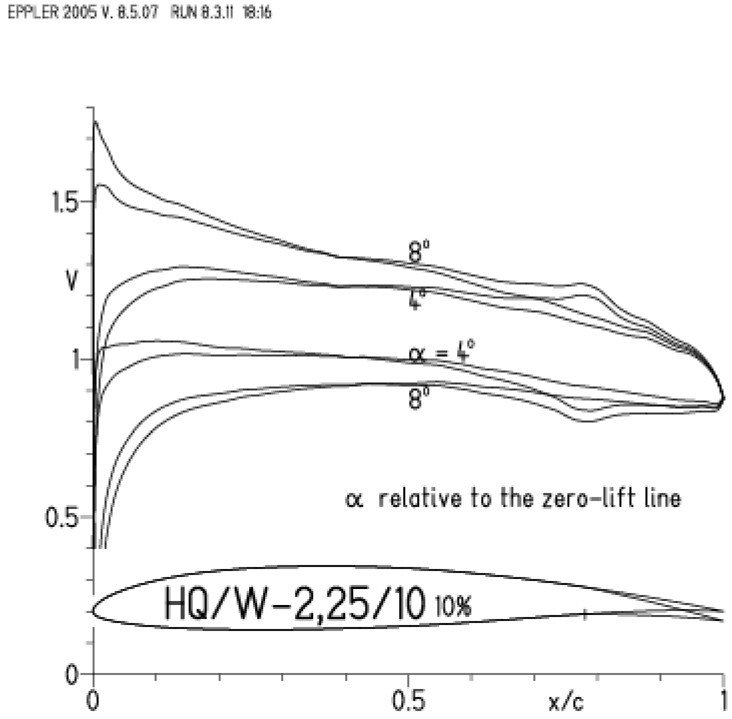


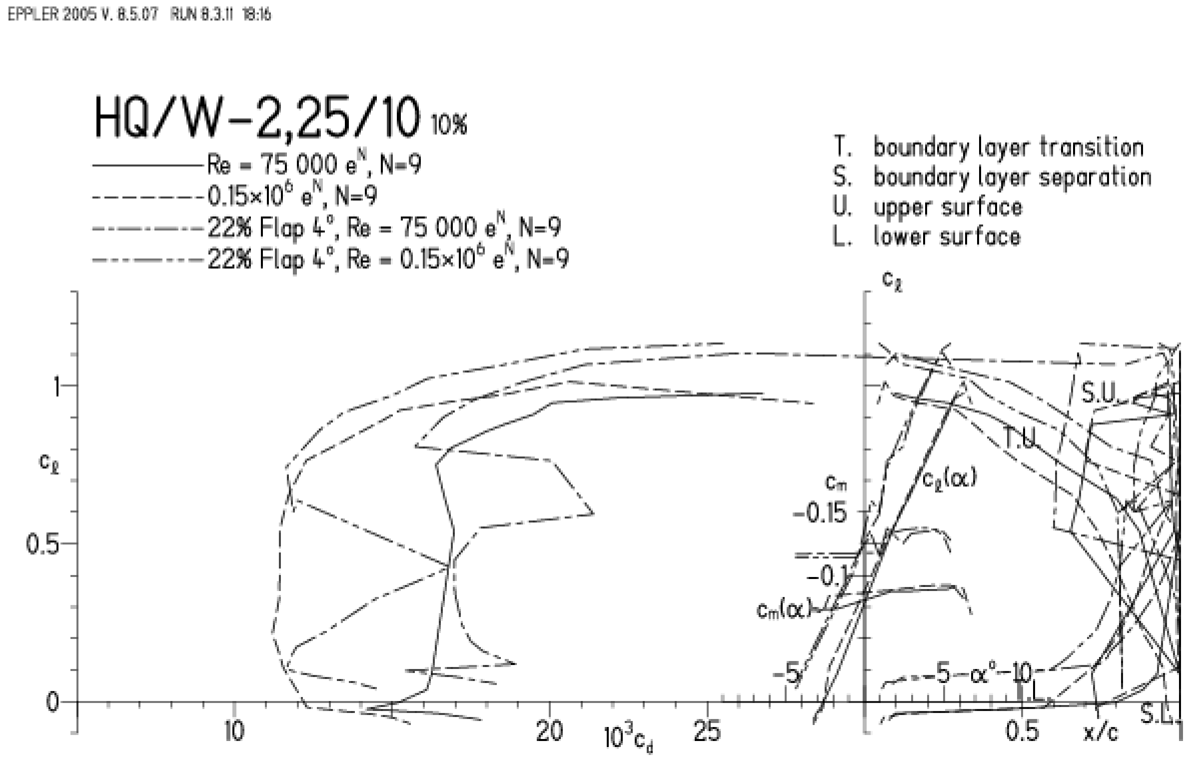
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



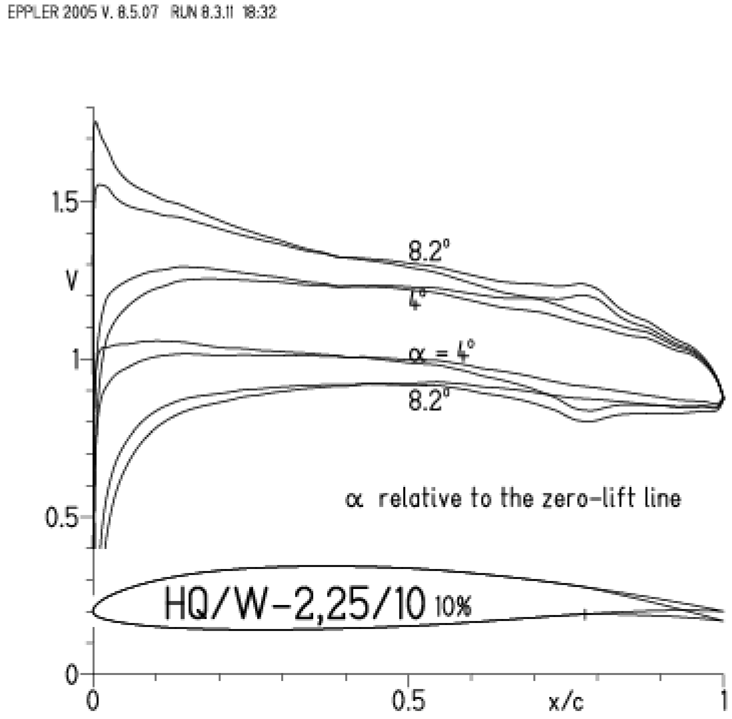


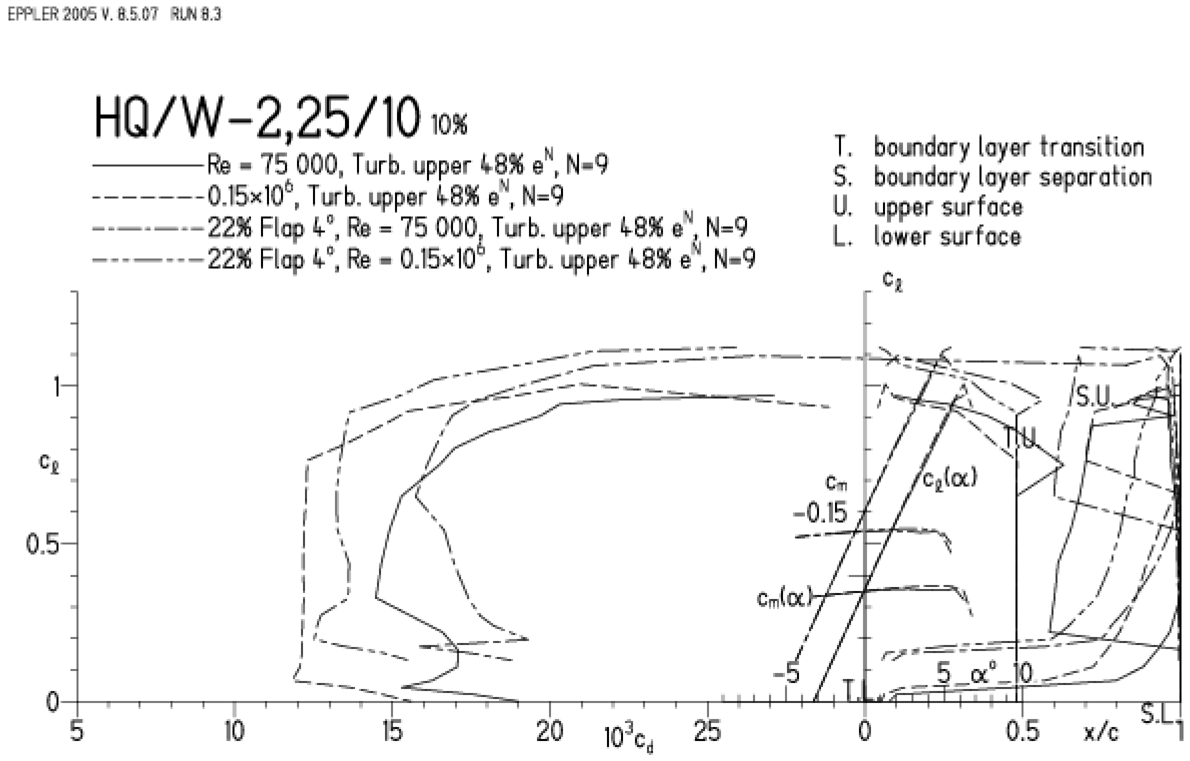
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag





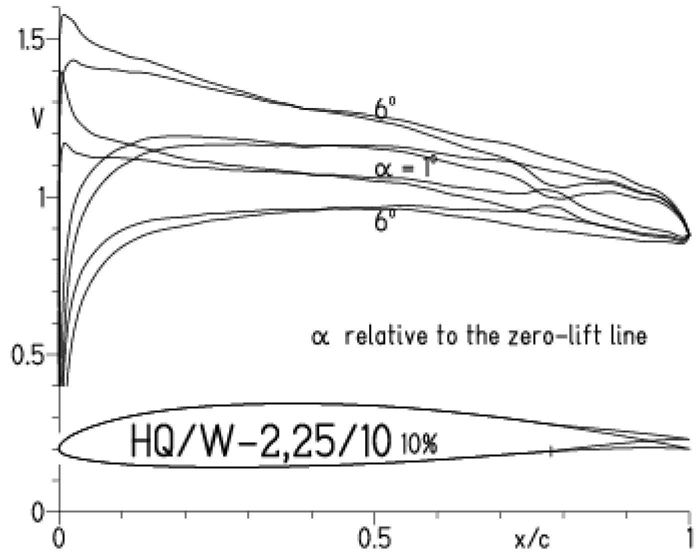
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



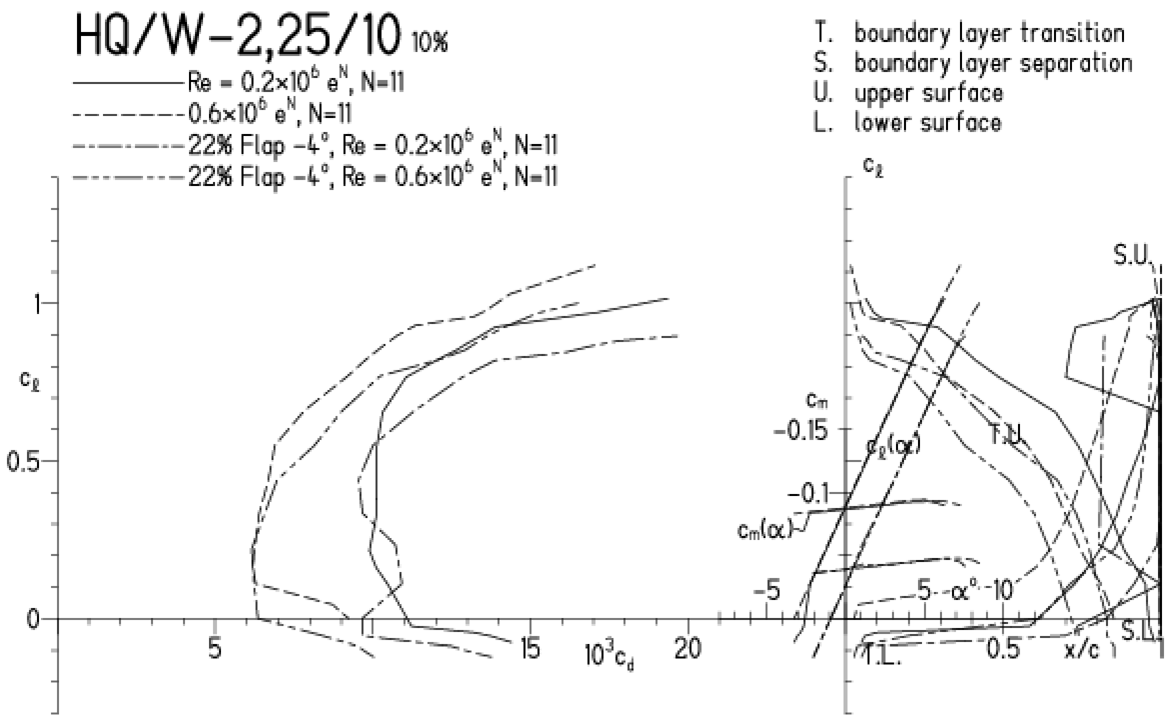


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

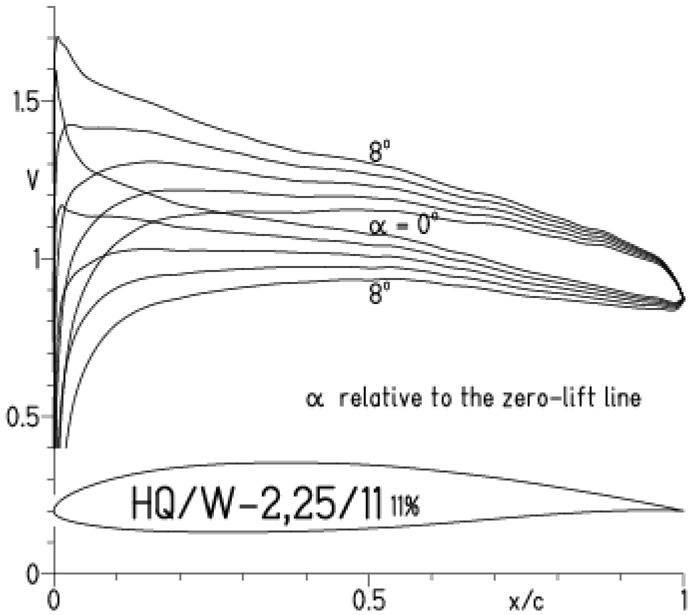


EPPLER 2005 V. 8.5.07 RUN

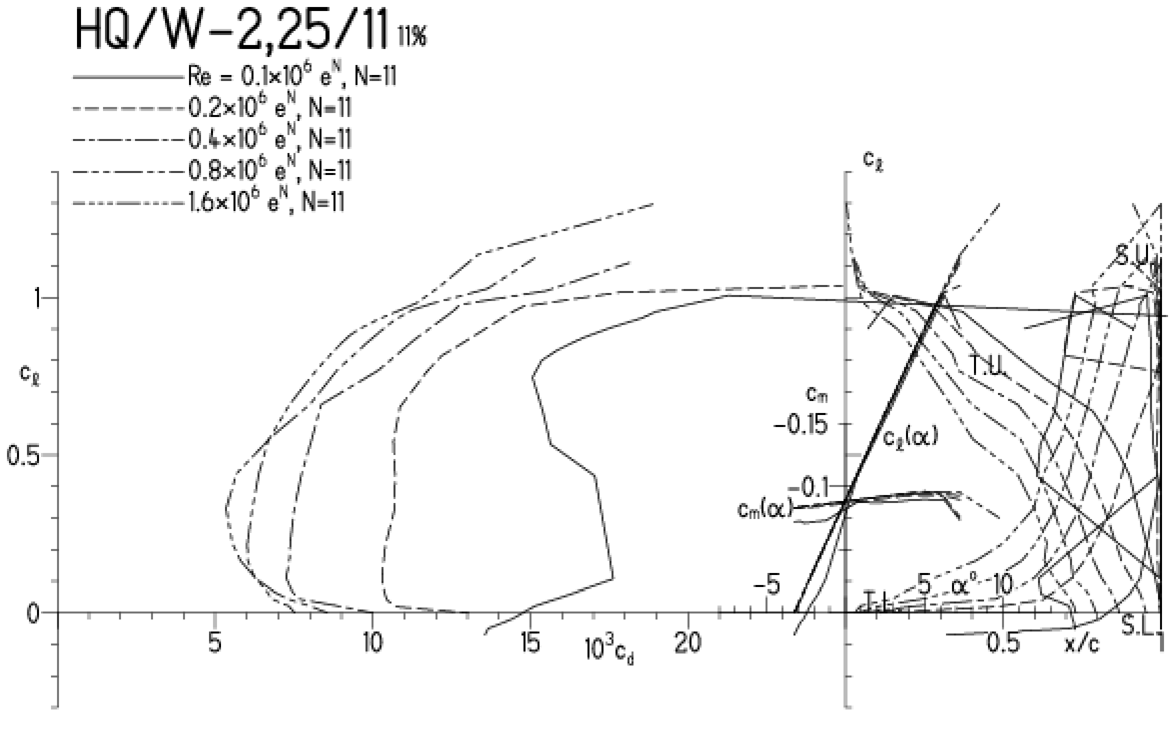


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

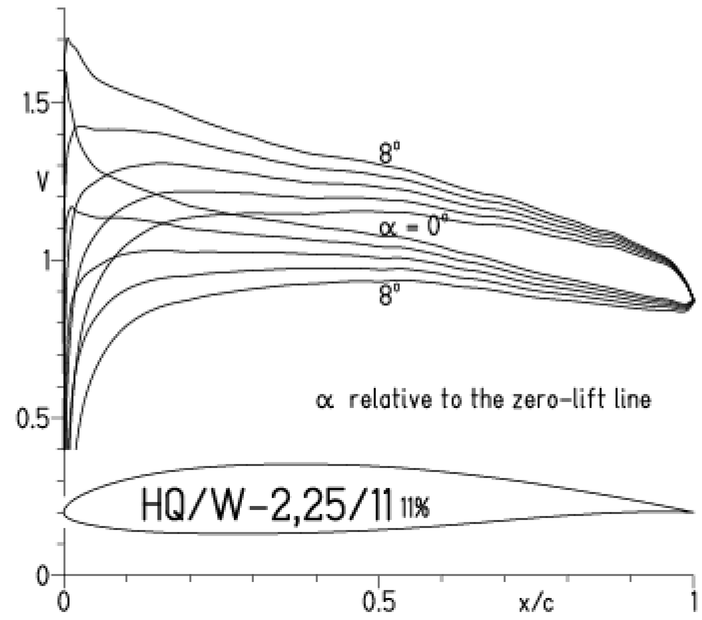


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

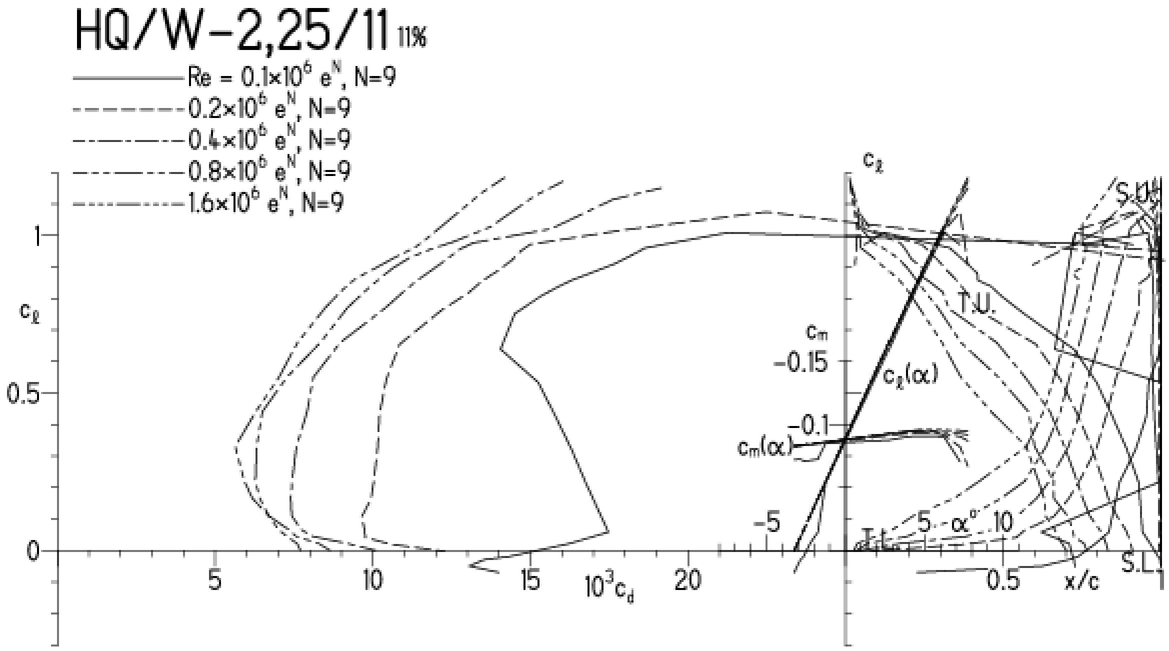


HQQ/W-2,25/11, N=9

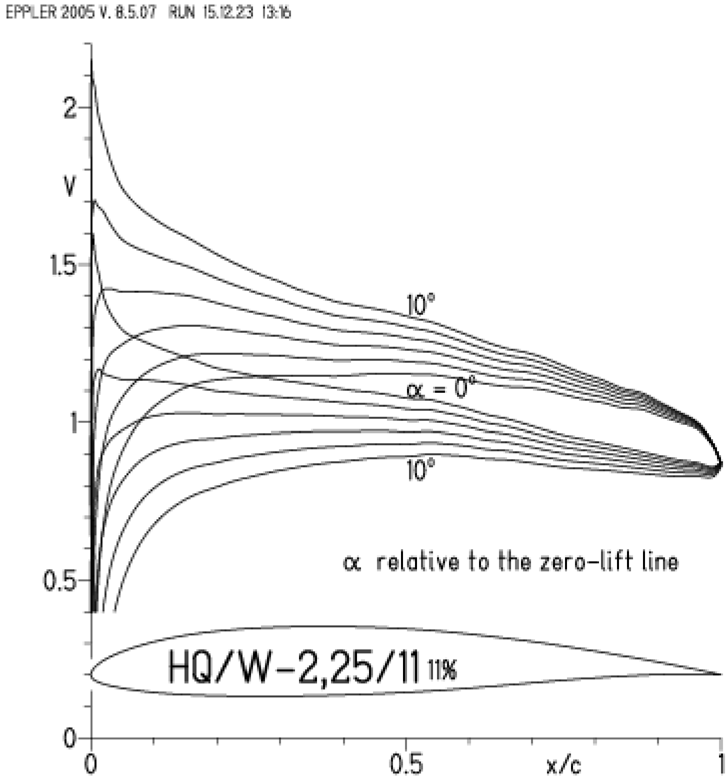
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

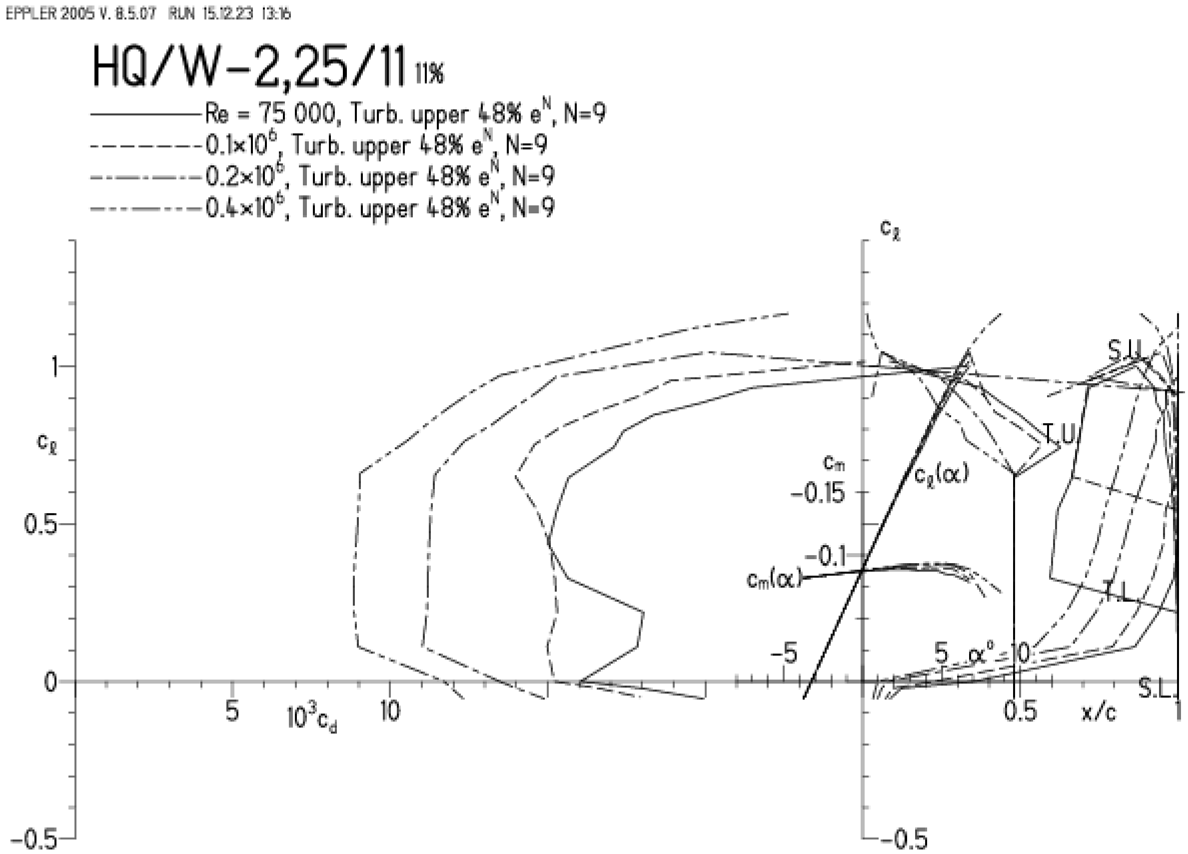


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



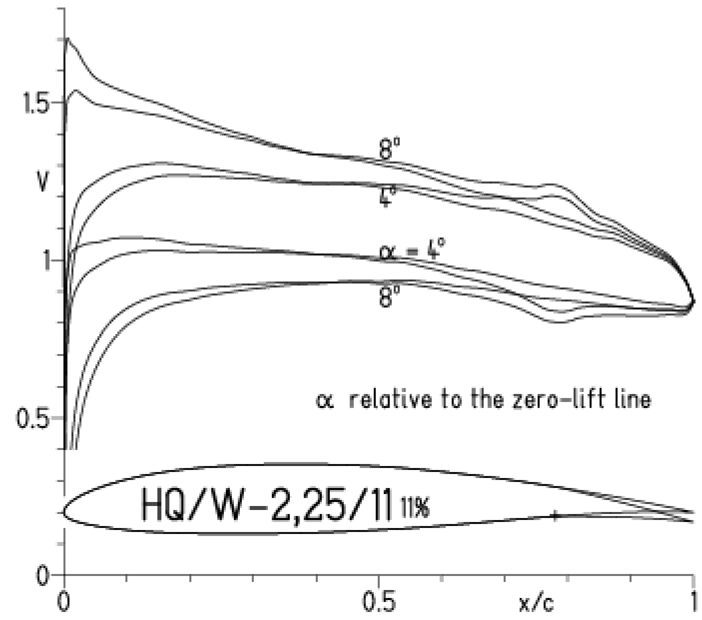
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



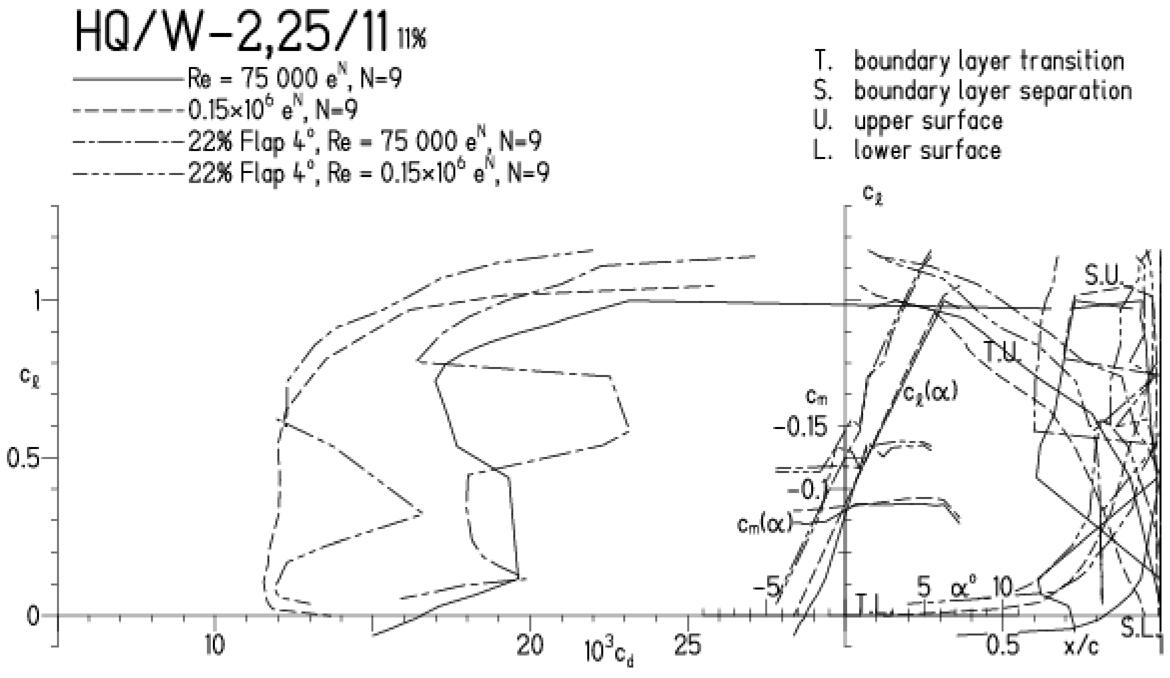


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

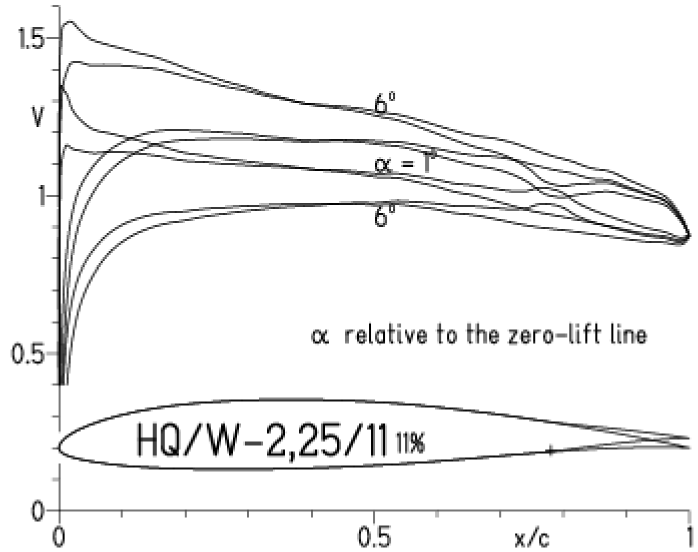


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

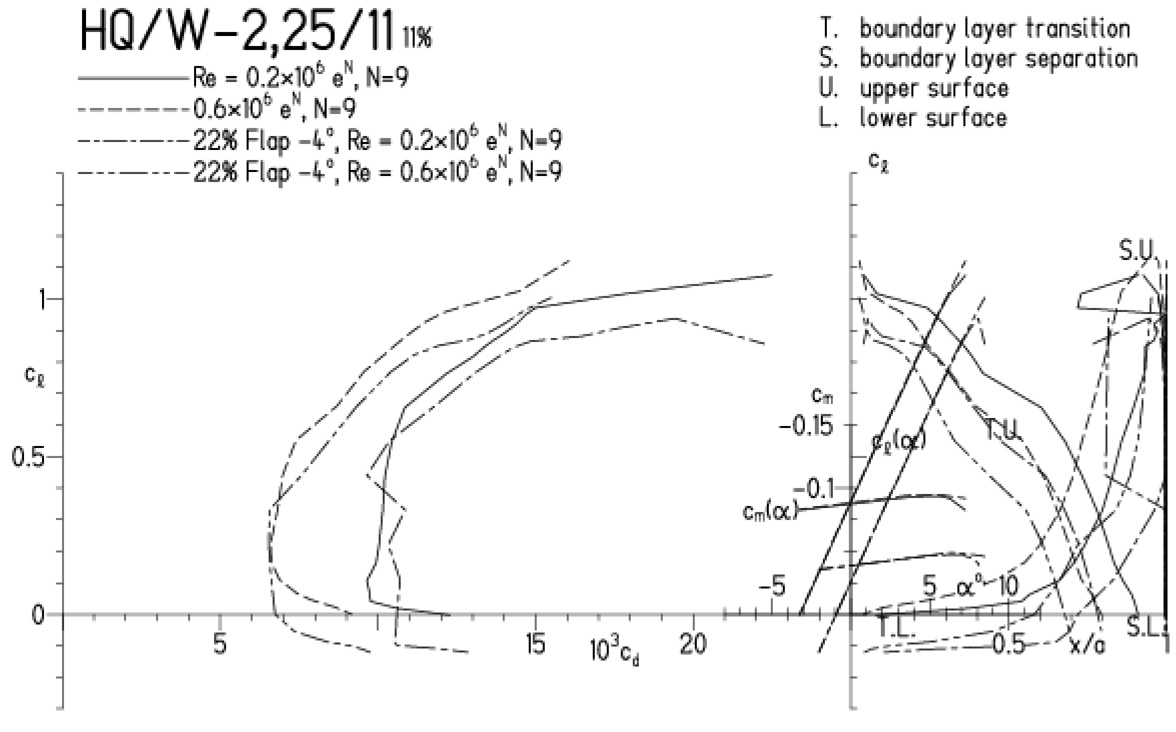


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

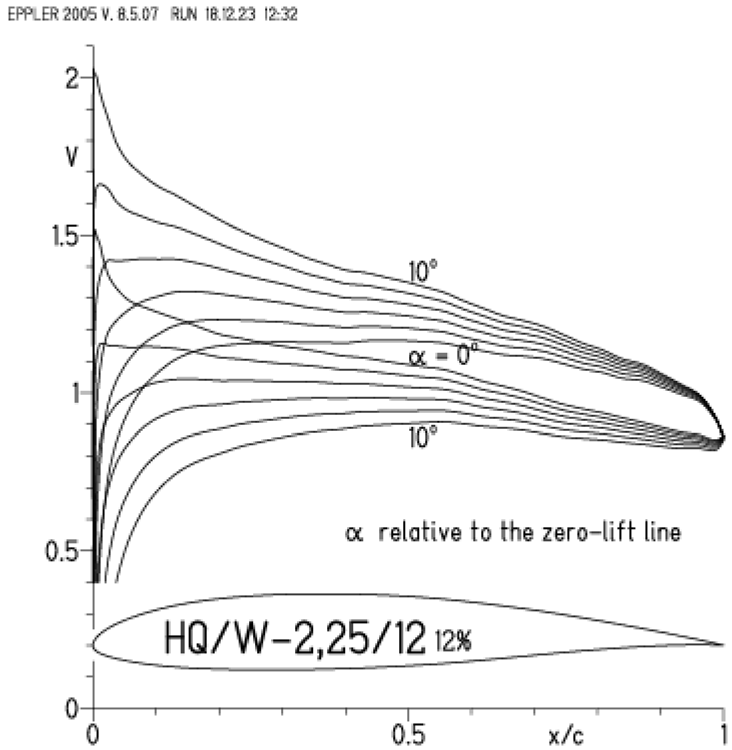
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

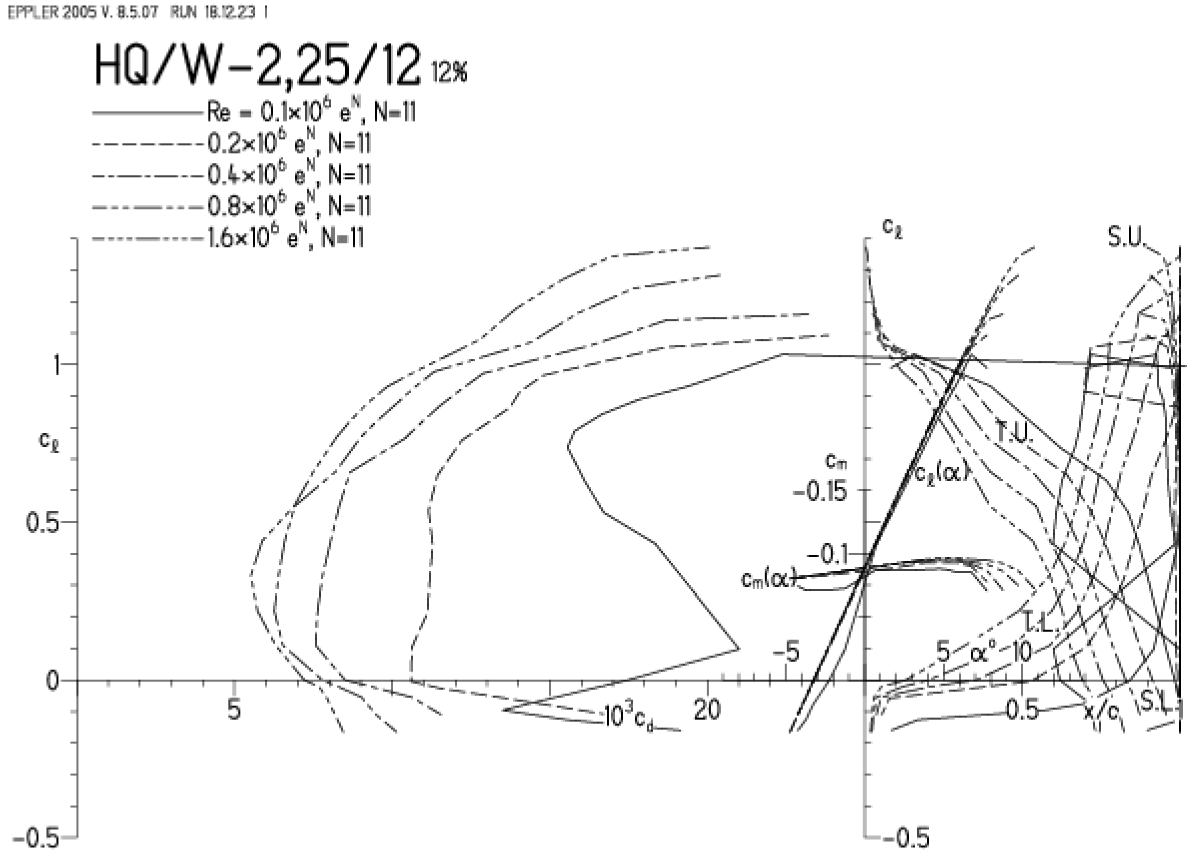


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

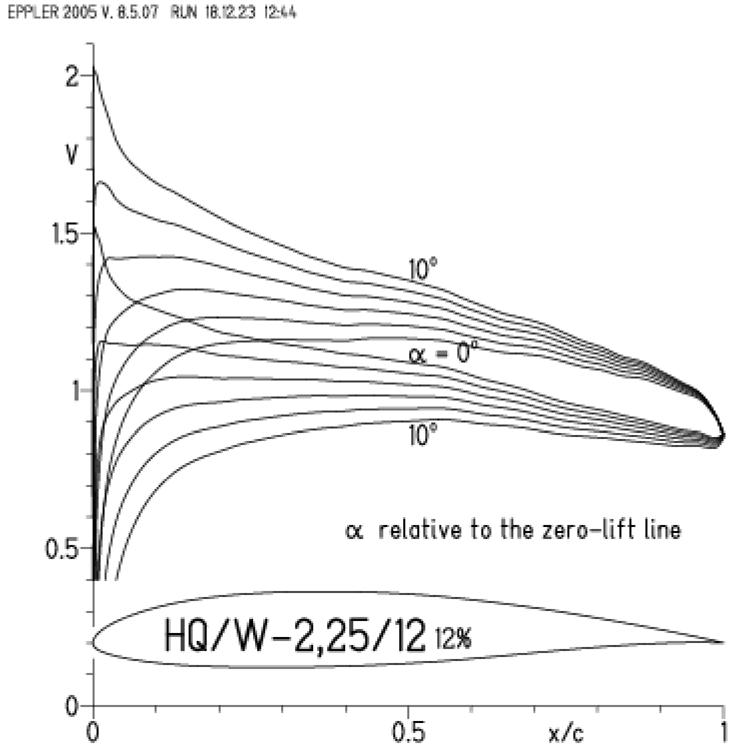


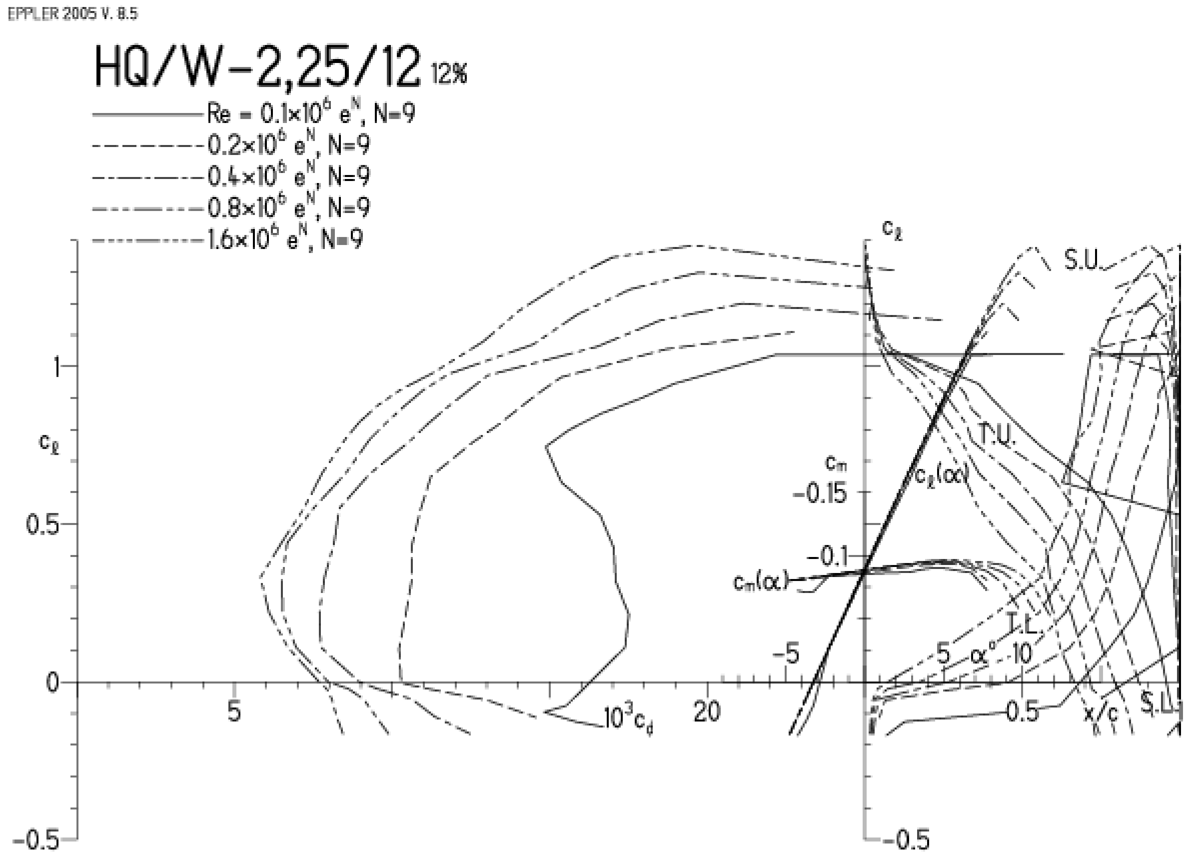
<u>HQ/W-2,25/12</u>, N=11



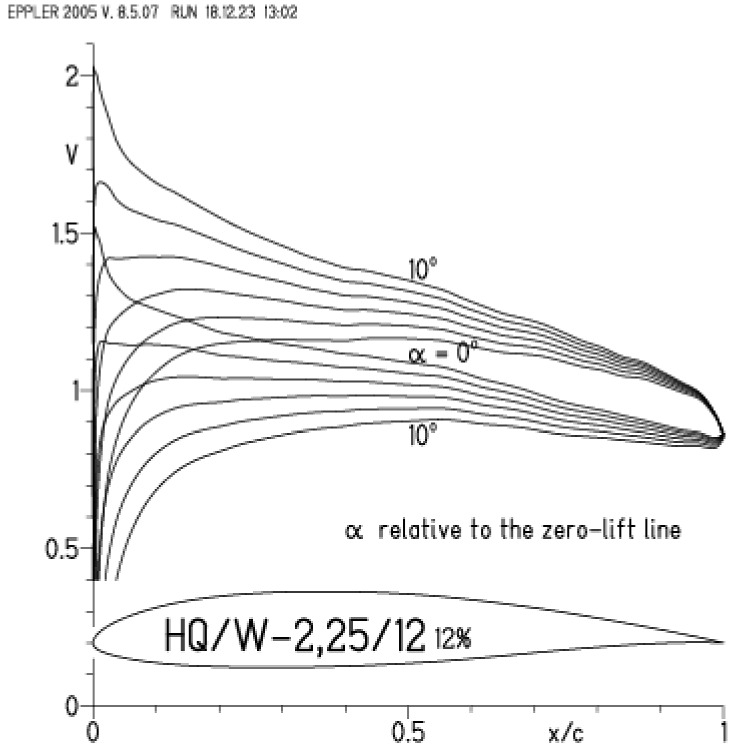


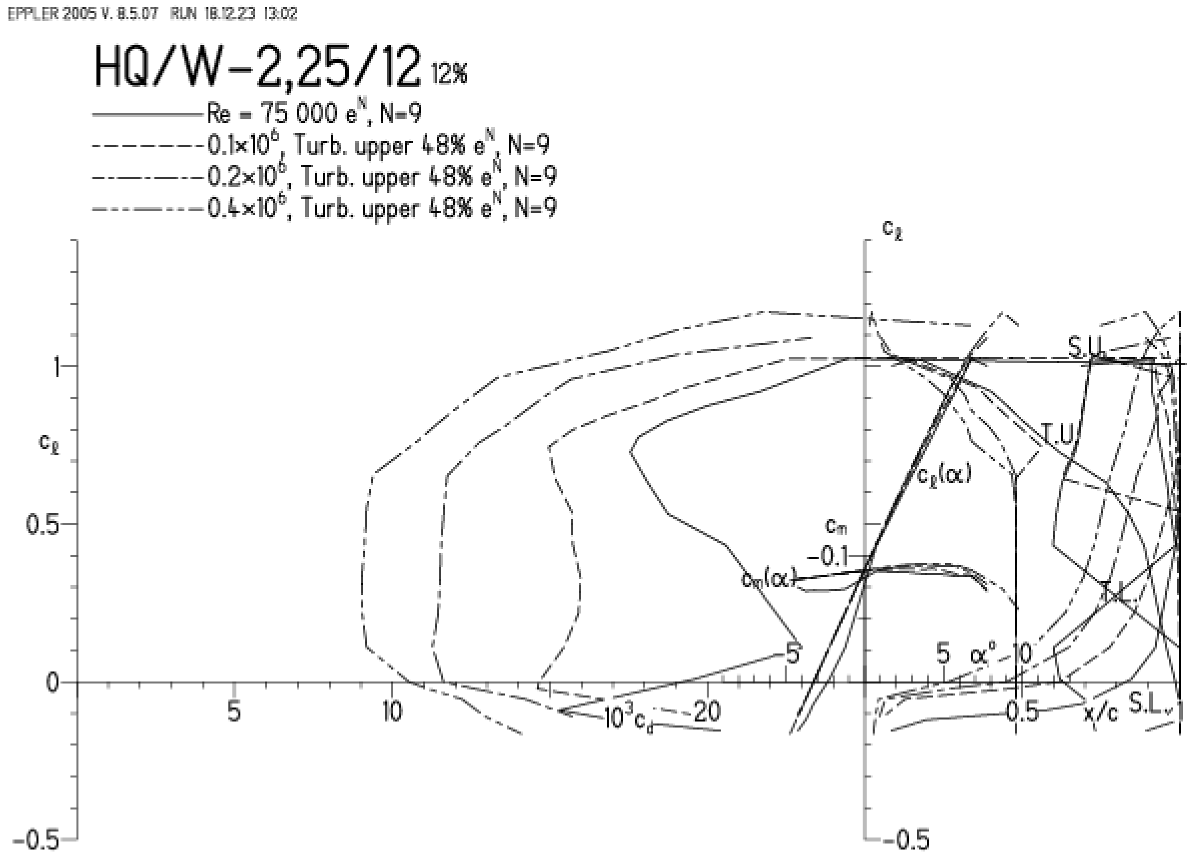
<u>HQ/W-2,25/12</u>, N=9





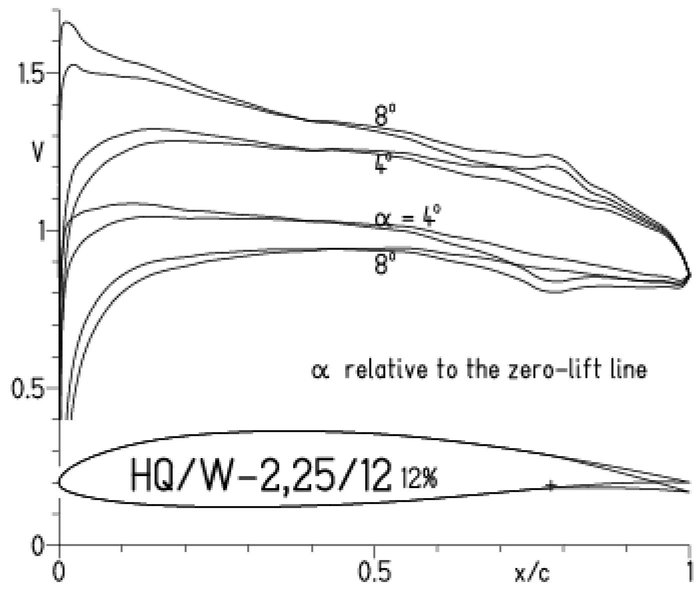
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



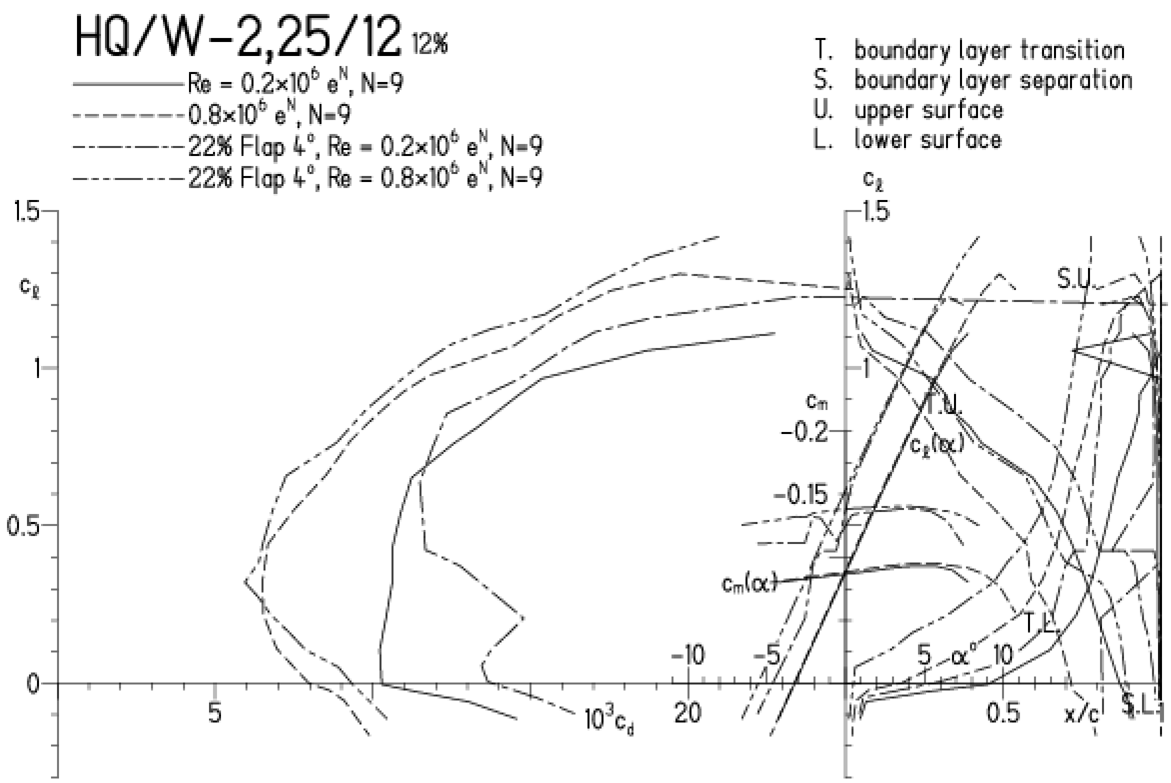


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

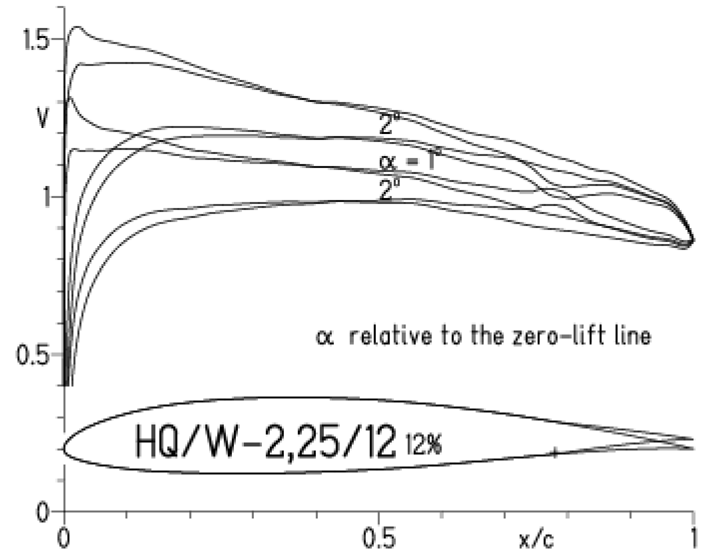


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

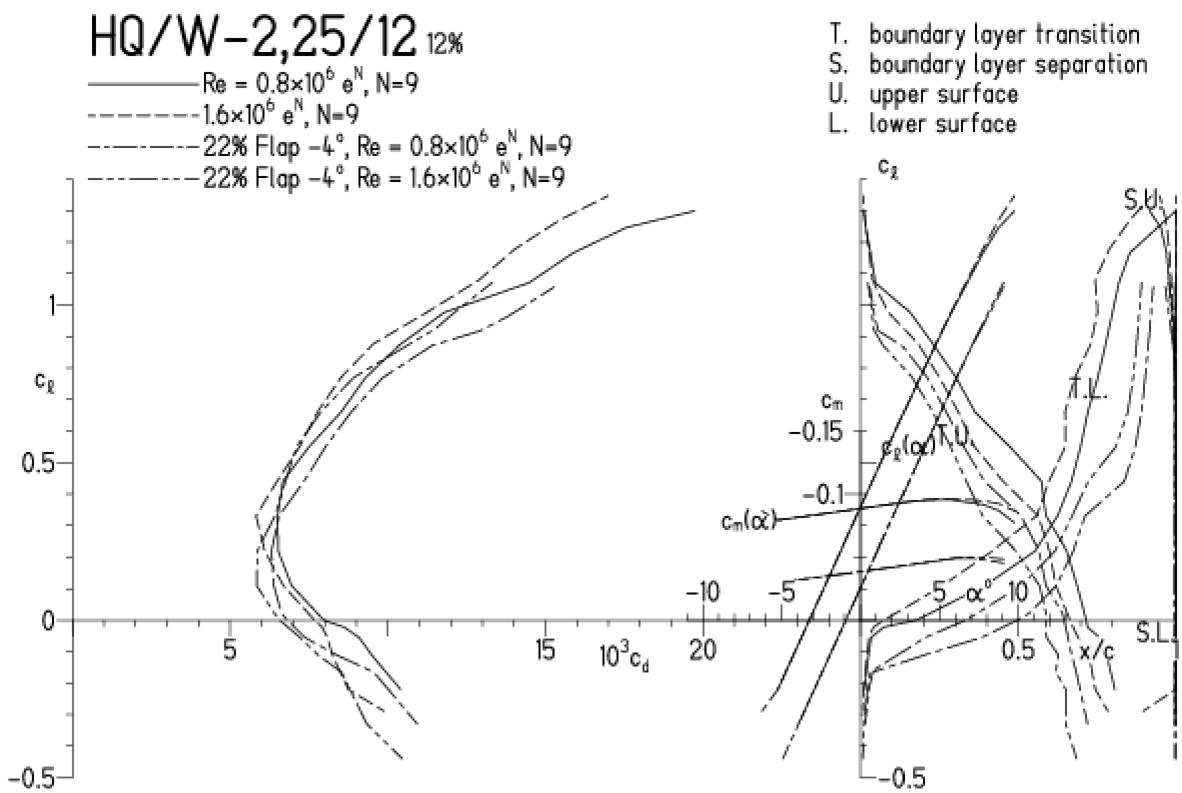


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

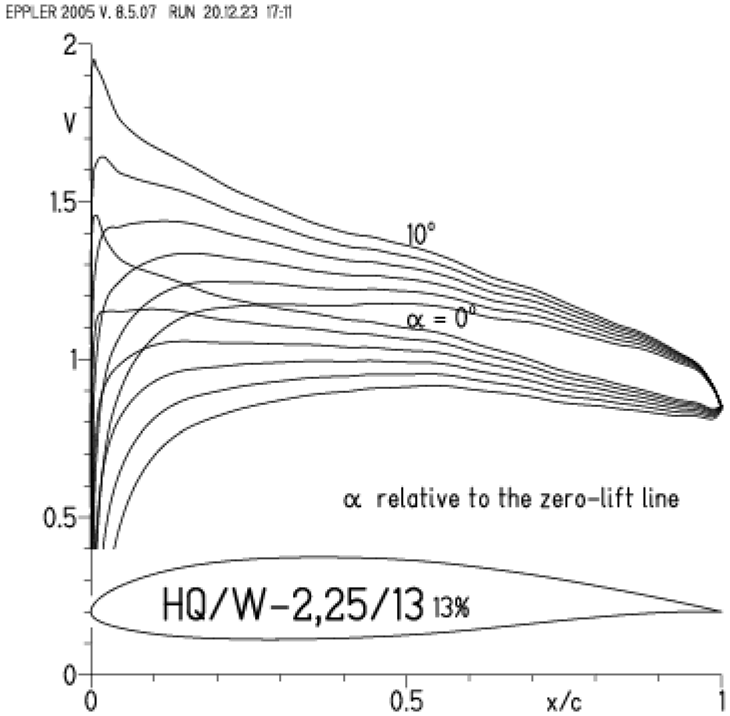
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

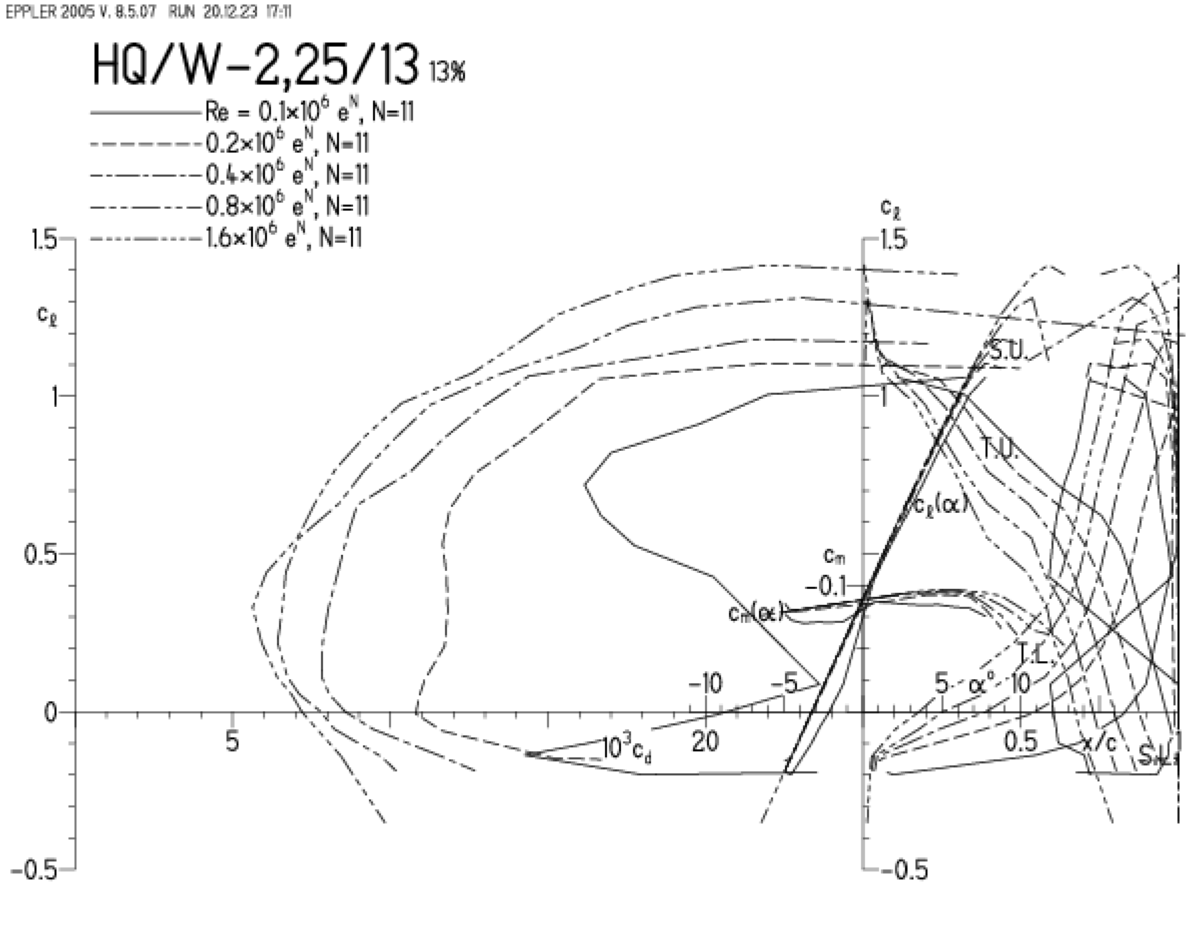


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

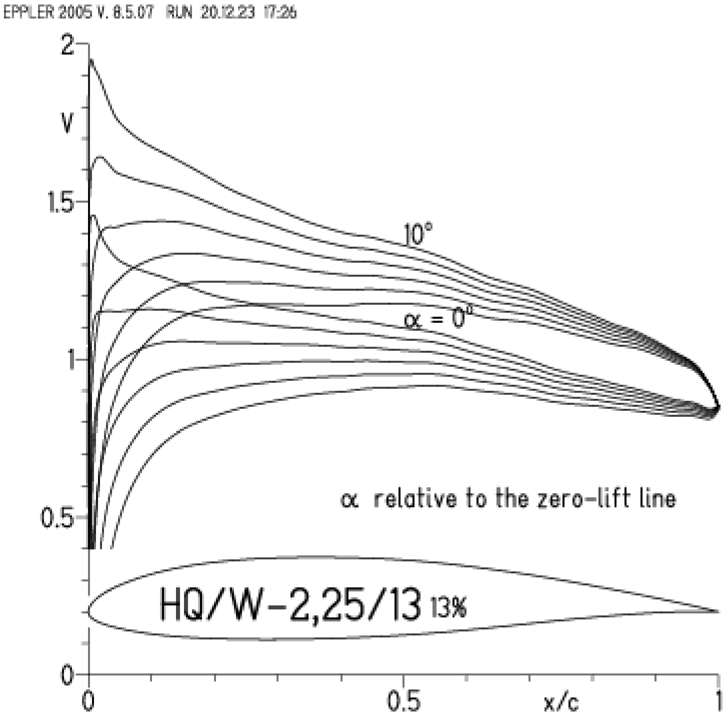


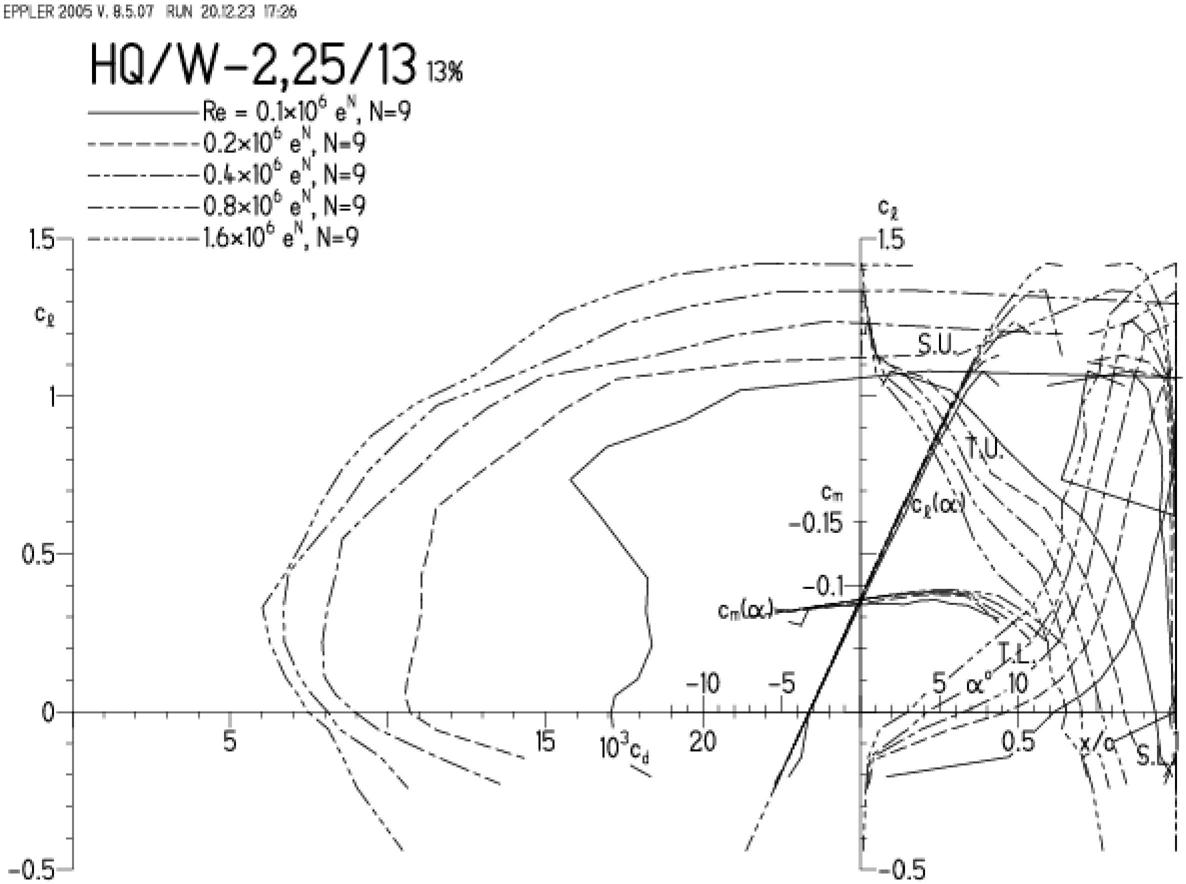
<u>HQ/W-2,25/13</u>, N=11



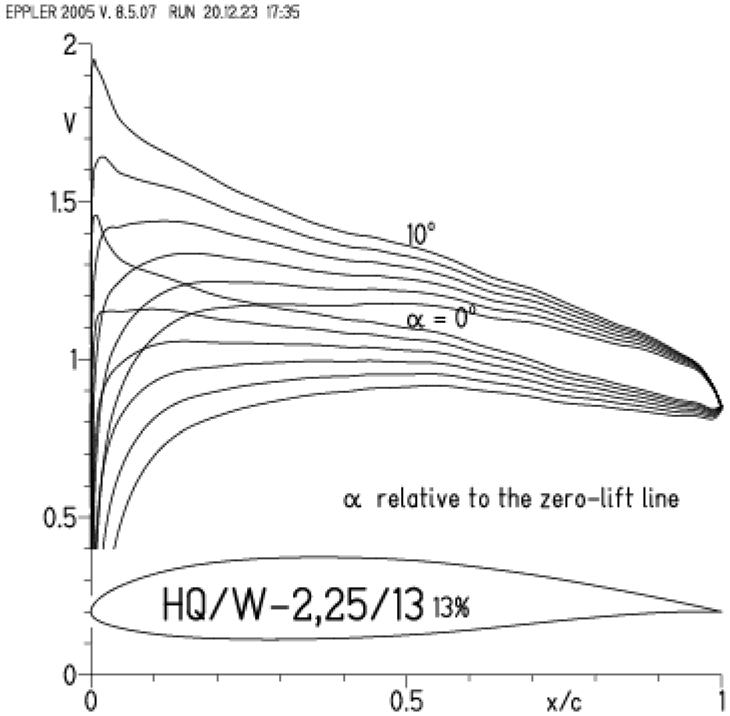


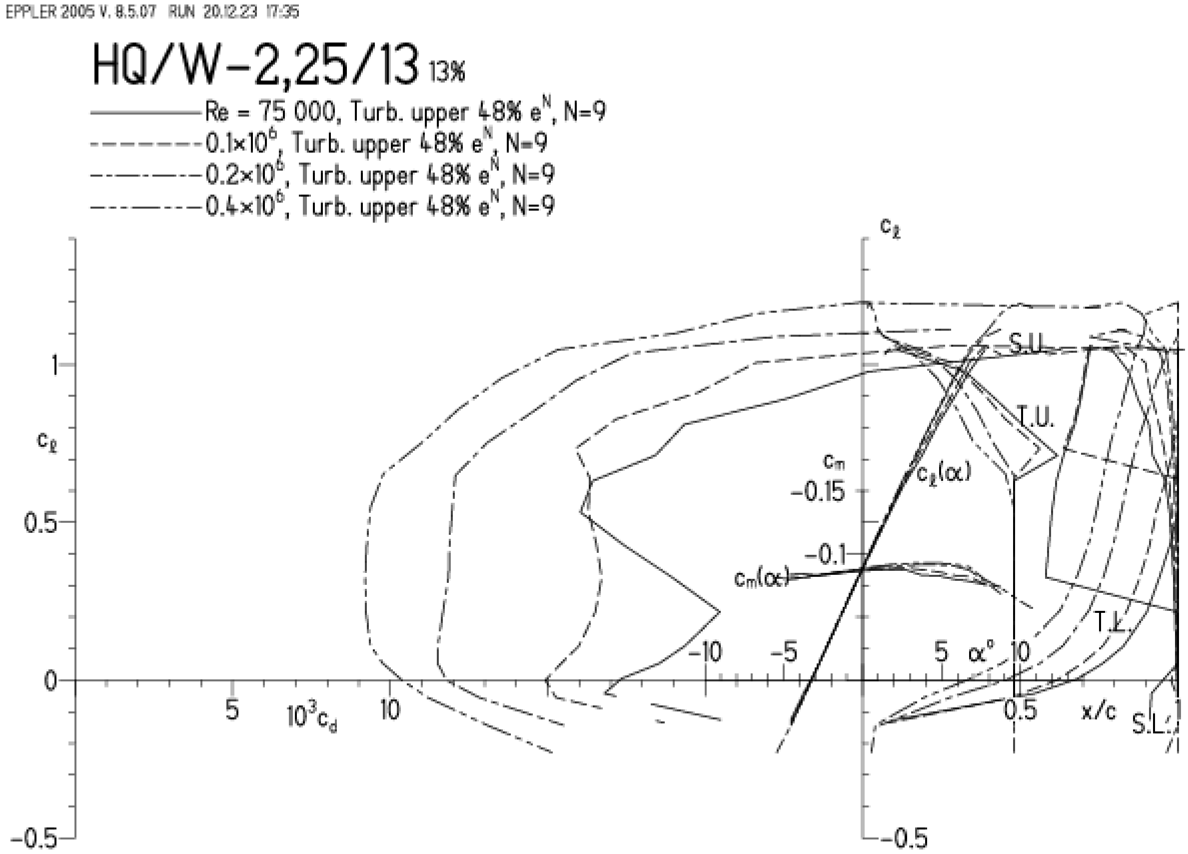
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
10³cd
α°
x/c

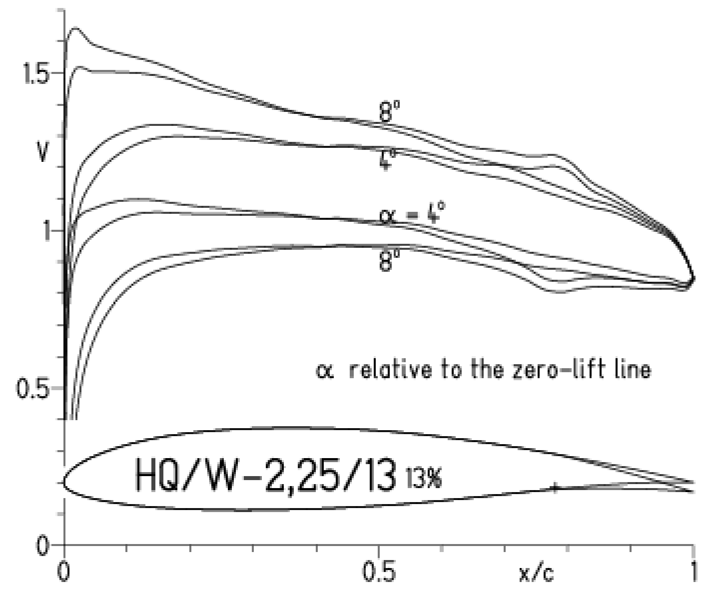
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



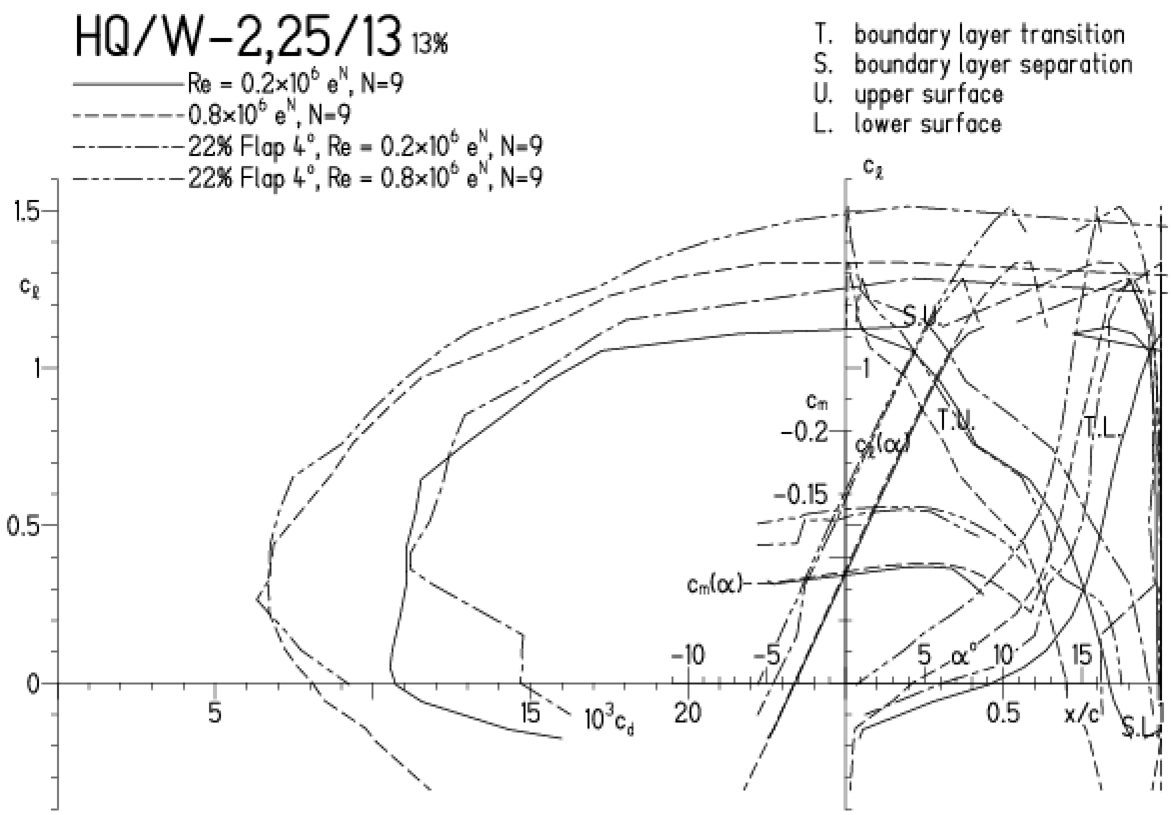


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

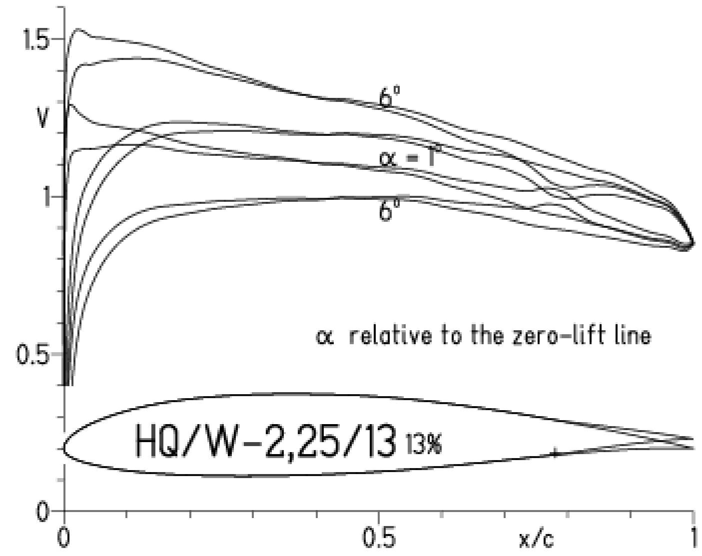


EPPLER 2005 V.

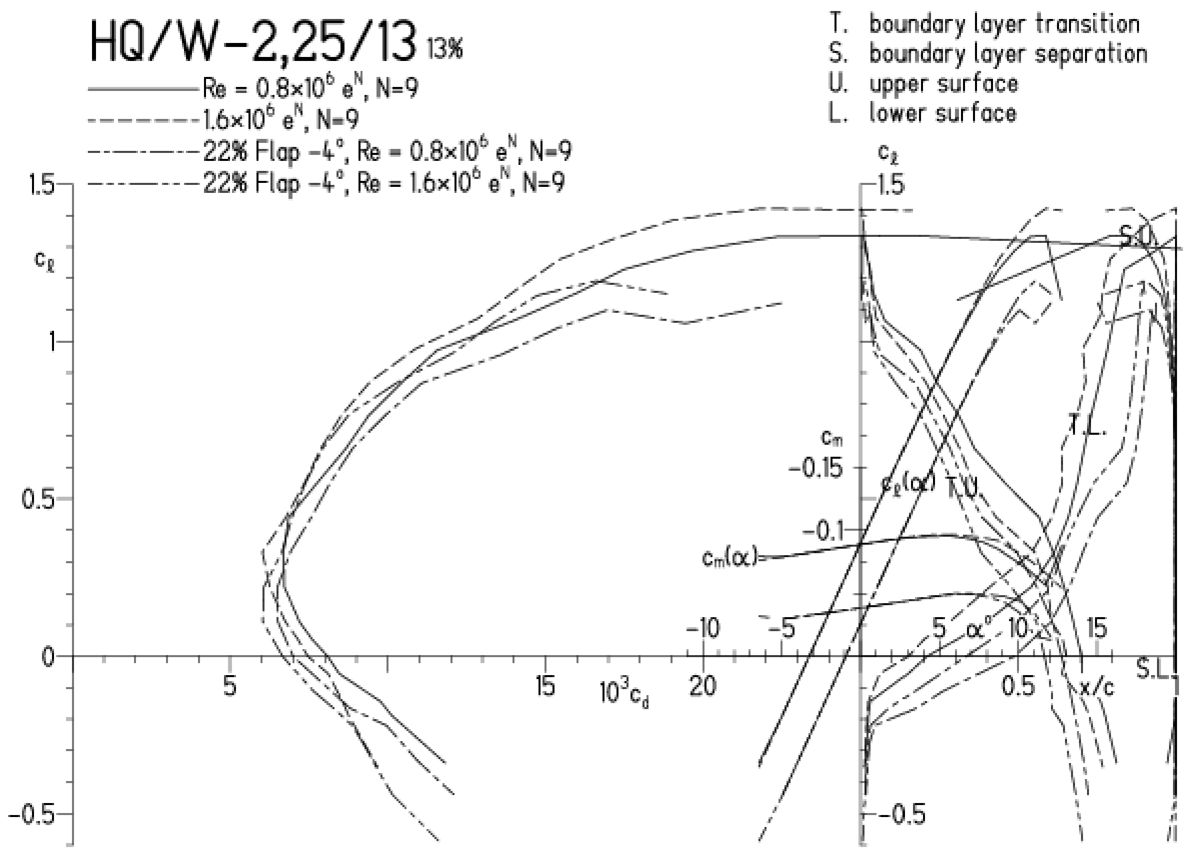


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

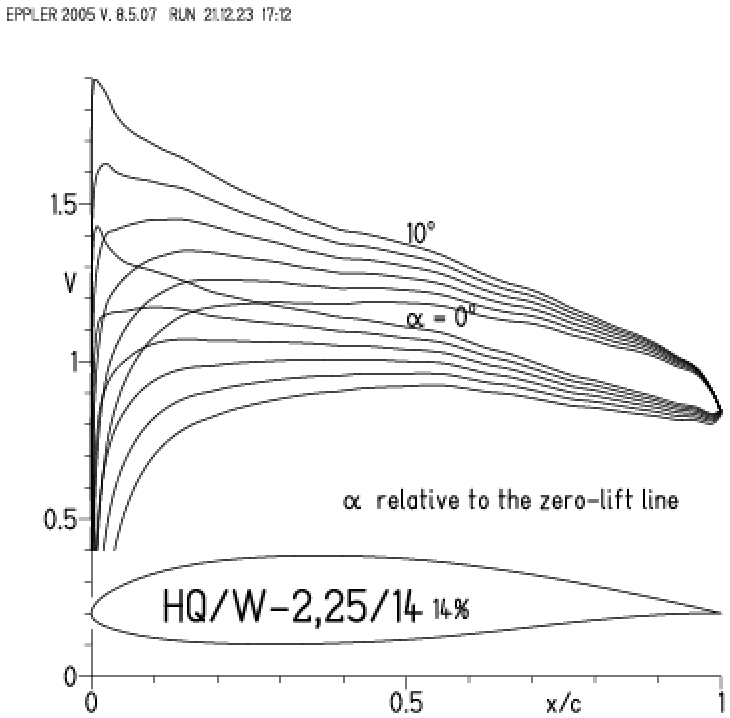
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

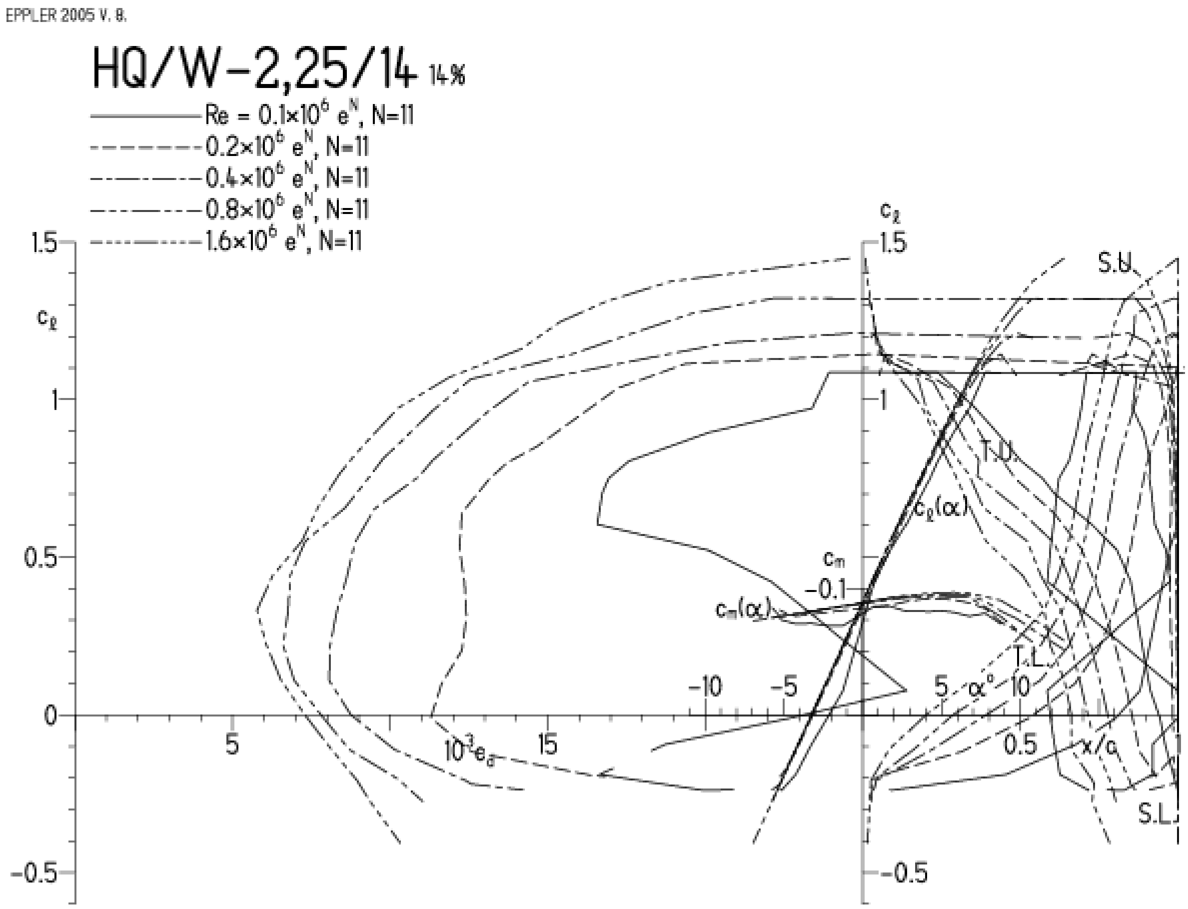


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



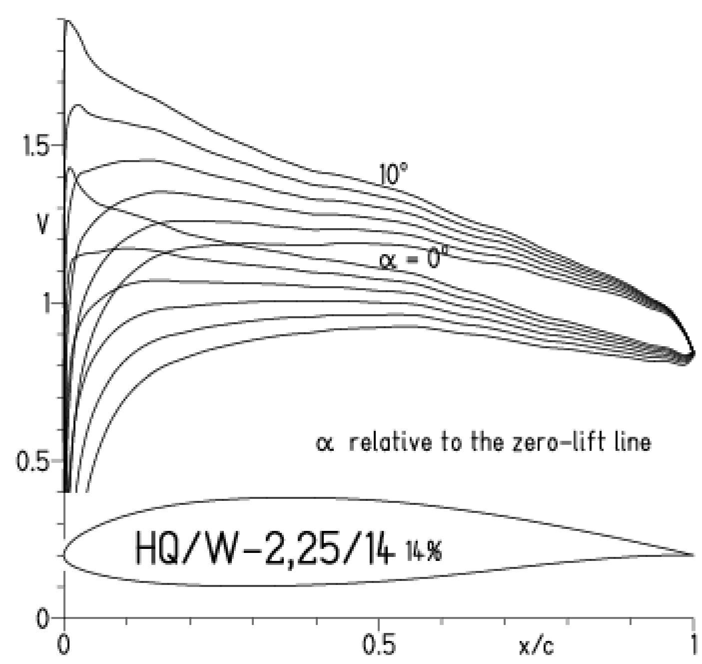
HQ/W-2,25/14, N=11



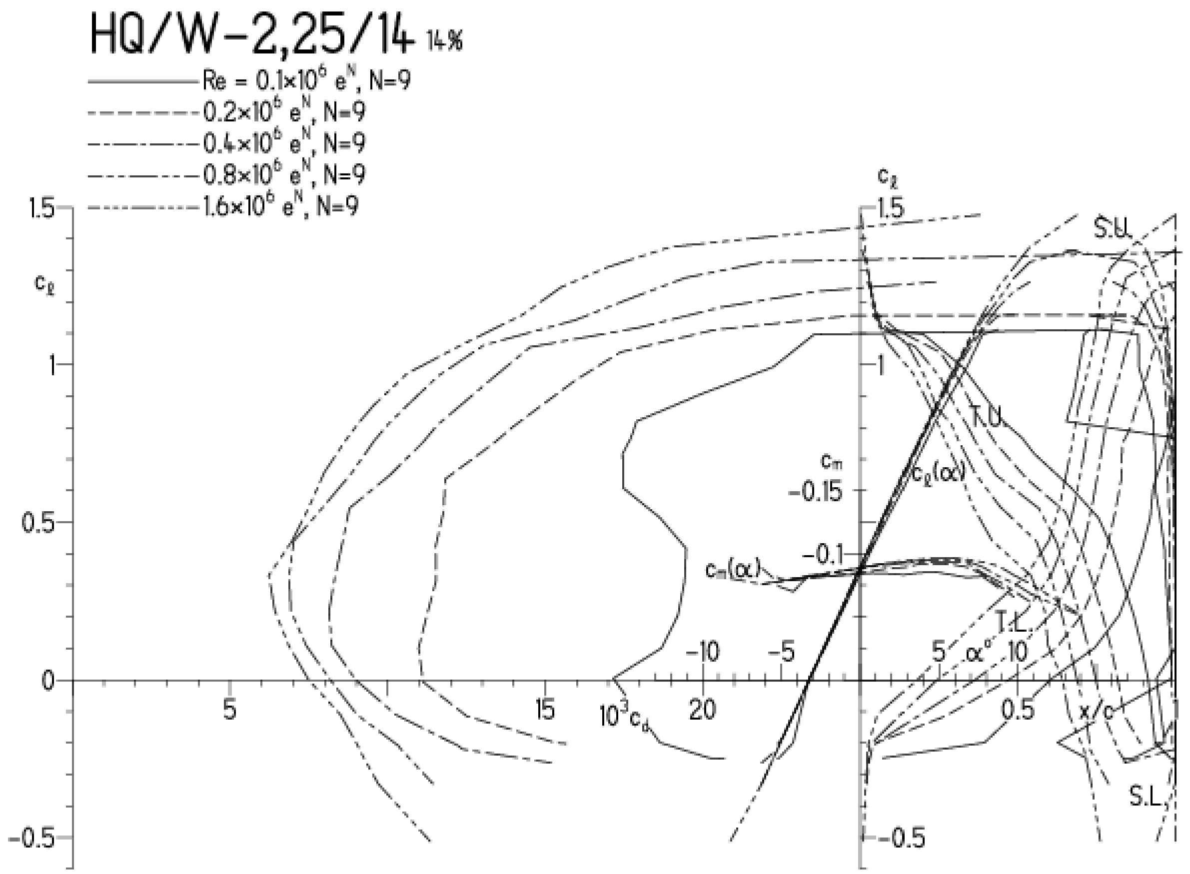


<u>HQ/W-2,25/14</u>, N=9

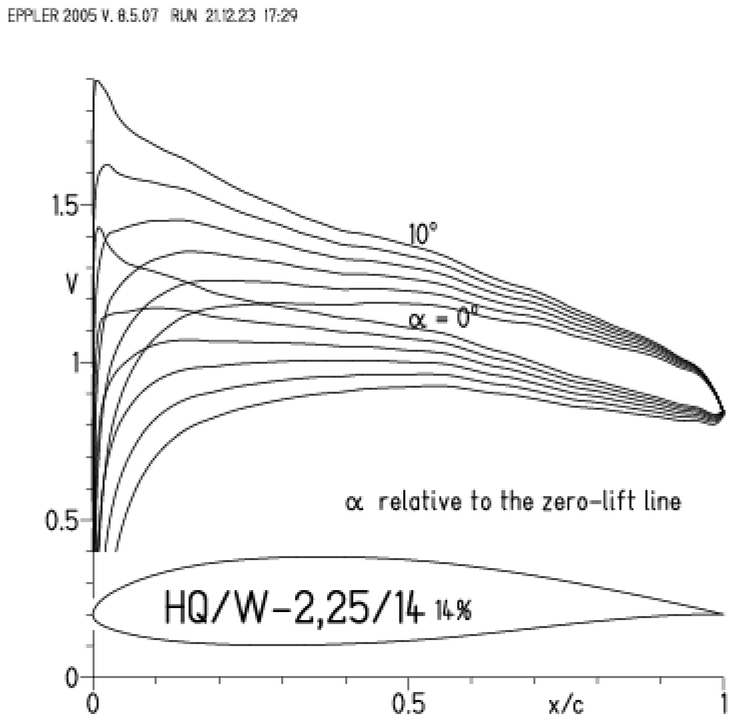
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

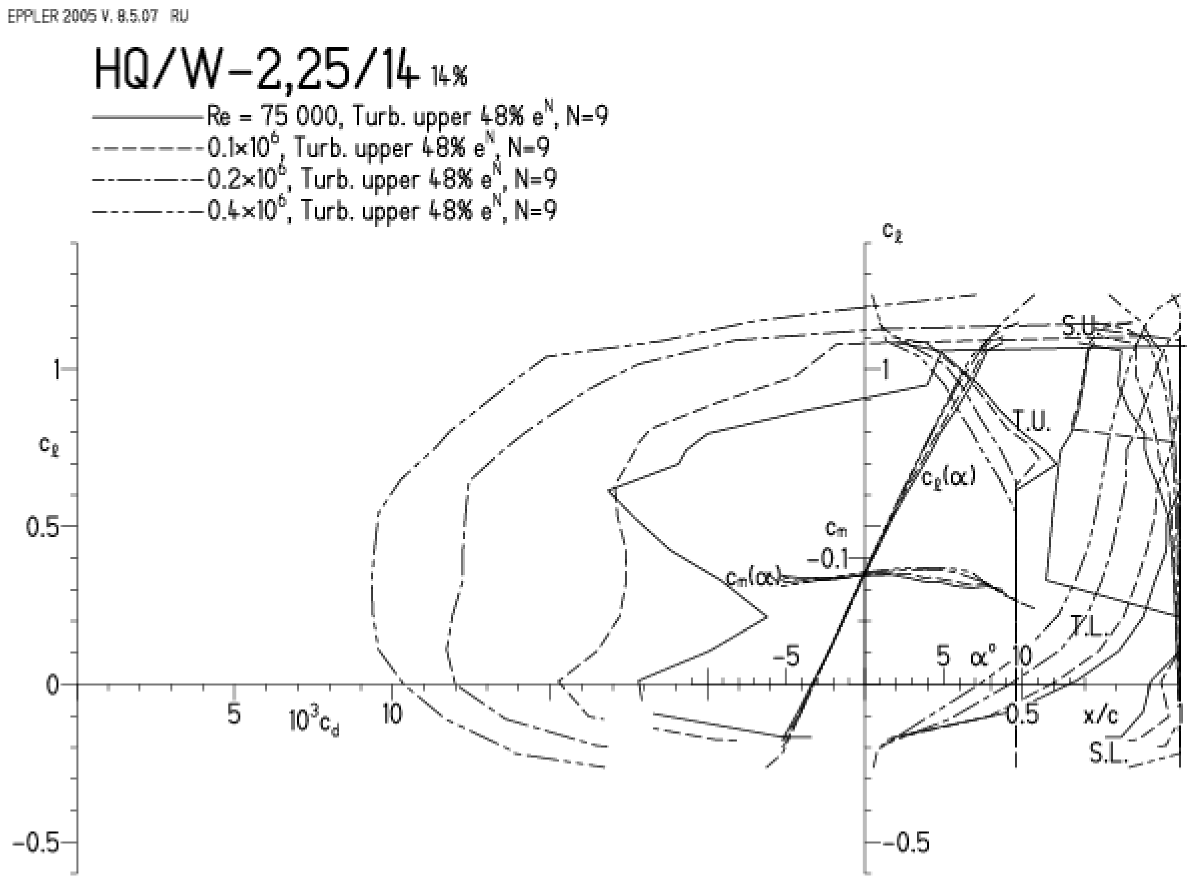


EPPLER 2005 V. 8.



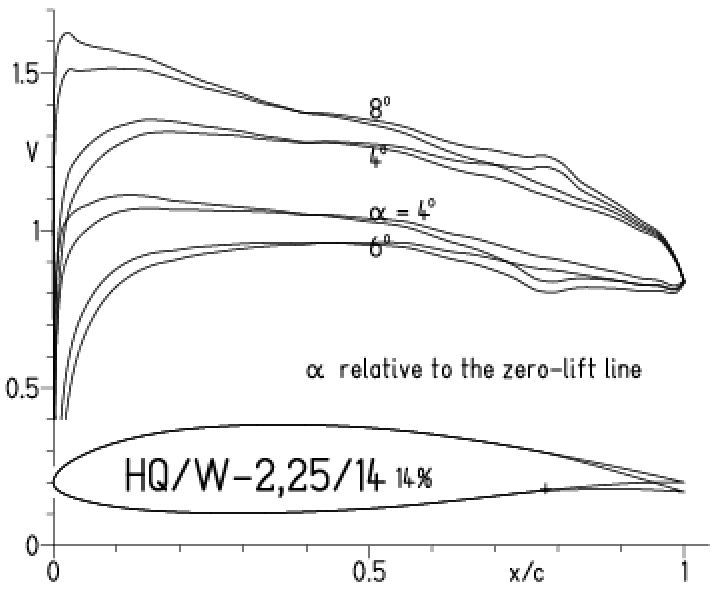
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



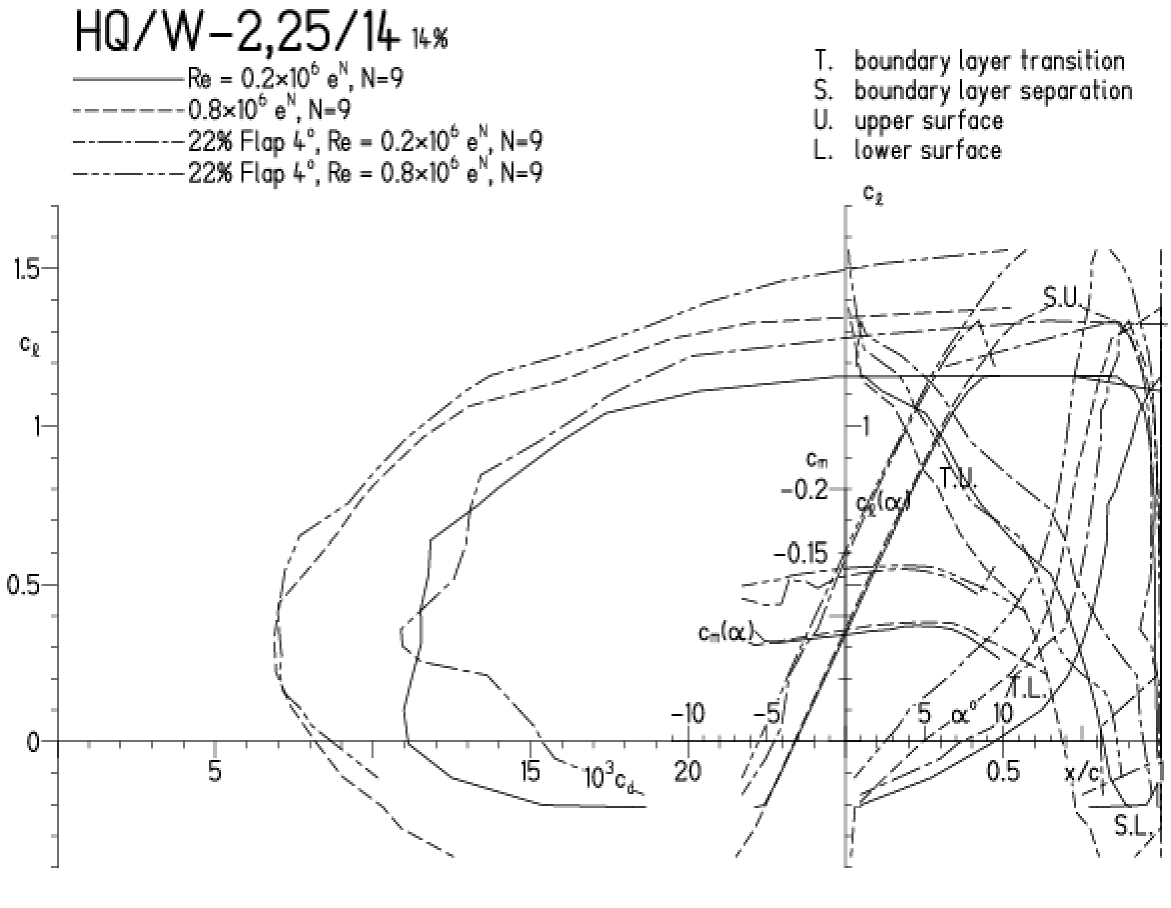


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

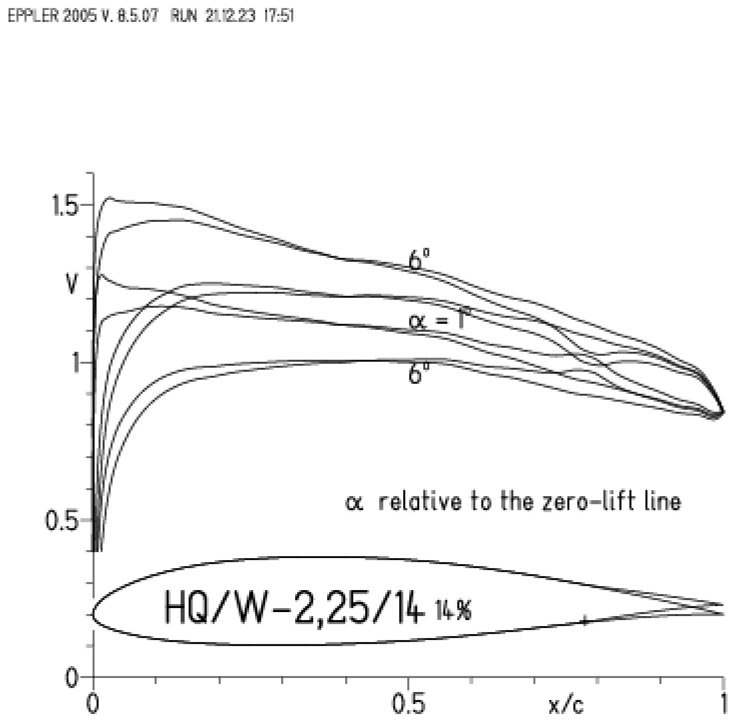
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

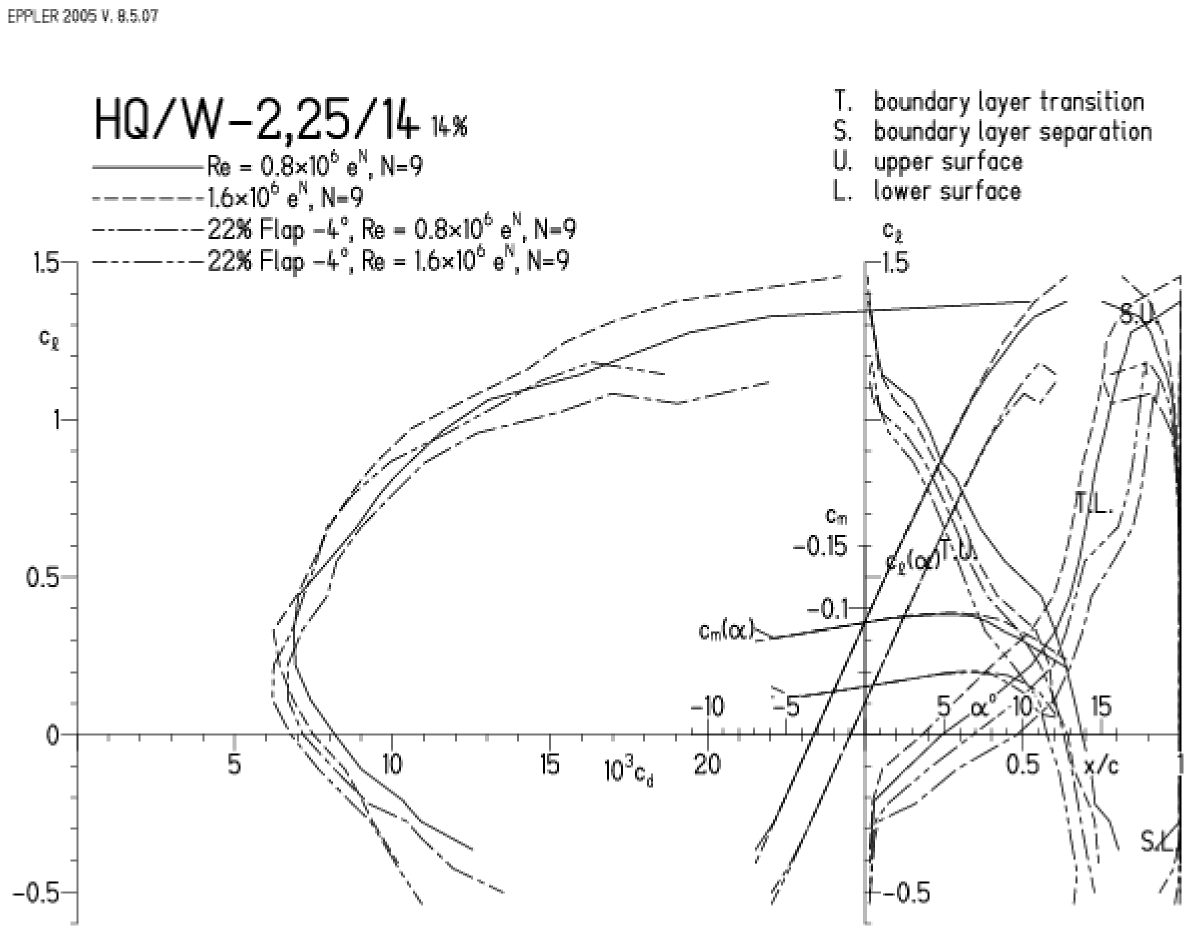


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

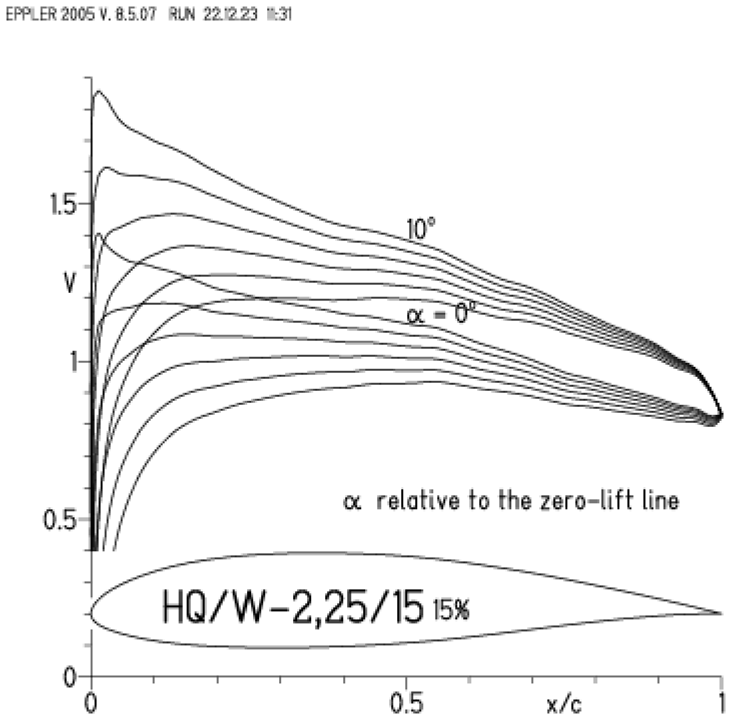


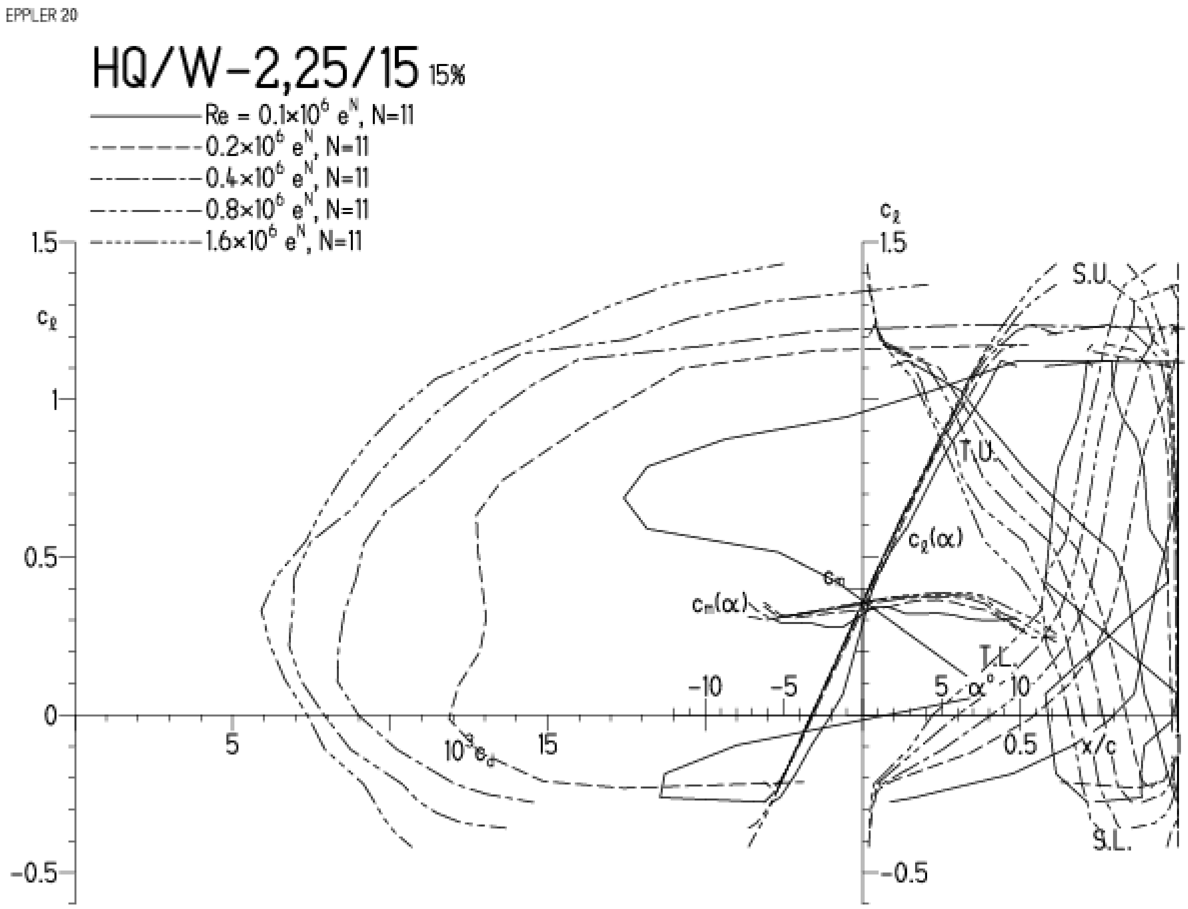
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag





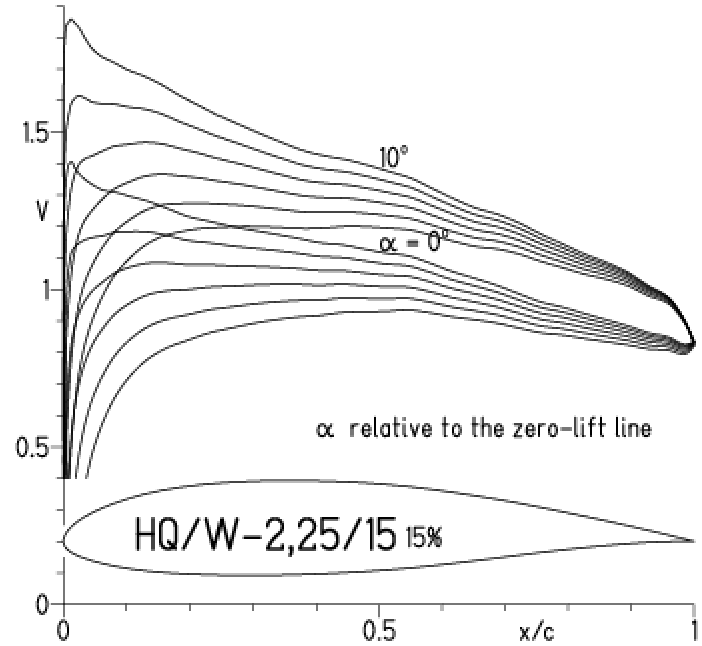
HQ/W-2,25/15, N=11



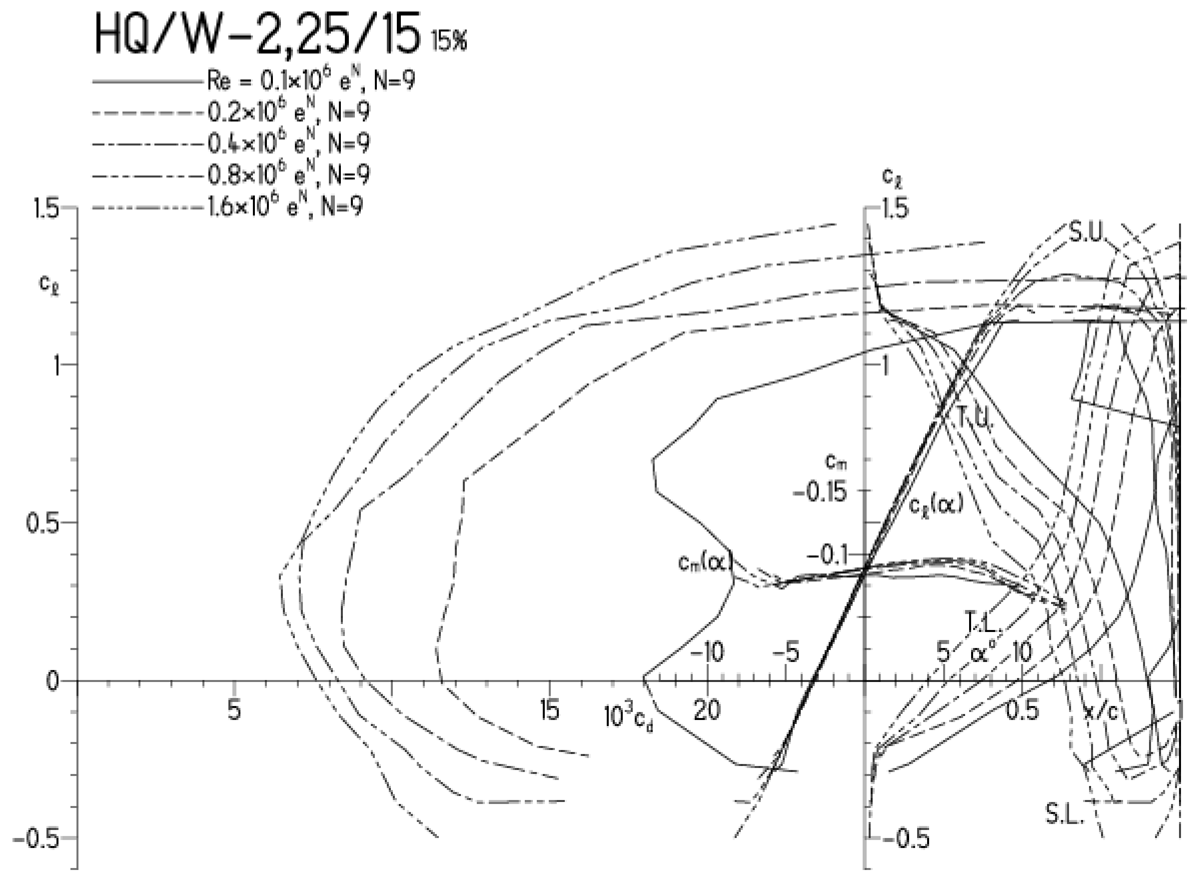


HQ/W-2,25/15, N=9

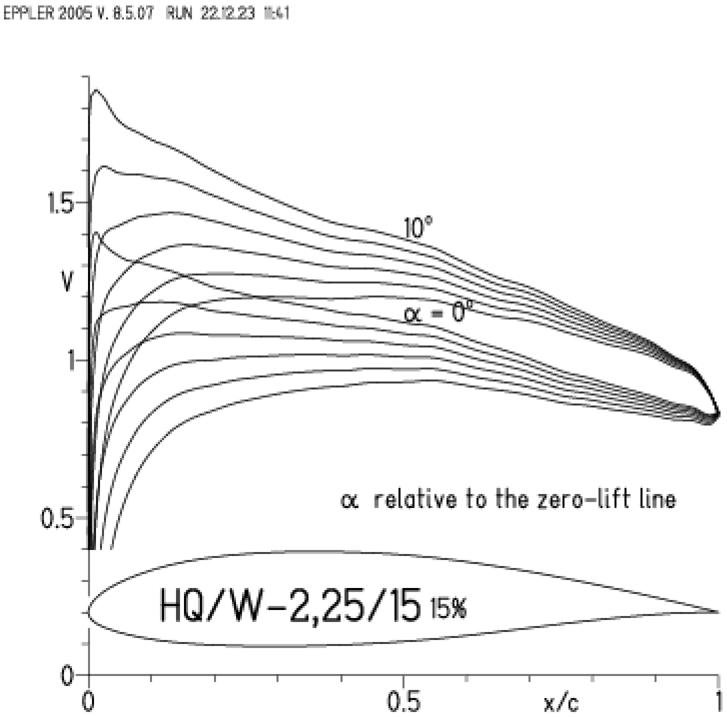
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

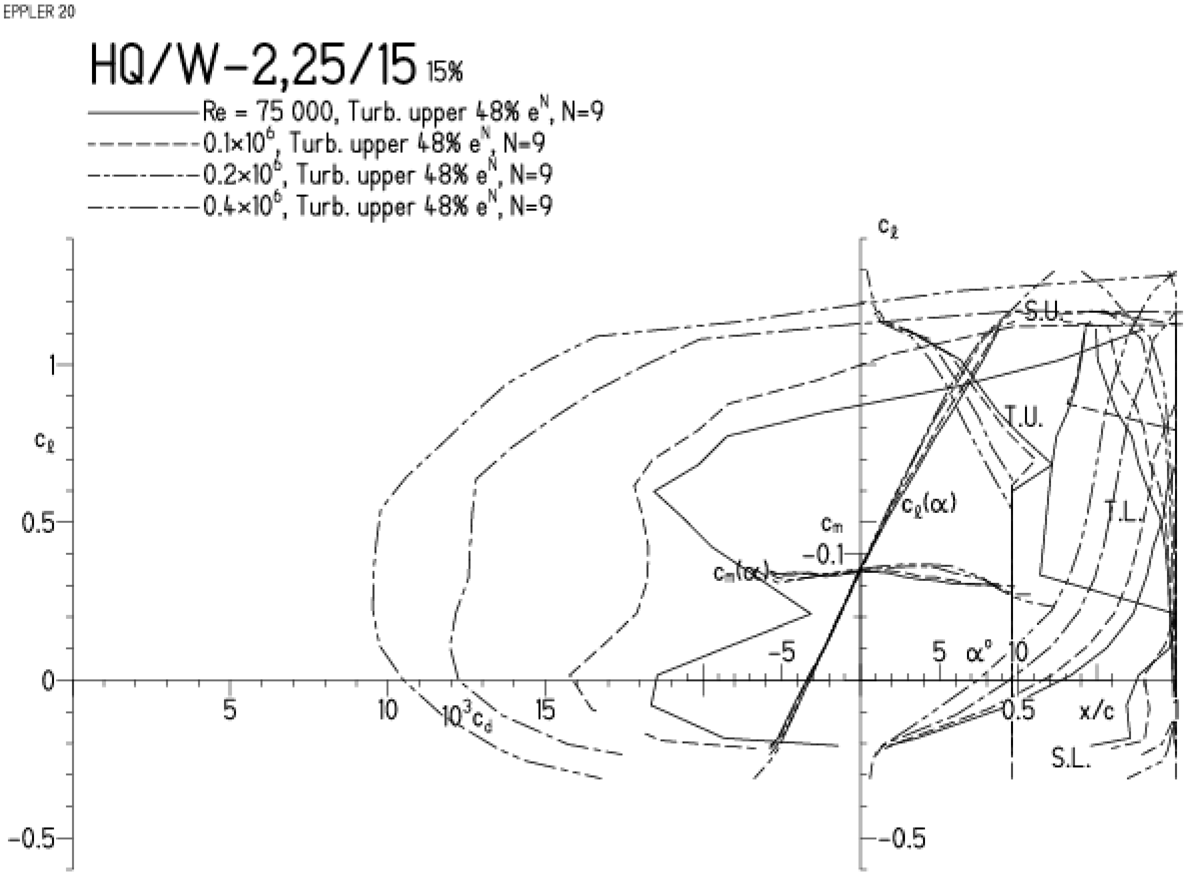


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



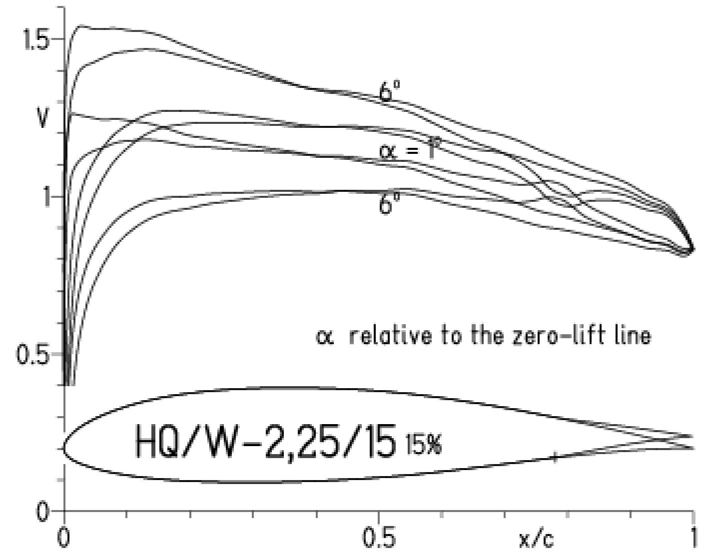


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

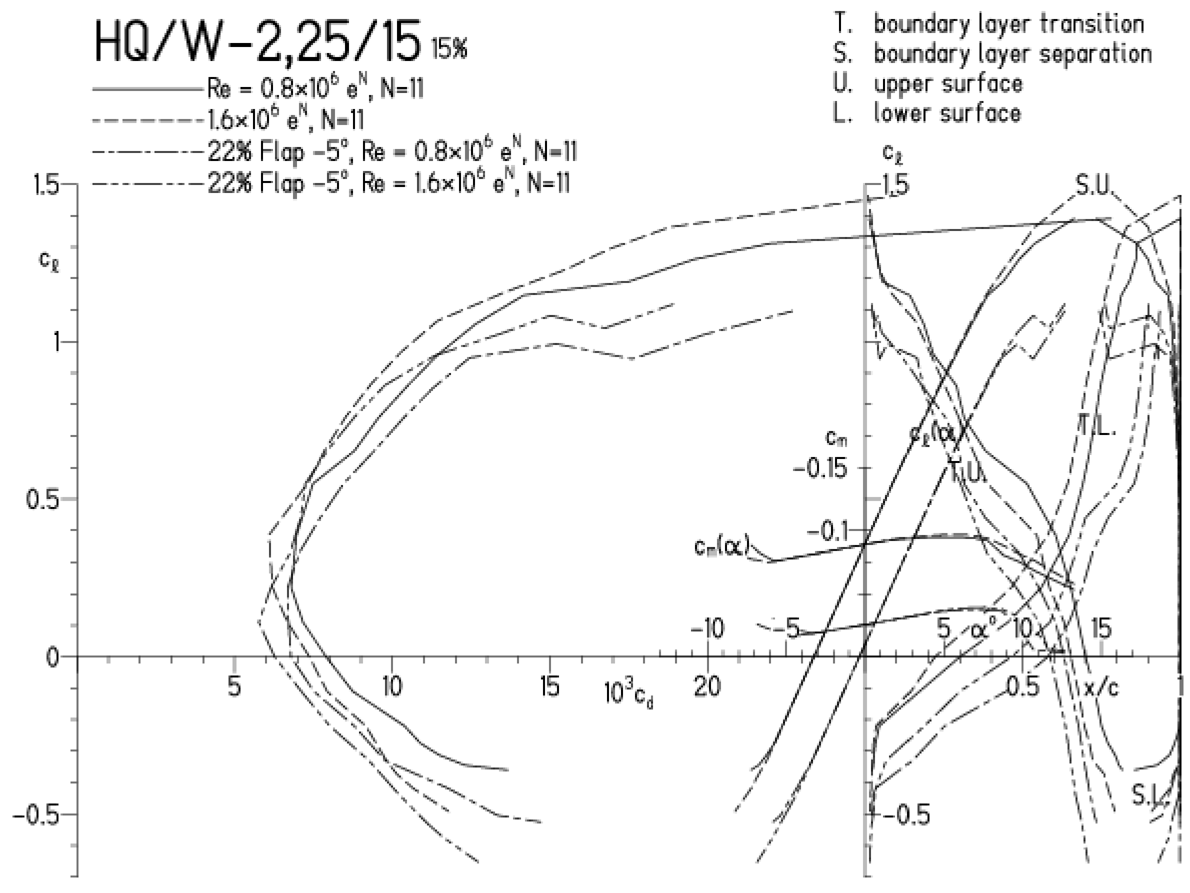
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

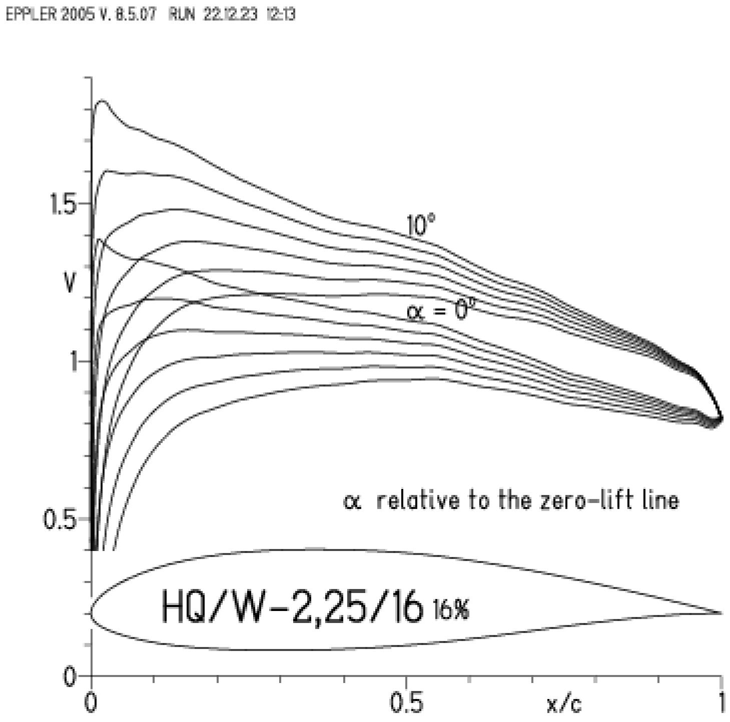
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

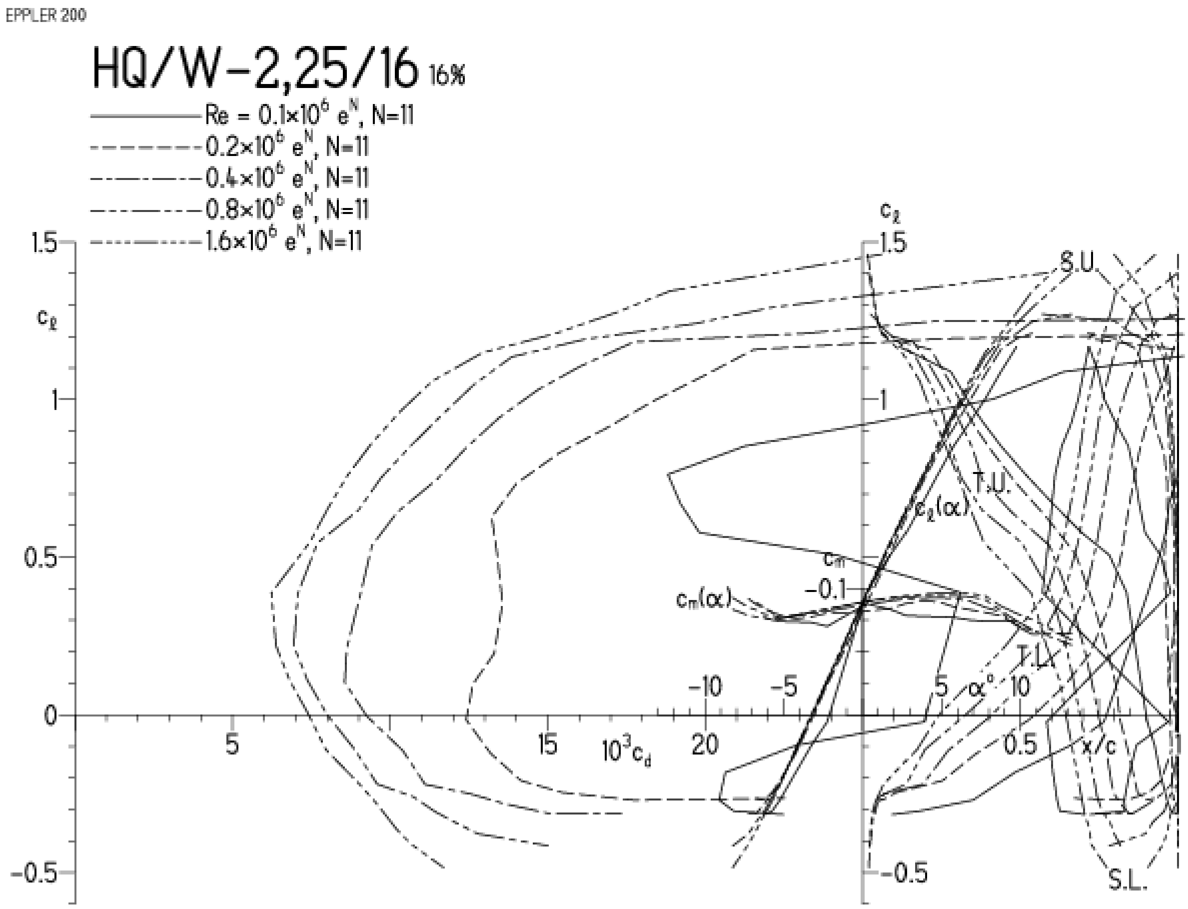


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

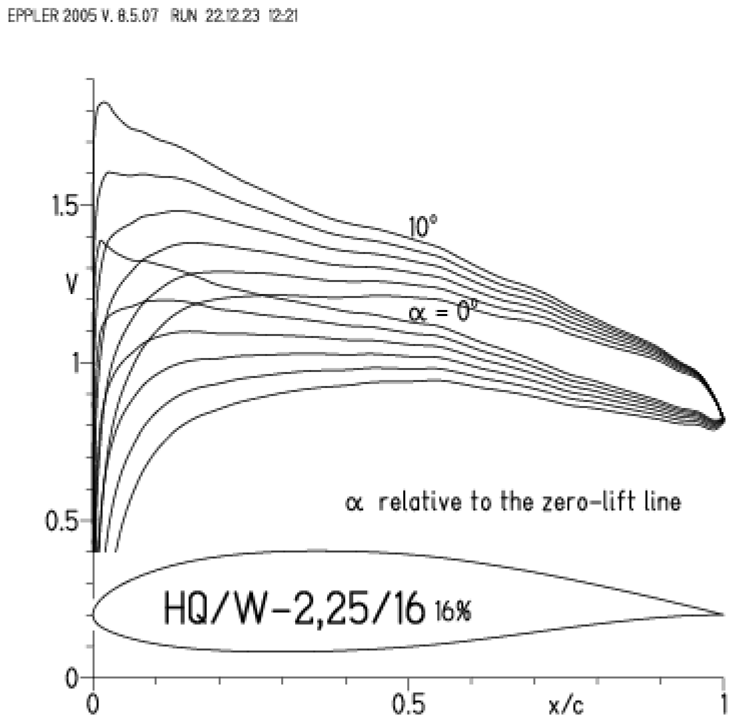


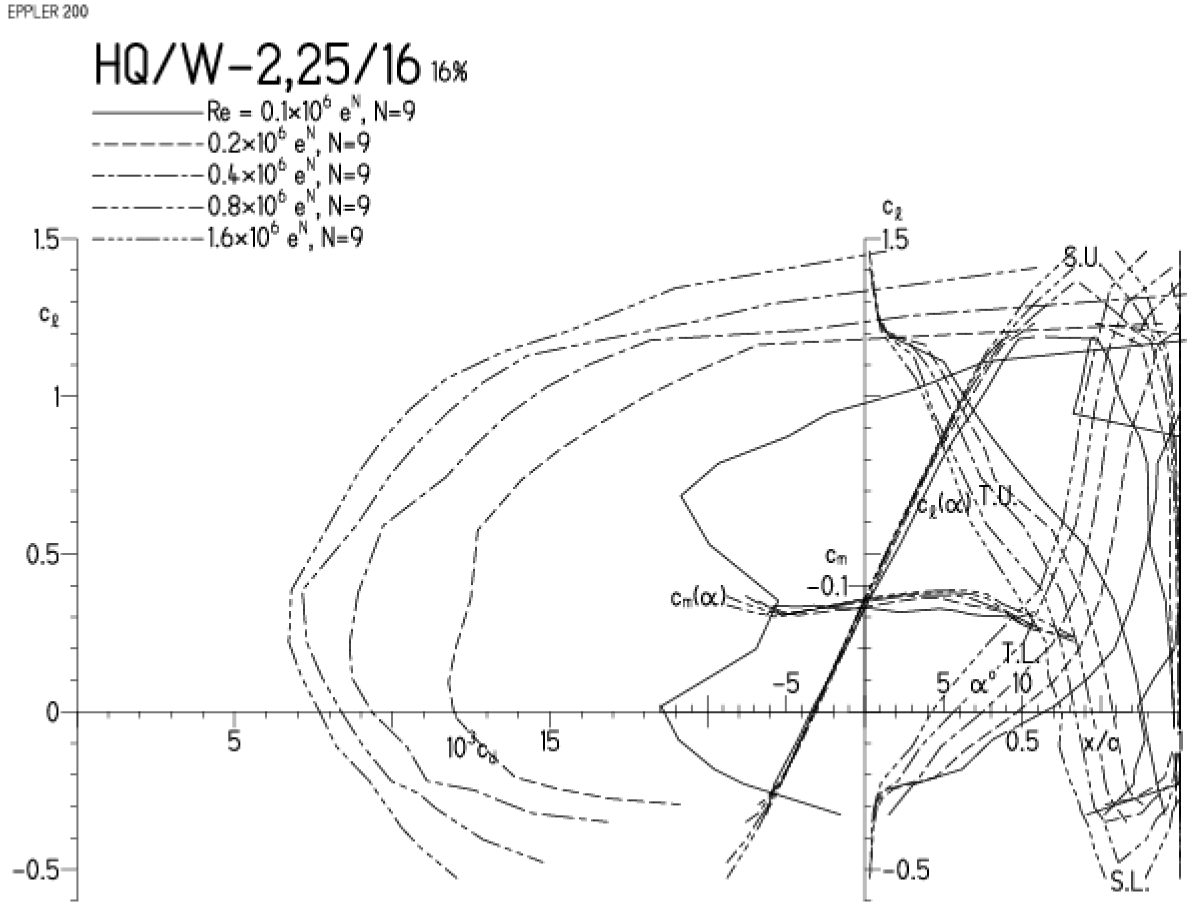
HQ/W-2,25/16, N=11



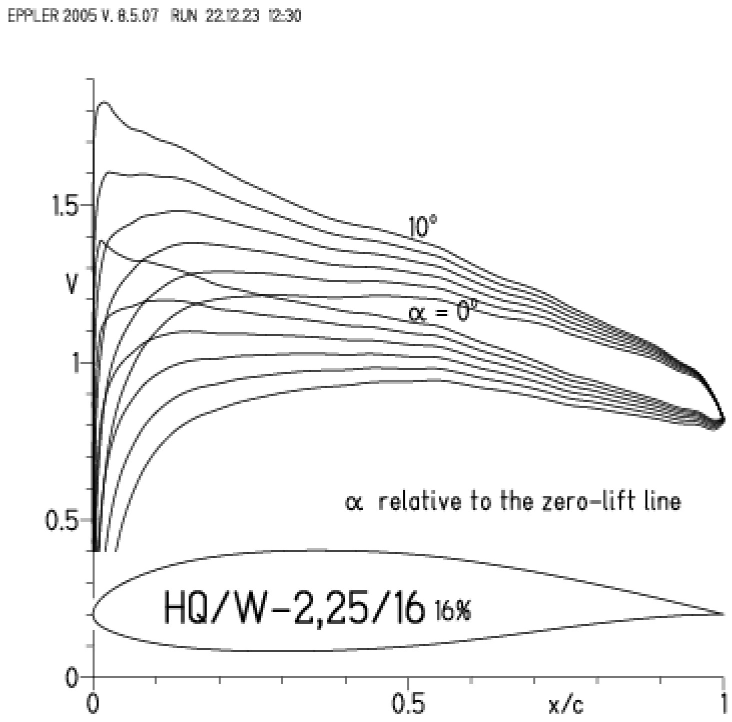


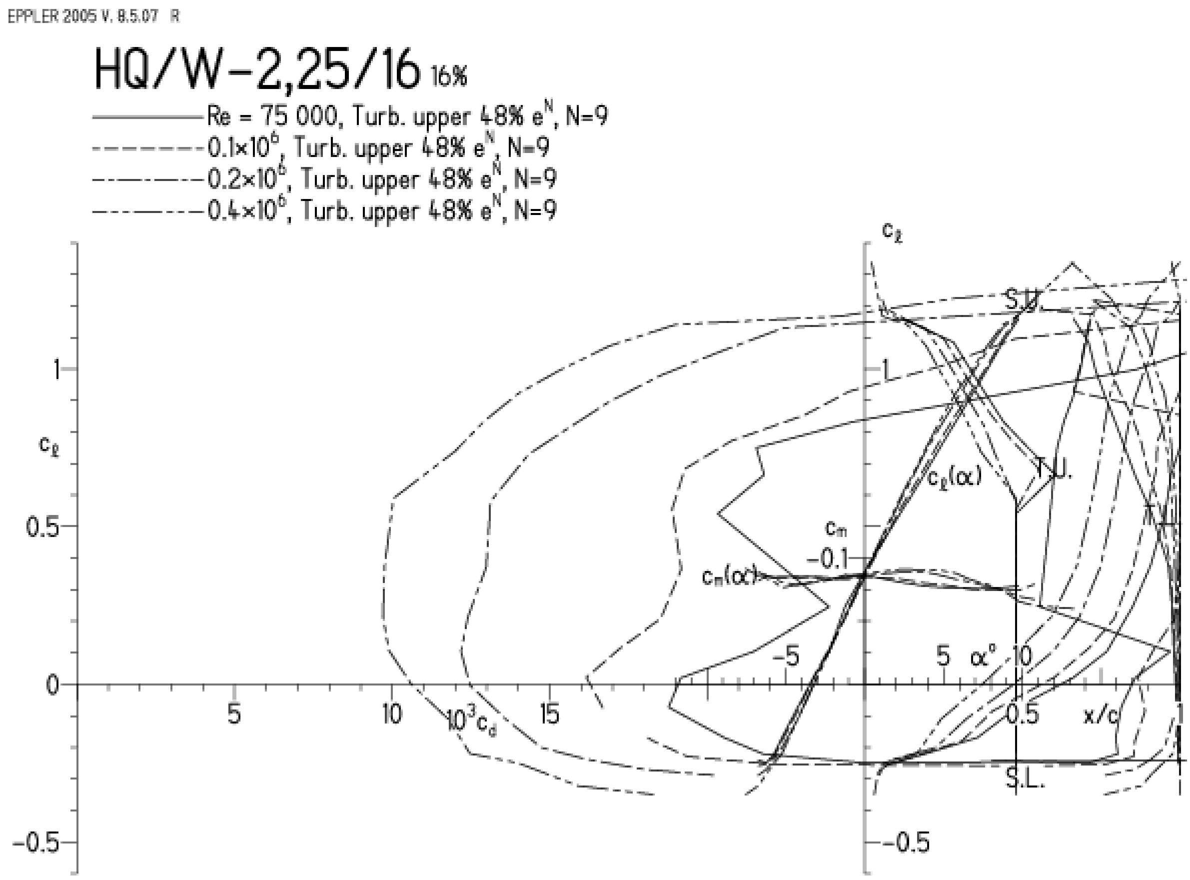
<u>HQ/W-2,25/16</u>, N=9





<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



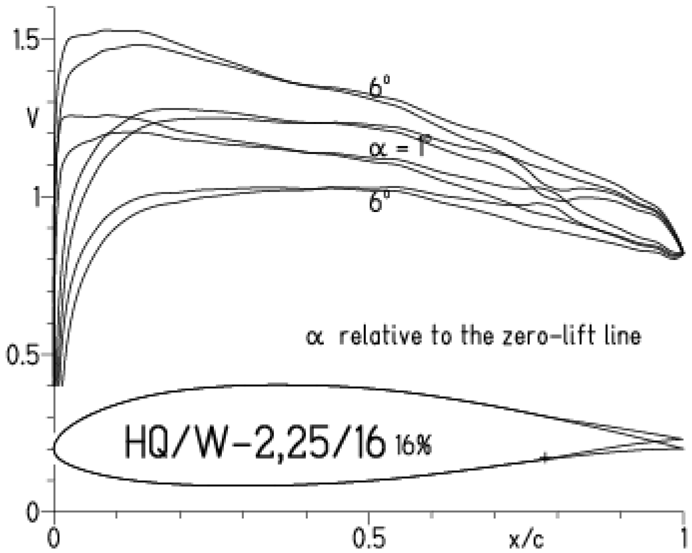


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

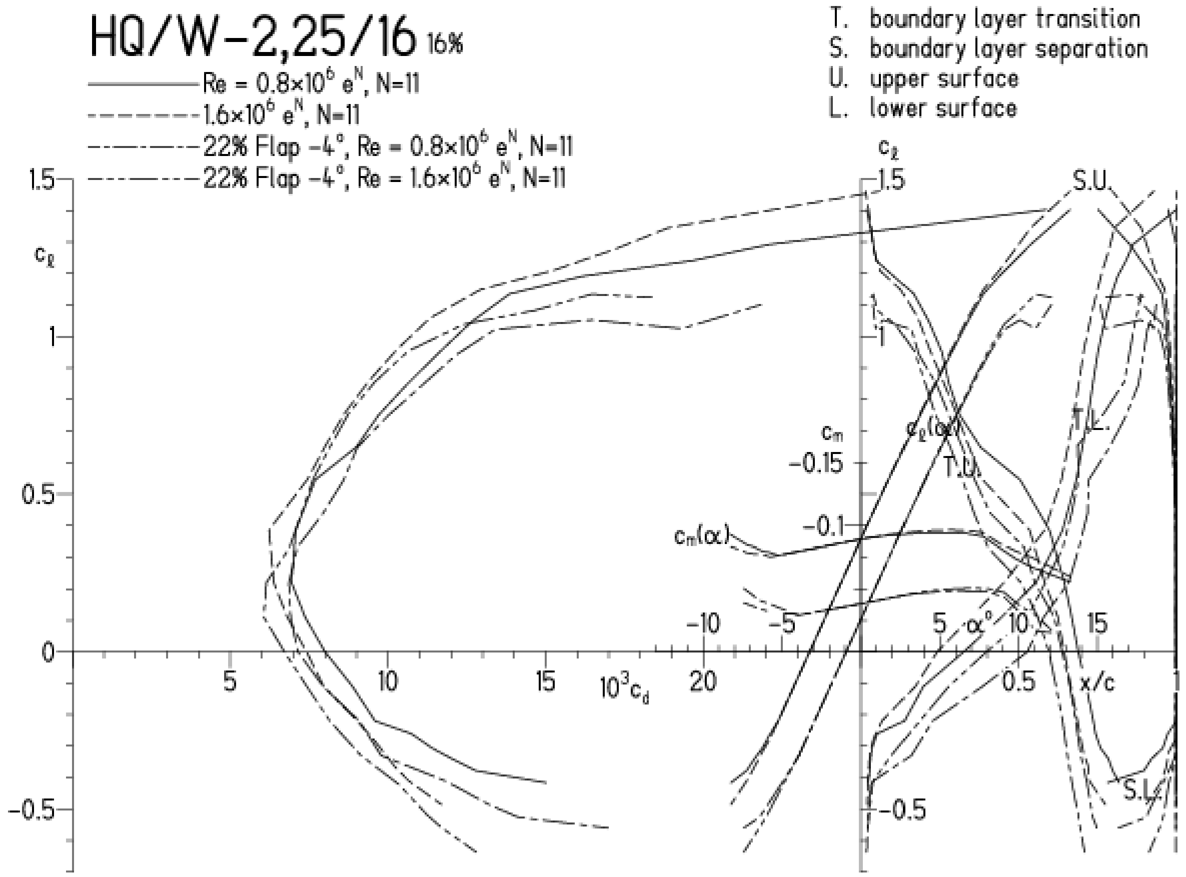
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

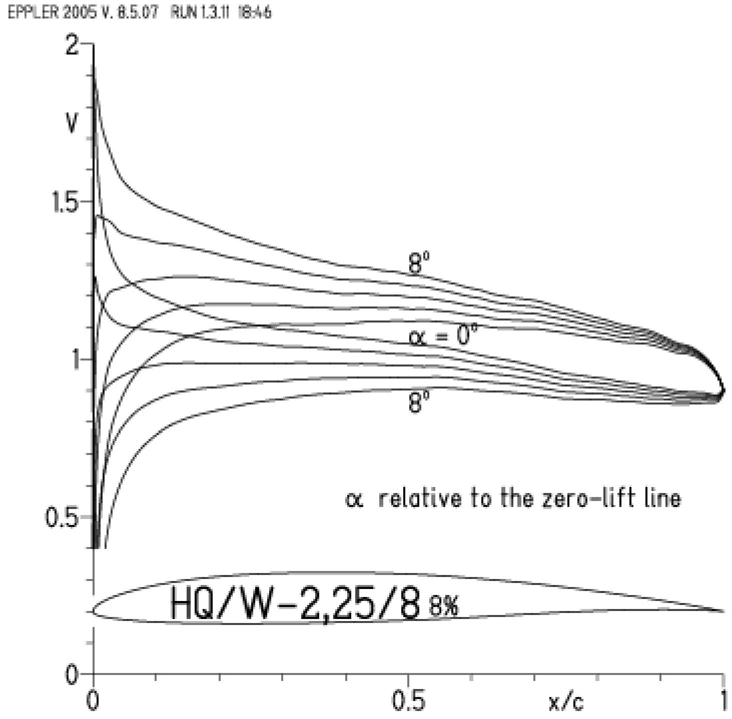
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

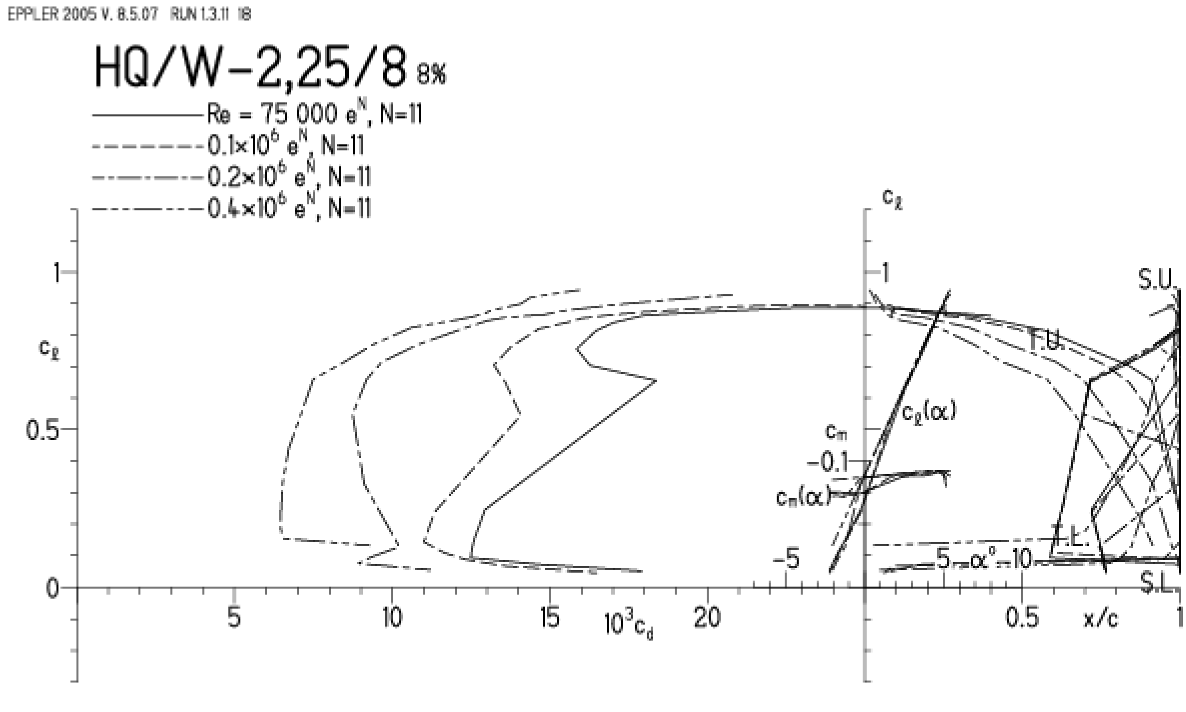


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

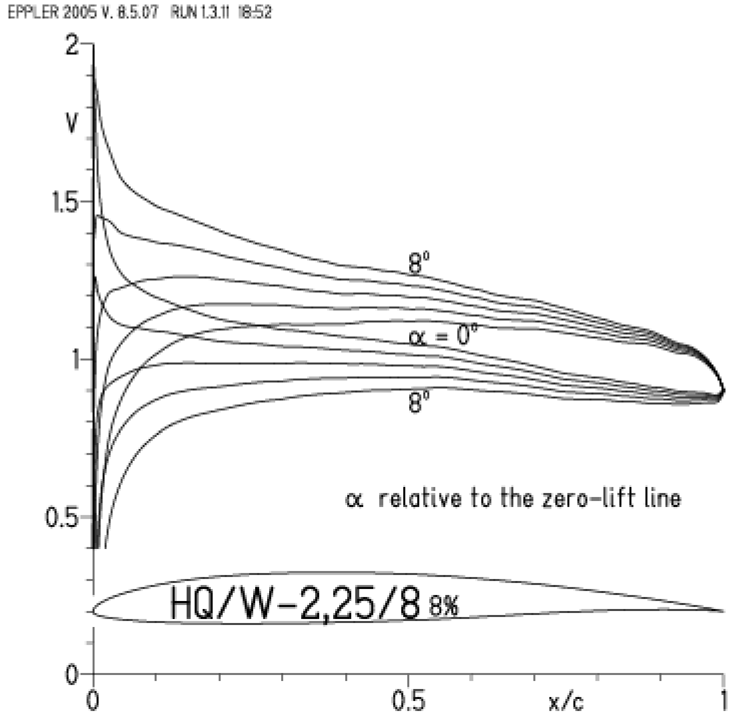


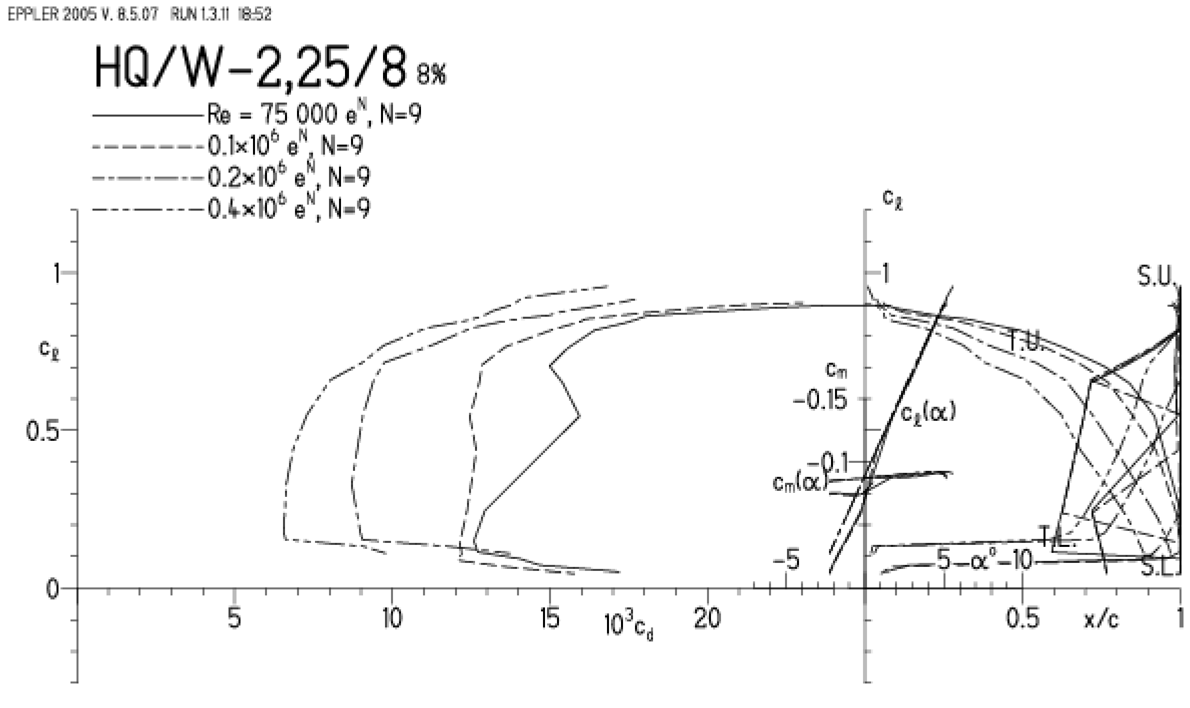
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

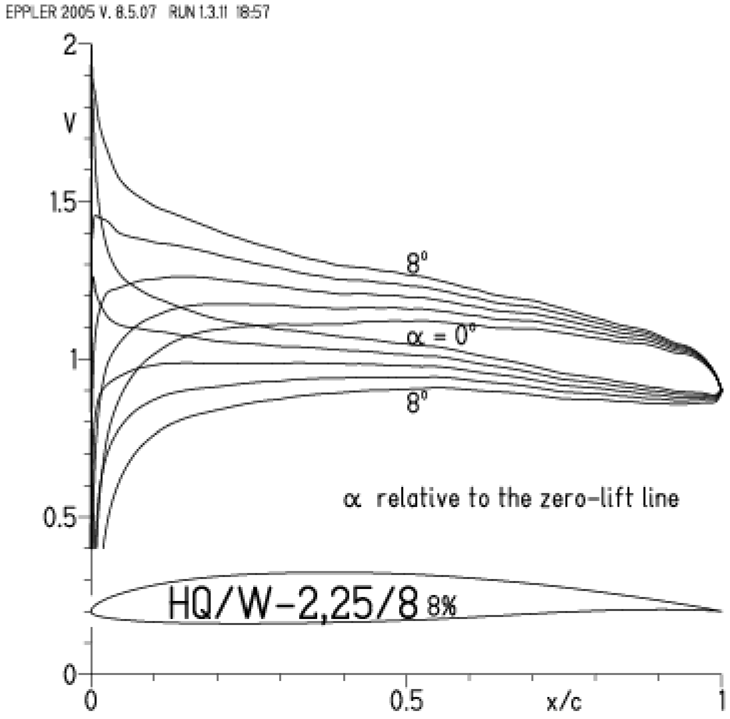

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

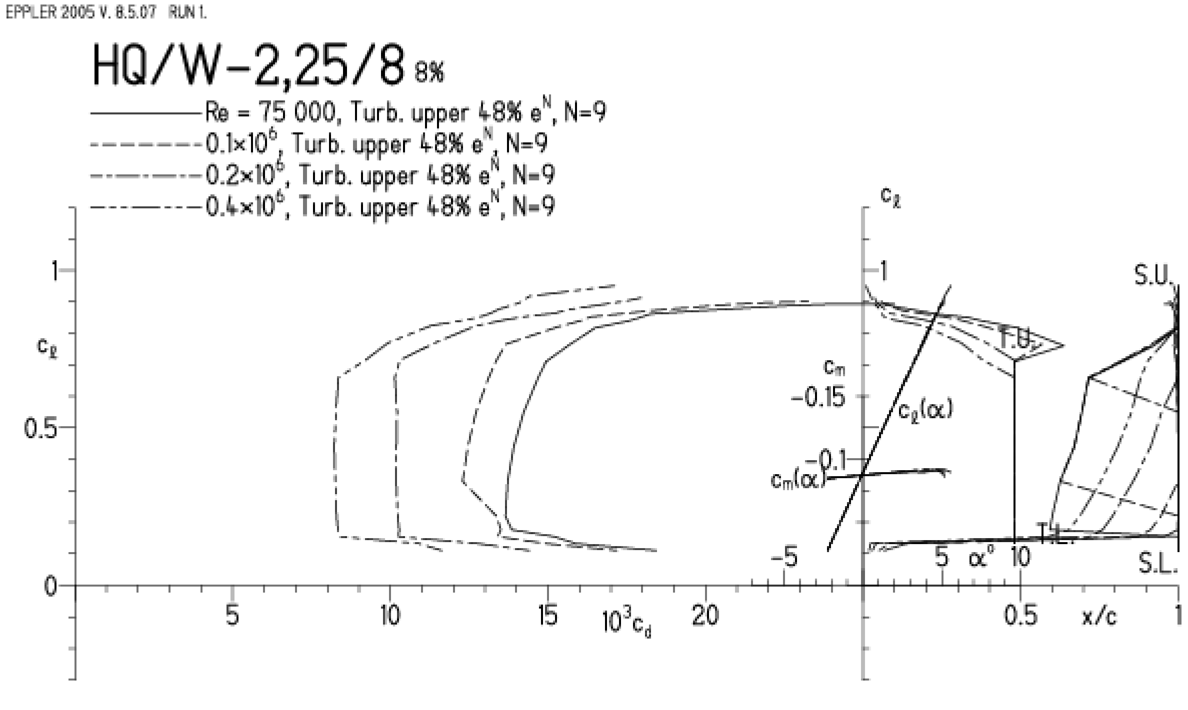
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

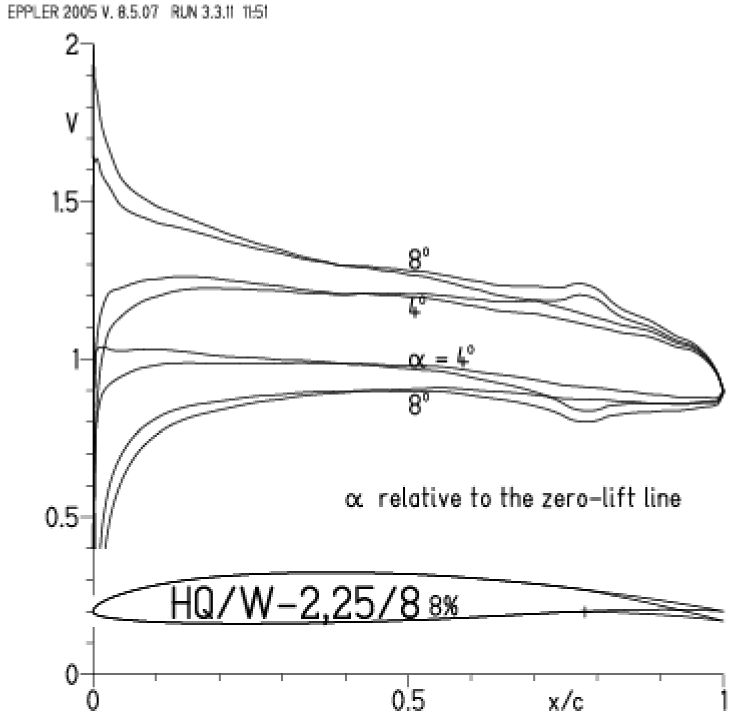

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
$c_l(\alpha)$
$c_m(\alpha)$
T.U.
S.U.
T.L.
S.L.
5 – α° – 10
$10^3 c_d$
x/c

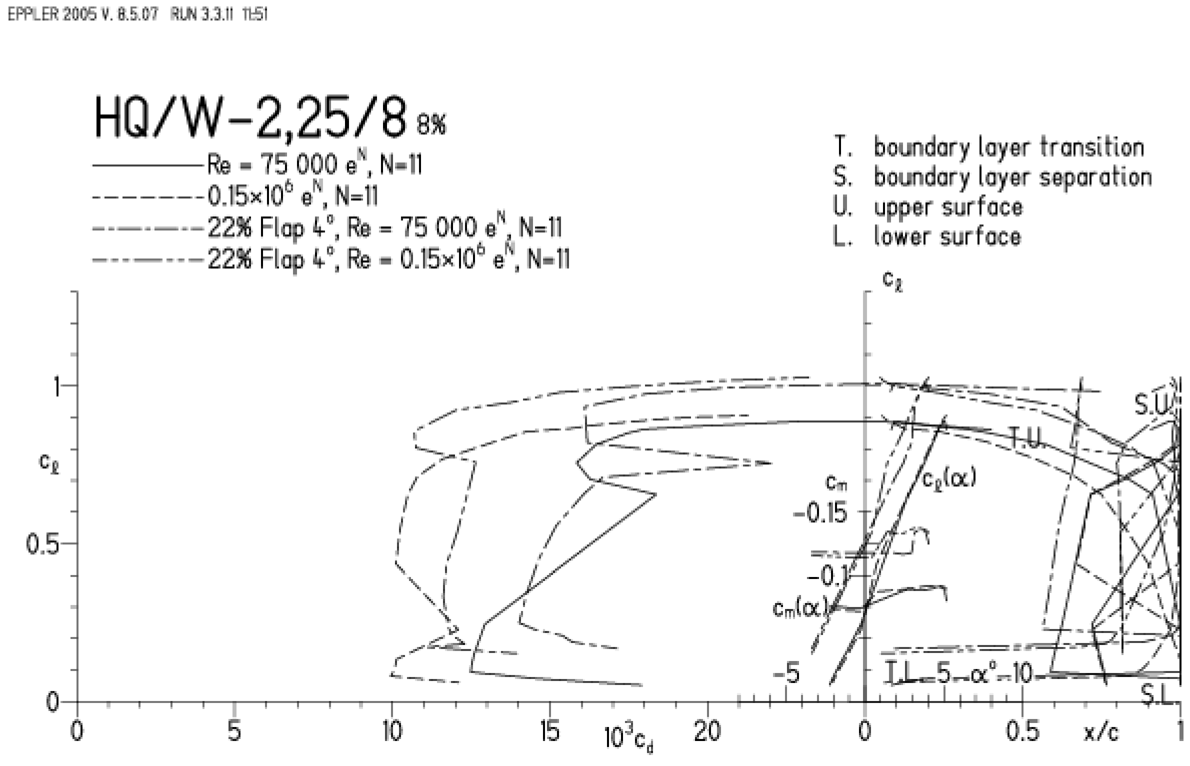
<u>HQ/W-2,25/8,</u> N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



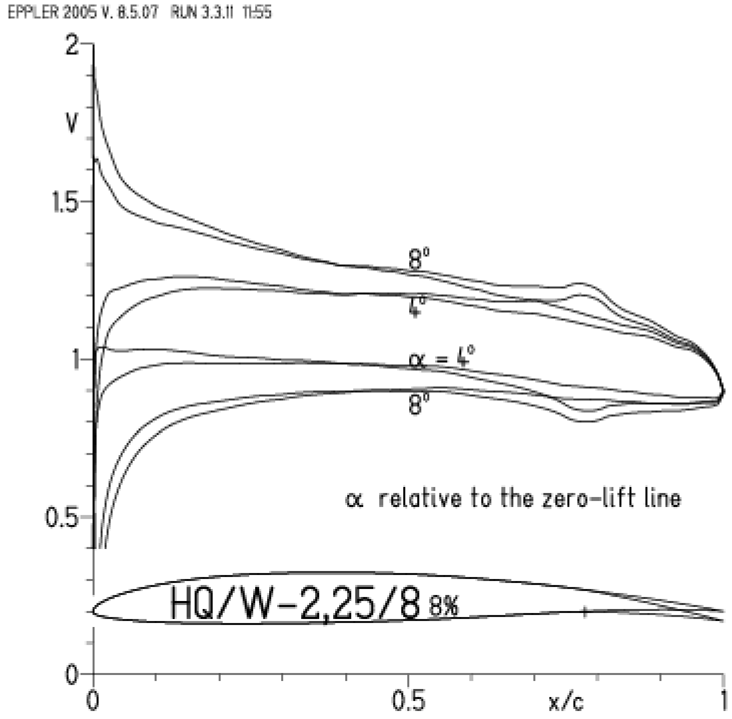


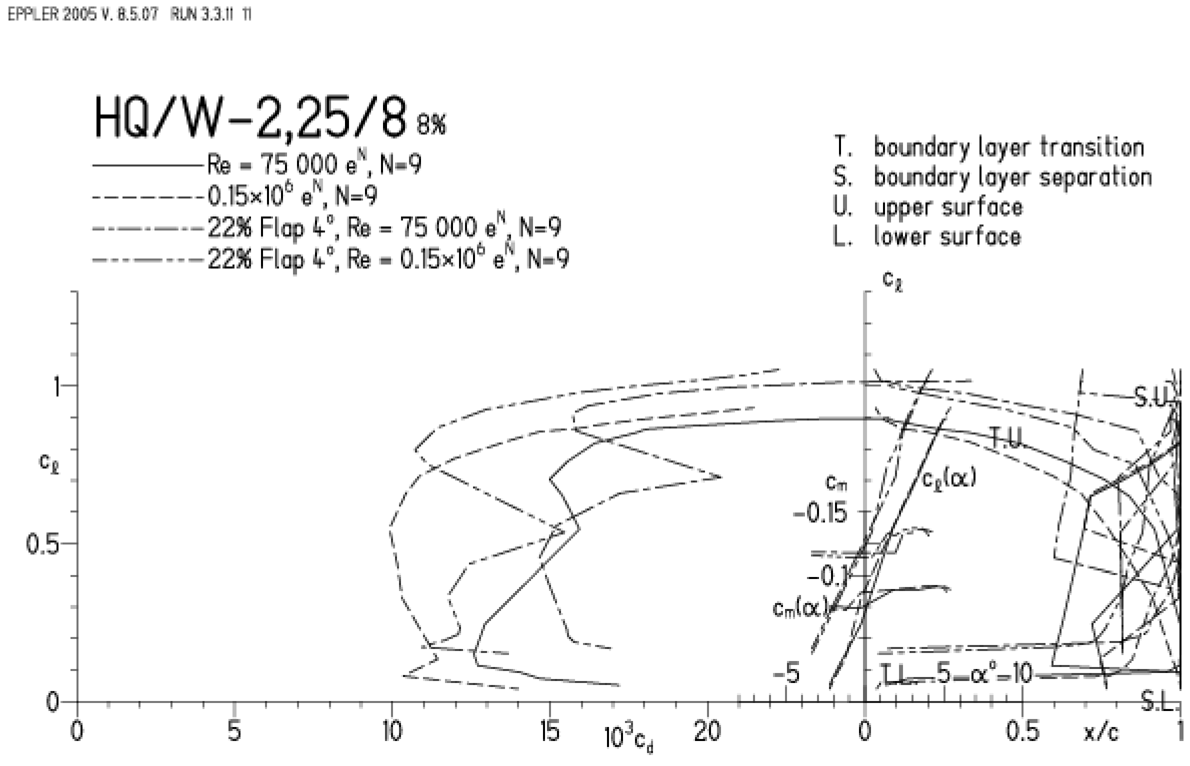
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



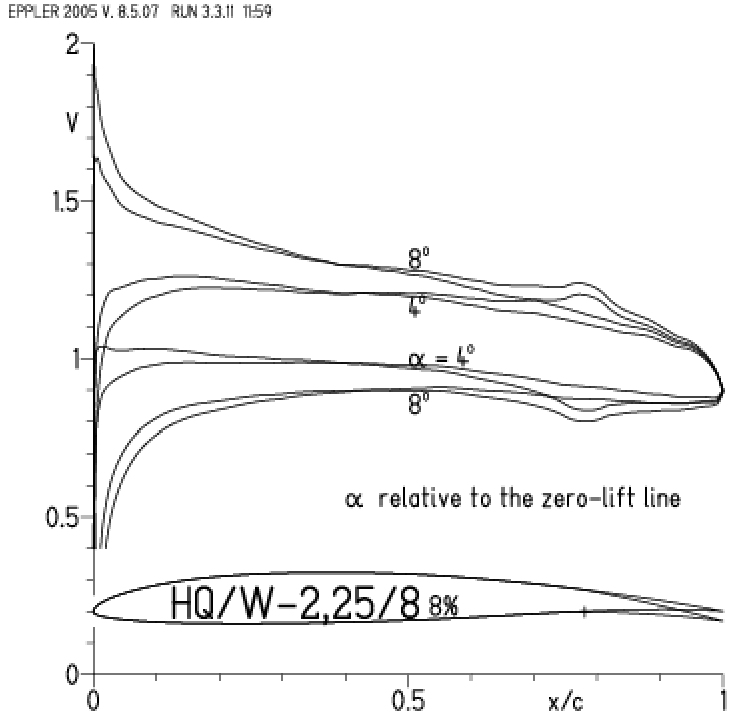


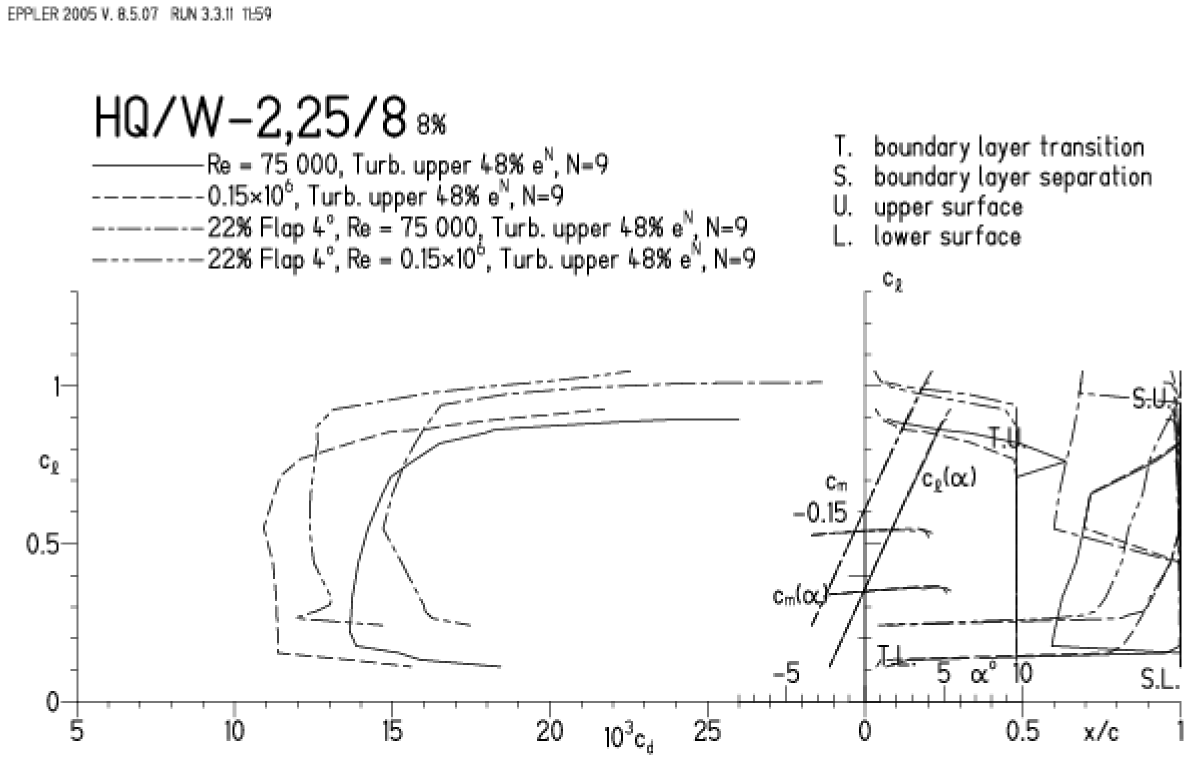
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





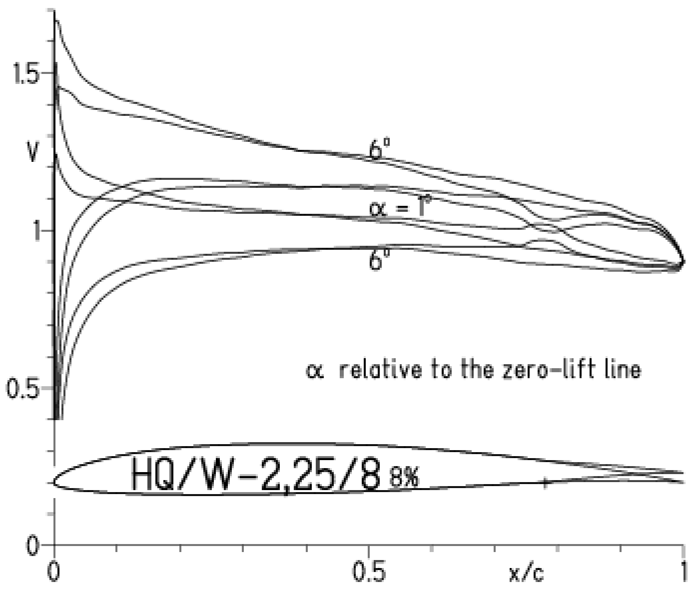
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



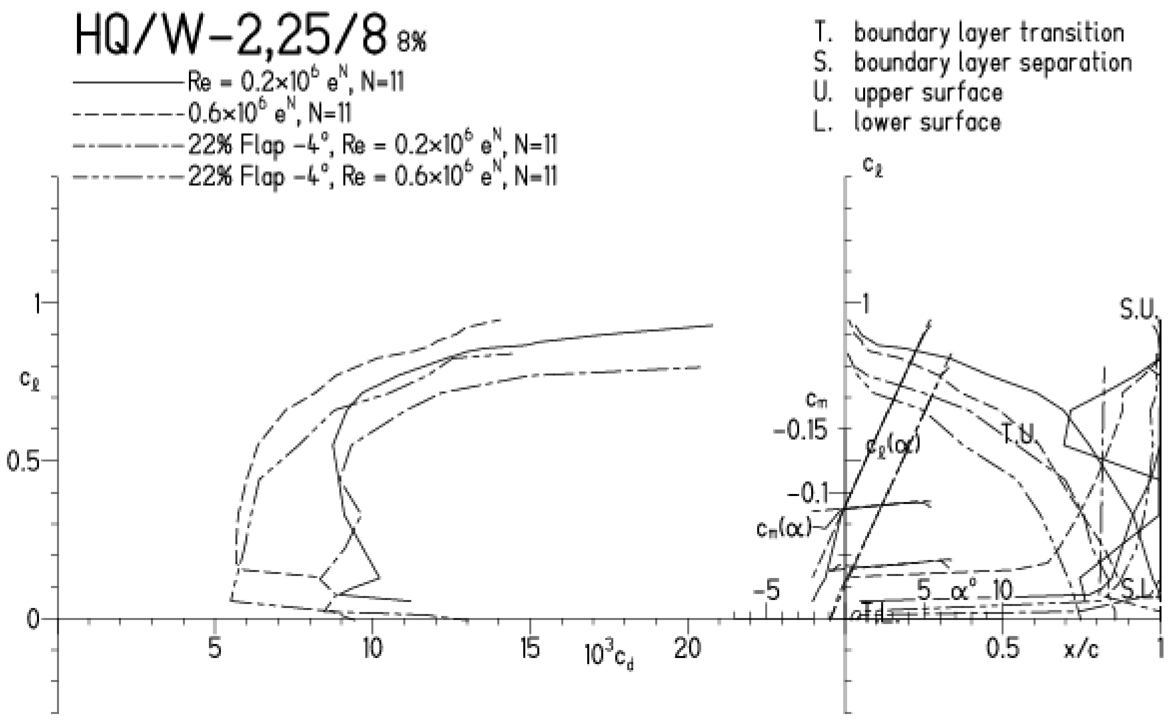


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

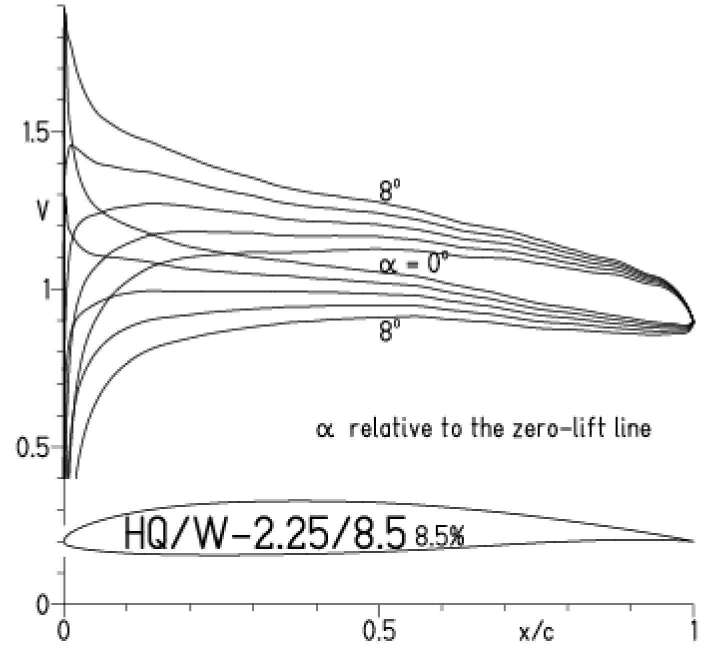


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

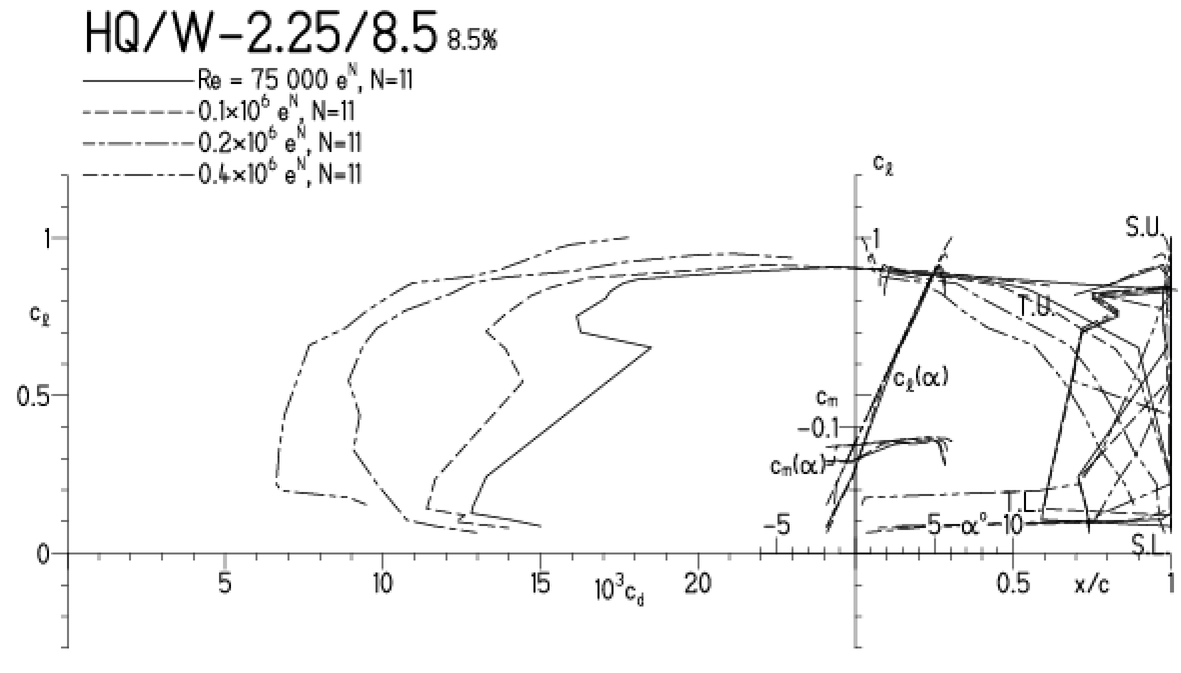


HQ/W-2,25/8,5, N=11

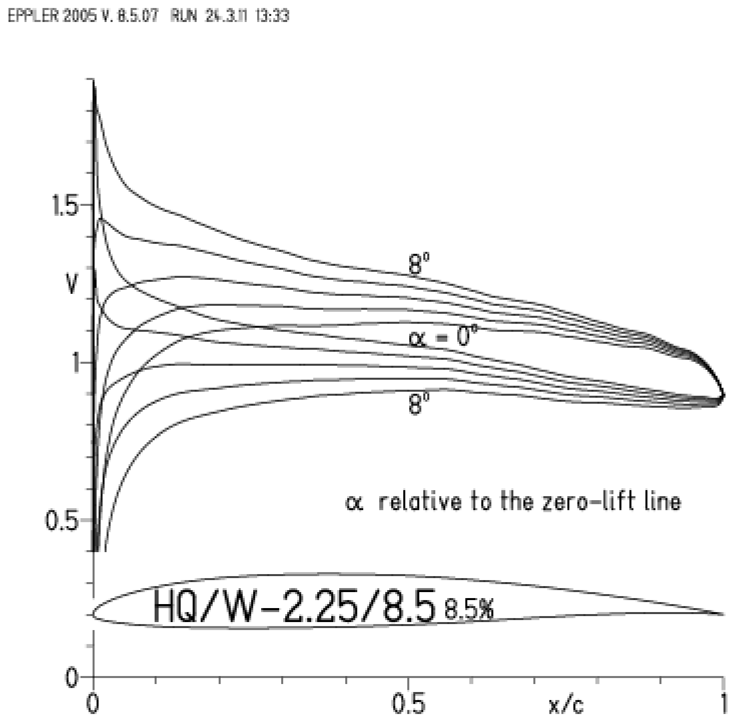
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

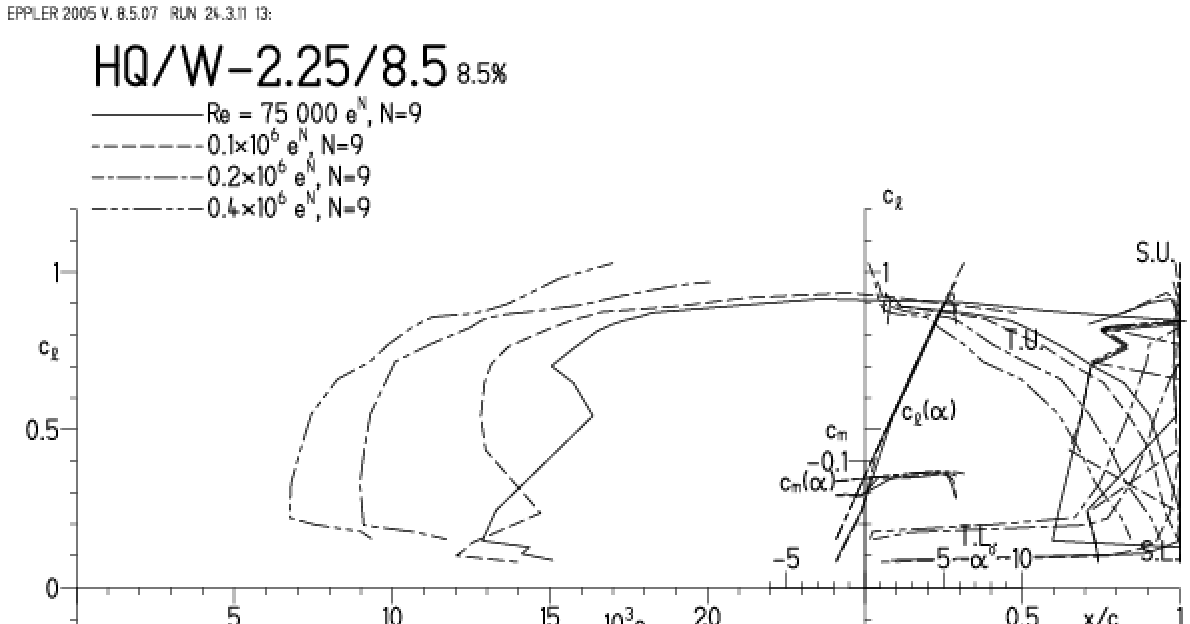


EPPLER 2005 V

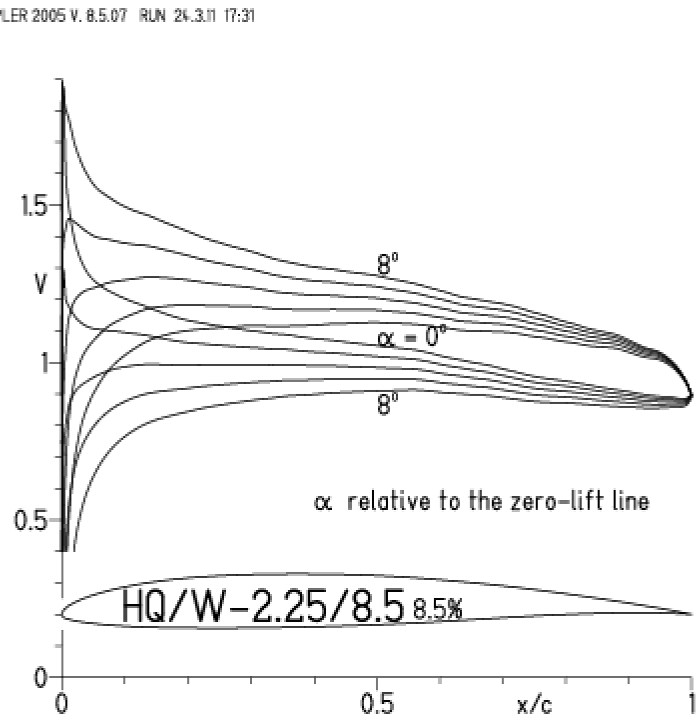


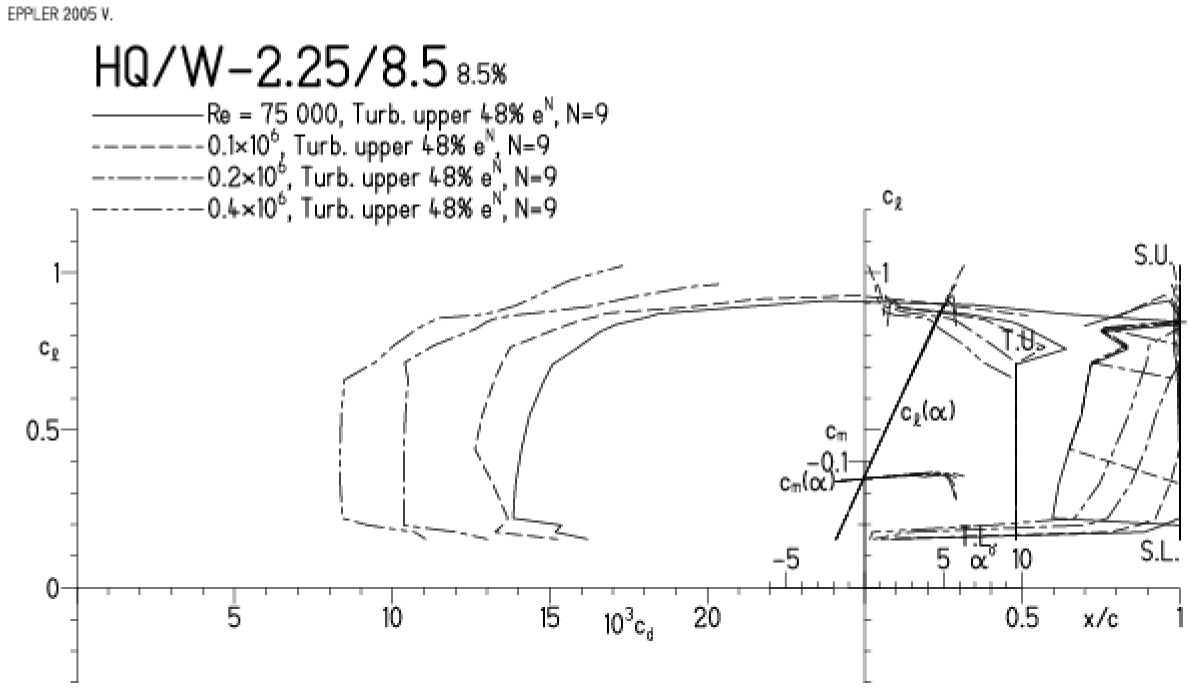
<u>HQ/W-2,25/8,5</u>, N=9



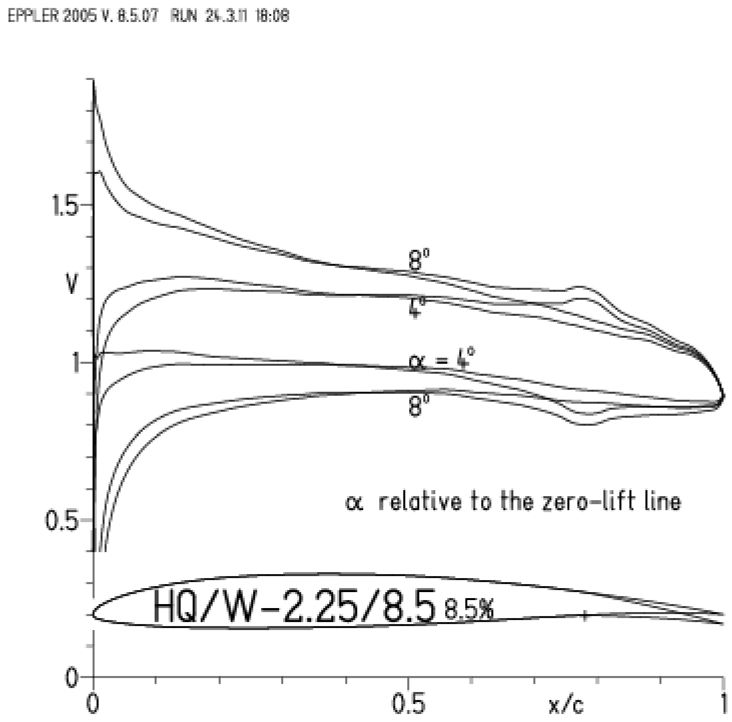


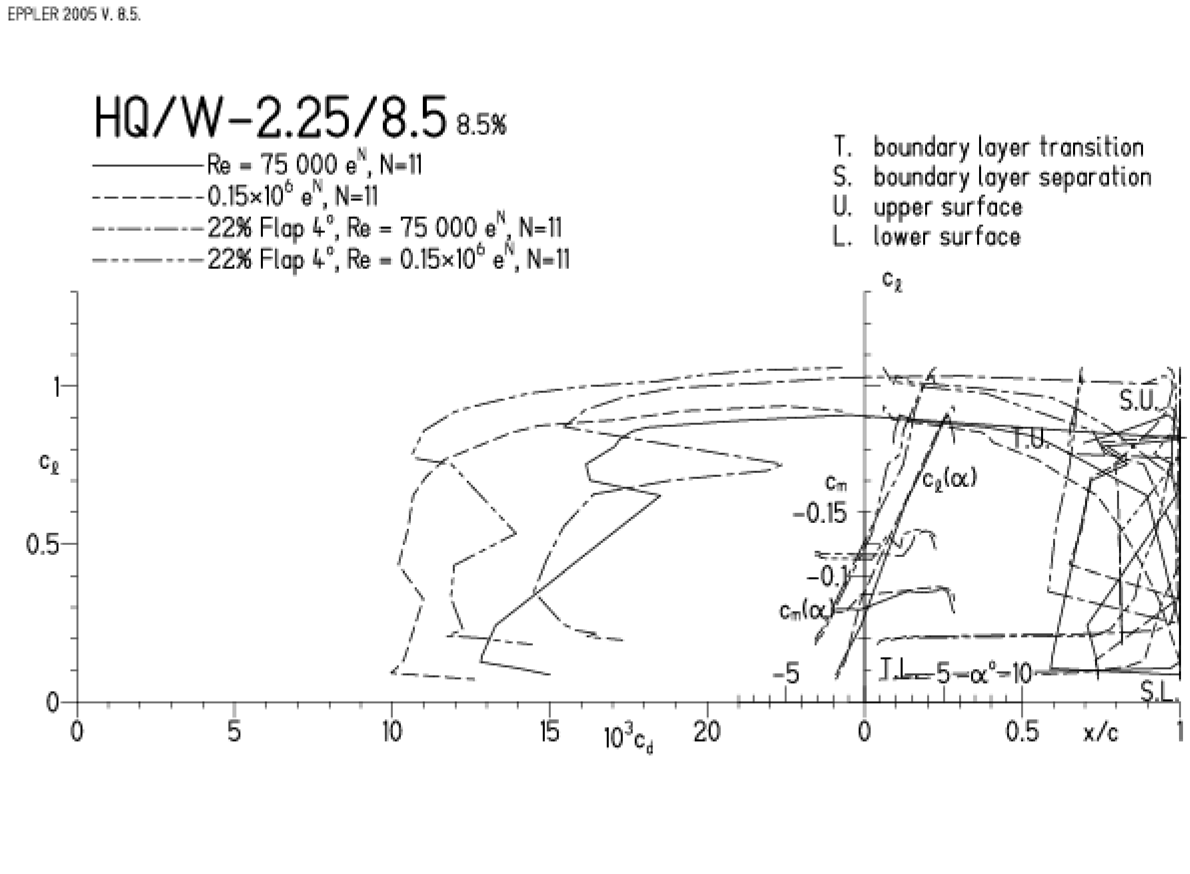
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





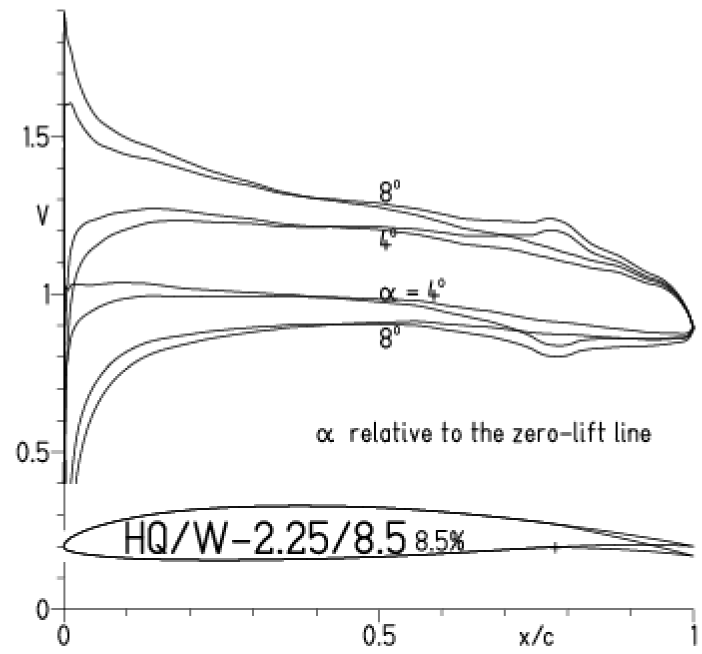
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



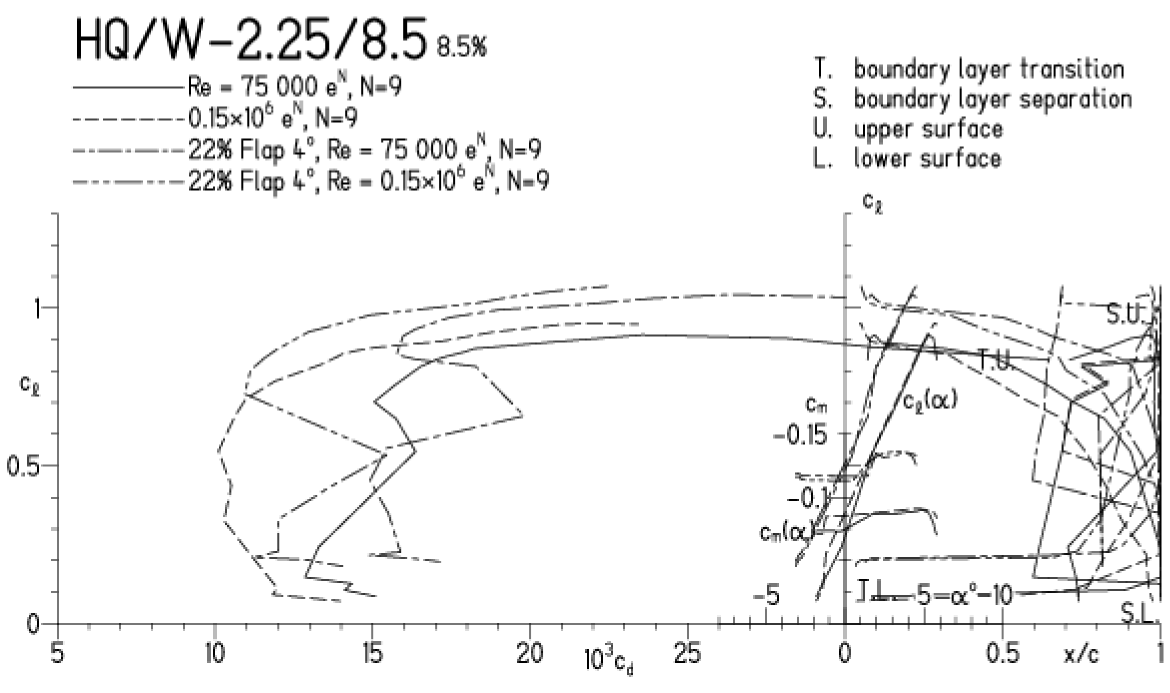


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

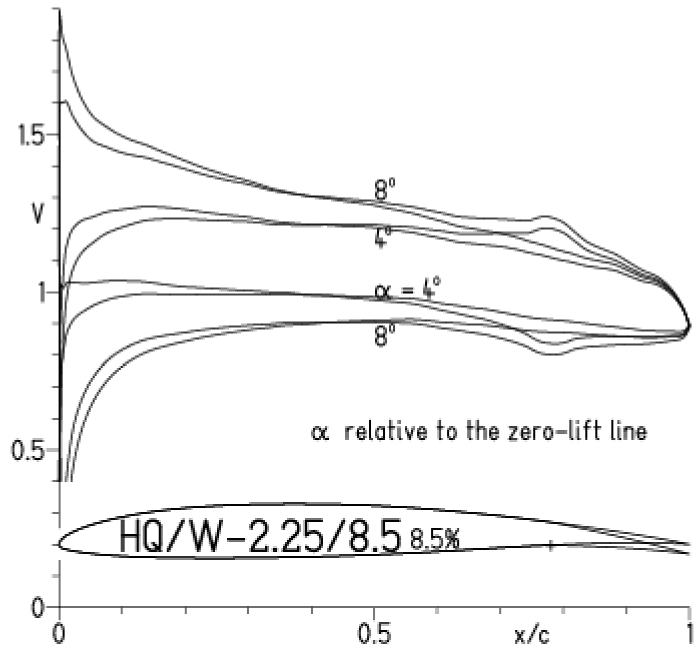


EPPLER 2005 V.

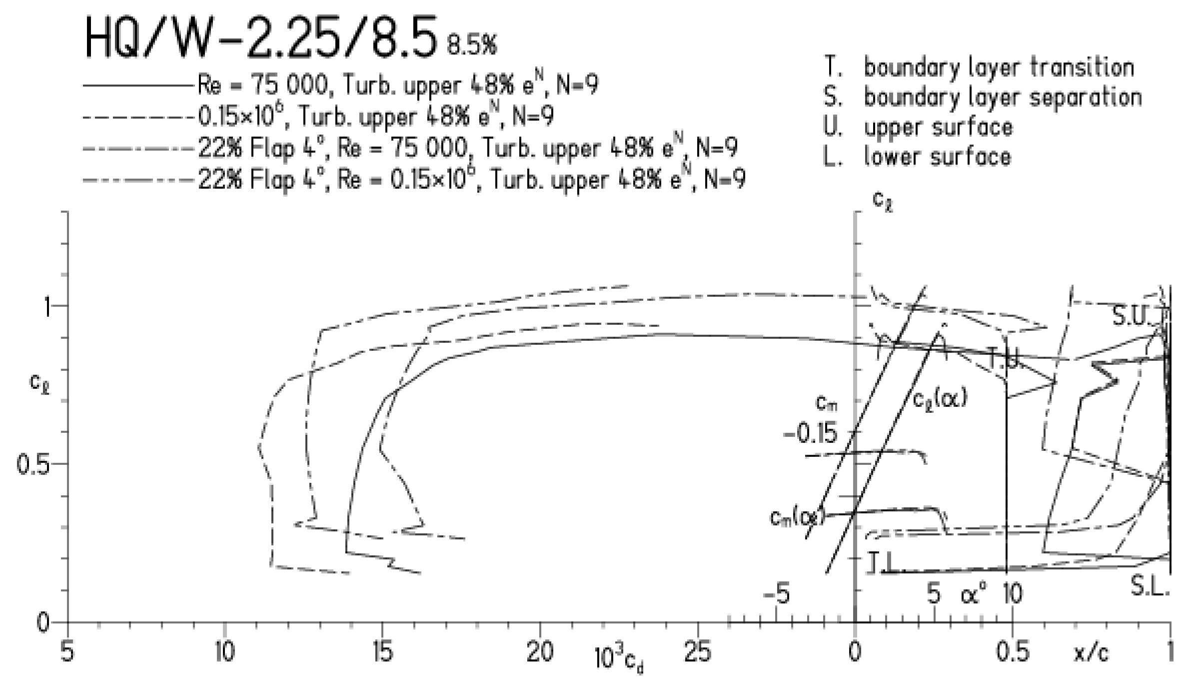


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

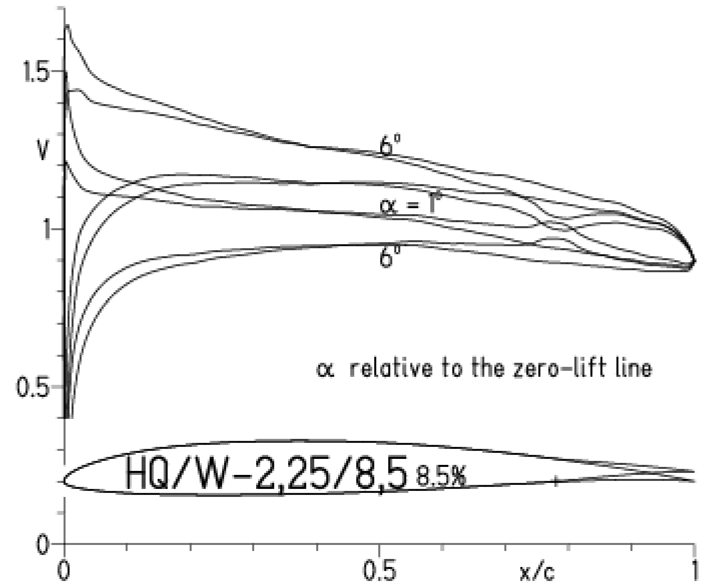


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

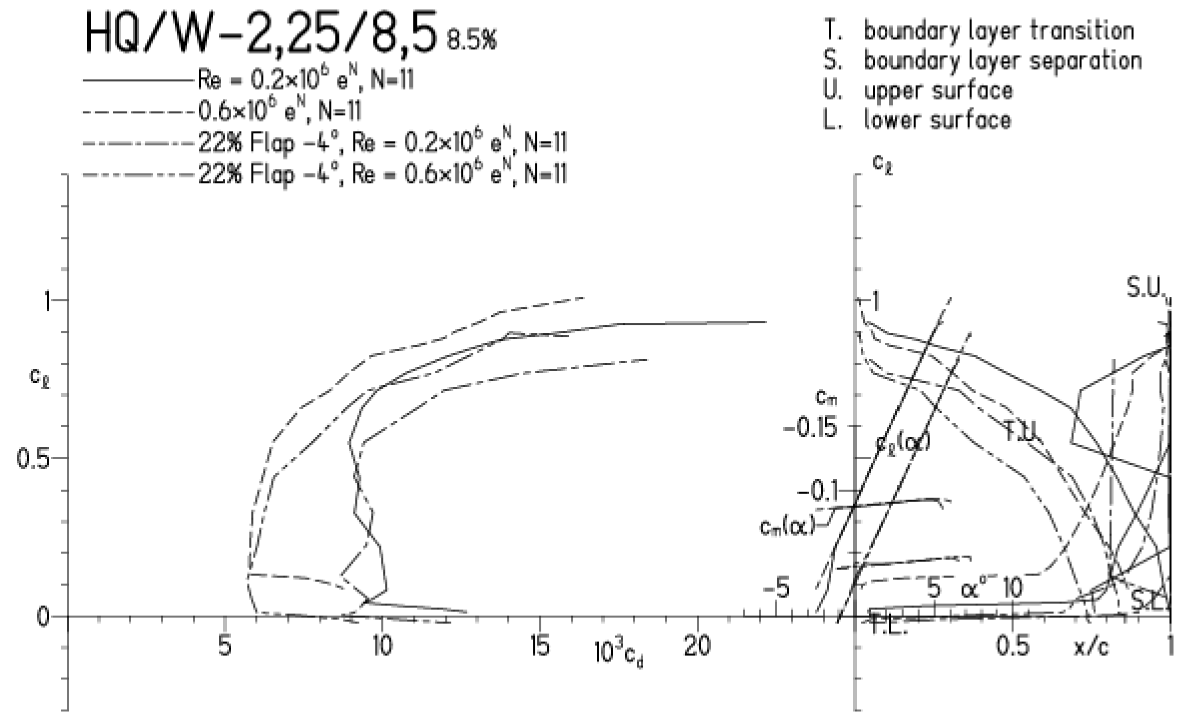


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

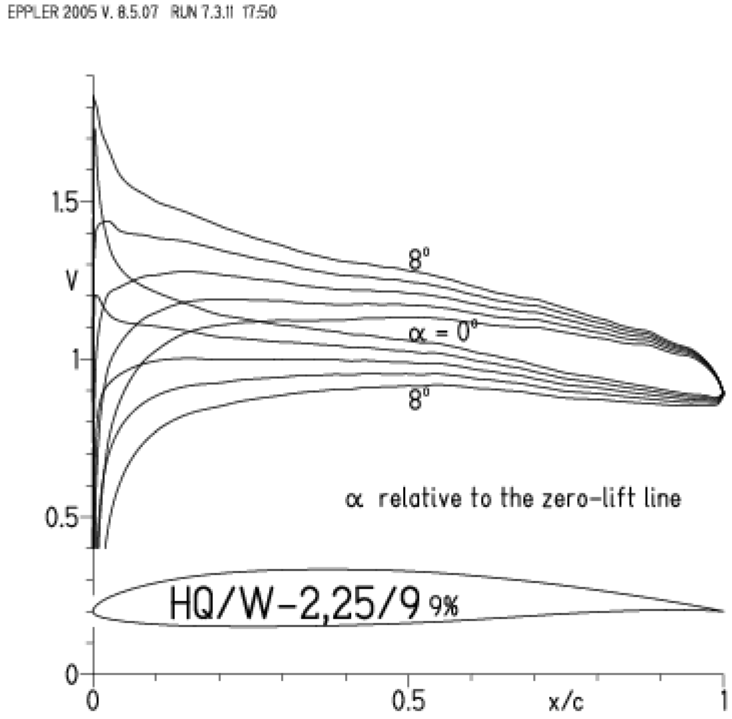
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

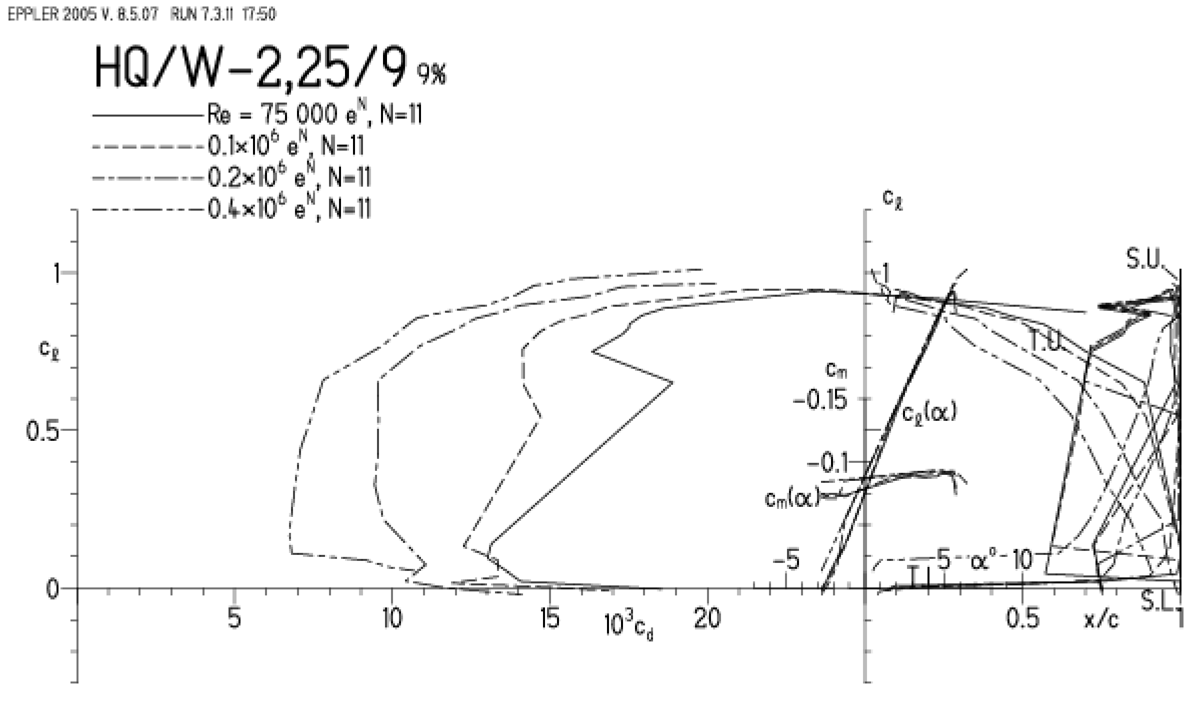


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

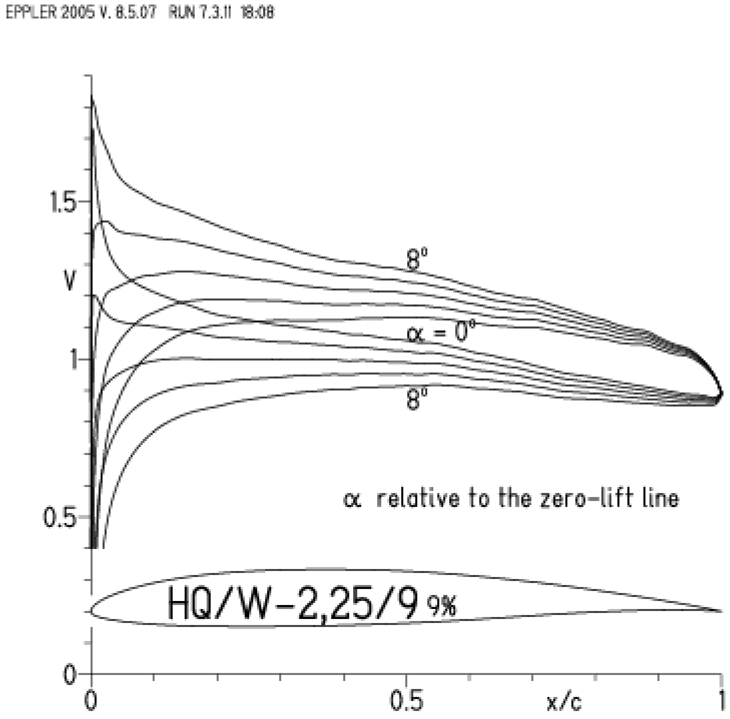


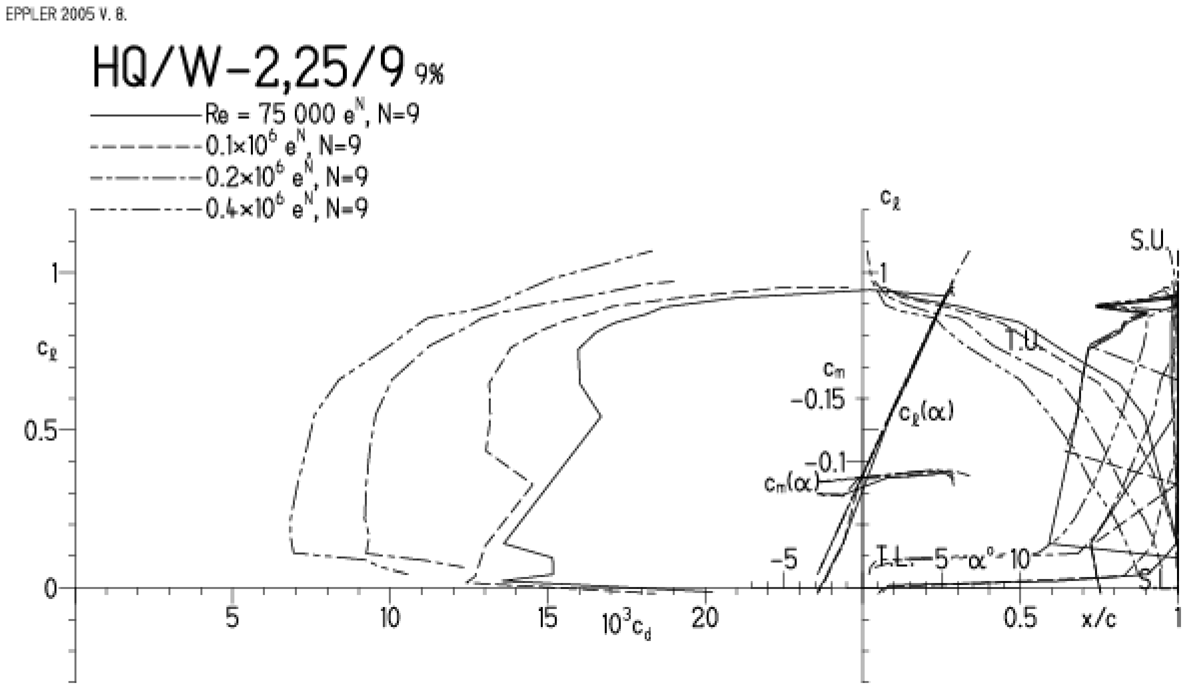
<u>HQ/W-2,25/9</u>, N=11





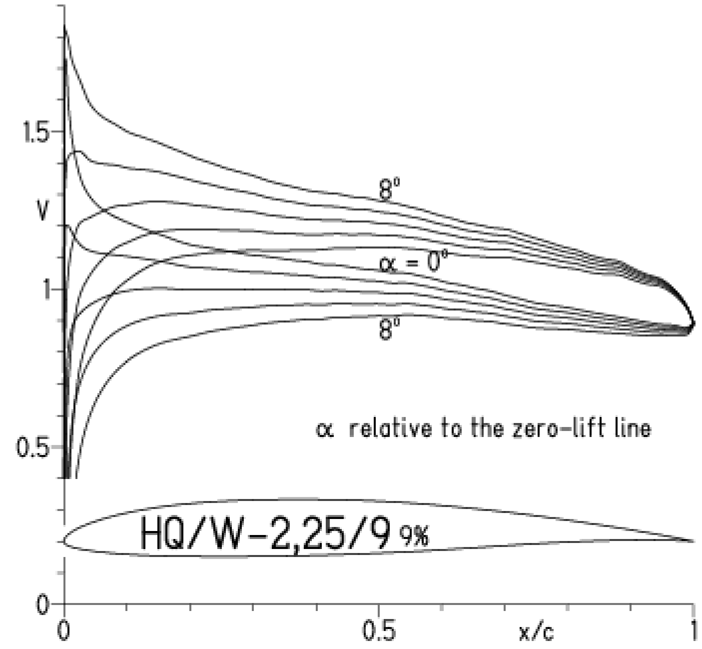
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

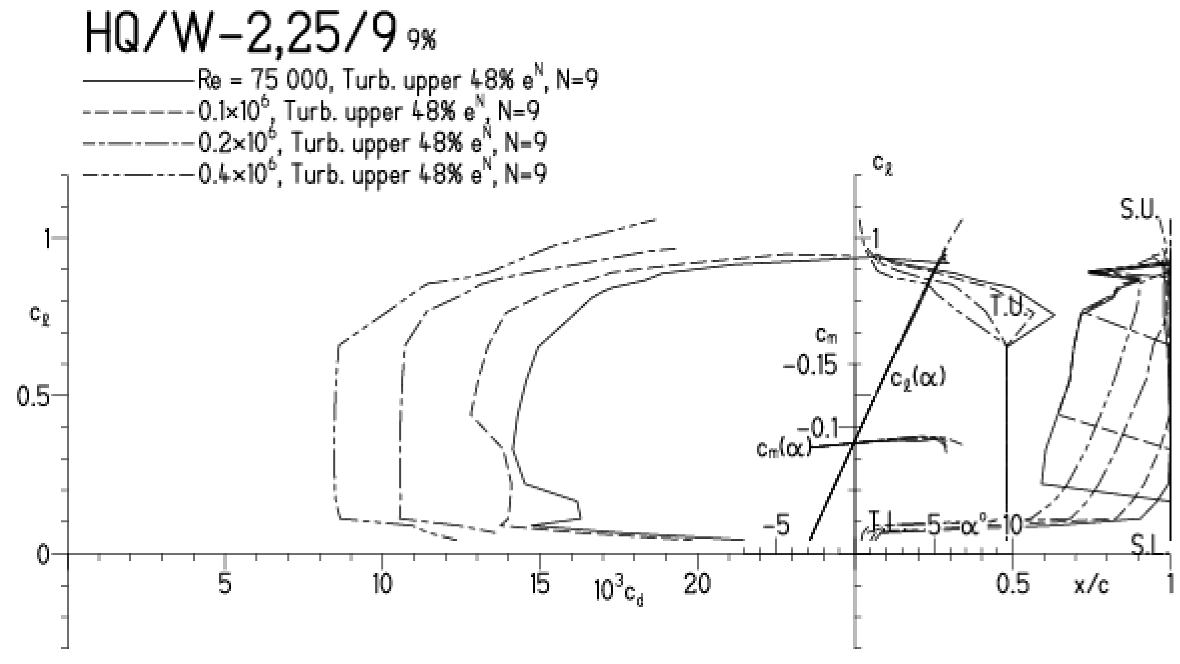

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
$10^3 c_d$
20
c_m
−0.15
−0.1
$c_m(\alpha)$
$c_\ell(\alpha)$
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

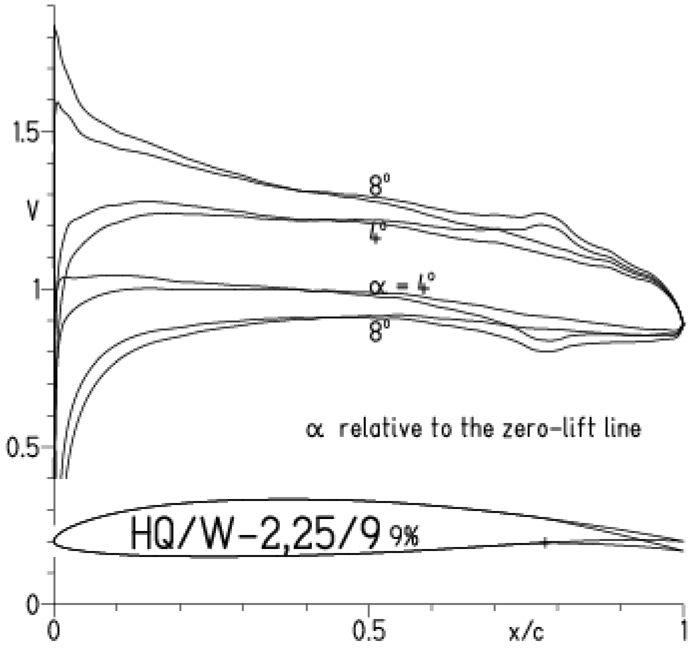


EPPLER 2005 V. 8.5.07 RUN 7

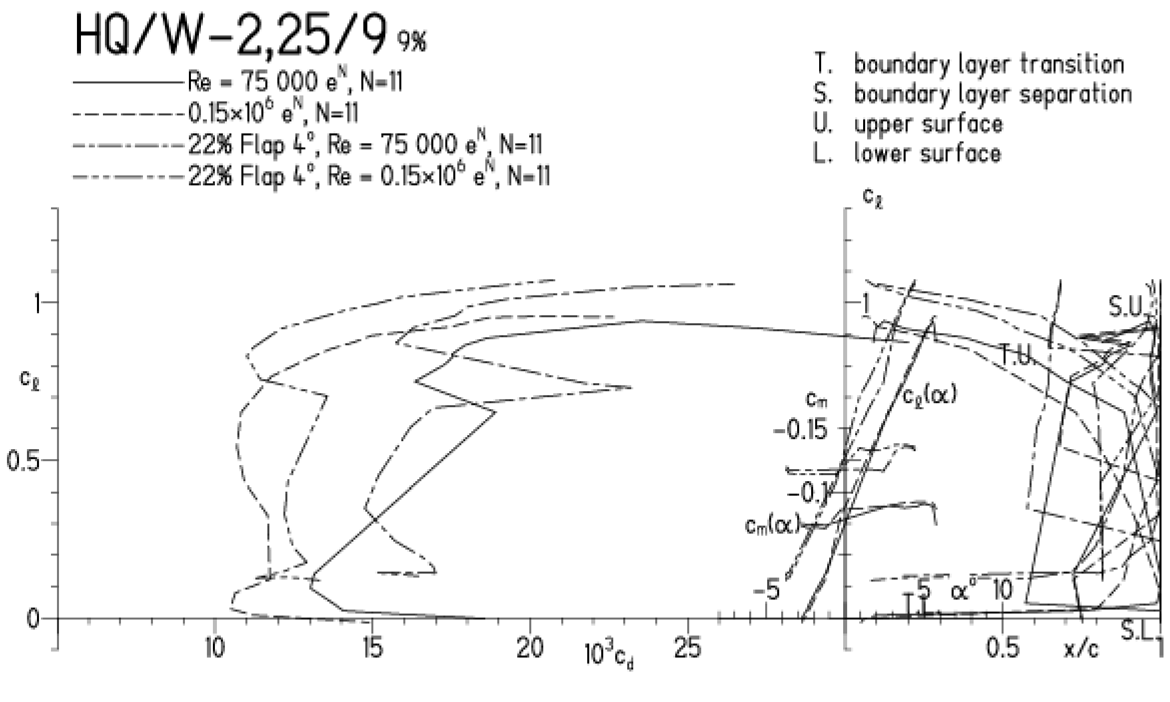


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

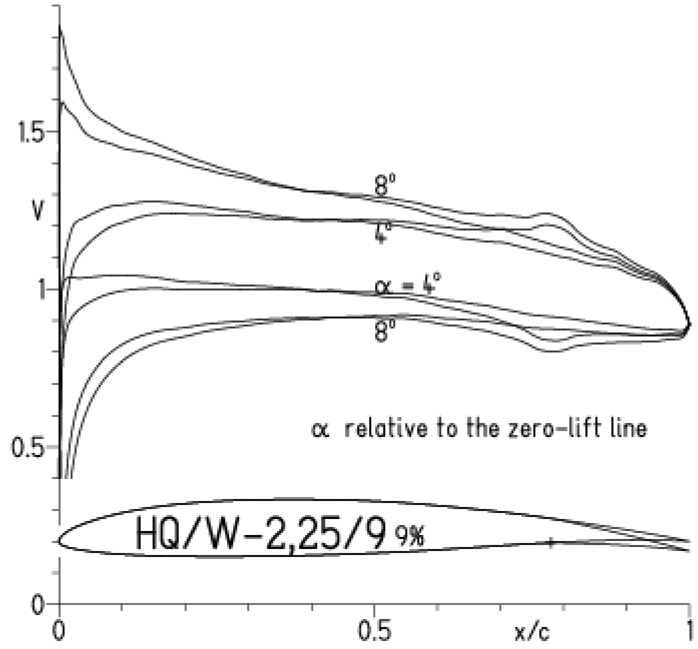


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

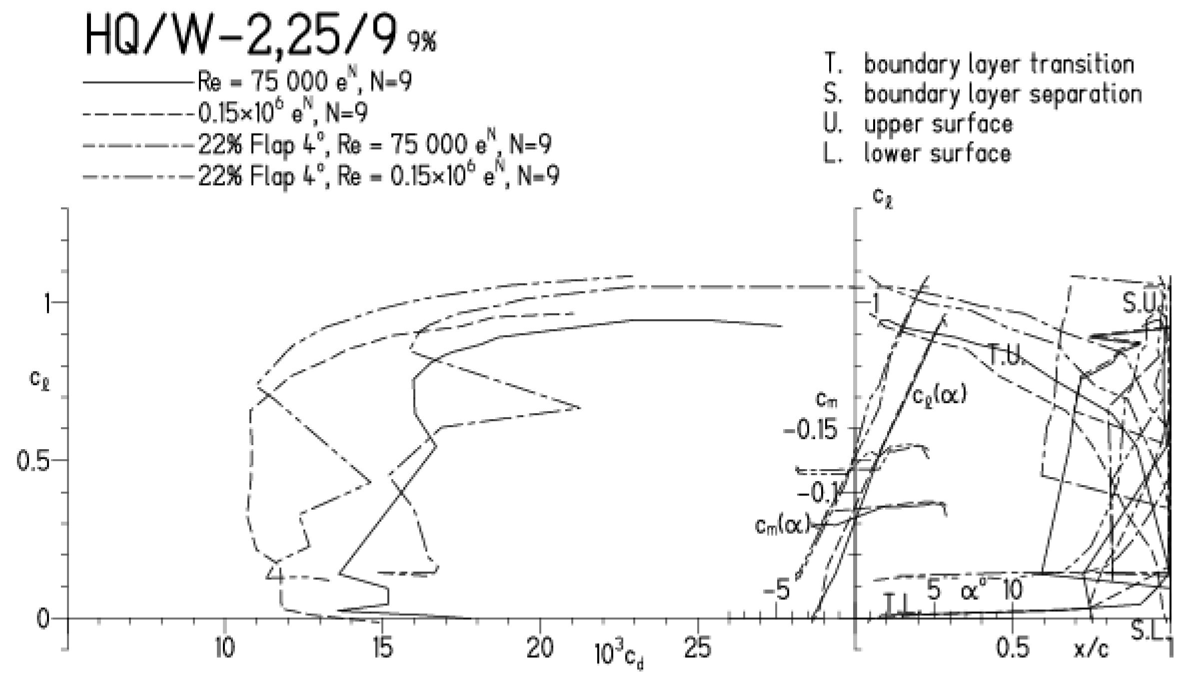


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

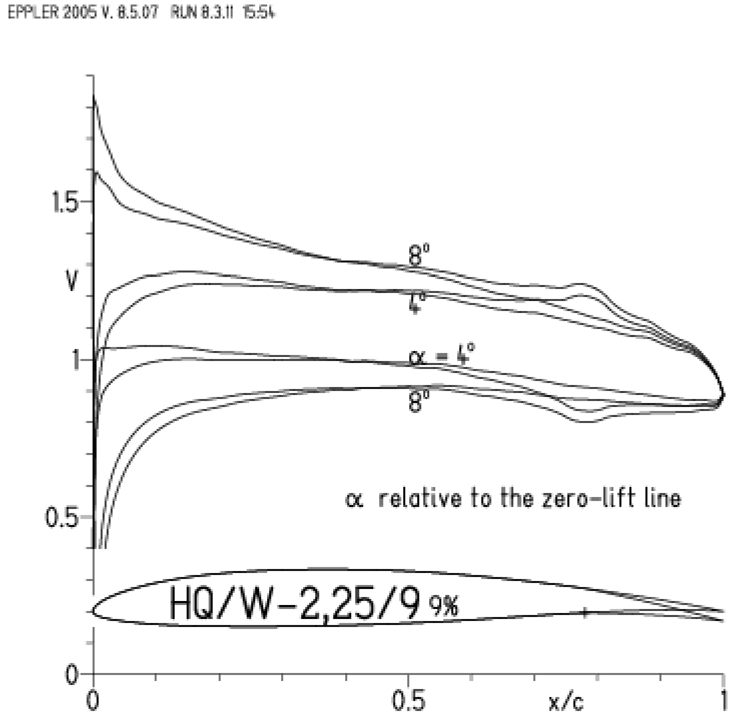
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

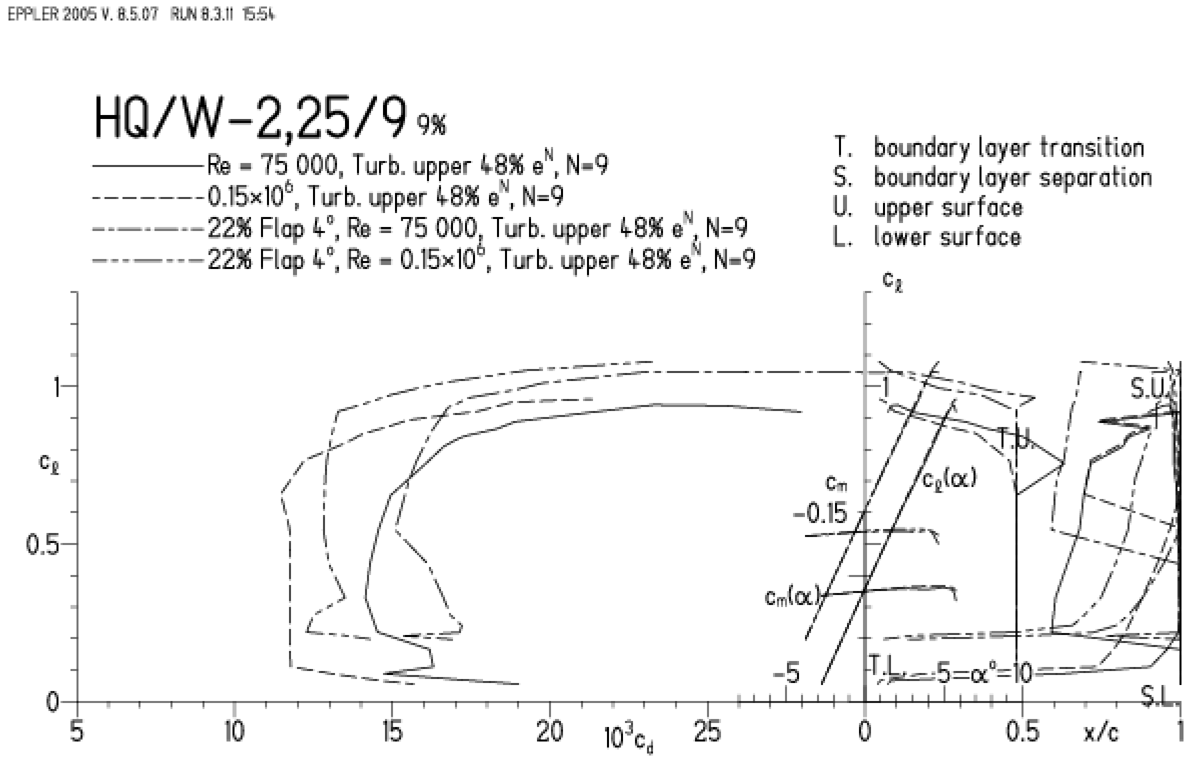


EPPLER 2005 V. 8.5.07 RUN 8.3.1

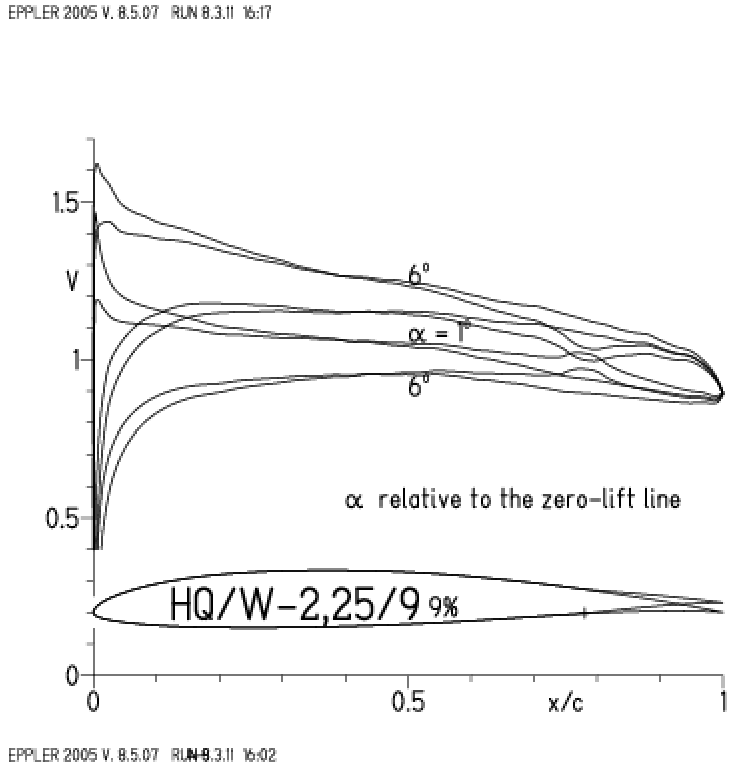


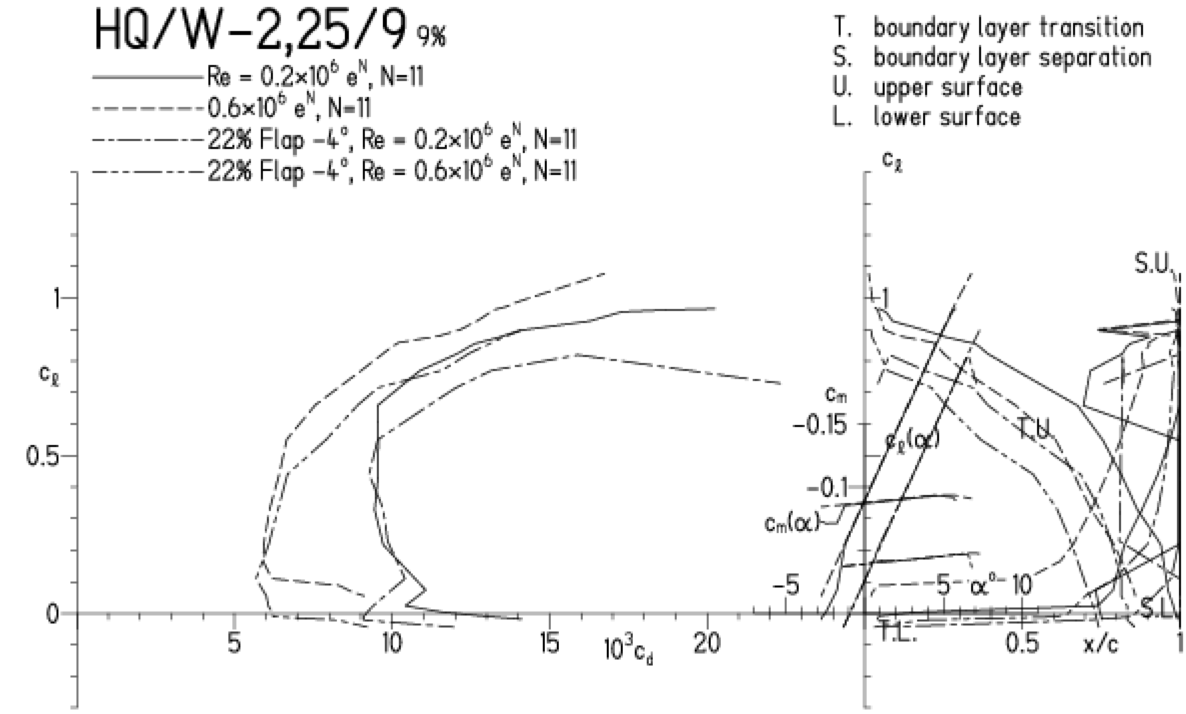
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





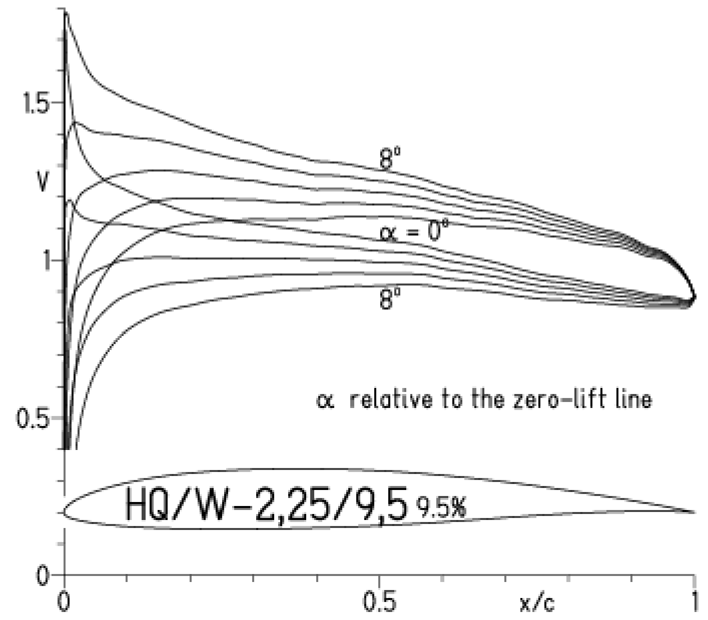
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



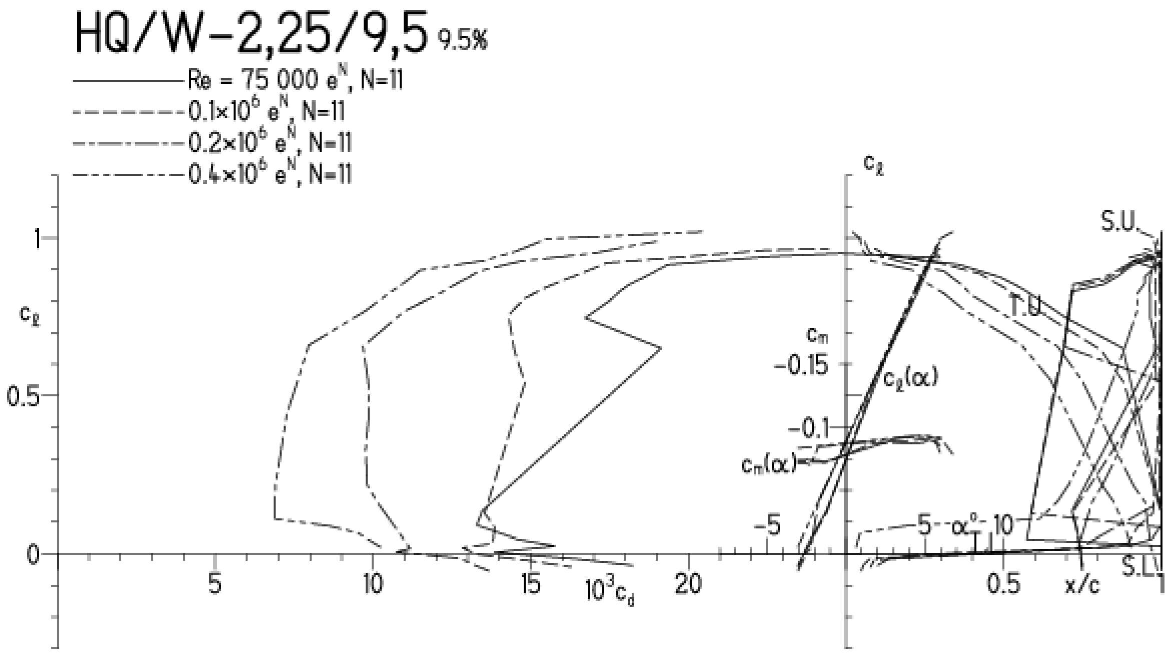


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

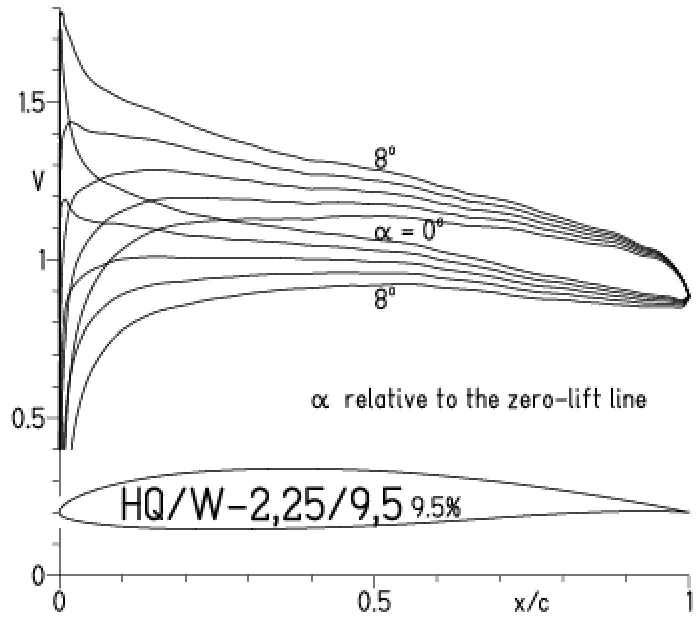


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

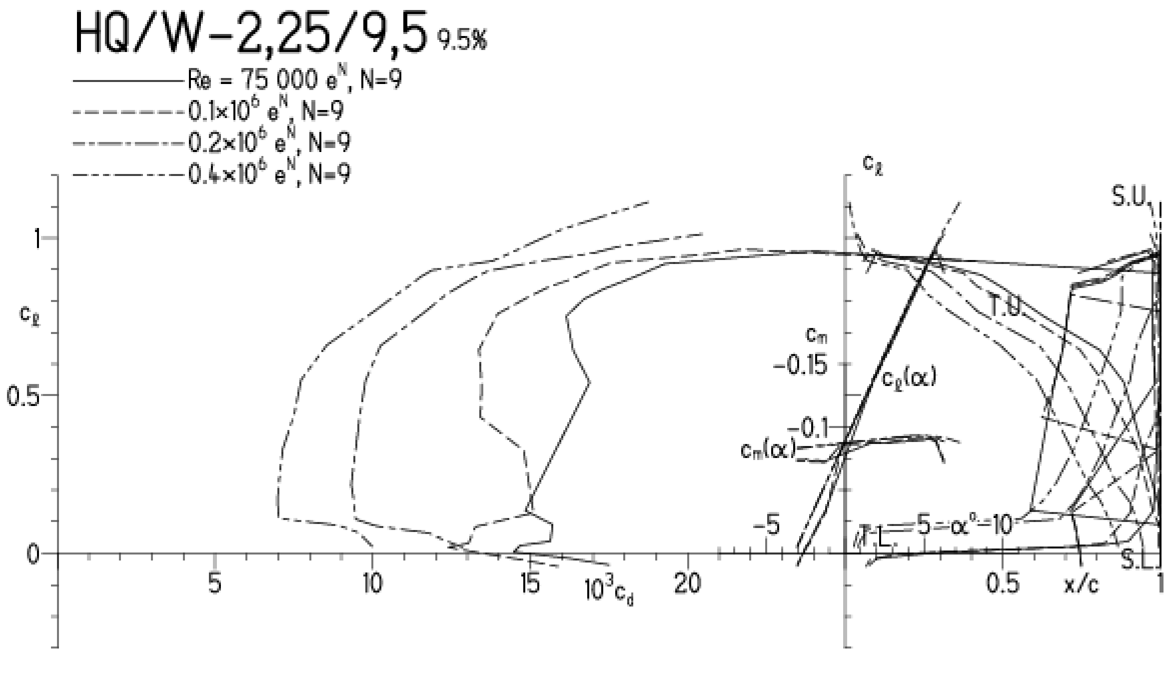


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

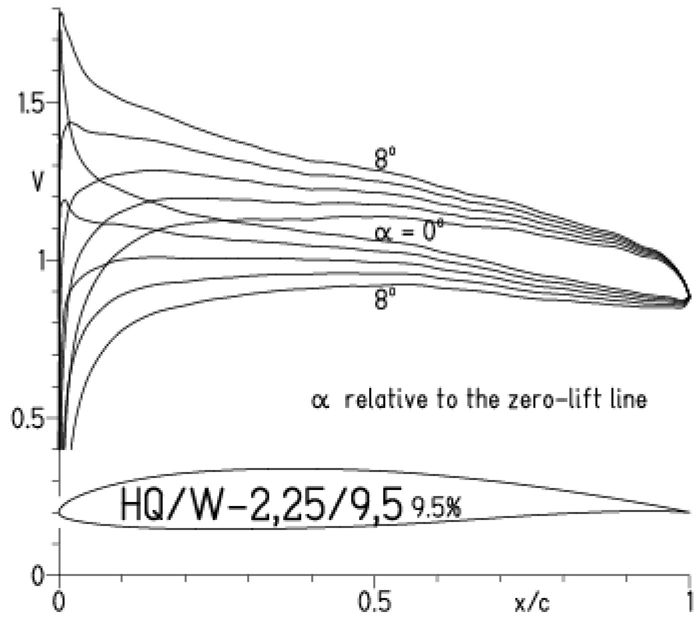


EPPLER 2005 V. 8.5.07 RUN 8.3.

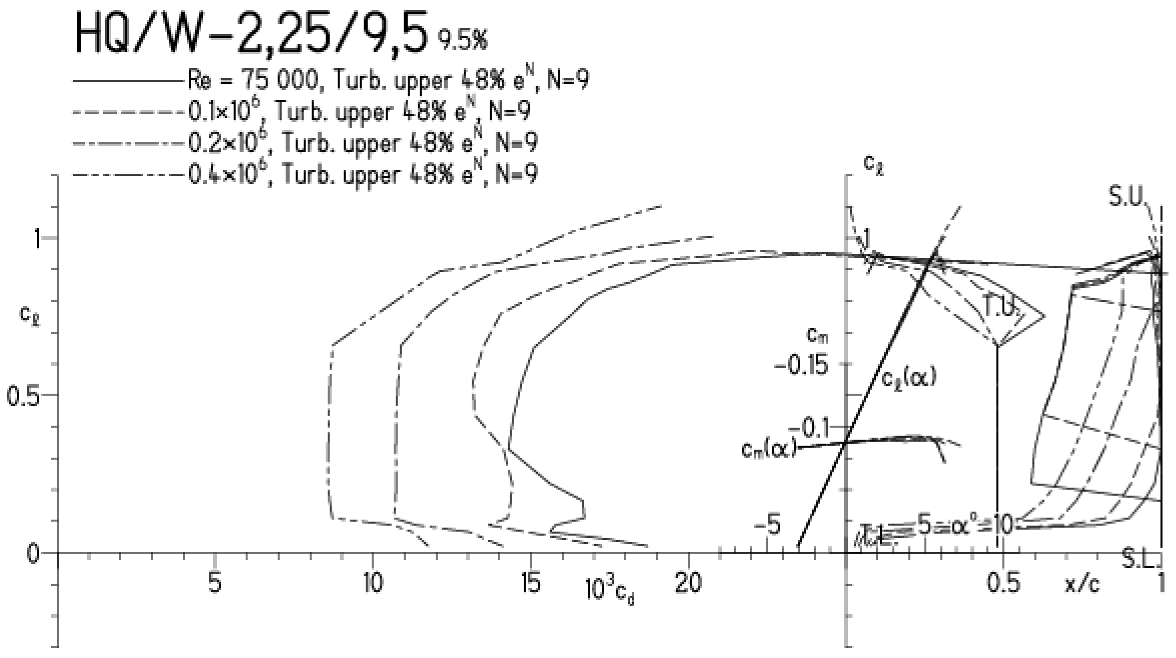


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

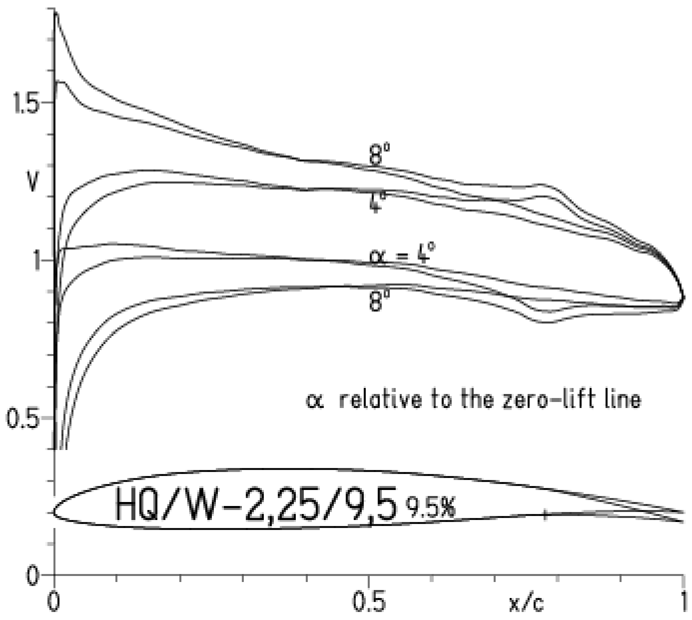


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

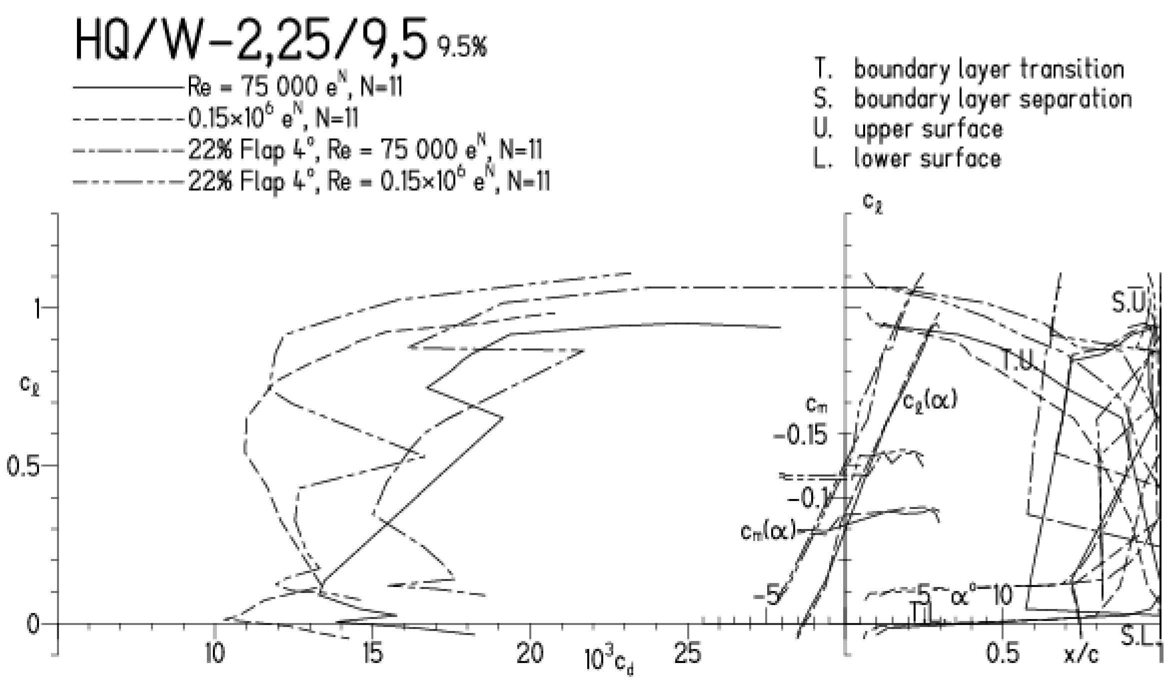


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

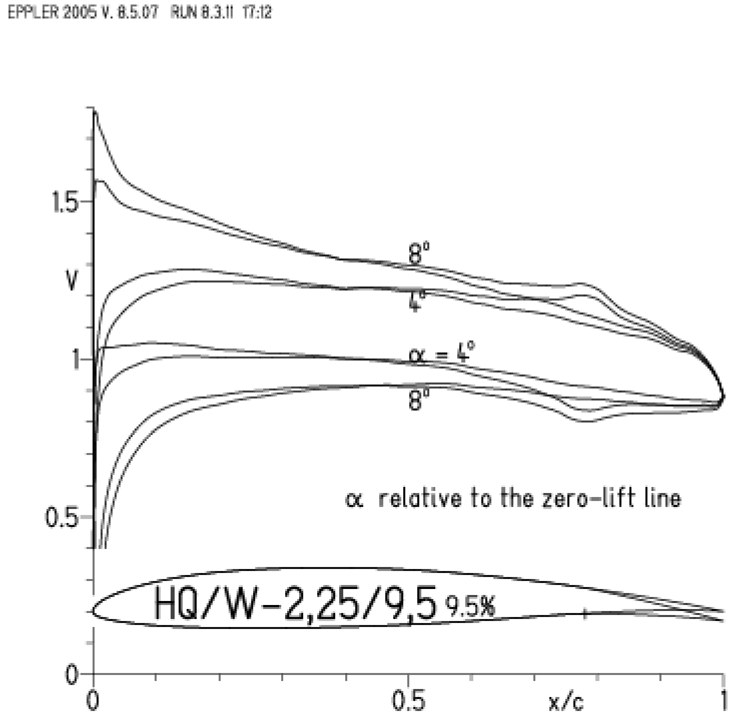
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

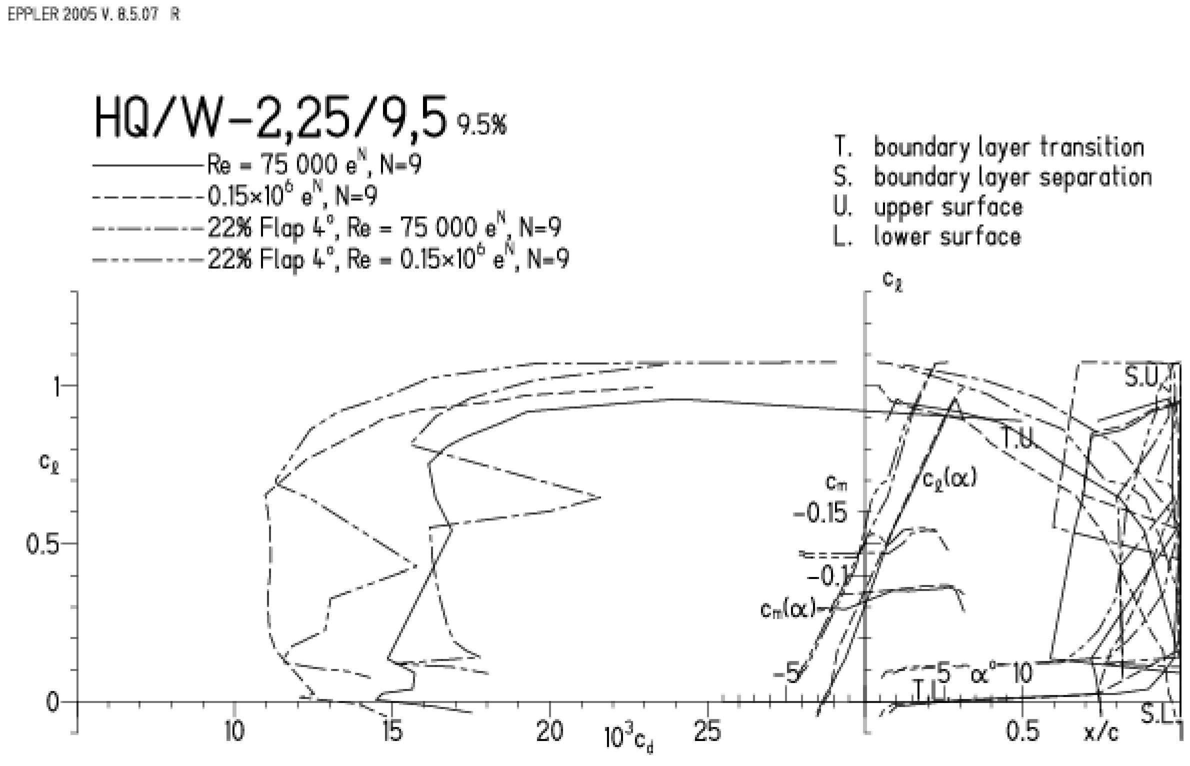


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

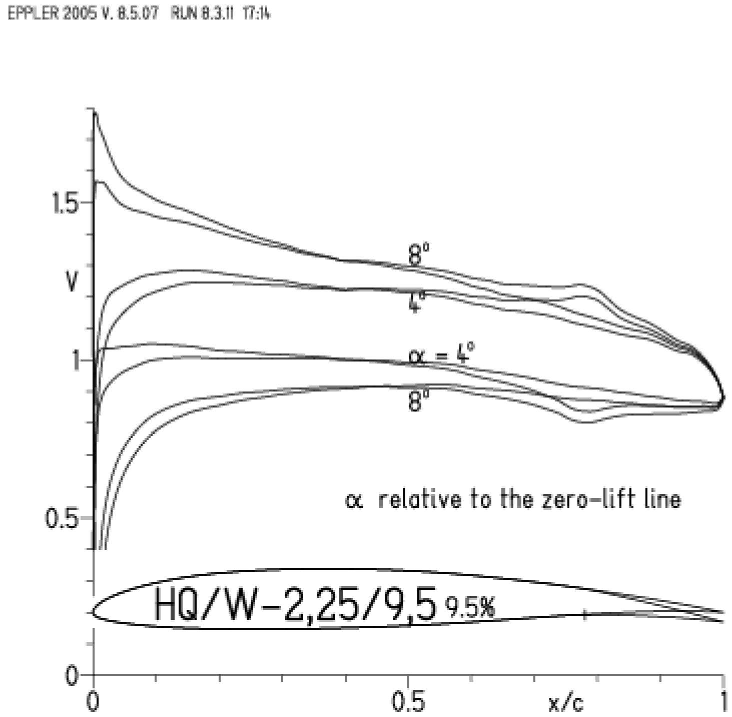


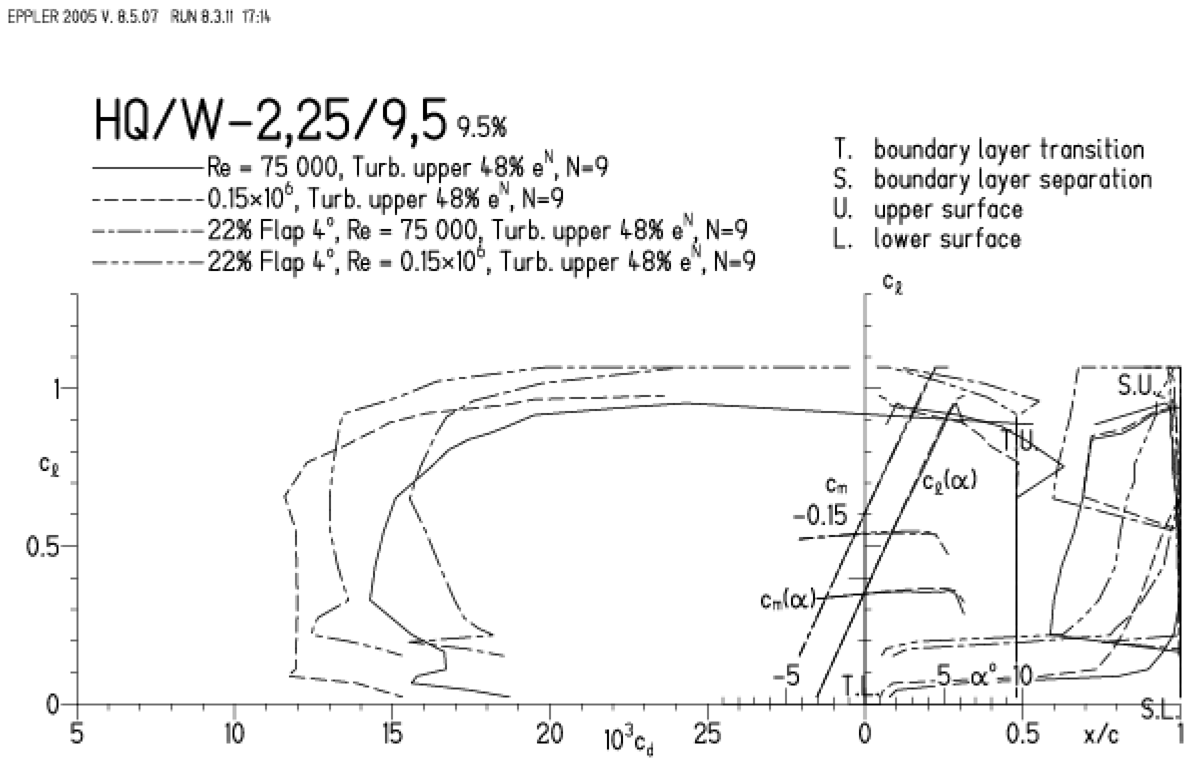
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag





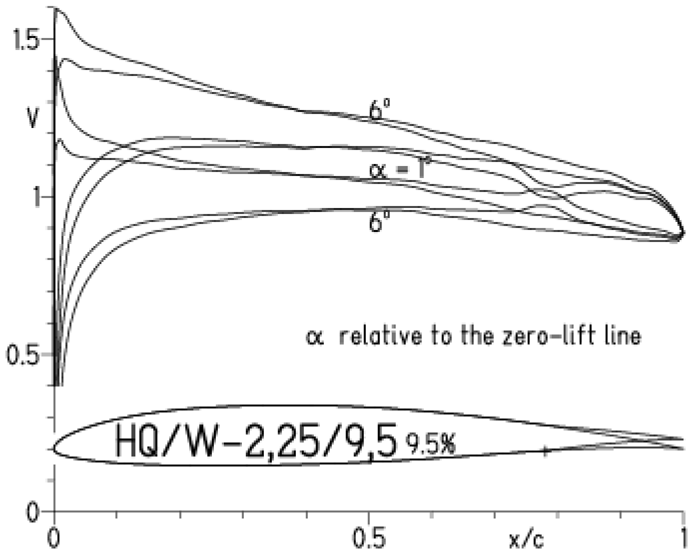
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



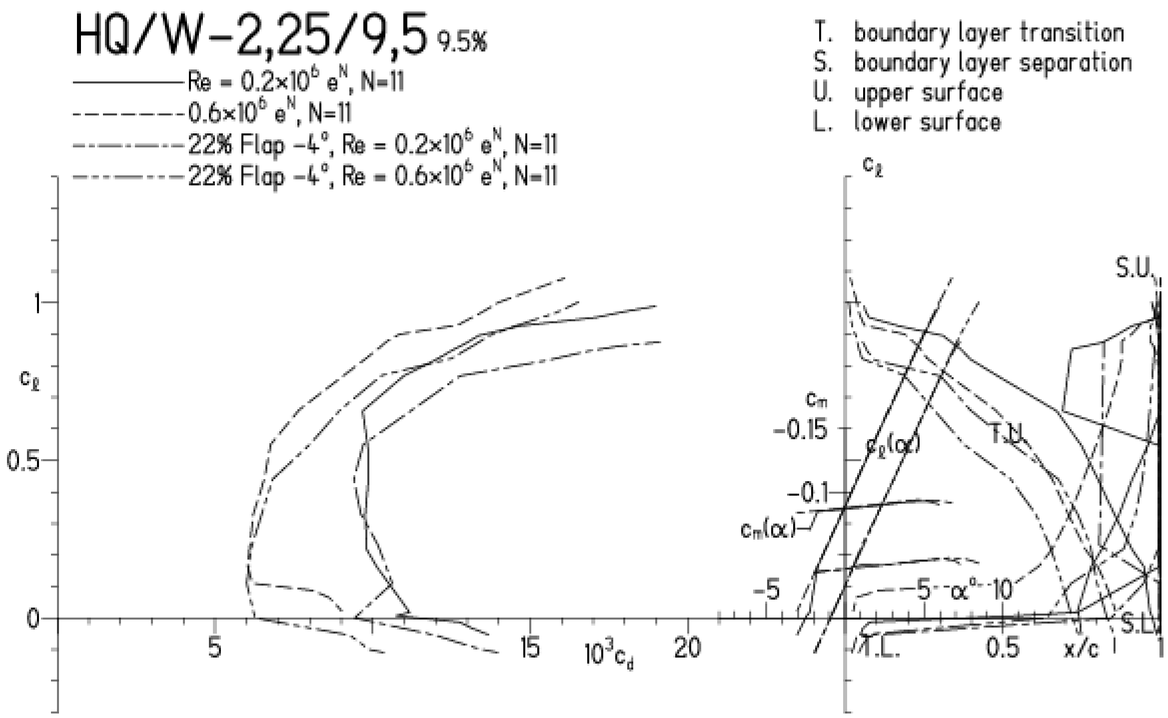


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

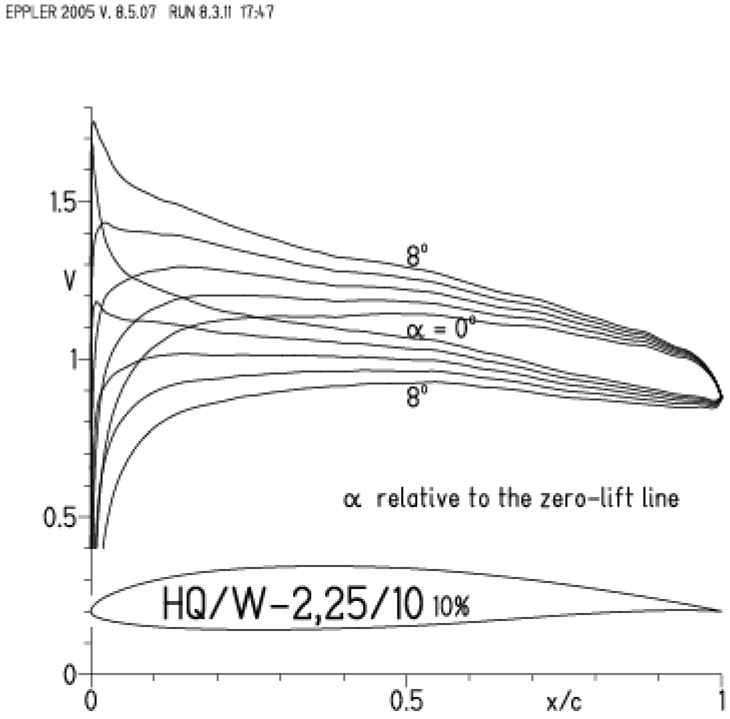
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

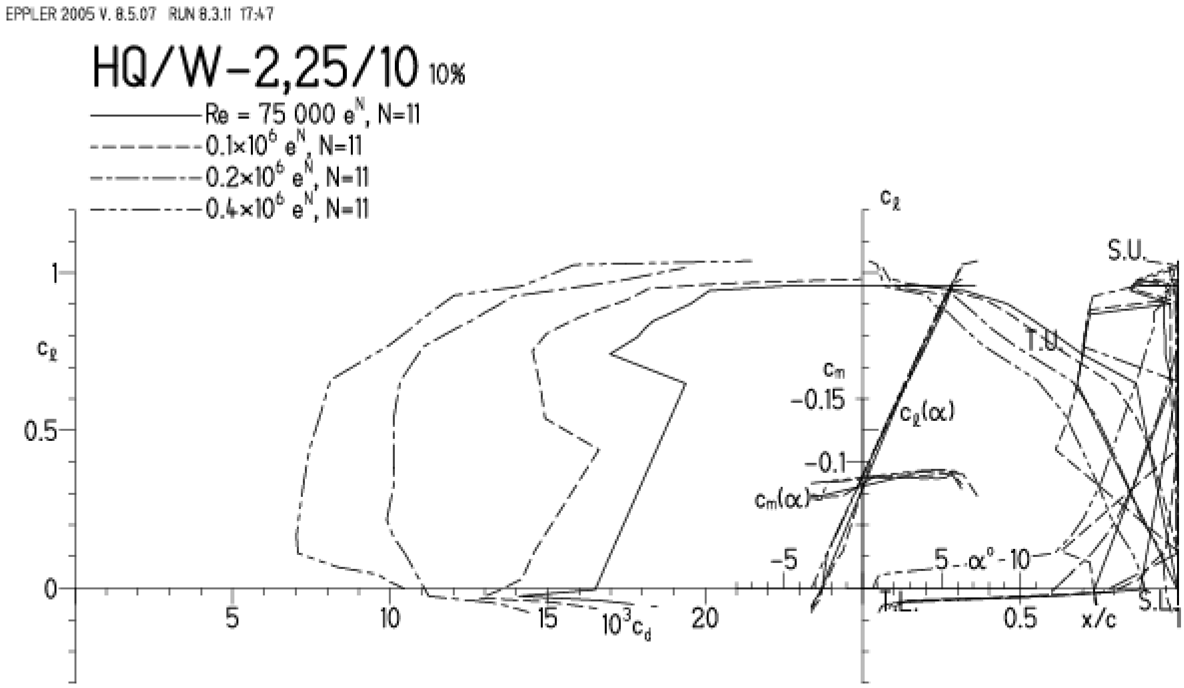


EPPLER 2005 V.



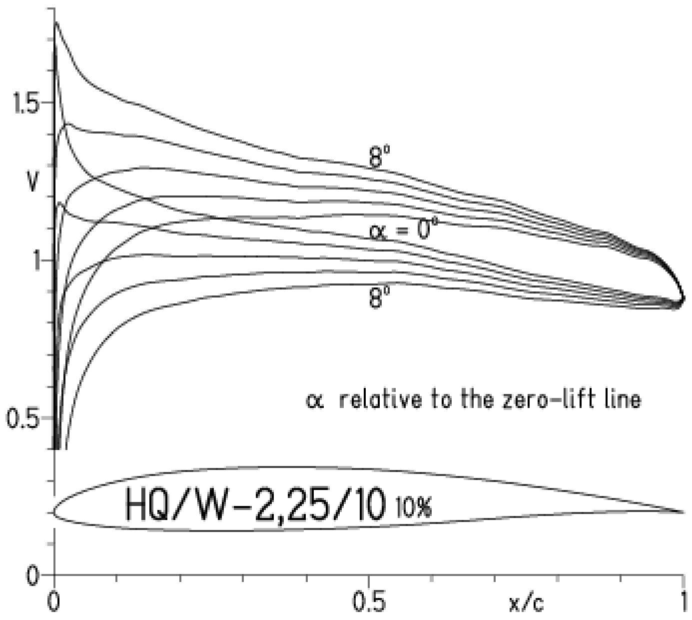
HQ/W-2,25/10, N=11



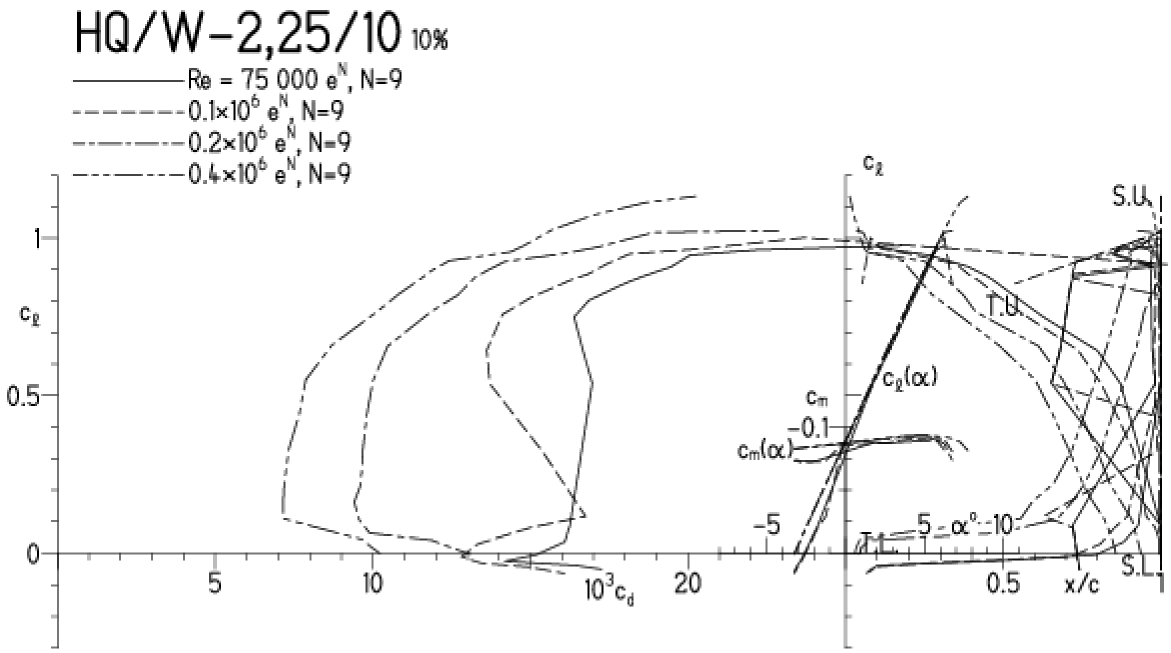


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

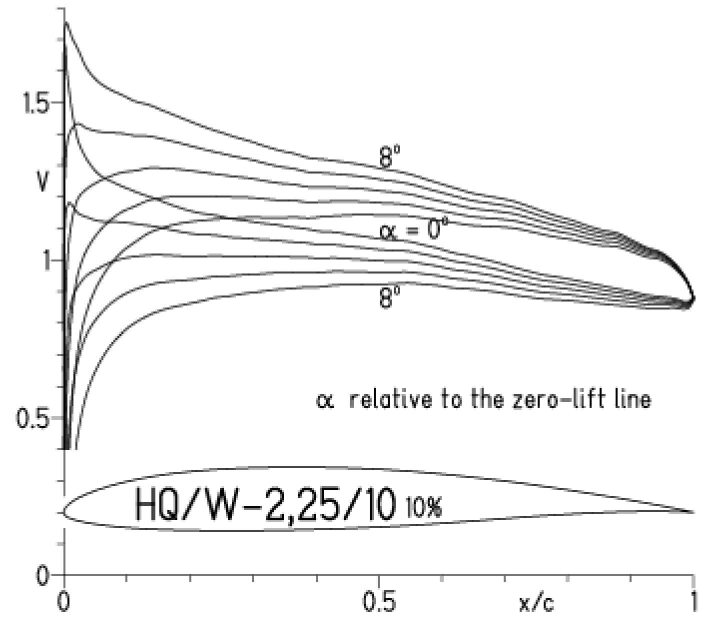


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

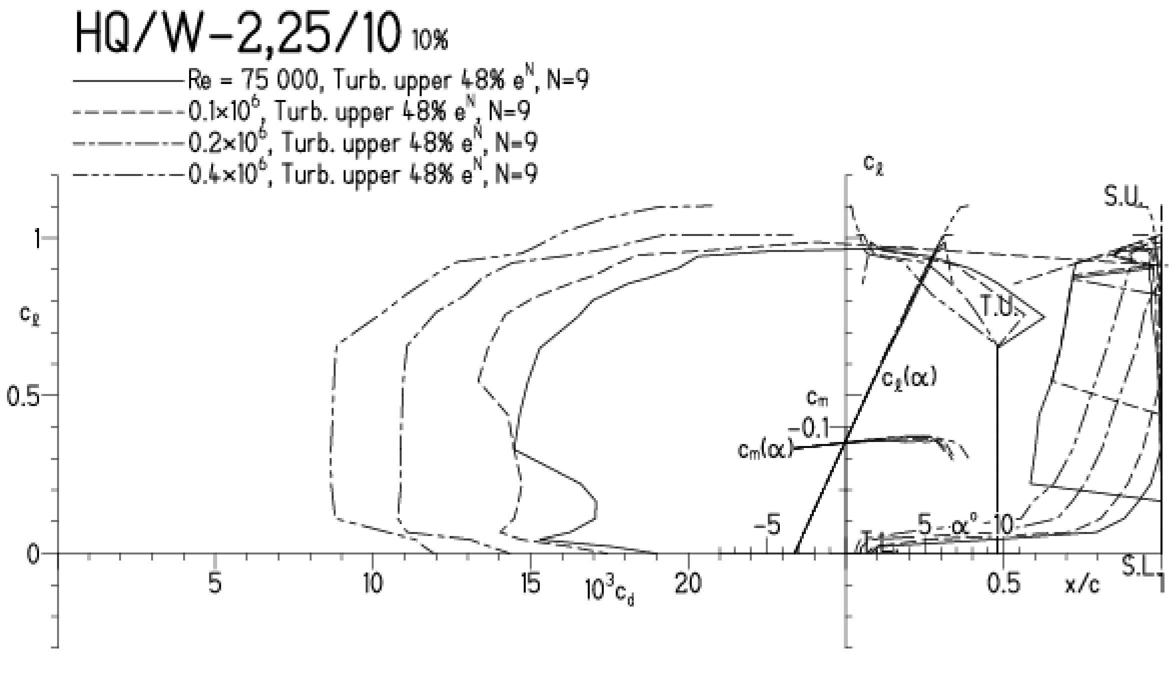


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

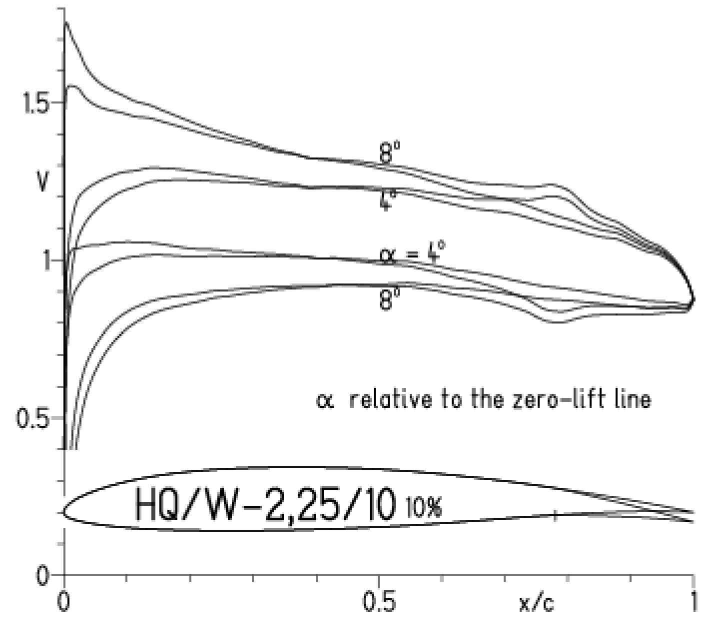


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

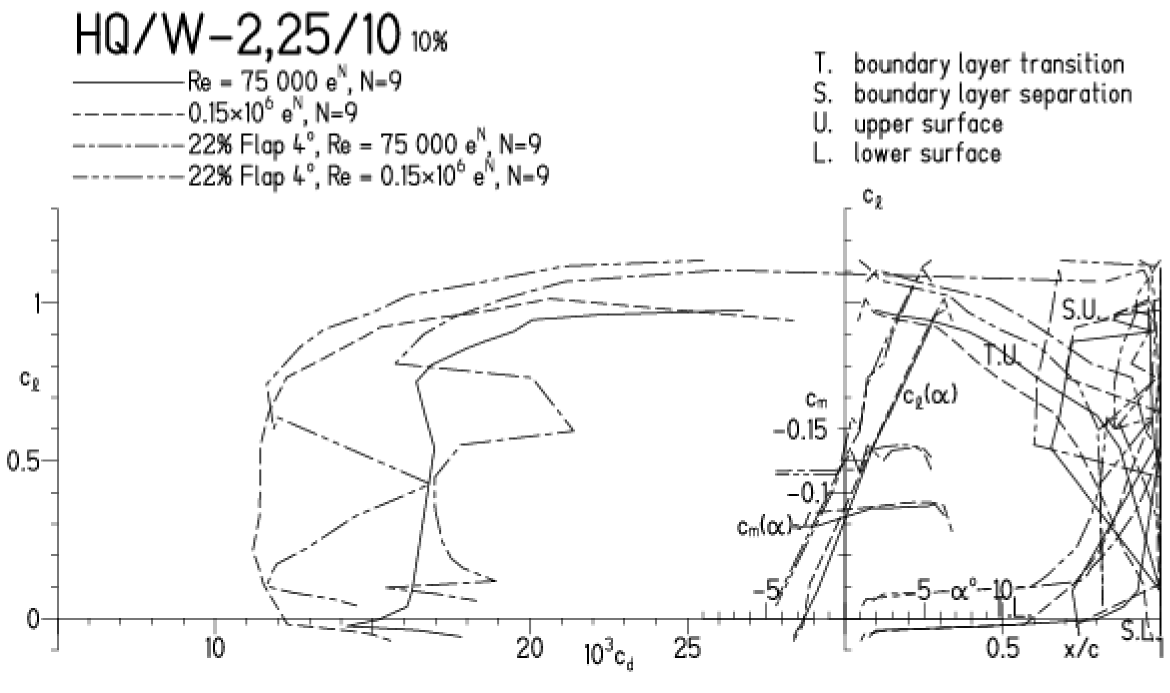


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

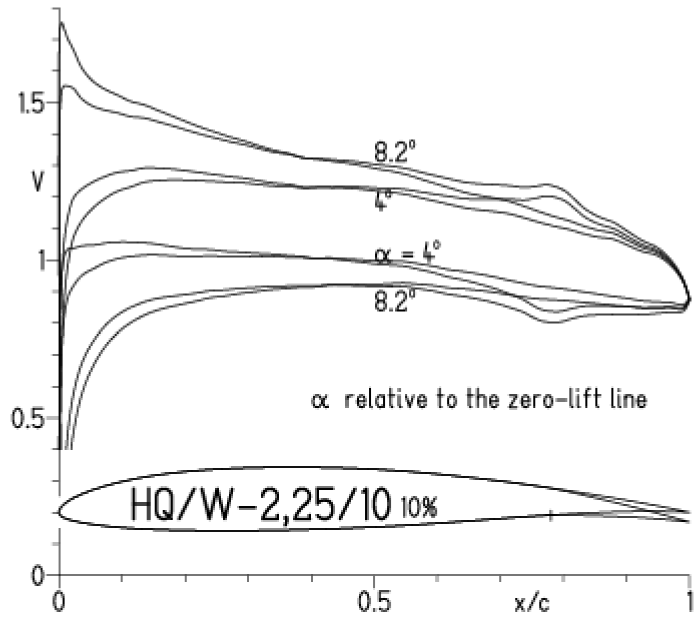


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

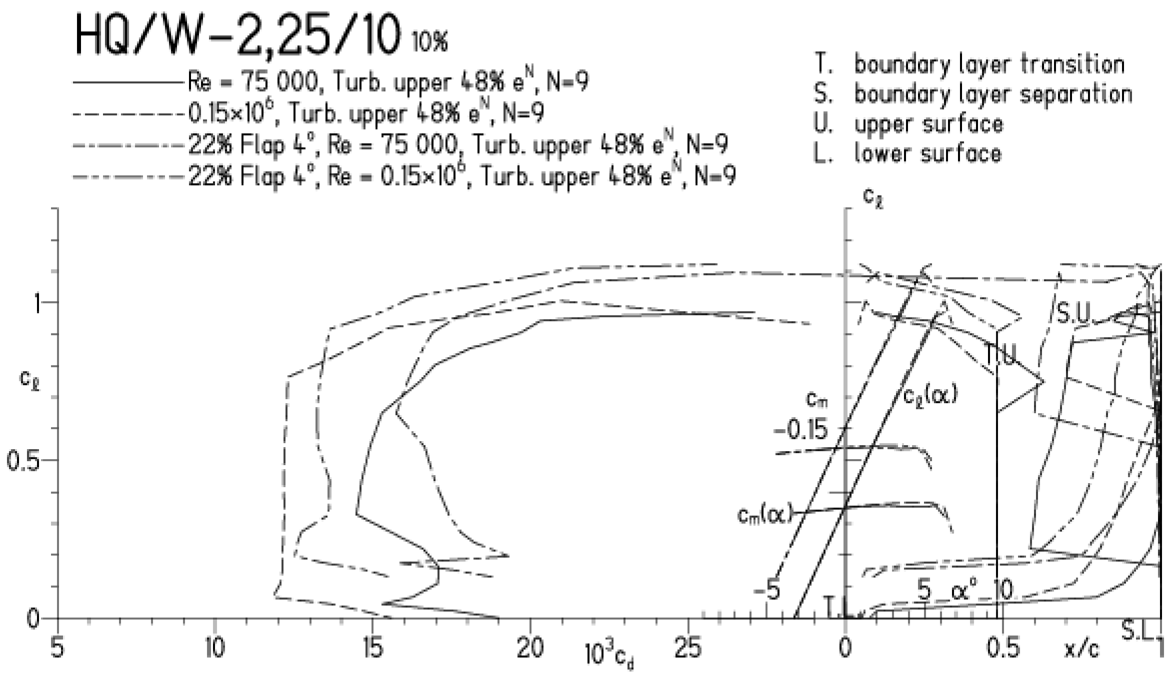


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

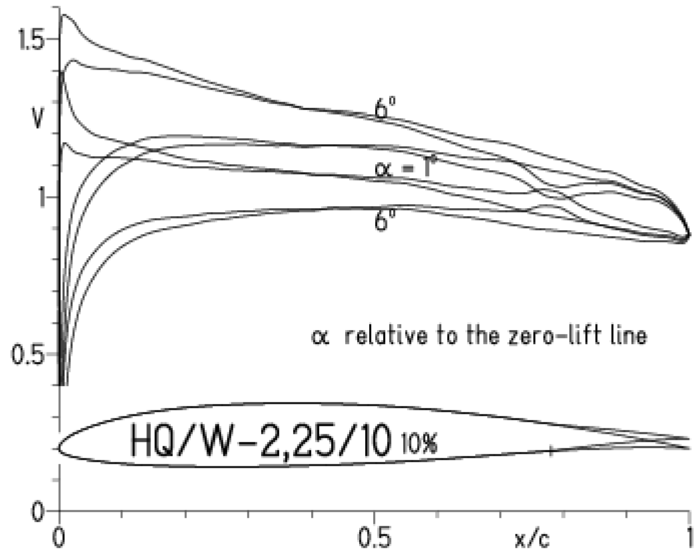


EPPLER 2005 V. 8.5.07 RUN 8.3

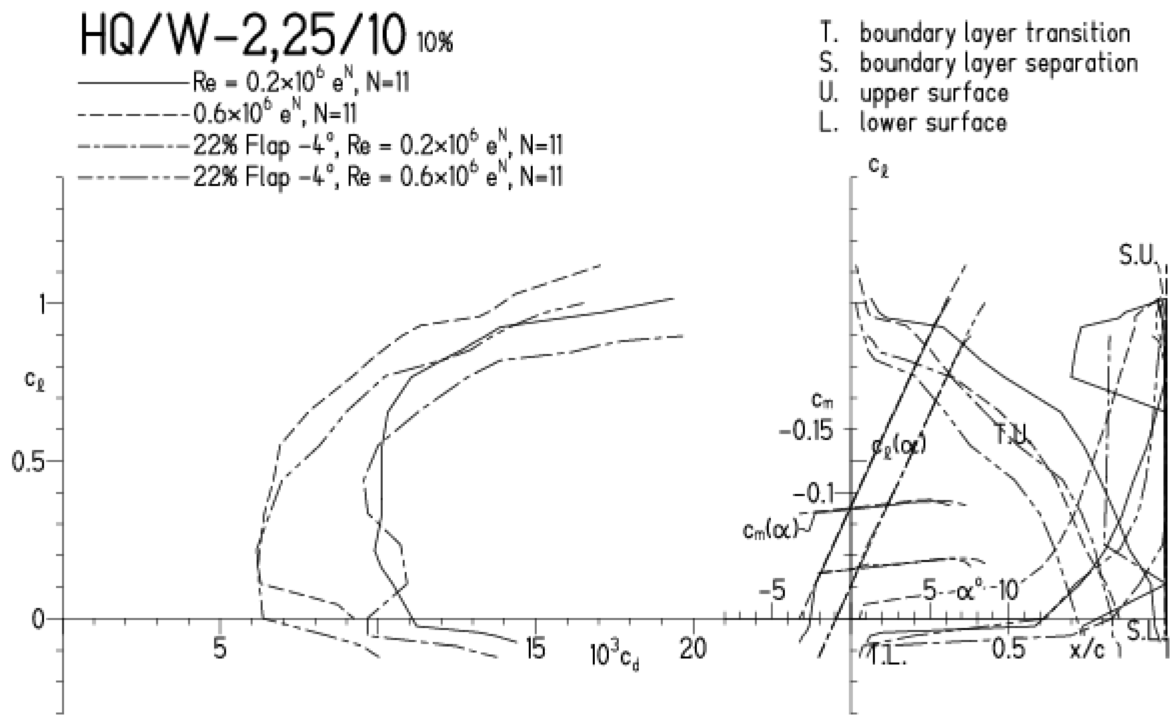


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

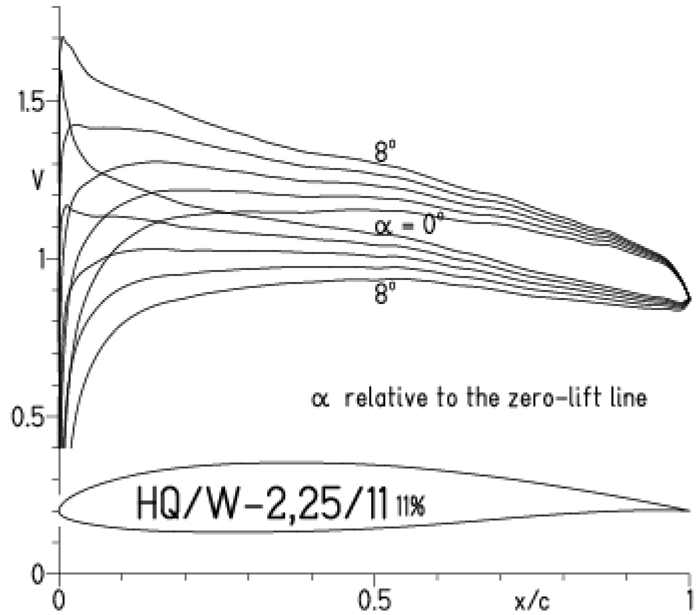


EPPLER 2005 V. 8.5.07 RUN

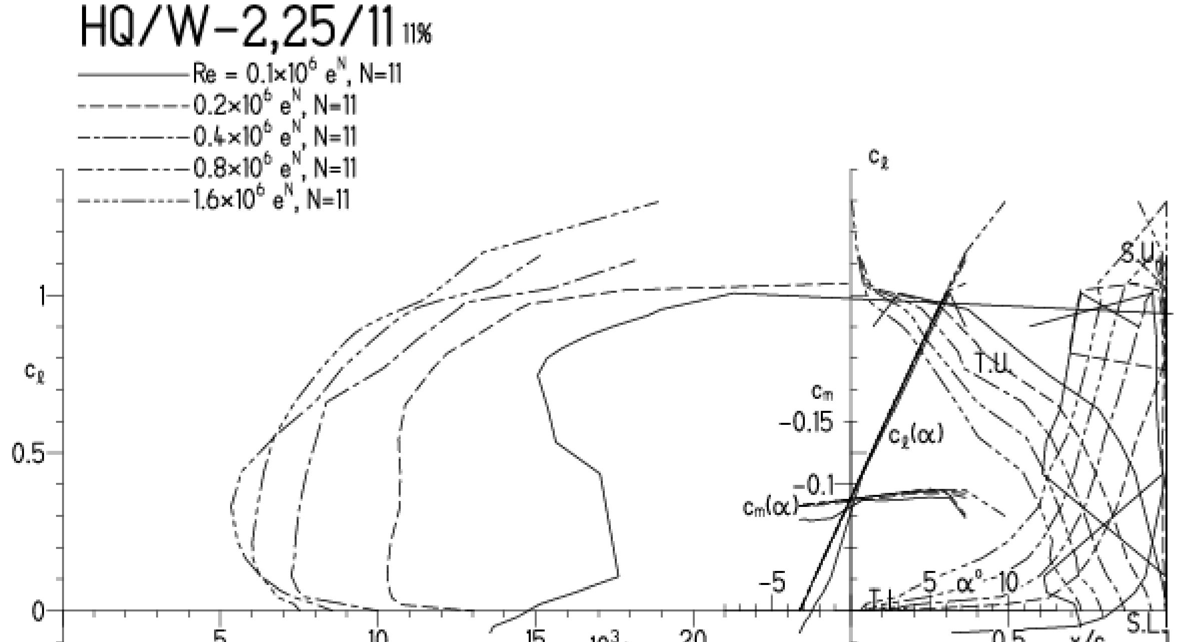


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

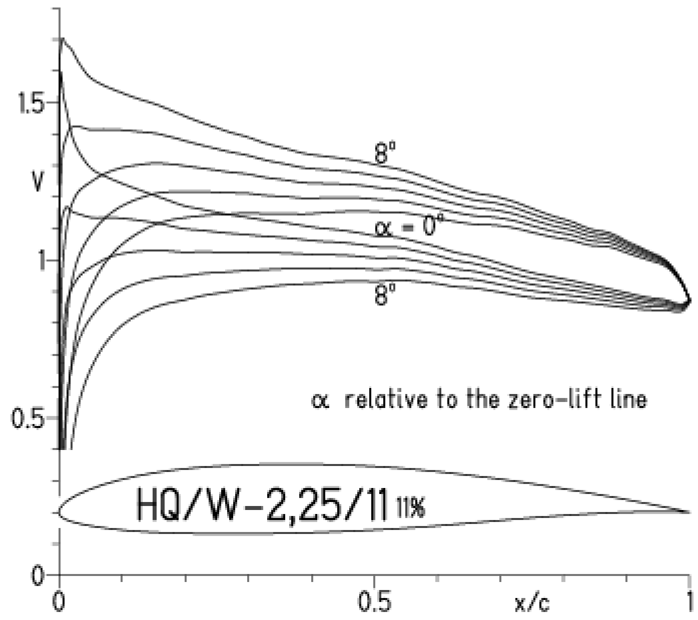


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

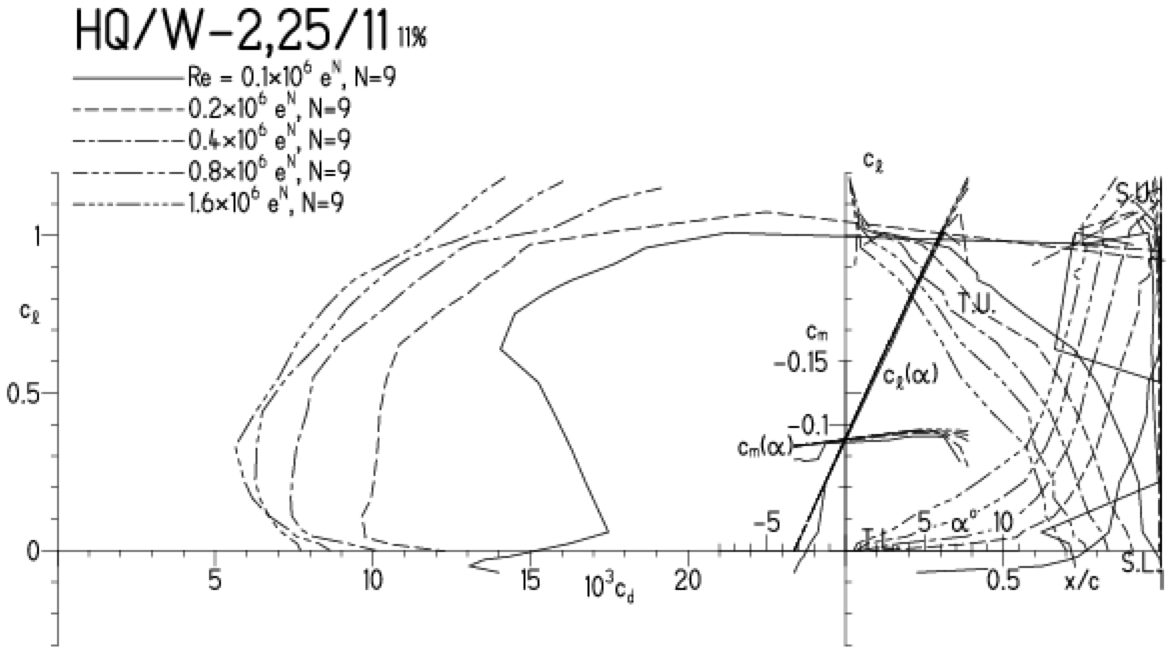


<u>HQQ/W-2,25/11</u>, N=9

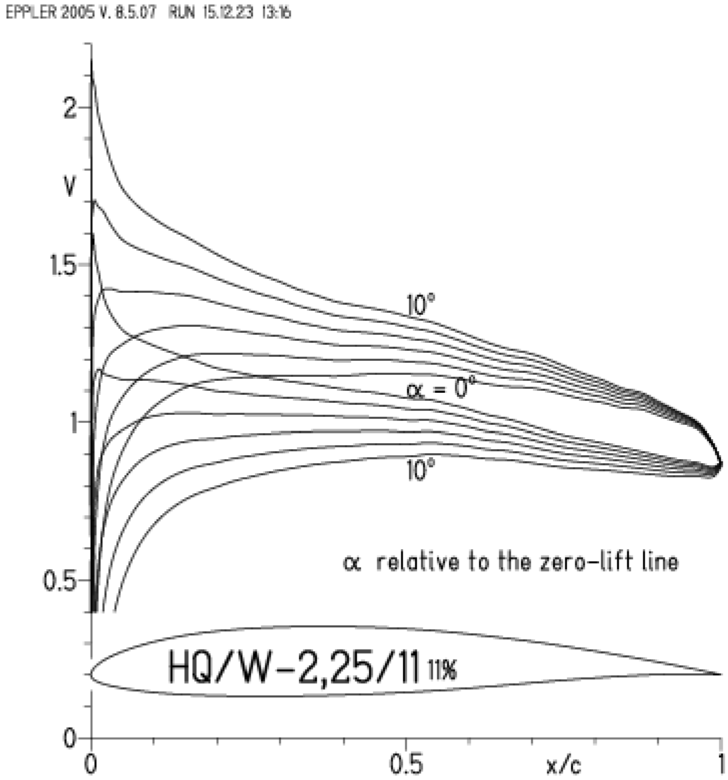
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

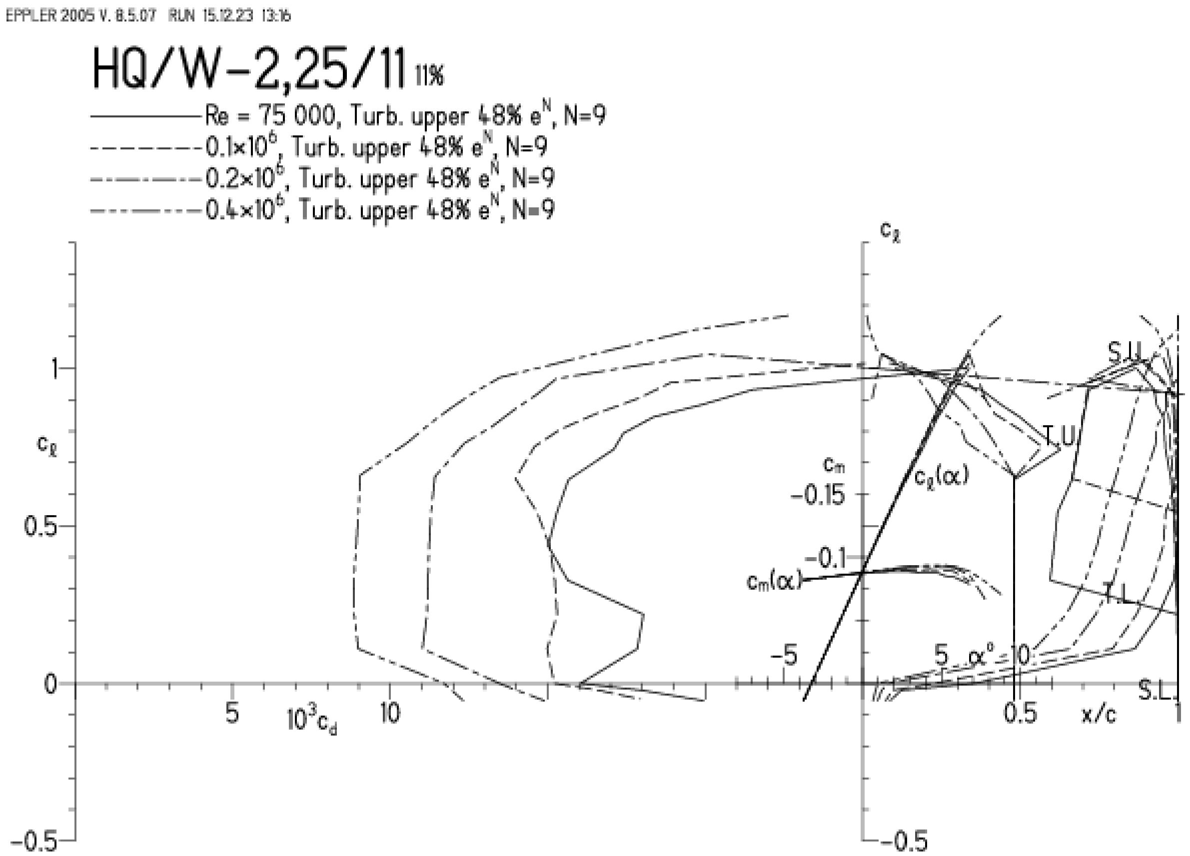


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



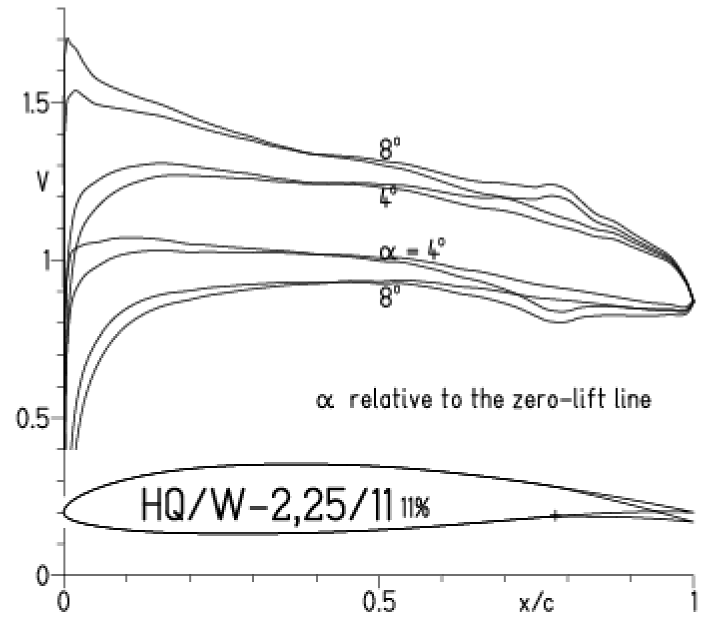
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



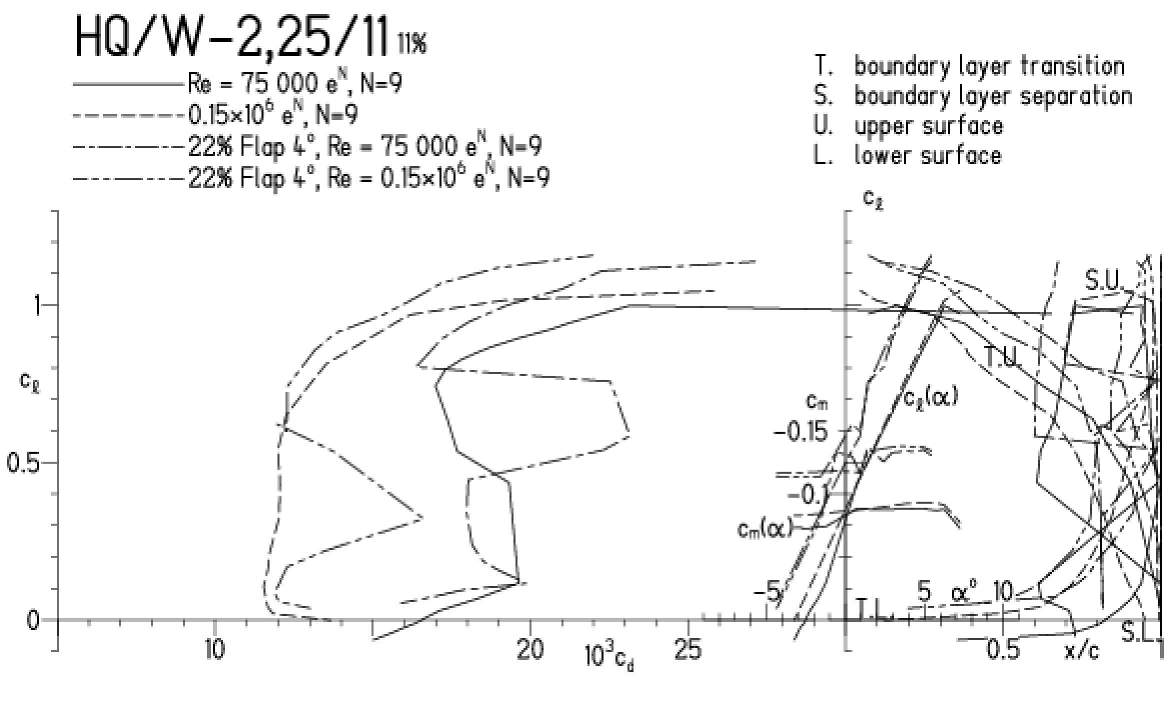


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

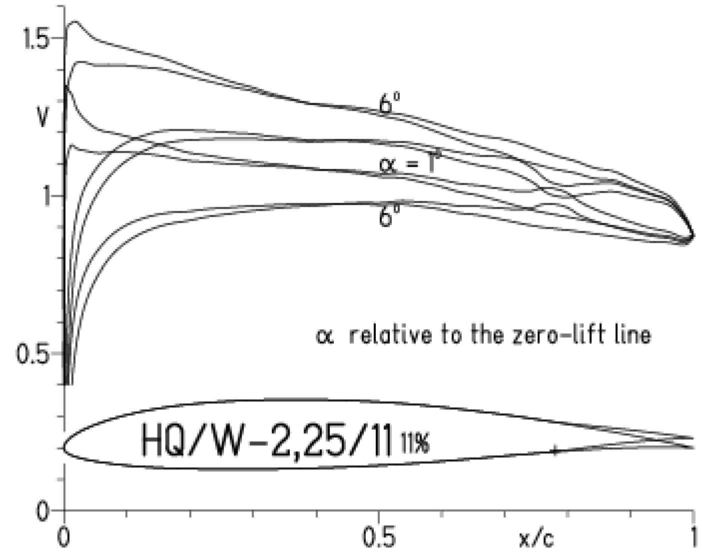


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17



<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



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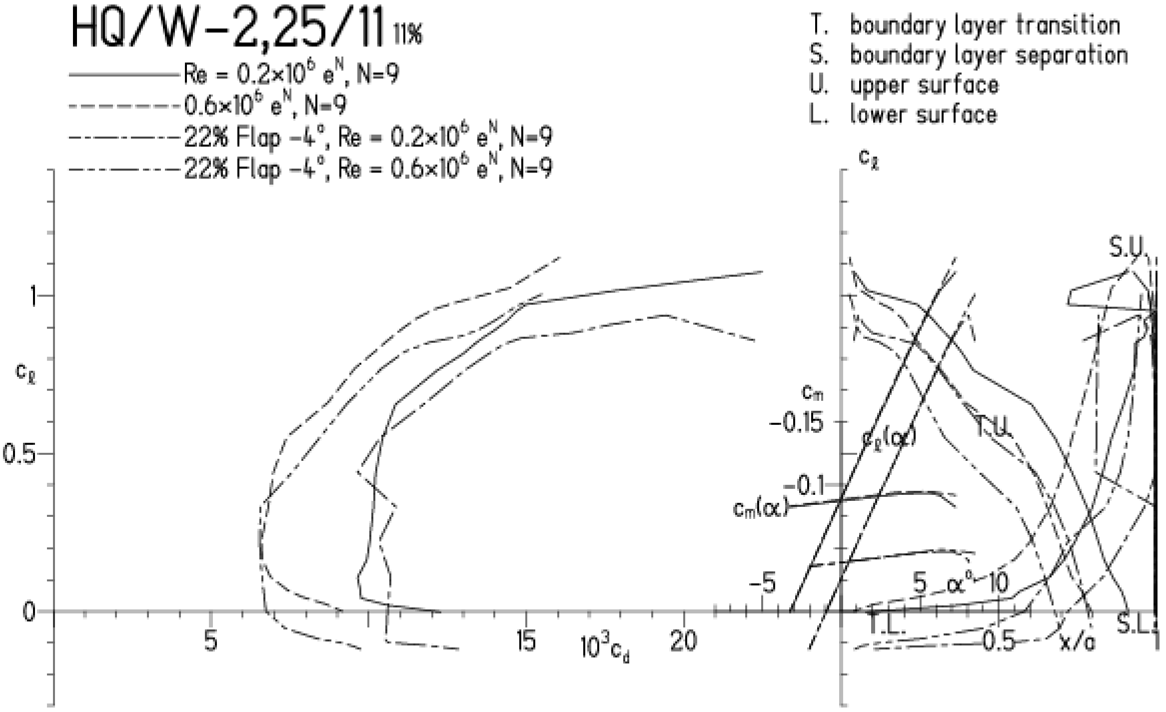
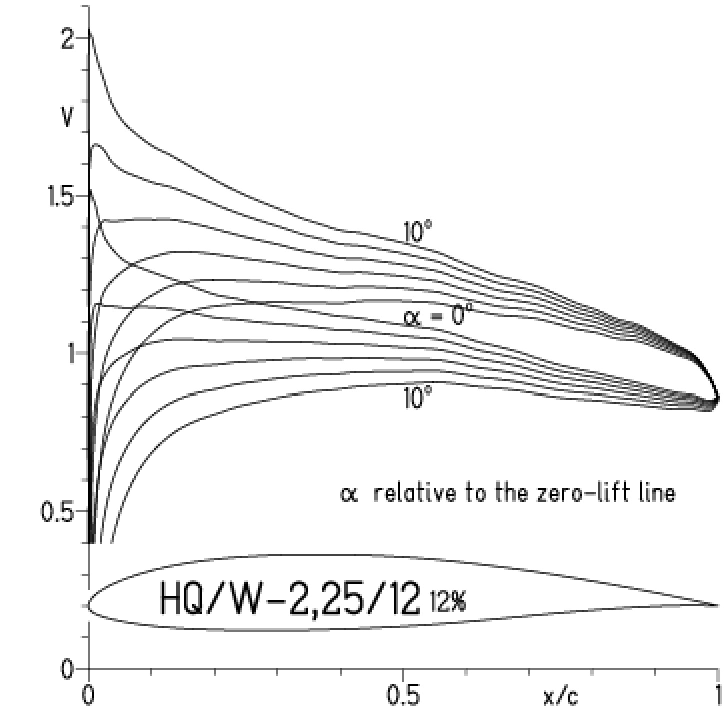
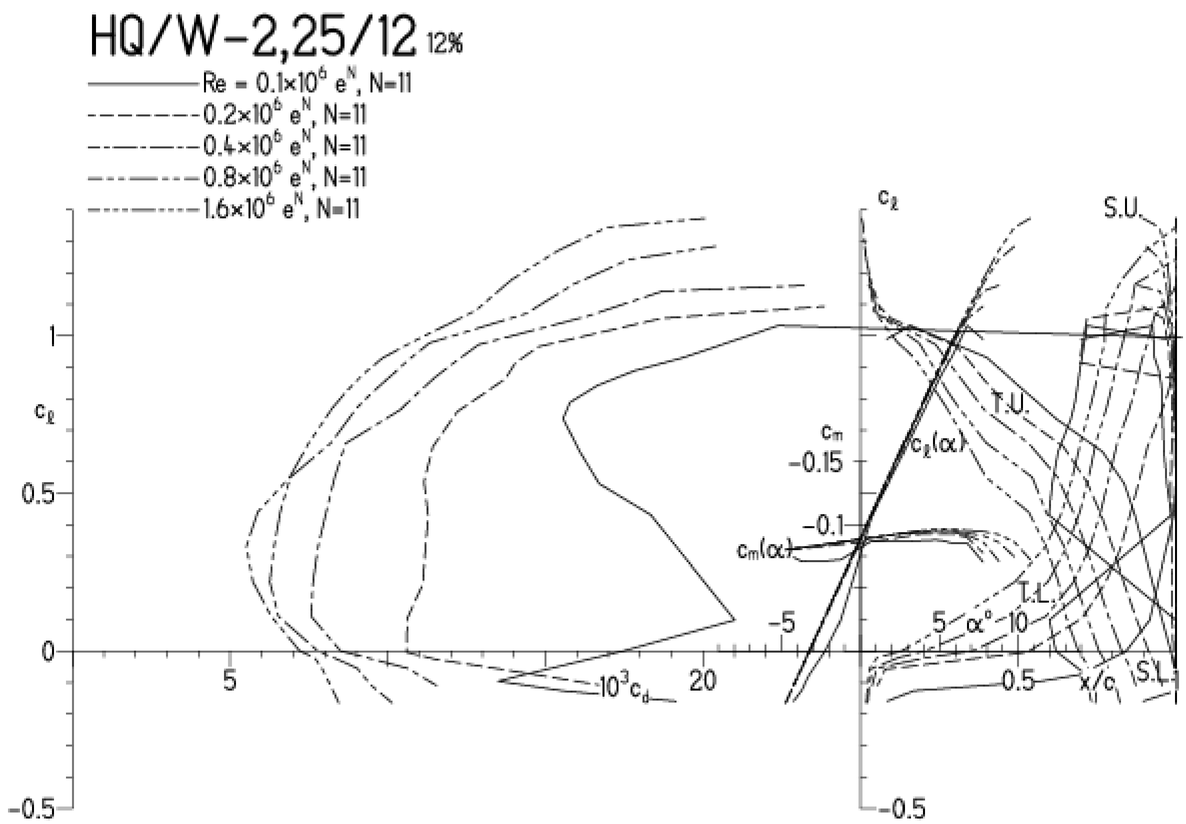


HQ/W-2,25/12, N=11

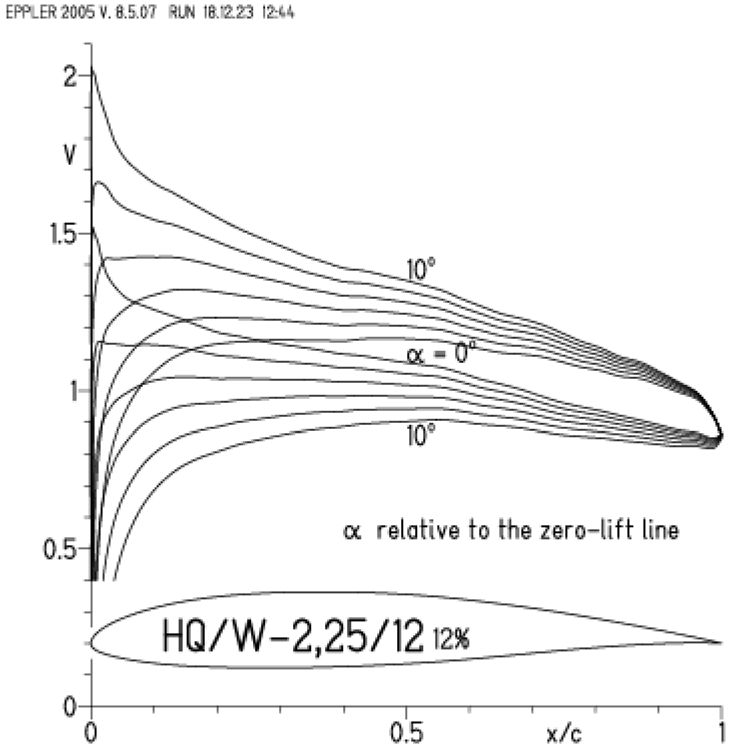
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

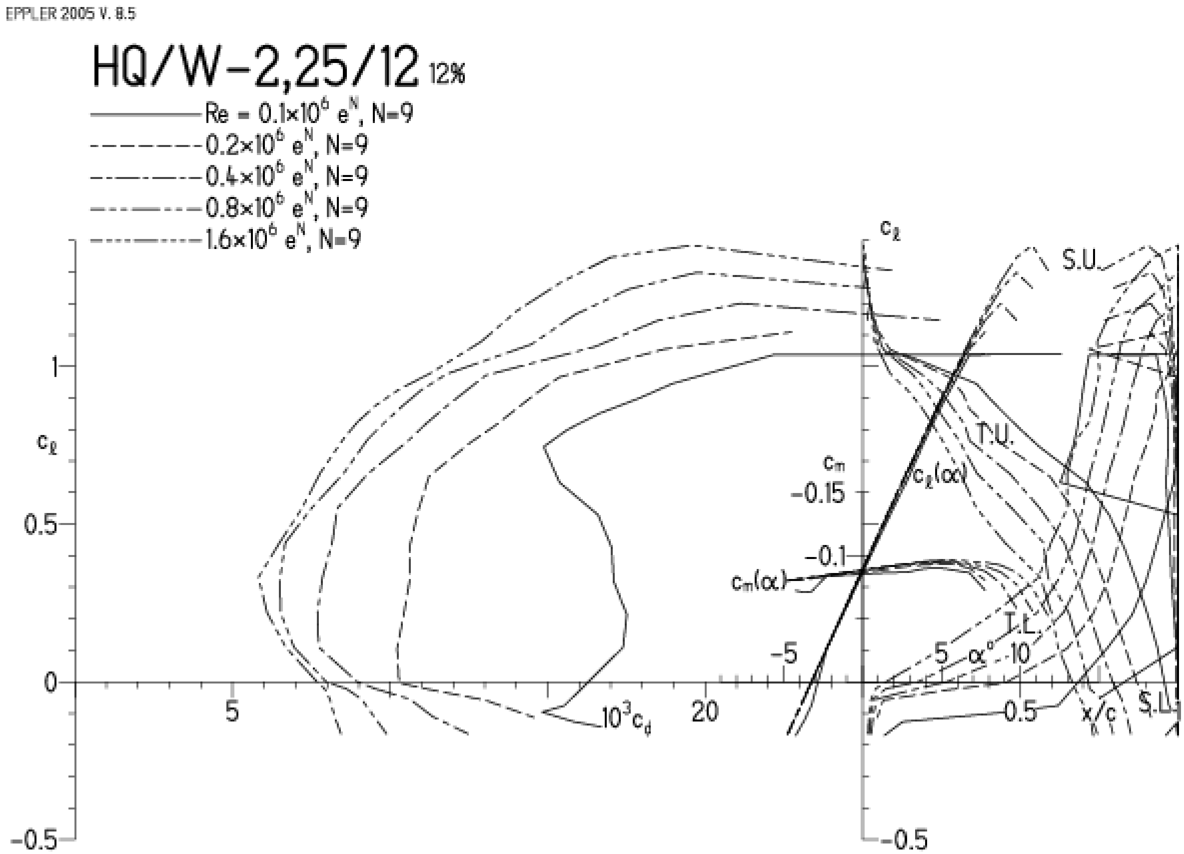


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

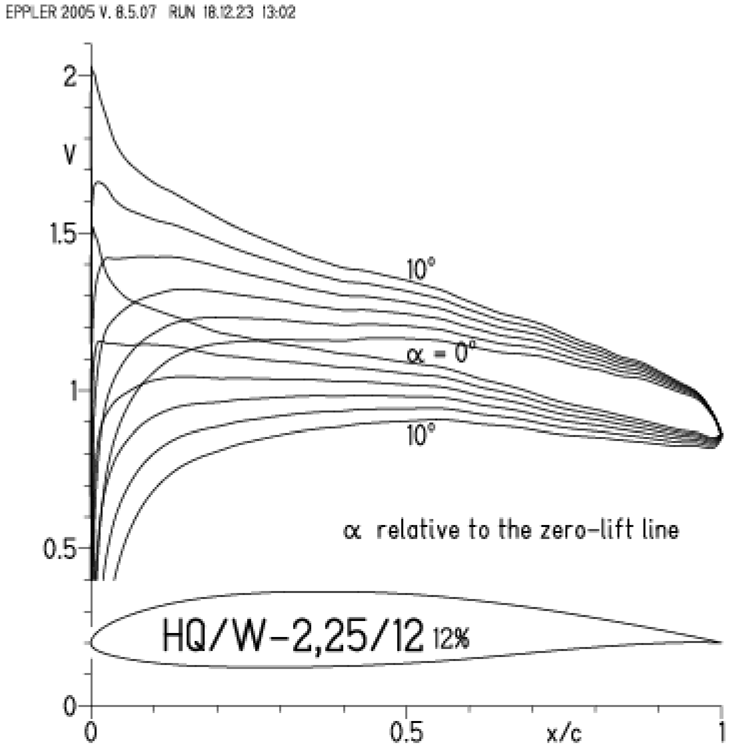


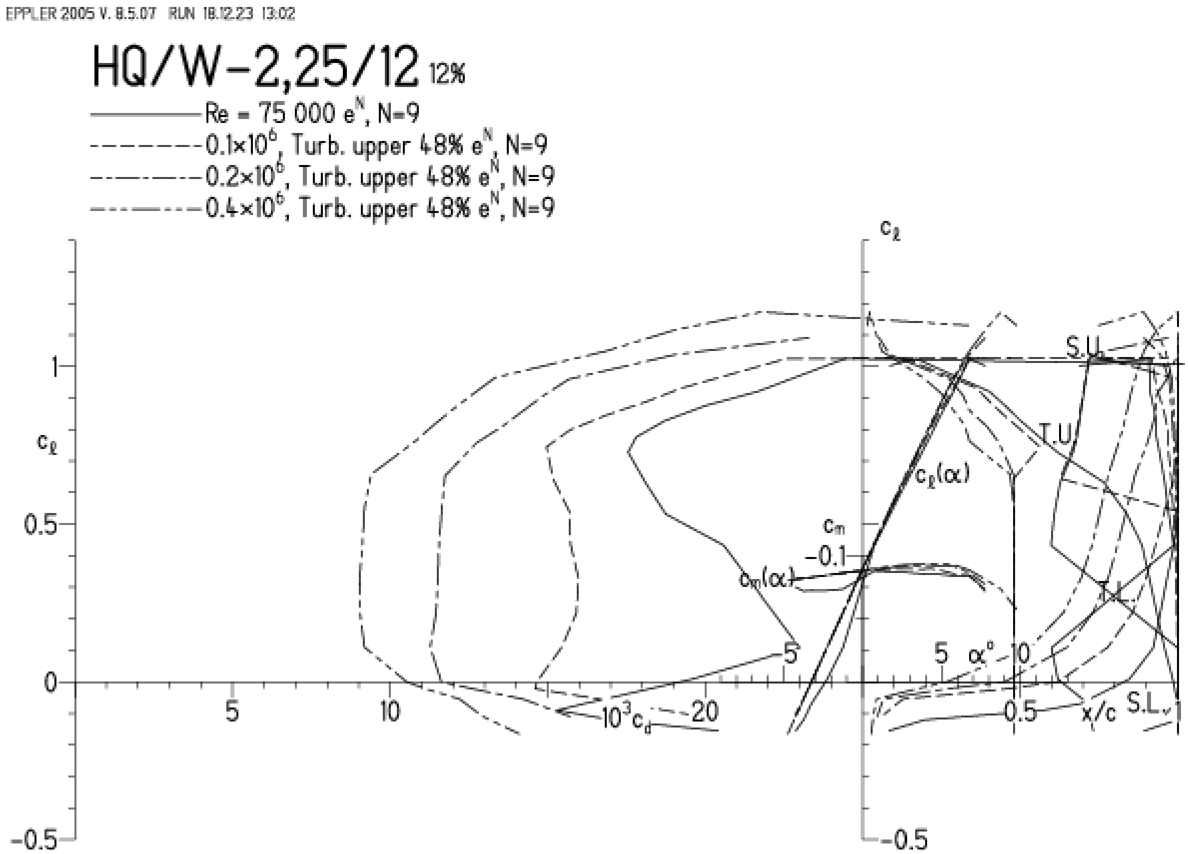
<u>HQ/W-2,25/12</u>, N=9



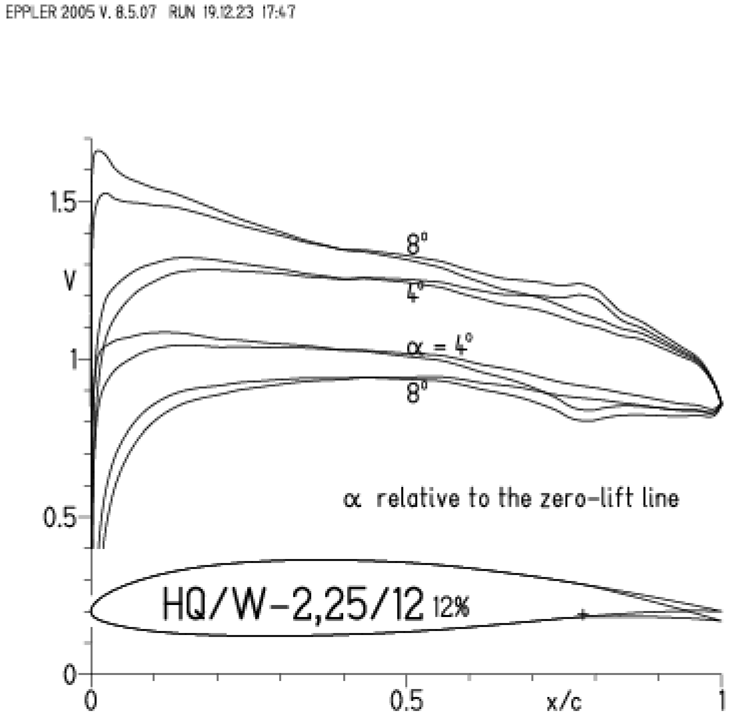


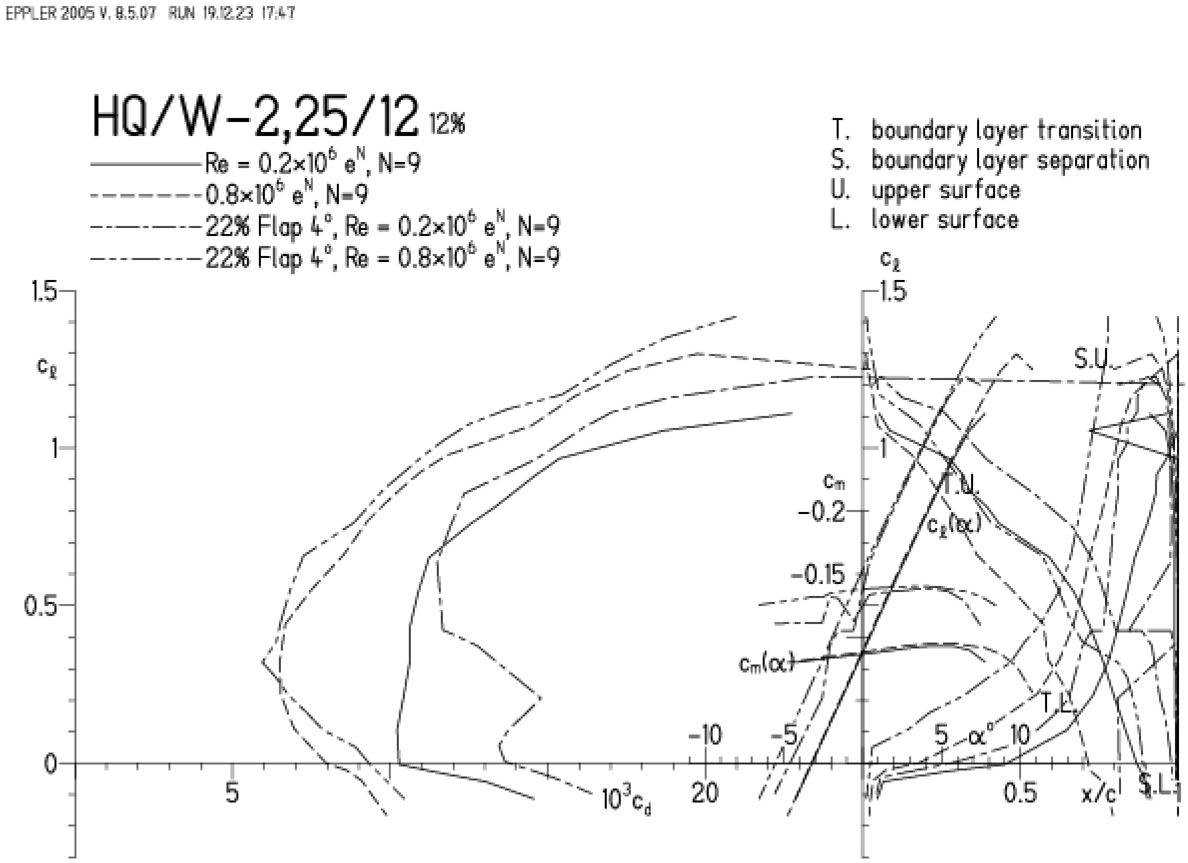
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





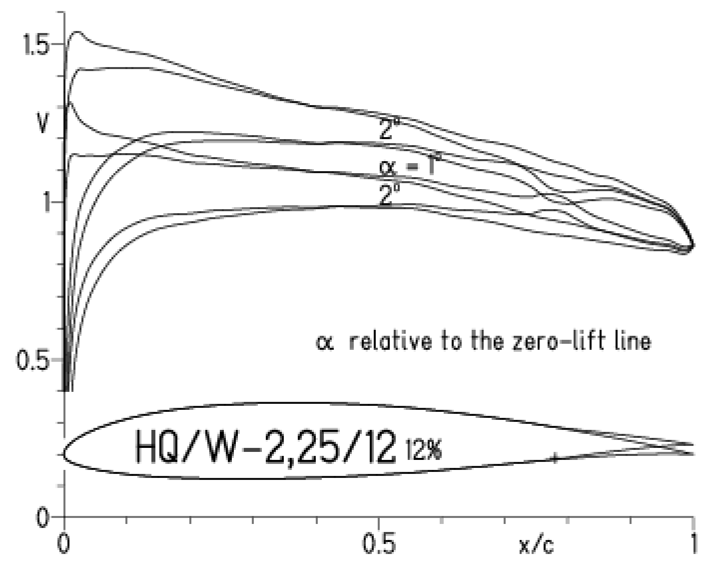
<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag



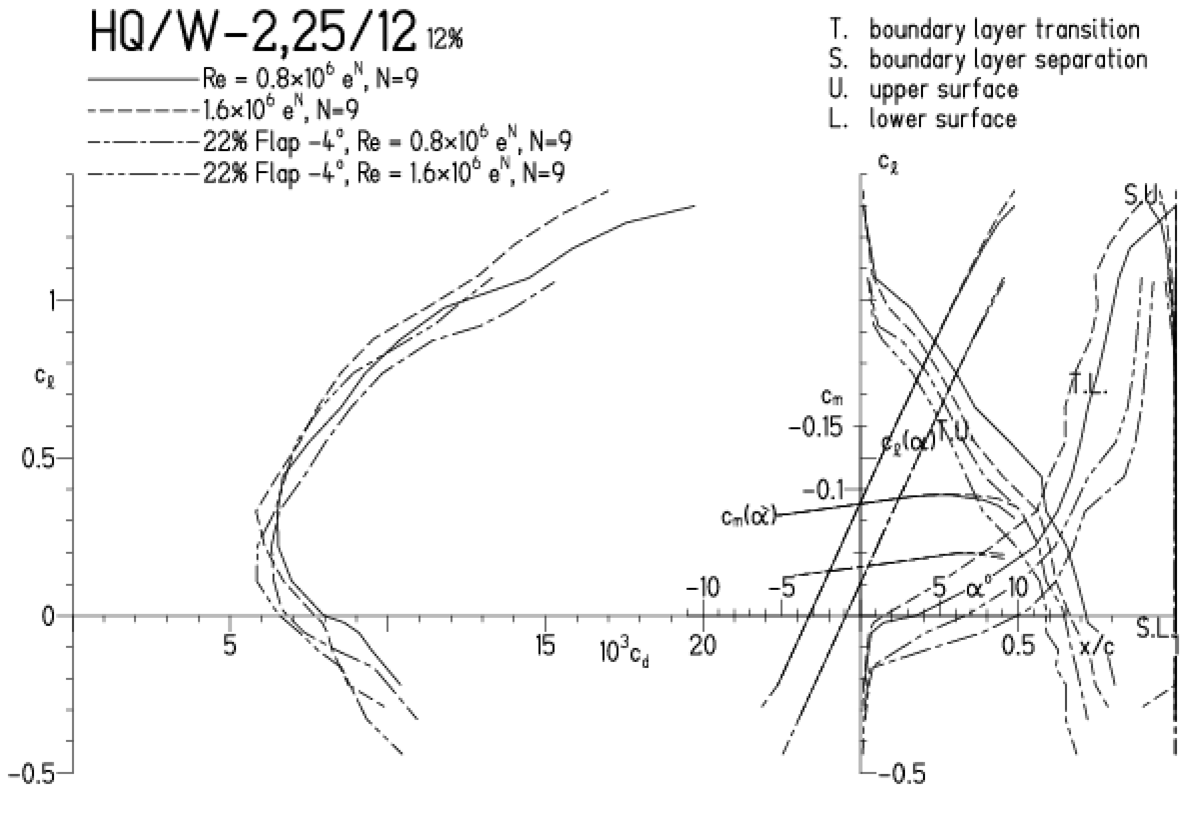


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

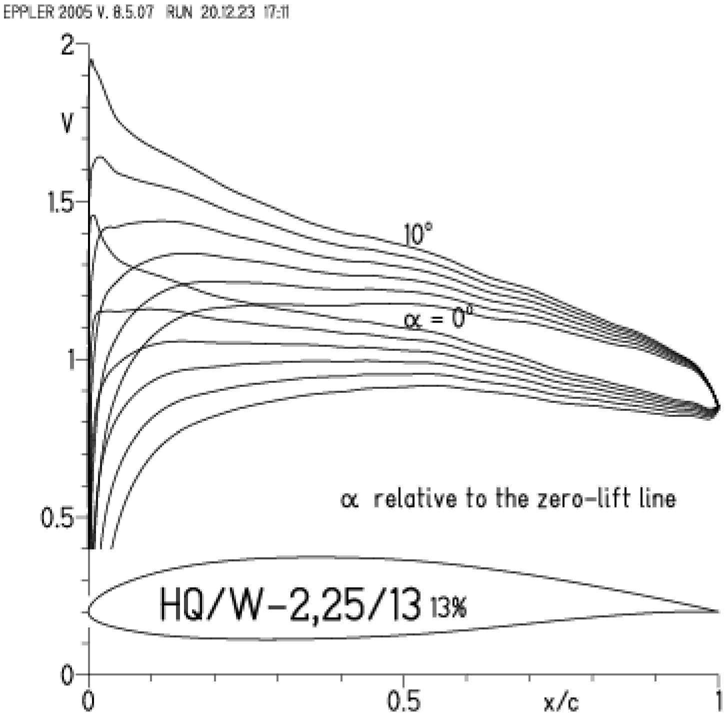
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

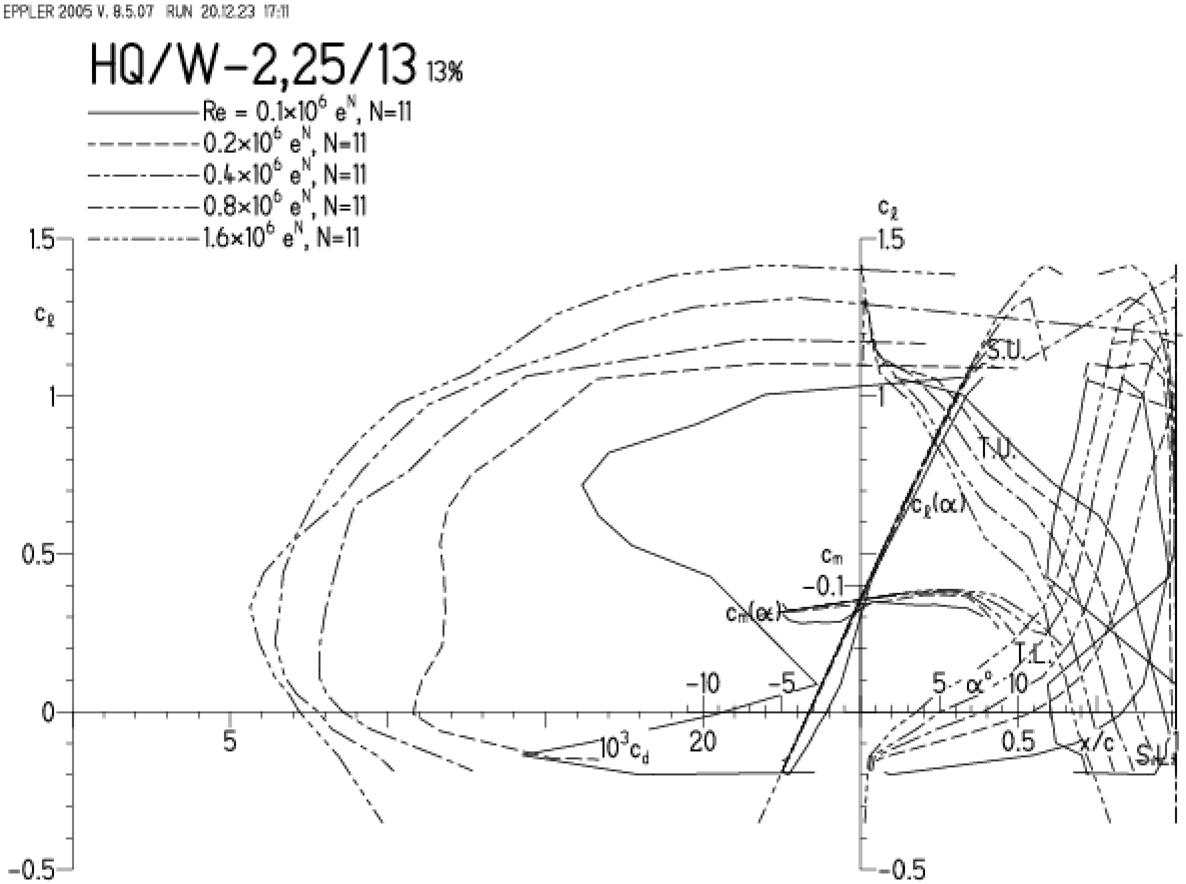


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

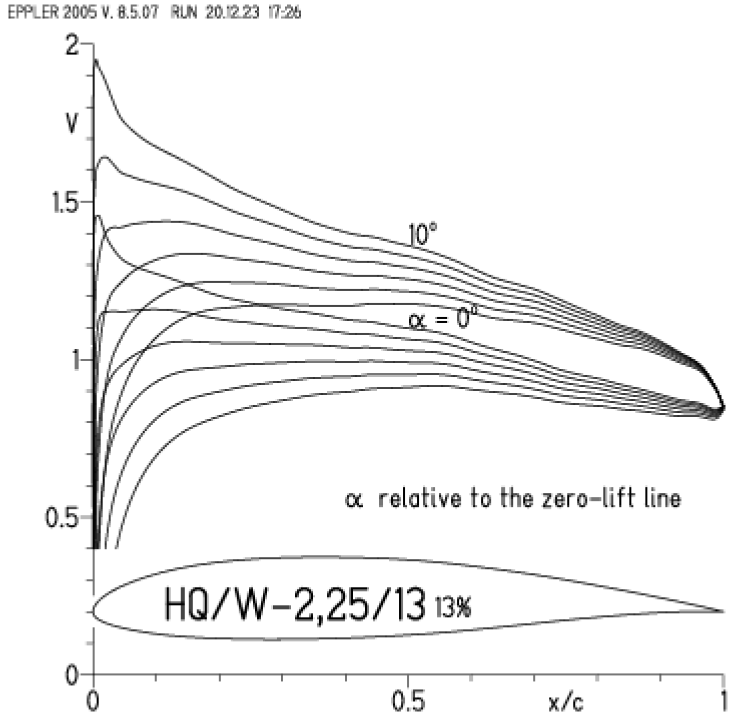


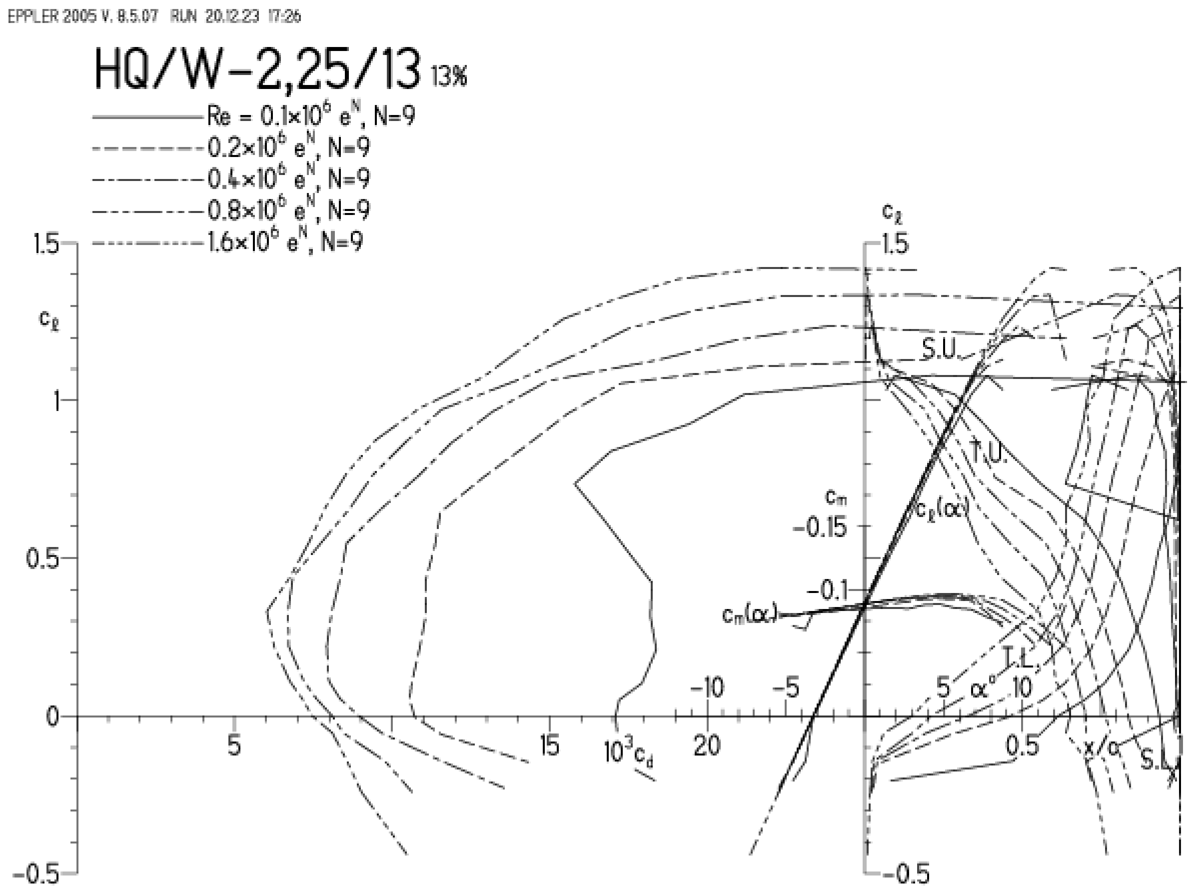
<u>HQ/W-2,25/13</u>, N=11



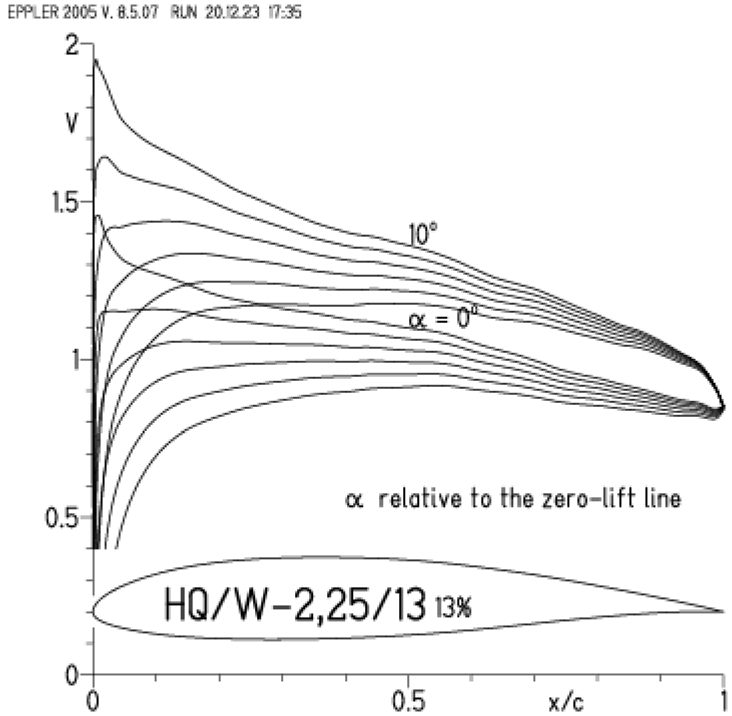


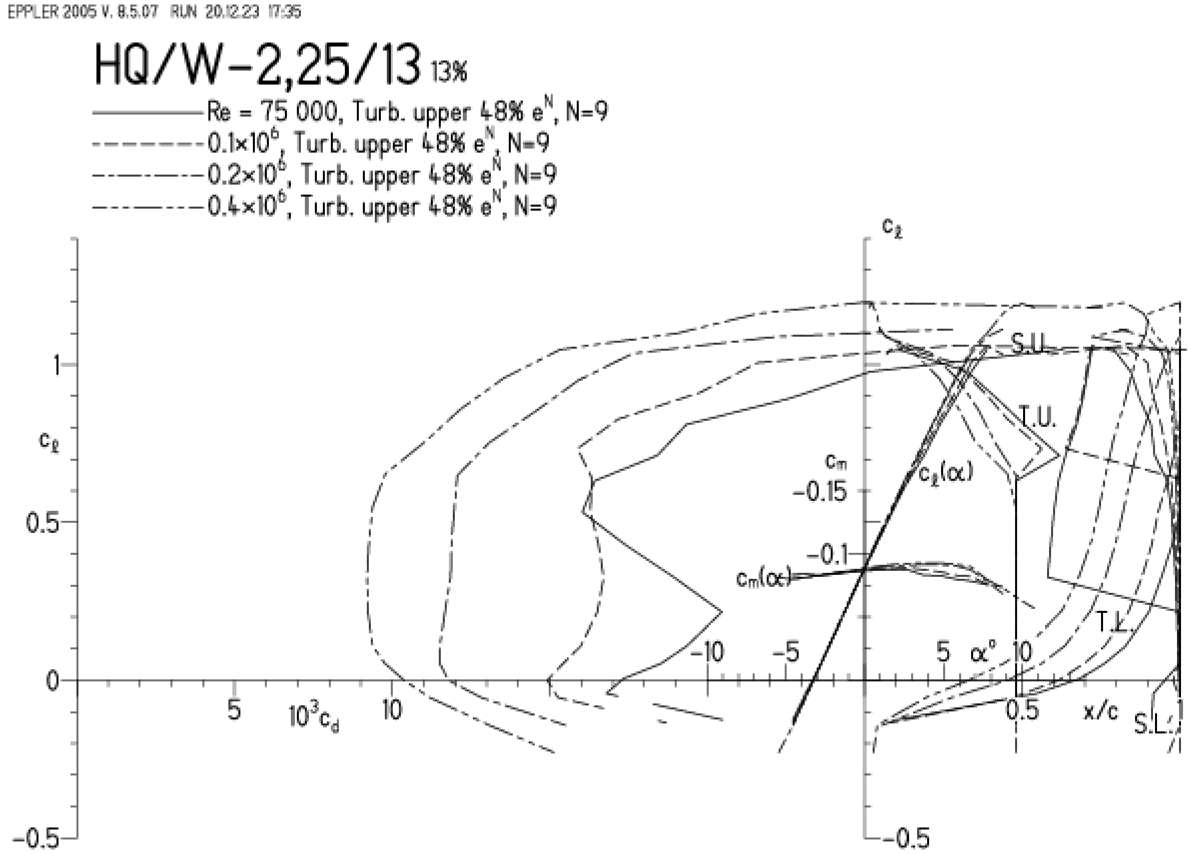
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
α°
x/c

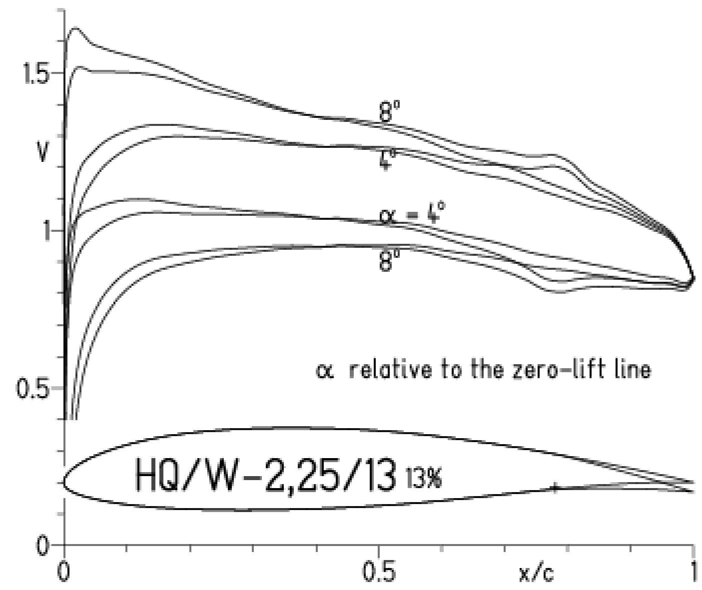
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



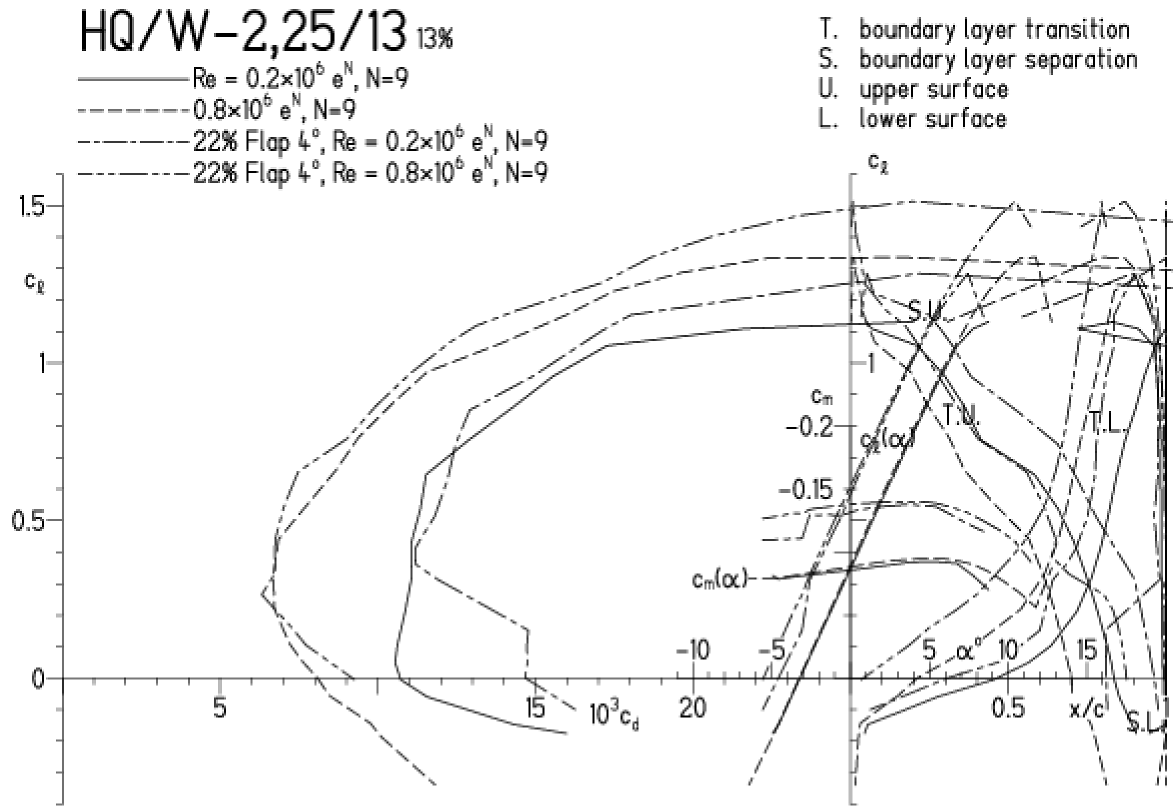


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

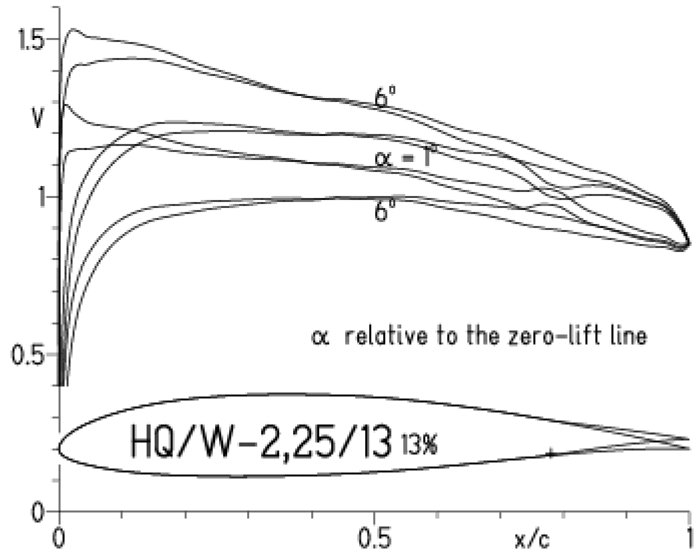


EPPLER 2005 V.

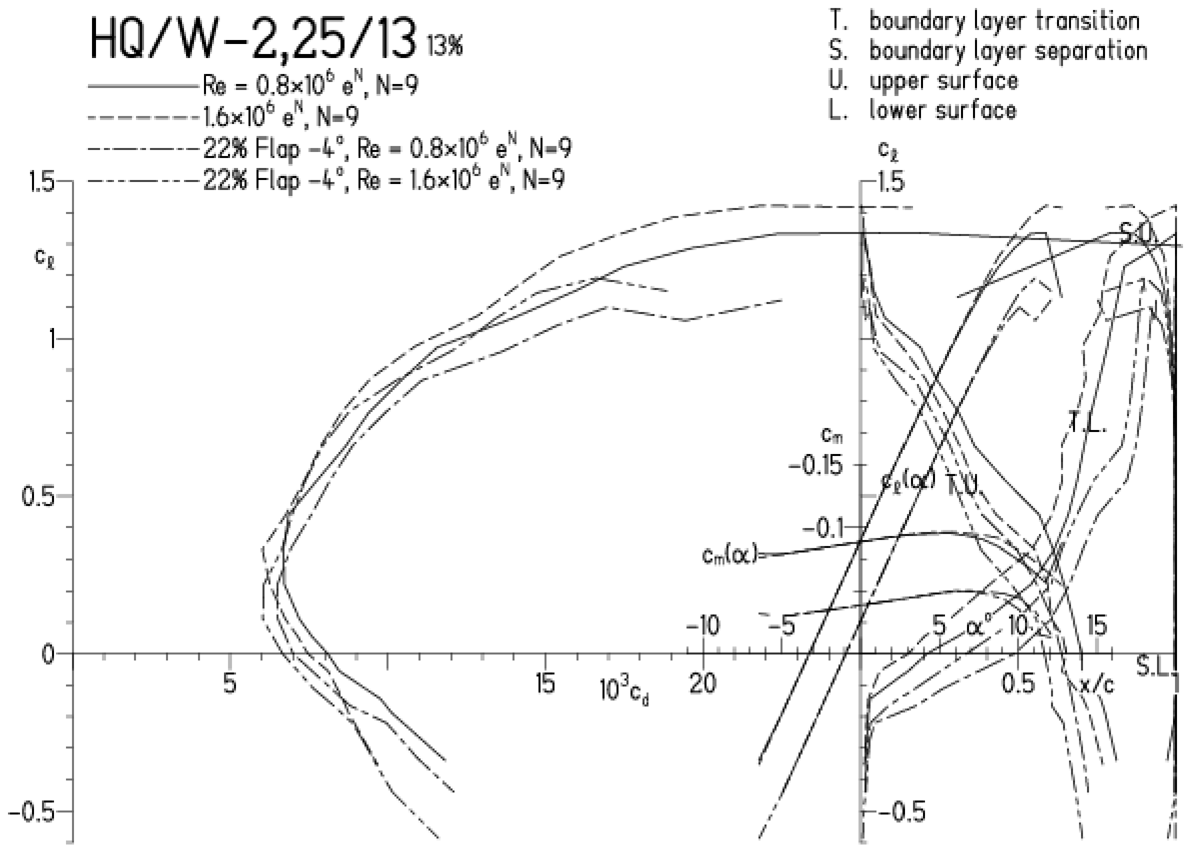


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

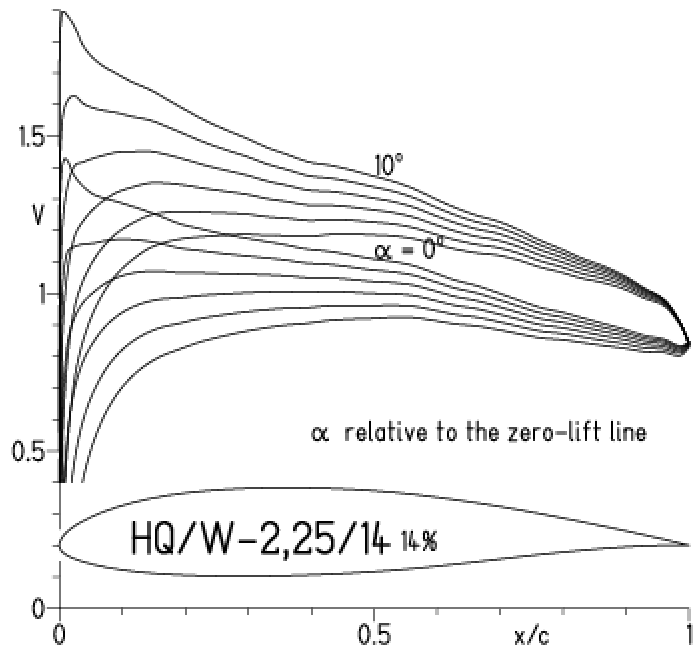


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

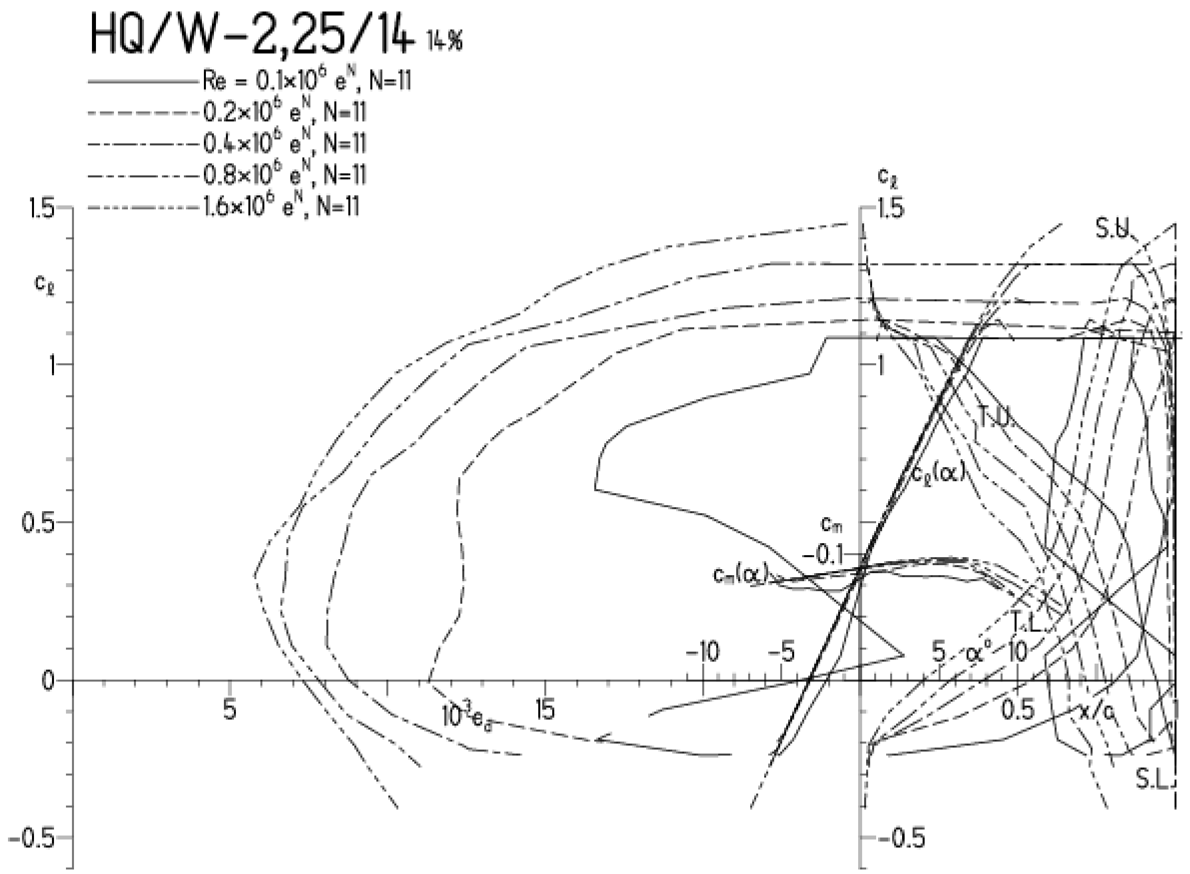


HQ/W-2,25/14, N=11

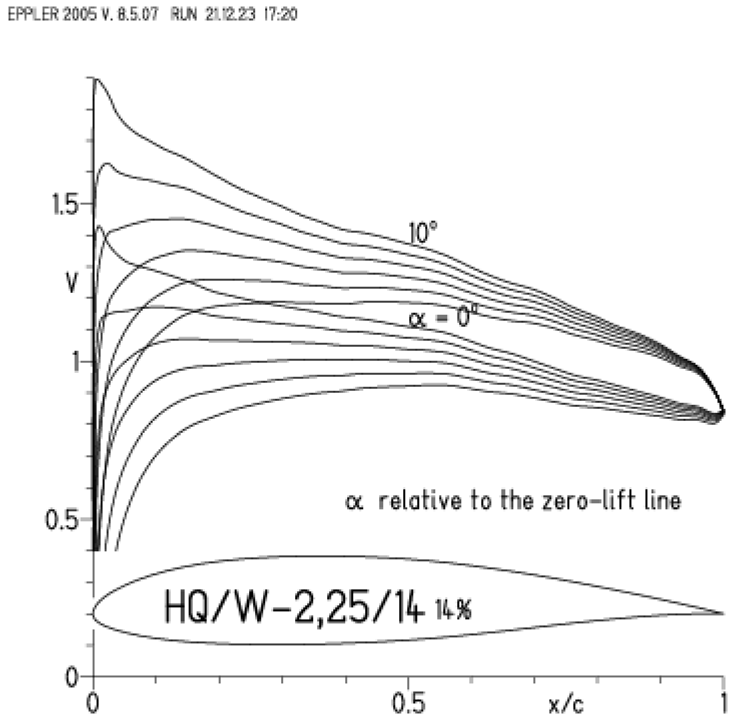
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

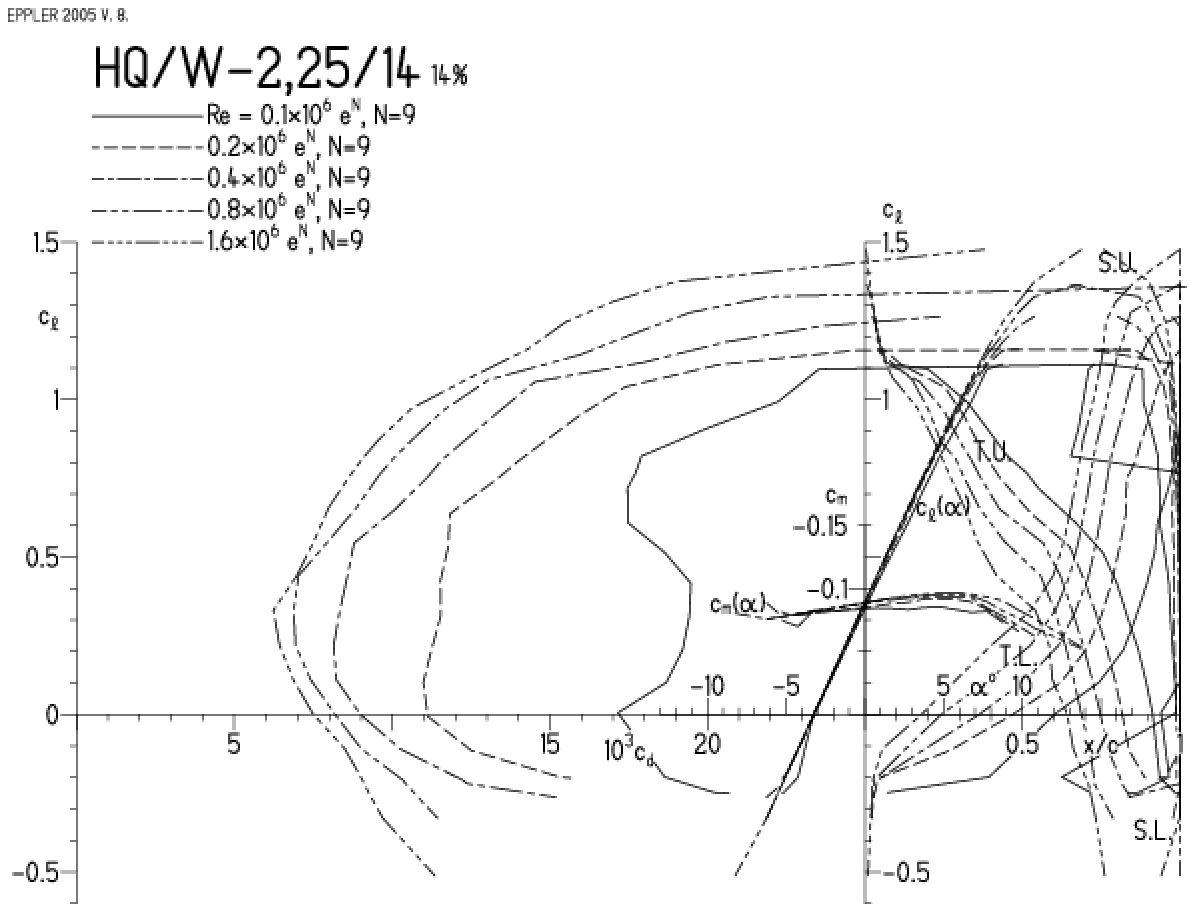


EPPLER 2005 V. 8.



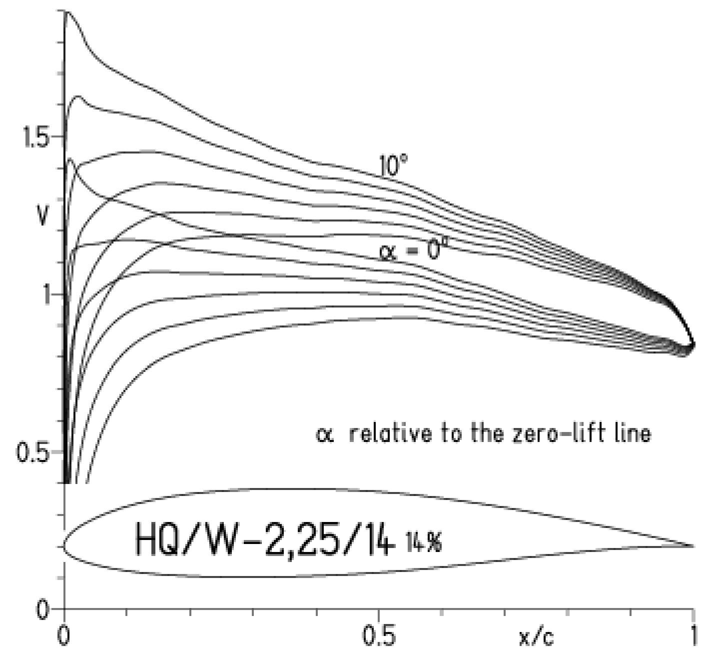
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c

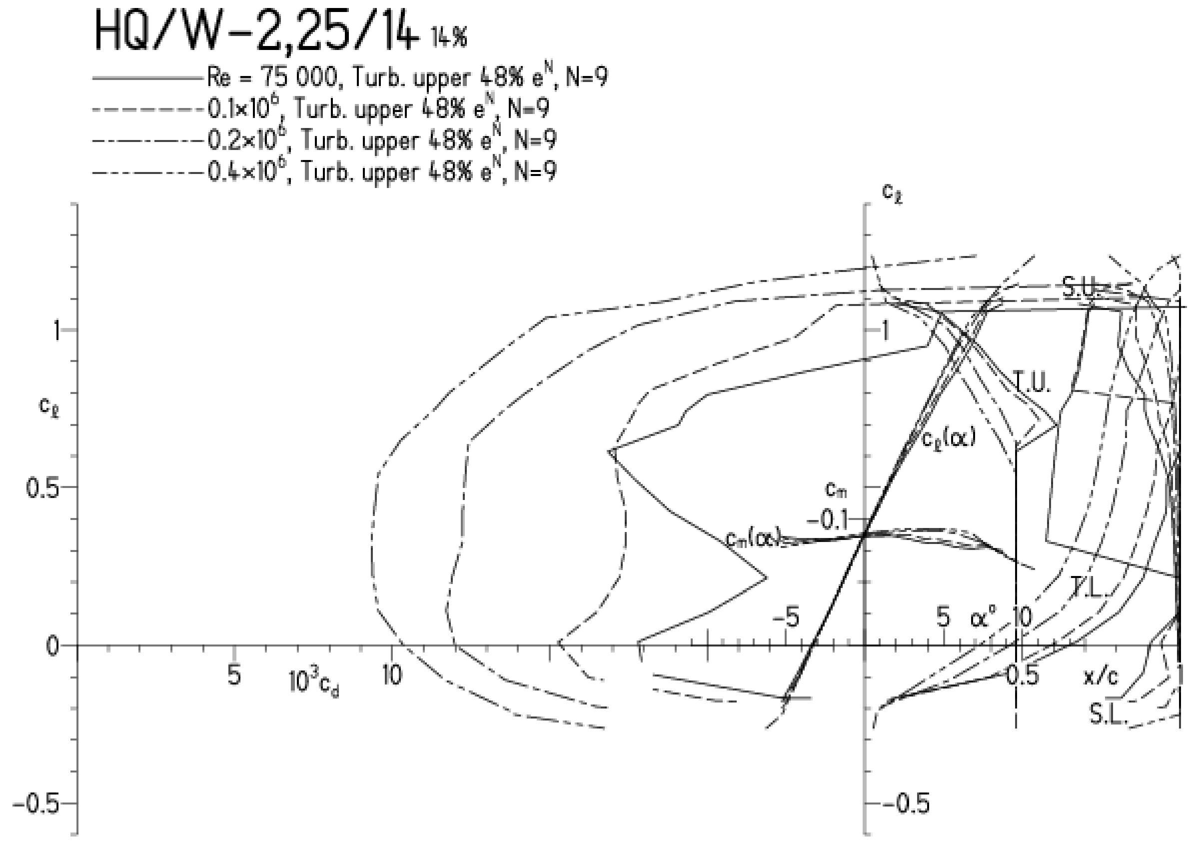

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10³cd
α°
x/c

HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

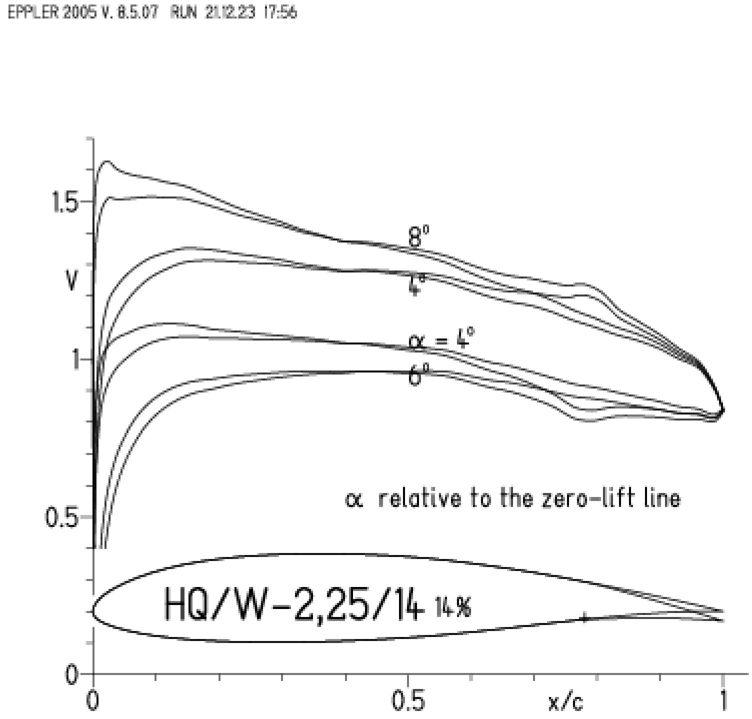
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

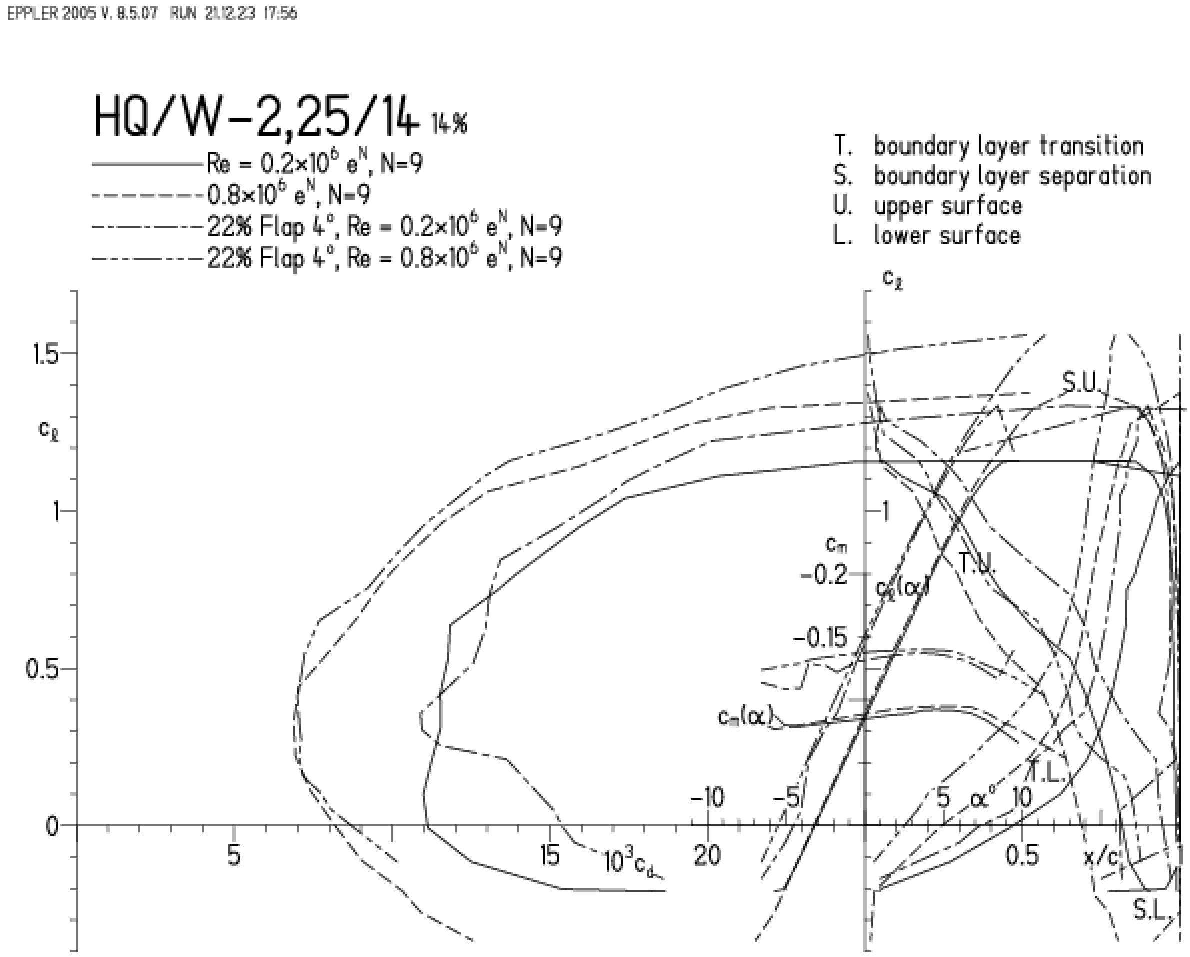


EPPLER 2005 V. 8.5.07 RU



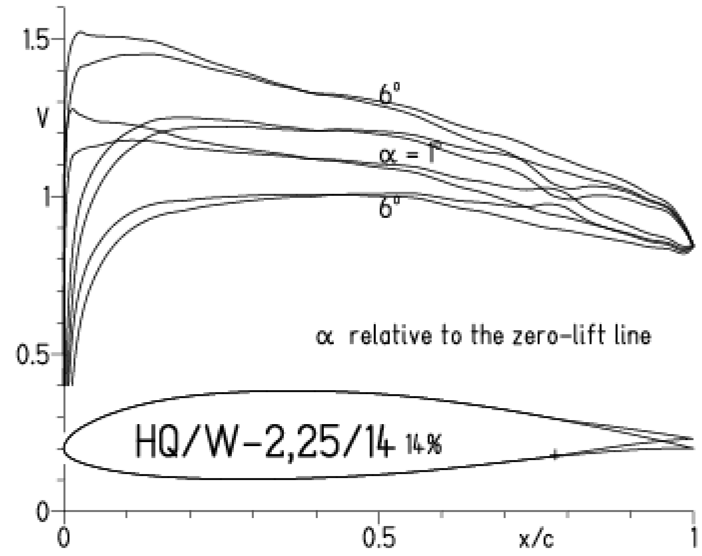
HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag



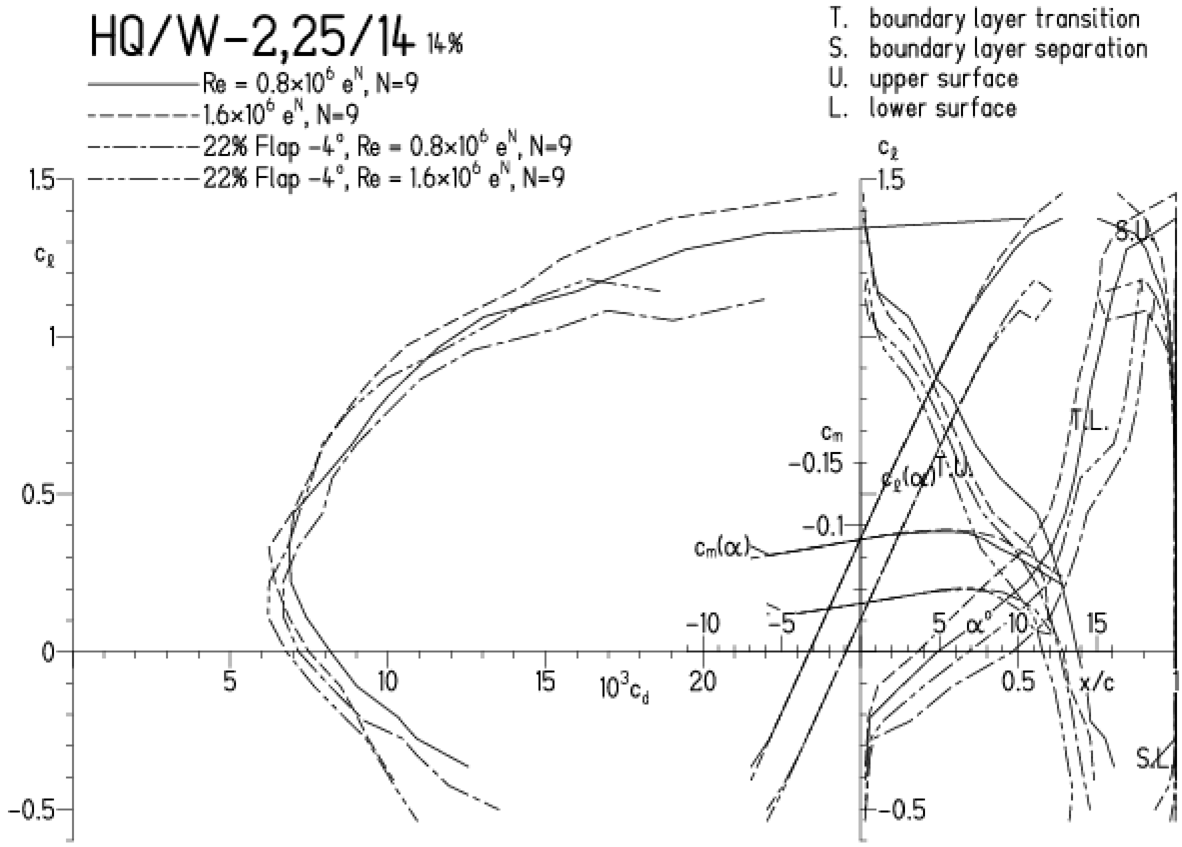


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

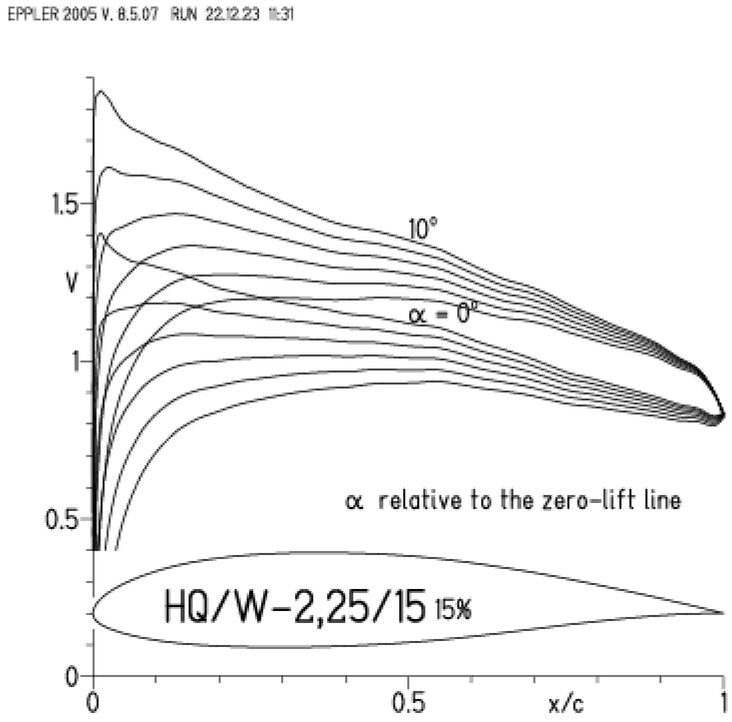
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

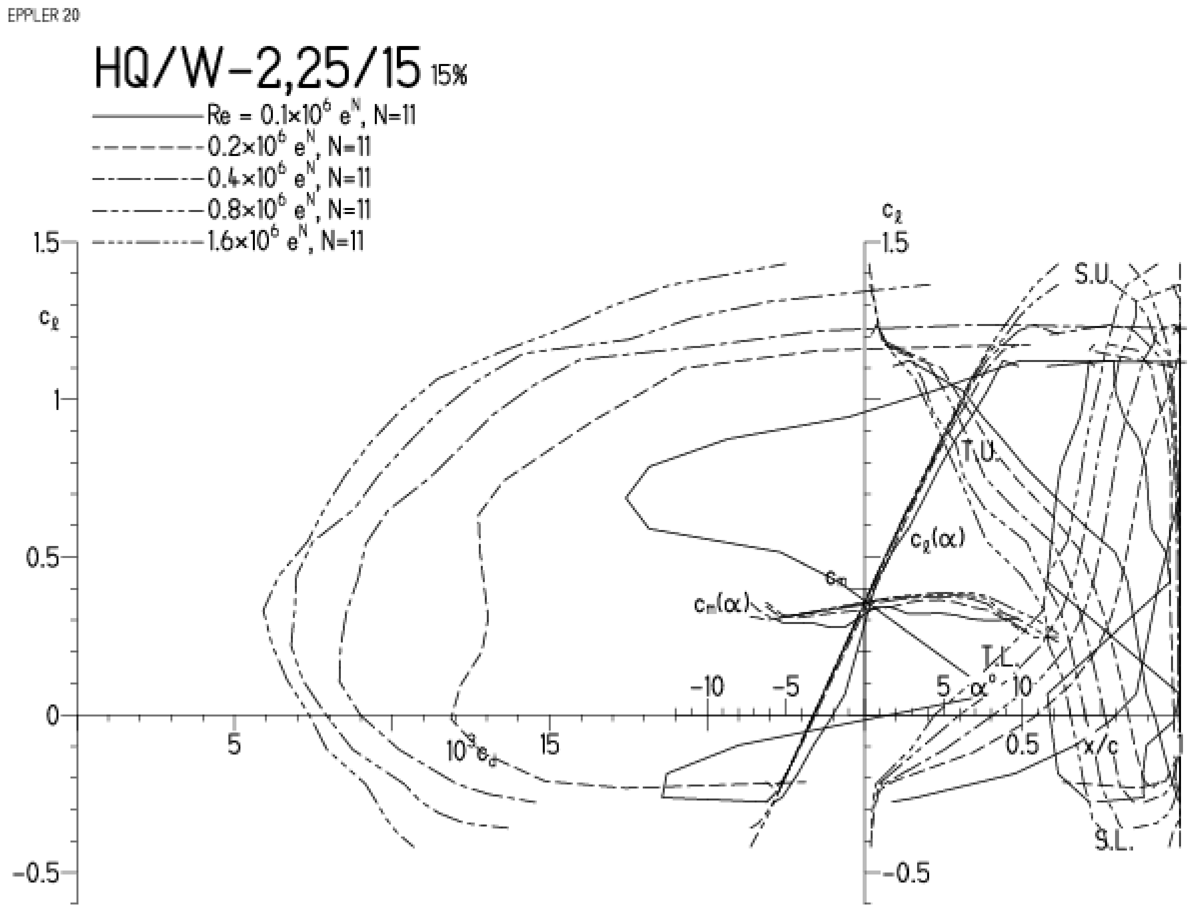


EPPLER 2005 V. 8.5.07



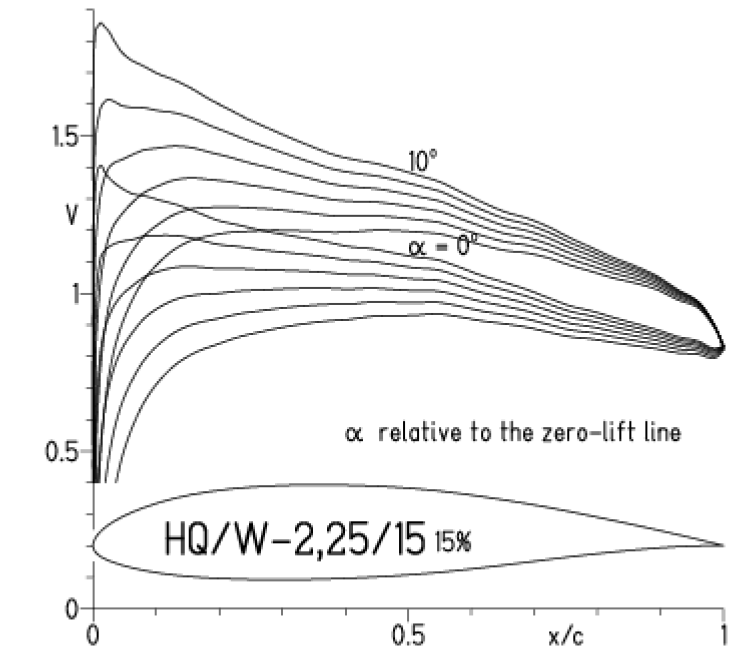
HQ/W-2,25/15, N=11



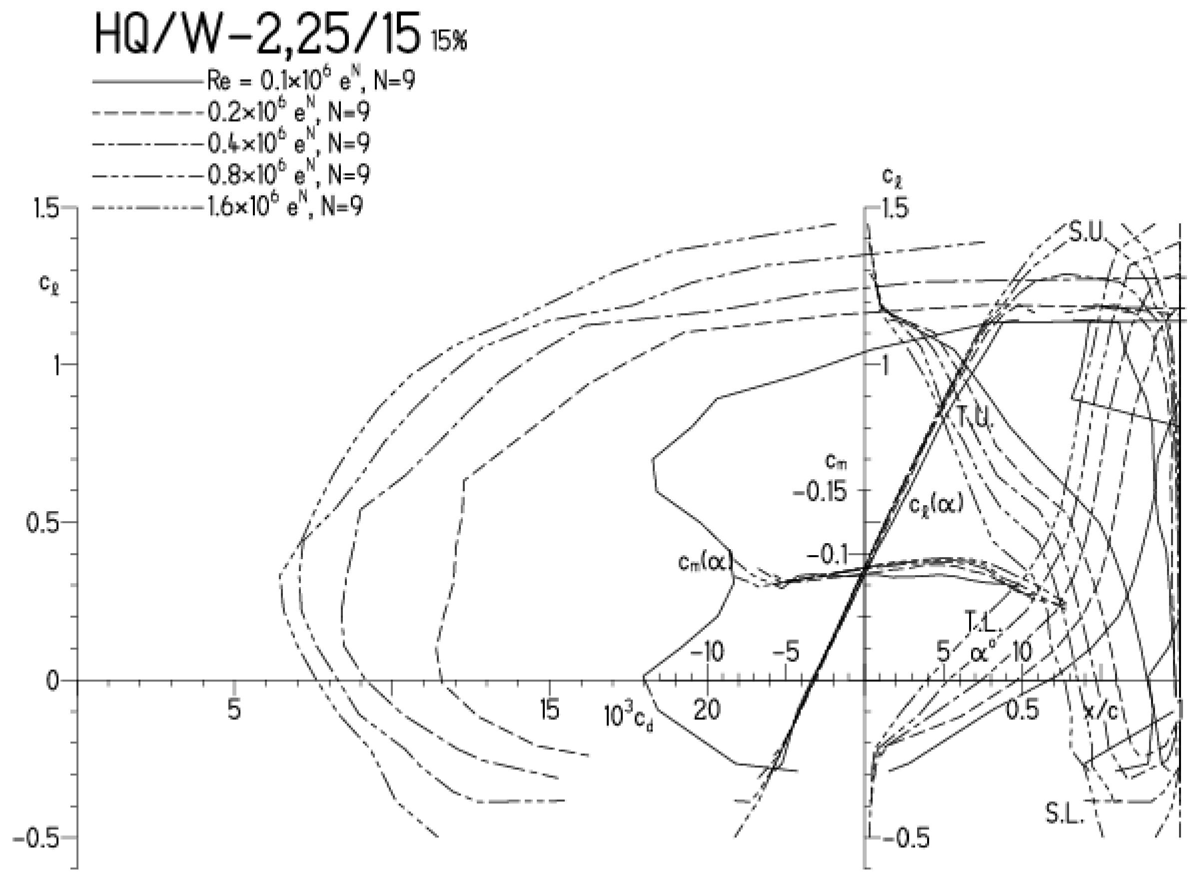


HQ/W-2,25/15, N=9

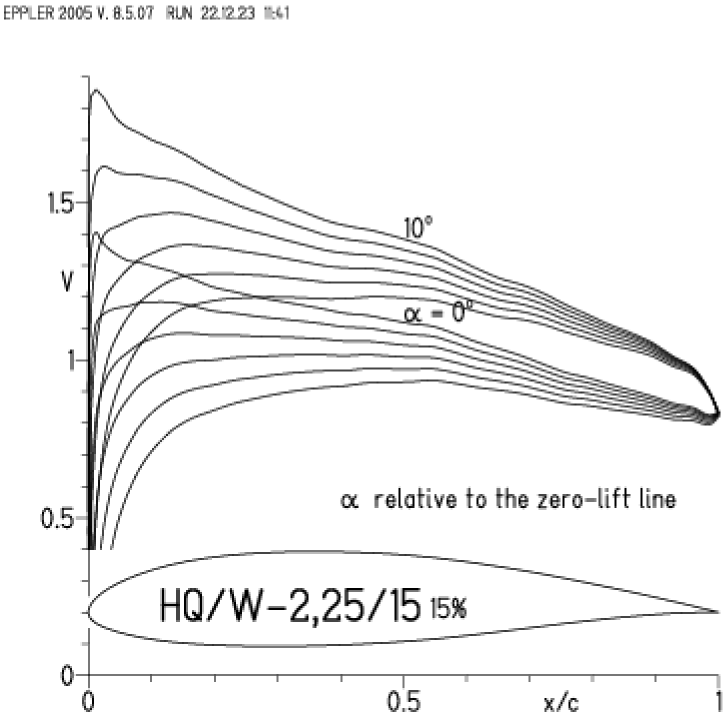
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

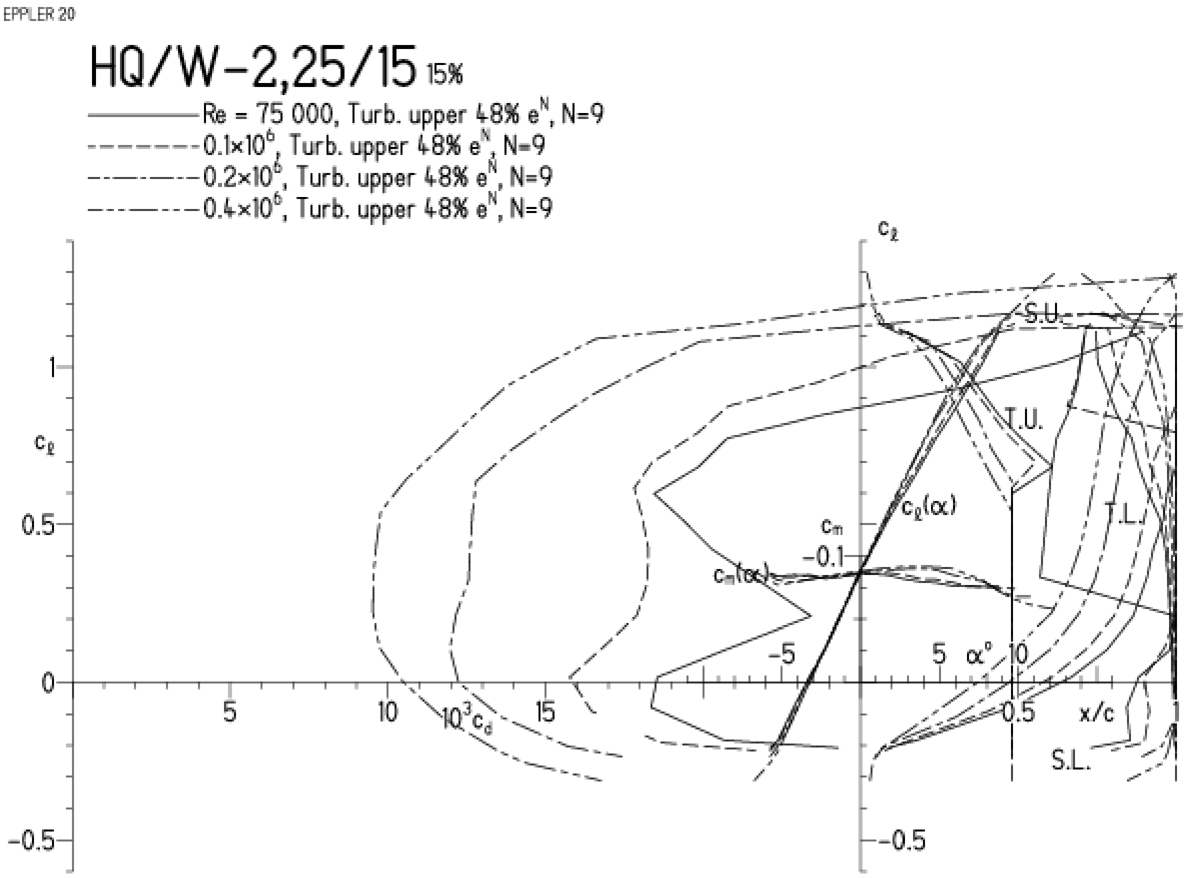


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



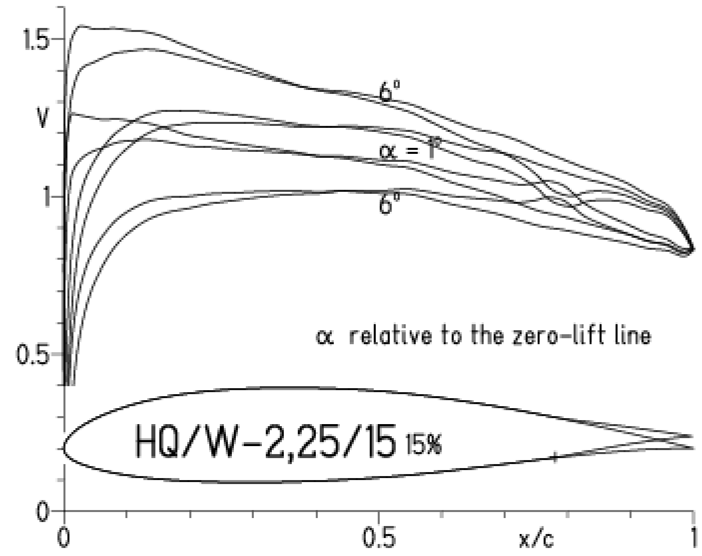


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

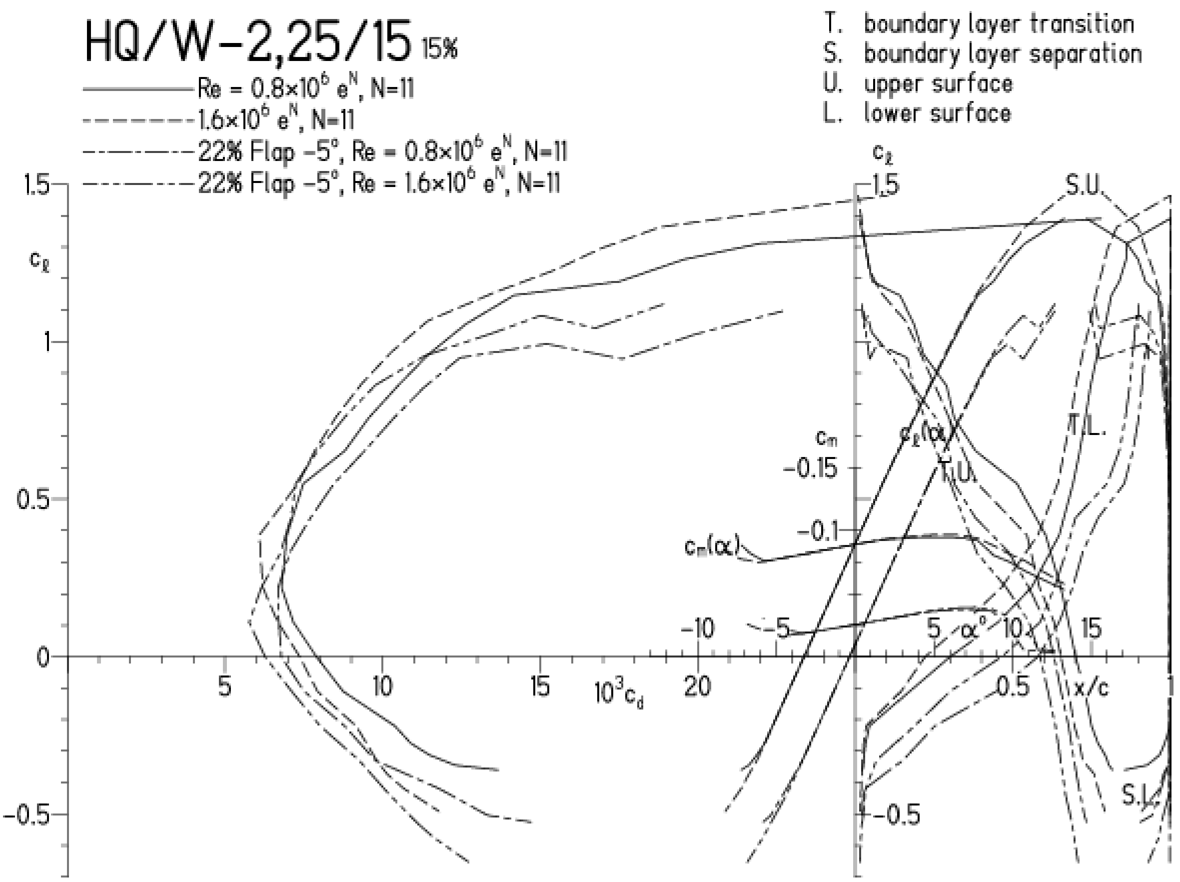
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

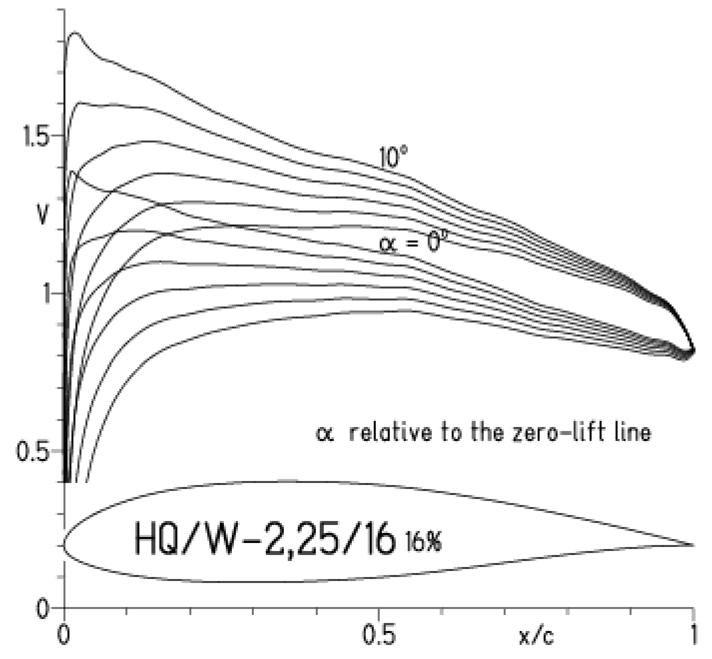


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

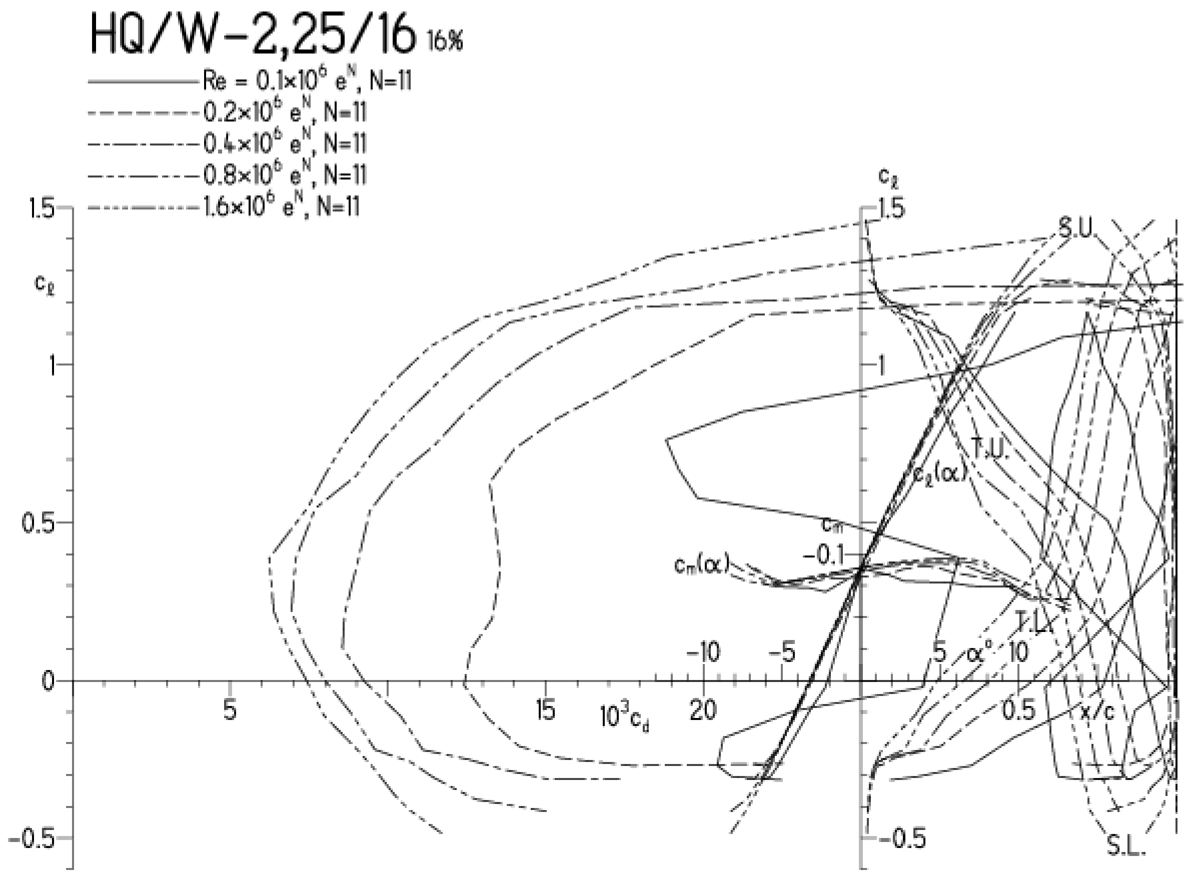


HQ/W-2,25/16, N=11

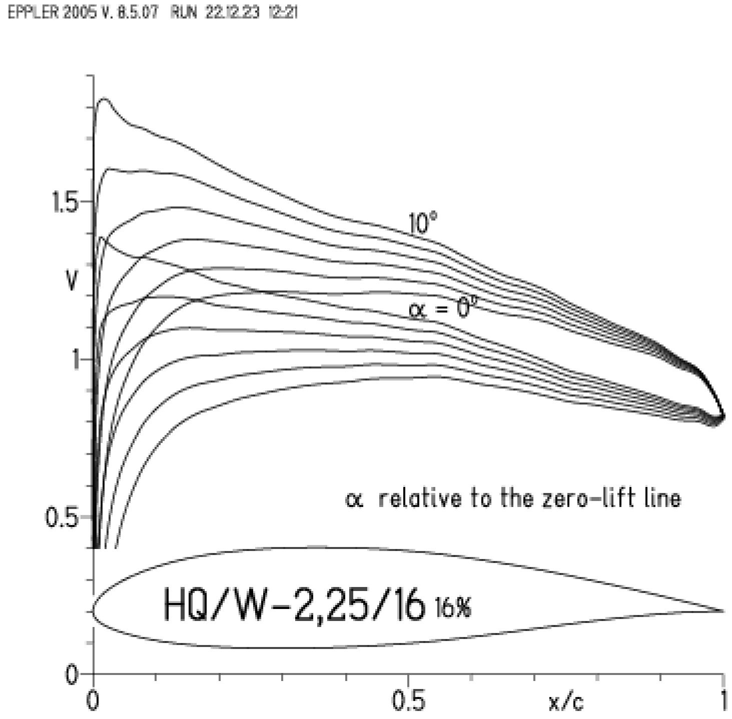
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

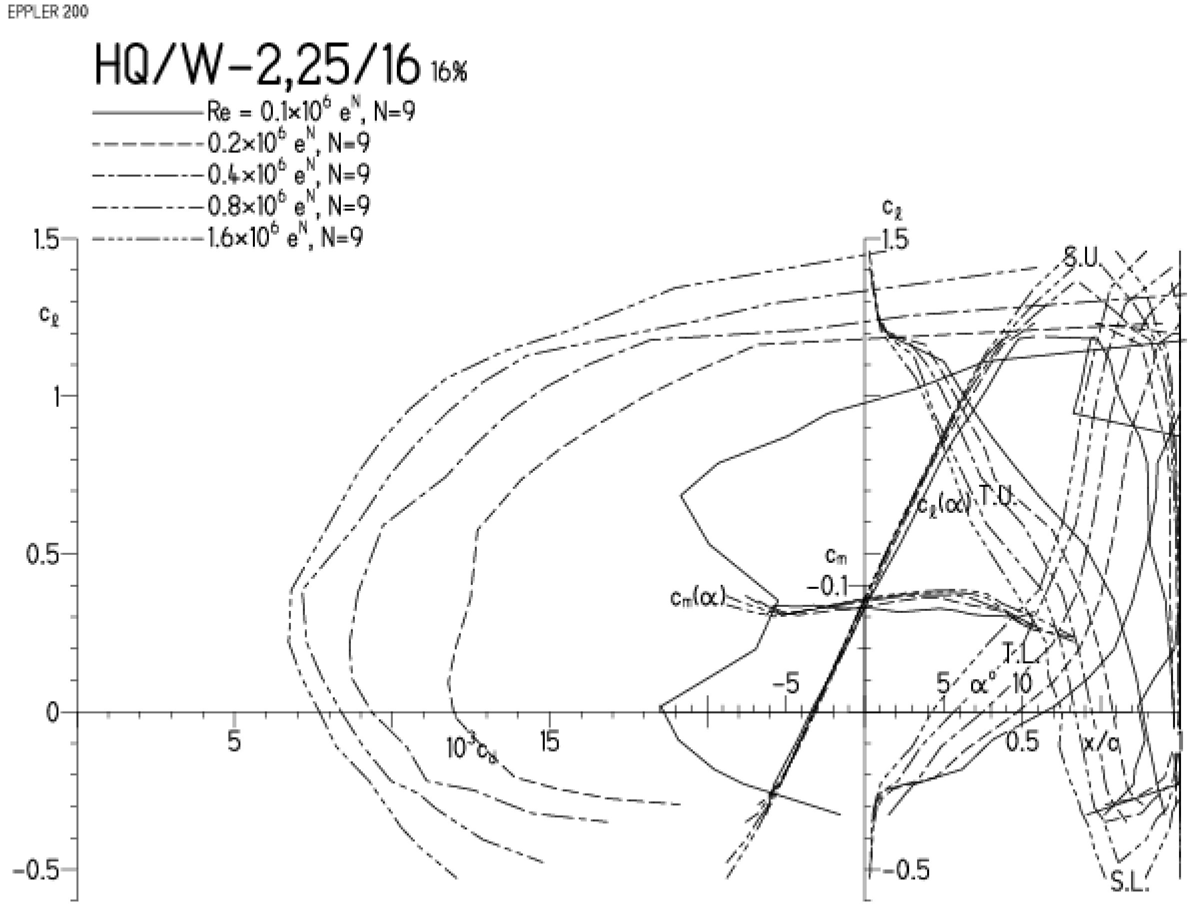


EPPLER 200



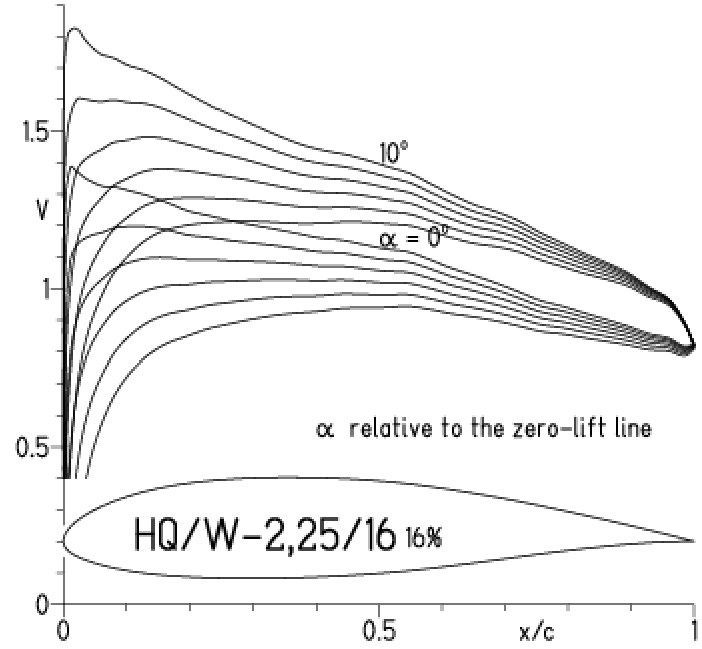
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1

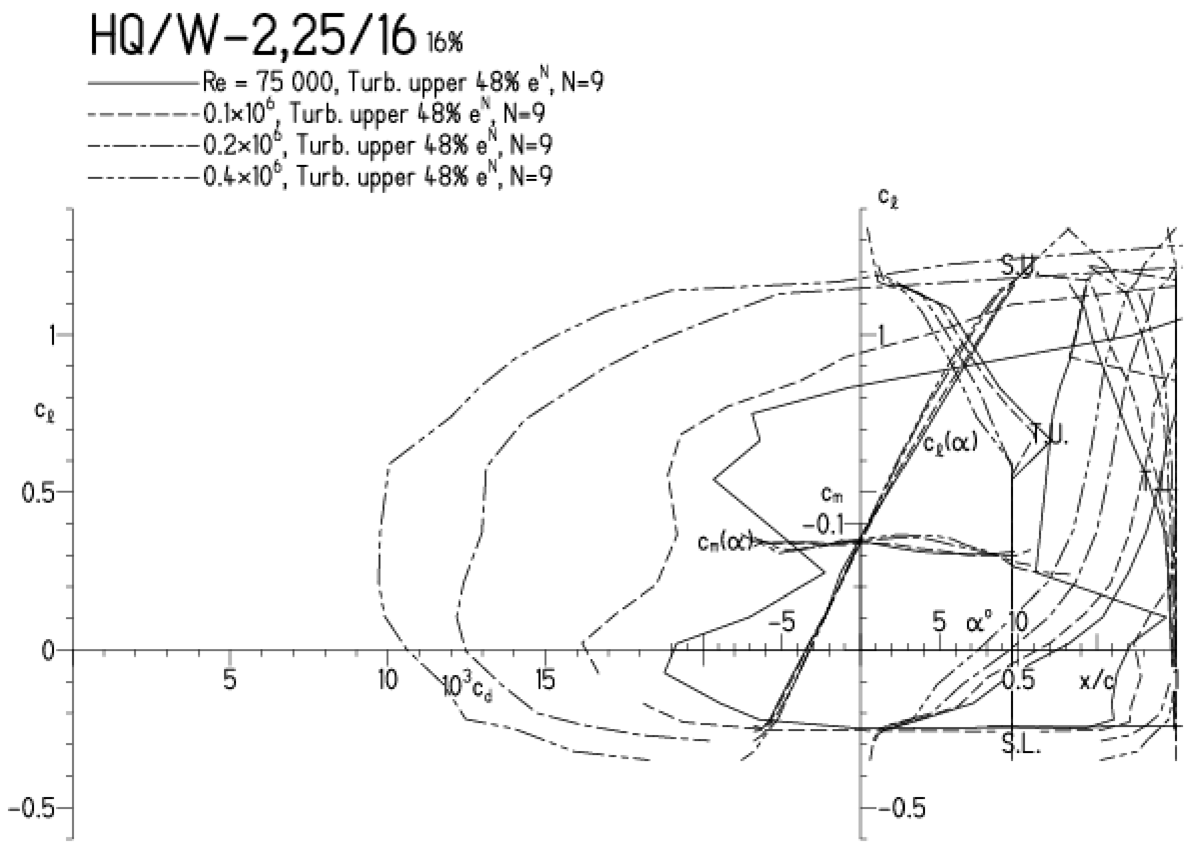

EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10³c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α)
T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

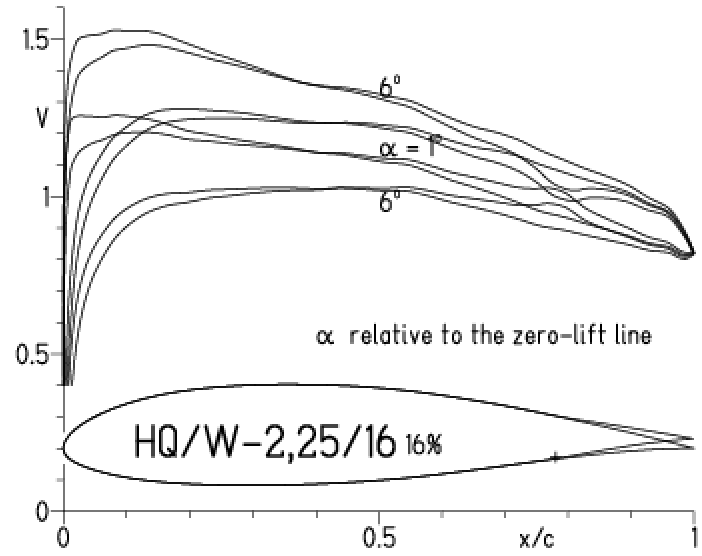


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

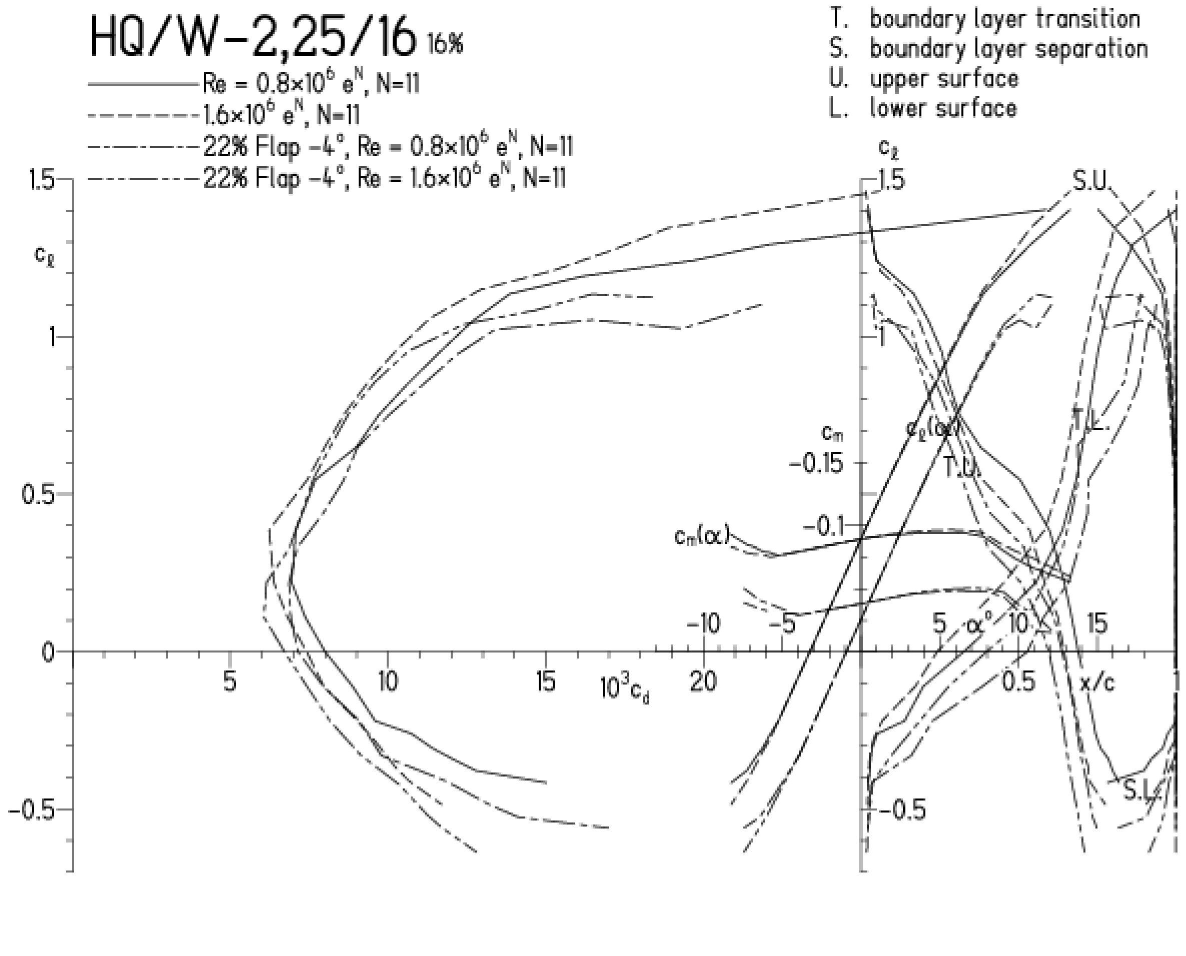
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

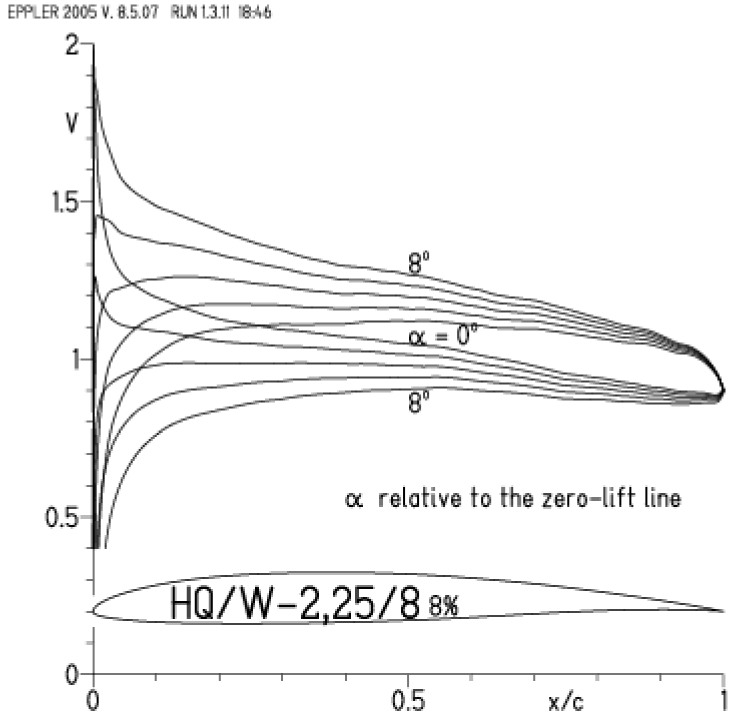
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

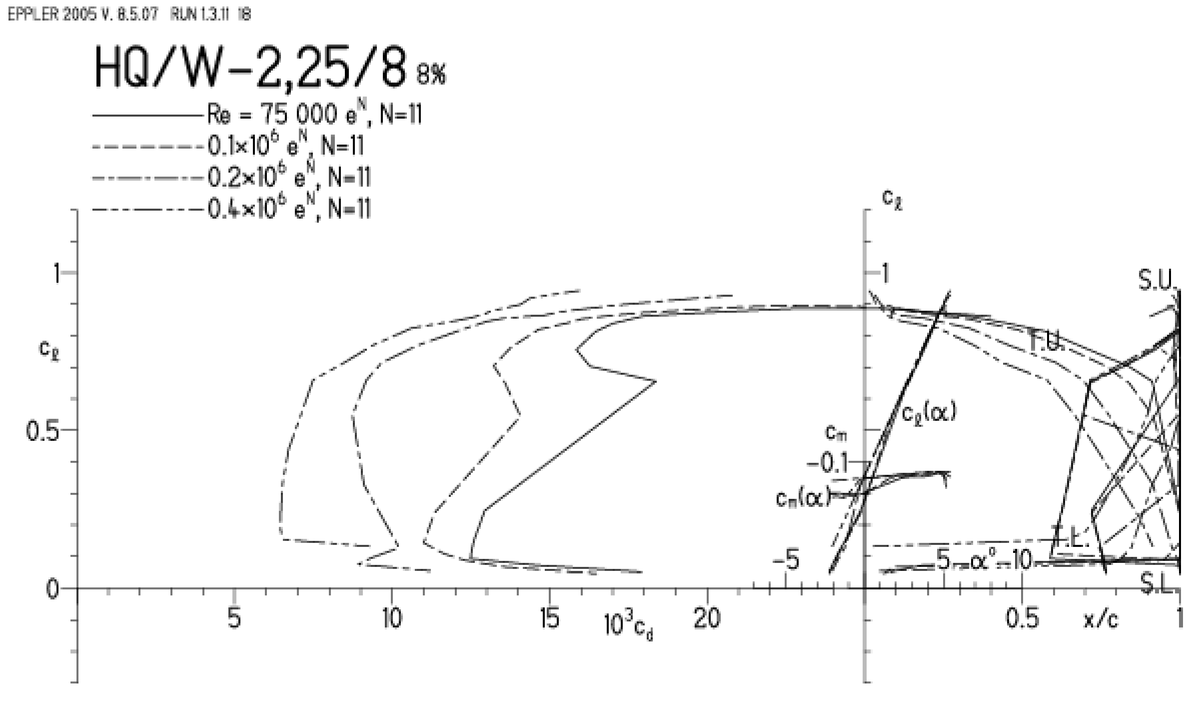


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

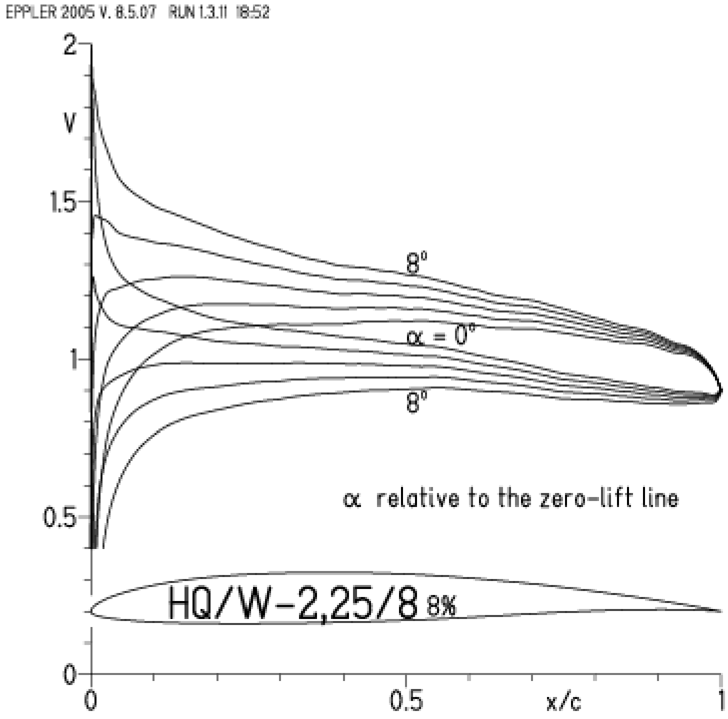


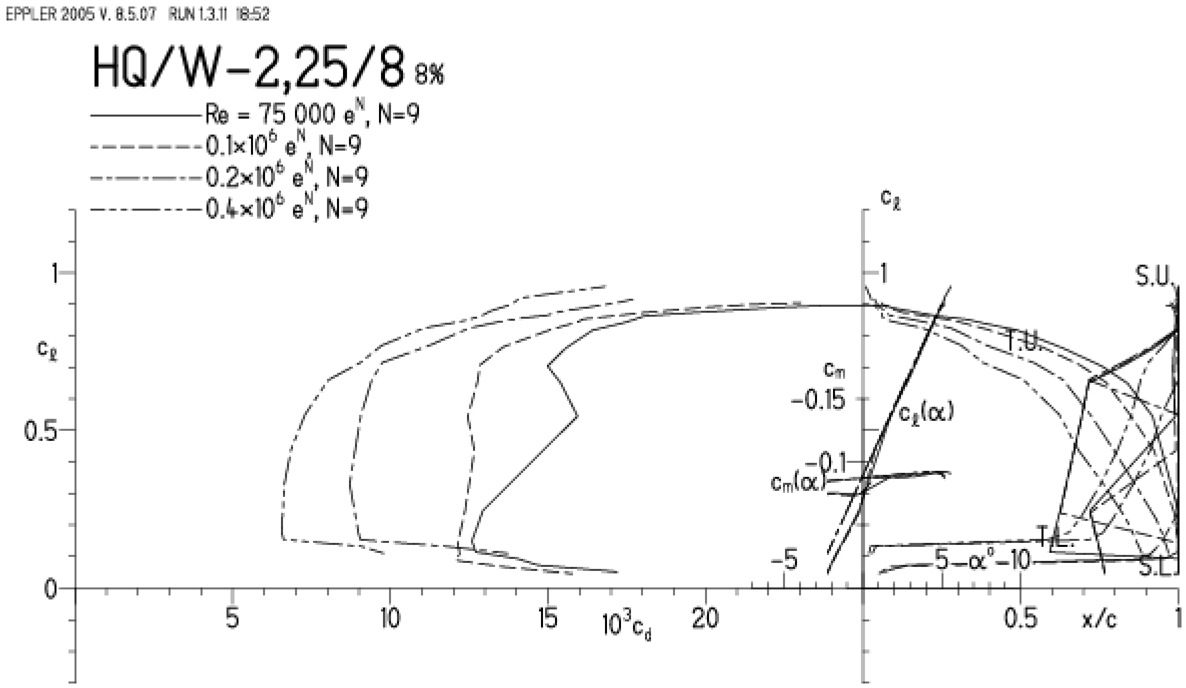
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

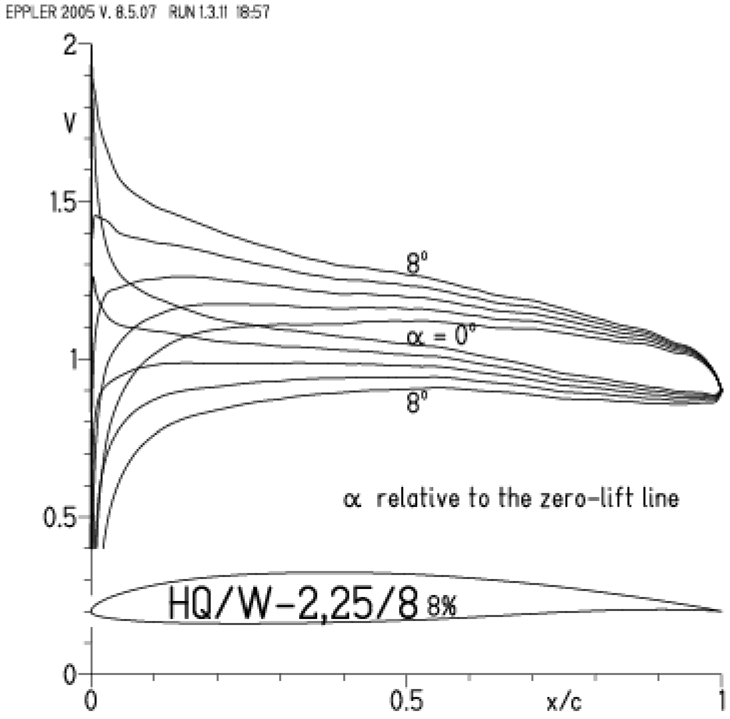

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

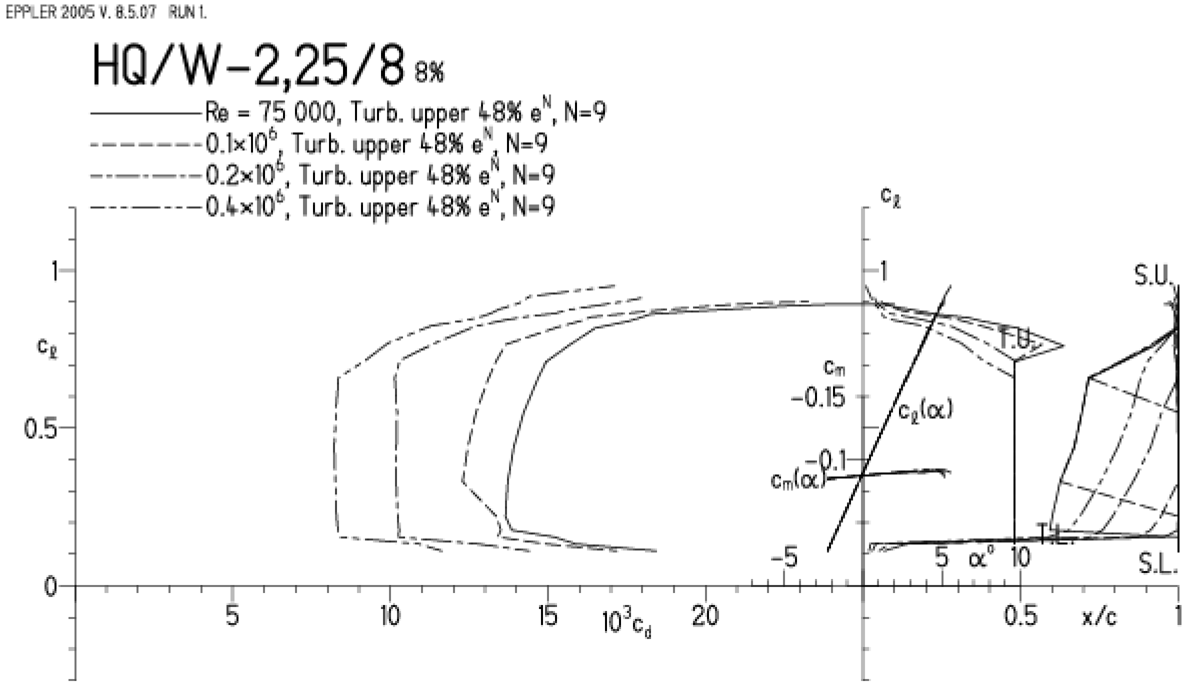
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

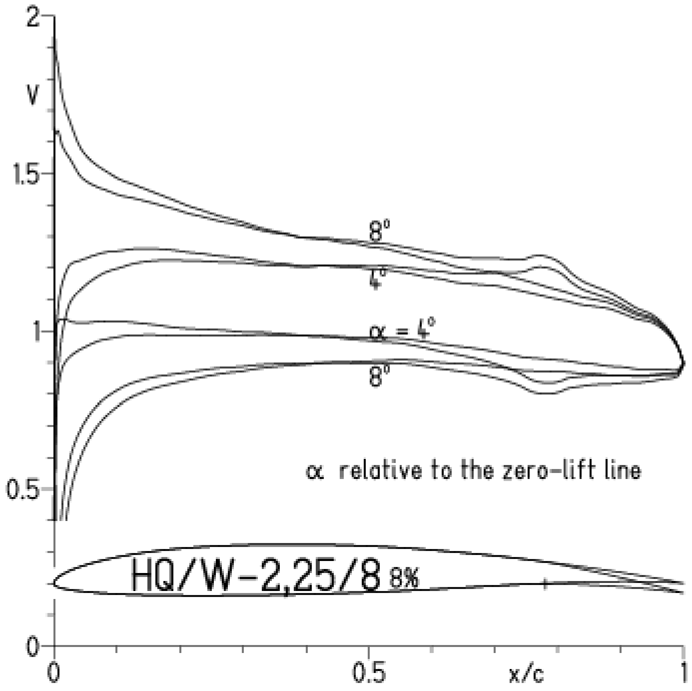
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



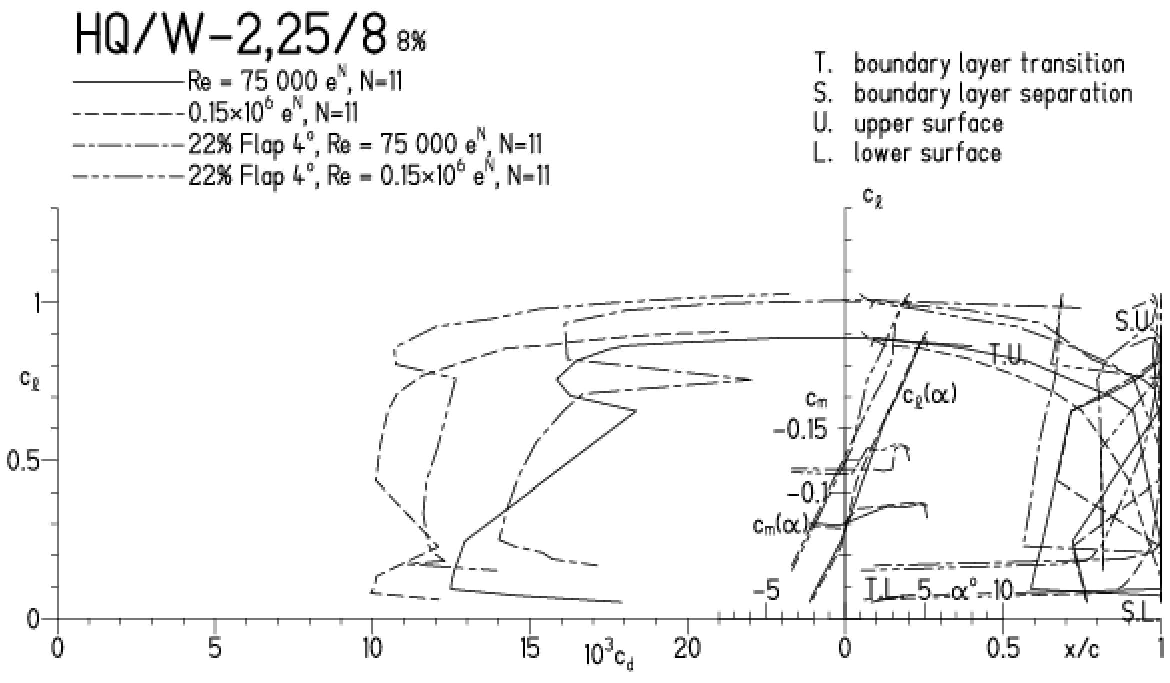


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

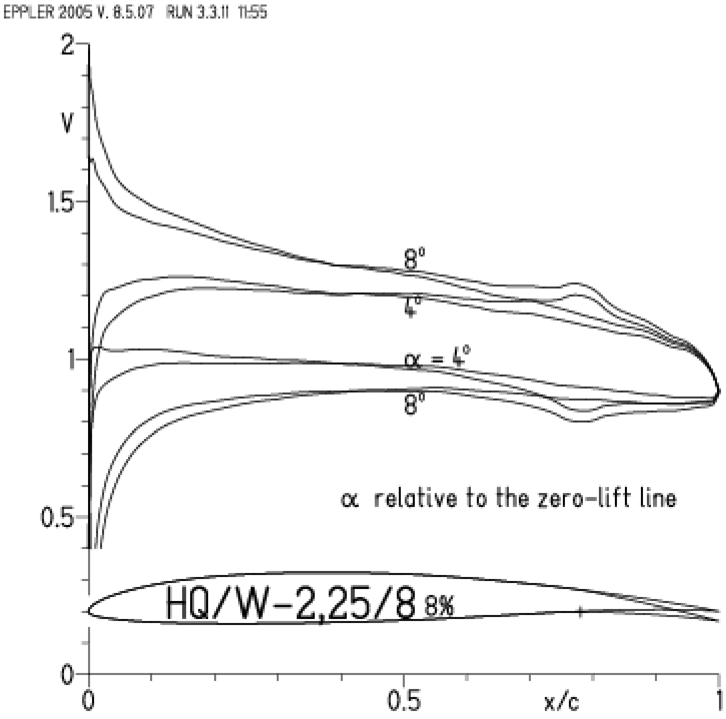
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

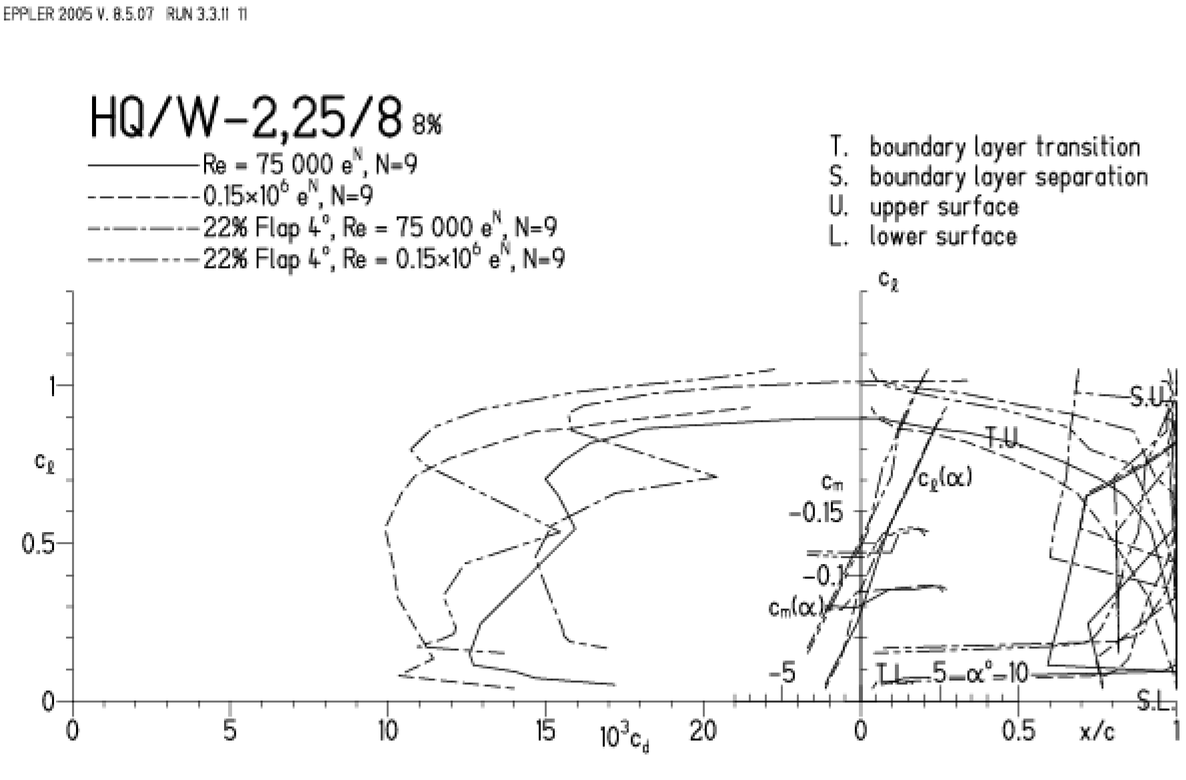


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

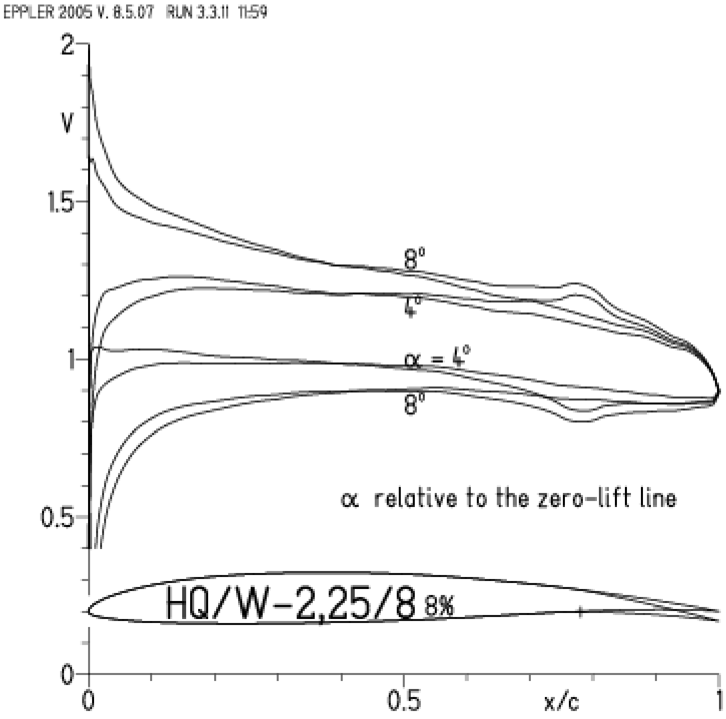


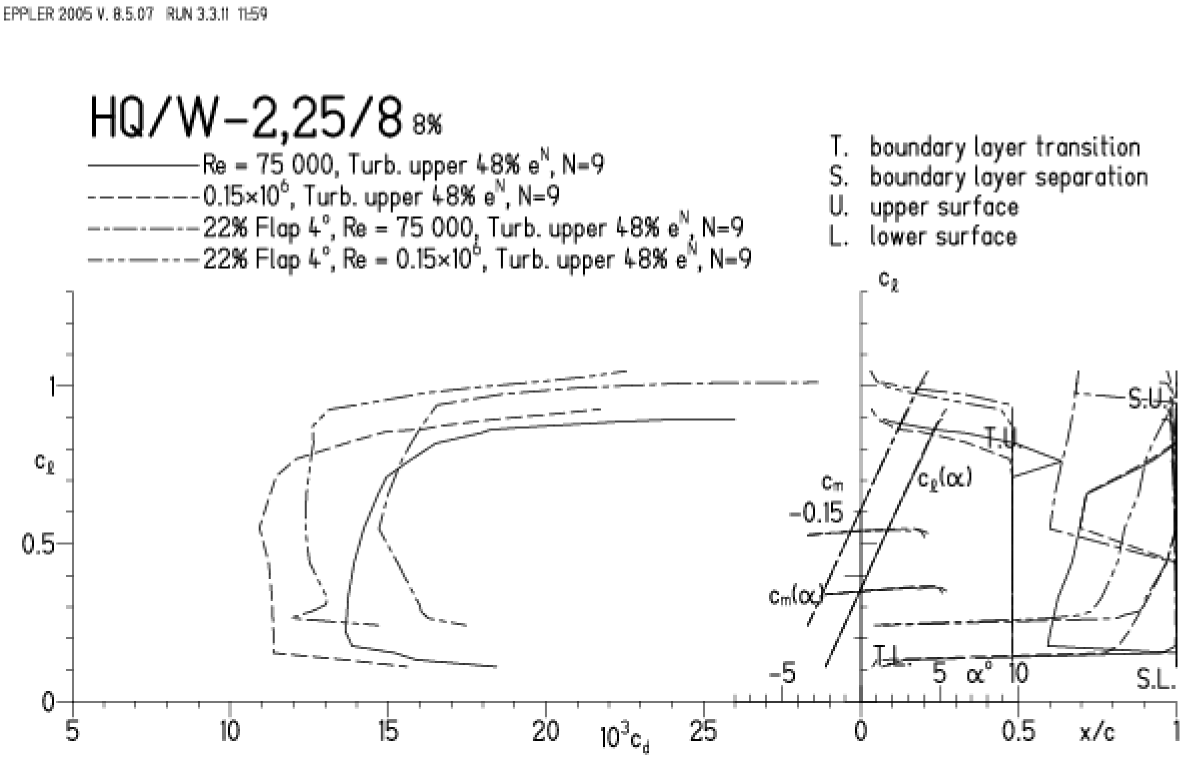
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





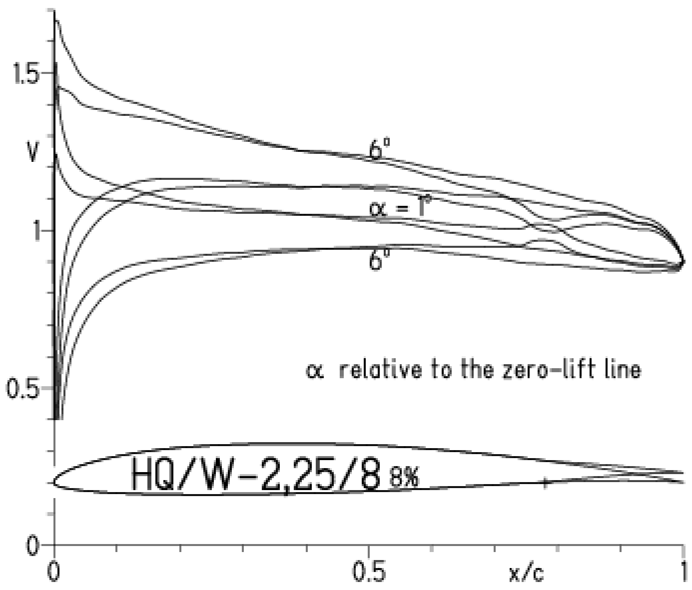
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



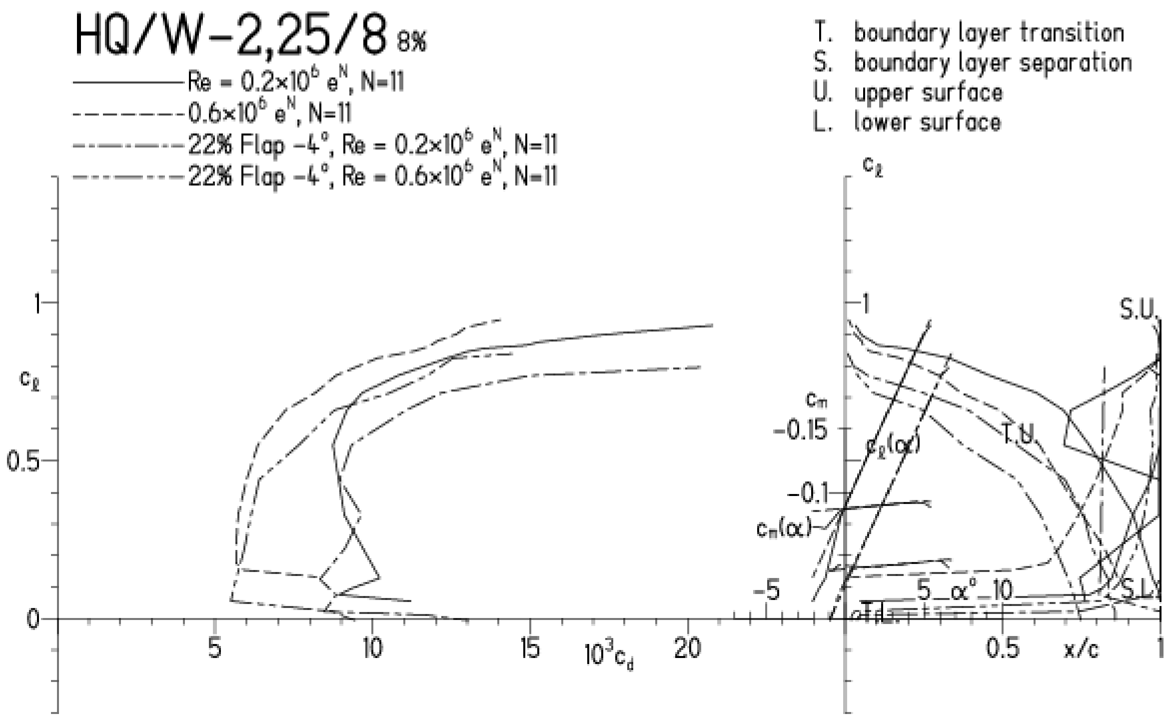


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

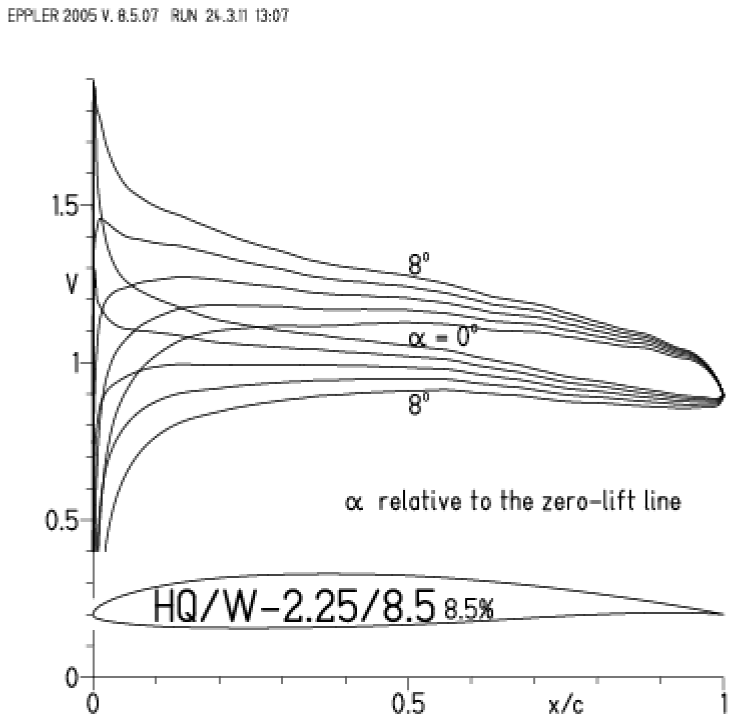
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

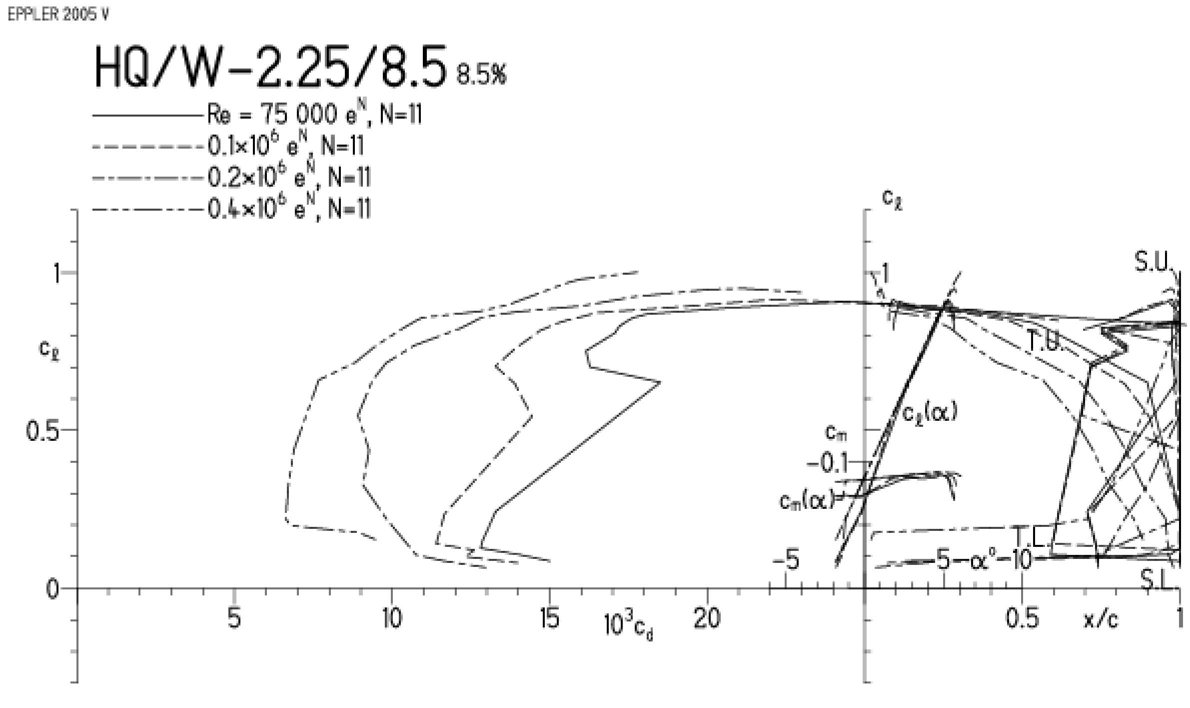


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

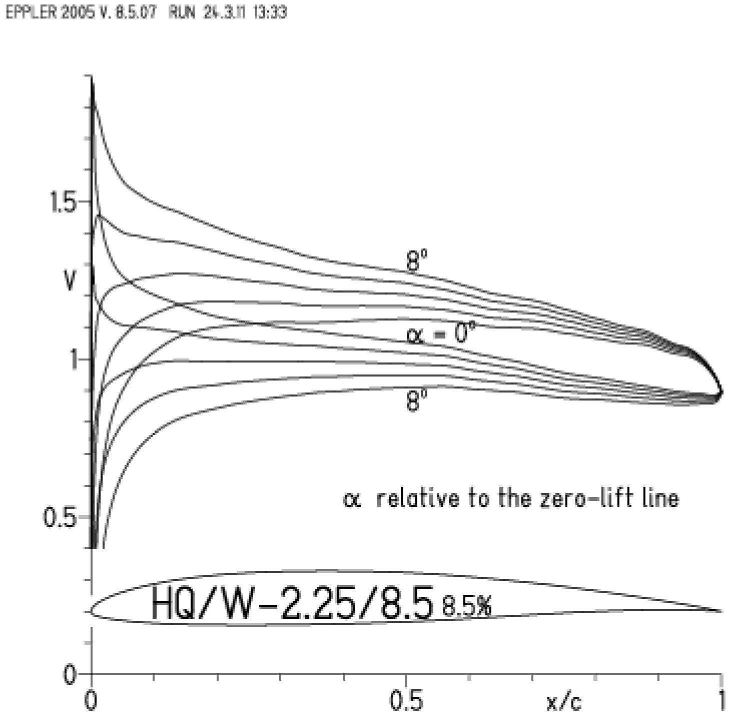


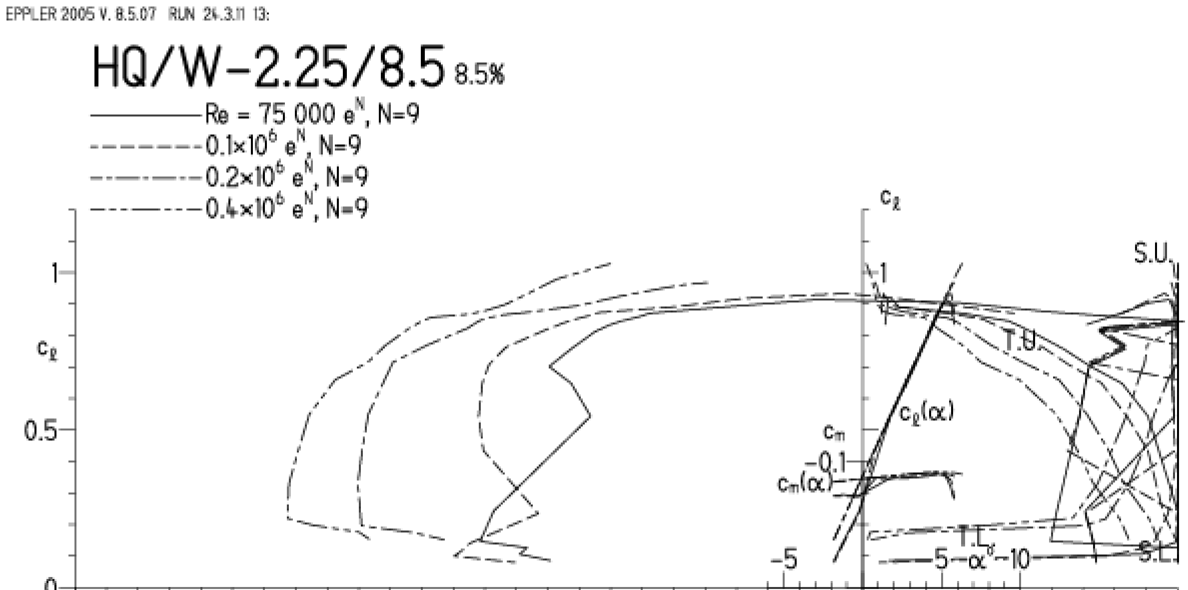
HQ/W-2,25/8,5, N=11



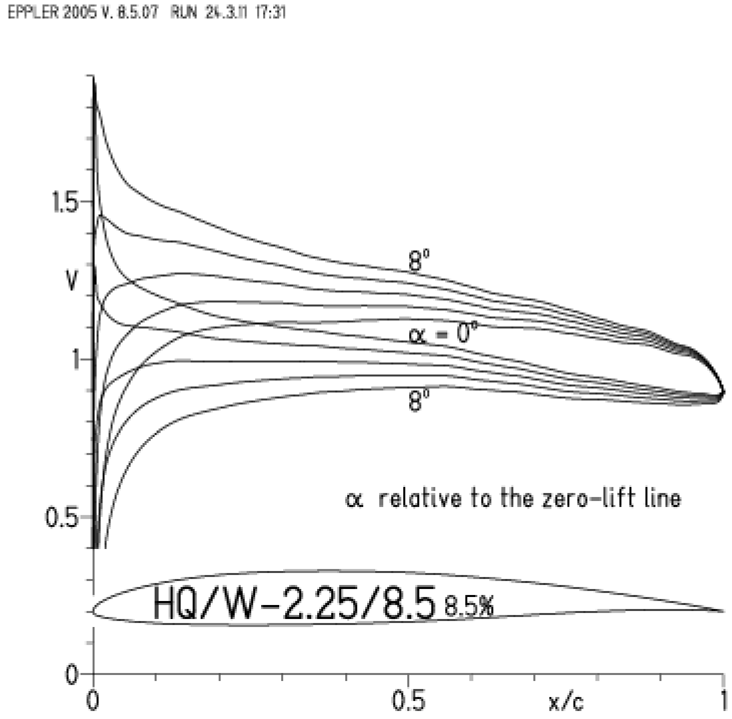


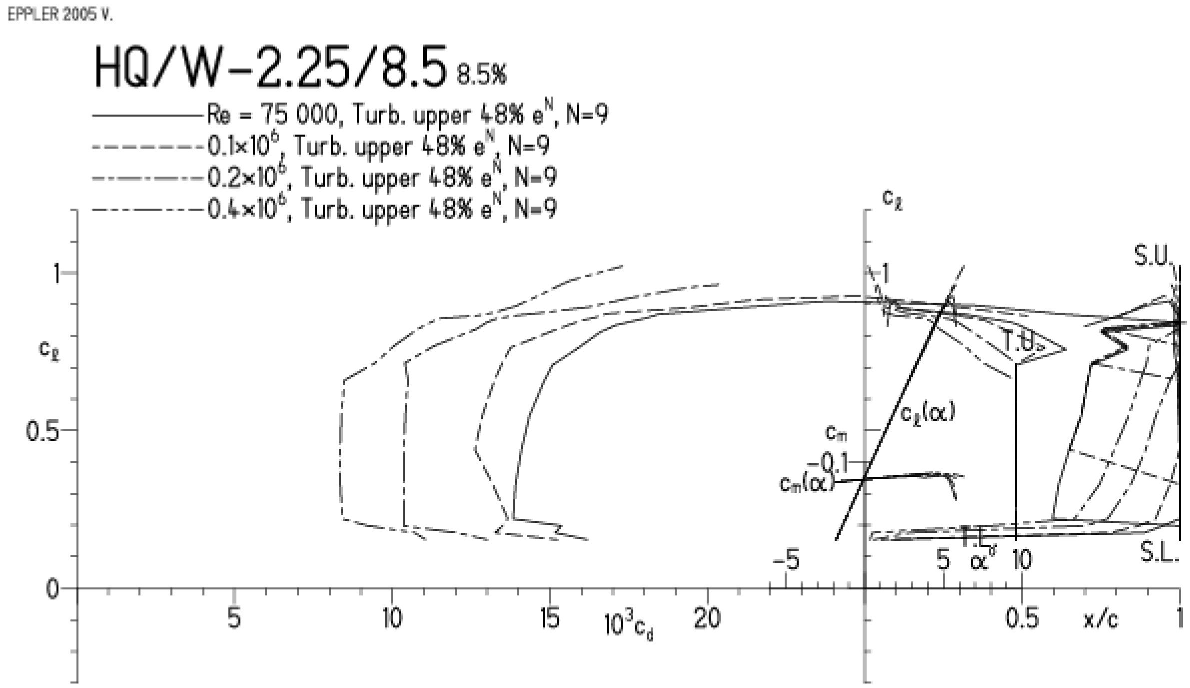
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

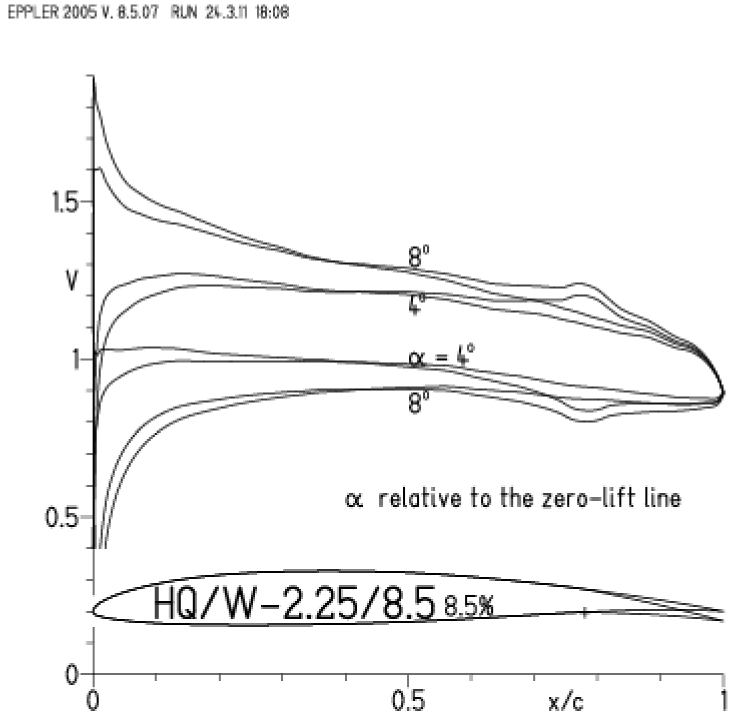

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_ℓ(α)
c_m
-0.1
c_m(α)
-5
S.U.
T.U.
T.L.
S.L.
5 α° 10
0.5
x/c
1

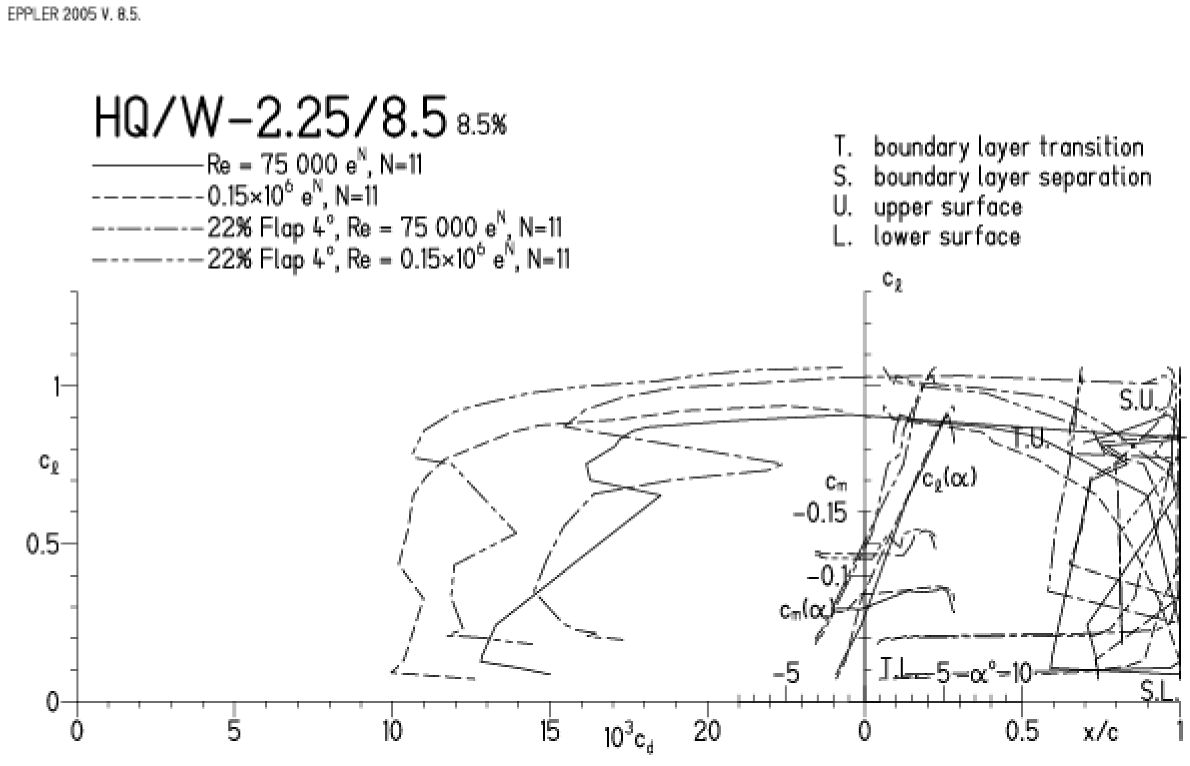
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





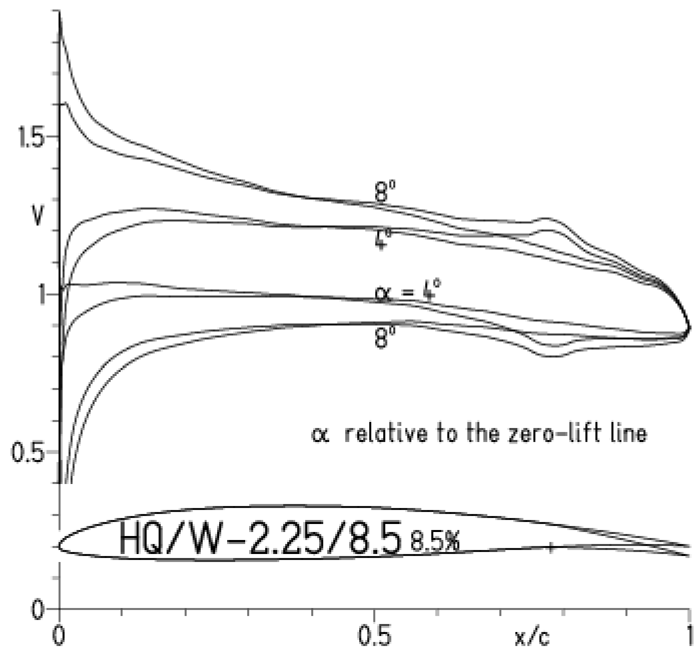
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



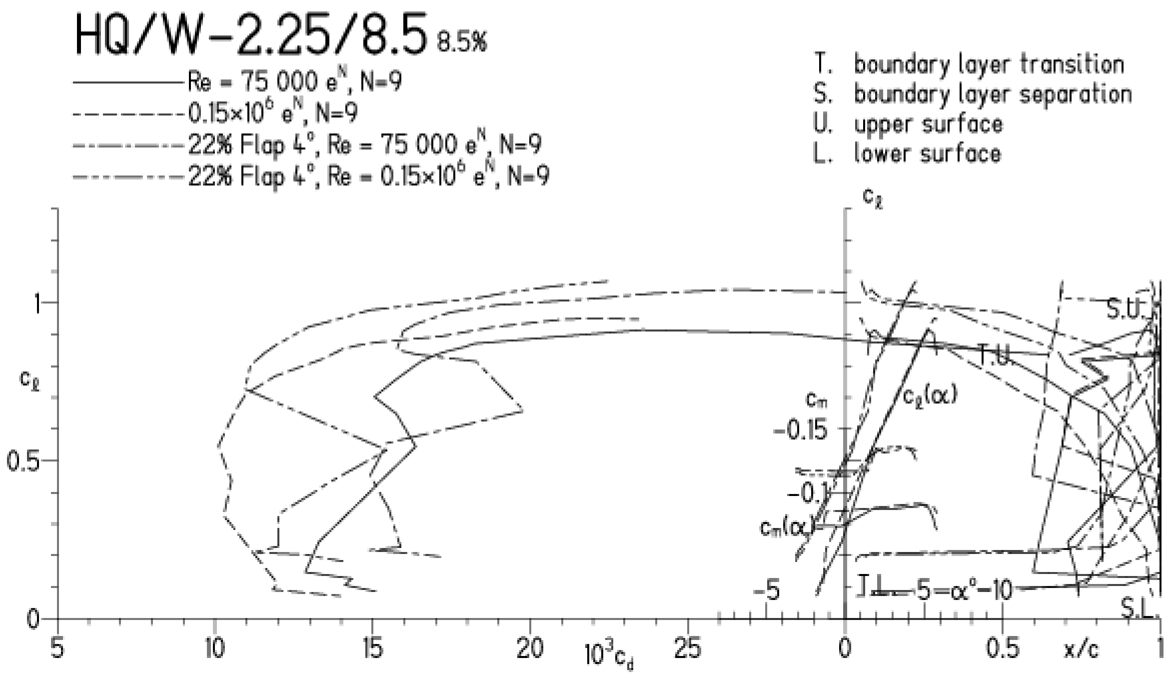


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

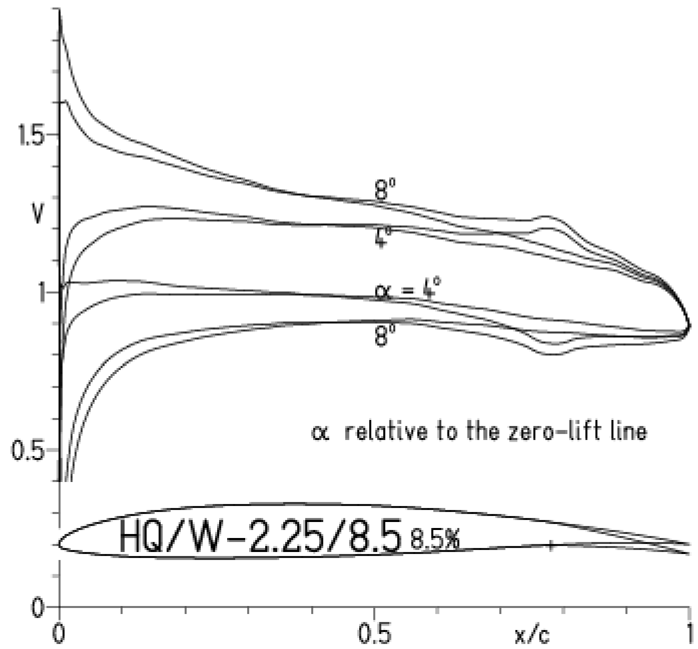


EPPLER 2005 V.

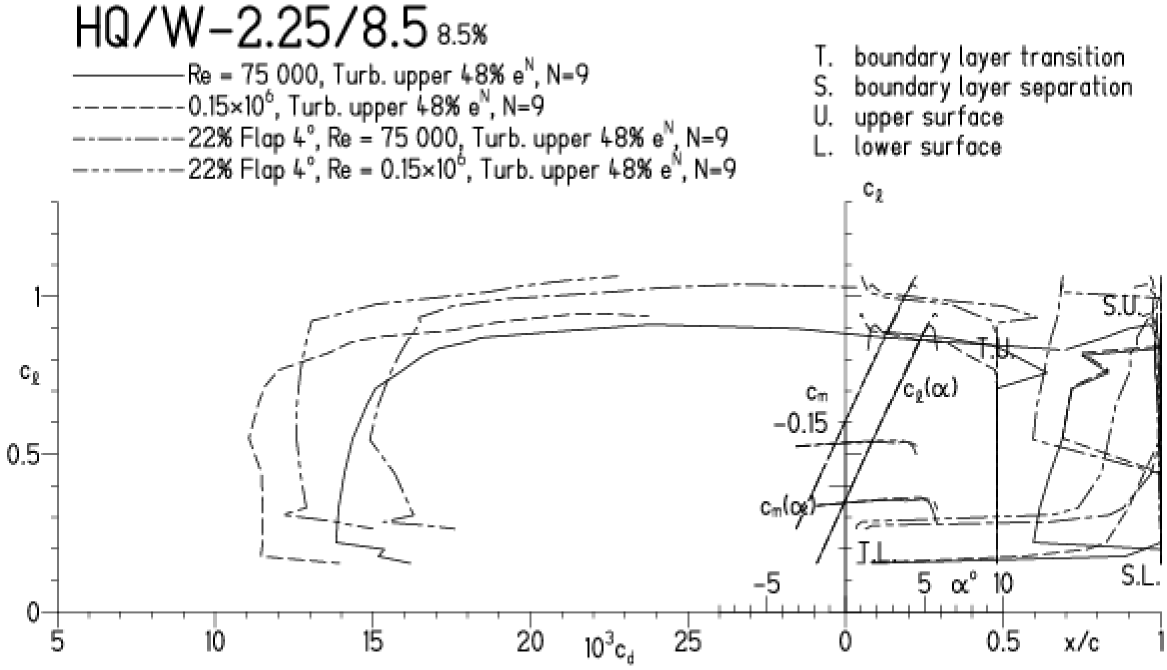


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

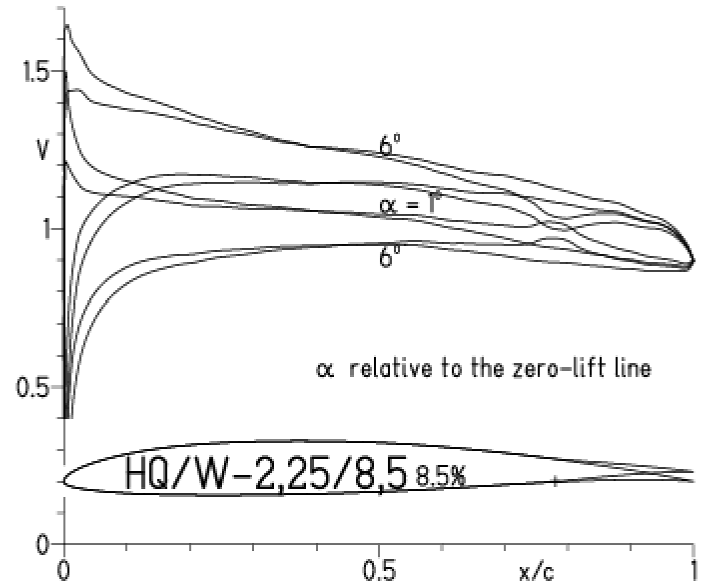


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

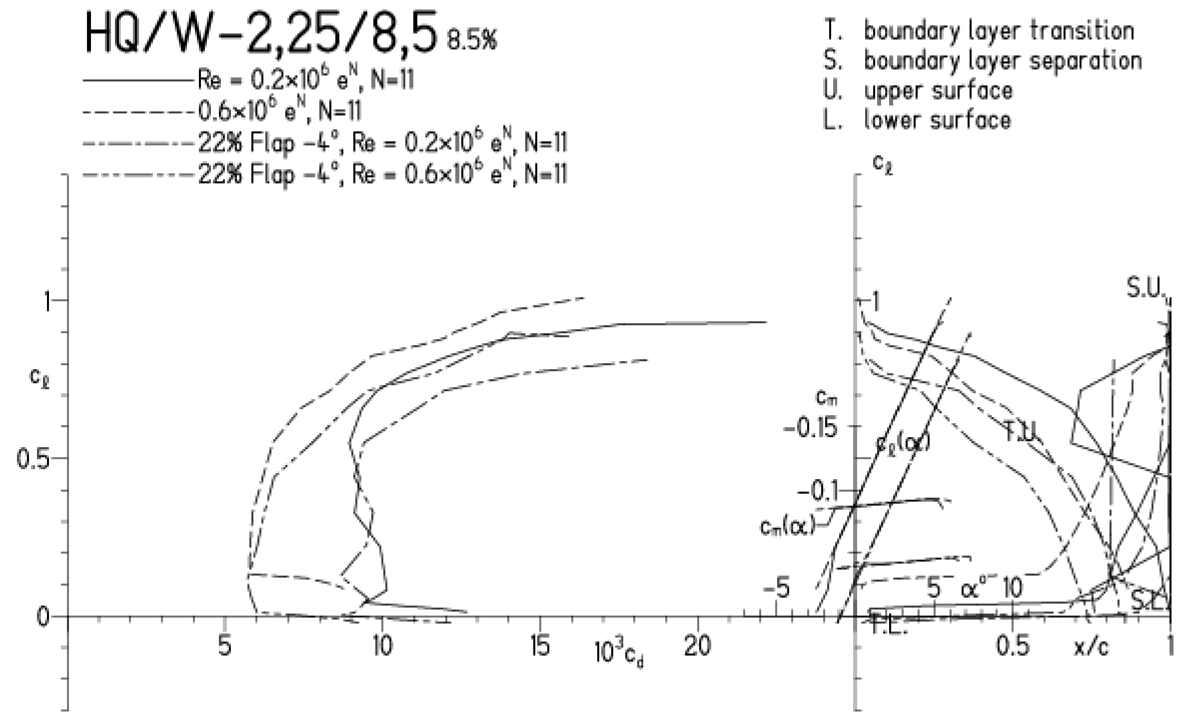


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

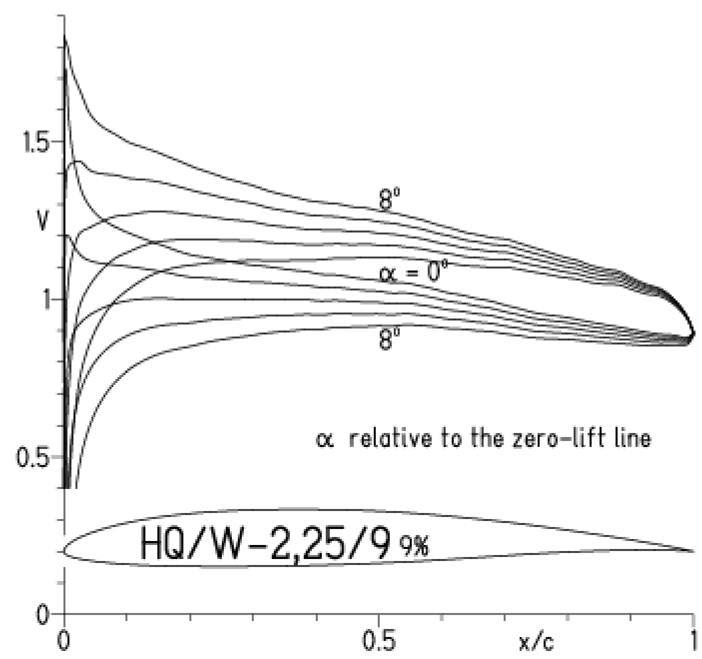


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

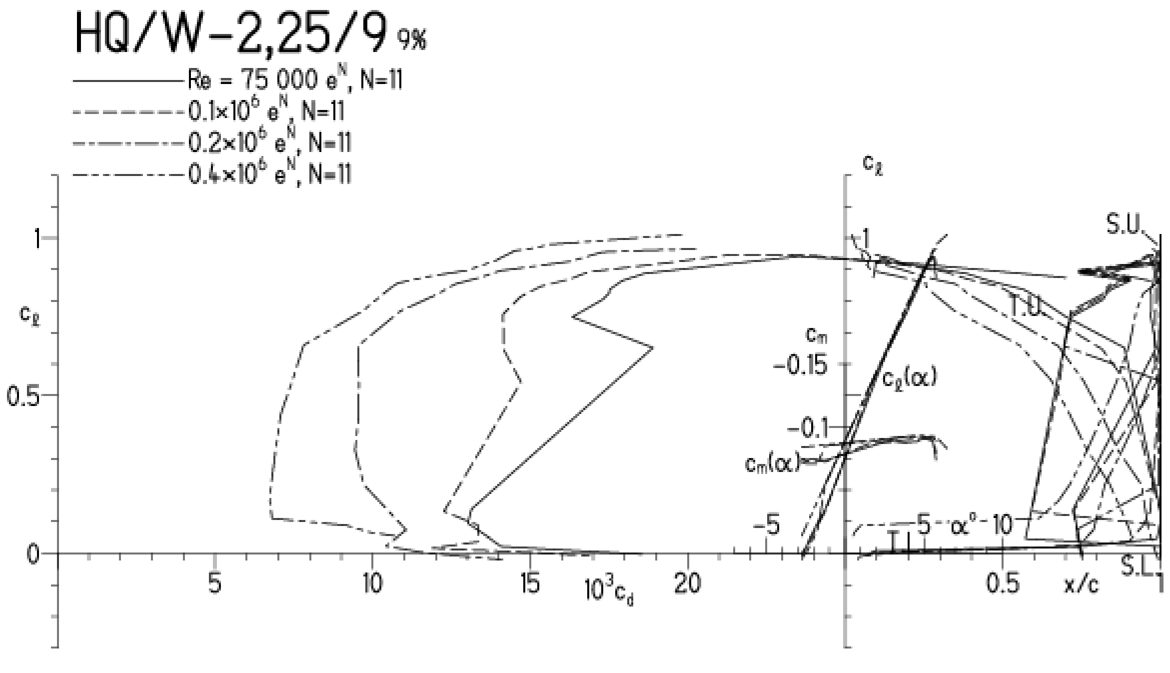


HQ/W-2,25/9, N=11

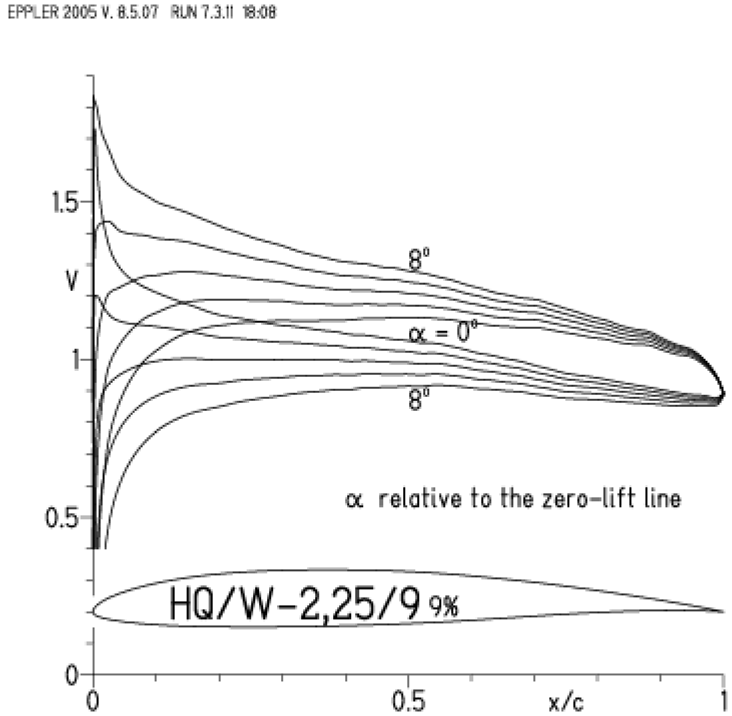
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

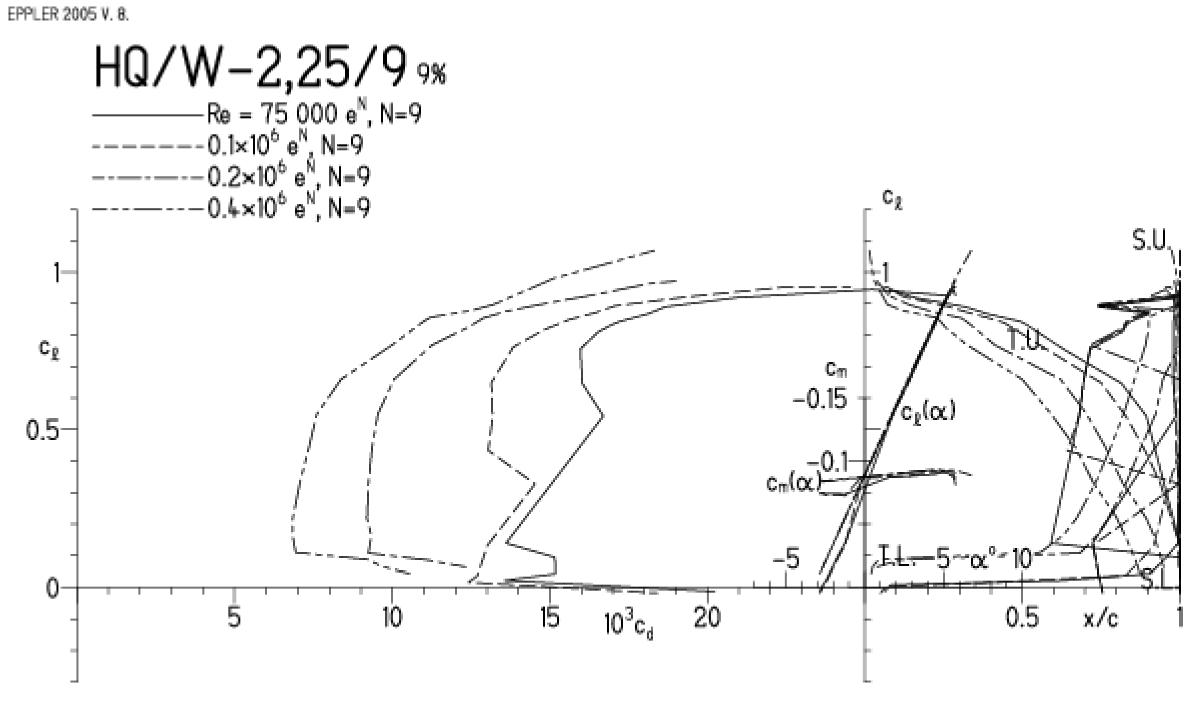


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



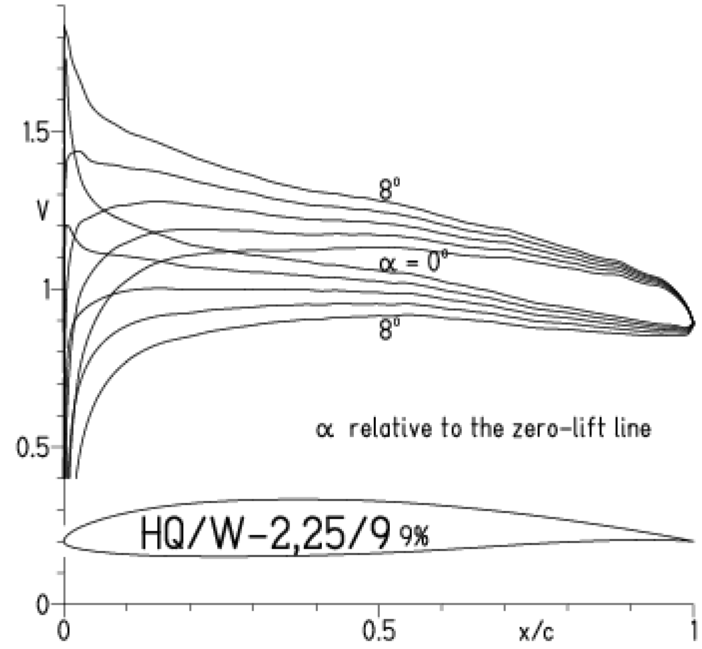
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

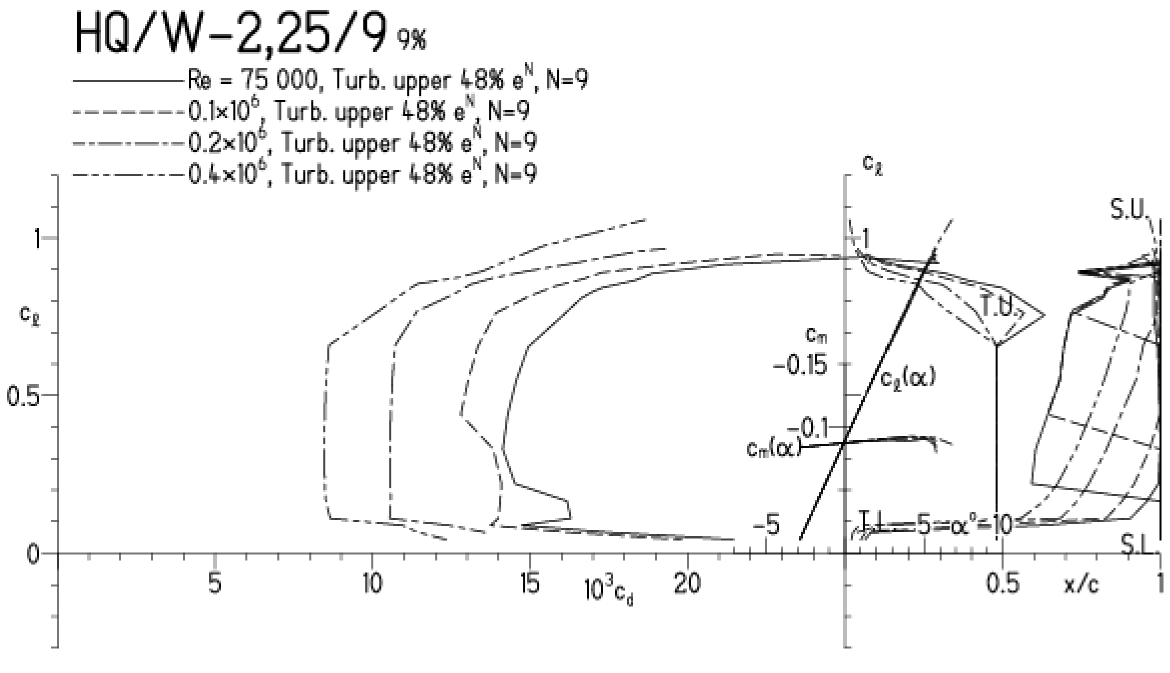

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

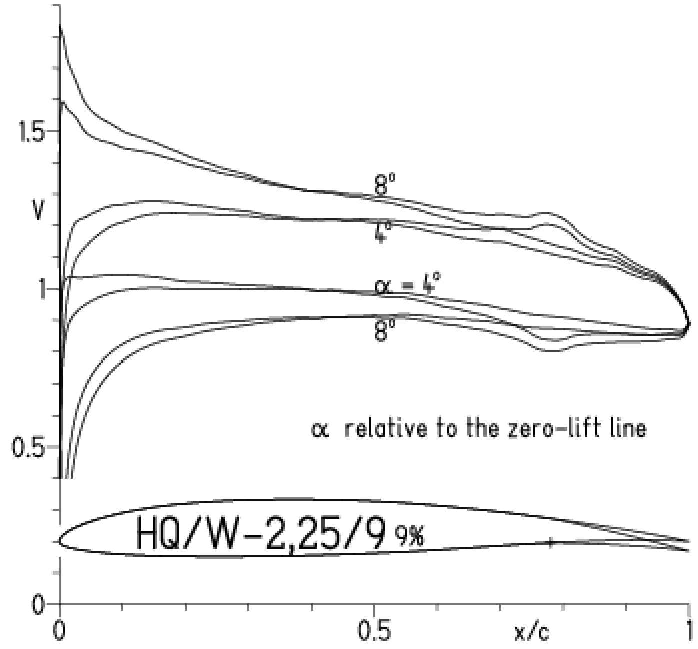


EPPLER 2005 V. 8.5.07 RUN 7

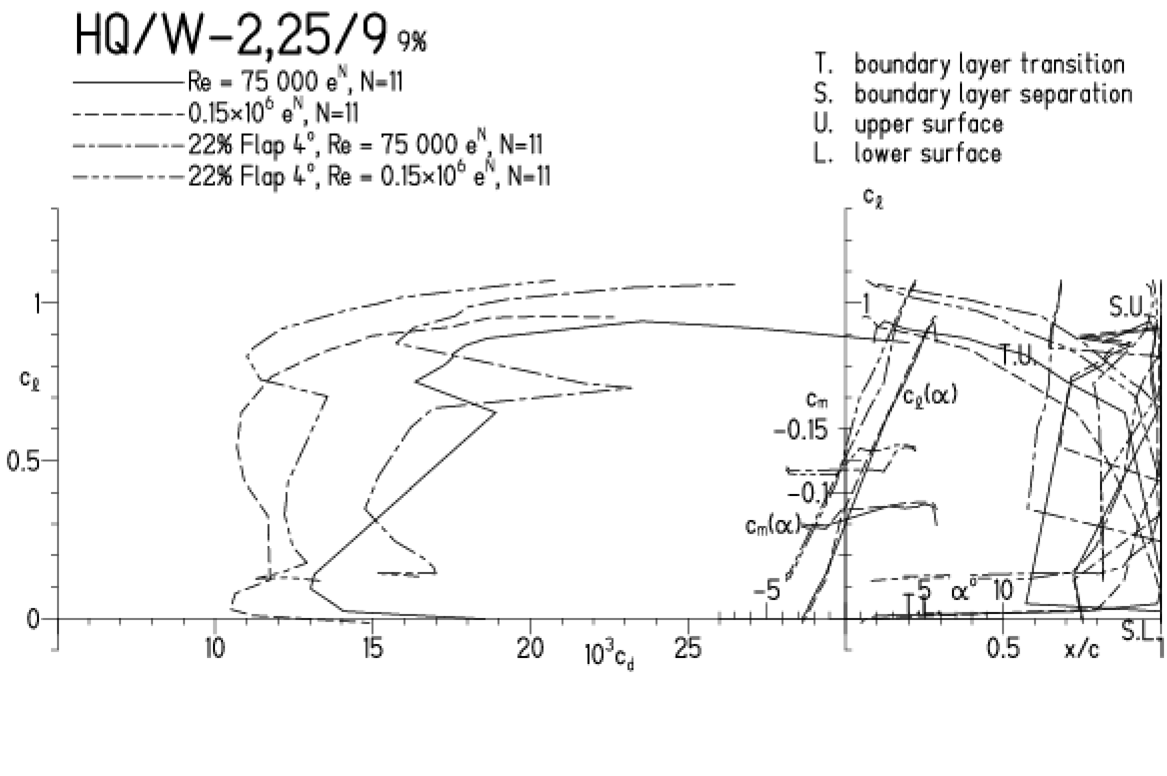


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

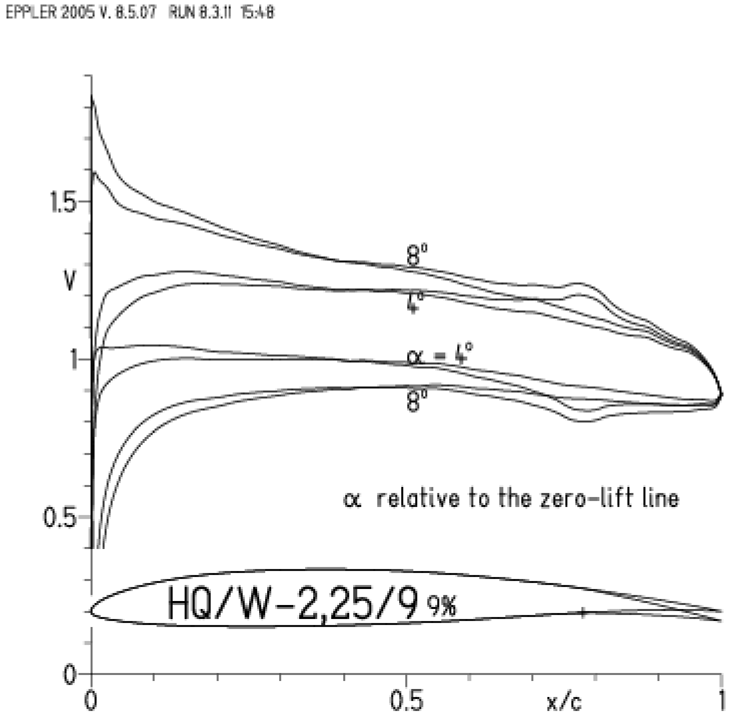
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

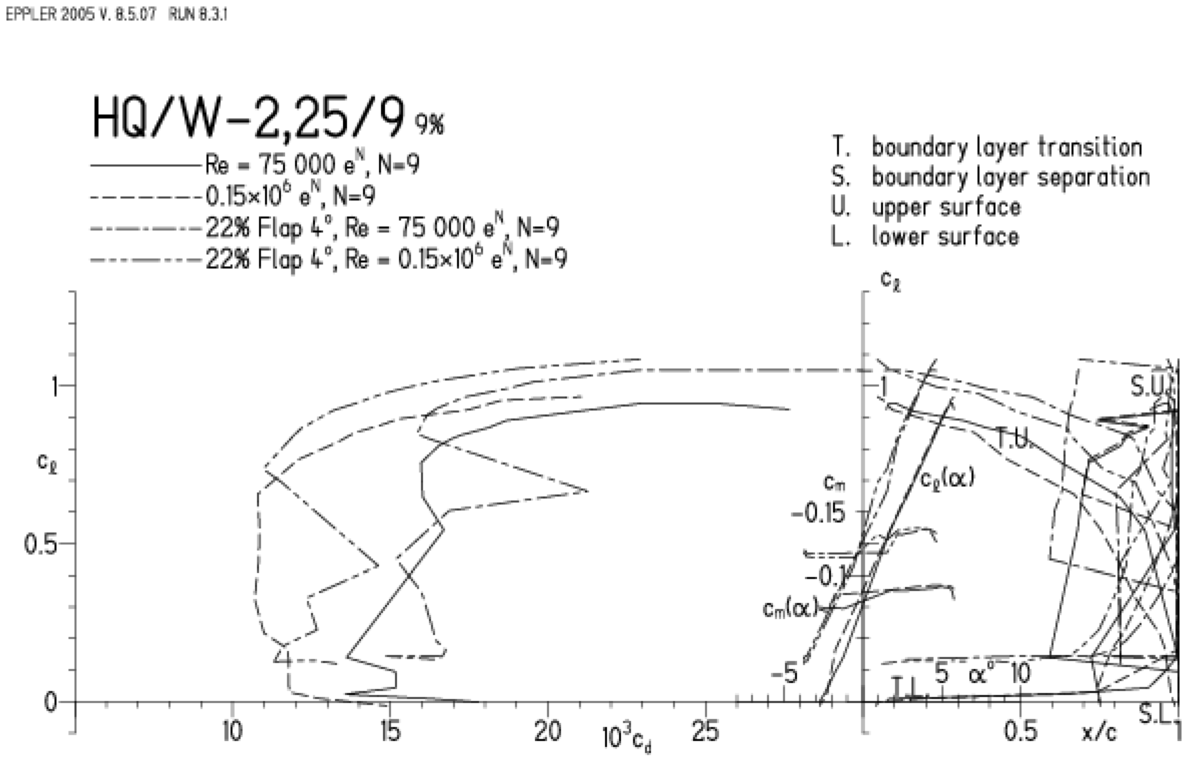


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



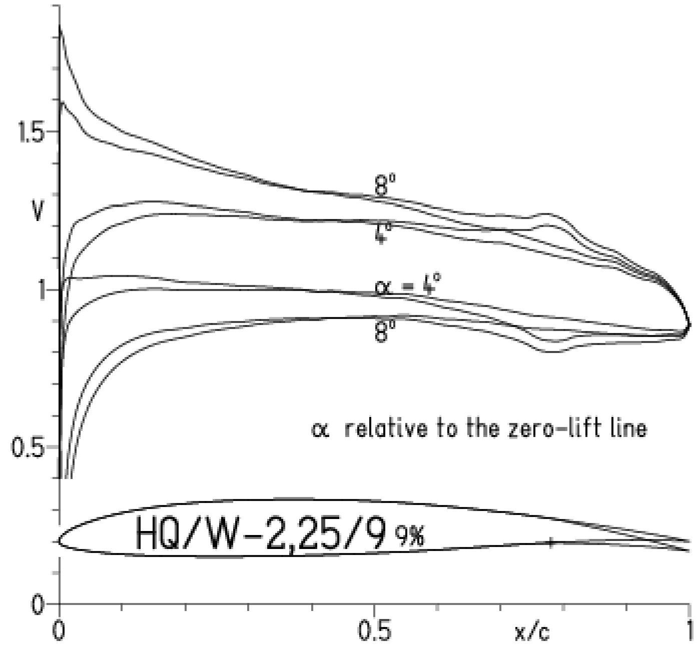
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



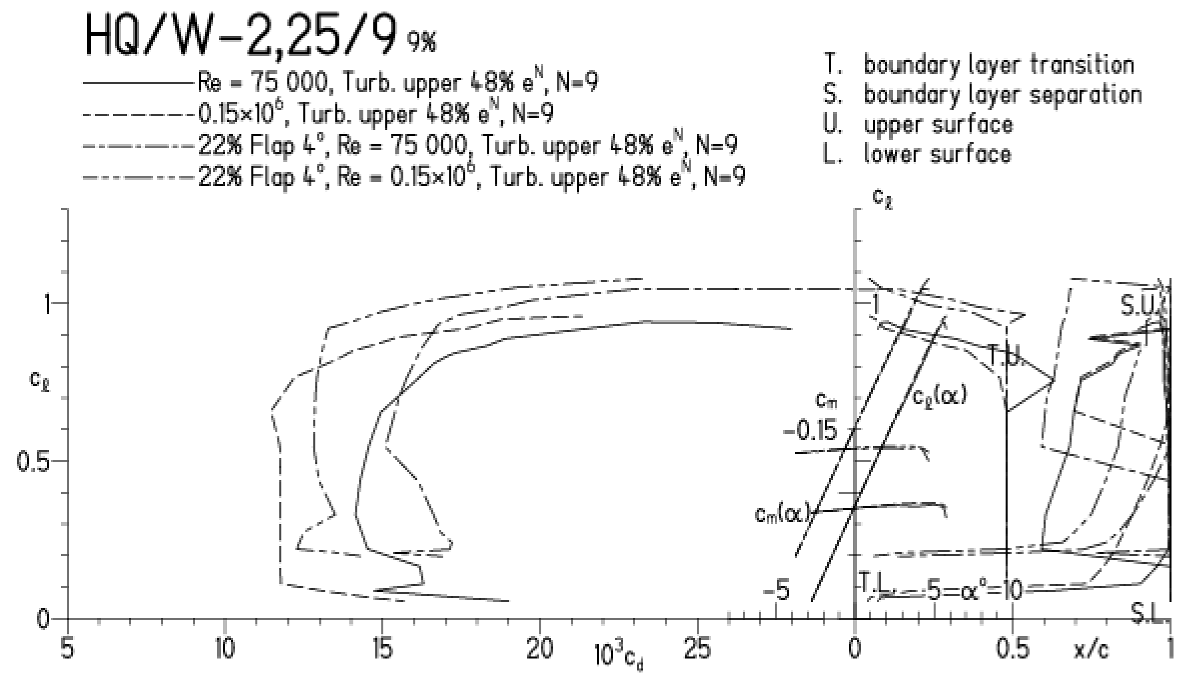


<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

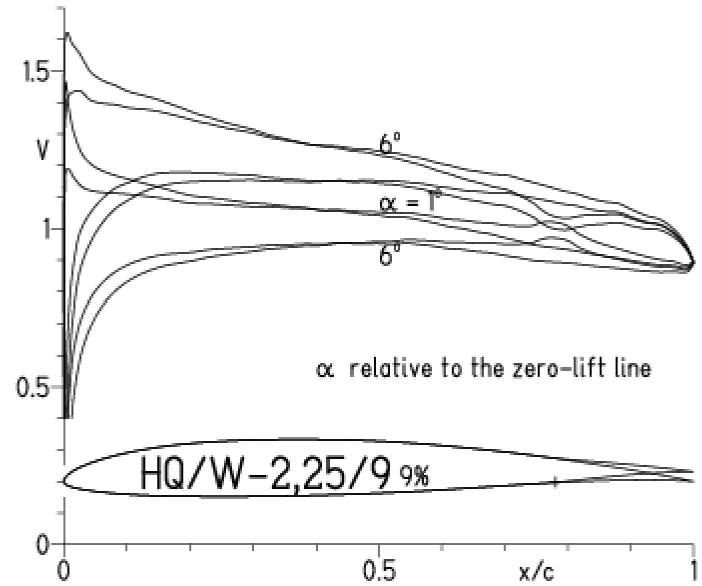


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

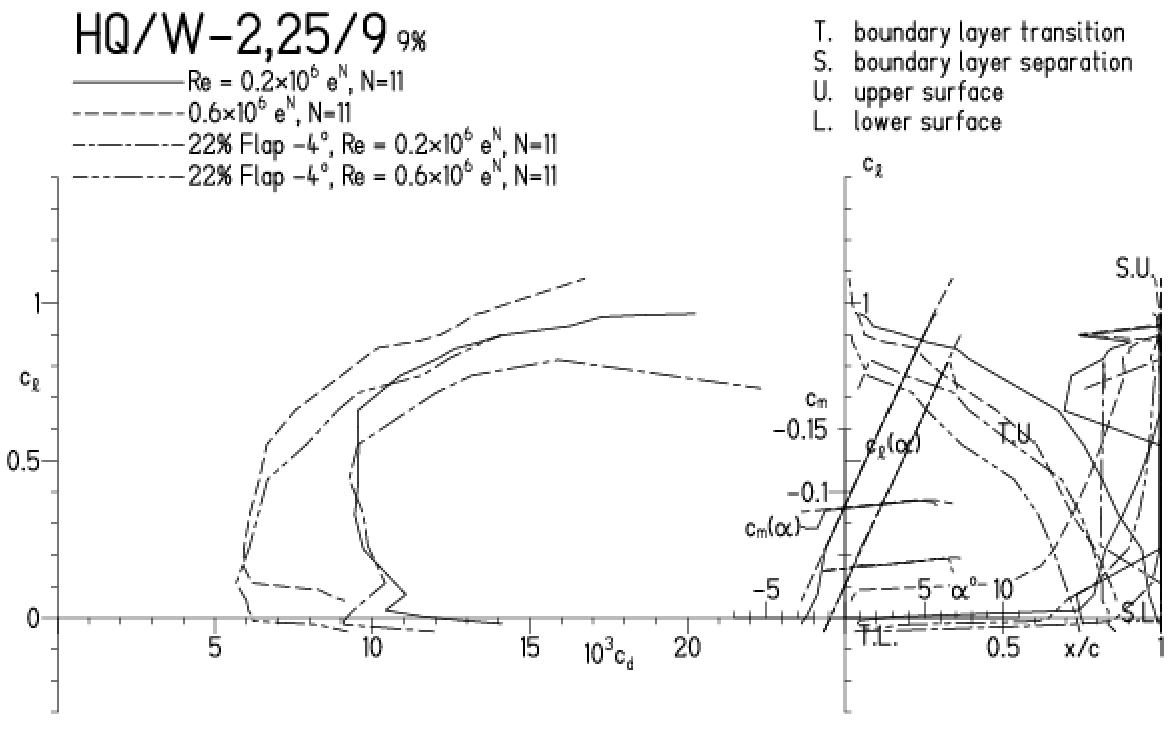


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

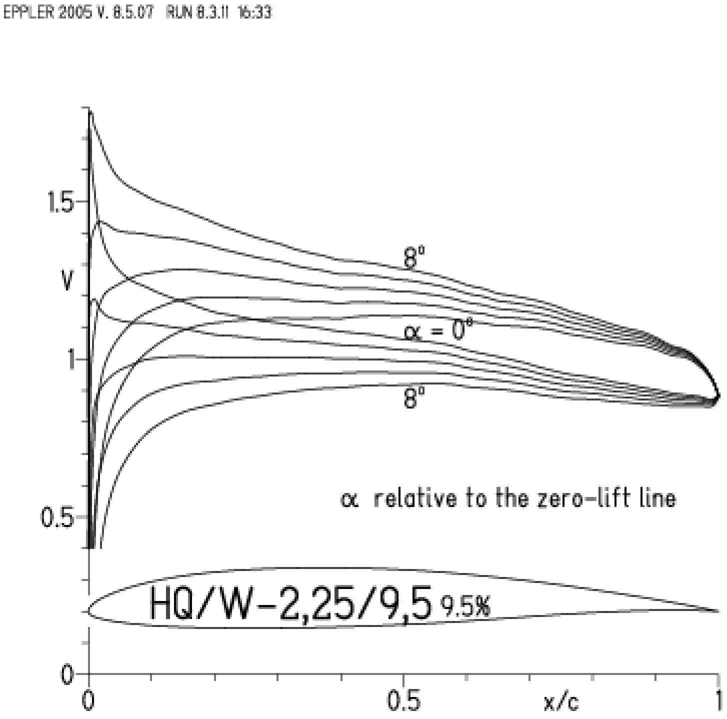
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

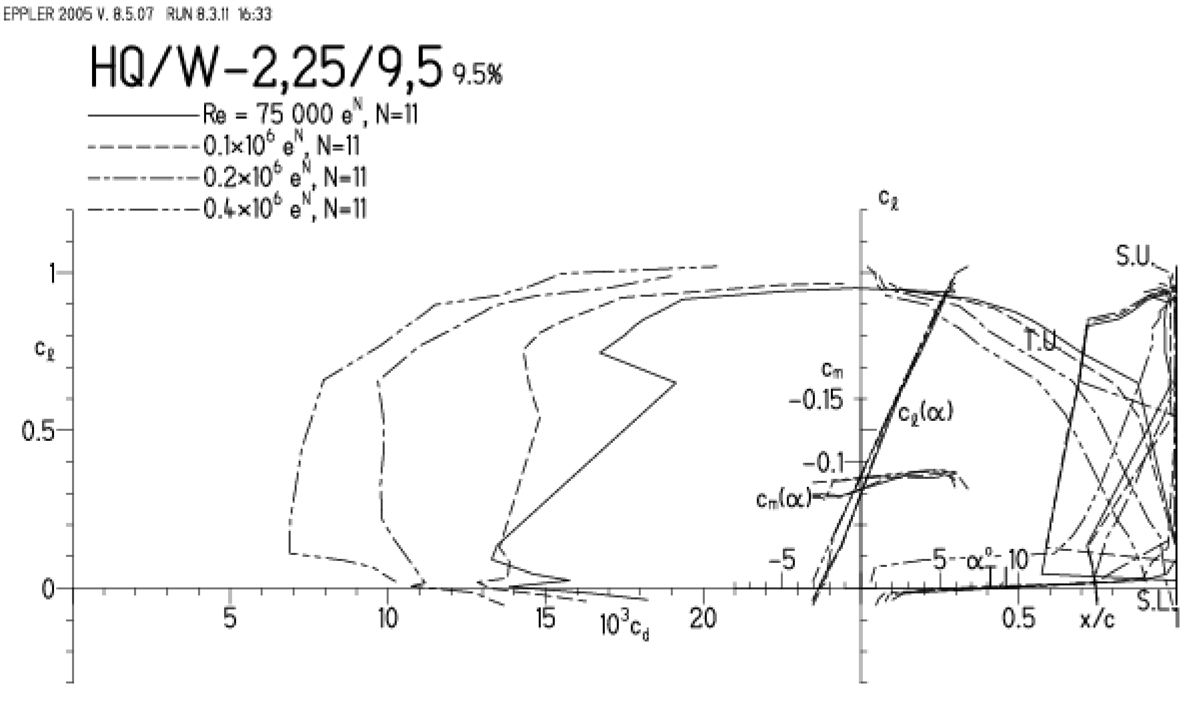


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

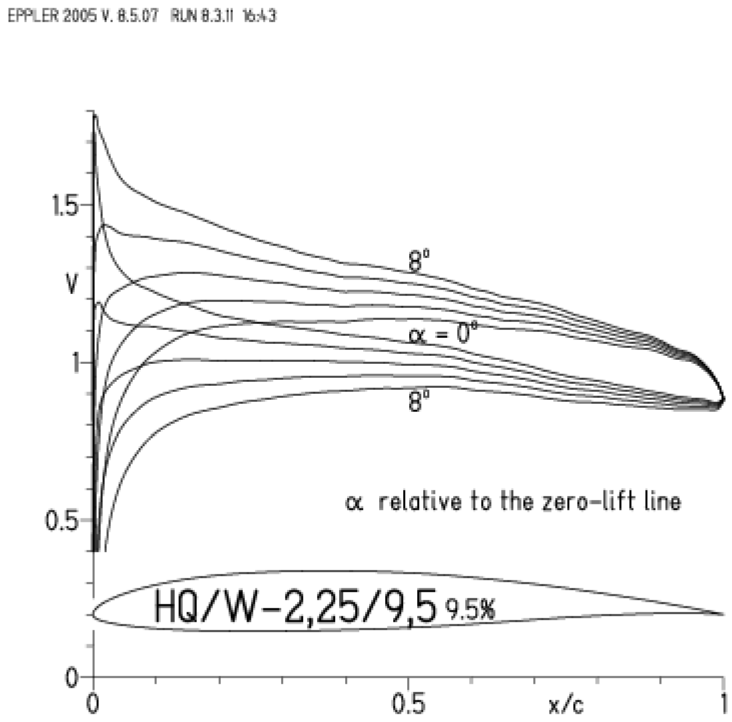


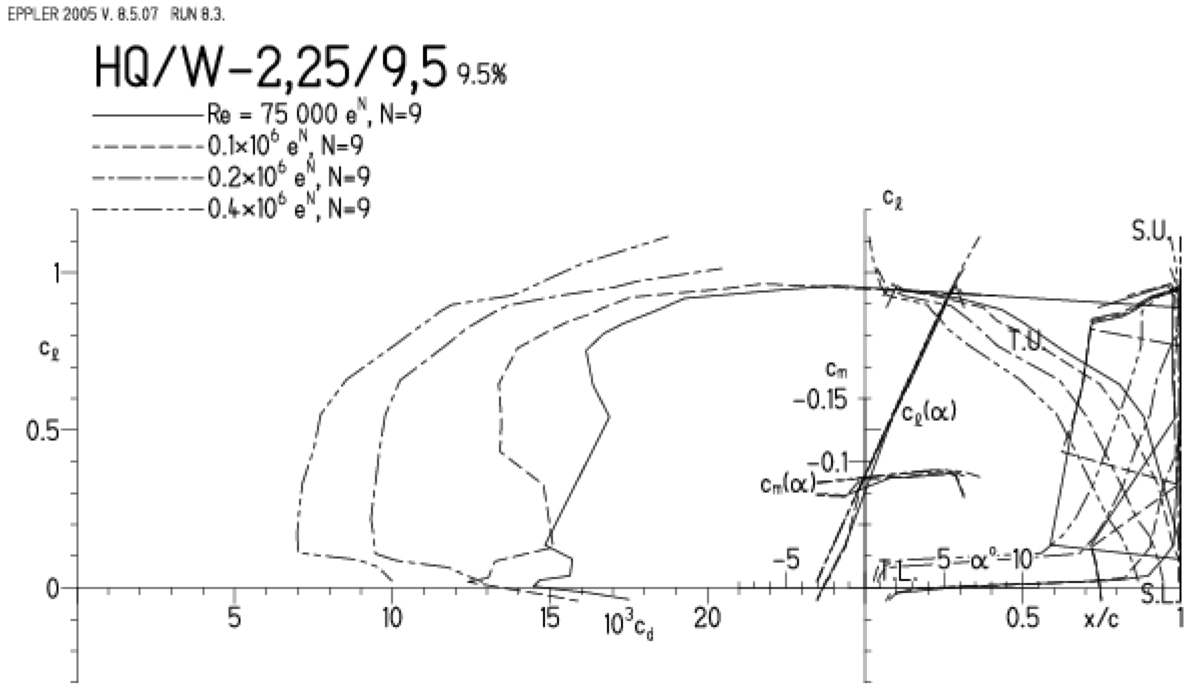
<u>HQ/W-2,25/9,5</u>, N=11





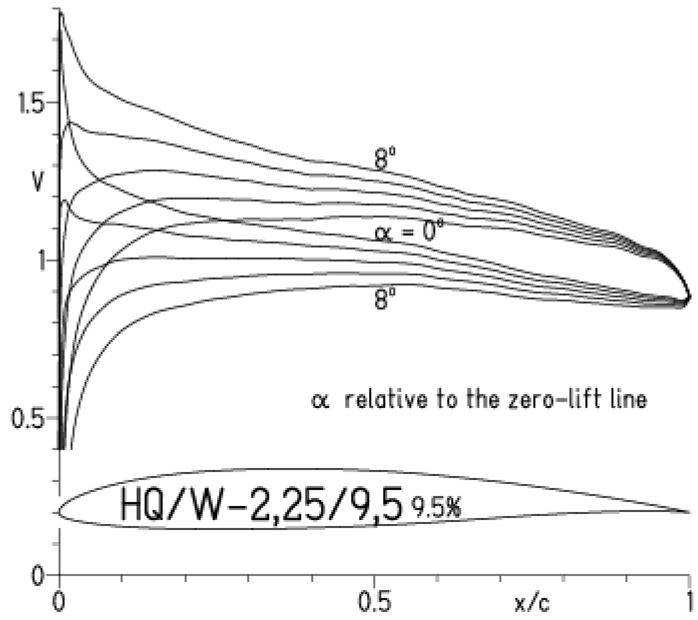
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

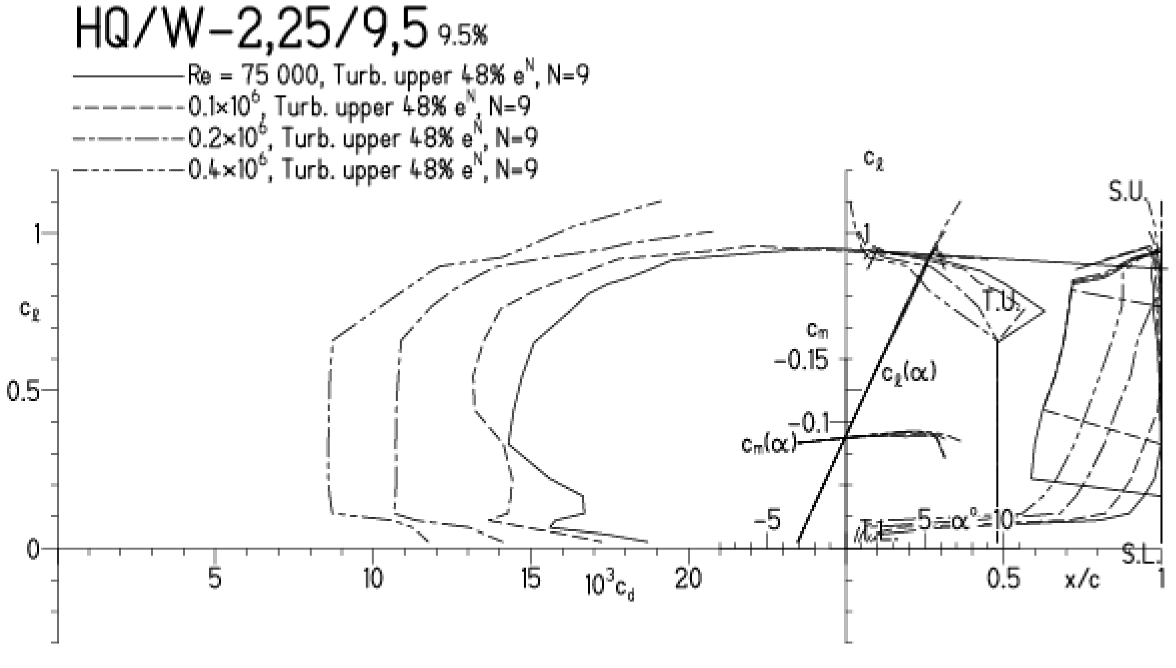

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
$10^3 c_d$
20
c_ℓ
c_m
-0.15
-0.1
c_ℓ(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

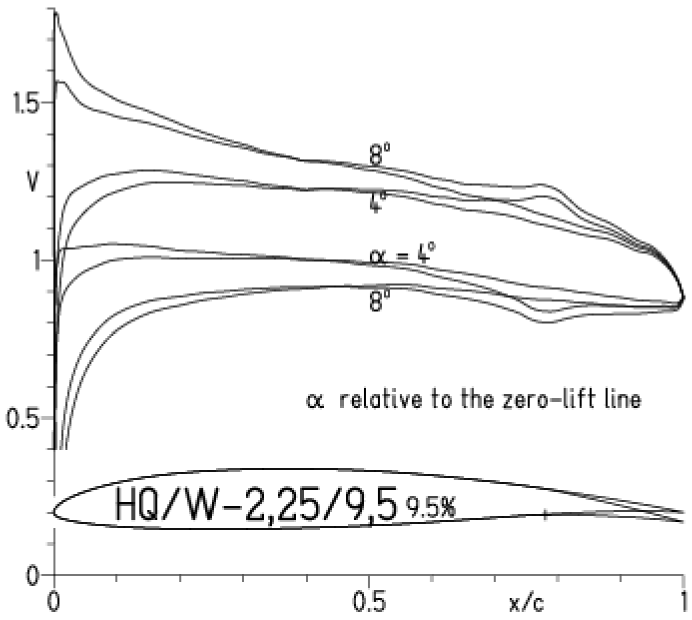


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

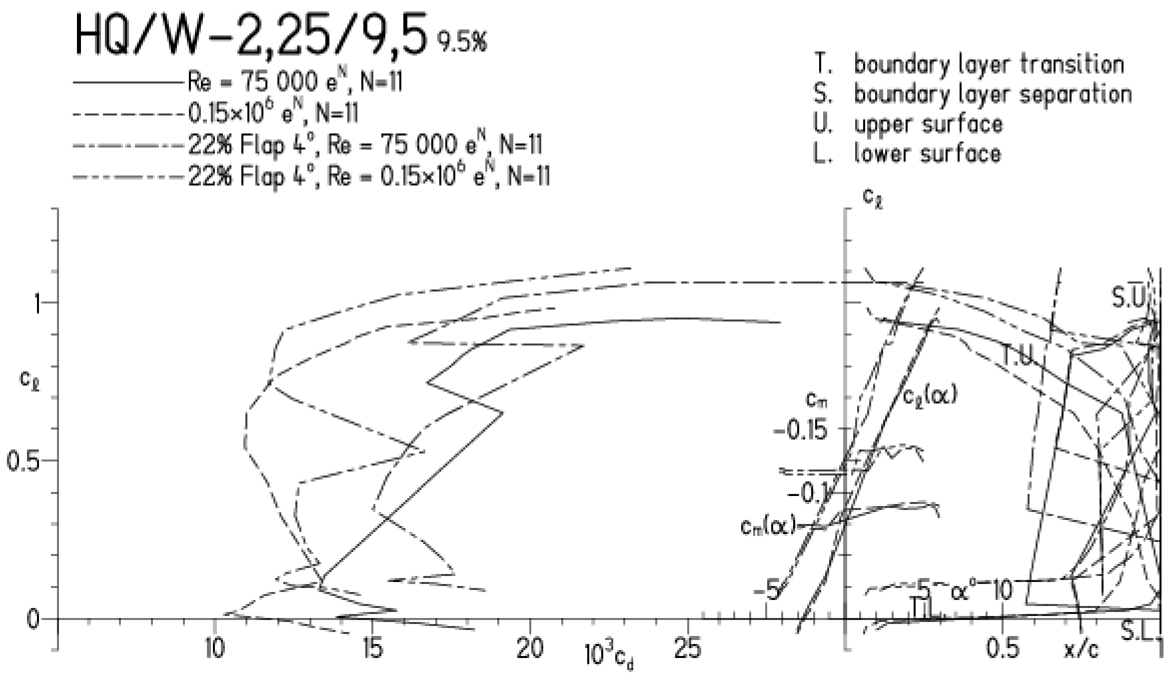


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

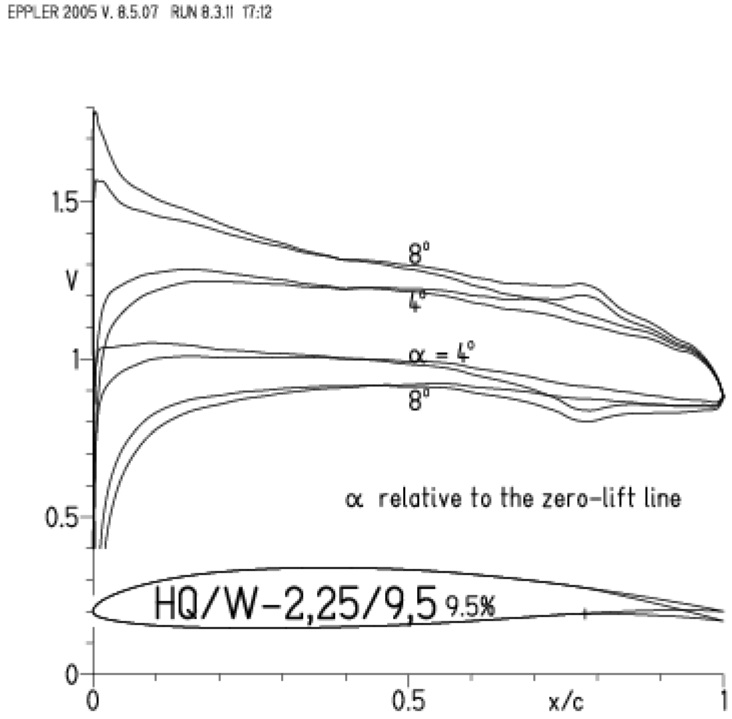
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

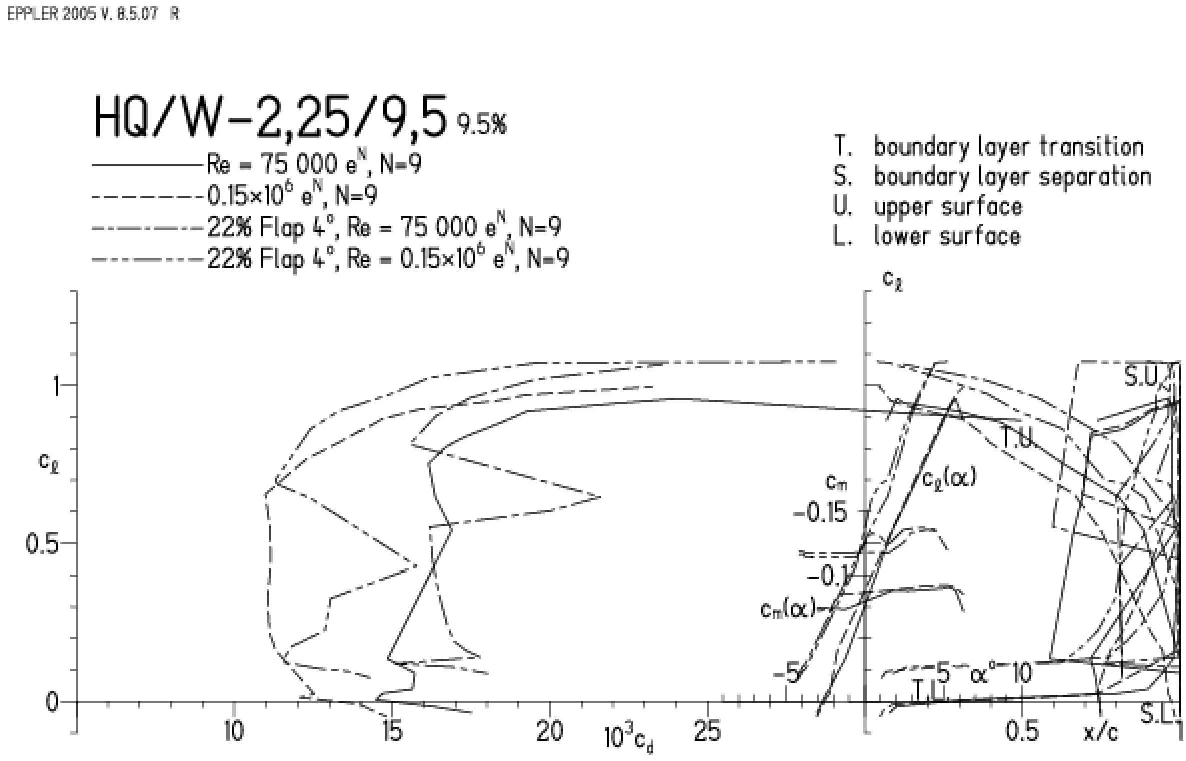


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

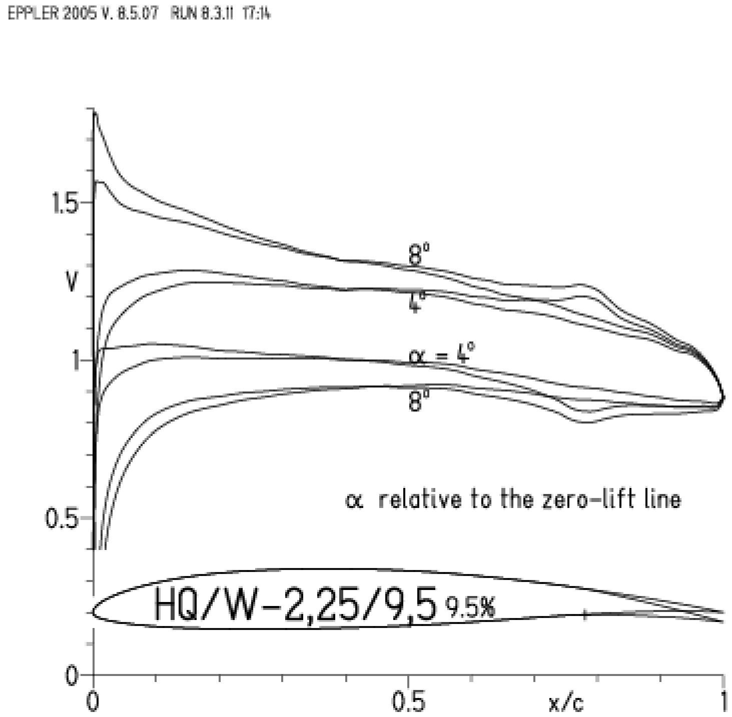


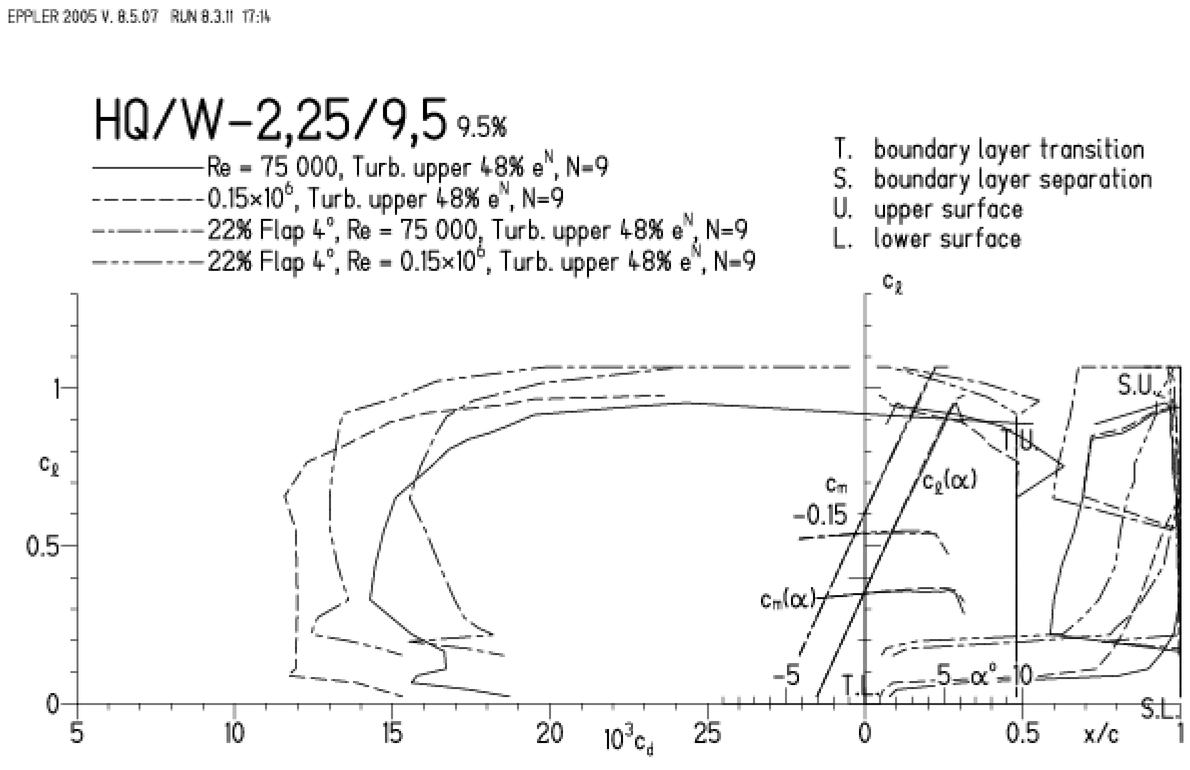
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag





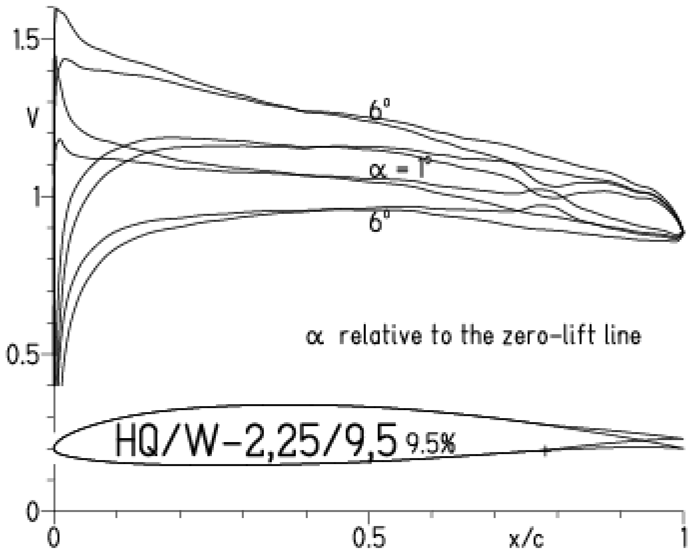
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



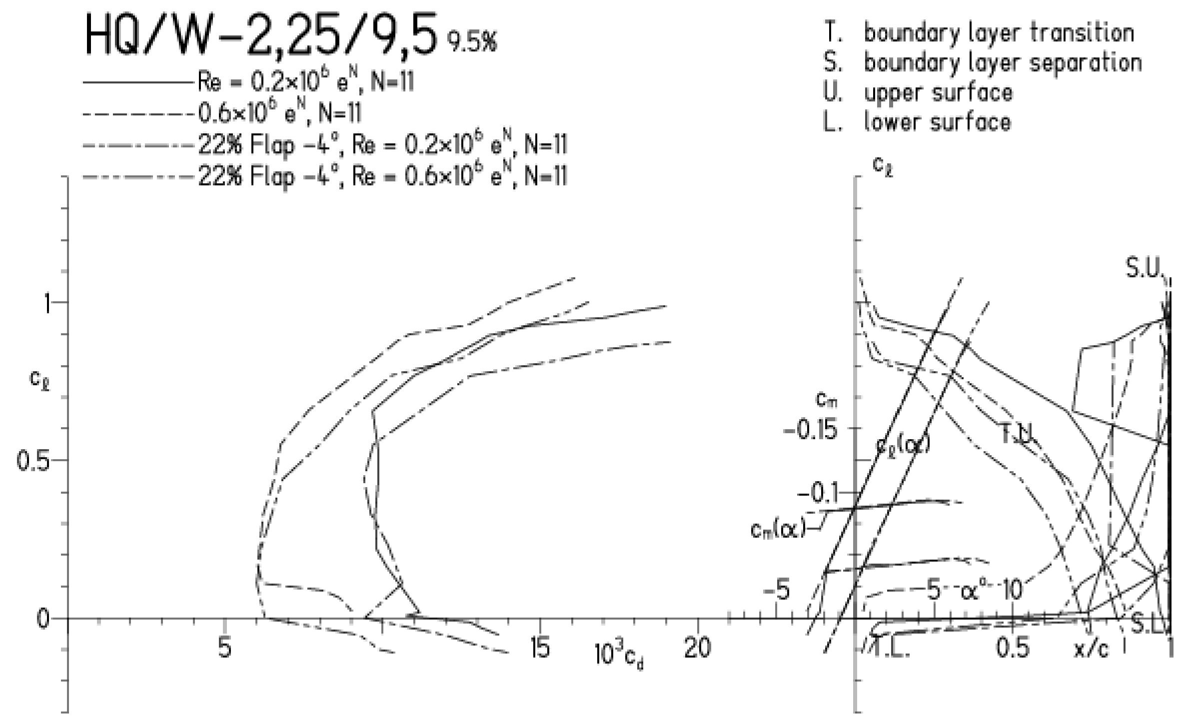


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

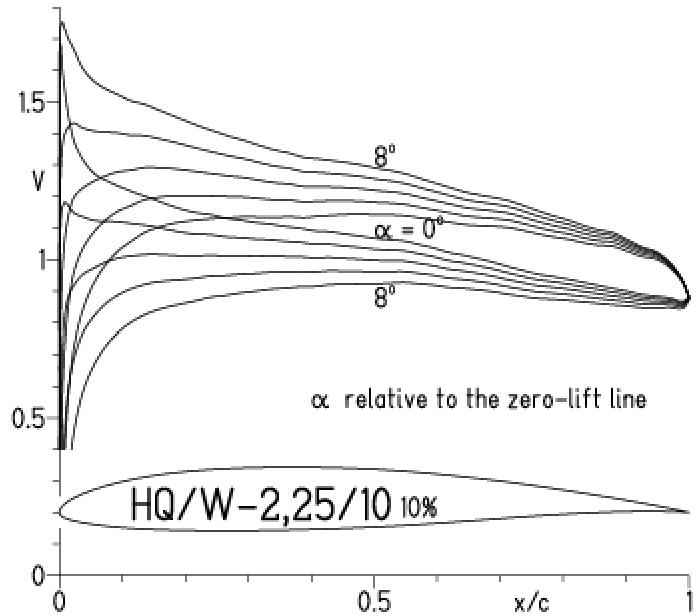


EPPLER 2005 V.

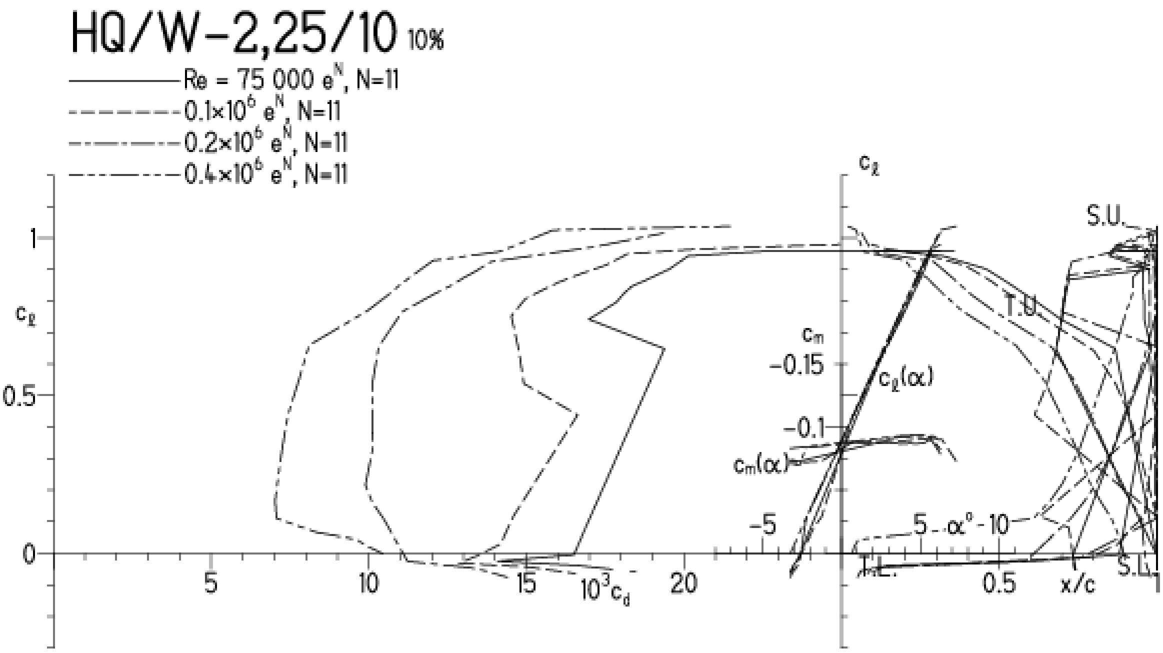


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

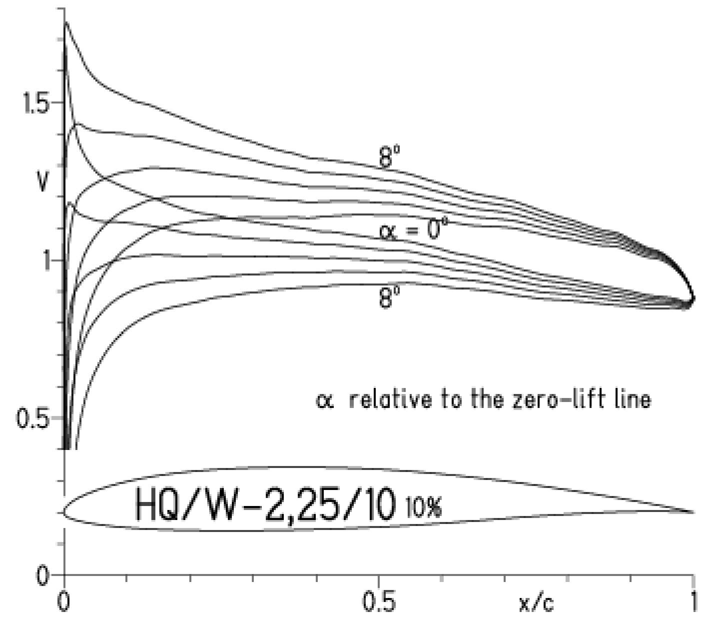


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

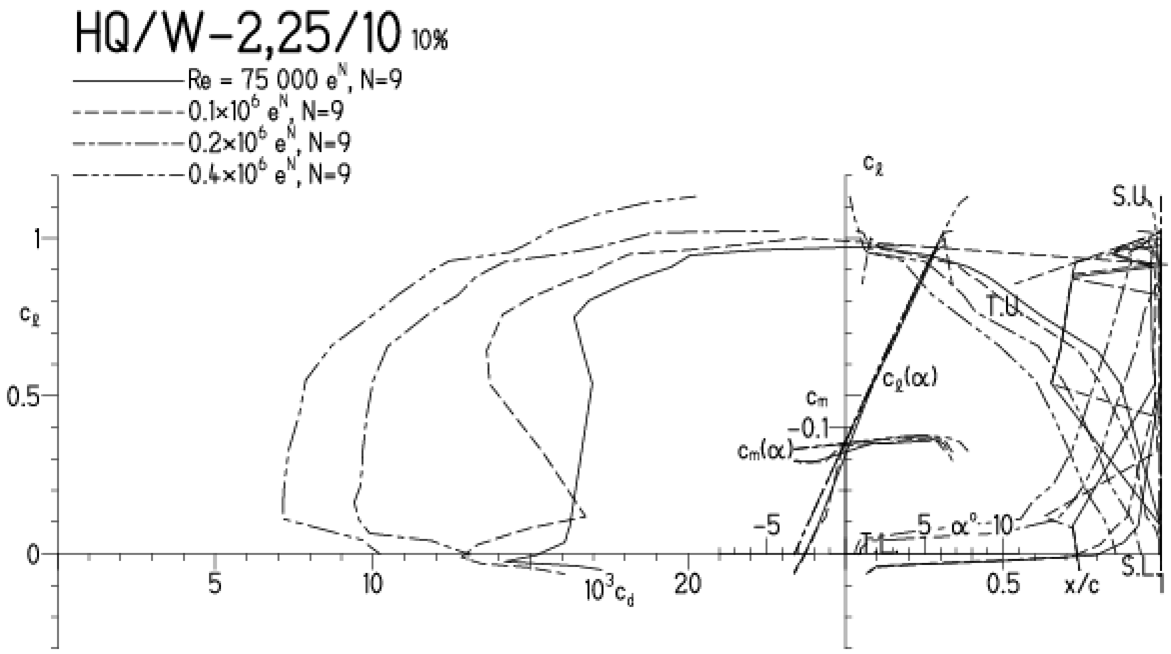


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

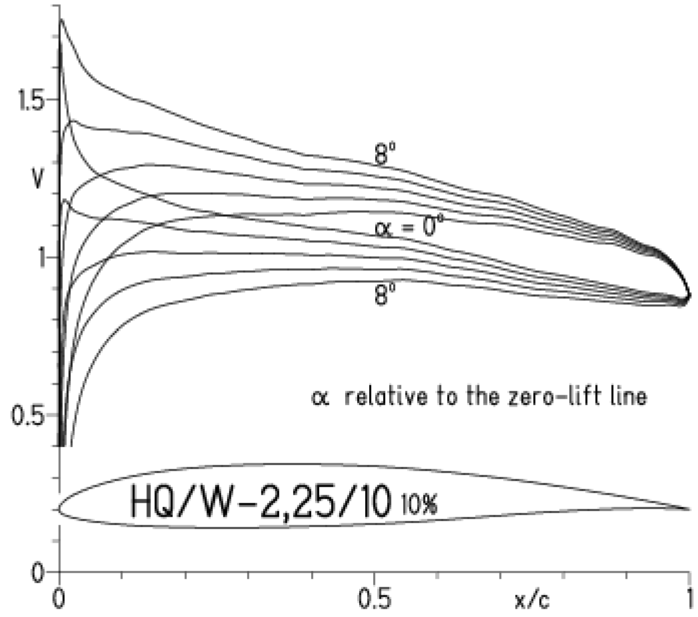


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

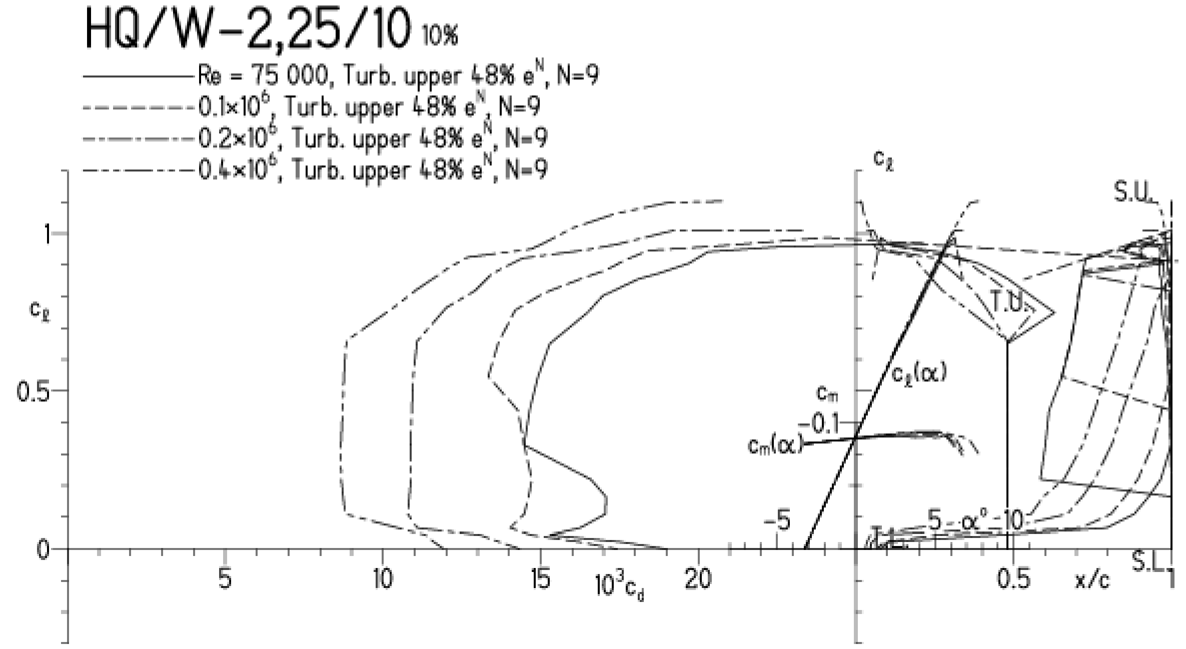


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

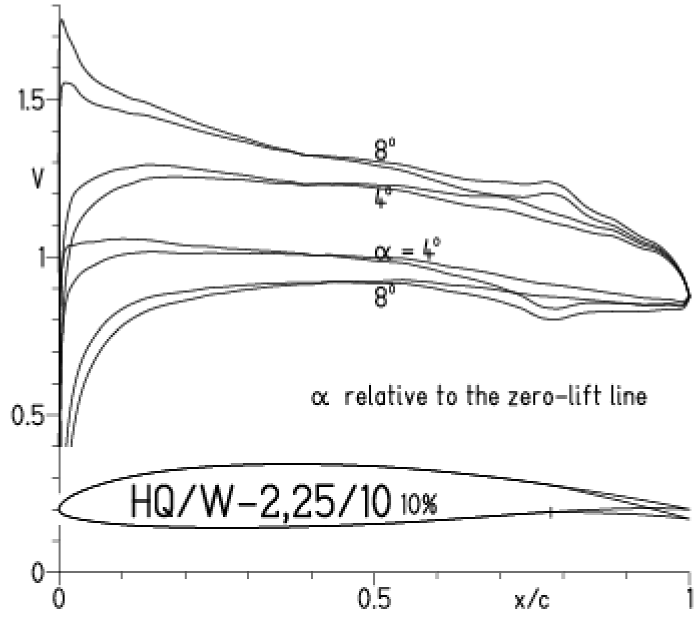


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

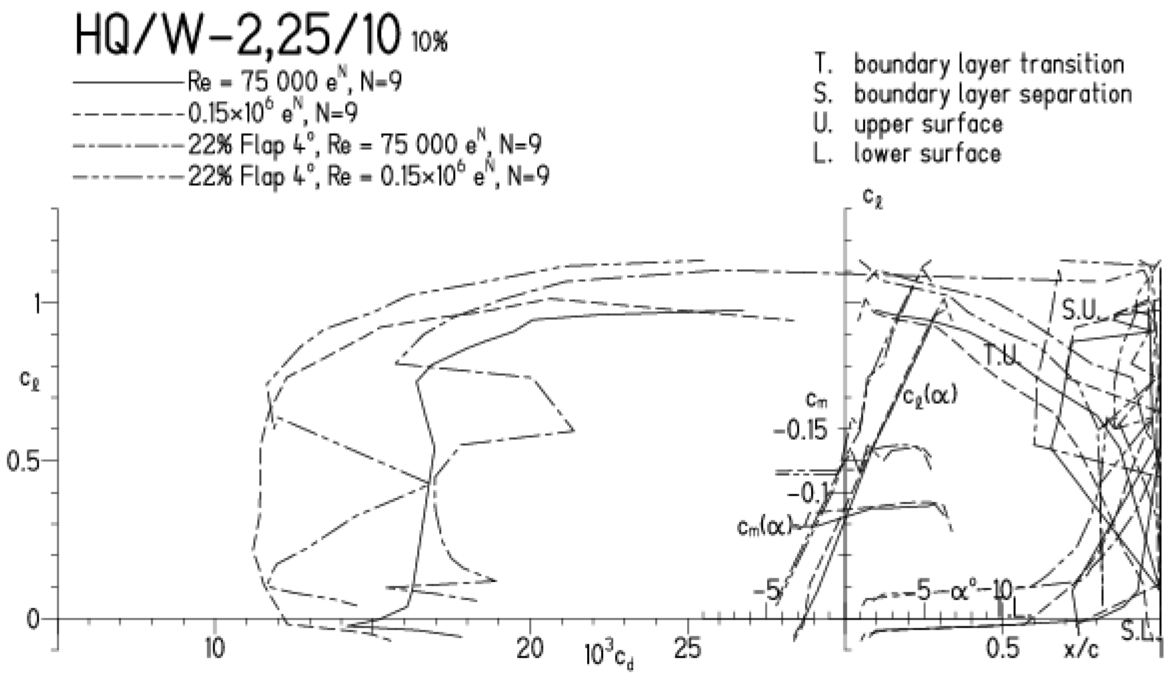


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

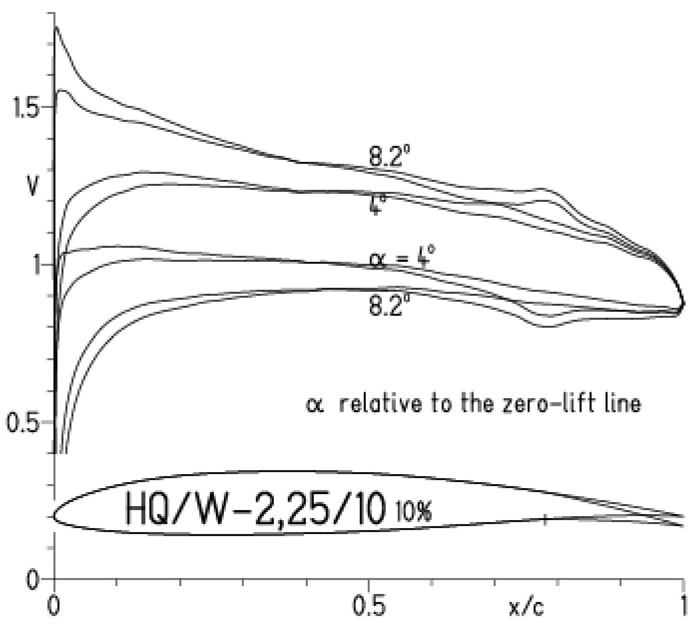


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

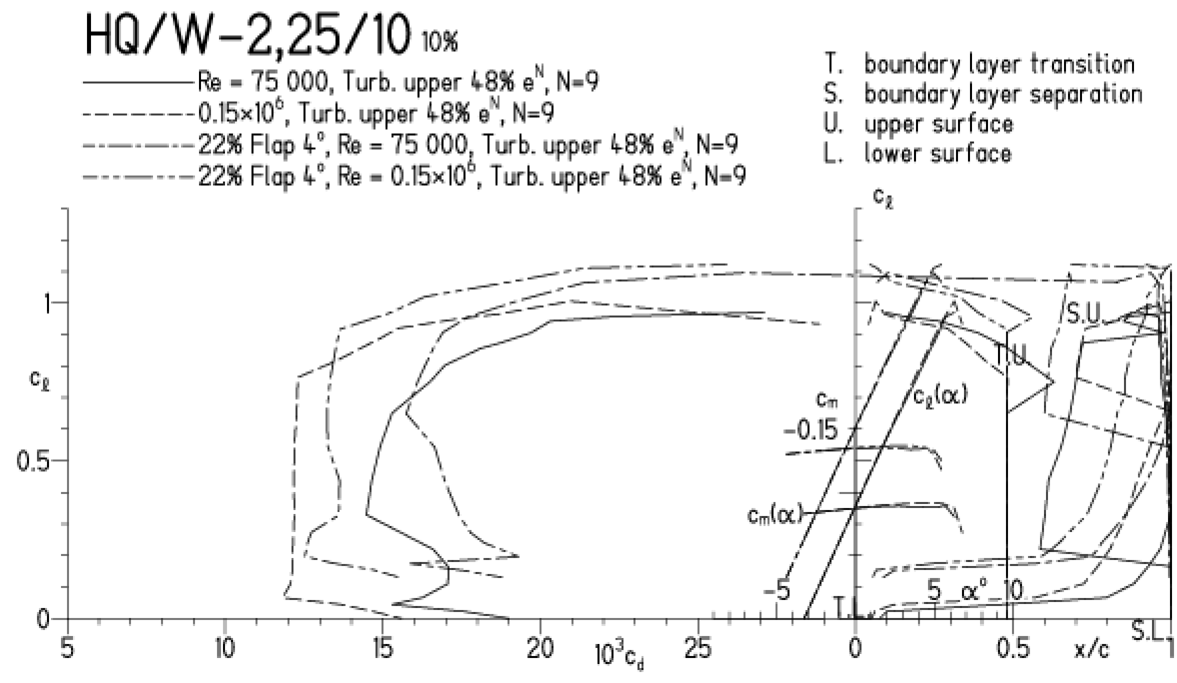


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

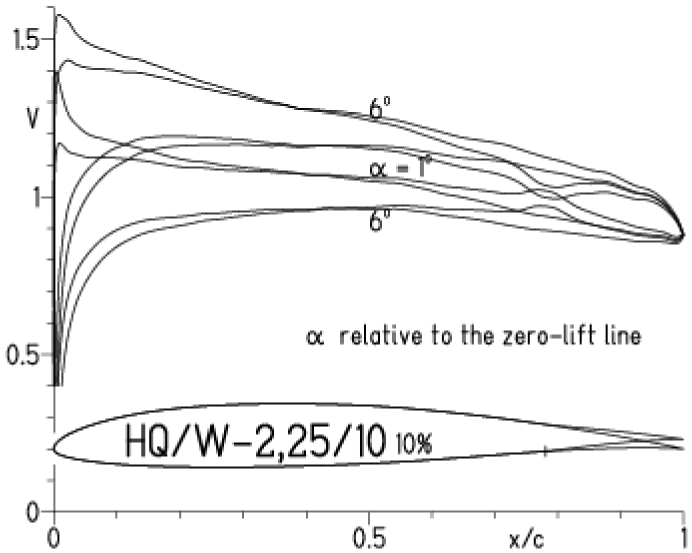


EPPLER 2005 V. 8.5.07 RUN 8.3

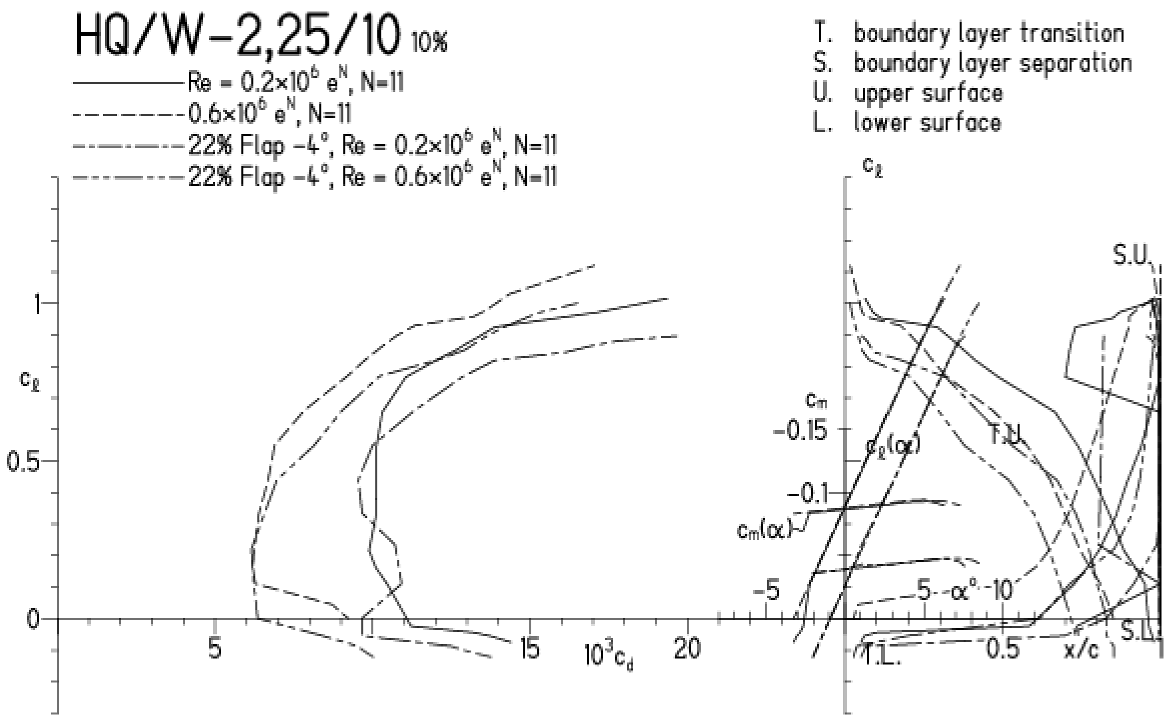


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

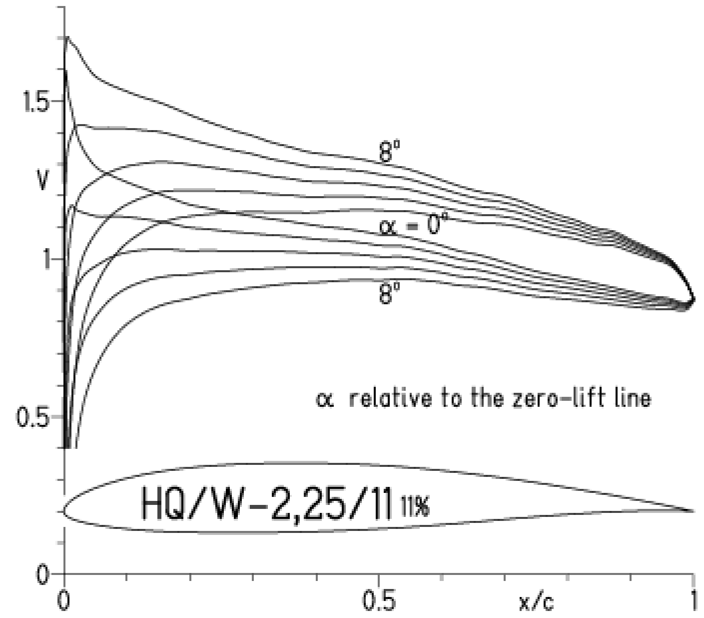


EPPLER 2005 V. 8.5.07 RUN

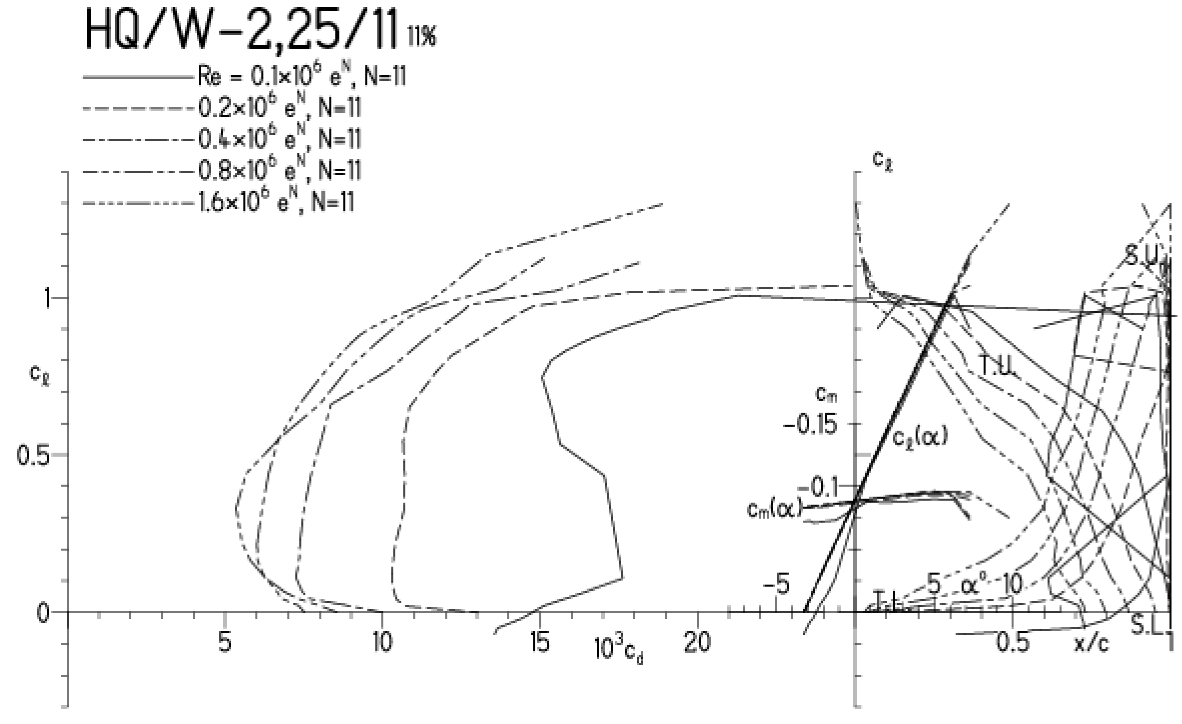


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

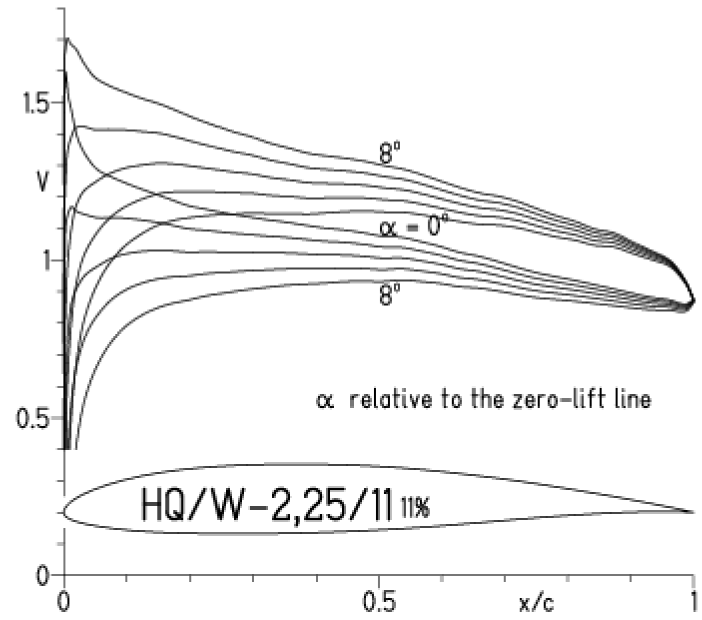


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

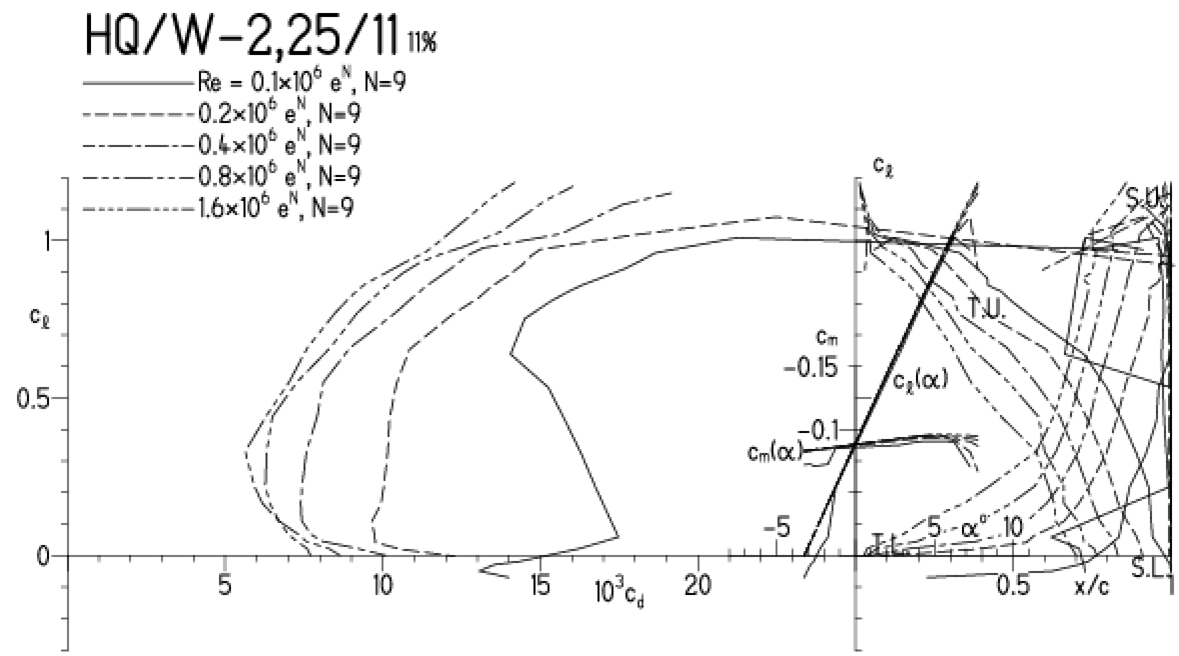


HQQ/W-2,25/11, N=9

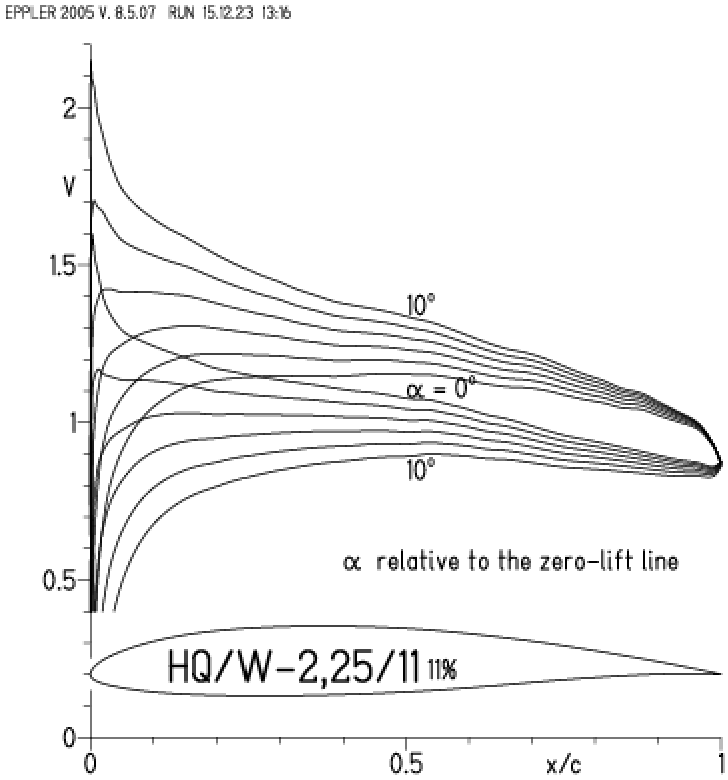
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

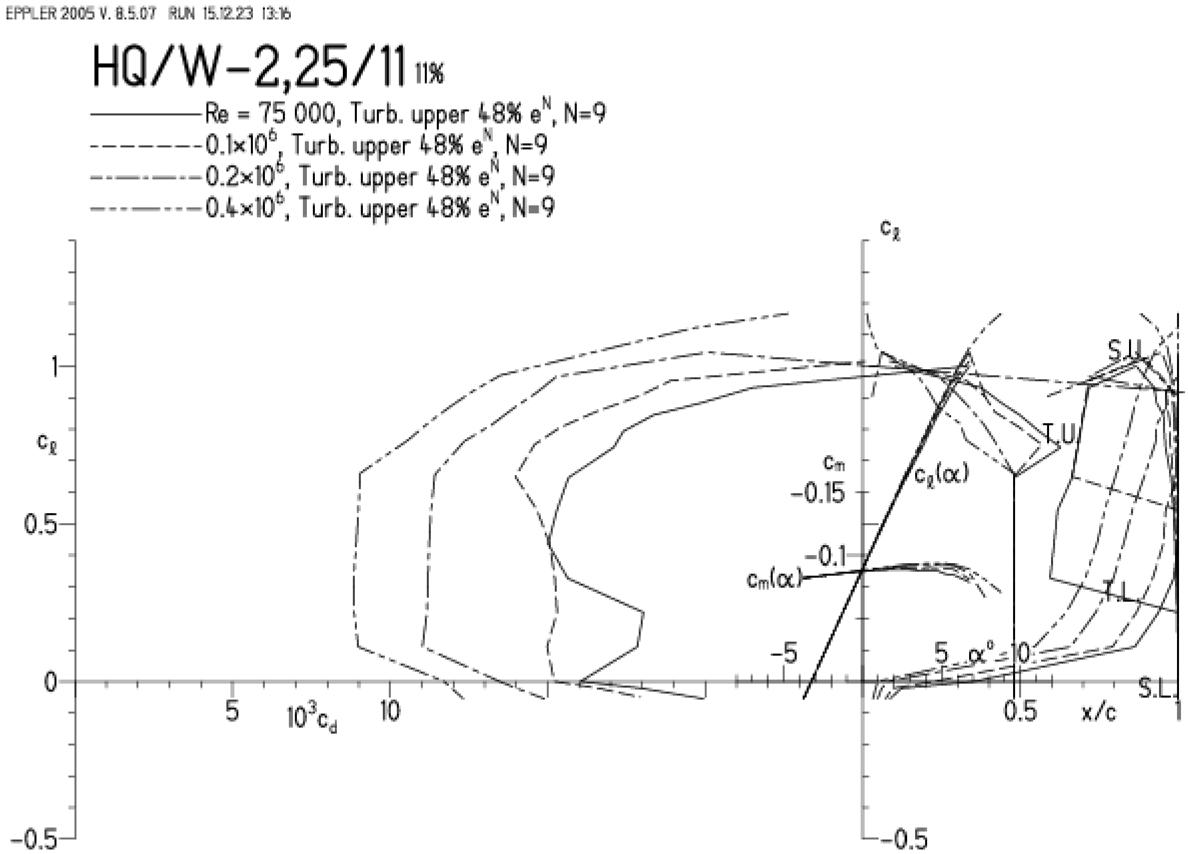


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

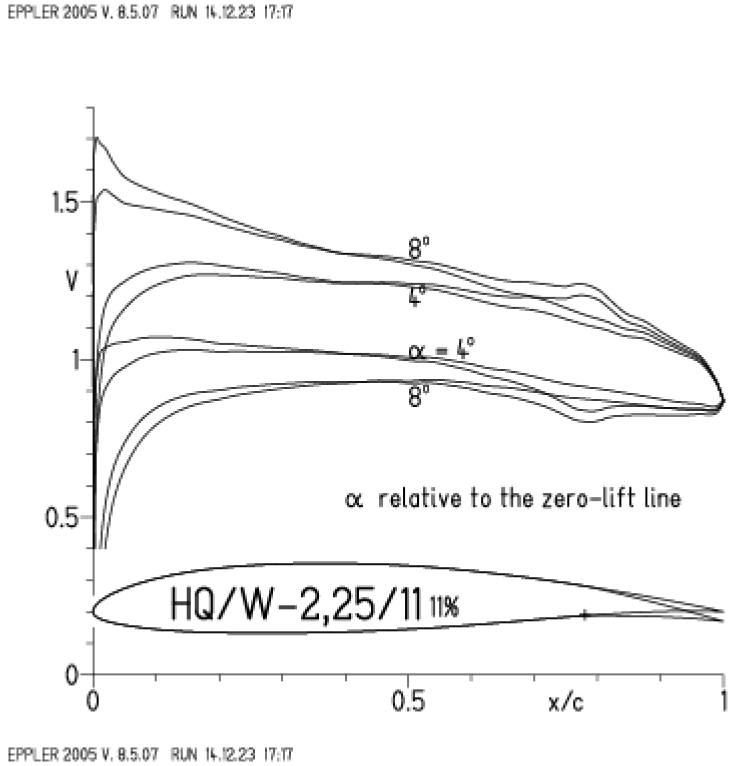


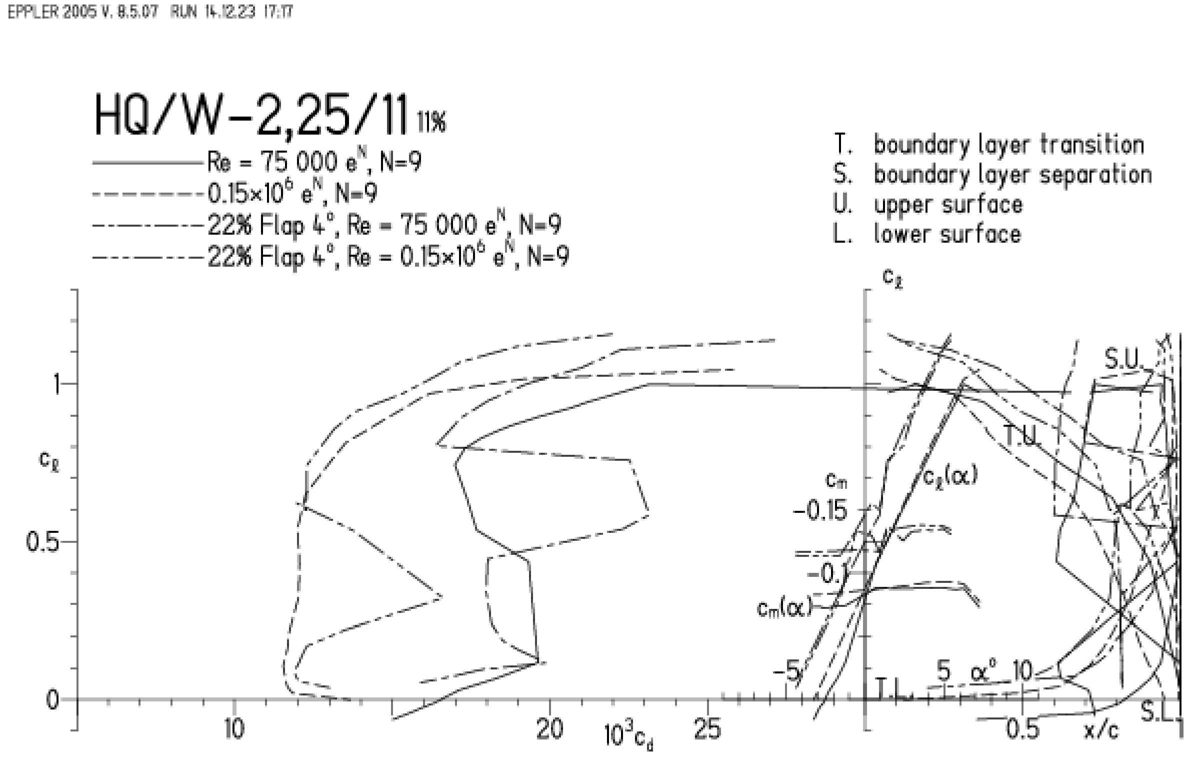
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





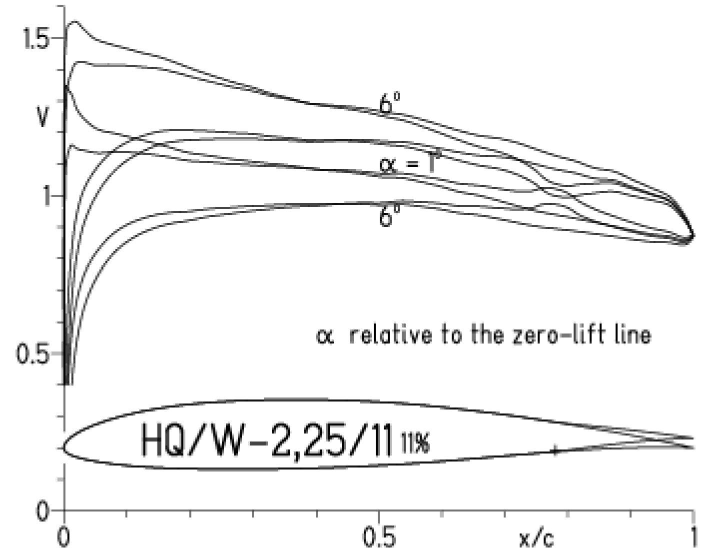
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



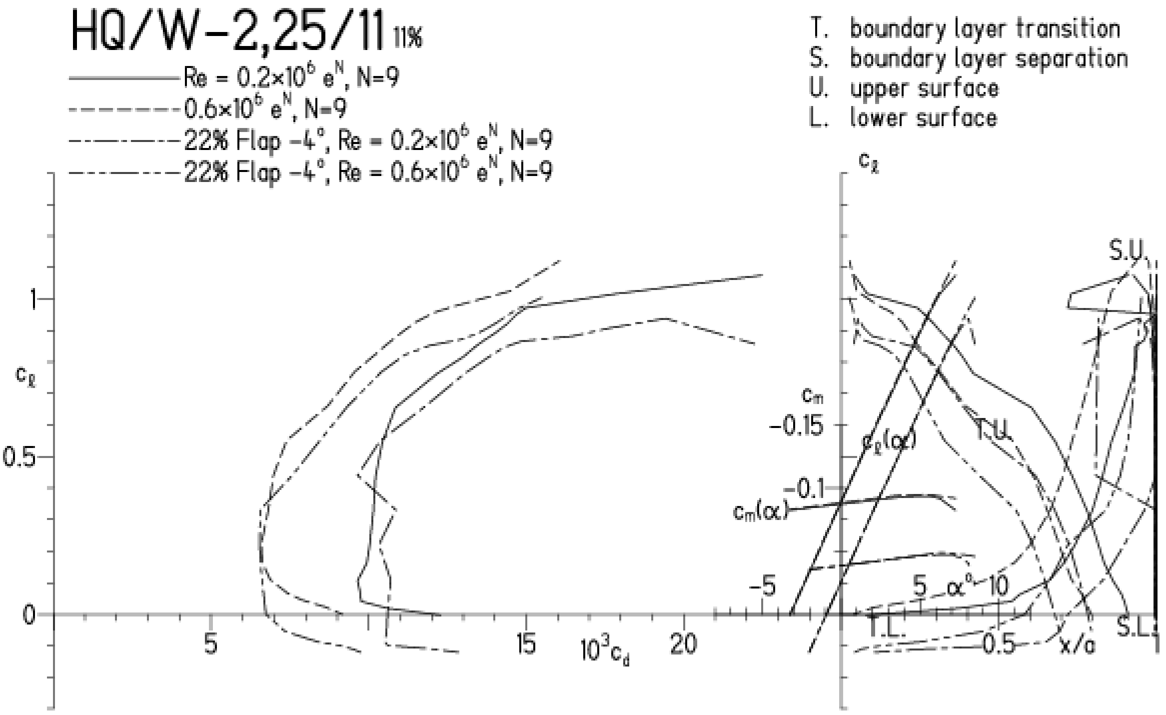


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

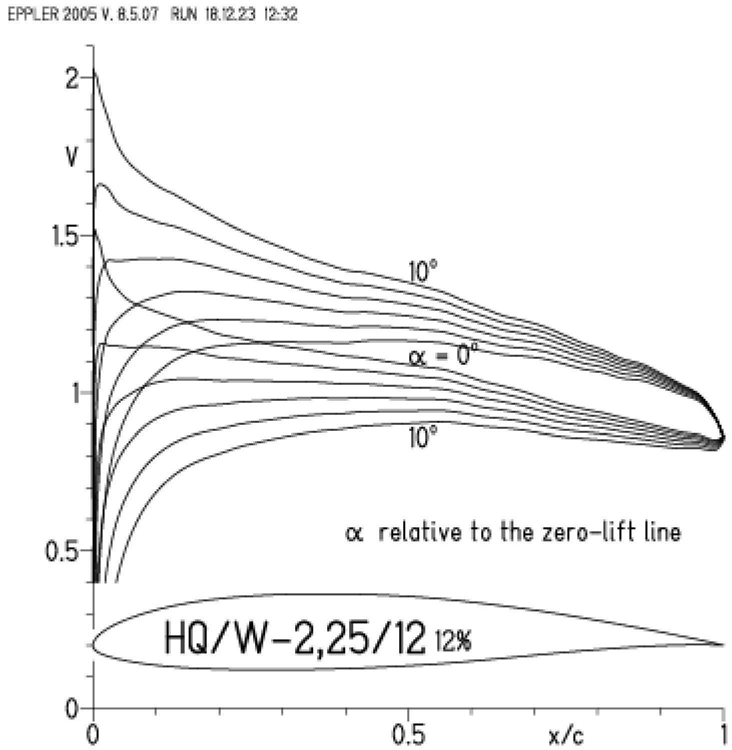
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

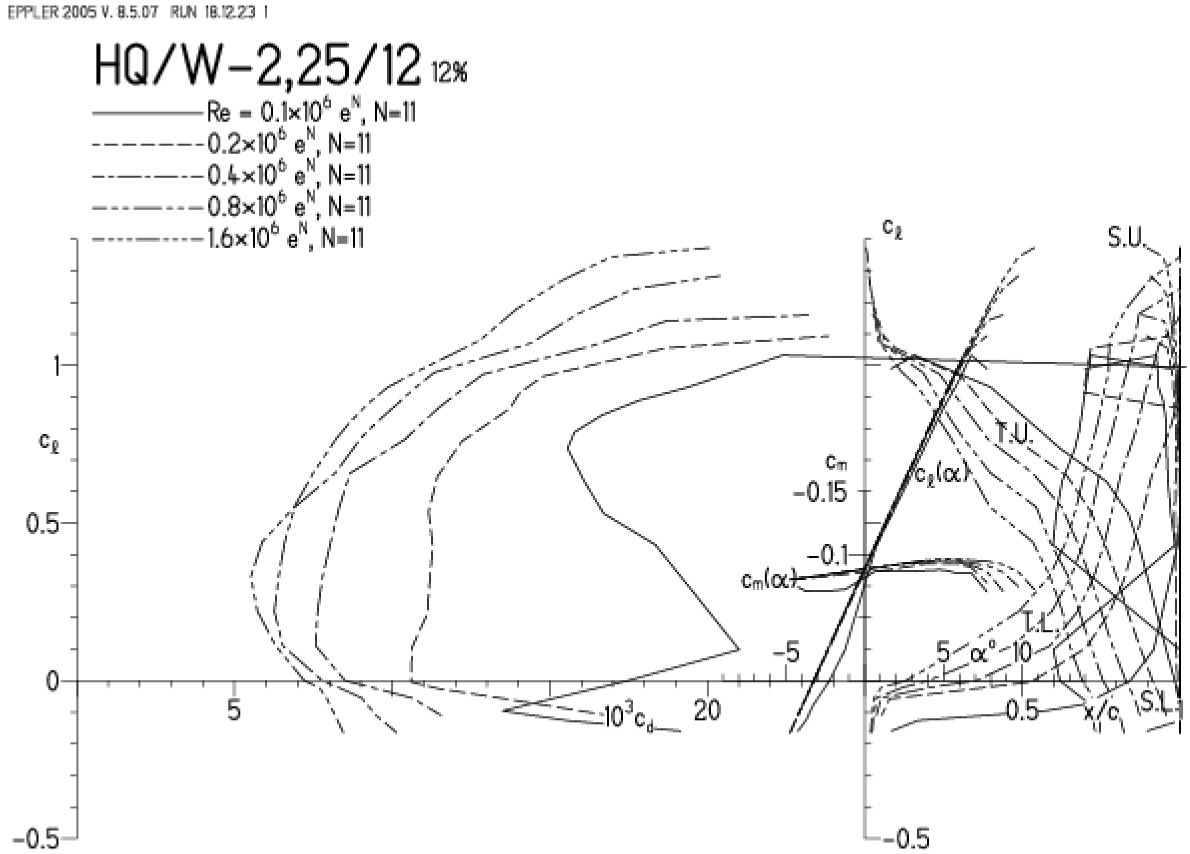


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

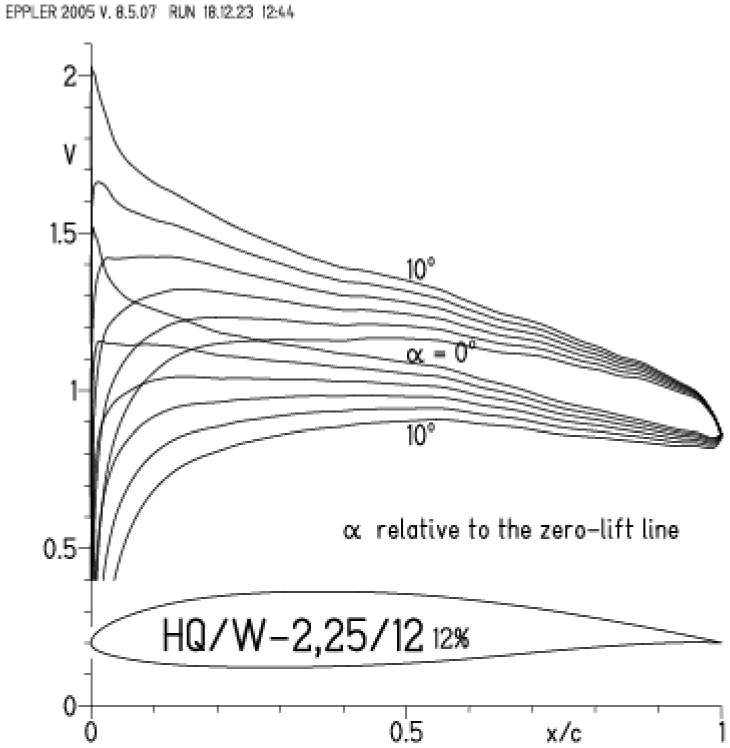


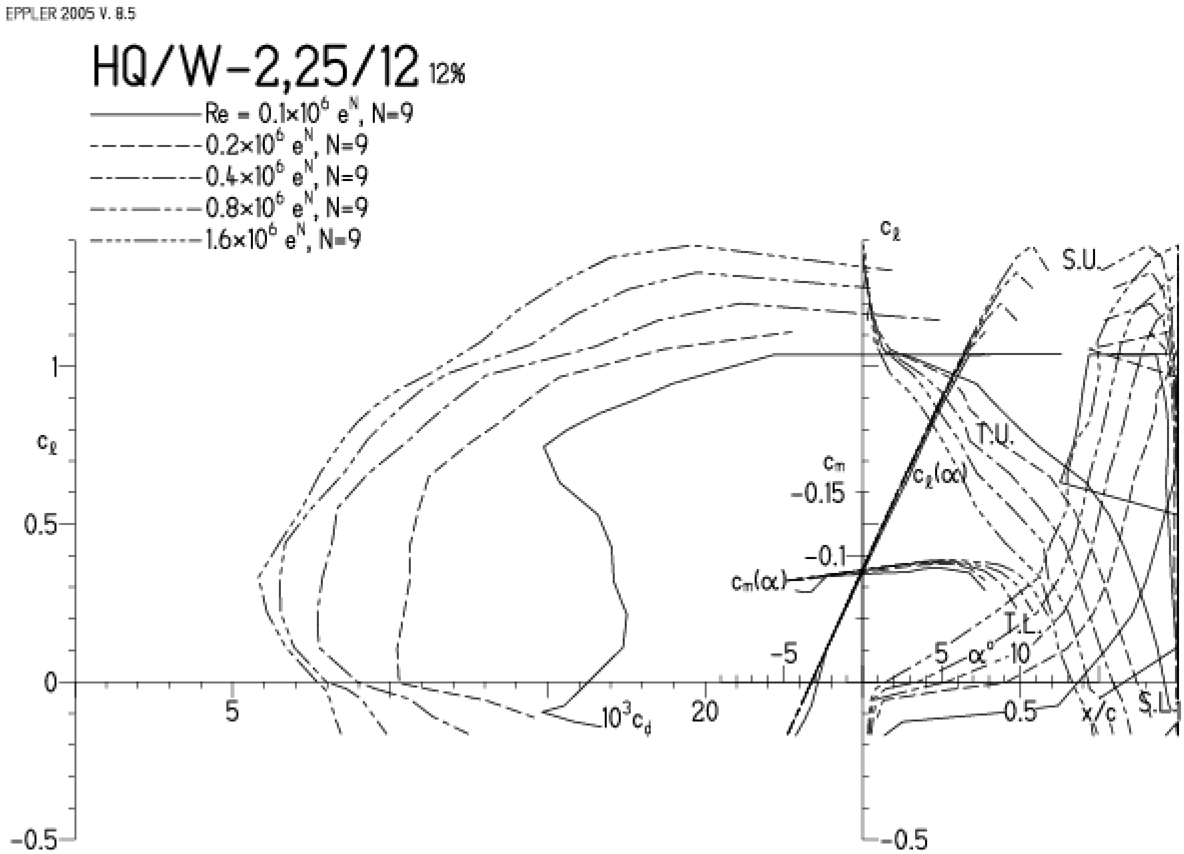
<u>HQ/W-2,25/12</u>, N=11



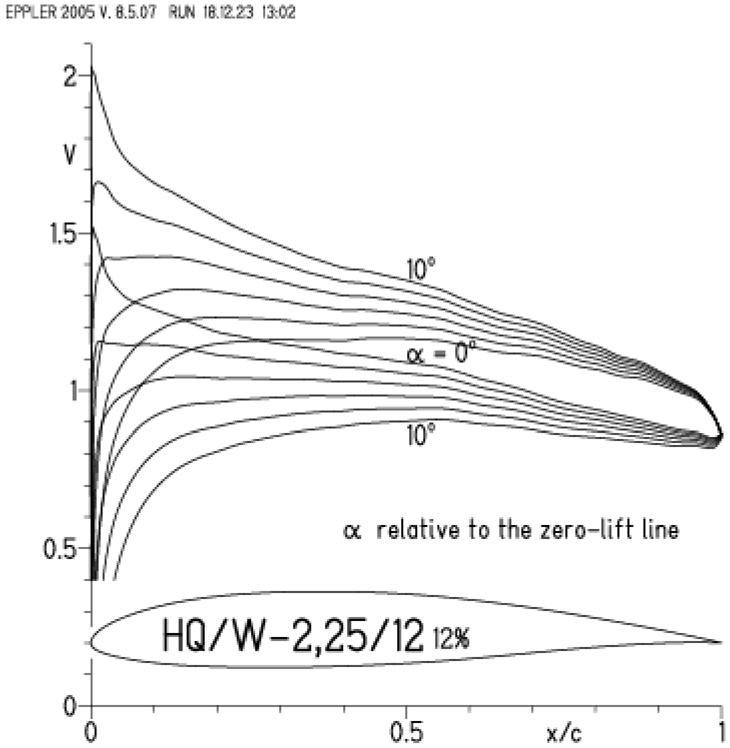


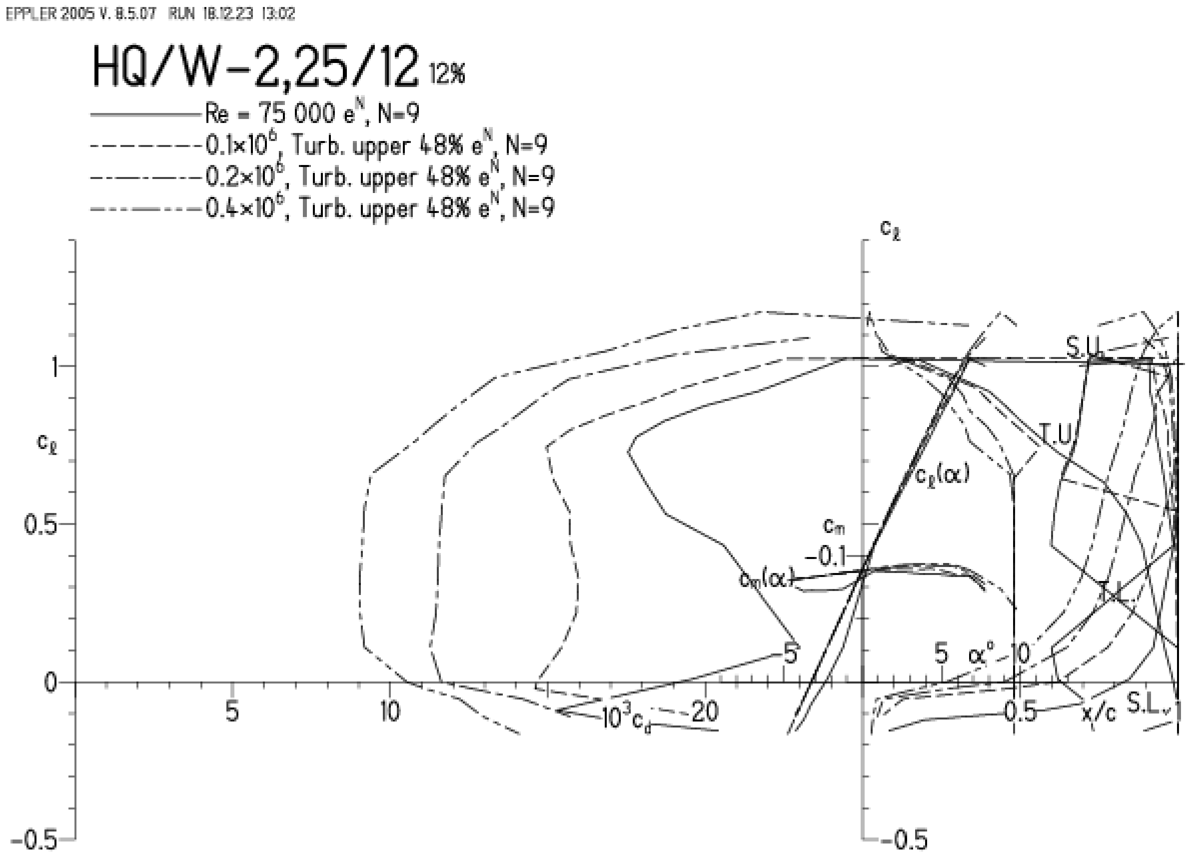
<u>HQ/W-2,25/12</u>, N=9





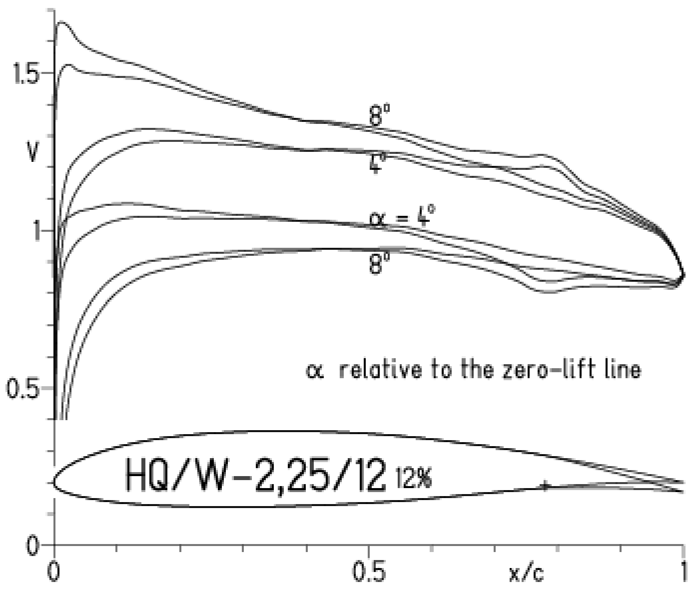
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



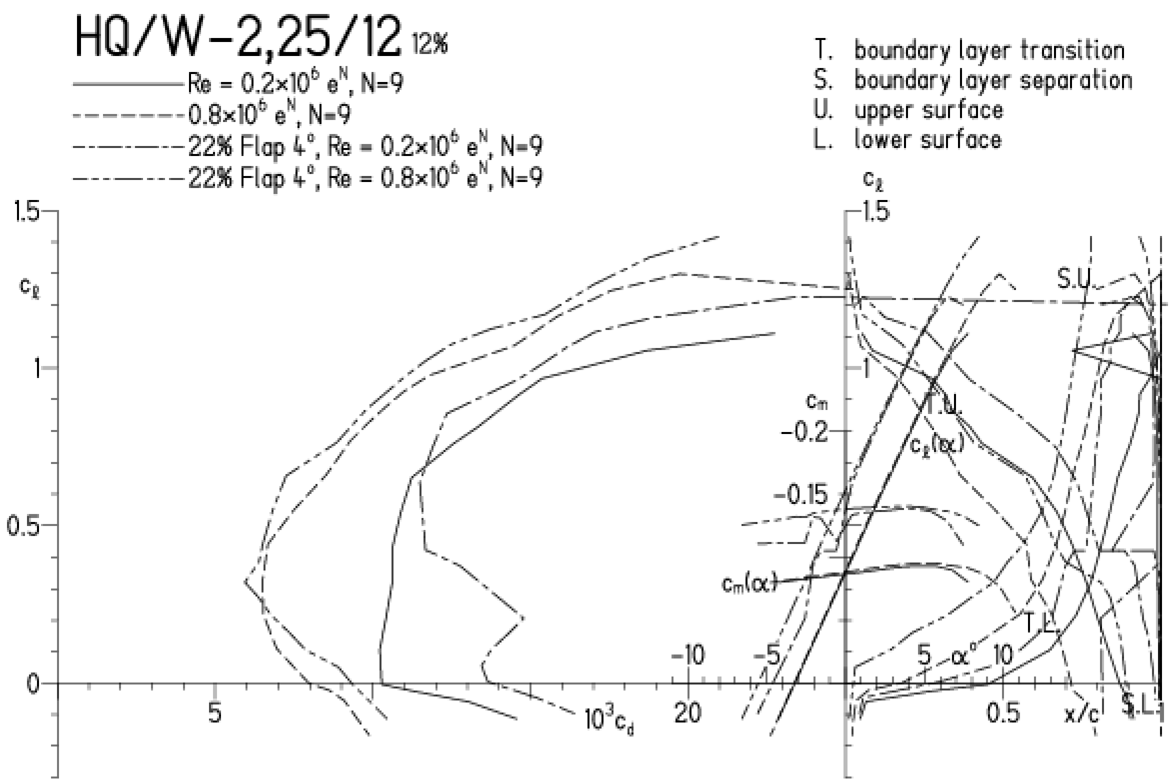


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

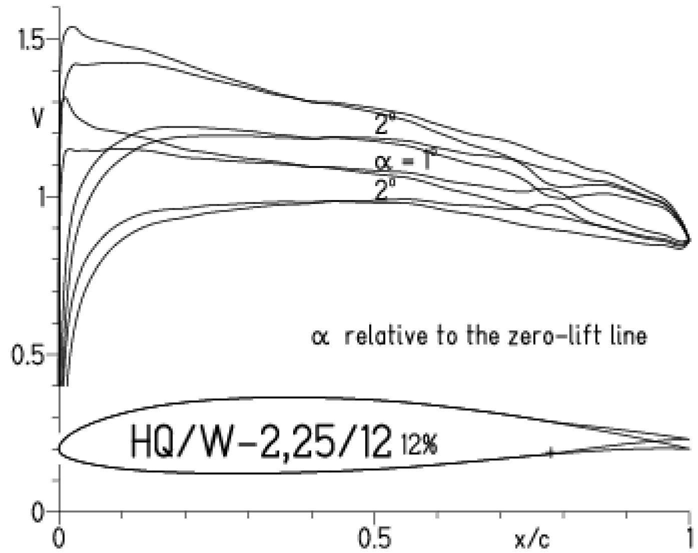


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

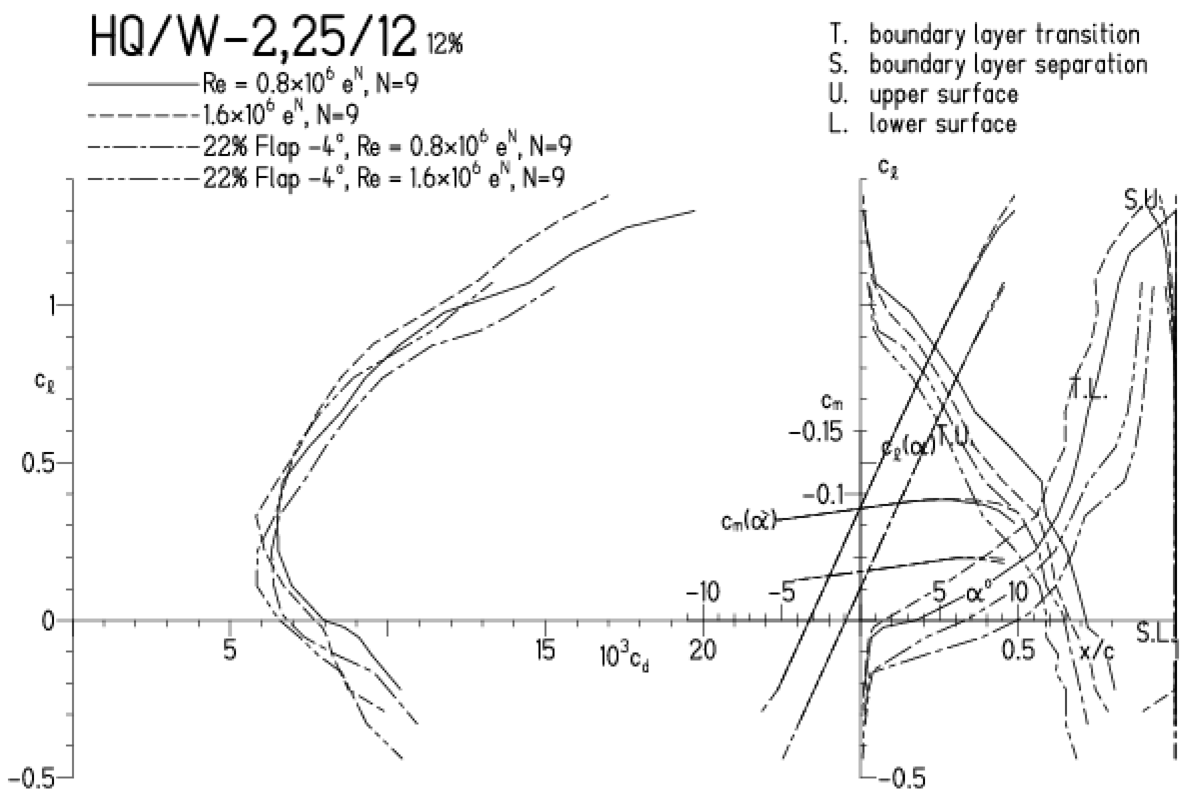


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

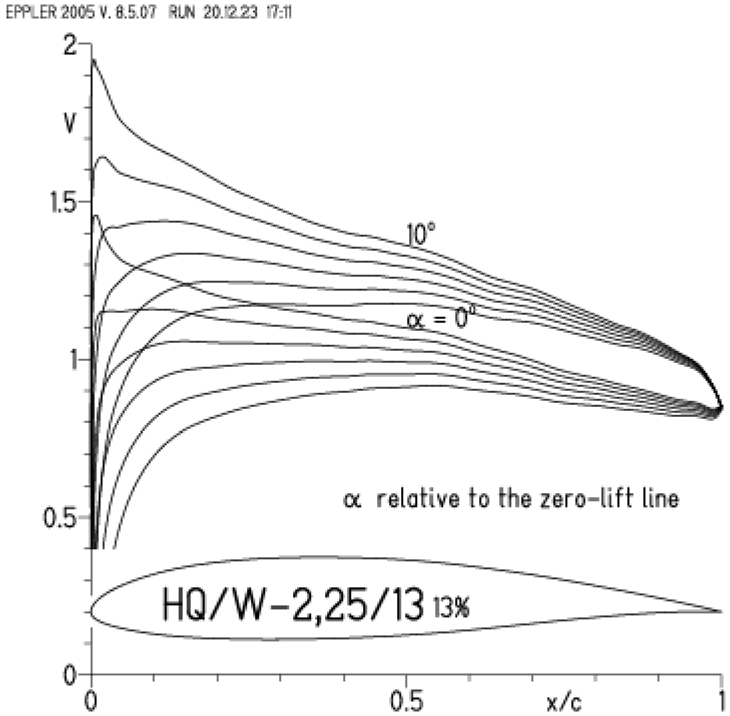
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

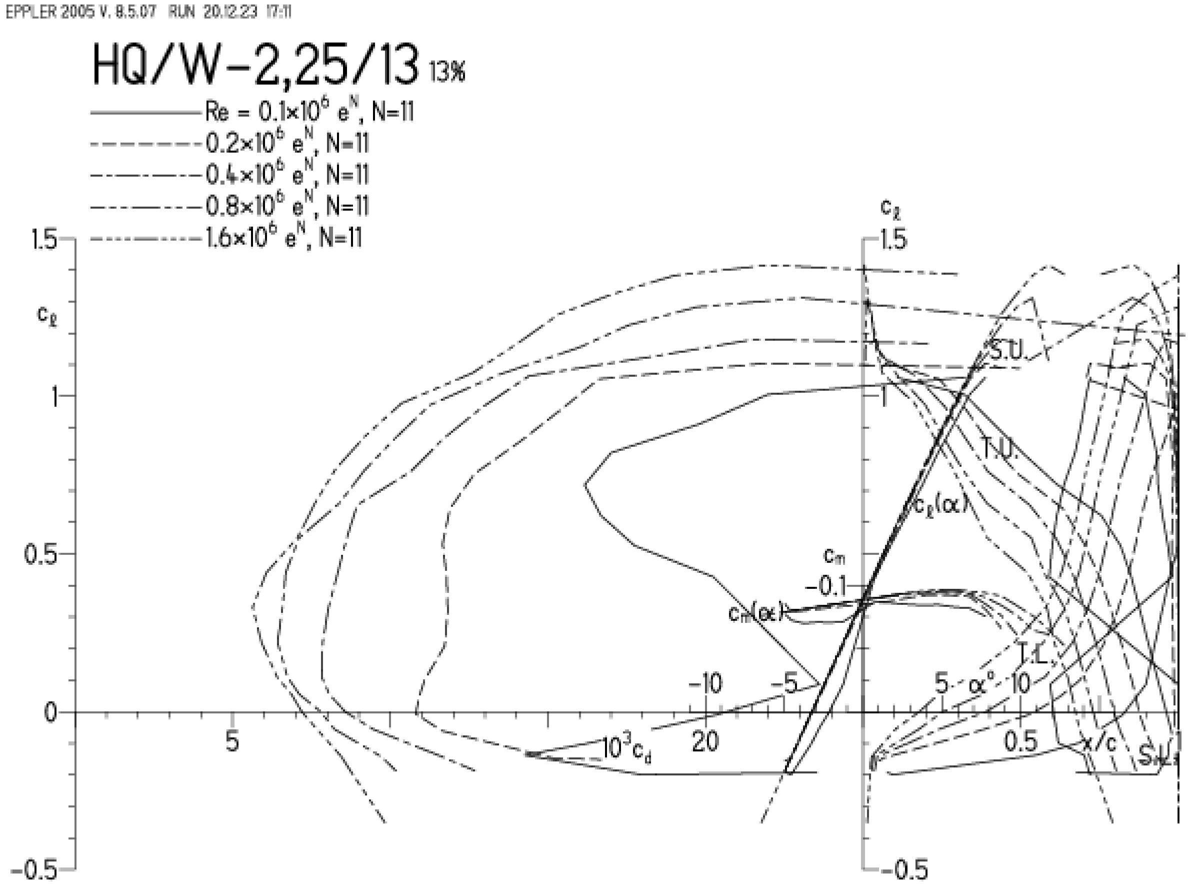


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

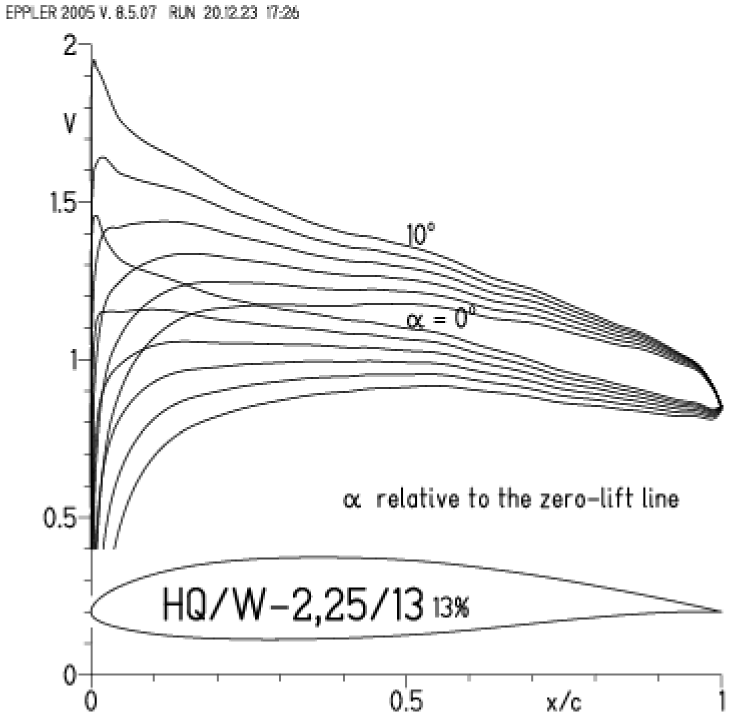


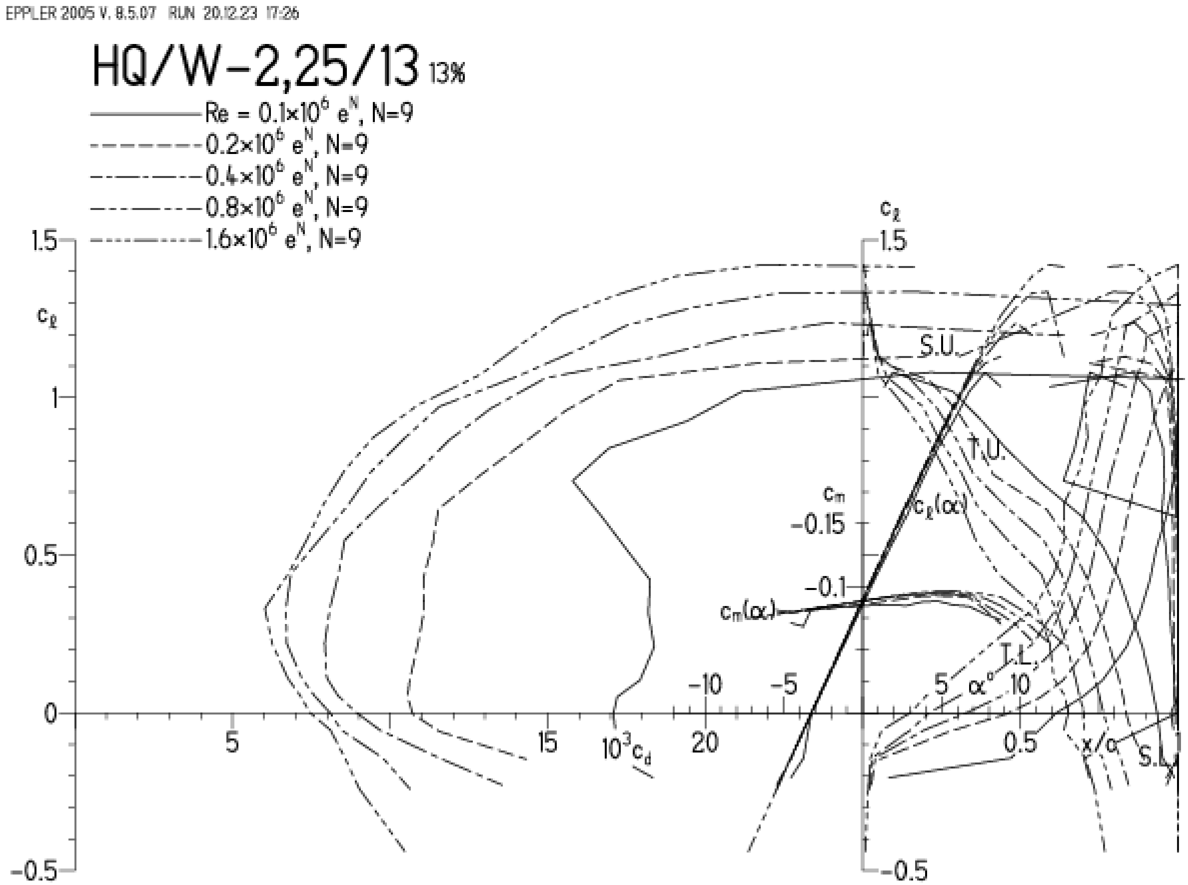
HQ/W-2,25/13, N=11



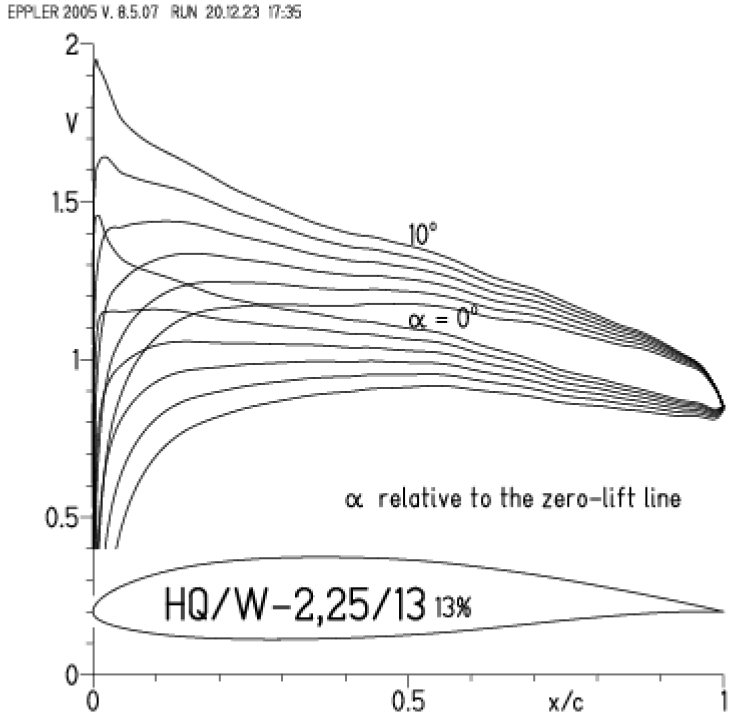


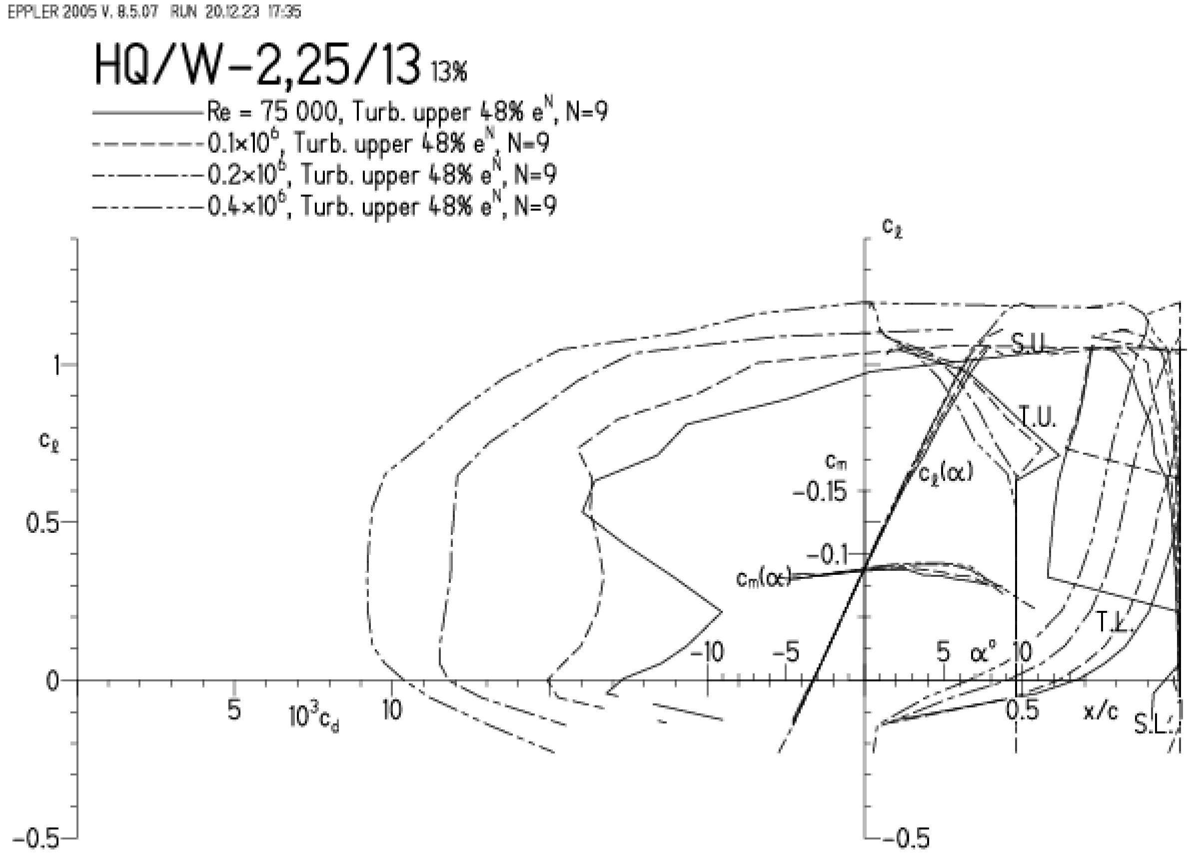
<u>HQ/W-2,25/13</u>, N=9





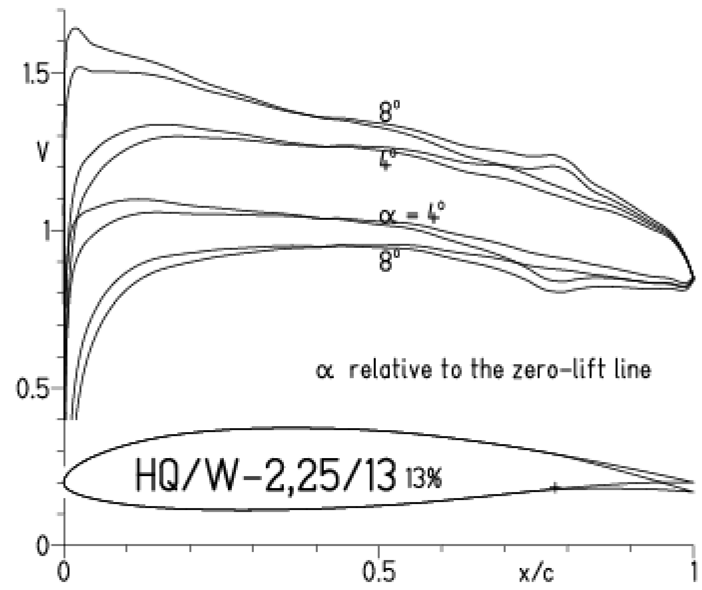
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



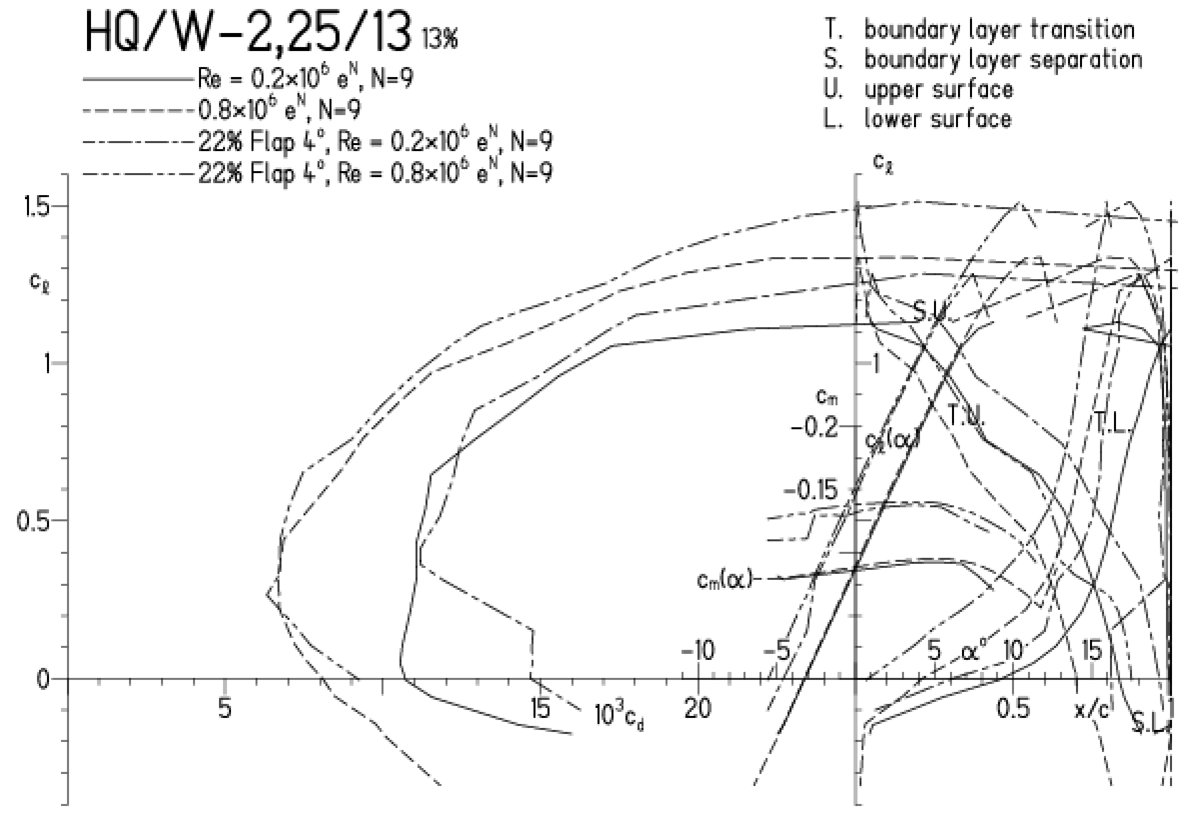


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

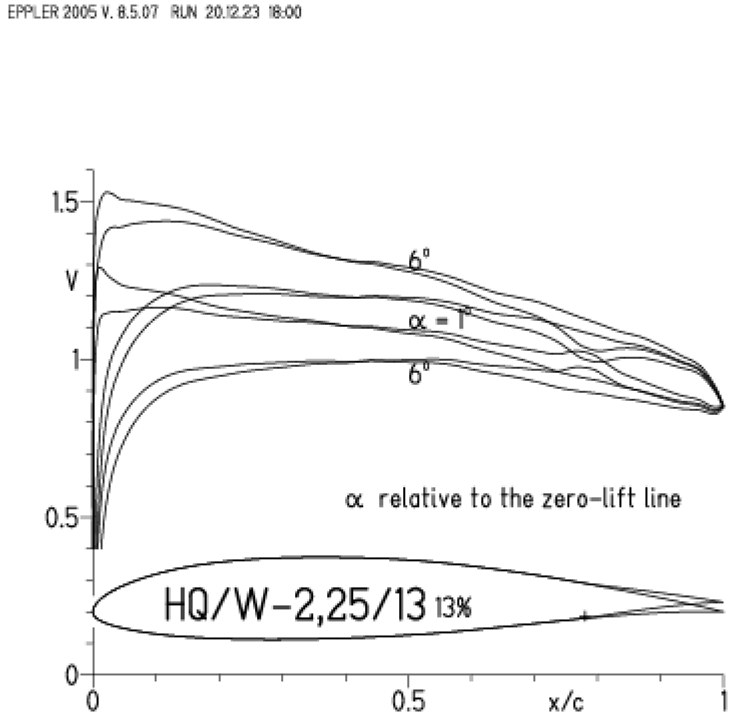
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

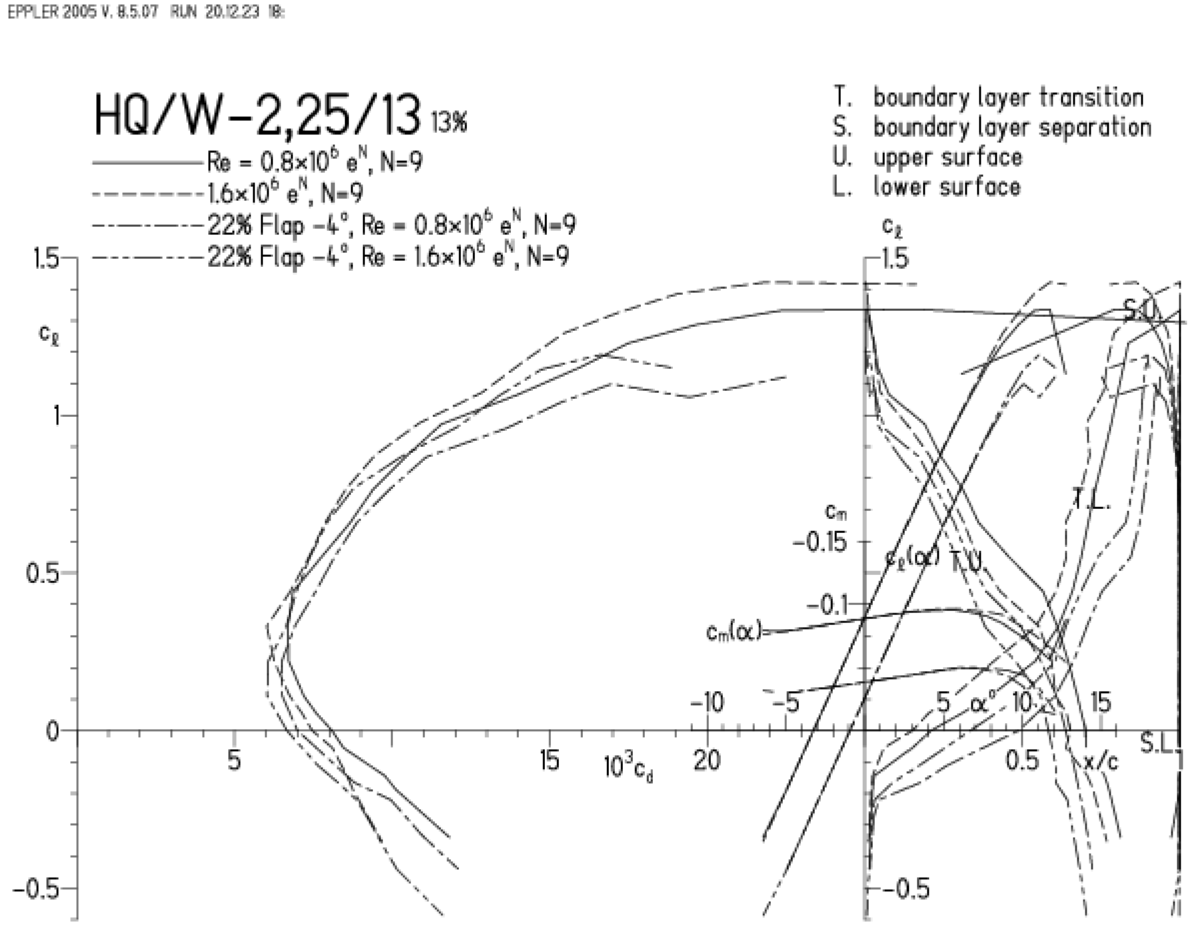


EPPLER 2005 V.



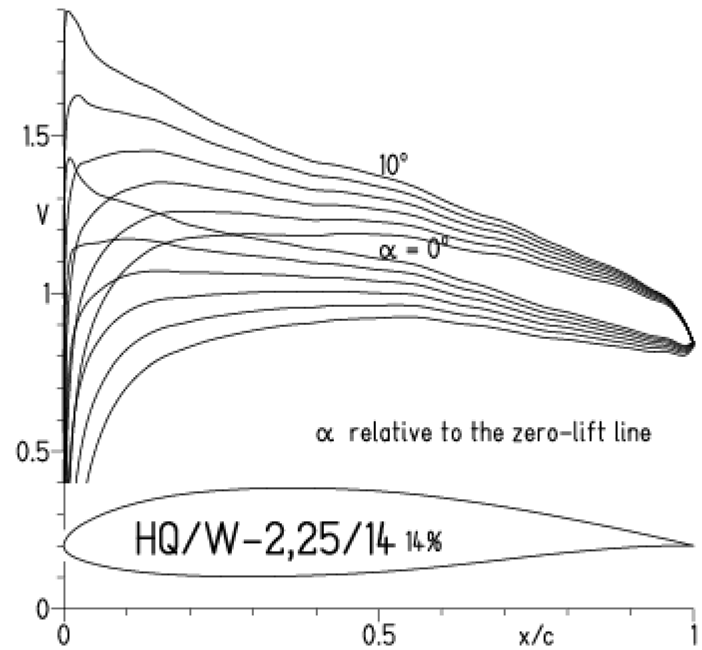
HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag



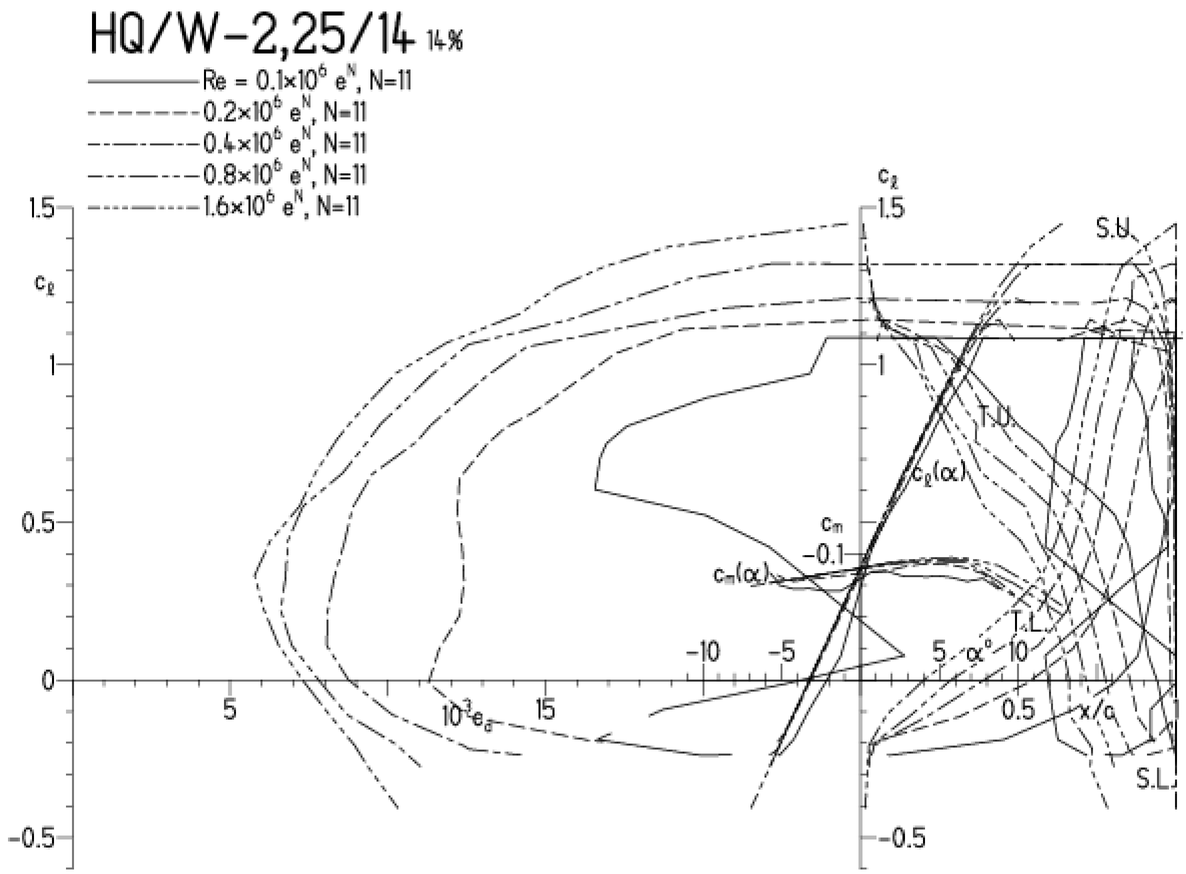


<u>HQ/W-2,25/14</u>, N=11

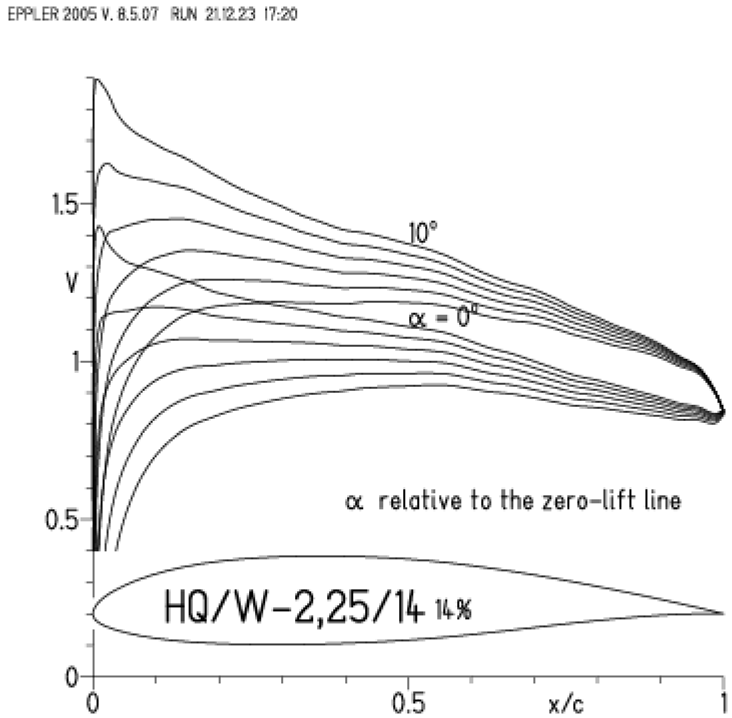
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

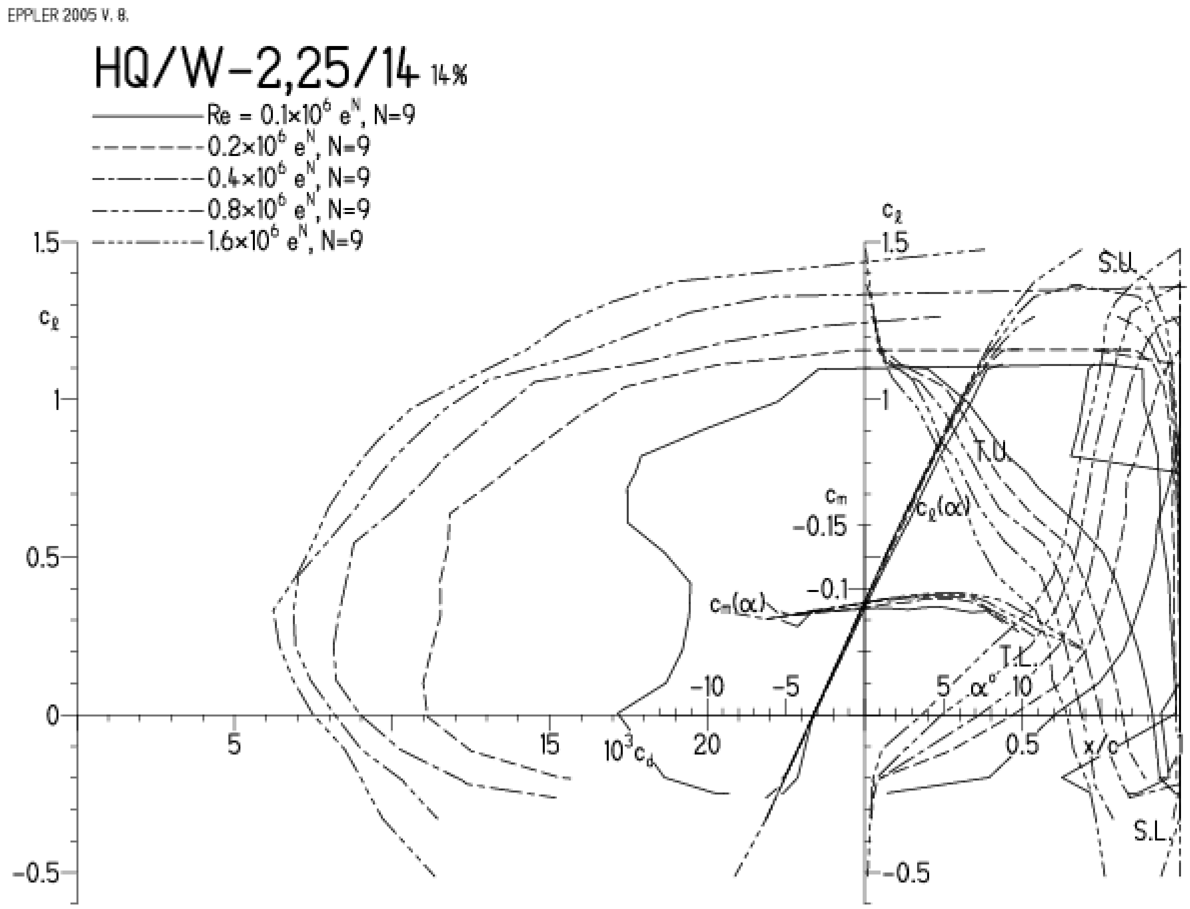


EPPLER 2005 V. 8.

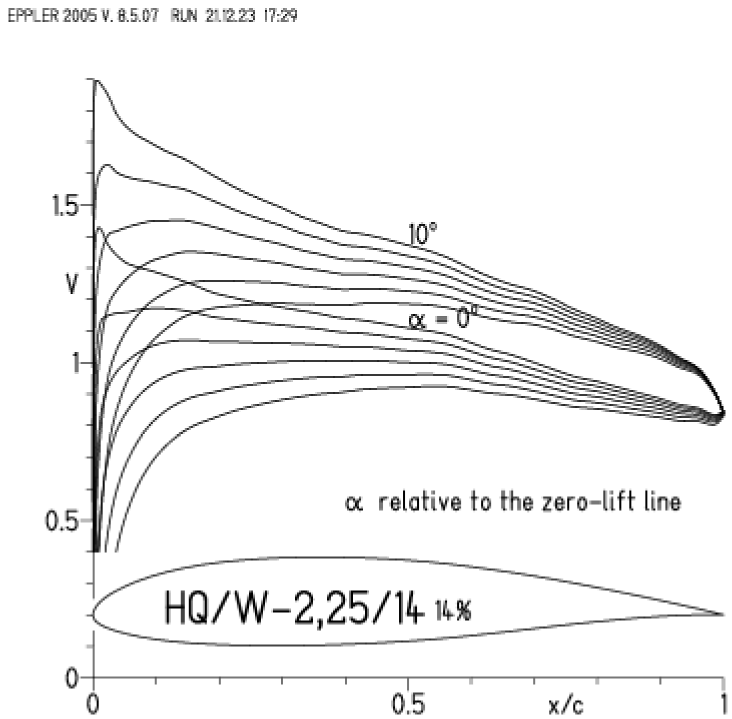


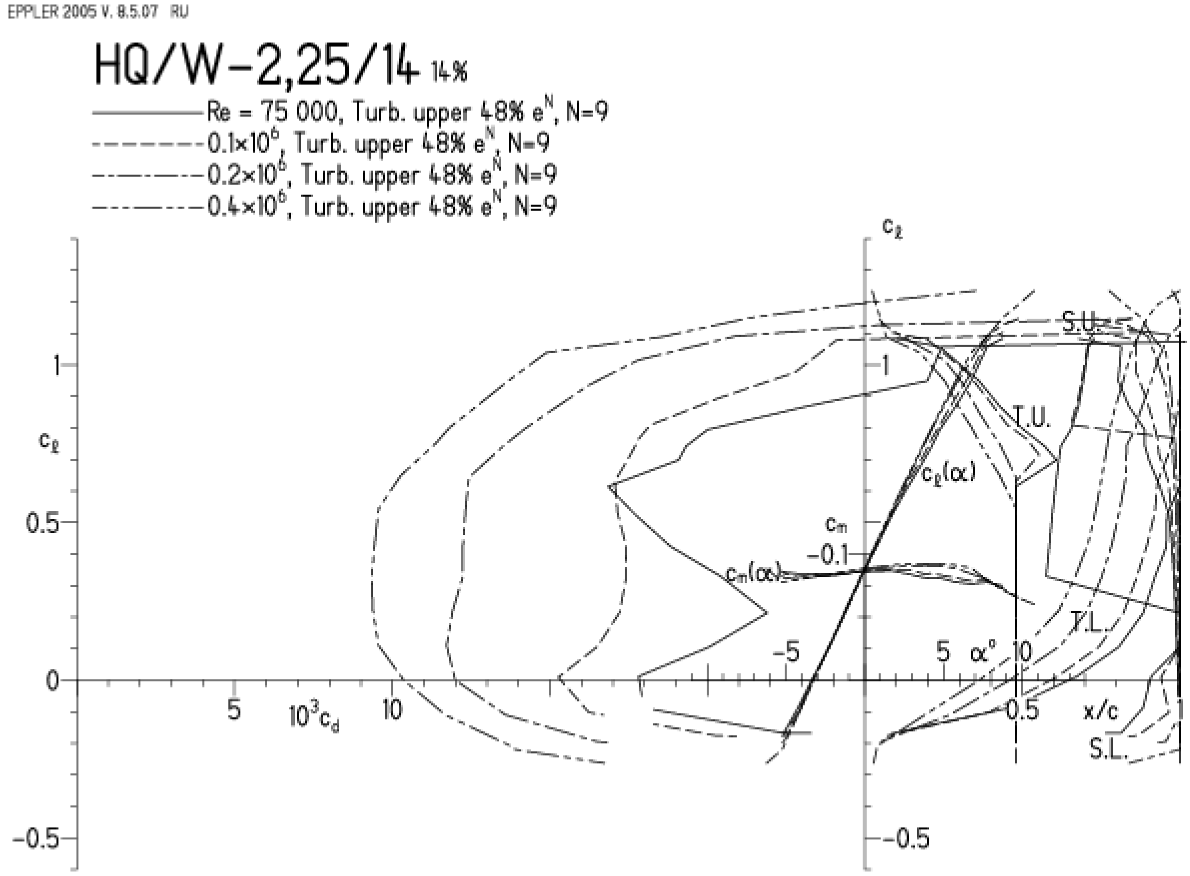
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

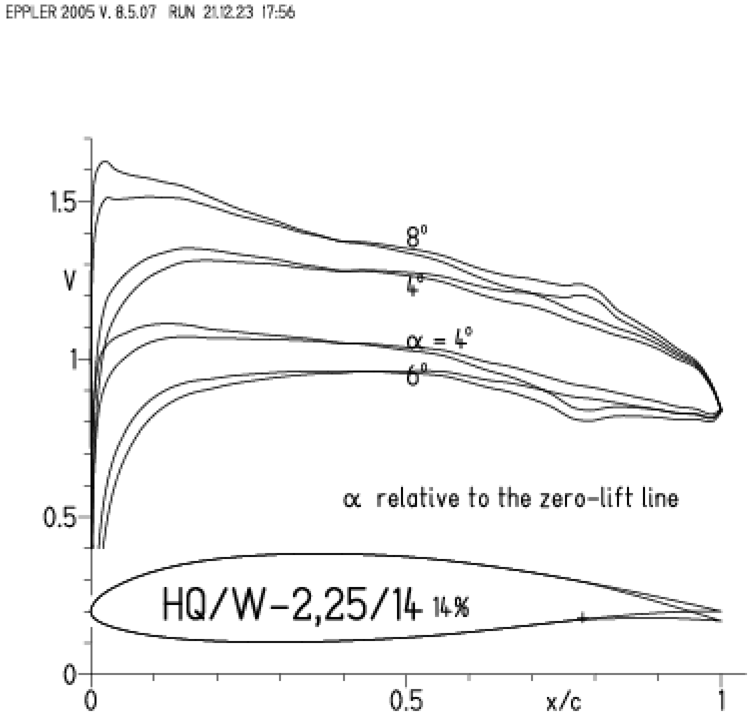

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

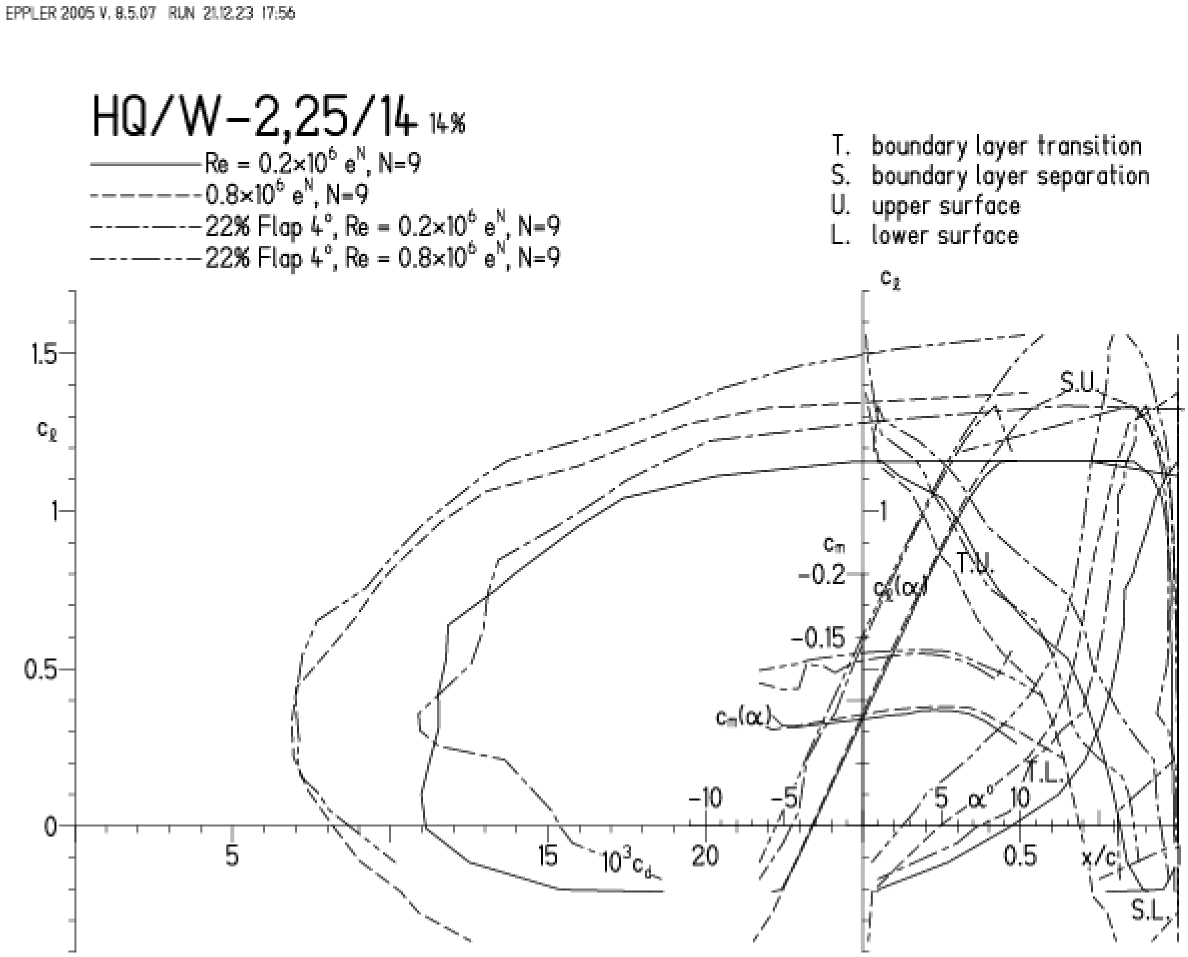
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





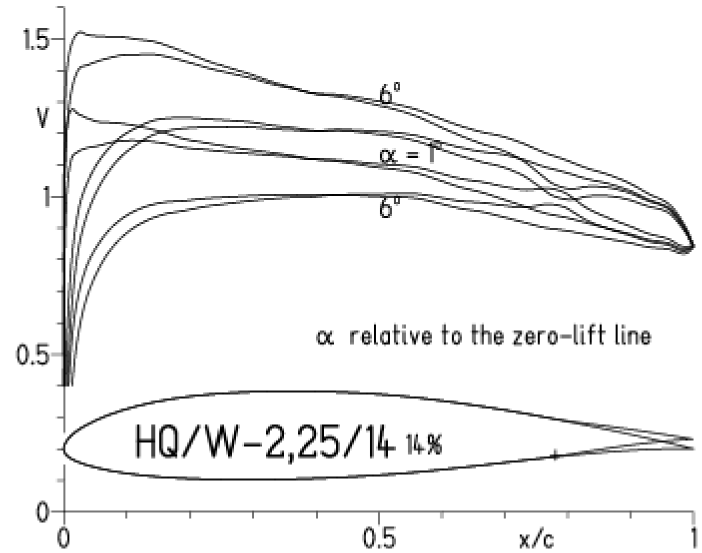
<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag



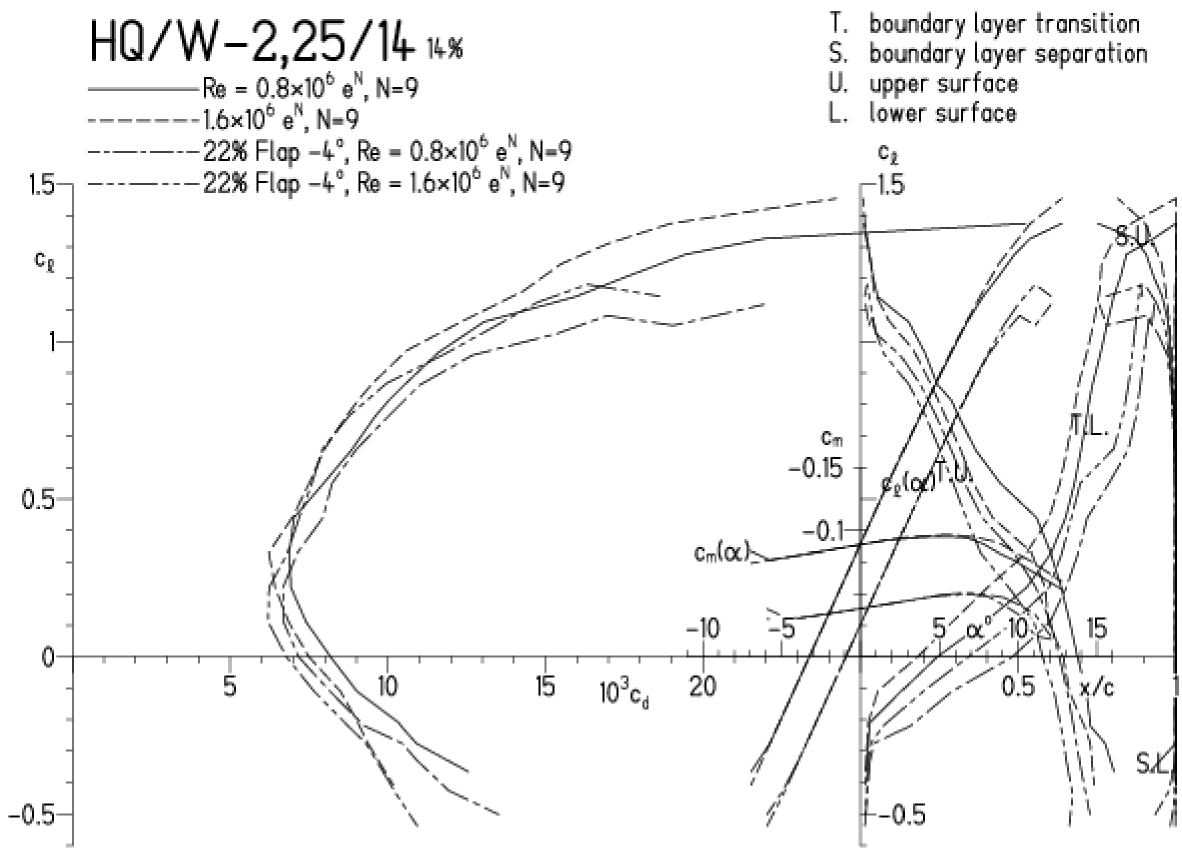


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

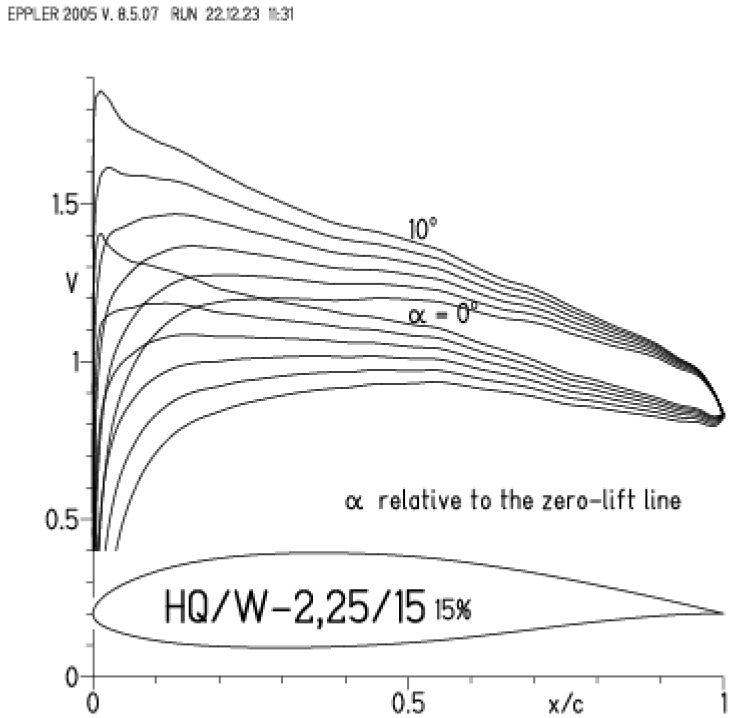
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

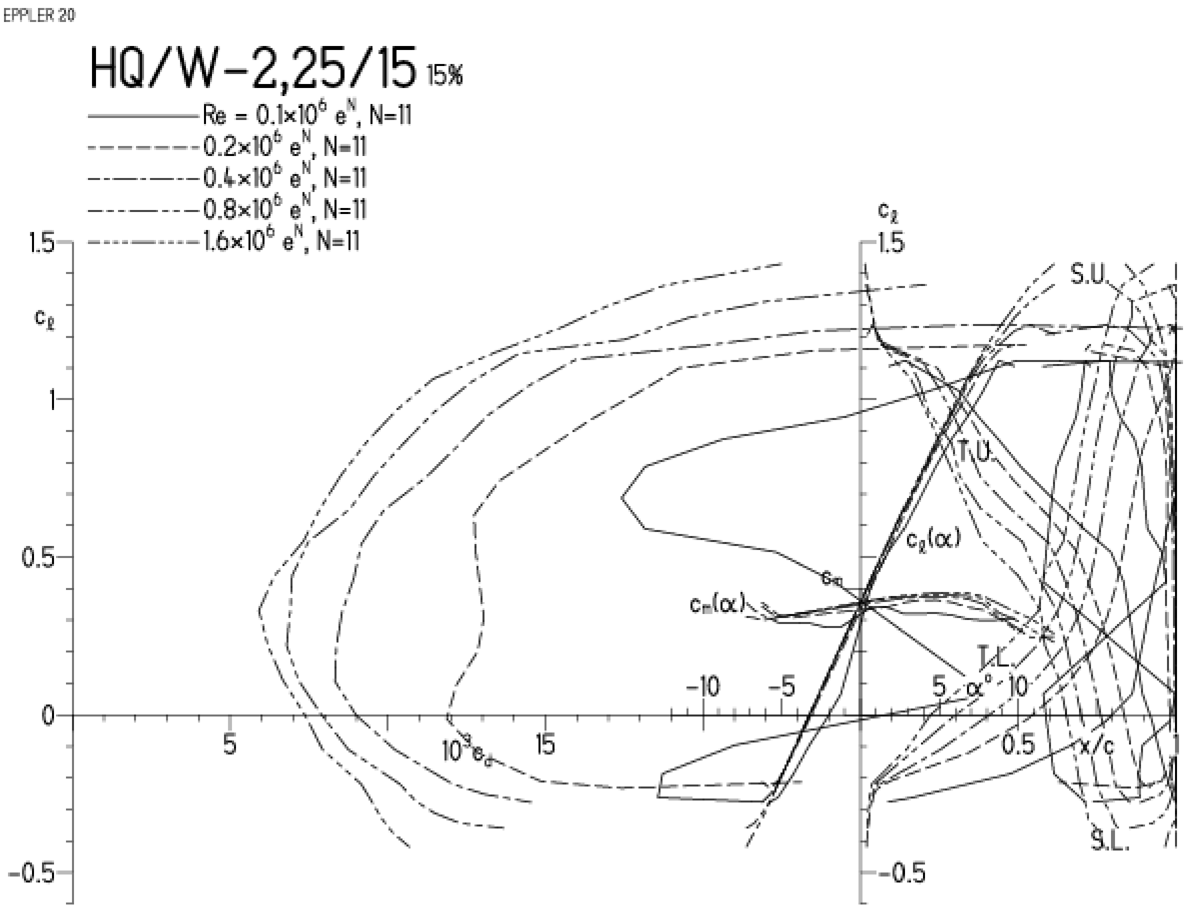


EPPLER 2005 V. 8.5.07

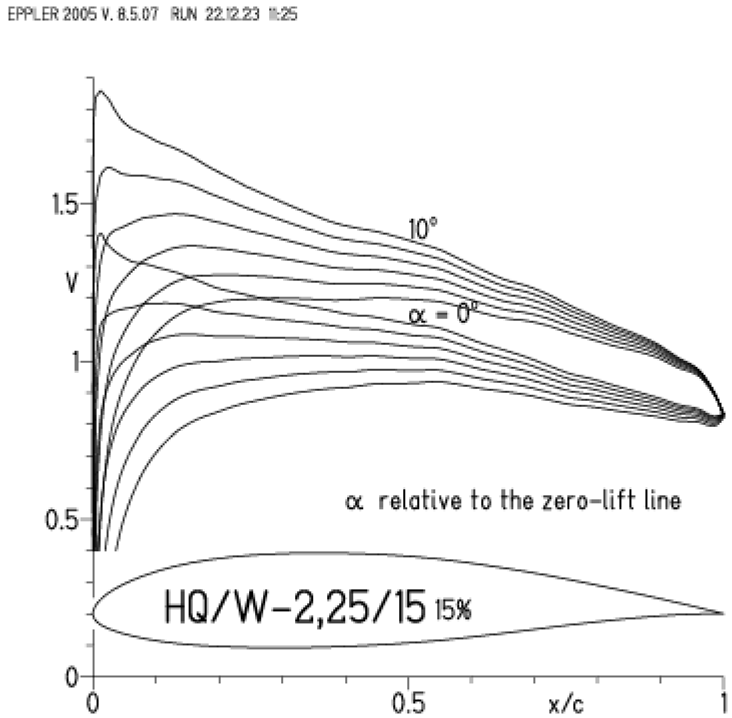


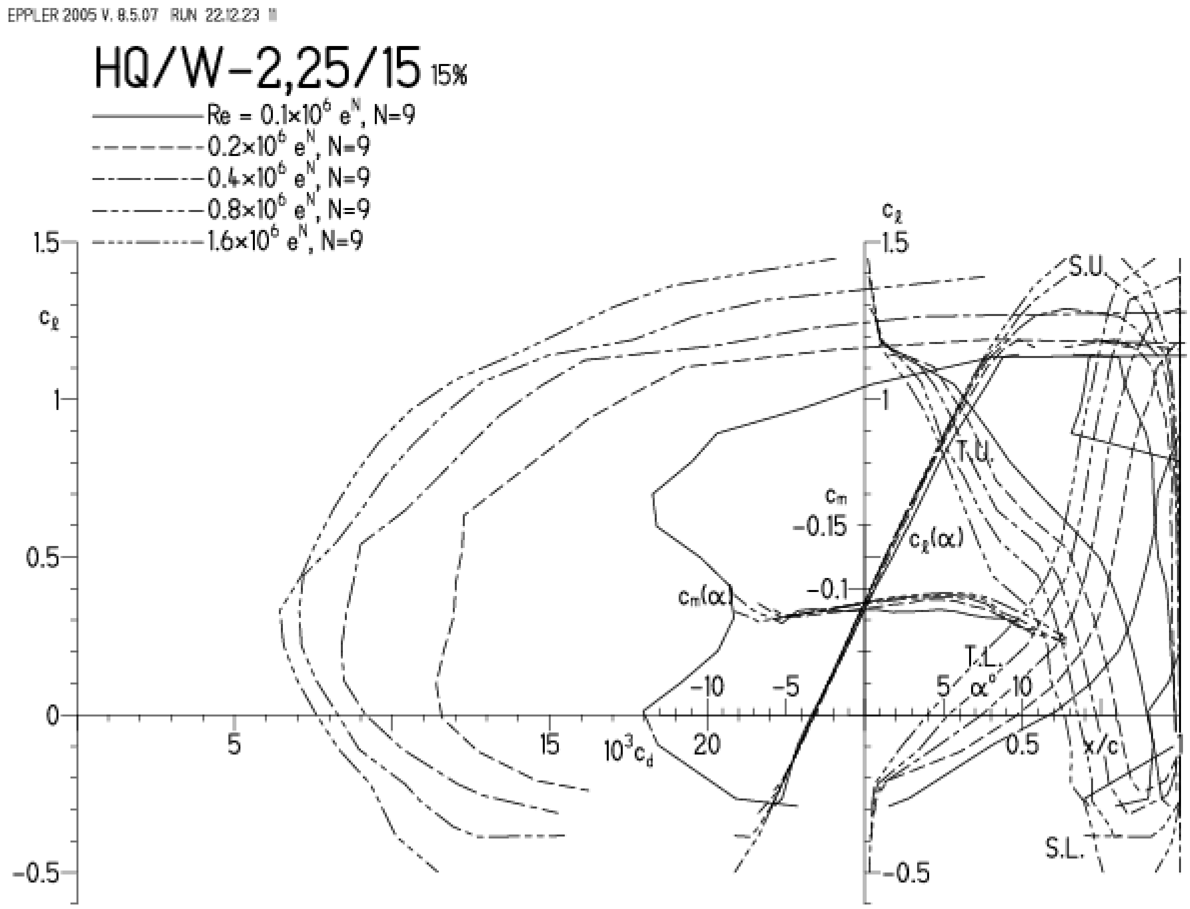
HQ/W-2,25/15, N=11



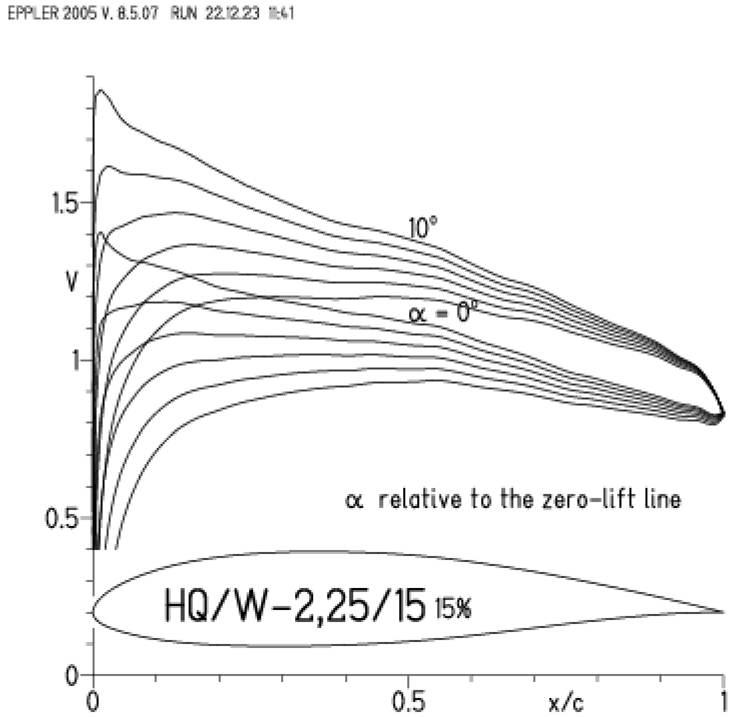


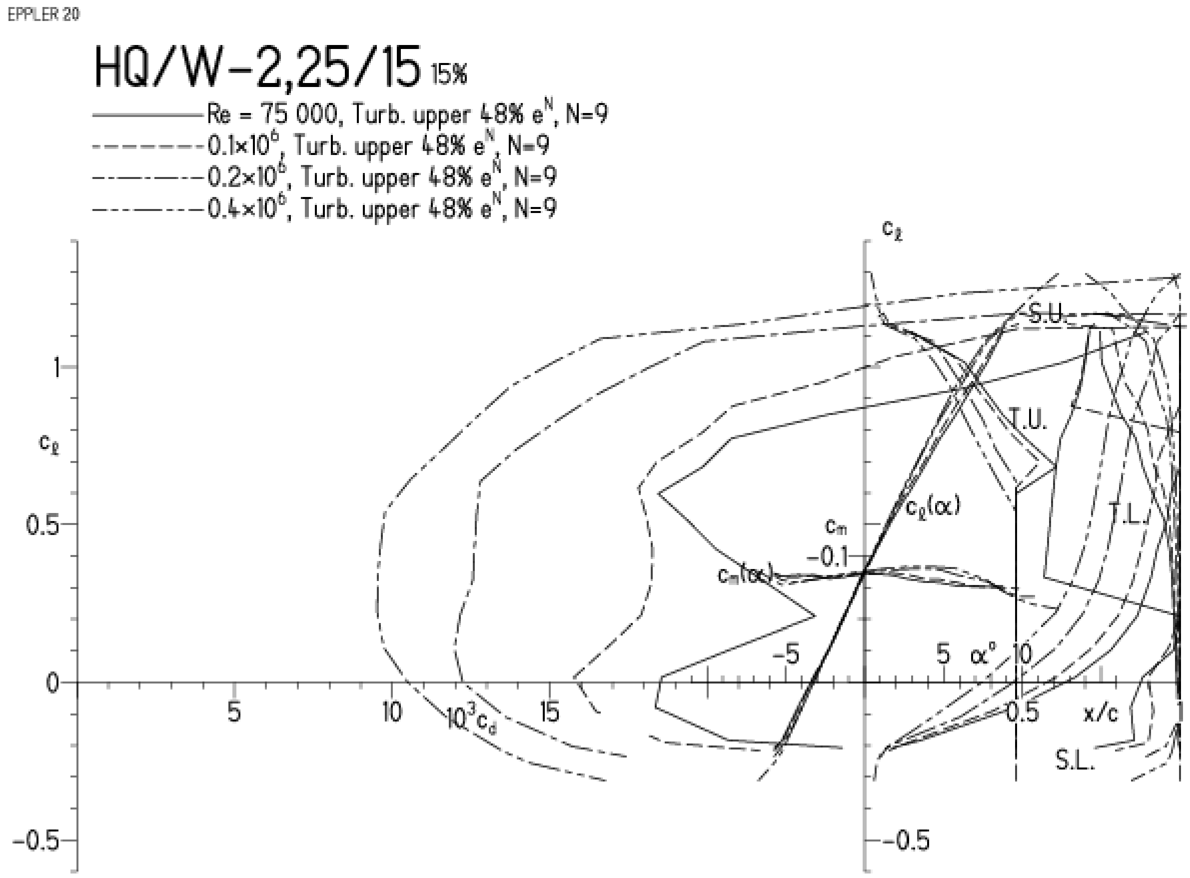
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
c_ℓ
1.5
1
0.5
0
-0.5
5
15
10³c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



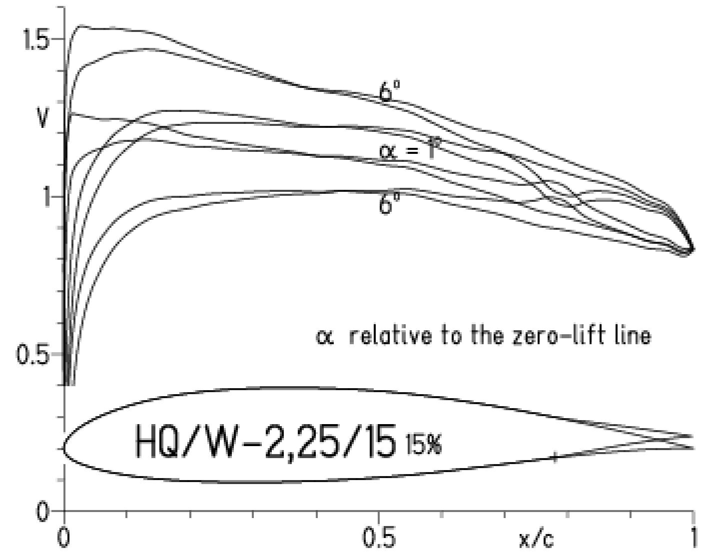


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

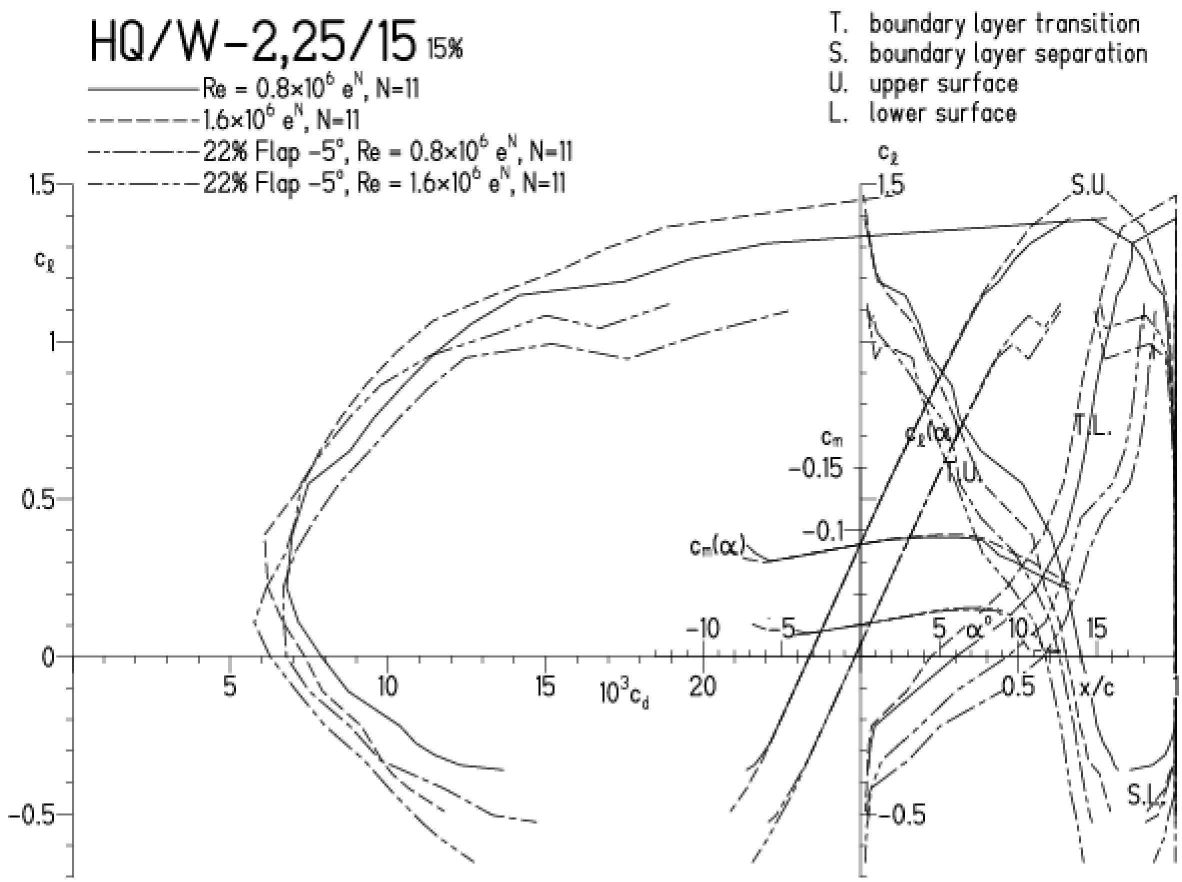
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

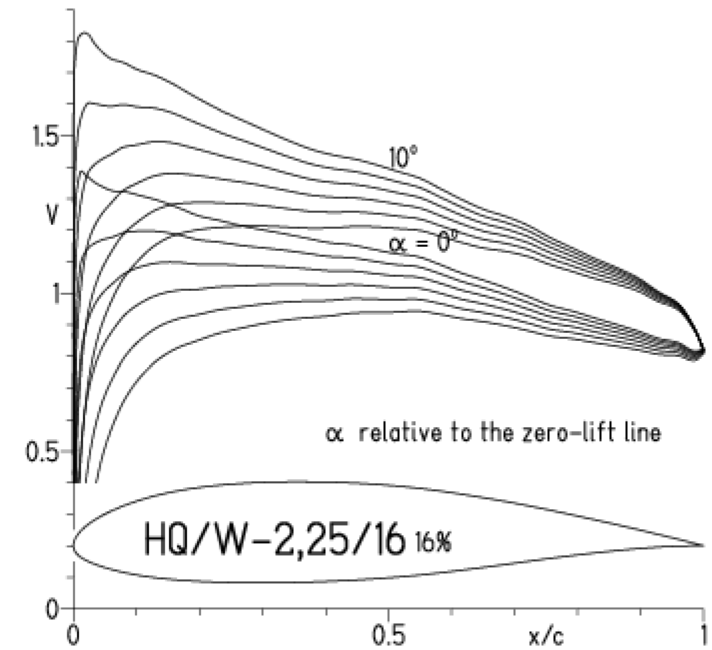


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

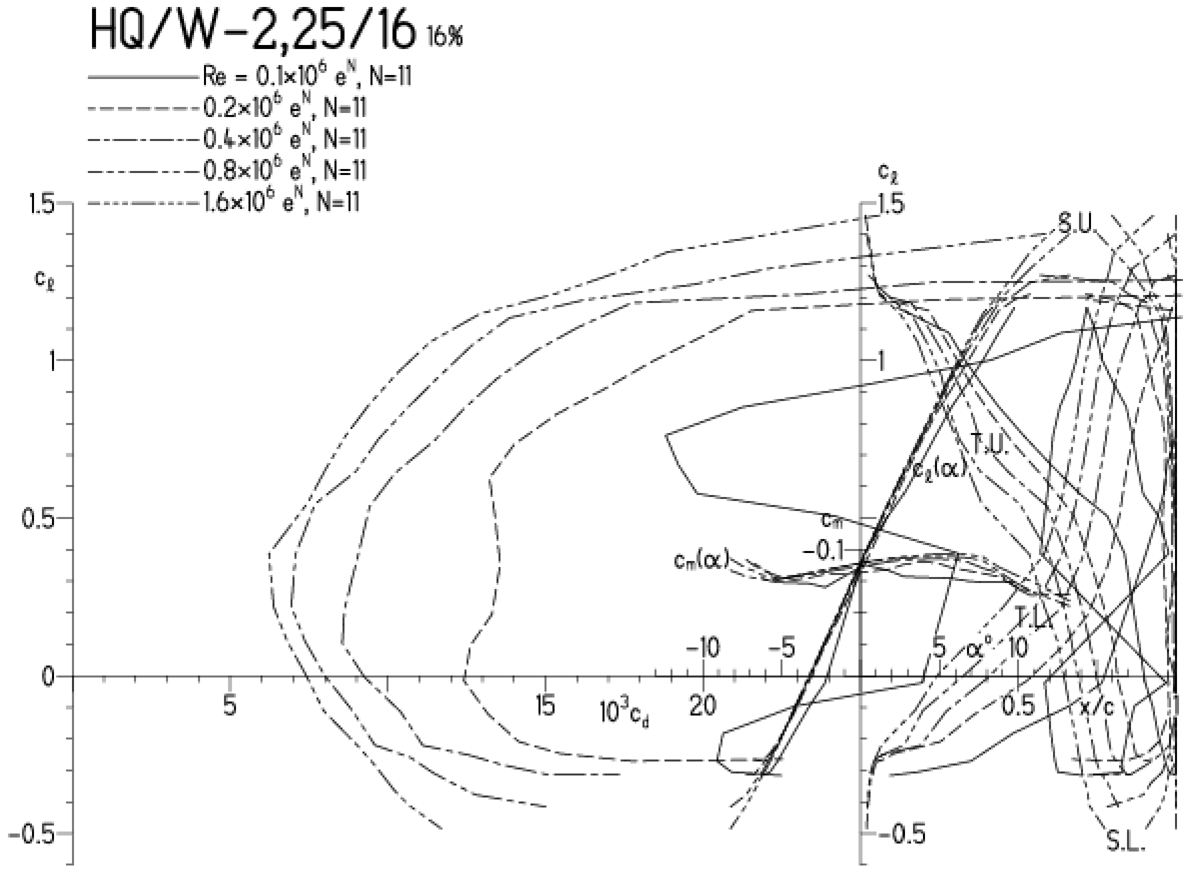


HQ/W-2,25/16, N=11

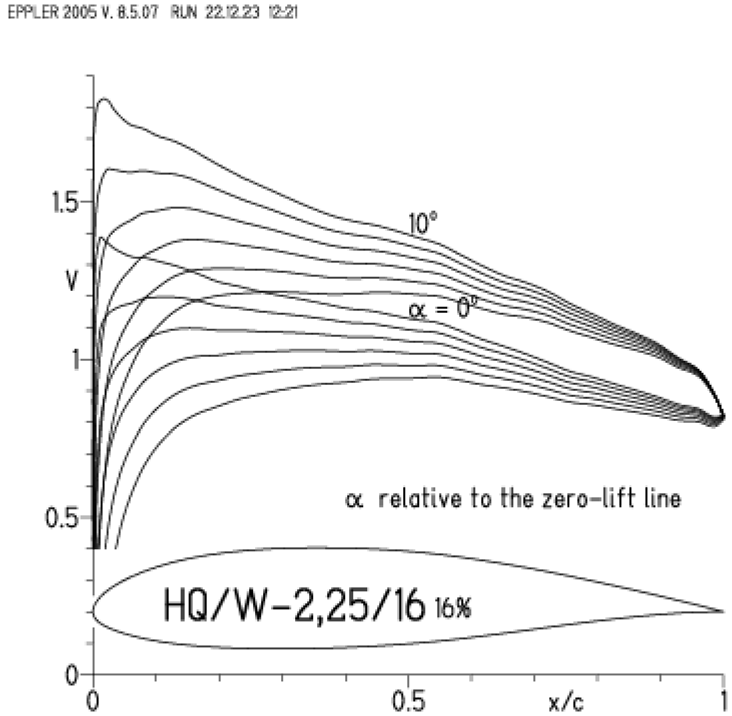
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

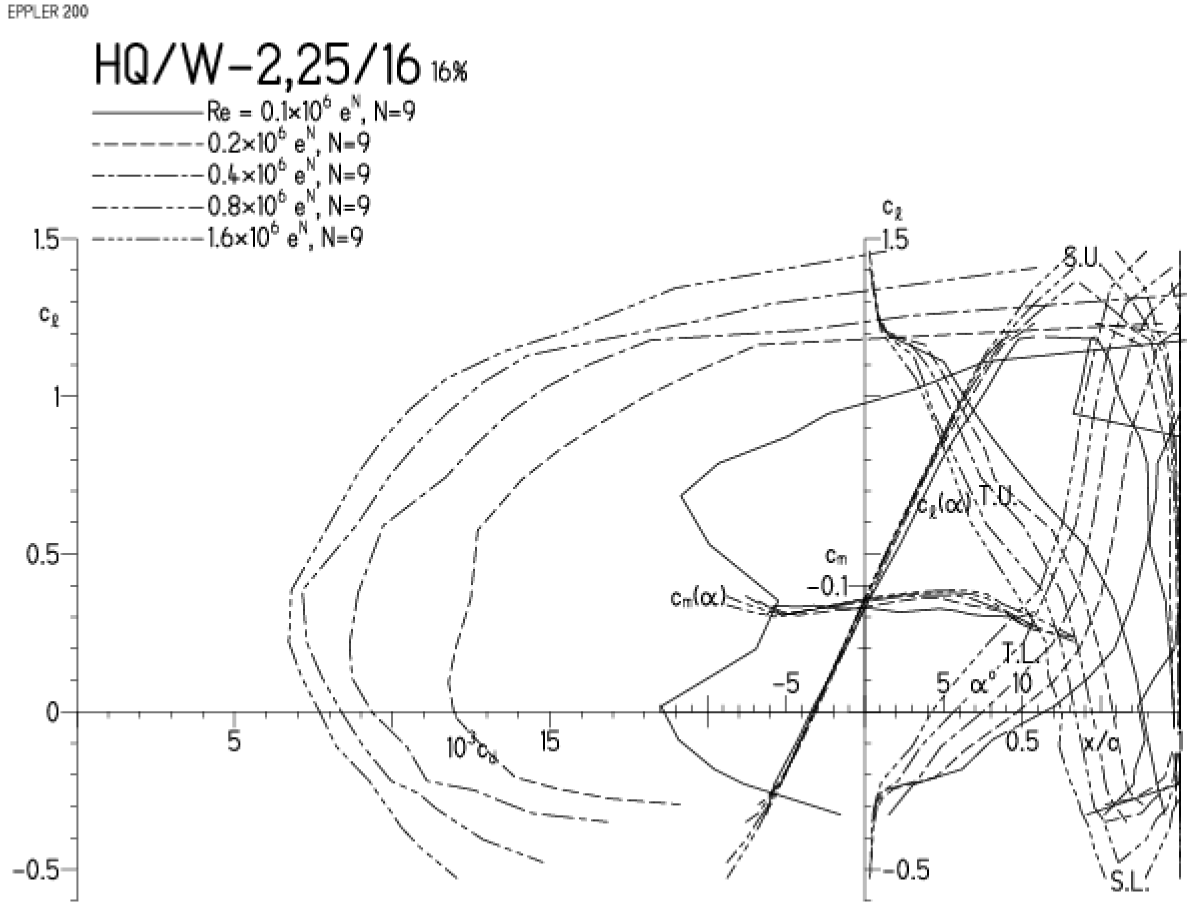


EPPLER 200

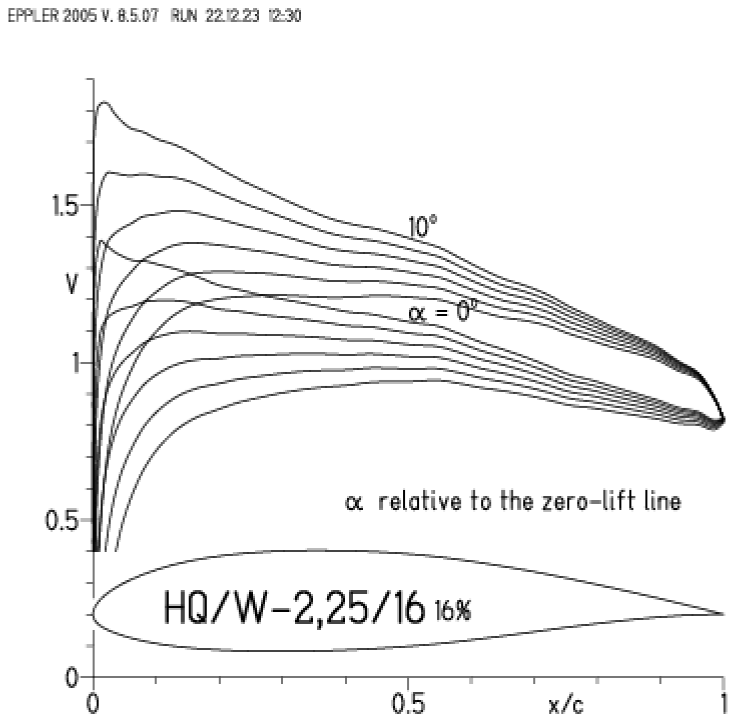


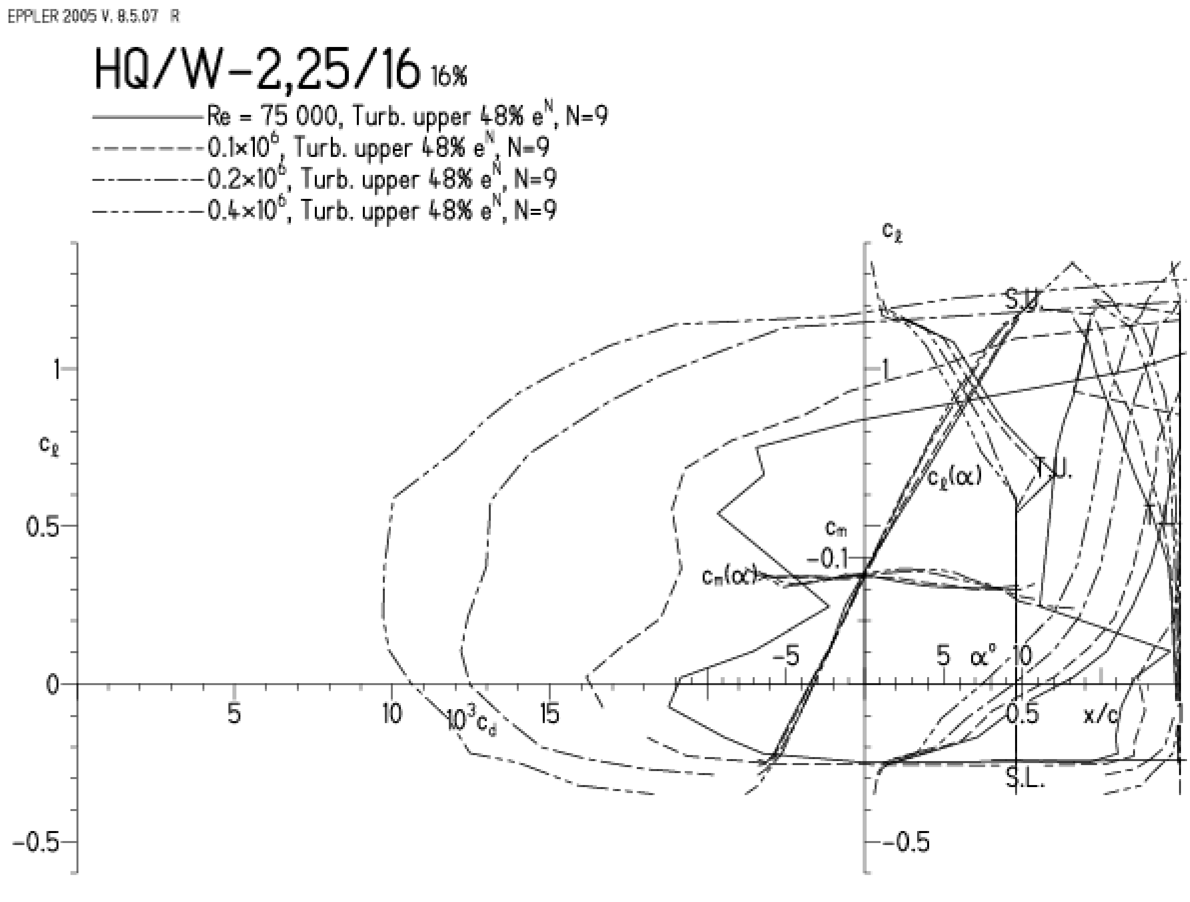
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10⁻³c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
c_ℓ
1.5
-0.5
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



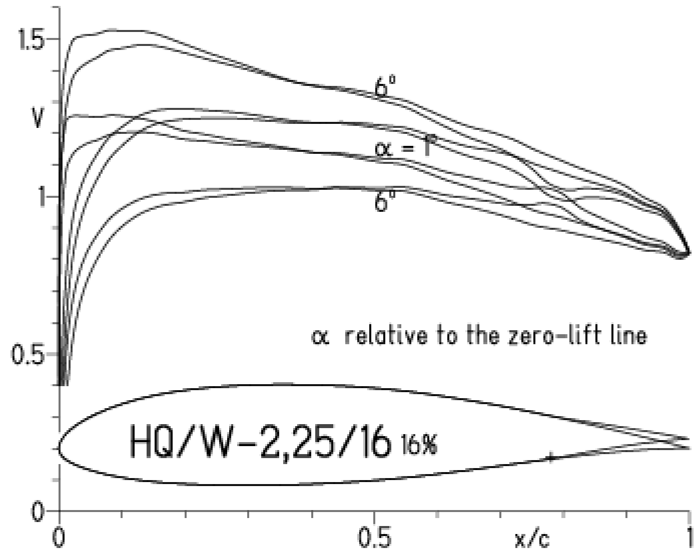


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

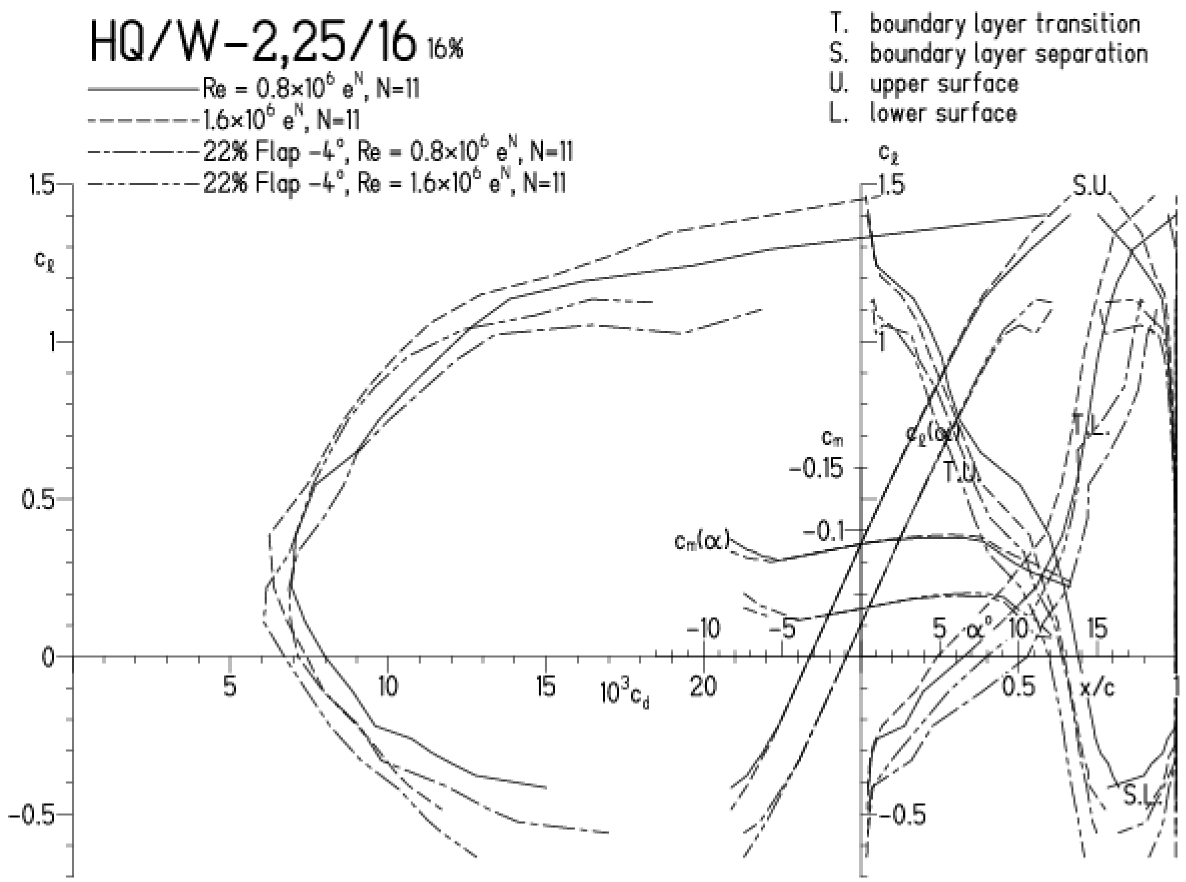
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

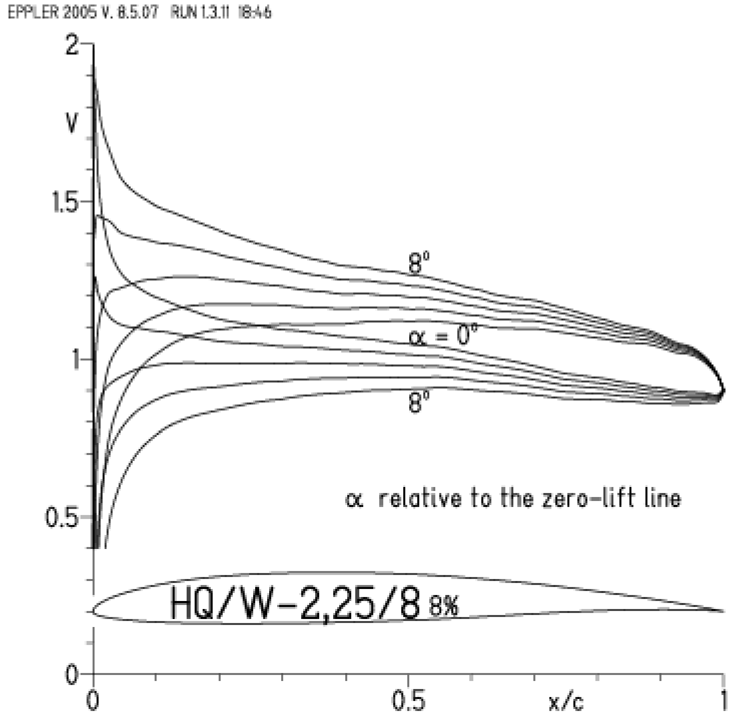
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

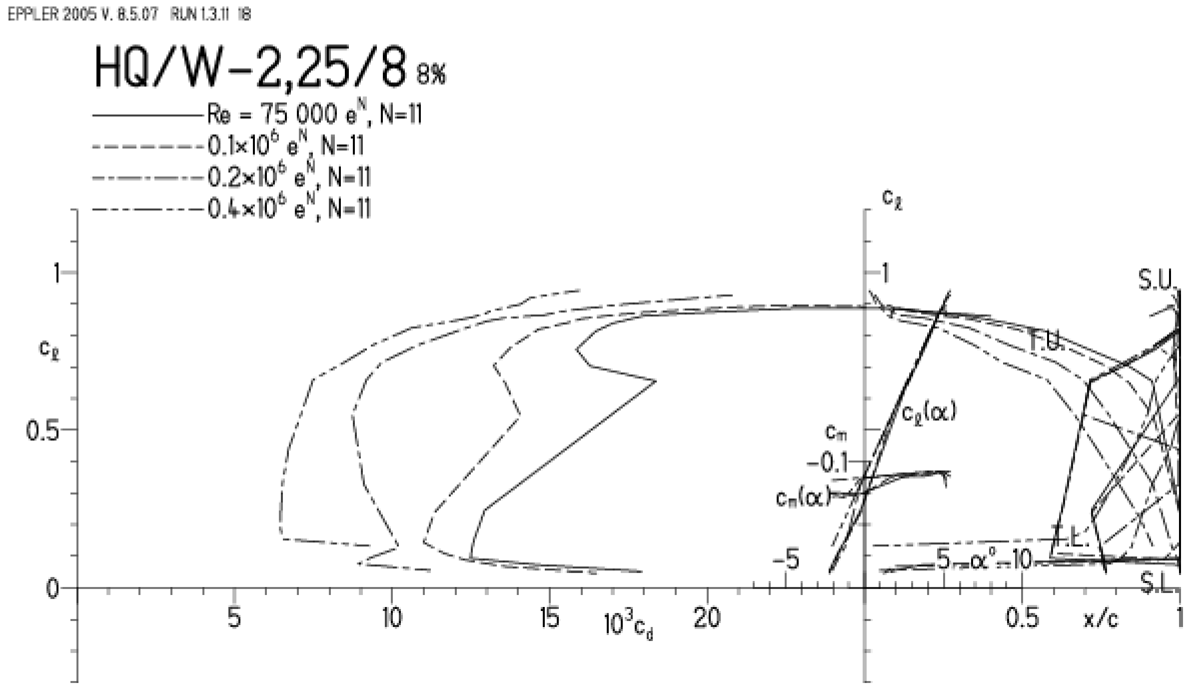


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

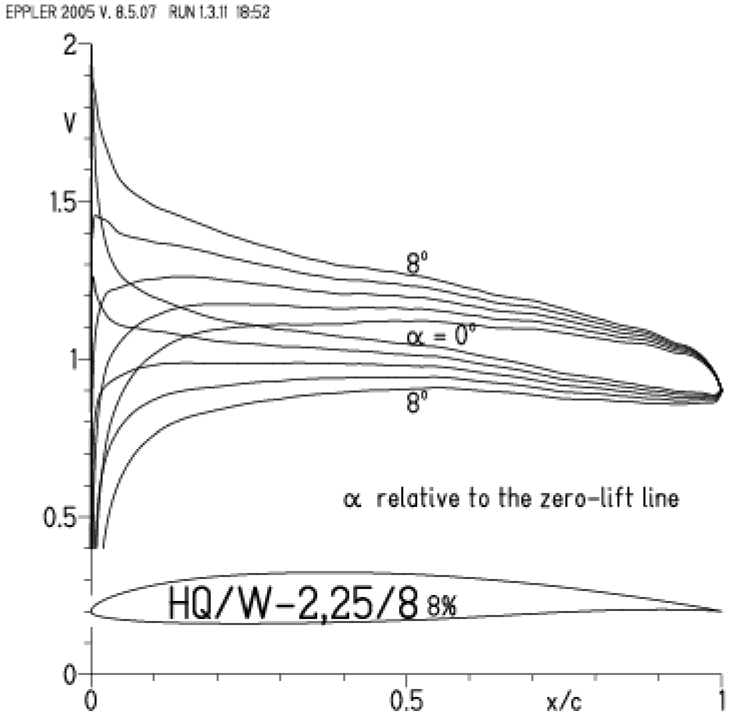


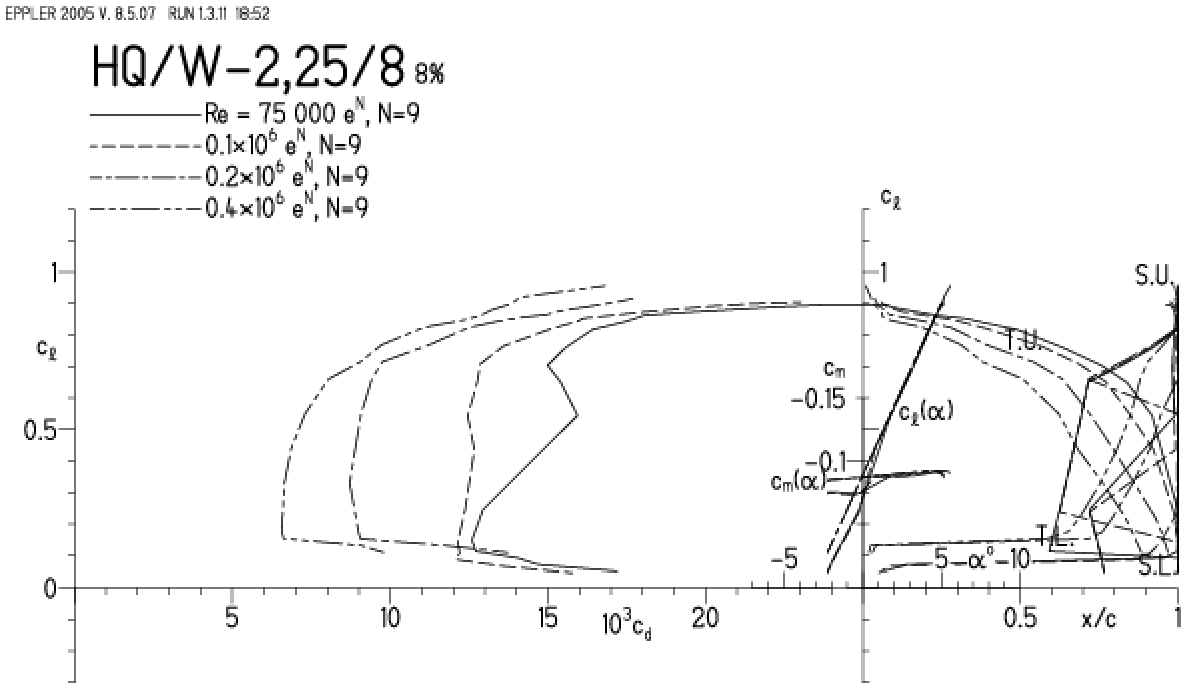
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

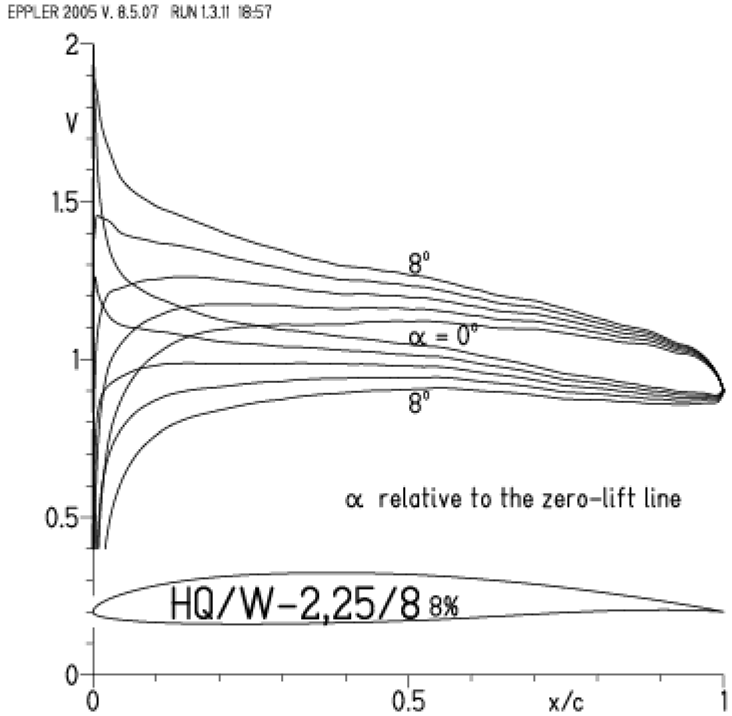

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
10^3 c_d
x/c

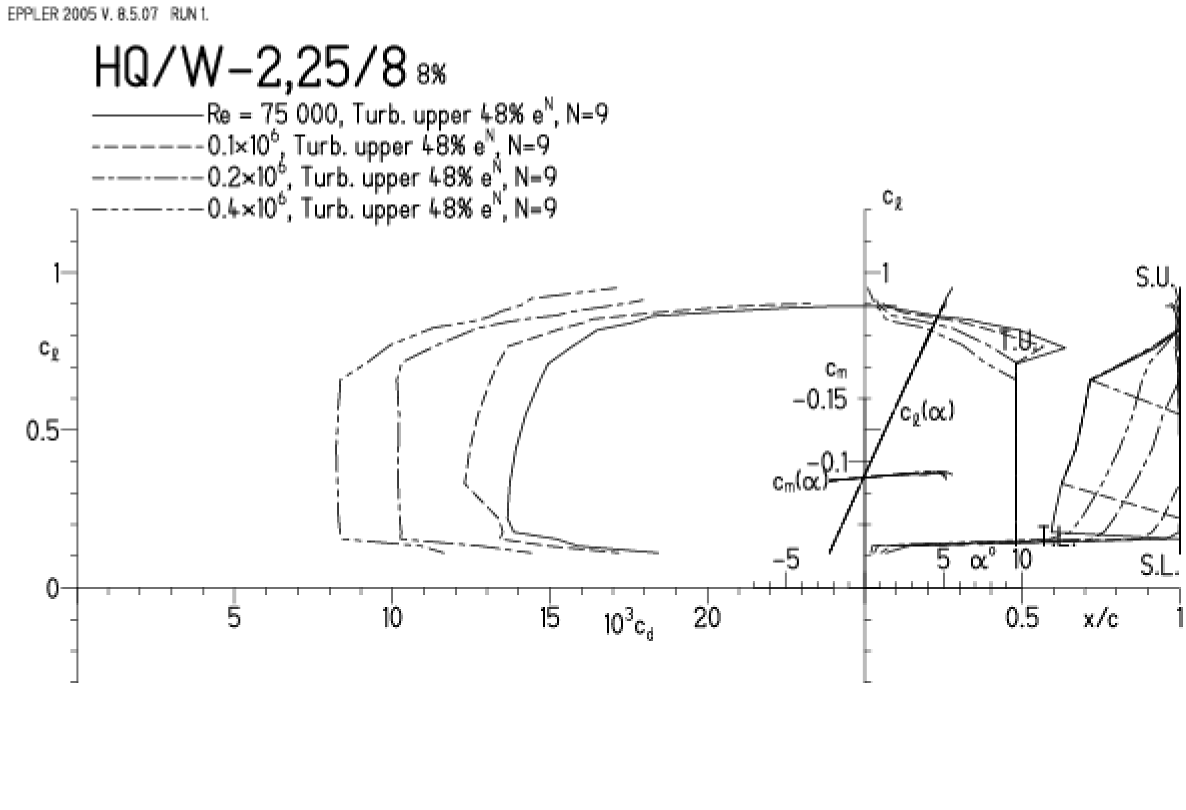
<u>HQ/W-2,25/8</u>, N=9





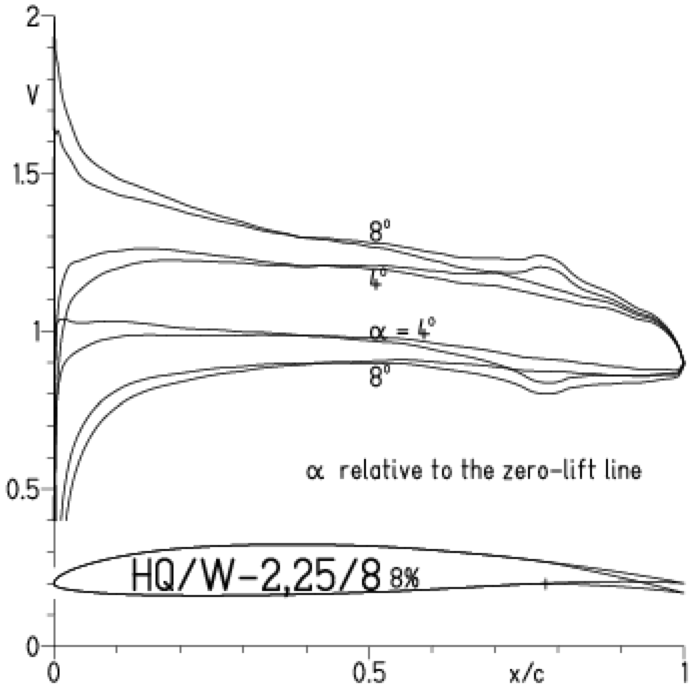
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



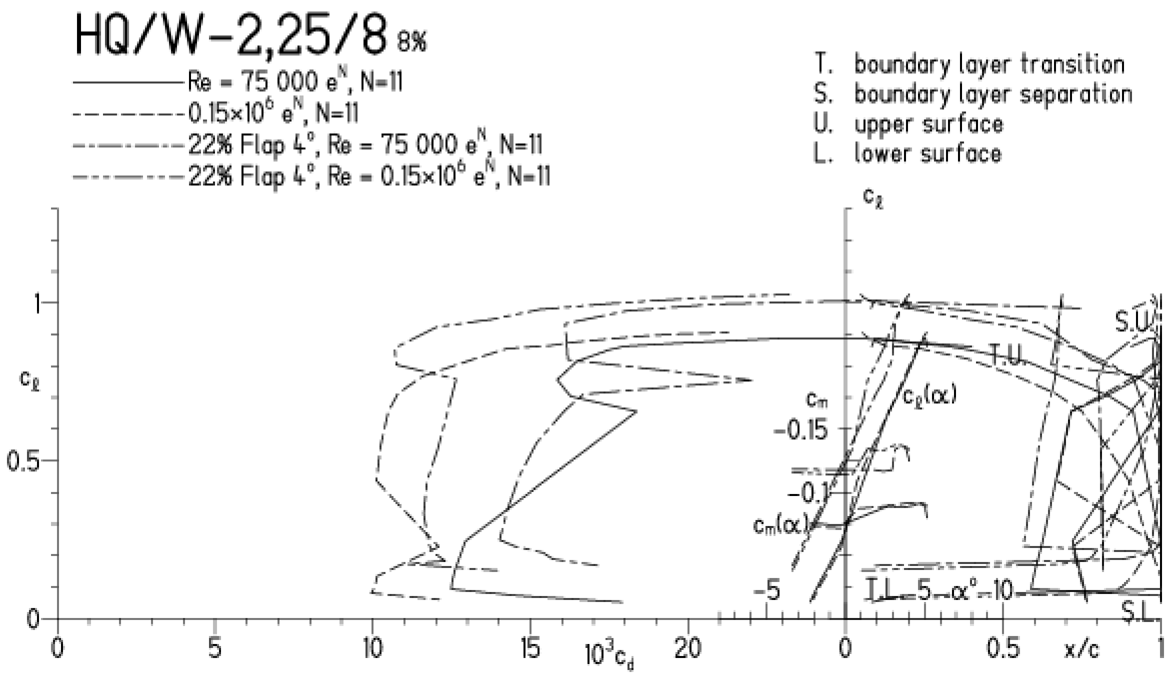


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

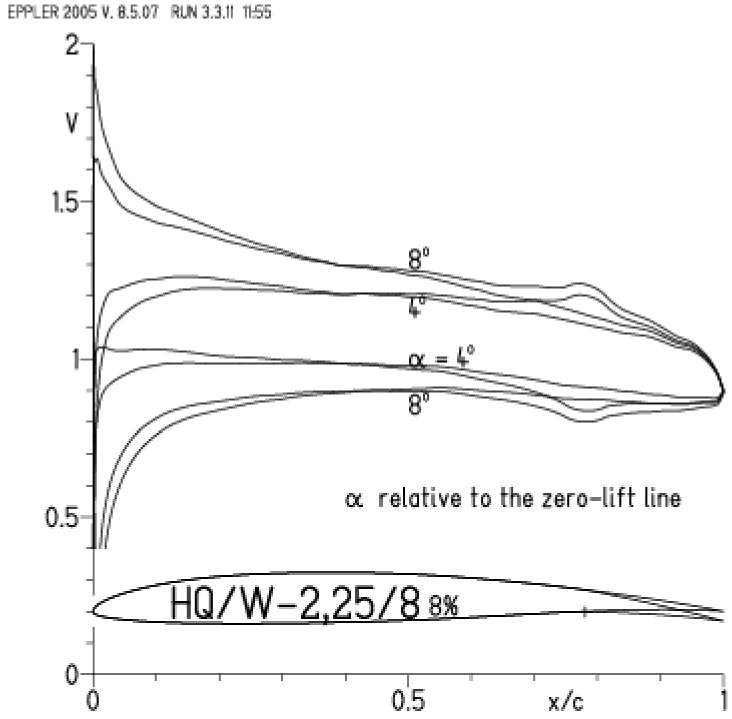
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

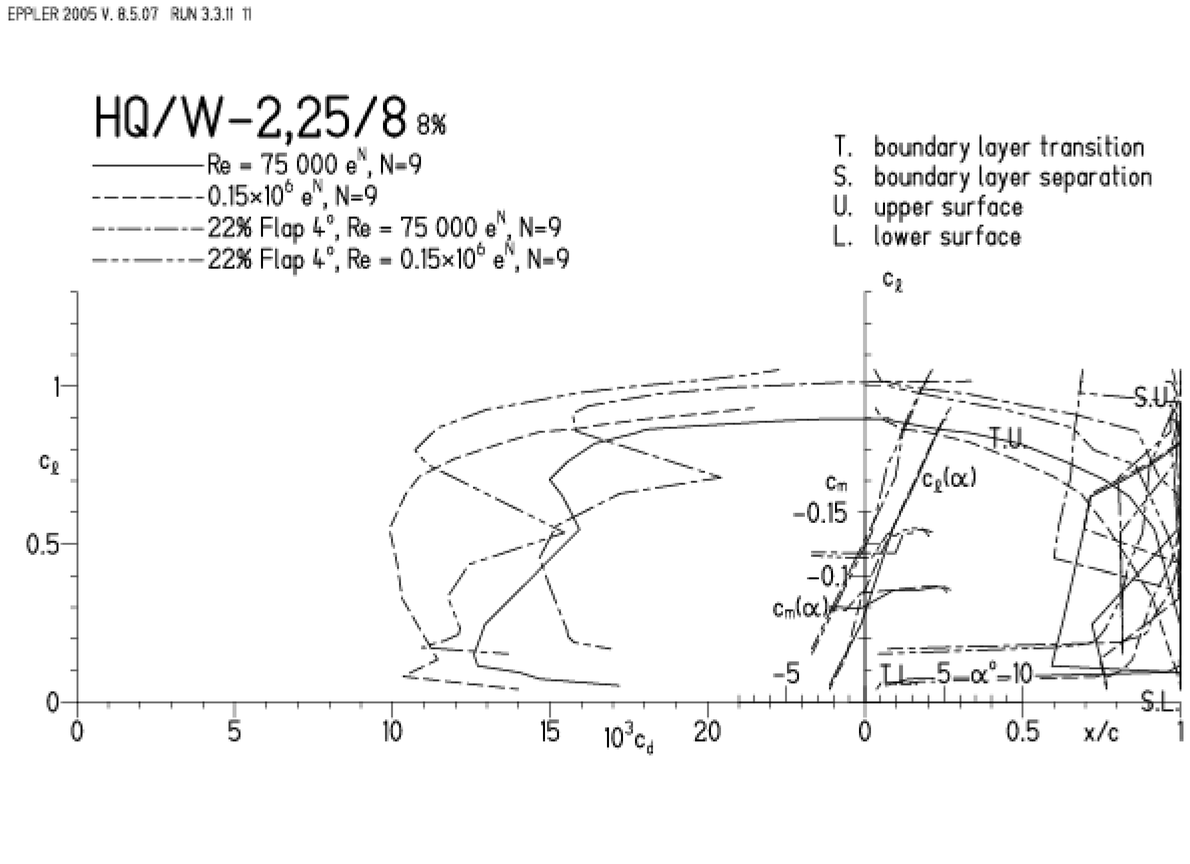


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

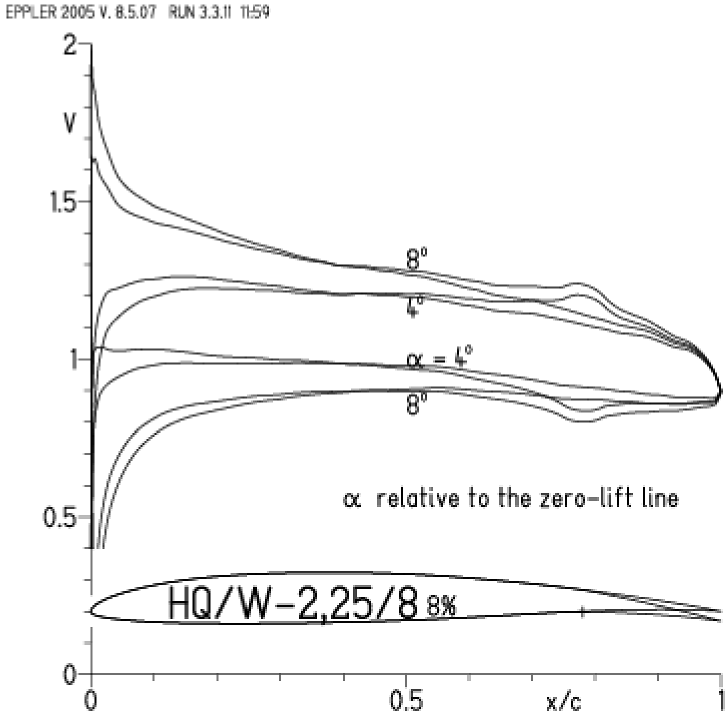


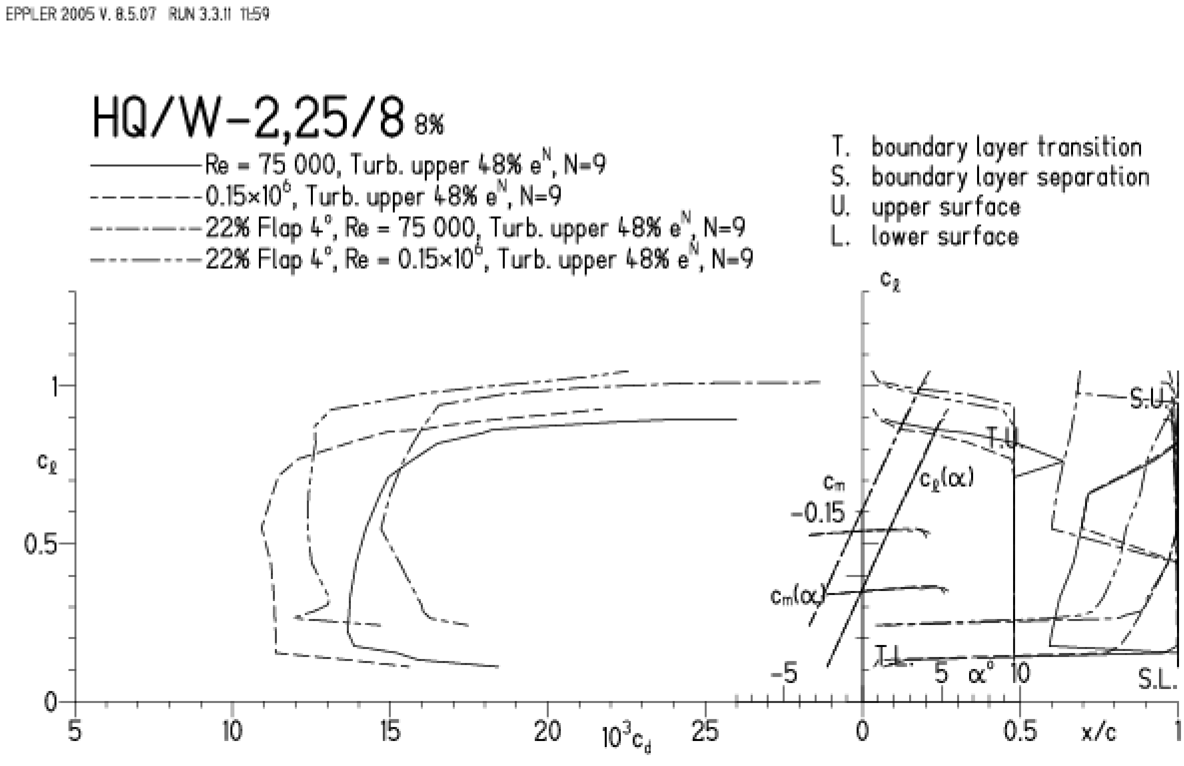
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





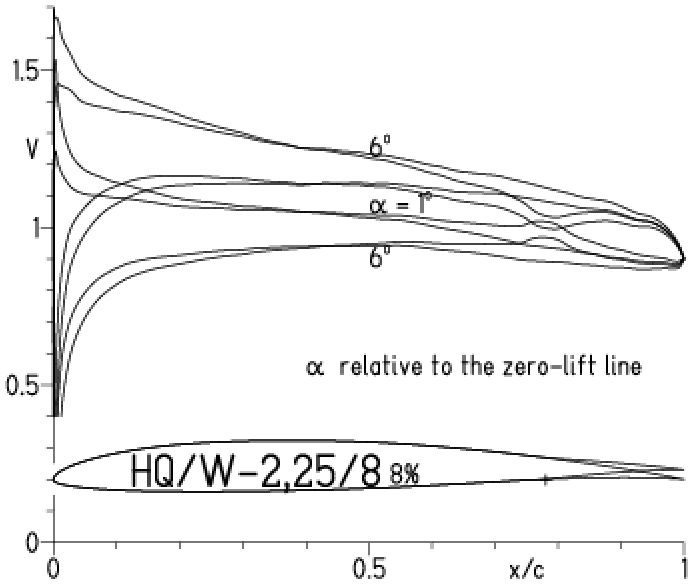
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



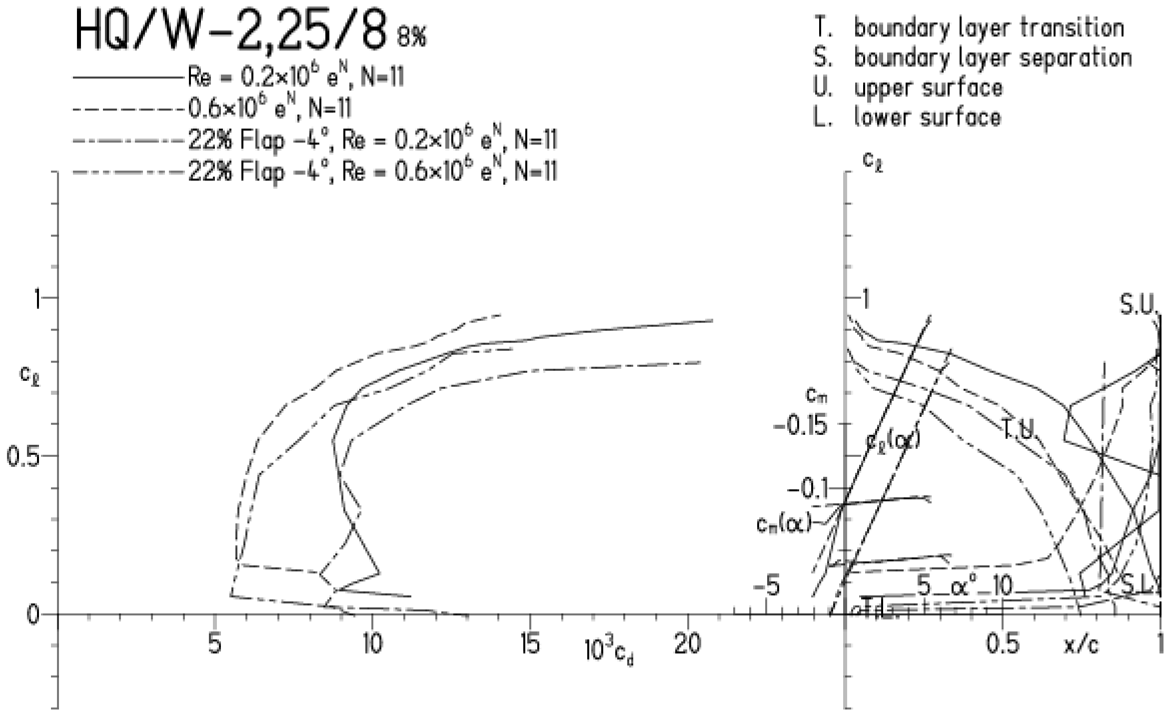


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

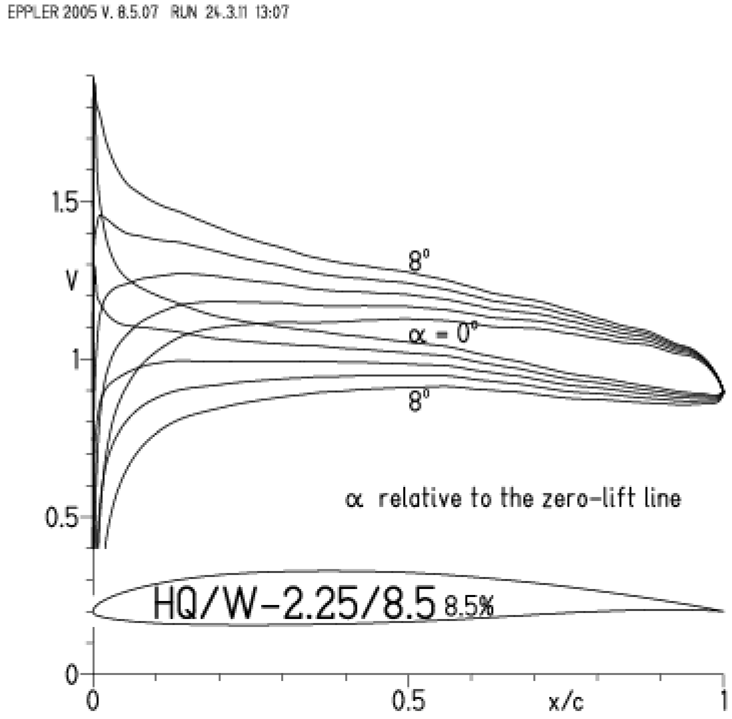
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

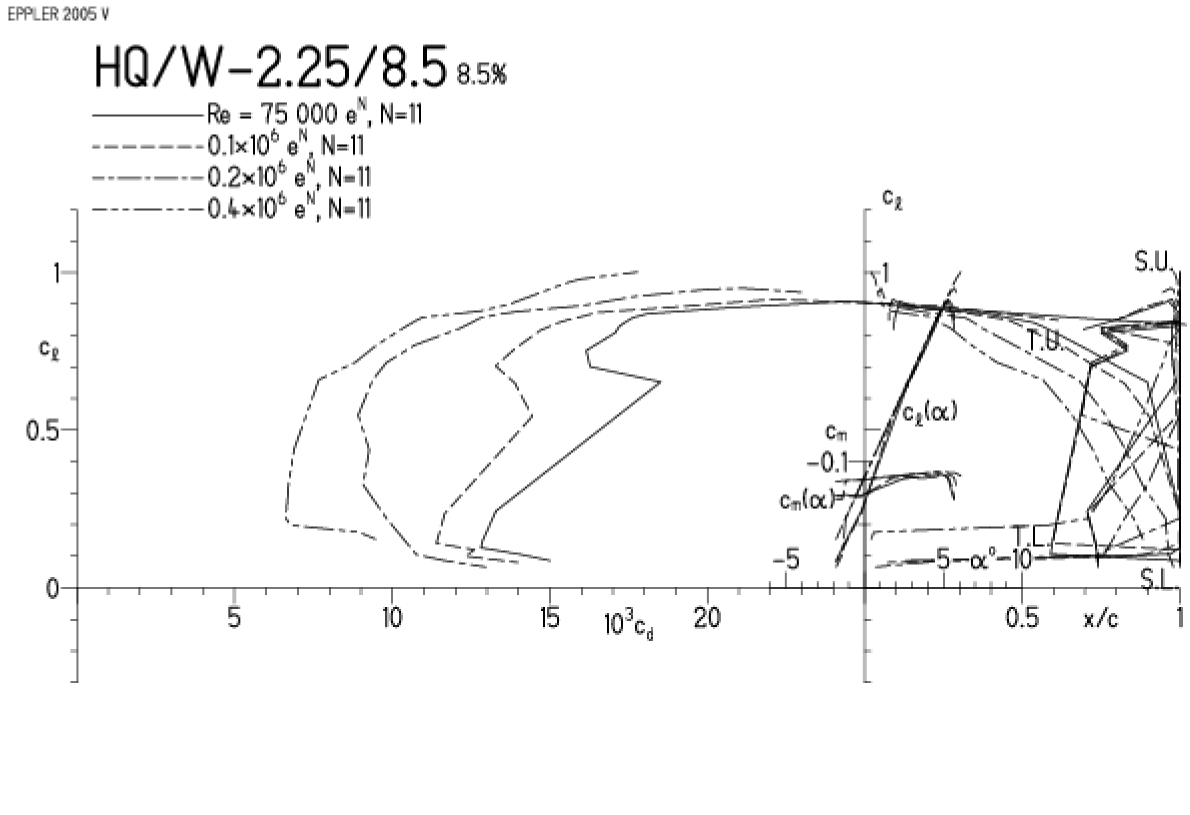


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



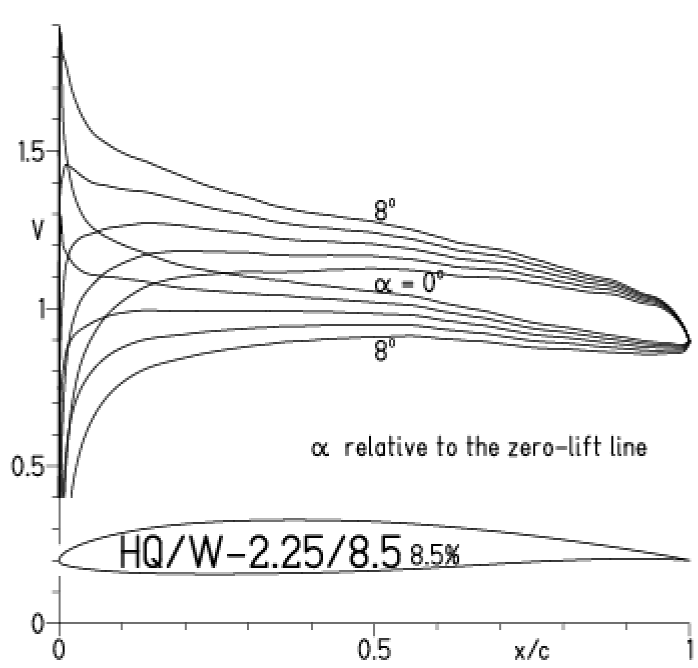
<u>HQ/W-2,25/8,5</u>, N=11



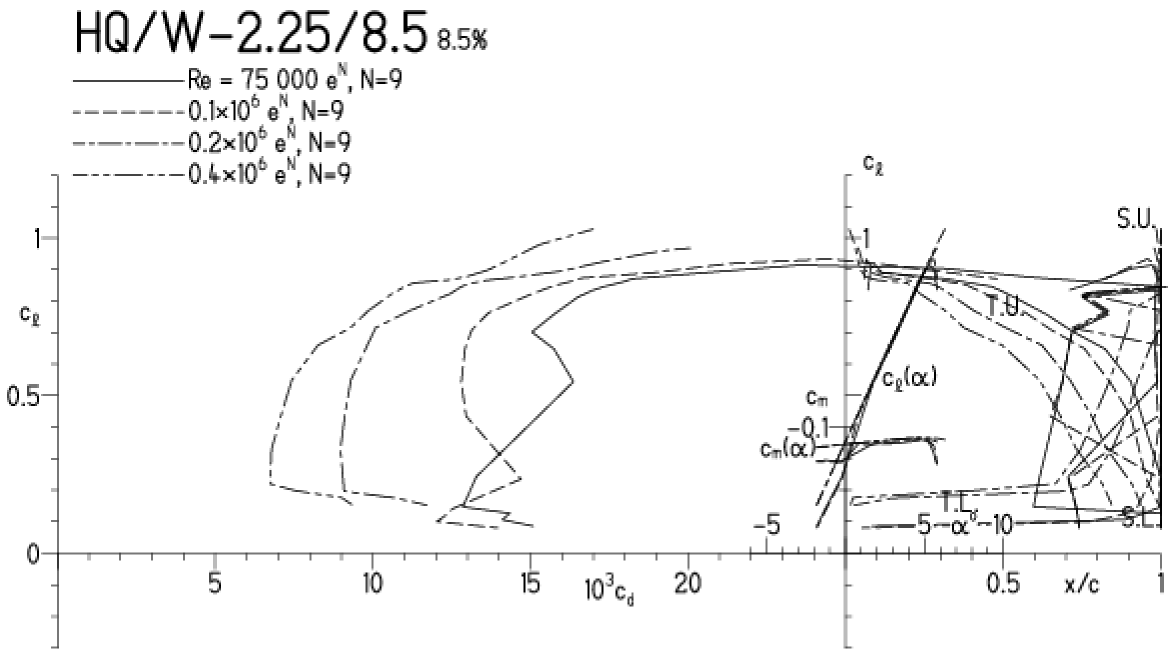


HQ/W-2,25/8,5, N=9

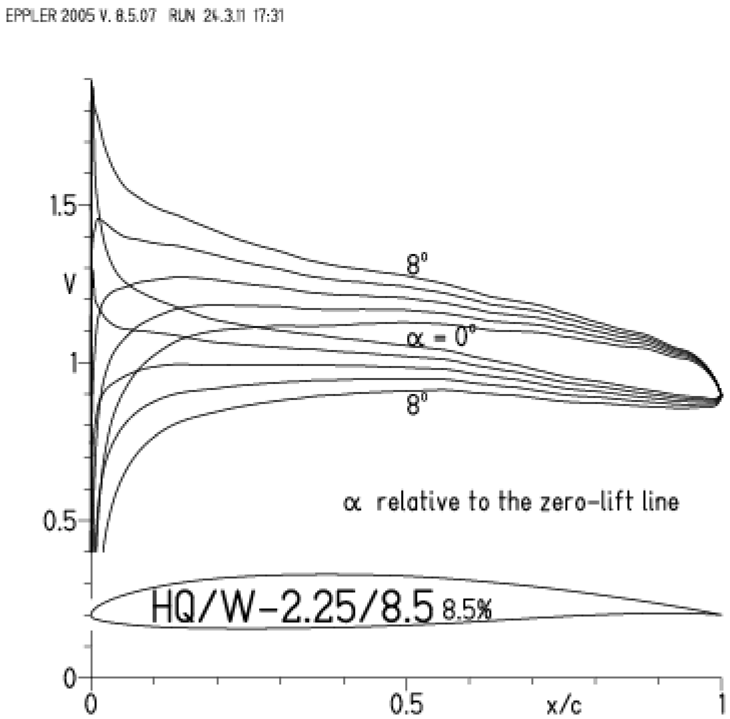
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

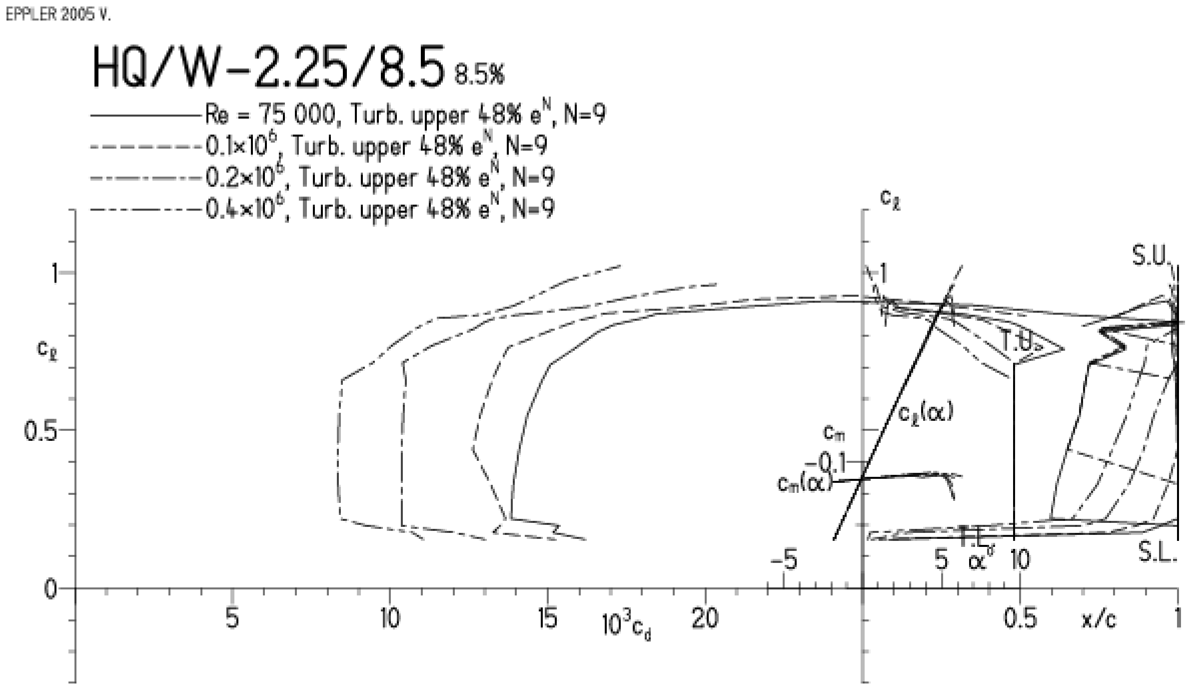


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



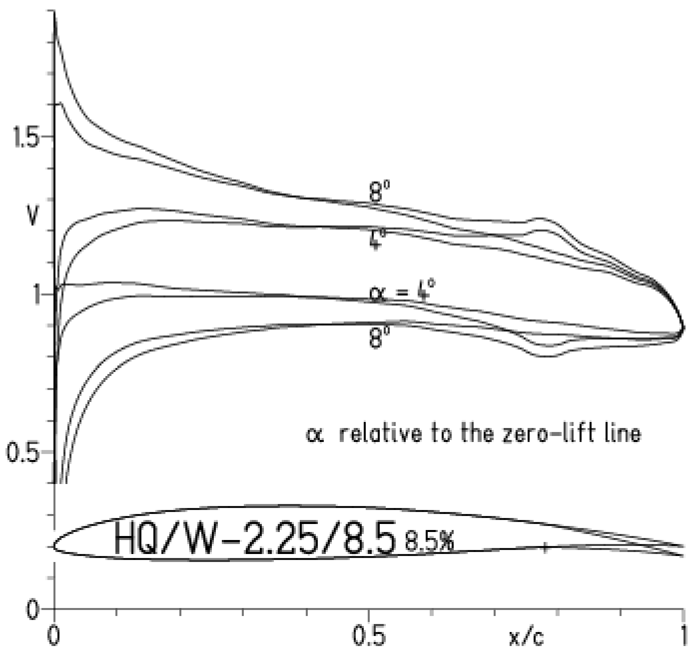
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



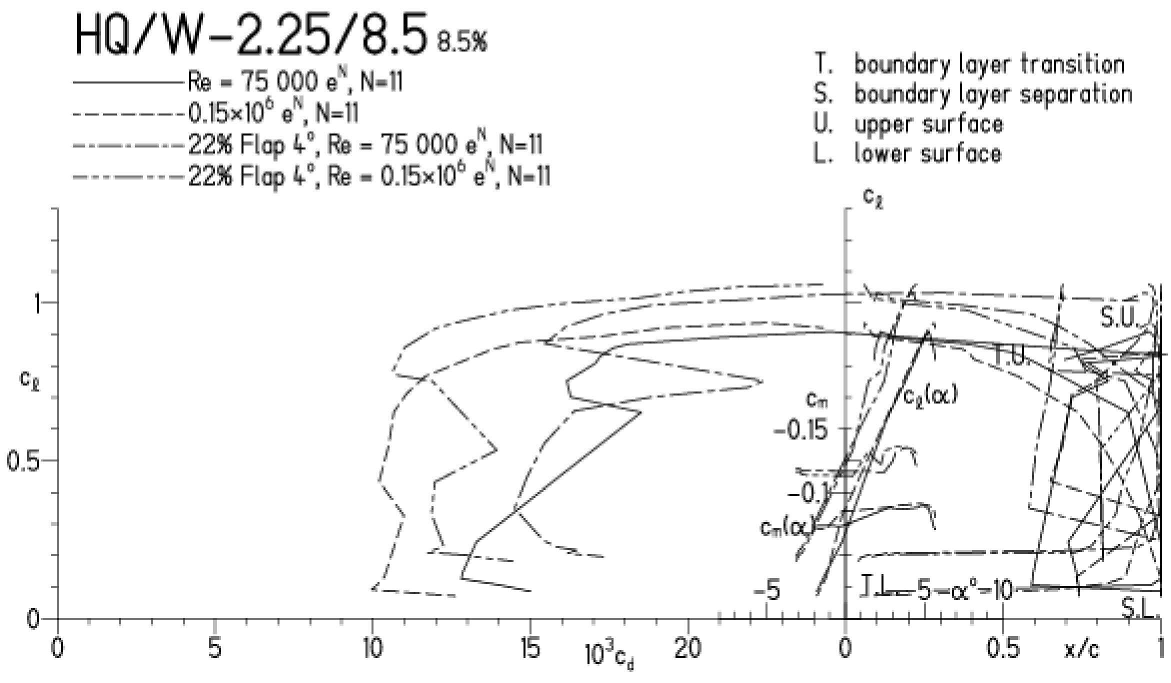


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

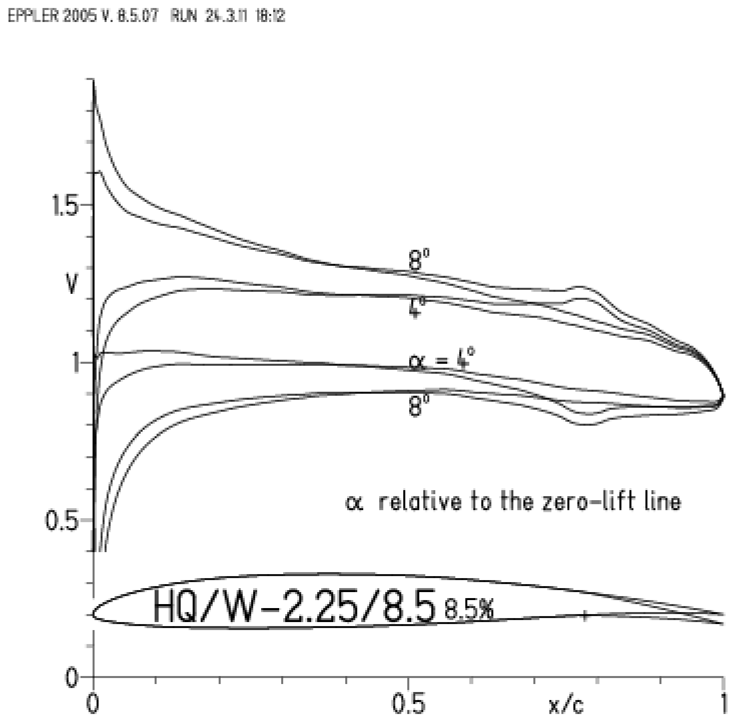
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

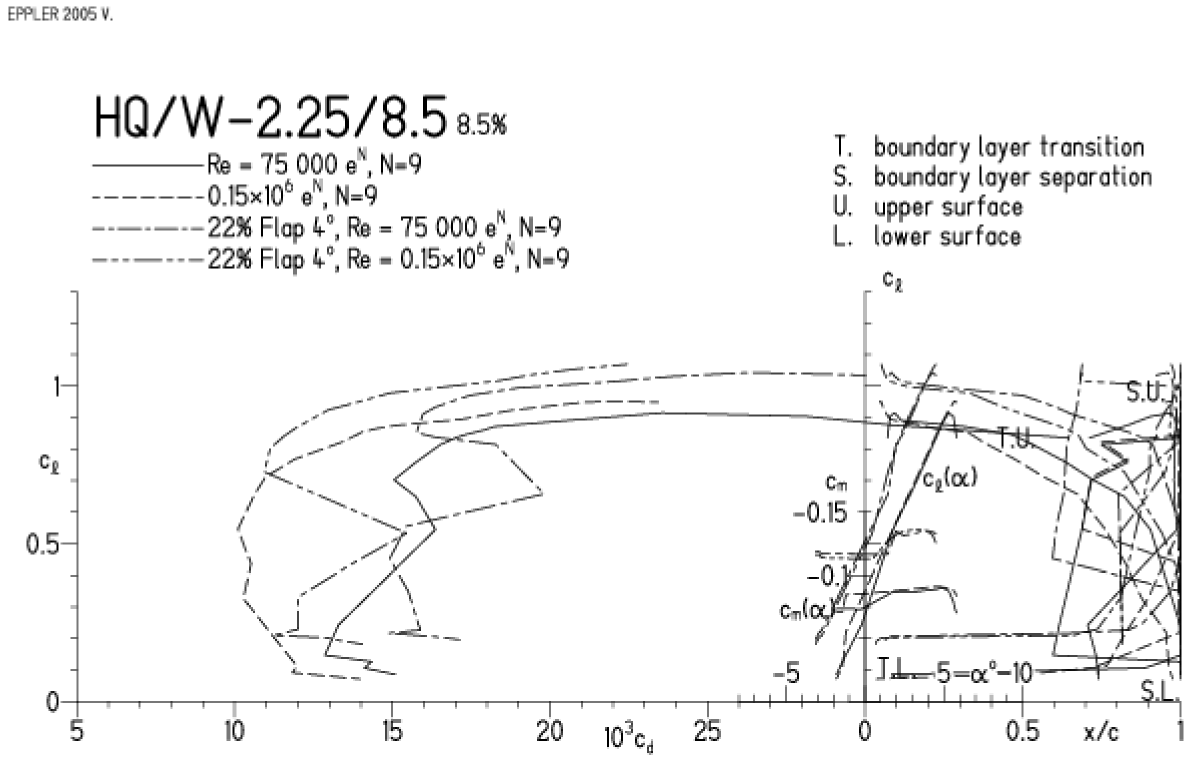


EPPLER 2005 V. 8.5.

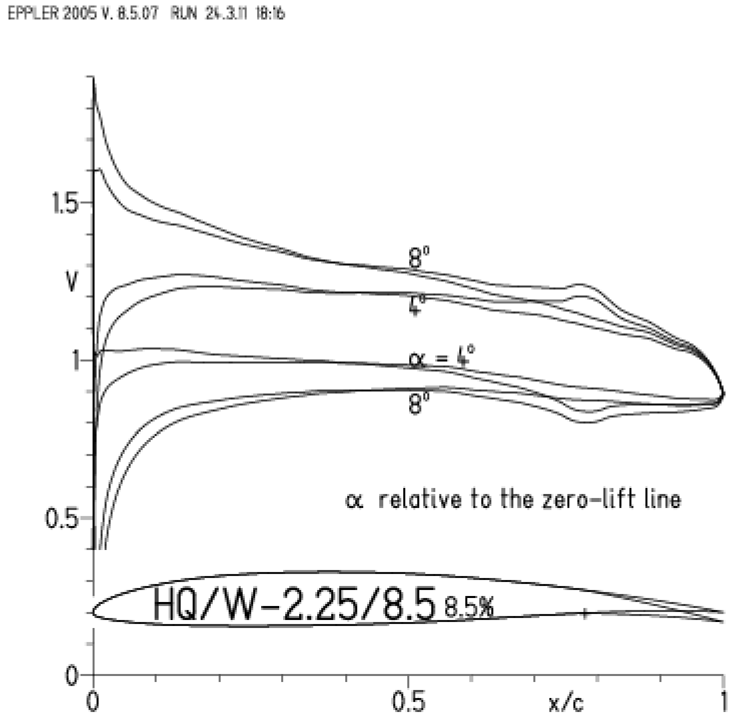


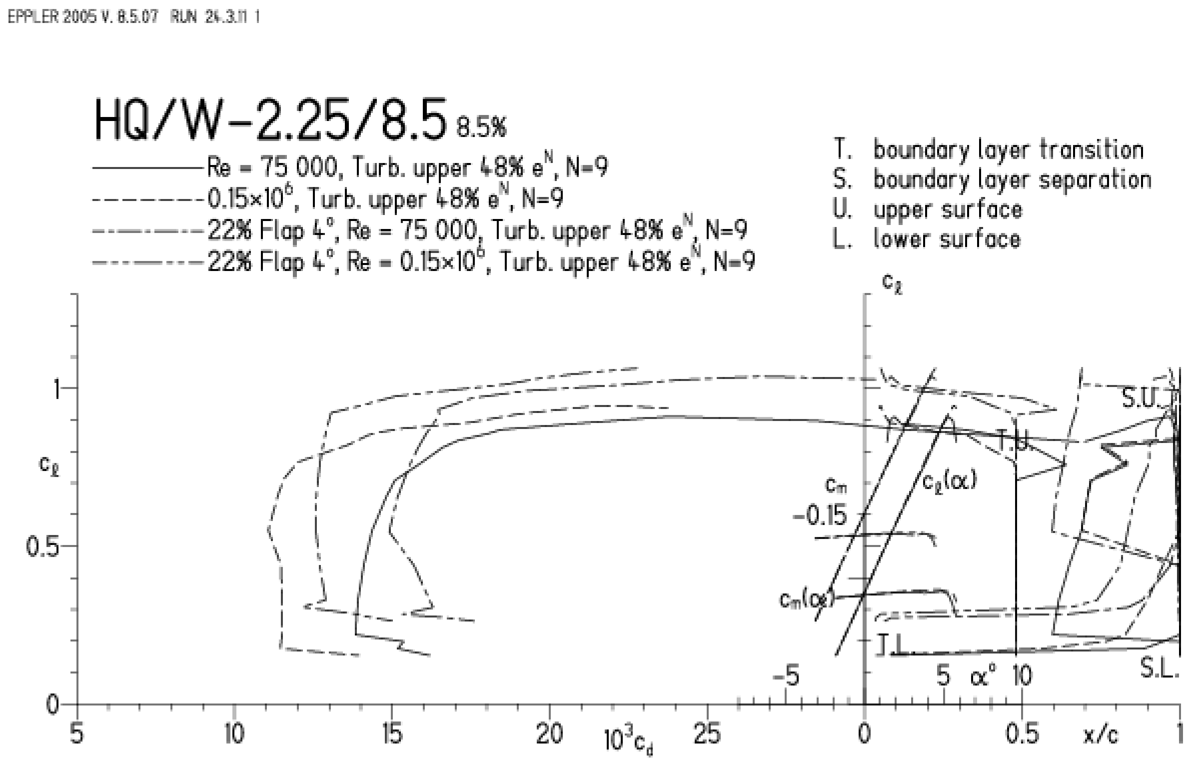
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag





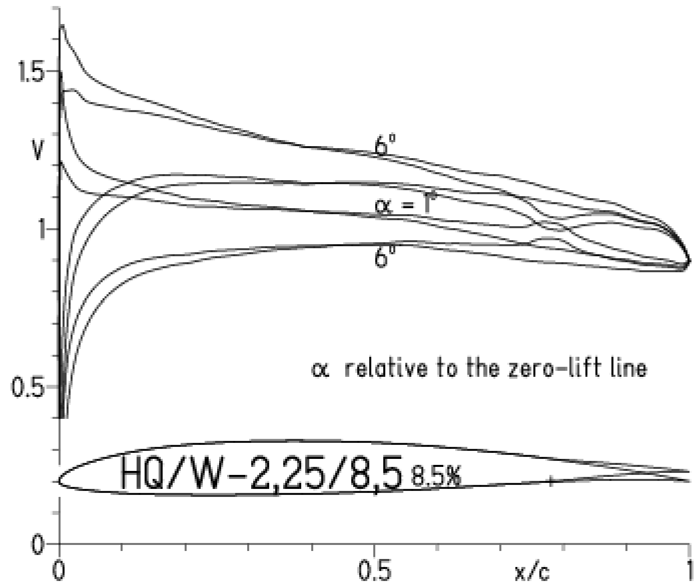
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



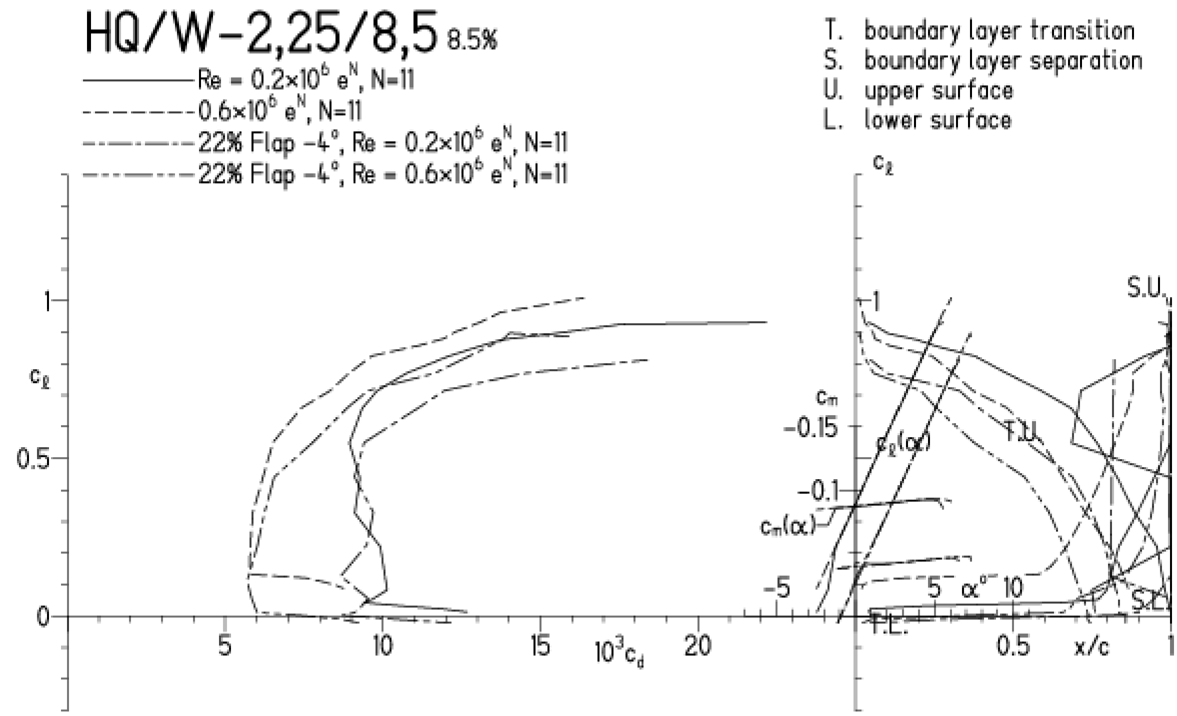


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

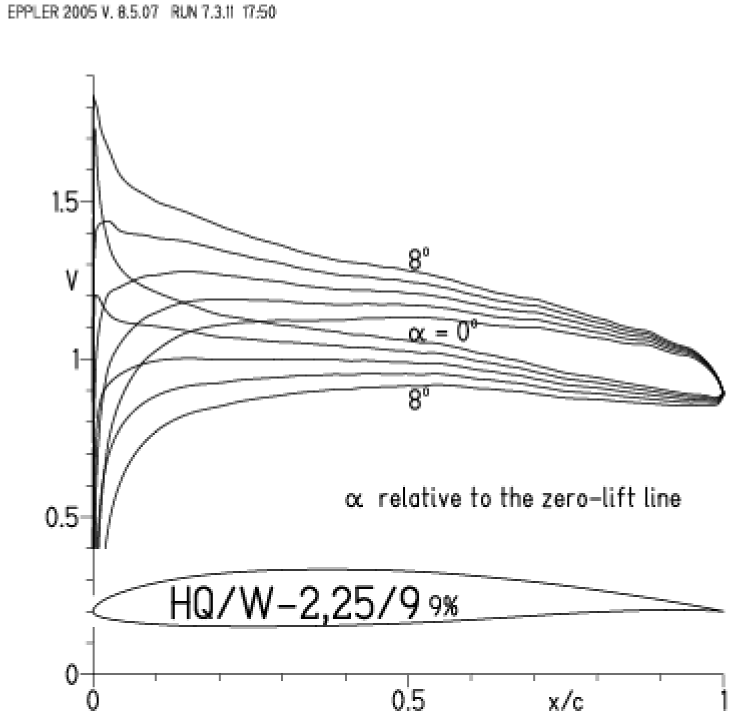
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

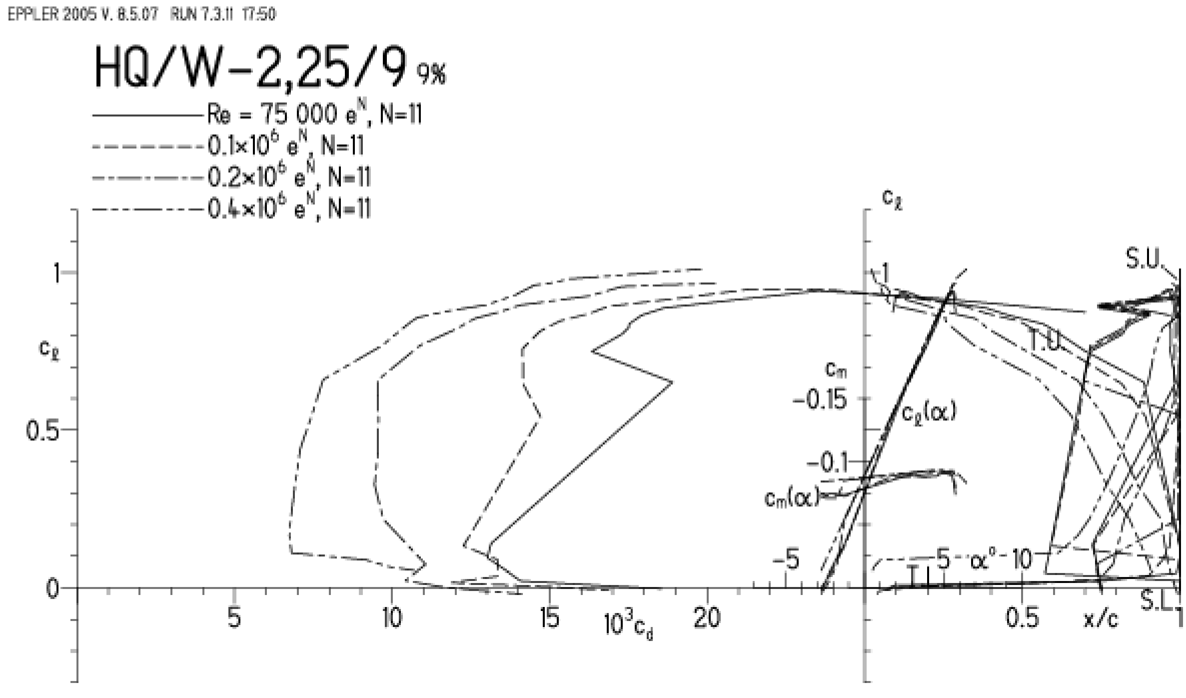


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



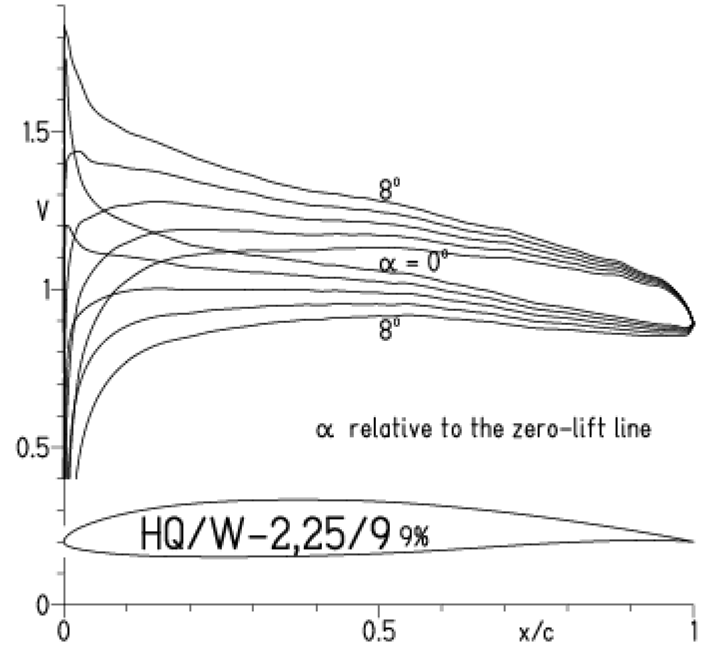
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

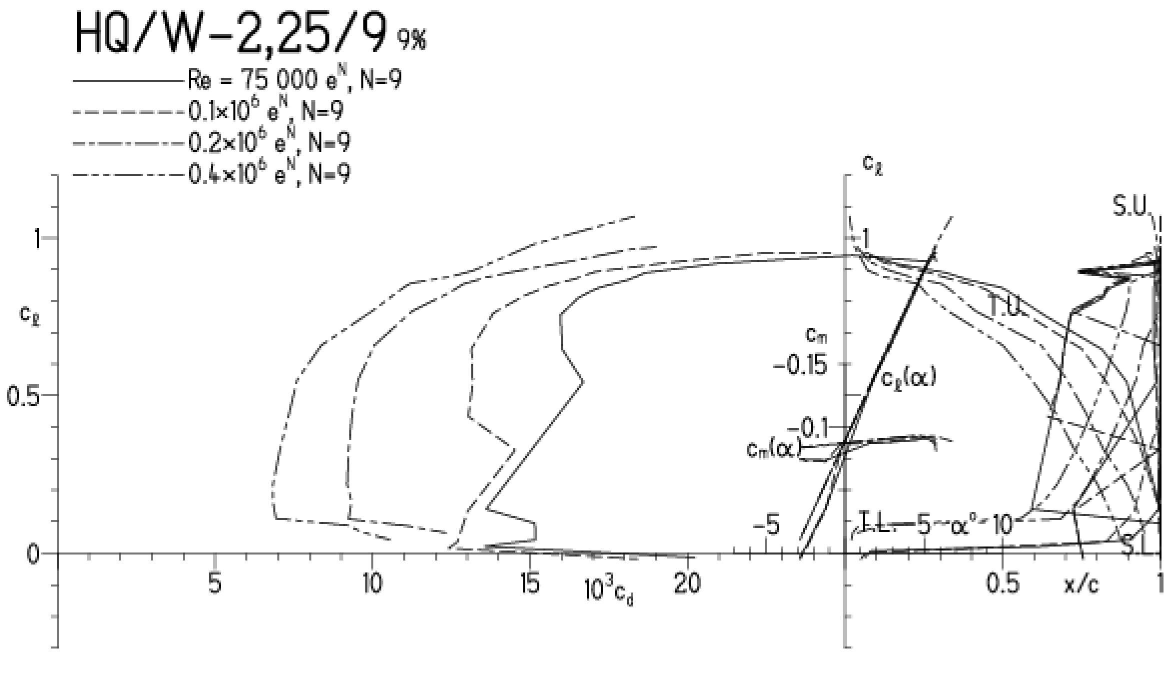

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

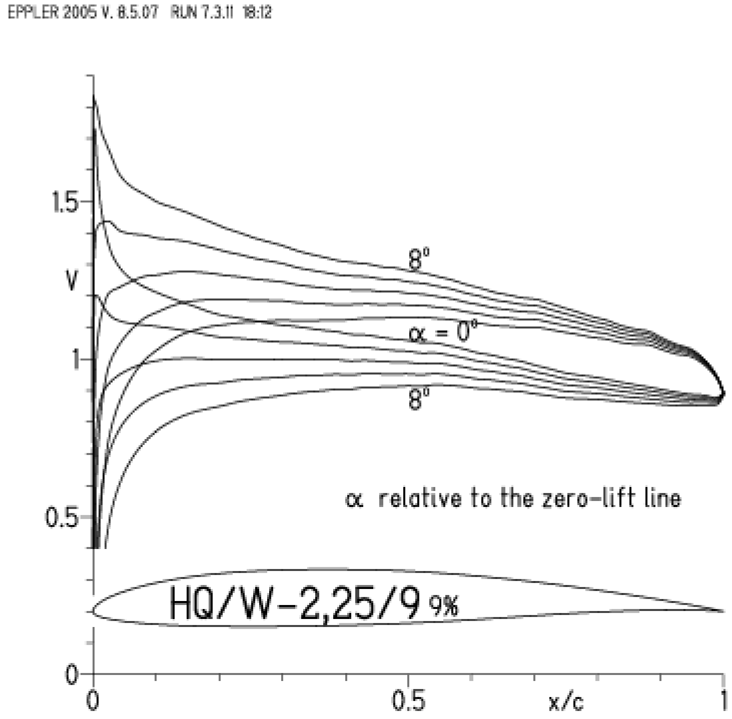
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

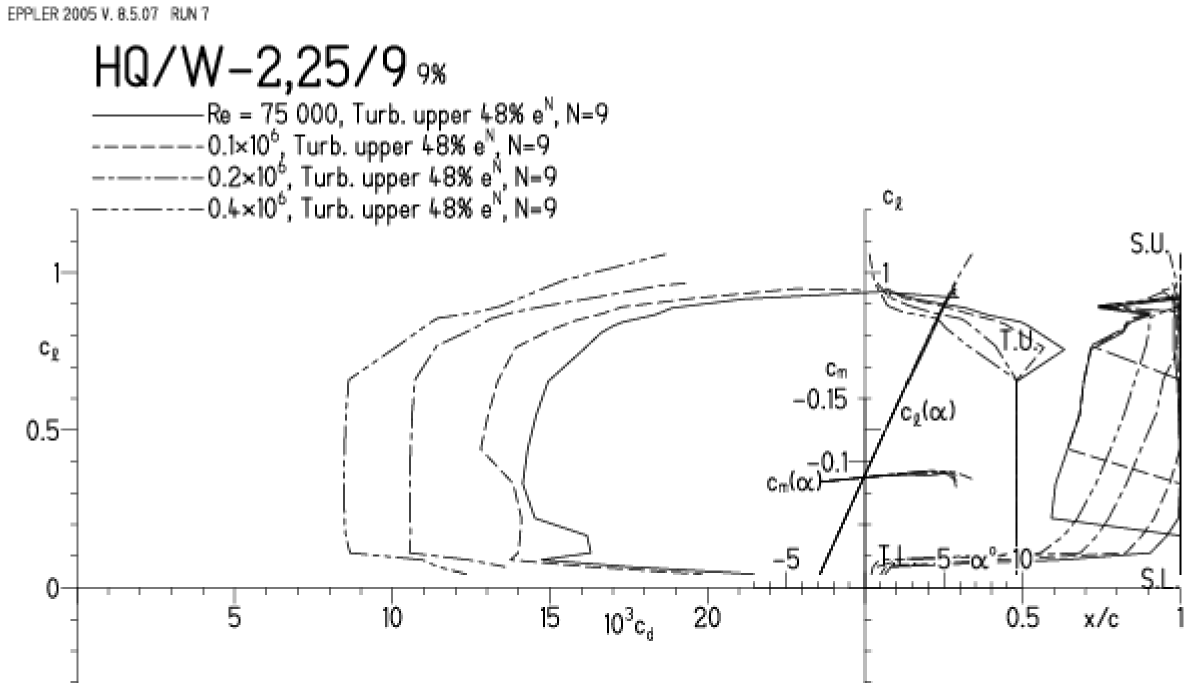


EPPLER 2005 V. 8.



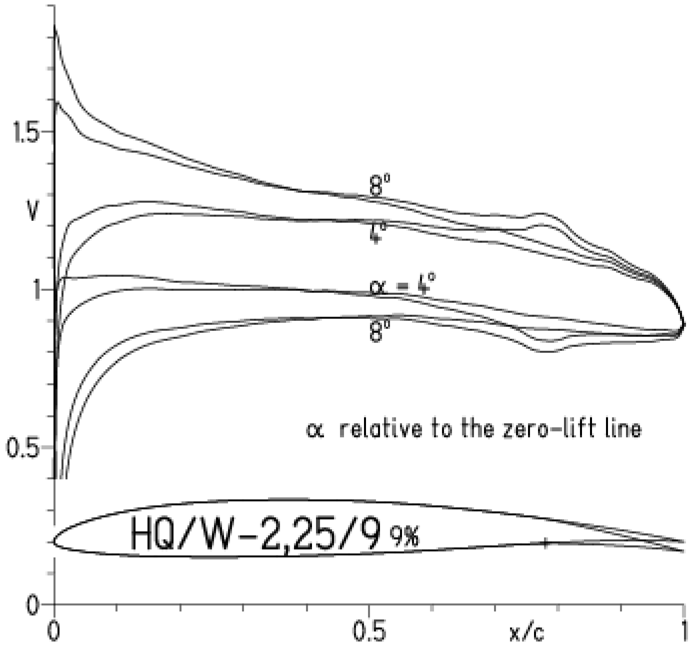
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



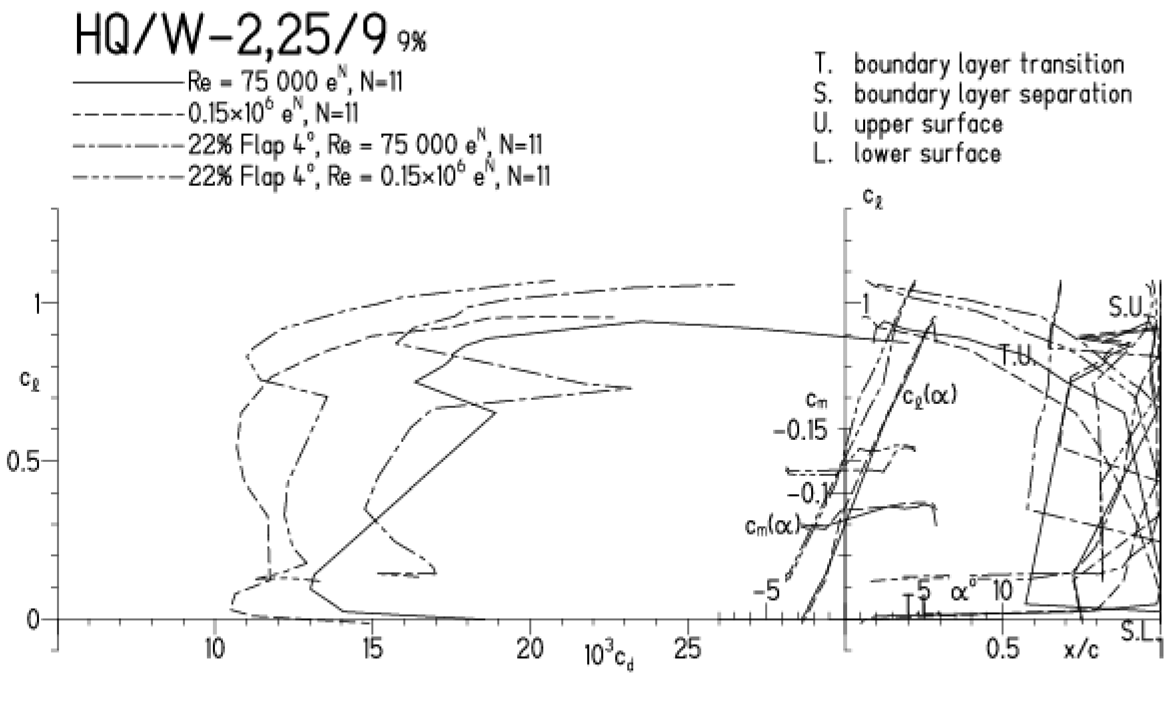


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

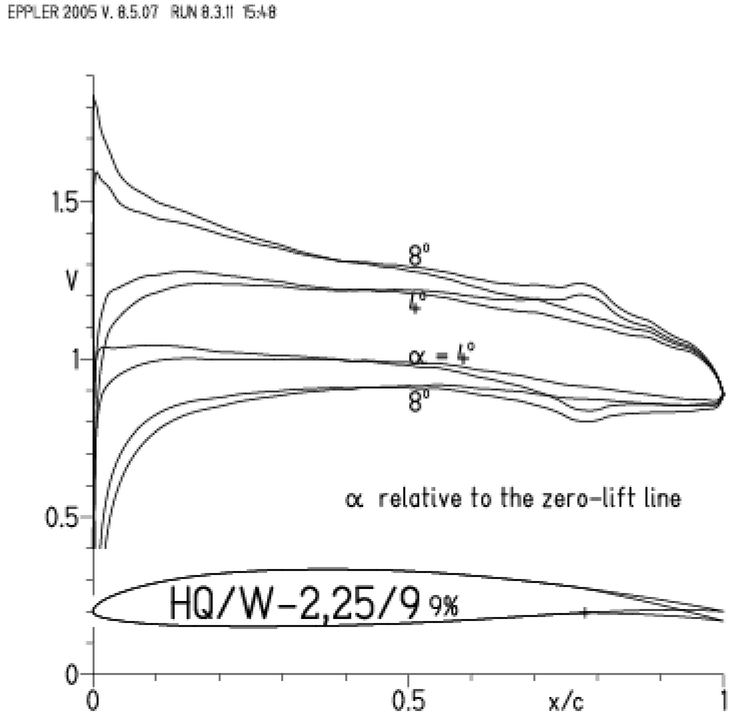
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

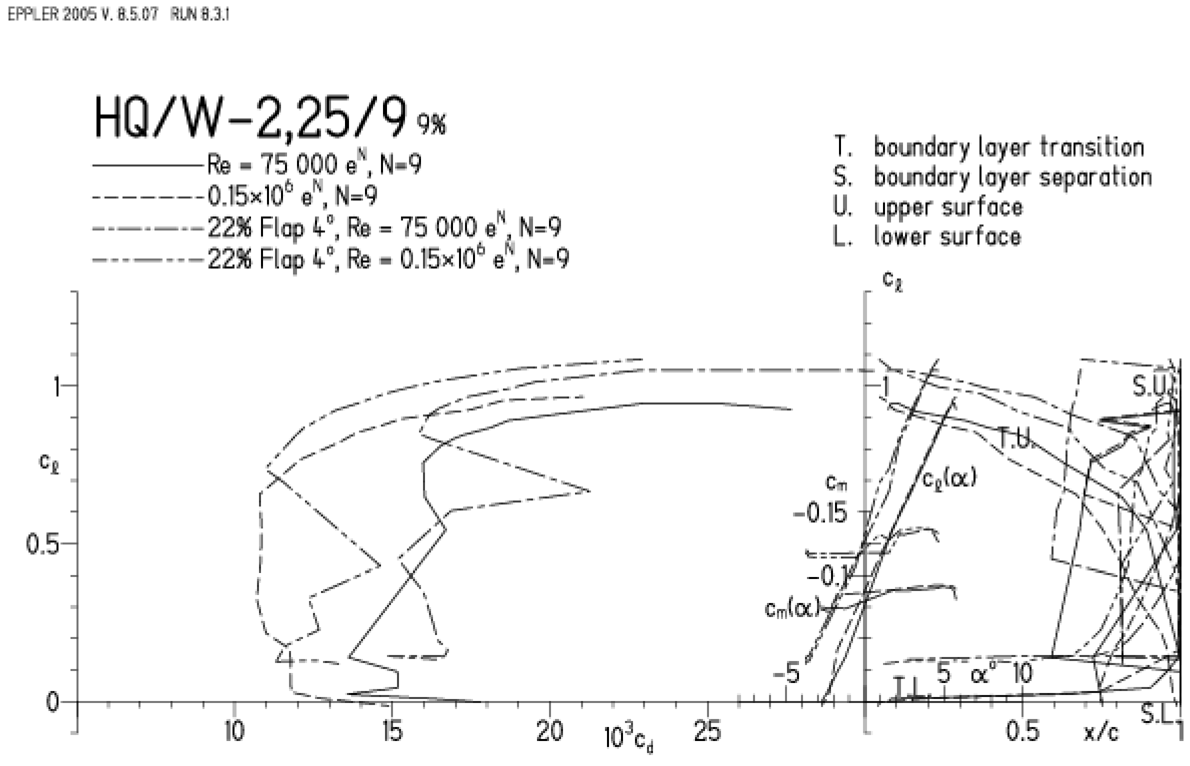


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

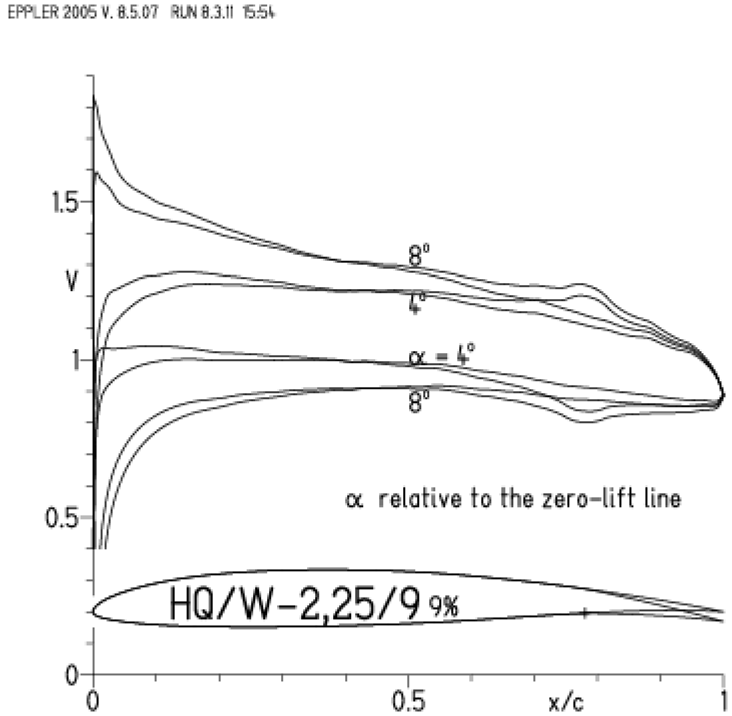


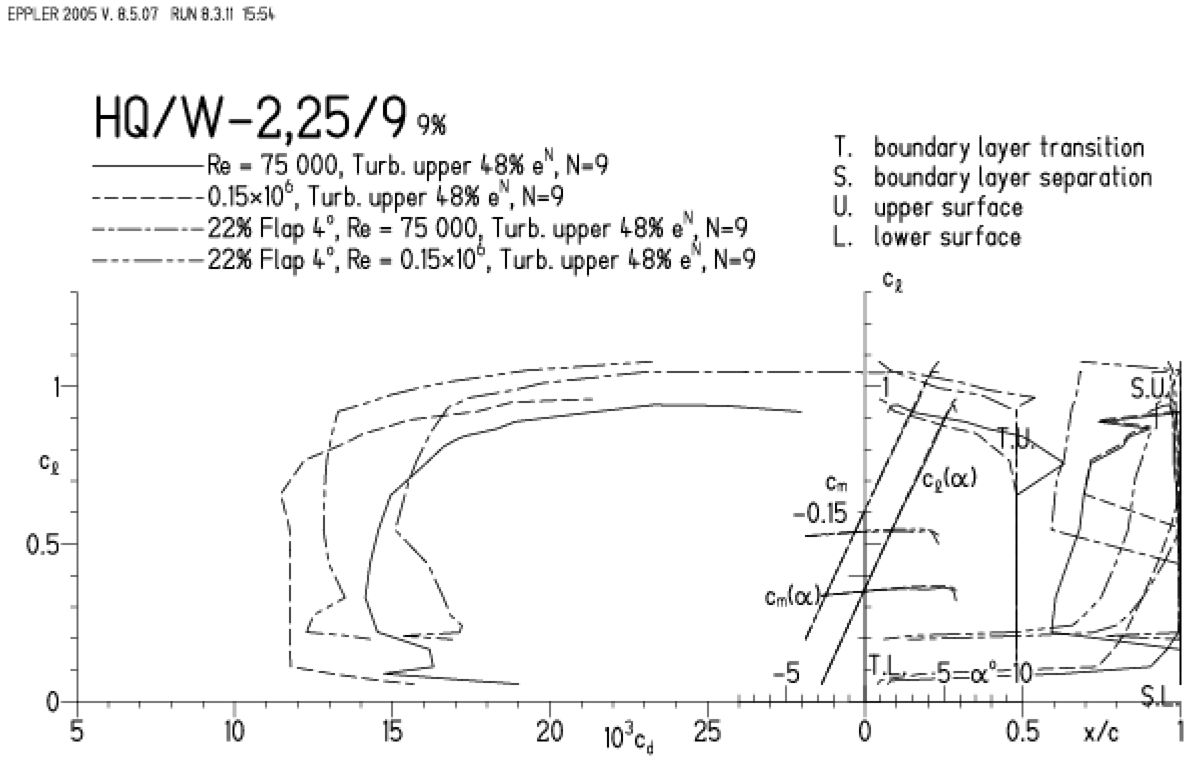
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



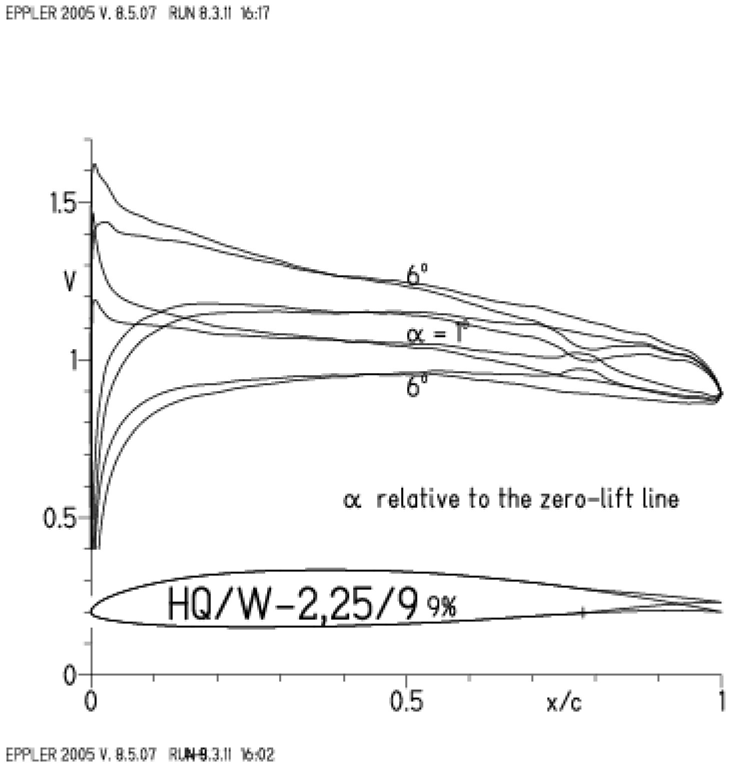


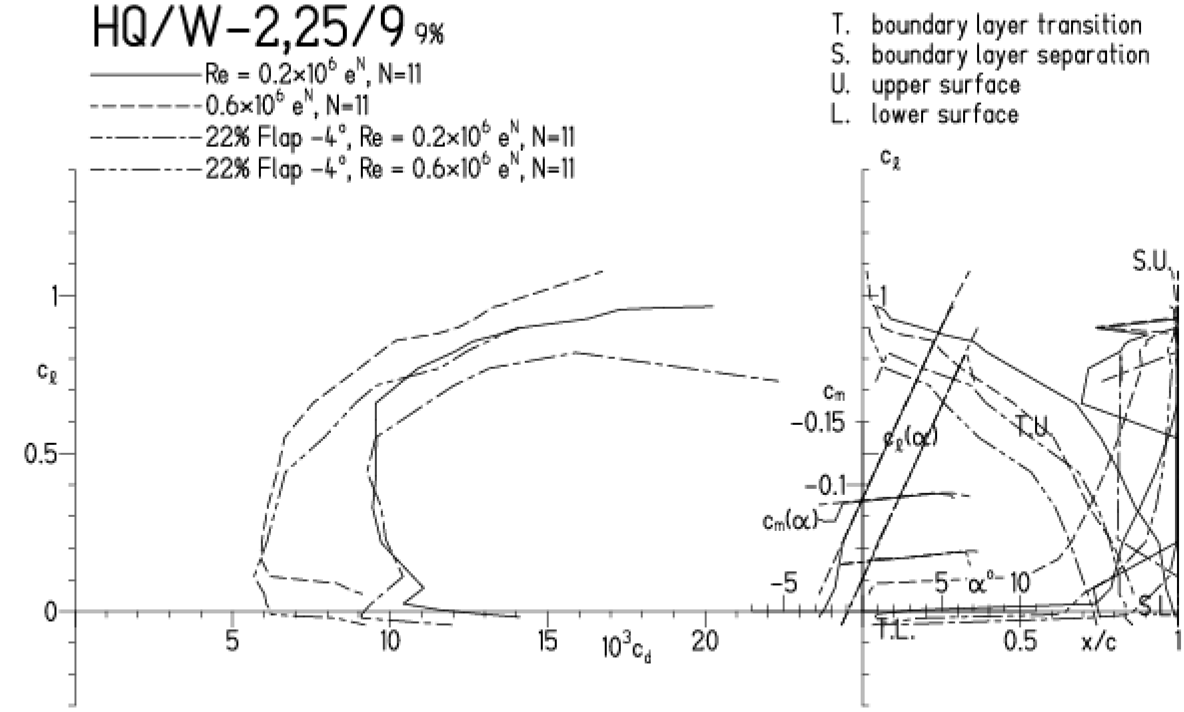
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





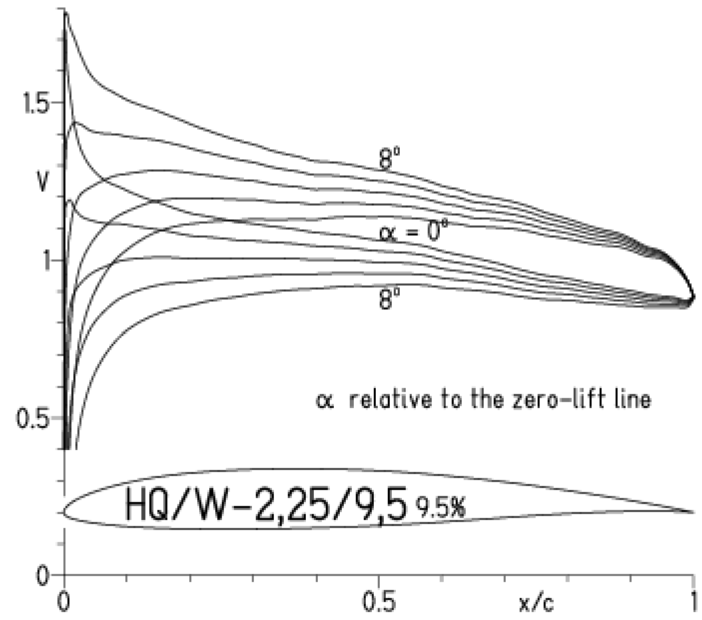
<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



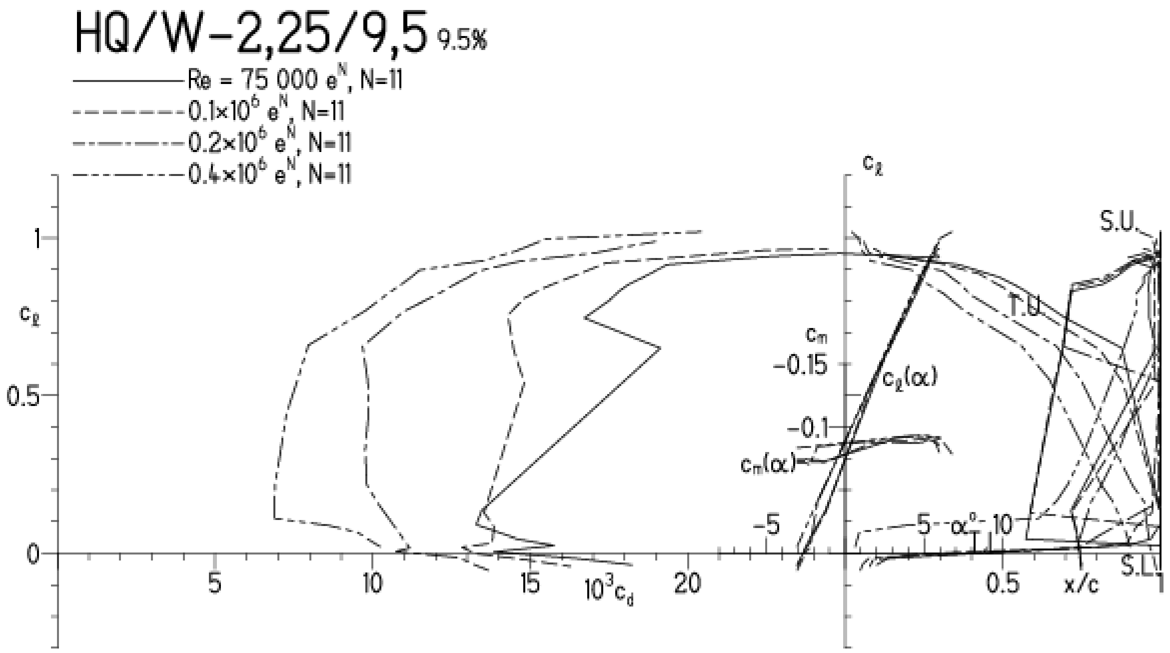


<u>HQ/W-2,25/9,5</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

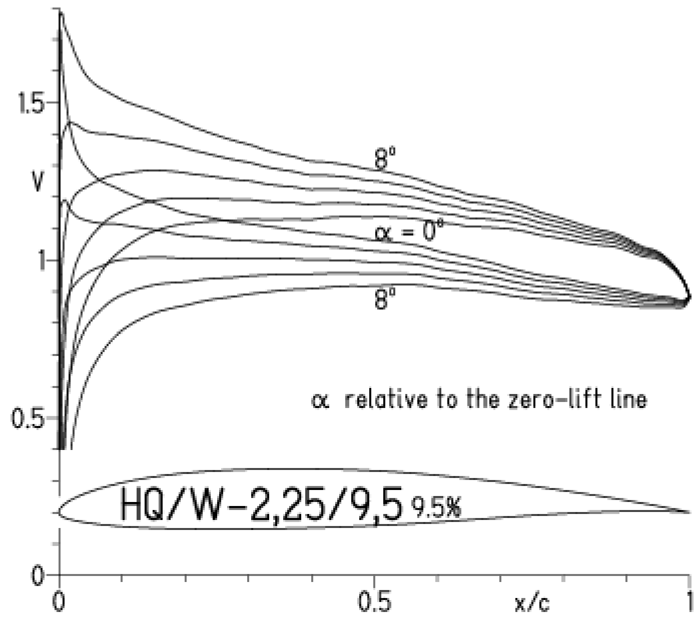


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

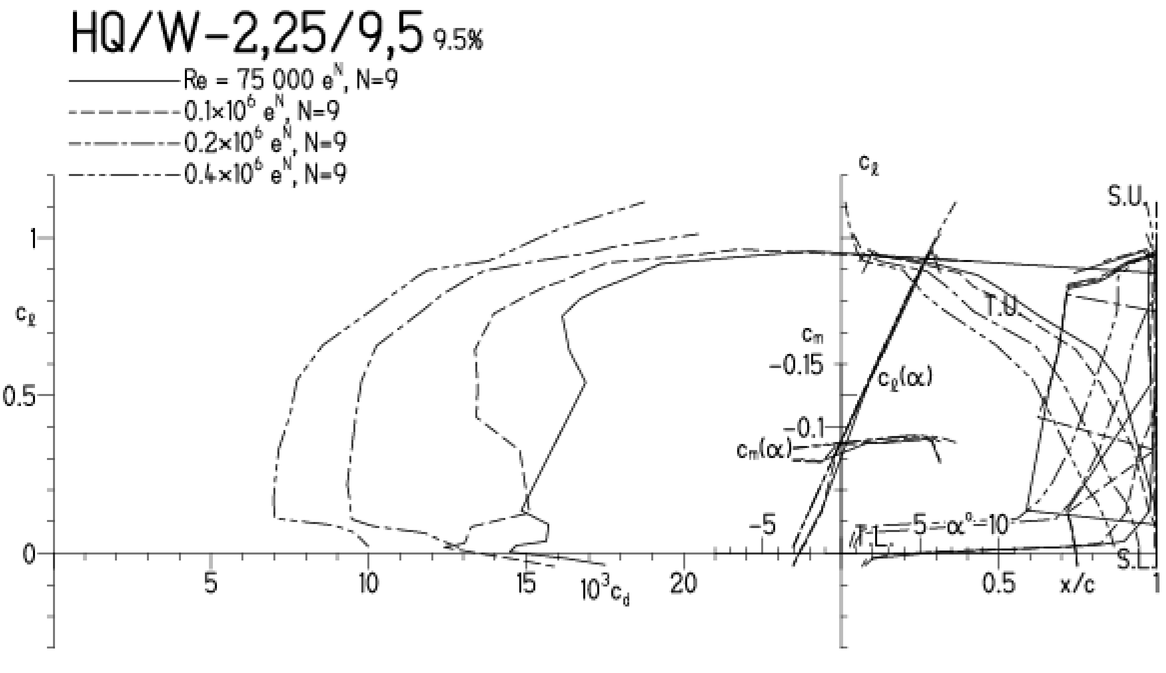


HQ/W-2,25/9,5, N=9

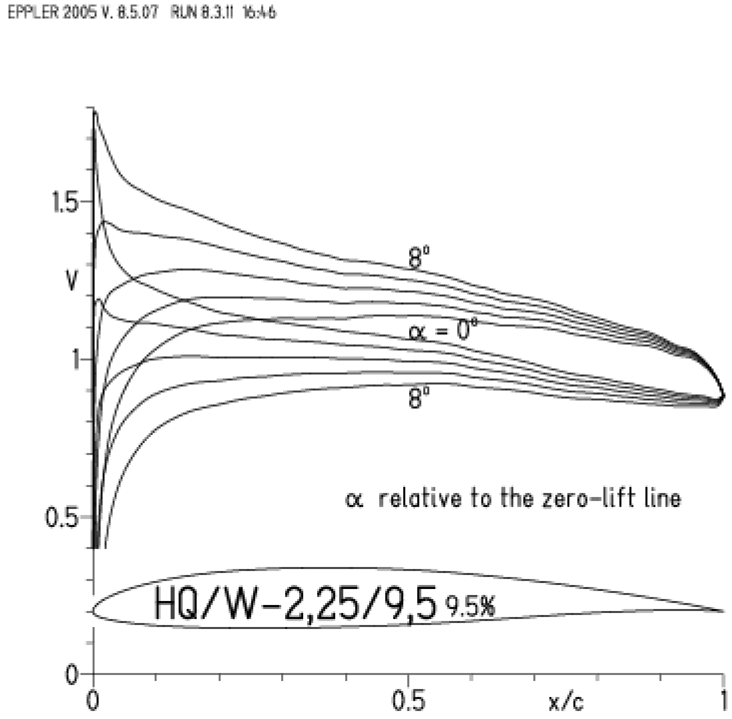
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

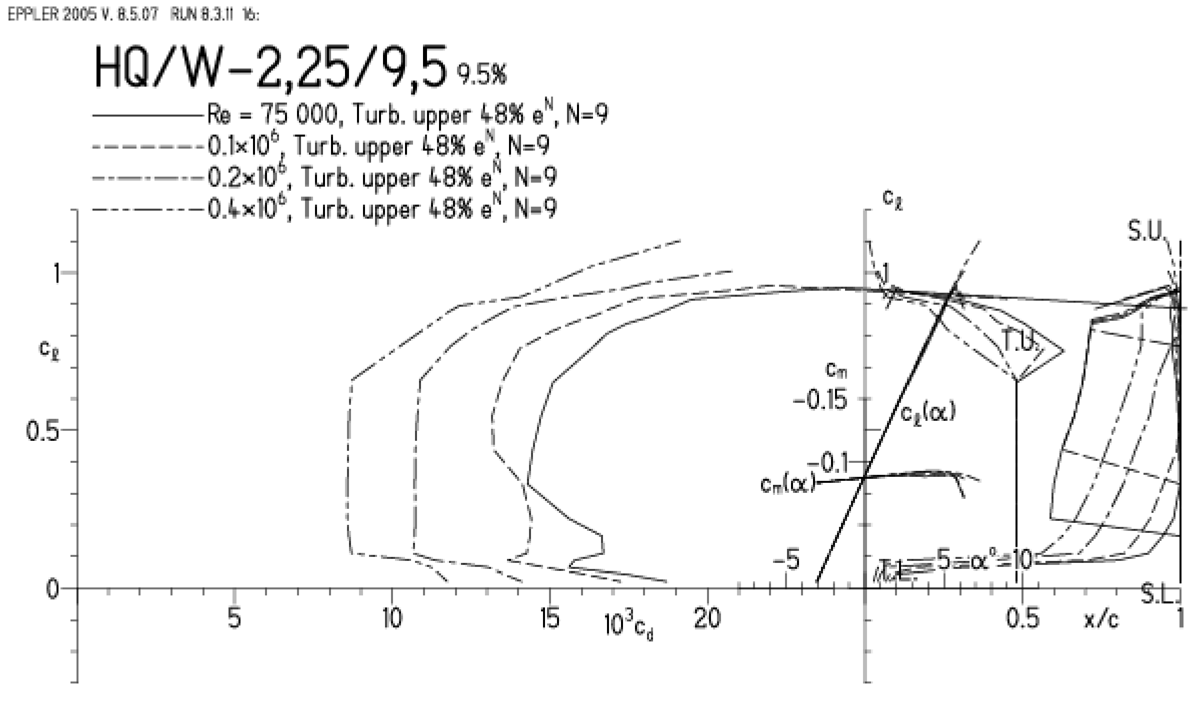


EPPLER 2005 V. 8.5.07 RUN 8.3.



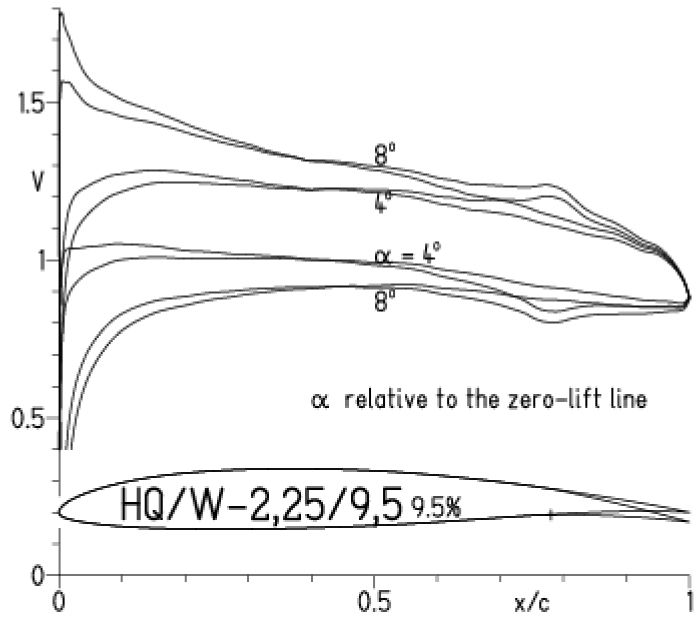
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



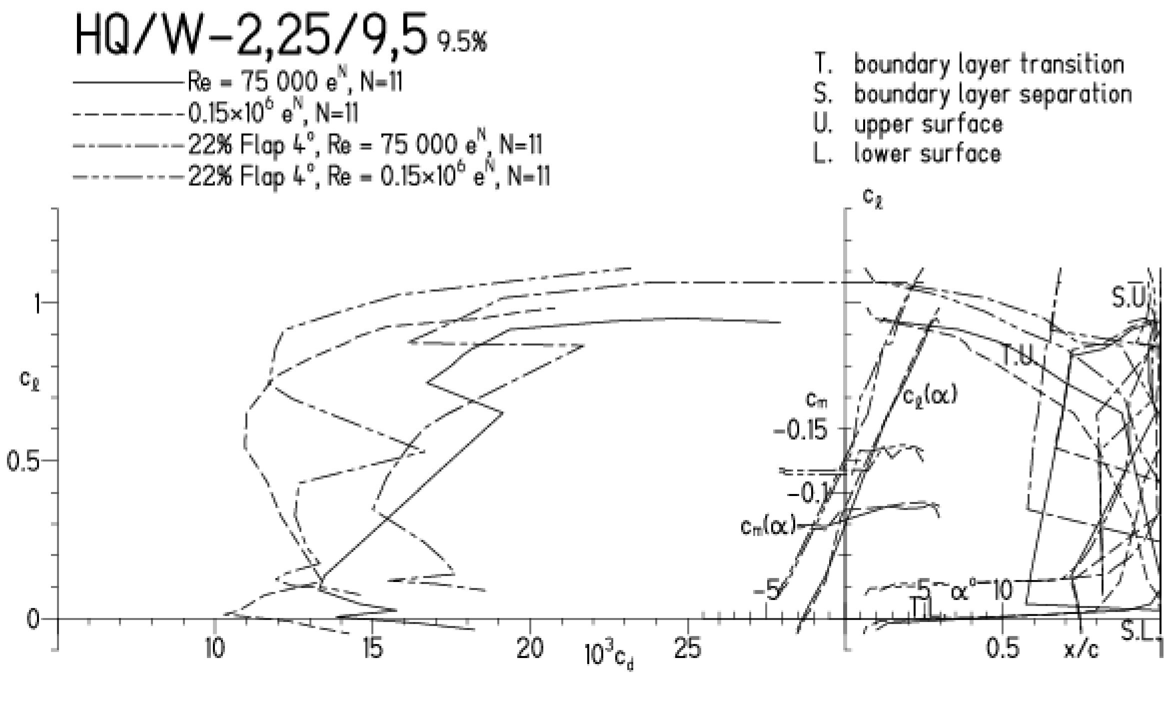


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

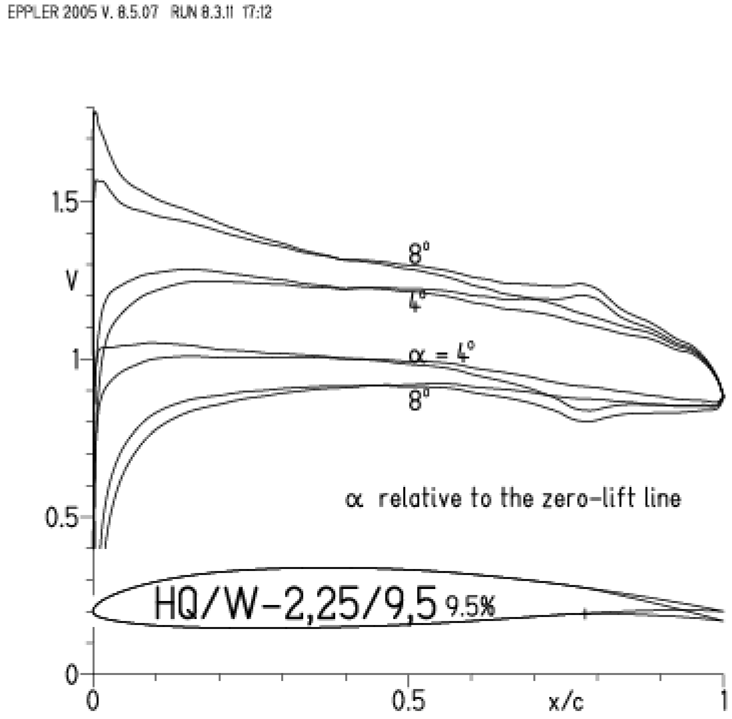
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

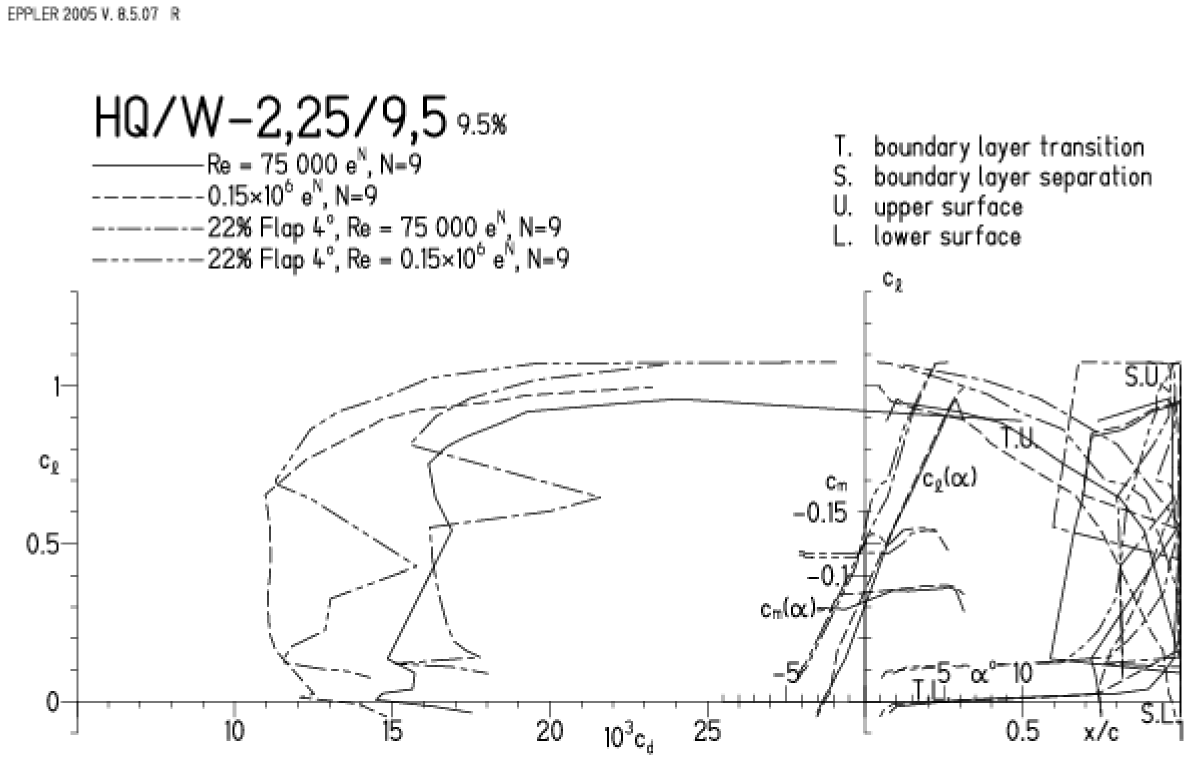


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

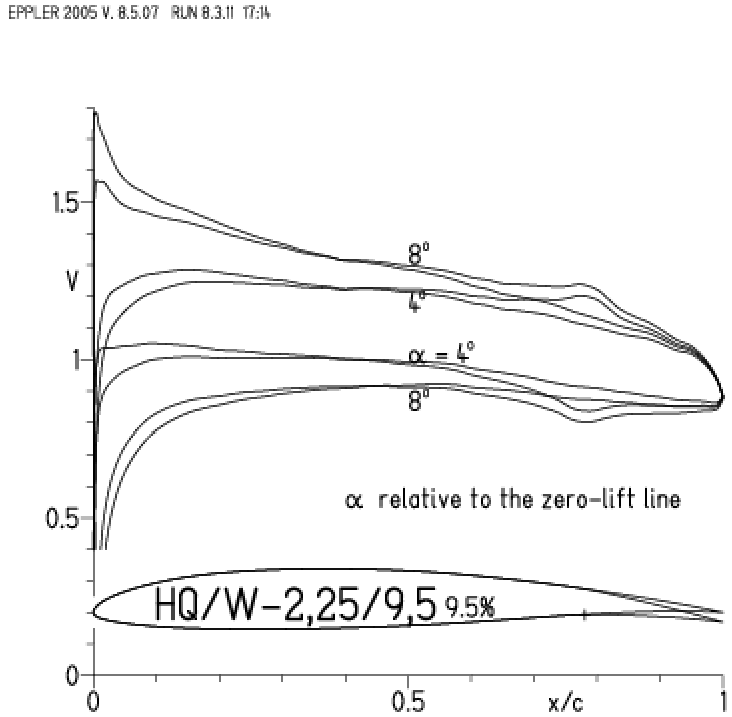


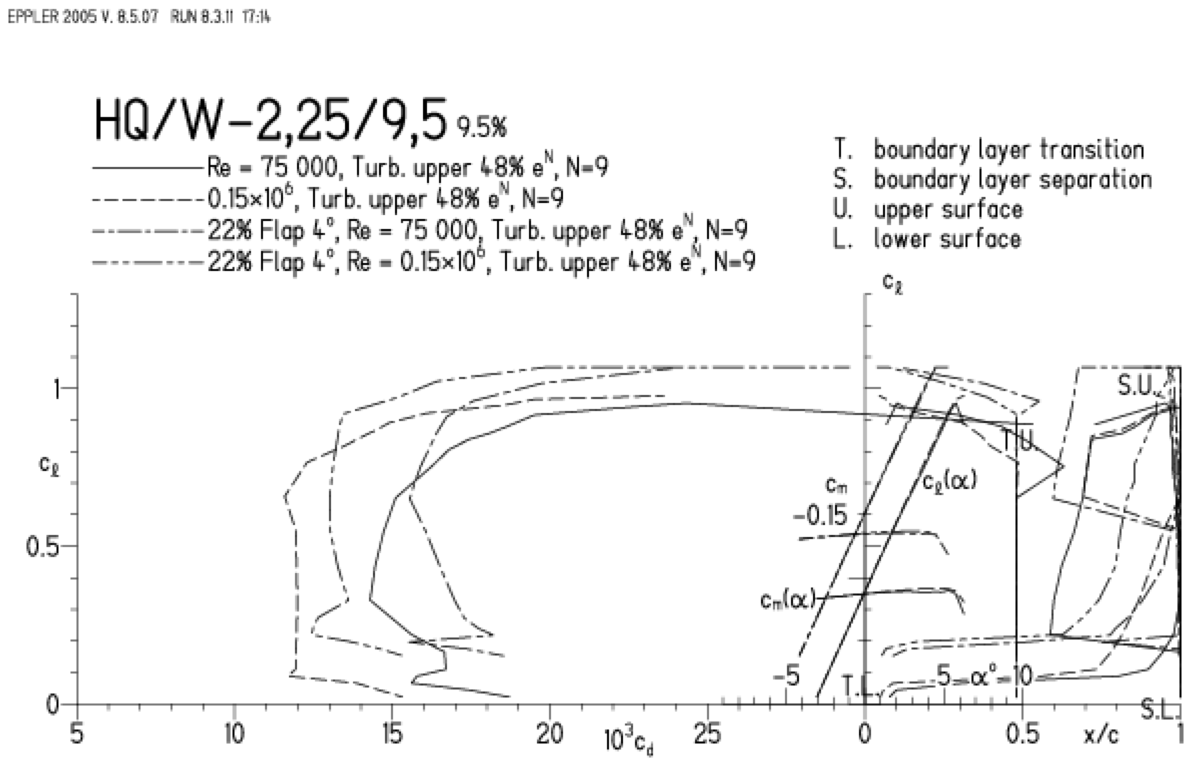
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag





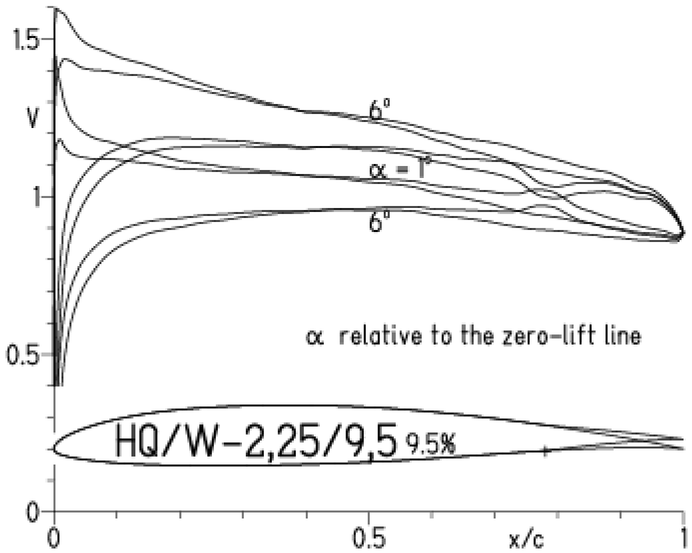
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



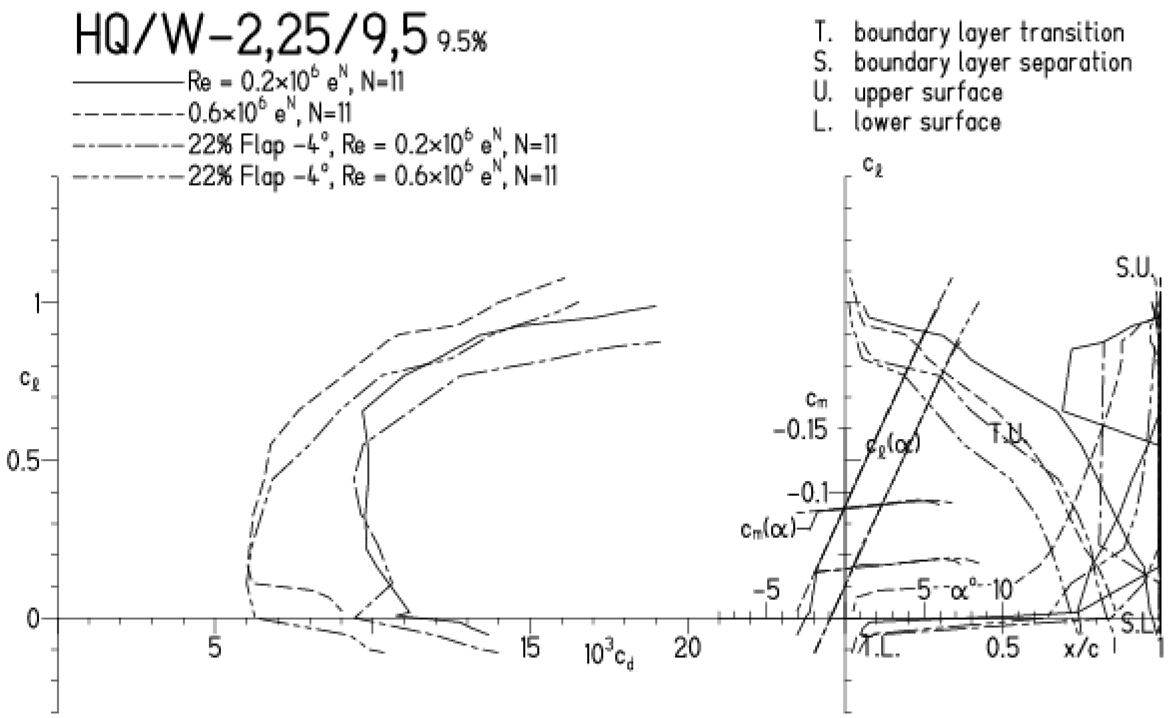


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

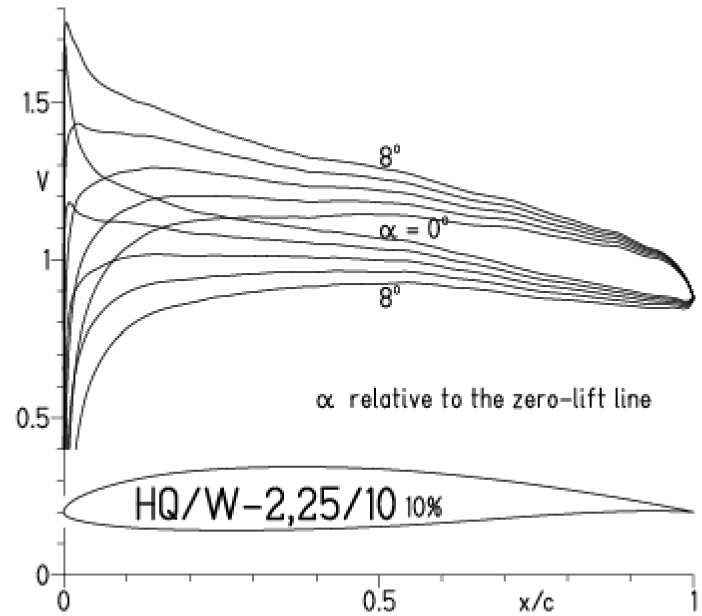


EPPLER 2005 V.

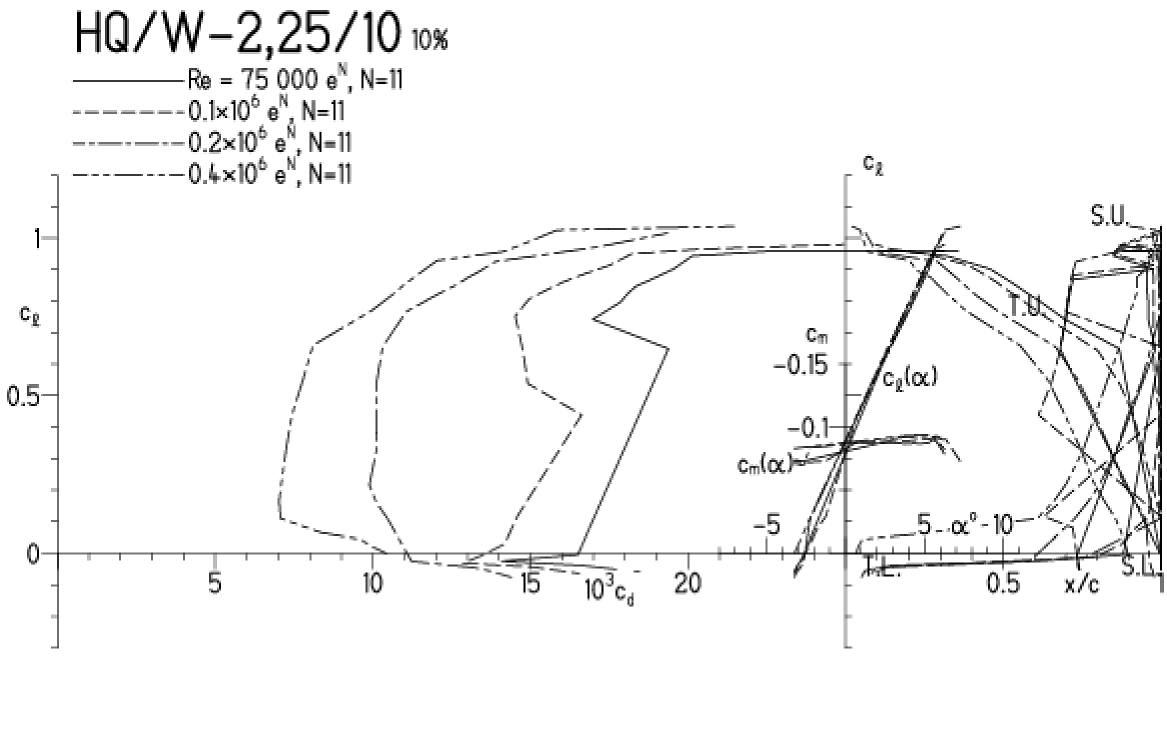


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

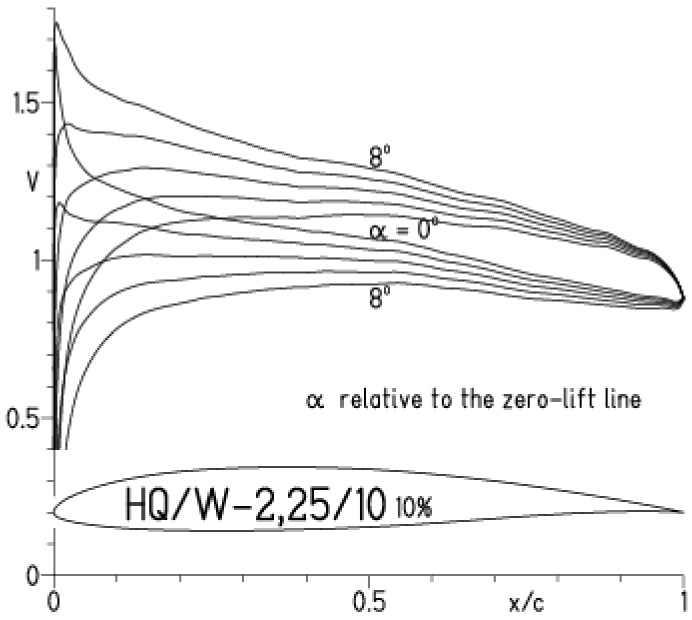


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

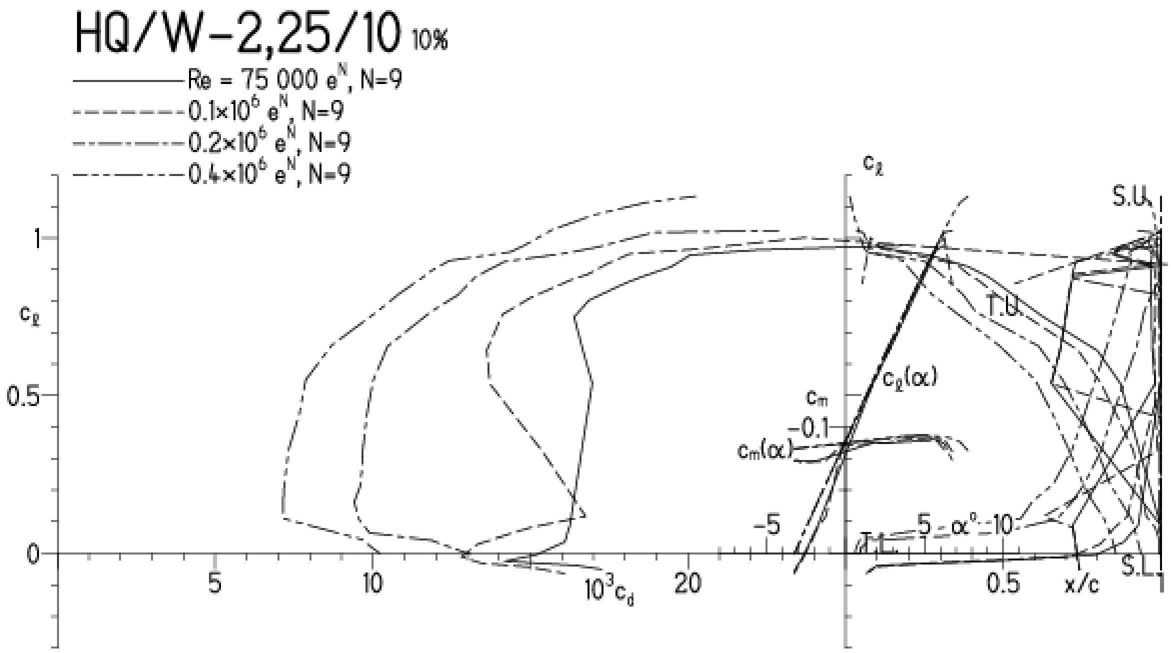


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

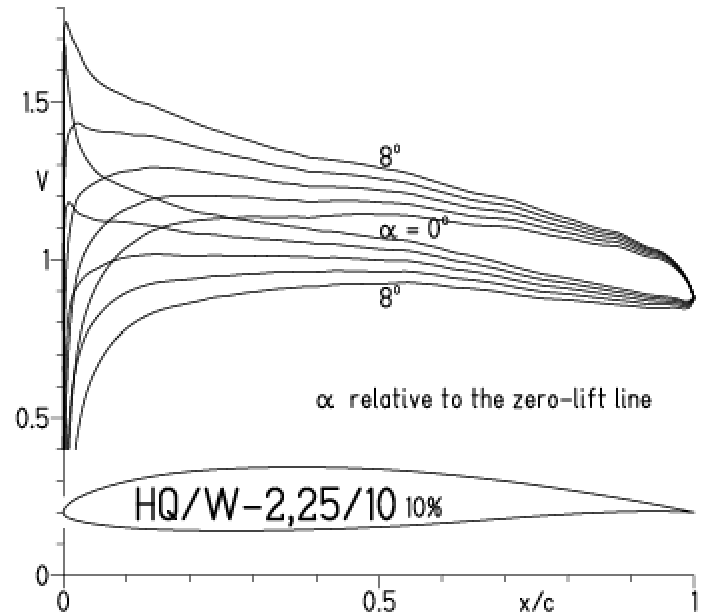


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

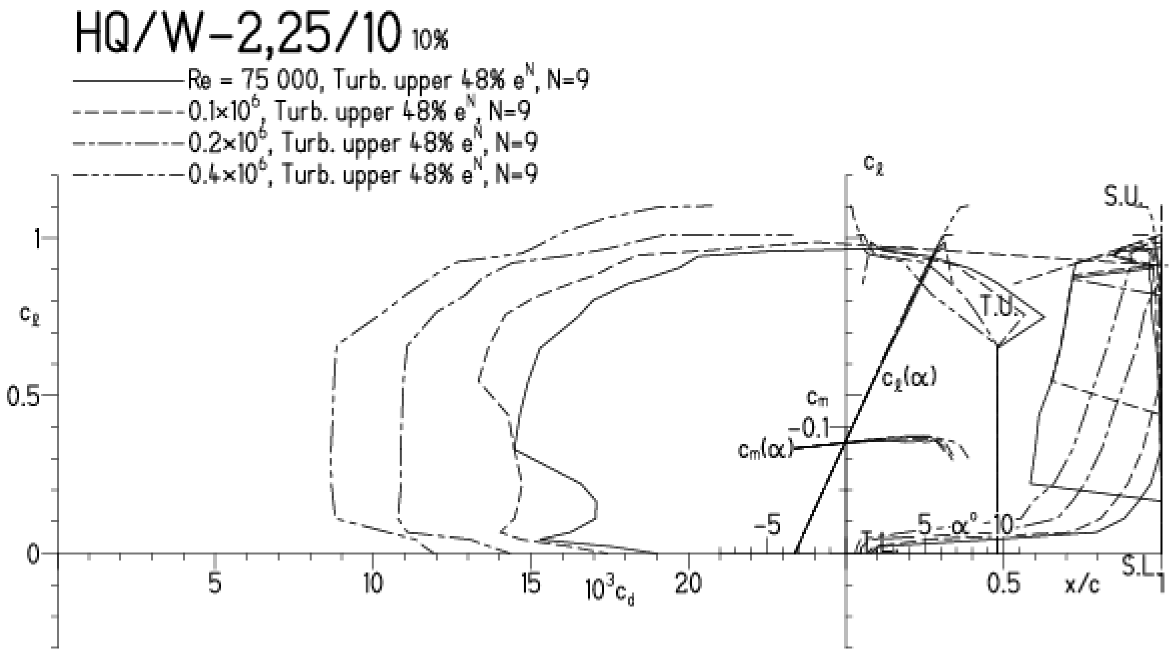


<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

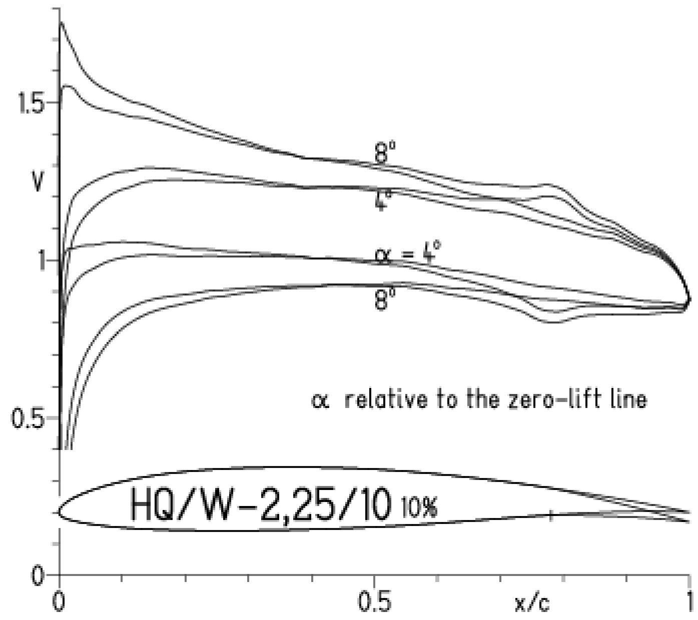


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

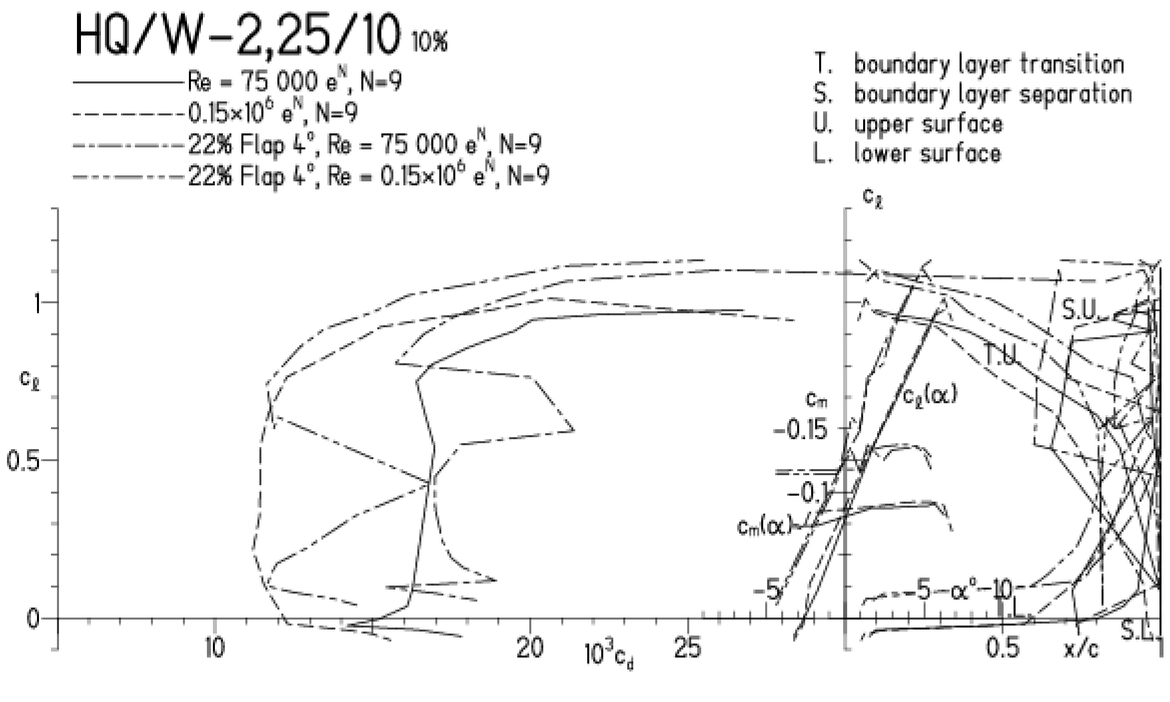


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

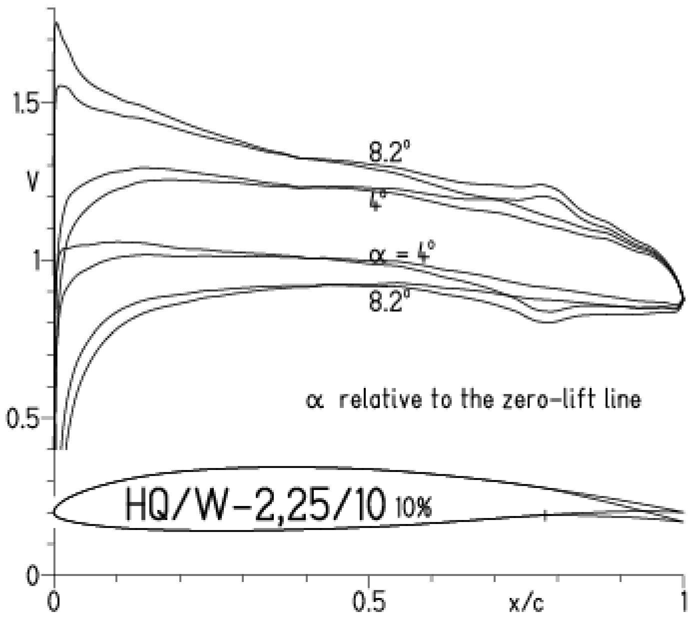


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

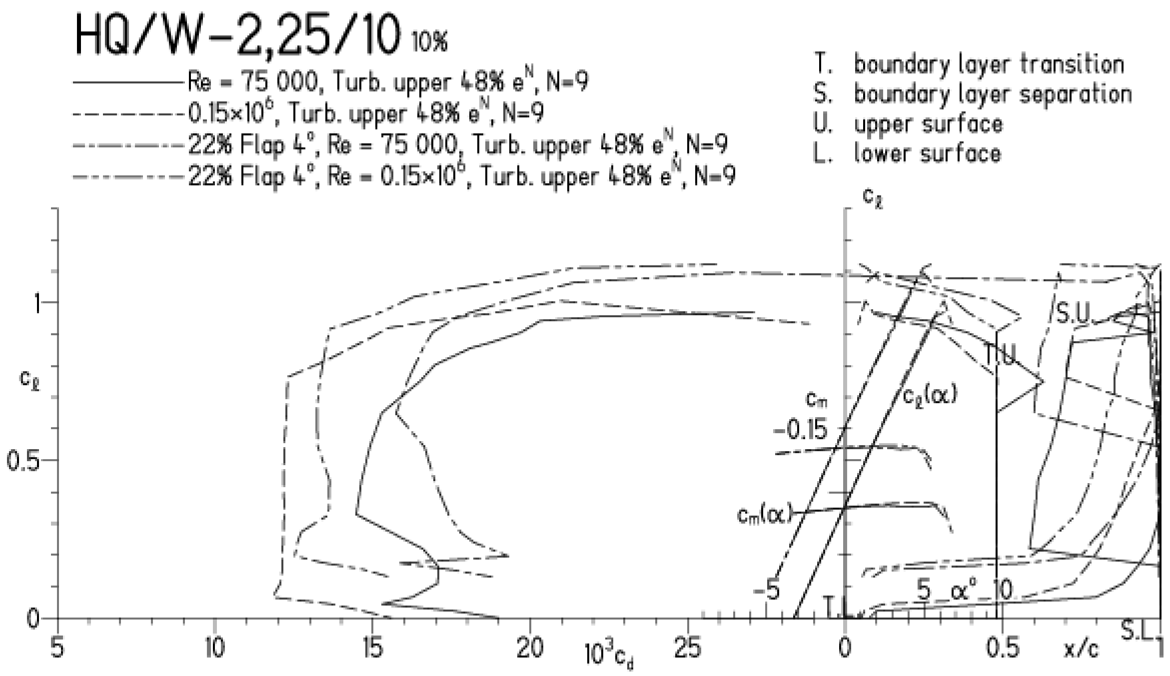


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

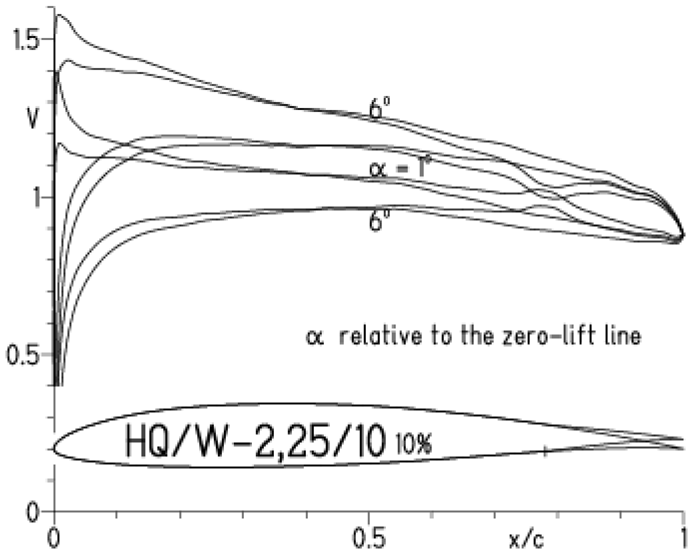


EPPLER 2005 V. 8.5.07 RUN 8.3

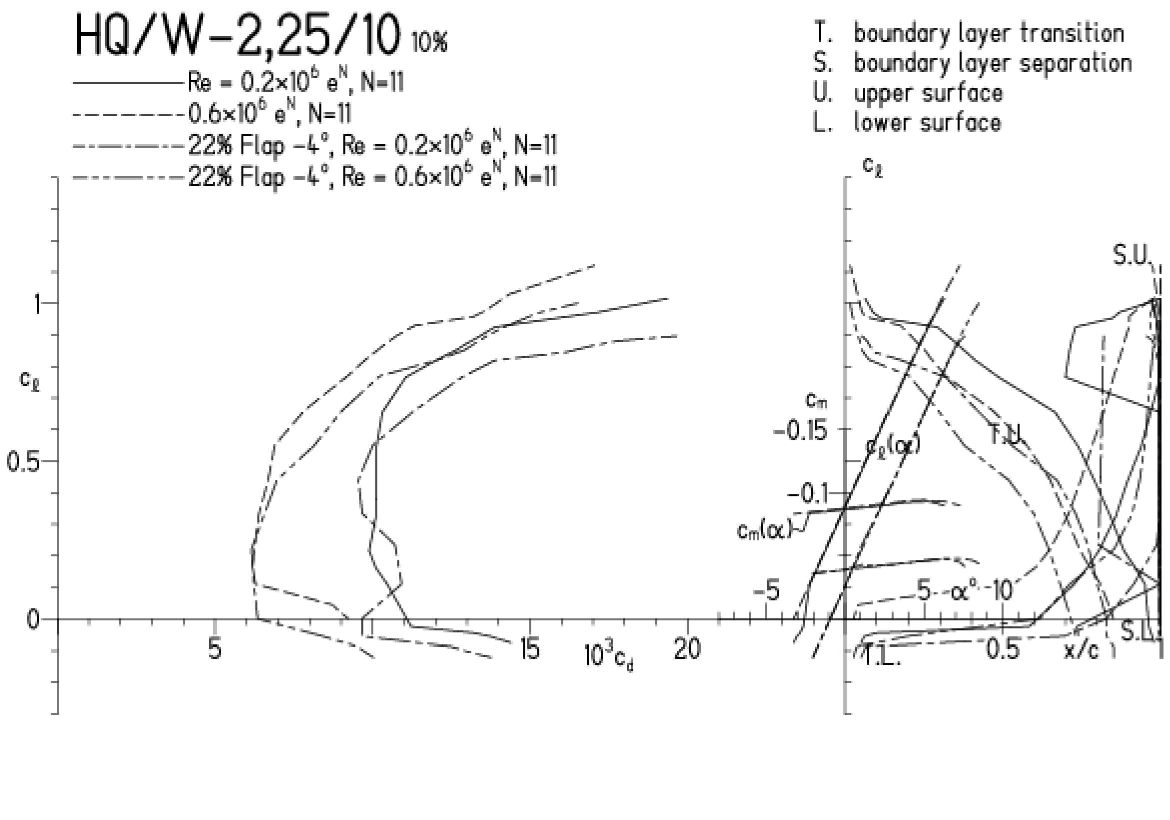


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

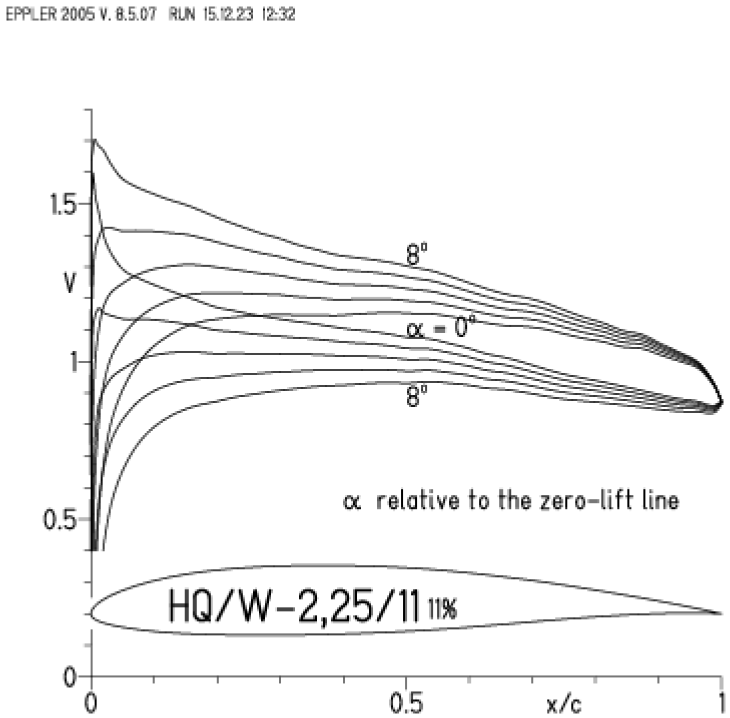
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

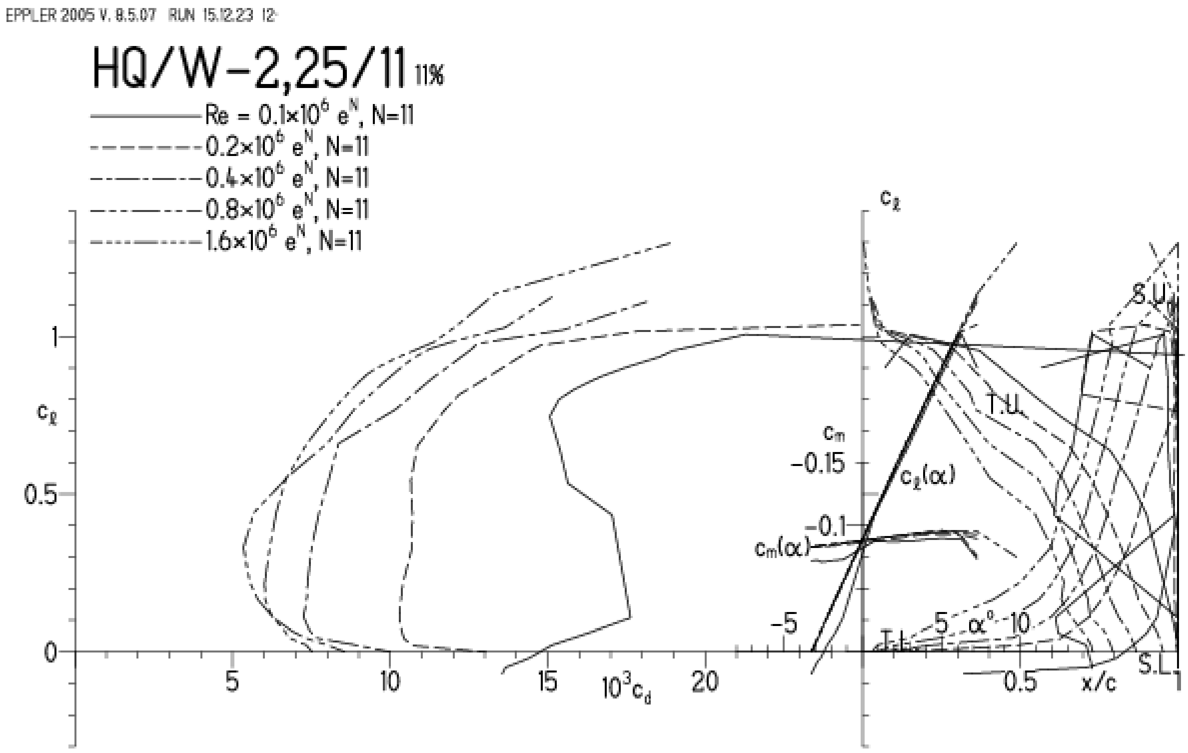


EPPLER 2005 V. 8.5.07 RUN



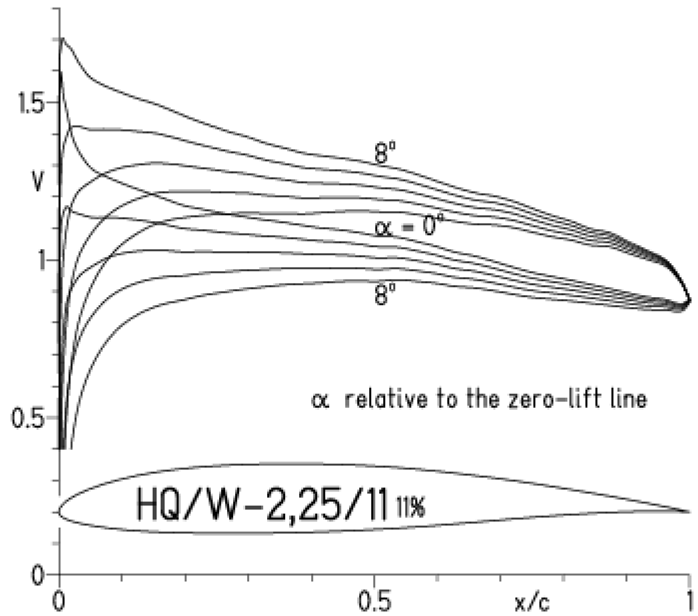
HQ/W-2,25/11, N=11



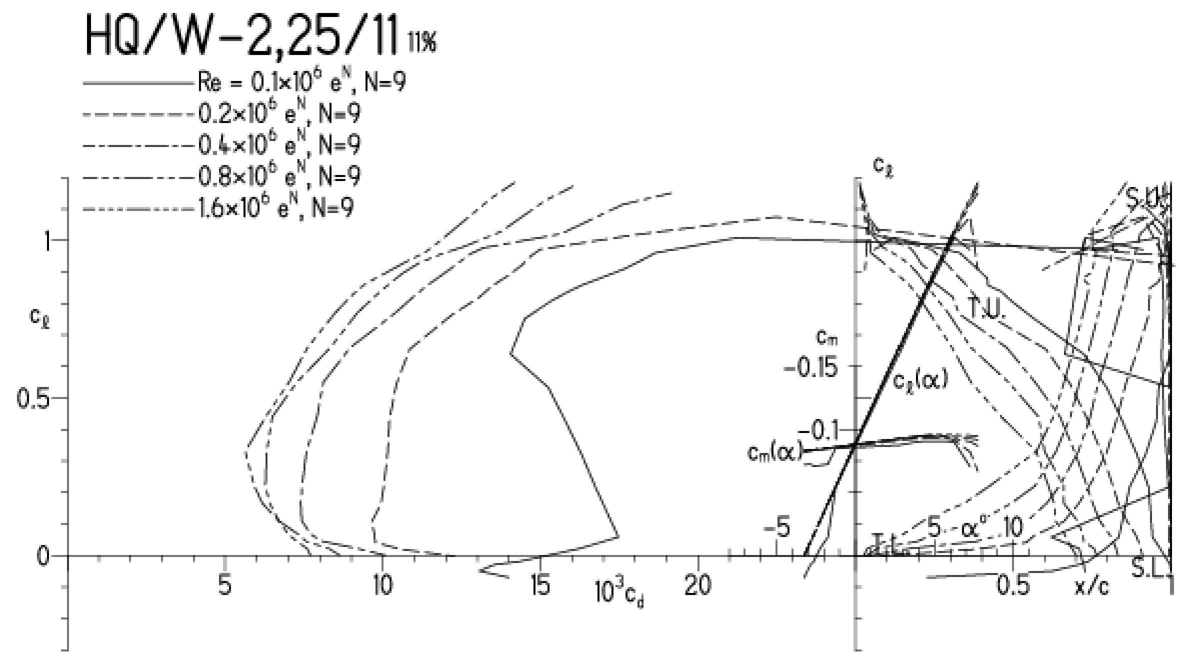


HQQ/W-2,25/11, N=9

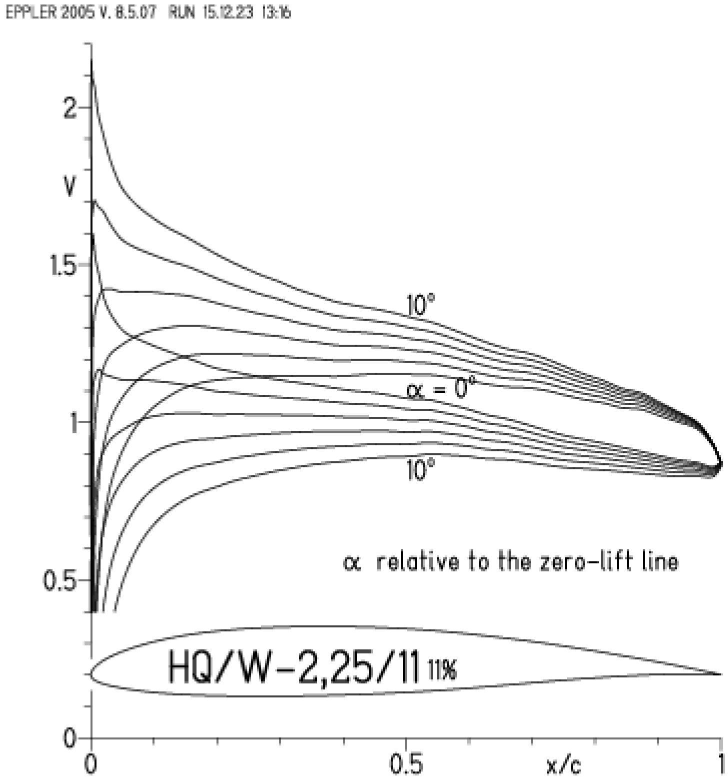
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

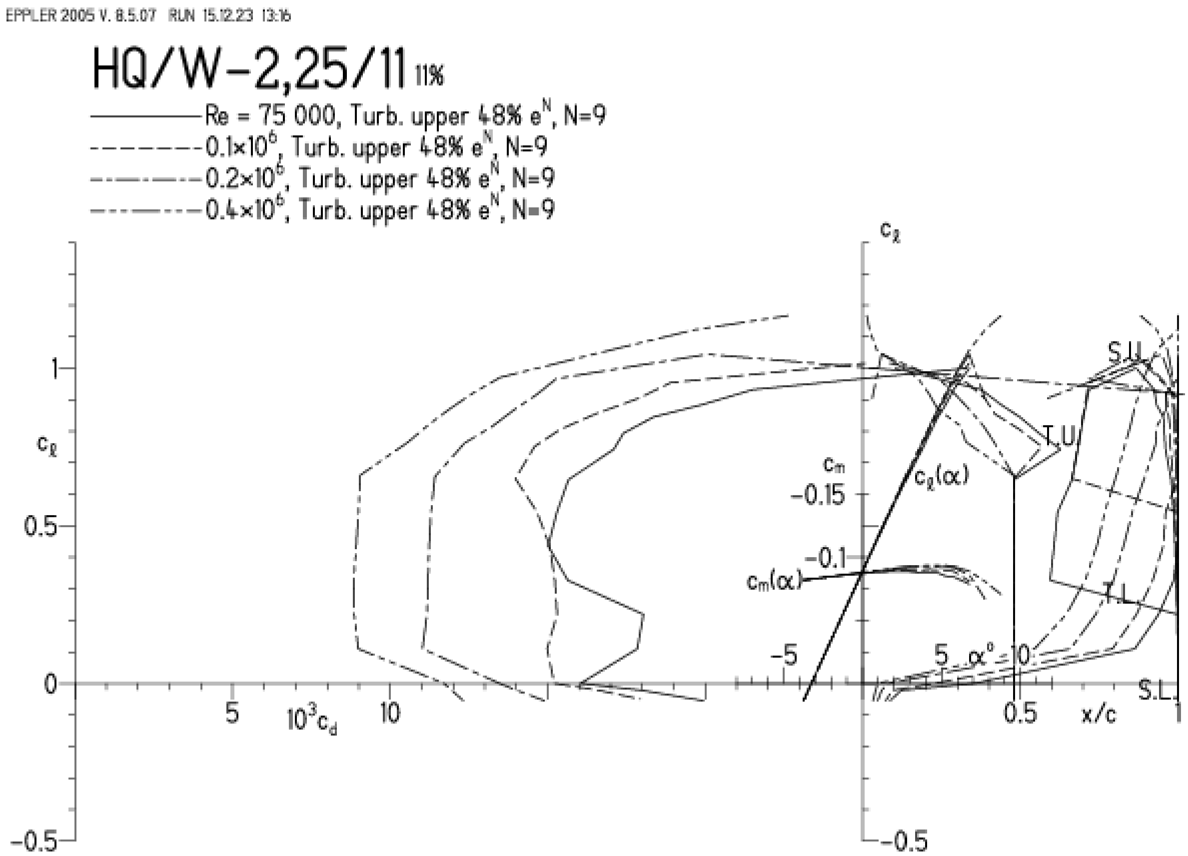


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



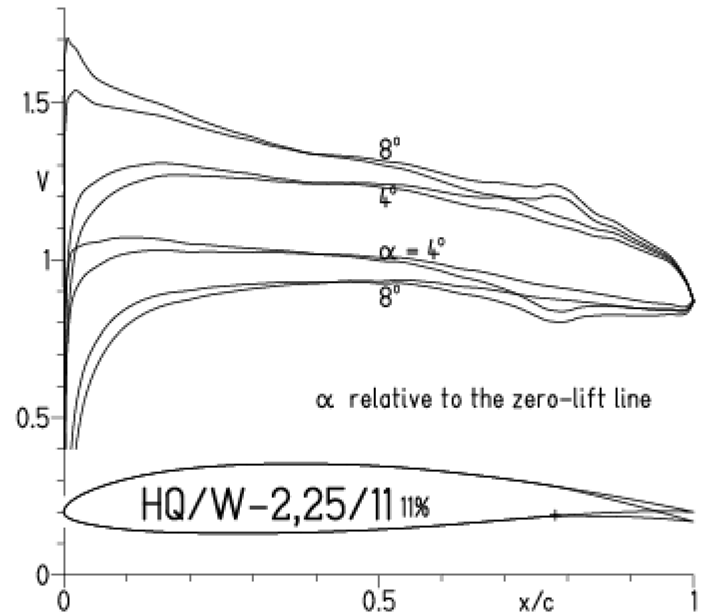
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



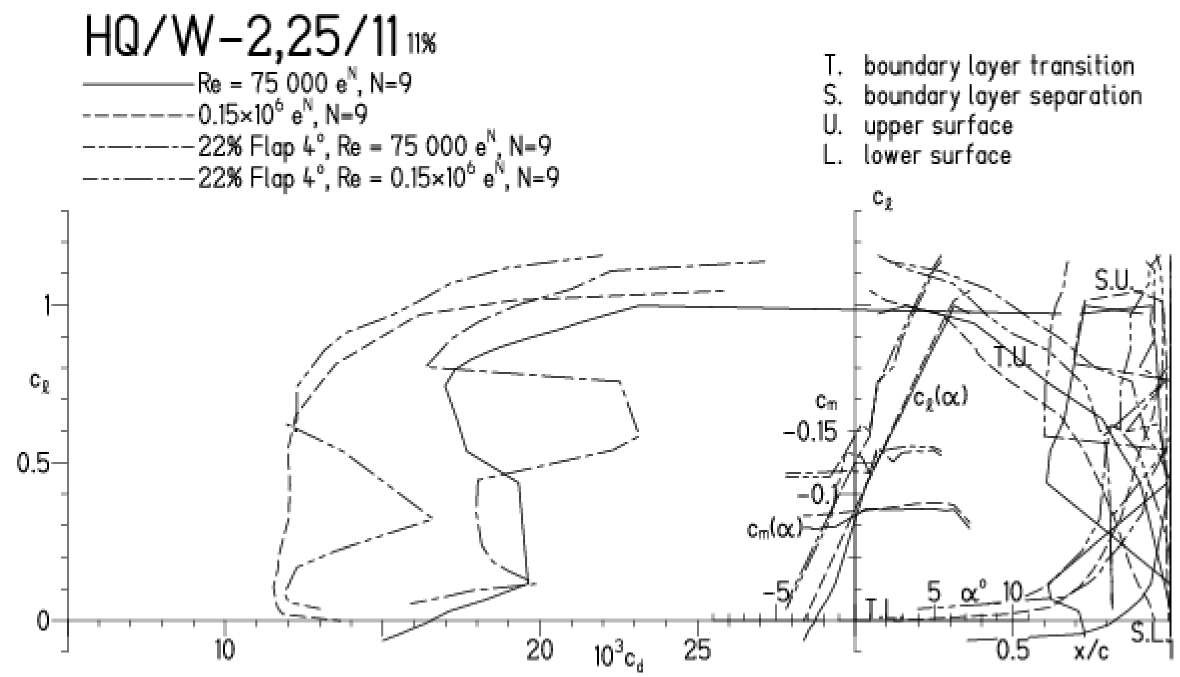


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

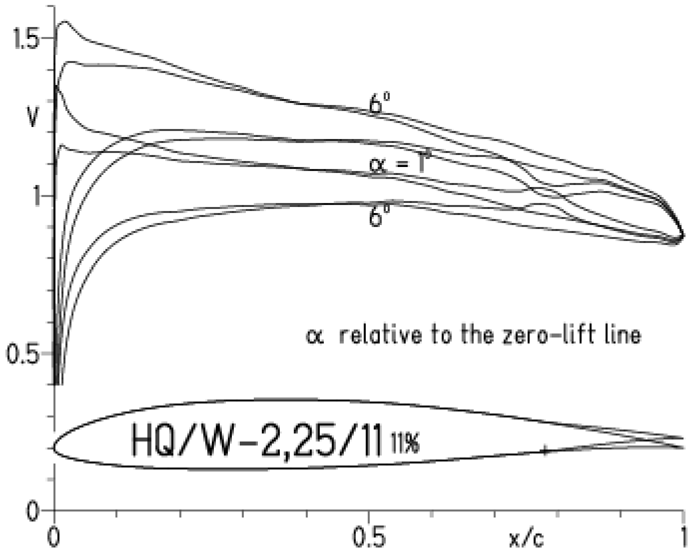


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

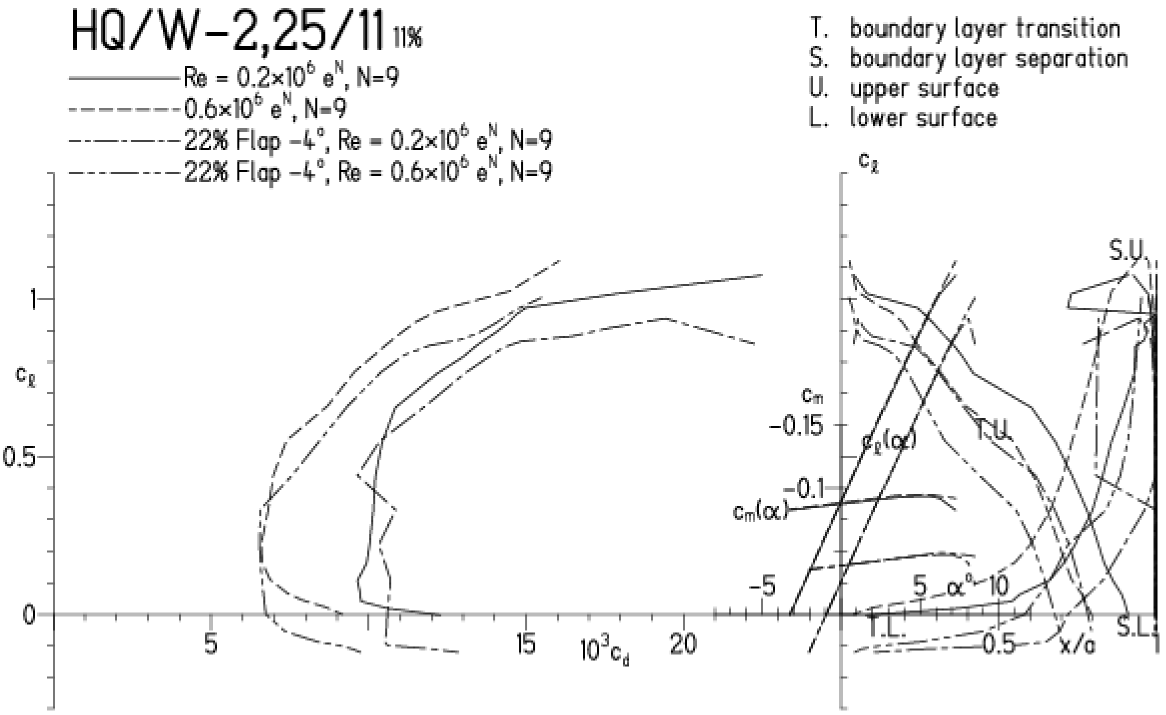


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

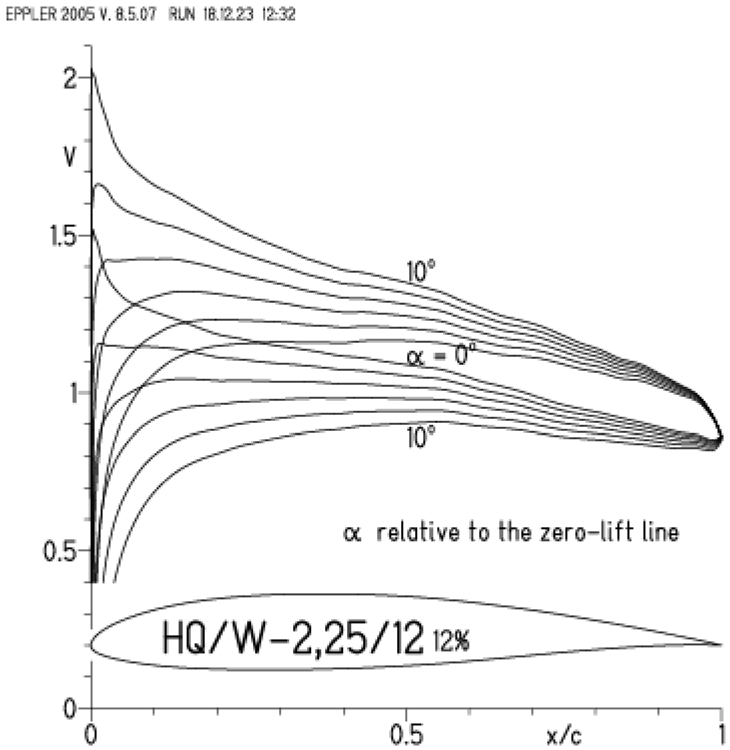
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

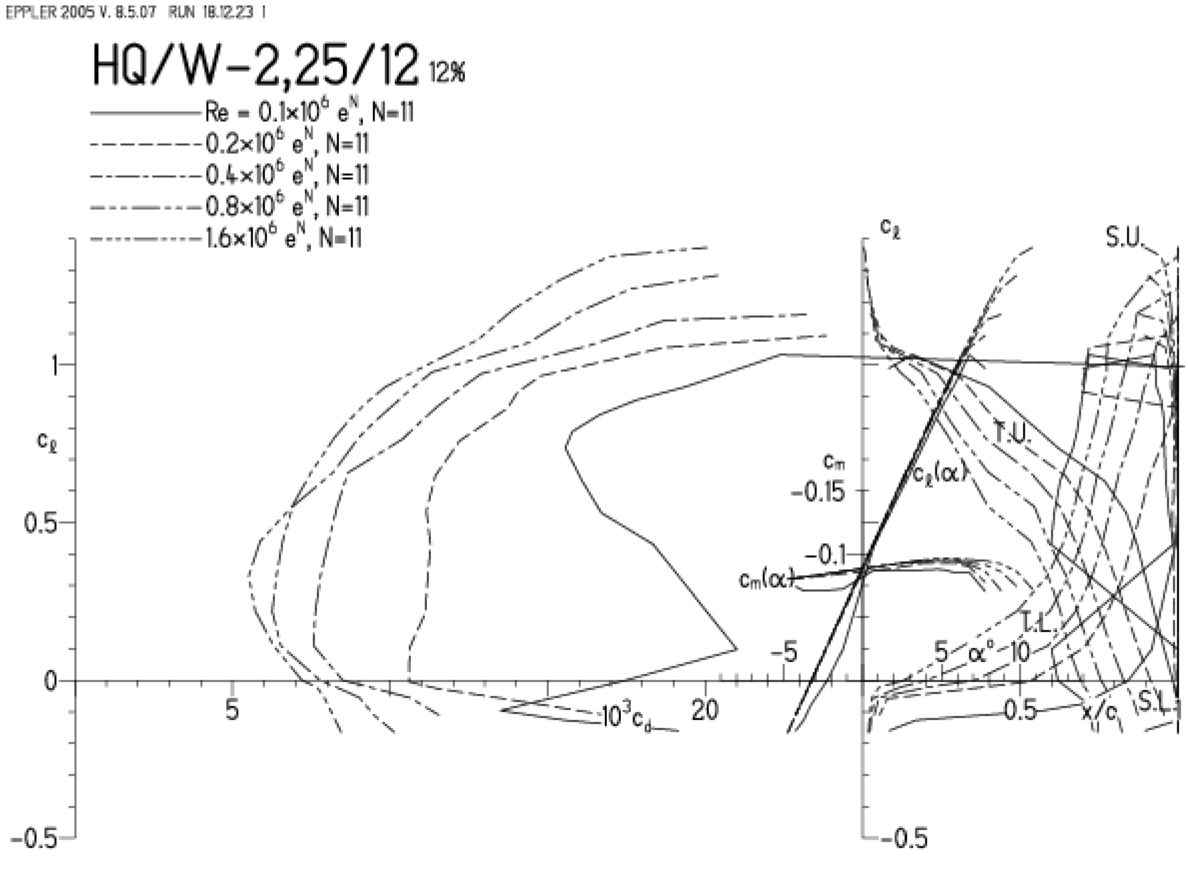


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



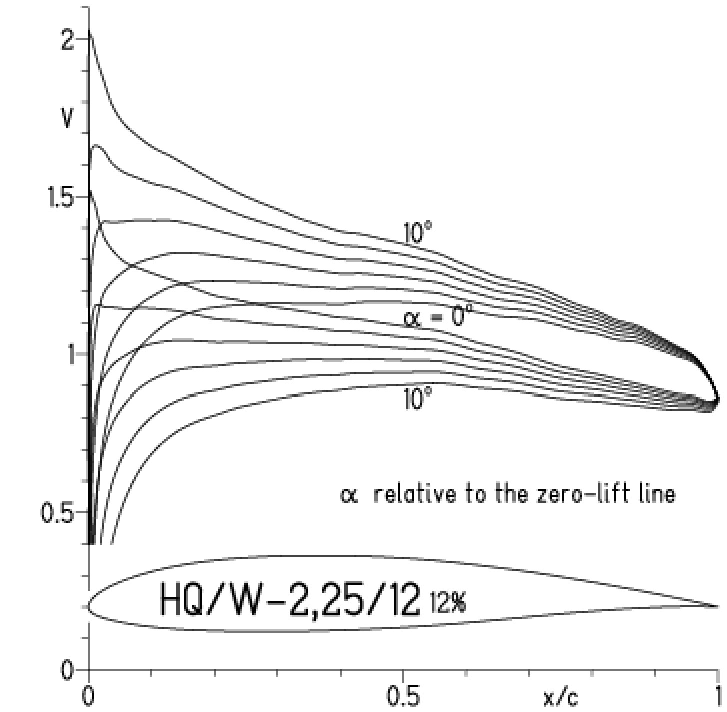
HQ/W-2,25/12, N=11



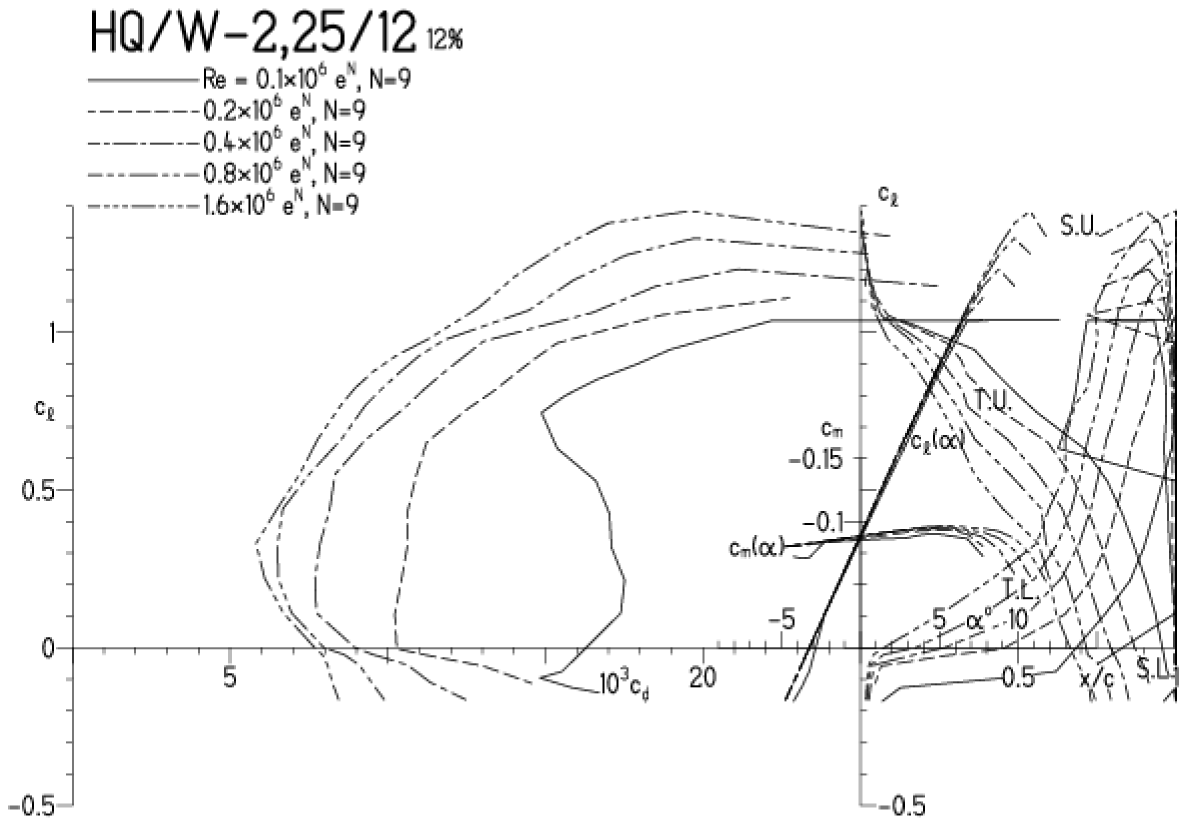


<u>HQ/W-2,25/12</u>, N=9

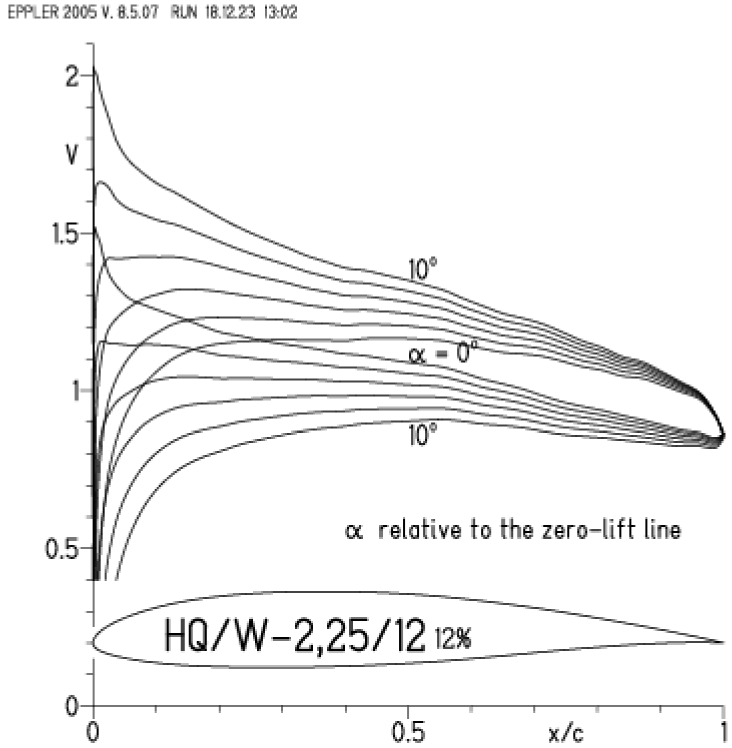
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

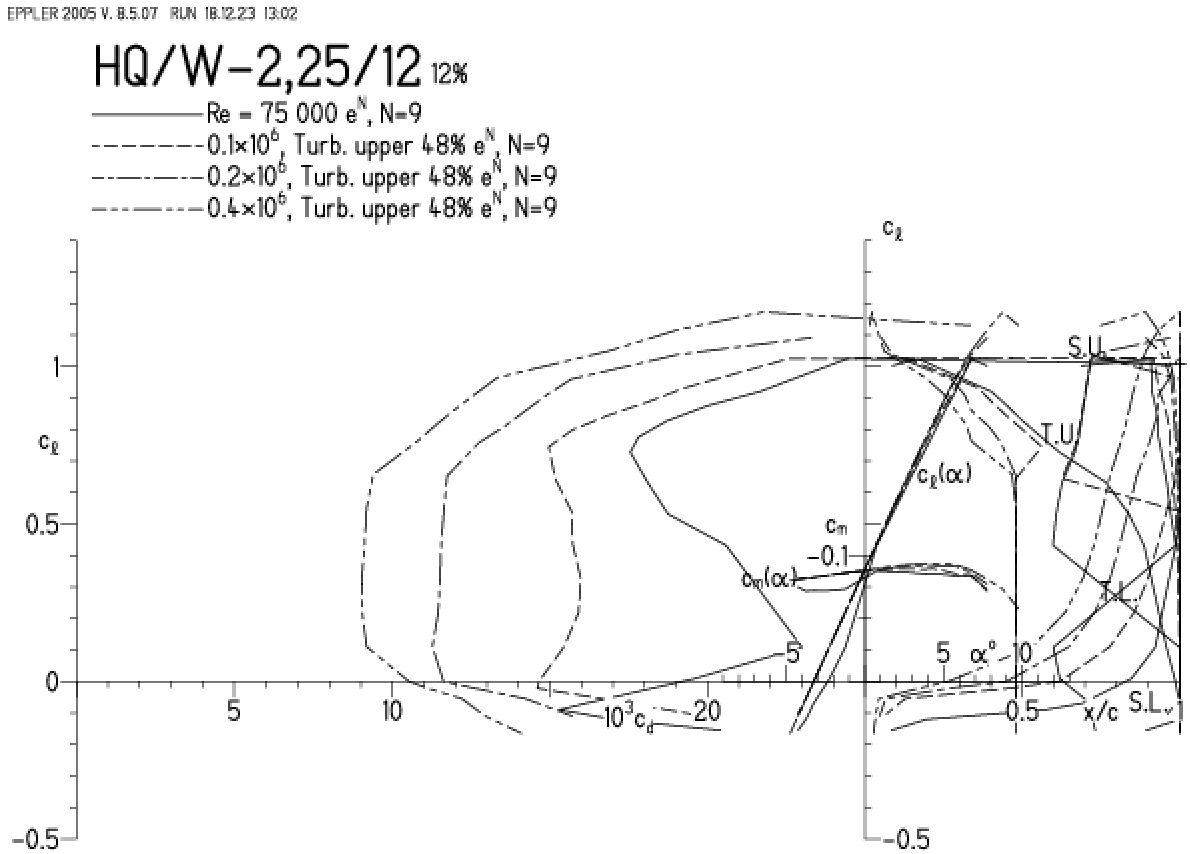


EPPLER 2005 V. 8.5



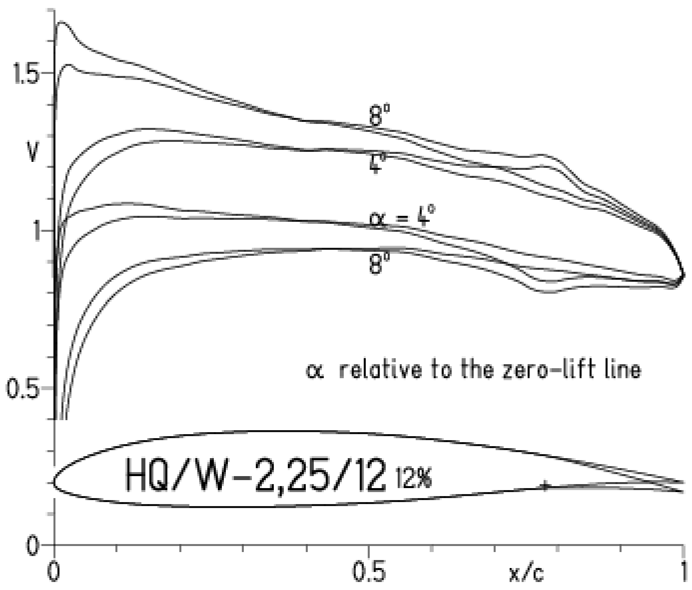
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



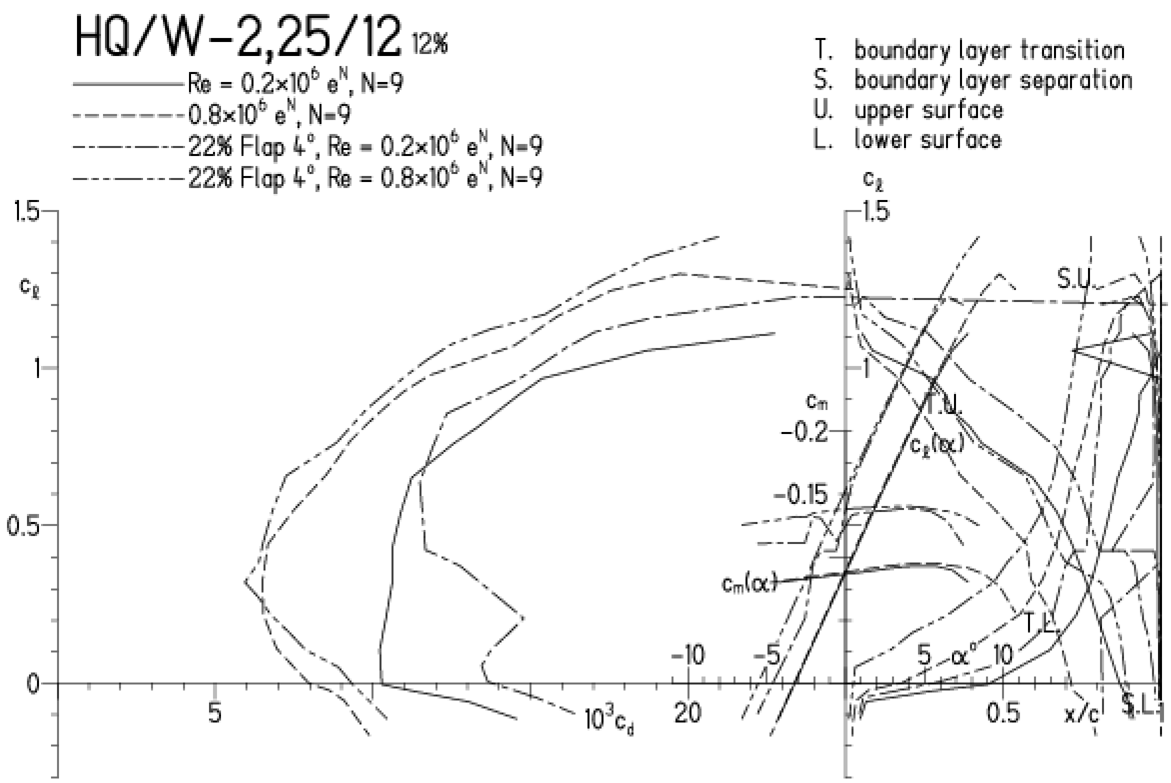


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

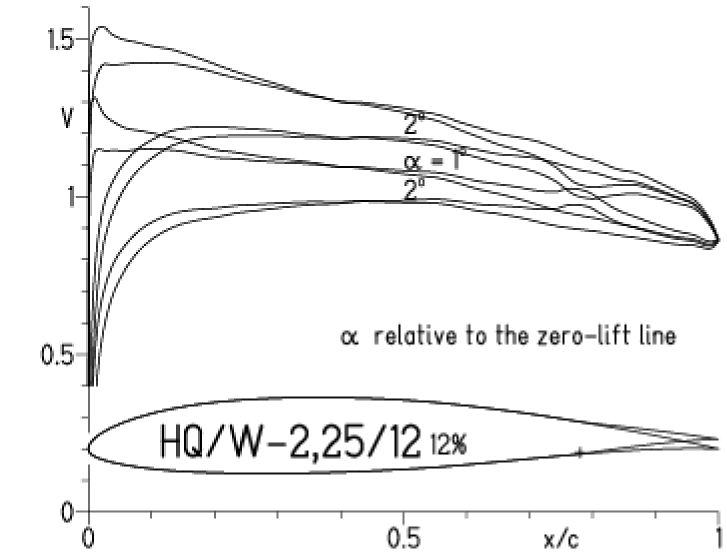


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

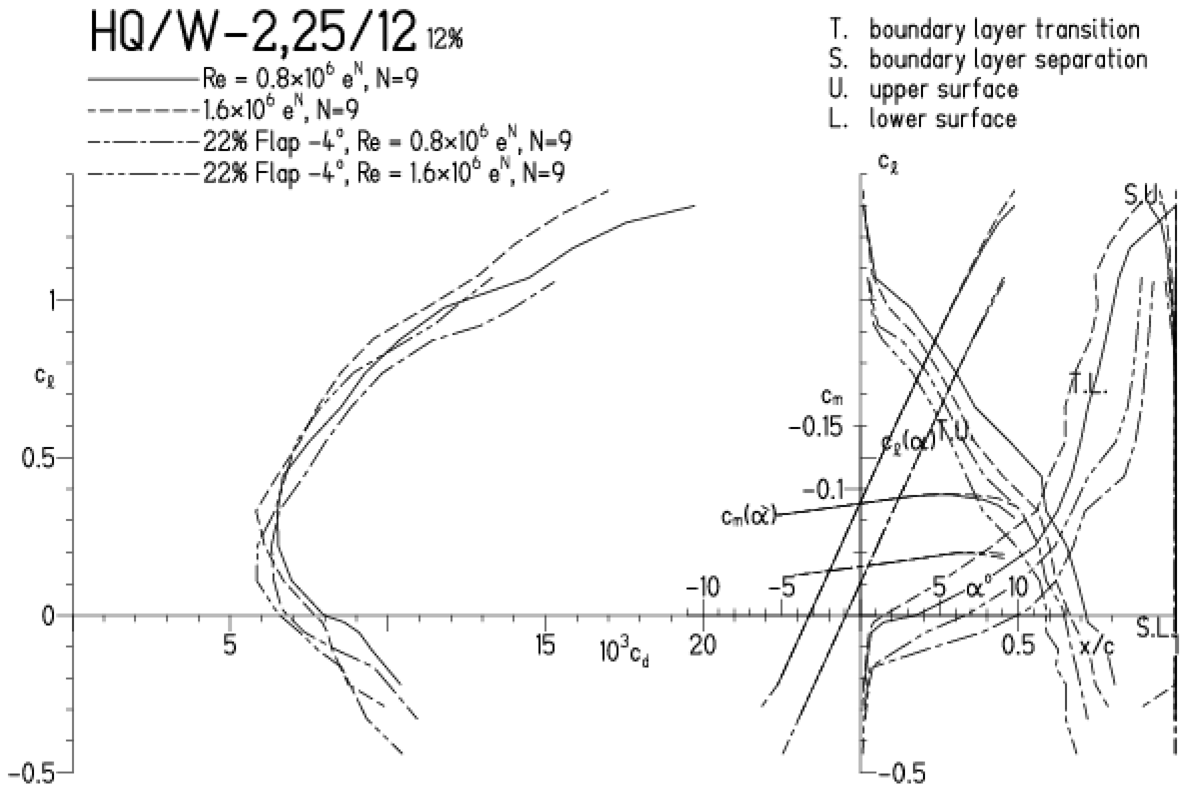


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

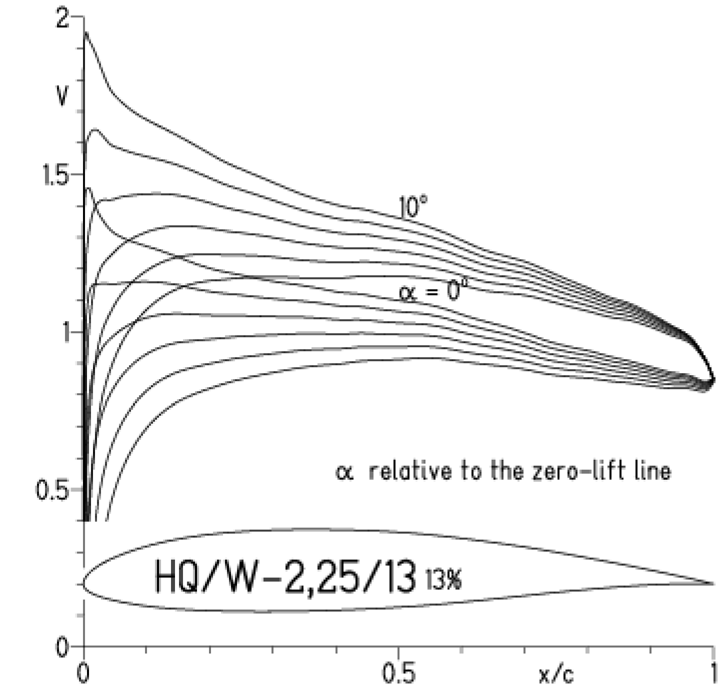


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

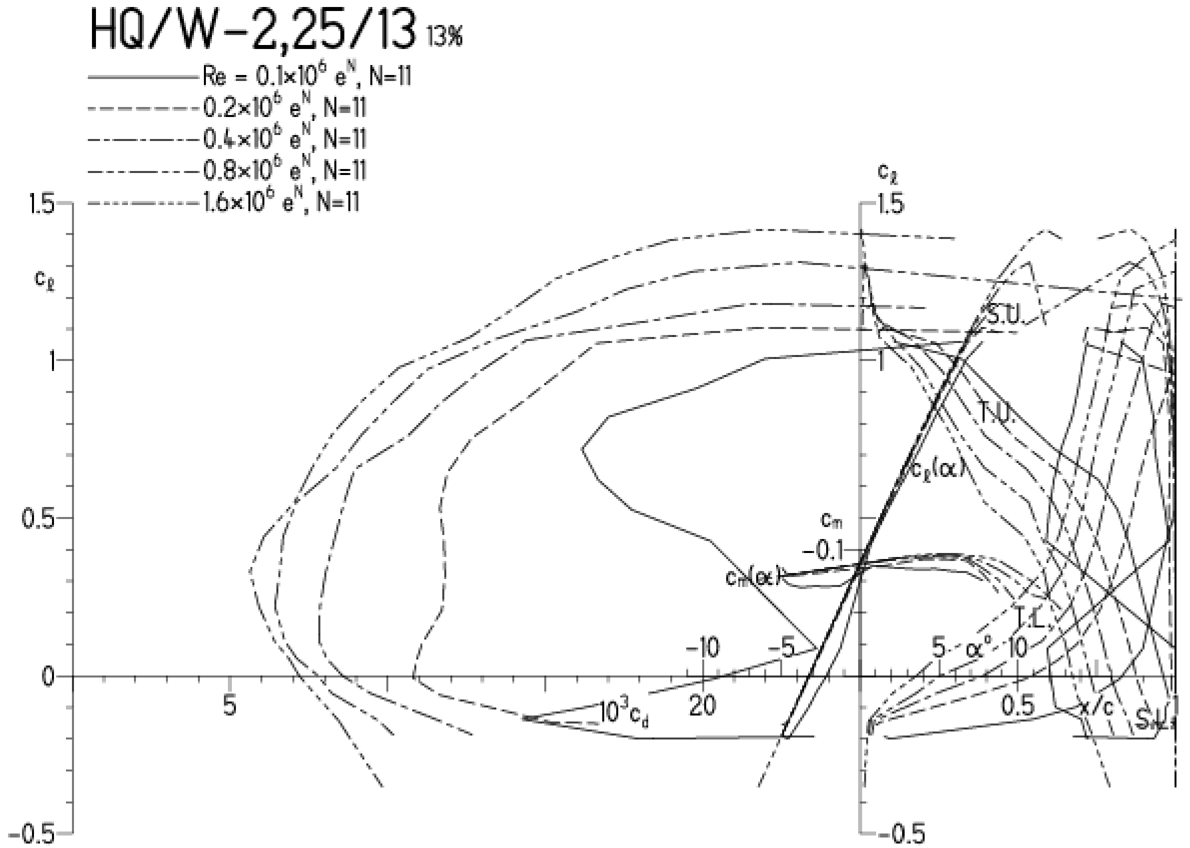


<u>HQ/W-2,25/13</u>, N=11

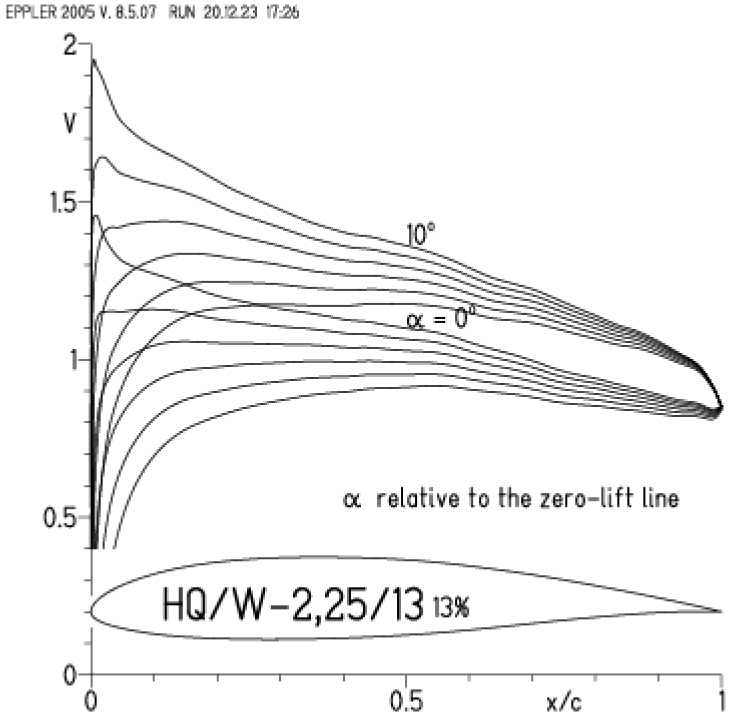
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:11

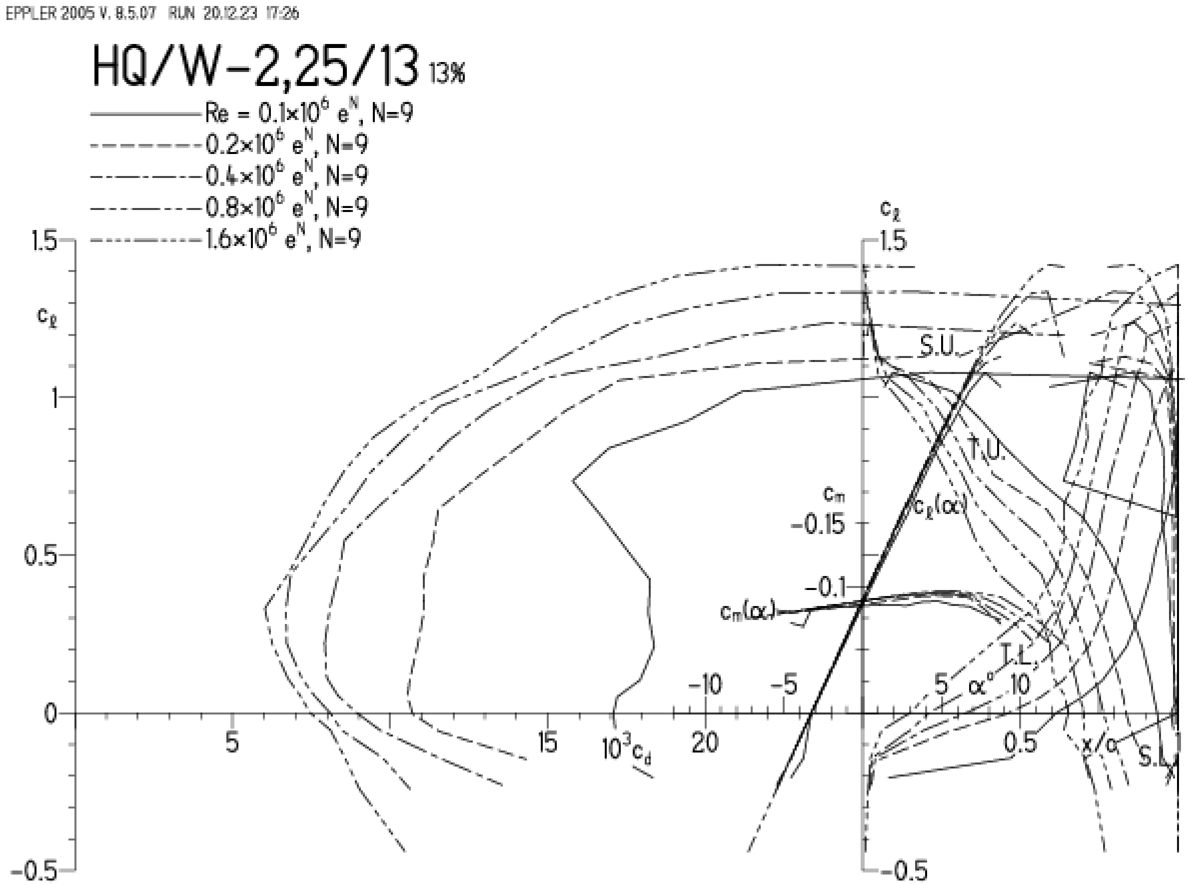


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:11

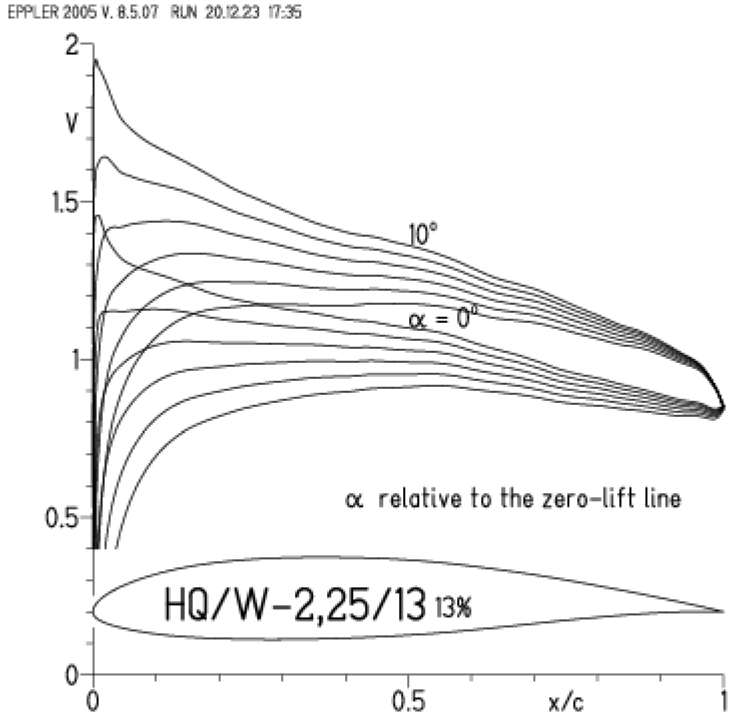


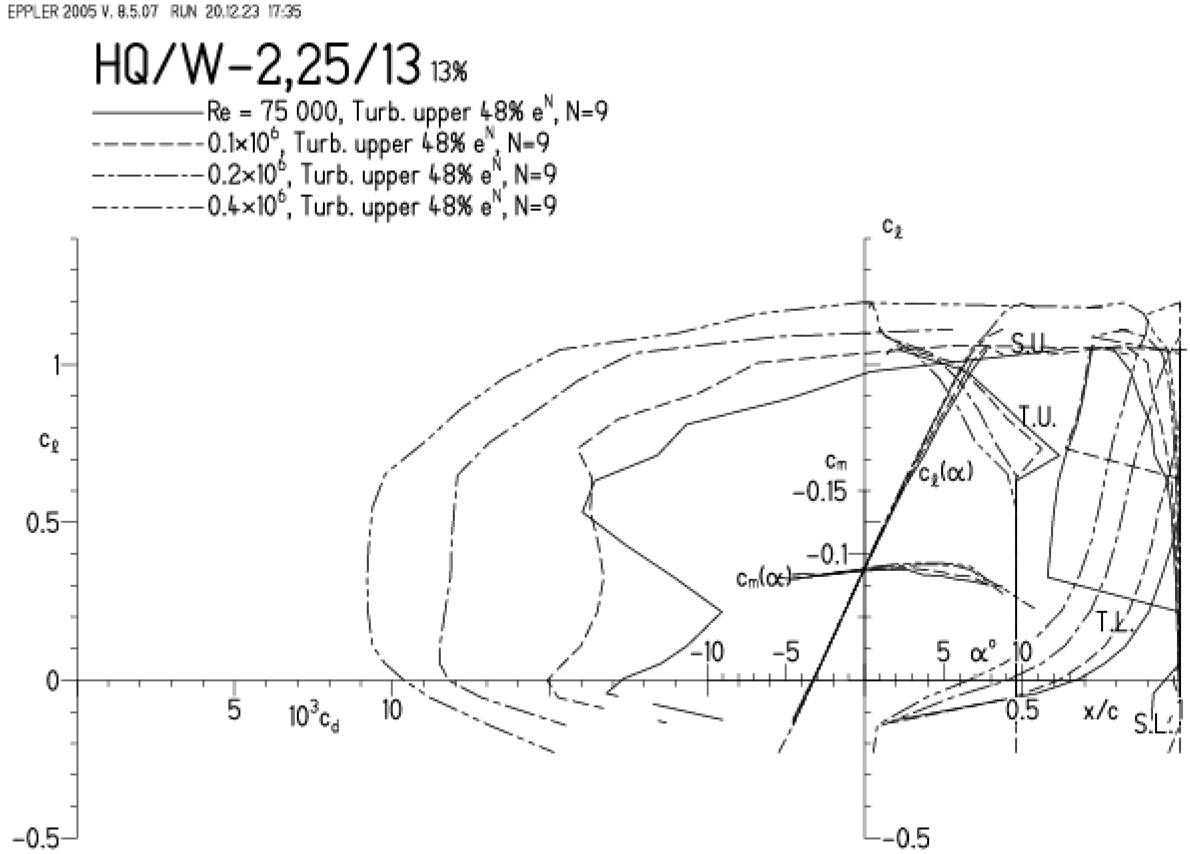
<u>HQ/W-2,25/13</u>, N=9





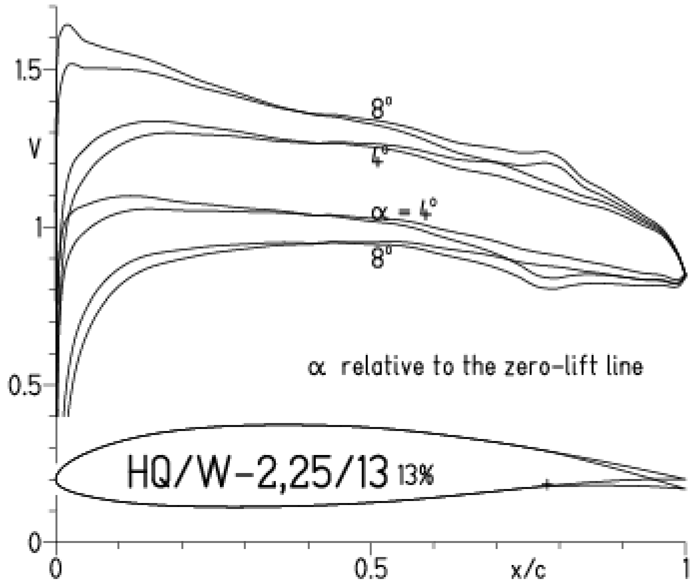
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



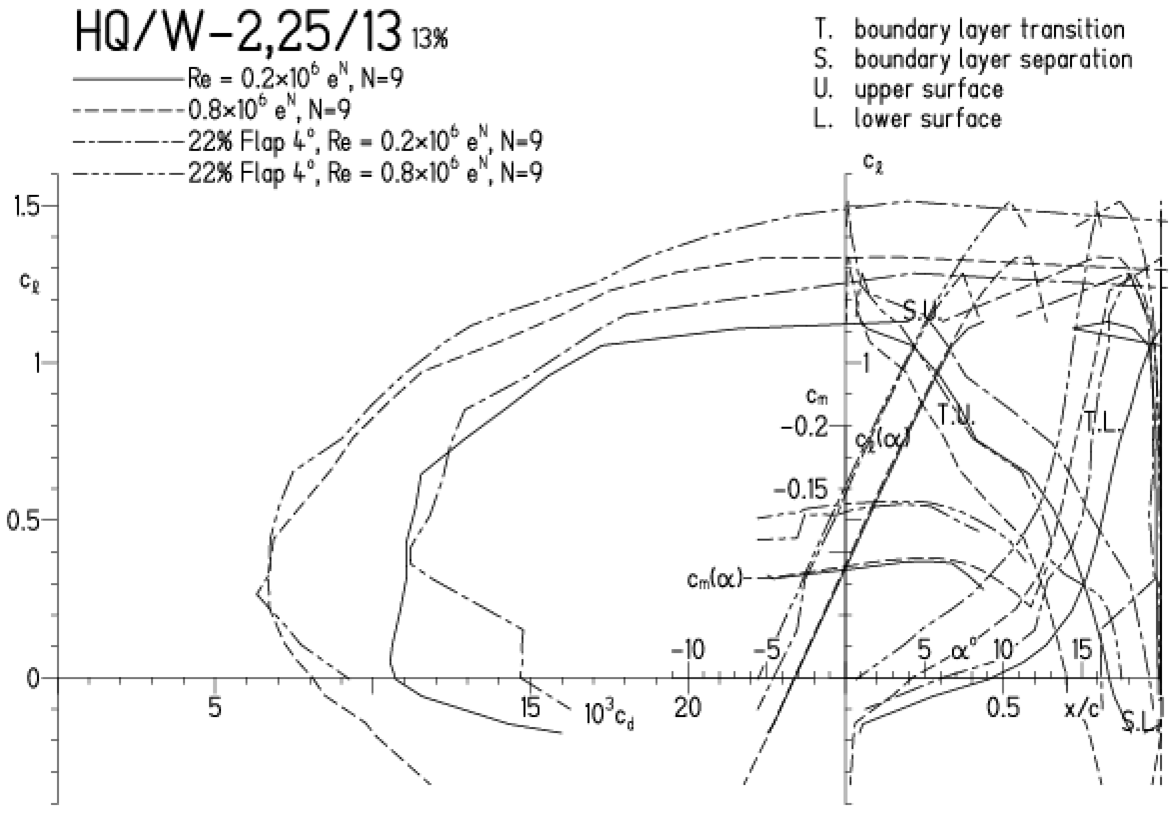


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

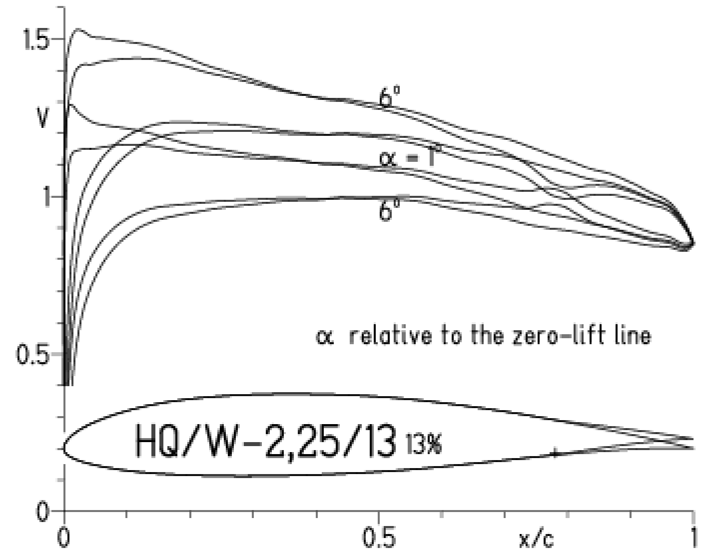


EPPLER 2005 V.

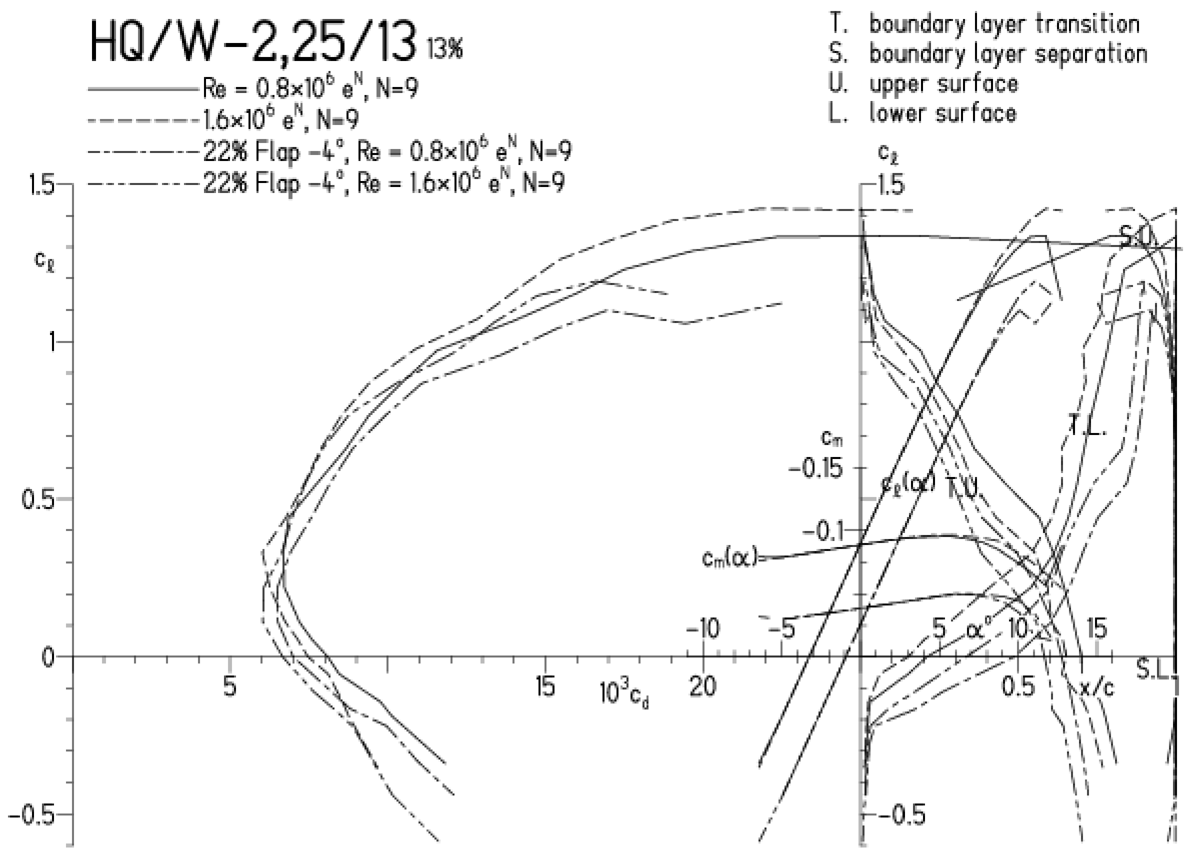


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

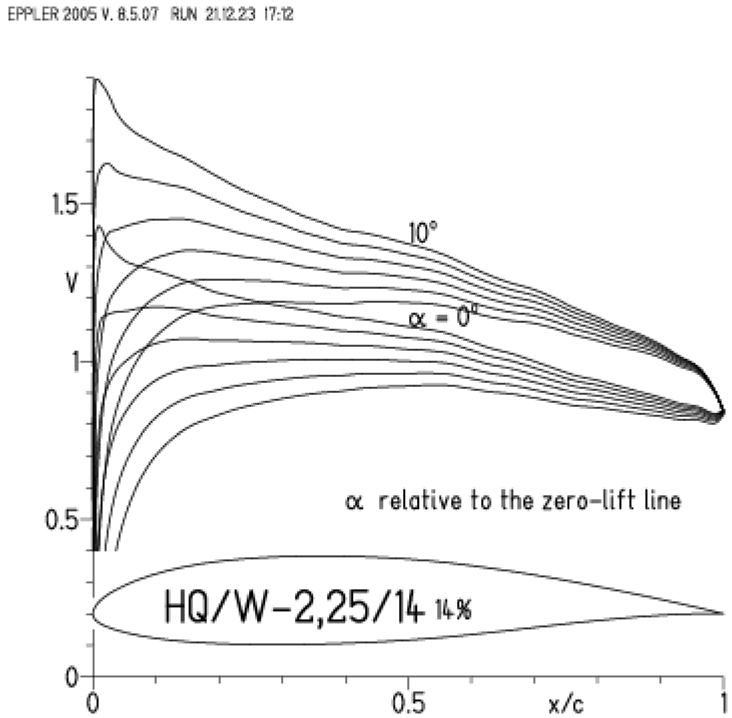
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

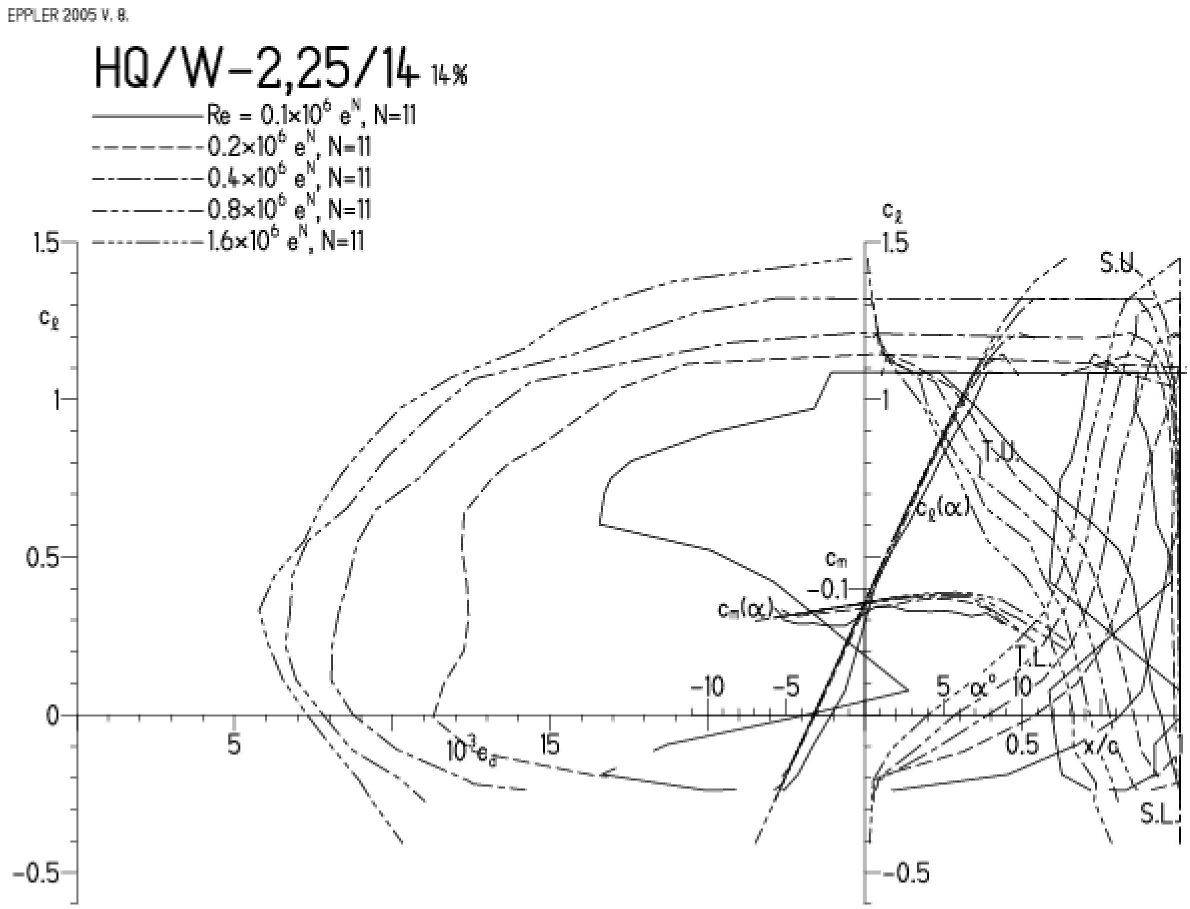


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

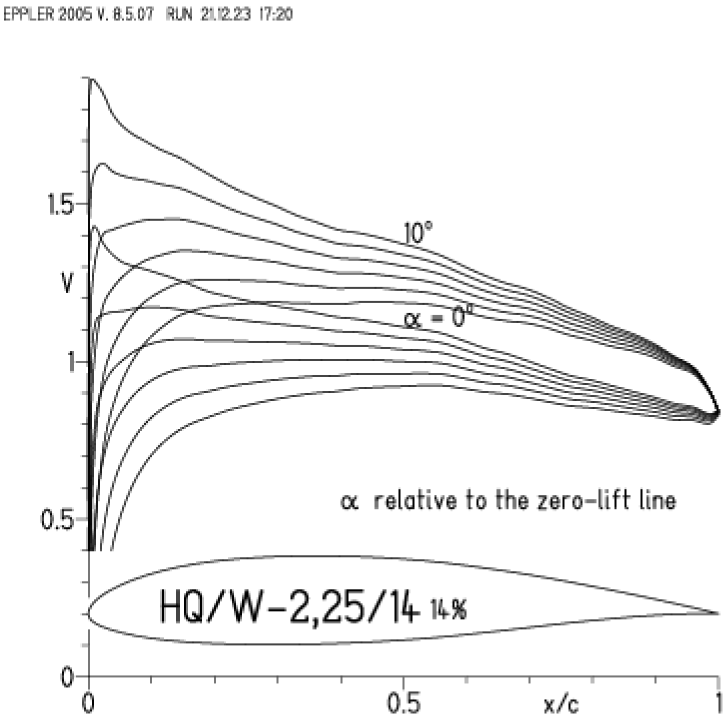


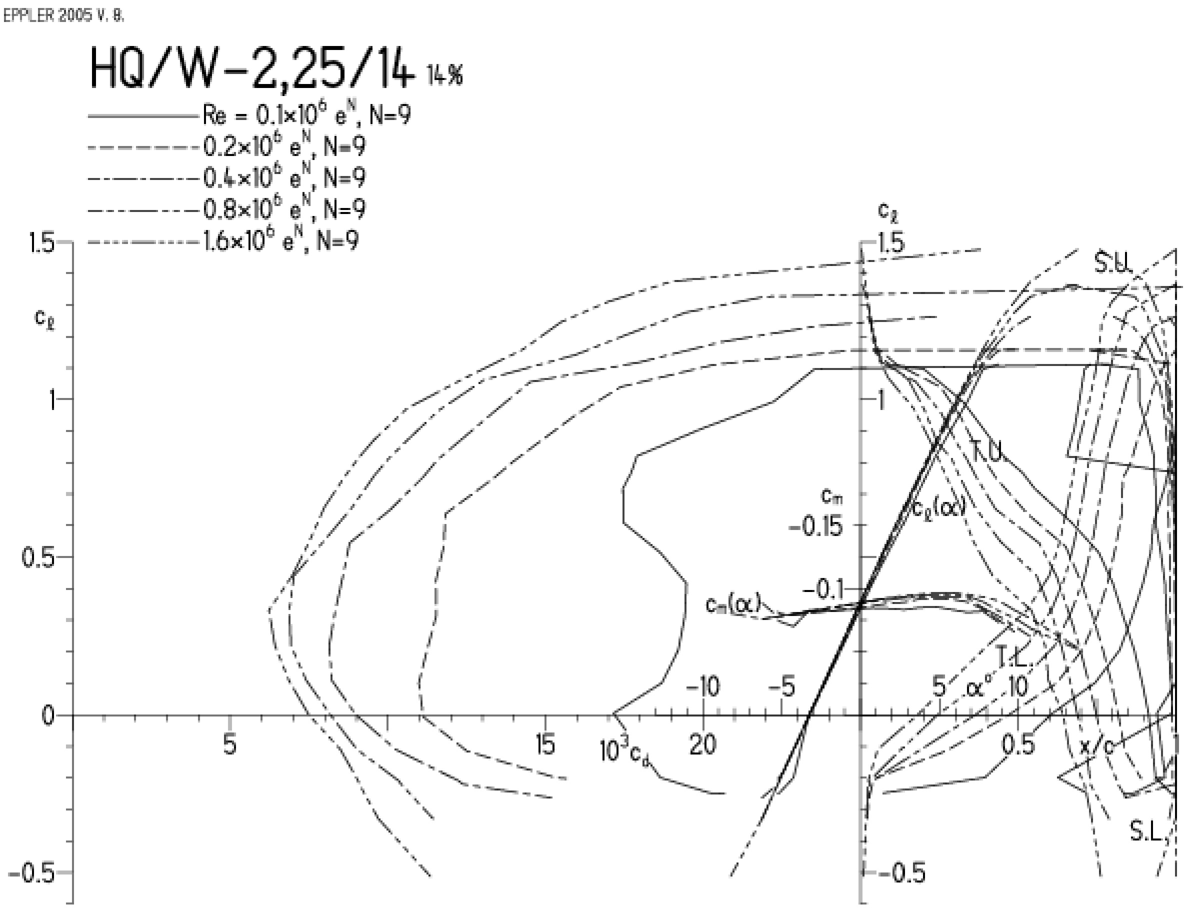
HQ/W-2,25/14, N=11



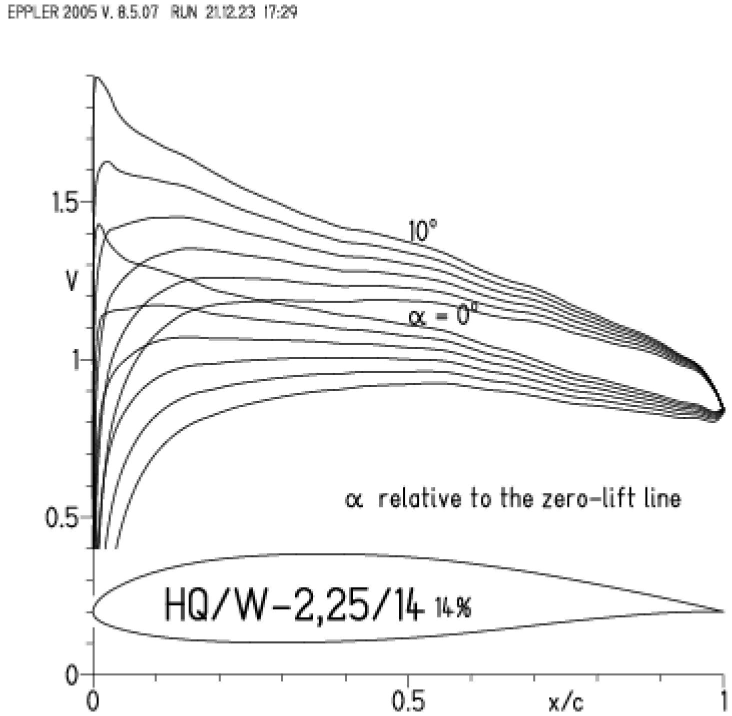


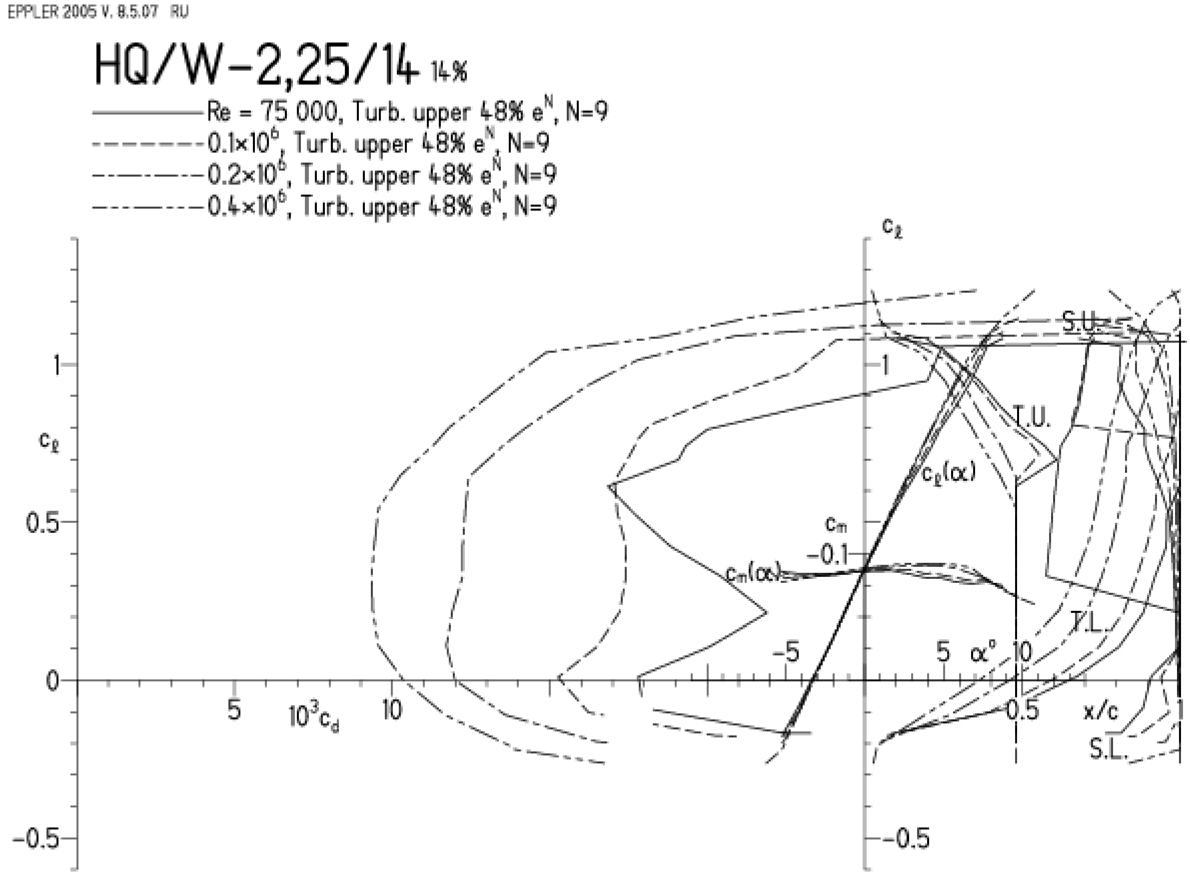
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c
0
0.5
1
1.5


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
-0.15
-0.1
c_ℓ(α)
c_m(α)
T.U.
T.L.
S.U.
S.L.
α°
x/c
10^3 c_d
-10
-5
5
10
15
20
0.5
-0.5
1
1.5

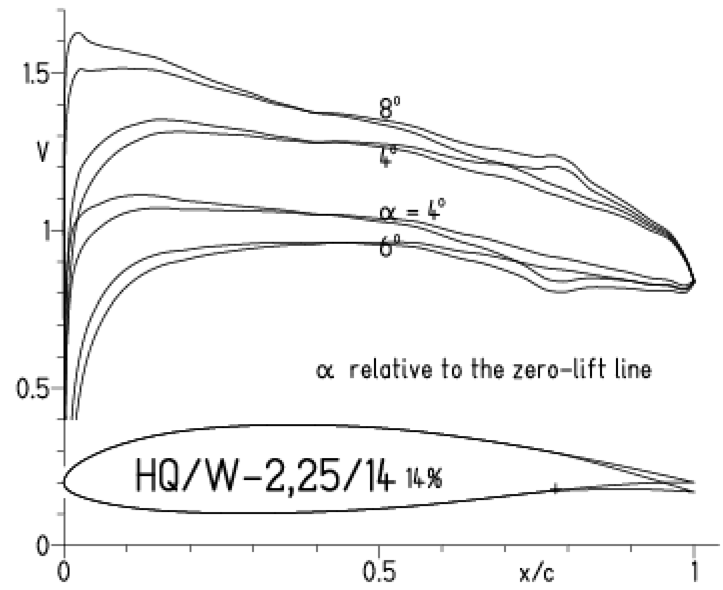
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



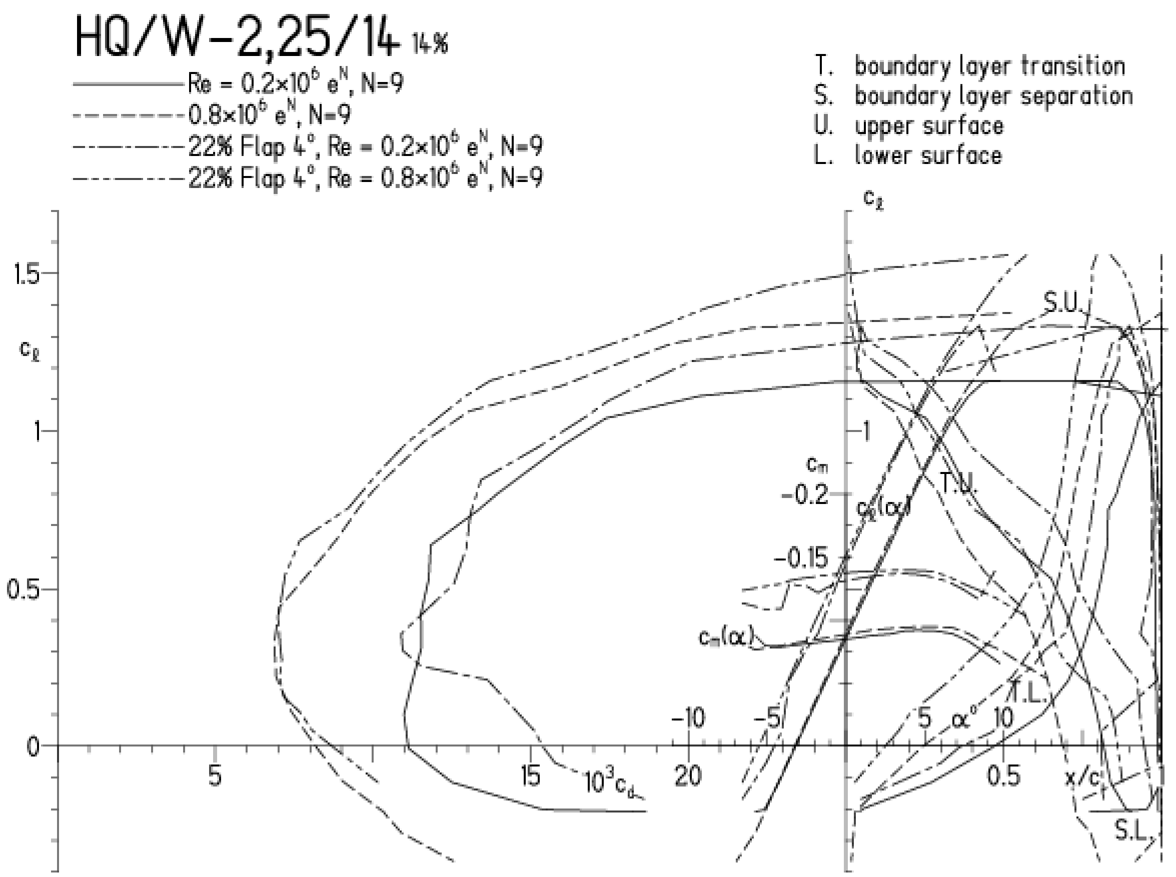


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

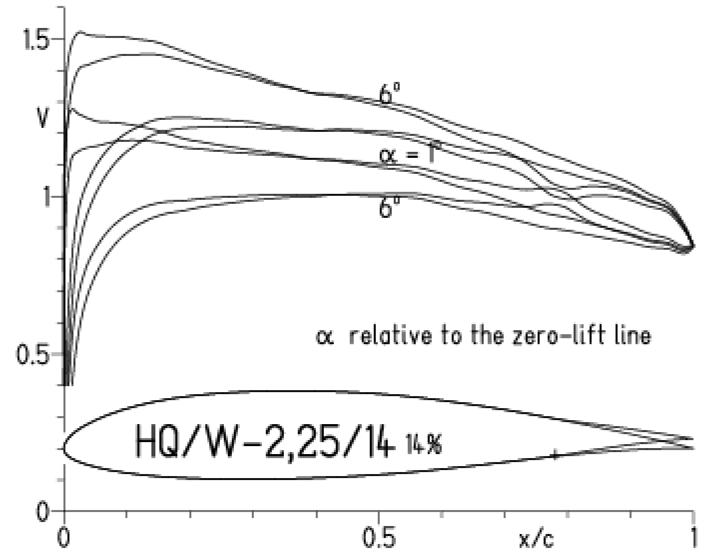


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

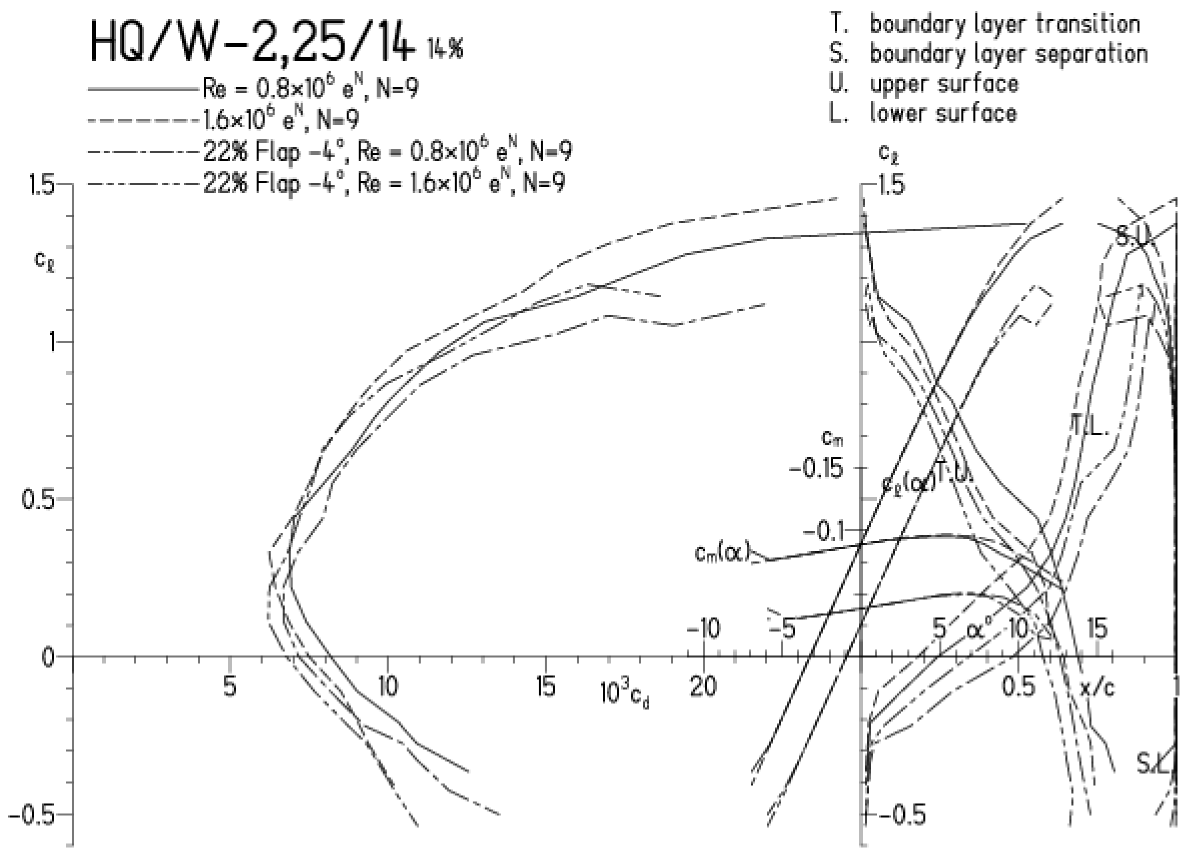


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

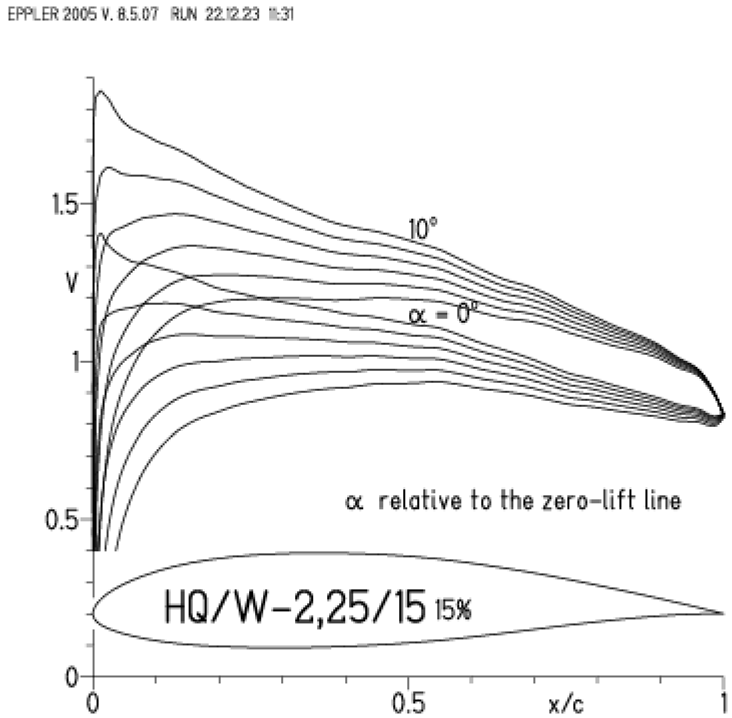
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

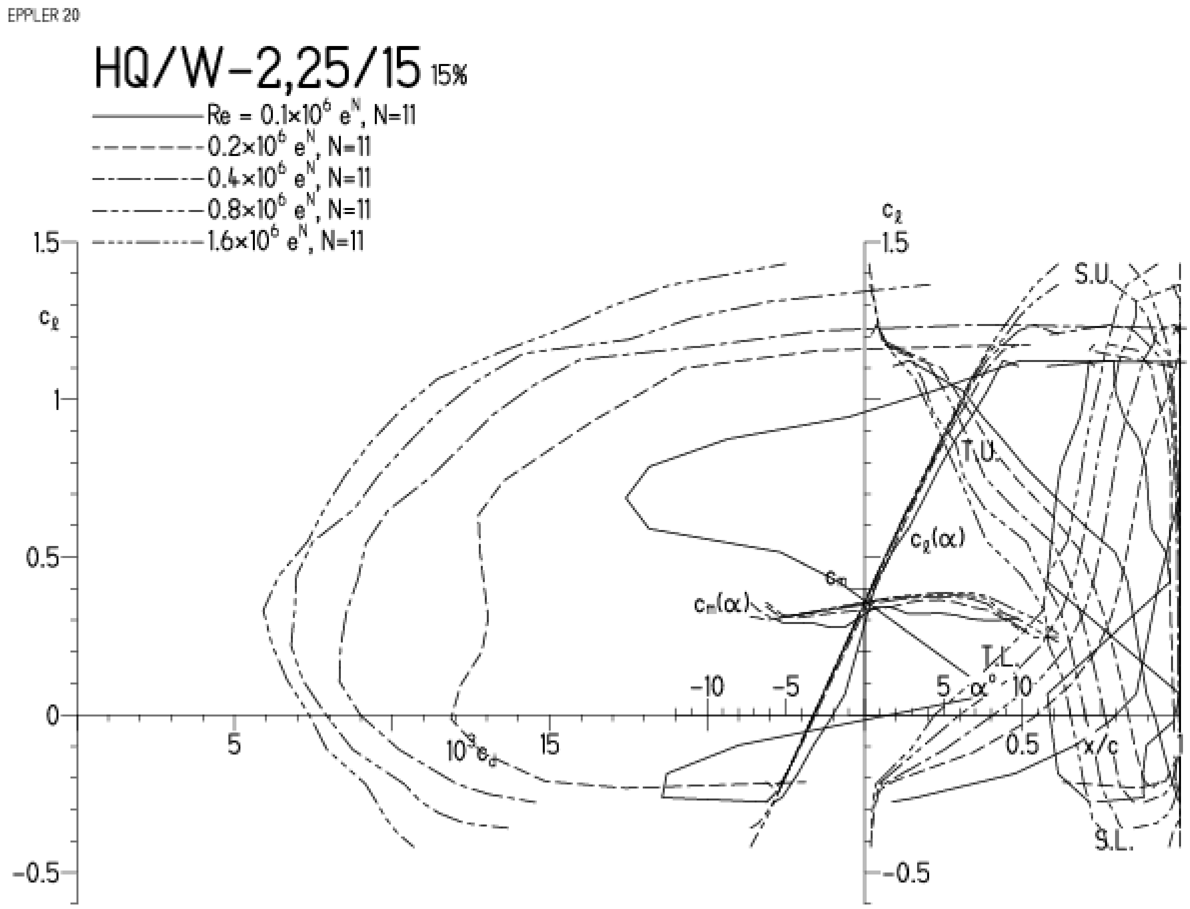


EPPLER 2005 V. 8.5.07



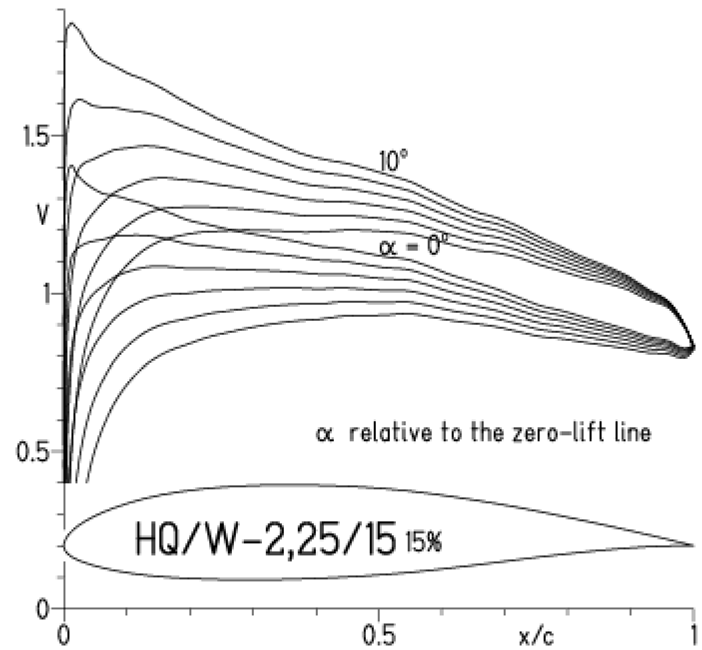
HQ/W-2,25/15, N=11



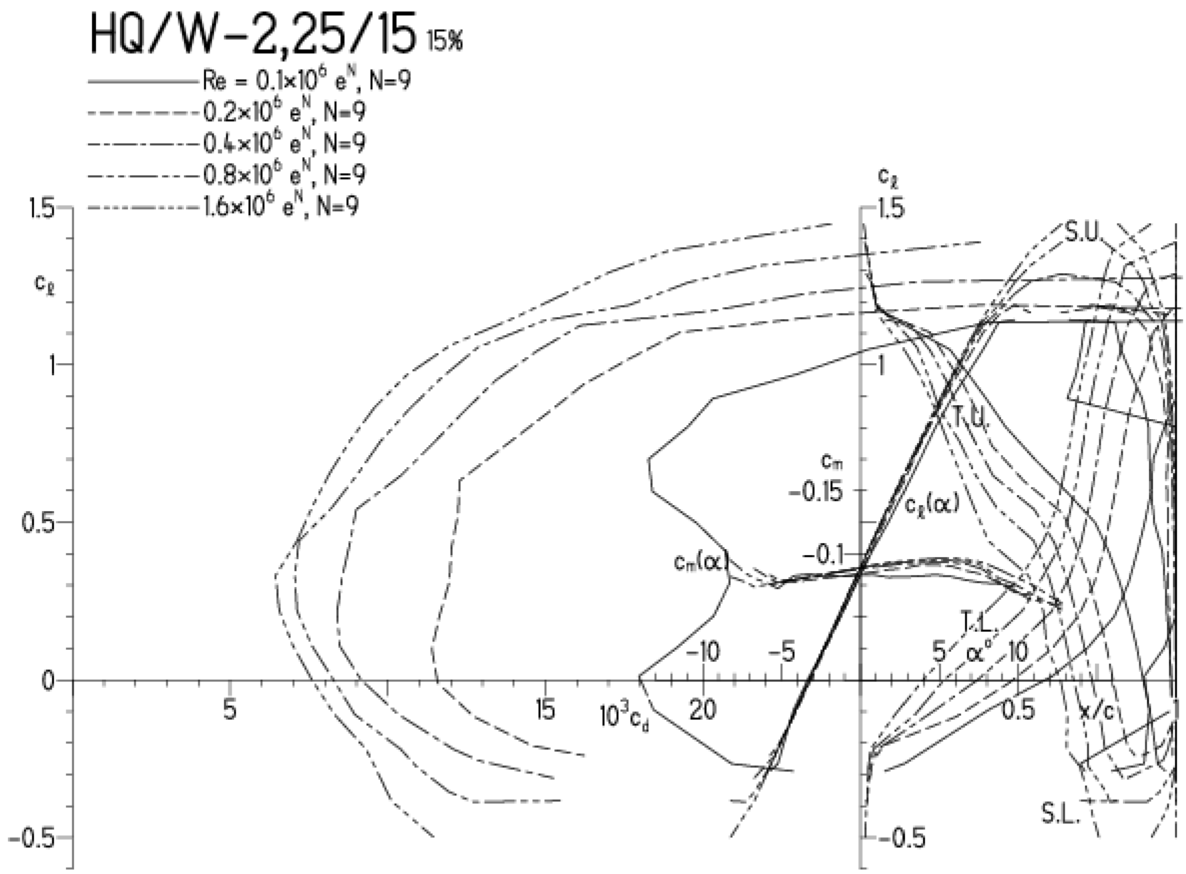


HQ/W-2,25/15, N=9

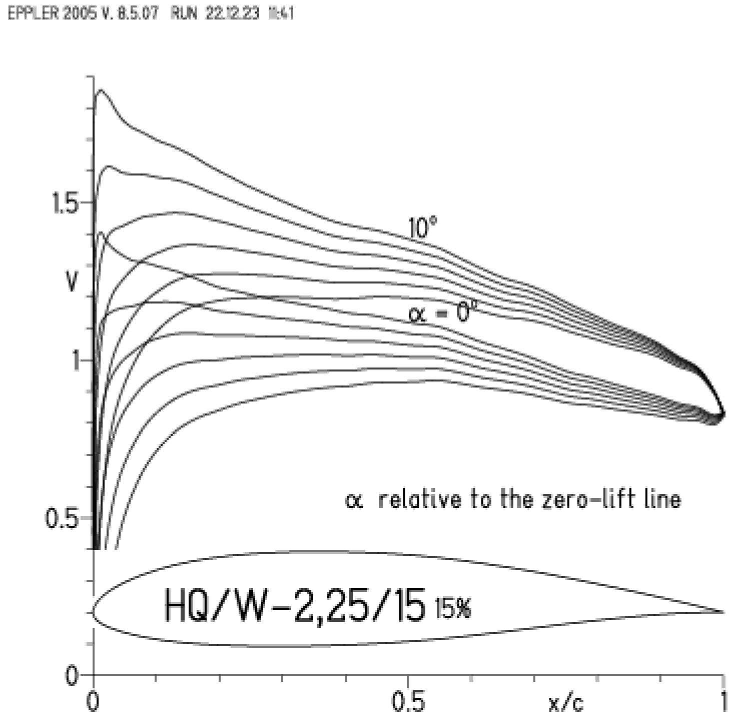
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

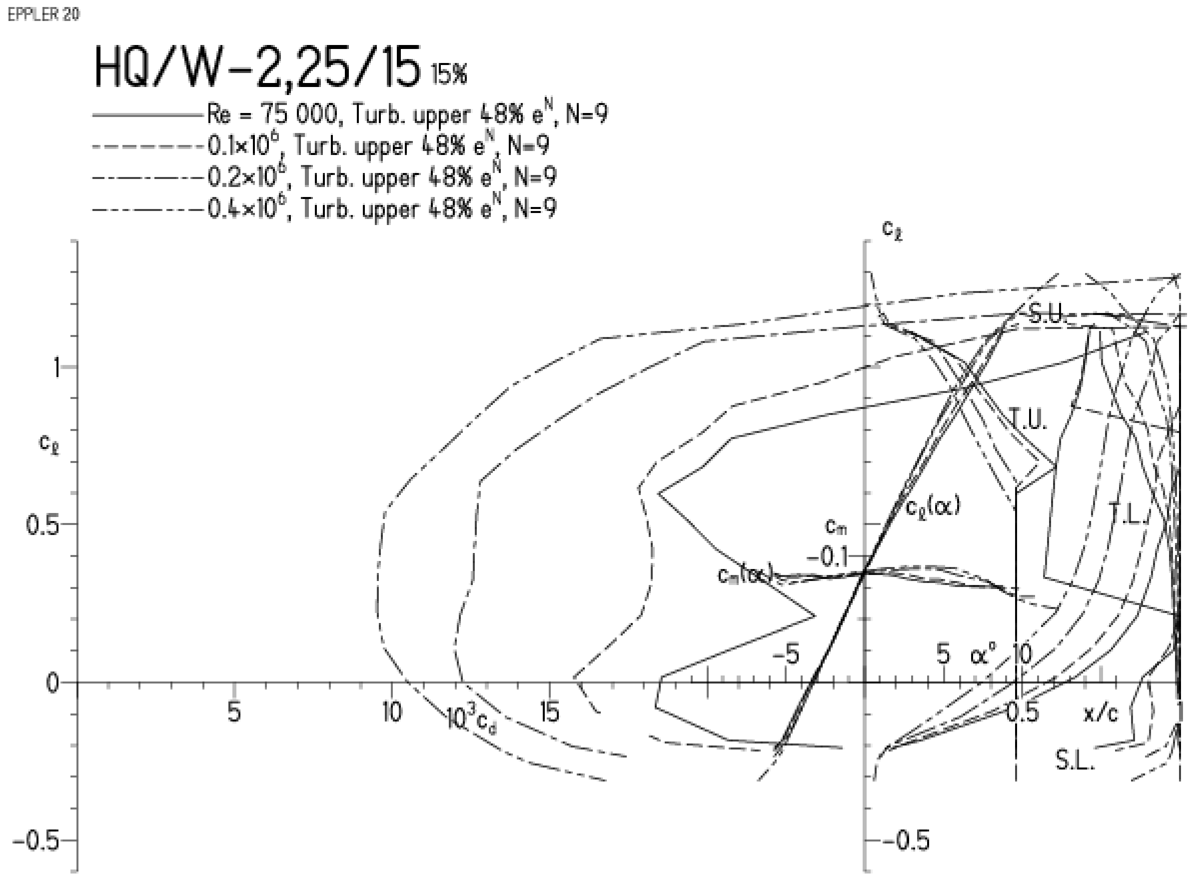


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



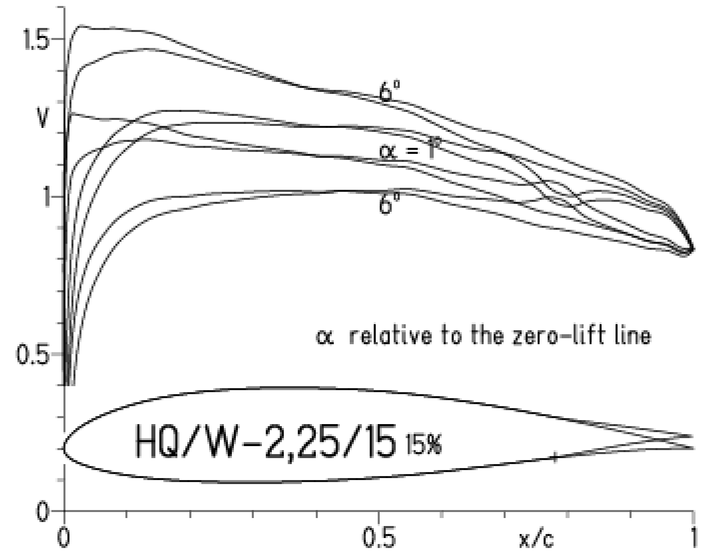


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

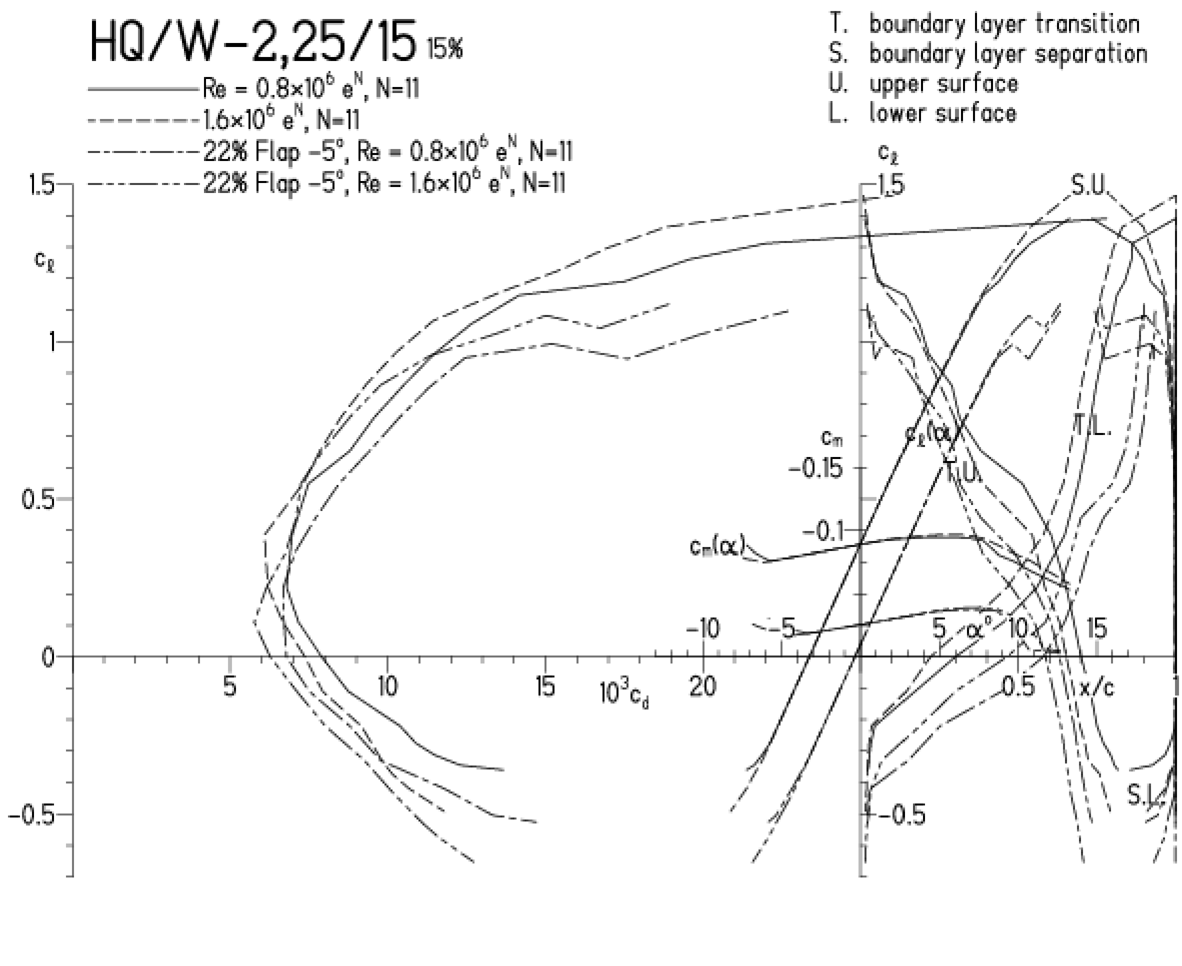
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

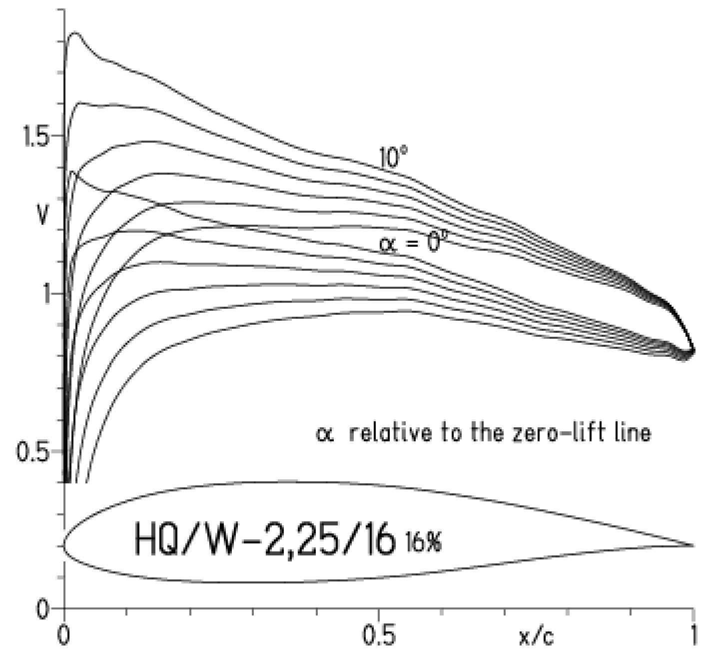


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

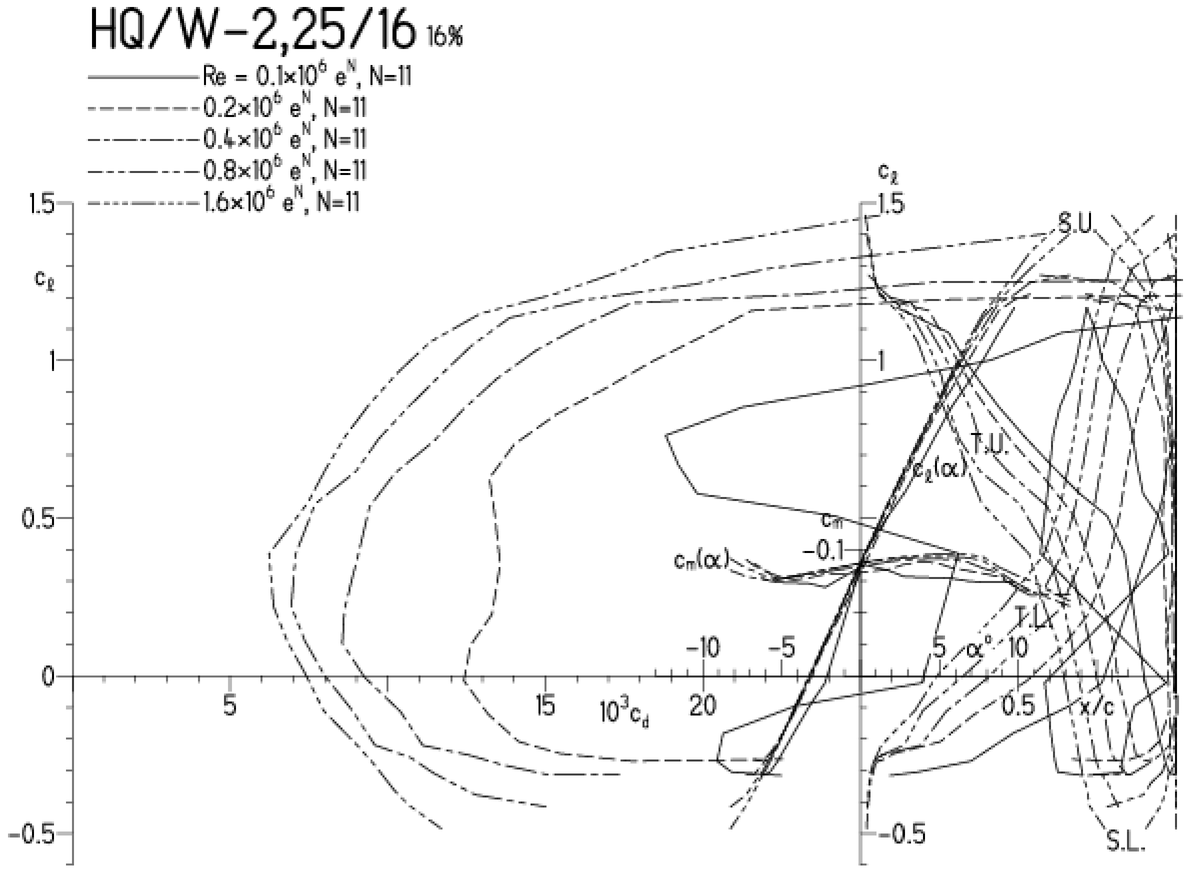


HQ/W-2,25/16, N=11

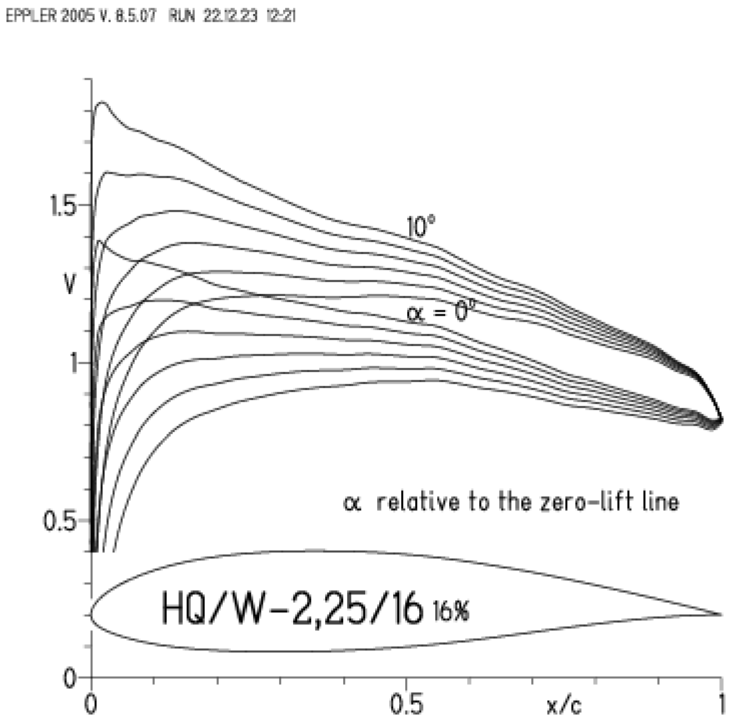
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

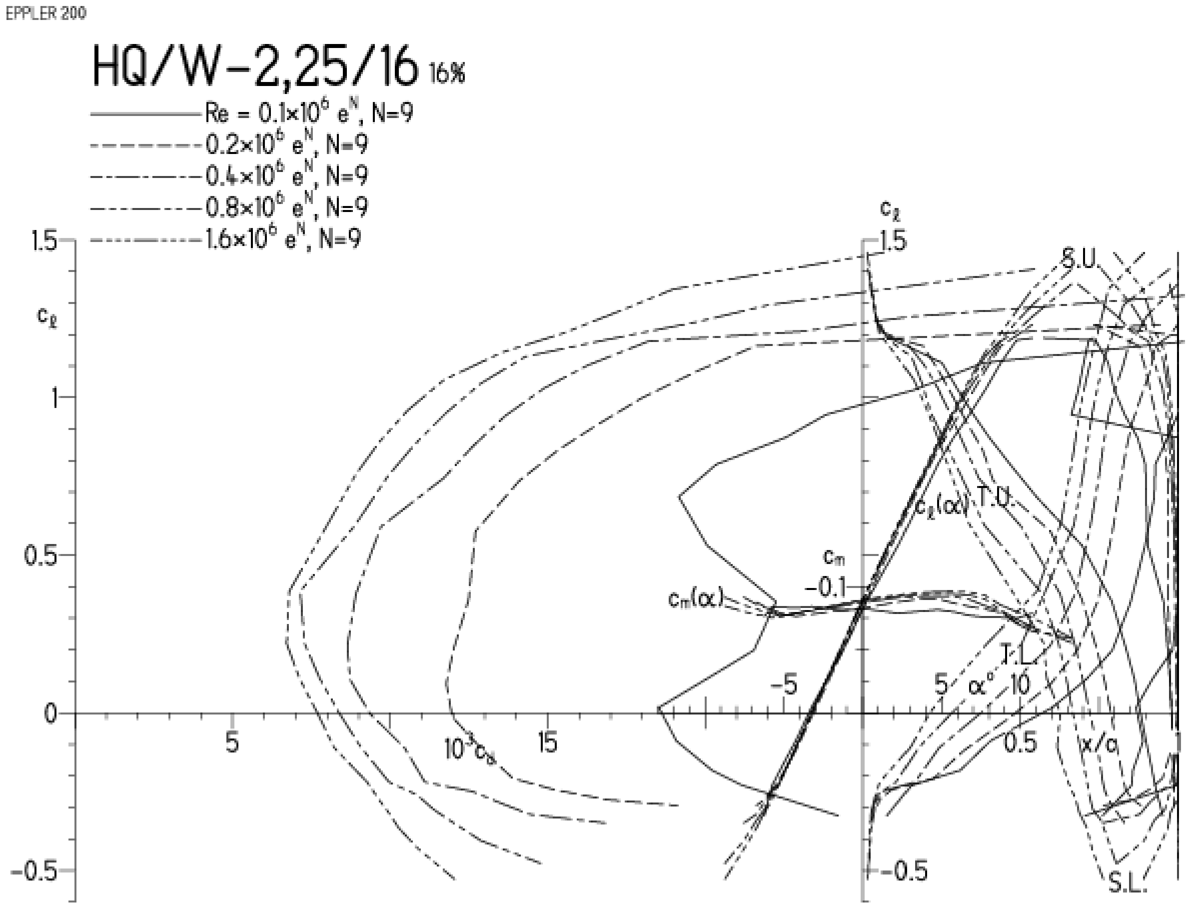


EPPLER 200

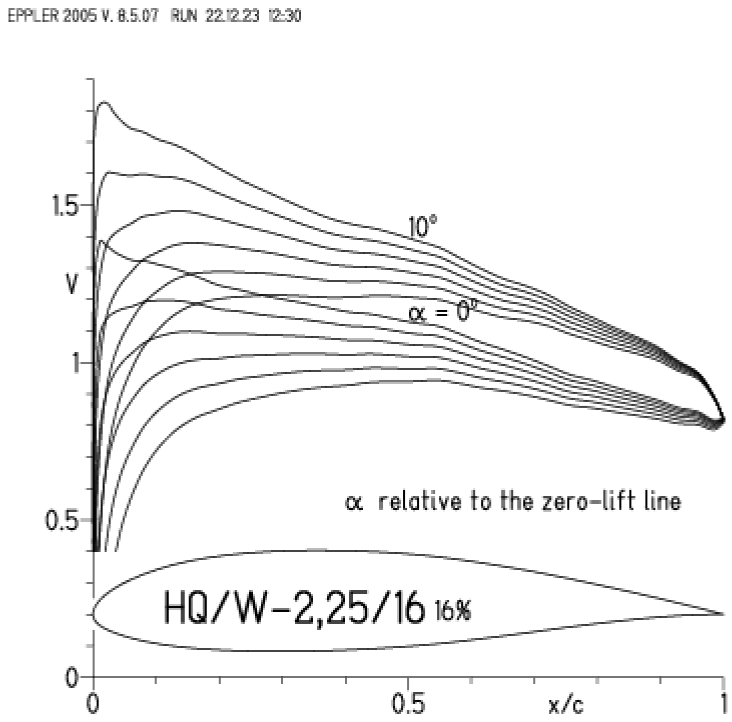


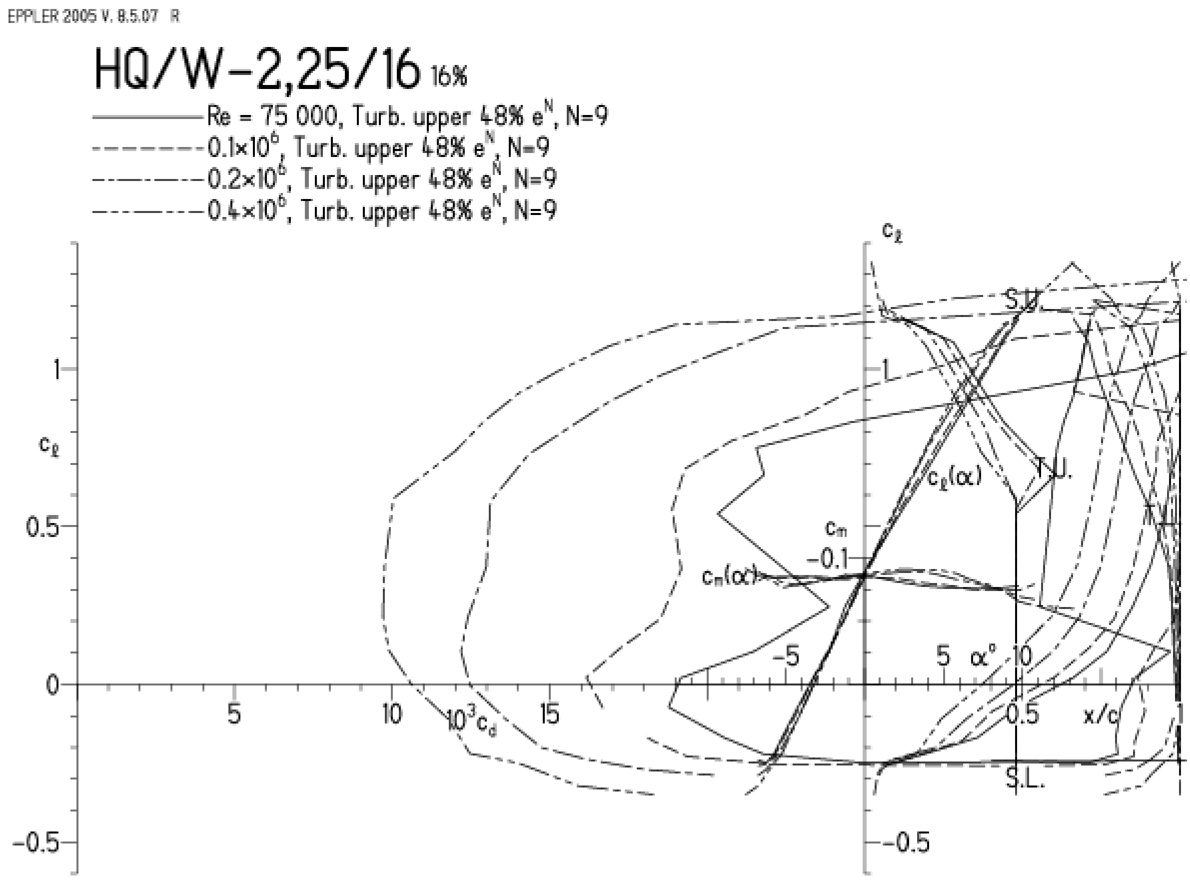
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



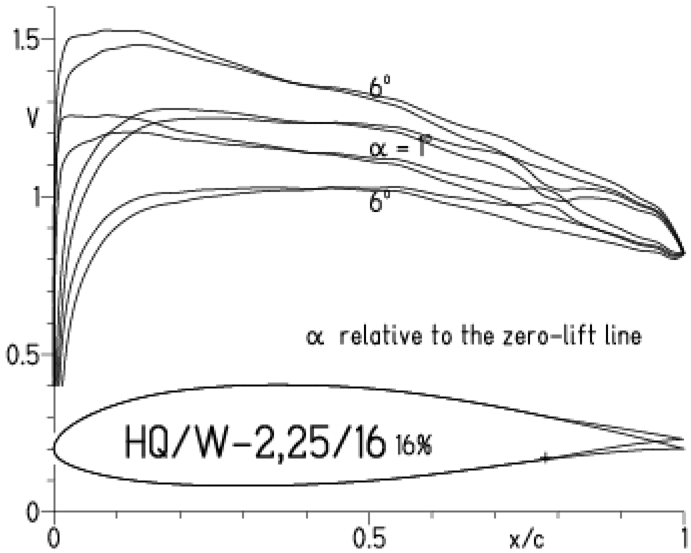


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

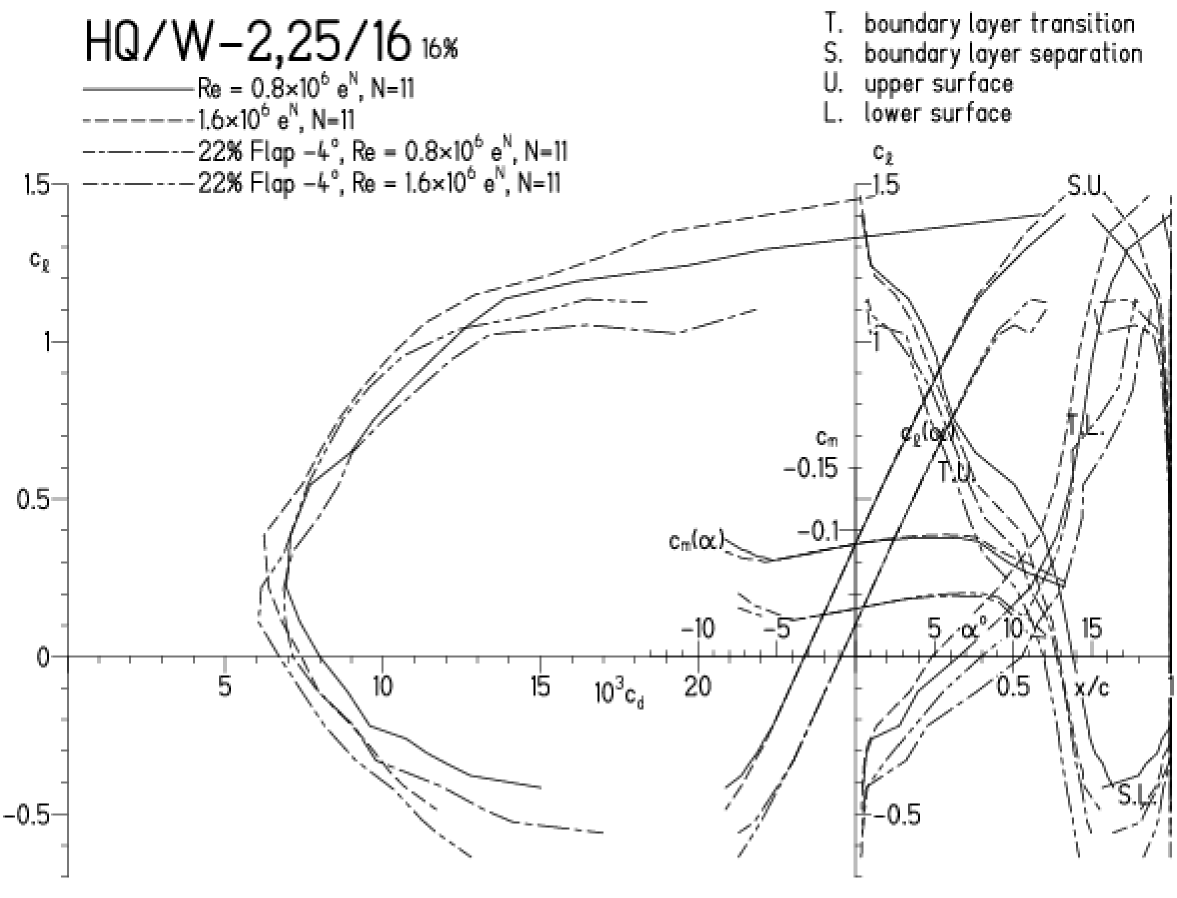
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

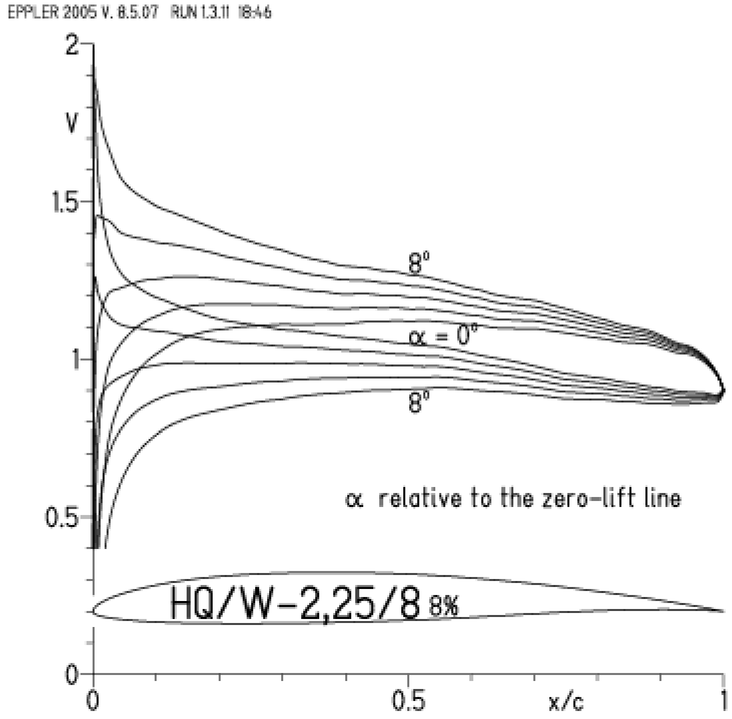
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

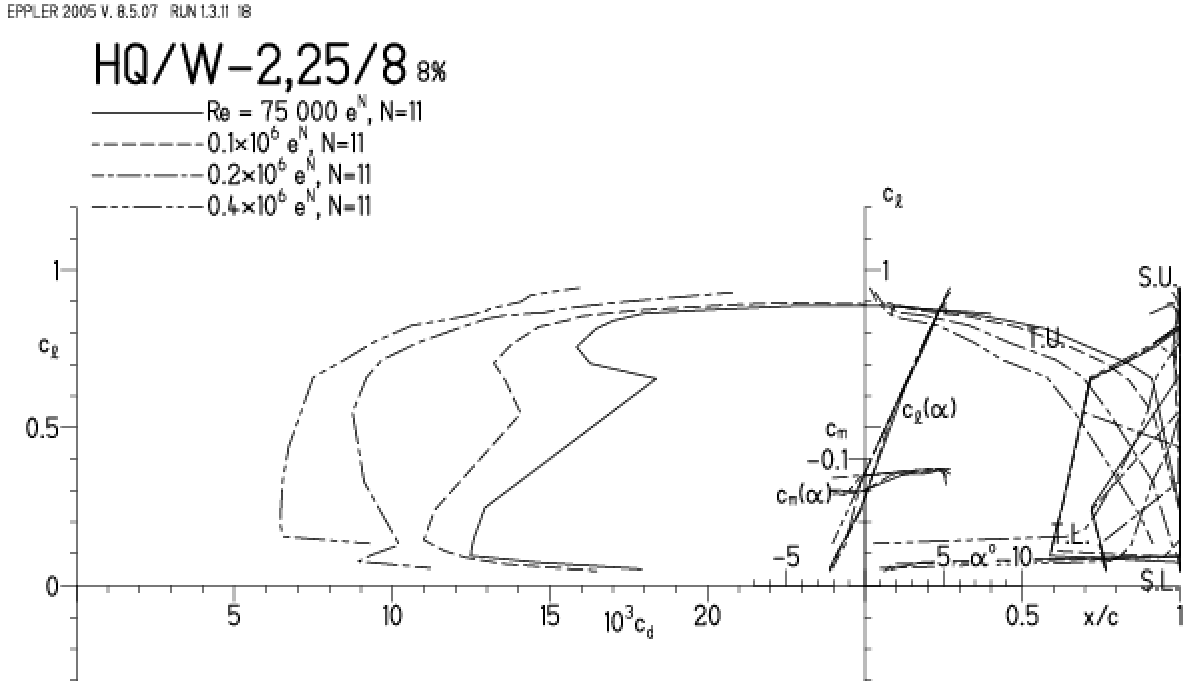


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

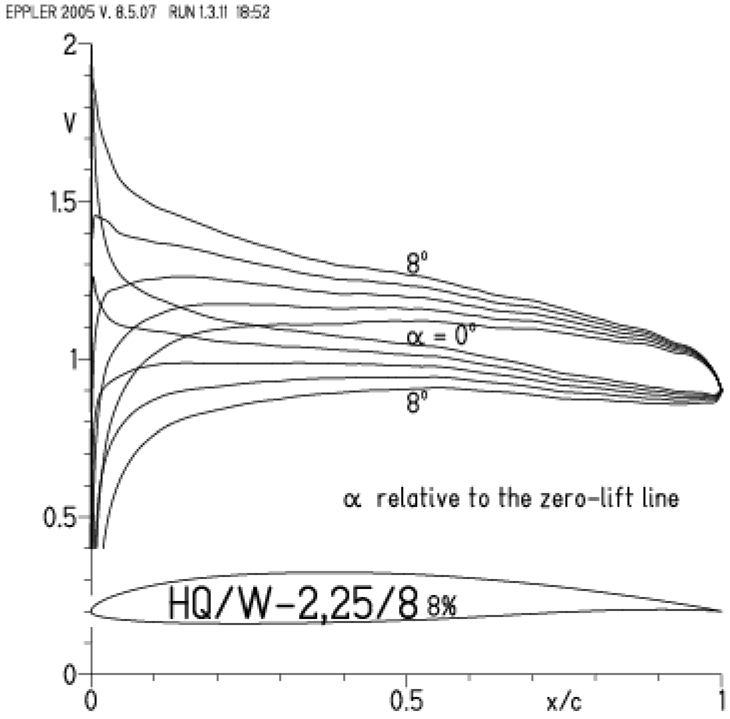


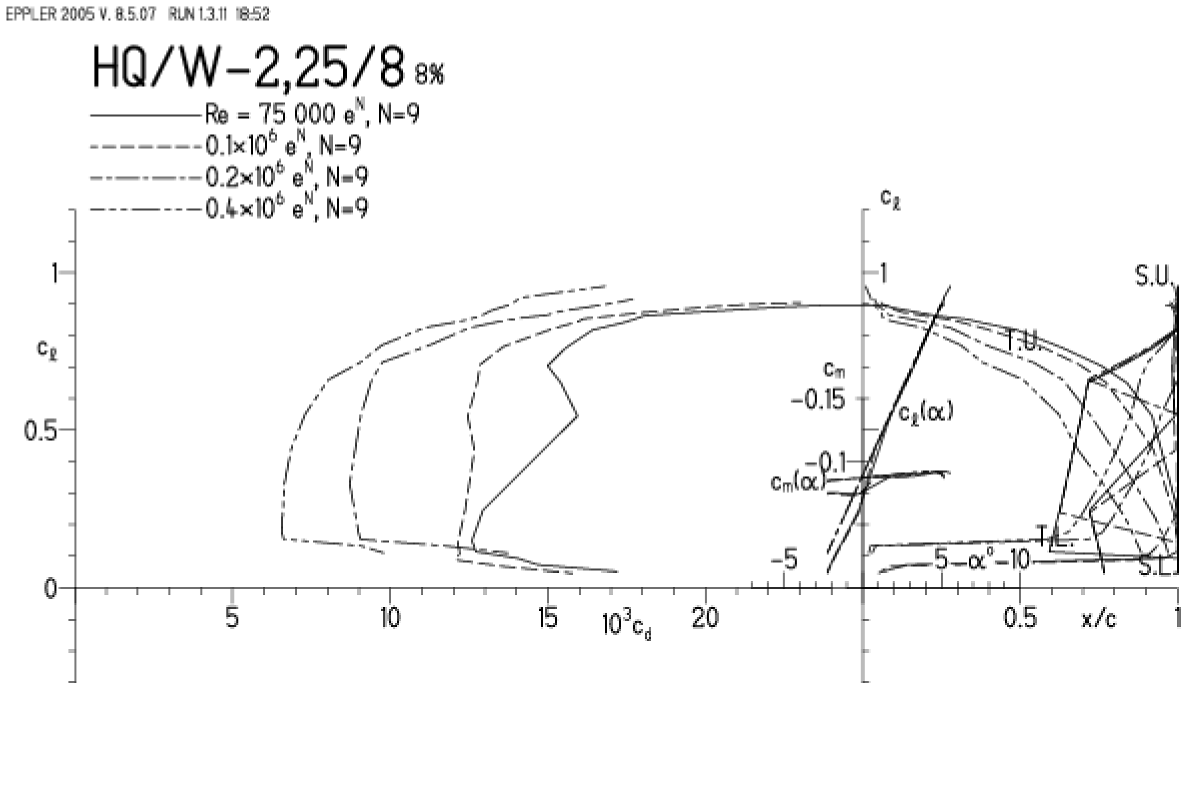
<u>HQ/W-2,25/8</u>, N=11



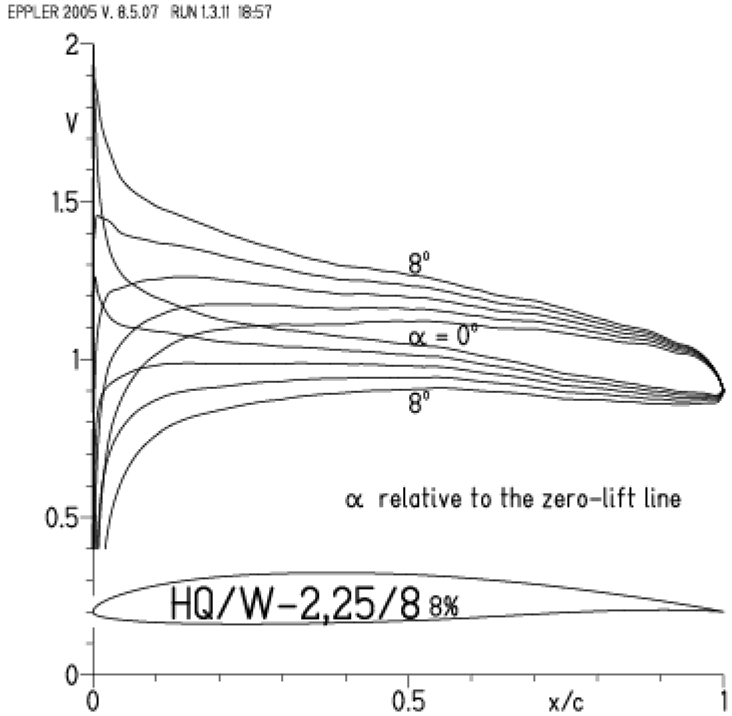


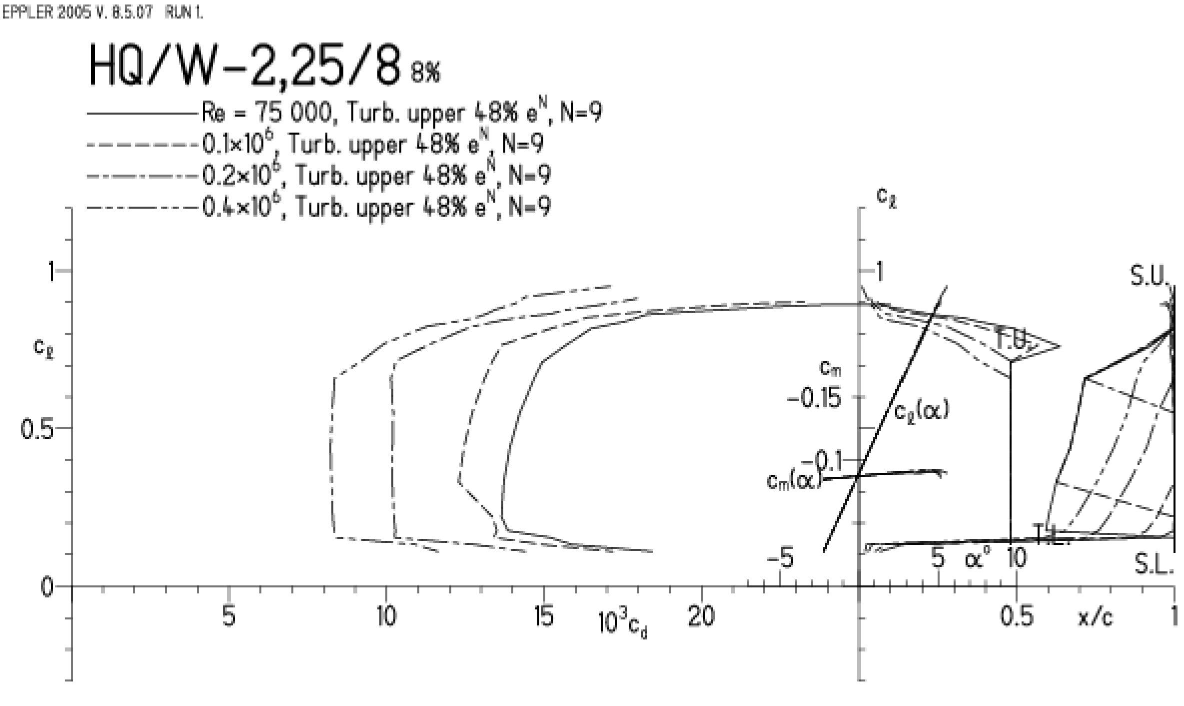
<u>HQ/W-2,25/8</u>, N=9



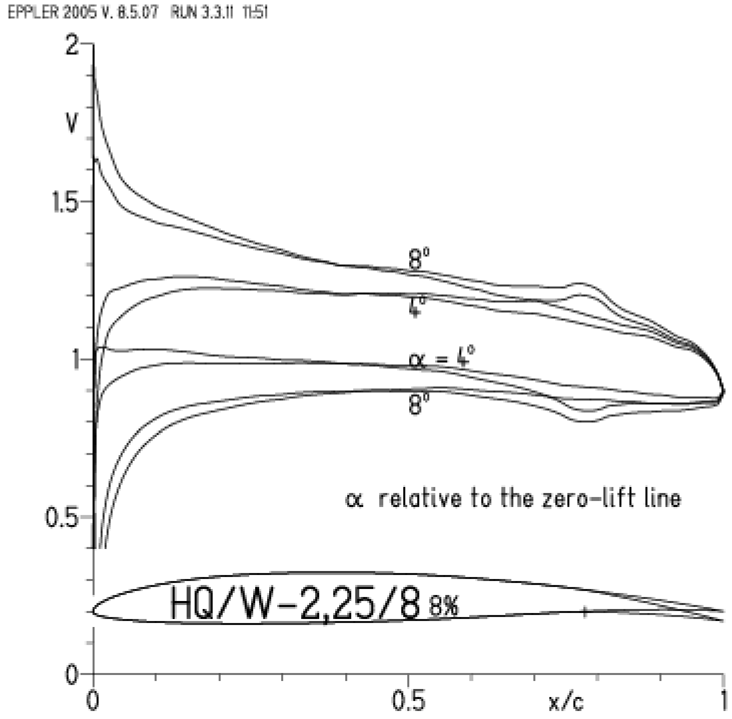


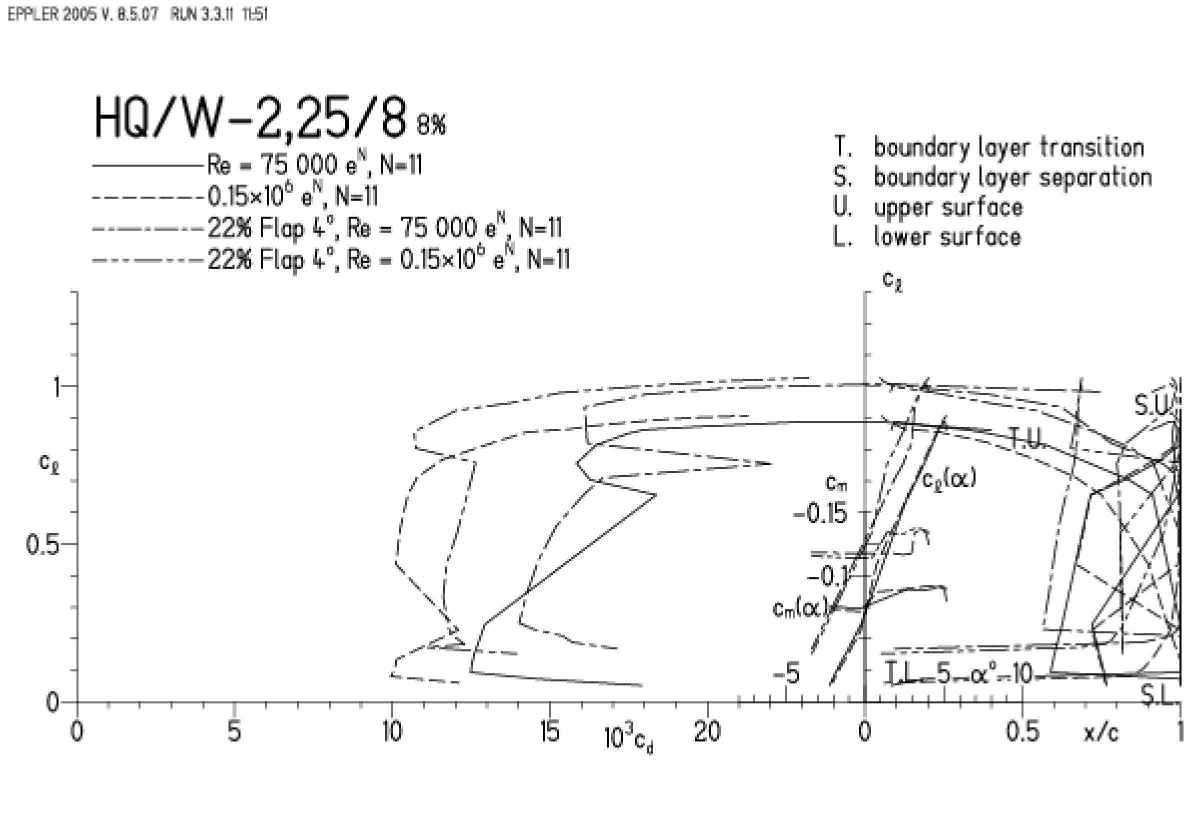
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



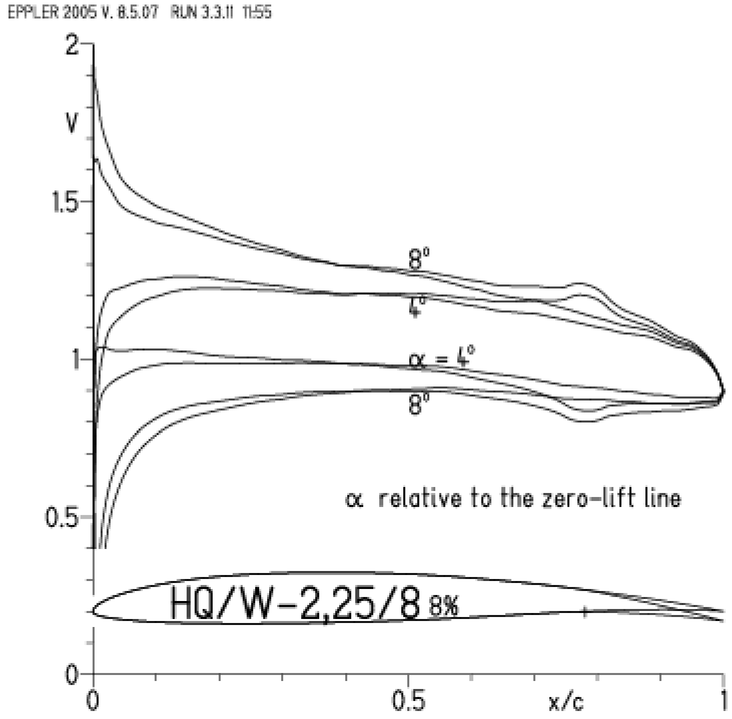


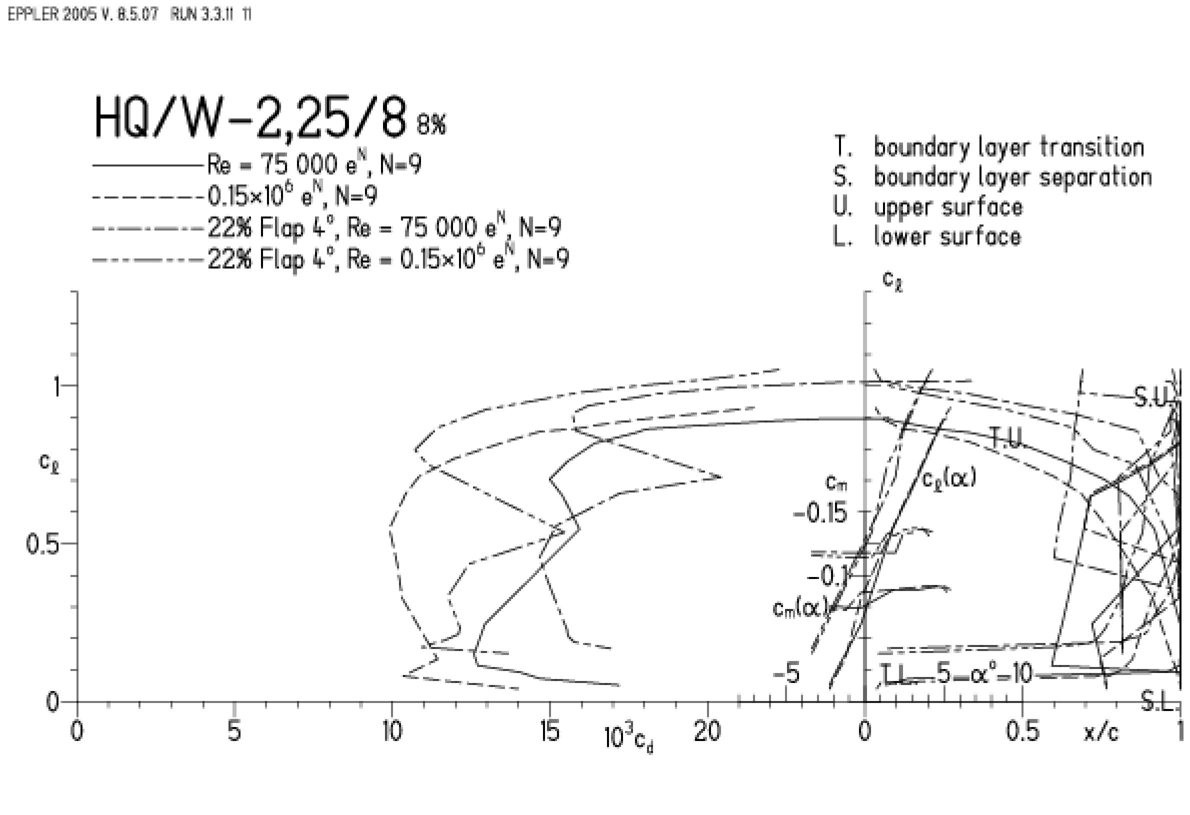
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



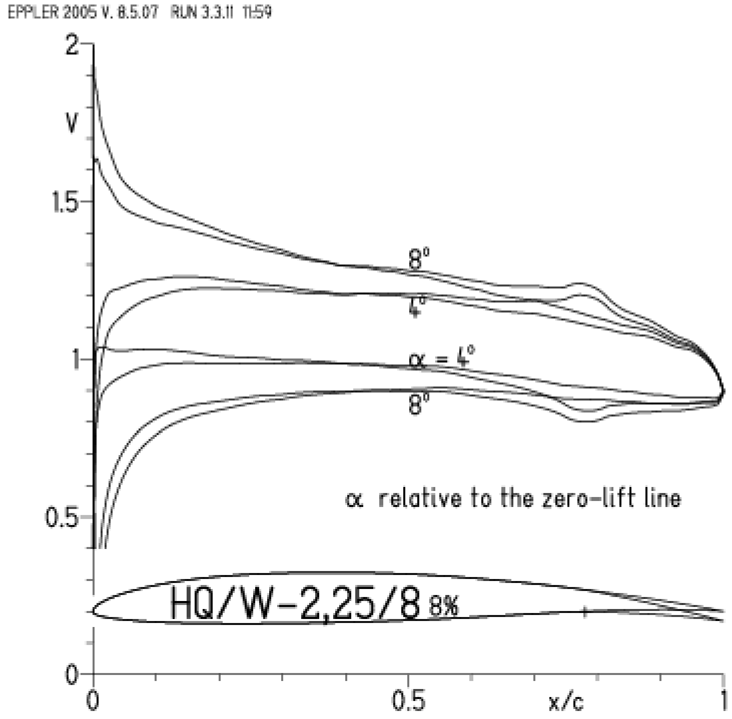


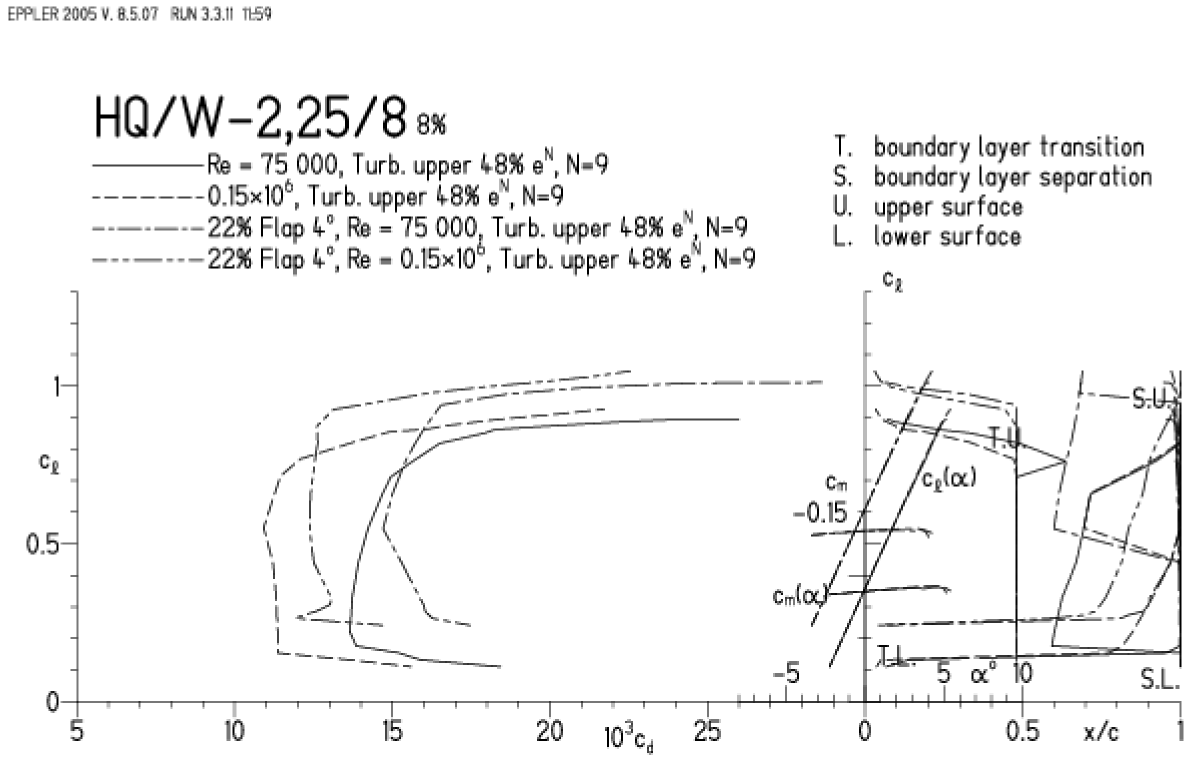
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





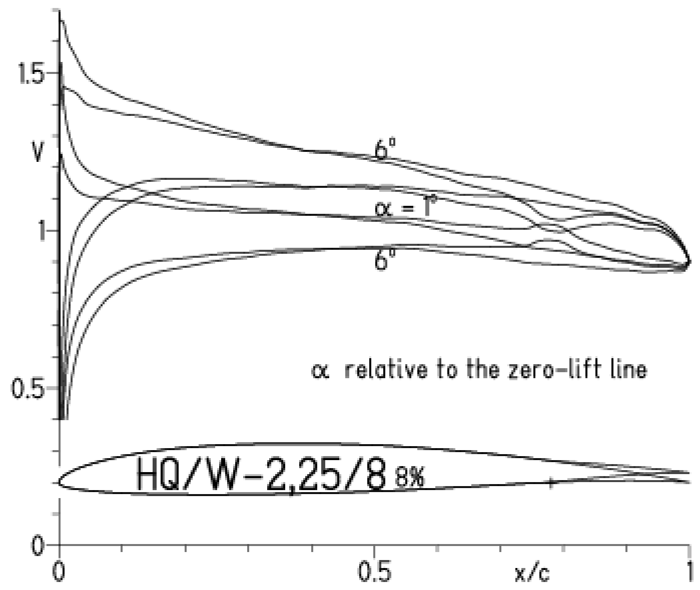
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



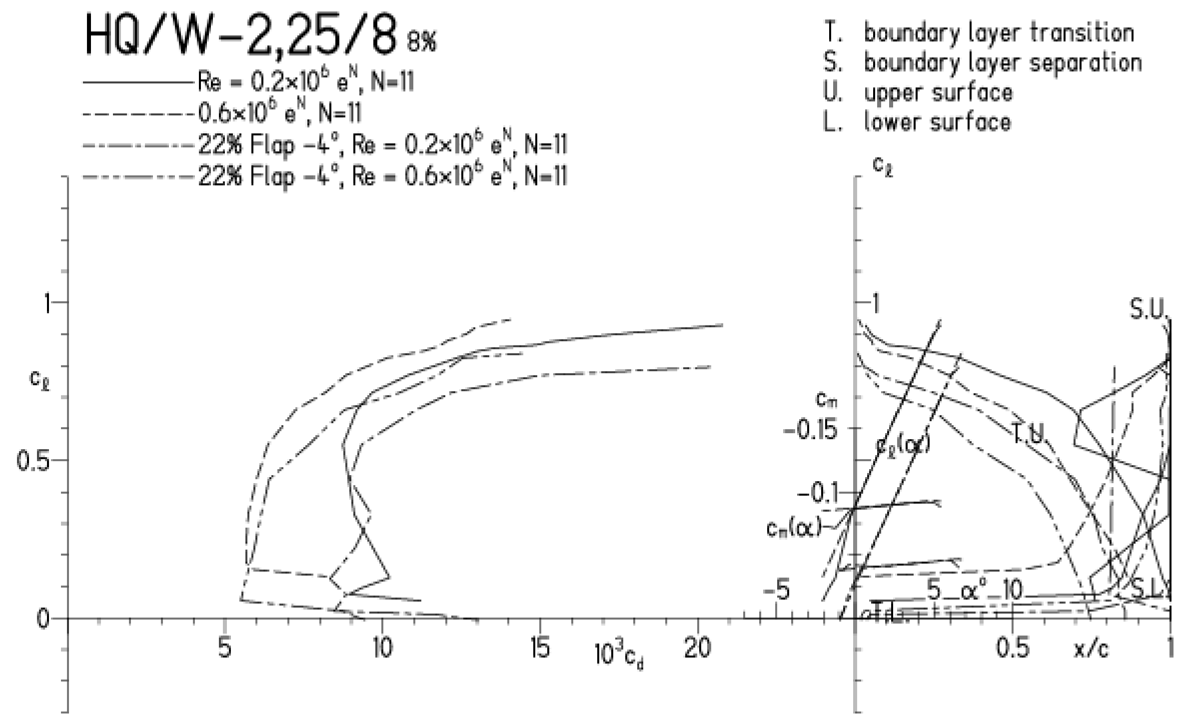


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

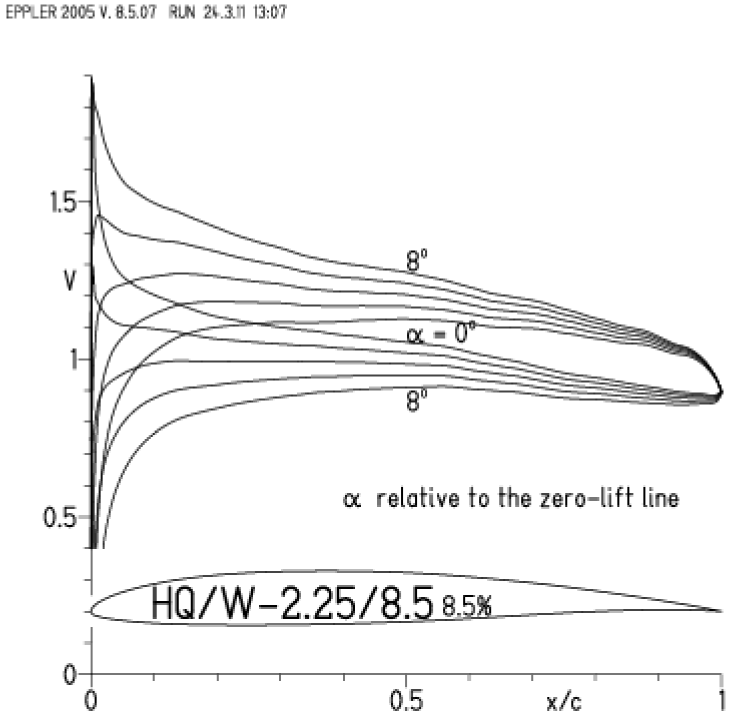
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

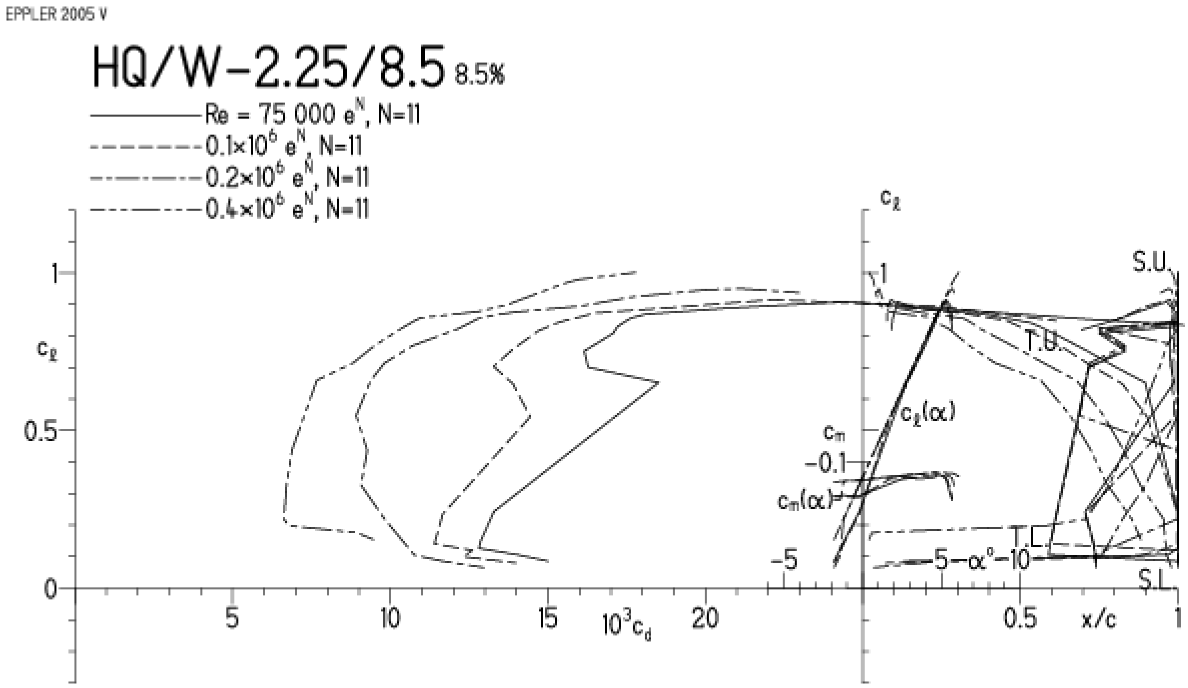


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

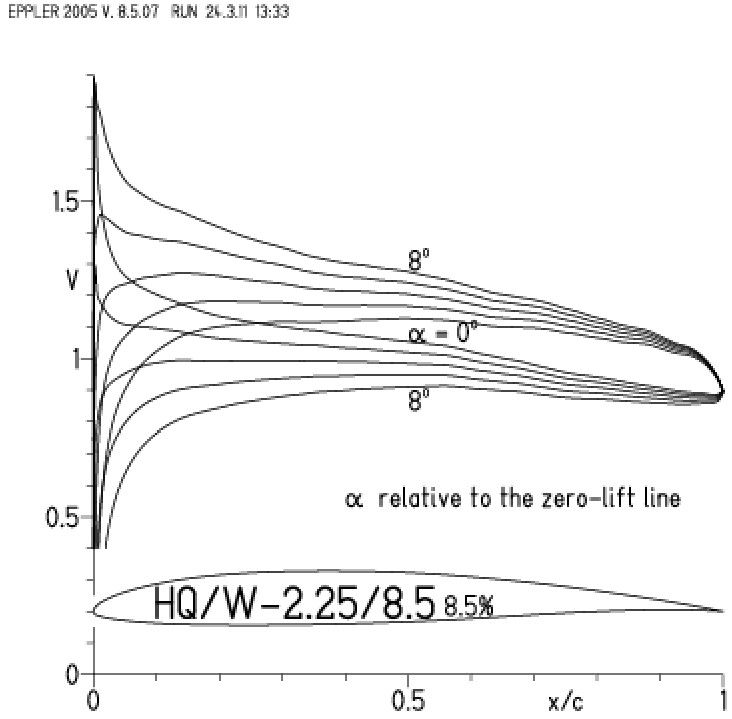


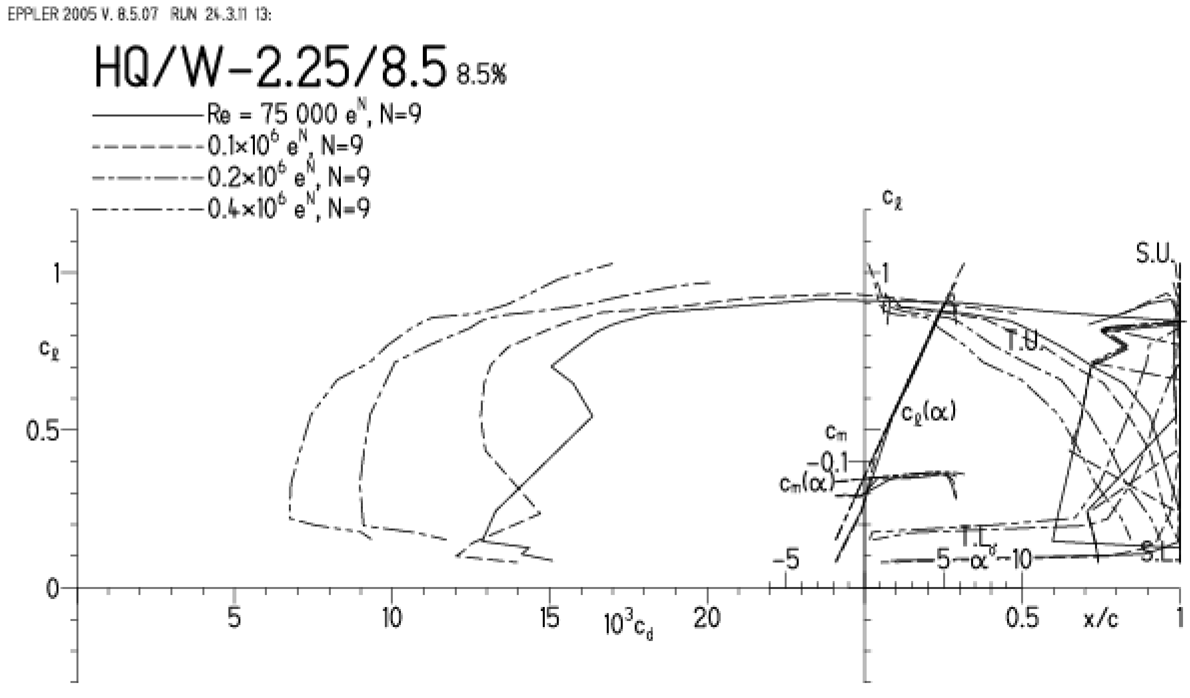
HQ/W-2,25/8,5, N=11



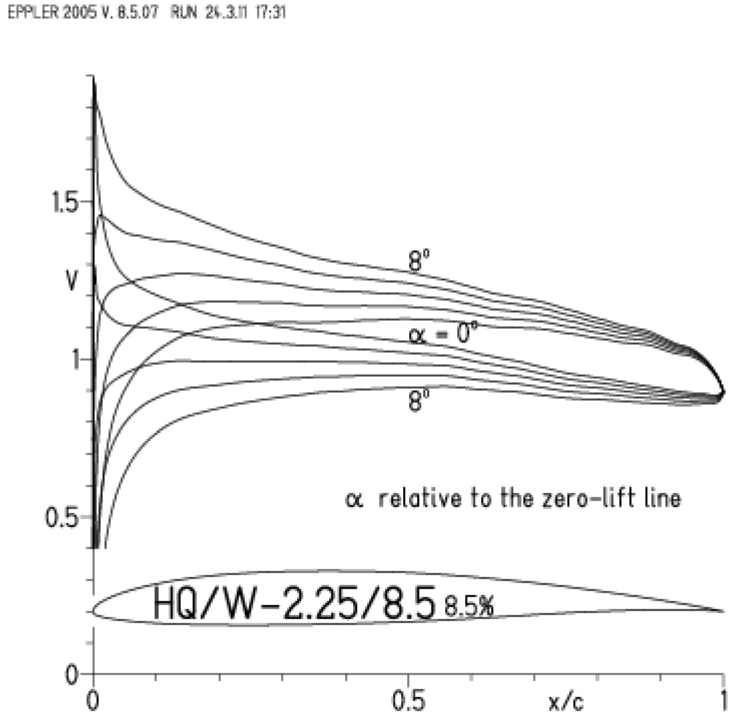


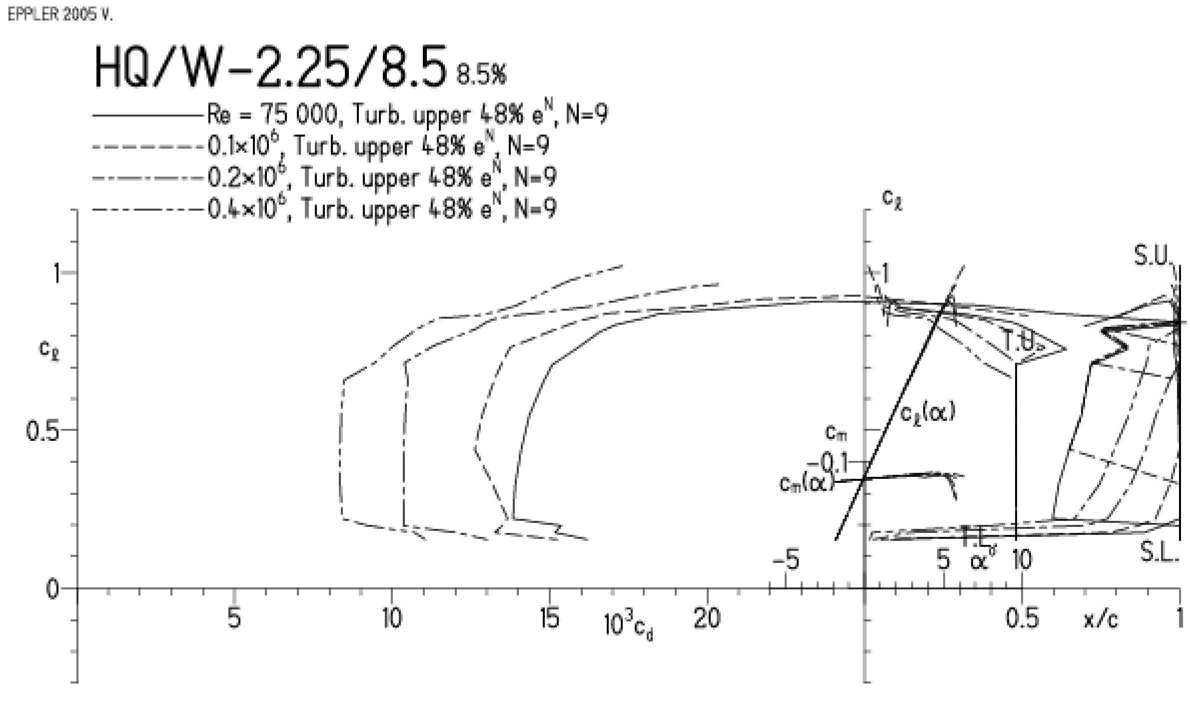
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.1
c_m(α)
c_ℓ(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

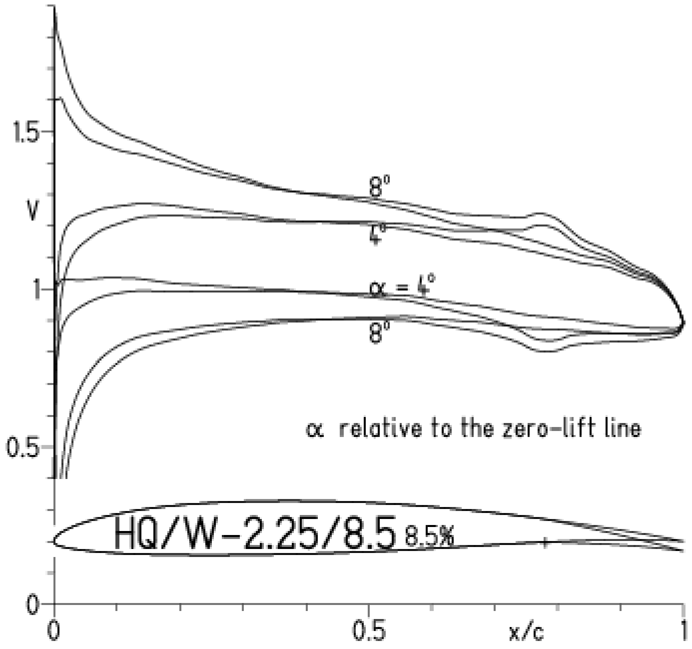
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



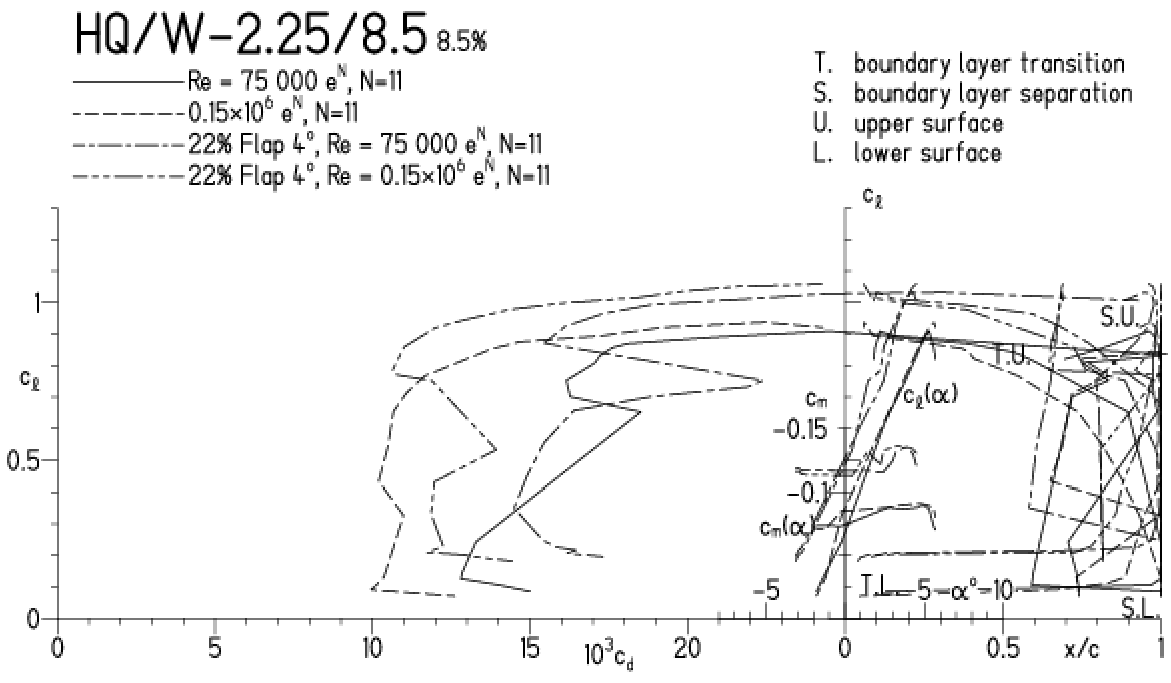


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

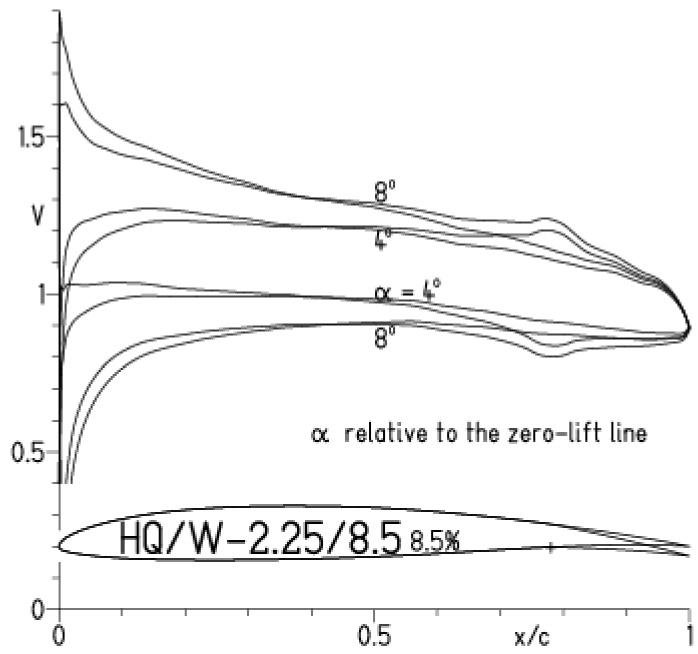


EPPLER 2005 V. 8.5.

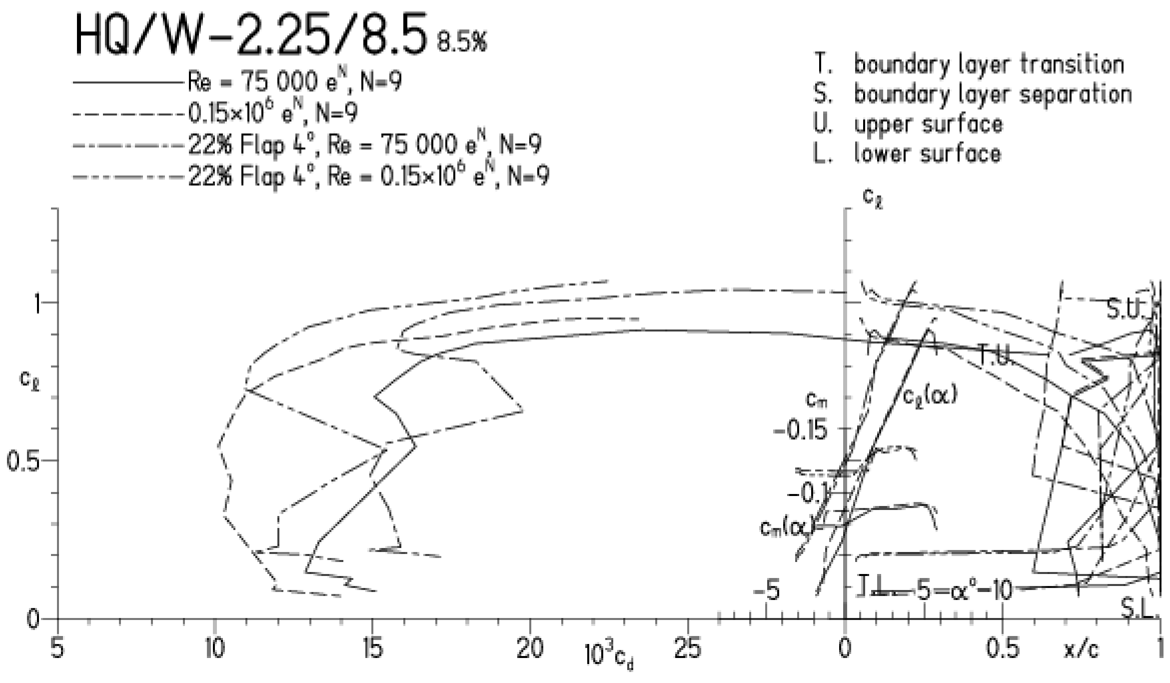


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

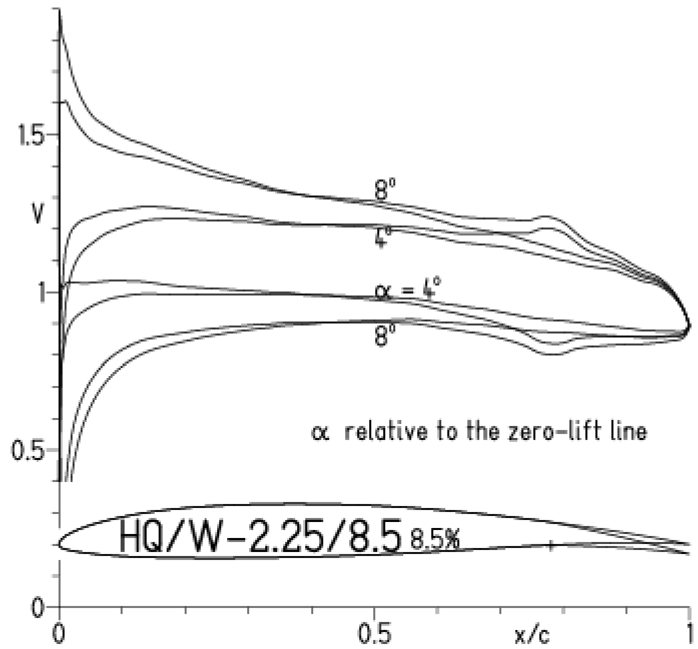


EPPLER 2005 V.

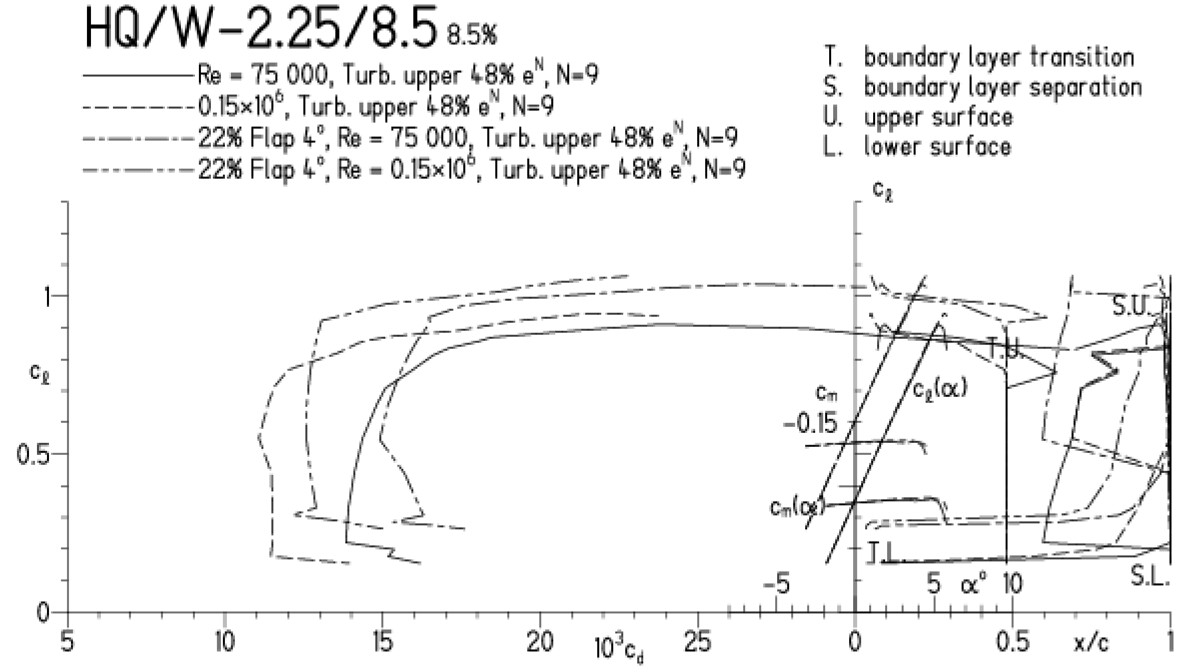


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

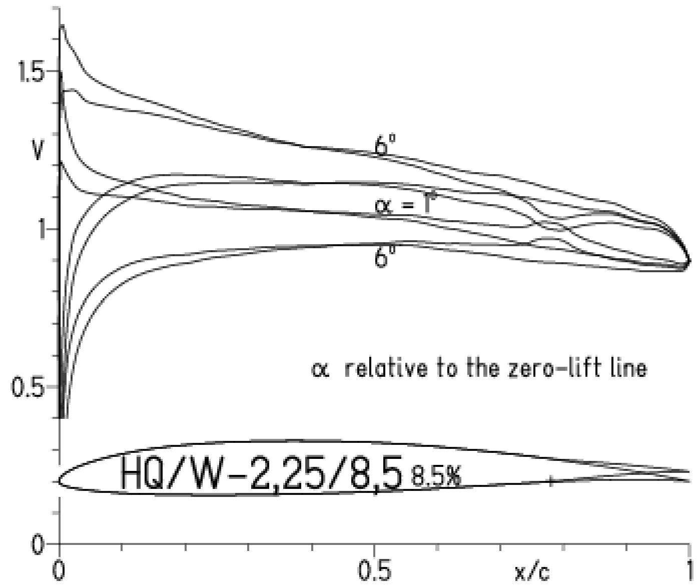


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

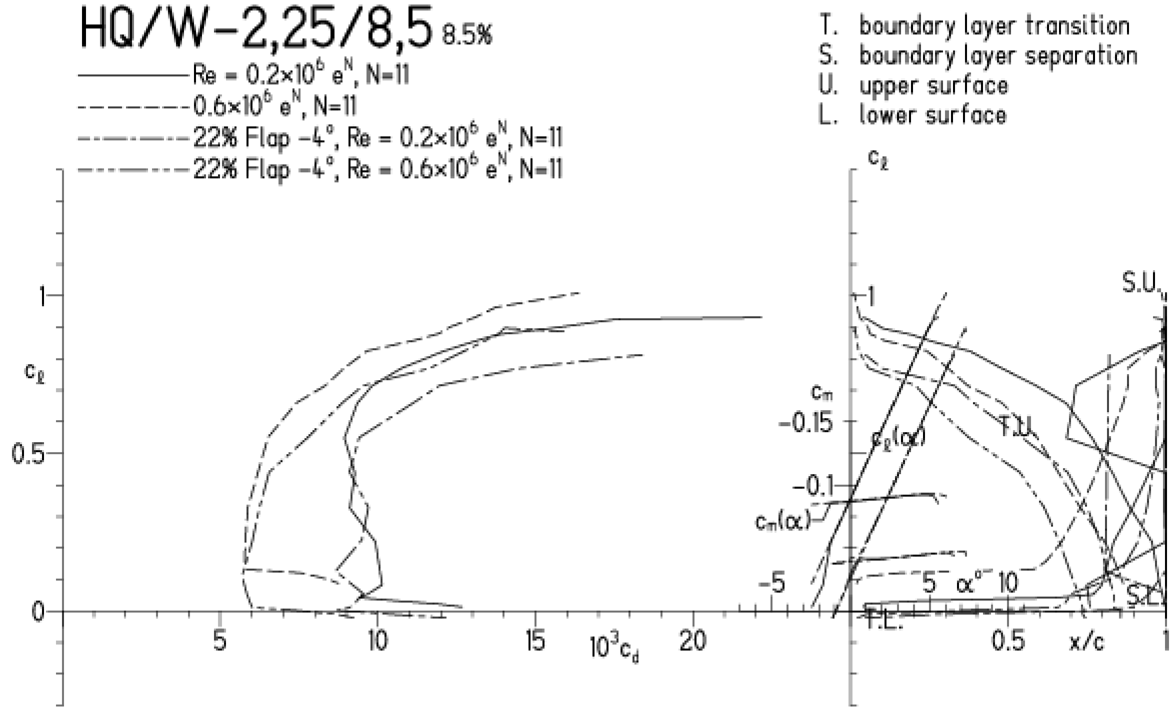


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

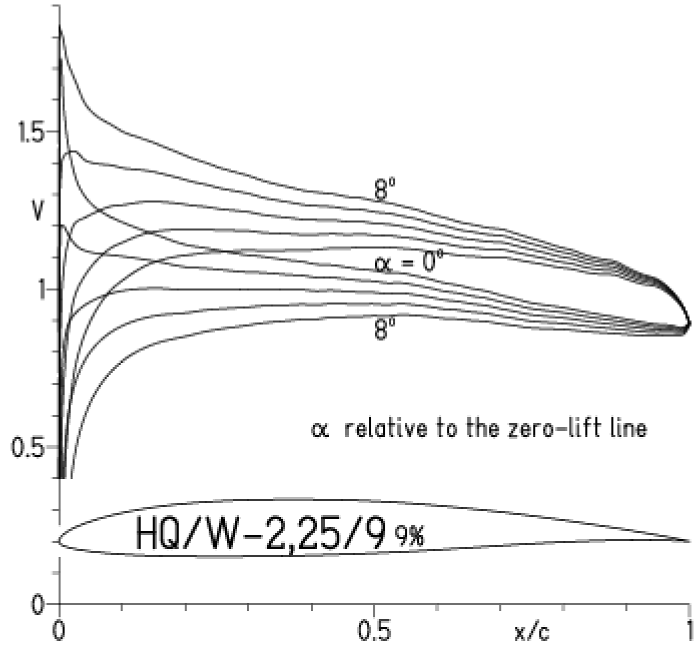


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

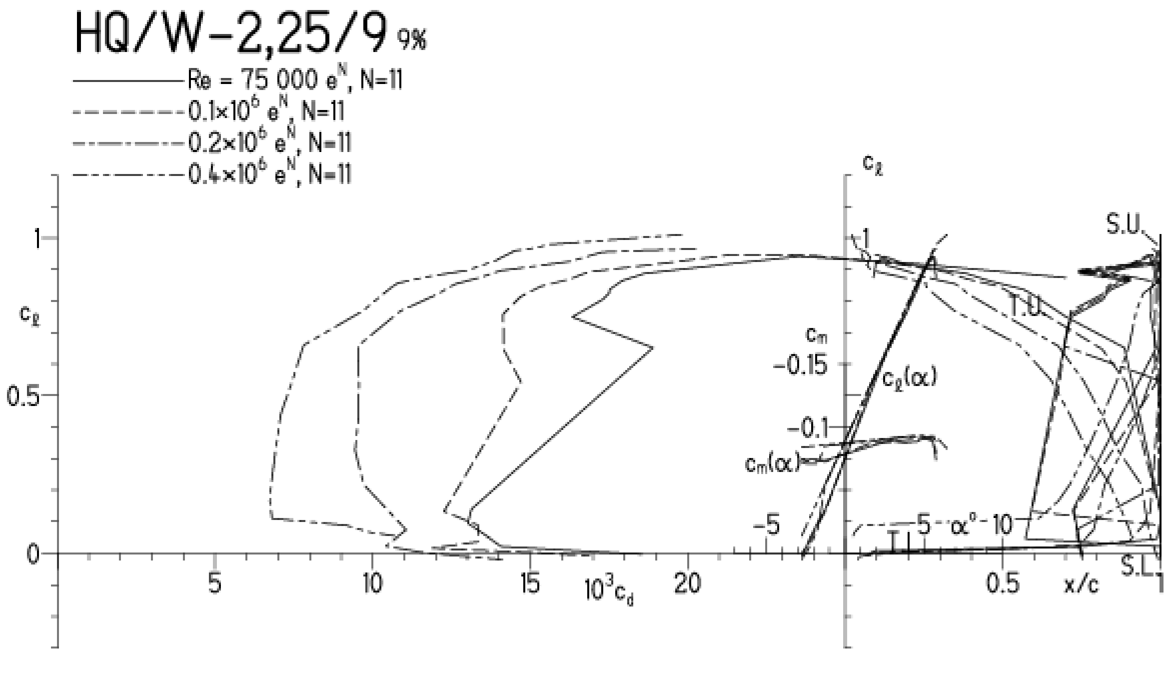


<u>HQ/W-2,25/9</u>, N=11

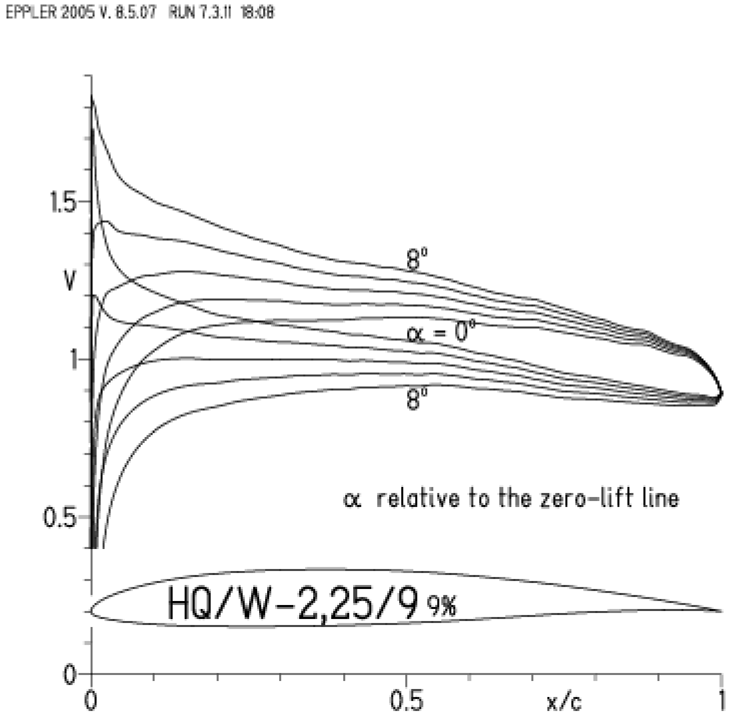
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

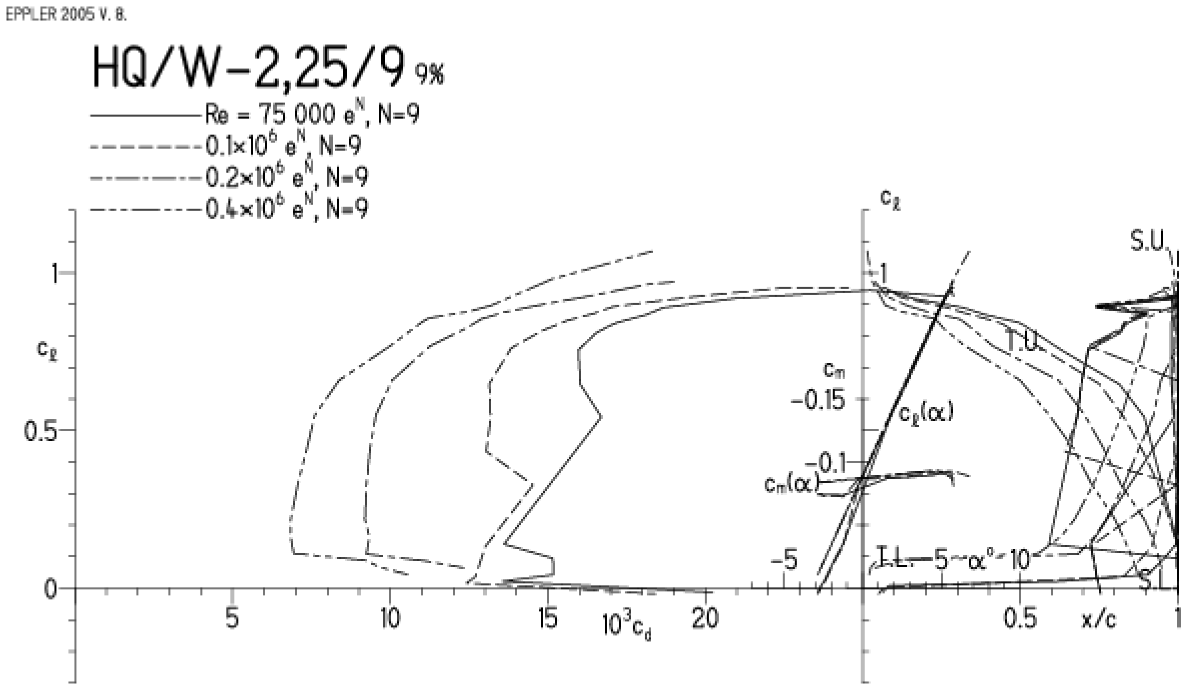


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

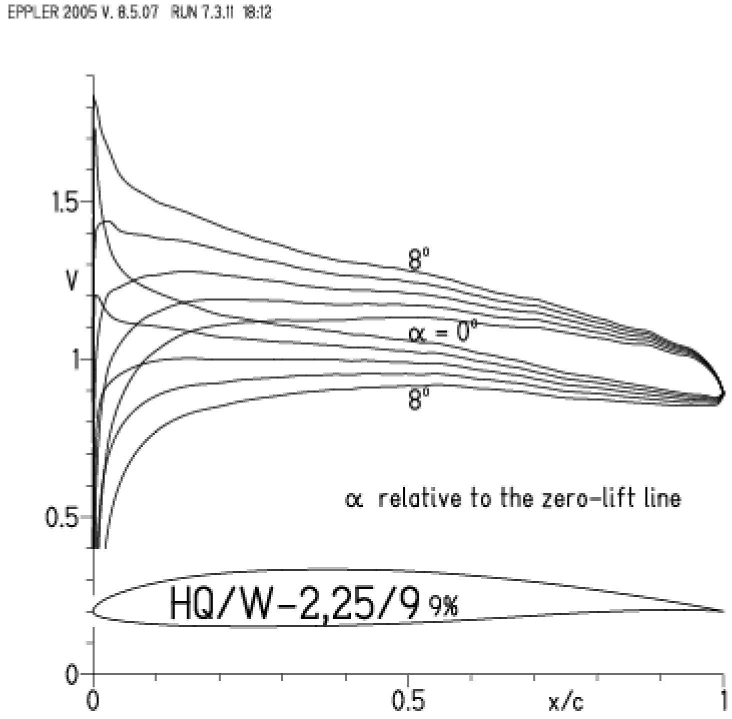


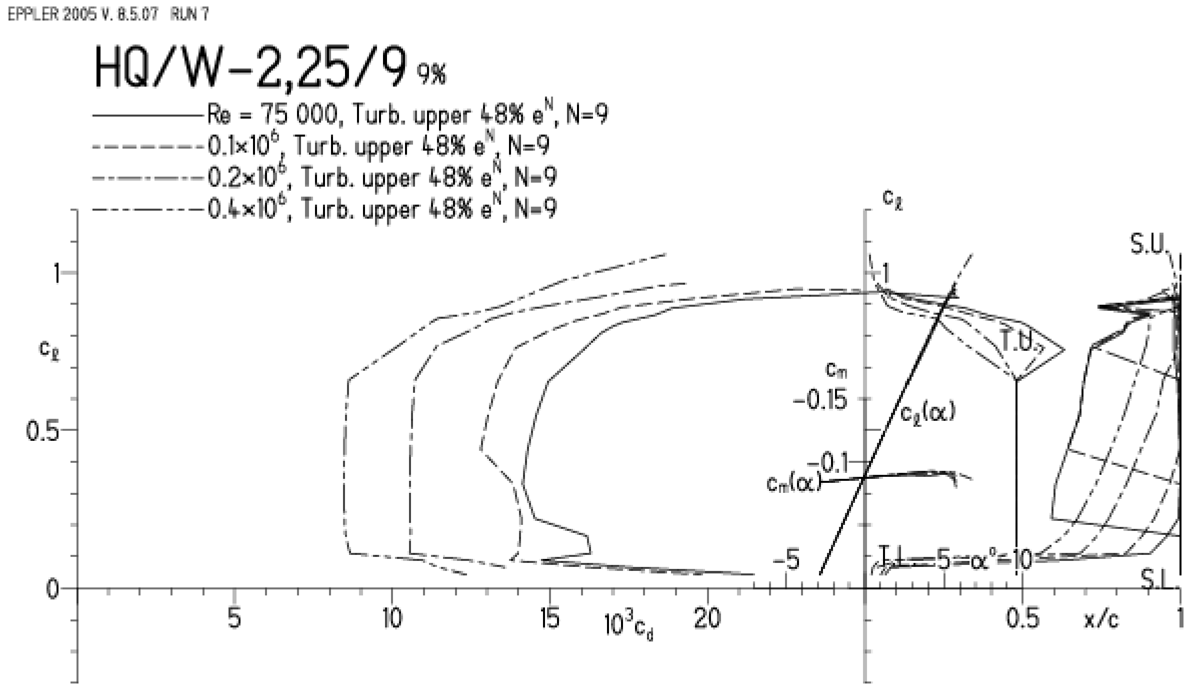
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

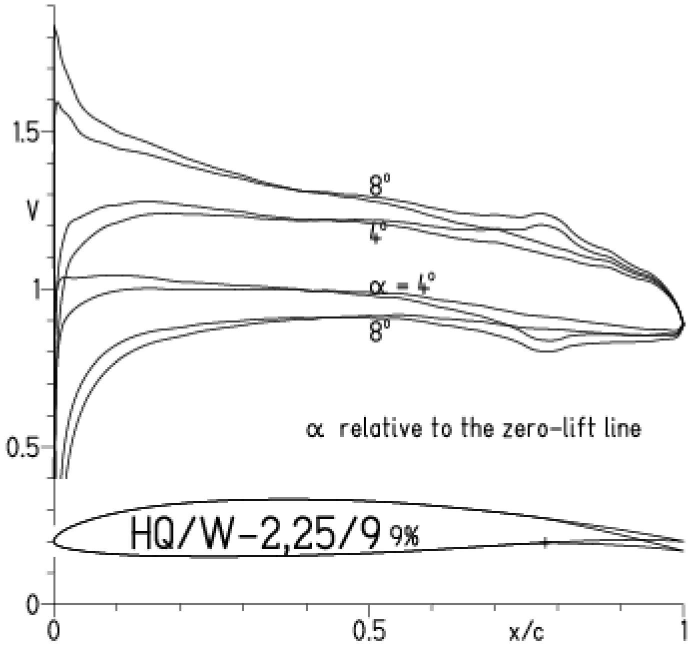
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



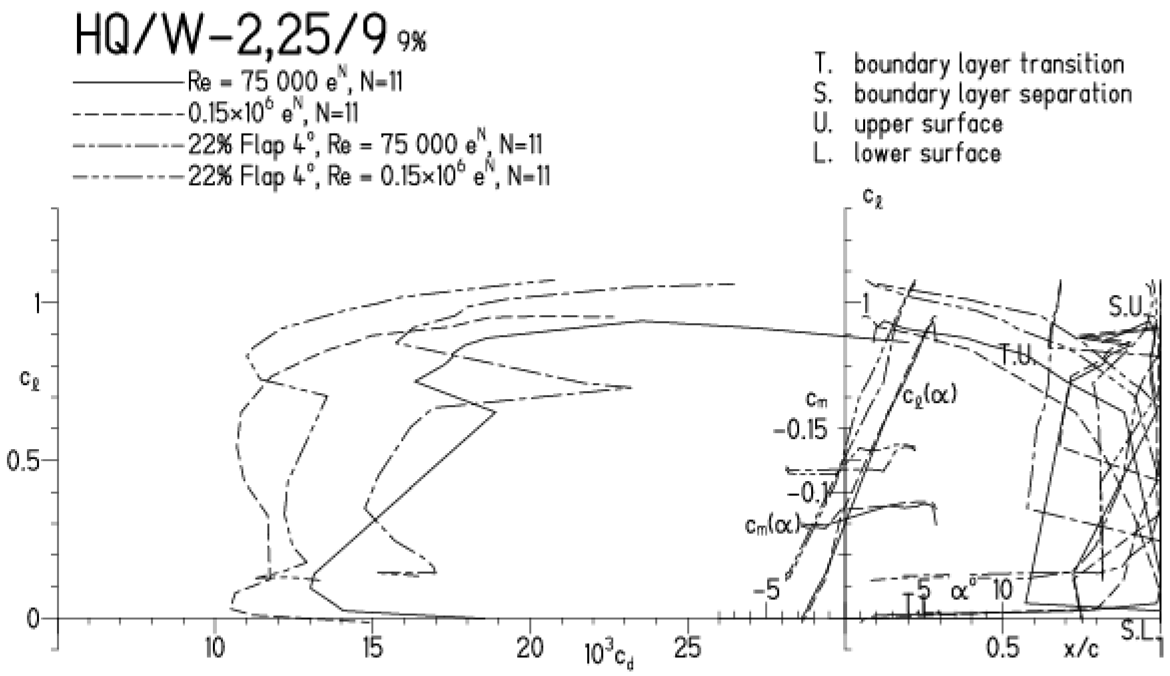


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

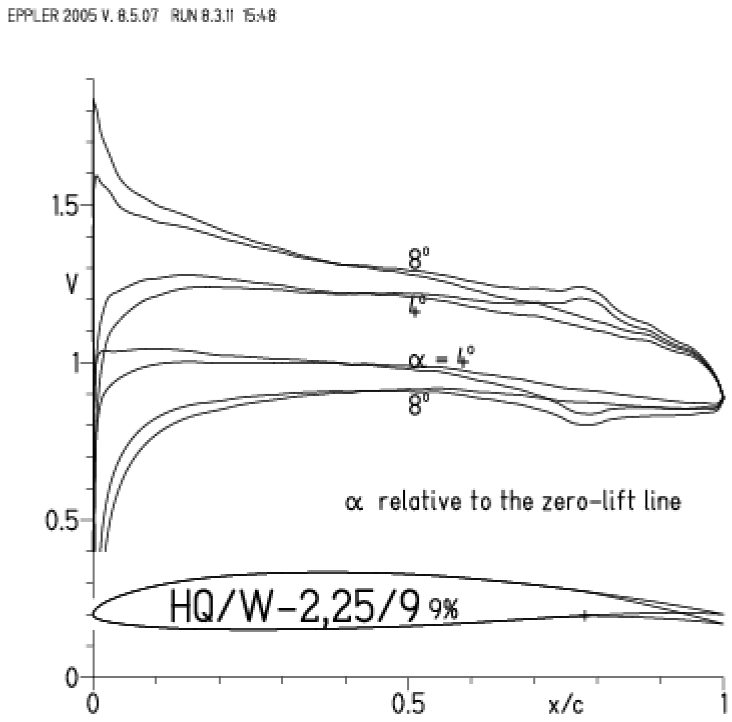
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

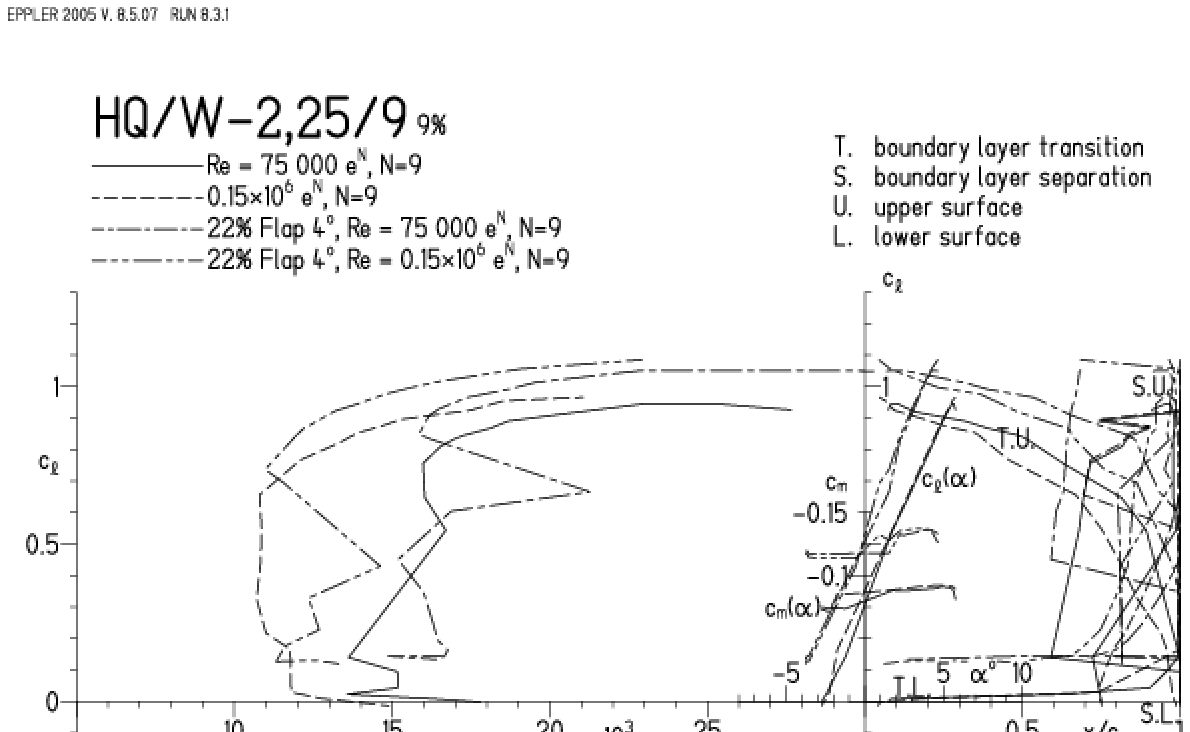


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



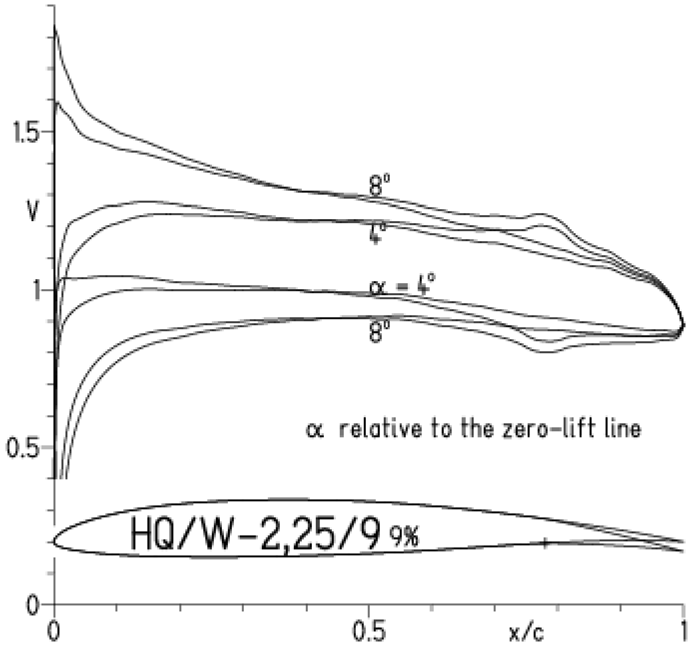
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



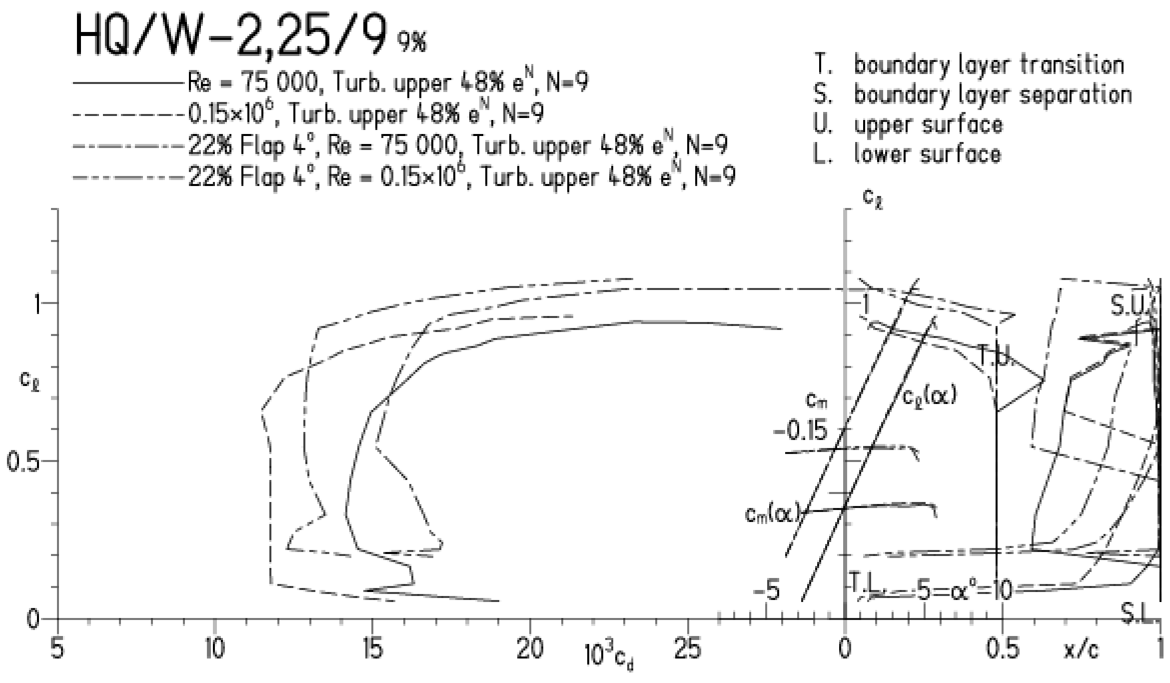


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

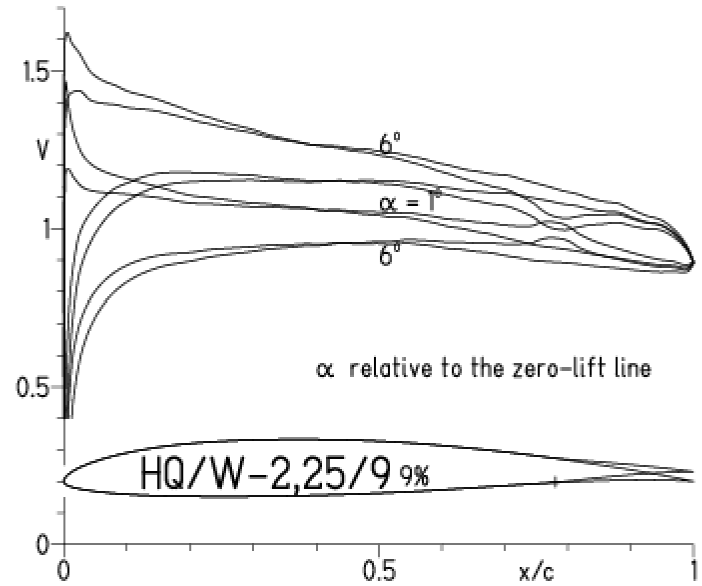


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

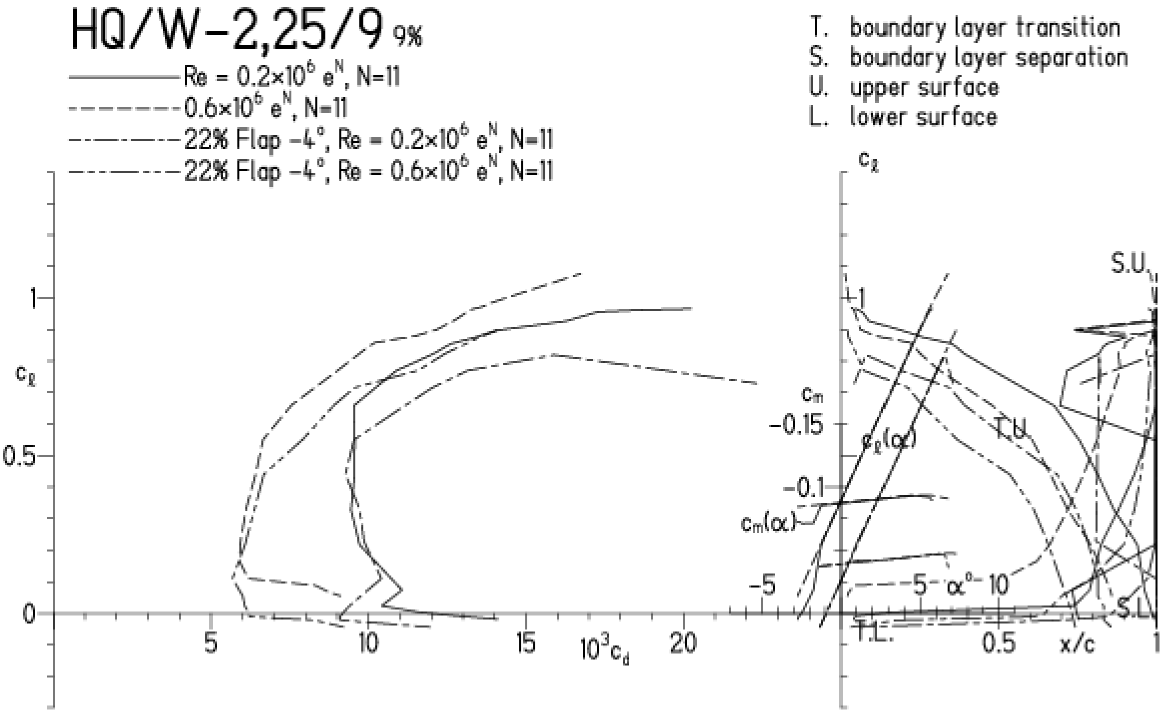


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

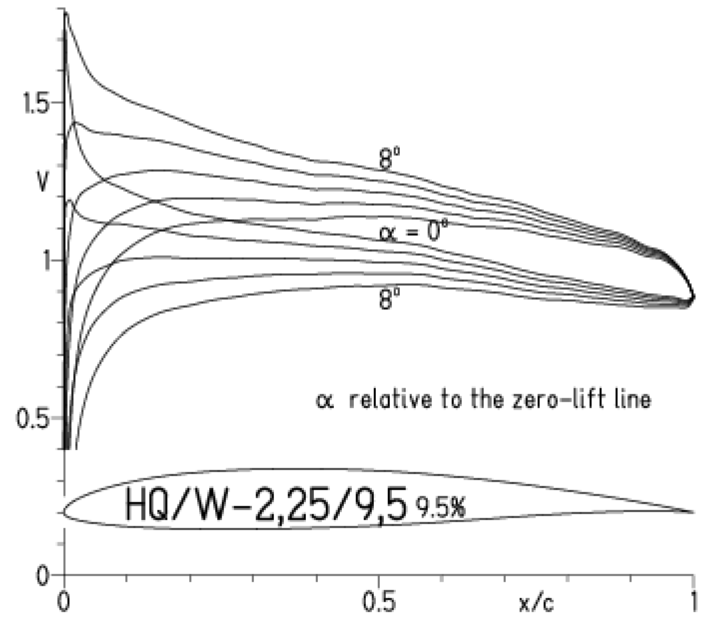


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

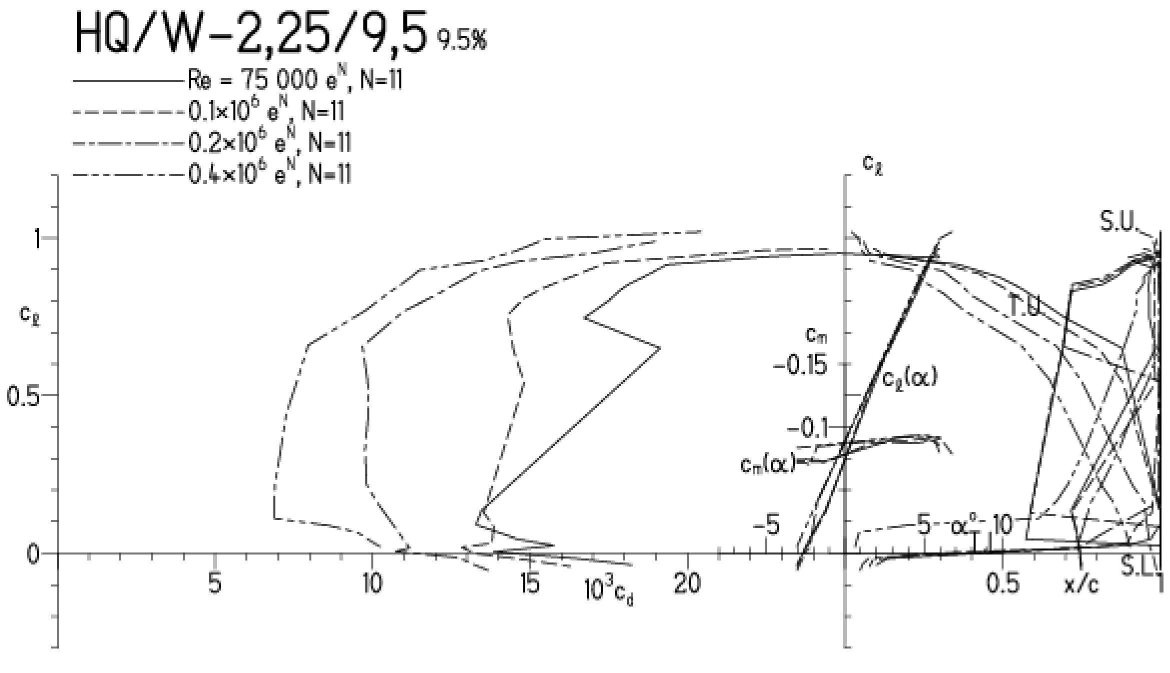


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

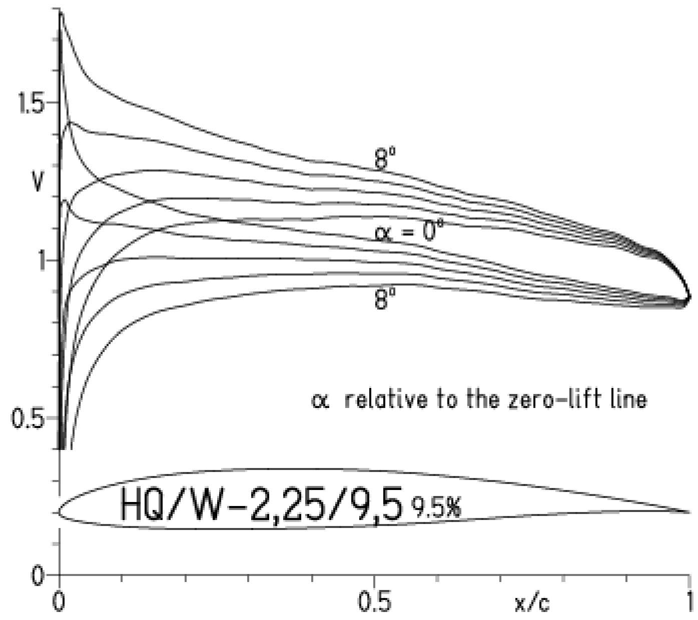


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

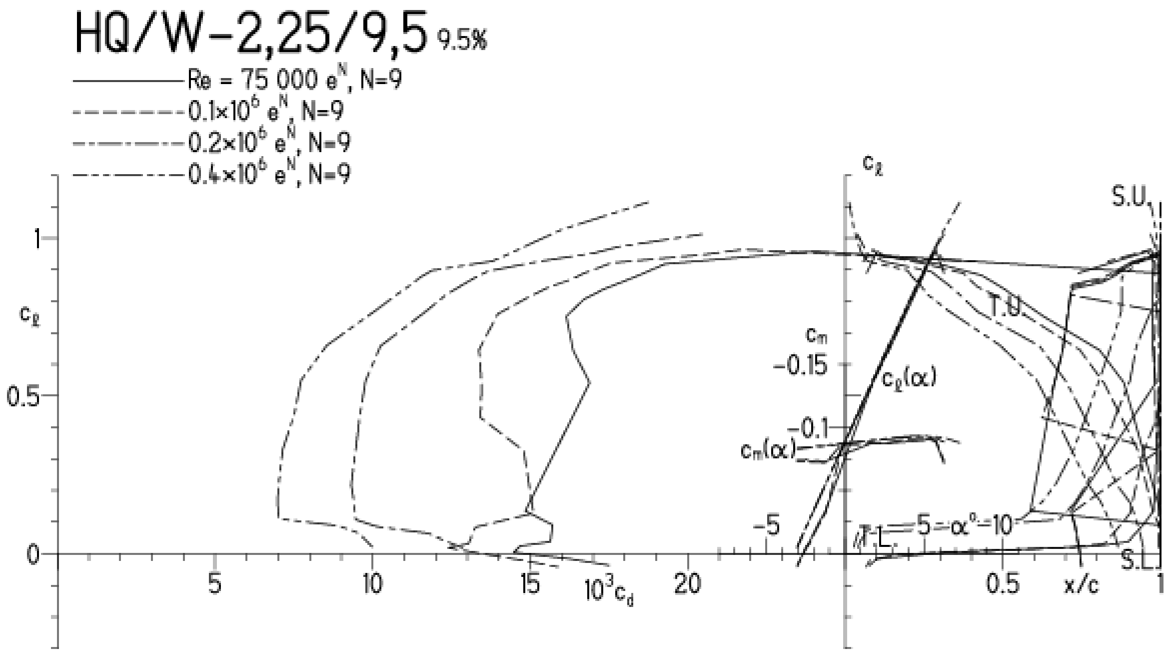


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

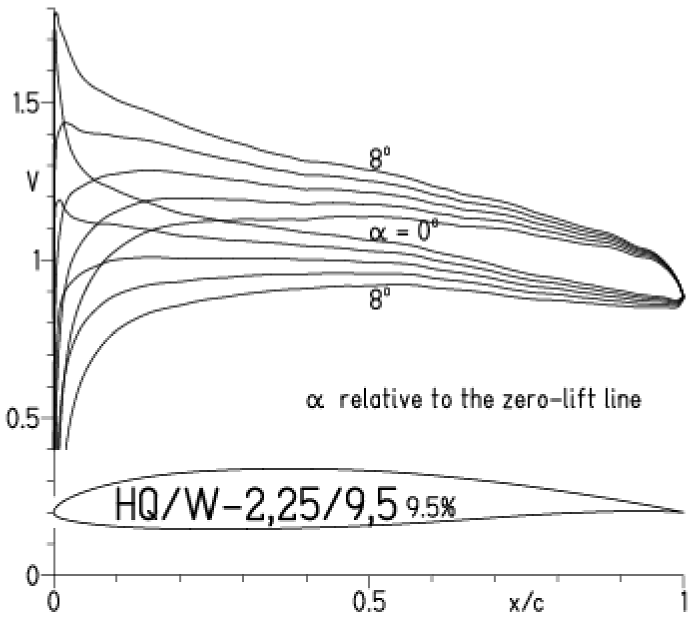


EPPLER 2005 V. 8.5.07 RUN 8.3.

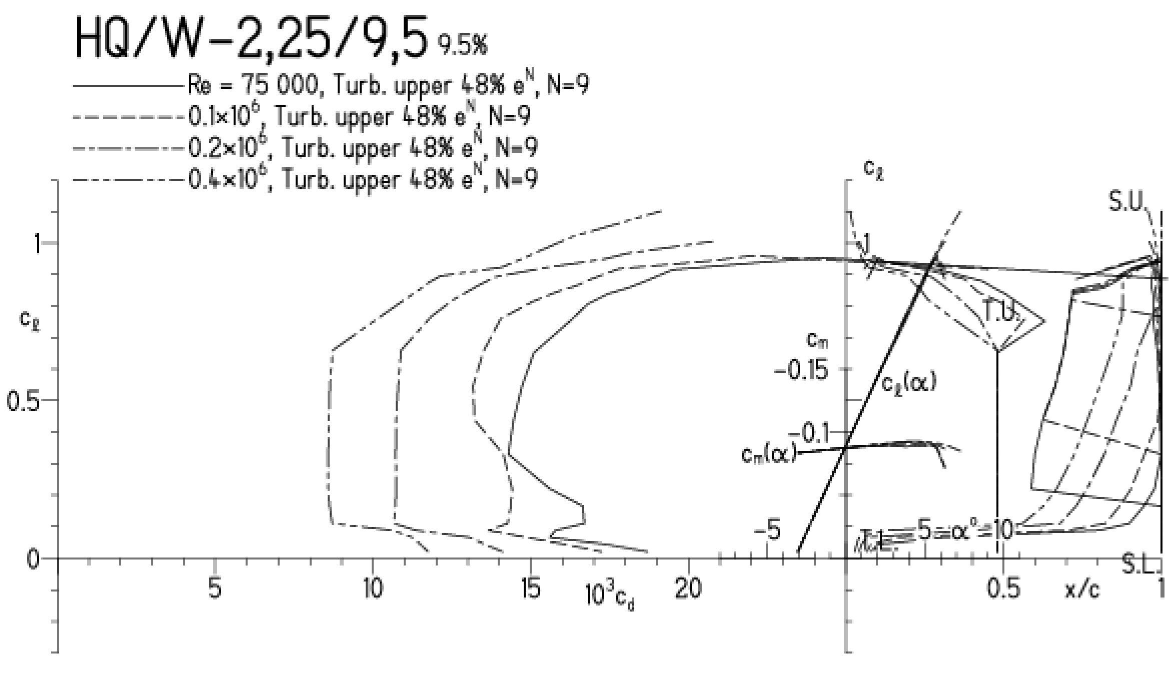


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

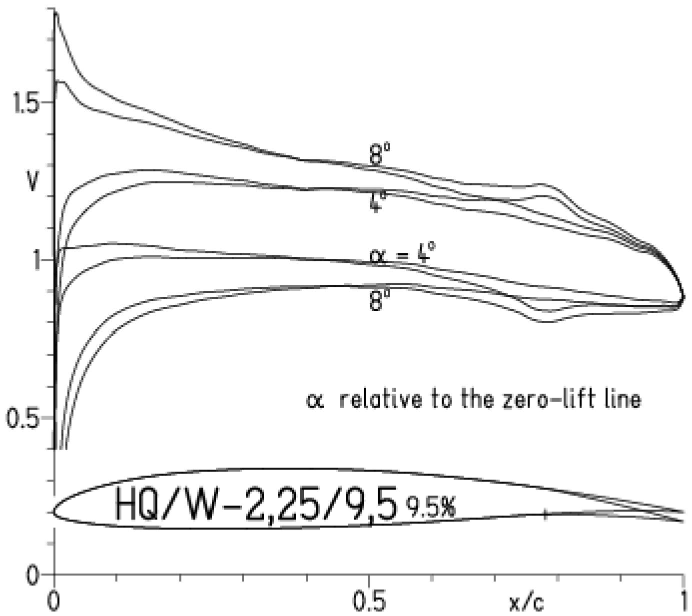


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

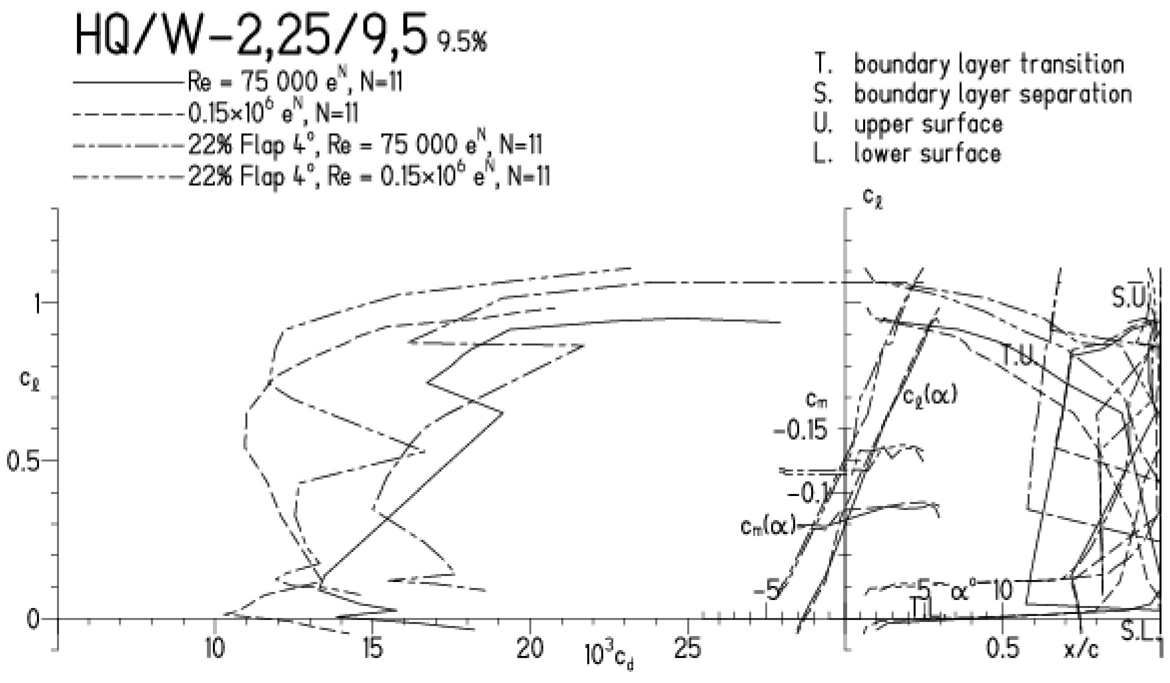


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

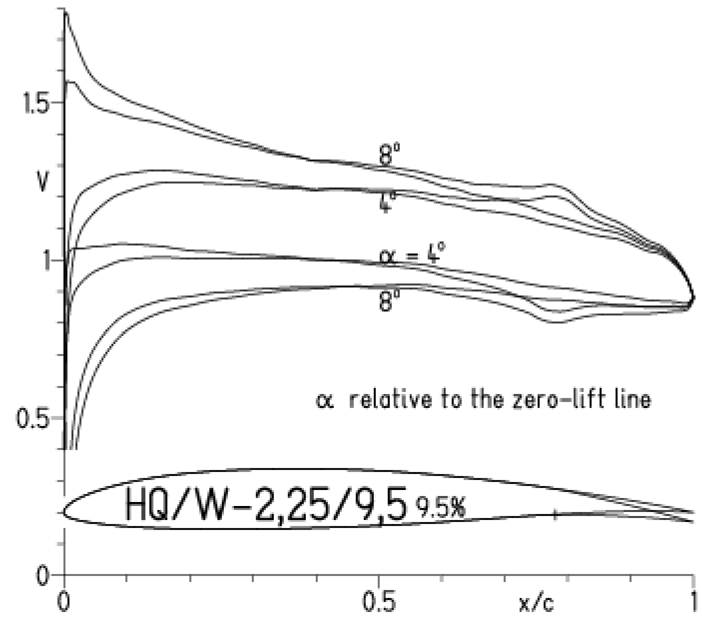


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

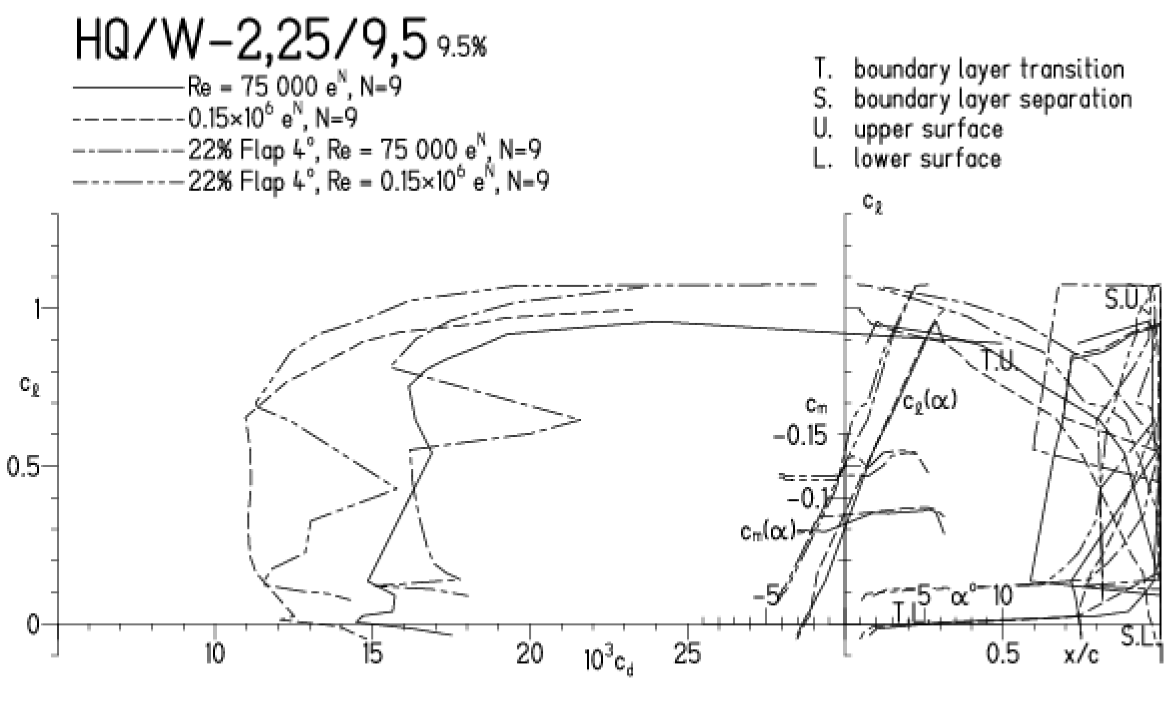


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

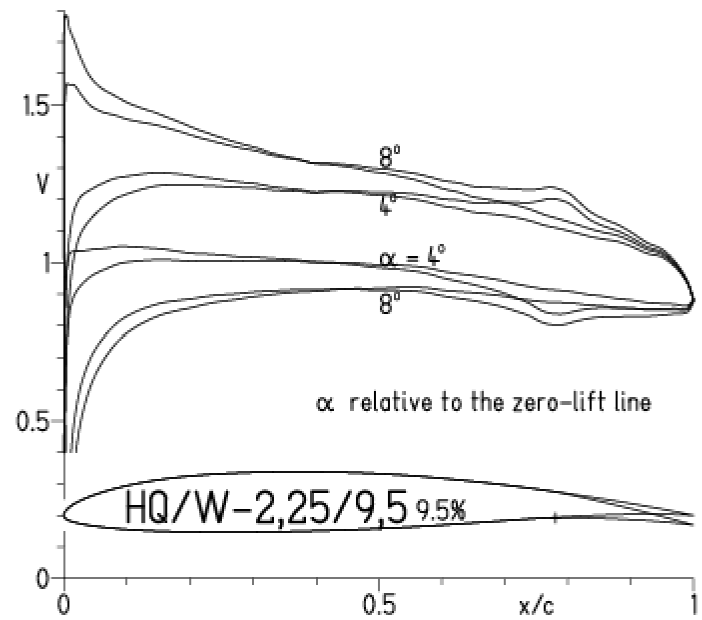


EPPLER 2005 V. 8.5.07 R

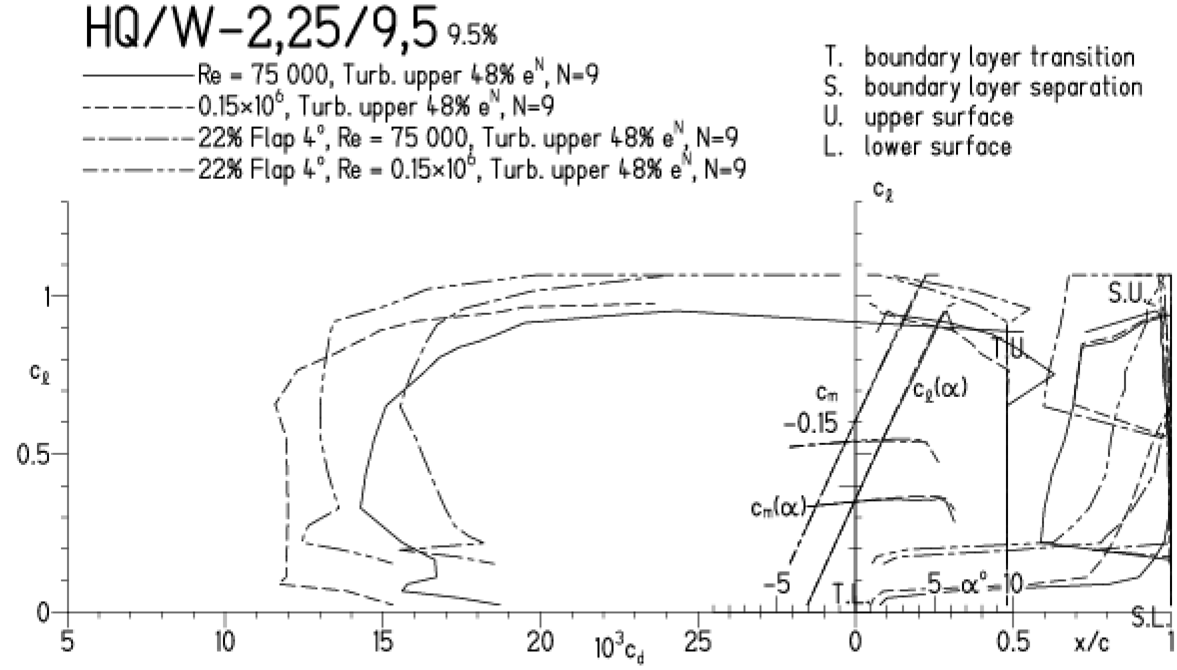


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

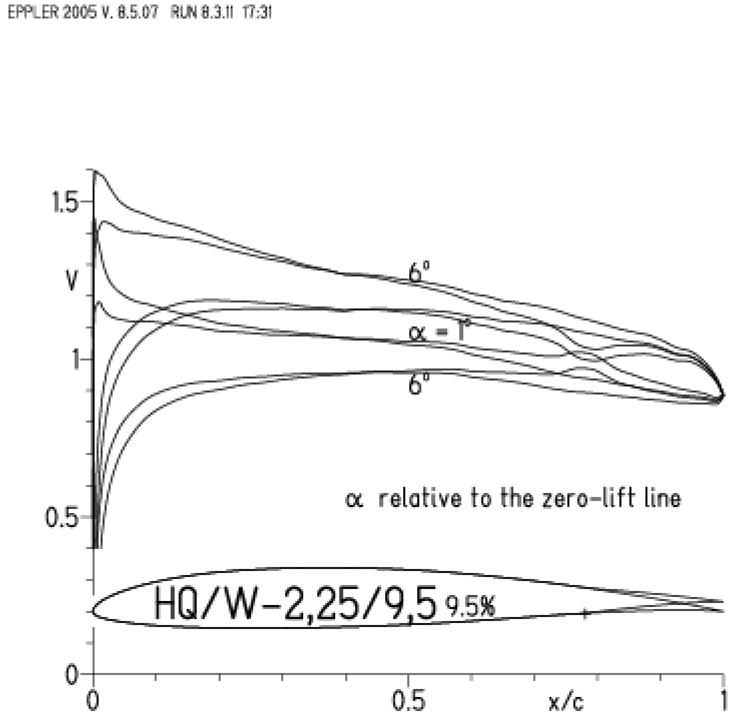
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

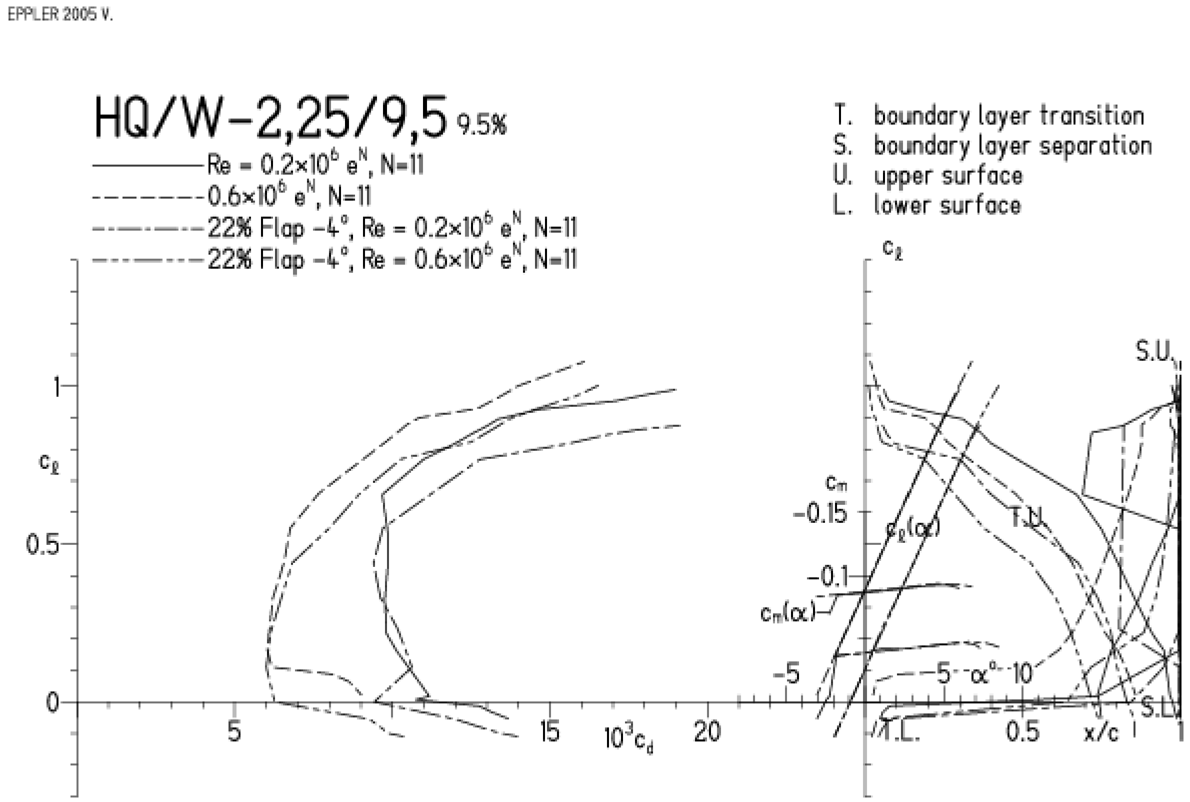


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

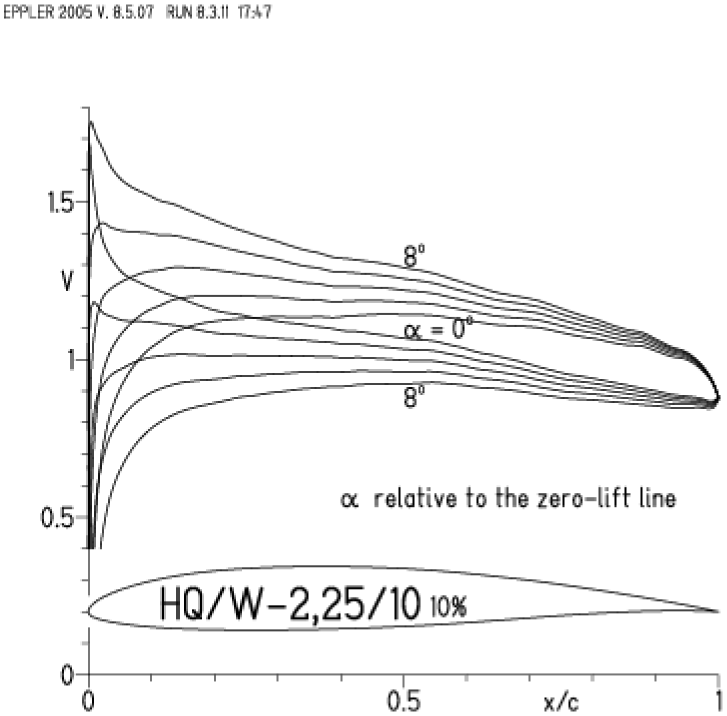


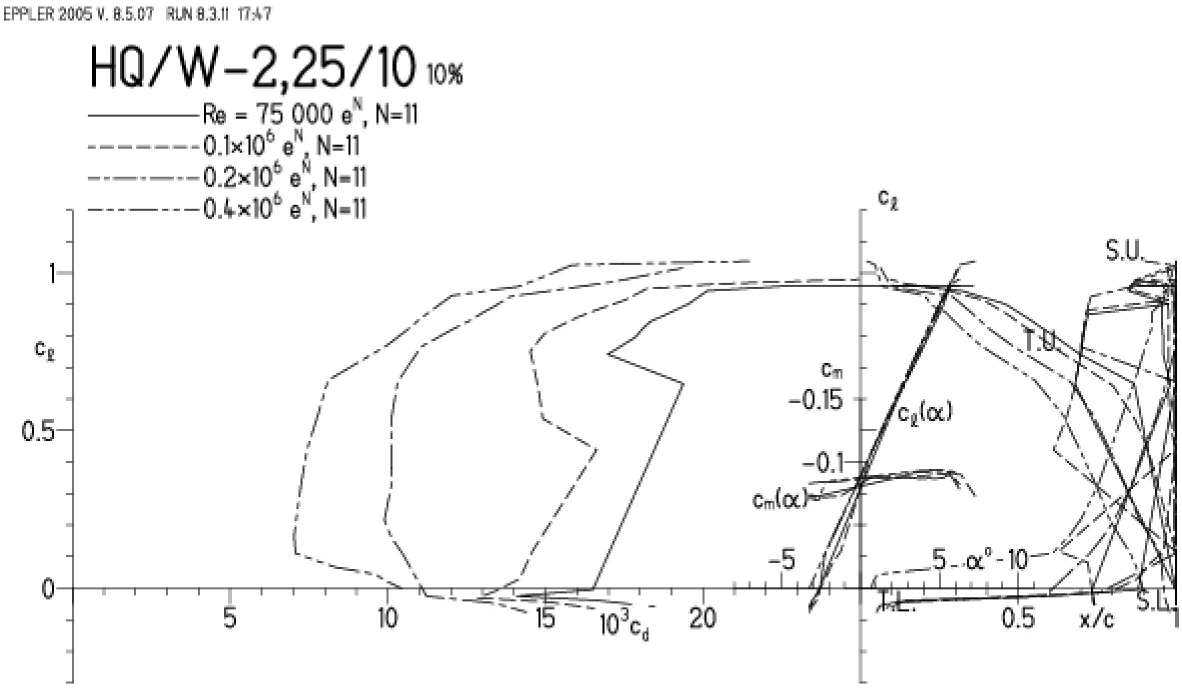
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag





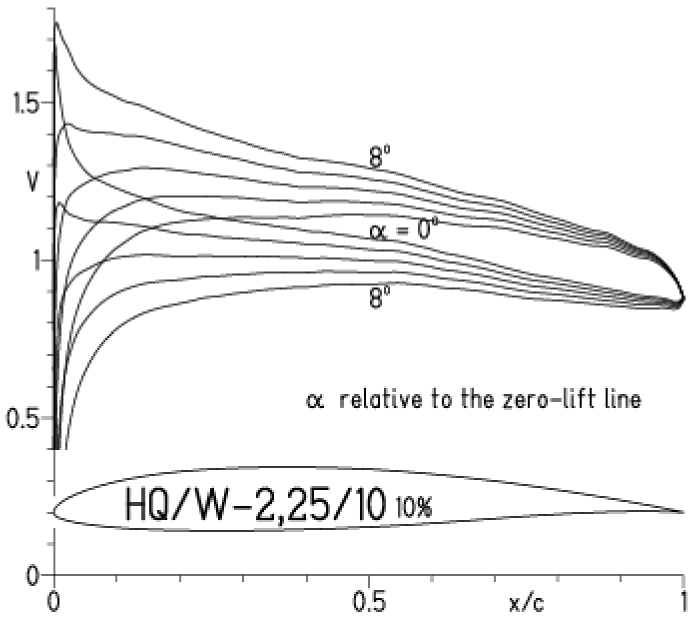
<u>HQ/W-2,25/10</u>, N=11



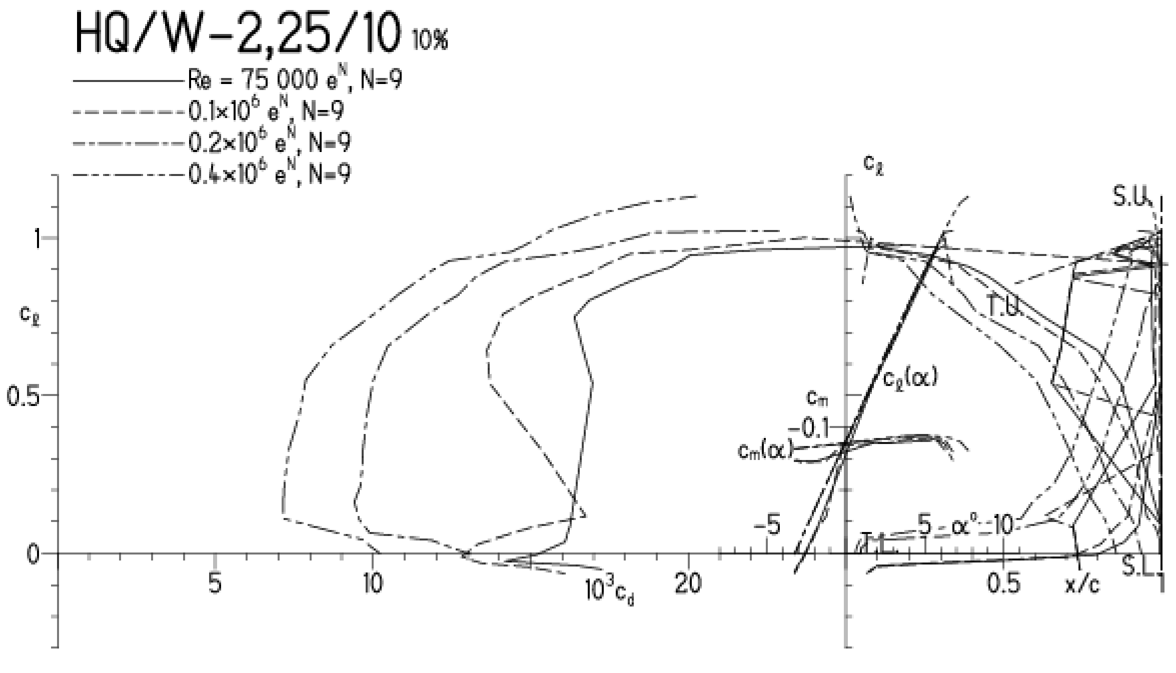


HQ/W-2,25/10, N=9

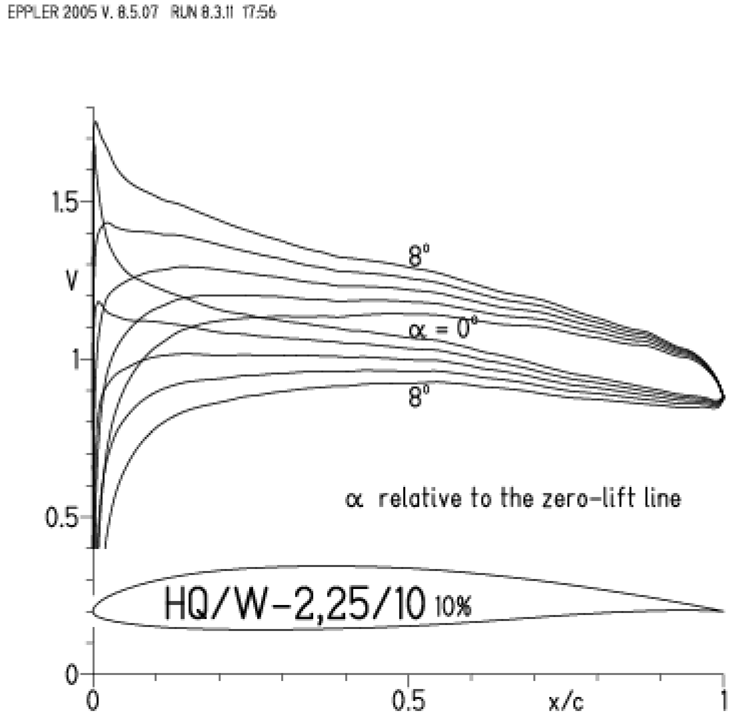
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

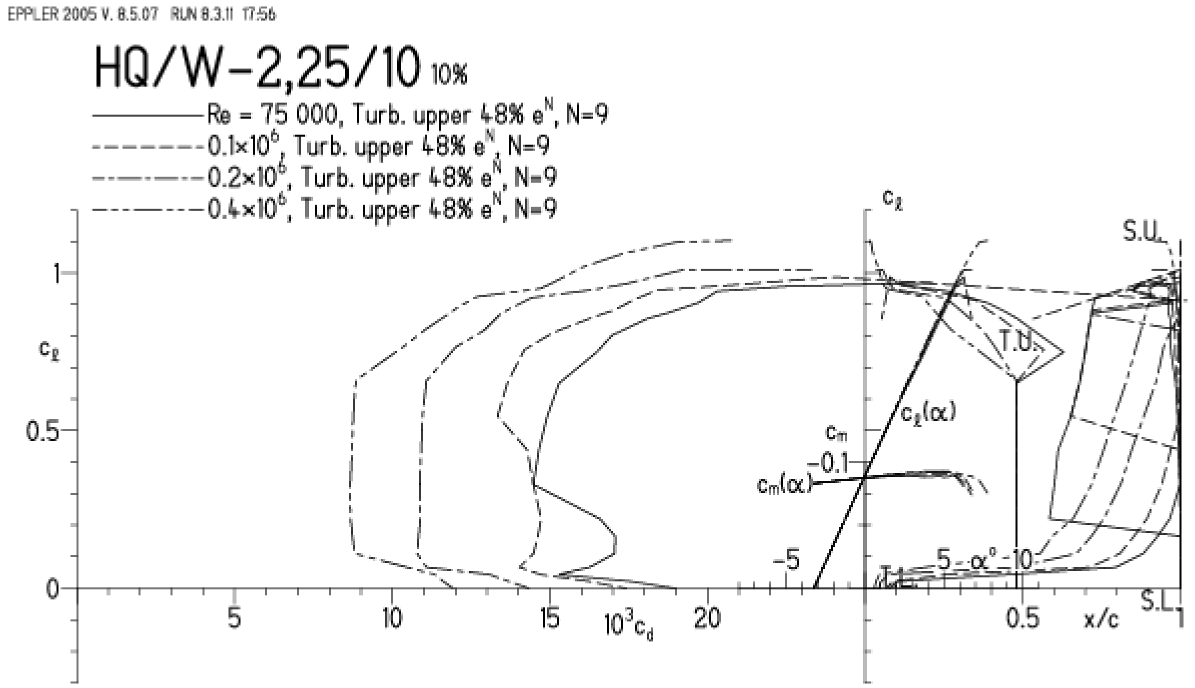


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



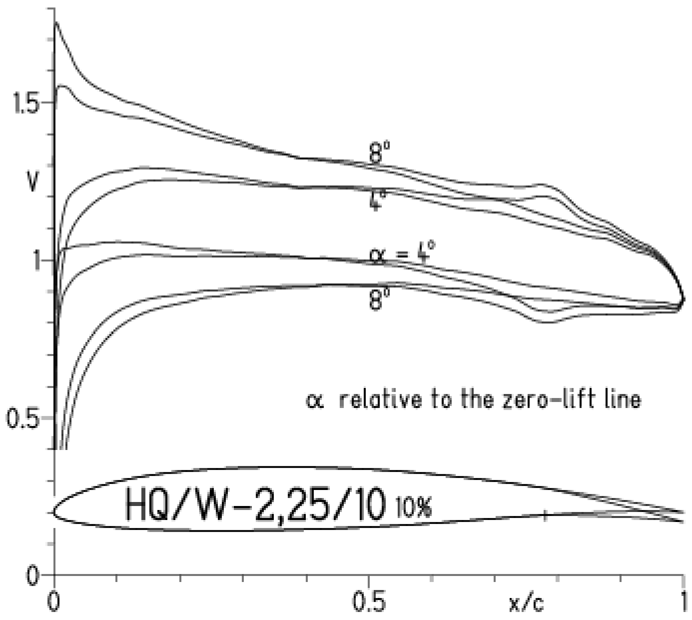
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



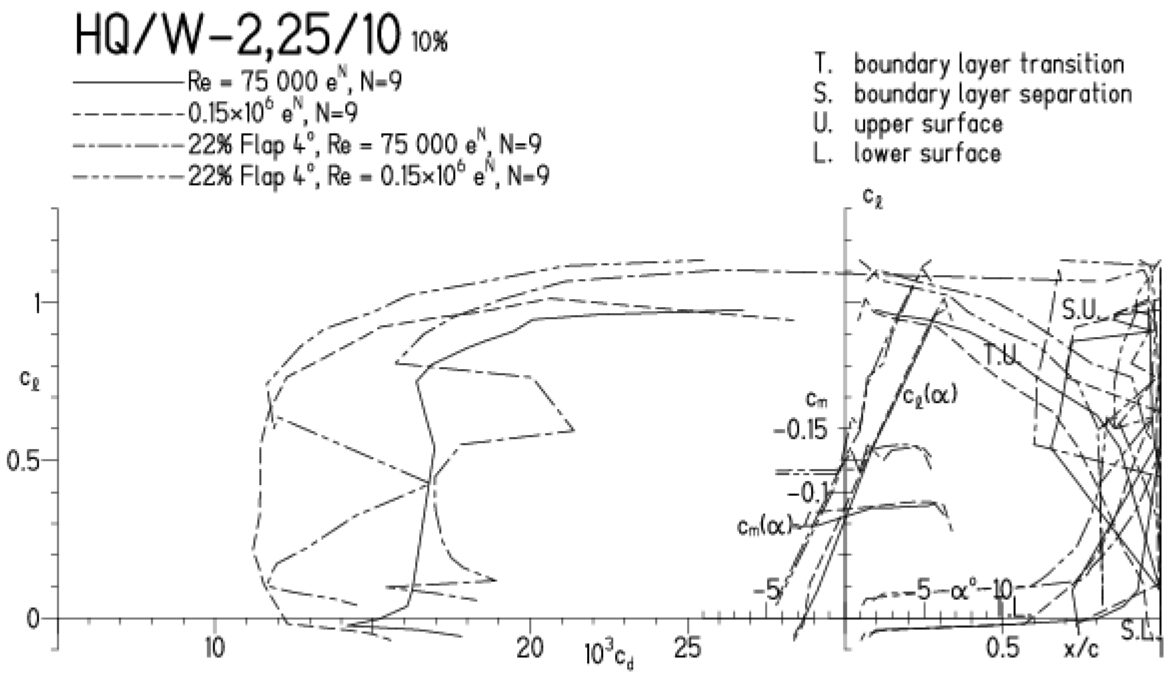


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

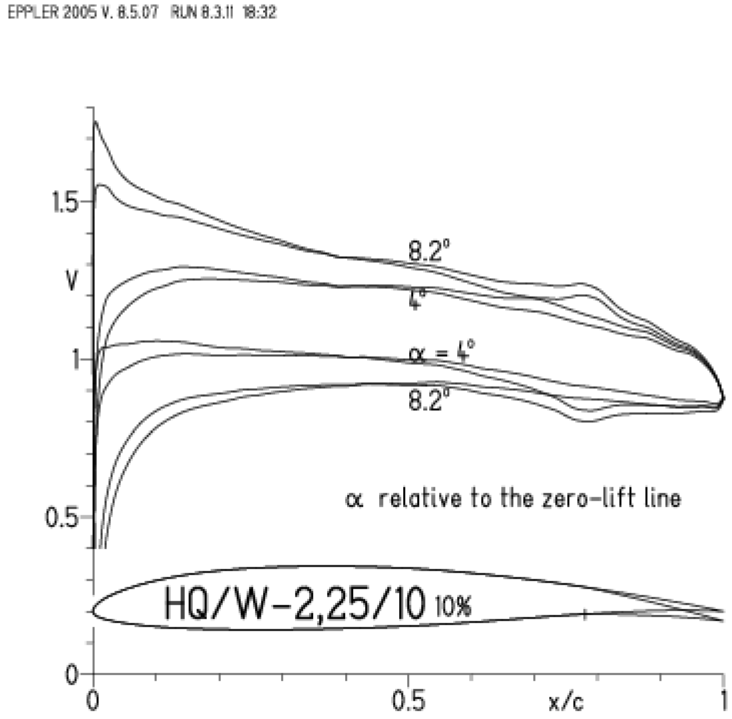
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

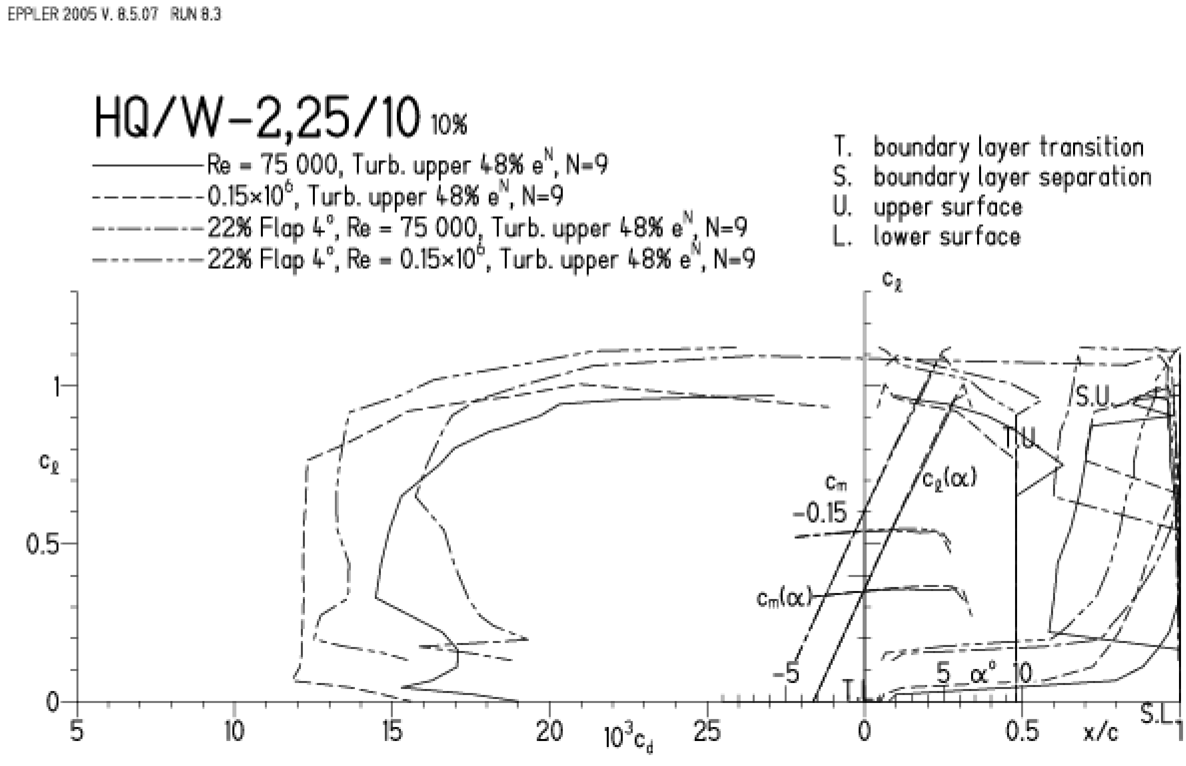


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



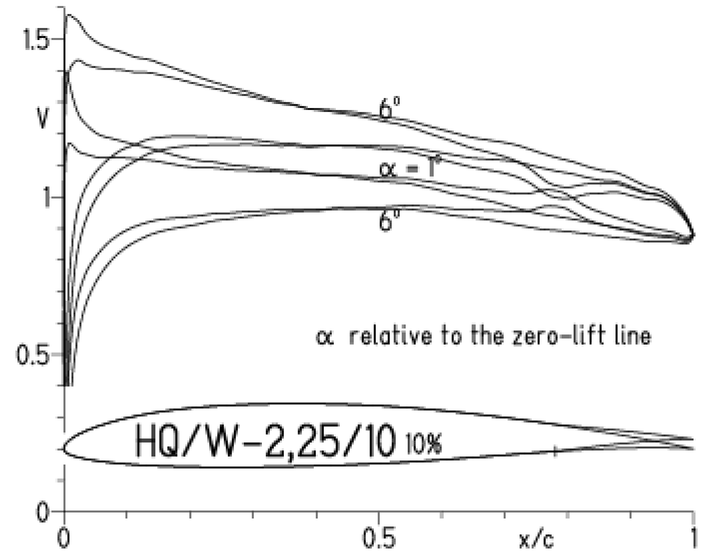
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



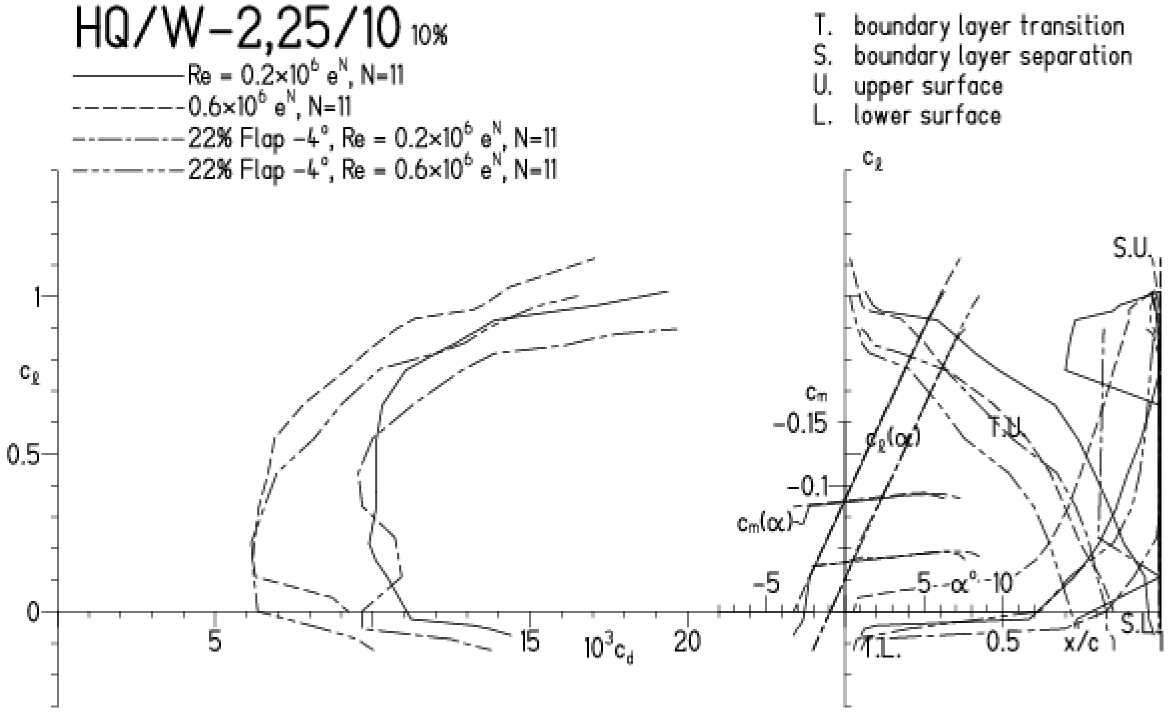


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

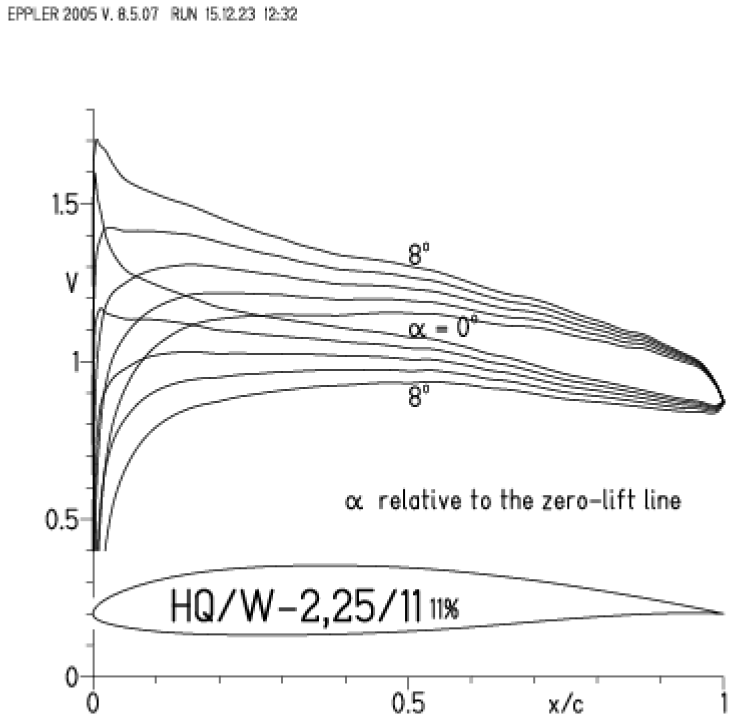
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

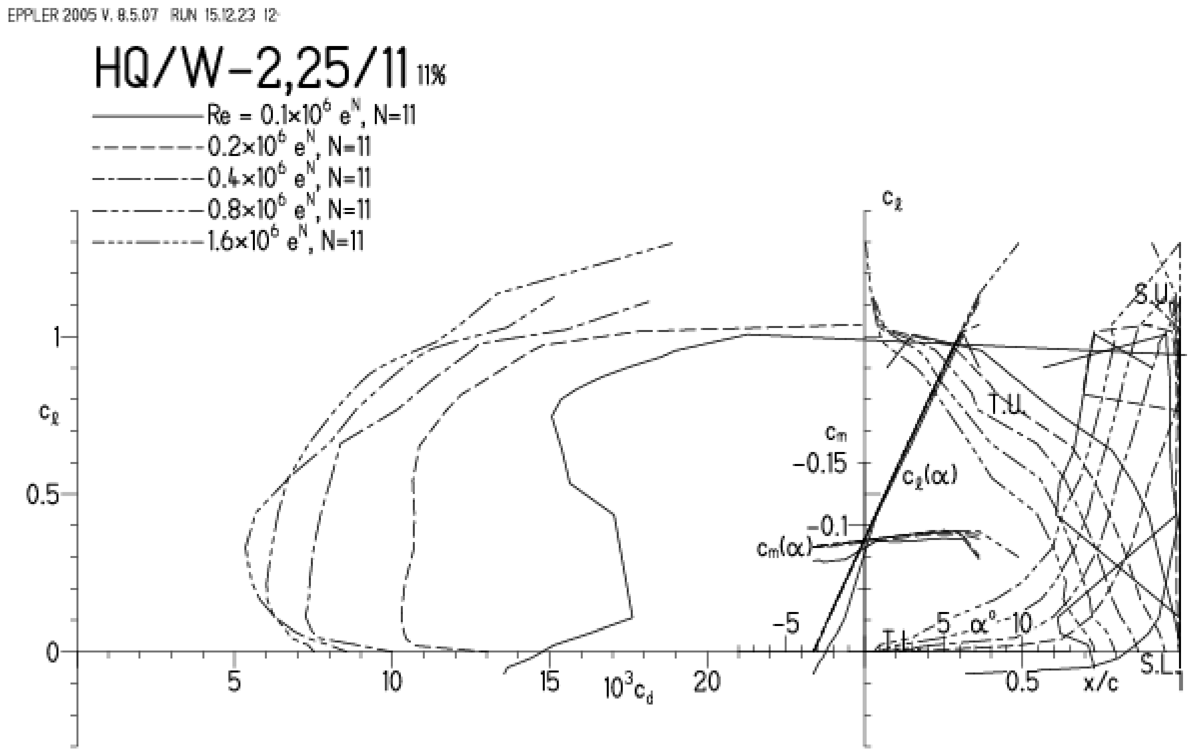


EPPLER 2005 V. 8.5.07 RUN

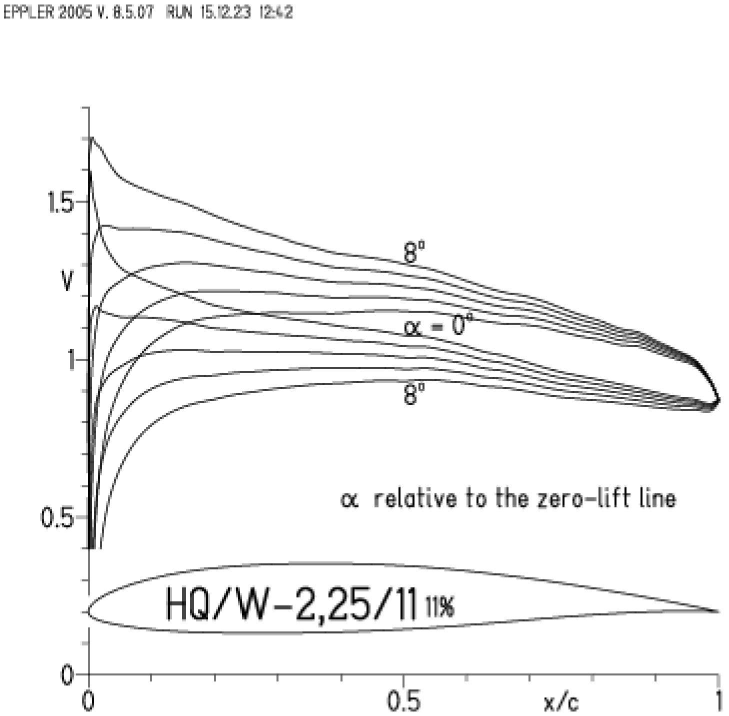


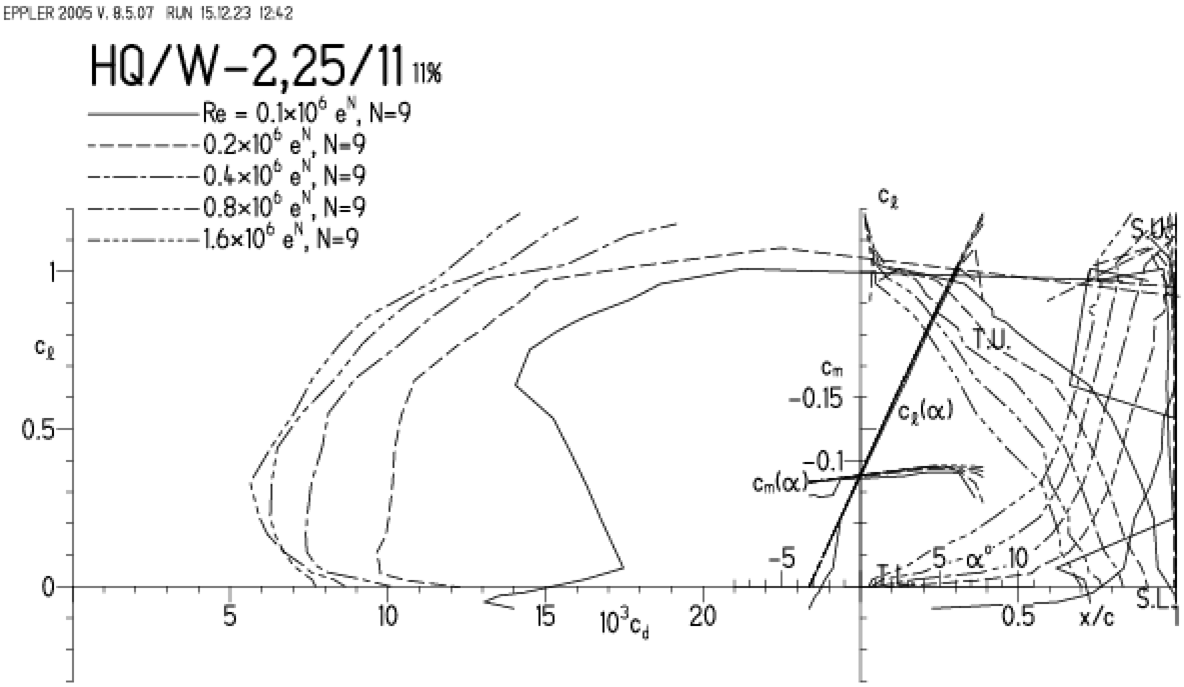
HQ/W-2,25/11, N=11



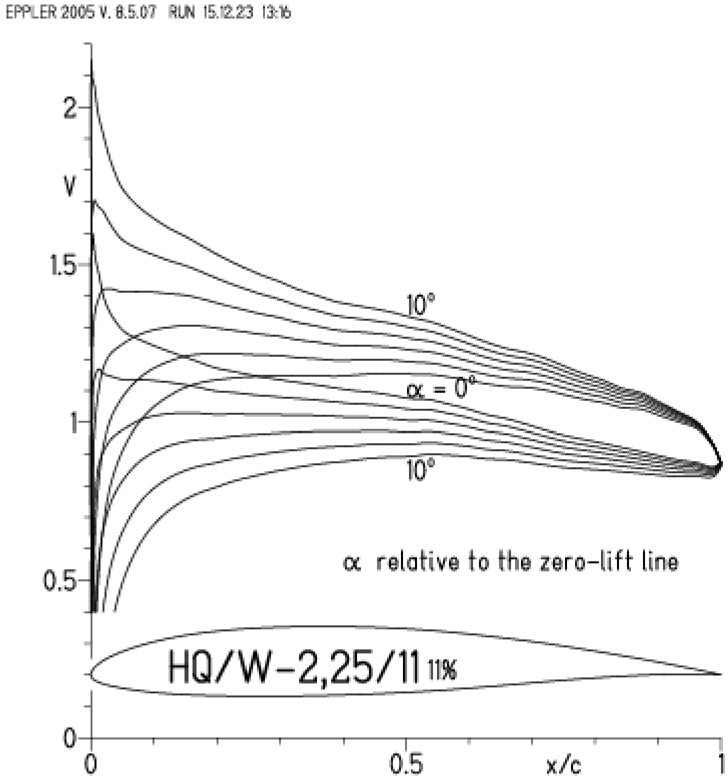


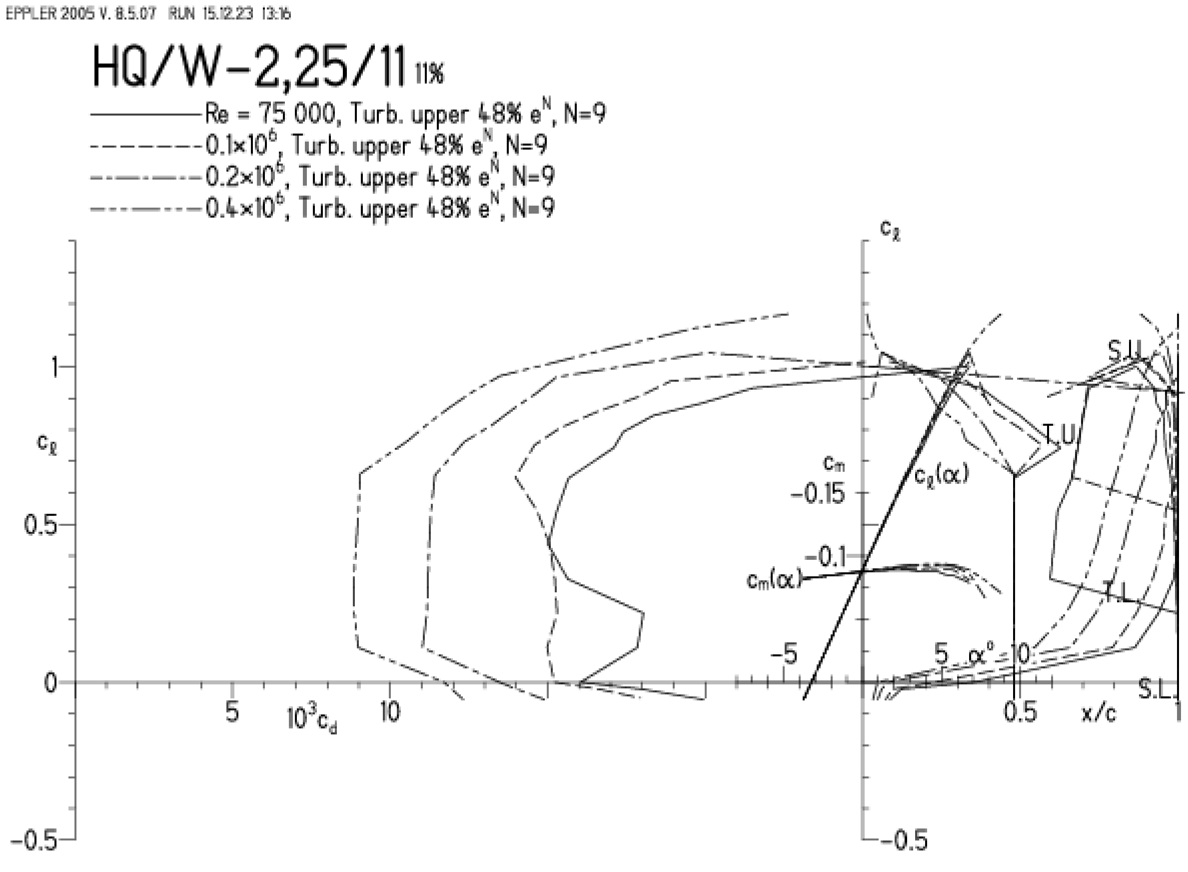
HQQ/W-2,25/11, N=9





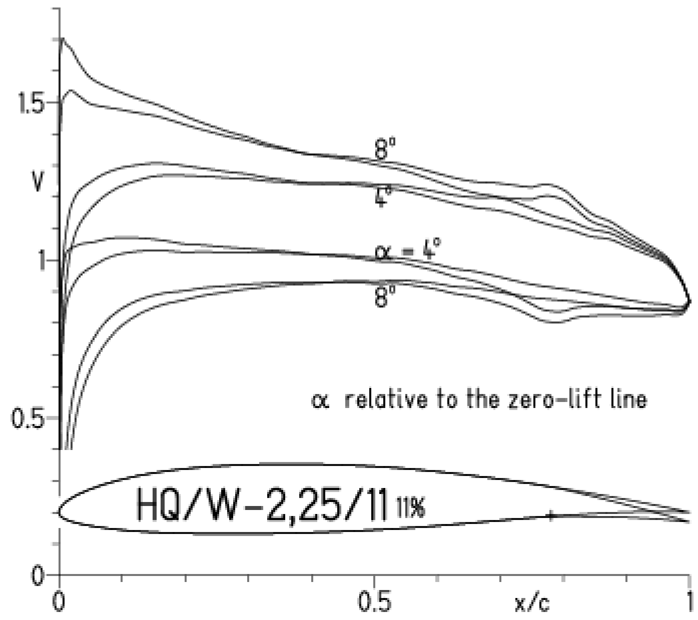
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



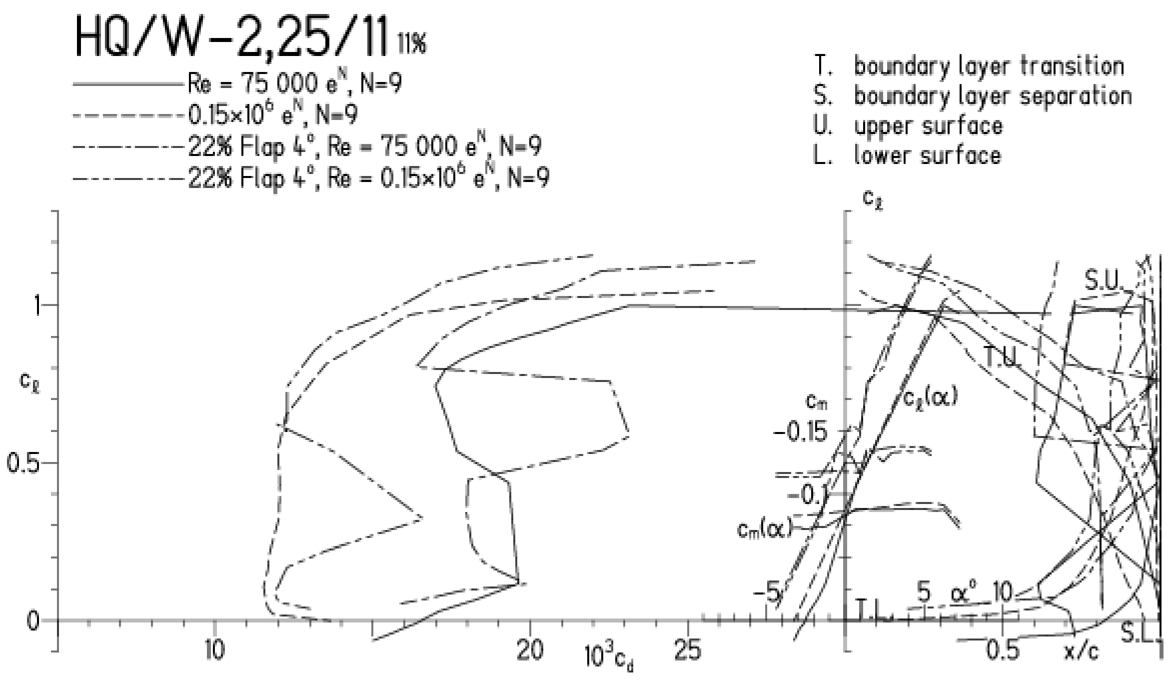


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

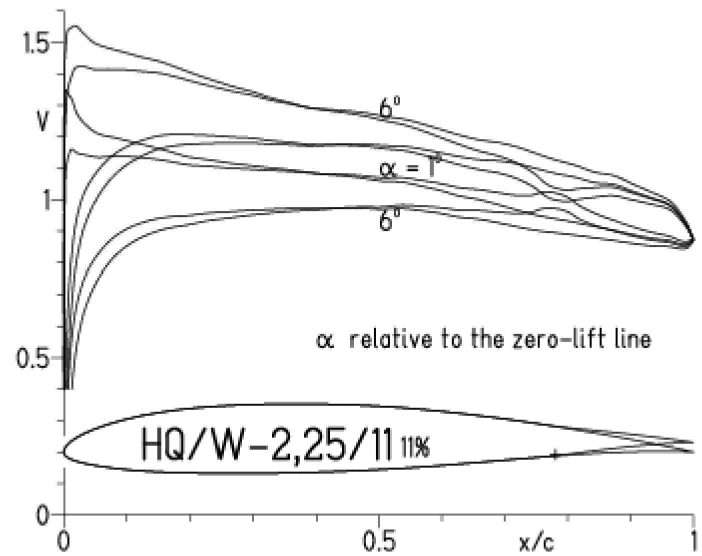


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

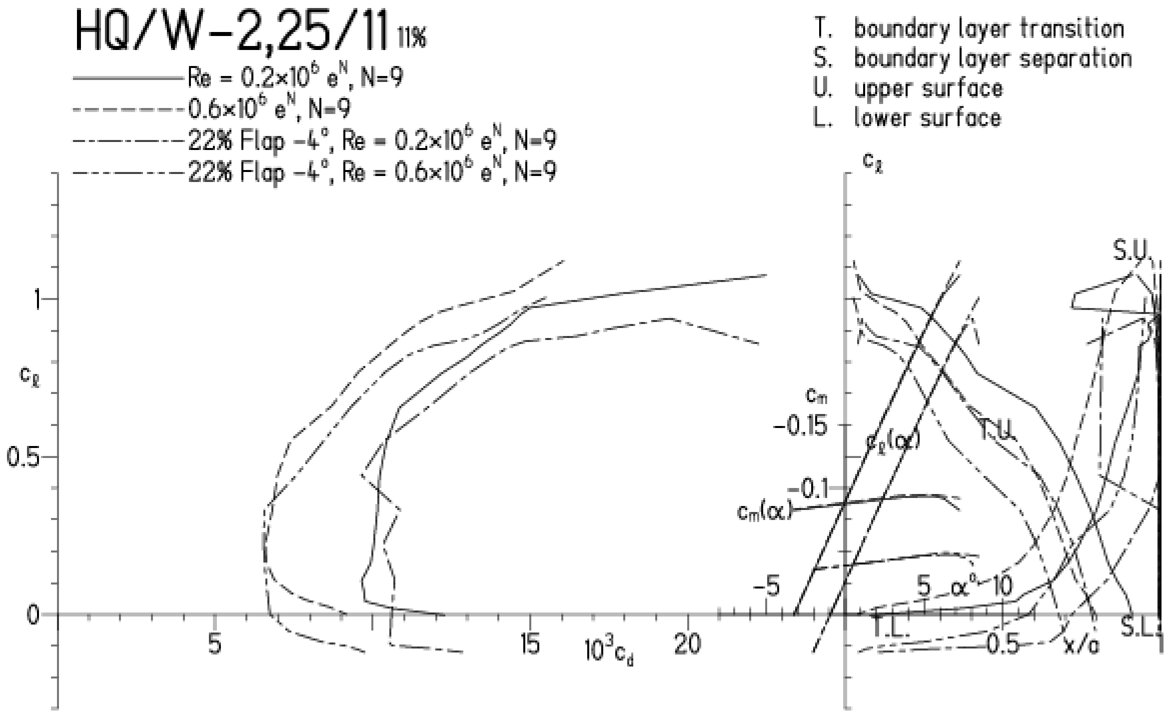


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

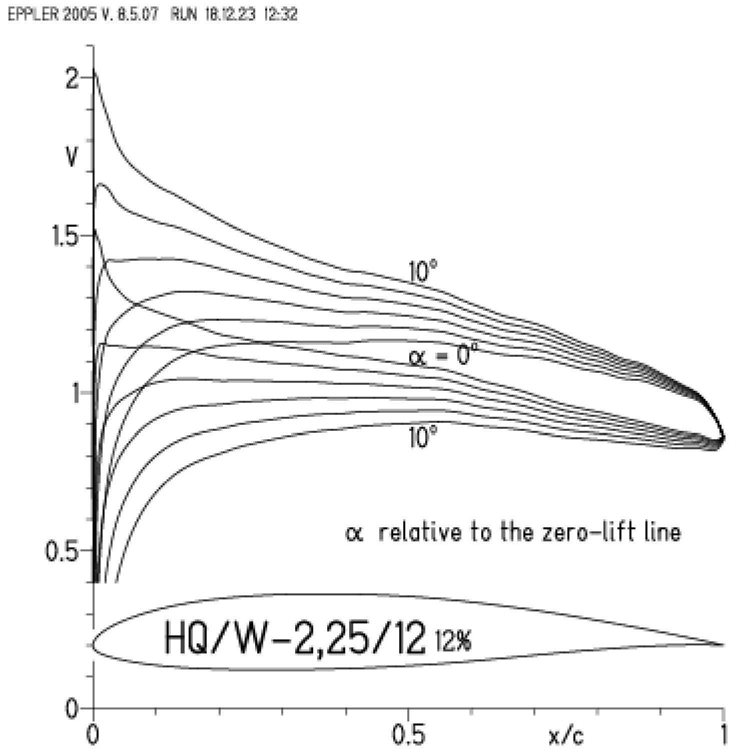
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

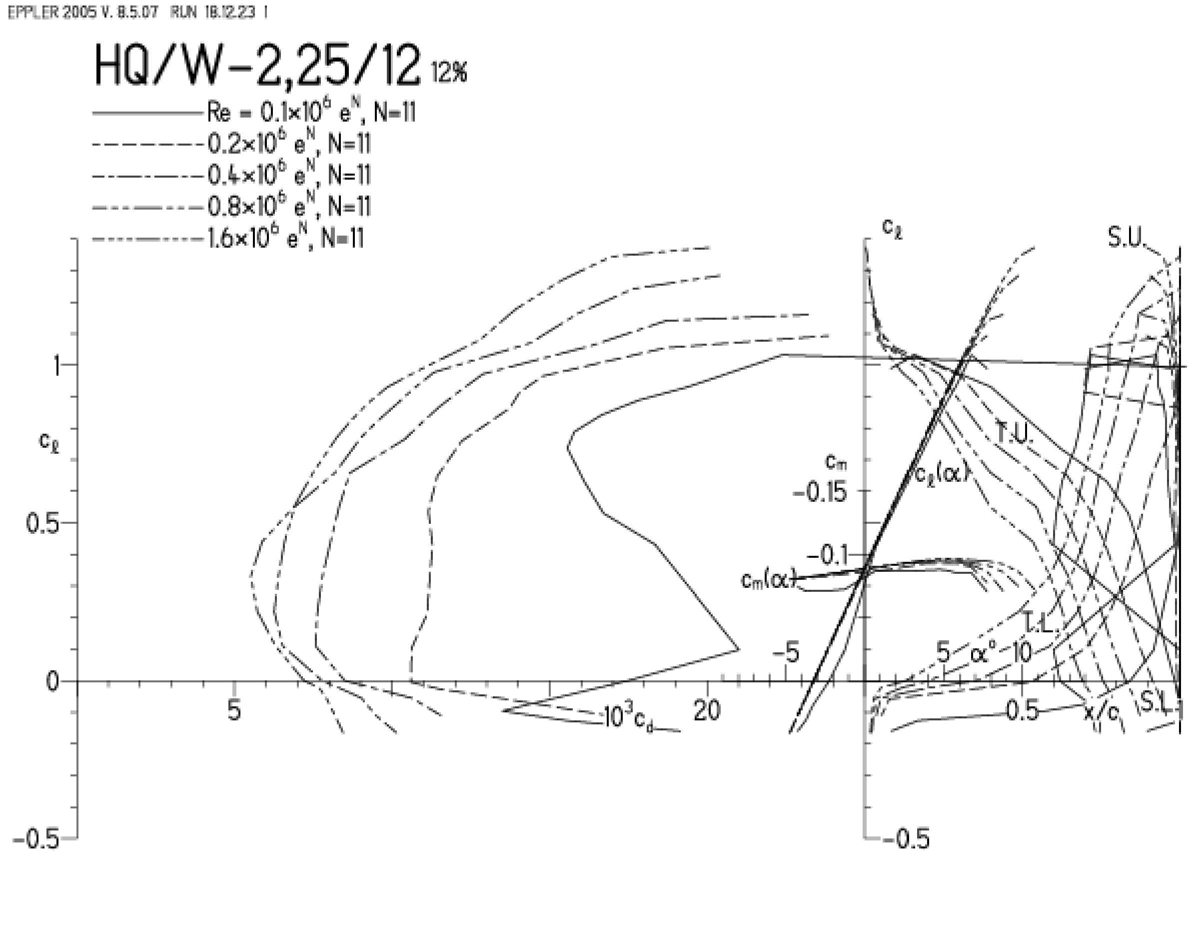


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

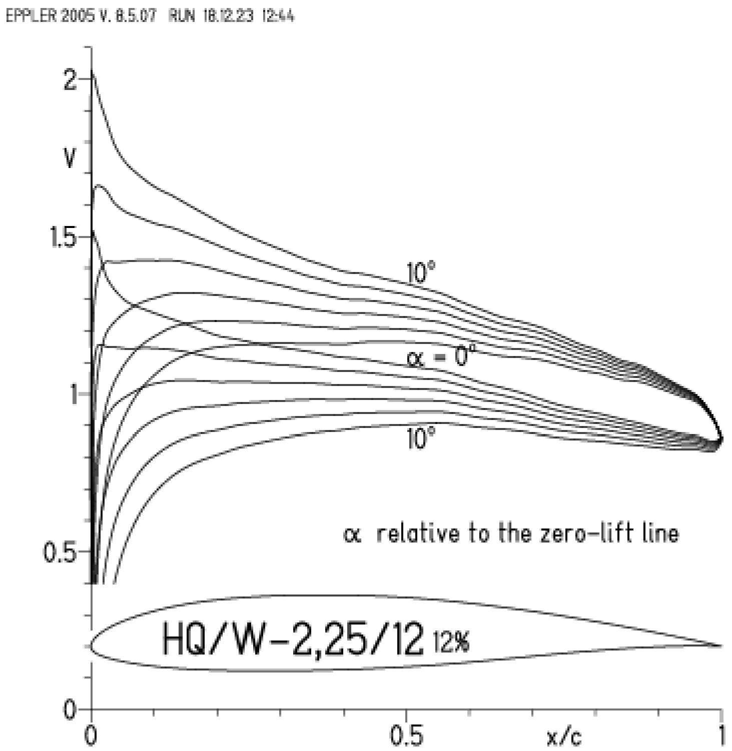


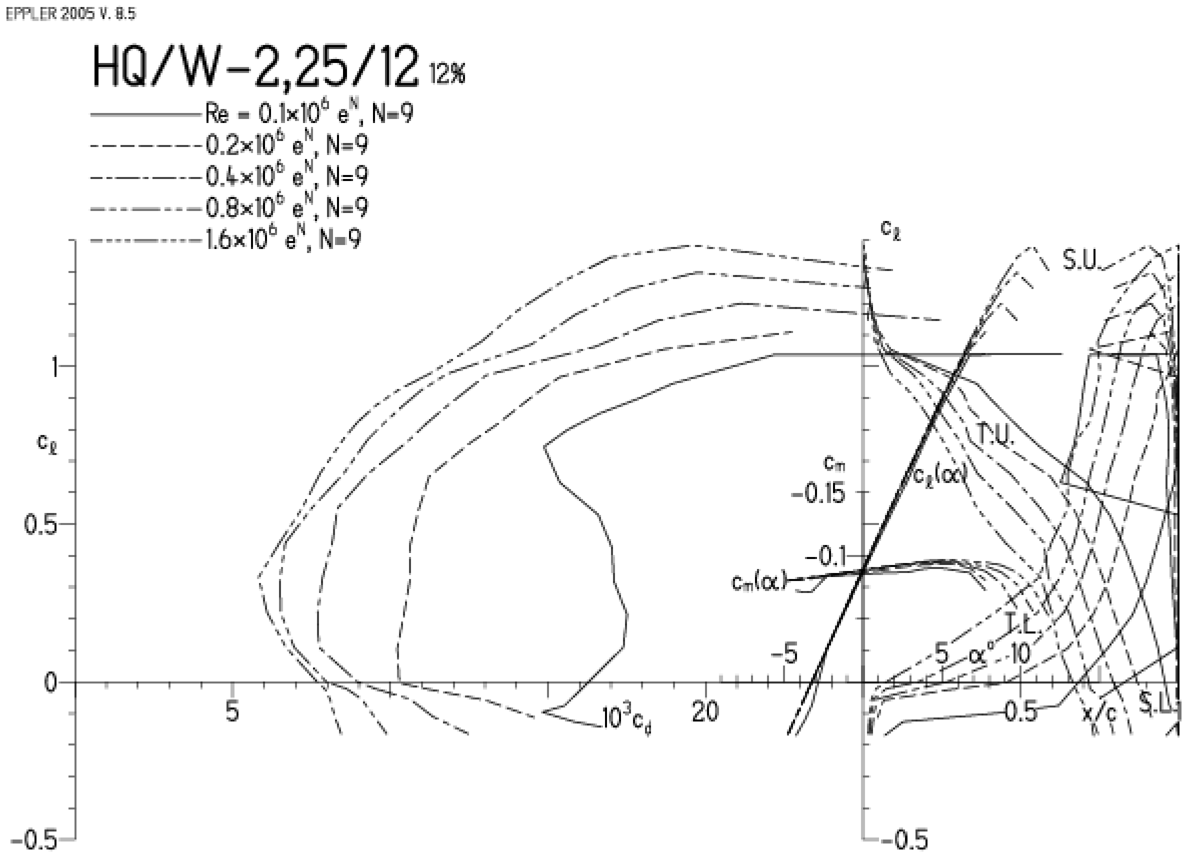
<u>HQ/W-2,25/12</u>, N=11



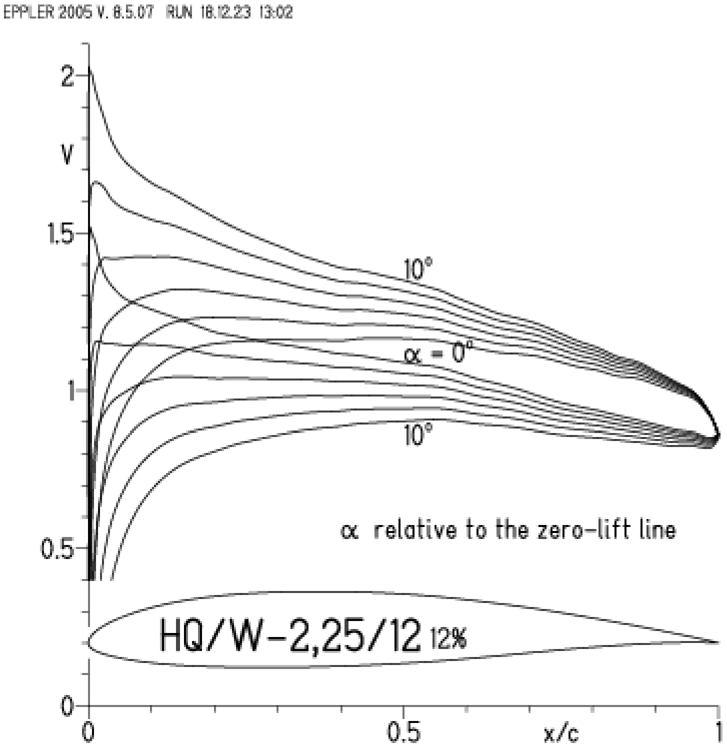


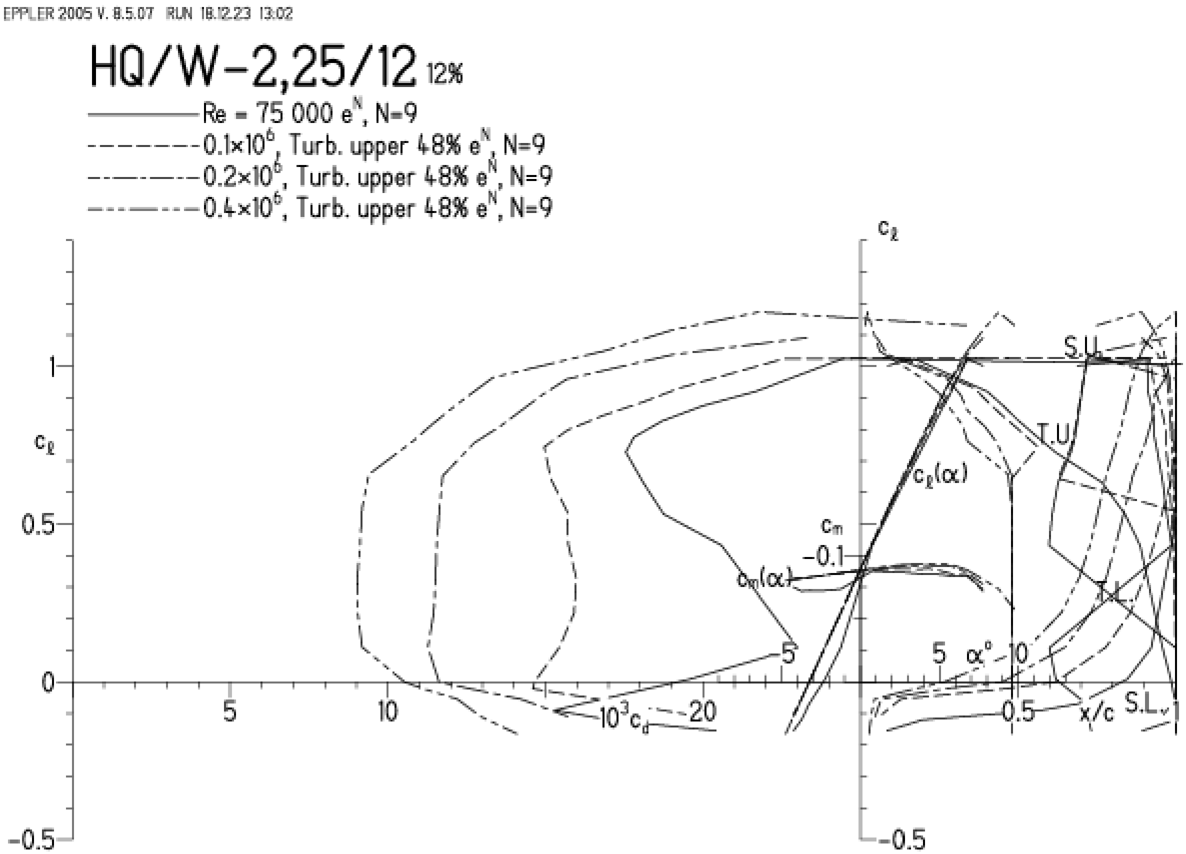
<u>HQ/W-2,25/12</u>, N=9



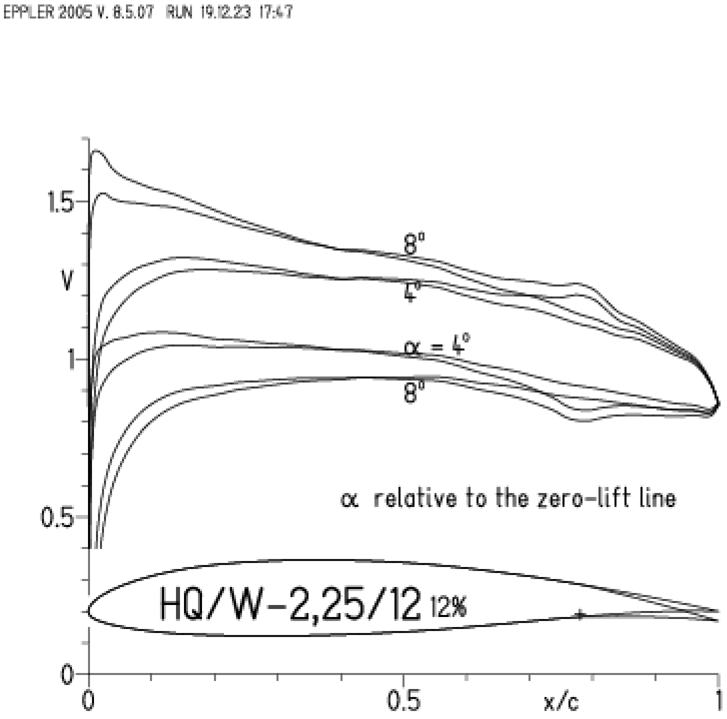


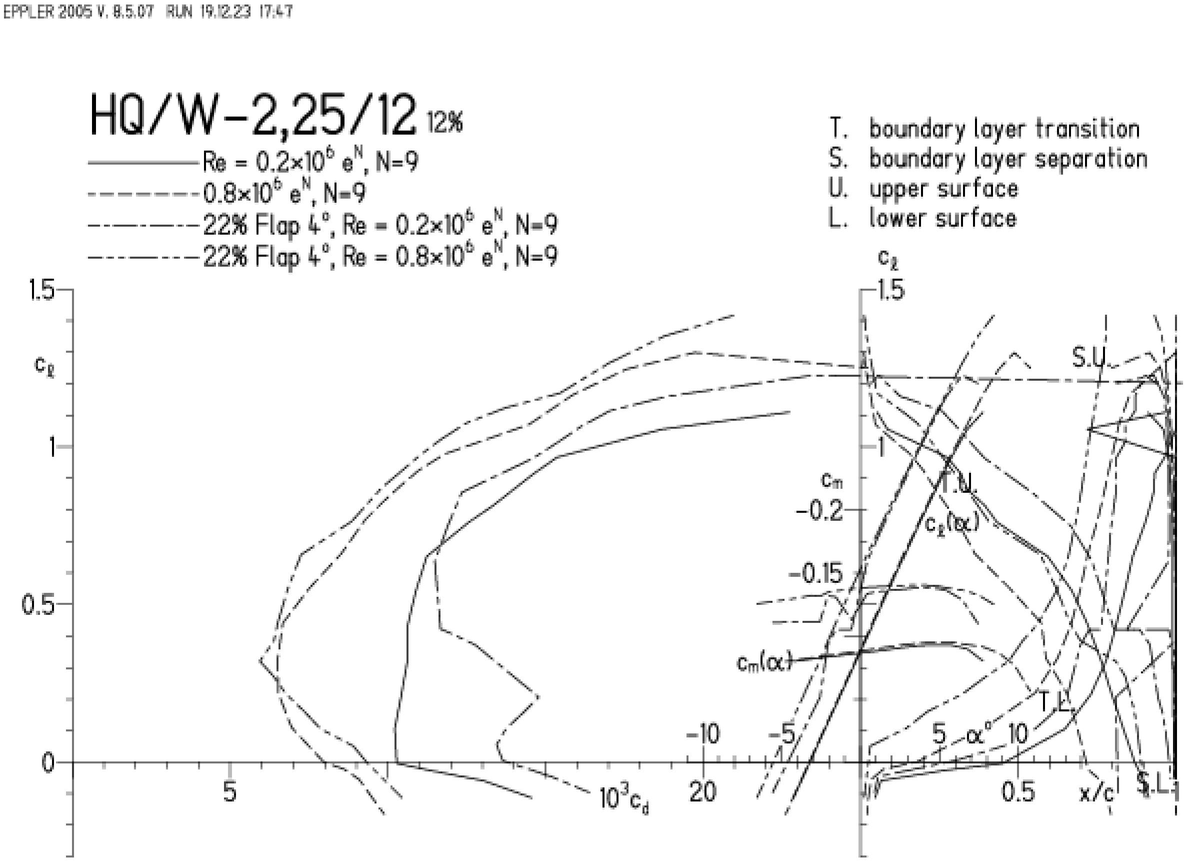
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





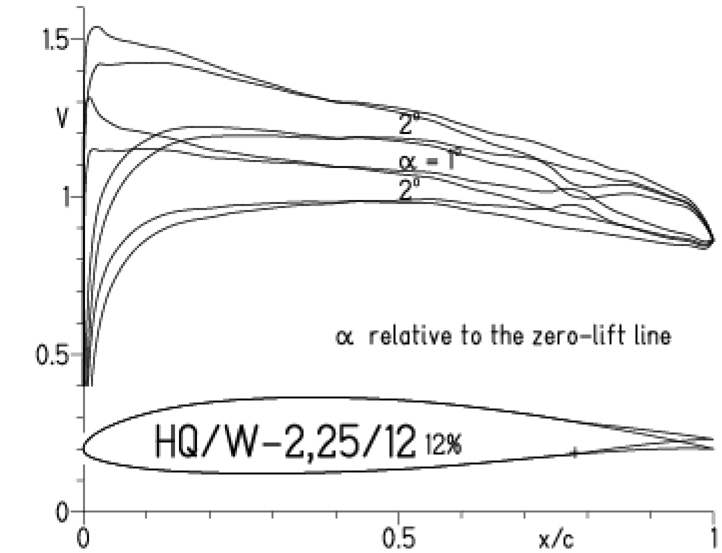
HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag



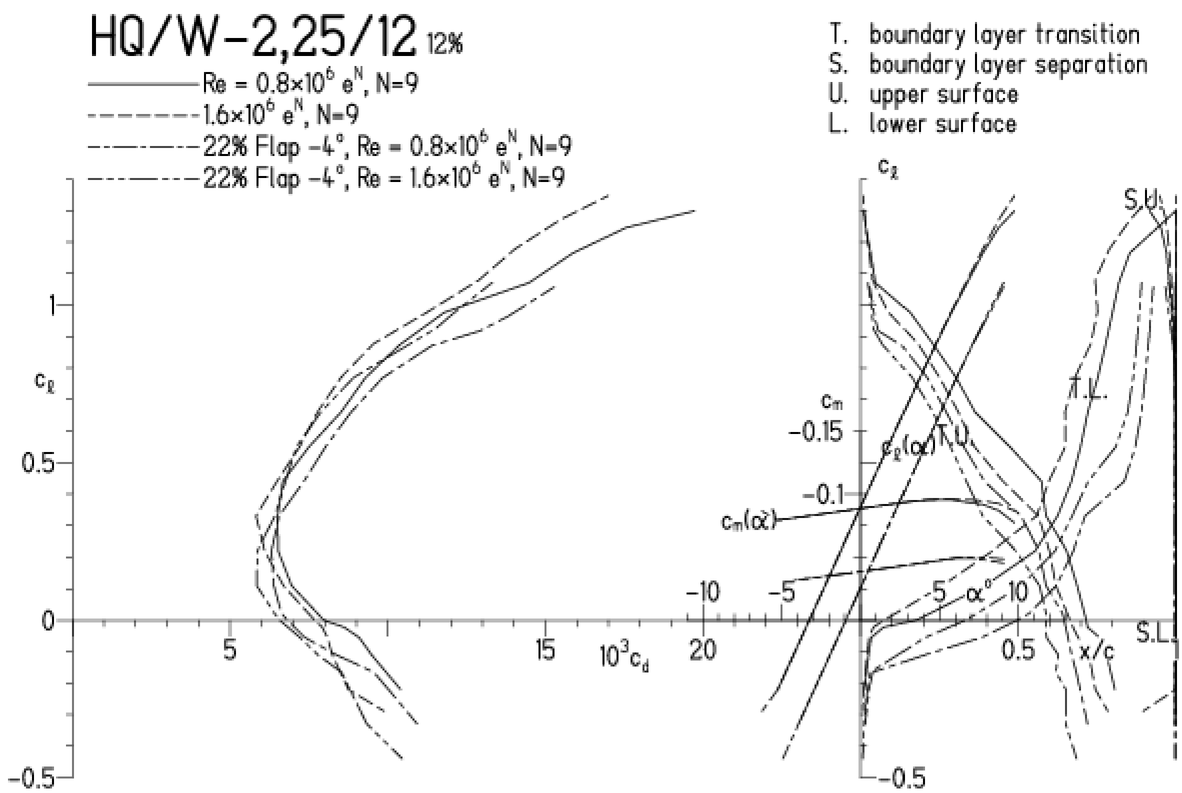


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

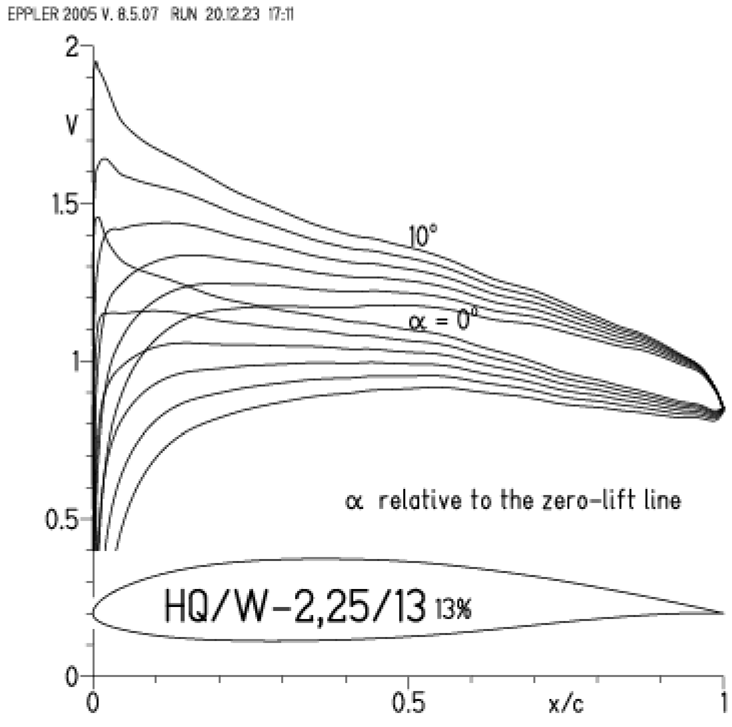
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

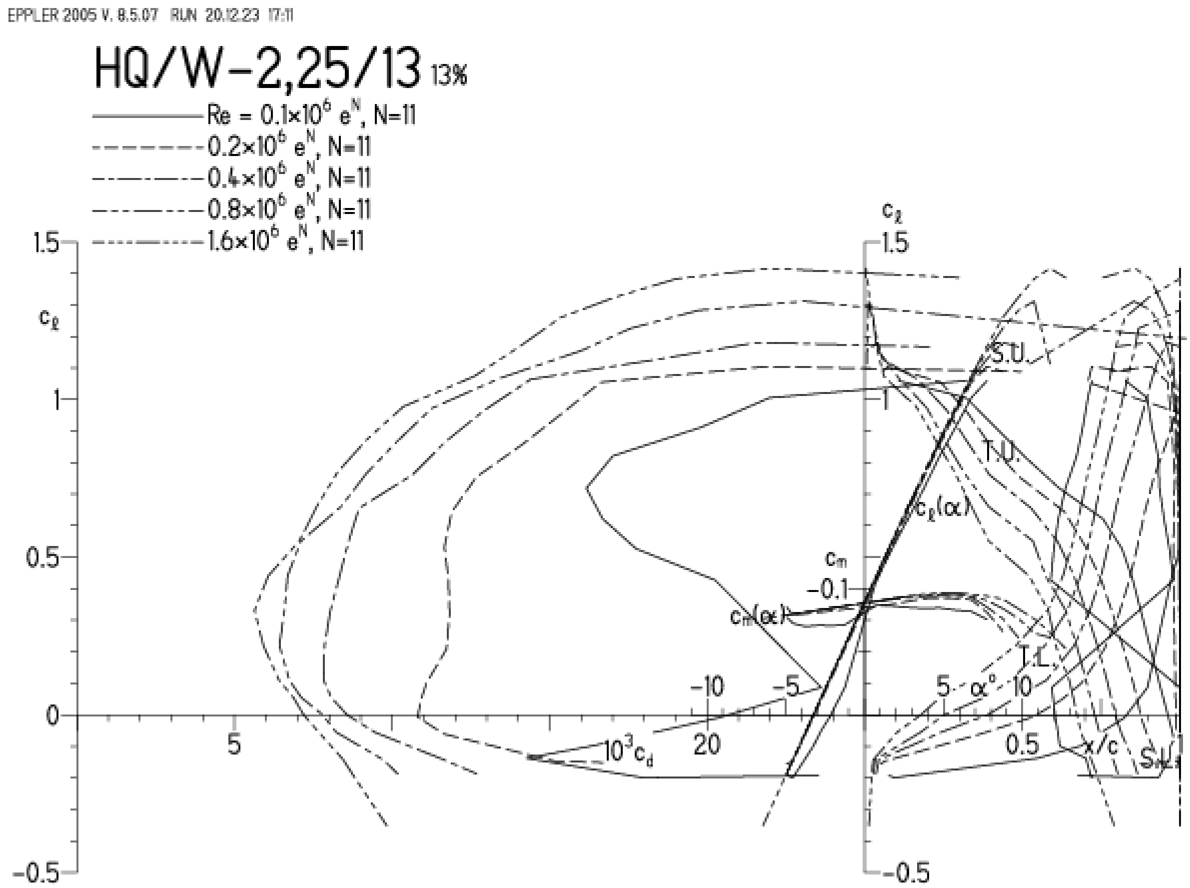


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

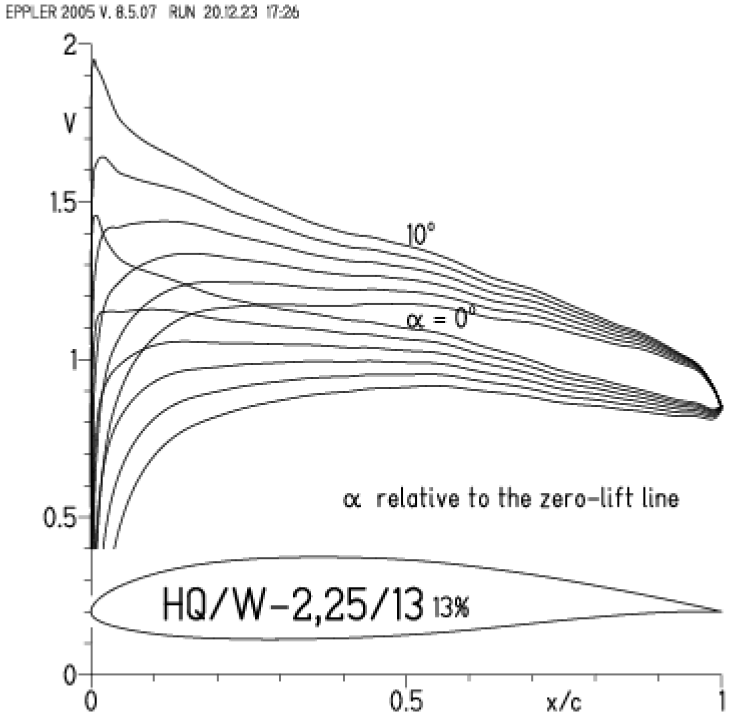


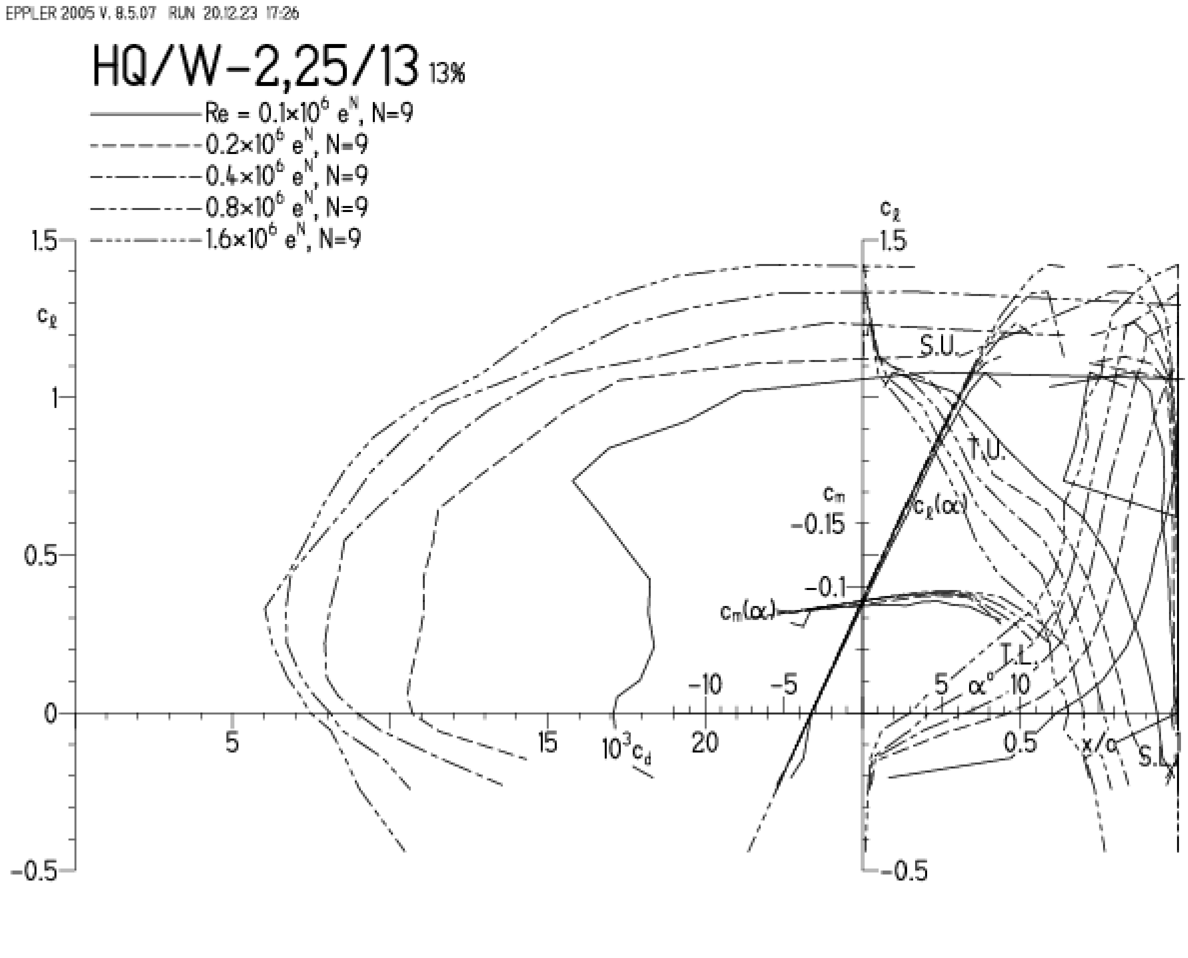
<u>HQ/W-2,25/13</u>, N=11



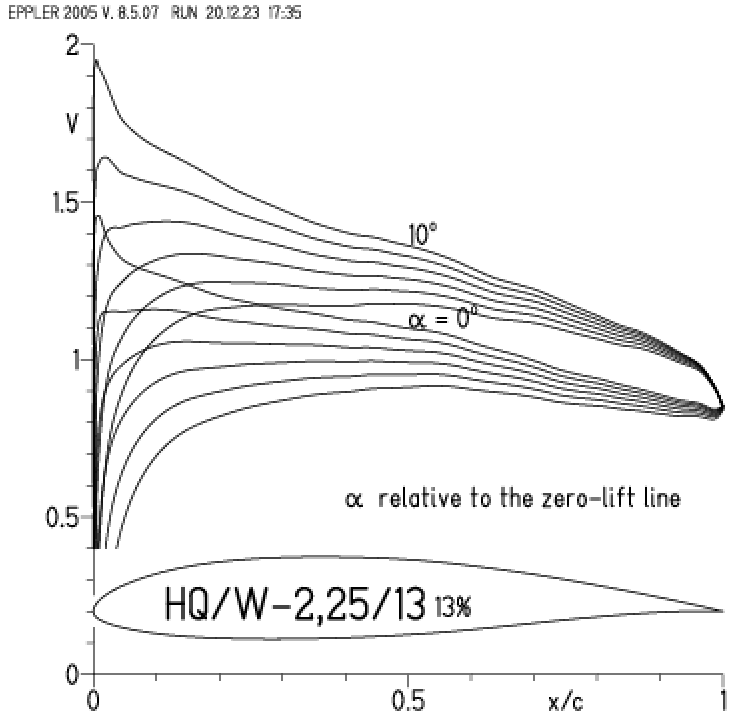


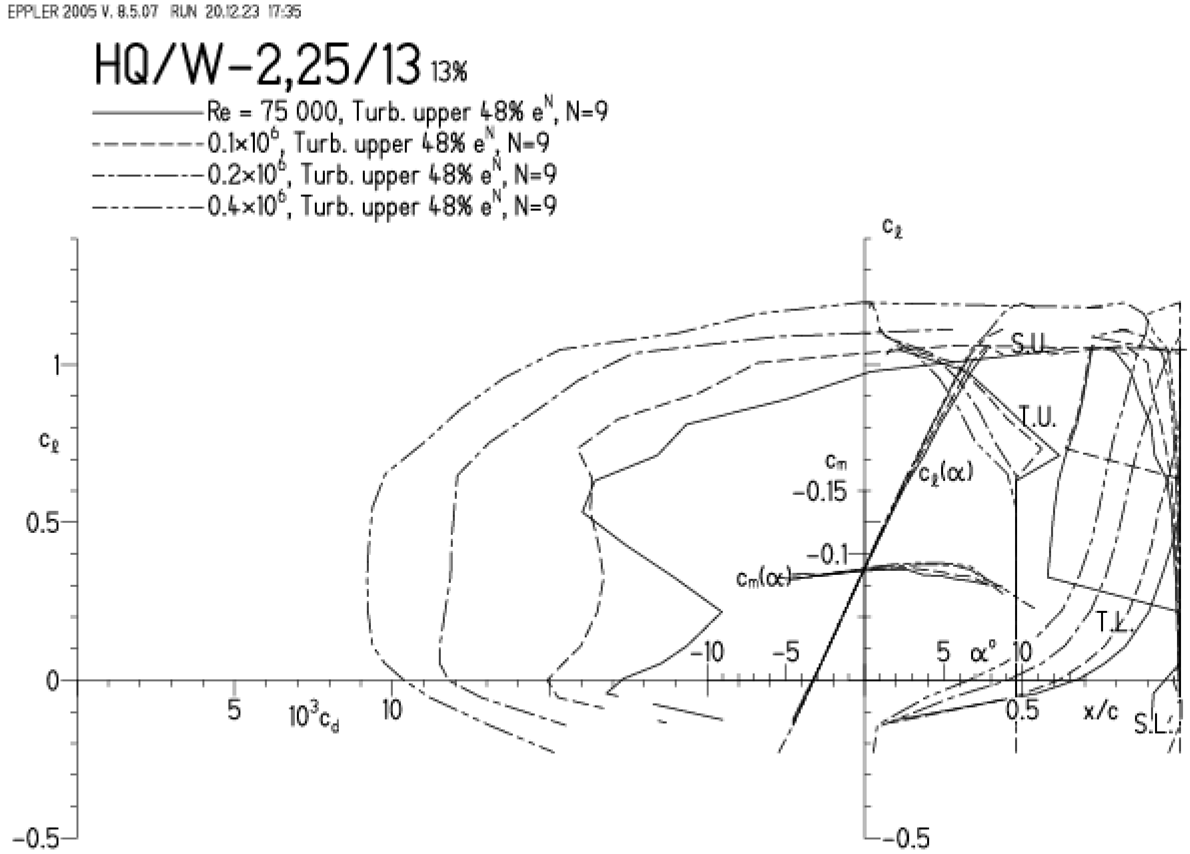
<u>HQ/W-2,25/13</u>, N=9





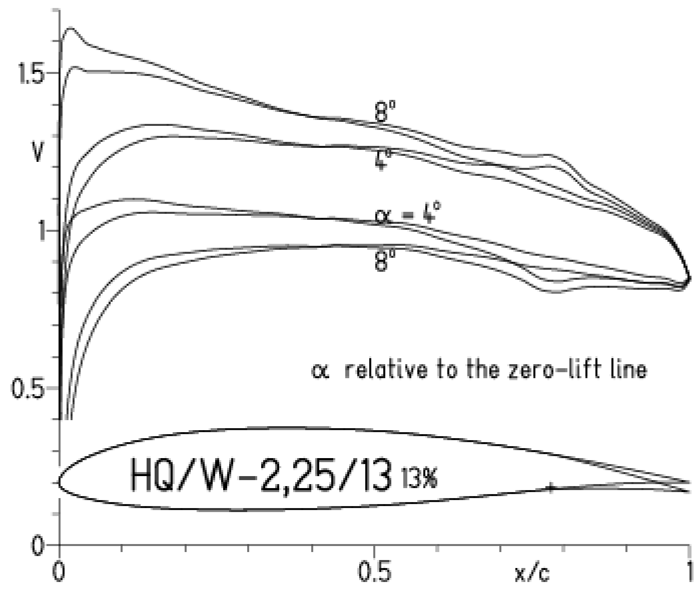
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



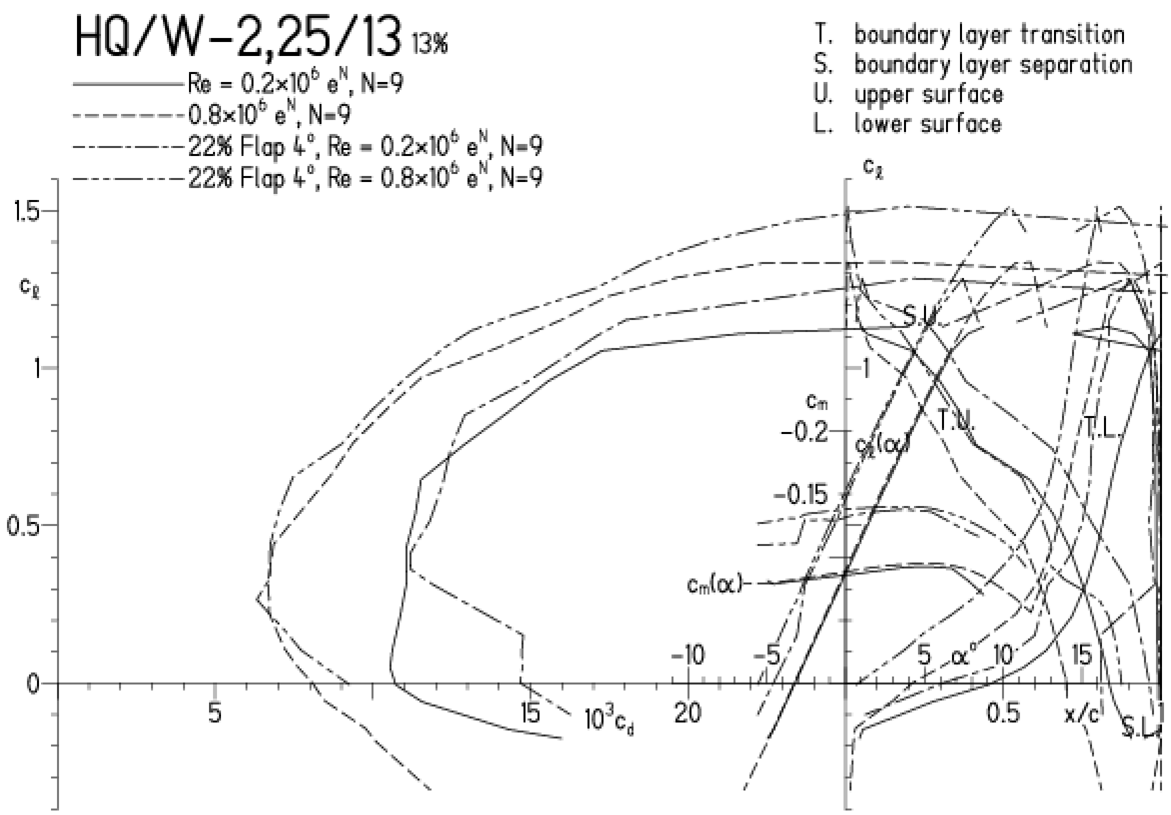


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

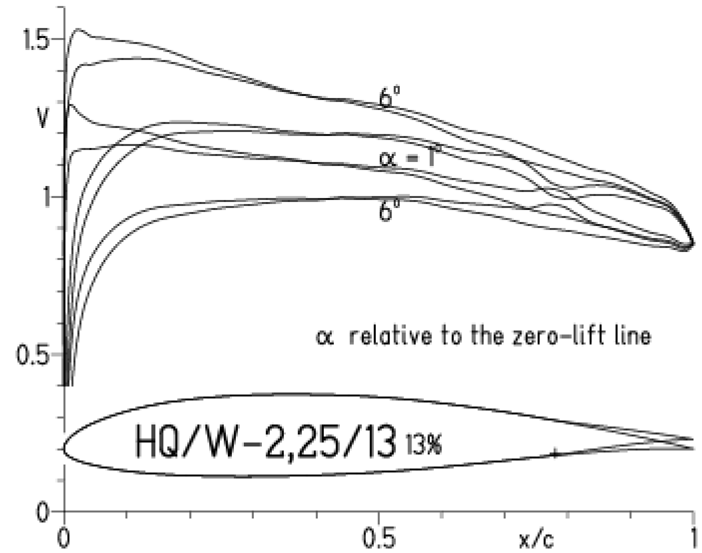


EPPLER 2005 V.

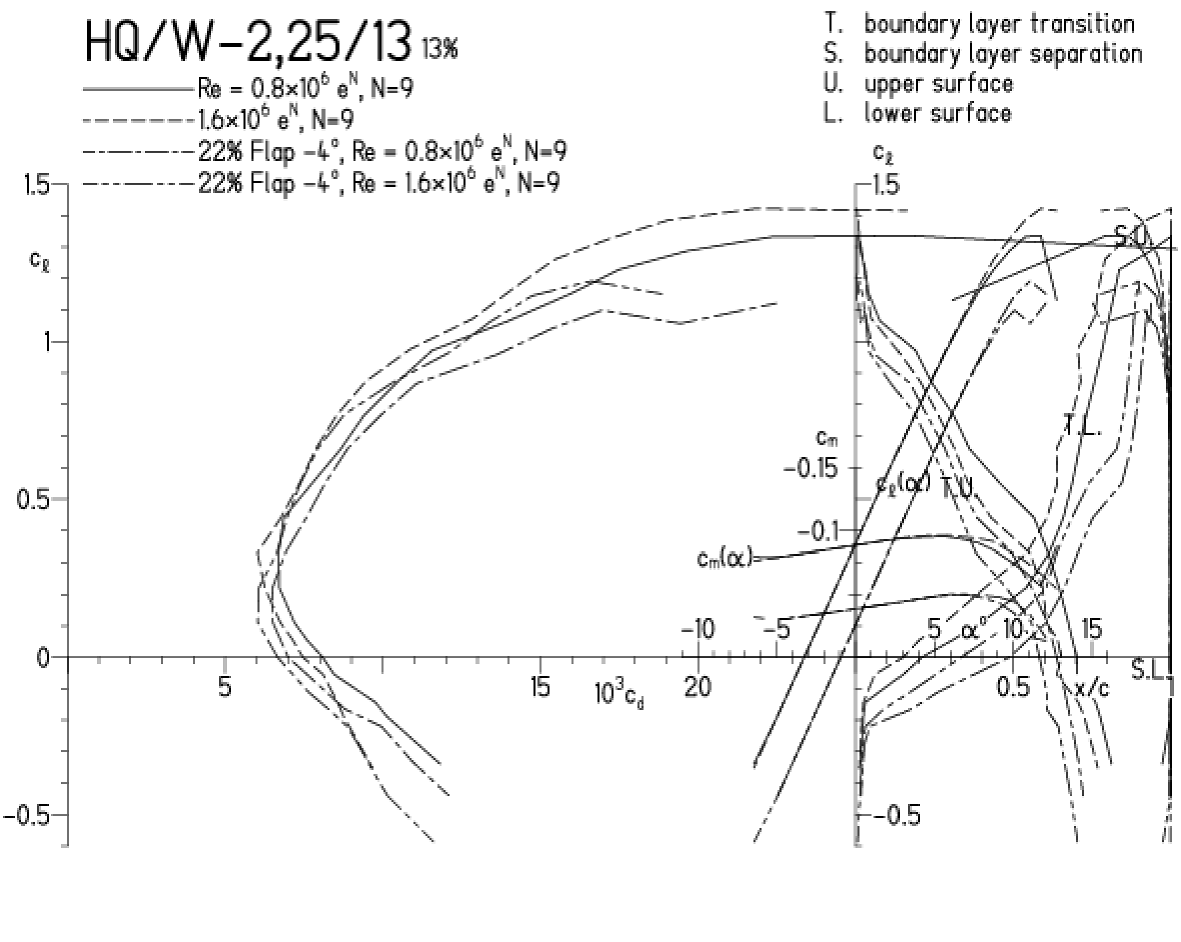


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

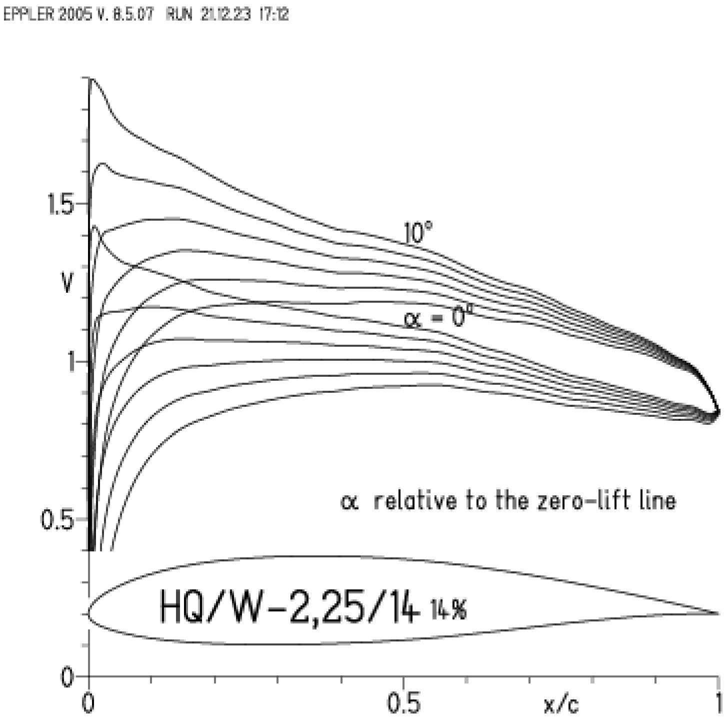
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

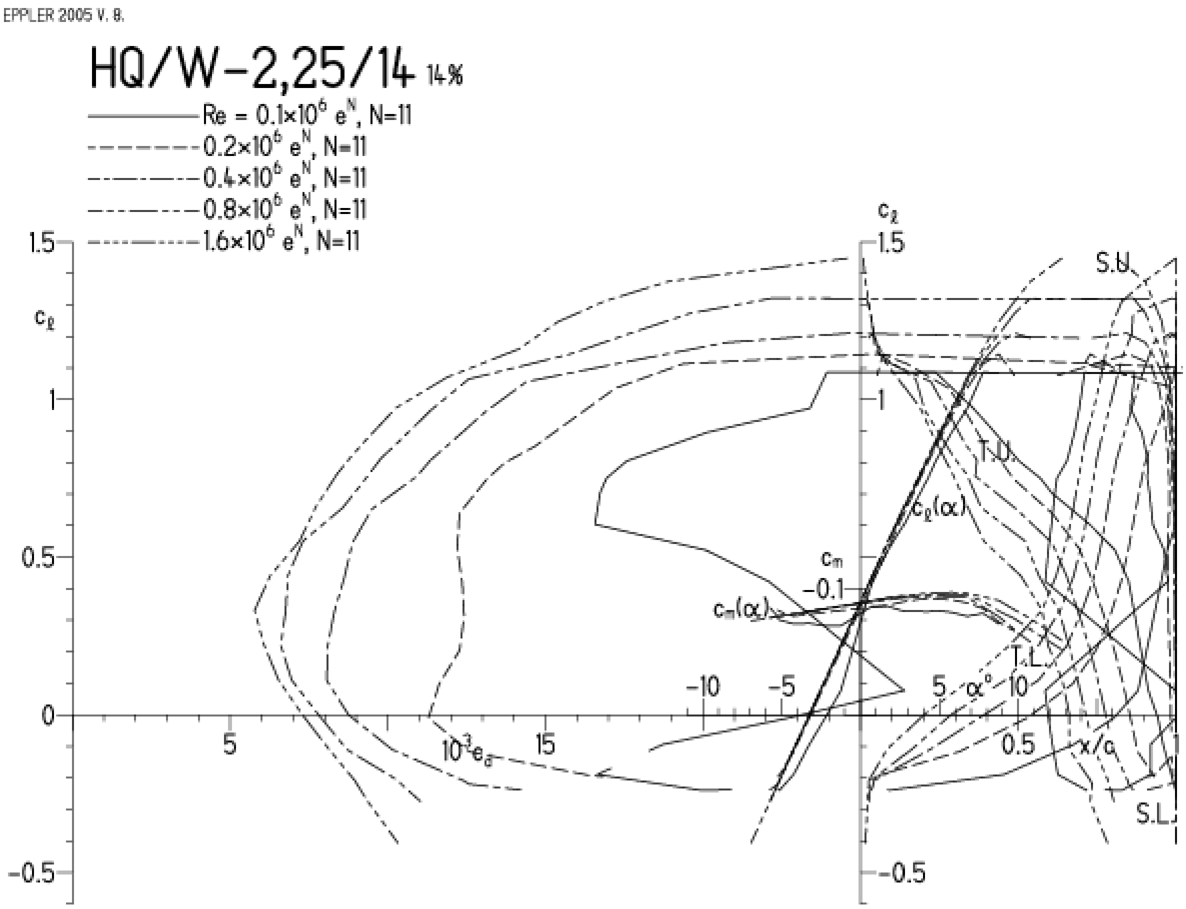


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

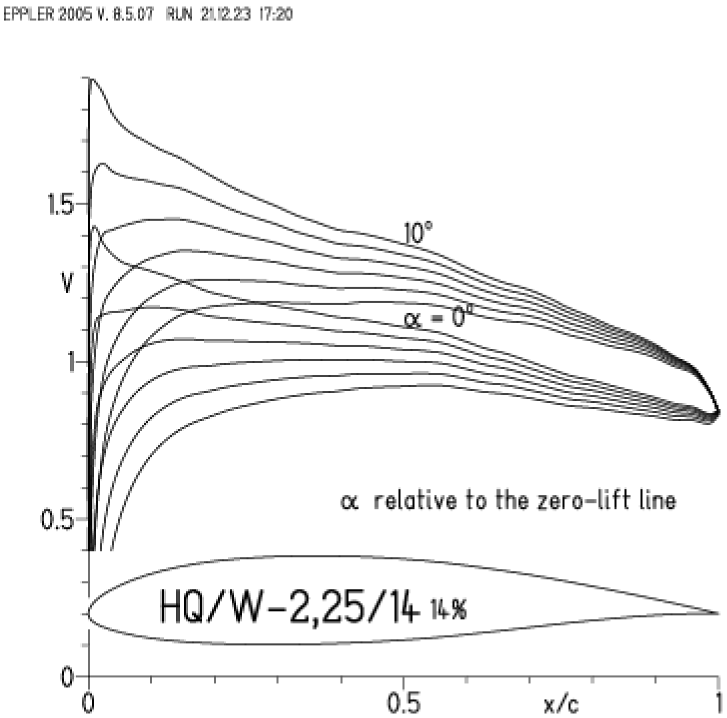


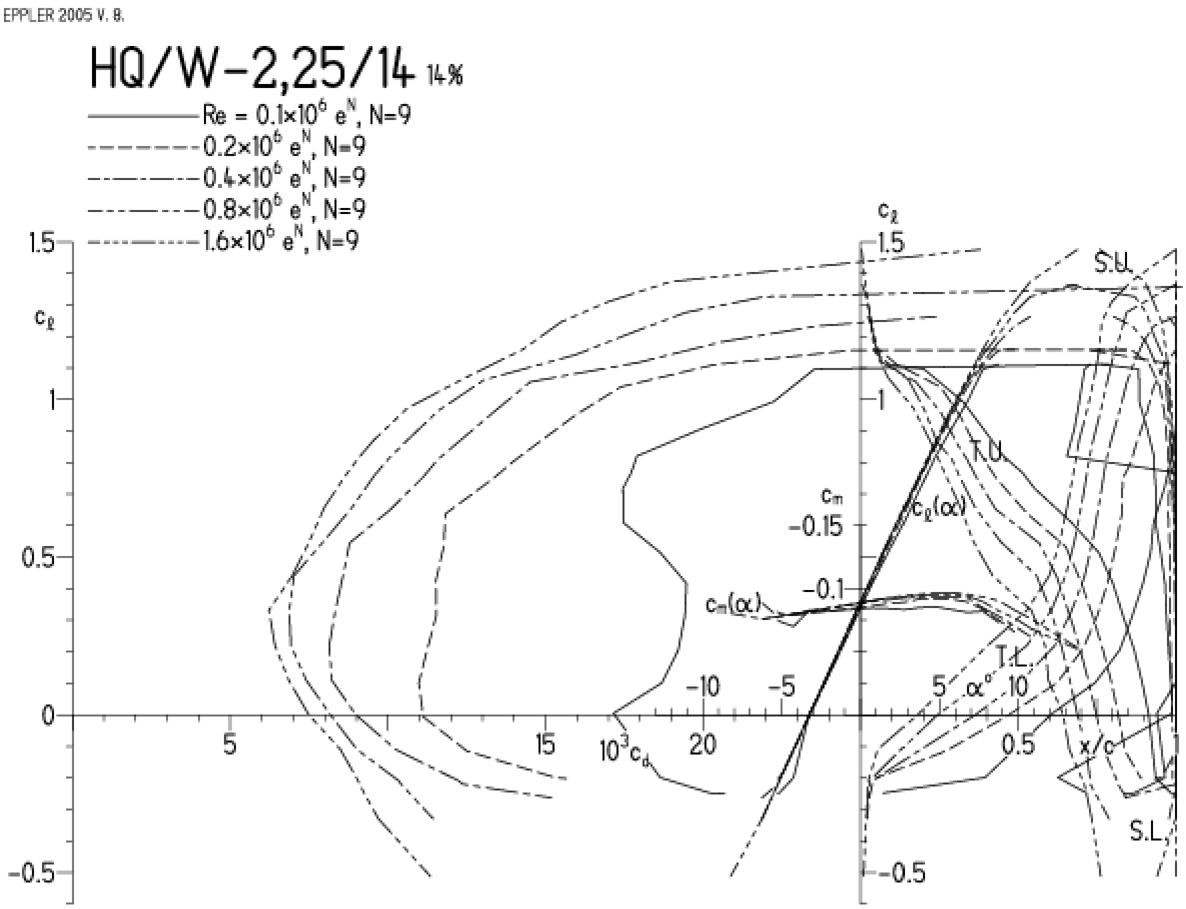
HQ/W-2,25/14, N=11



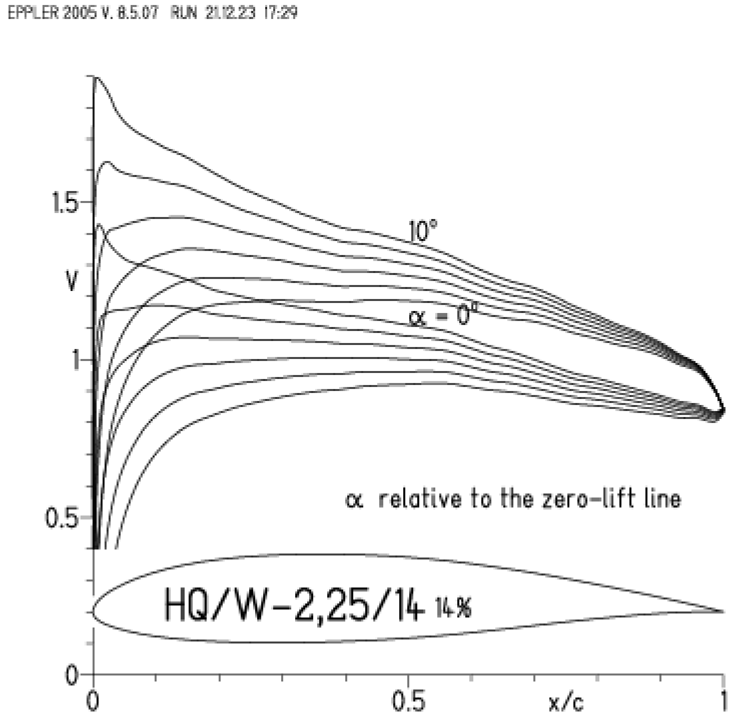


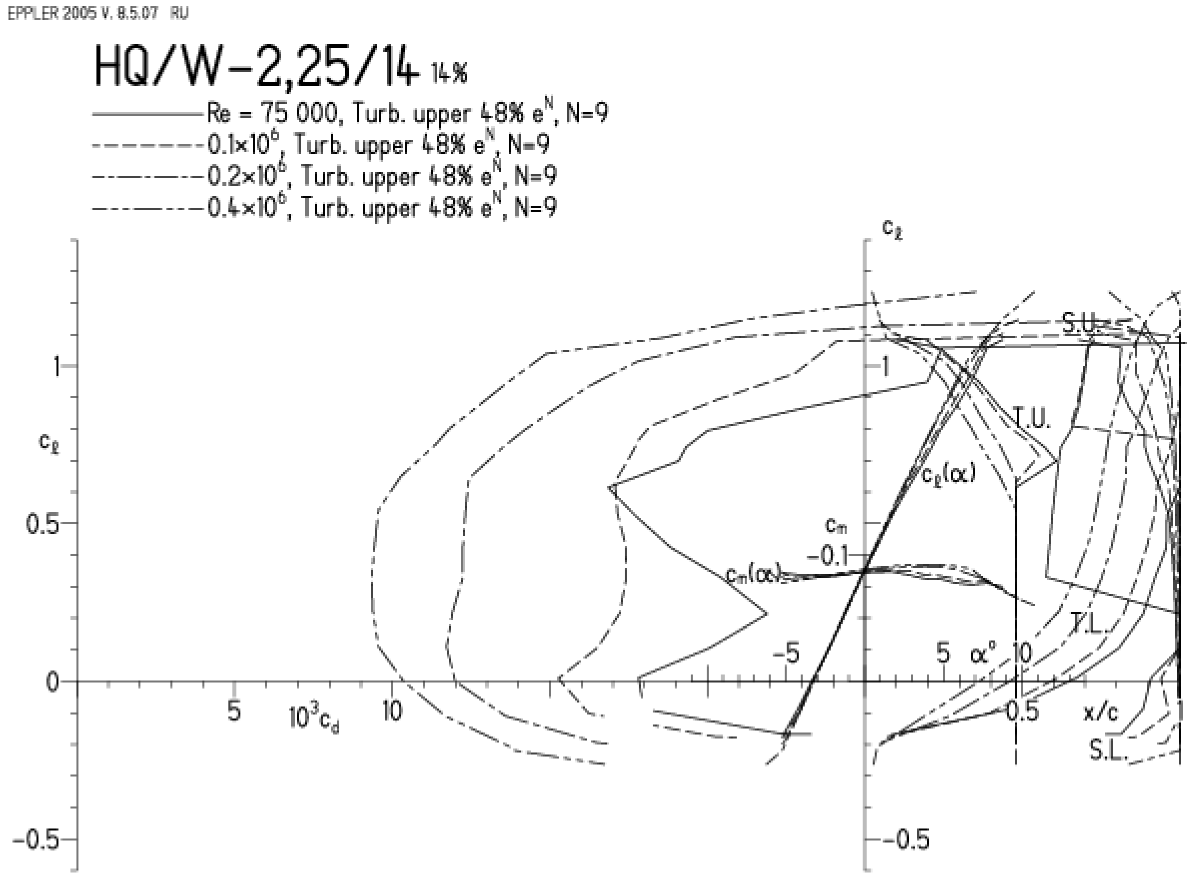
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

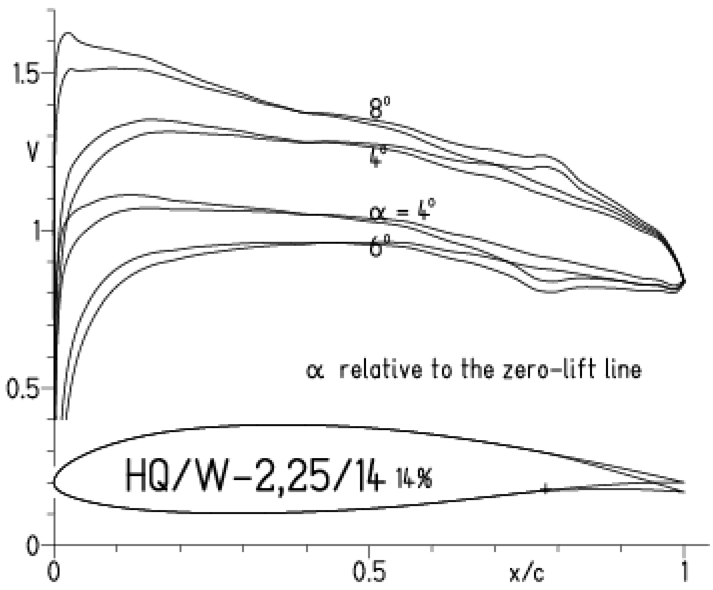
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



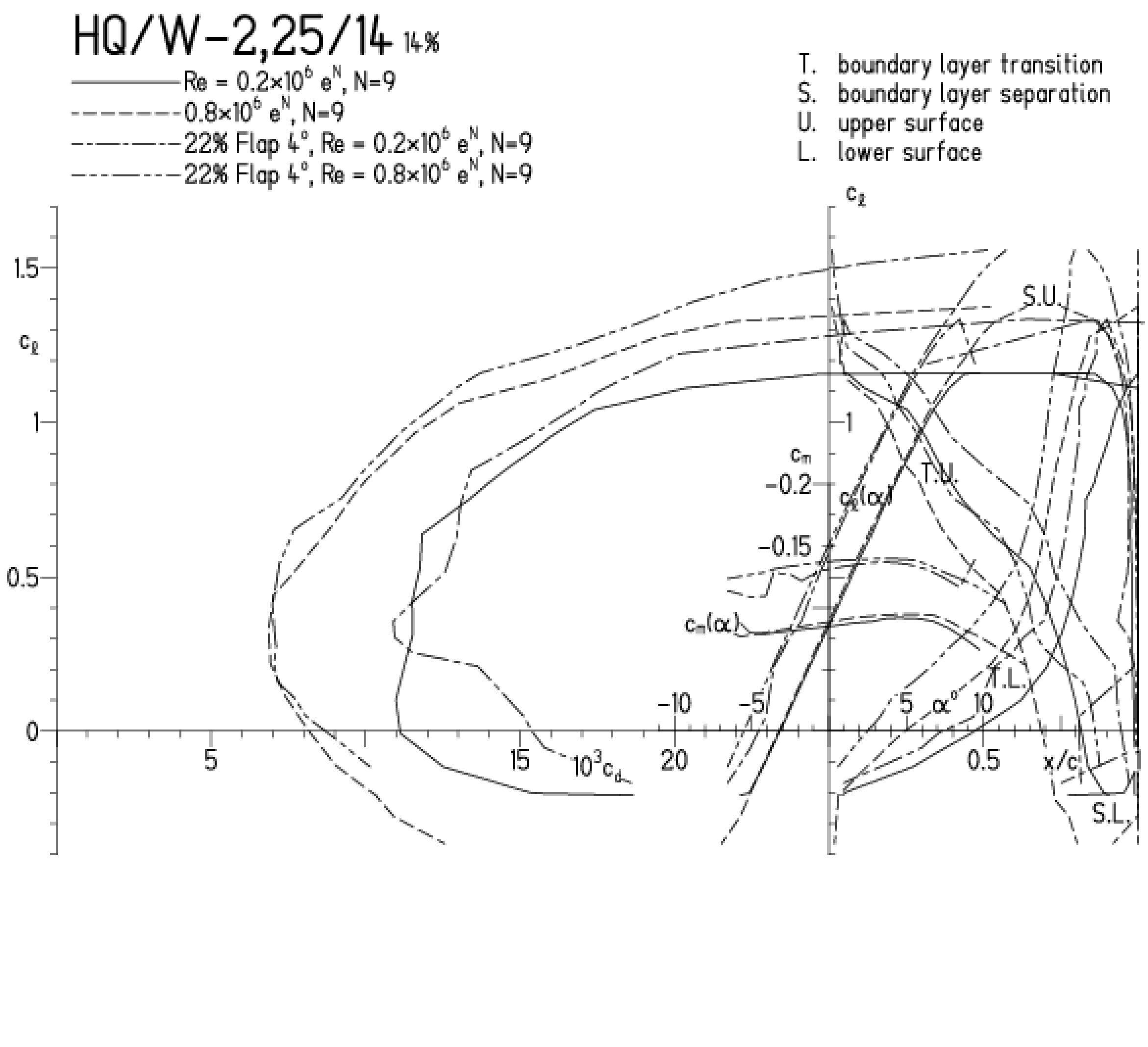


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

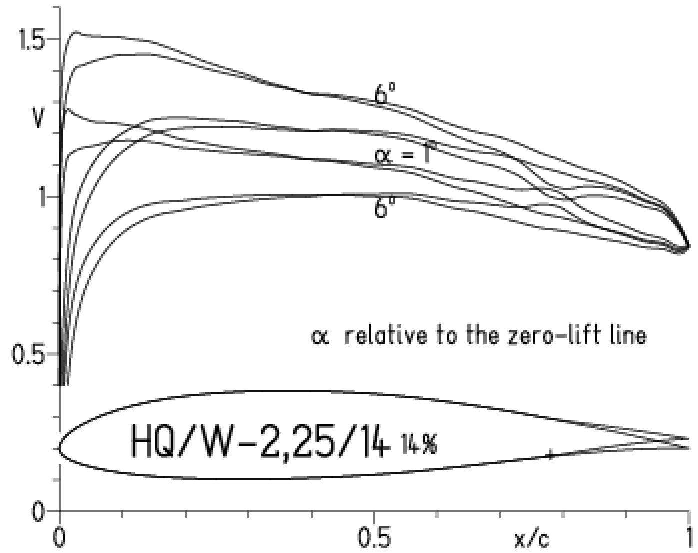


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

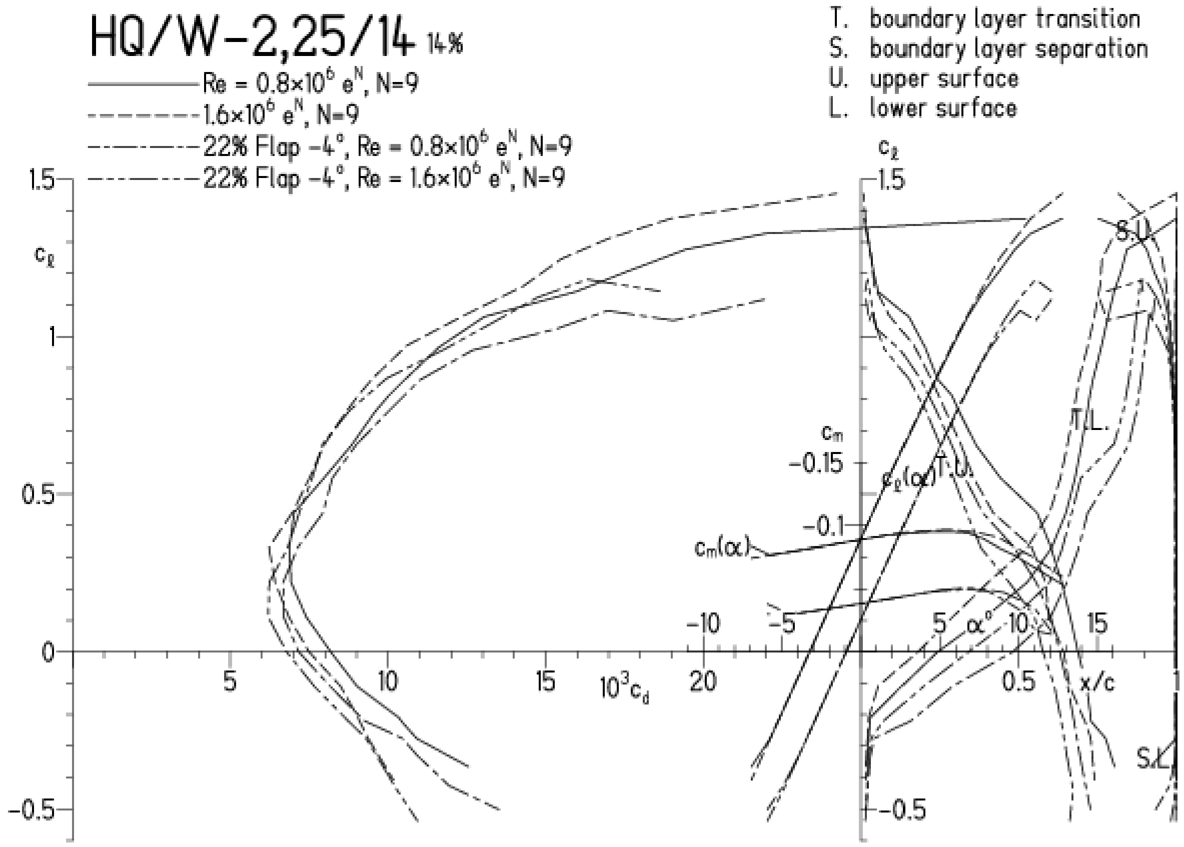


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

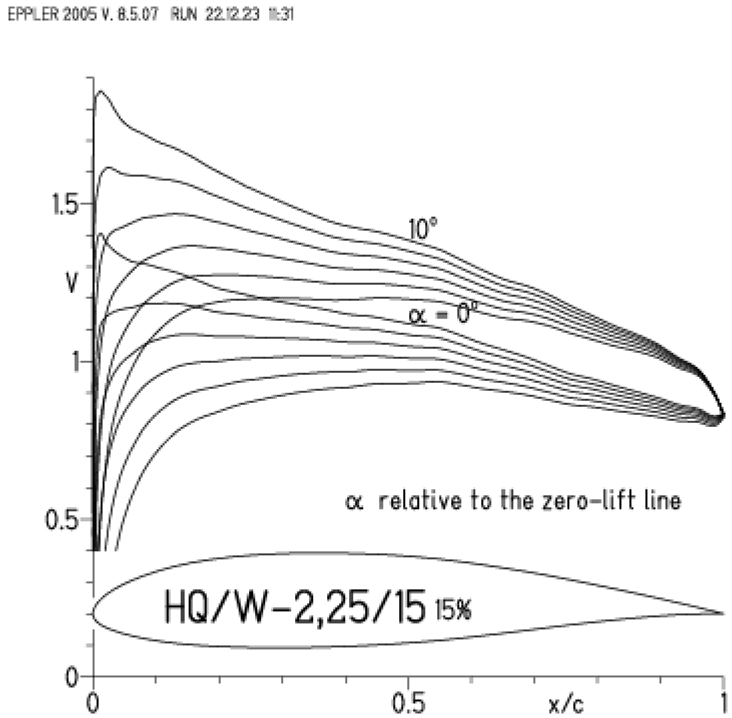
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

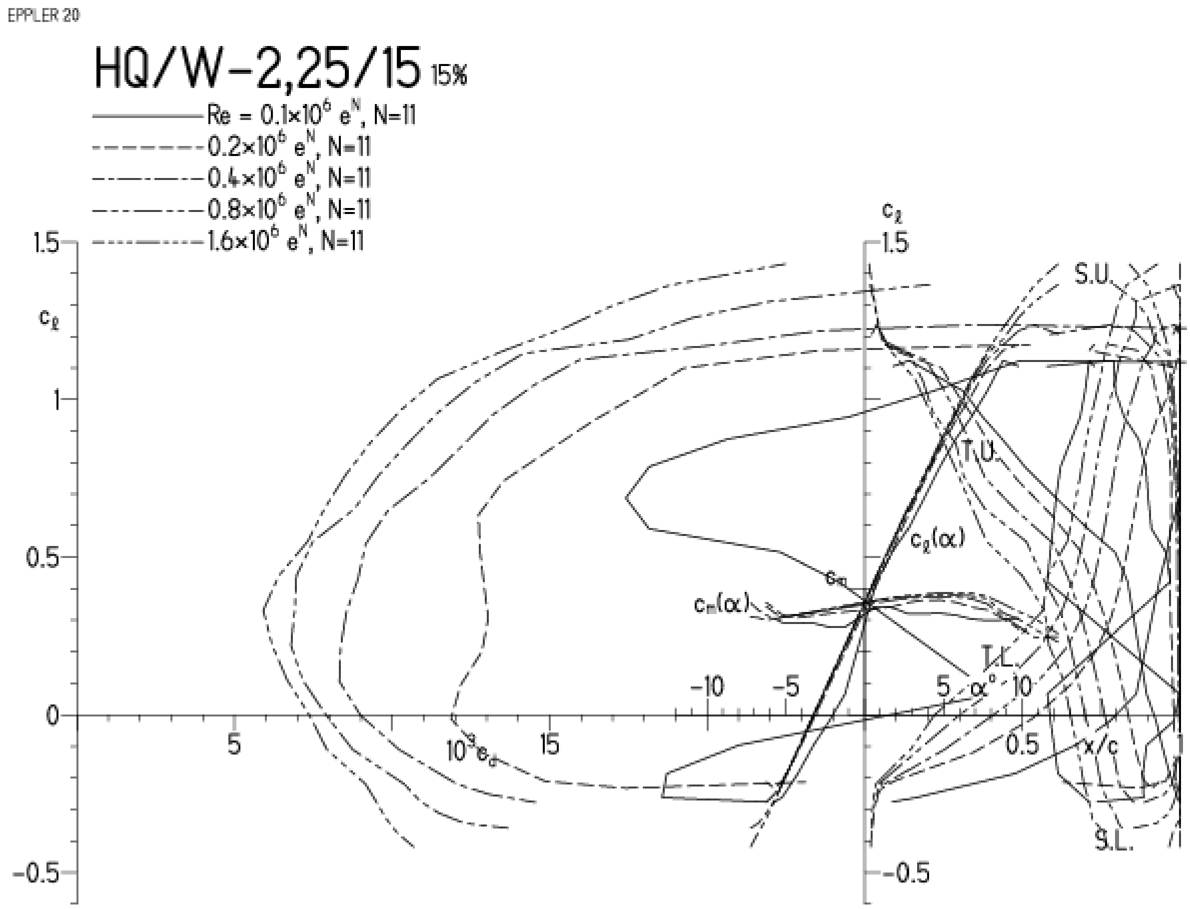


EPPLER 2005 V. 8.5.07



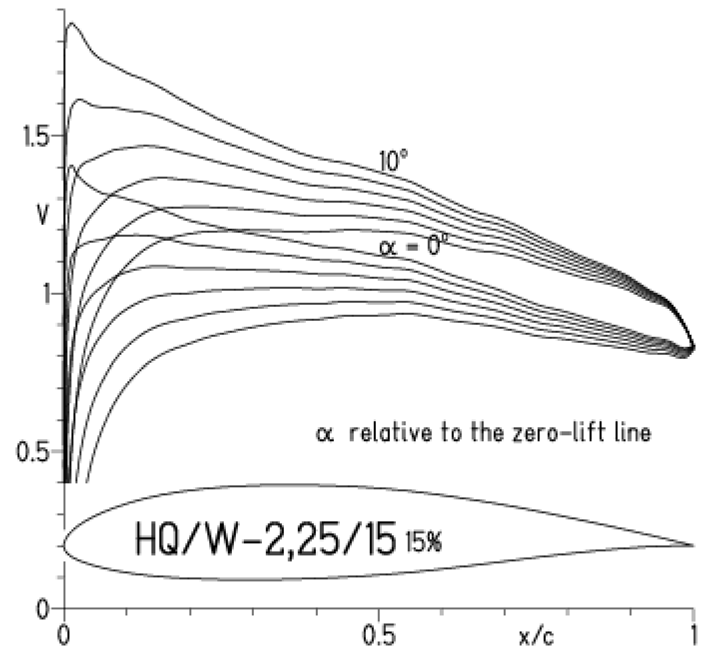
HQ/W-2,25/15, N=11



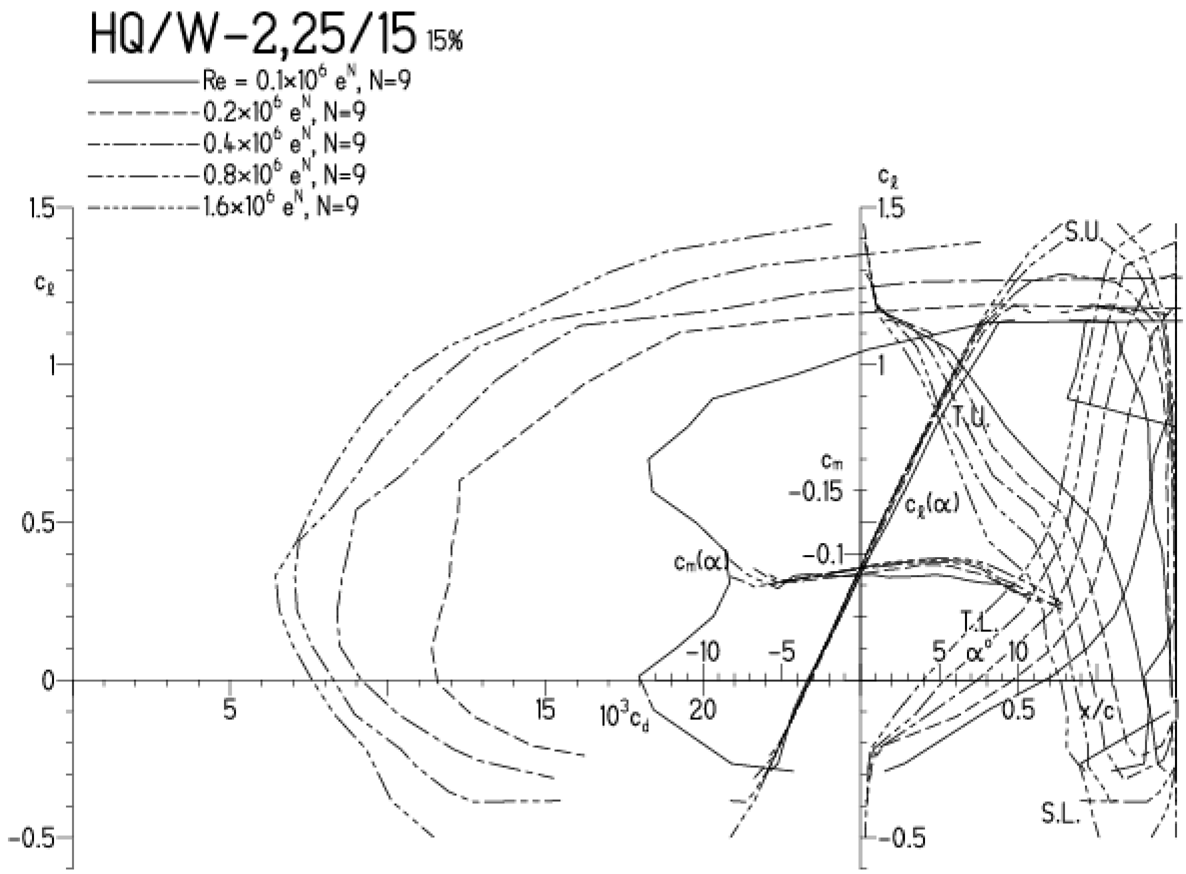


HQ/W-2,25/15, N=9

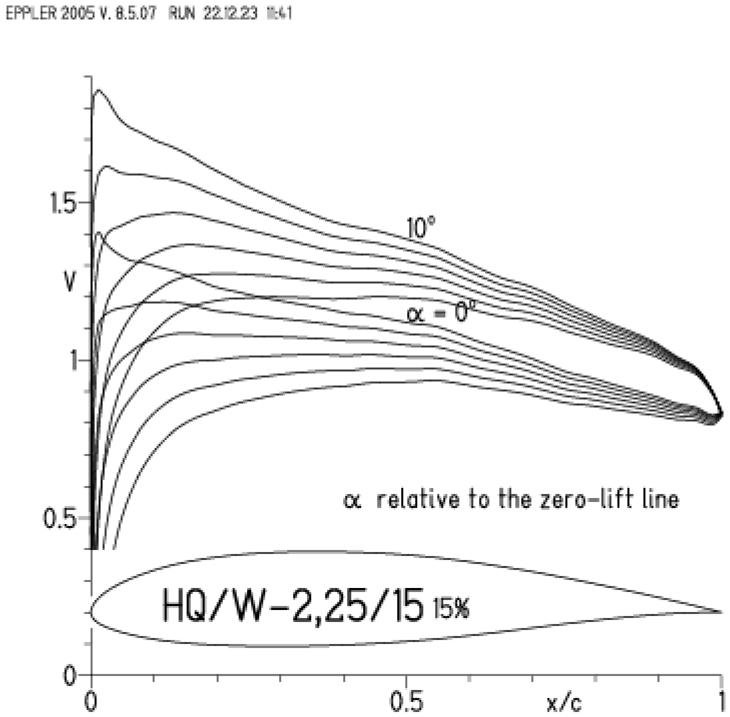
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

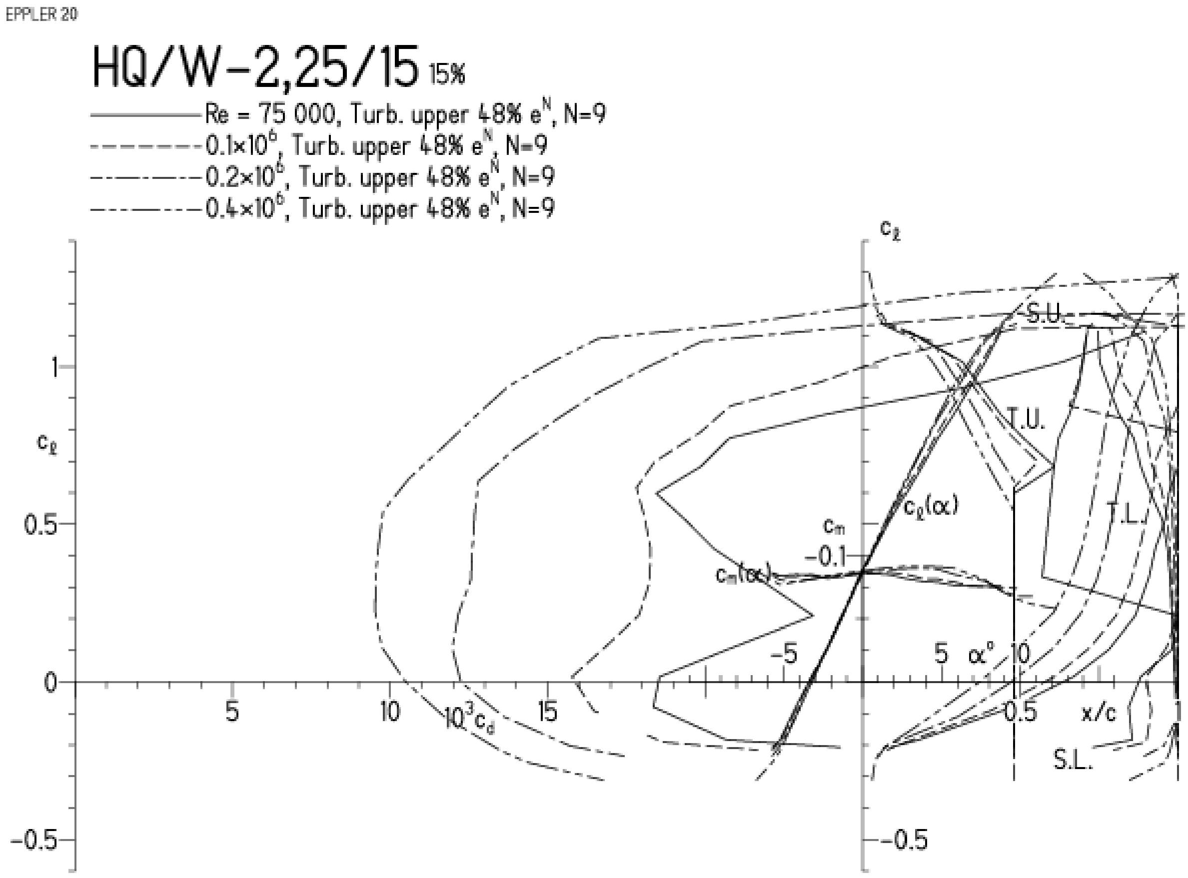


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



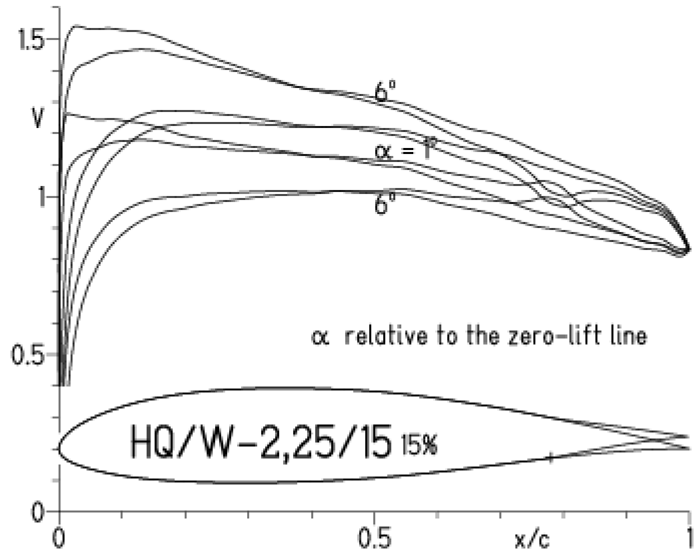


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

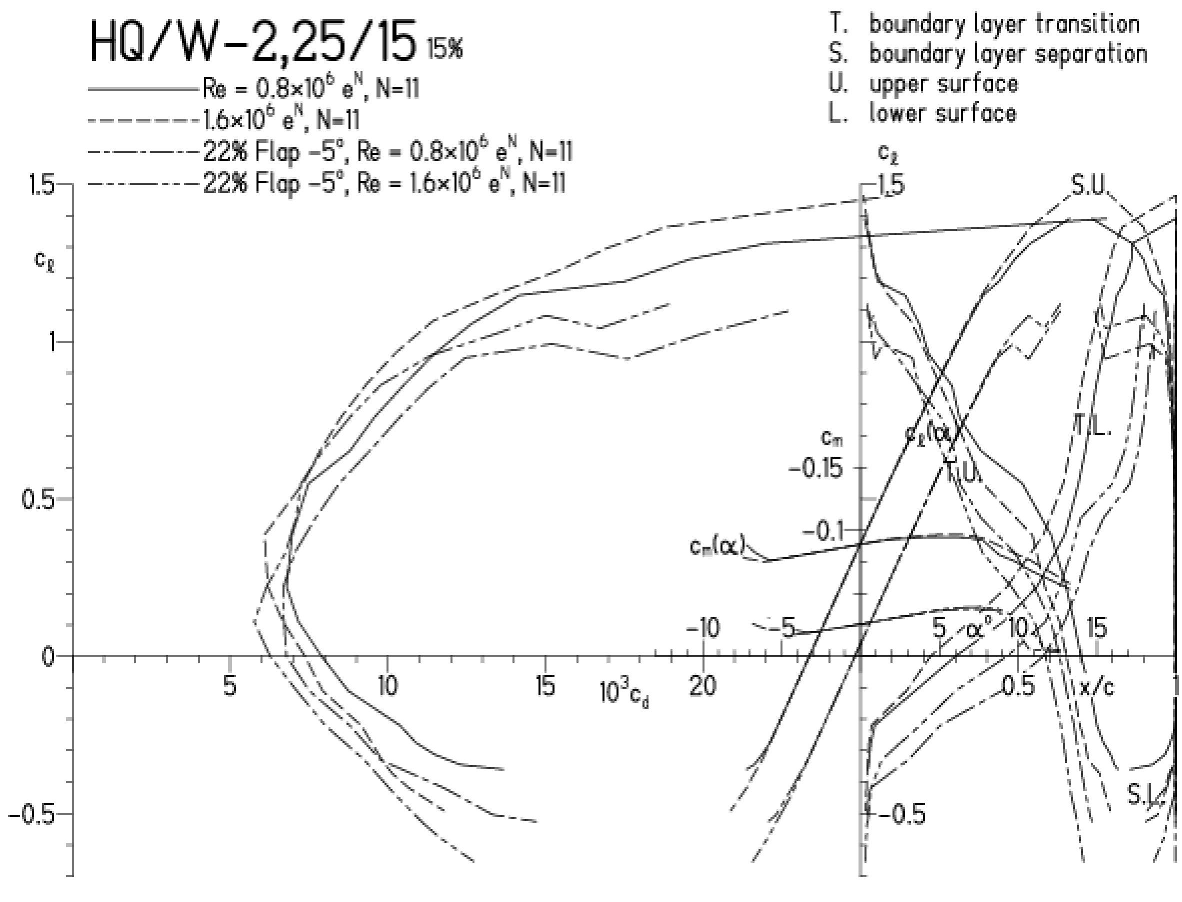
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

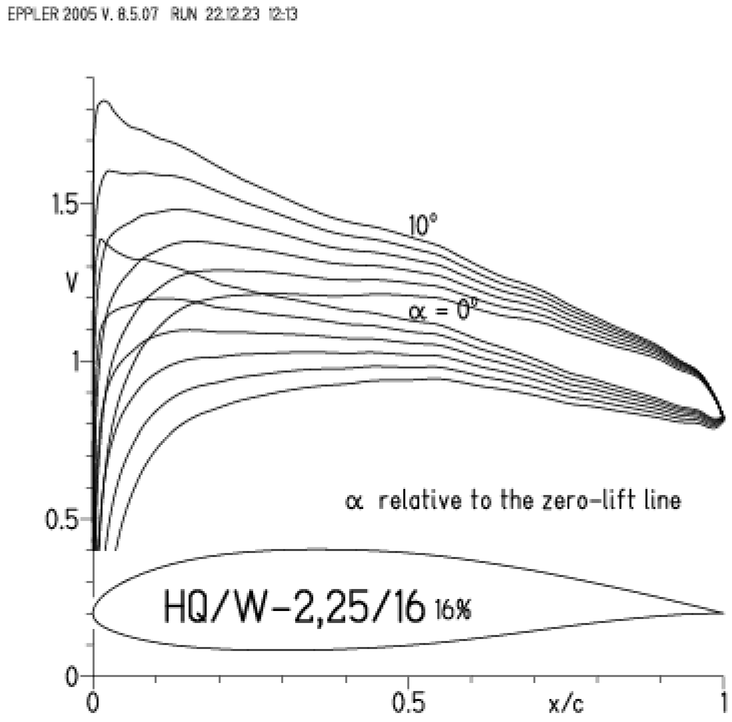
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

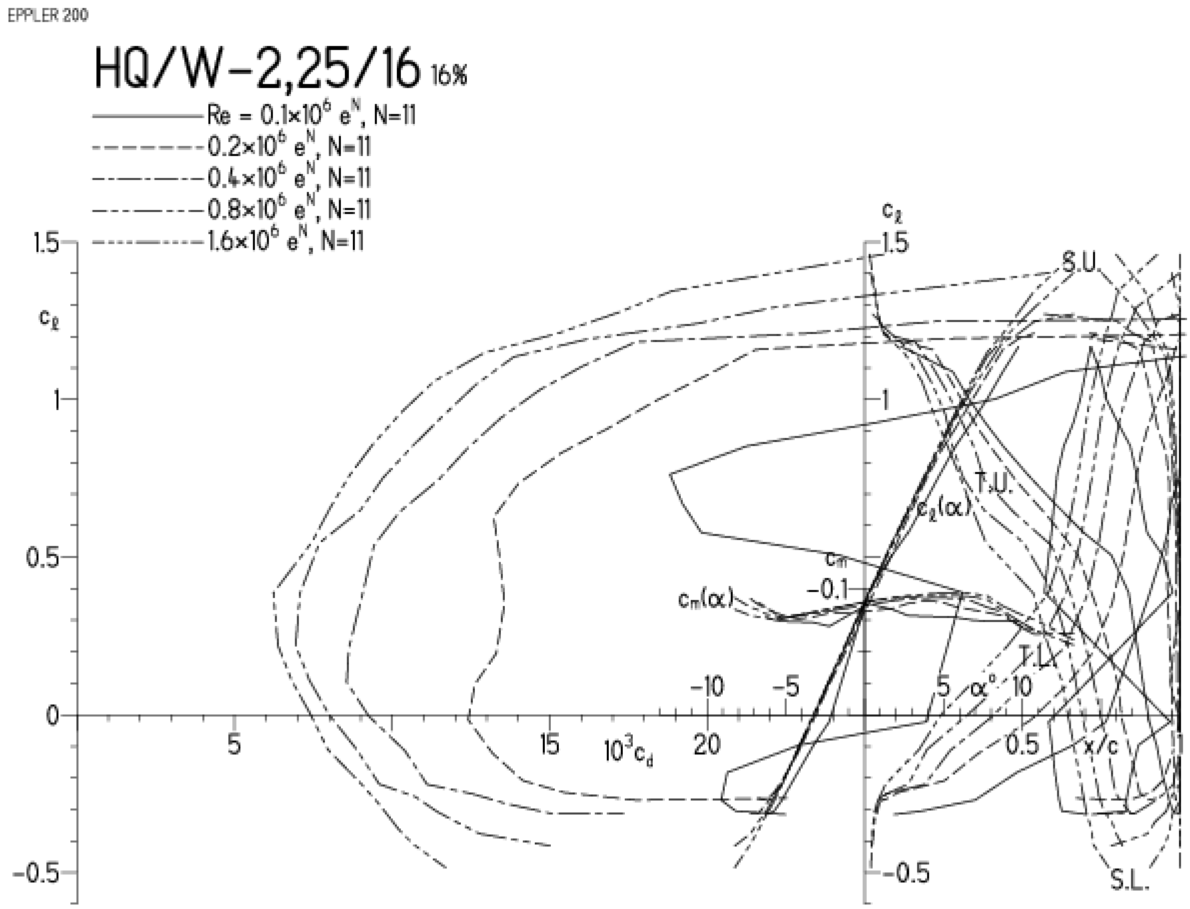


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

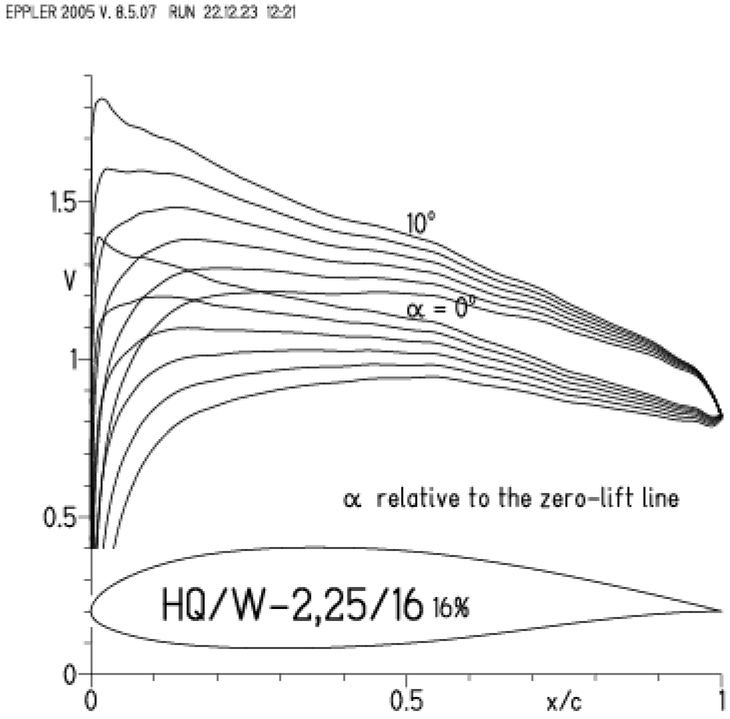


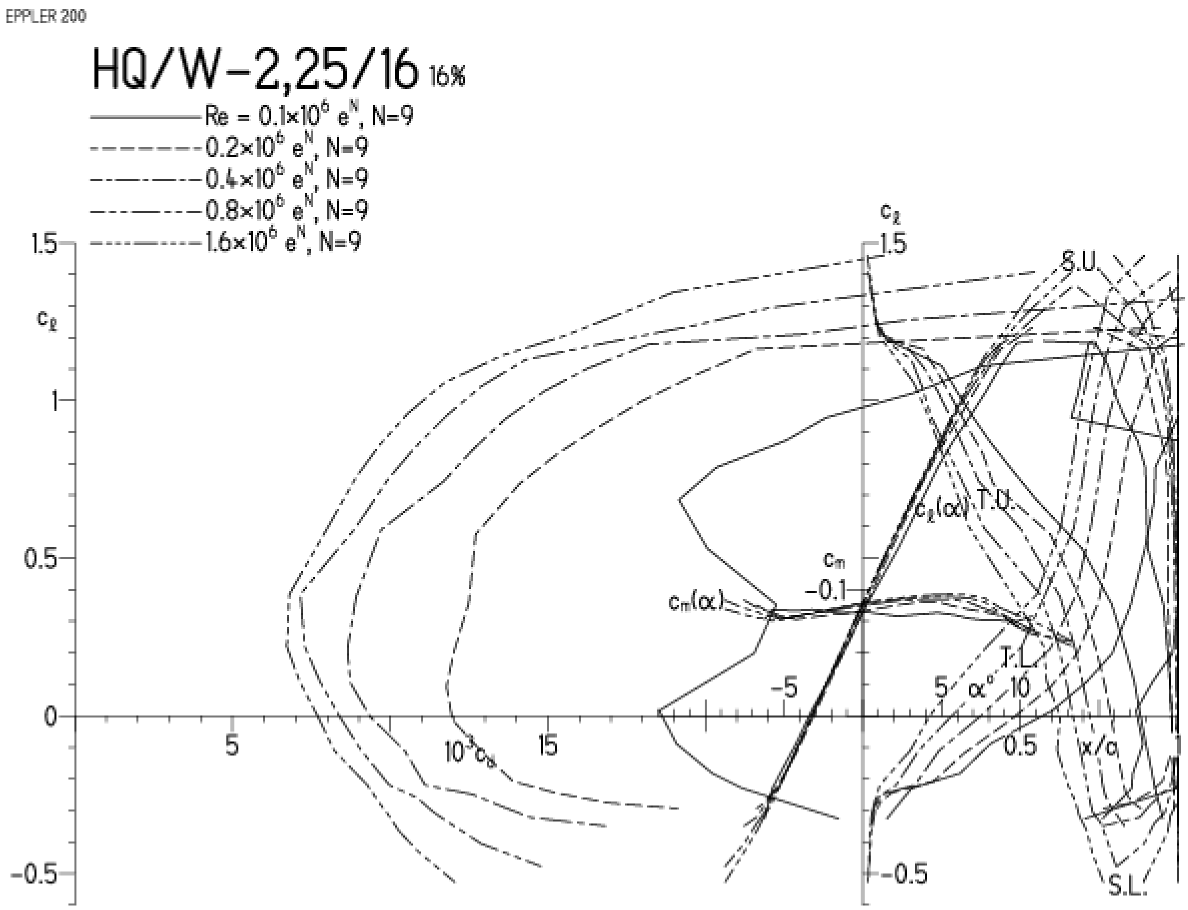
HQ/W-2,25/16, N=11



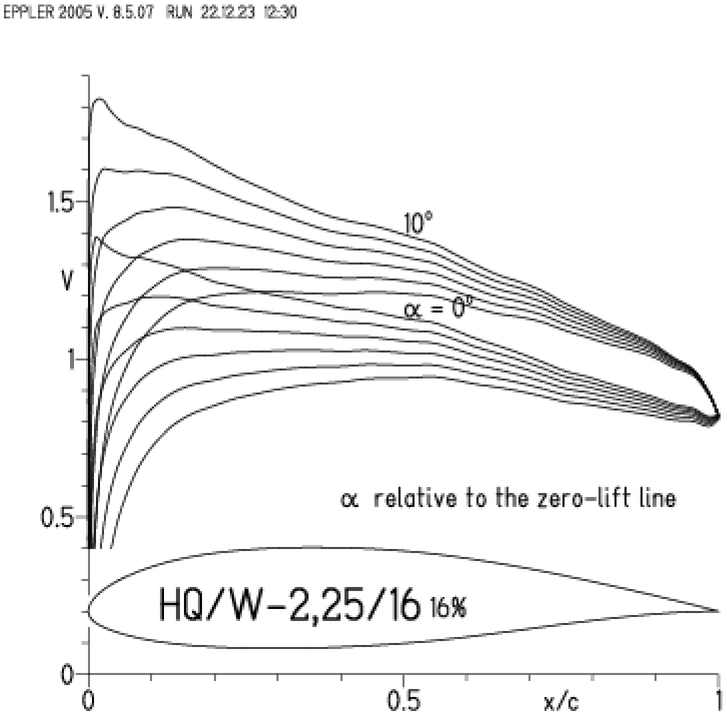


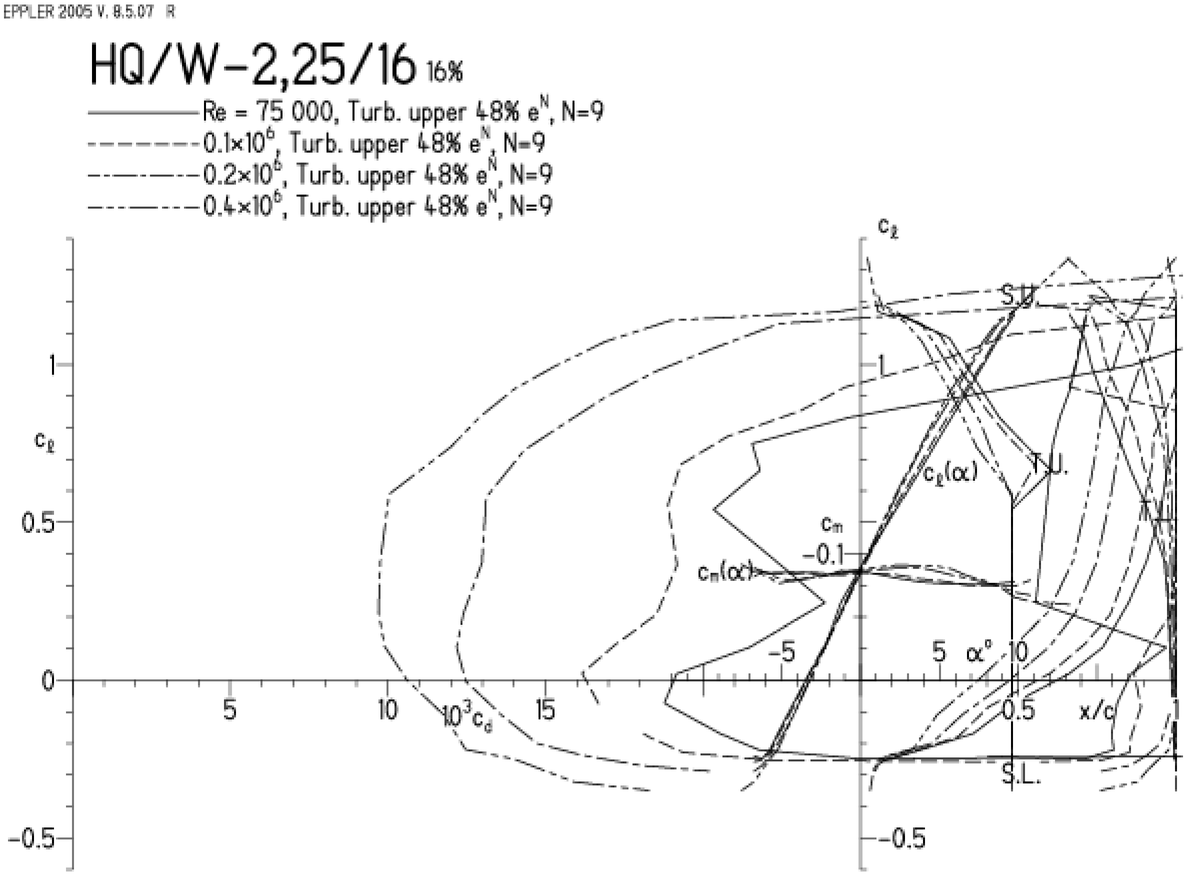
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



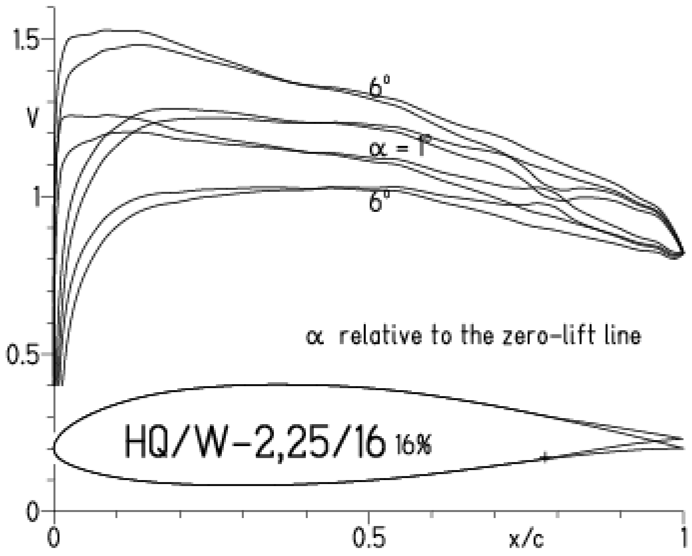


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

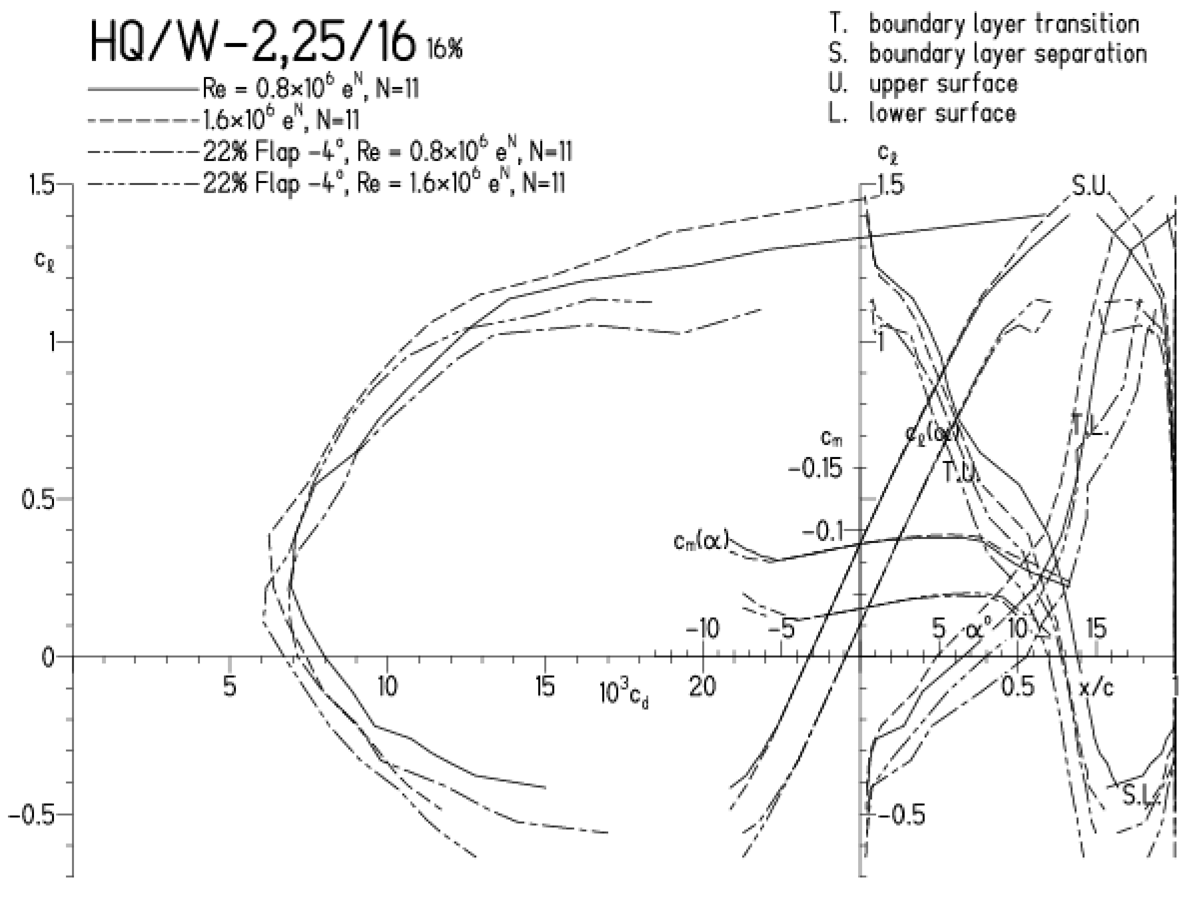
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

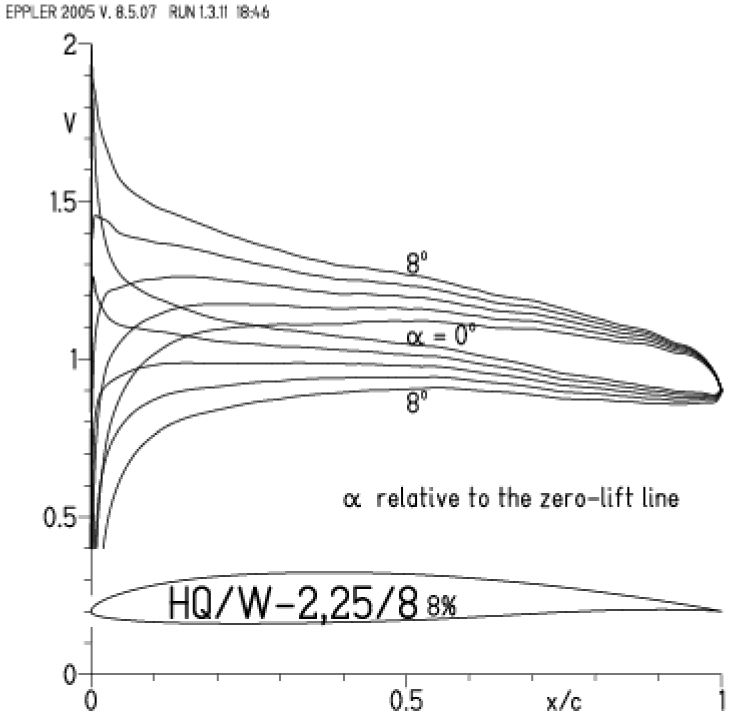
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

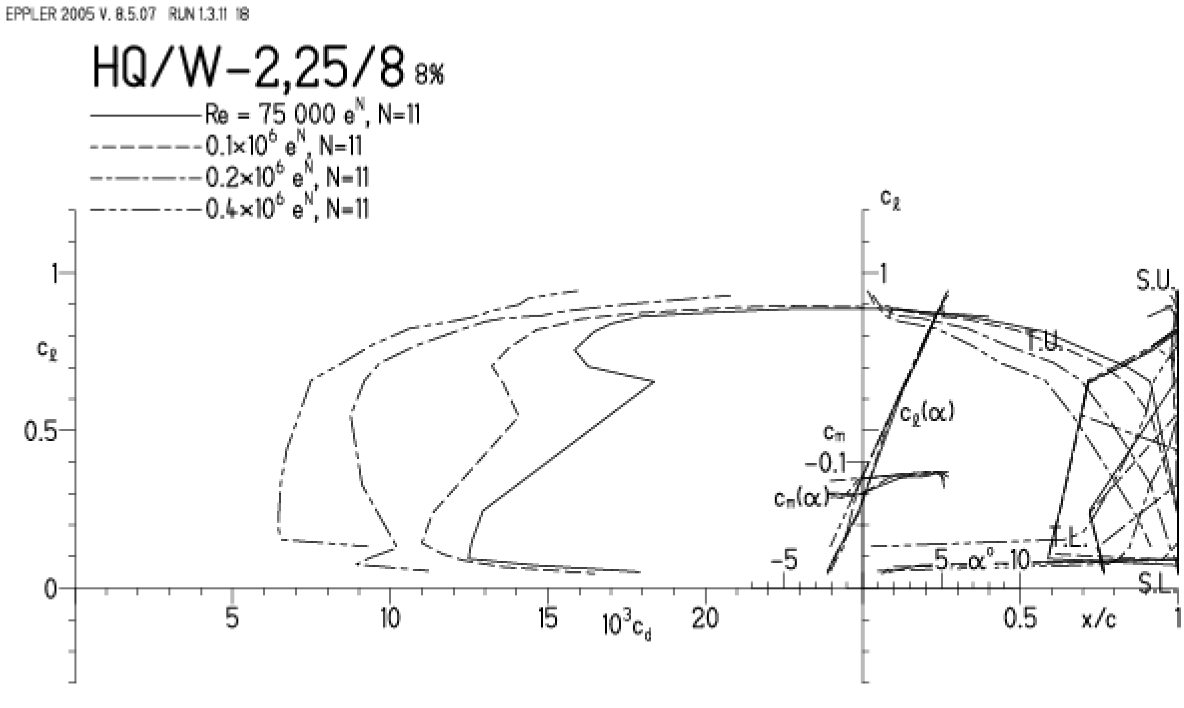


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



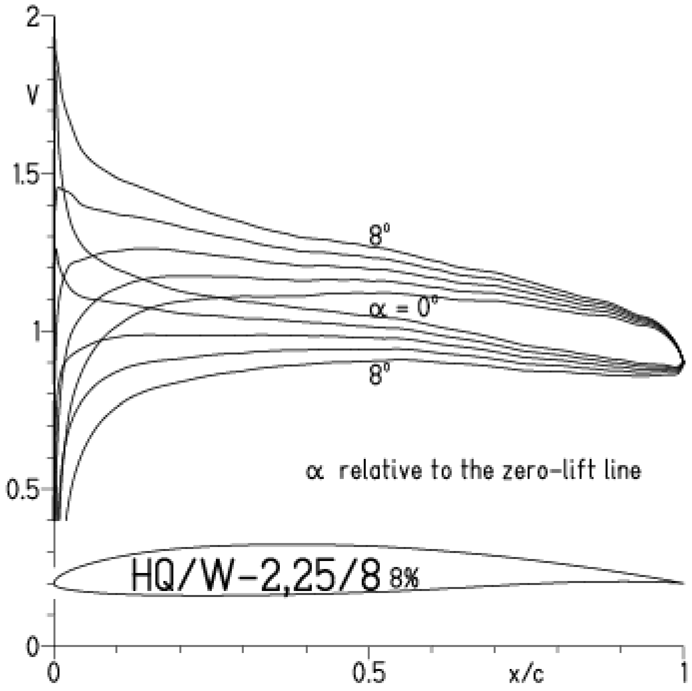
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

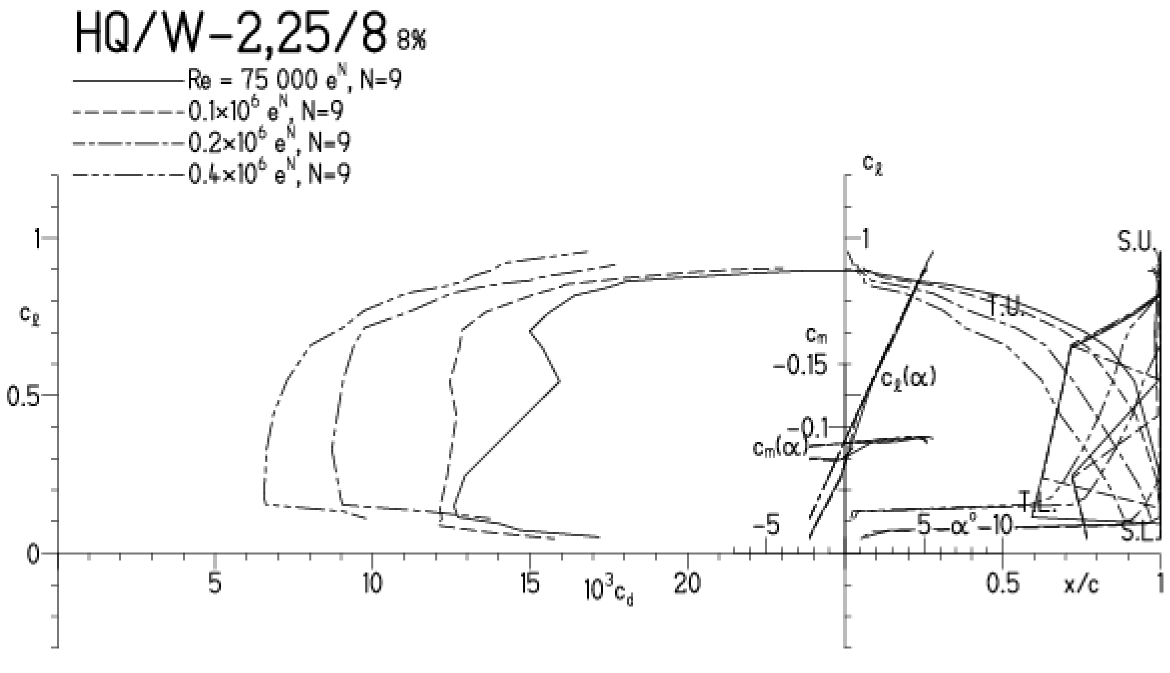

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

HQ/W-2,25/8, N=9

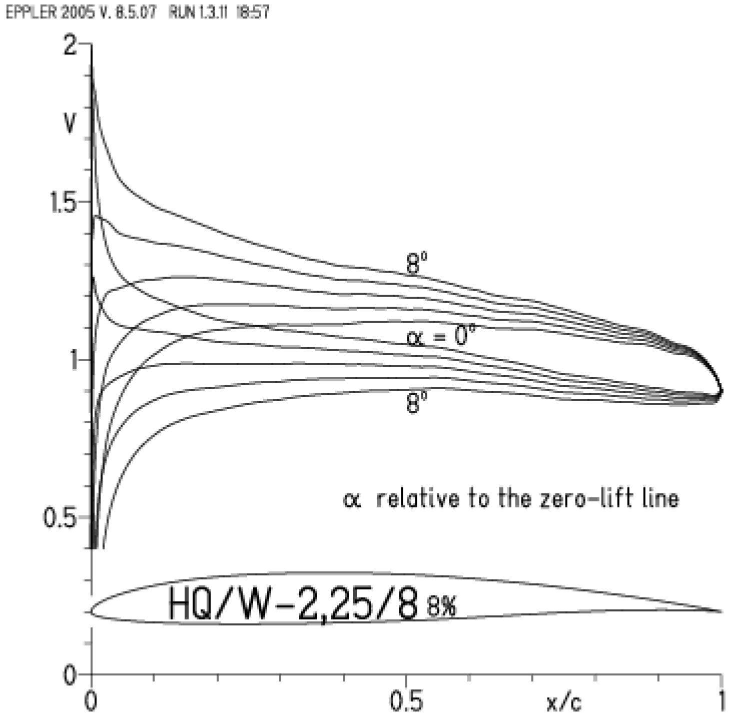
EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

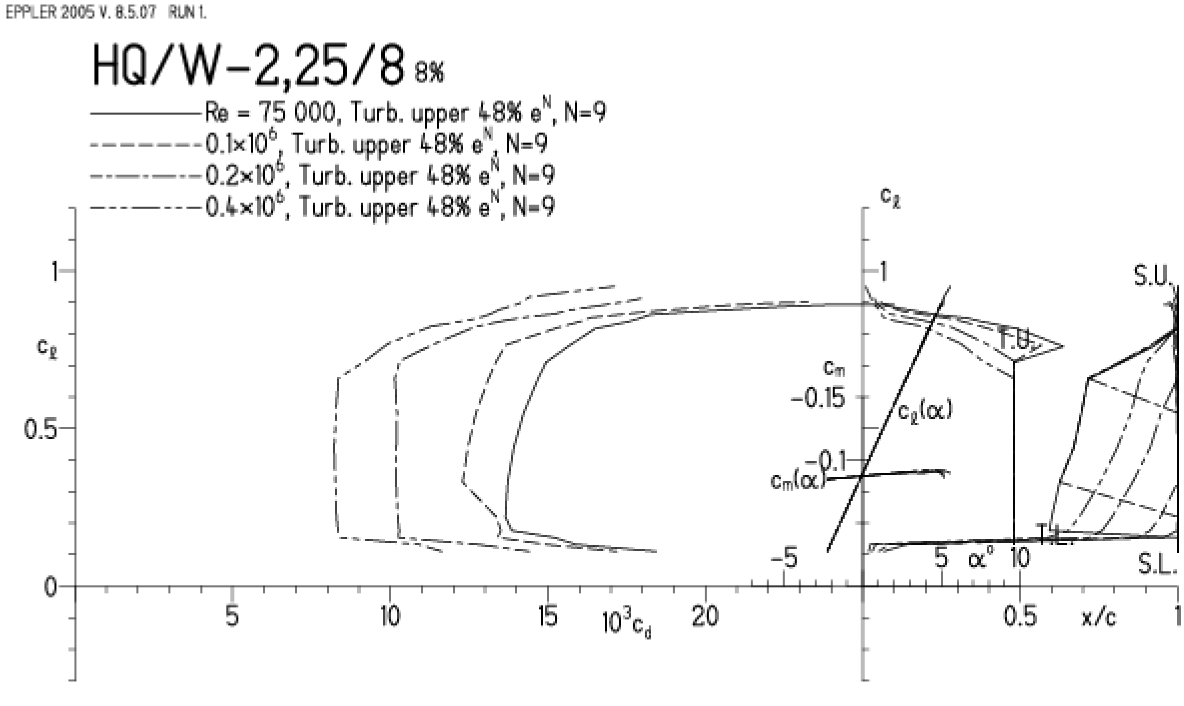


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

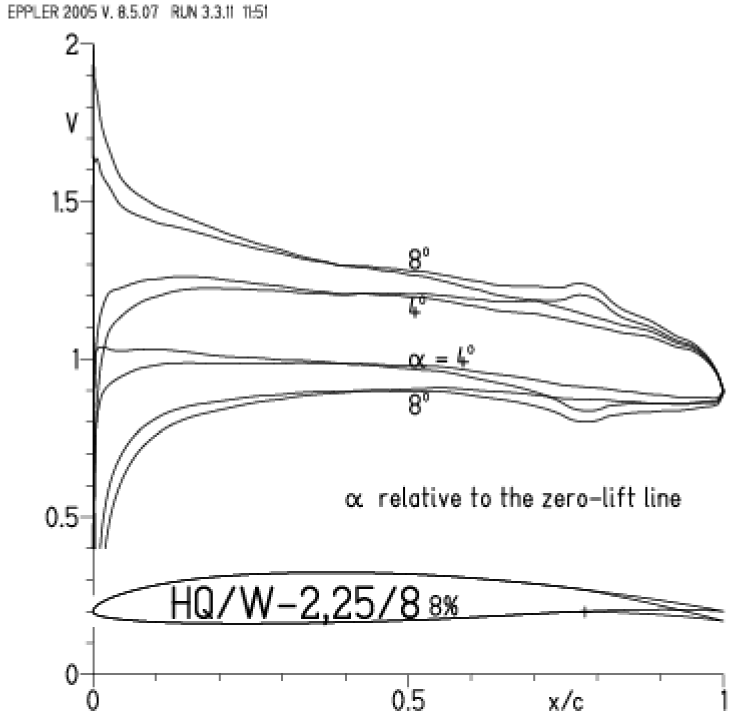


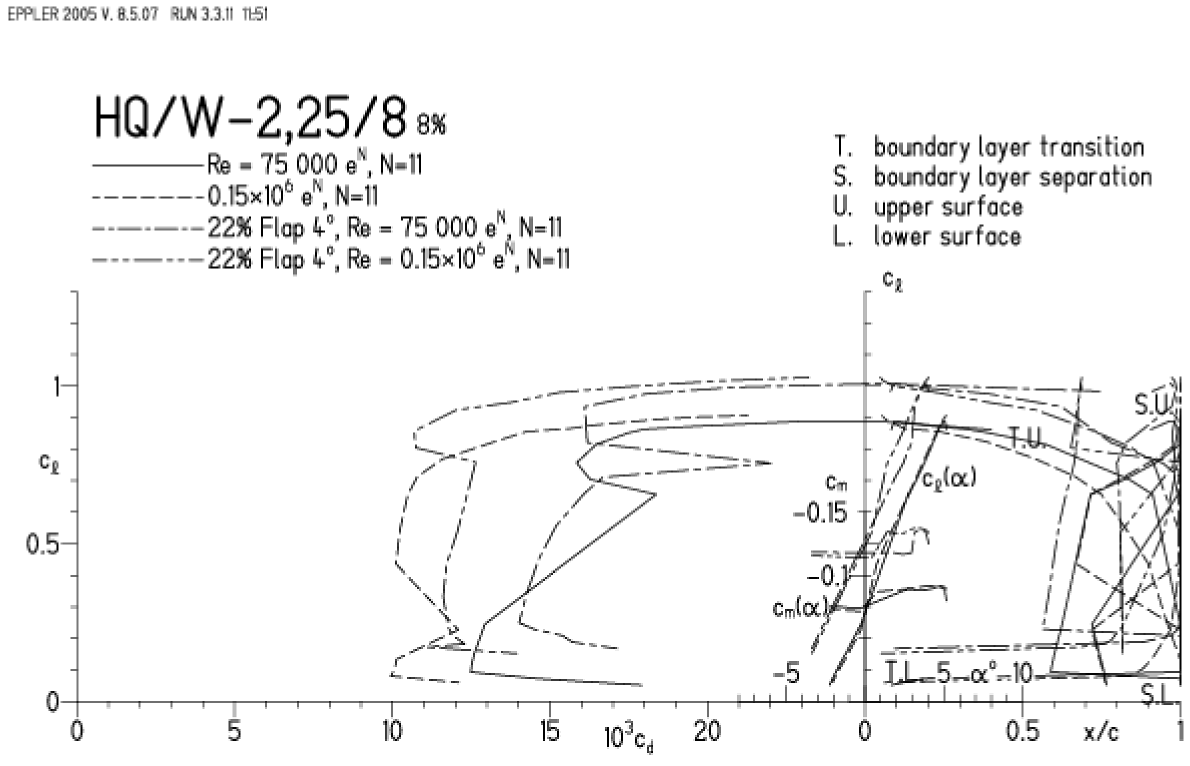
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



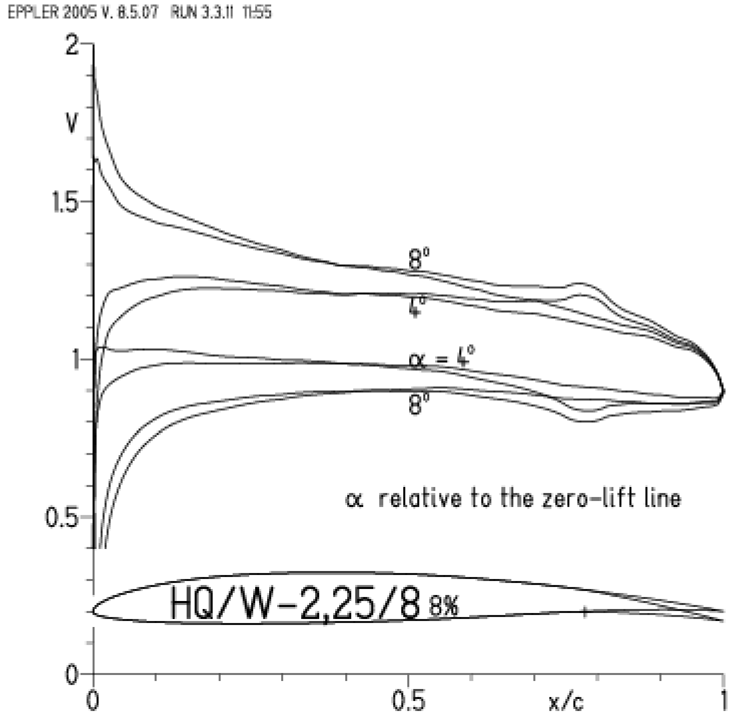


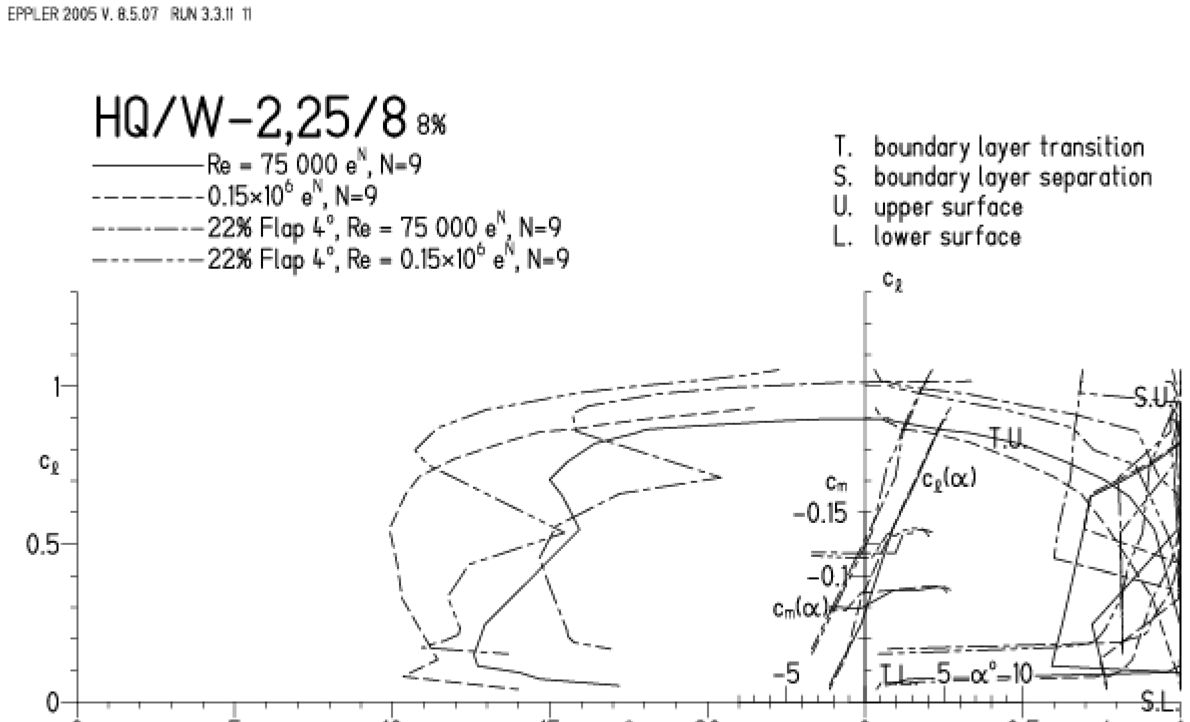
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



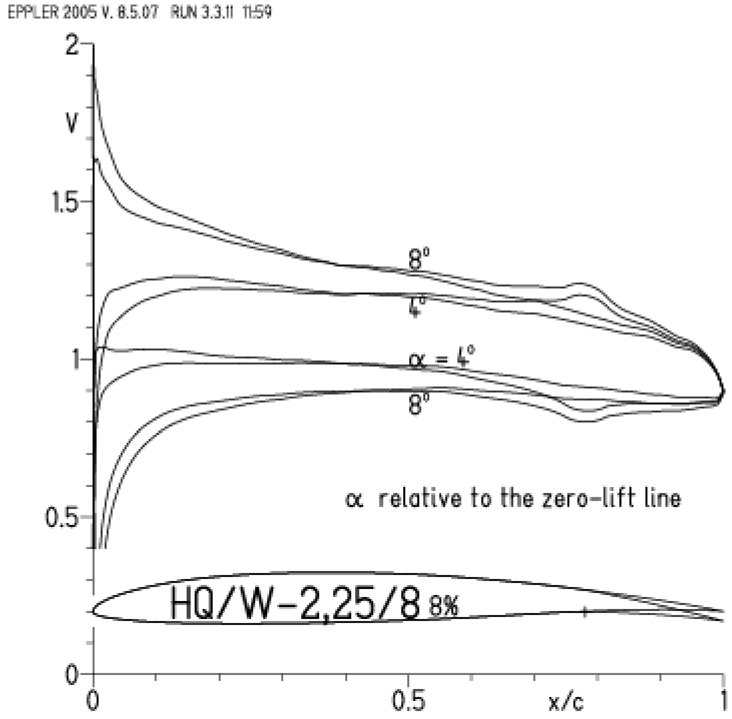


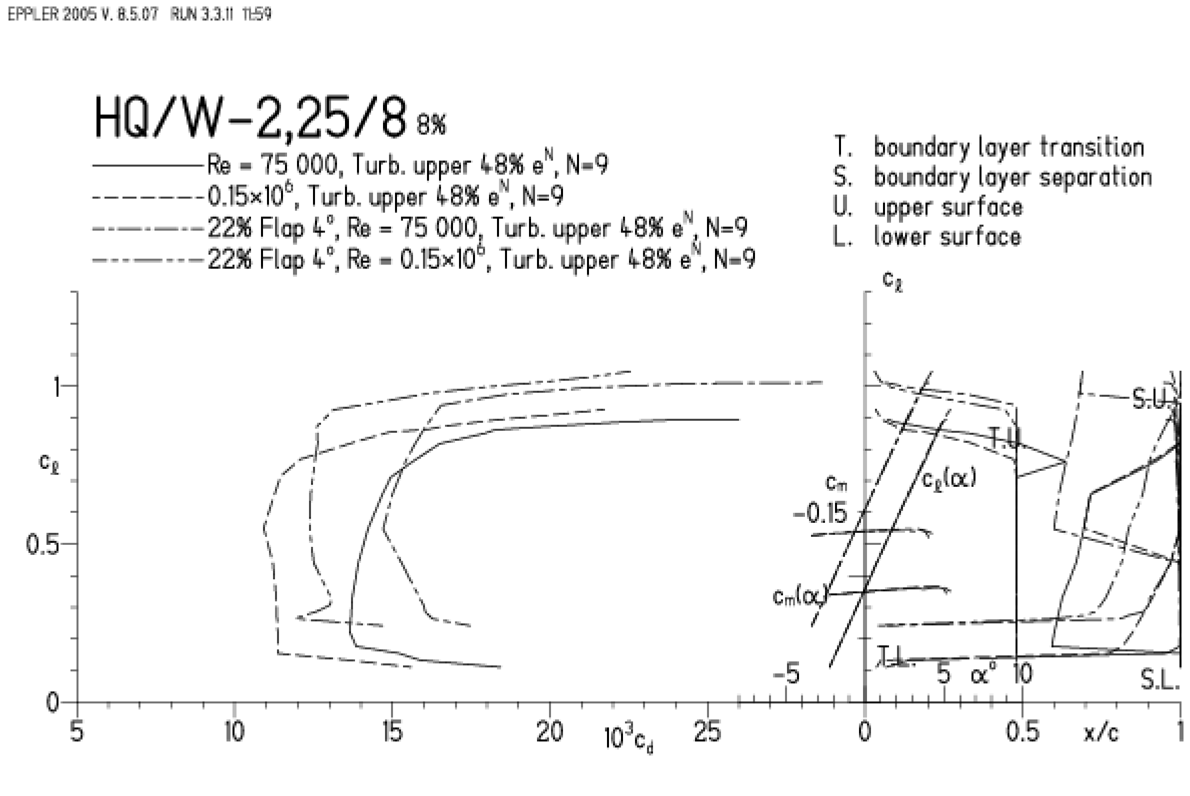
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



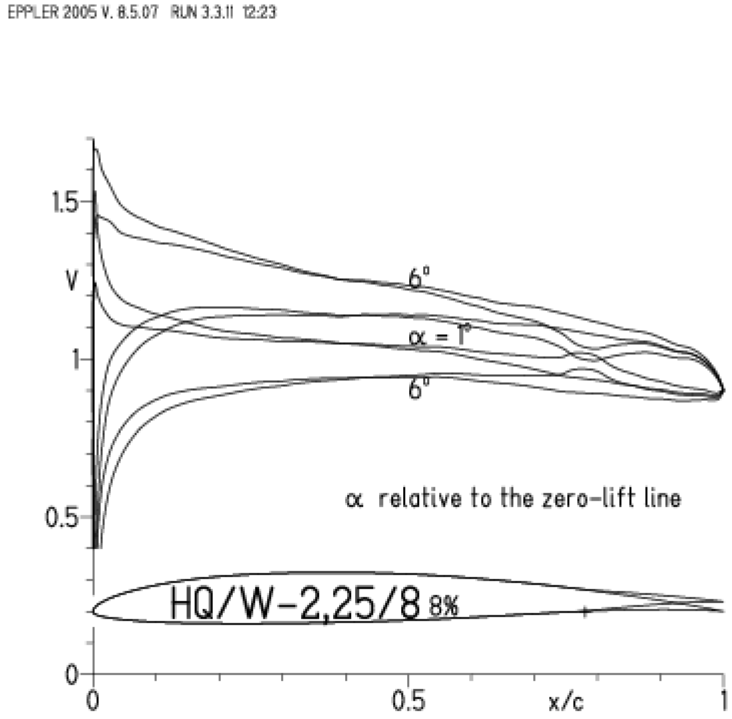


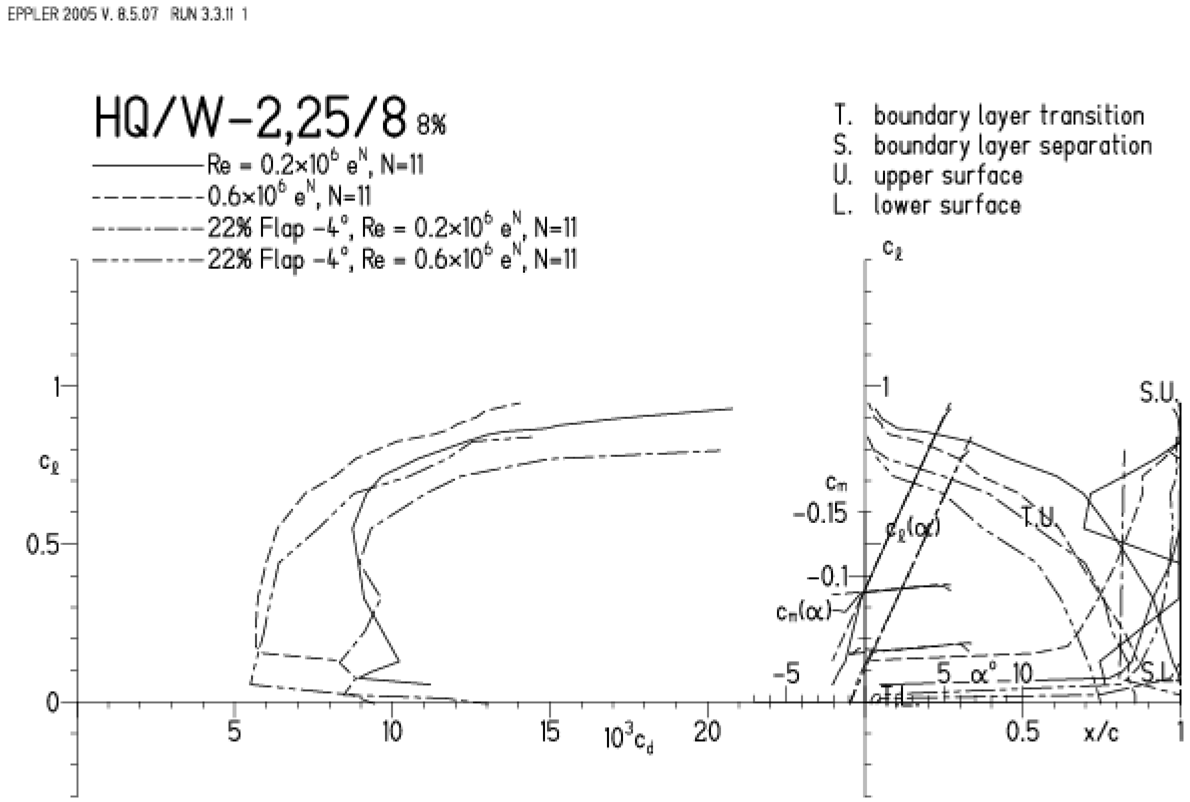
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



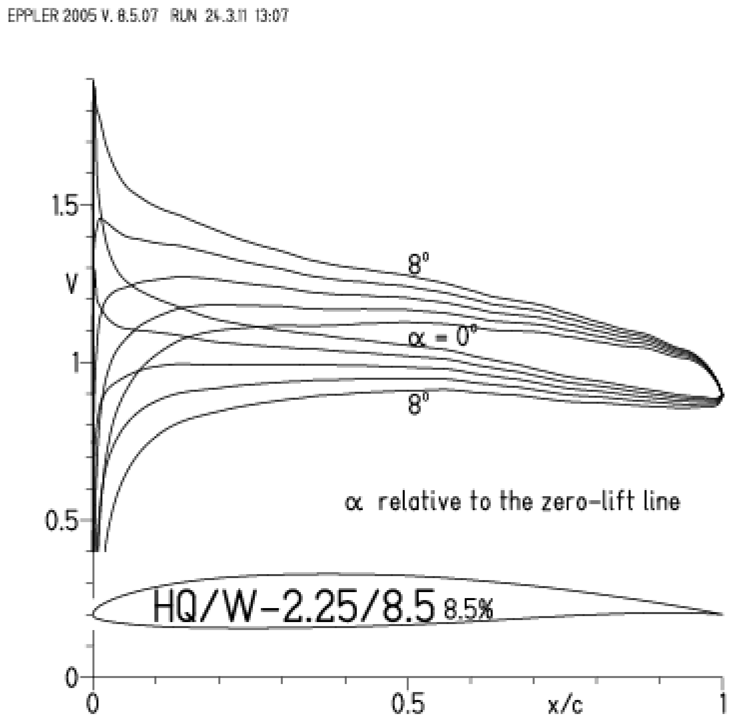


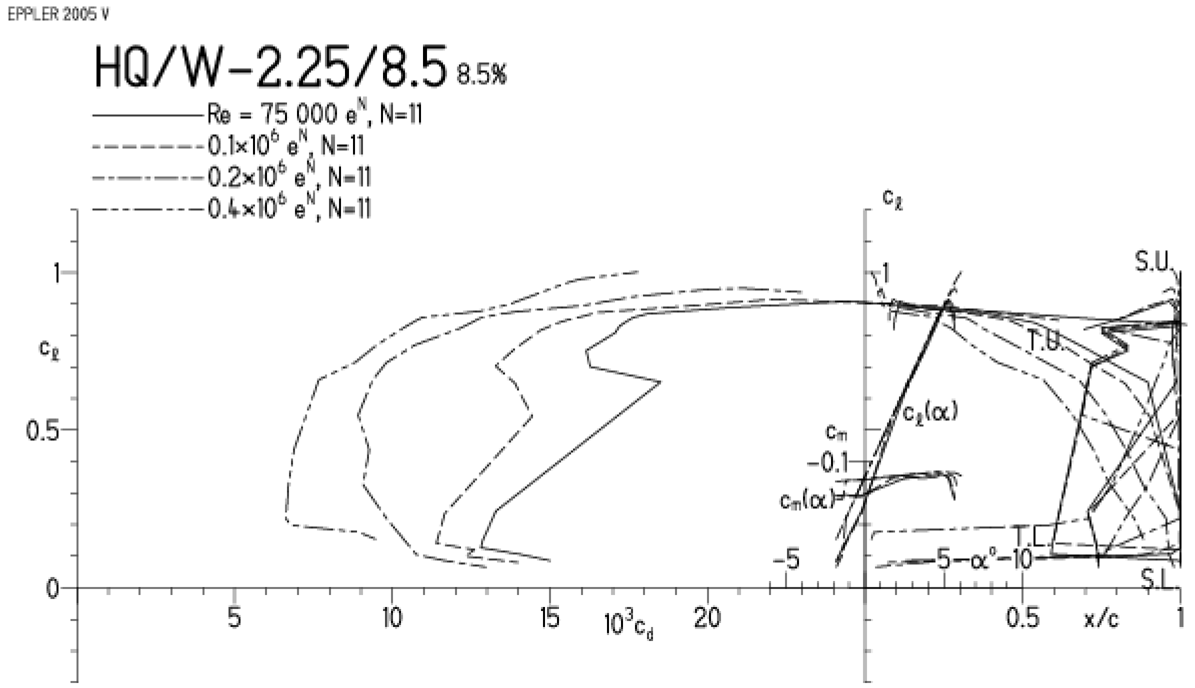
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)





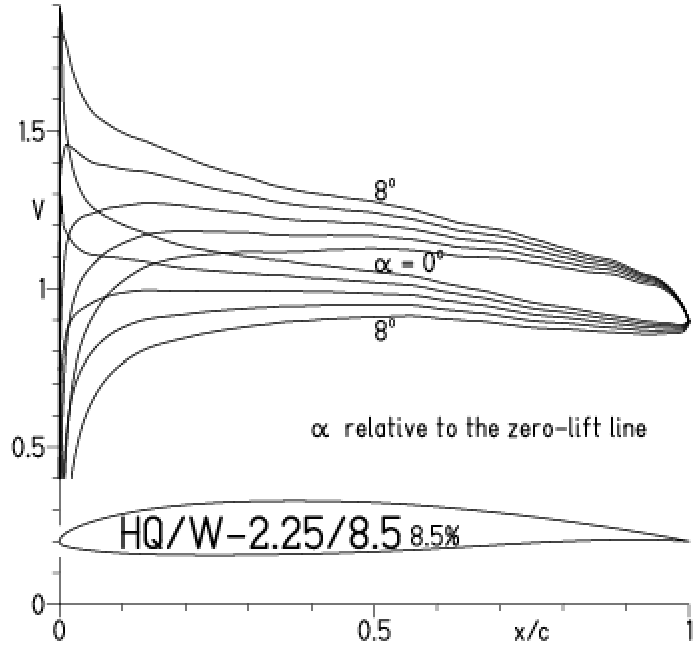
HQ/W-2,25/8,5, N=11



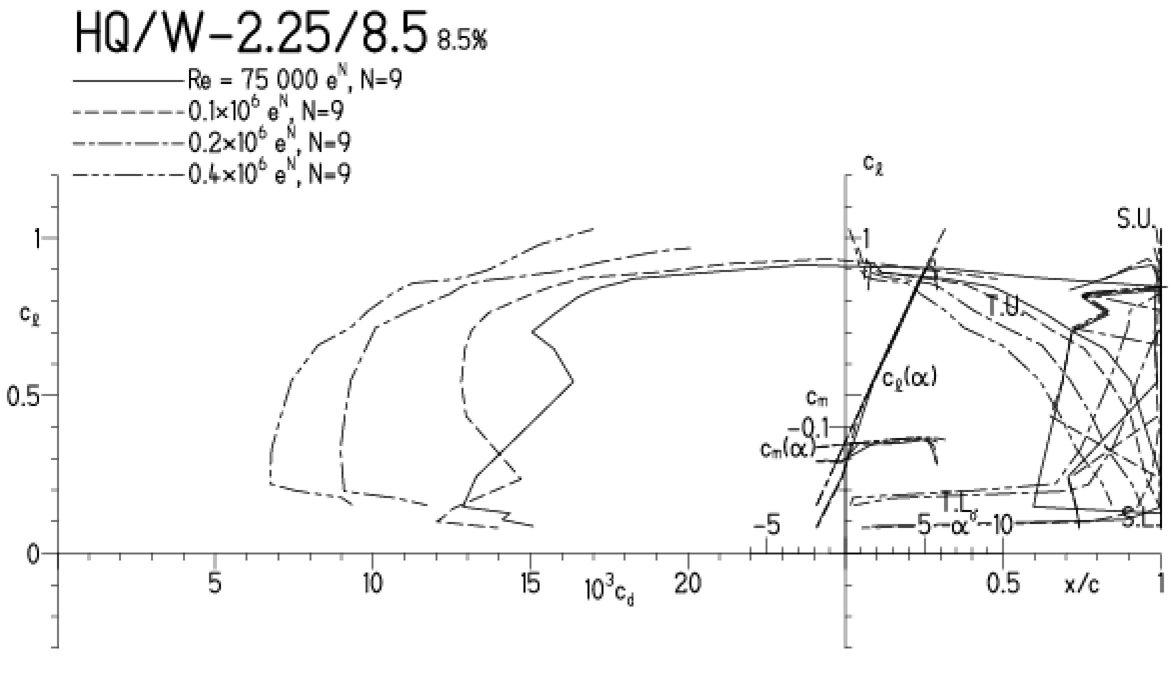


<u>HQ/W-2,25/8,5</u>, N=9

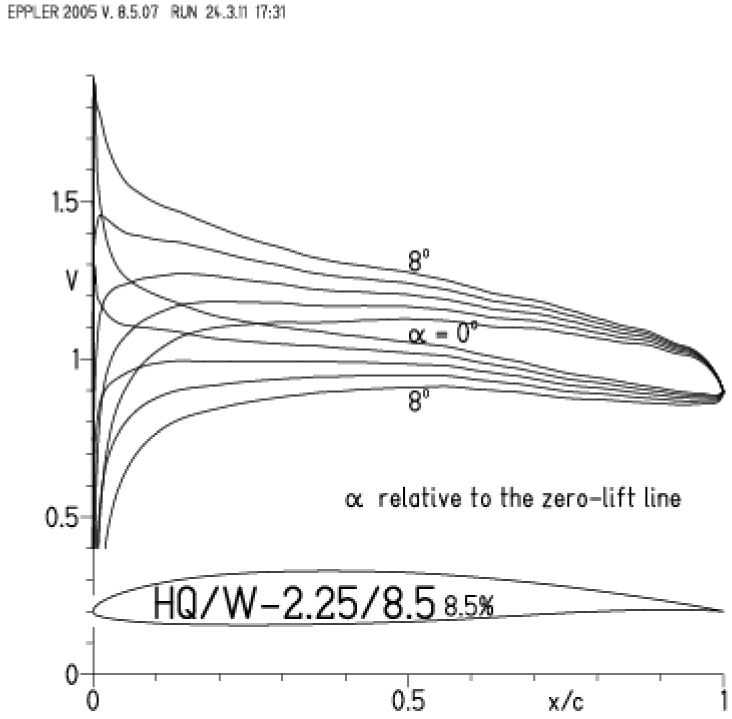
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

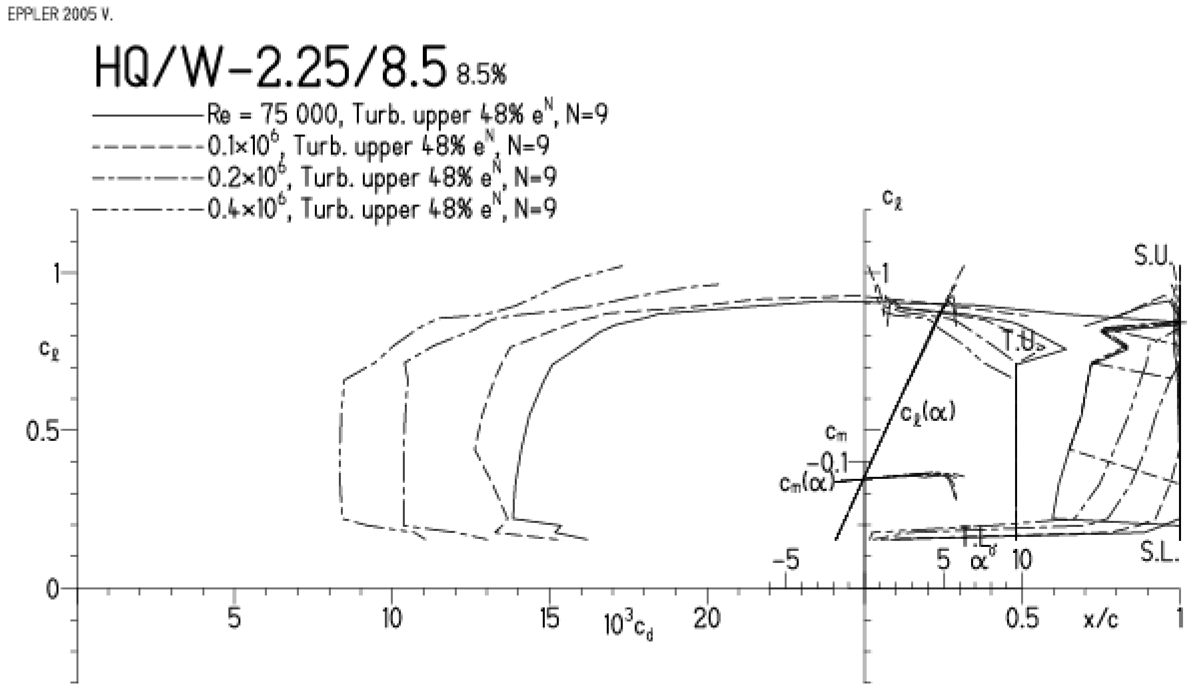


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

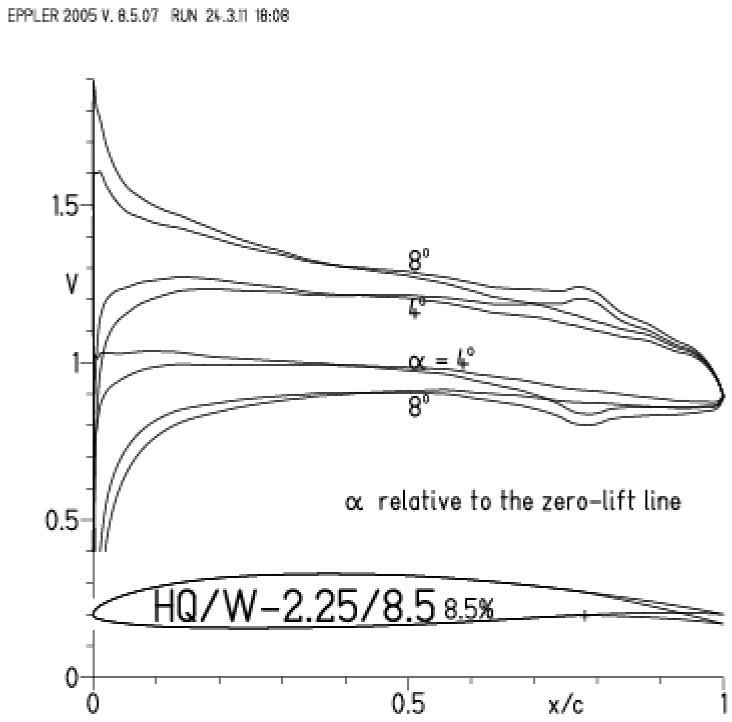


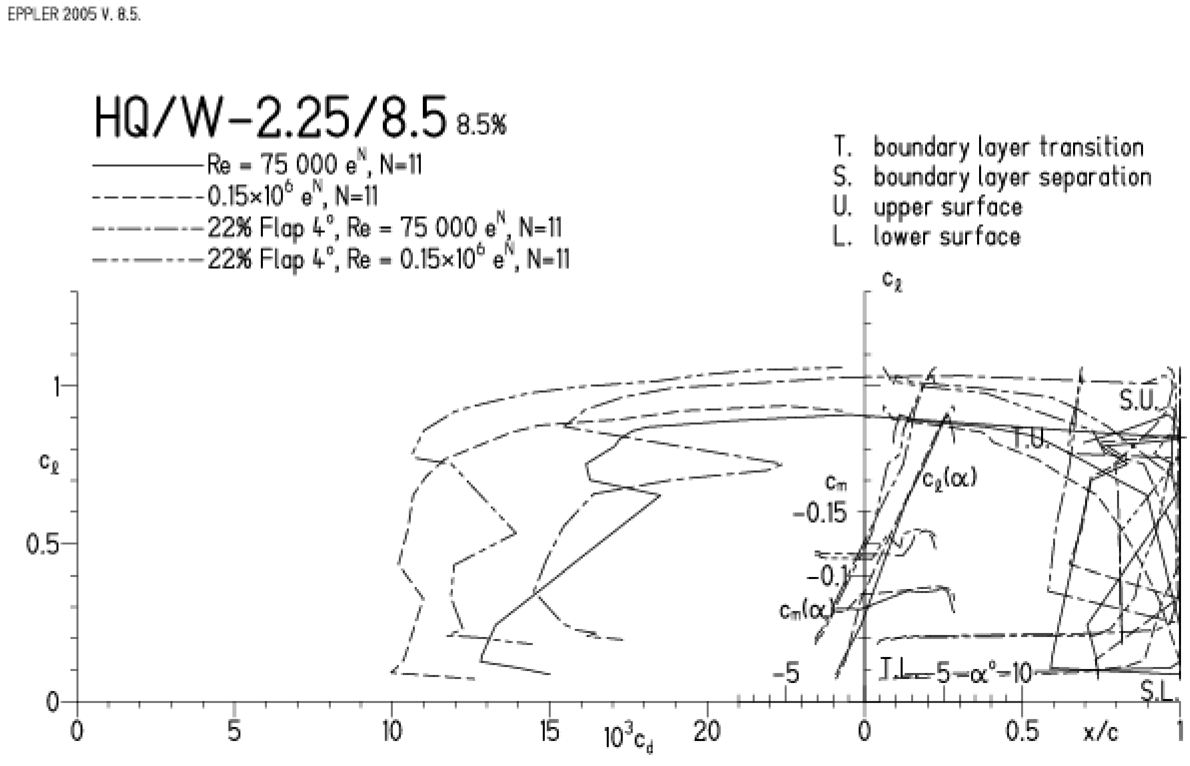
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





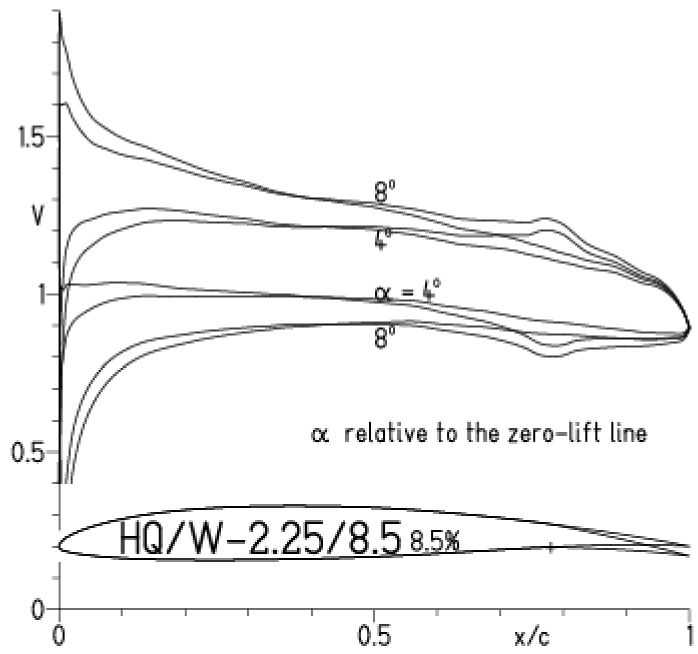
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



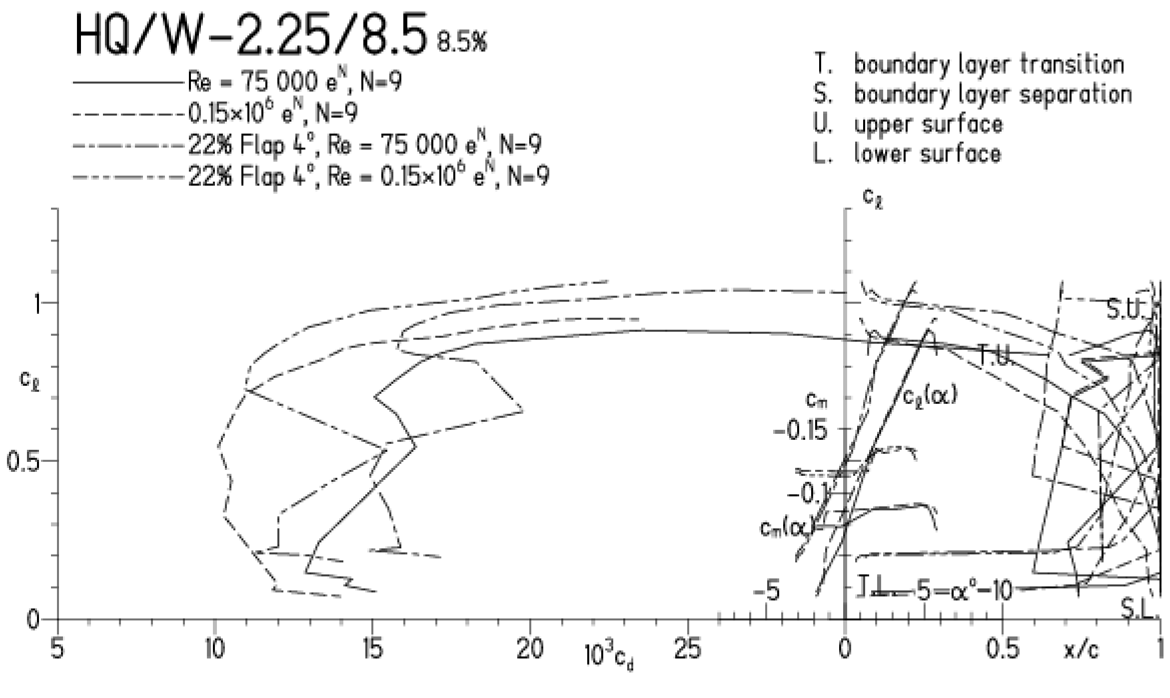


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

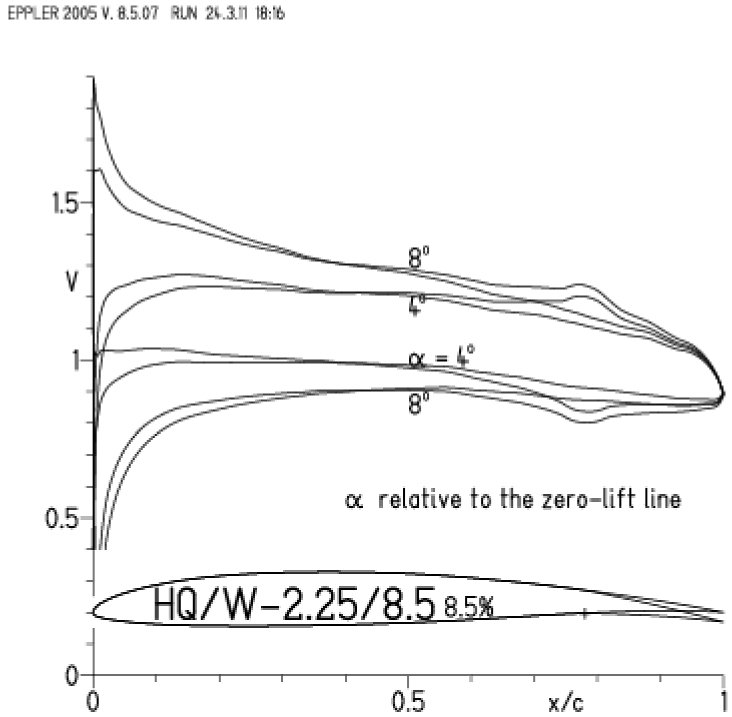
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

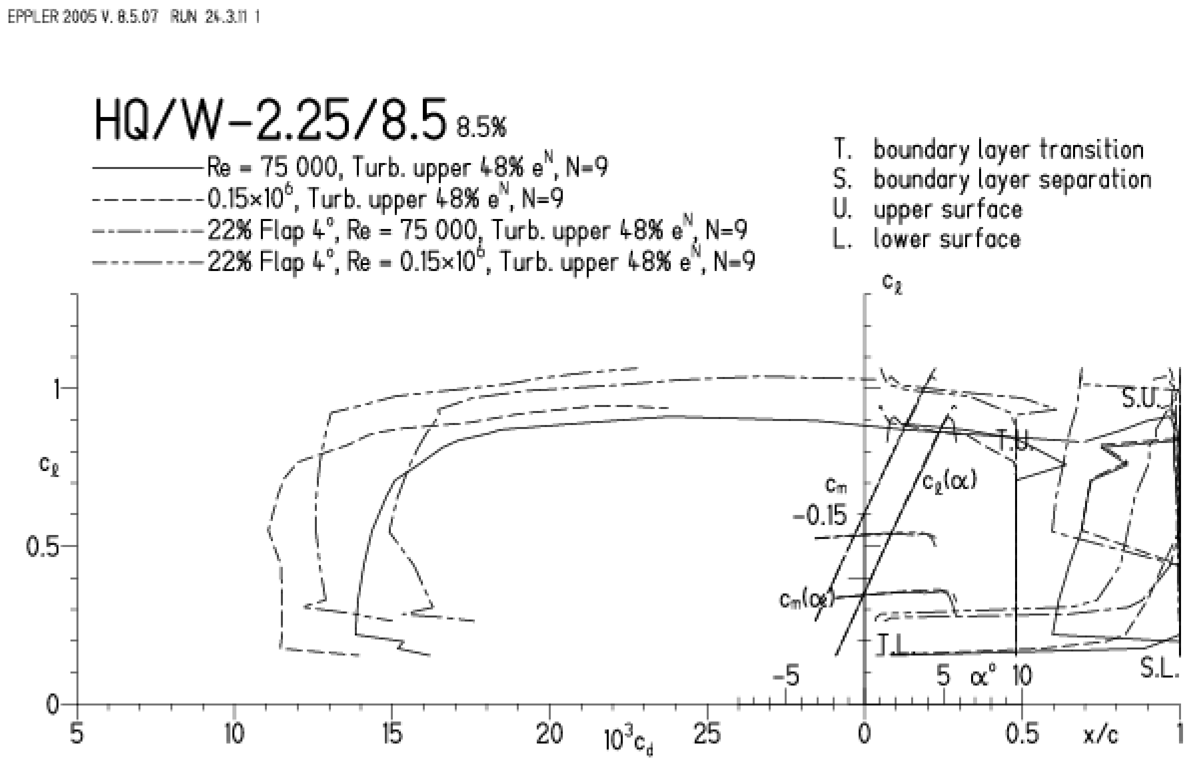


EPPLER 2005 V.



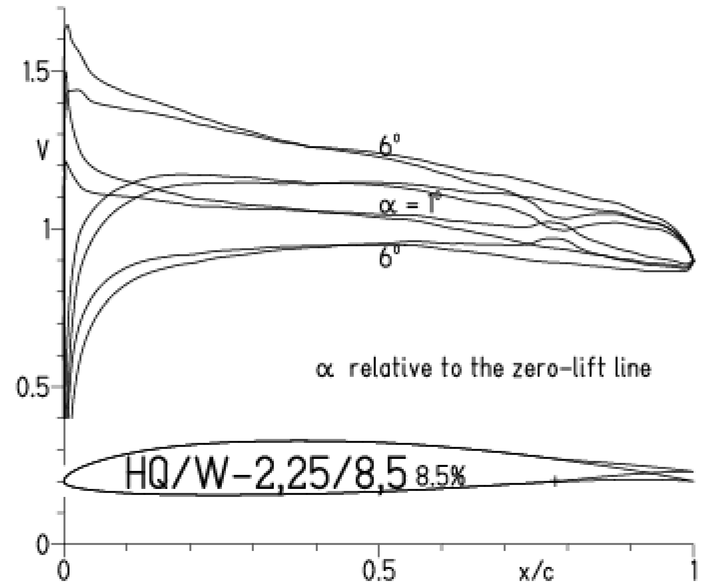
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



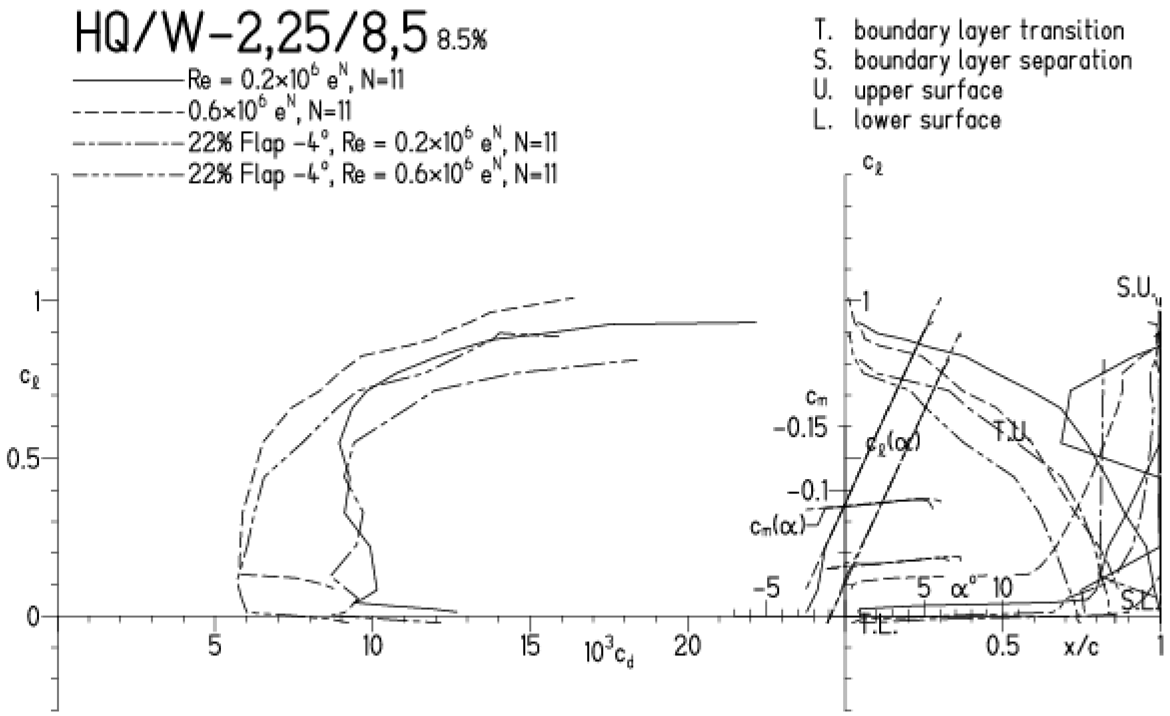


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

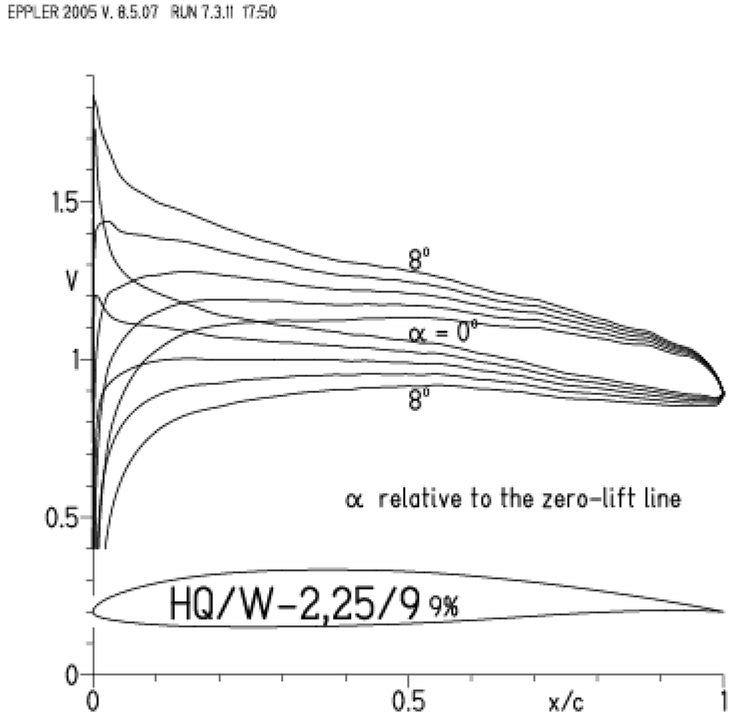
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

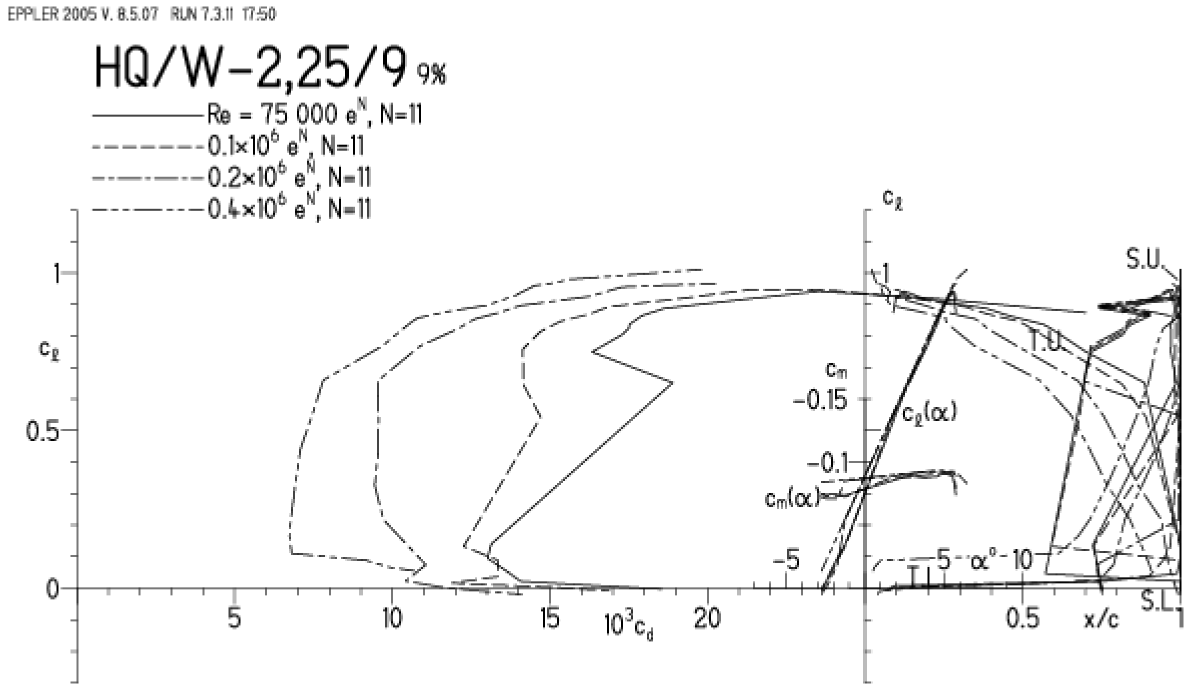


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



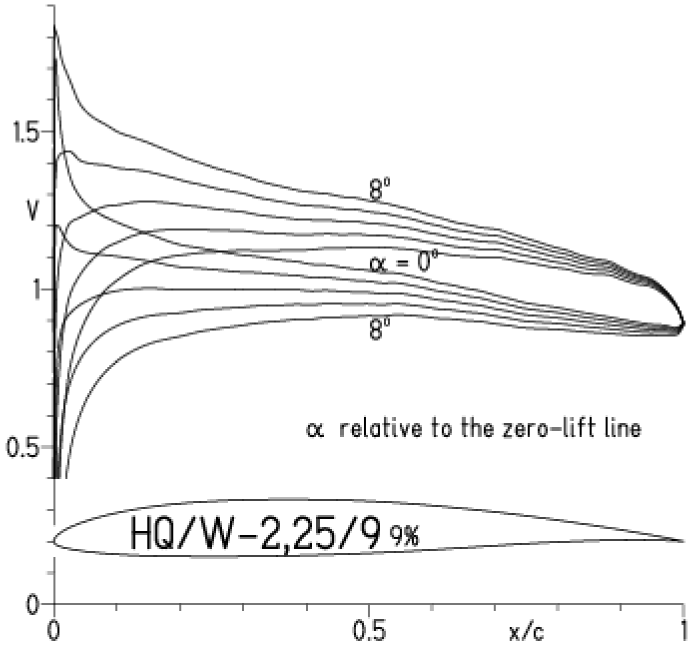
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

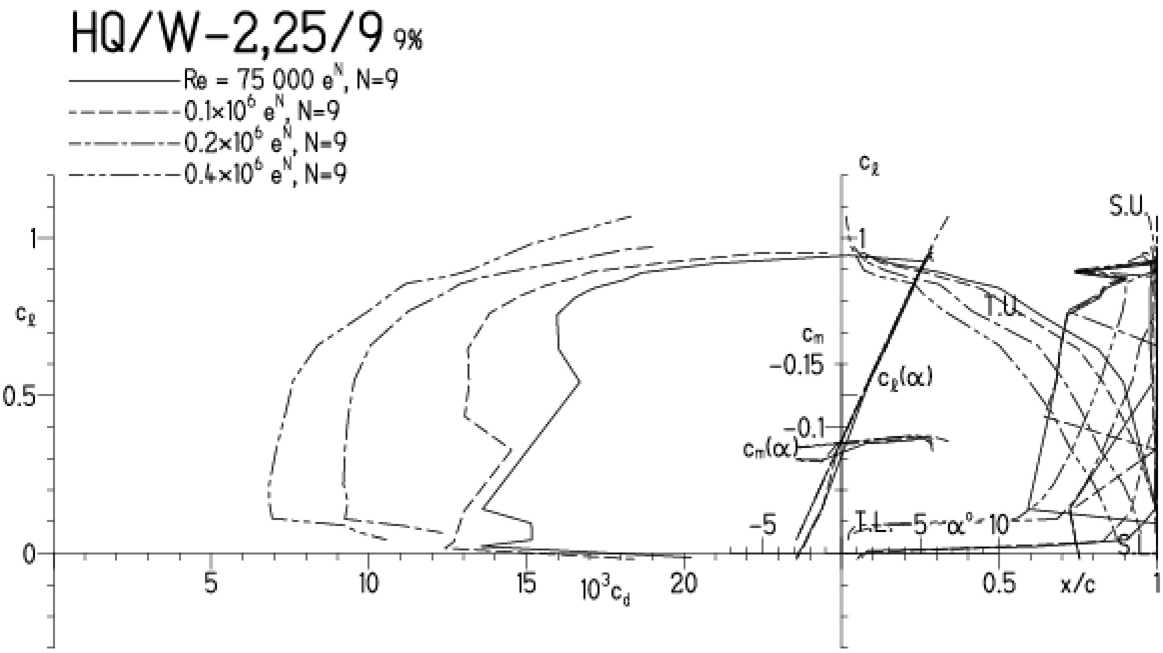

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
T.U.
S.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

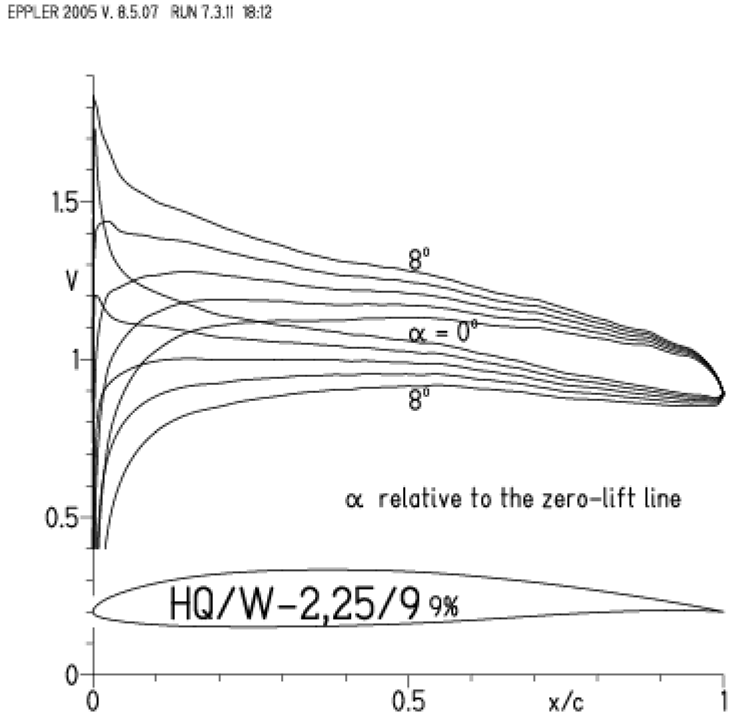
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

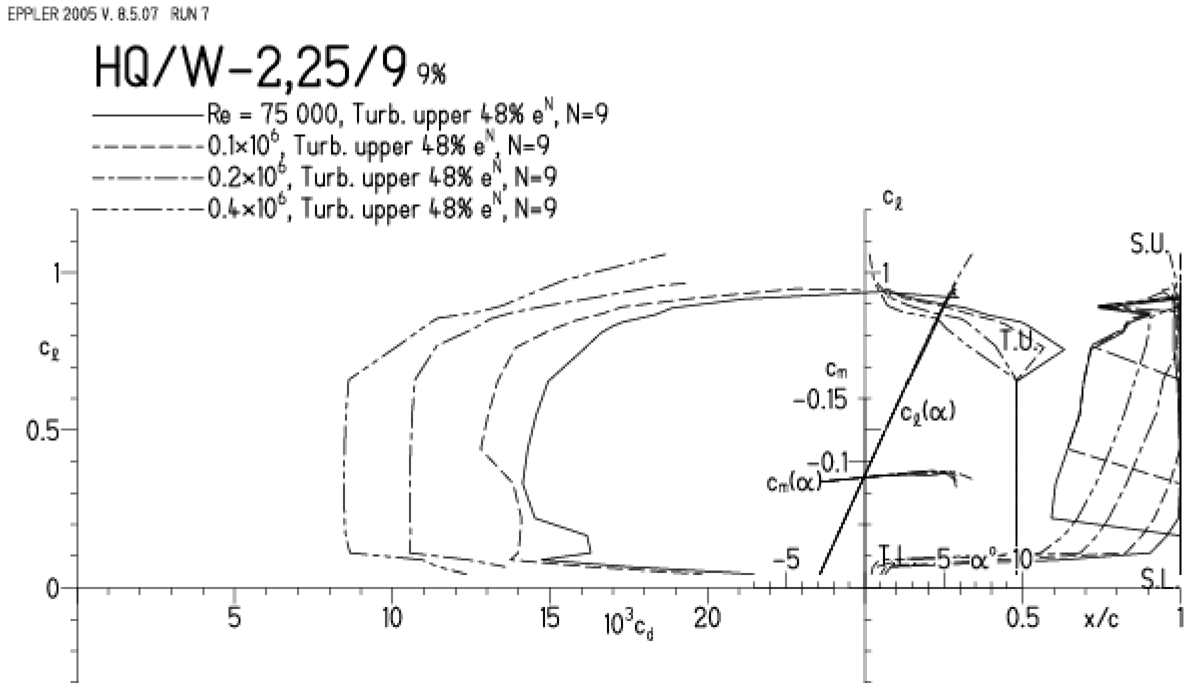


EPPLER 2005 V. 8.



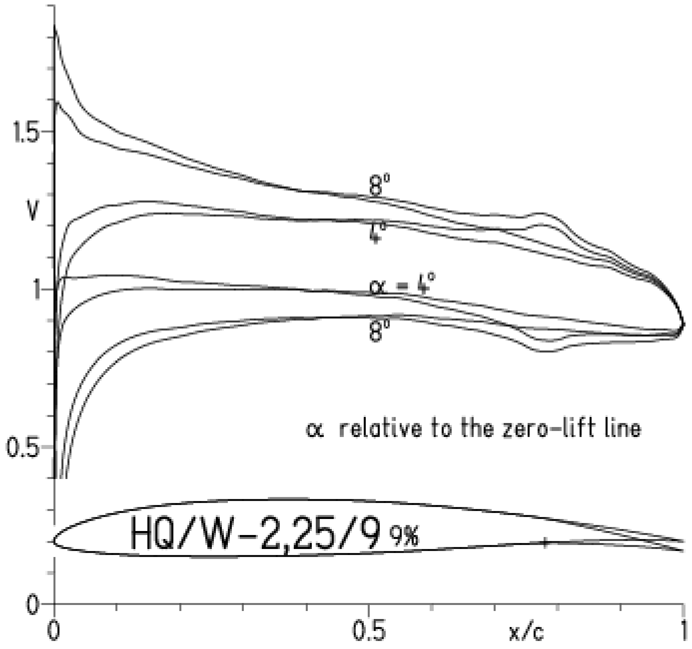
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



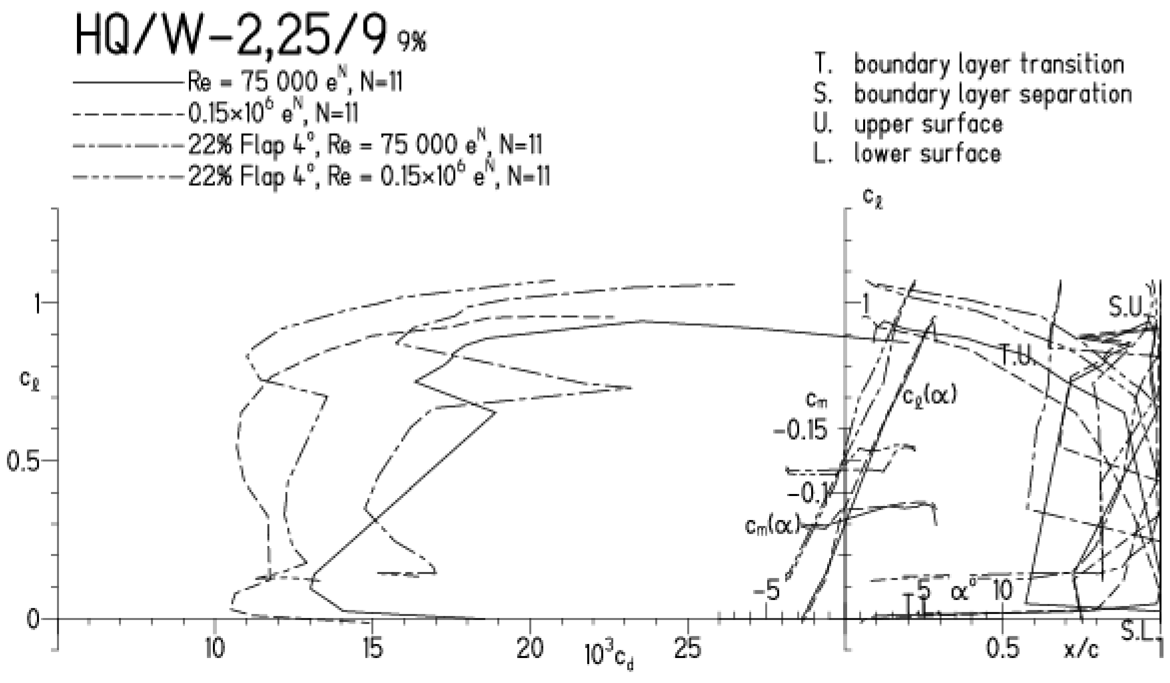


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

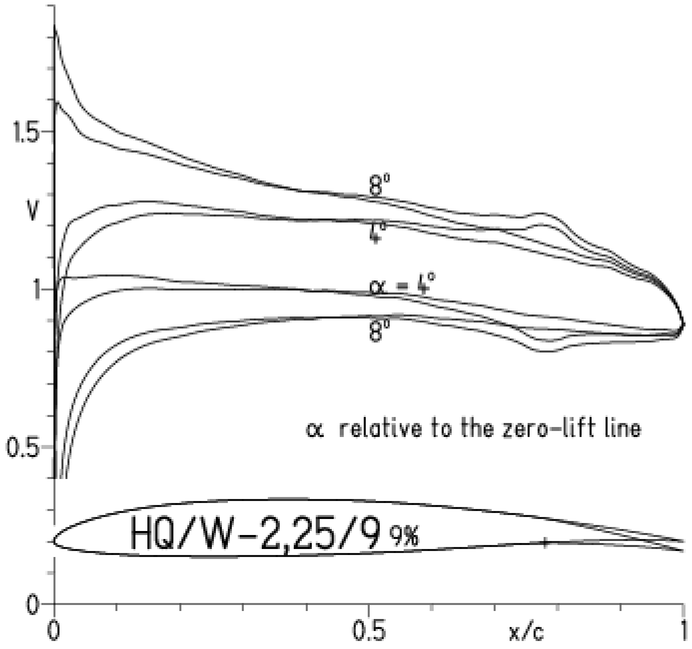


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

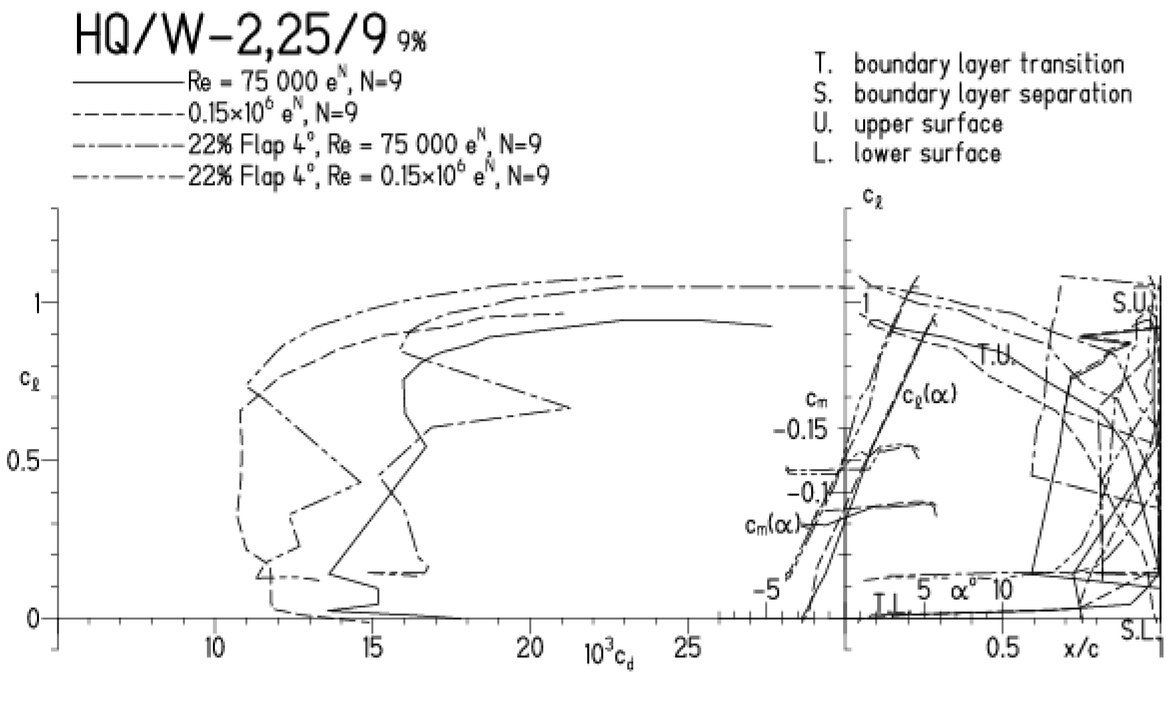


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

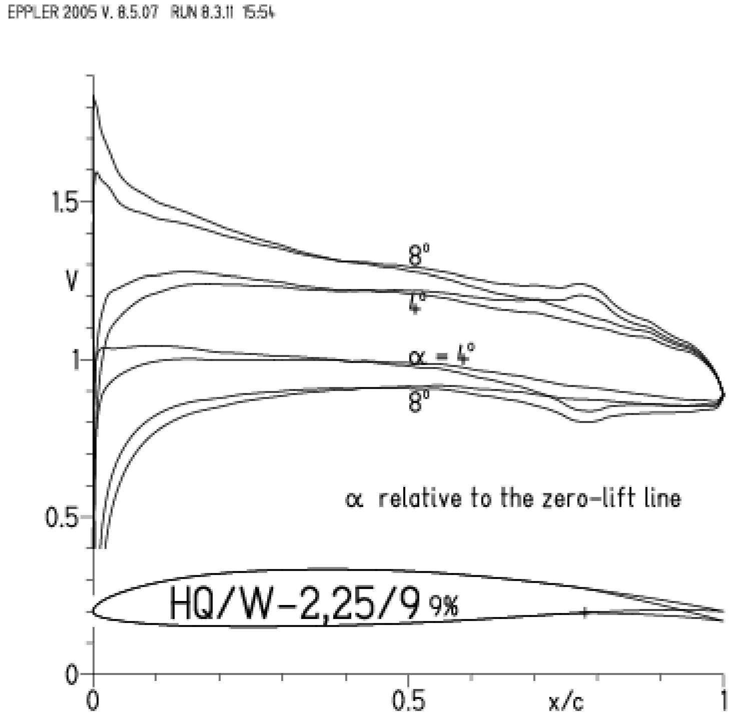
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

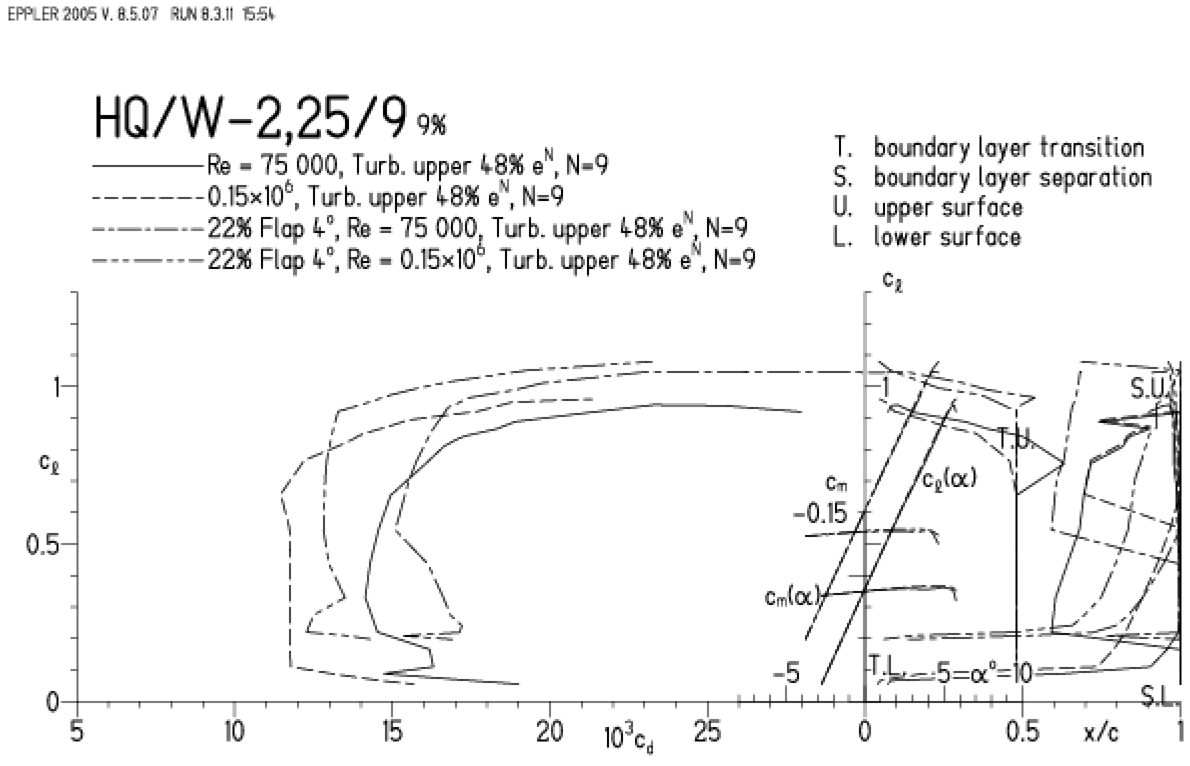


EPPLER 2005 V. 8.5.07 RUN 8.3.1



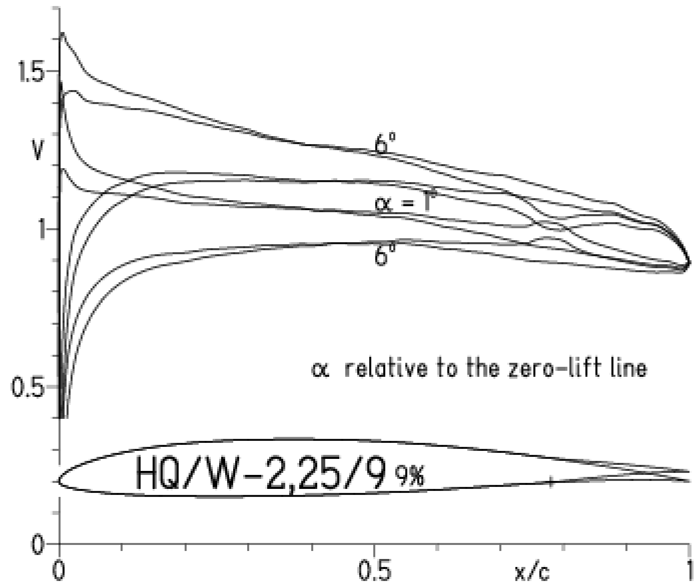
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



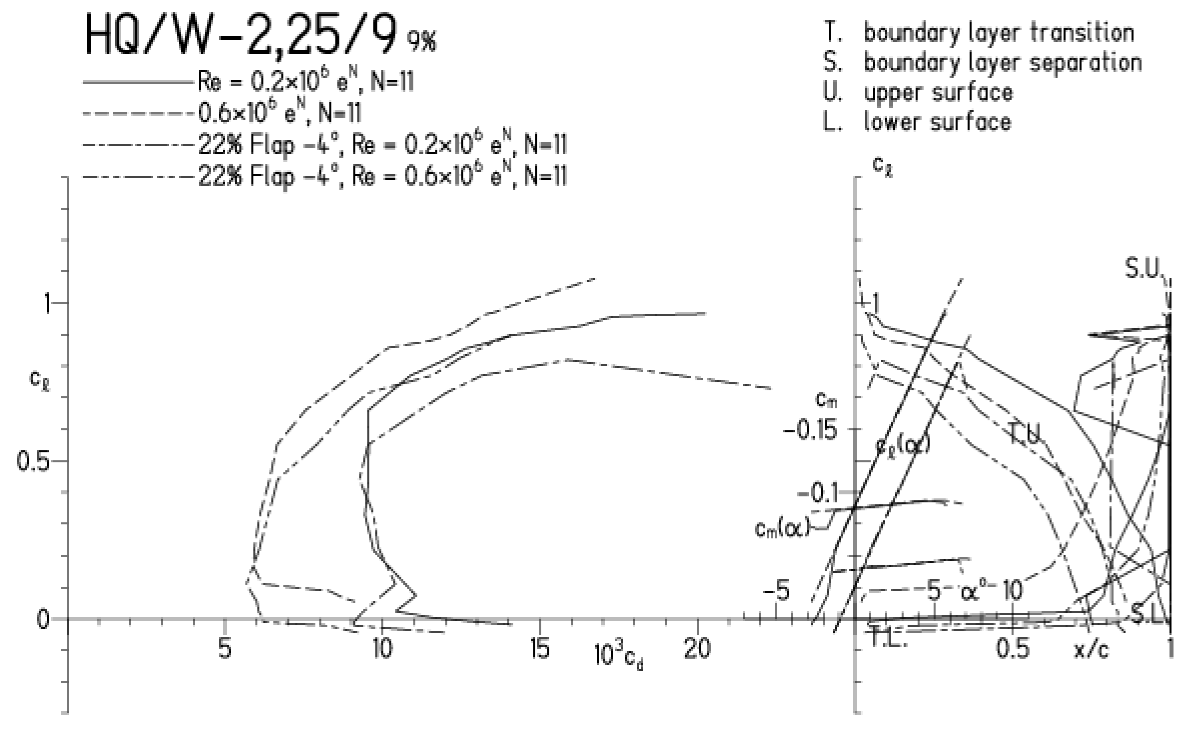


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

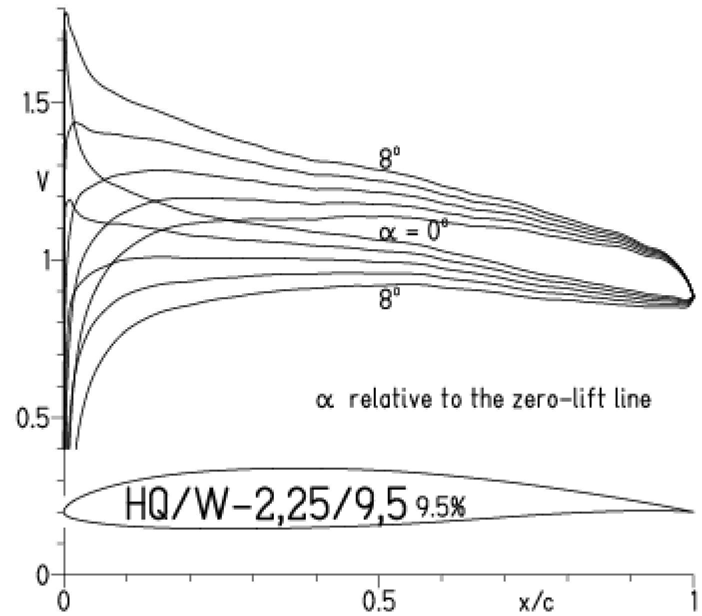


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

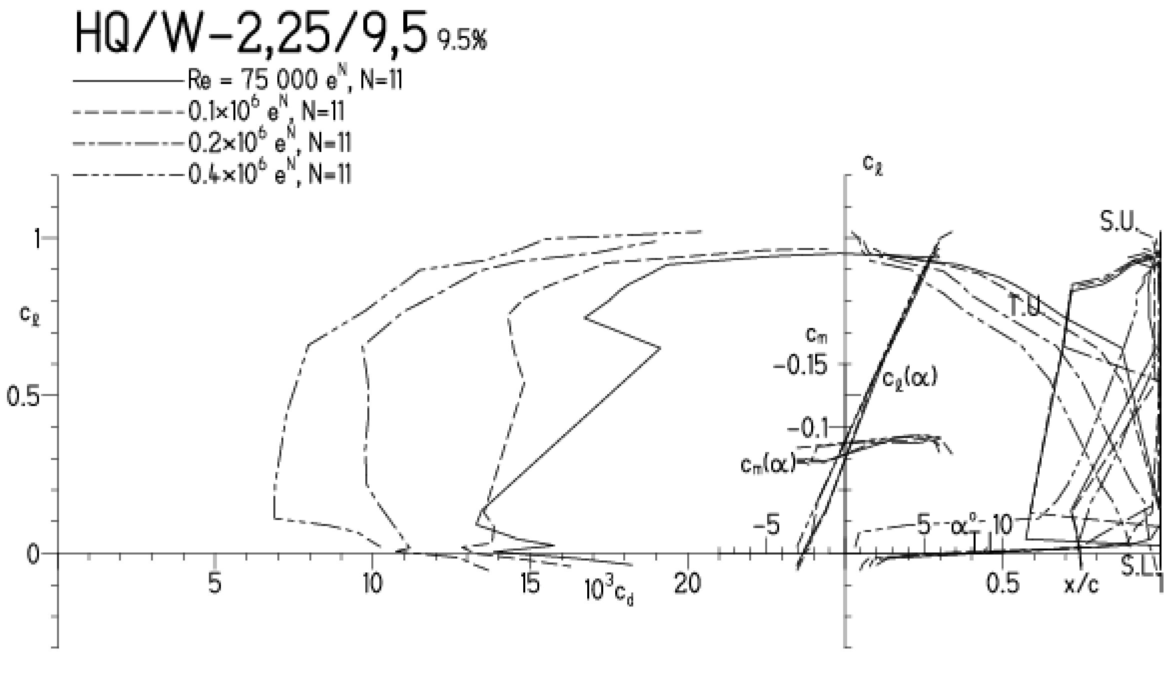


HQ/W-2,25/9,5, N=11

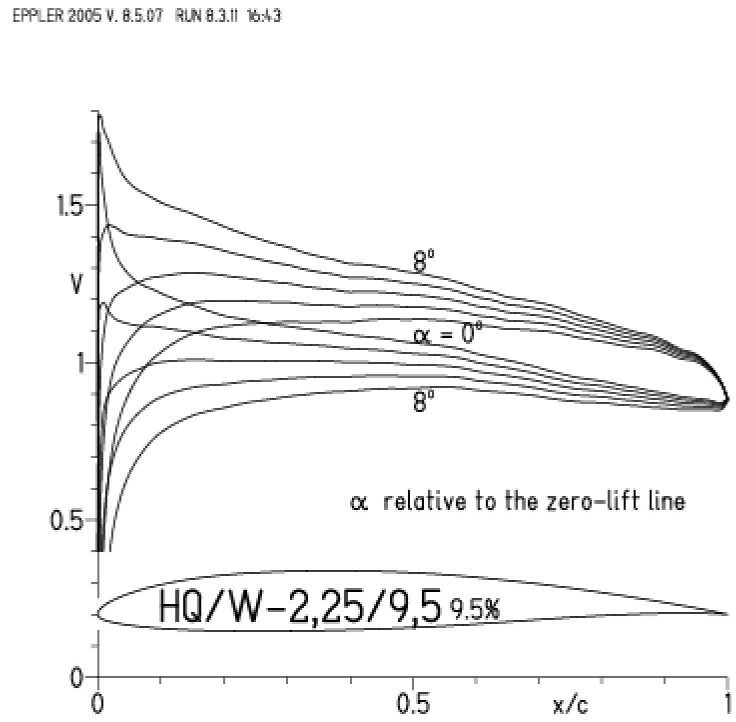
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

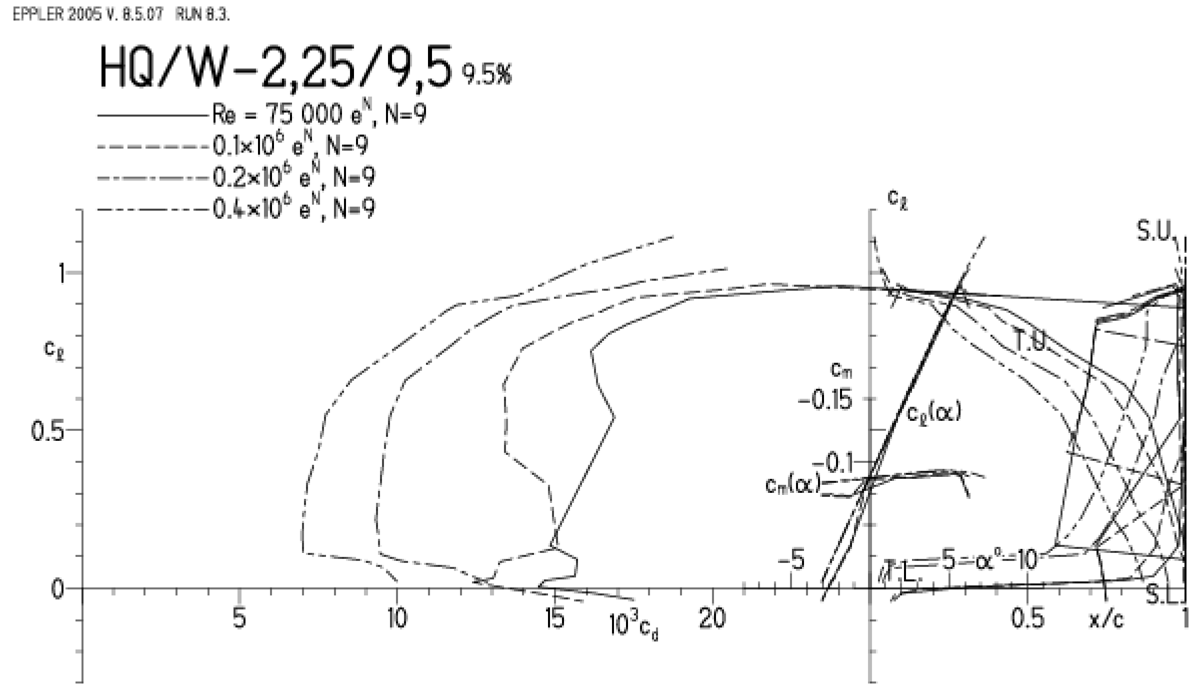


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

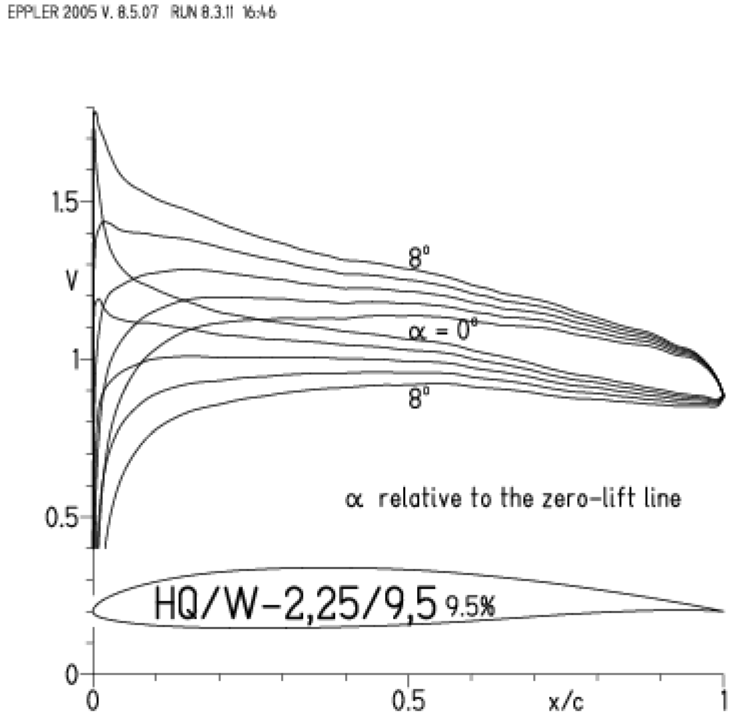


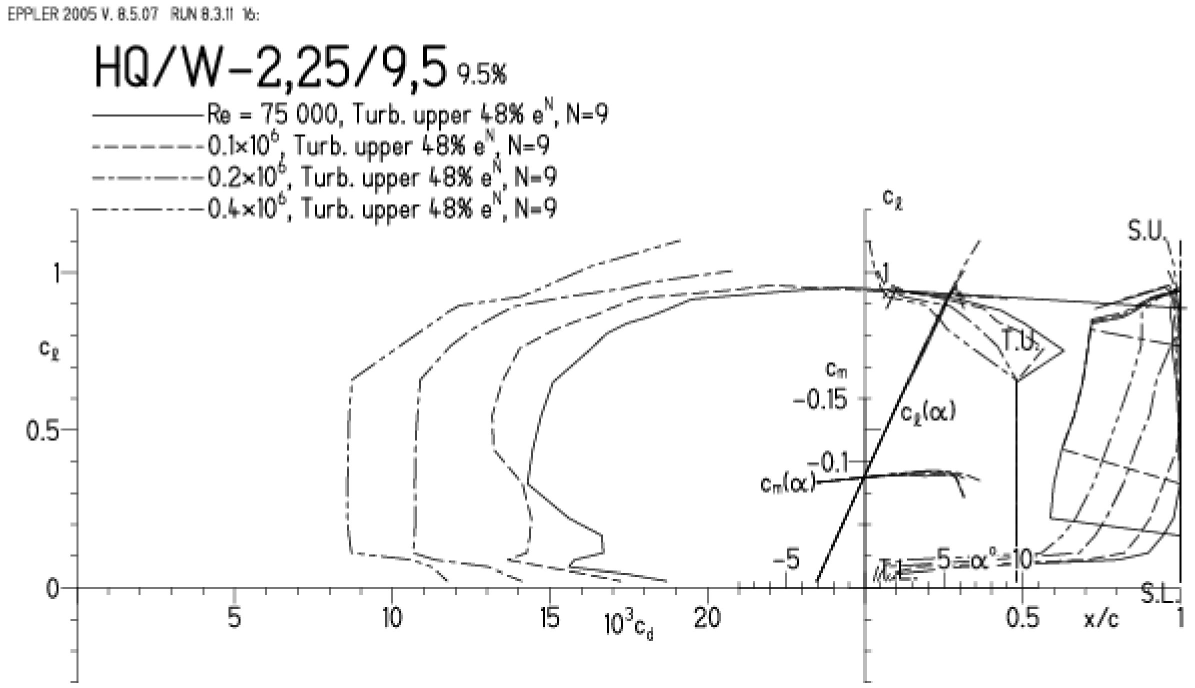
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

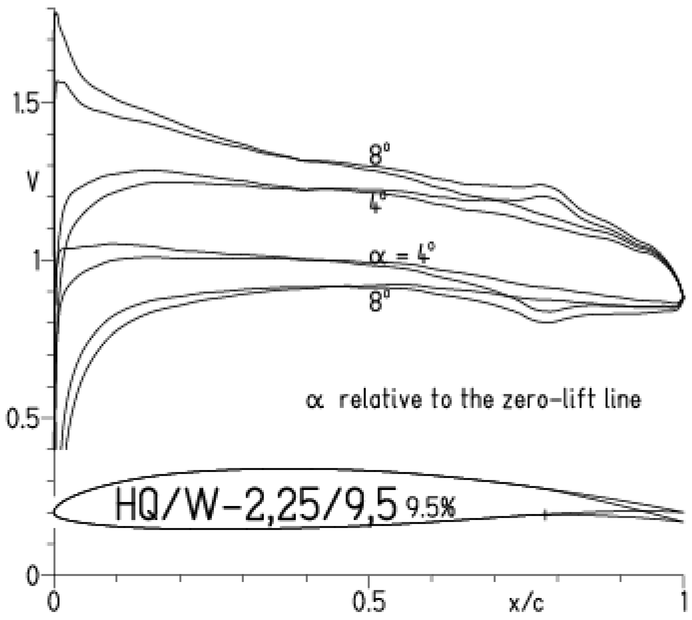
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



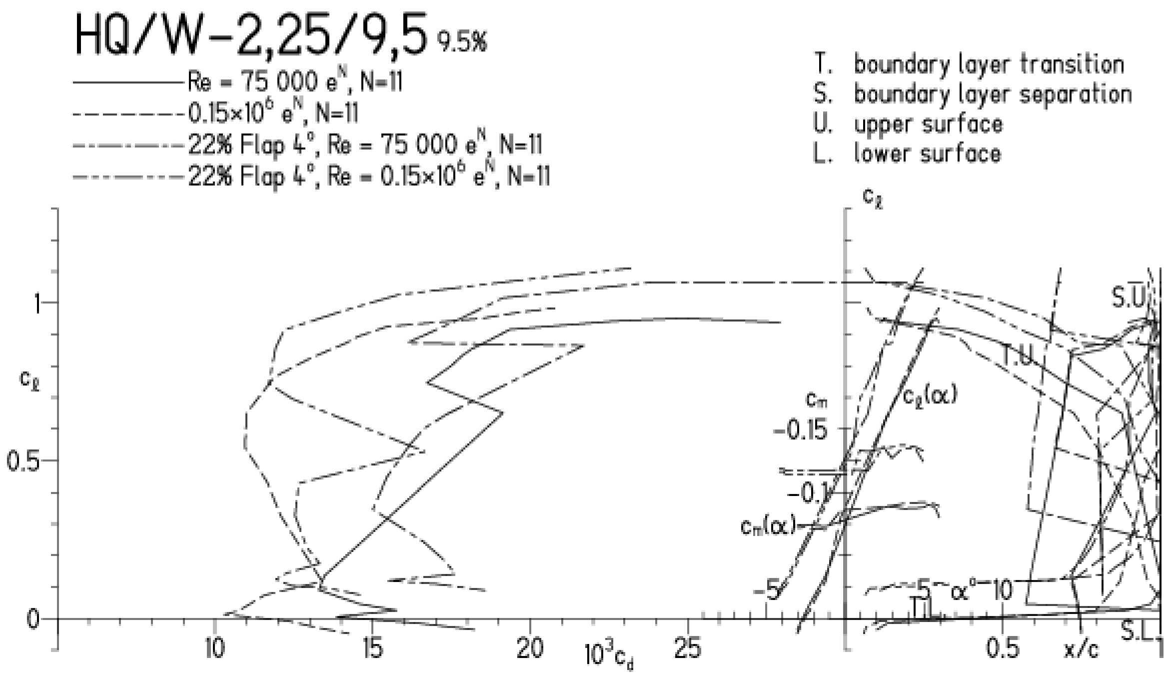


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

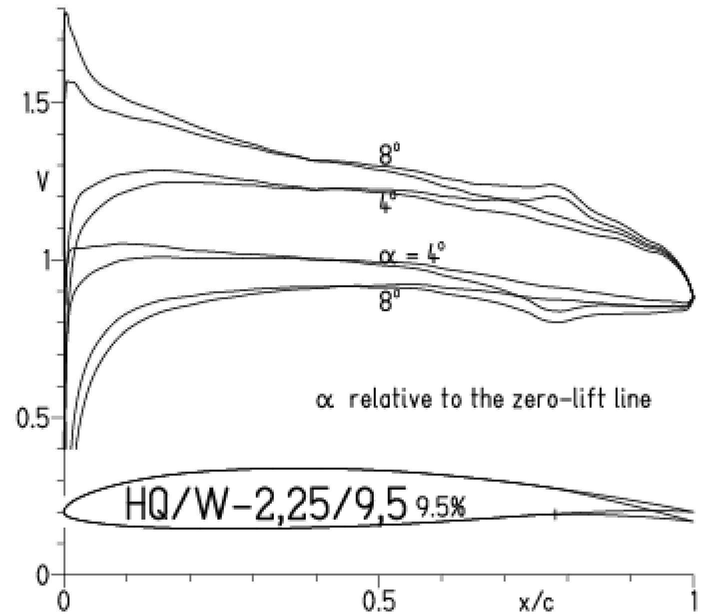


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

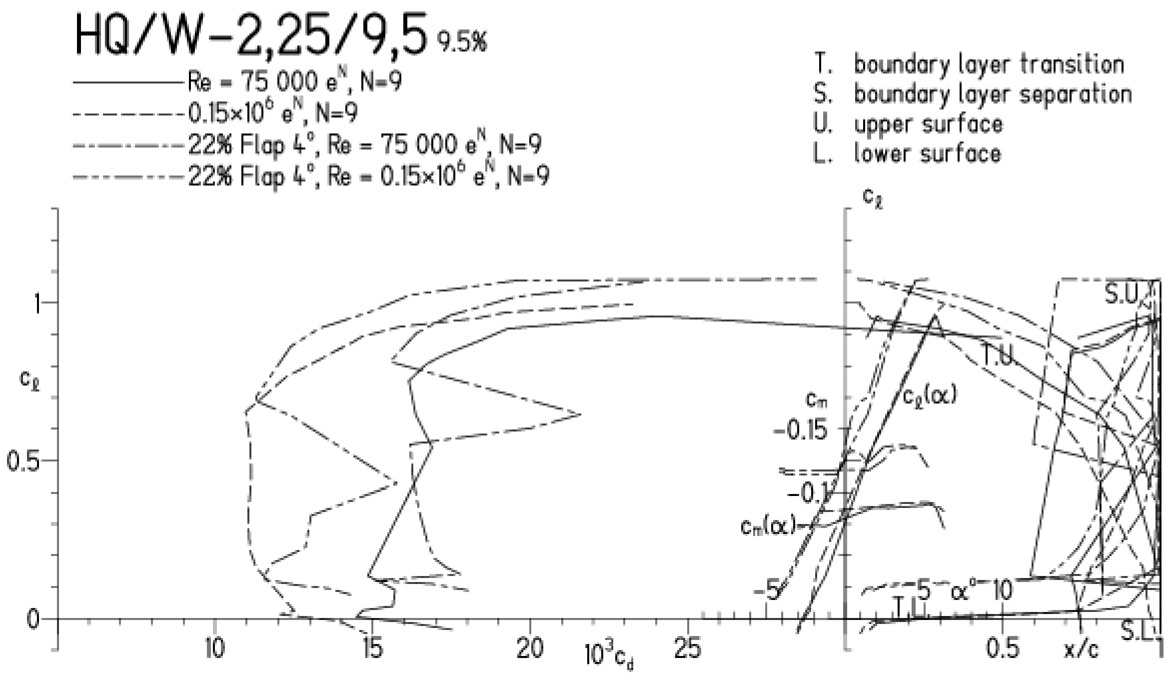


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

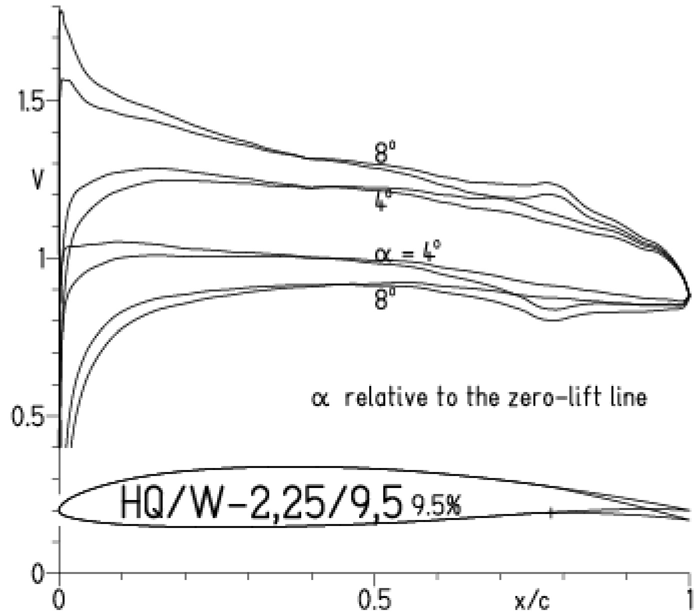


EPPLER 2005 V. 8.5.07 R

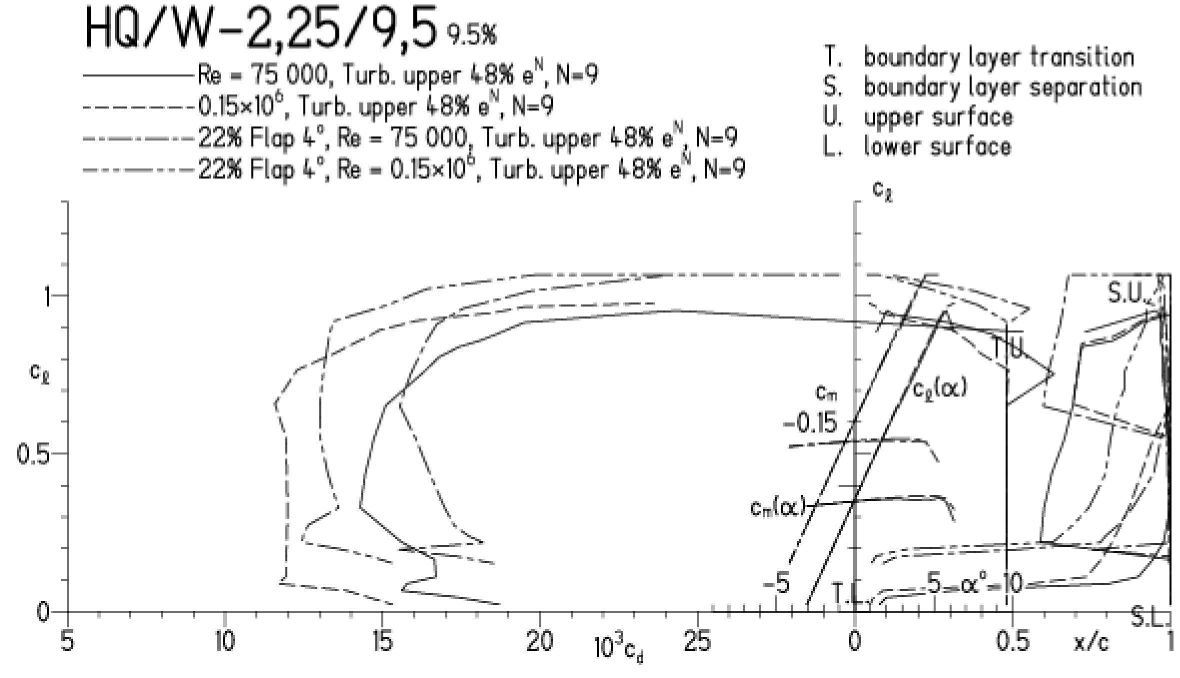


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

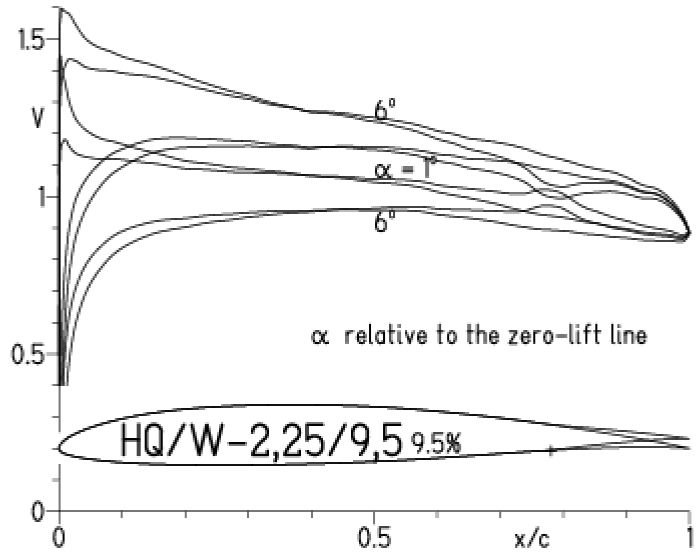


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

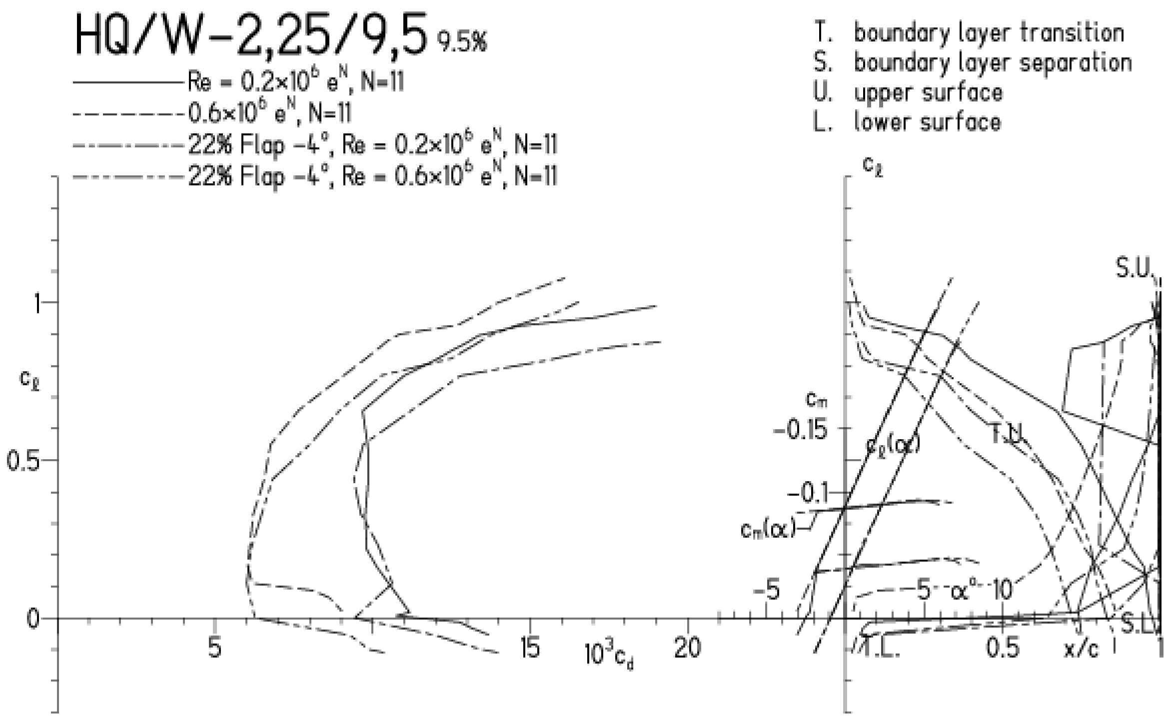


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

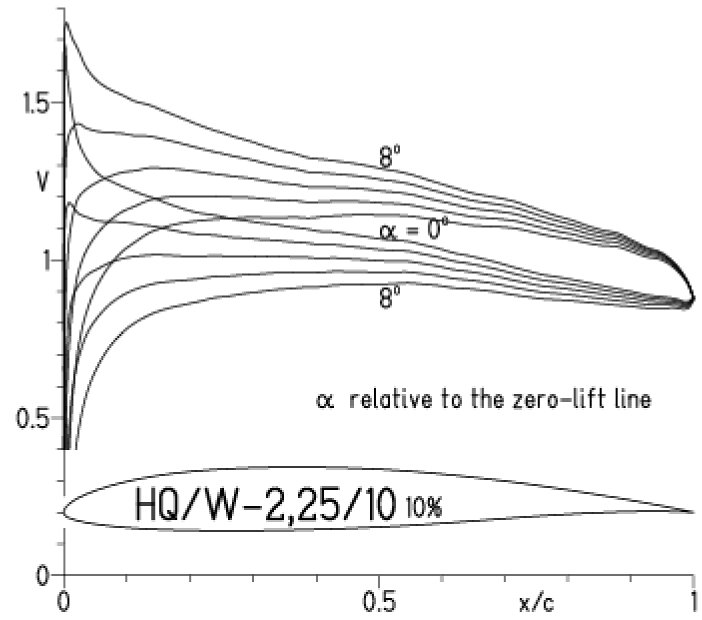


EPPLER 2005 V.

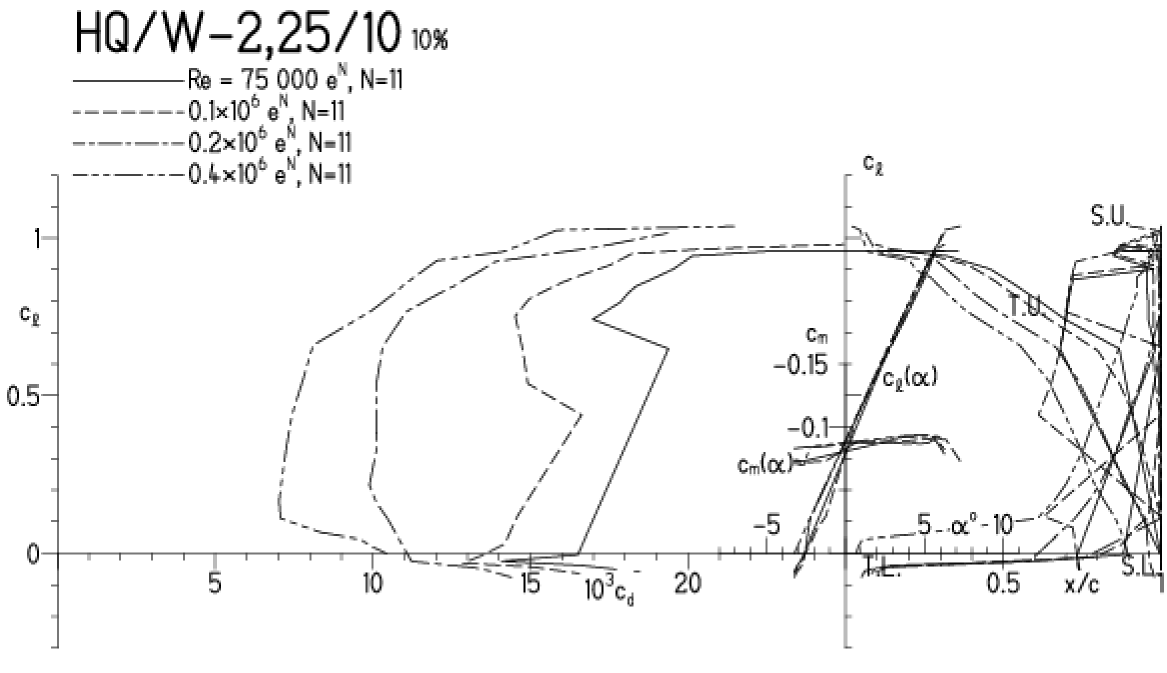


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

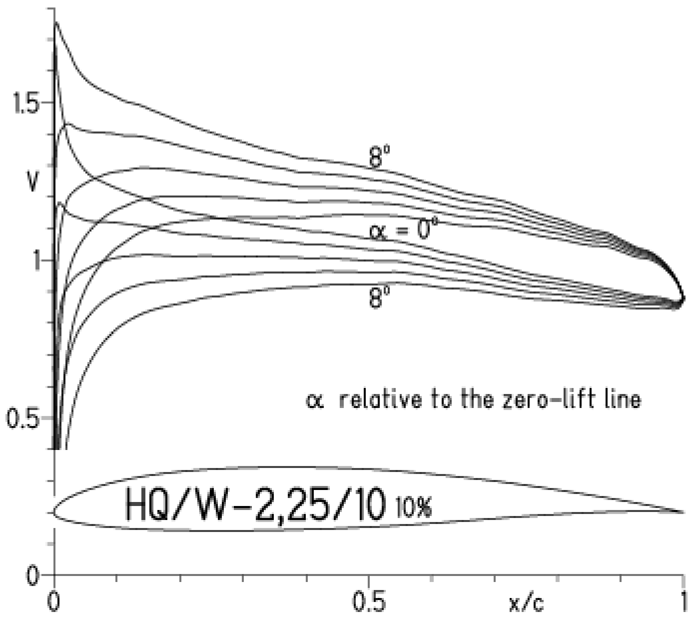


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

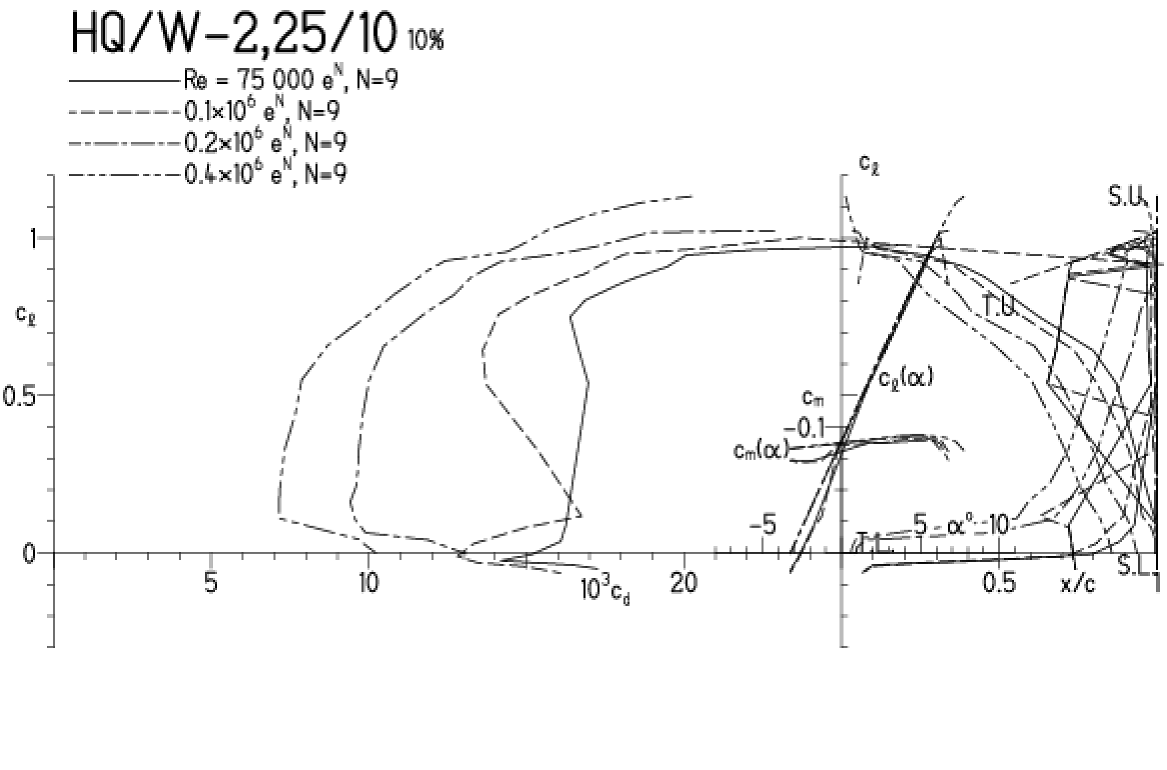


HQ/W-2,25/10, N=9

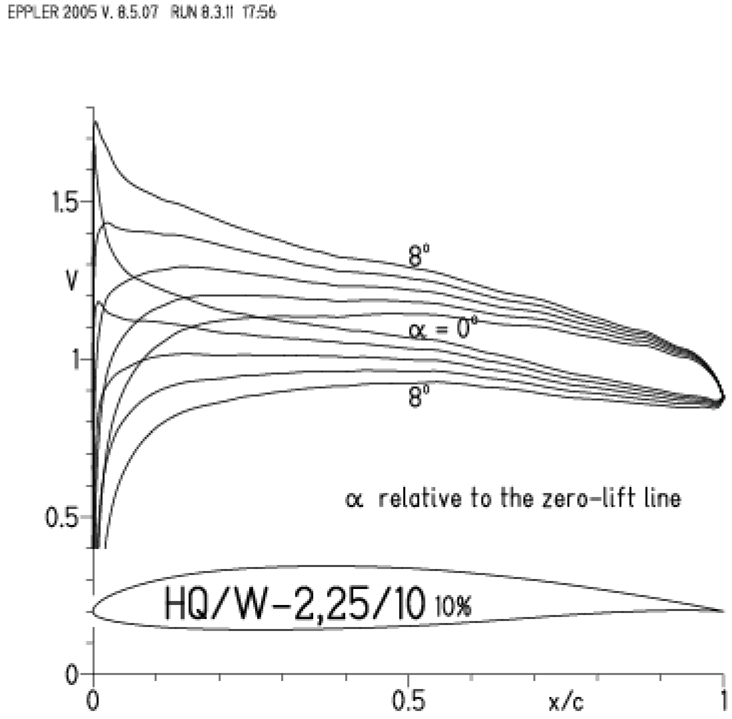
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

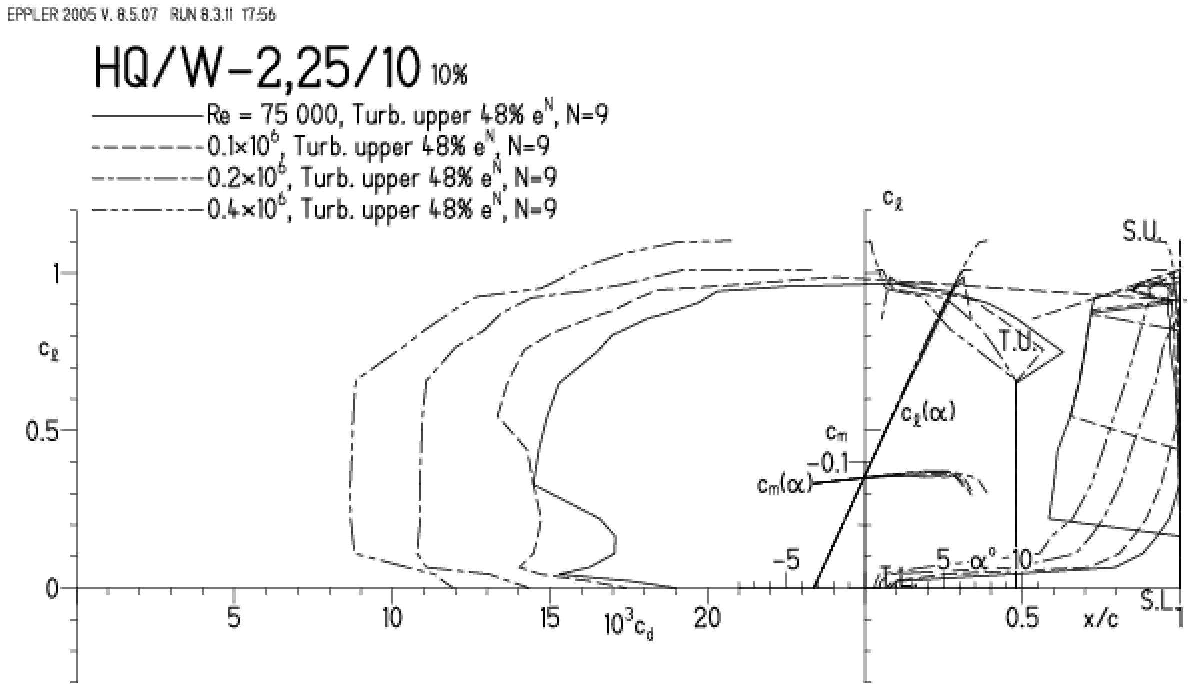


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

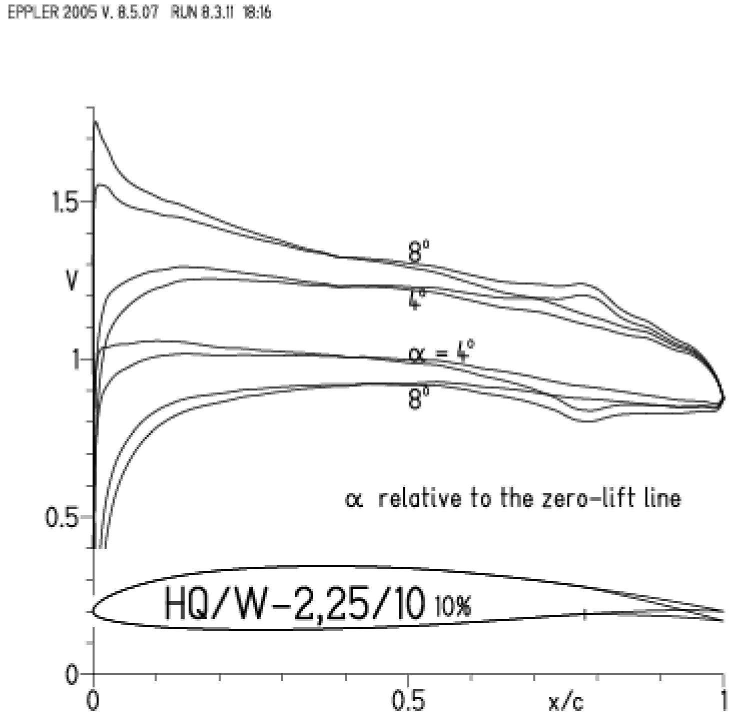


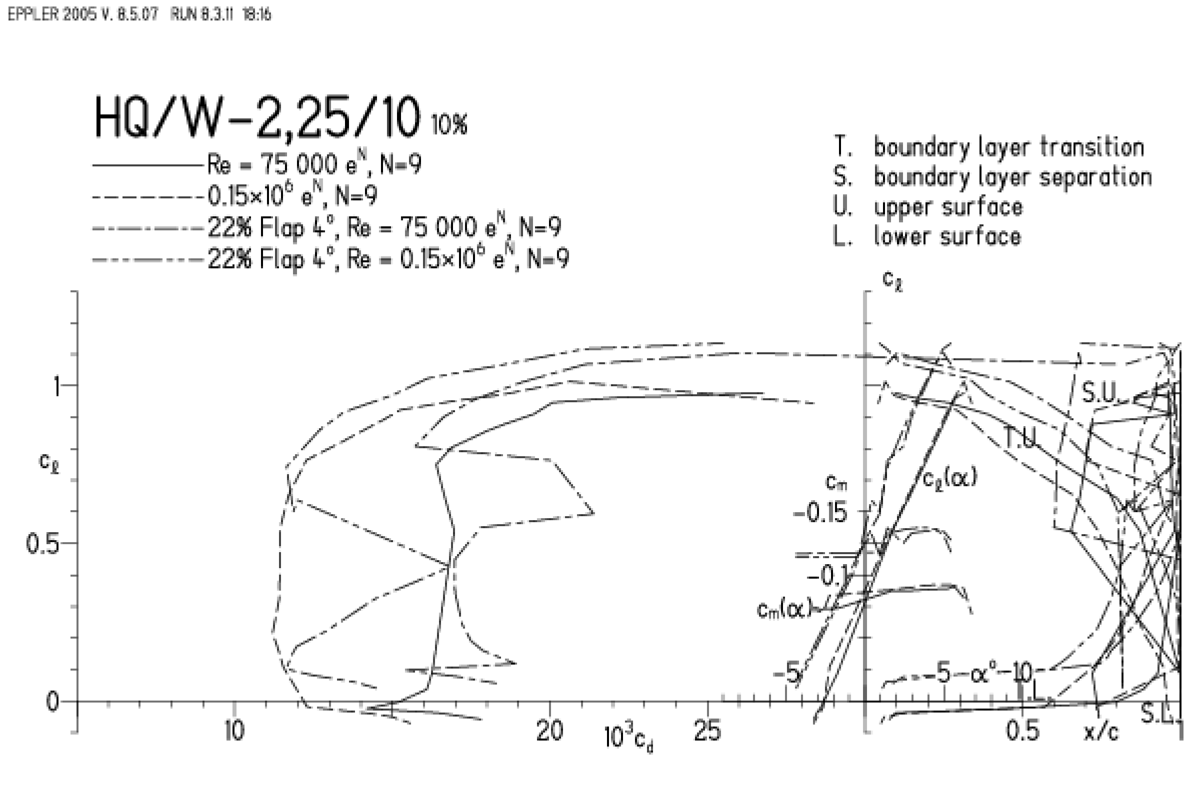
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





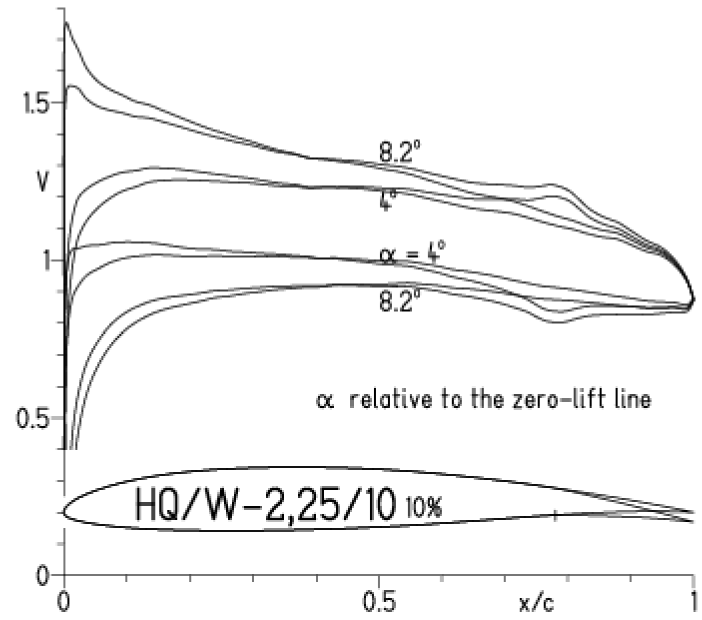
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag



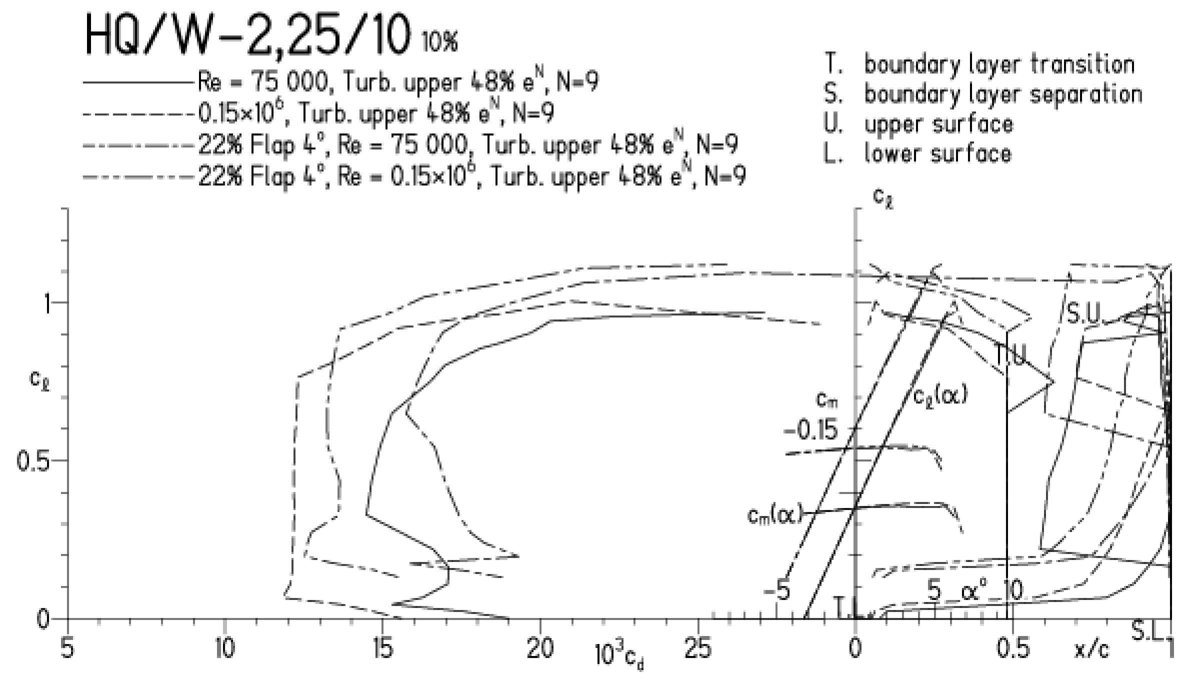


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

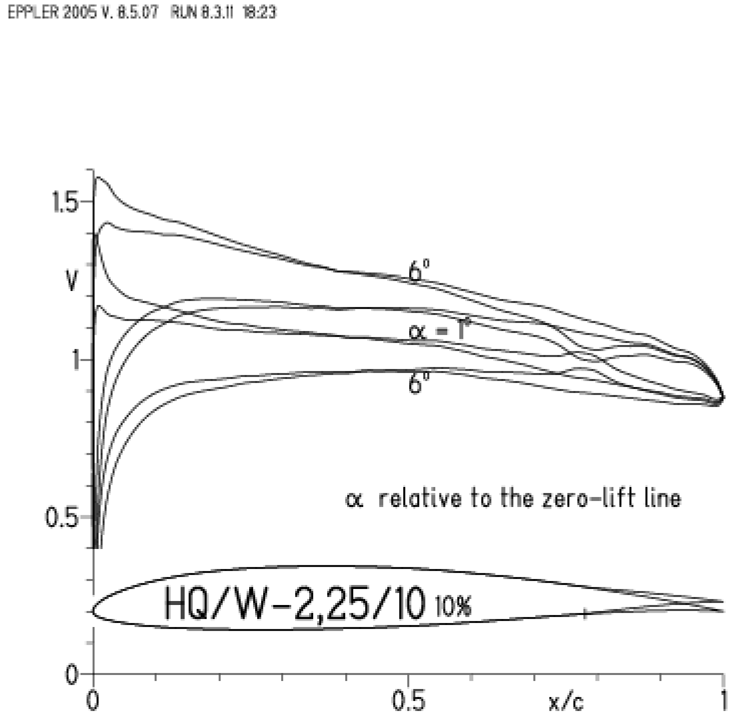
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

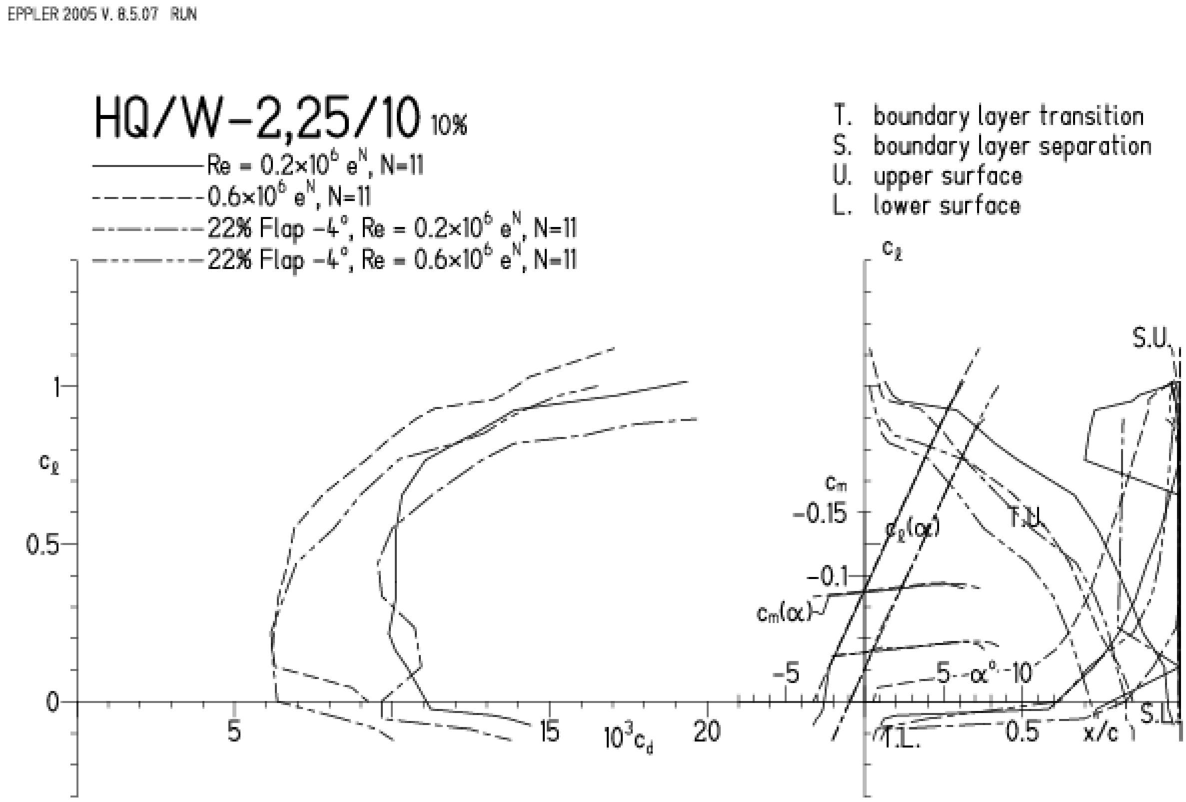


EPPLER 2005 V. 8.5.07 RUN 8.3

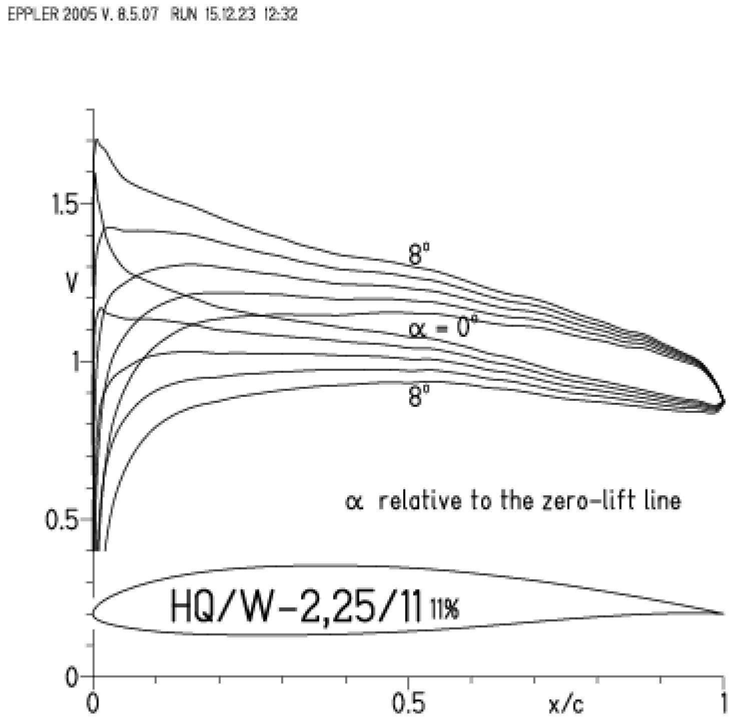


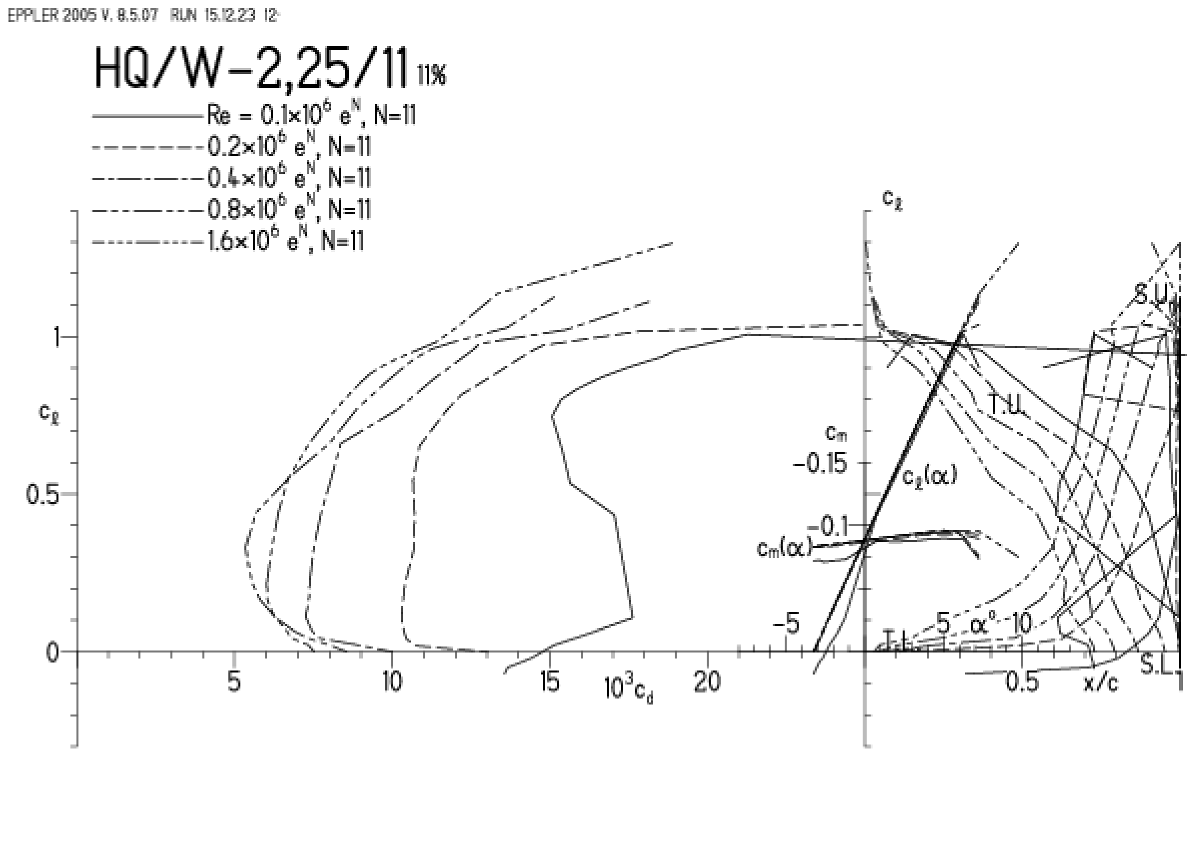
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag





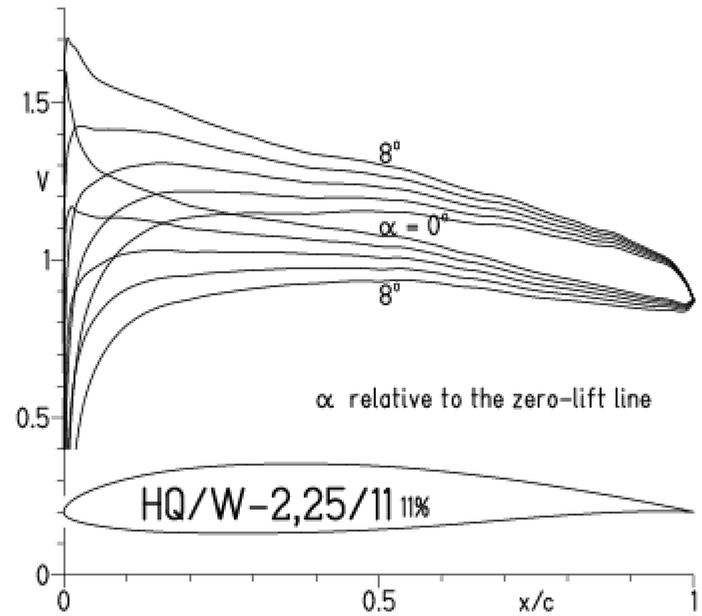
HQ/W-2,25/11, N=11



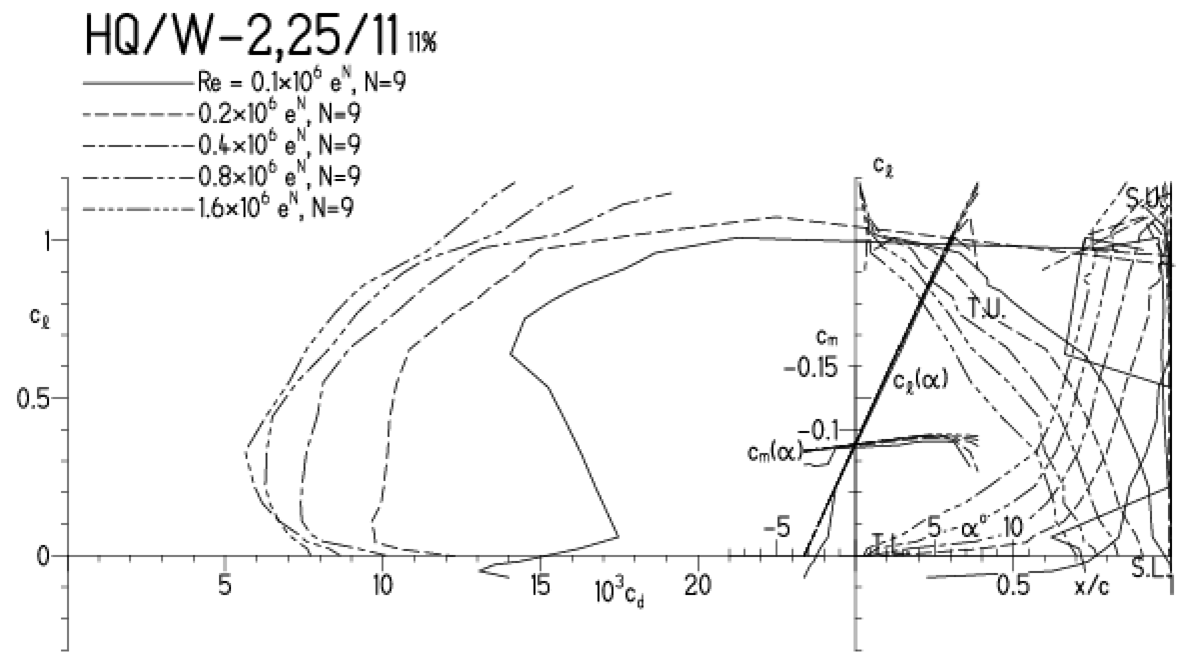


HQQ/W-2,25/11, N=9

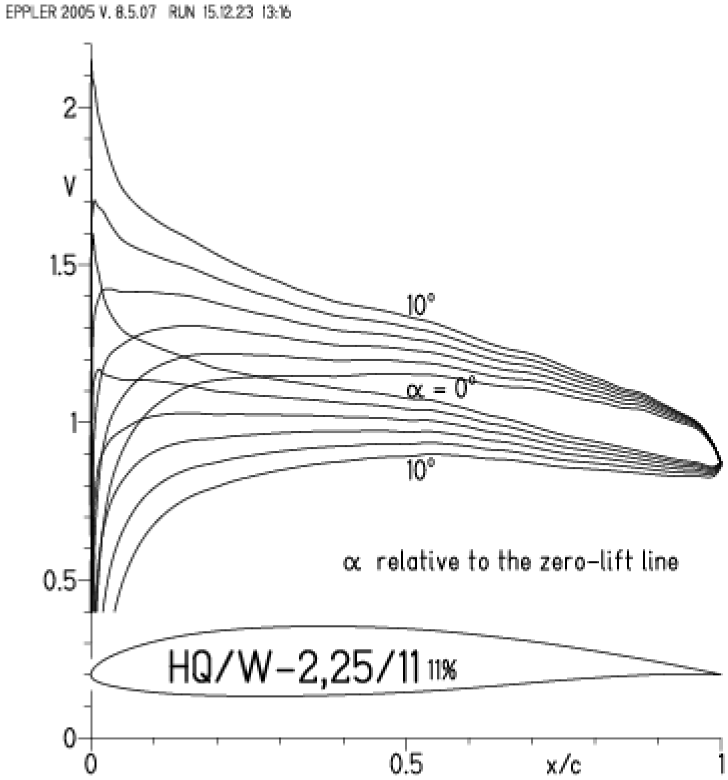
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

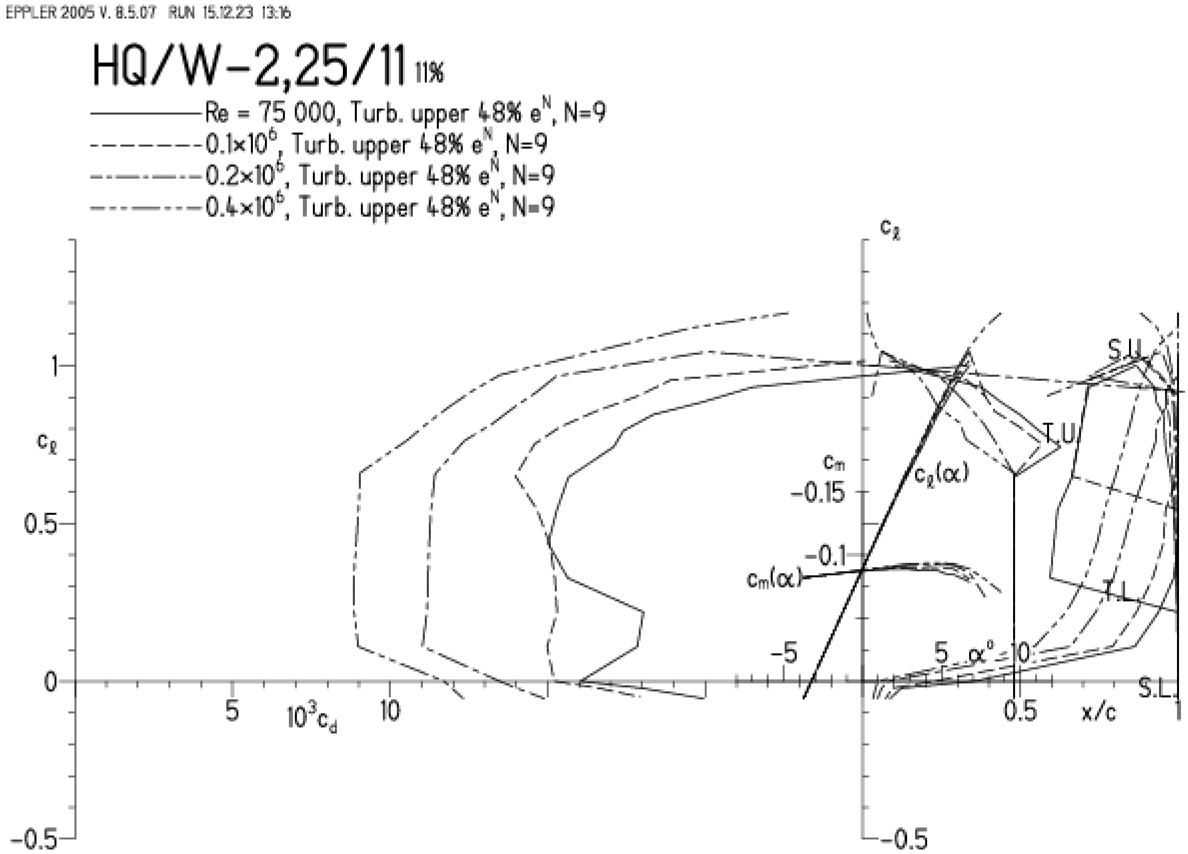


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



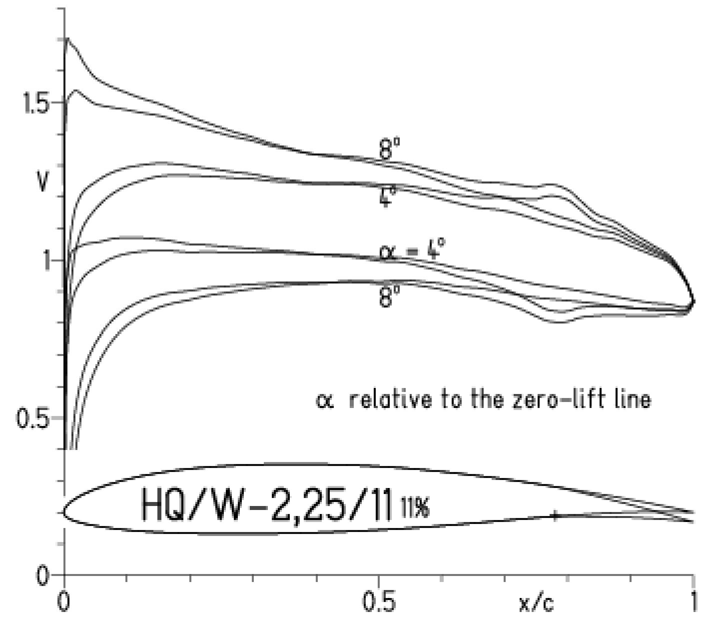
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



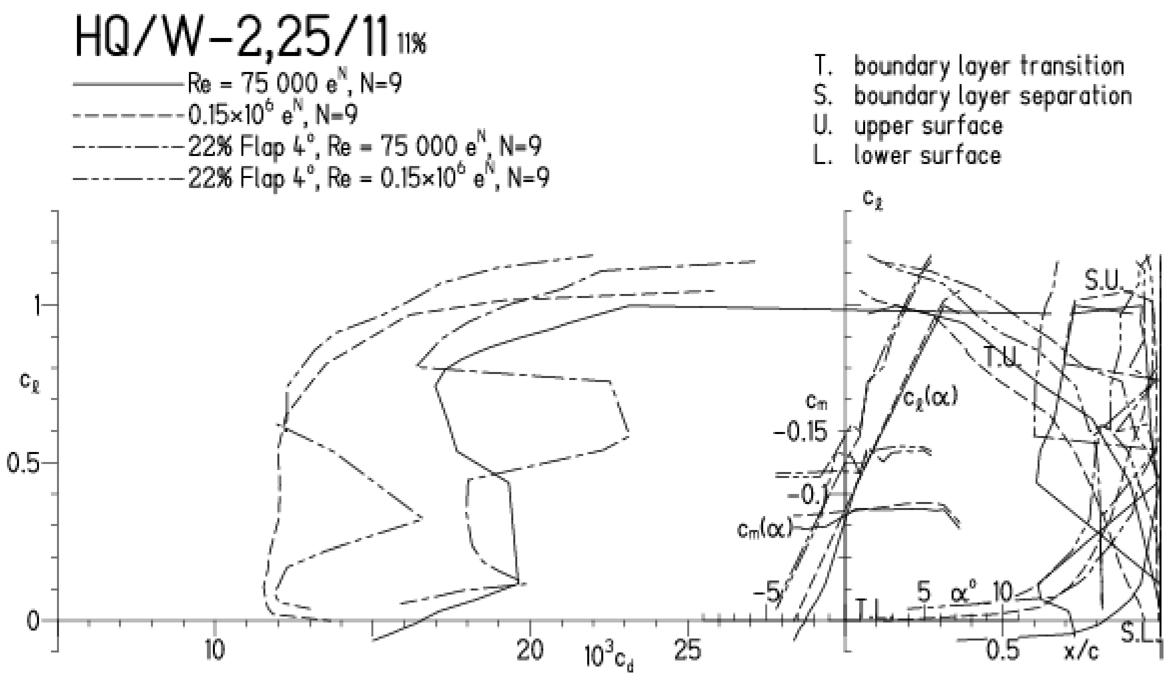


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

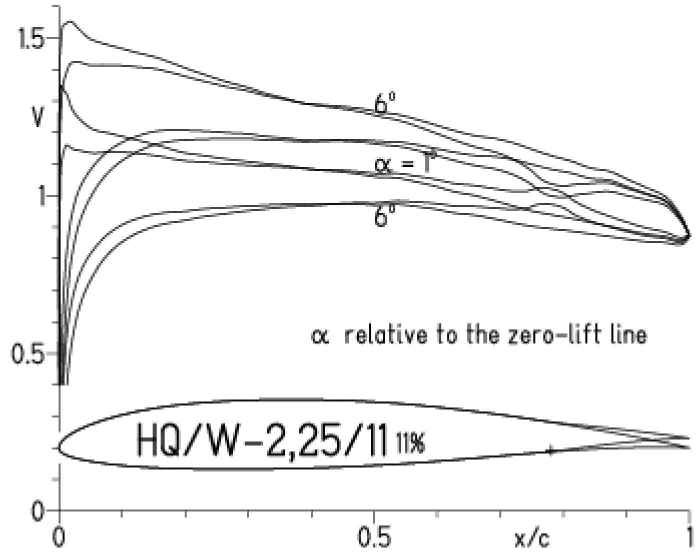


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

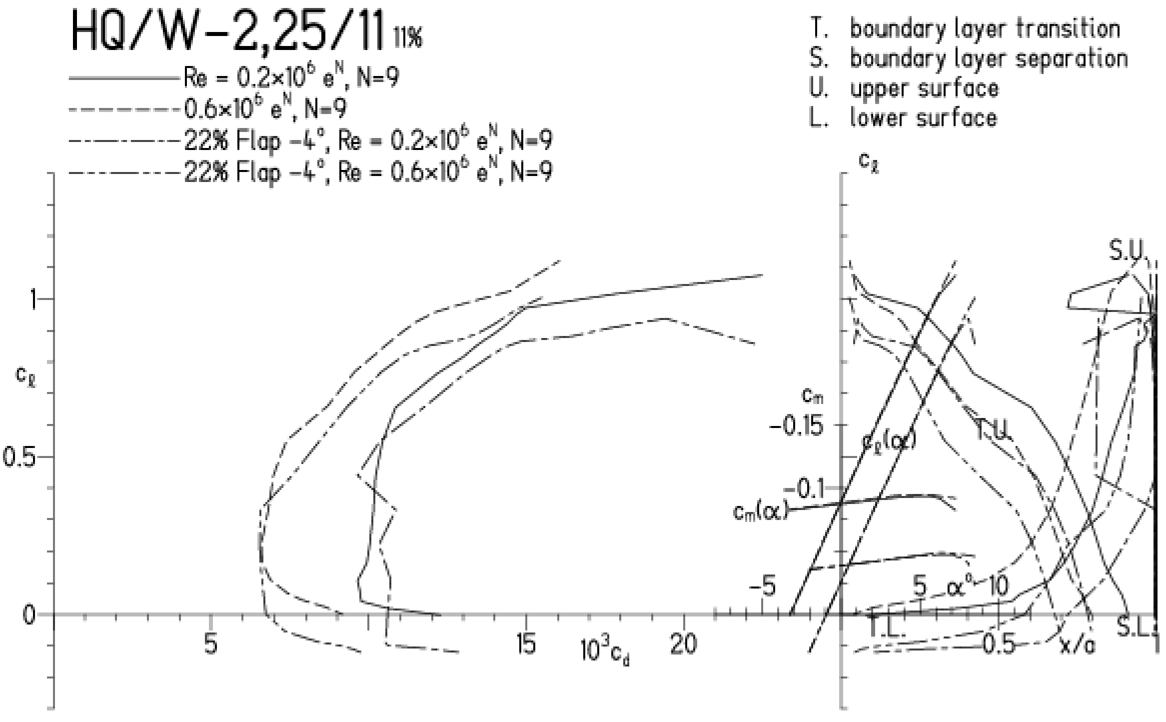


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

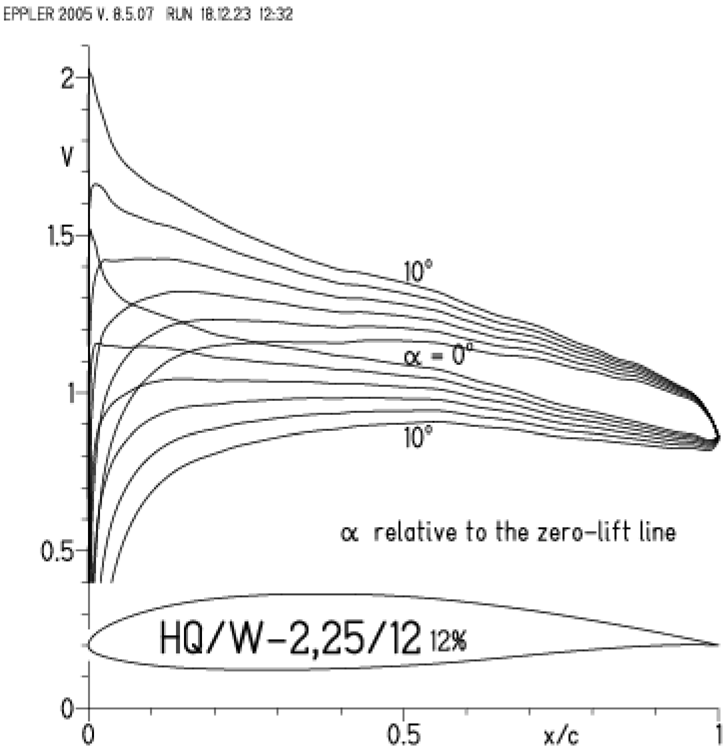
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

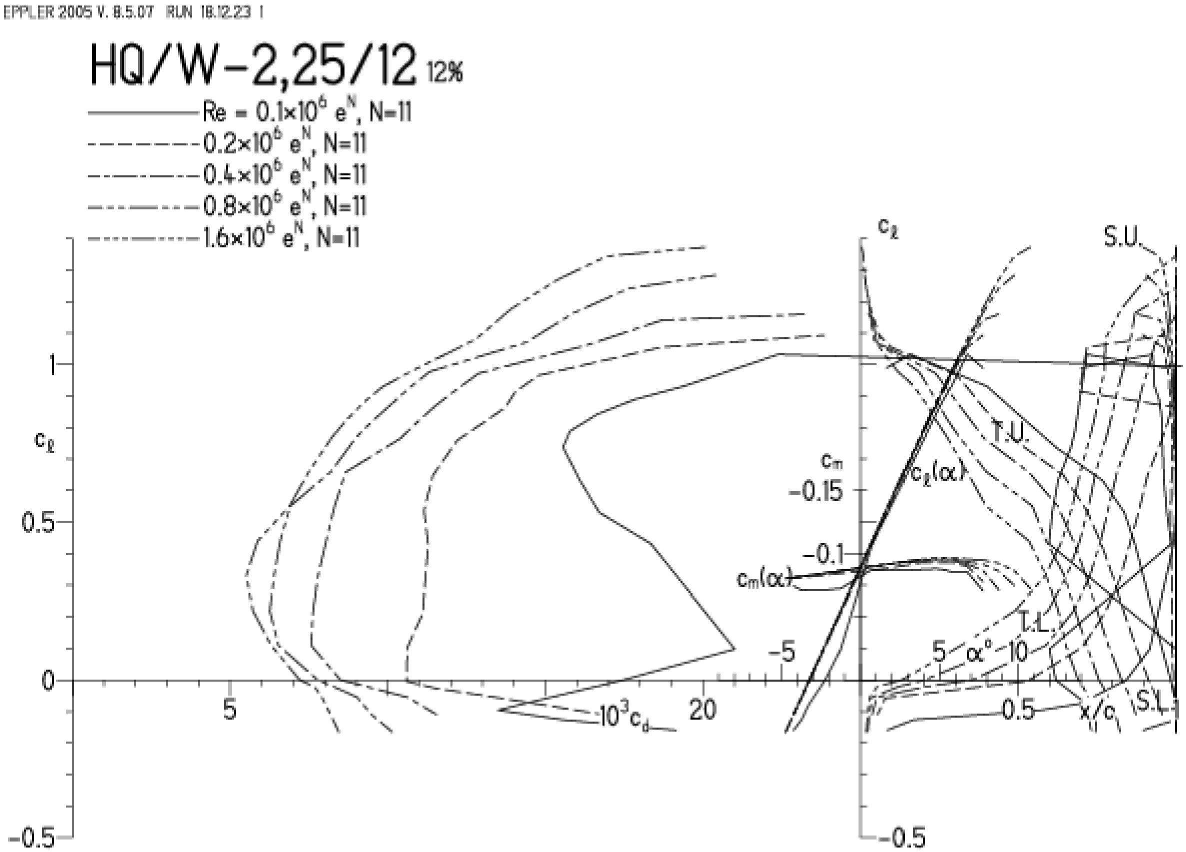


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



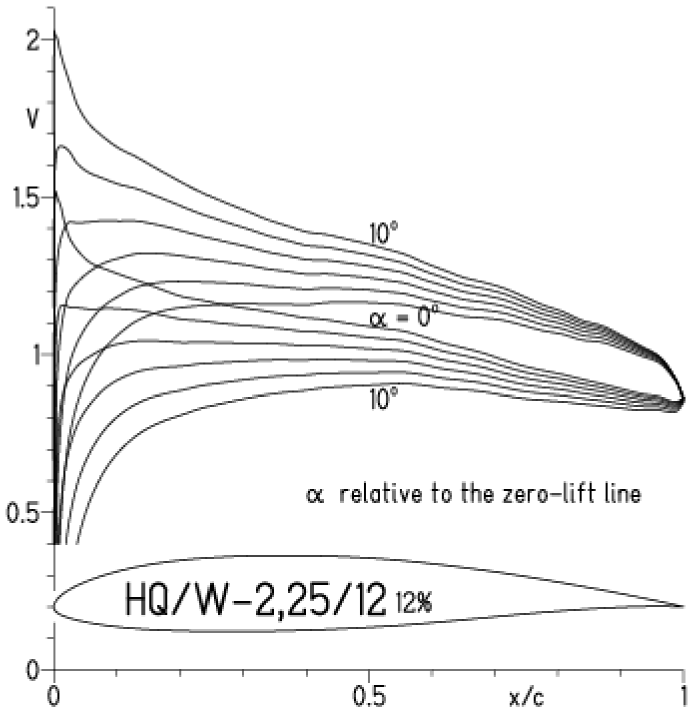
<u>HQ/W-2,25/12</u>, N=11



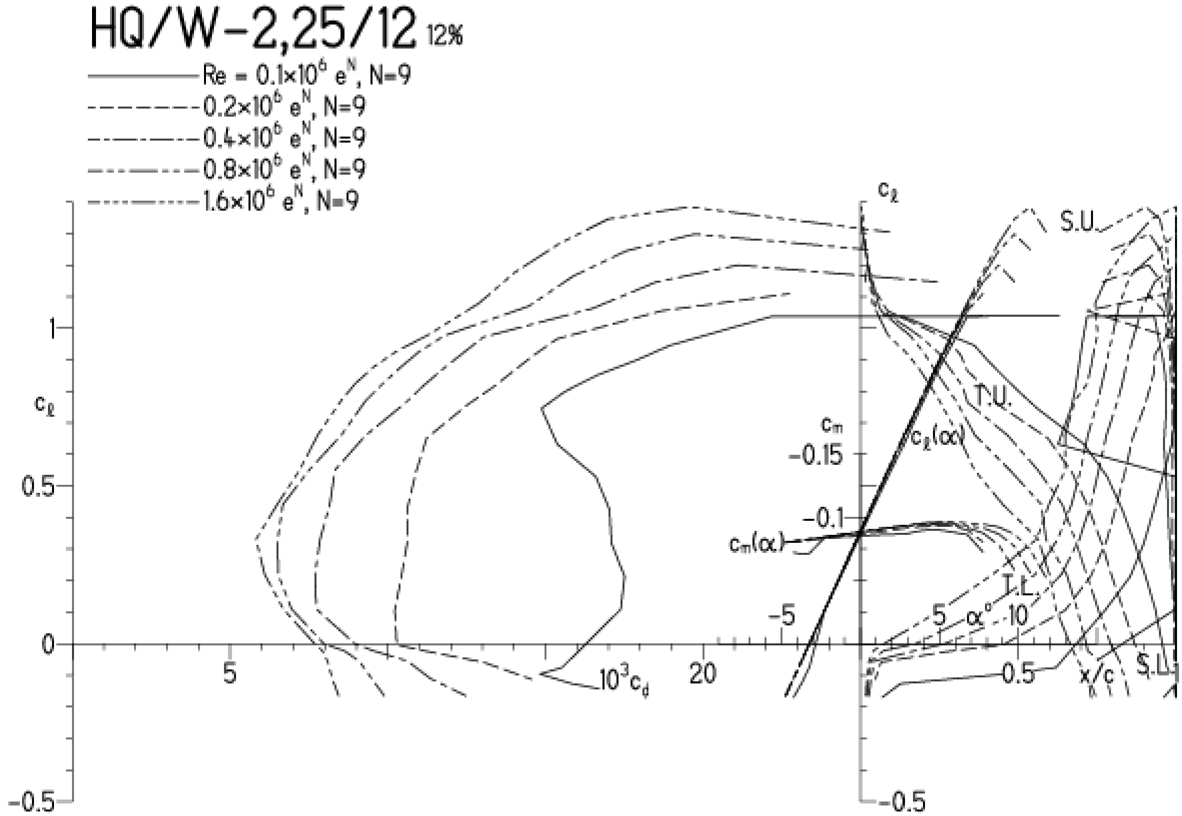


HQ/W-2,25/12, N=9

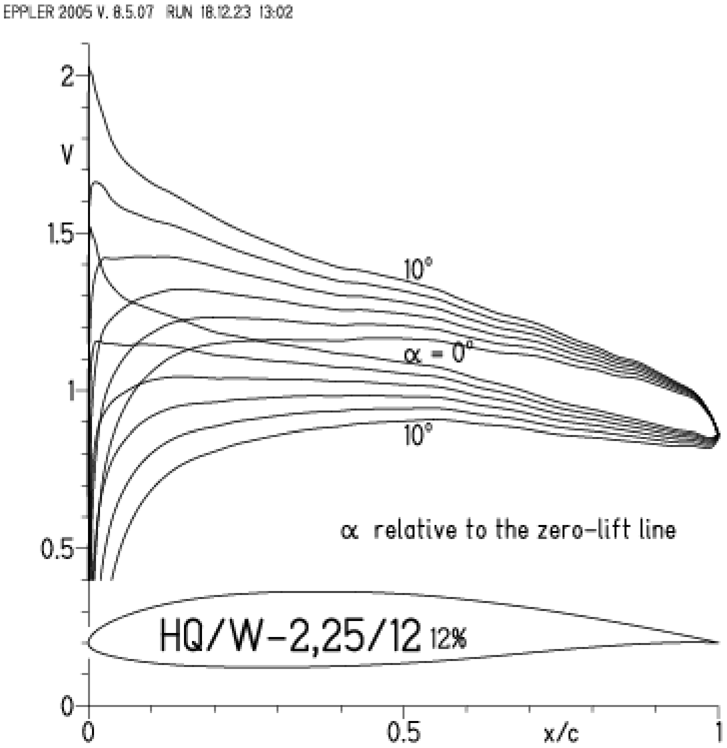
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

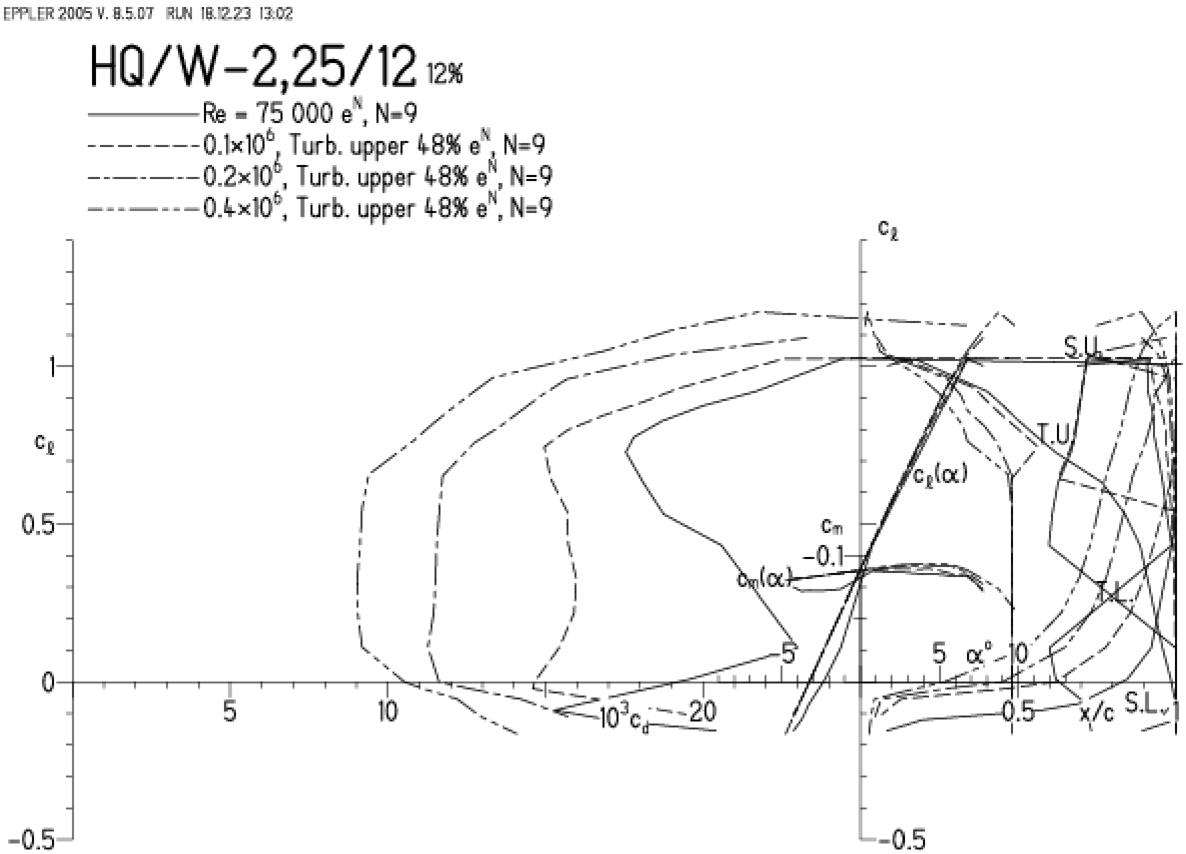


EPPLER 2005 V. 8.5



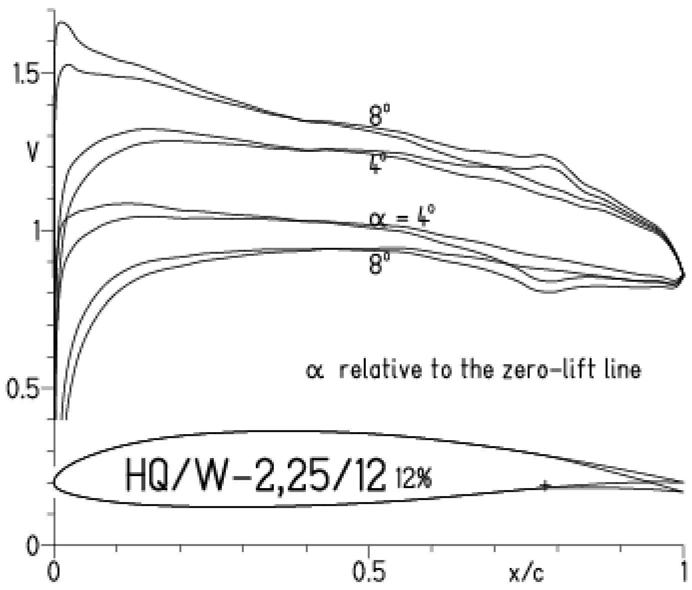
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



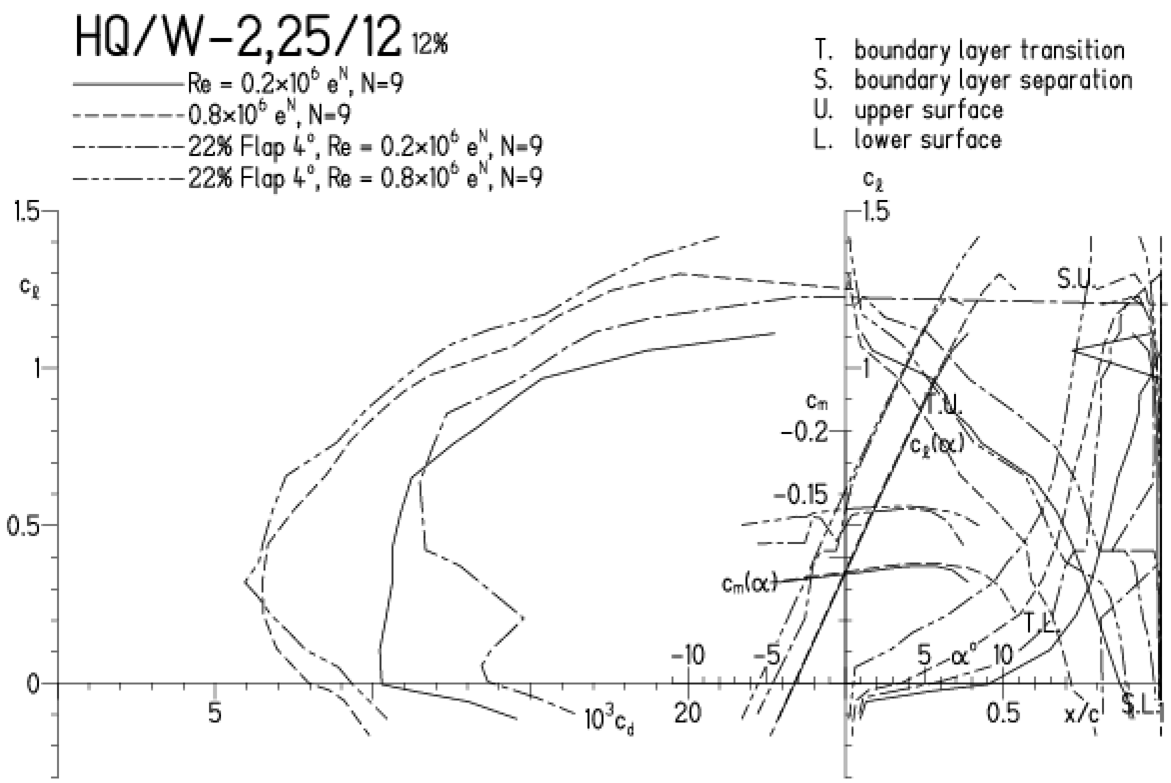


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

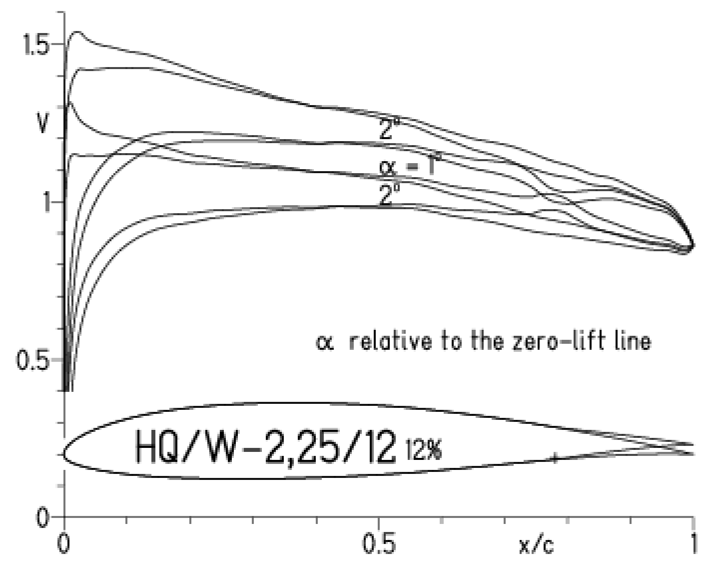


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

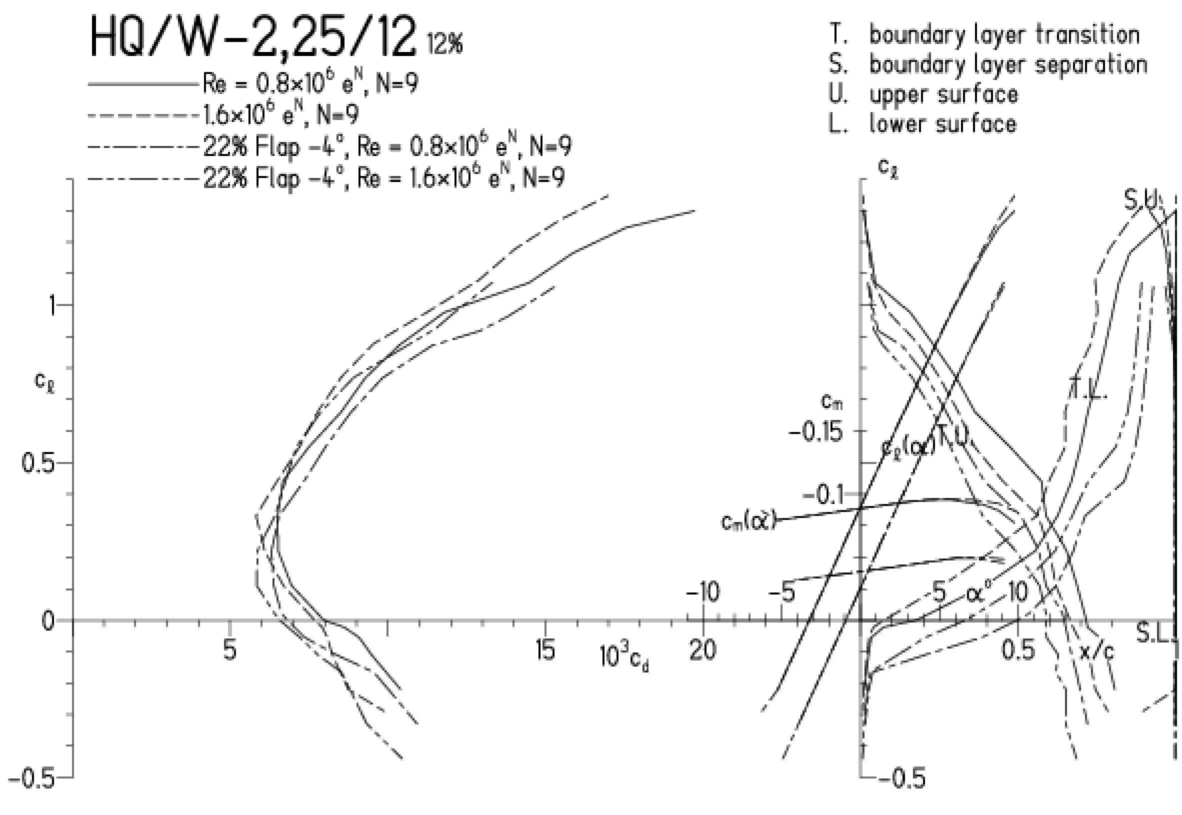


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

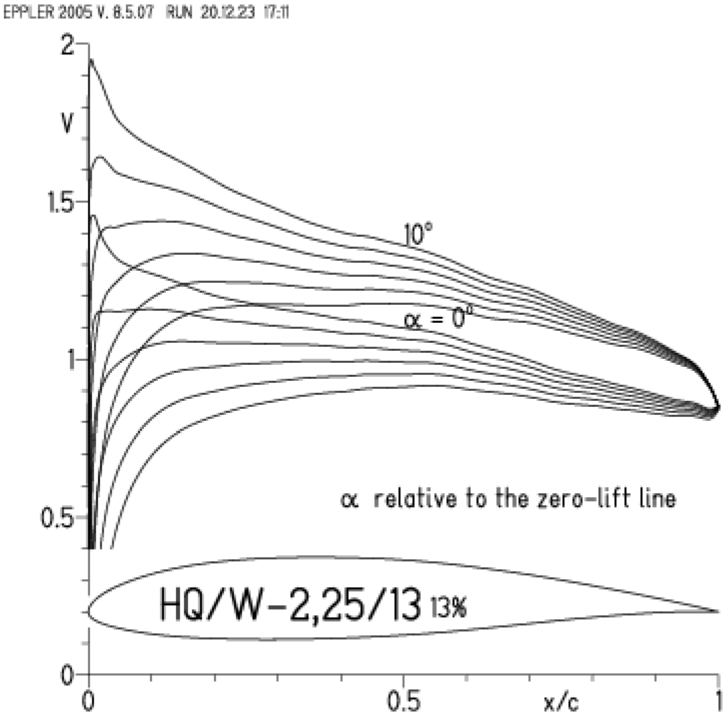
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

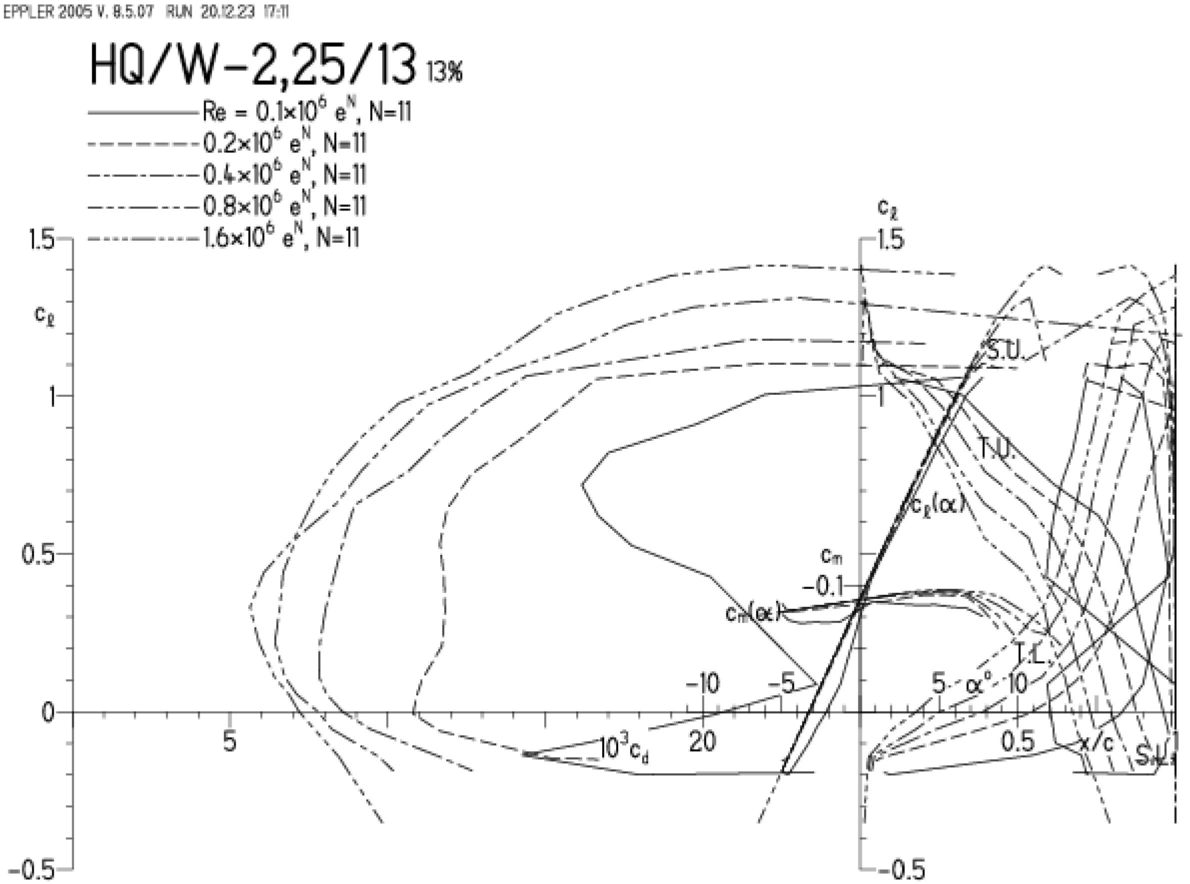


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

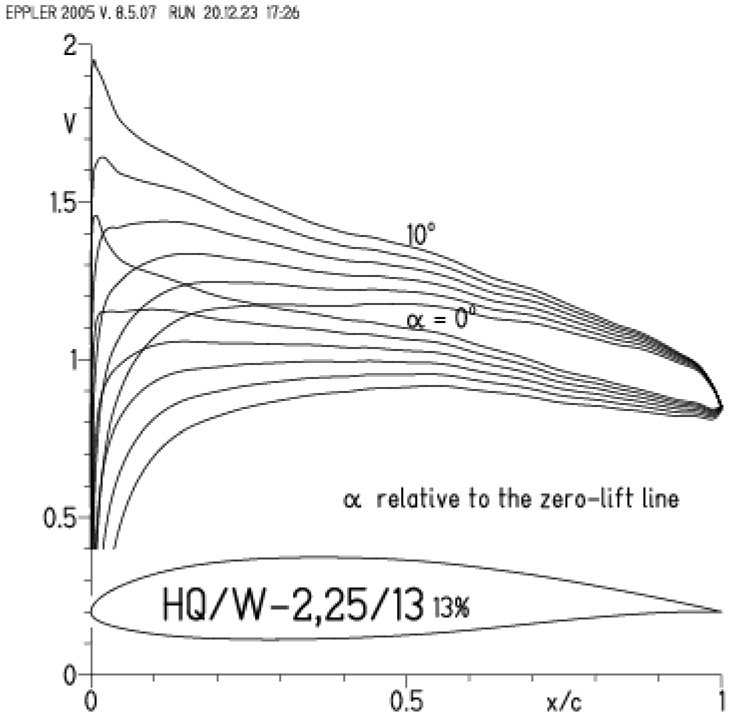


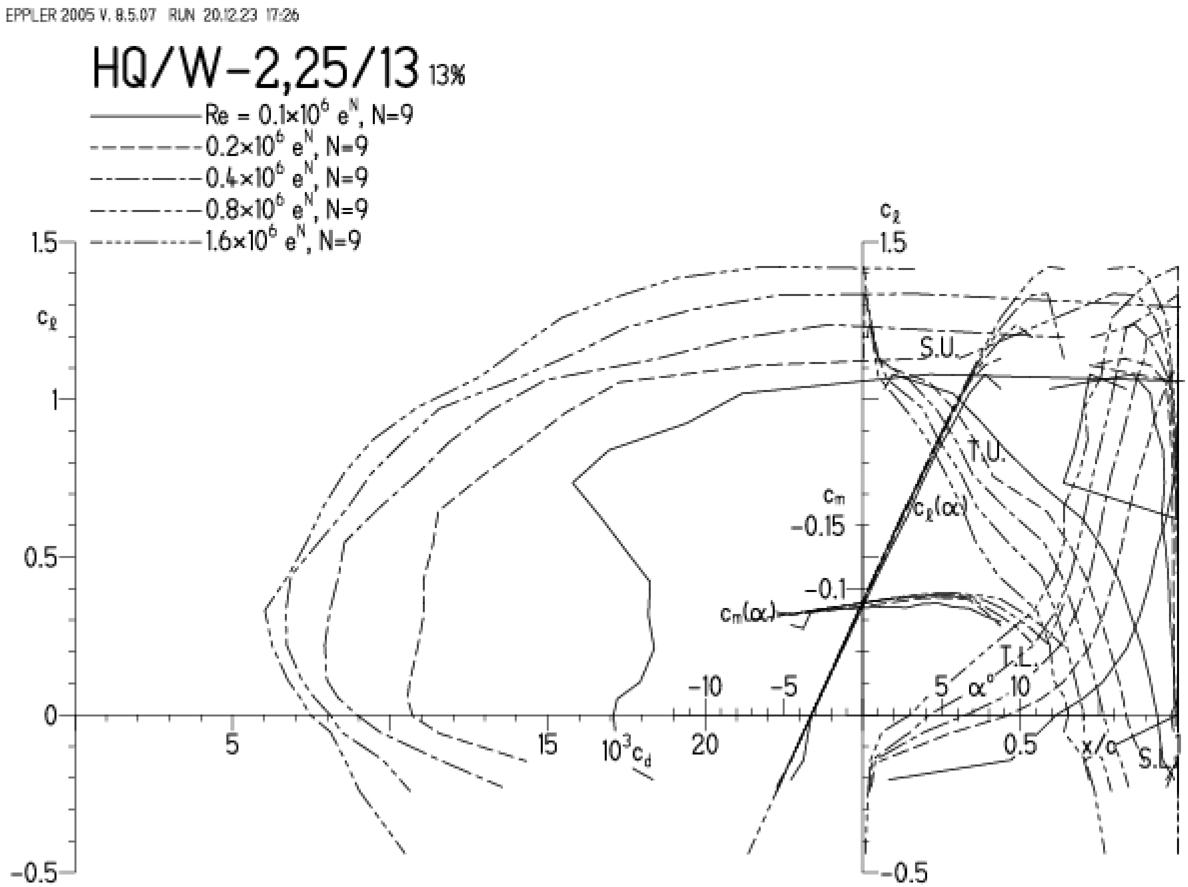
HQ/W-2,25/13, N=11



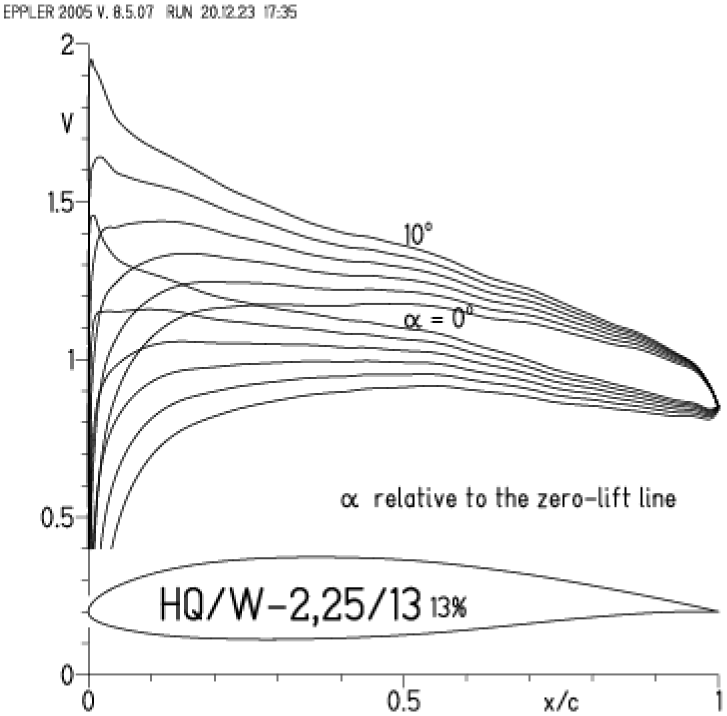


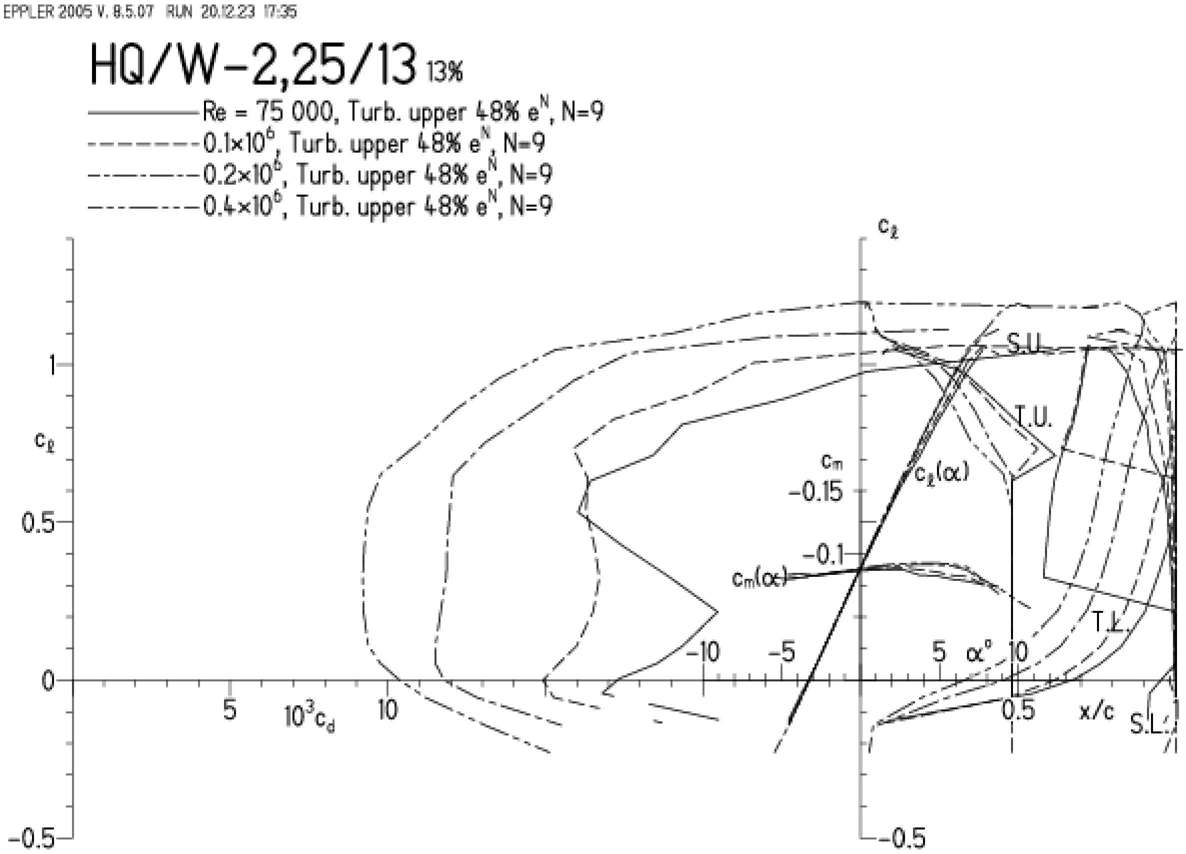
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_ℓ(α)
c_m
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

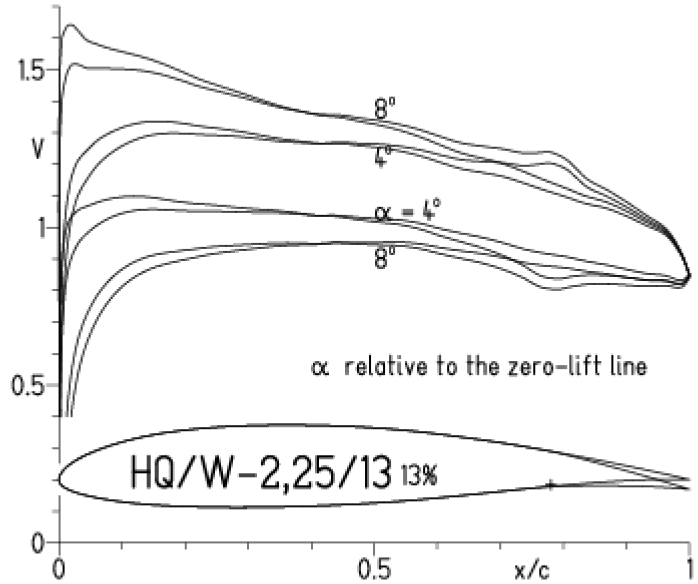
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



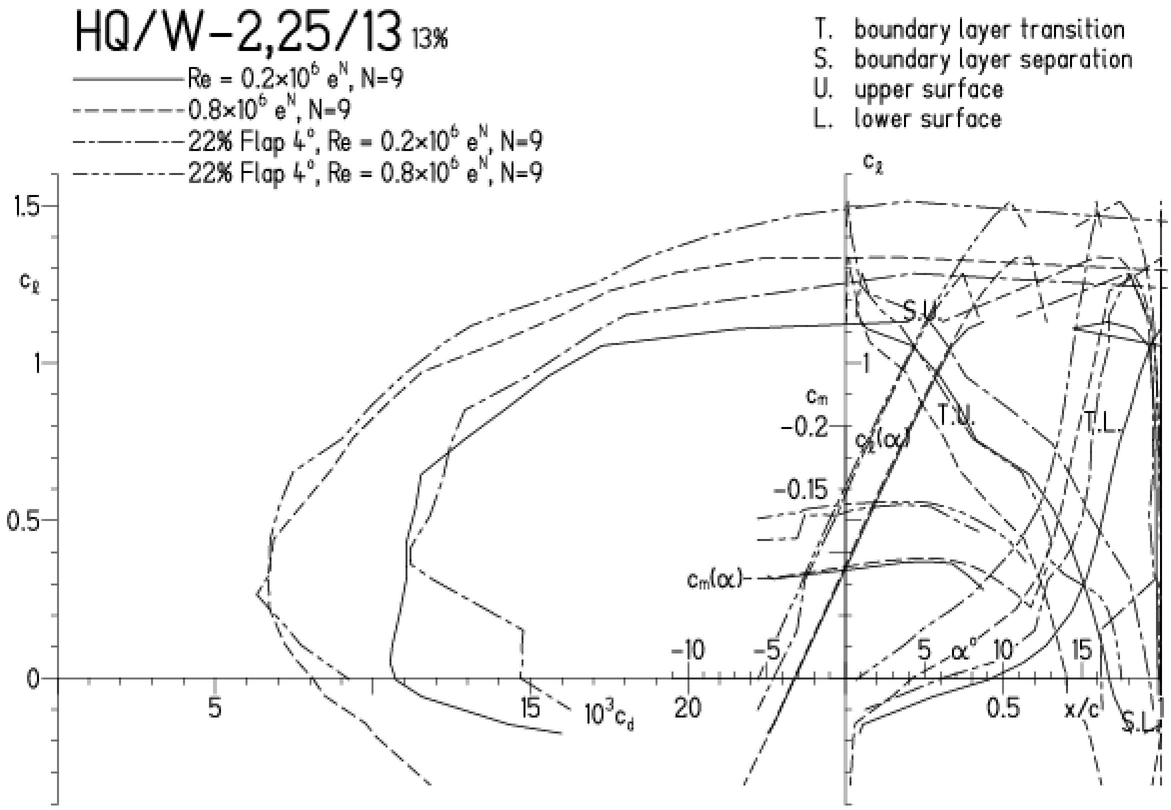


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

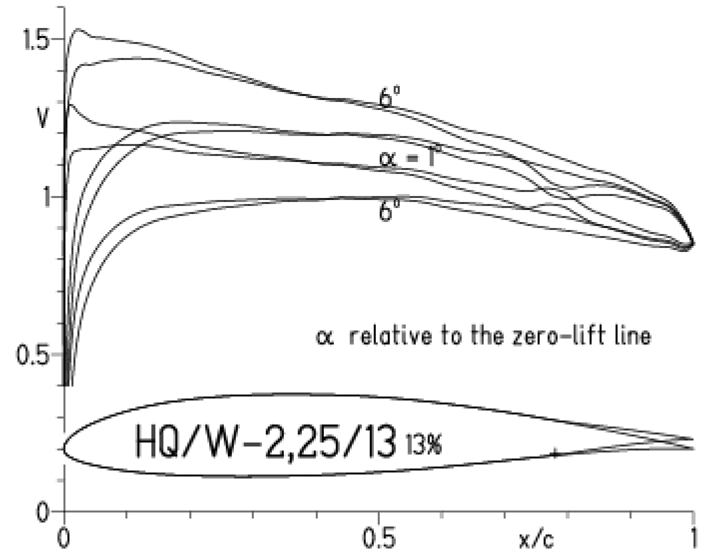


EPPLER 2005 V.

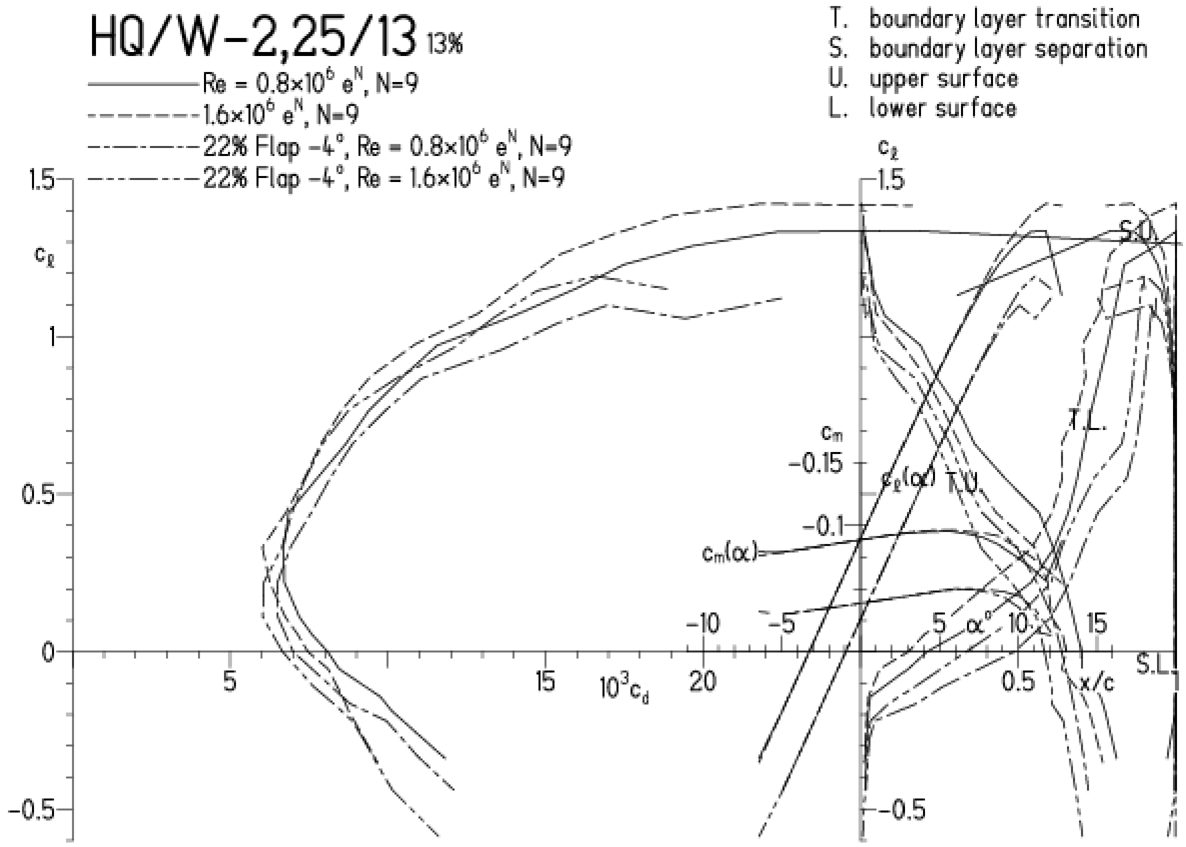


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

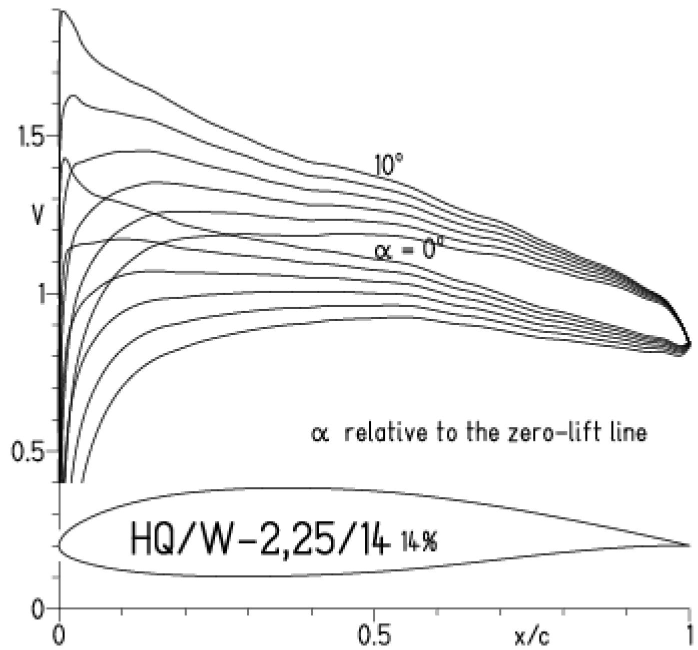


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

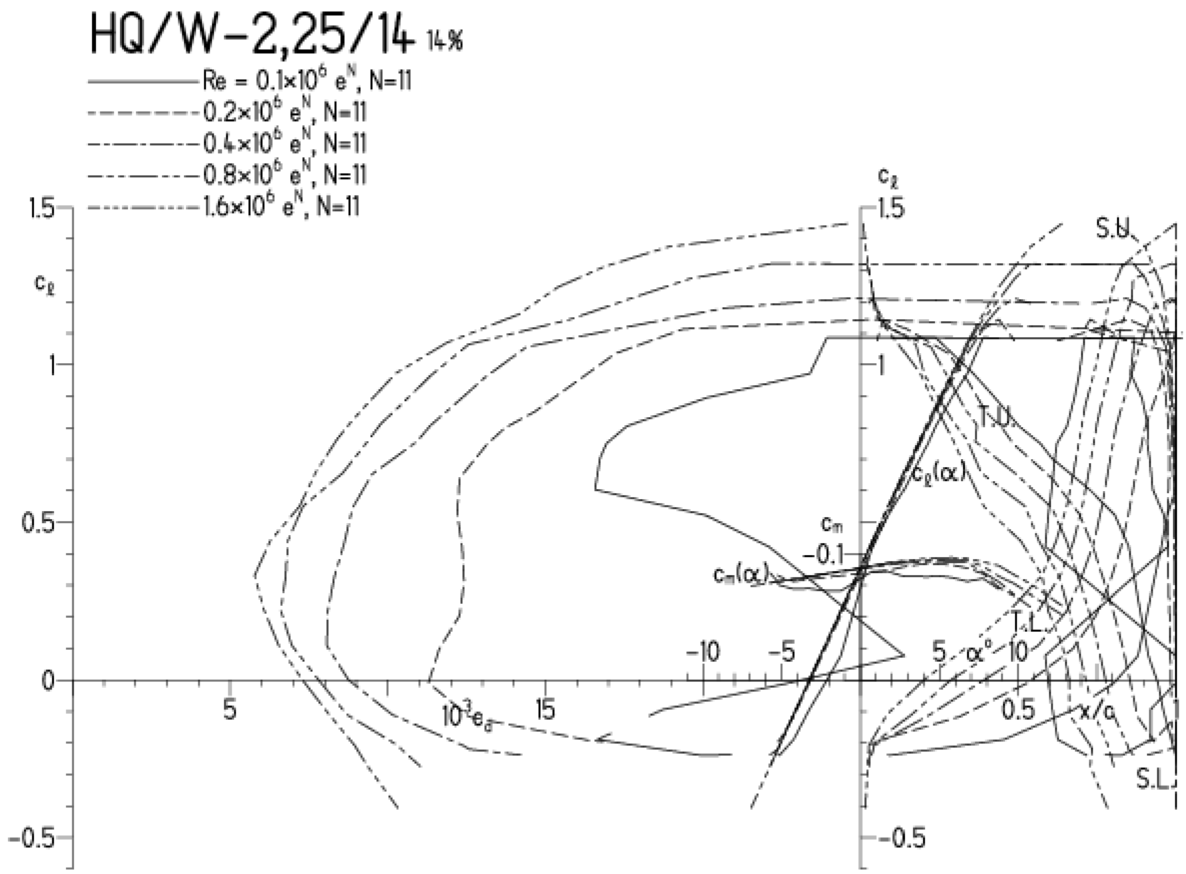


HQ/W-2,25/14, N=11

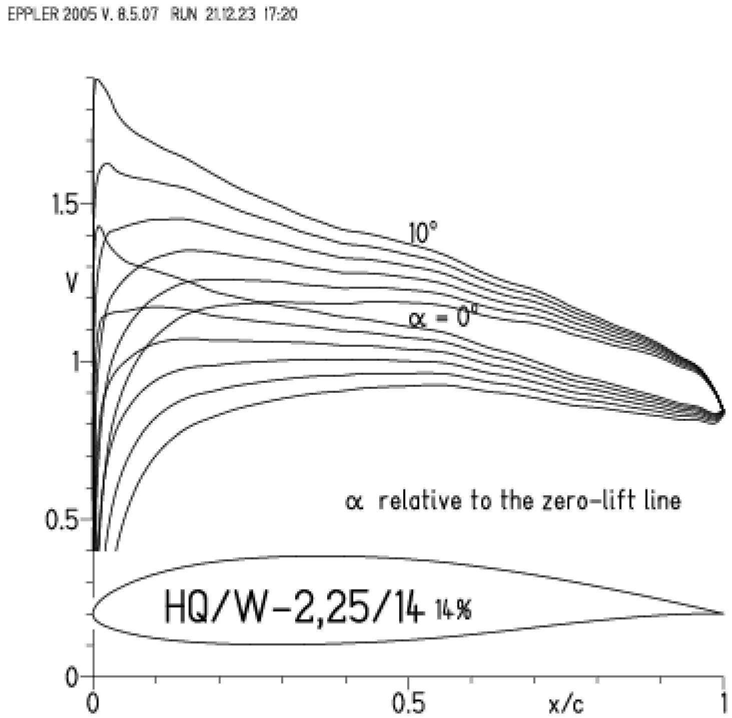
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

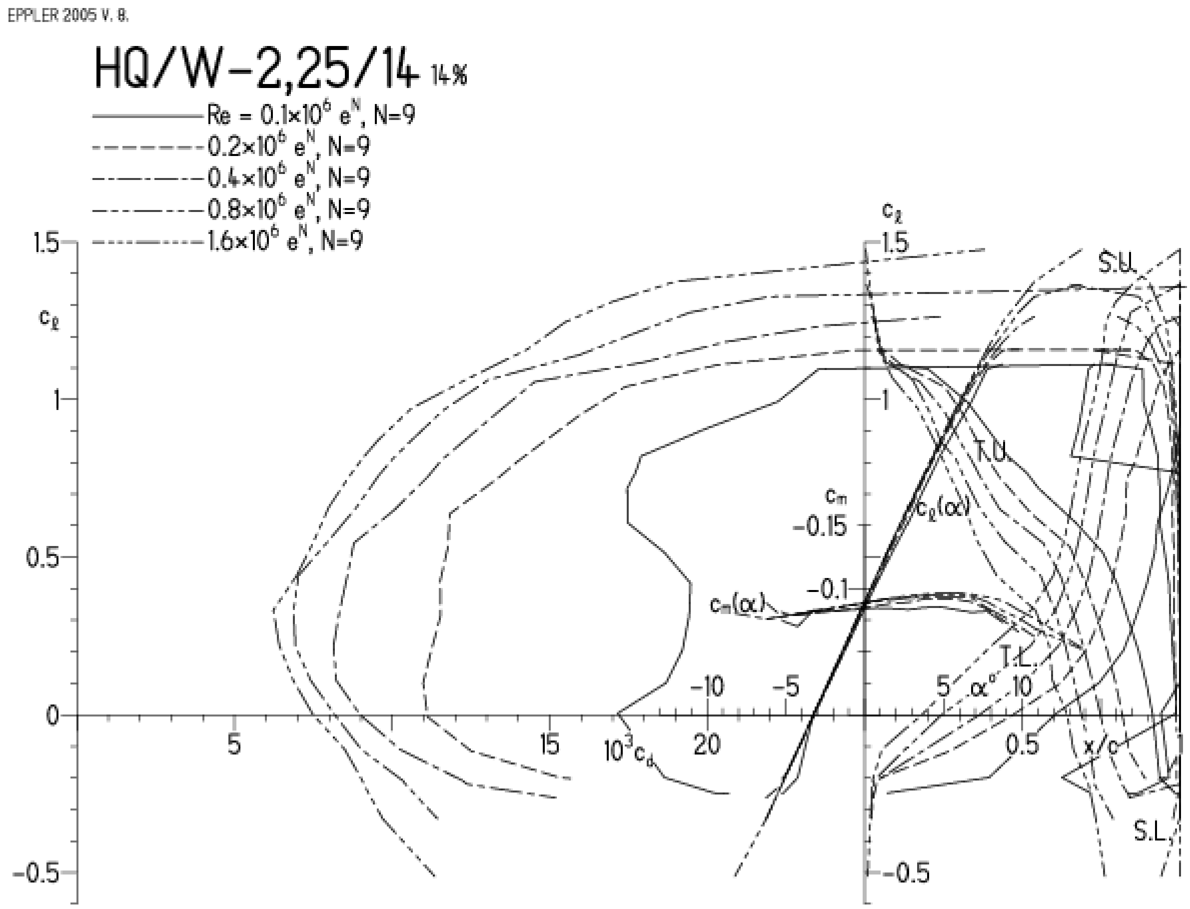


EPPLER 2005 V. 8.

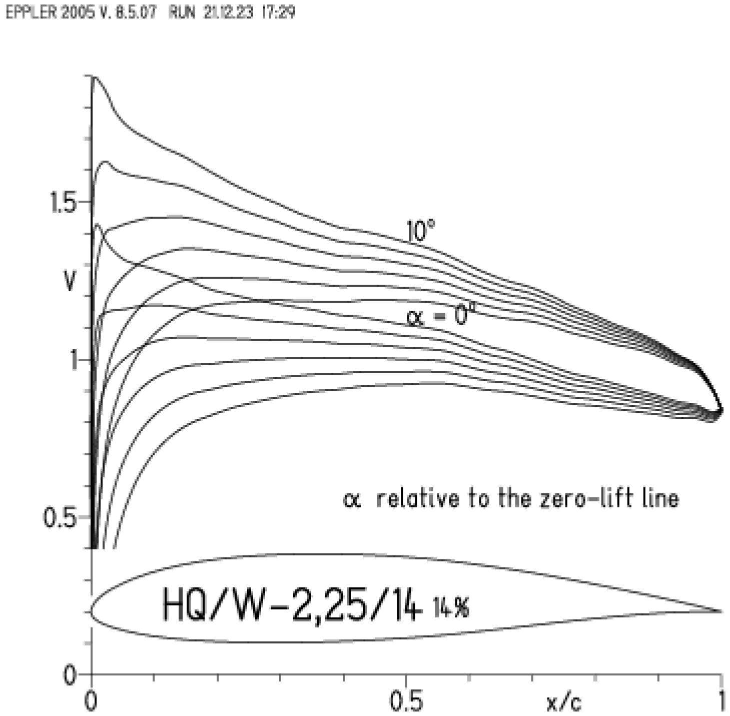


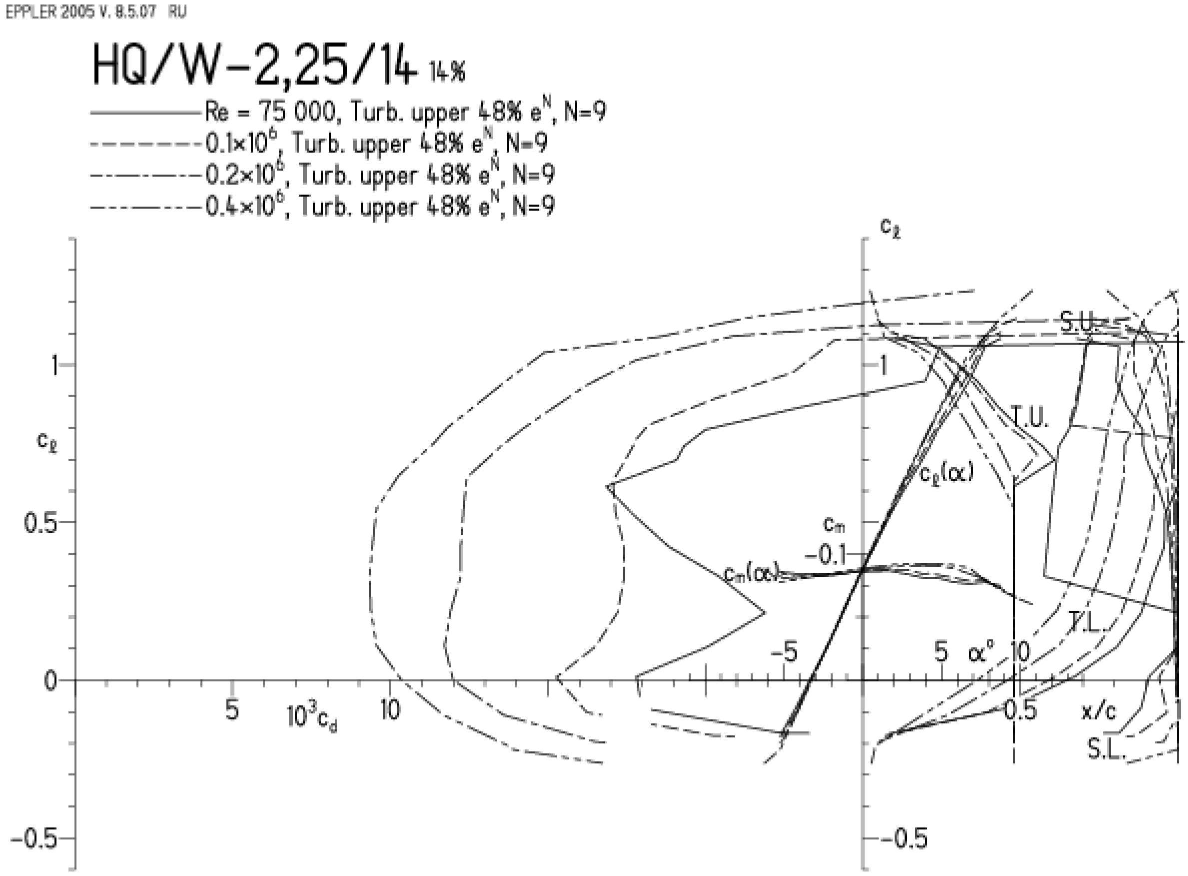
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
V
1.5
1
0.5
0
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

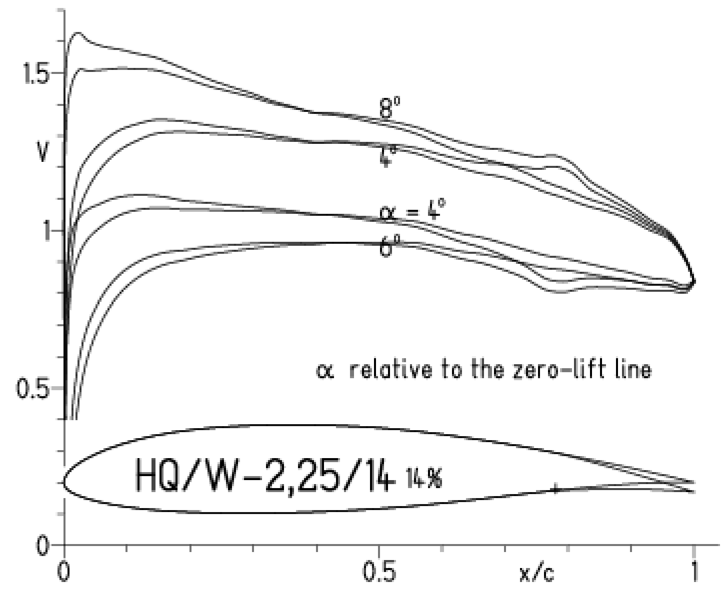
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



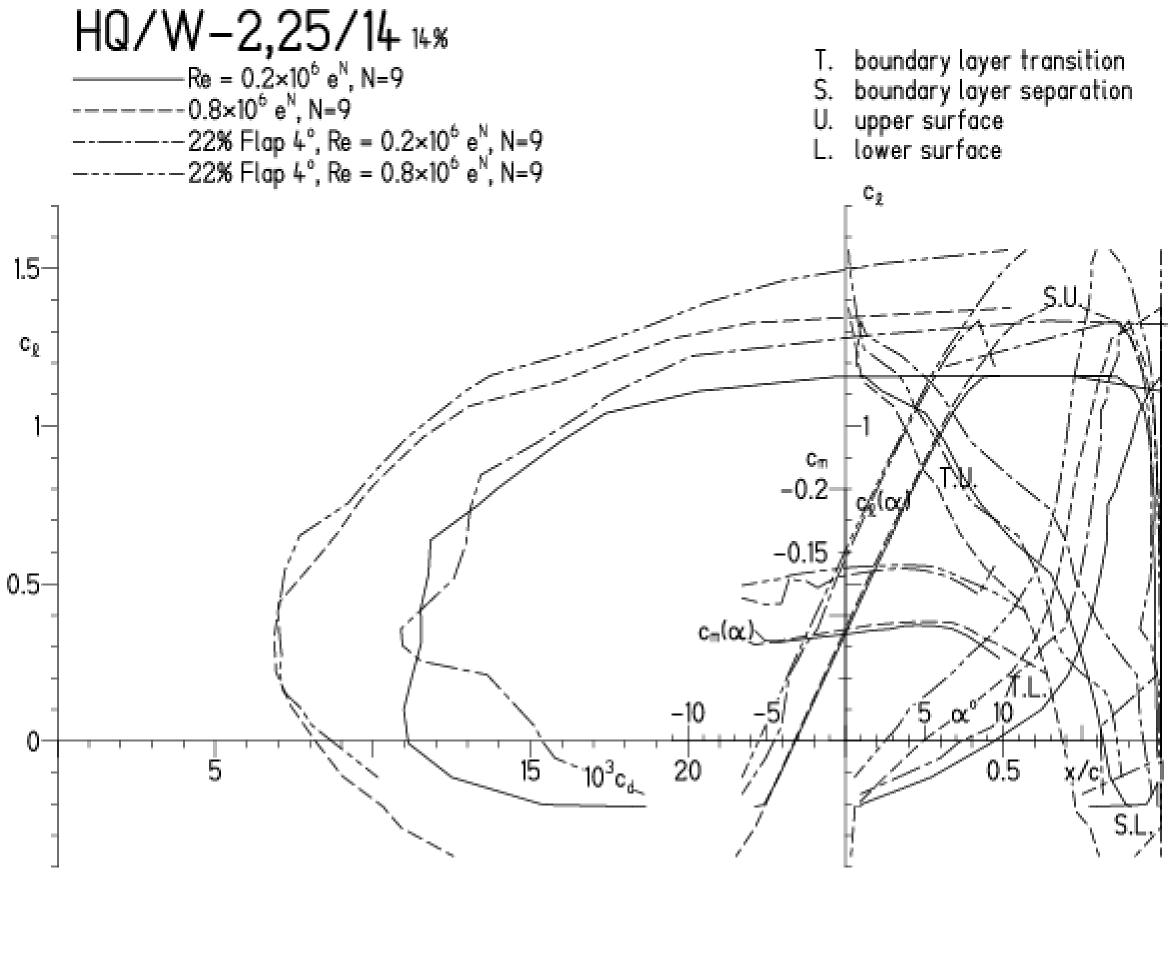


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

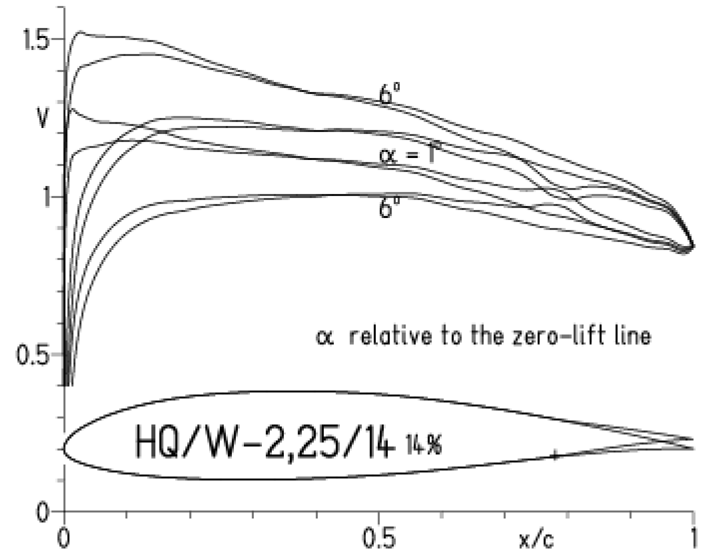


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

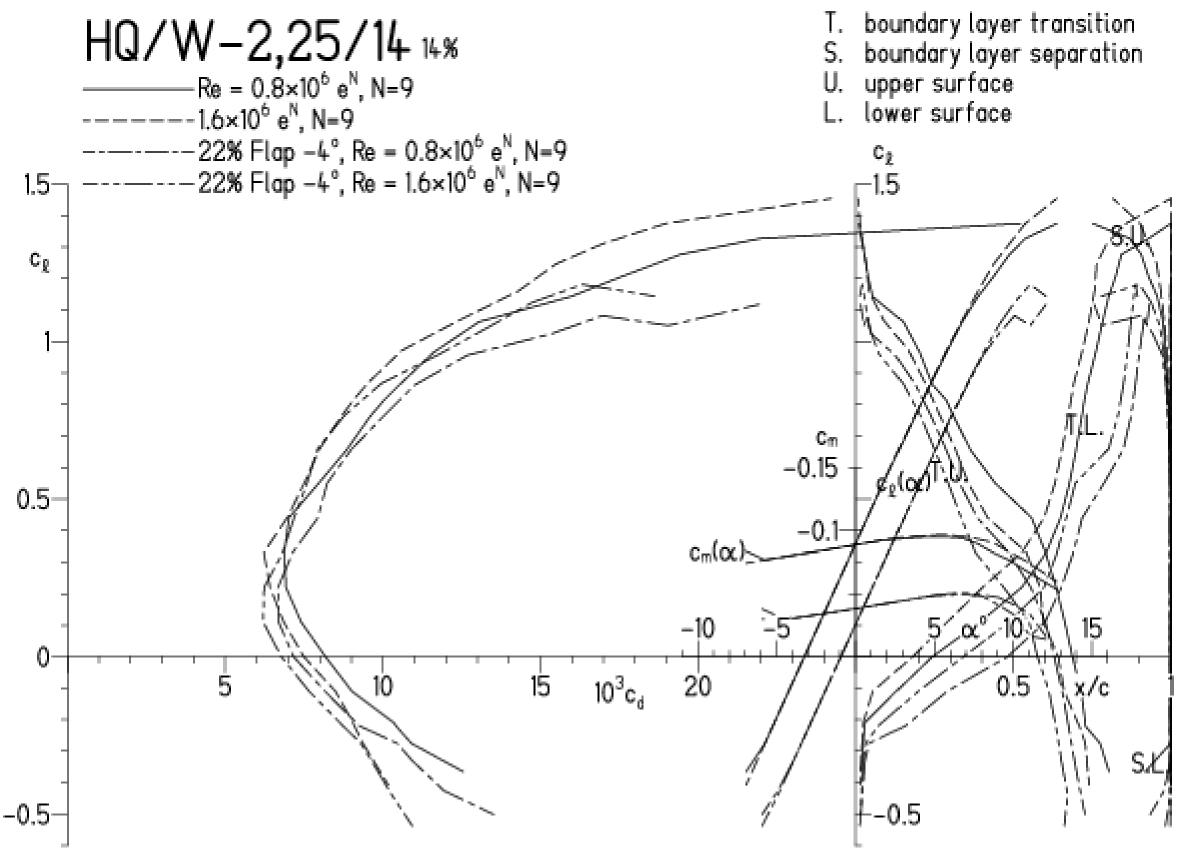


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

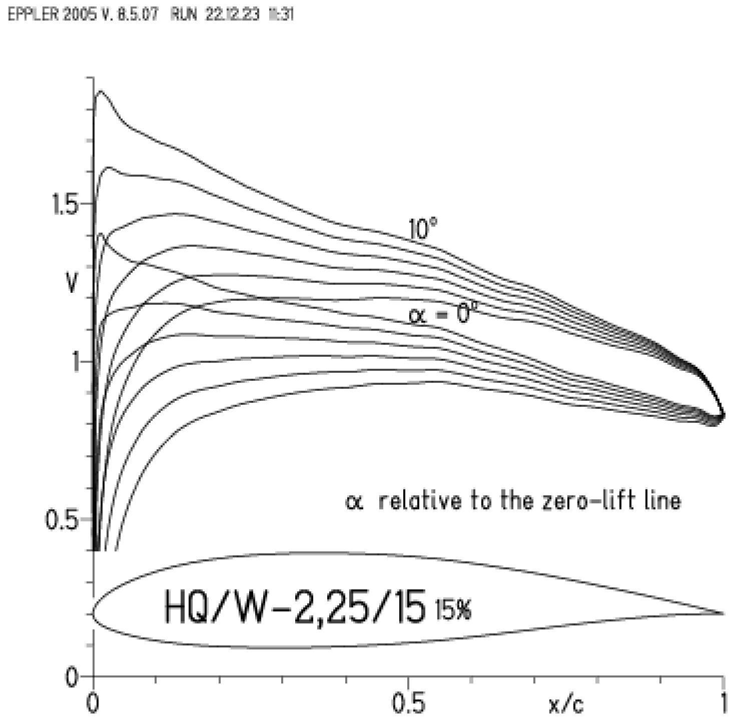
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

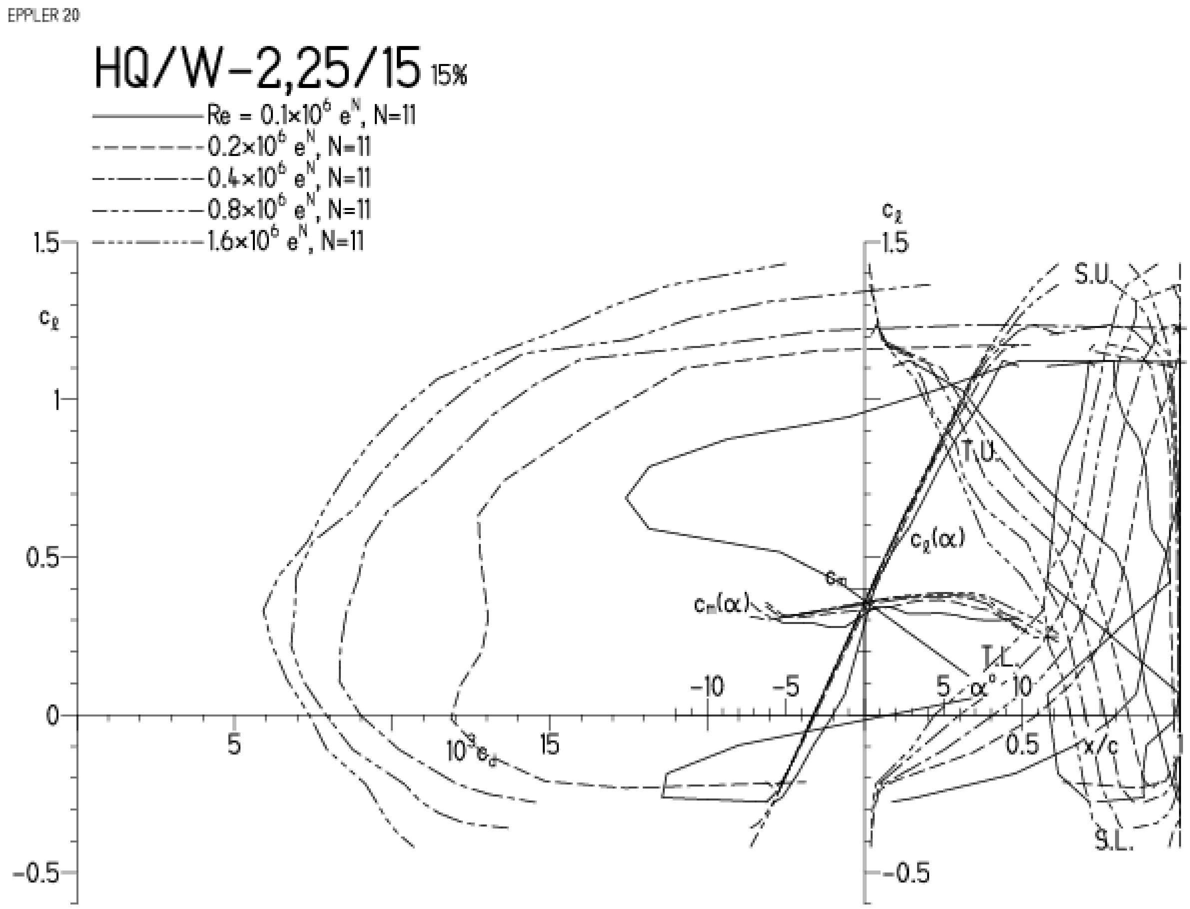


EPPLER 2005 V. 8.5.07



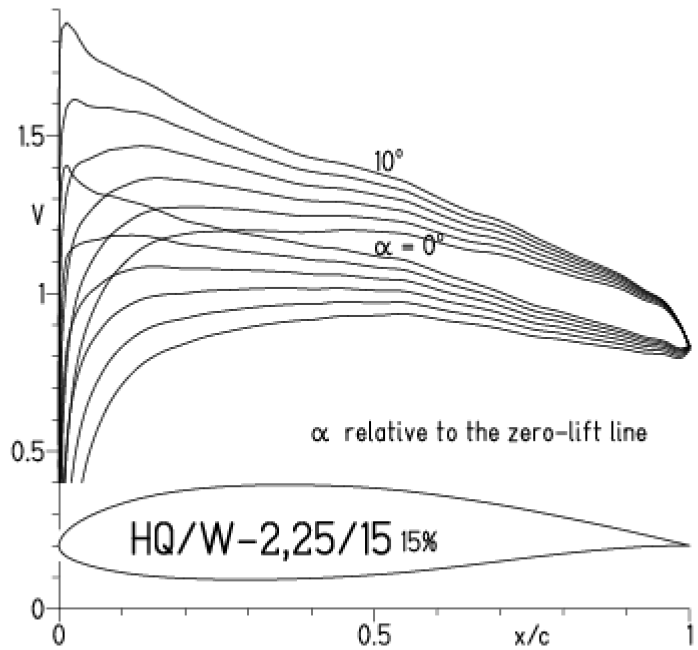
HQ/W-2,25/15, N=11



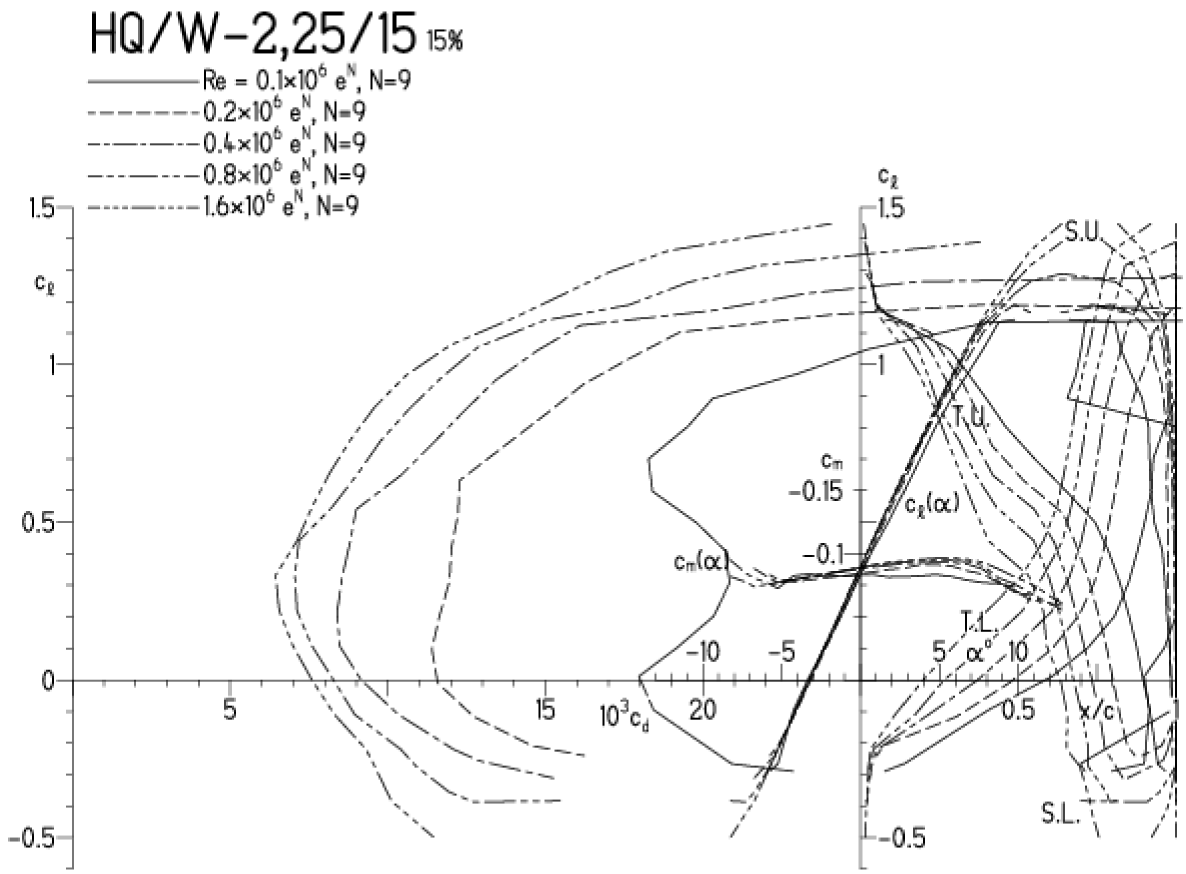


HQ/W-2,25/15, N=9

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

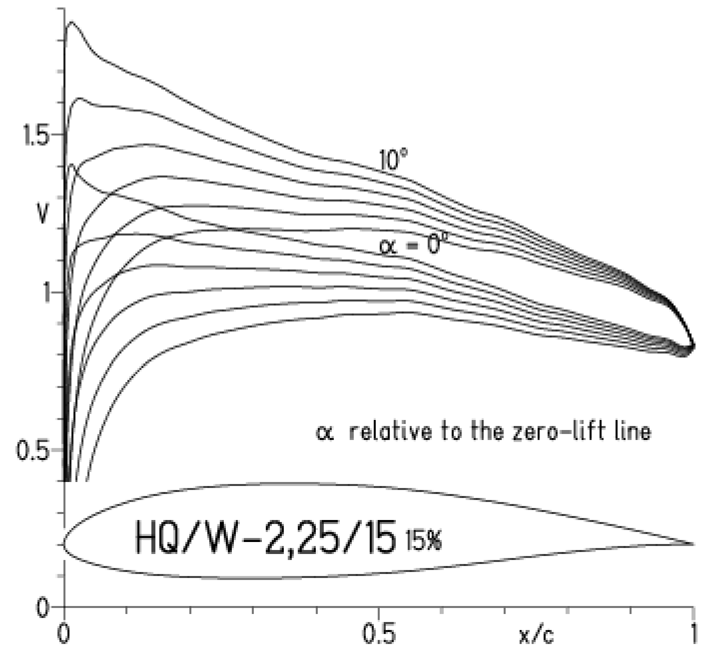


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11

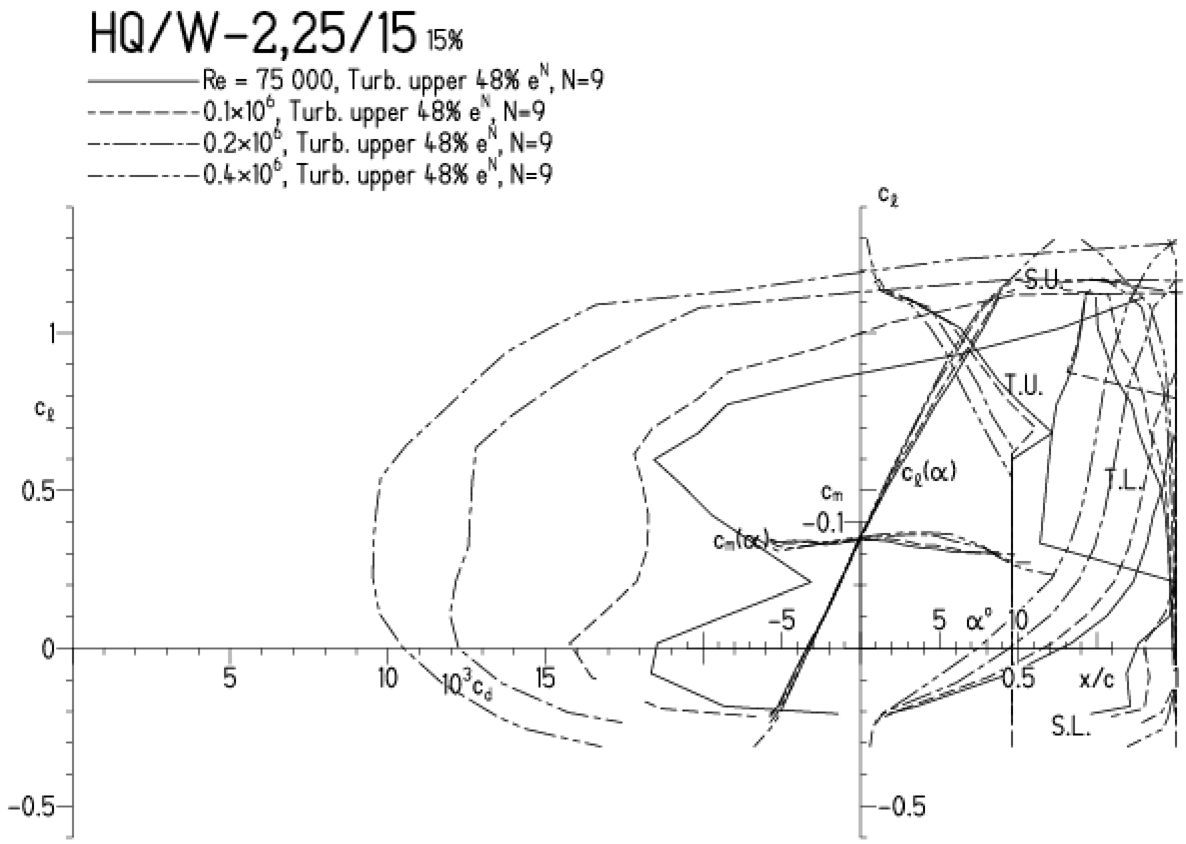


HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:41



EPPLER 20

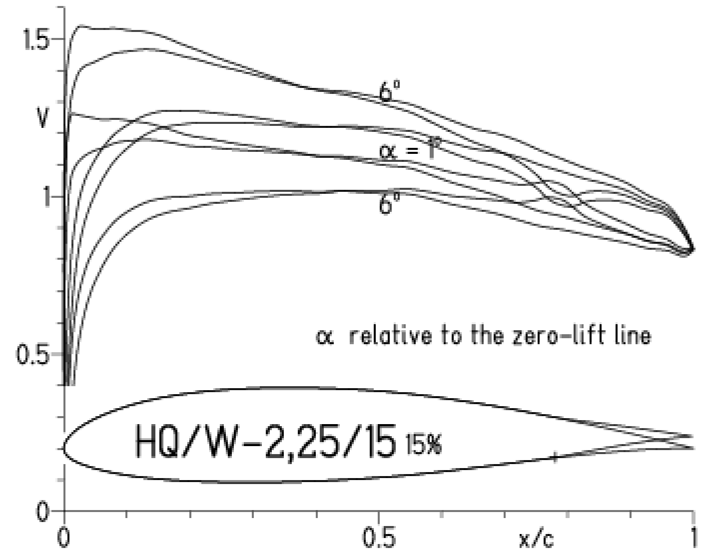


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

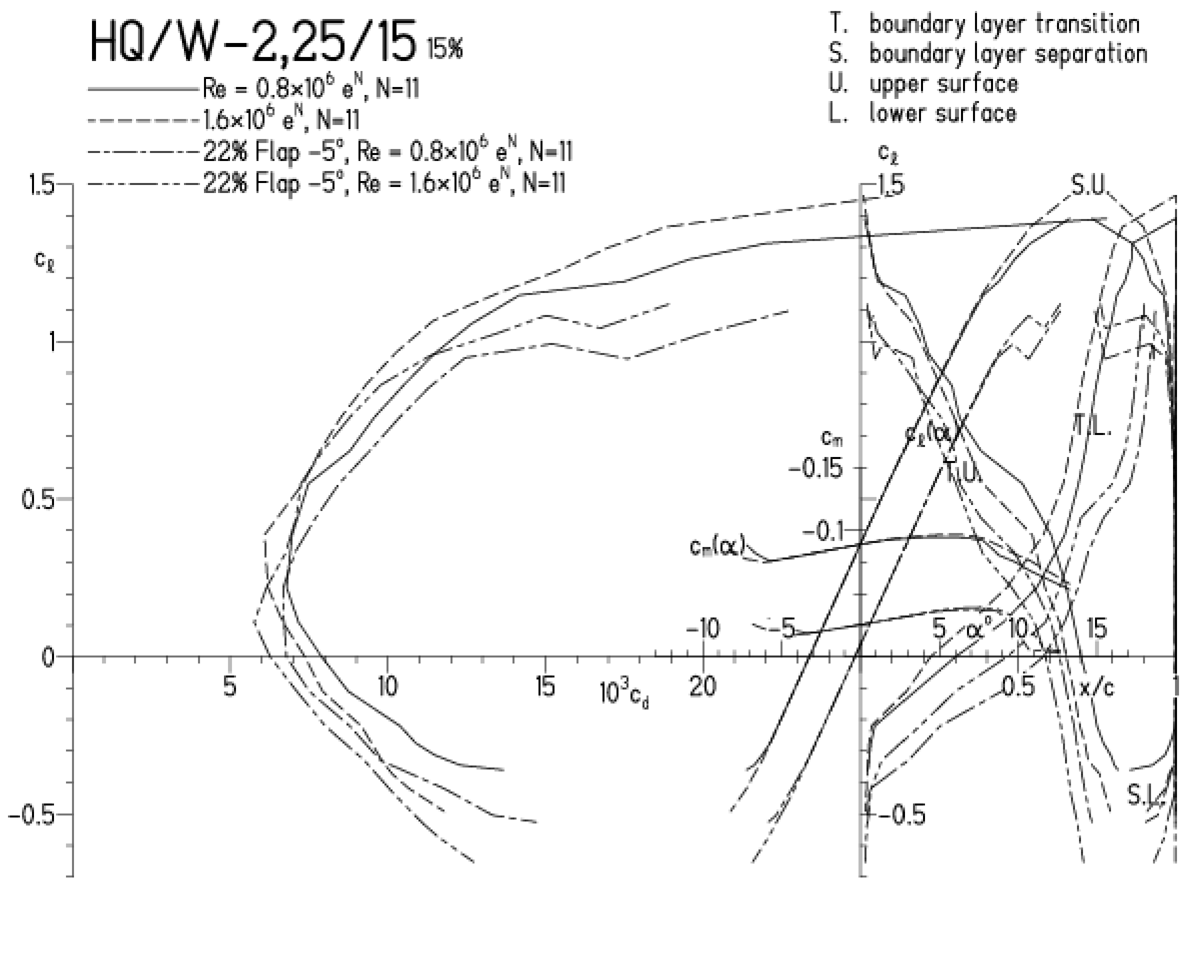
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

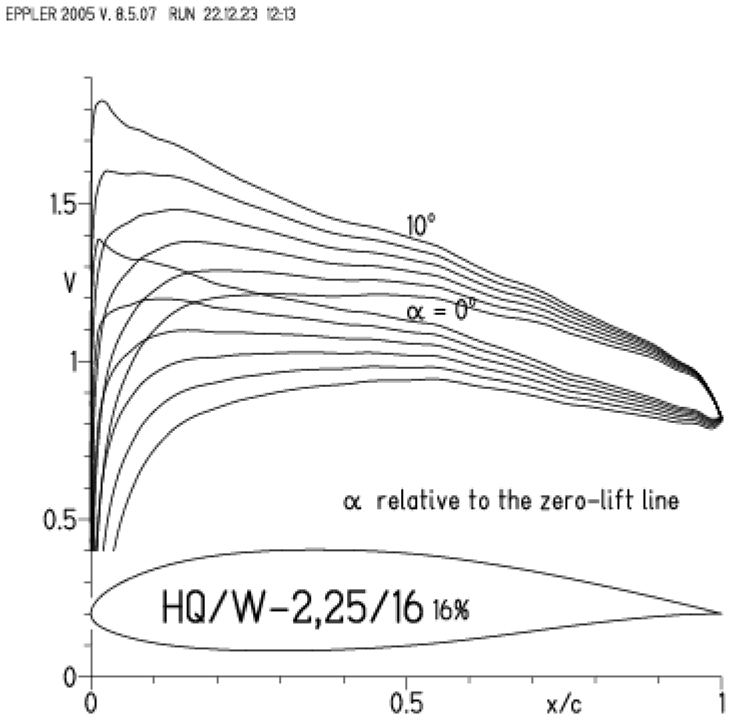
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

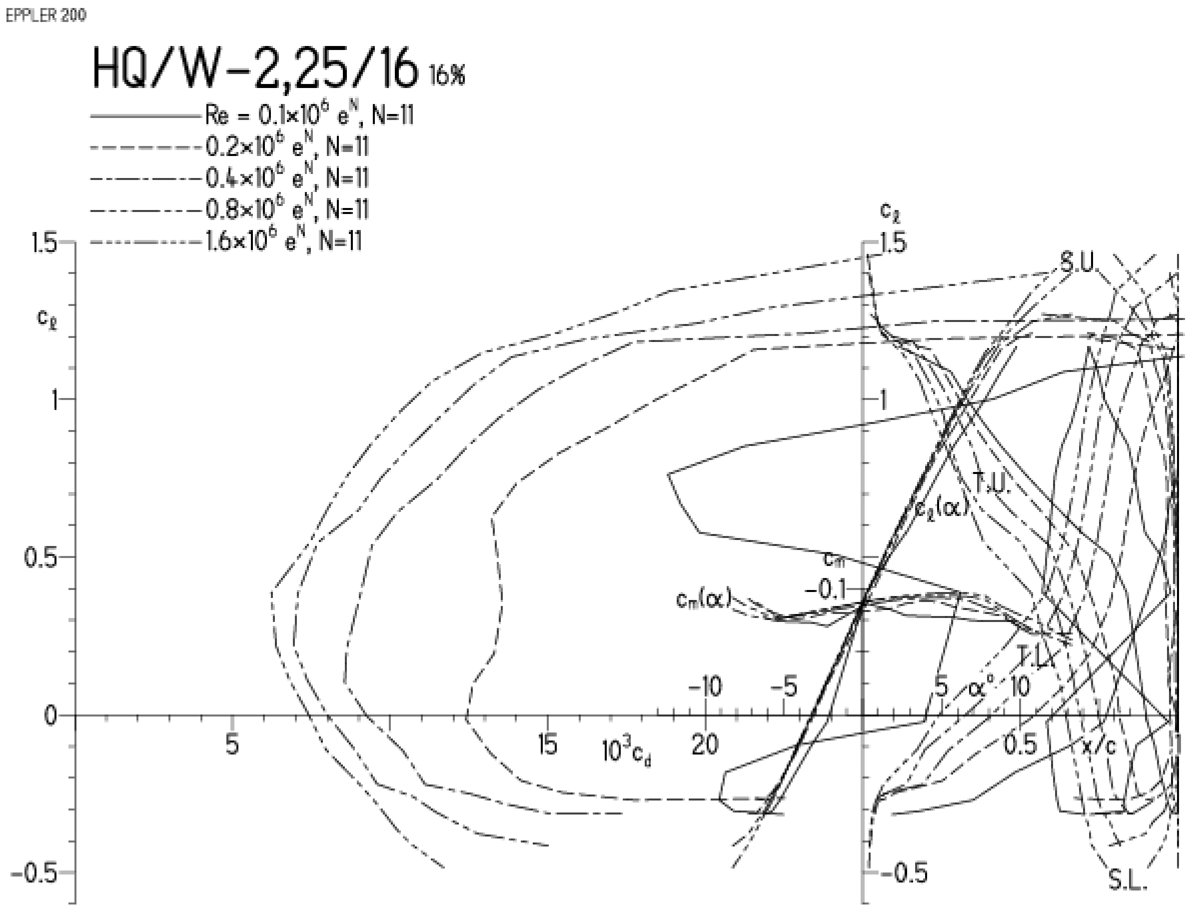


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

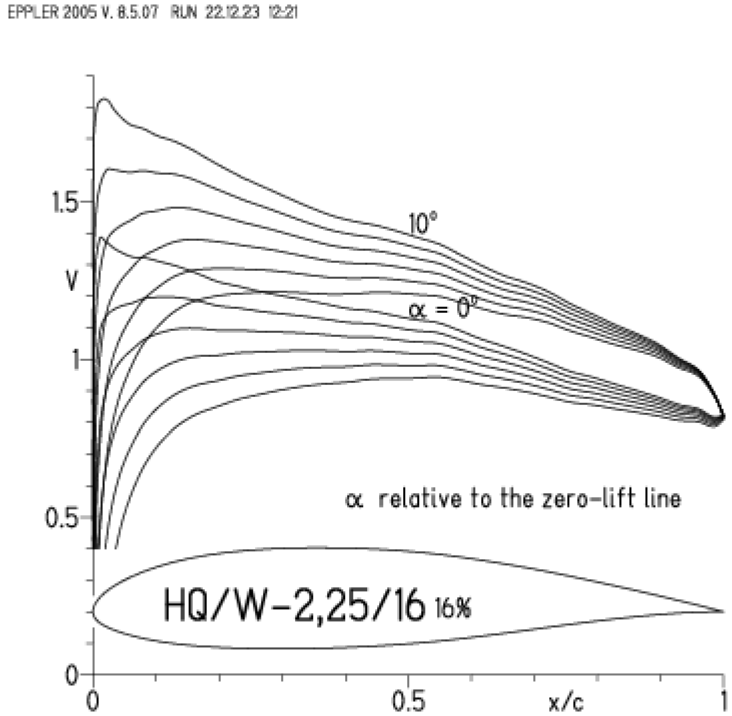


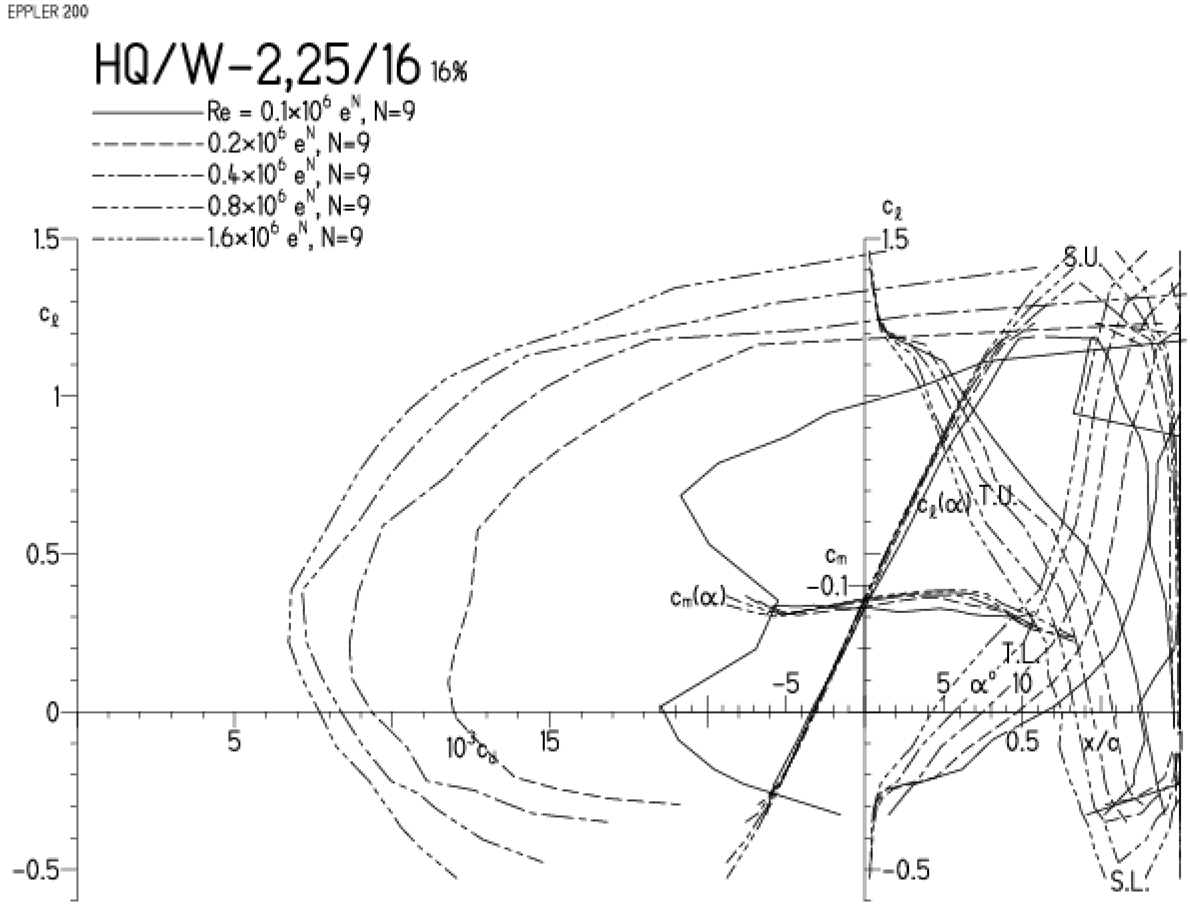
HQ/W-2,25/16, N=11



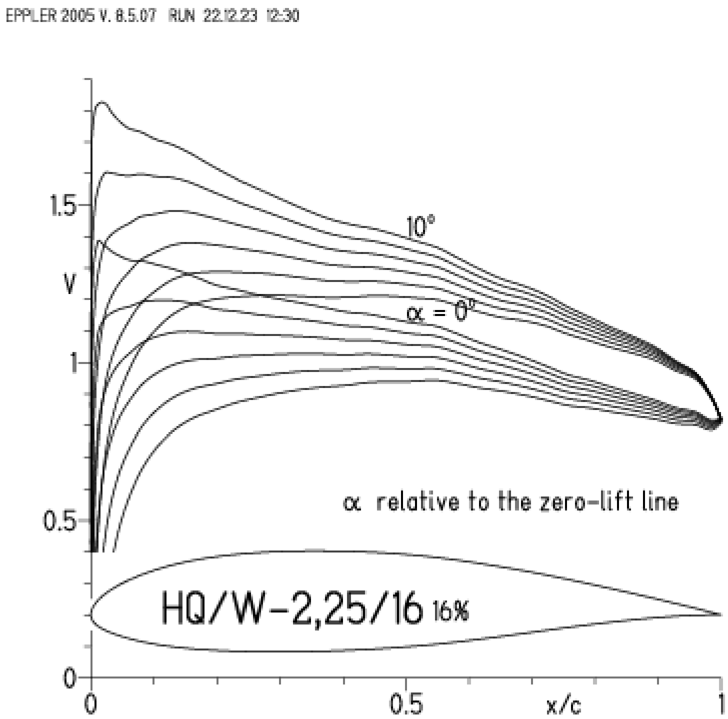


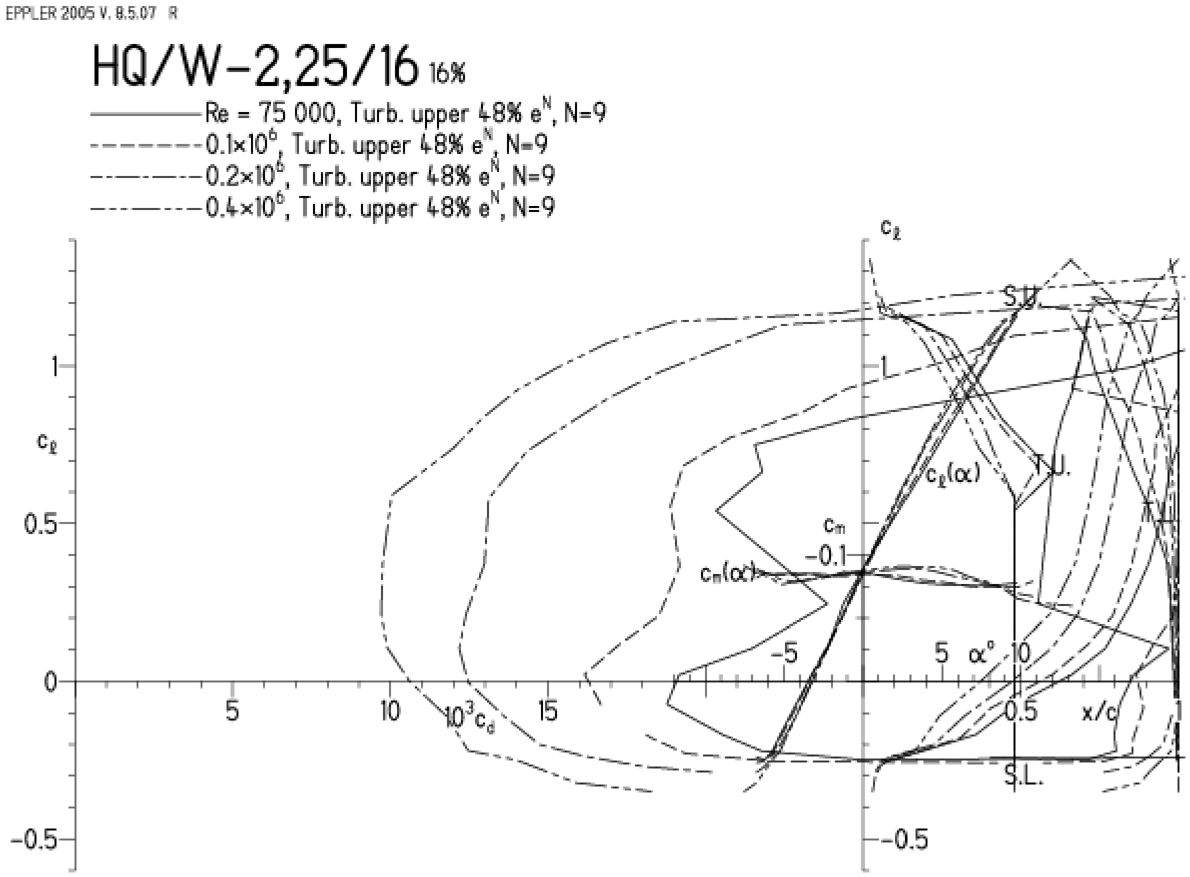
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^3 c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α)
T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
-0.5
S.L.

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



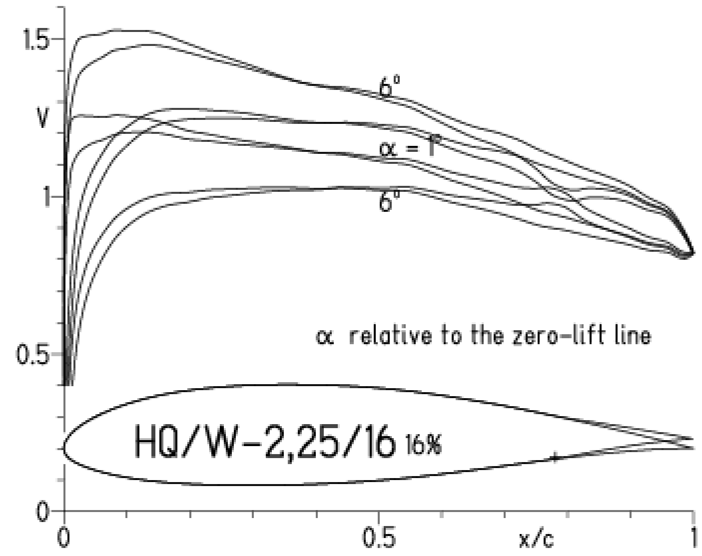


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

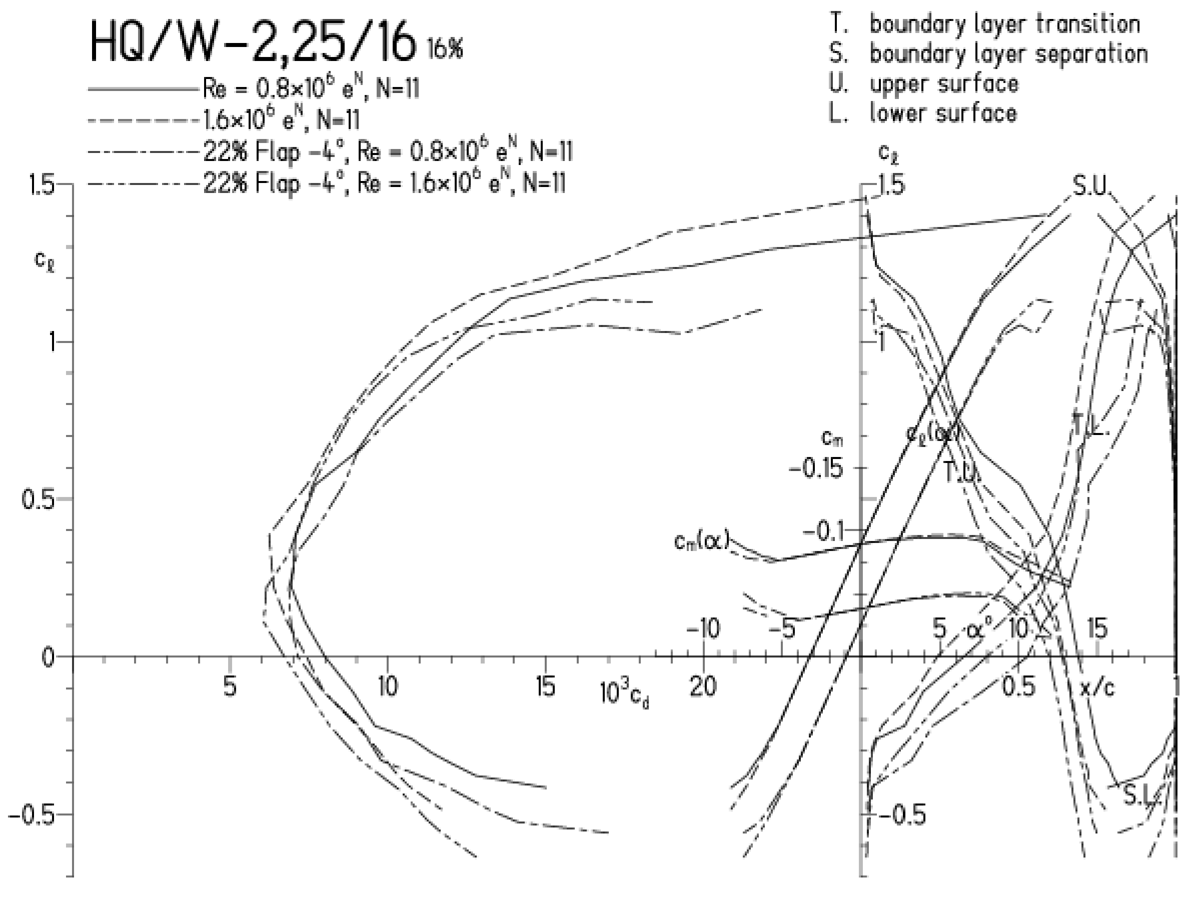
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

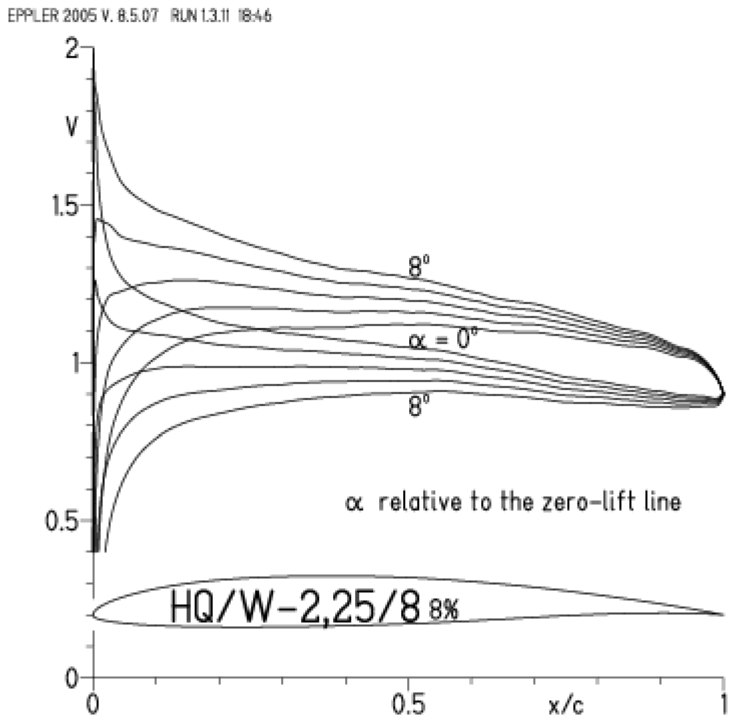
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

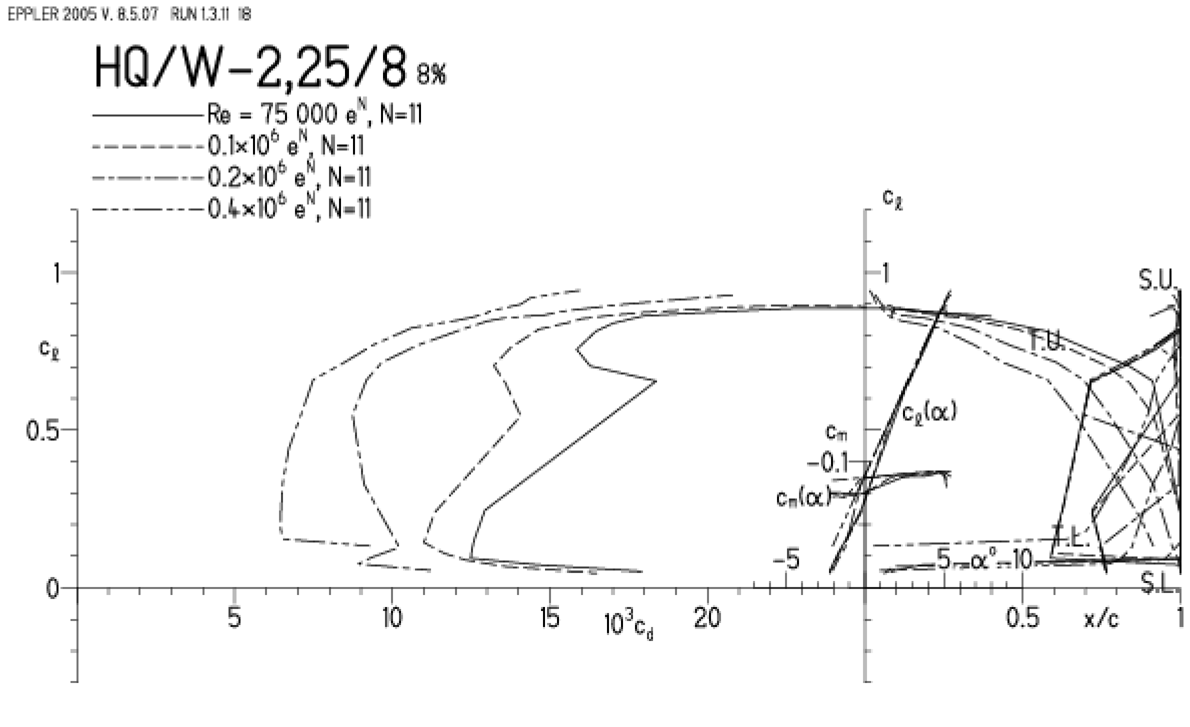


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

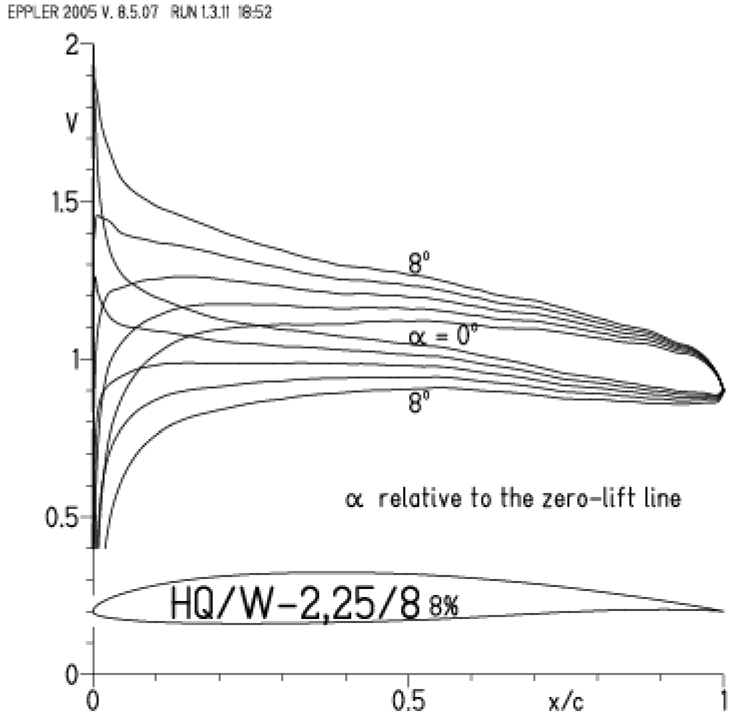


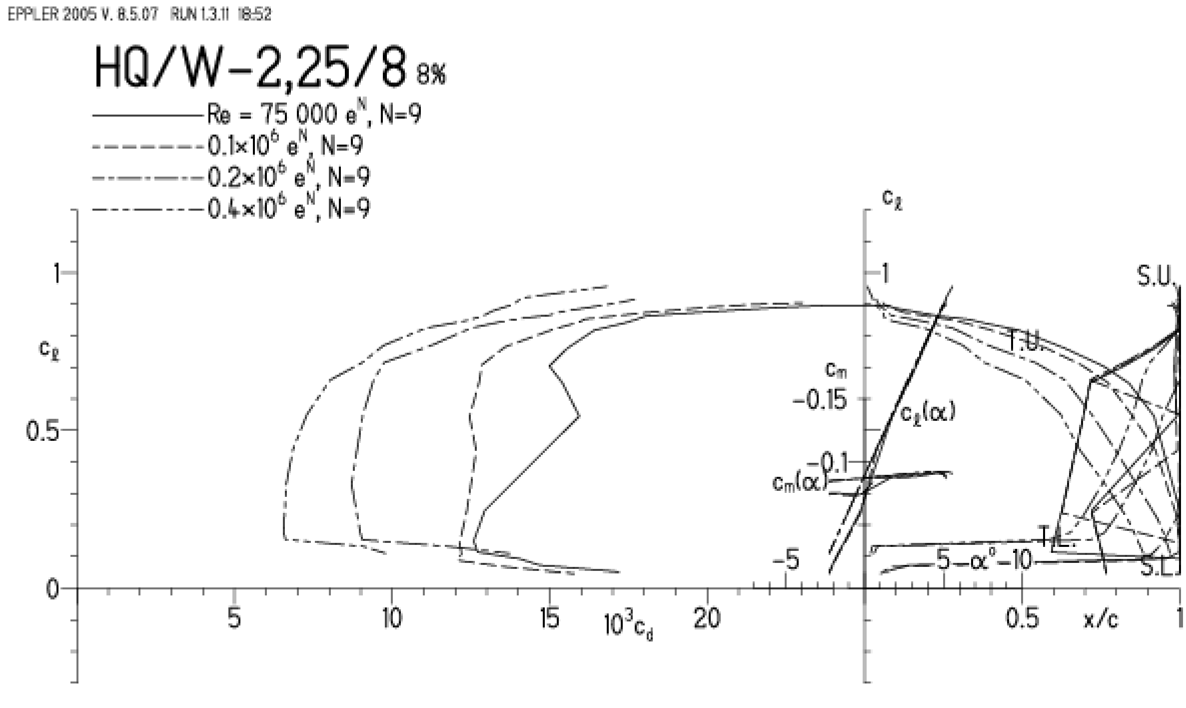
<u>HQ/W-2,25/8</u>, N=11



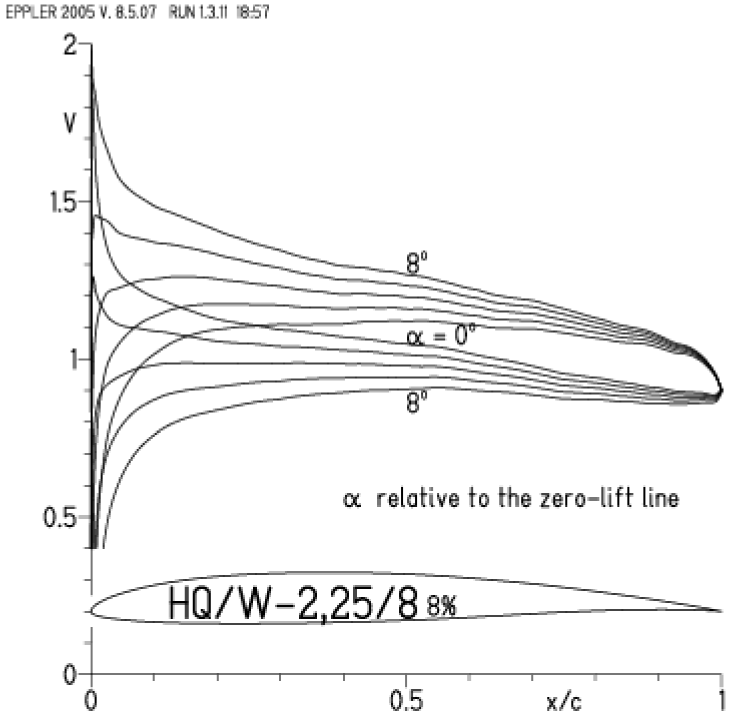


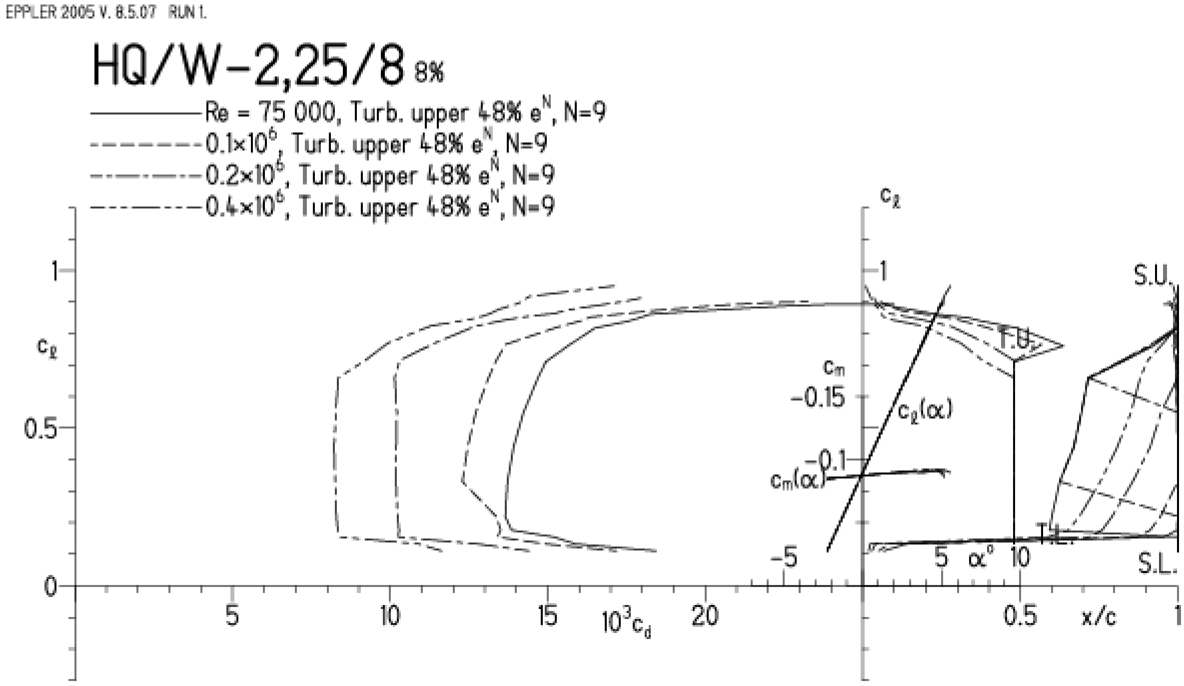
<u>HQ/W-2,25/8</u>, N=9



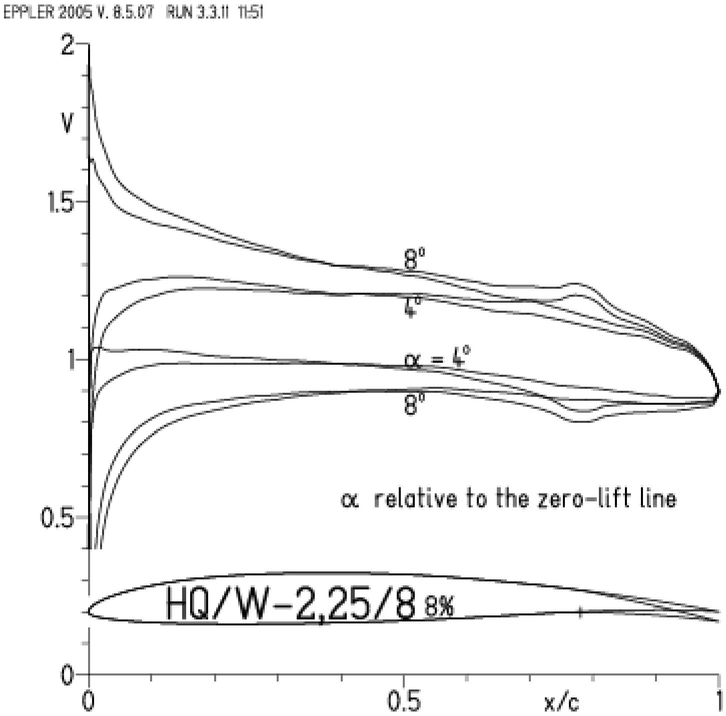


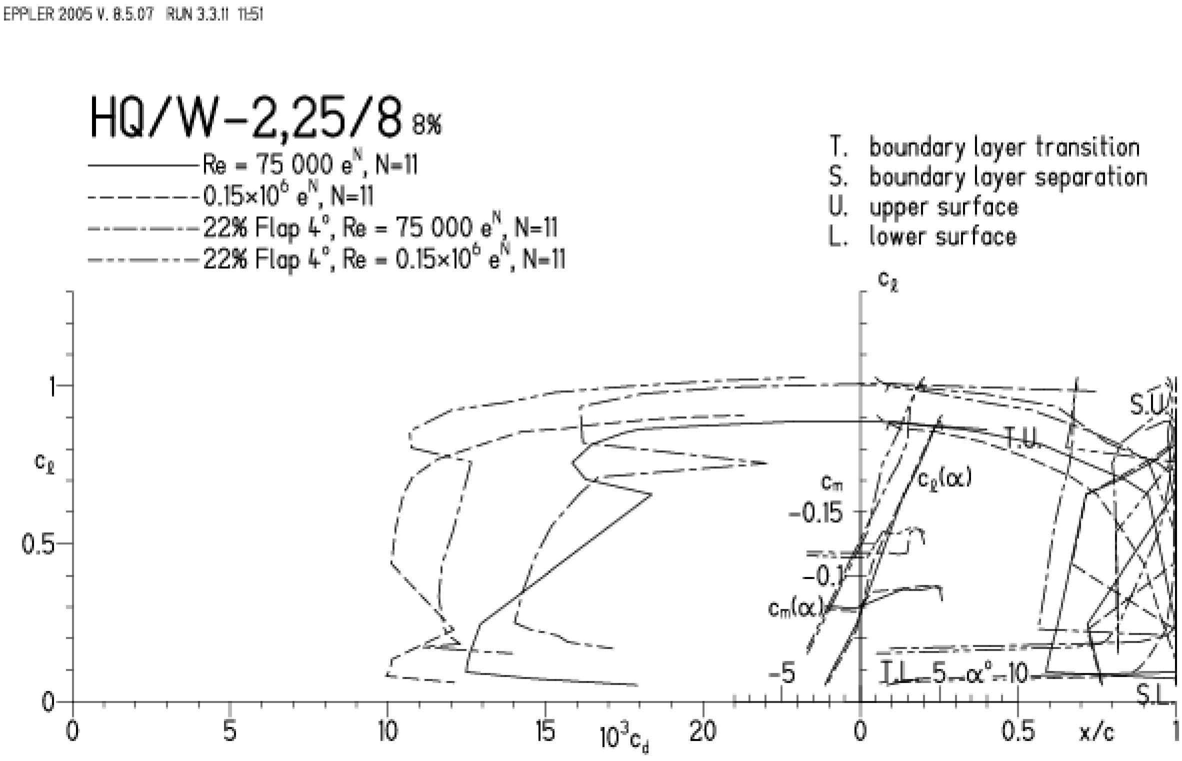
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



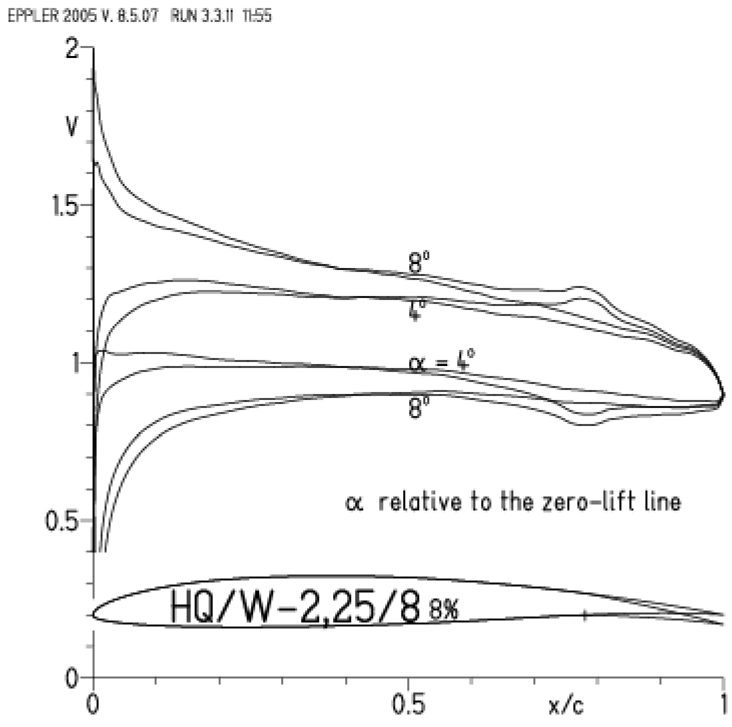


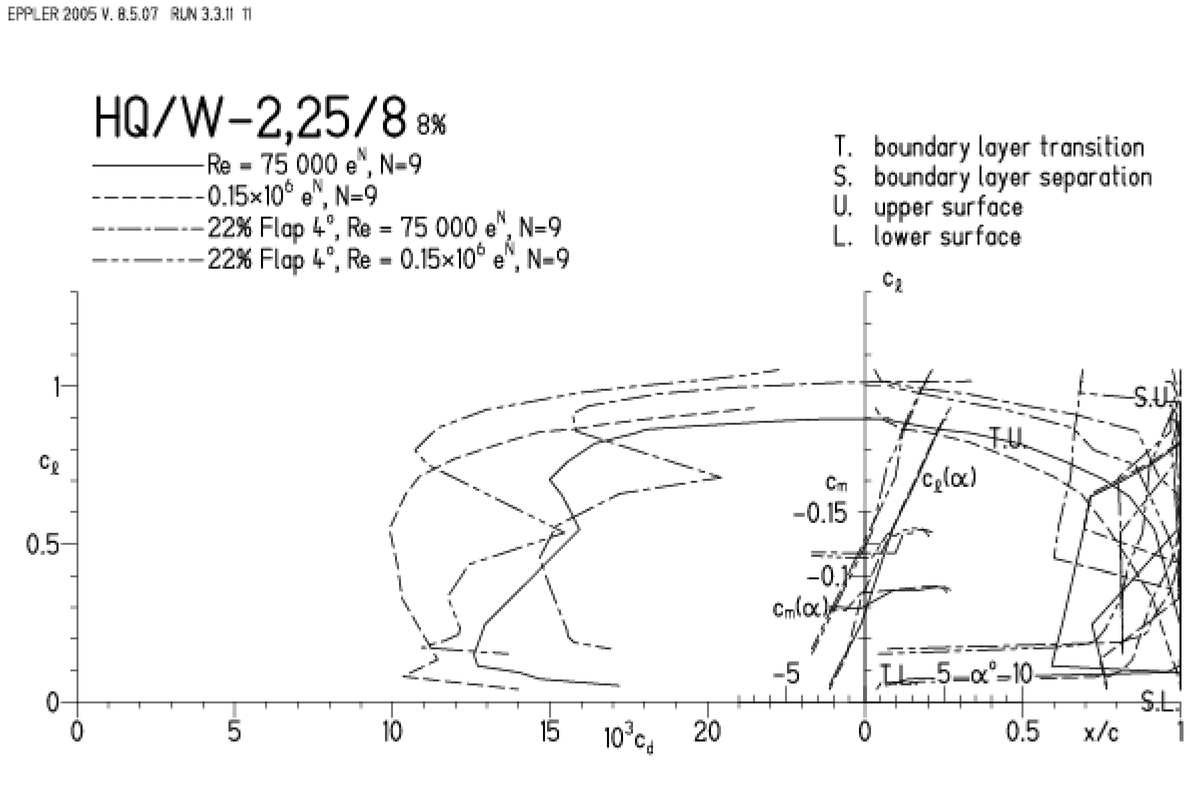
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



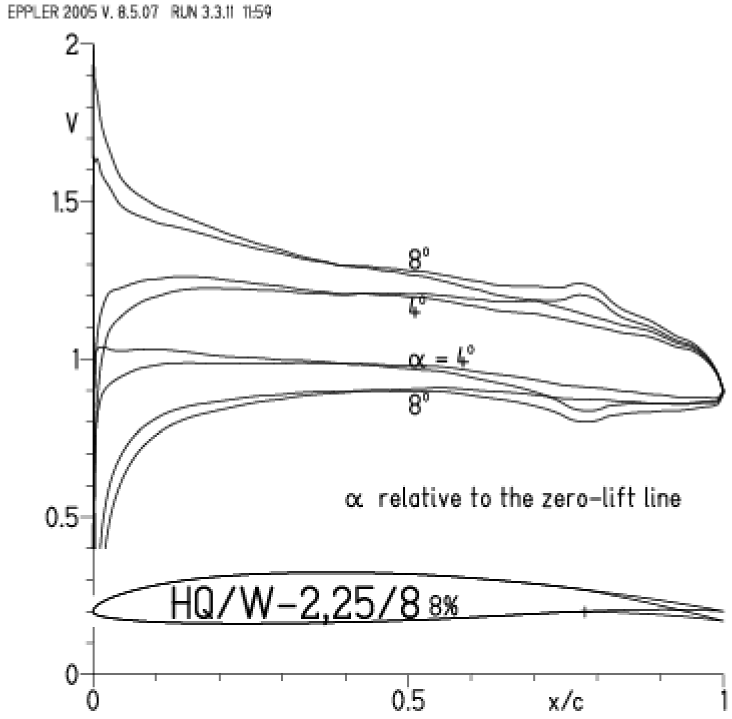


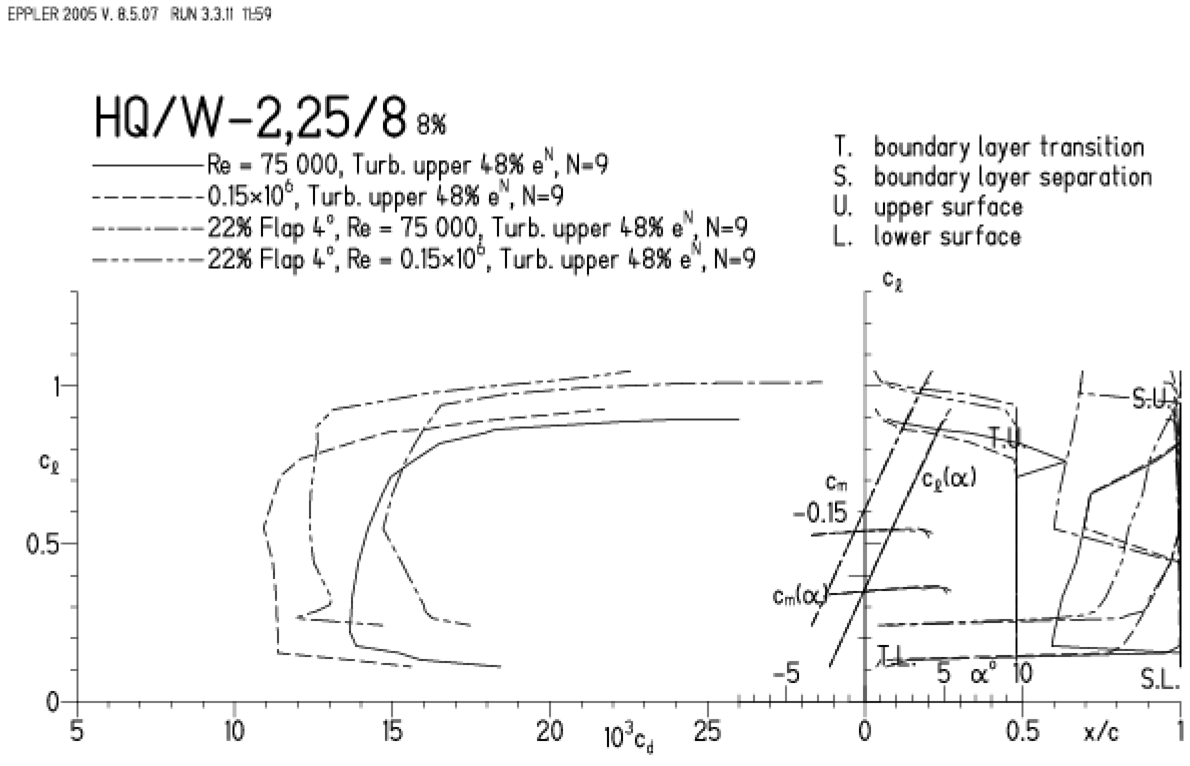
<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag





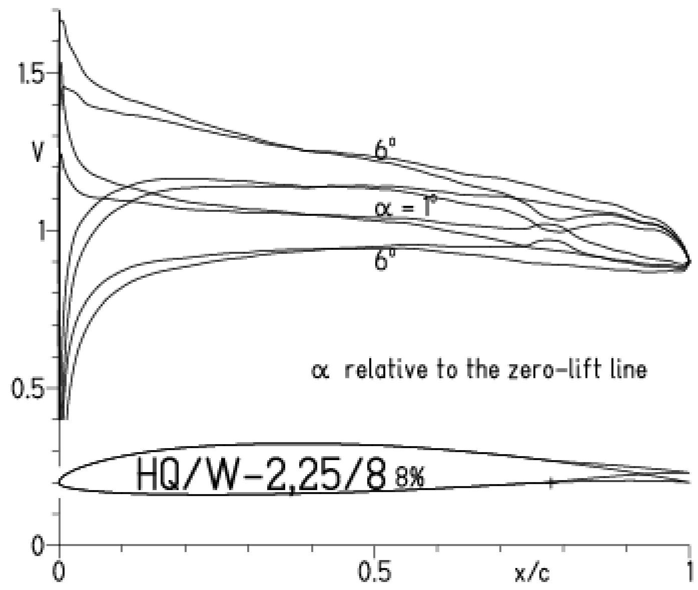
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



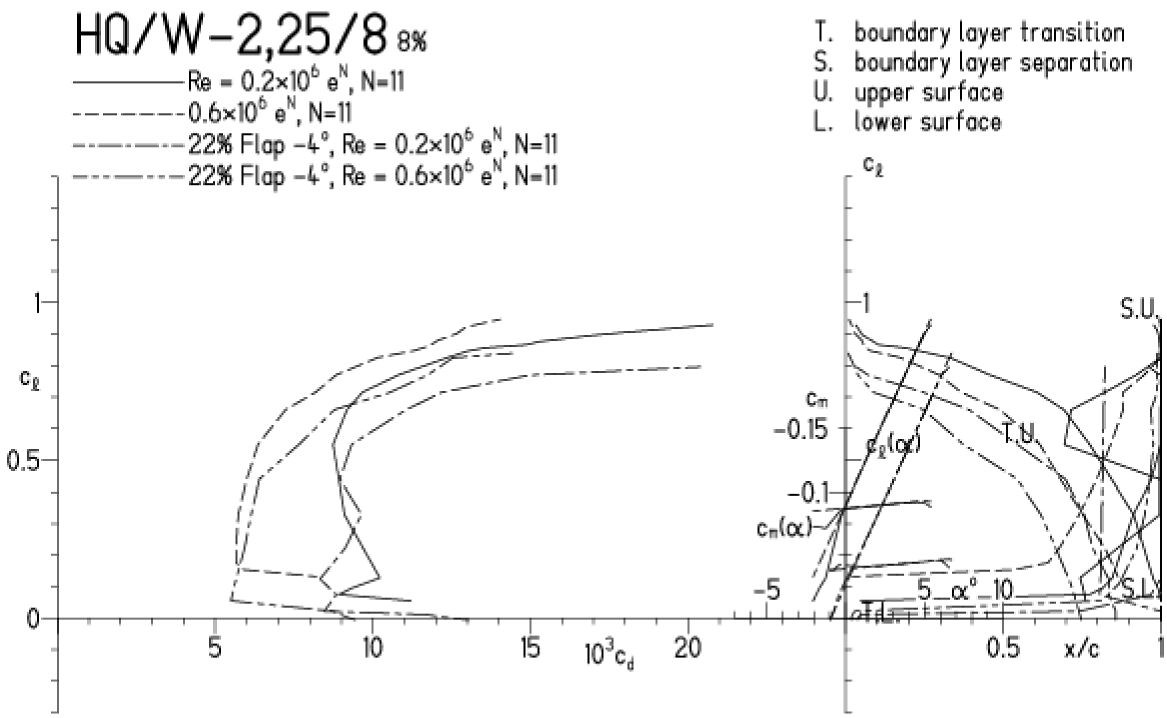


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

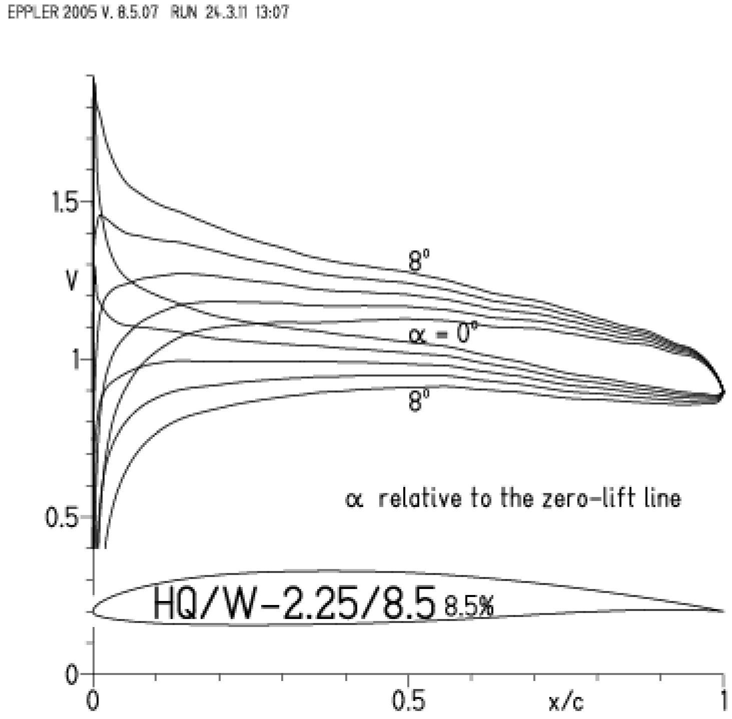
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

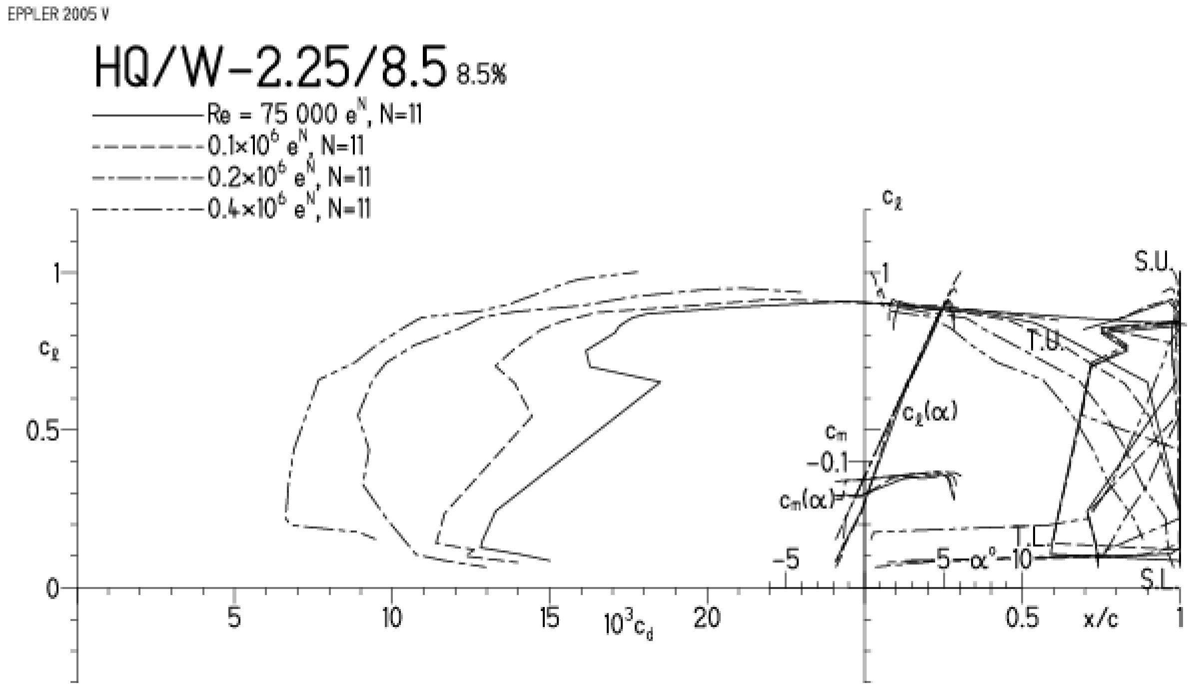


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

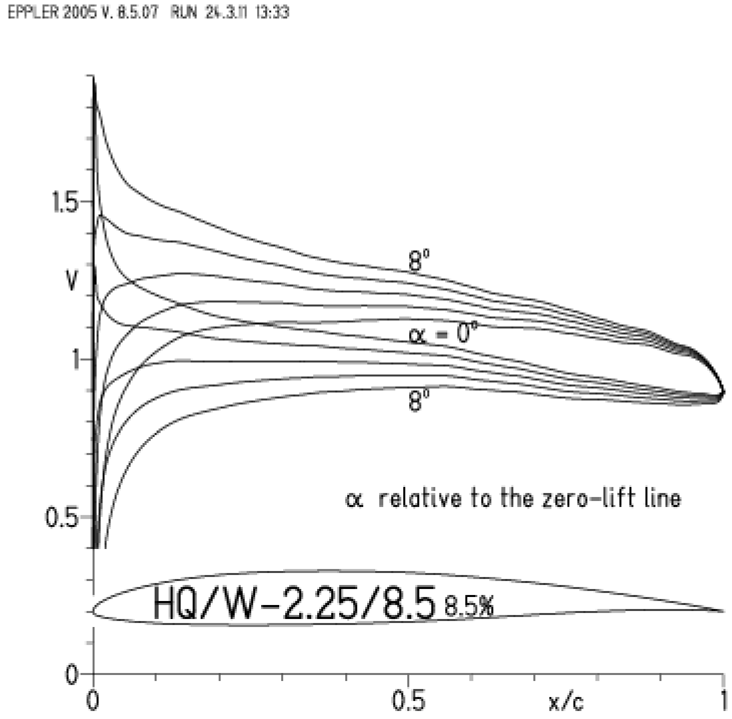


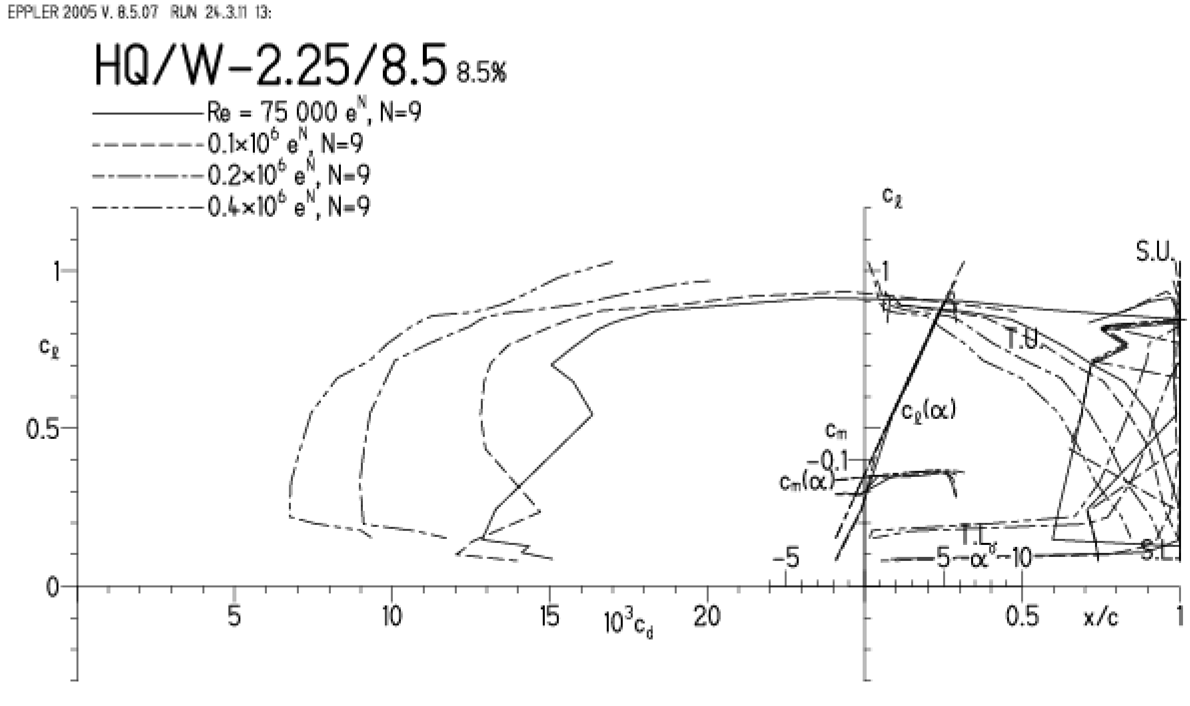
<u>HQ/W-2,25/8,5</u>, N=11



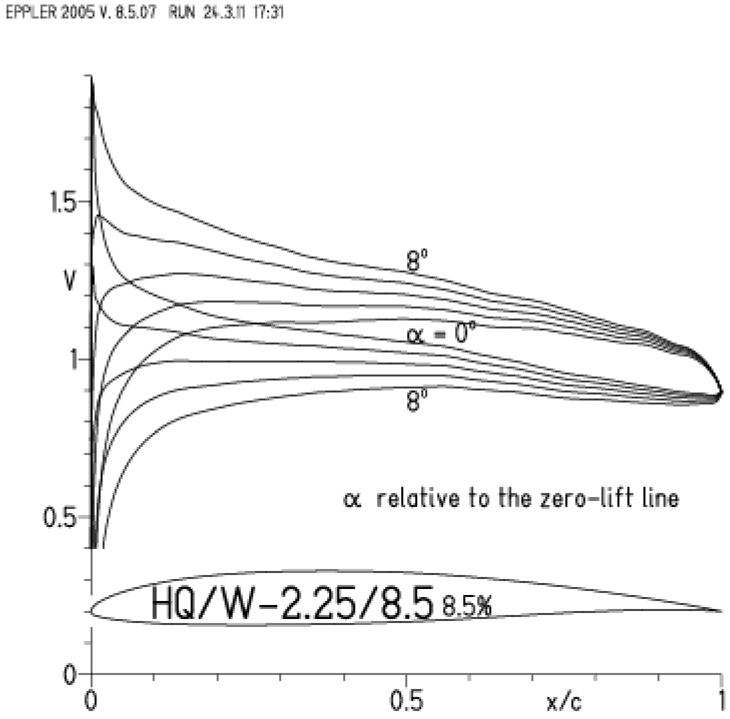


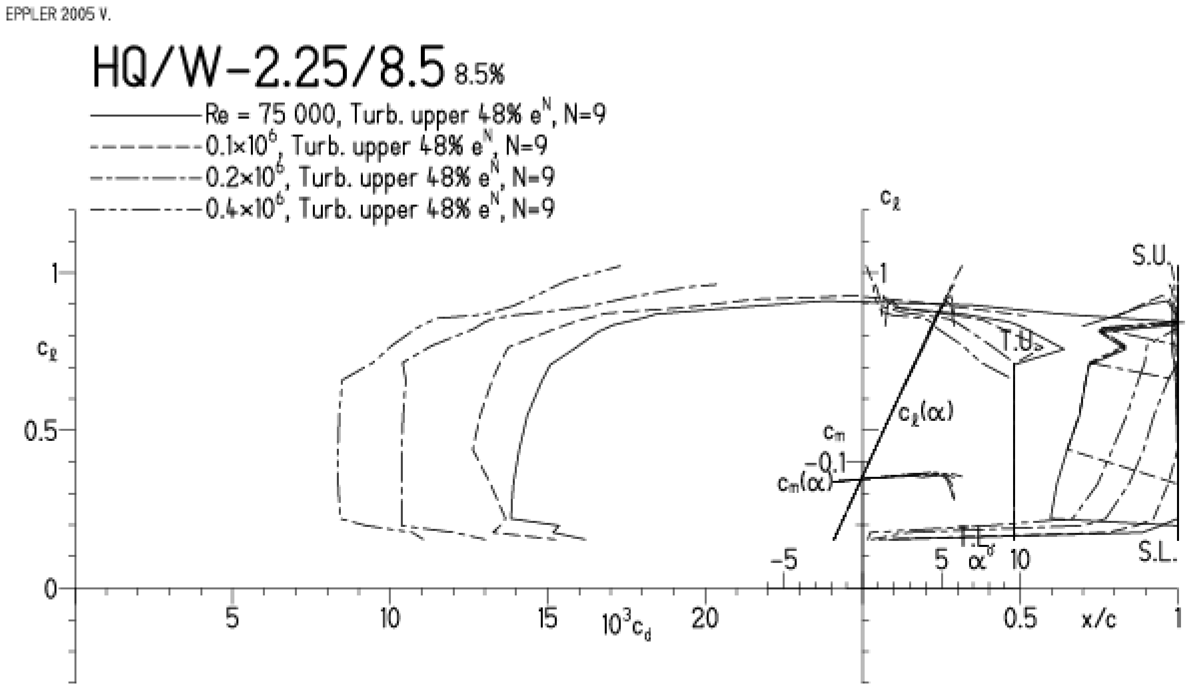
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
20
10^3 c_d
c_m
-0.1
c_m(α)
c_l(α)
-5
S.U.
T.U.
T.L.
S.L.
5
α°
10
0.5
x/c
1

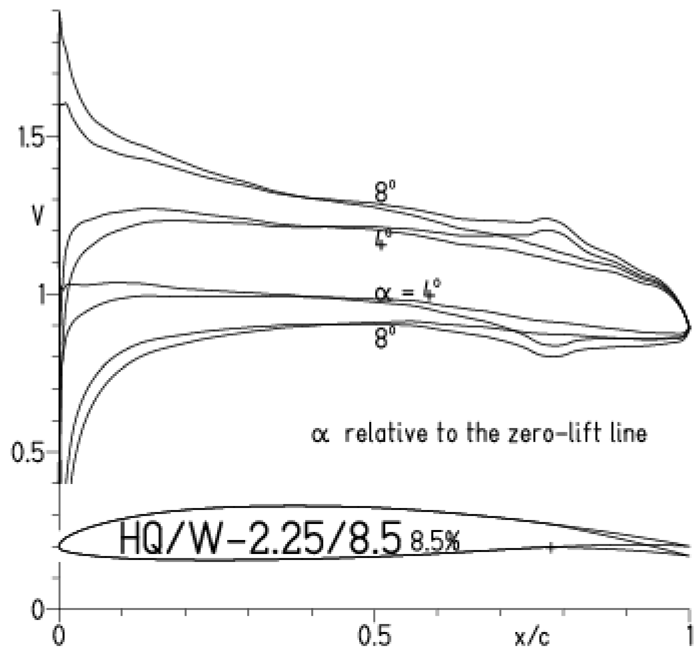
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



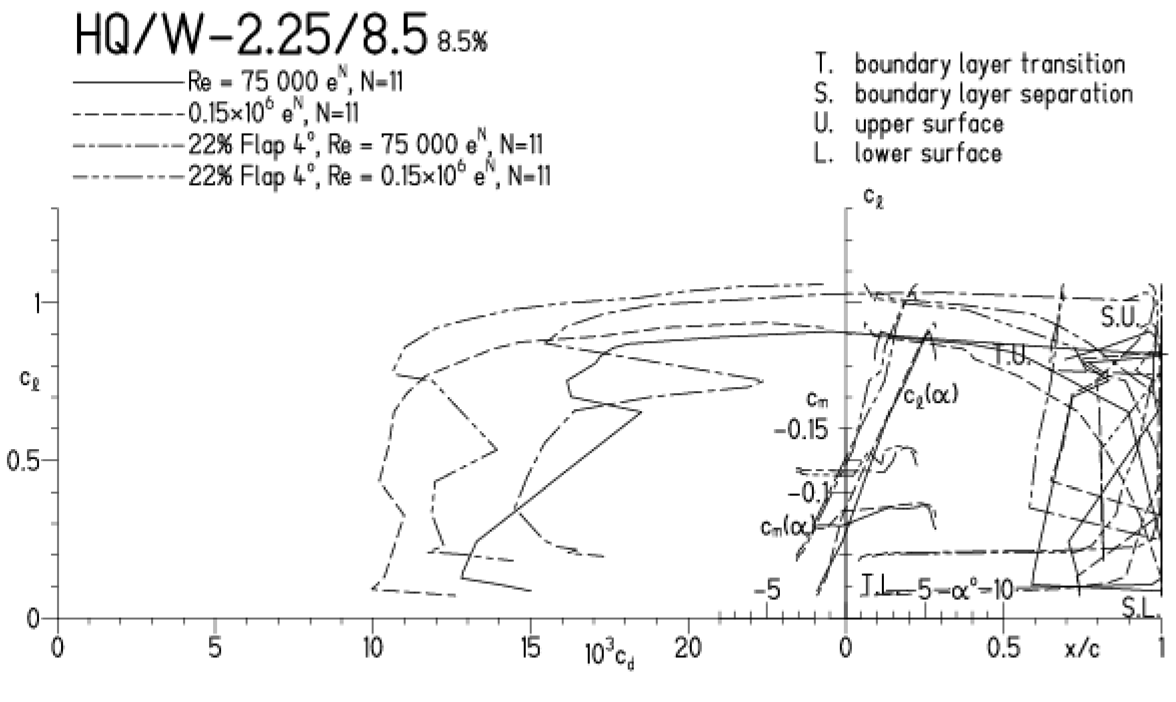


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

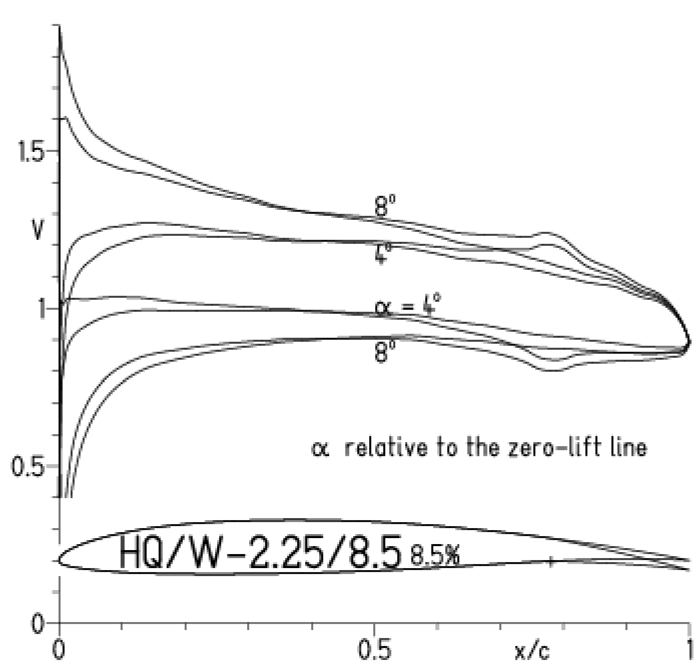


EPPLER 2005 V. 8.5.

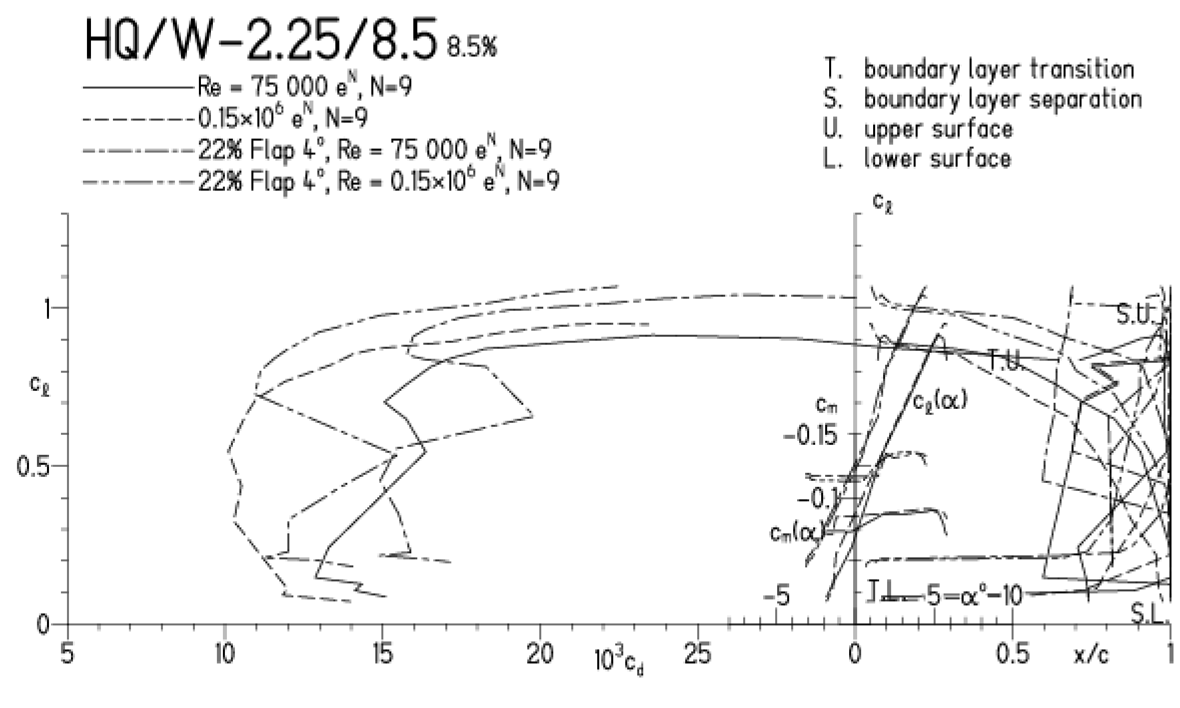


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

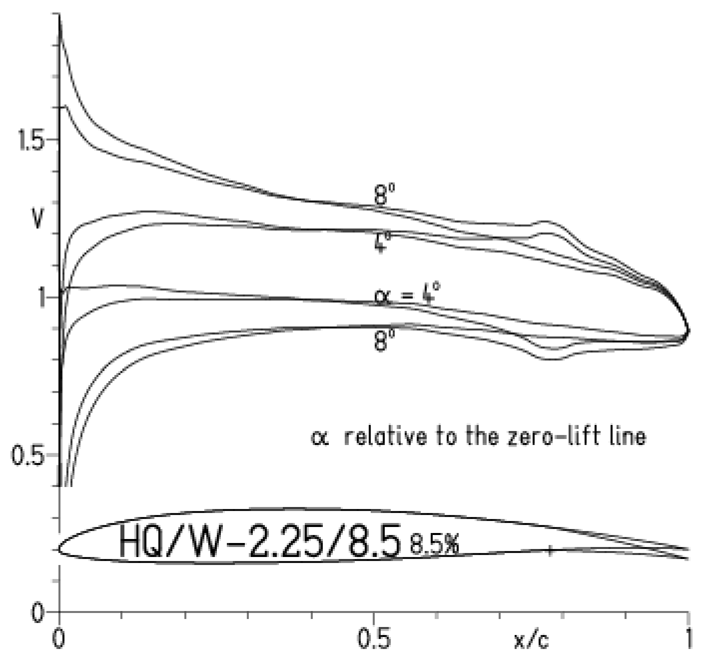


EPPLER 2005 V.

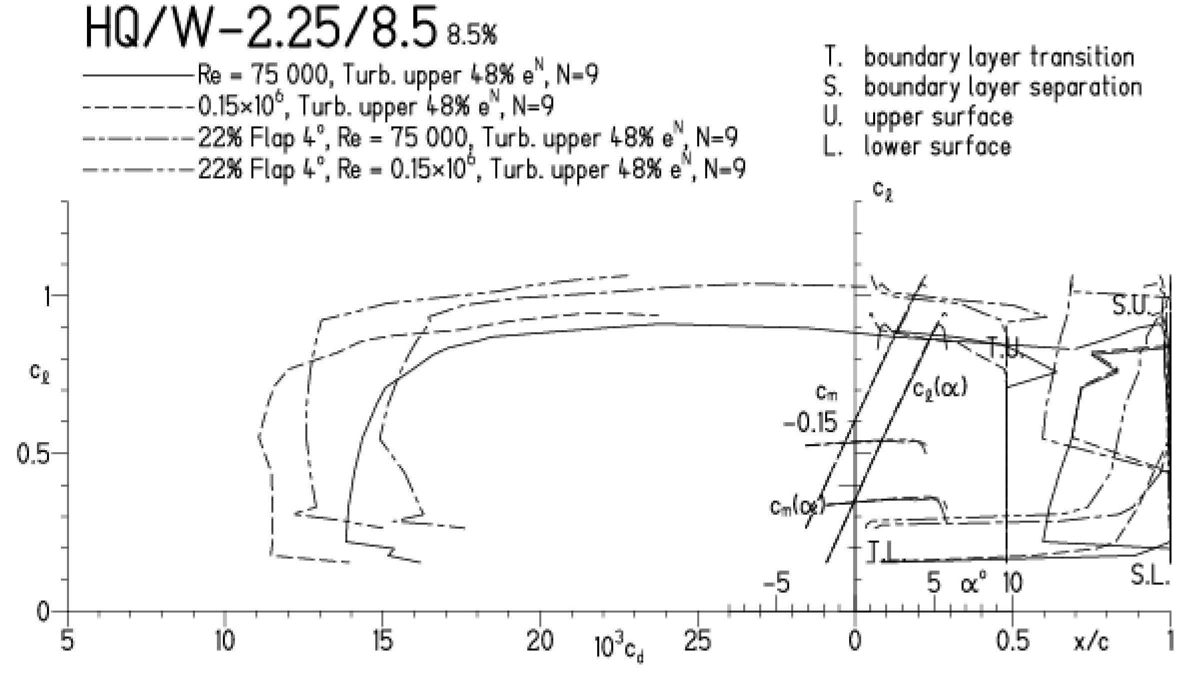


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

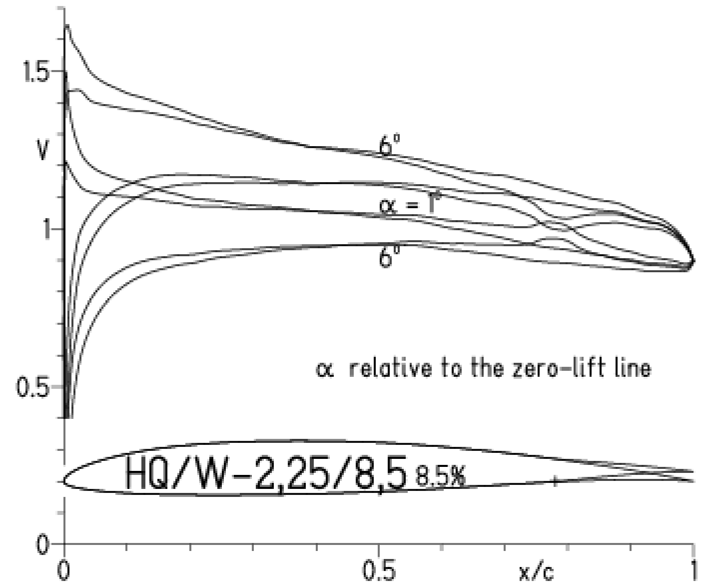


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

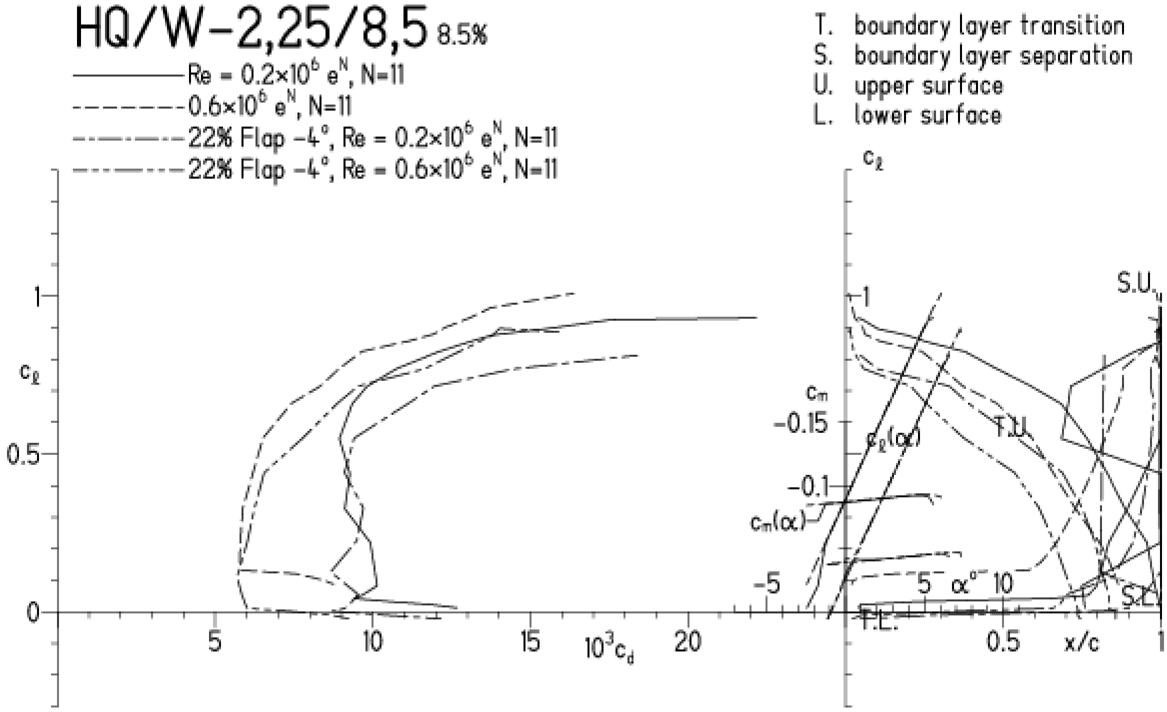


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

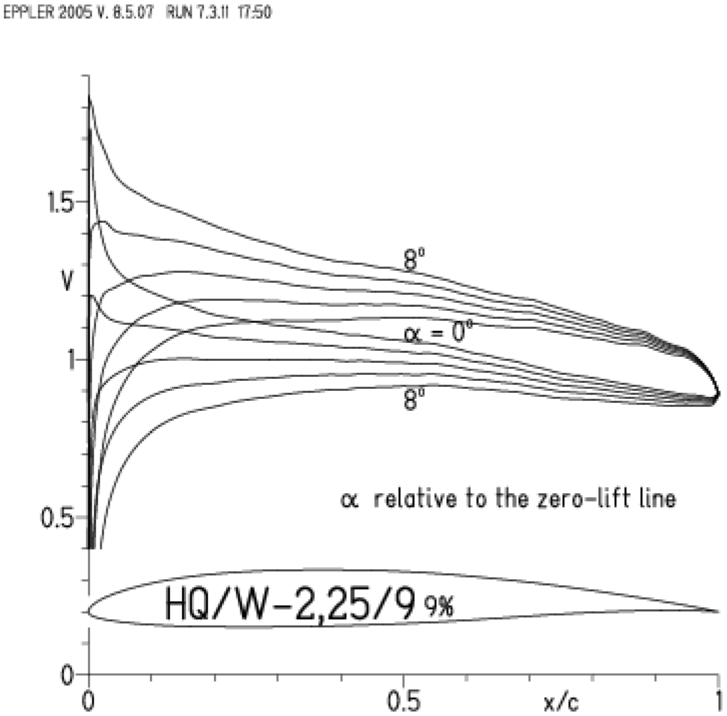
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

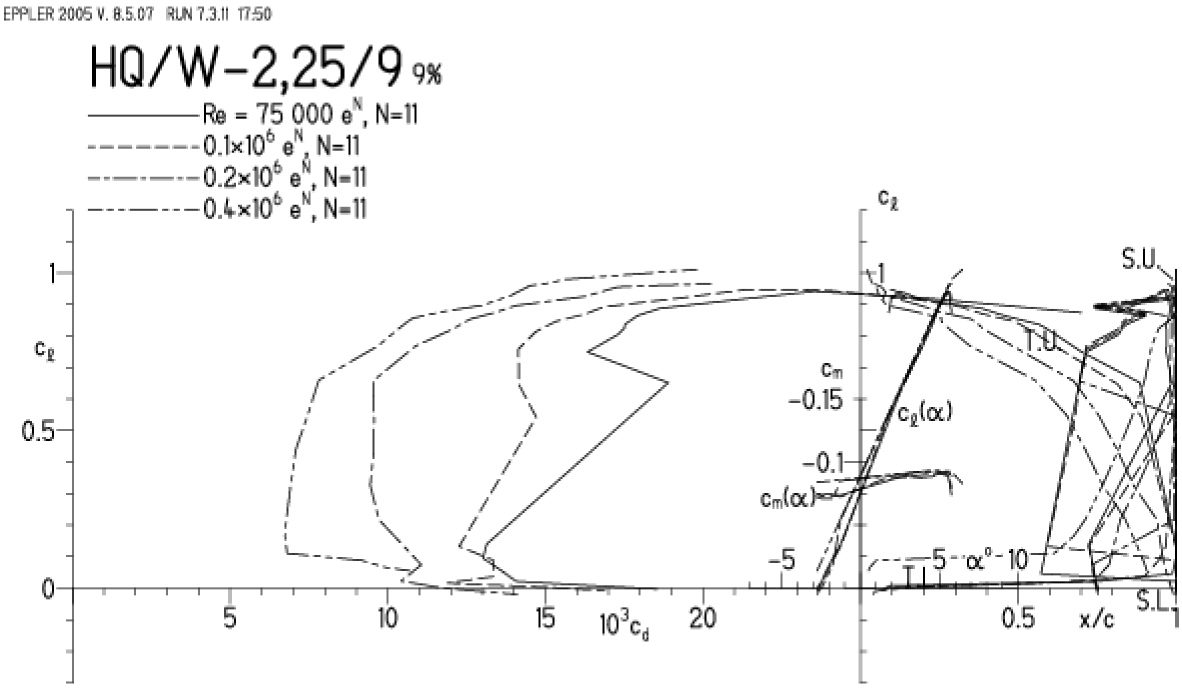


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

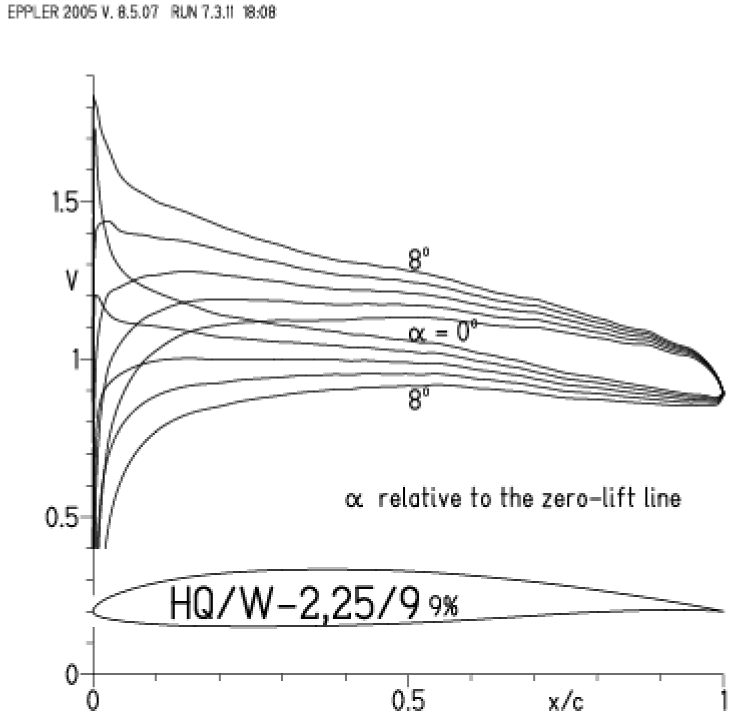


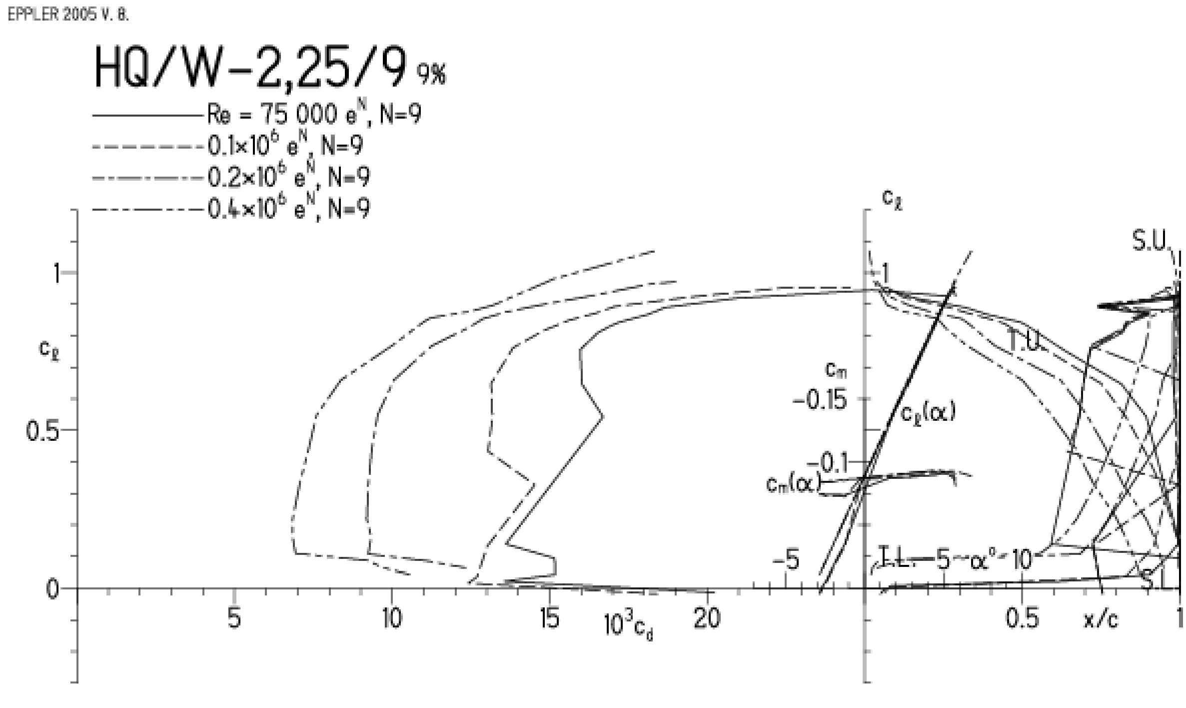
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

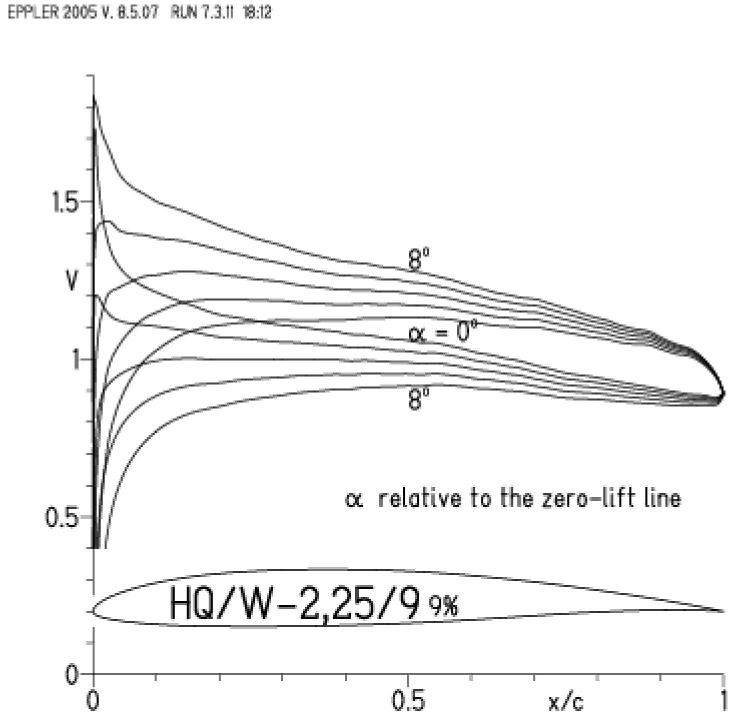

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

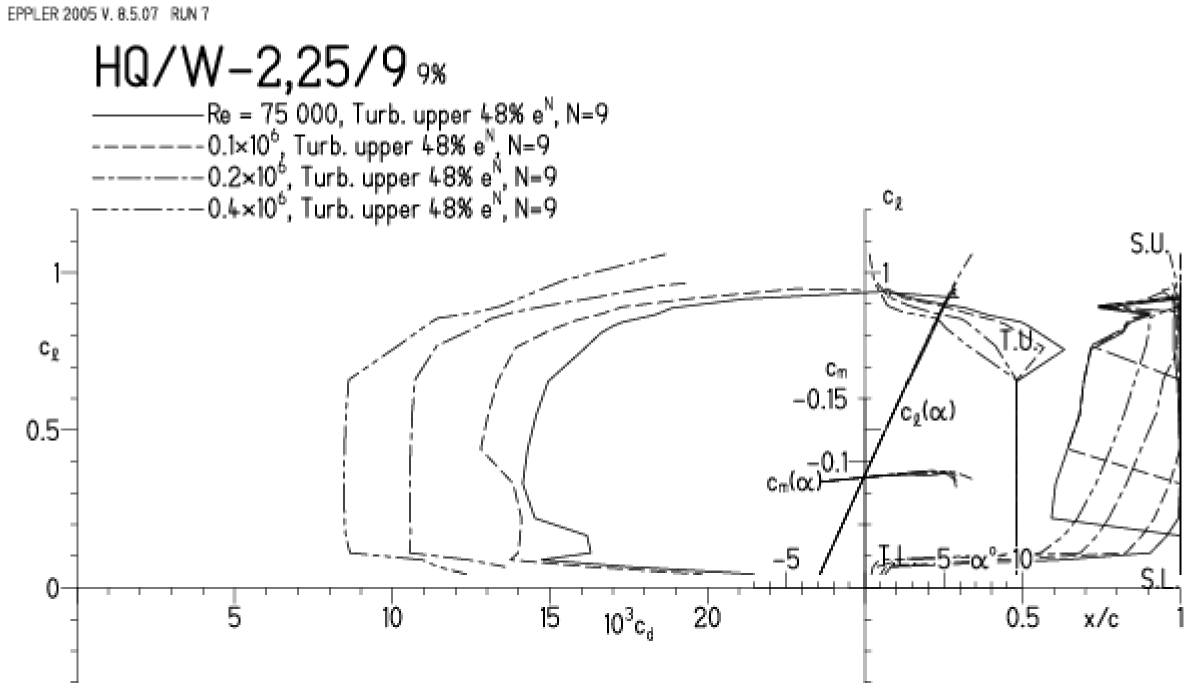
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
0.5
x/c
1
S.U.
T.U.
S.L.

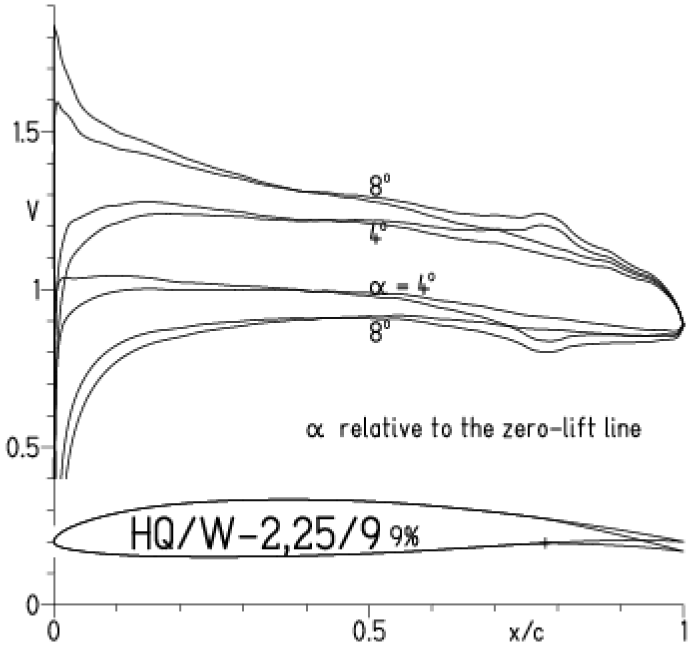
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



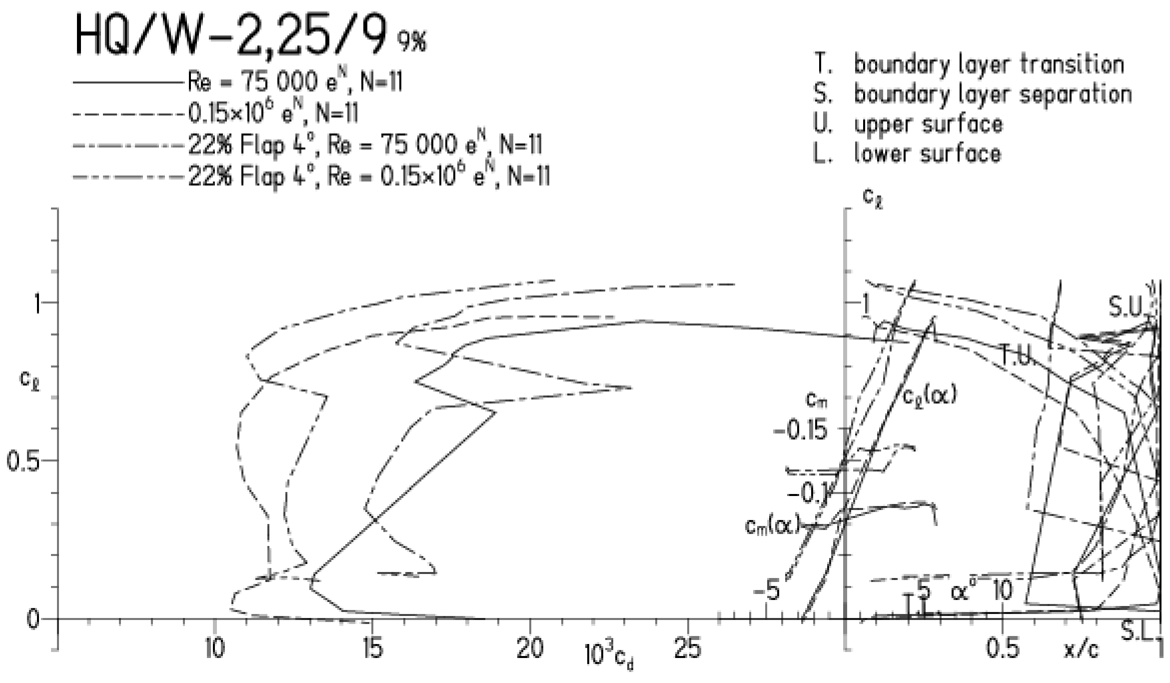


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

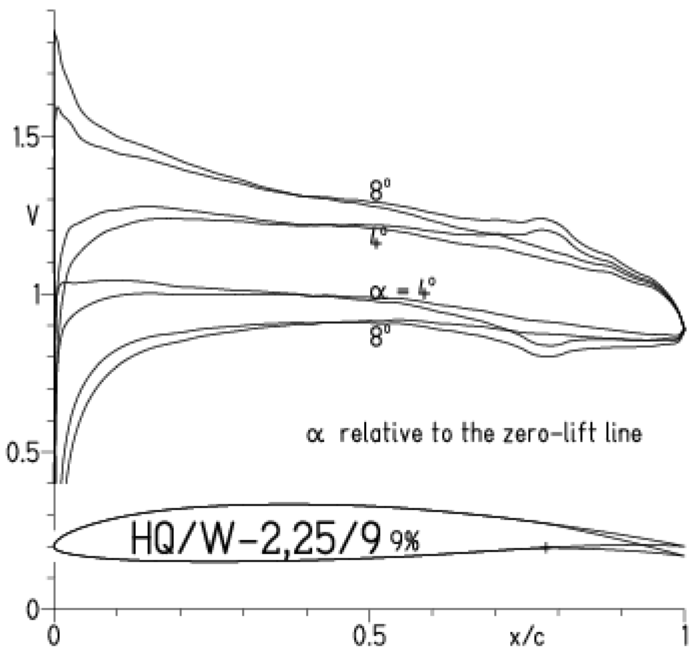


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

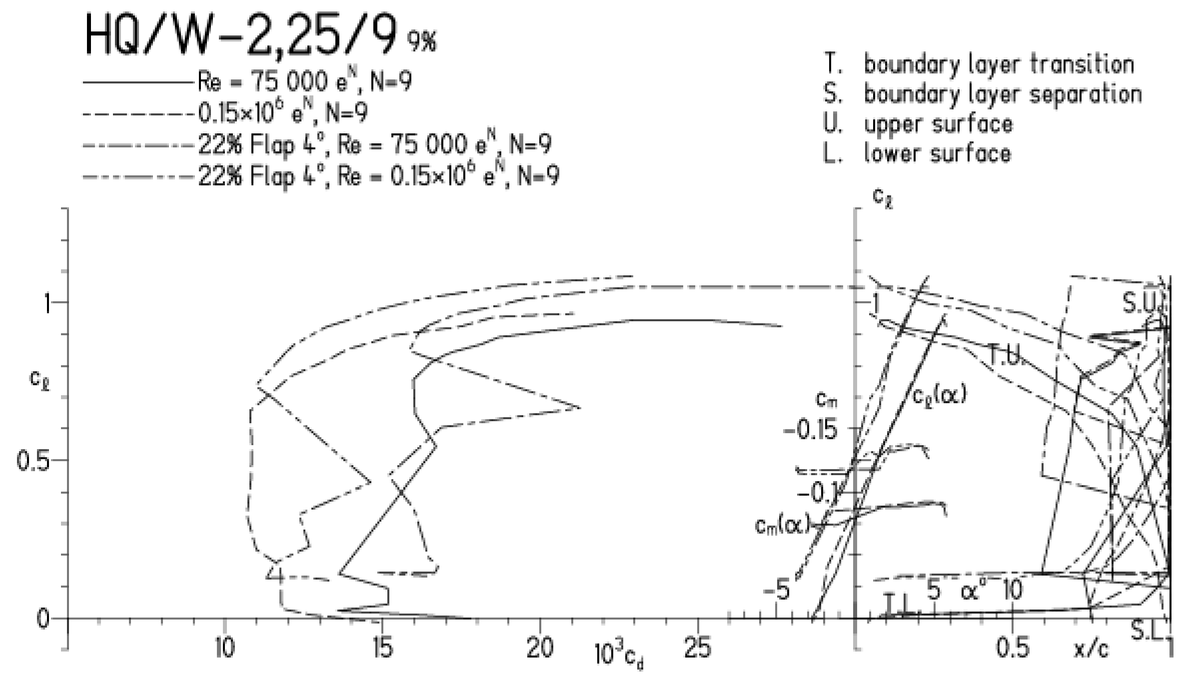


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

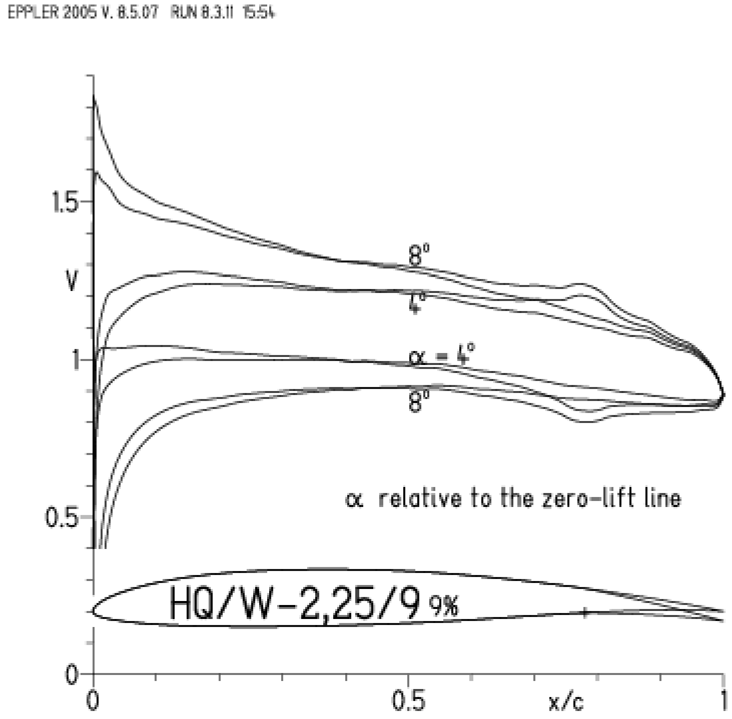
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

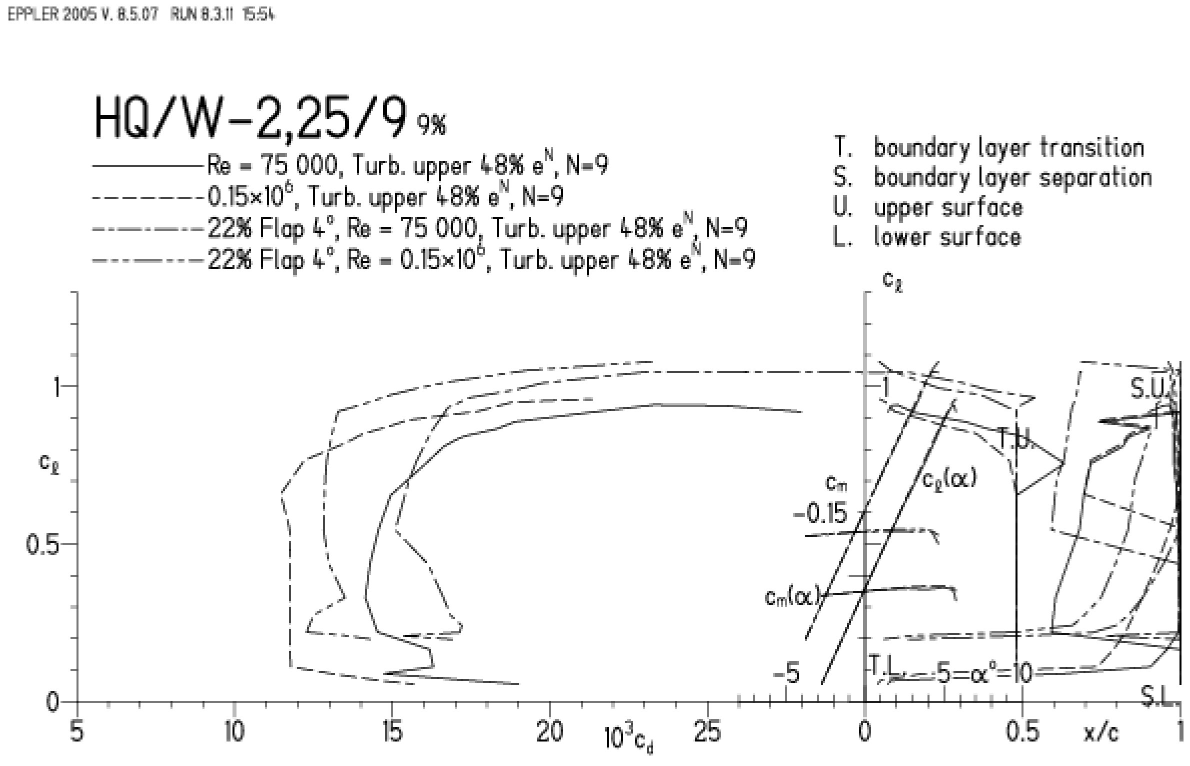


EPPLER 2005 V. 8.5.07 RUN 8.3.1



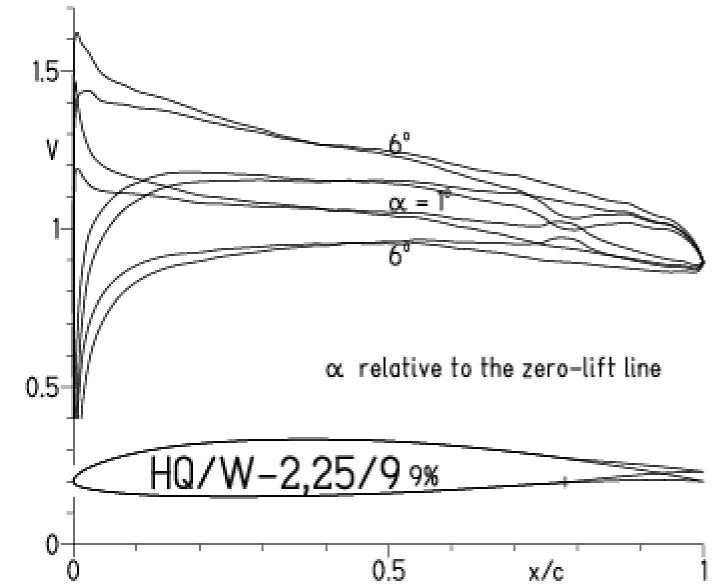
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



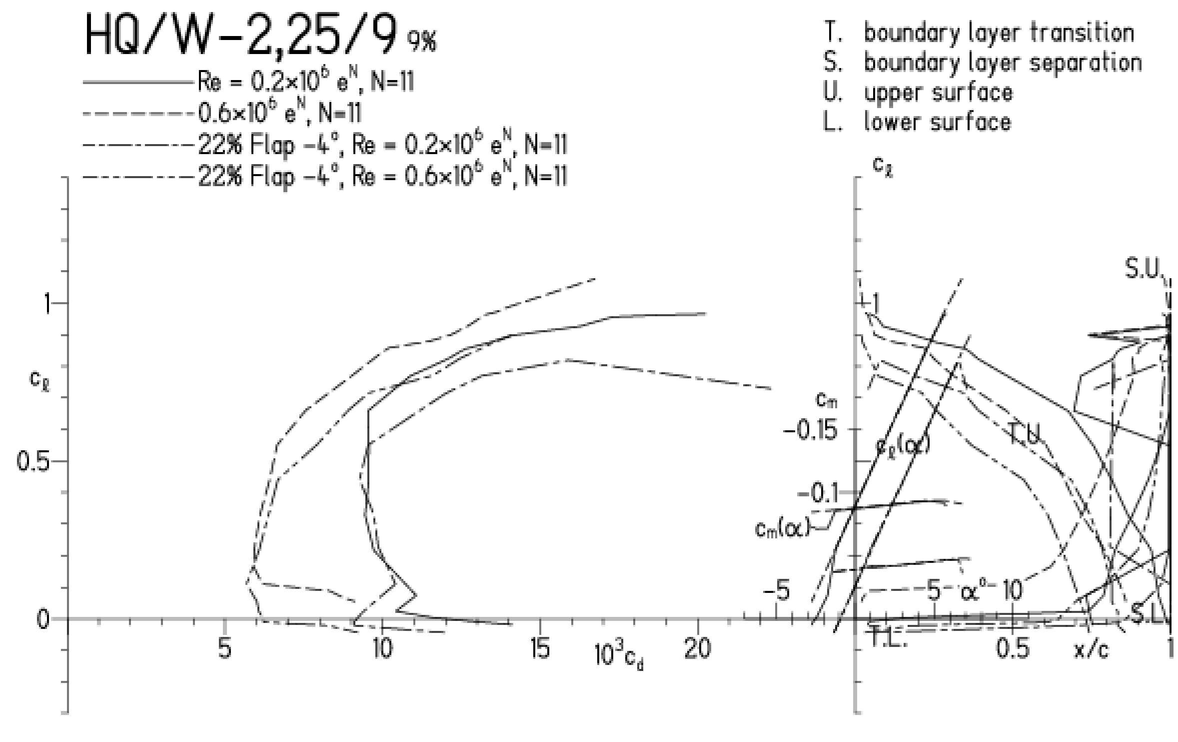


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

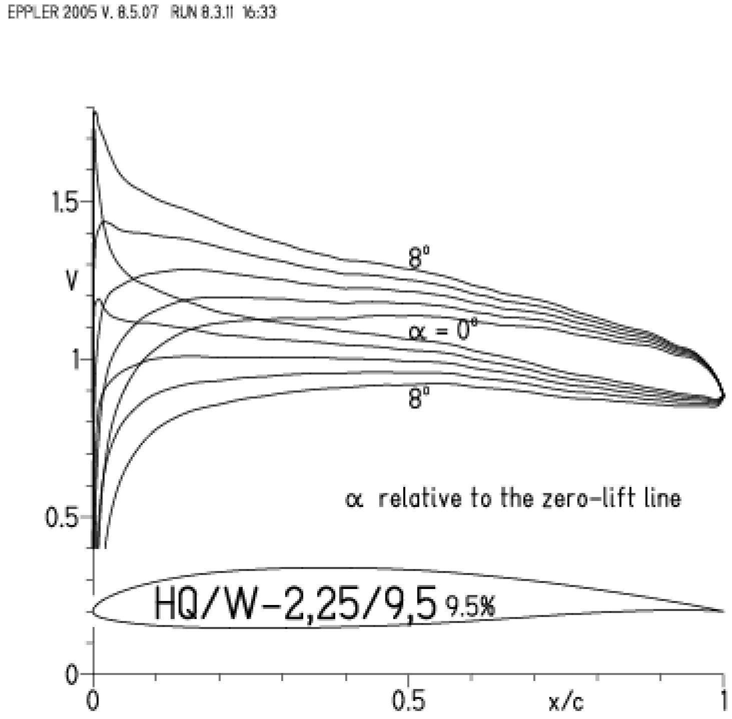
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

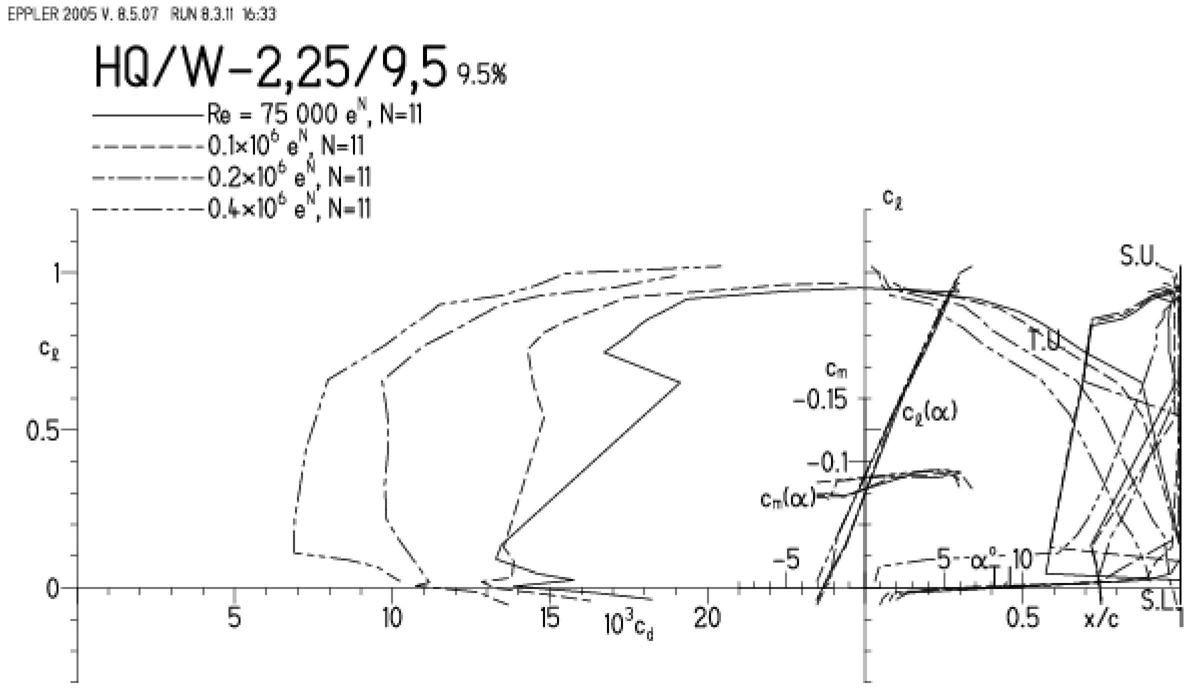


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



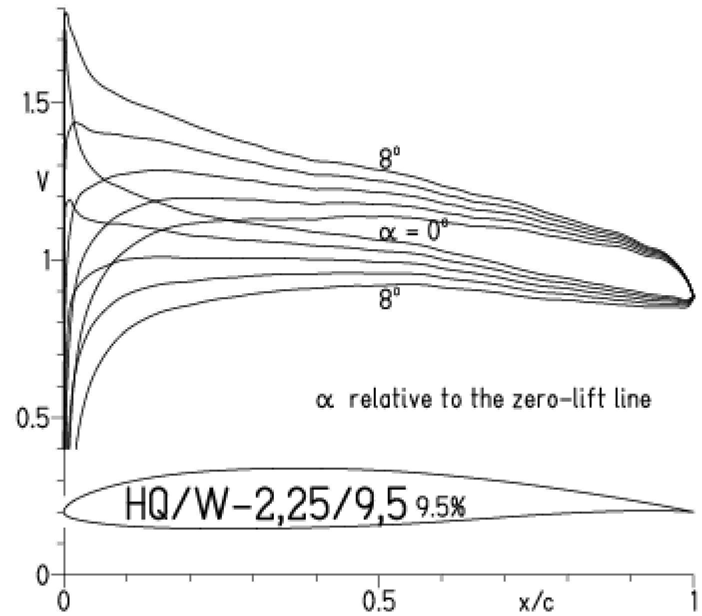
HQ/W-2,25/9,5, N=11



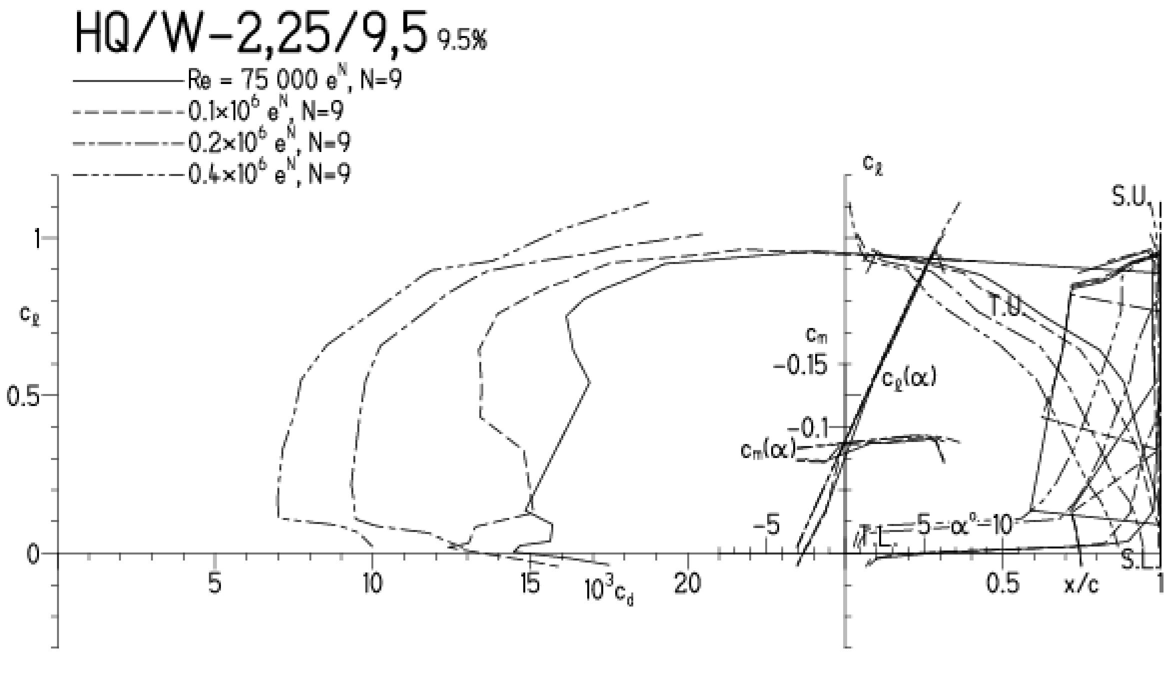


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

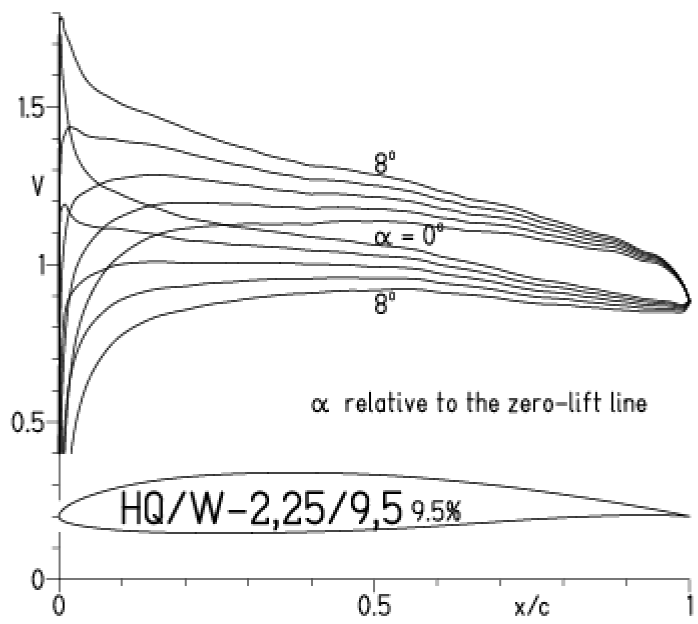


EPPLER 2005 V. 8.5.07 RUN 8.3.

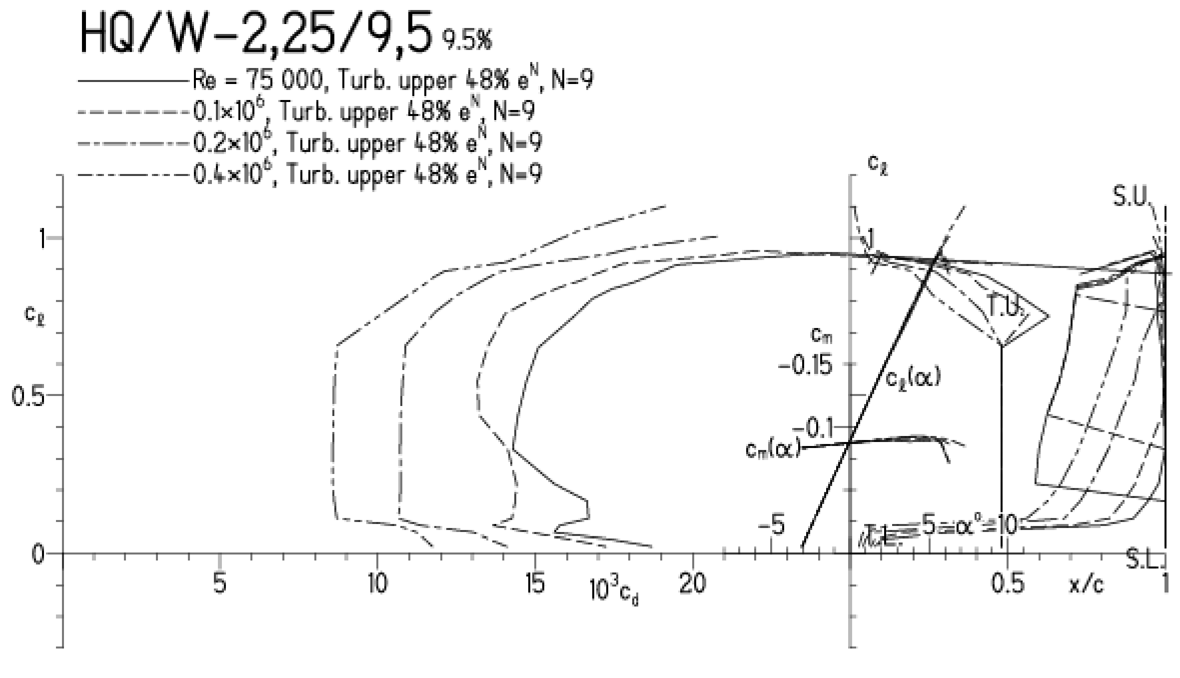


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

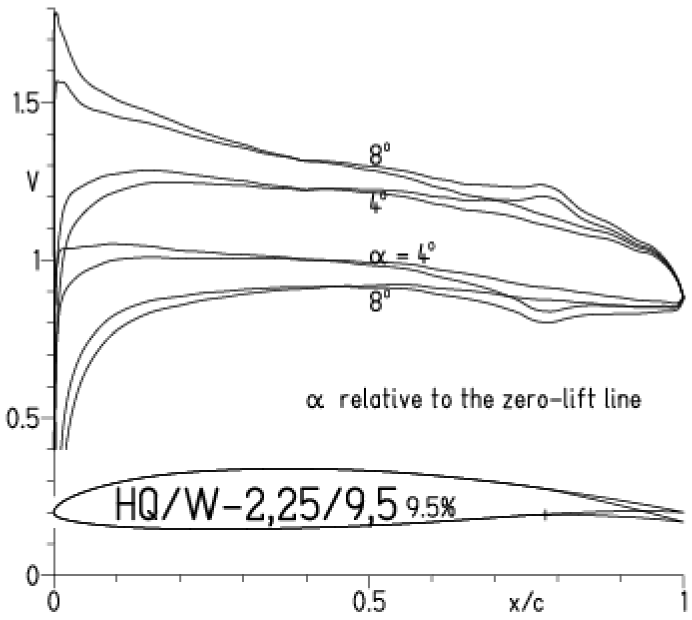


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

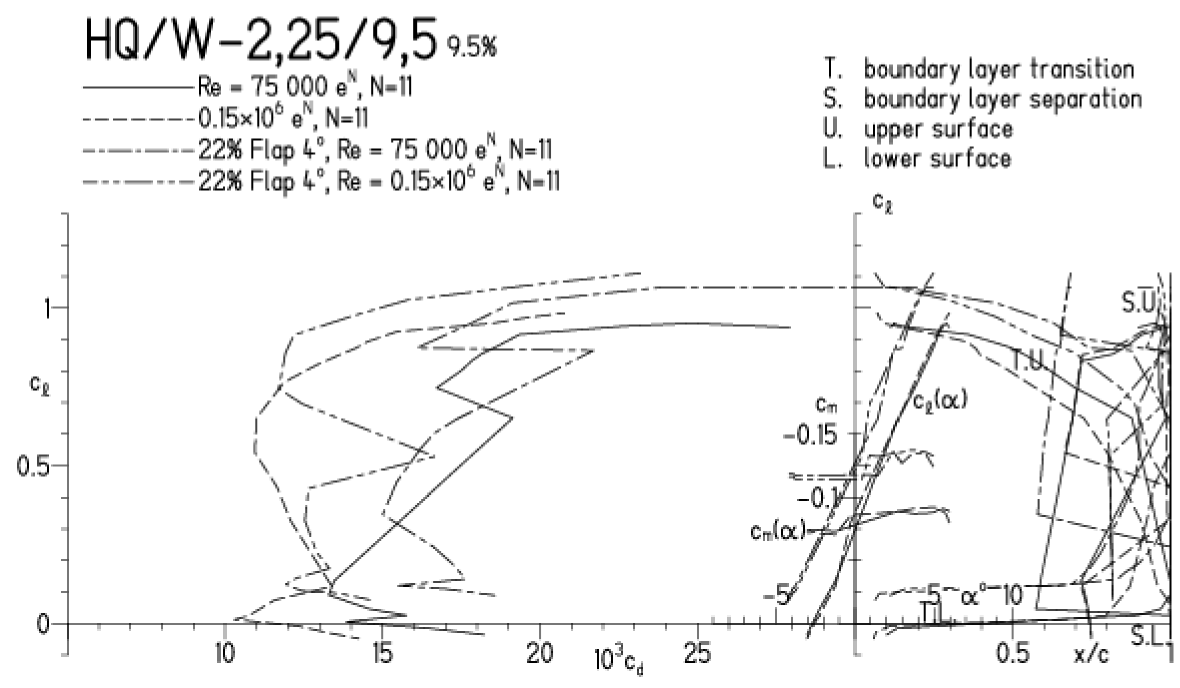


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

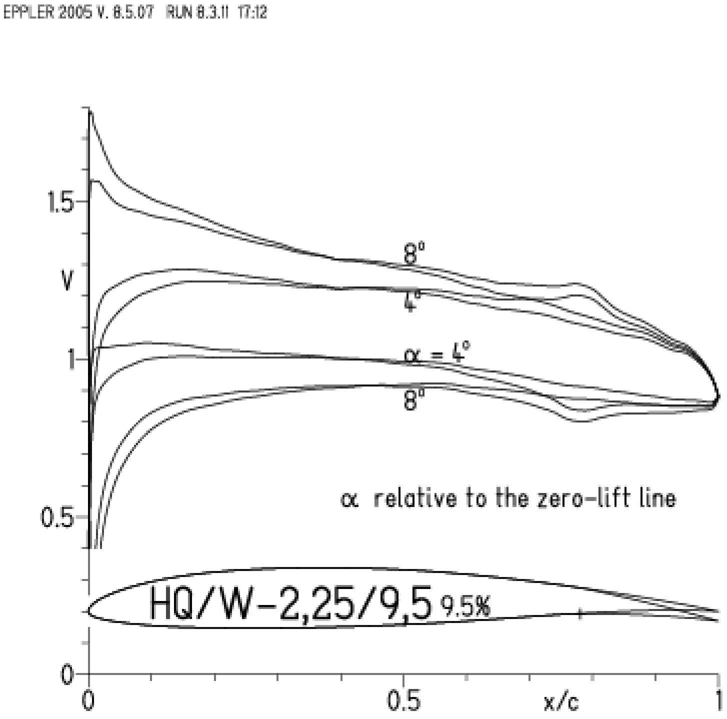
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

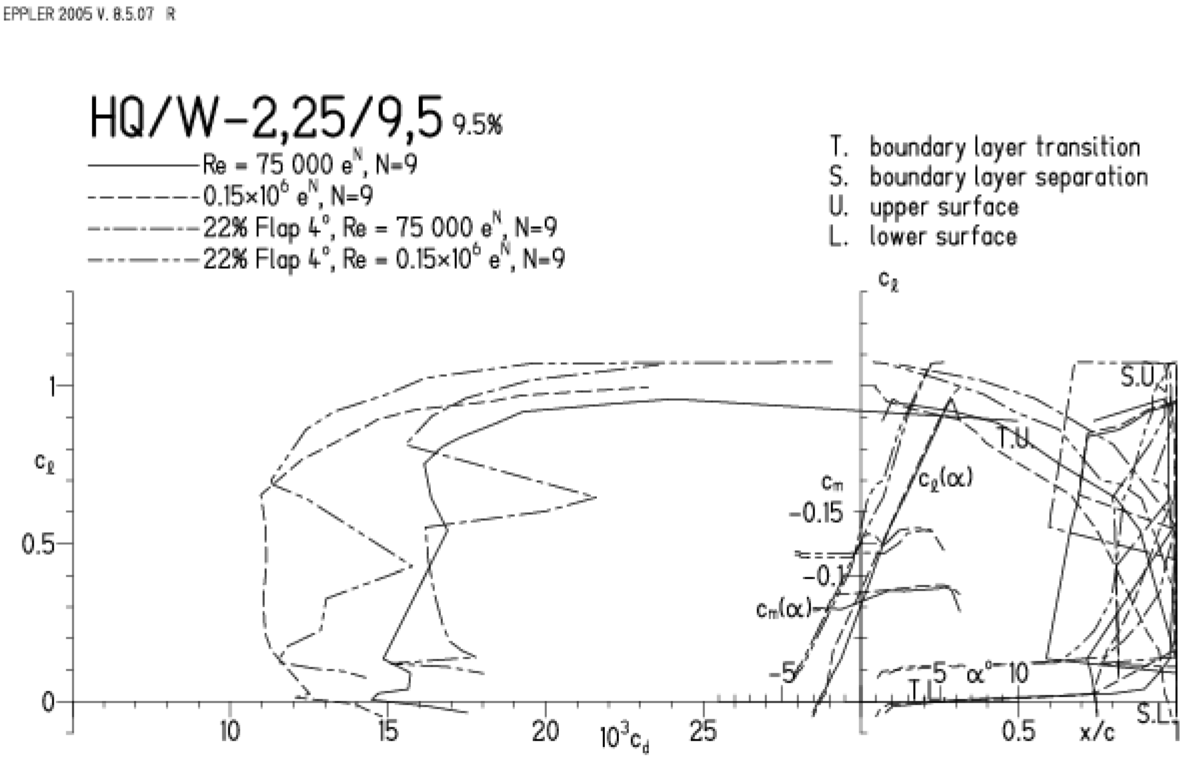


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



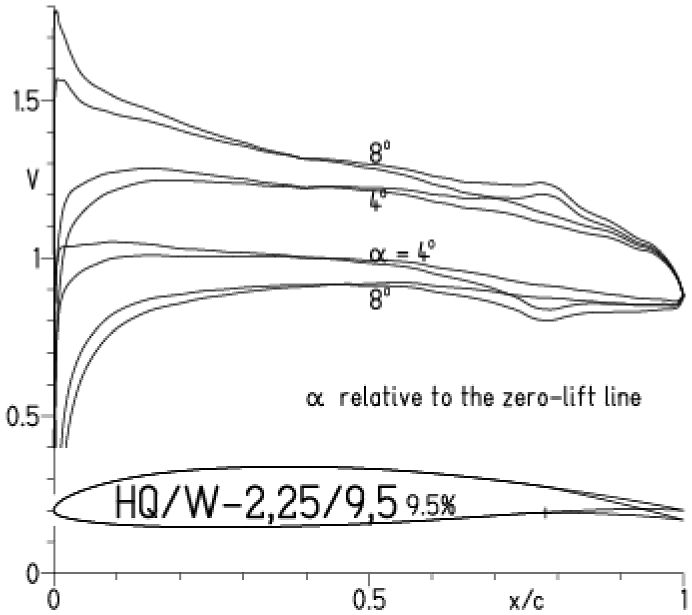
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



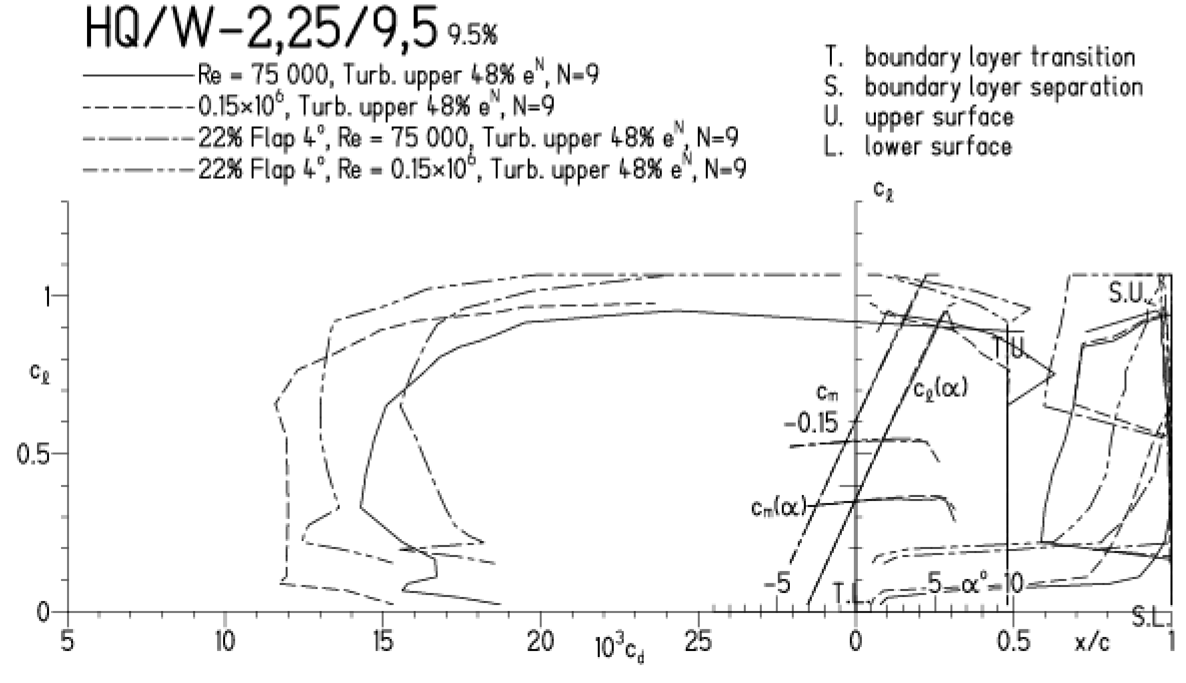


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

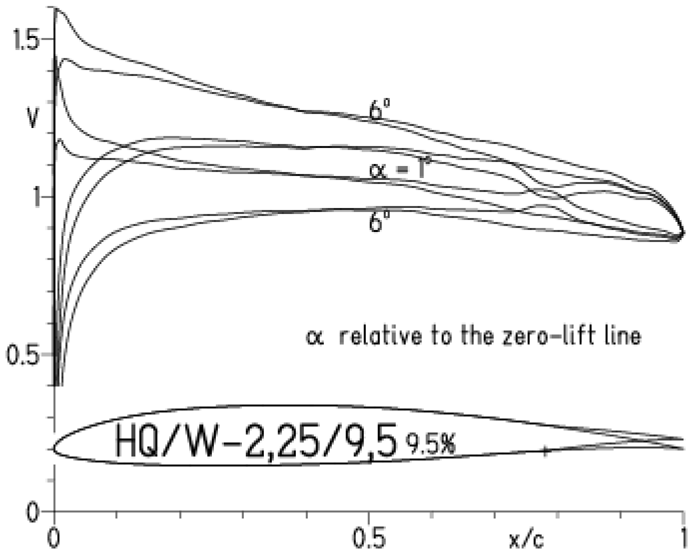


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

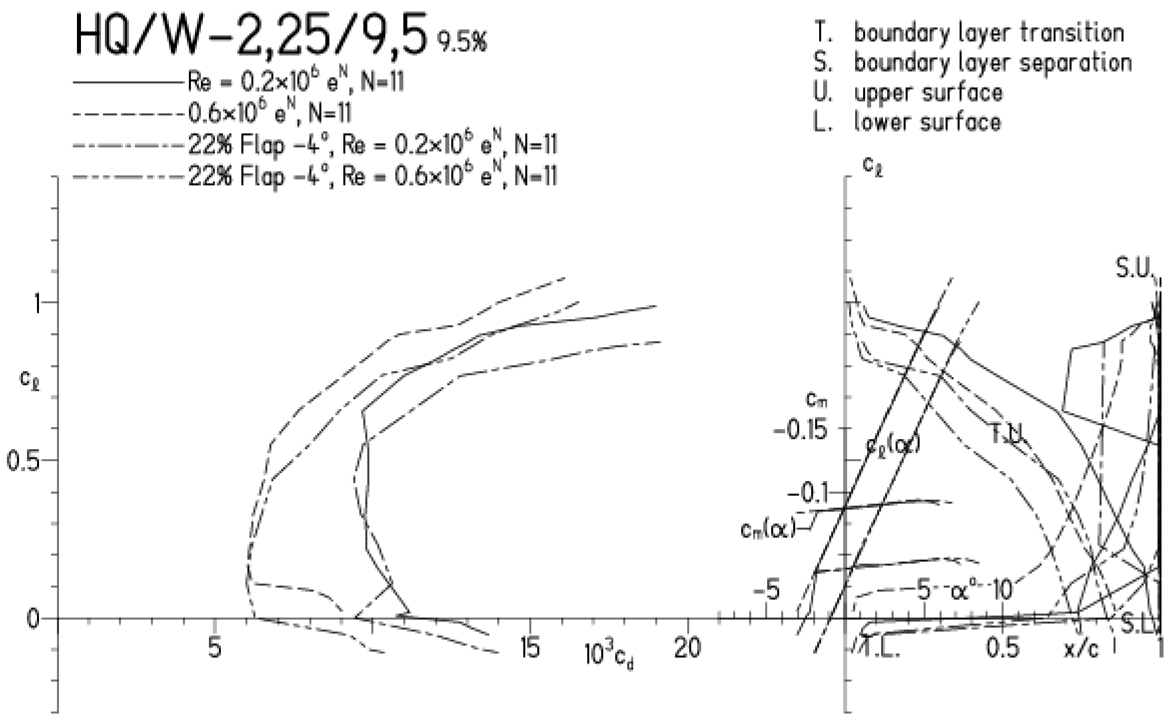


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

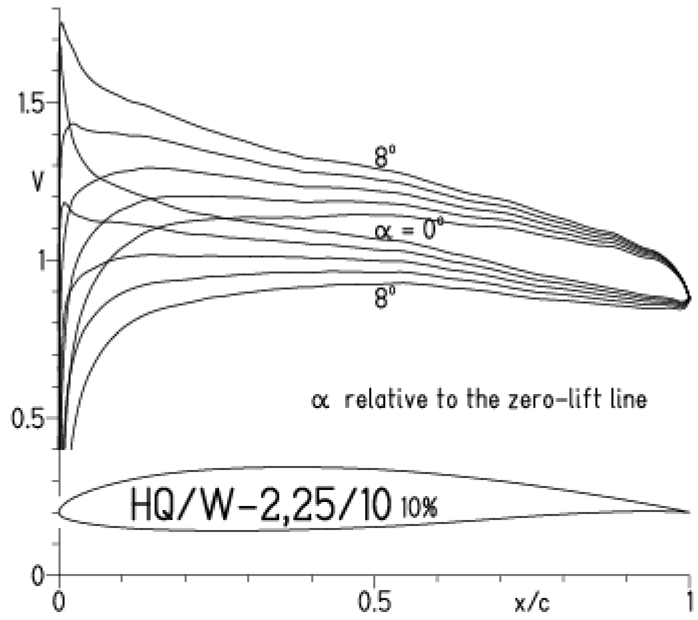


EPPLER 2005 V.

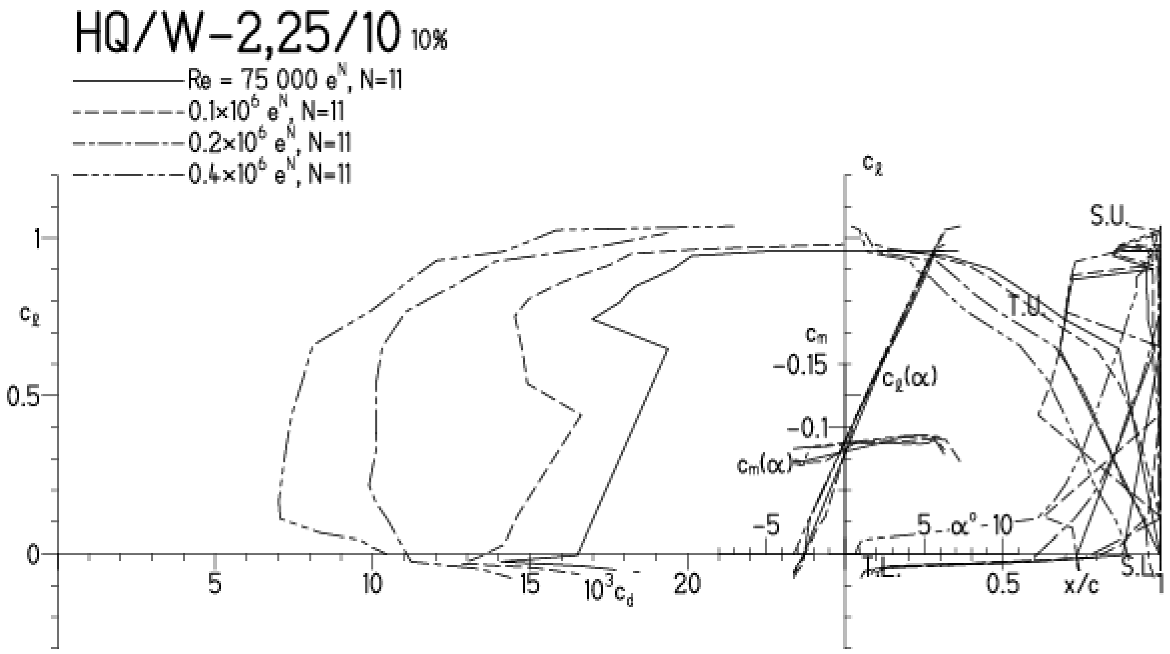


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

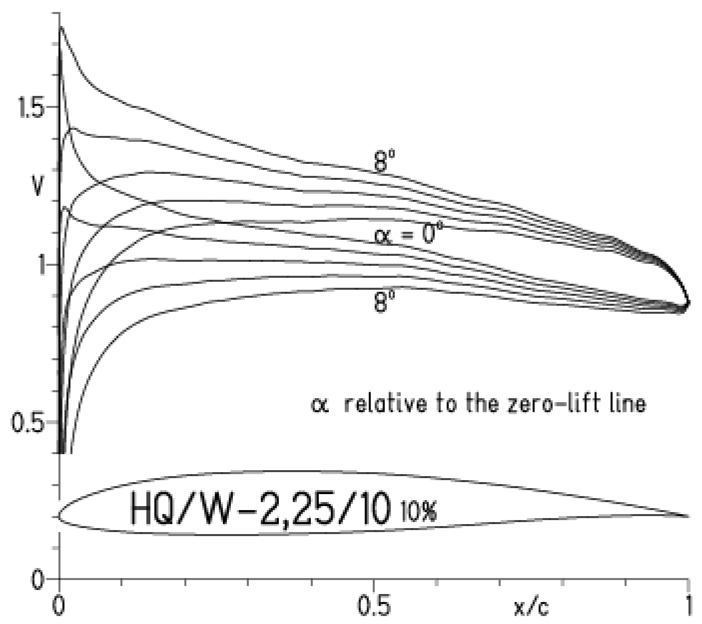


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

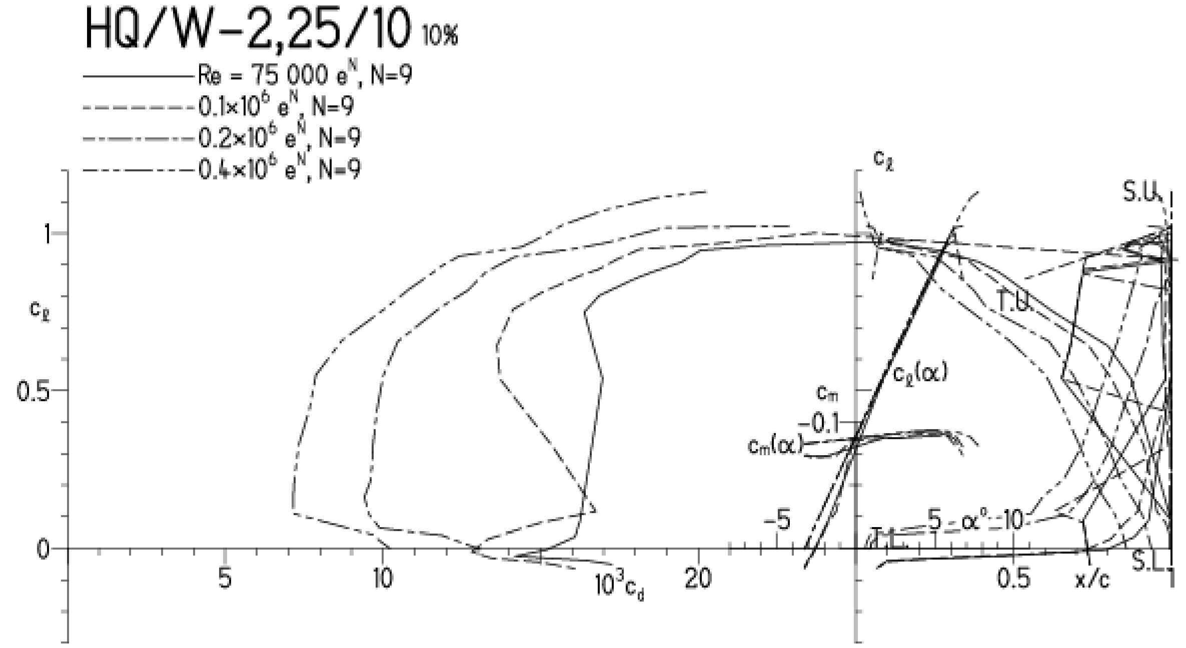


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

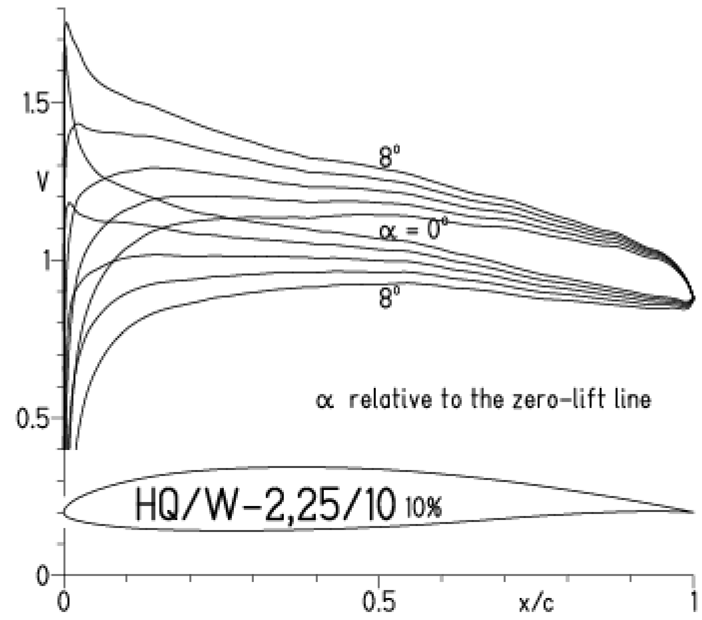


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

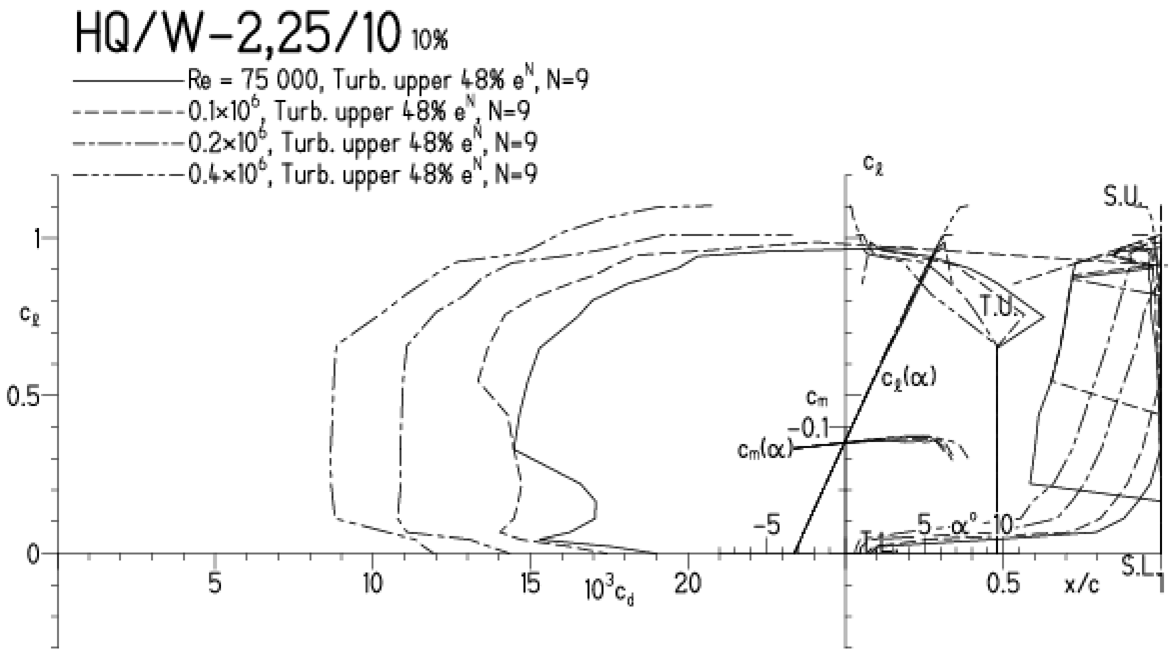


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

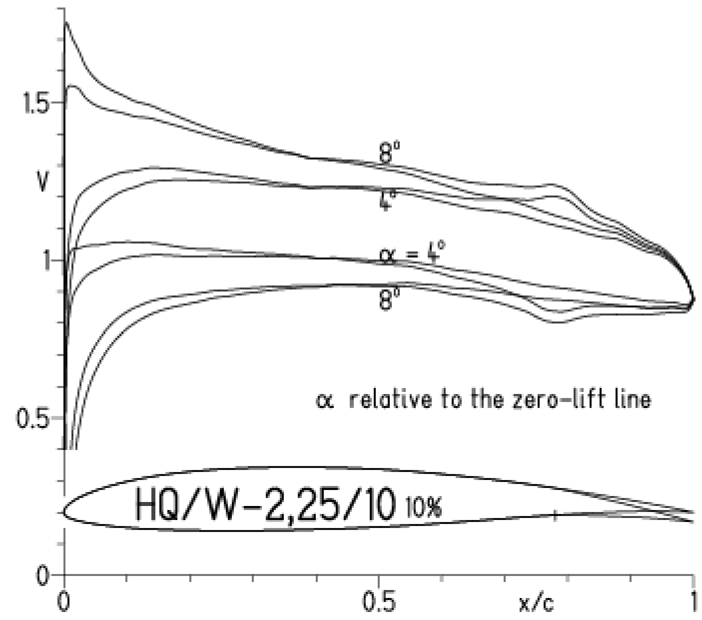


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

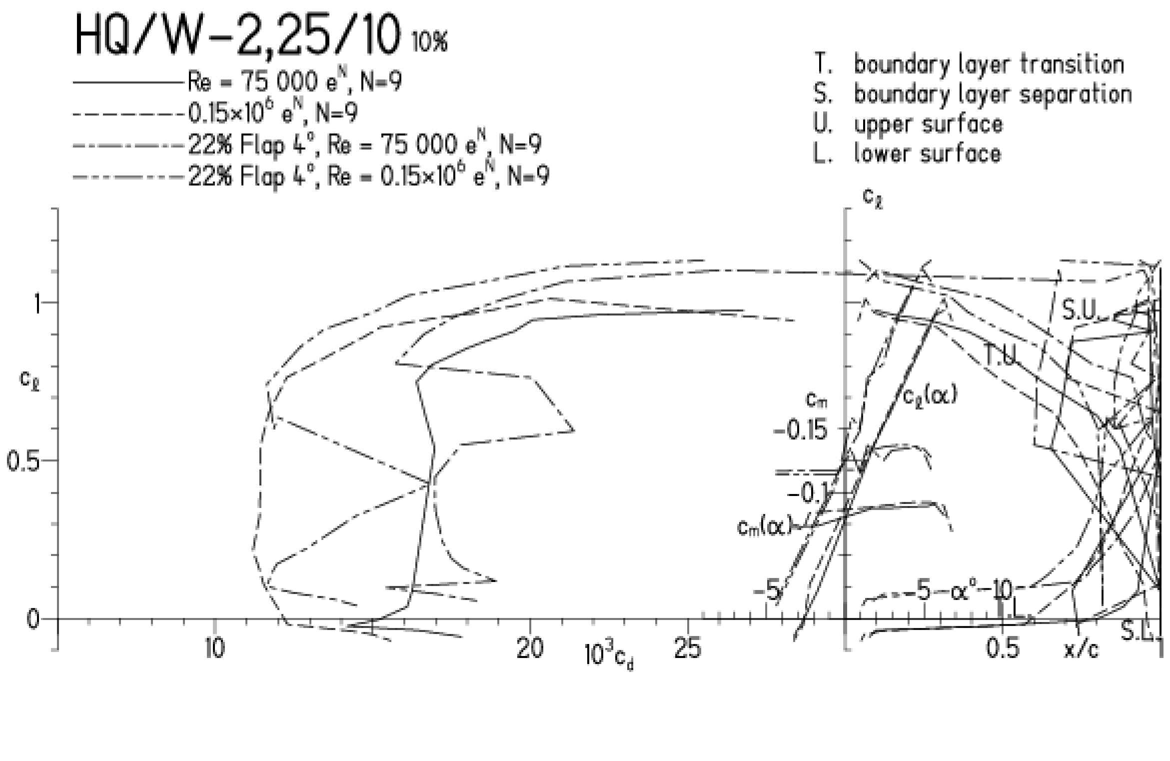


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

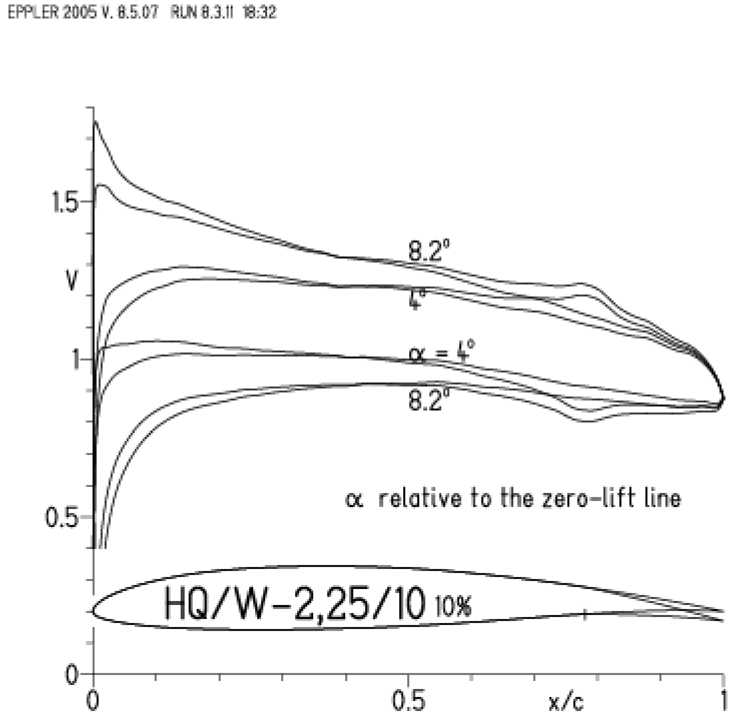
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

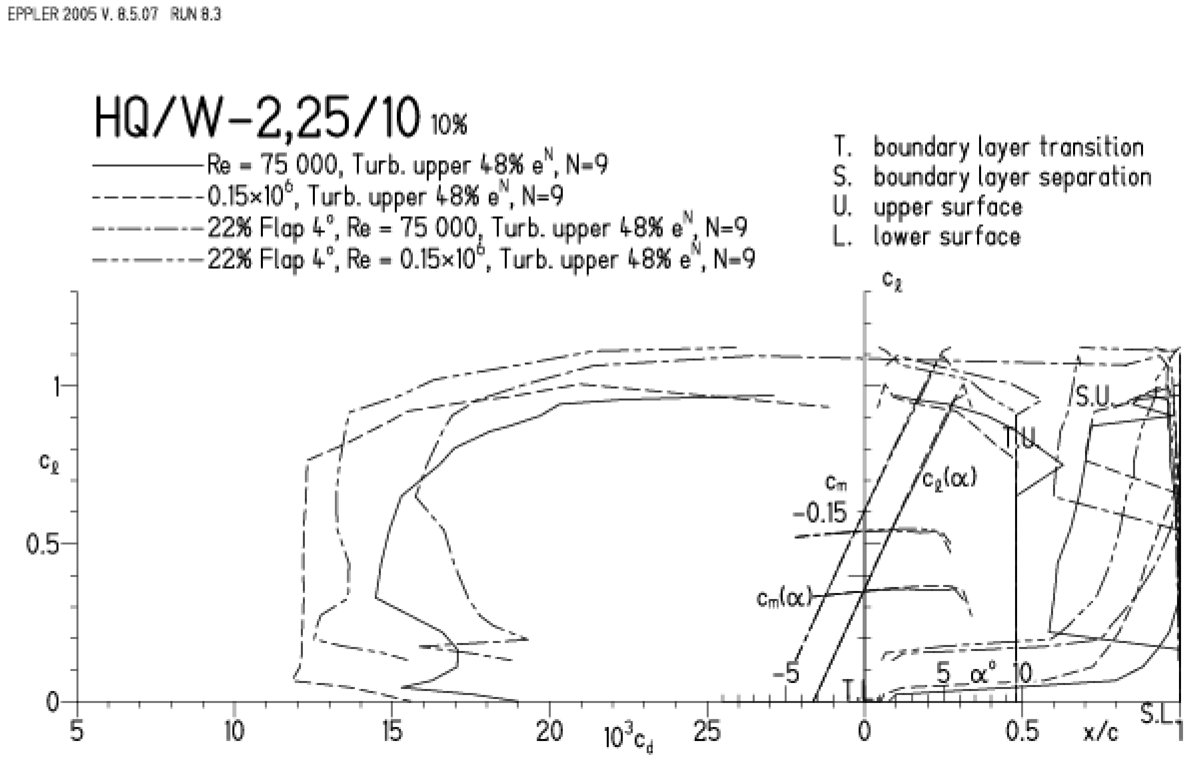


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



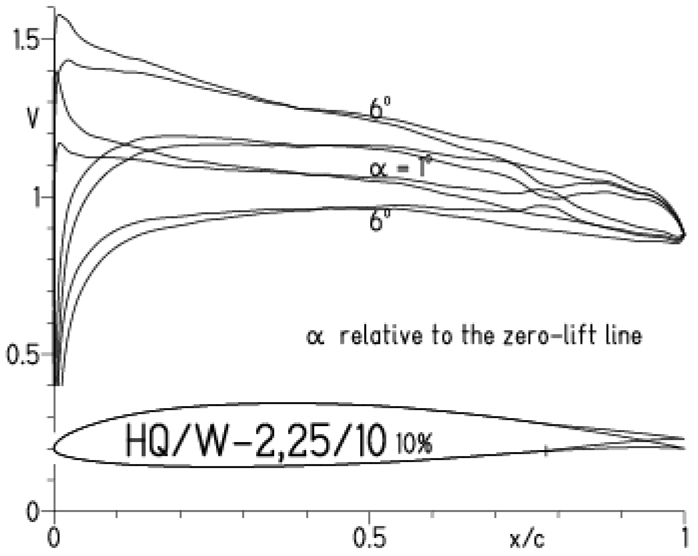
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



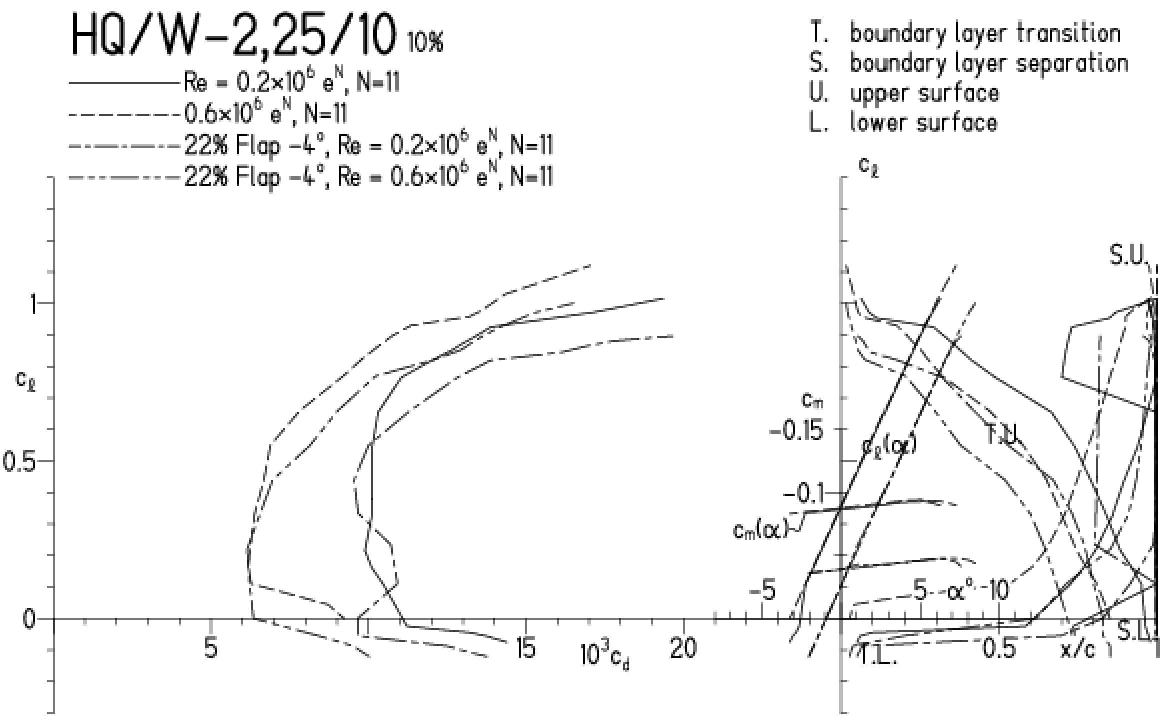


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

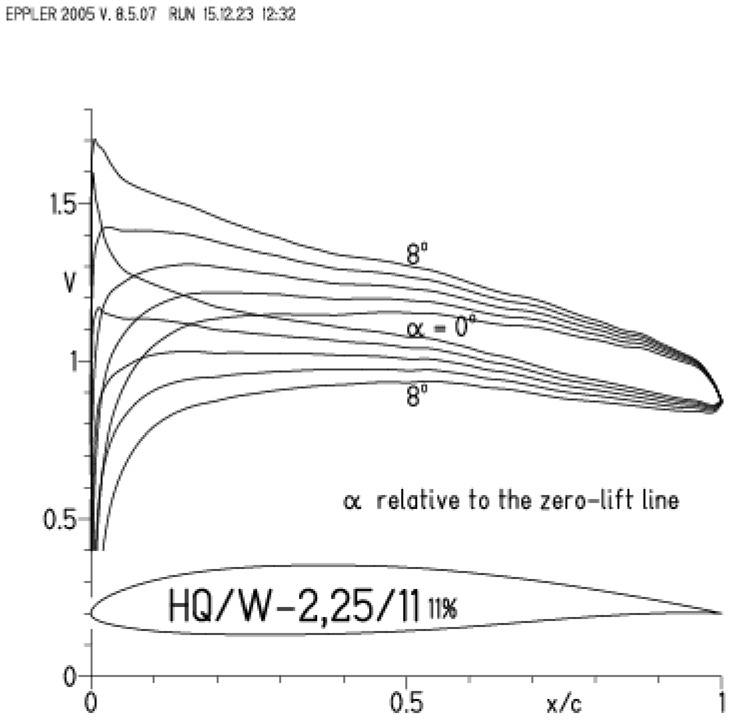
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

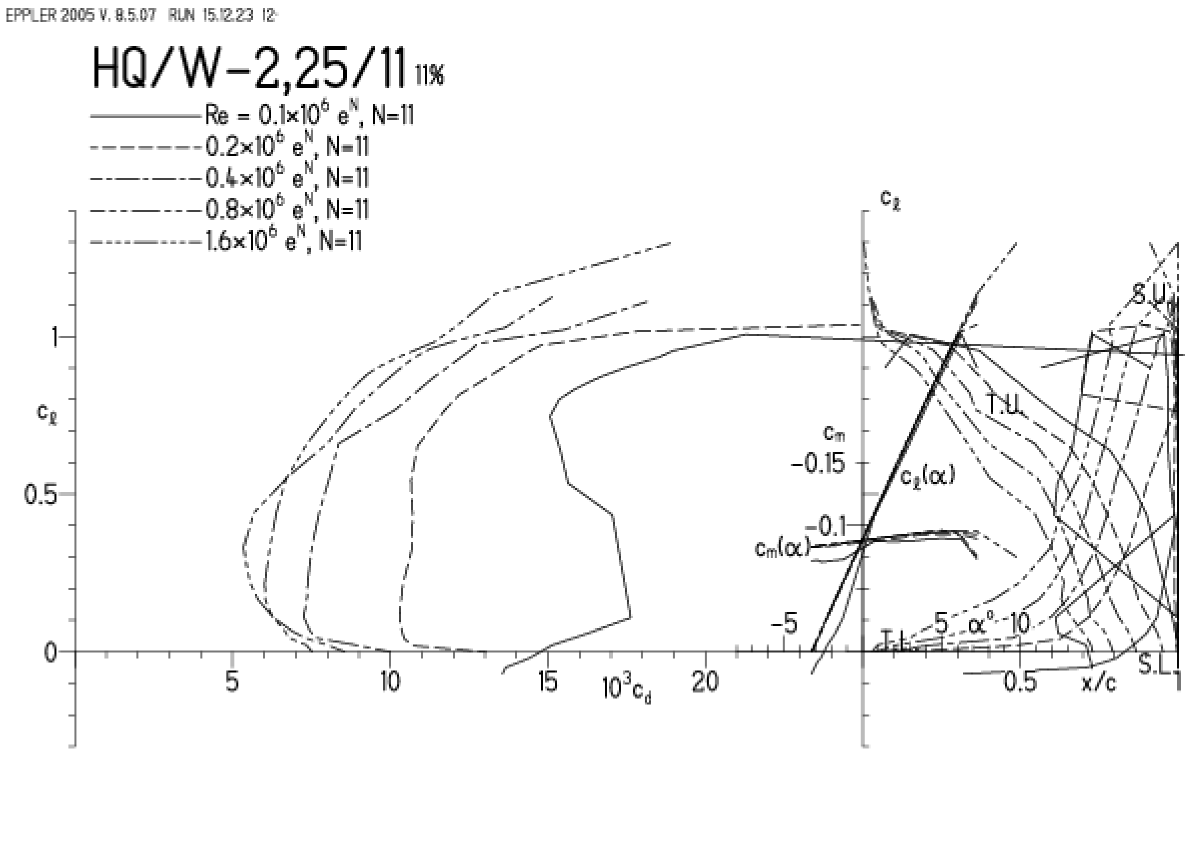


EPPLER 2005 V. 8.5.07 RUN

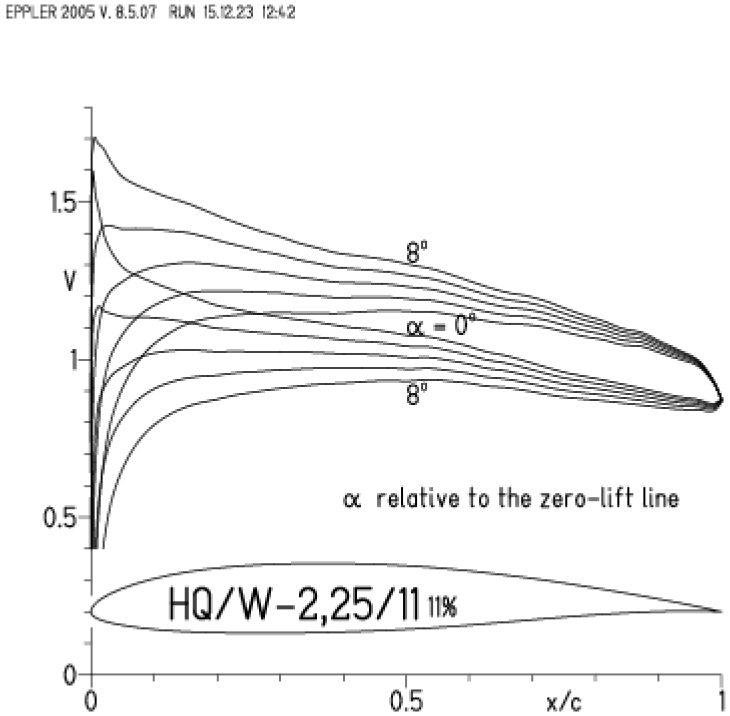


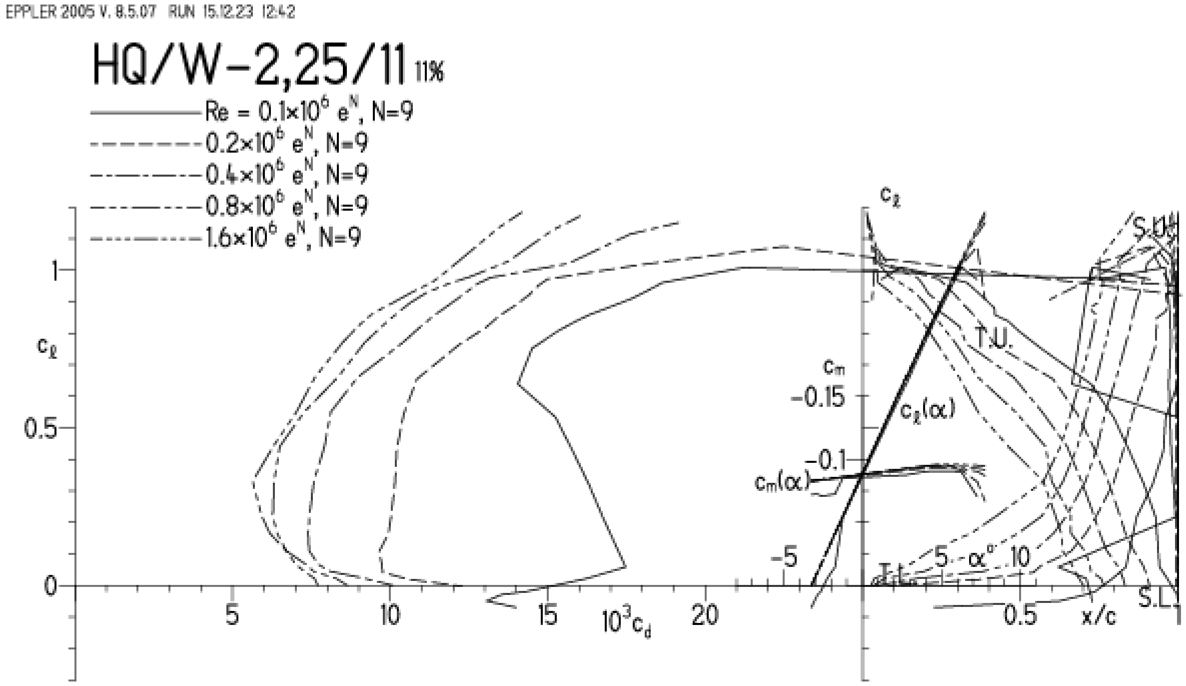
HQ/W-2,25/11, N=11



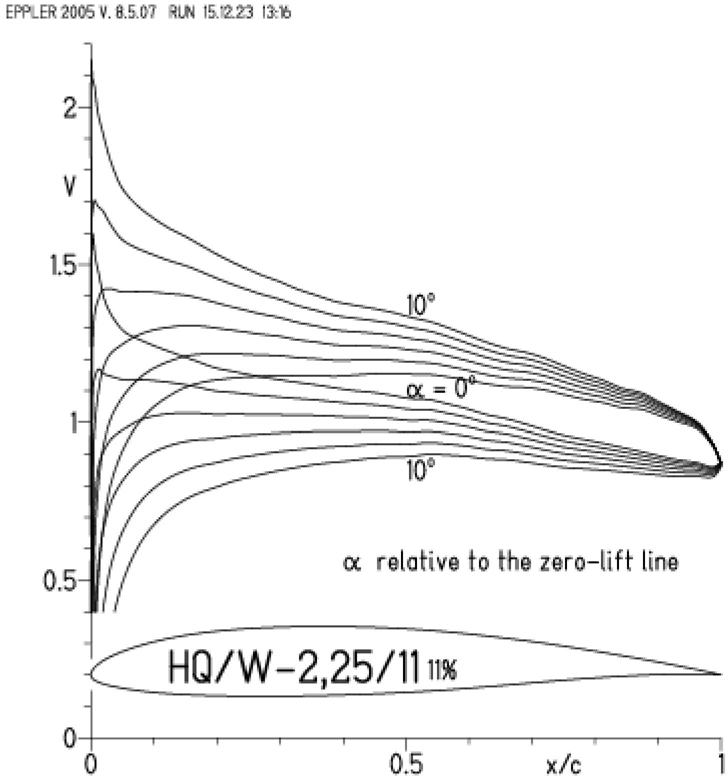


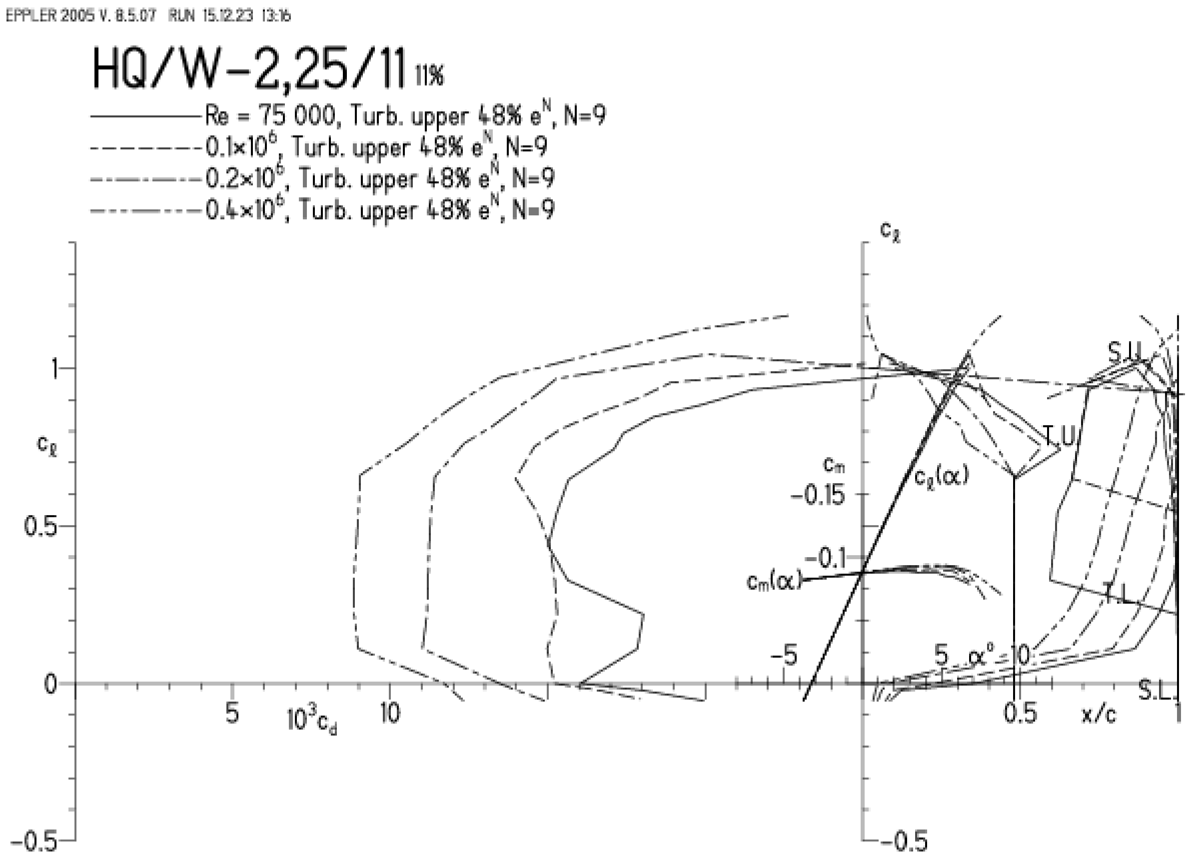
HQQ/W-2,25/11, N=9





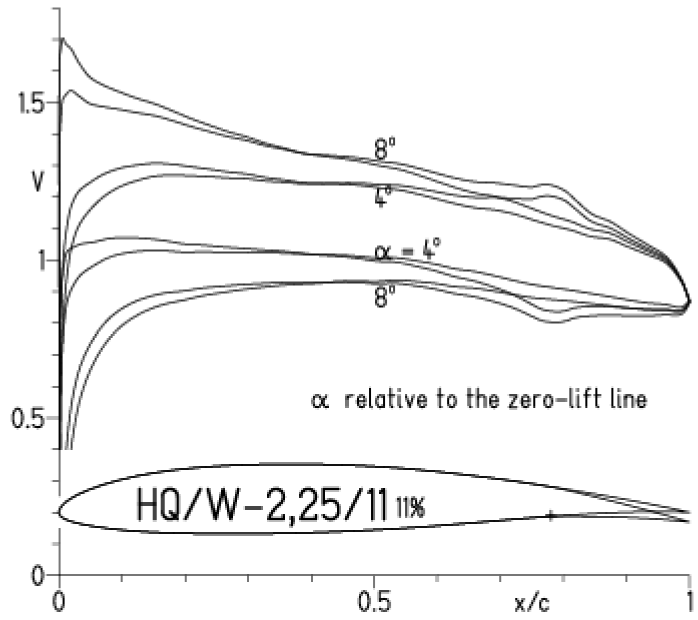
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



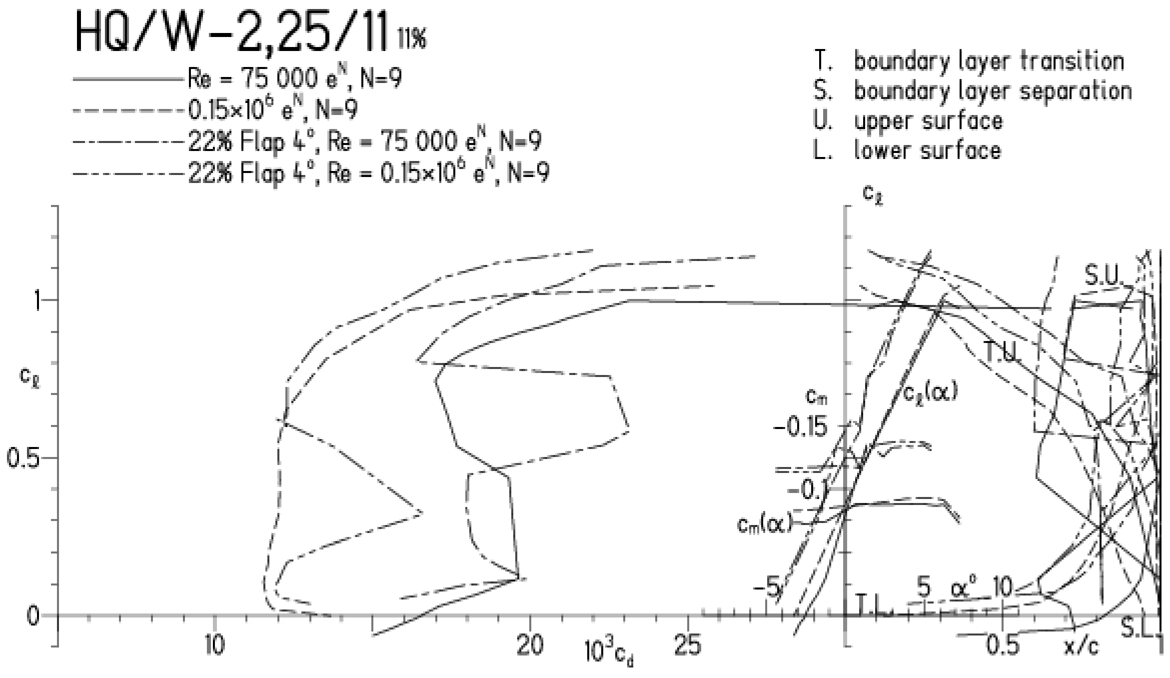


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

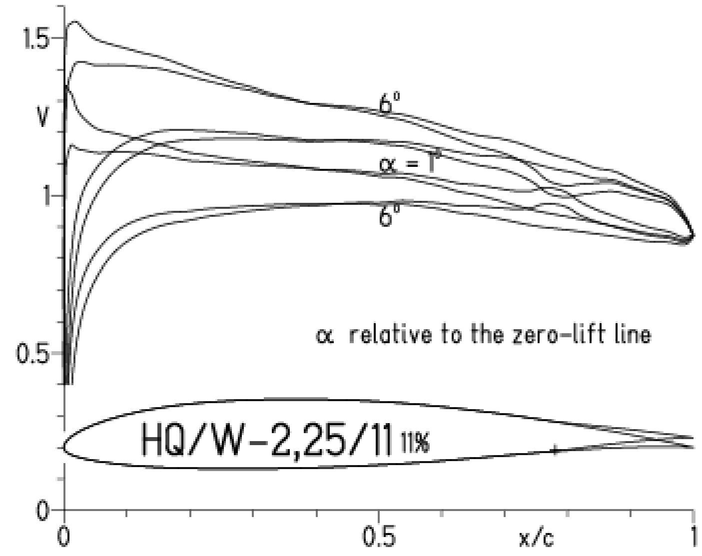


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

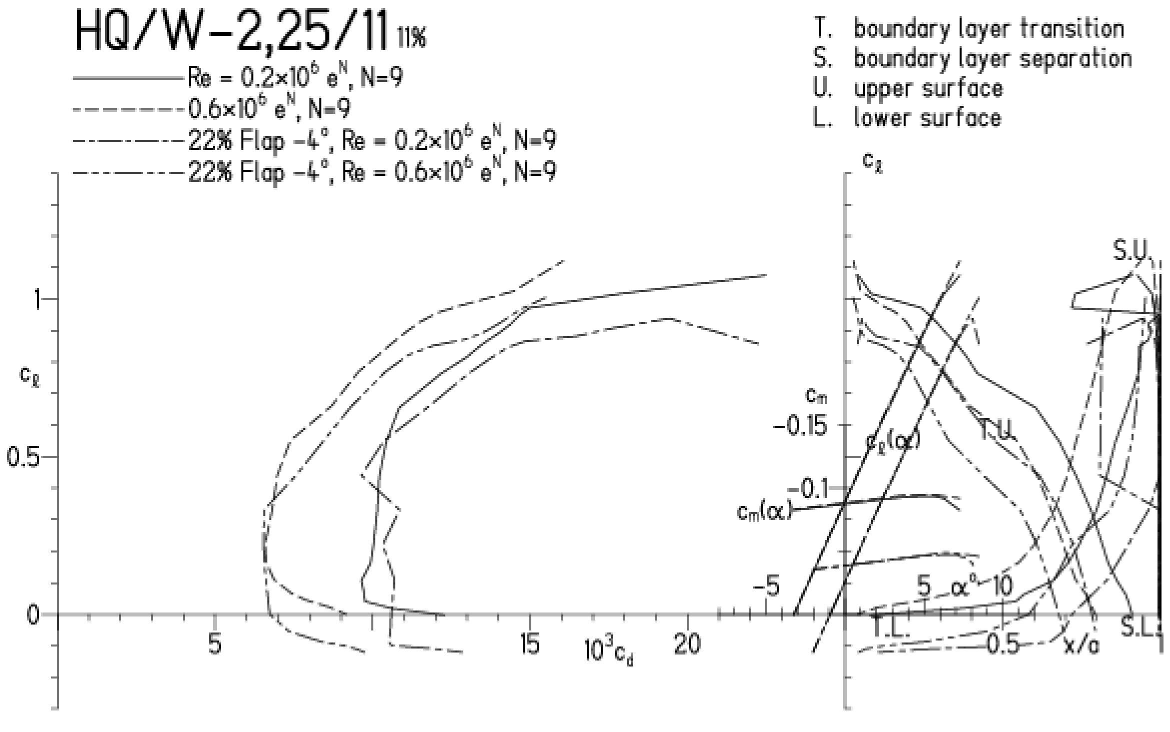


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

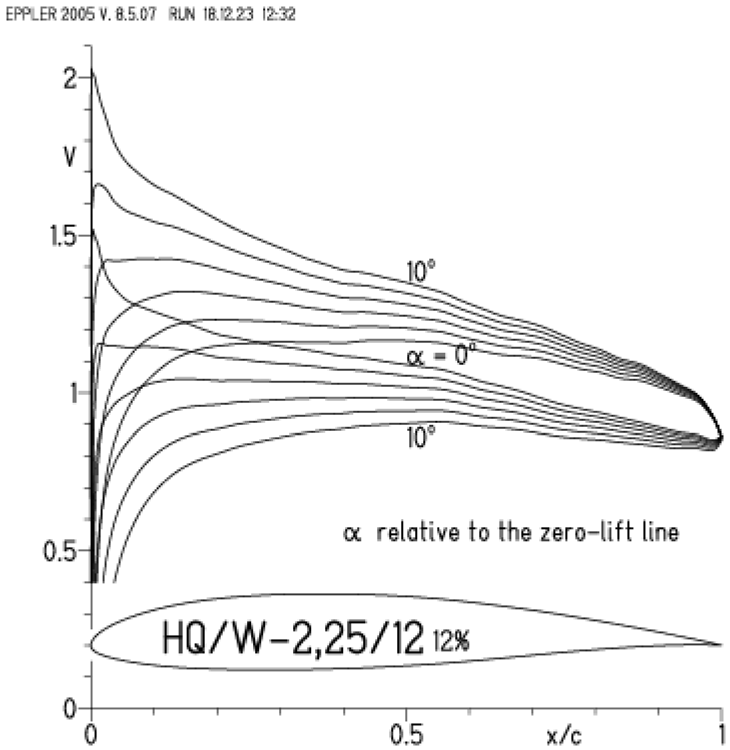
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

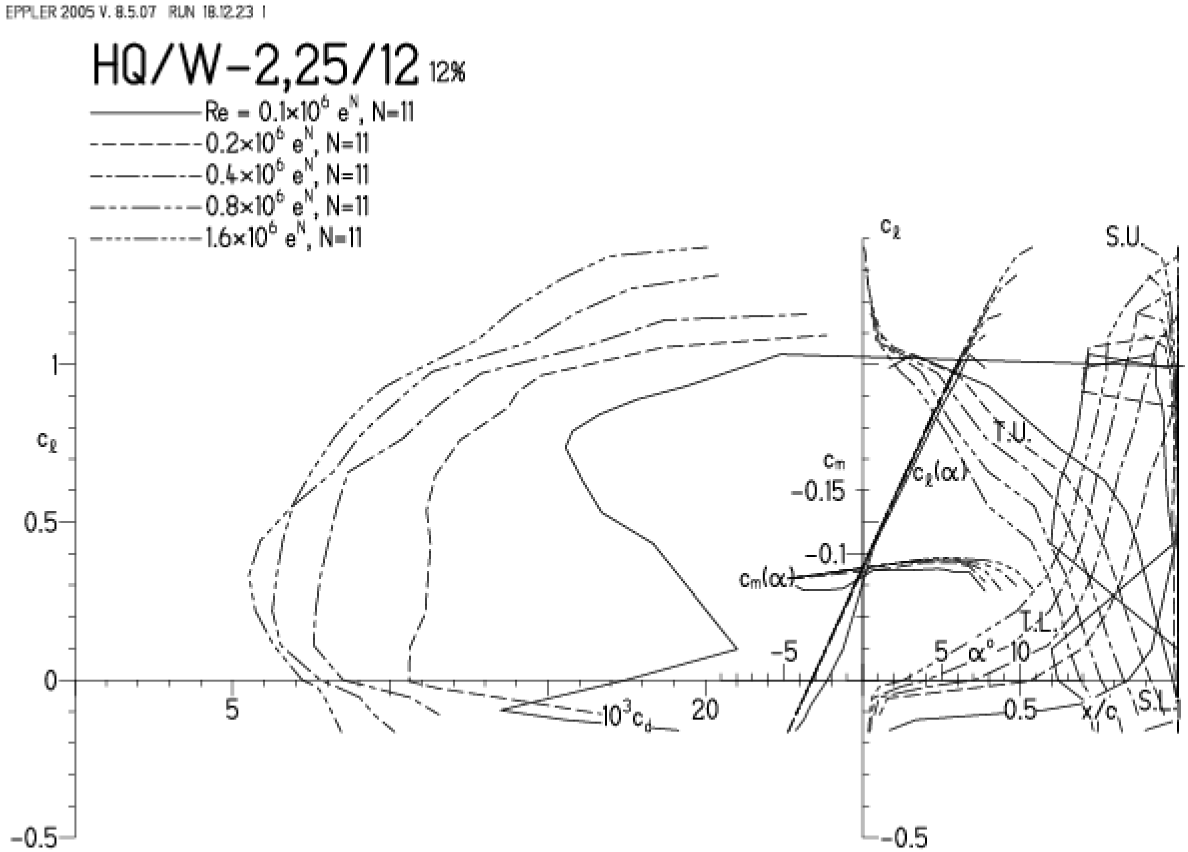


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



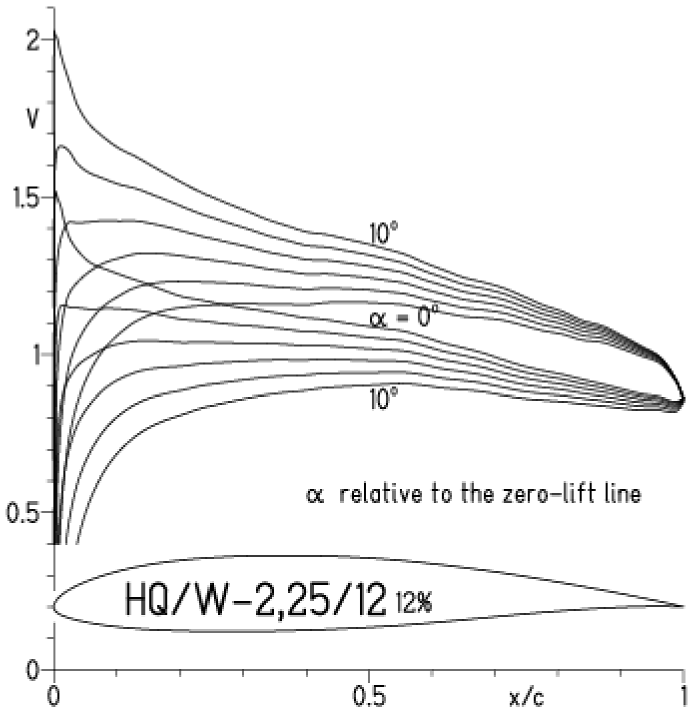
HQ/W-2,25/12, N=11



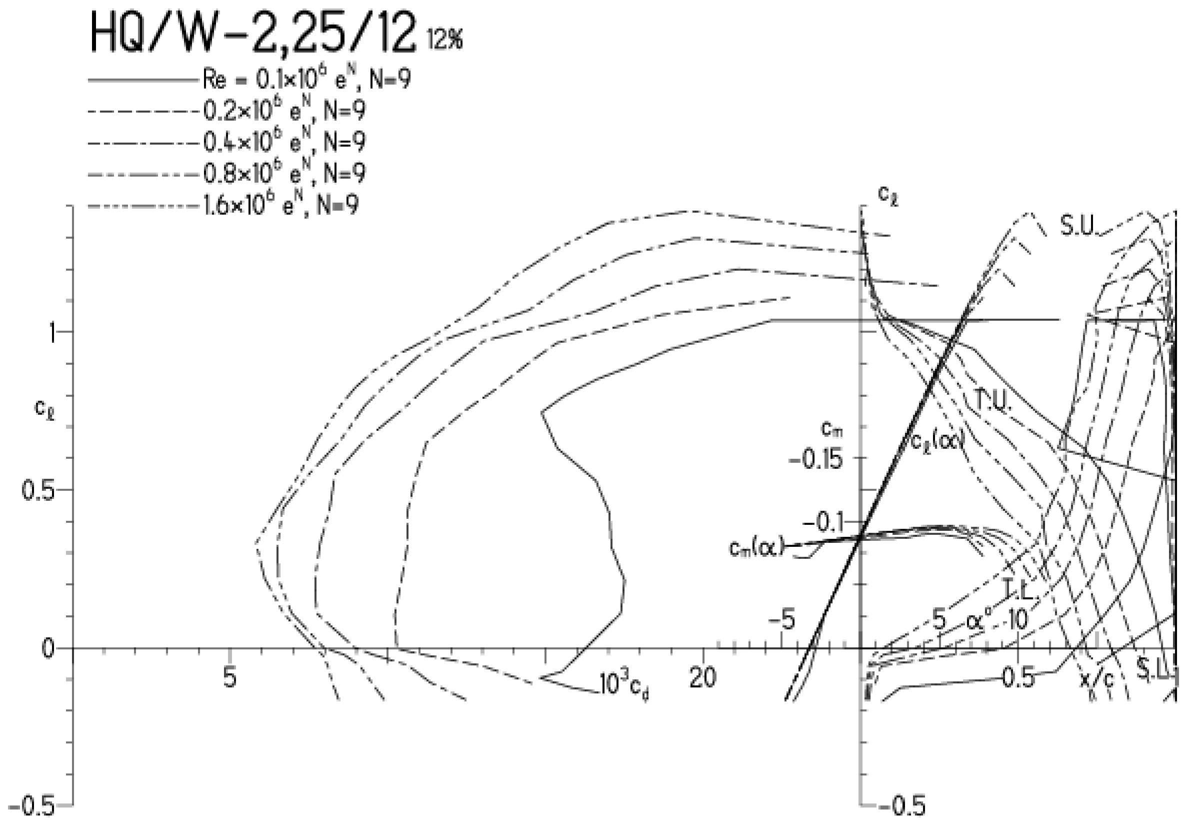


HQ/W-2,25/12, N=9

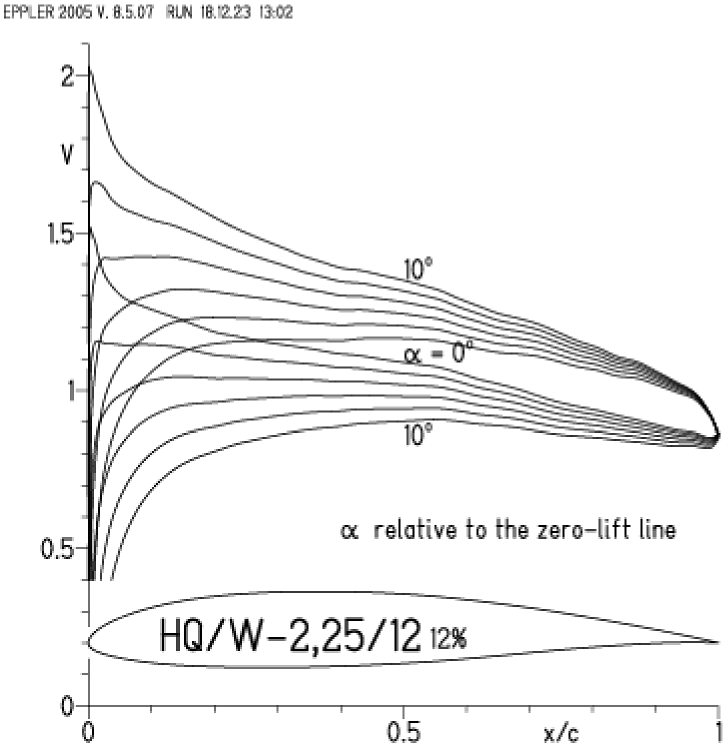
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

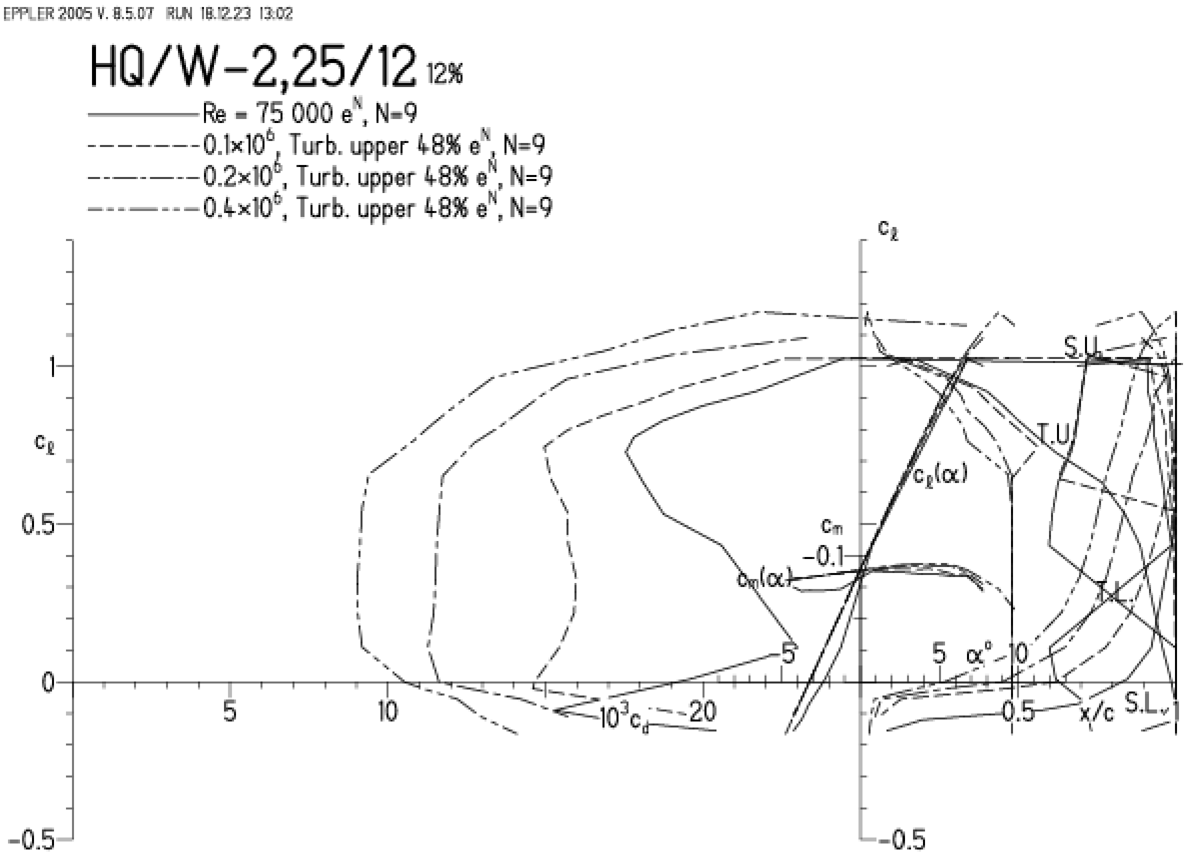


EPPLER 2005 V. 8.5



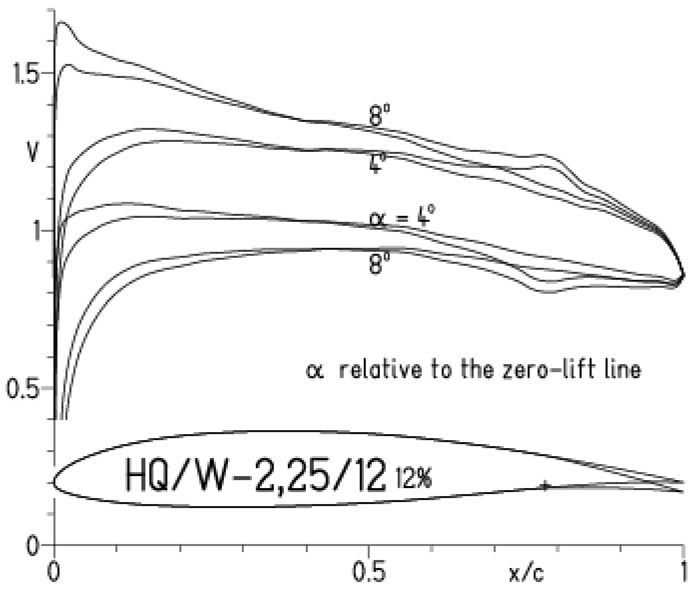
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



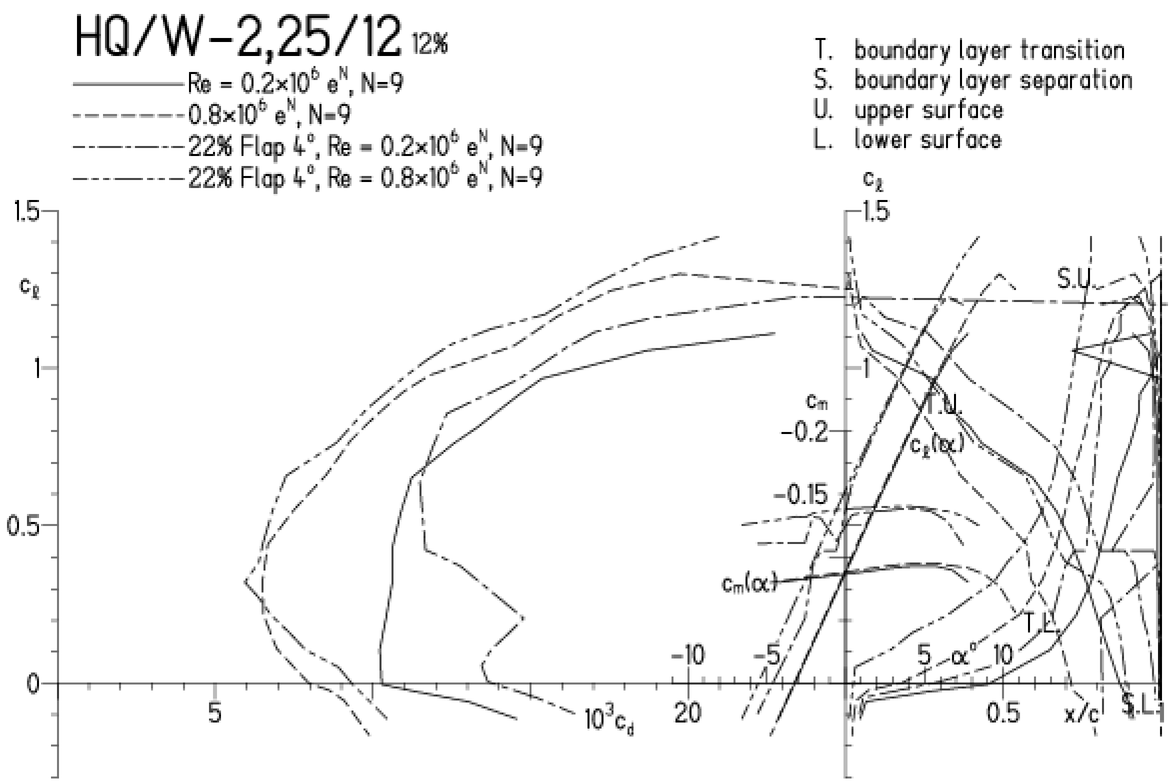


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

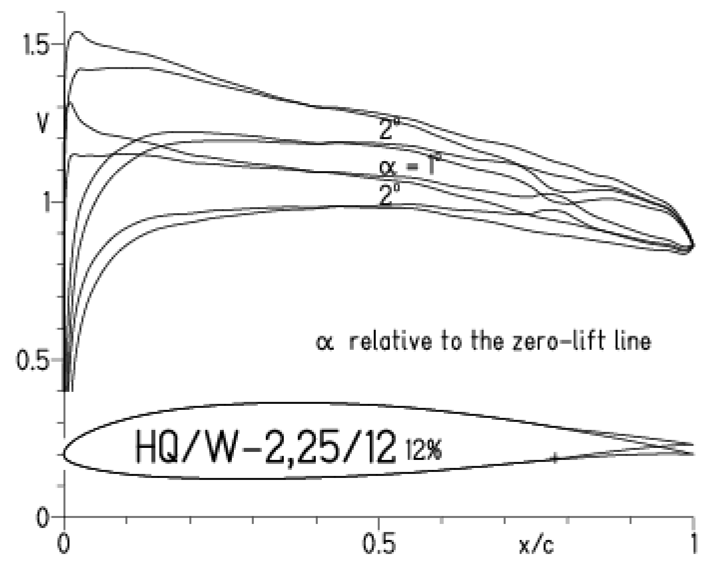


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

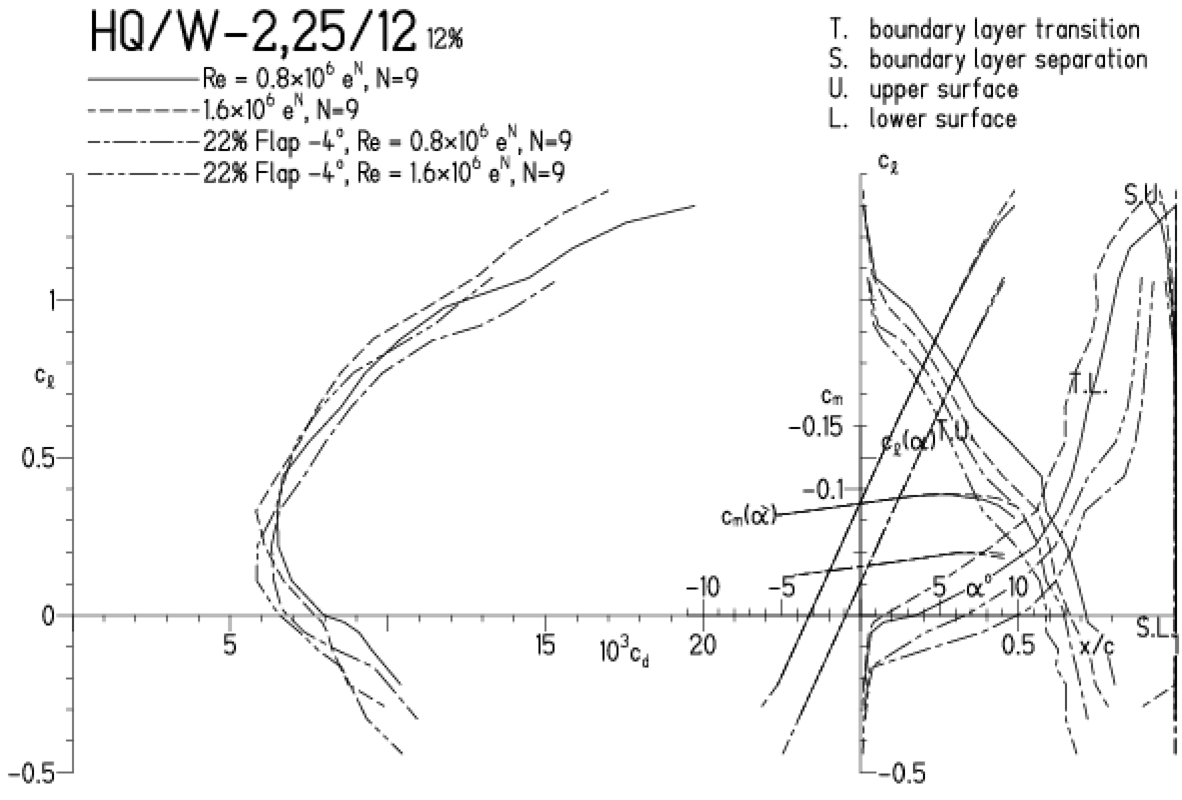


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

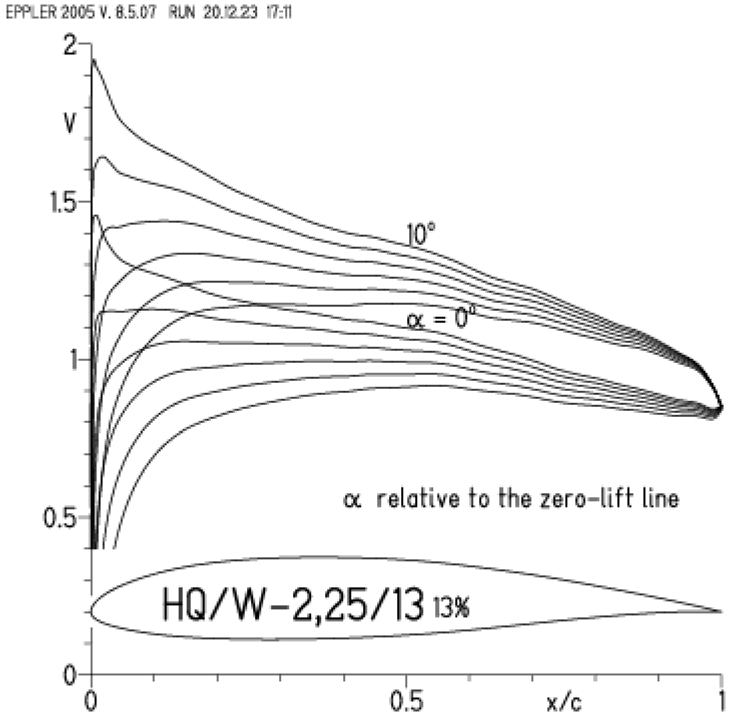
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

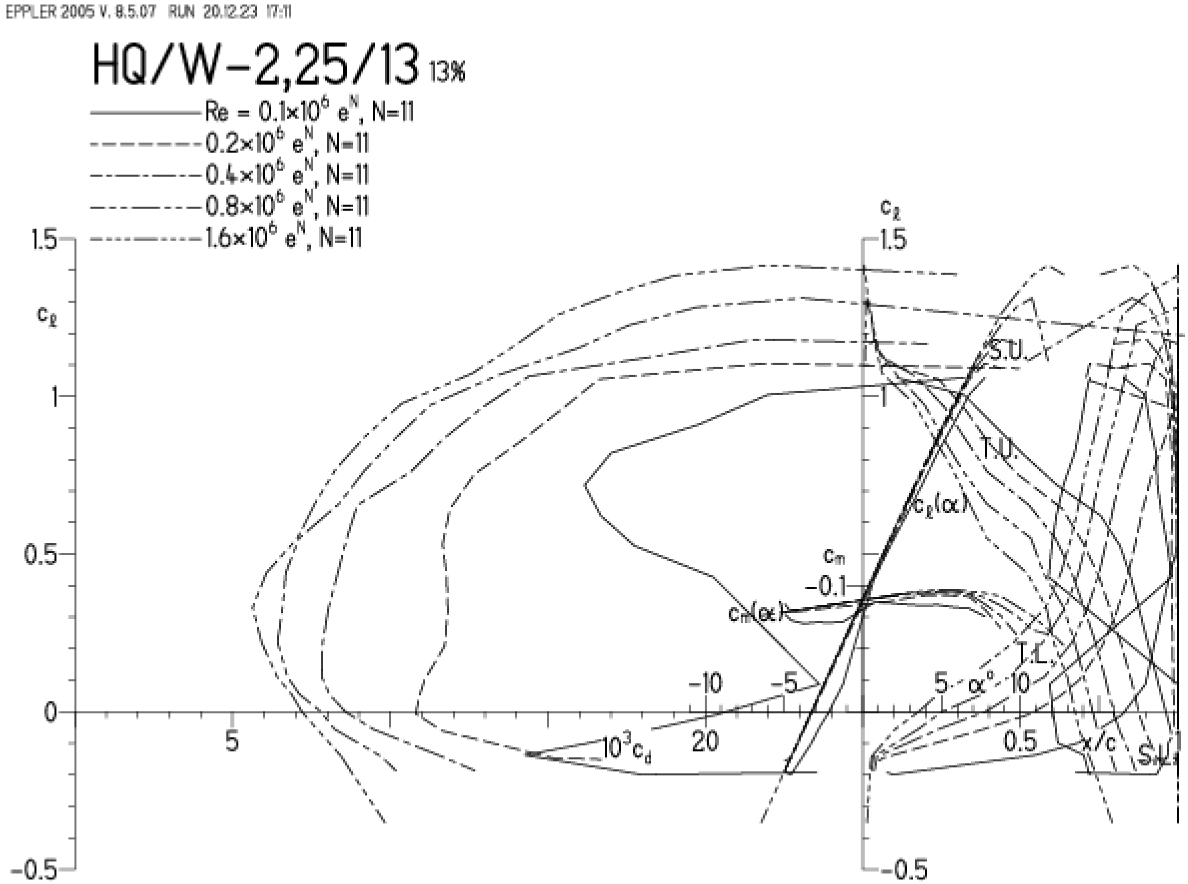


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

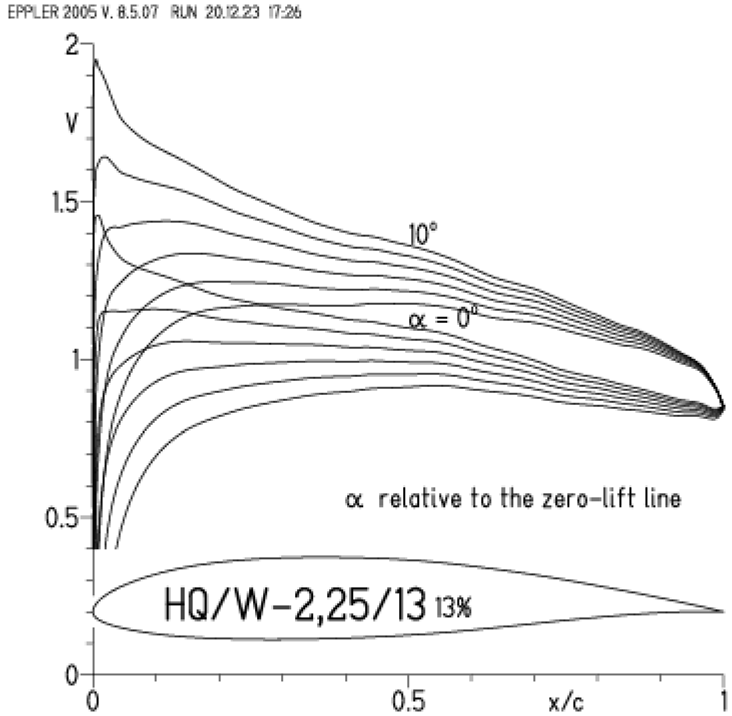


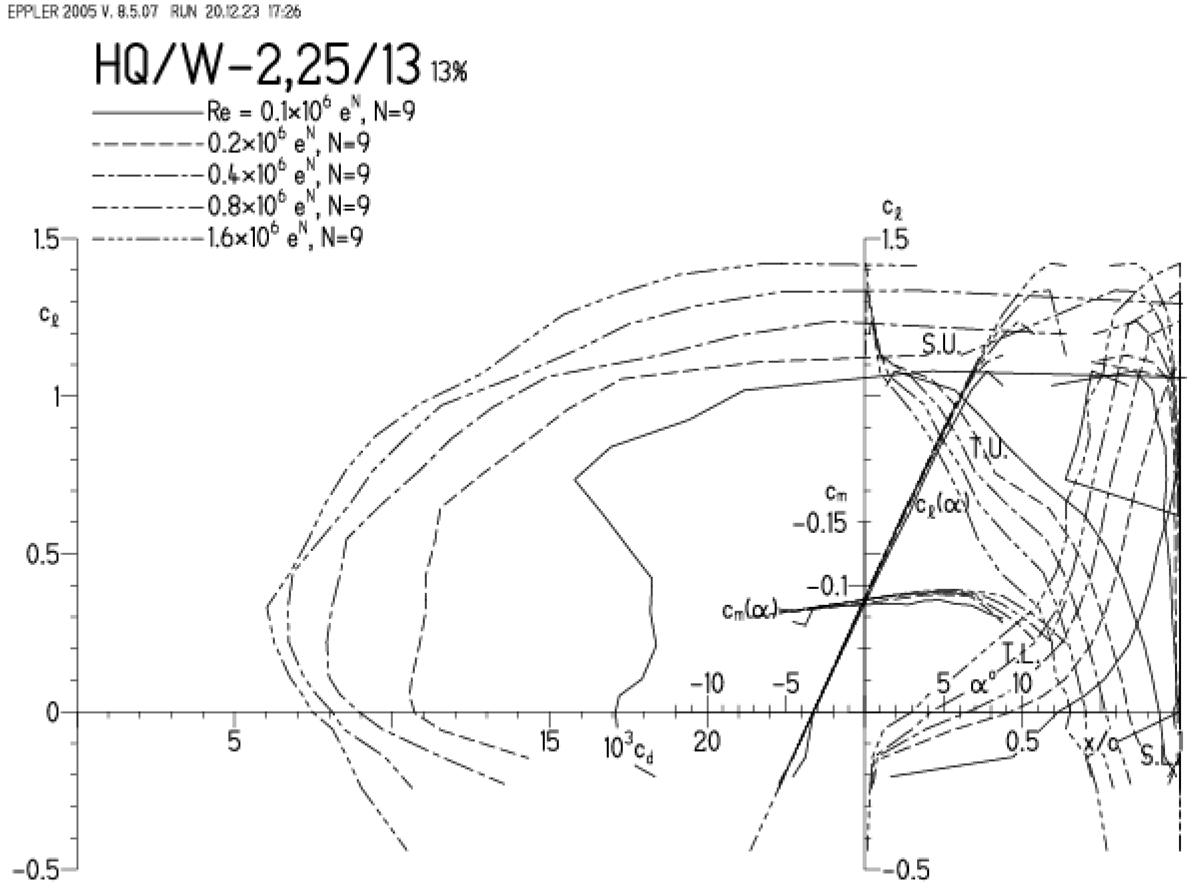
<u>HQ/W-2,25/13</u>, N=11



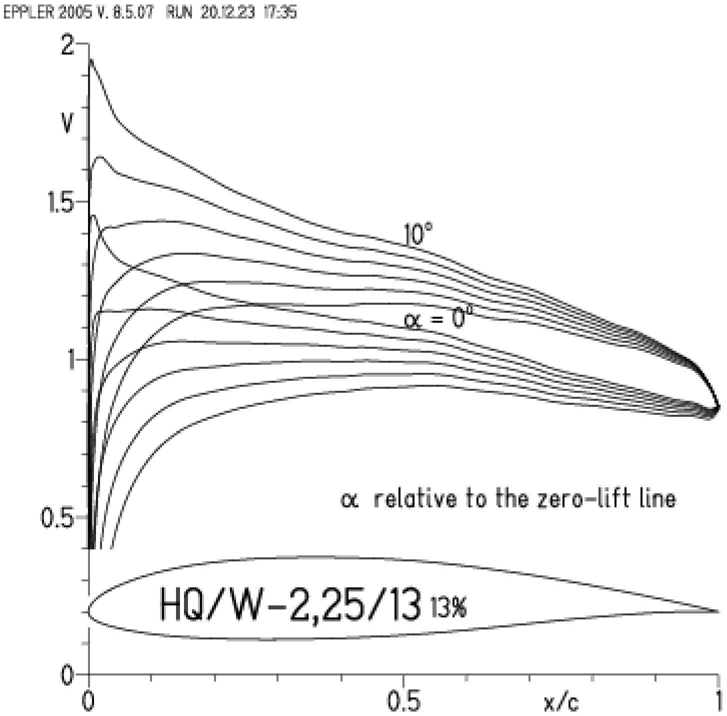


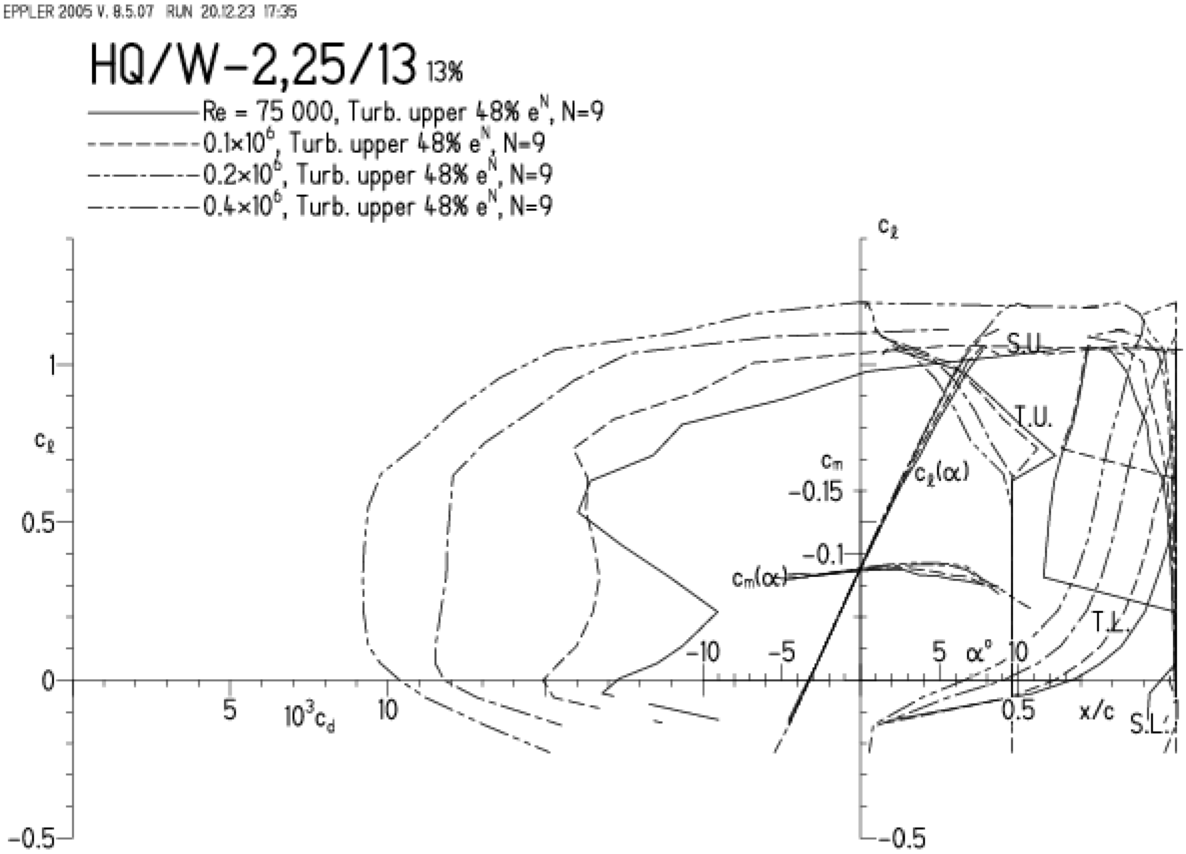
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
10³cd
x/c

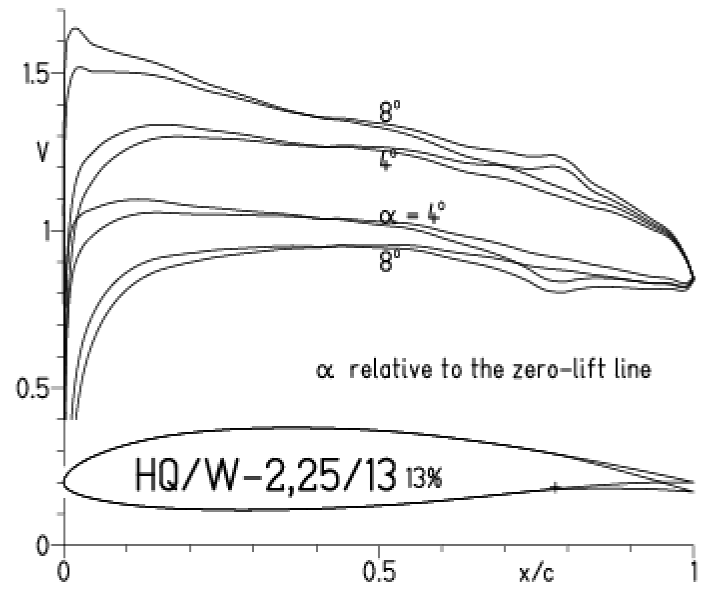
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



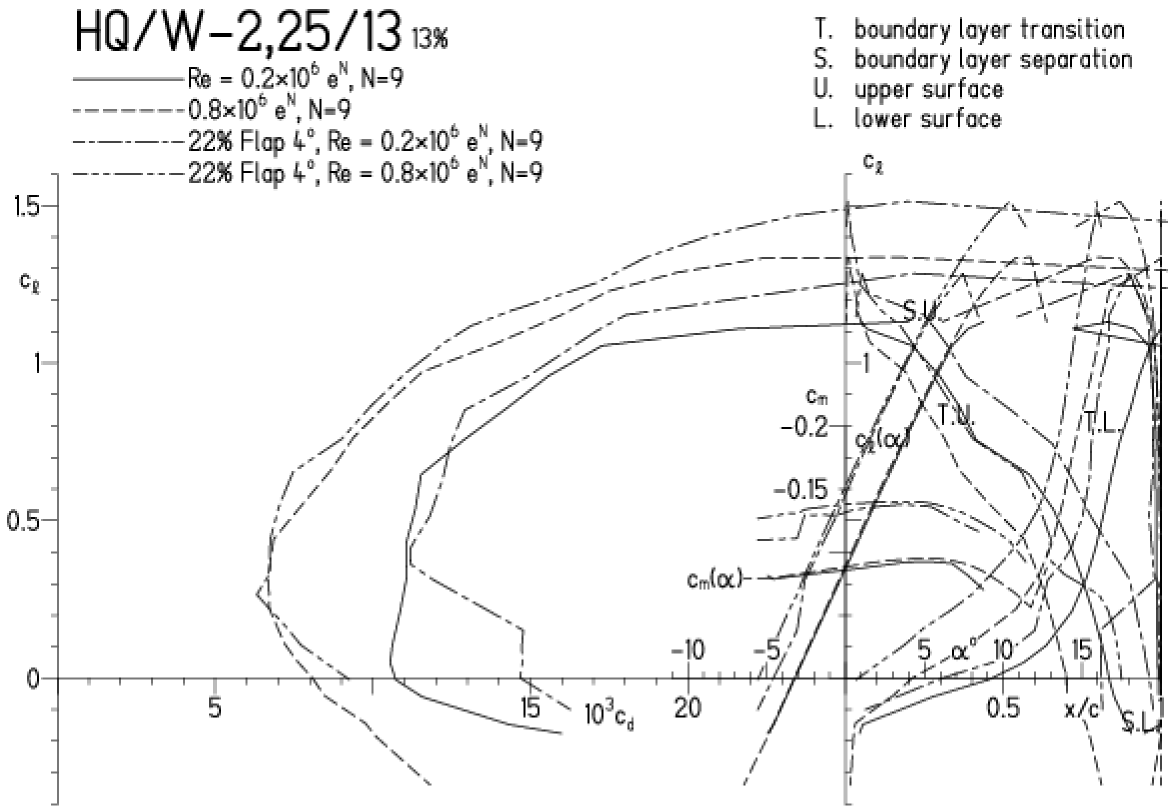


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

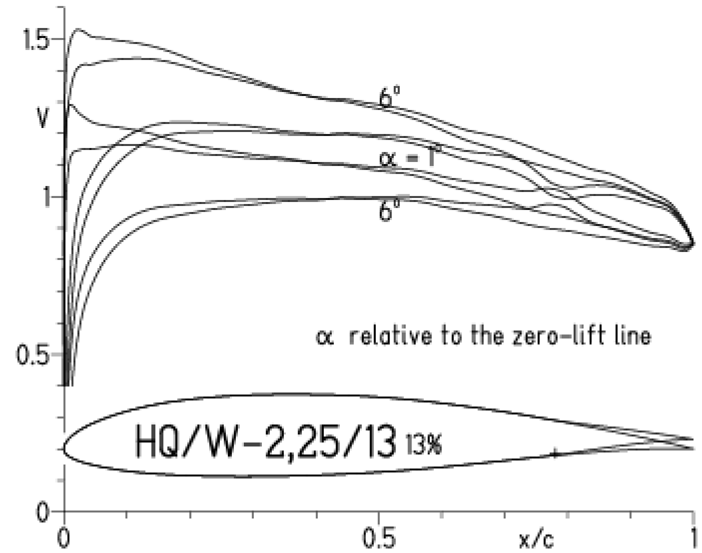


EPPLER 2005 V.

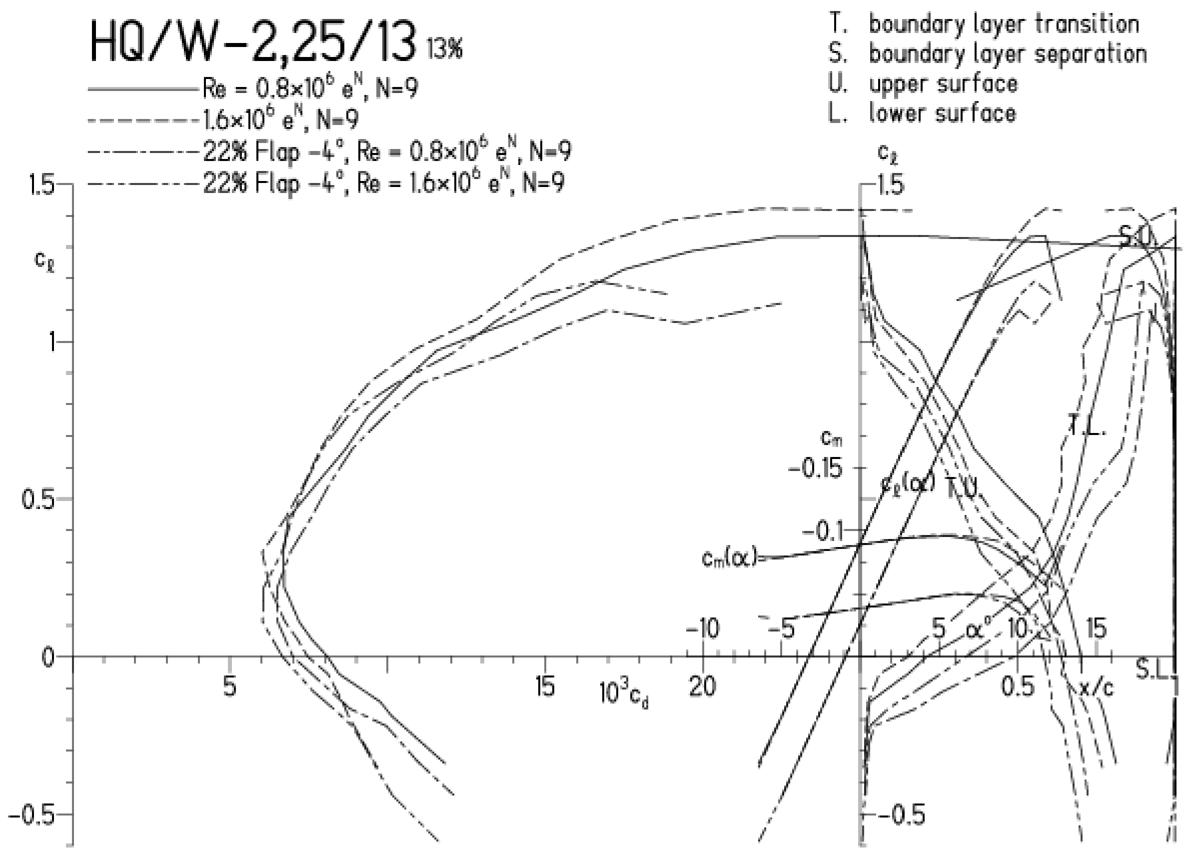


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

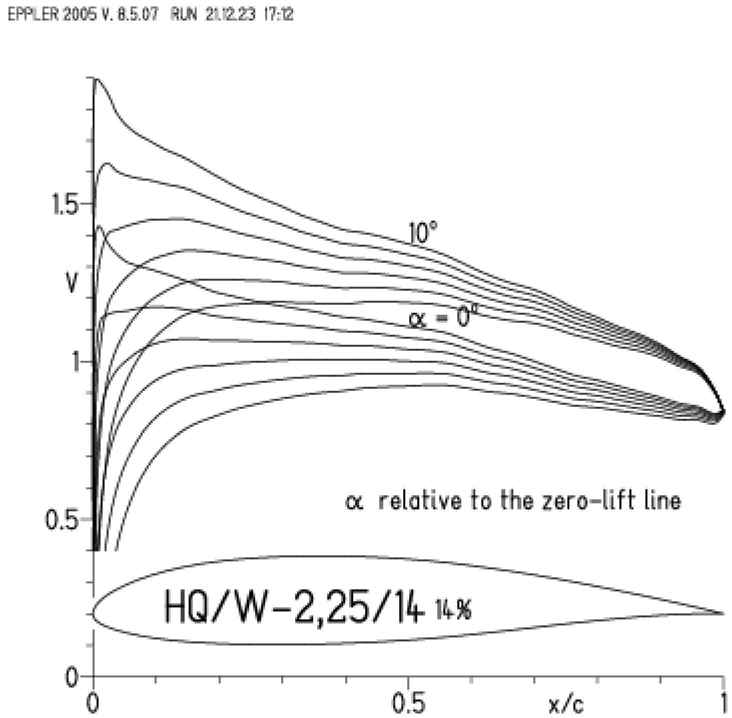
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

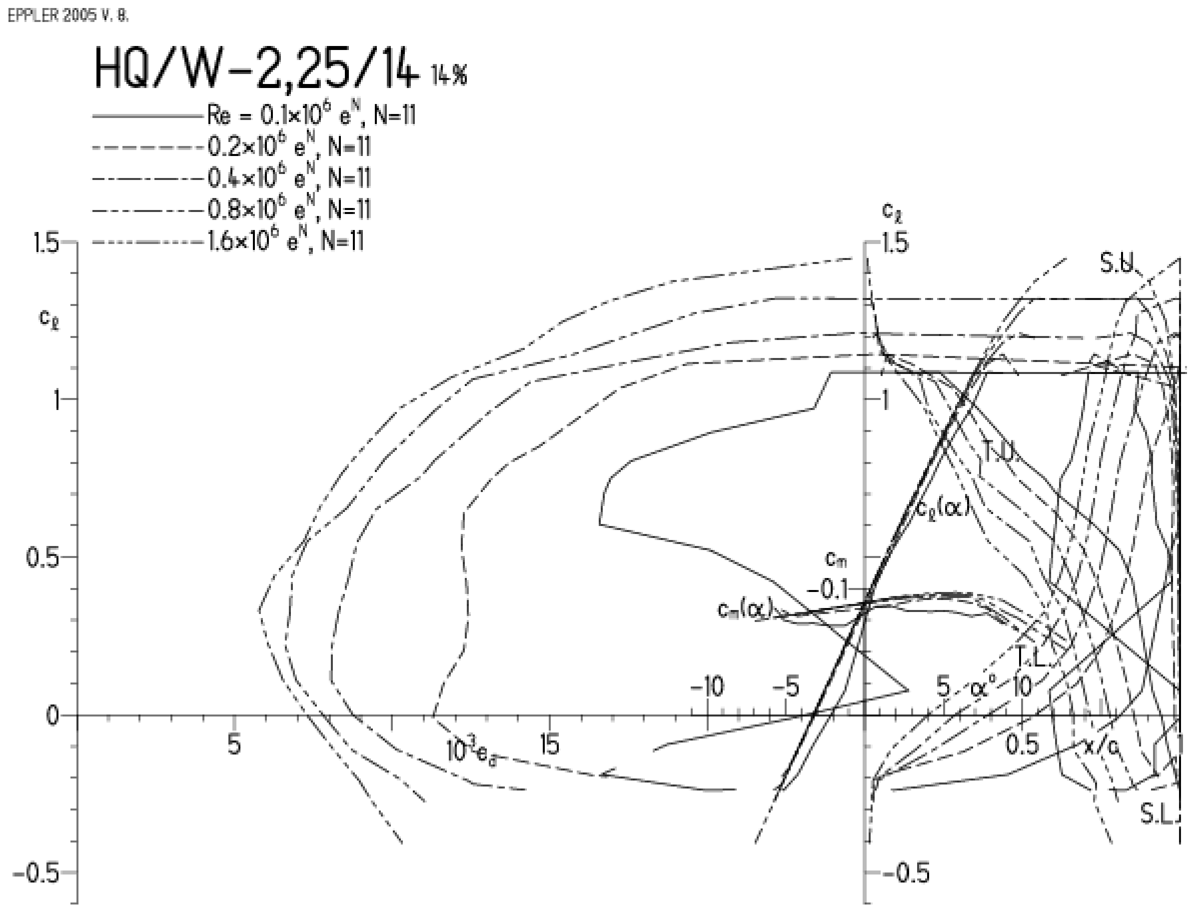


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

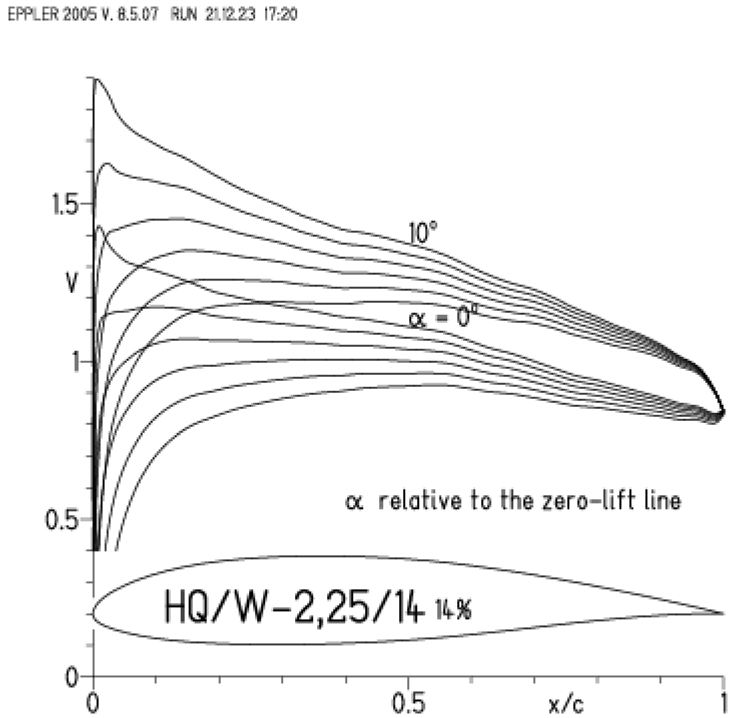


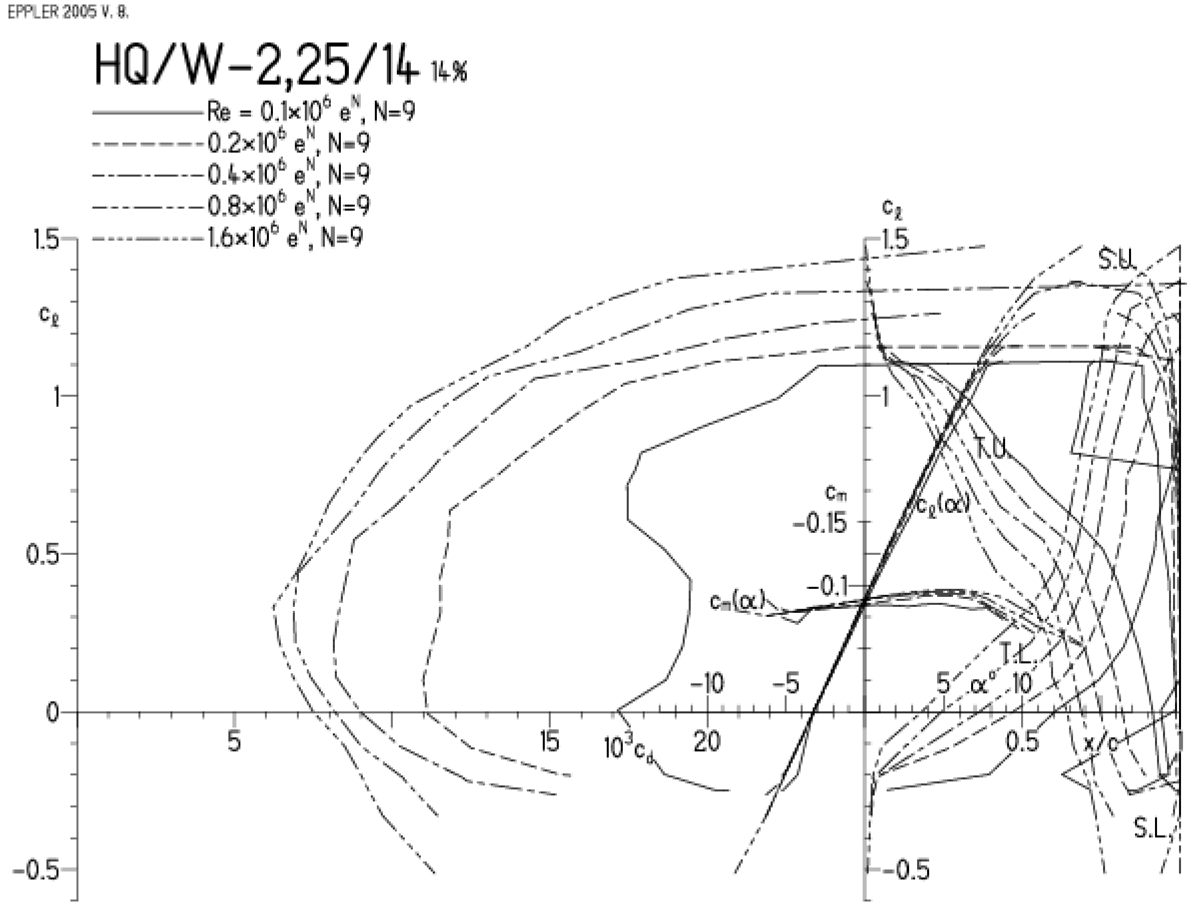
<u>HQ/W-2,25/14</u>, N=11





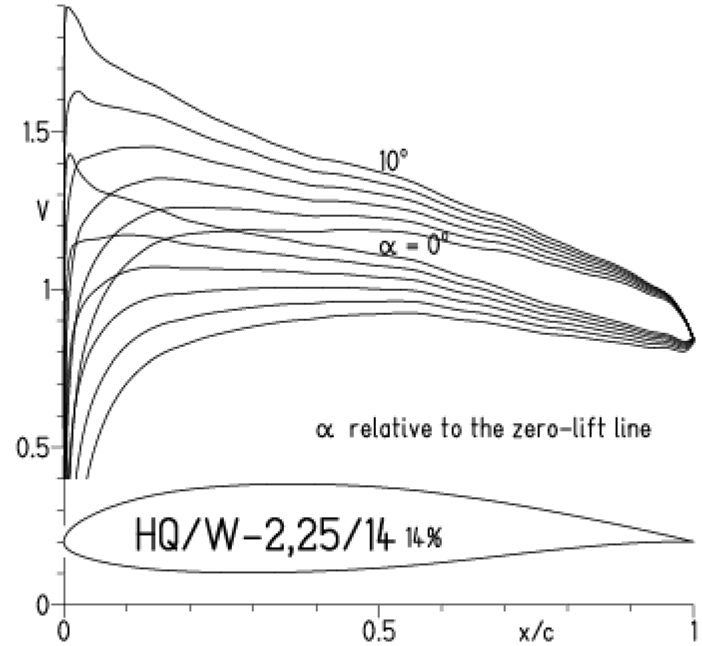
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

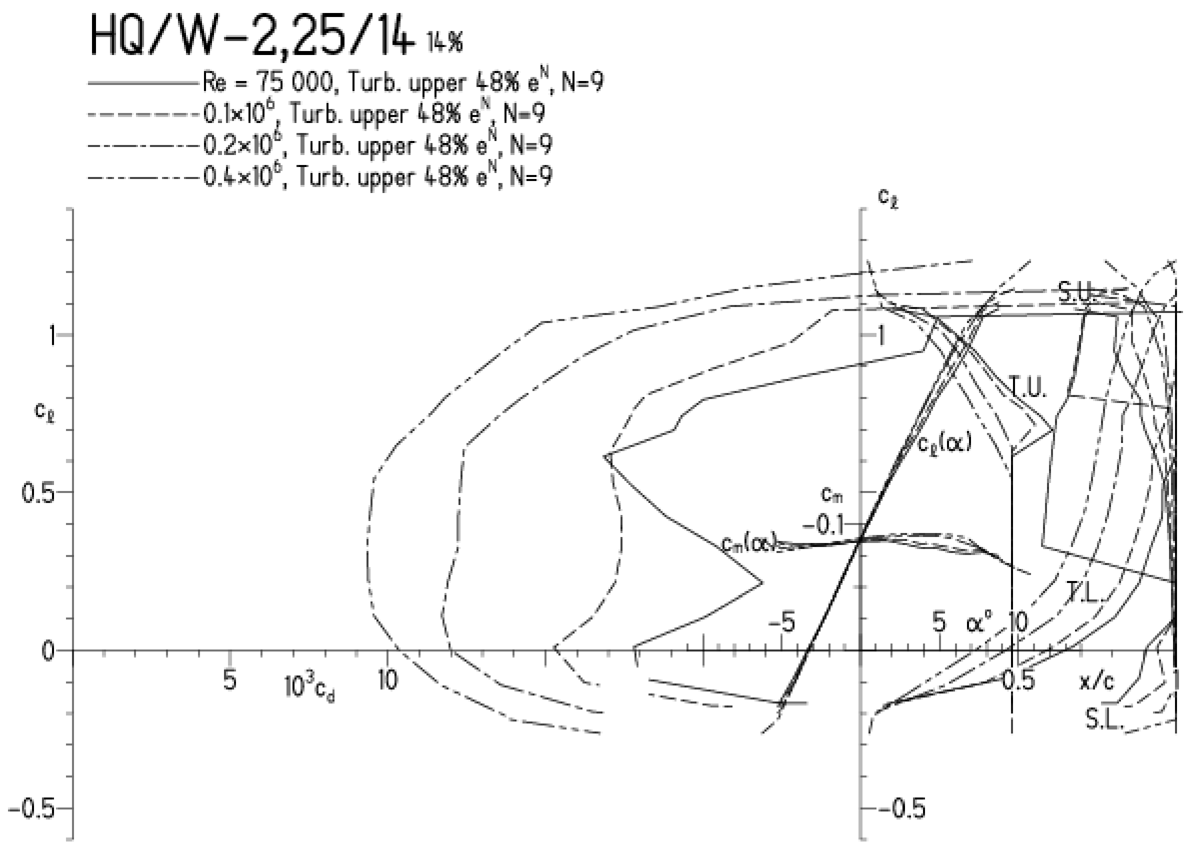

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_l
1.5
1
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−10
−5
5
α°
10
−0.5
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

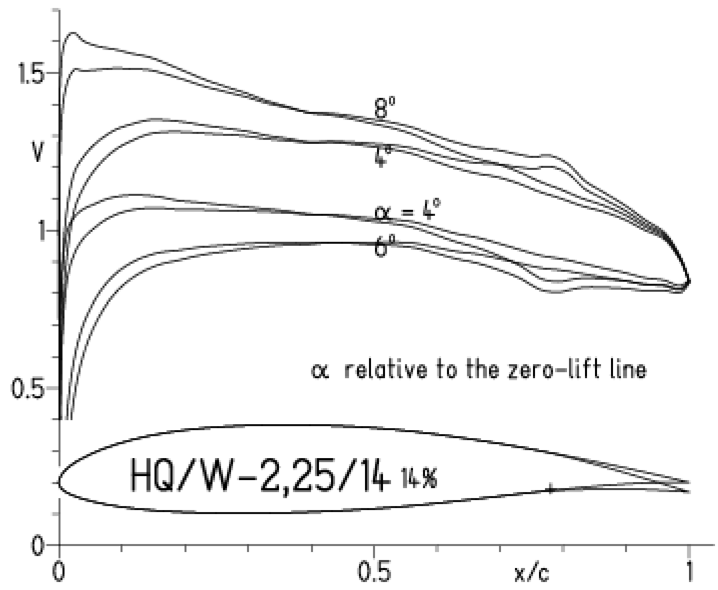


EPPLER 2005 V. 8.5.07 RU

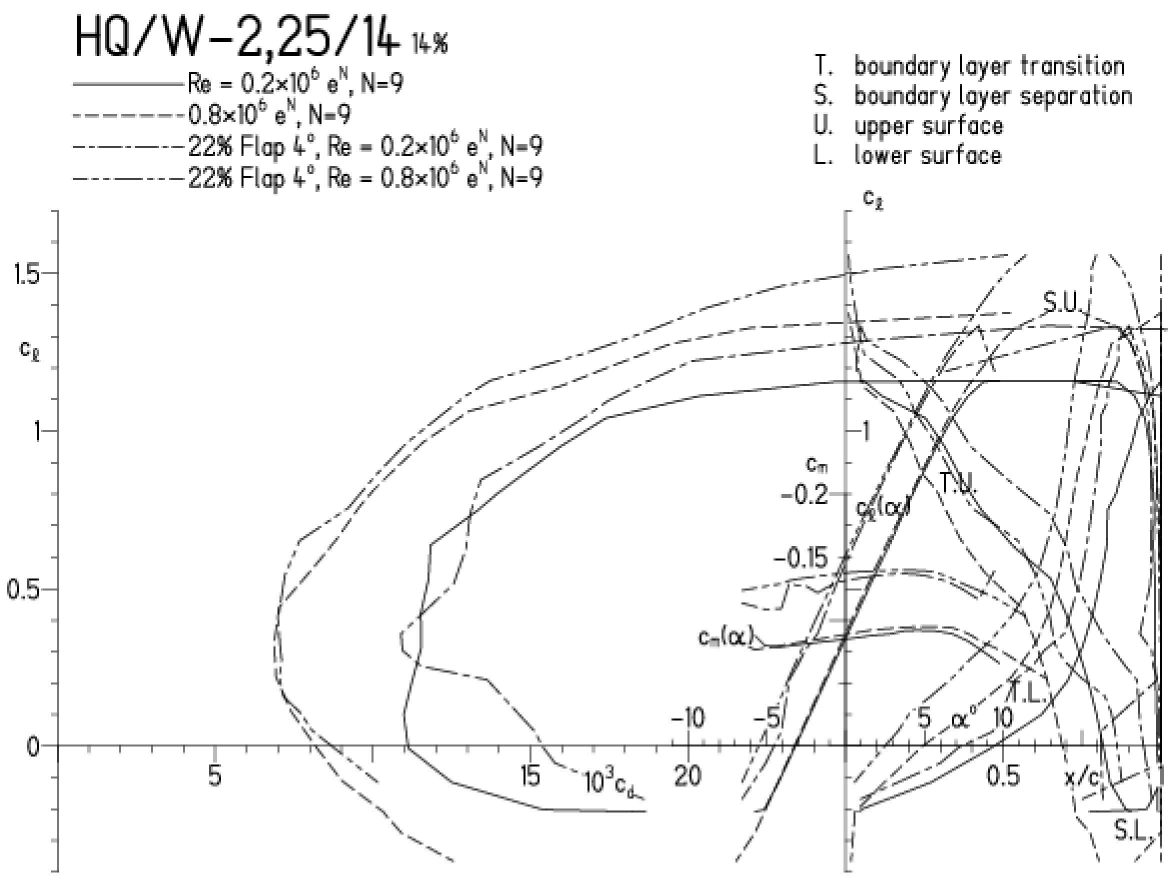


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

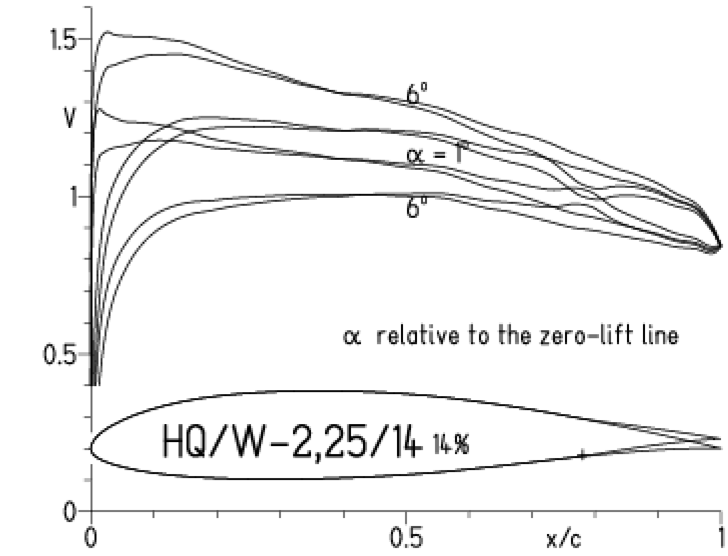


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

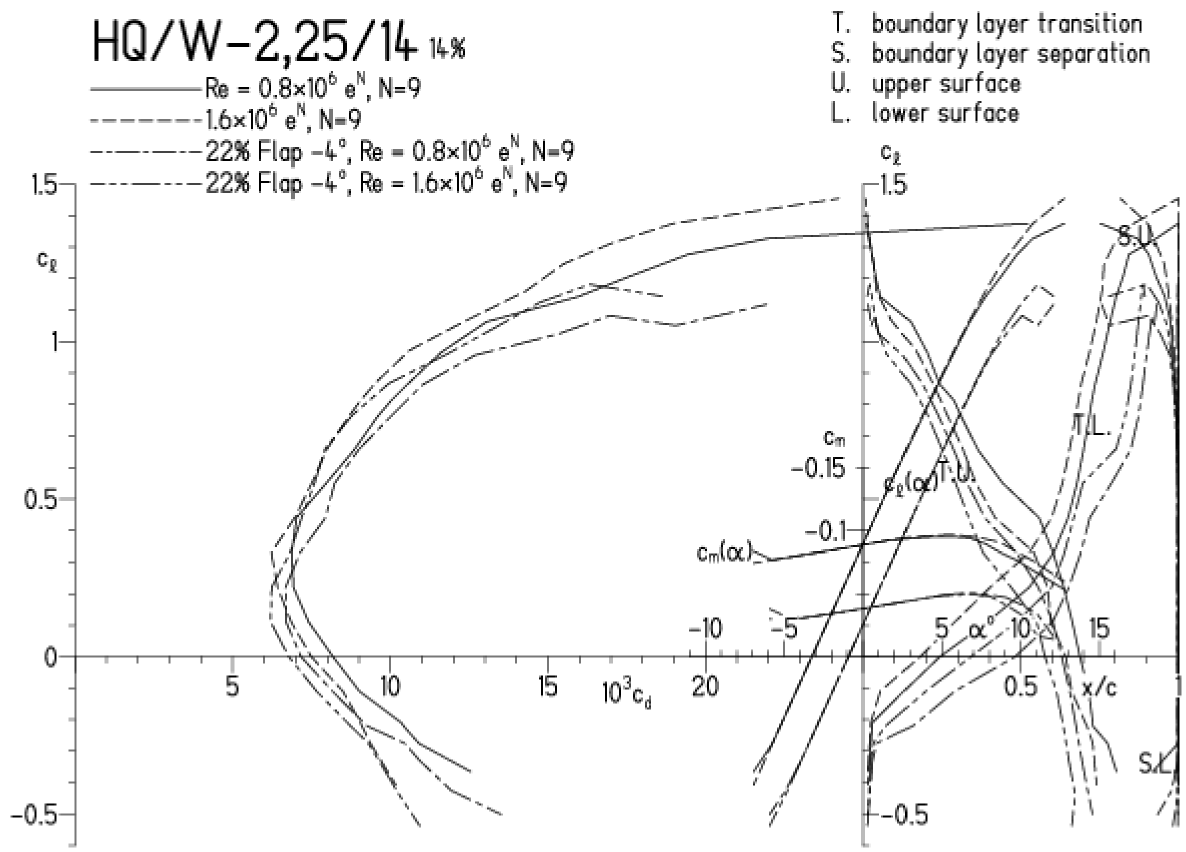


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

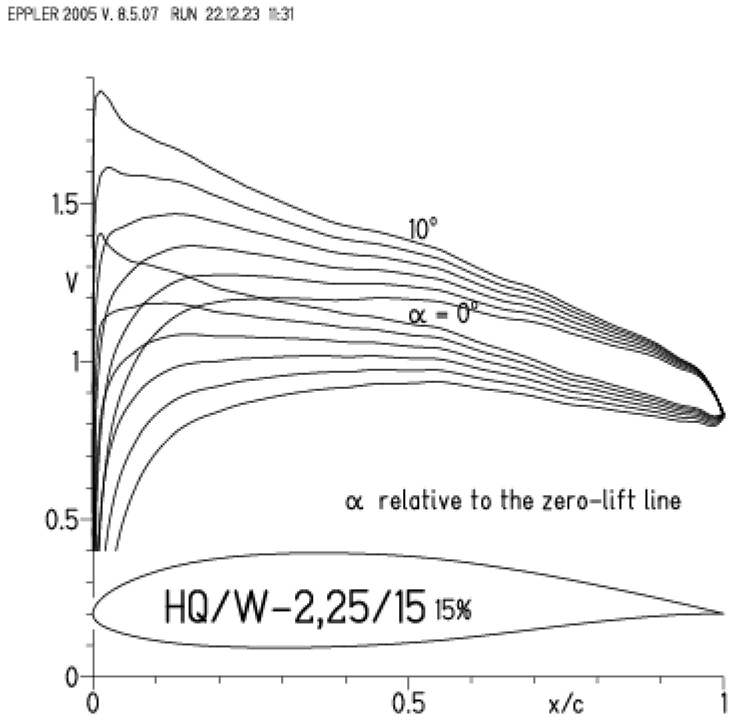
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

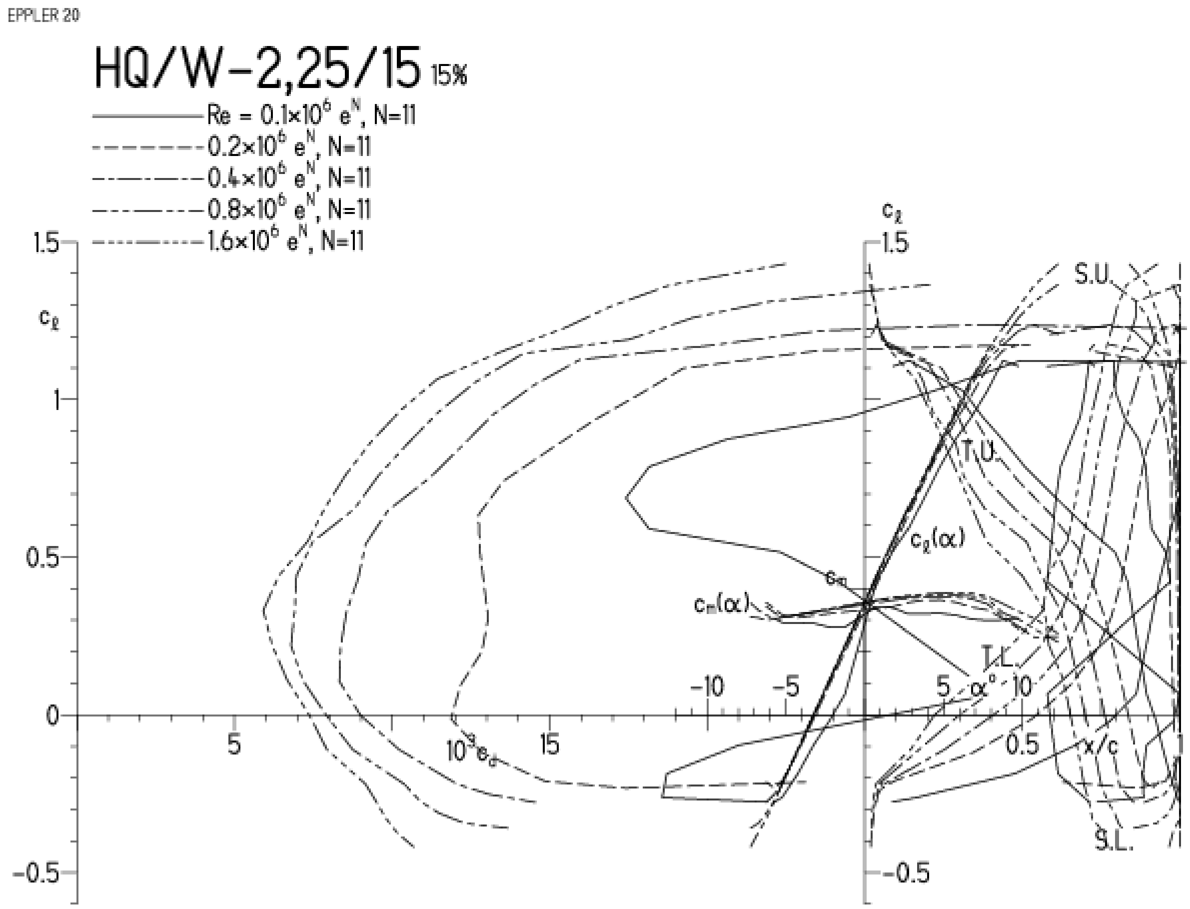


EPPLER 2005 V. 8.5.07

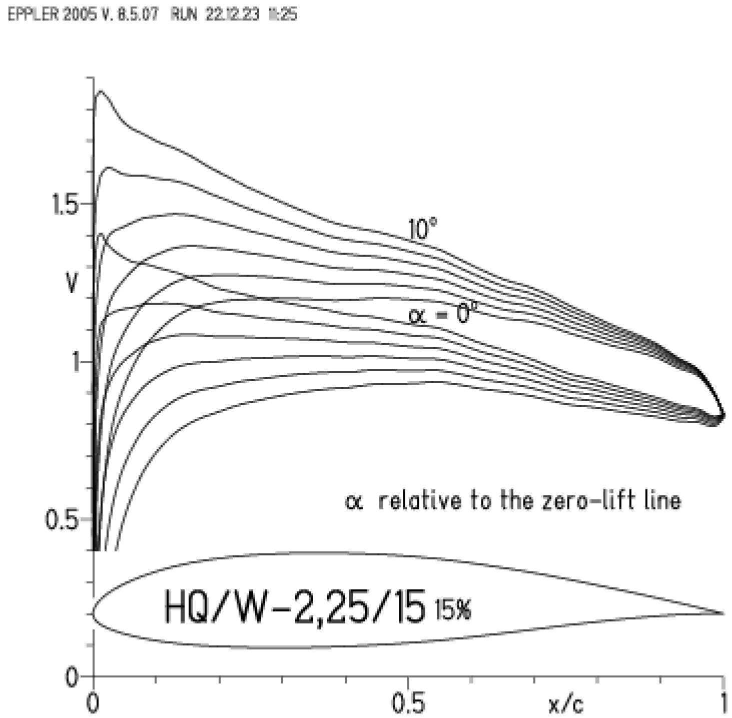


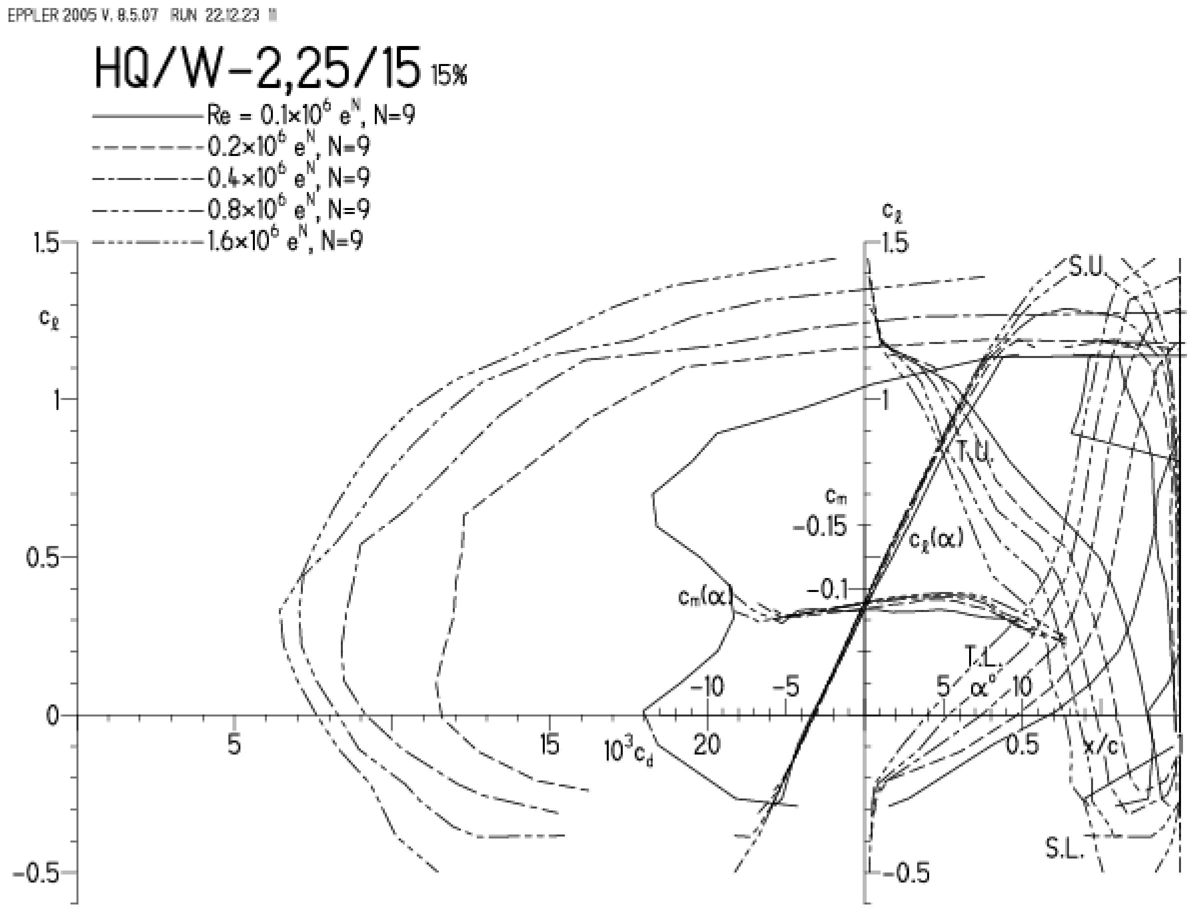
HQ/W-2,25/15, N=11



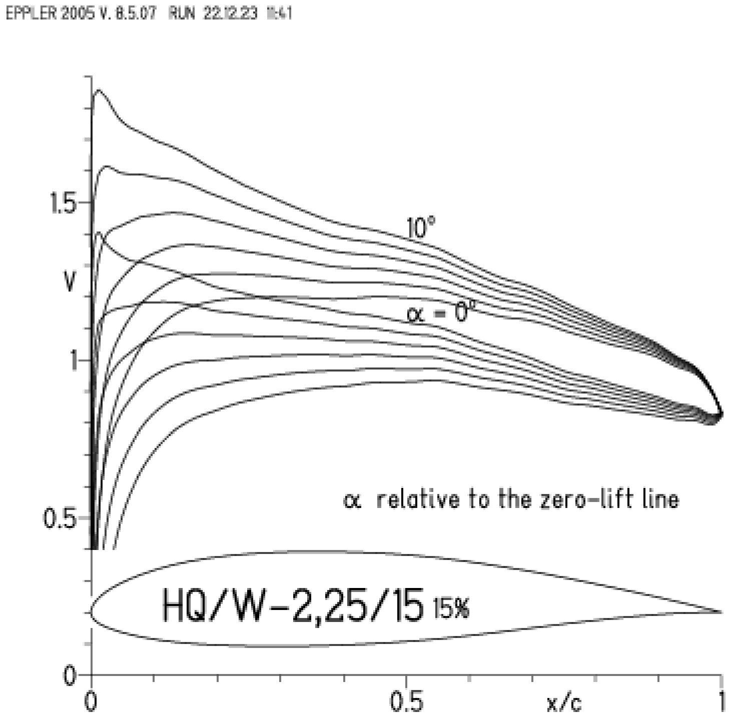


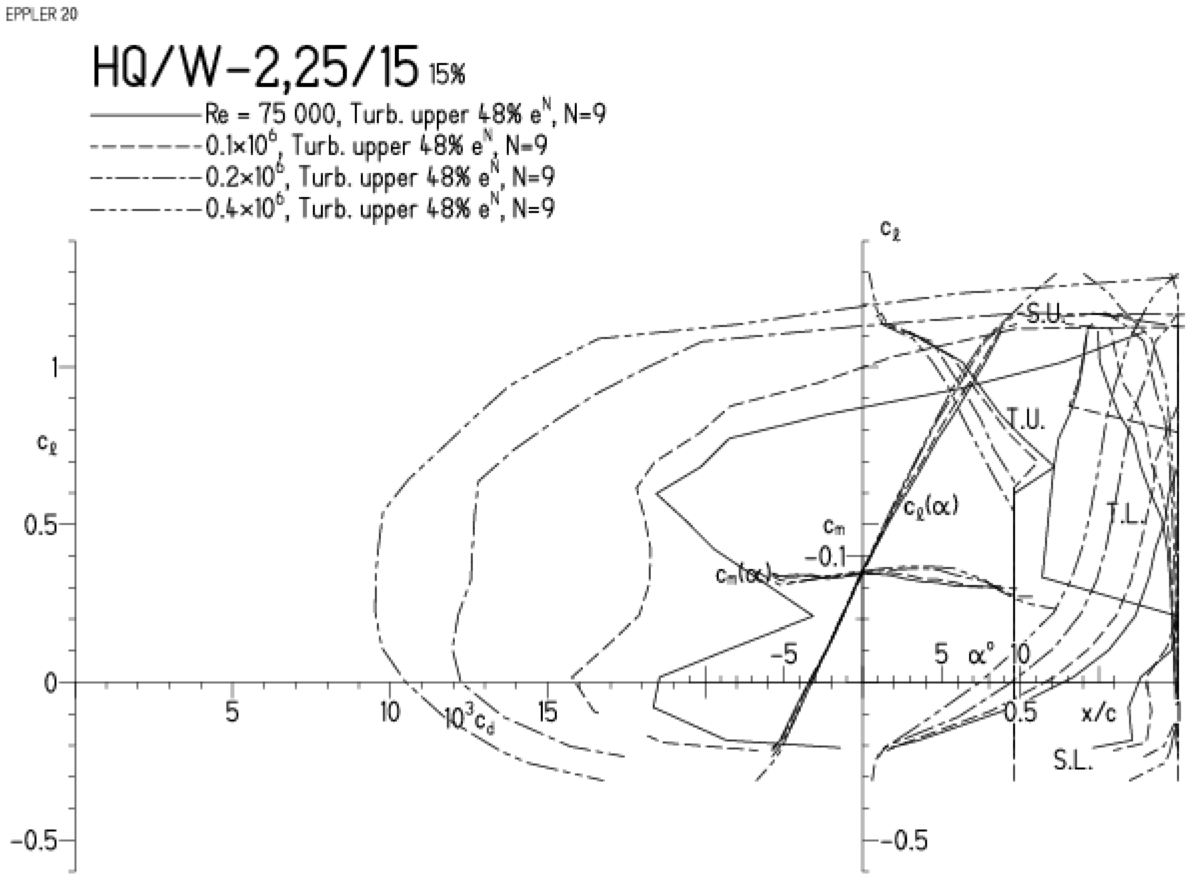
<u>HQ/W-2,25/15</u>, N=9





HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



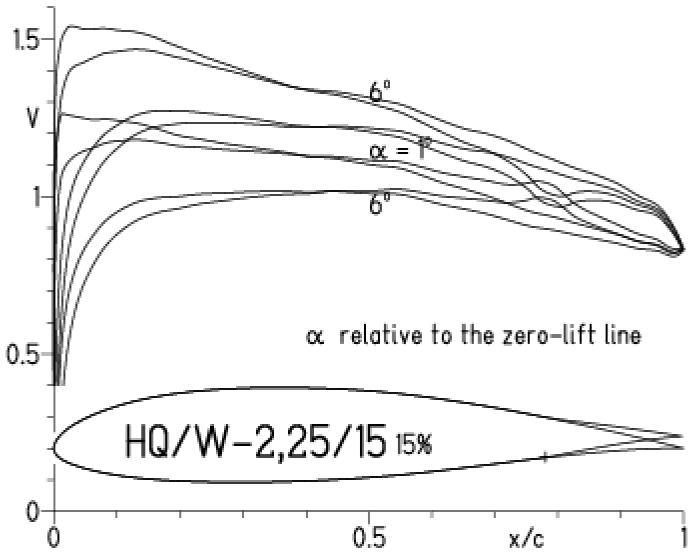


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

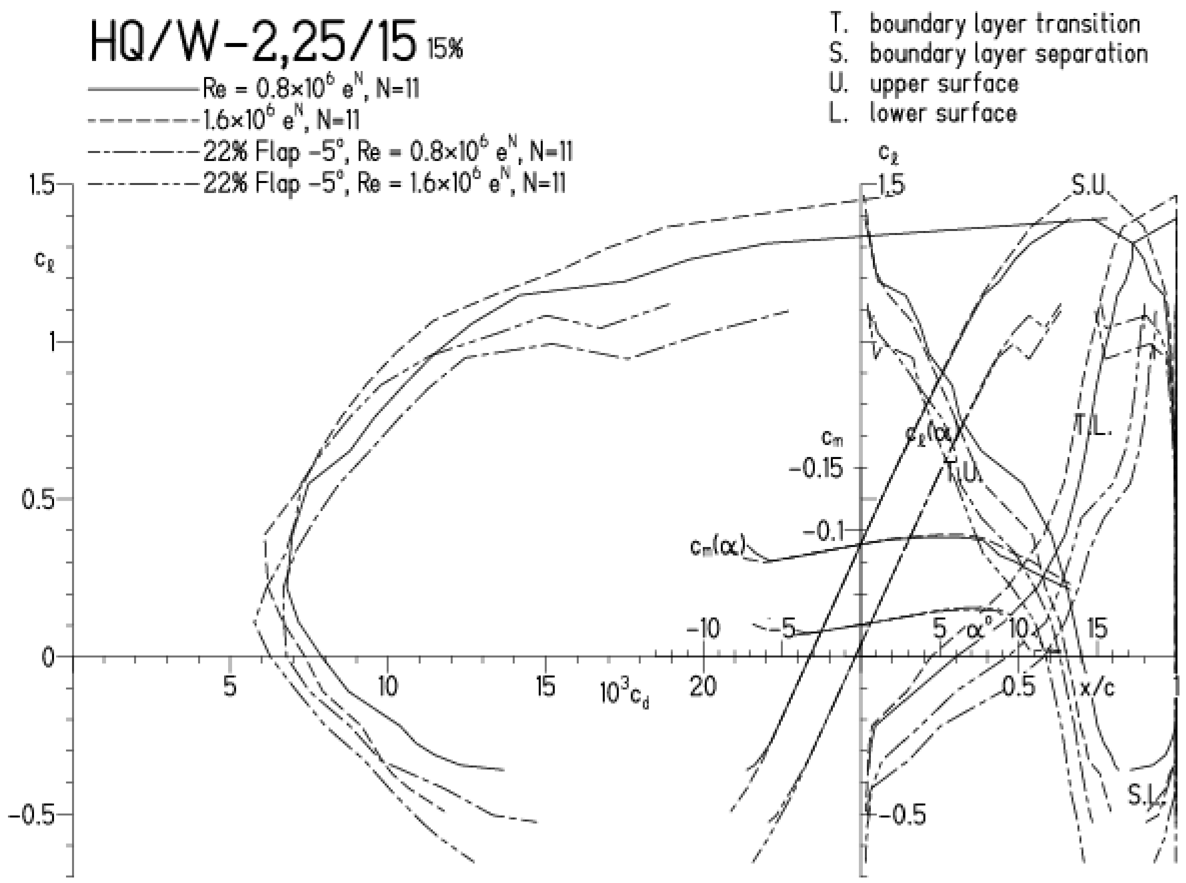
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

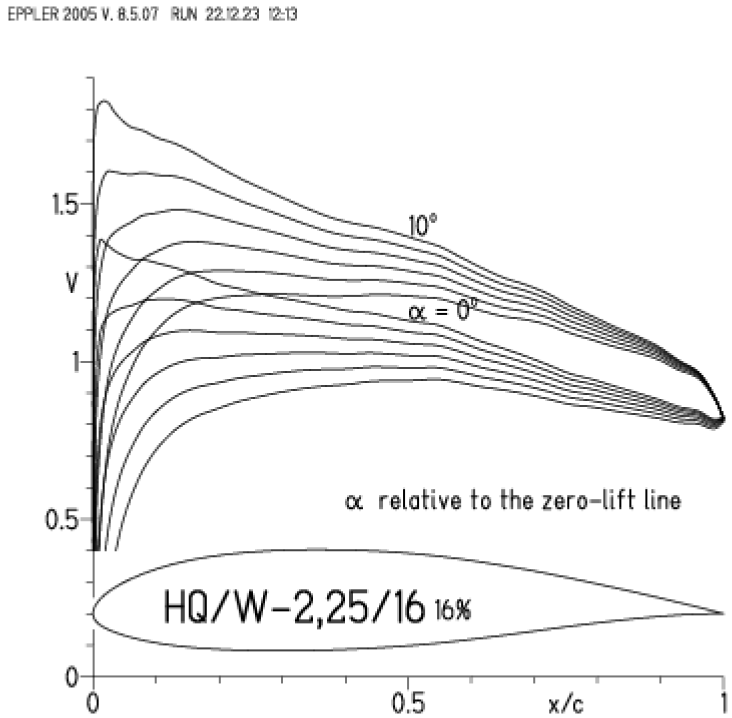
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

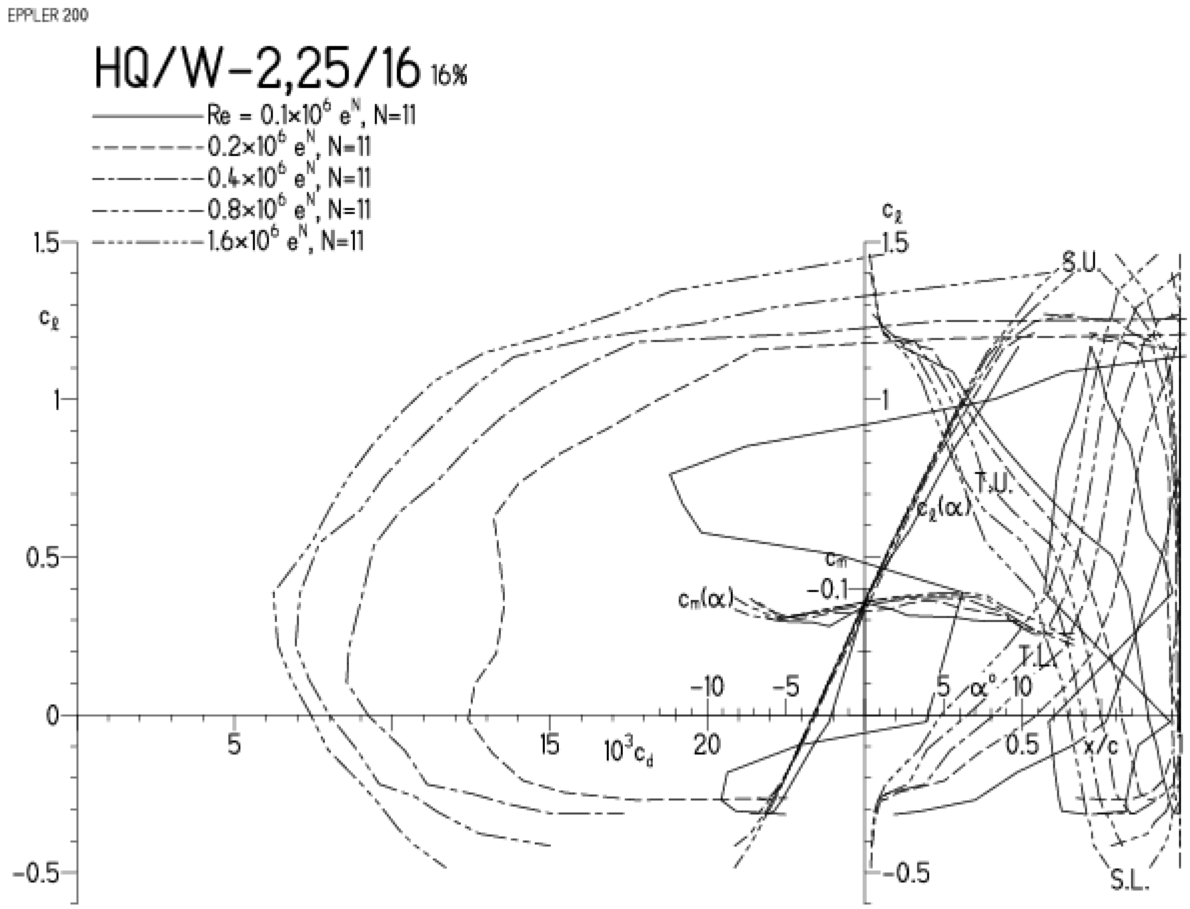


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

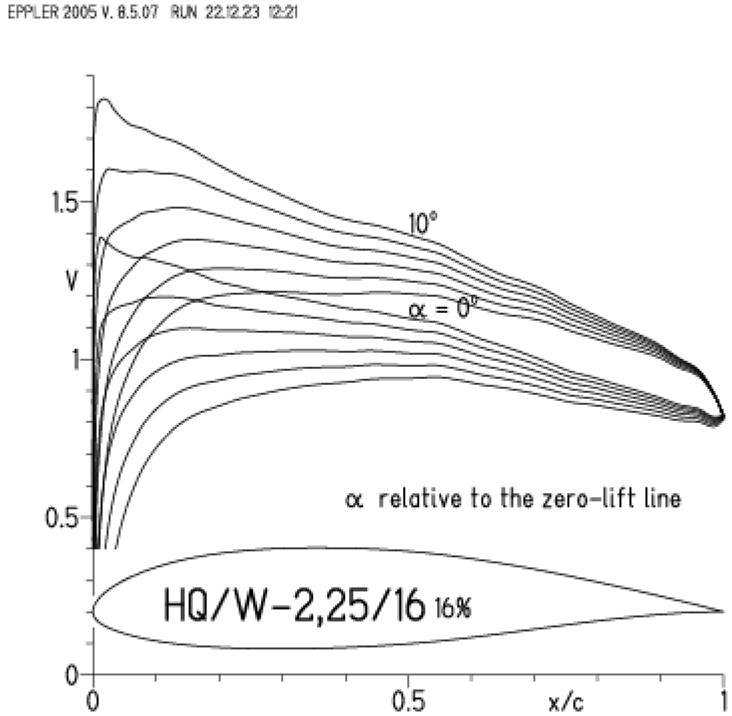


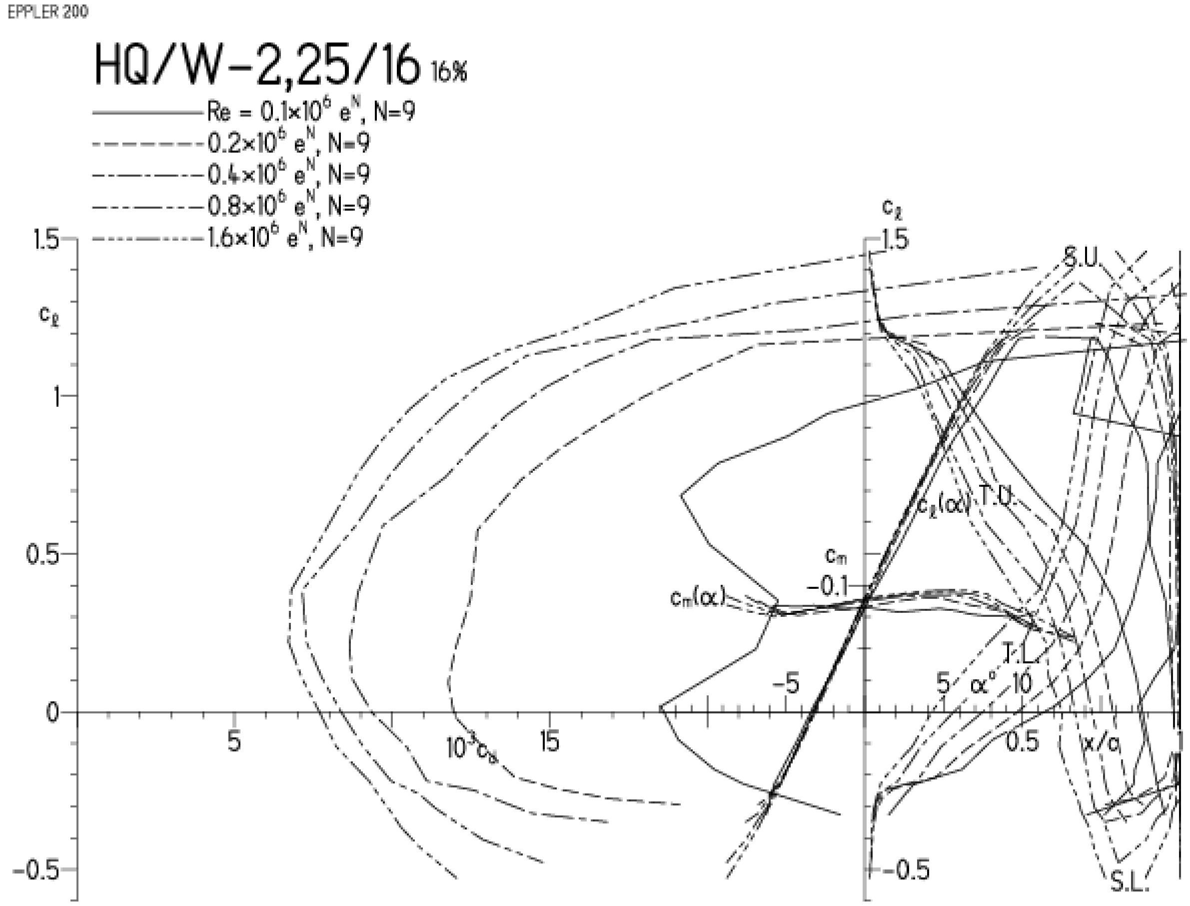
HQ/W-2,25/16, N=11



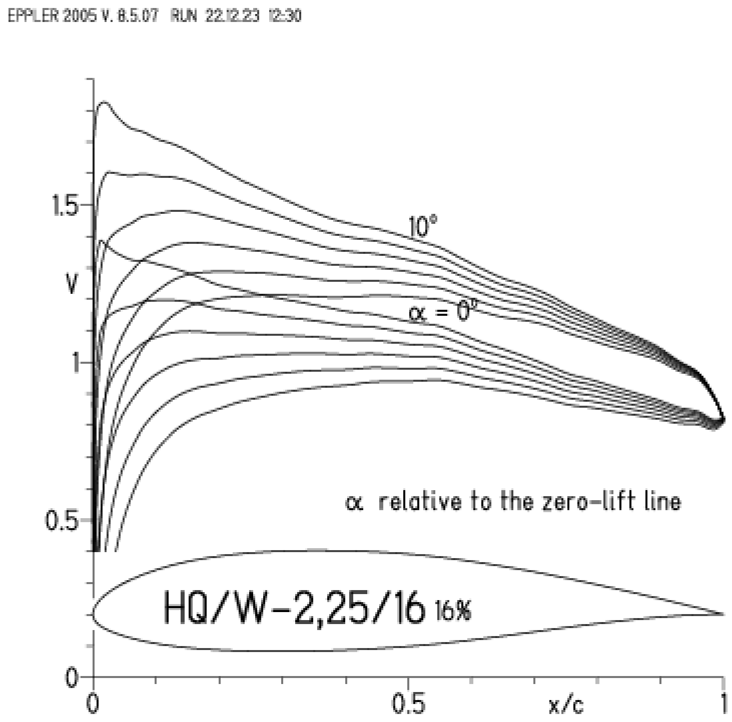


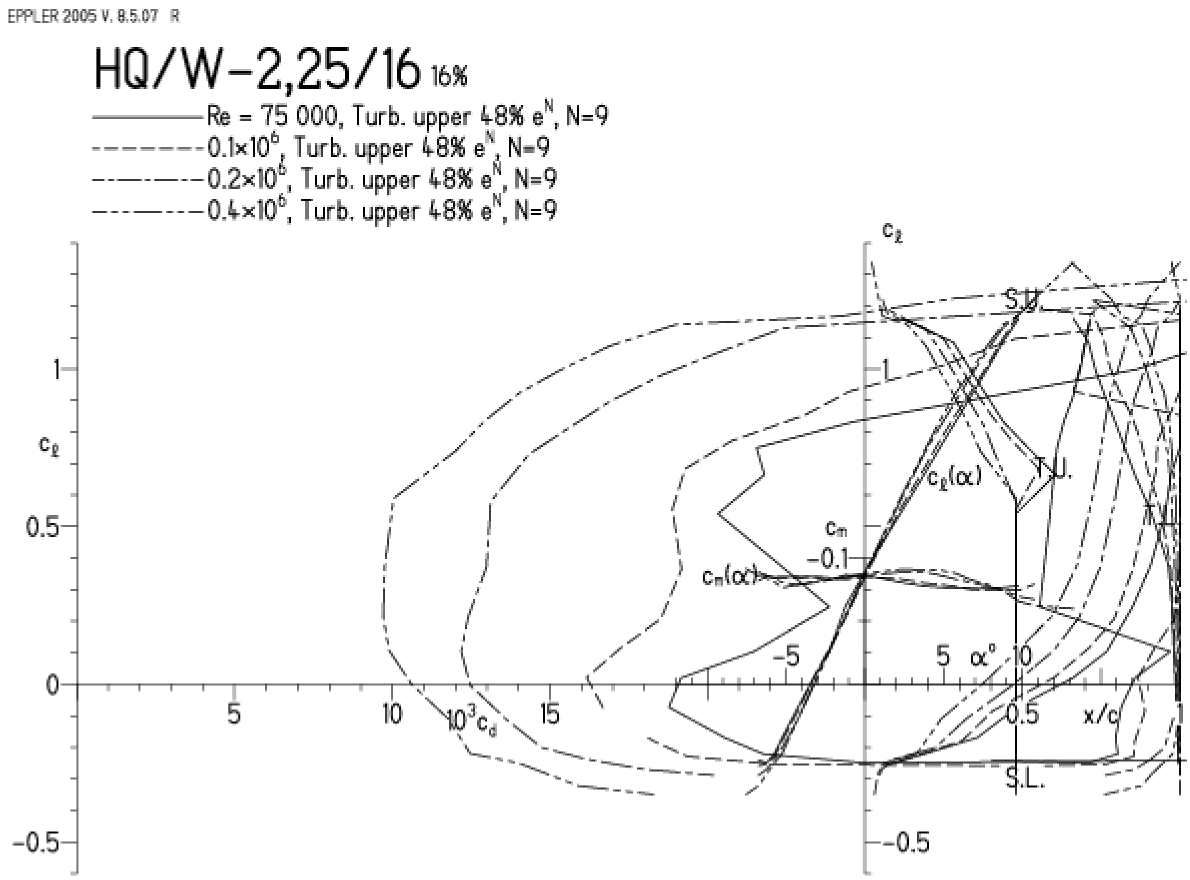
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^-3 c_d
15
S.U.
c_ℓ(α)
T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



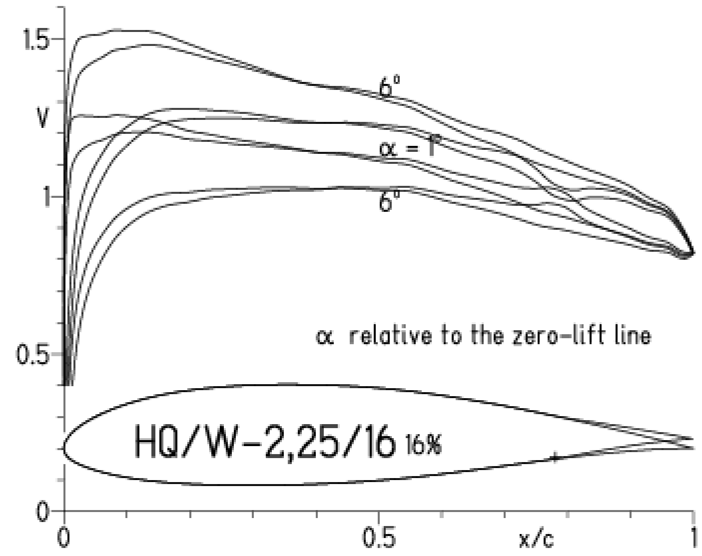


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

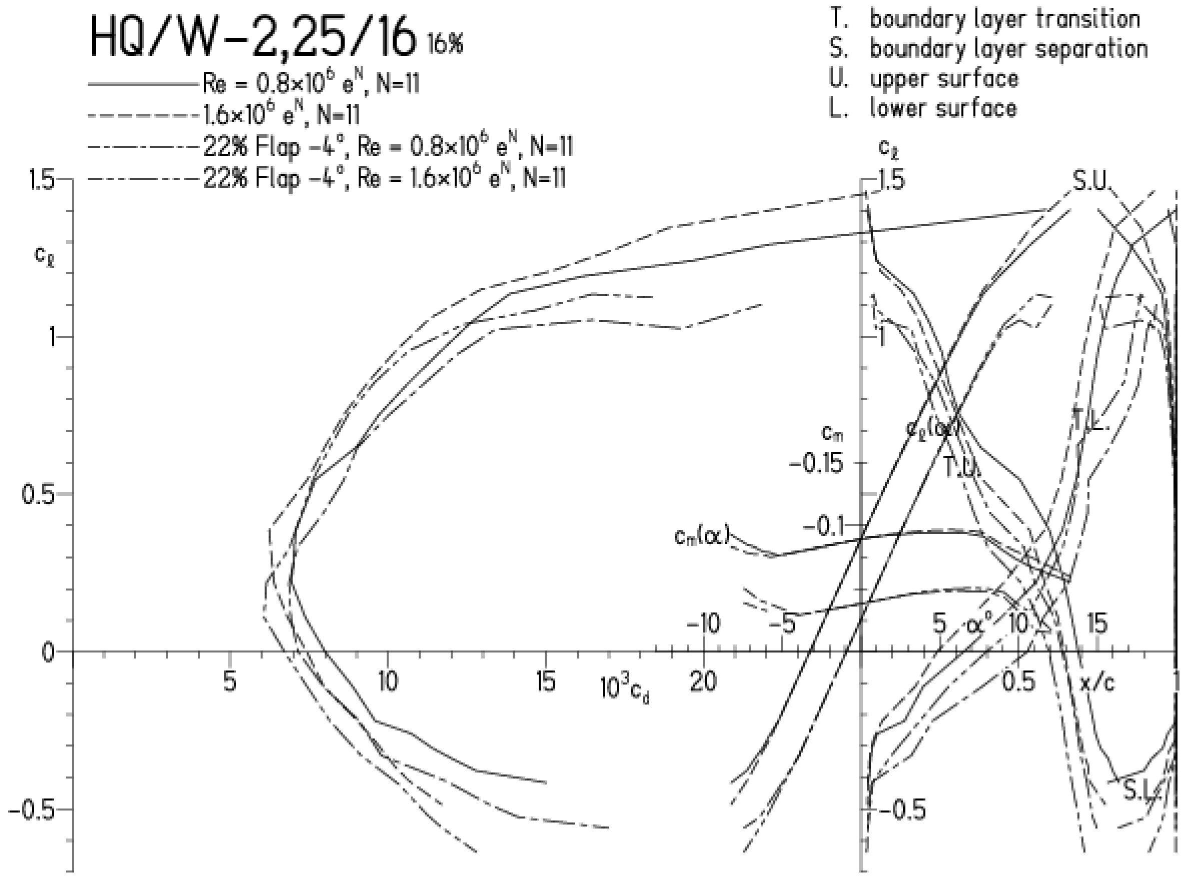
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

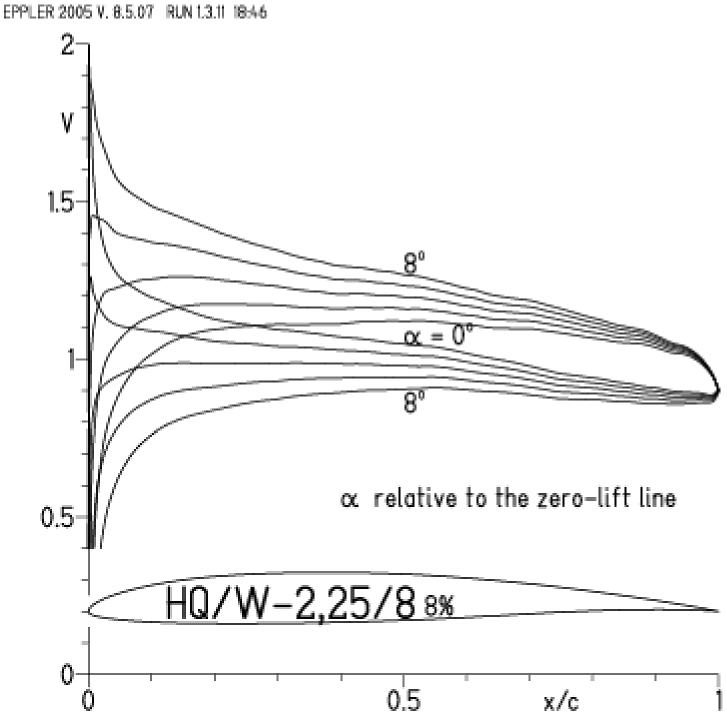
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

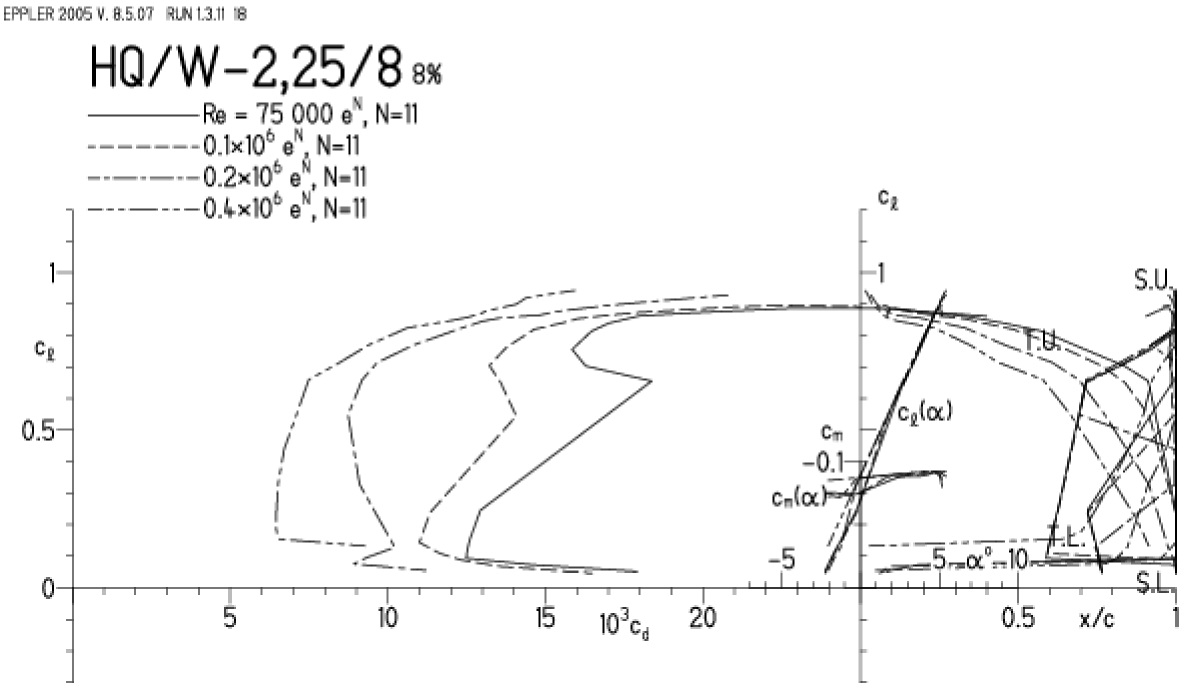


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

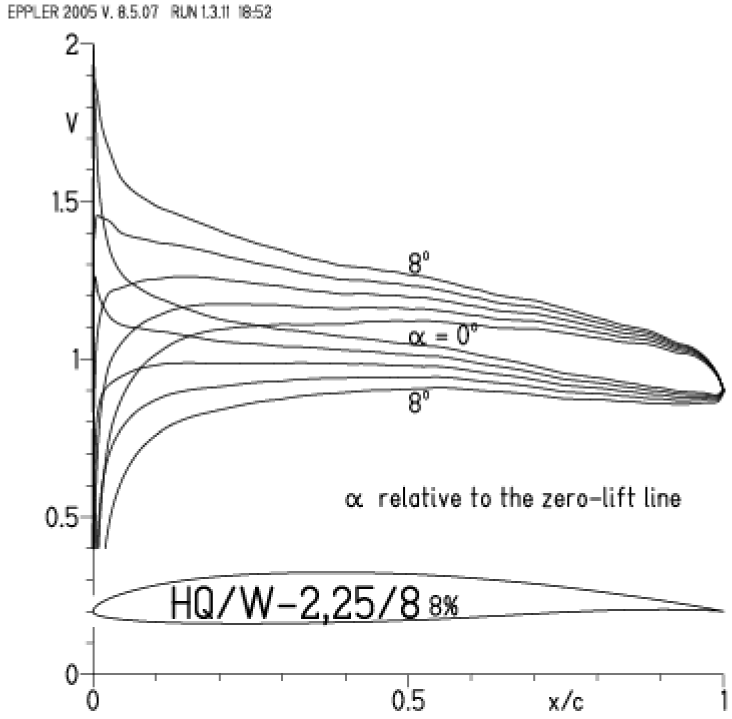


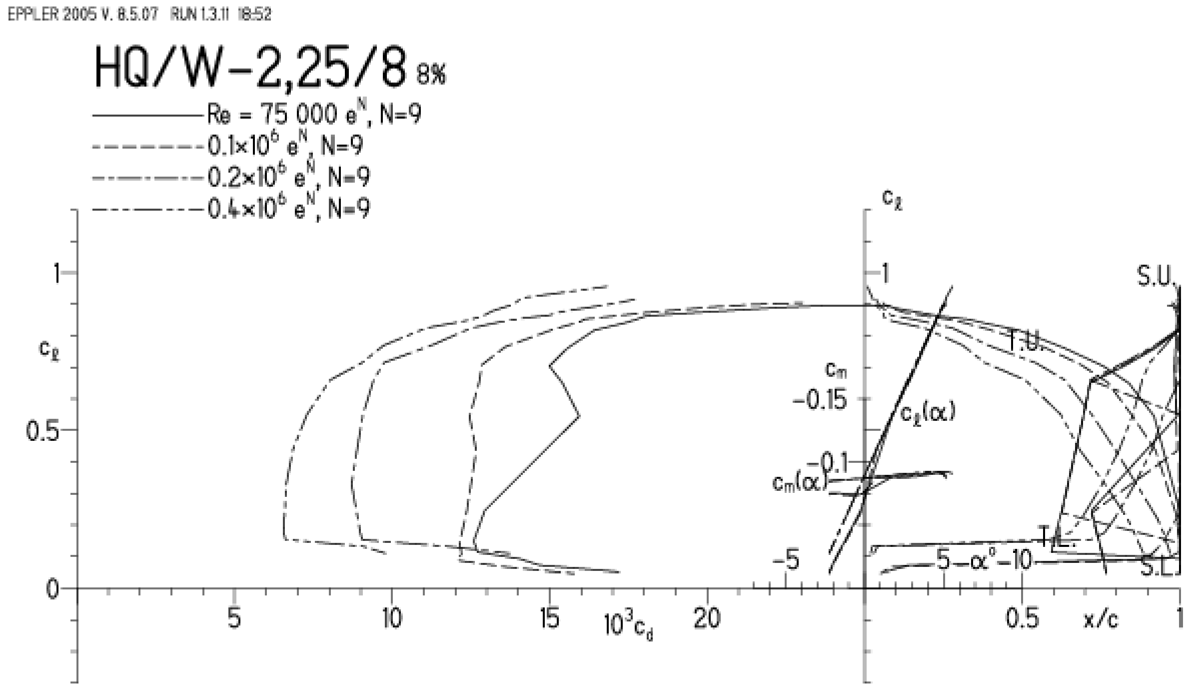
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

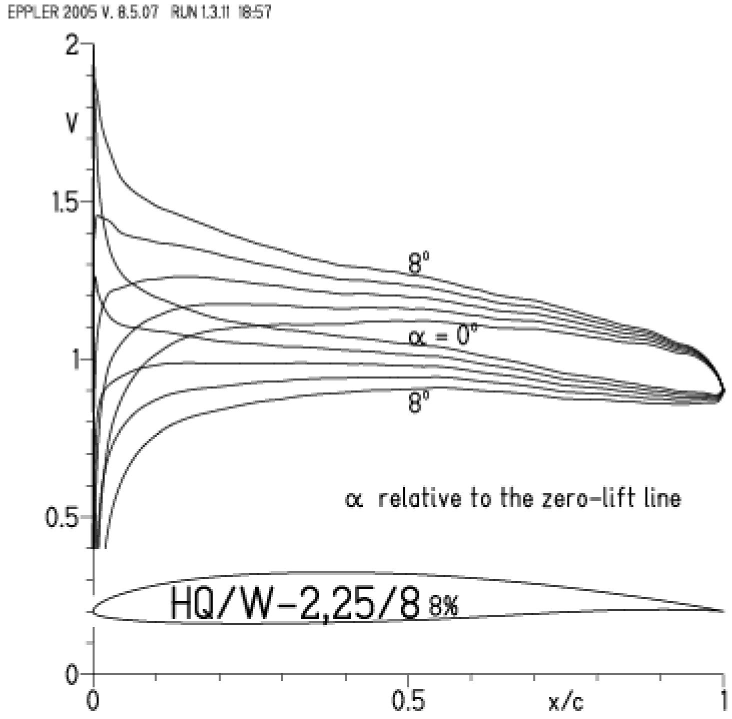

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
10^3 c_d
c_l(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
x/c

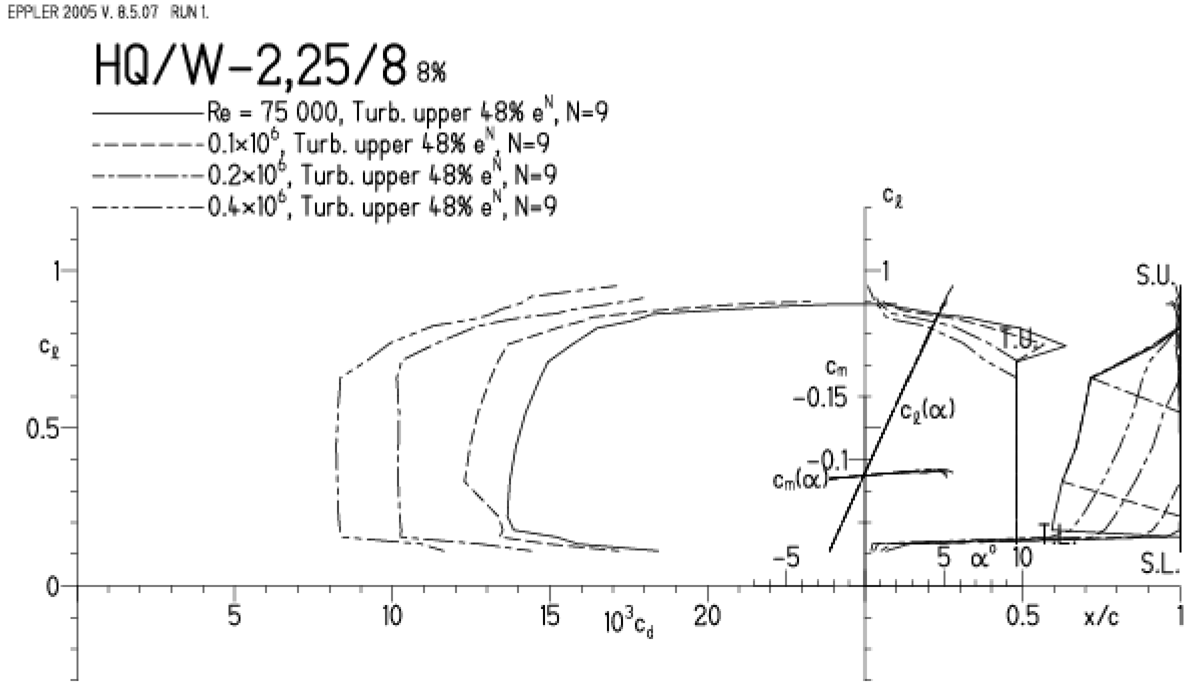
<u>HQ/W-2,25/8</u>, N=9





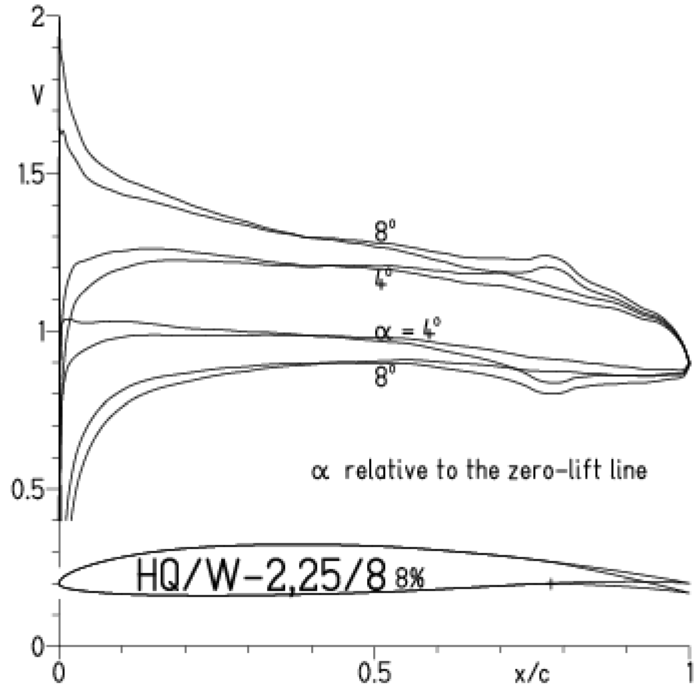
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



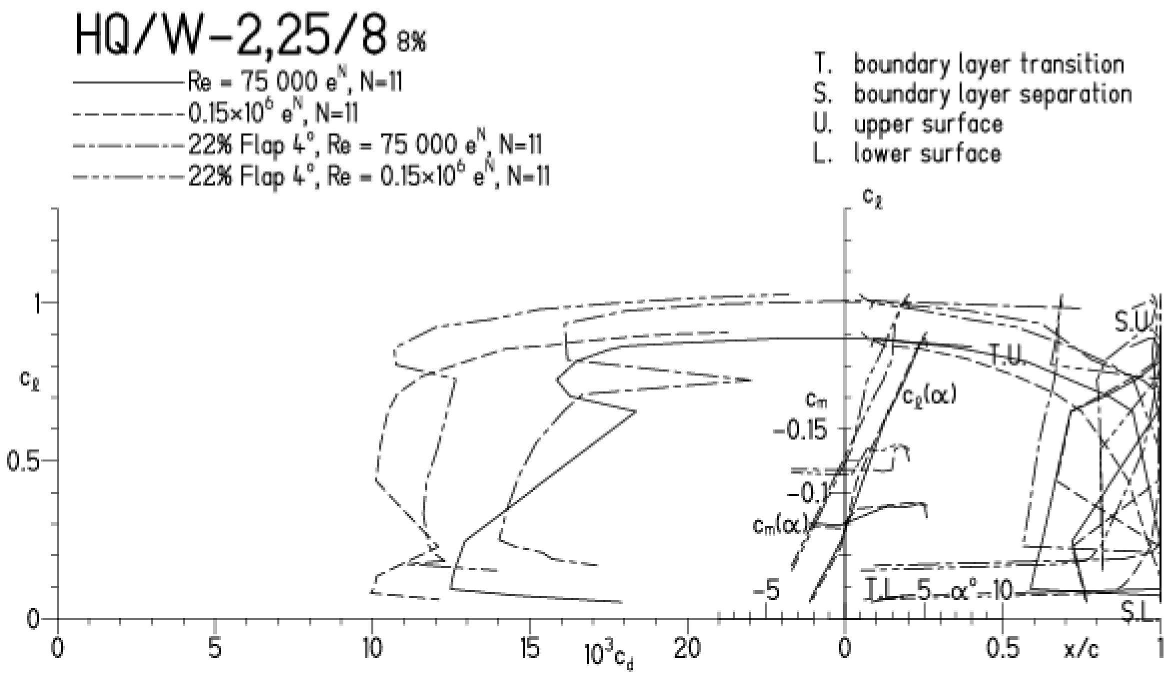


<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag

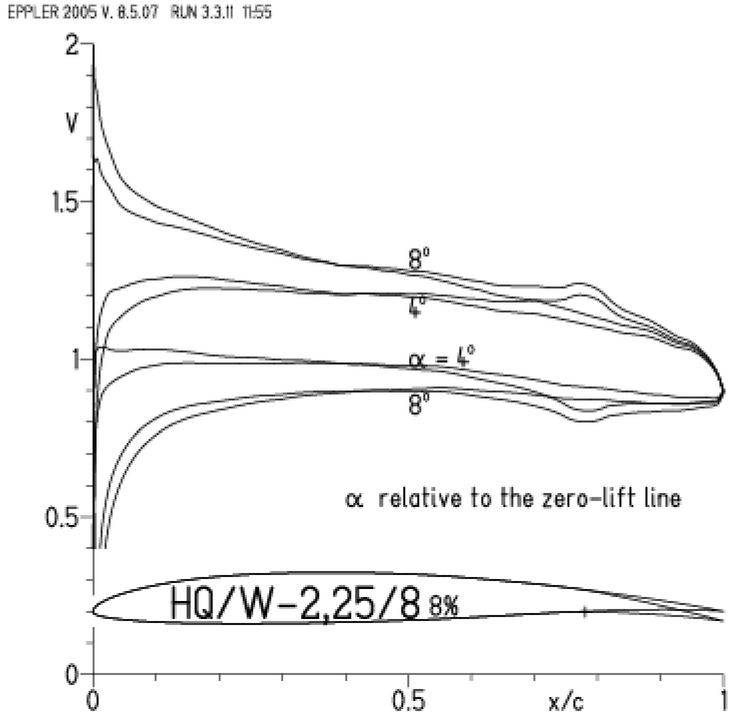
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

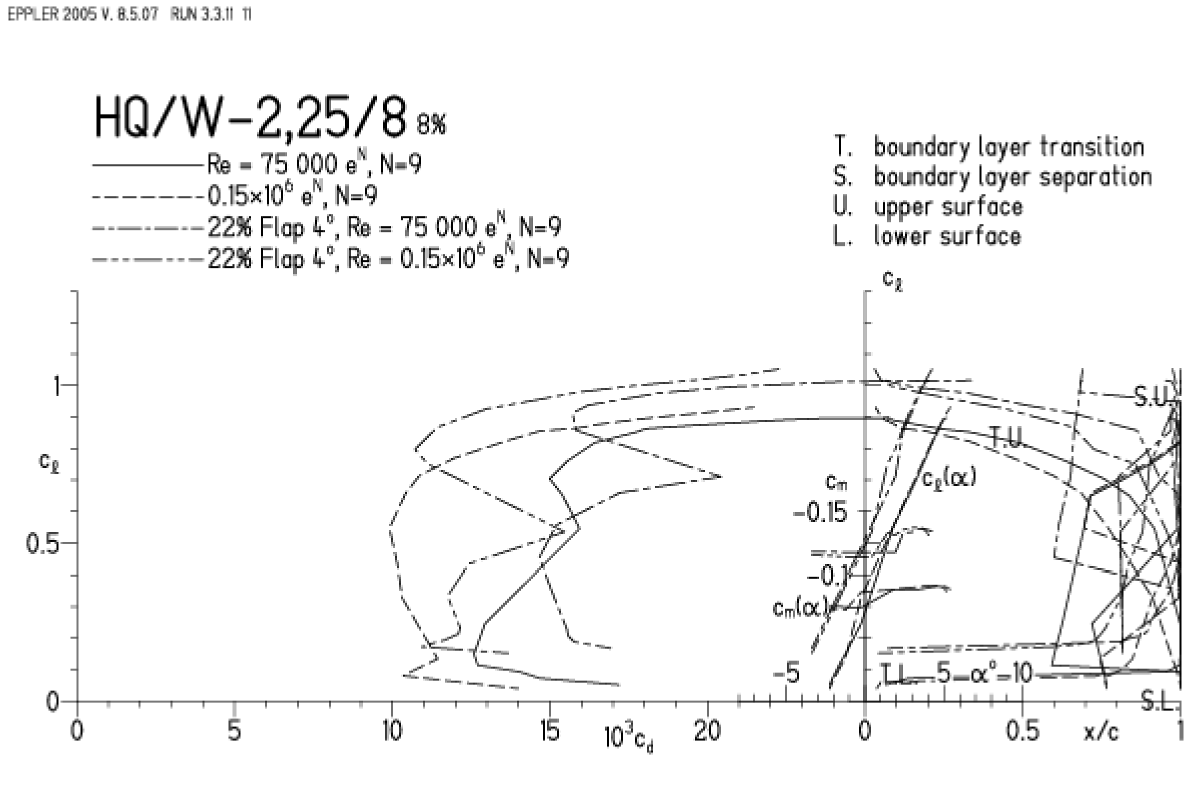


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

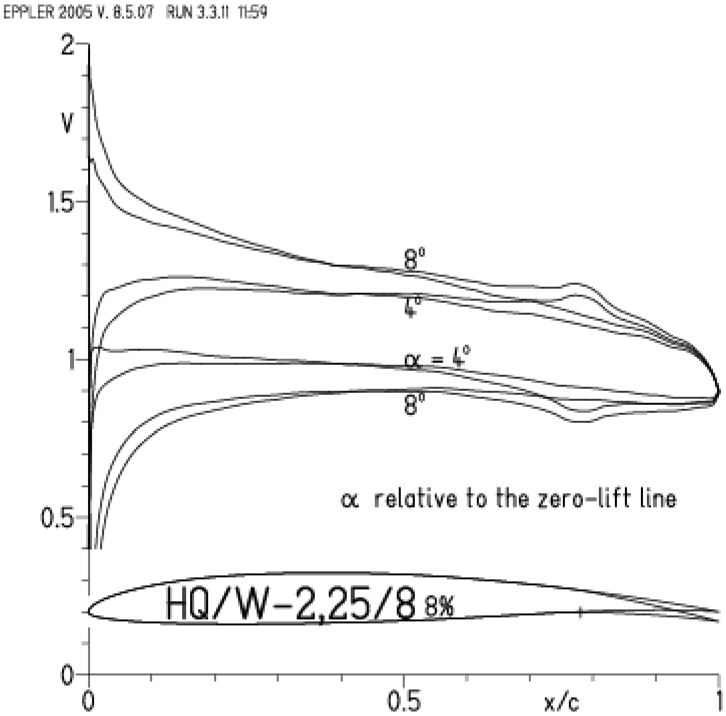


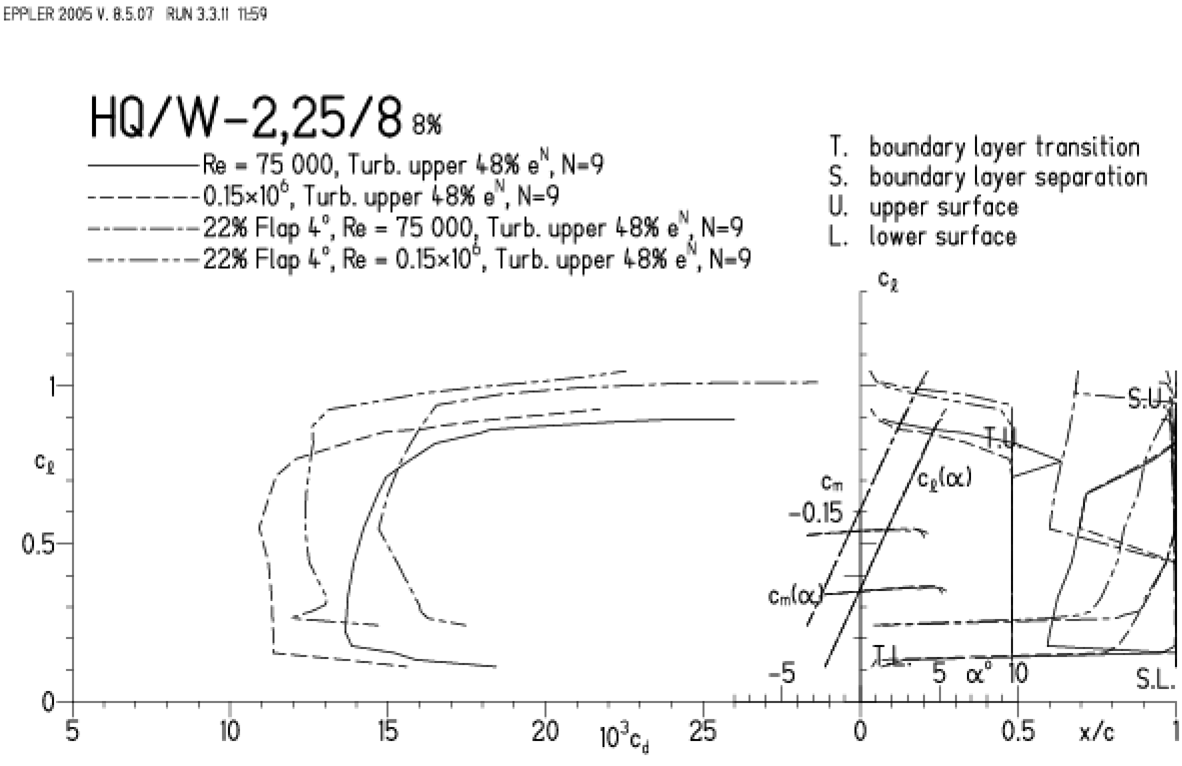
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





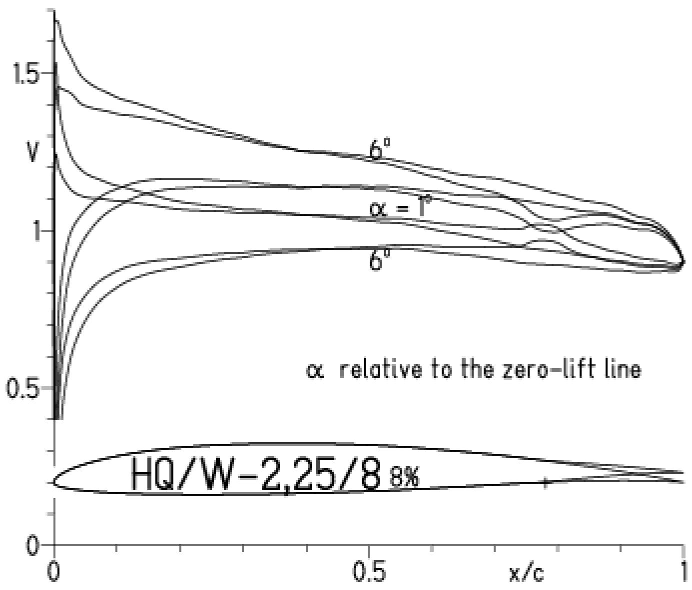
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



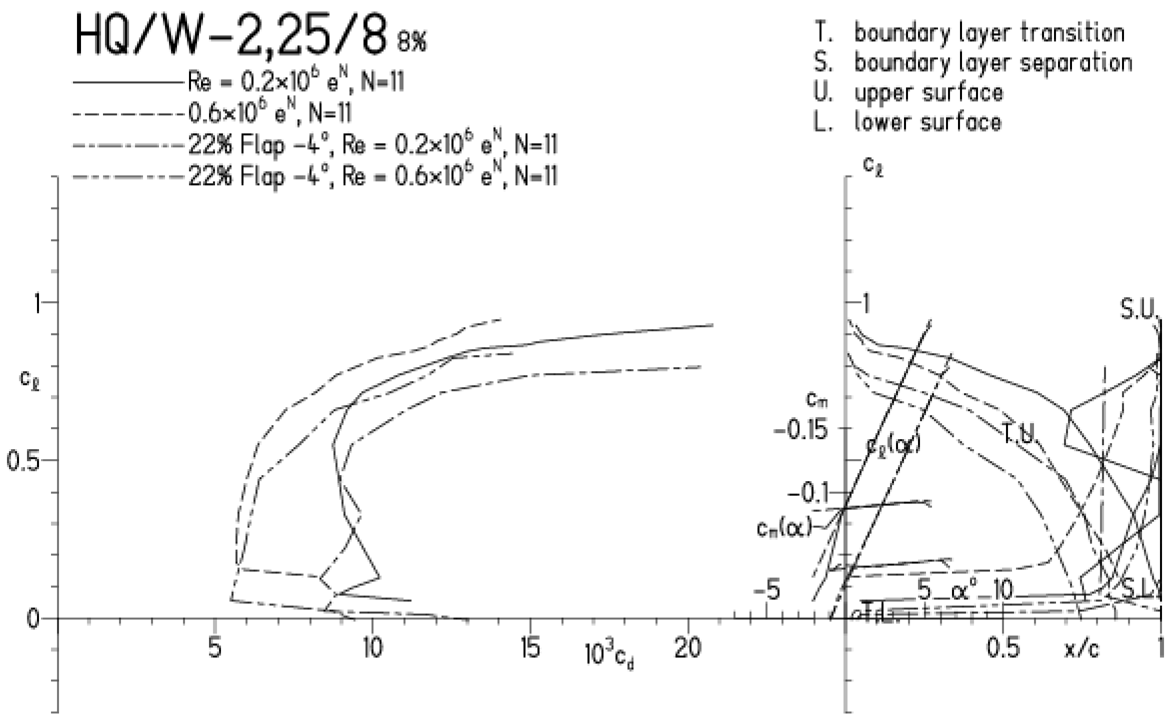


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

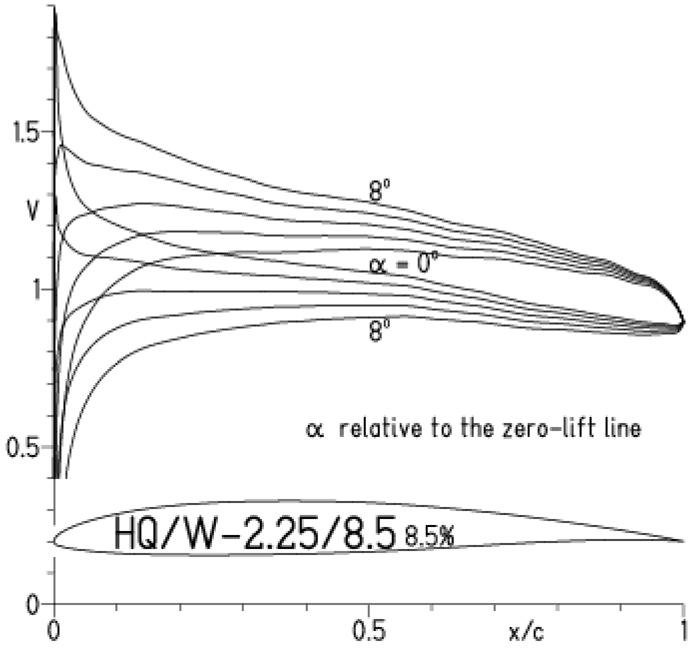


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

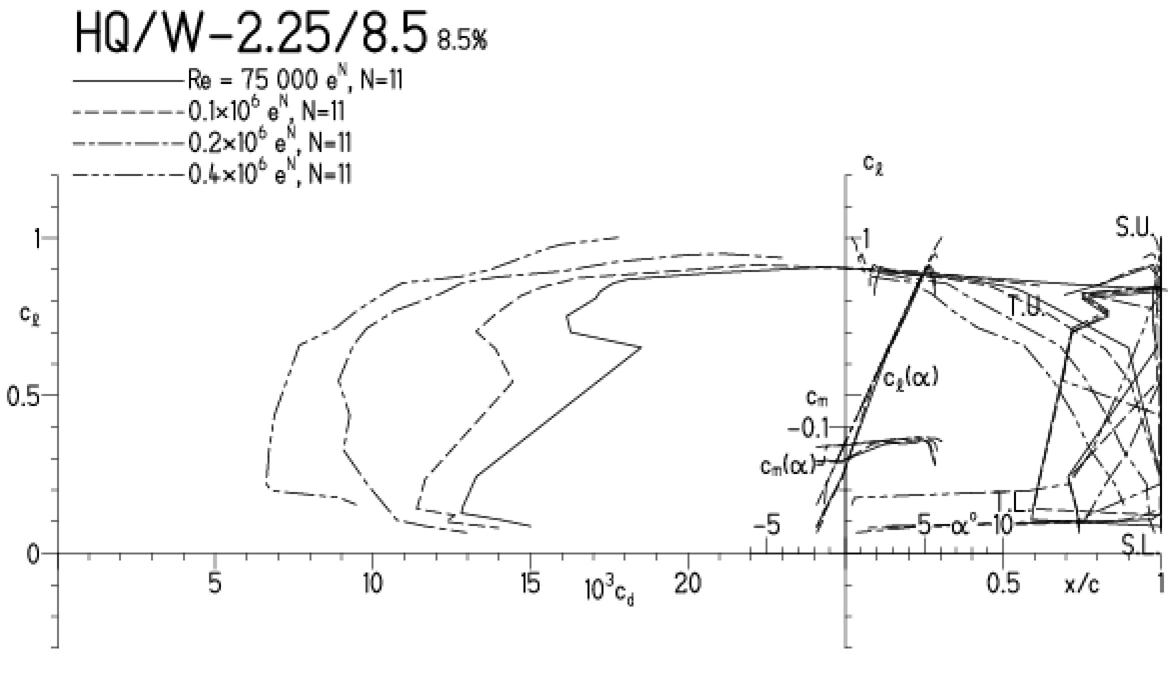


<u>HQ/W-2,25/8,5</u>, N=11

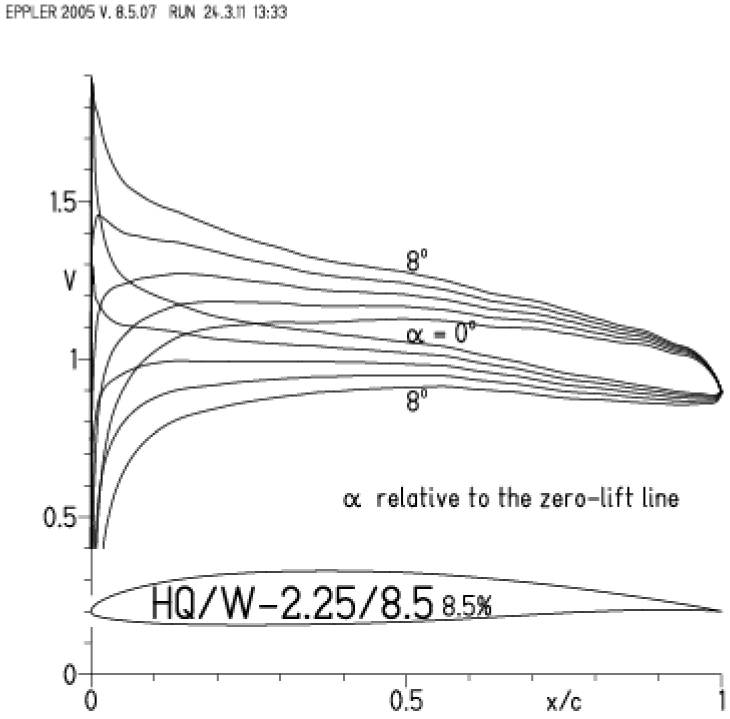
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

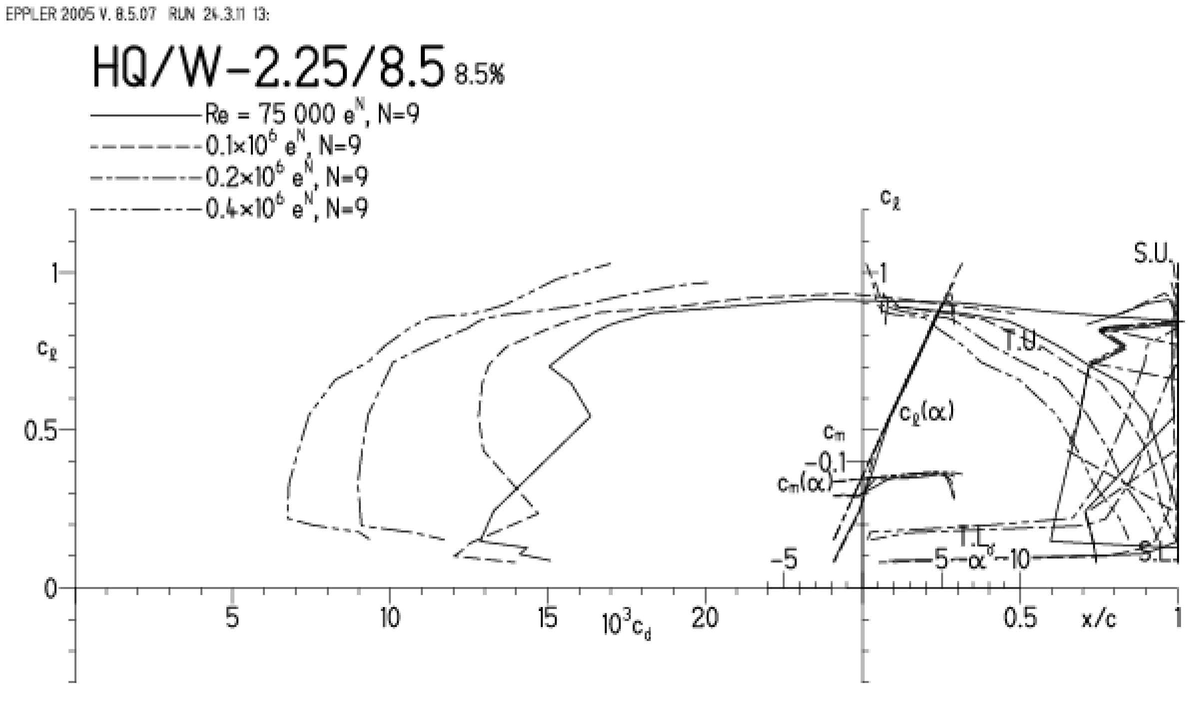


EPPLER 2005 V

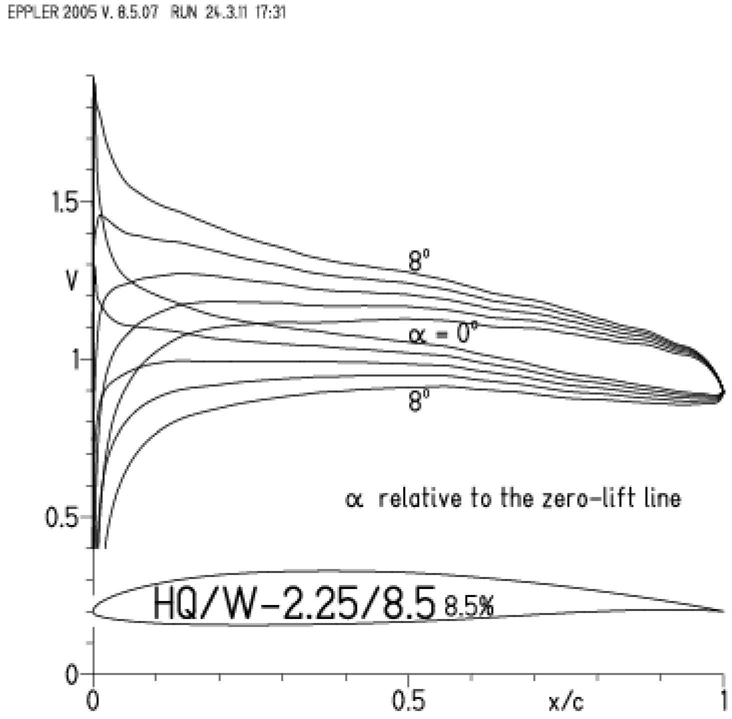


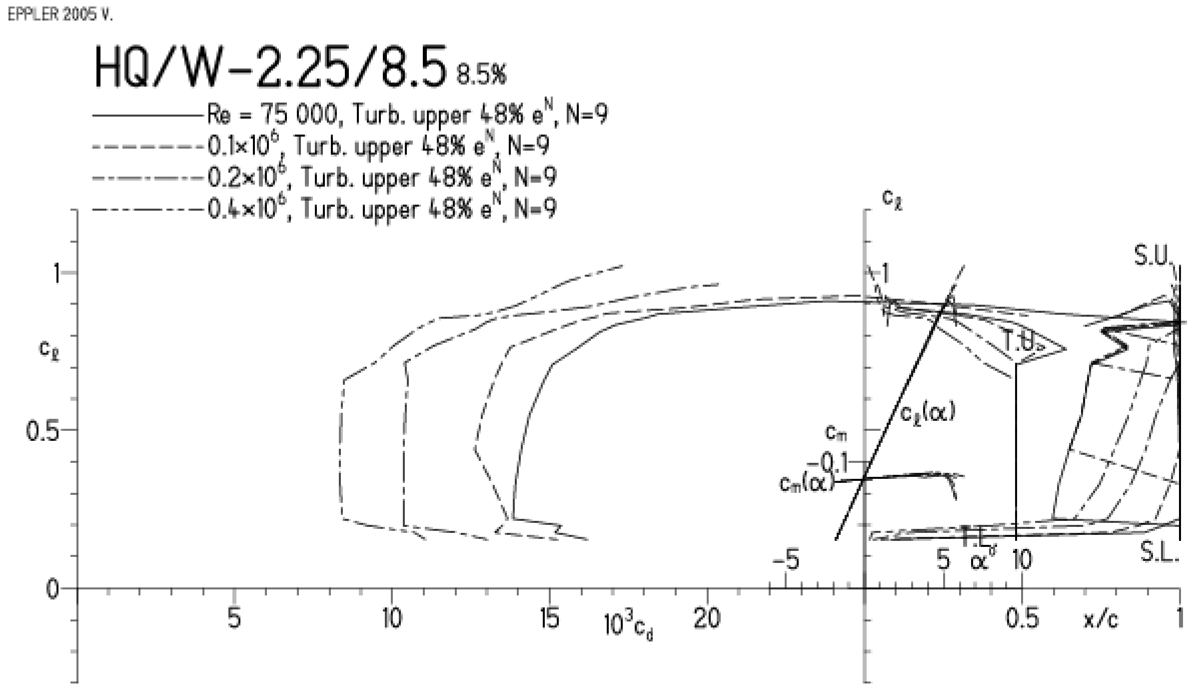
<u>HQ/W-2,25/8,5</u>, N=9



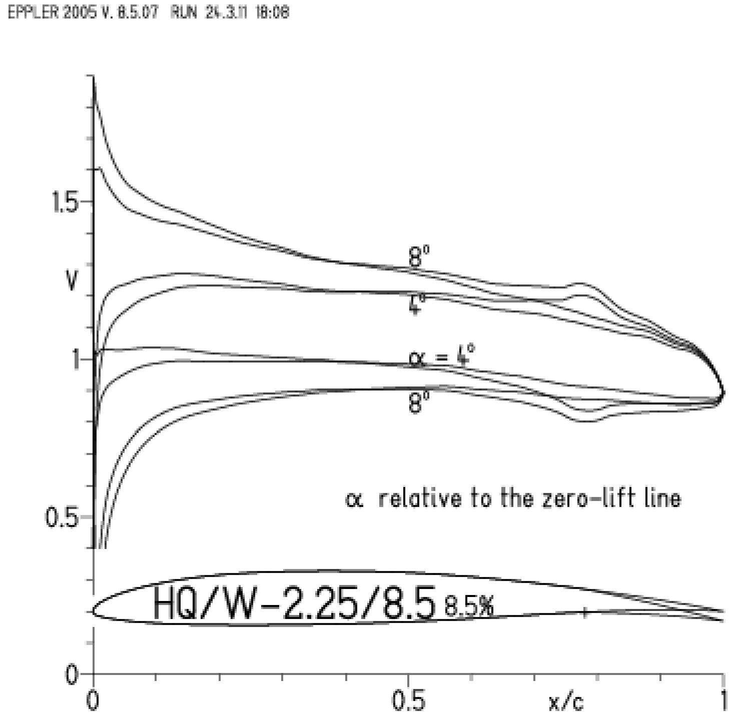


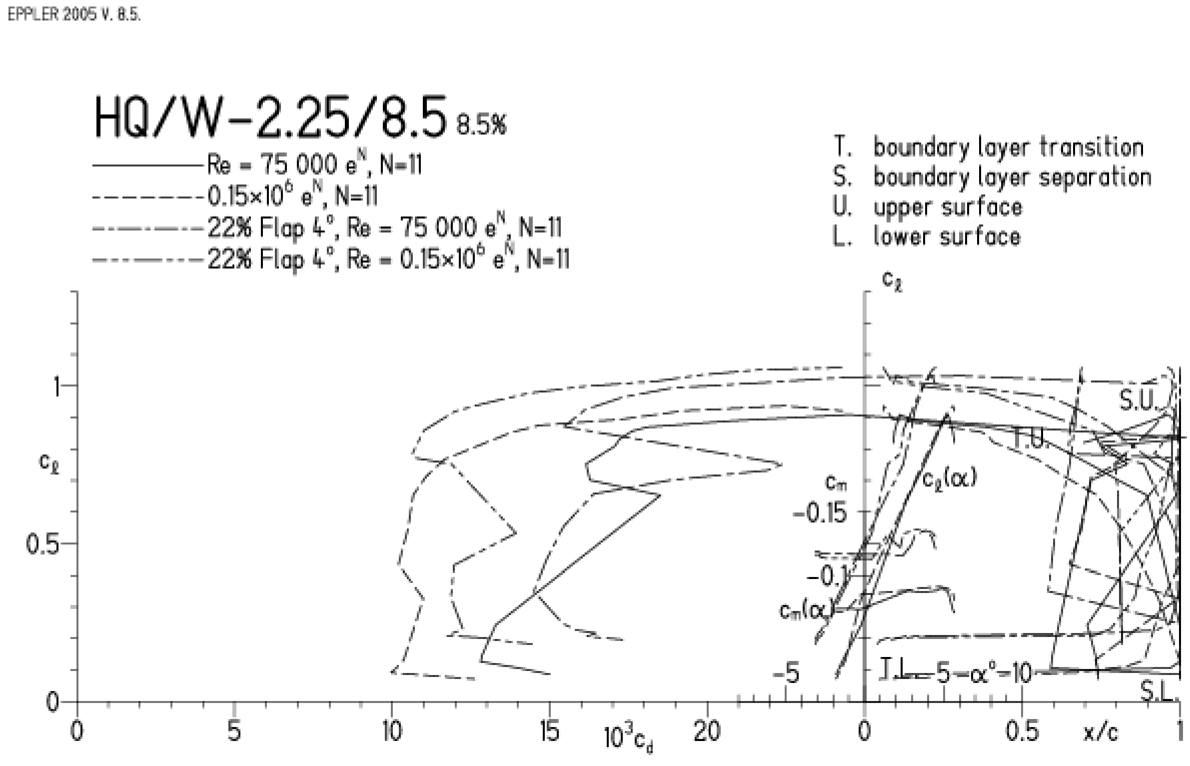
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





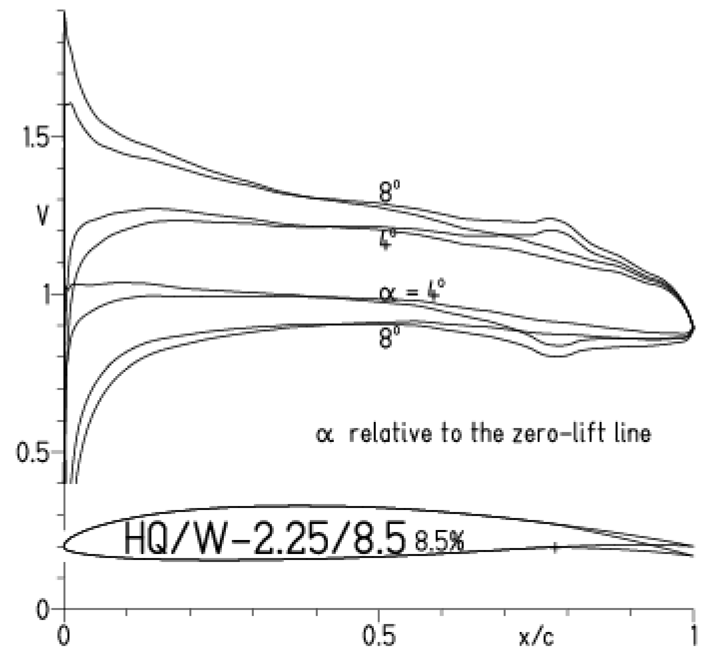
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



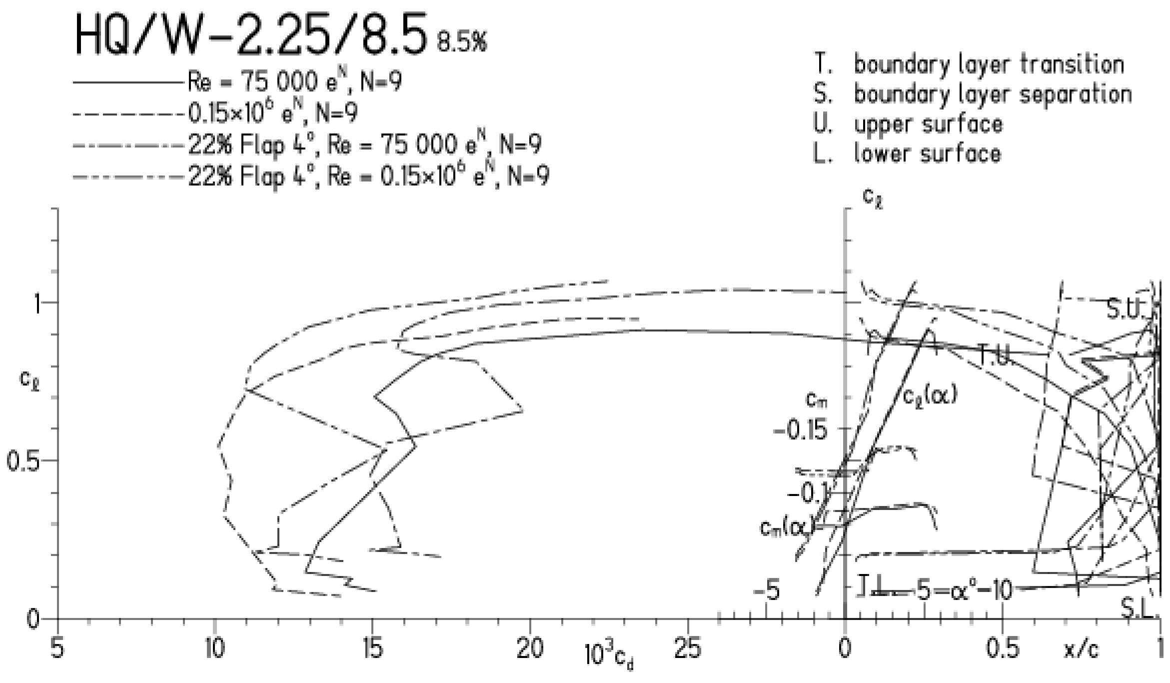


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

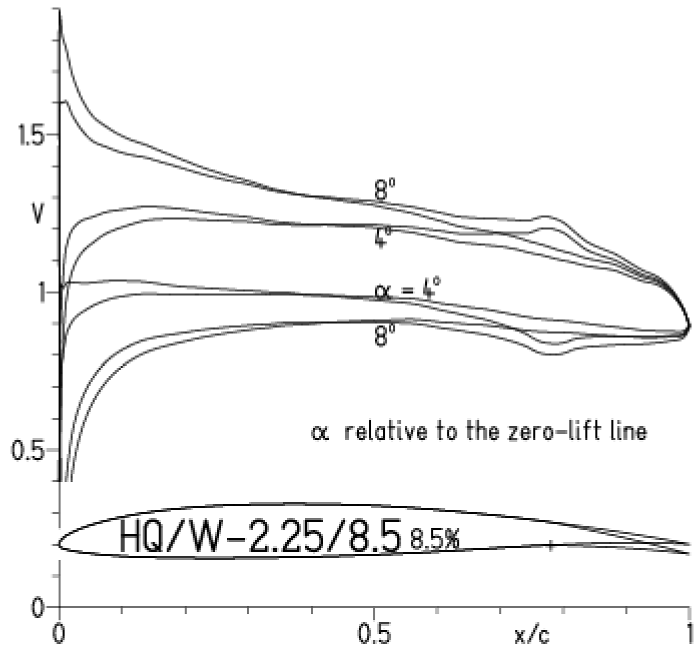


EPPLER 2005 V.

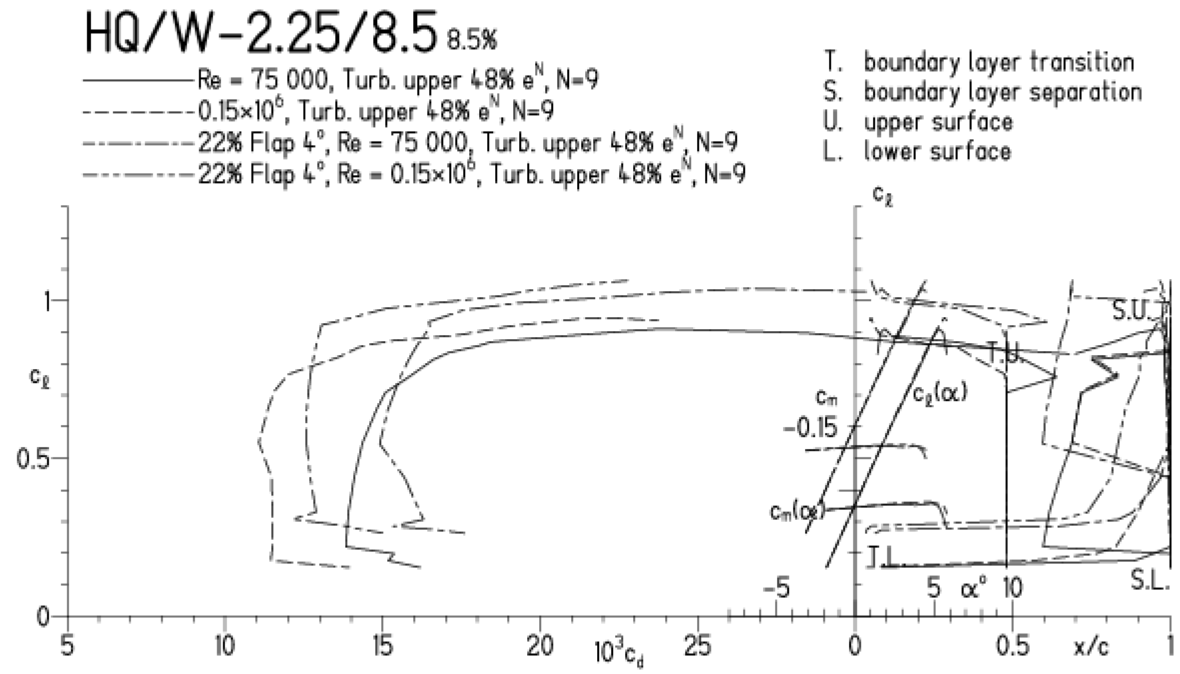


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

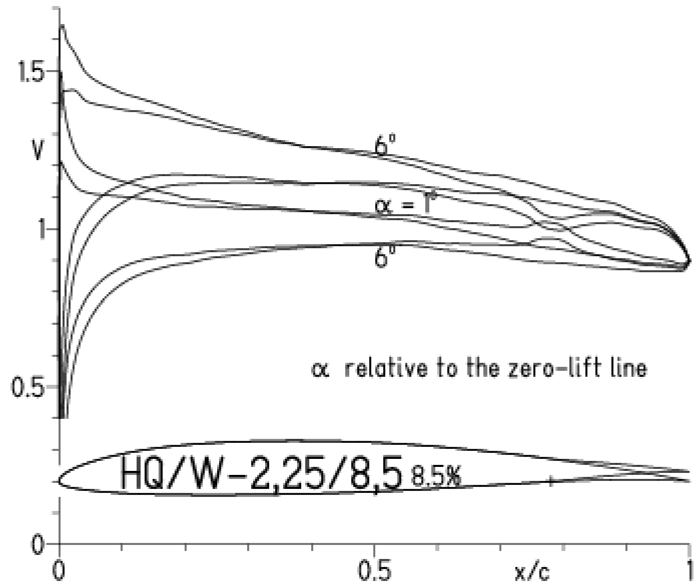


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

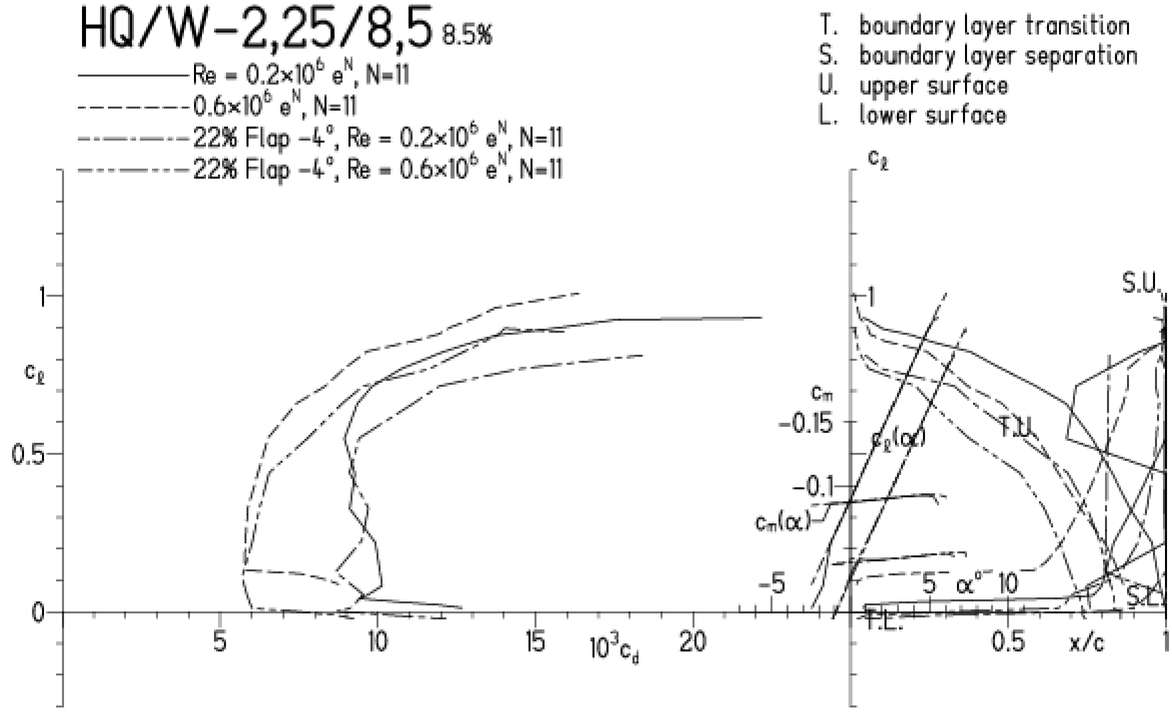


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

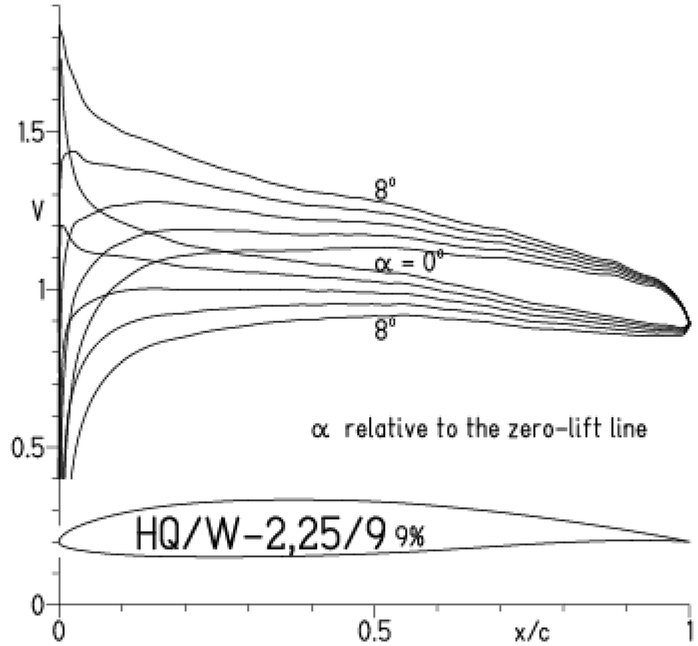


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

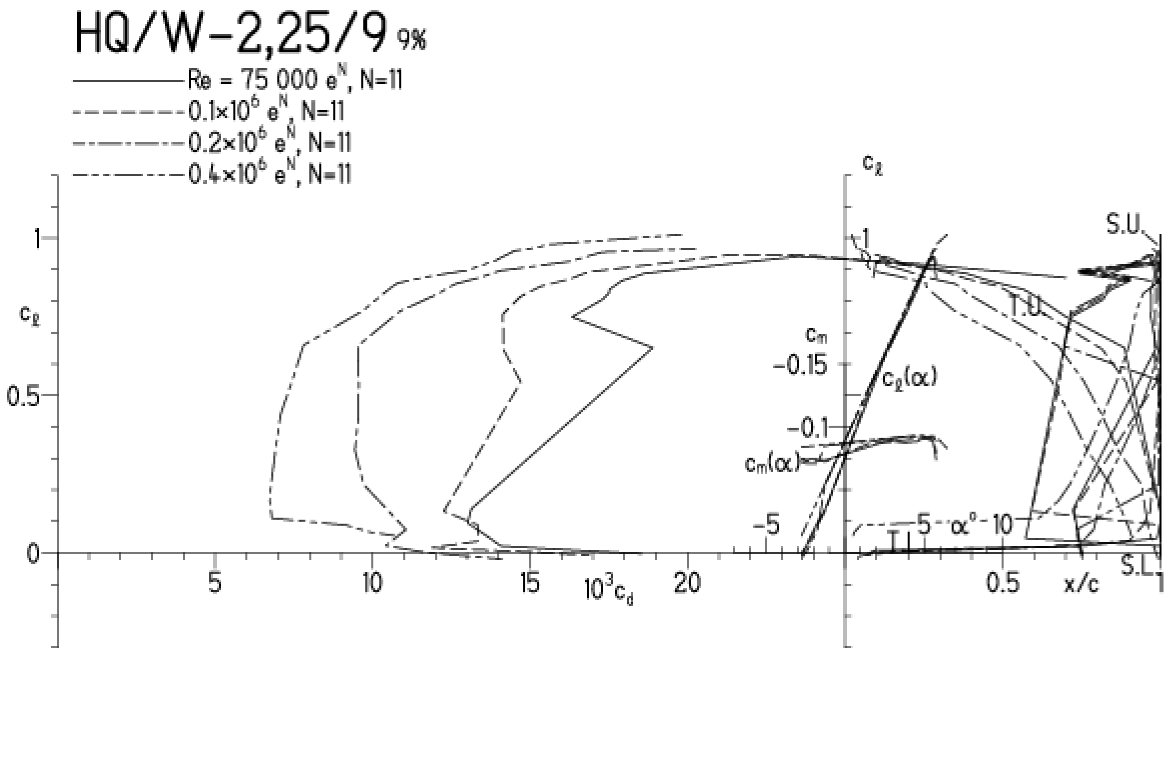


HQ/W-2,25/9, N=11

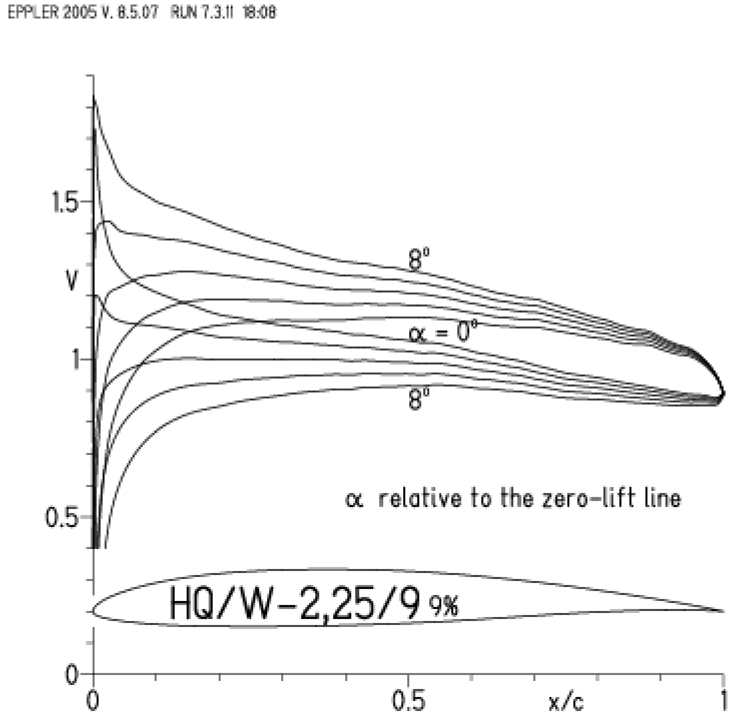
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

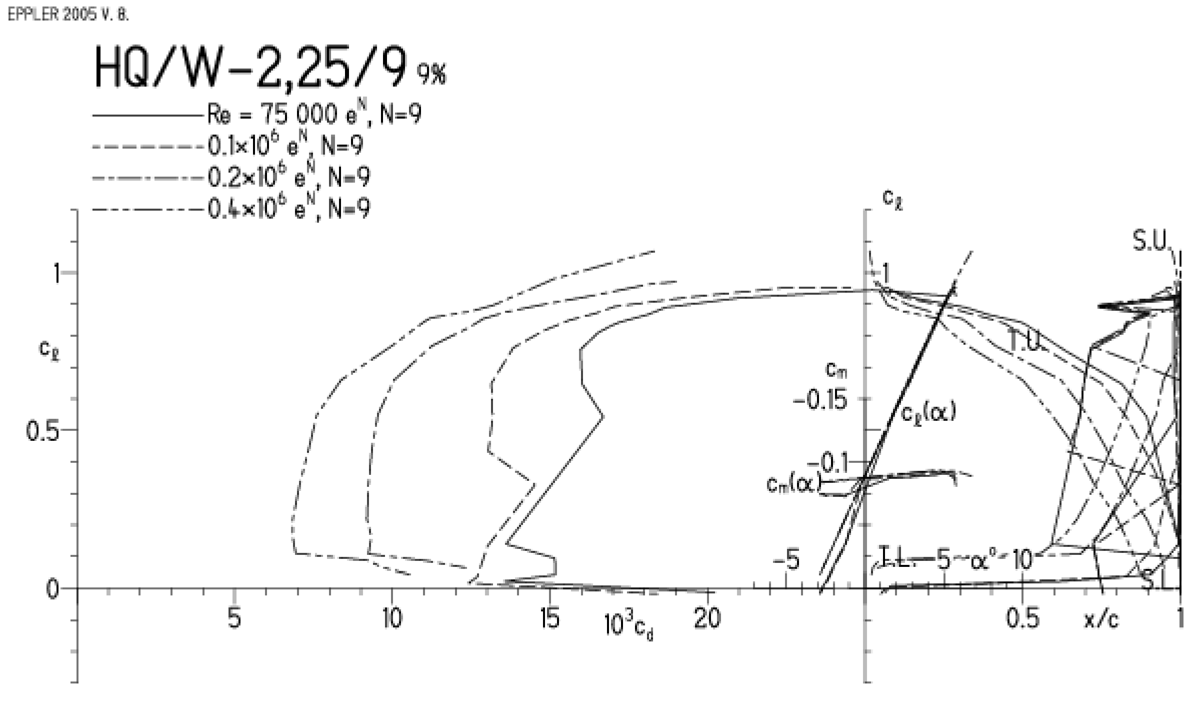


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

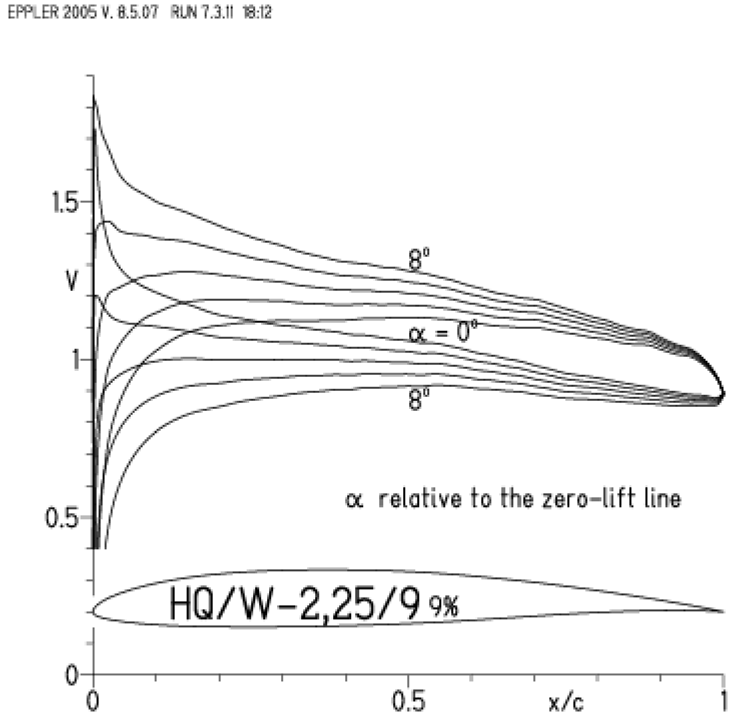


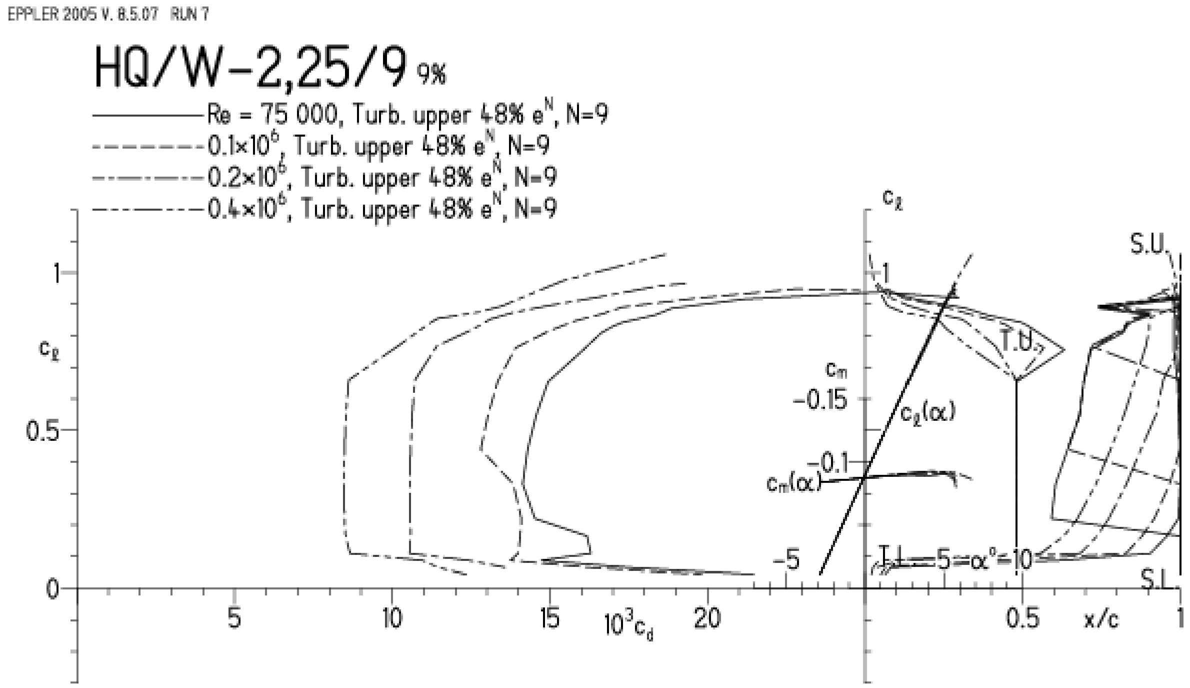
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

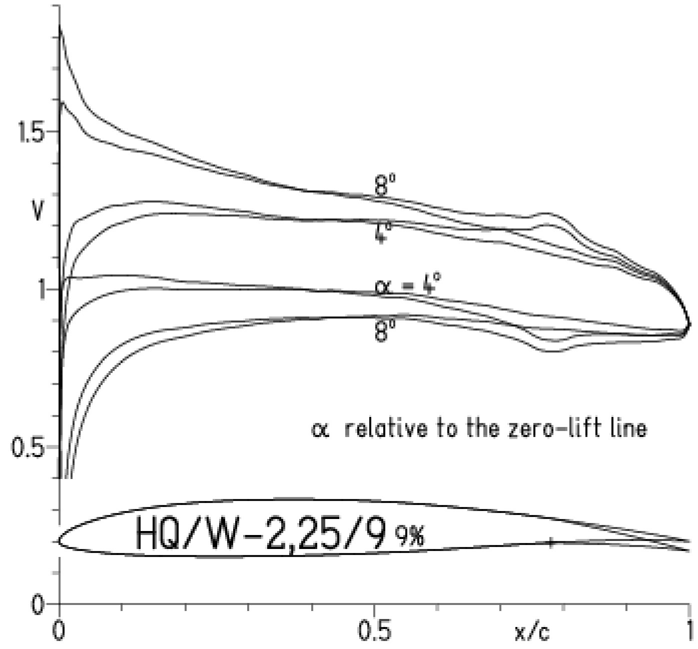
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



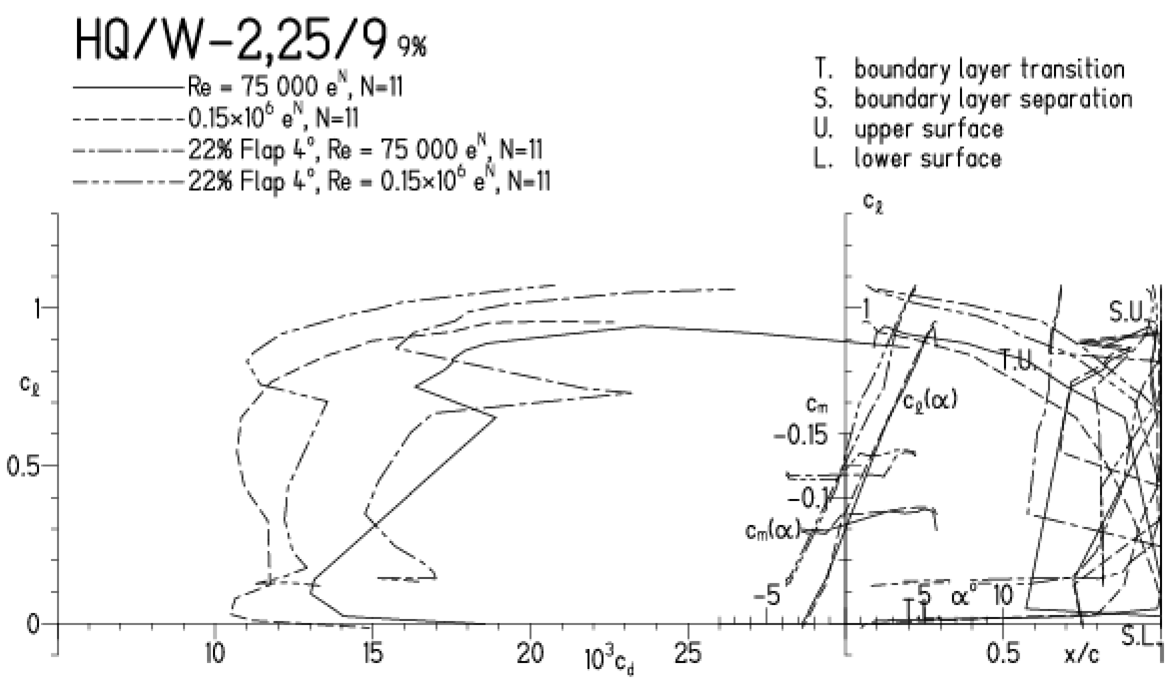


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

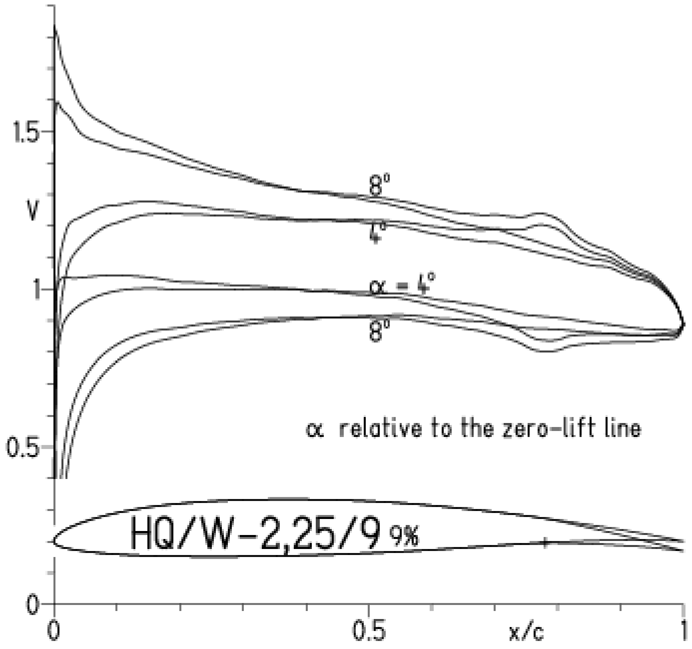


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

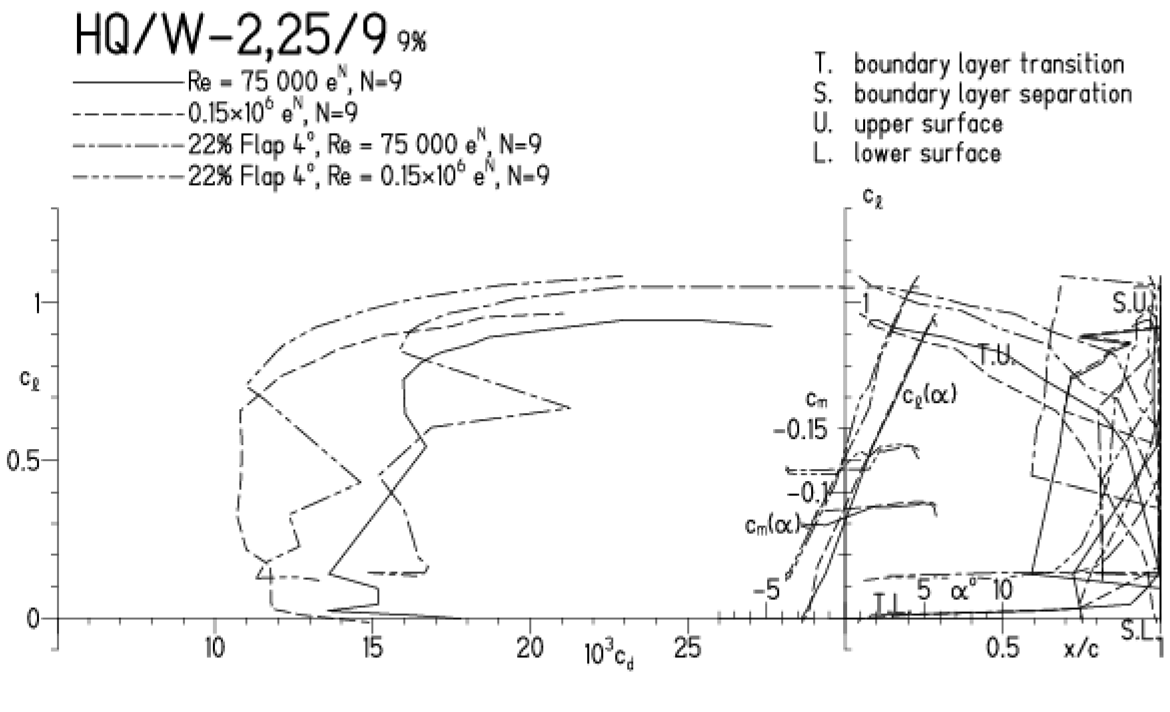


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

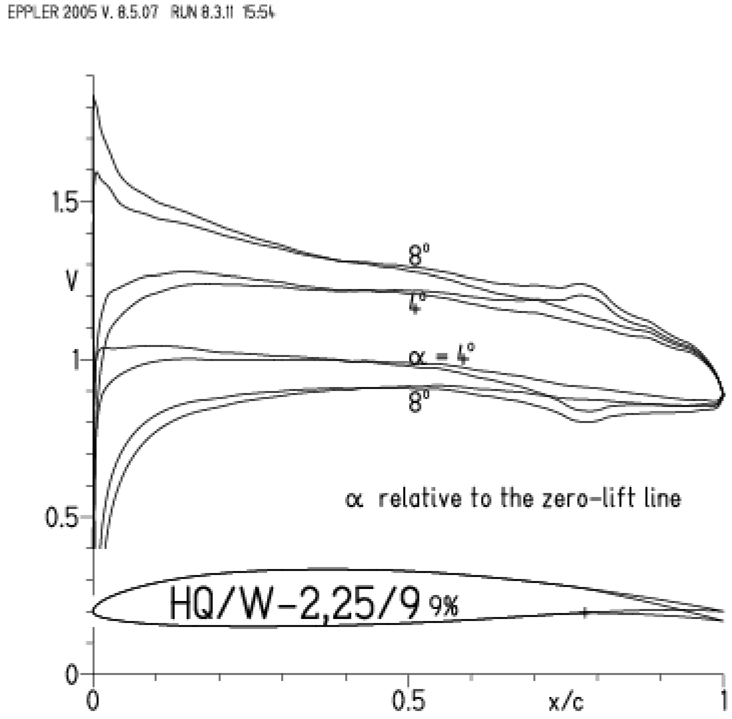
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

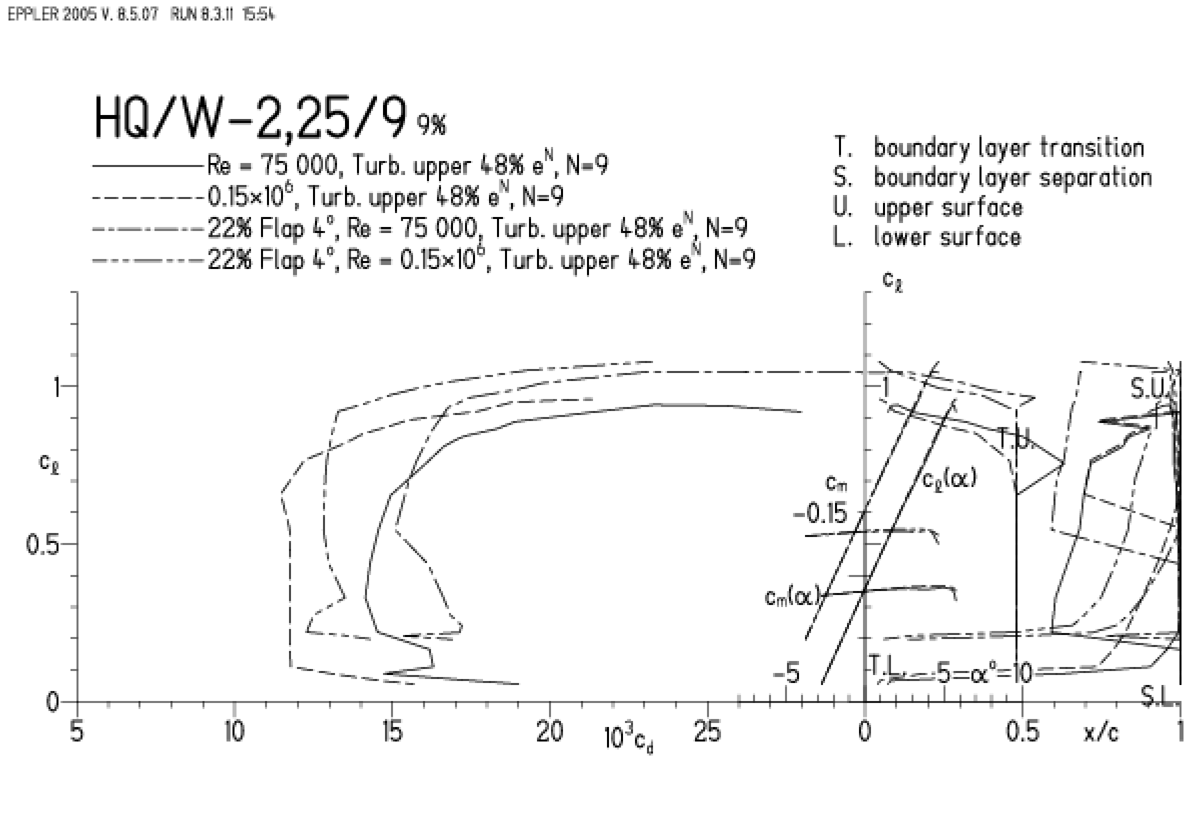


EPPLER 2005 V. 8.5.07 RUN 8.3.1



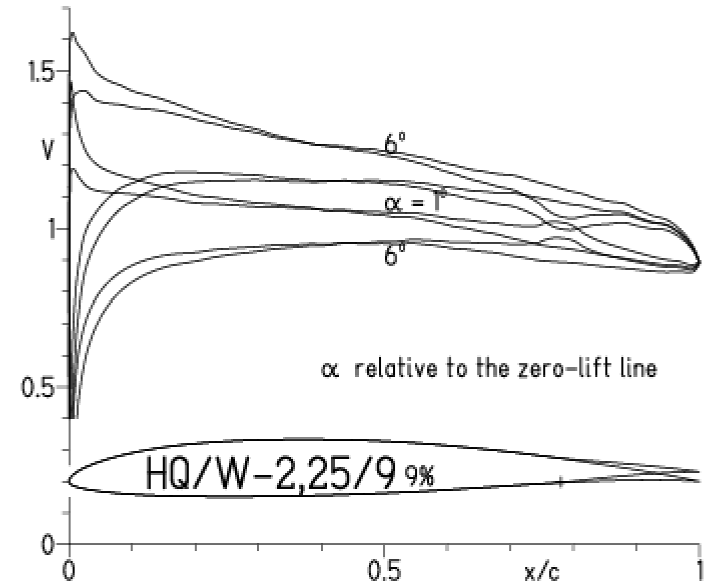
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



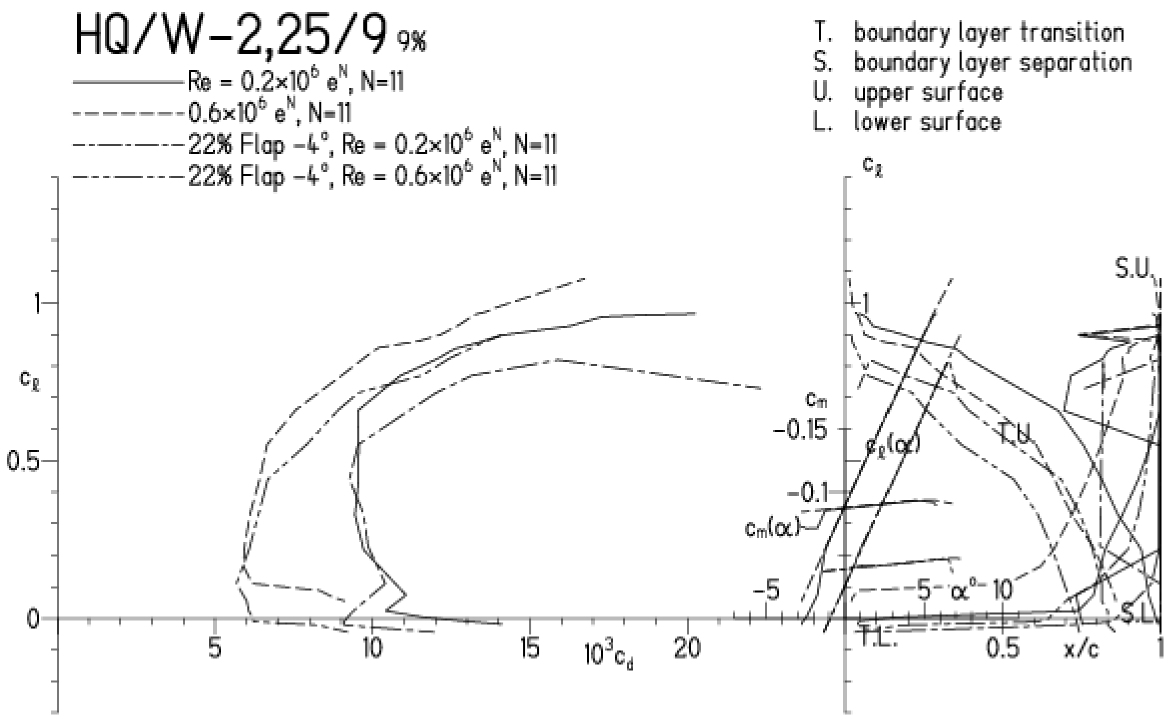


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

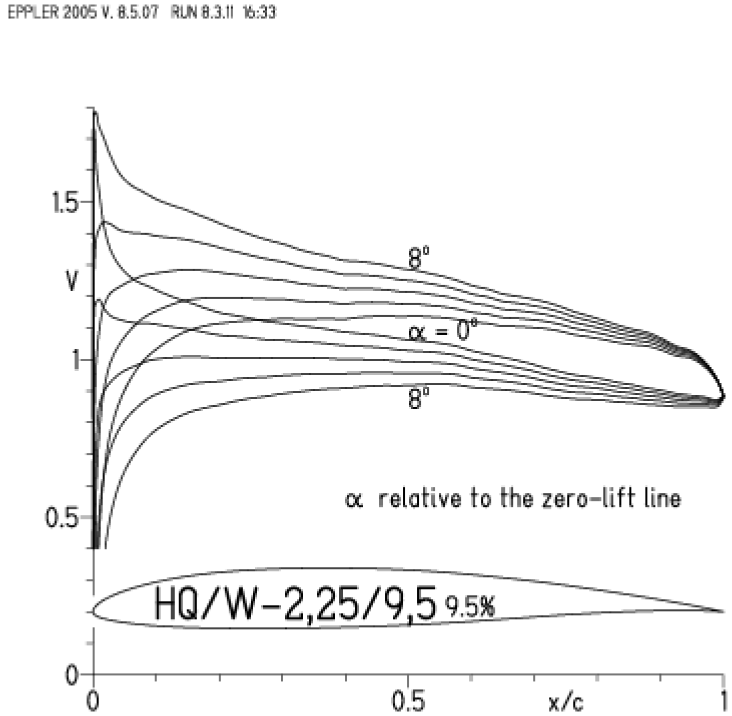
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

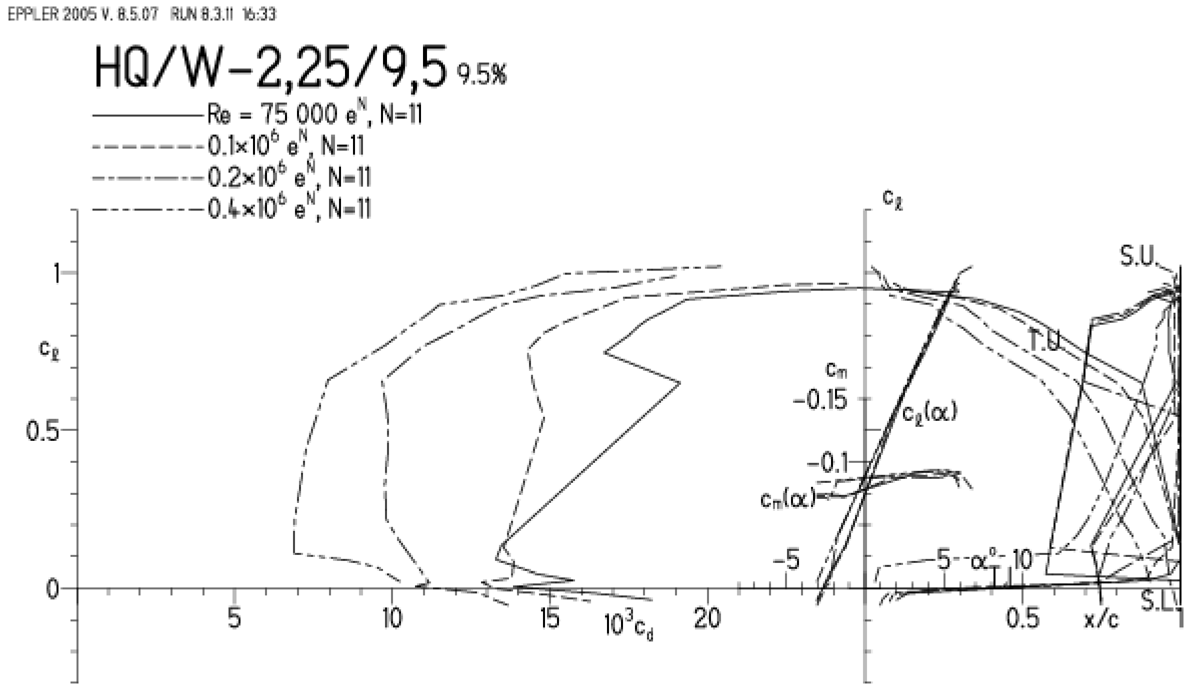


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

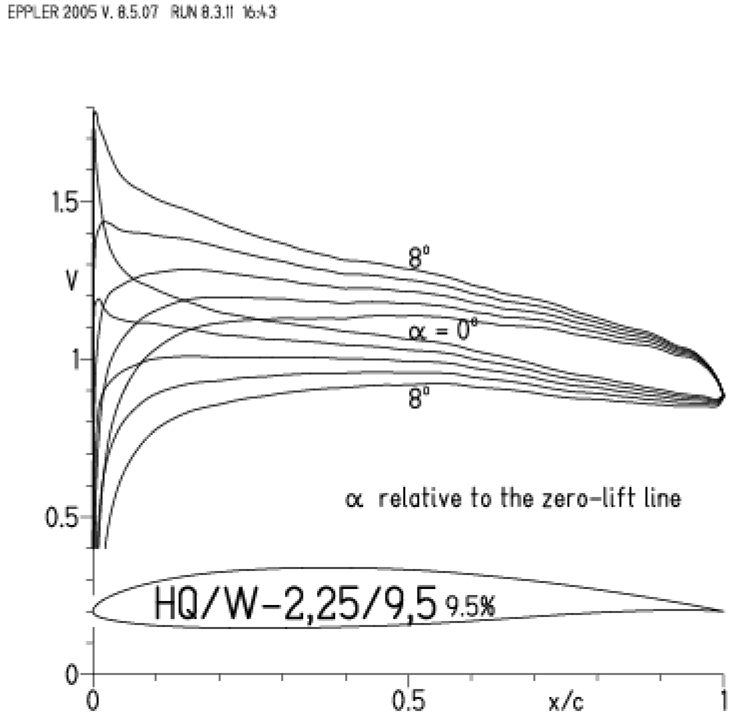


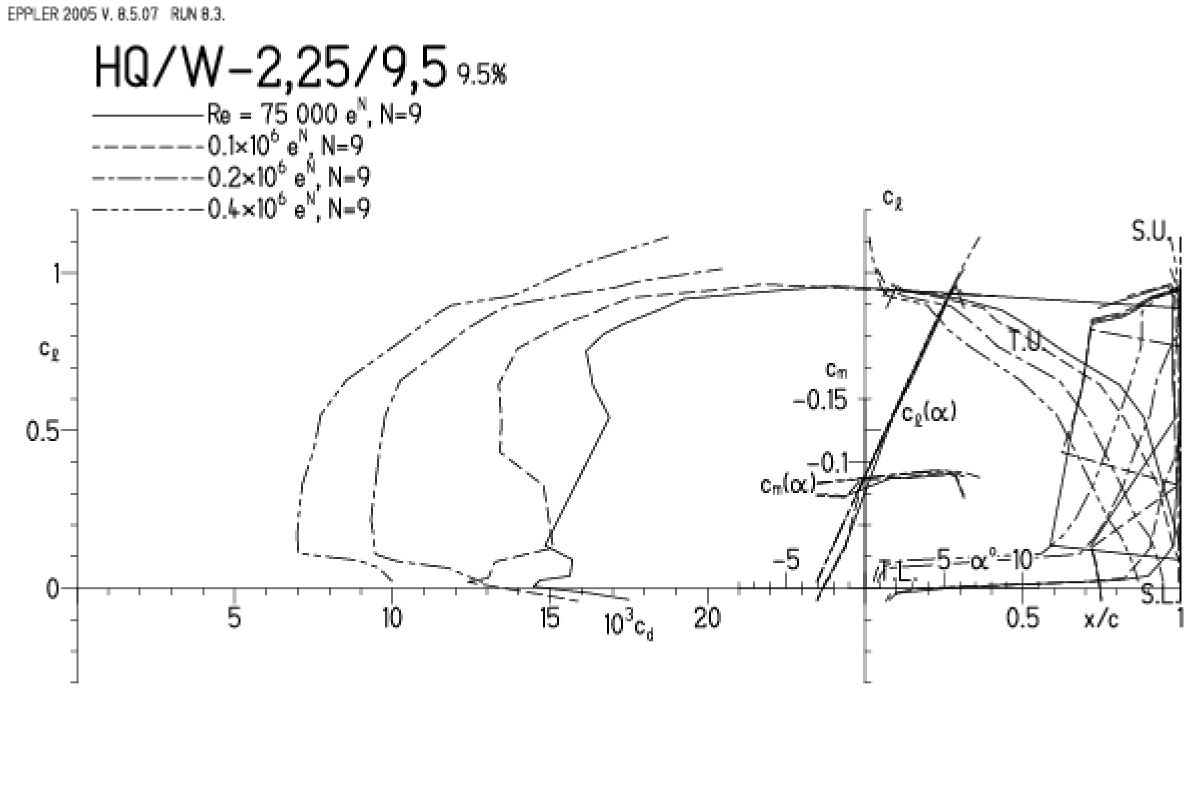
HQ/W-2,25/9,5, N=11





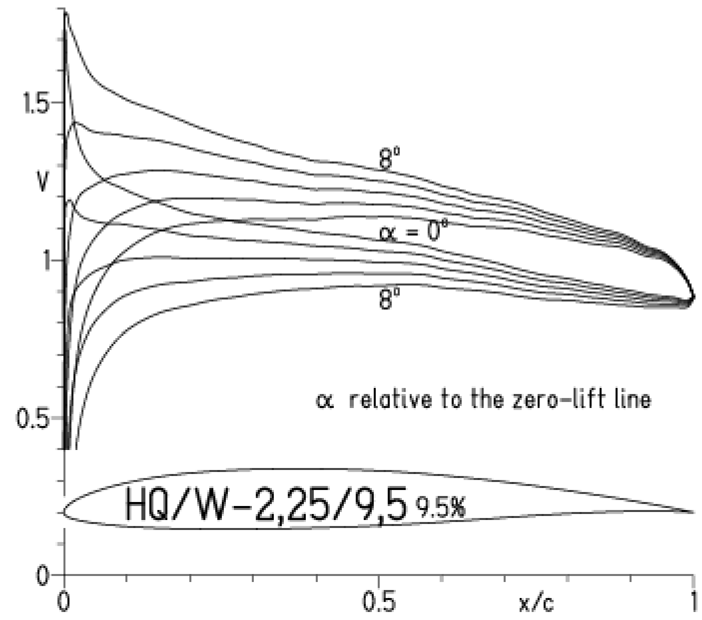
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

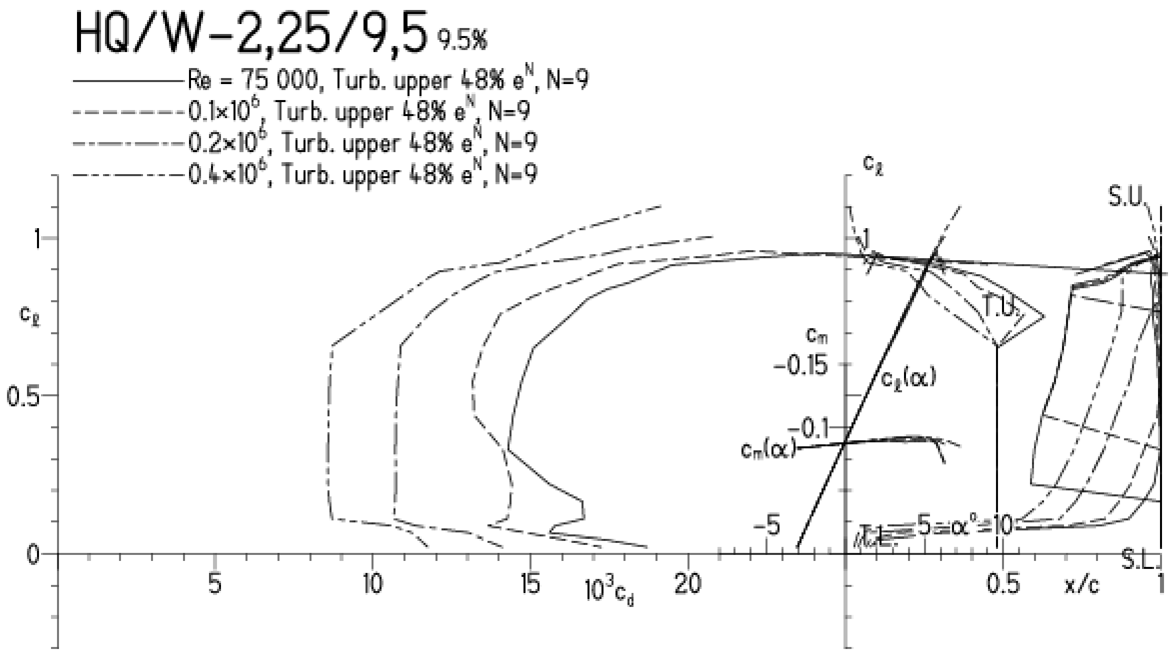

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
S.U.
T.U.
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

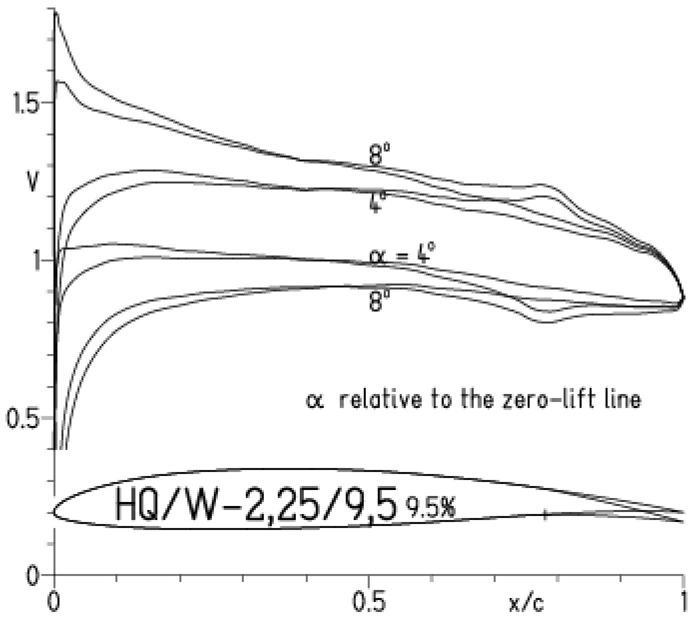


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

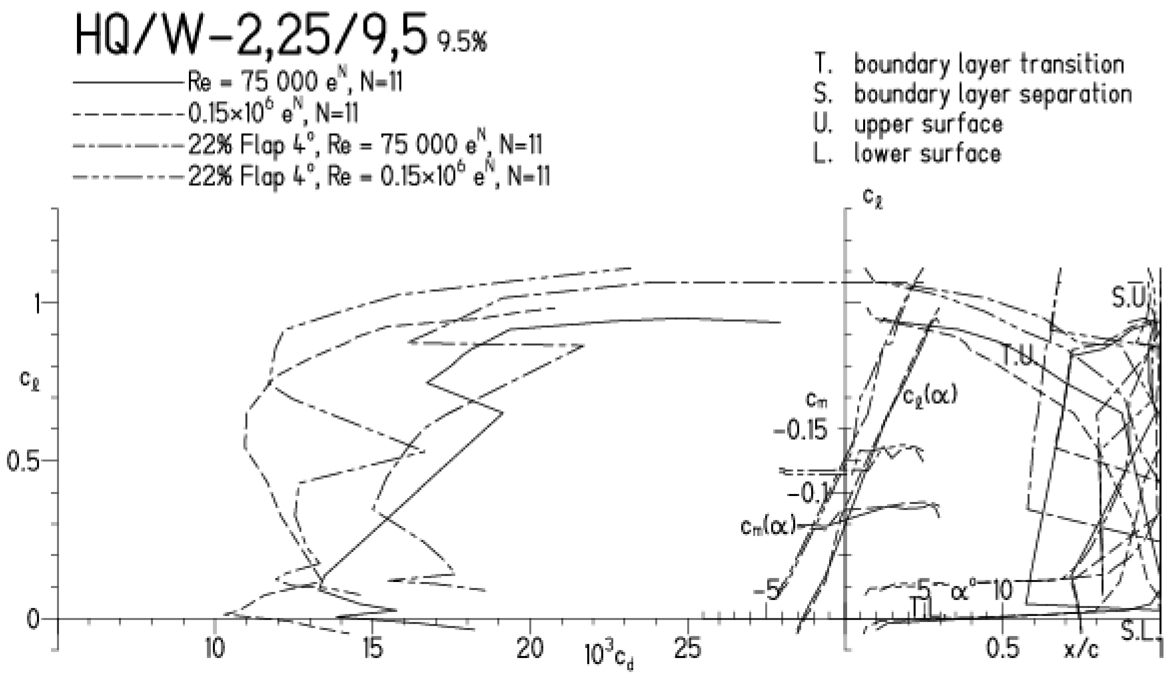


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

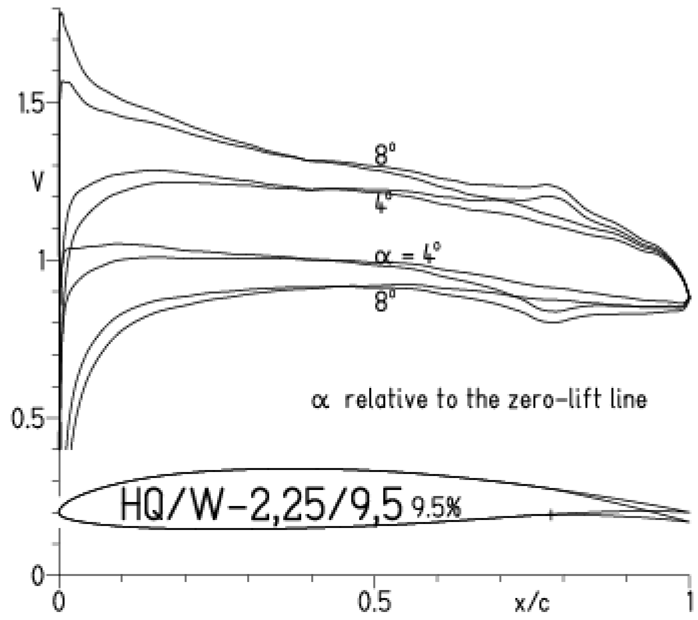


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

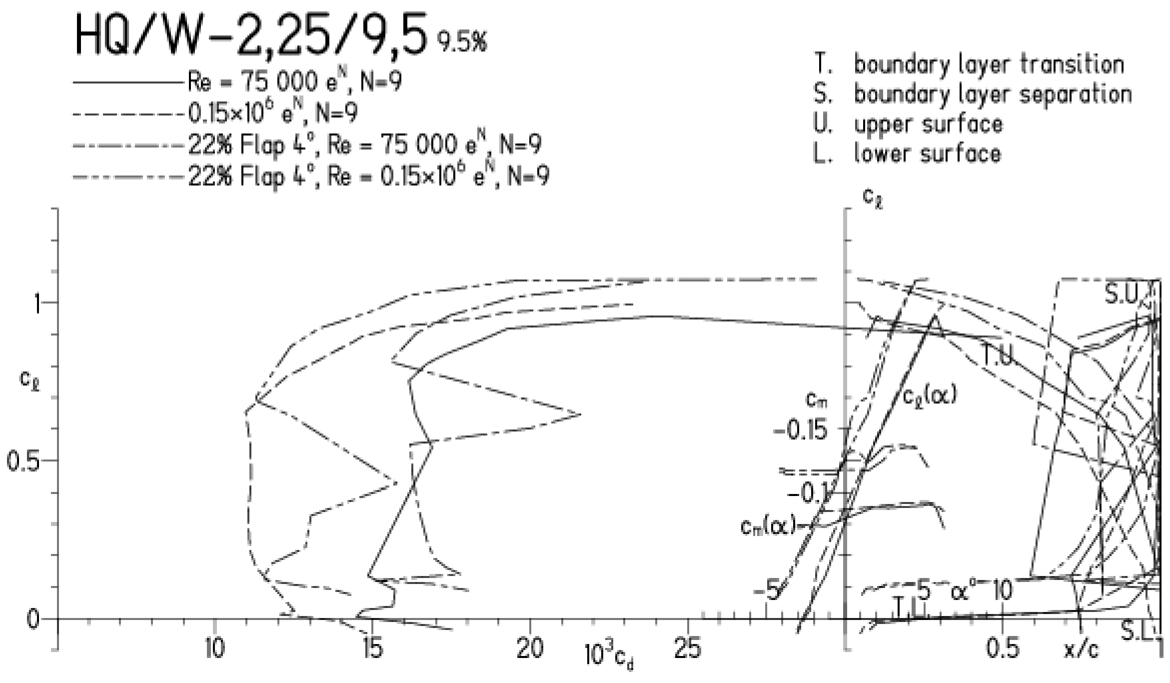


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

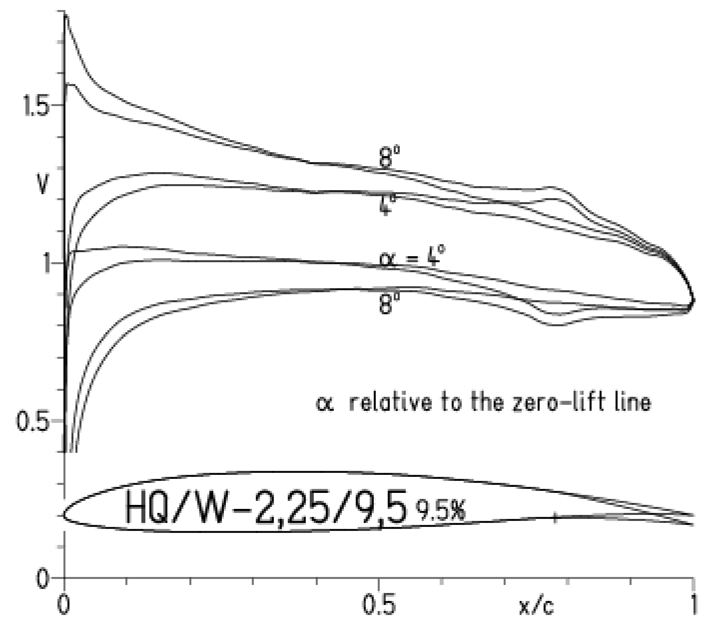


EPPLER 2005 V. 8.5.07 R

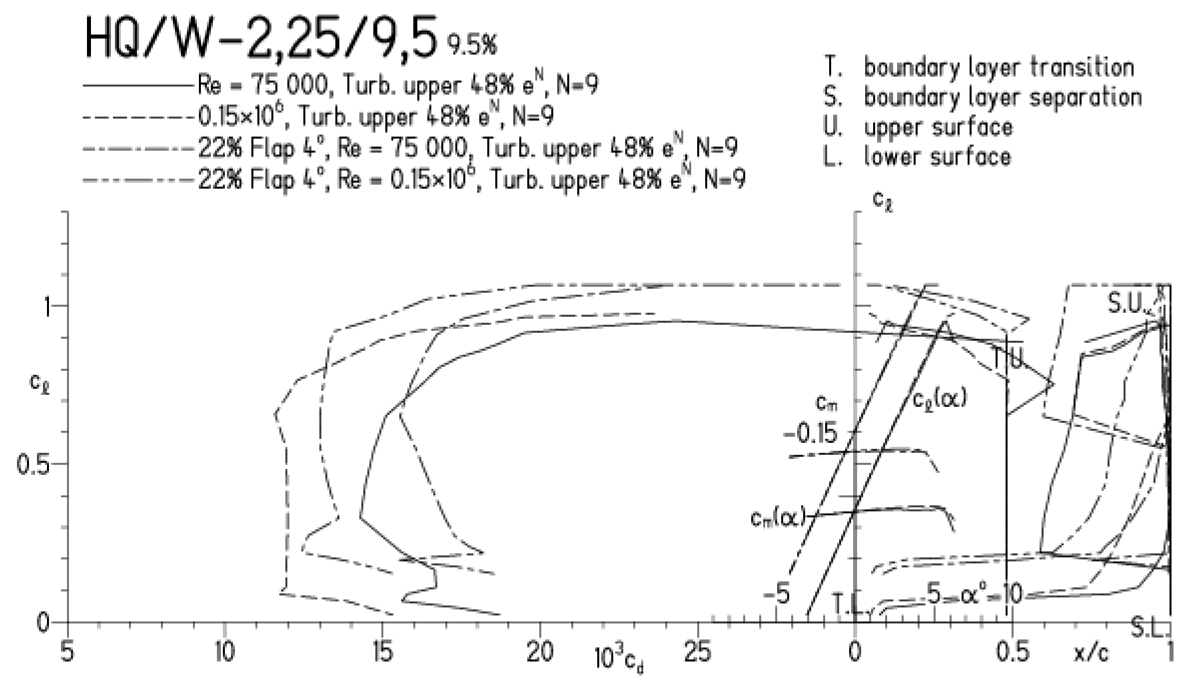


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

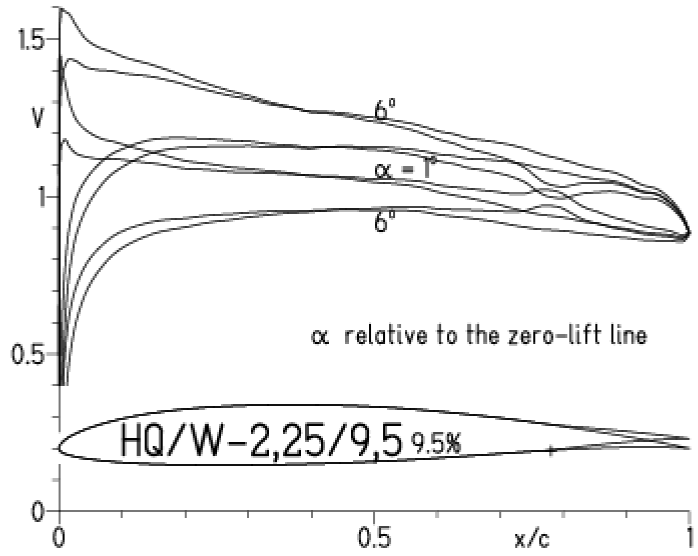


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

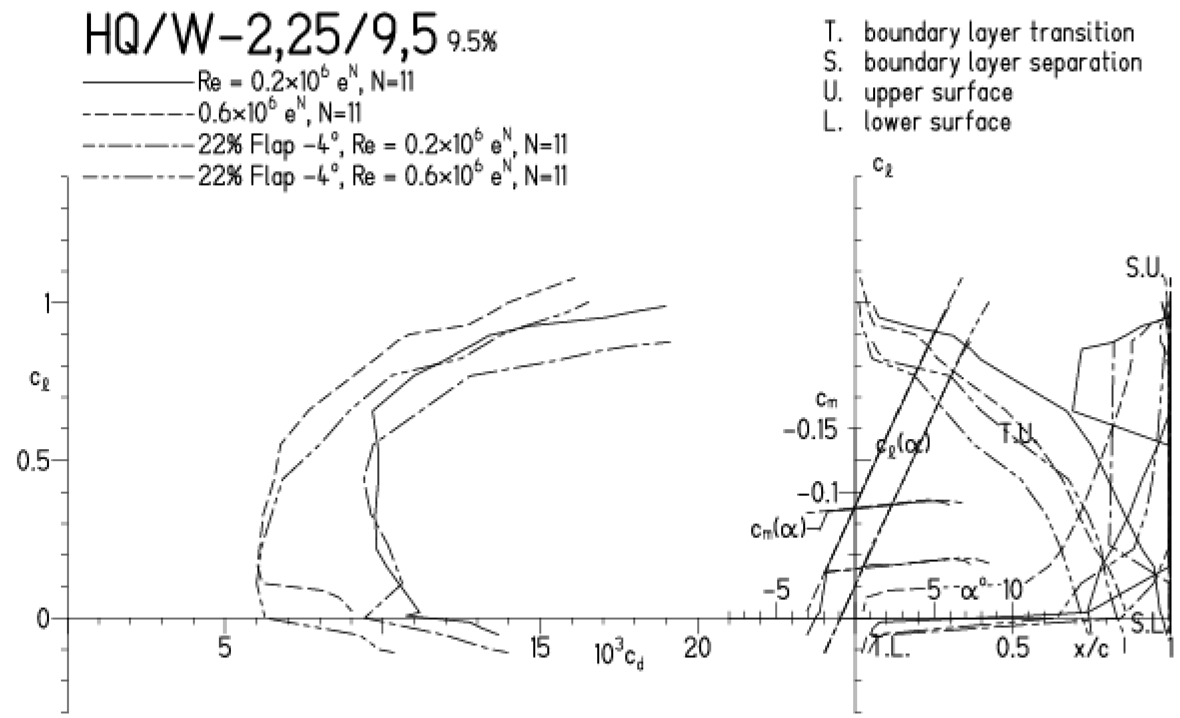


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

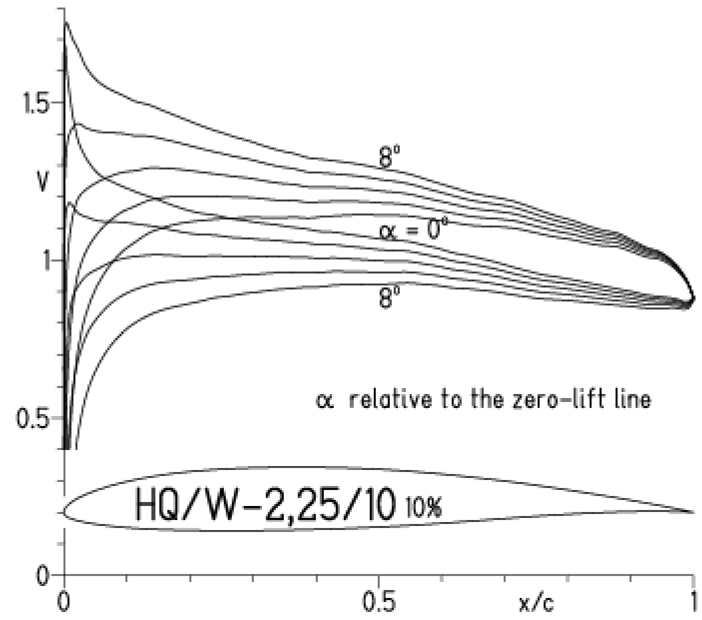


EPPLER 2005 V.

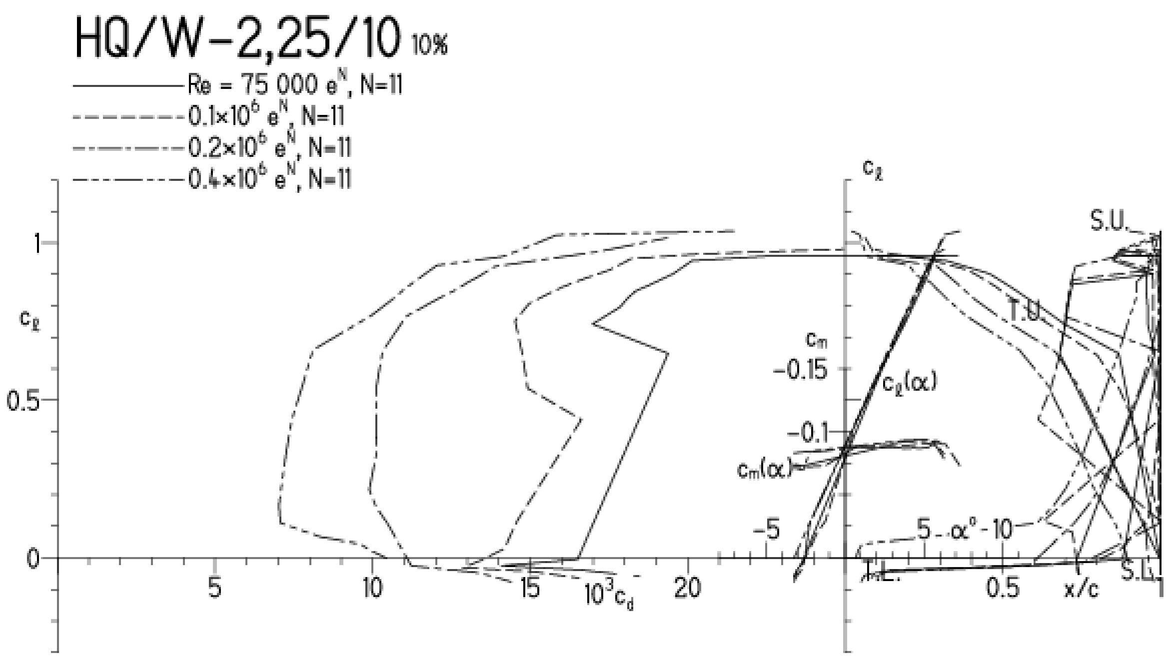


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

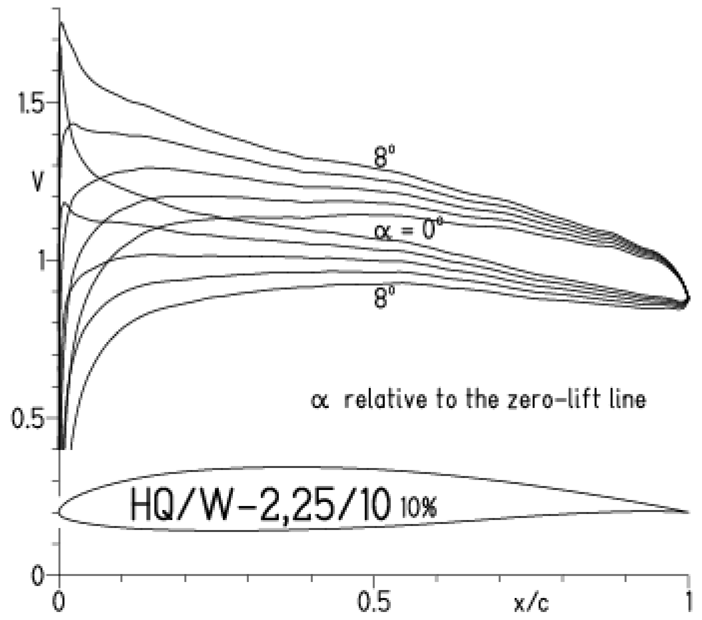


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

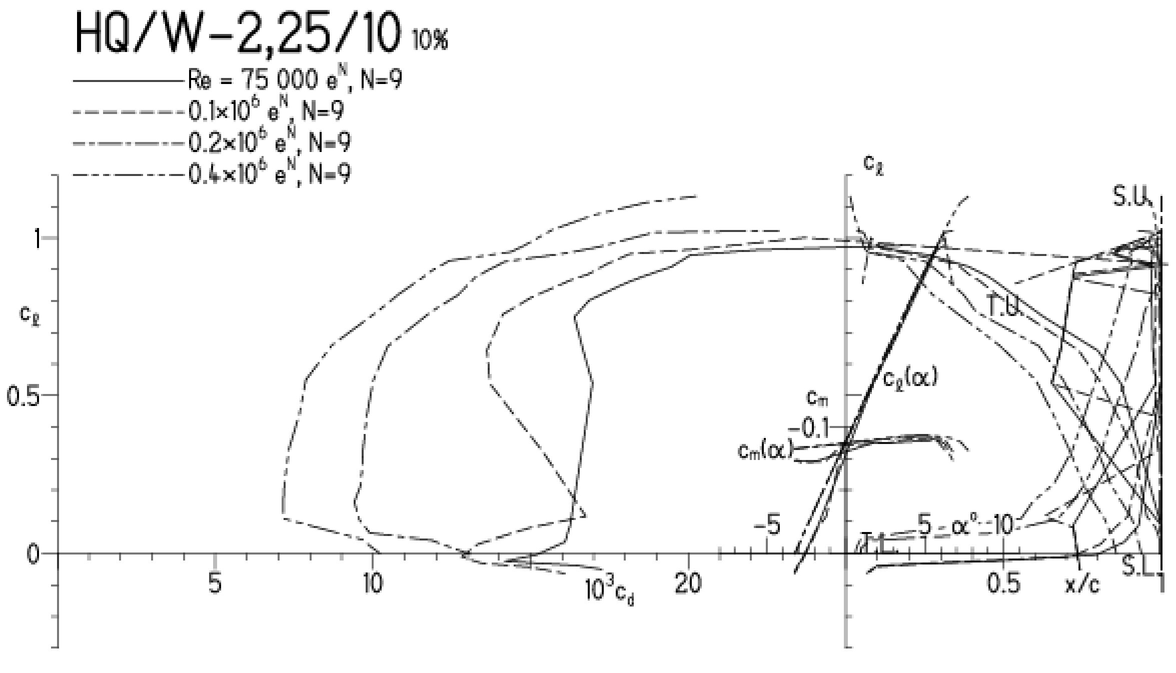


<u>HQ/W-2,25/10</u>, N=9

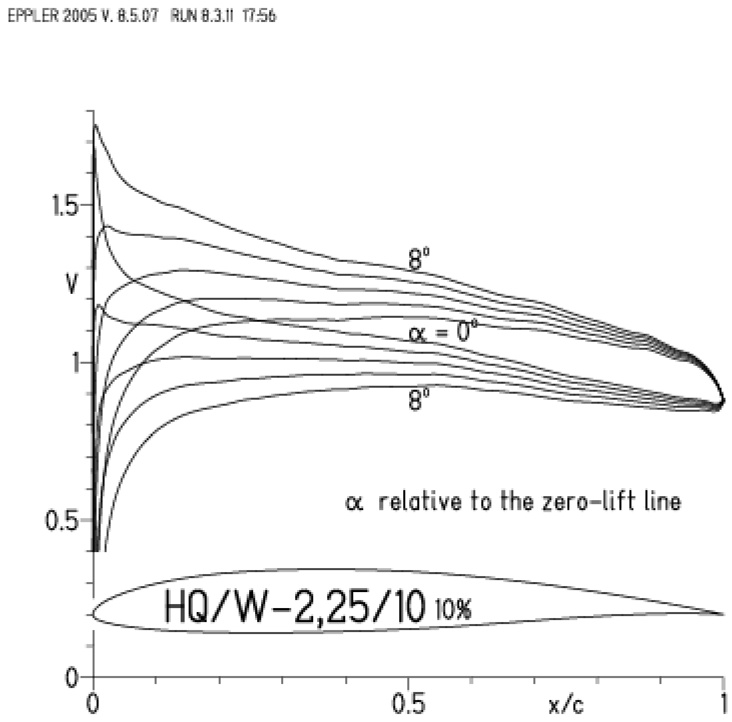
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

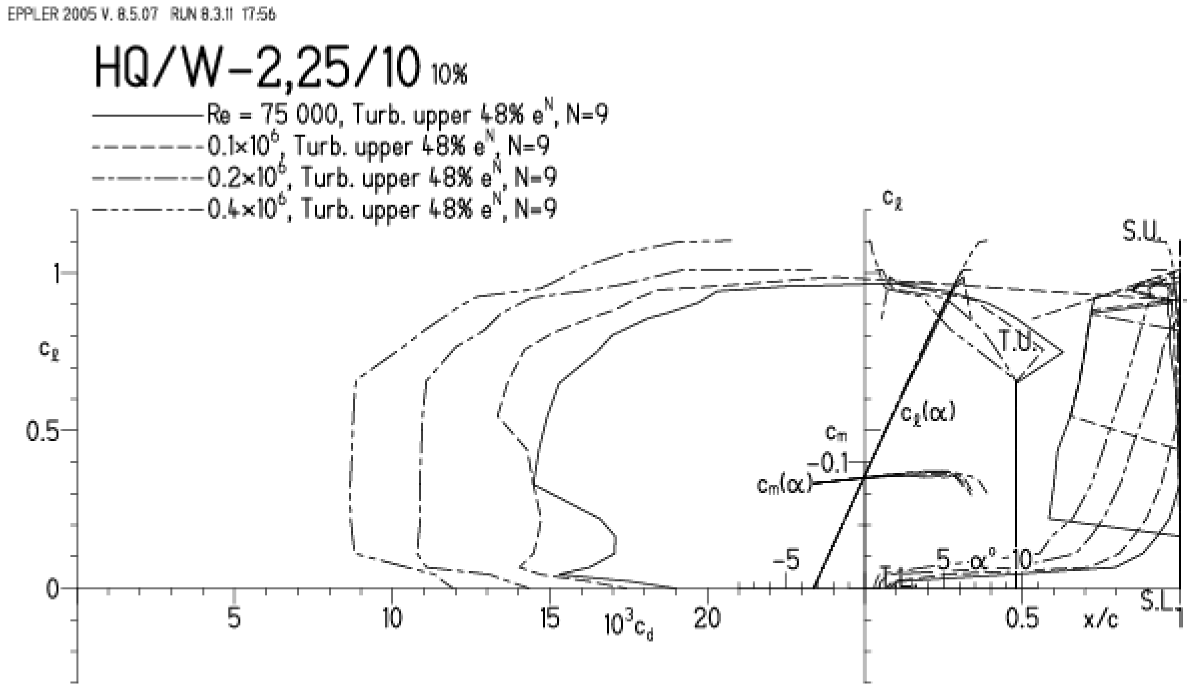


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



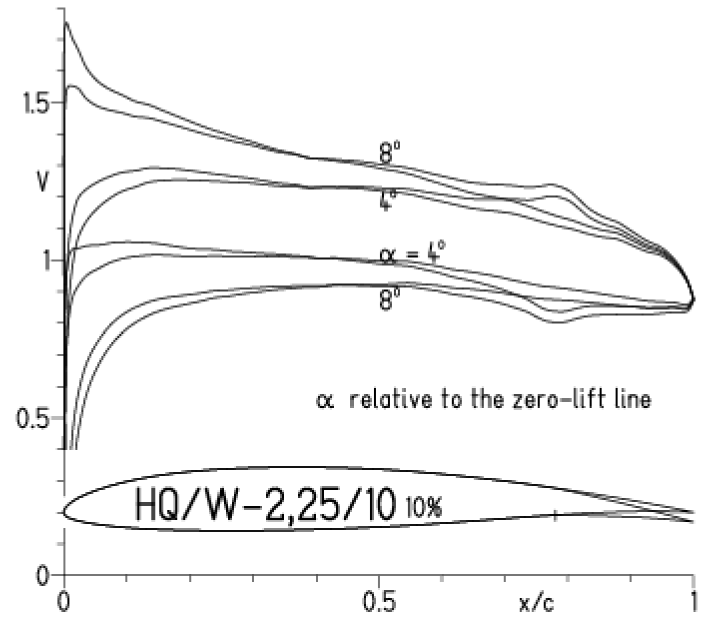
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



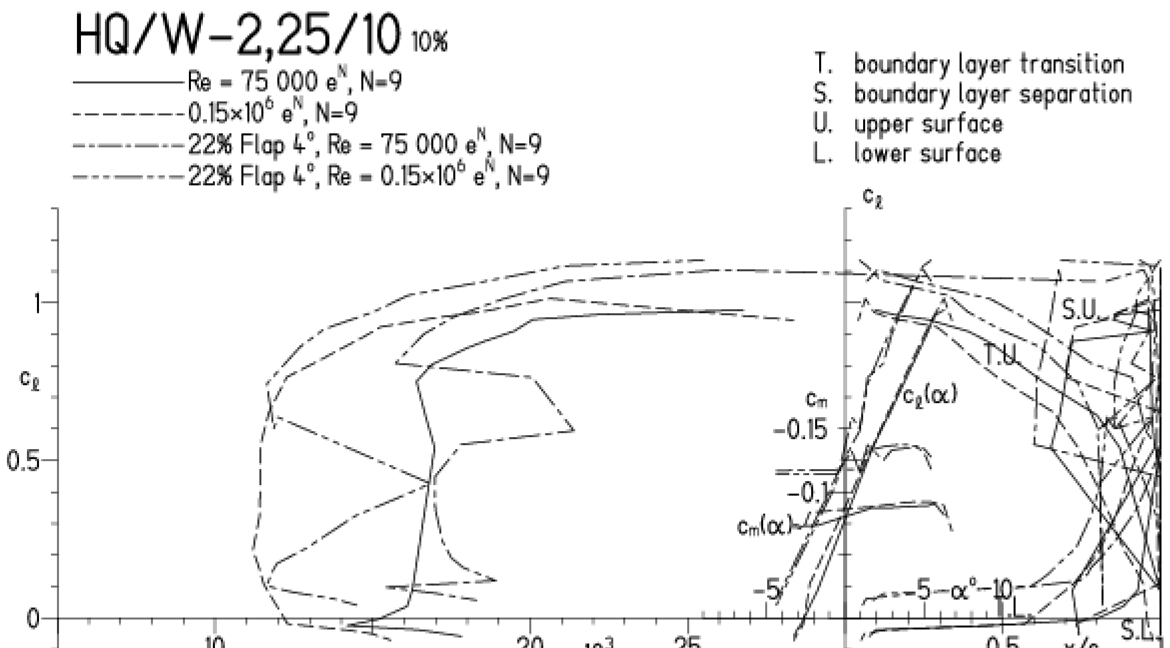


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

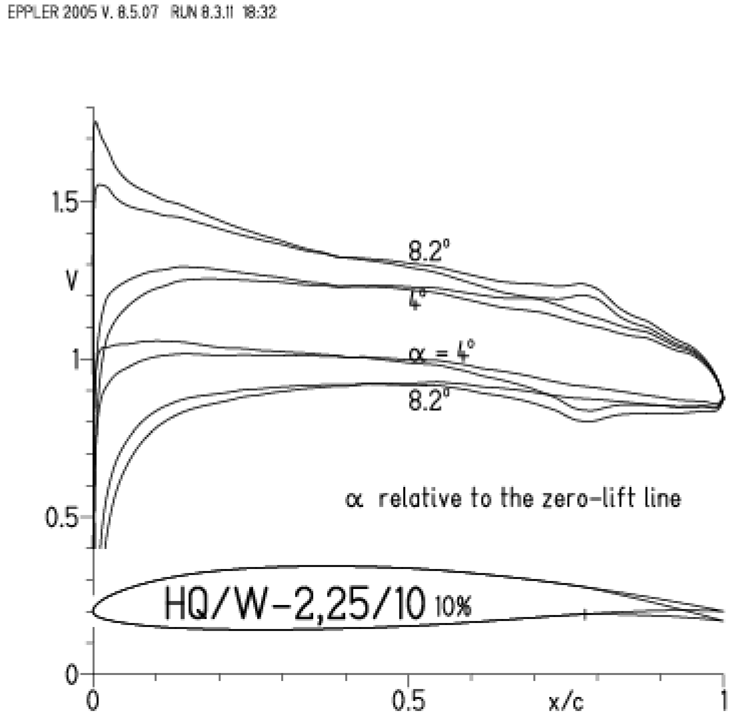
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

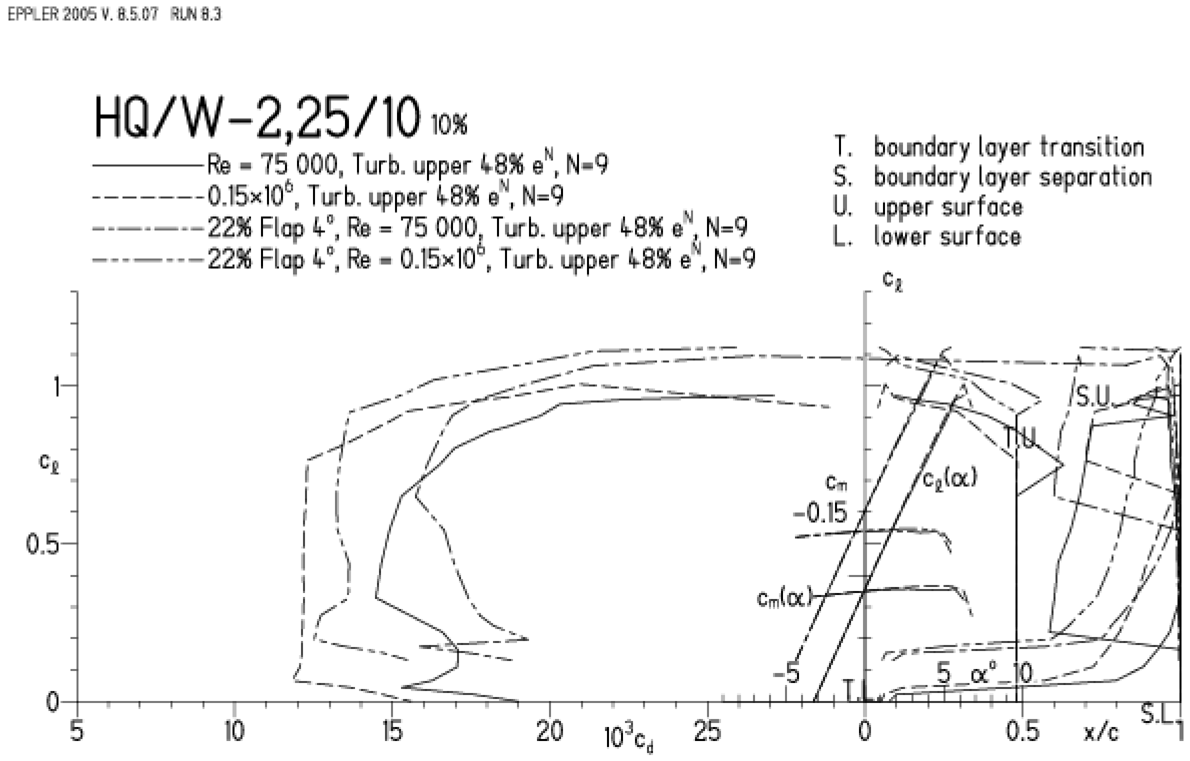


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



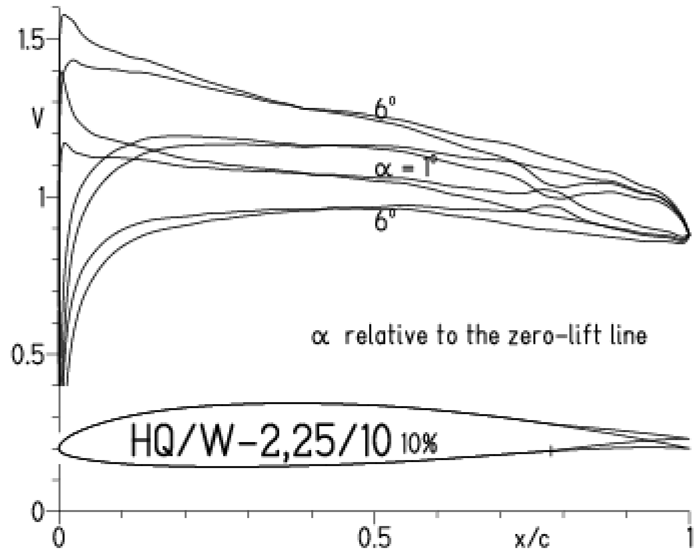
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



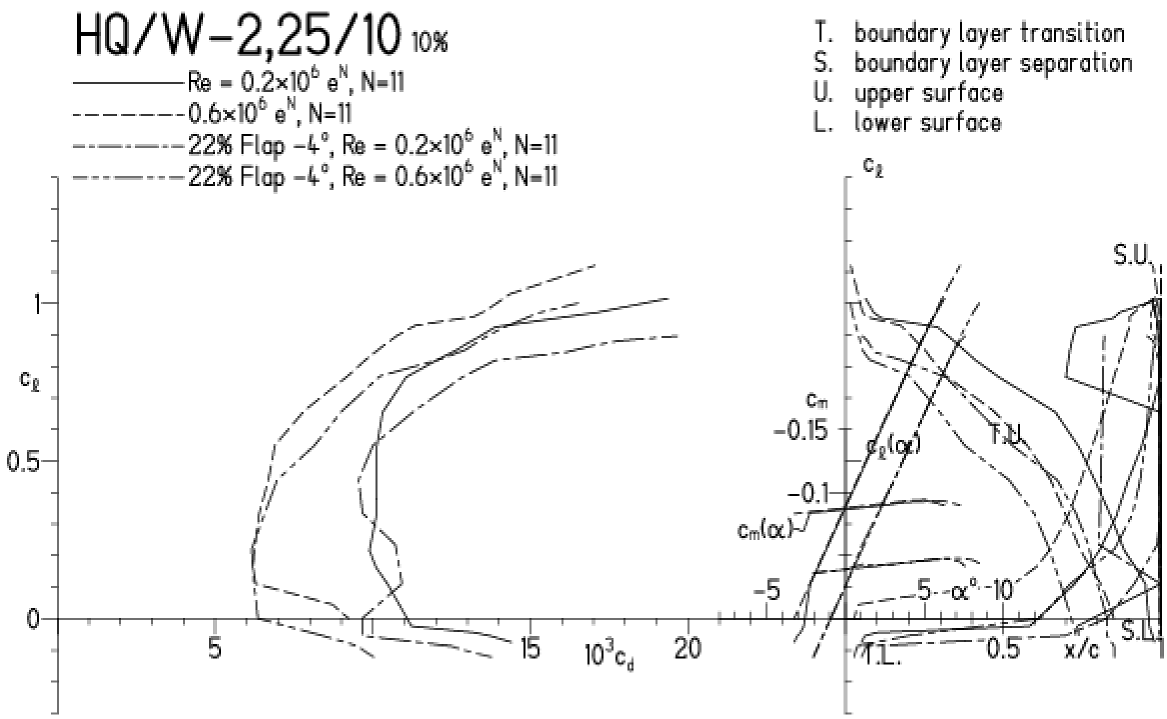


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

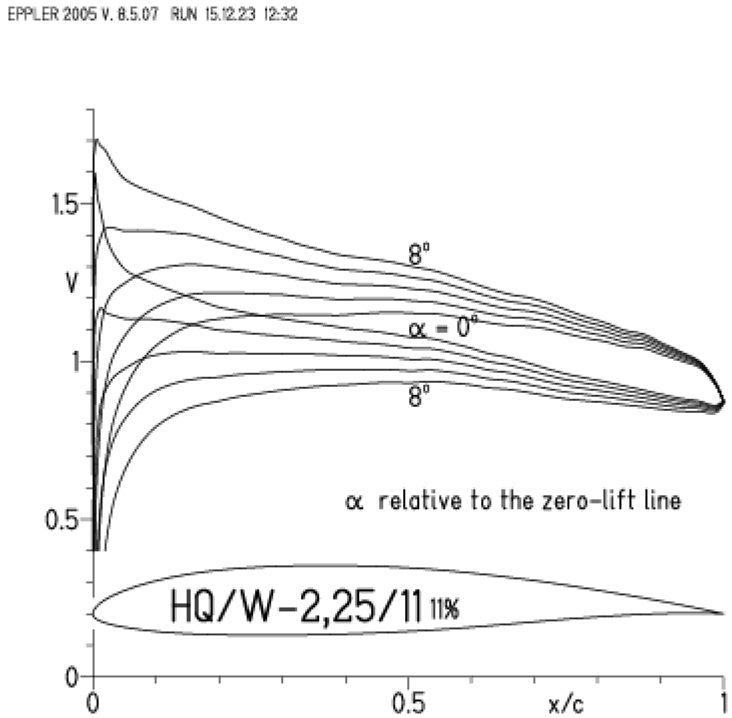
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

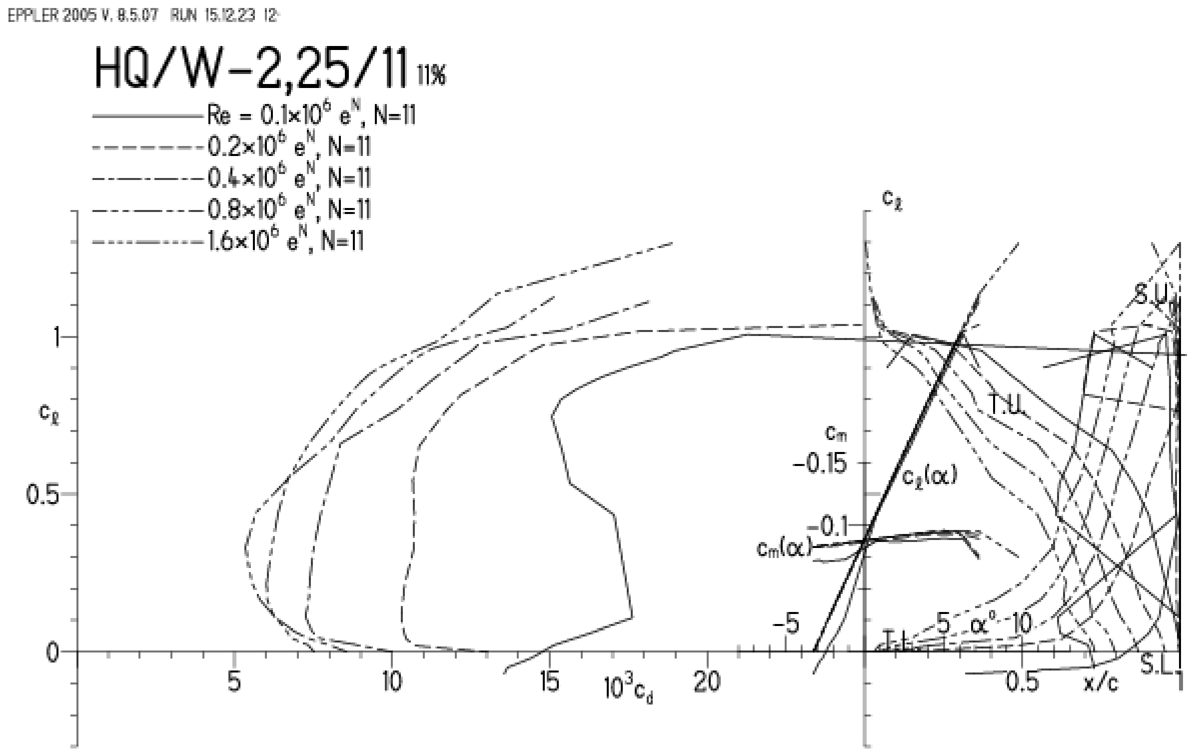


EPPLER 2005 V. 8.5.07 RUN



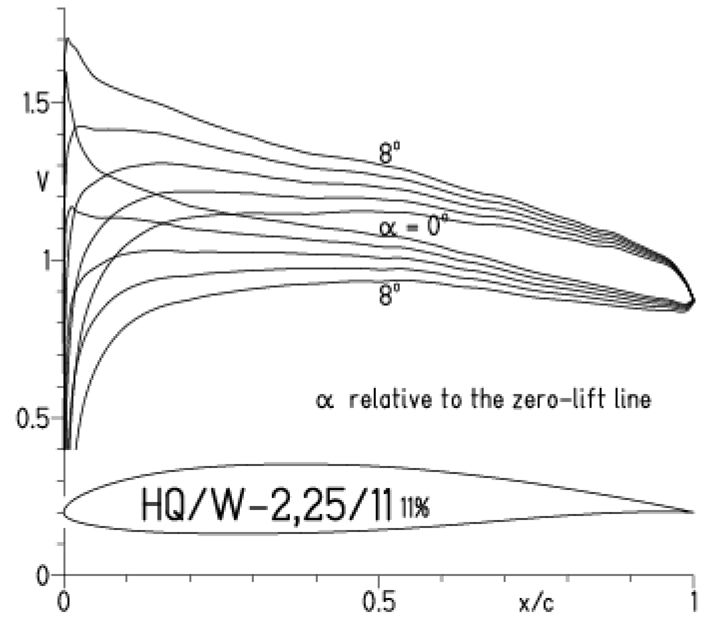
HQ/W-2,25/11, N=11



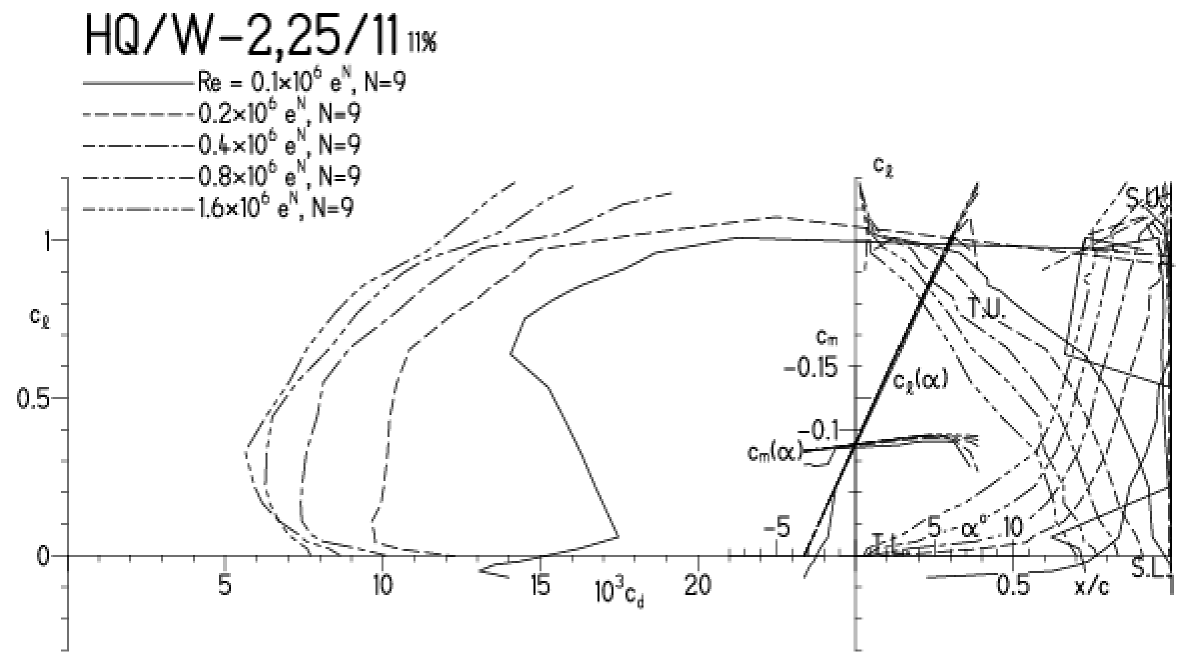


HQQ/W-2,25/11, N=9

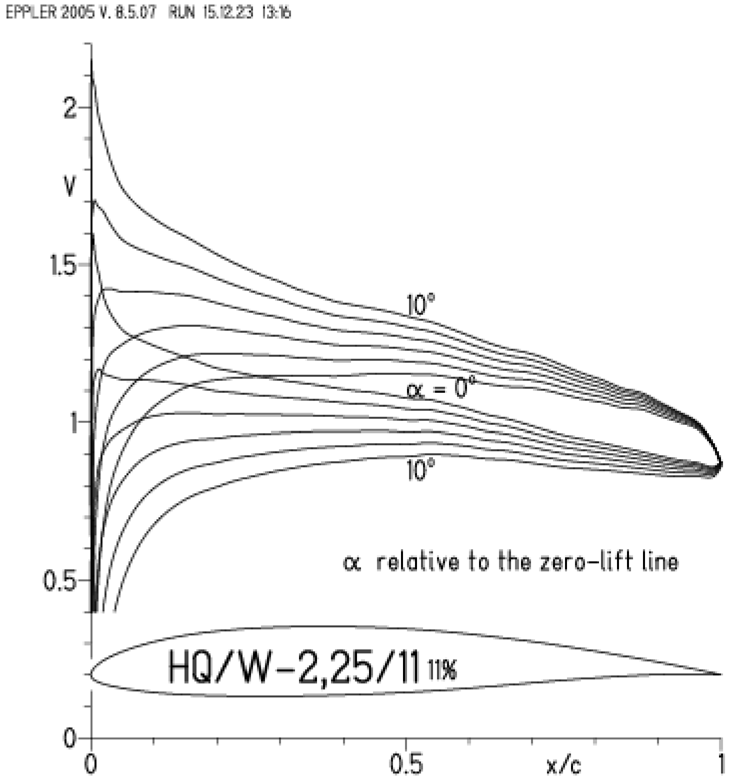
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

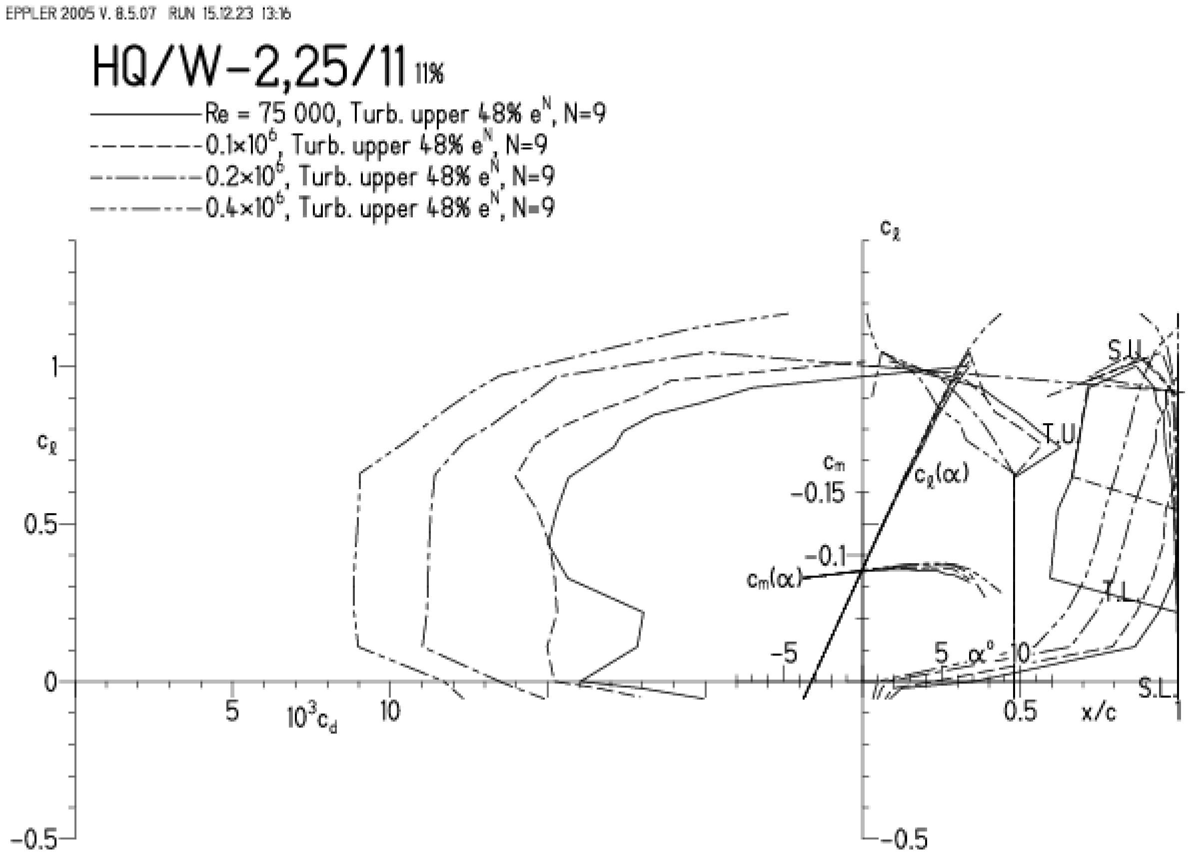


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



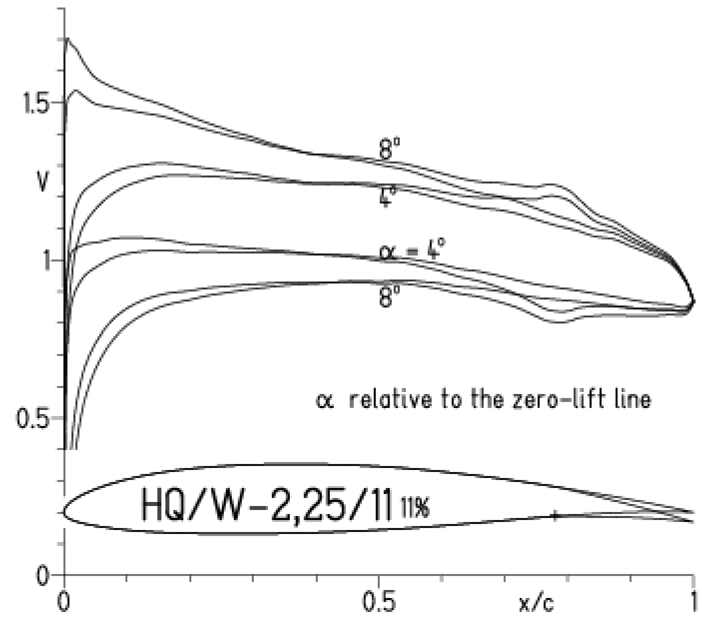
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



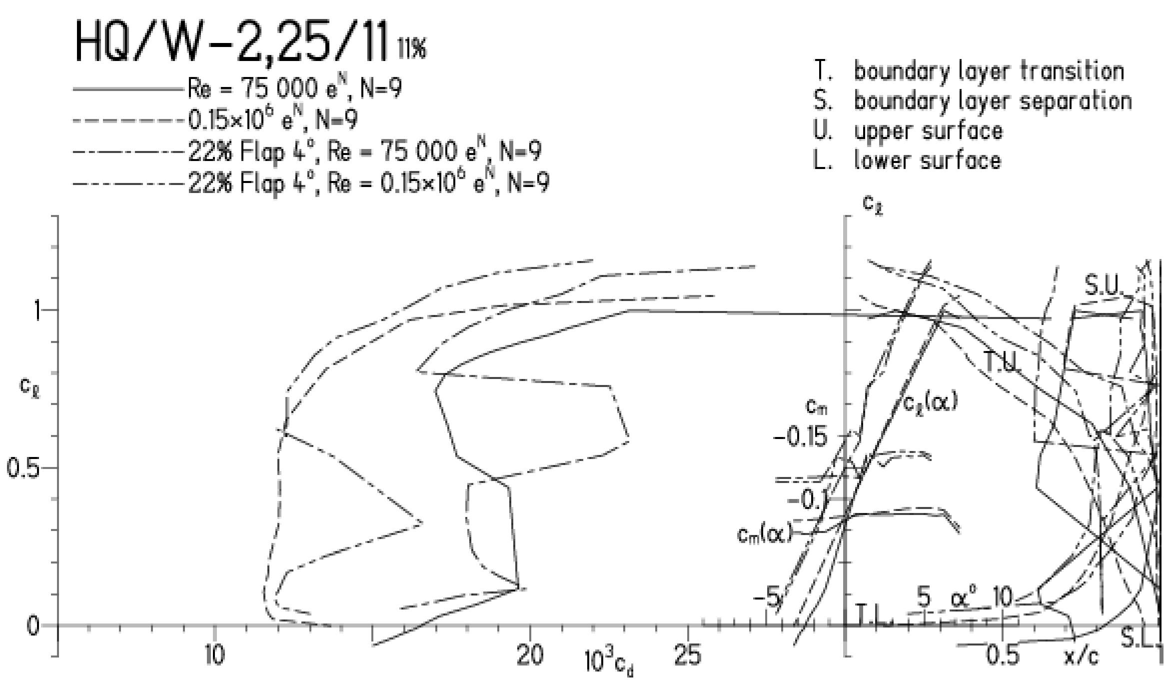


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

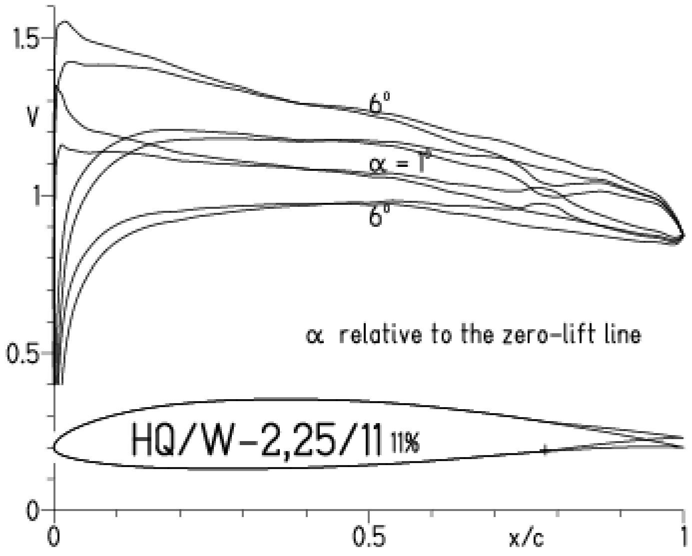


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

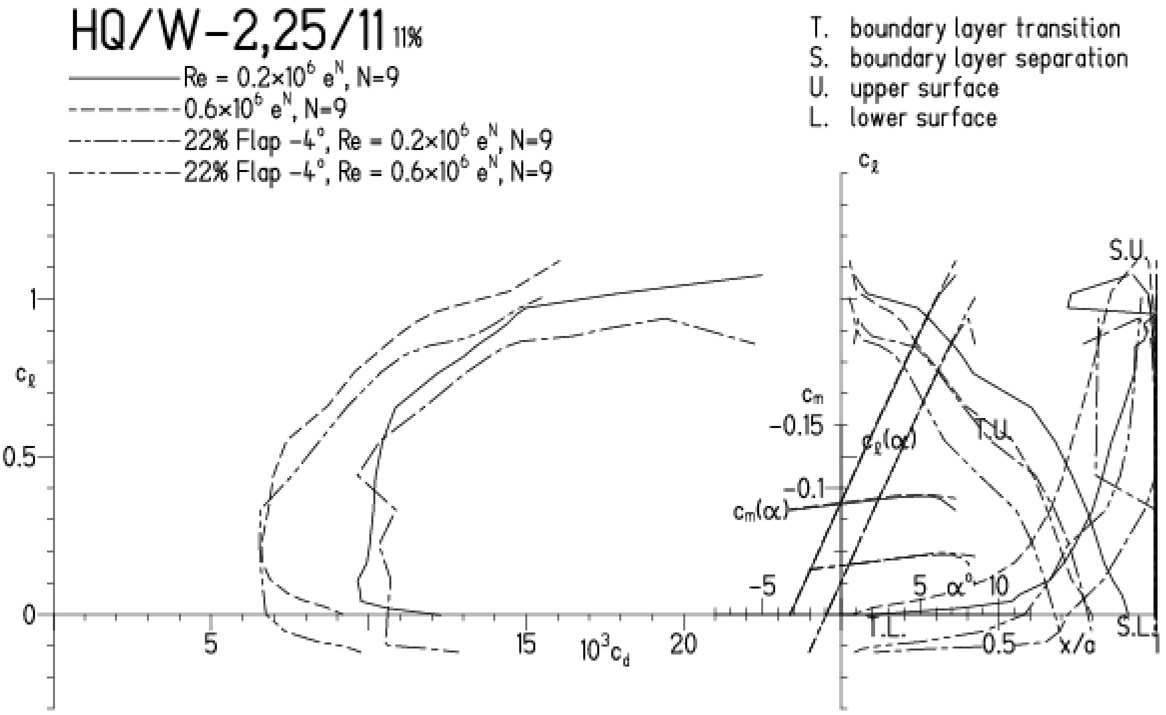


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

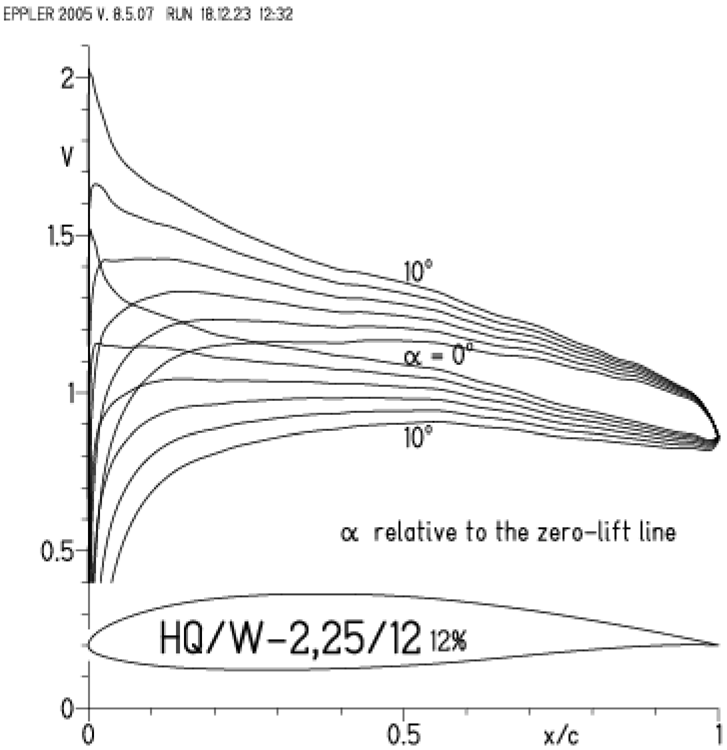
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

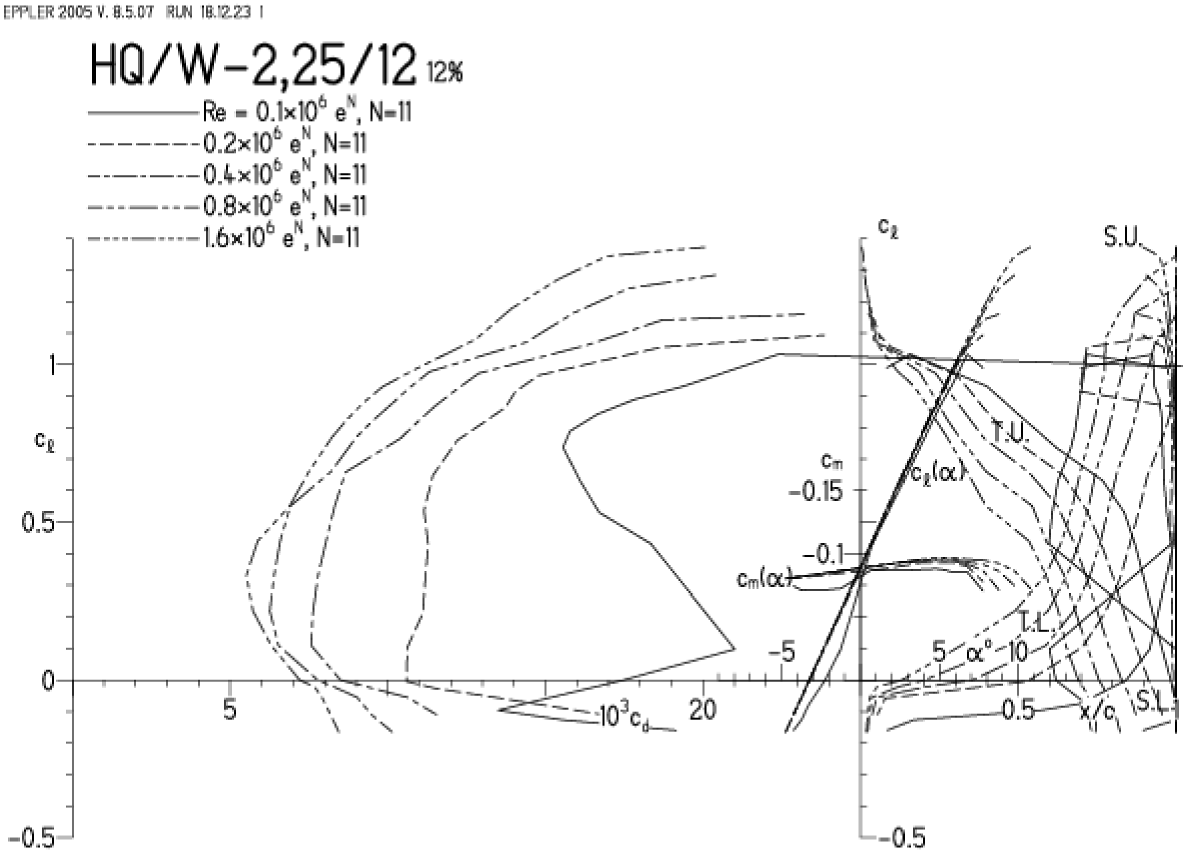


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

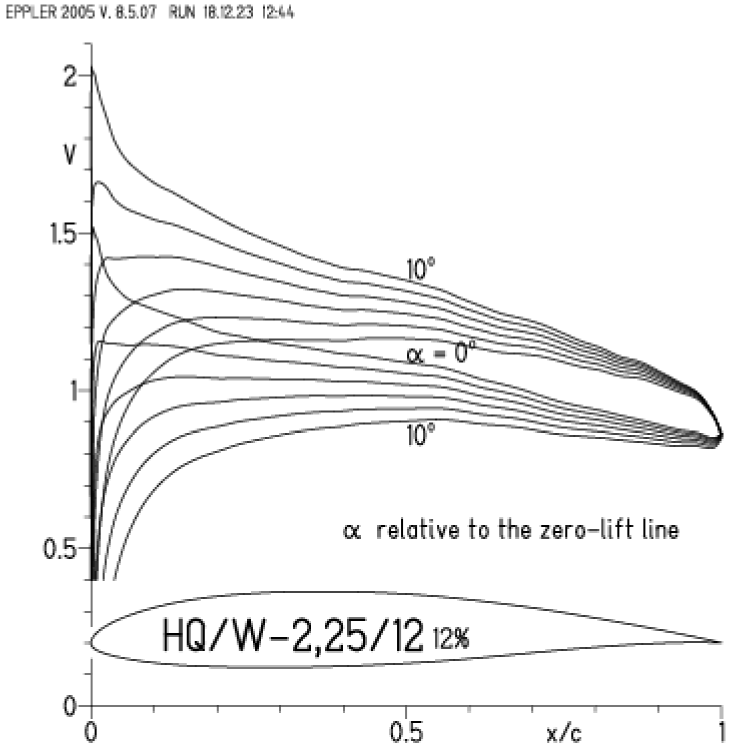


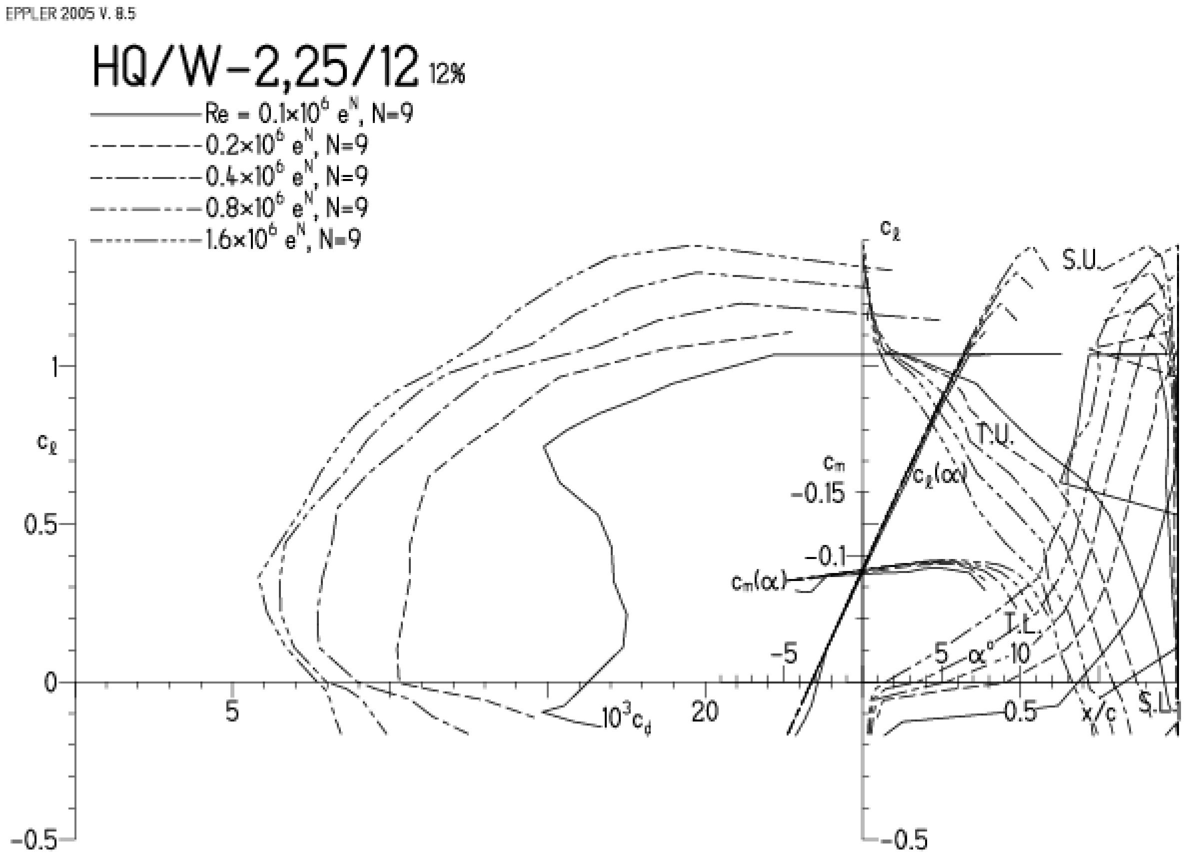
<u>HQ/W-2,25/12</u>, N=11



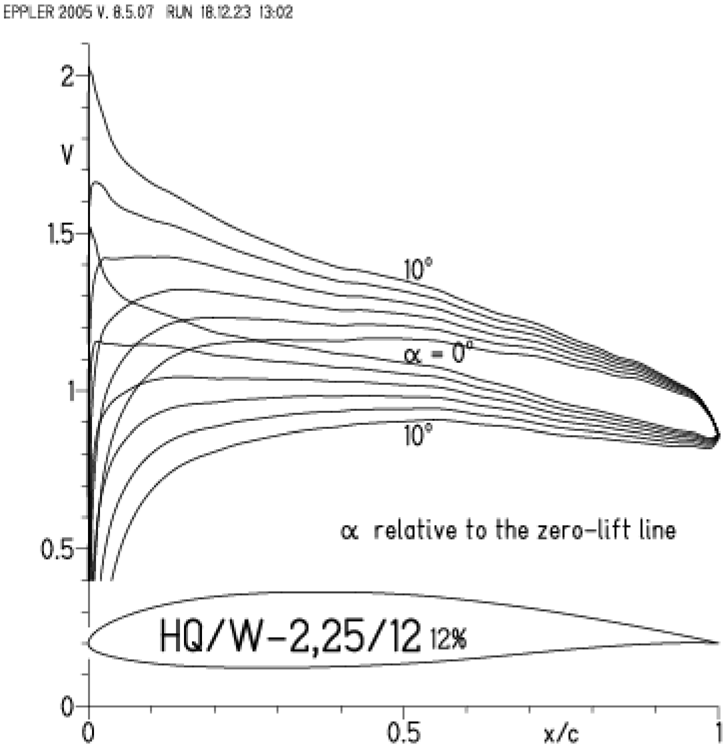


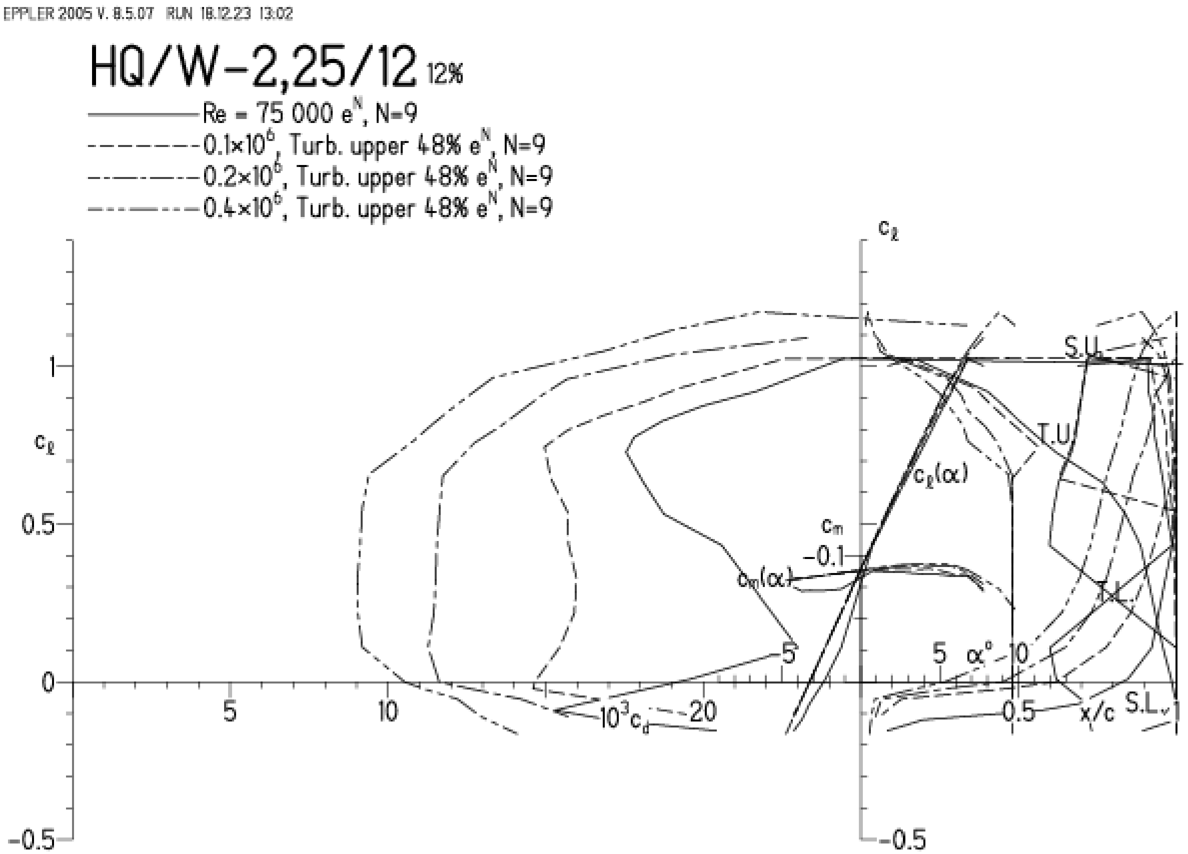
<u>HQ/W-2,25/12</u>, N=9





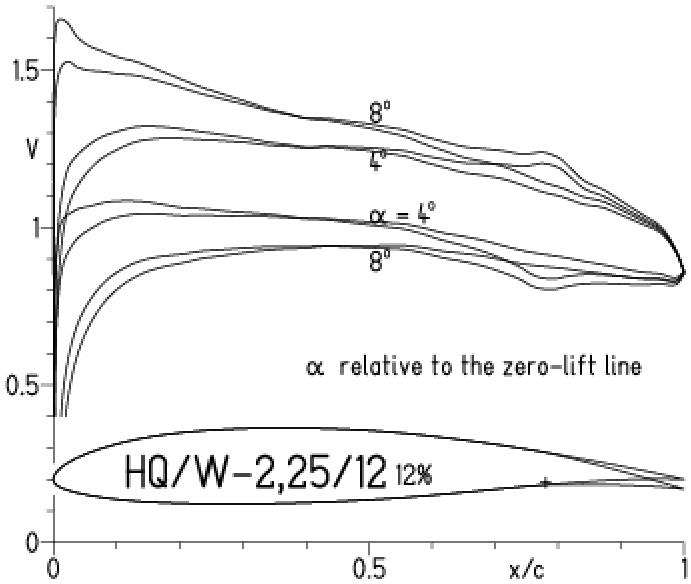
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



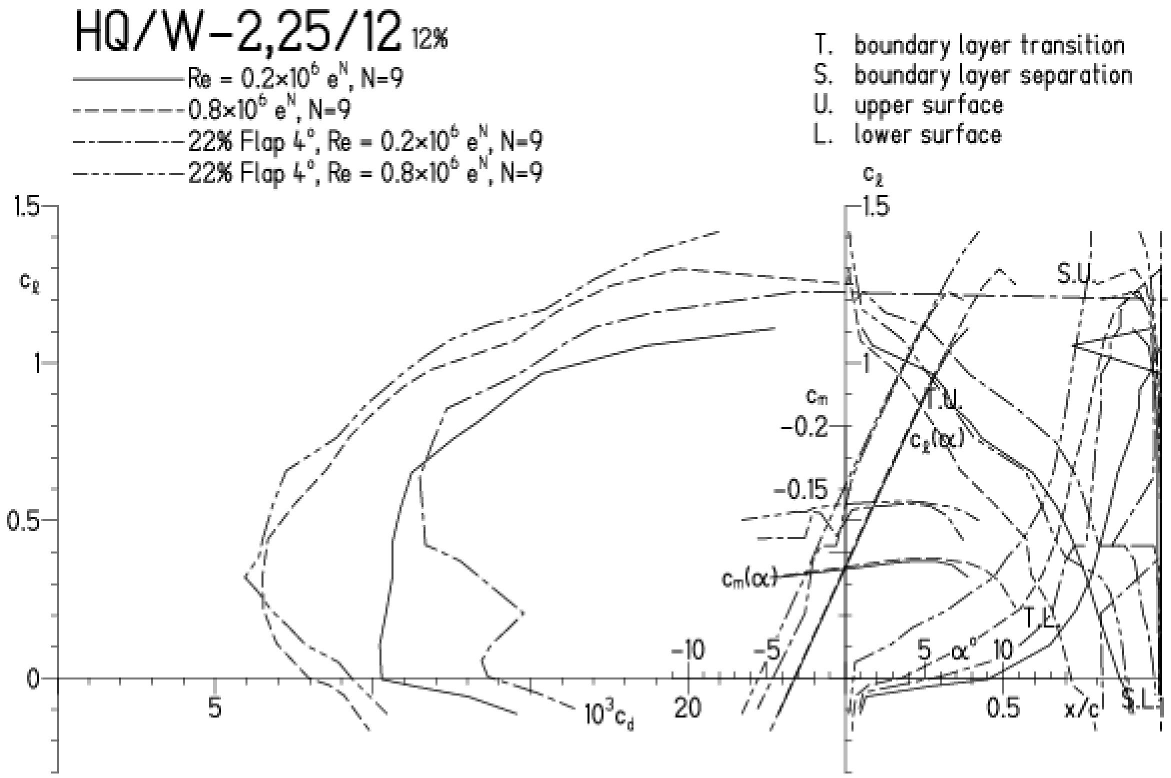


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

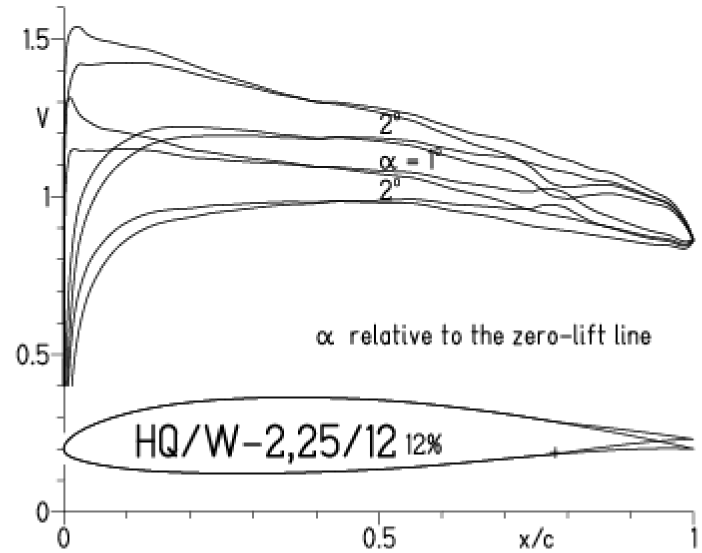


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

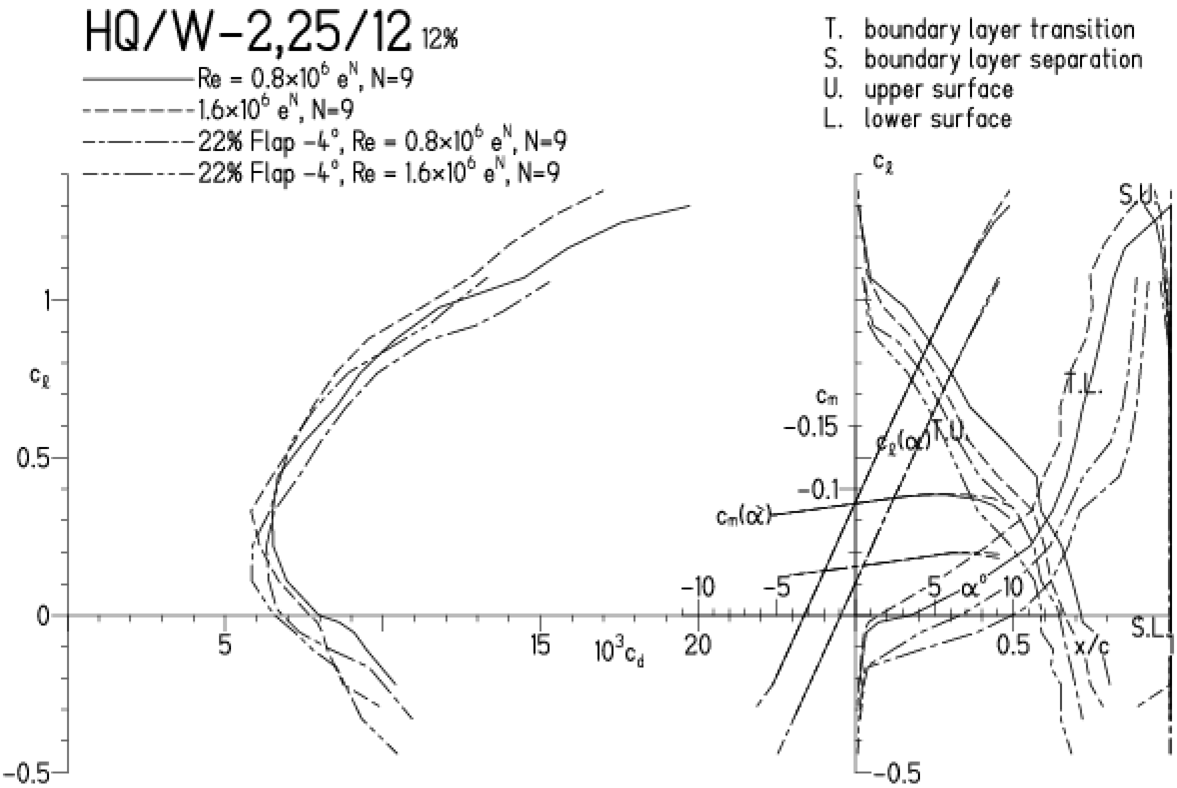


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

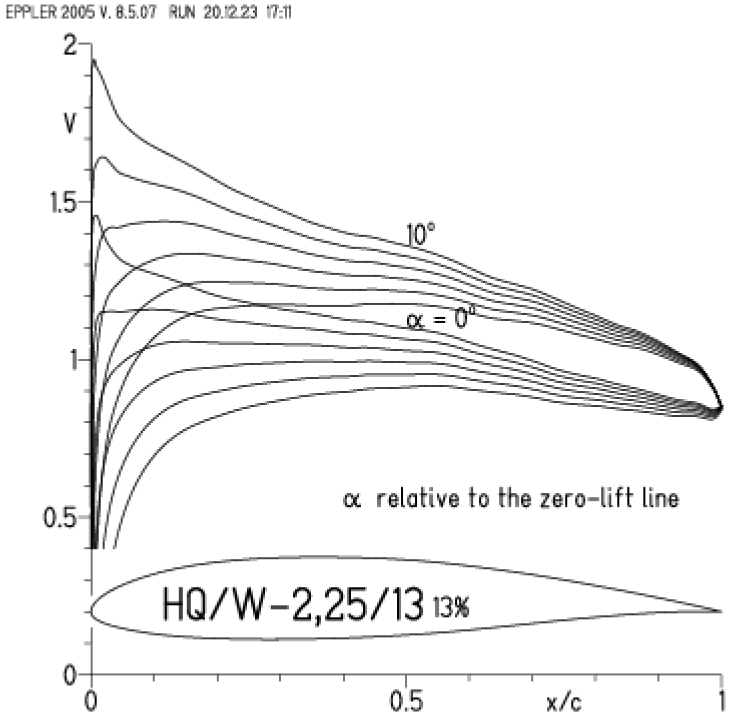
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

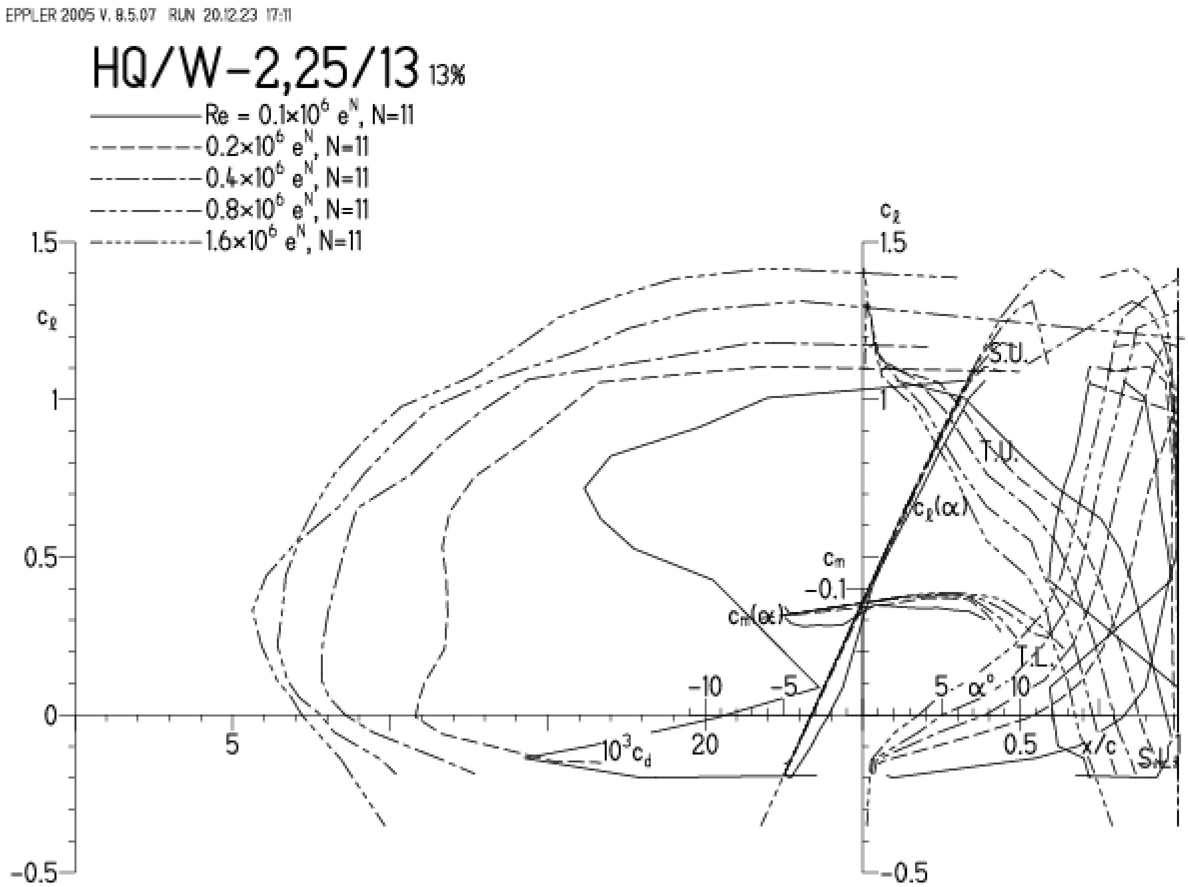


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

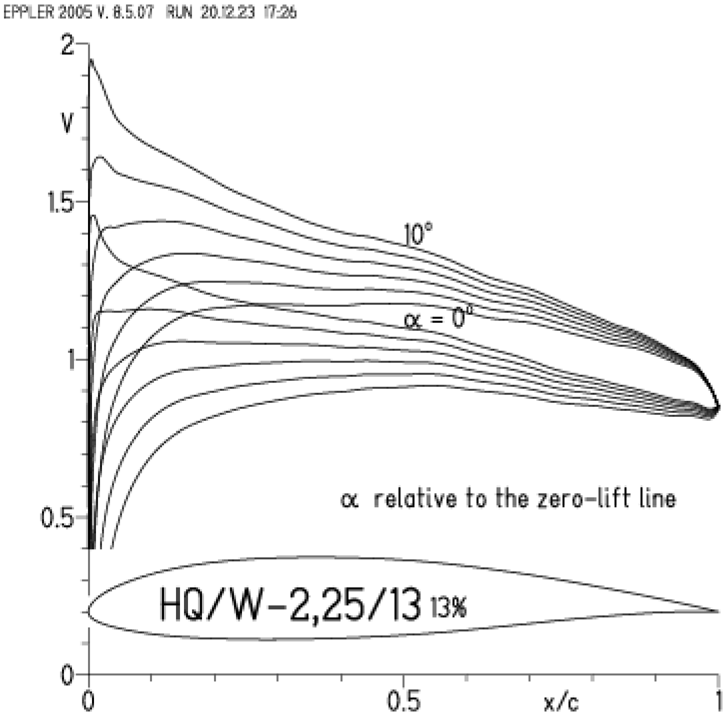


HQ/W-2,25/13, N=11

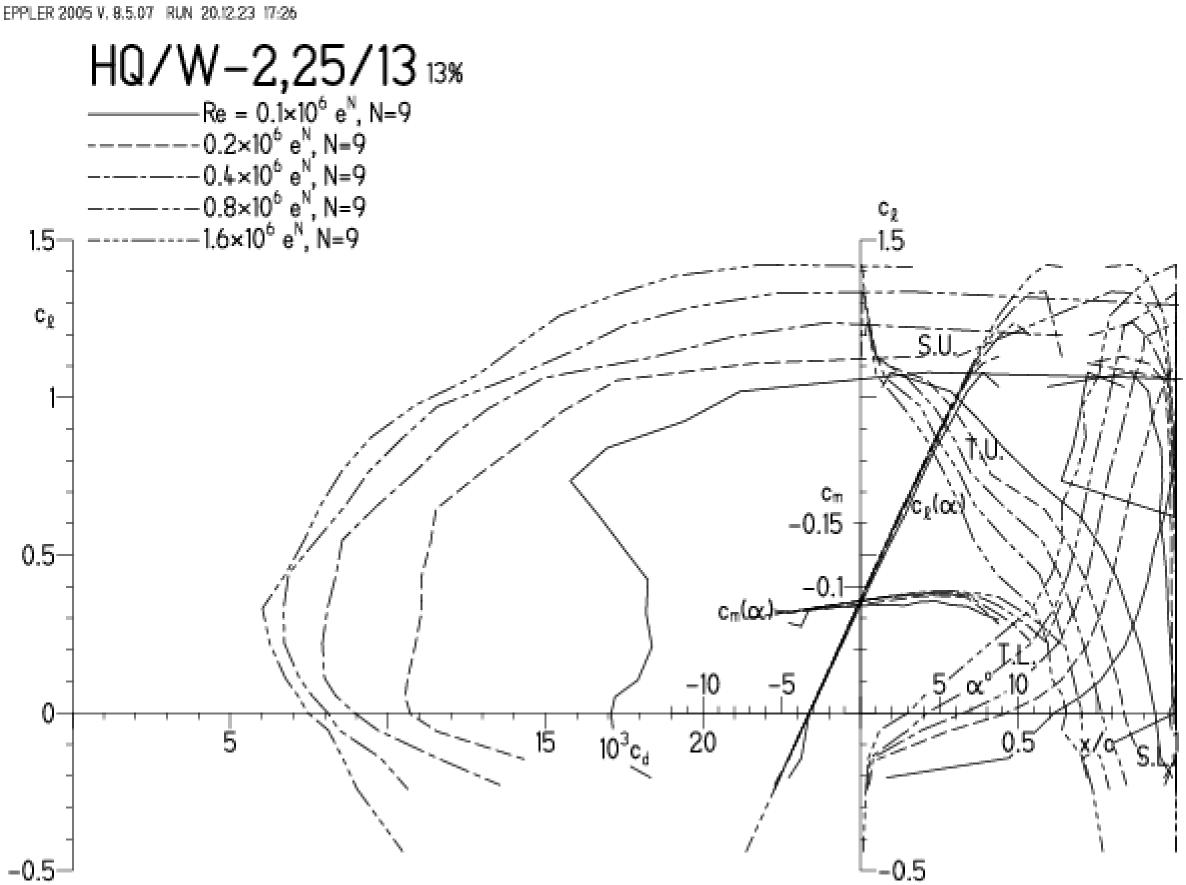




HQ/W-2,25/13, N=9

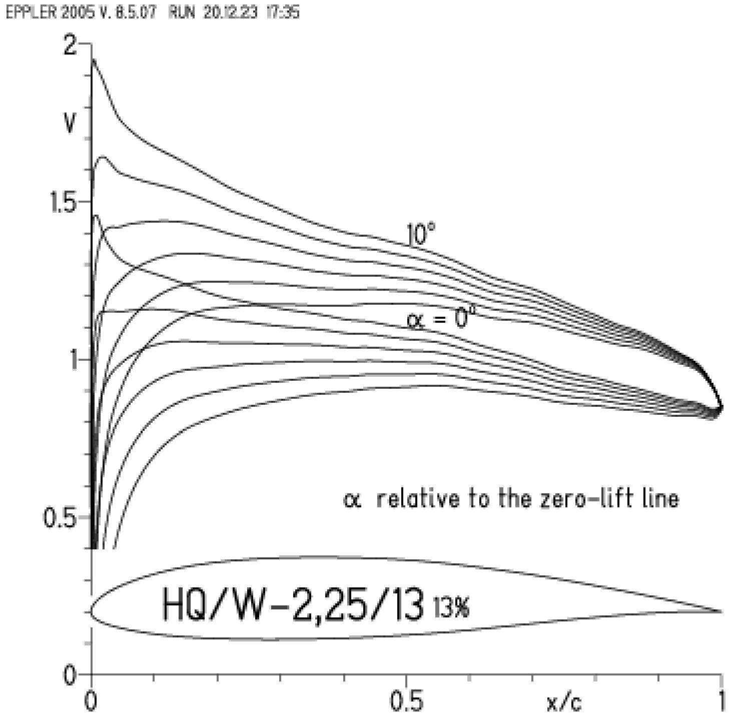


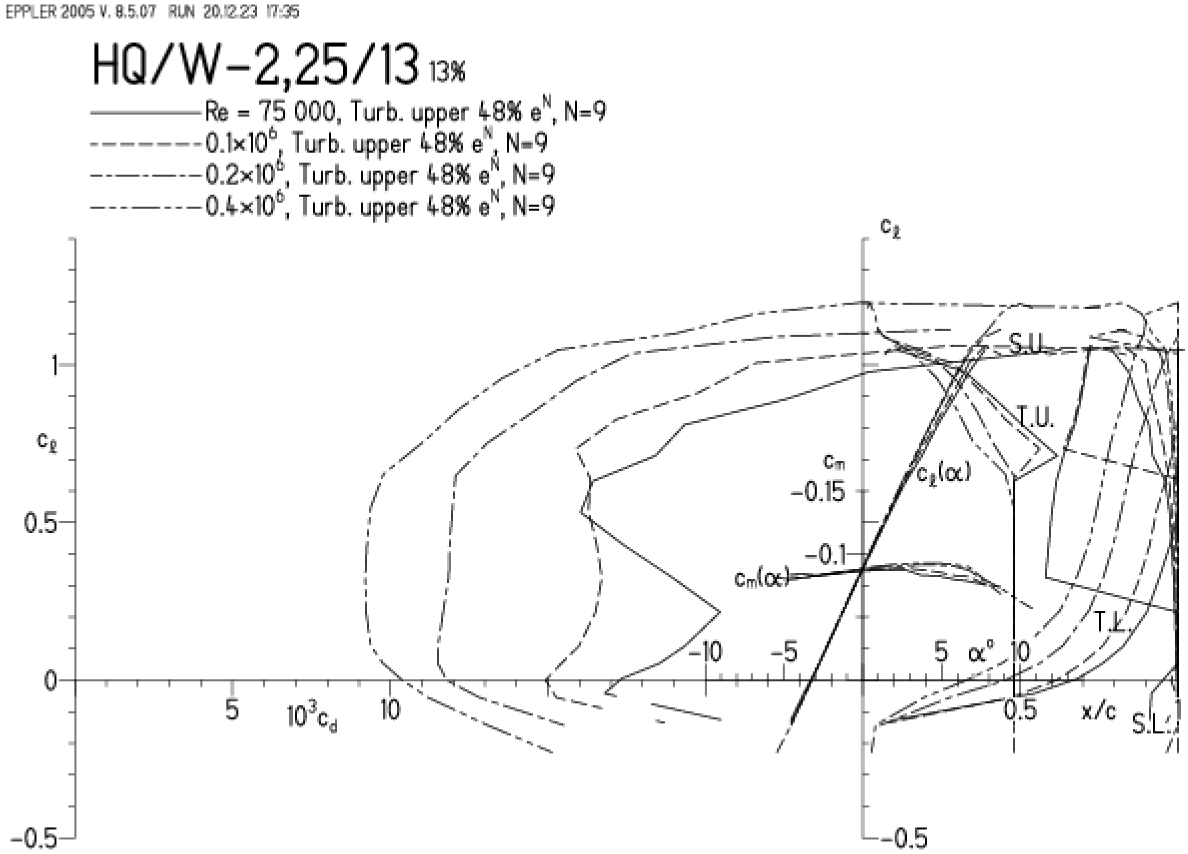
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
α relative to the zero-lift line
0.5
HQ/W-2,25/13 13%
0
0
0.5
x/c
1



EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_ℓ
1.5
S.U.
T.U.
c_m
-0.15
c_ℓ(α)
-0.1
c_m(α)
-10
-5
5
α°
10
T.L.
0.5
x/c
S.L.
-0.5

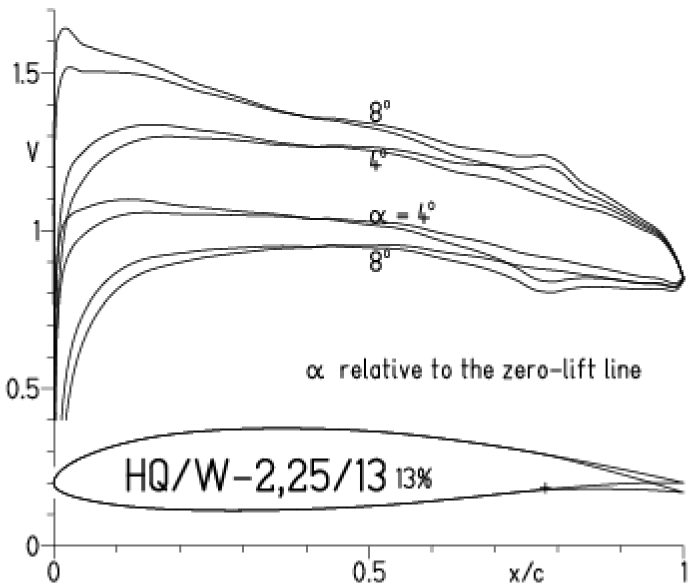
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



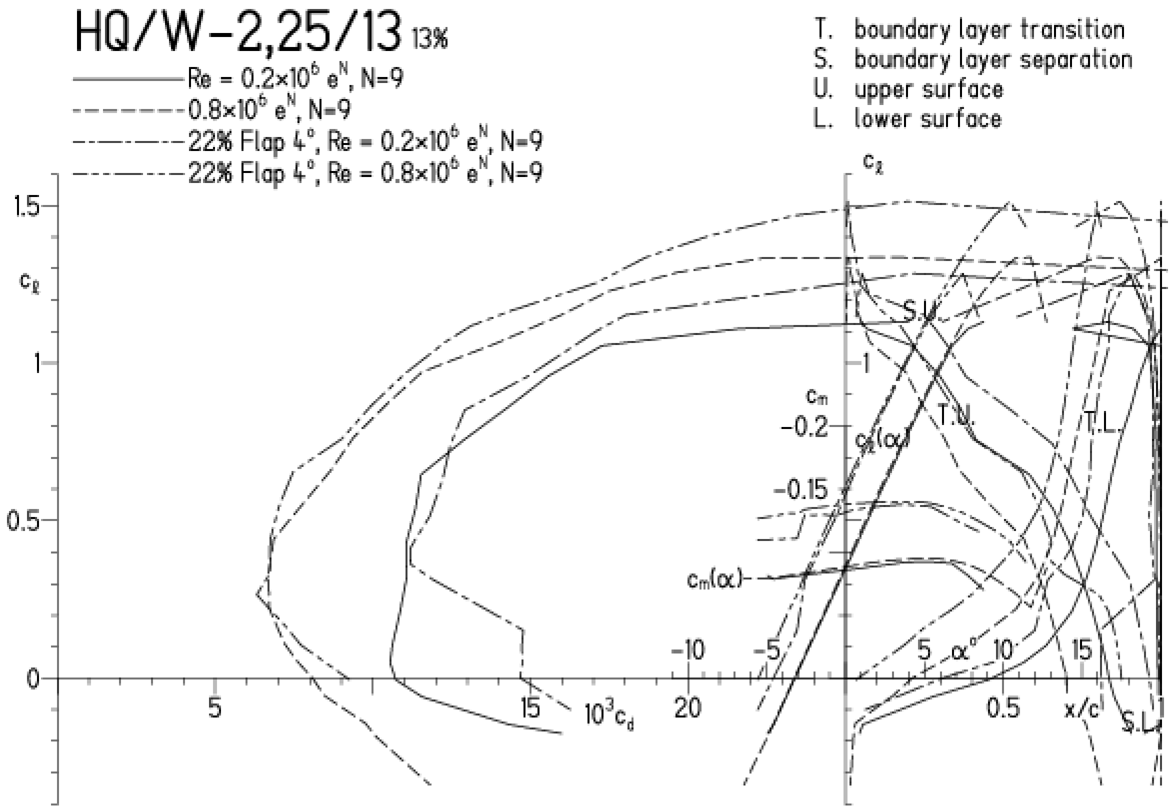


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

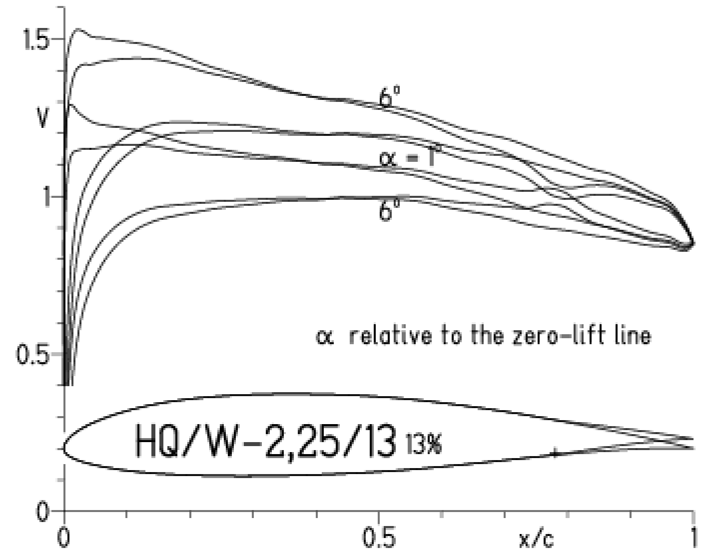


EPPLER 2005 V.

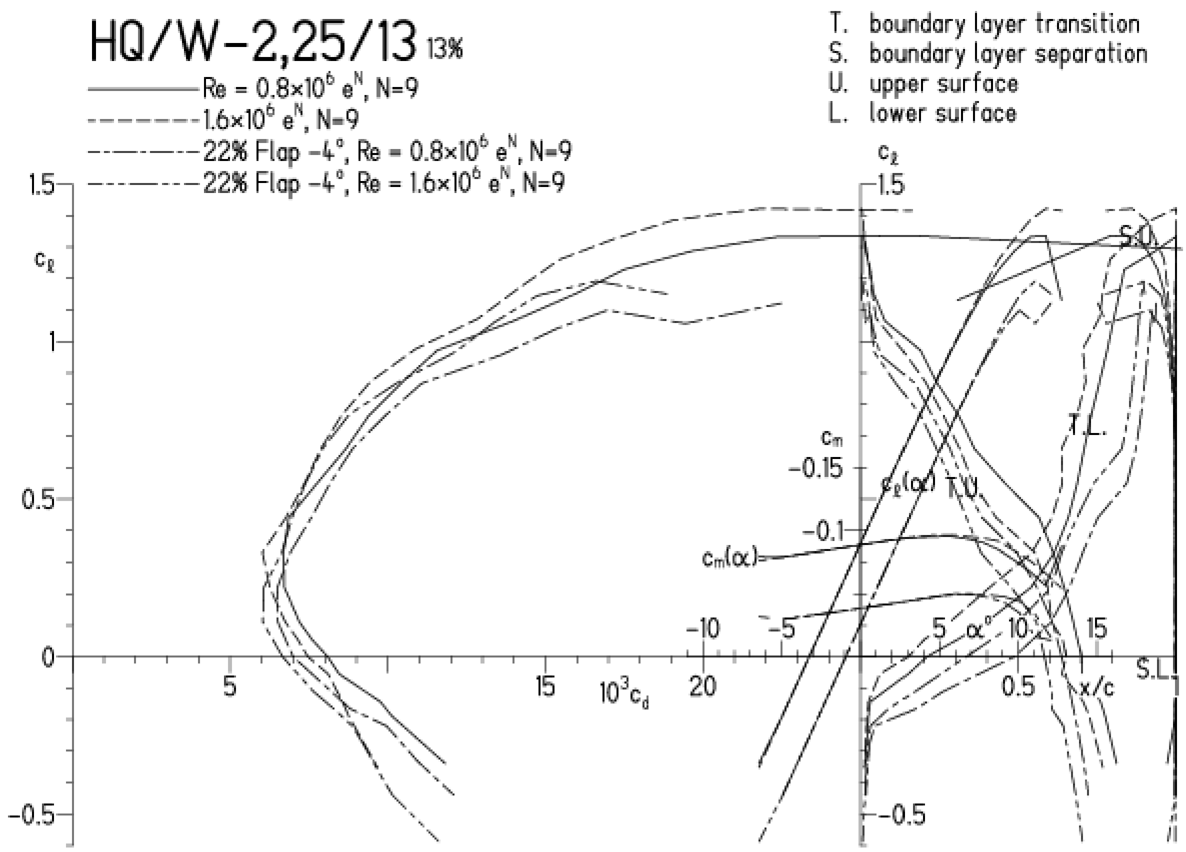


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

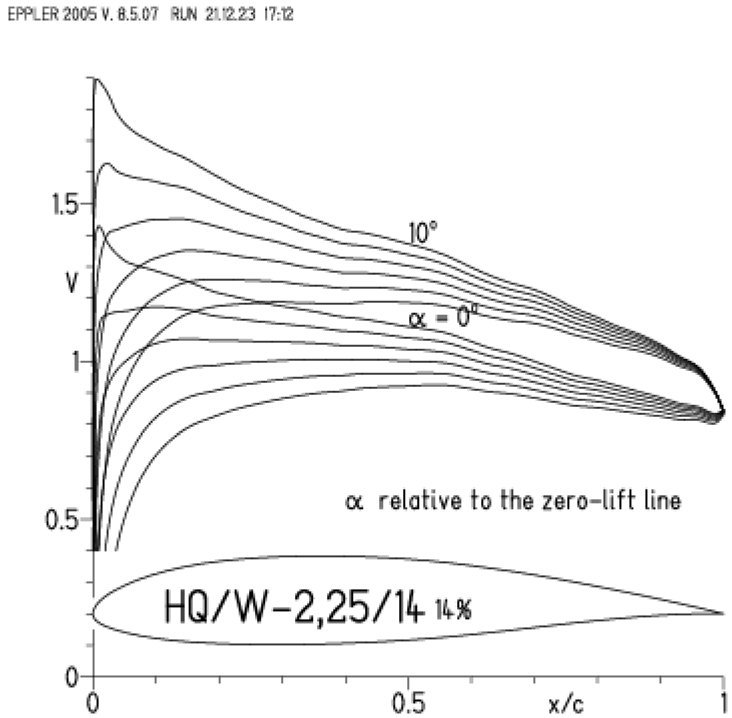
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

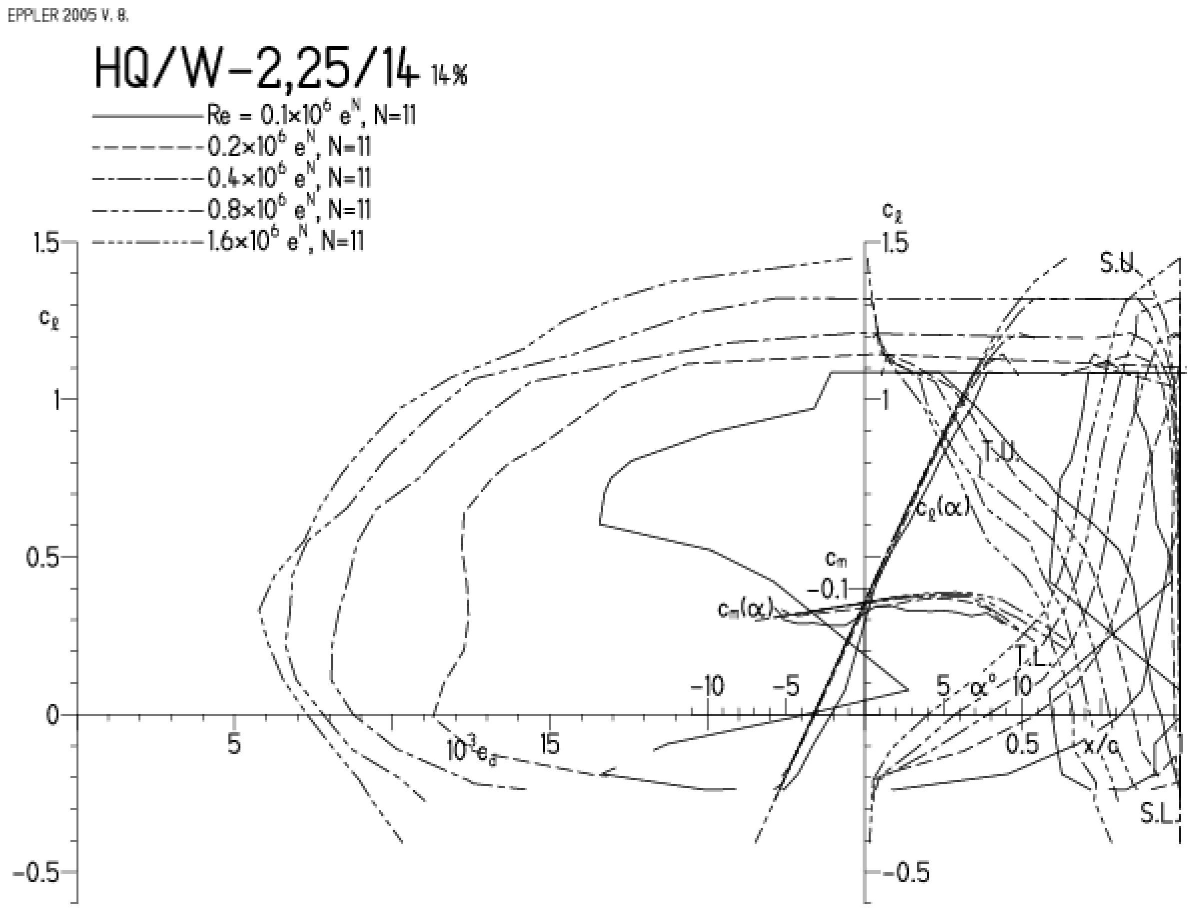


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

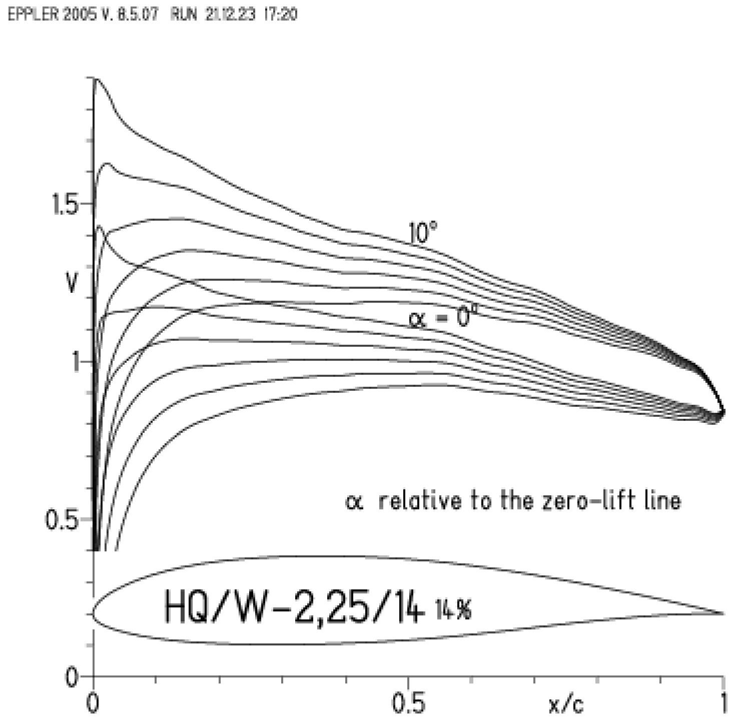


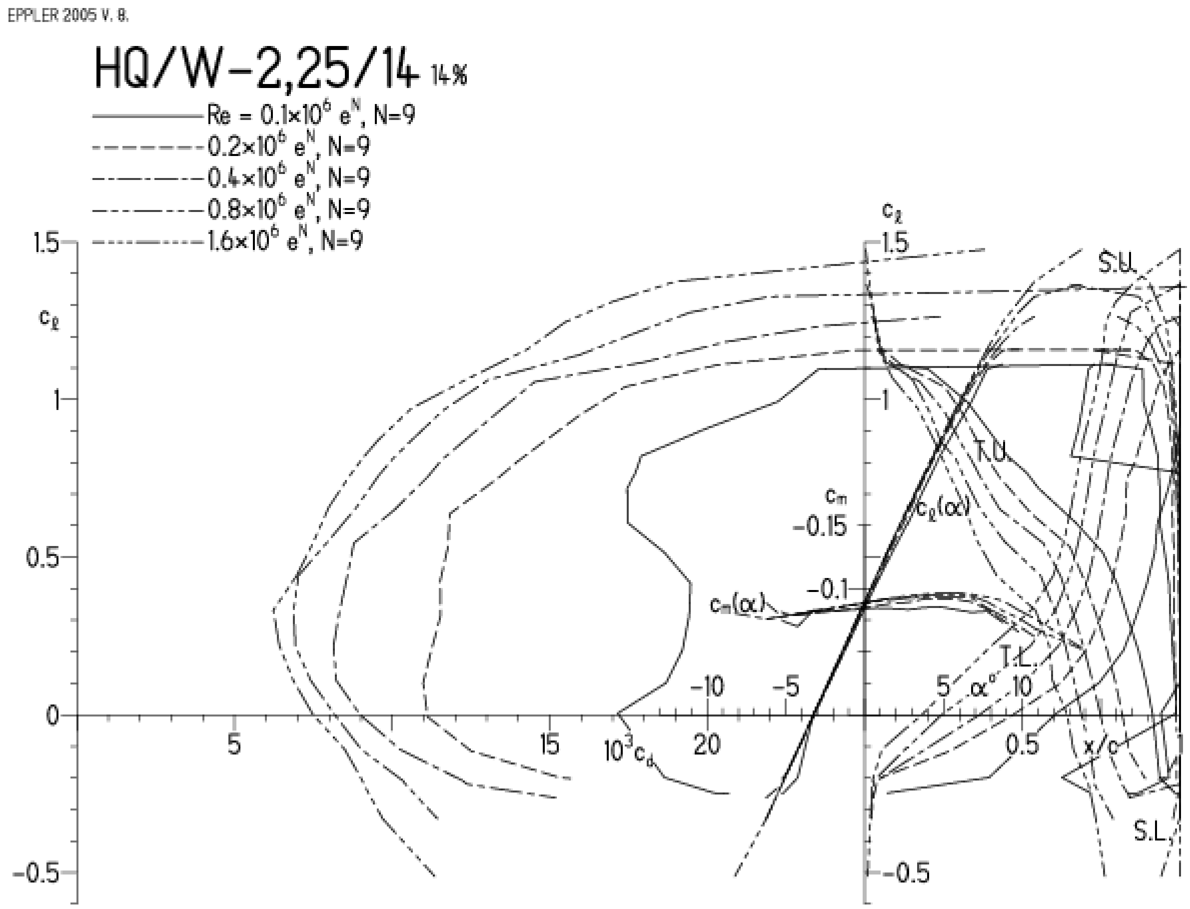
<u>HQ/W-2,25/14</u>, N=11



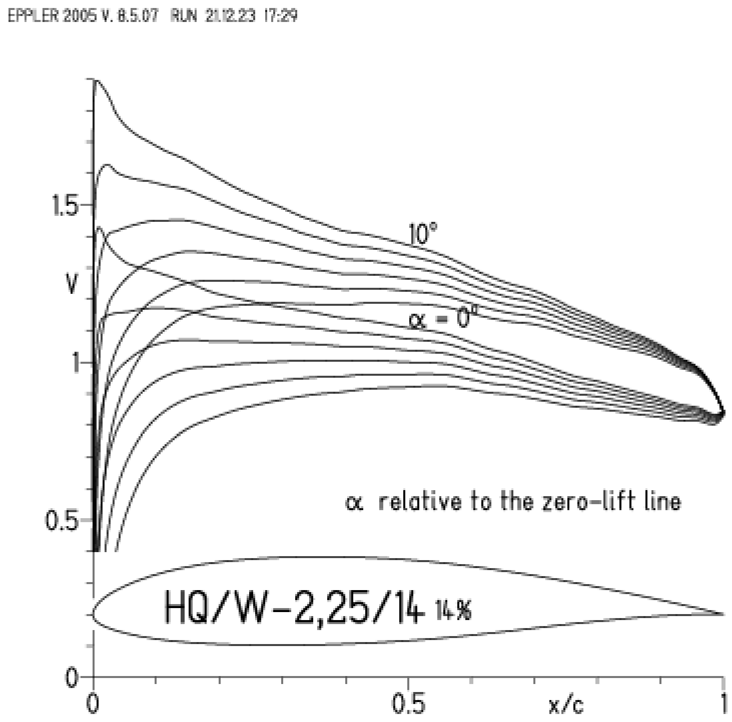


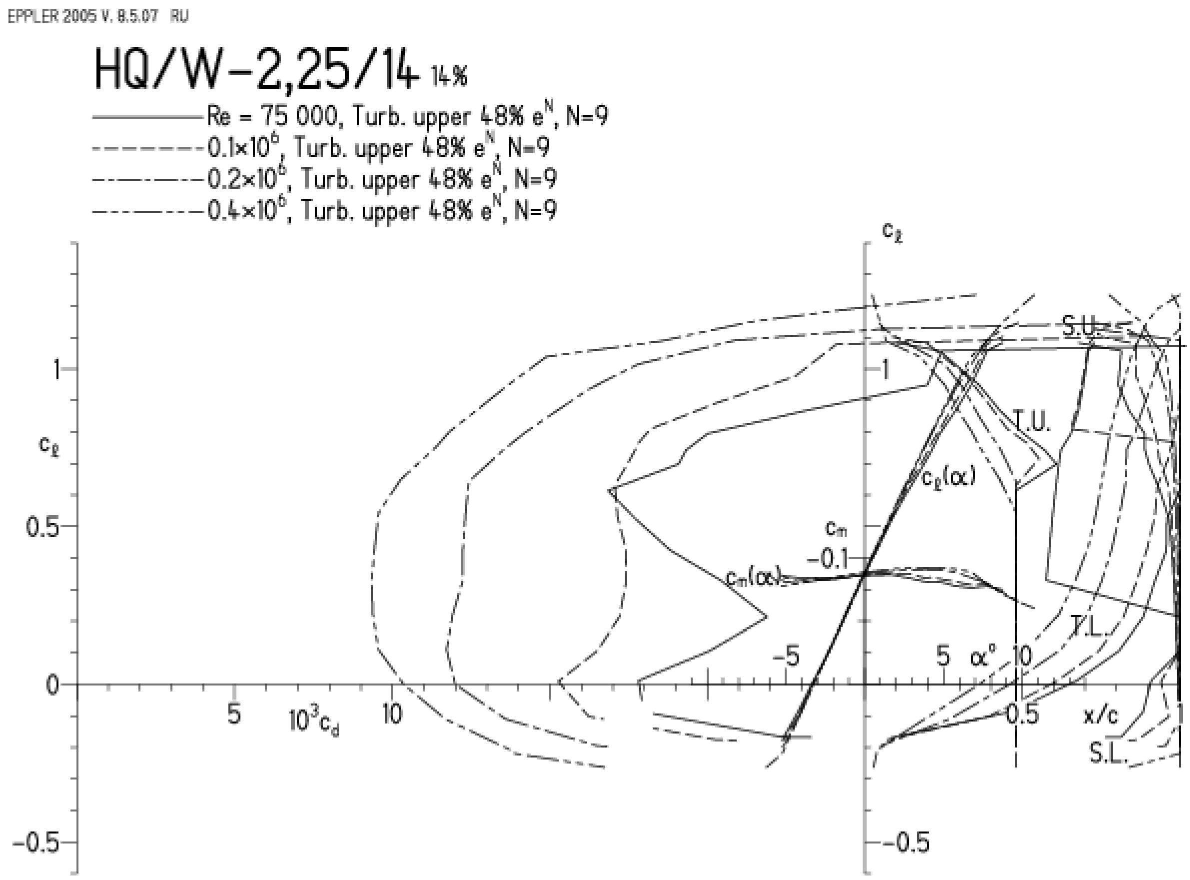
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
-10
-5
5
α°
10
0.5
x/c
1
c_l
1.5
c_m
-0.15
-0.1
c_l(α)
c_m(α)
T.U.
T.L.
S.U.
S.L.
-0.5

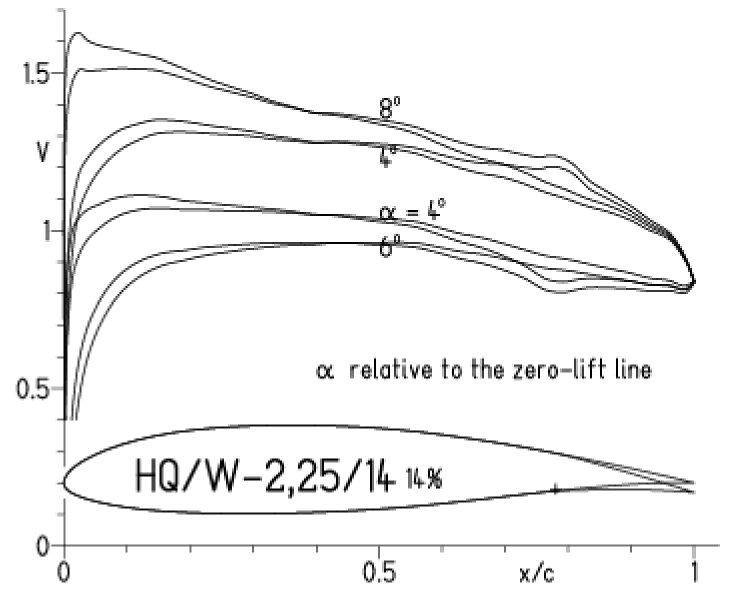
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



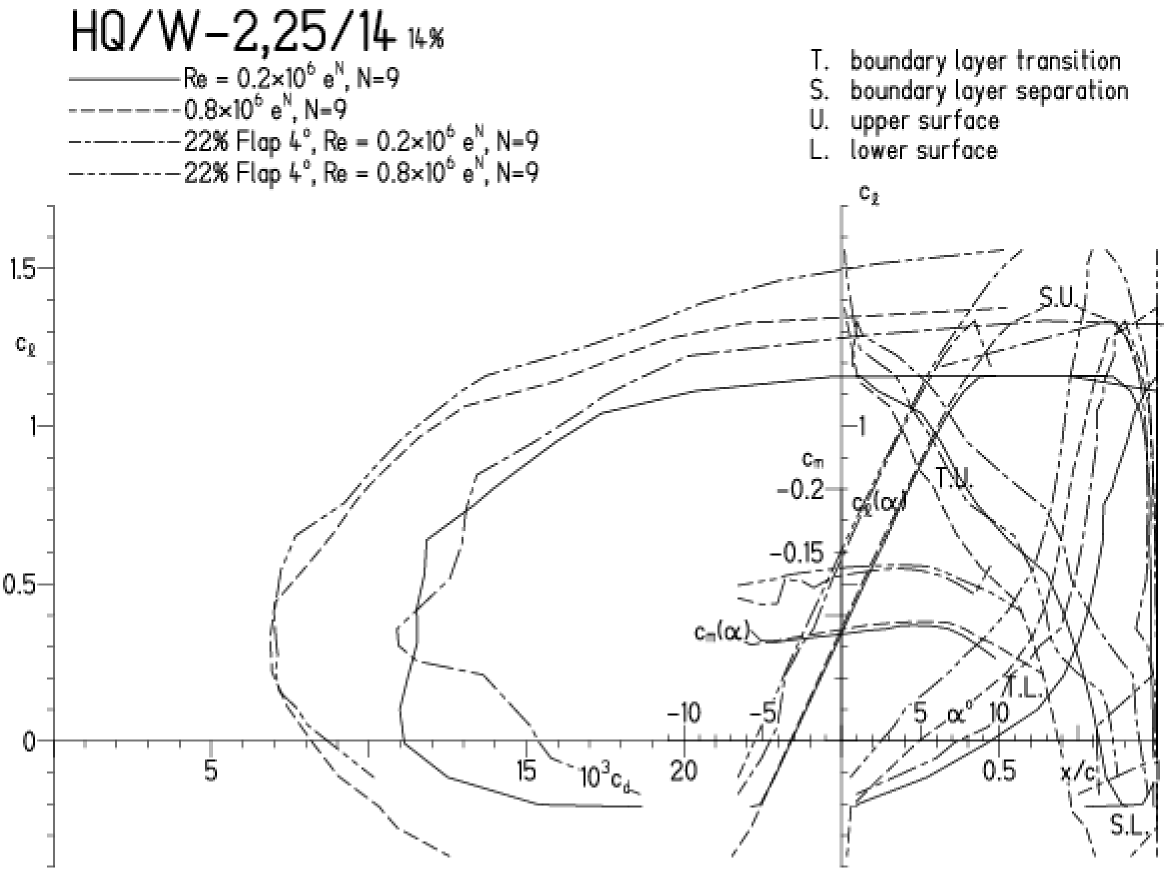


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

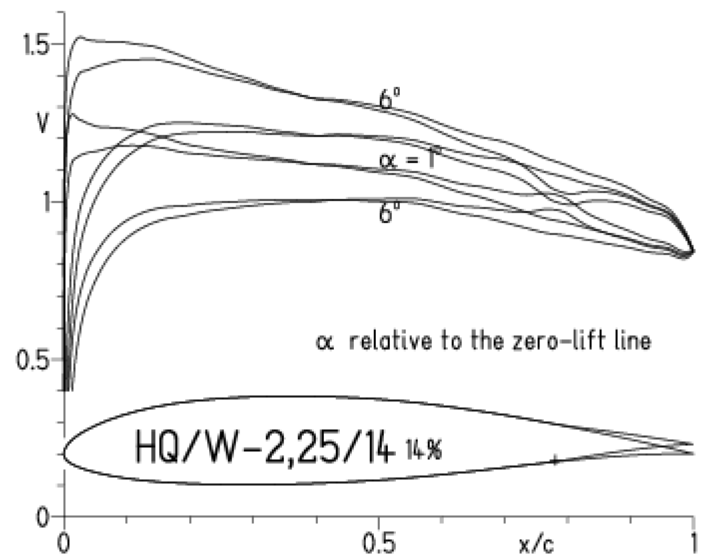


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

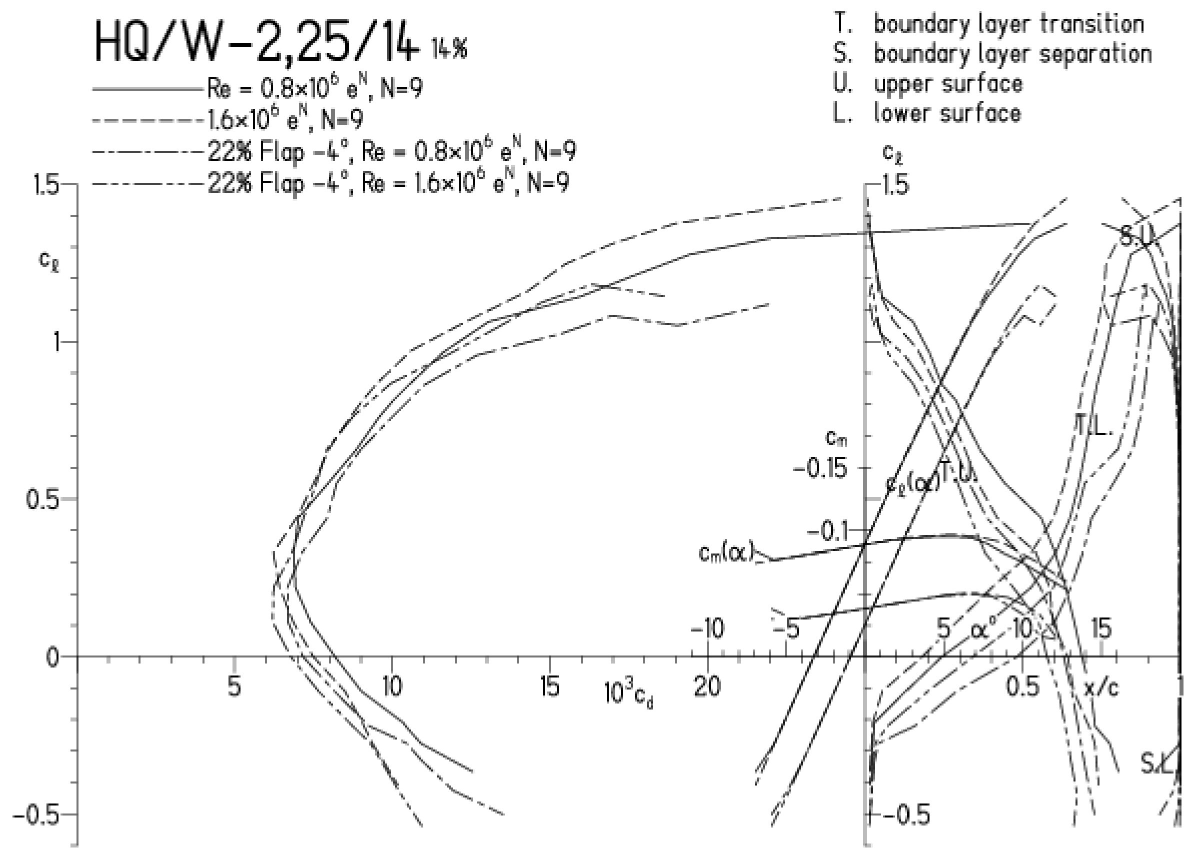


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

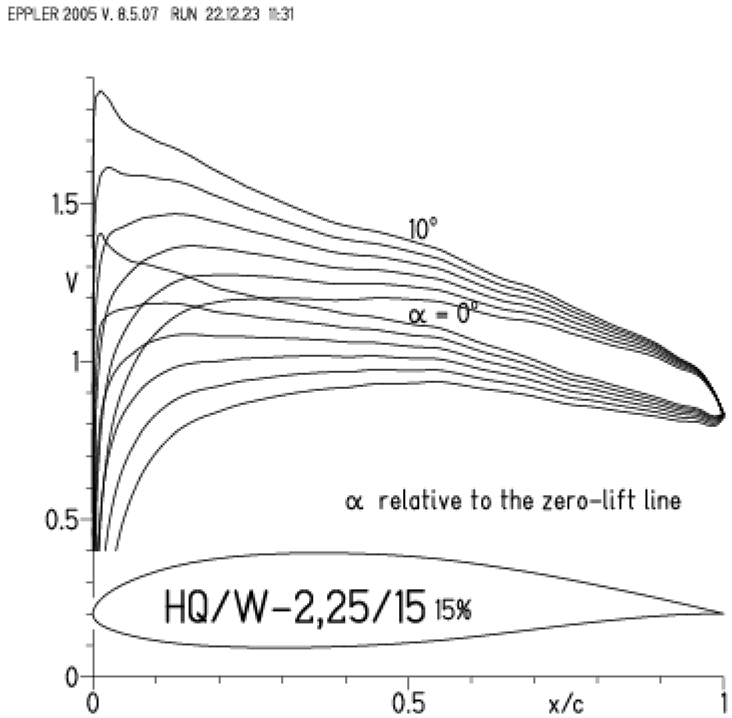
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

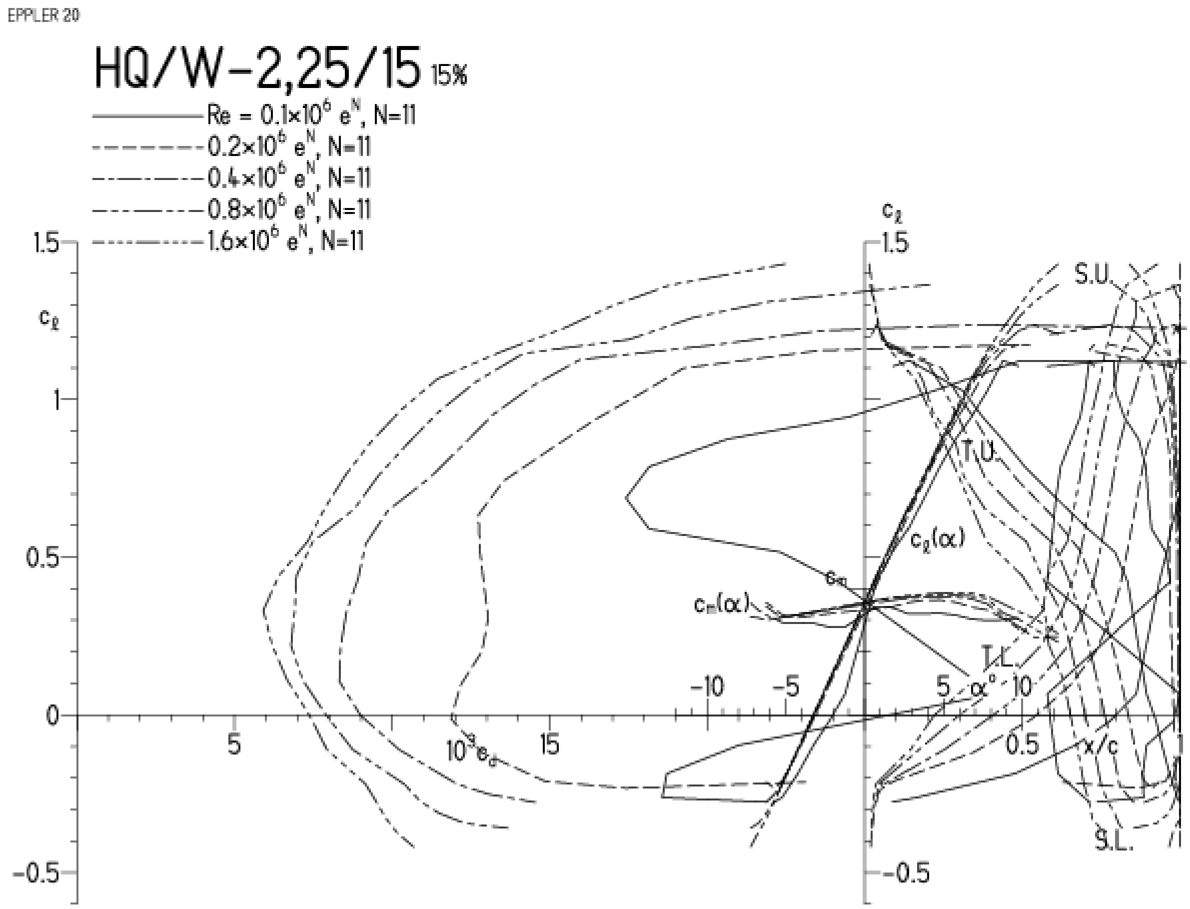


EPPLER 2005 V. 8.5.07

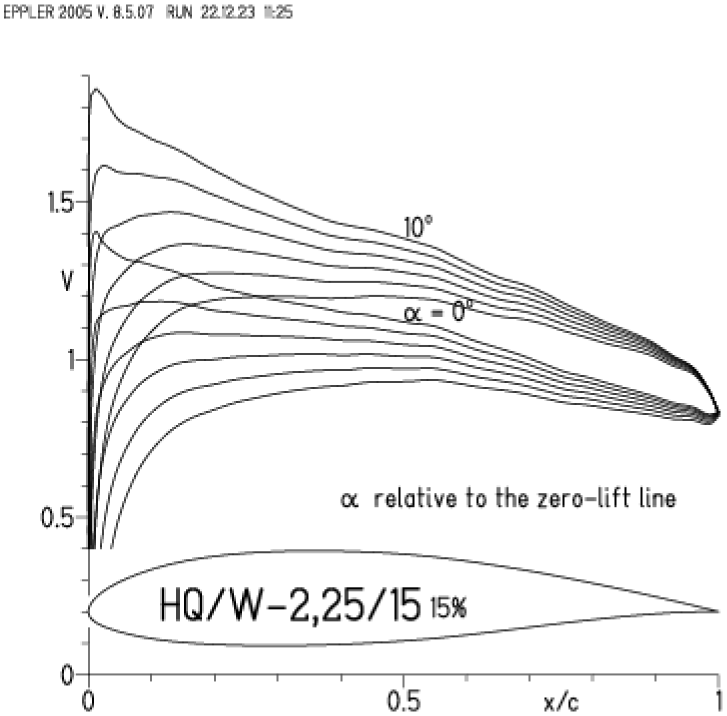


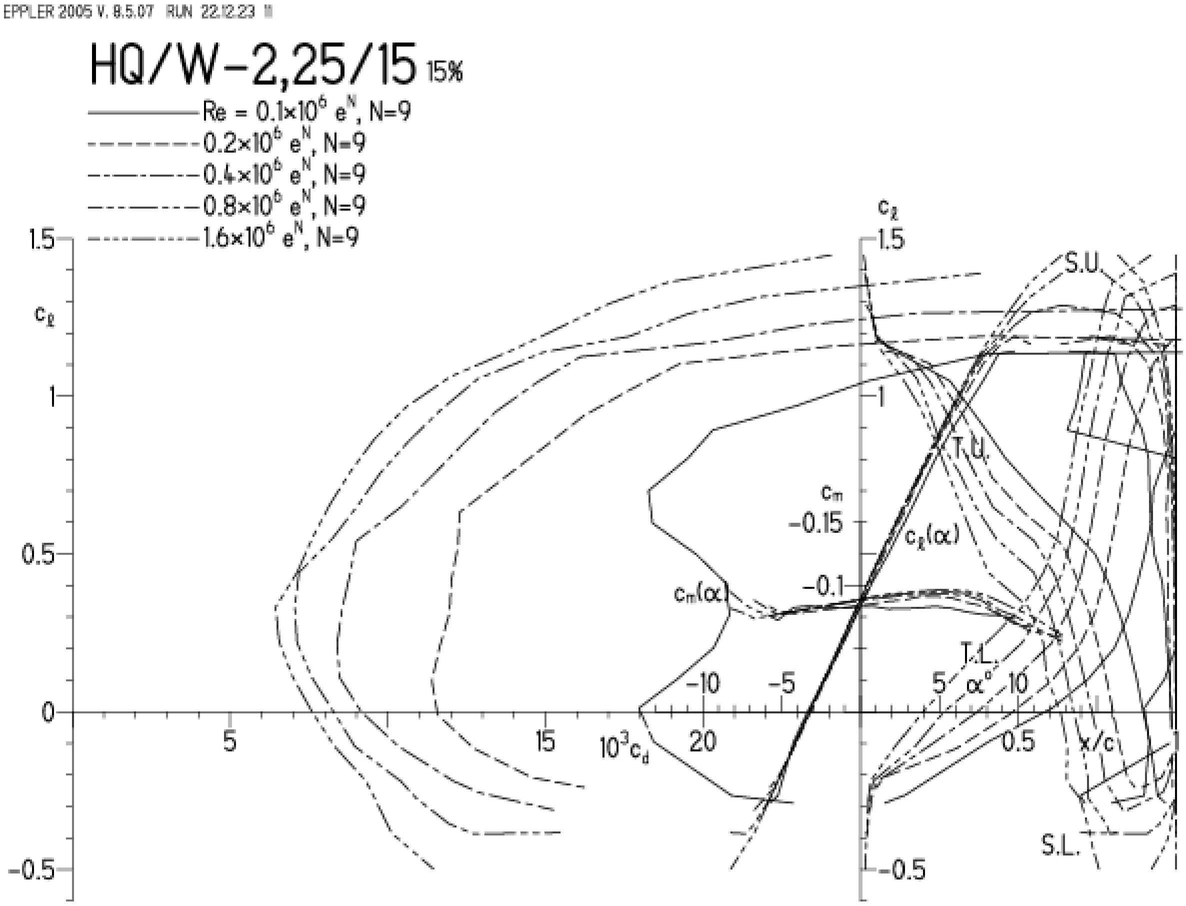
<u>HQ/W-2,25/15</u>, N=11



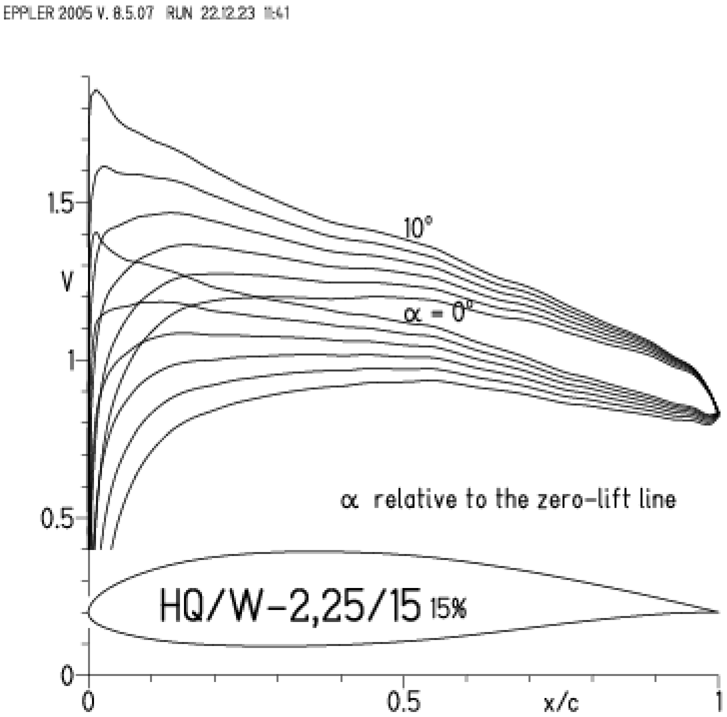


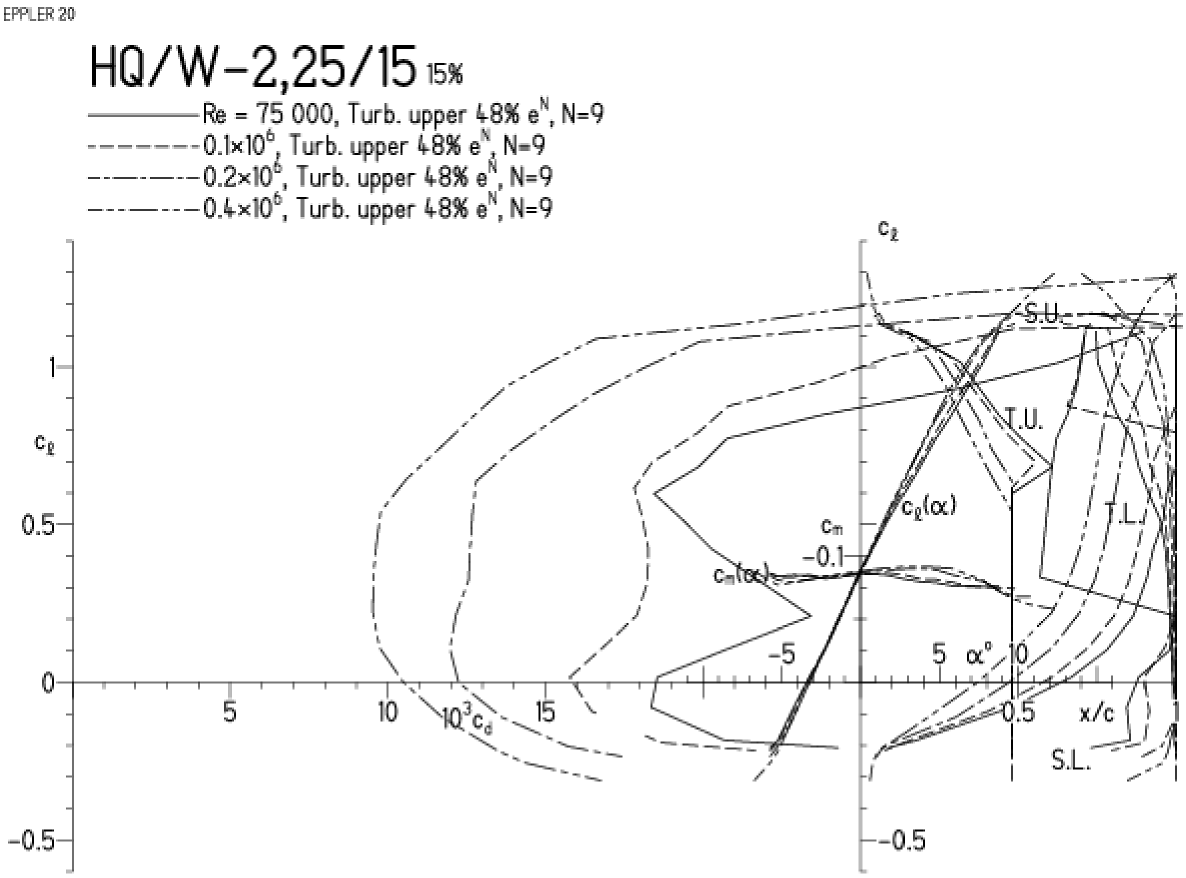
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
cℓ
1
0.5
0
-0.5
5
15
10³cd
20
cℓ
1.5
1
cm
-0.15
-0.1
cm(α)
cℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
0.5
x/c
1
S.L.
-0.5

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



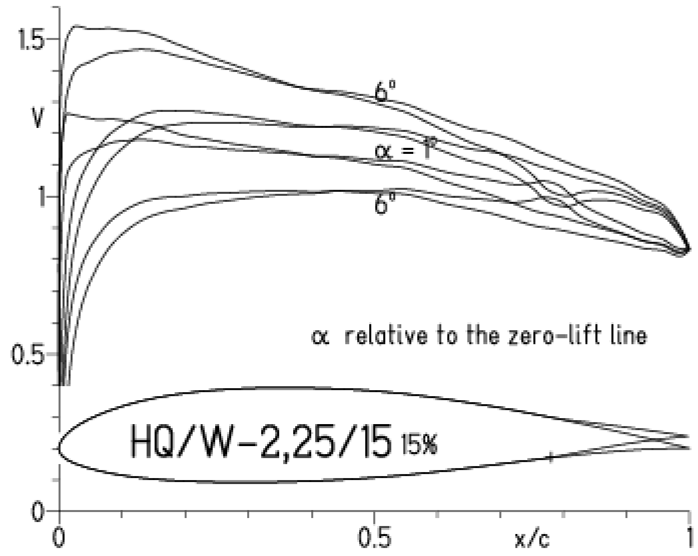


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

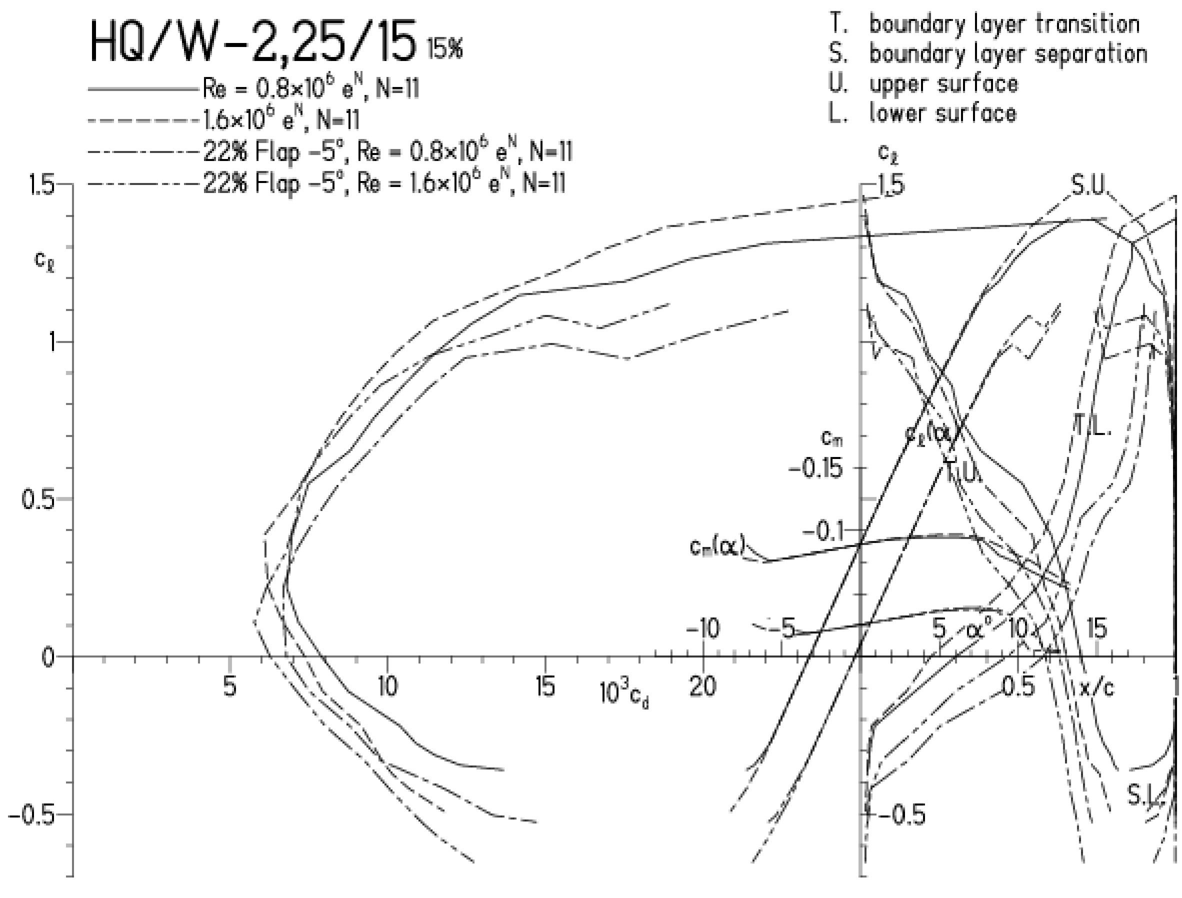
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

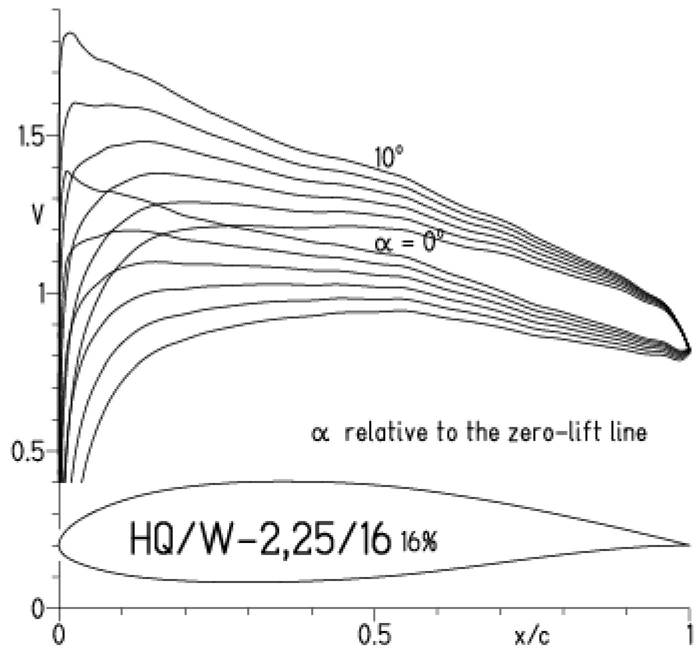


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

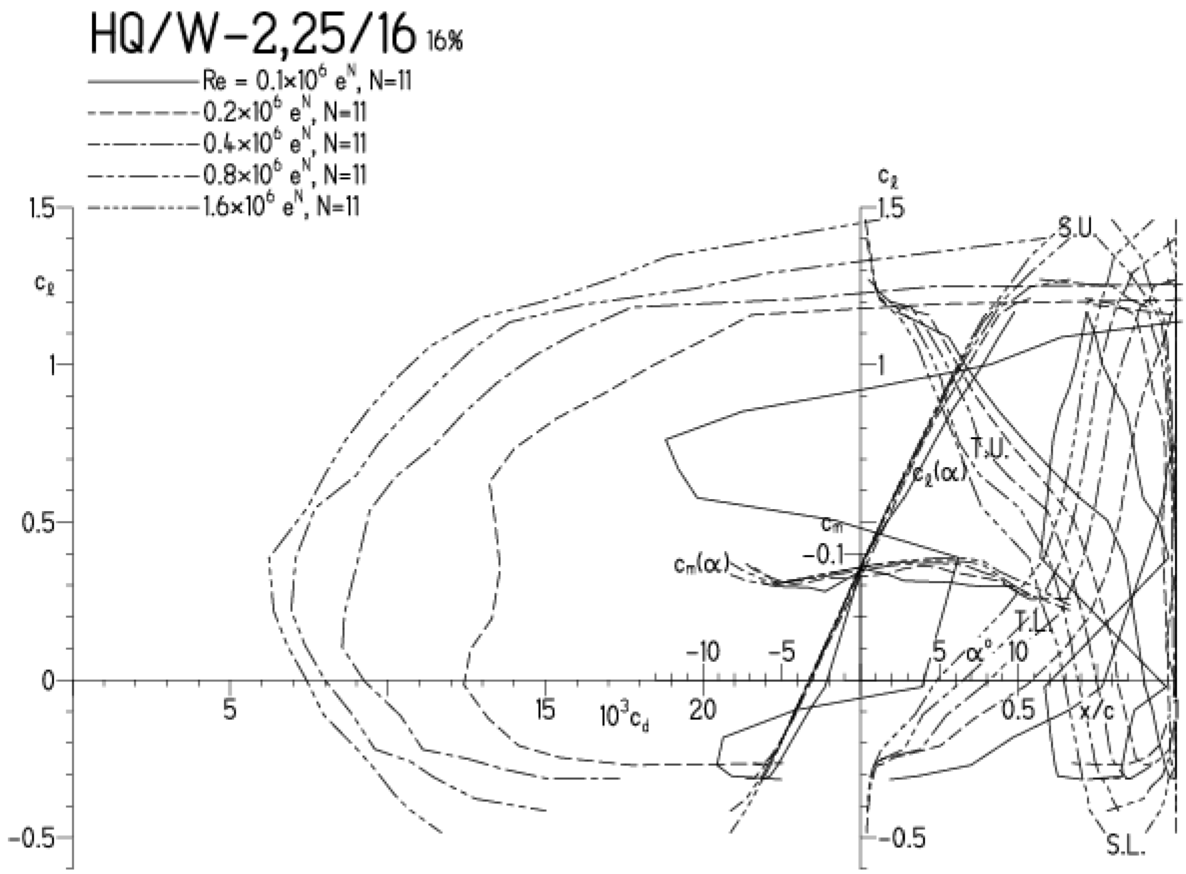


HQ/W-2,25/16, N=11

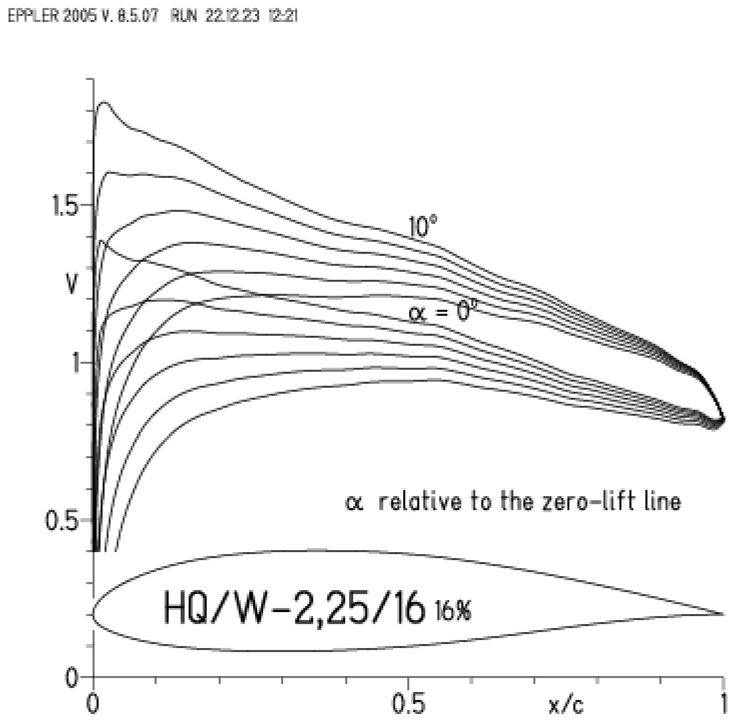
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

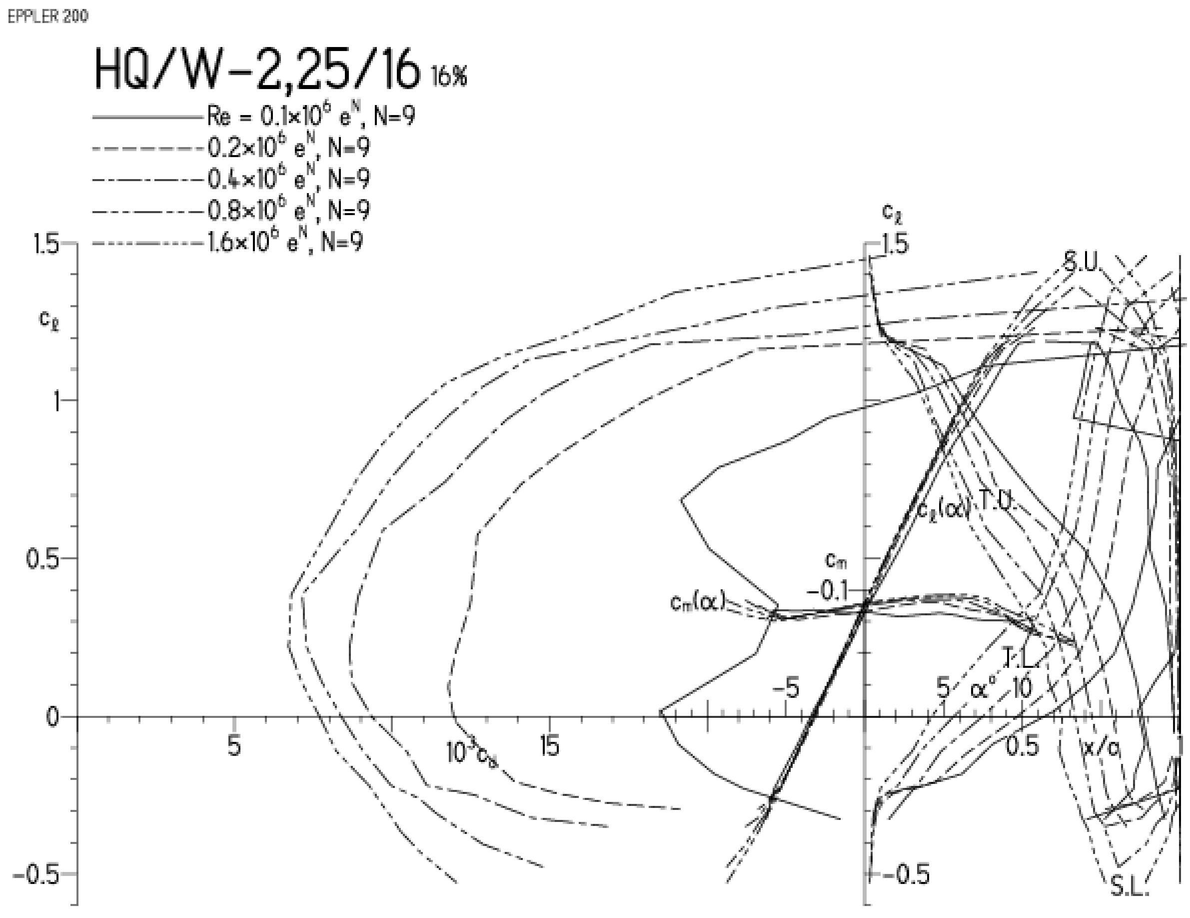


EPPLER 200

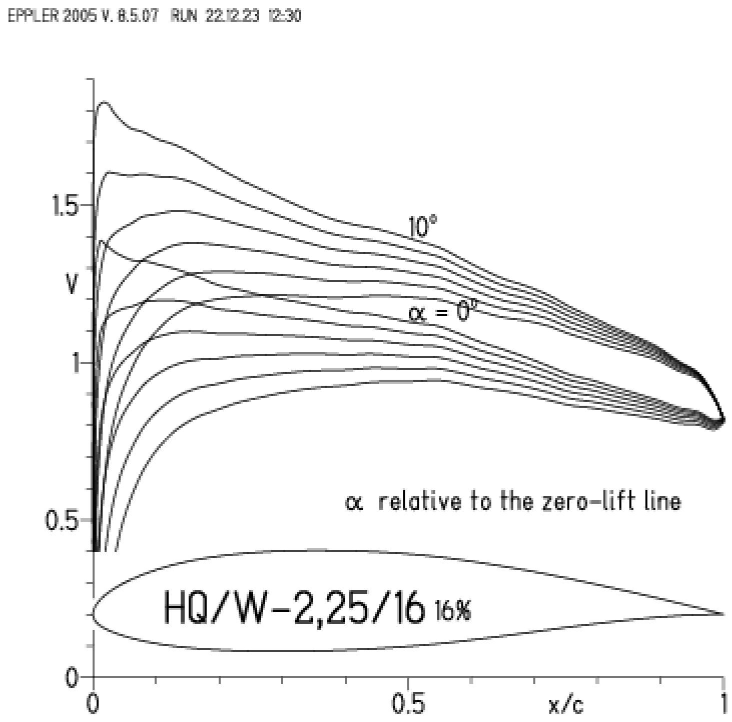


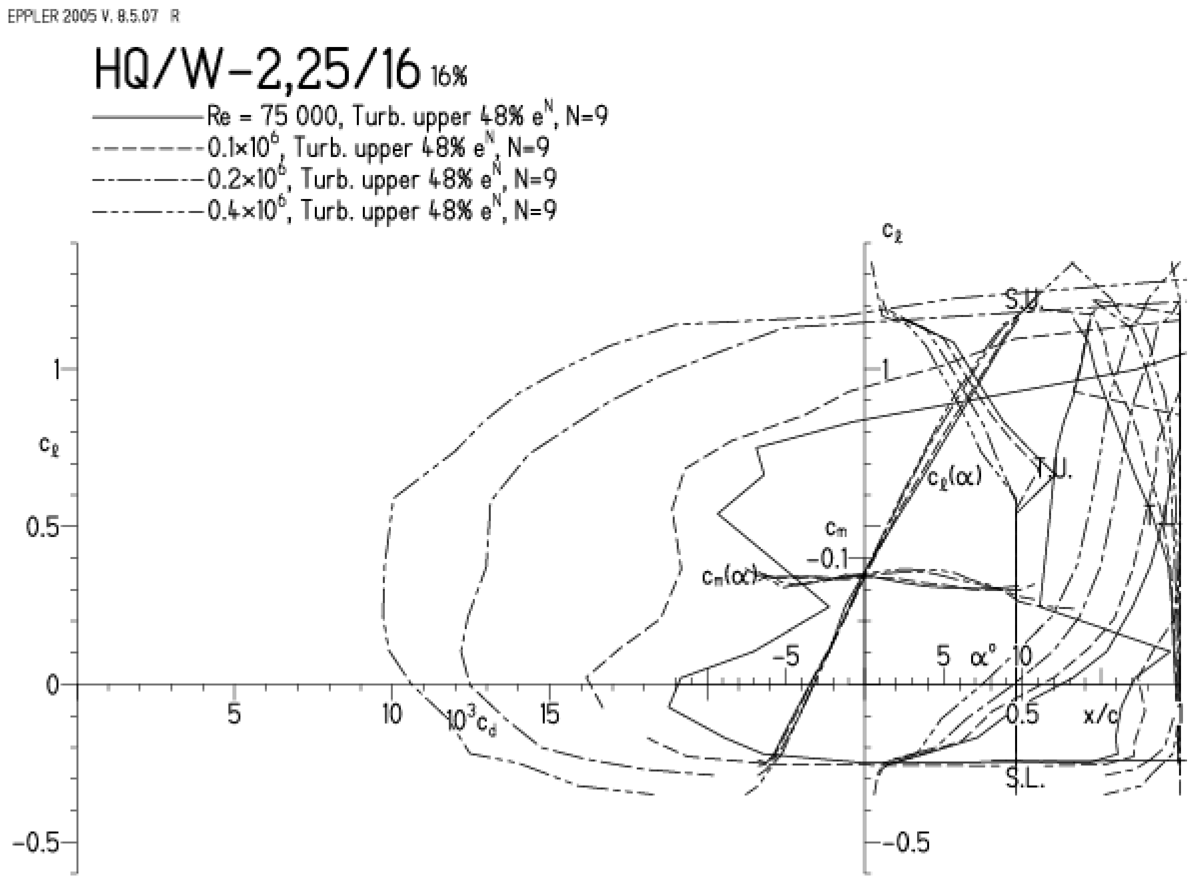
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
V
x/c


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
x/c
α°
cm(α)
cl(α)

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



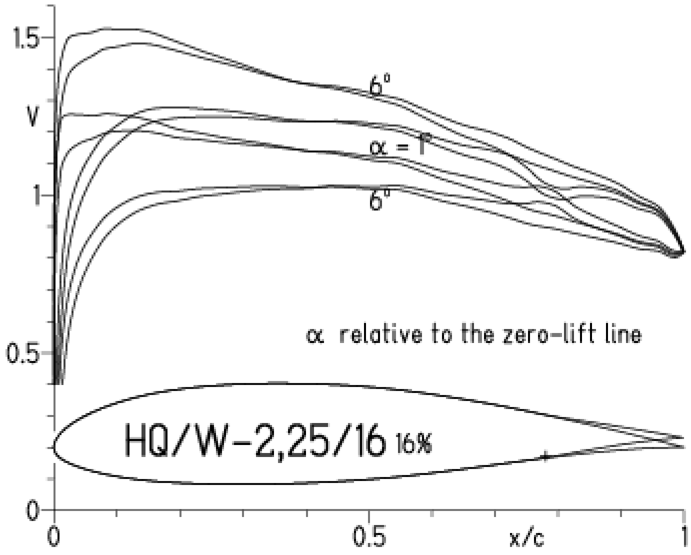


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

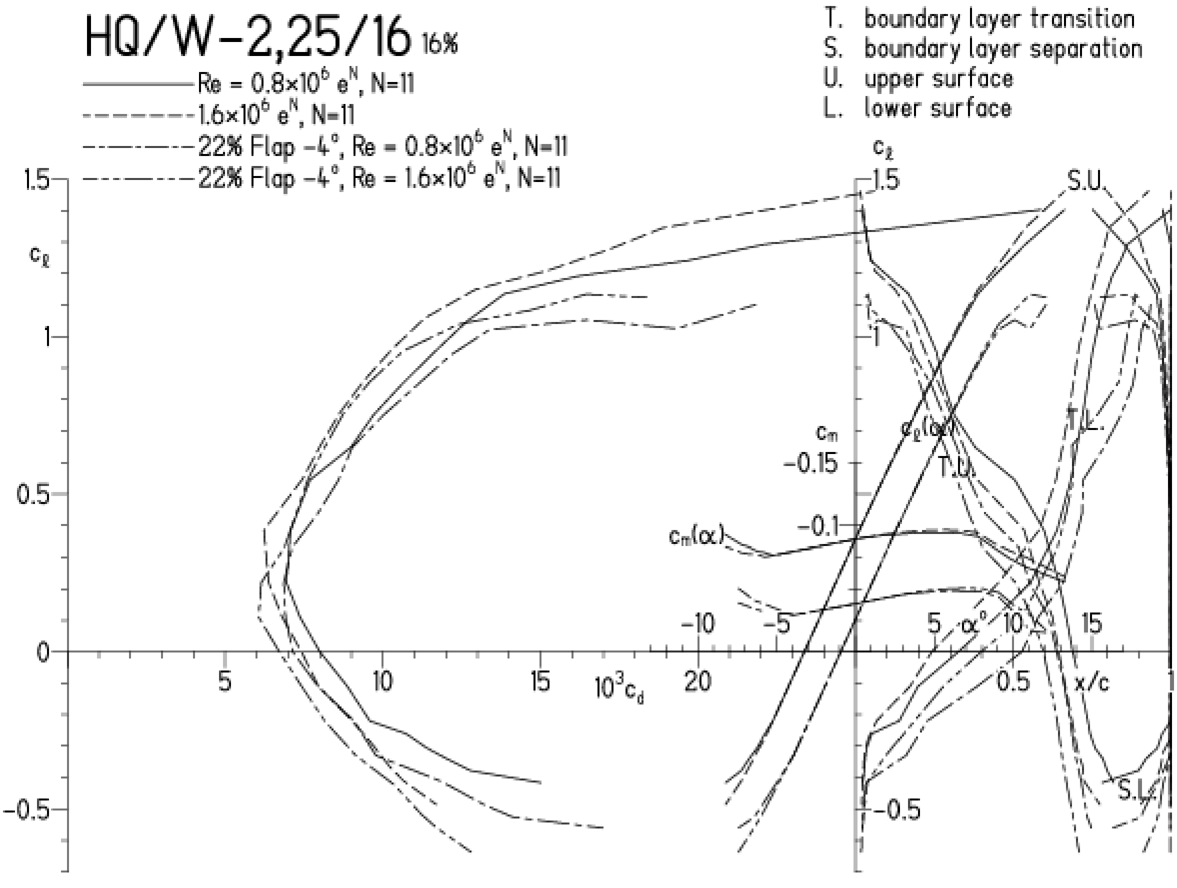
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

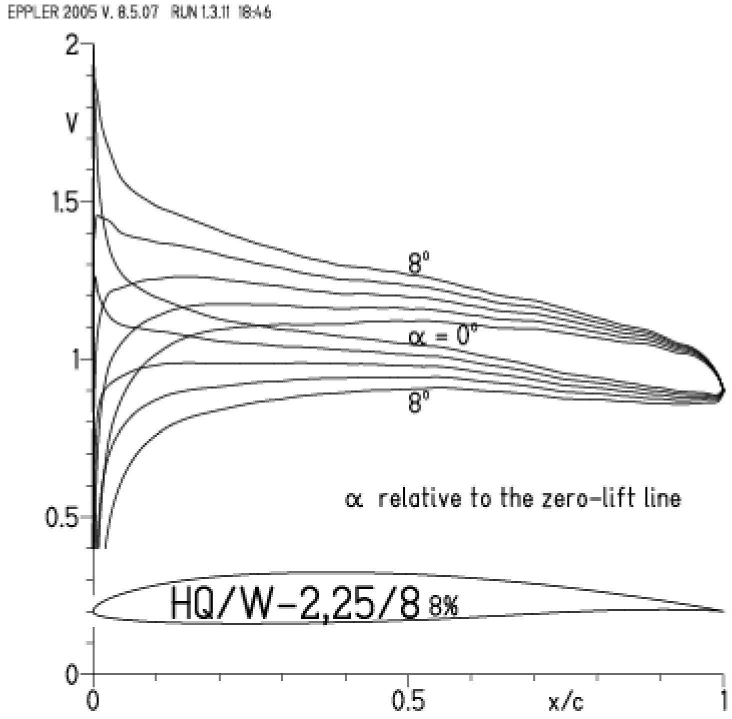
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

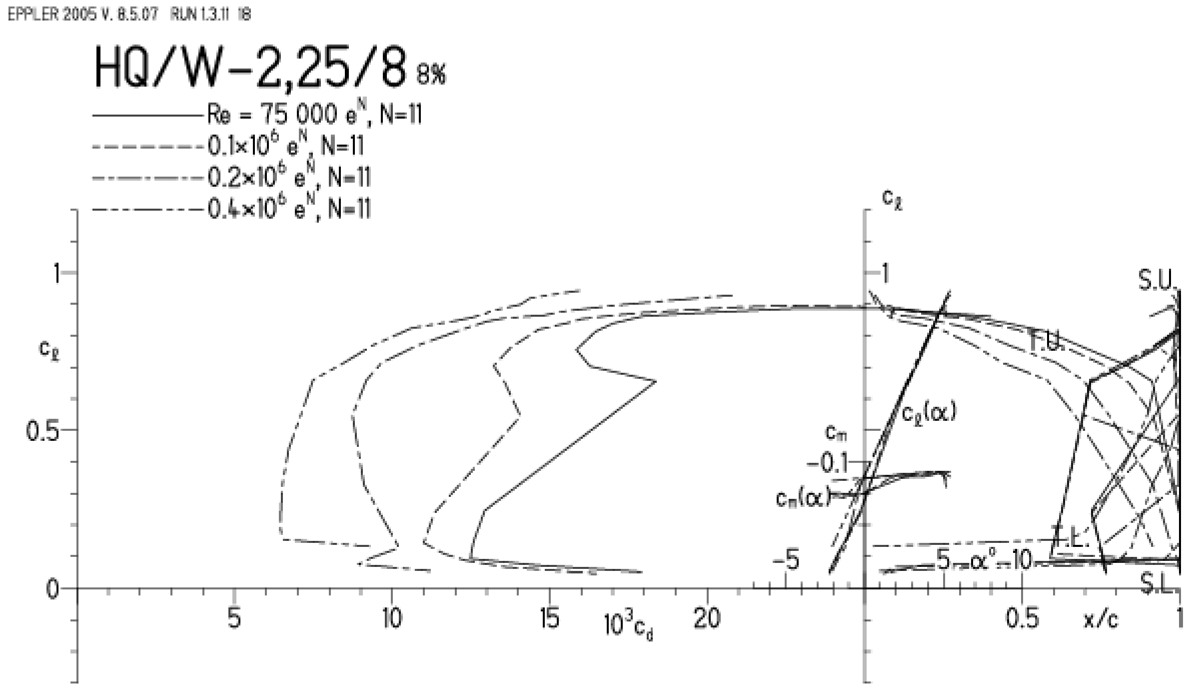


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

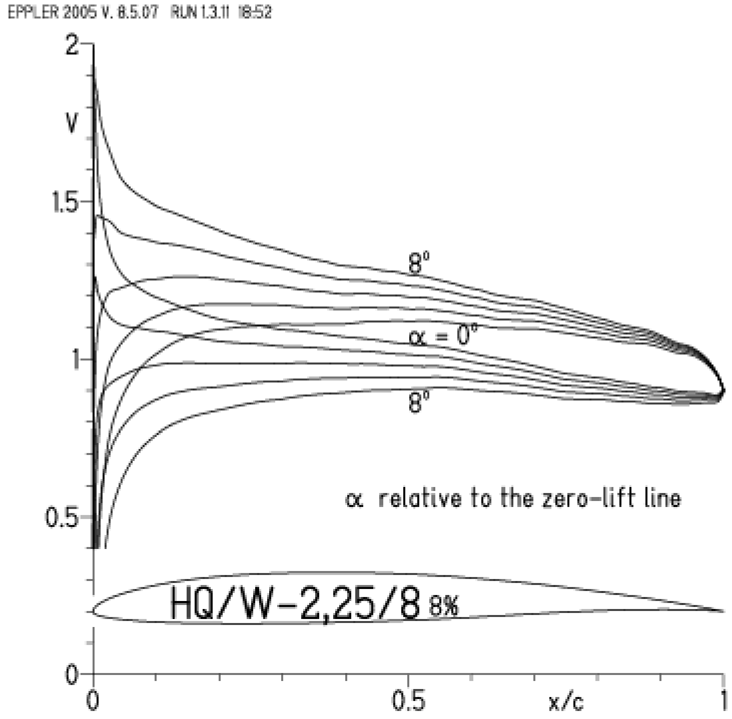


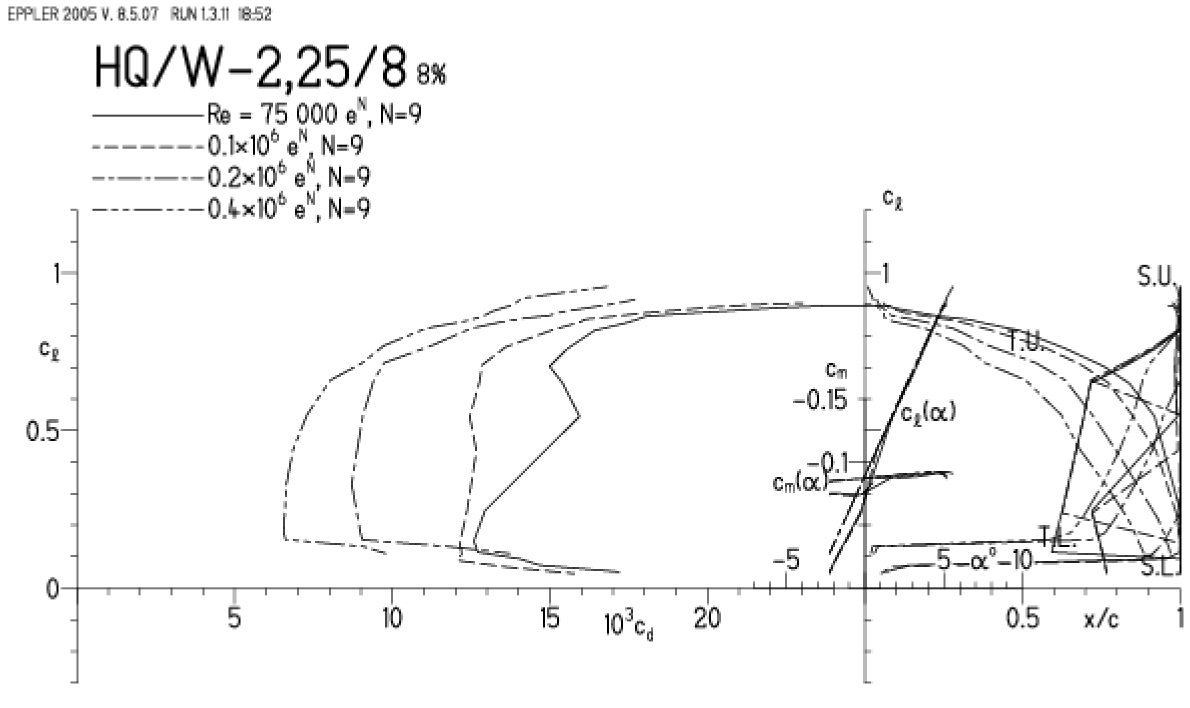
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

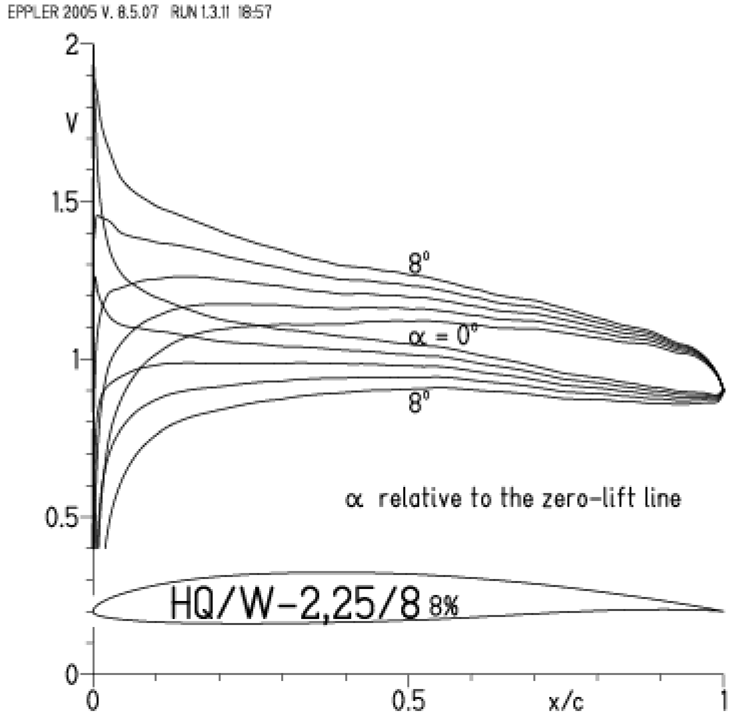

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
10^3 c_d
x/c
α°

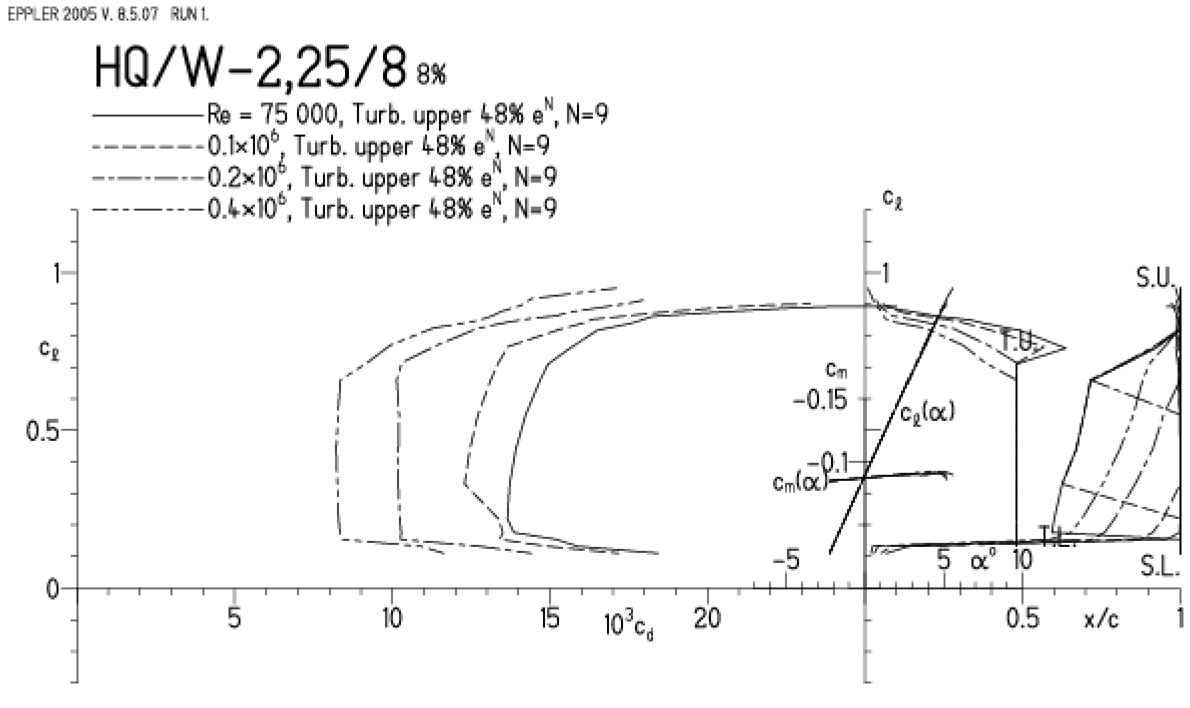
<u>HQ/W-2,25/8</u>, N=9





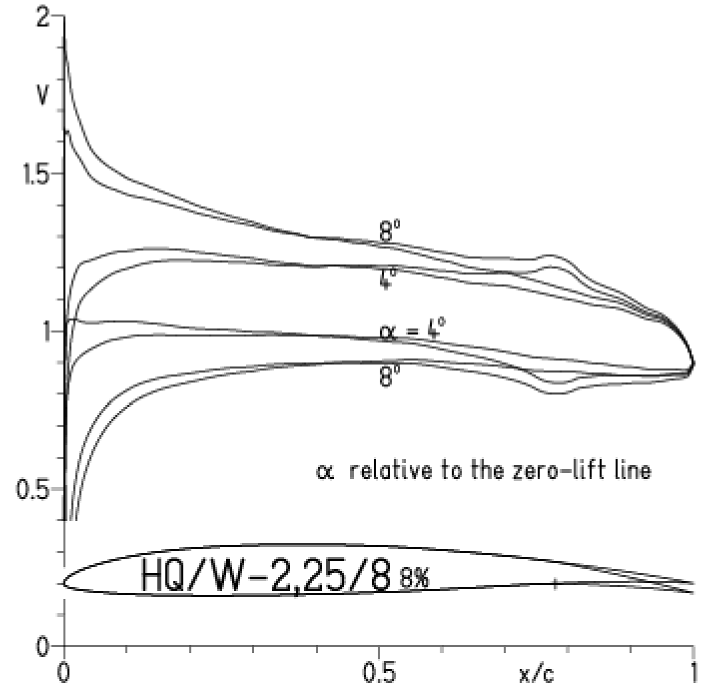
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



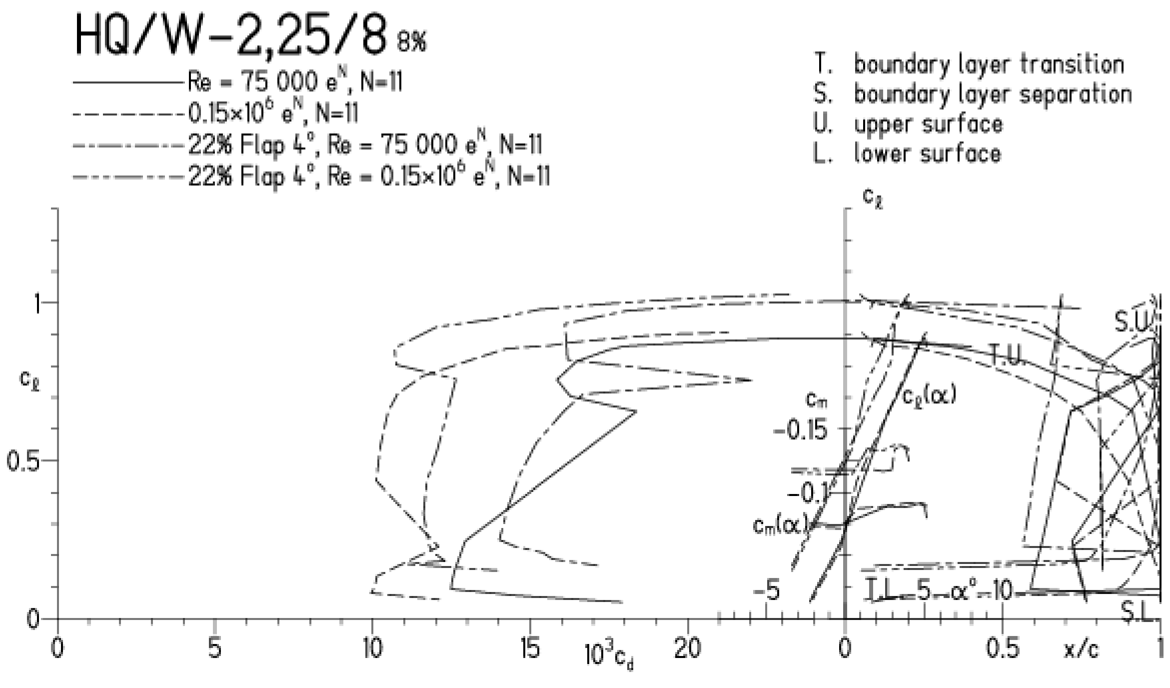


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

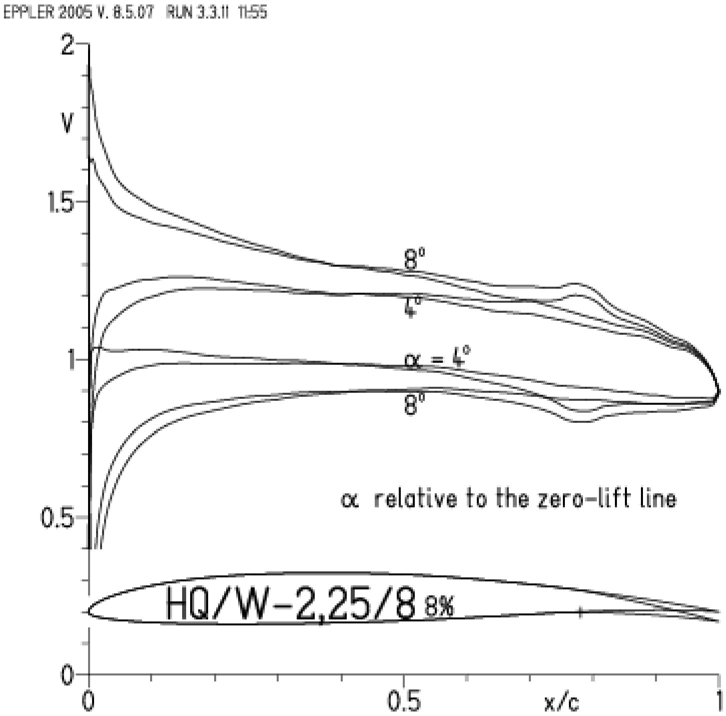
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

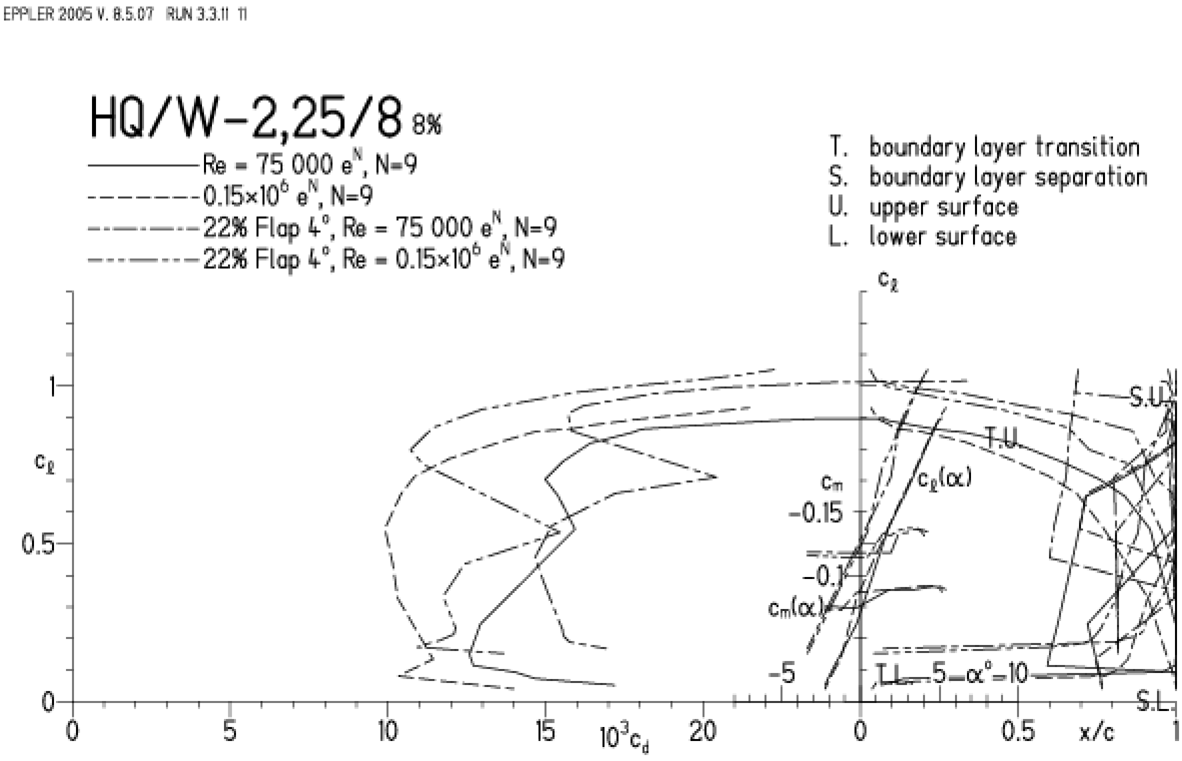


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

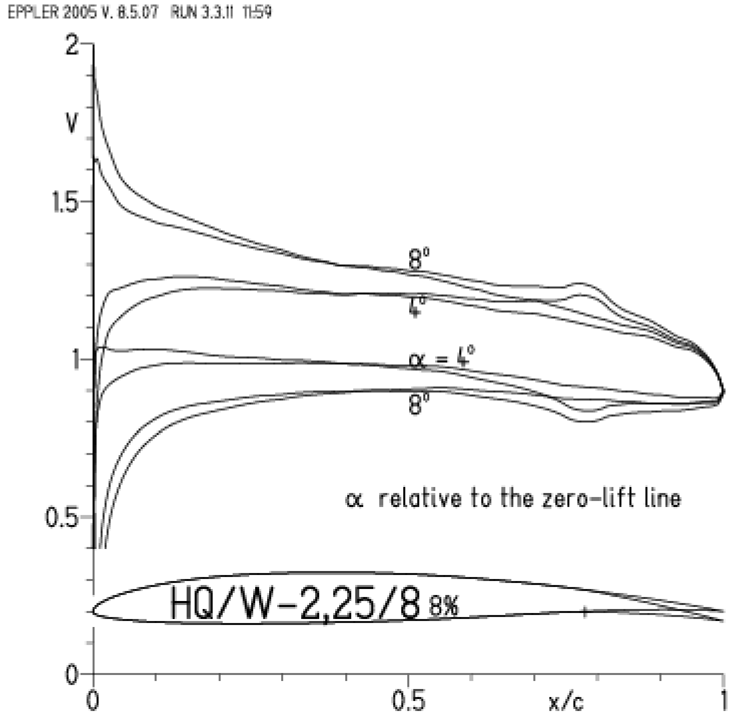


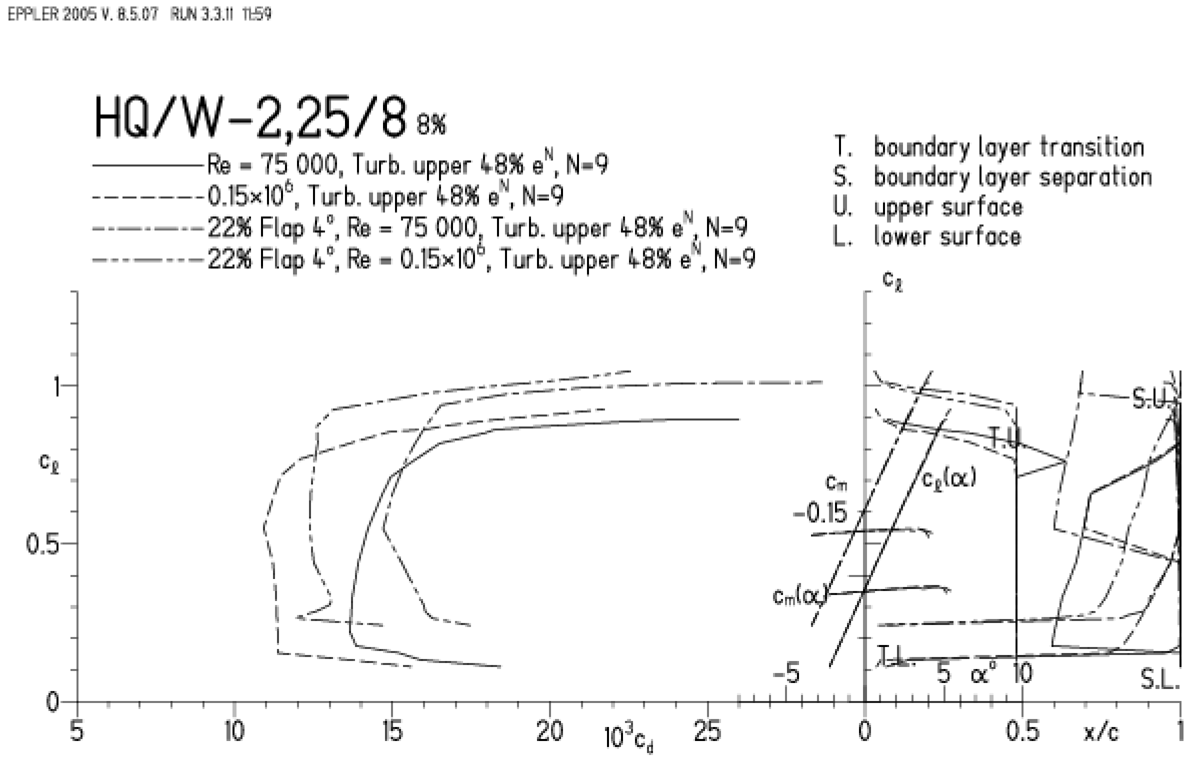
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



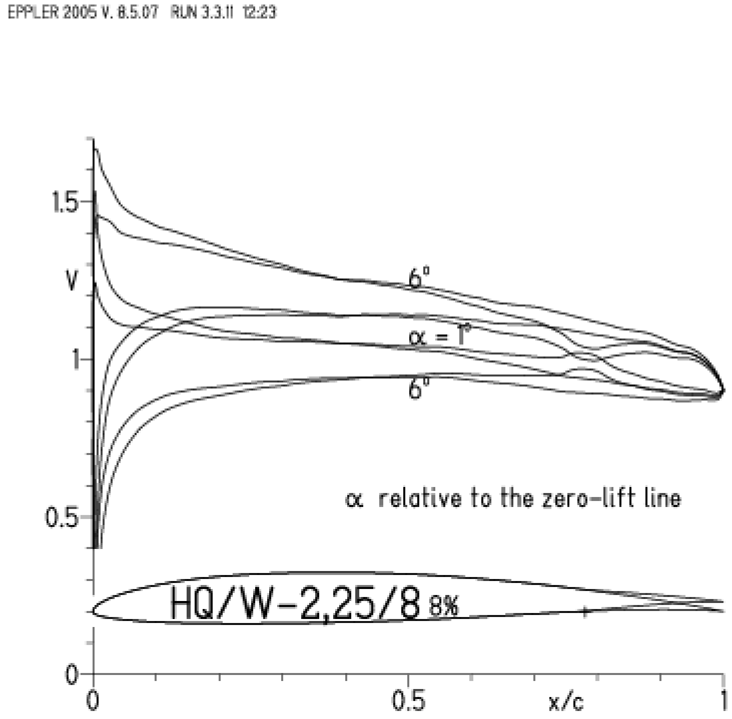


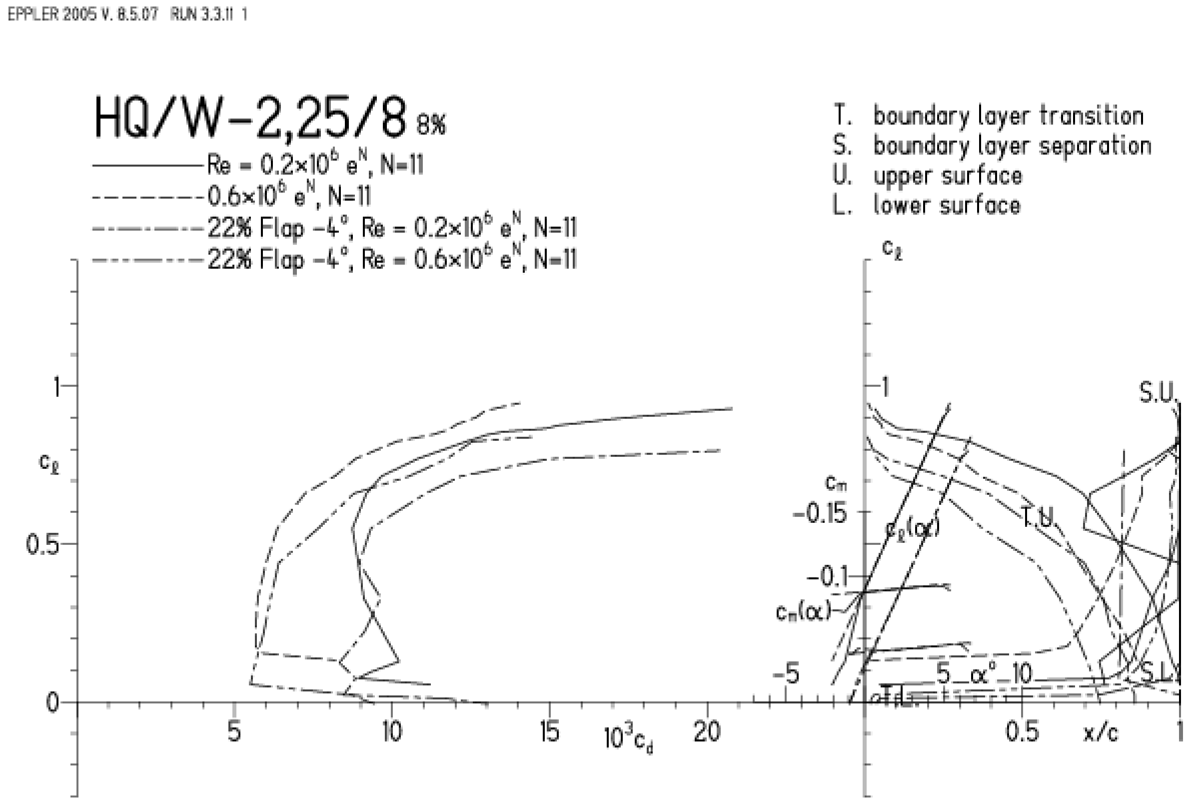
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



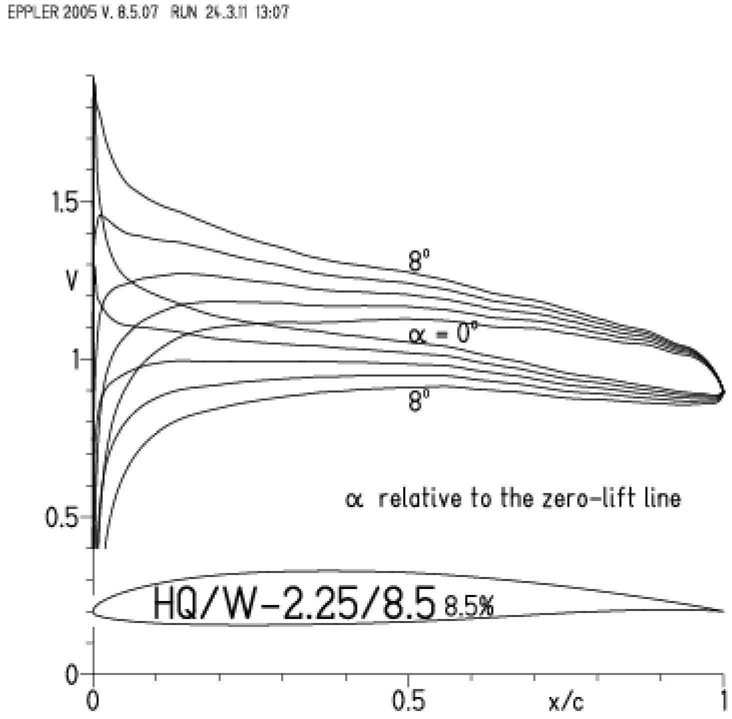


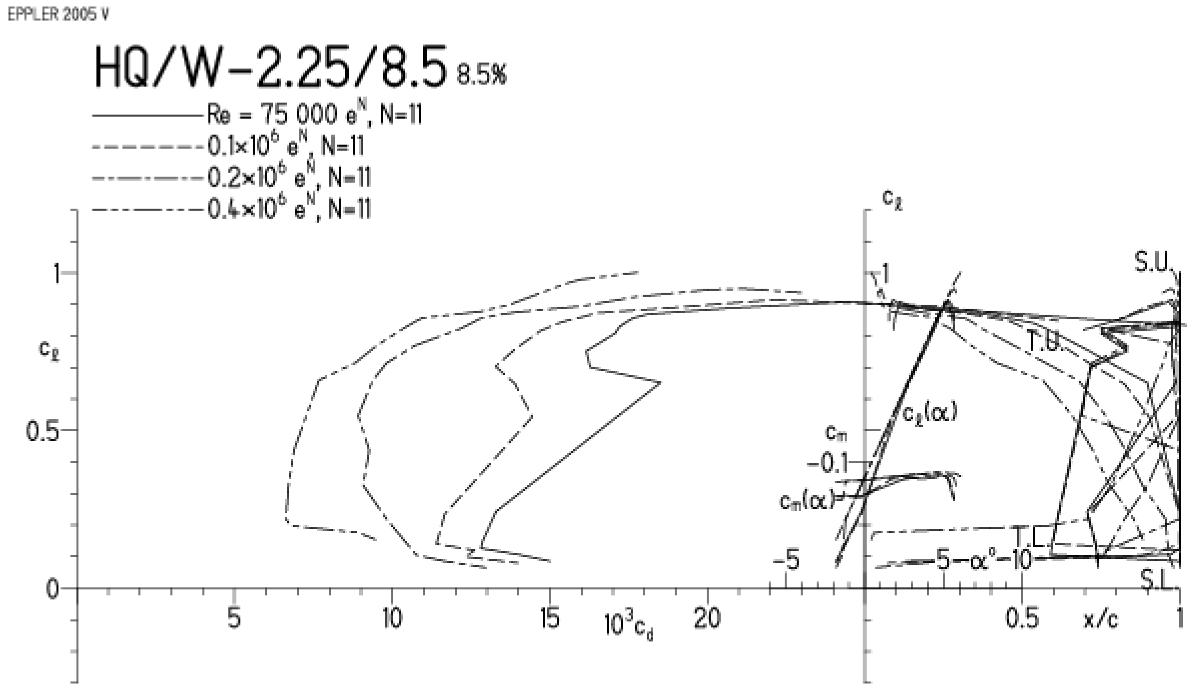
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)





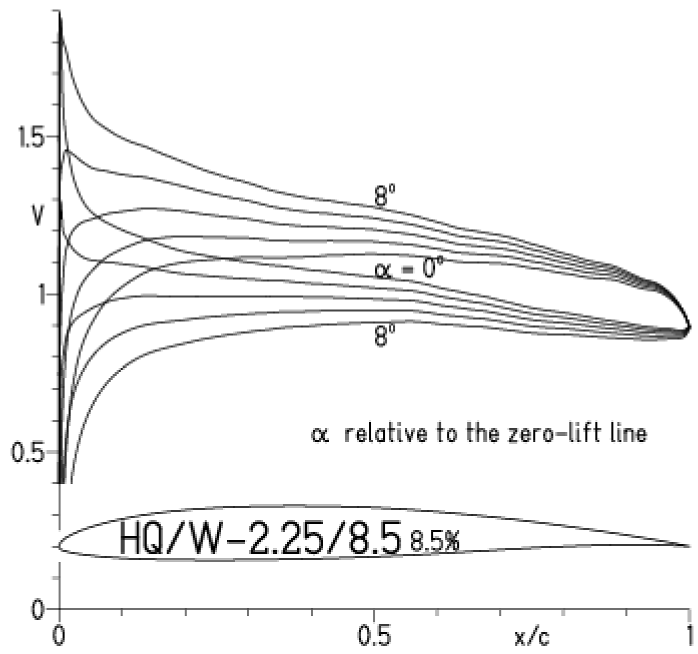
HQ/W-2,25/8,5, N=11



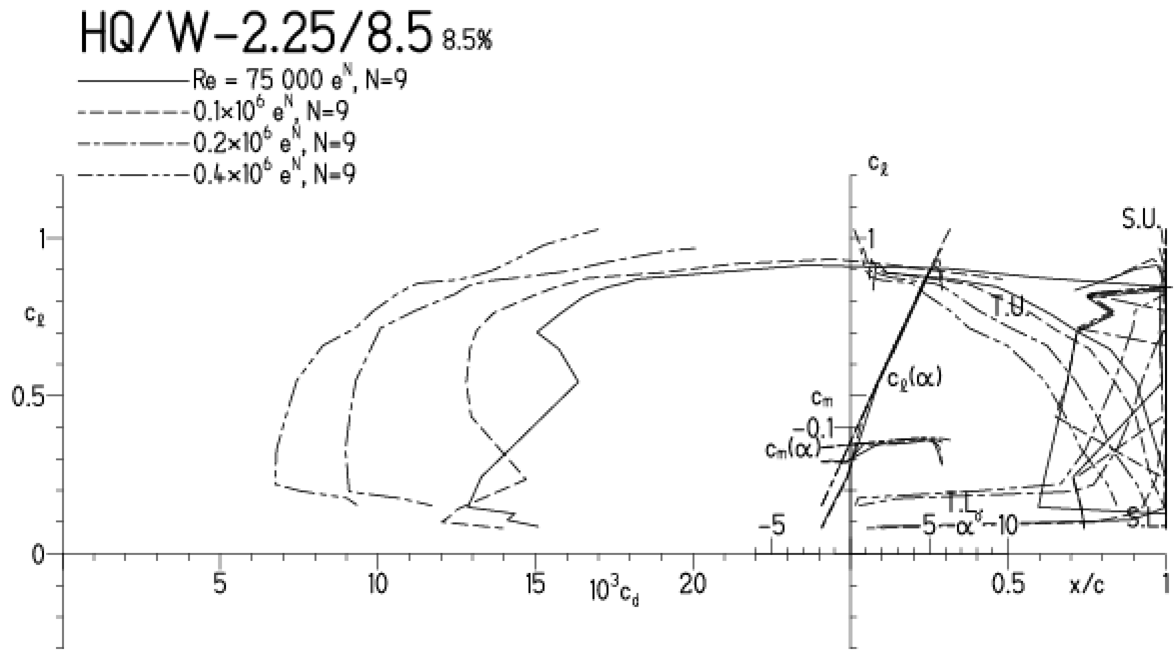


HQ/W-2,25/8,5, N=9

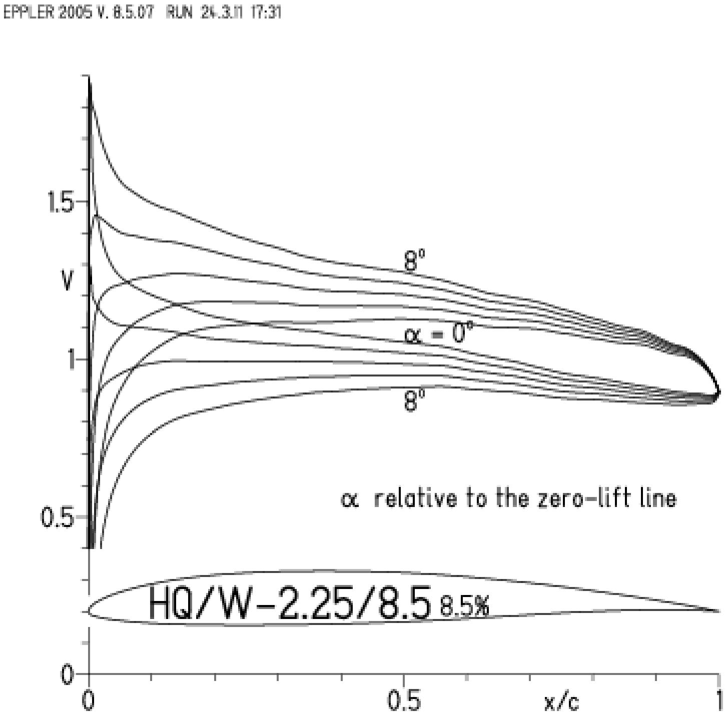
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

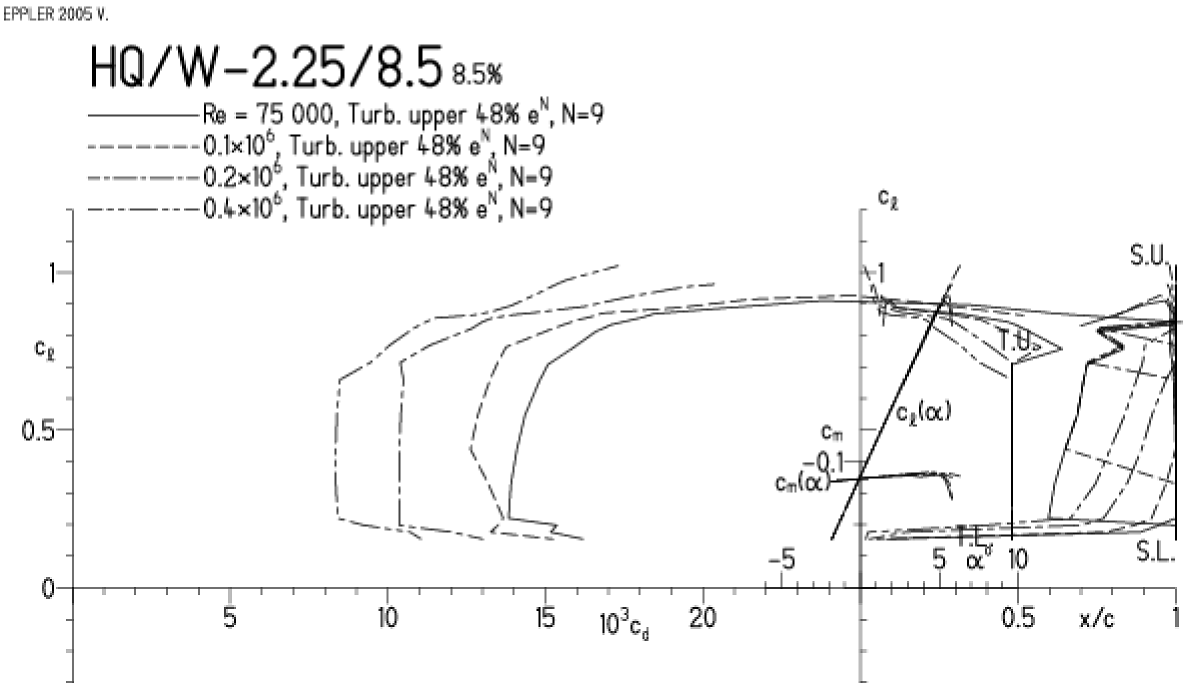


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



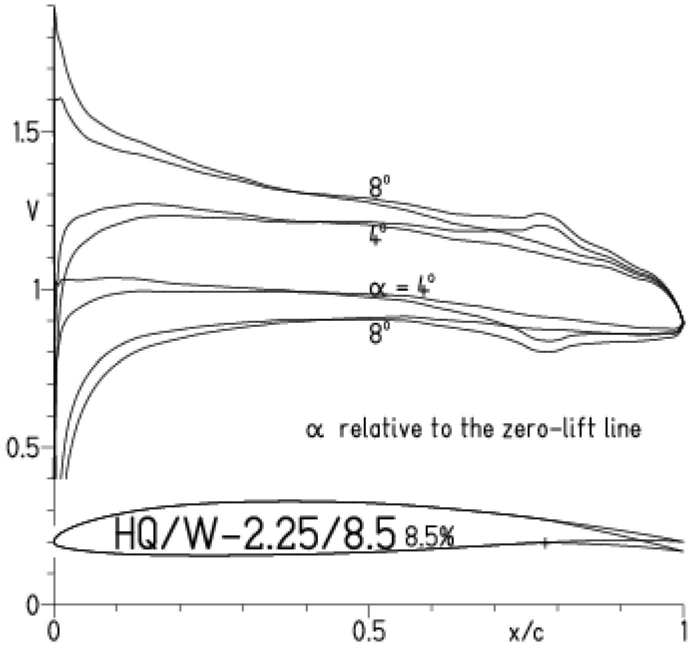
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



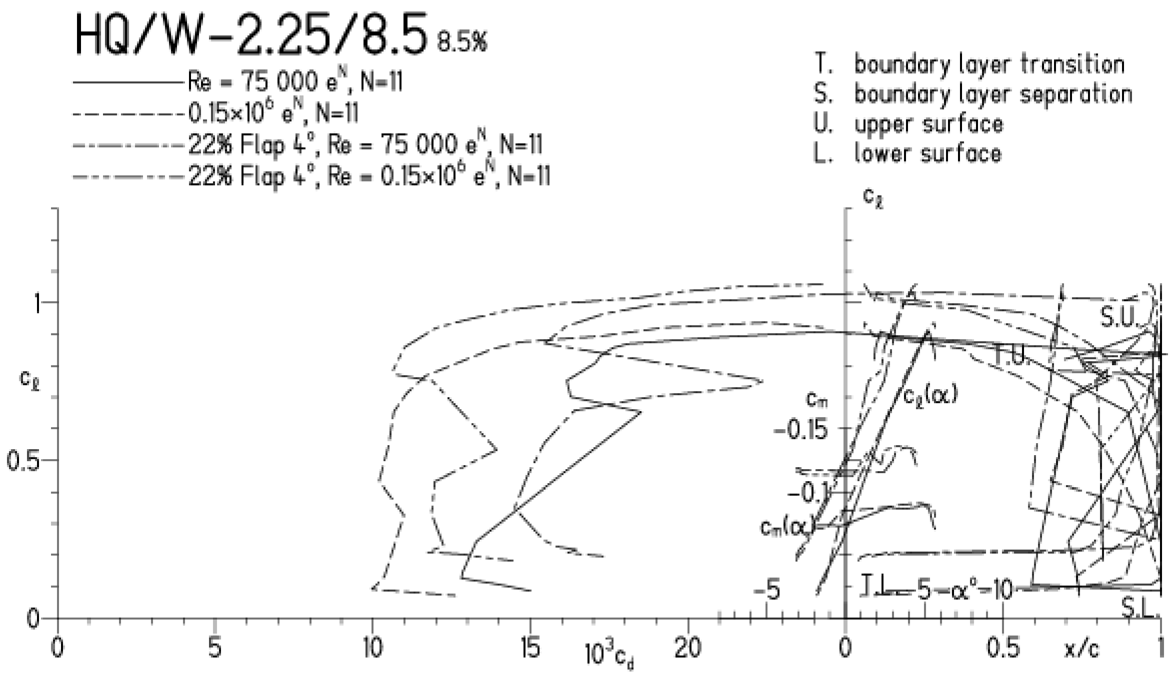


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

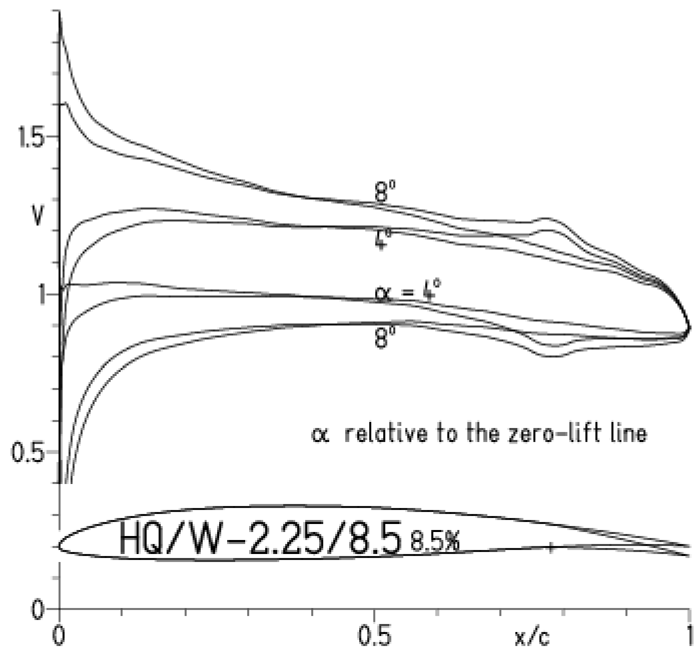


EPPLER 2005 V. 8.5.

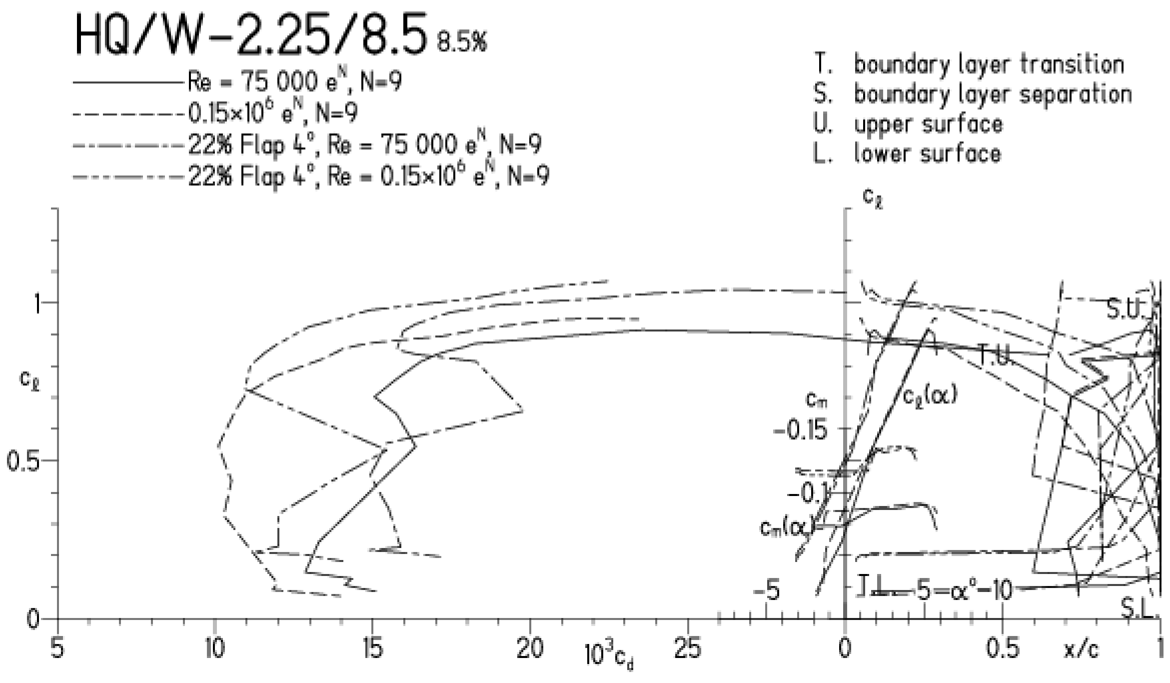


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

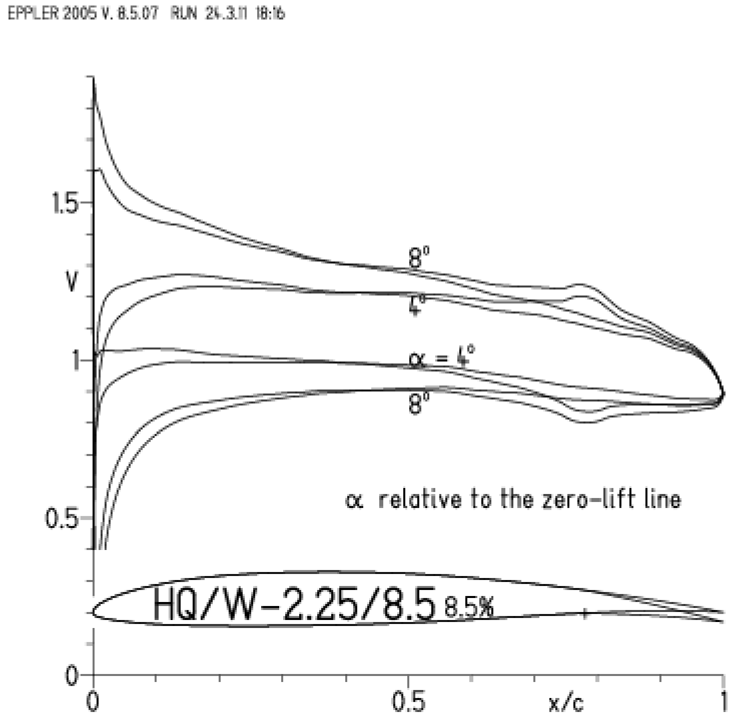
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

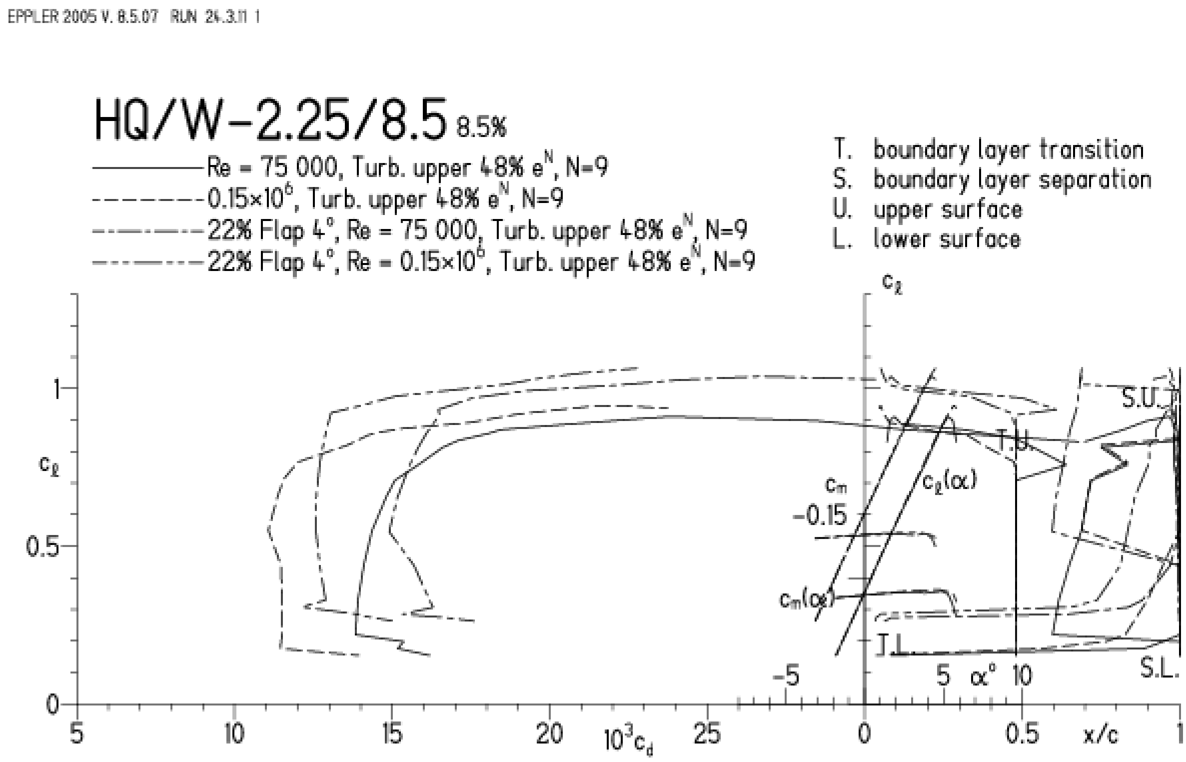


EPPLER 2005 V.



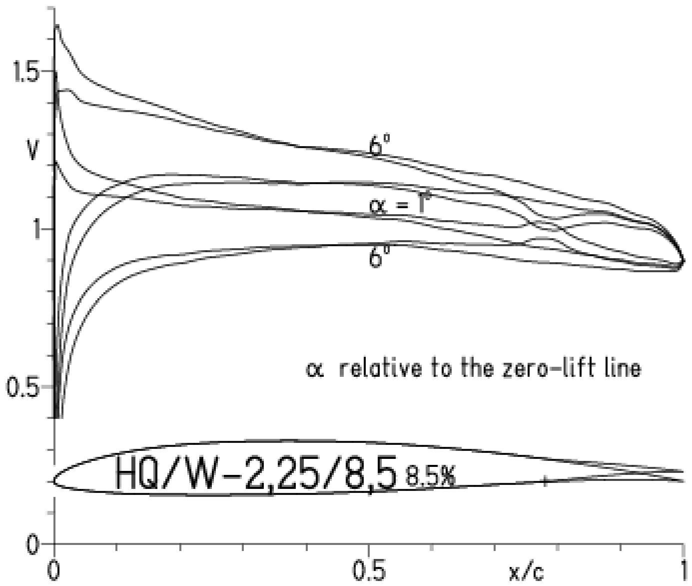
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



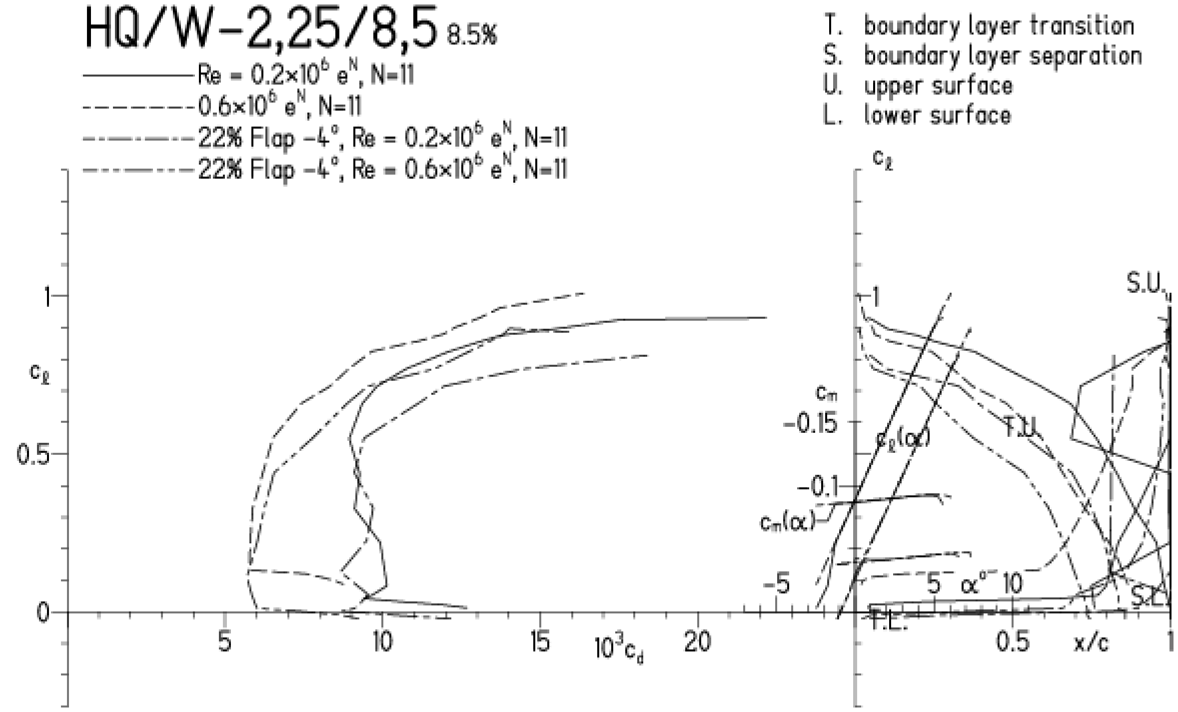


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

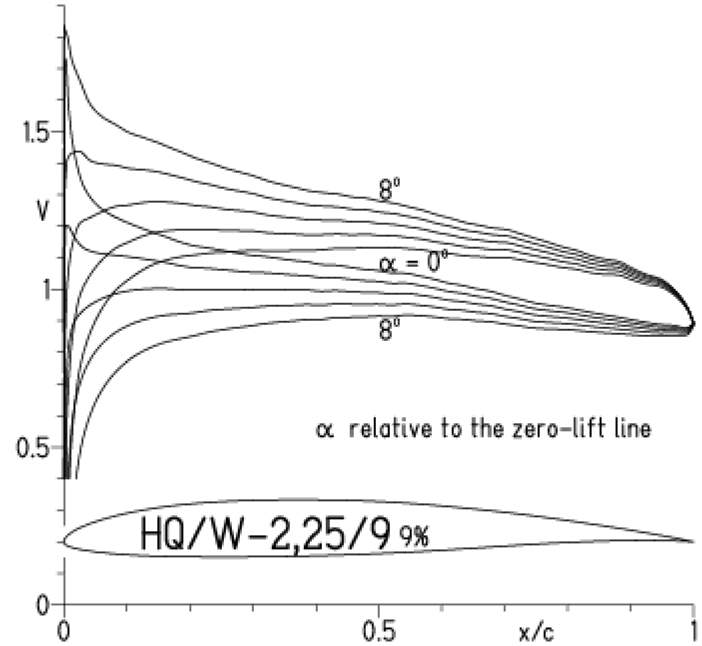


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

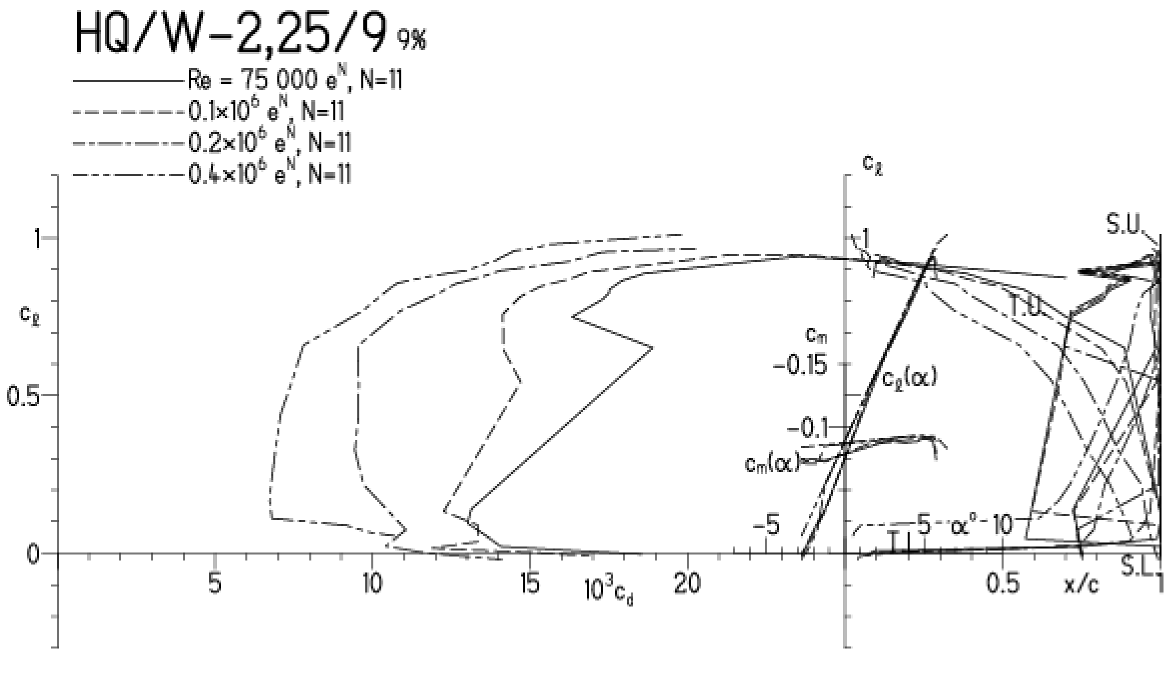


HQ/W-2,25/9, N=11

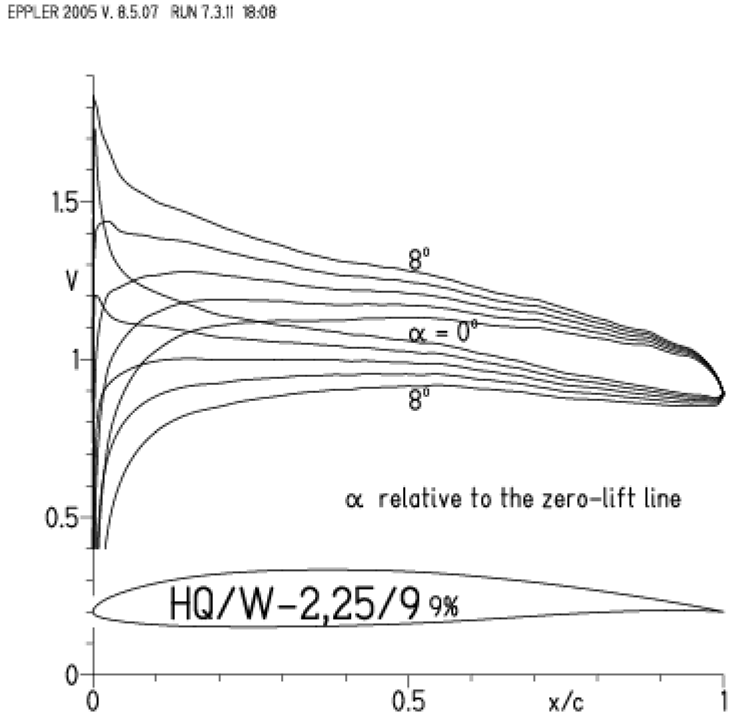
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

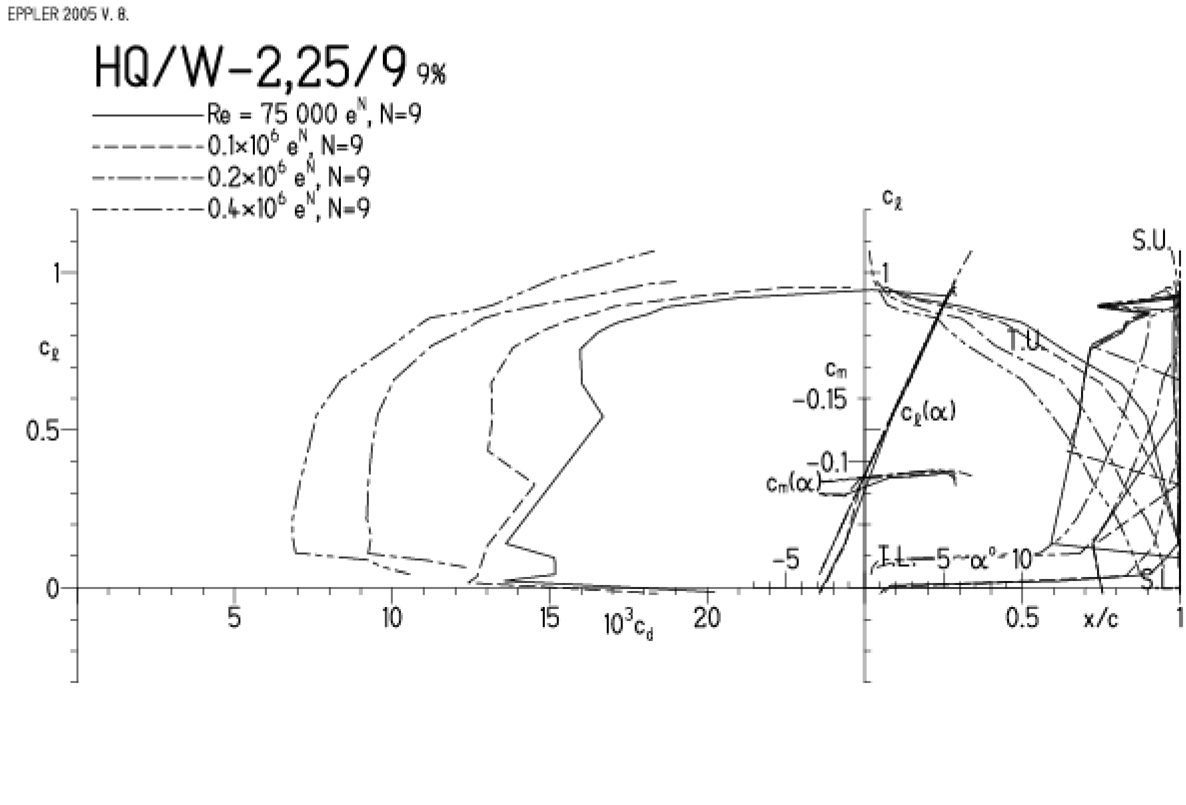


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



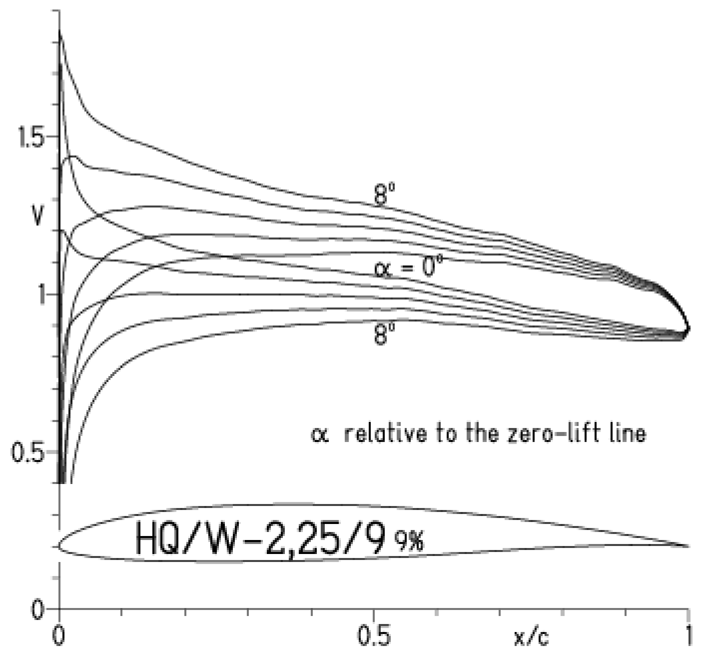
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

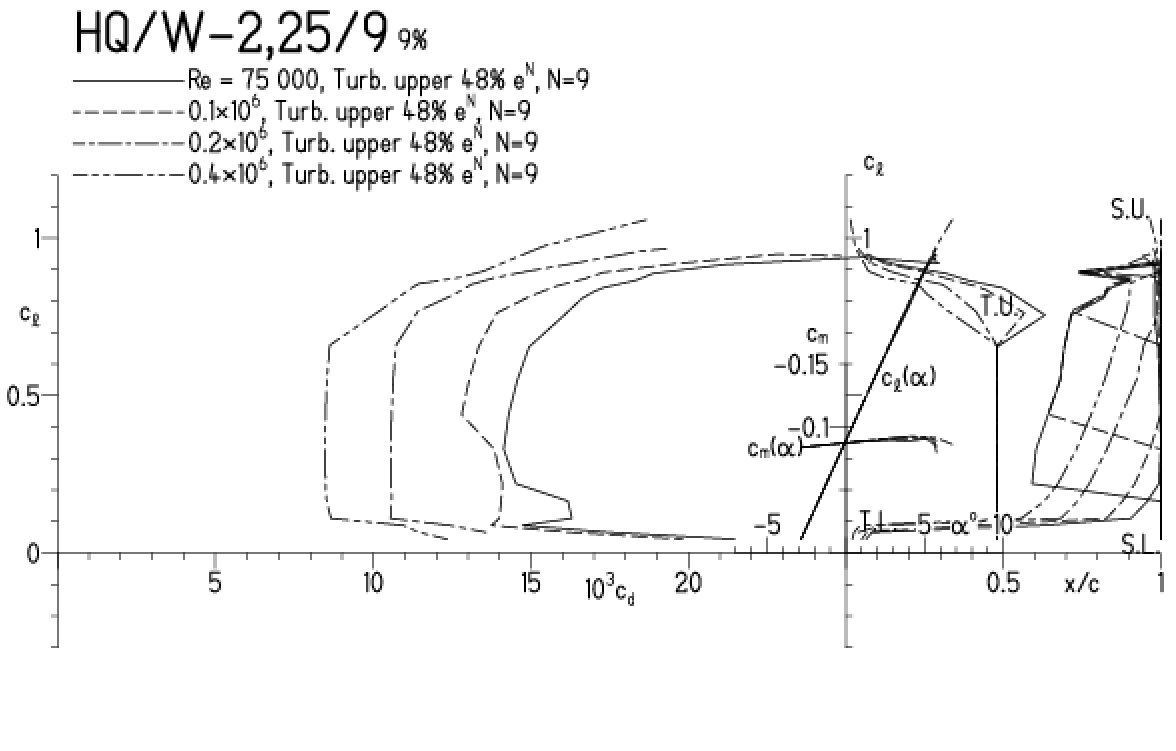

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
20
10^3 c_d
S.U.
T.U.
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

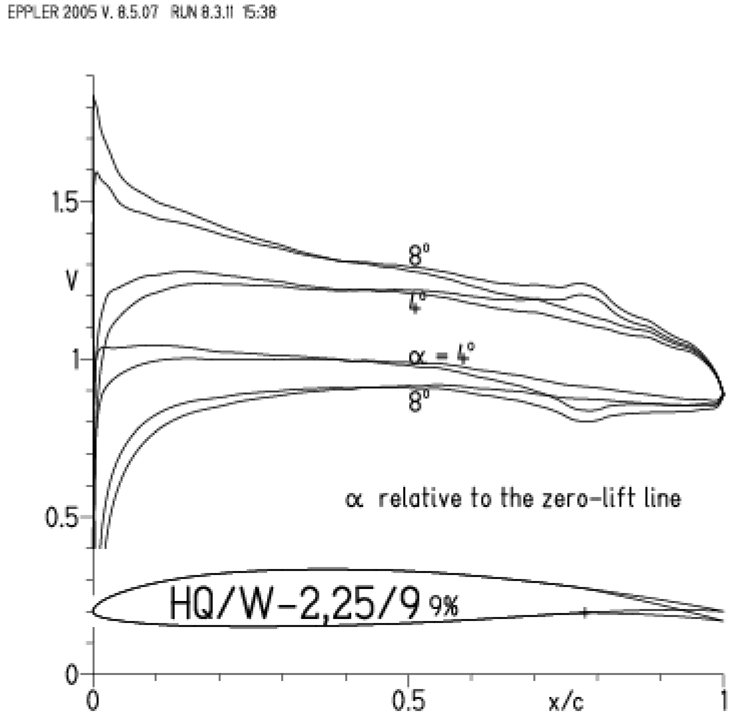
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

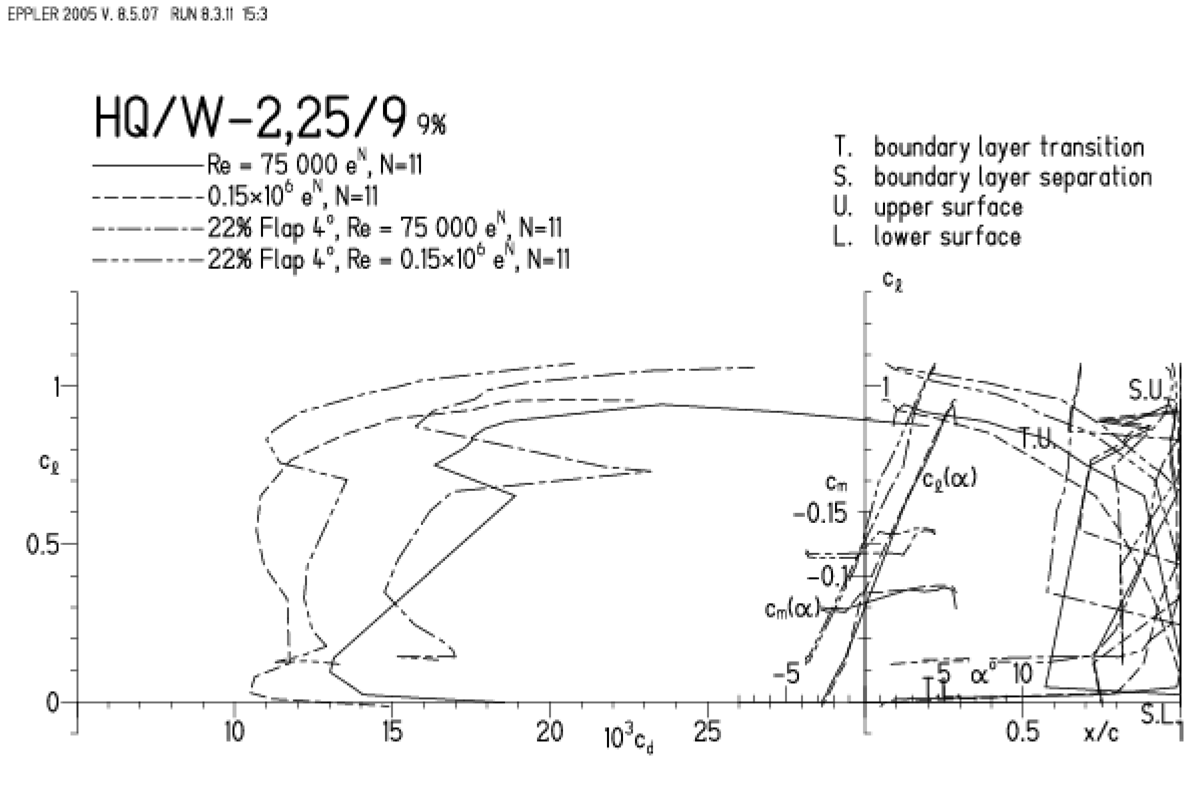


EPPLER 2005 V. 8.5.07 RUN 7



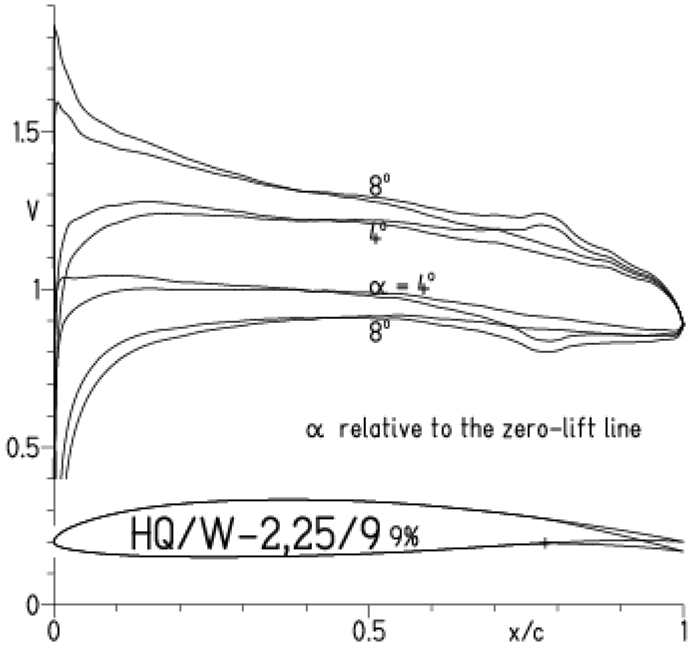
HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag



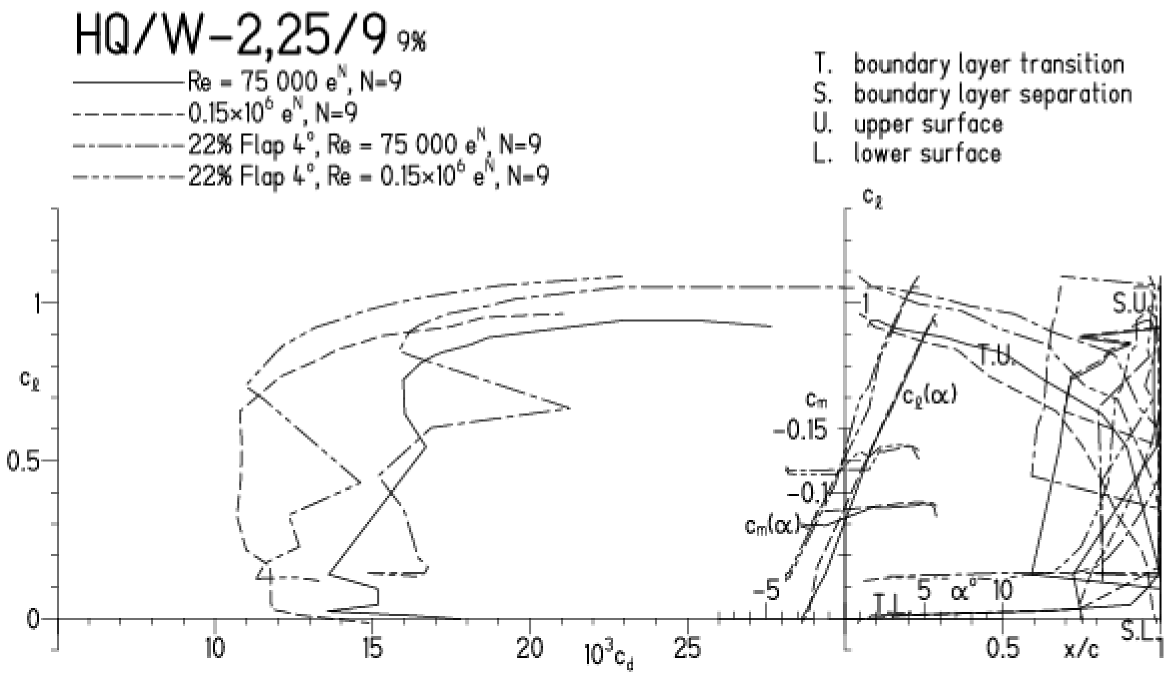


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

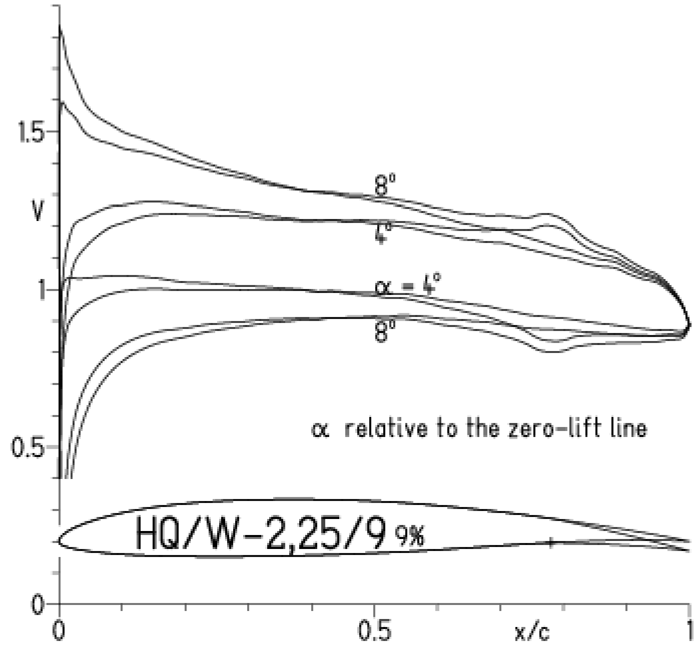


EPPLER 2005 V. 8.5.07 RUN 8.3.1

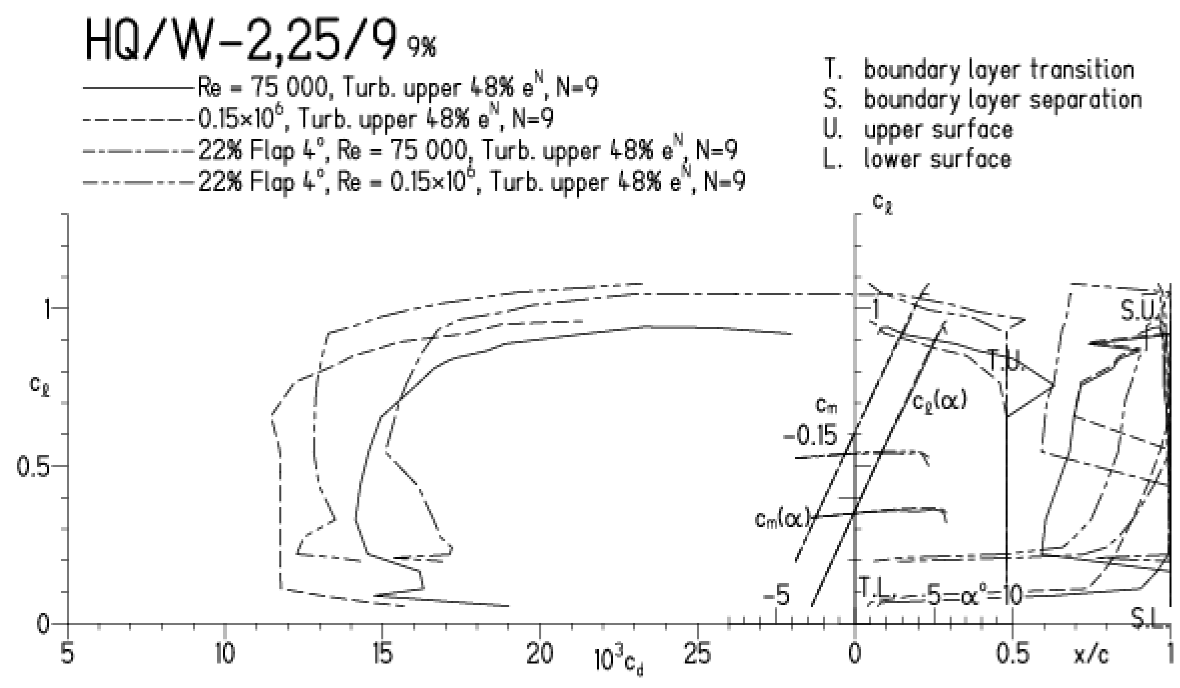


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

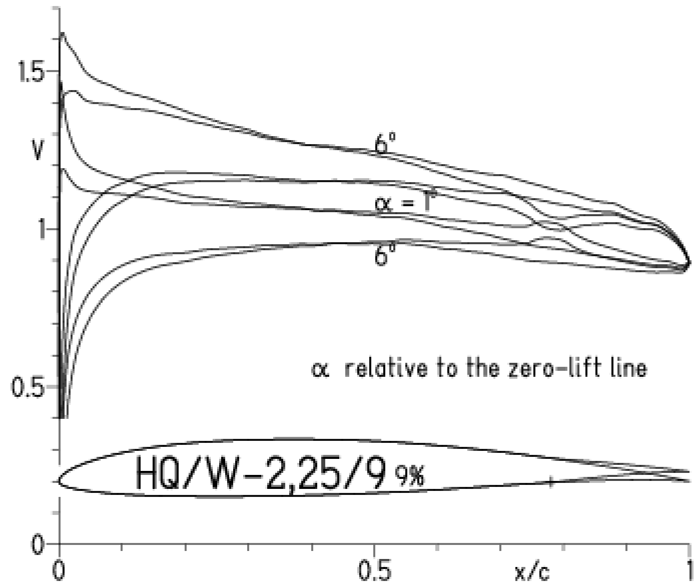


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

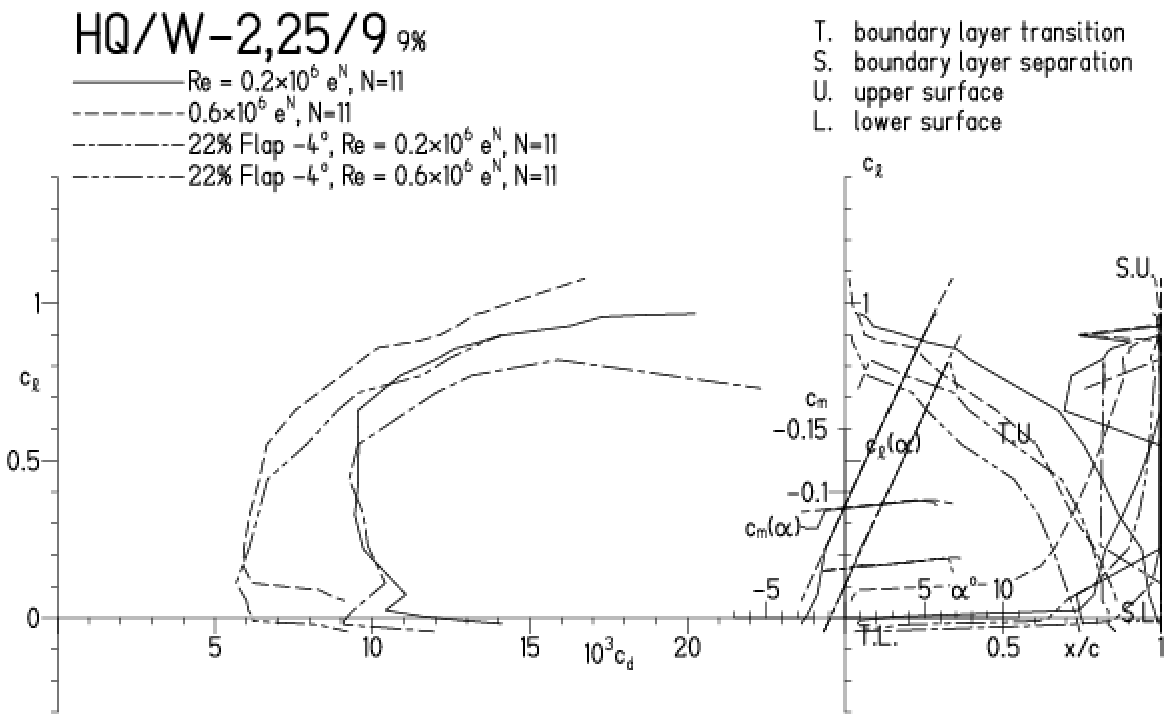


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

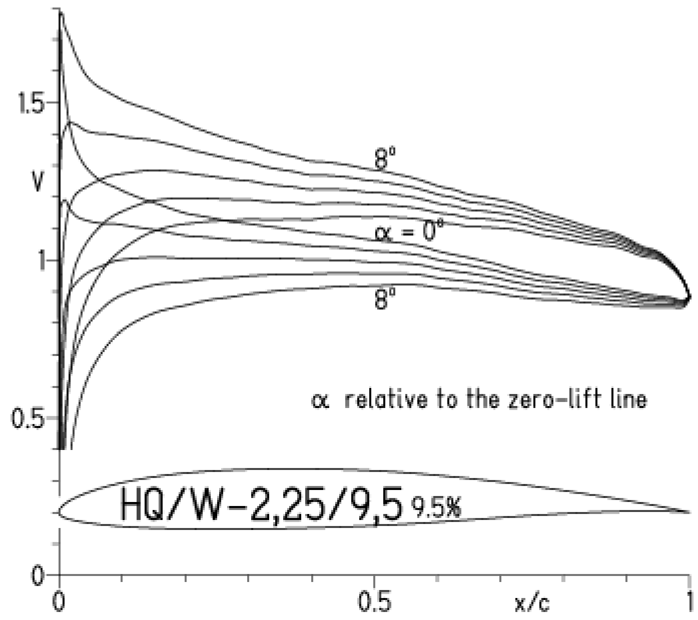


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

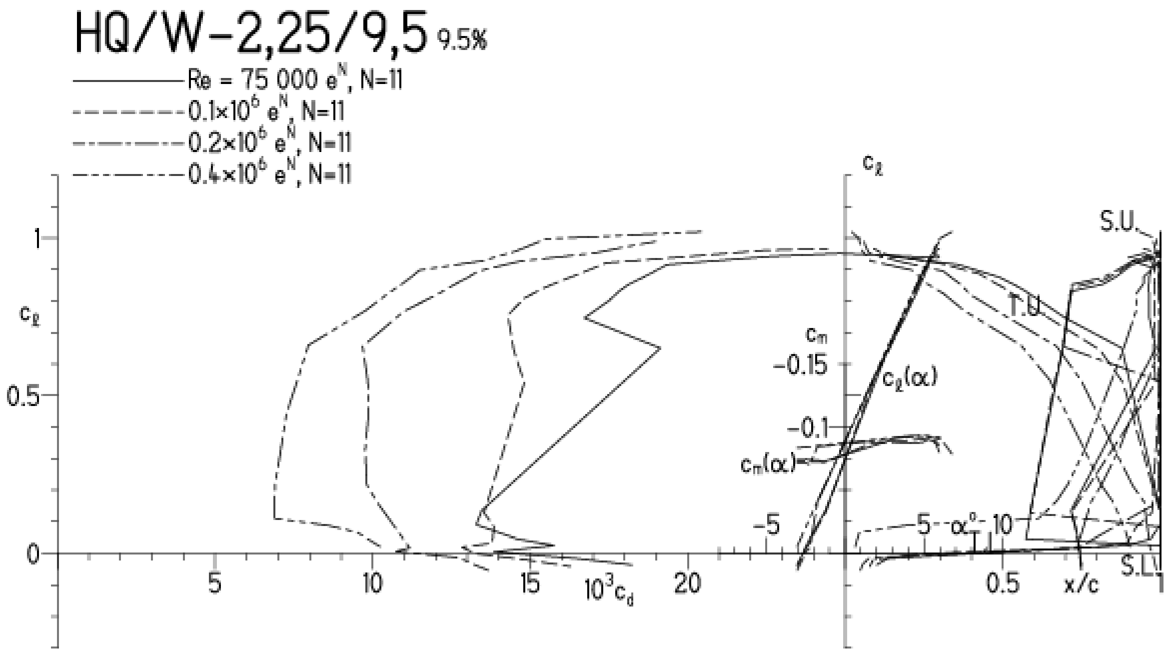


HQ/W-2,25/9,5, N=11

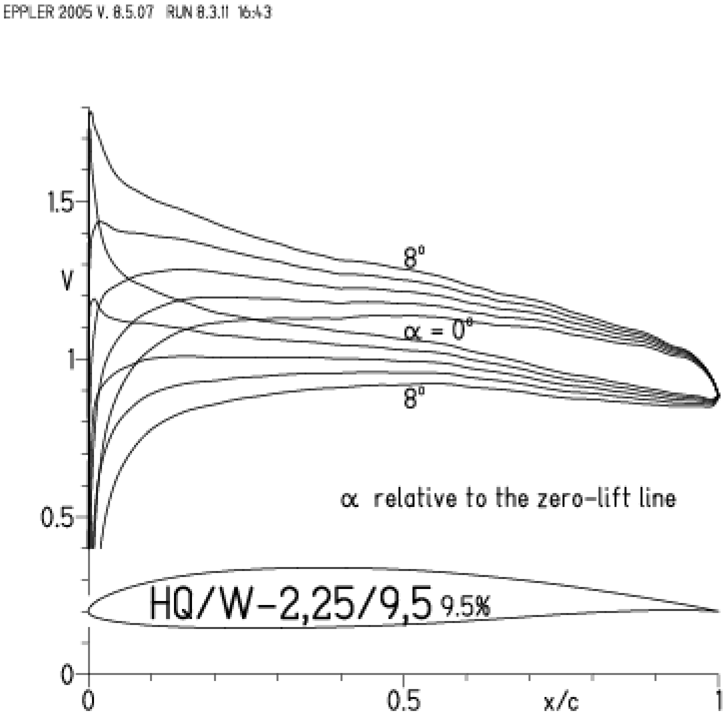
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

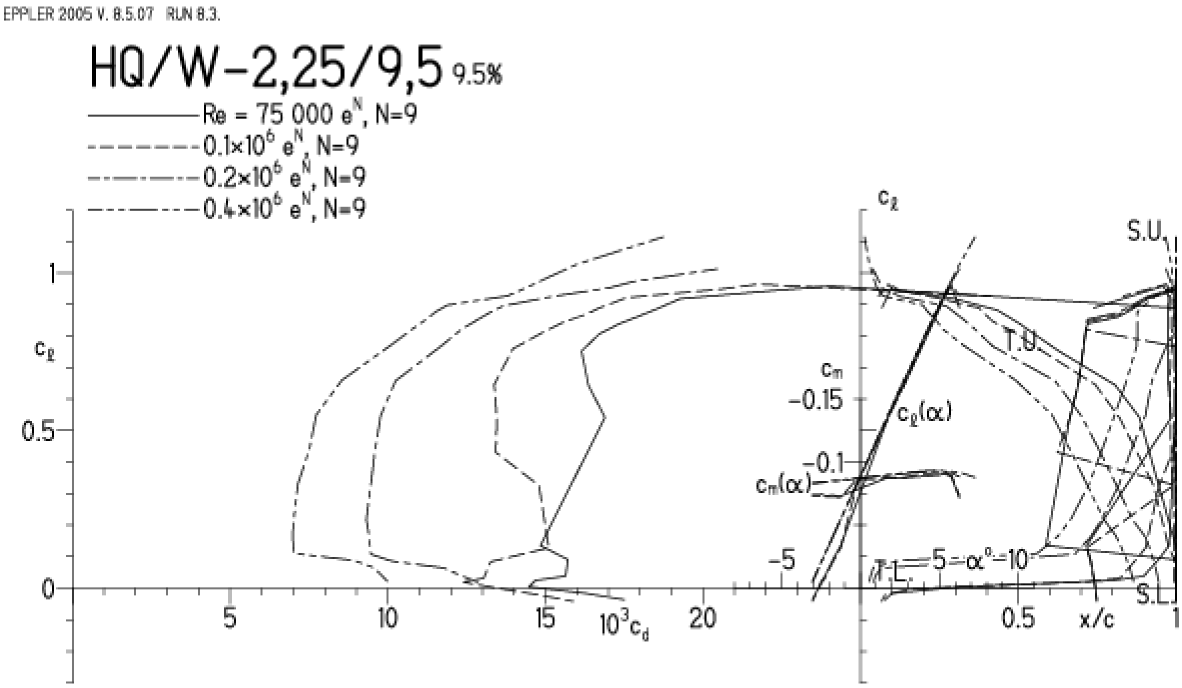


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



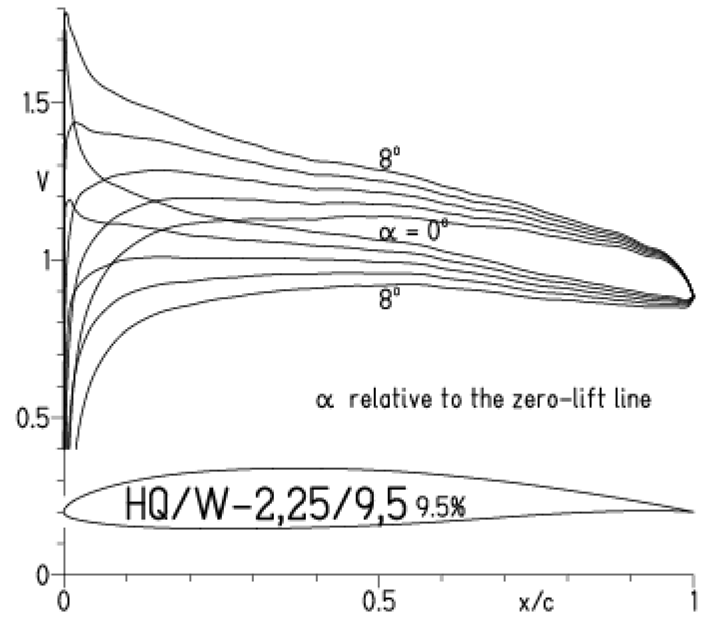
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

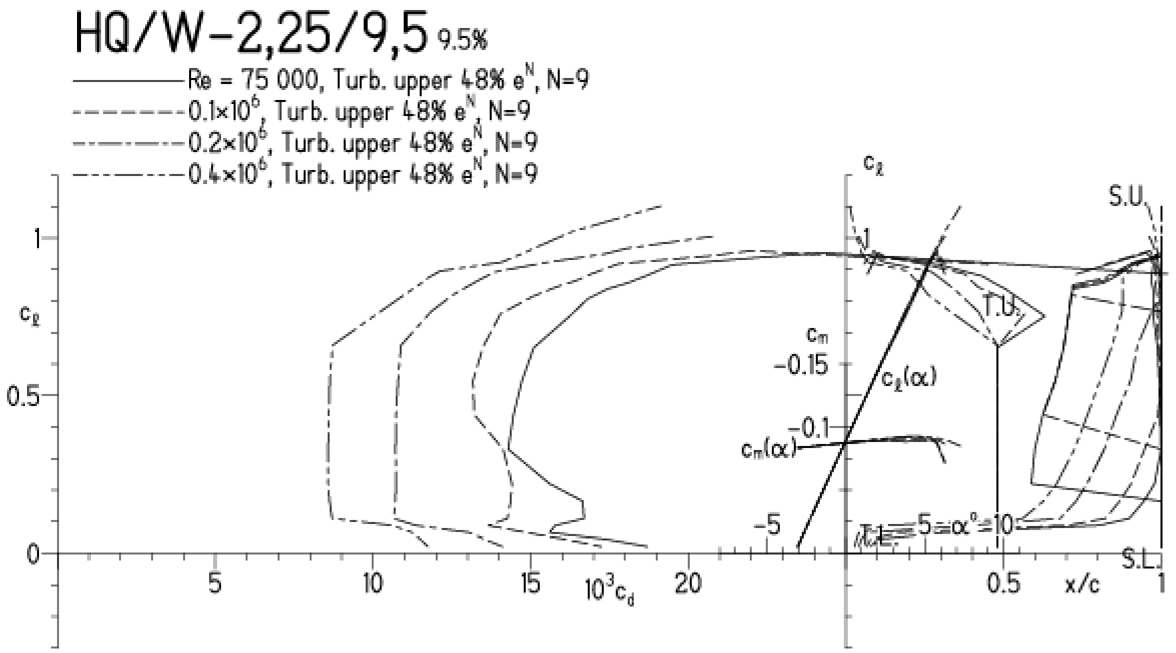

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

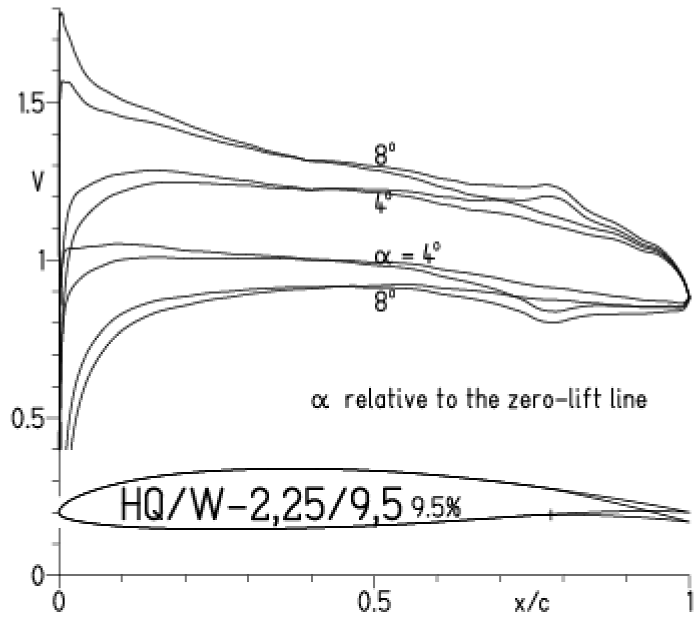


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

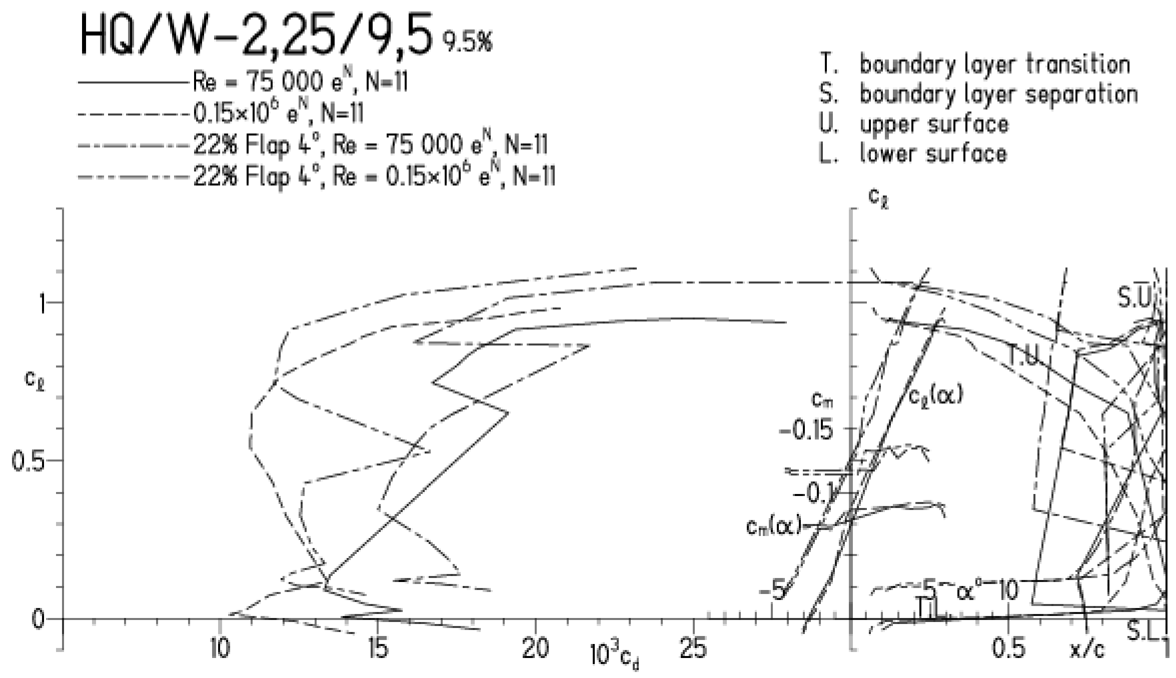


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

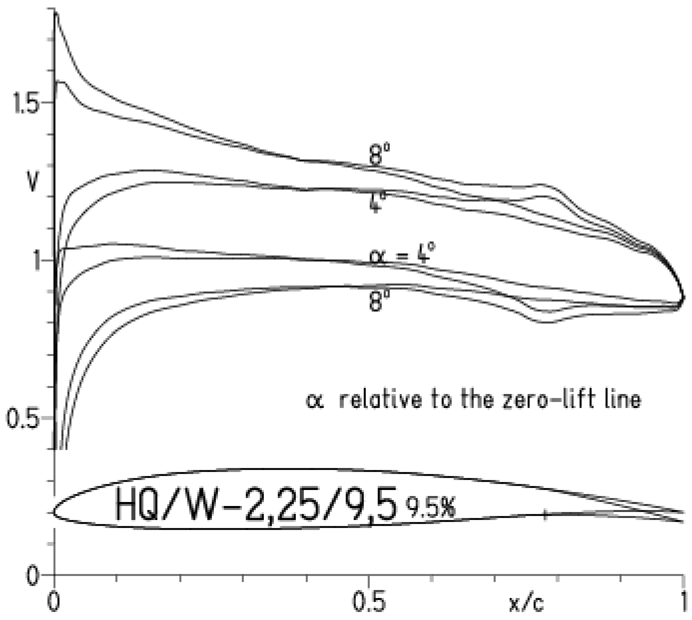


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

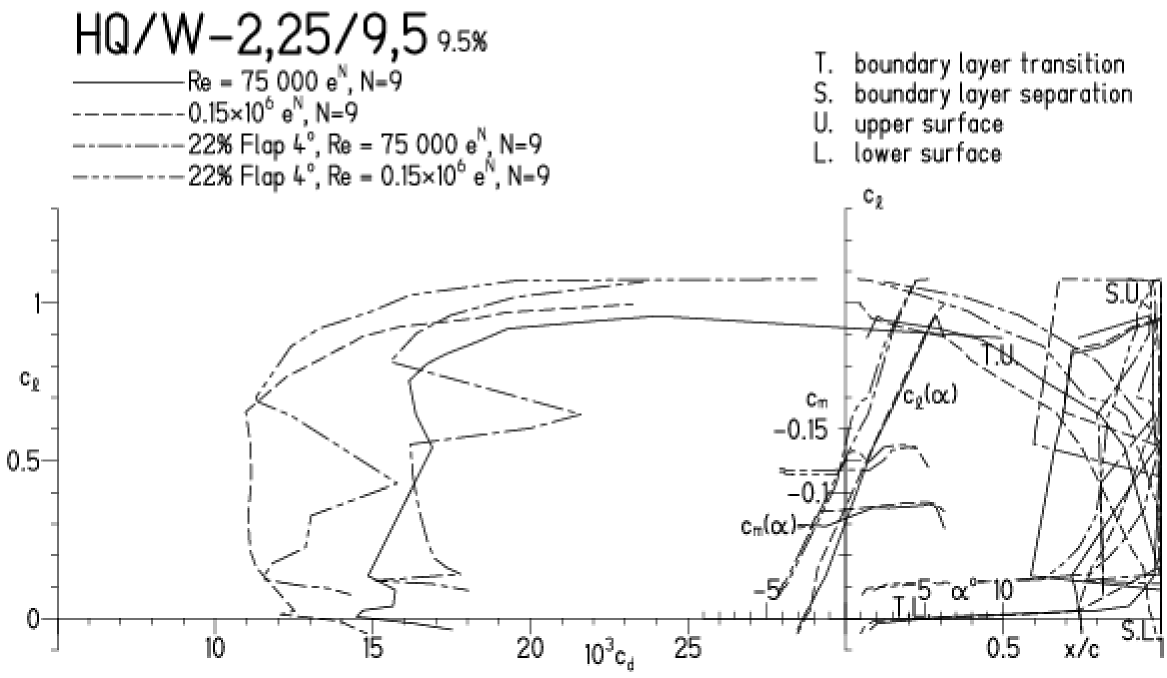


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

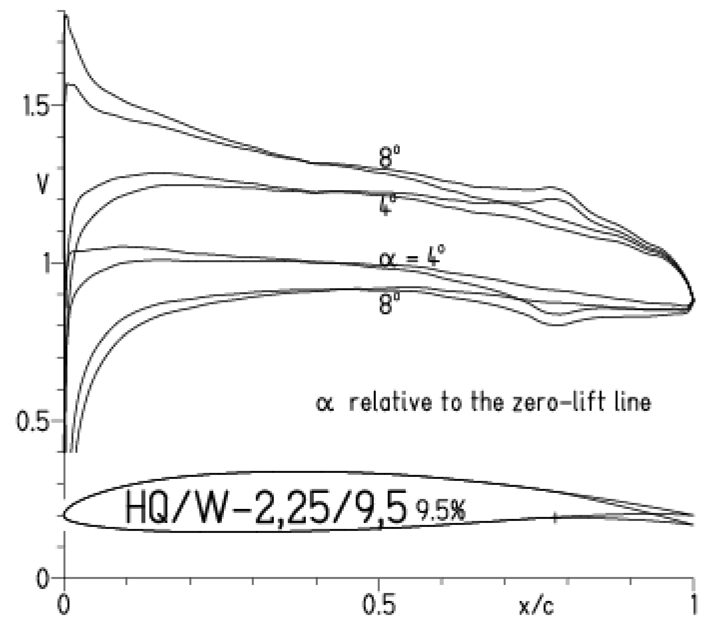


EPPLER 2005 V. 8.5.07 R

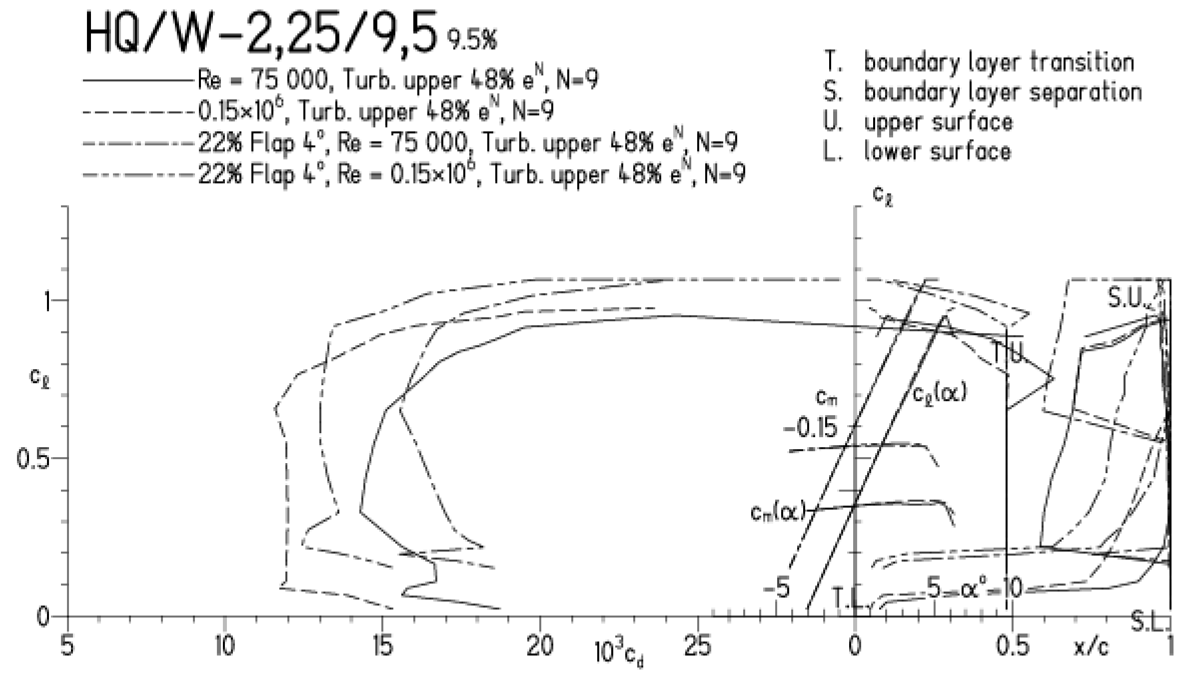


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

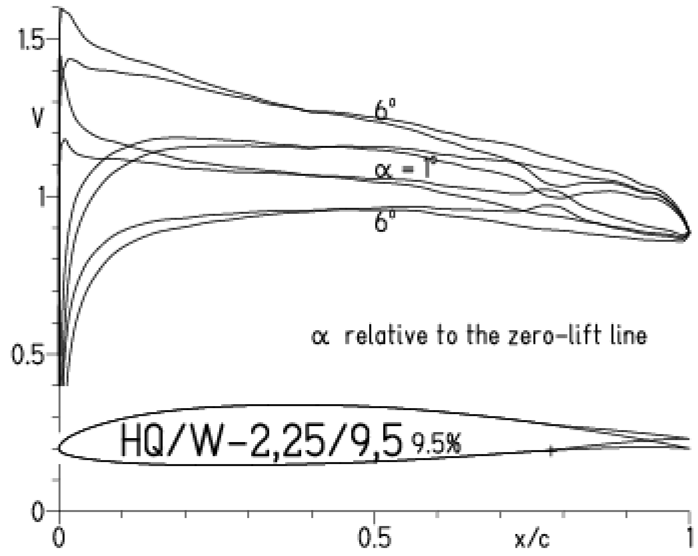


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

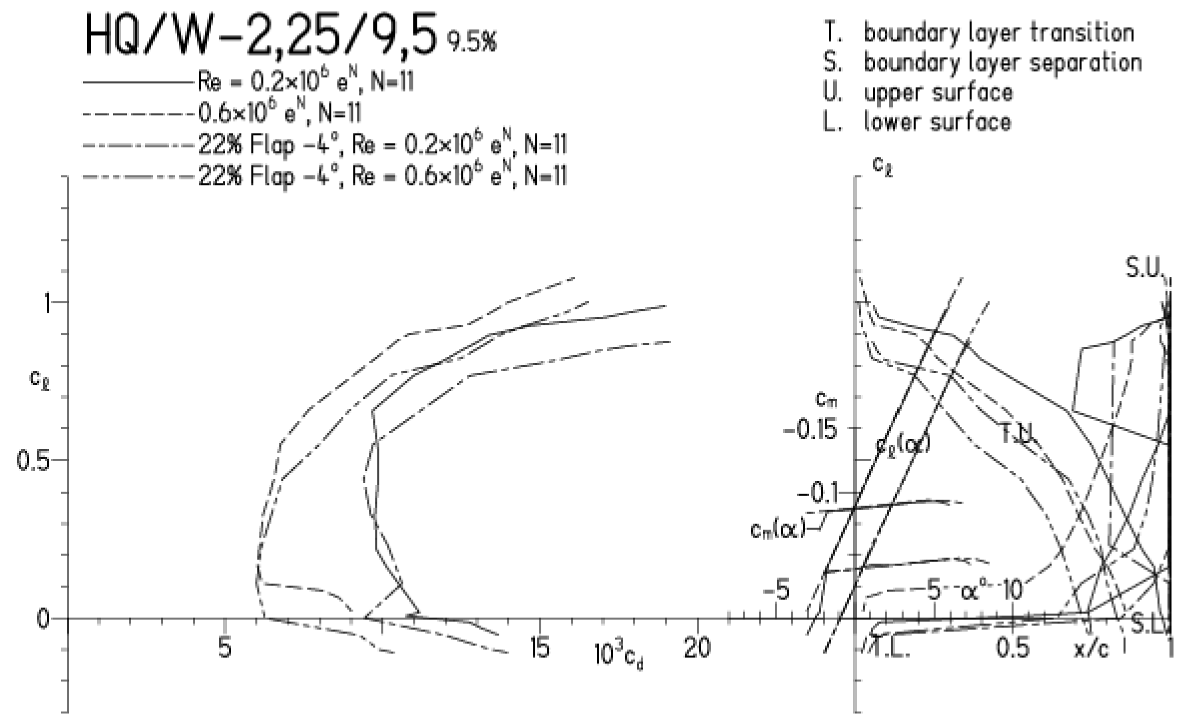


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

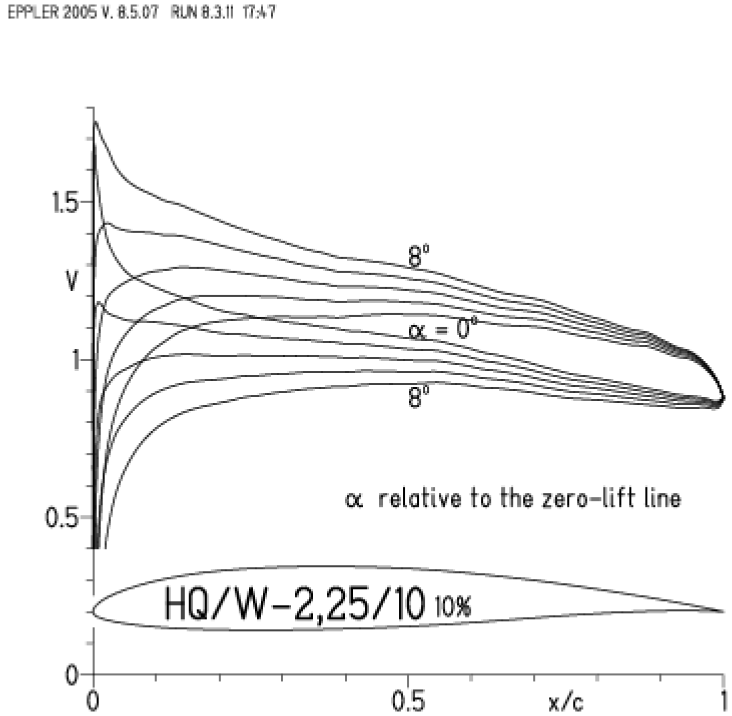
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

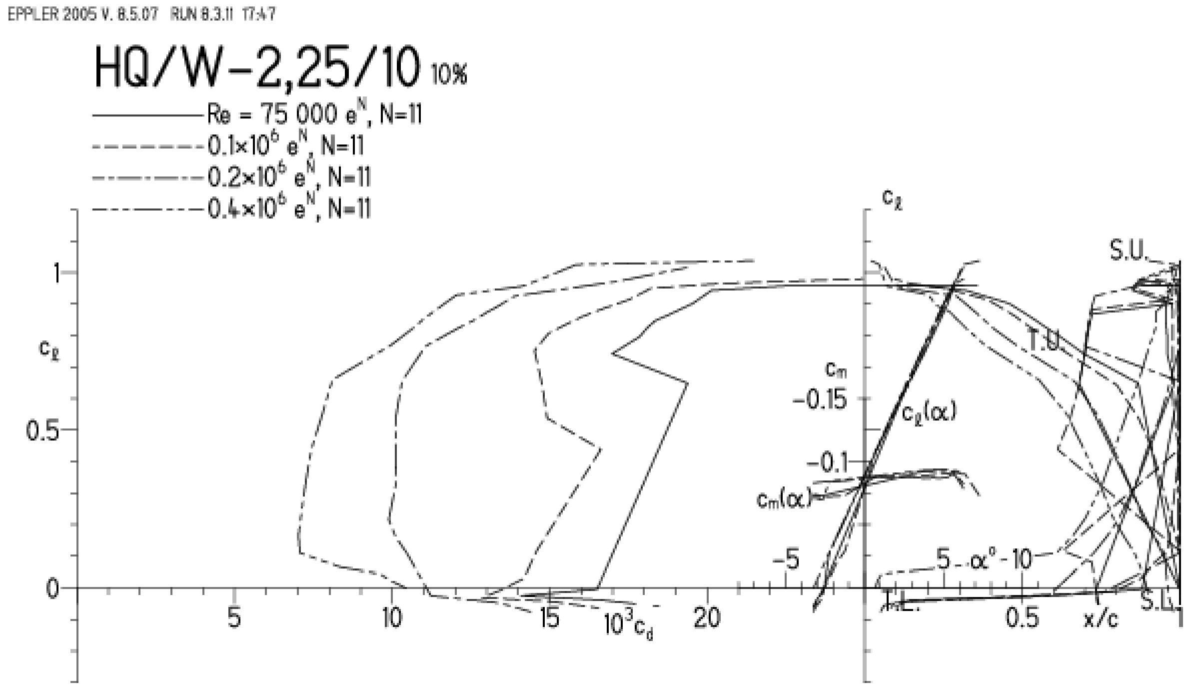


EPPLER 2005 V.



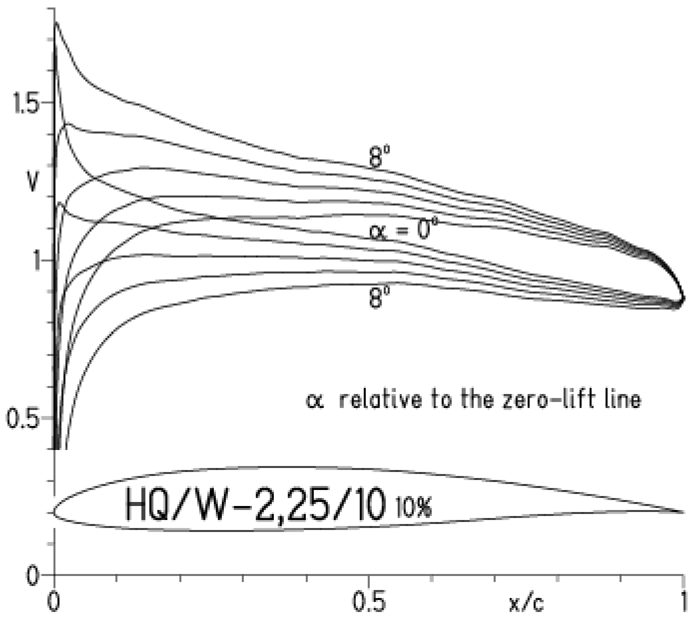
<u>HQ/W-2,25/10</u>, N=11



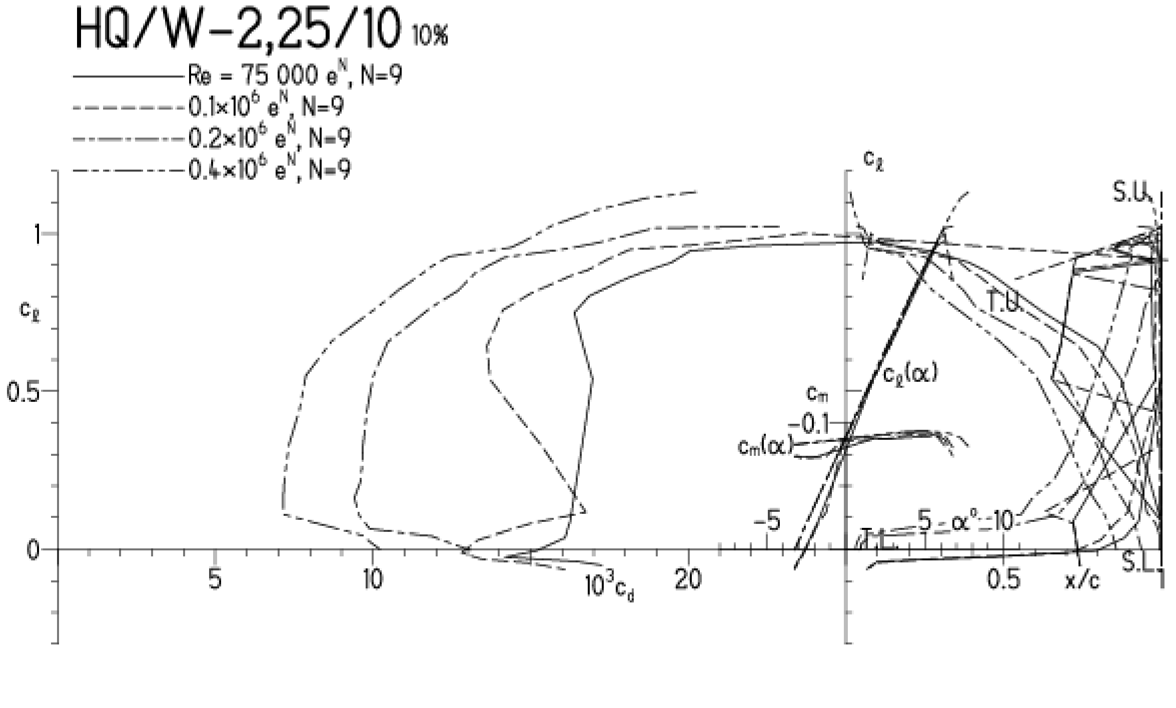


HQ/W-2,25/10, N=9

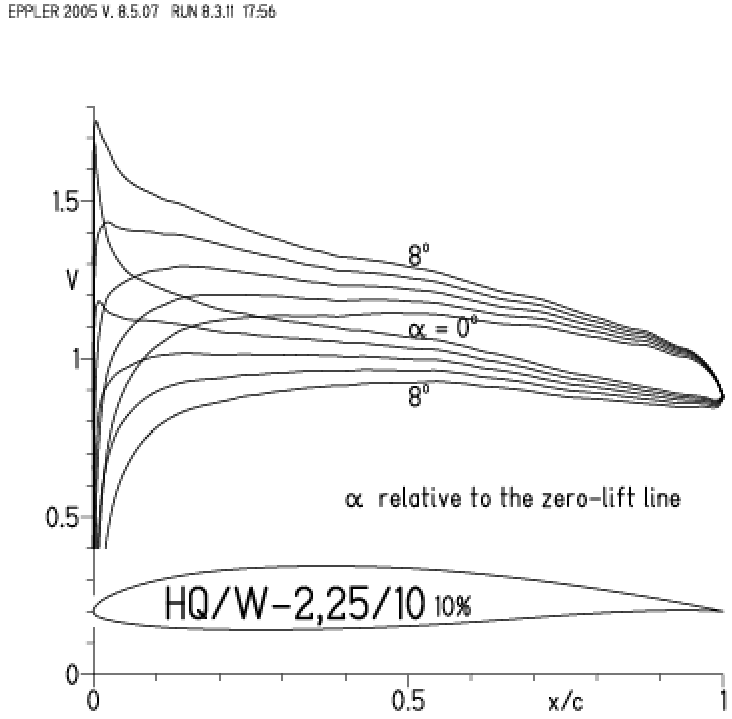
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

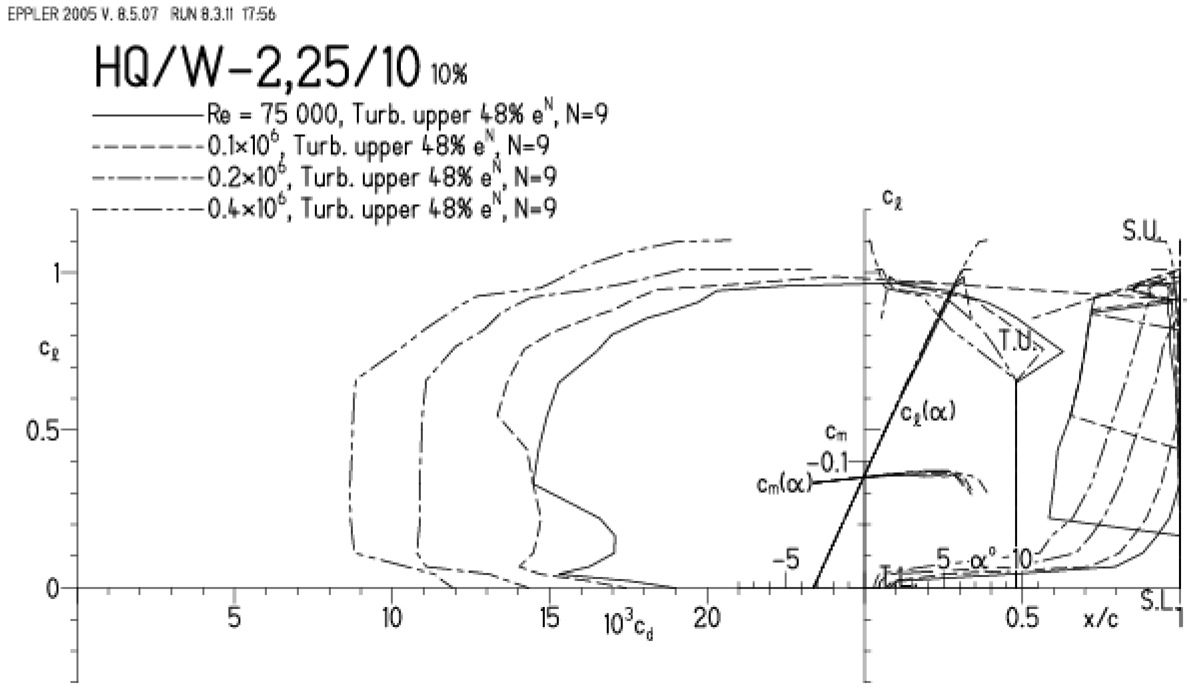


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



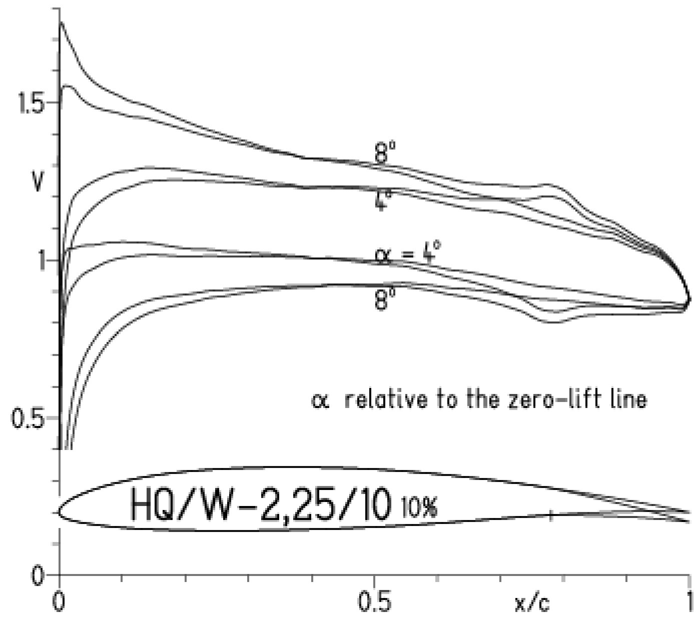
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



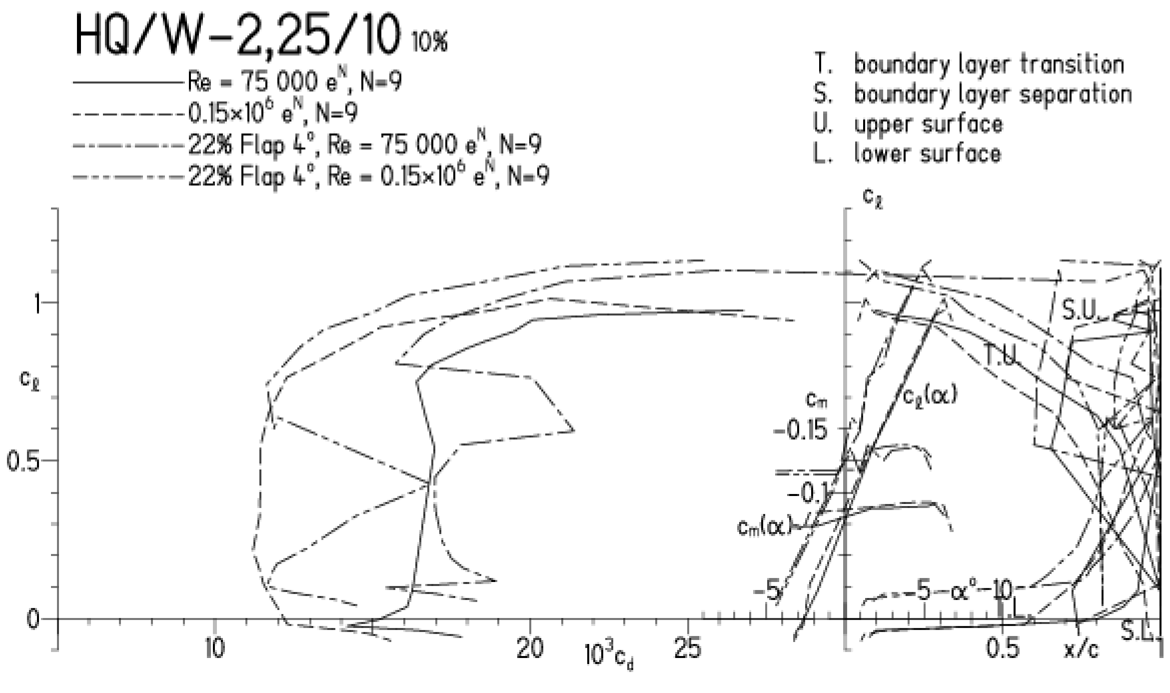


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

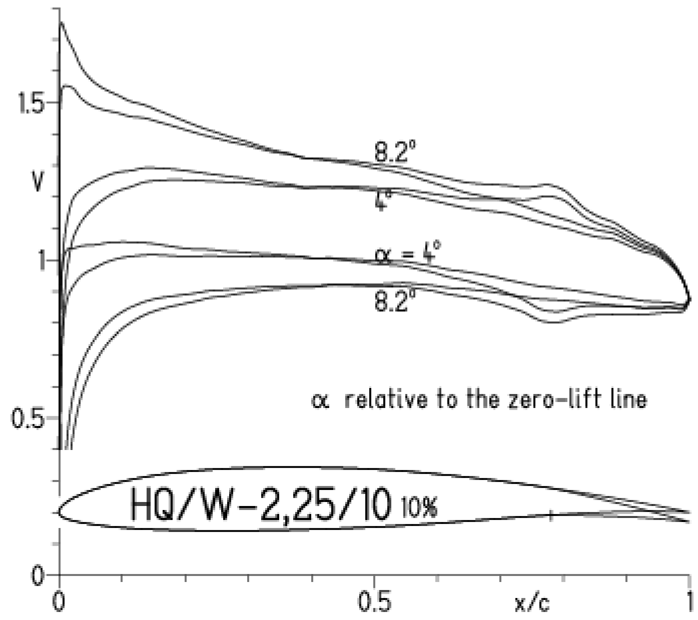


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

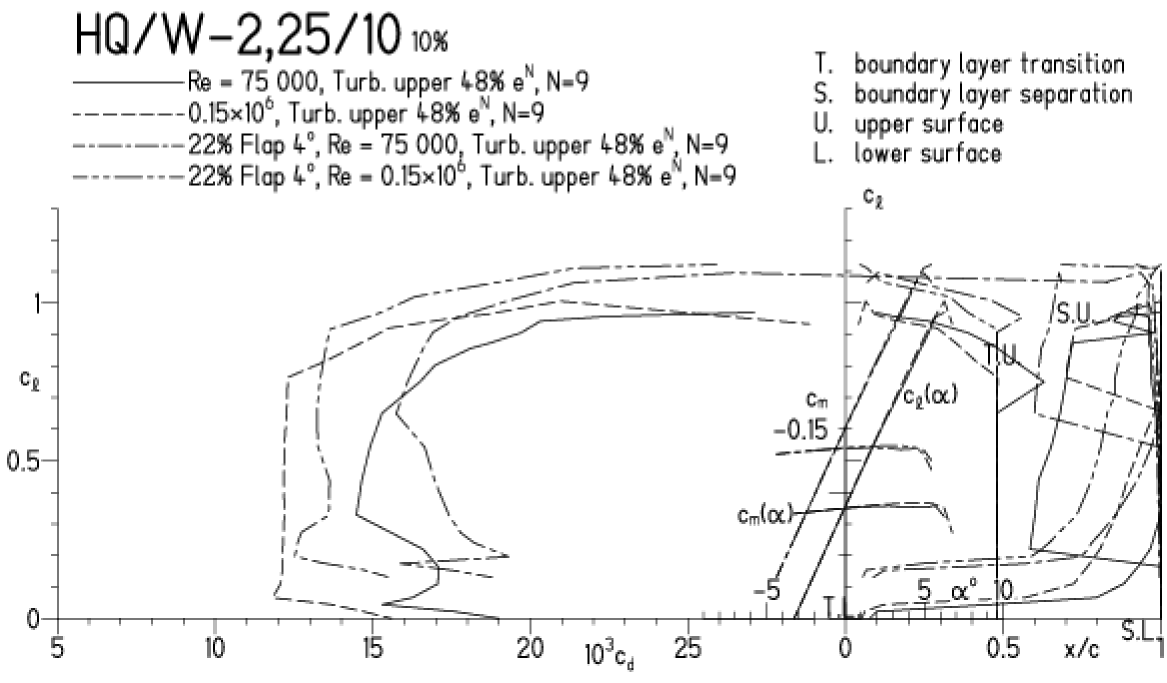


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

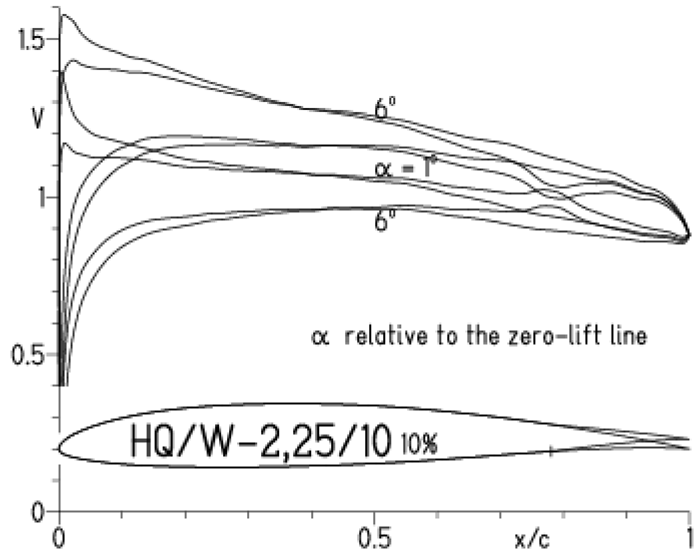


EPPLER 2005 V. 8.5.07 RUN 8.3

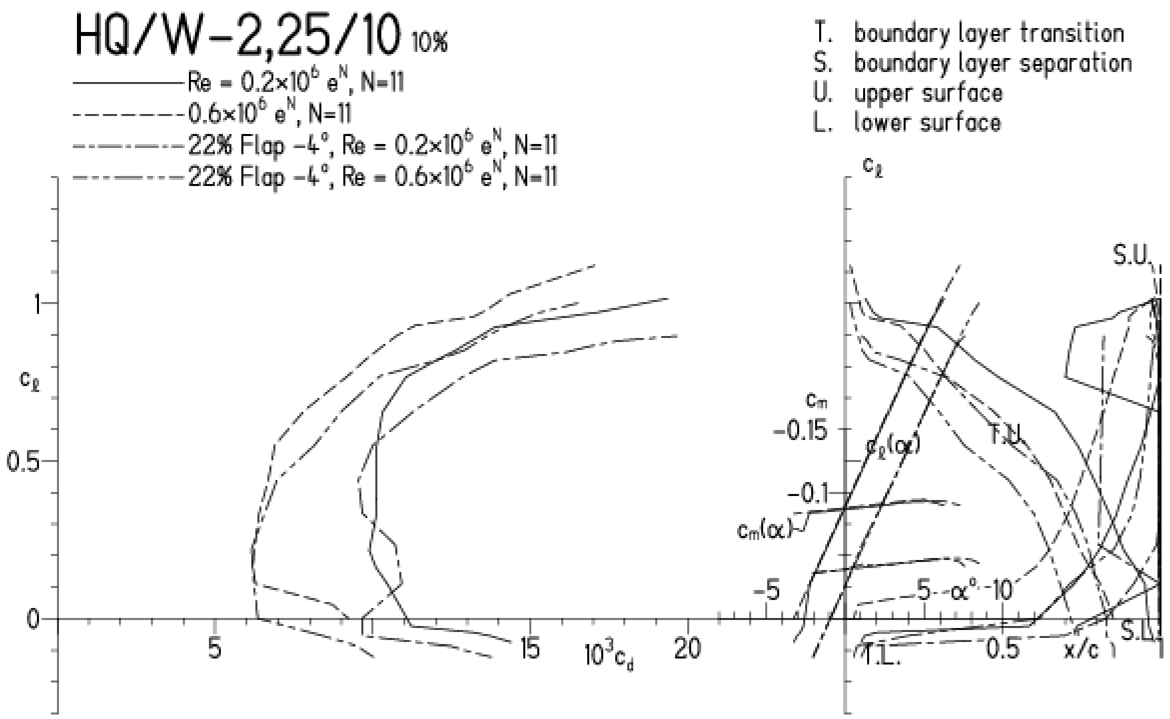


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

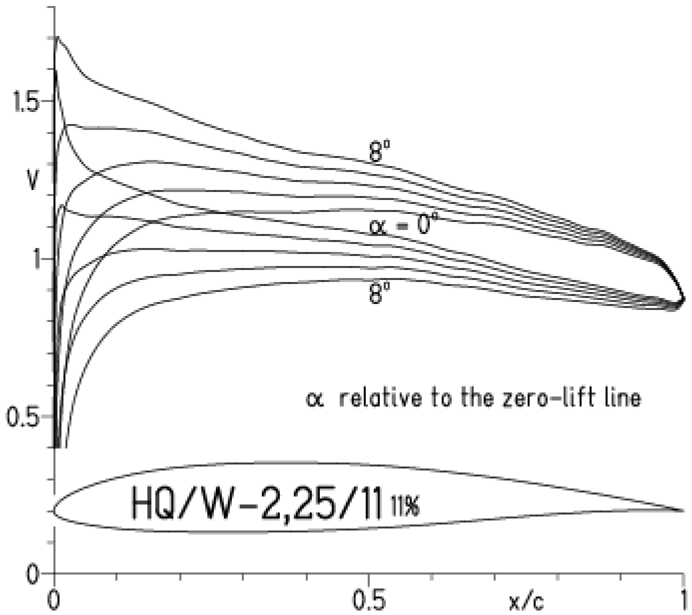


EPPLER 2005 V. 8.5.07 RUN

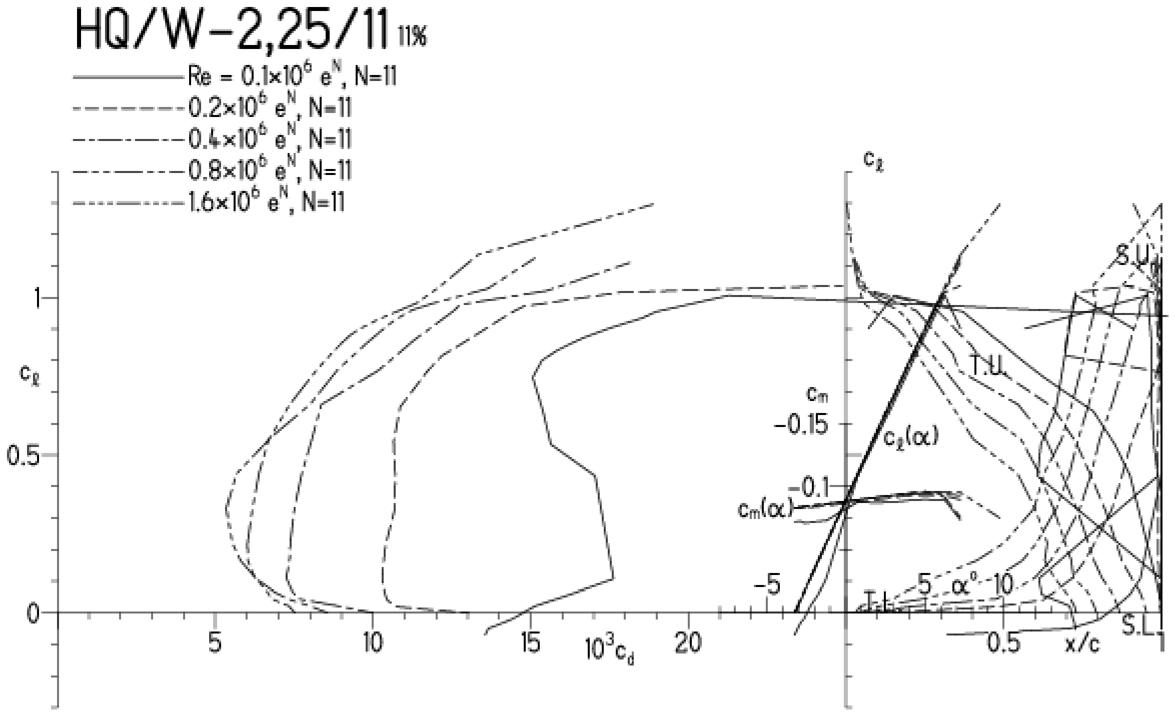


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

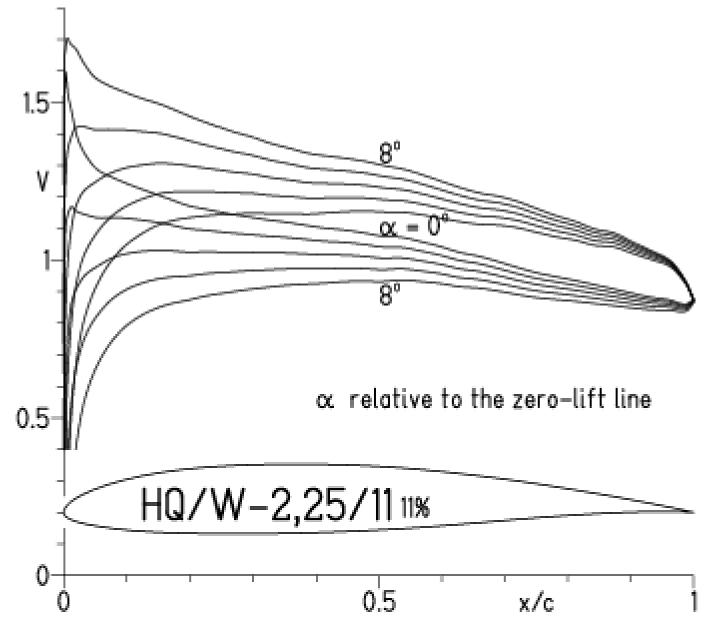


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12·

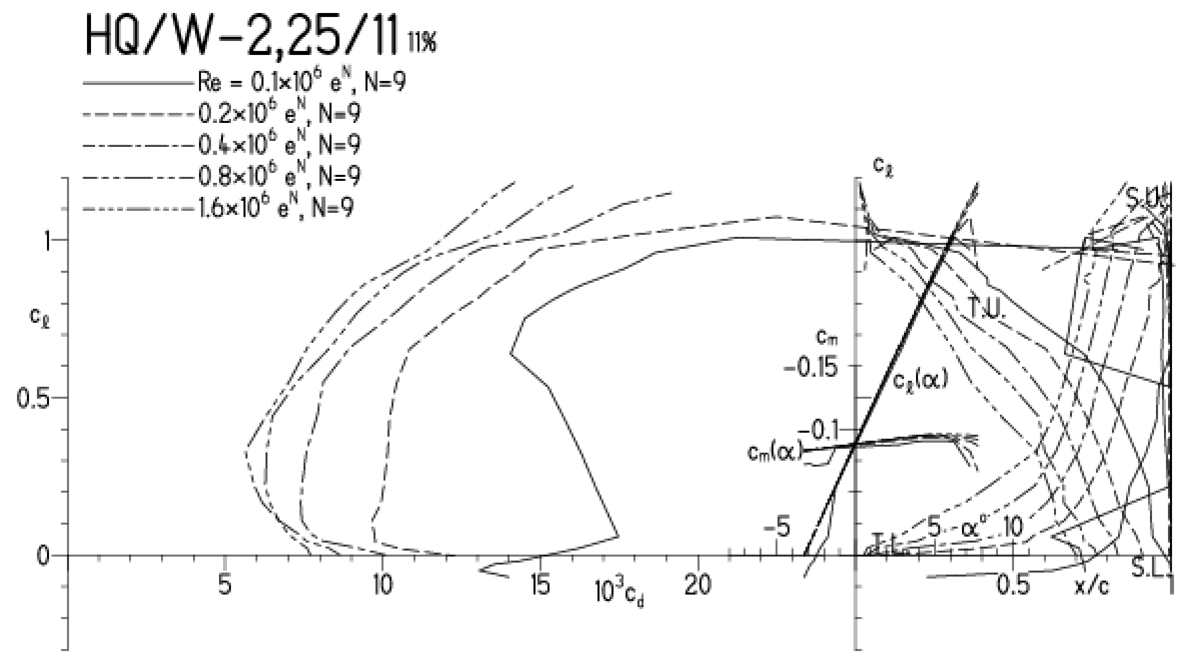


HQQ/W-2,25/11, N=9

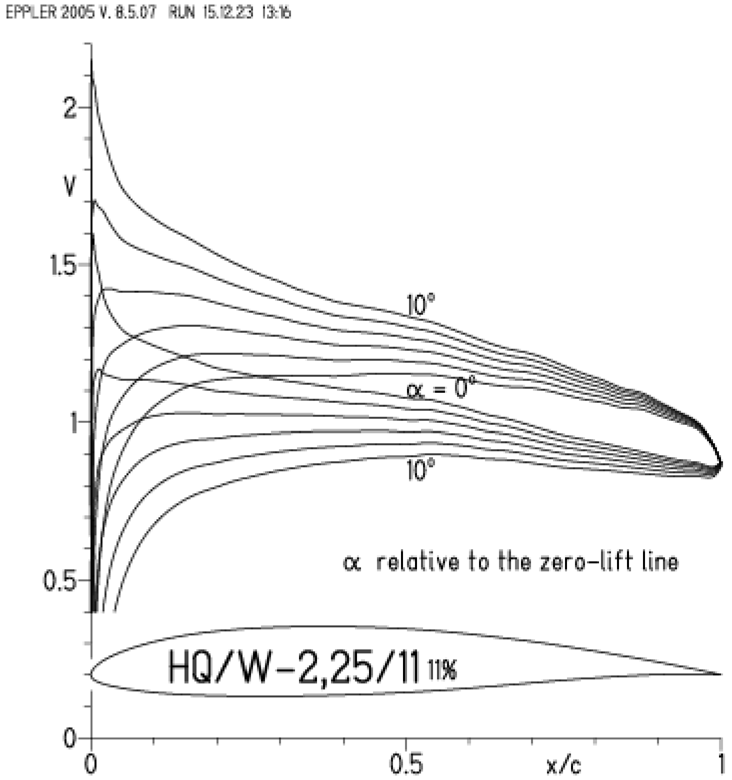
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

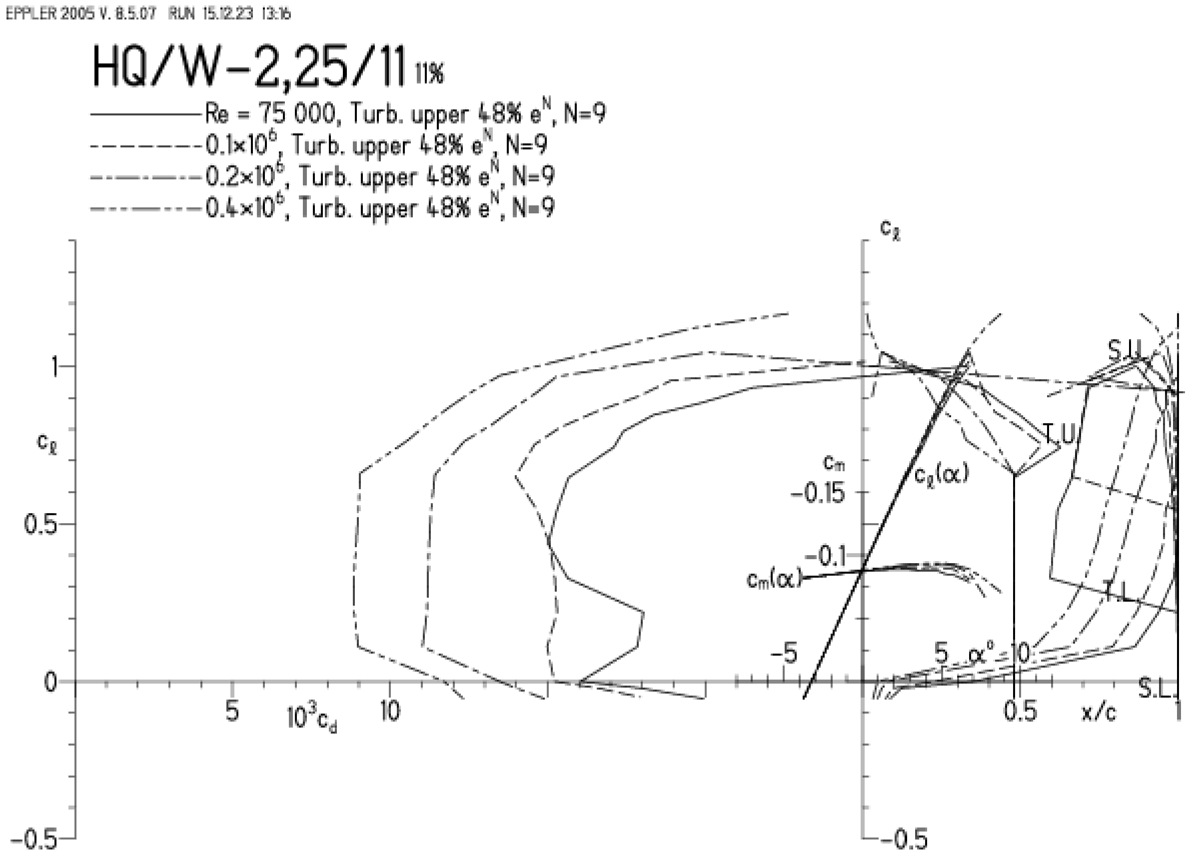


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



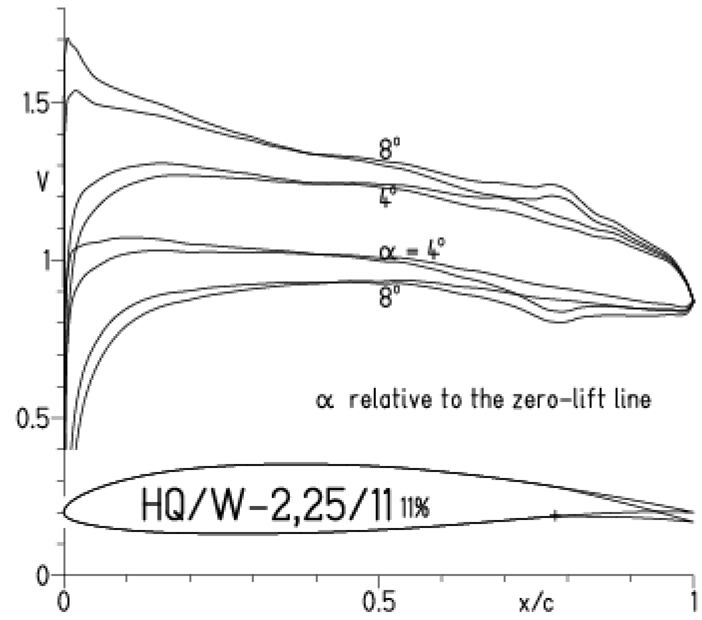
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



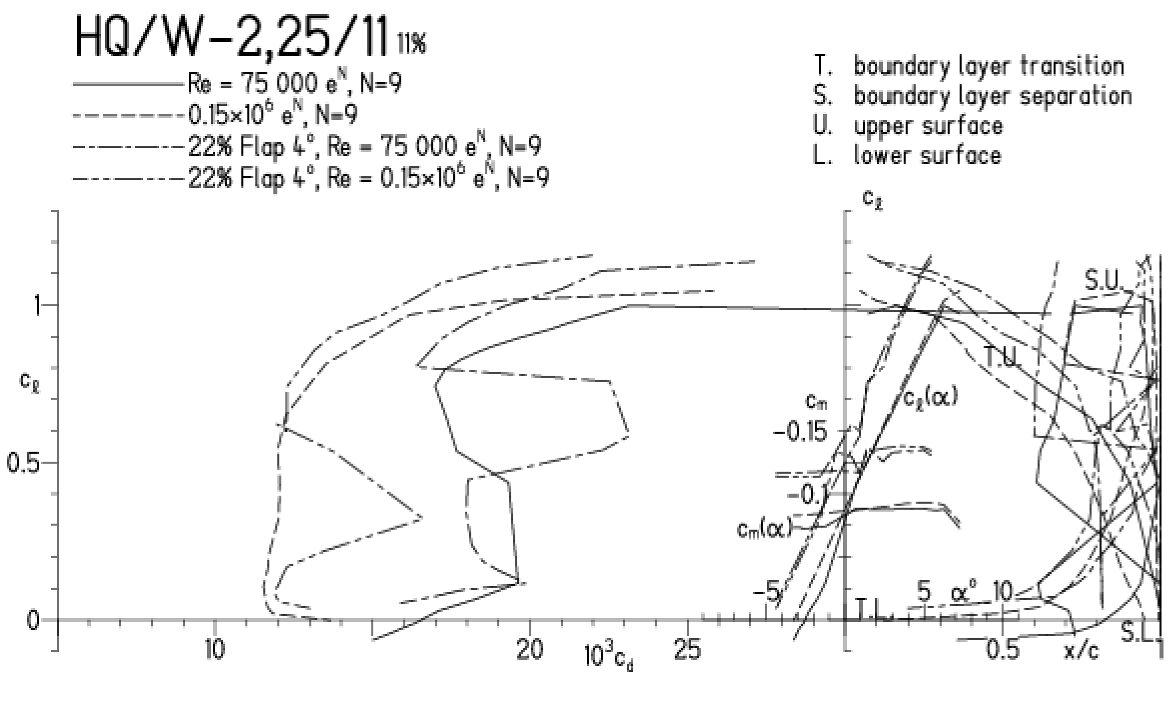


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

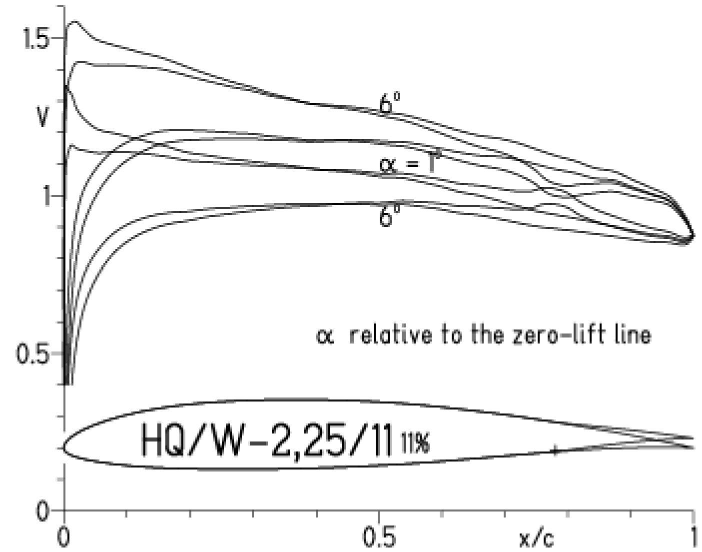


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

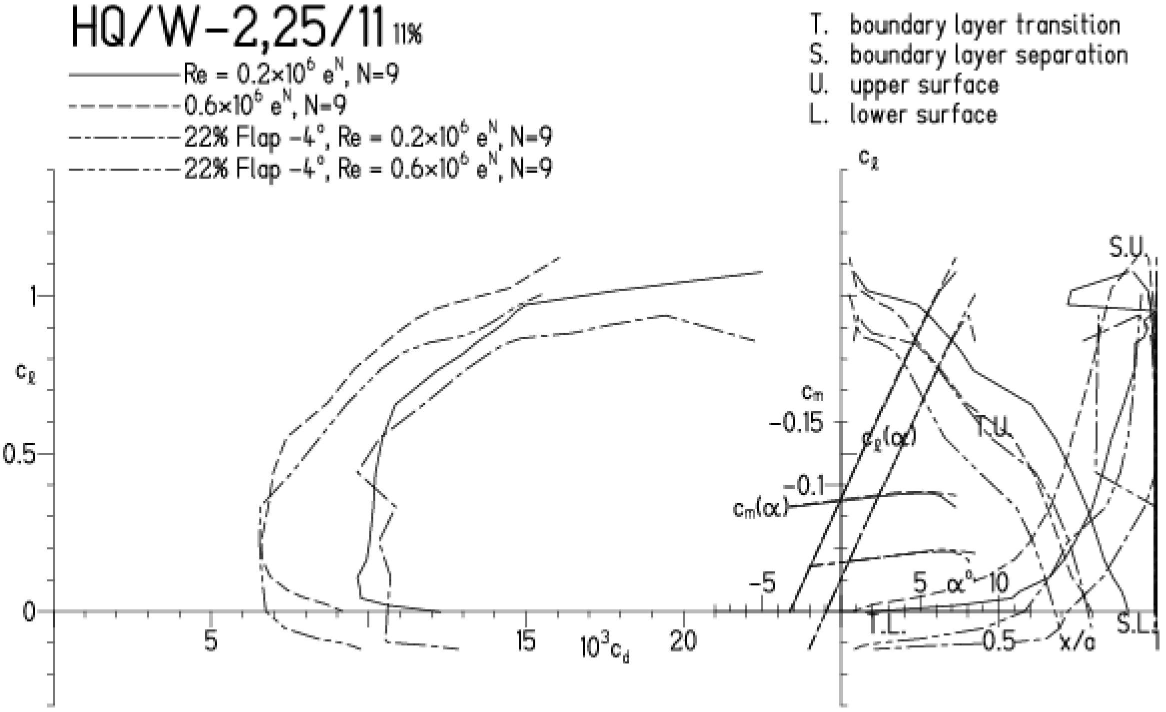


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

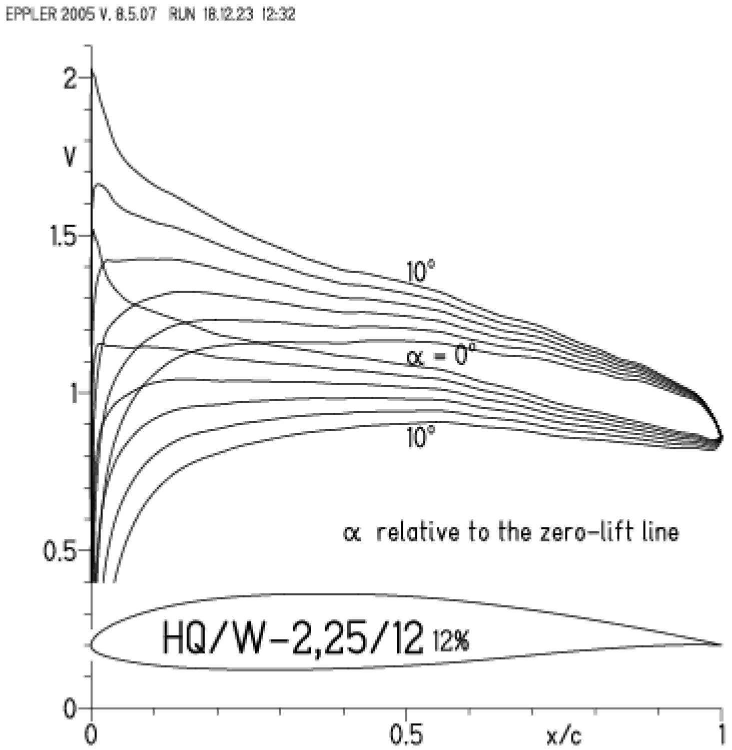
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

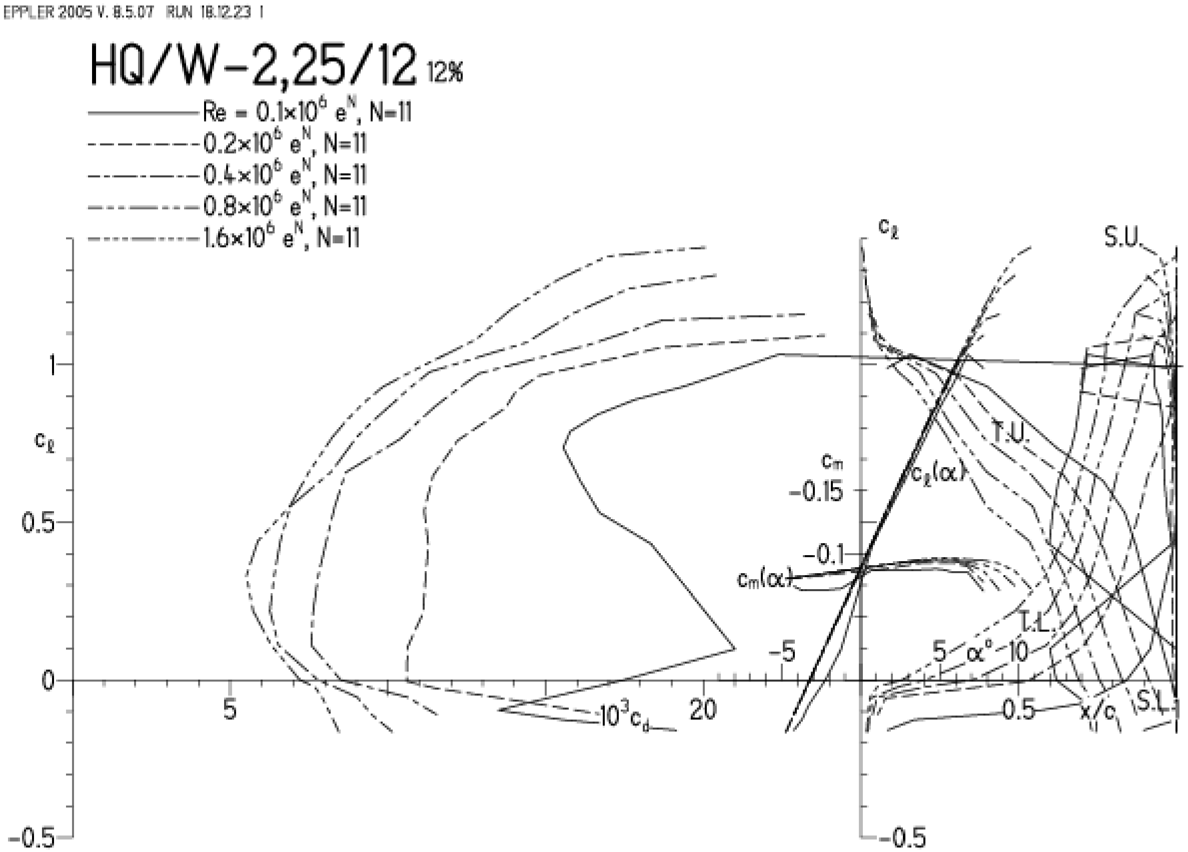


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

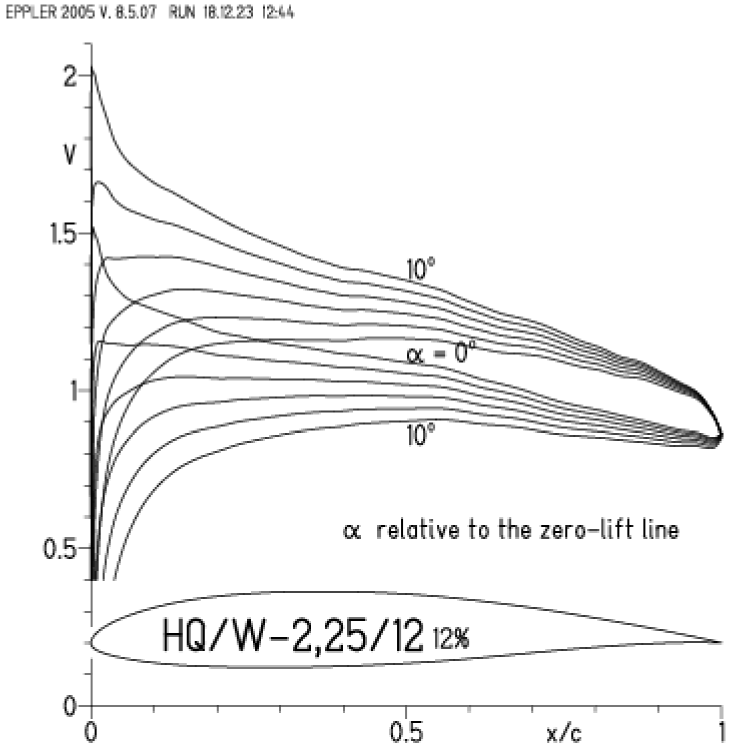


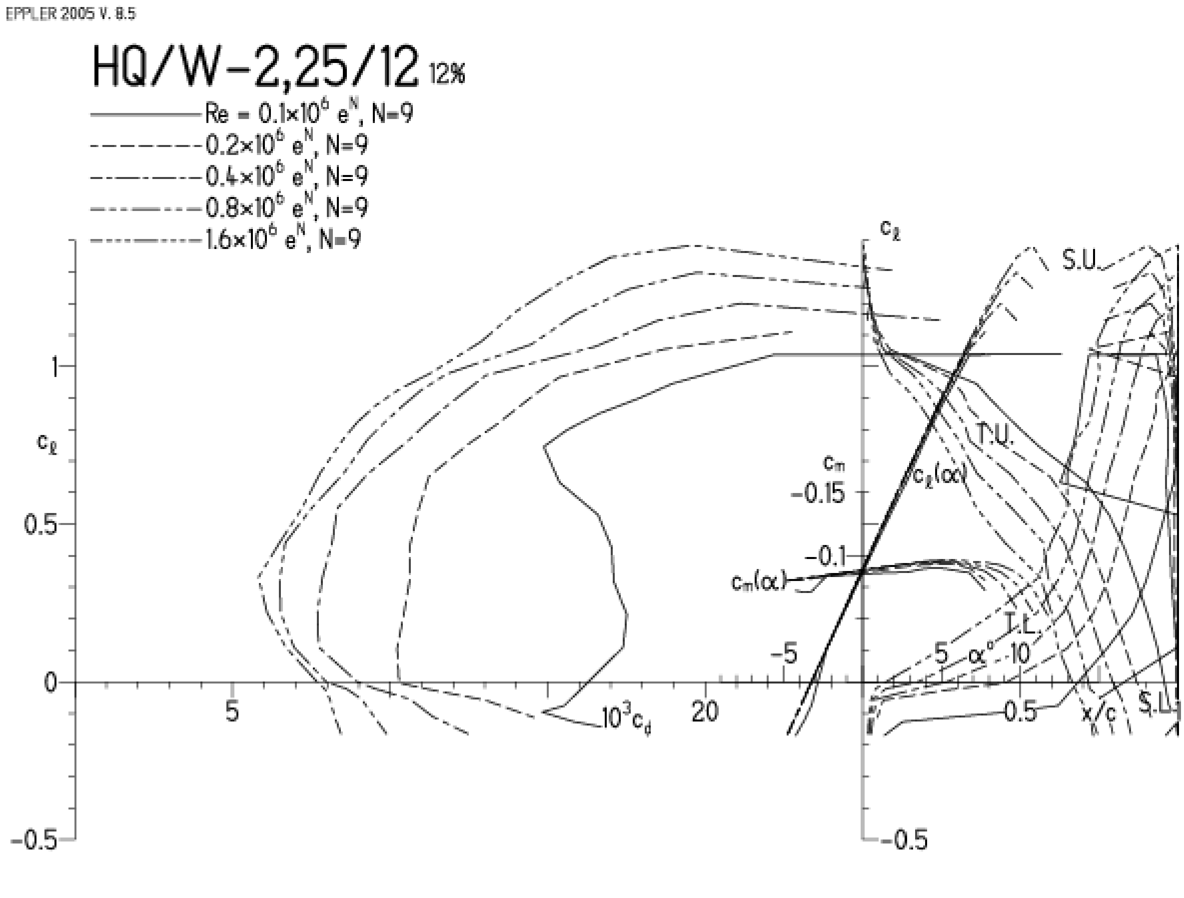
<u>HQ/W-2,25/12</u>, N=11



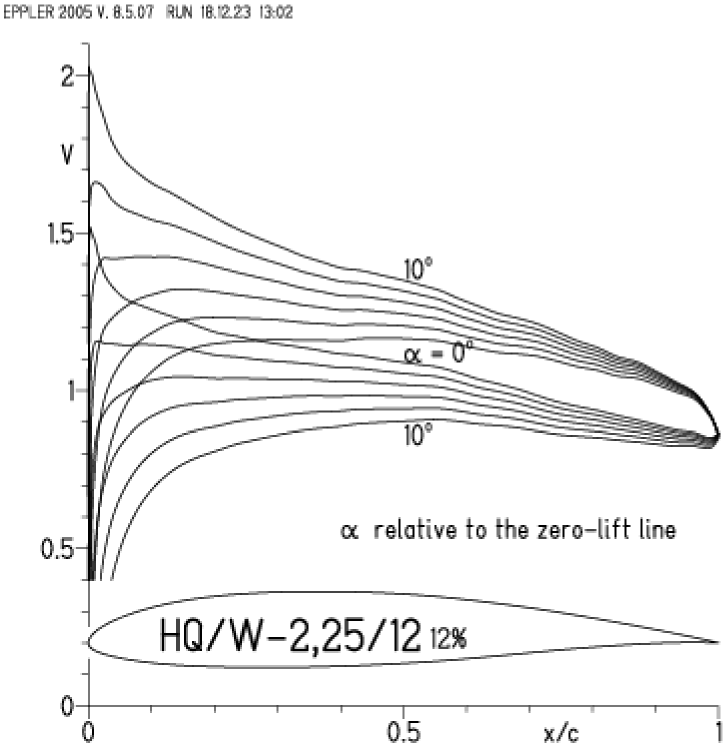


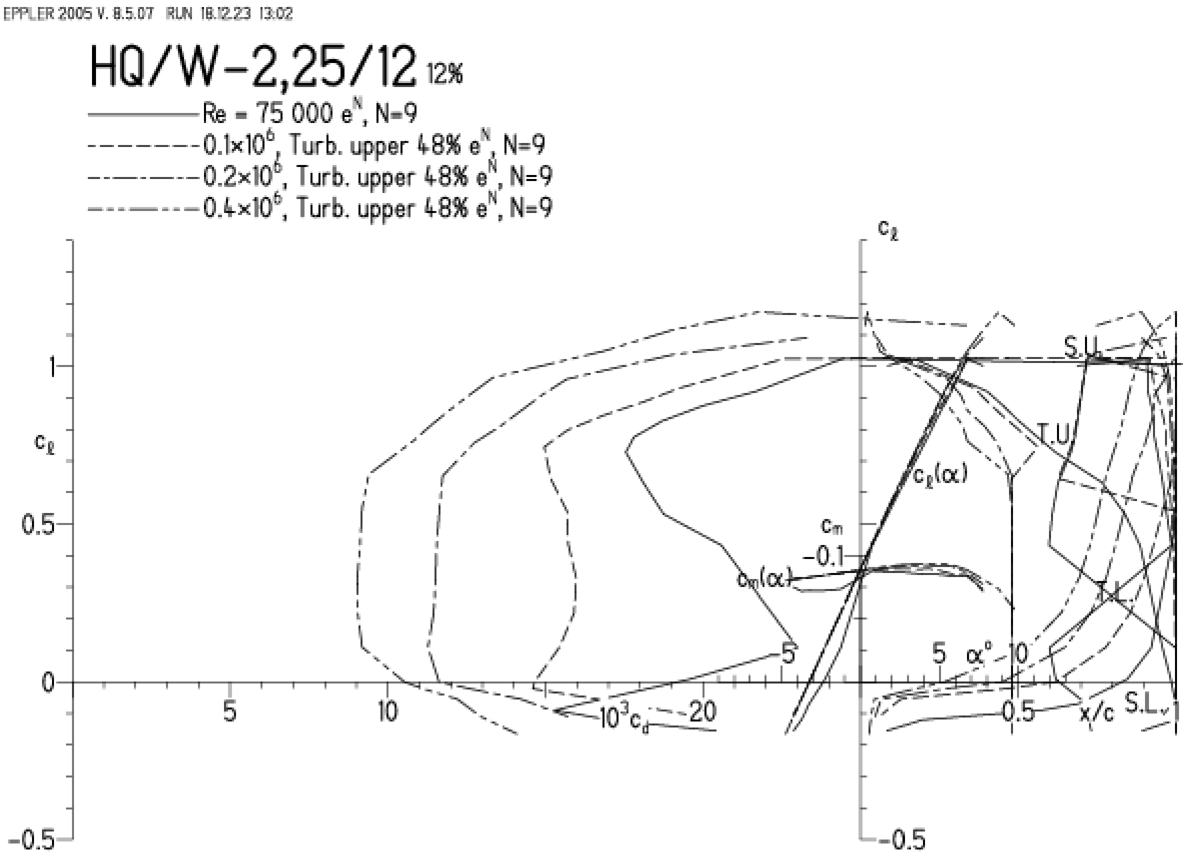
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_m
c_ℓ(α)
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

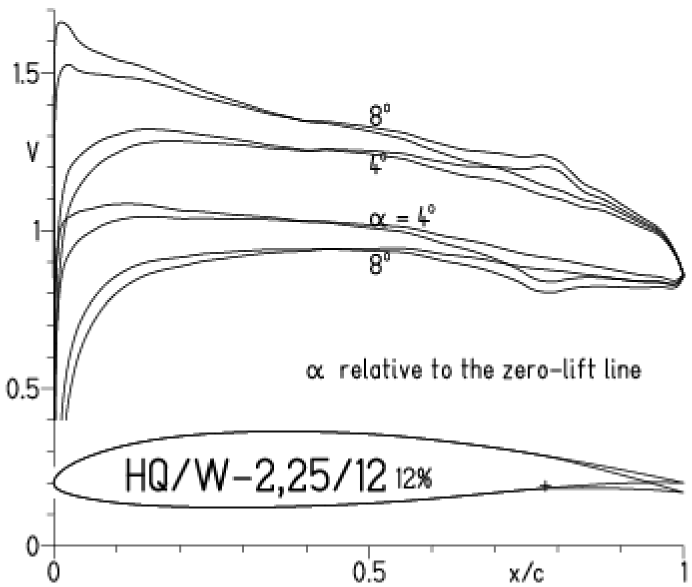
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



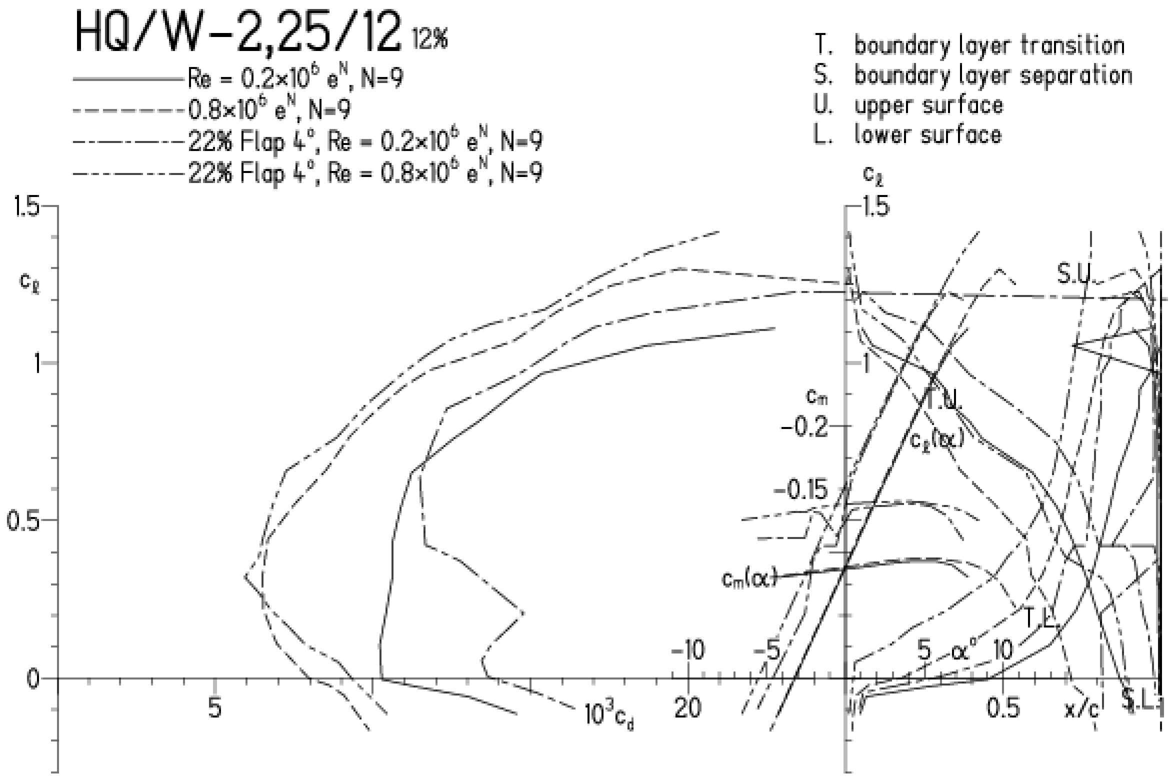


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

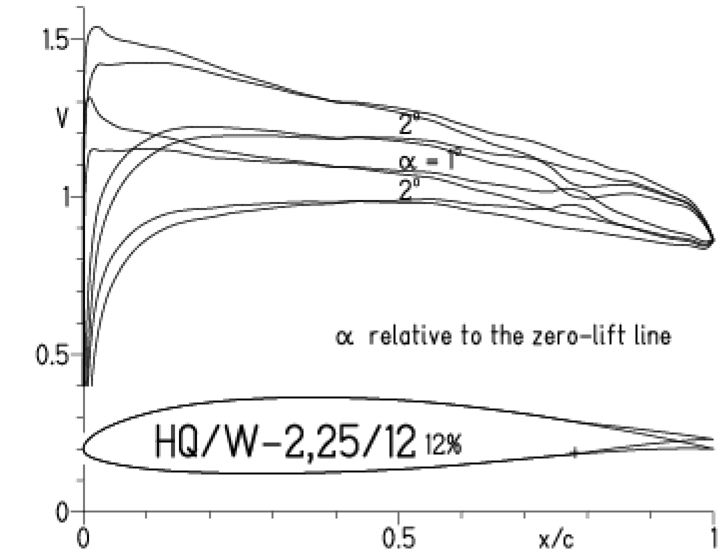


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

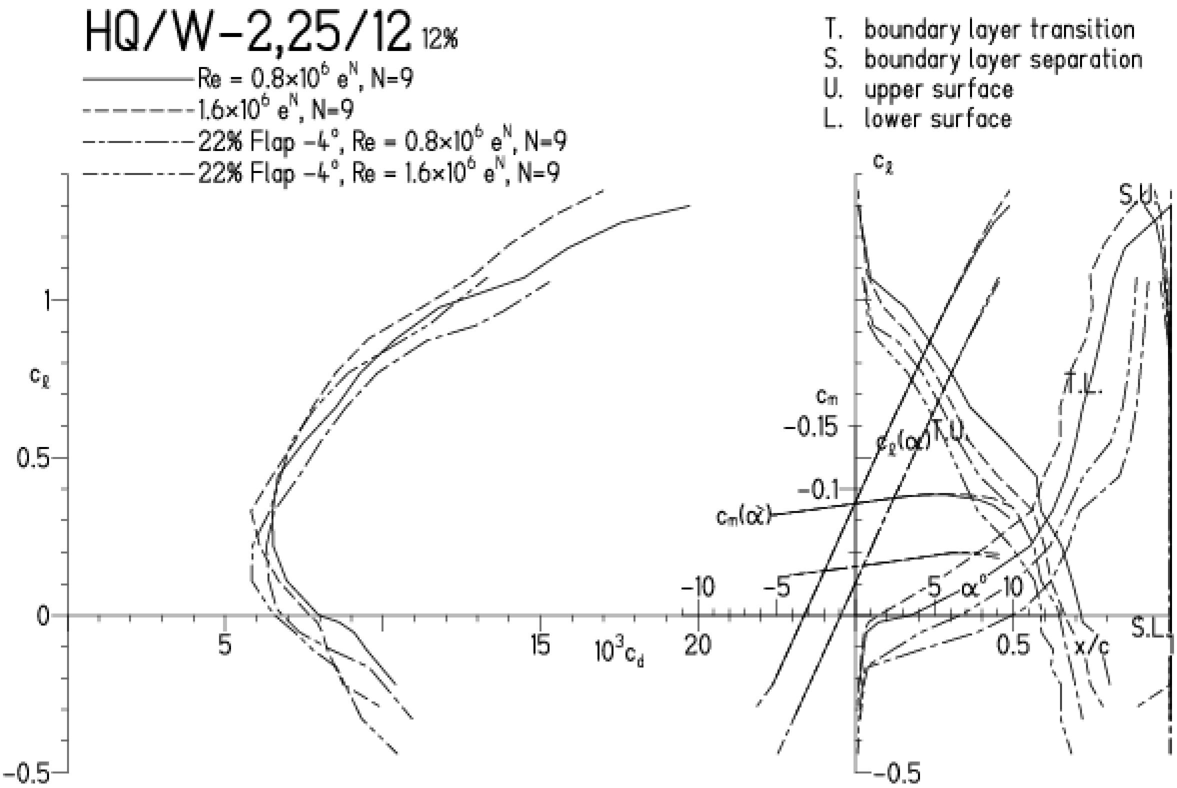


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

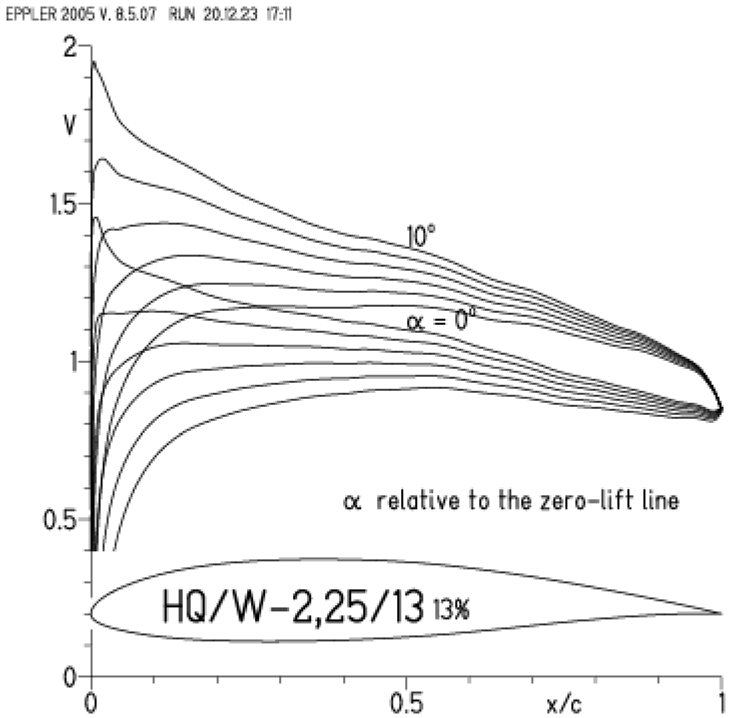
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

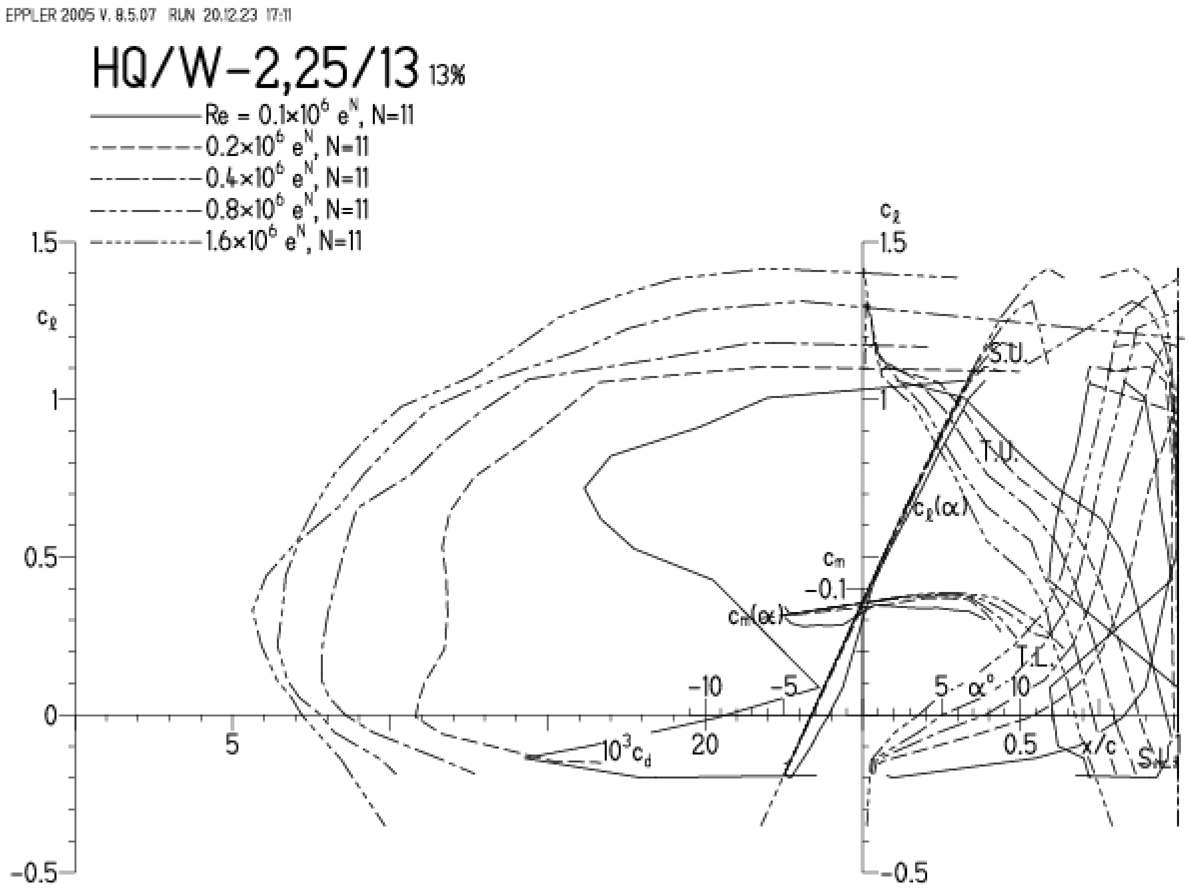


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

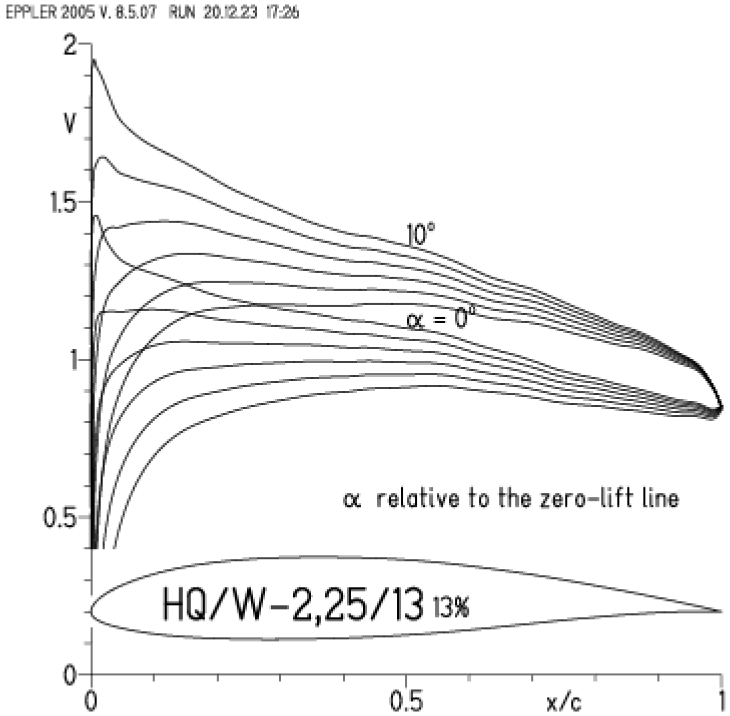


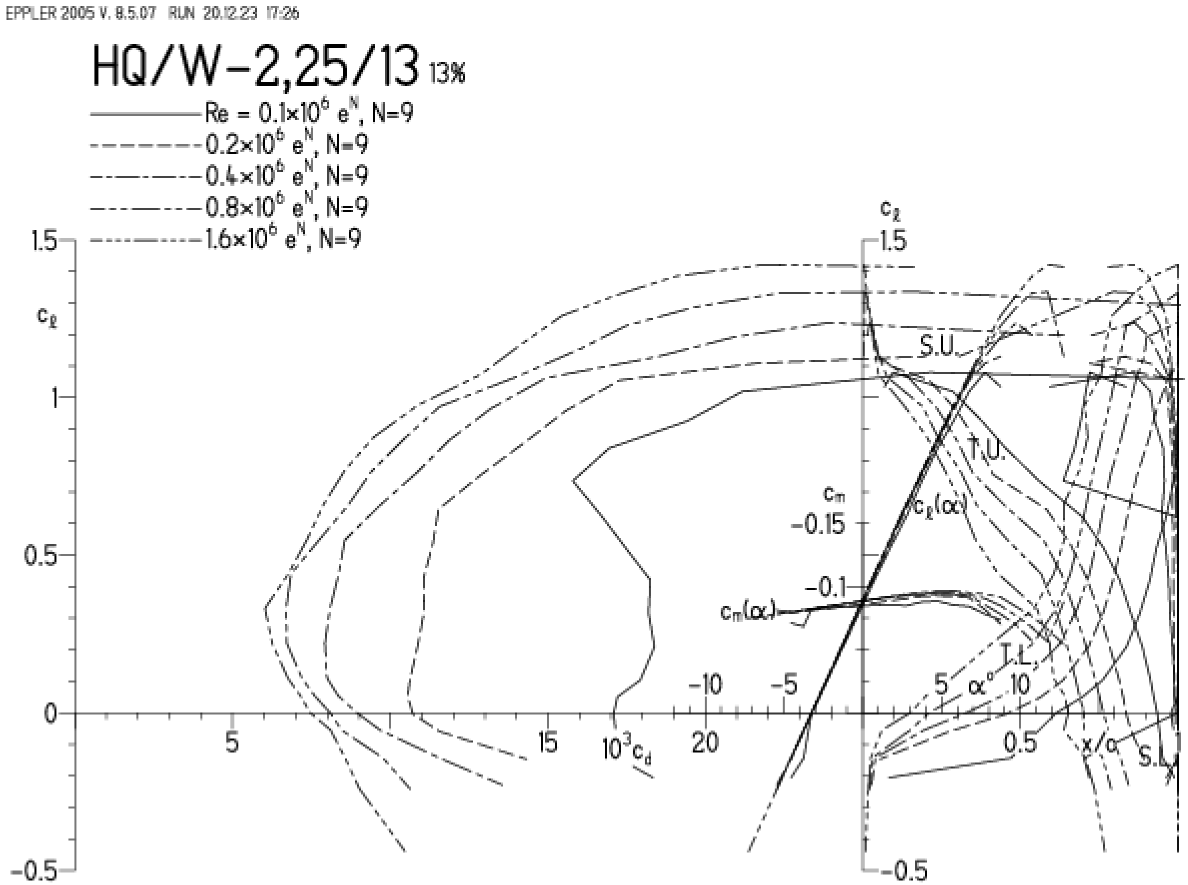
<u>HQ/W-2,25/13</u>, N=11



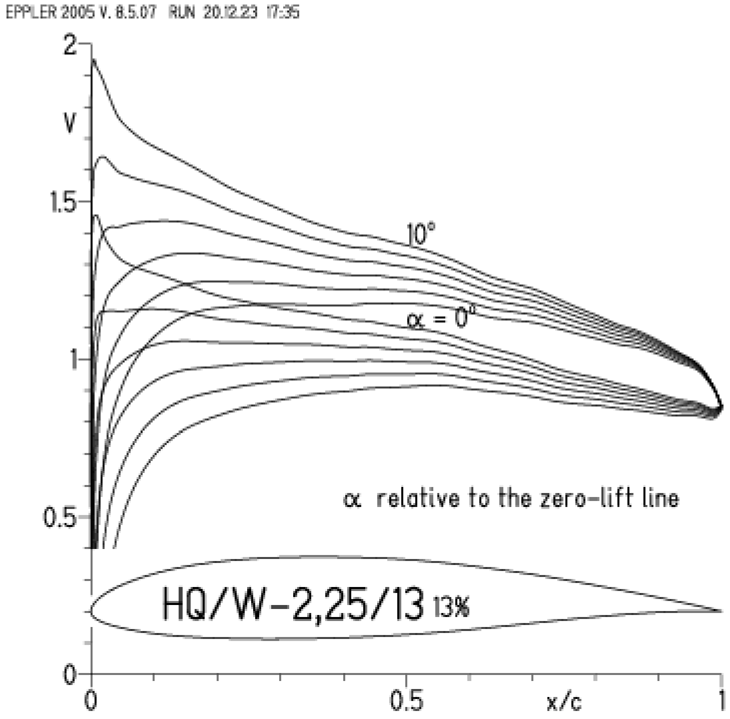


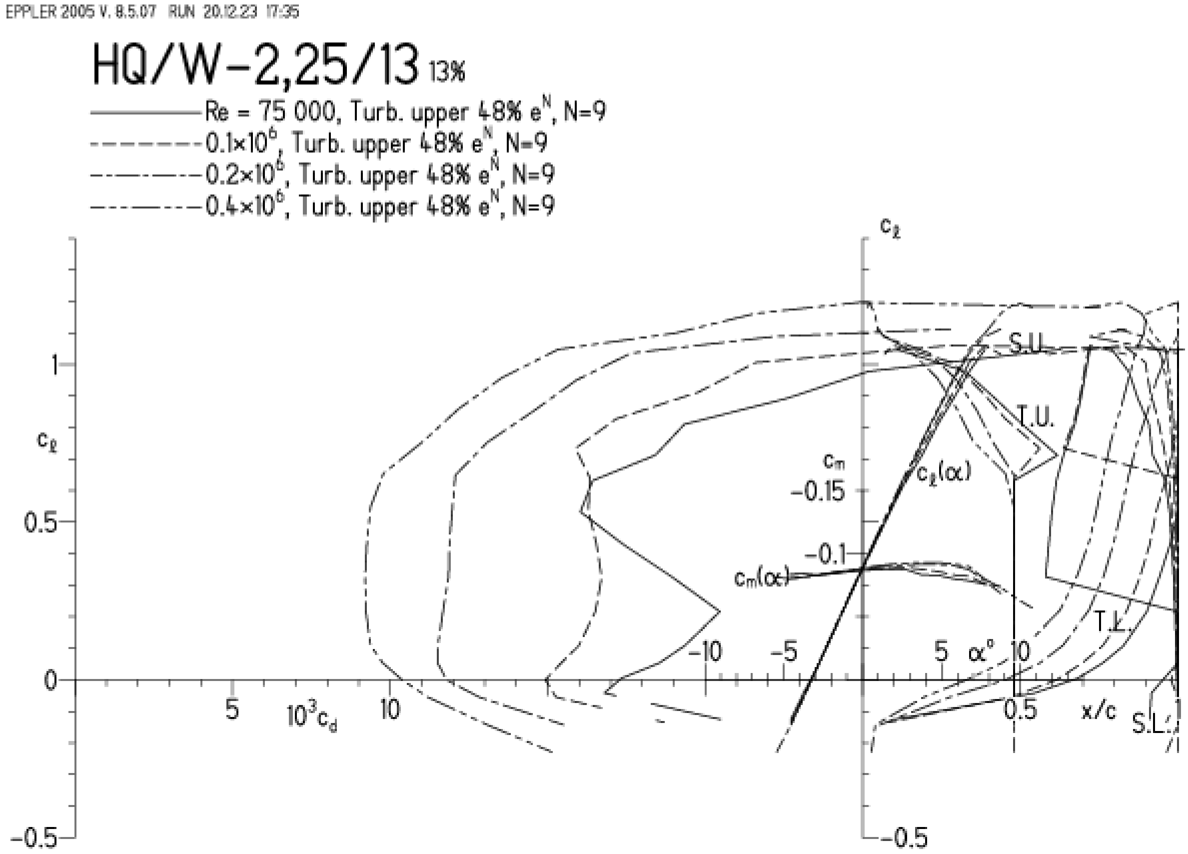
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

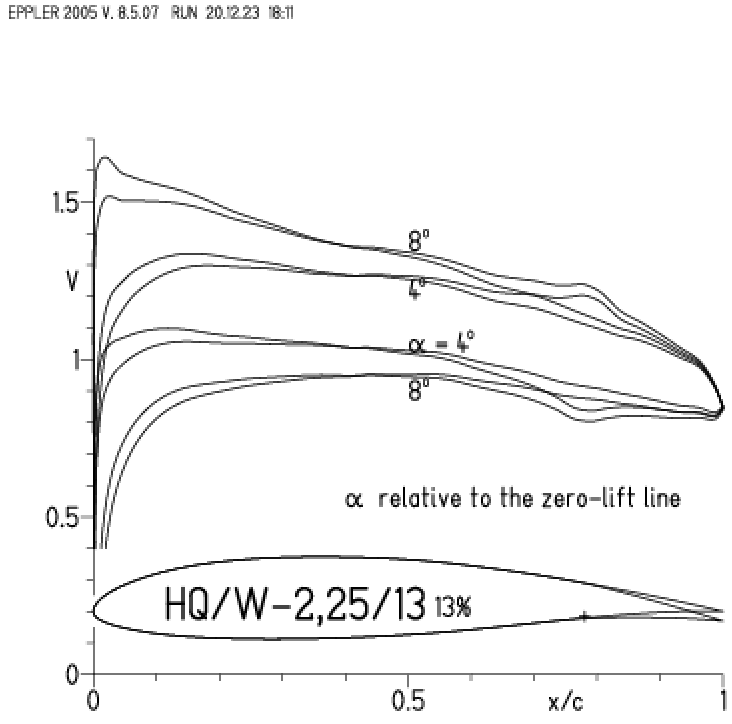

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
α°
x/c
10³cd

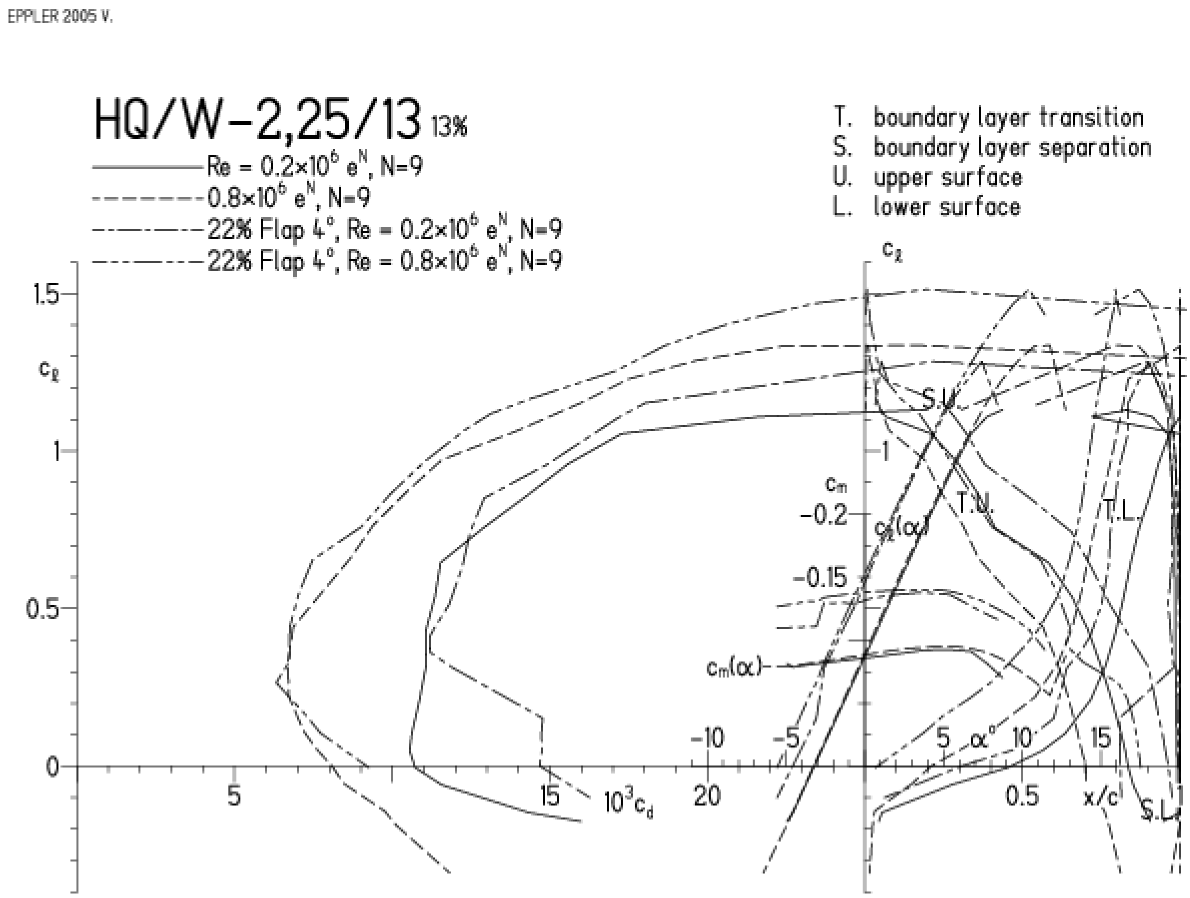
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





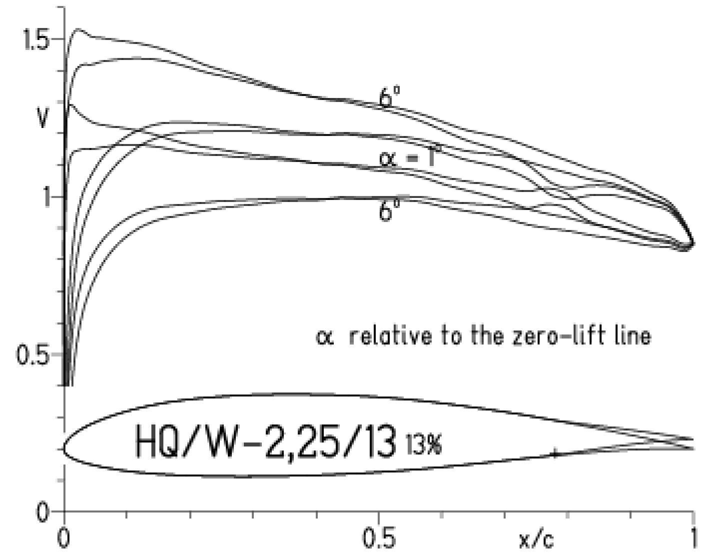
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



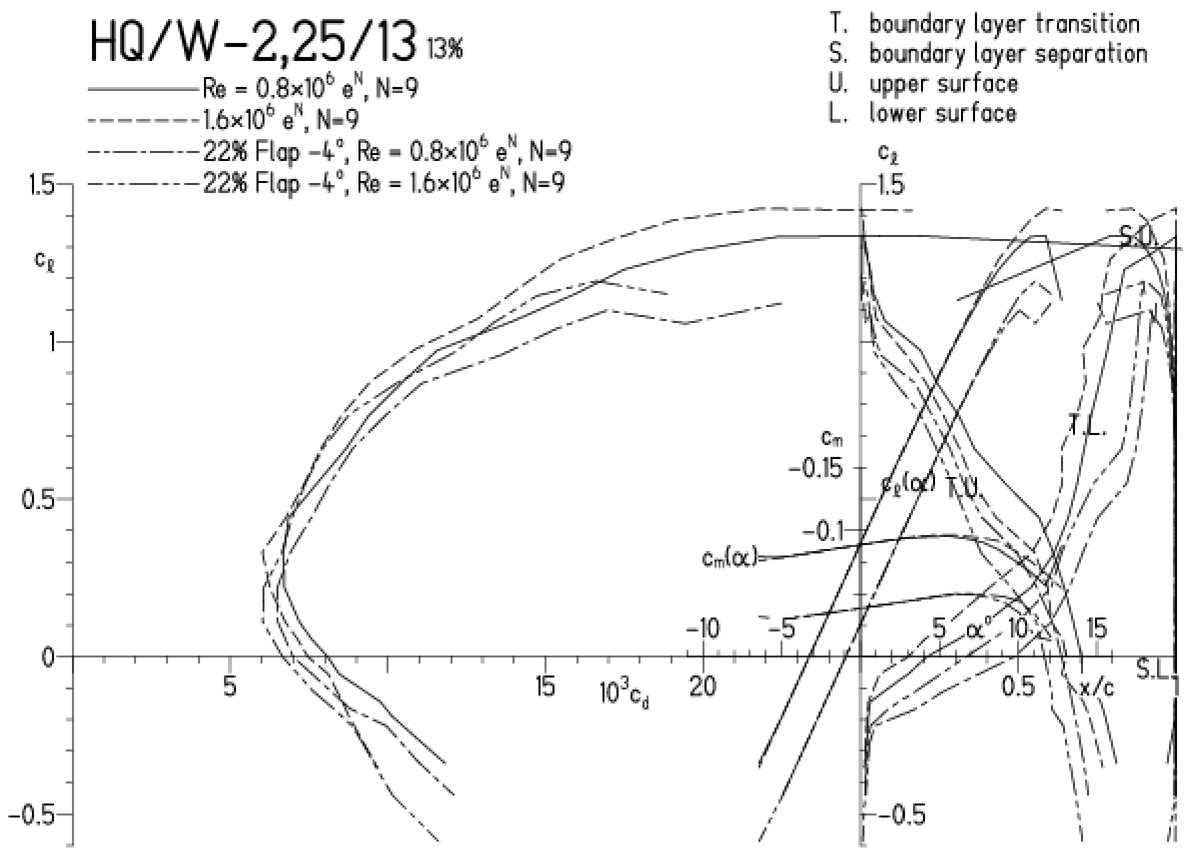


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

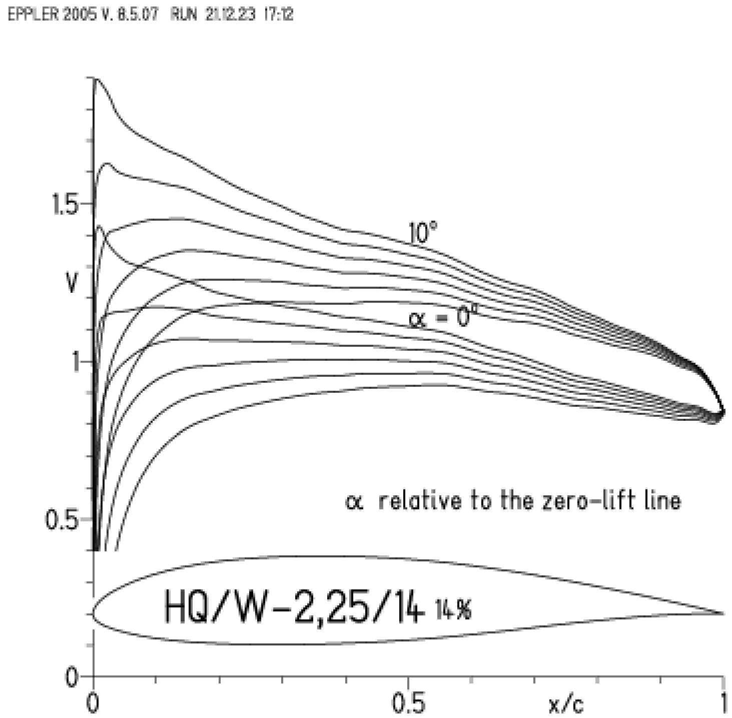
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

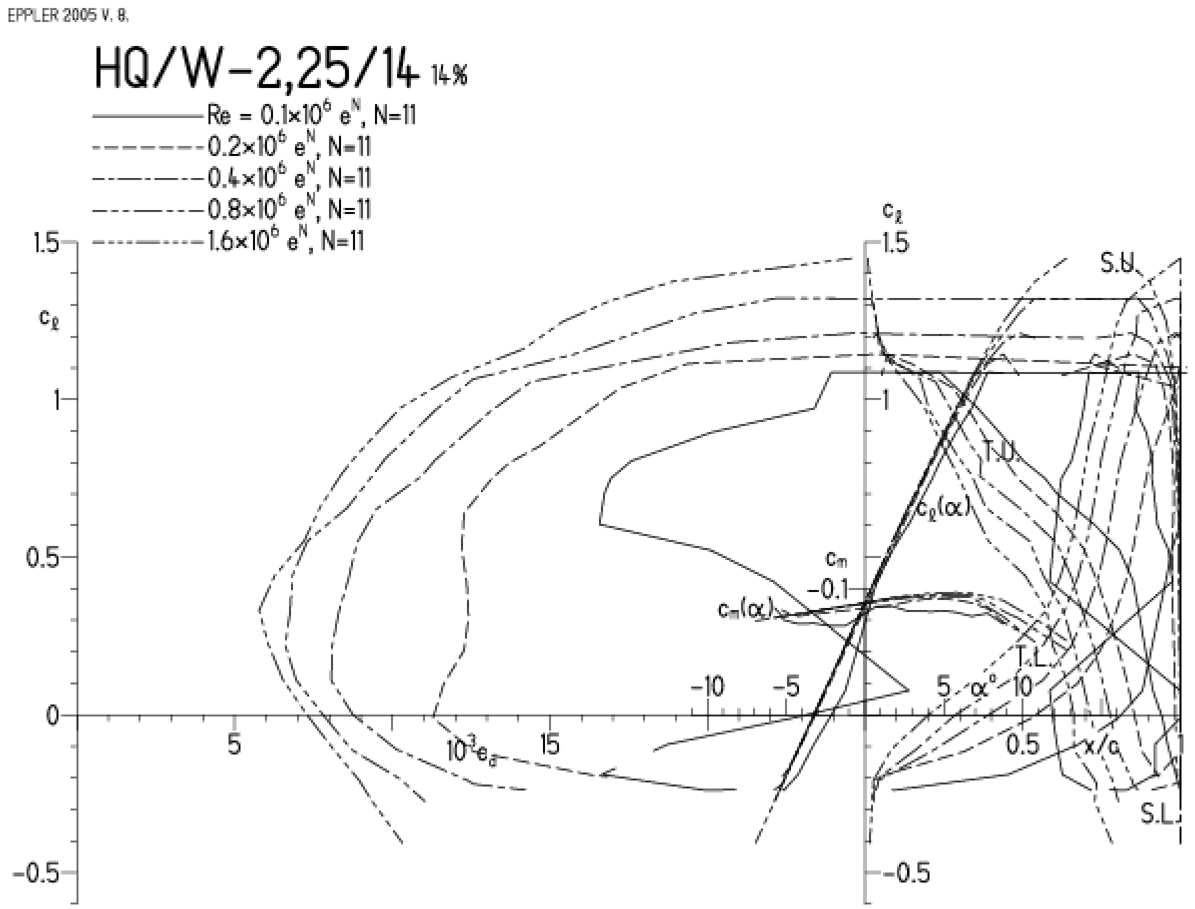


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



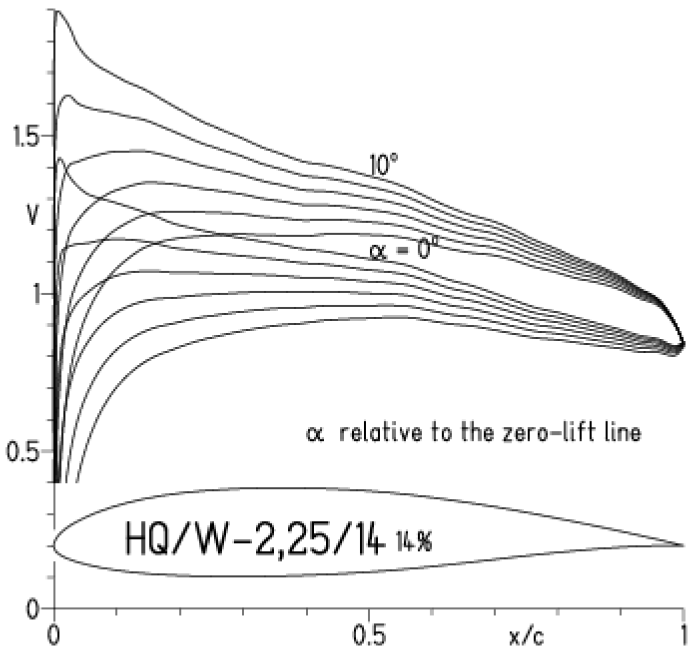
HQ/W-2,25/14, N=11



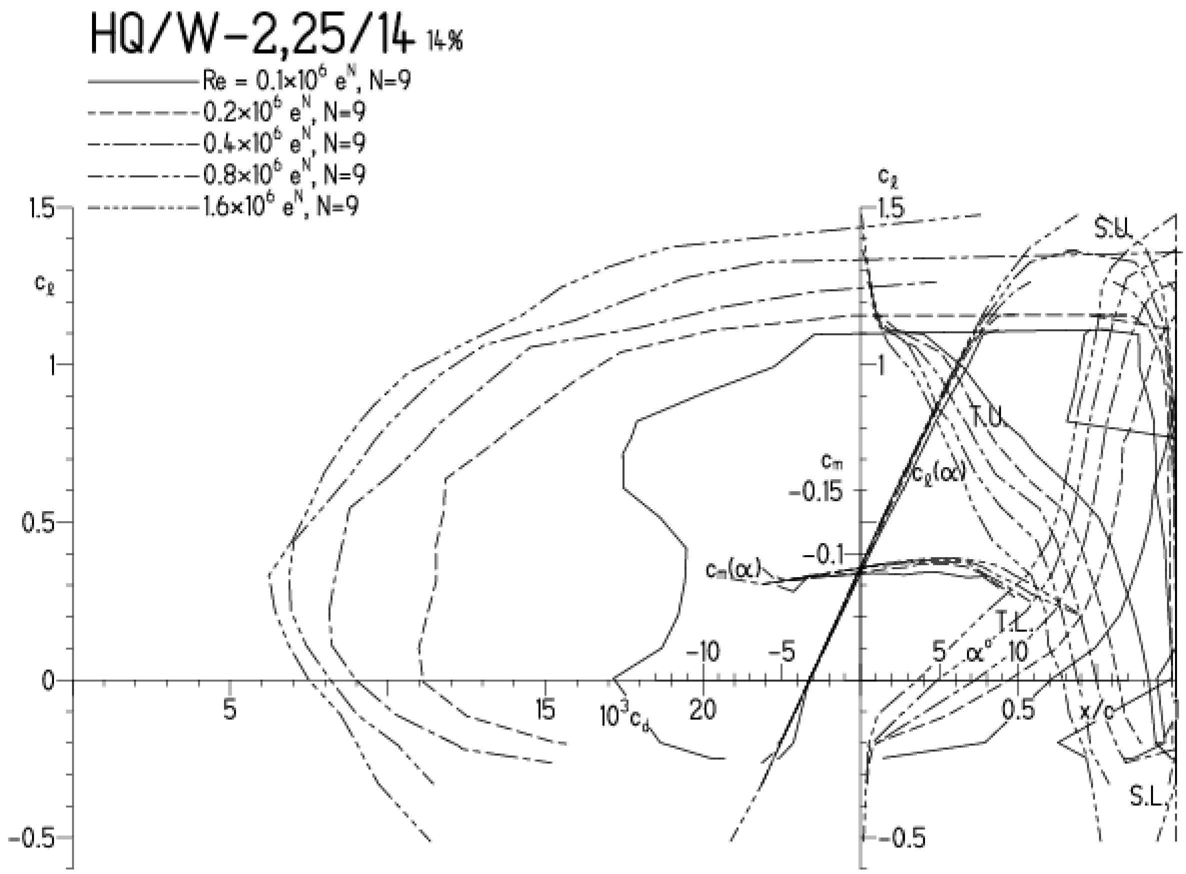


HQ/W-2,25/14, N=9

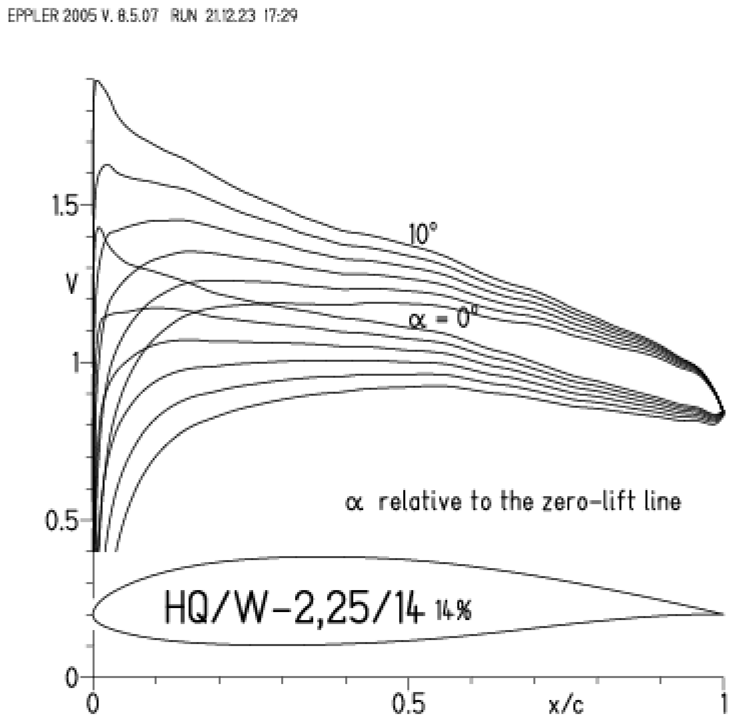
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

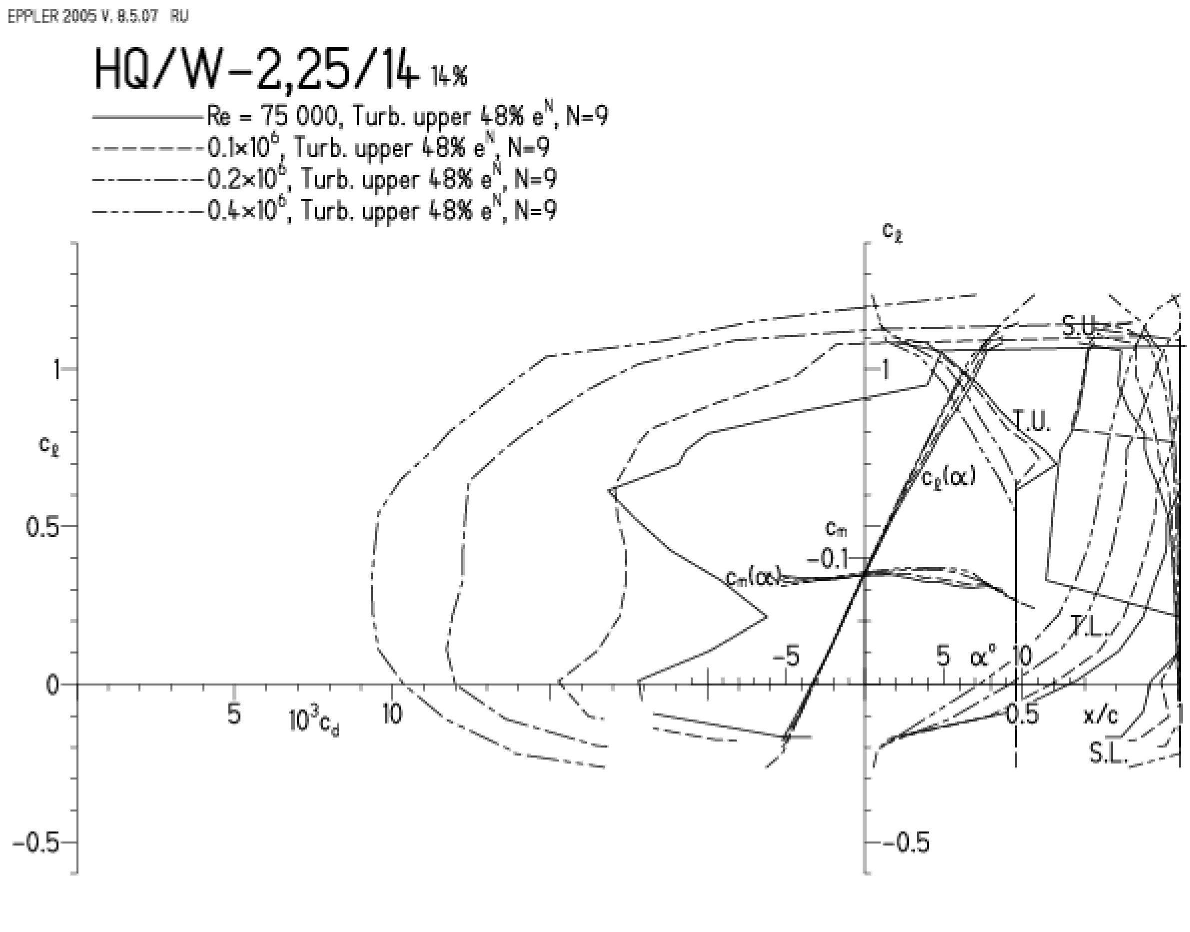


EPPLER 2005 V. 8.



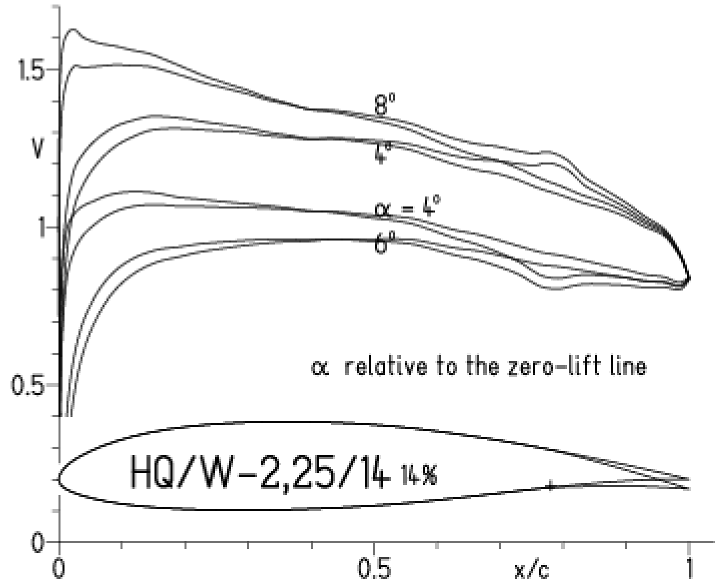
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



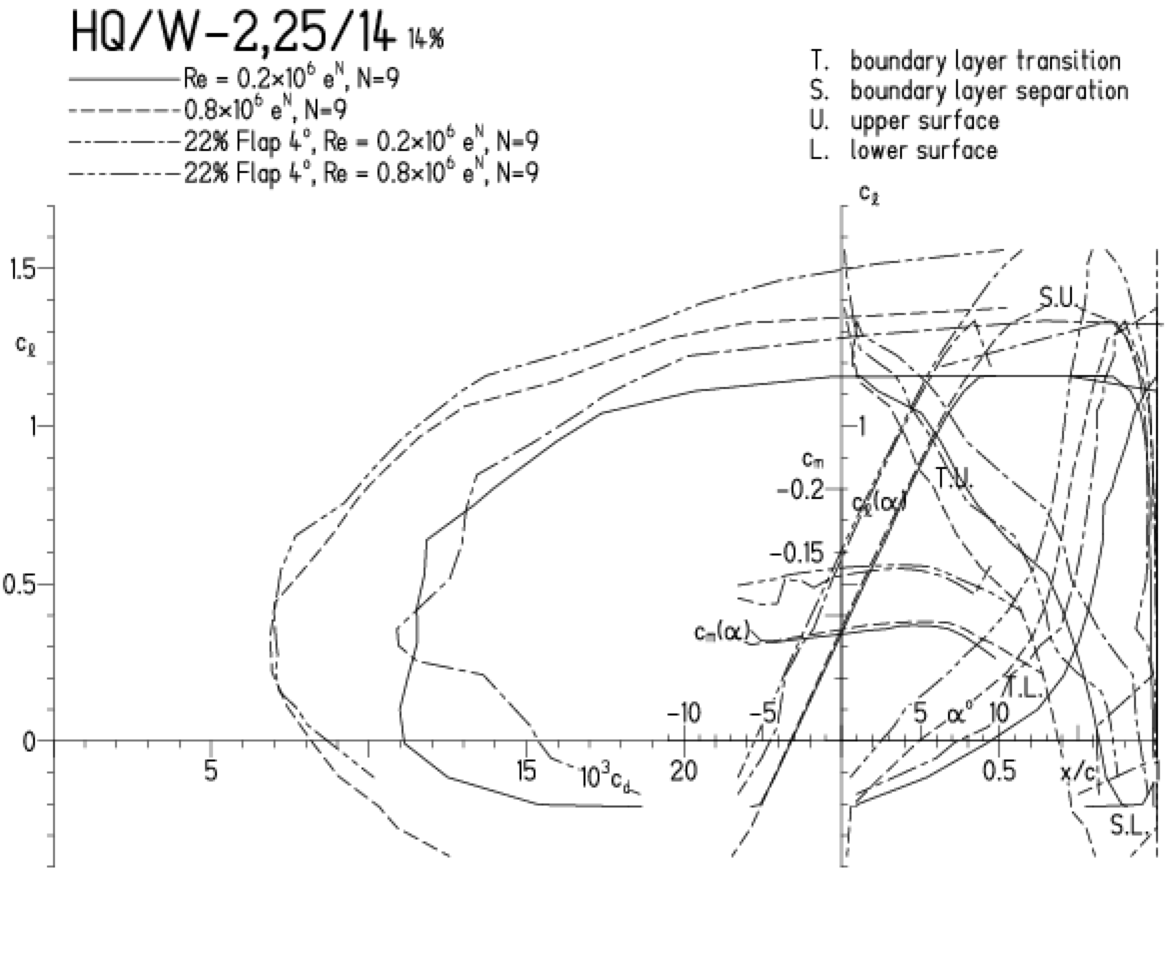


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

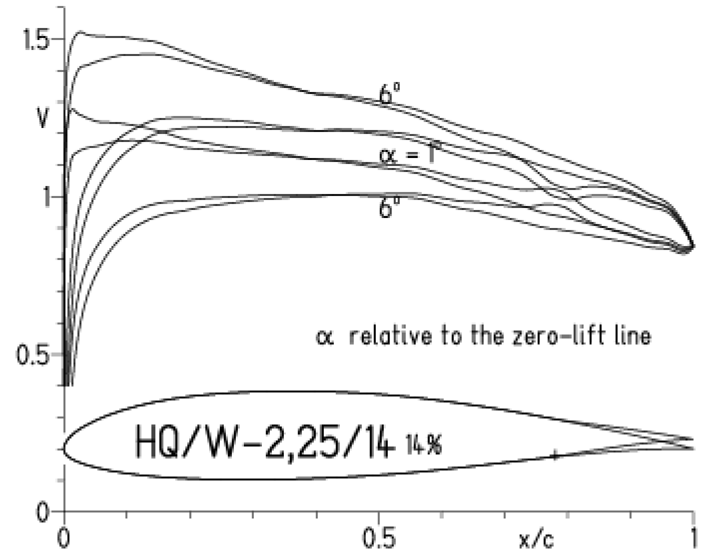


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

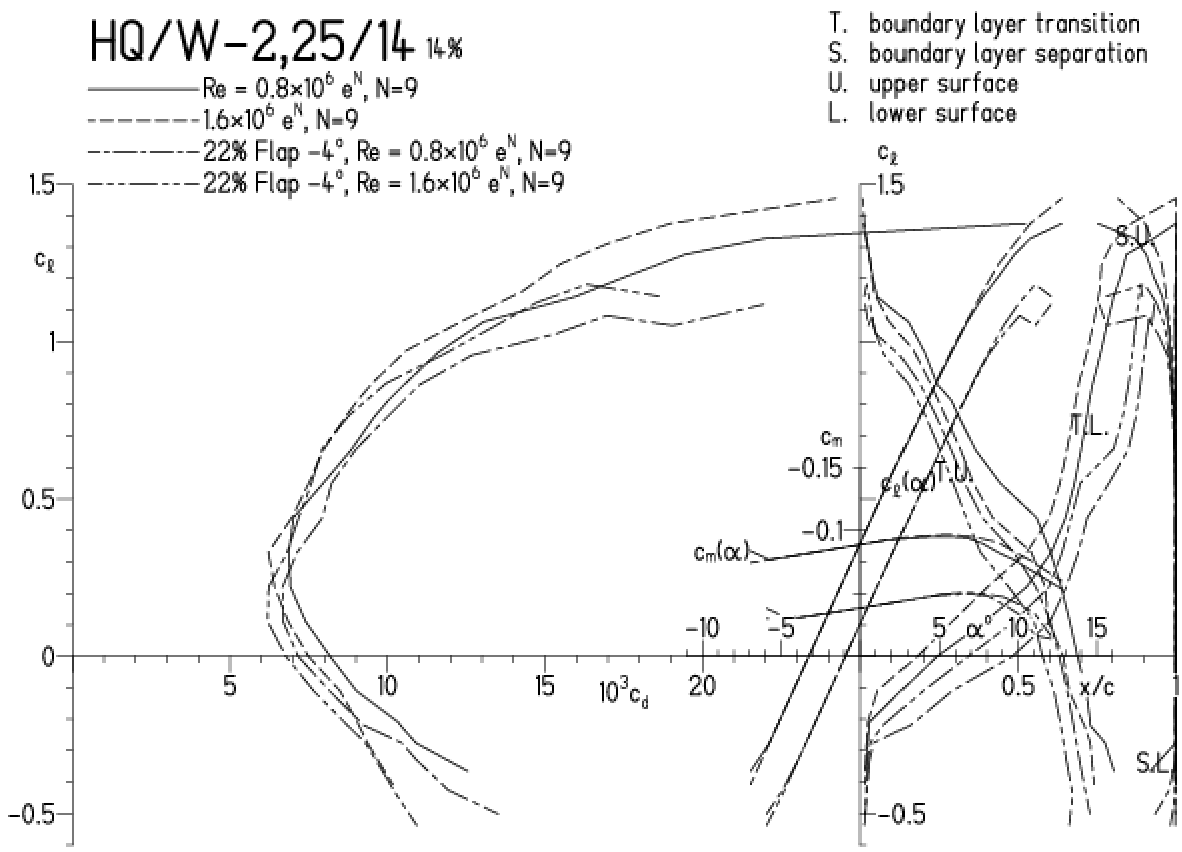


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

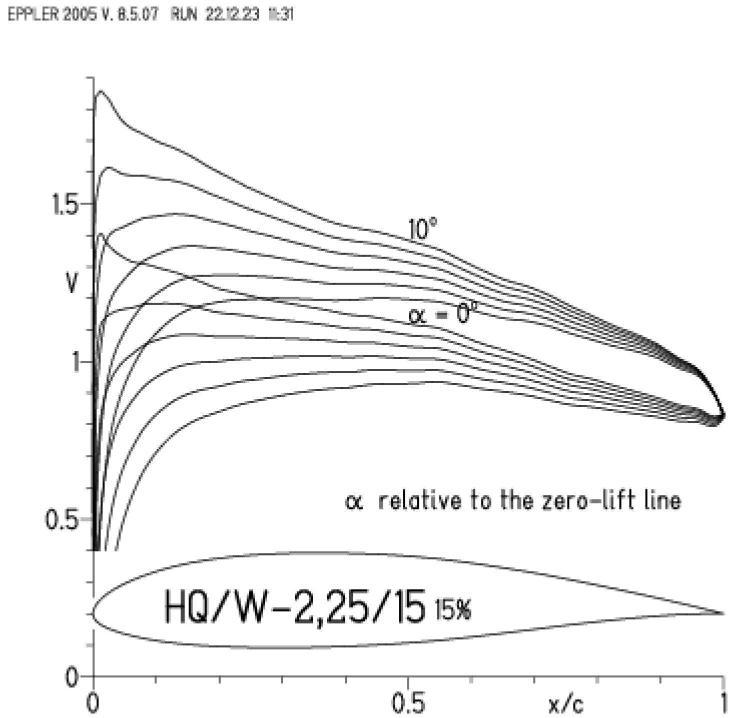
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

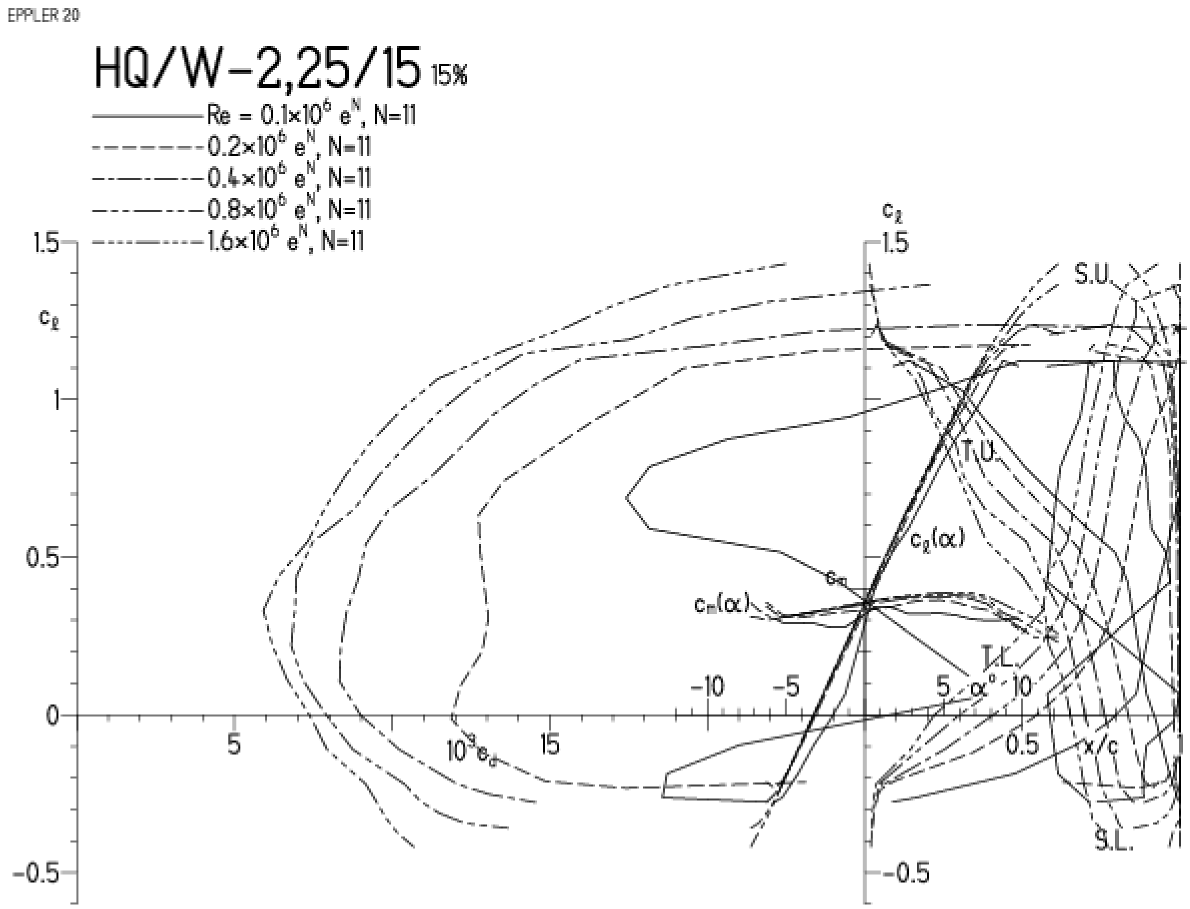


EPPLER 2005 V. 8.5.07

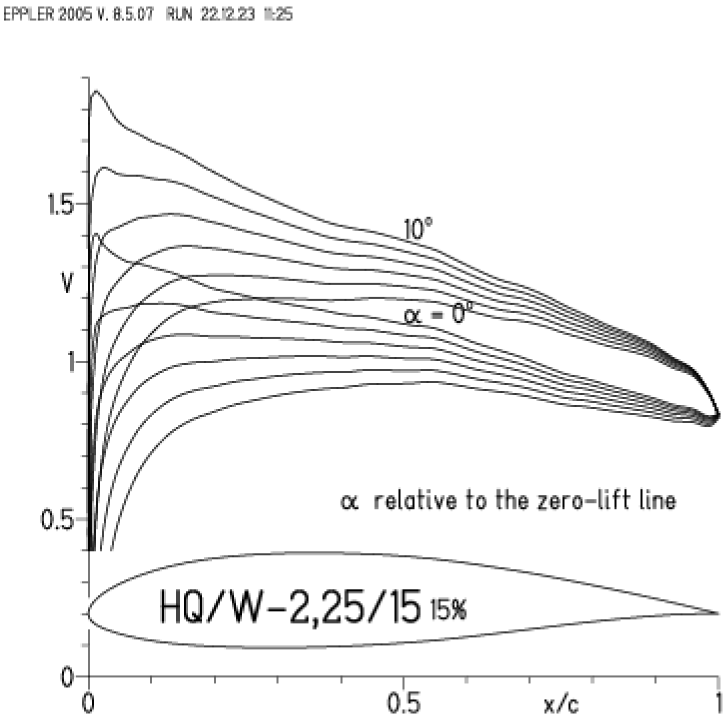


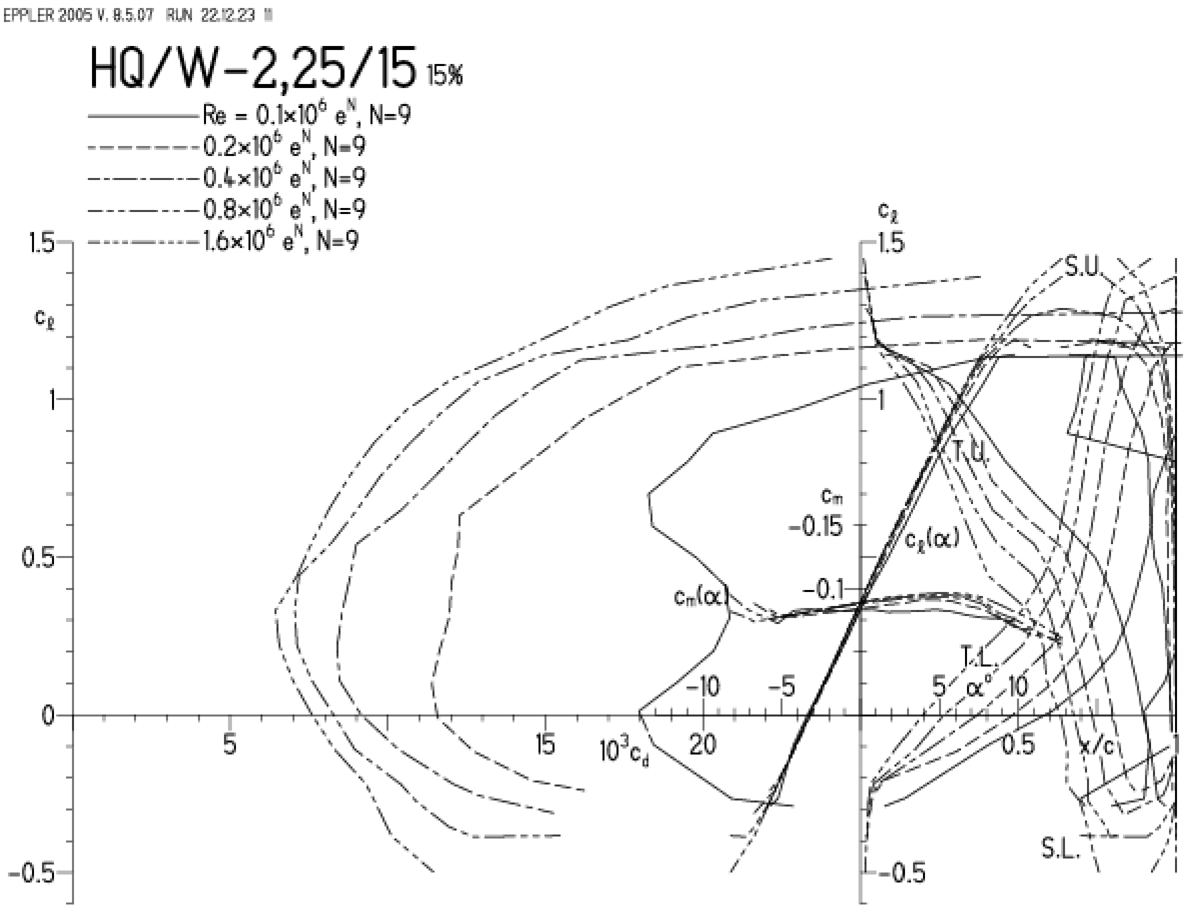
<u>HQ/W-2,25/15</u>, N=11



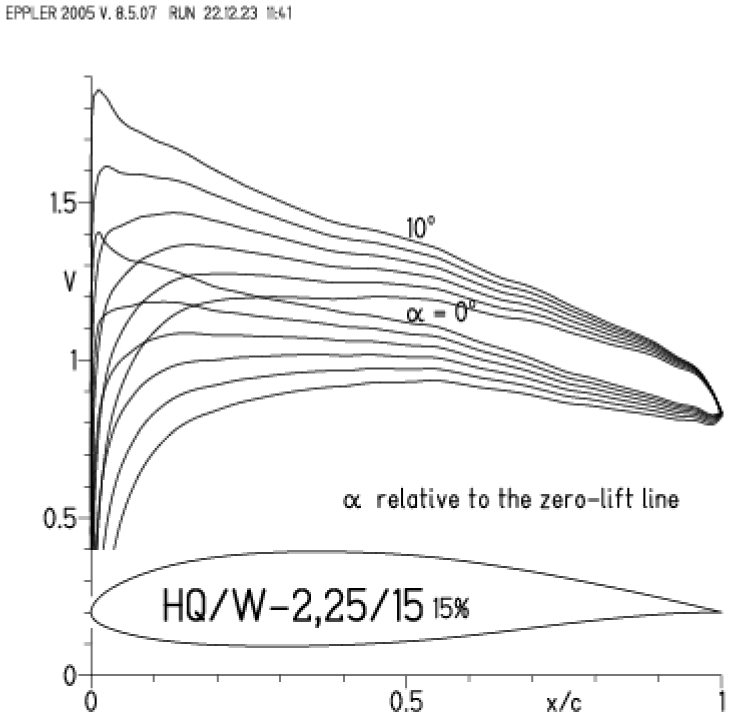


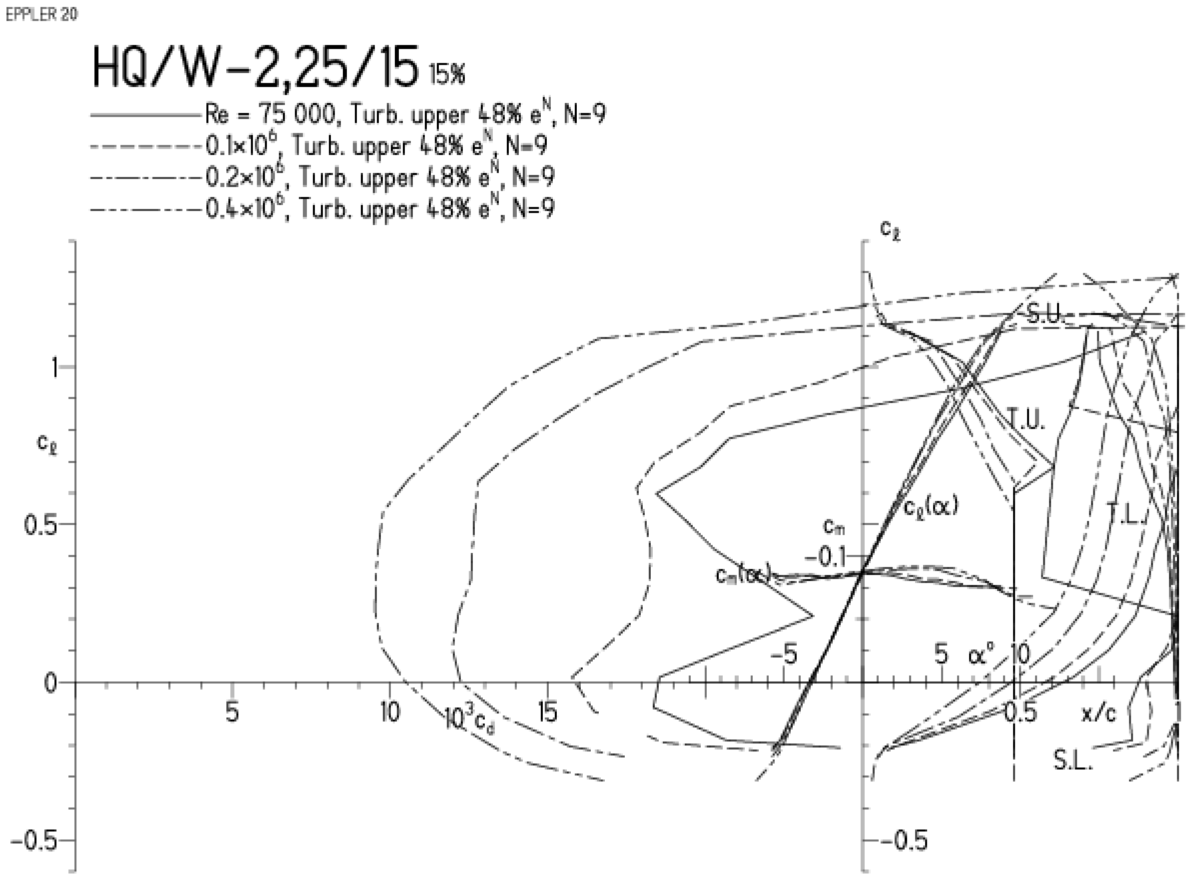
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_l
1.5
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



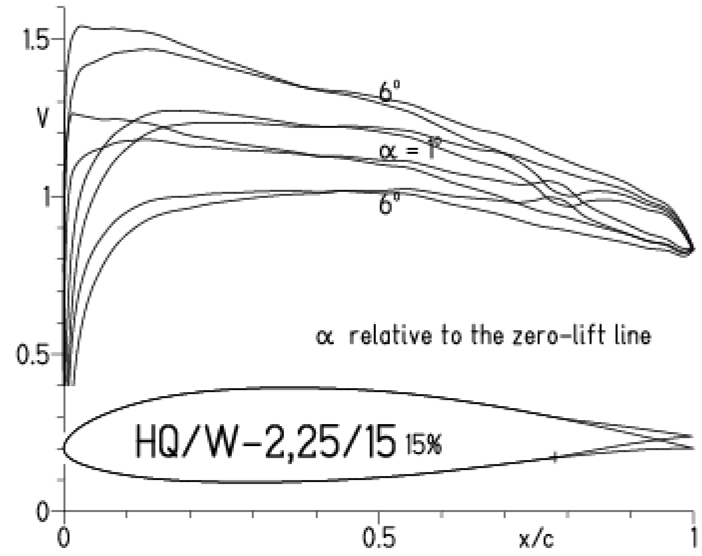


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

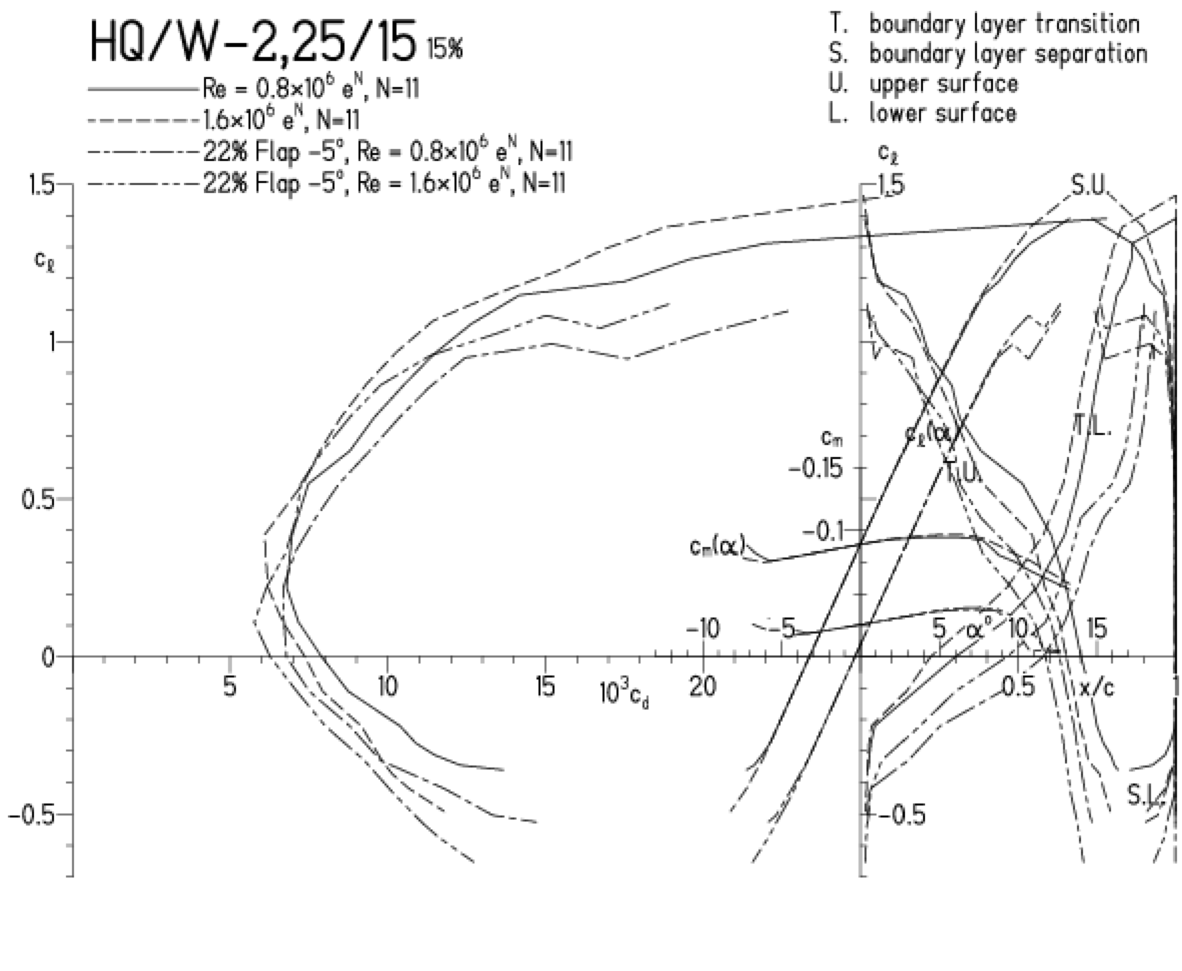
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

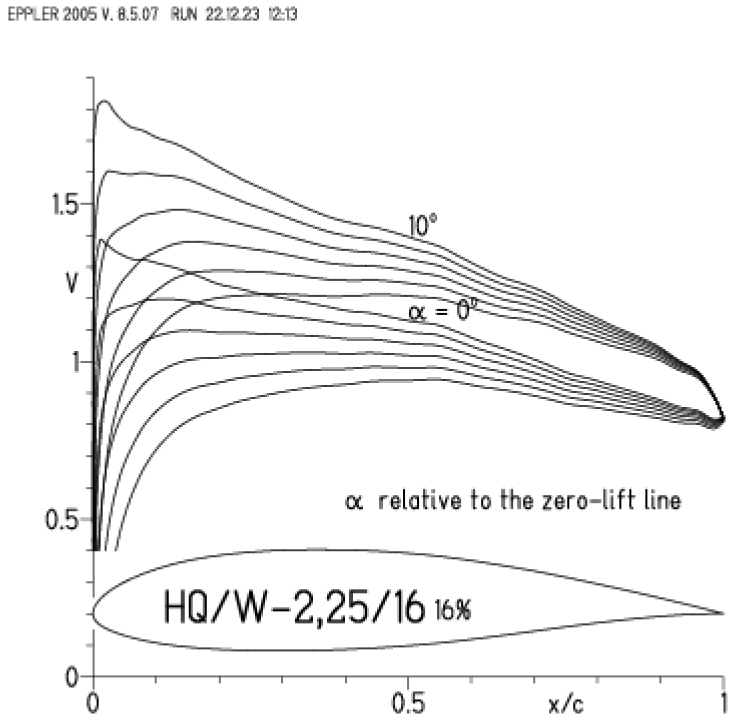
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

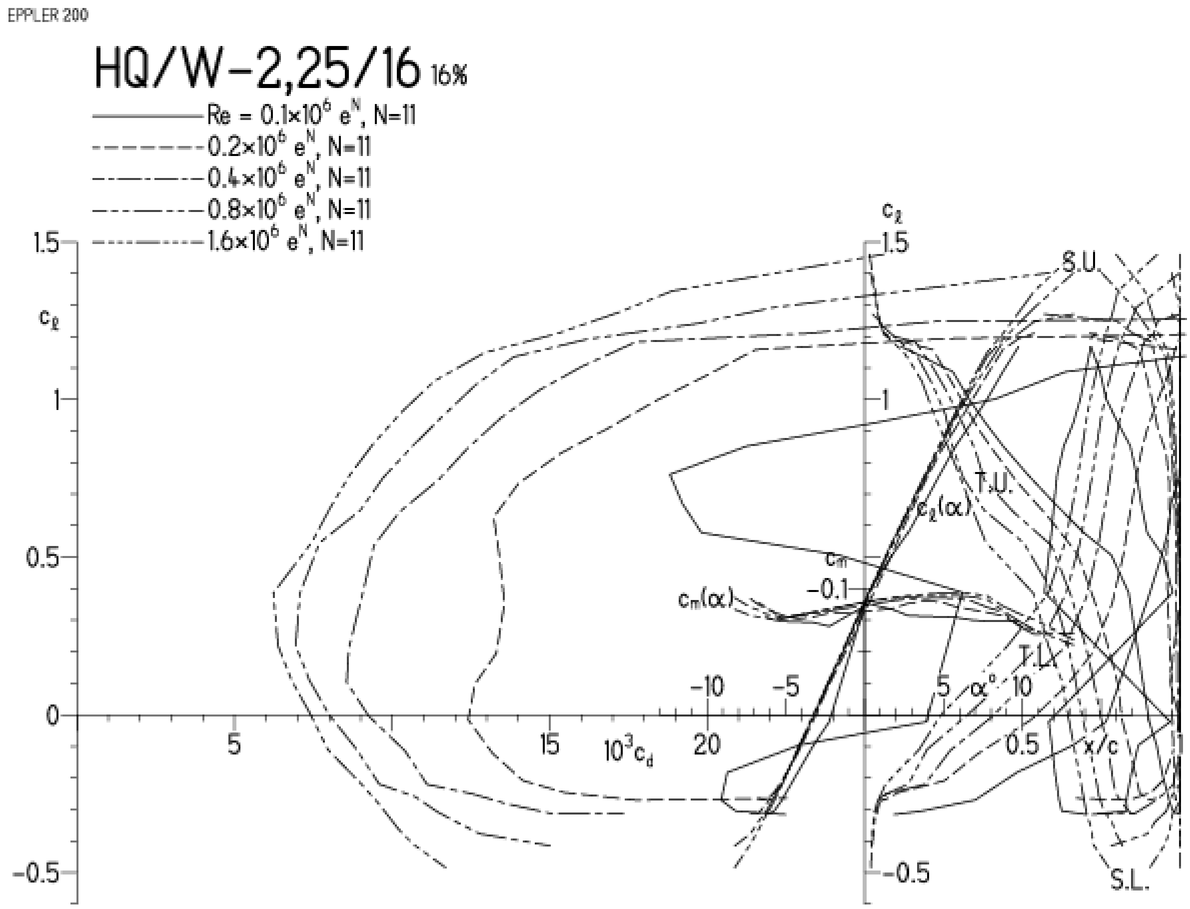


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

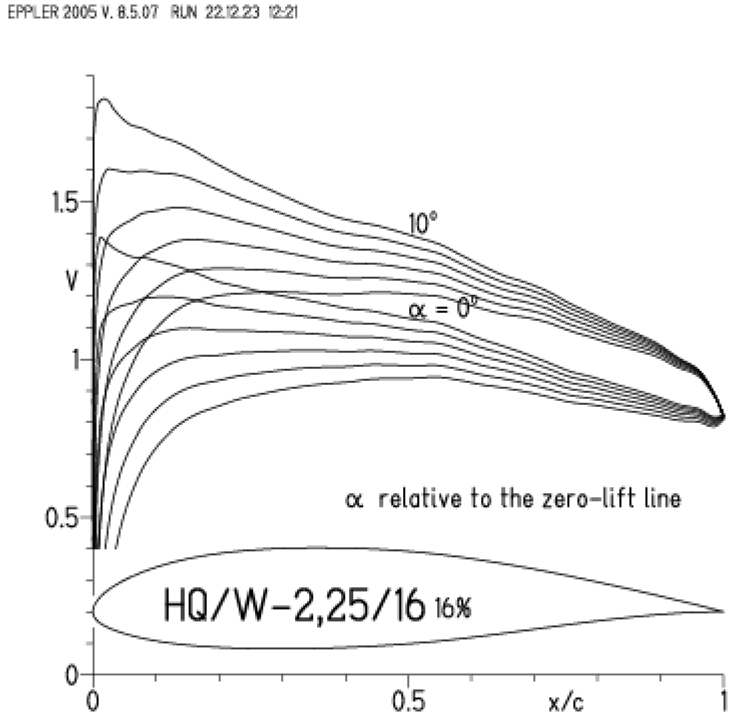


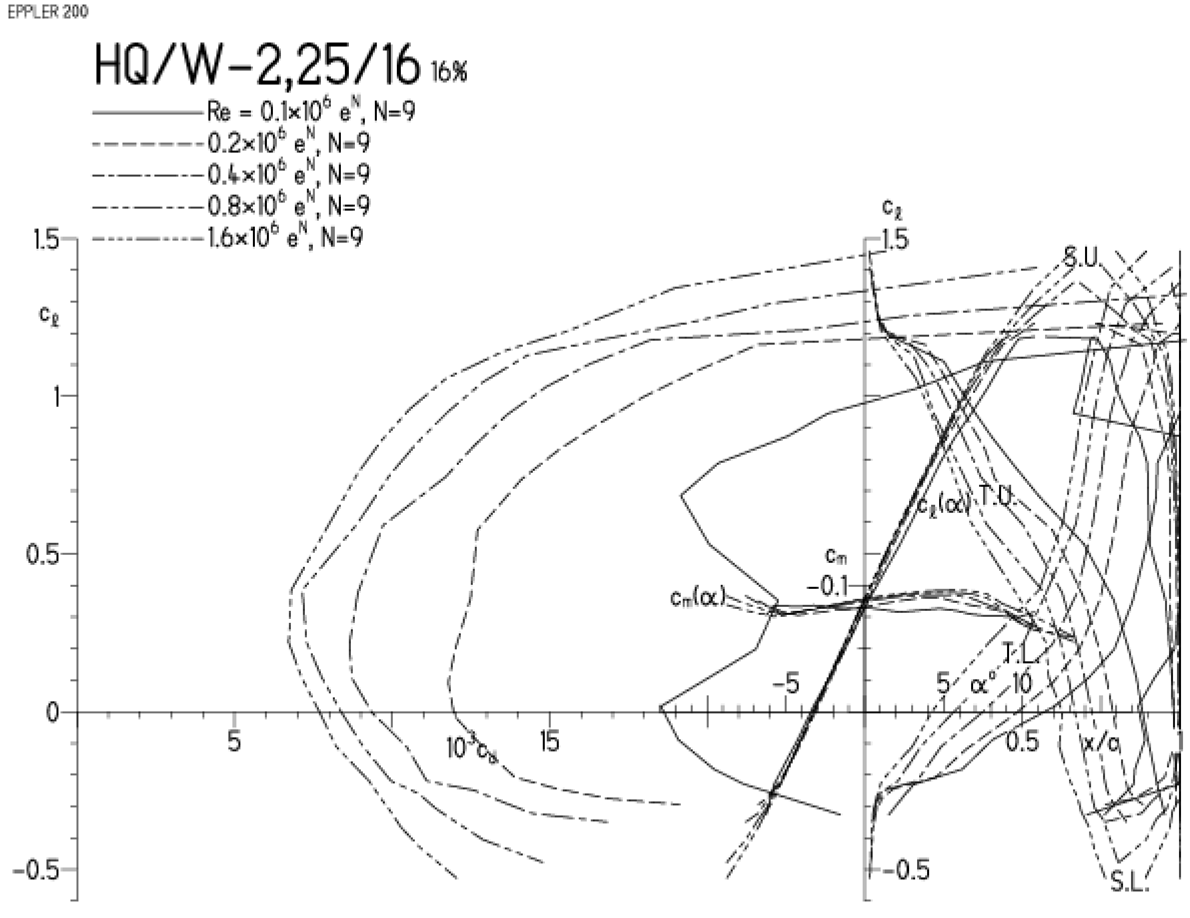
HQ/W-2,25/16, N=11



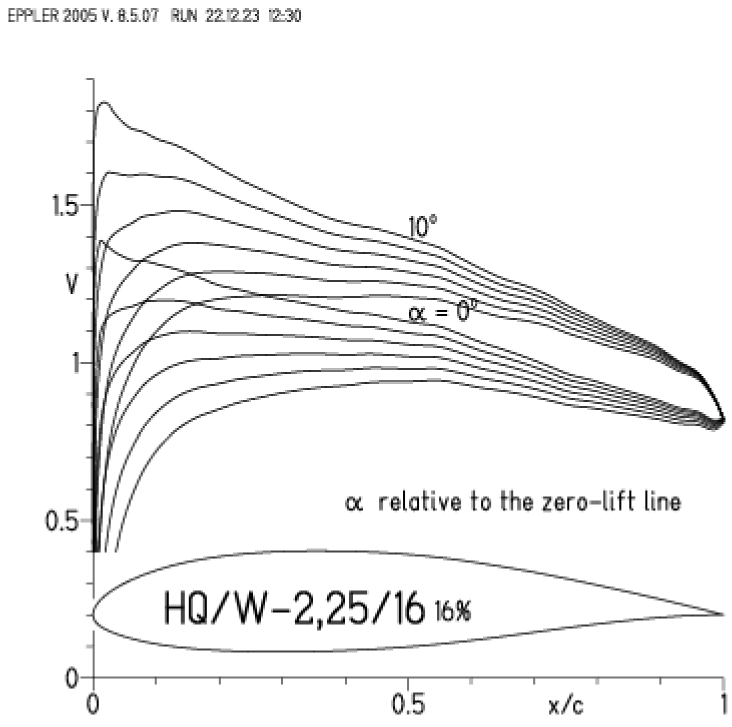


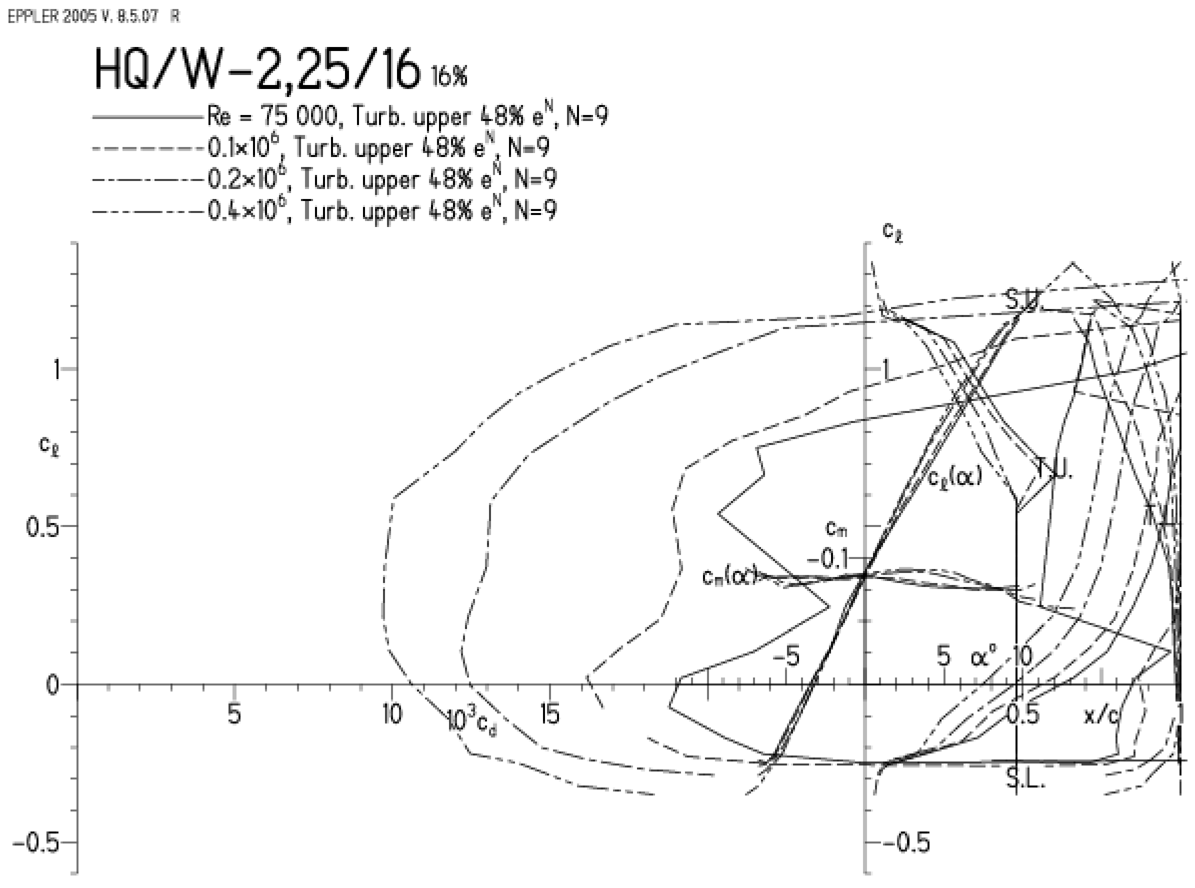
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_l
1.5
1
0.5
0
-0.5
5
10^3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_l(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



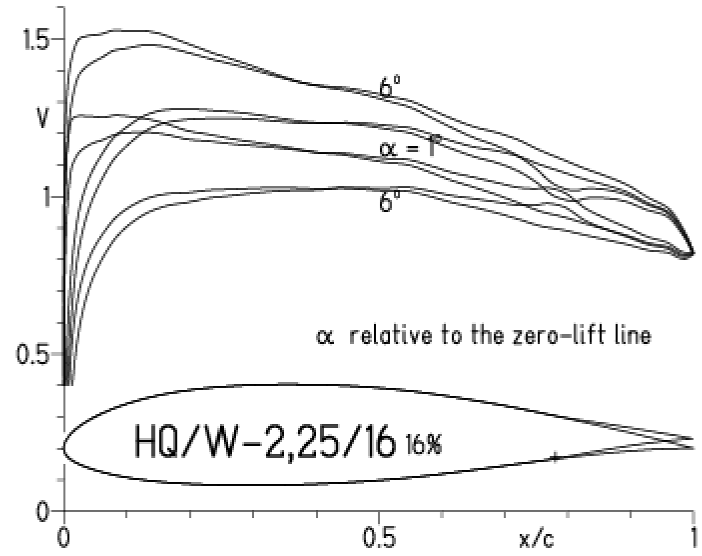


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

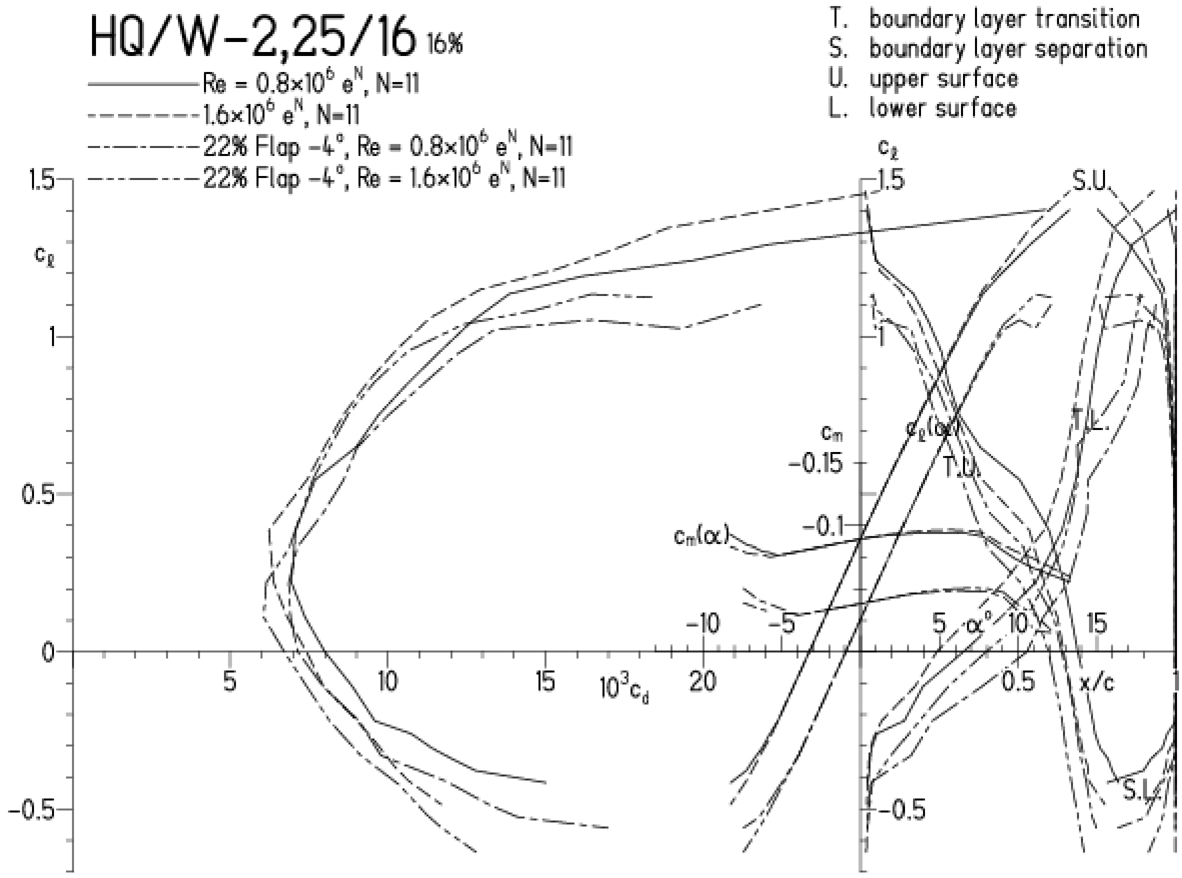
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

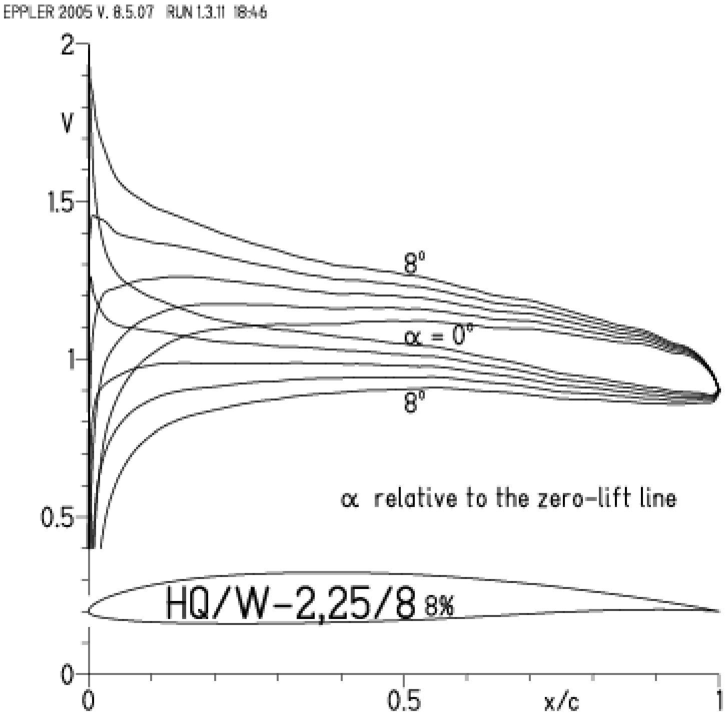
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

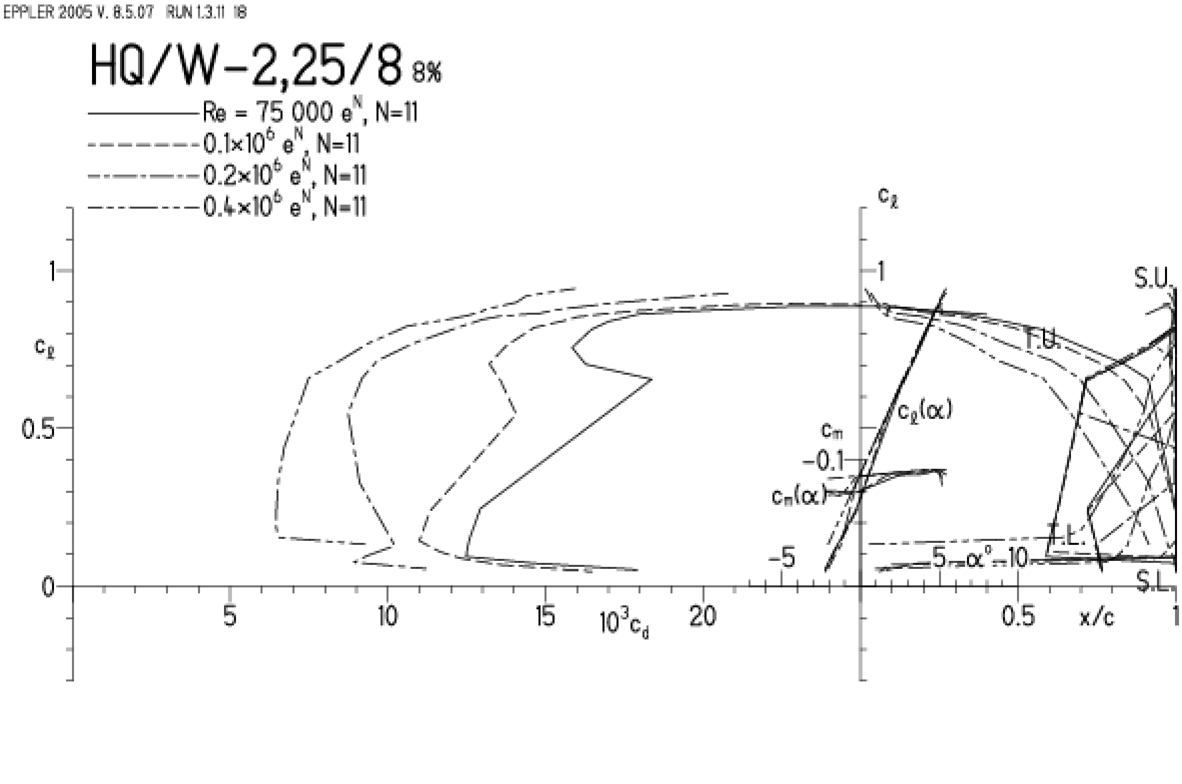


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

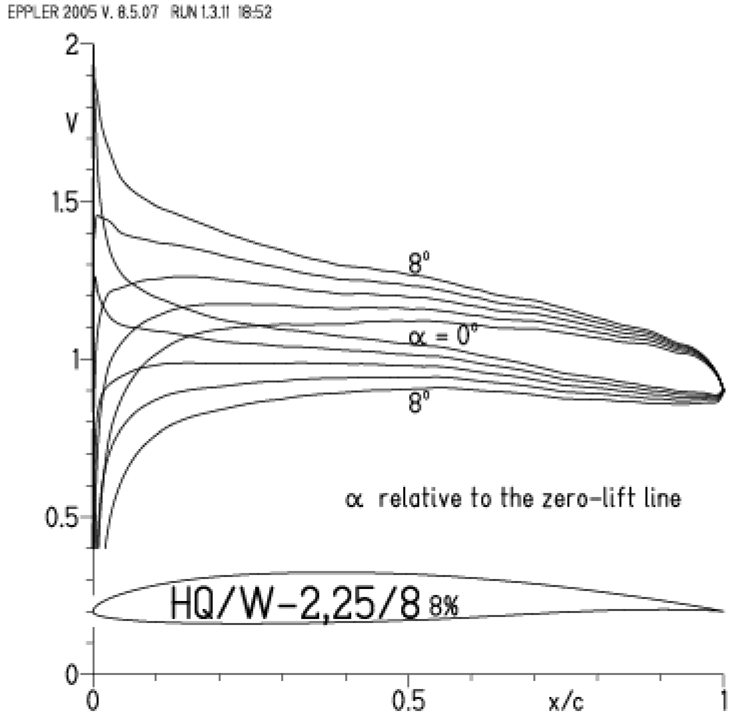


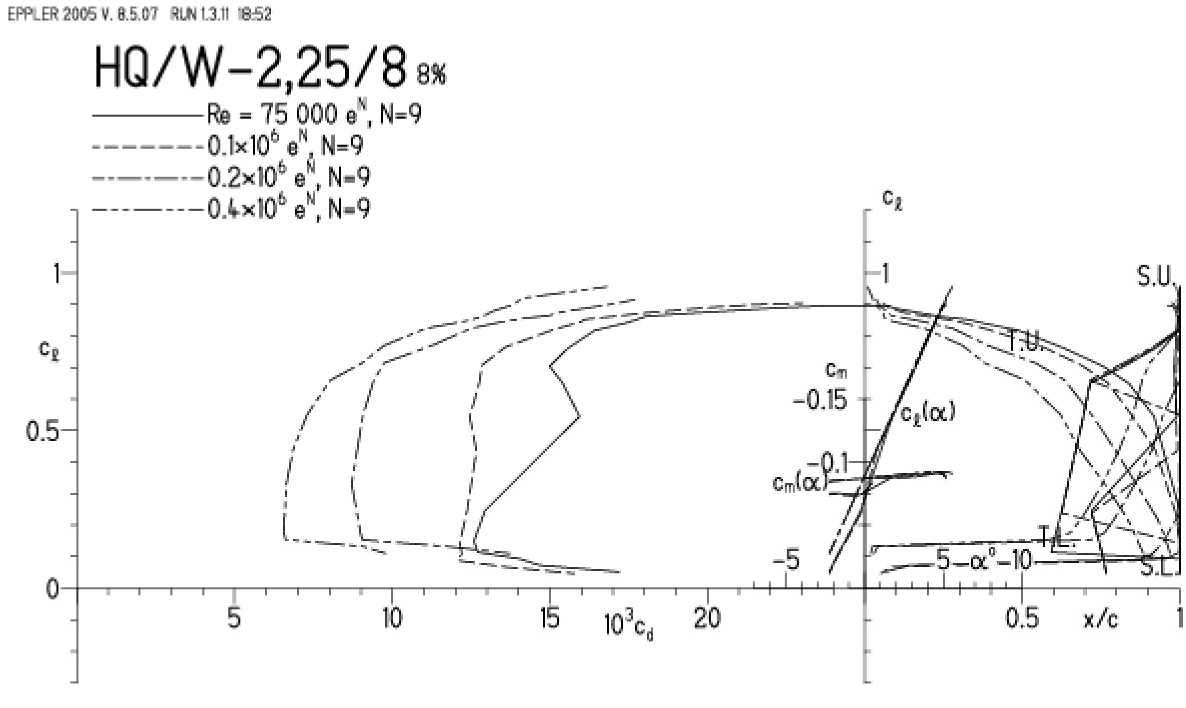
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

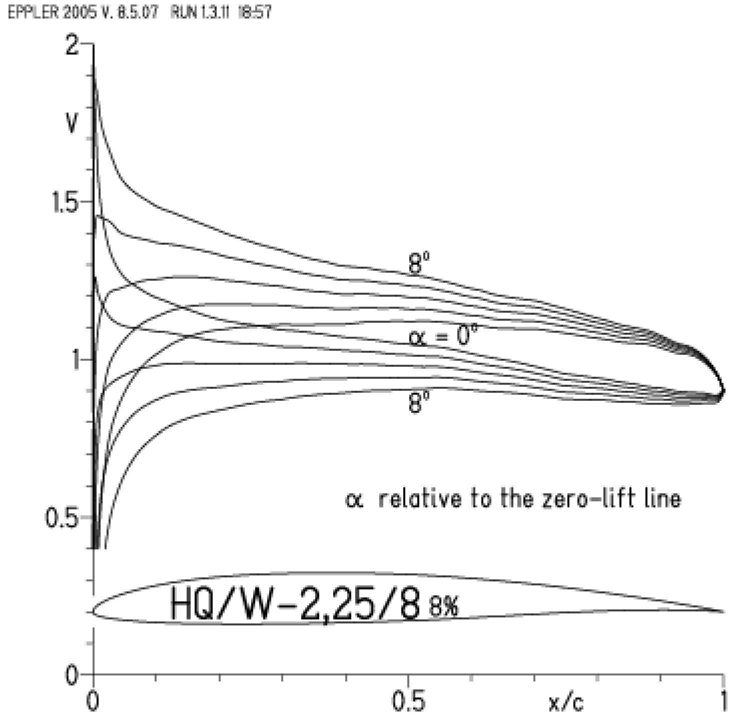

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
T.U.
S.U.
T.L.
S.L.
10^3 c_d
x/c
α°

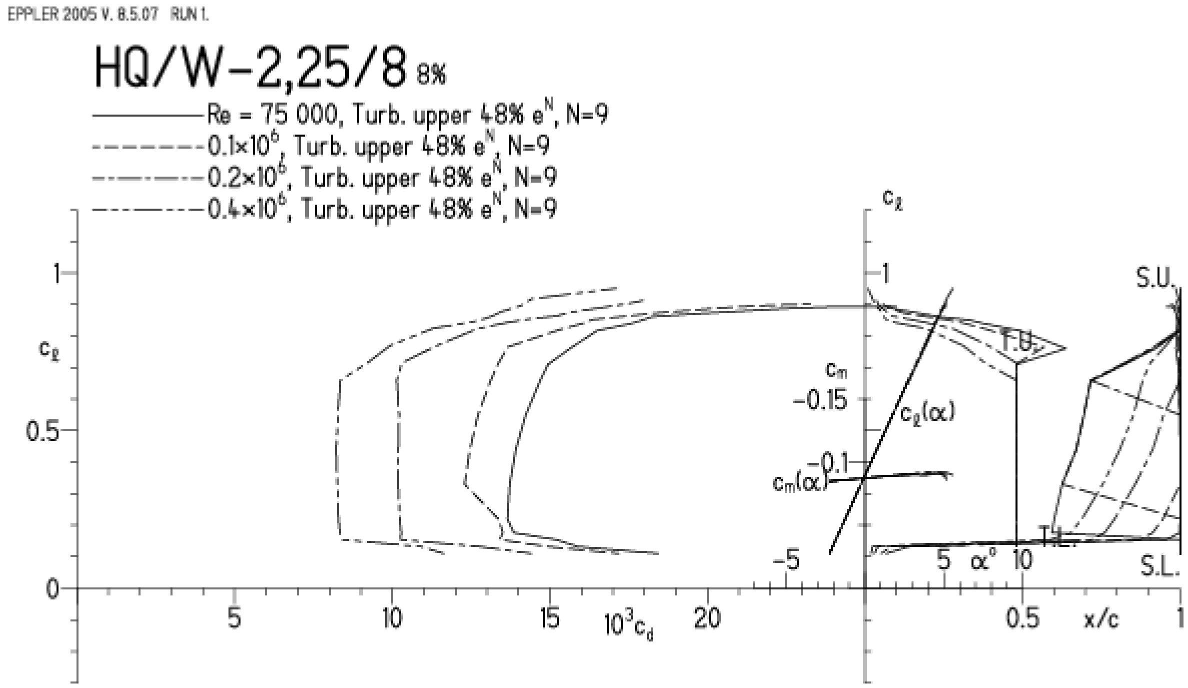
<u>HQ/W-2,25/8</u>, N=9





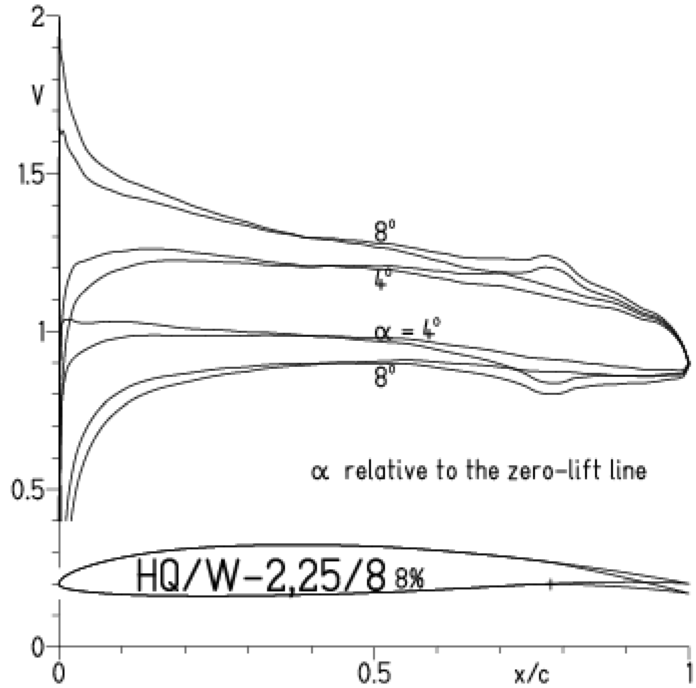
<u>HQ/W-2,25/8,</u> N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



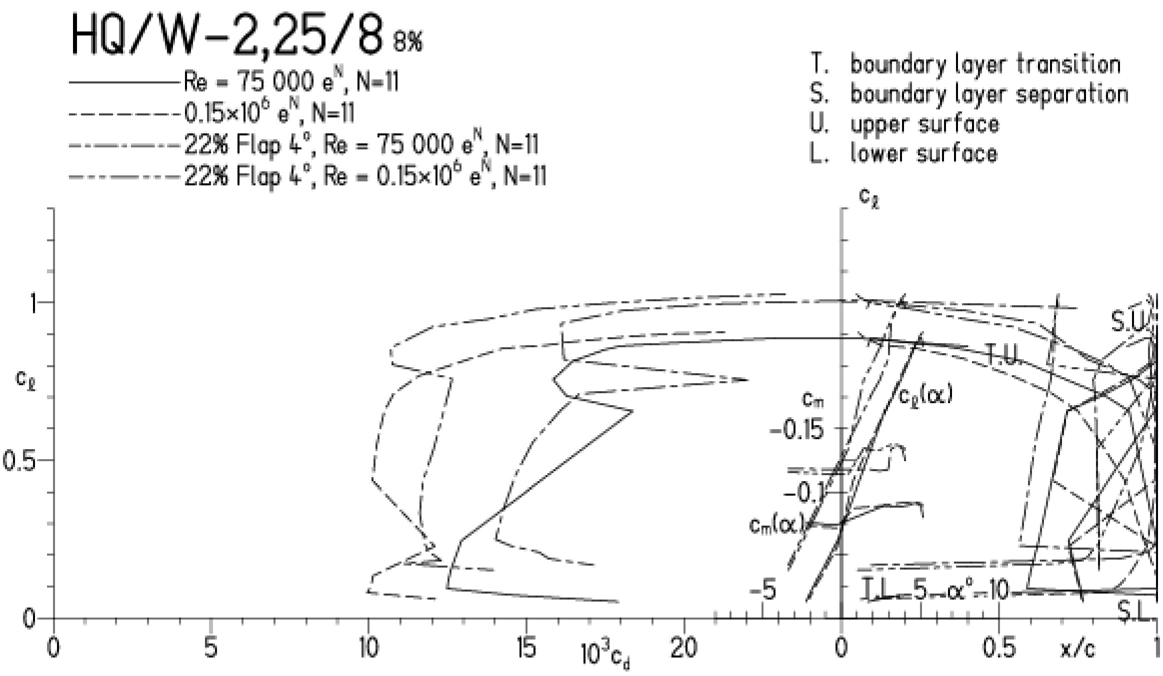


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

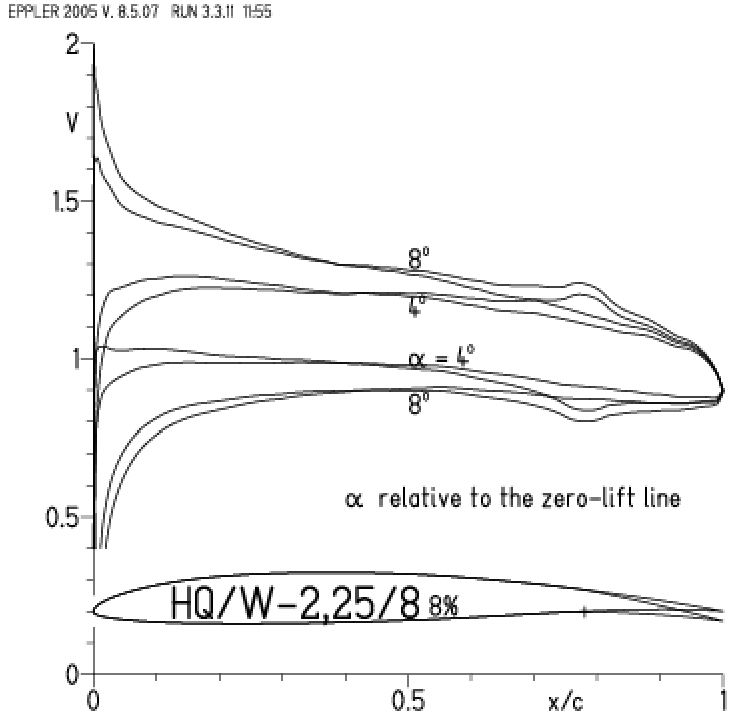
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

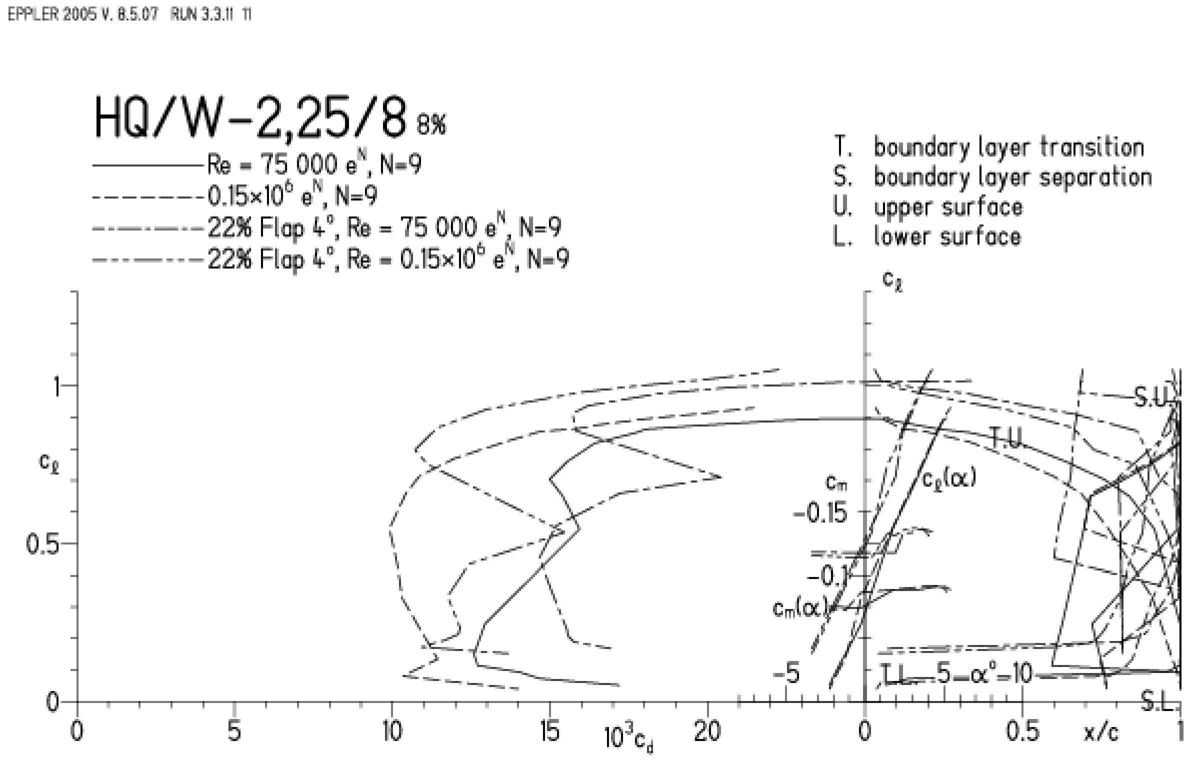


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

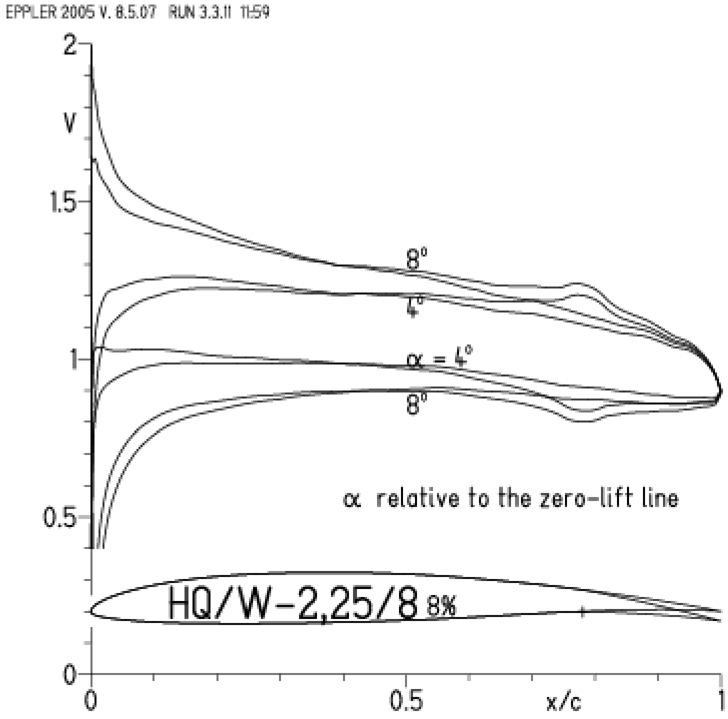


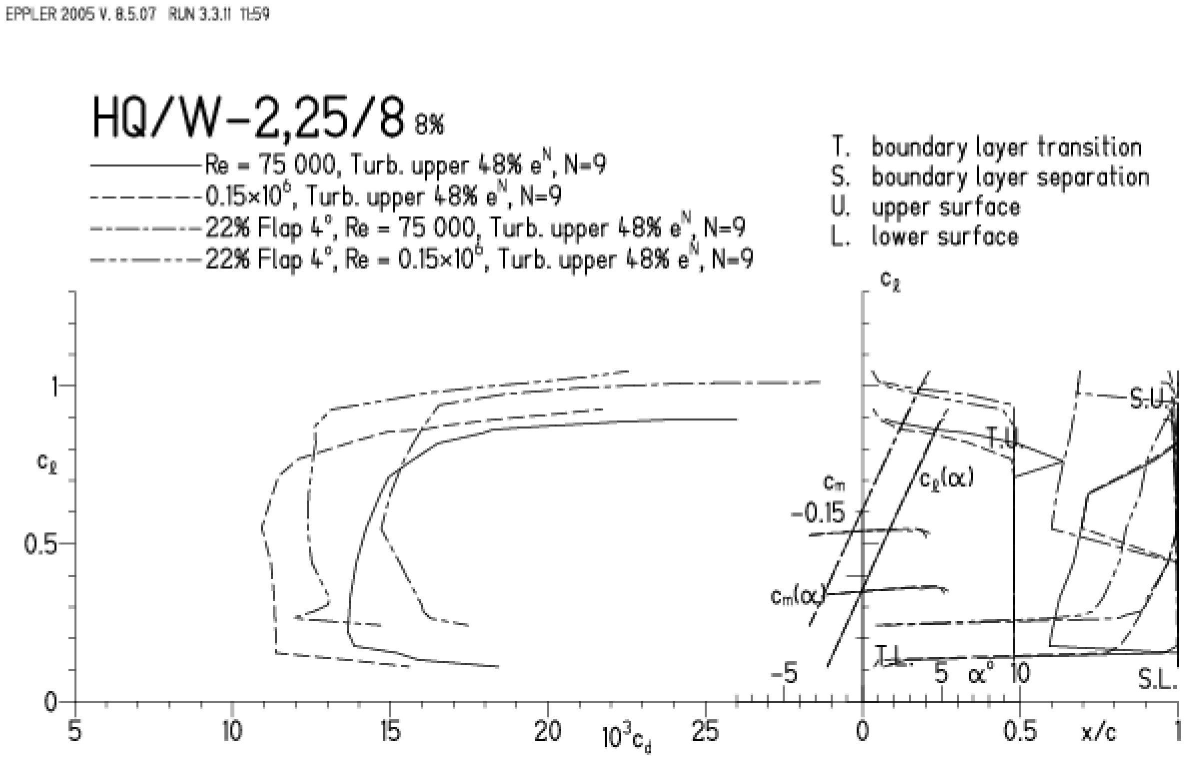
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





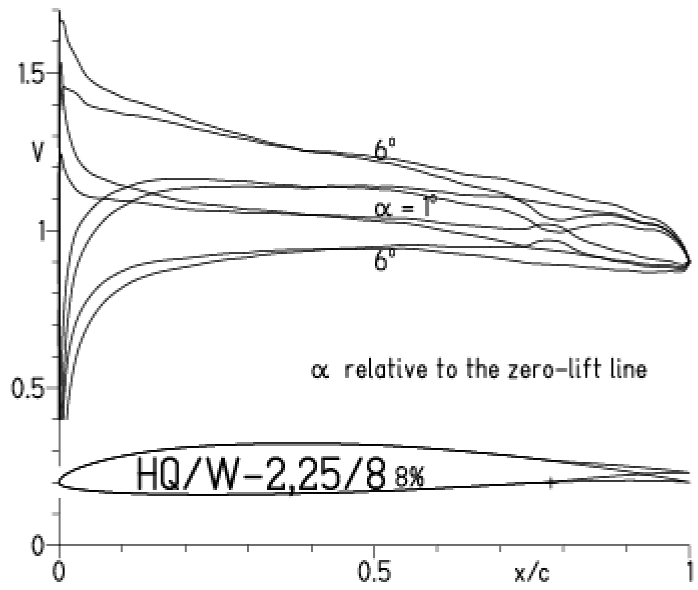
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



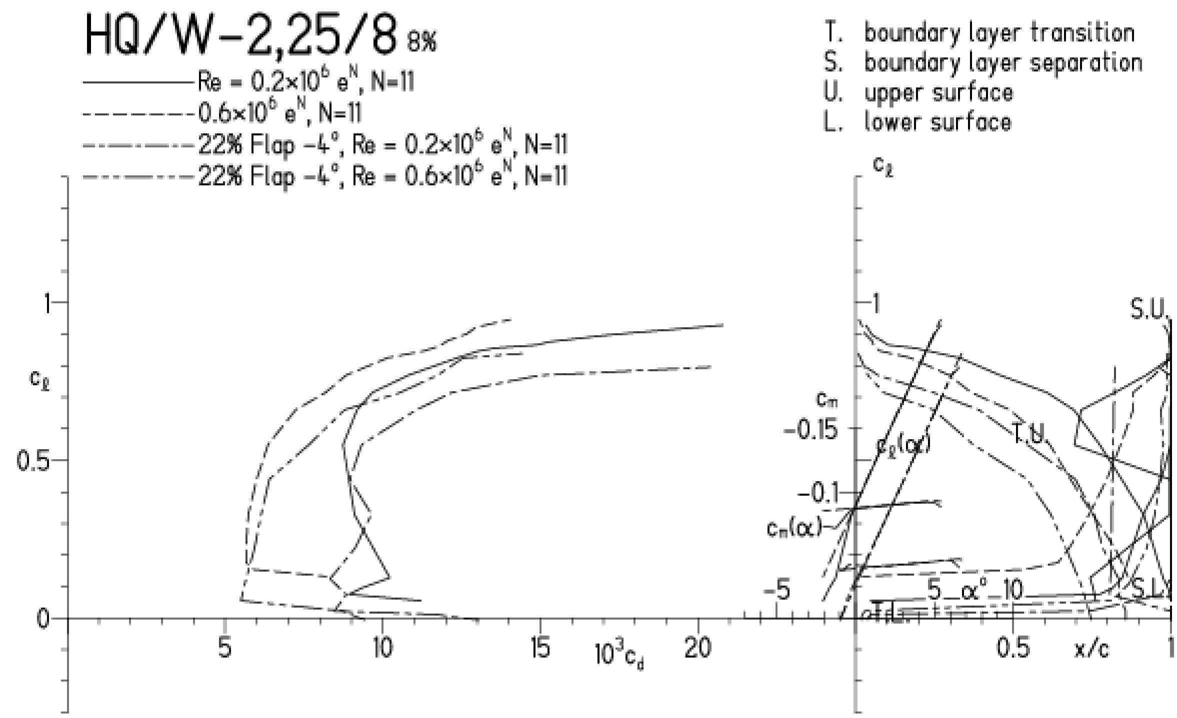


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

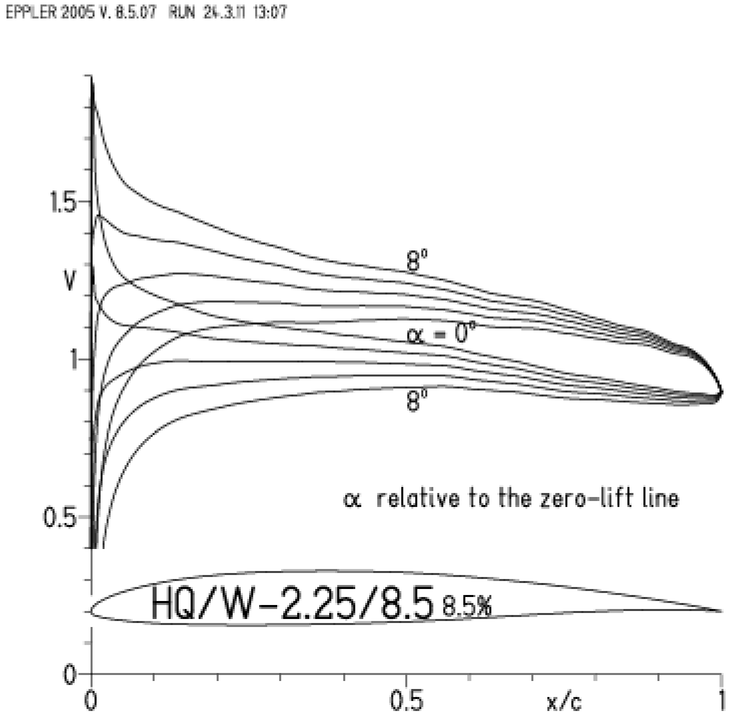
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

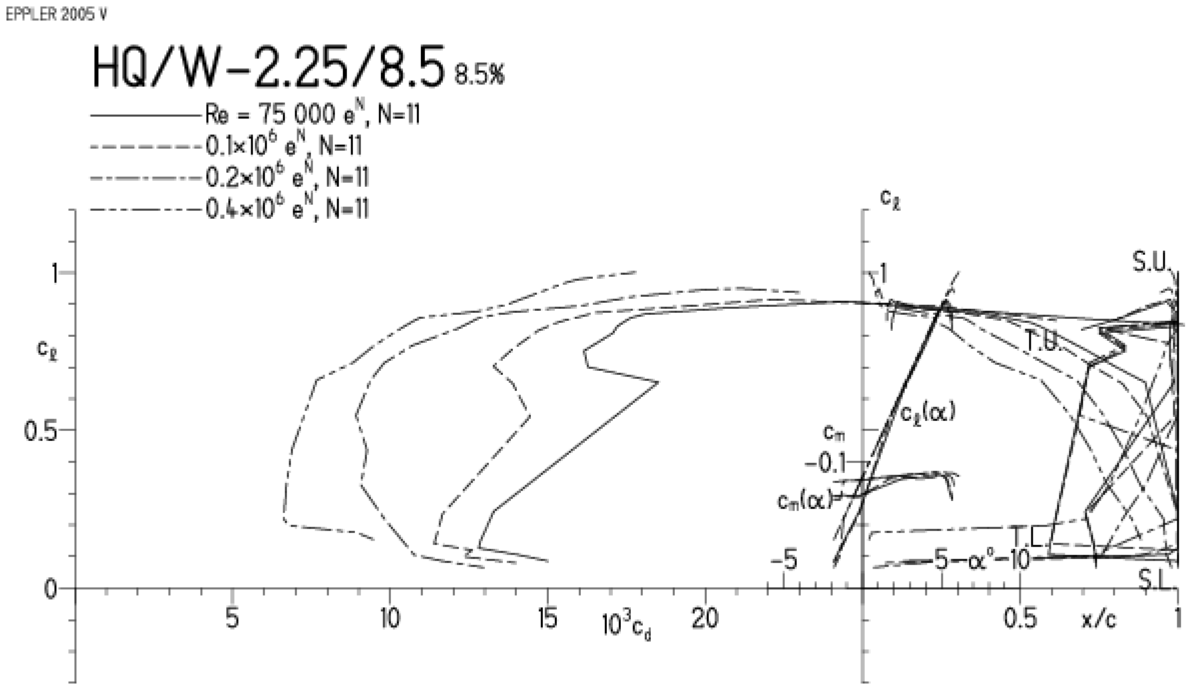


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



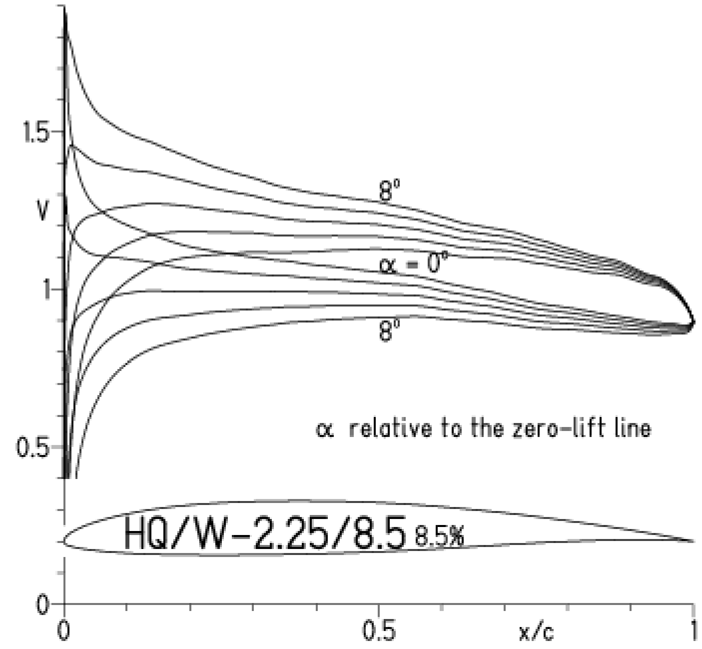
HQ/W-2,25/8,5, N=11



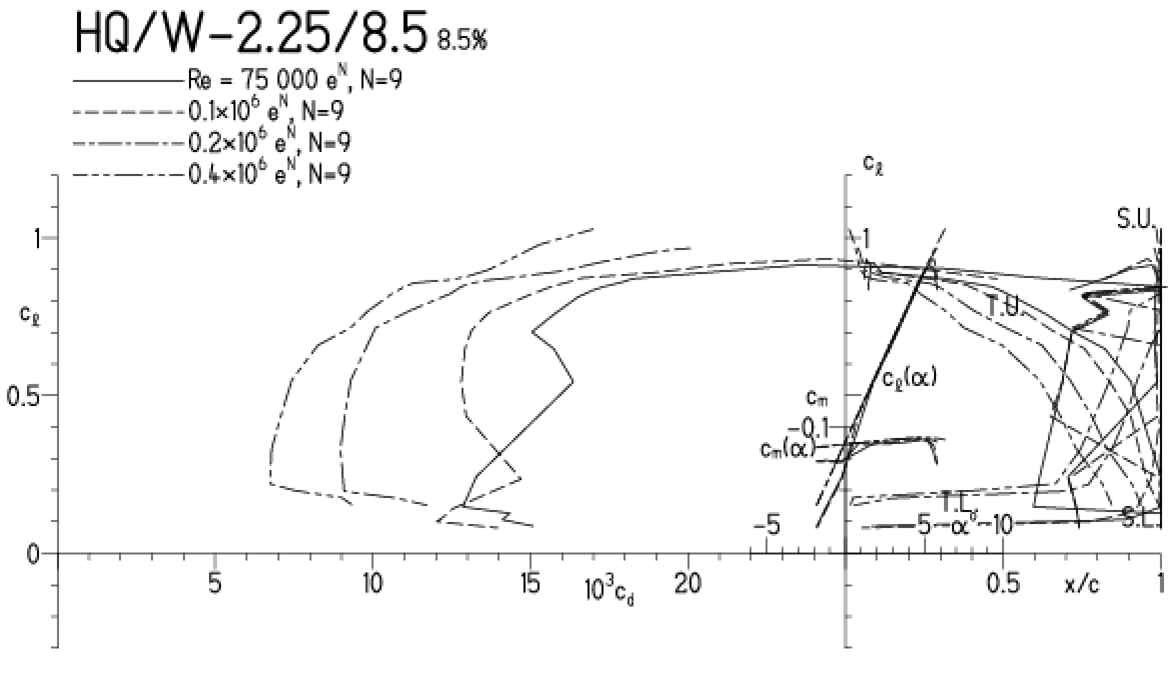


HQ/W-2,25/8,5, N=9

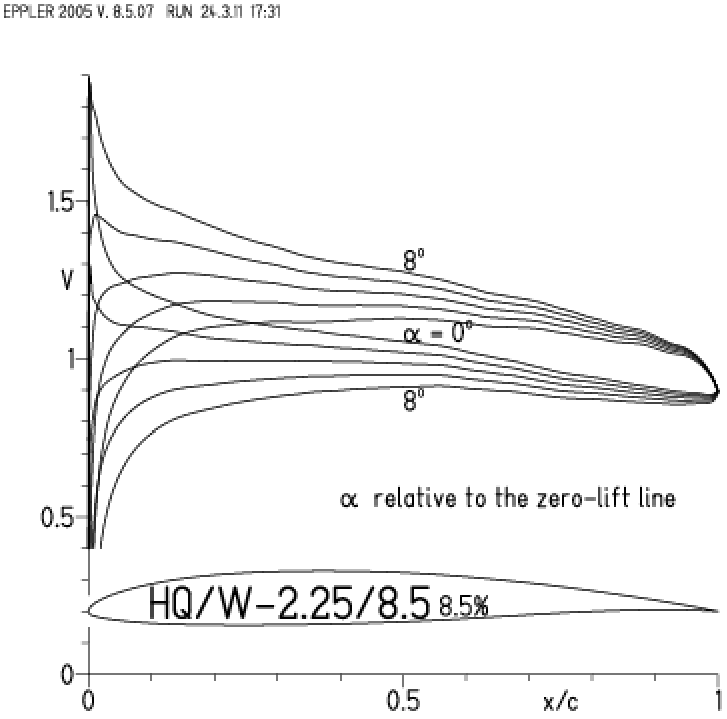
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

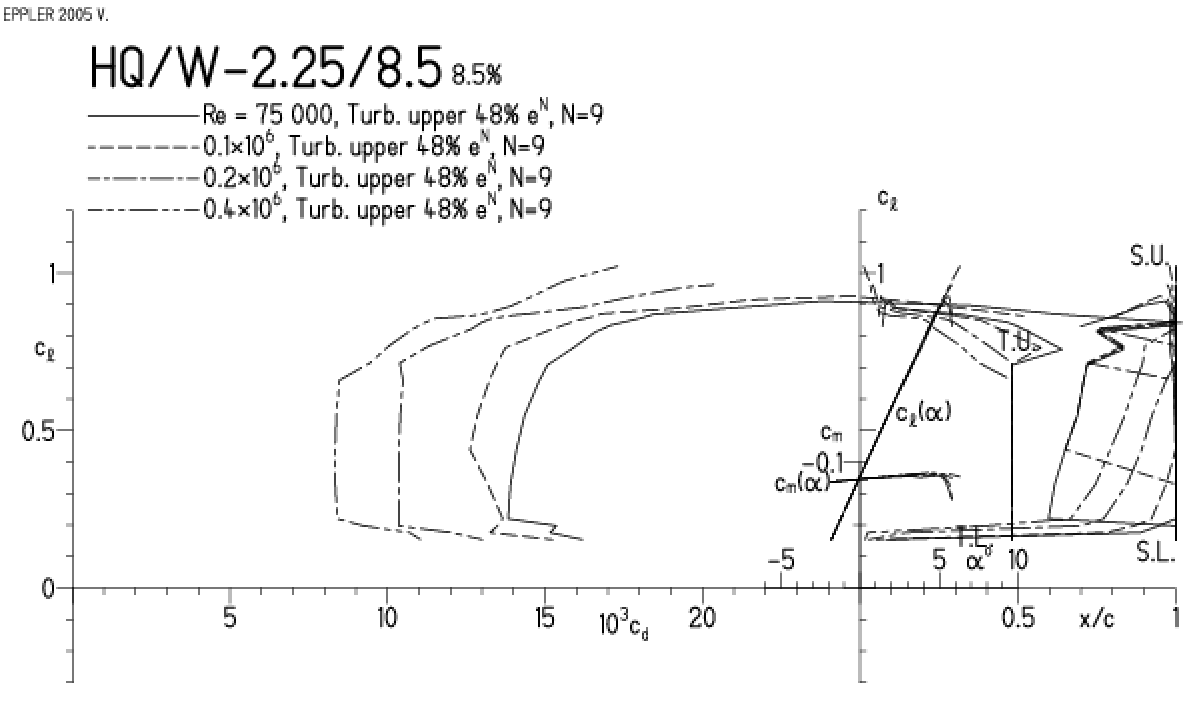


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

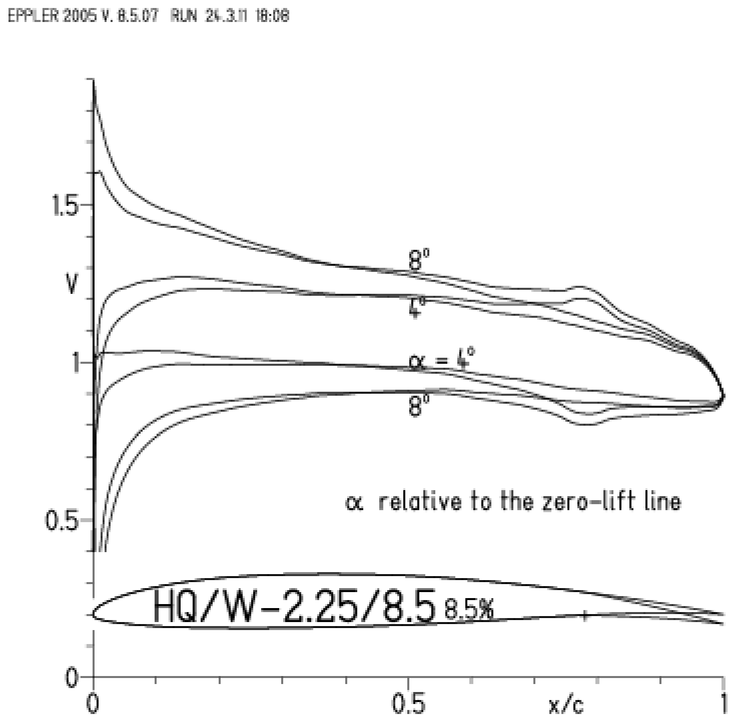


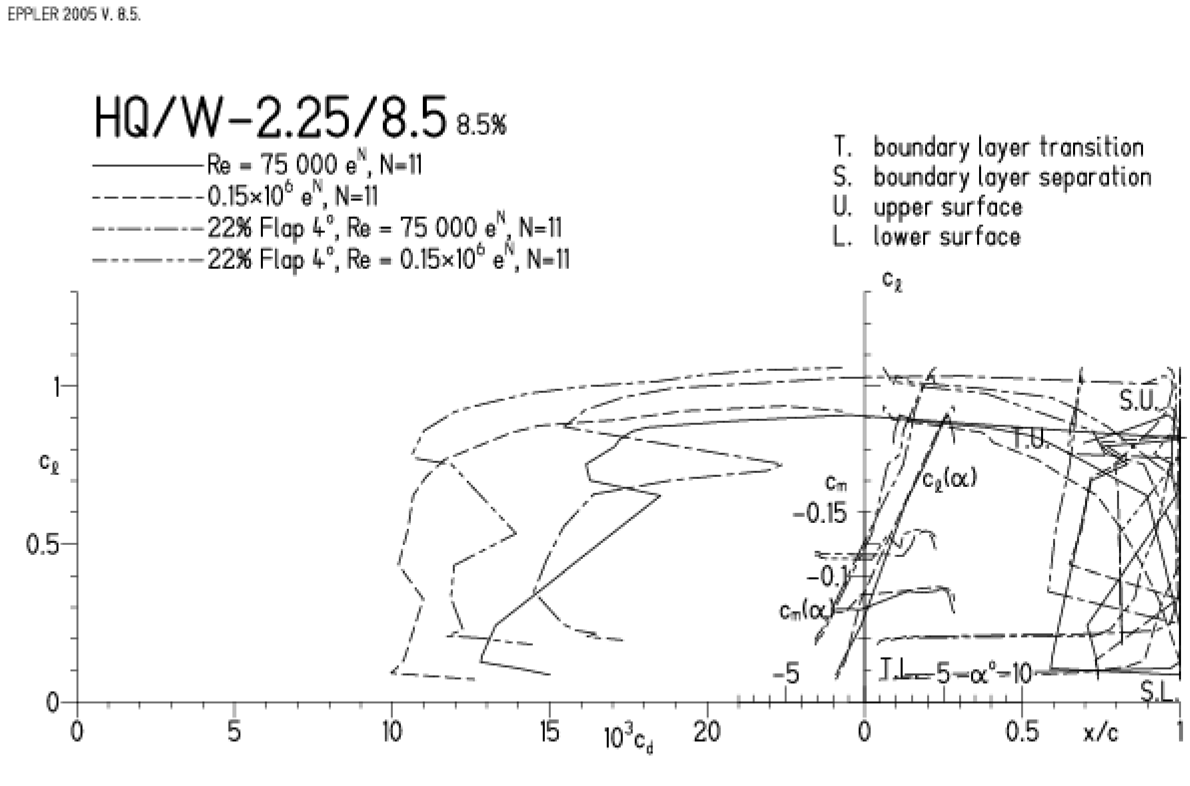
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





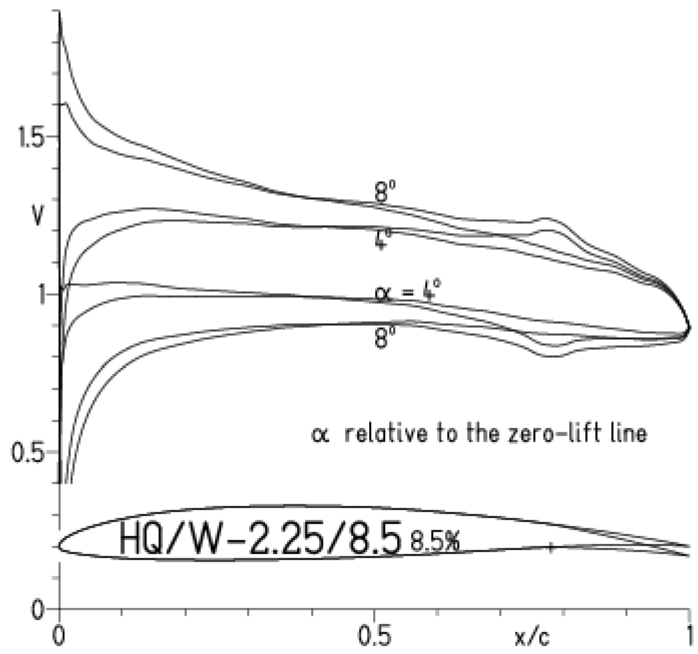
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



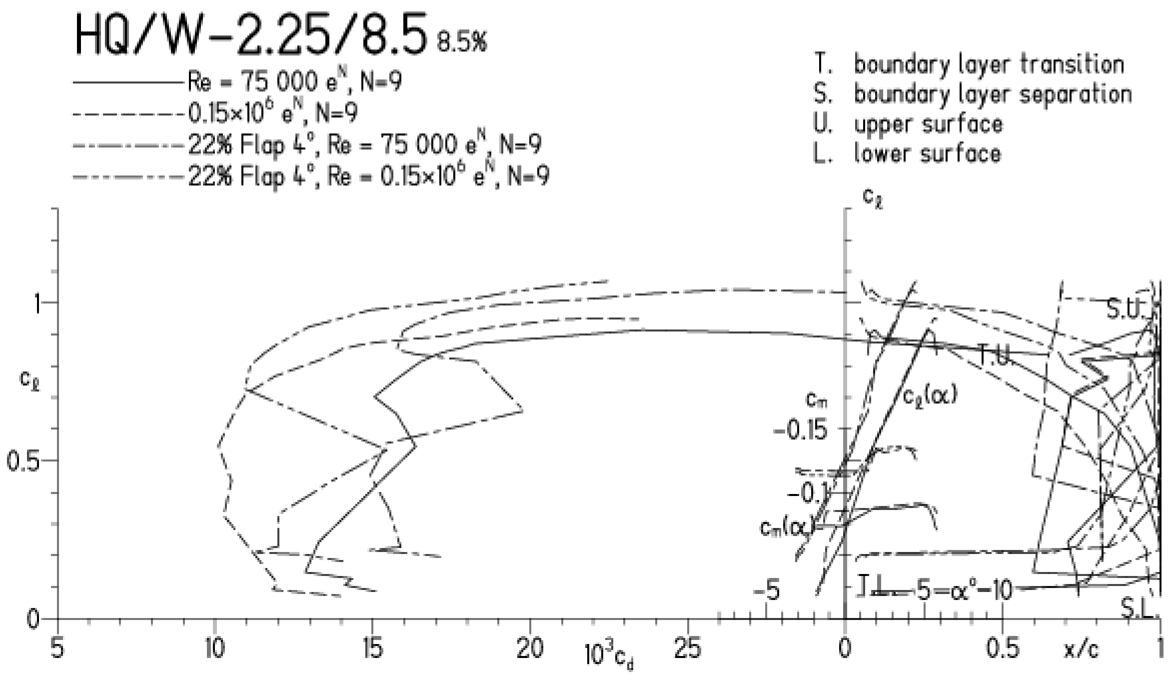


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

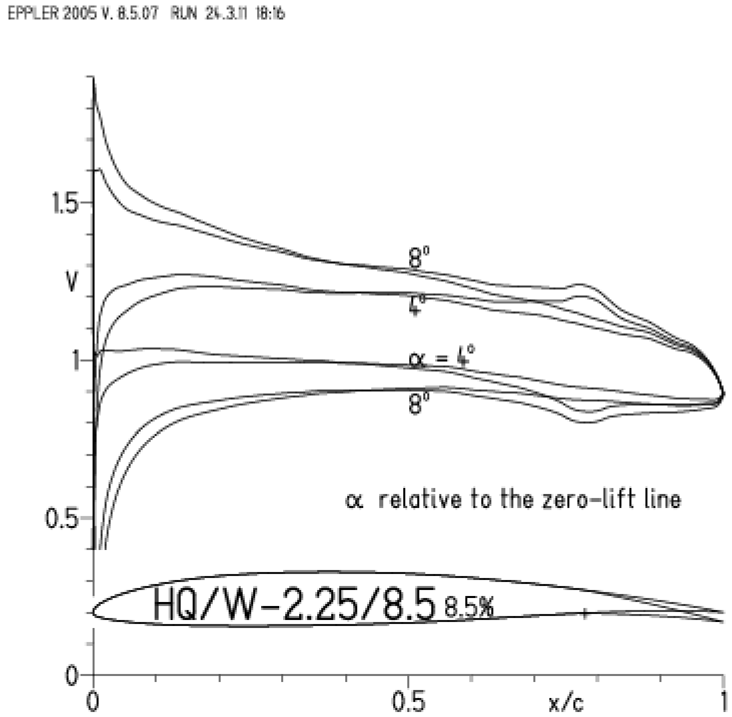
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

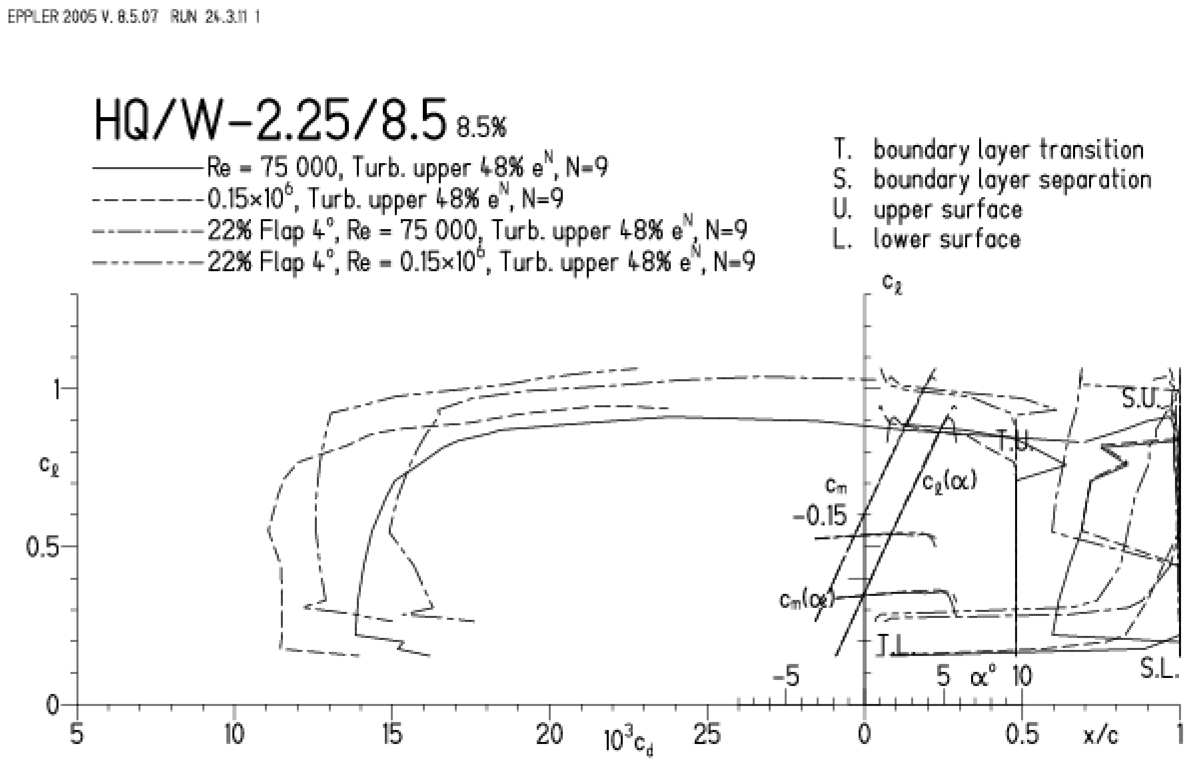


EPPLER 2005 V.

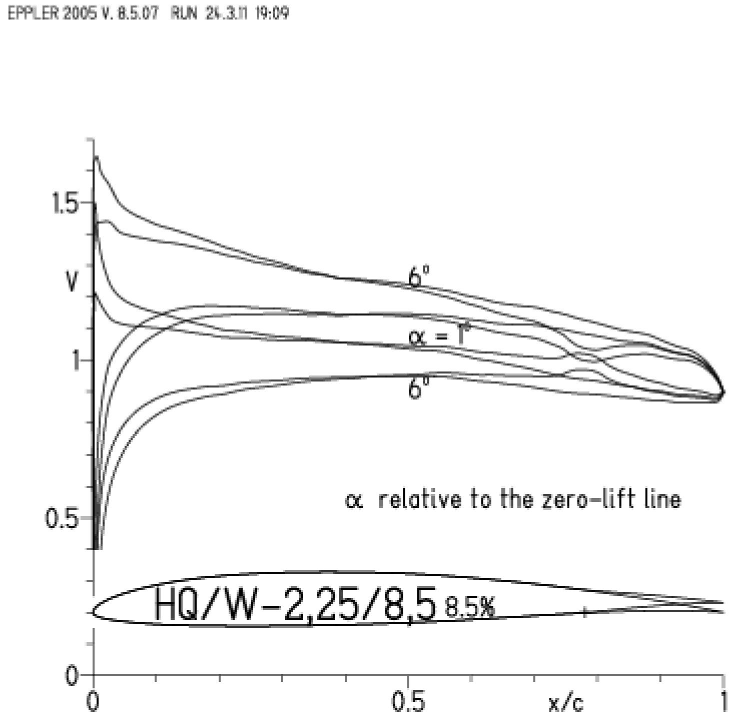


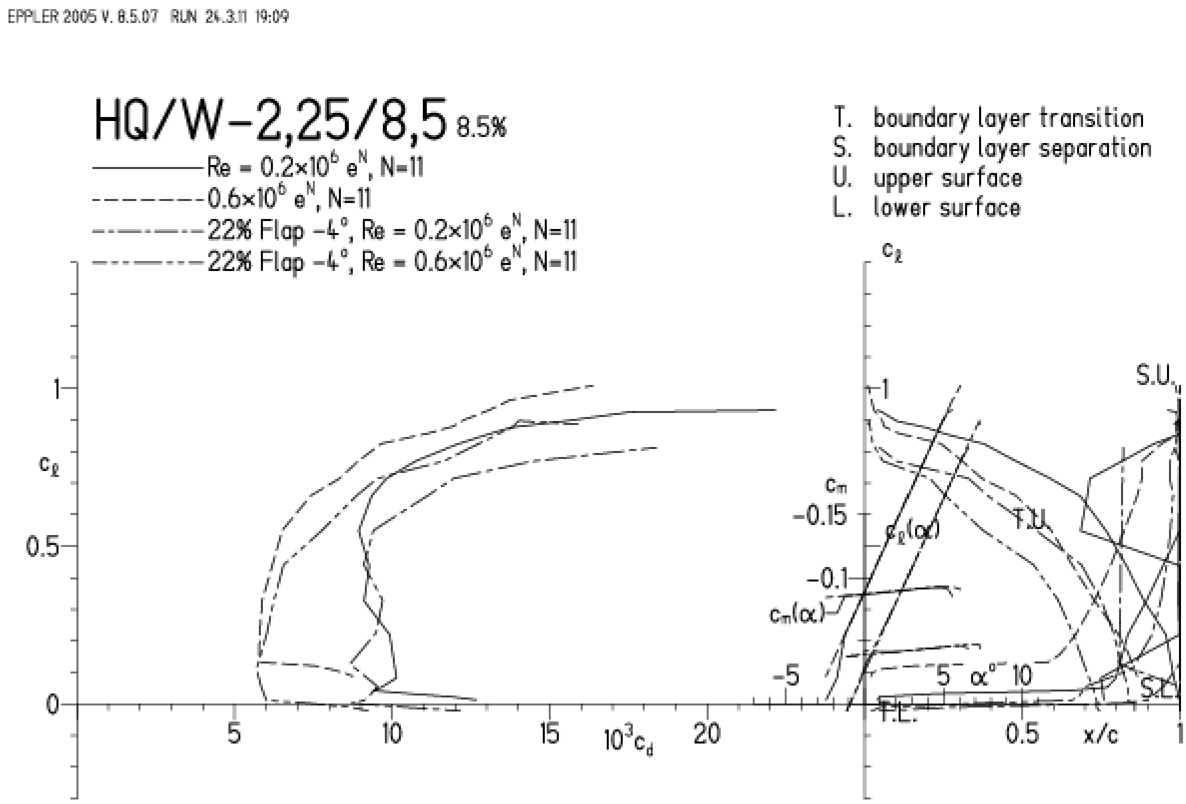
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



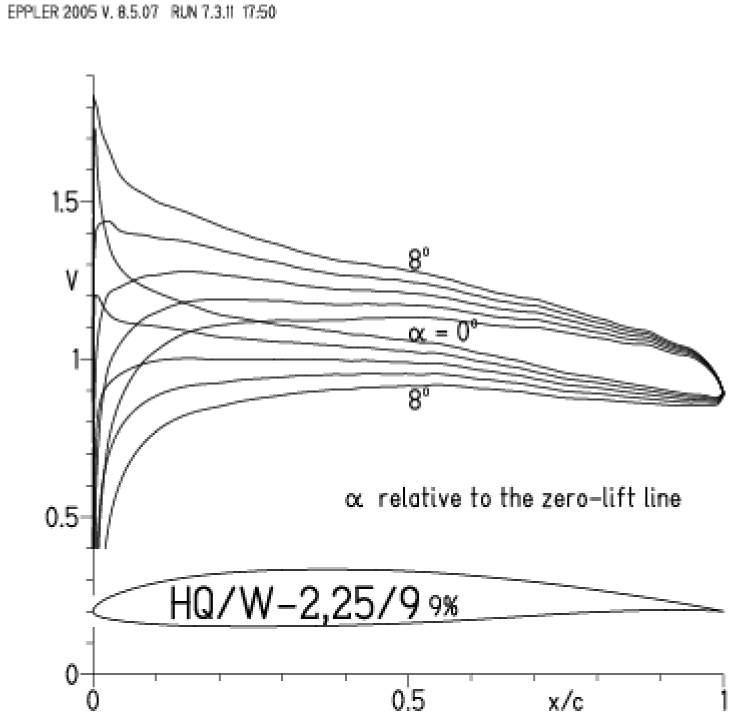


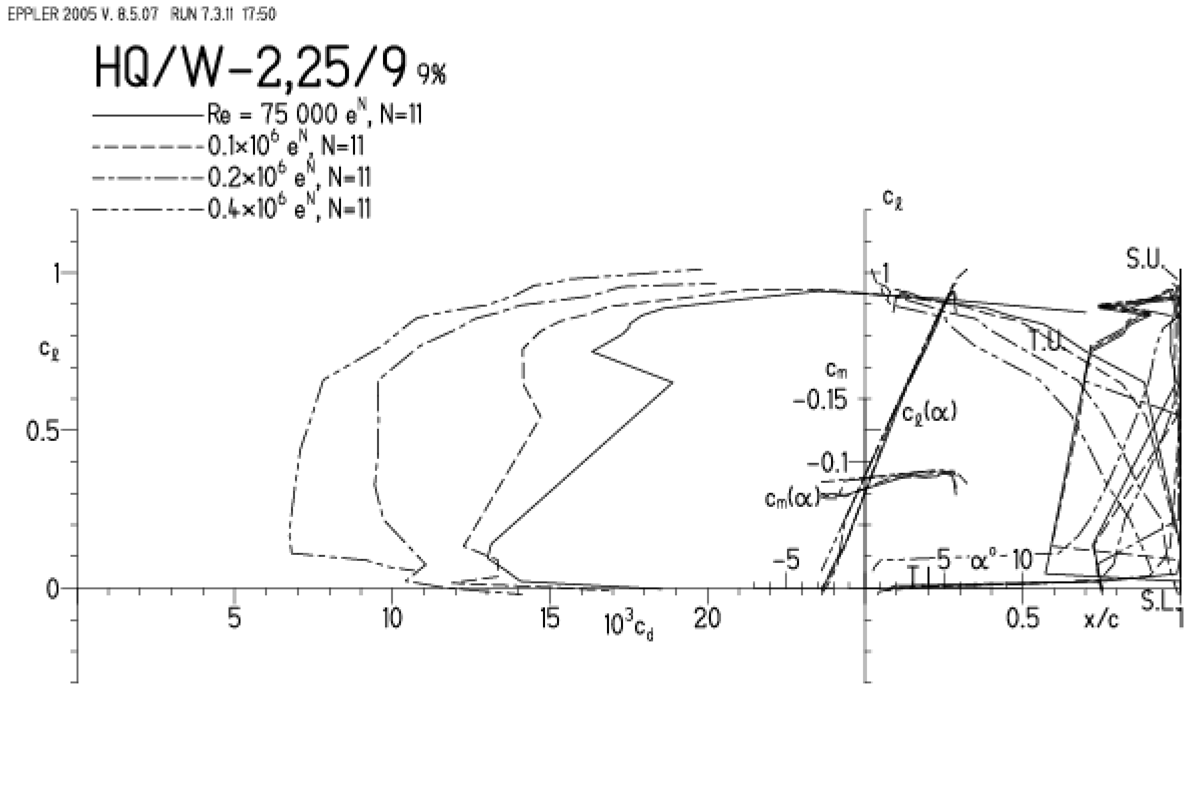
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)





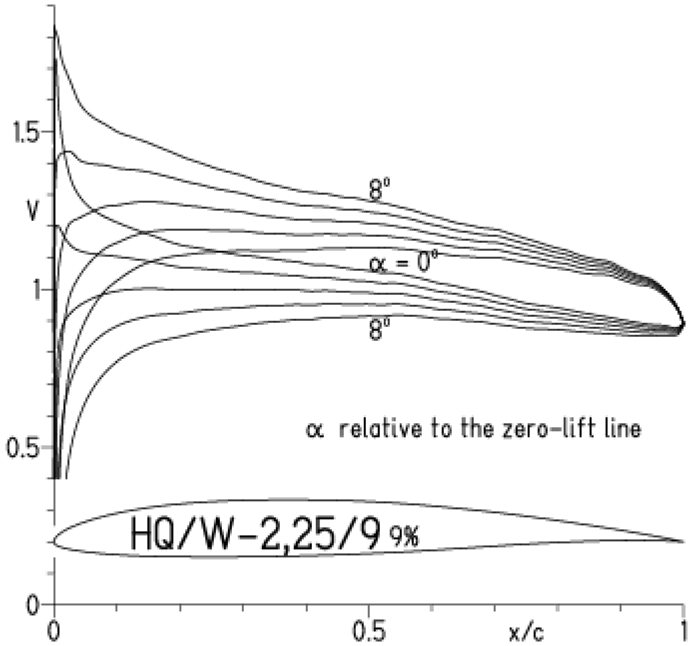
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

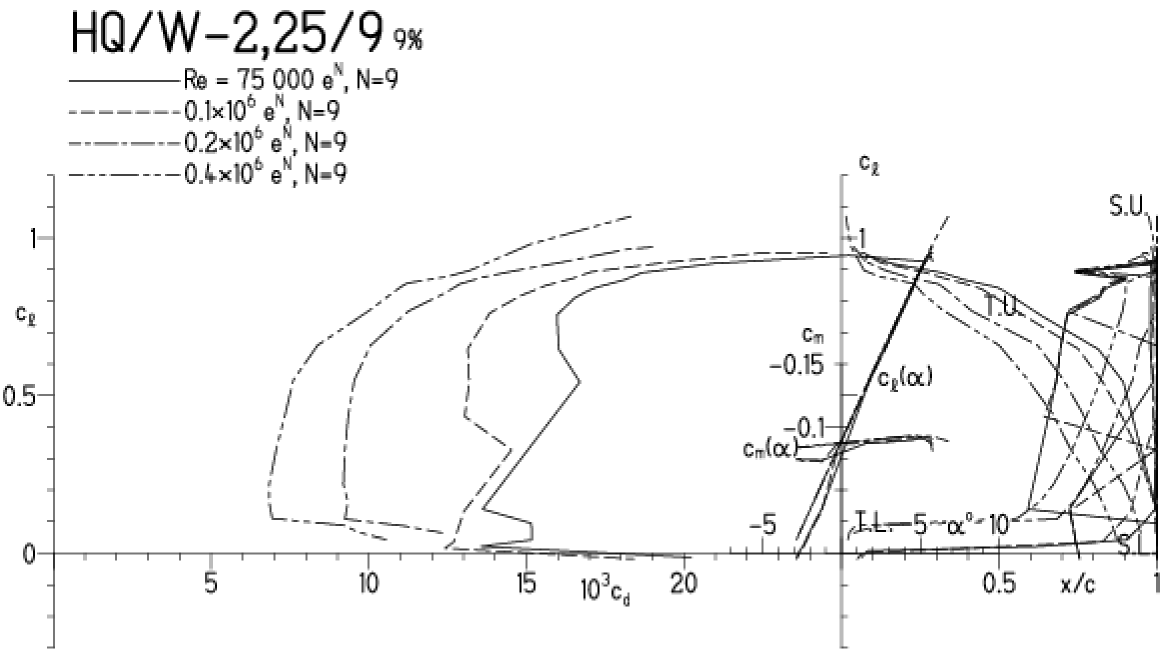

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

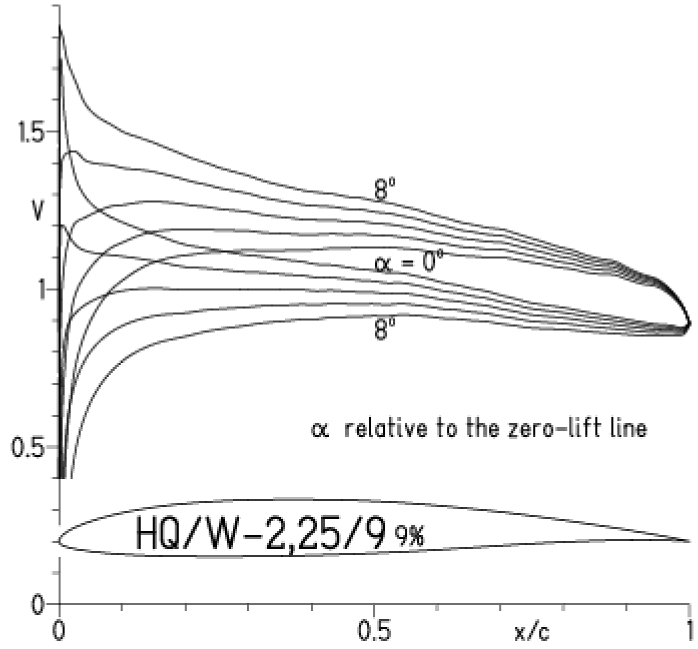


EPPLER 2005 V. 8.

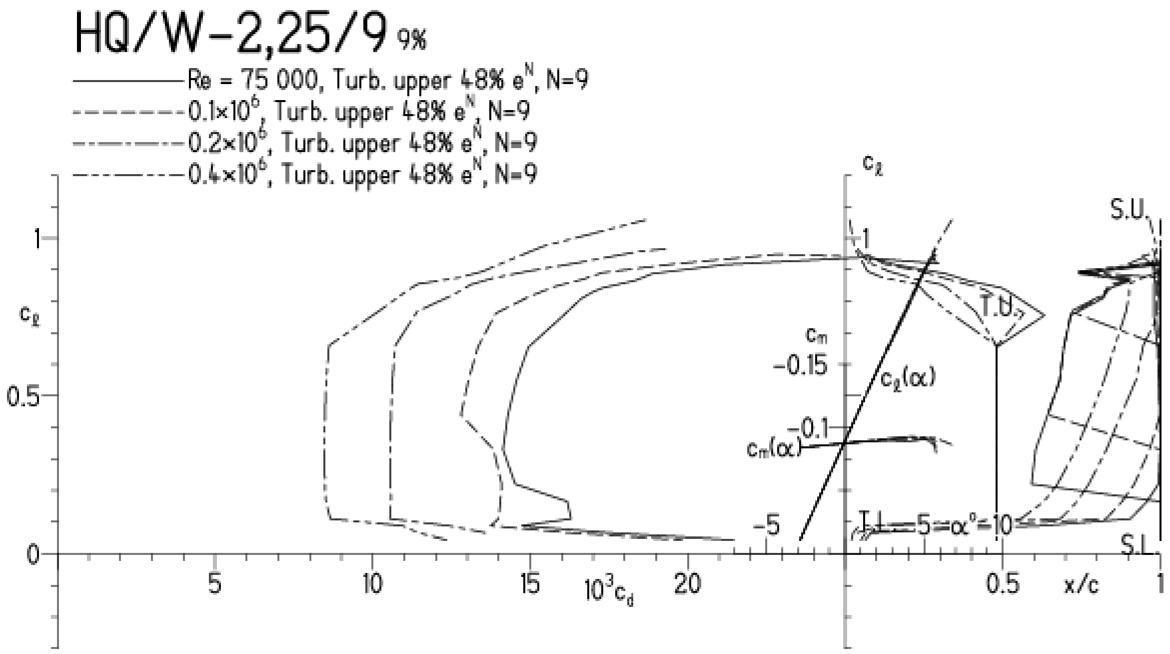


<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

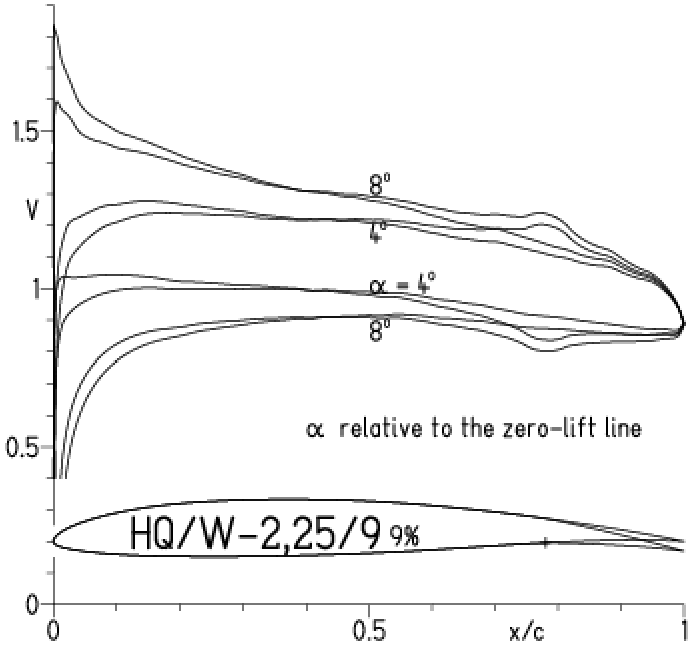


EPPLER 2005 V. 8.5.07 RUN 7

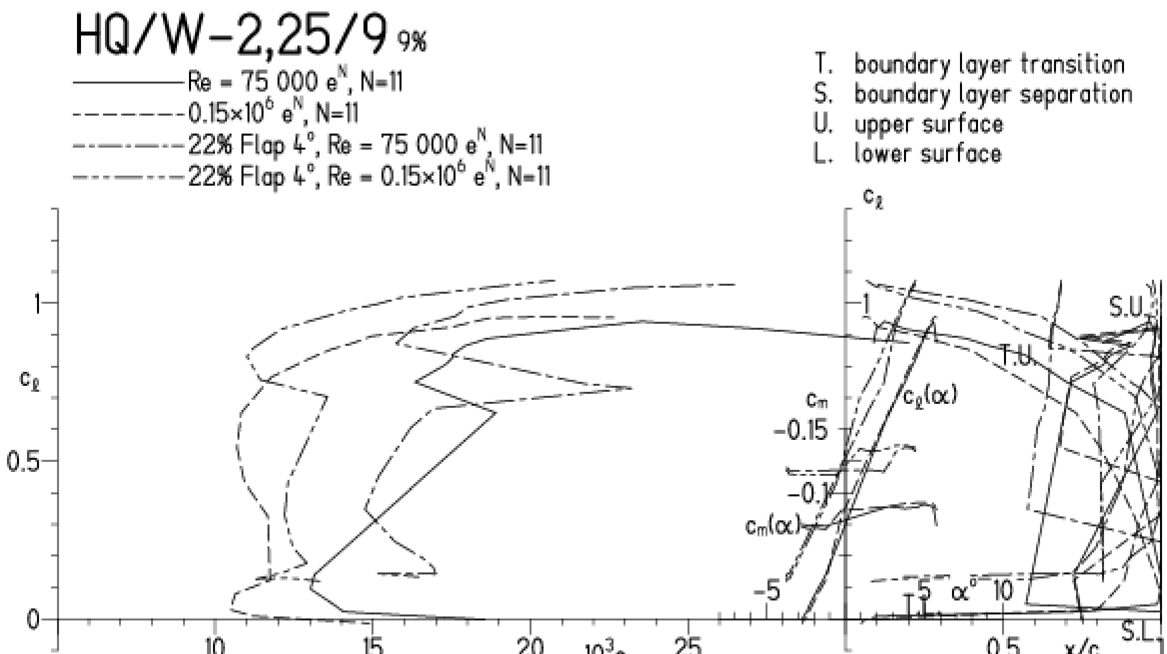


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

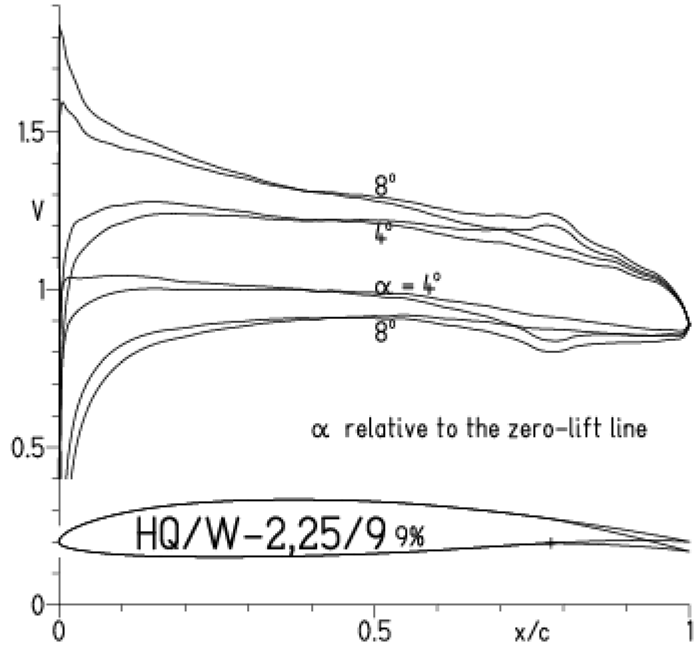


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

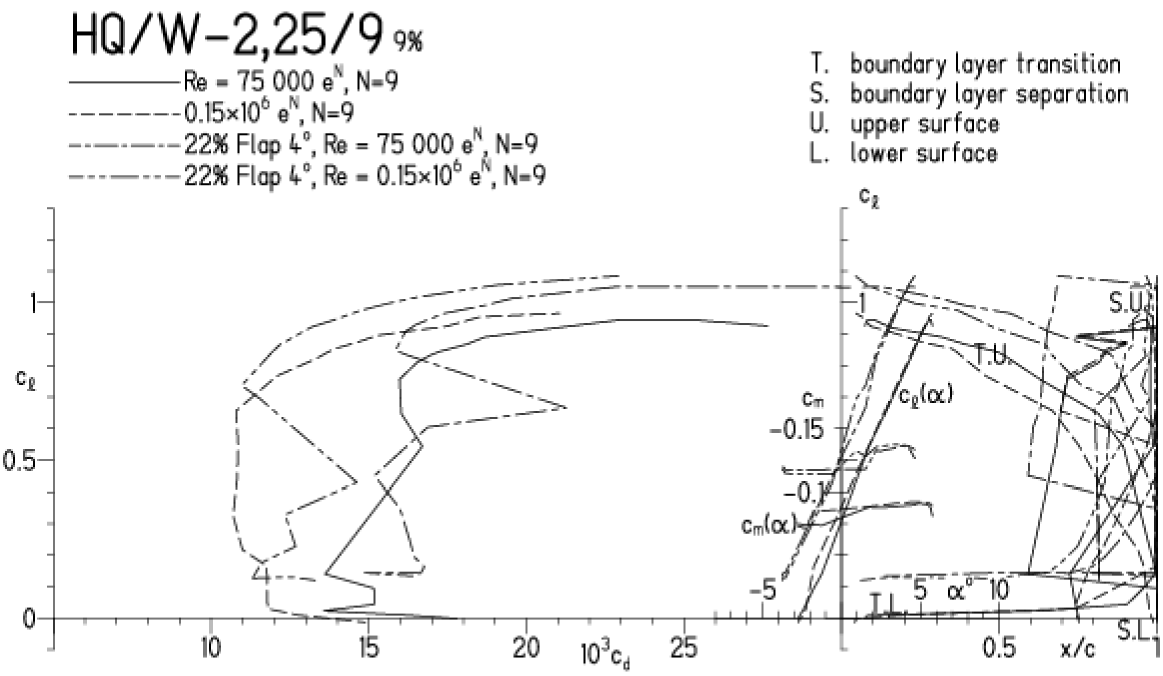


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

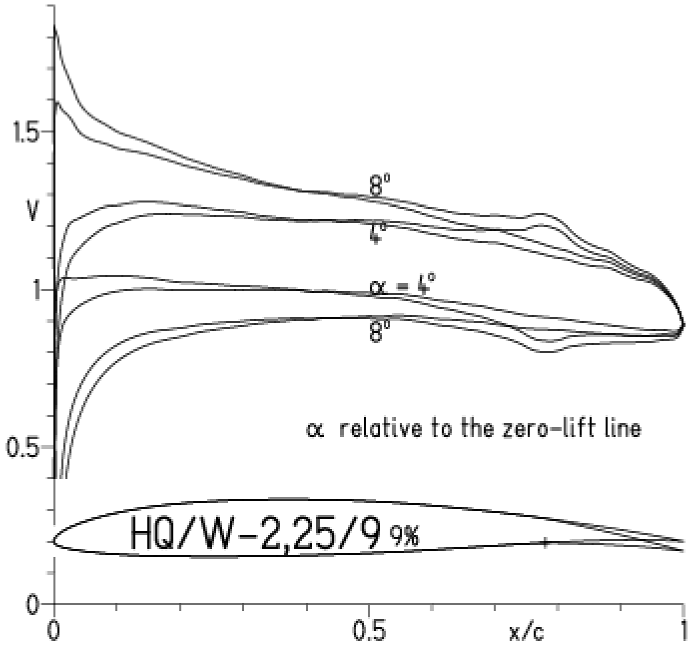


EPPLER 2005 V. 8.5.07 RUN 8.3.1

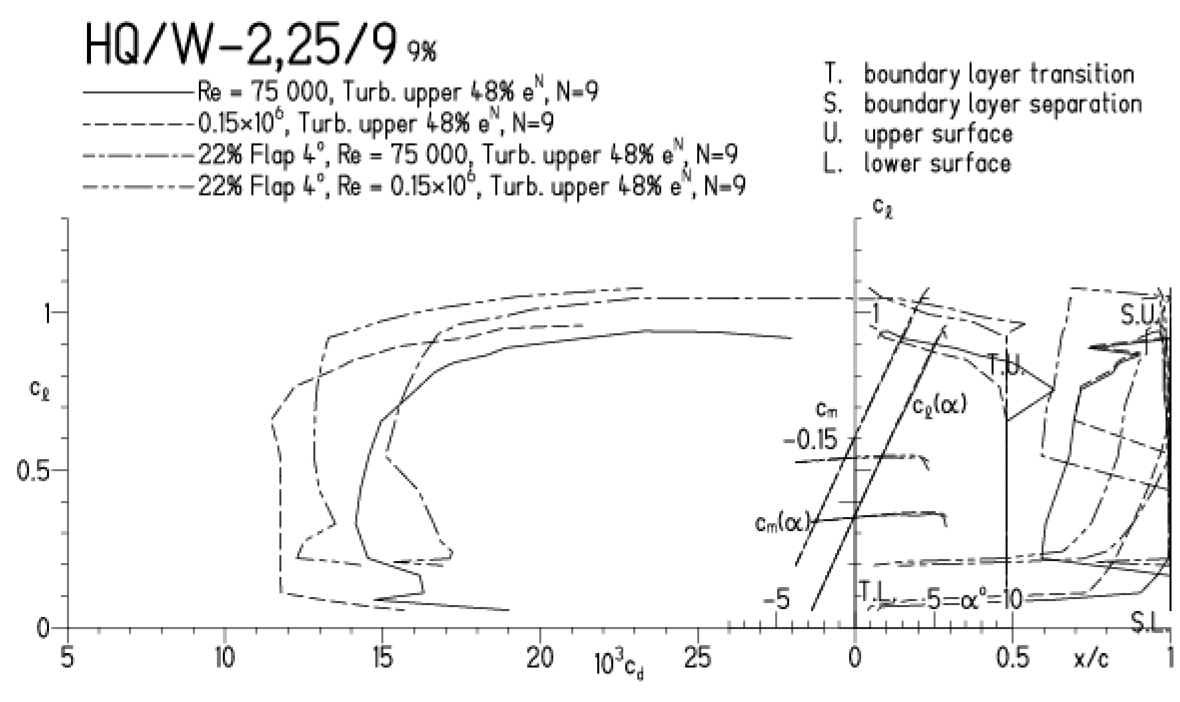


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

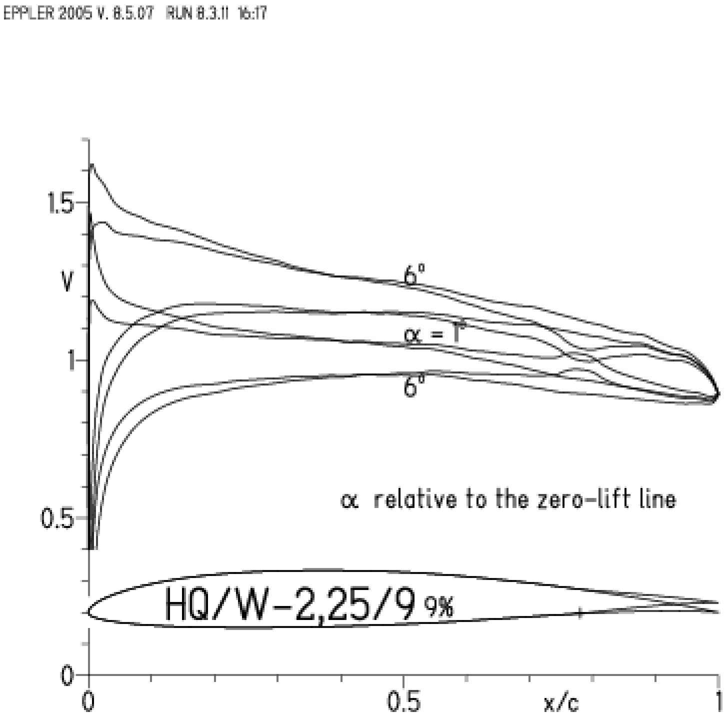
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

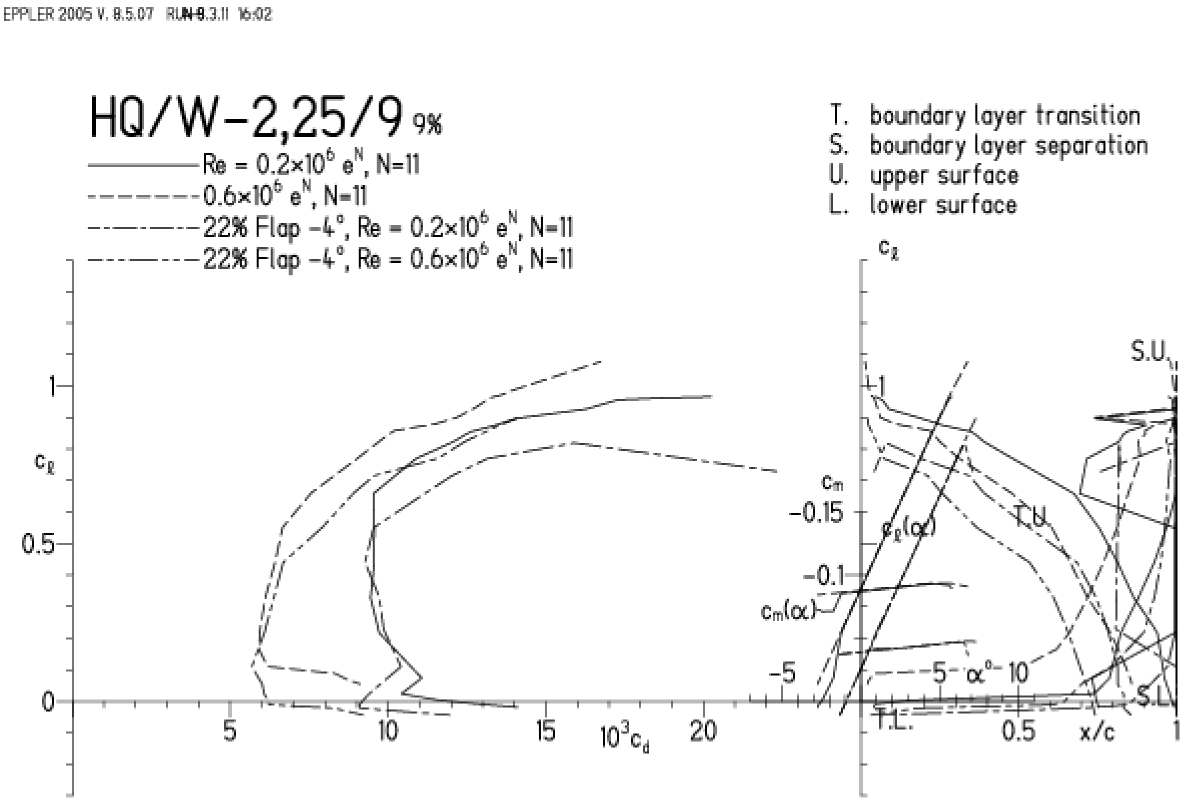


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54



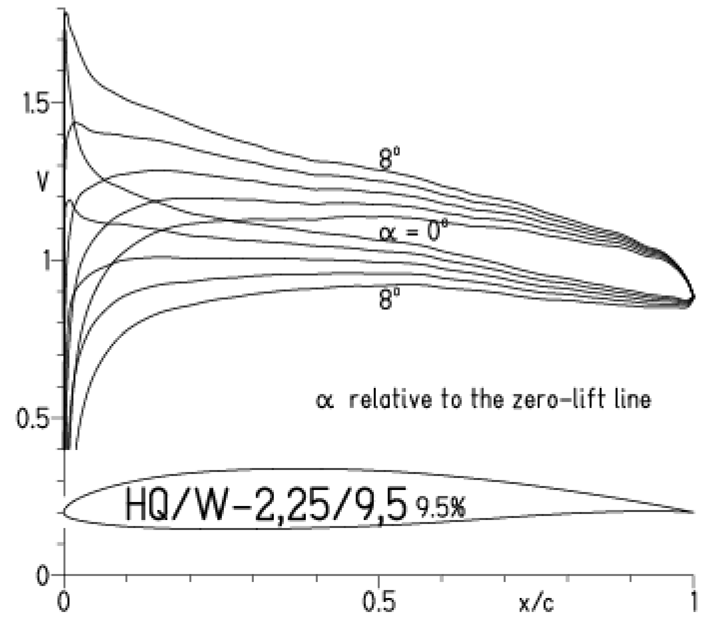
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



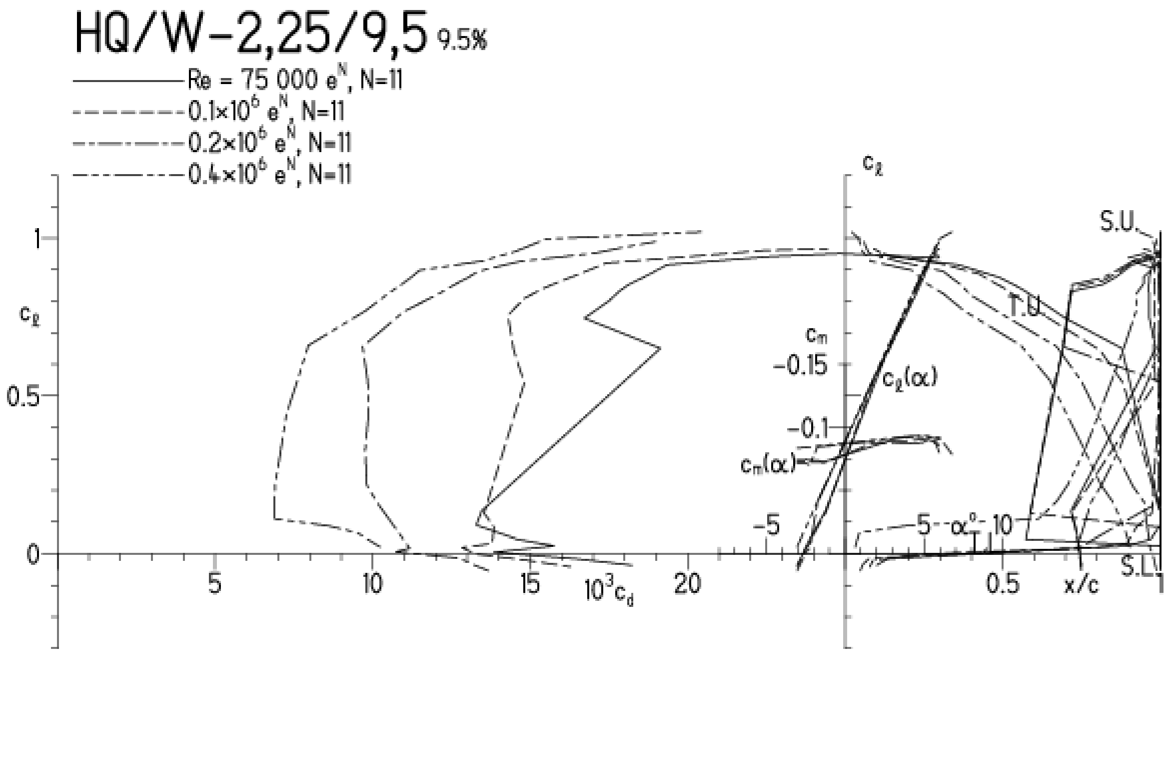


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

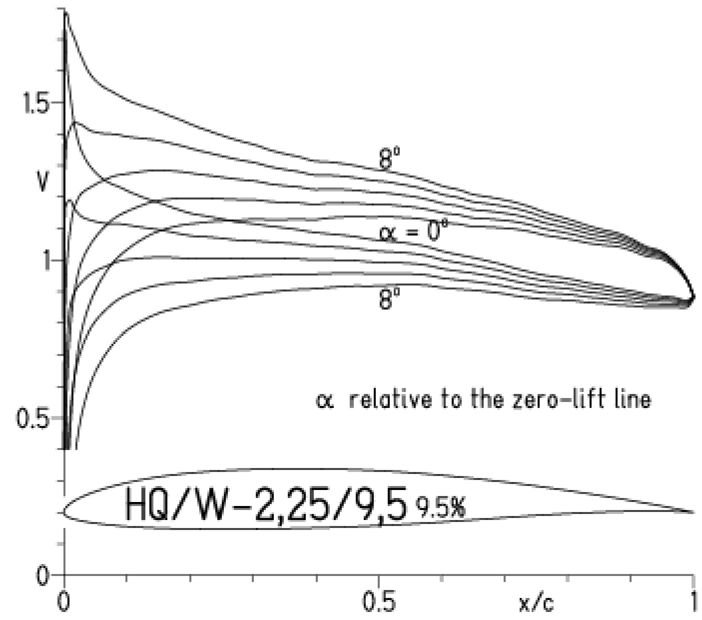


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

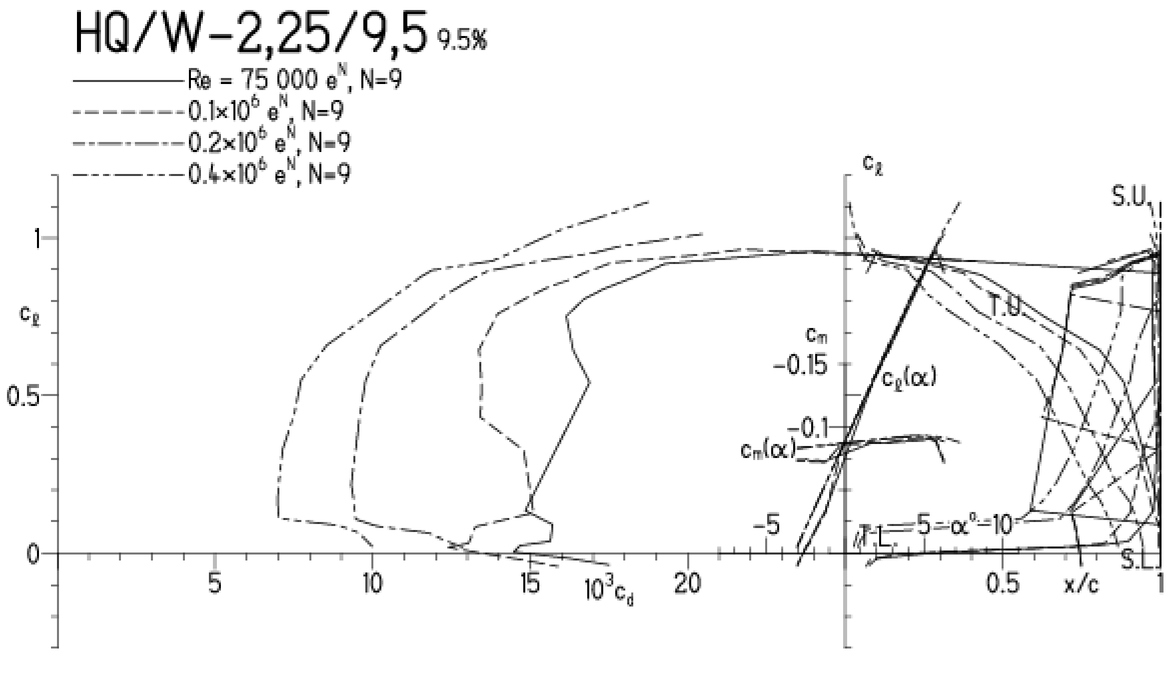


<u>HQ/W-2,25/9,5</u>, N=9

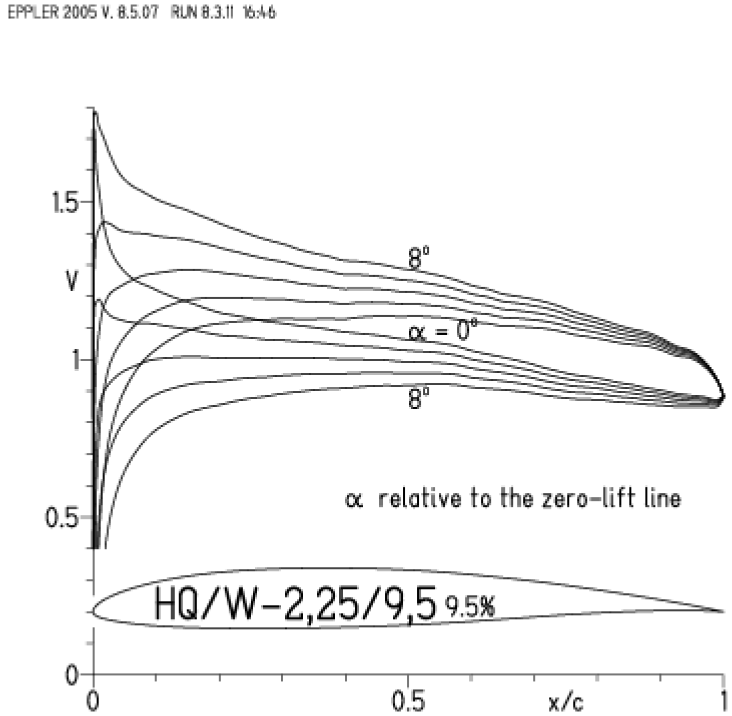
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

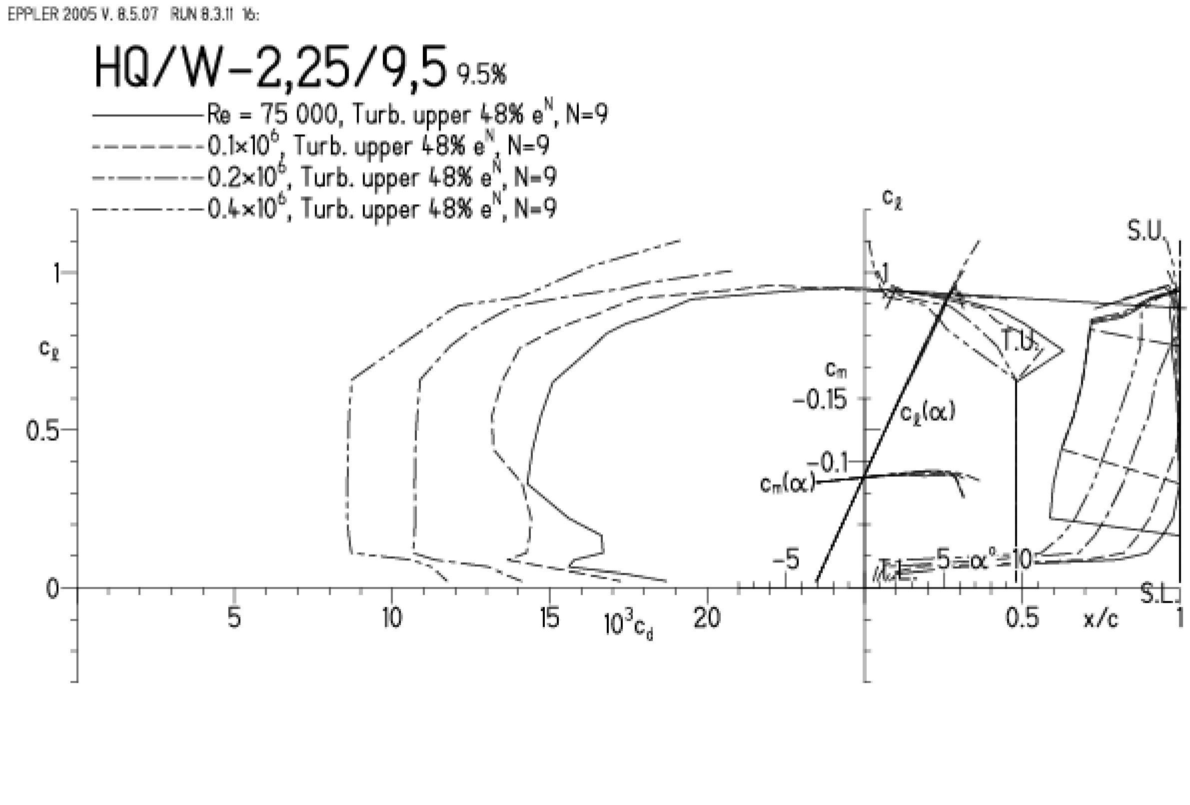


EPPLER 2005 V. 8.5.07 RUN 8.3.



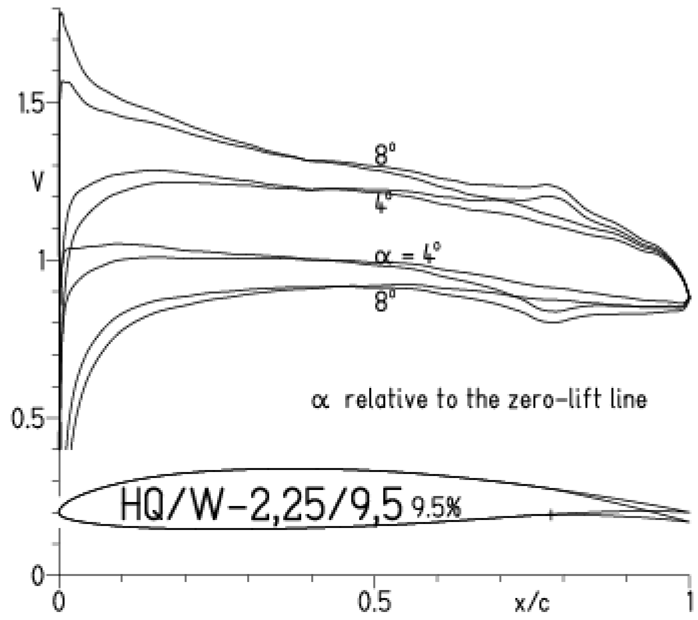
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



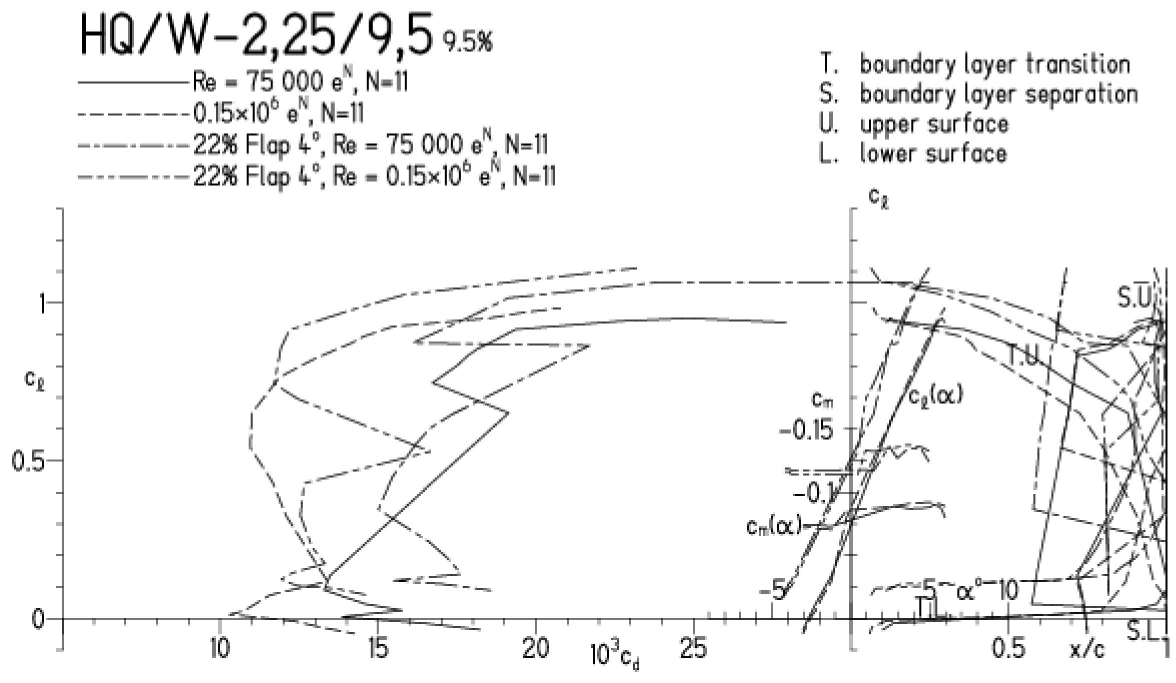


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

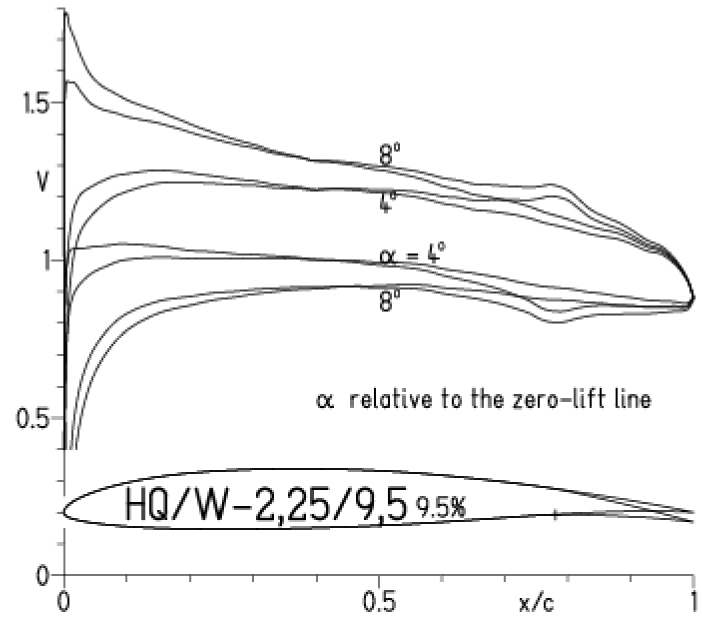


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

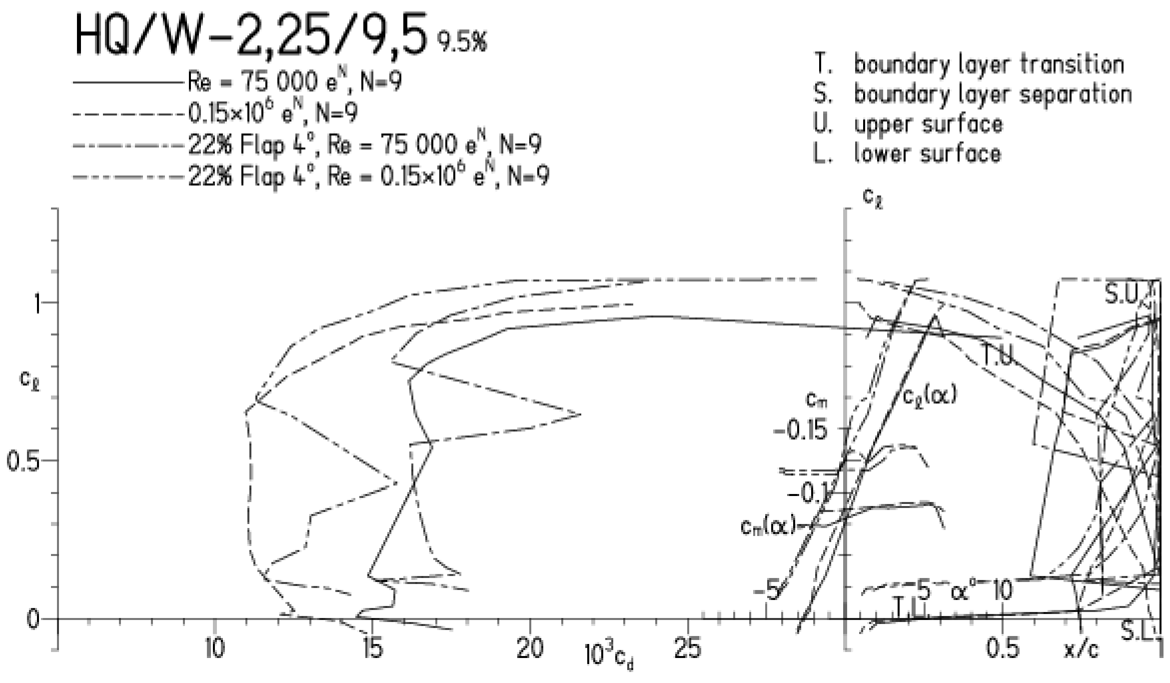


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

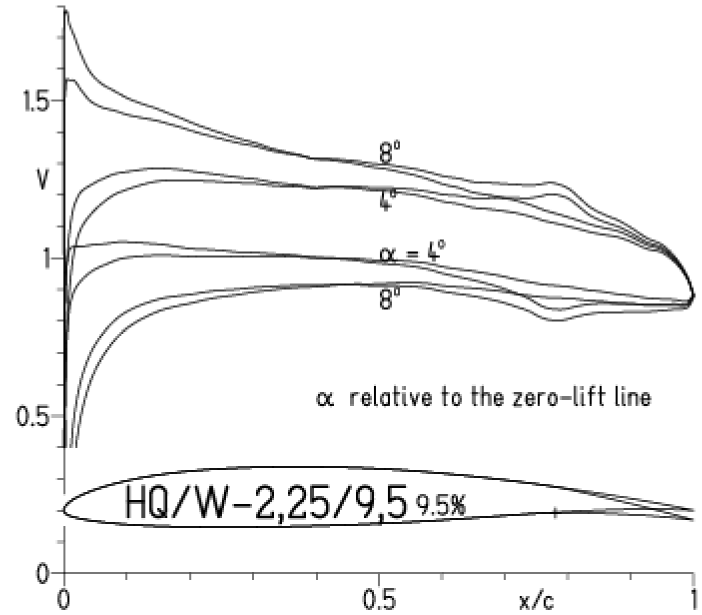


EPPLER 2005 V. 8.5.07 R

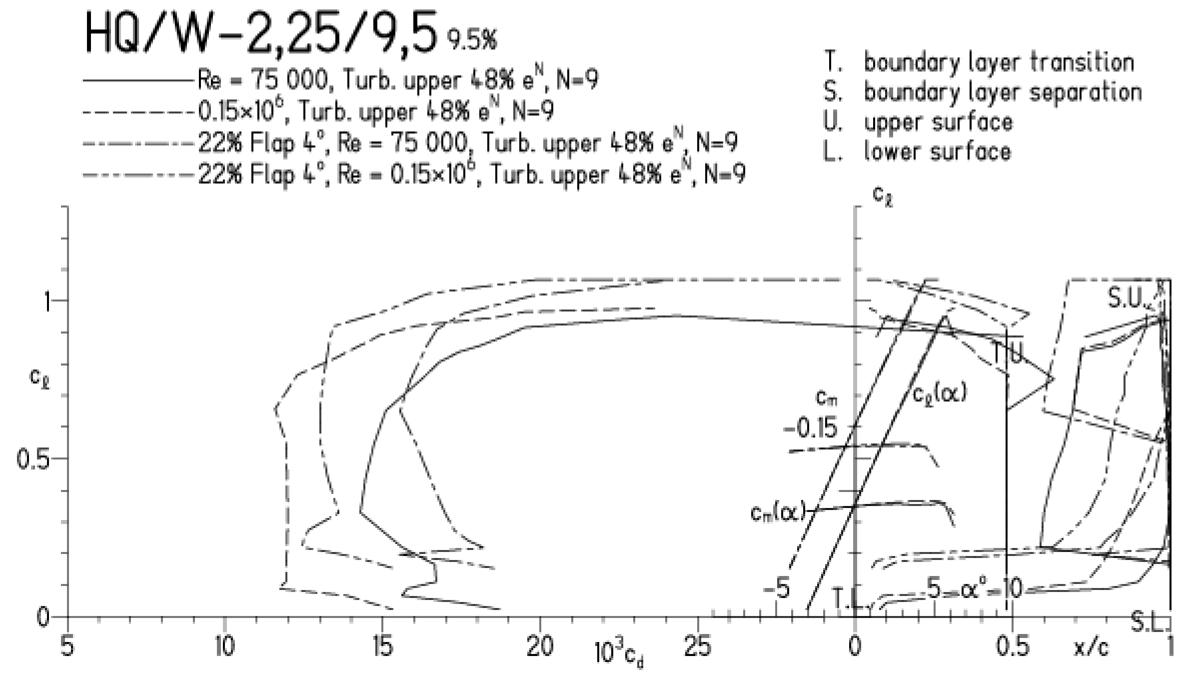


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

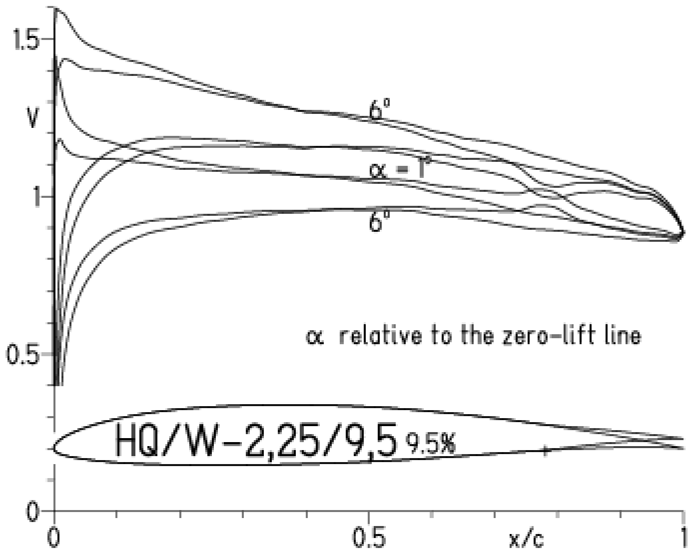


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

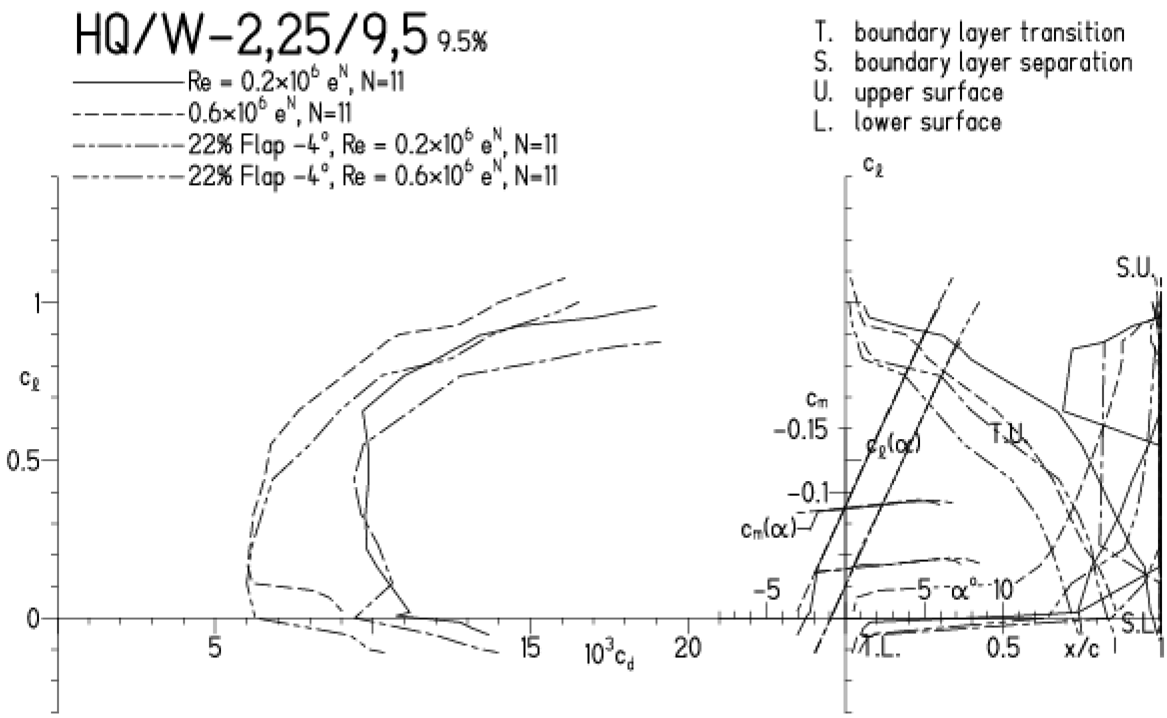


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

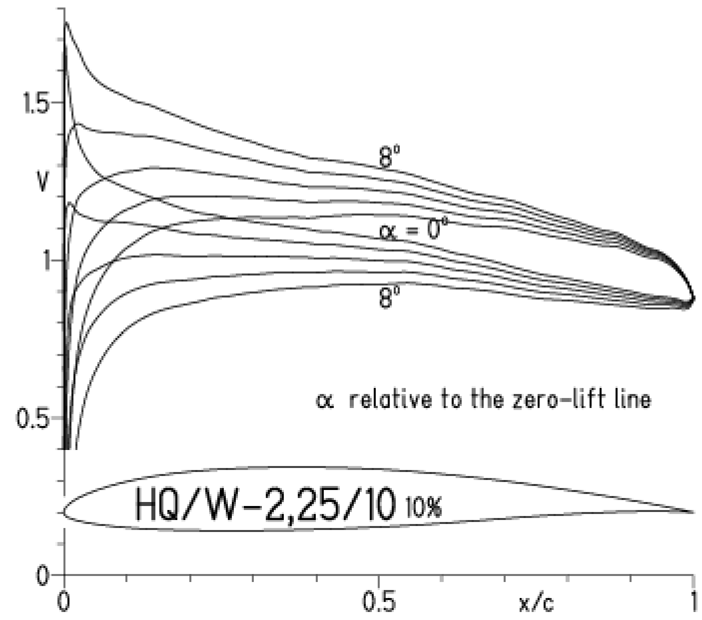


EPPLER 2005 V.

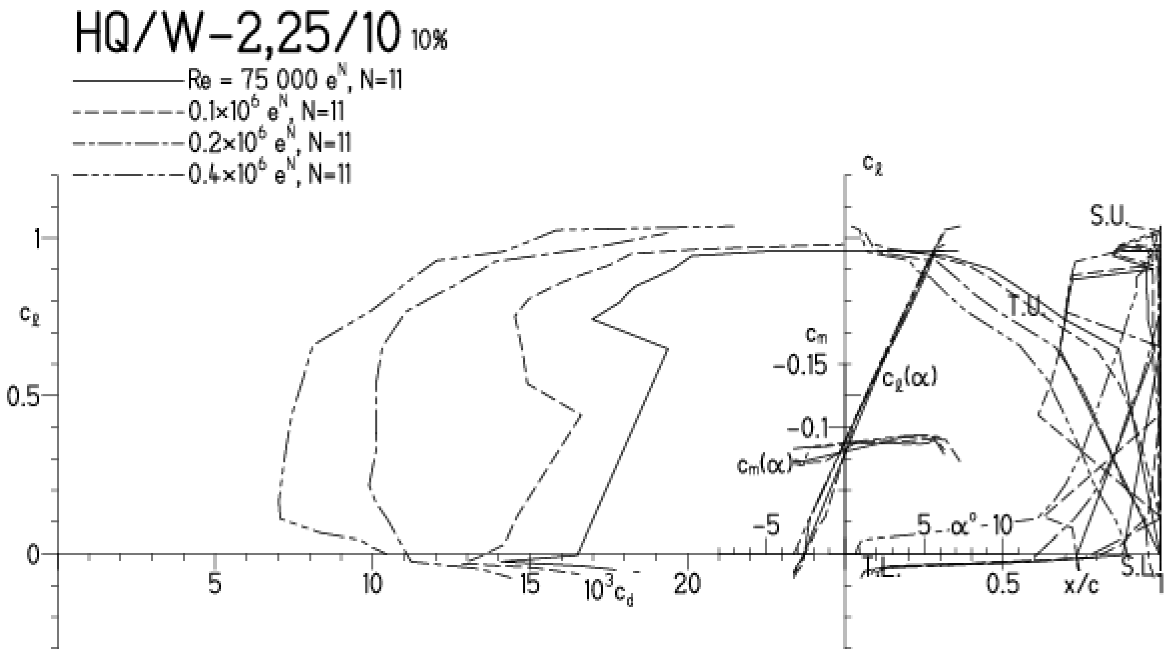


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

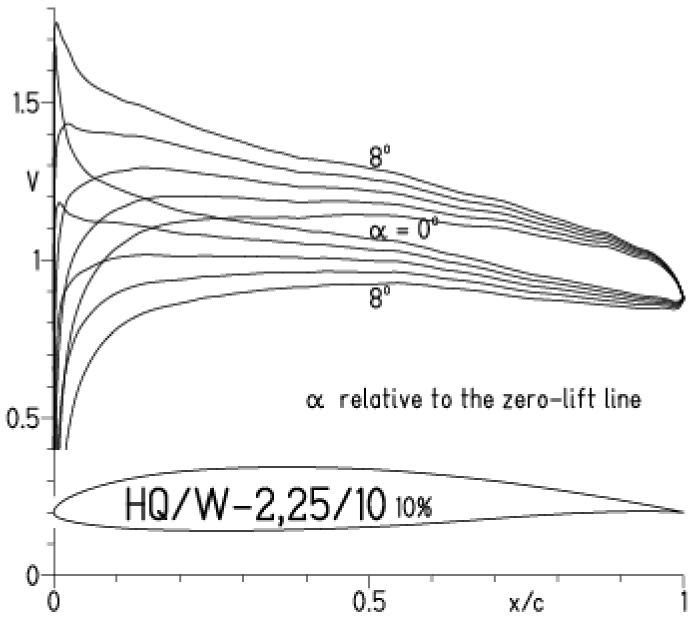


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

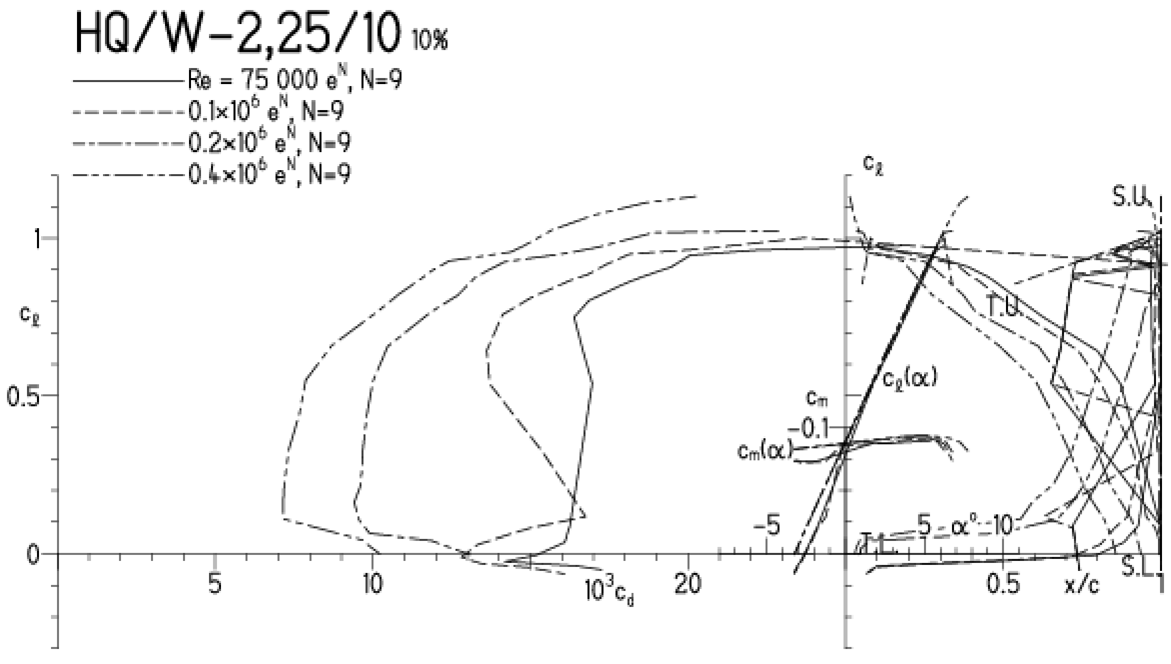


<u>HQ/W-2,25/10</u>, N=9

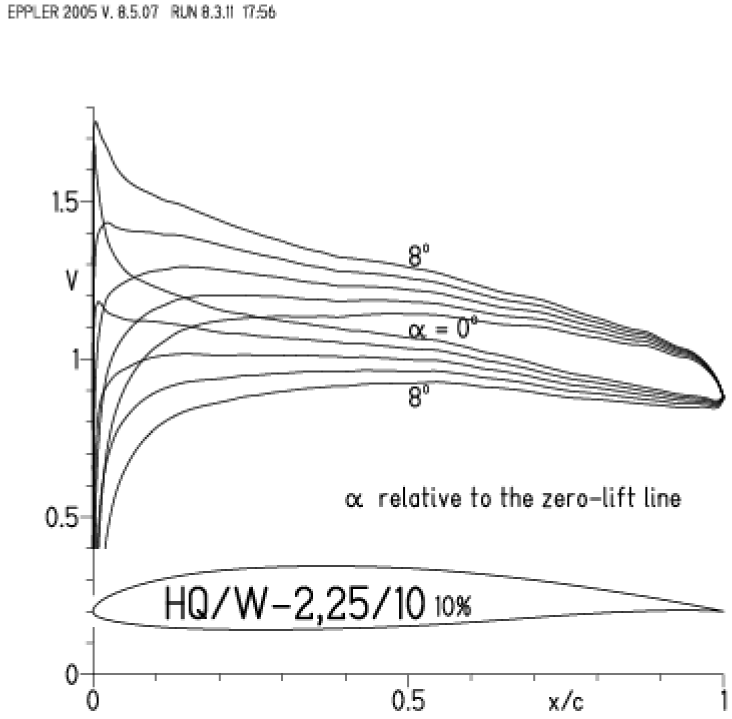
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

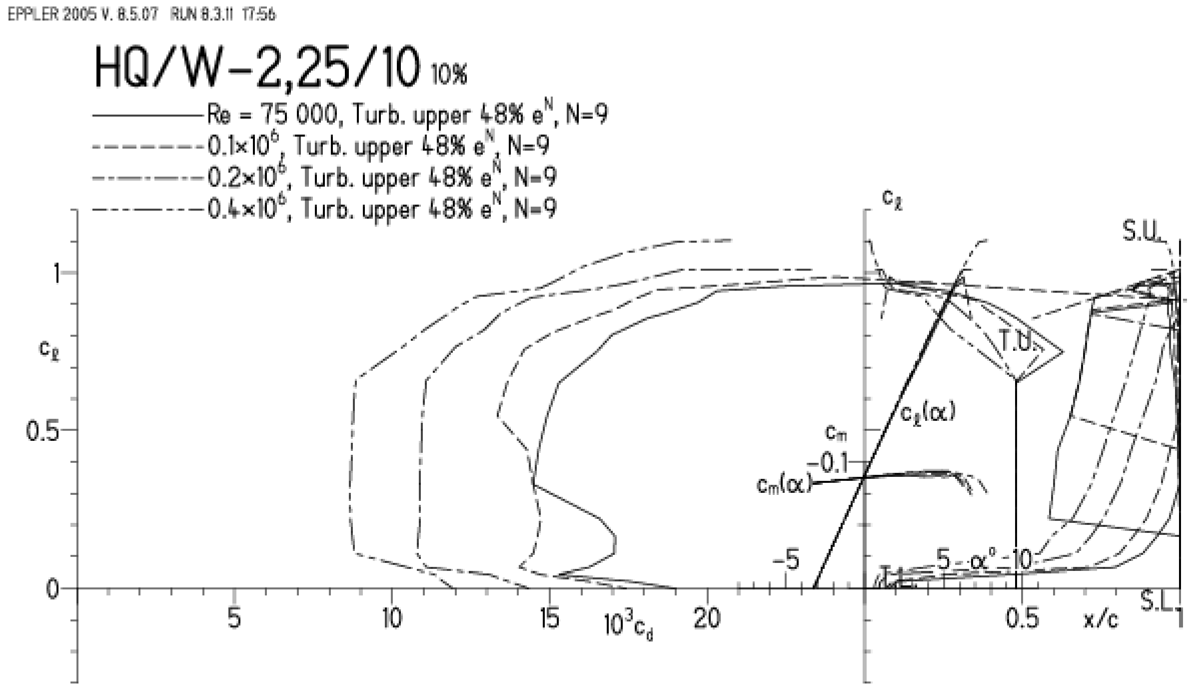


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



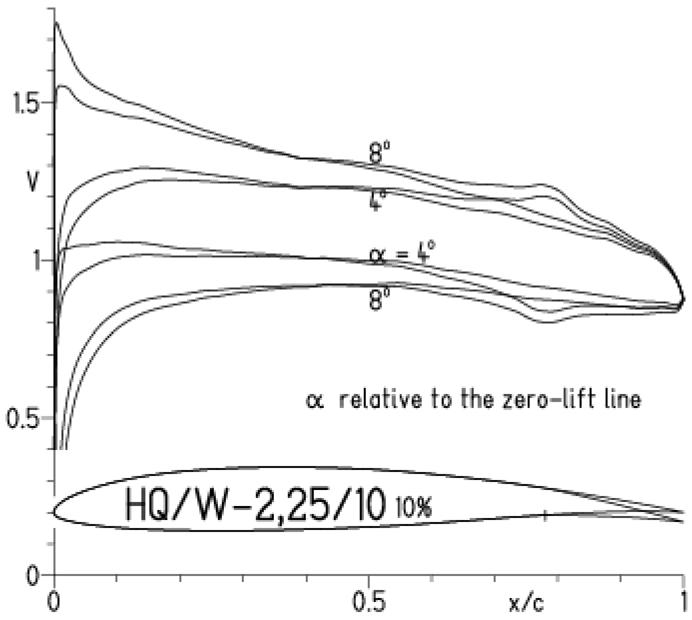
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



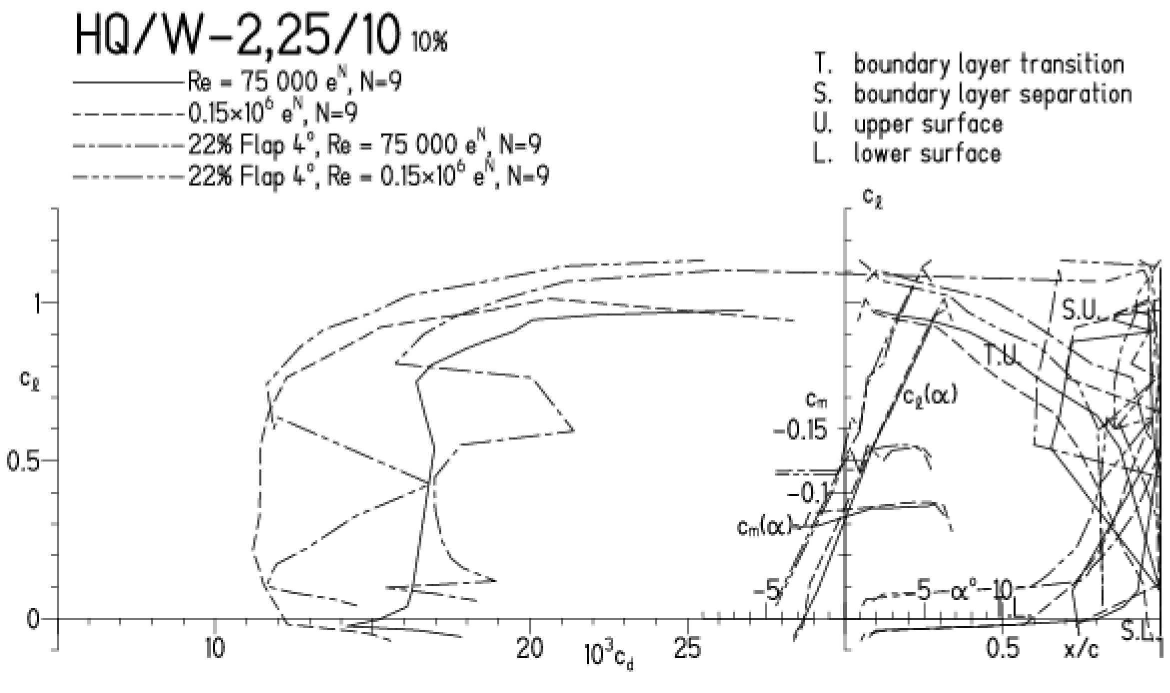


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

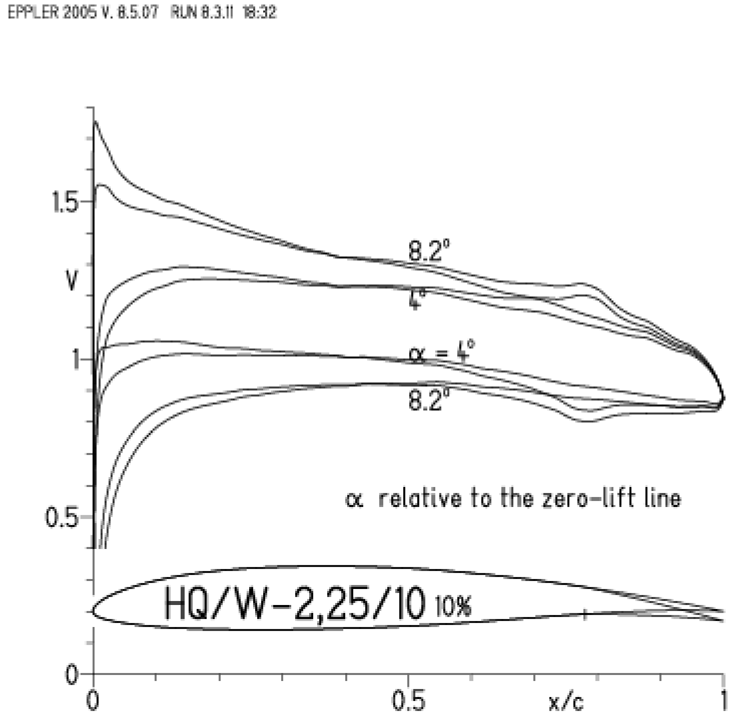
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

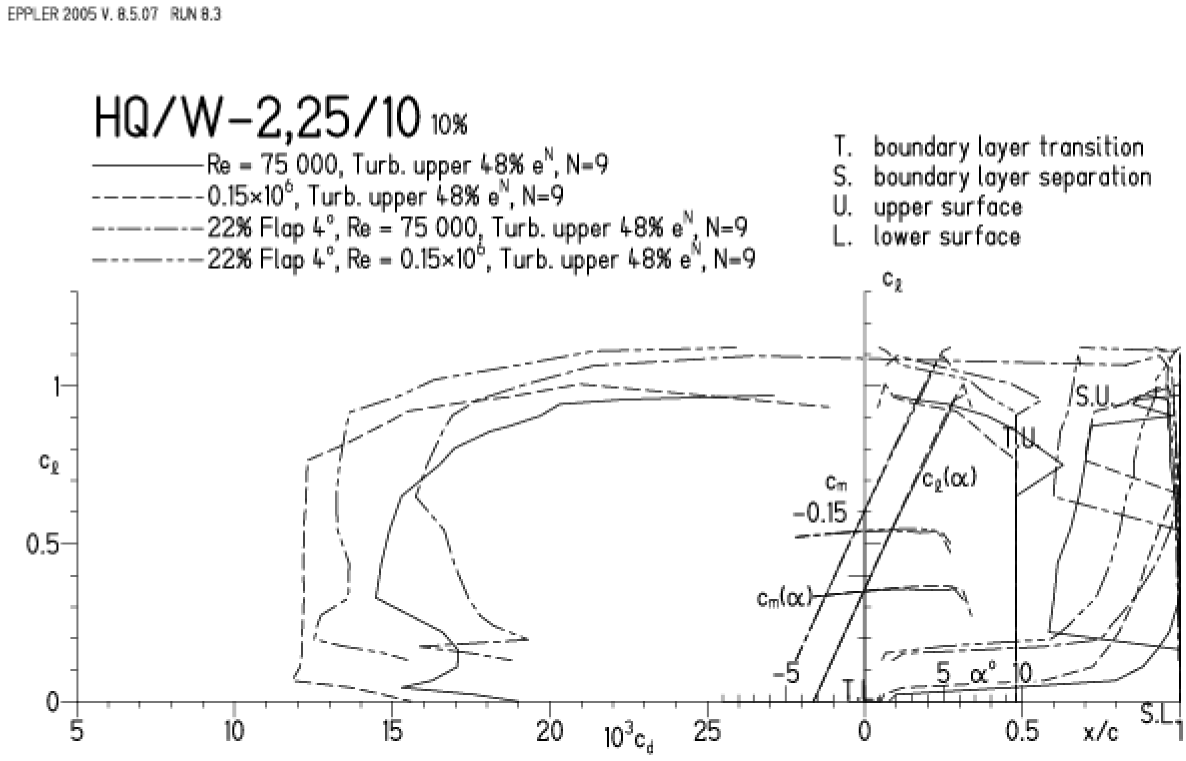


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



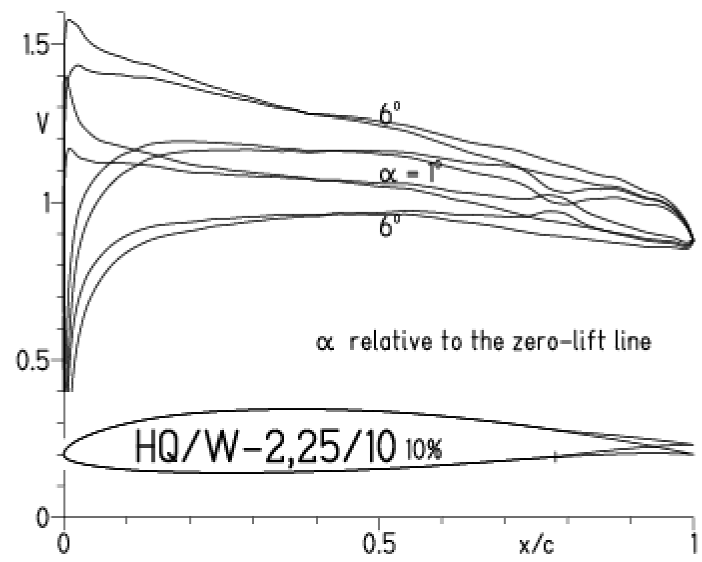
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



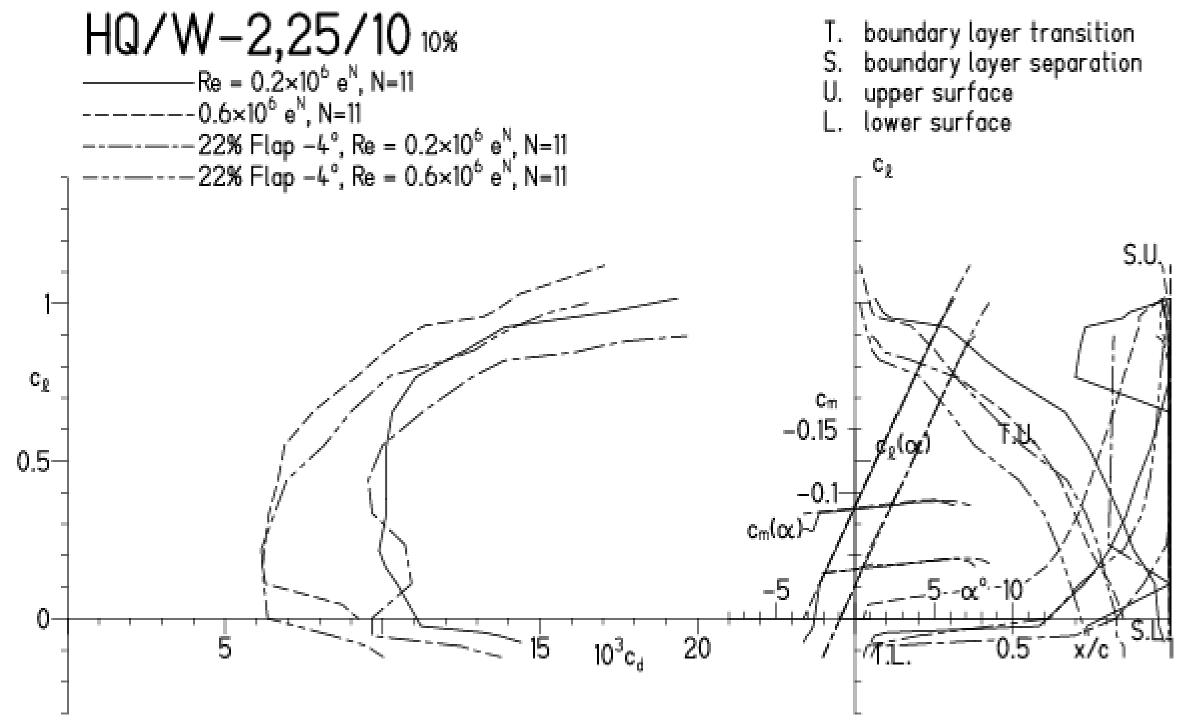


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

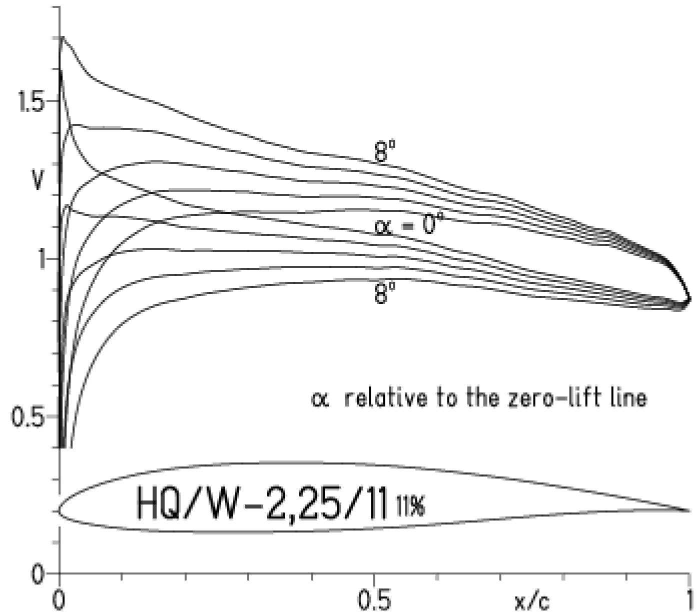


EPPLER 2005 V. 8.5.07 RUN

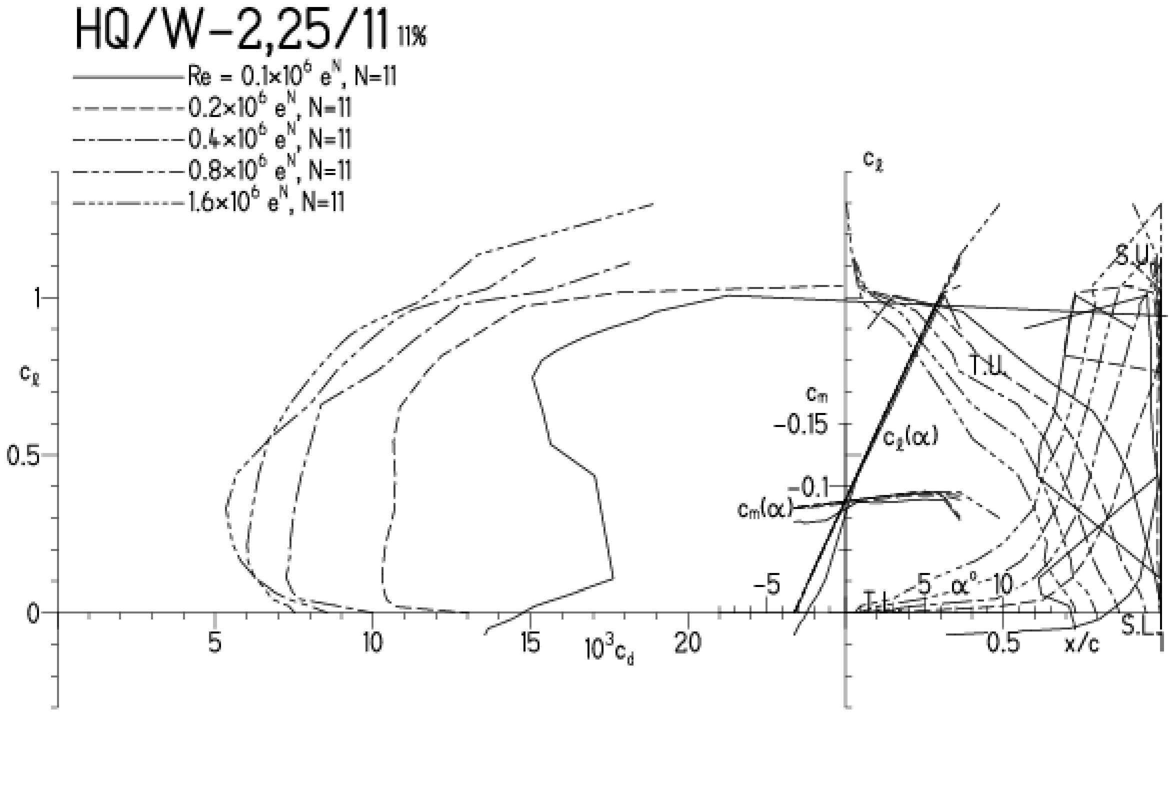


<u>HQ/W-2,25/11</u>, N=11

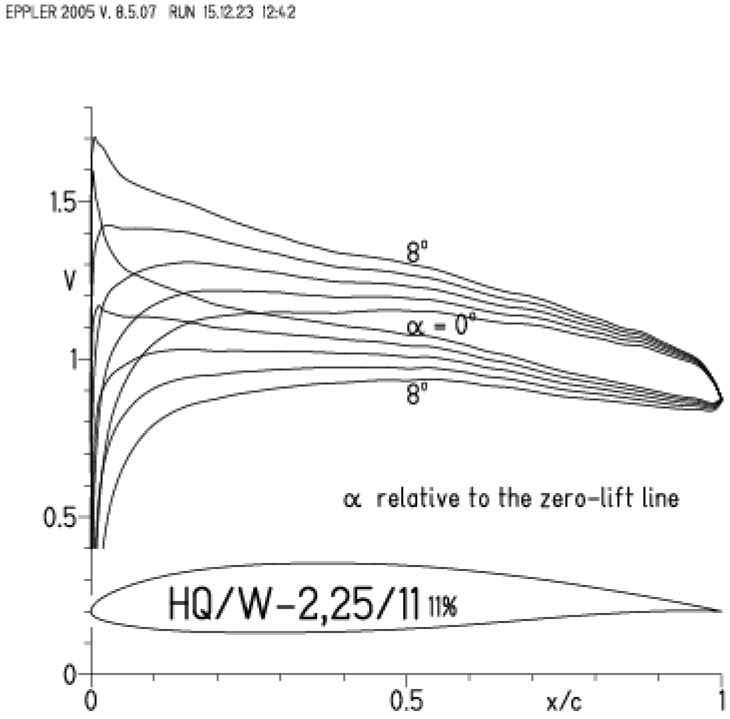
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

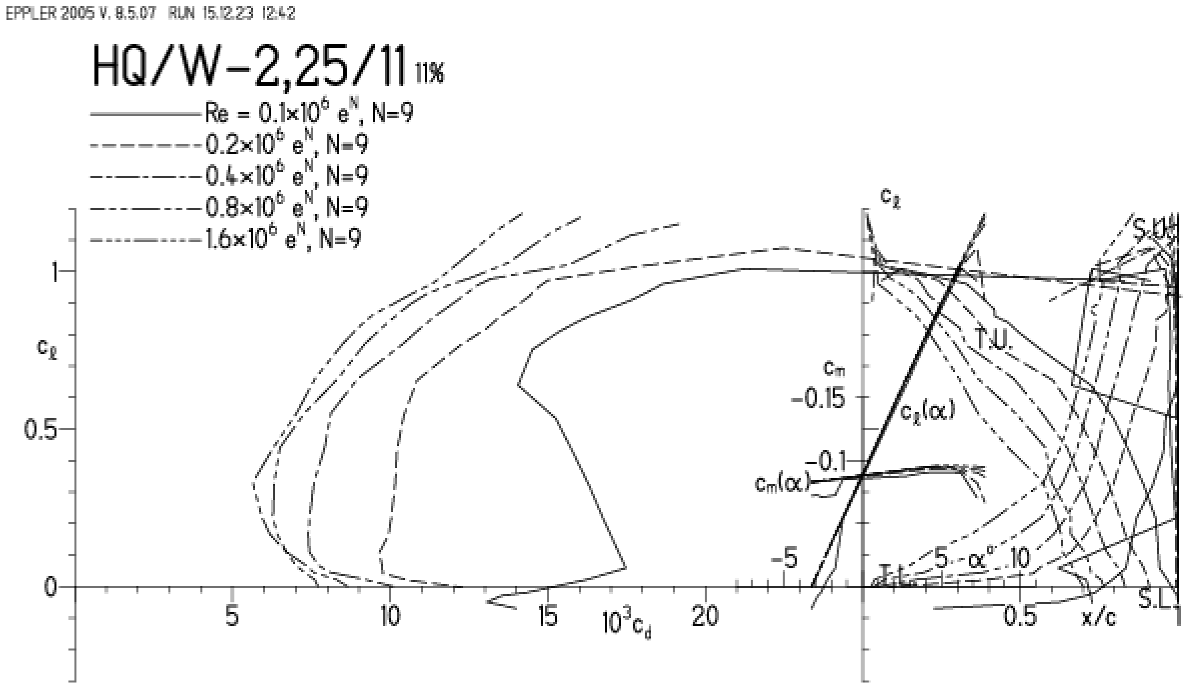


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

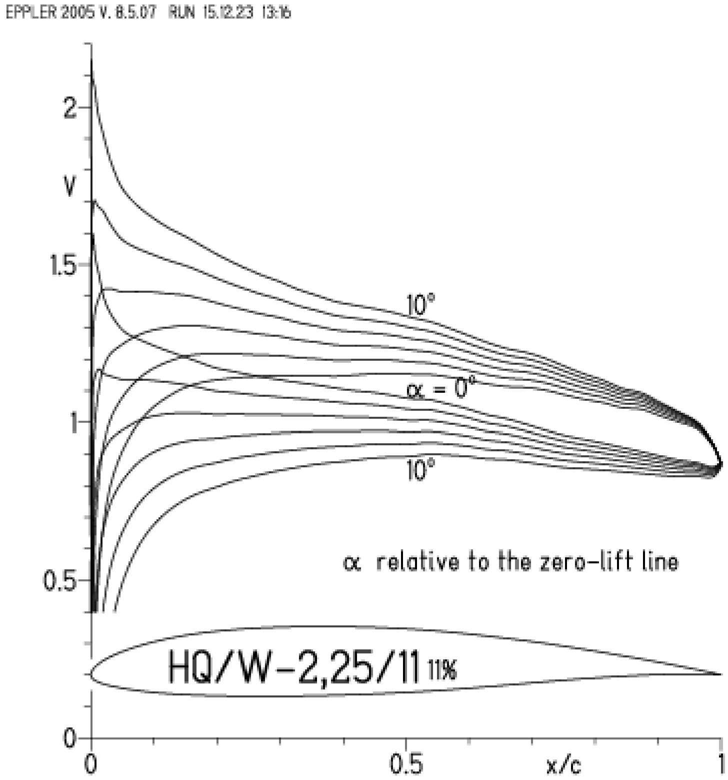


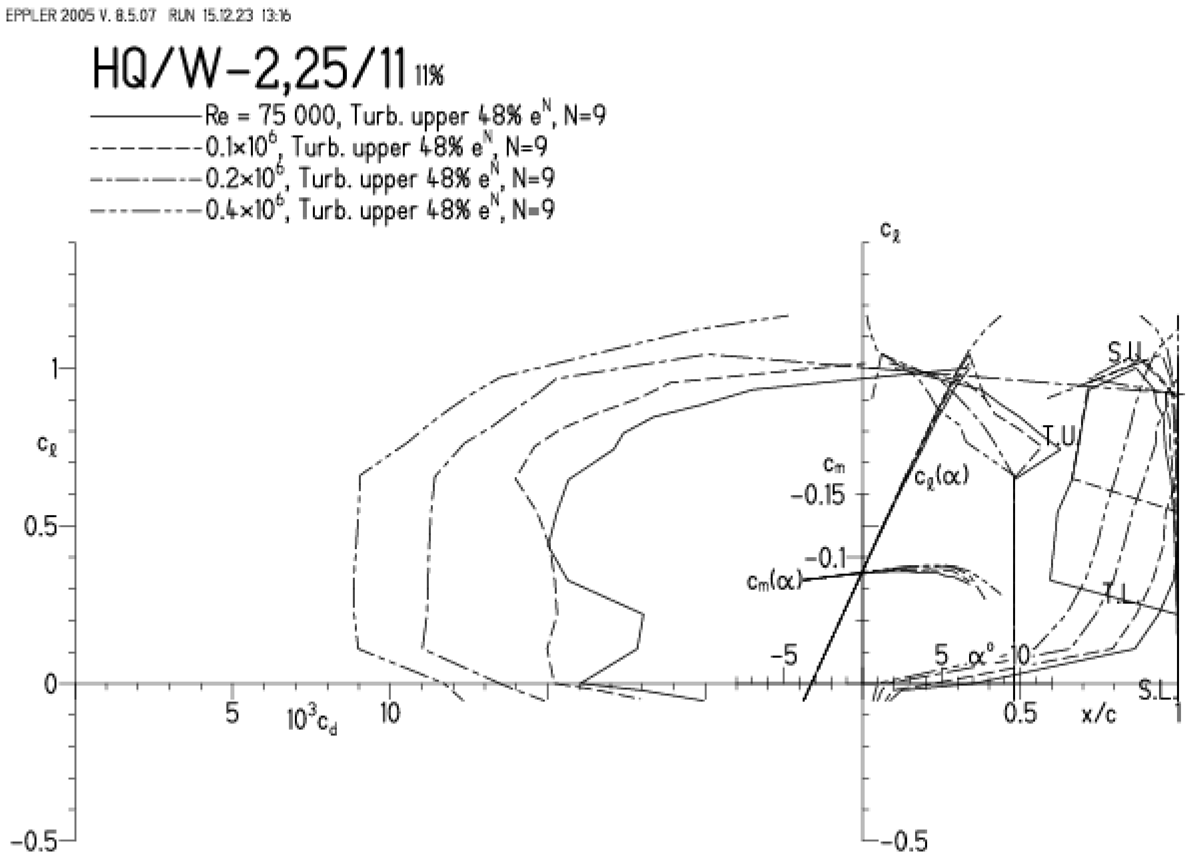
<u>HQQ/W-2,25/11</u>, N=9





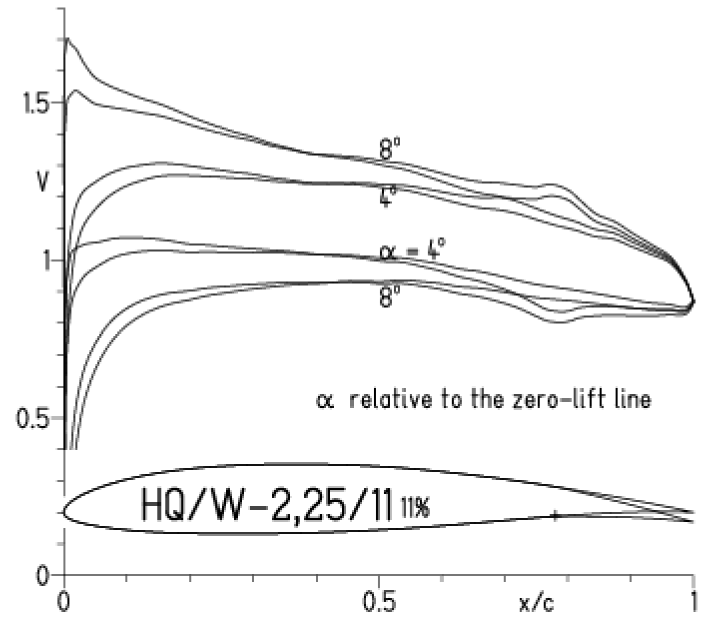
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



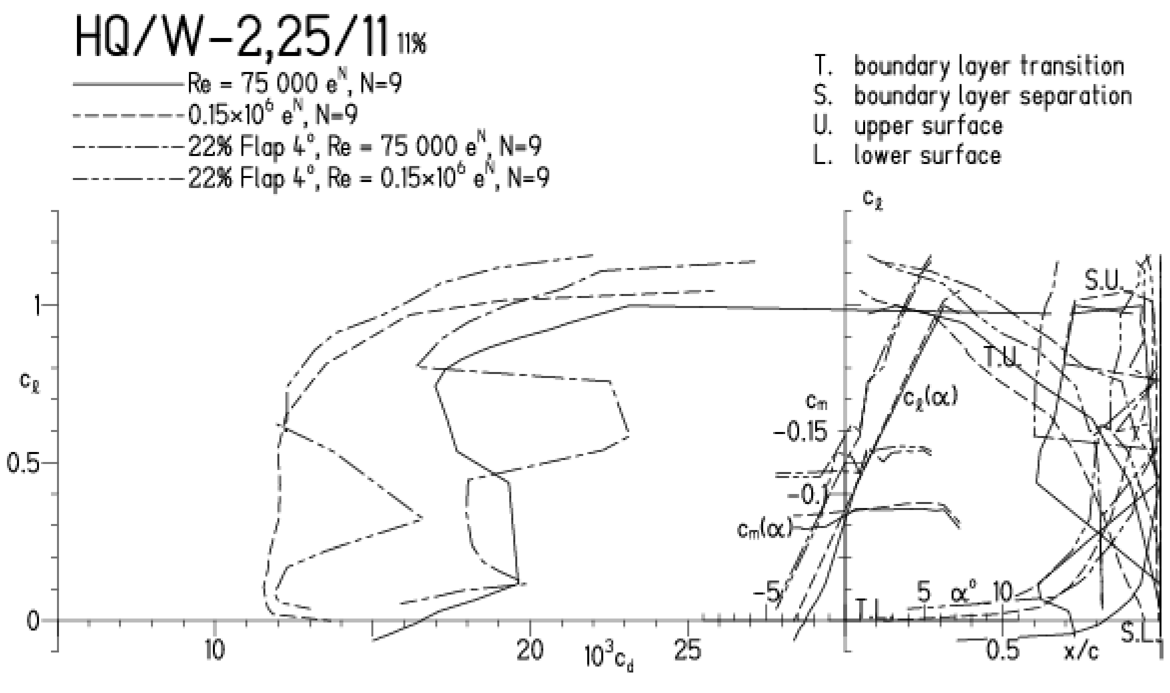


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

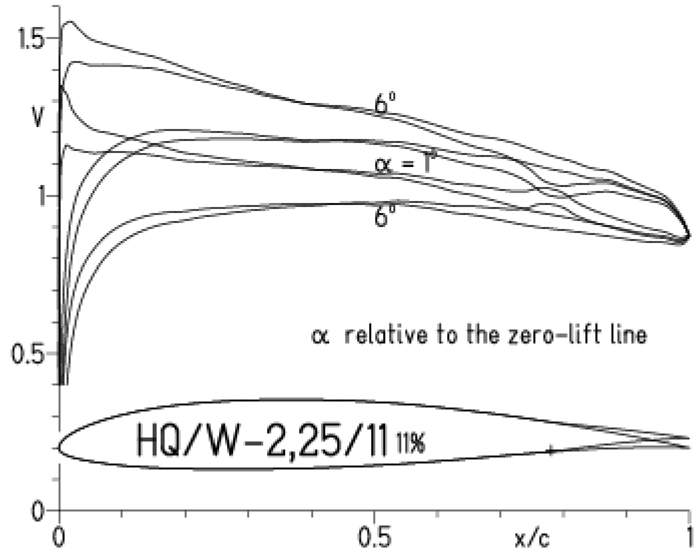


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

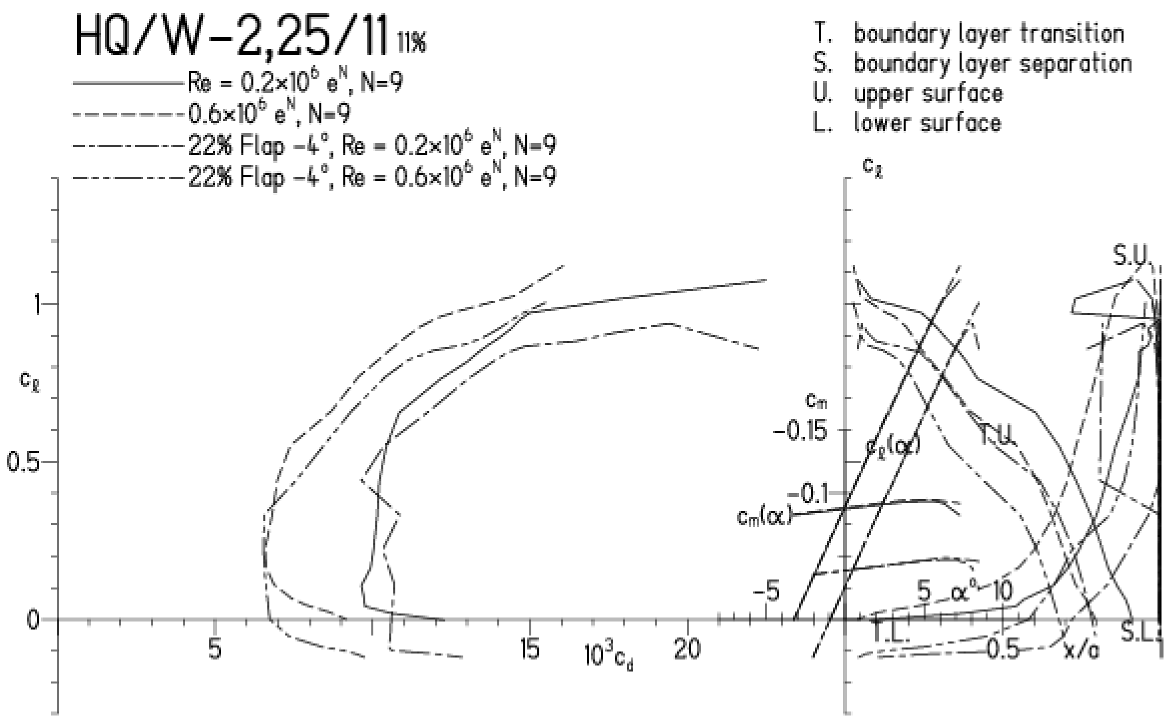


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

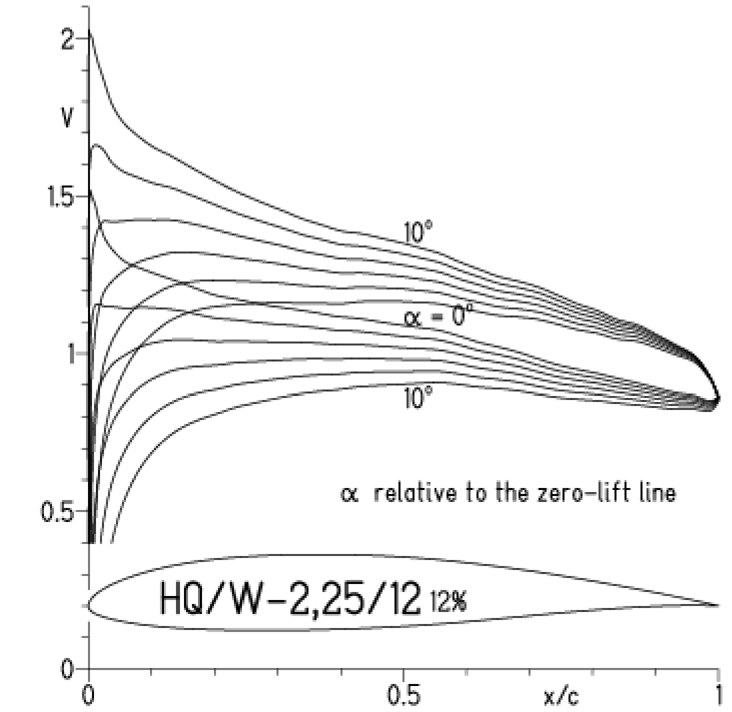


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

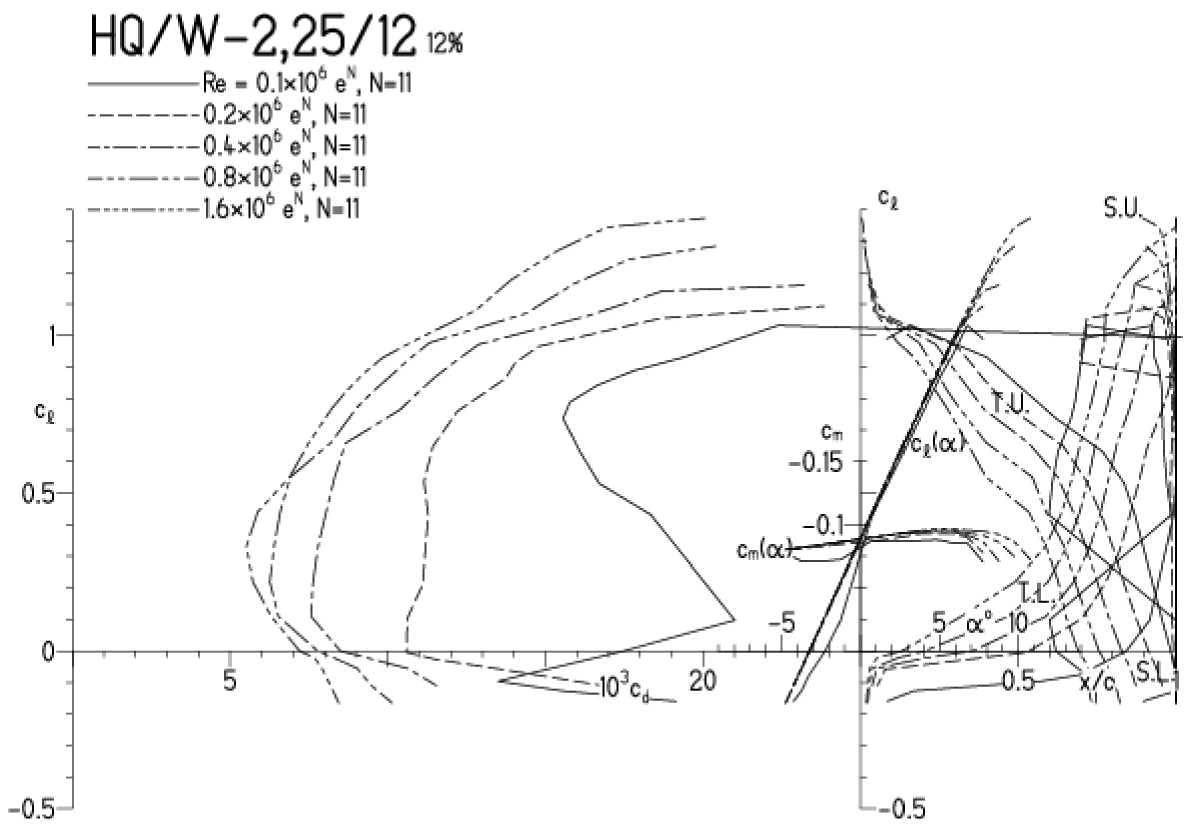


<u>HQ/W-2,25/12</u>, N=11

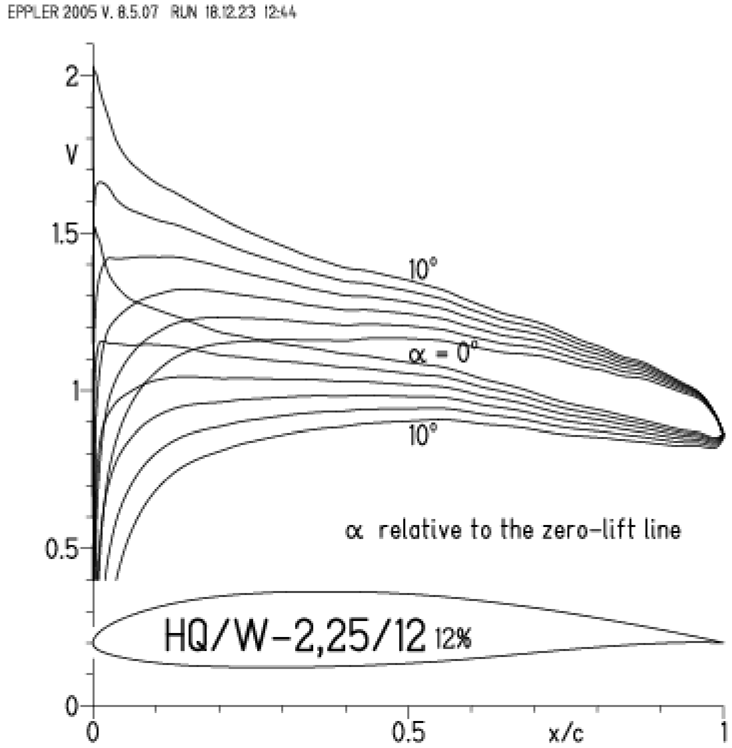
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

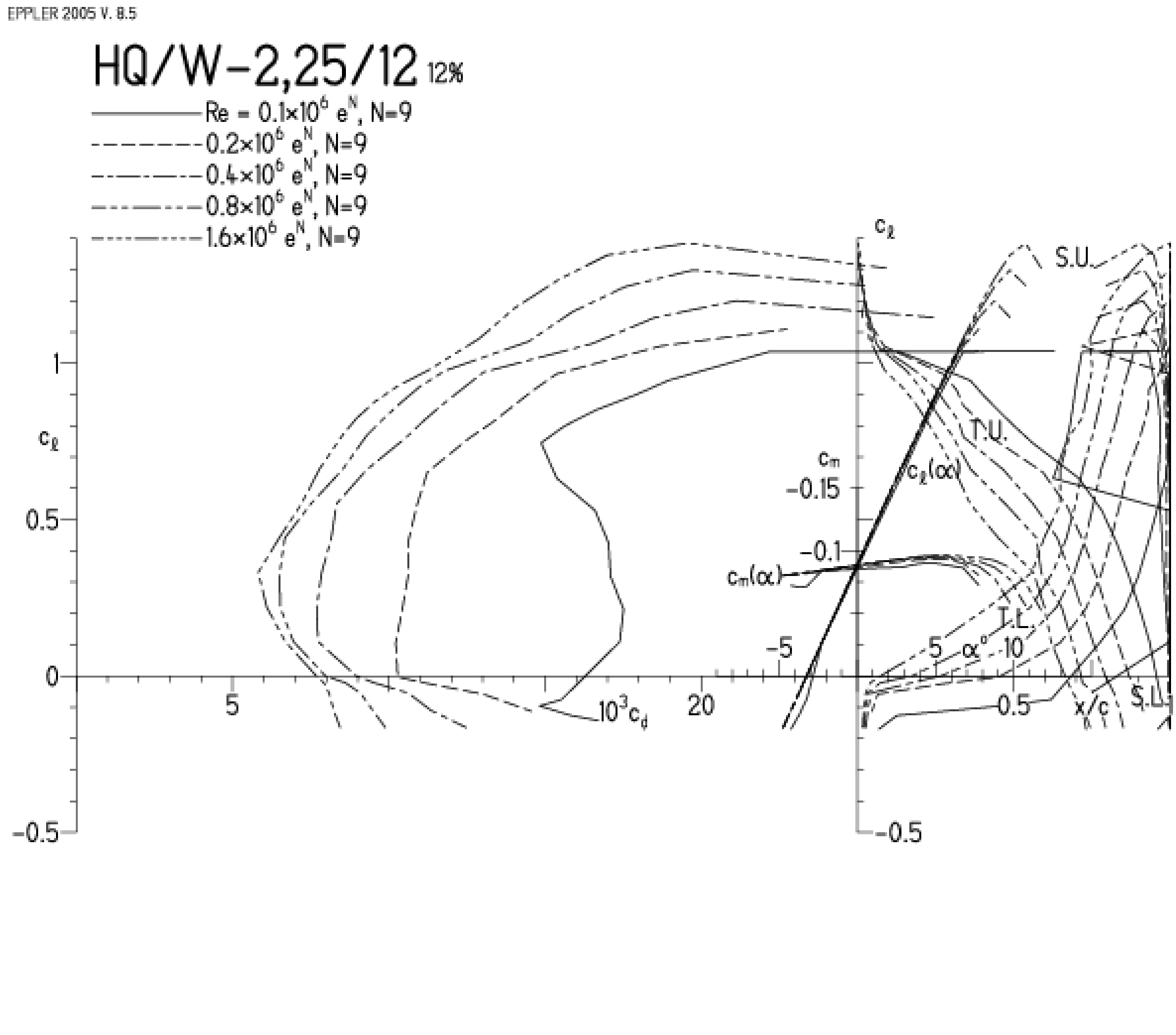


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

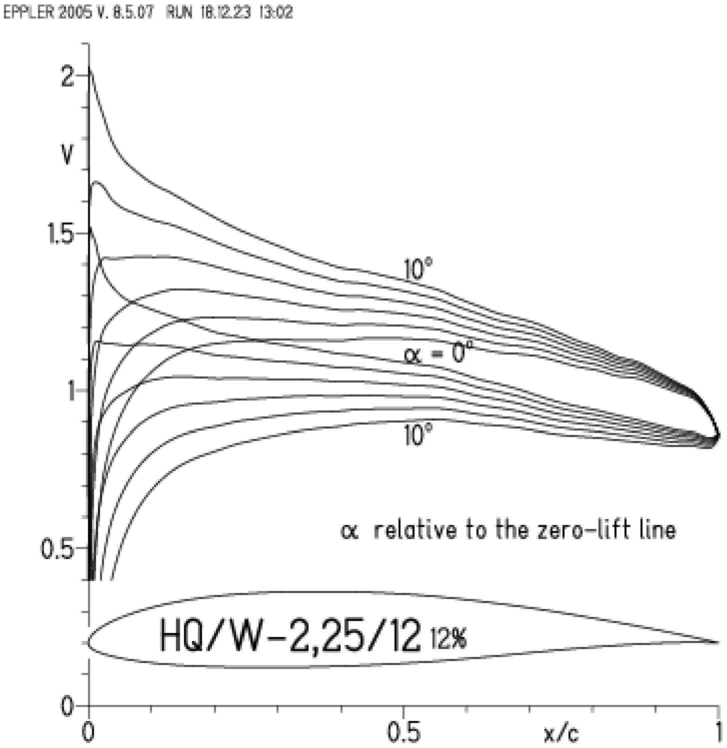


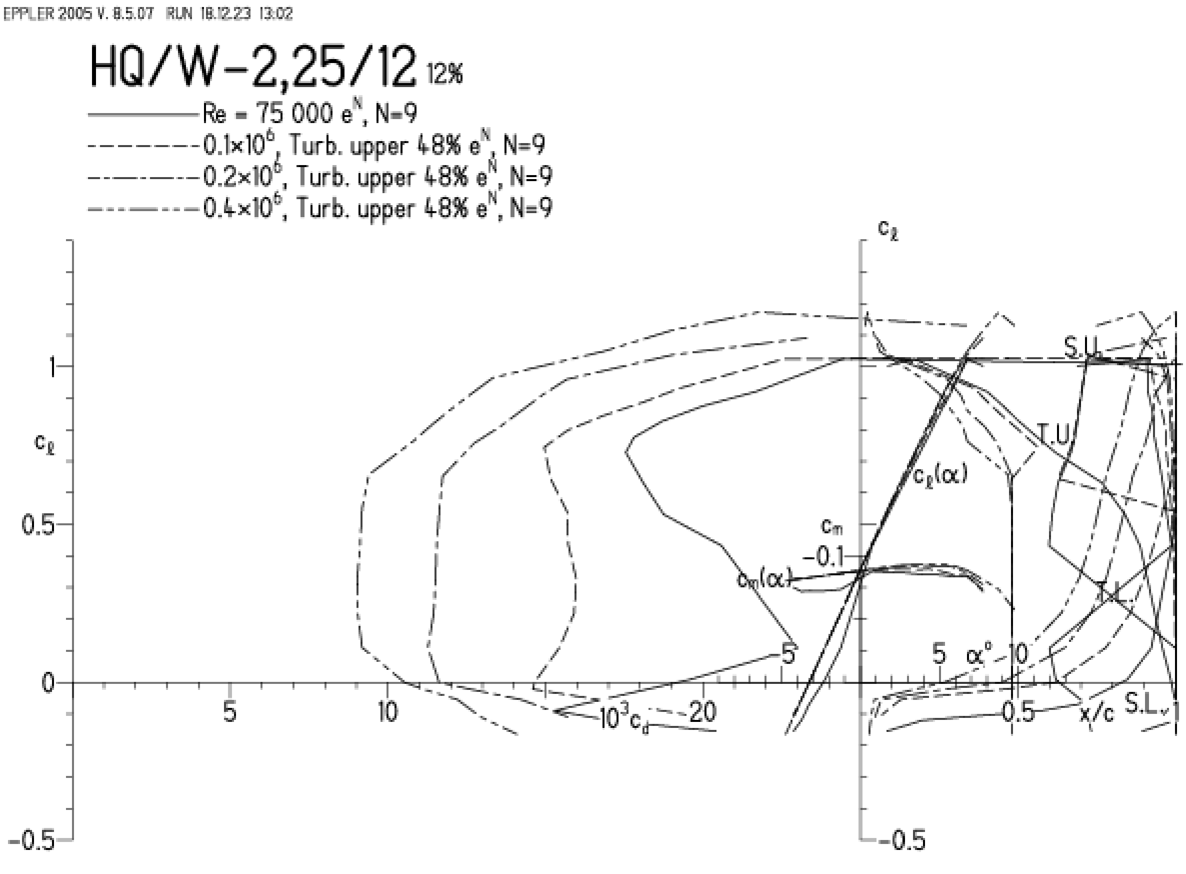
<u>HQ/W-2,25/12</u>, N=9





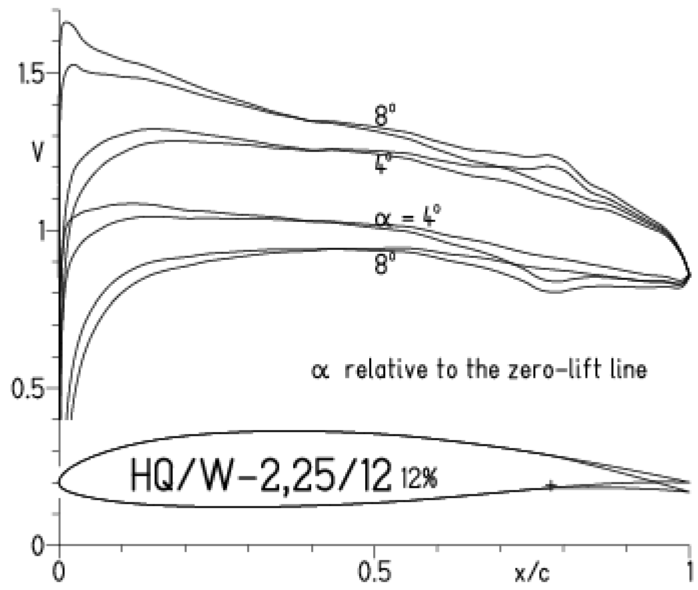
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



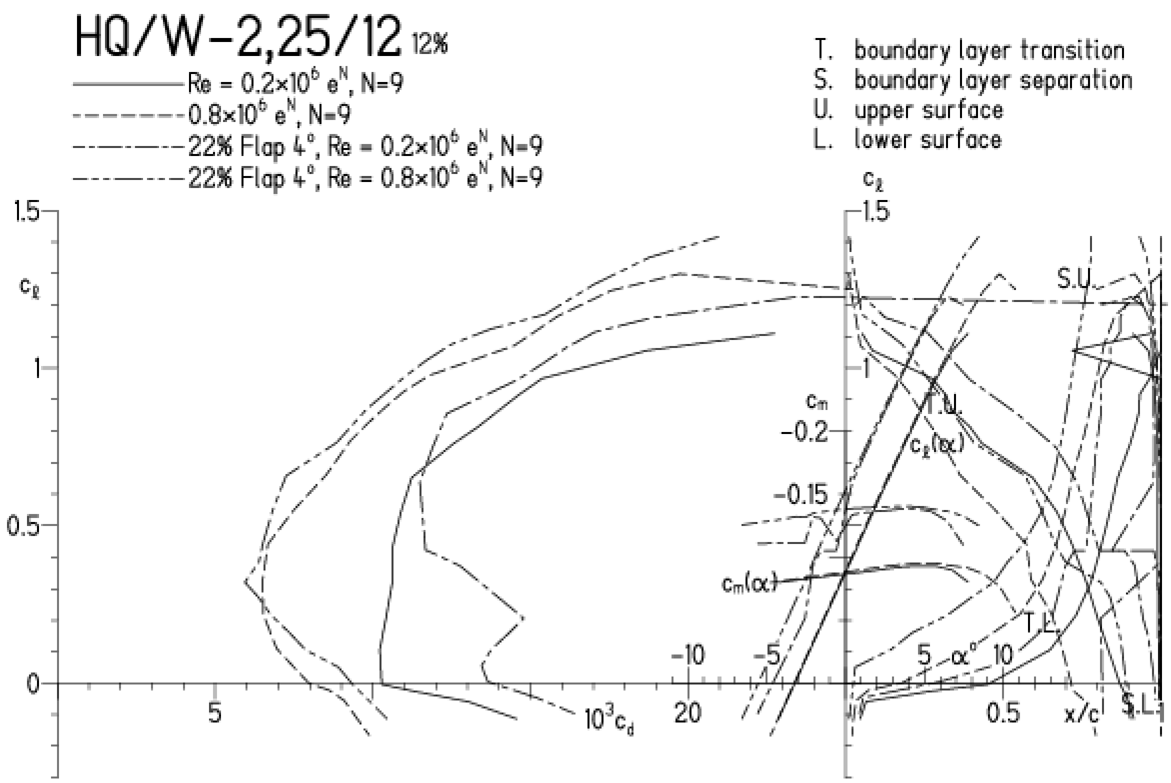


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

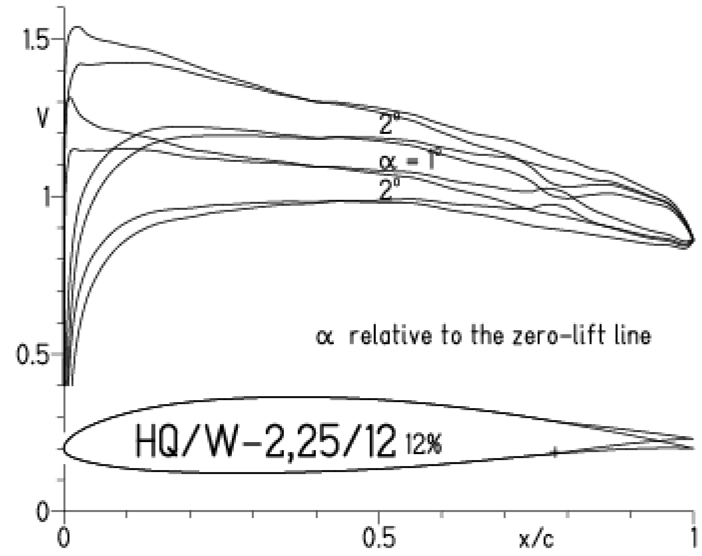


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

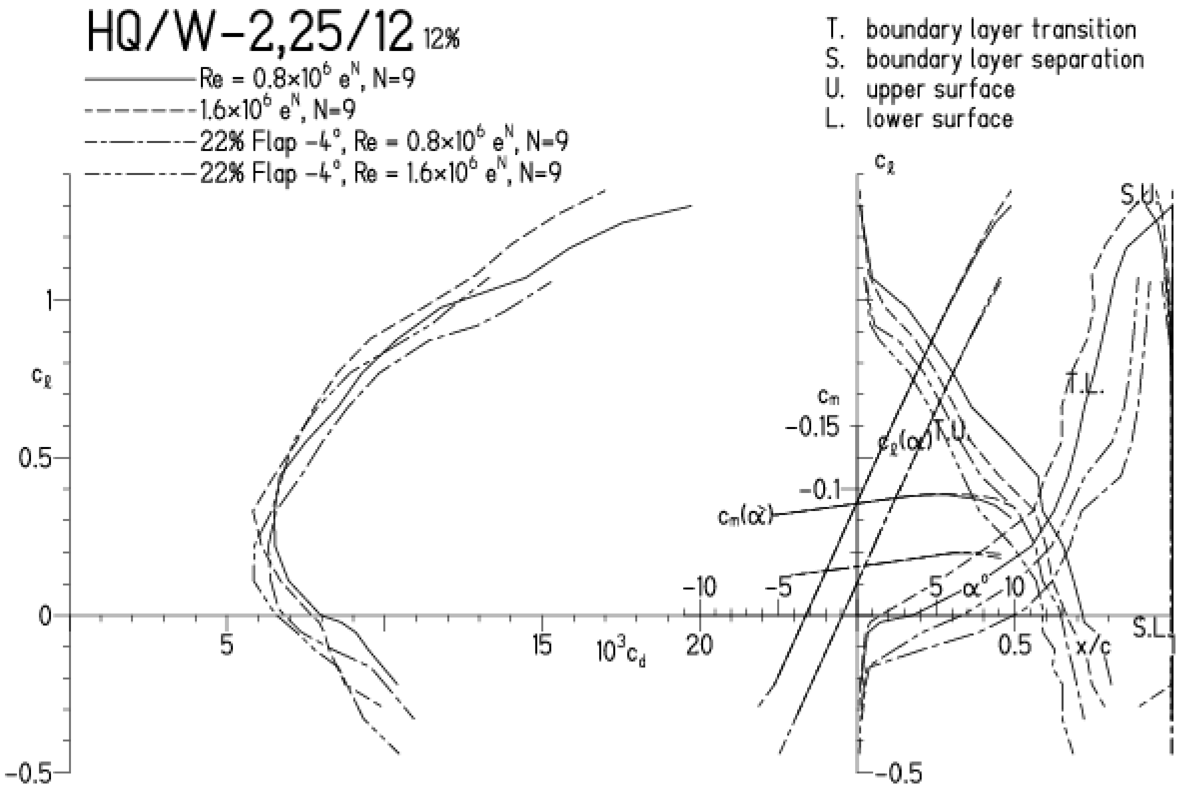


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

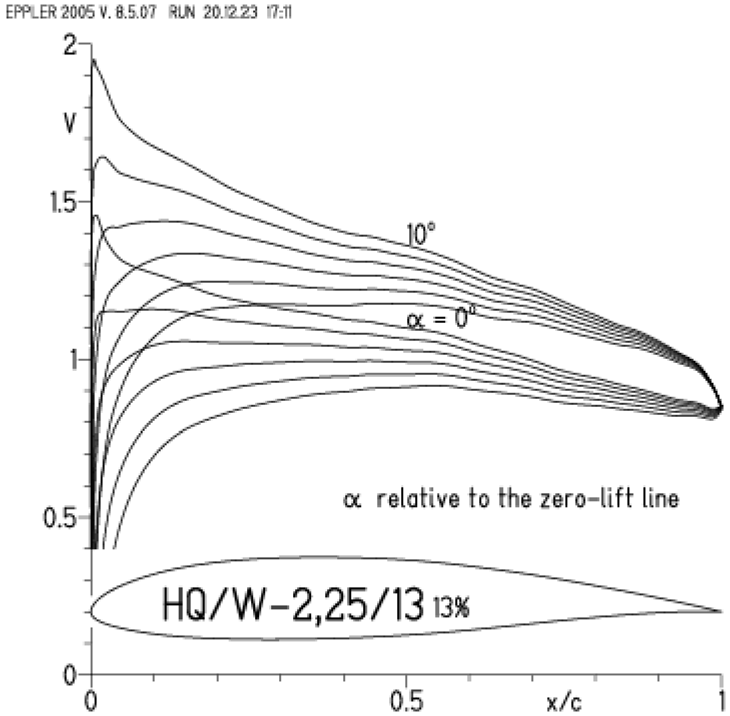
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

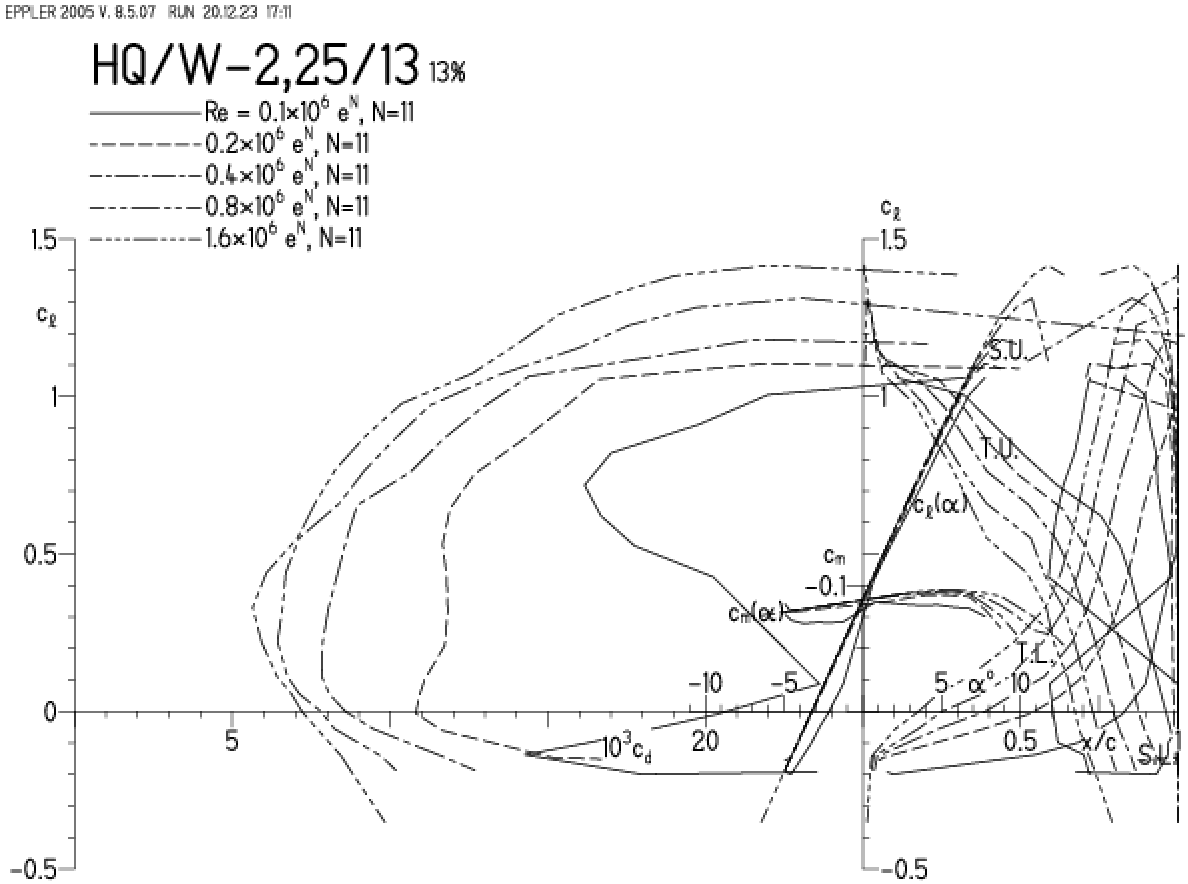


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

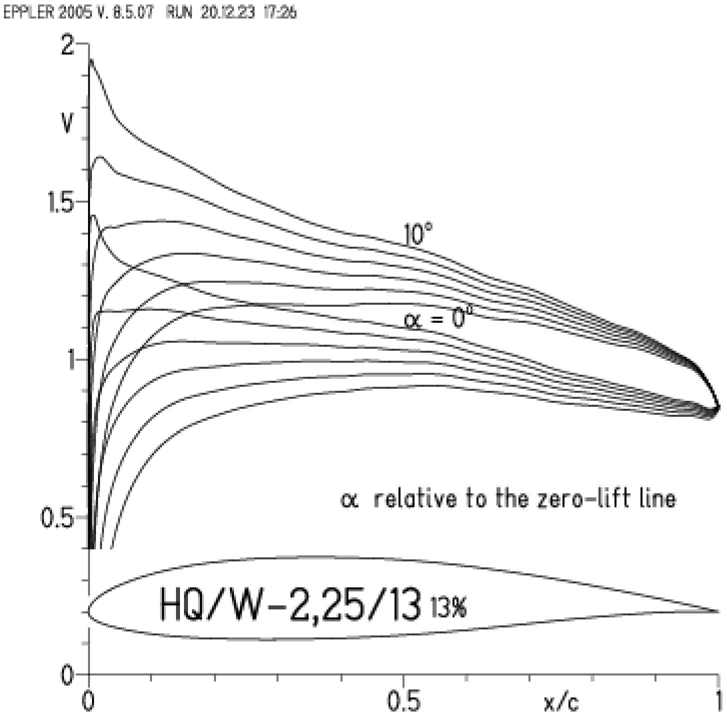


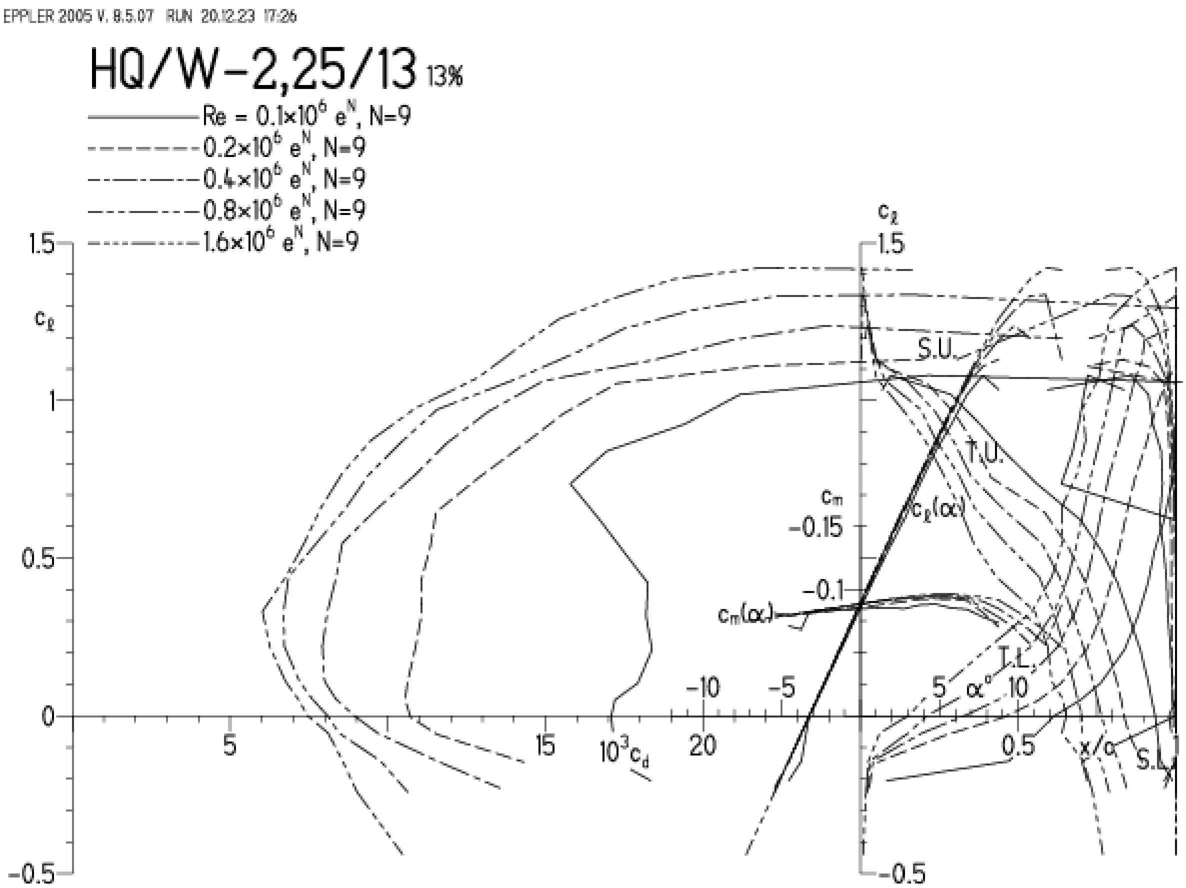
<u>HQ/W-2,25/13</u>, N=11



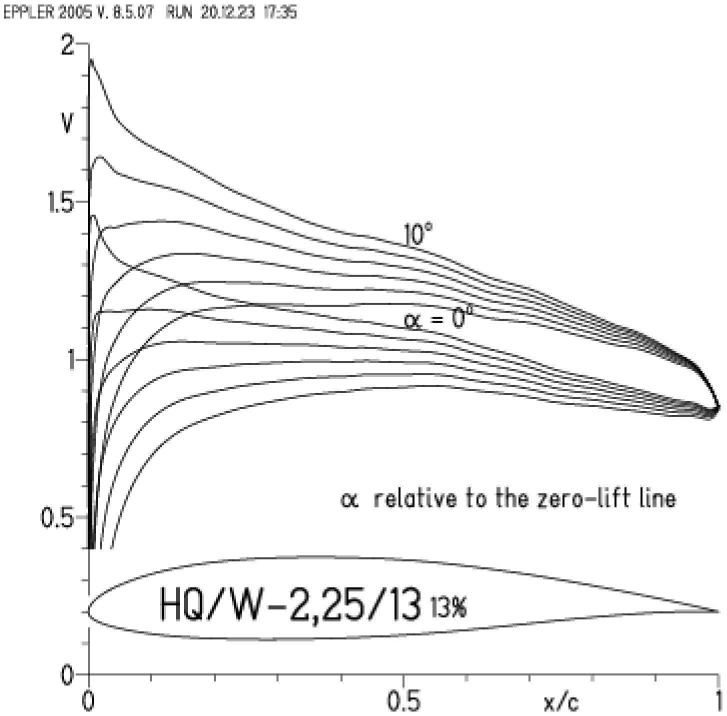


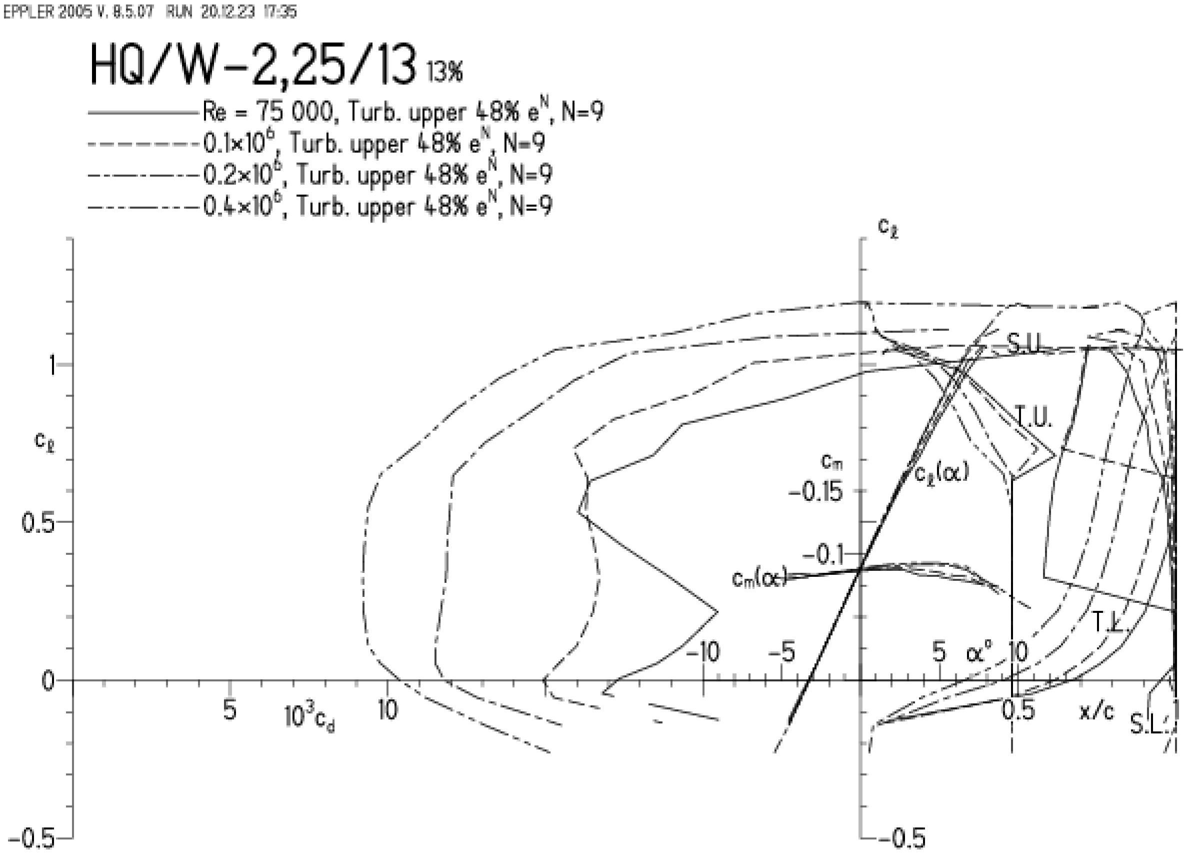
<u>HQ/W-2,25/13</u>, N=9



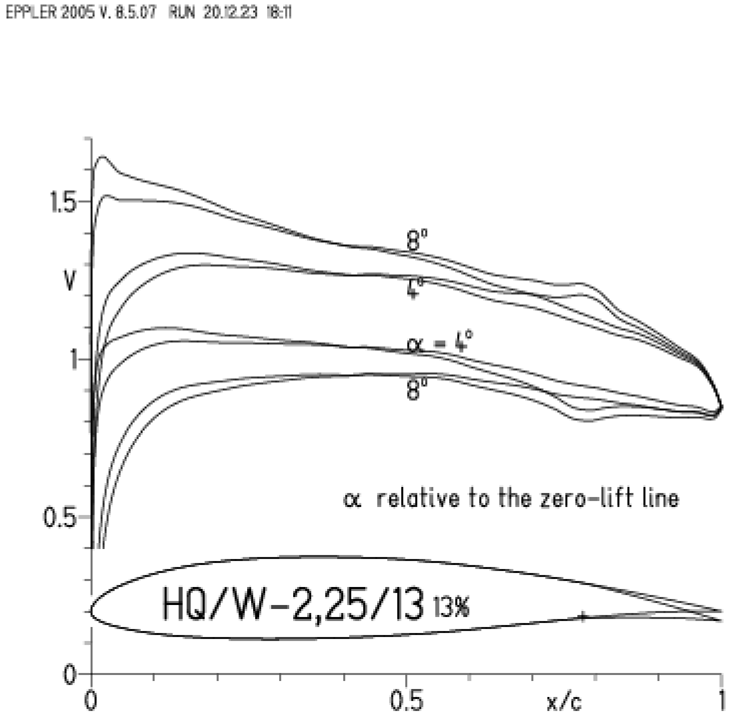


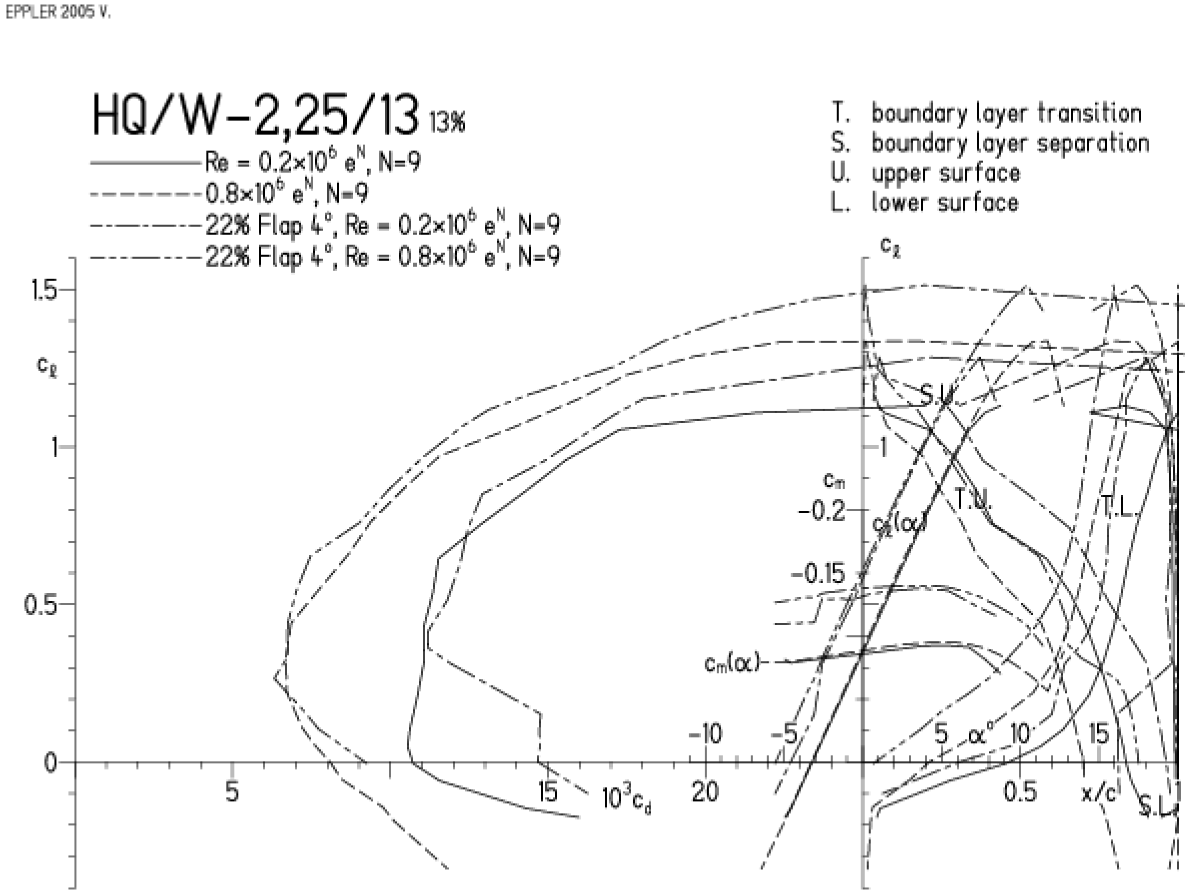
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





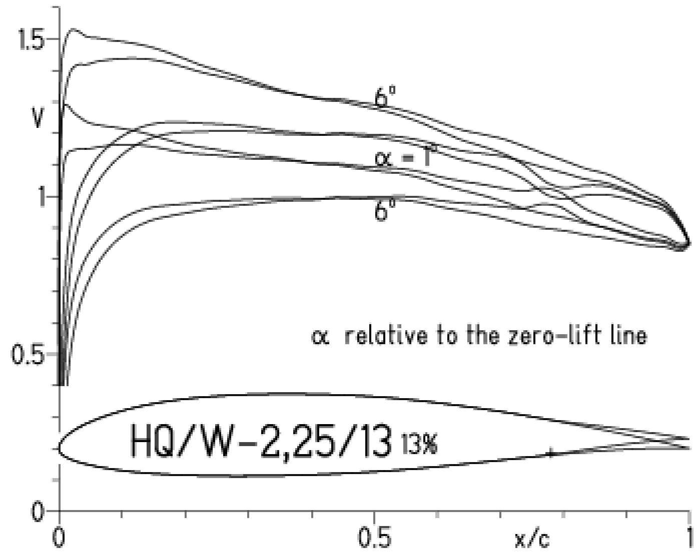
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



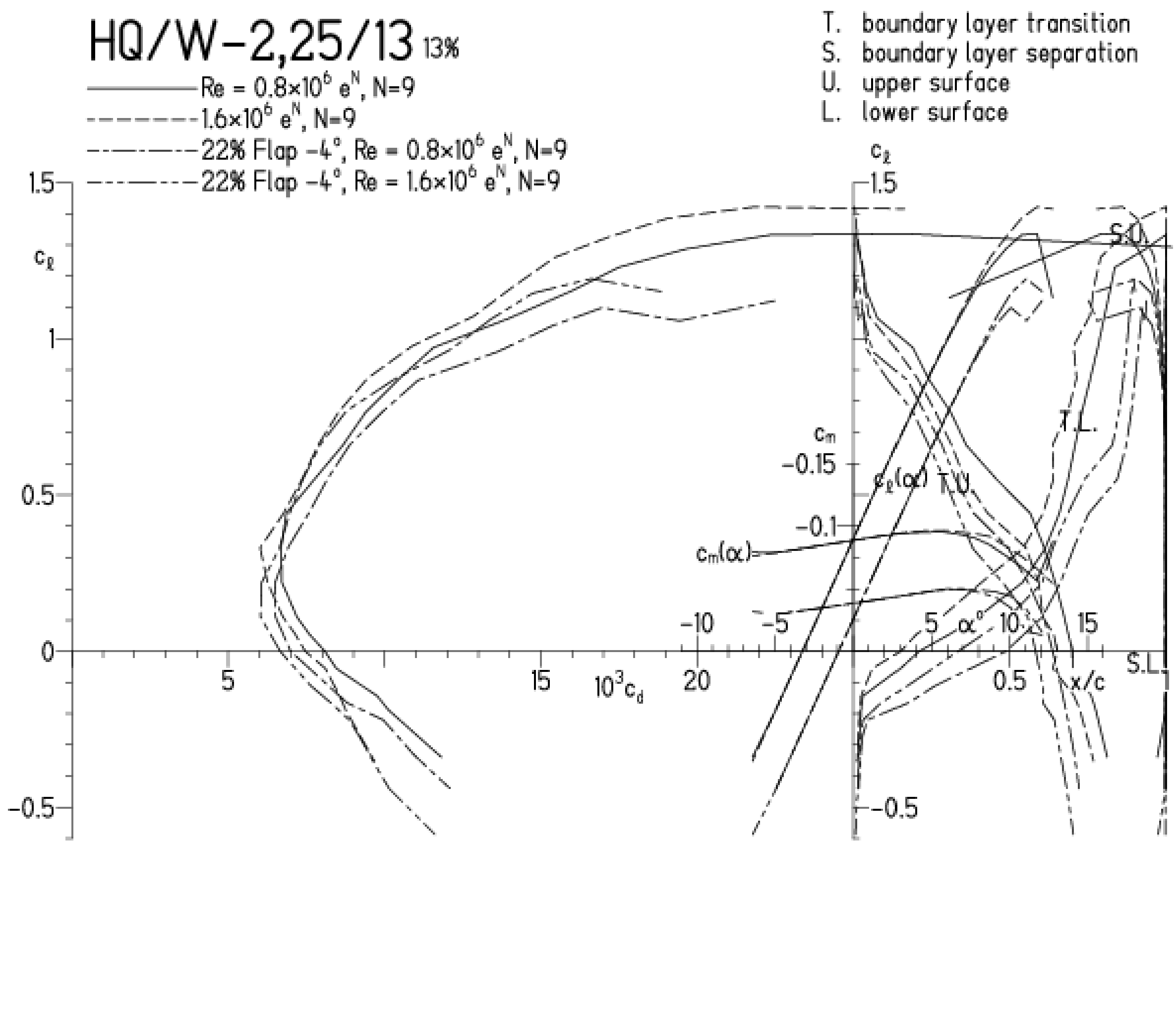


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

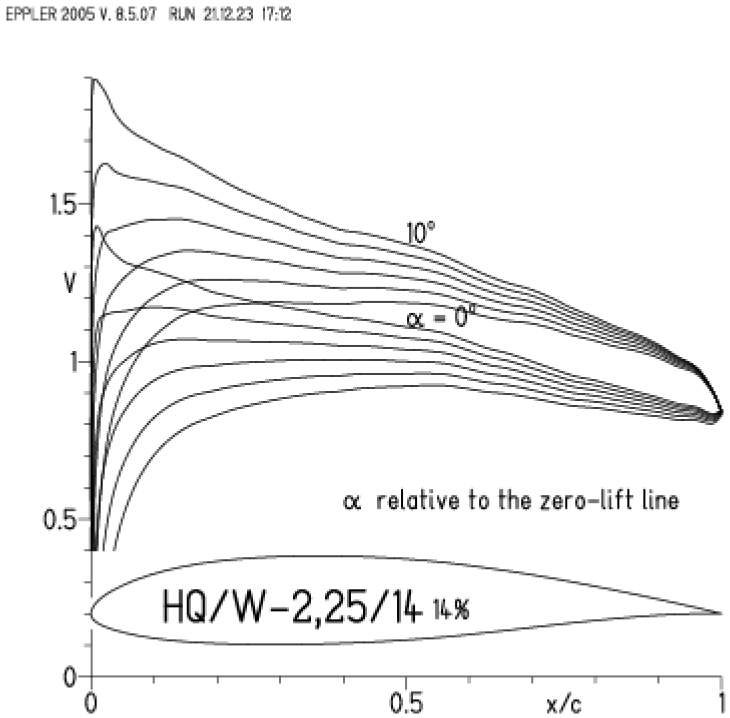
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

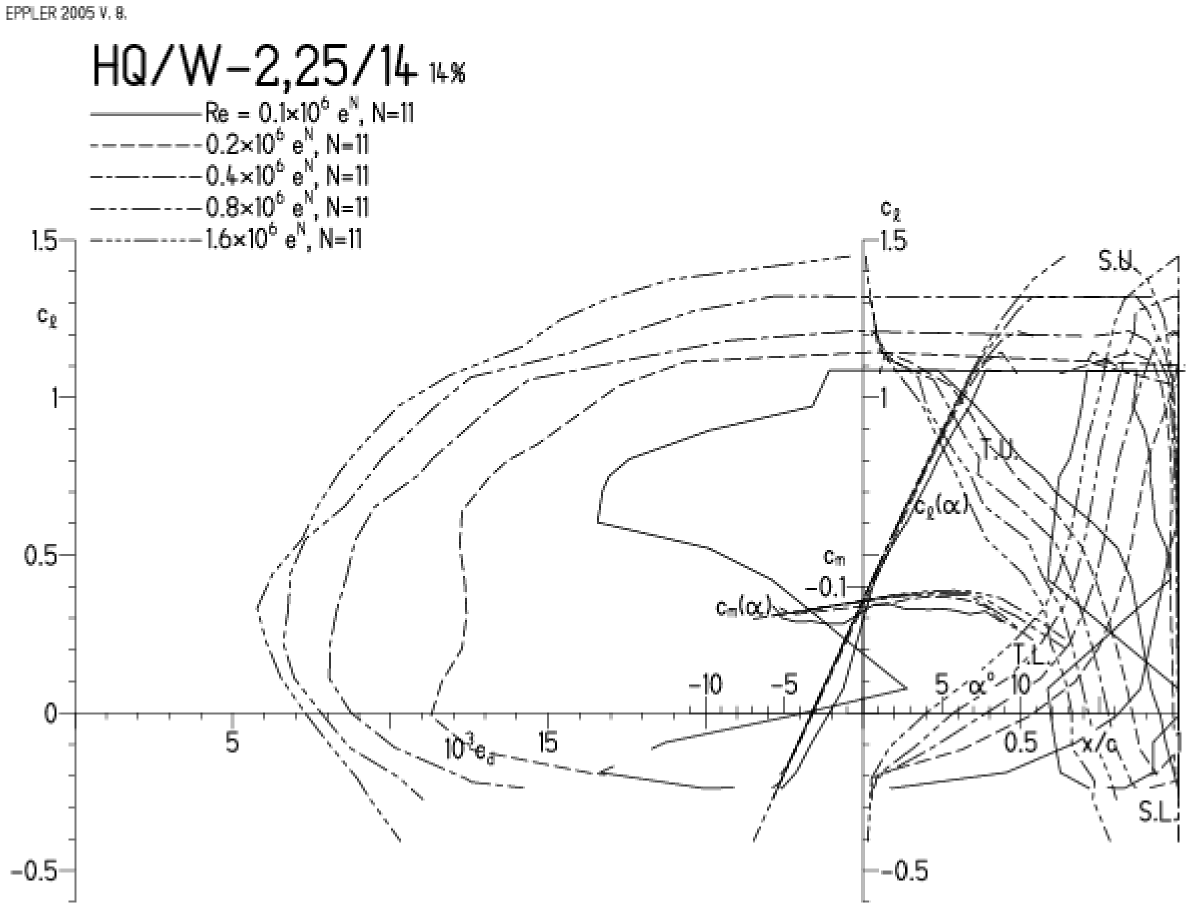


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

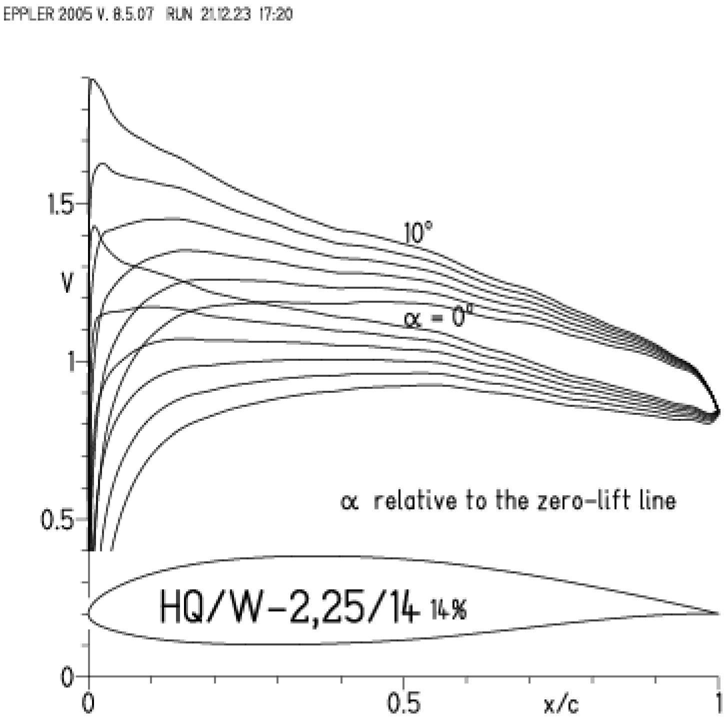


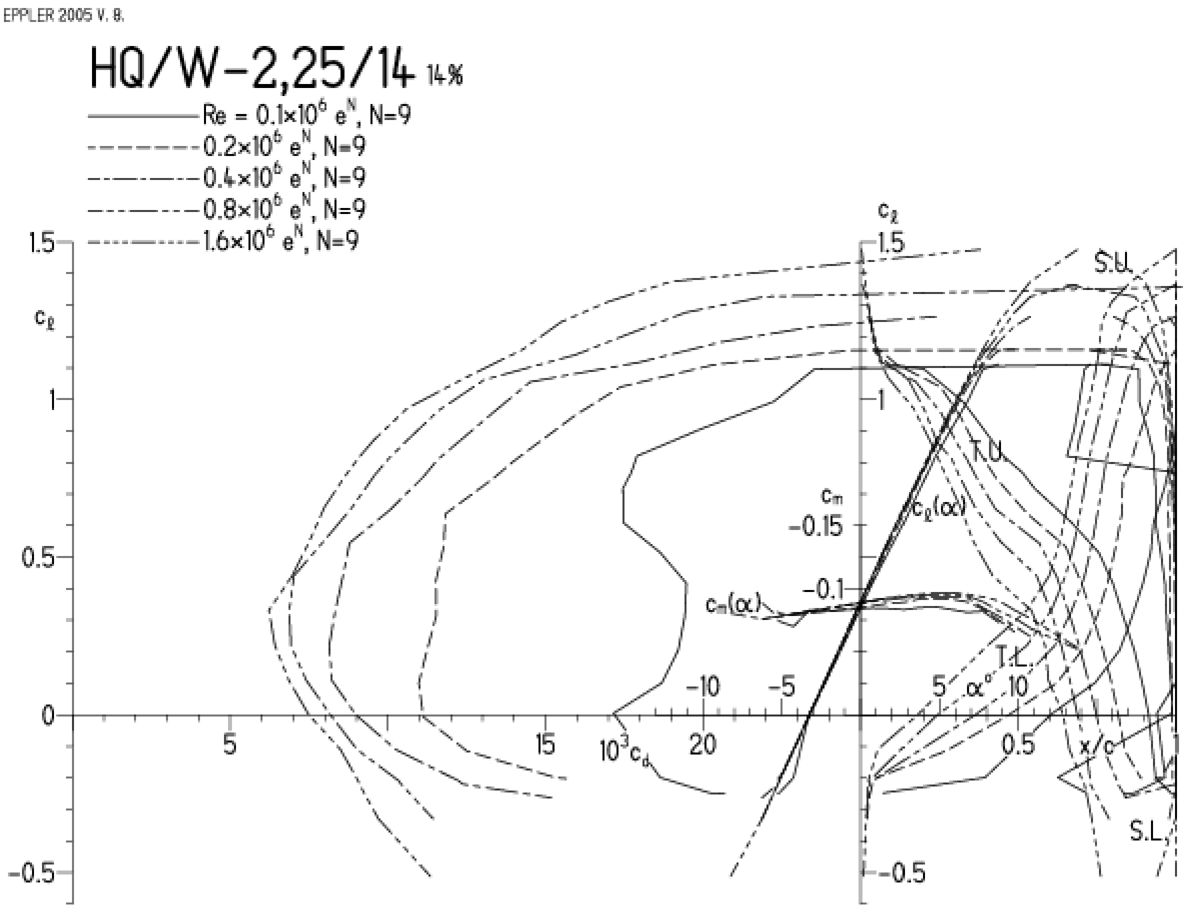
HQ/W-2,25/14, N=11



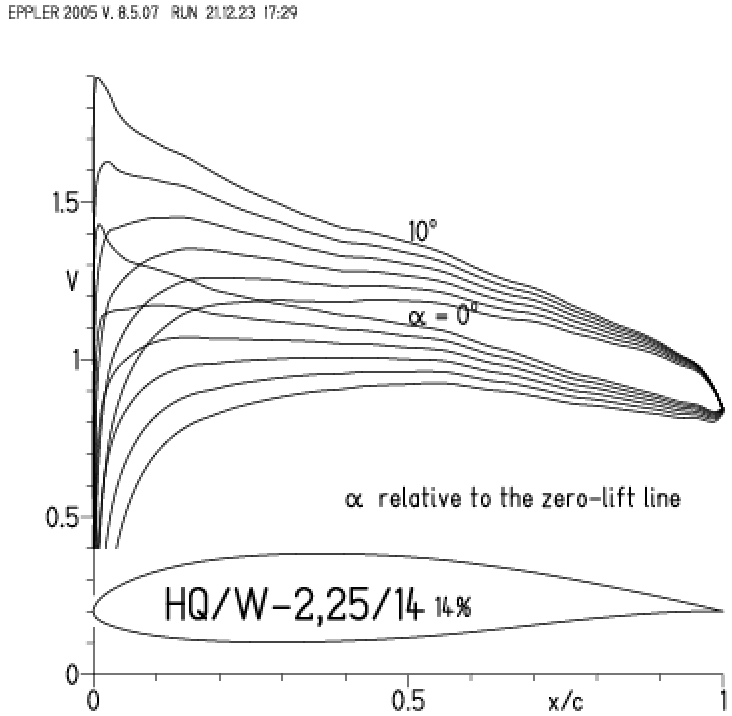


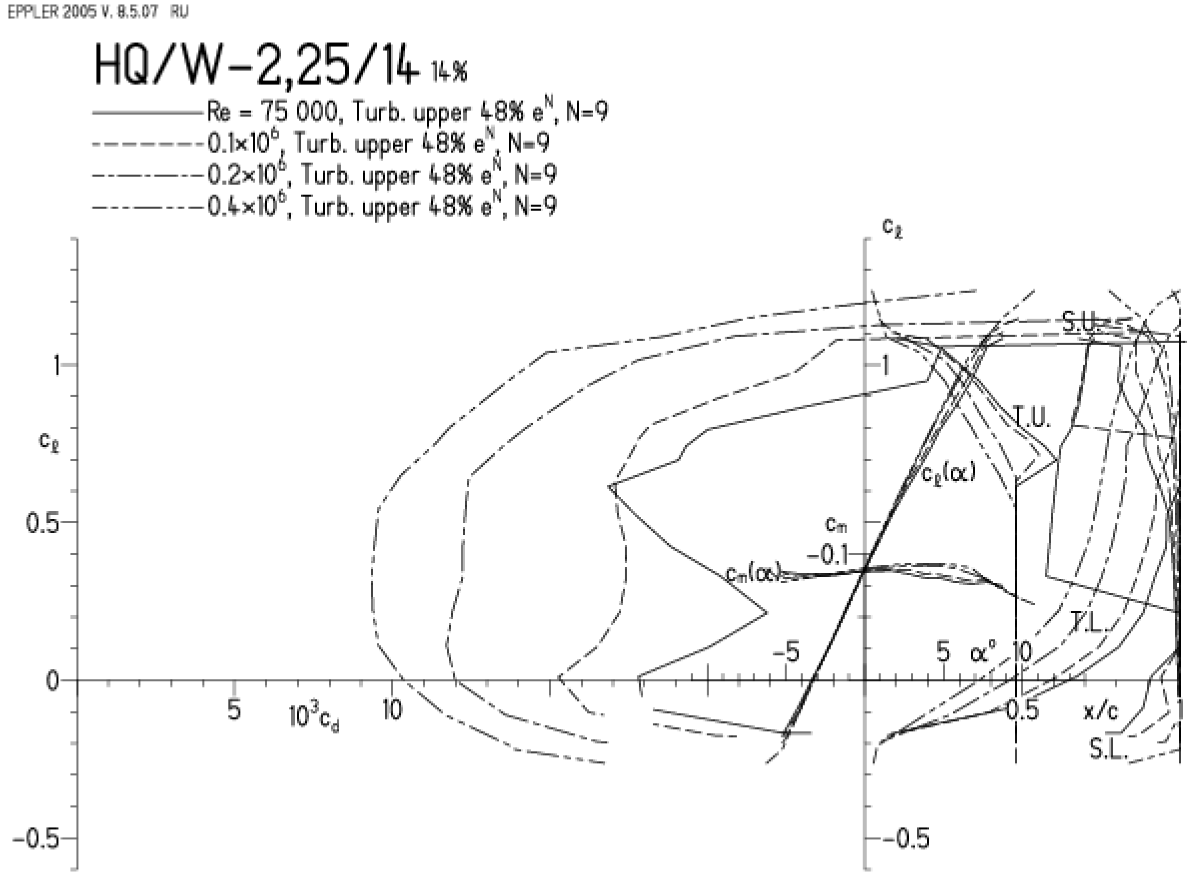
<u>HQ/W-2,25/14</u>, N=9





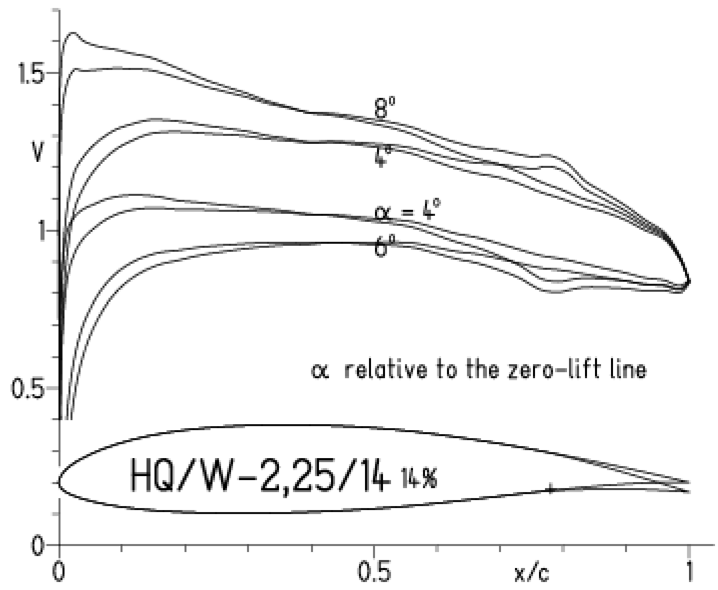
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



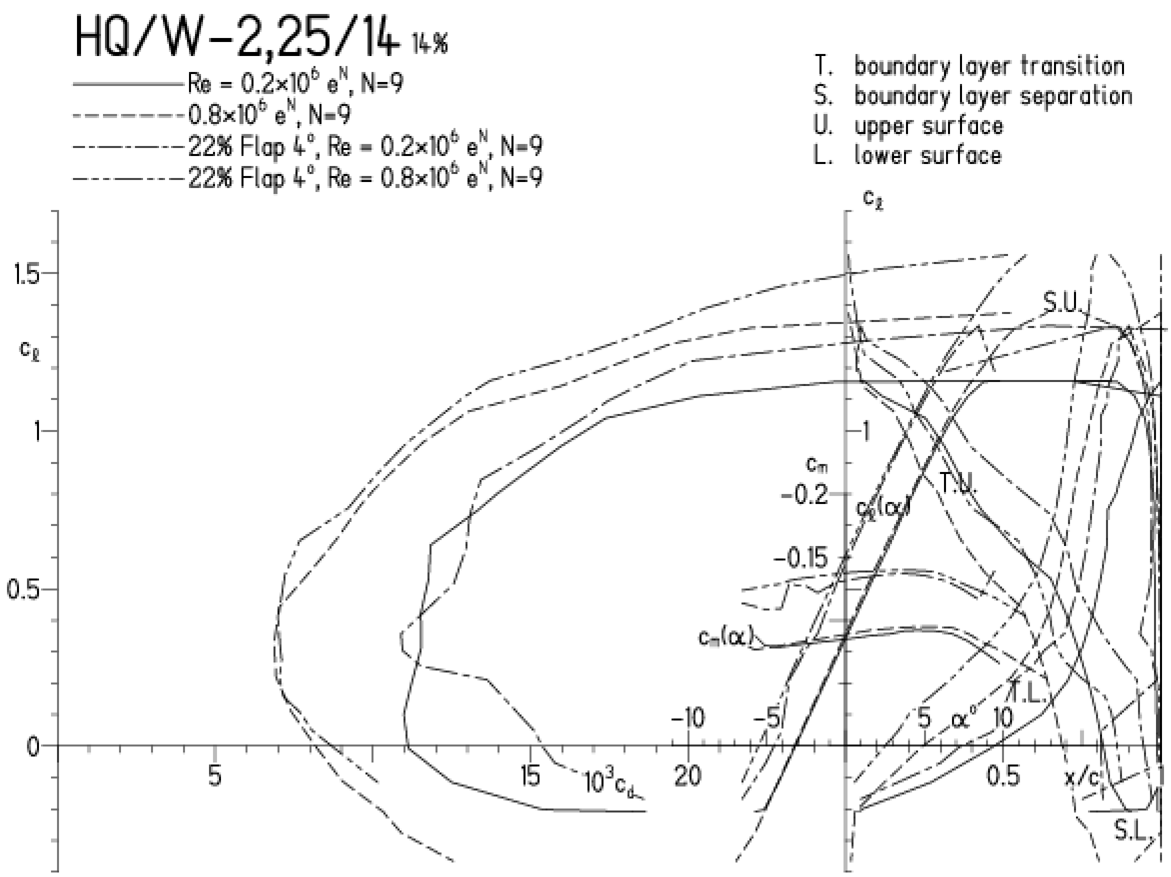


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

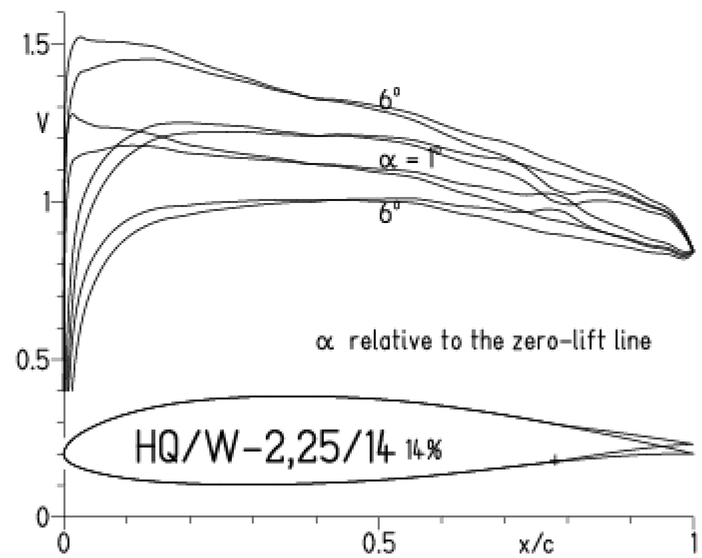


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

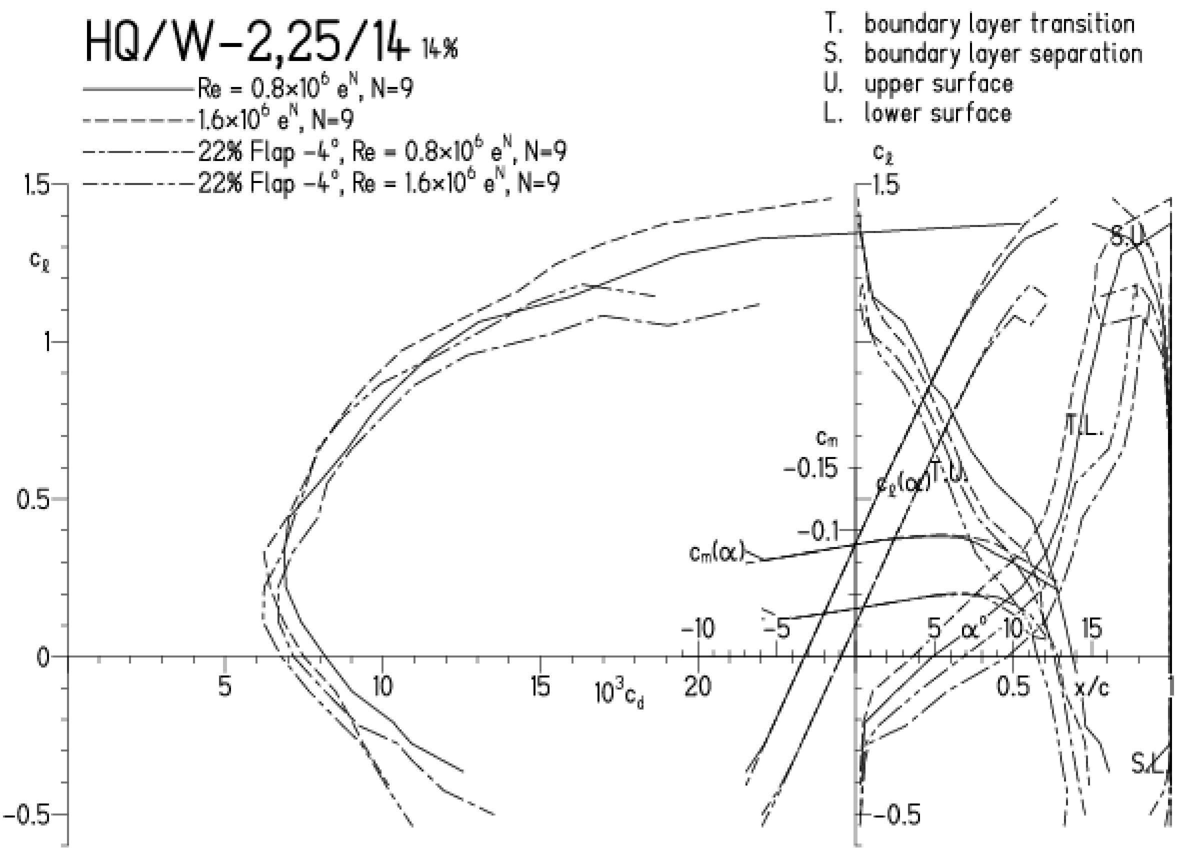


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

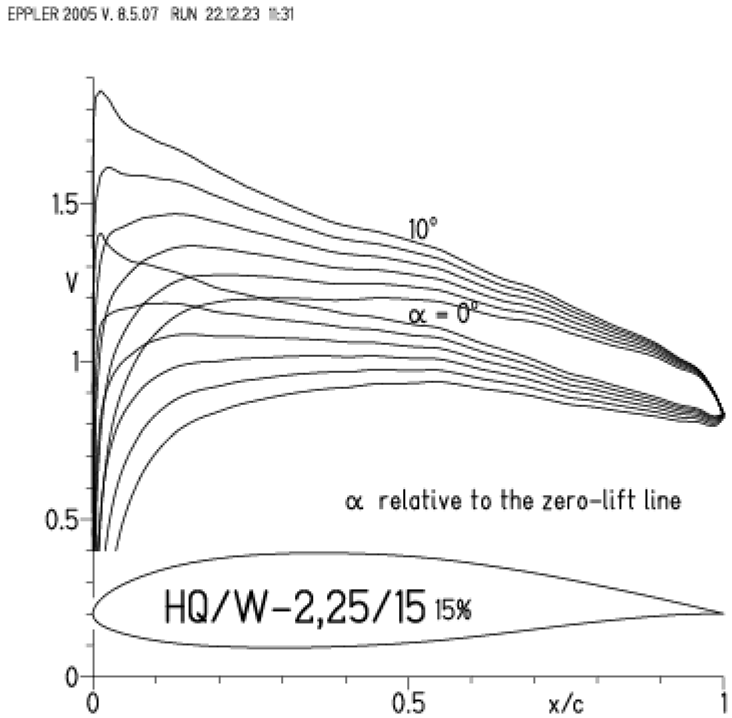
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

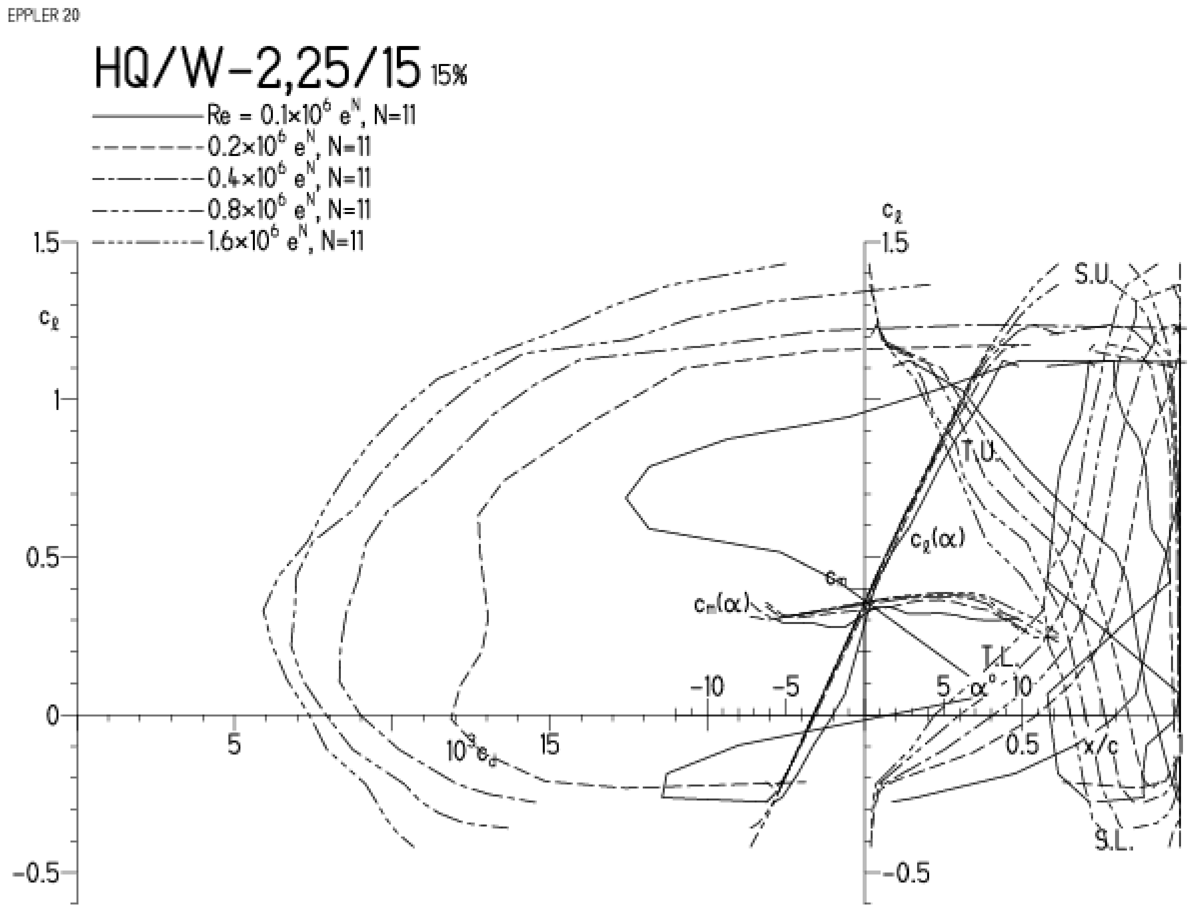


EPPLER 2005 V. 8.5.07



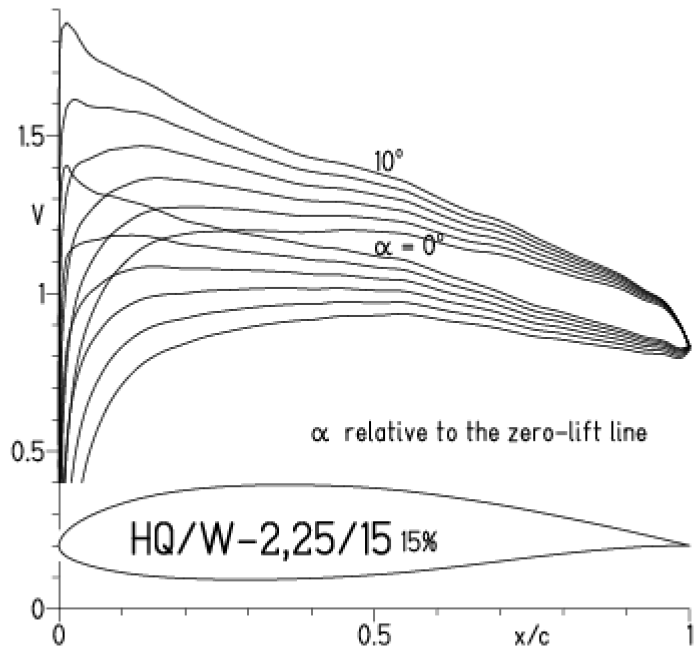
HQ/W-2,25/15, N=11



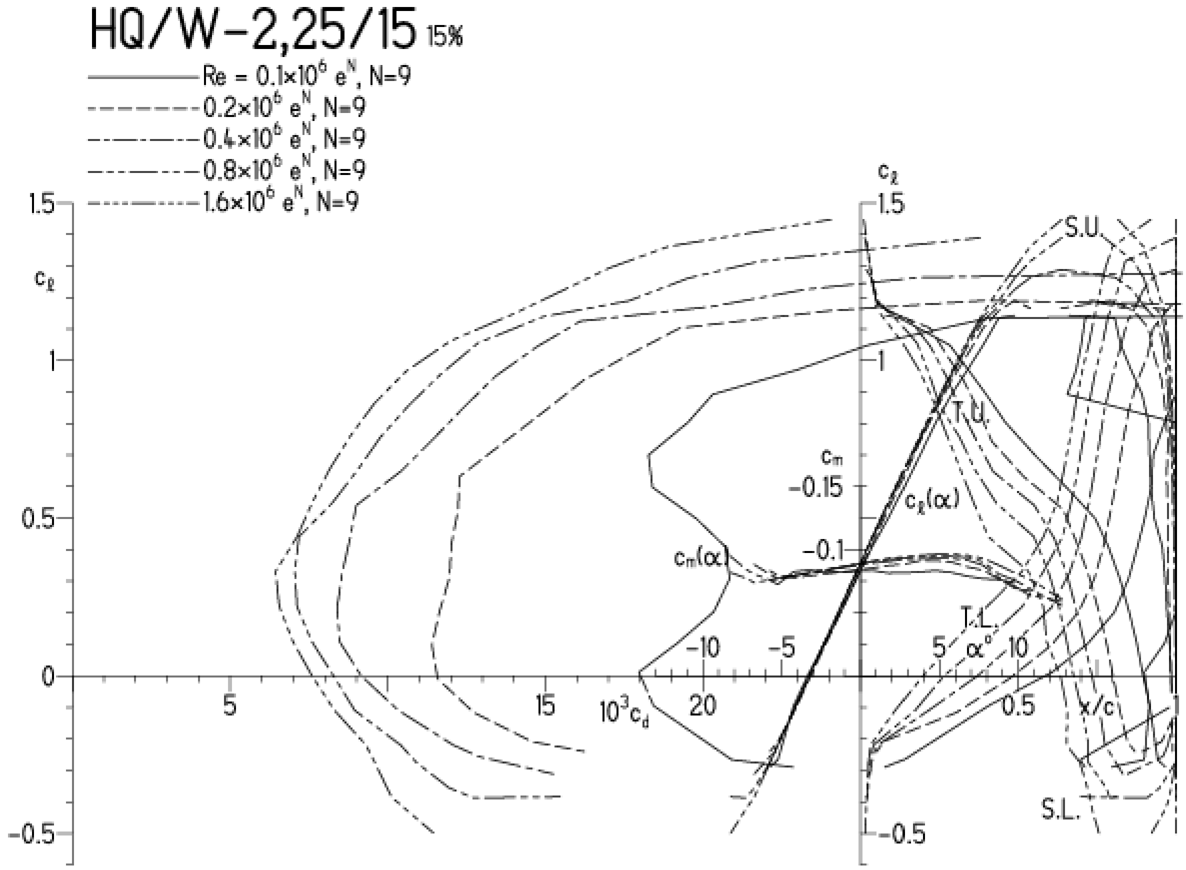


HQ/W-2,25/15, N=9

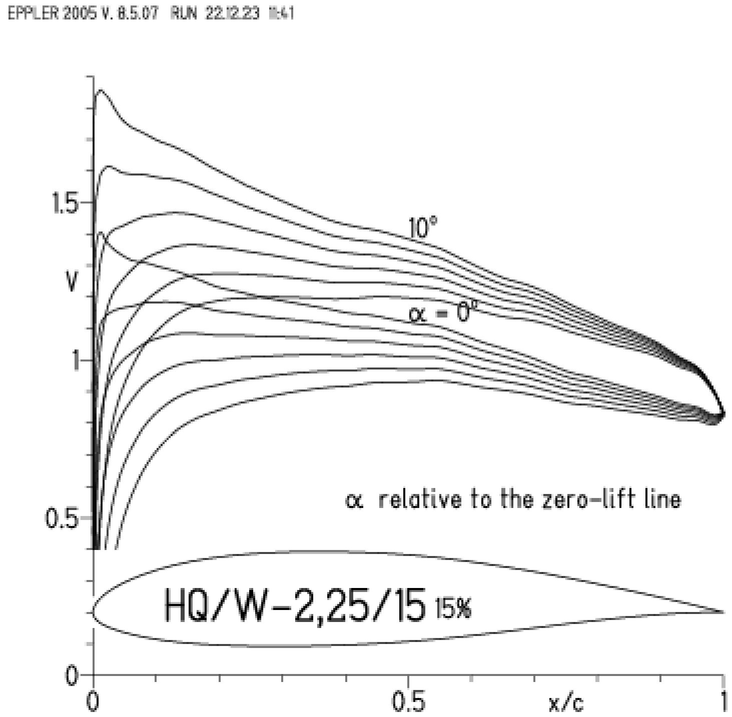
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

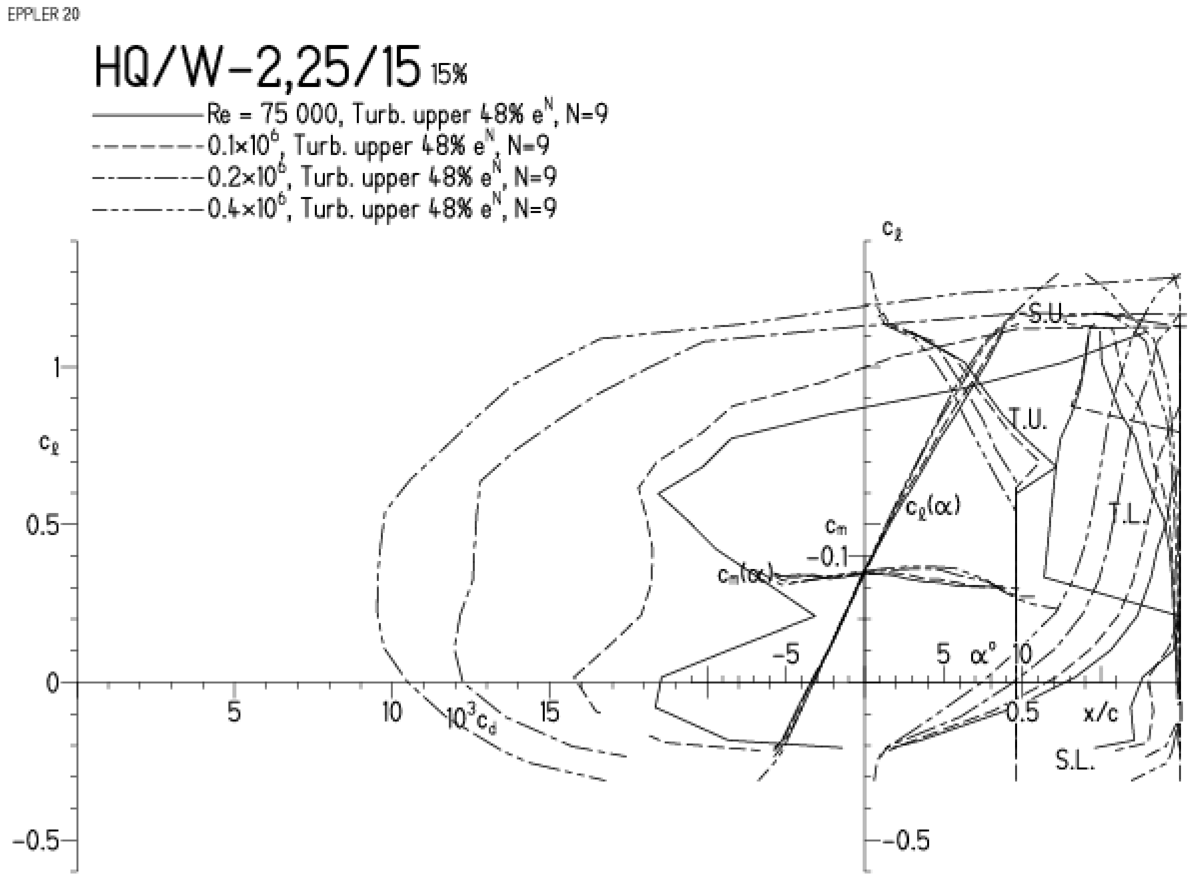


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



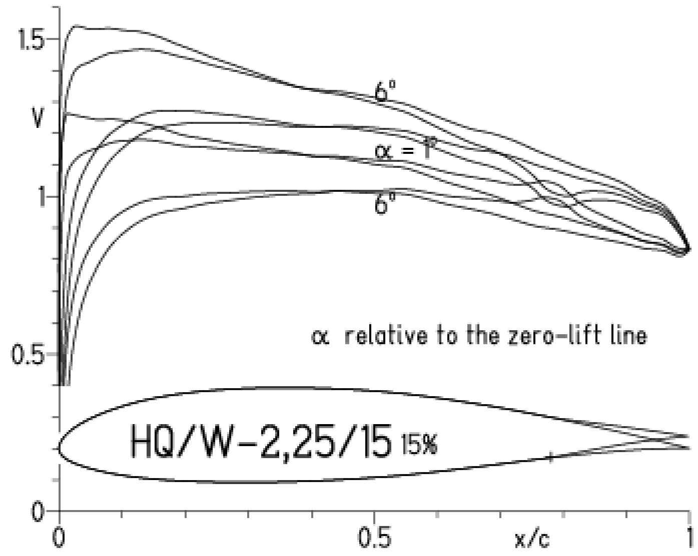


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

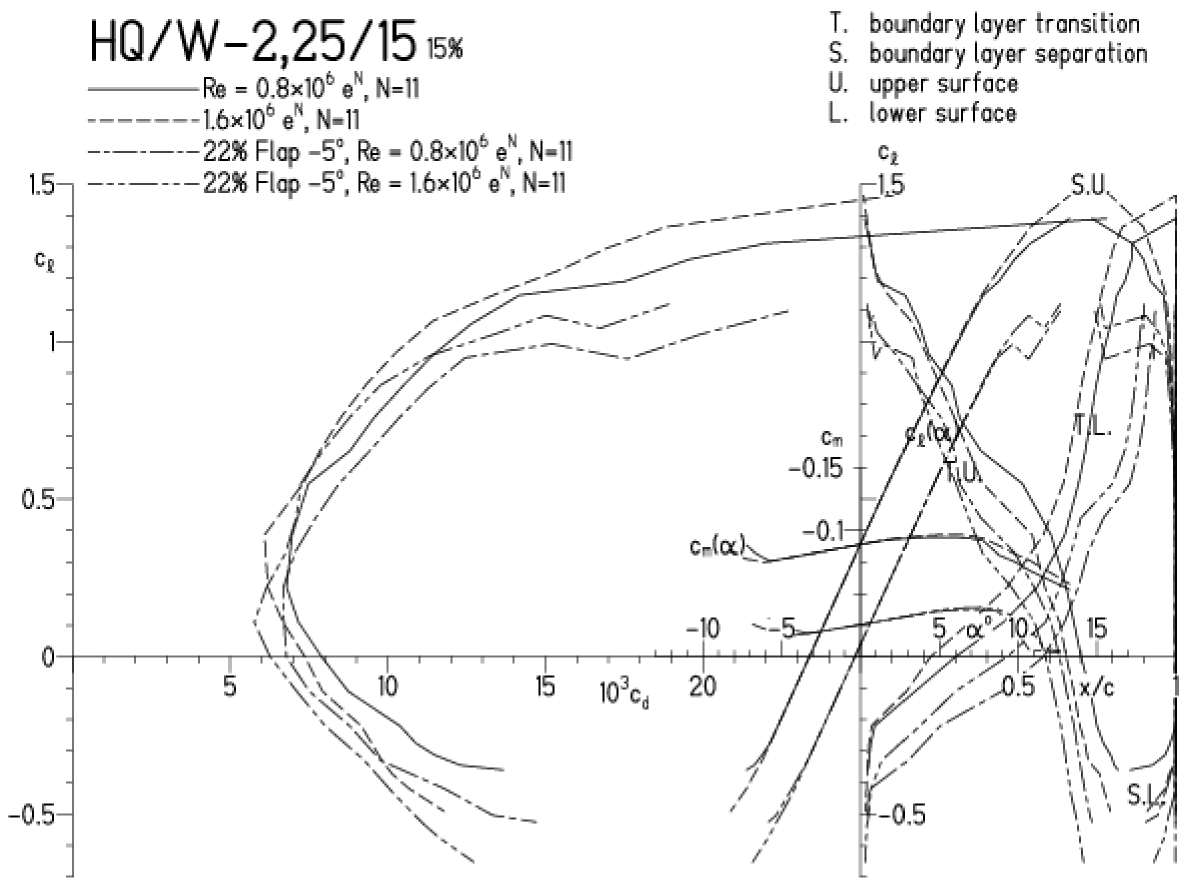
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

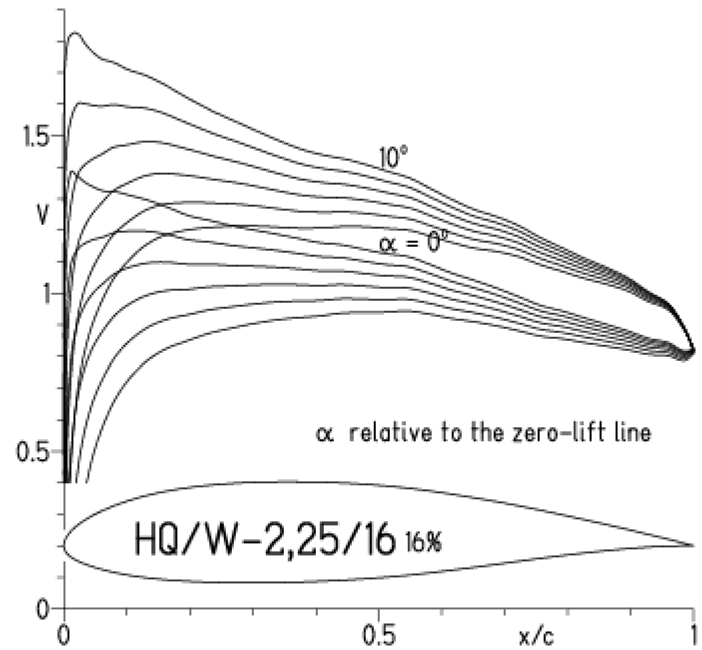


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

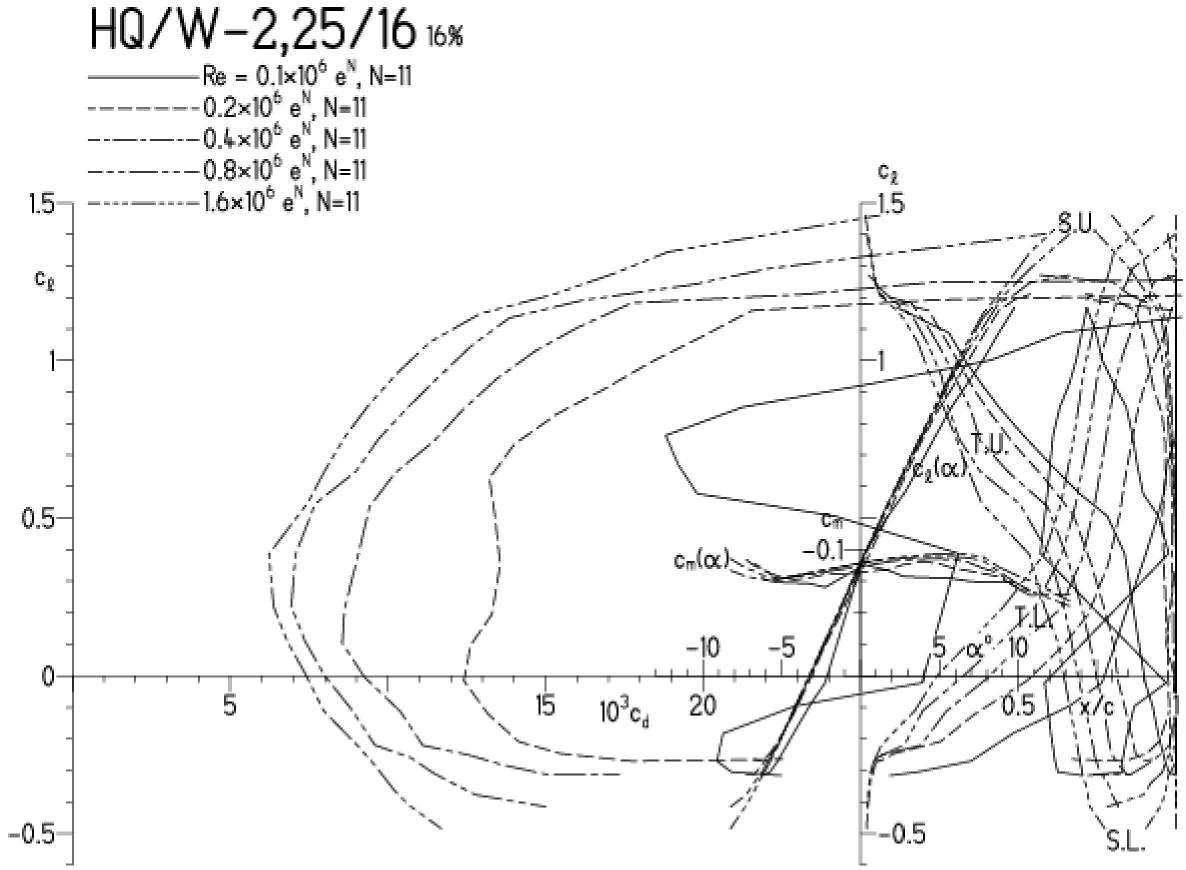


HQ/W-2,25/16, N=11

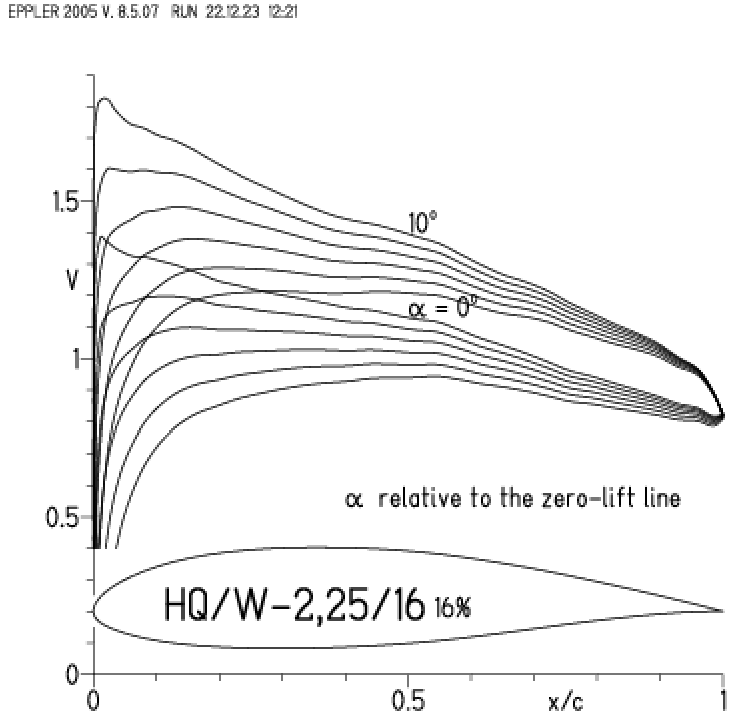
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

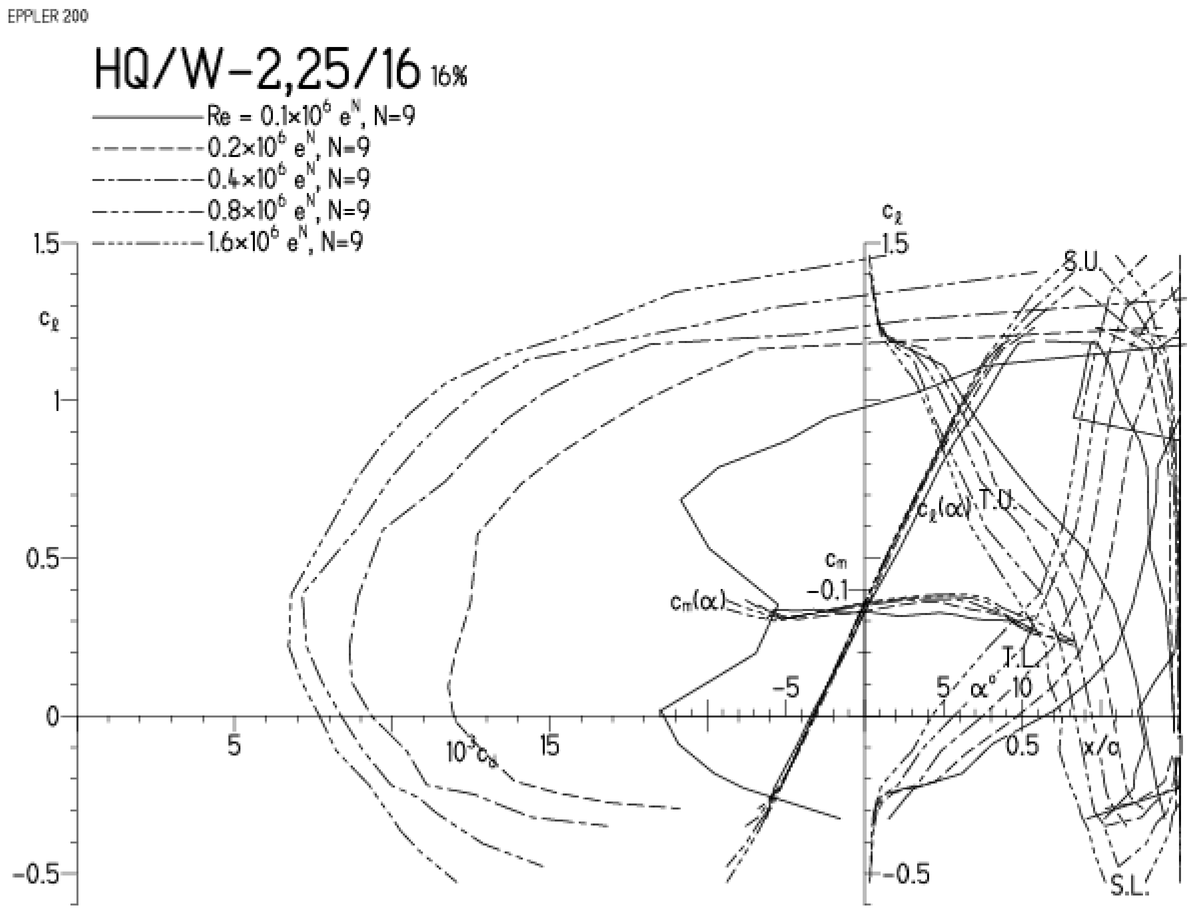


EPPLER 200

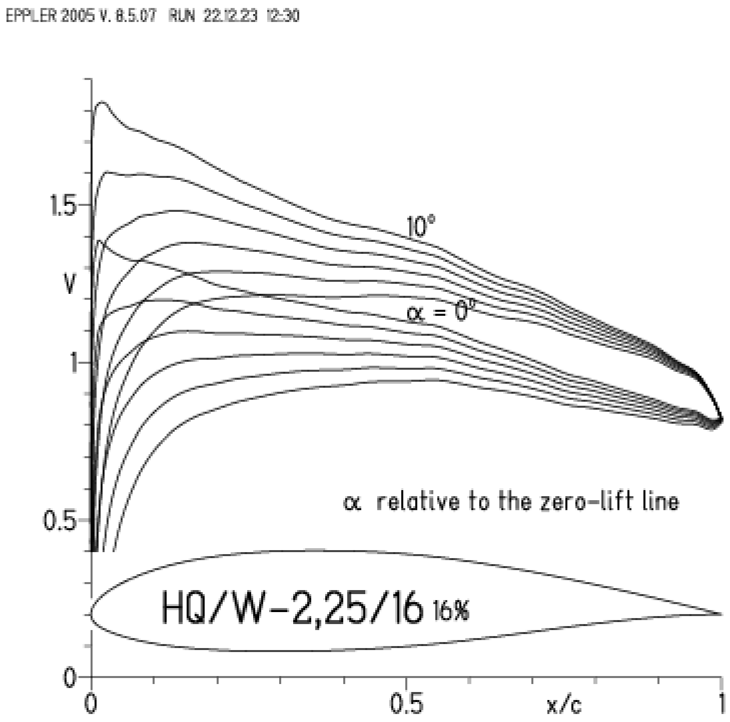


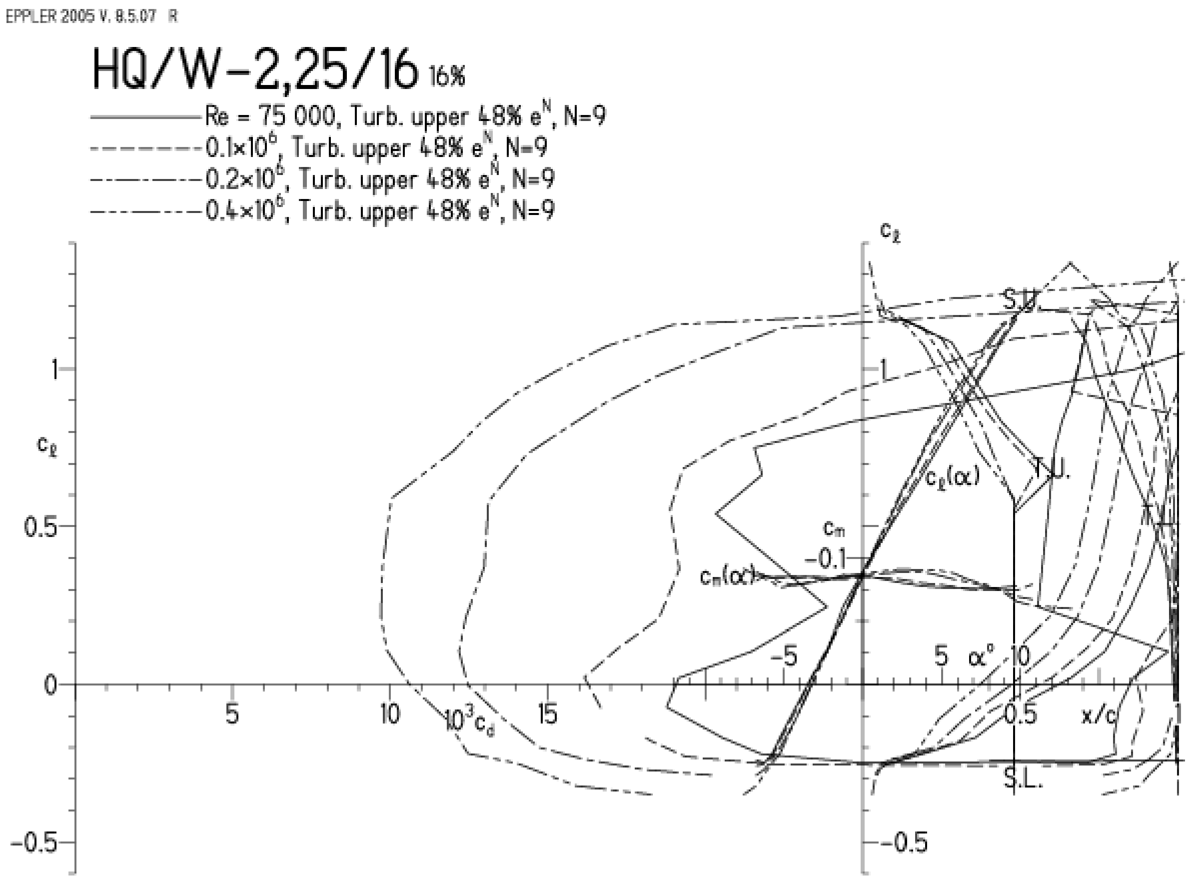
<u>HQ/W-2,25/16</u>, N=9





<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

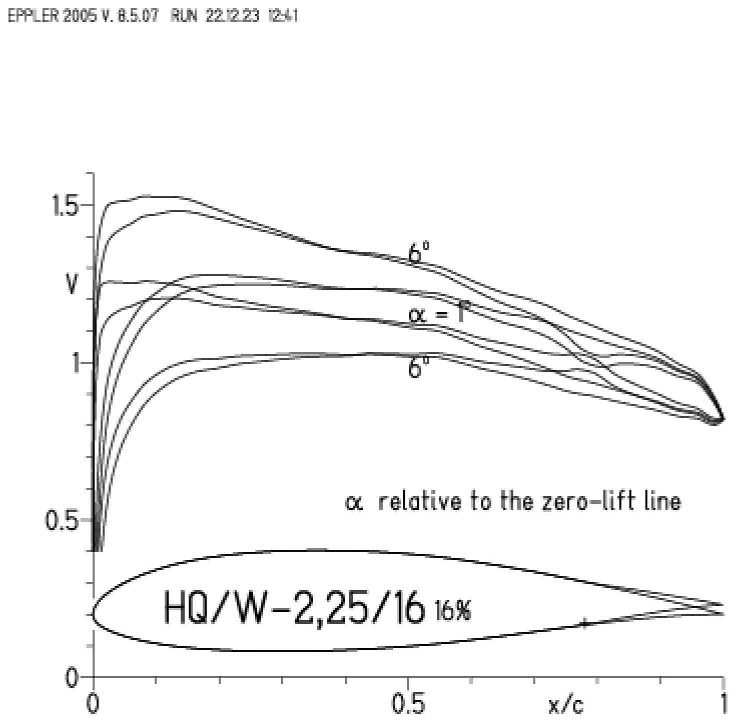


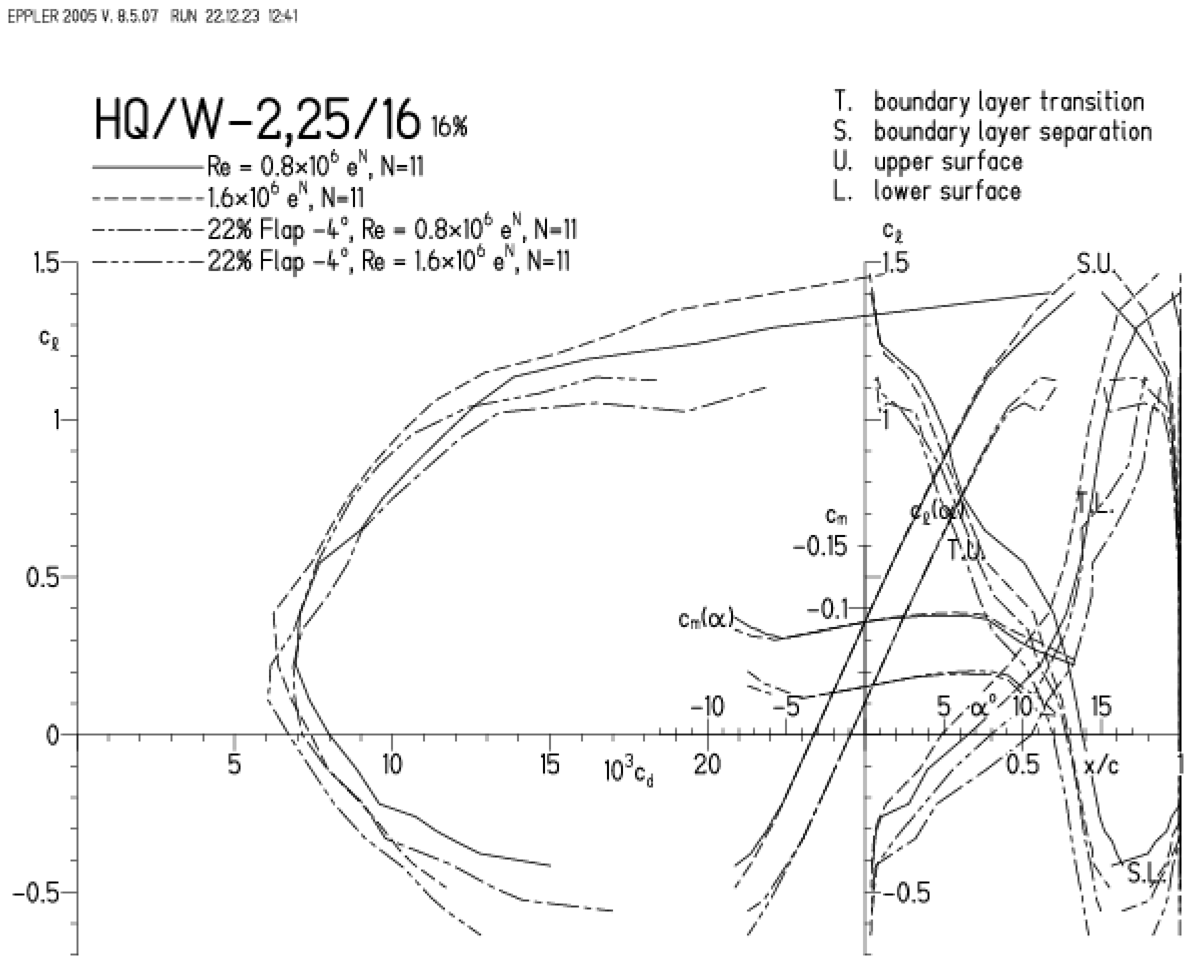


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

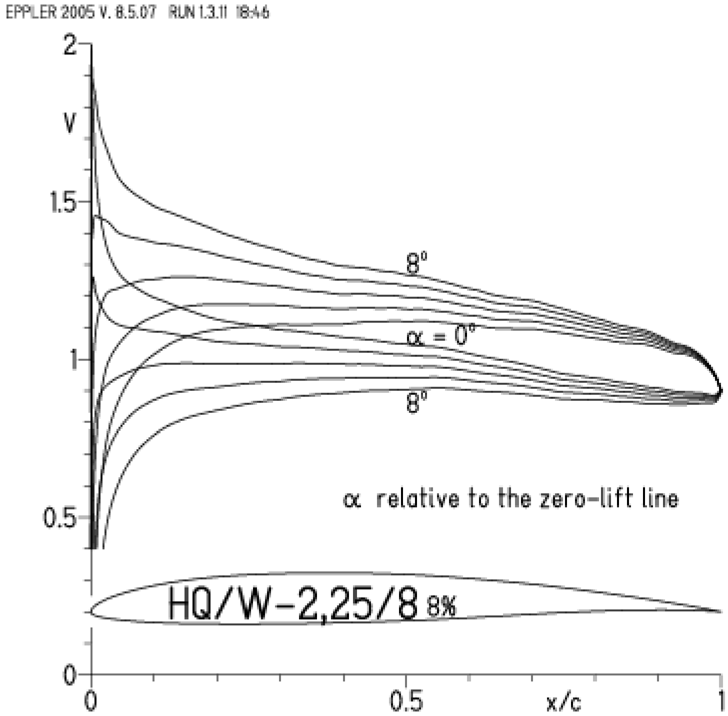
Bringt keine merkliche Verbesserung im Langsamflug.

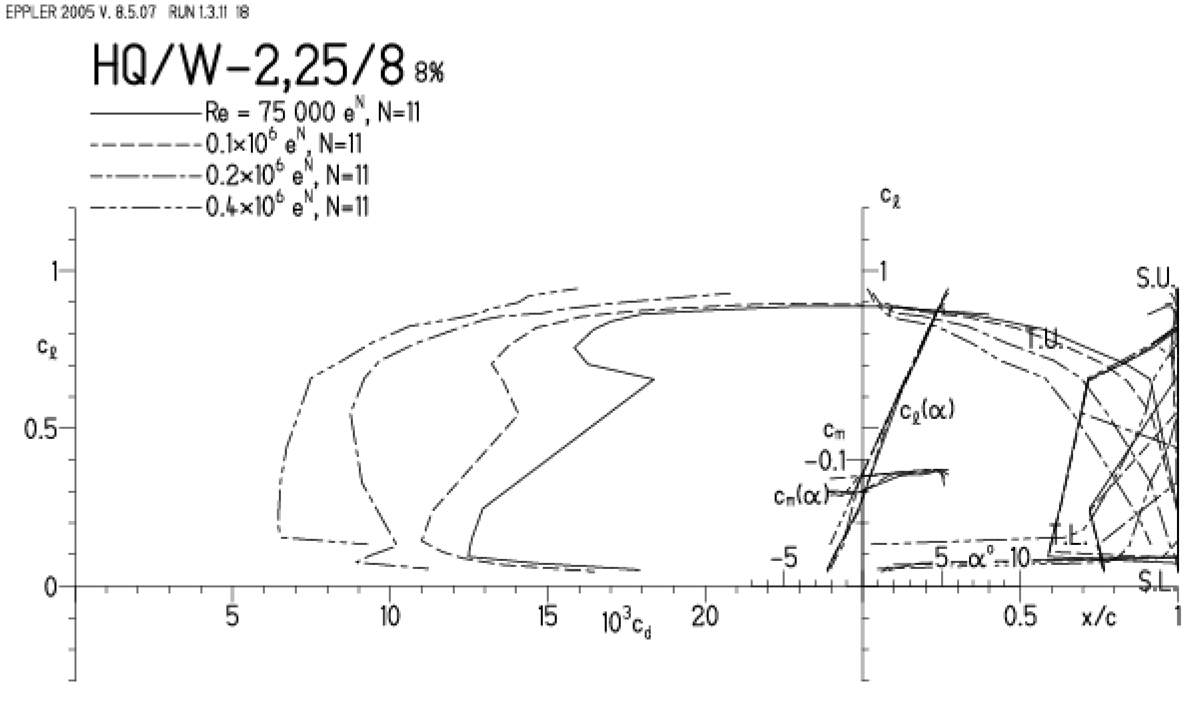
HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag



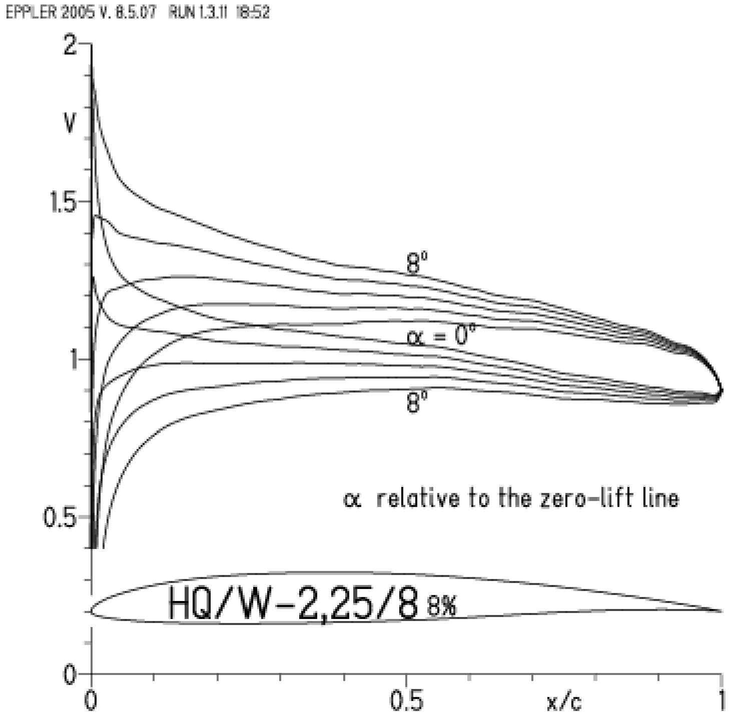


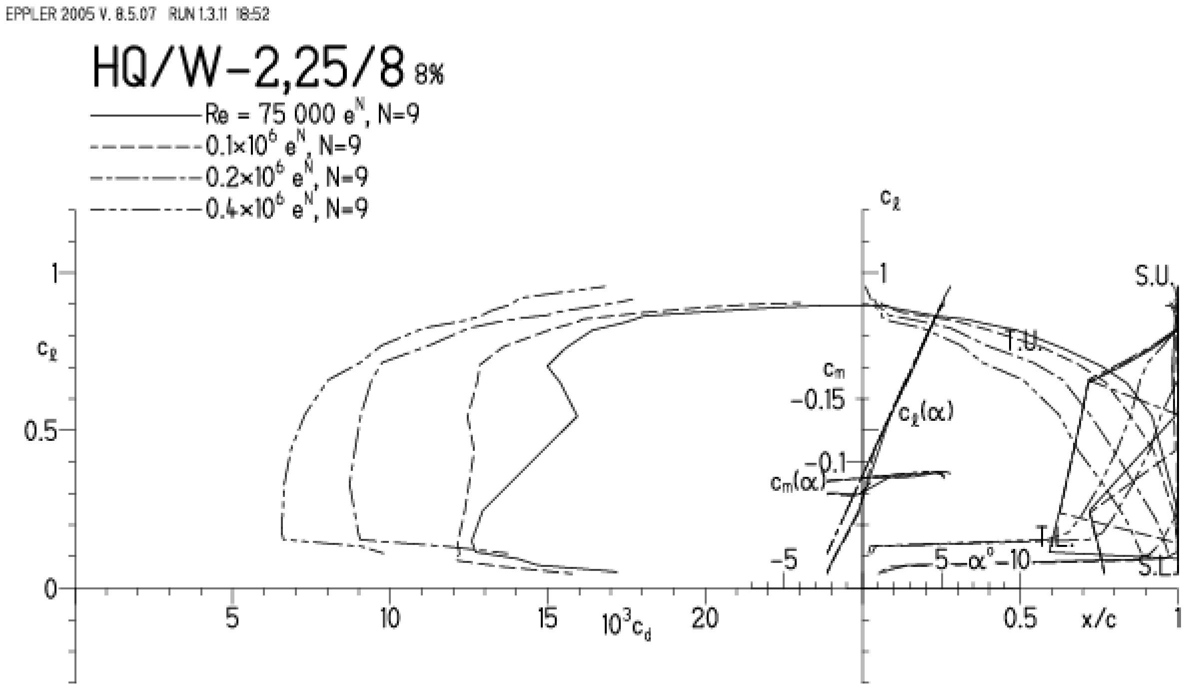
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
2
V
1.5
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
0
0.5
x/c
1

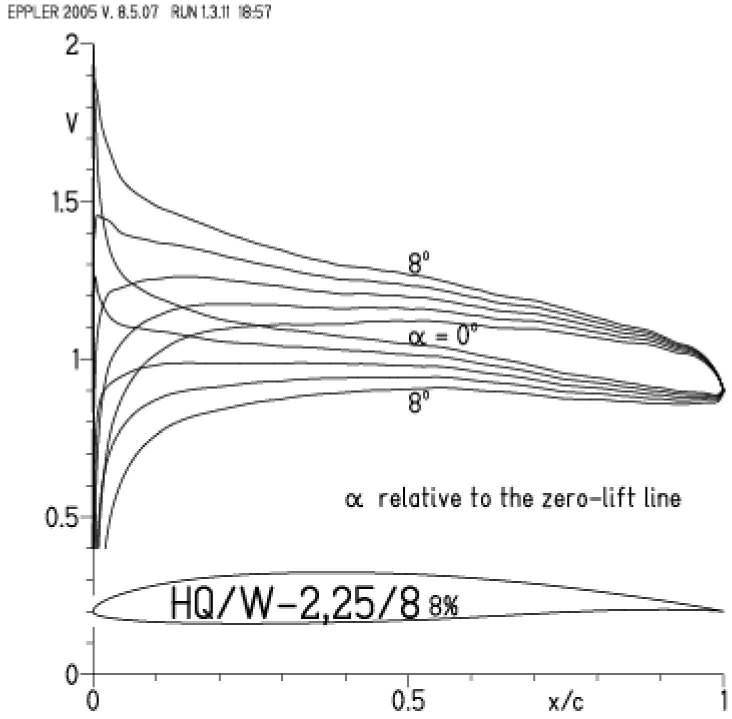

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.1
c_m(α)
c_l(α)
-5
5 α° 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

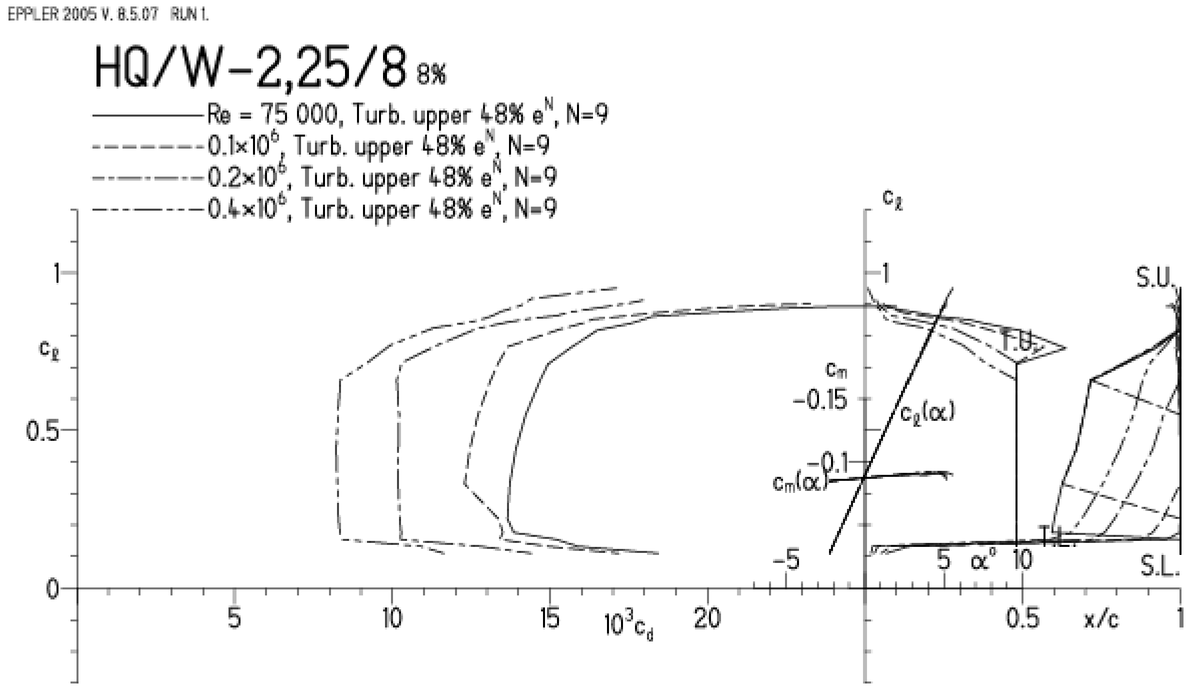
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

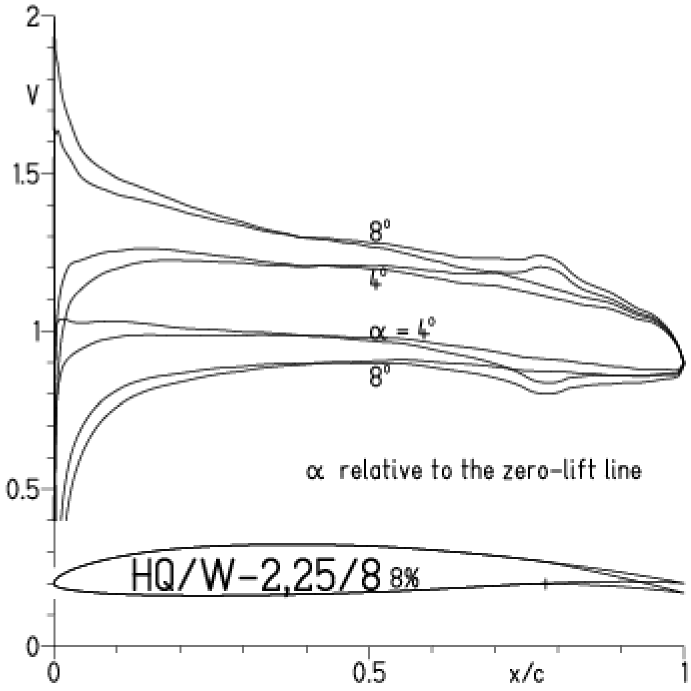
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



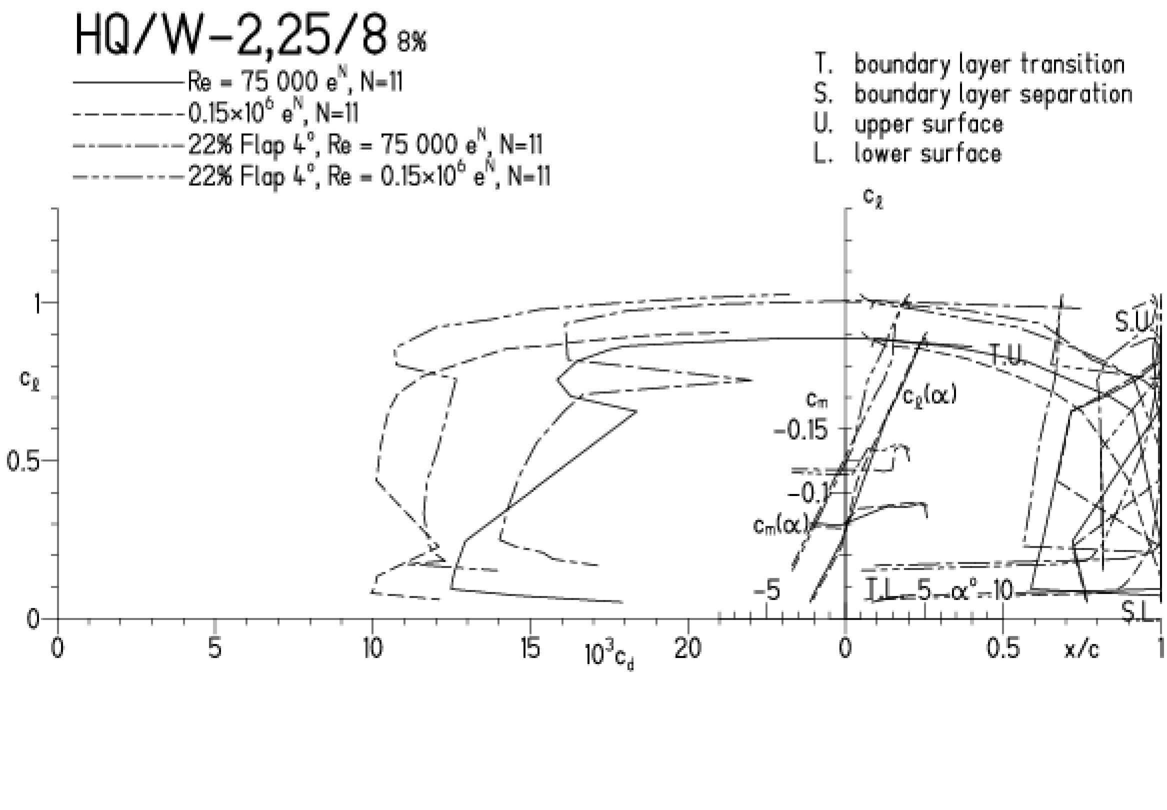


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

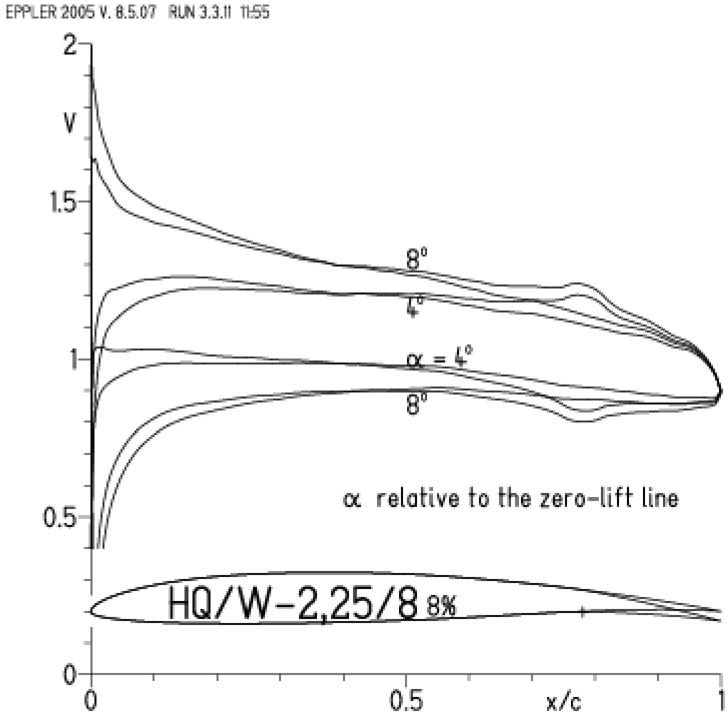
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

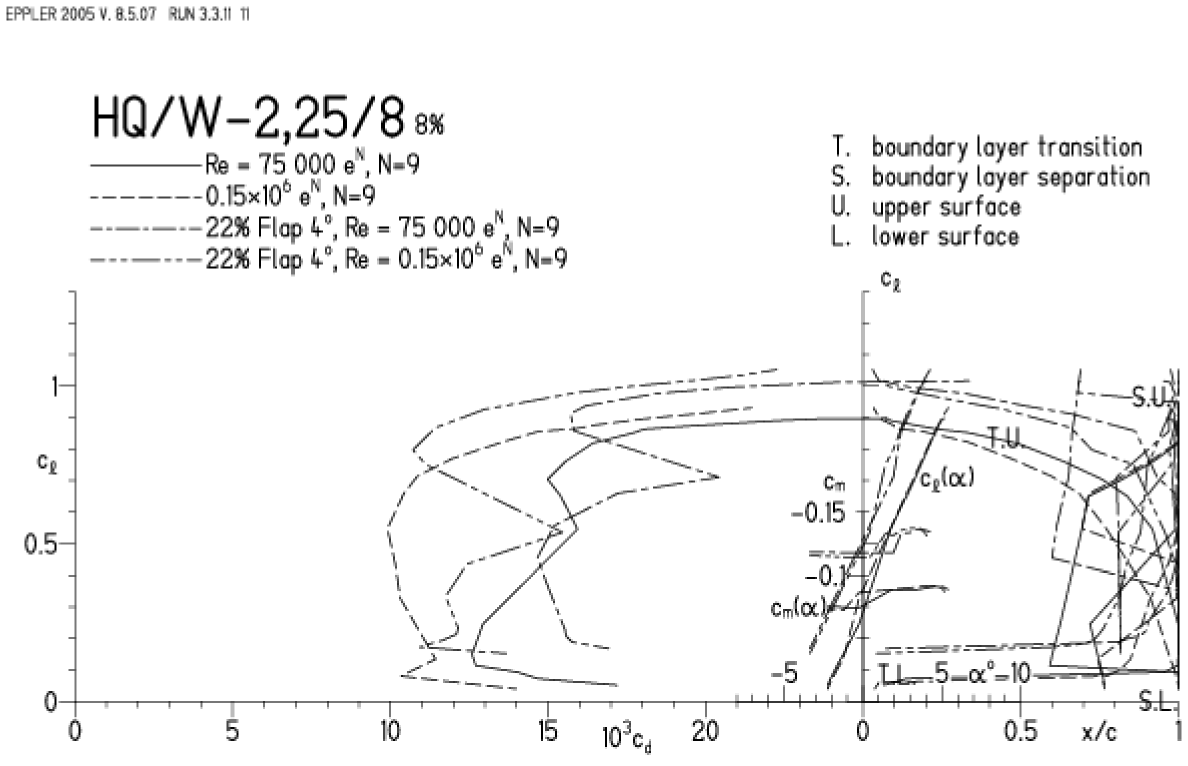


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

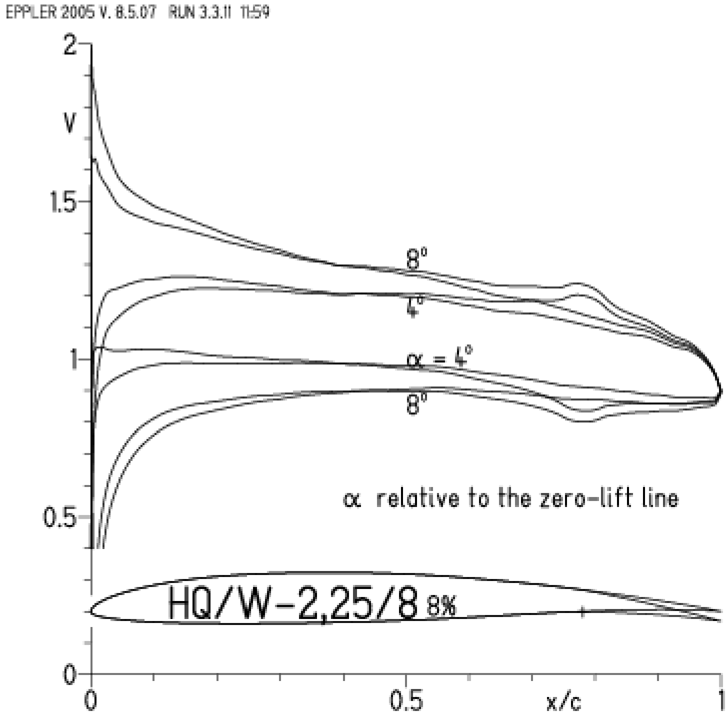


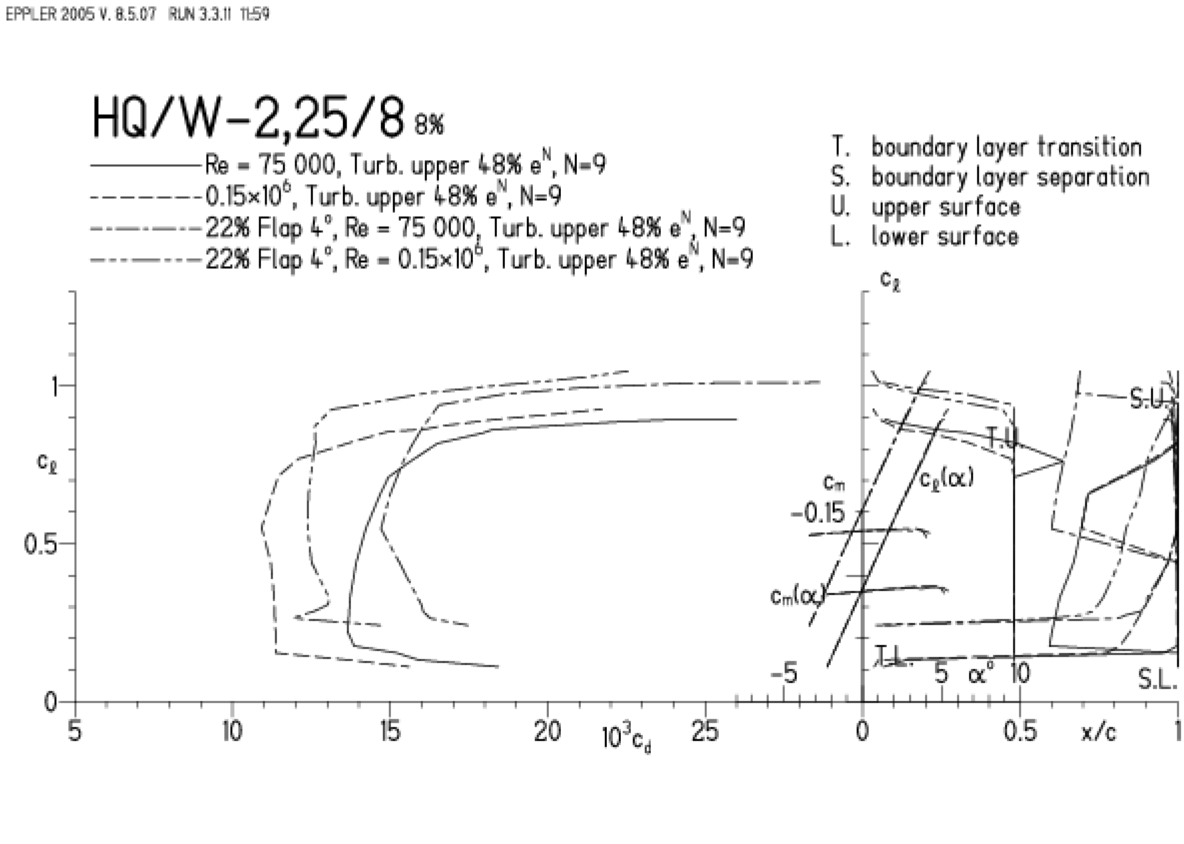
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





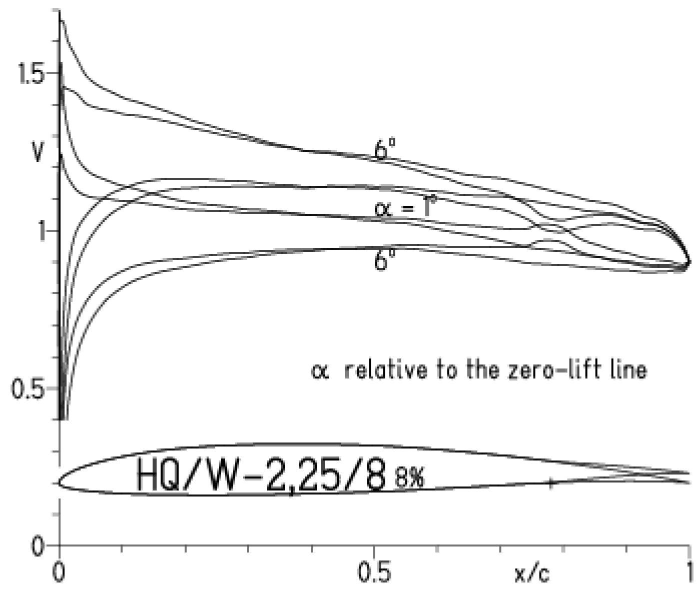
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



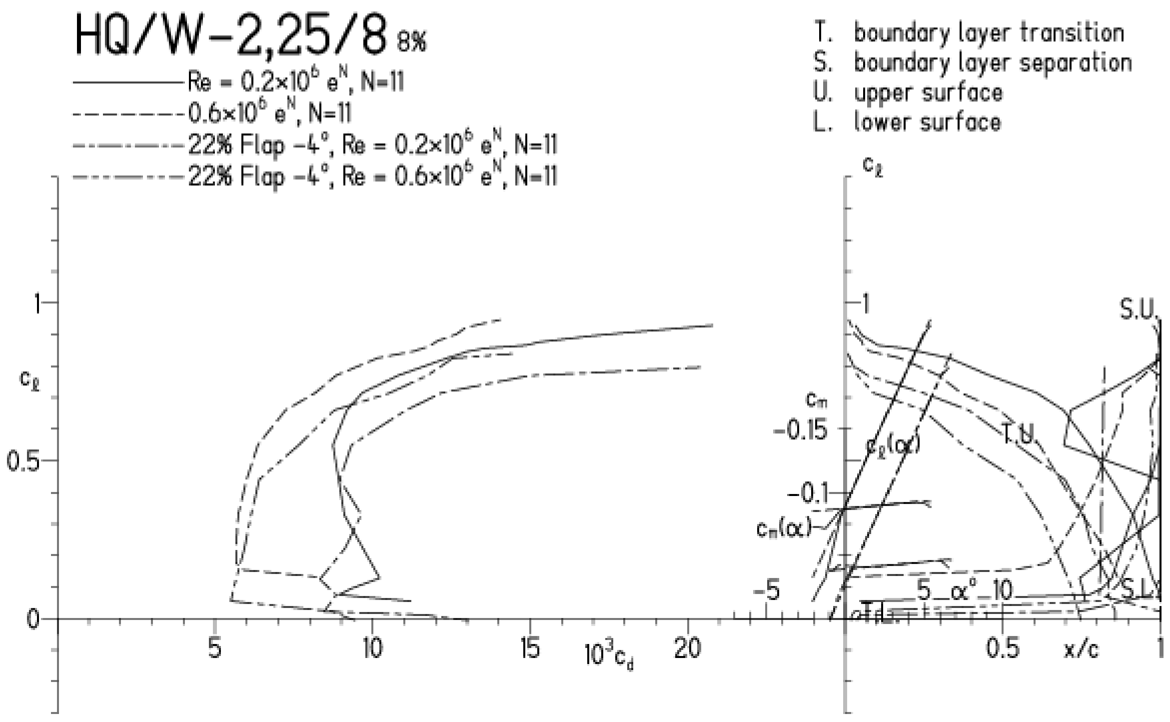


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

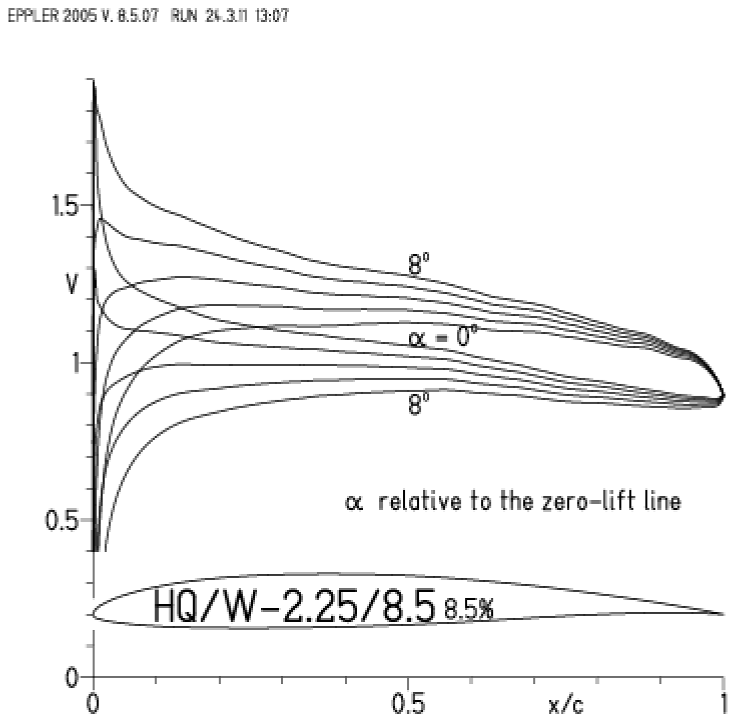
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

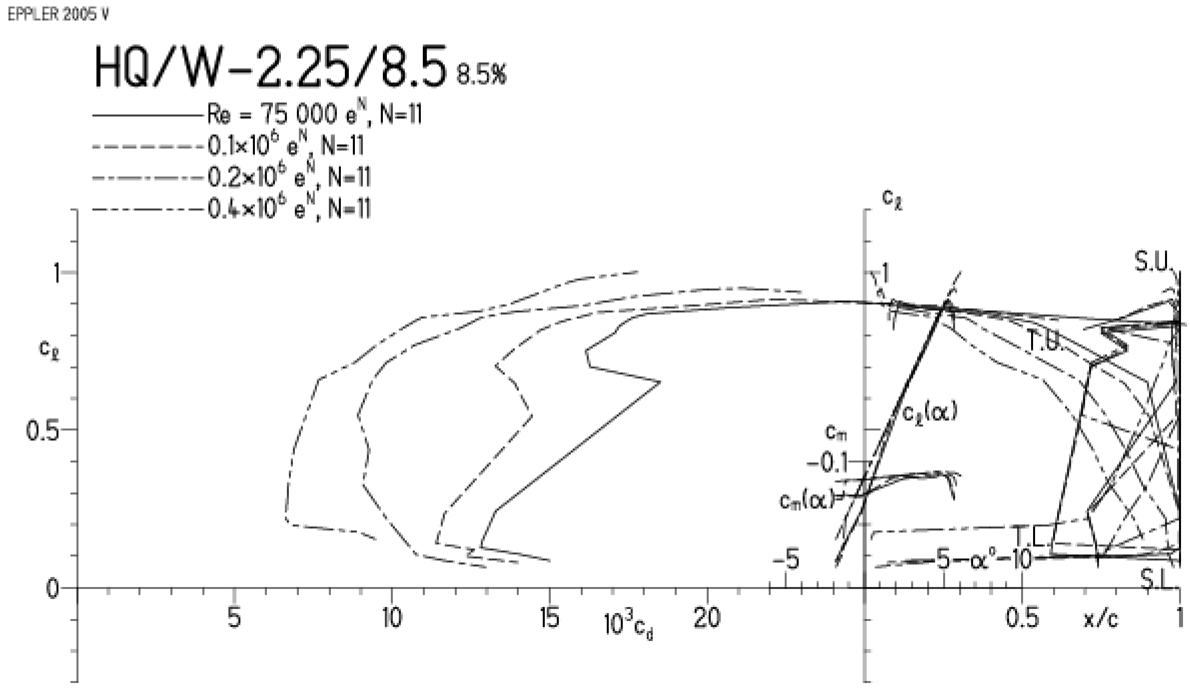


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

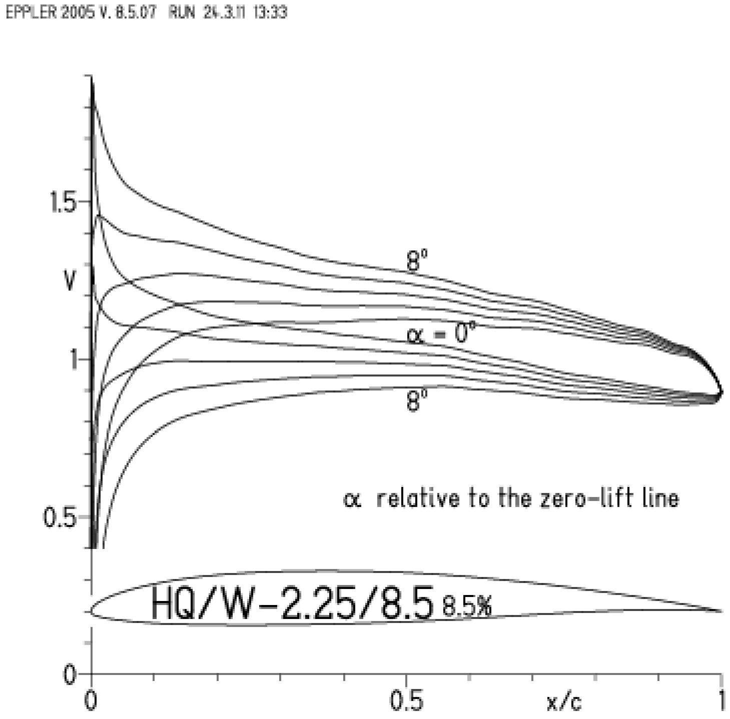


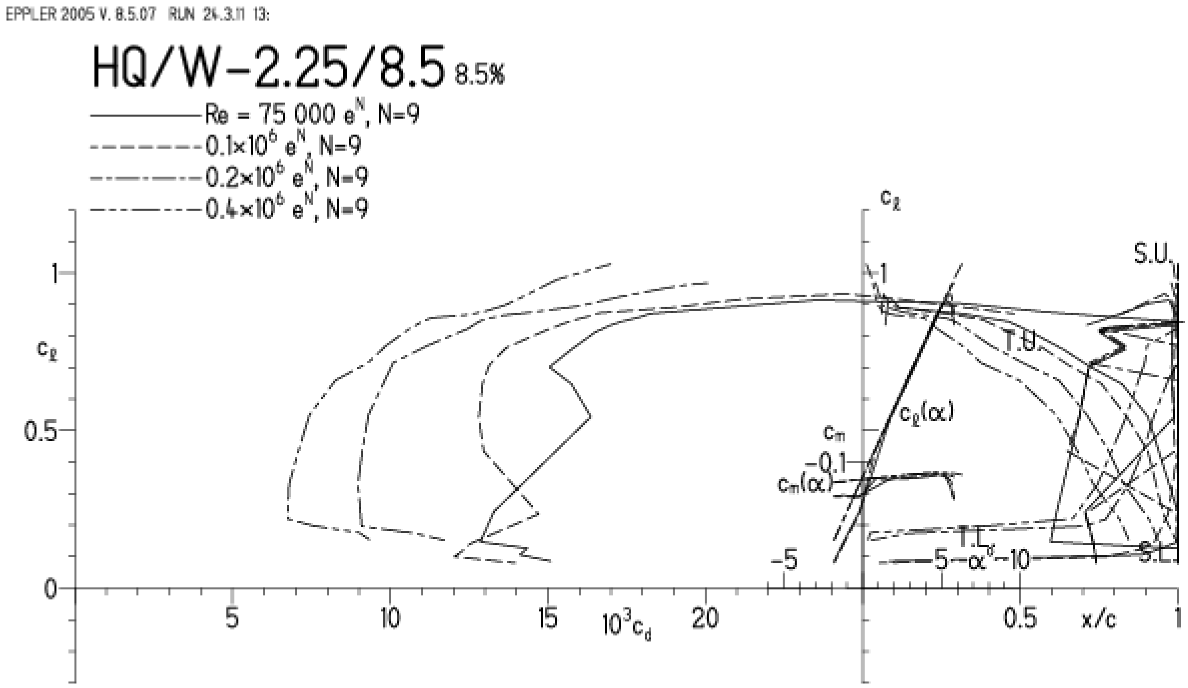
<u>HQ/W-2,25/8,5</u>, N=11



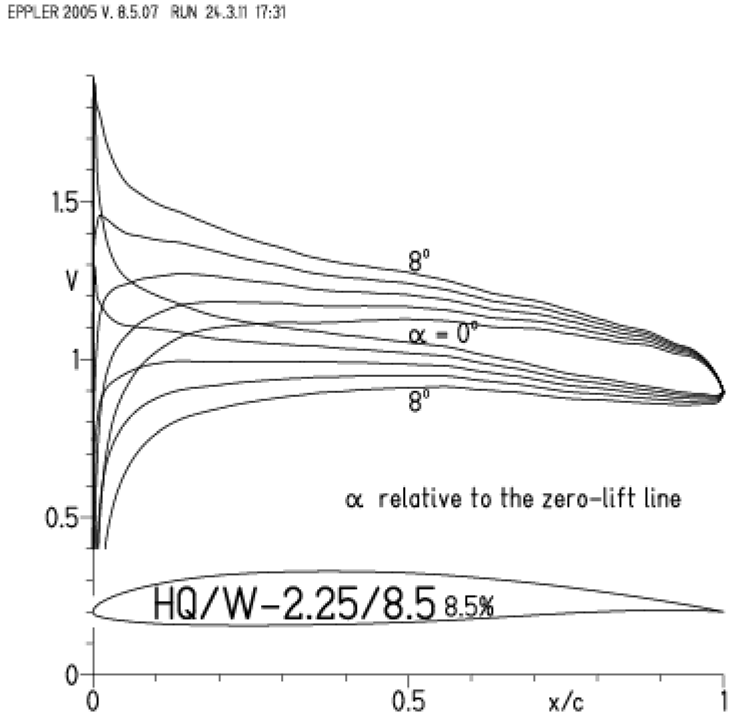


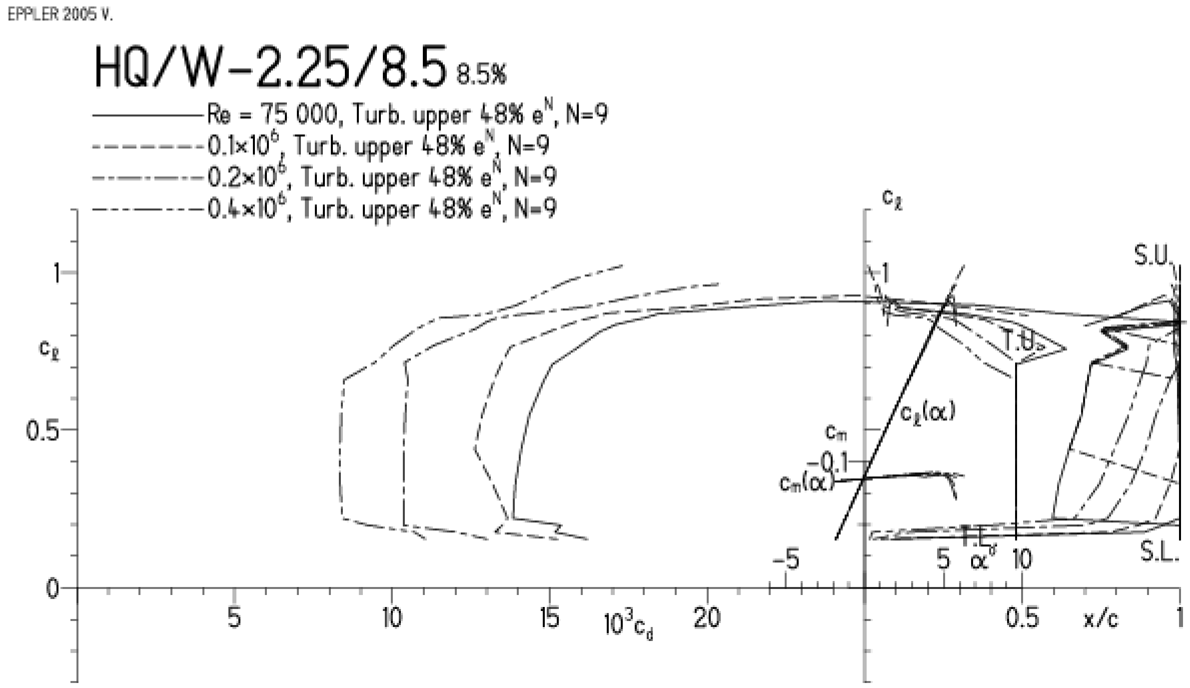
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
10^3 c_d
20
c_l
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

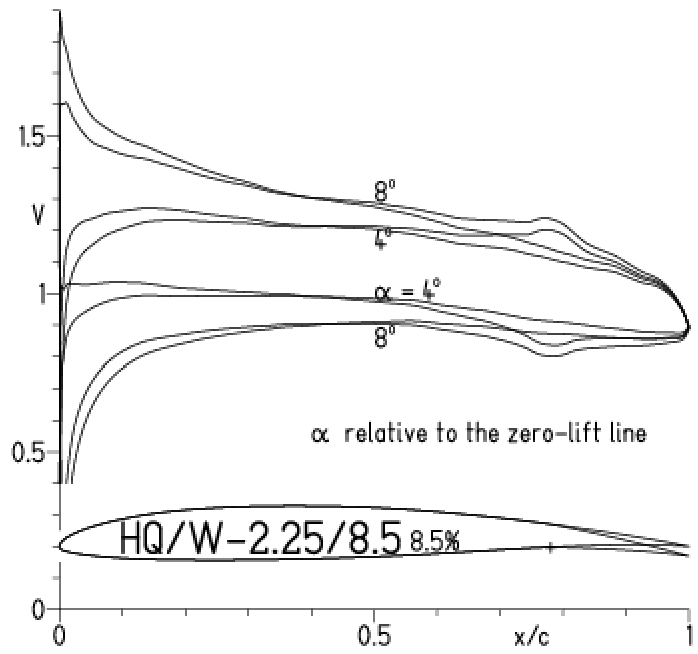
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



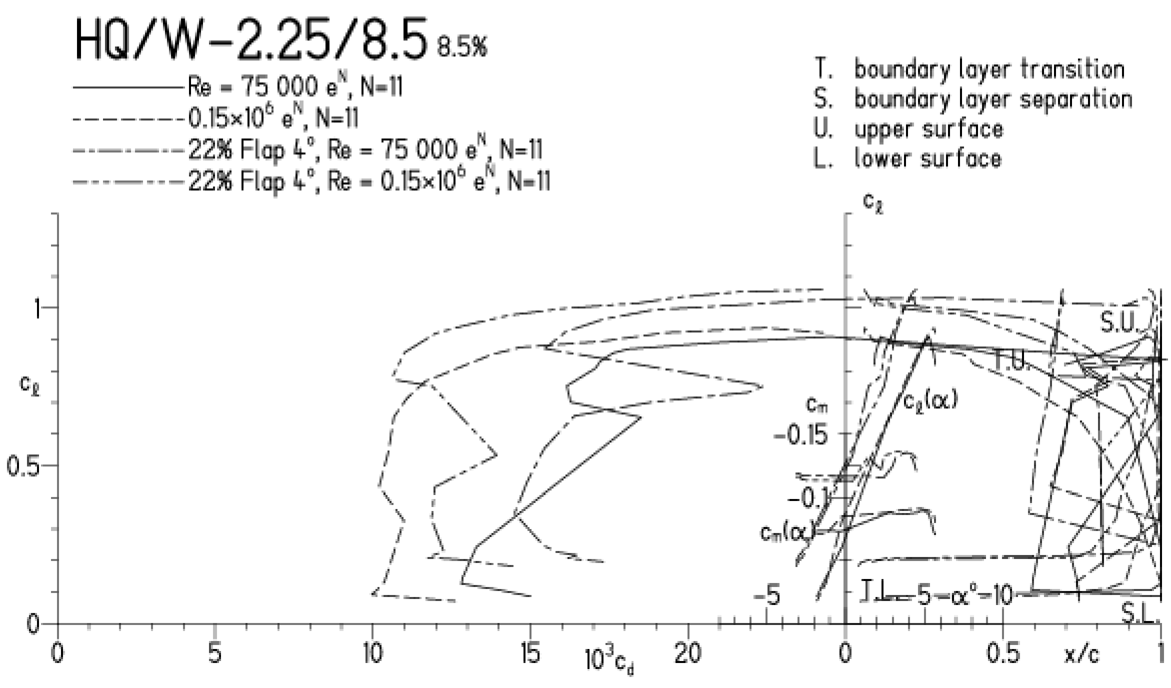


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

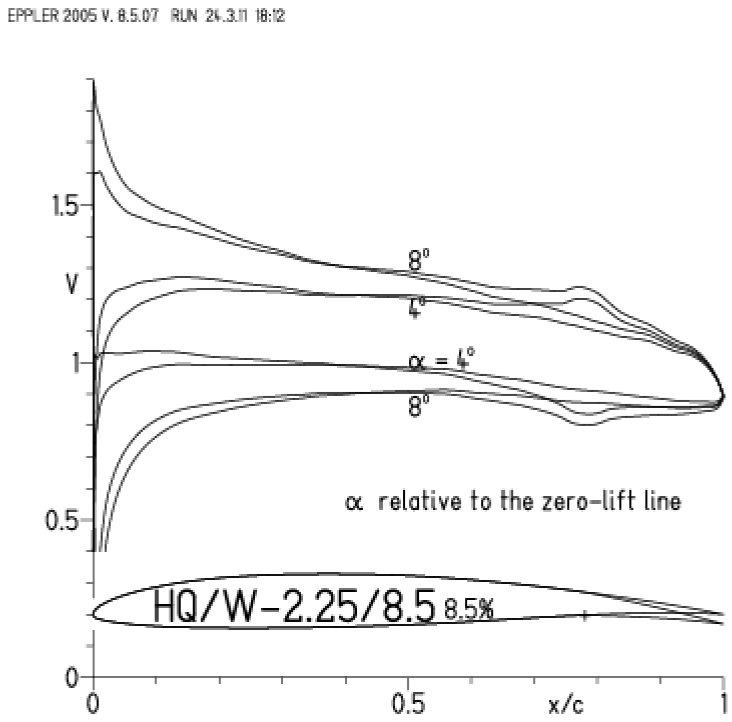
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

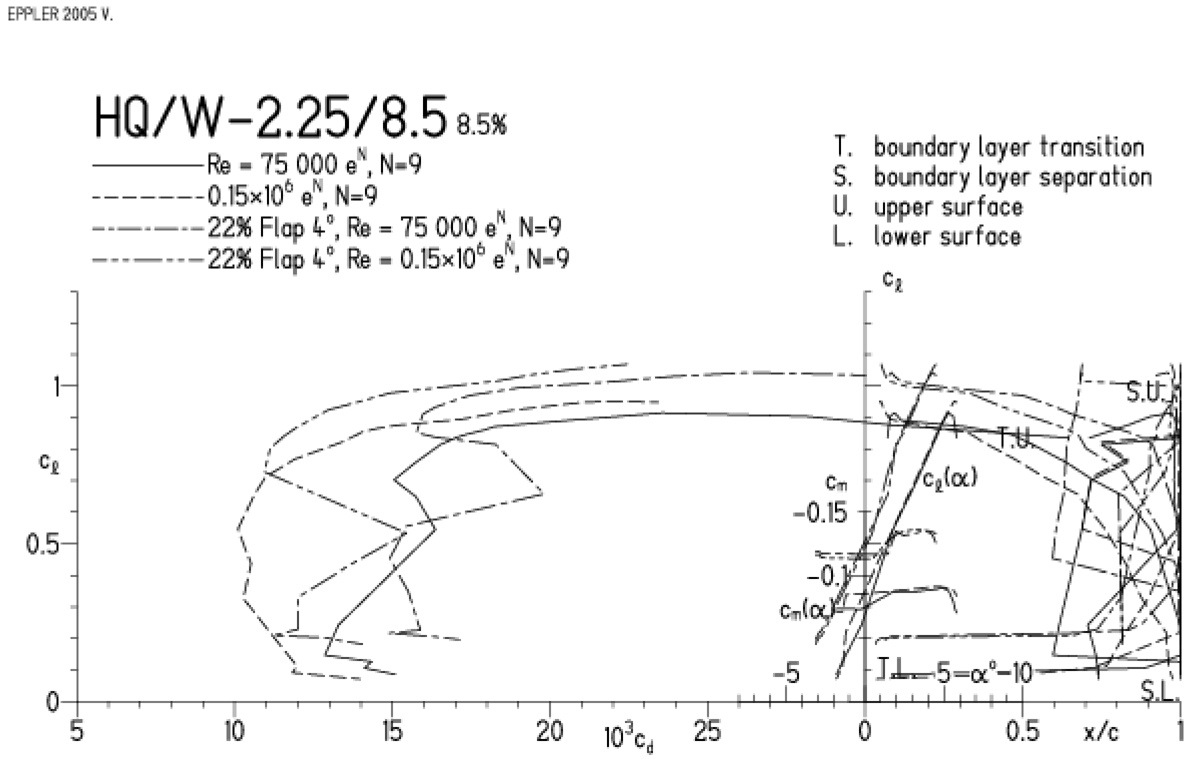


EPPLER 2005 V. 8.5.



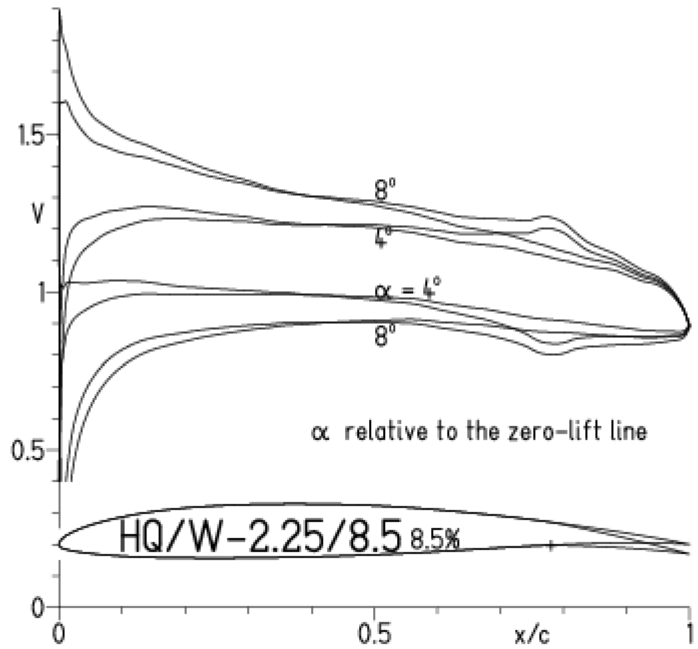
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



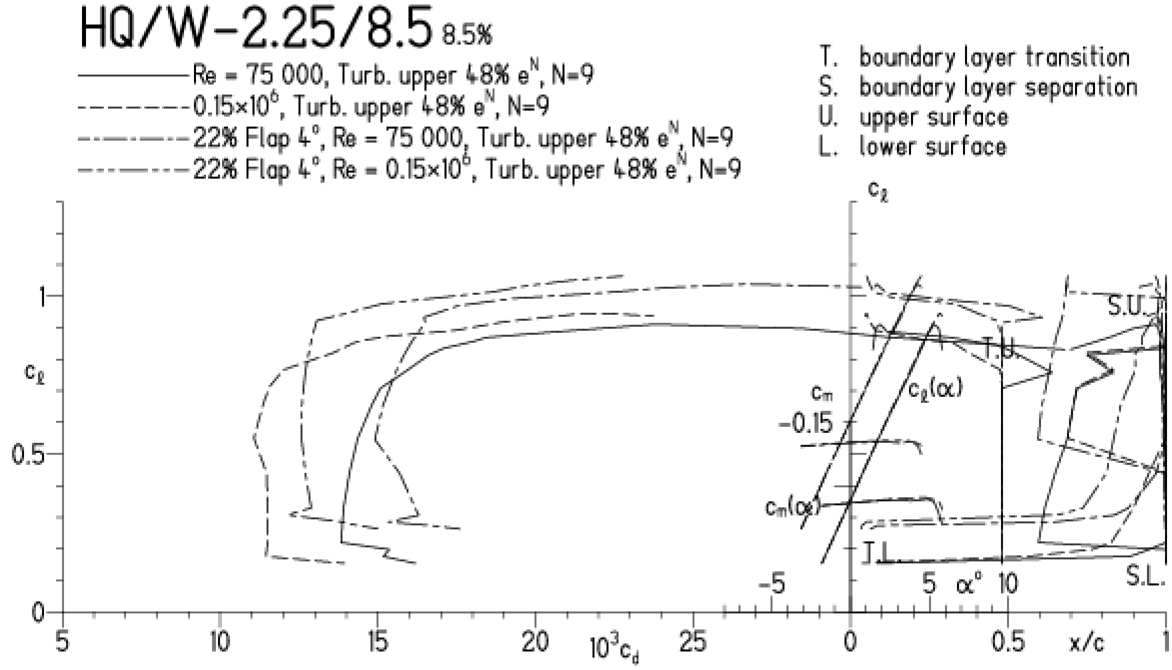


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

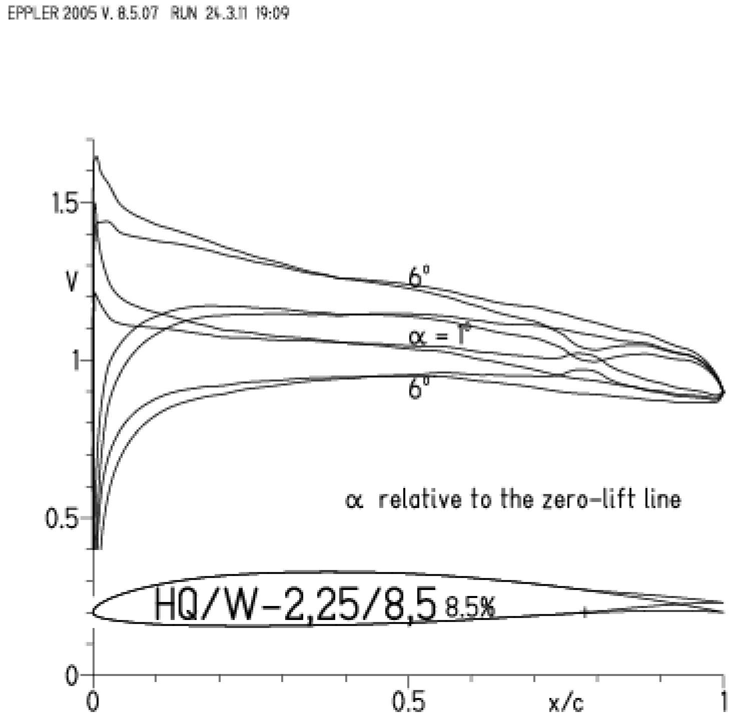
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

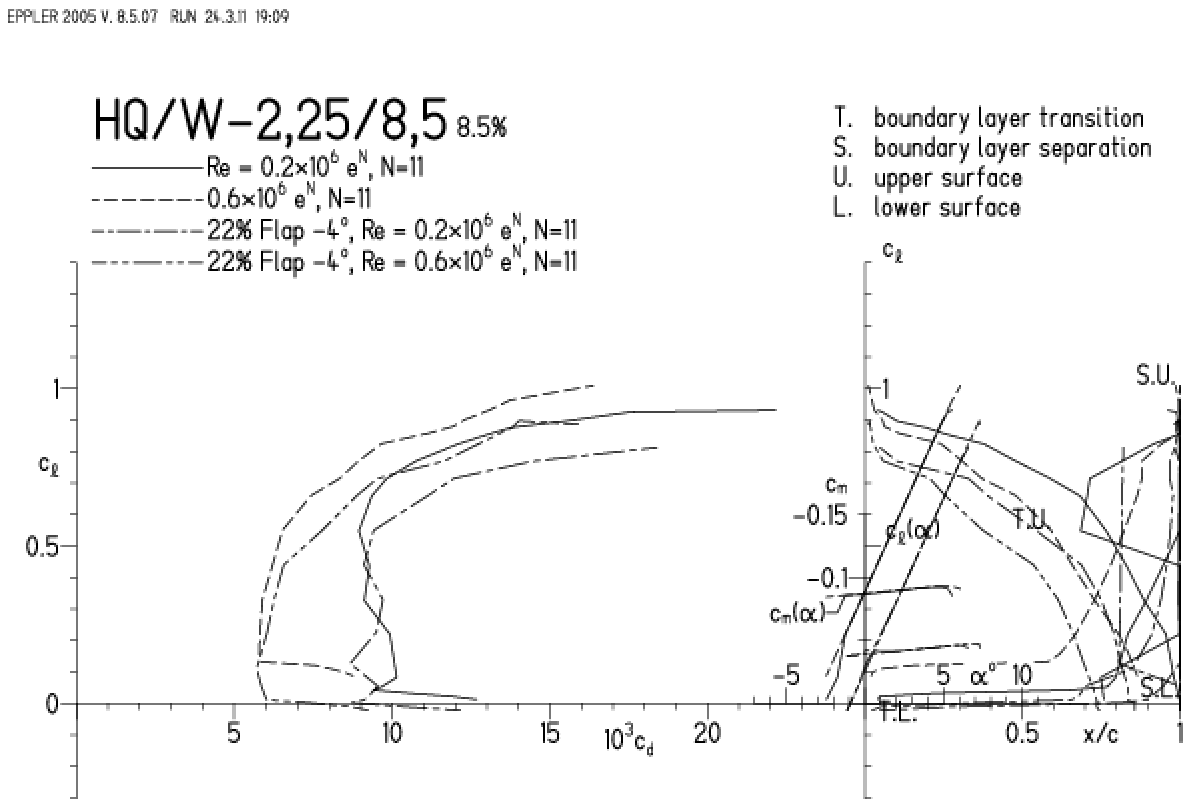


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



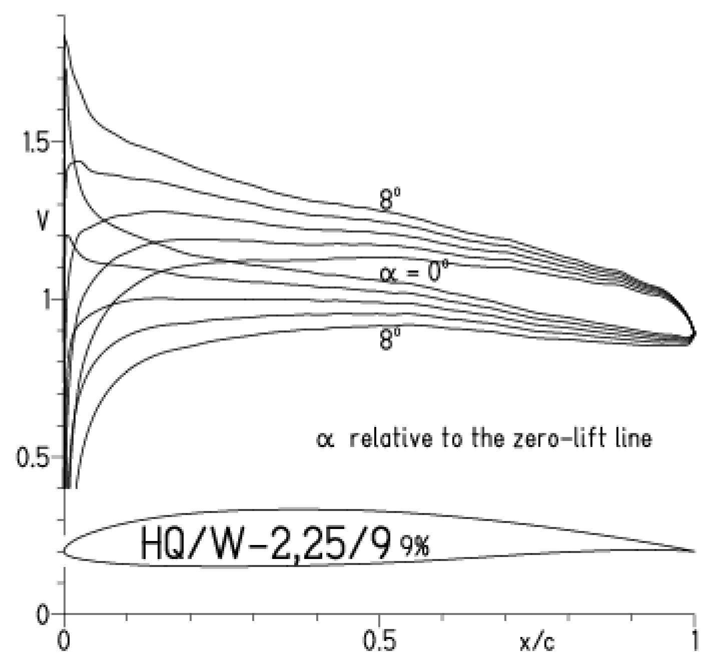
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



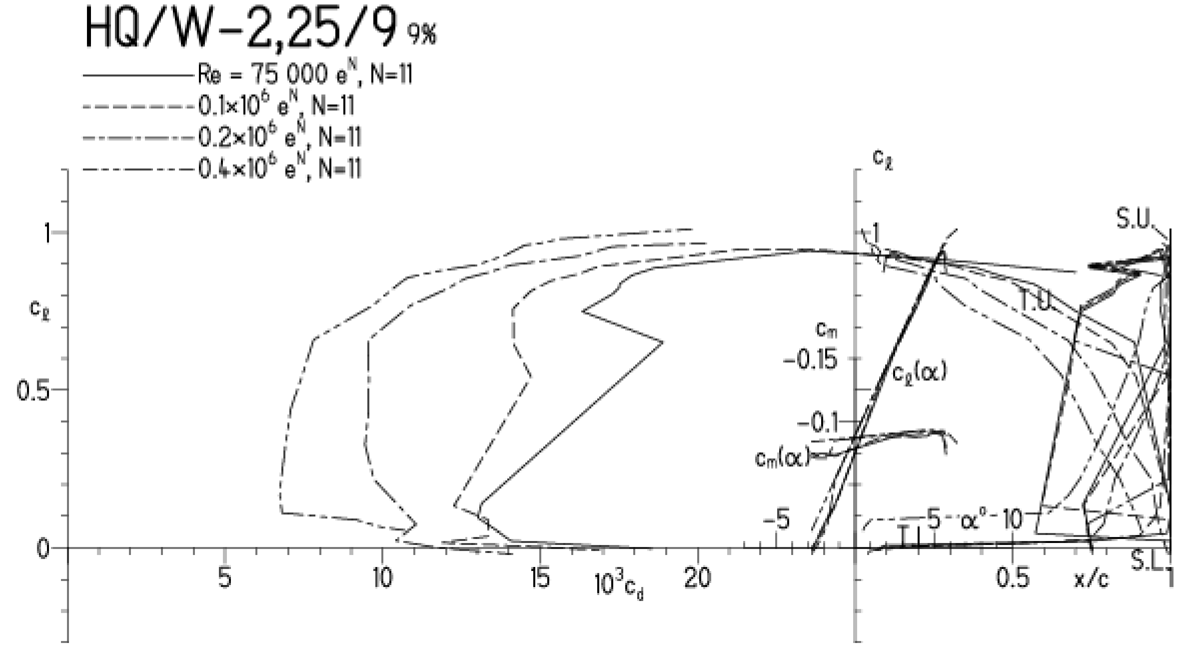


HQ/W-2,25/9, N=11

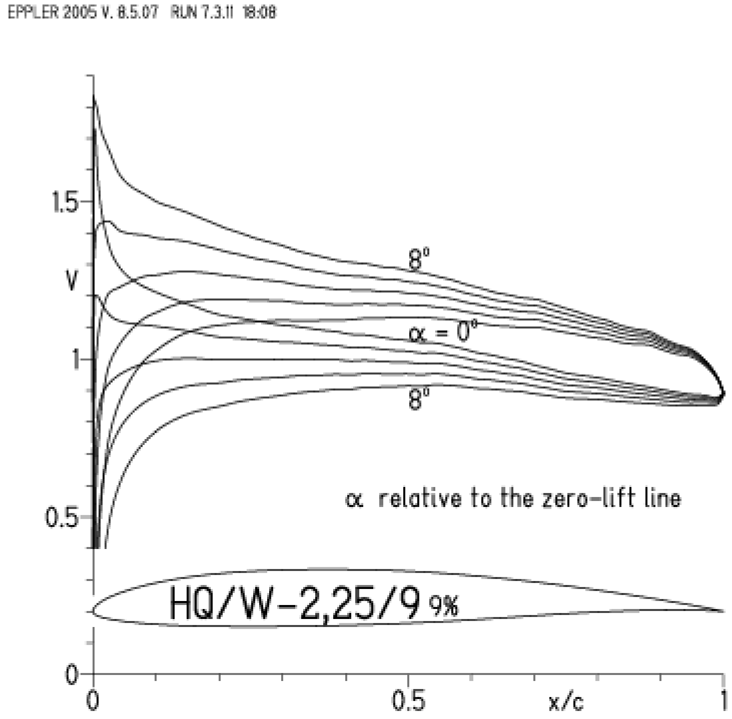
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

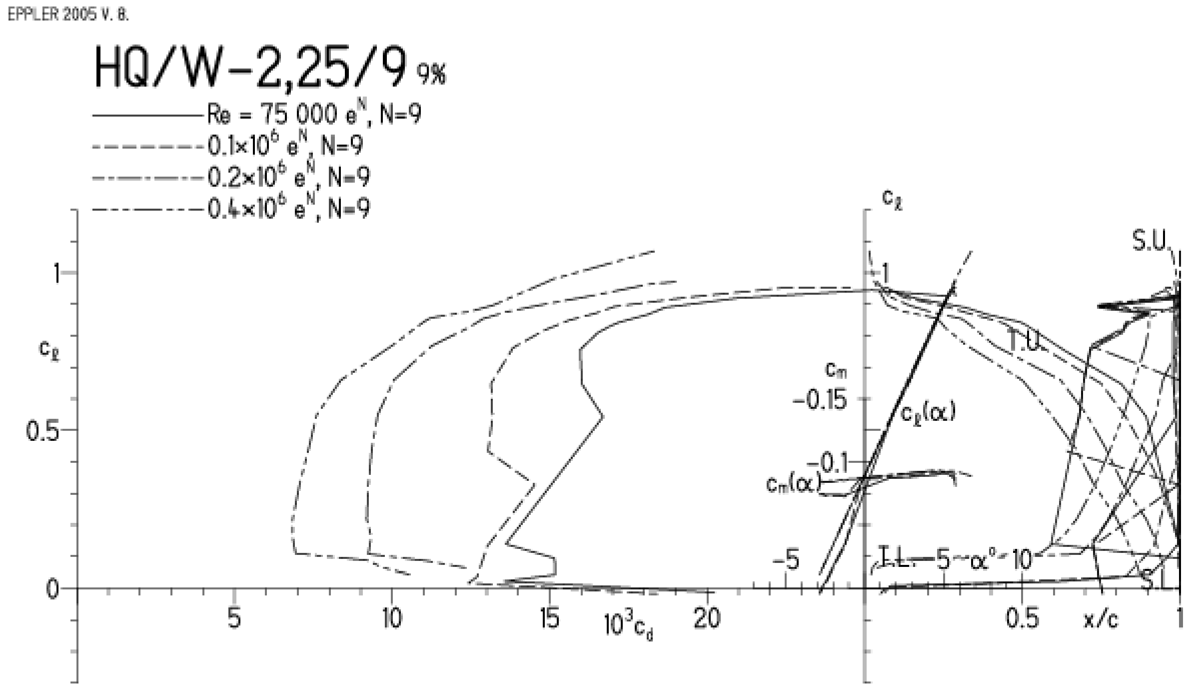


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

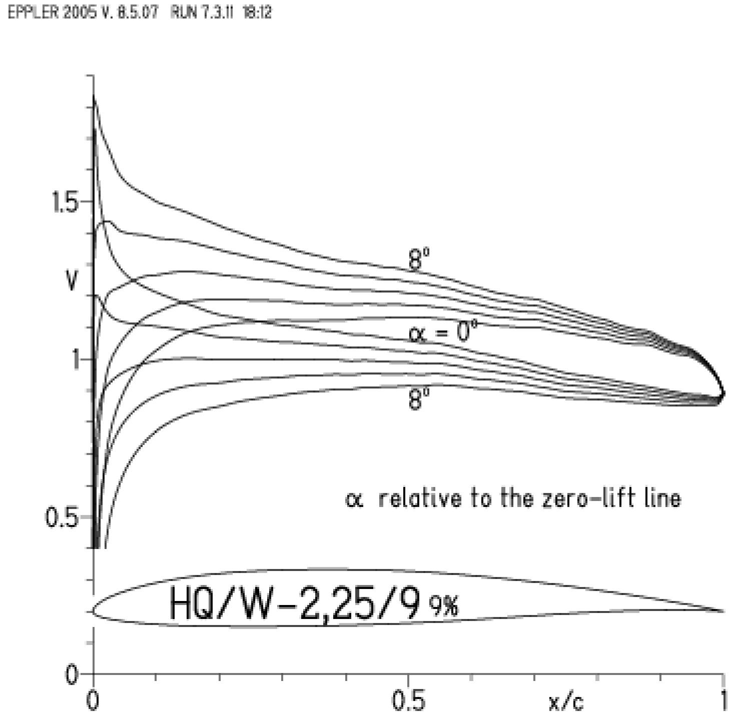


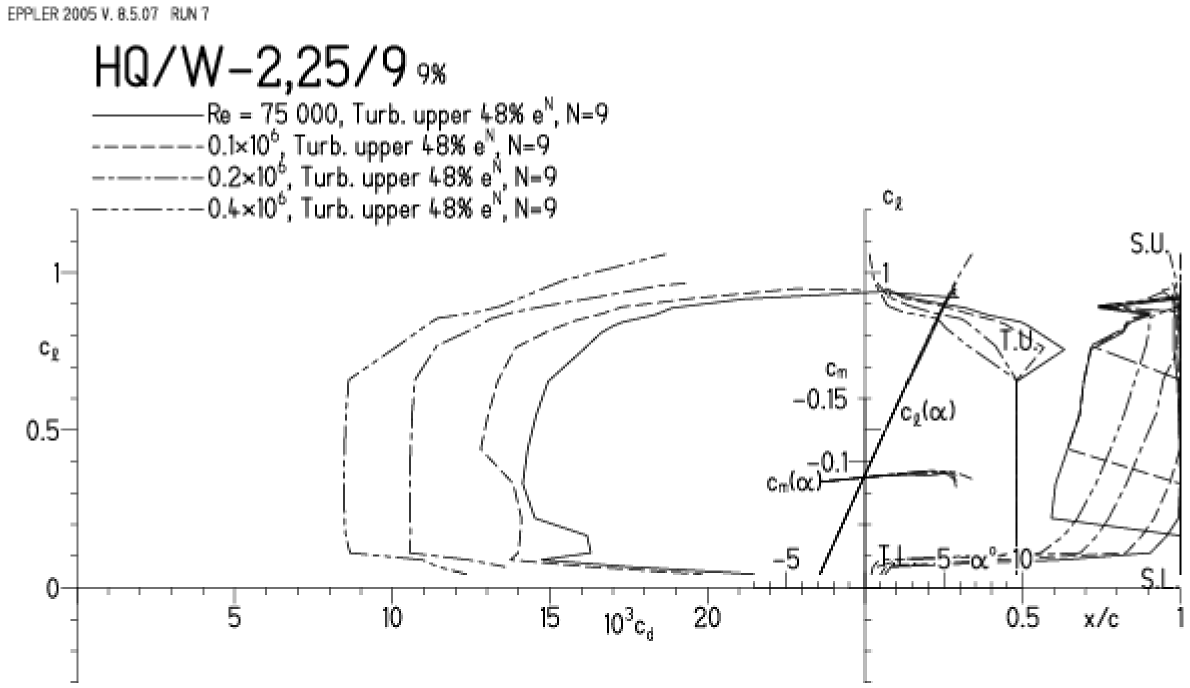
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

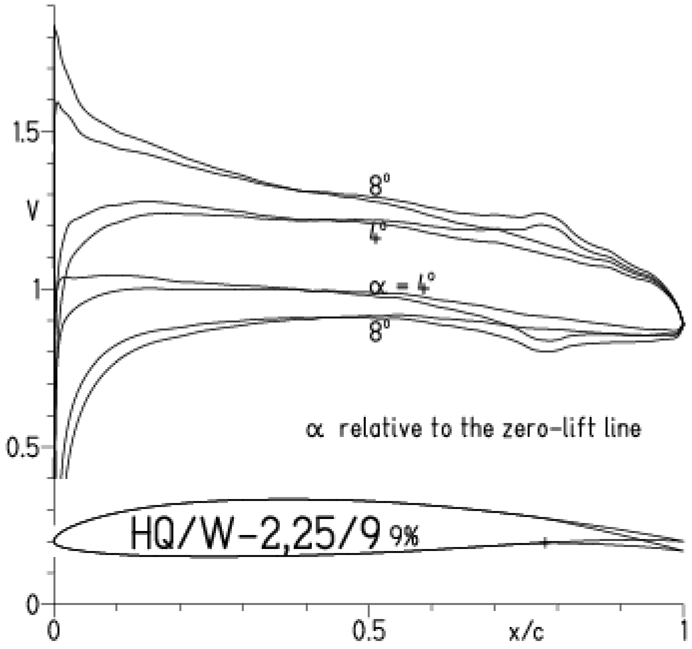
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



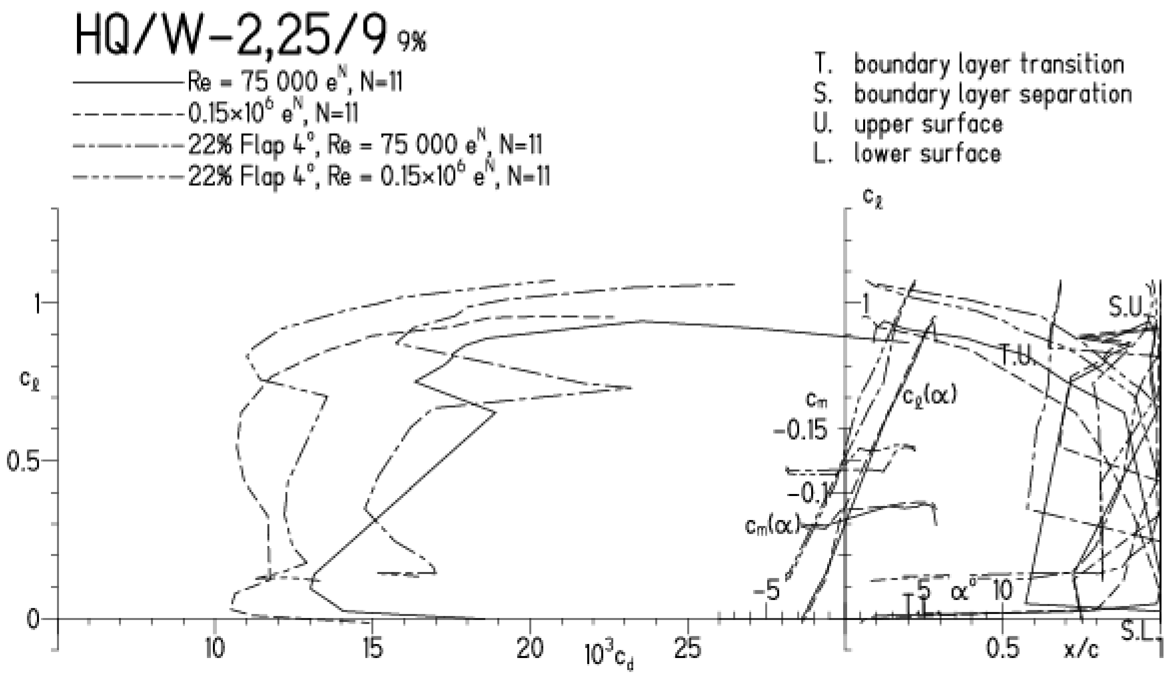


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

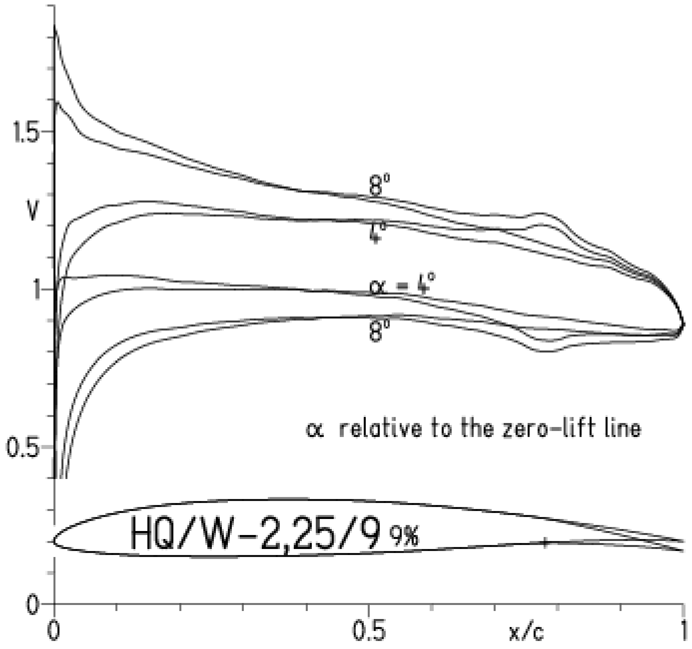


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

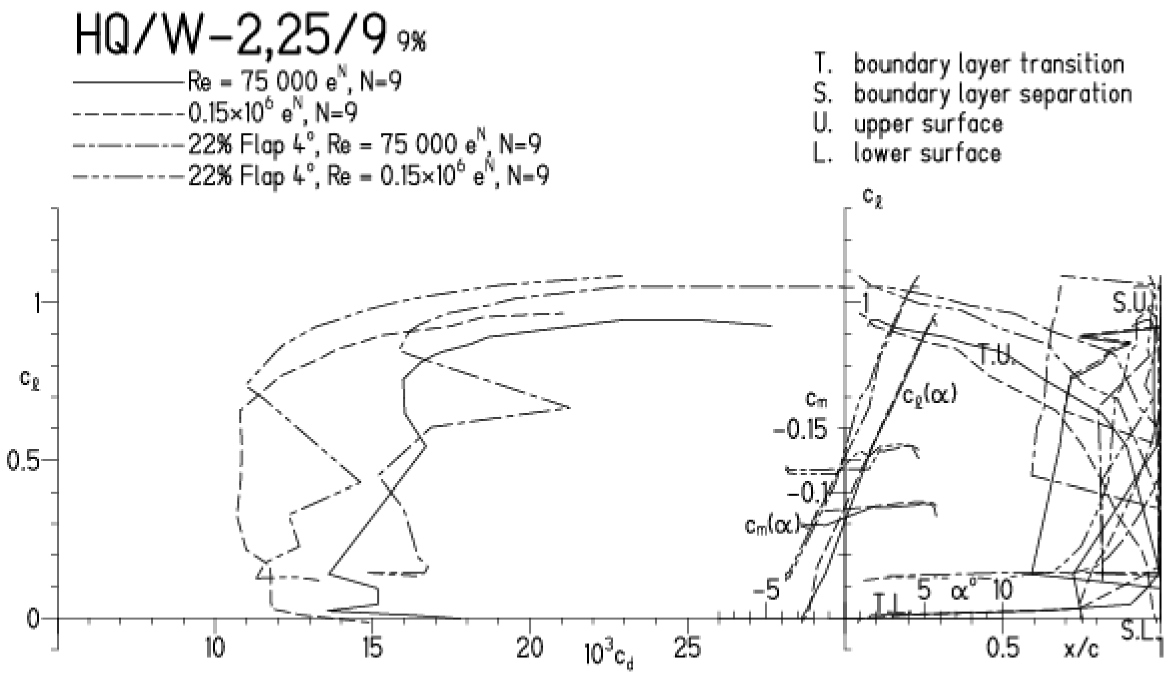


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

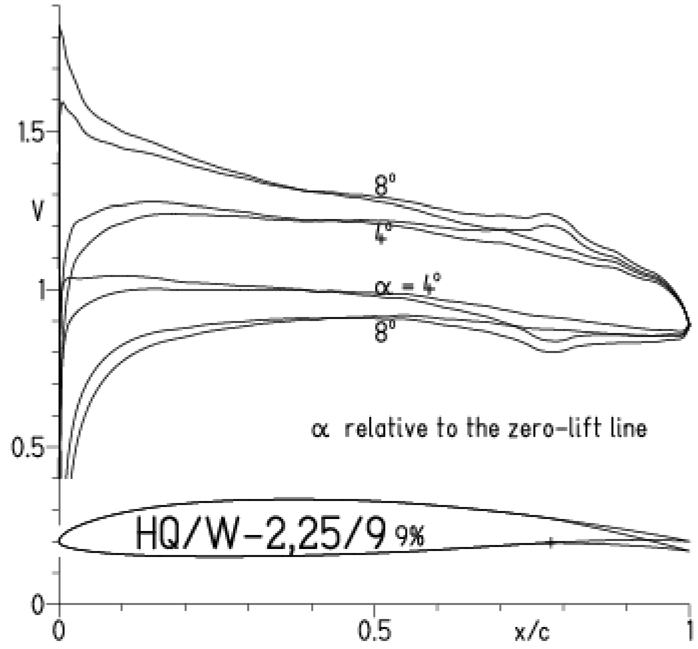


EPPLER 2005 V. 8.5.07 RUN 8.3.1

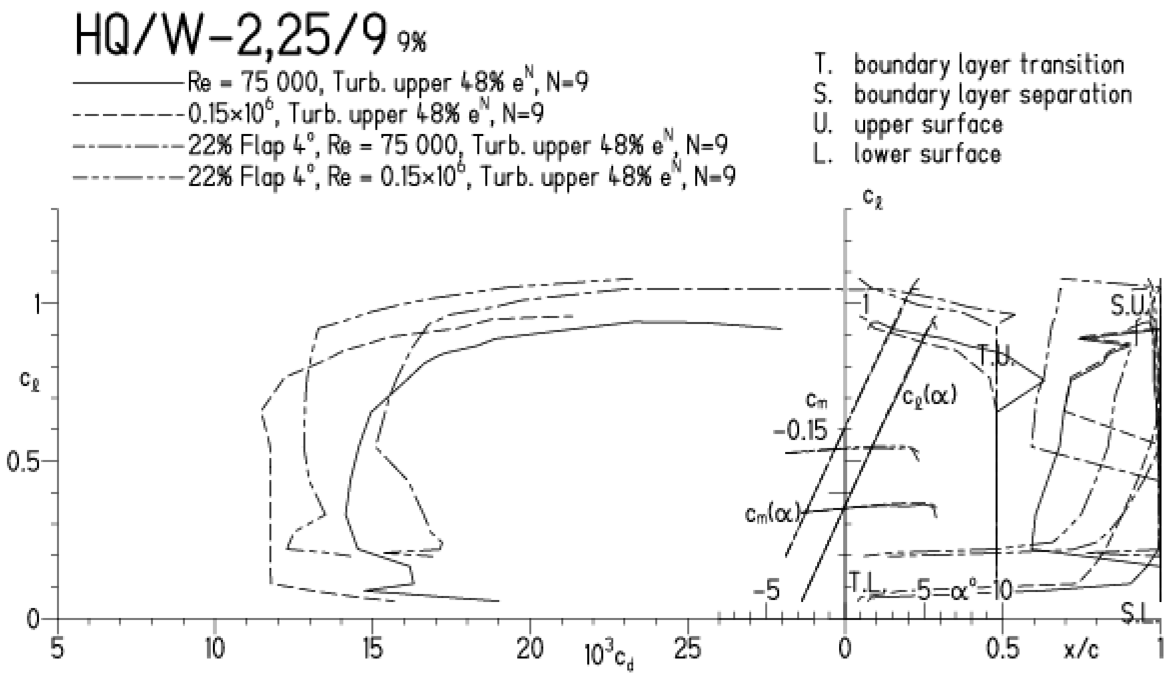


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

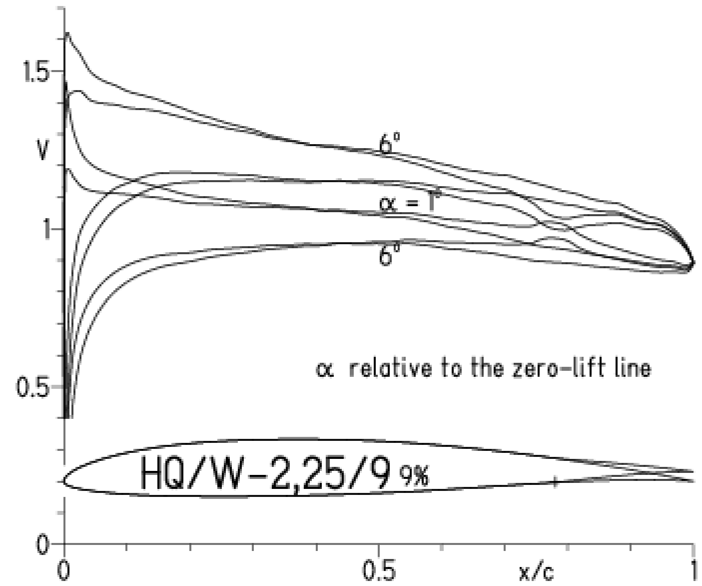


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

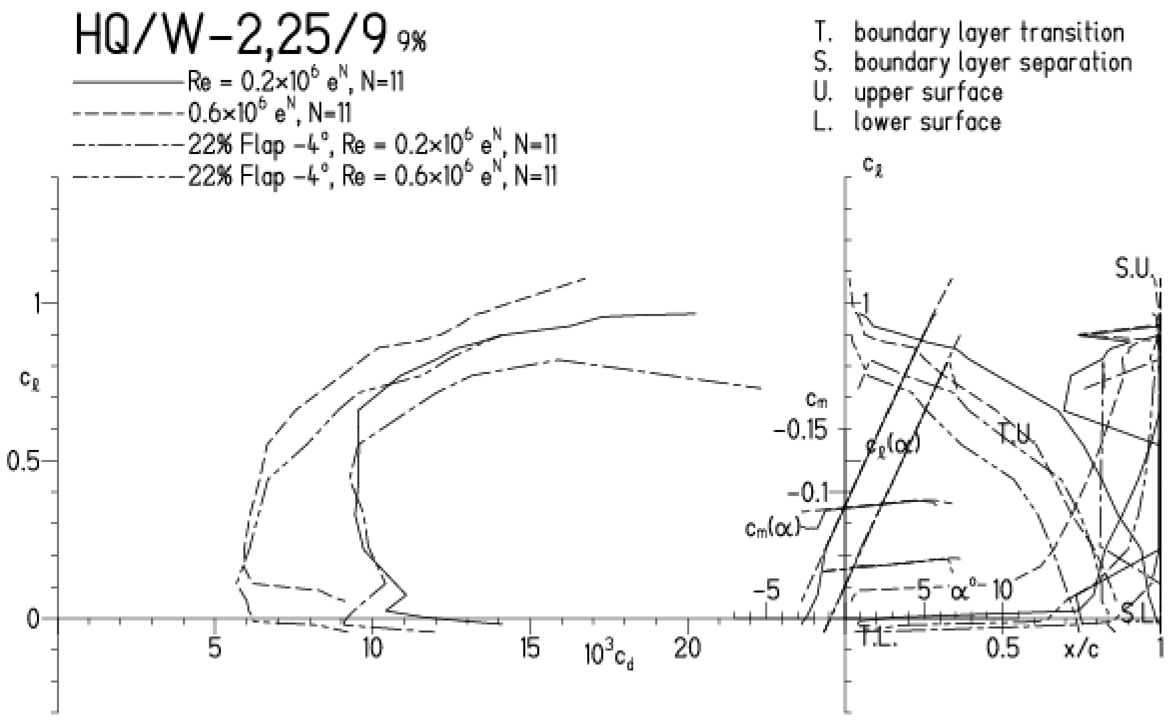


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

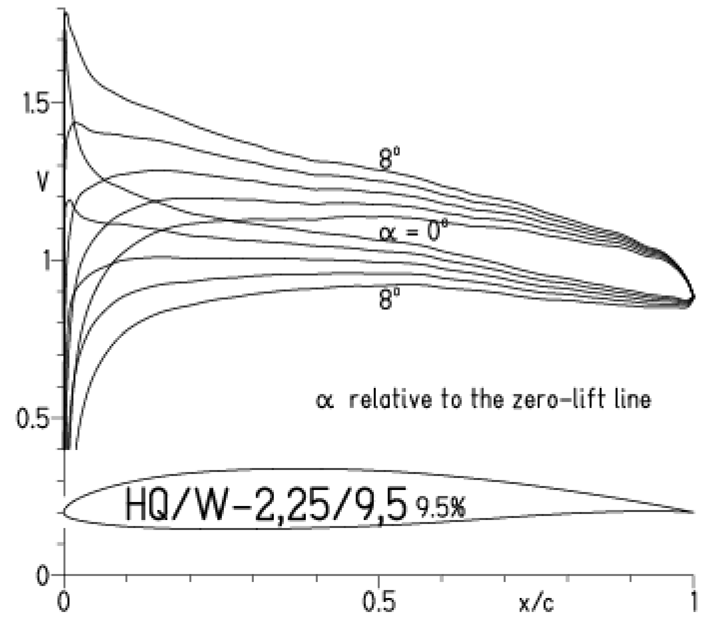


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

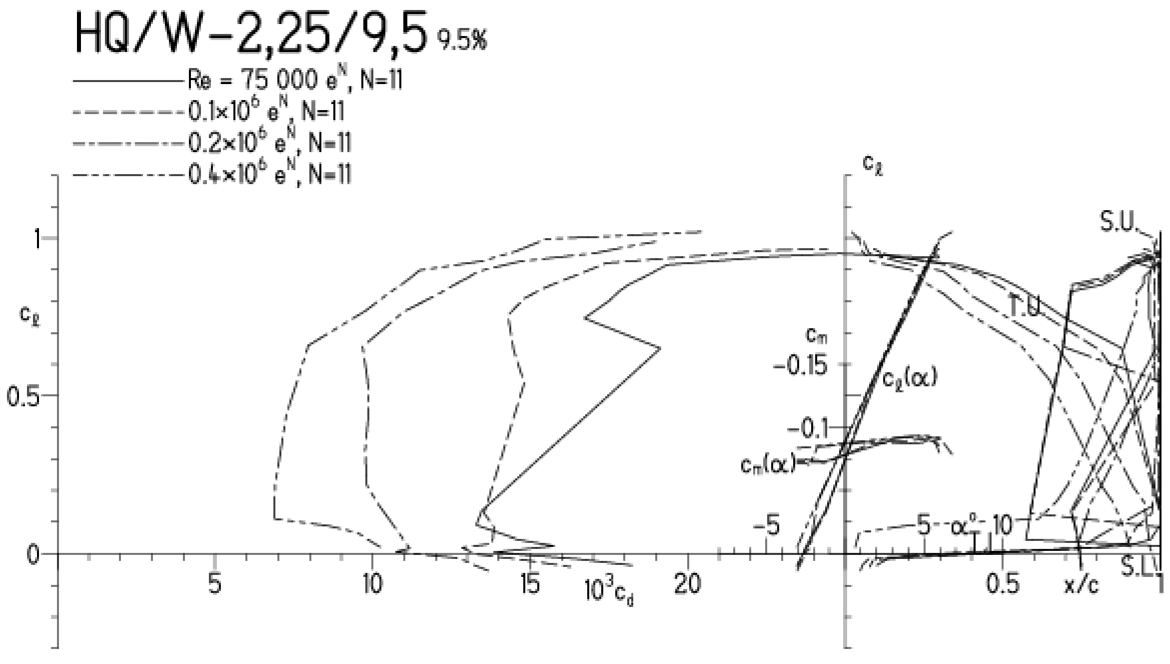


HQ/W-2,25/9,5, N=11

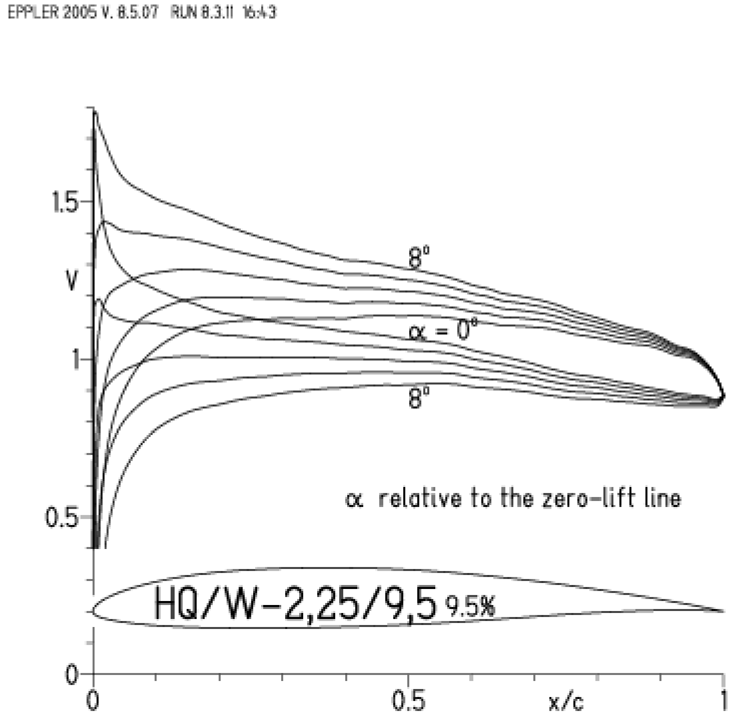
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

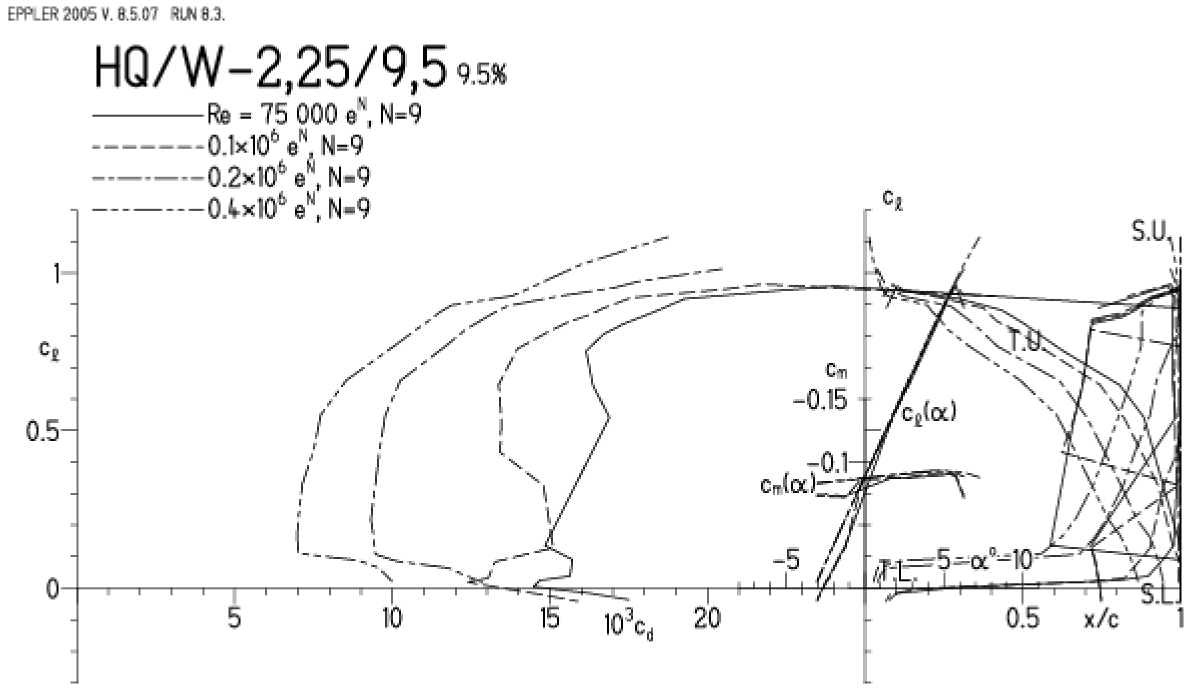


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

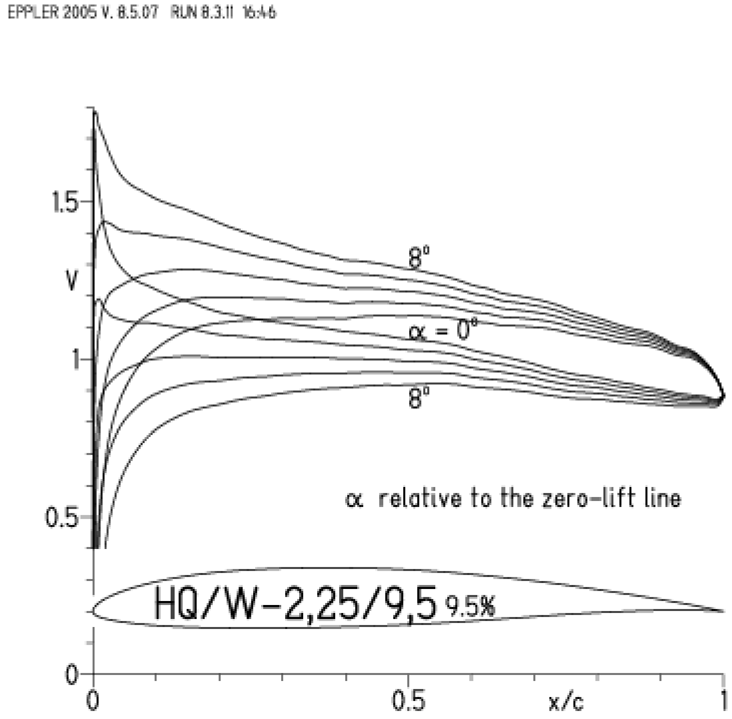


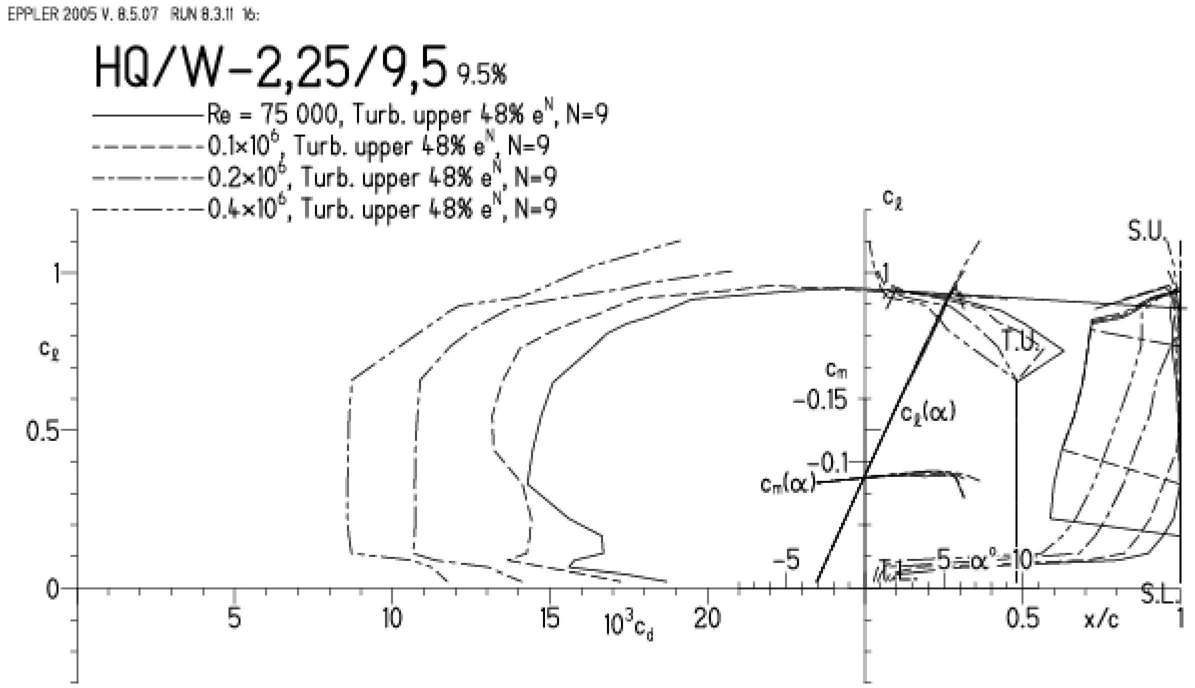
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

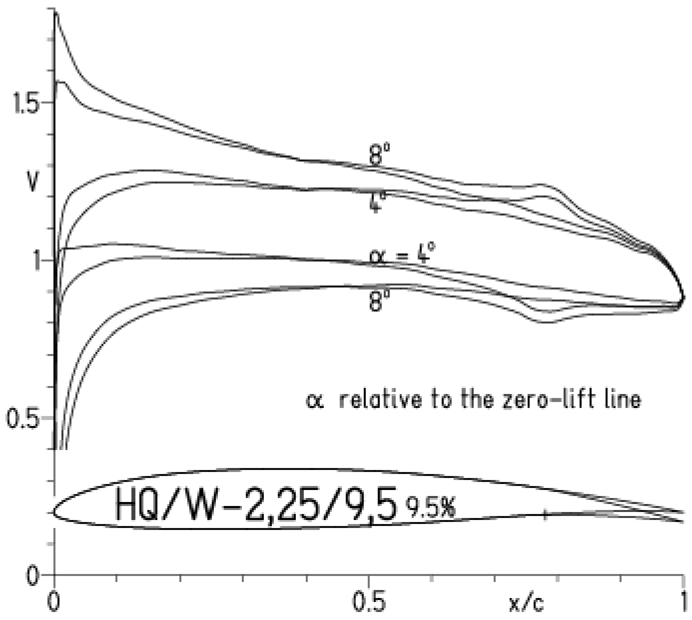
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



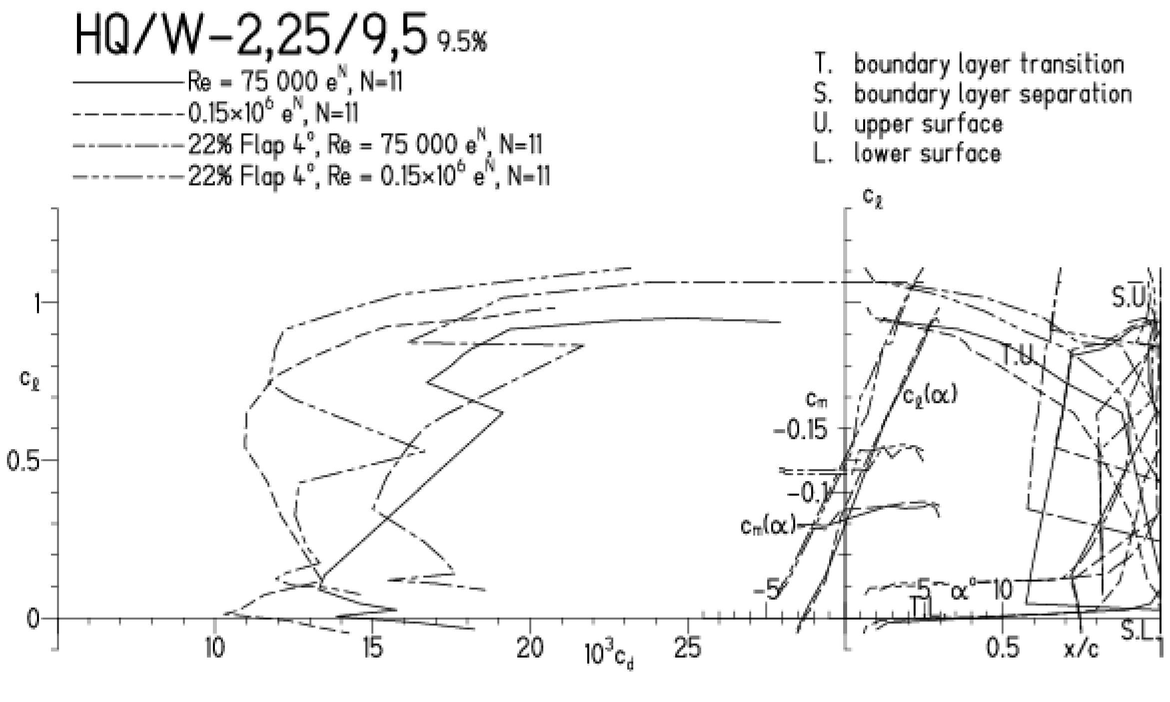


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

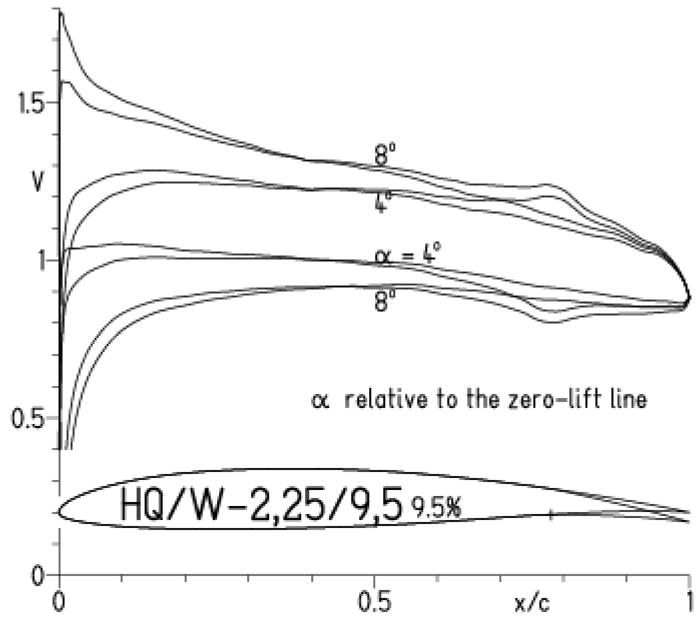


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

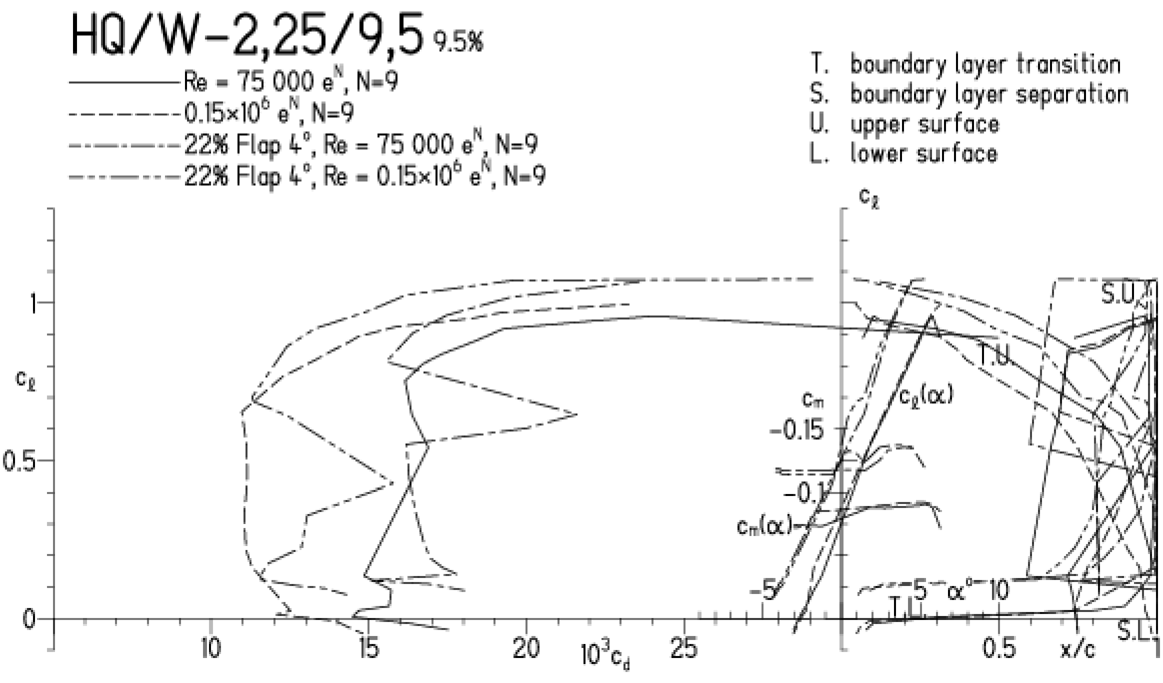


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

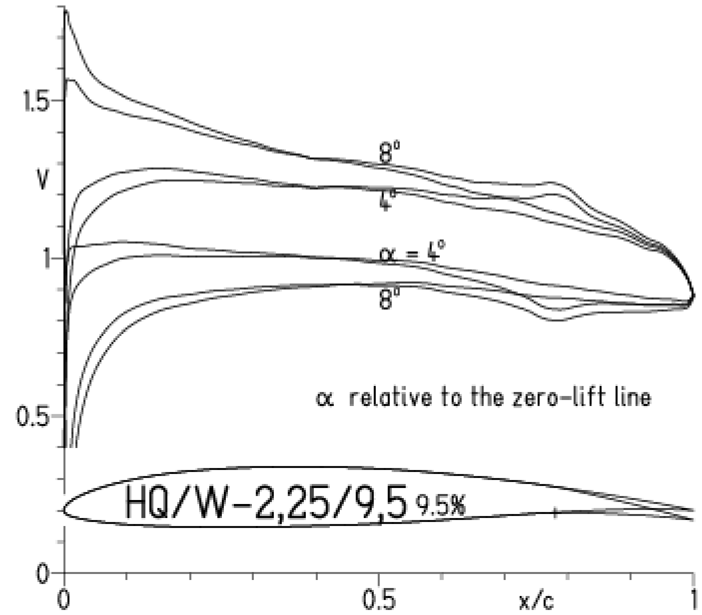


EPPLER 2005 V. 8.5.07 R

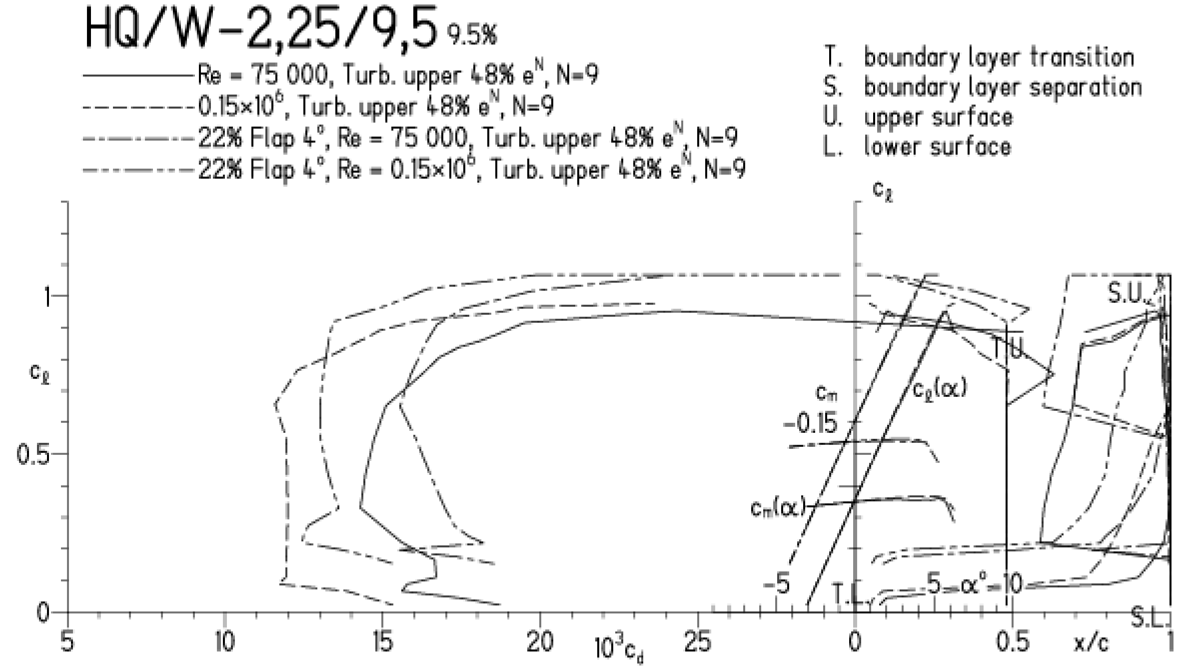


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

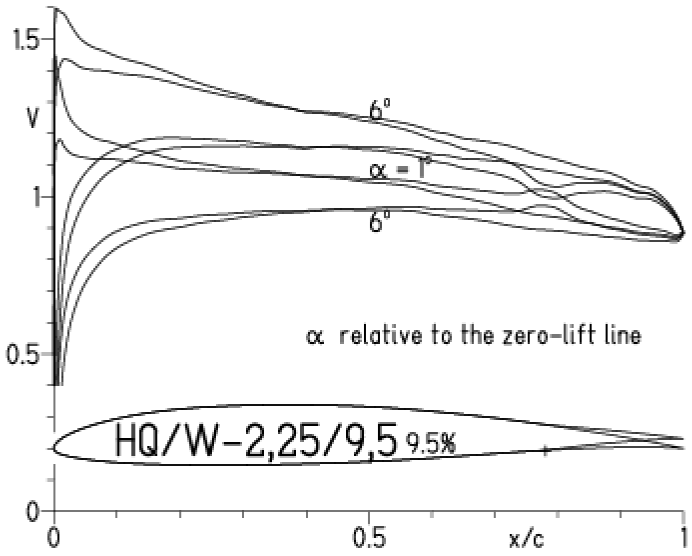


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

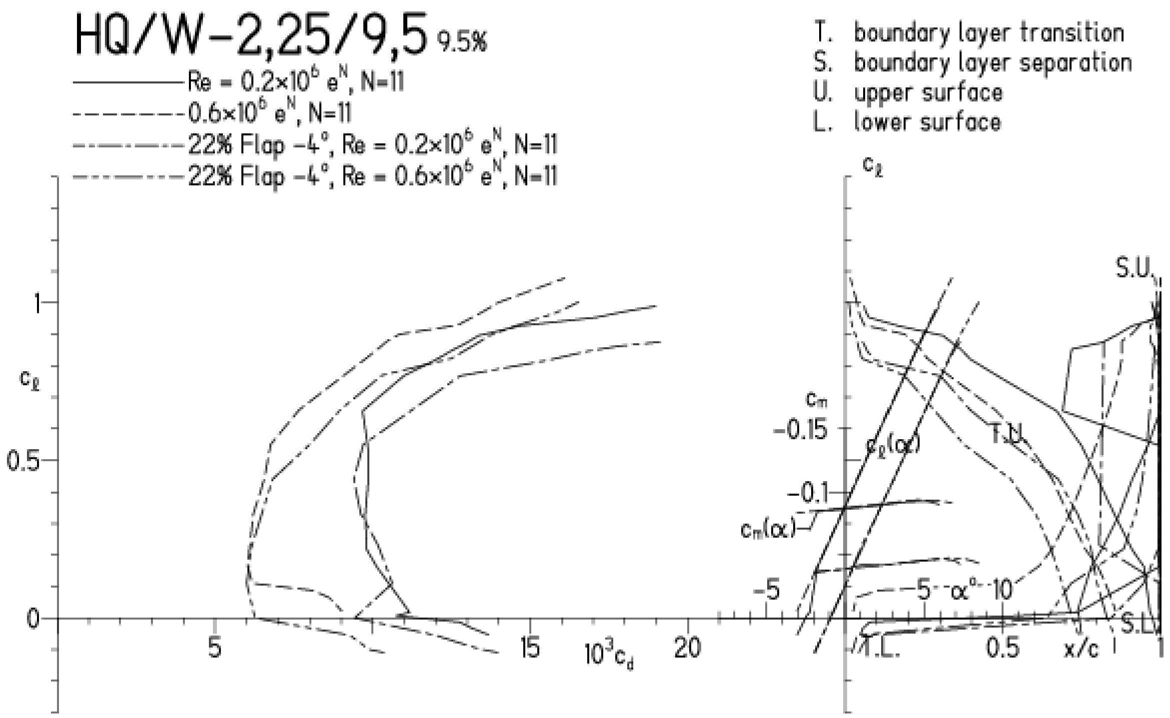


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

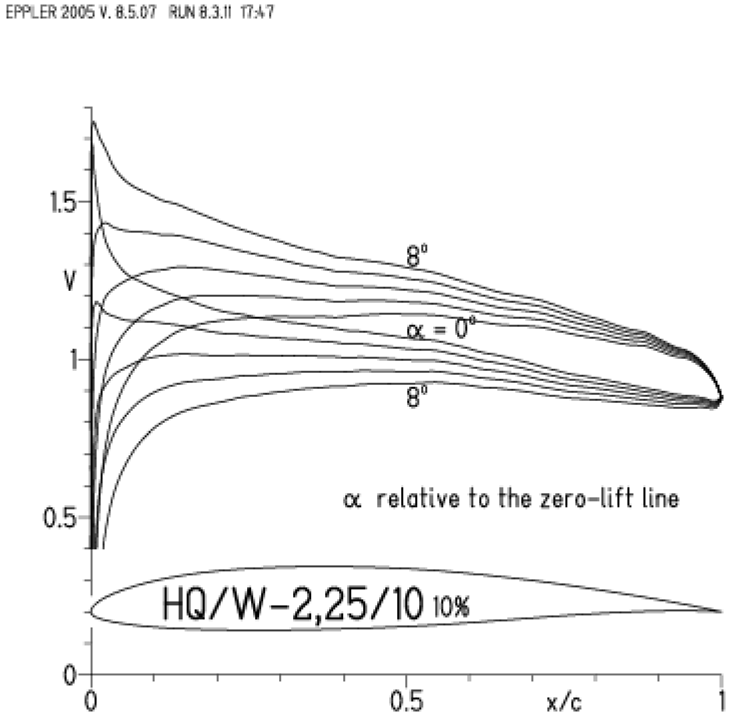
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

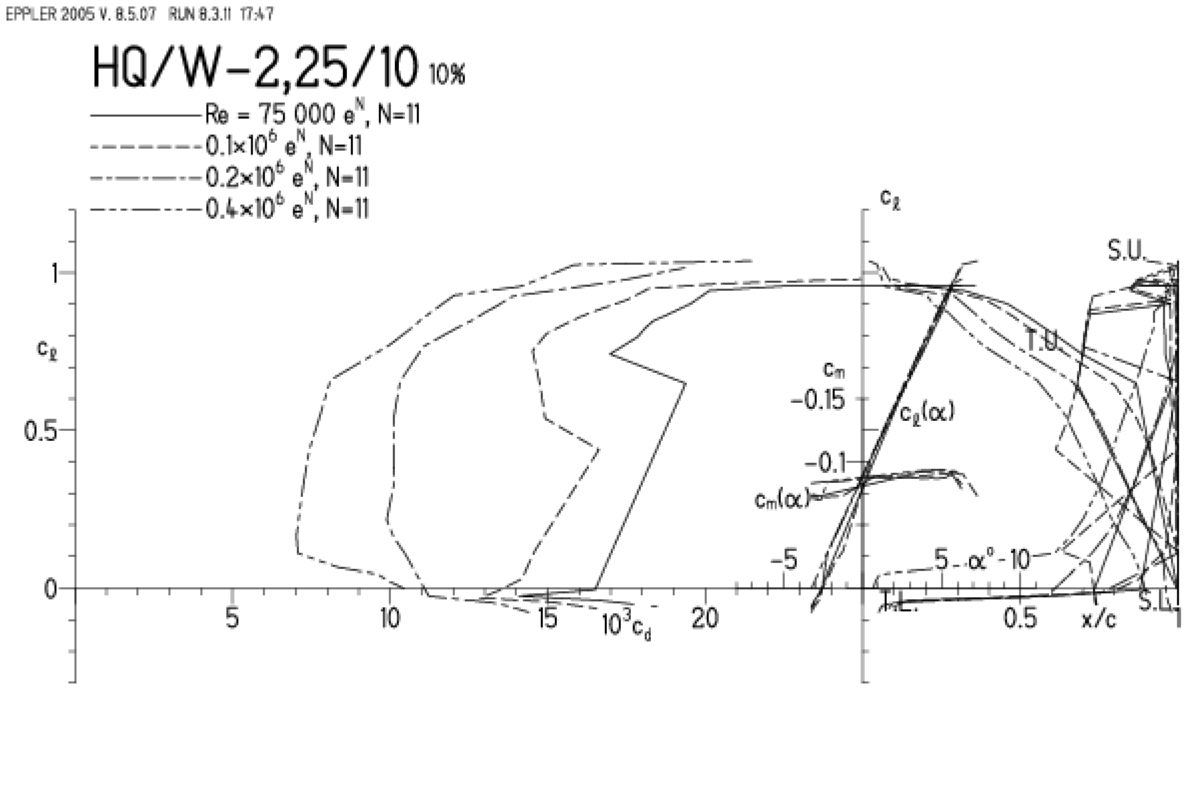


EPPLER 2005 V.



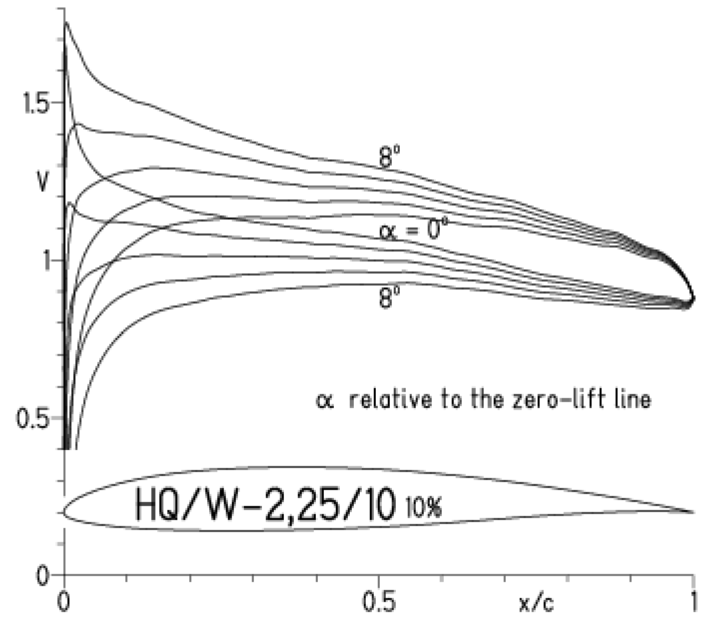
HQ/W-2,25/10, N=11



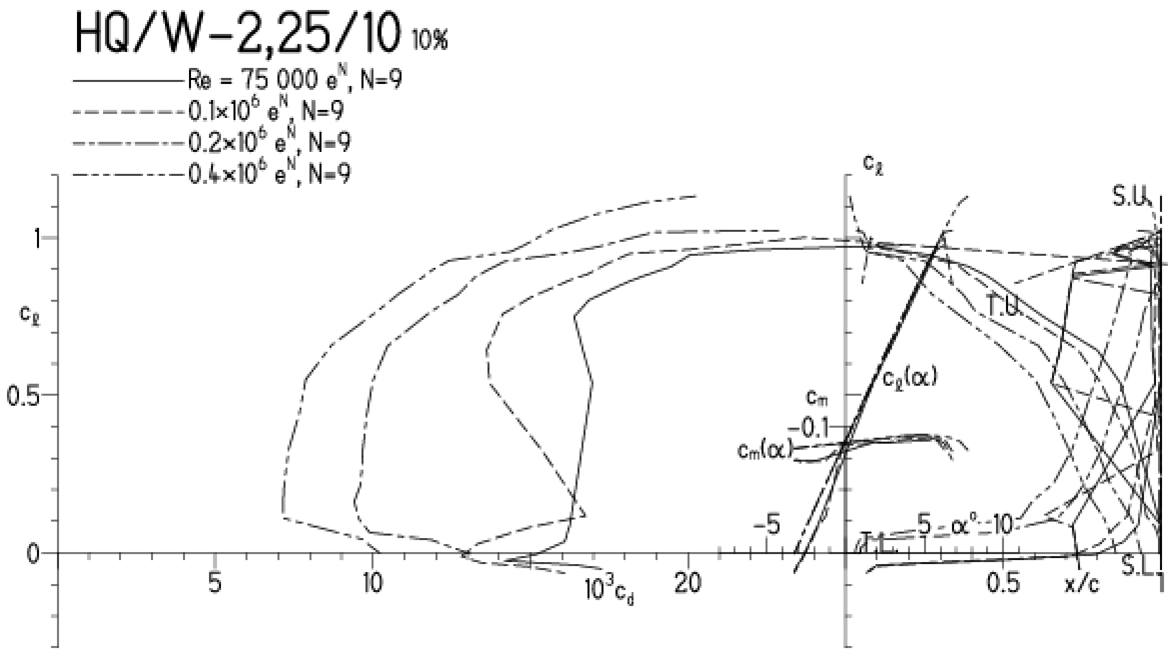


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

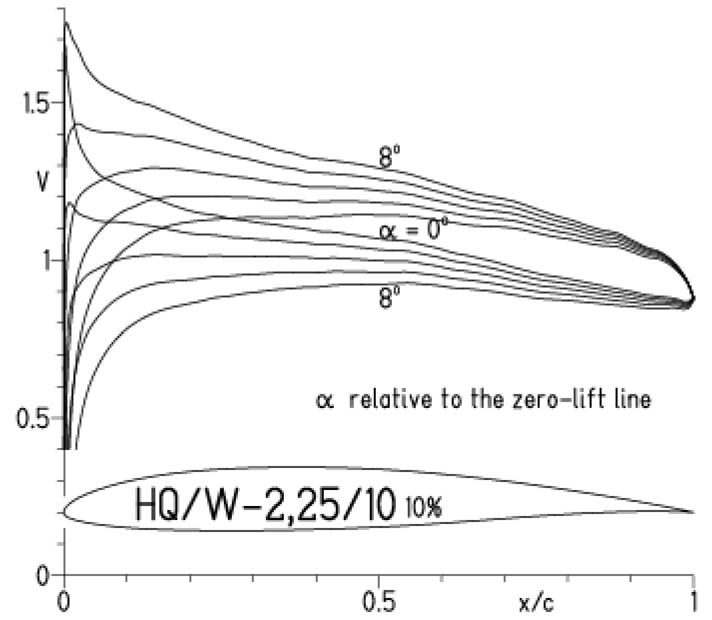


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

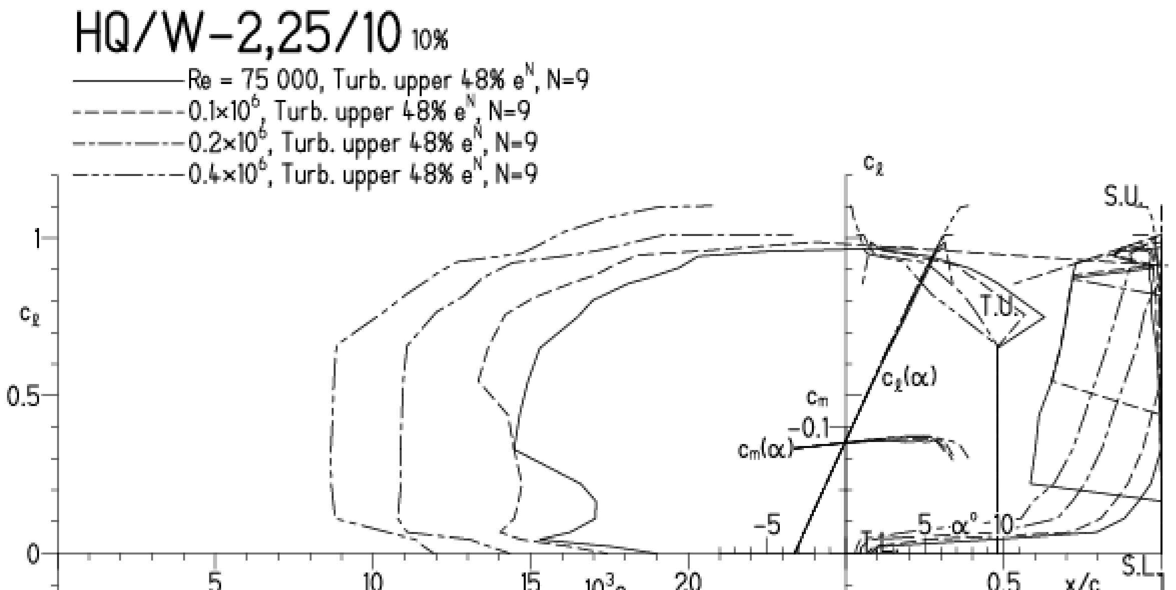


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

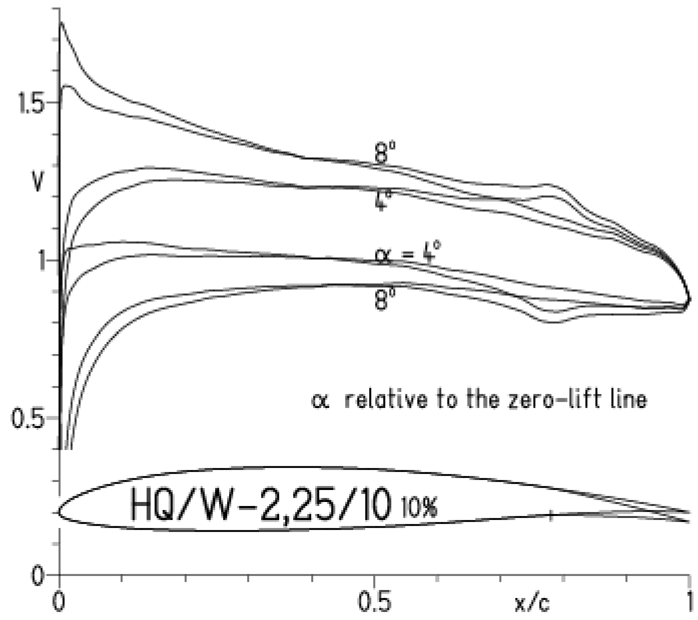


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

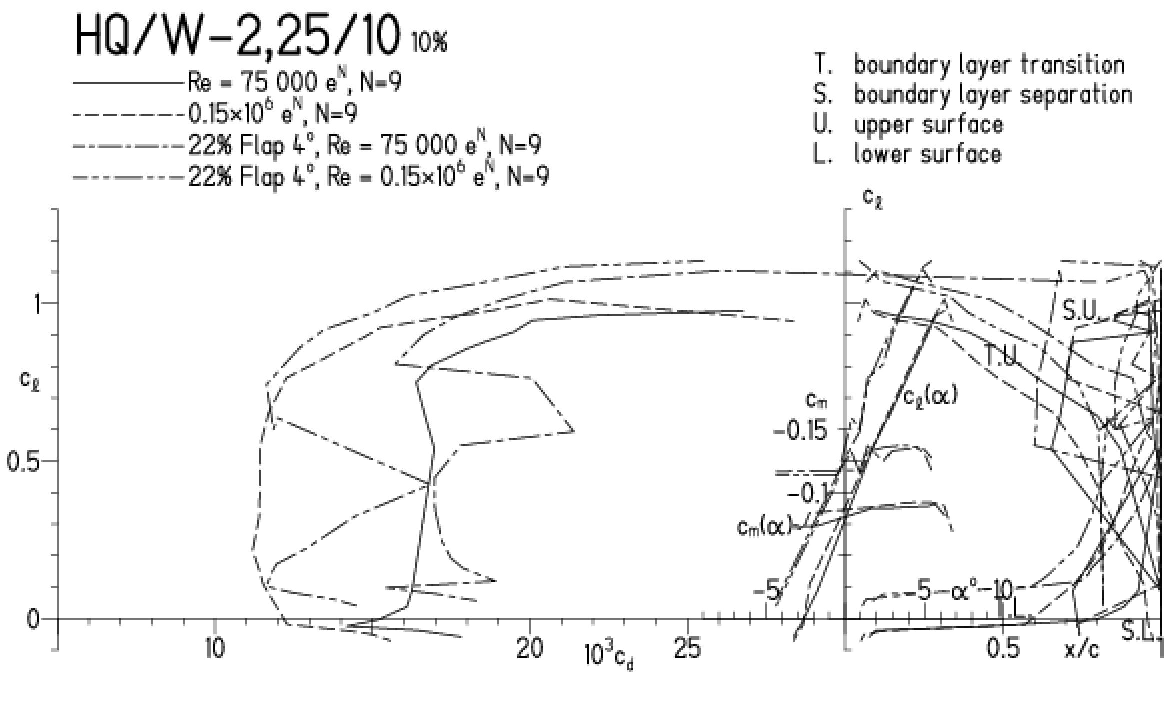


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

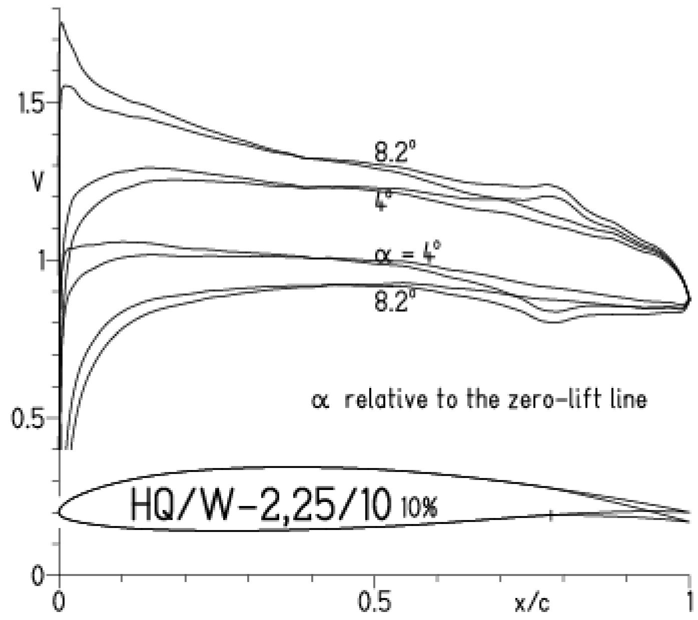


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

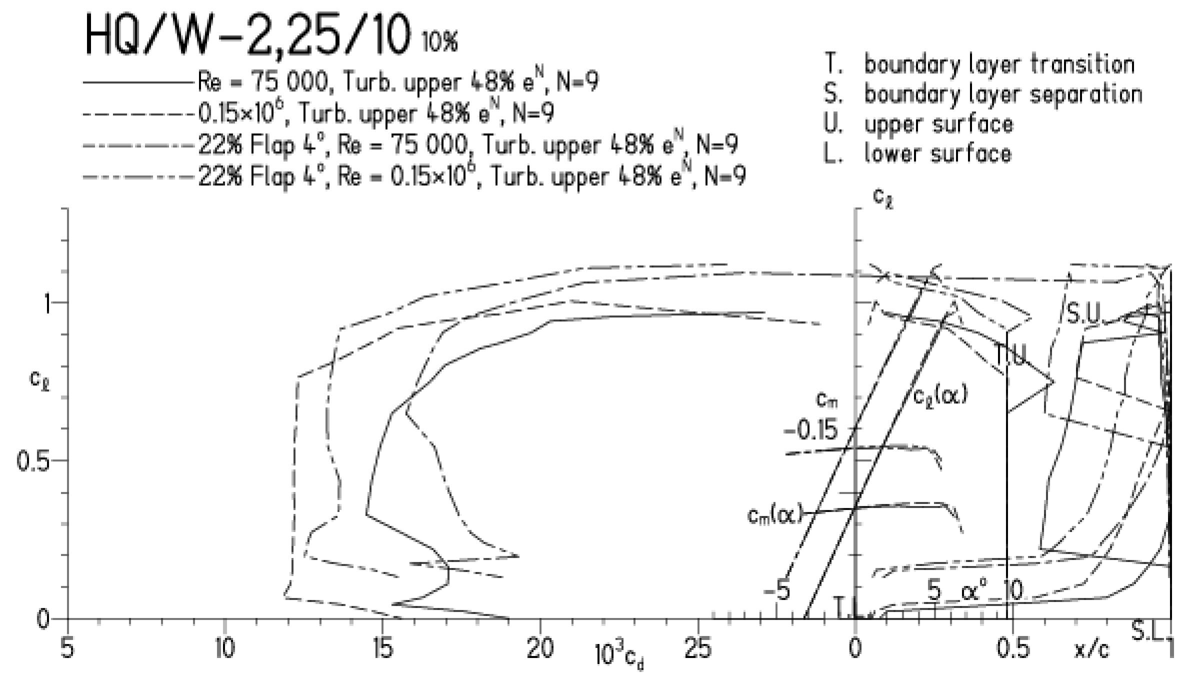


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

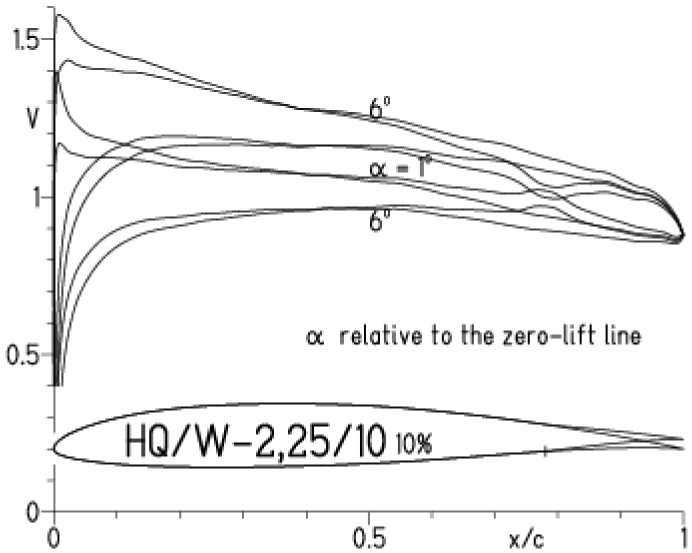


EPPLER 2005 V. 8.5.07 RUN 8.3

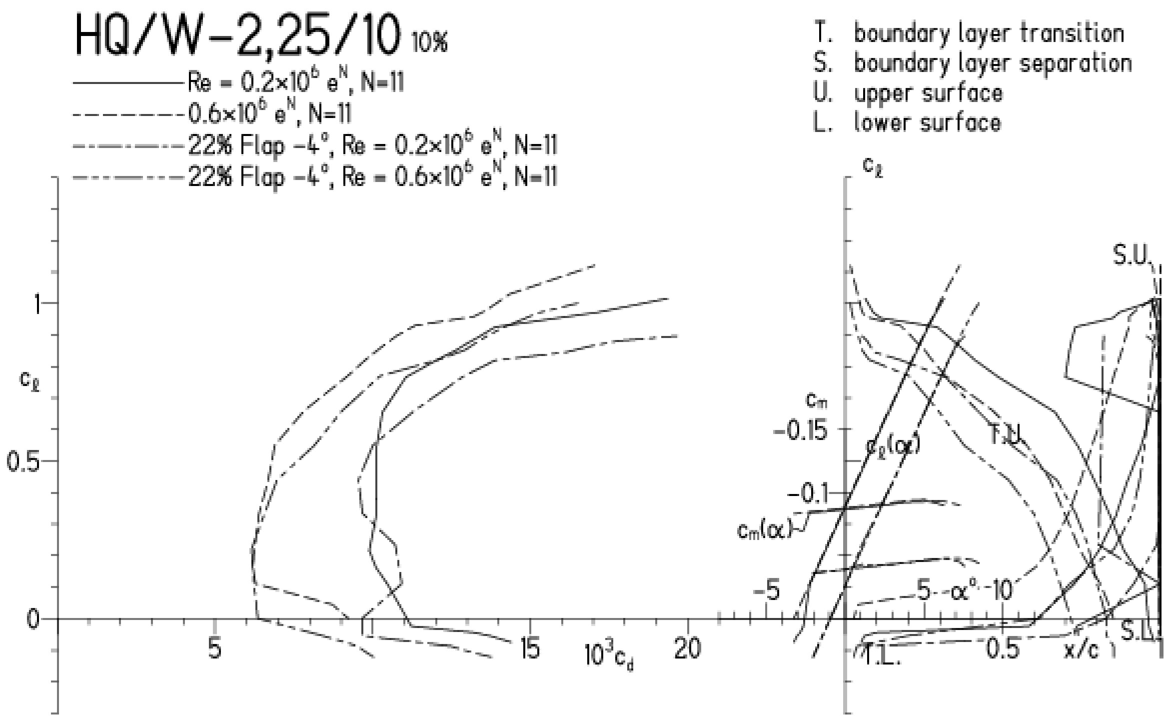


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

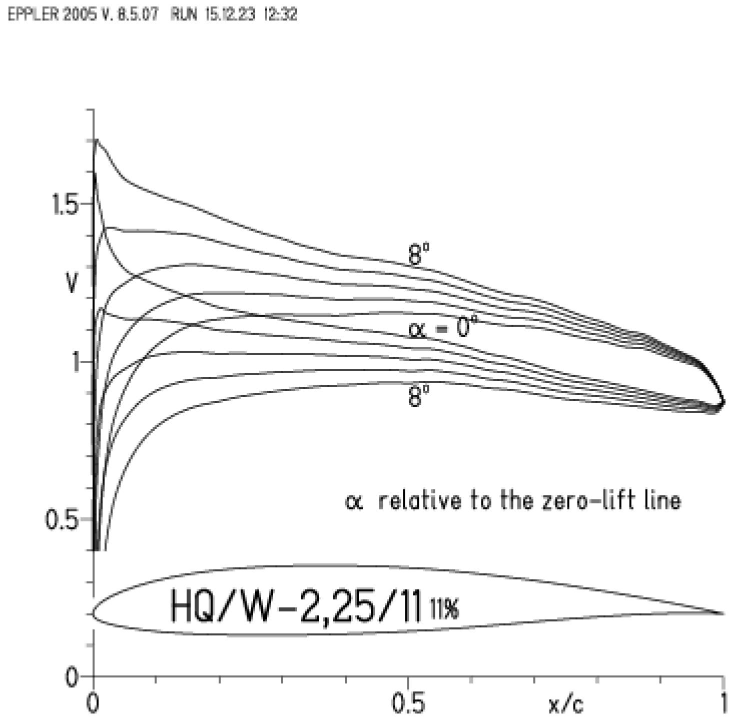
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

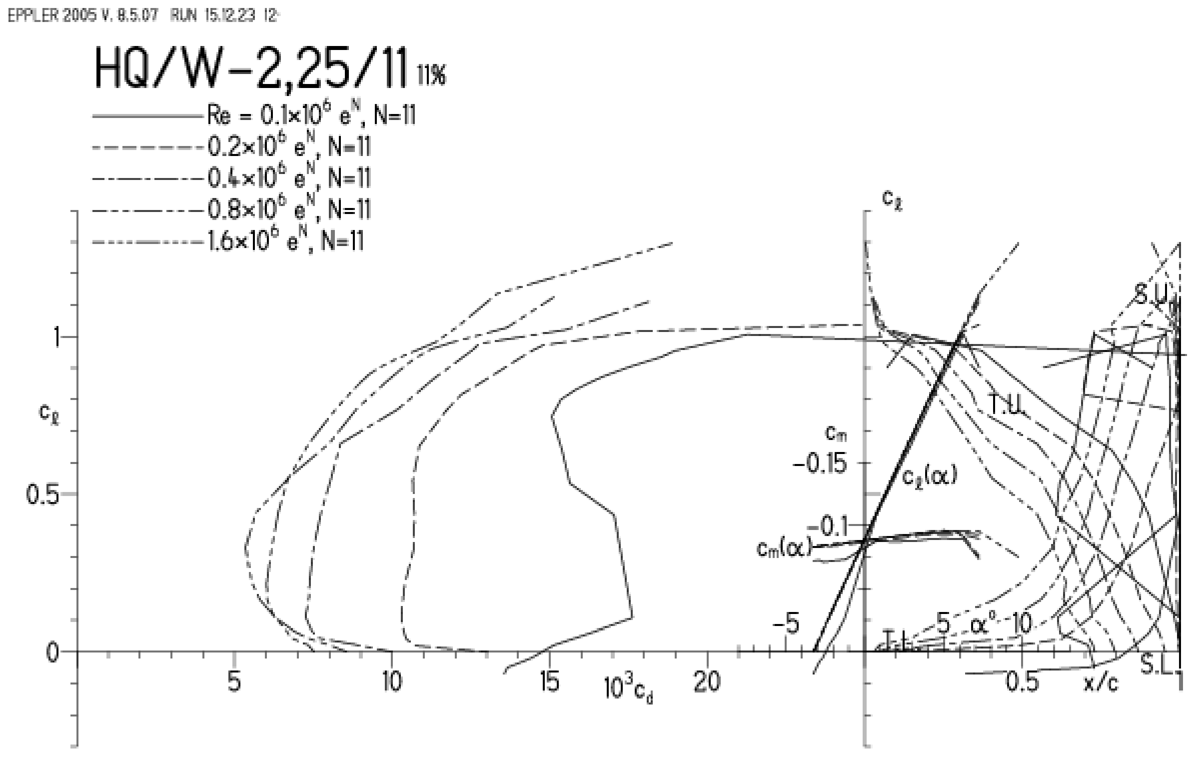


EPPLER 2005 V. 8.5.07 RUN



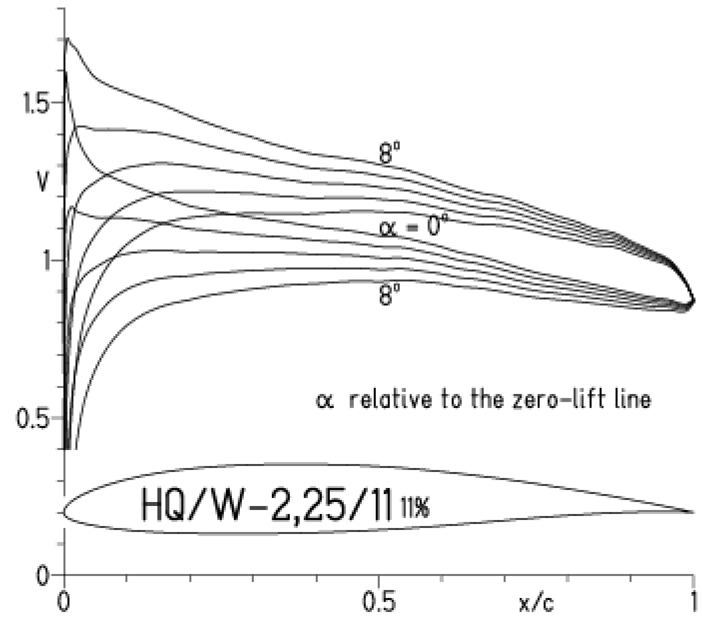
HQ/W-2,25/11, N=11



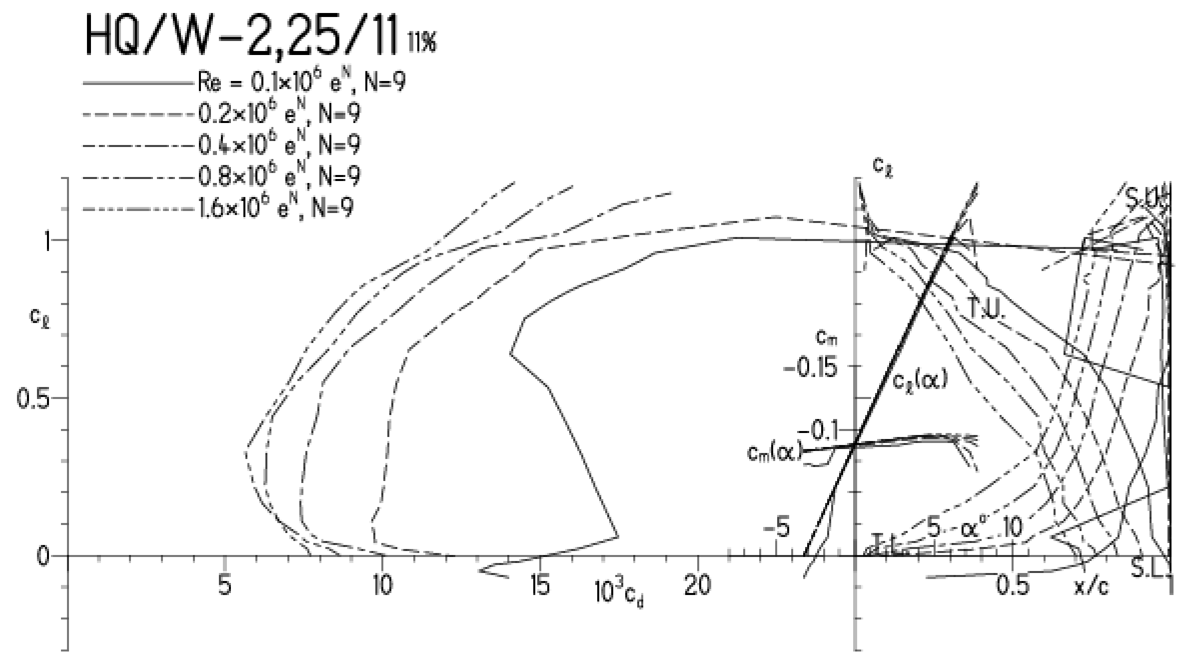


HQQ/W-2,25/11, N=9

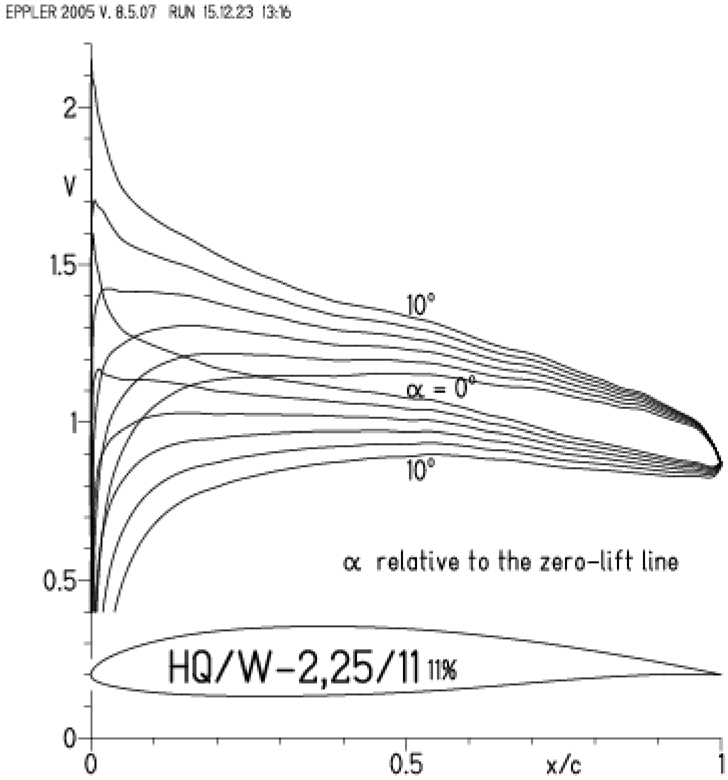
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

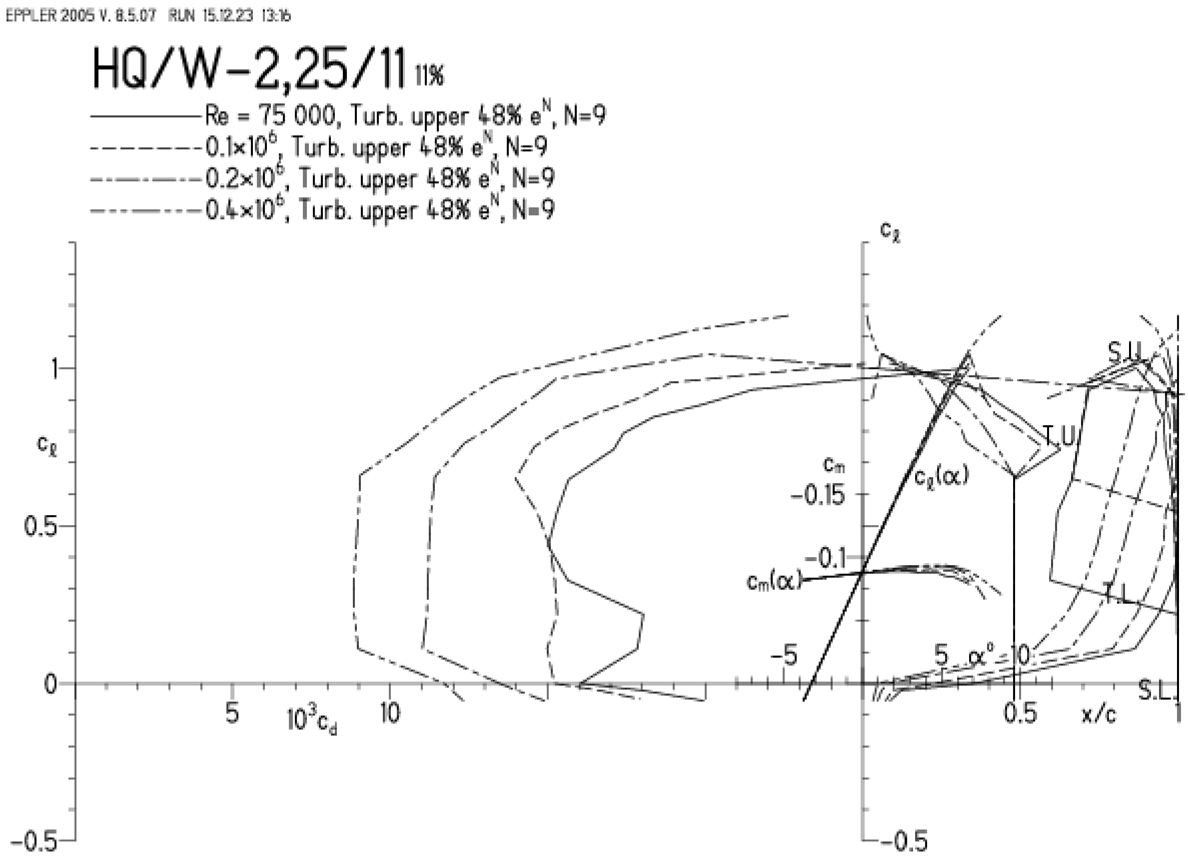


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



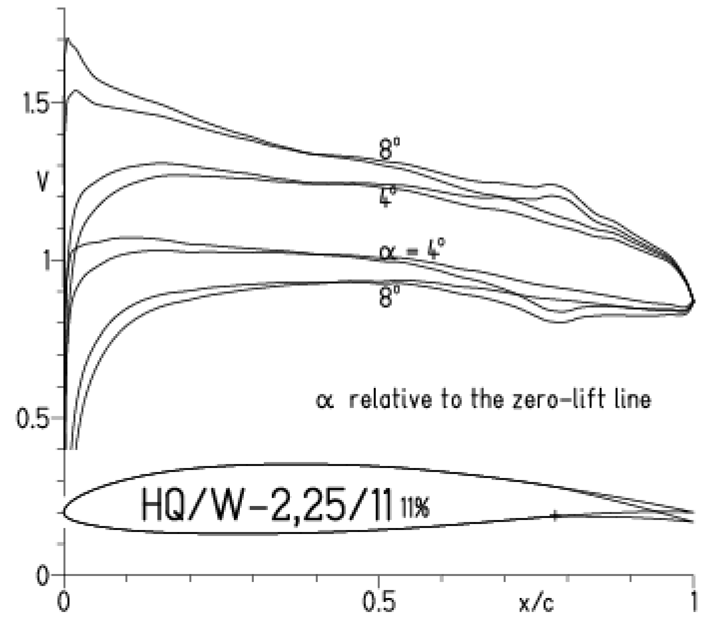
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



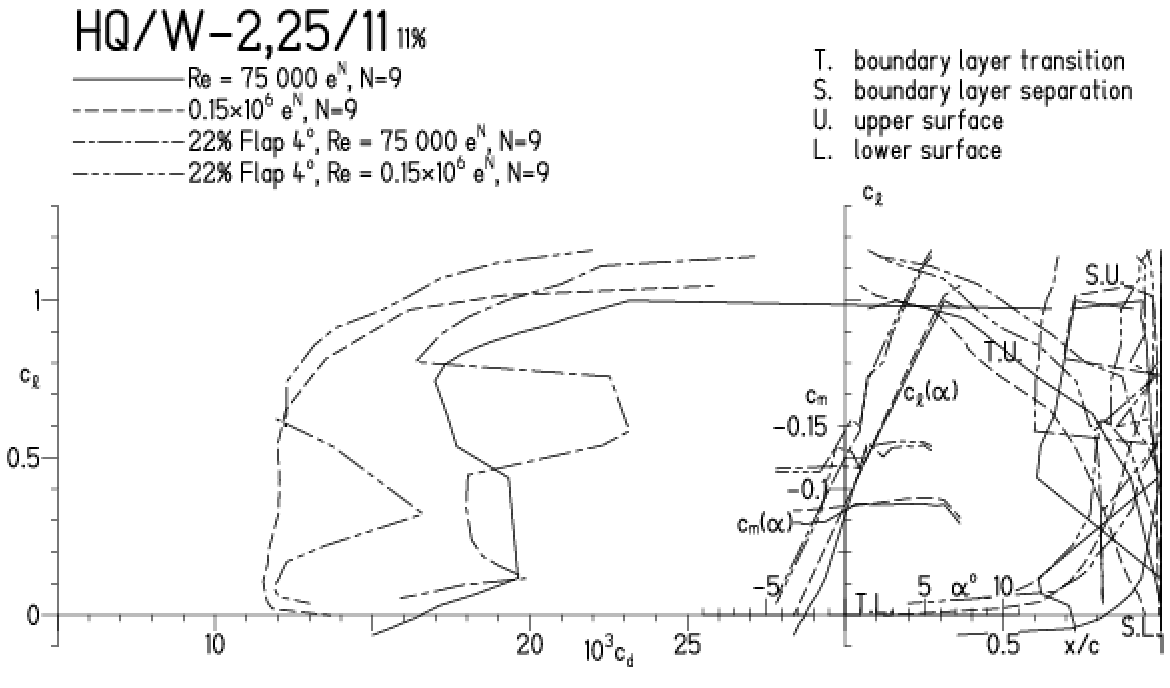


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

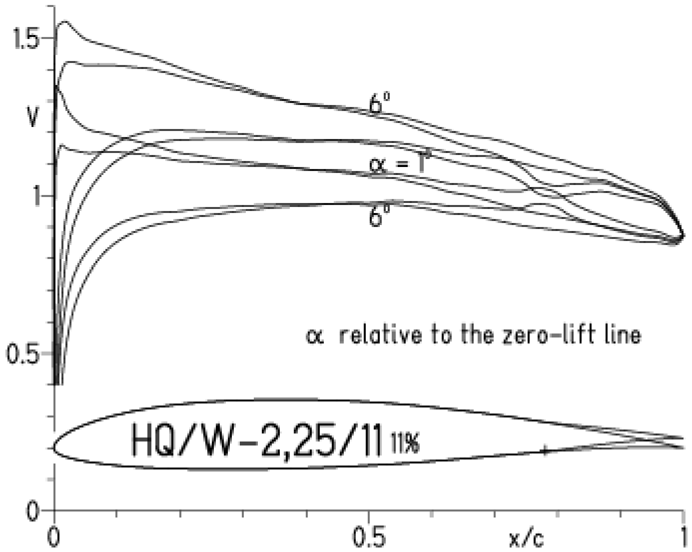


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

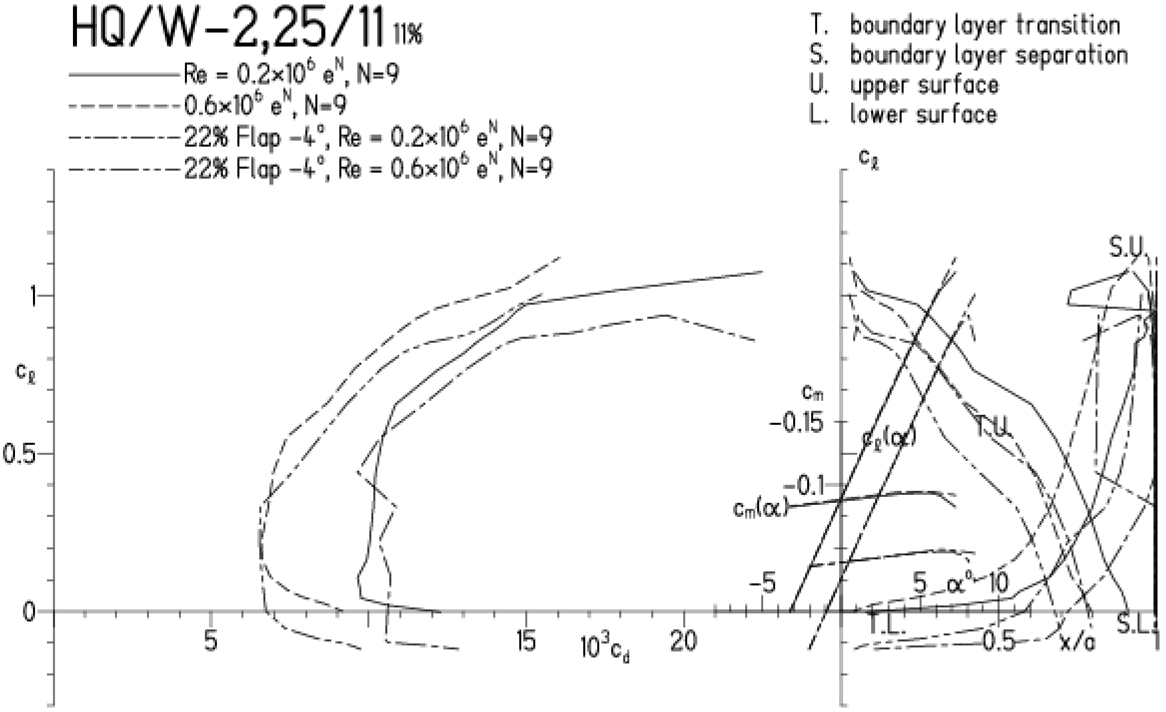


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

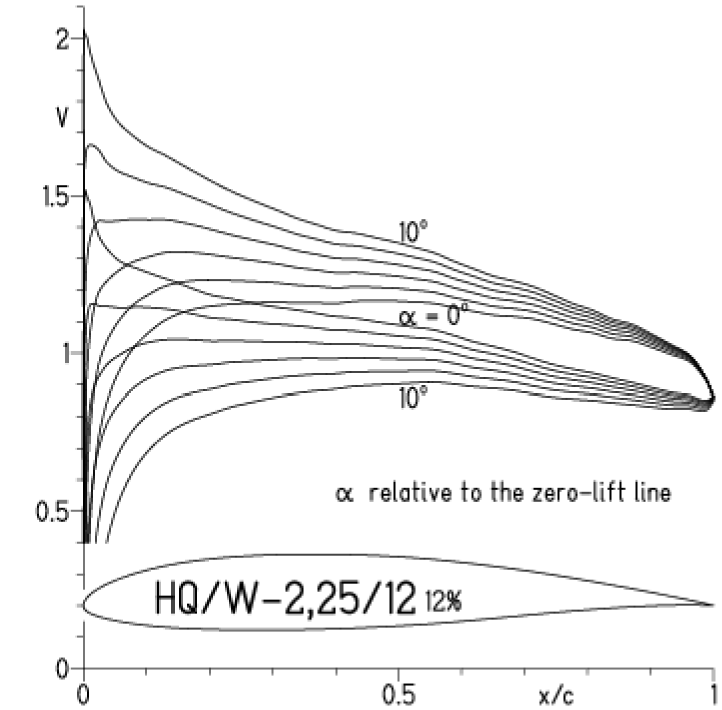


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

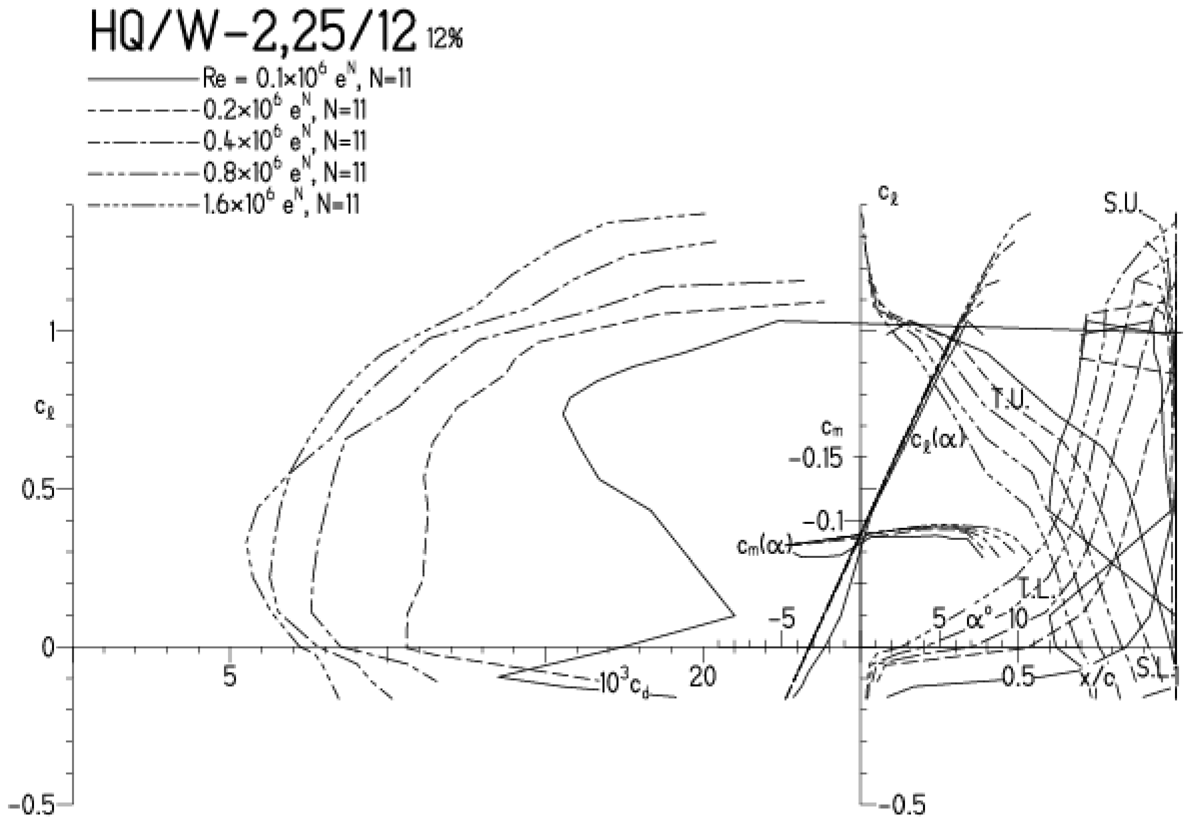


<u>HQ/W-2,25/12</u>, N=11

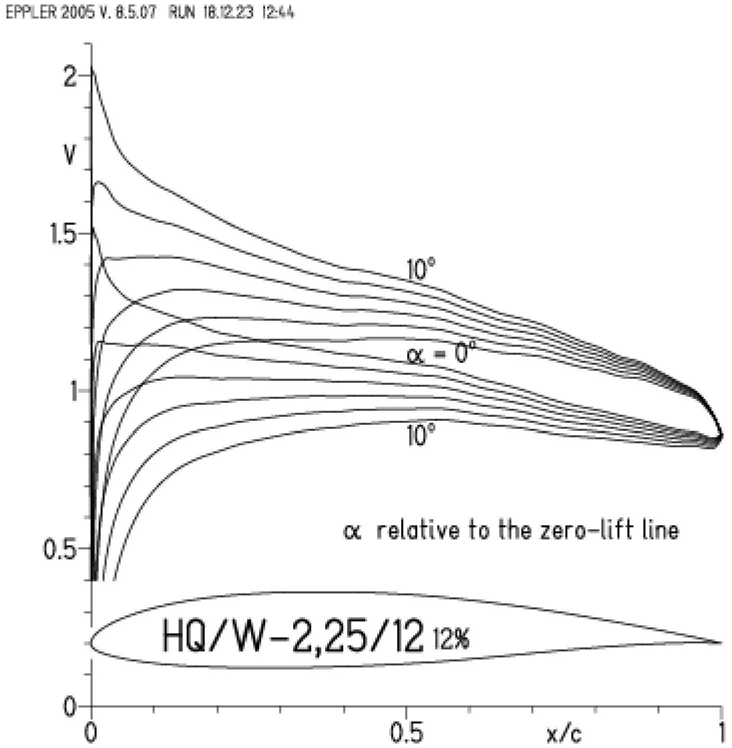
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

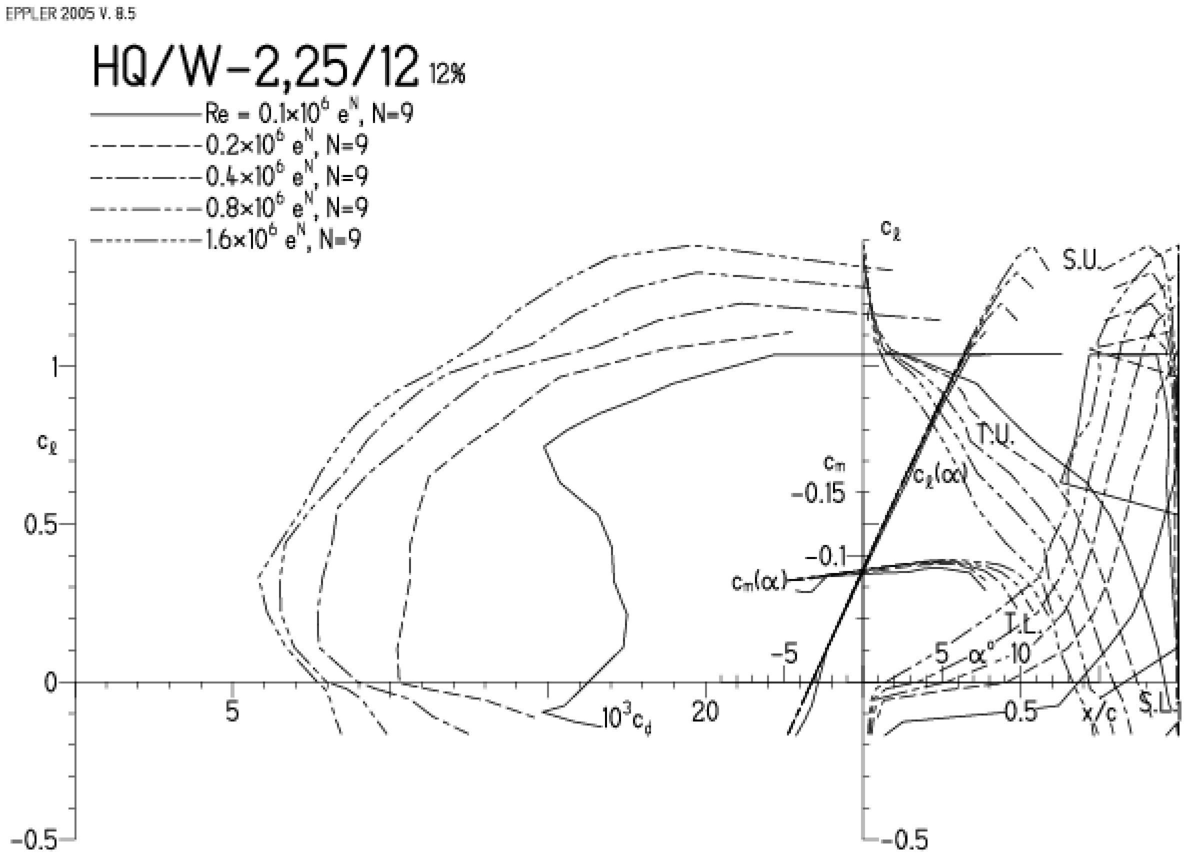


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

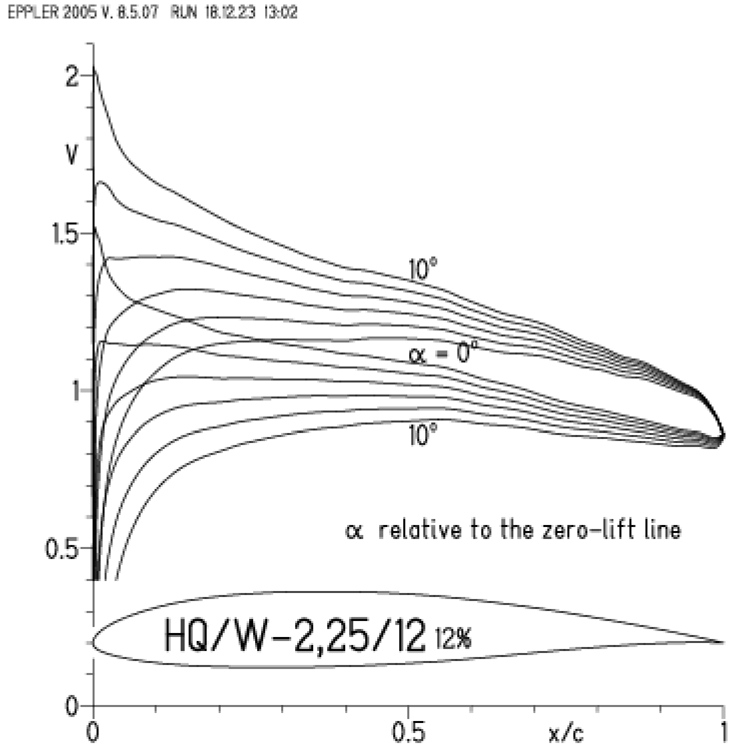


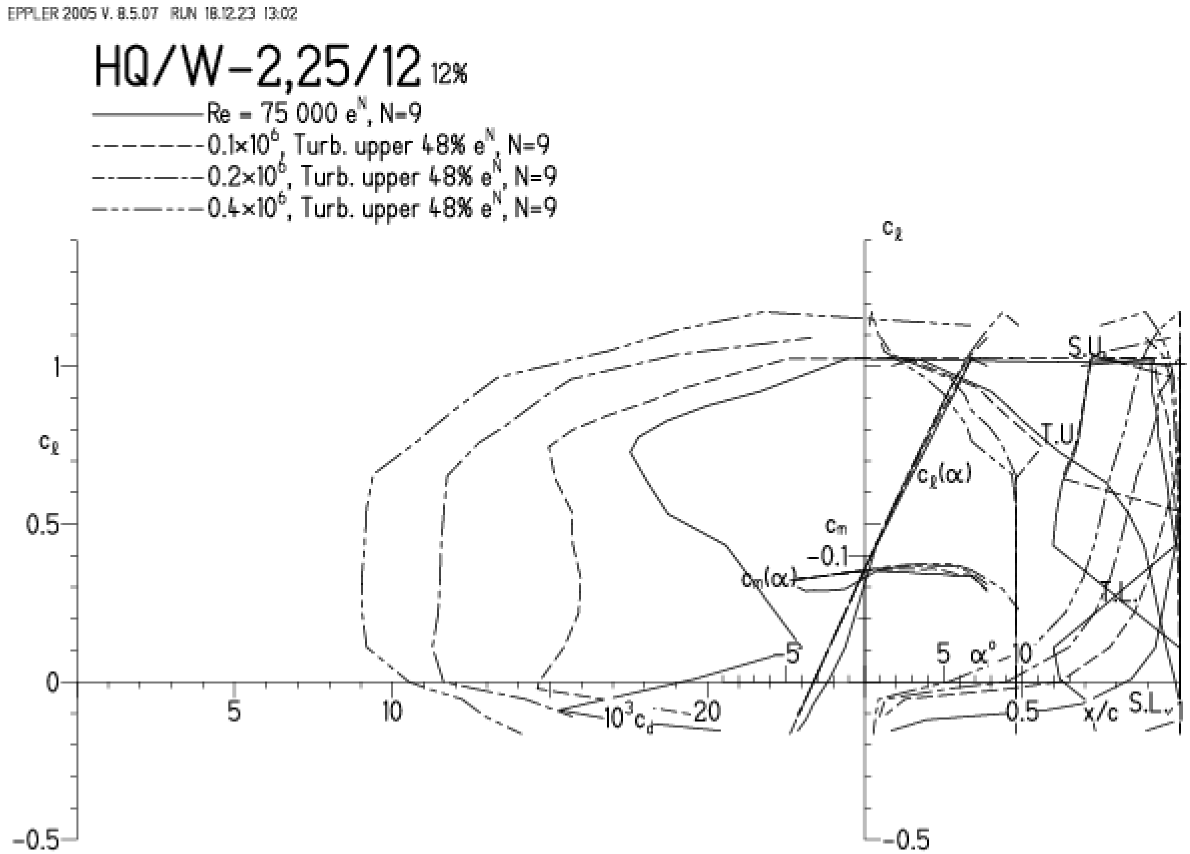
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cₗ(α)
cₘ(α)
α°
10³c_d
x/c

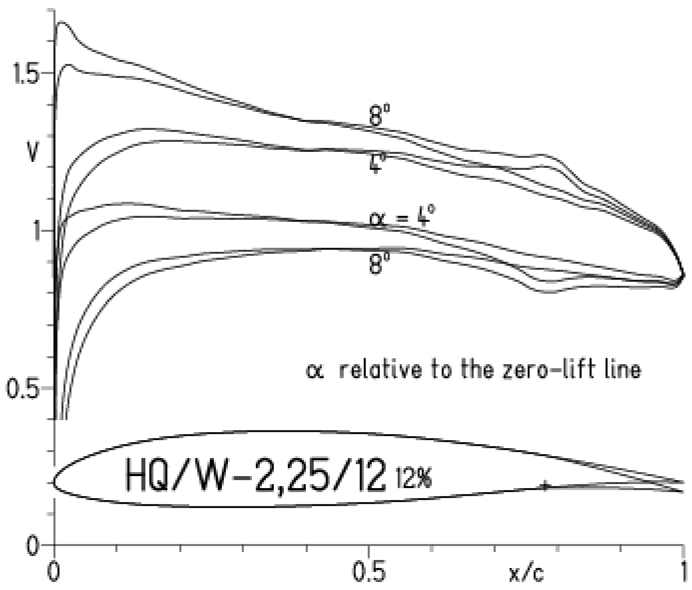
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



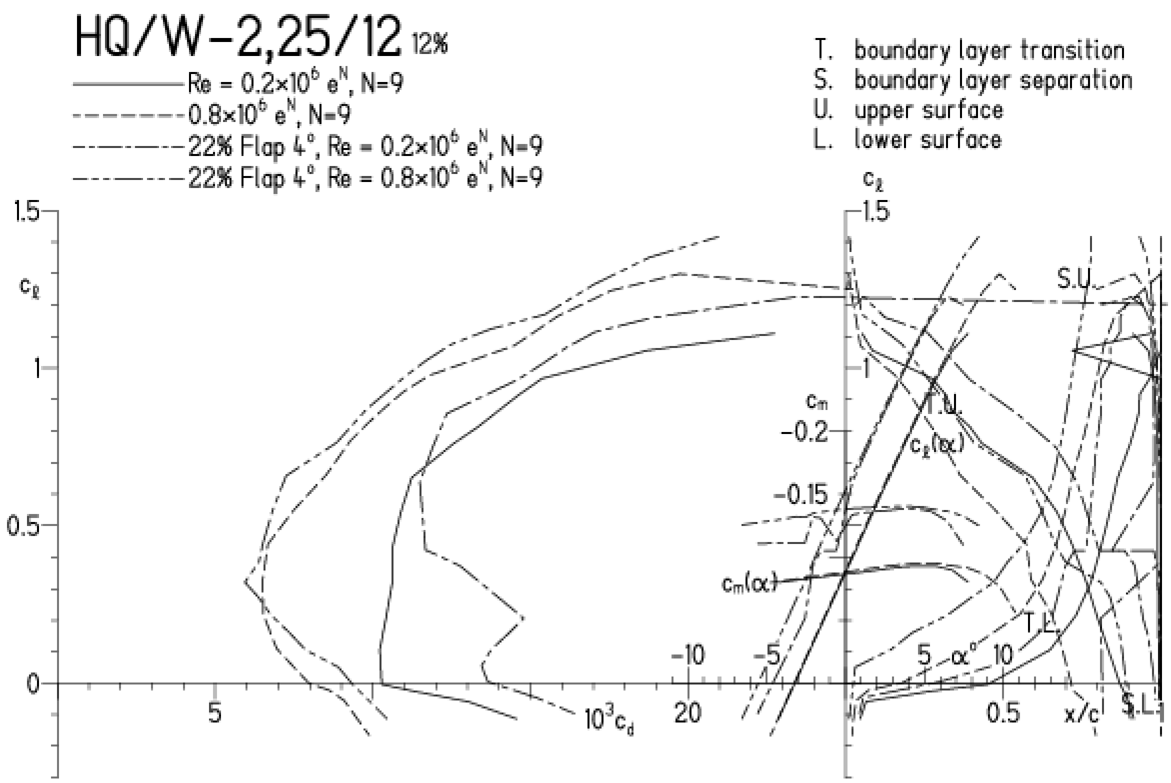


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

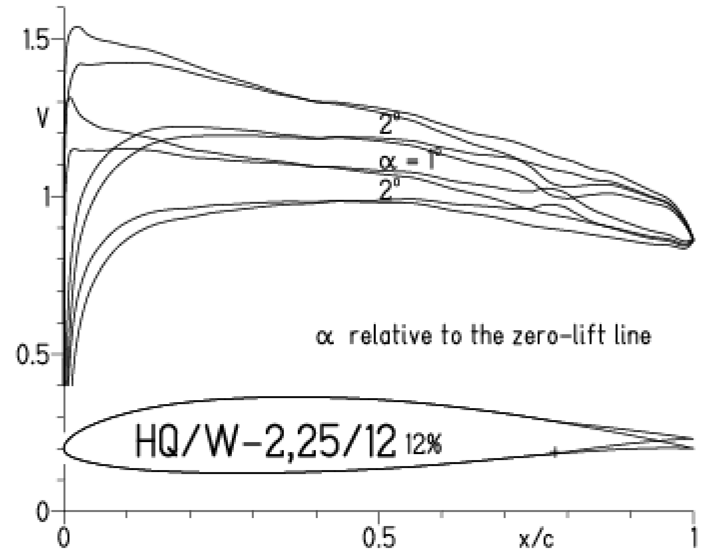


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

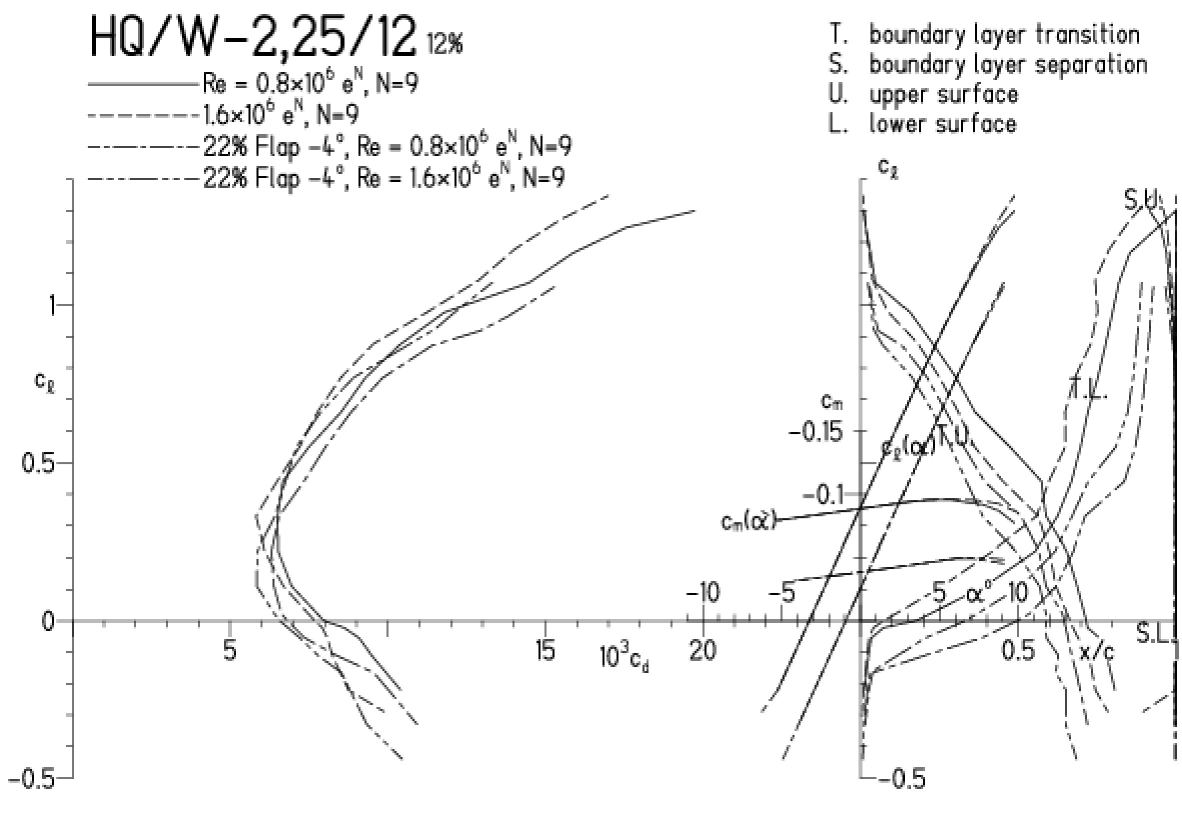


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

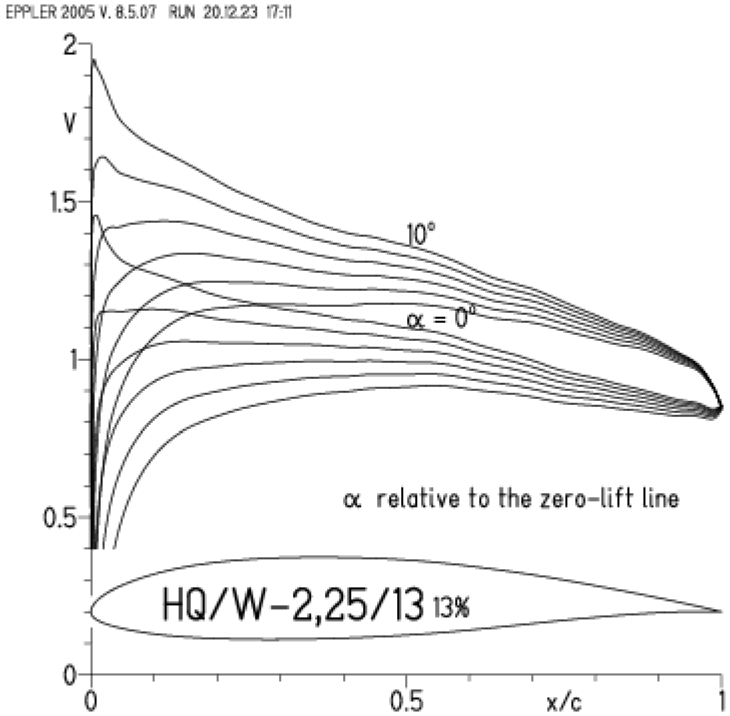
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

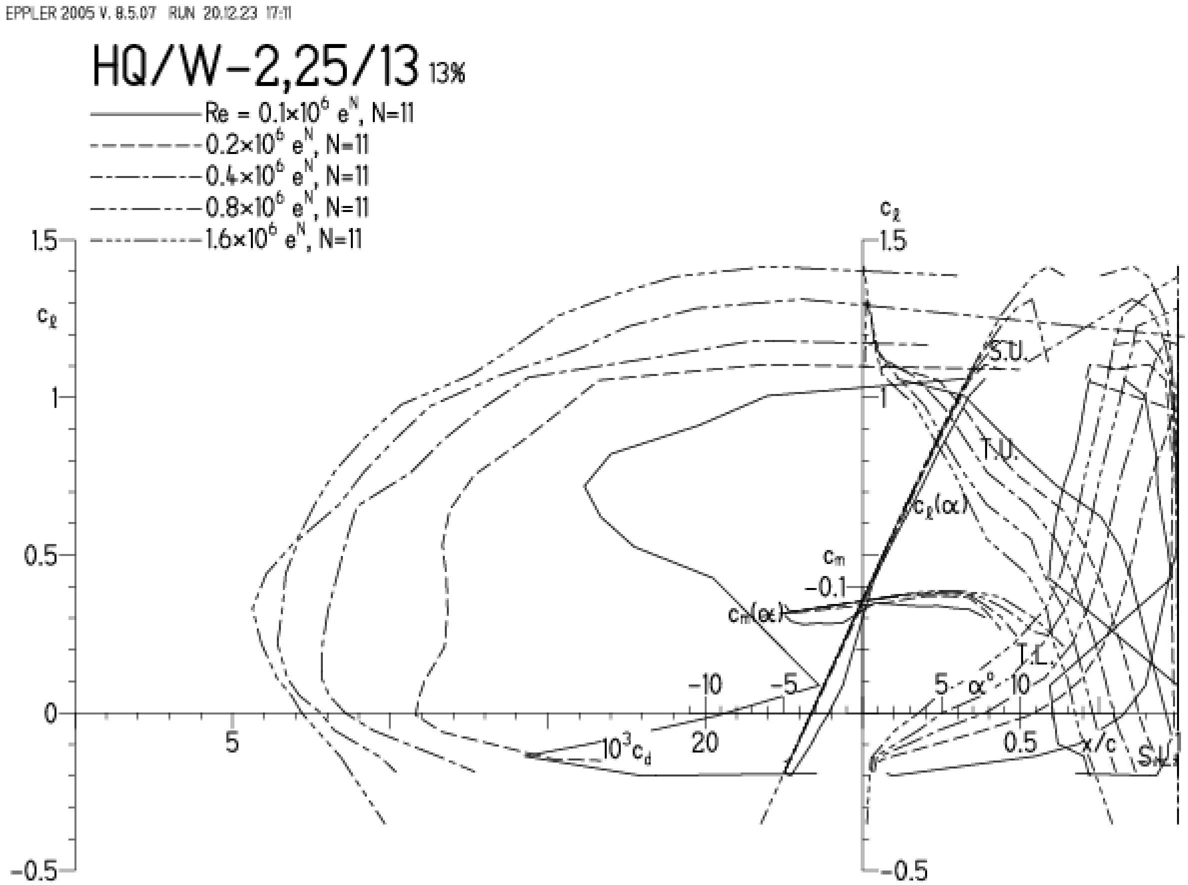


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

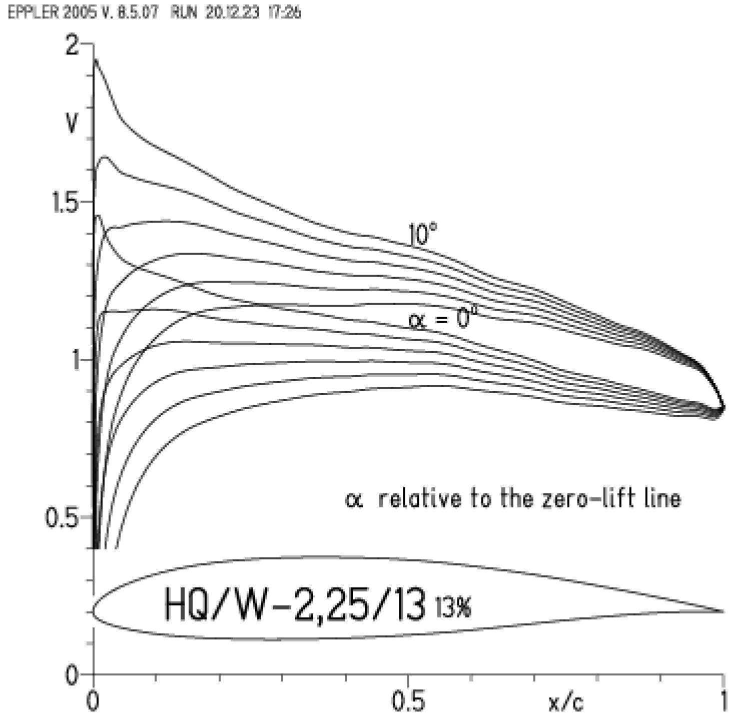


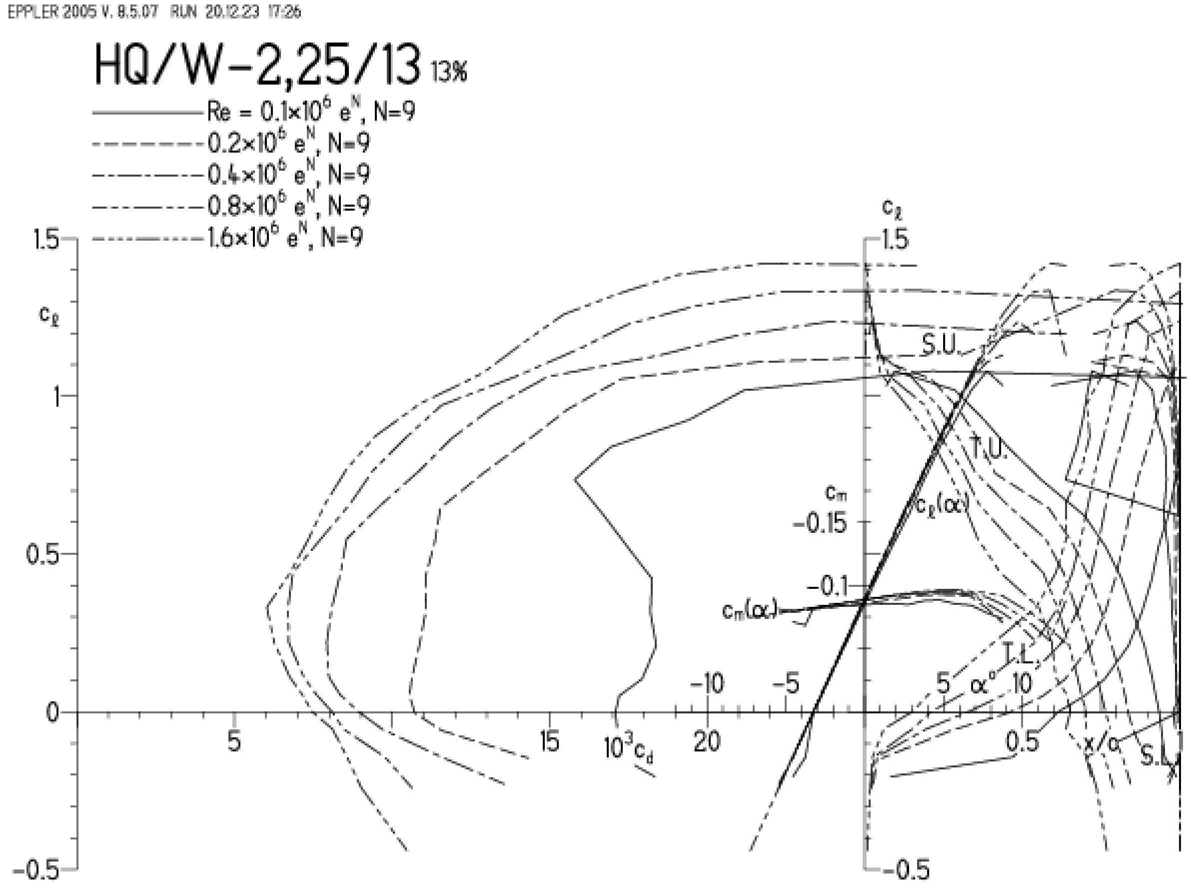
<u>HQ/W-2,25/13</u>, N=11



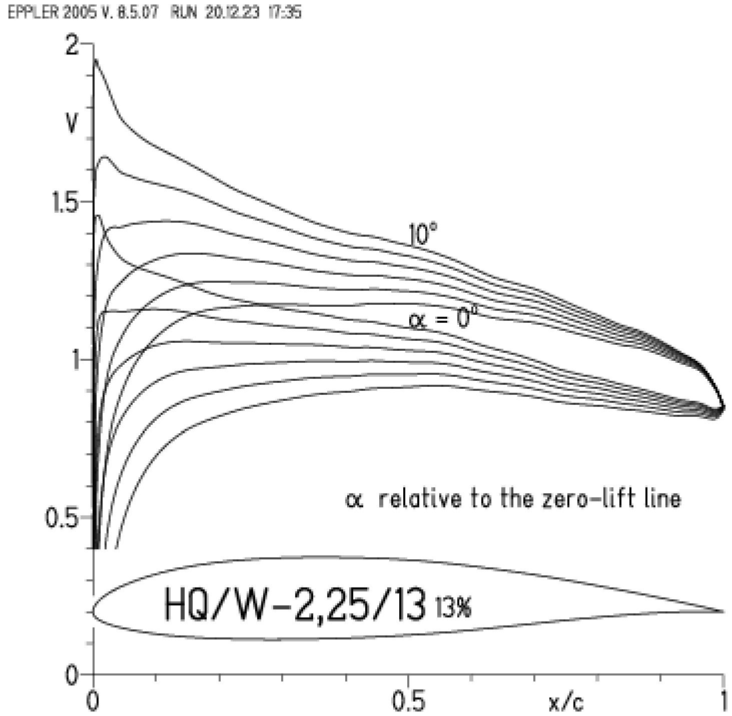


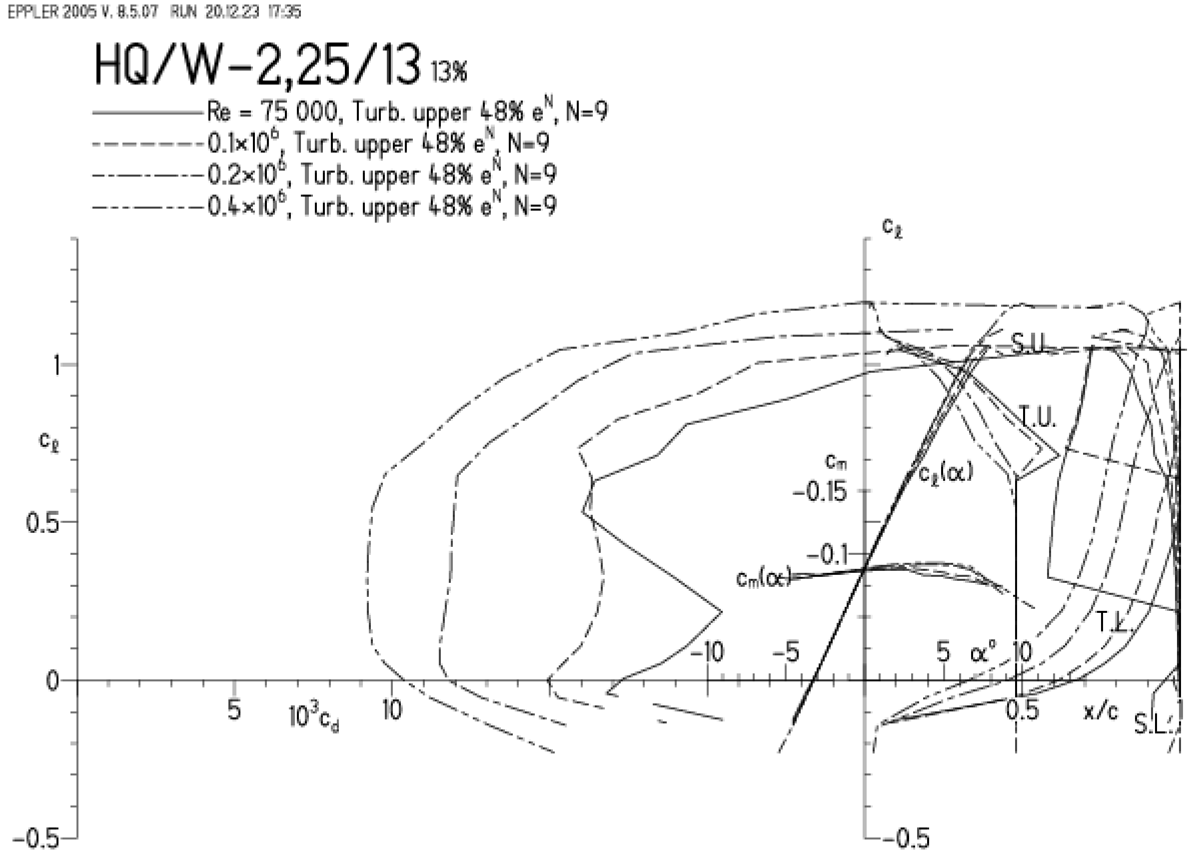
<u>HQ/W-2,25/13</u>, N=9





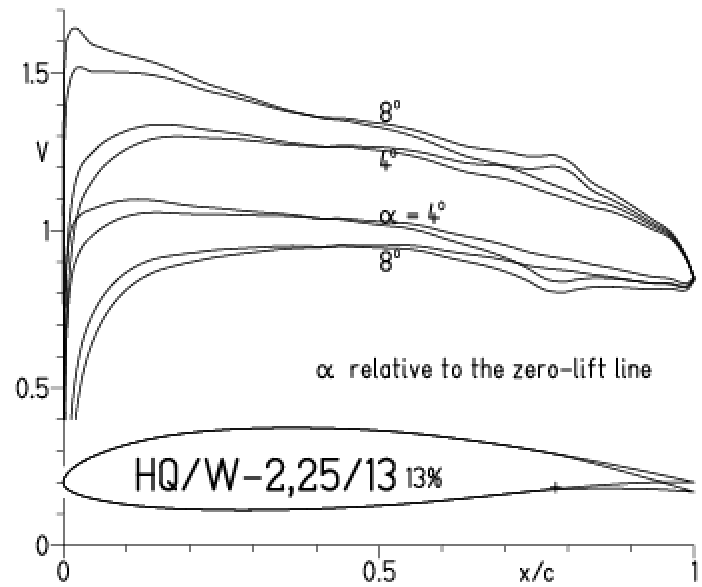
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



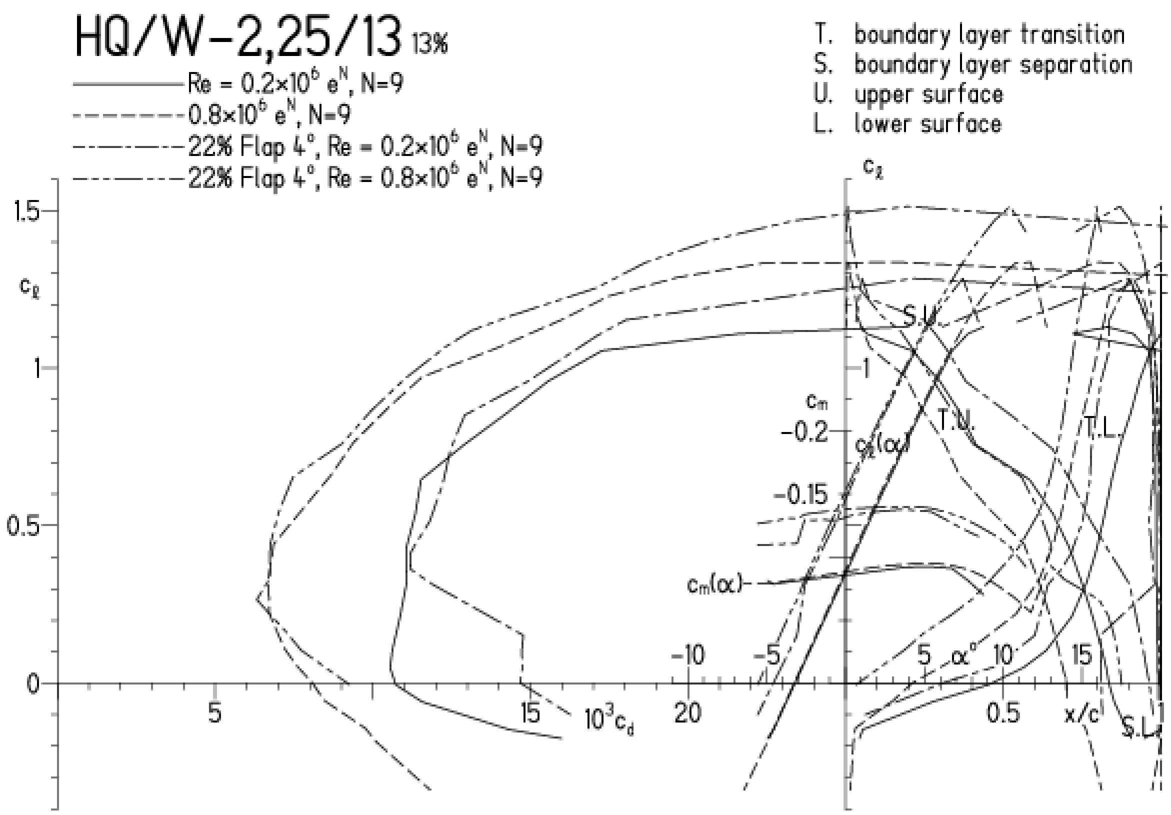


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

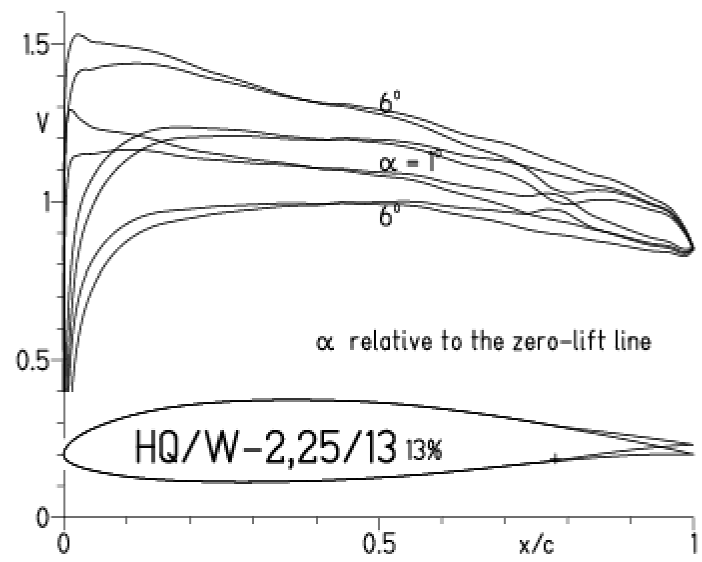


EPPLER 2005 V.

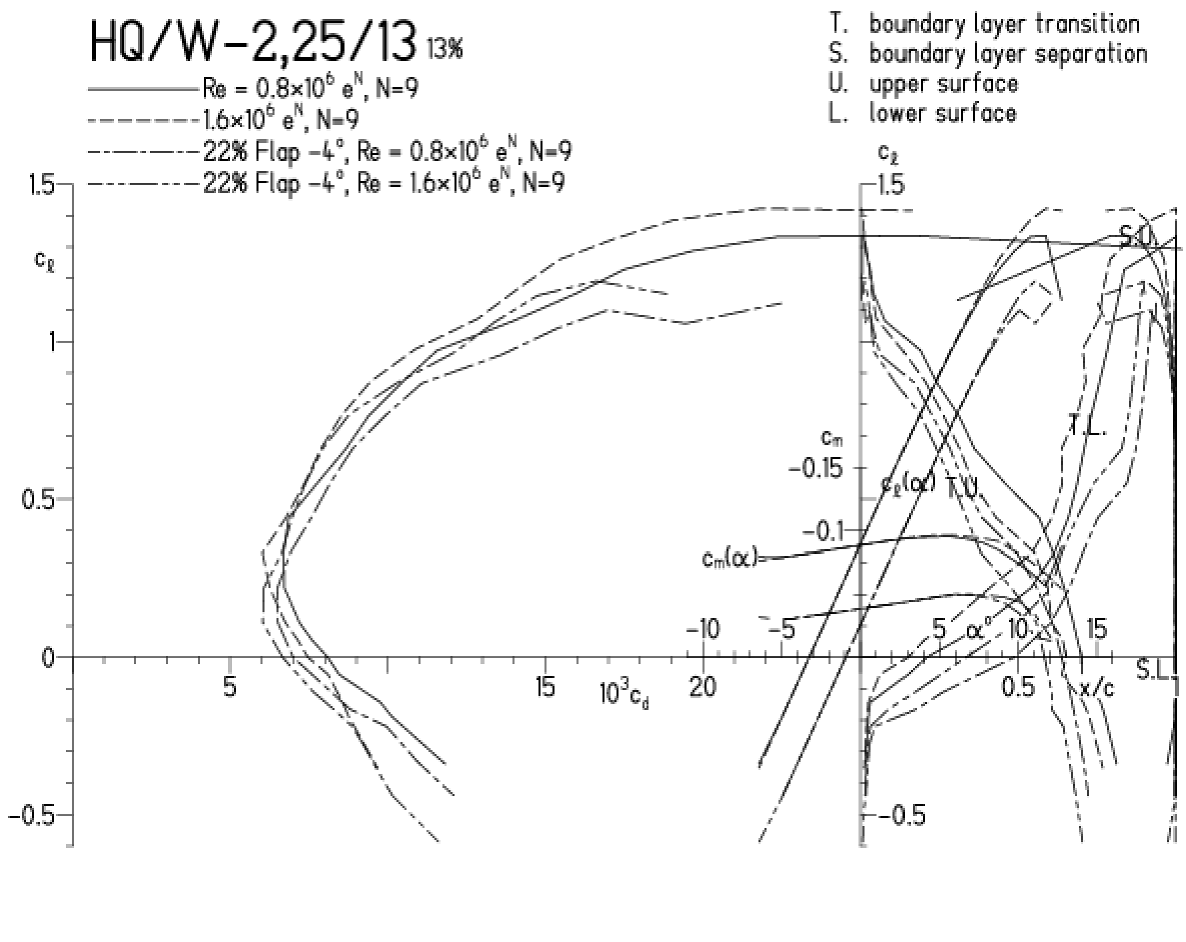


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

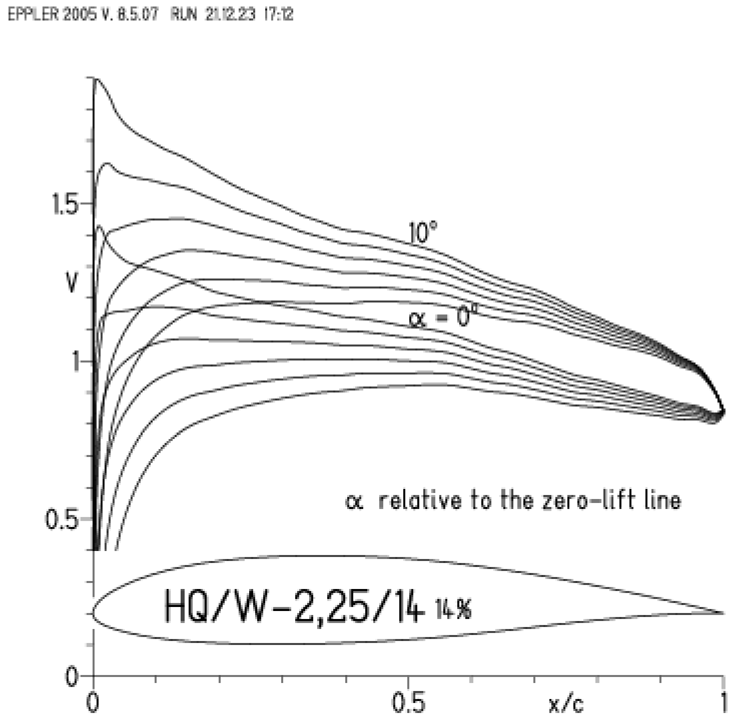
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

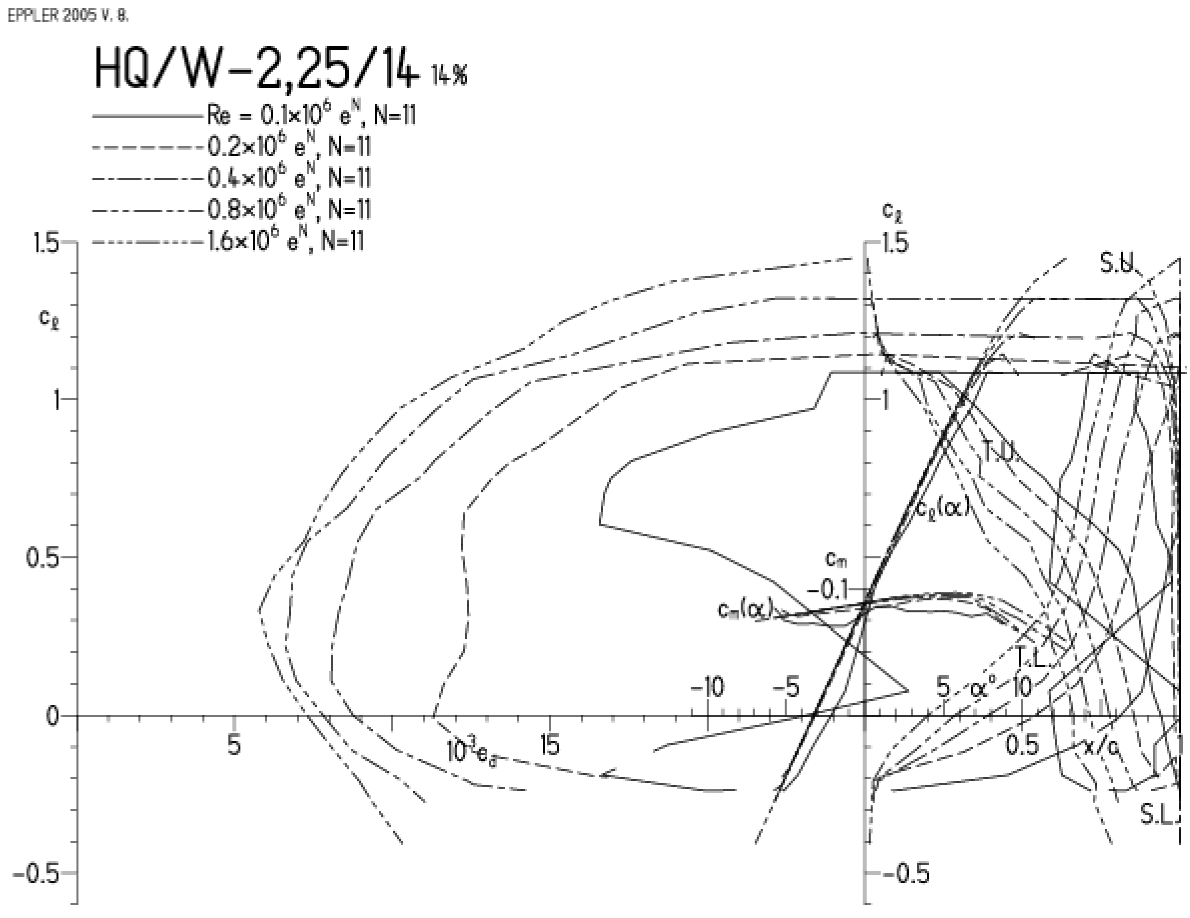


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

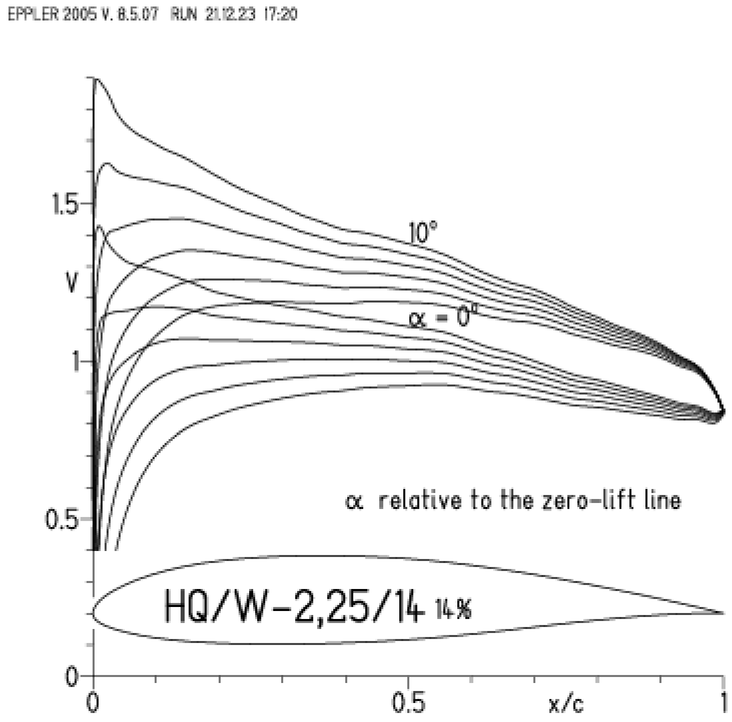


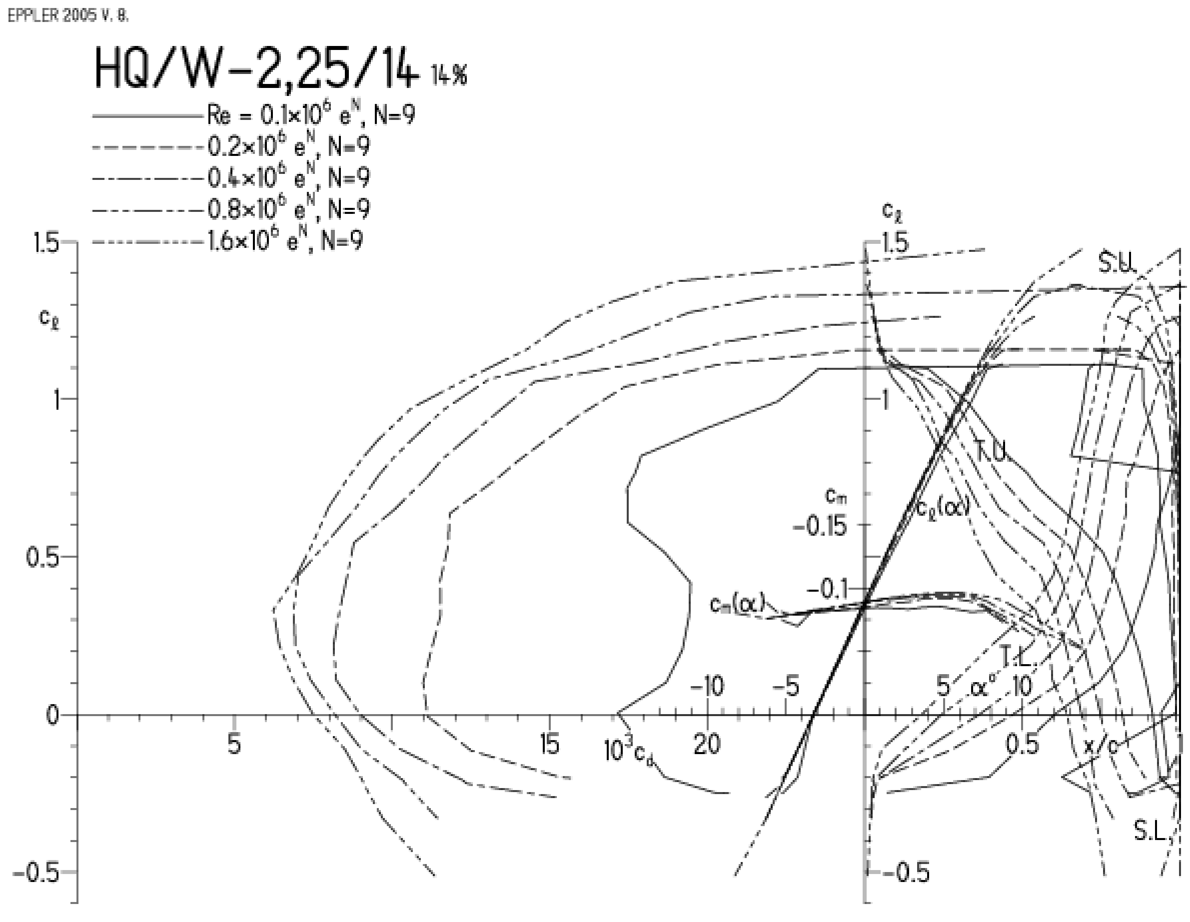
HQ/W-2,25/14, N=11



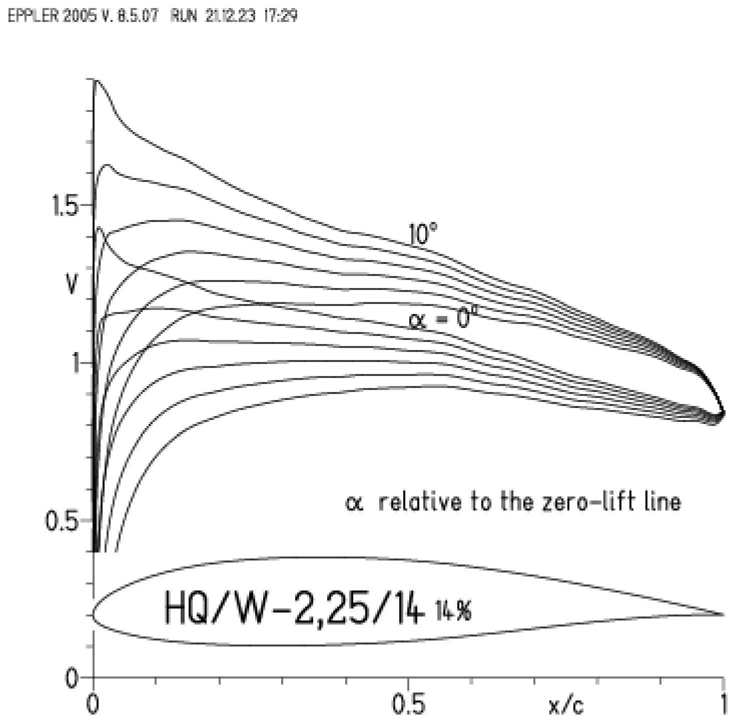


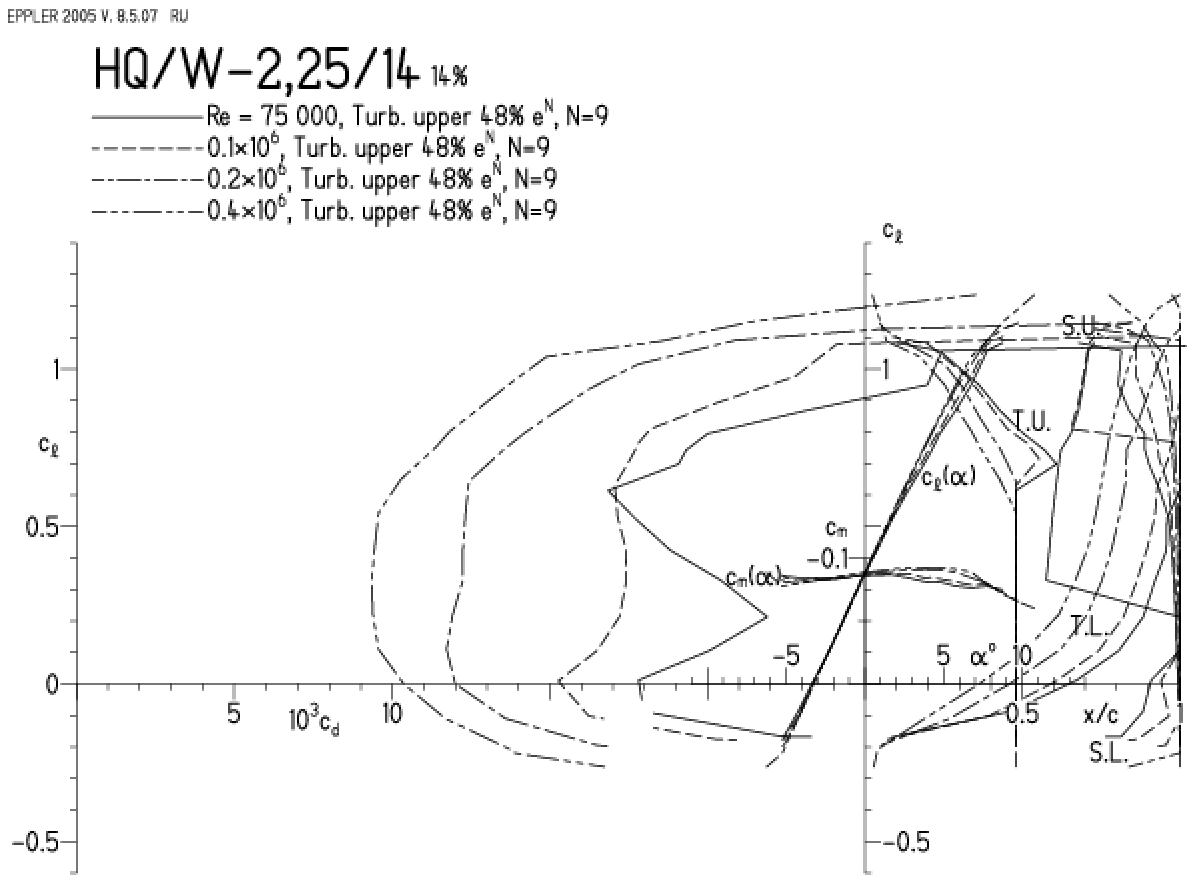
<u>HQ/W-2,25/14</u>, N=9





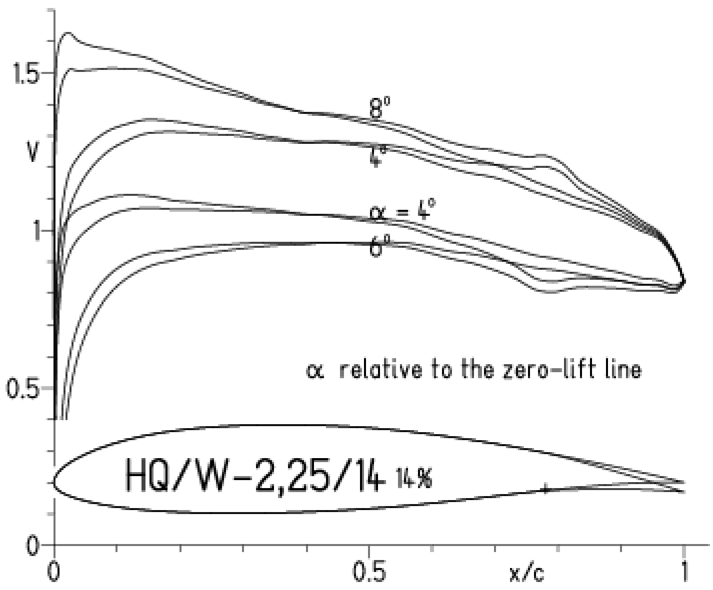
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



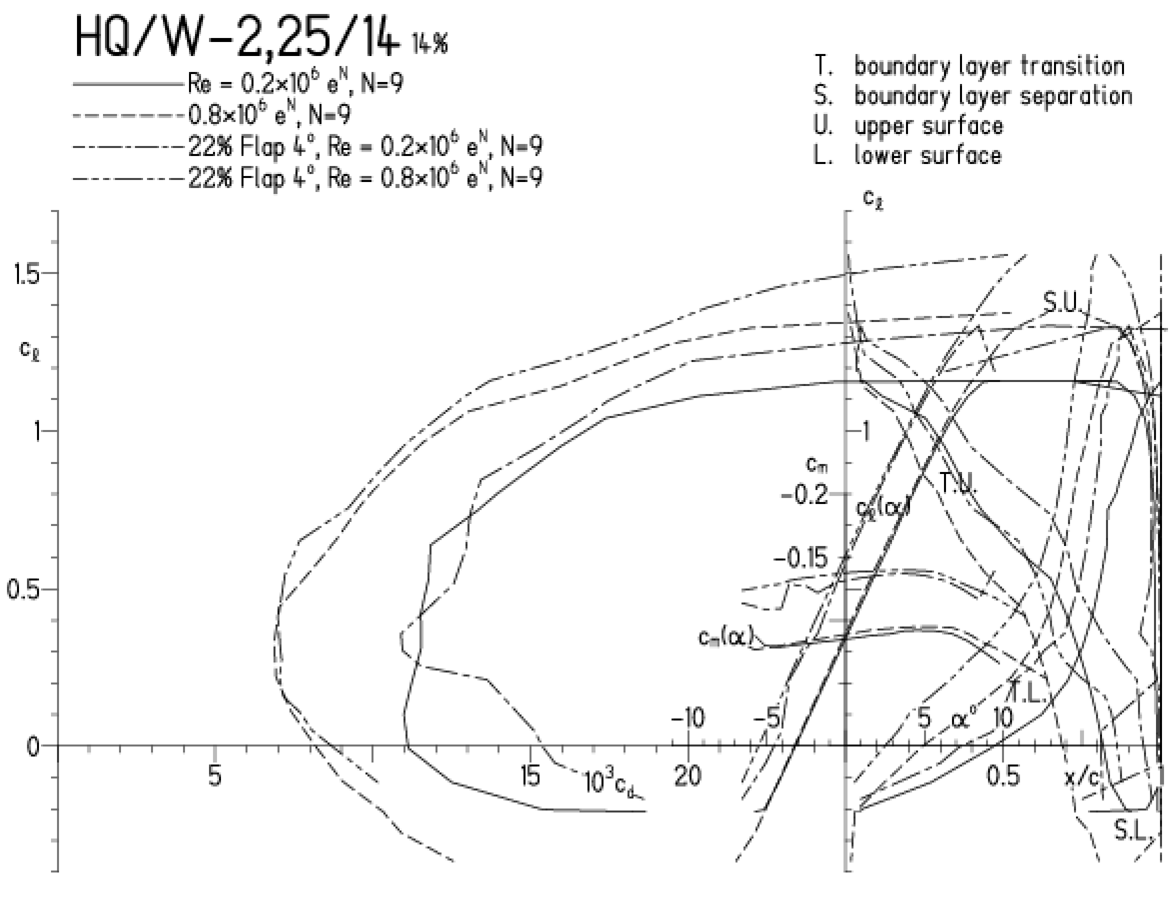


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

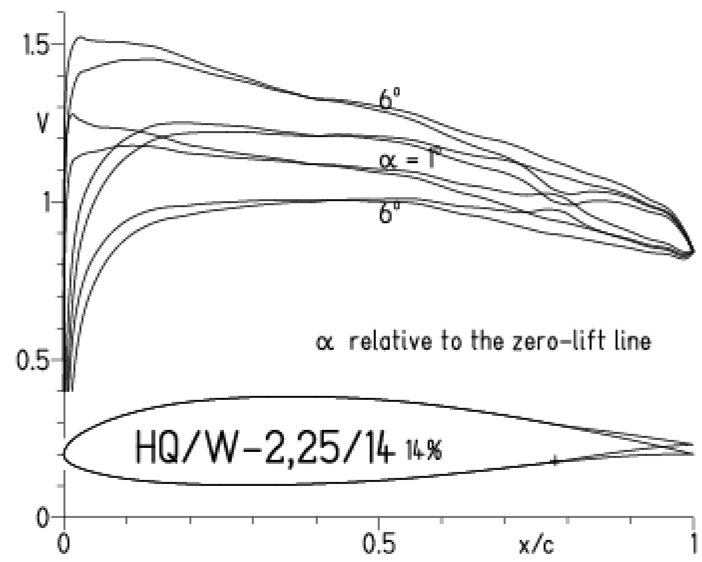


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

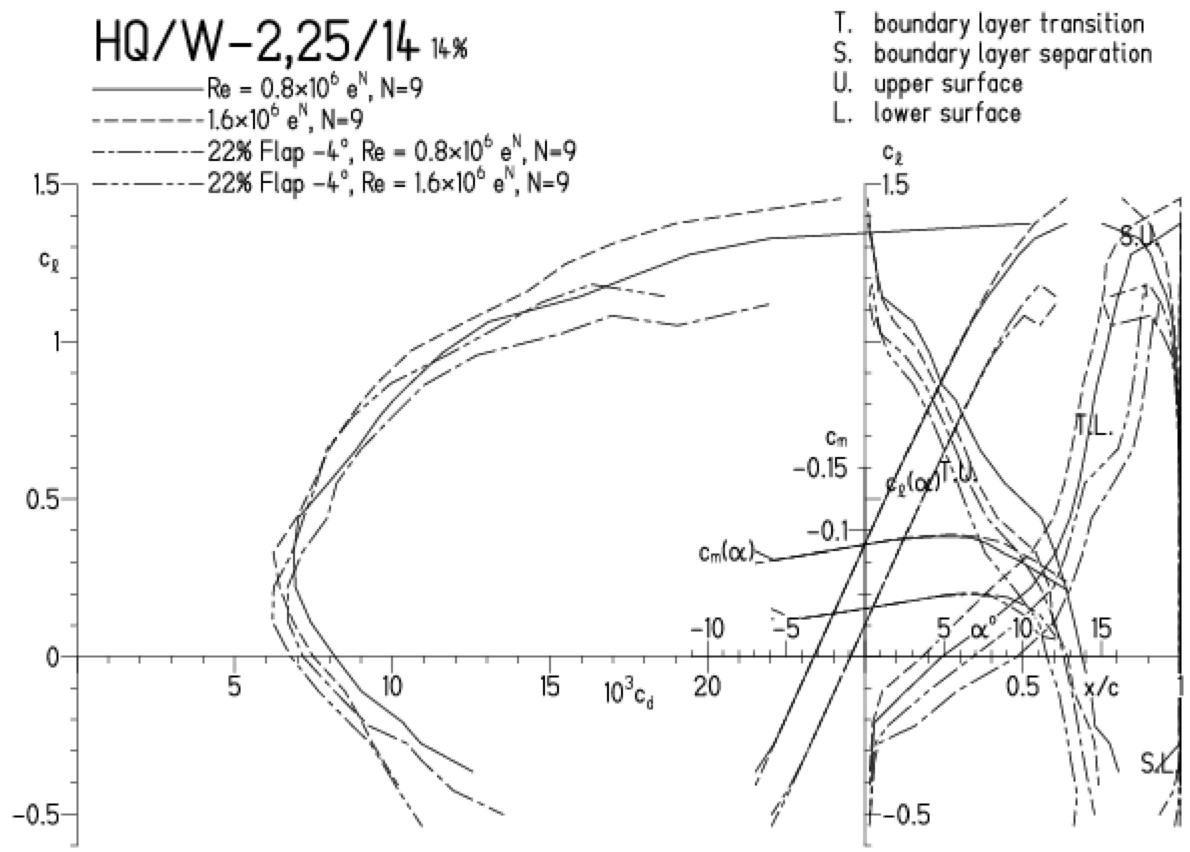


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

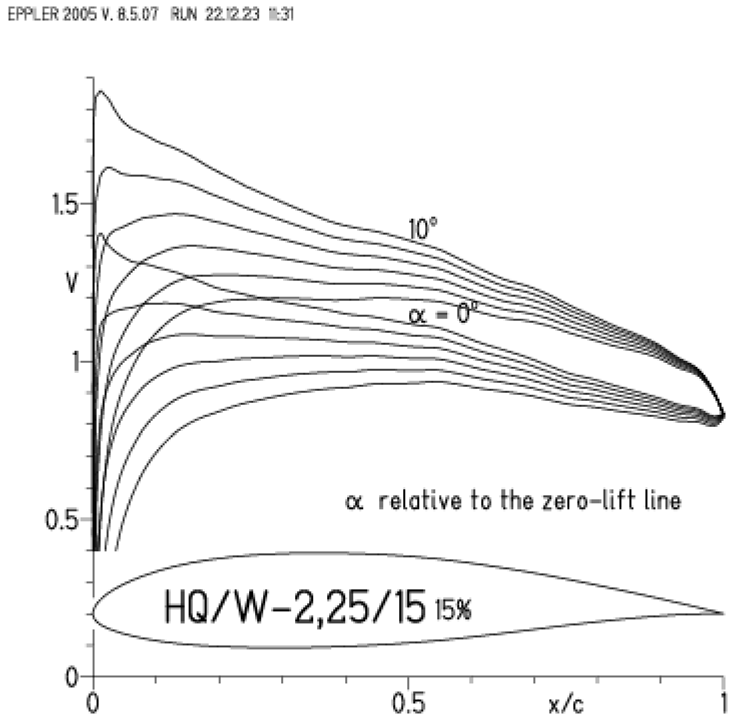
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

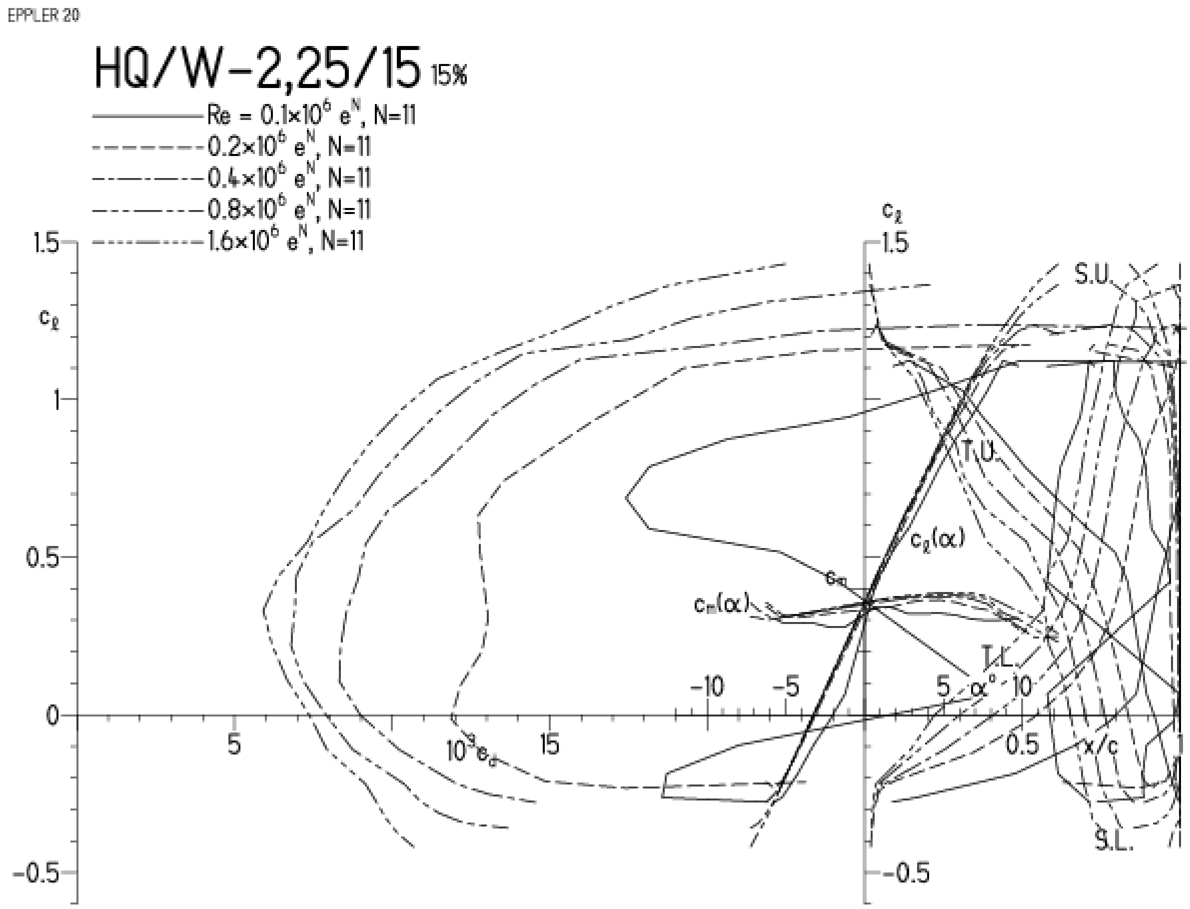


EPPLER 2005 V. 8.5.07

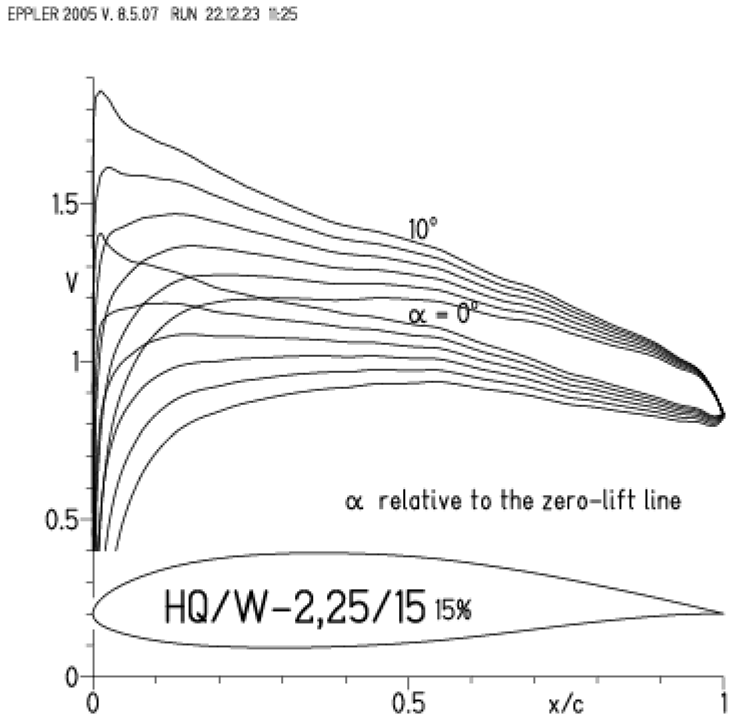


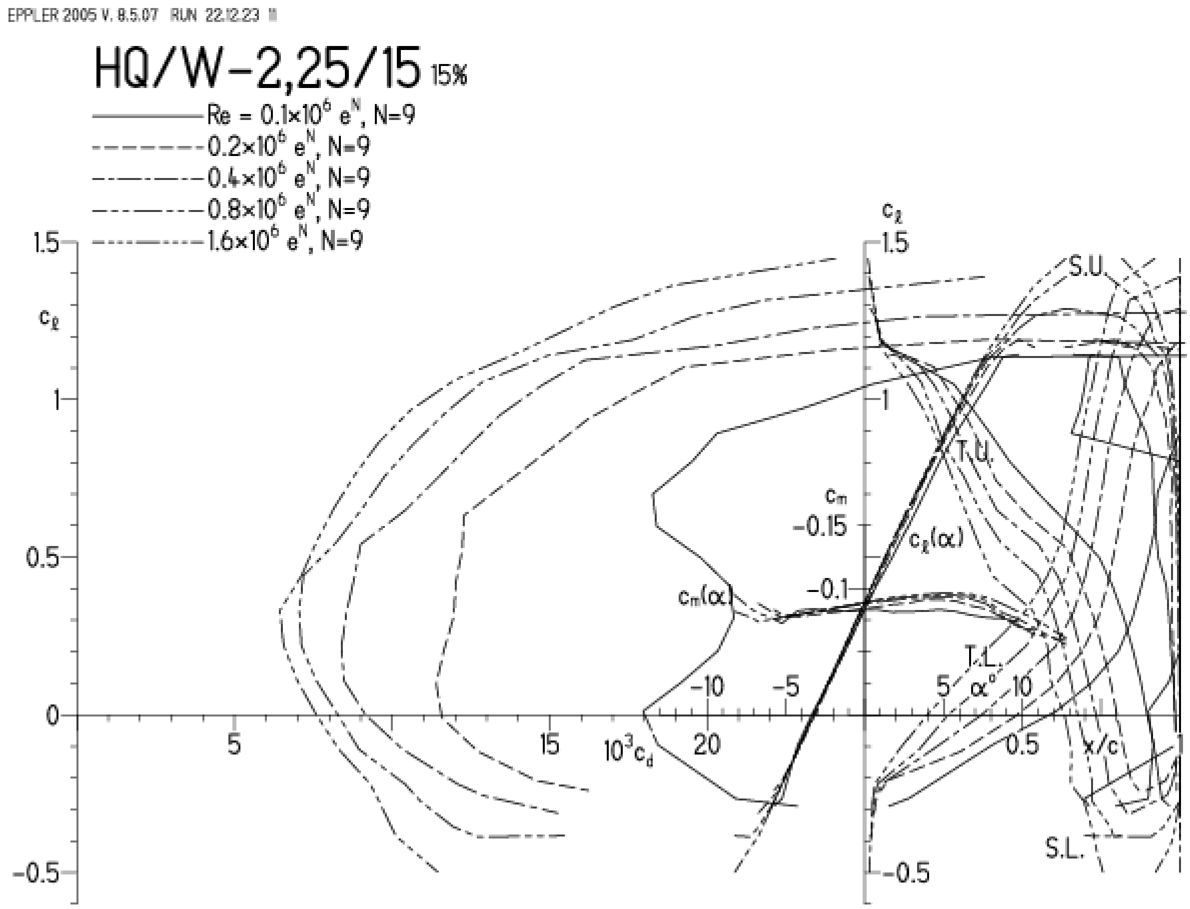
HQ/W-2,25/15, N=11



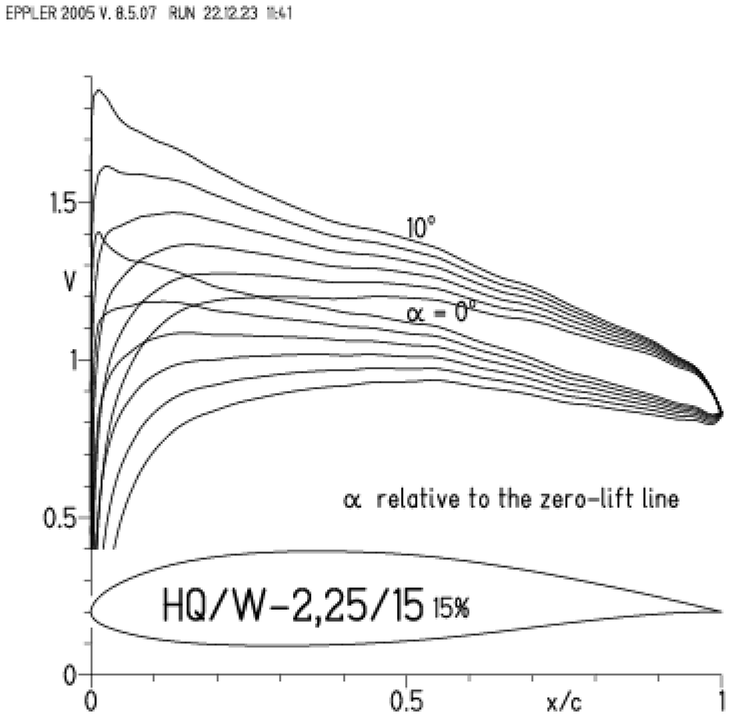


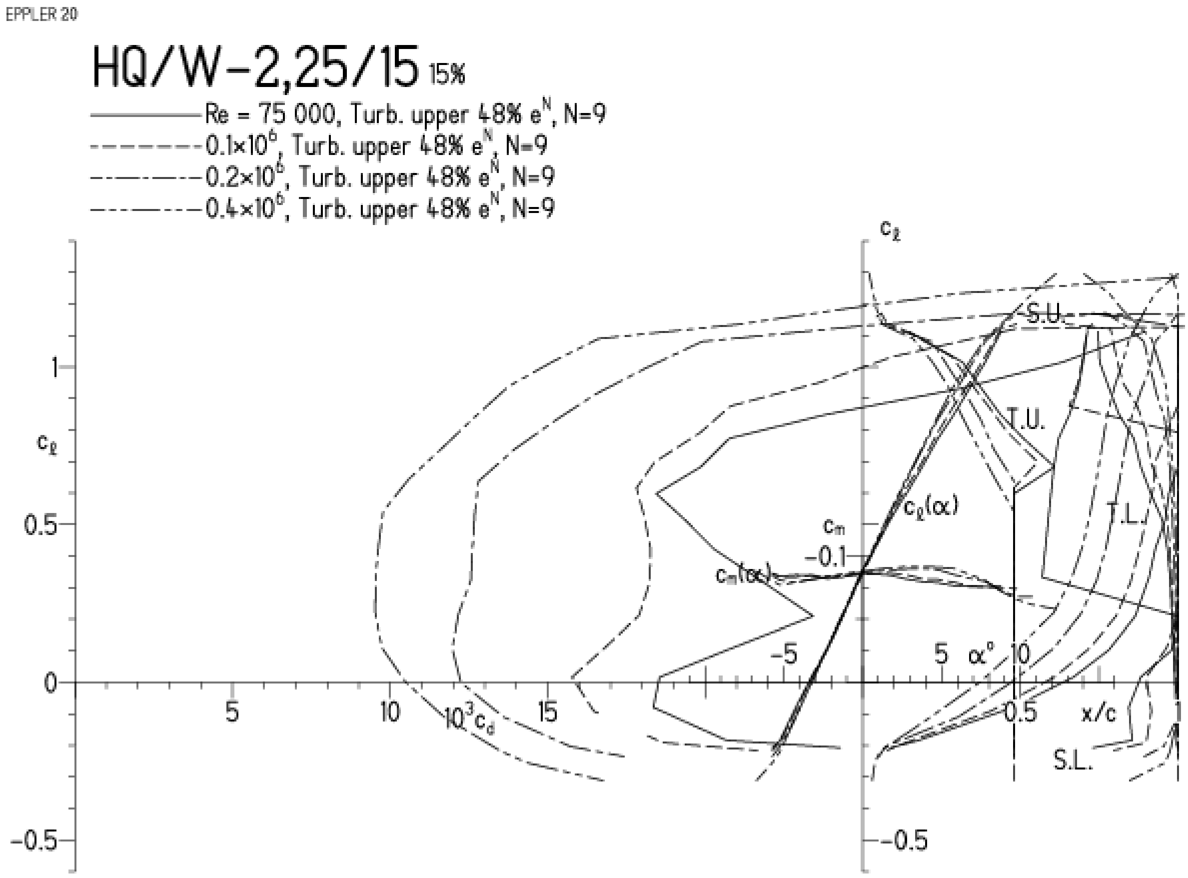
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



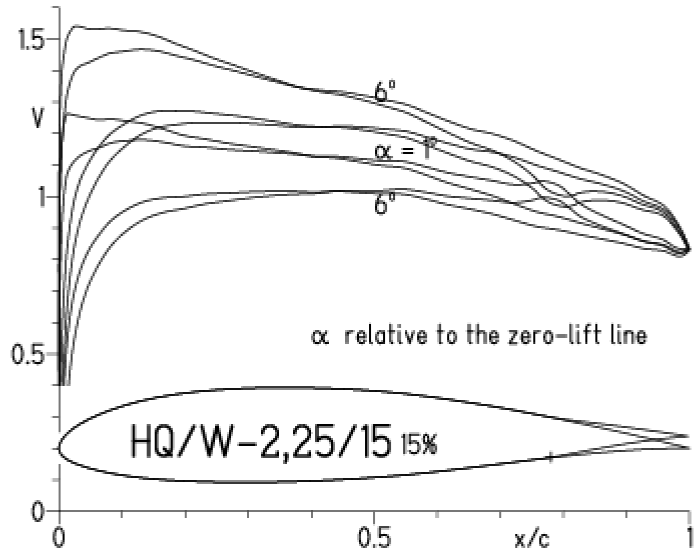


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

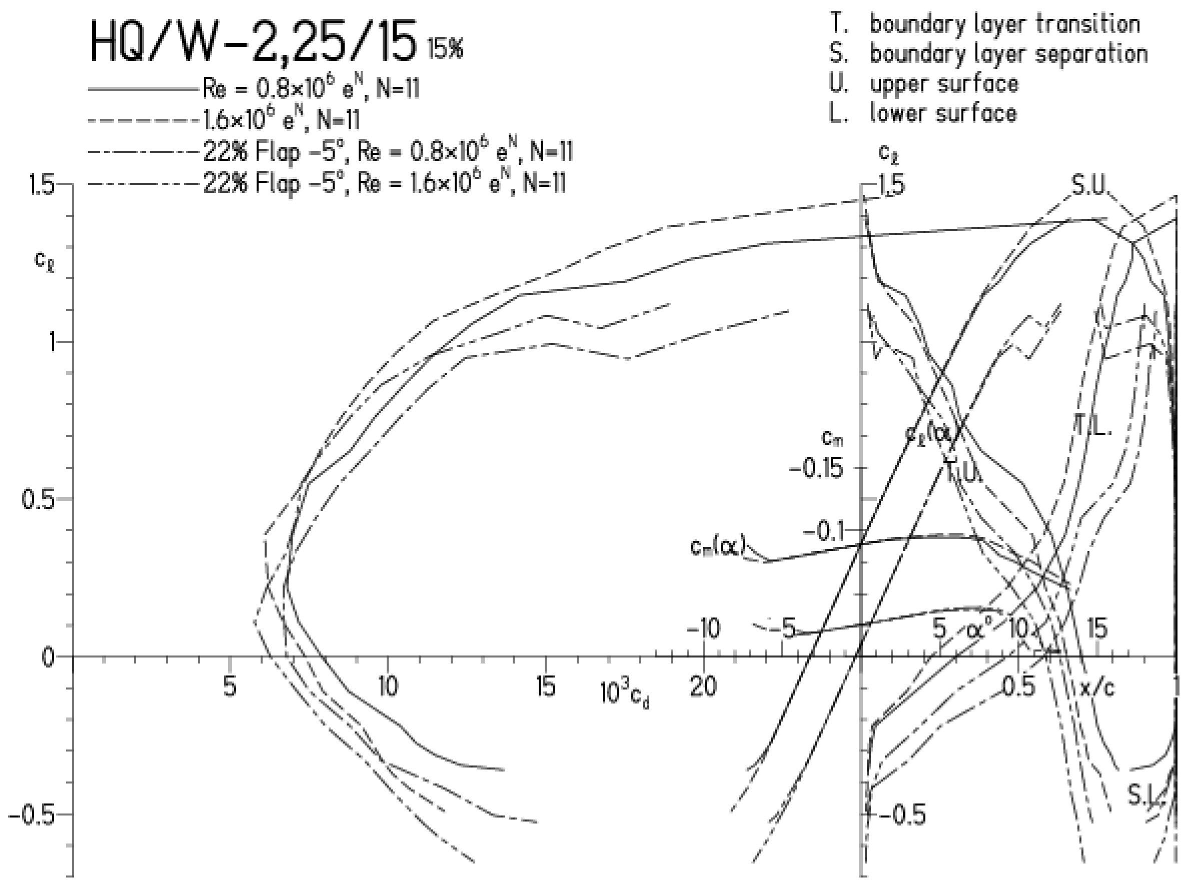
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

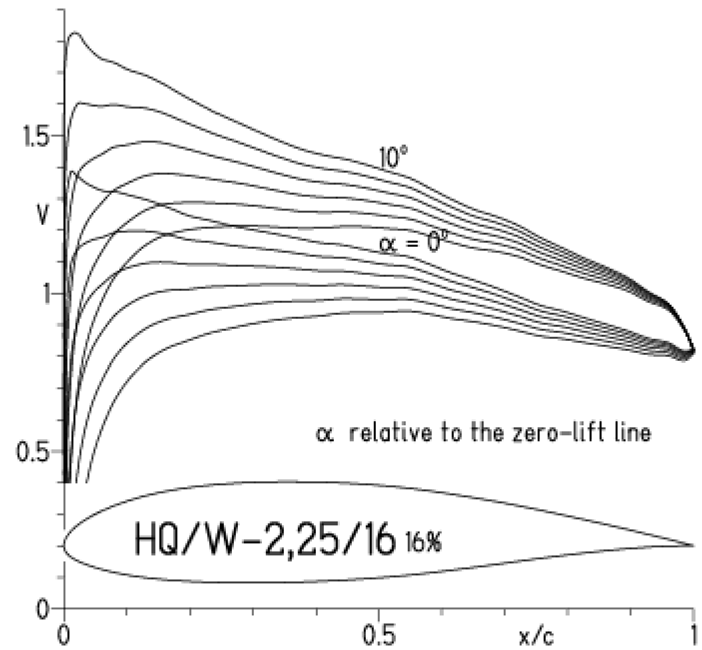


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

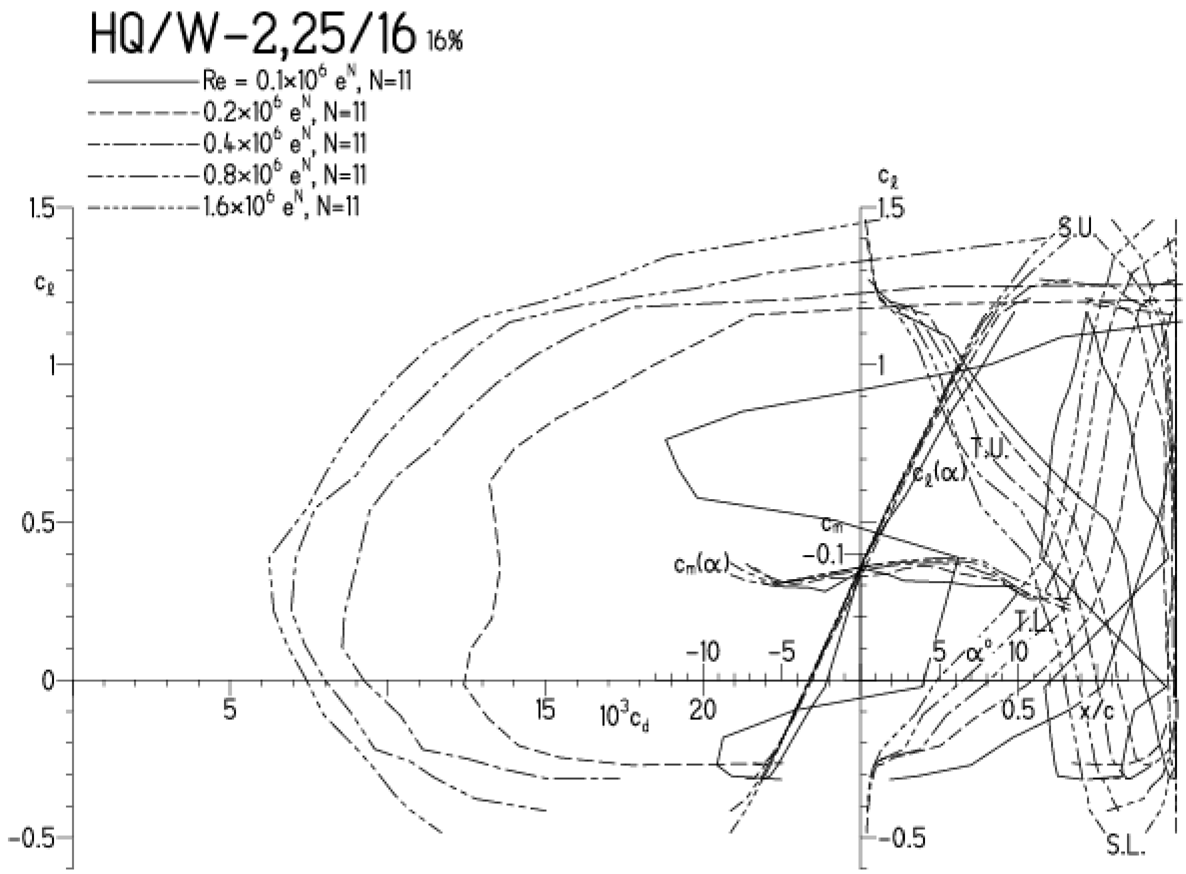


HQ/W-2,25/16, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

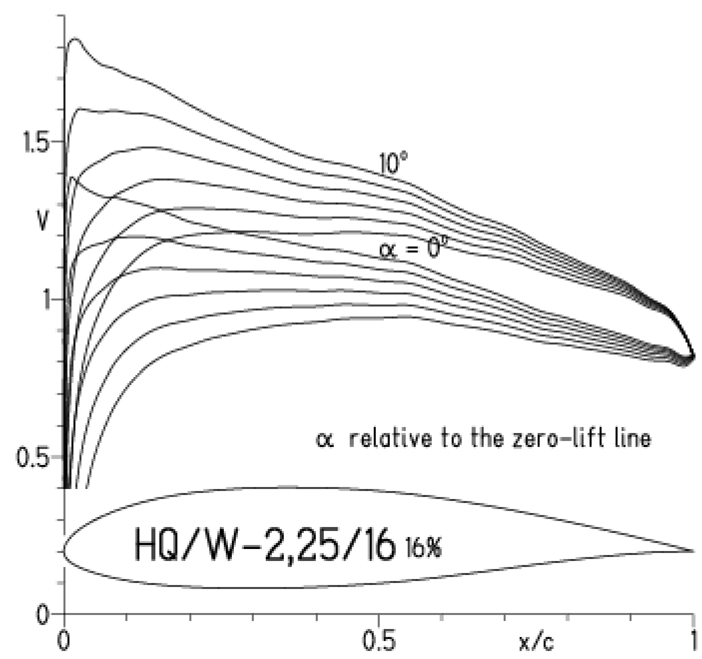


EPPLER 200

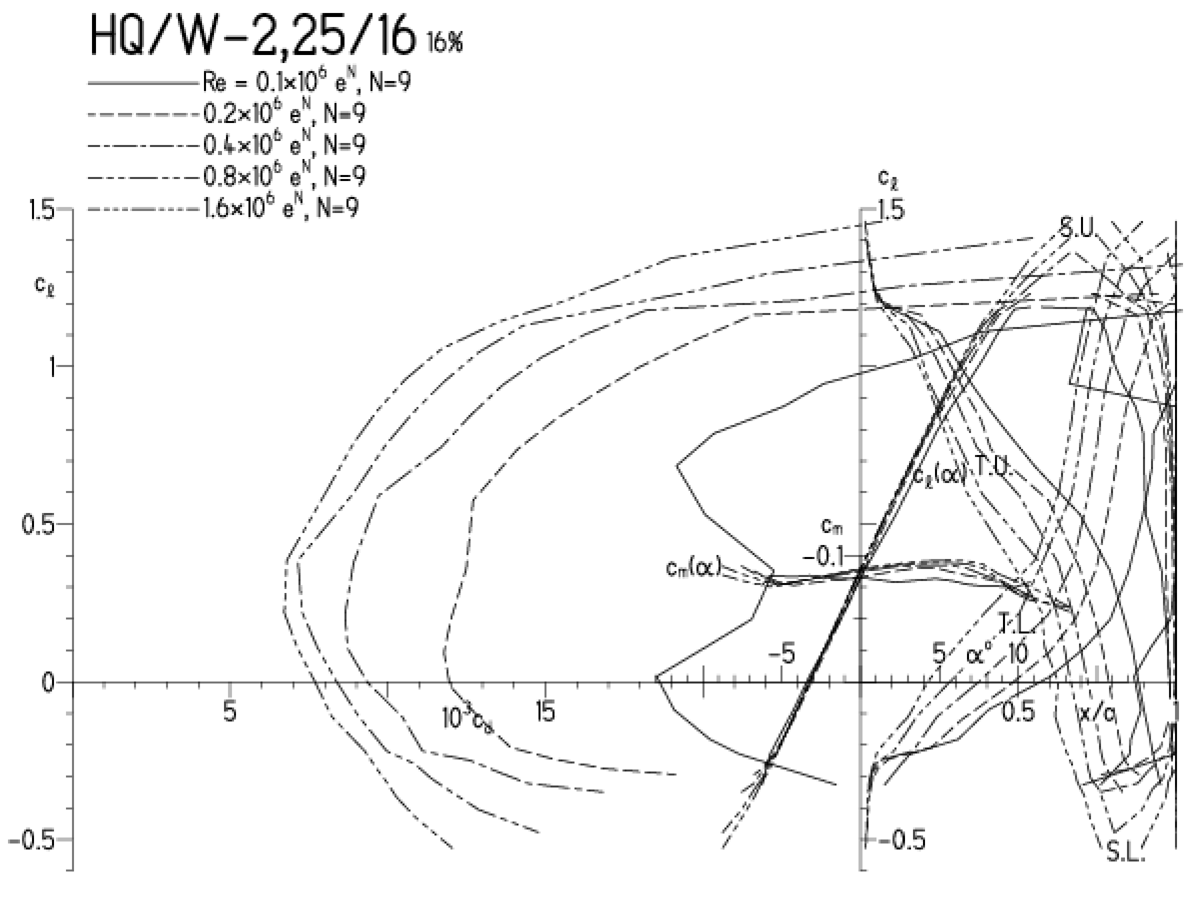


<u>HQ/W-2,25/16</u>, N=9

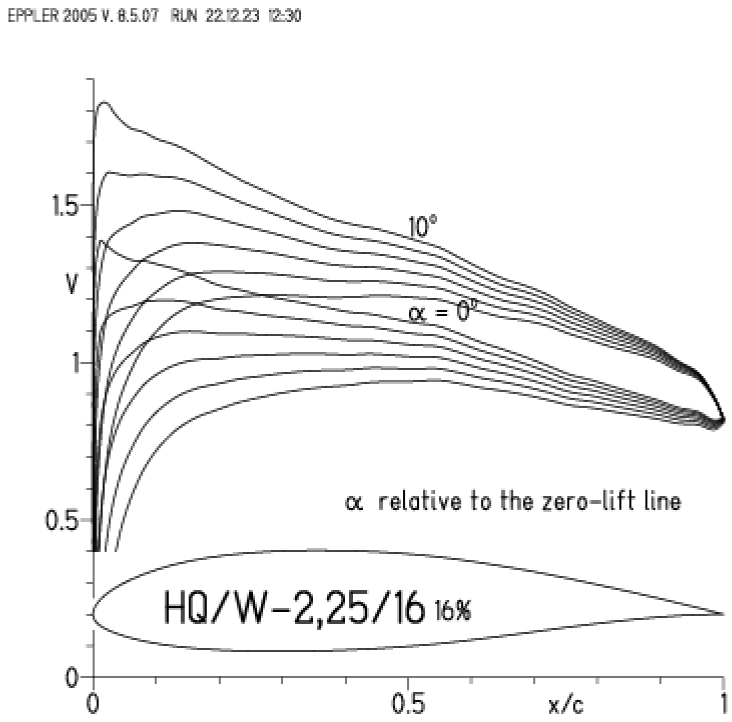
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

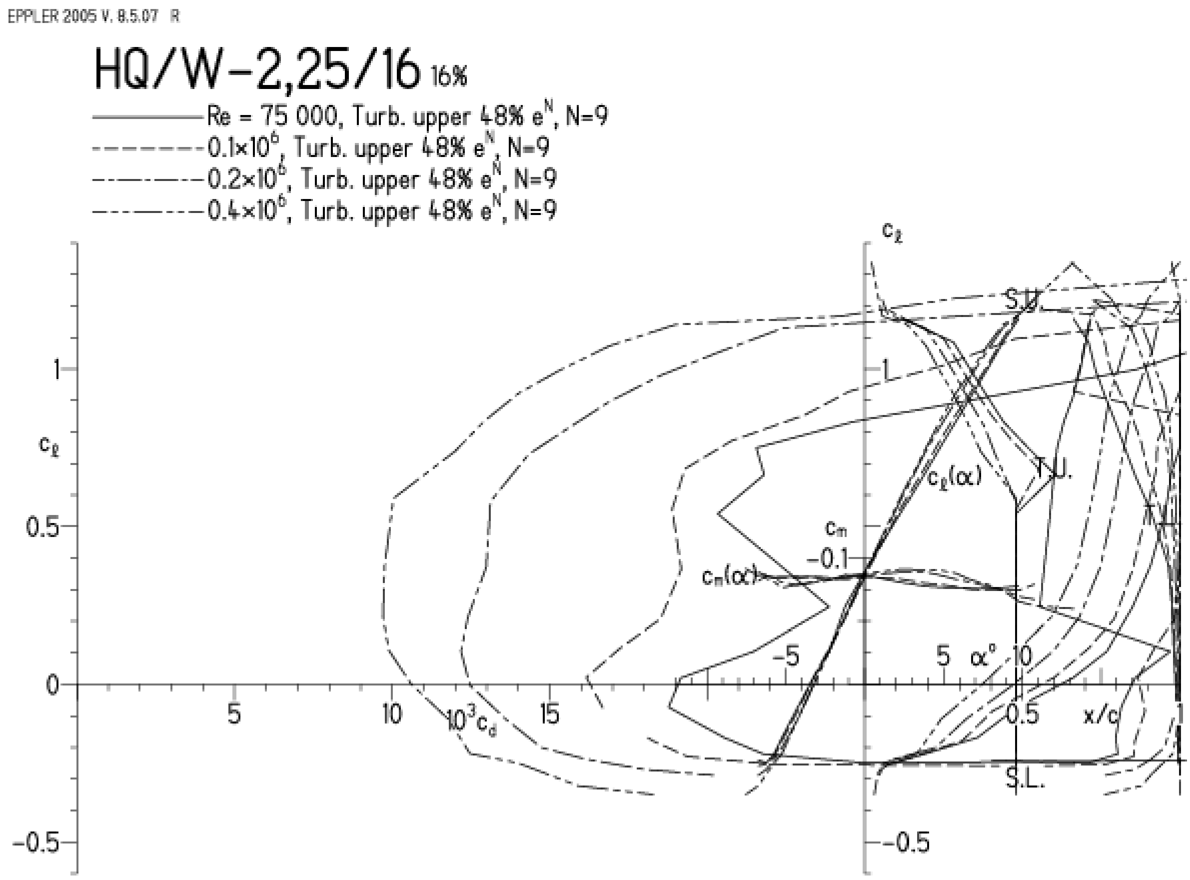


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



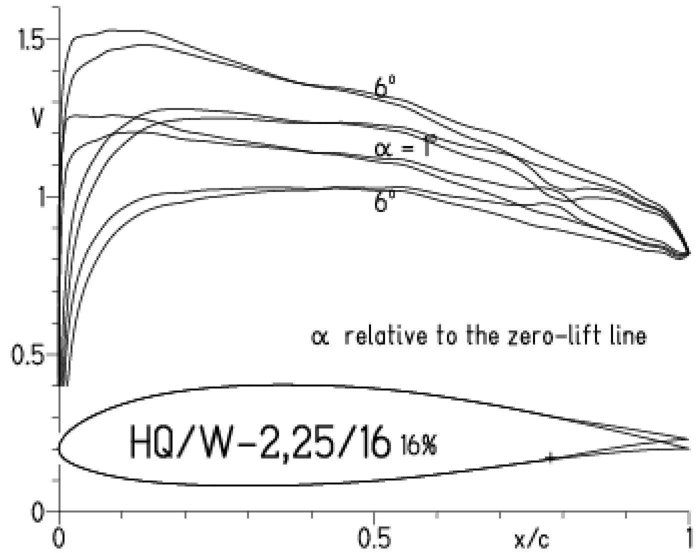


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

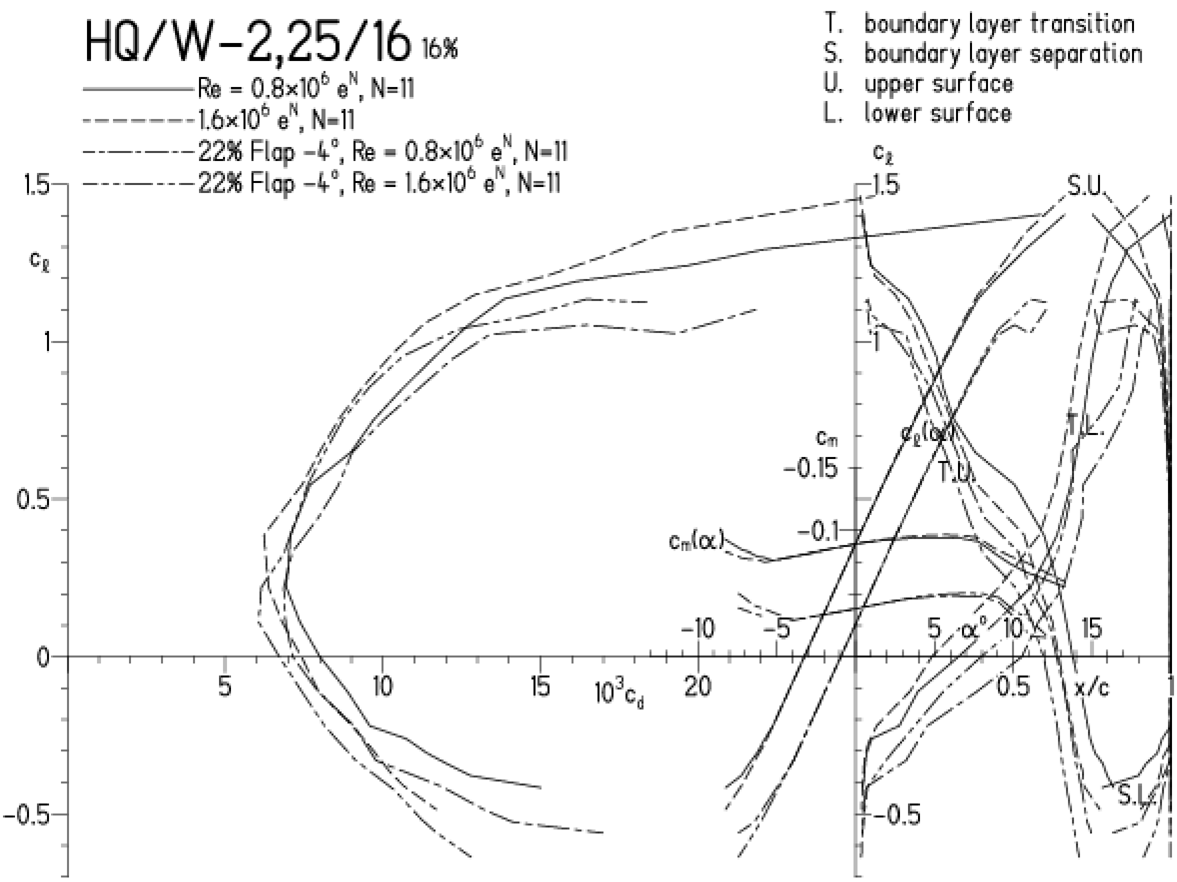
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

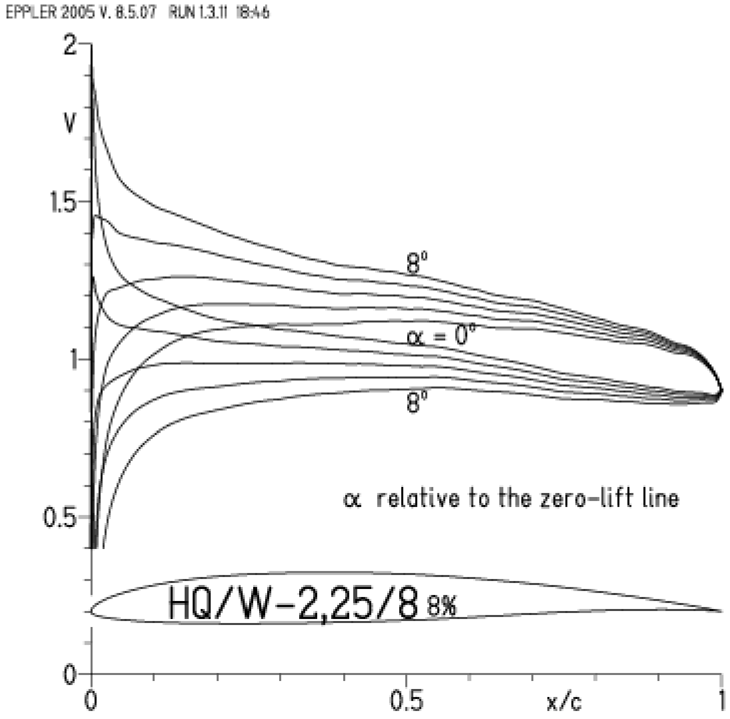
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

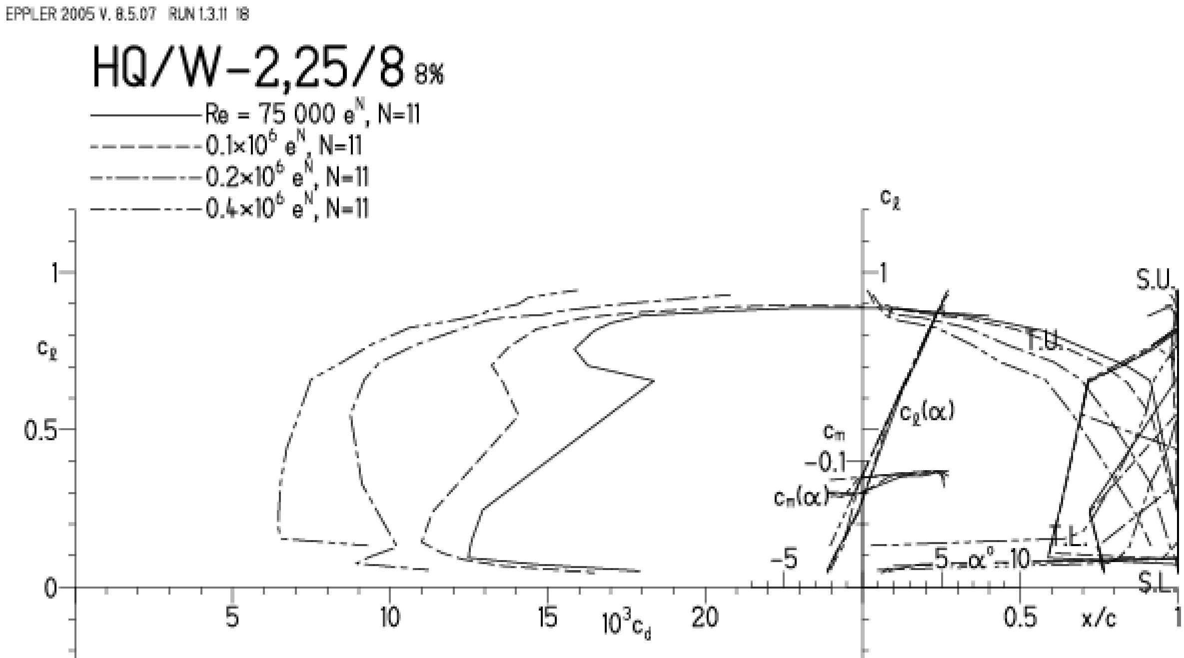


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

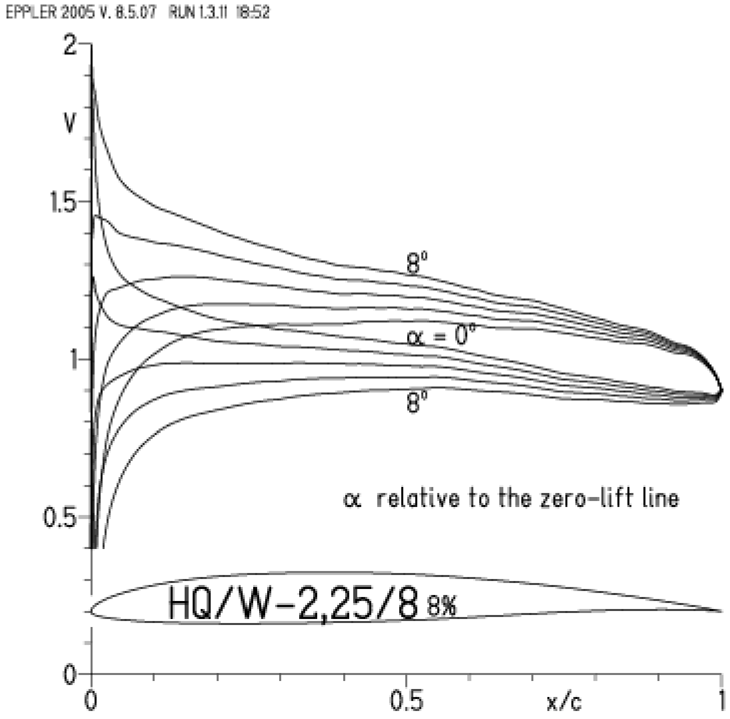


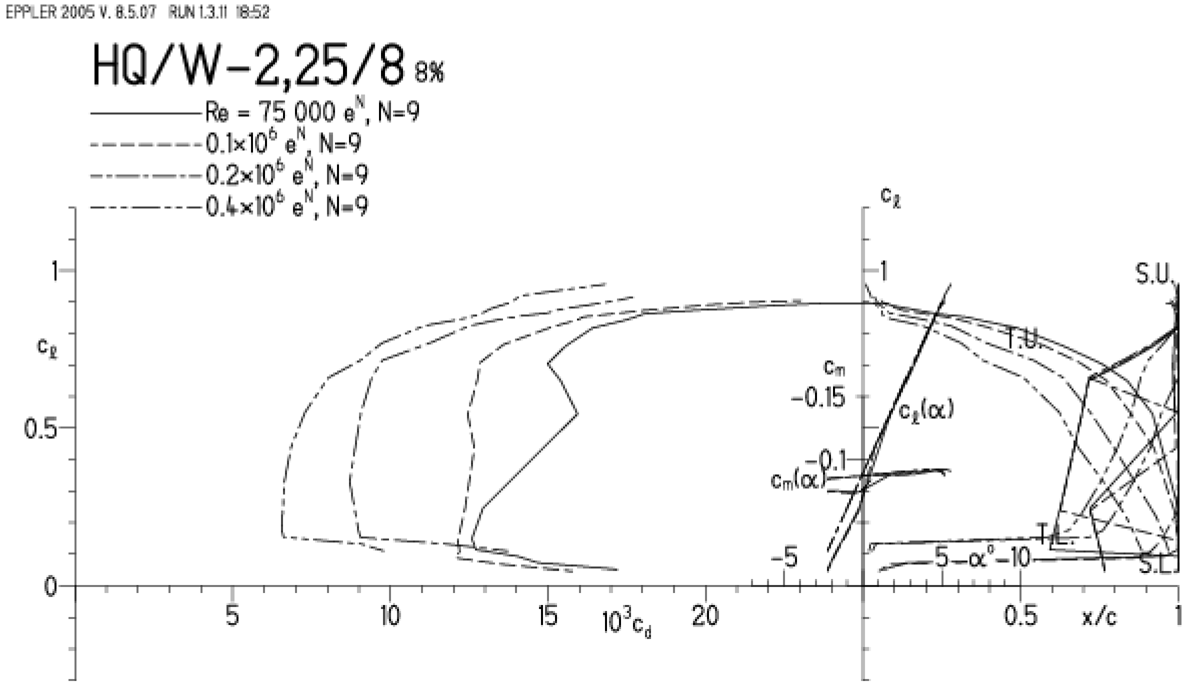
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

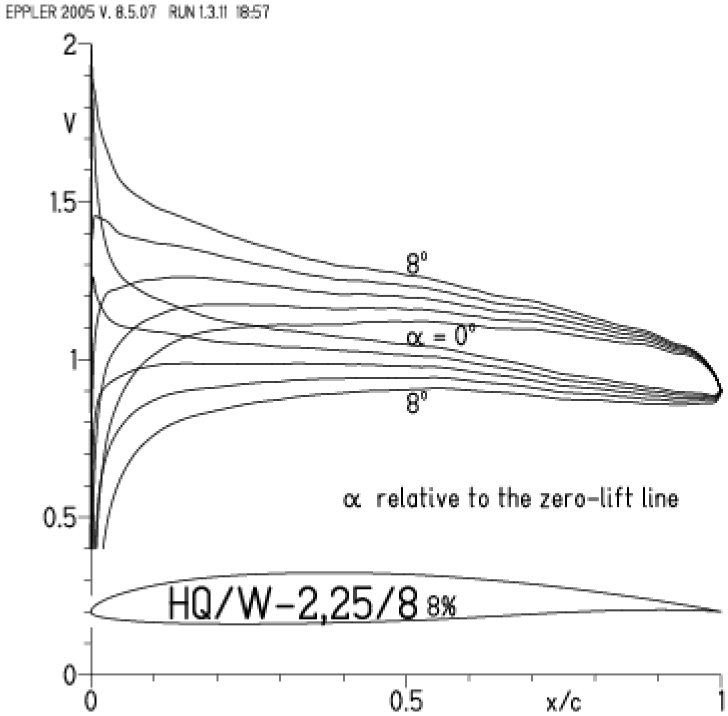

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
$10^3 c_d$
c_m
c_l(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
x/c

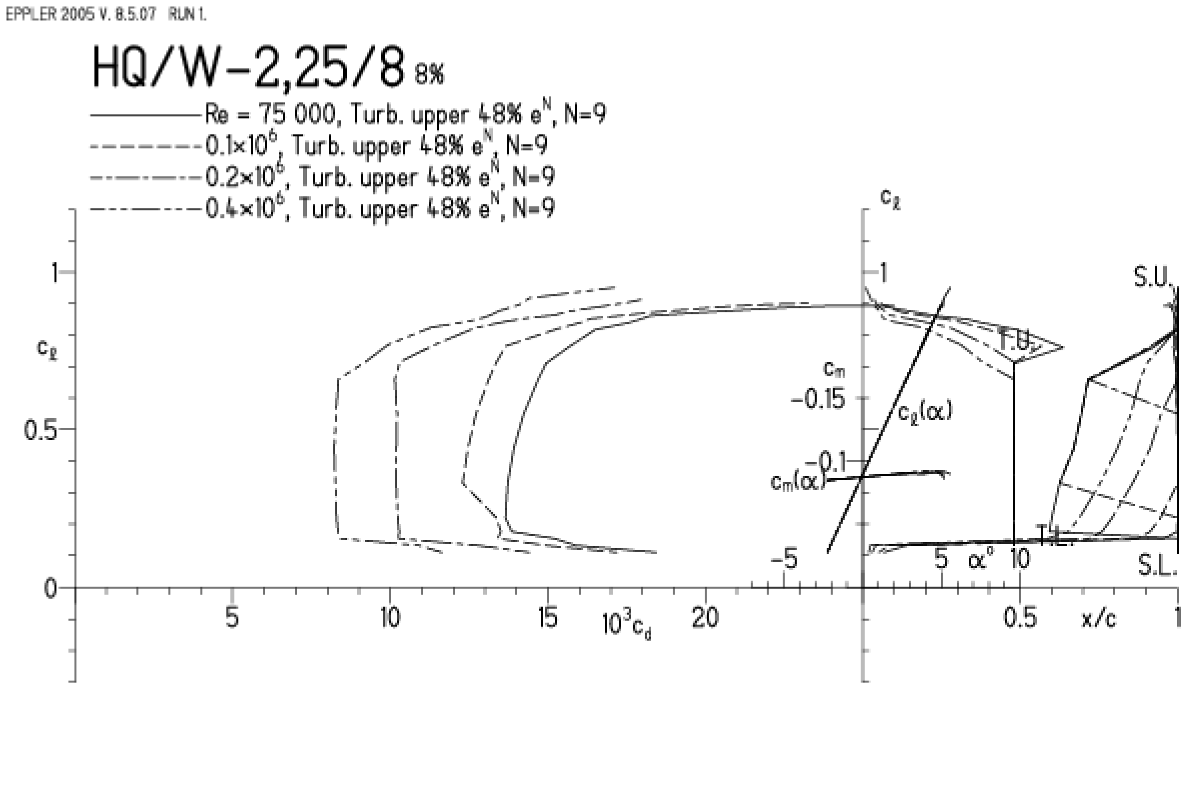
<u>HQ/W-2,25/8</u>, N=9





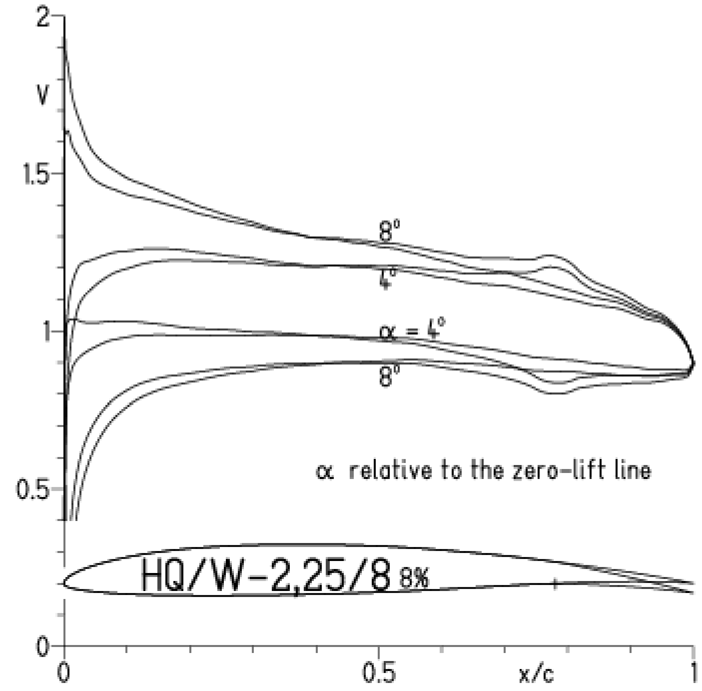
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



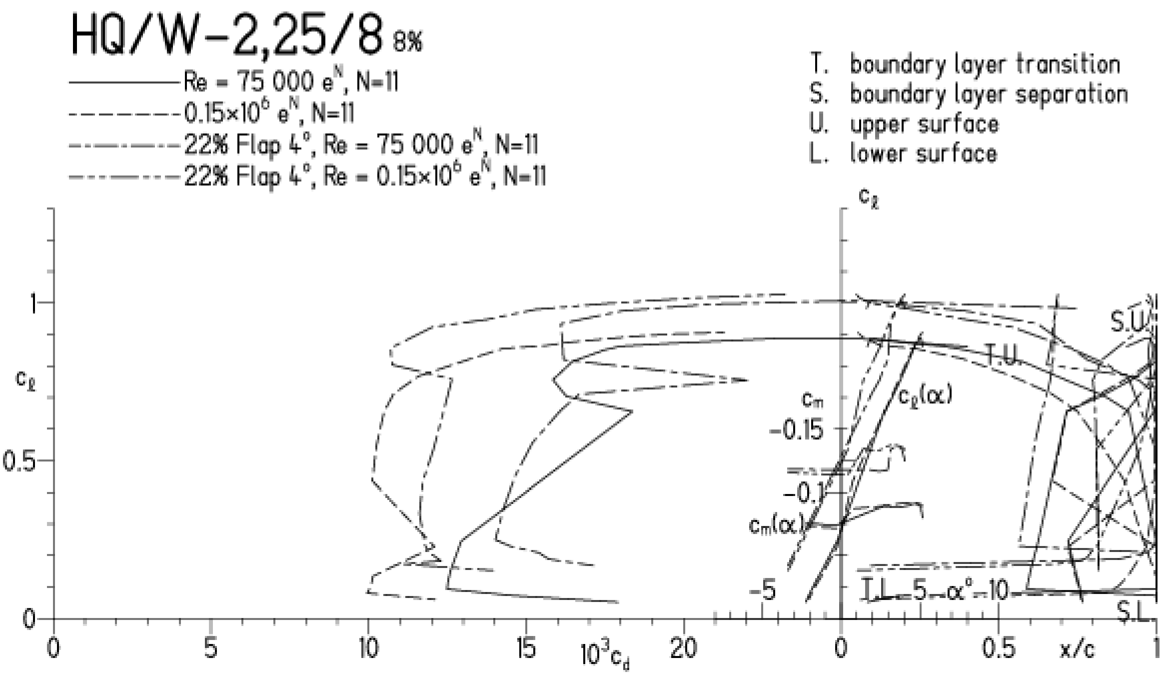


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

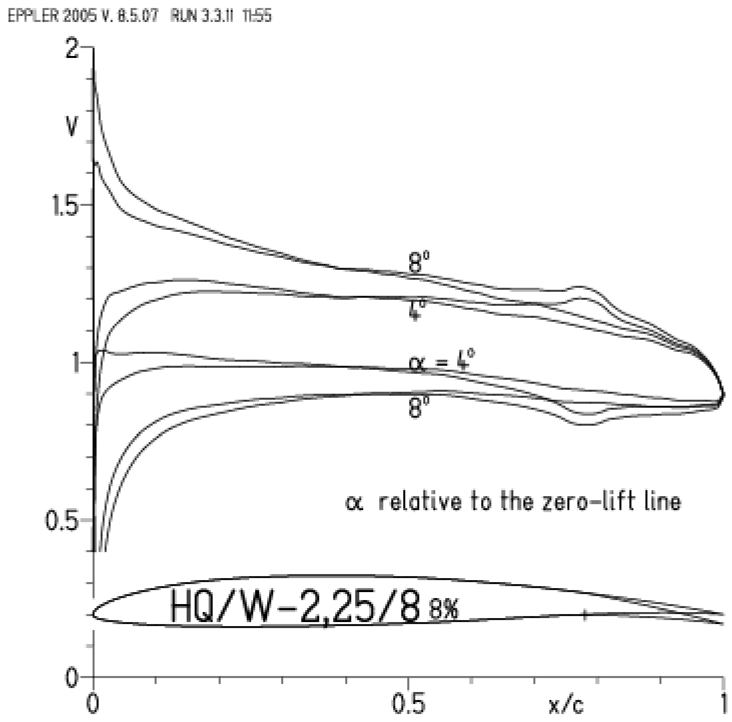
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

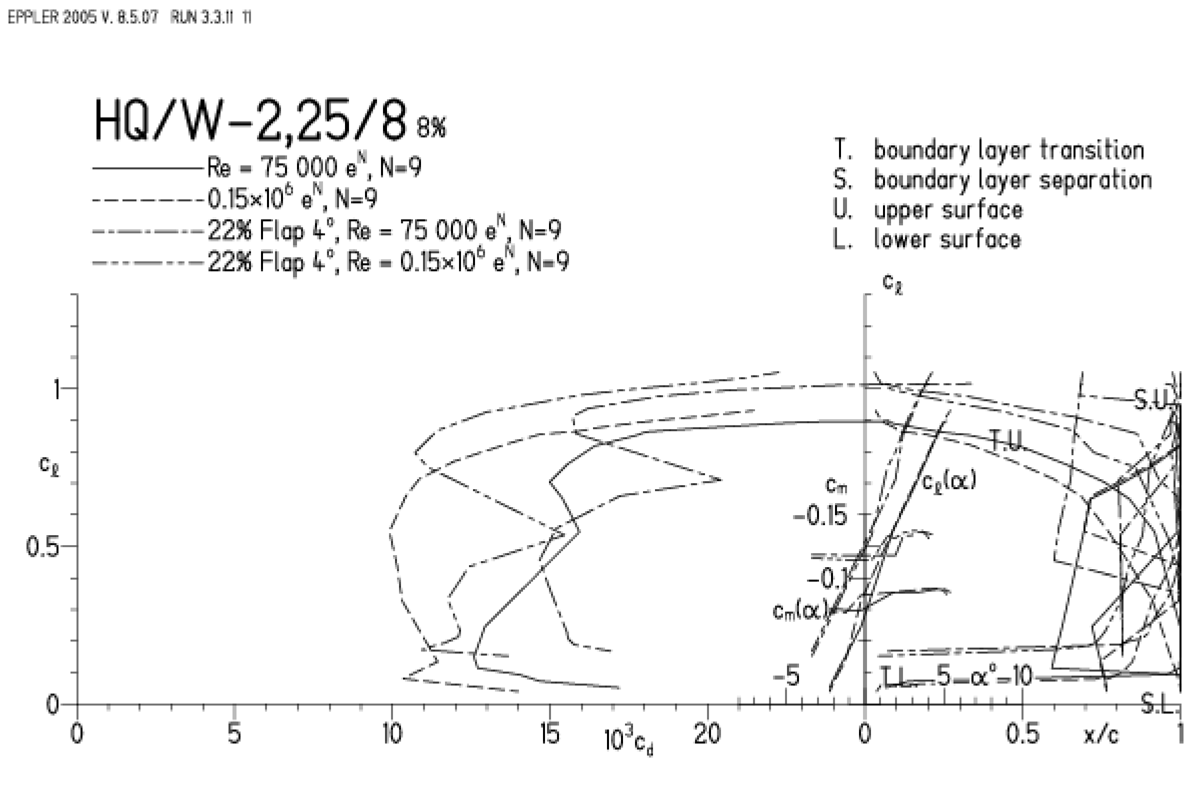


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

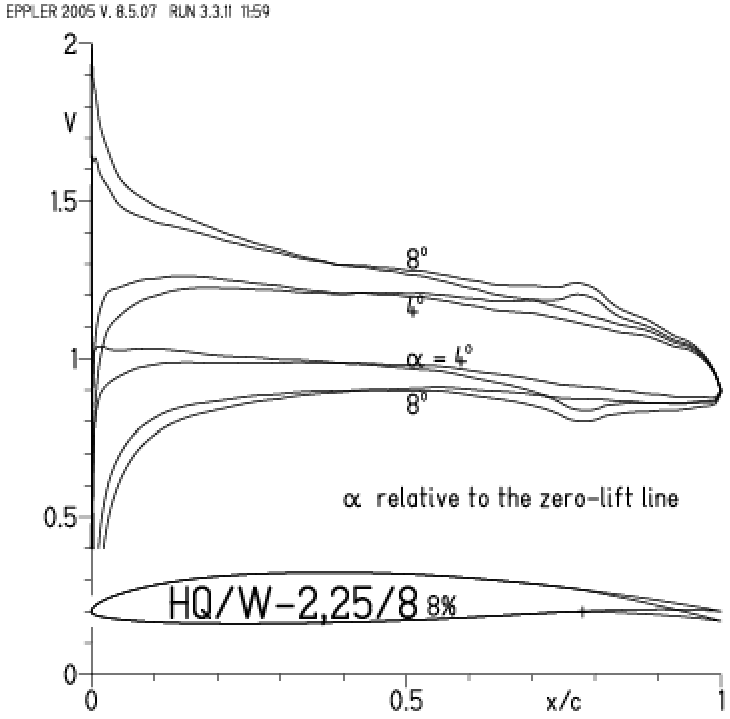


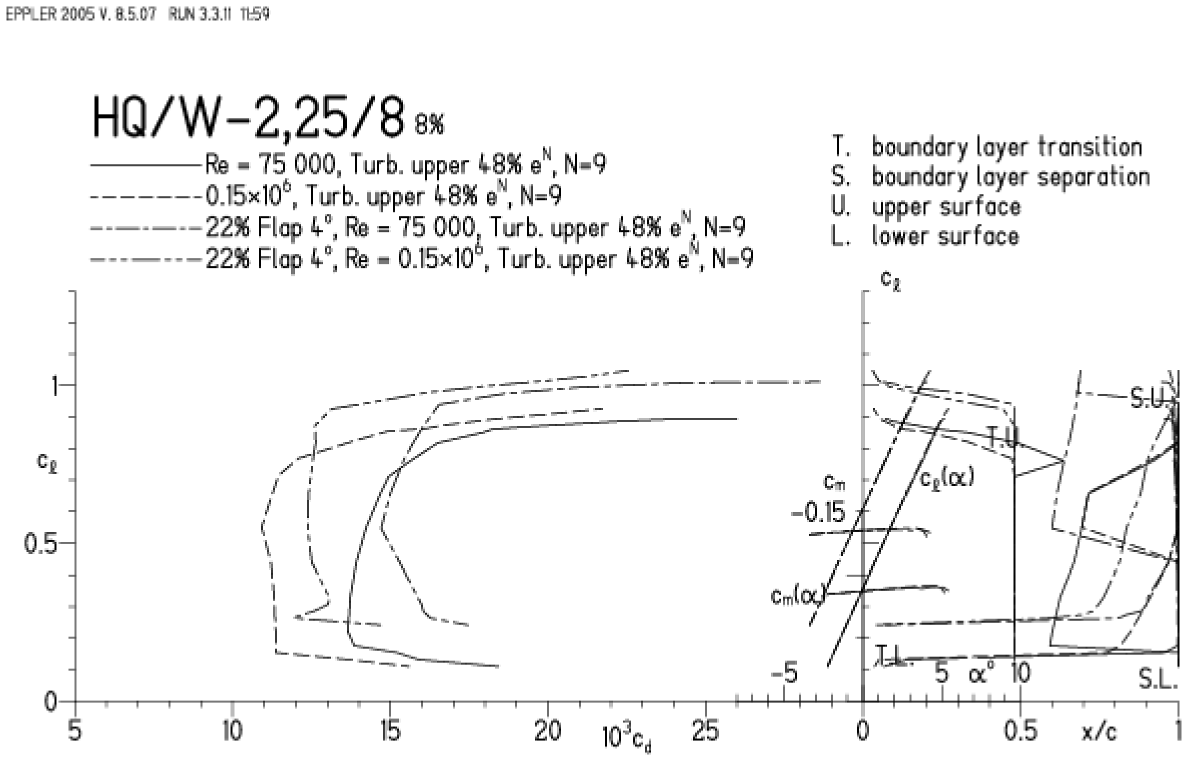
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





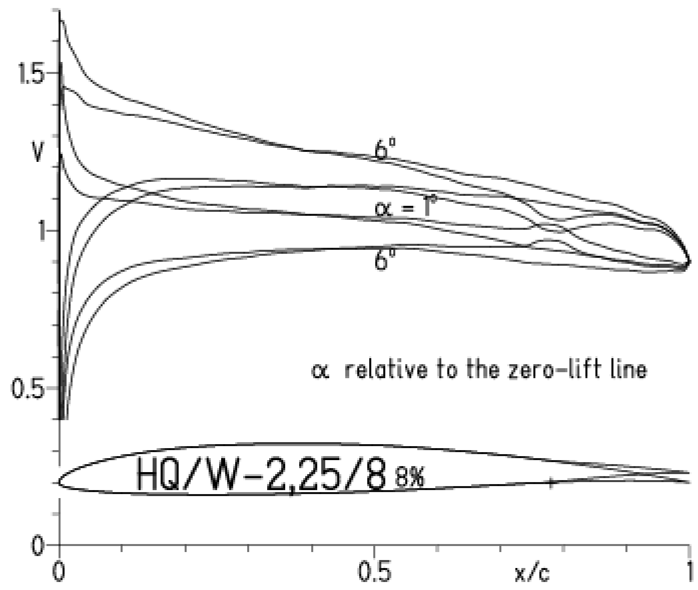
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



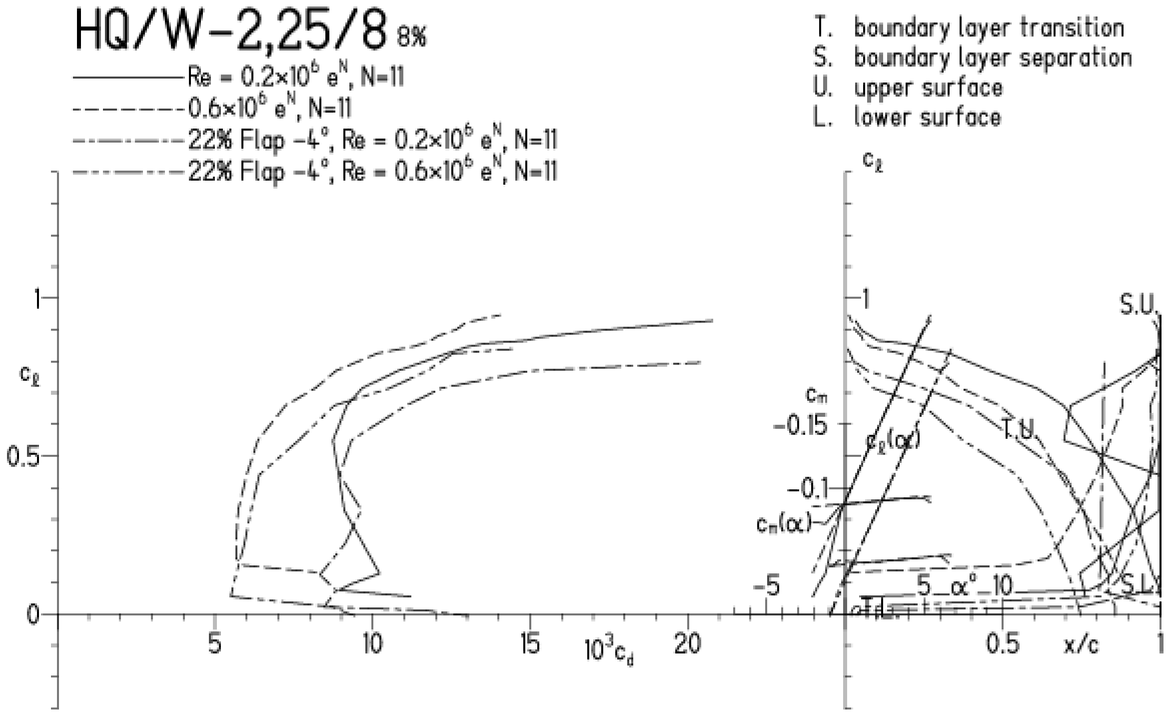


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

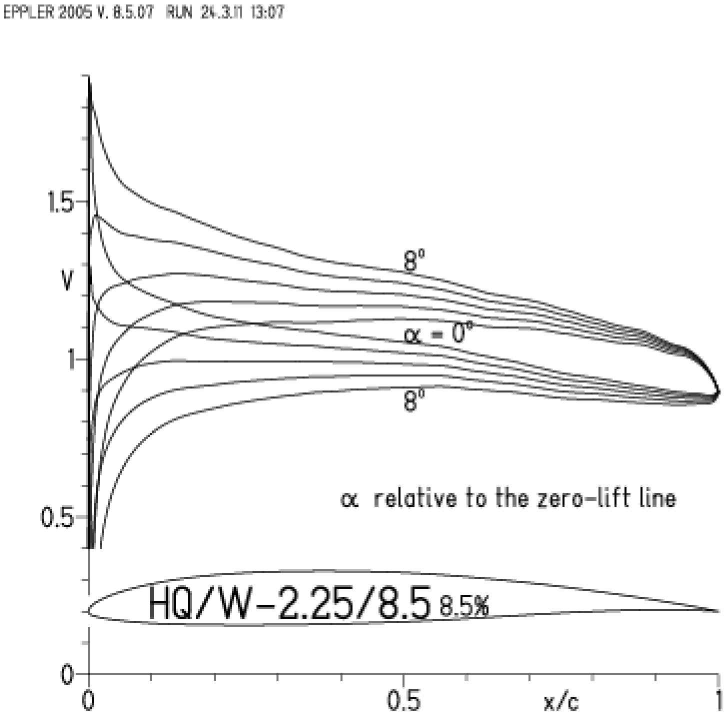
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

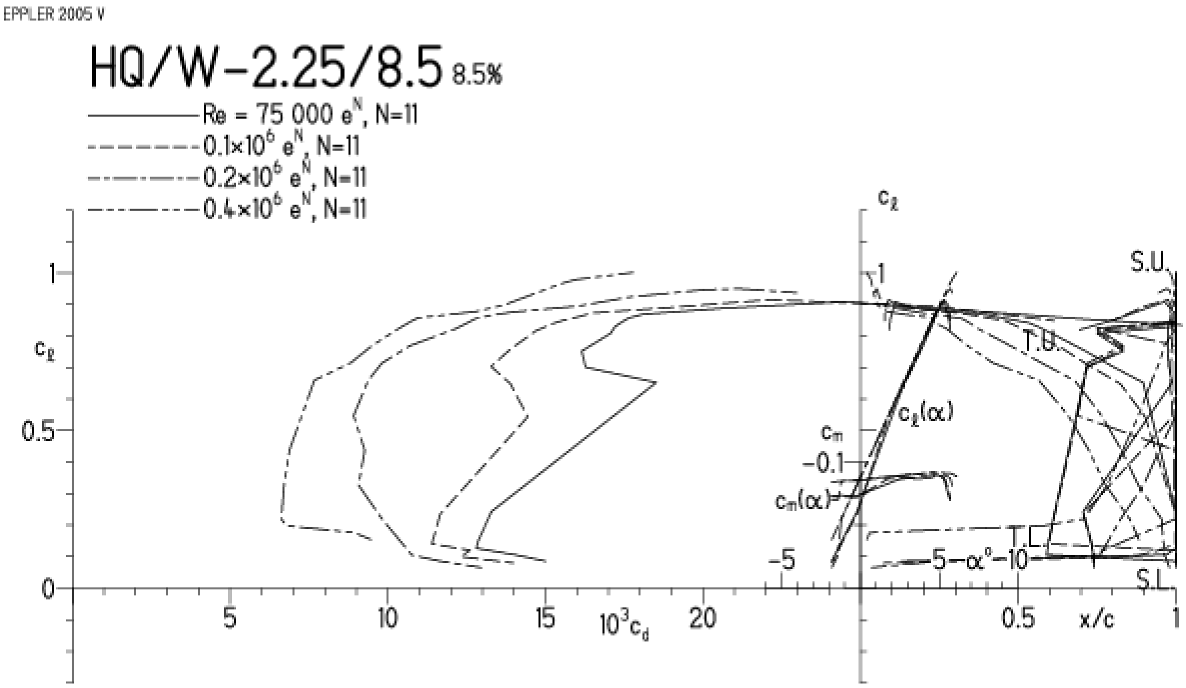


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



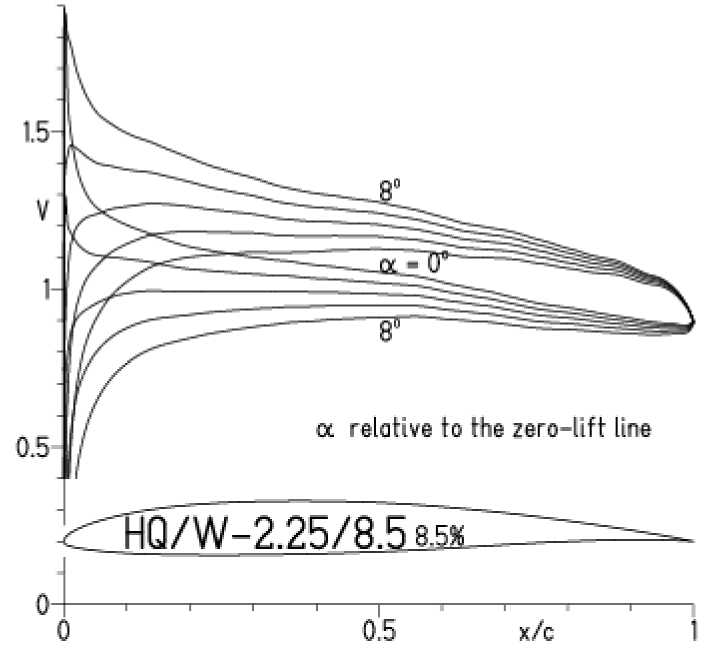
<u>HQ/W-2,25/8,5</u>, N=11



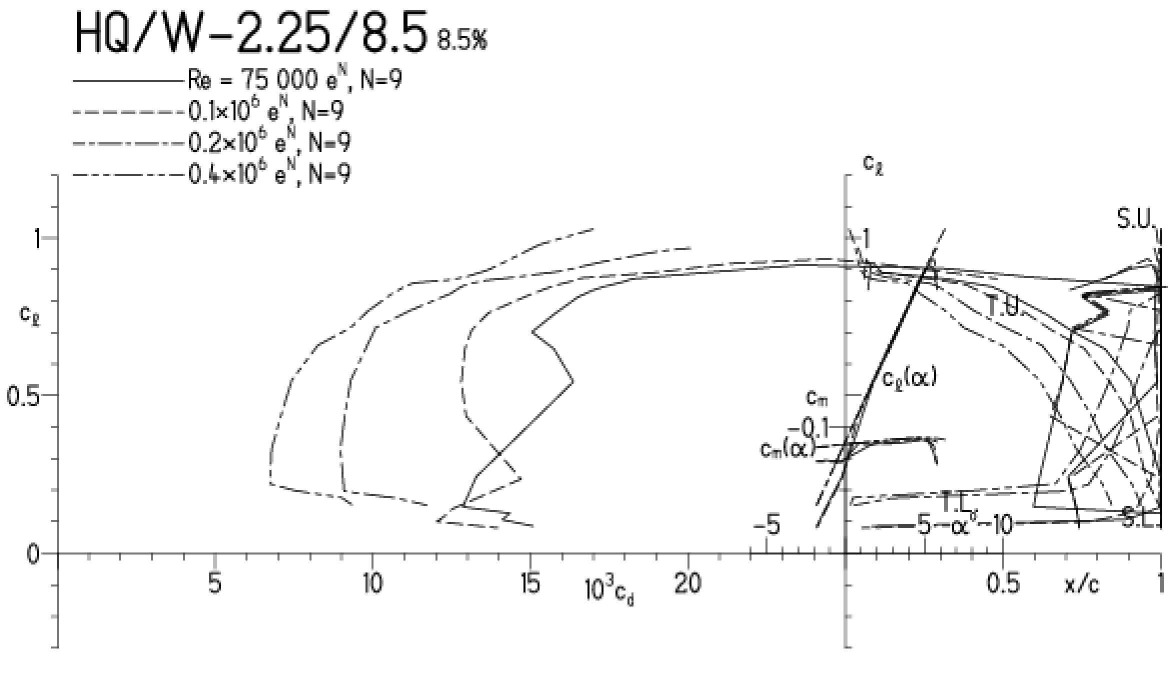


HQ/W-2,25/8,5, N=9

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

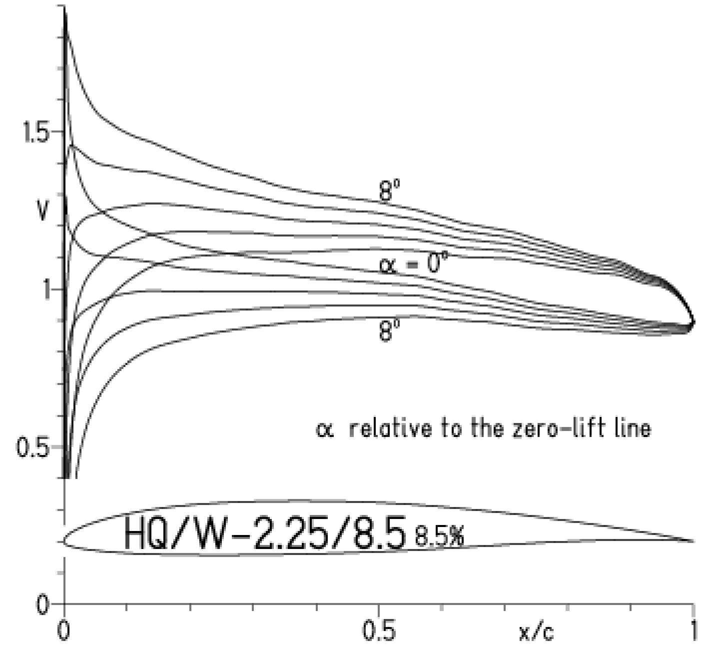


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

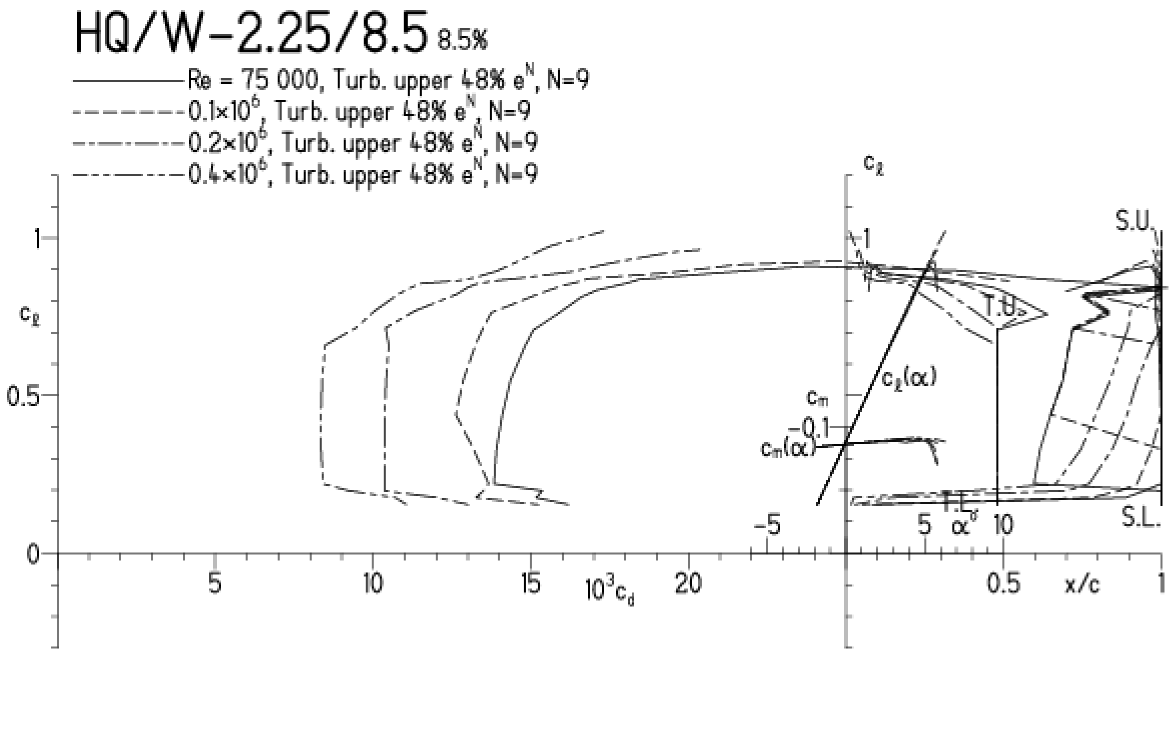


<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 17:31

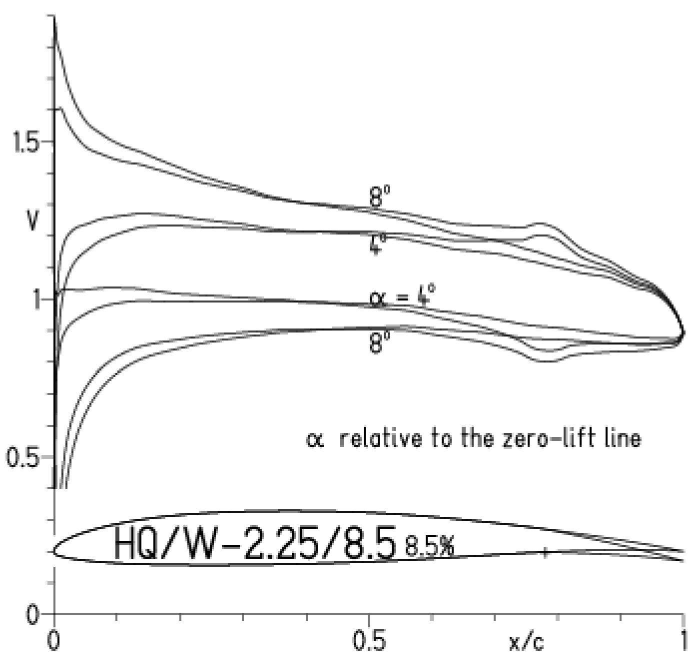


EPPLER 2005 V.

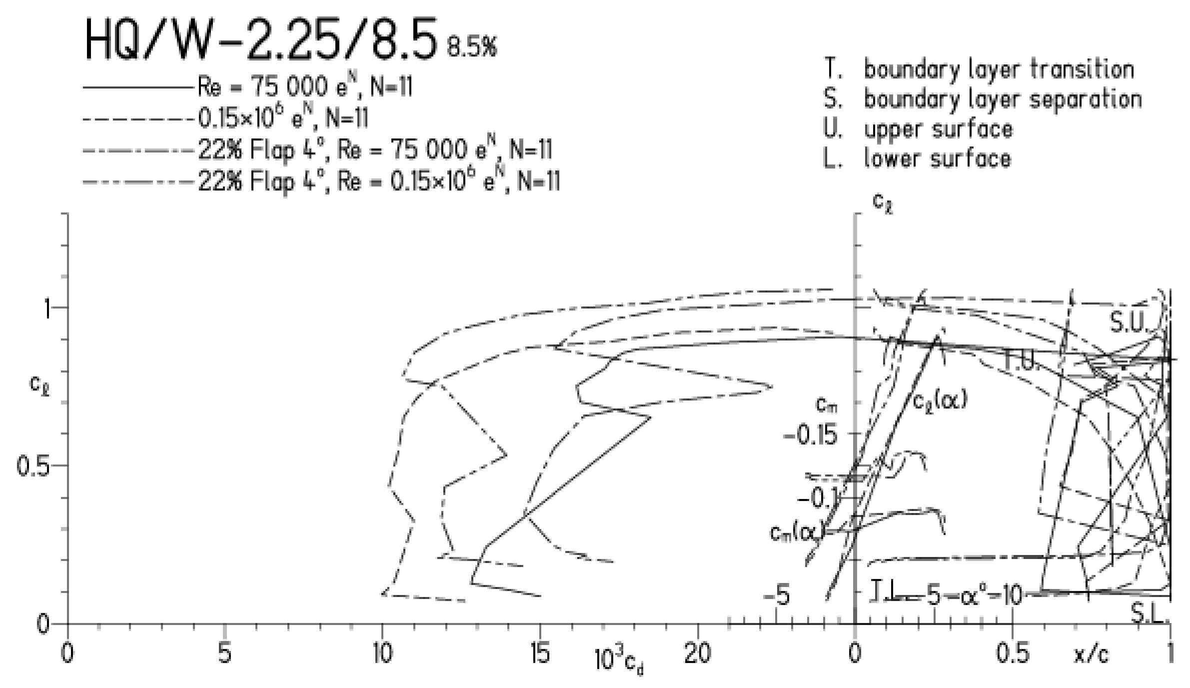


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

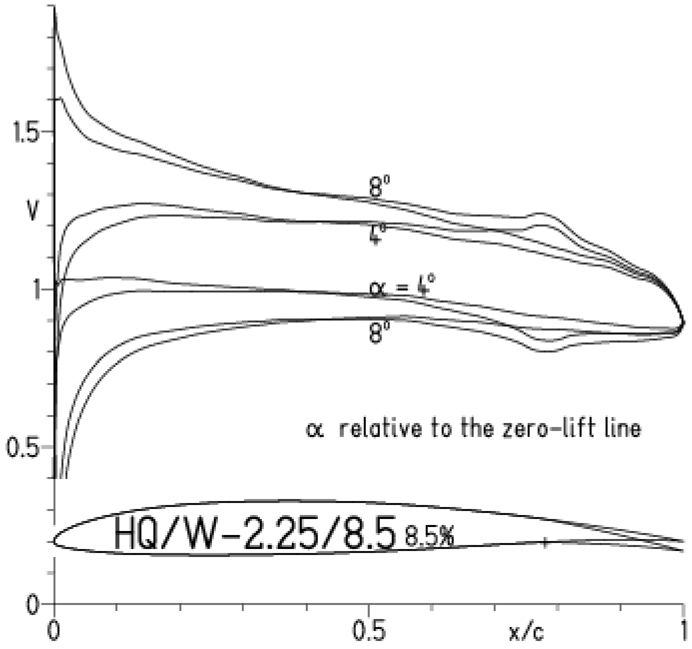


EPPLER 2005 V. 8.5.

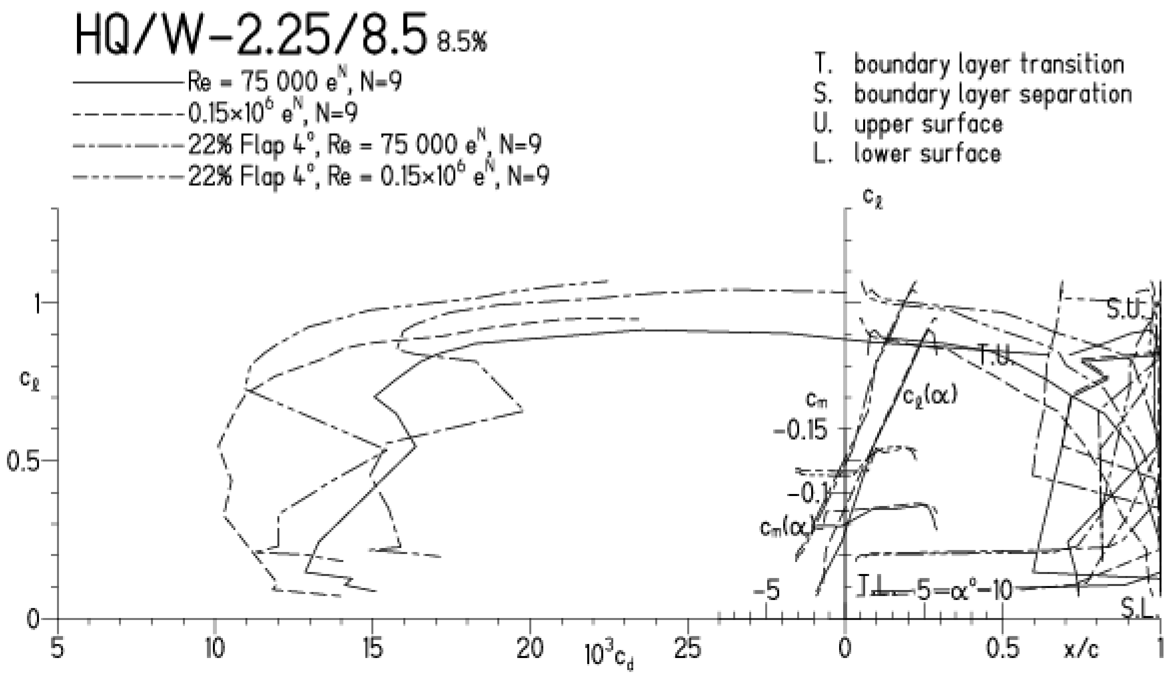


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

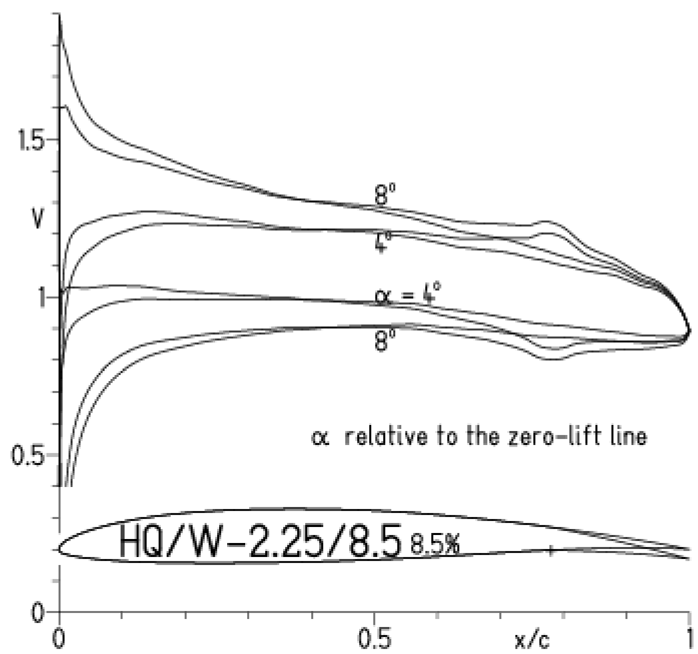


EPPLER 2005 V.

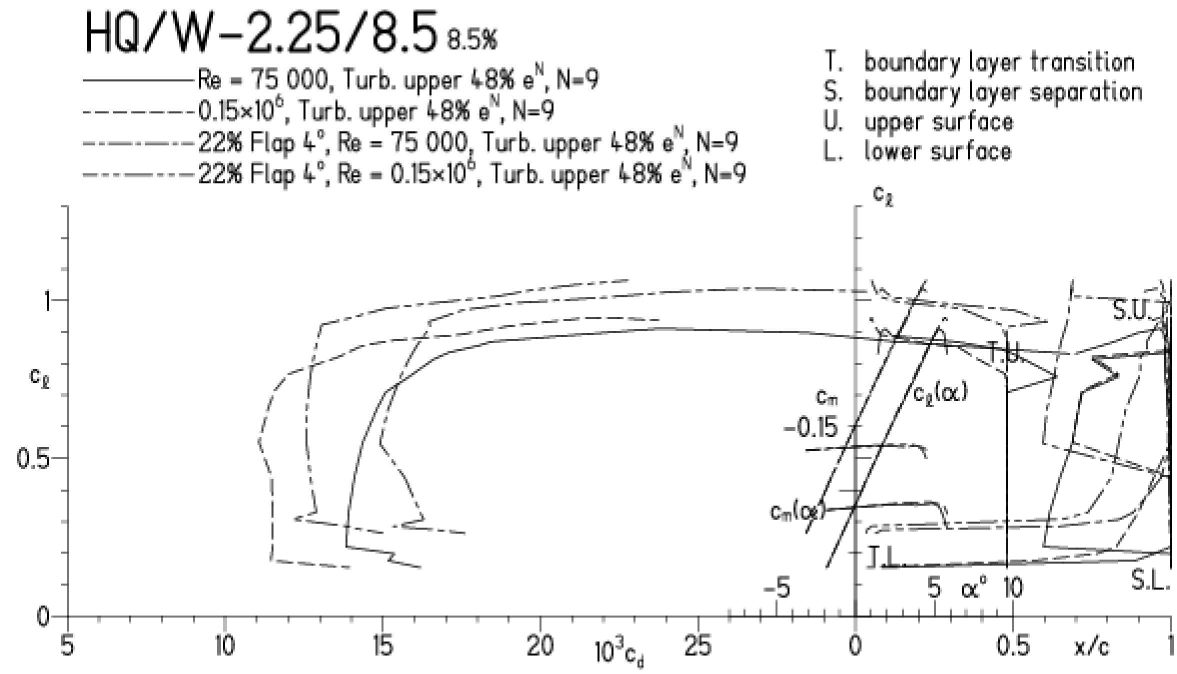


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

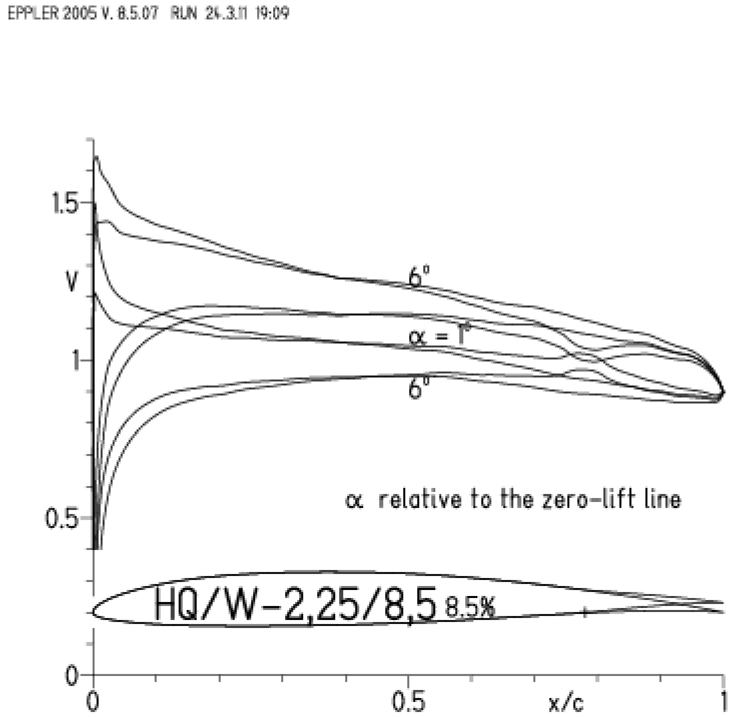
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

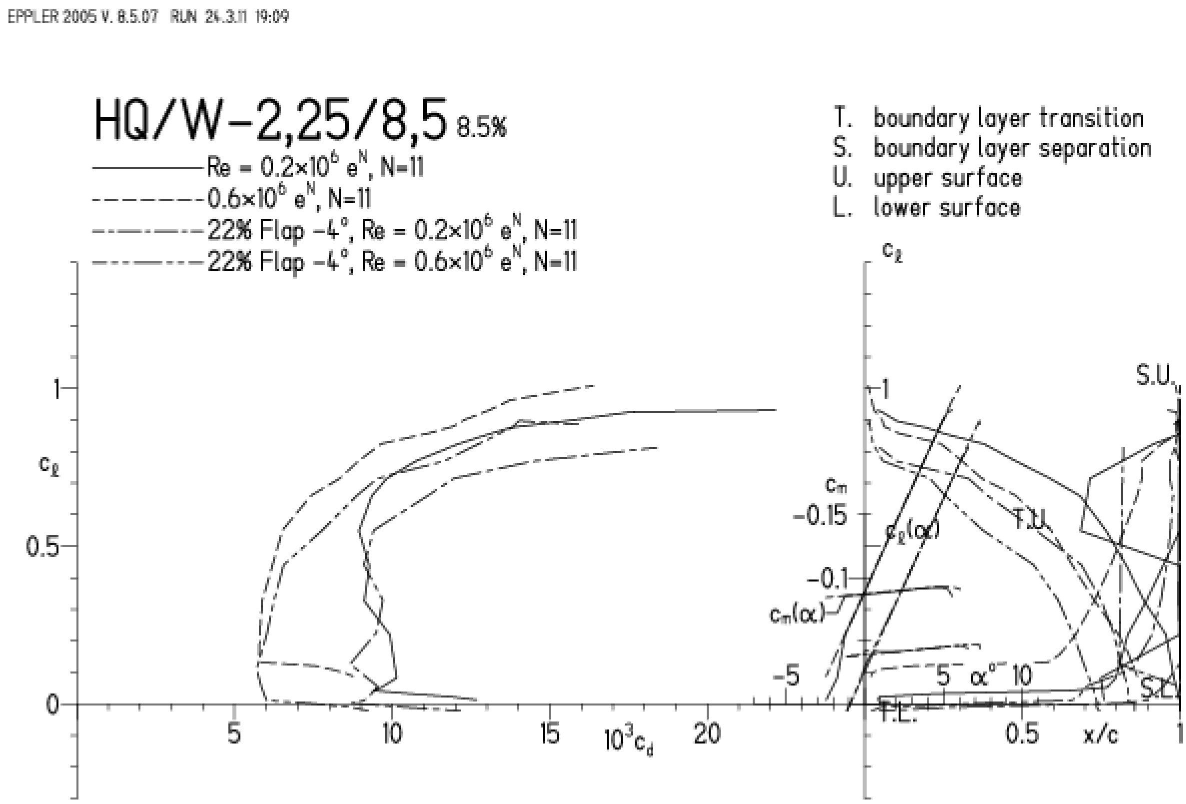


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



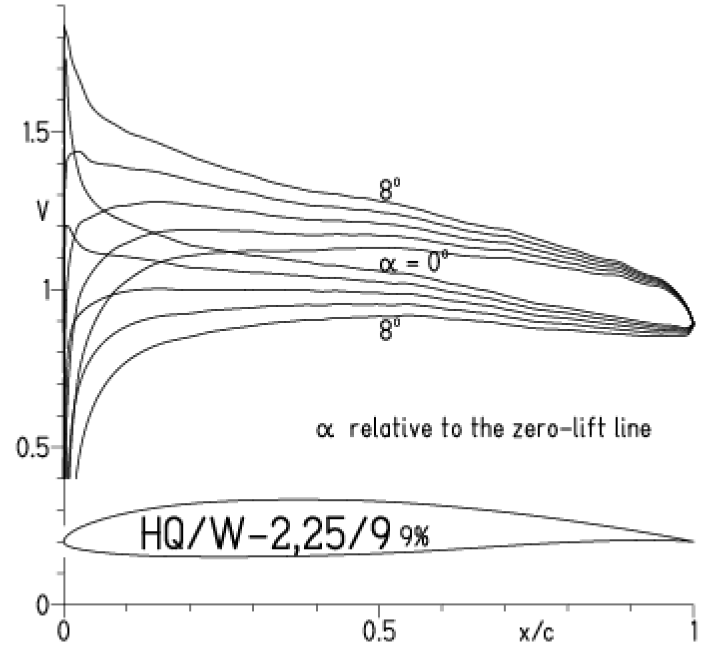
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



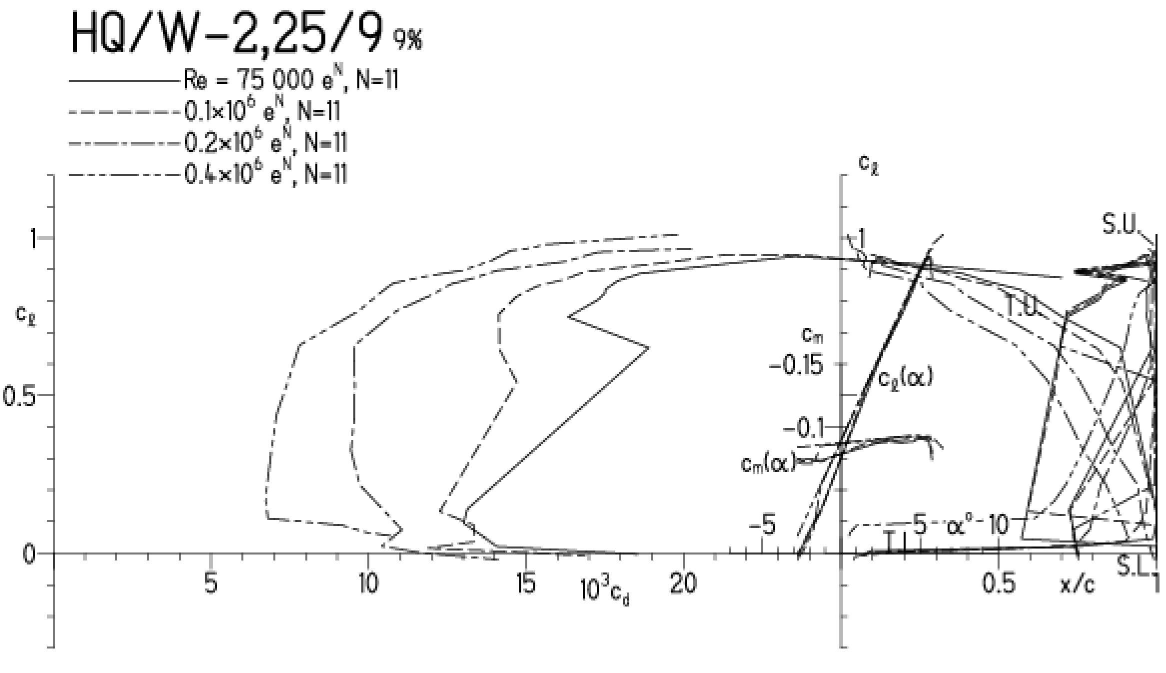


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

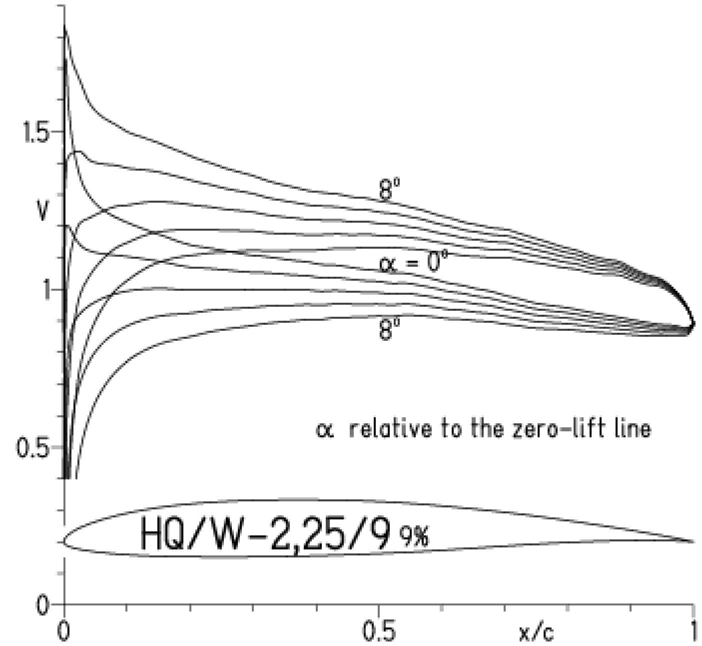


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

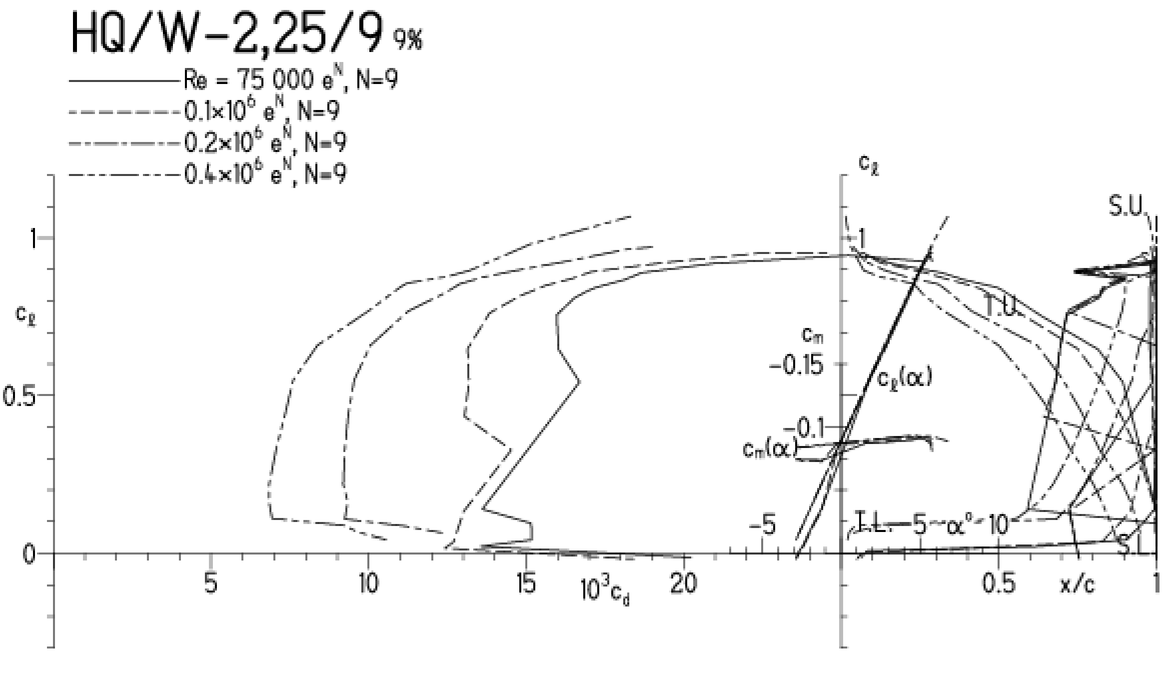


<u>HQ/W-2,25/9</u>, N=9

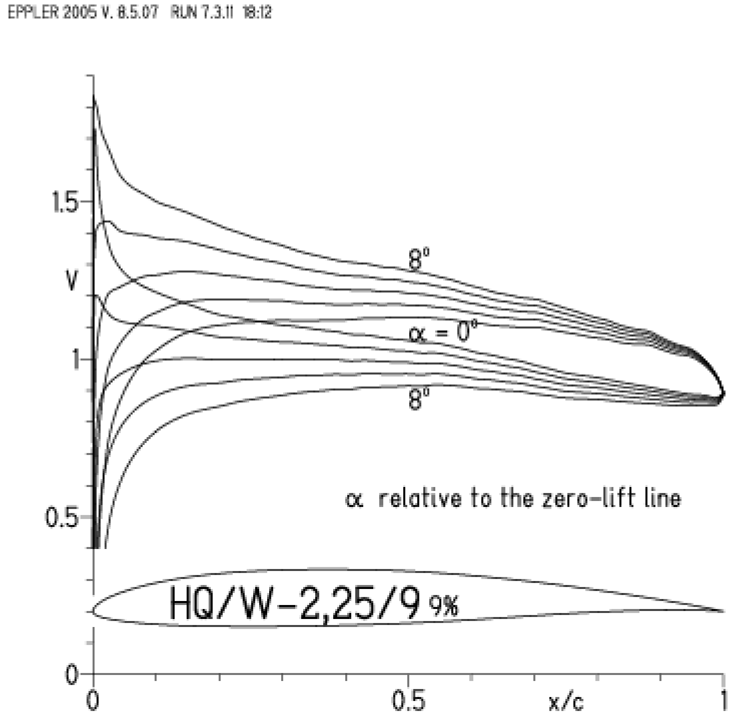
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

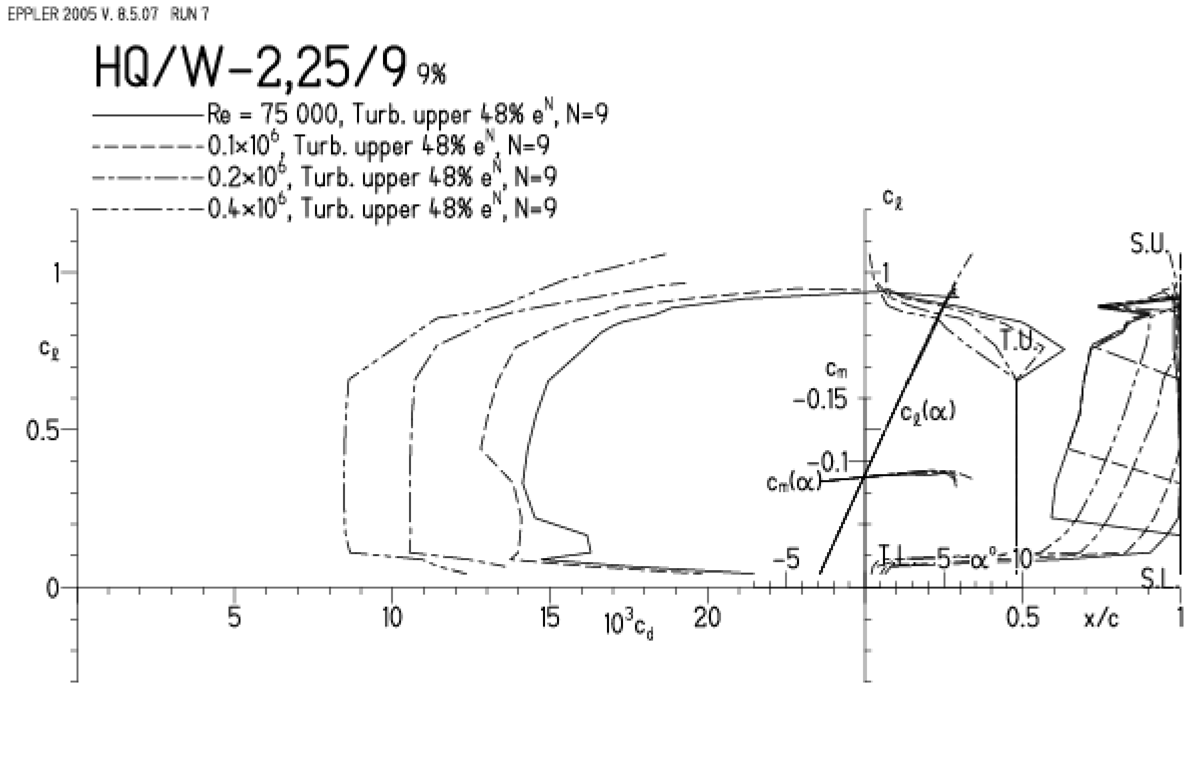


EPPLER 2005 V. 8.



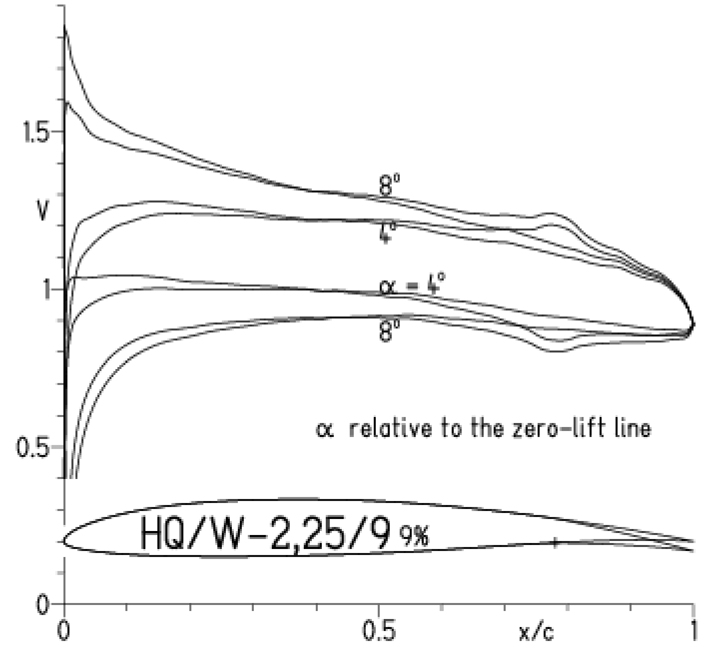
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



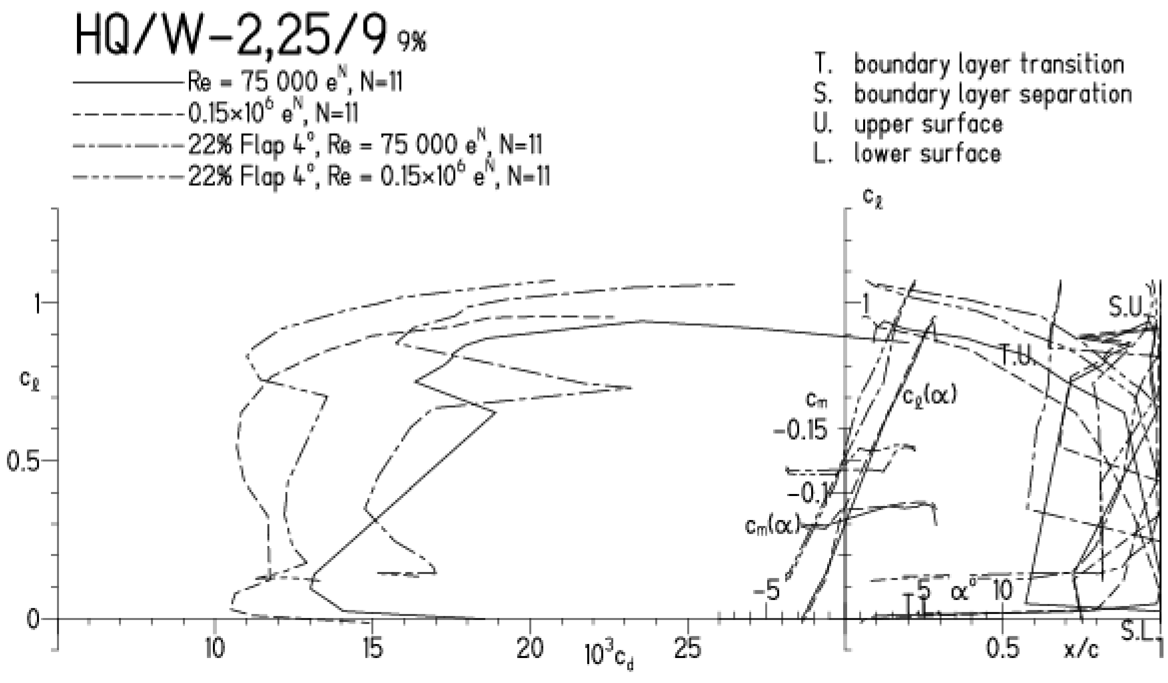


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

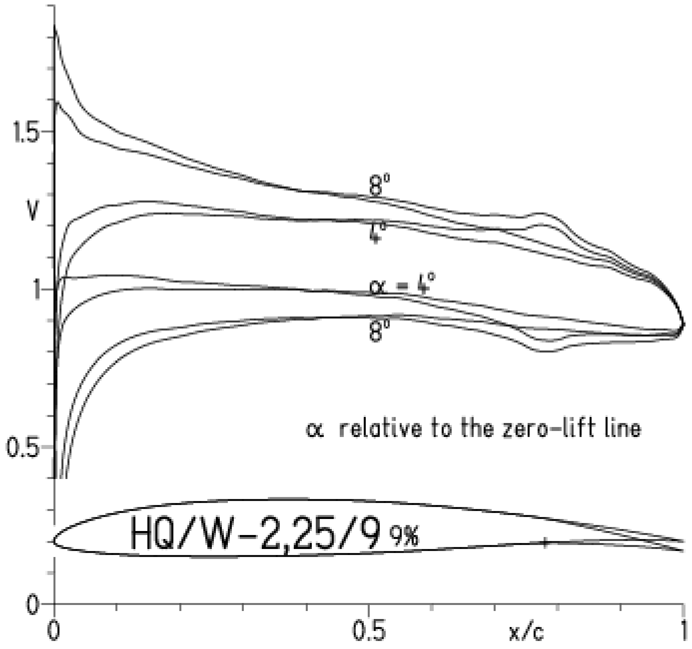


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

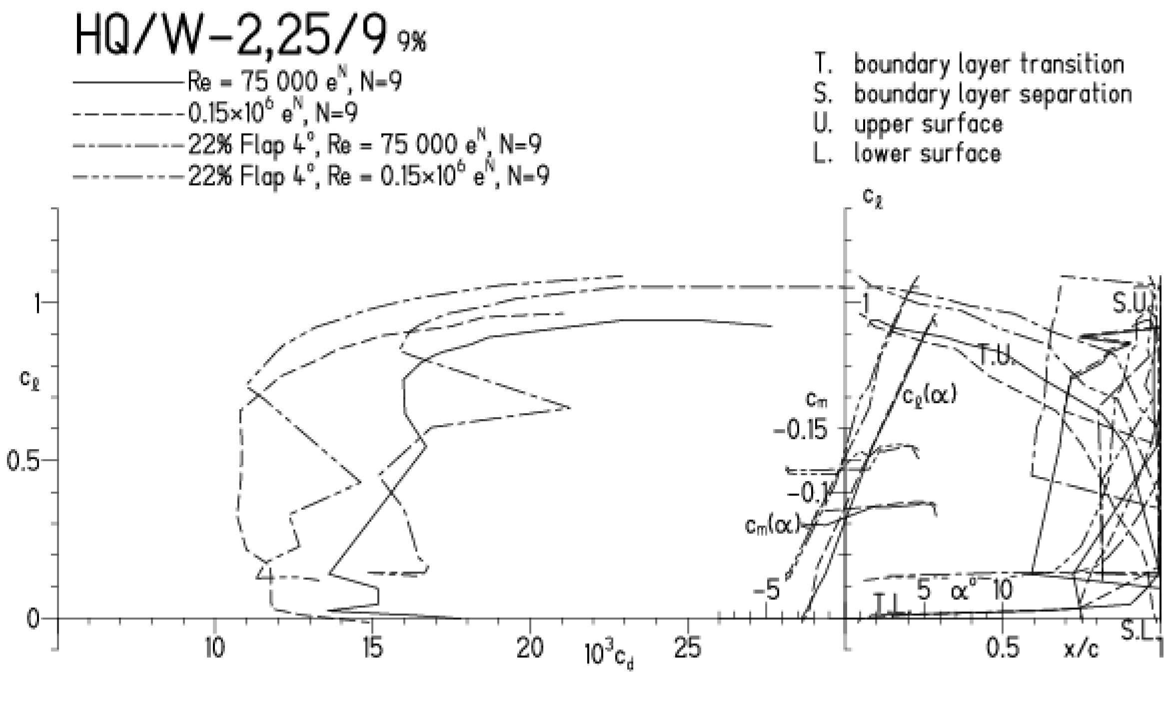


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

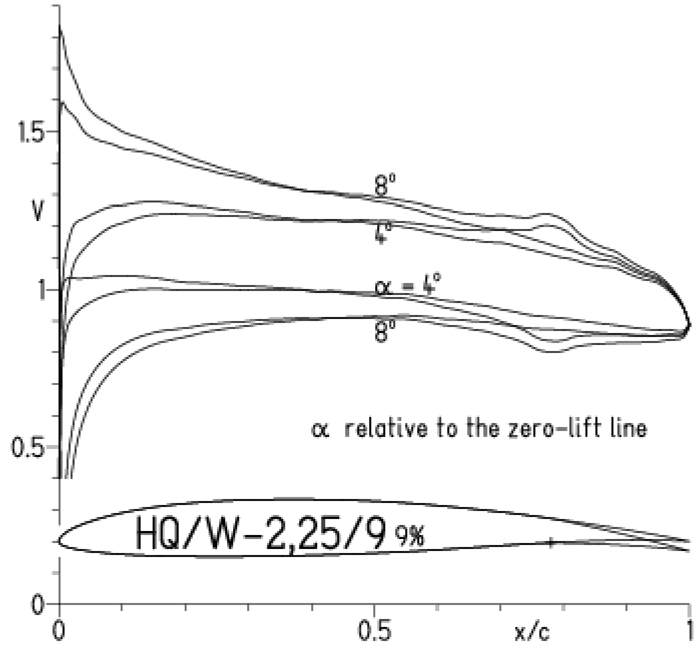


EPPLER 2005 V. 8.5.07 RUN 8.3.1

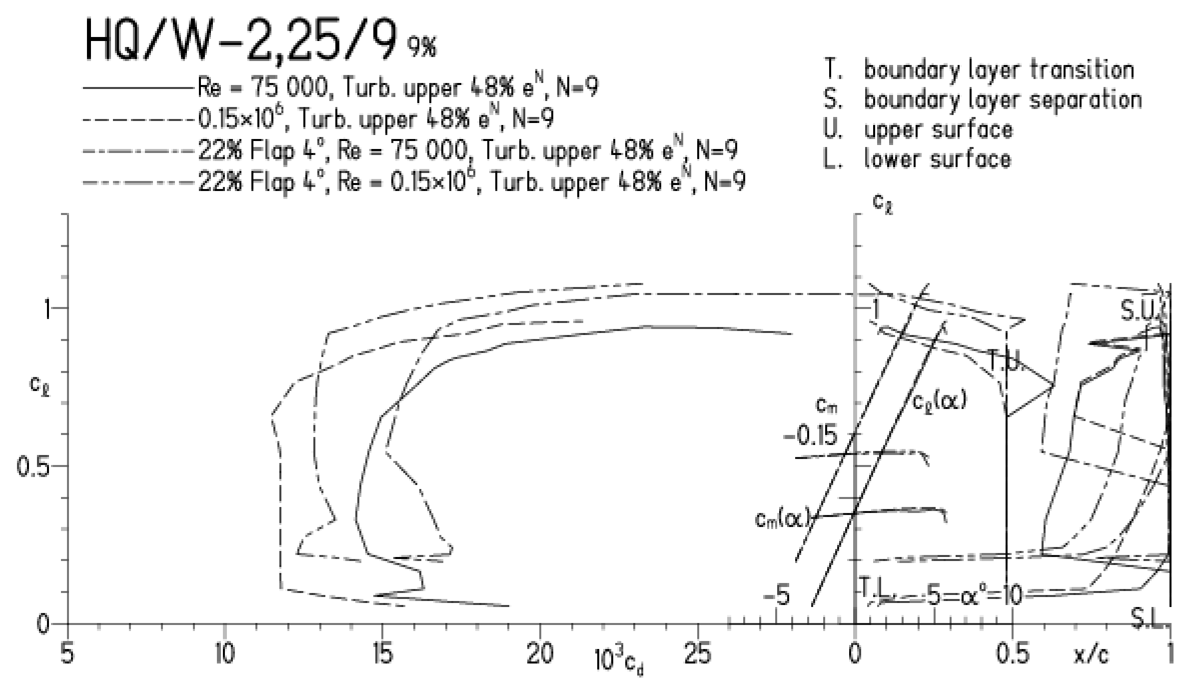


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

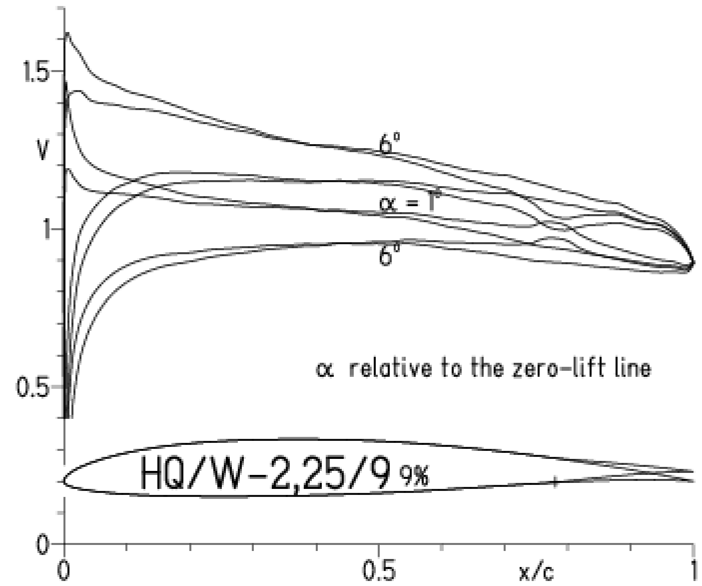


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

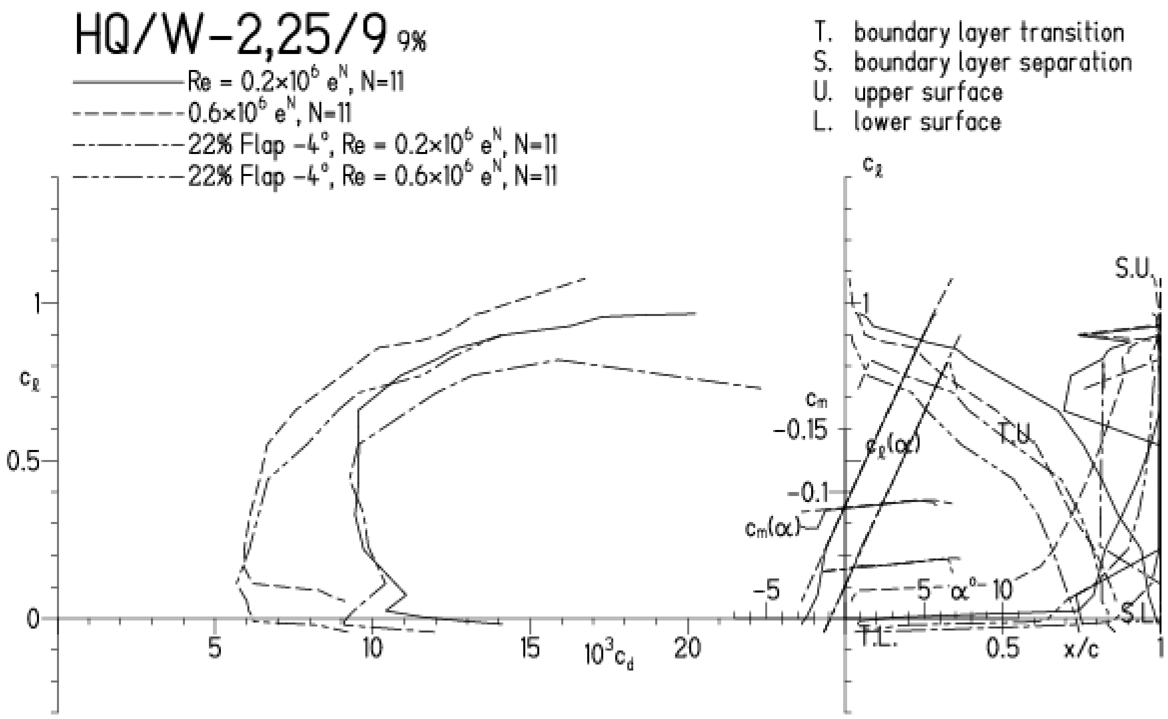


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

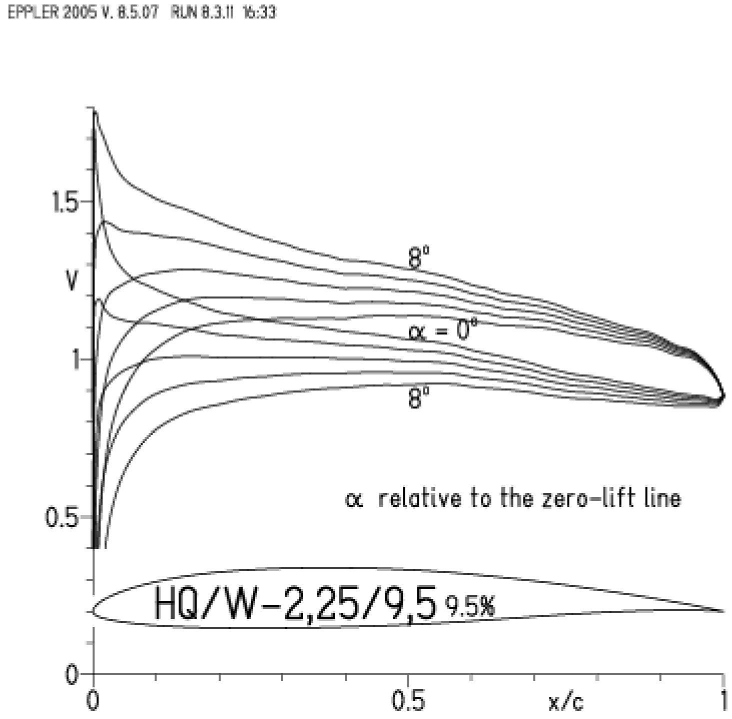
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

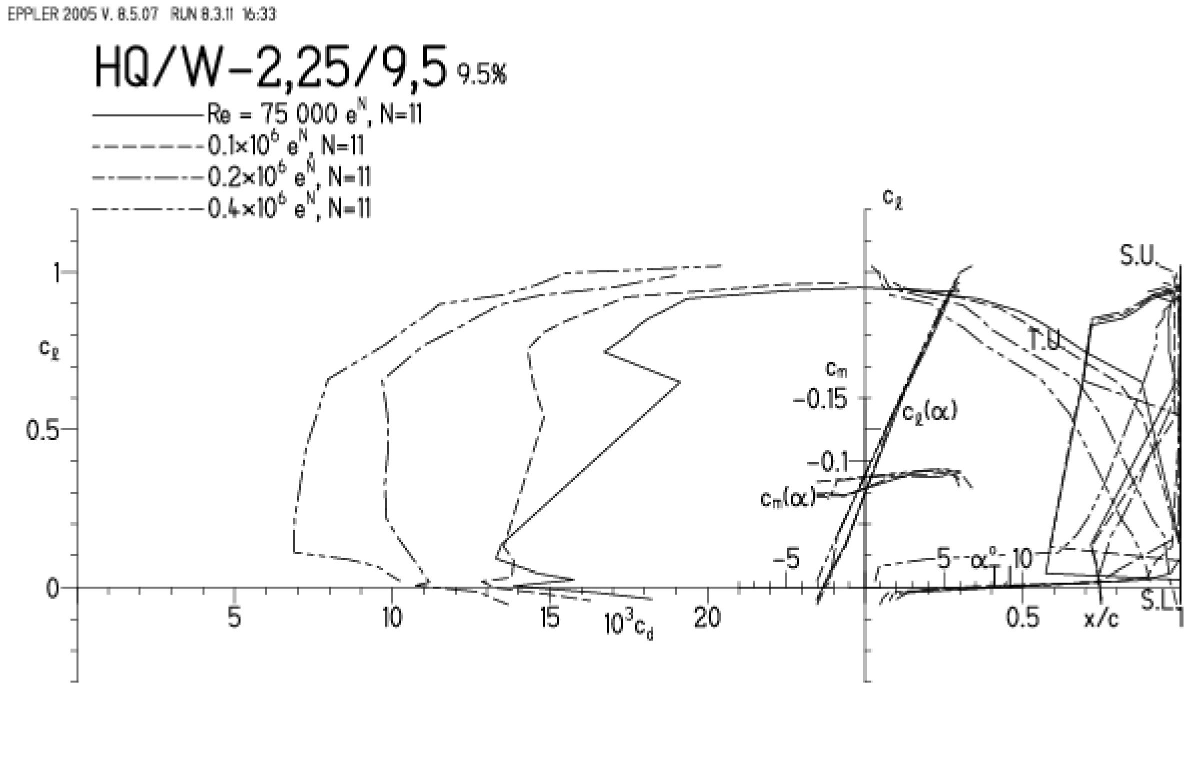


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



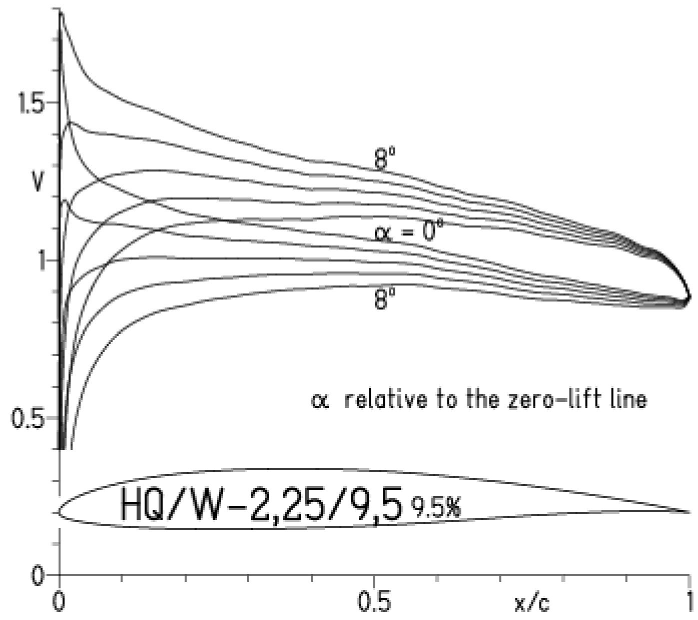
HQ/W-2,25/9,5, N=11



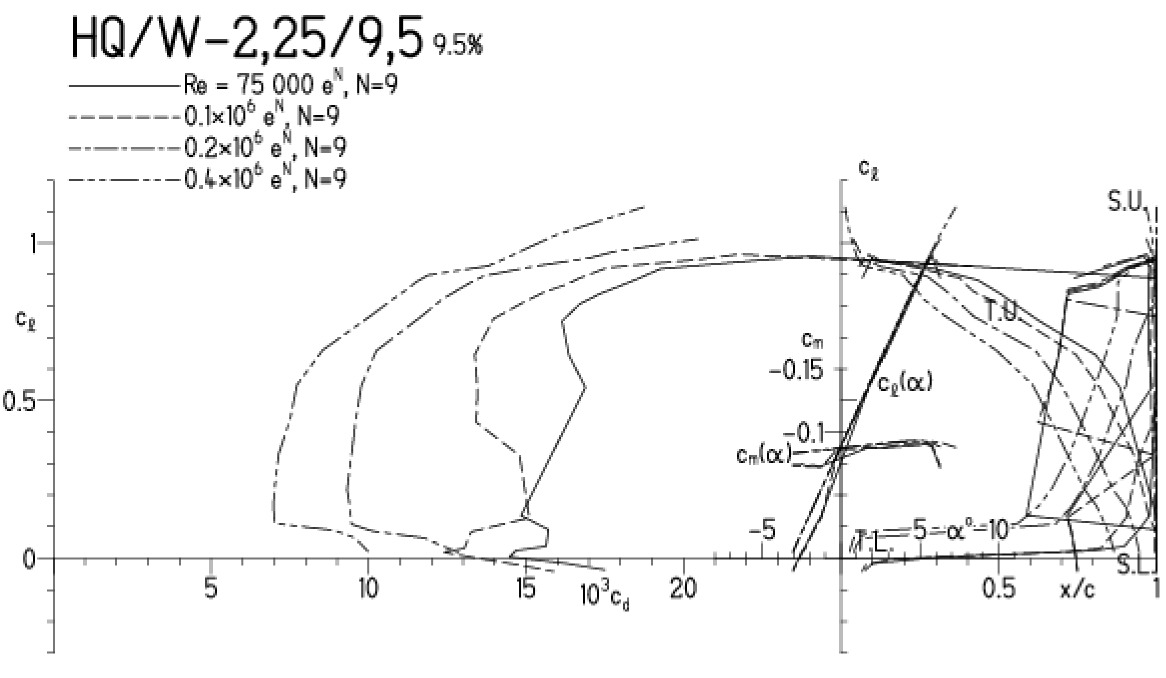


HQ/W-2,25/9,5, N=9

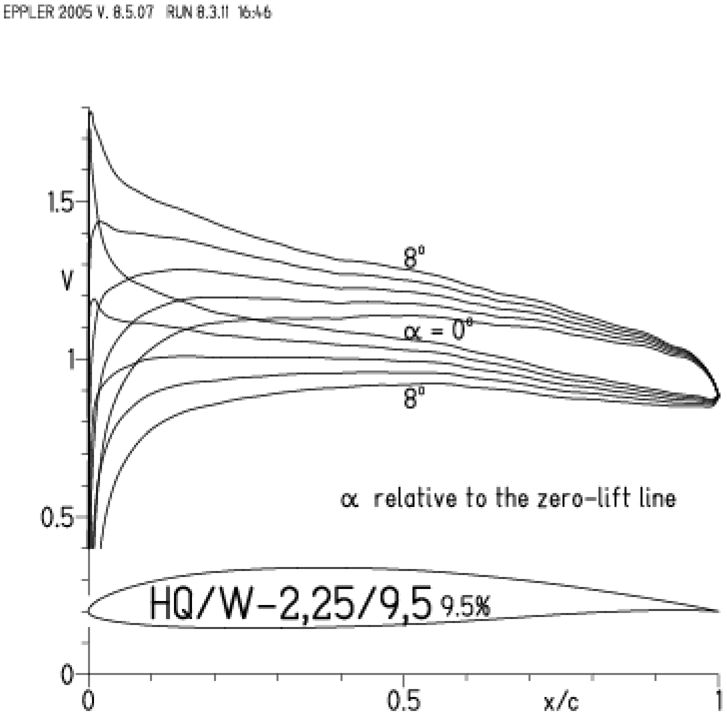
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

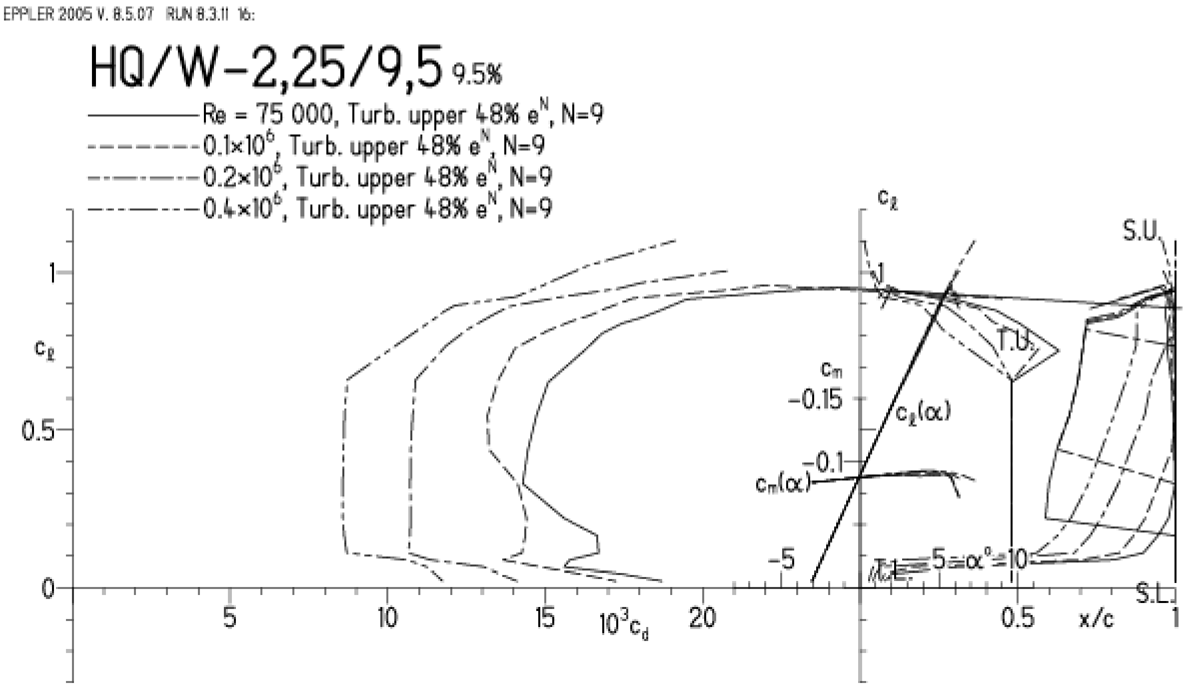


EPPLER 2005 V. 8.5.07 RUN 8.3.



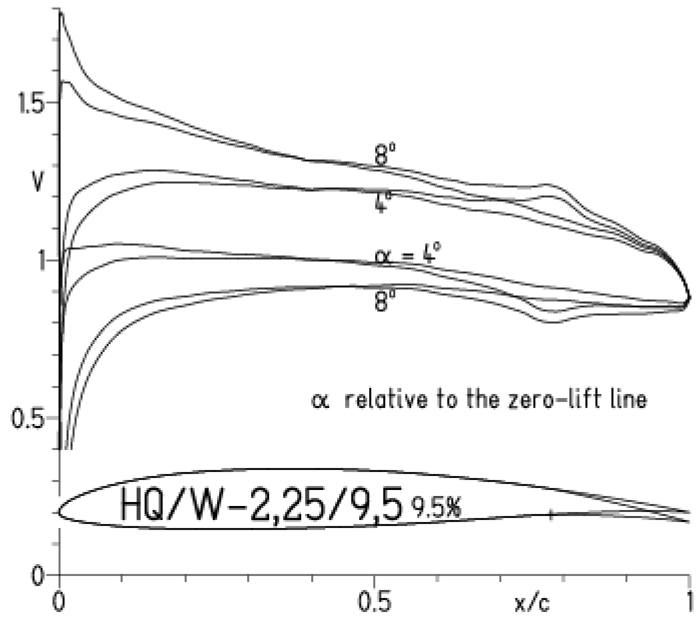
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



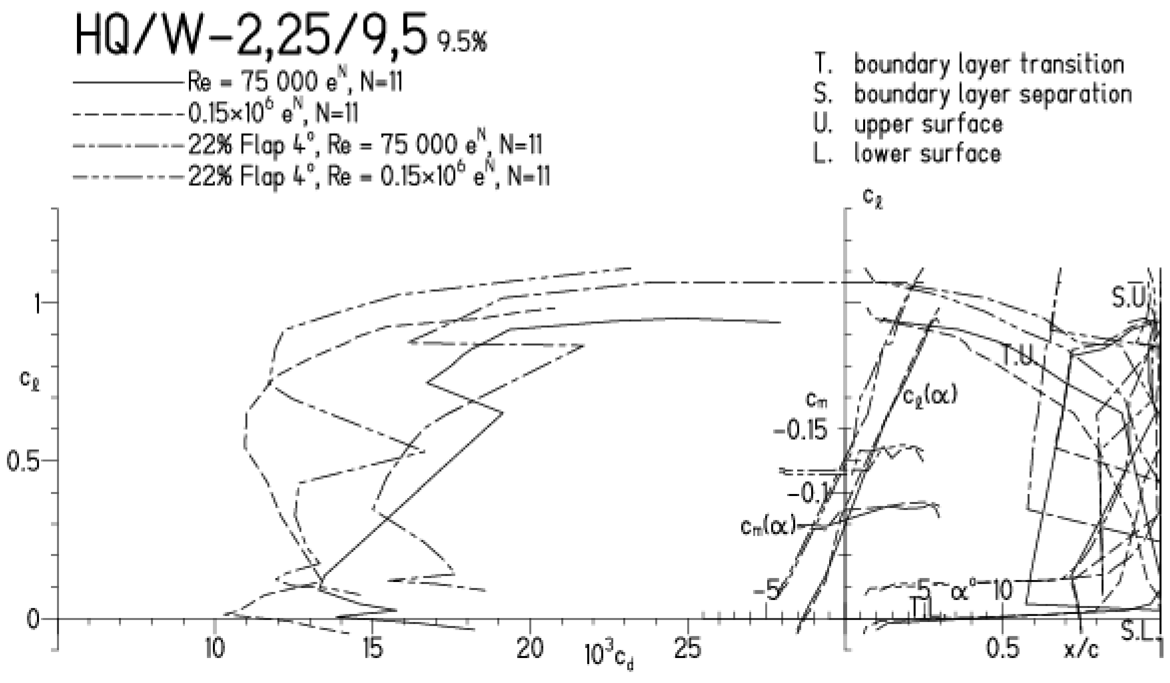


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

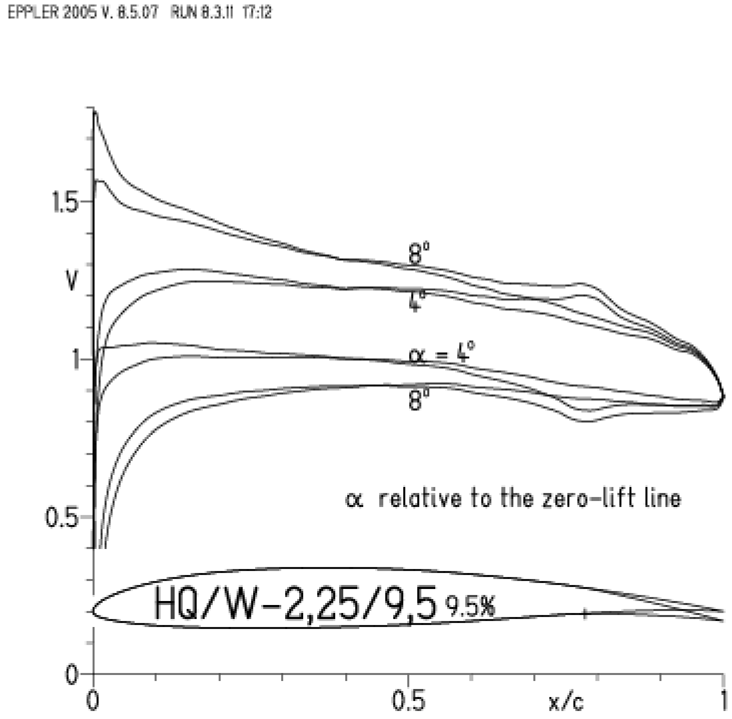
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

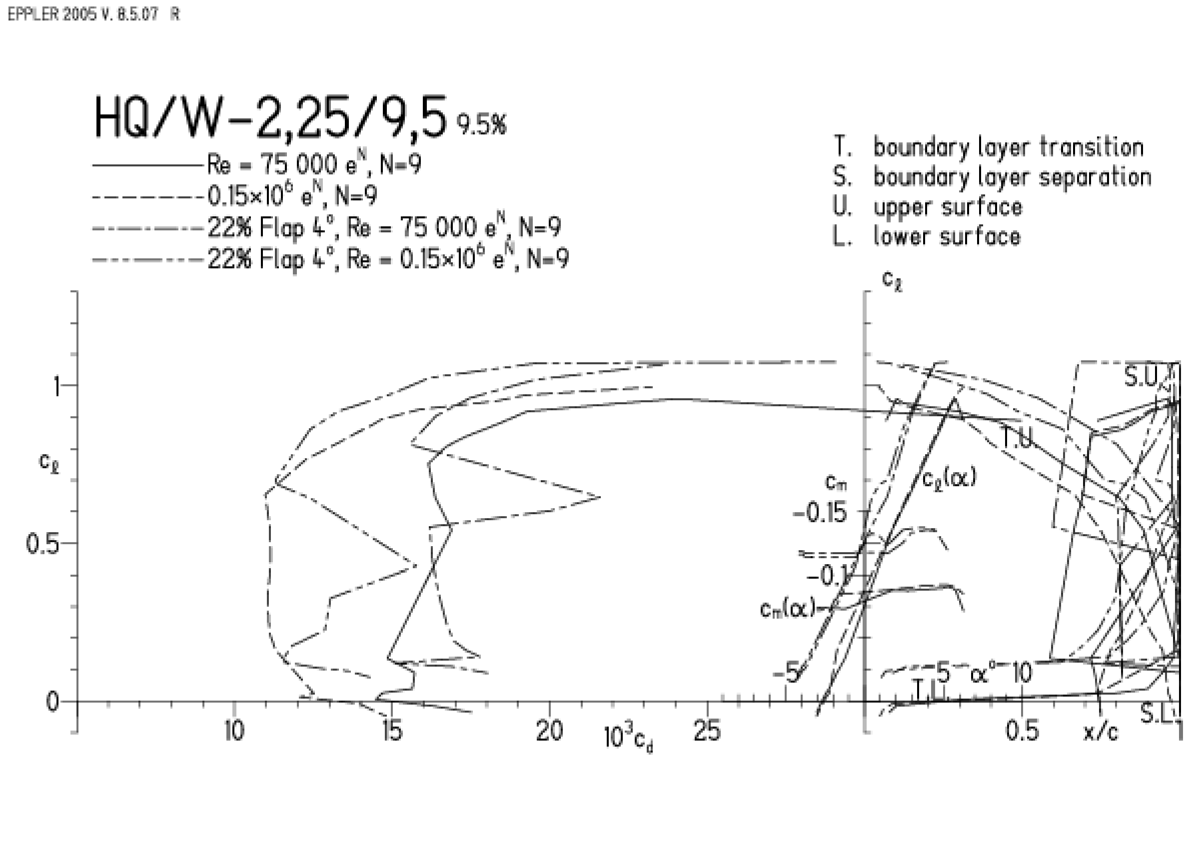


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



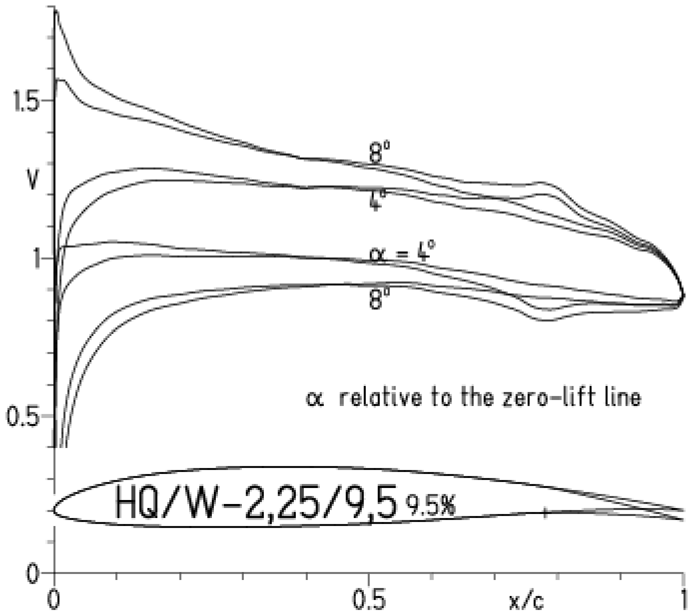
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



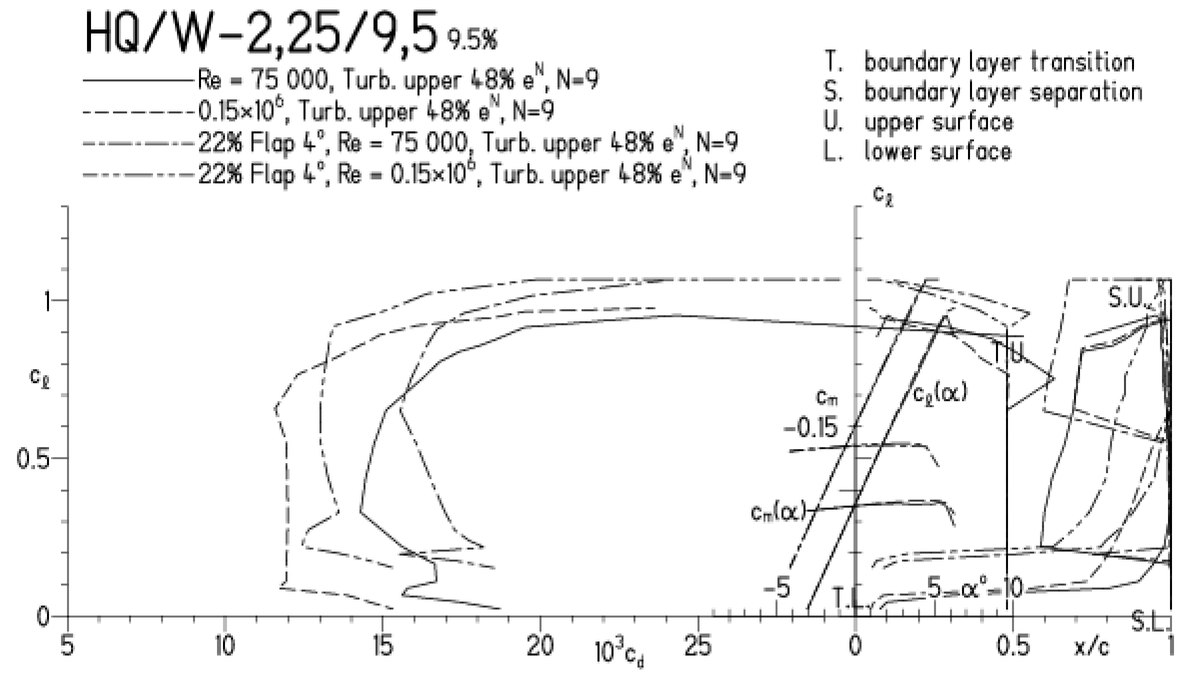


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

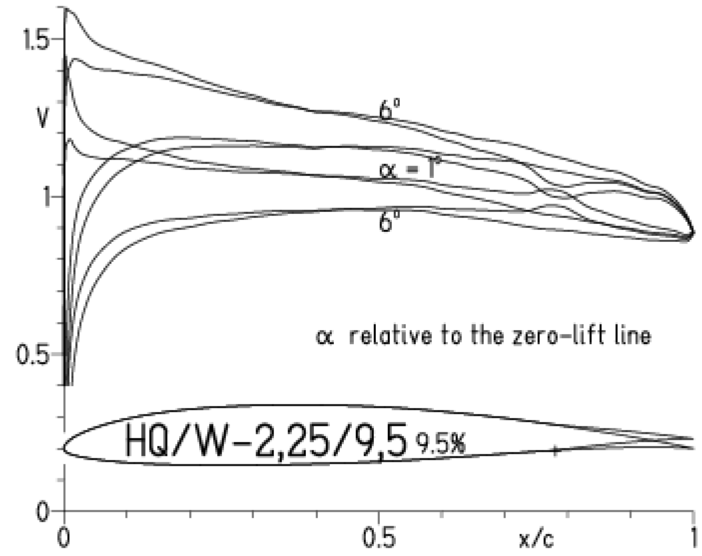


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

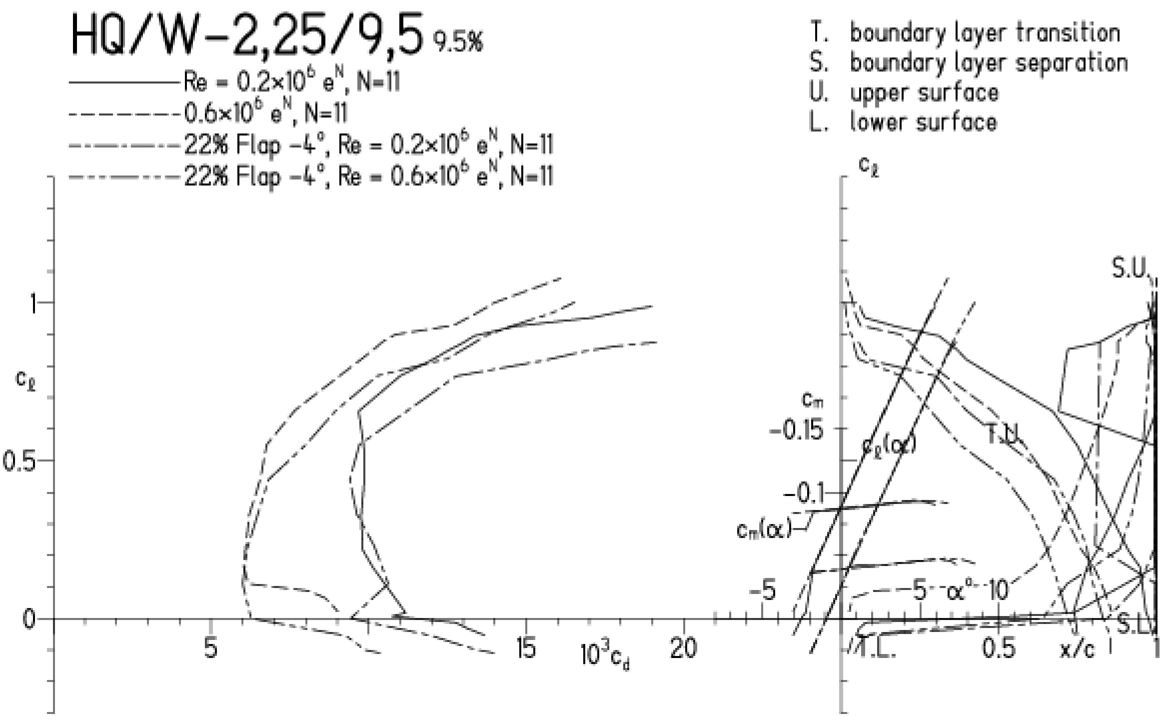


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

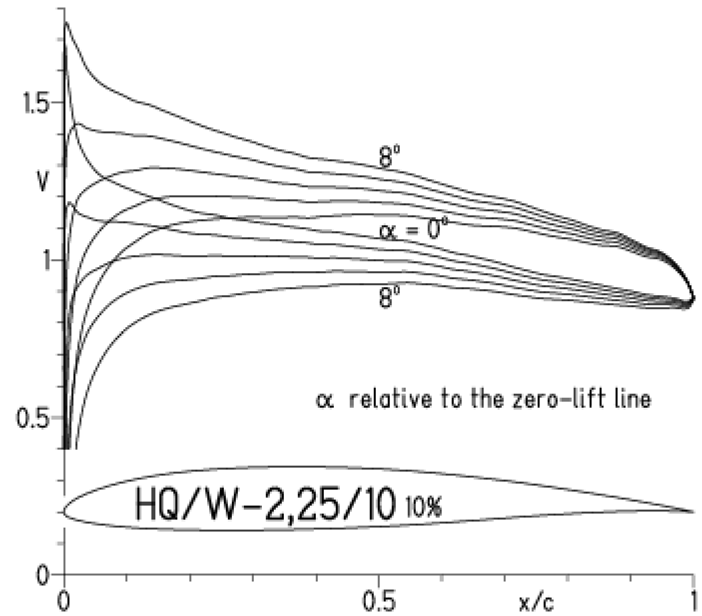


EPPLER 2005 V.

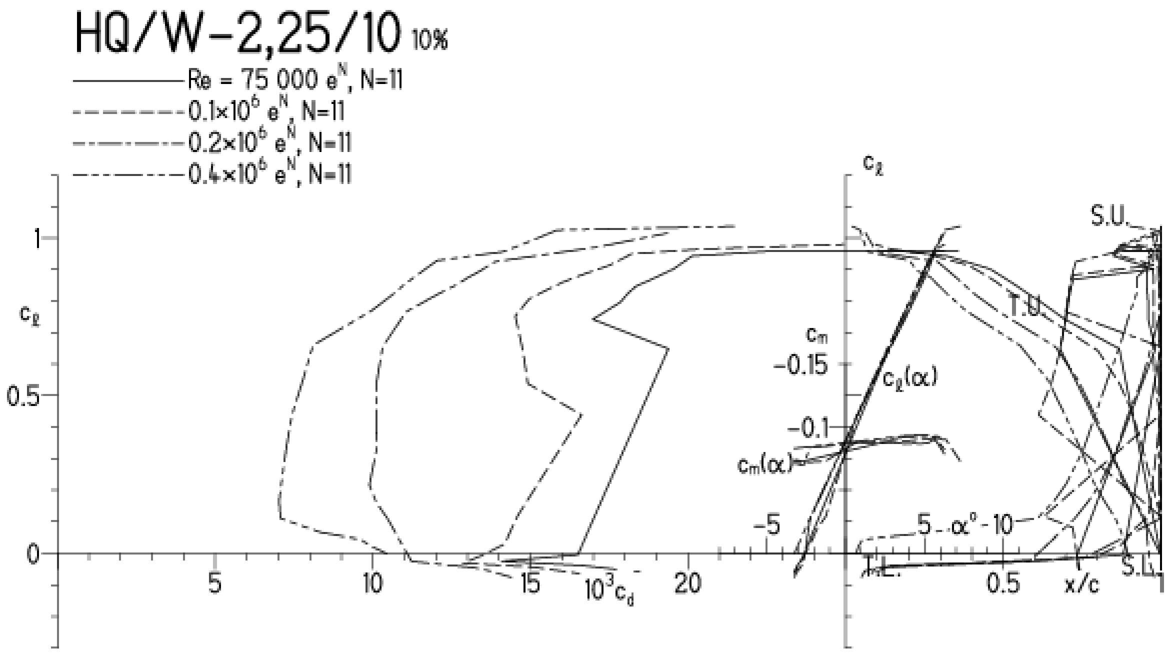


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

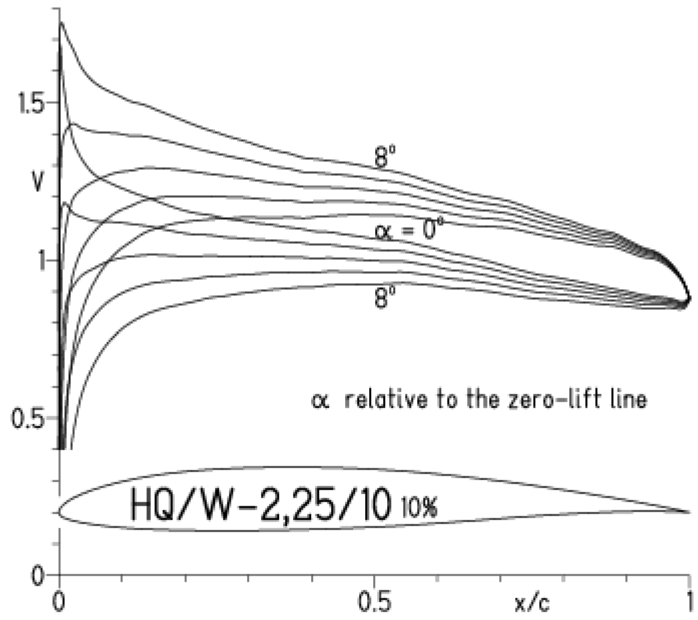


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

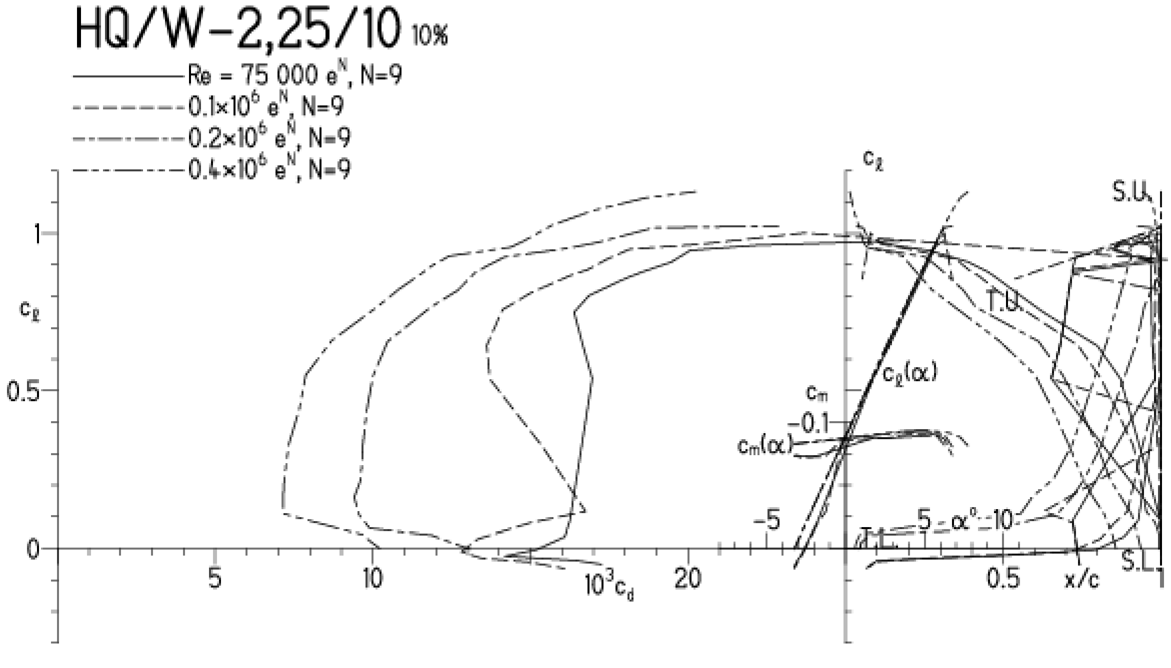


<u>HQ/W-2,25/10</u>, N=9

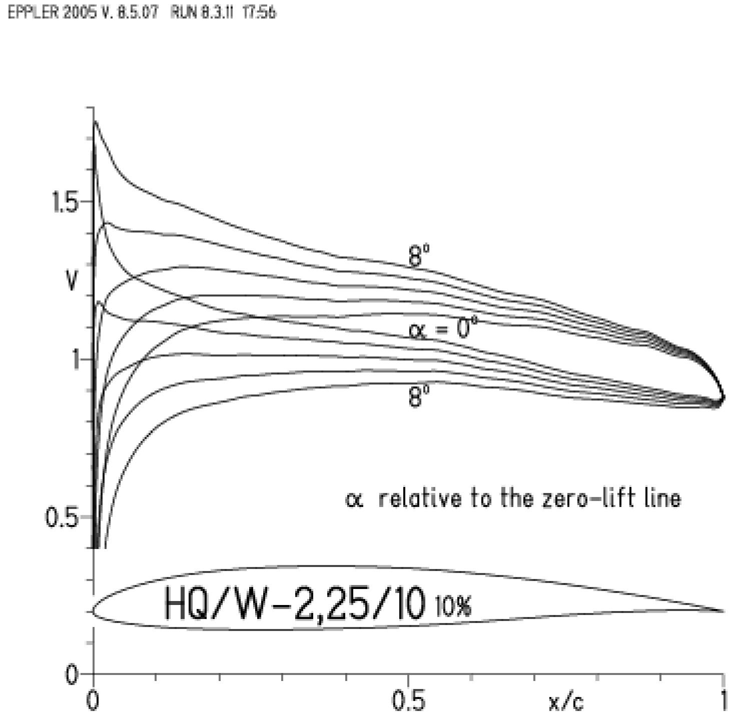
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

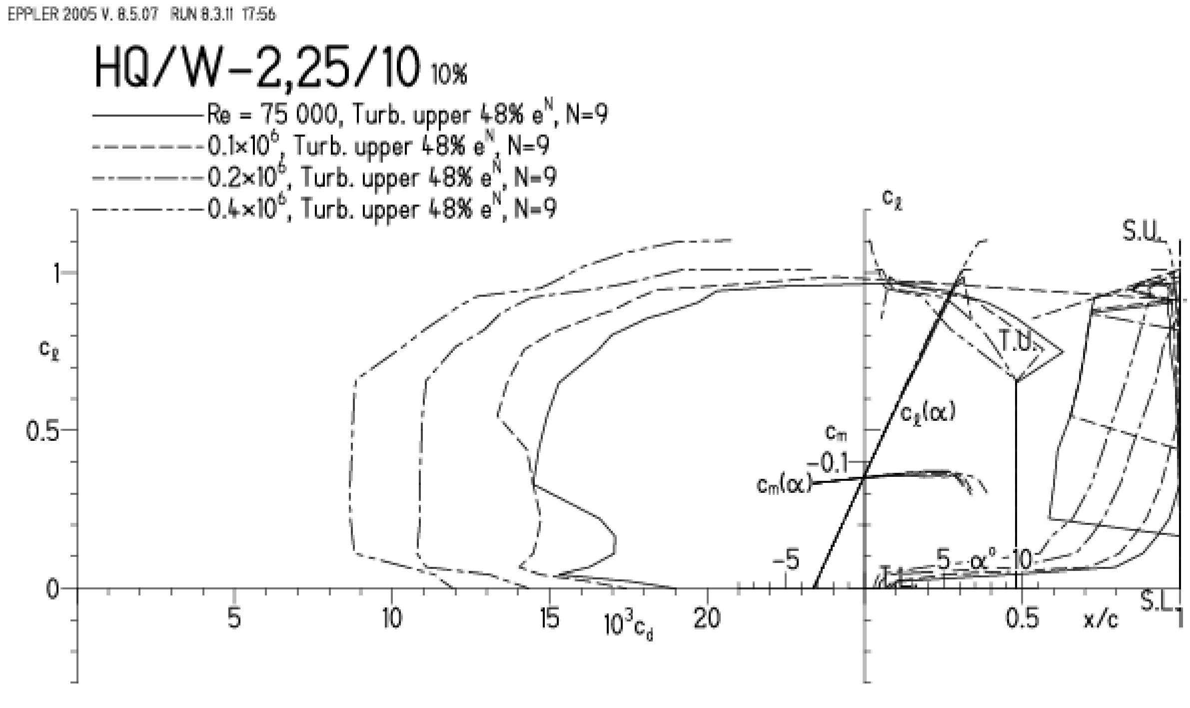


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



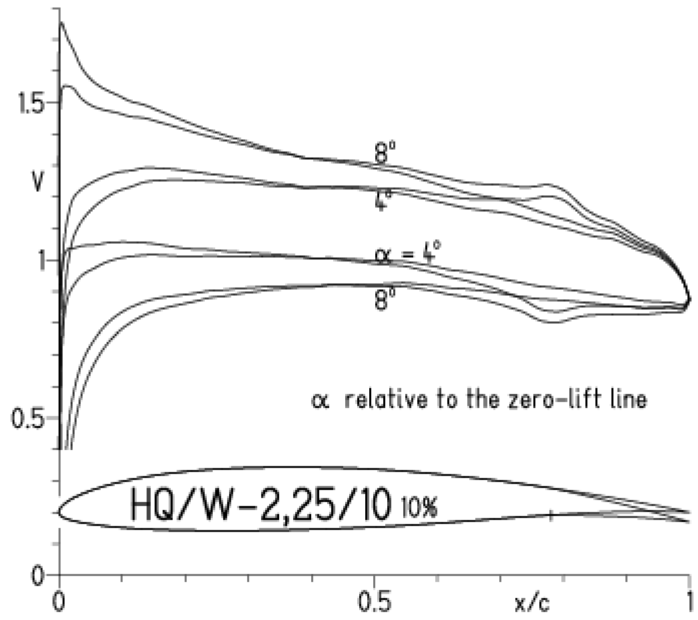
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



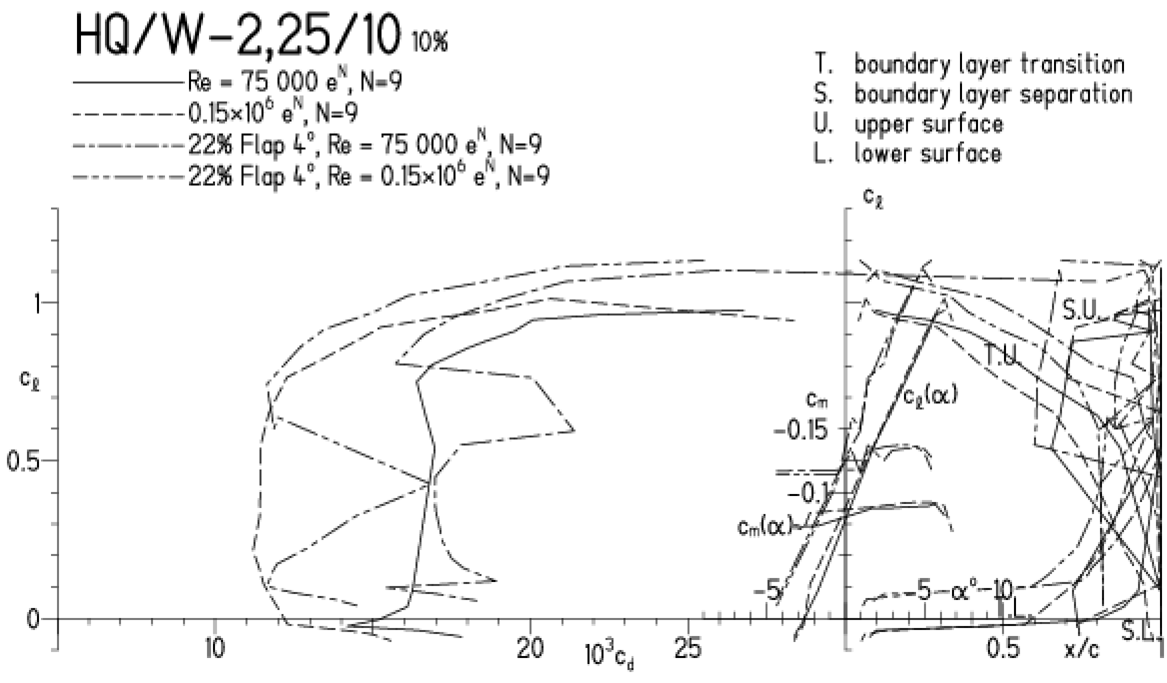


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

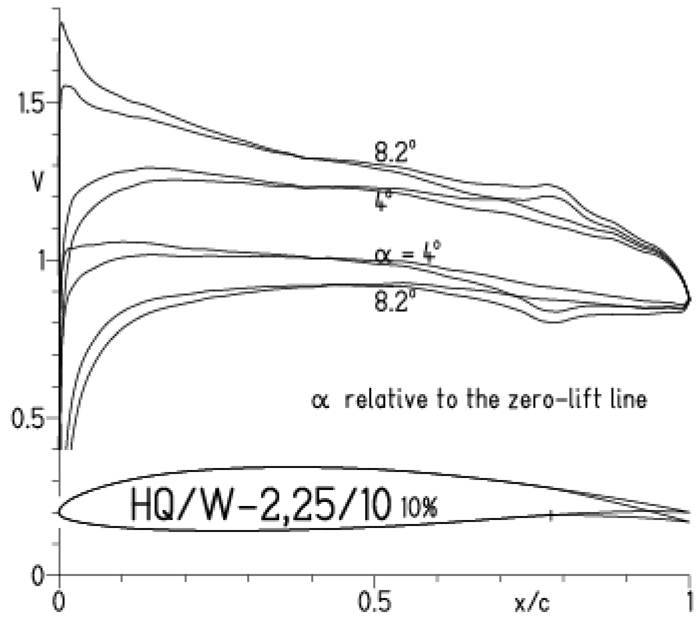


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

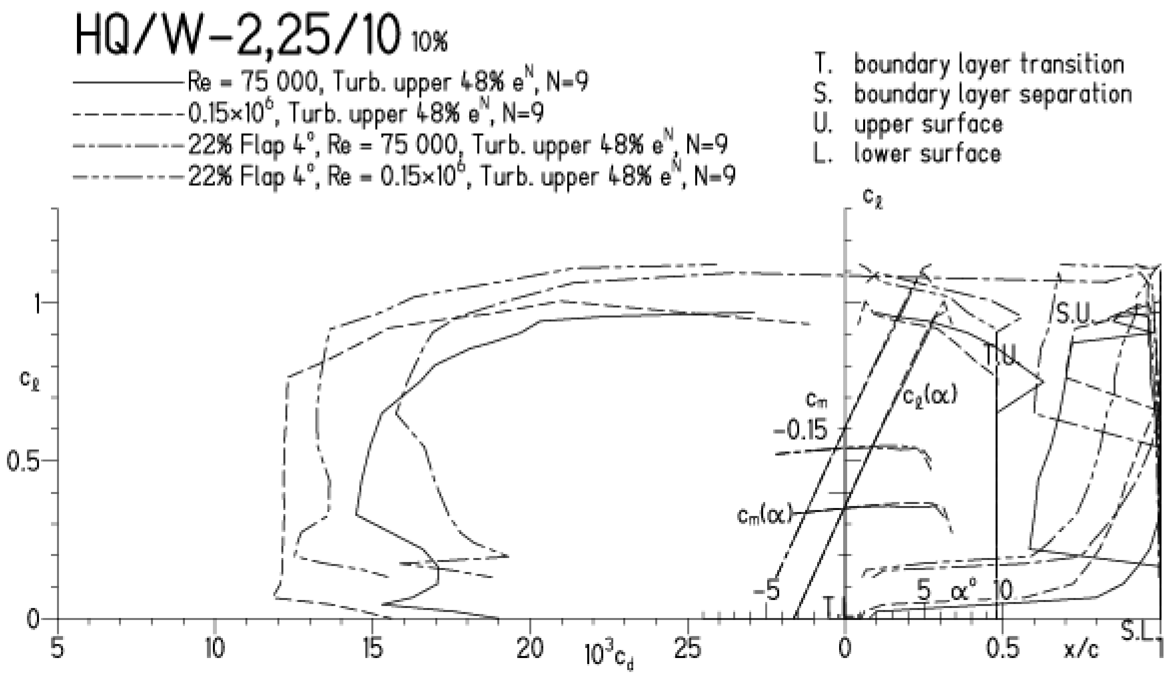


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

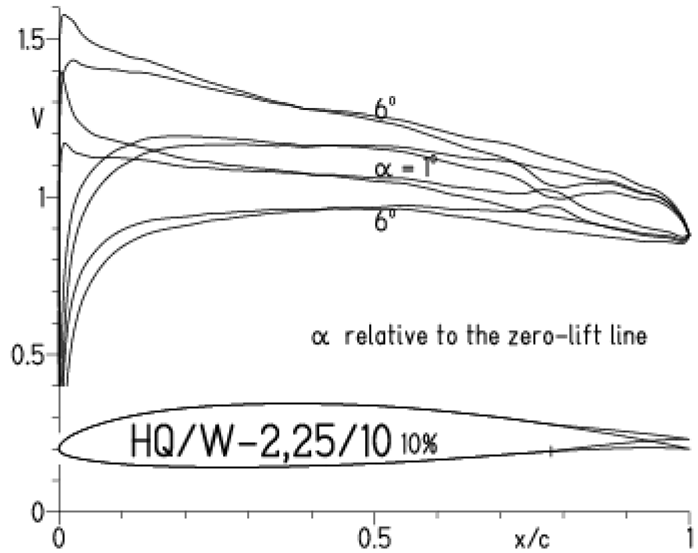


EPPLER 2005 V. 8.5.07 RUN 8.3

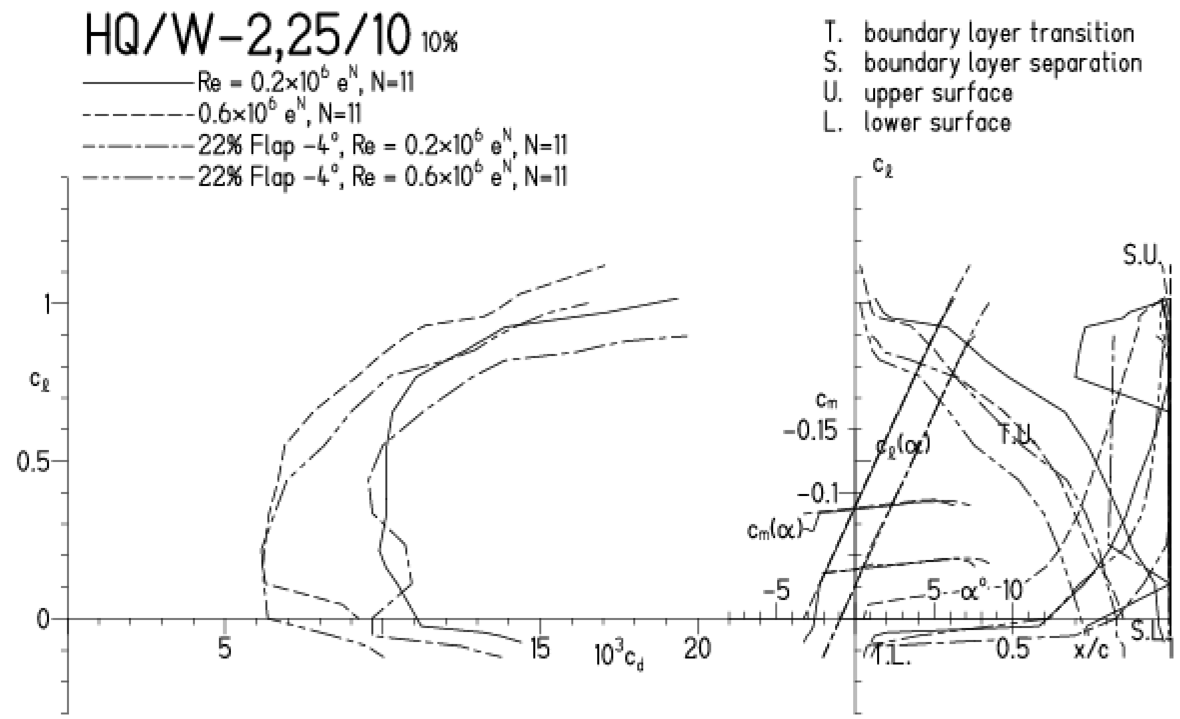


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

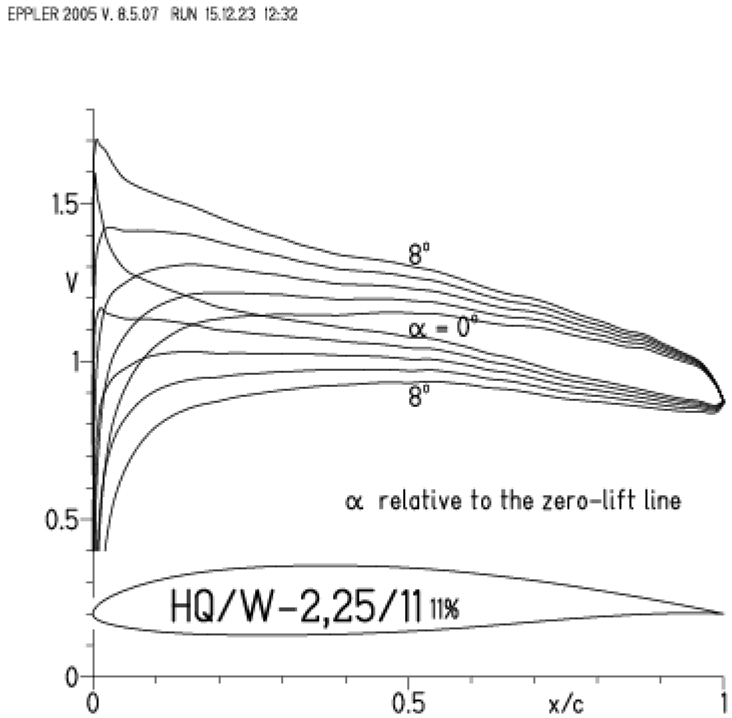
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

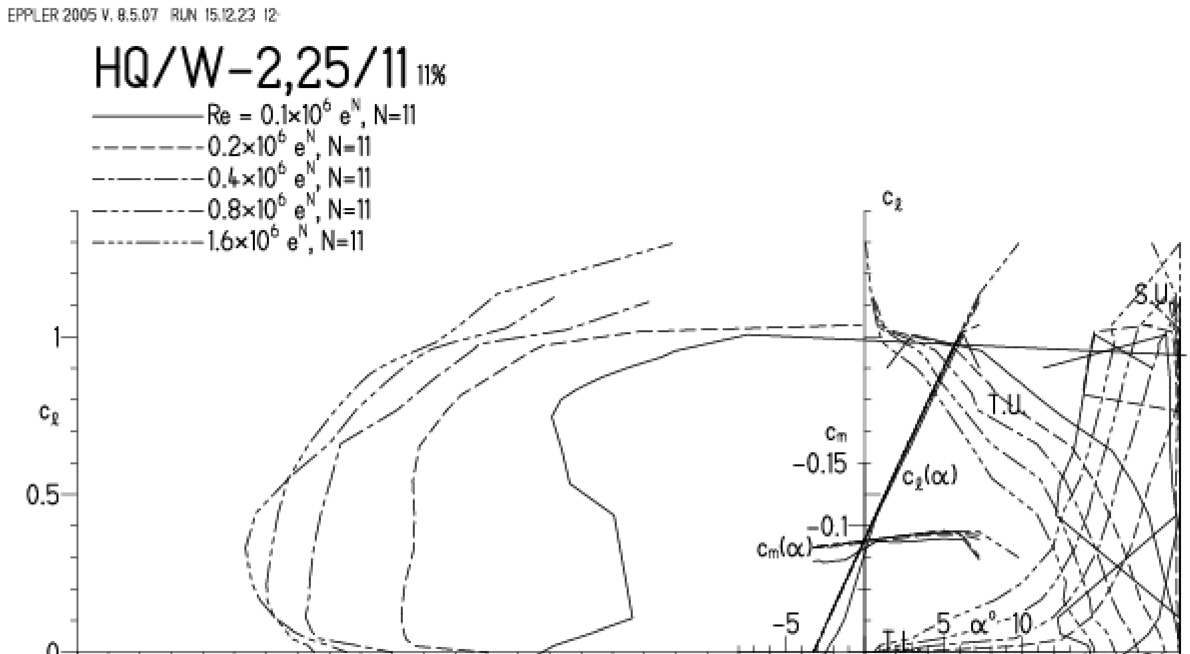


EPPLER 2005 V. 8.5.07 RUN



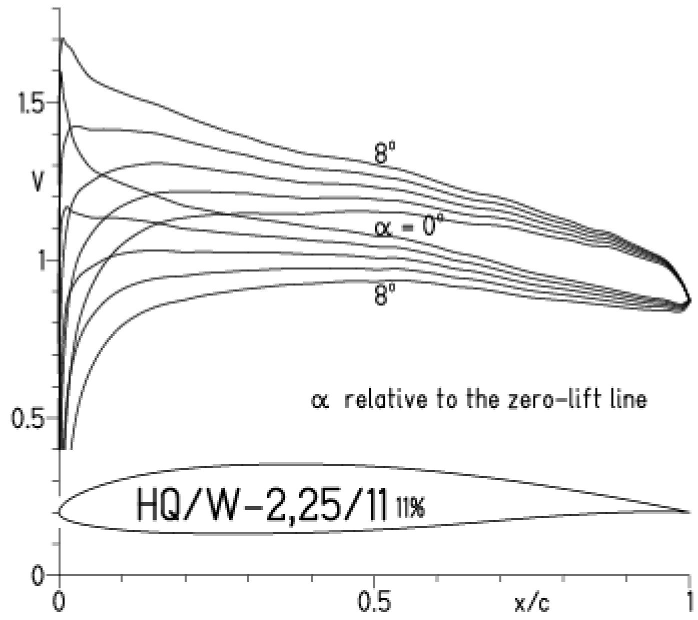
HQ/W-2,25/11, N=11



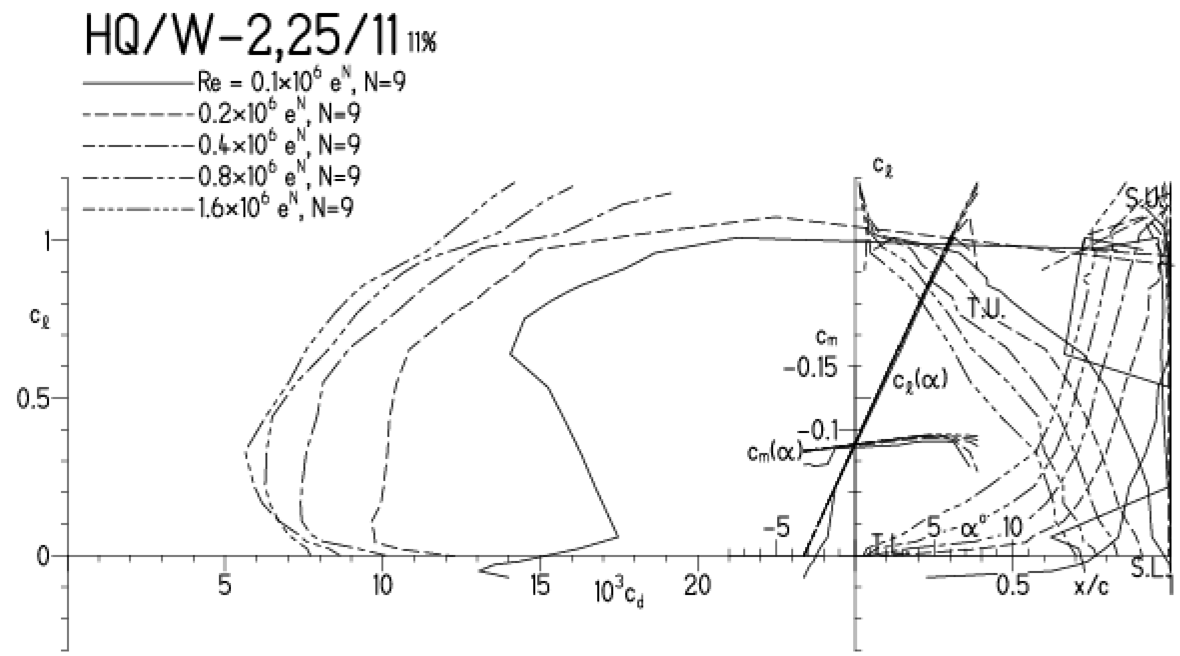


<u>HQQ/W-2,25/11</u>, N=9

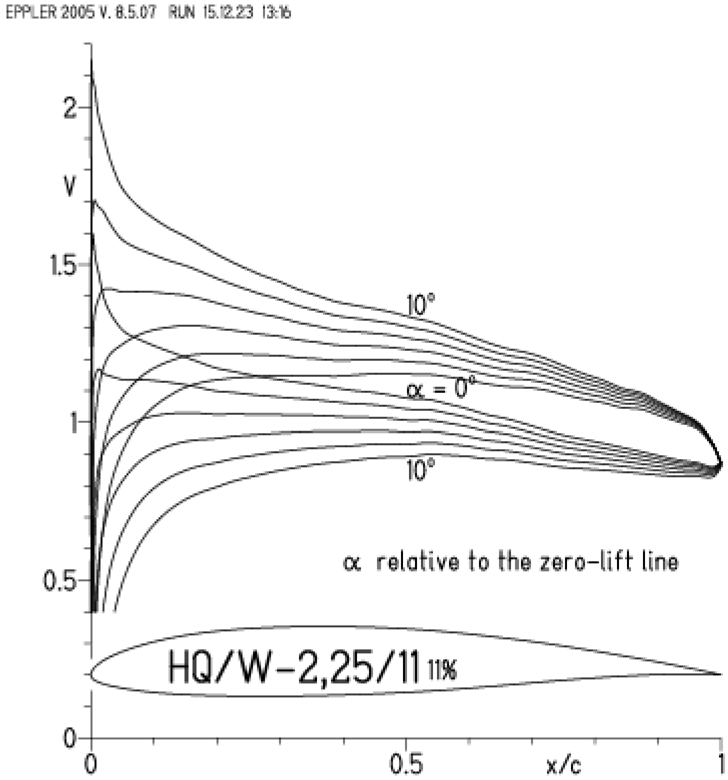
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

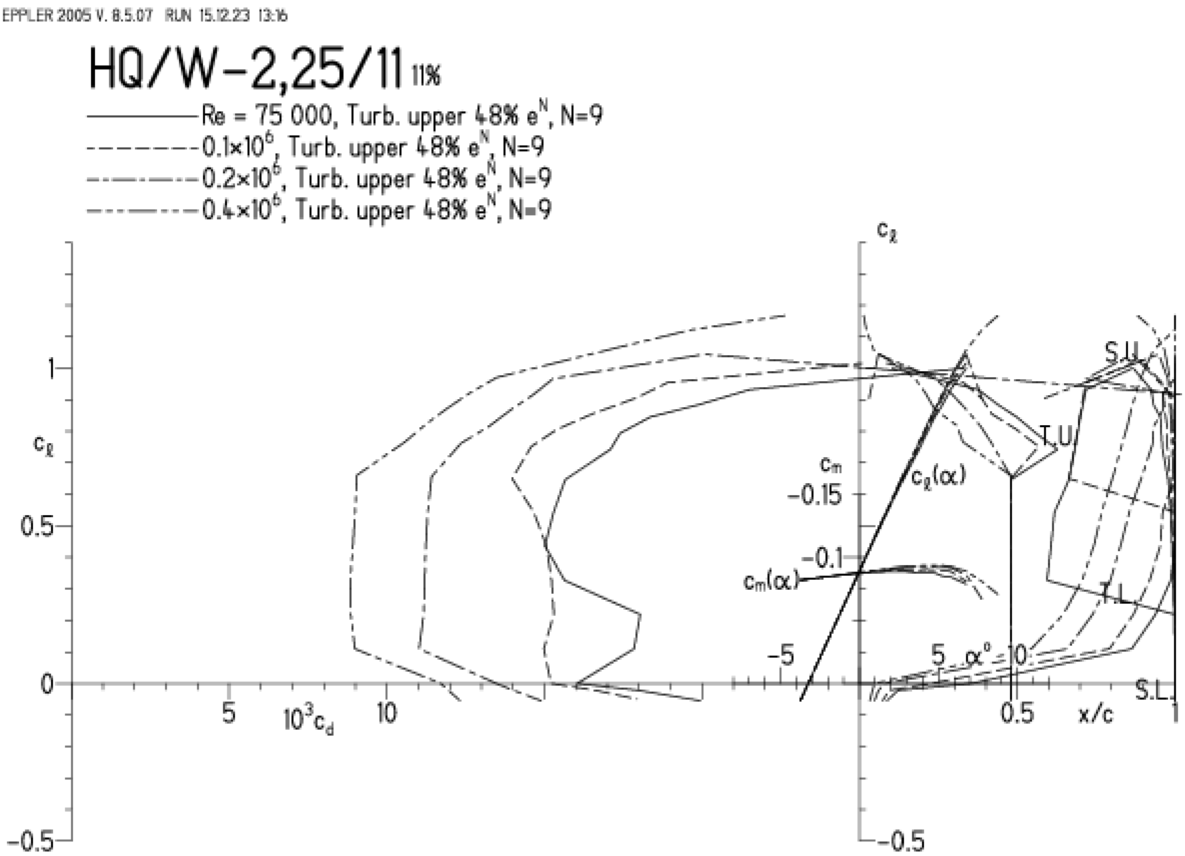


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

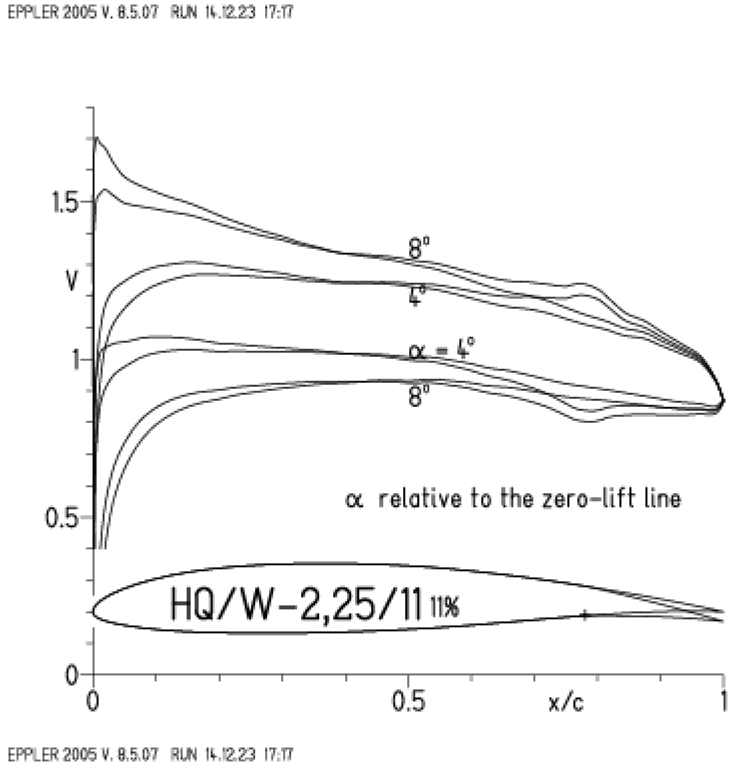


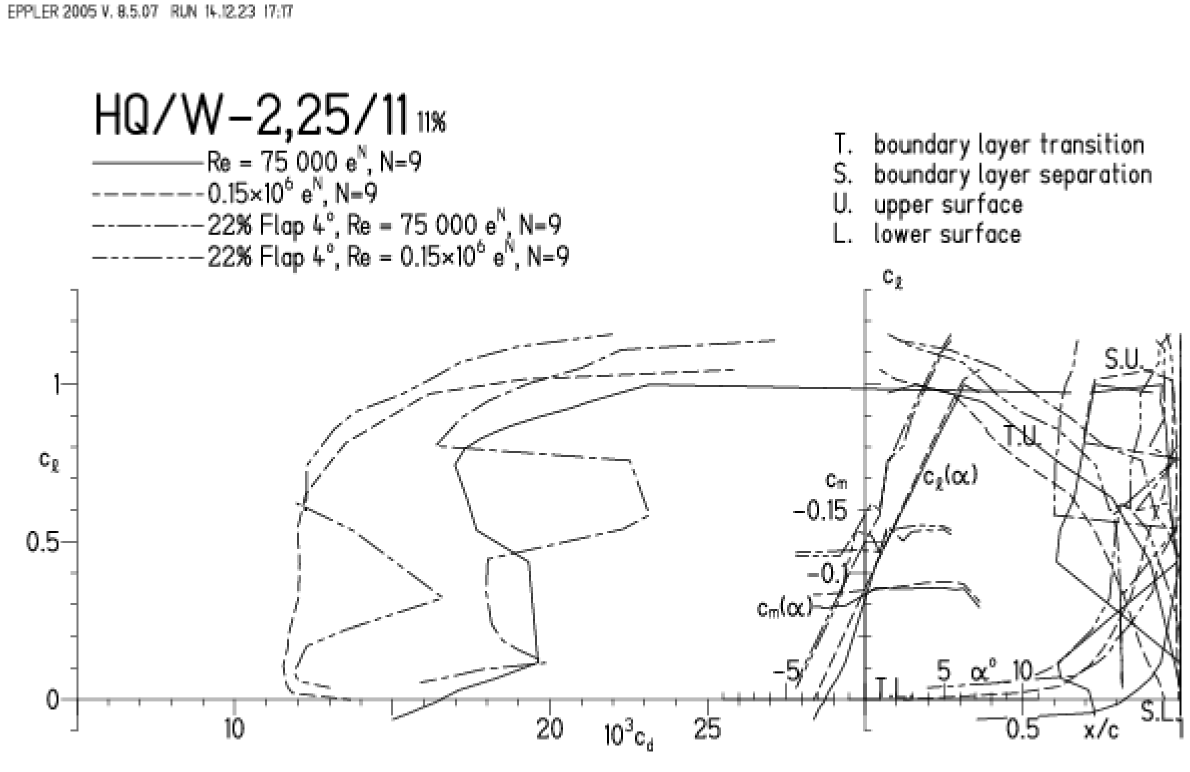
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





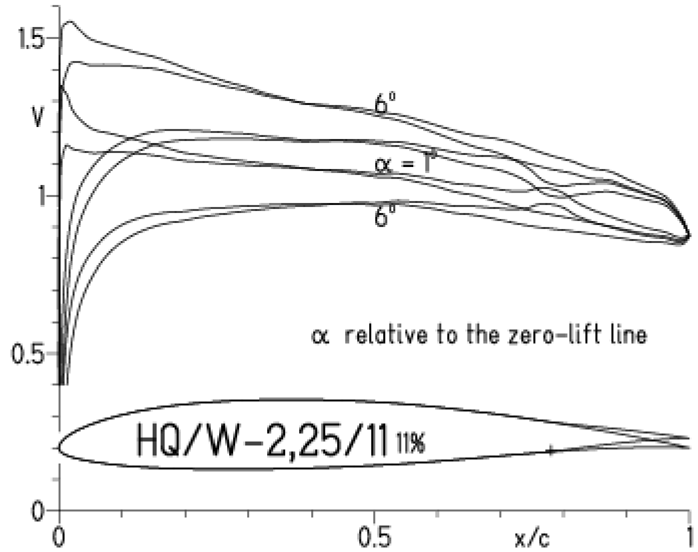
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



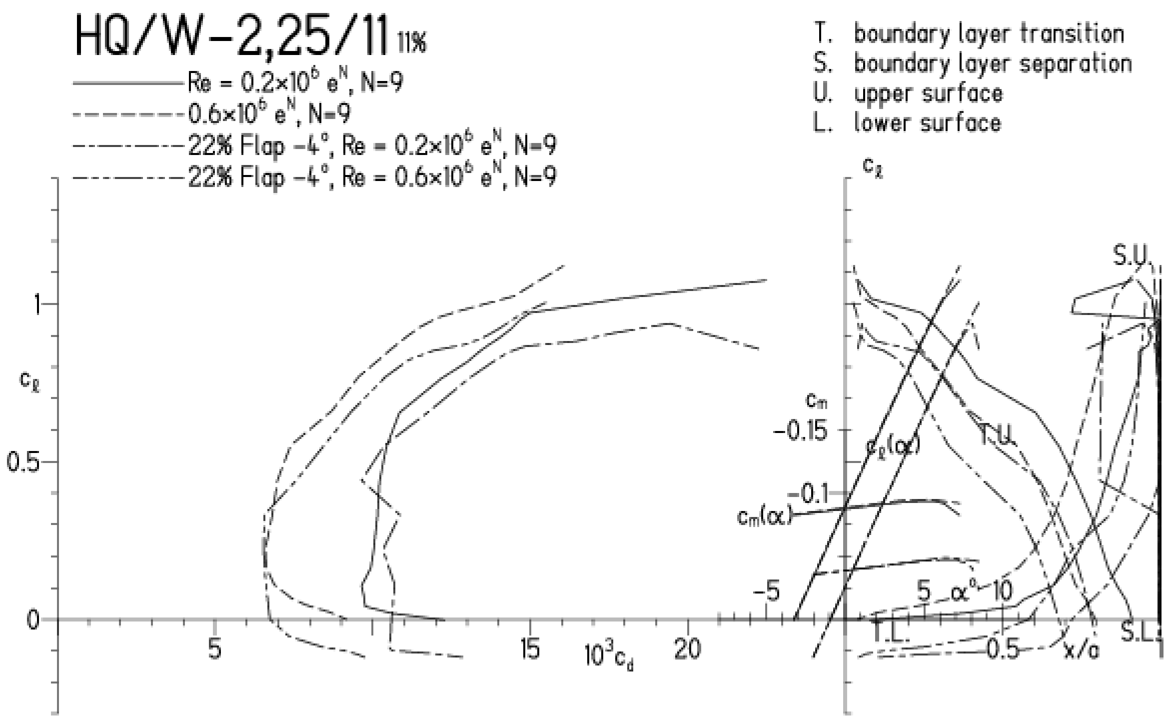


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

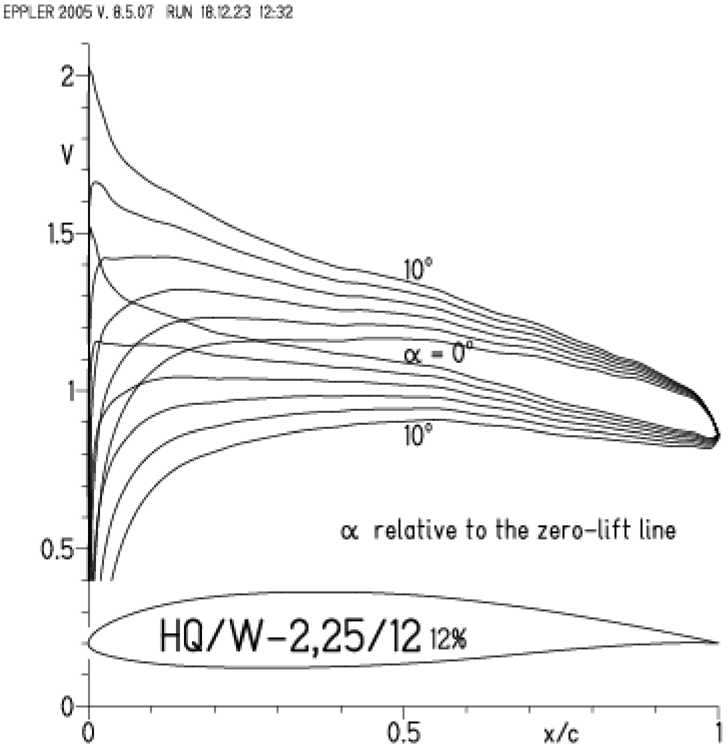
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

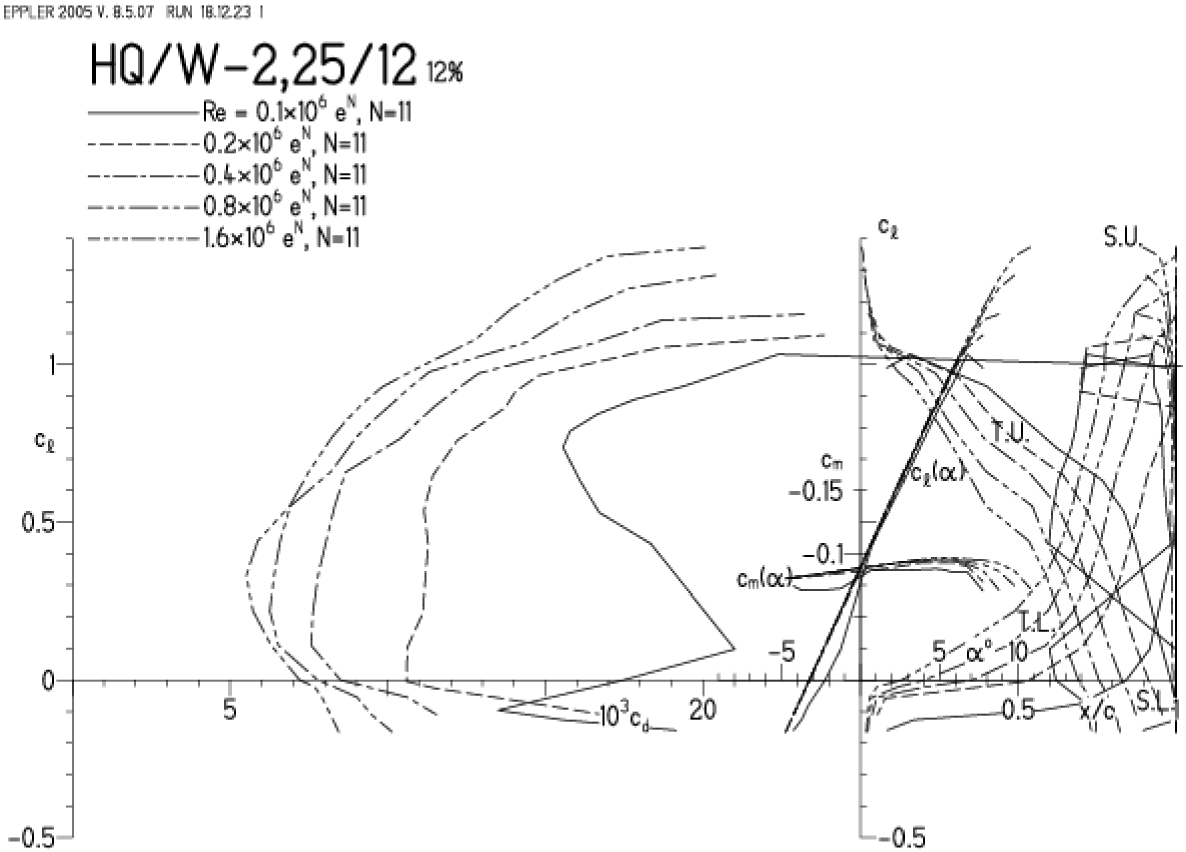


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

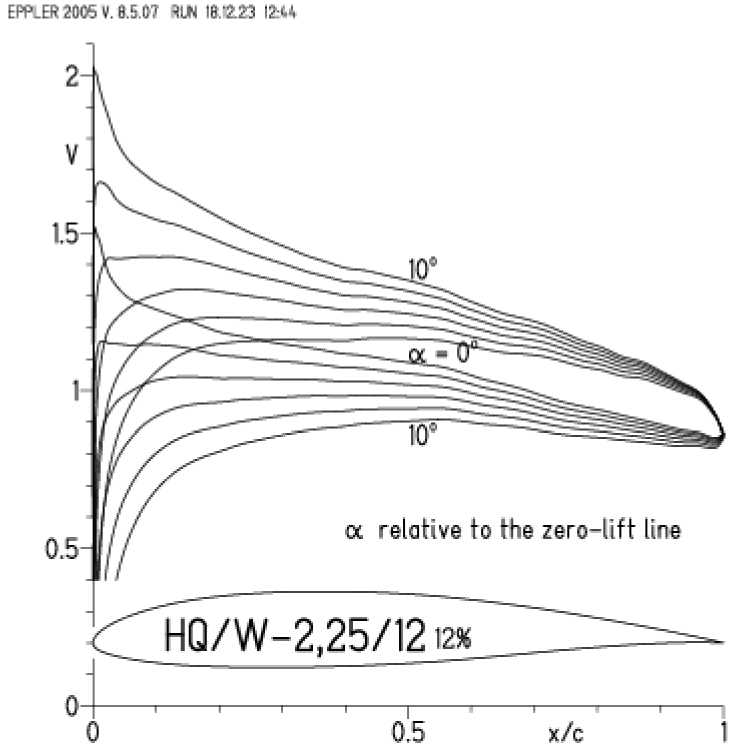


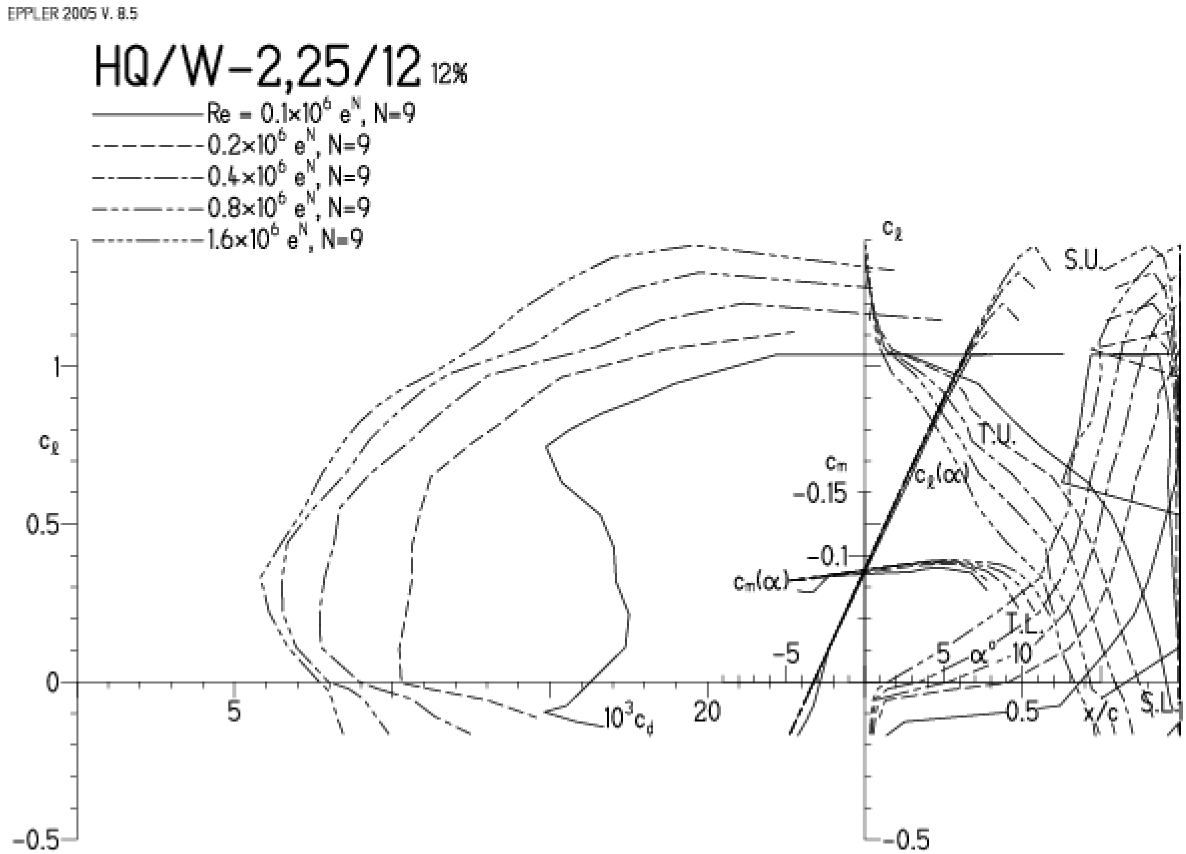
HQ/W-2,25/12, N=11



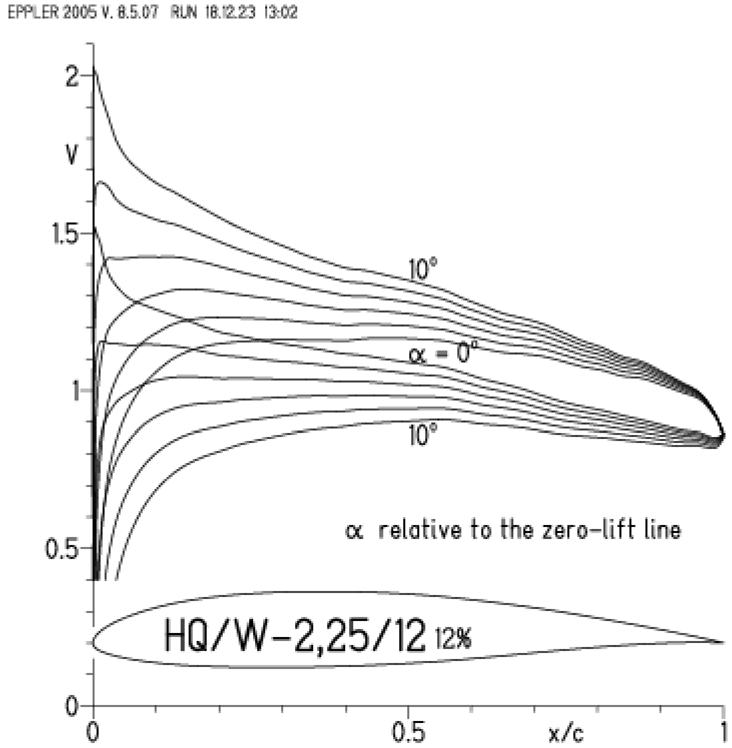


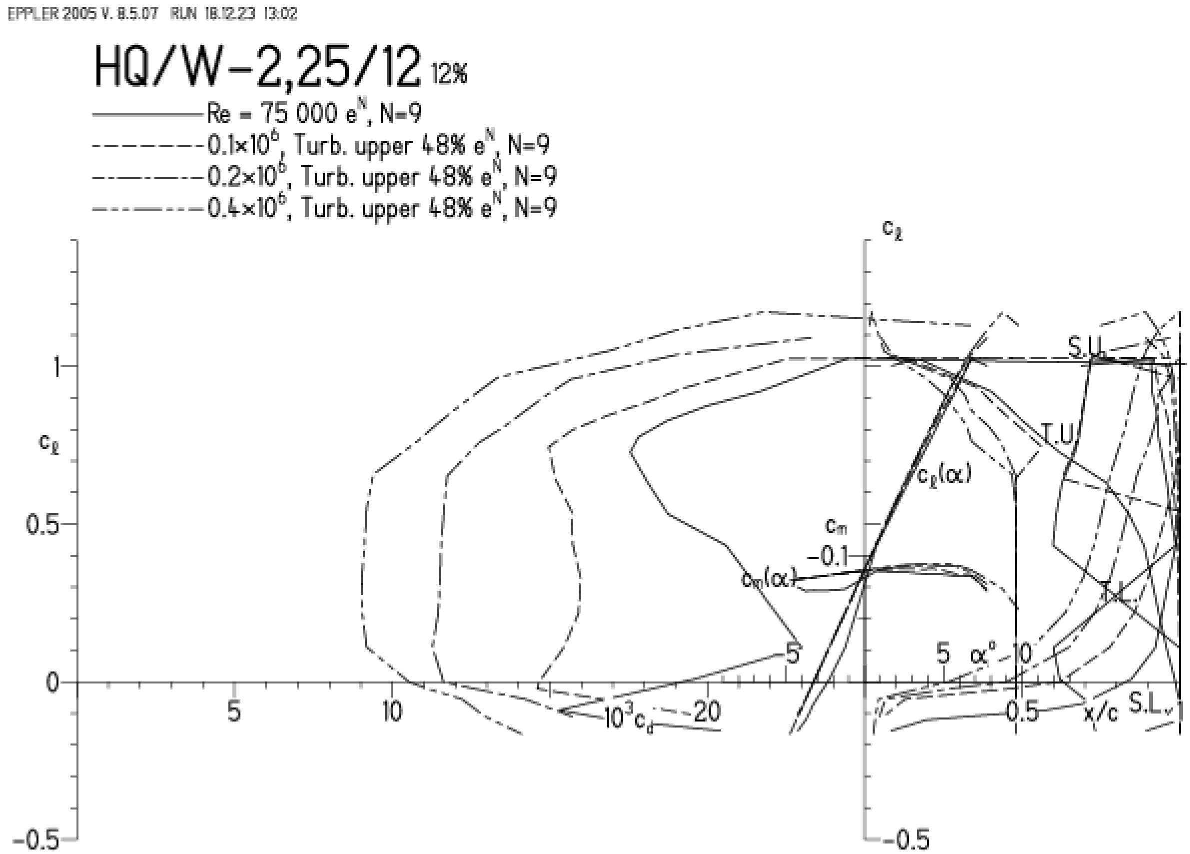
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
c_ℓ
c_m
$c_\ell(\alpha)$
$c_m(\alpha)$
$10^3 c_d$
α°
x/c

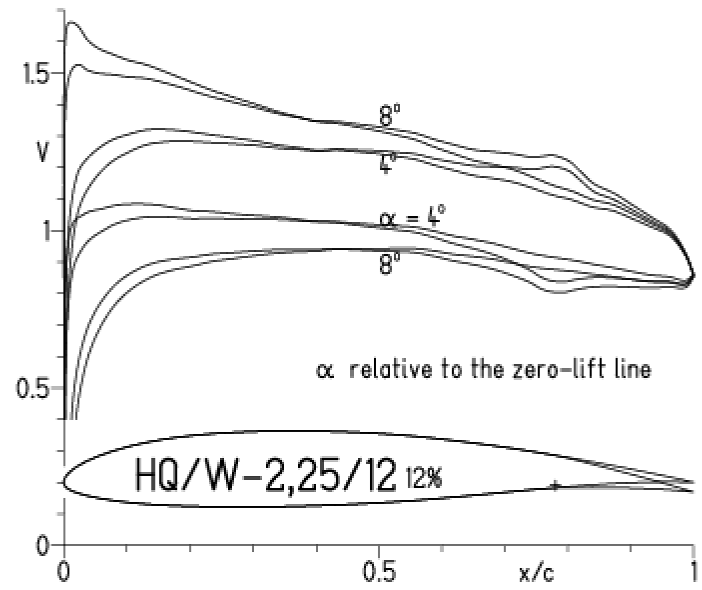
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



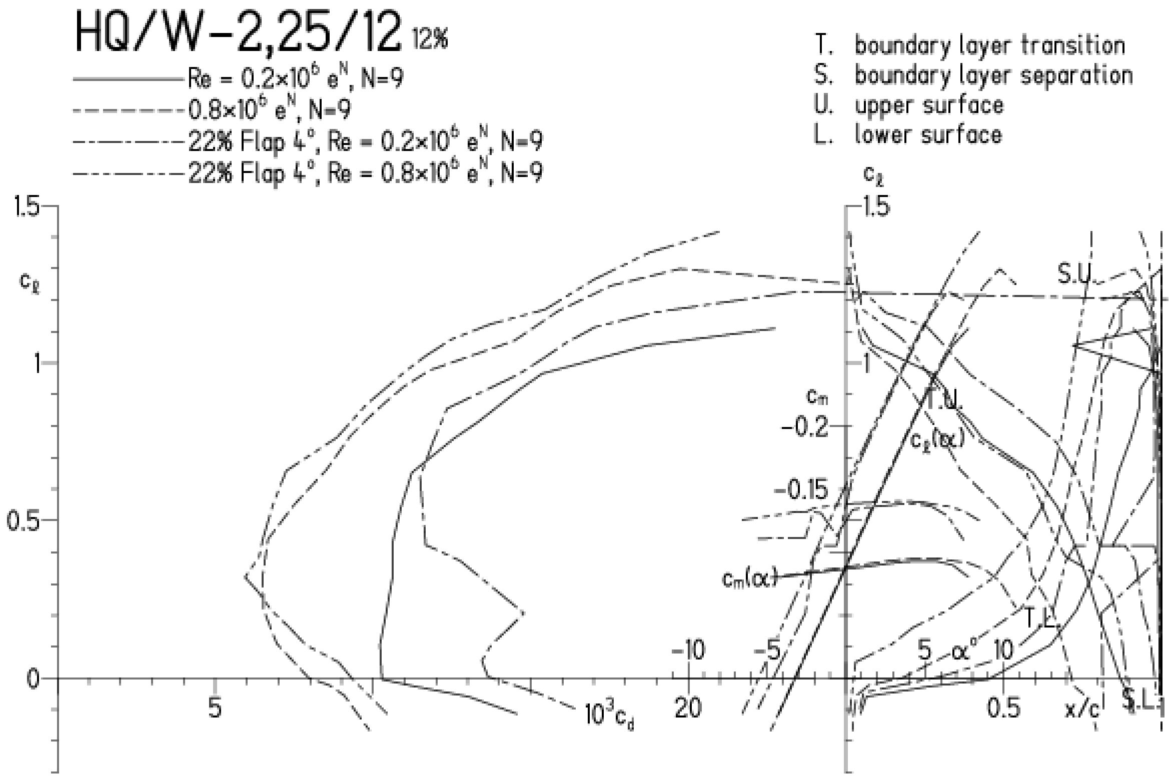


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

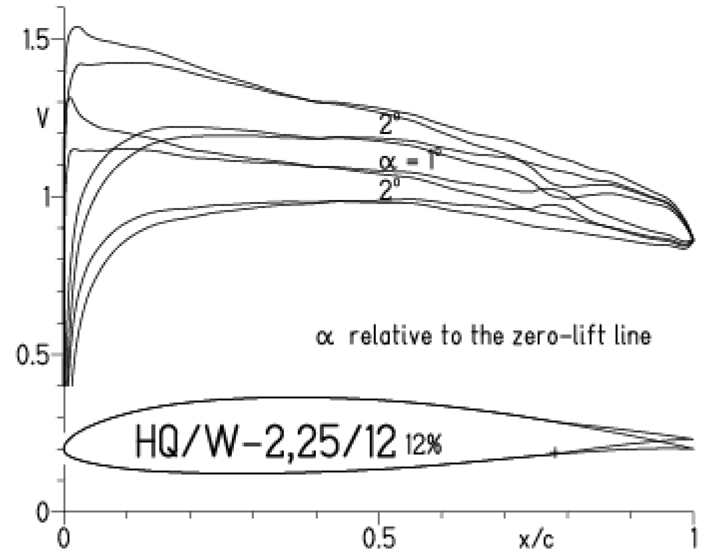


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

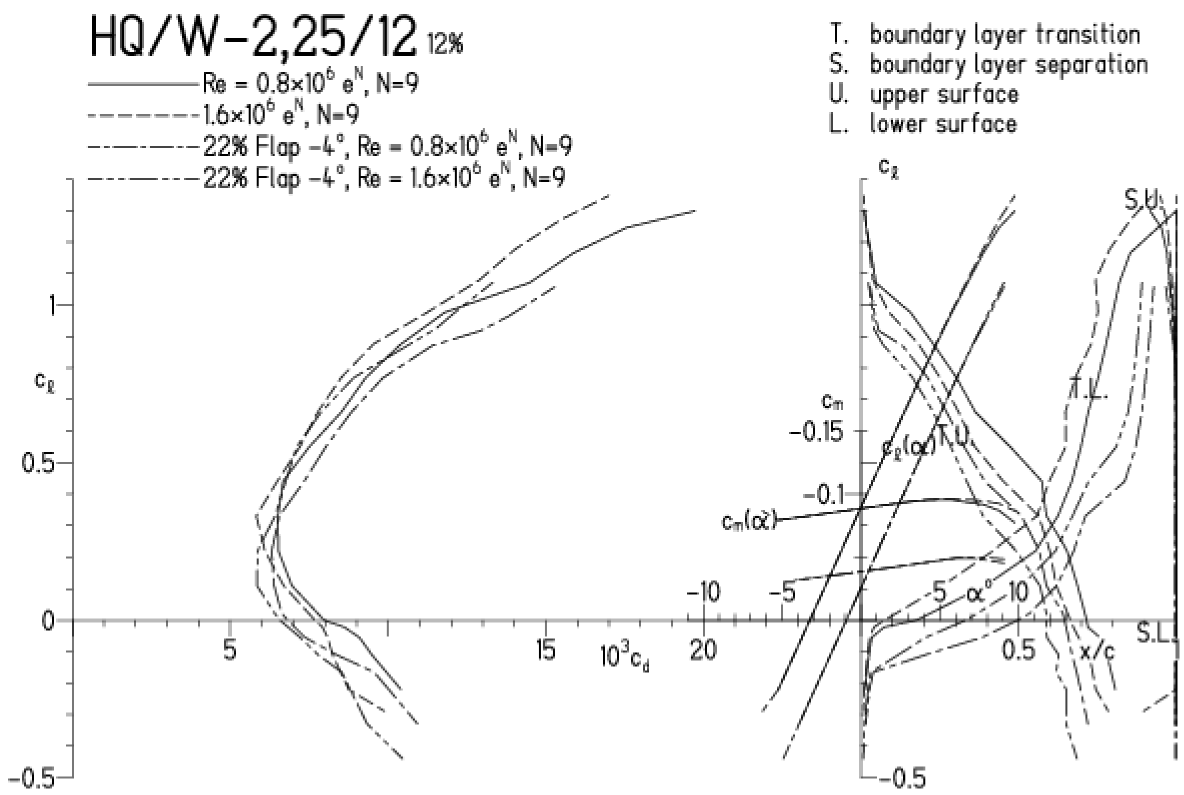


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

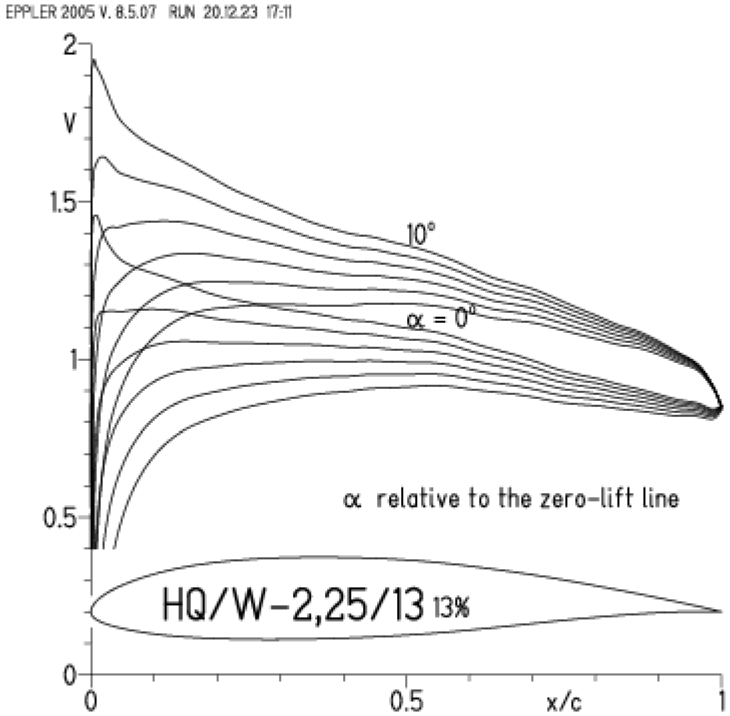
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

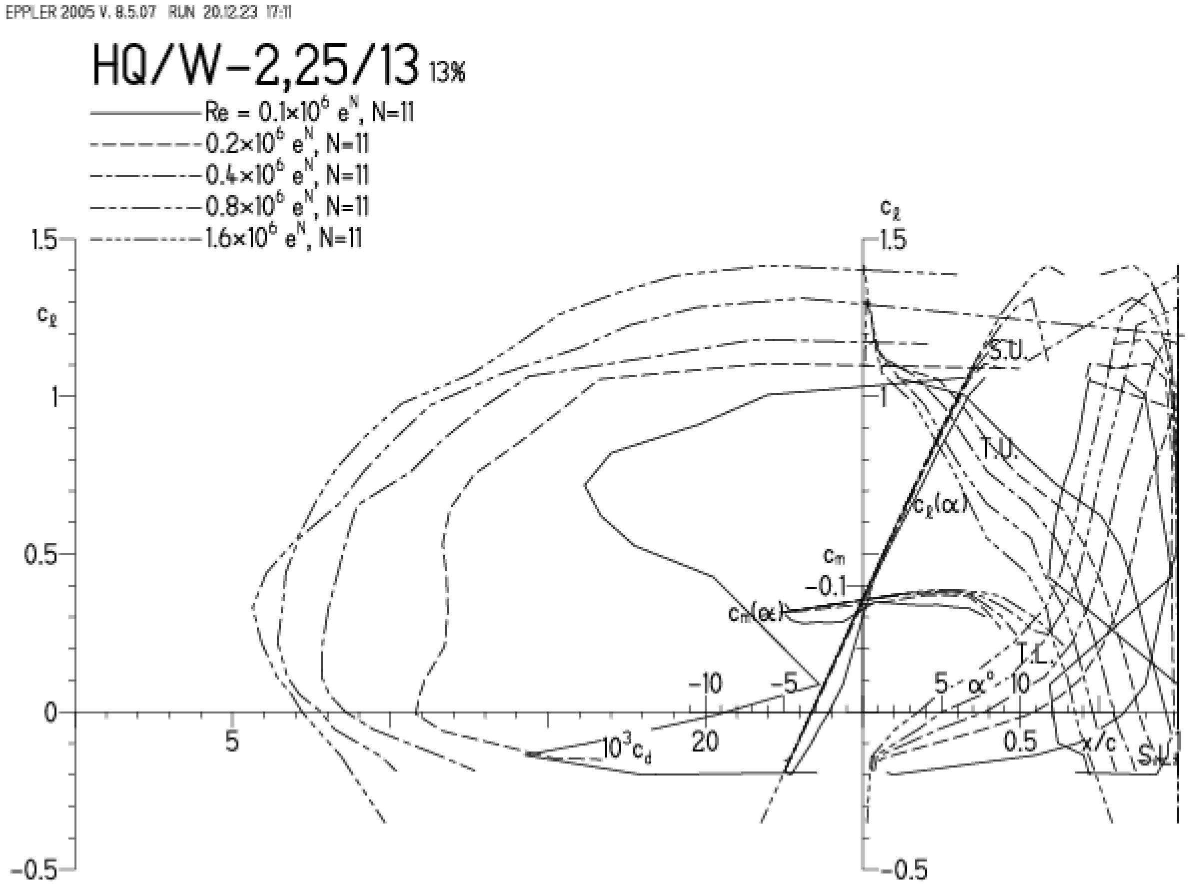


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24



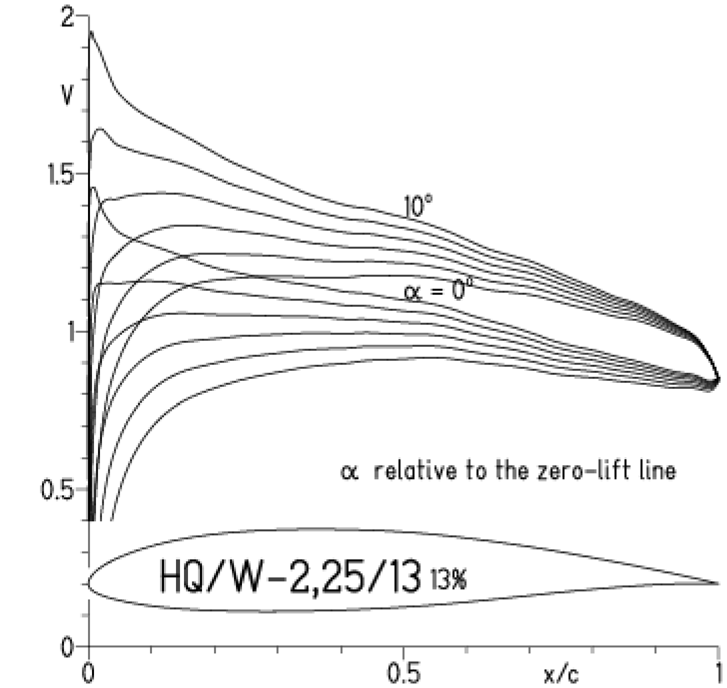
<u>HQ/W-2,25/13</u>, N=11



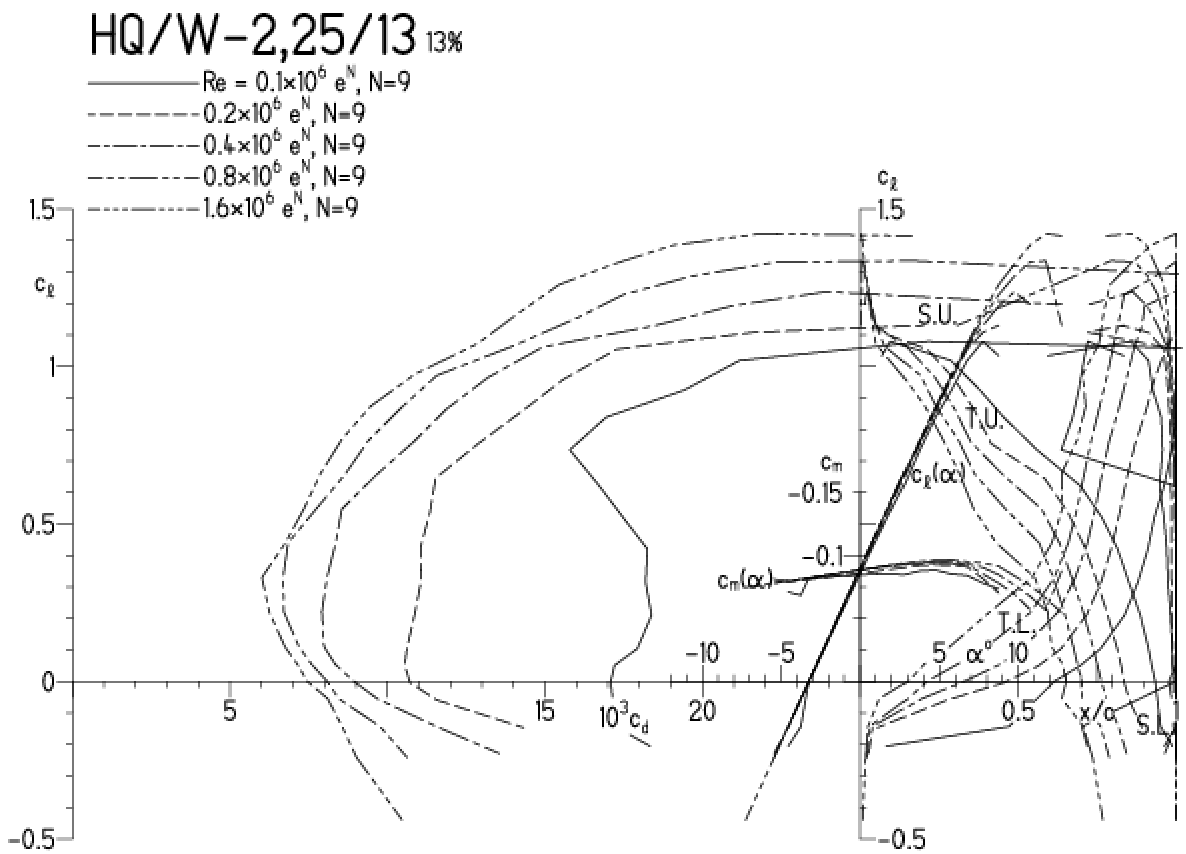


<u>HQ/W-2,25/13</u>, N=9

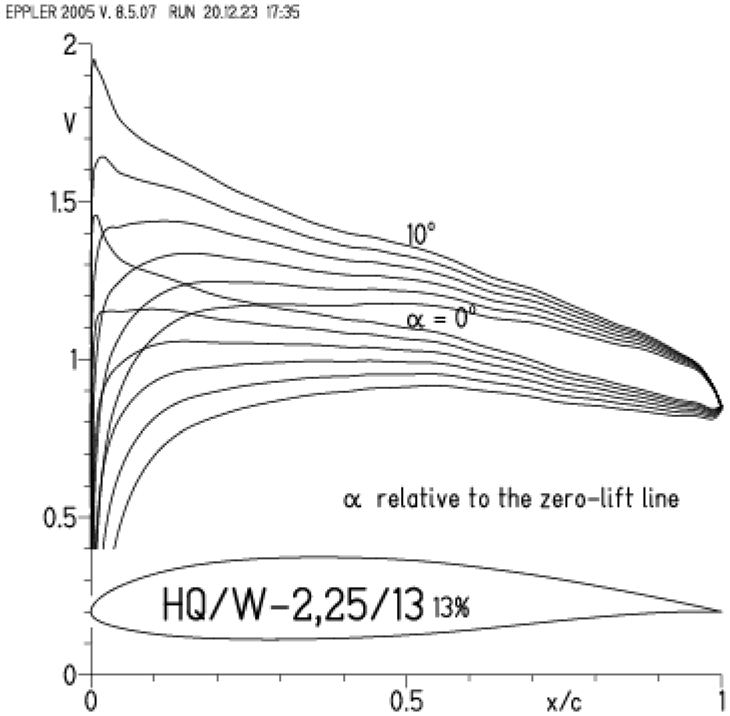
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26

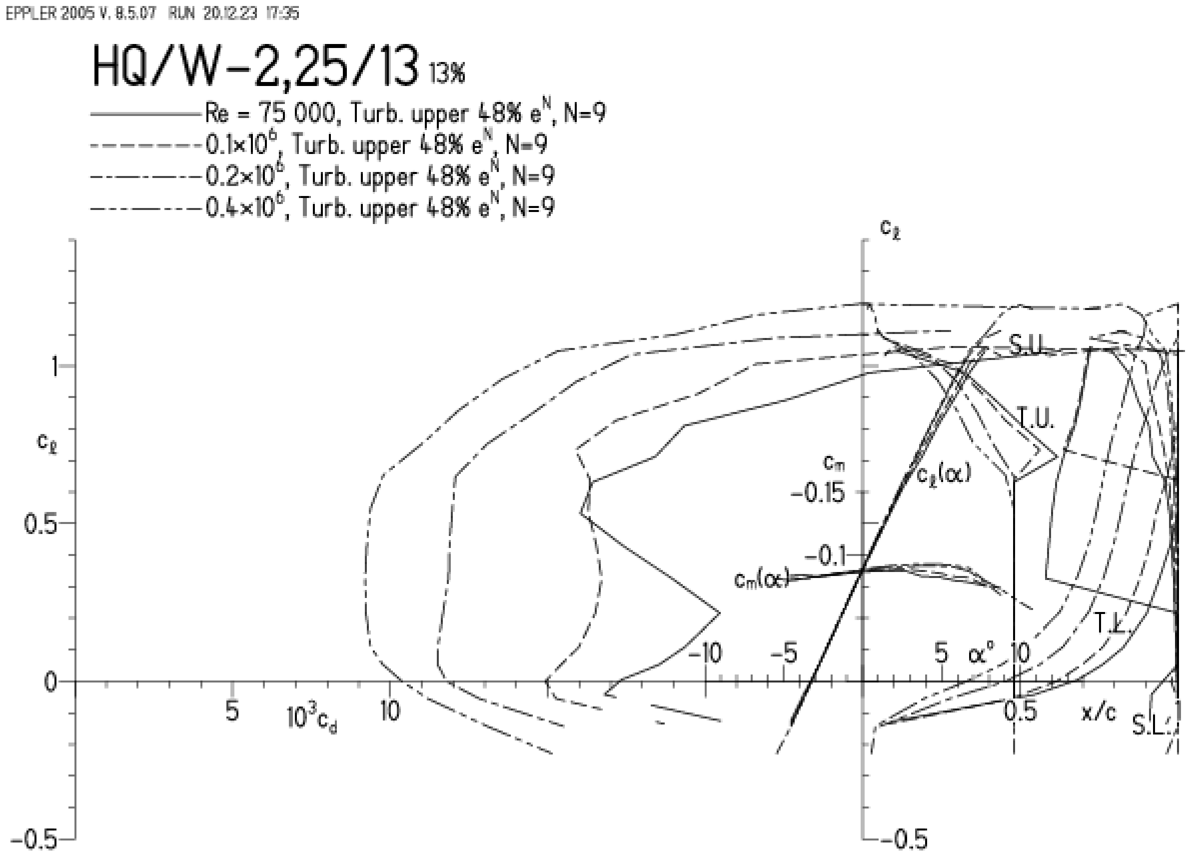


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26

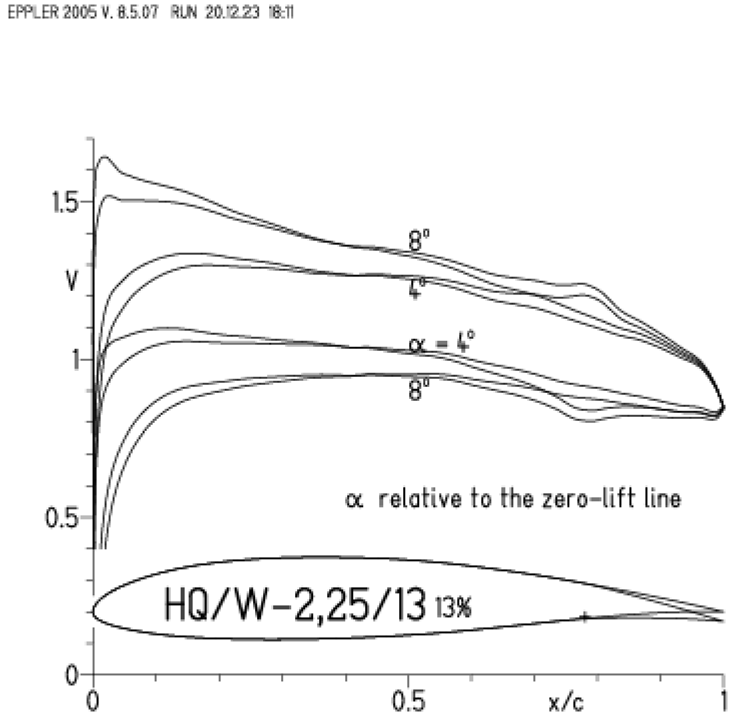


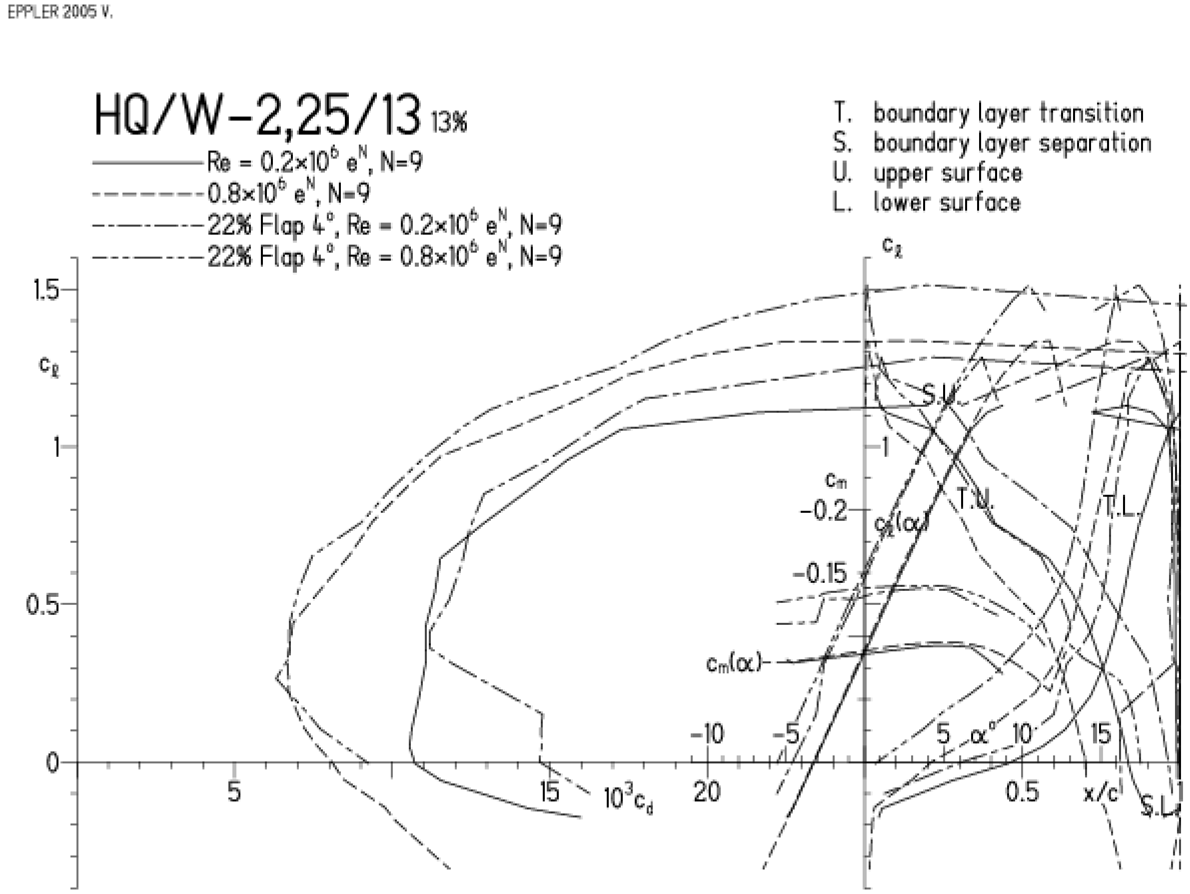
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





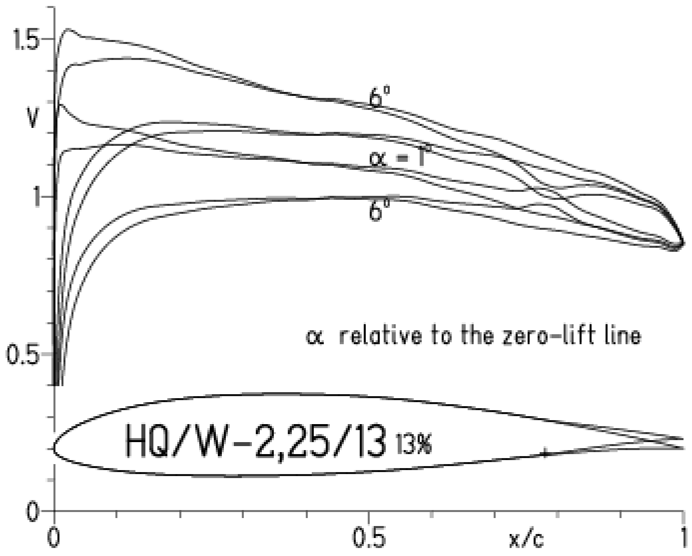
<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag



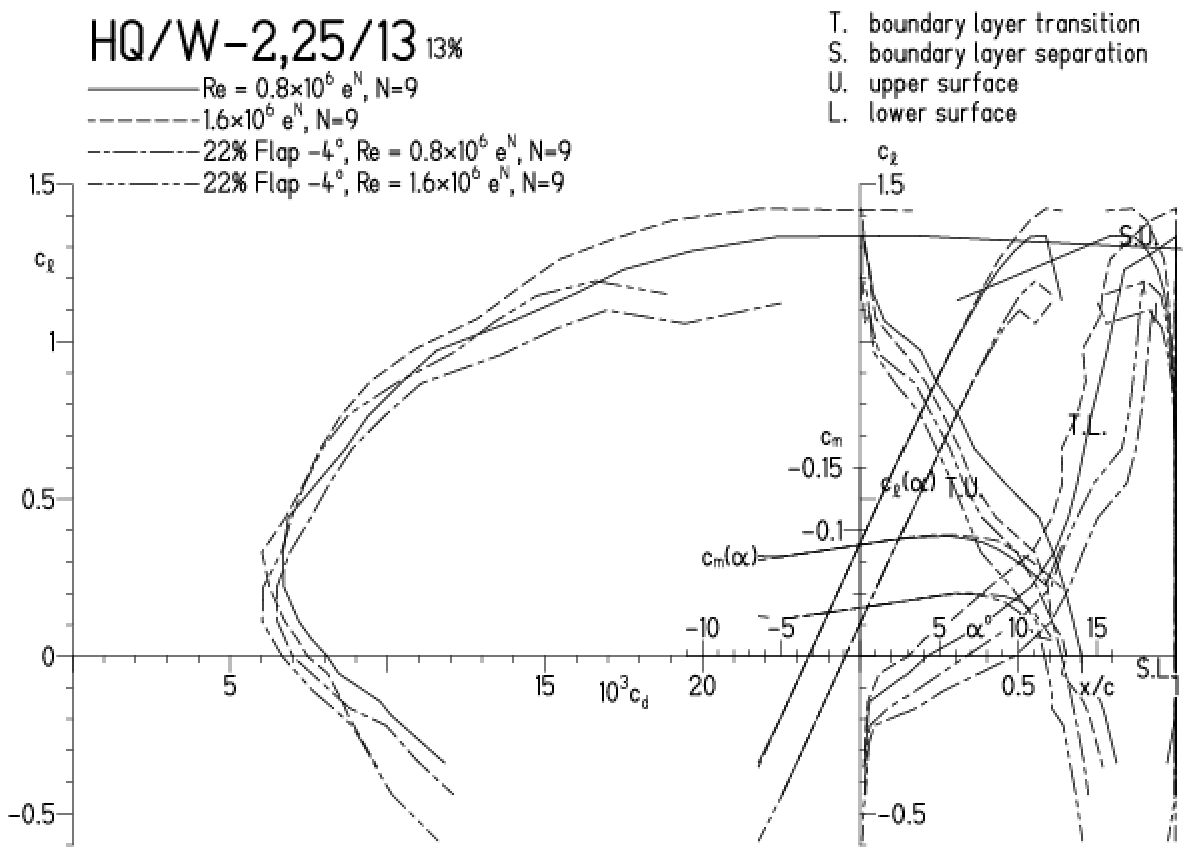


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

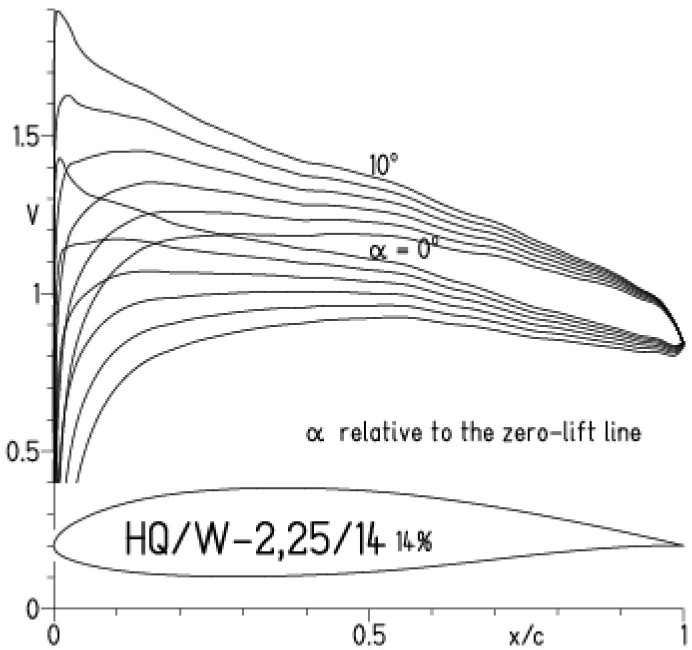


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

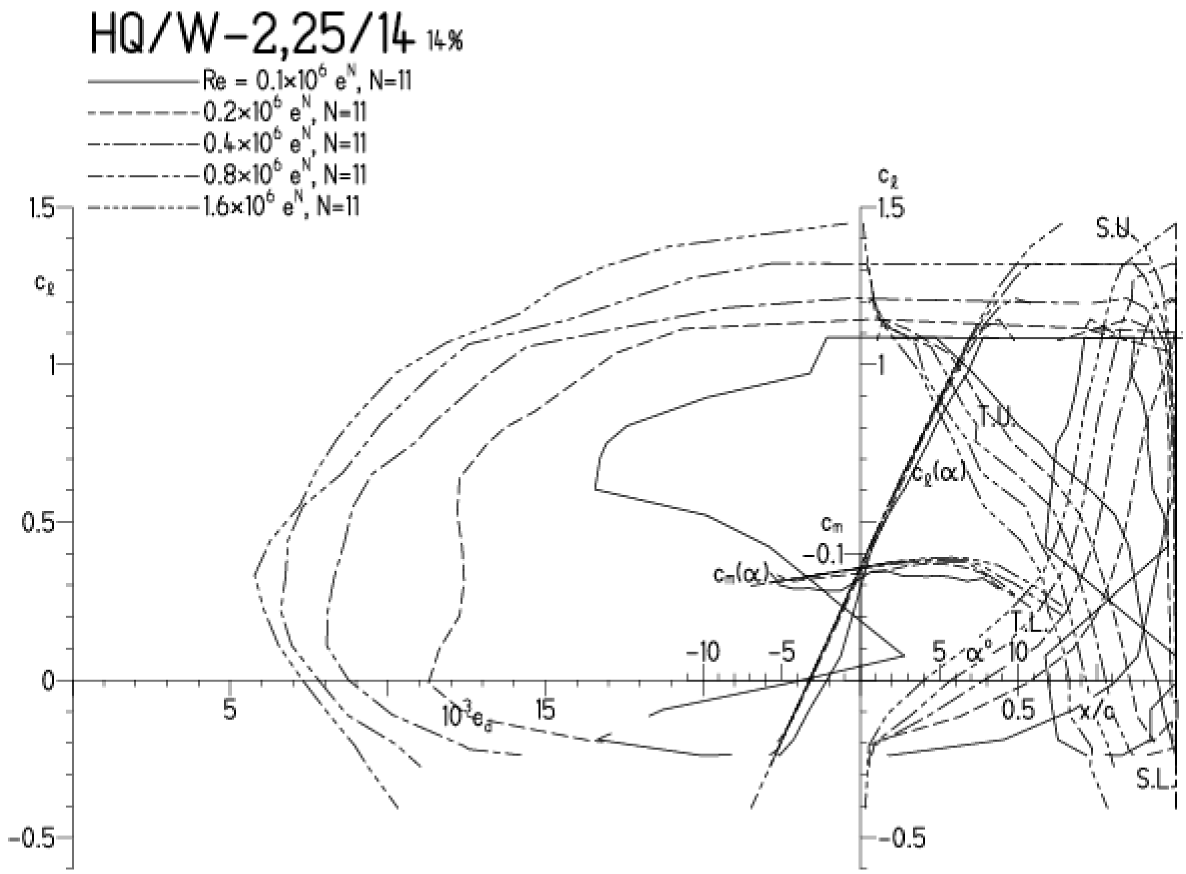


HQ/W-2,25/14, N=11

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

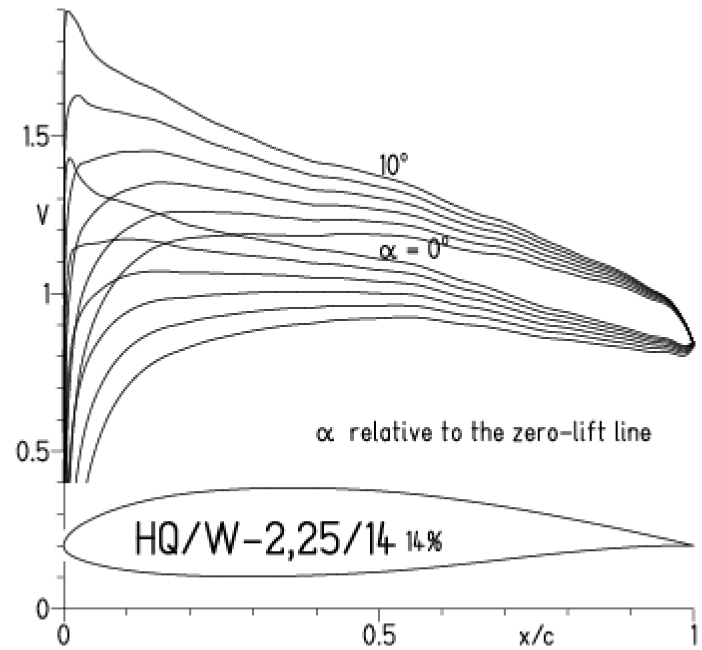


EPPLER 2005 V. 8.

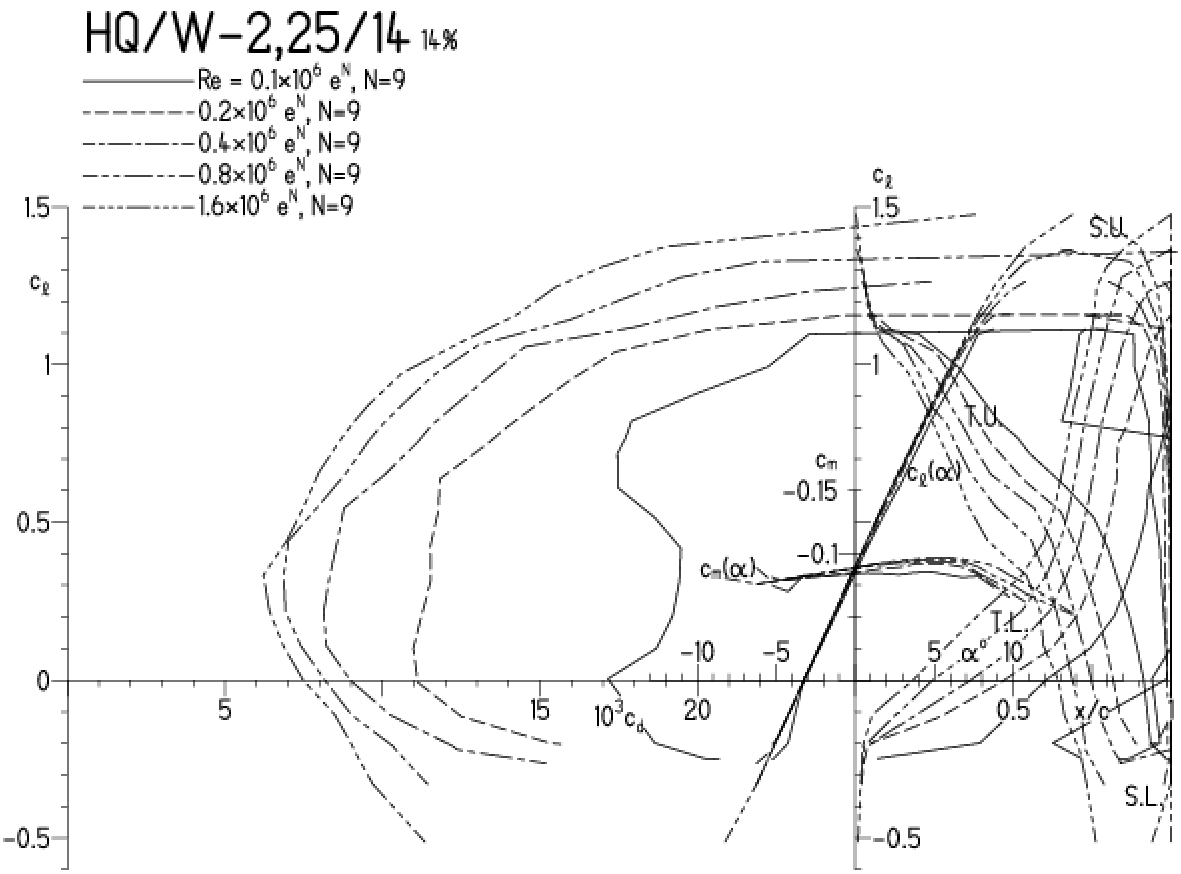


HQ/W-2,25/14, N=9

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

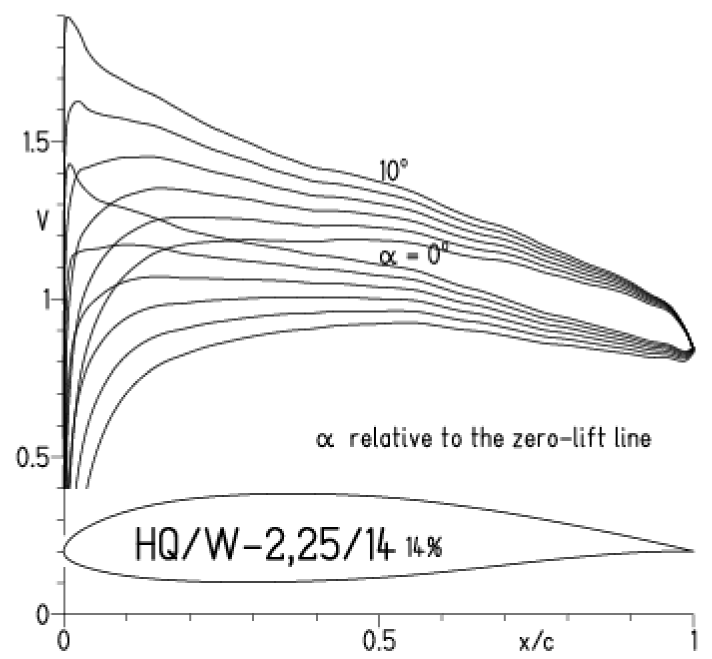


EPPLER 2005 V. 8.

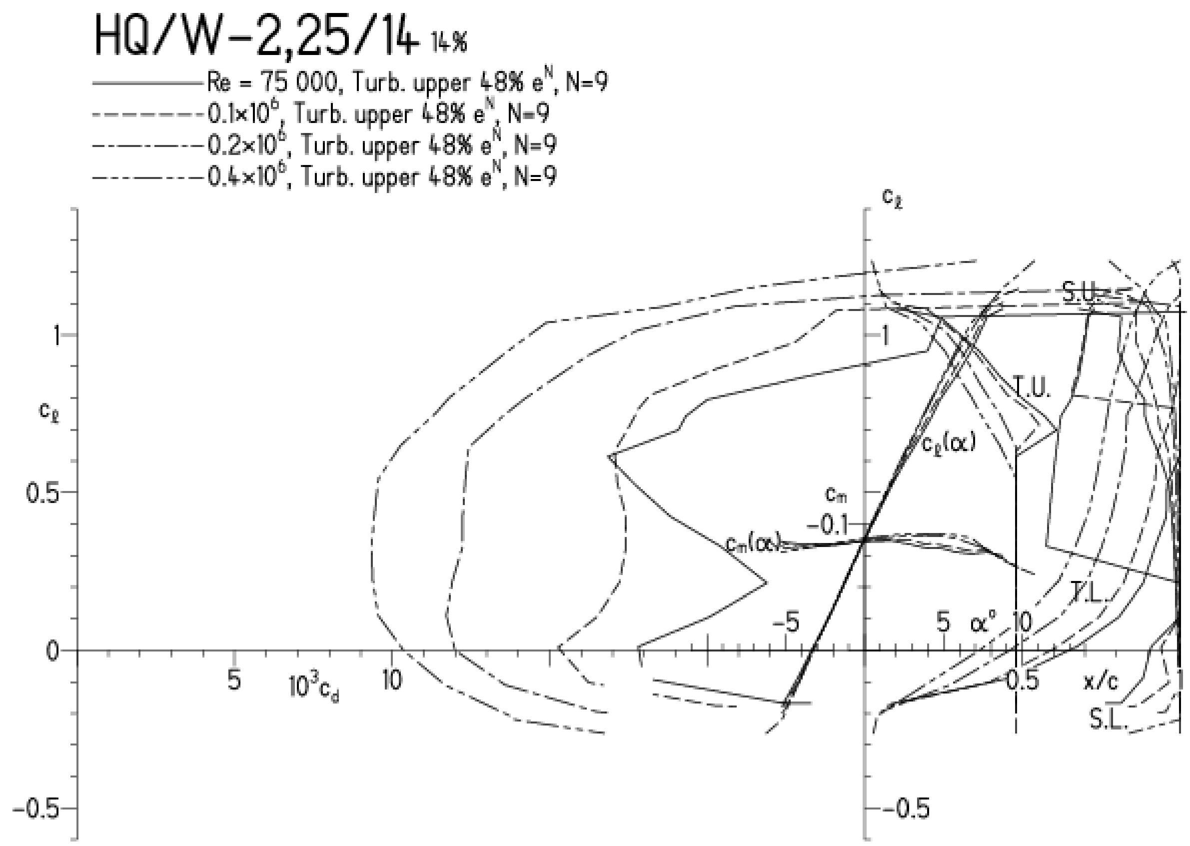


HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

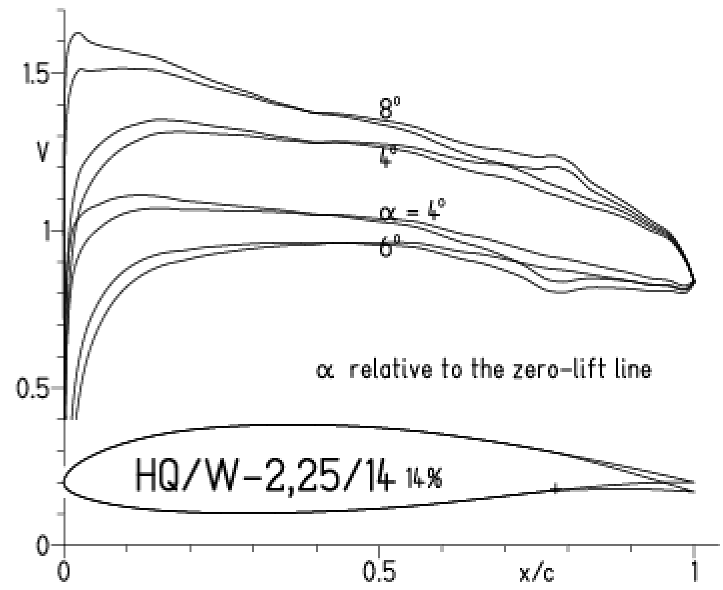


EPPLER 2005 V. 8.5.07 RU

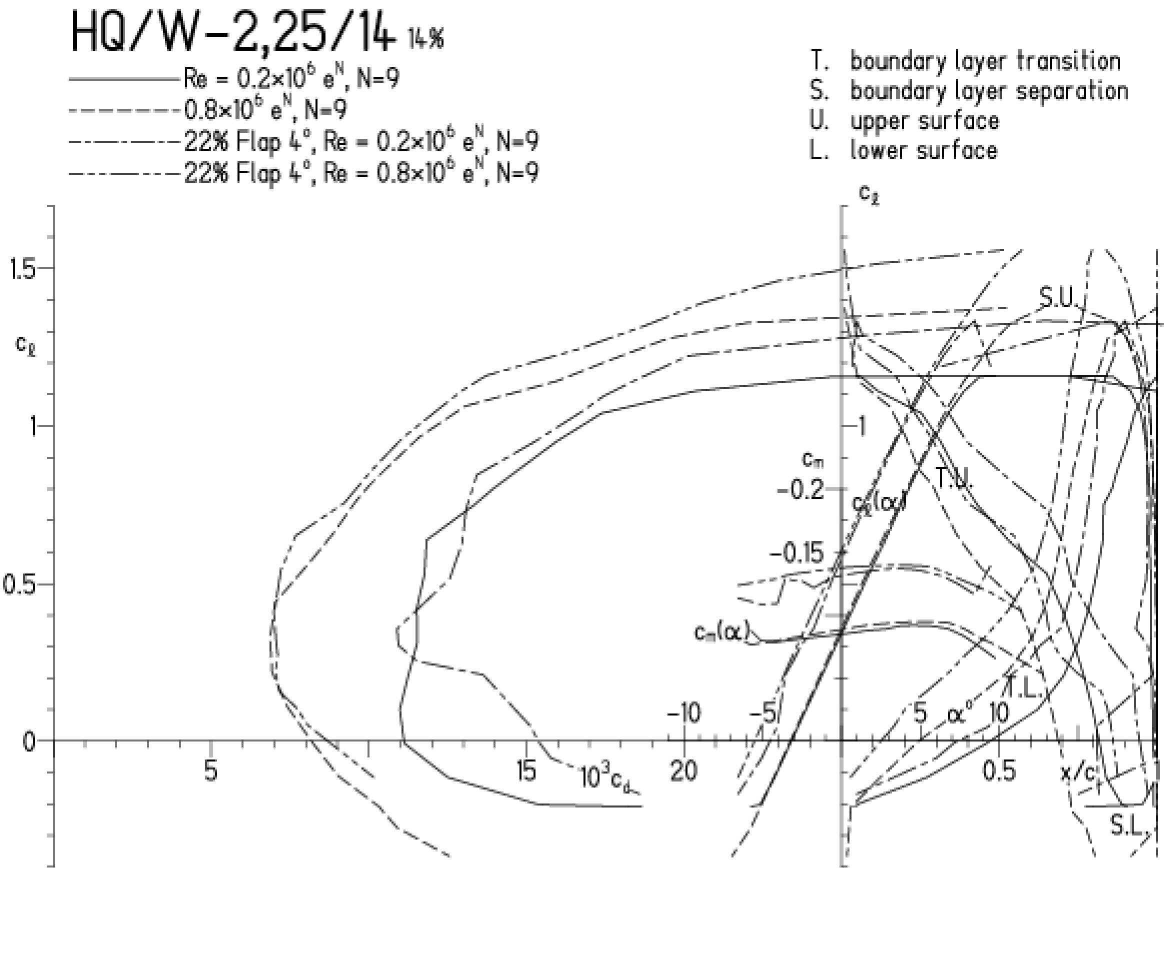


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

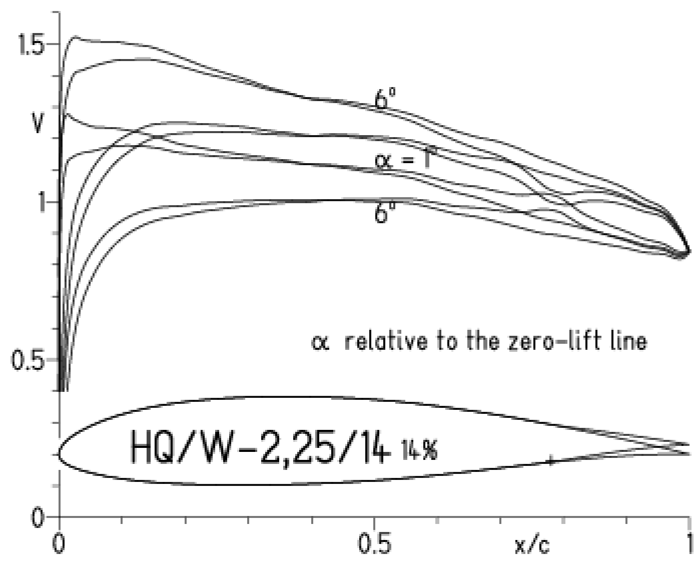


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

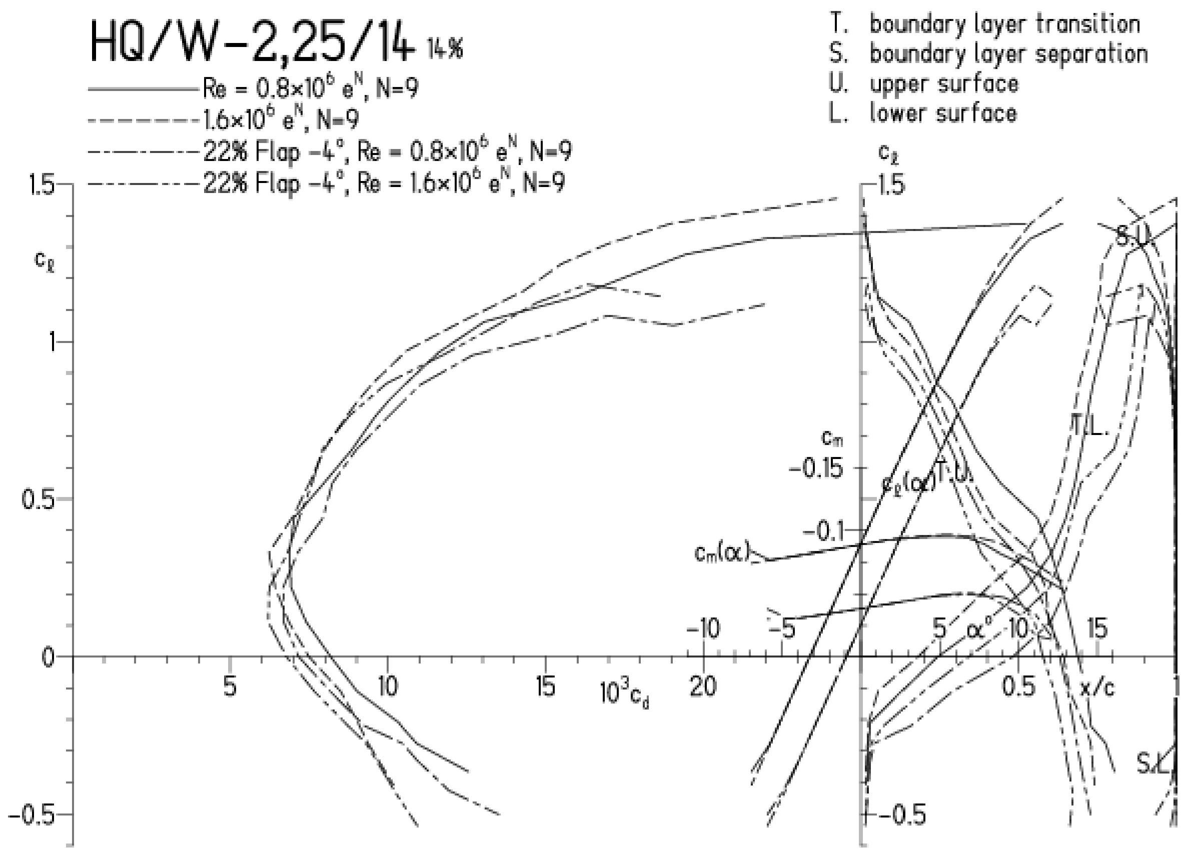


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

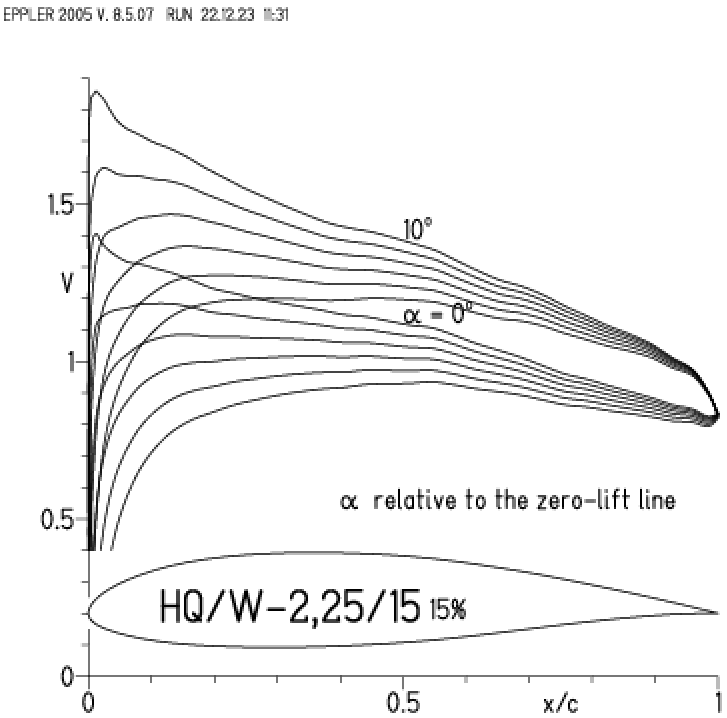
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

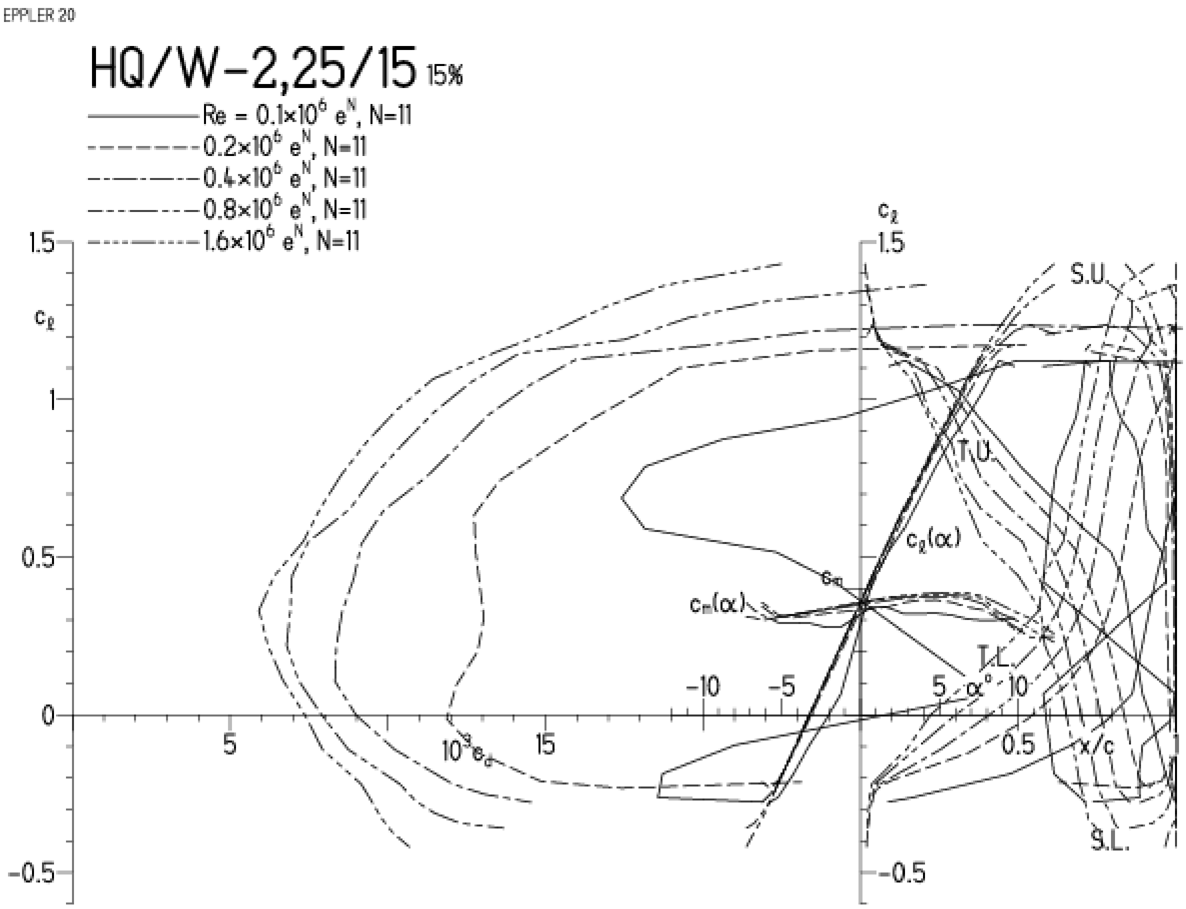


EPPLER 2005 V. 8.5.07



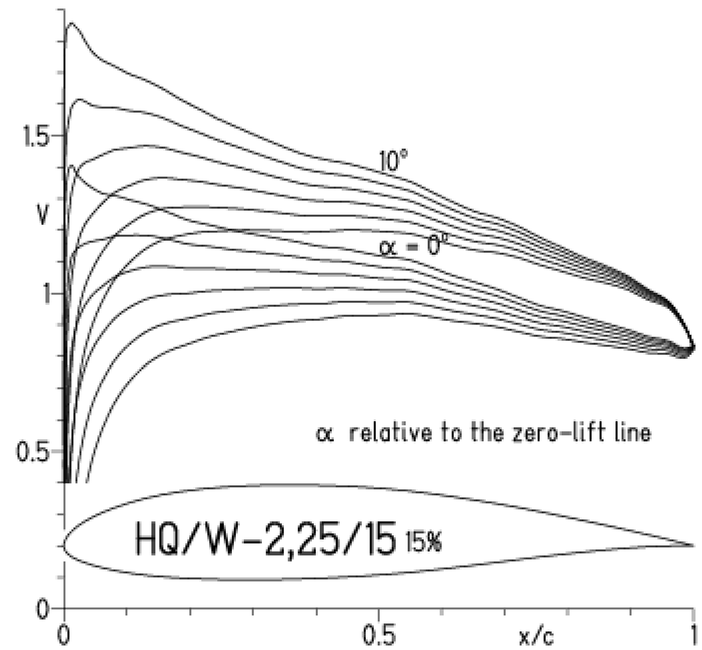
<u>HQ/W-2,25/15</u>, N=11



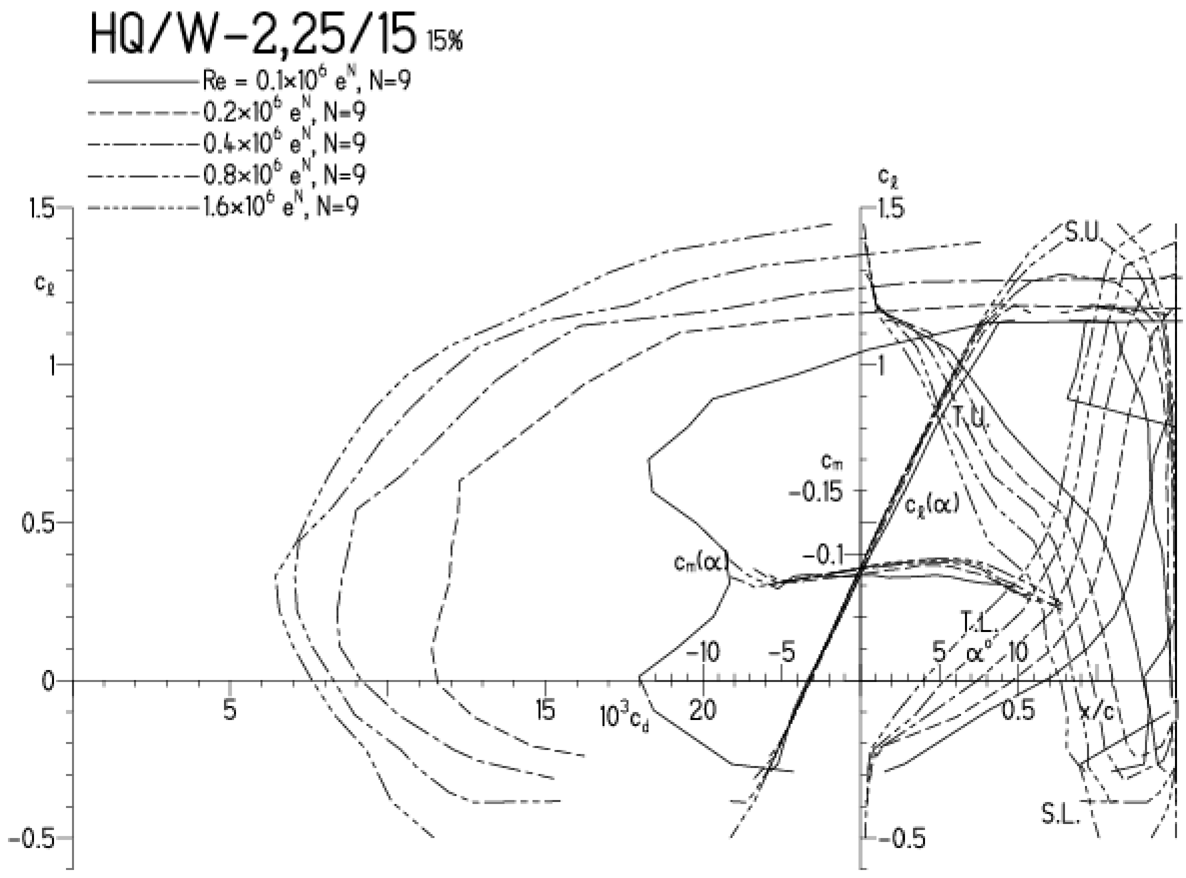


HQ/W-2,25/15, N=9

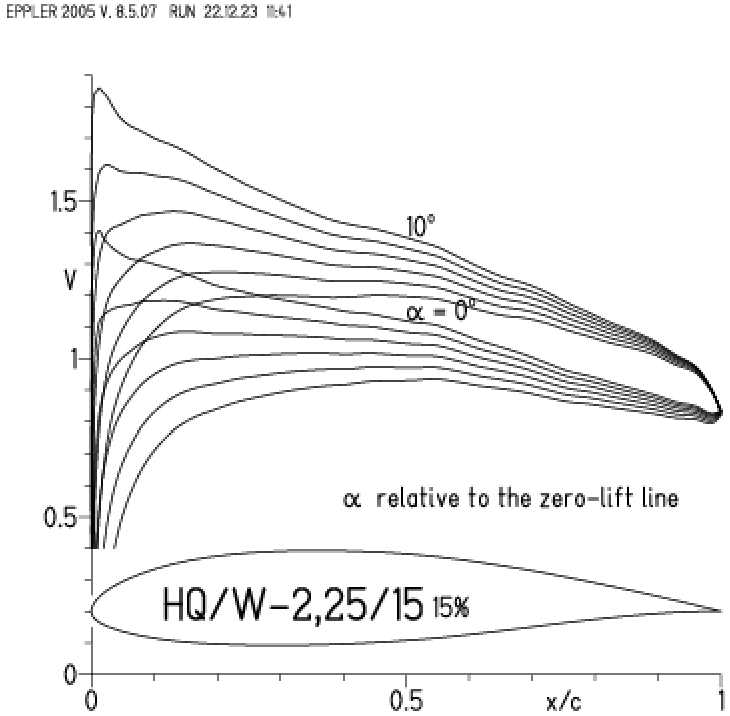
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

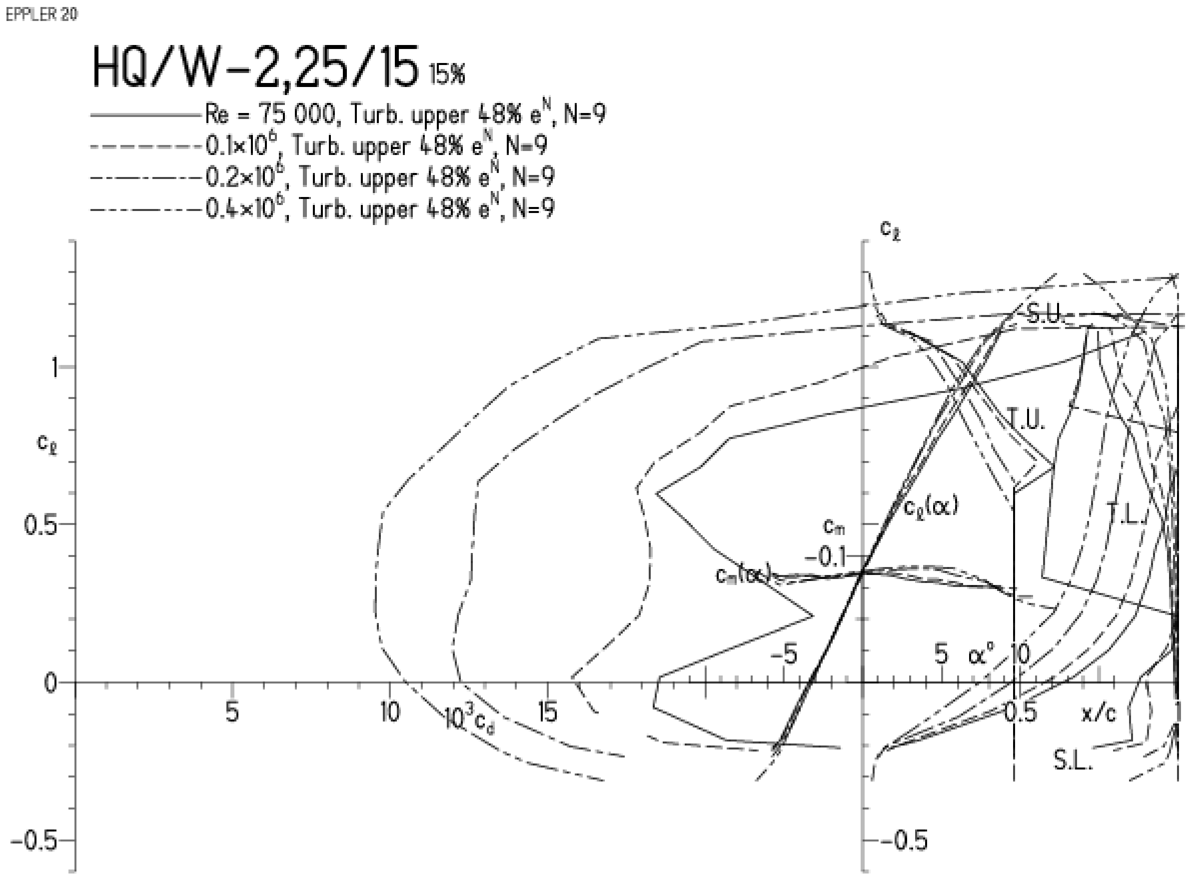


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



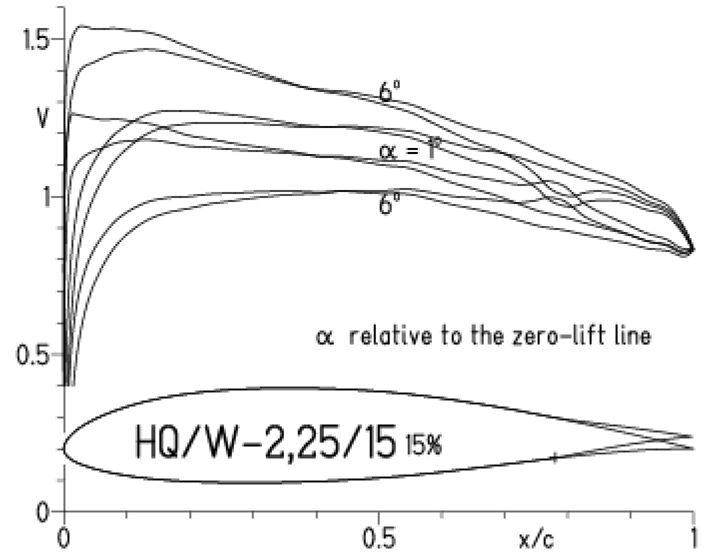


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

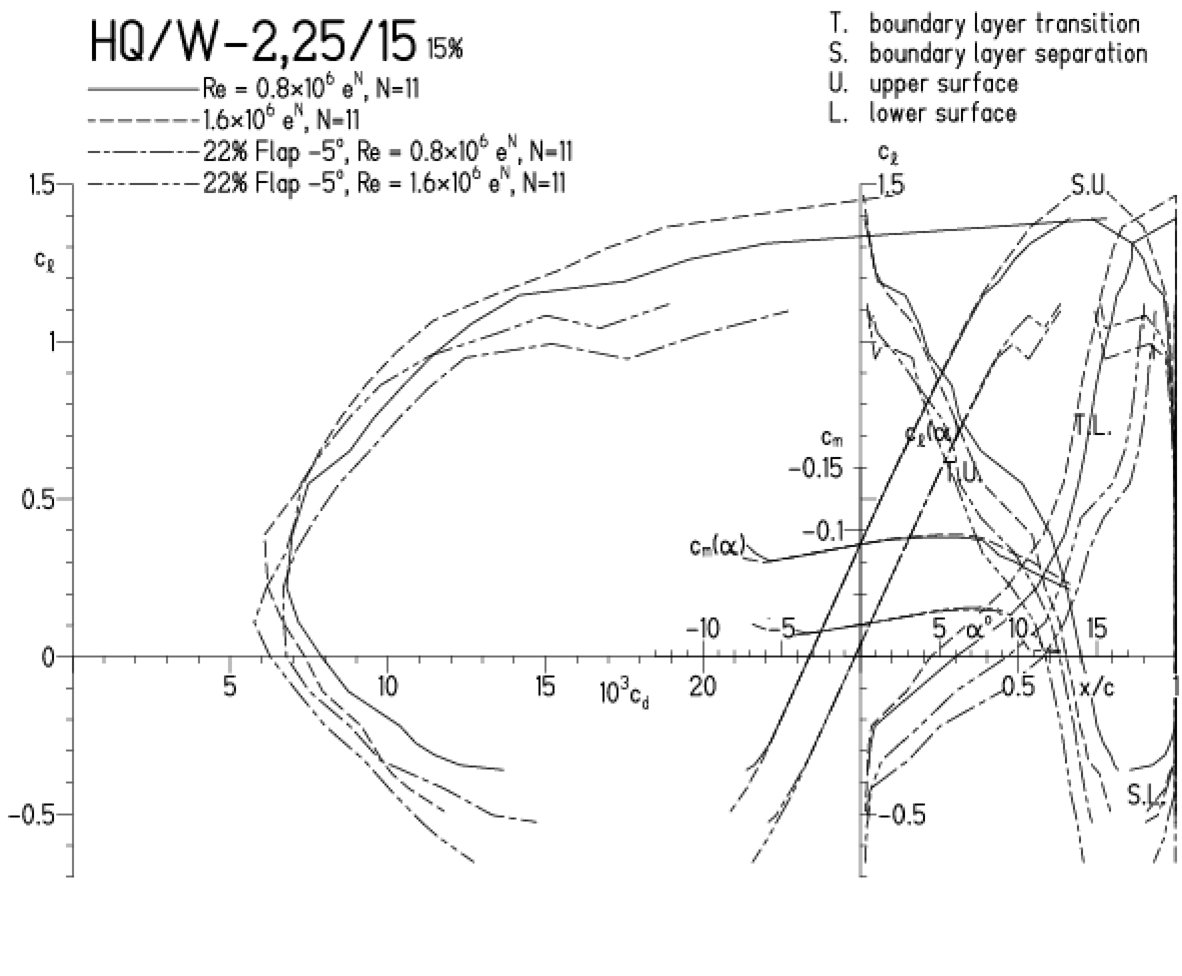
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

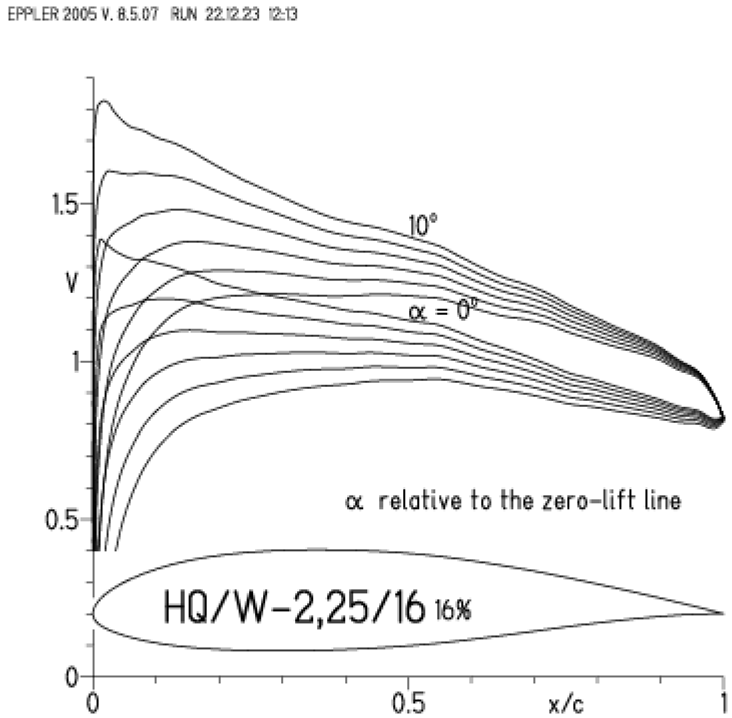
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

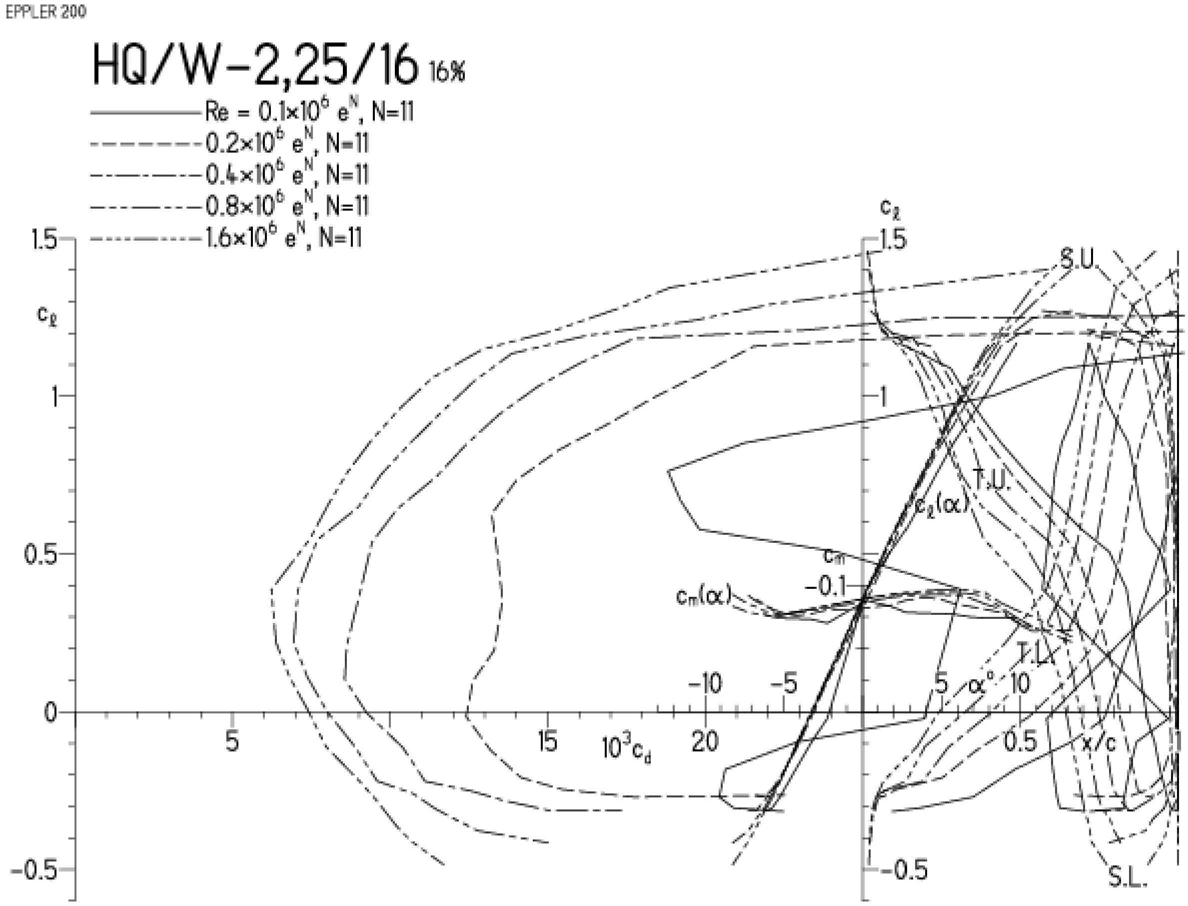


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

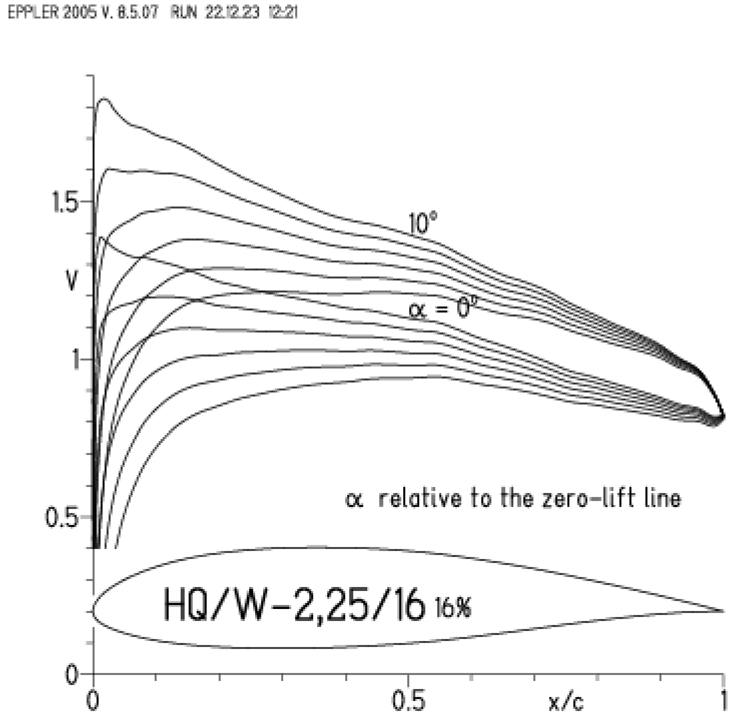


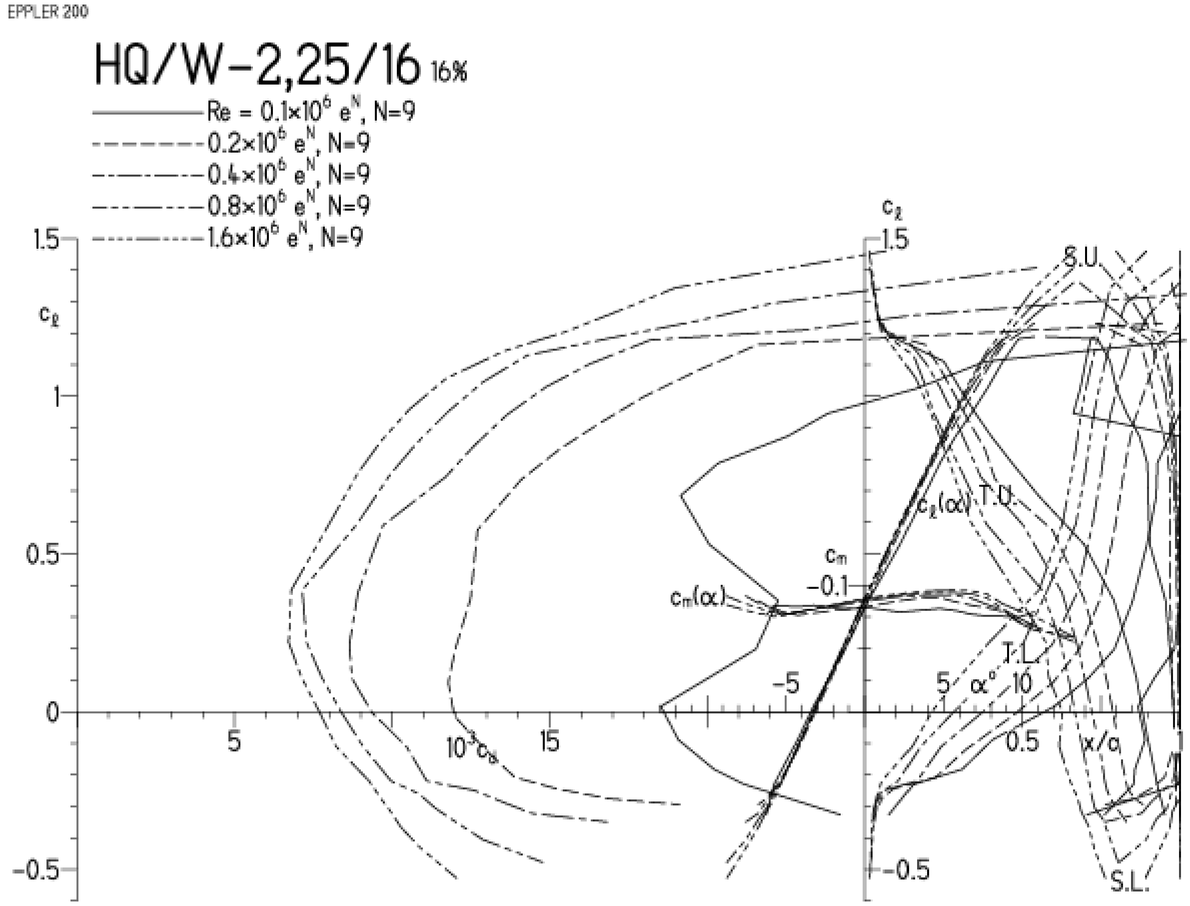
<u>HQ/W-2,25/16</u>, N=11



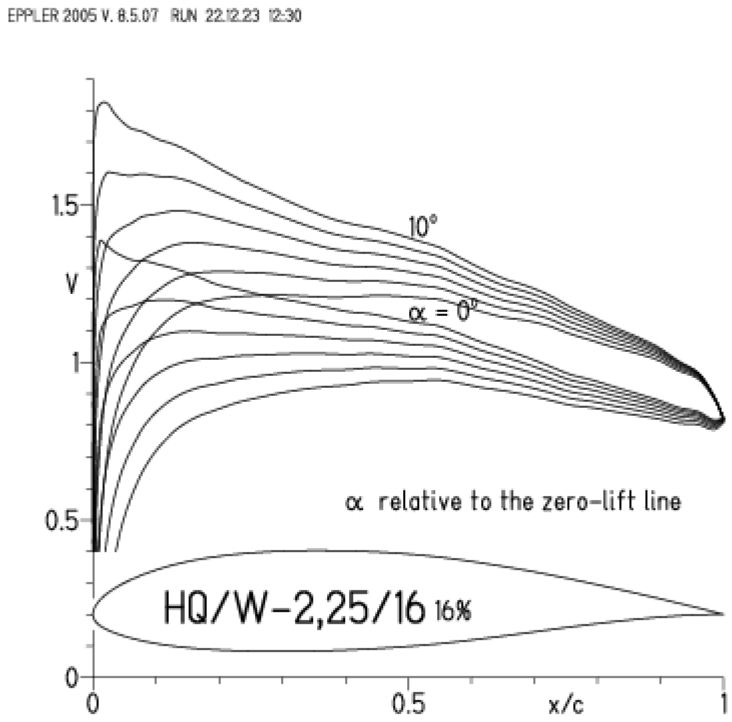


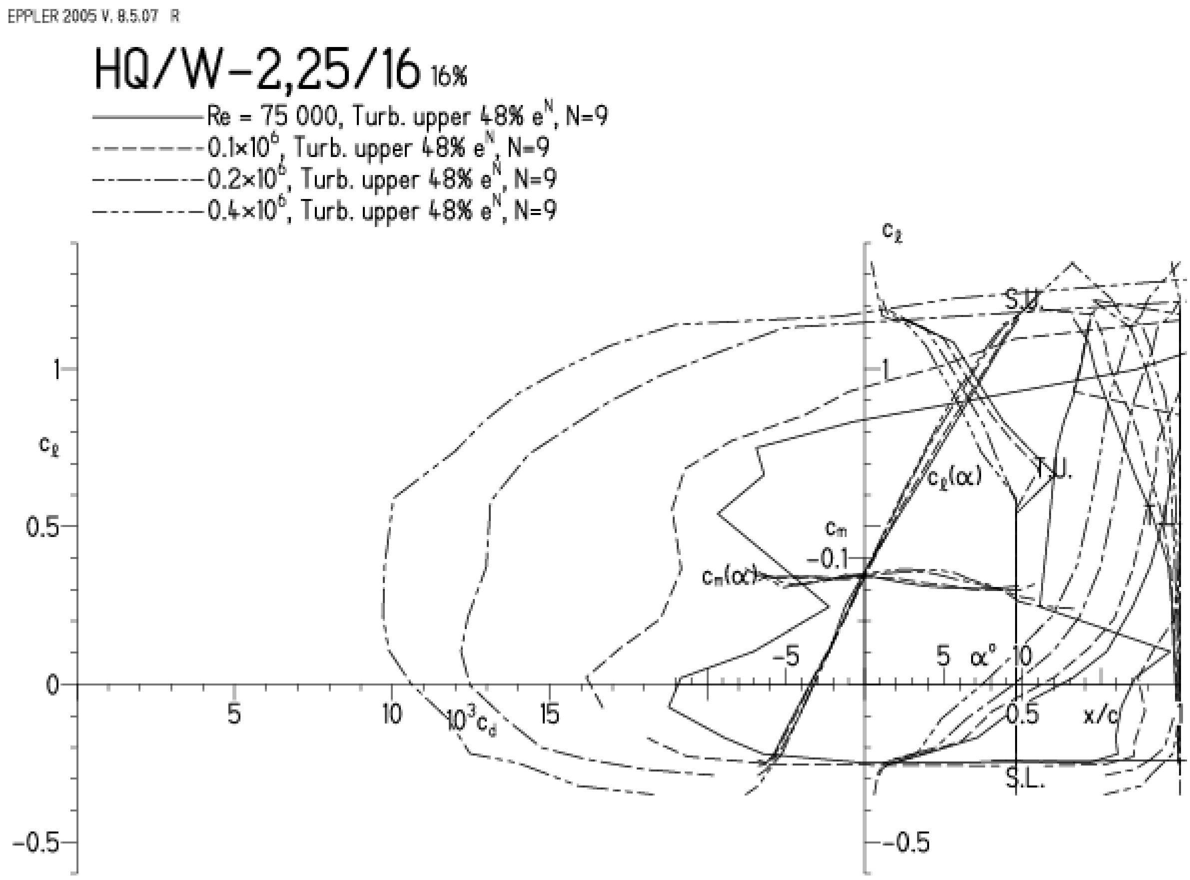
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



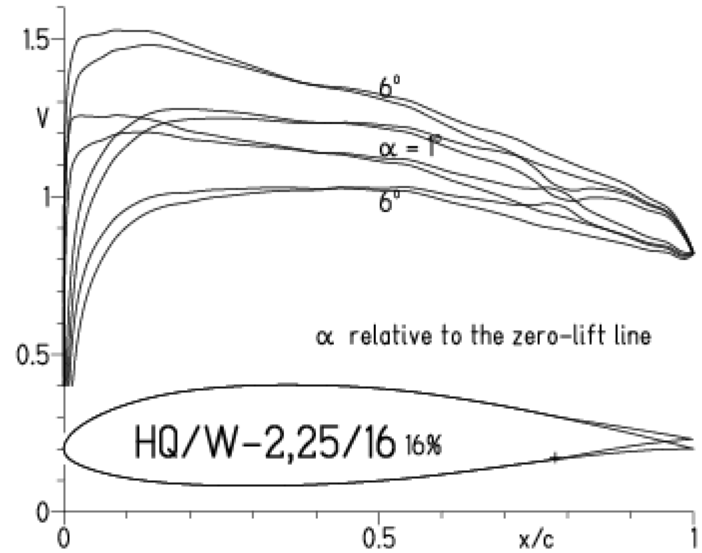


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

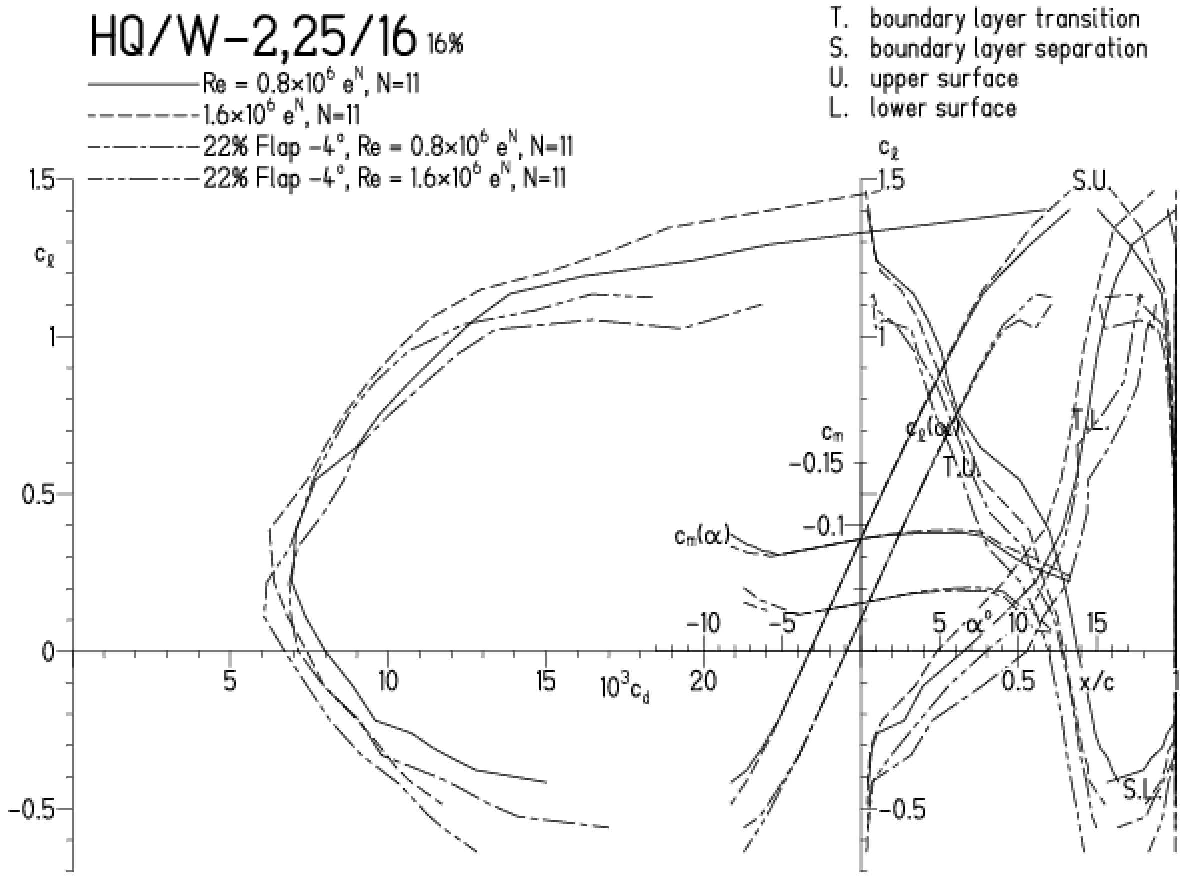
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

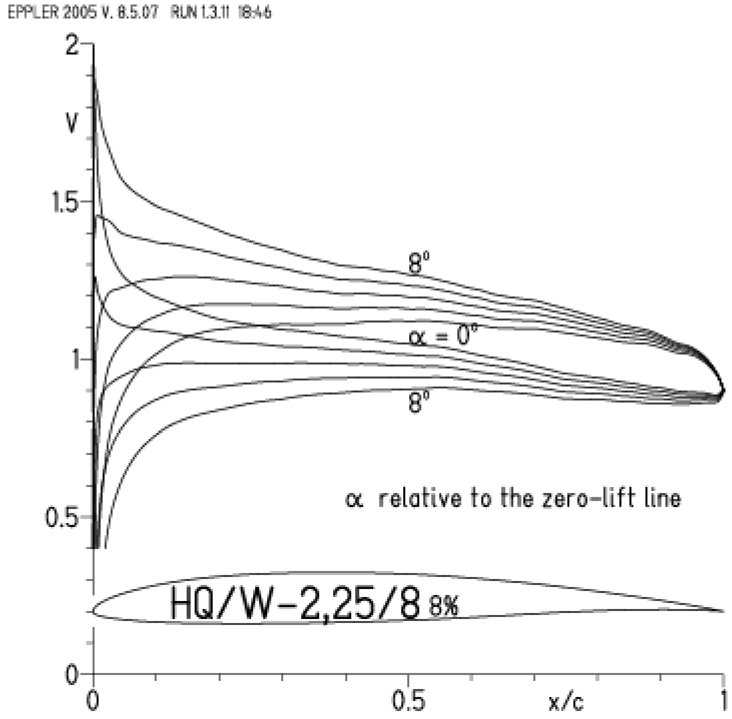
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

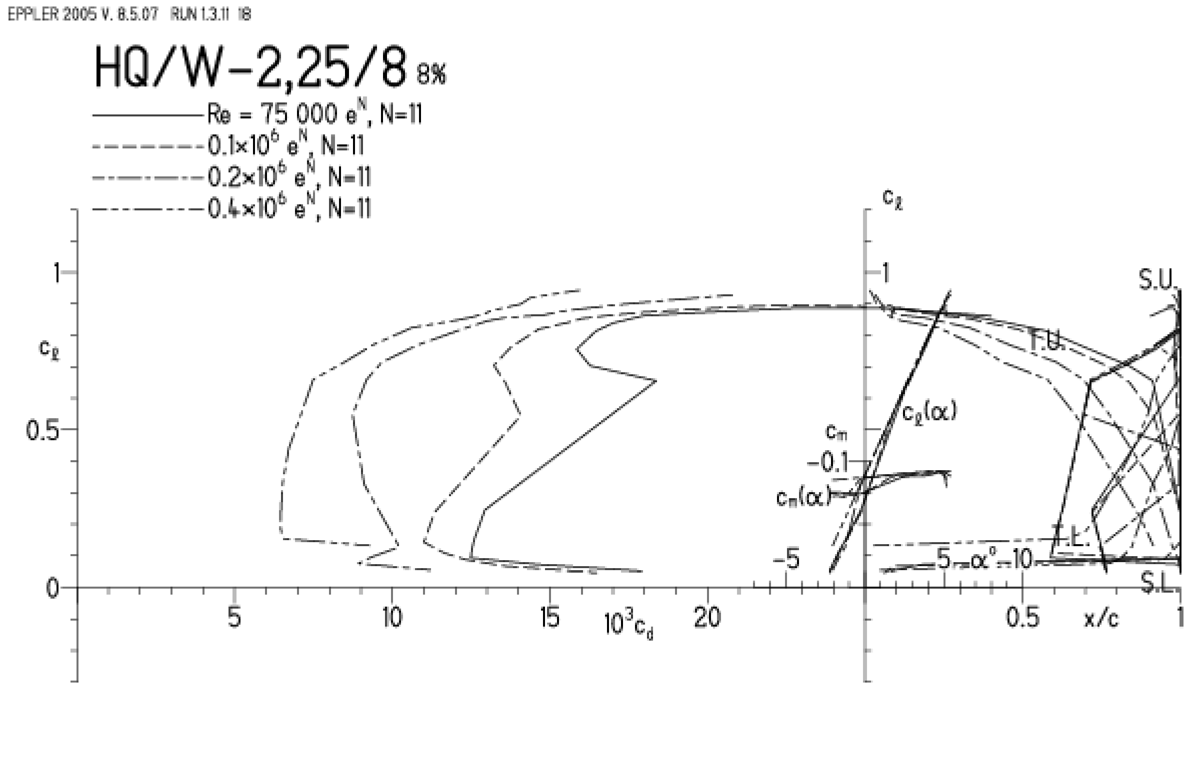


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



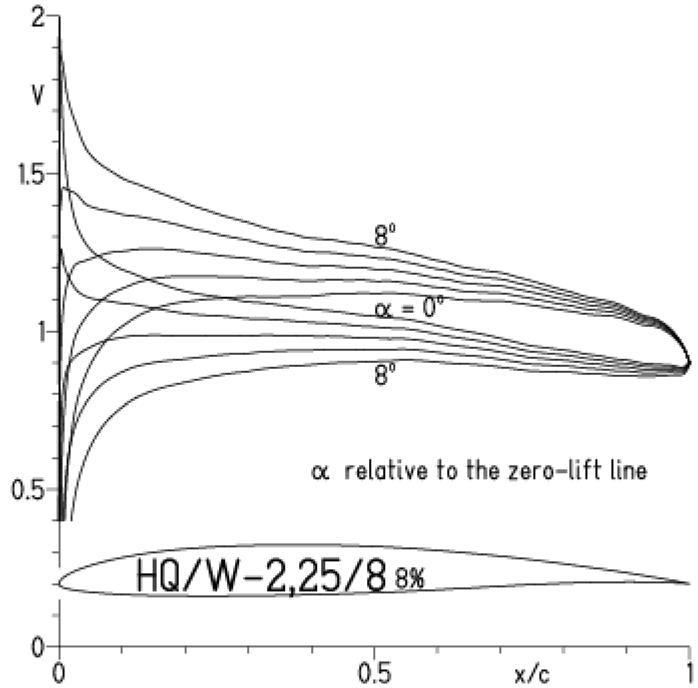
<u>HQ/W-2,25/8</u>, N=11



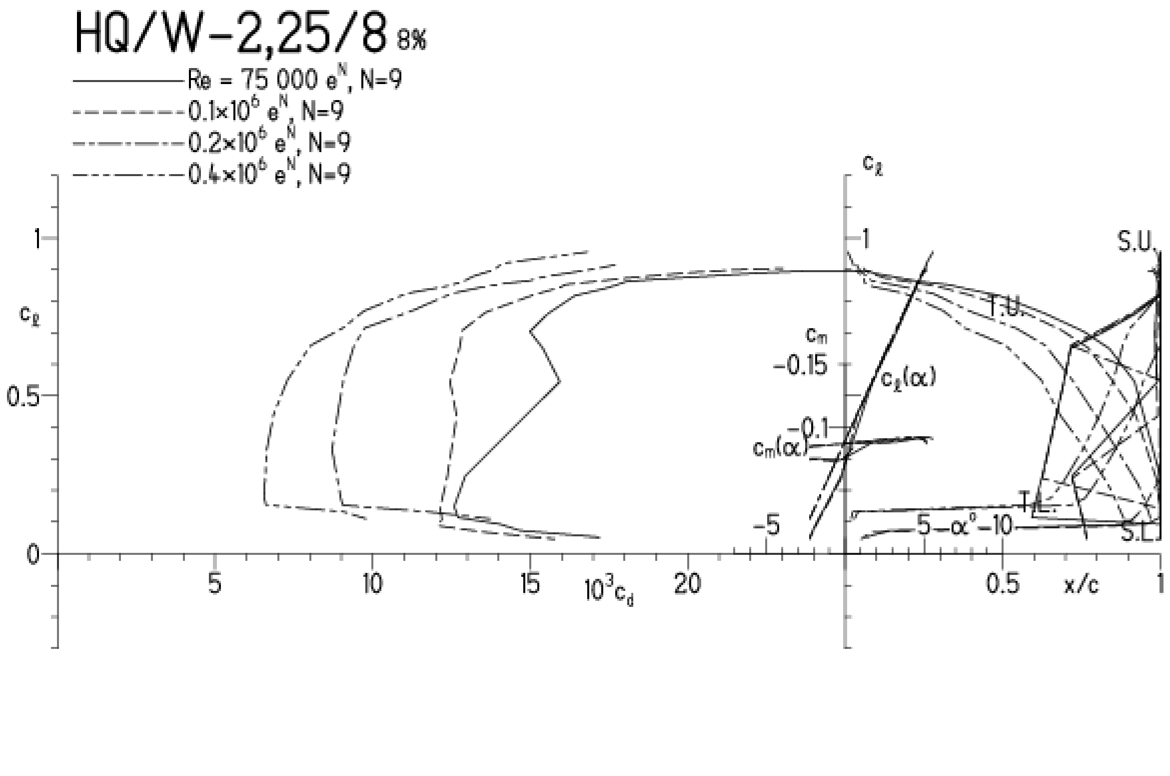


<u>HQ/W-2,25/8</u>, N=9

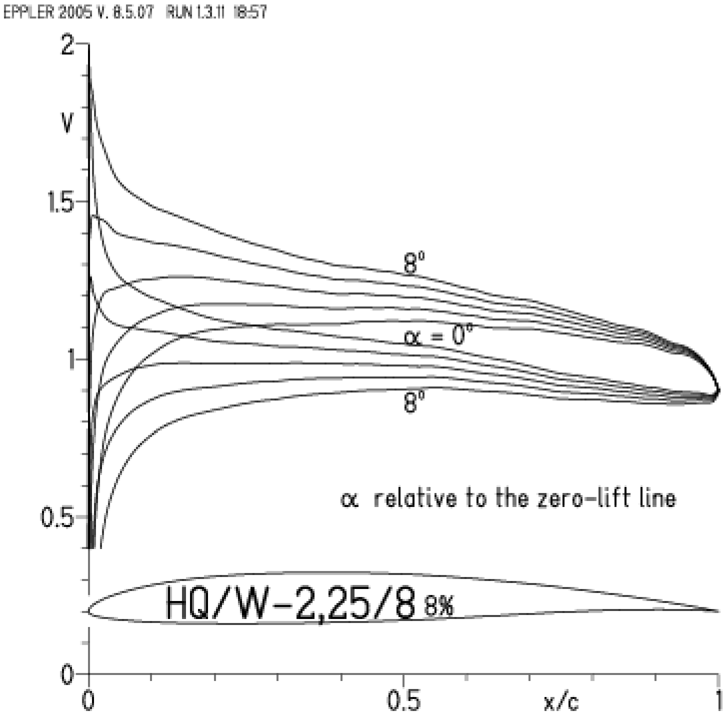
EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

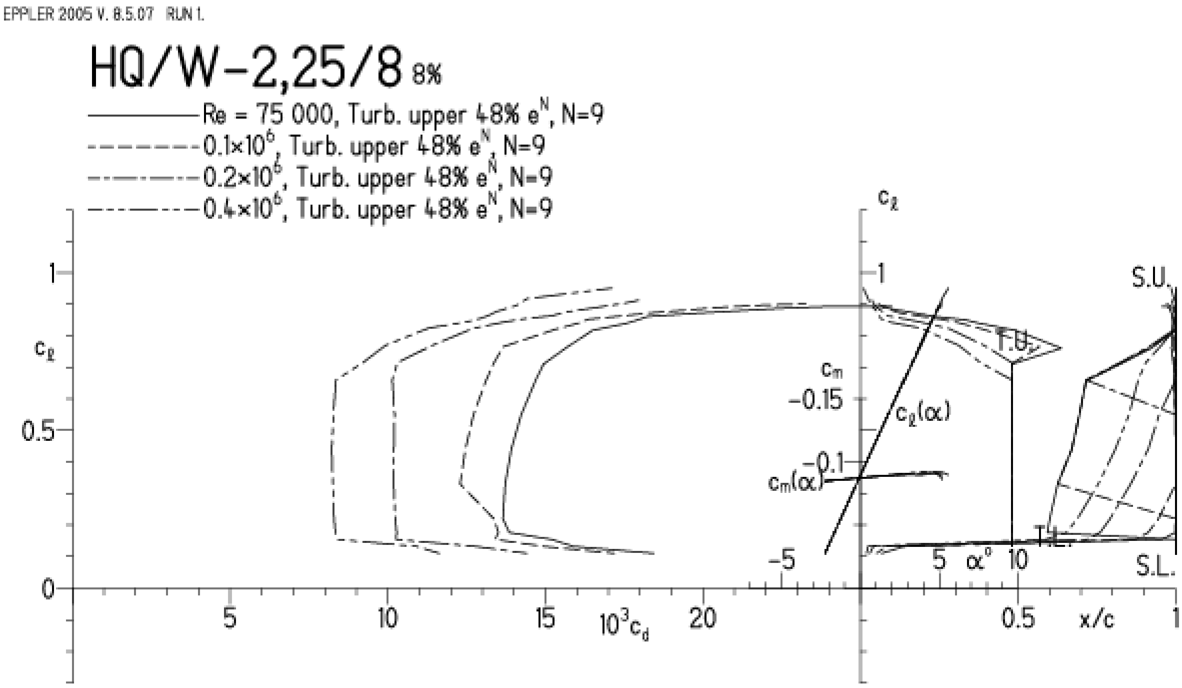


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52



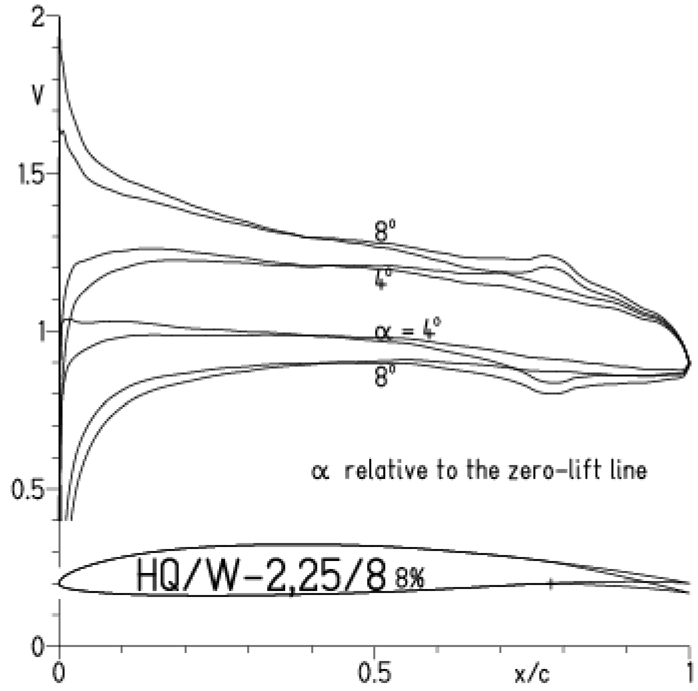
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



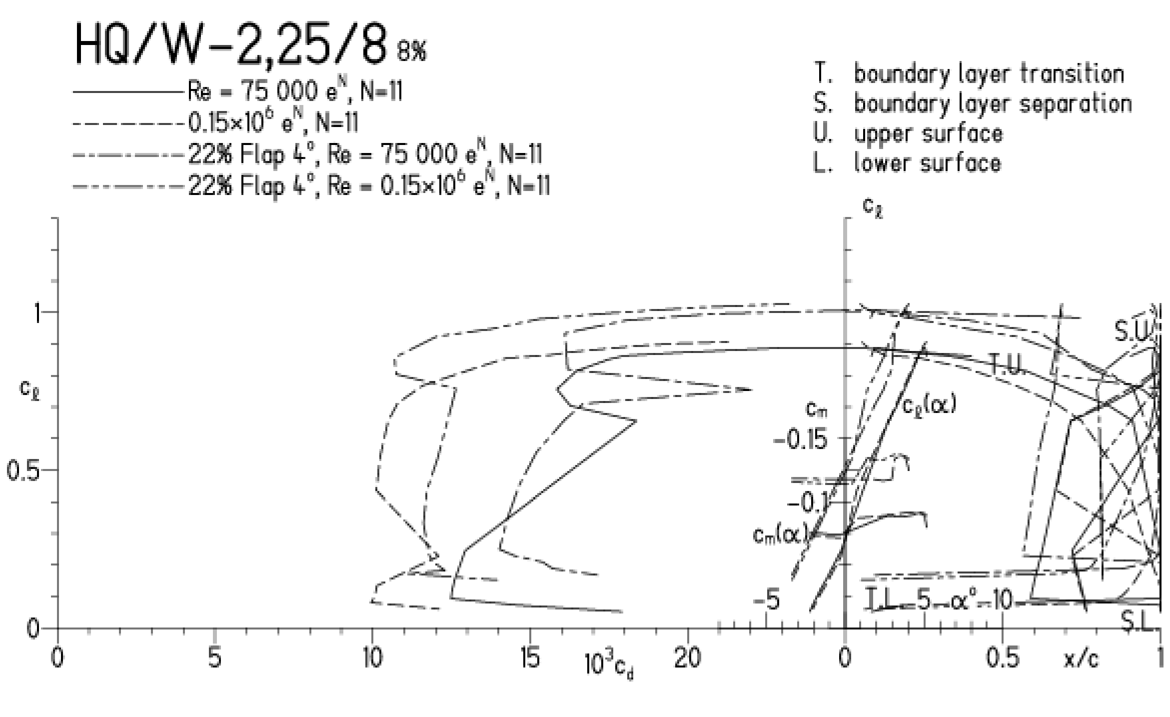


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

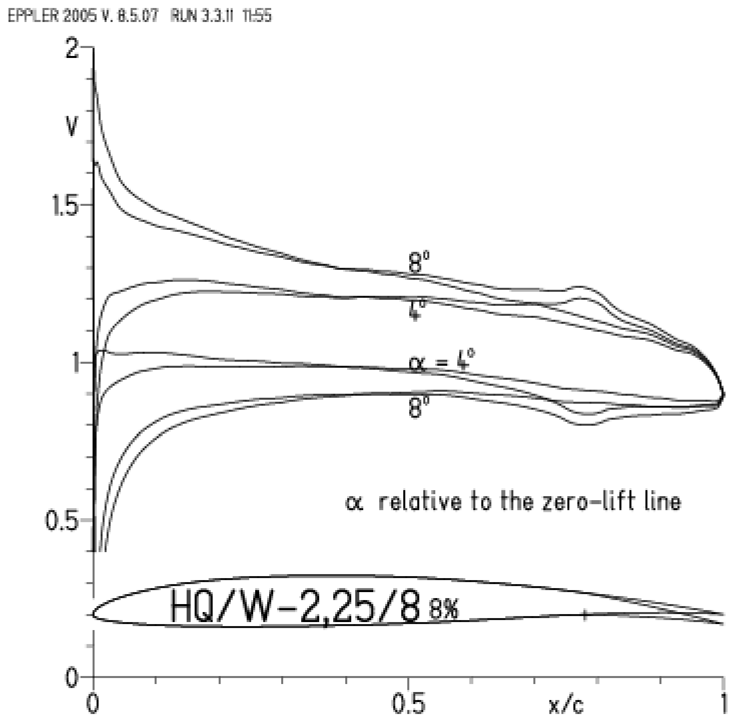
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

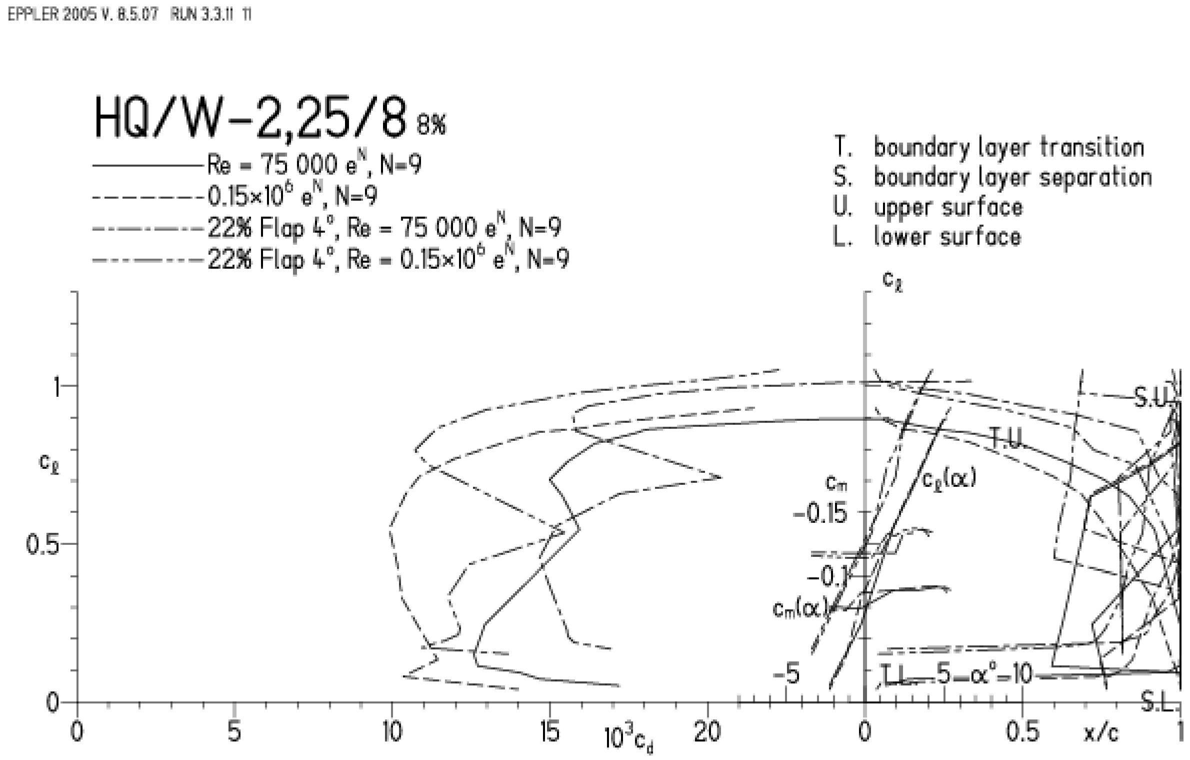


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

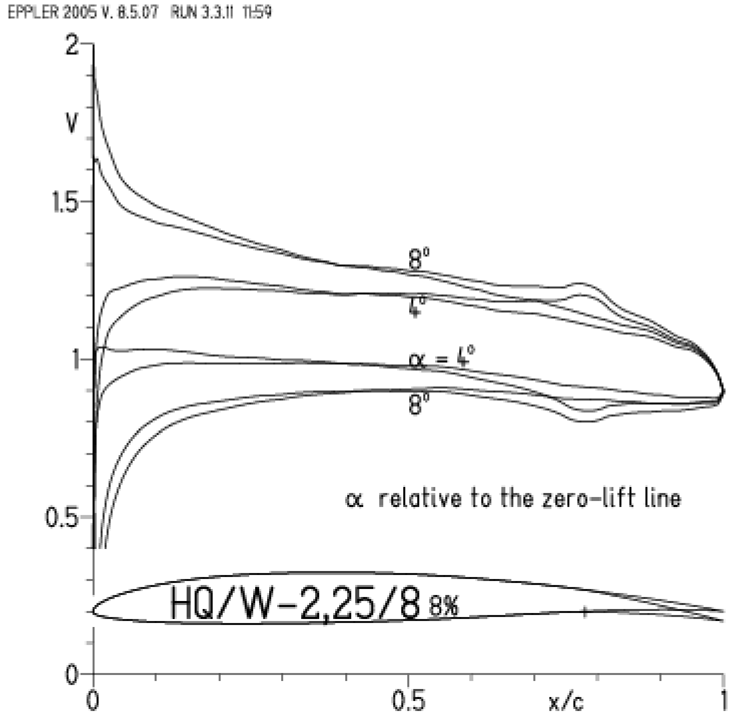


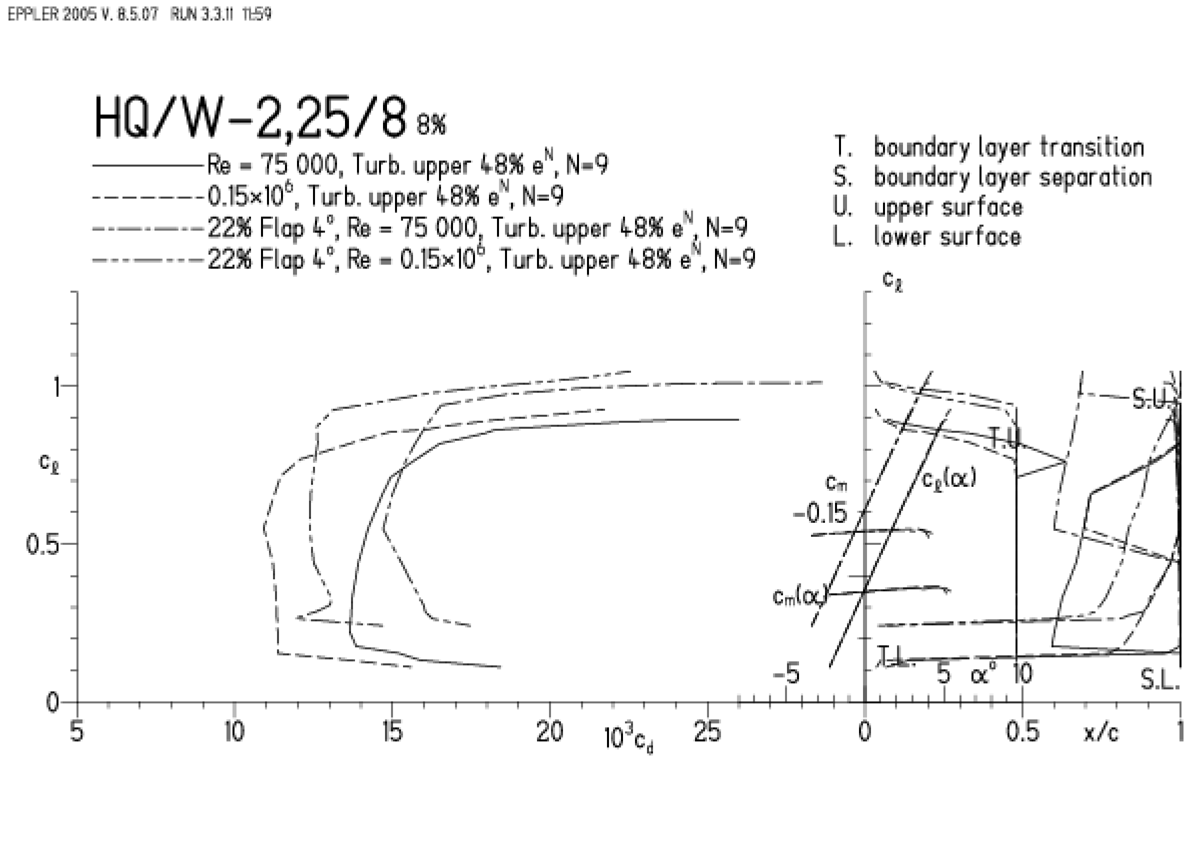
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





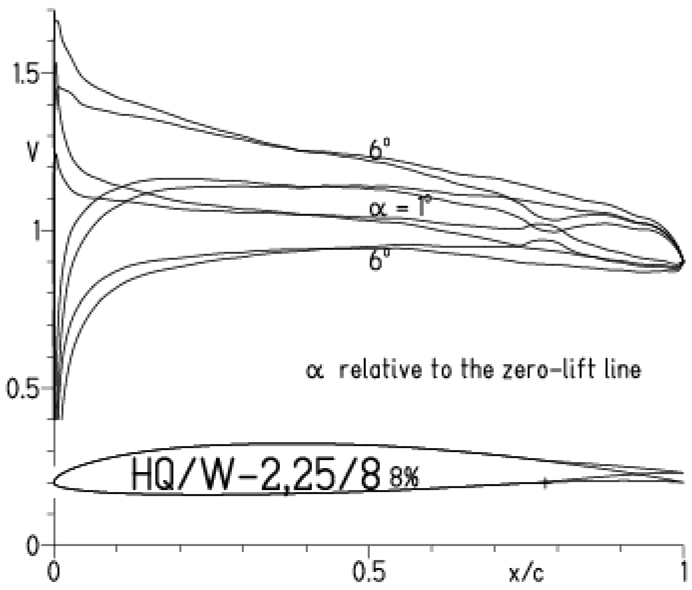
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



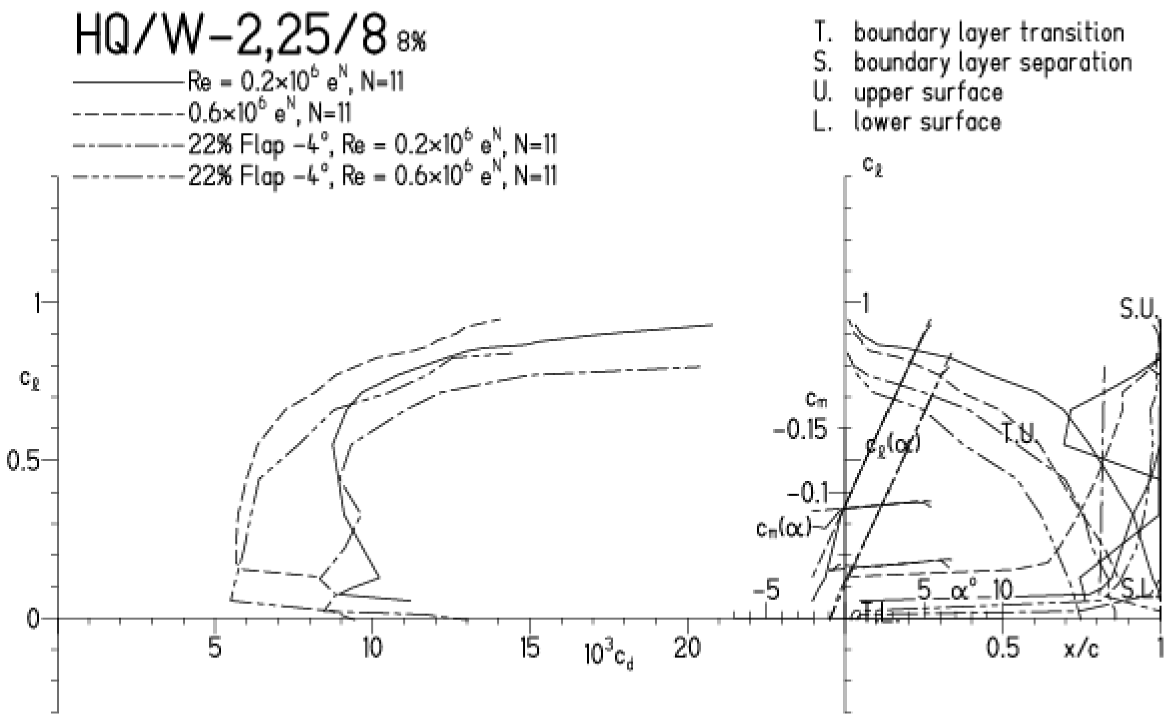


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

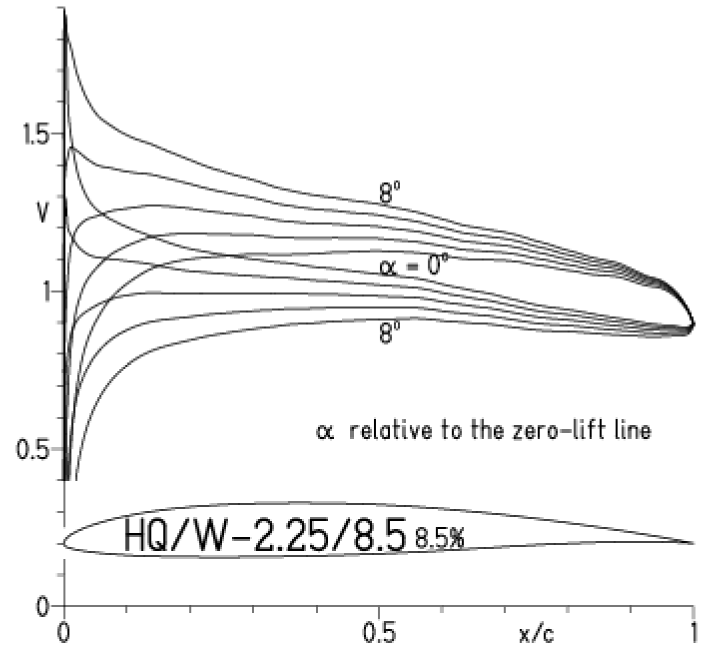


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

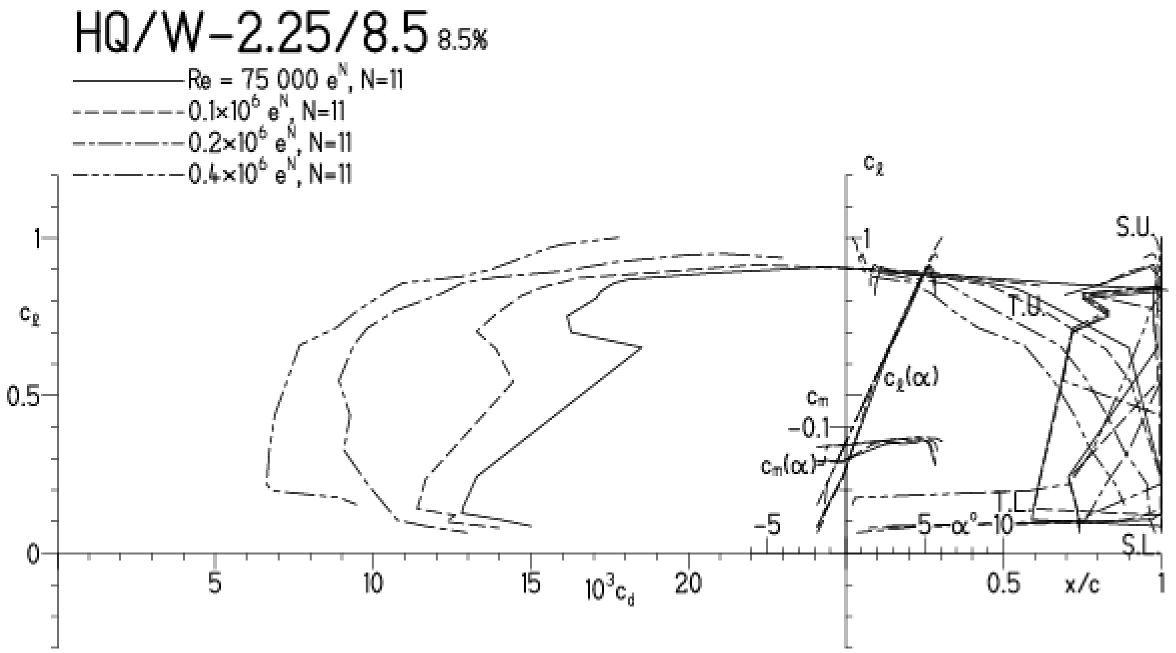


<u>HQ/W-2,25/8,5</u>, N=11

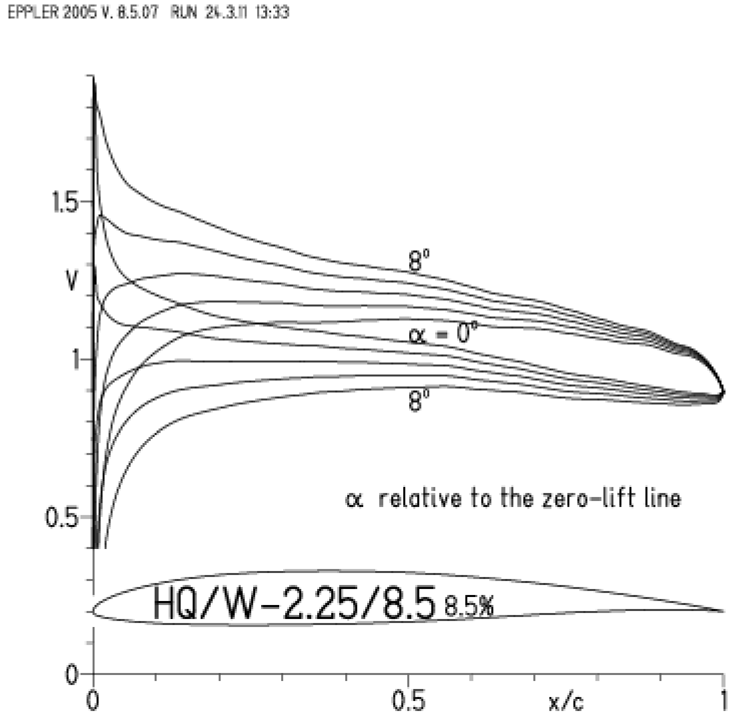
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

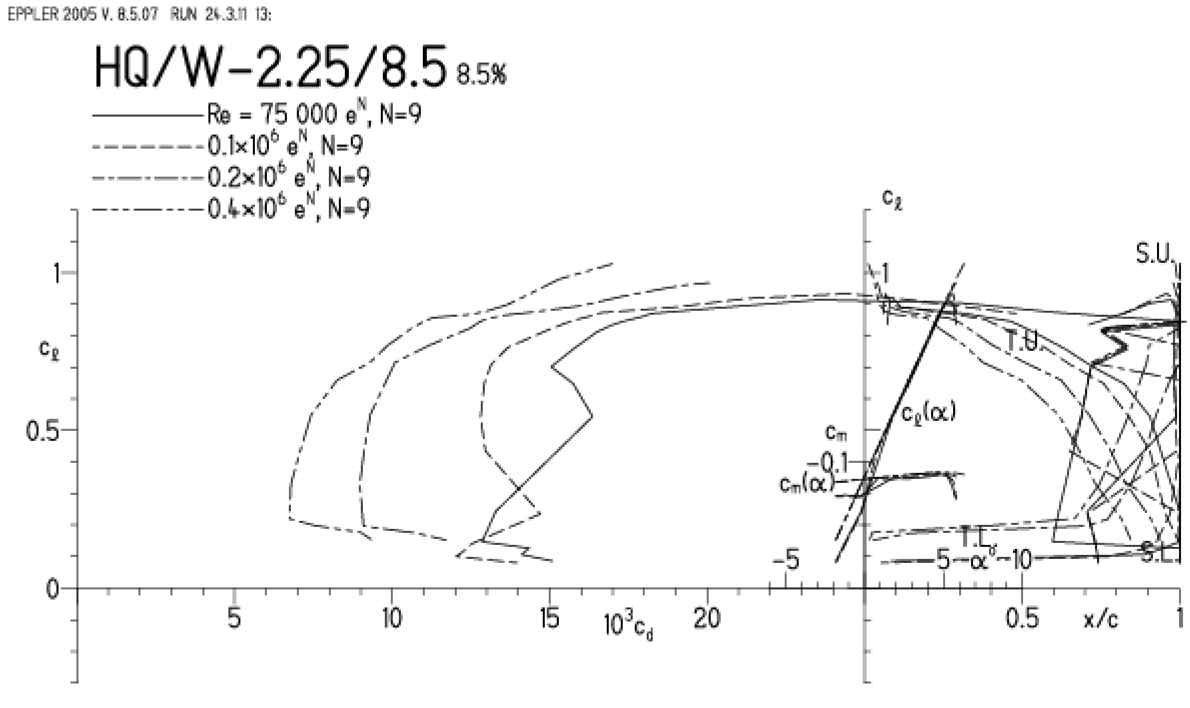


EPPLER 2005 V



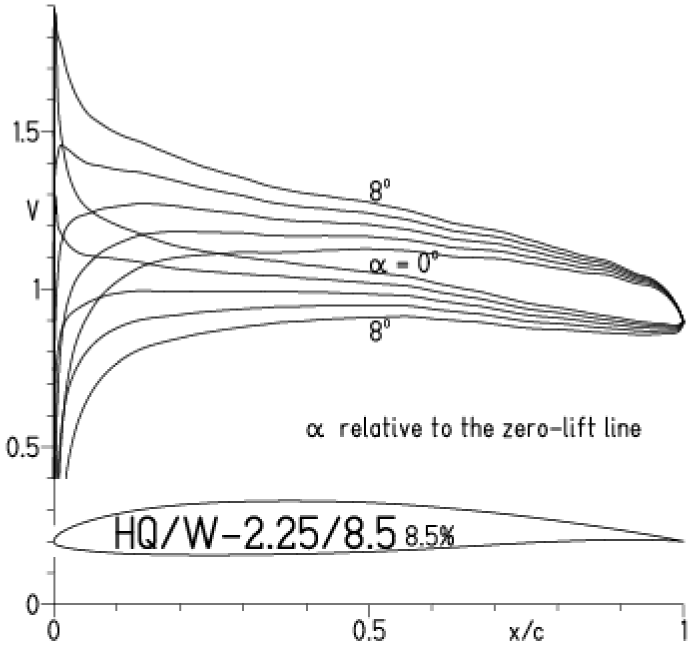
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

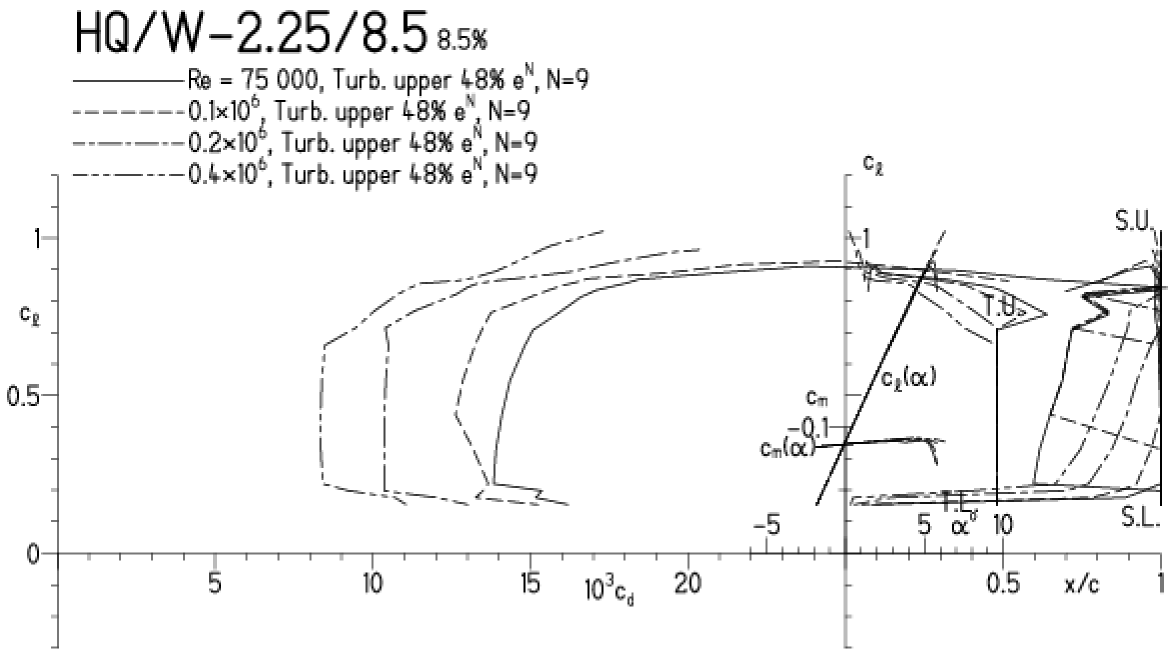

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

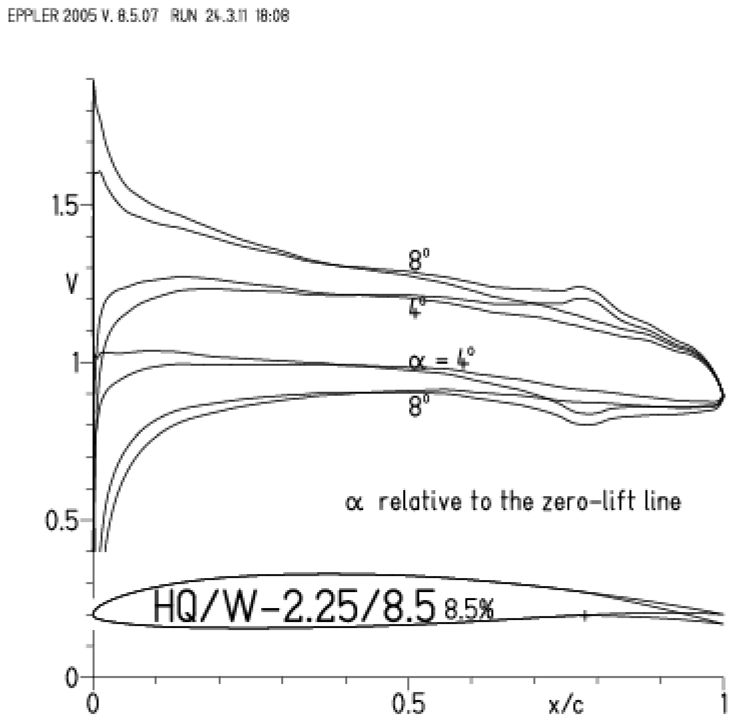
EPPLER 2005 V. 8.5.07 RUN 24.3.11 17:31

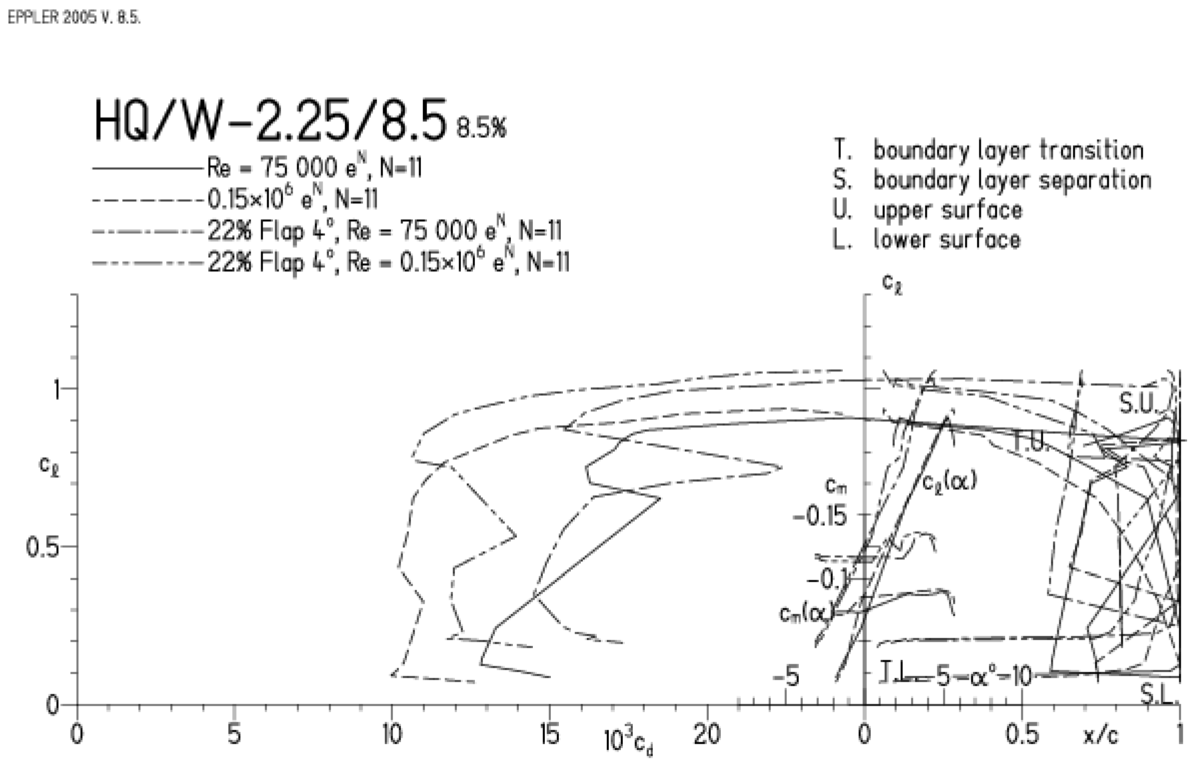


EPPLER 2005 V.

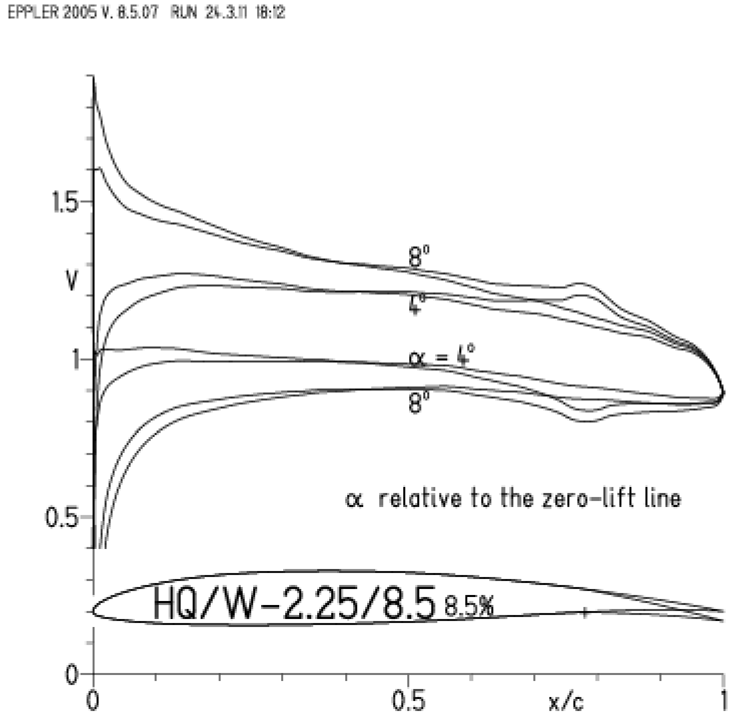


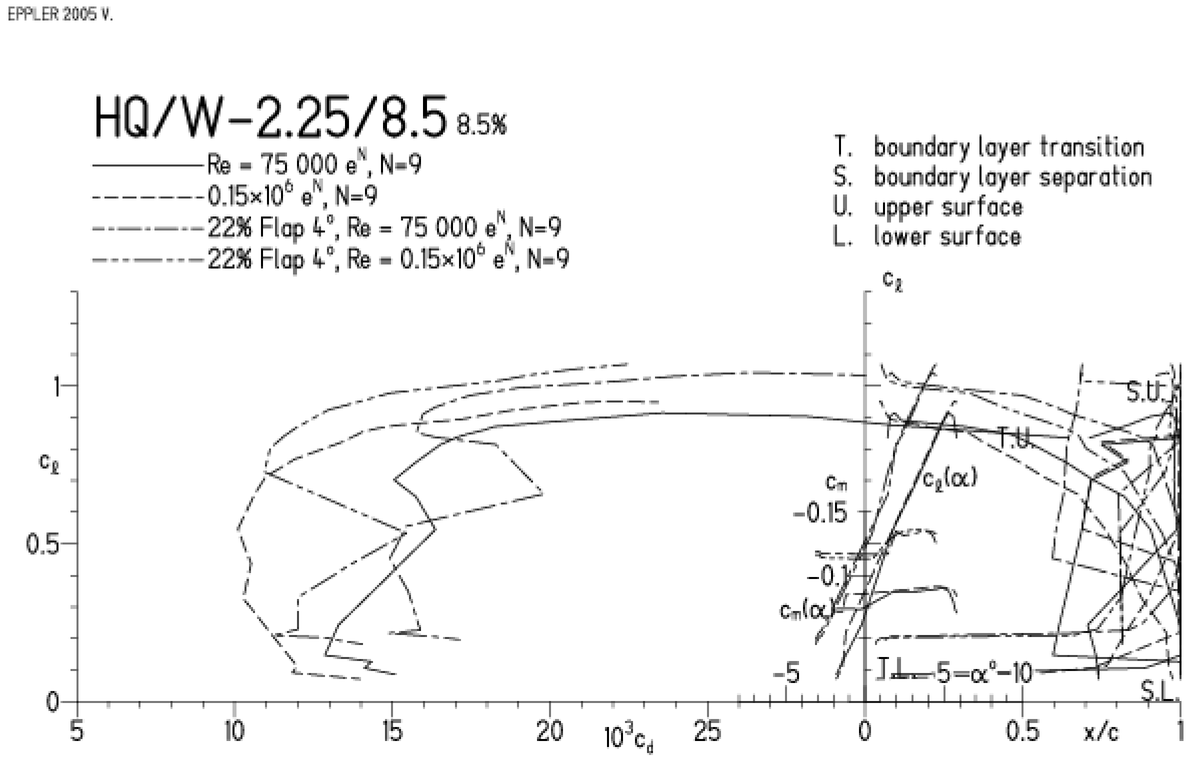
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag





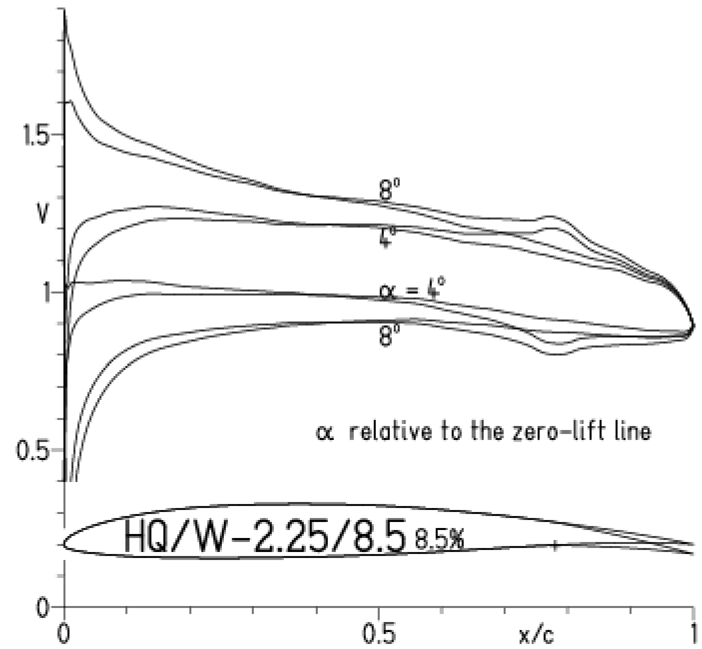
HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag



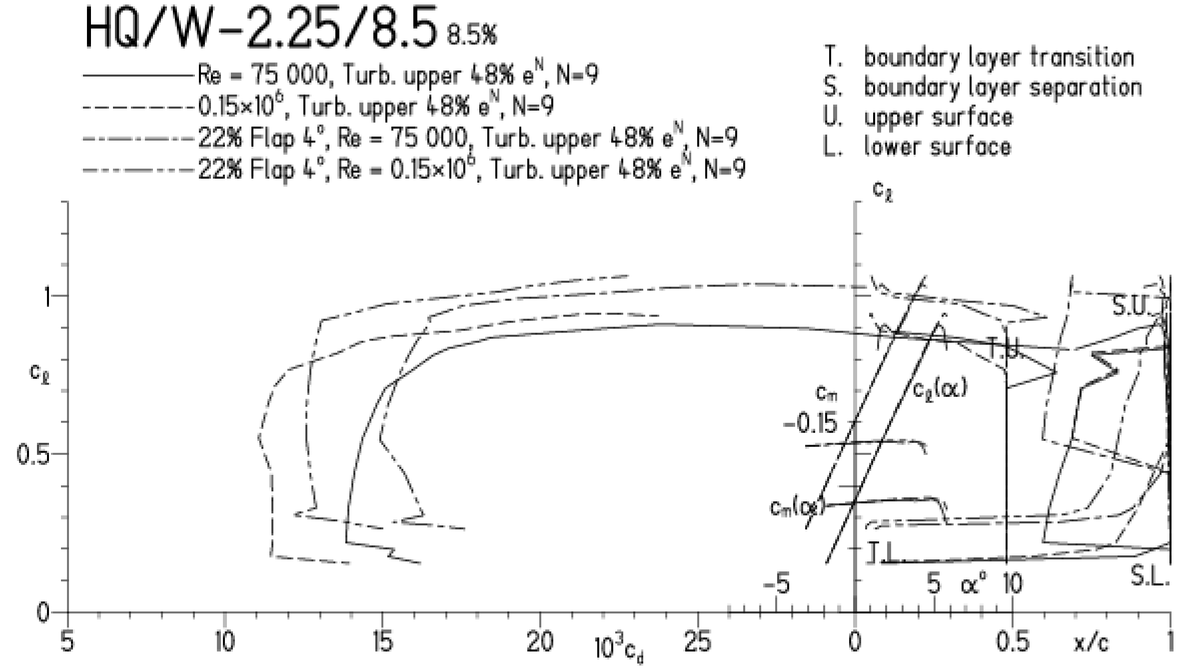


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

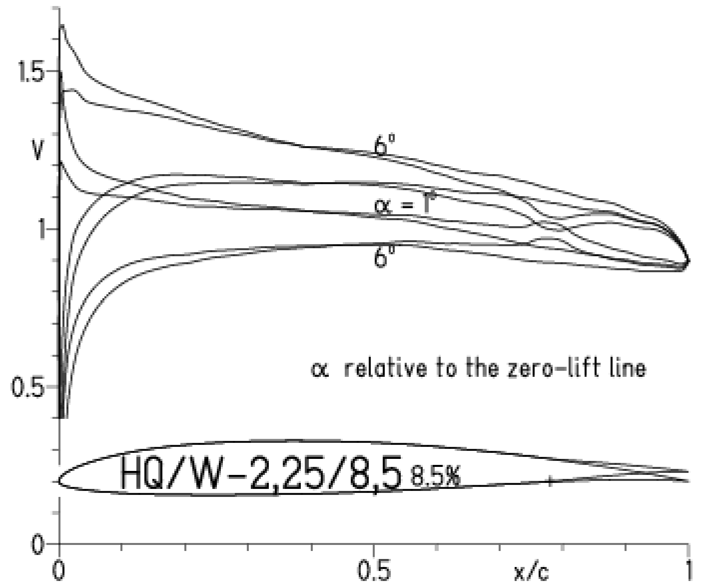


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

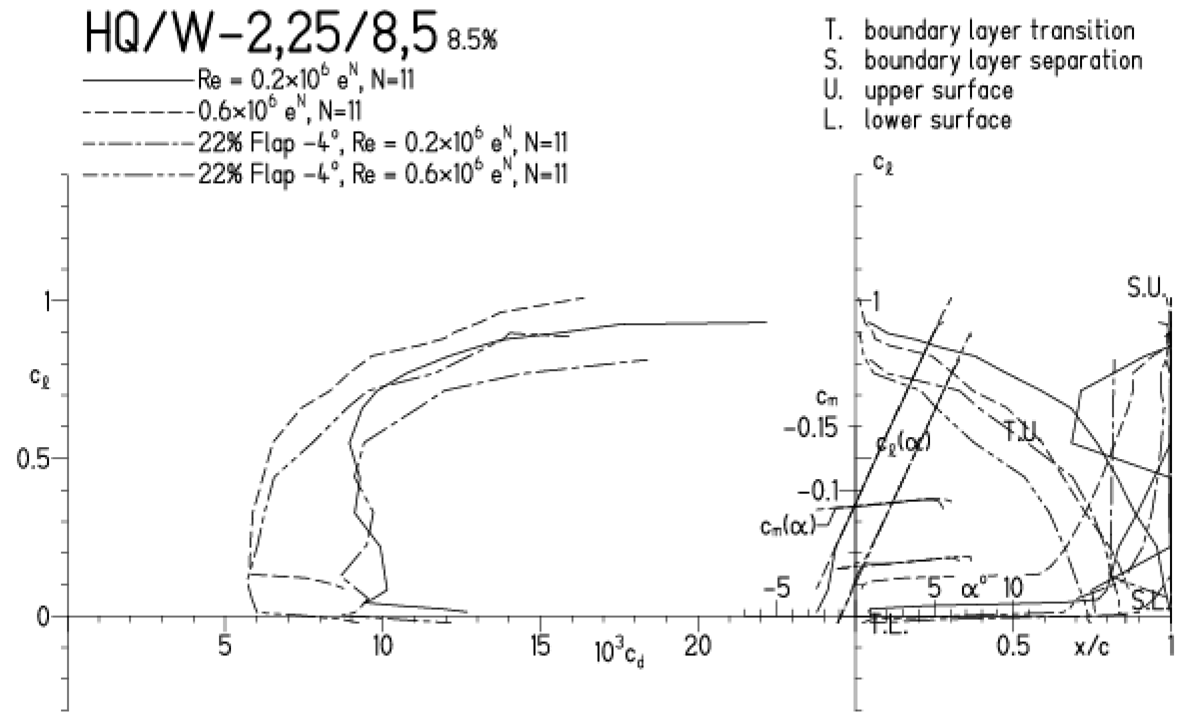


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

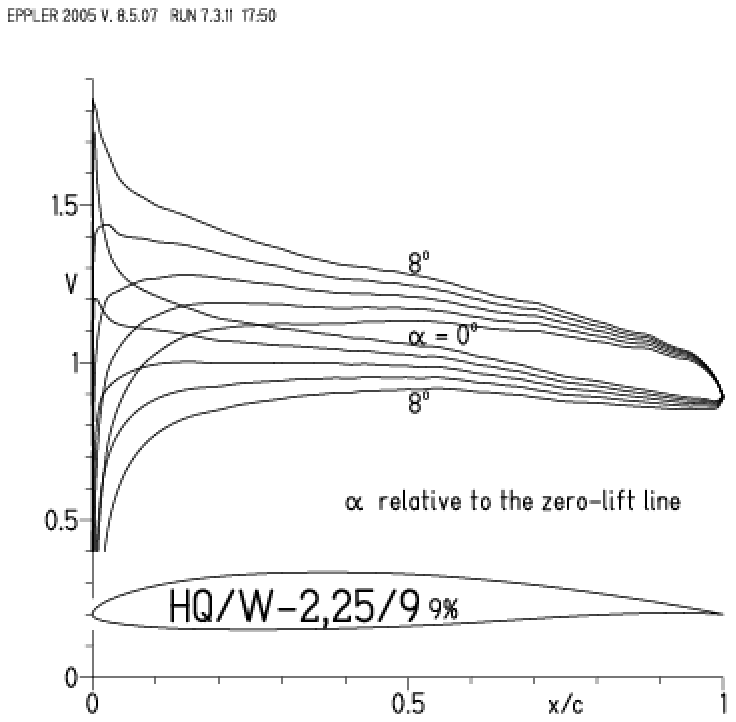
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

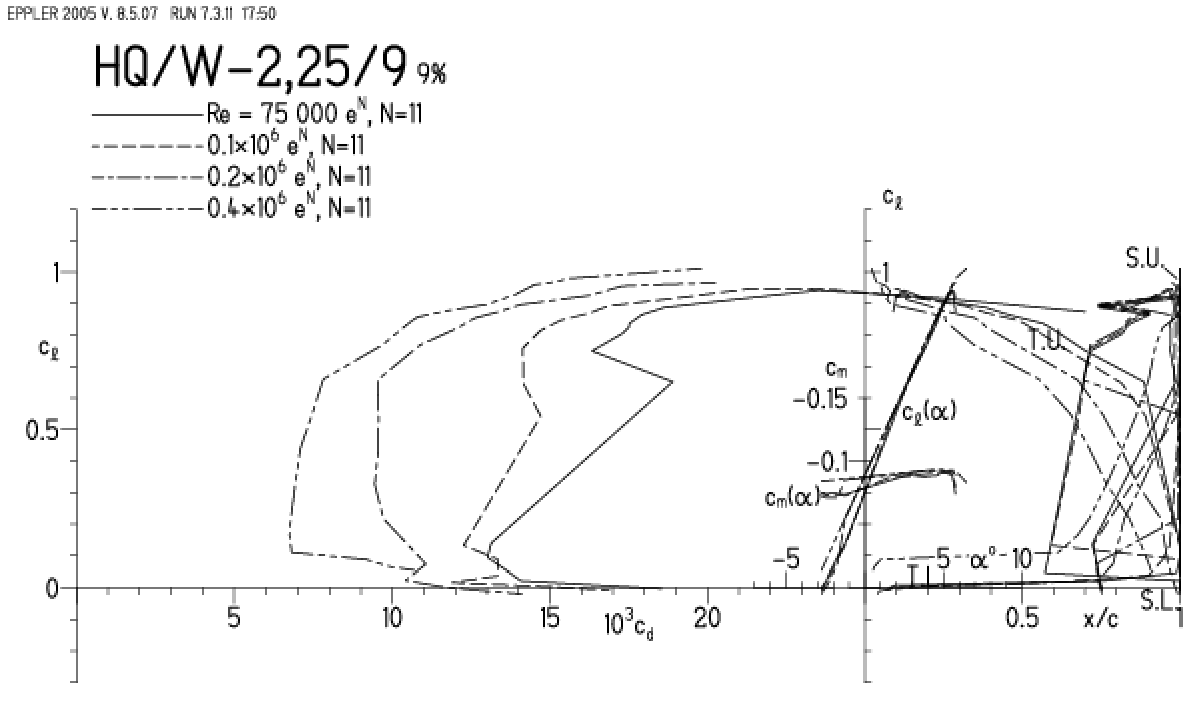


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

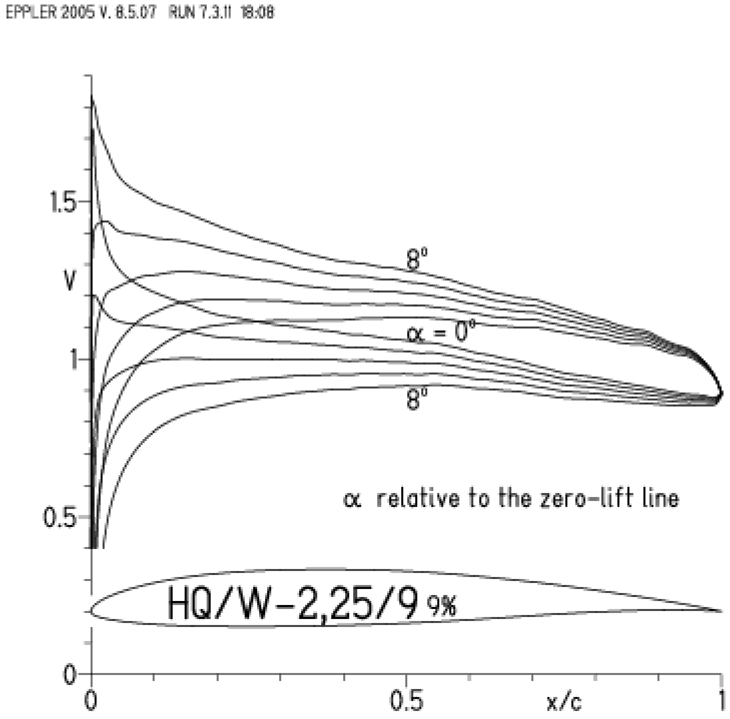


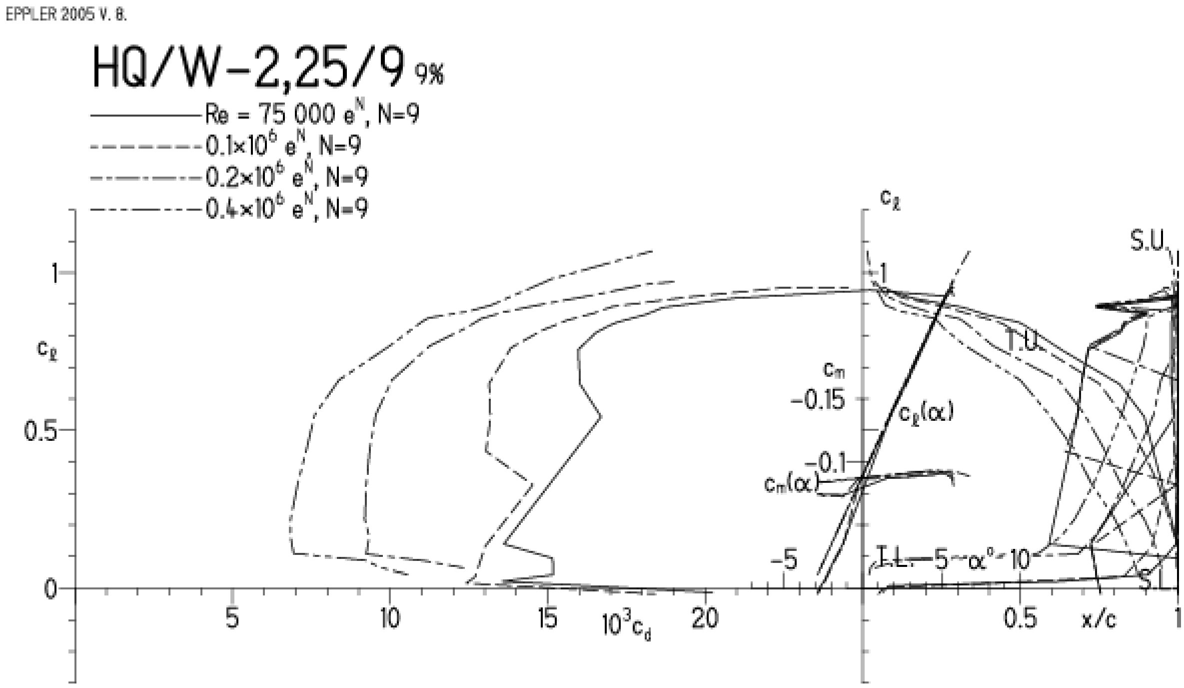
<u>HQ/W-2,25/9</u>, N=11



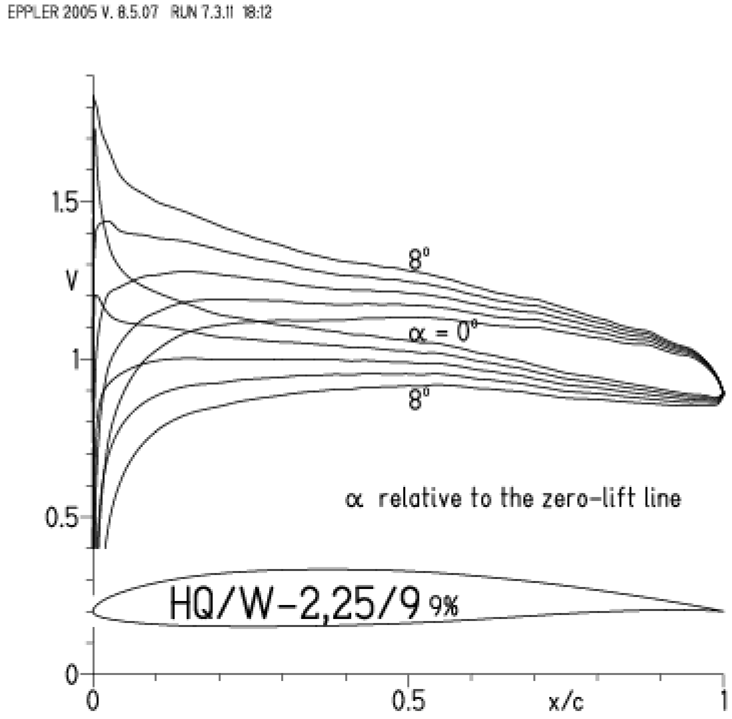


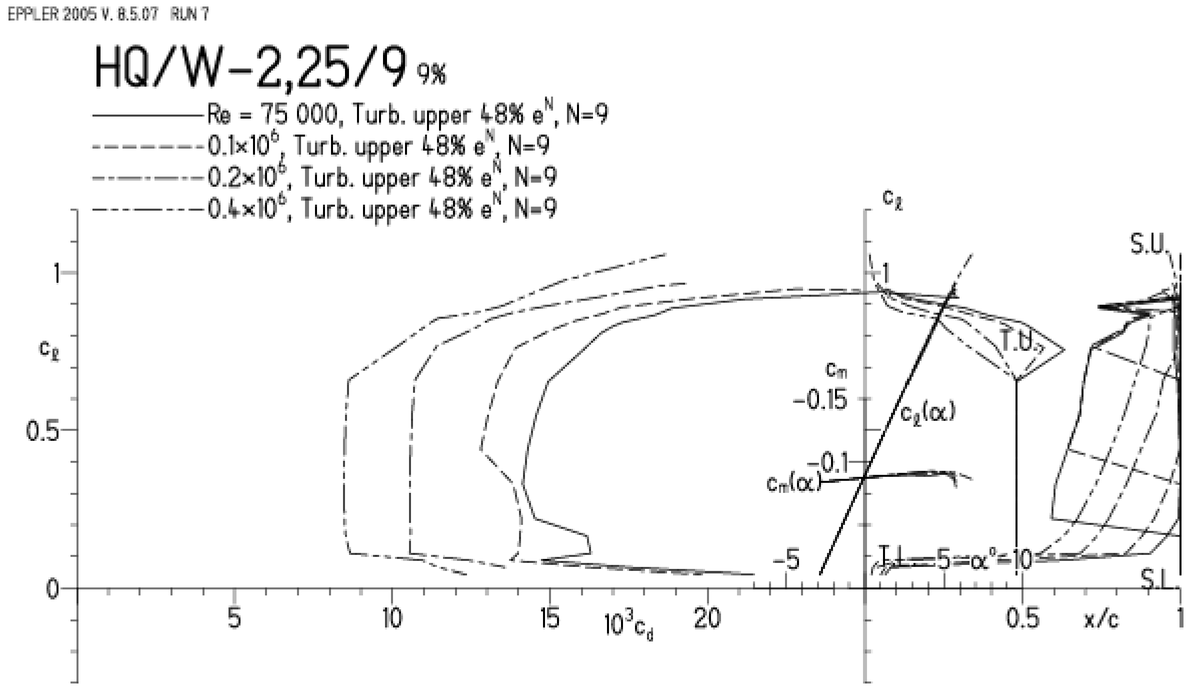
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
-5
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
5
α°
10
S.L.
0.5
x/c
1

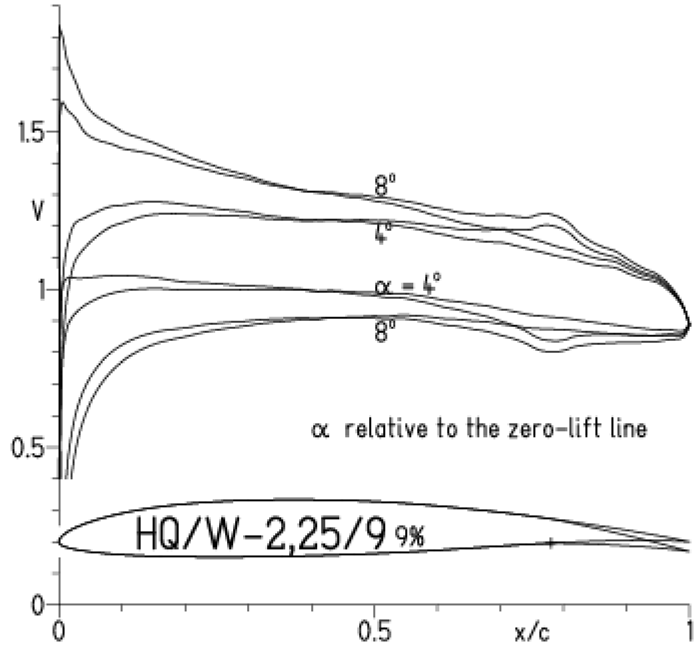
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



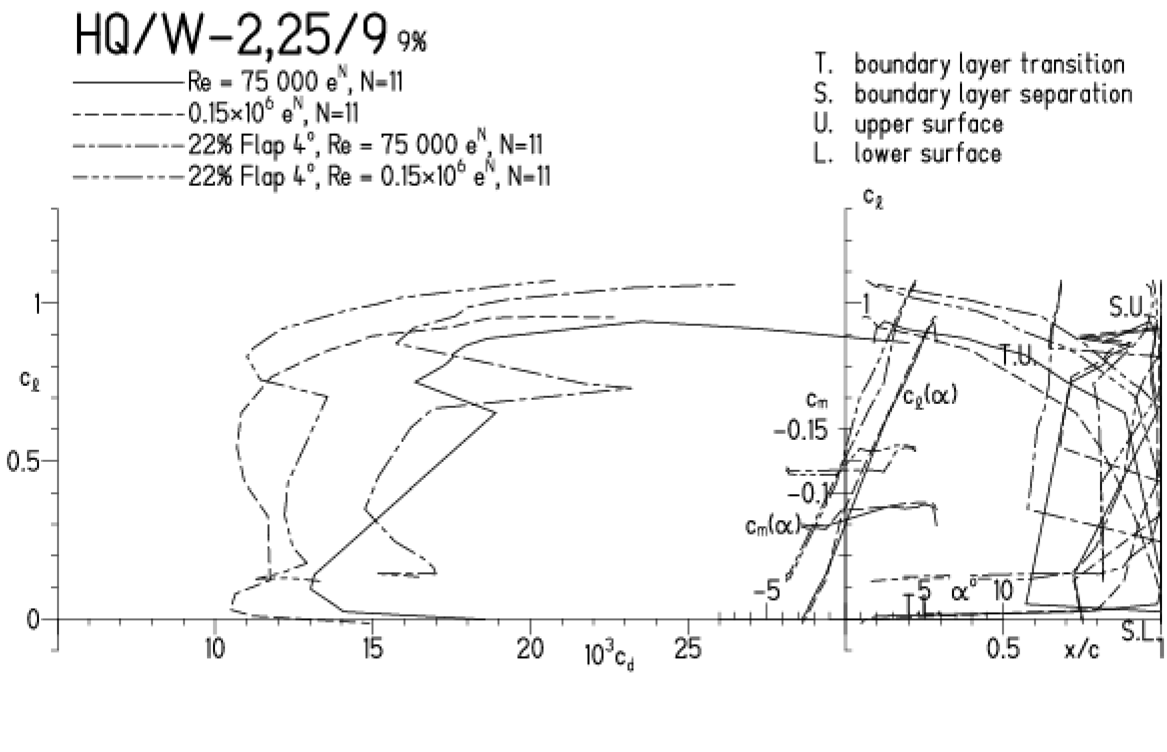


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

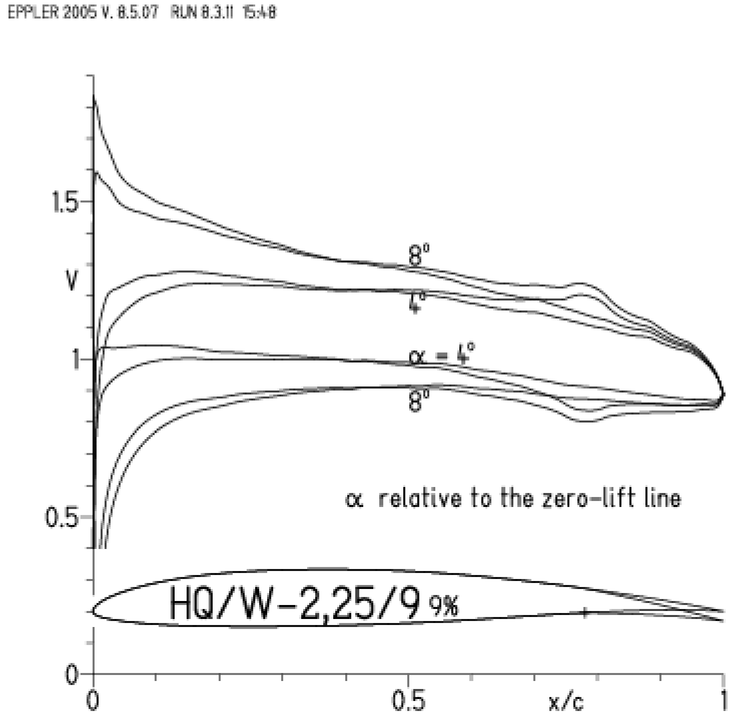
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

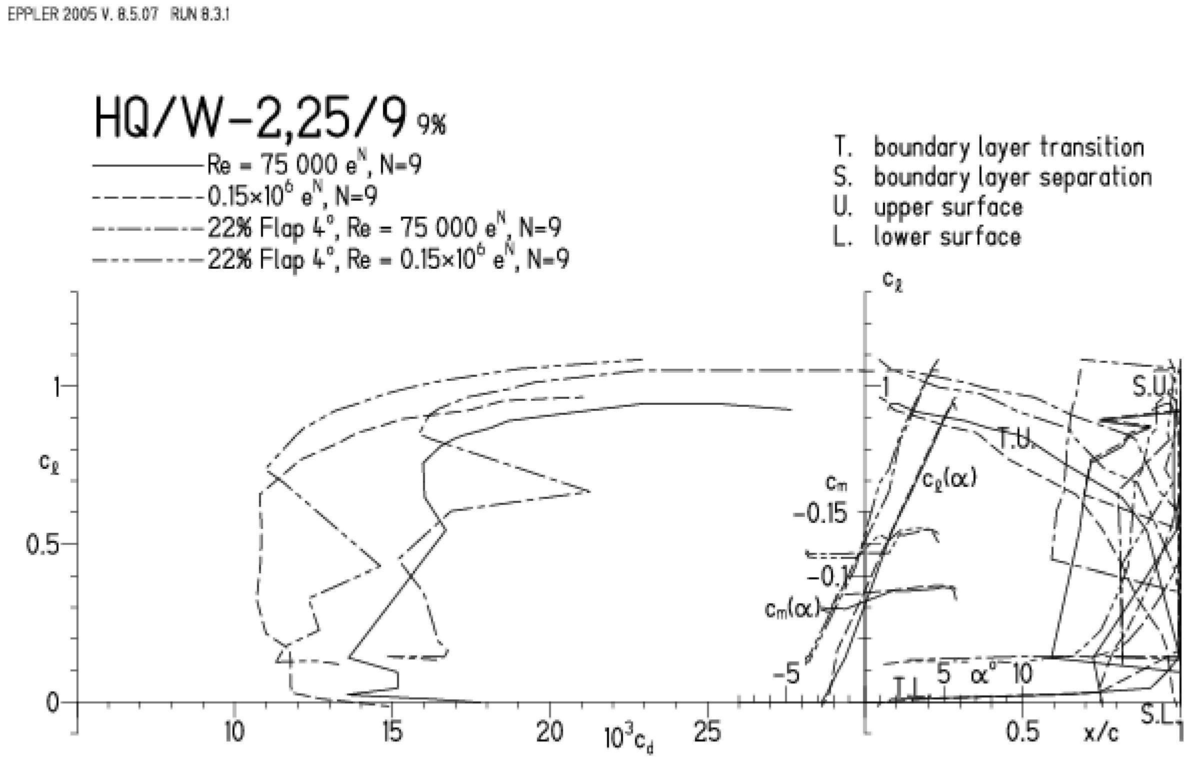


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



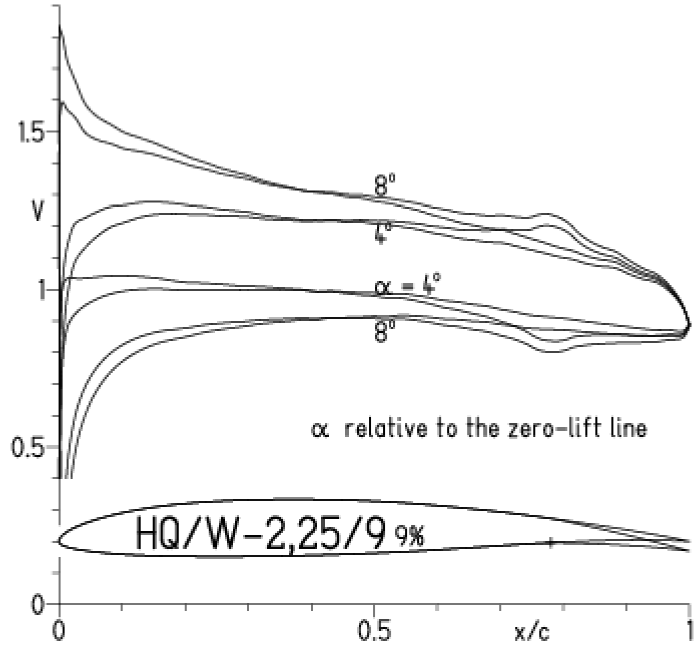
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



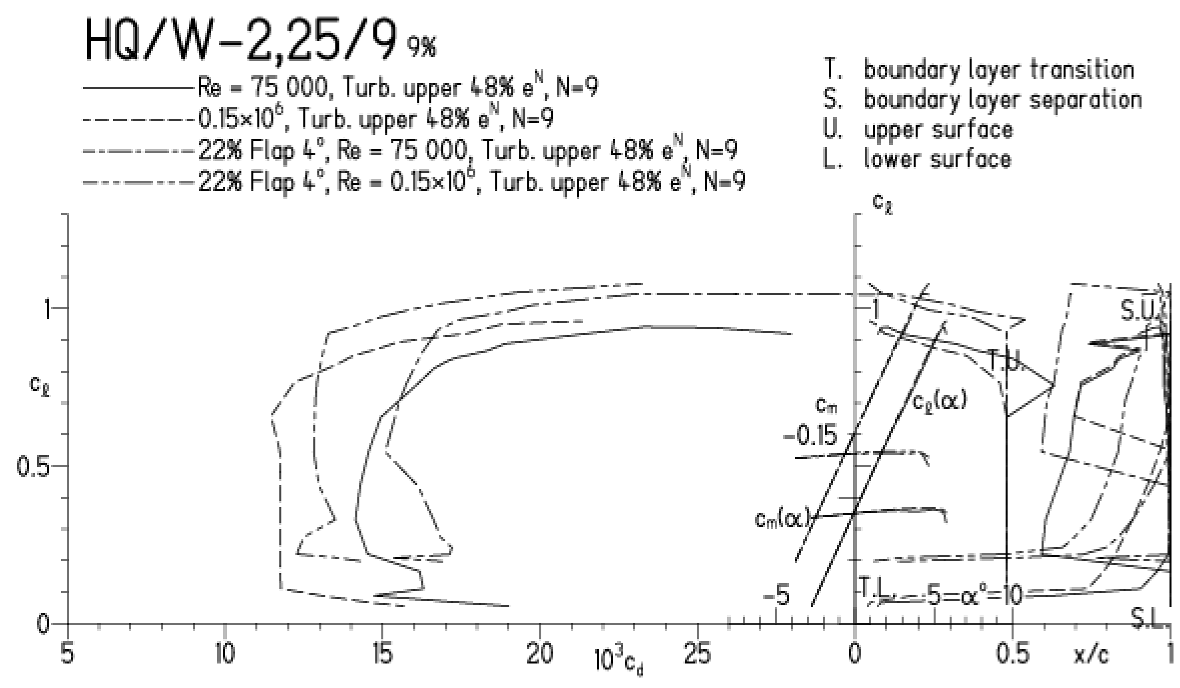


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

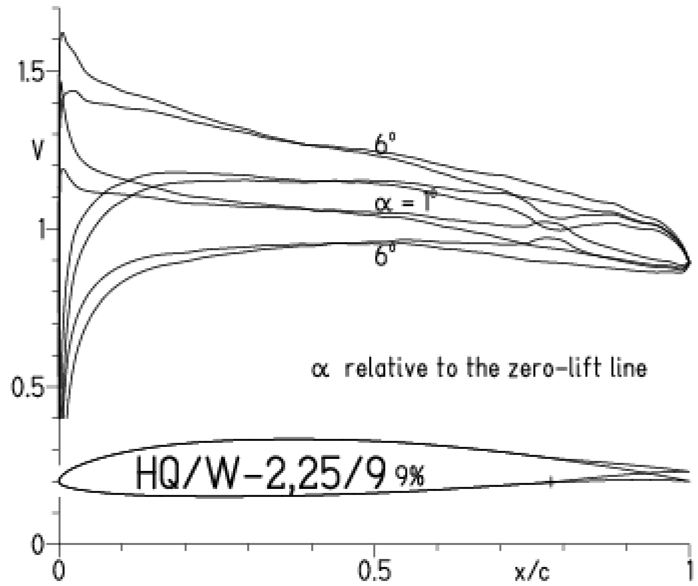


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

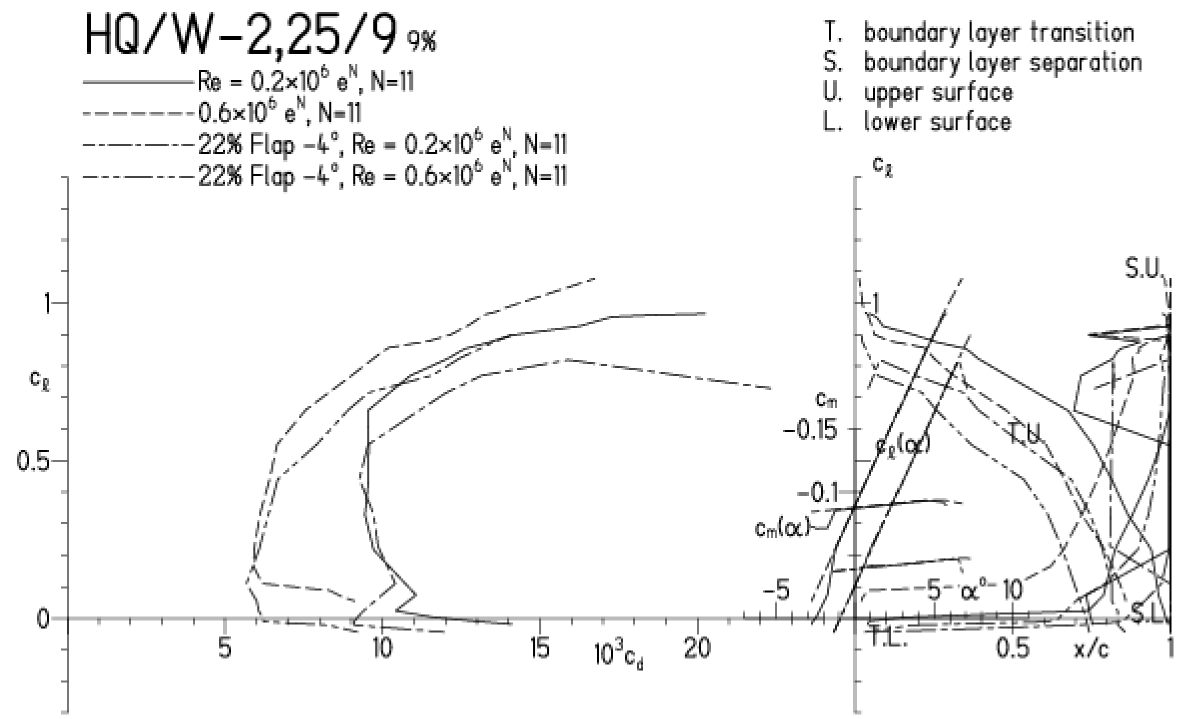


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

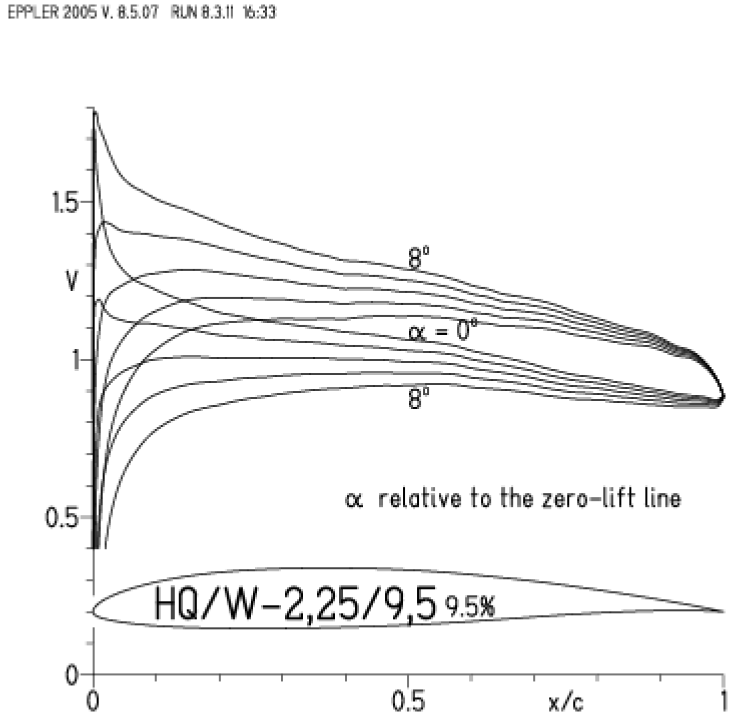
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

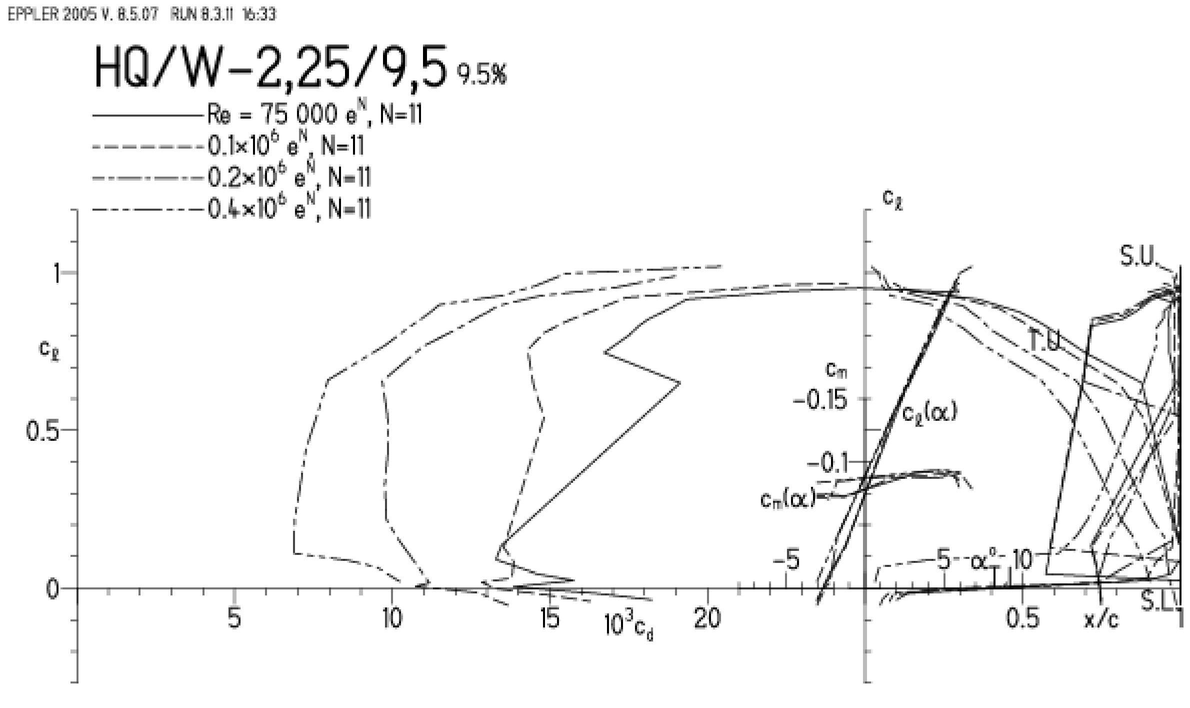


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



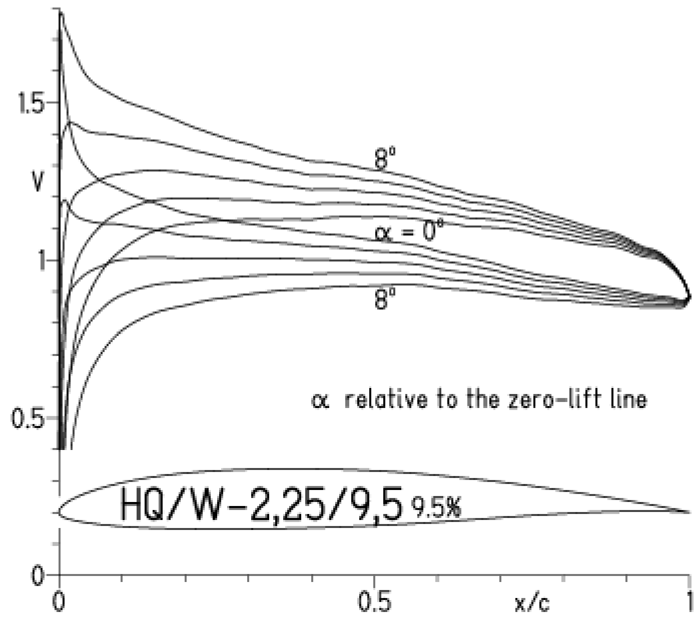
HQ/W-2,25/9,5, N=11



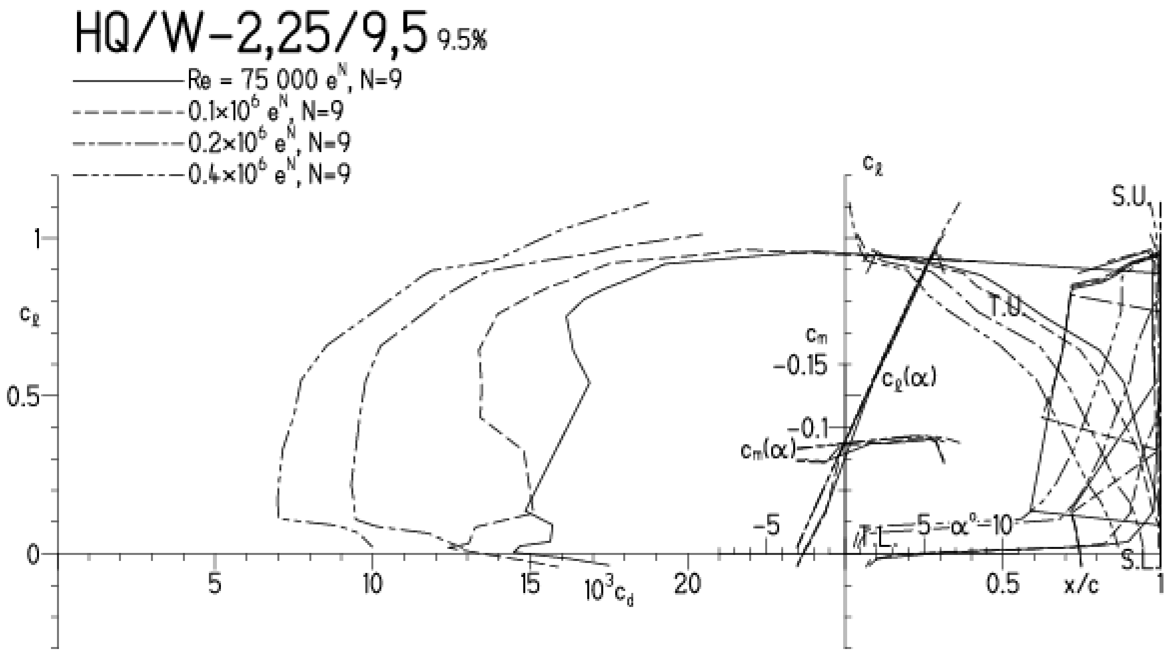


<u>HQ/W-2,25/9,5</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

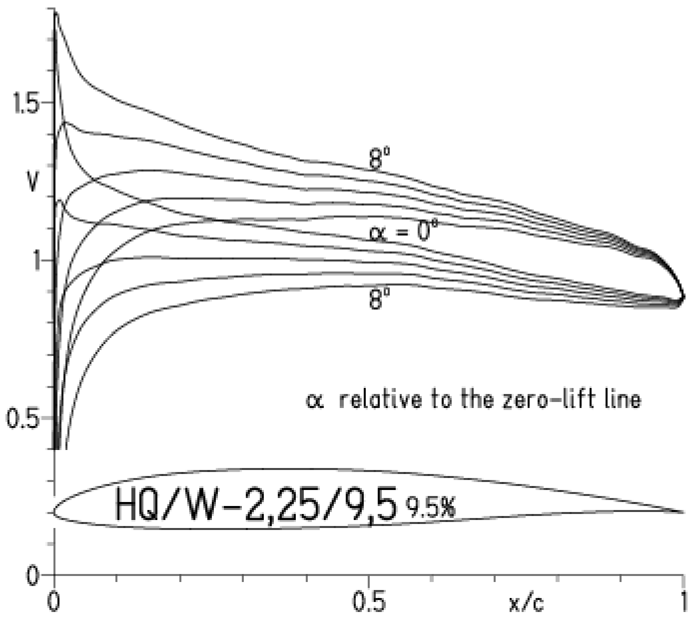


EPPLER 2005 V. 8.5.07 RUN 8.3.

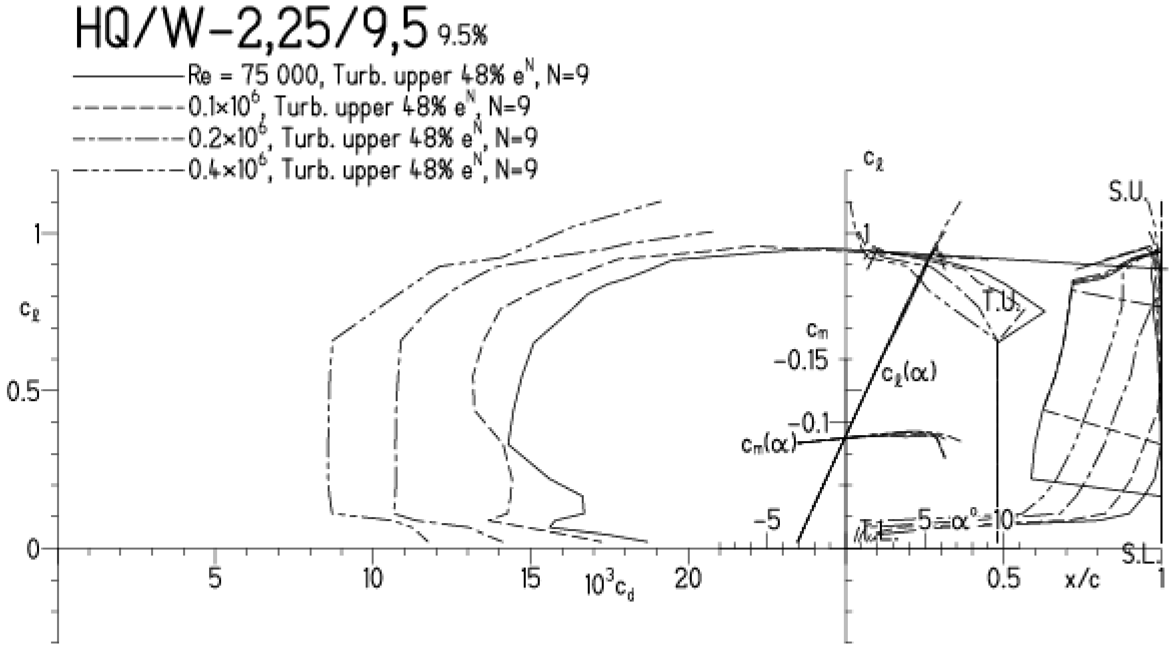


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

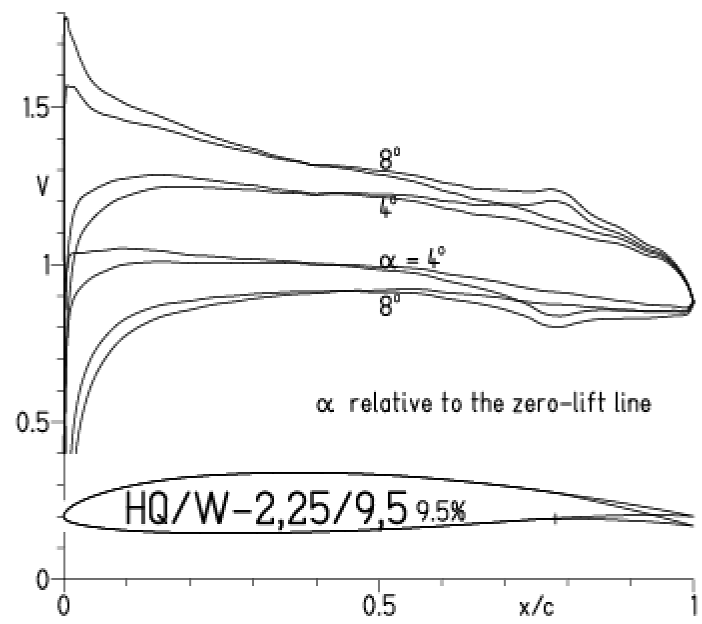


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

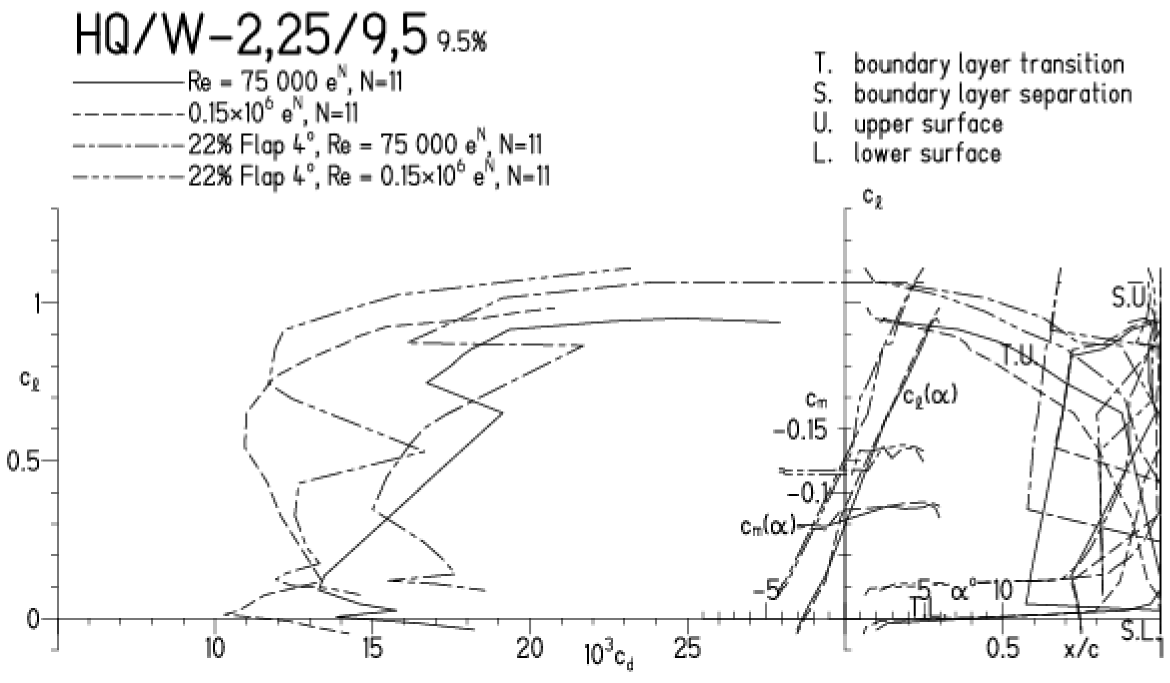


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

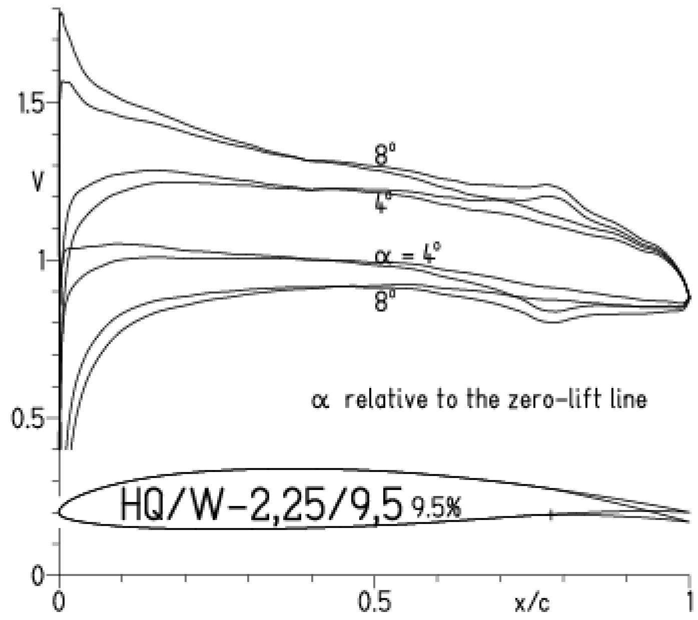


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

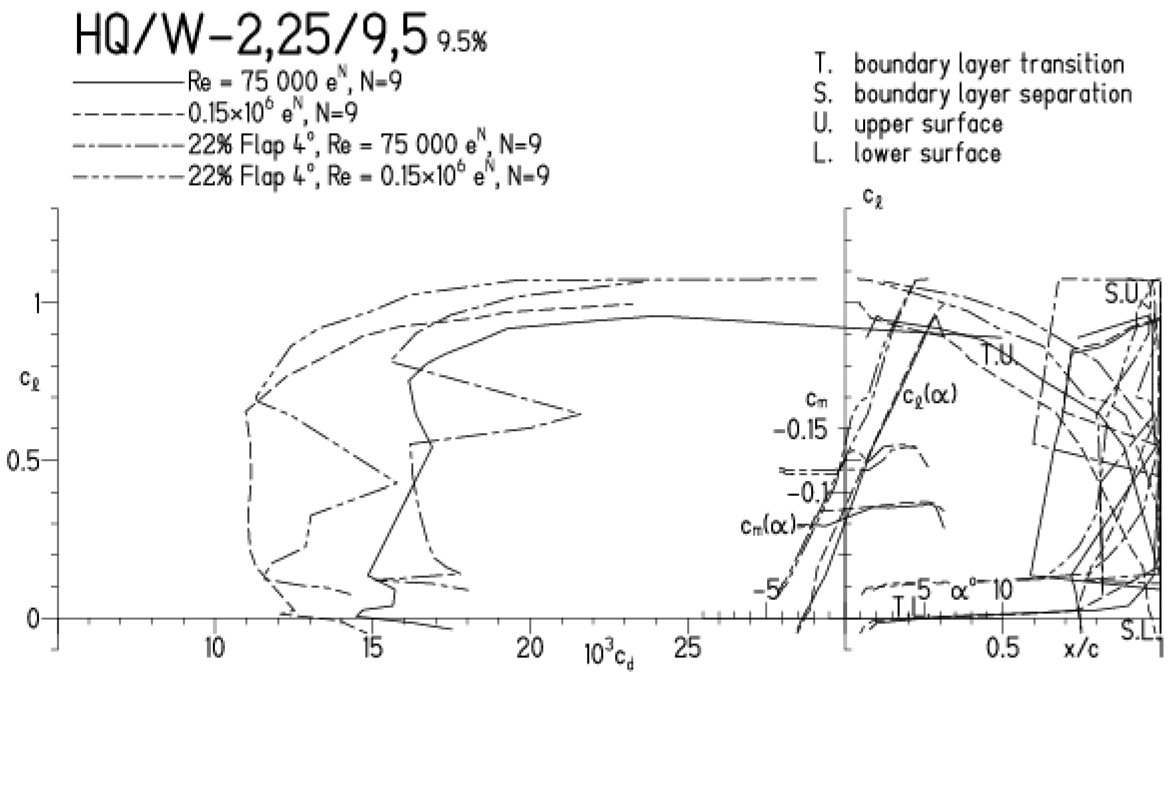


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

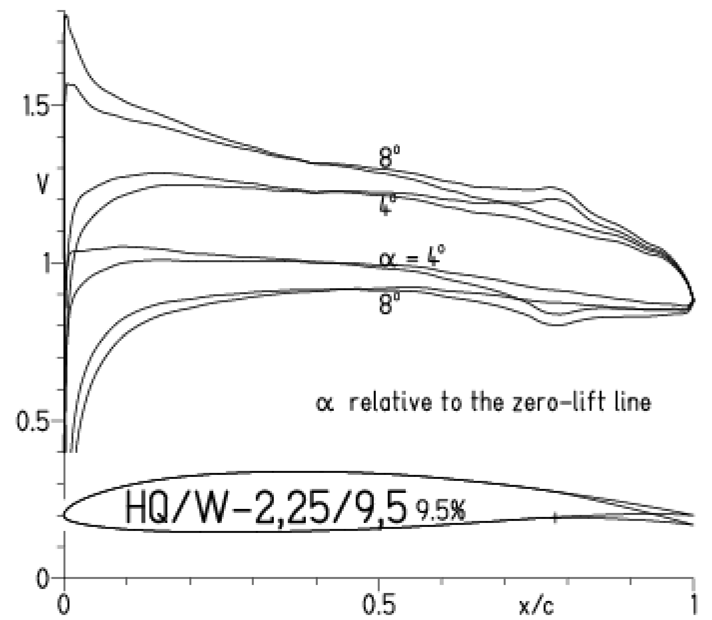


EPPLER 2005 V. 8.5.07 R

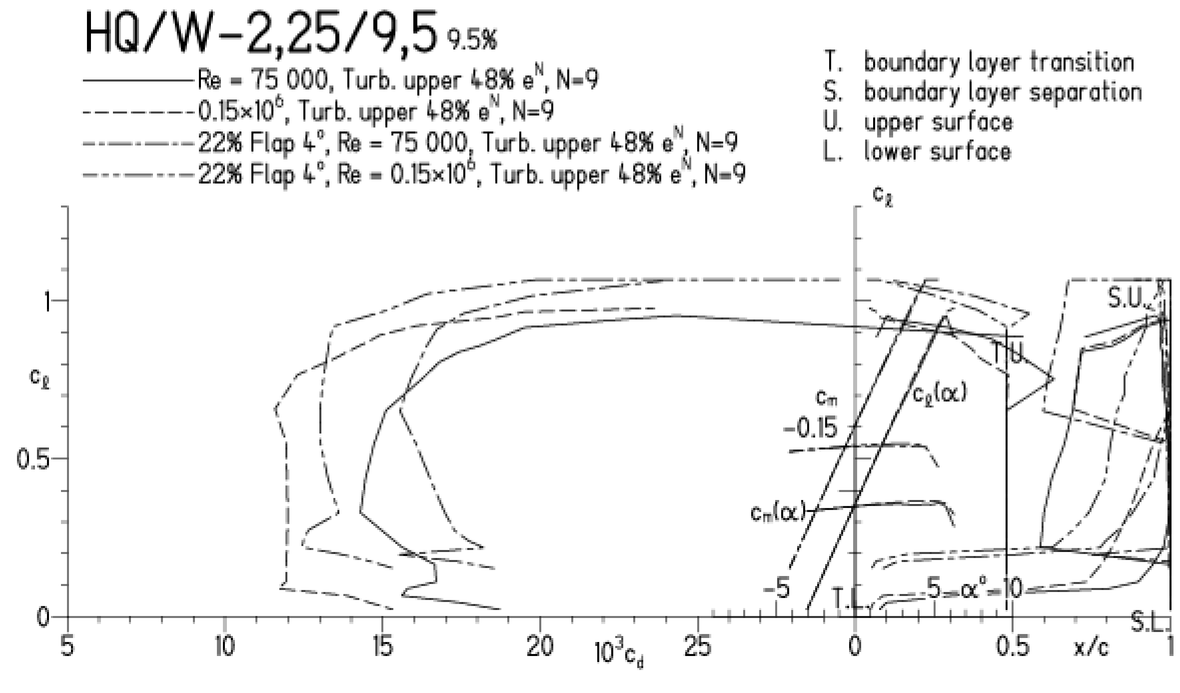


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

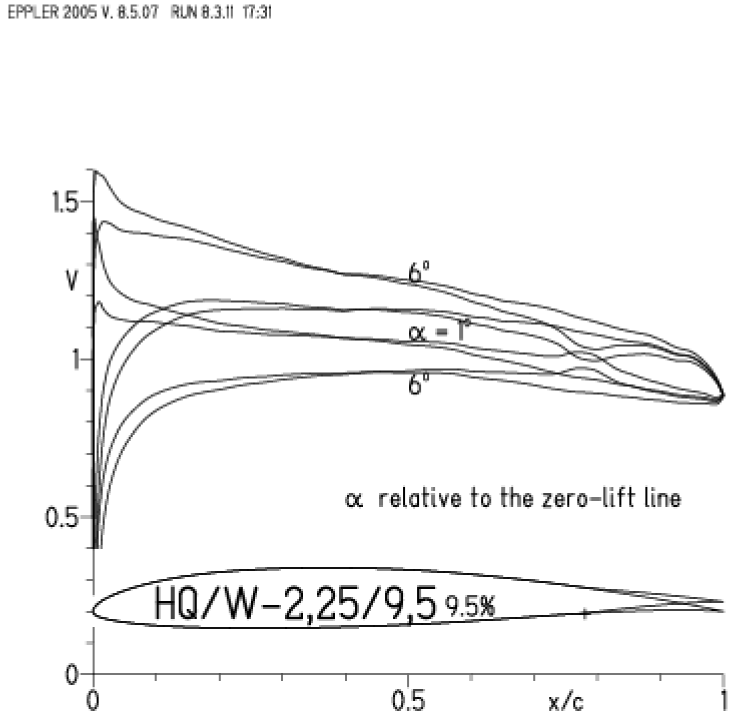
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

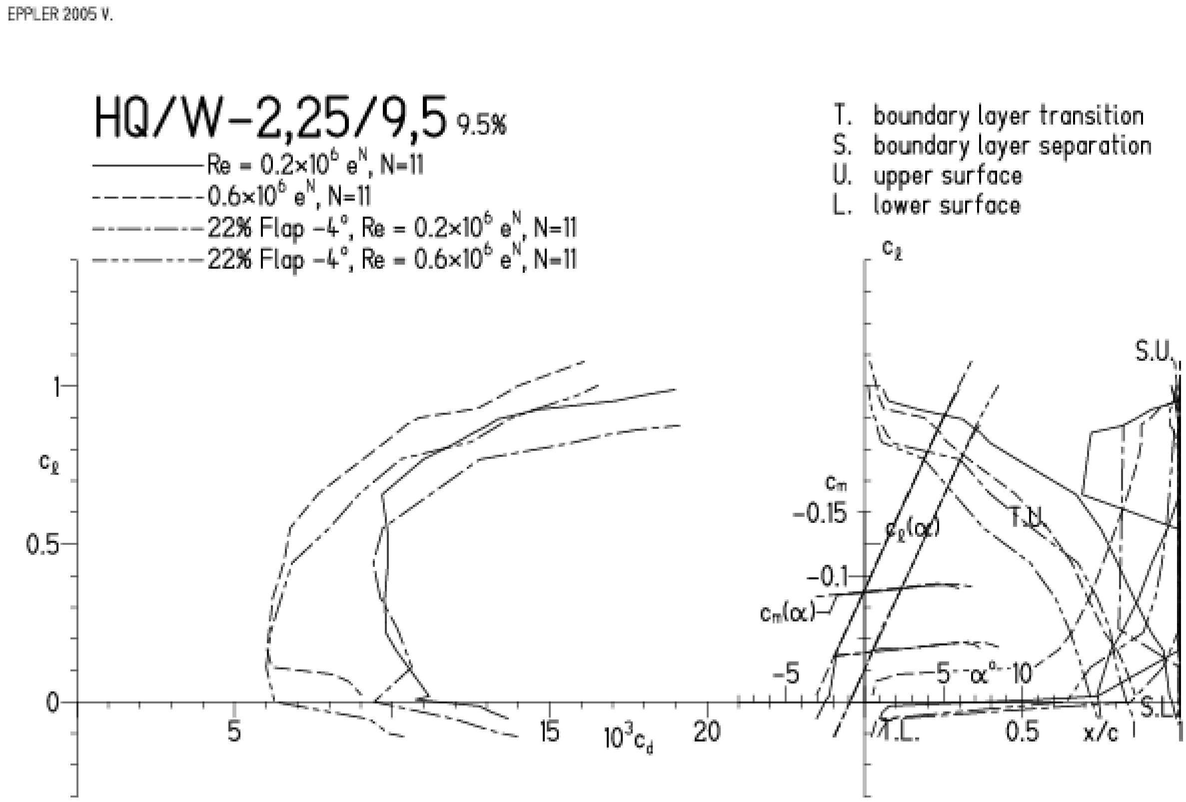


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



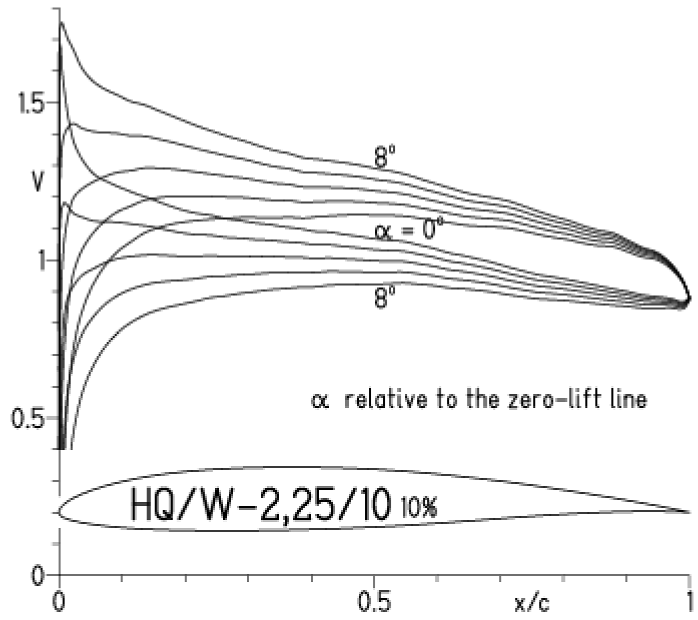
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



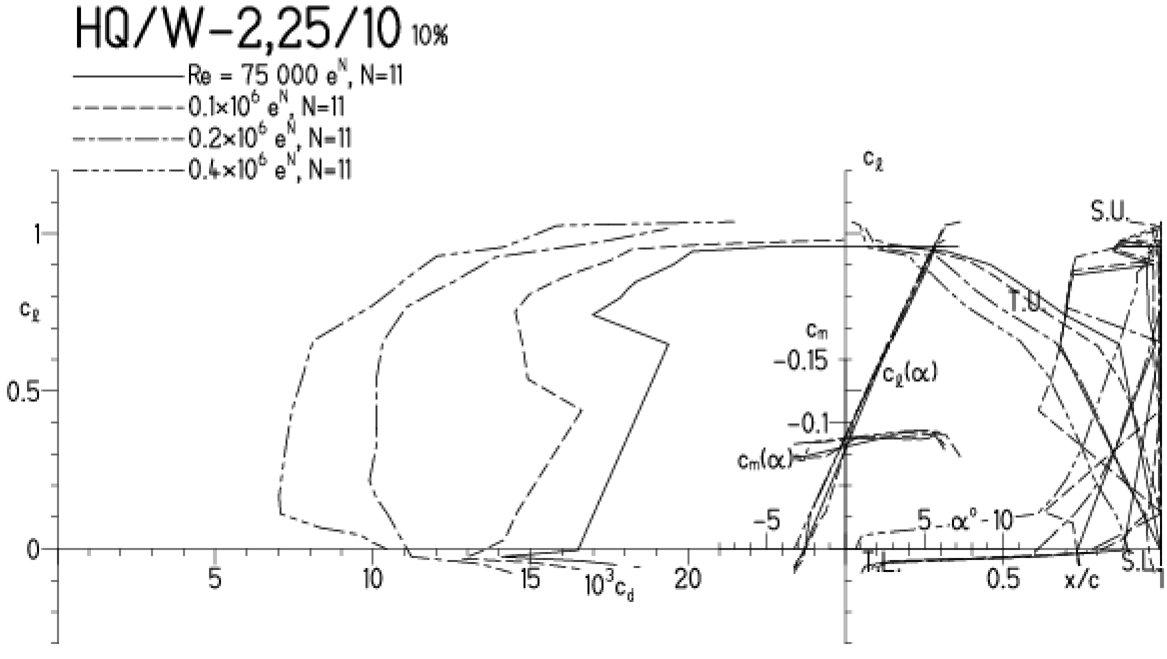


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

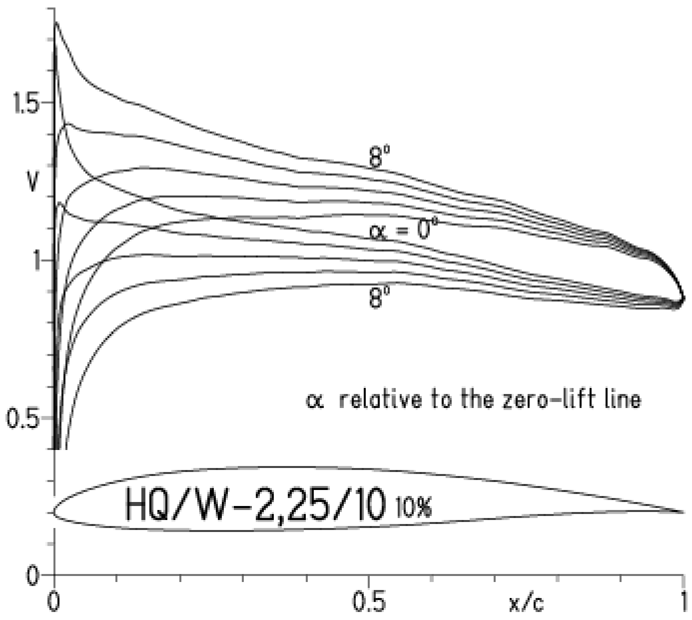


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

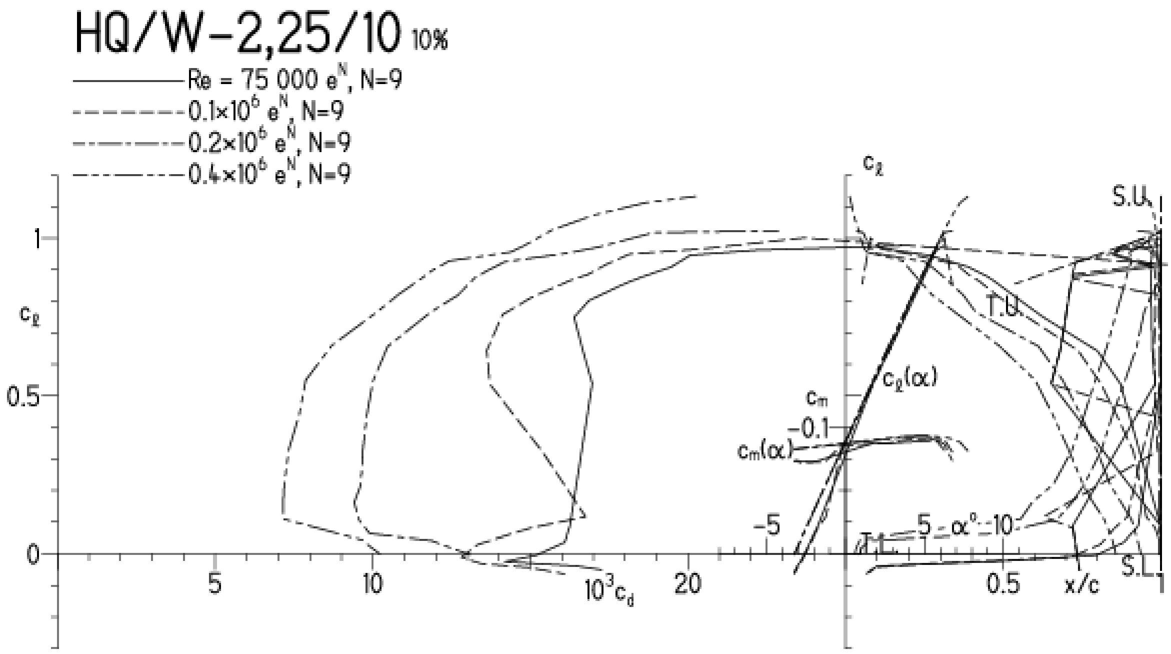


HQ/W-2,25/10, N=9

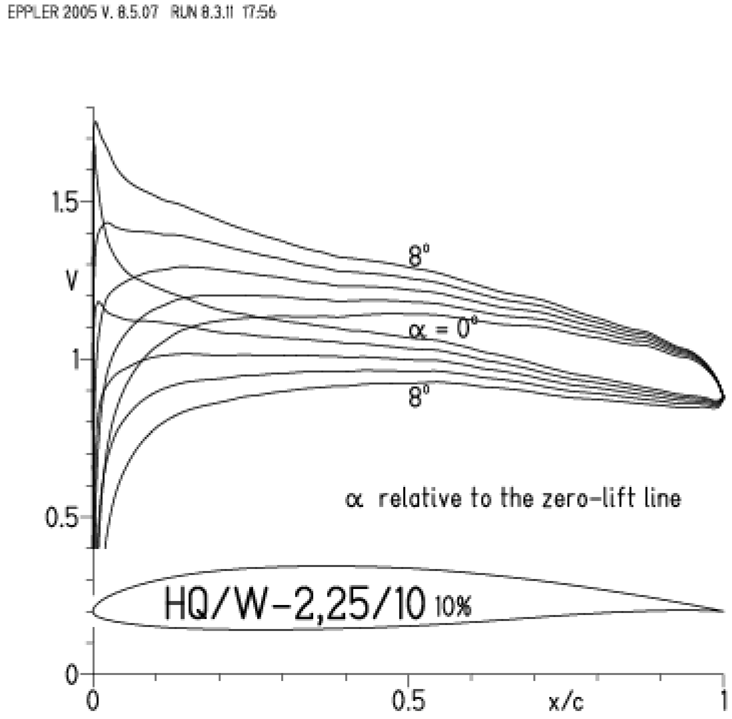
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

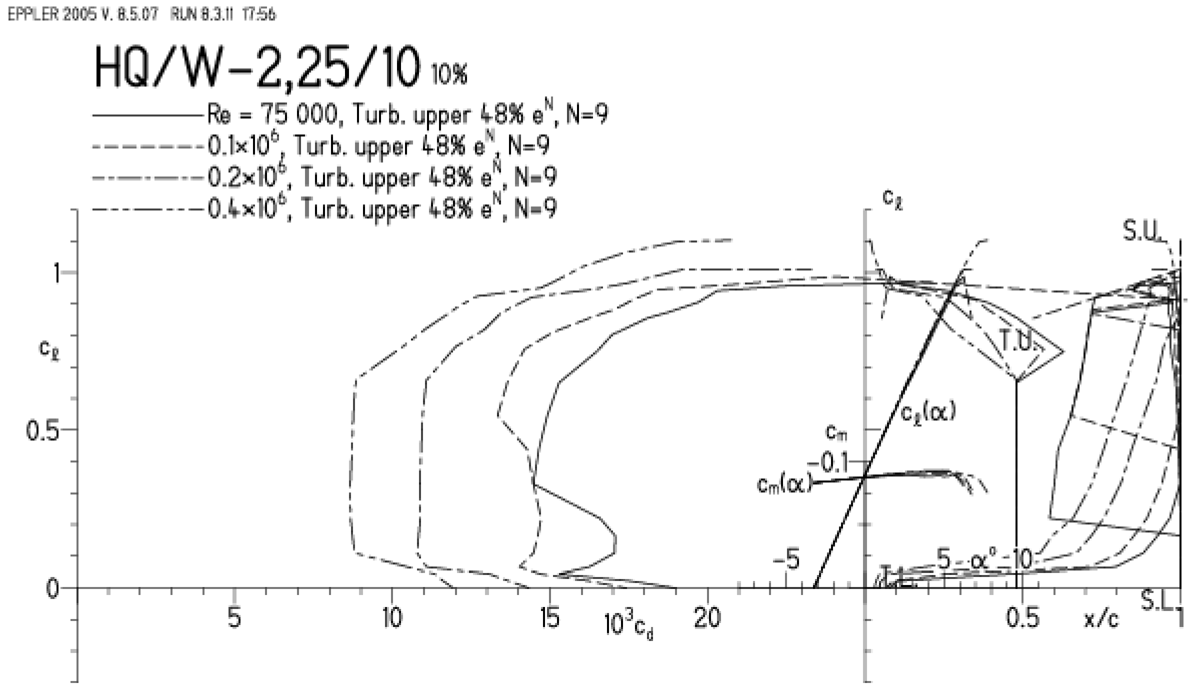


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



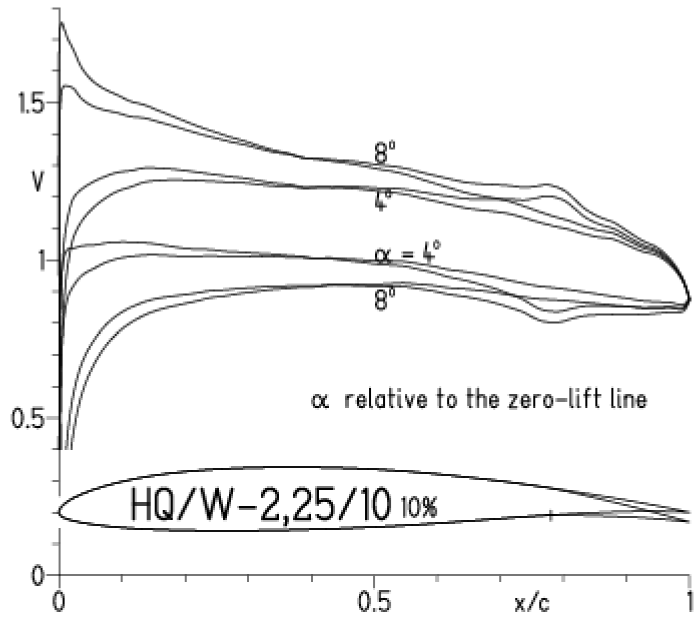
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



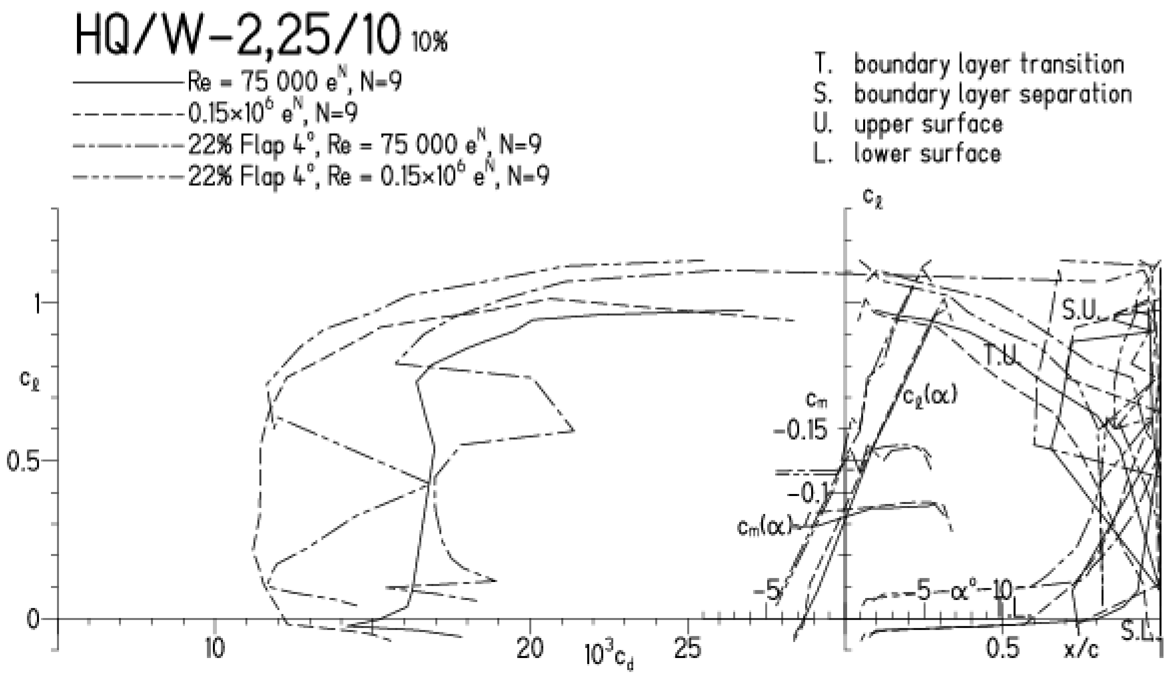


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

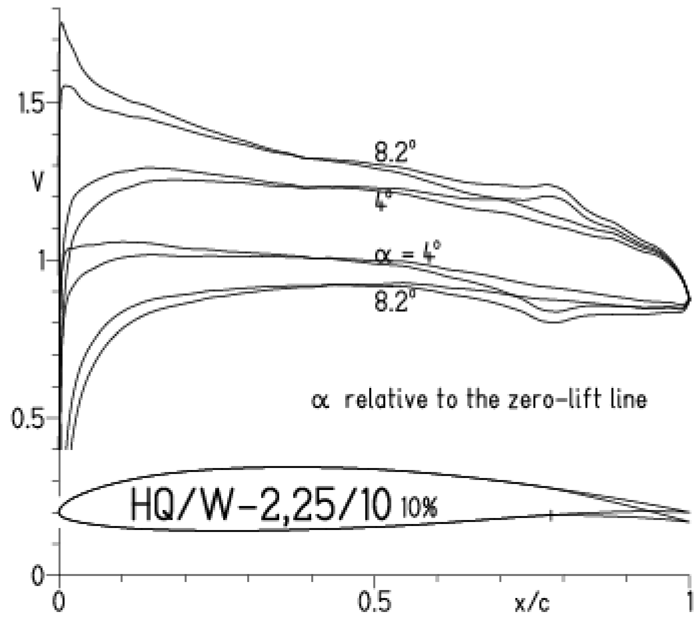


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

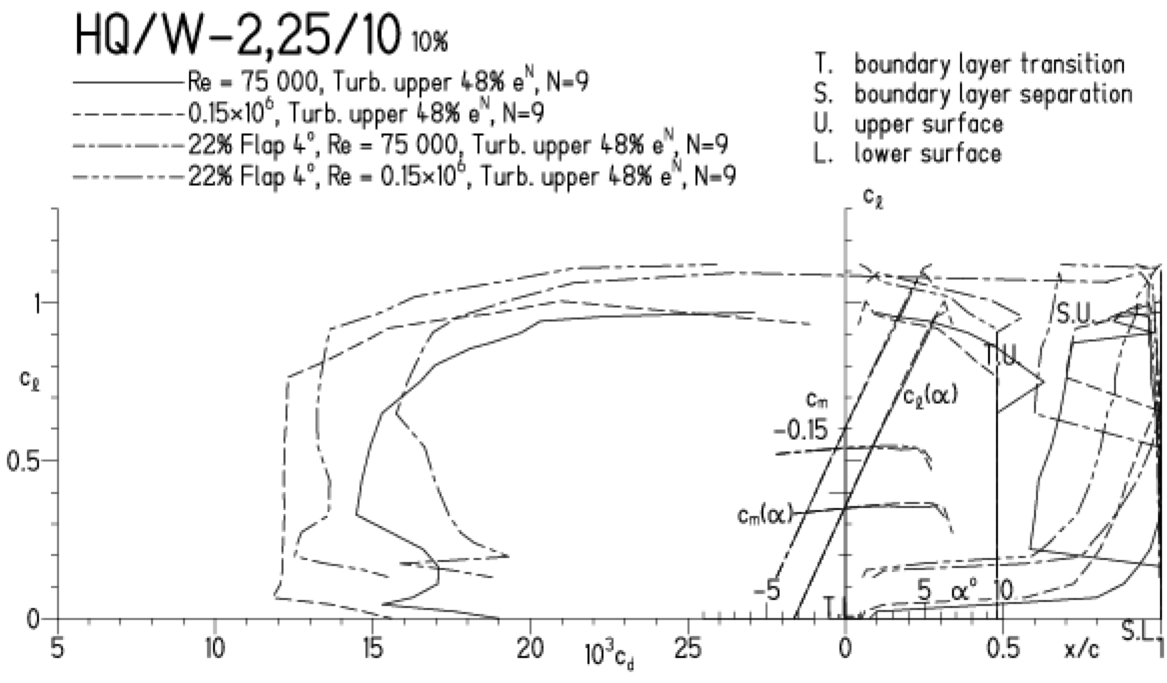


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

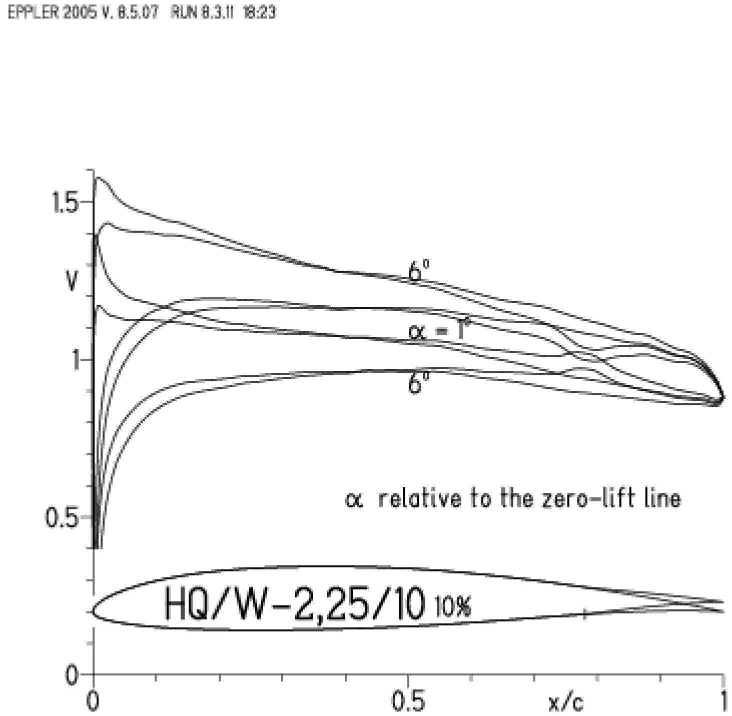
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

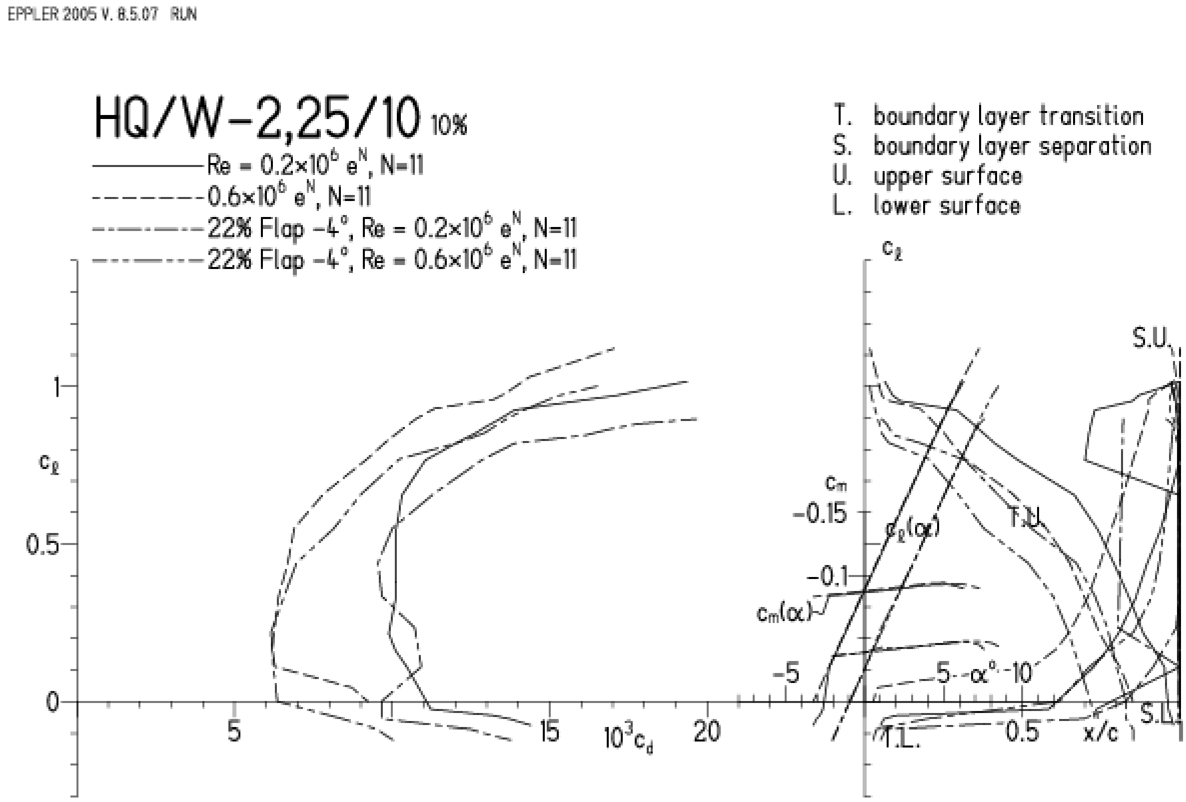


EPPLER 2005 V. 8.5.07 RUN 8.3



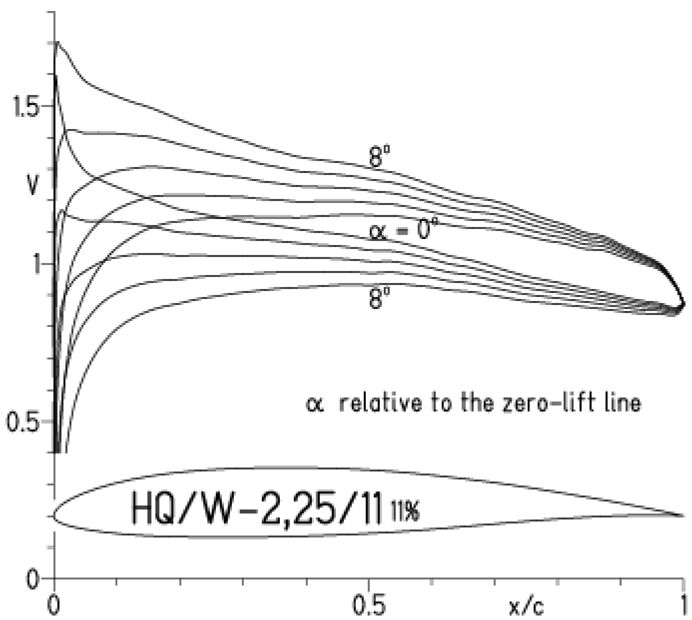
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



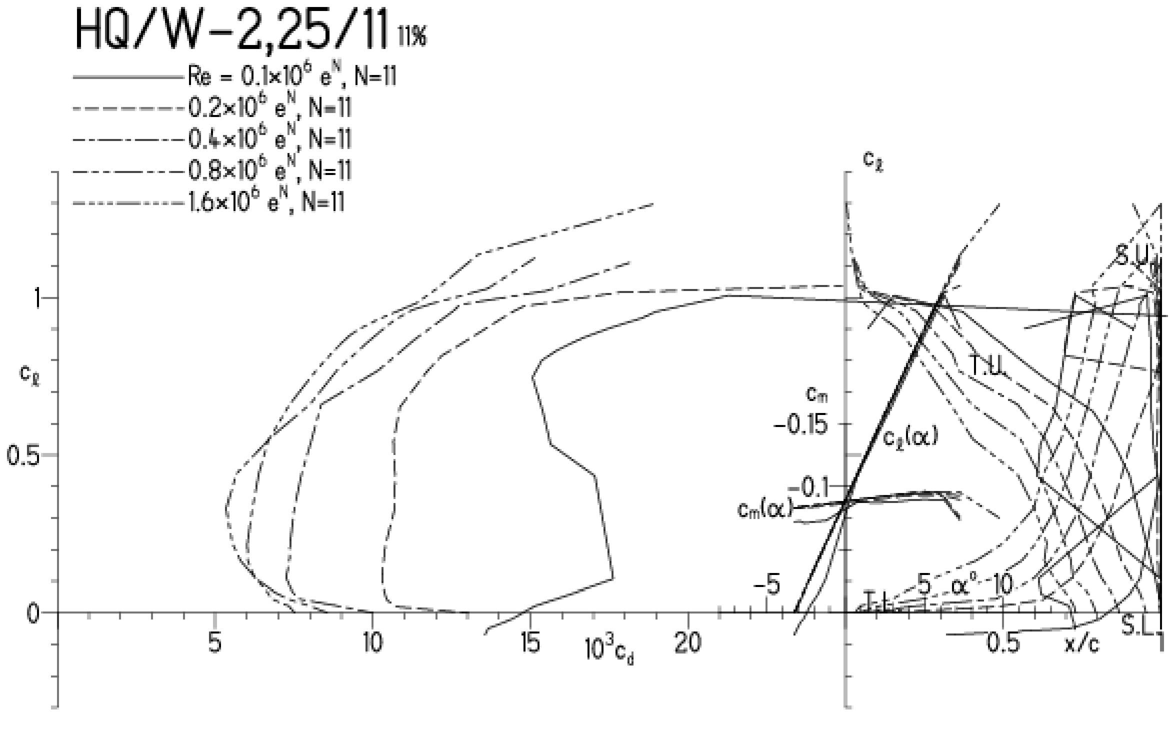


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

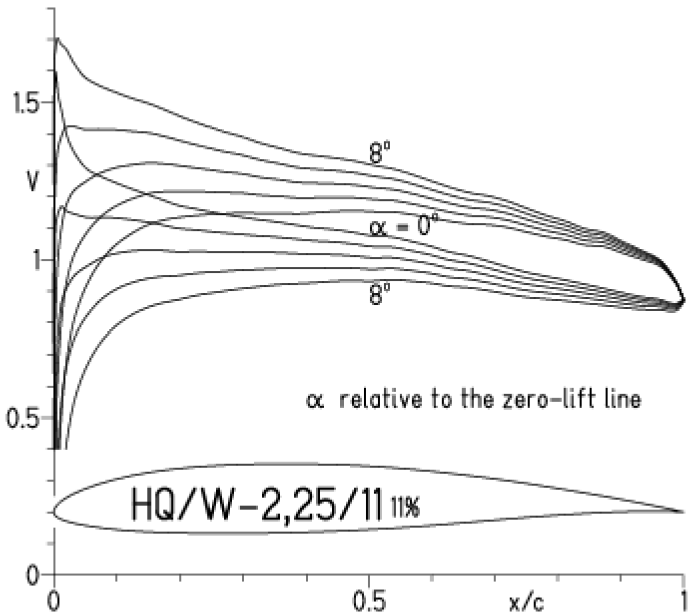


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

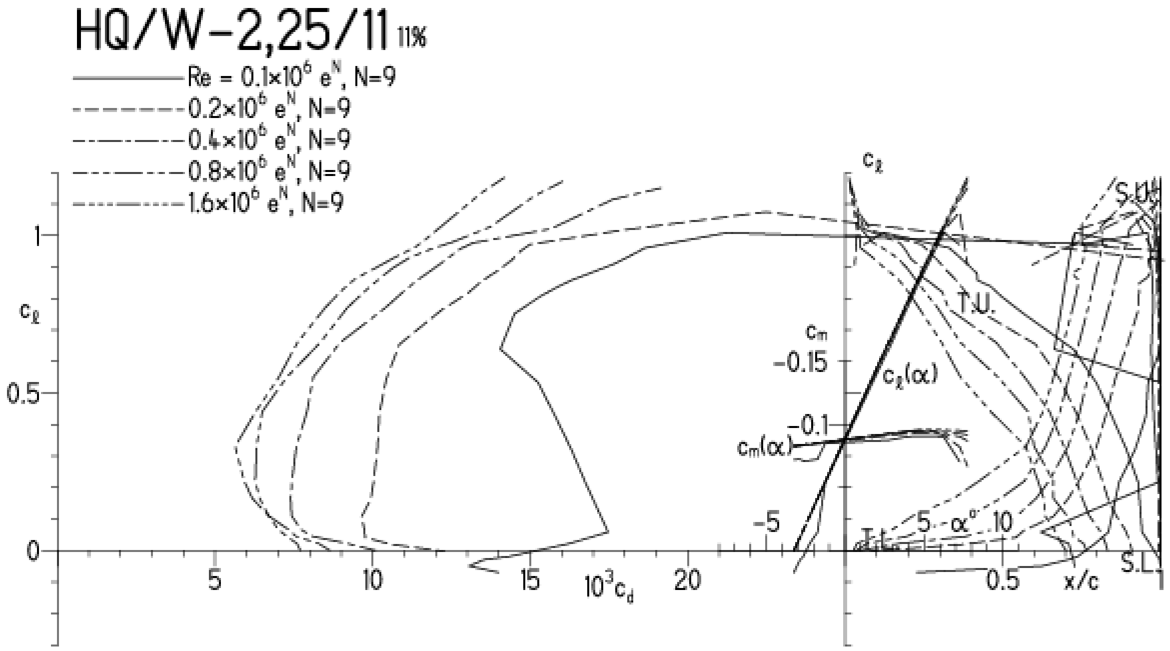


HQQ/W-2,25/11, N=9

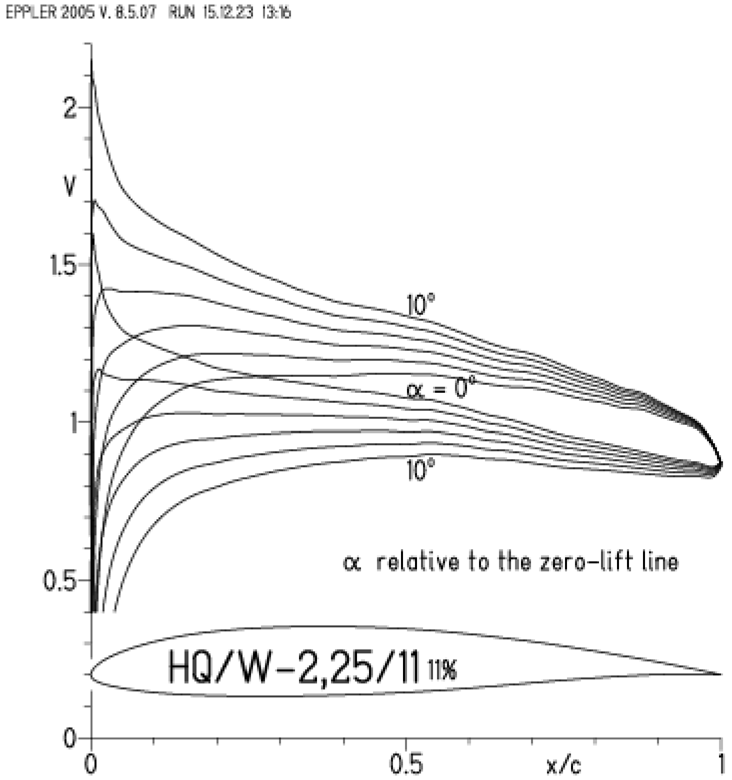
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

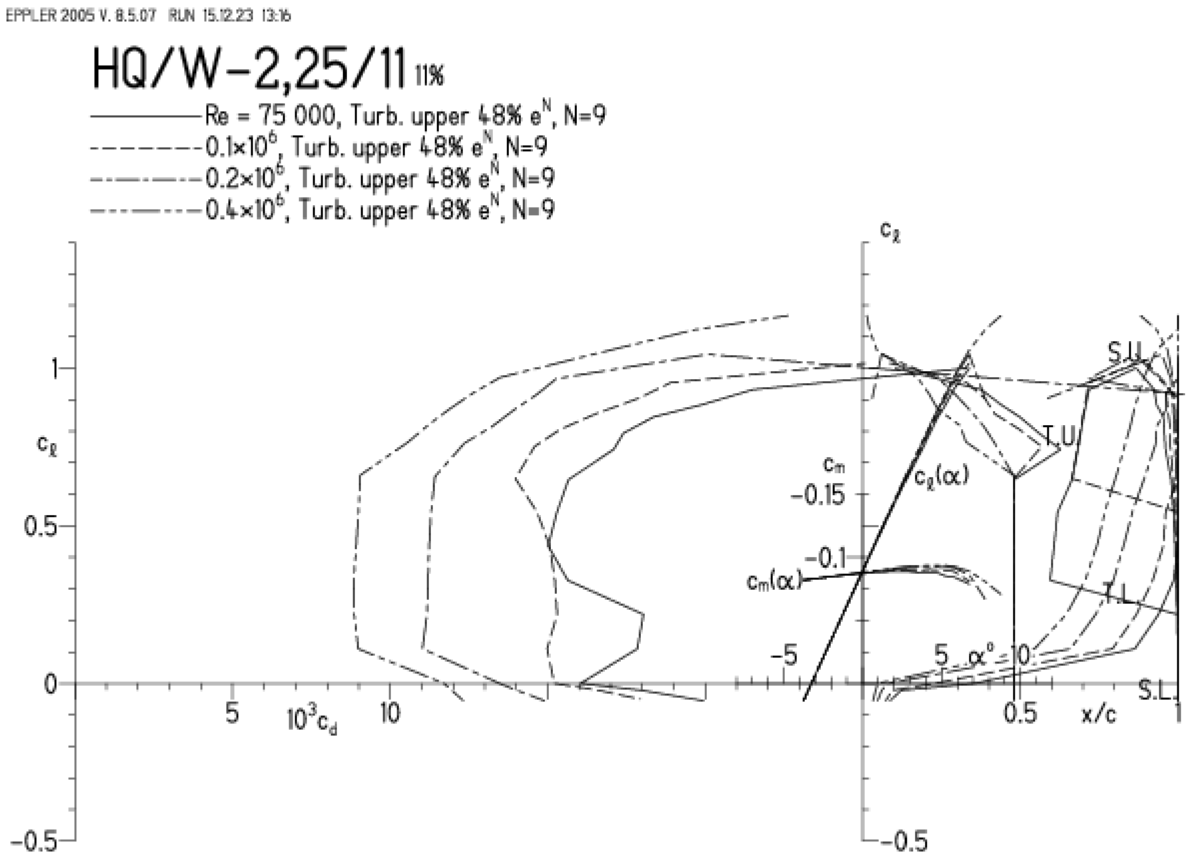


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



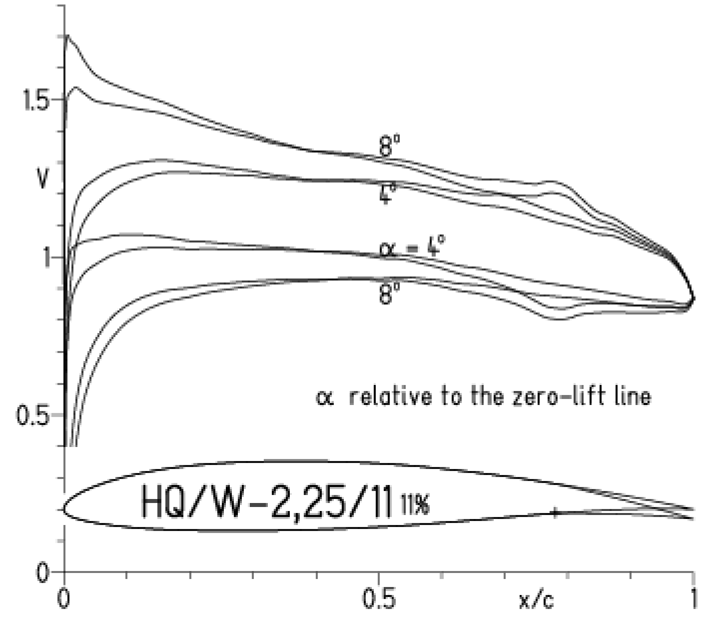
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



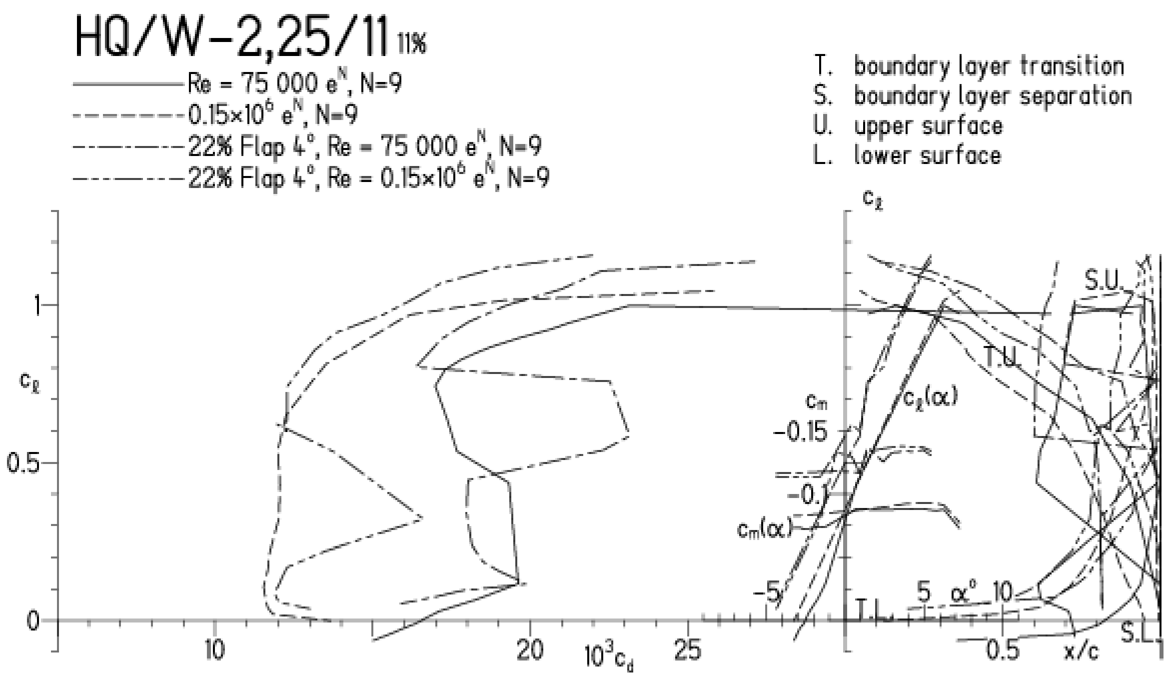


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

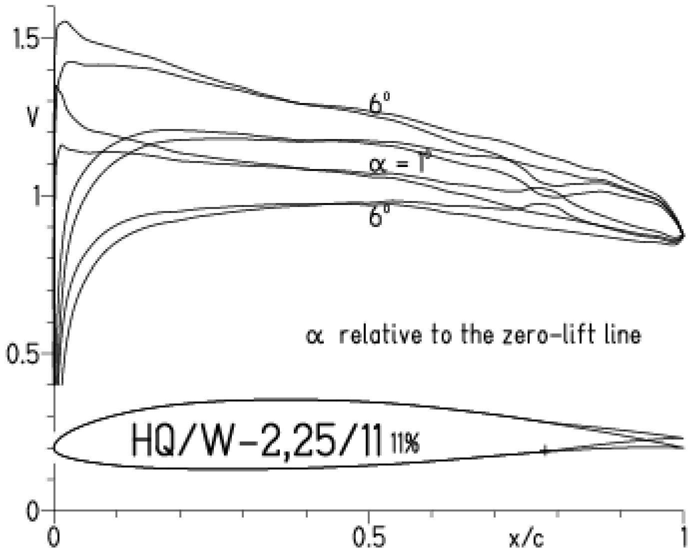


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

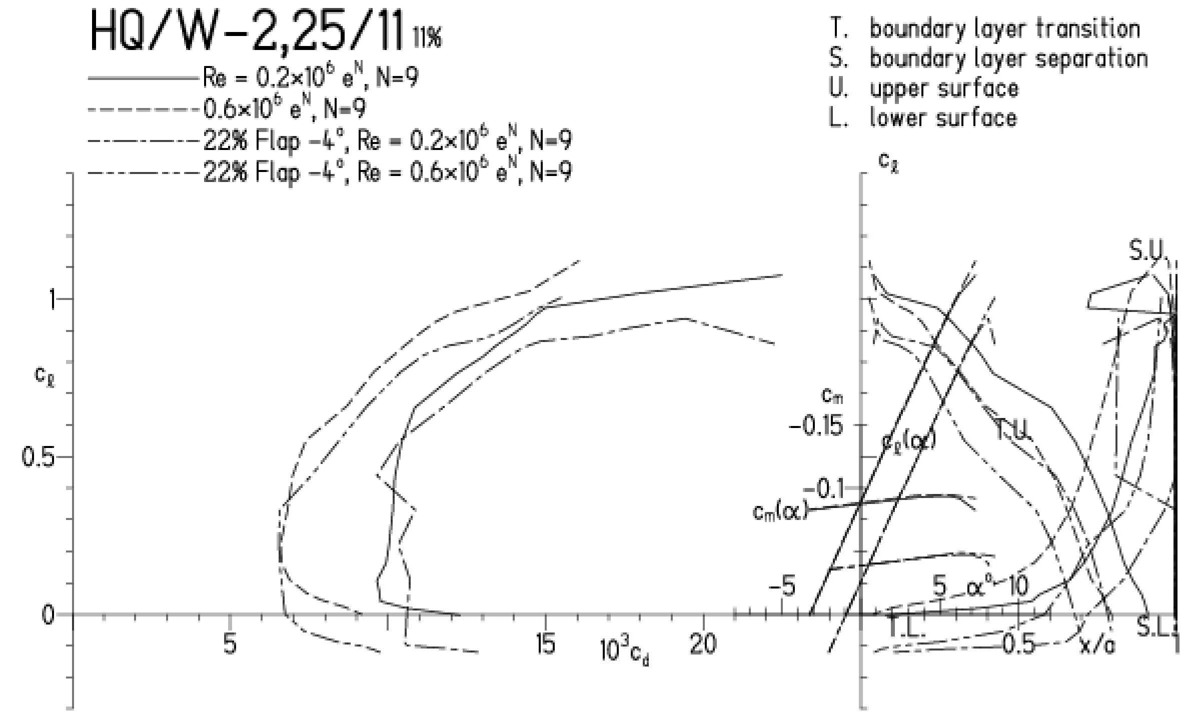


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

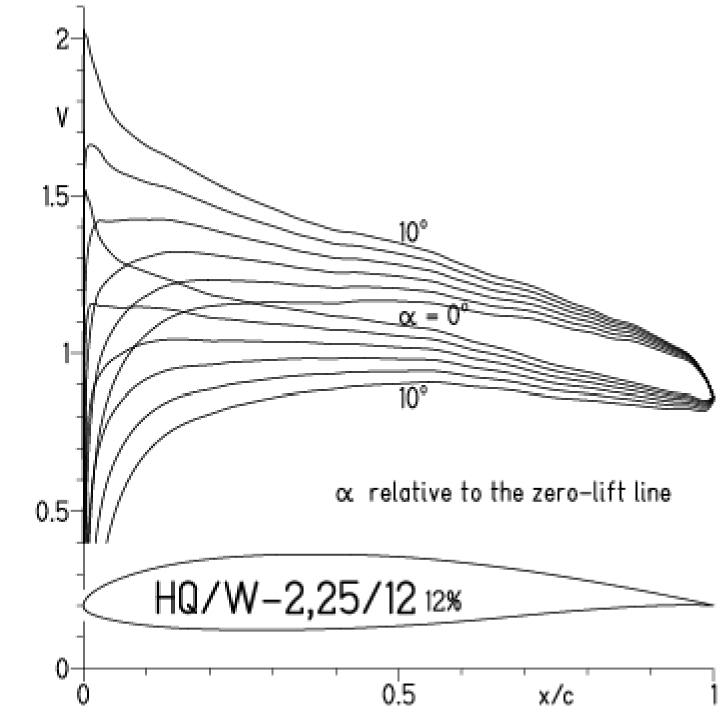


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

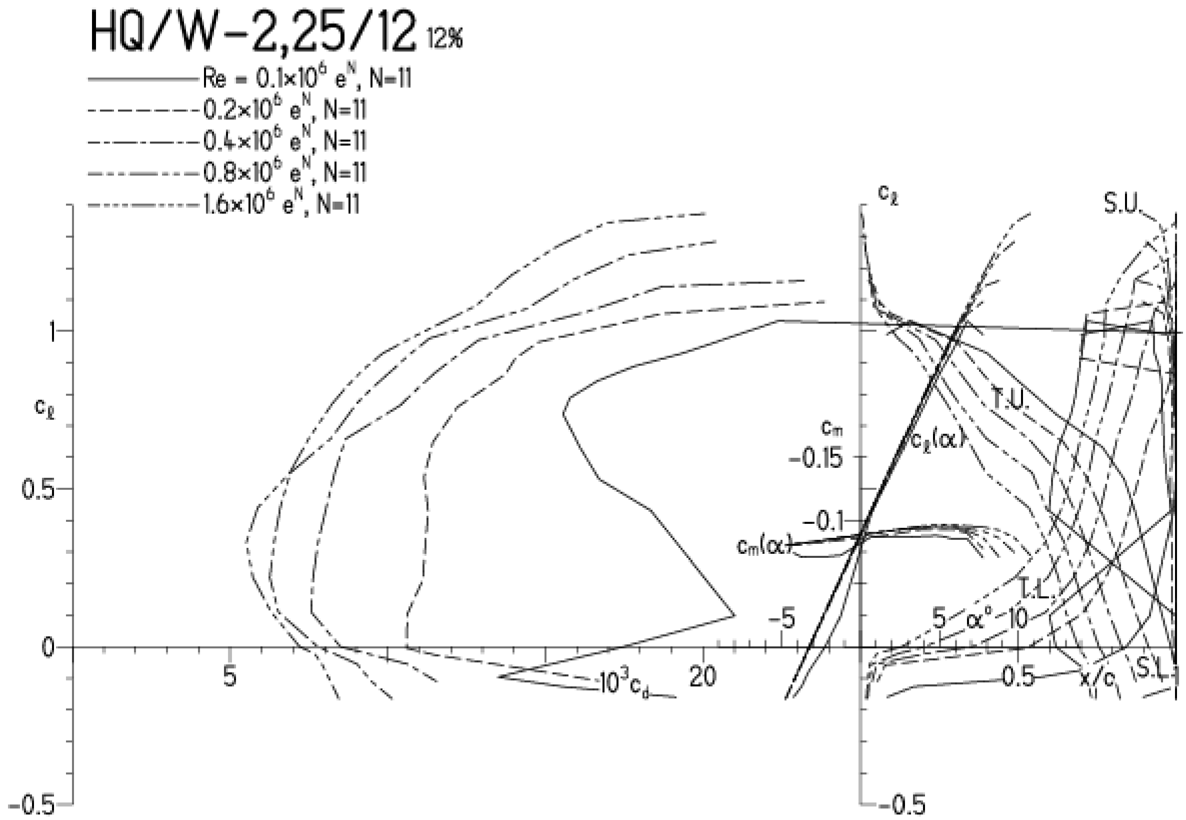


<u>HQ/W-2,25/12</u>, N=11

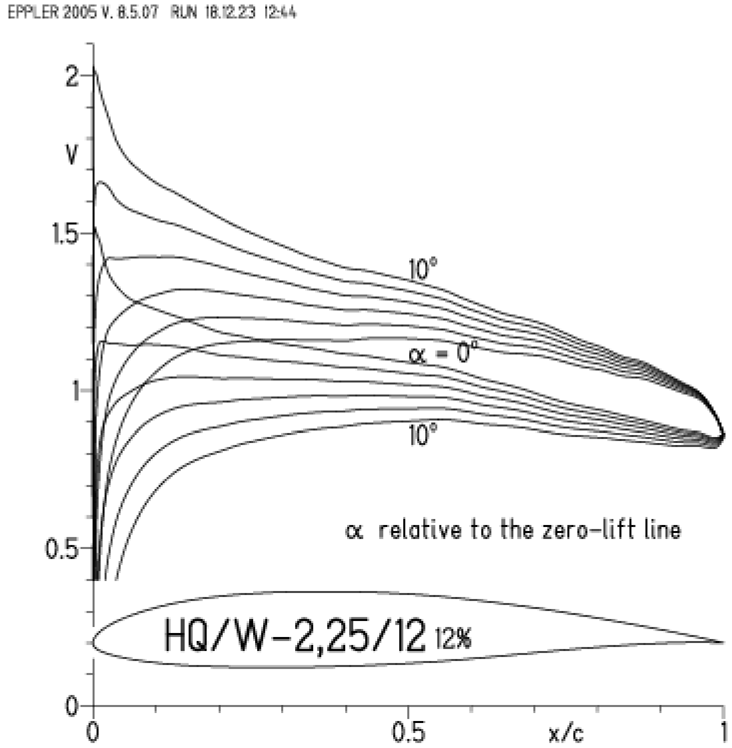
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

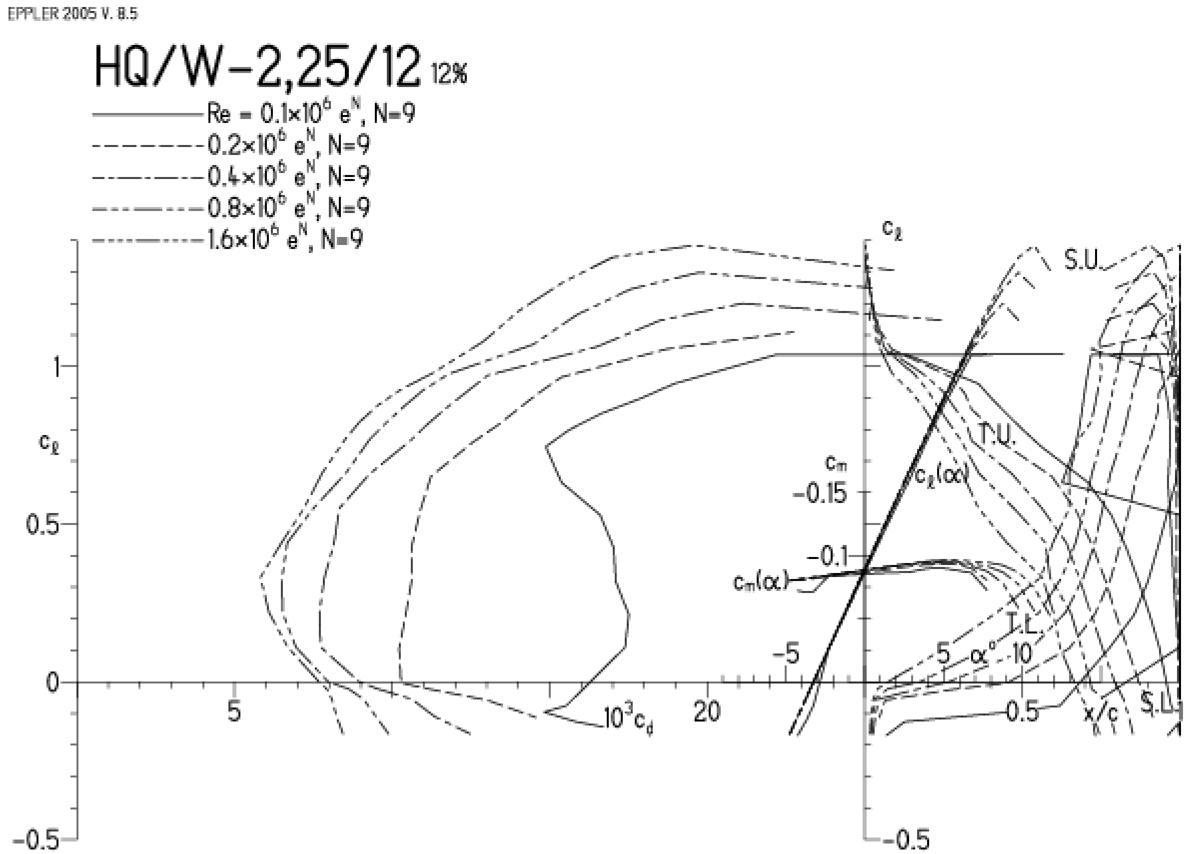


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

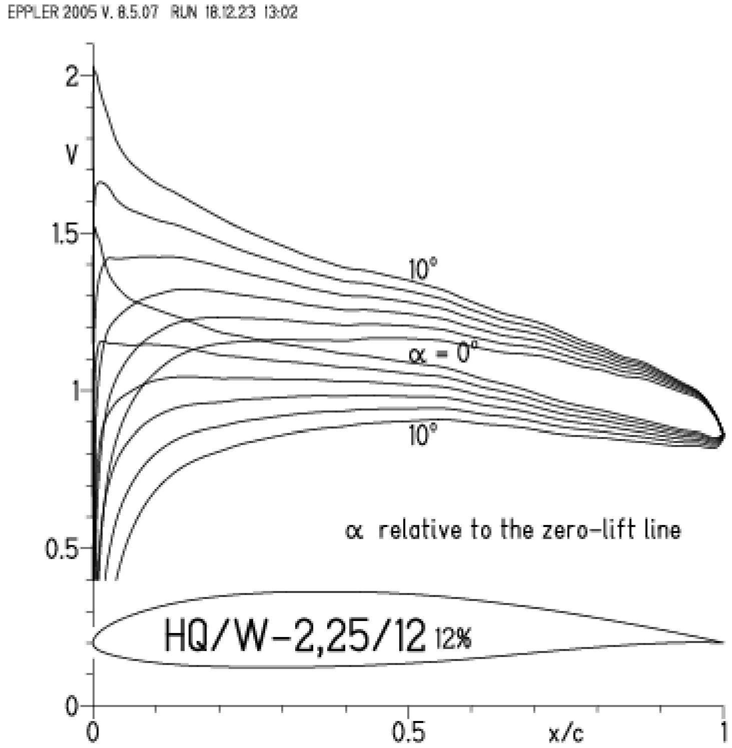


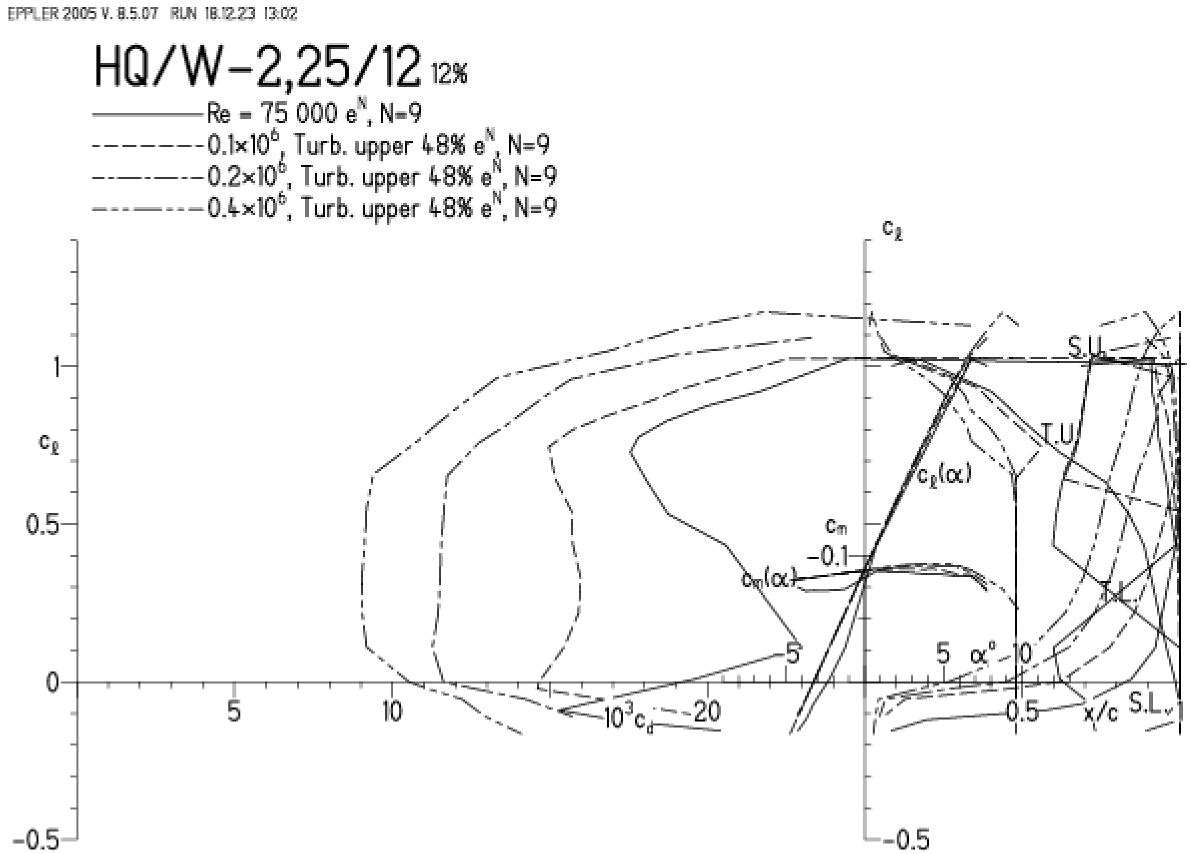
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
2
V
1.5
10°
α = 0°
1
10°
α relative to the zero-lift line
0.5
HQ/W-2,25/12 12%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1
0.5
0
-0.5
5
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
-0.5

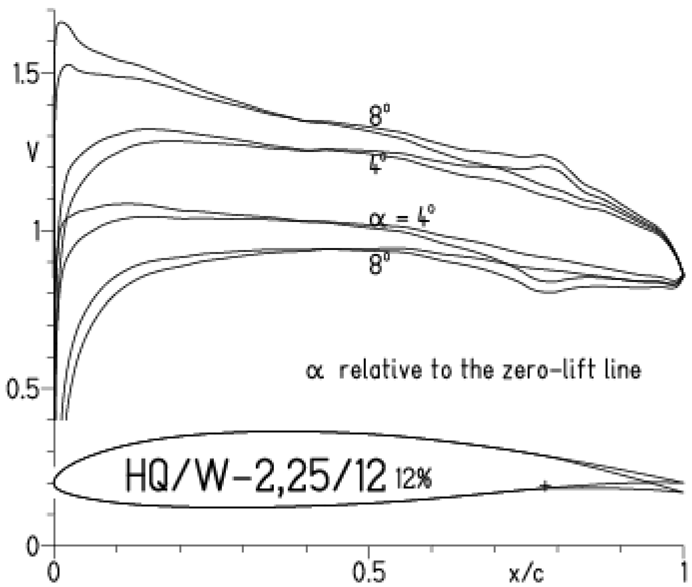
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



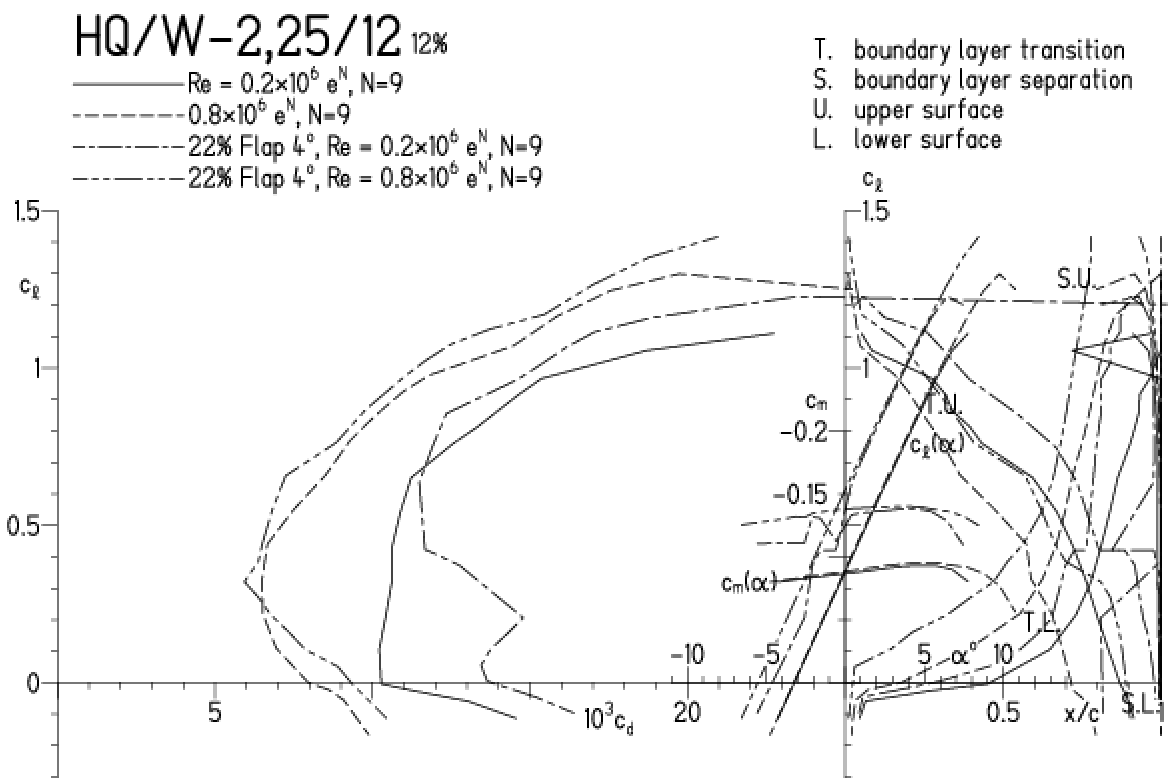


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

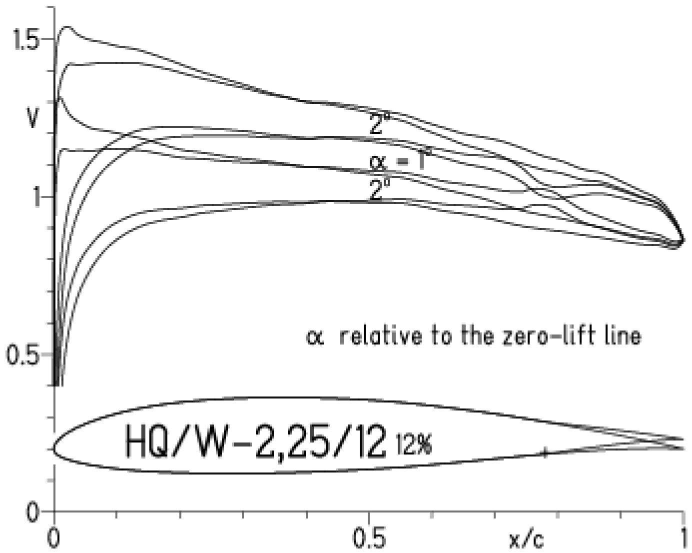


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

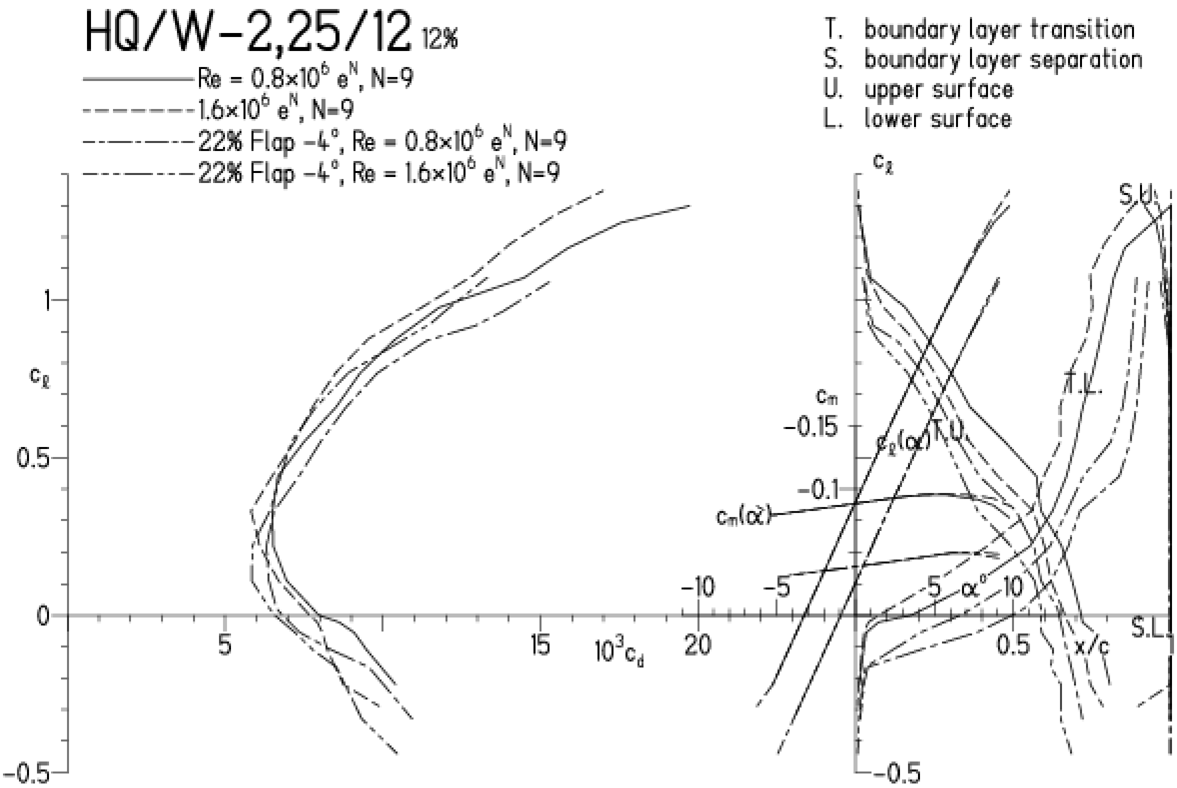


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

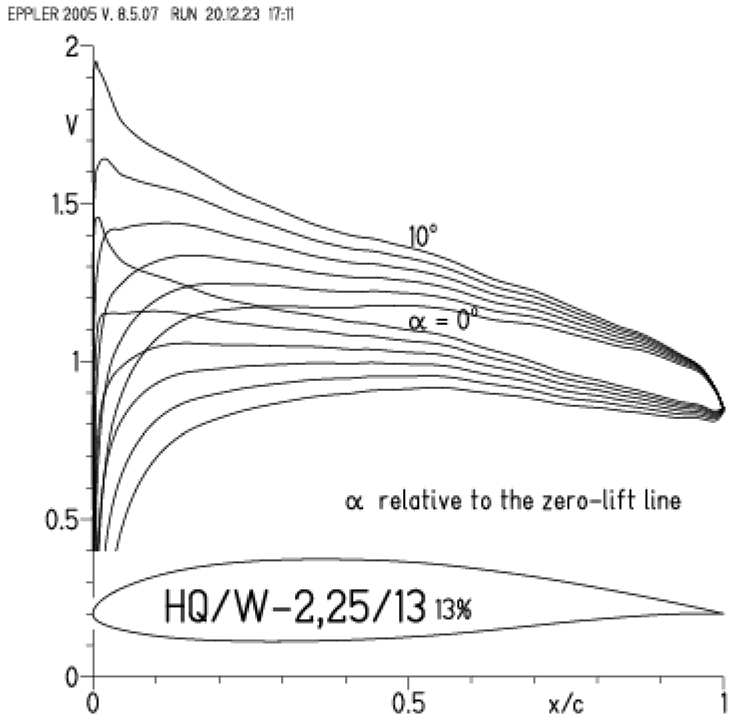
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

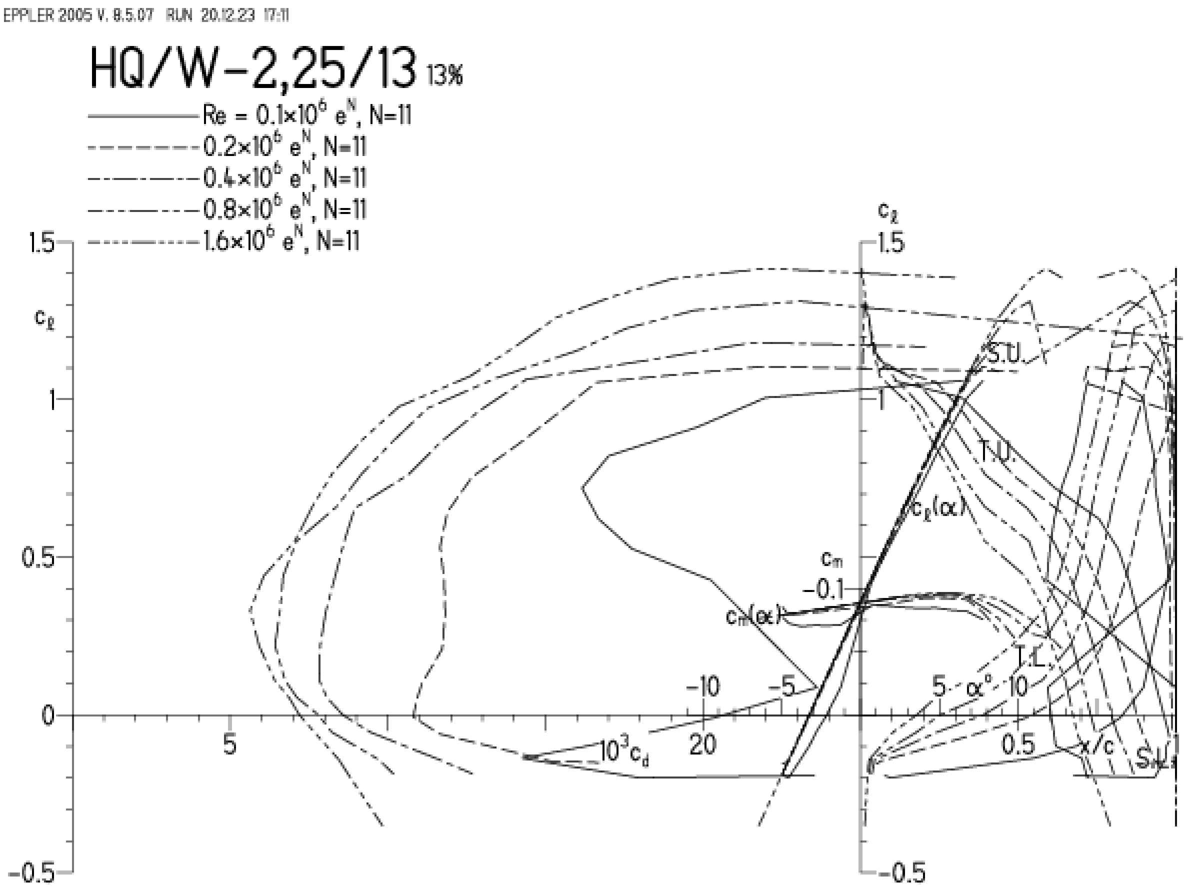


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

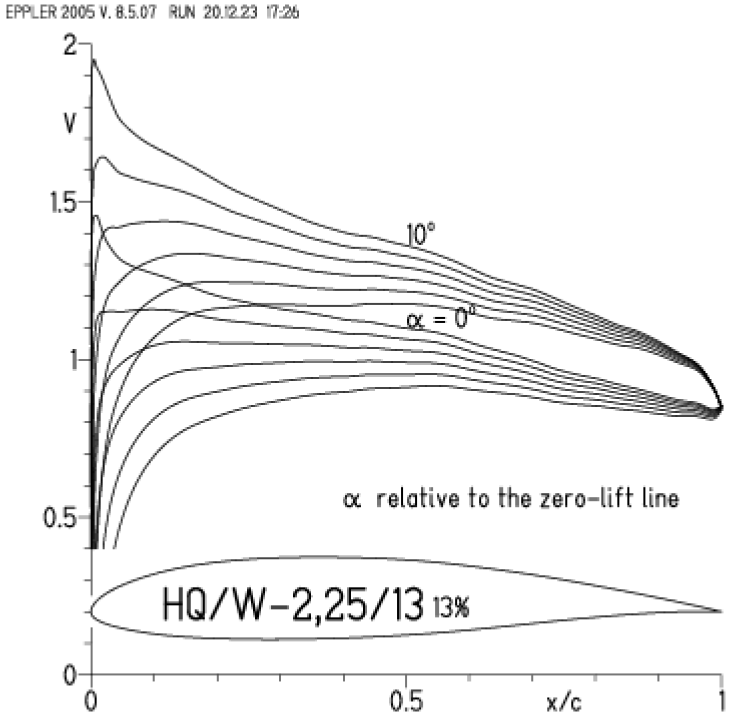


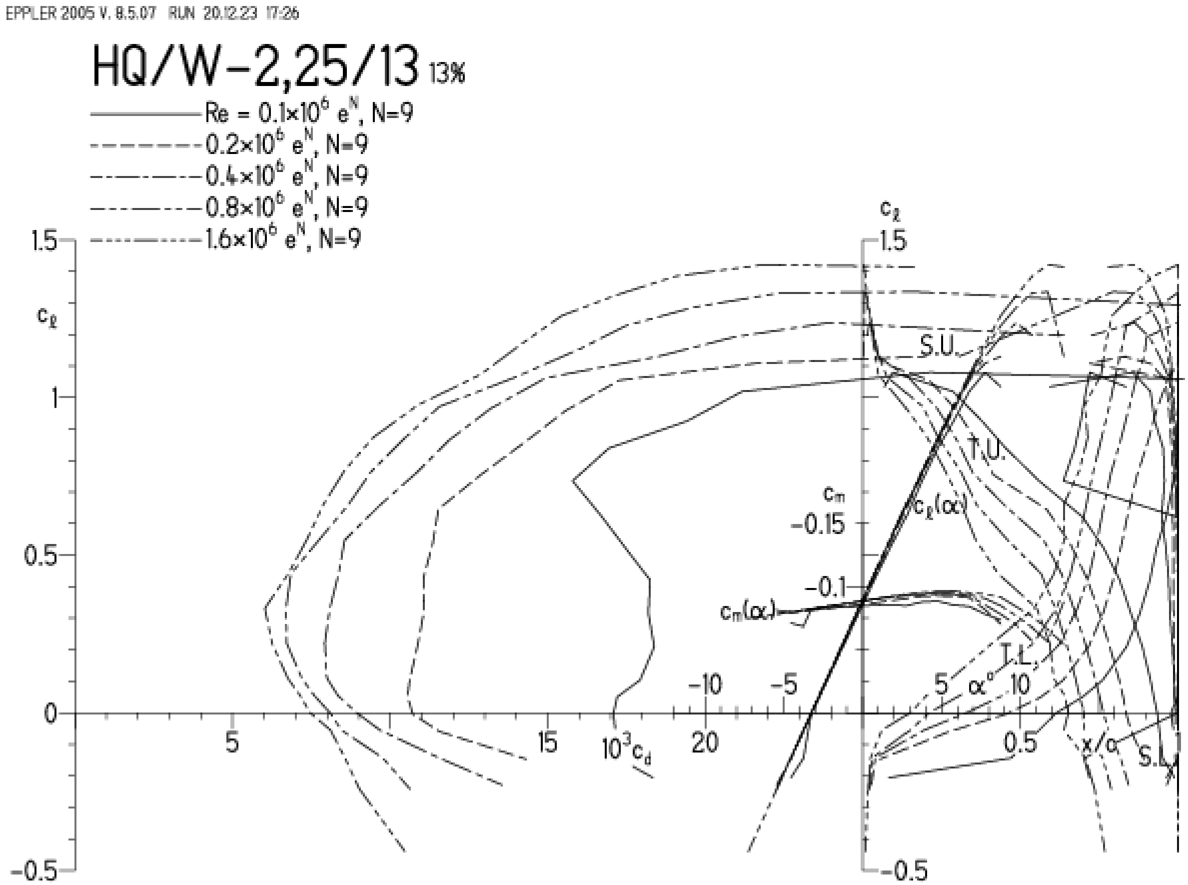
HQ/W-2,25/13, N=11



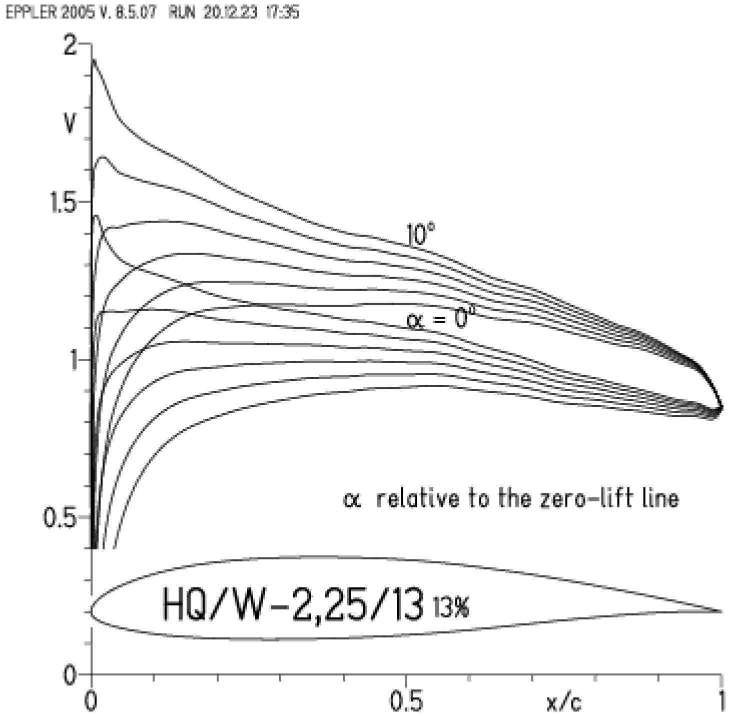


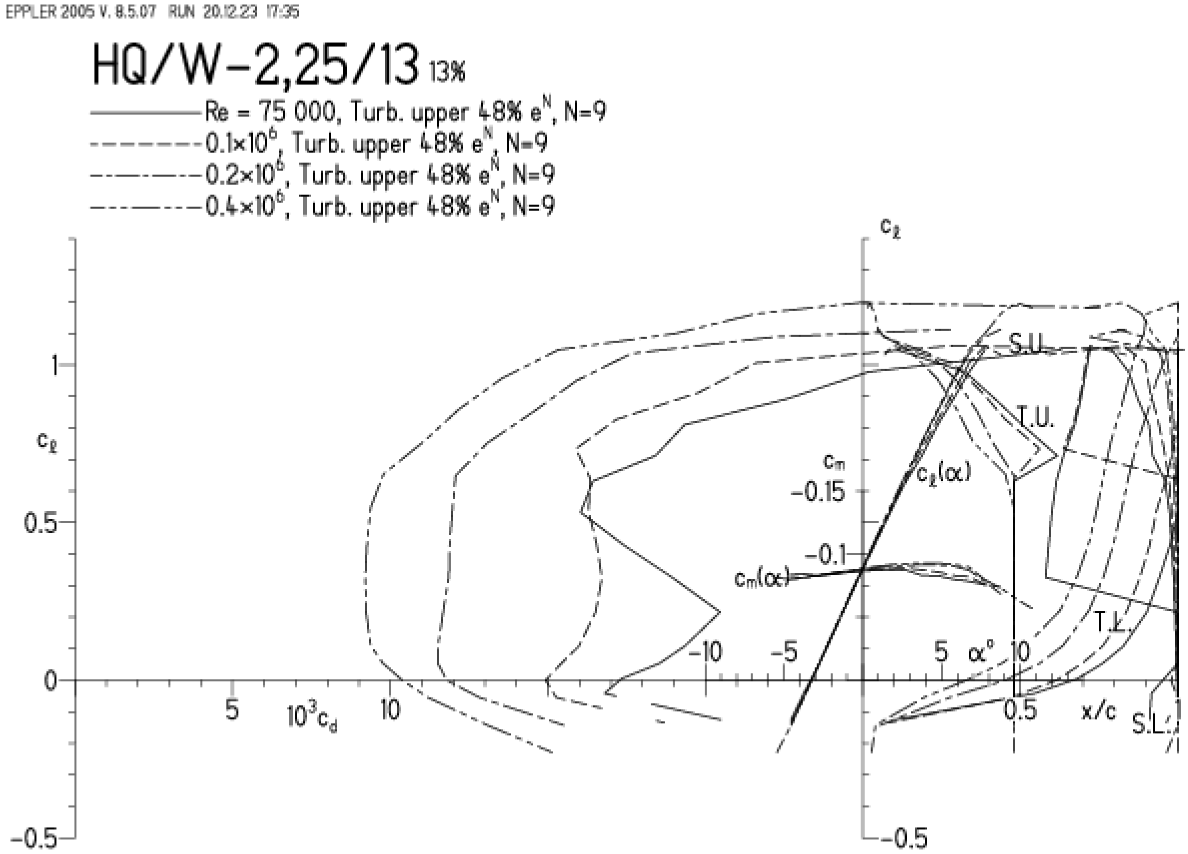
<u>HQ/W-2,25/13</u>, N=9





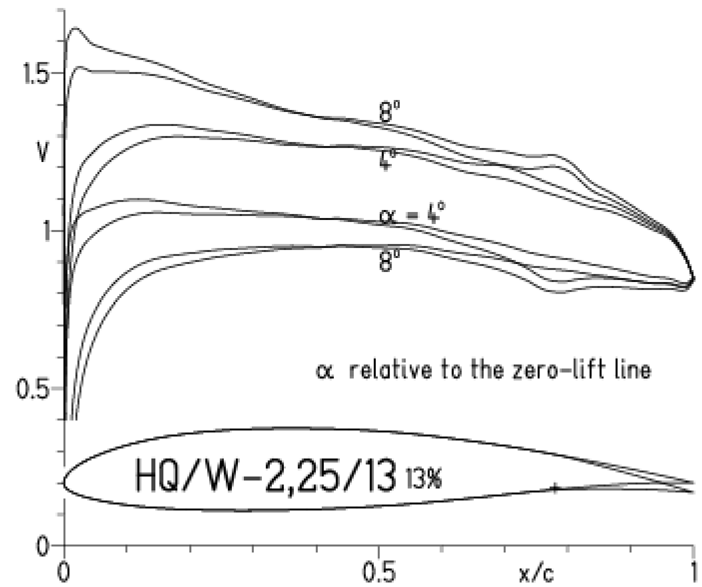
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



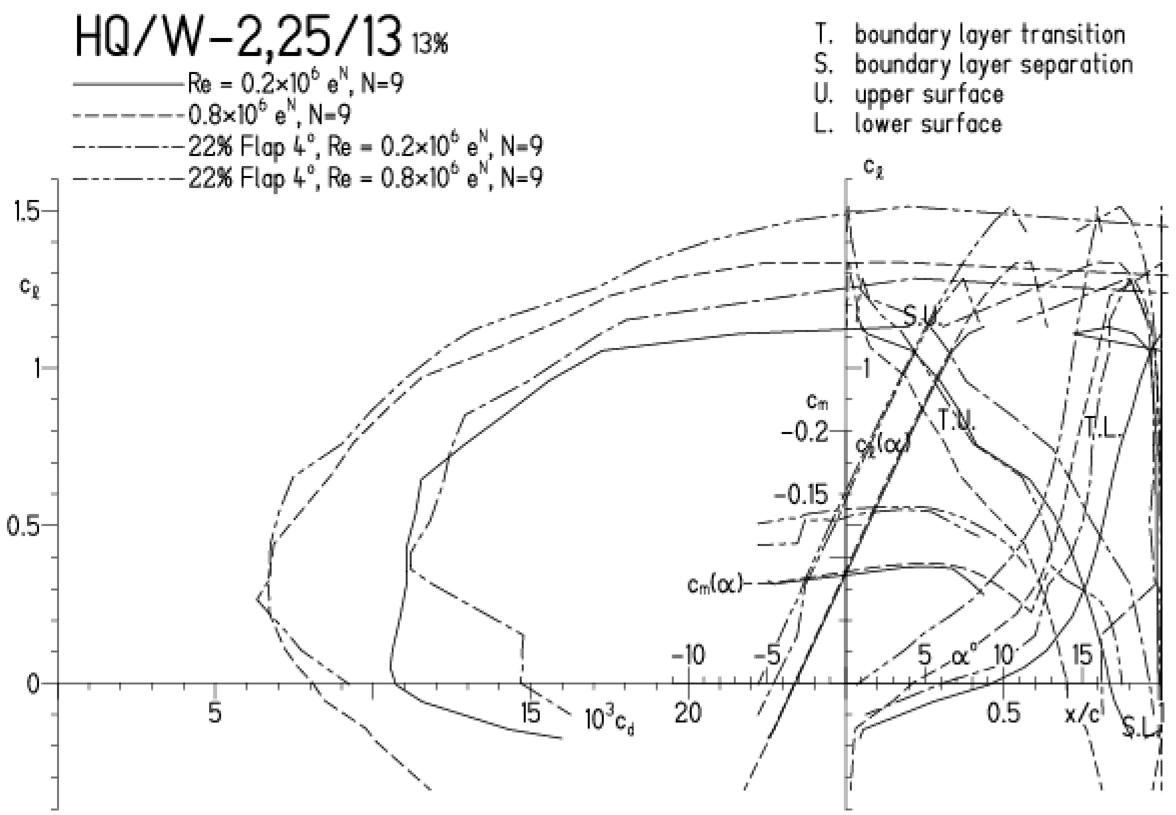


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

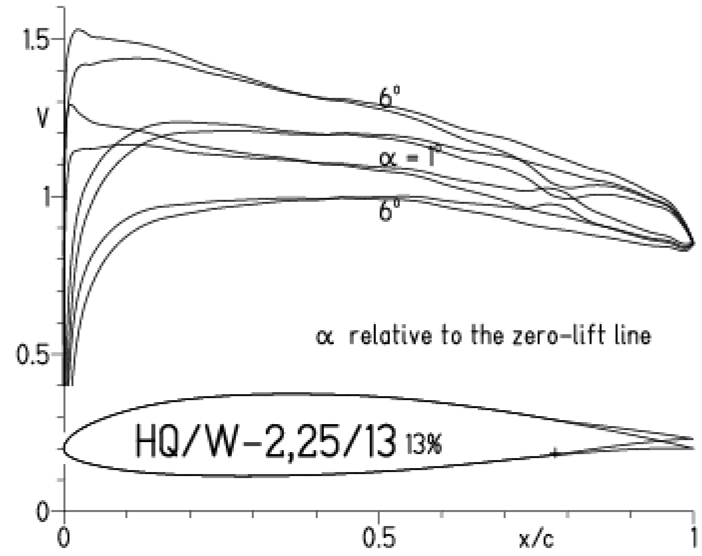


EPPLER 2005 V.

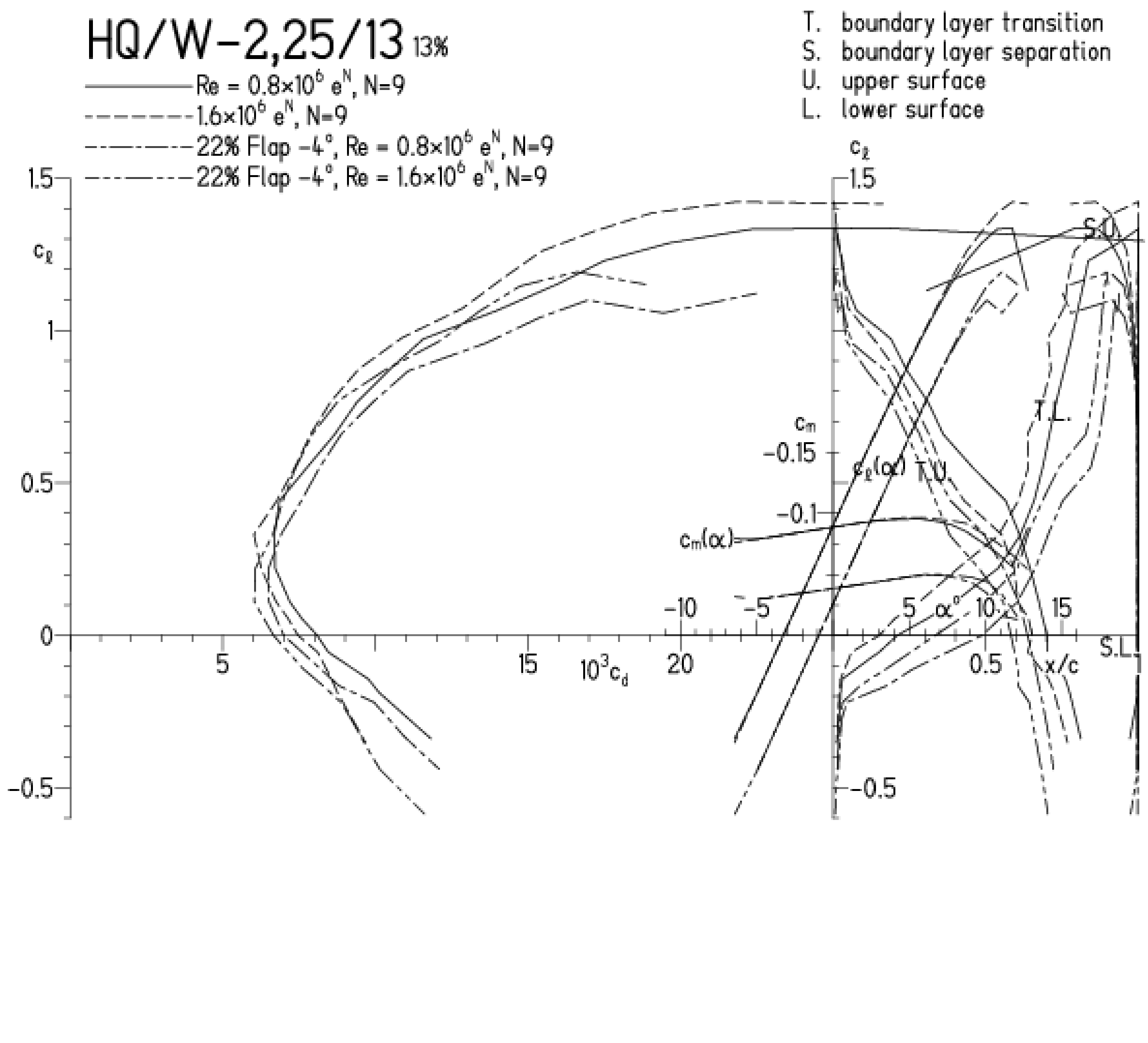


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

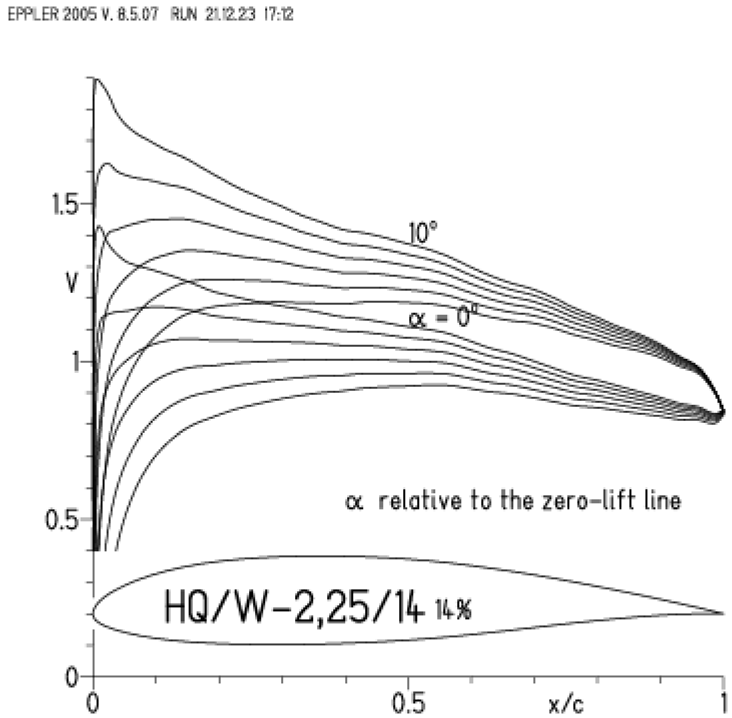
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

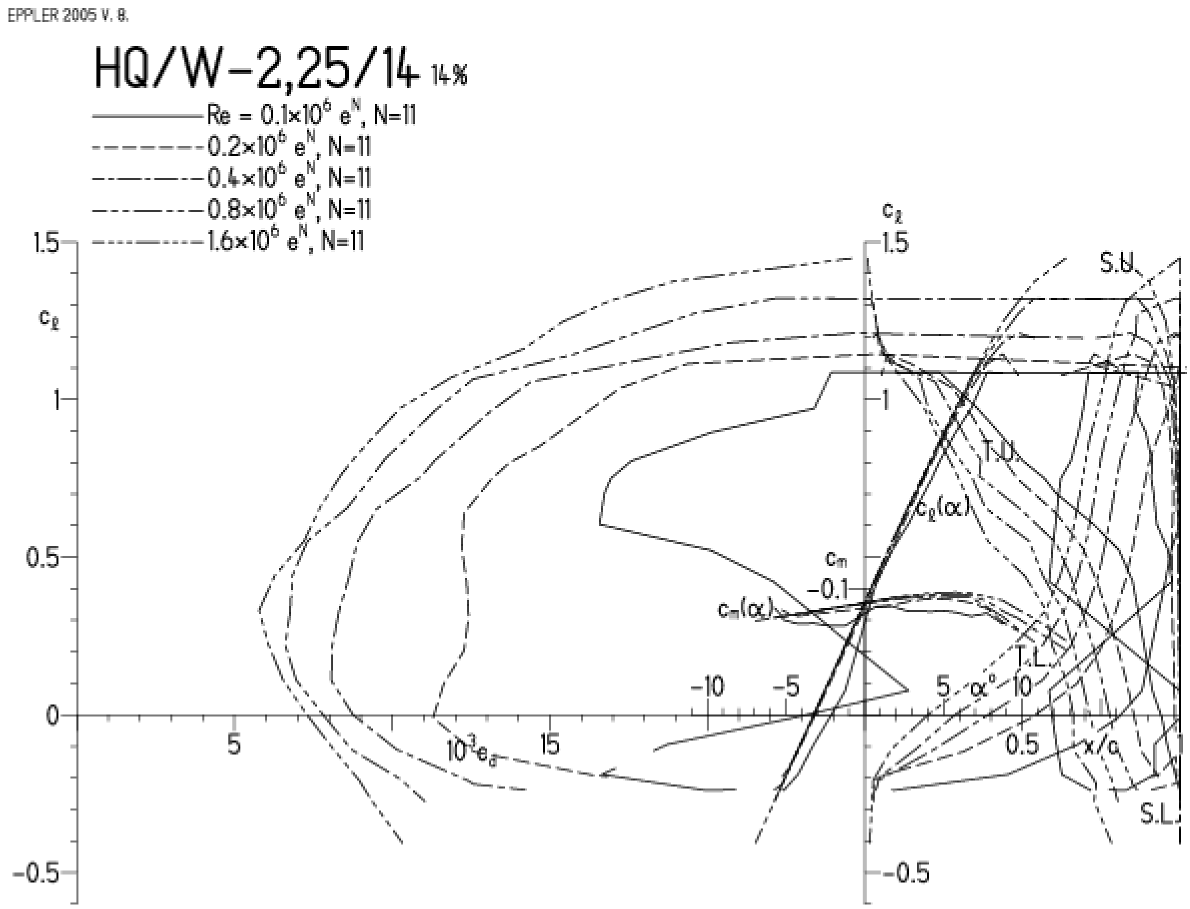


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

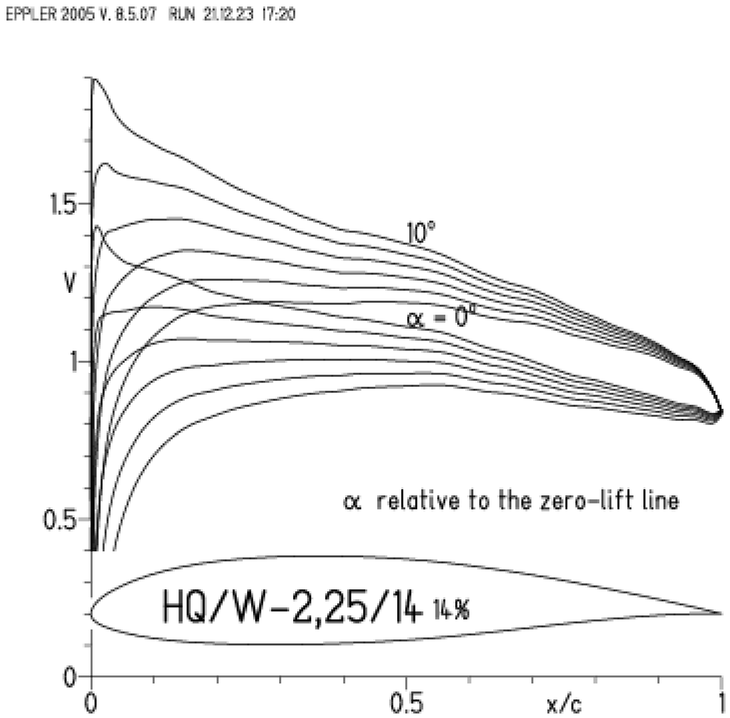


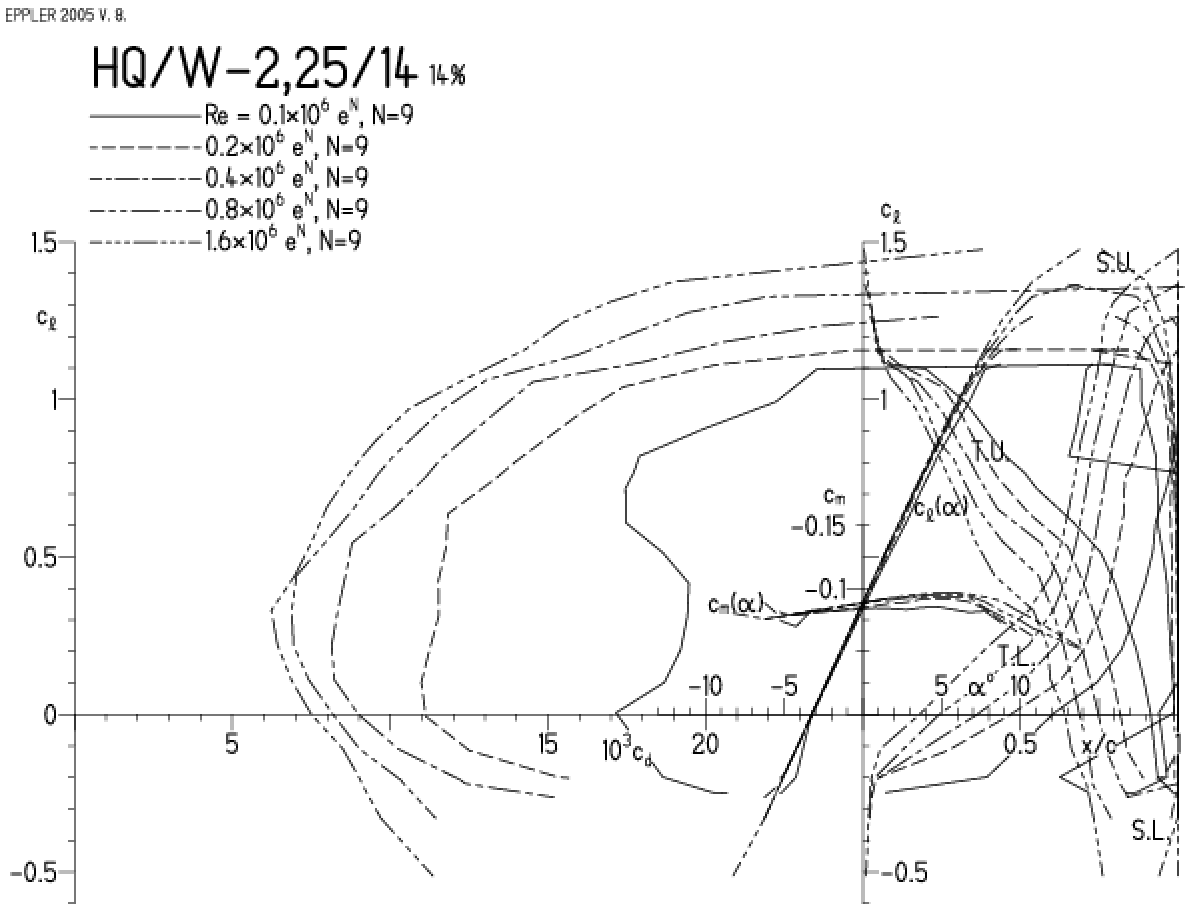
HQ/W-2,25/14, N=11



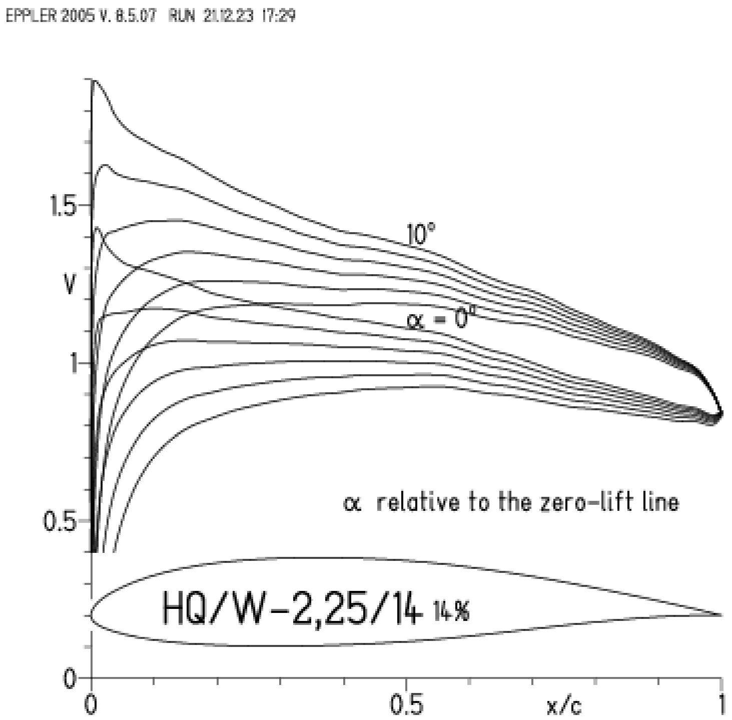


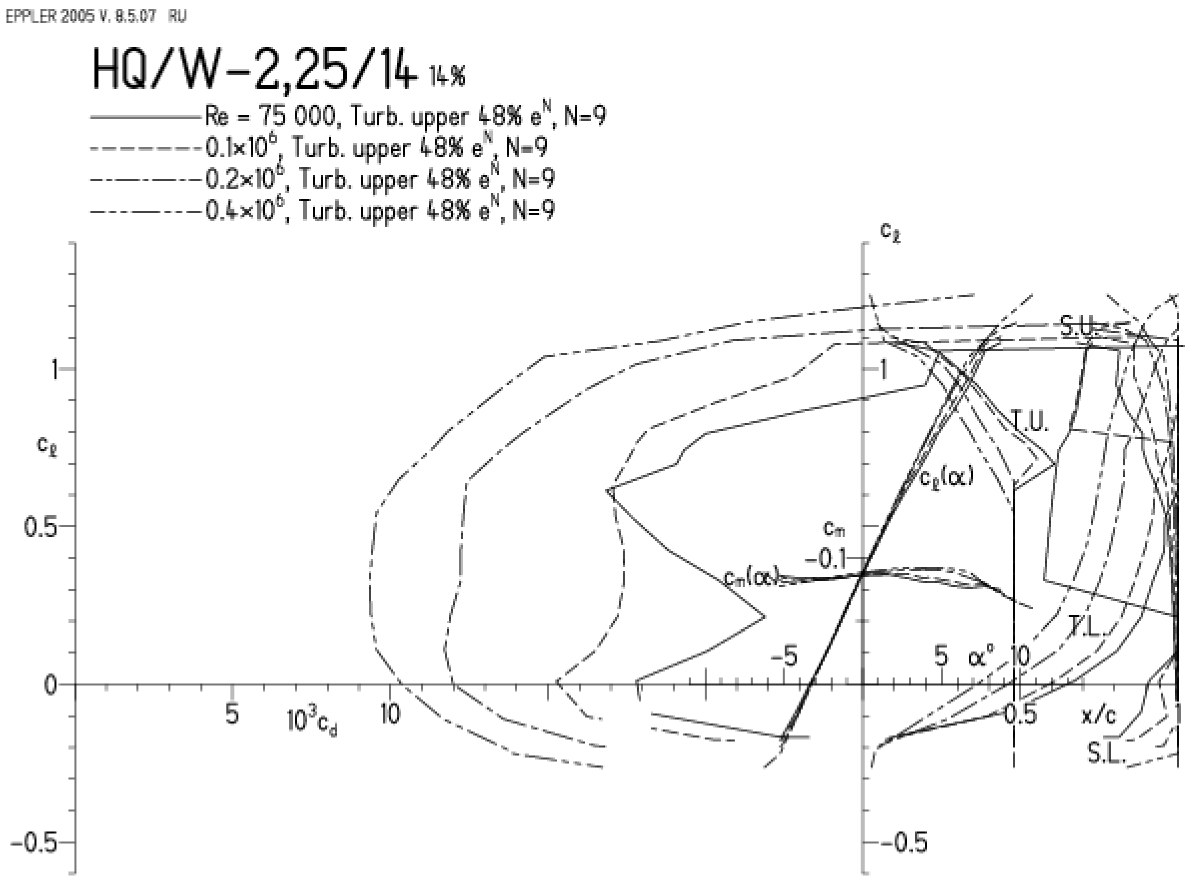
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

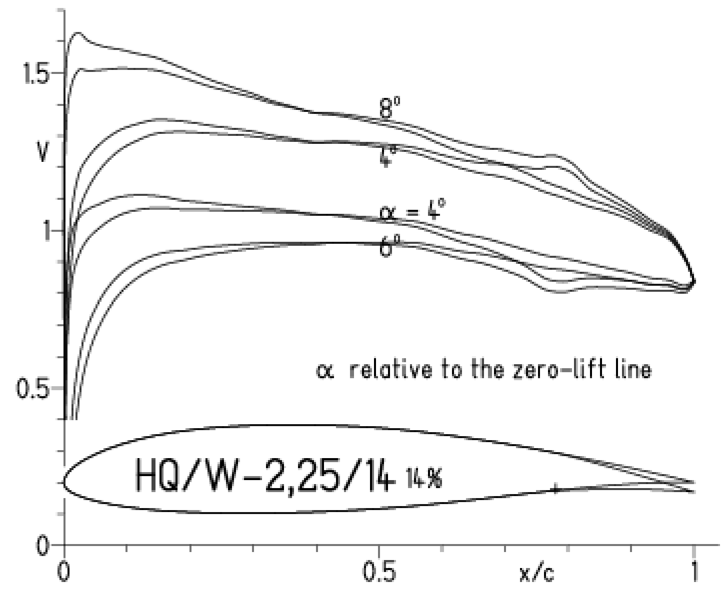
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



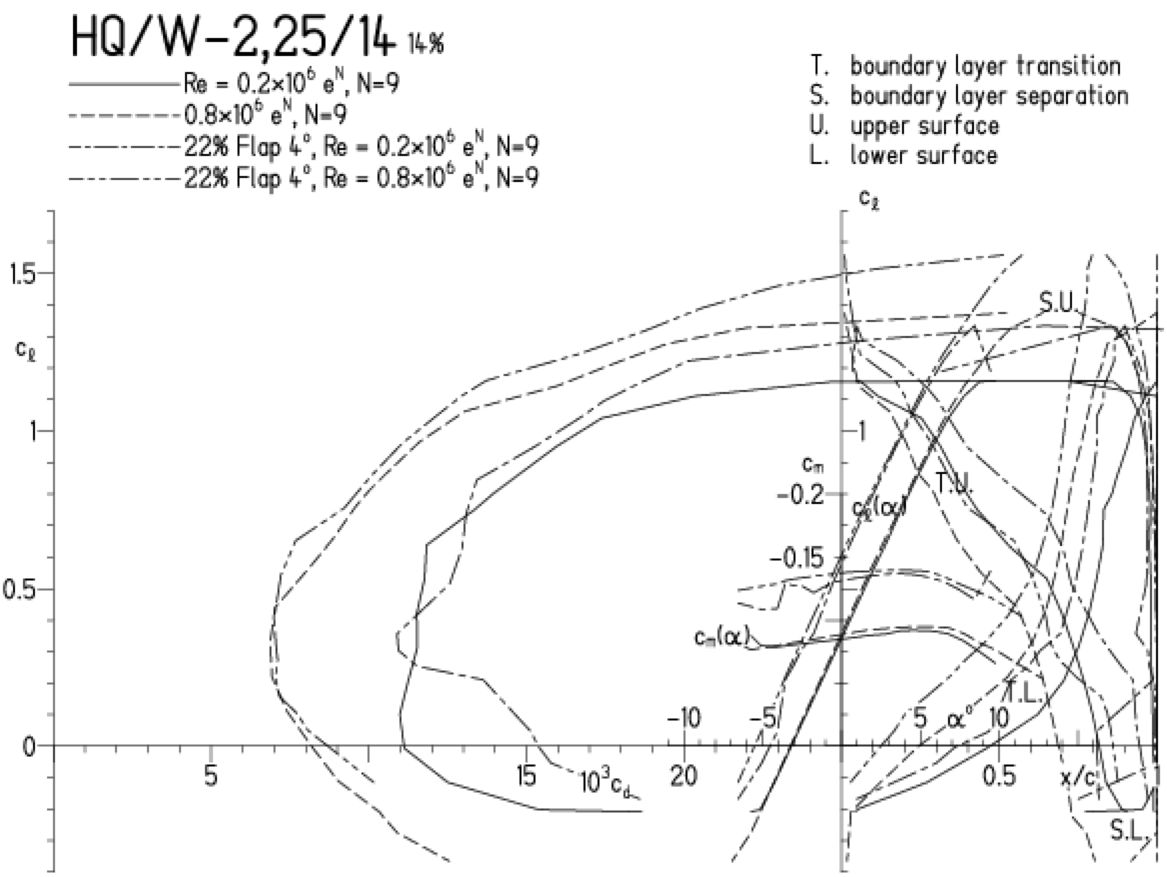


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

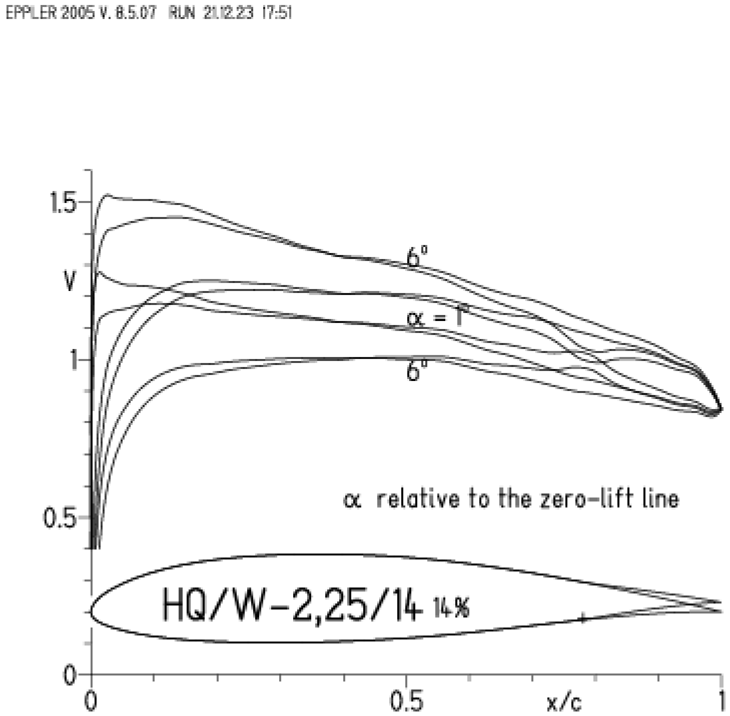
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

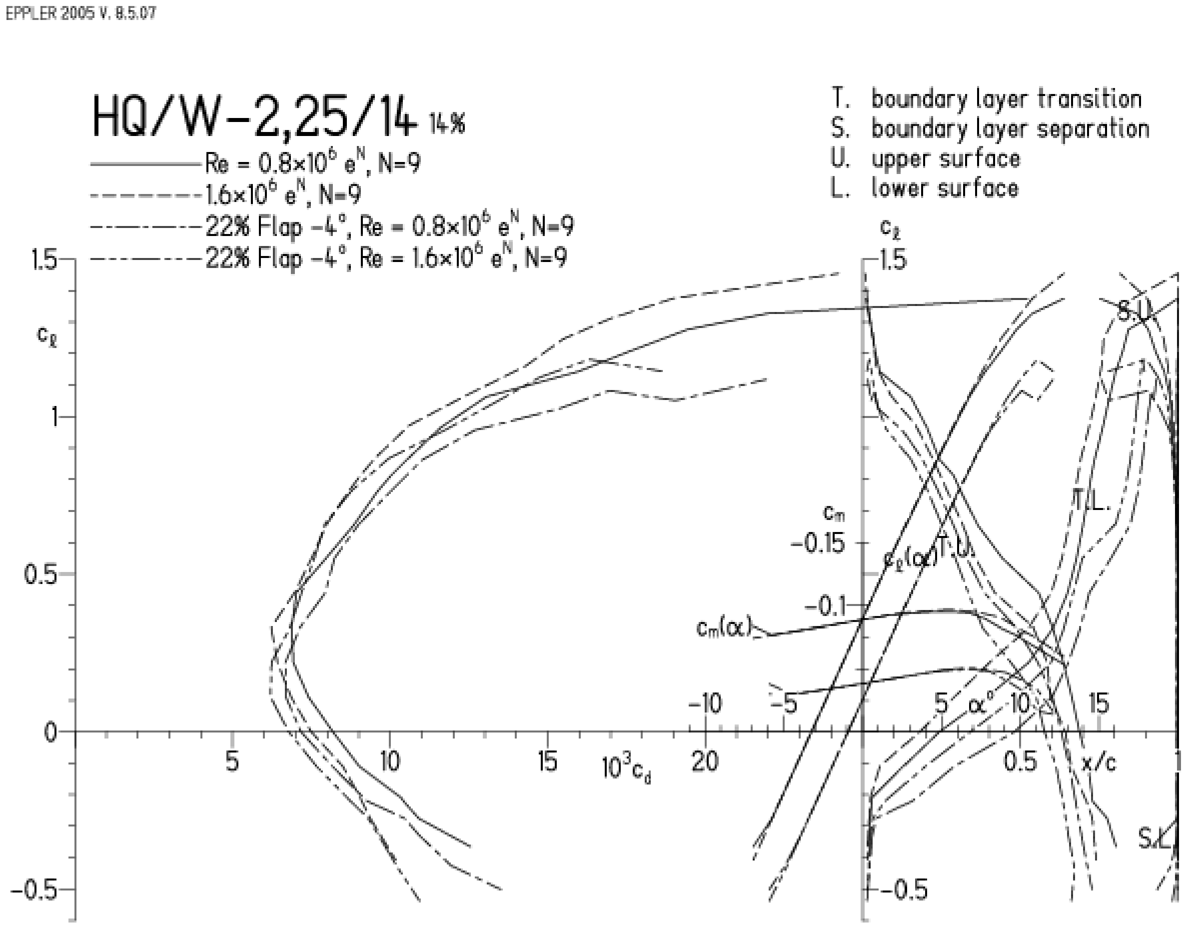


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

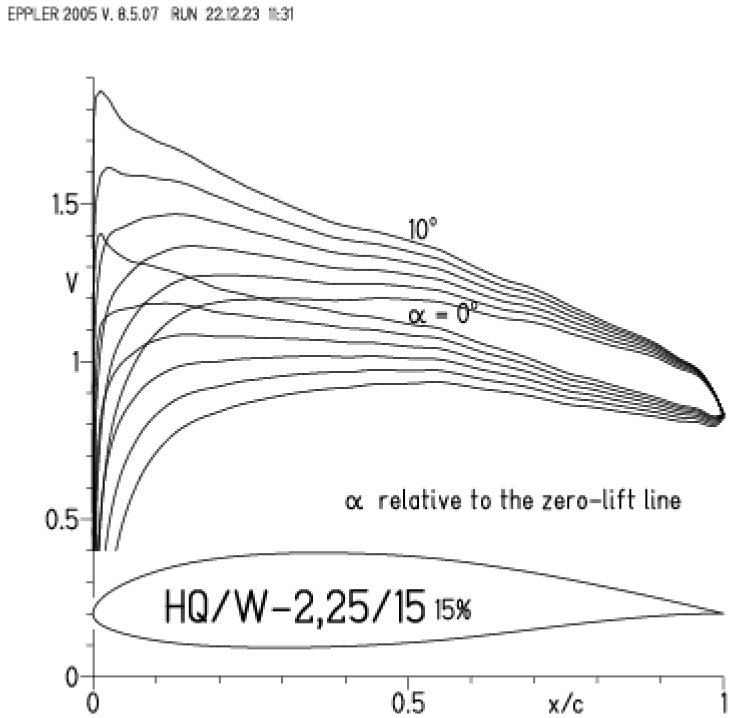


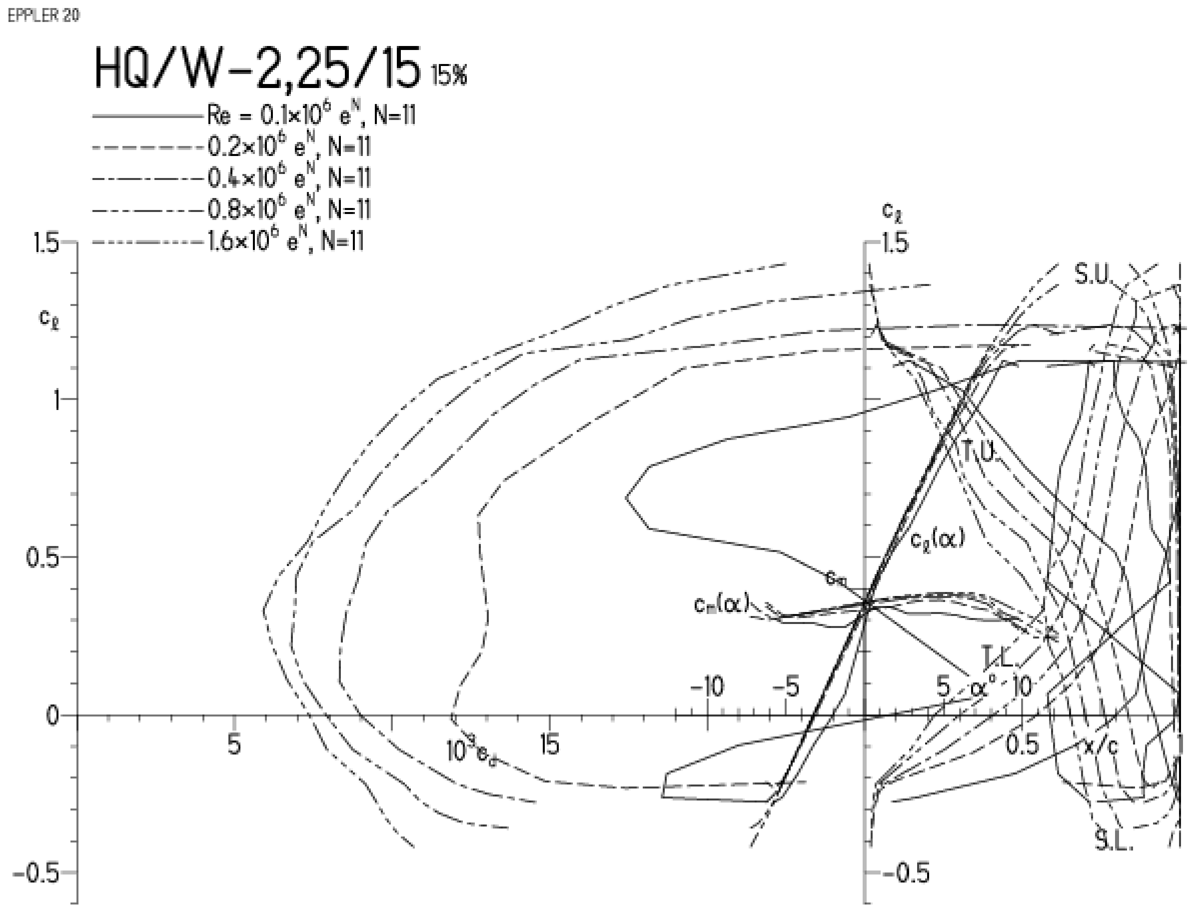
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



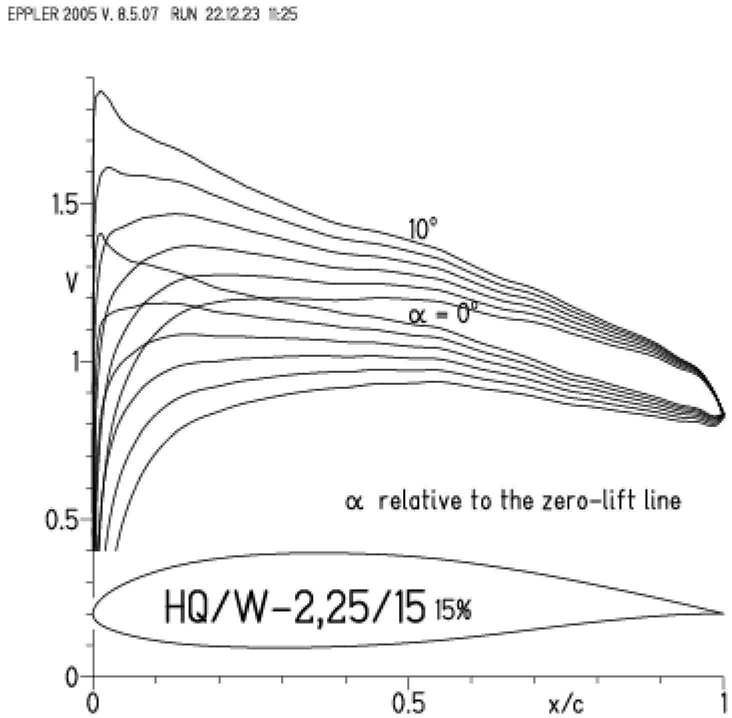


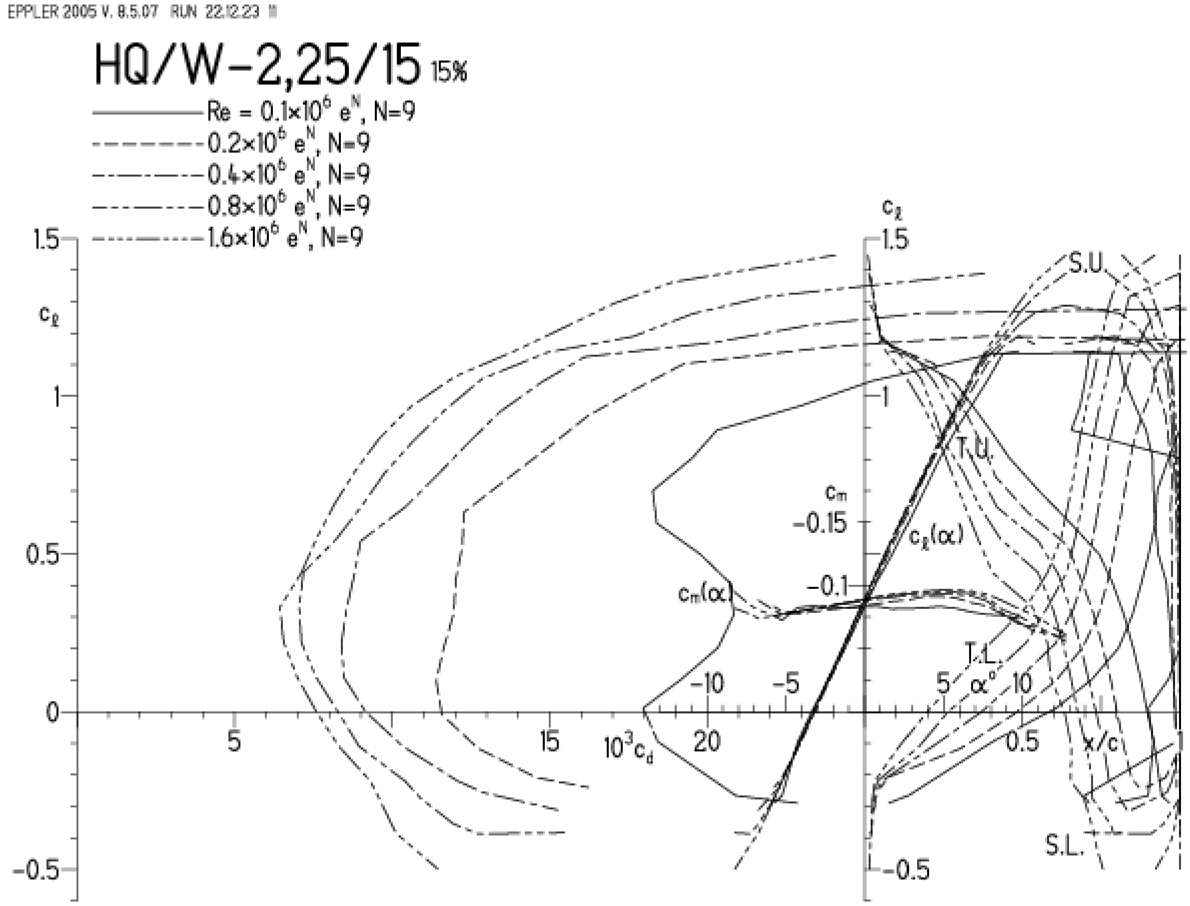
<u>HQ/W-2,25/15</u>, N=11



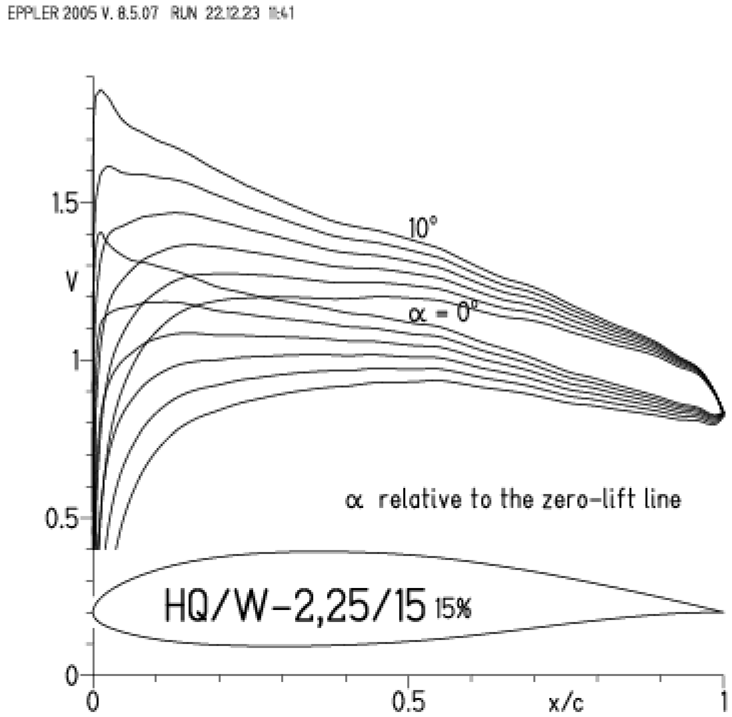


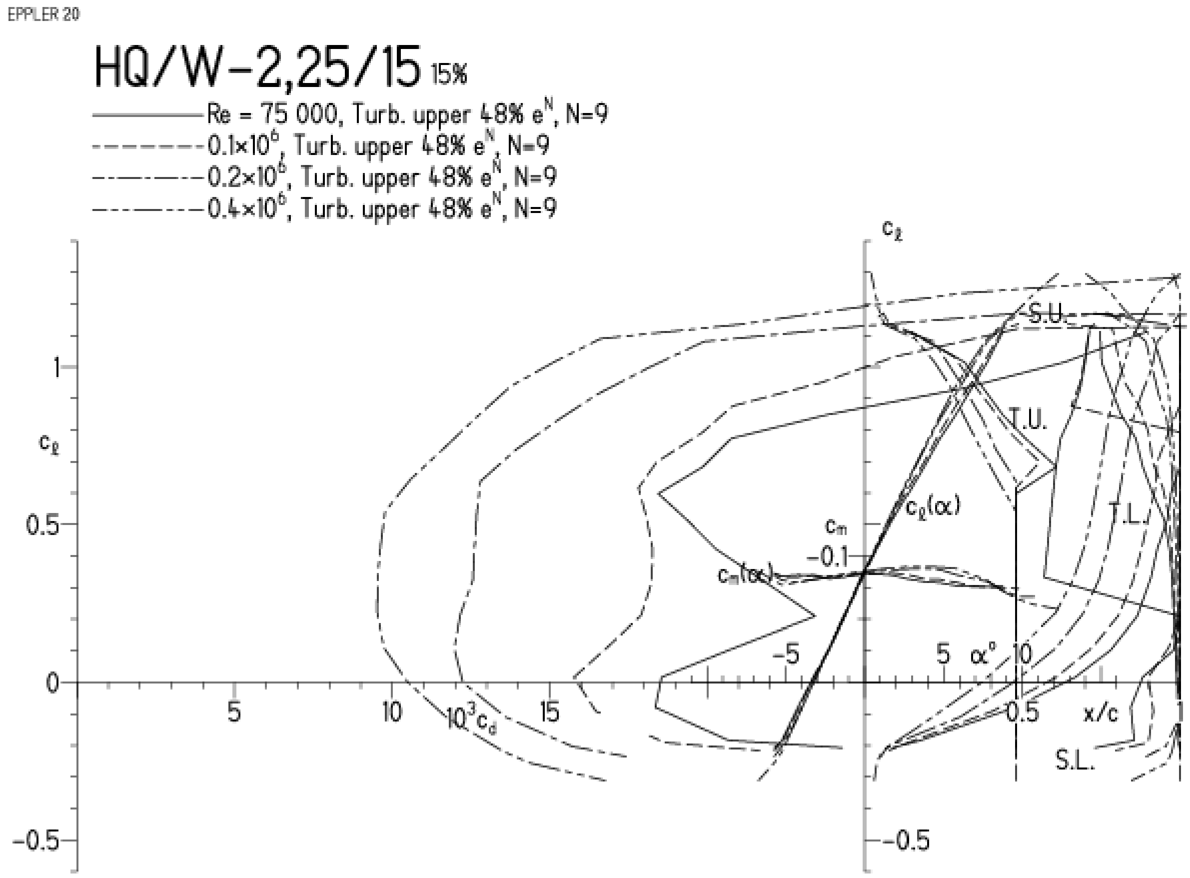
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



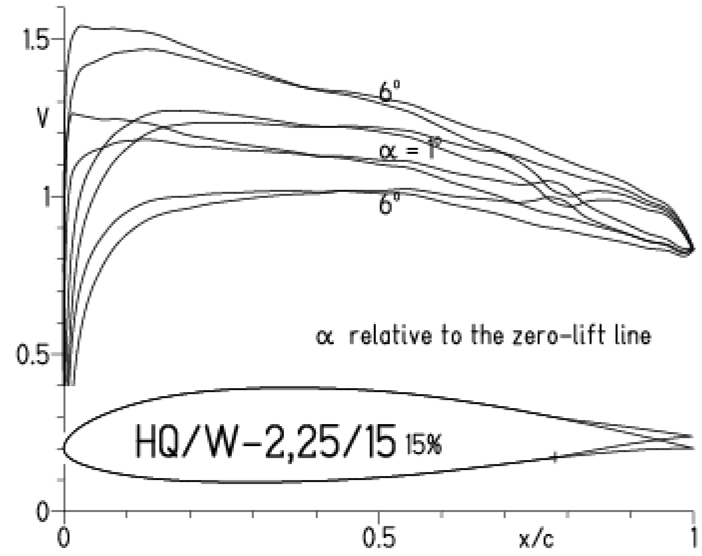


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

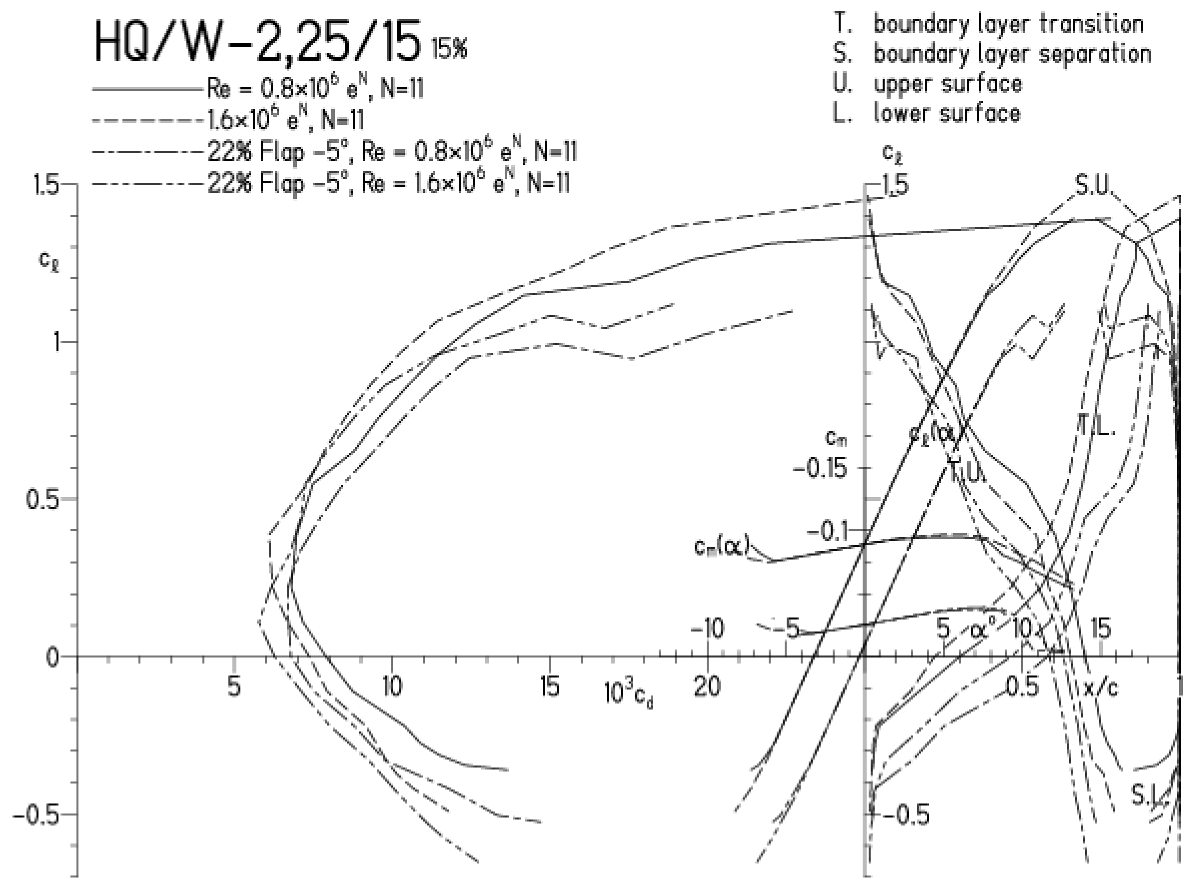
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

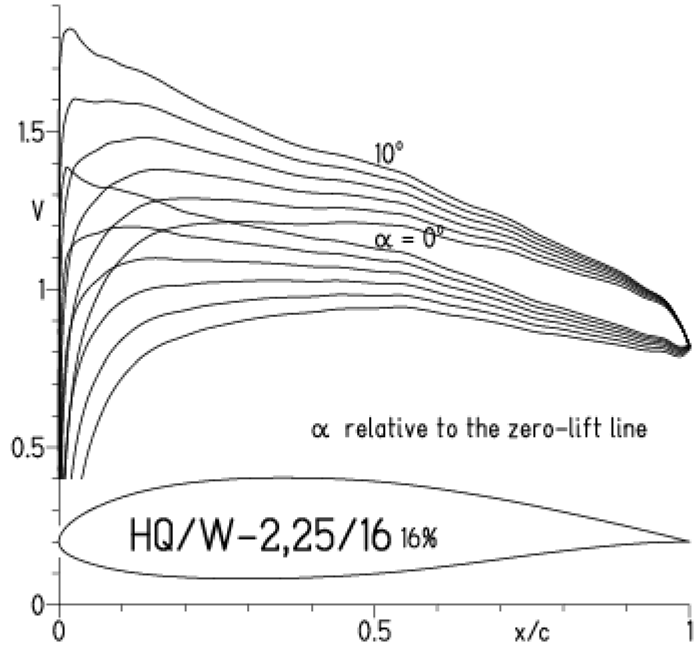


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

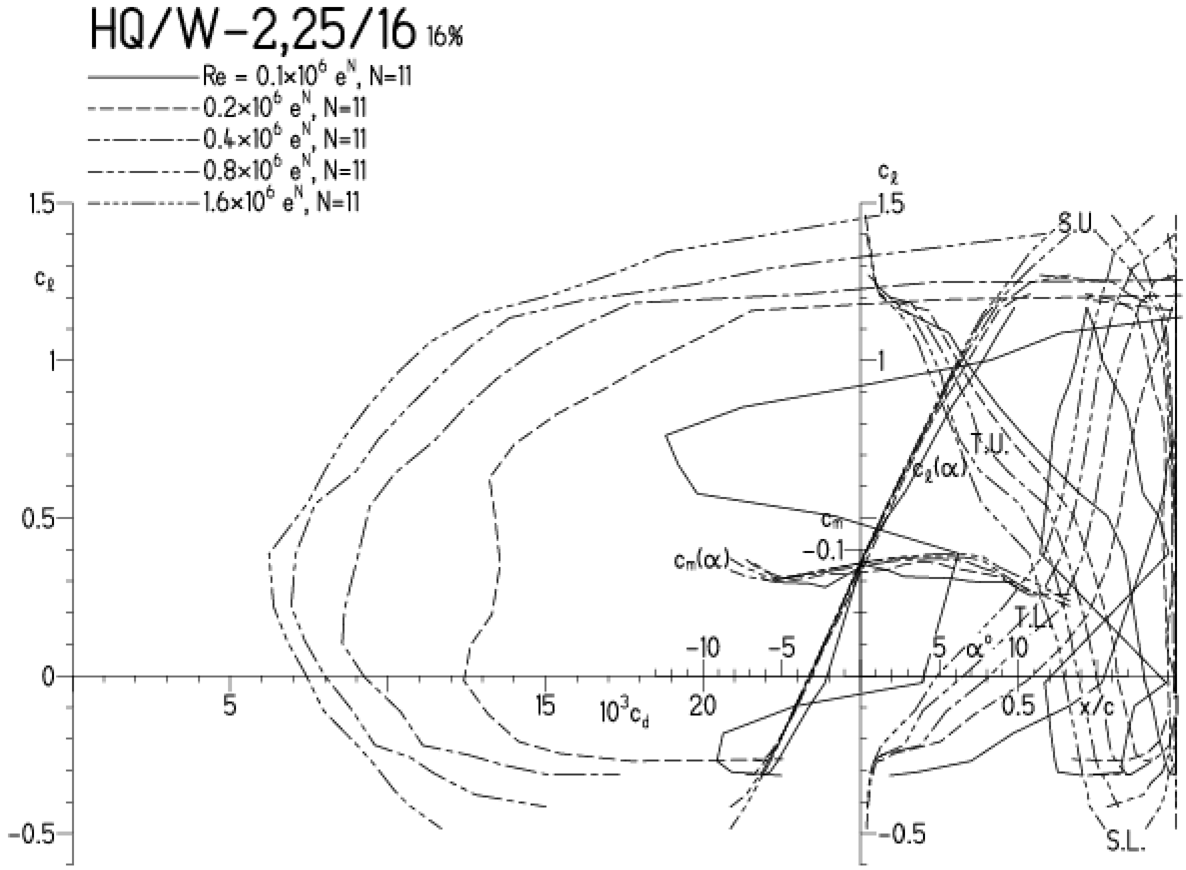


HQ/W-2,25/16, N=11

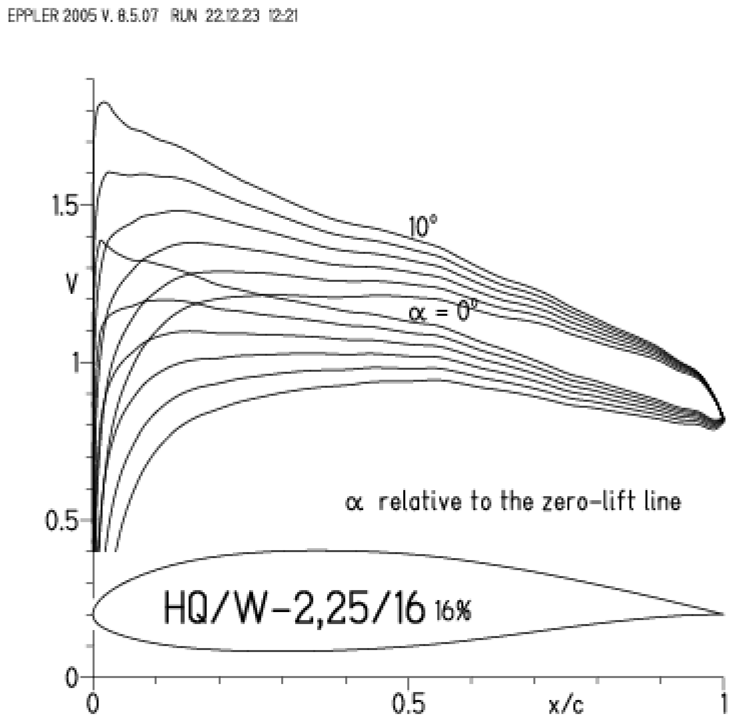
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

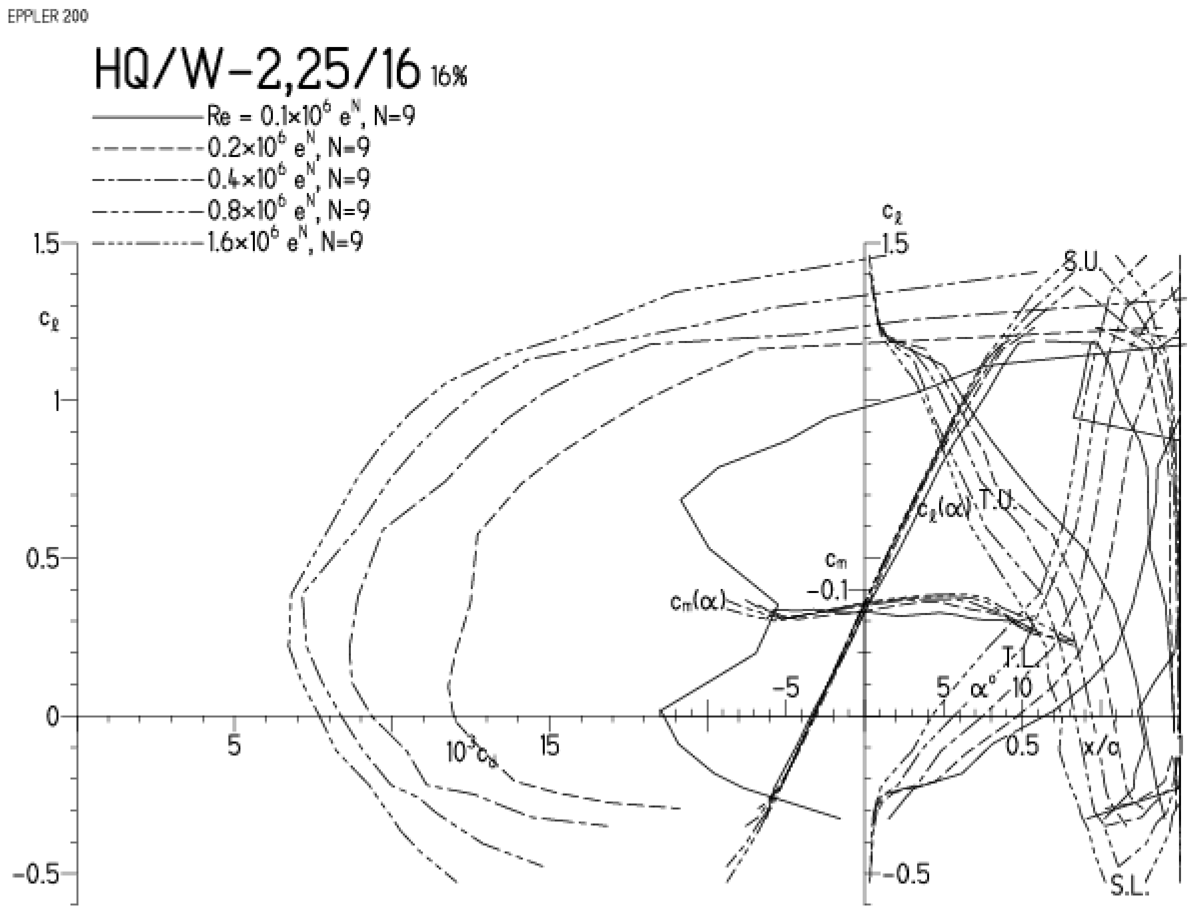


EPPLER 200

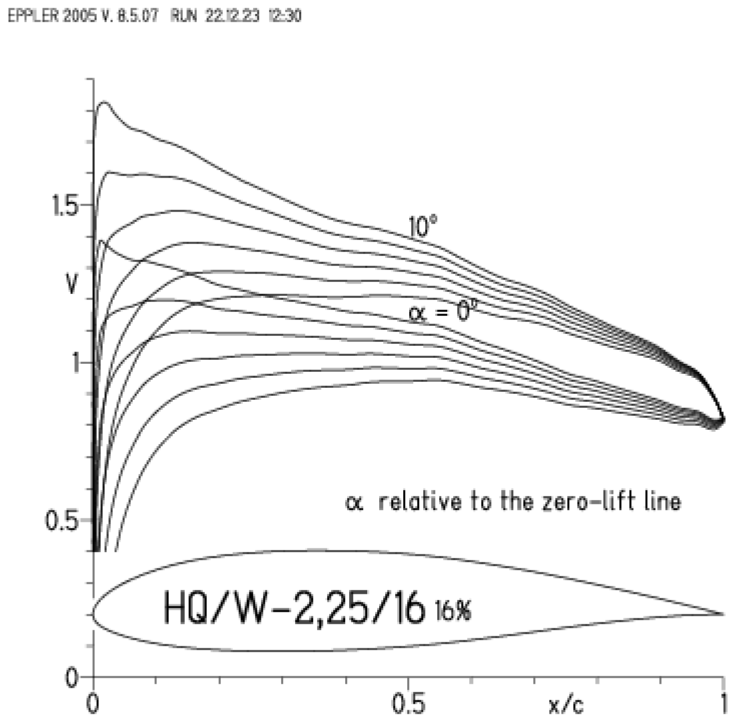


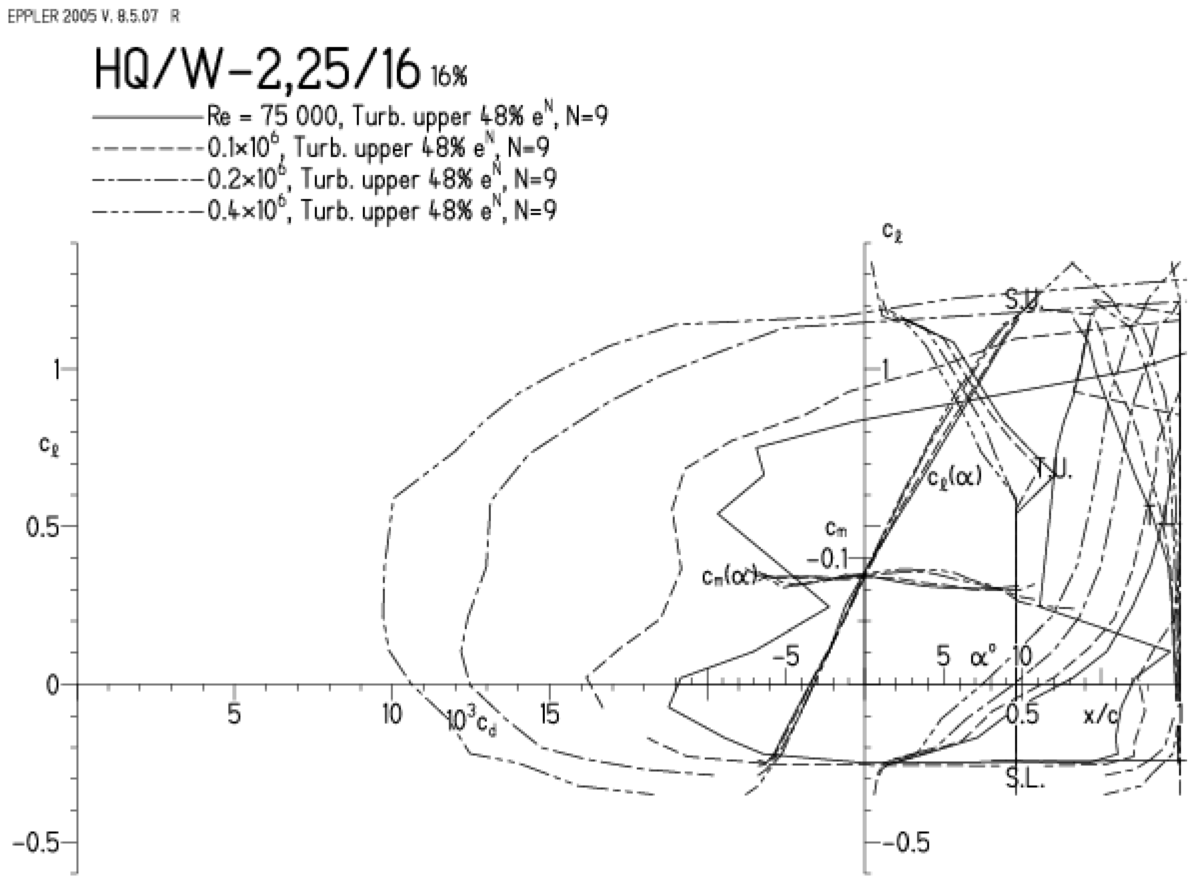
<u>HQ/W-2,25/16</u>, N=9





<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



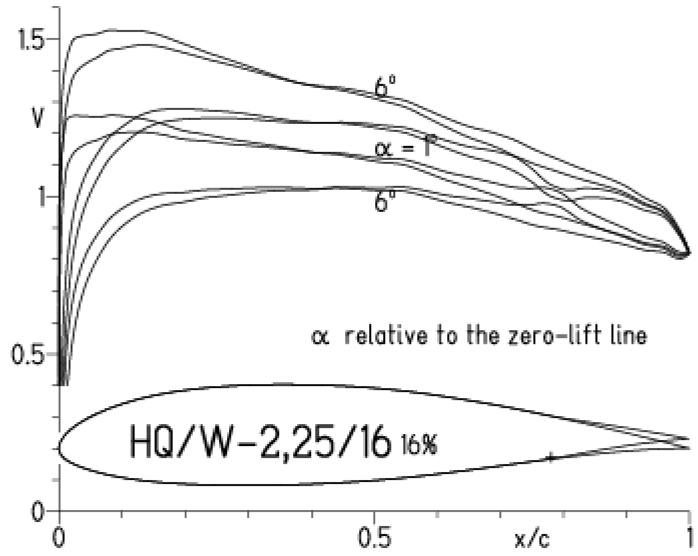


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

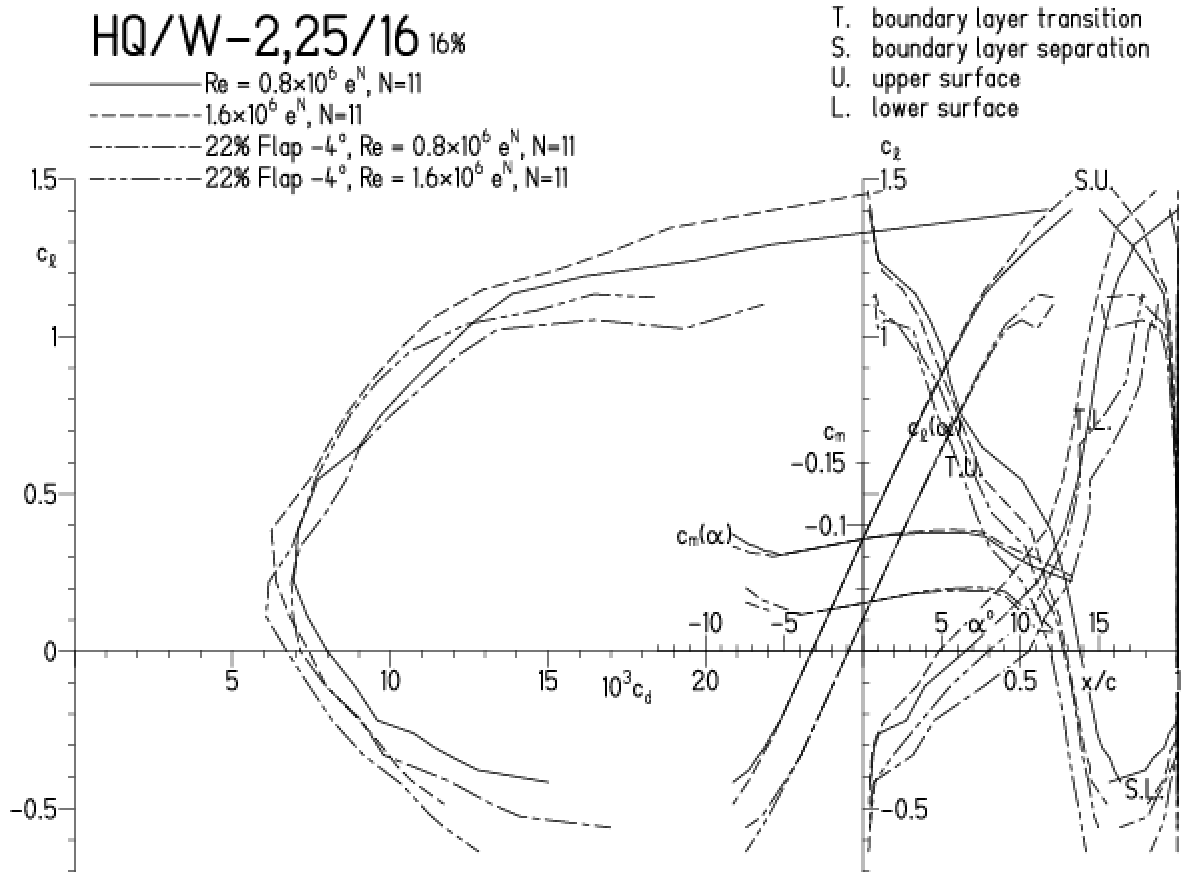
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

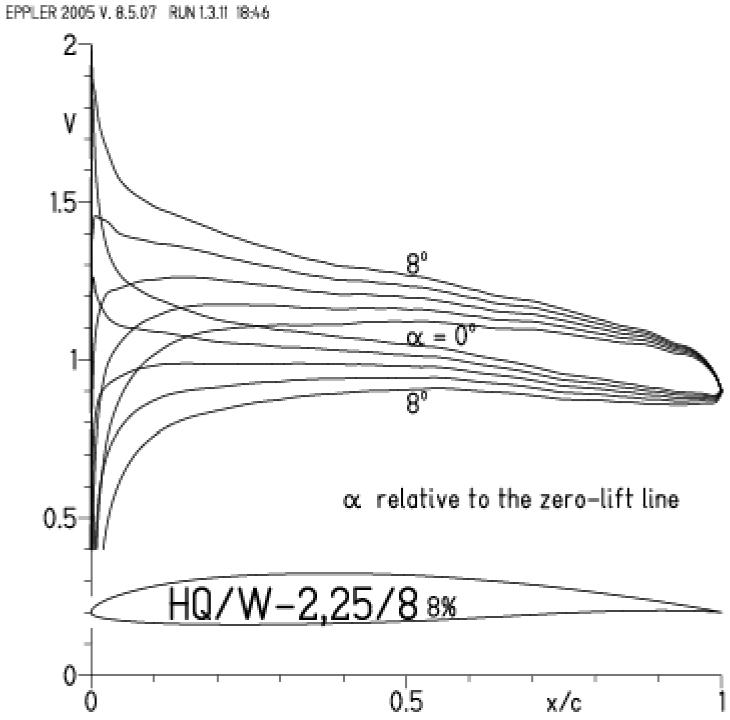
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

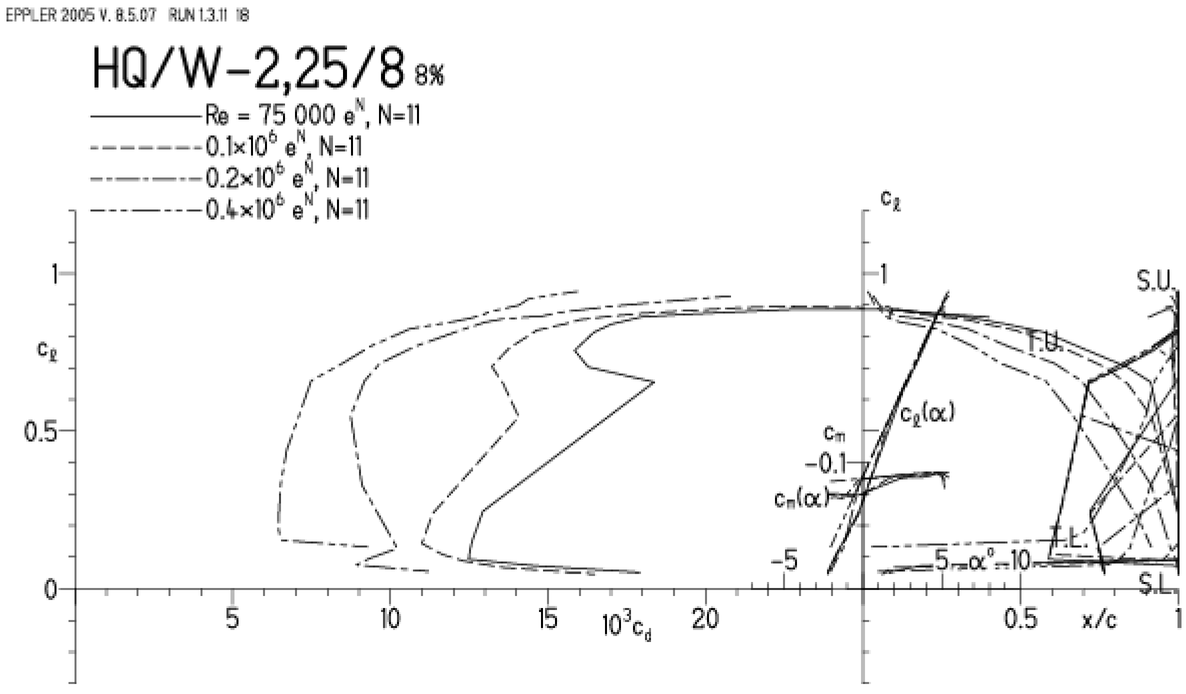


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

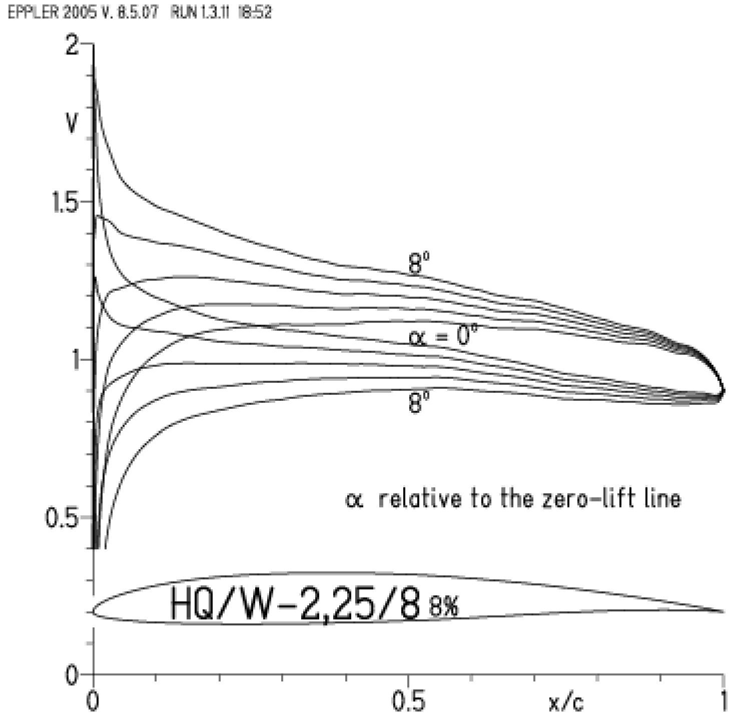


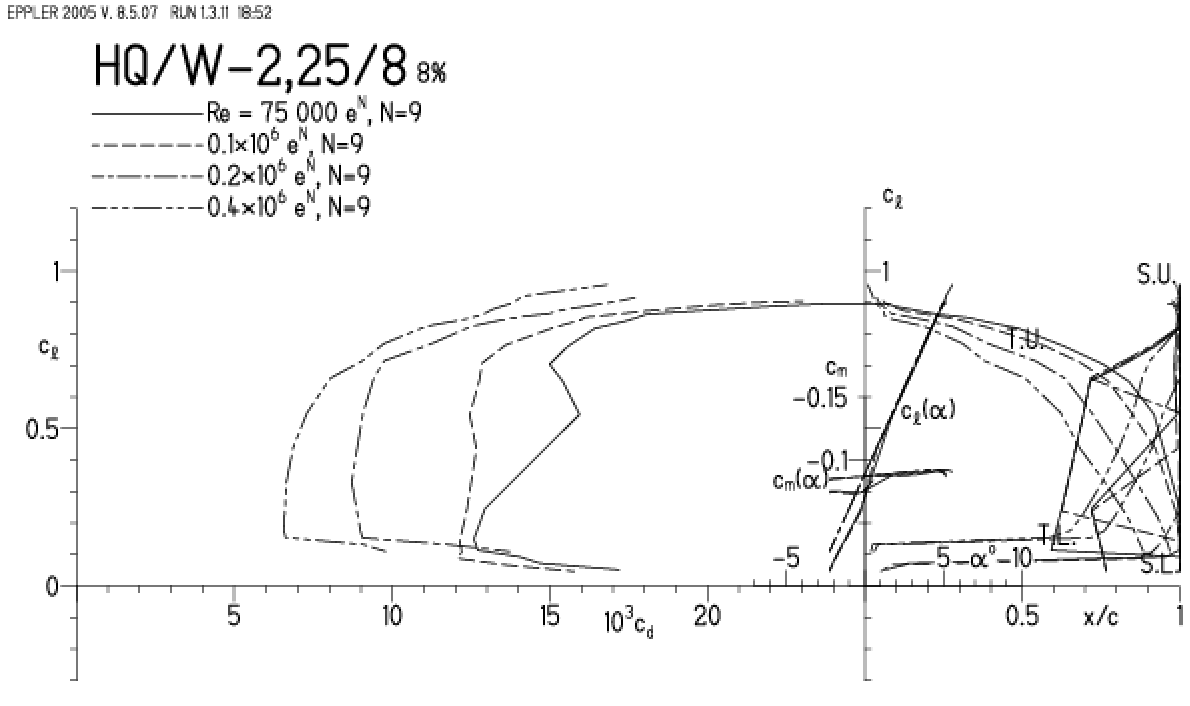
<u>HQ/W-2,25/8</u>, N=11



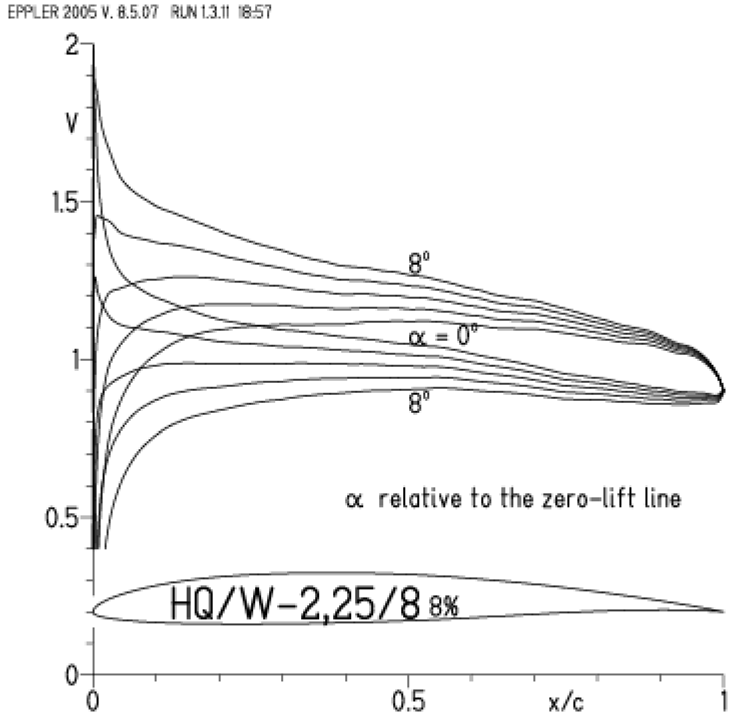


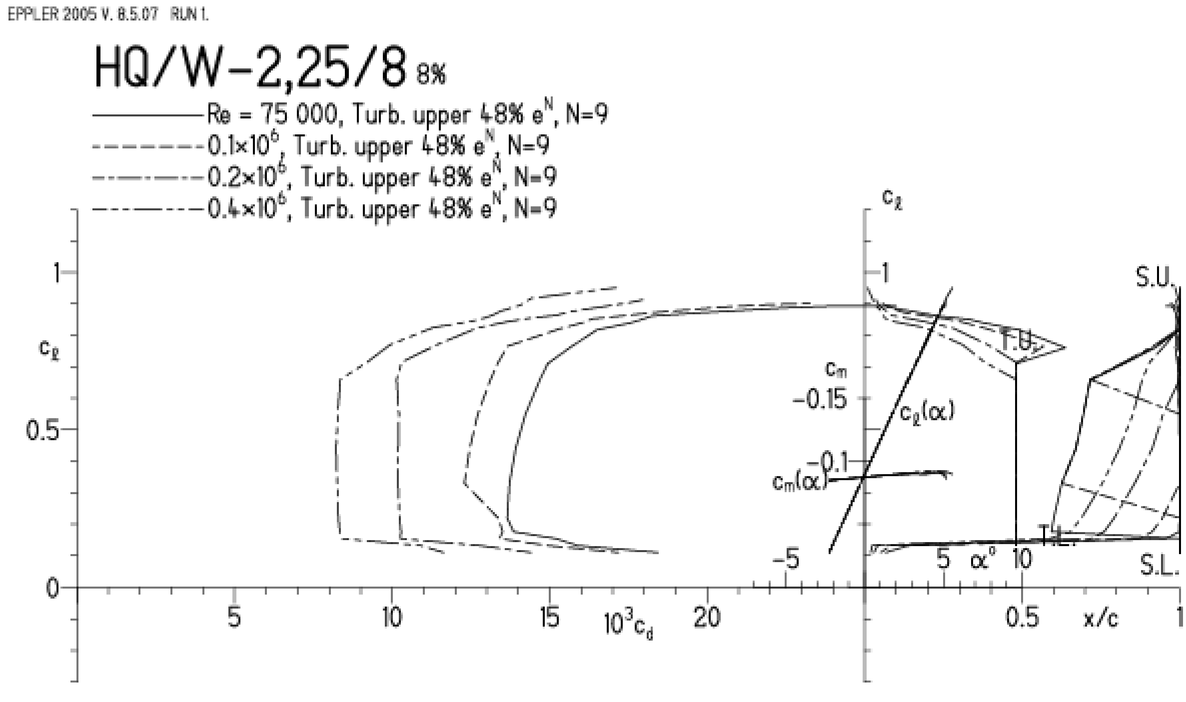
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5−α°−10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

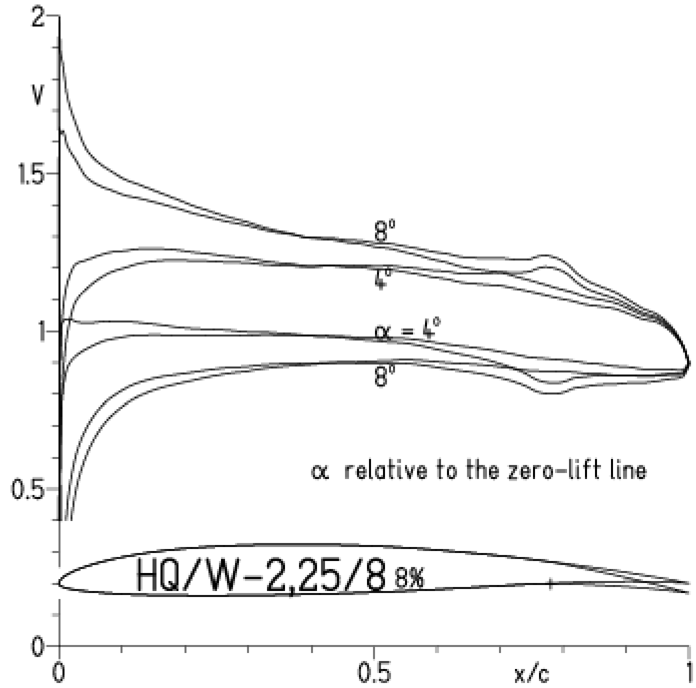
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



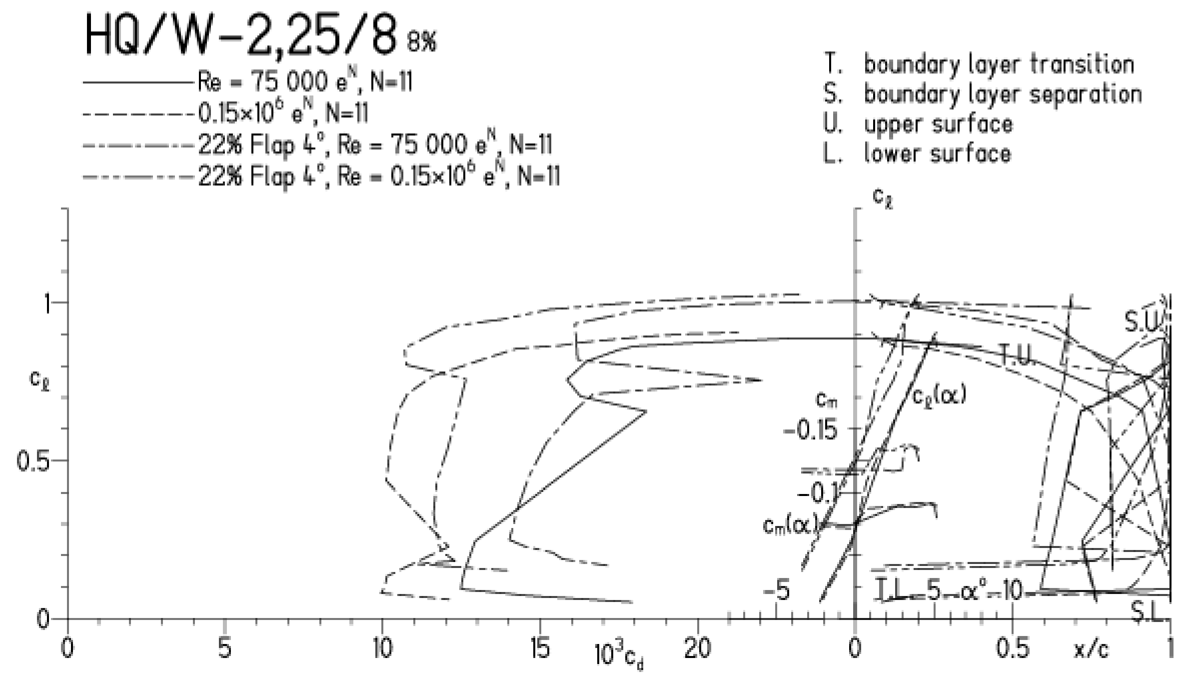


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

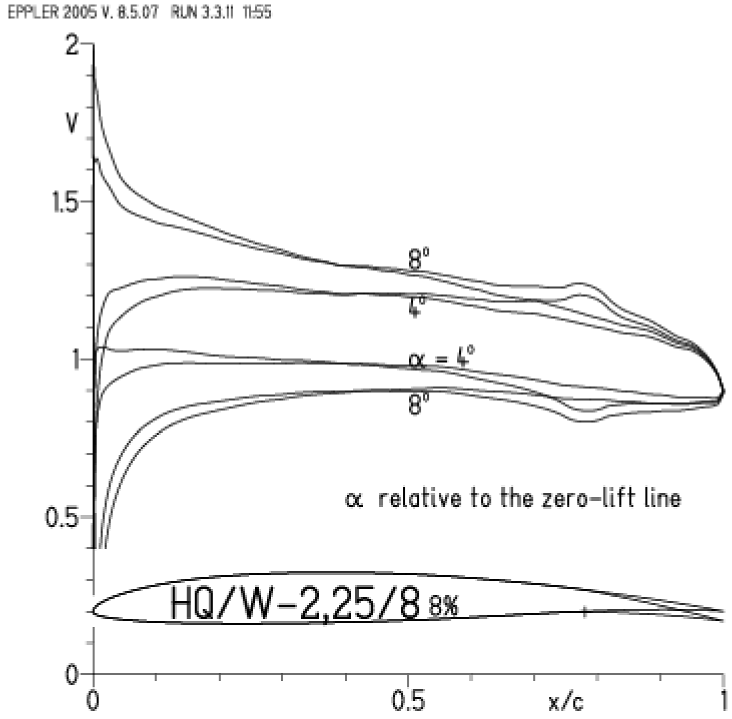
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

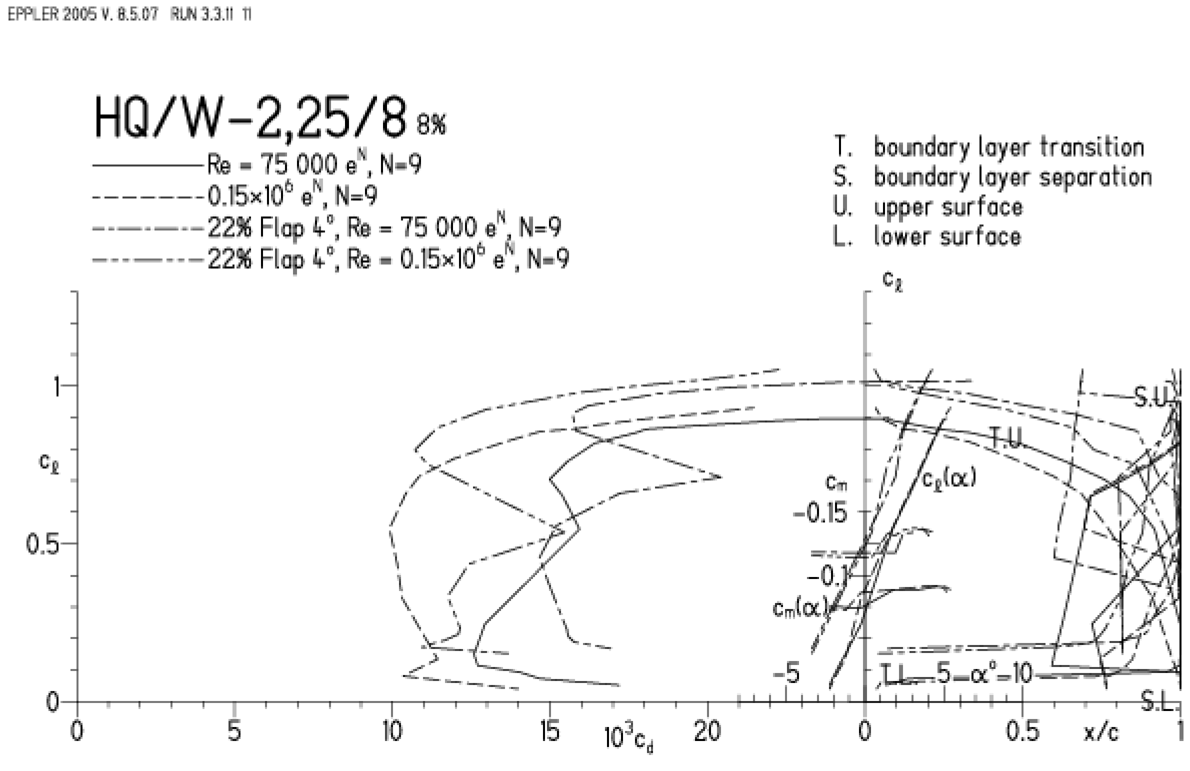


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

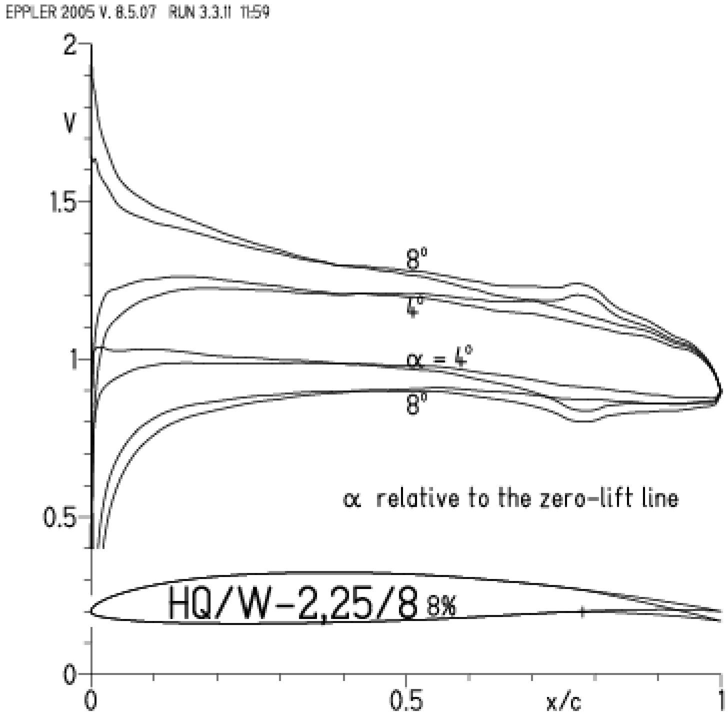


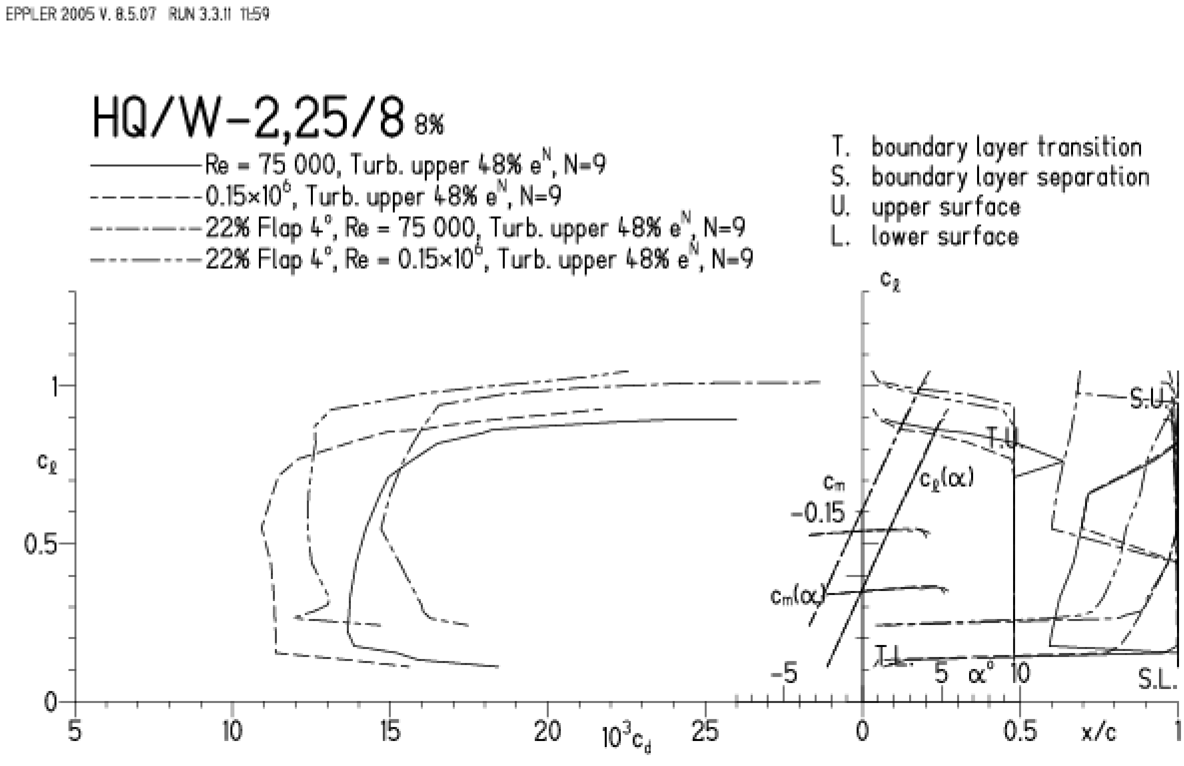
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





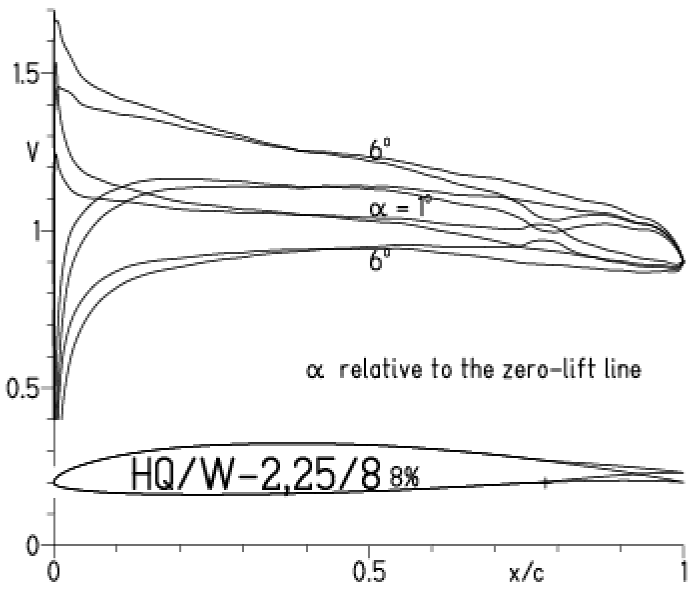
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



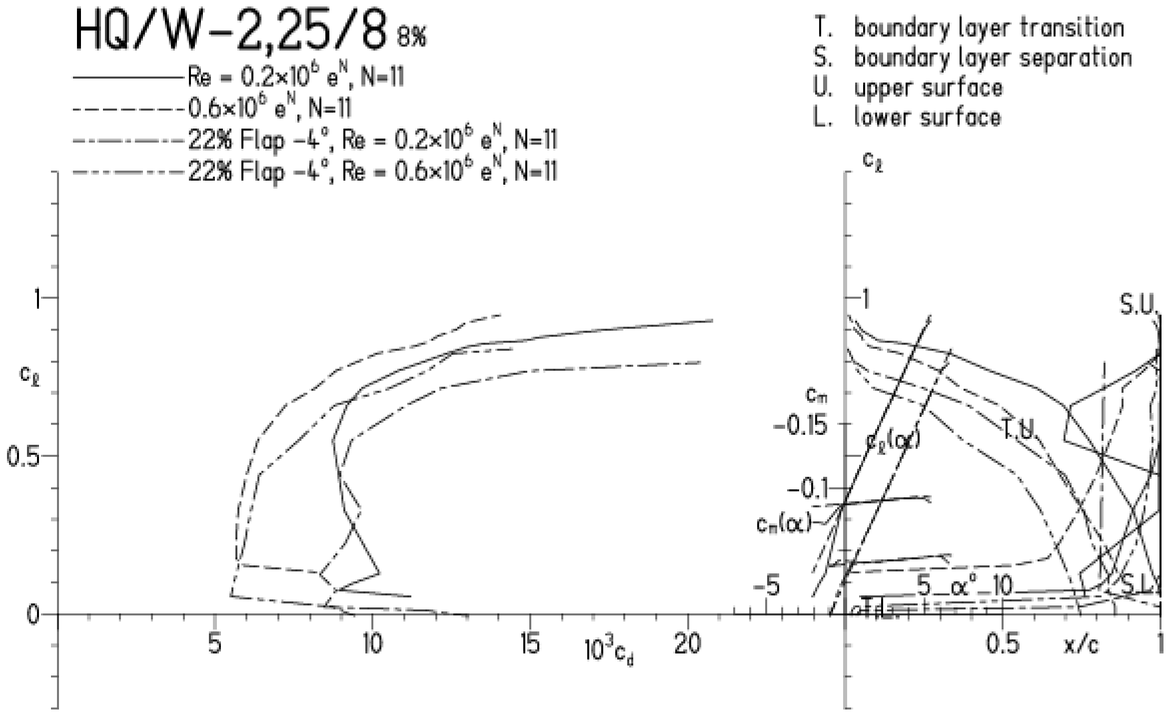


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

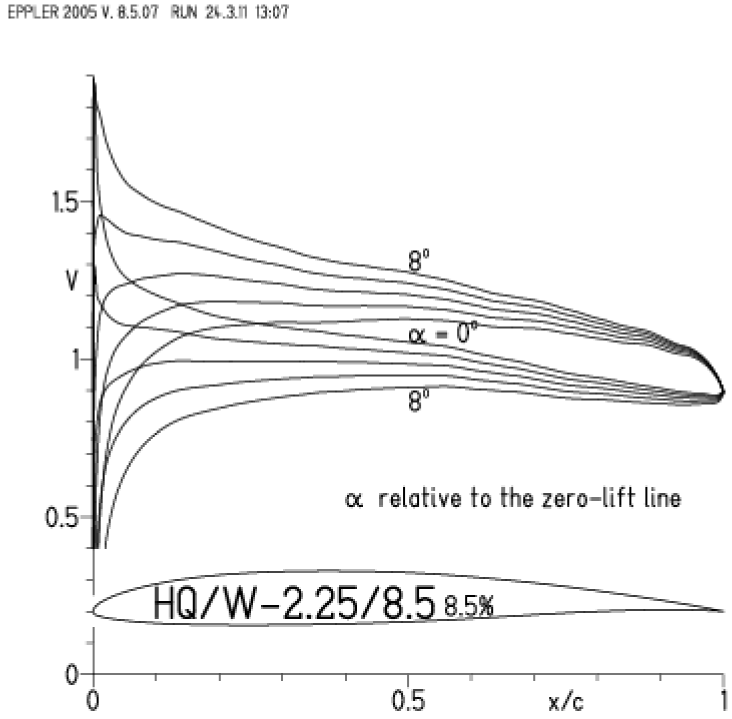
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

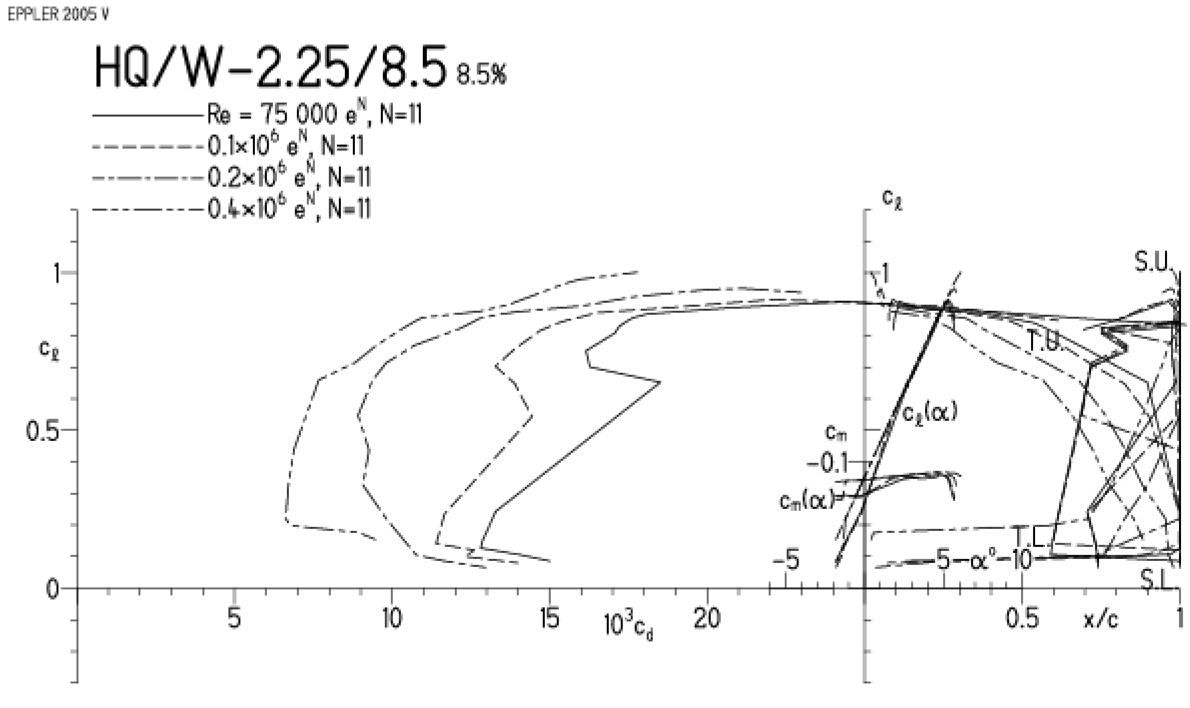


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

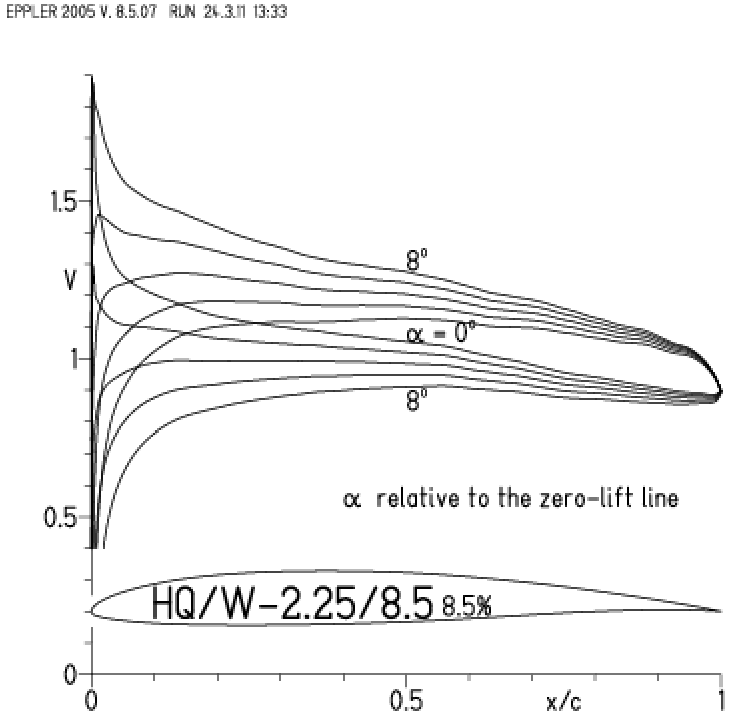


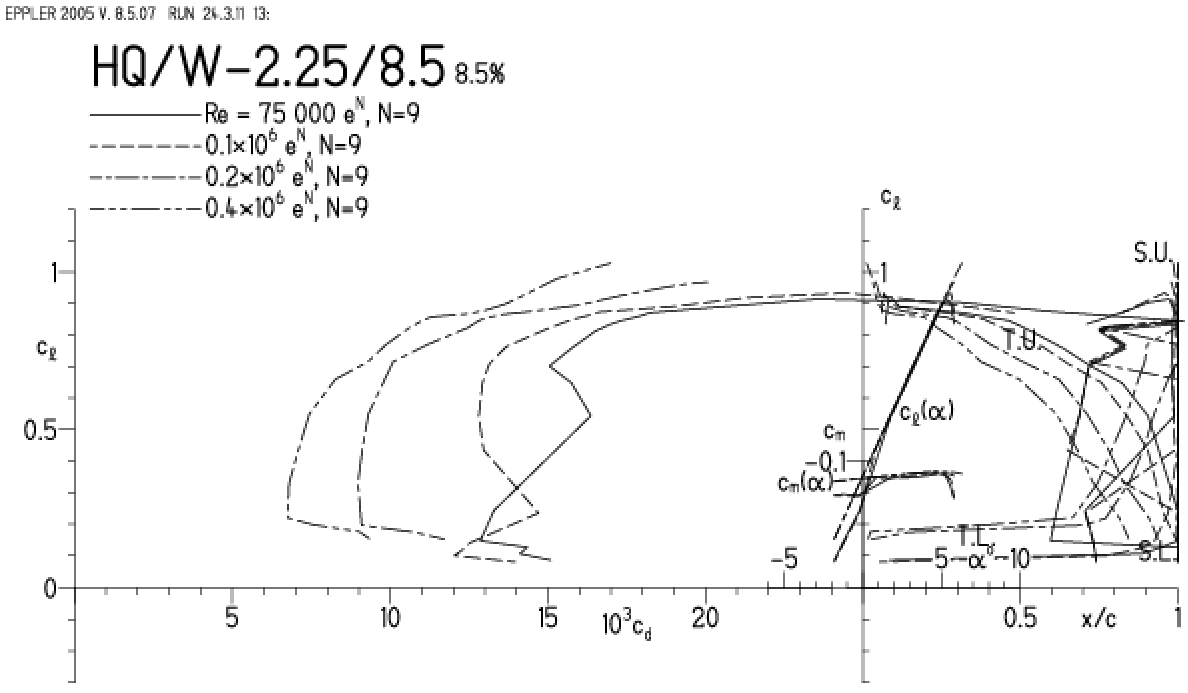
HQ/W-2,25/8,5, N=11





HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
10³c_d
20
c_m
-0.1
c_m(α)
c_ℓ(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
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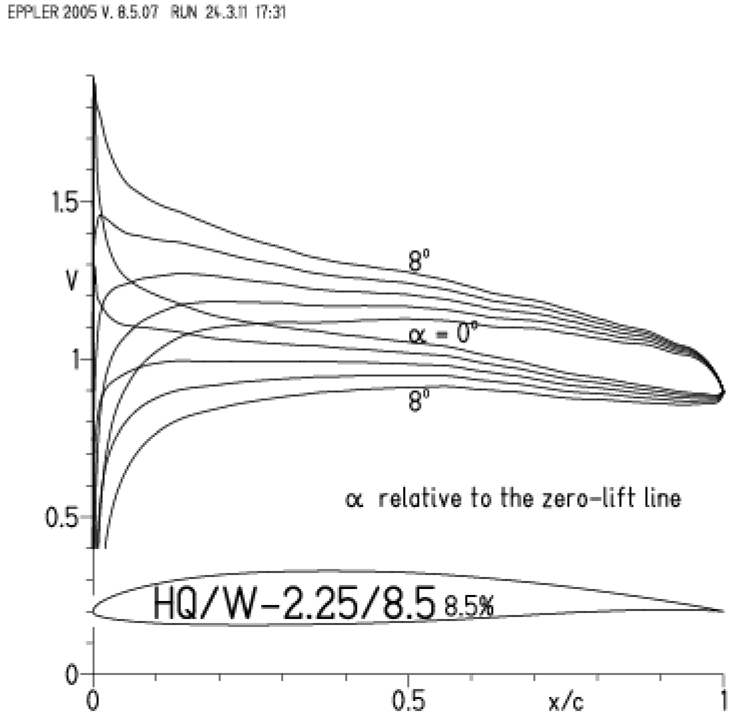
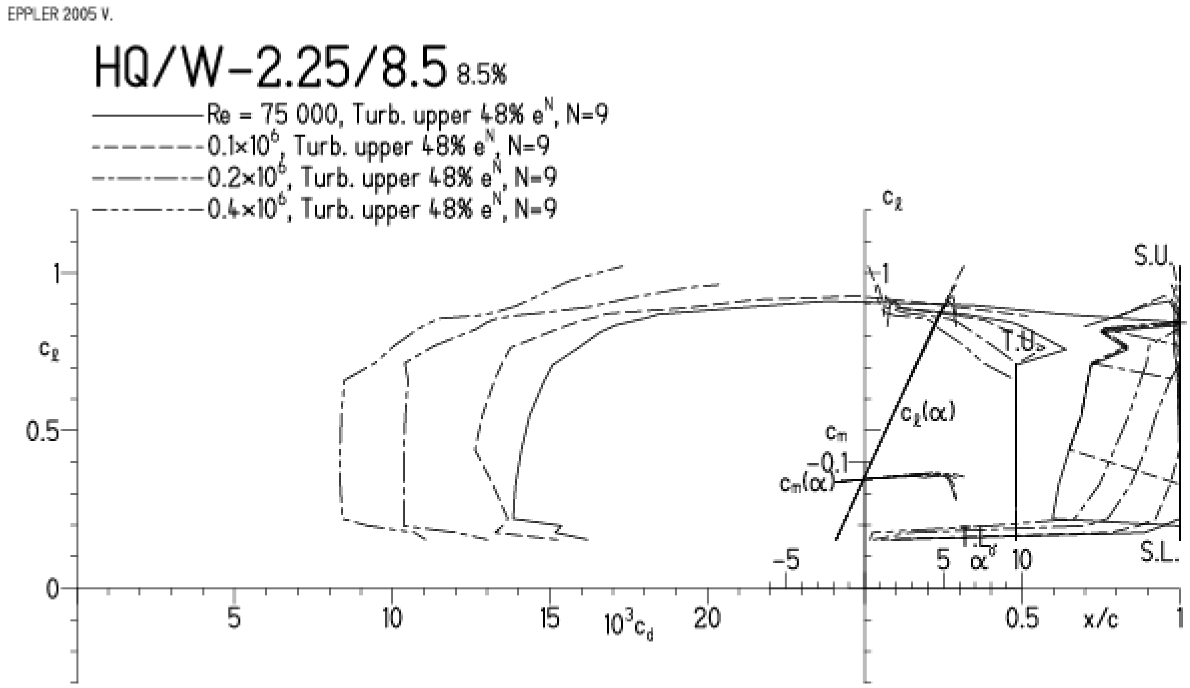
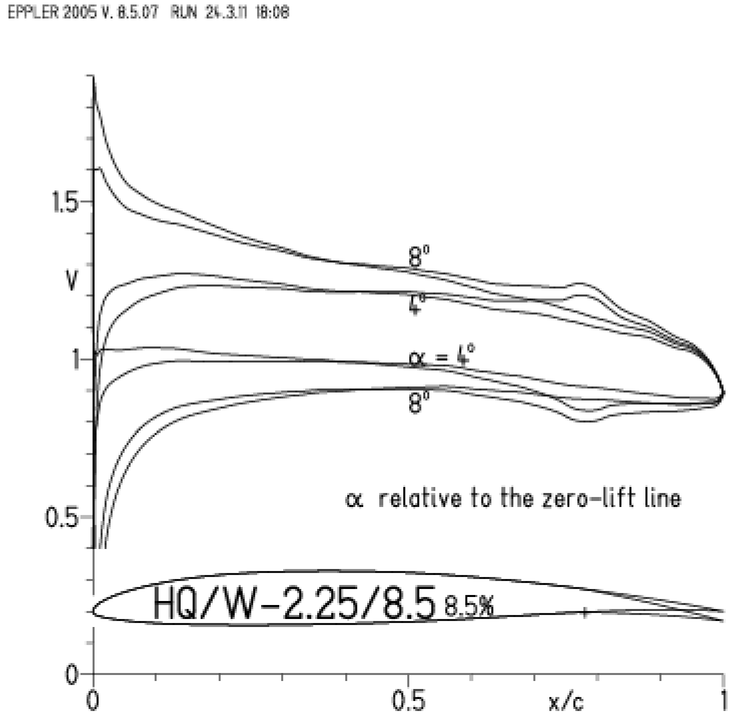
1

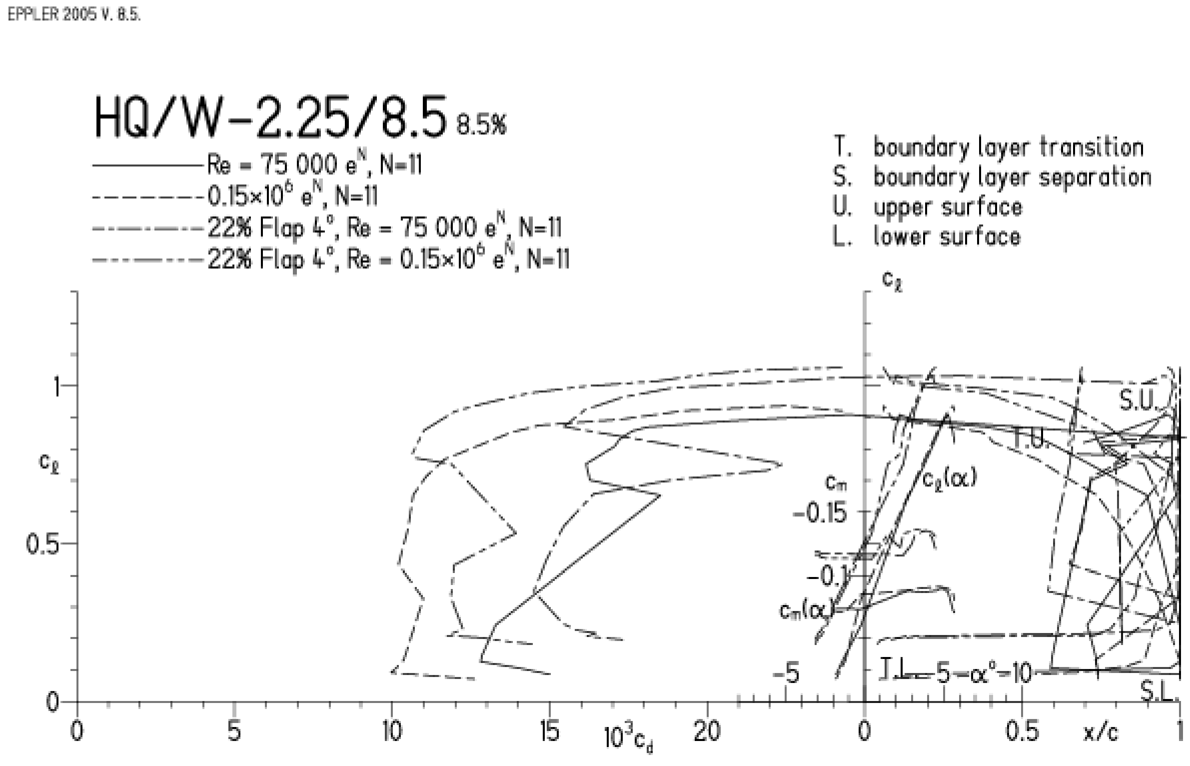
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





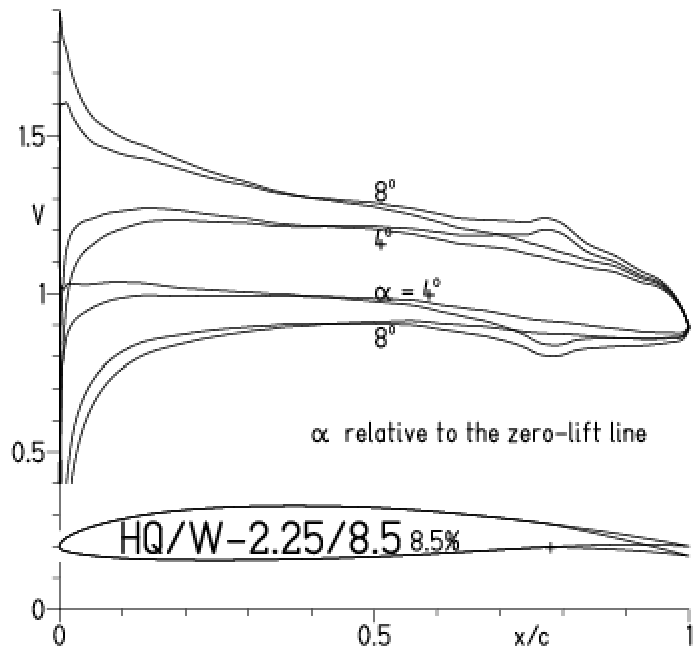
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



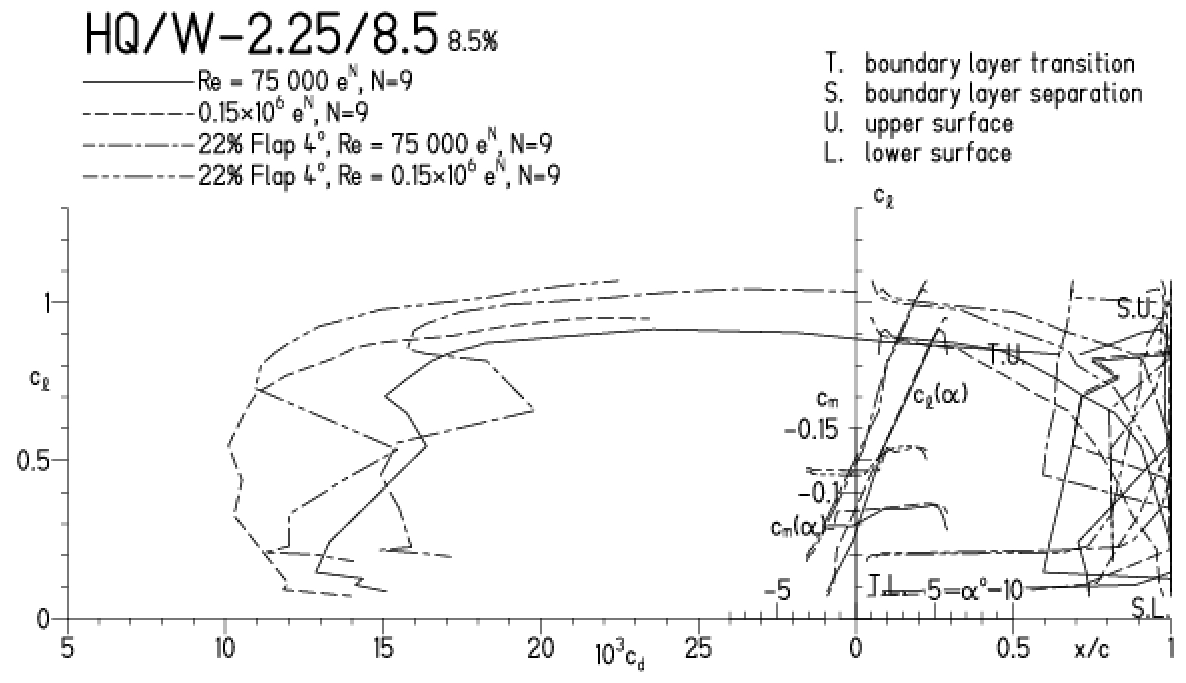


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

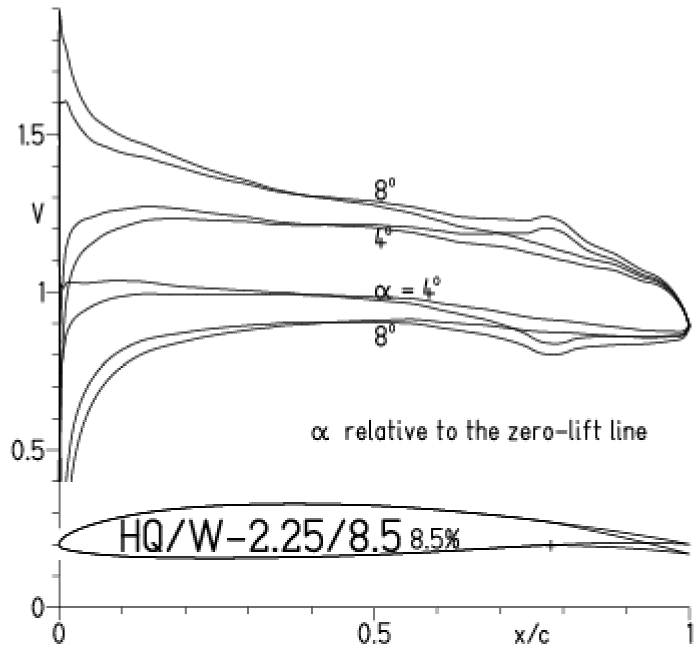


EPPLER 2005 V.

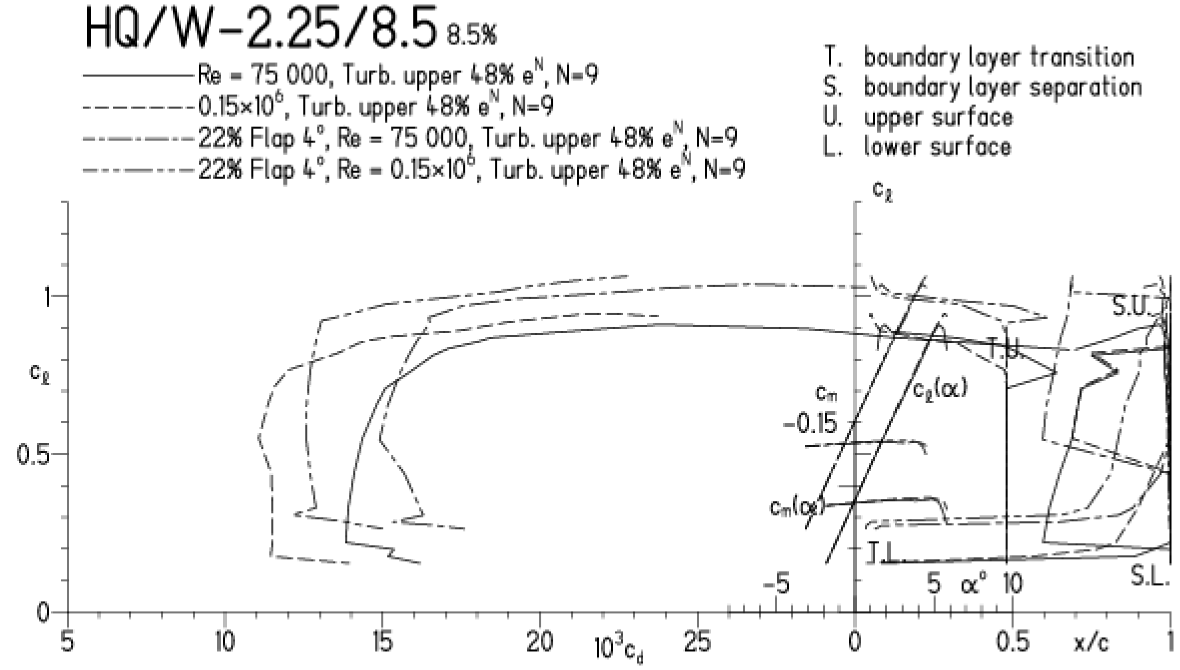


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

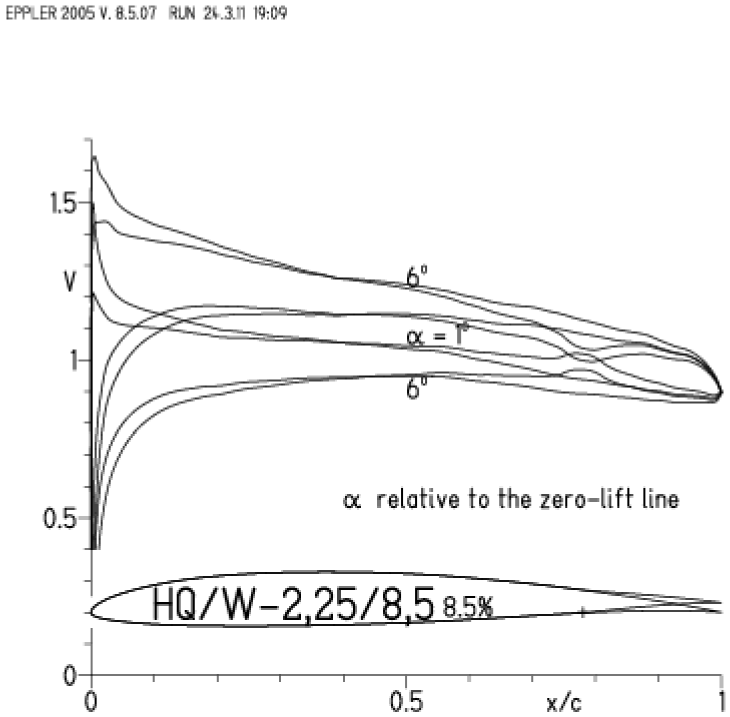
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

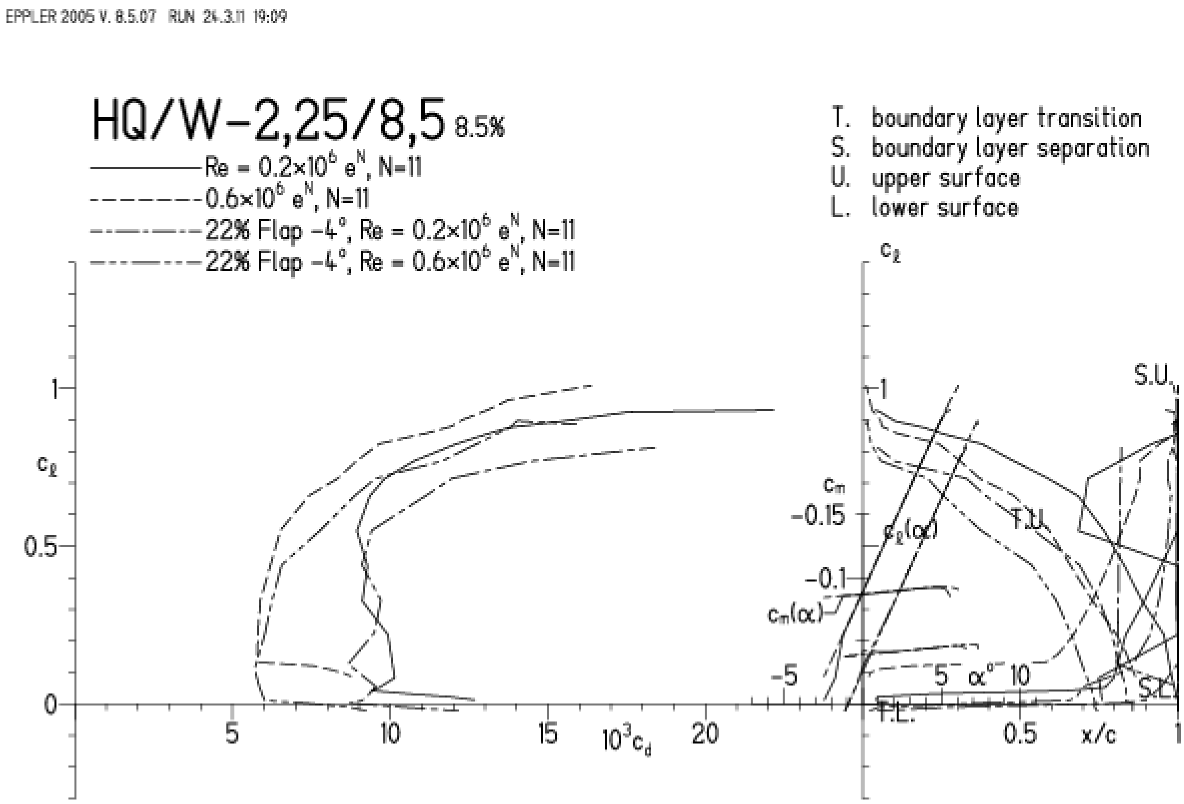


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



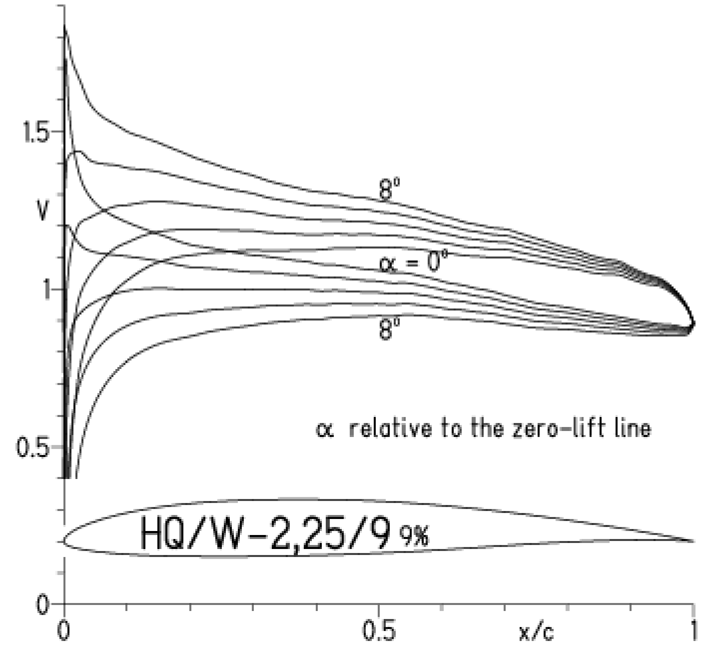
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



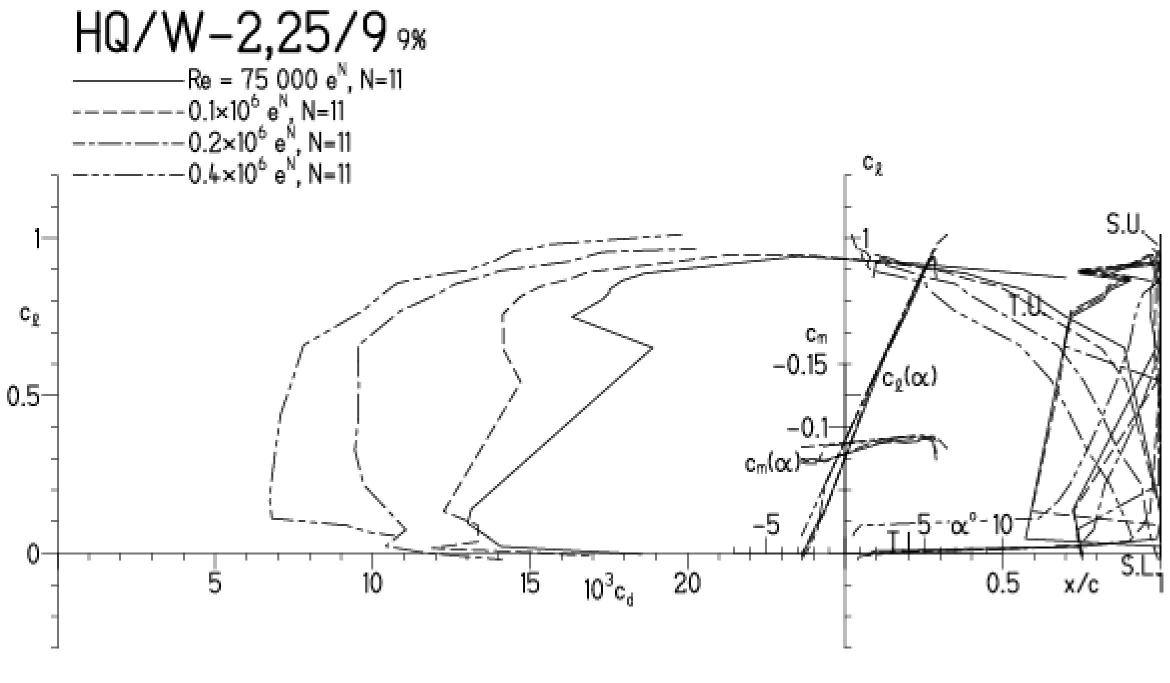


HQ/W-2,25/9, N=11

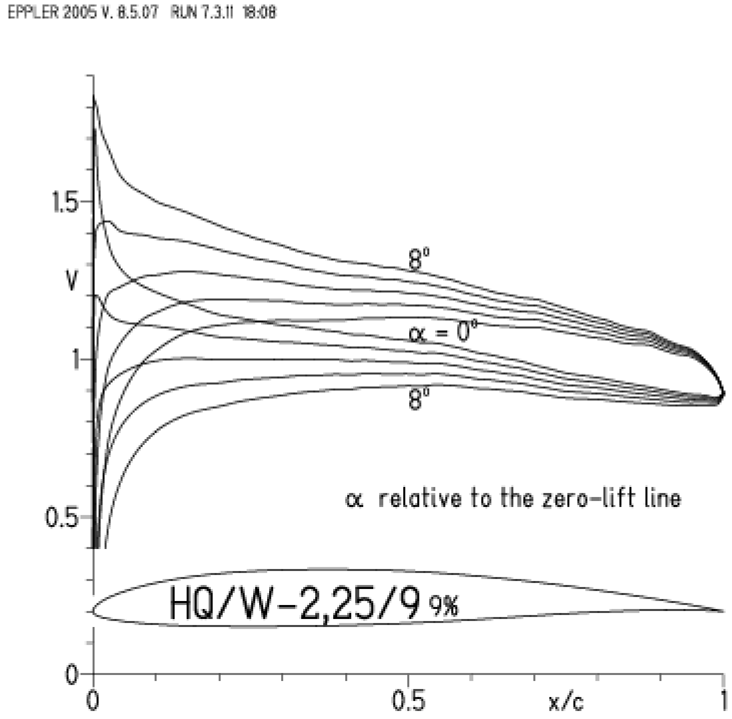
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

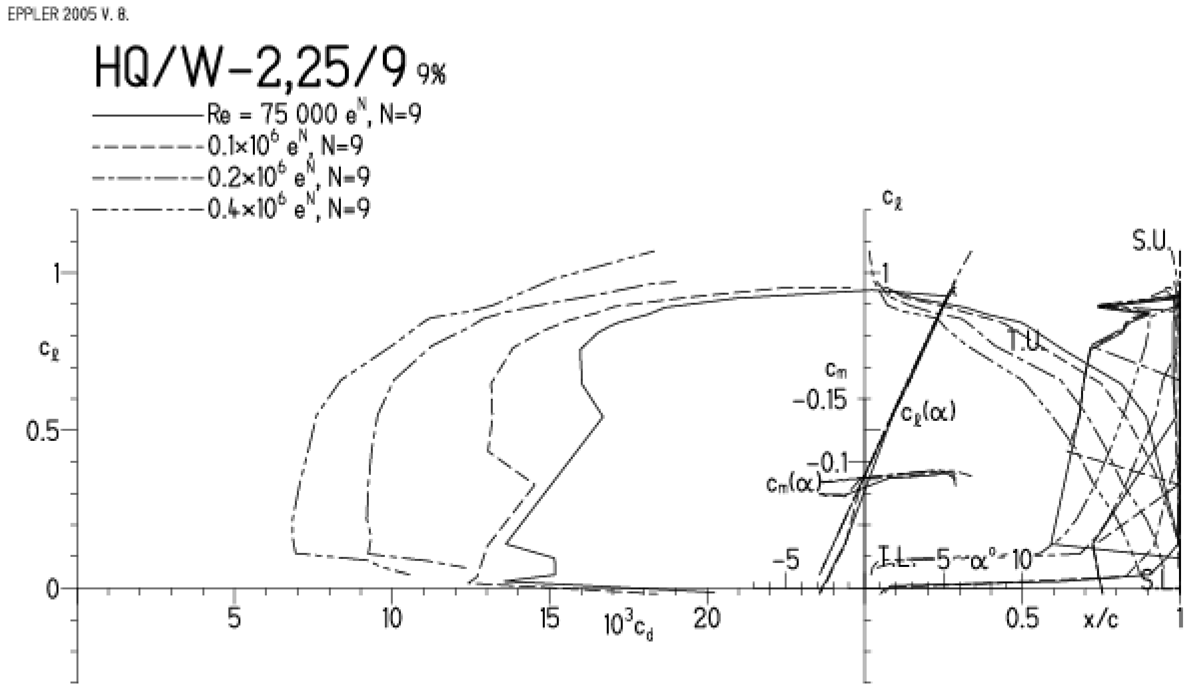


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

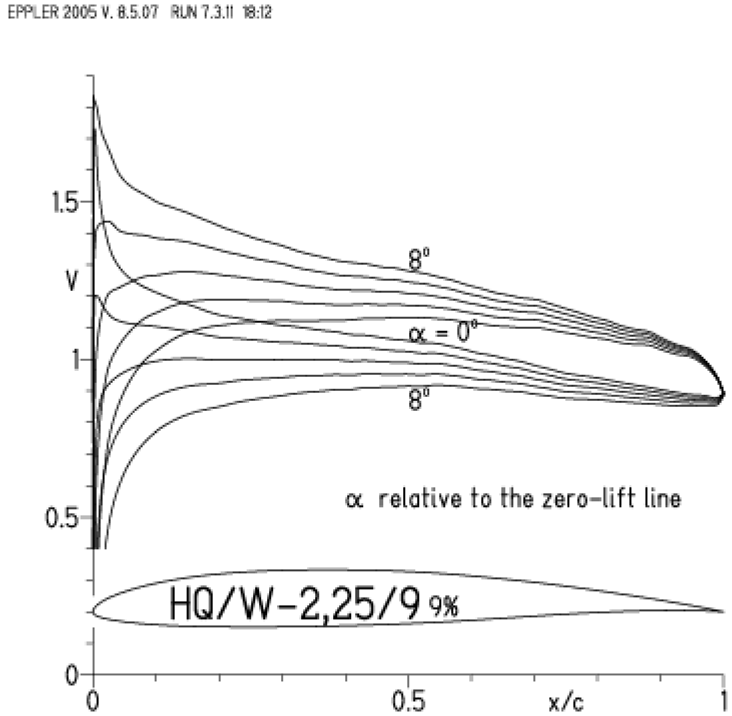


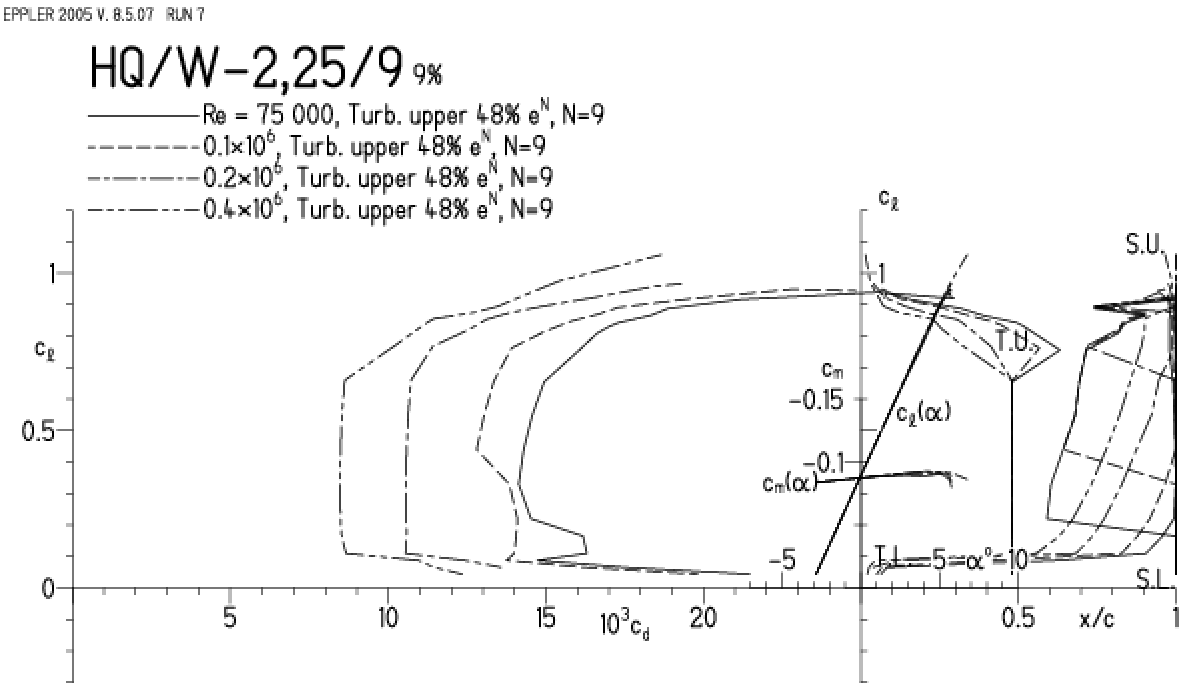
<u>HQ/W-2,25/9</u>, N=9





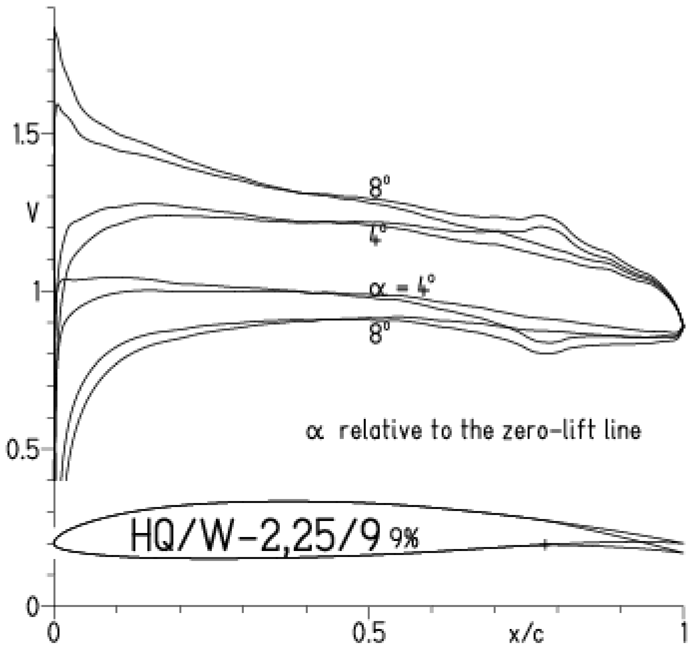
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



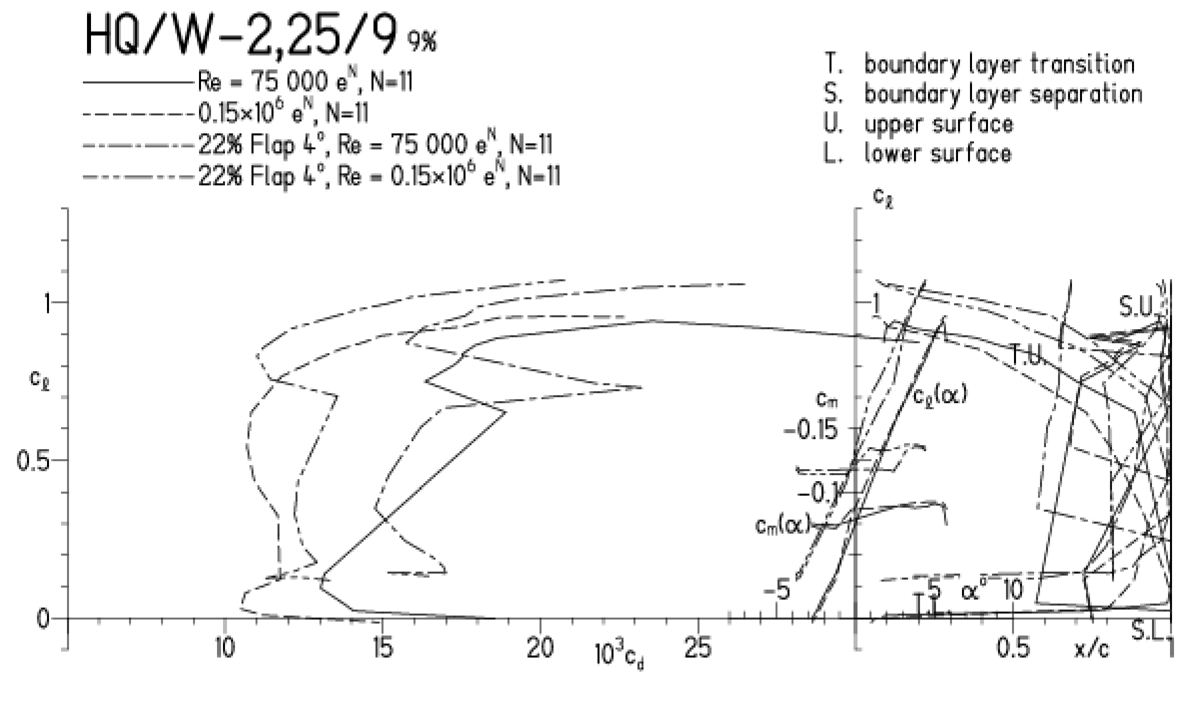


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

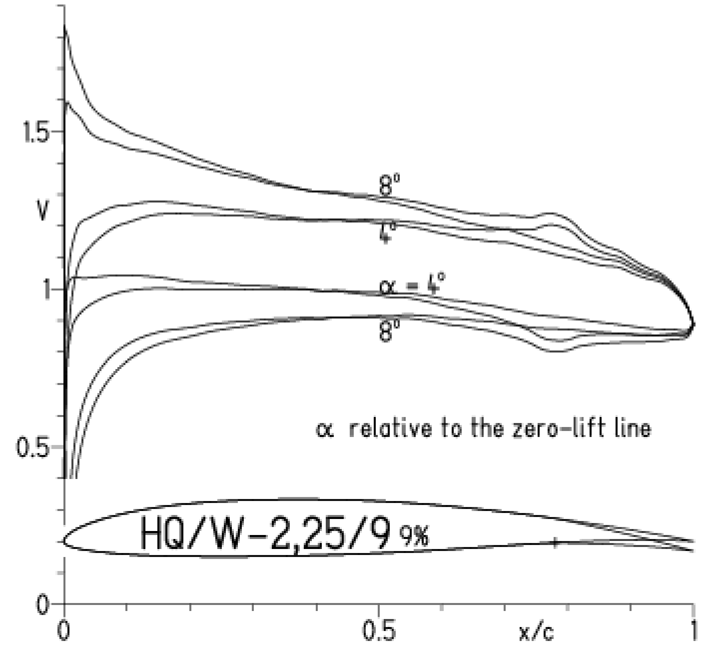


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

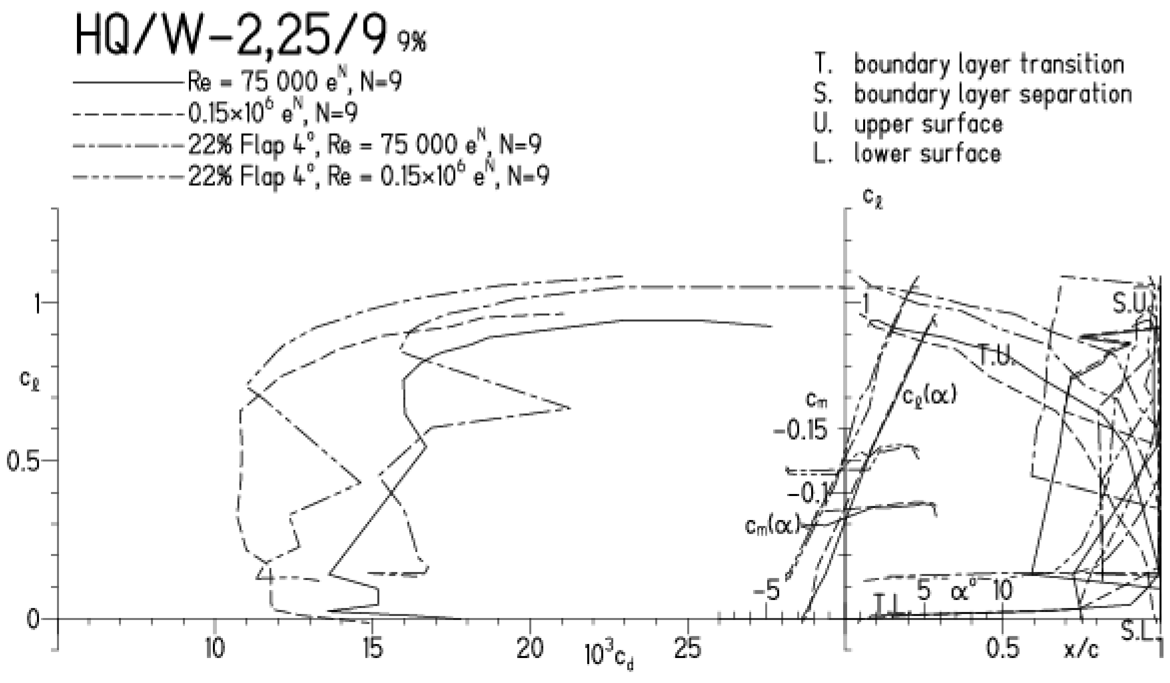


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

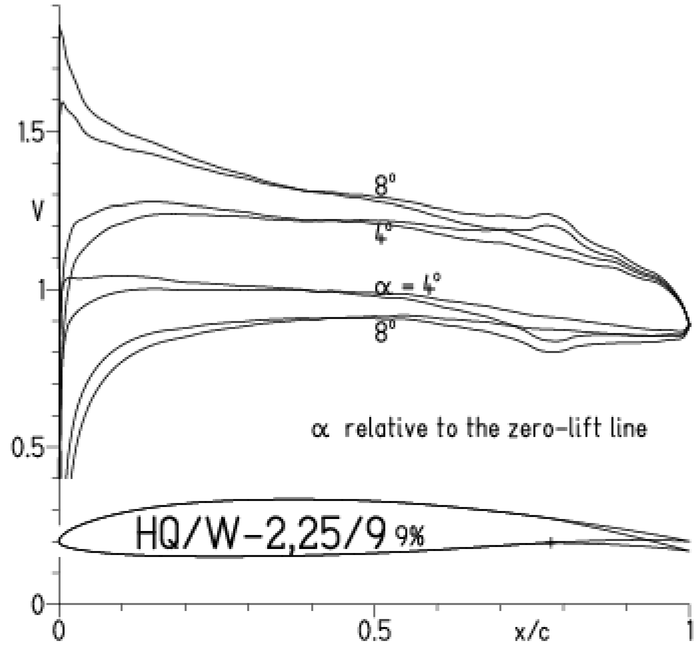


EPPLER 2005 V. 8.5.07 RUN 8.3.1

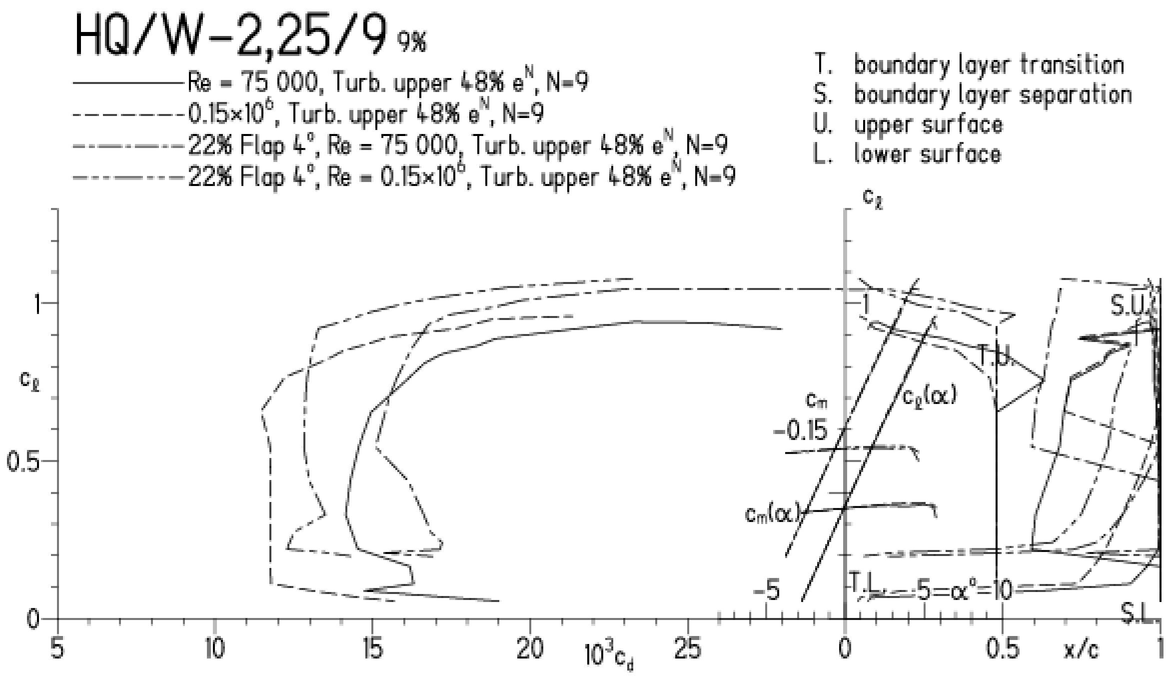


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

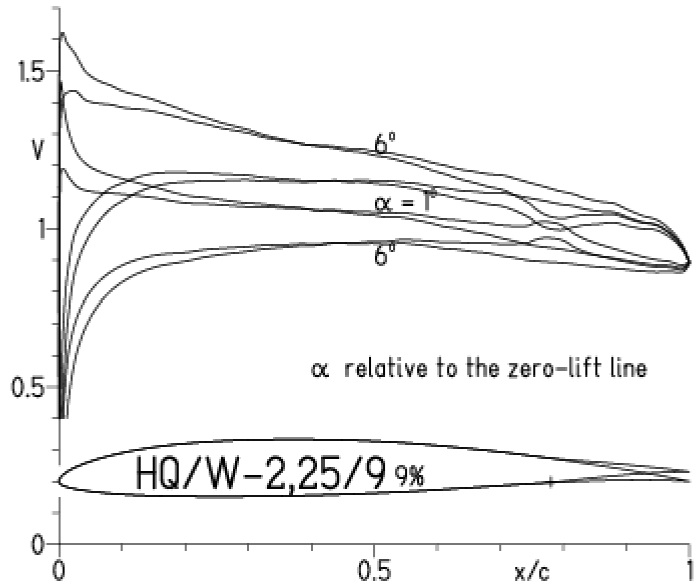


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

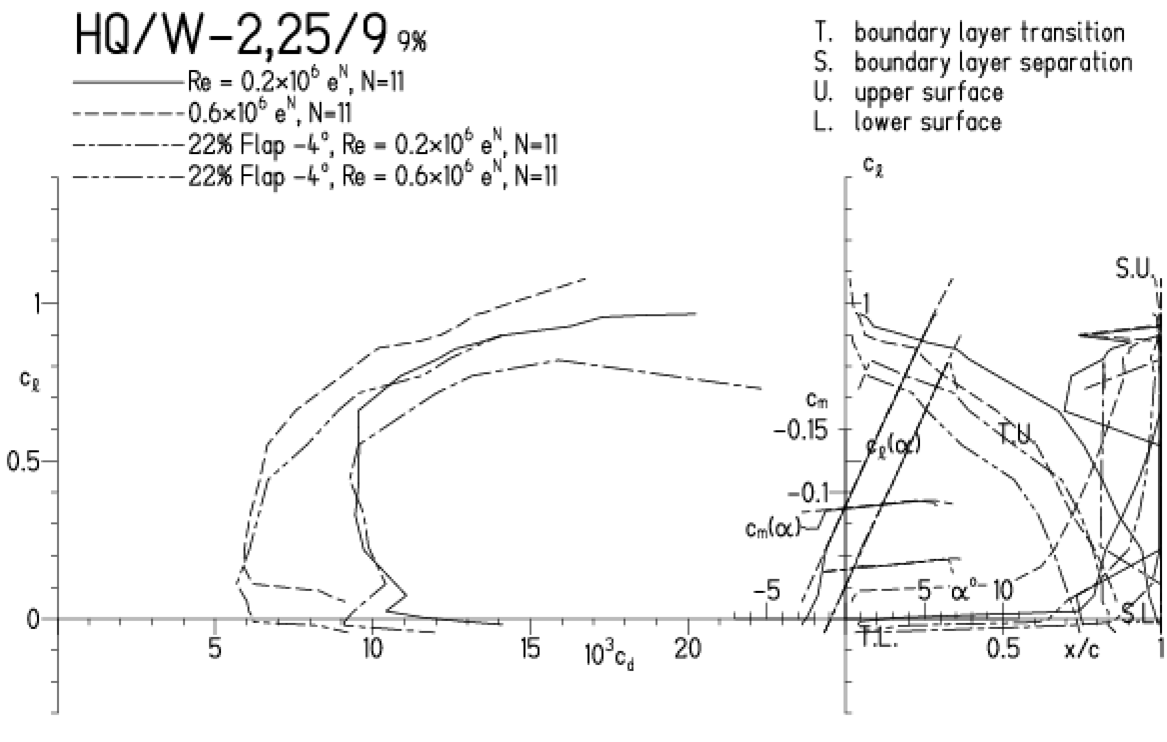


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

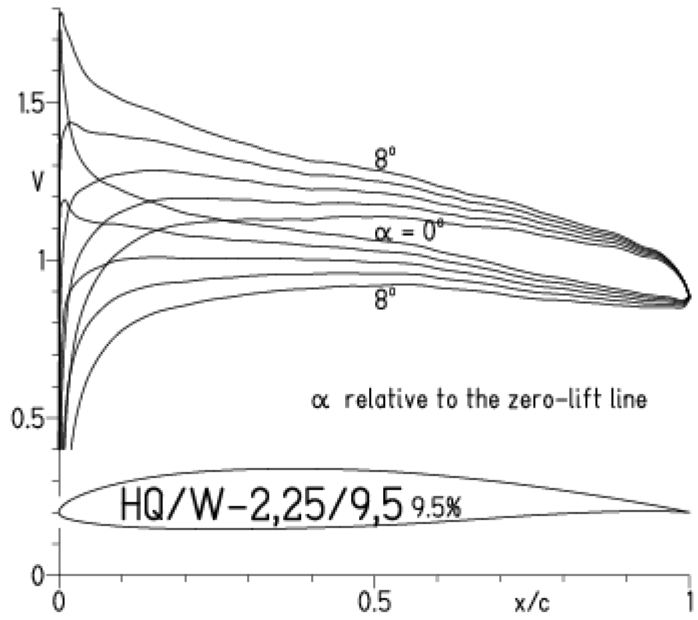


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

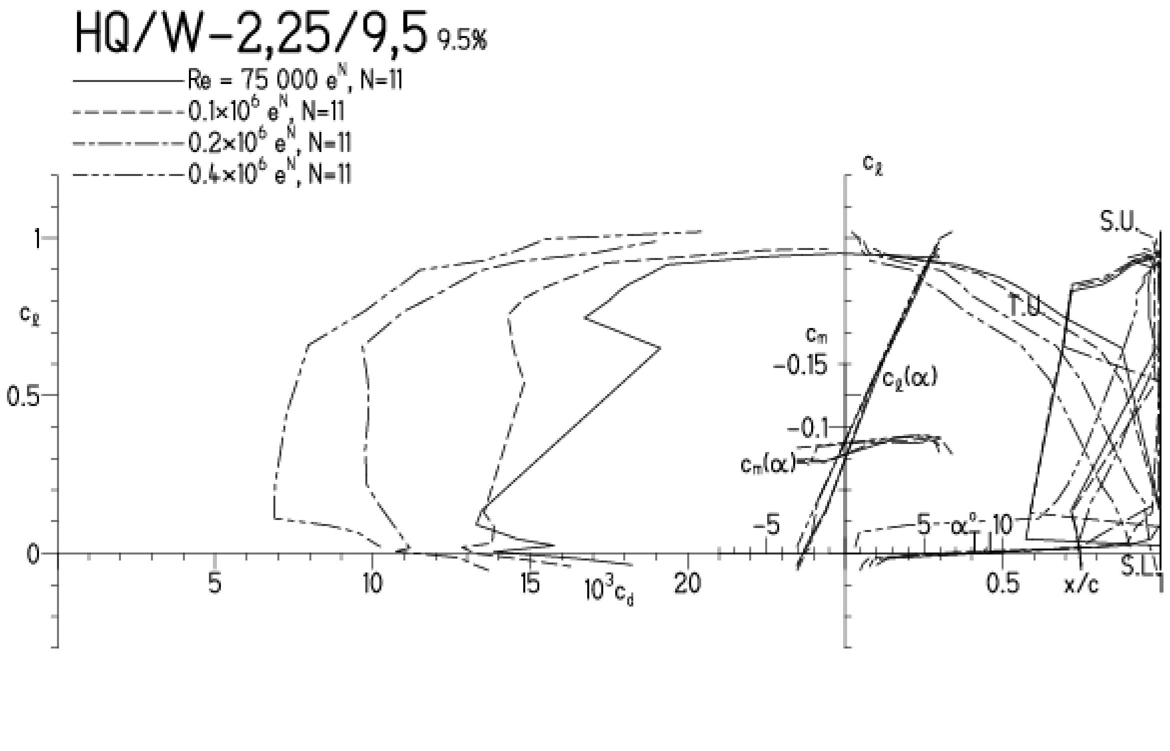


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

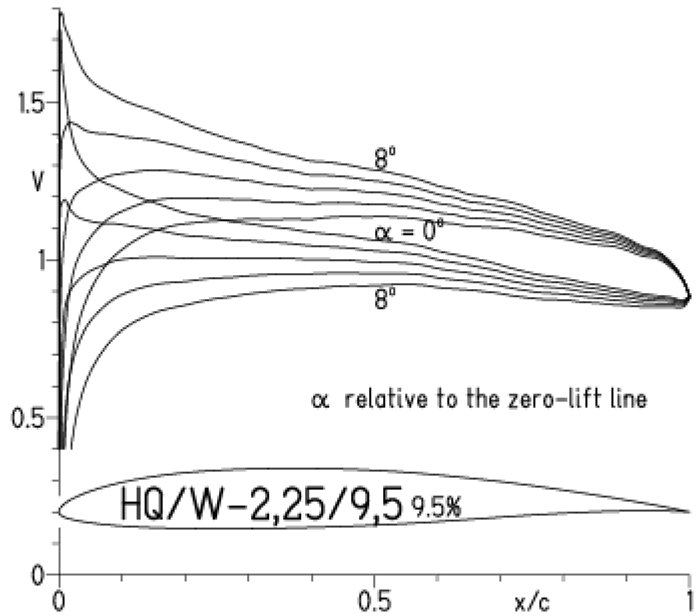


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

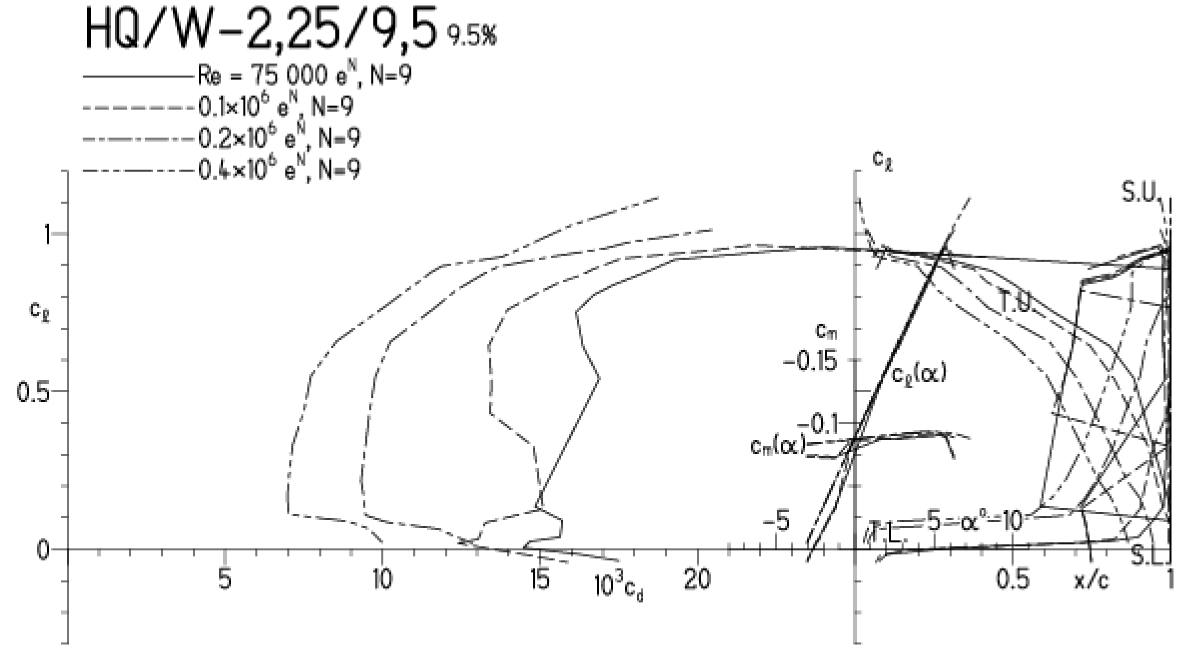


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

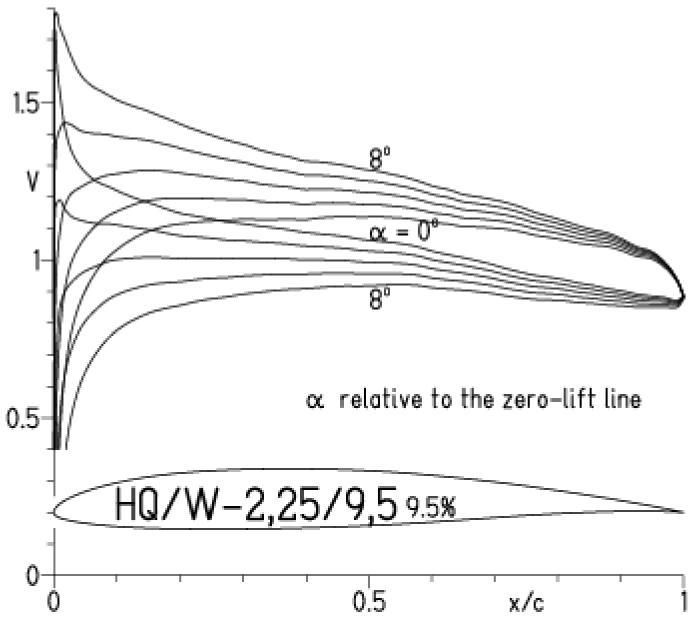


EPPLER 2005 V. 8.5.07 RUN 8.3.

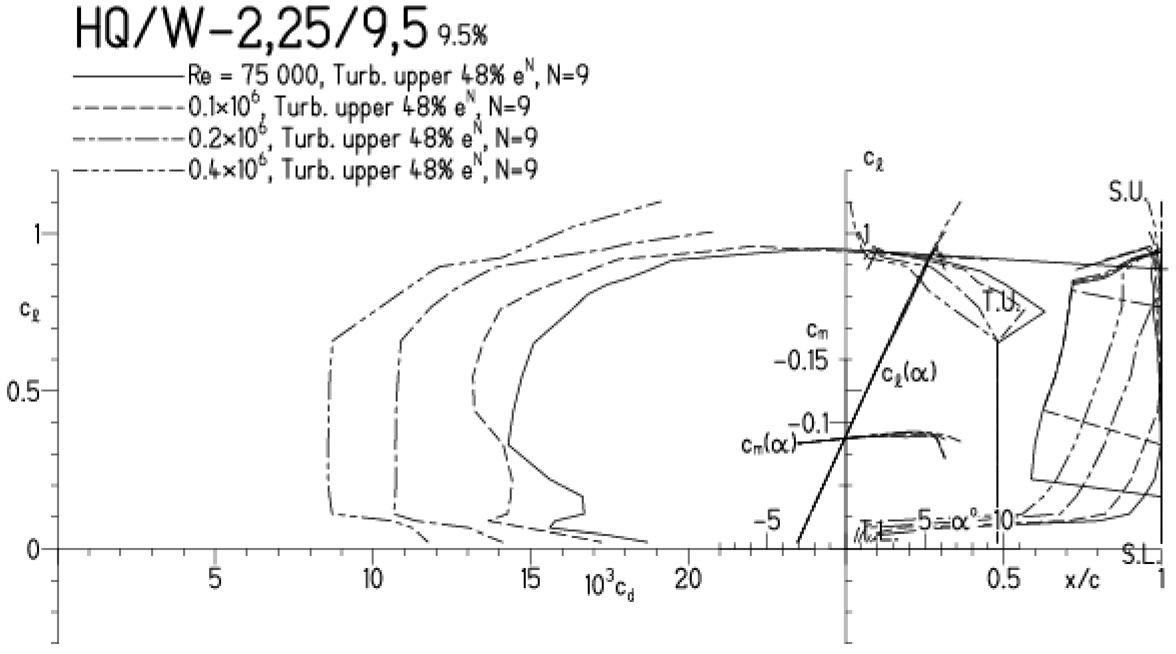


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

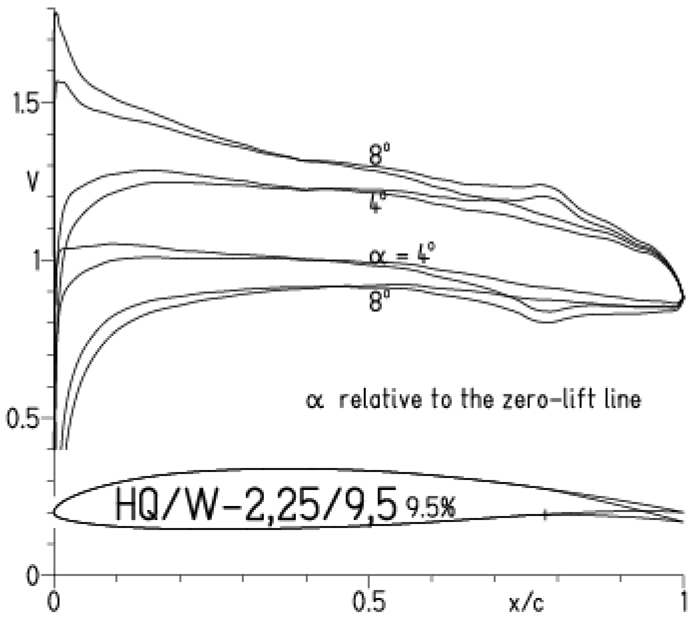


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

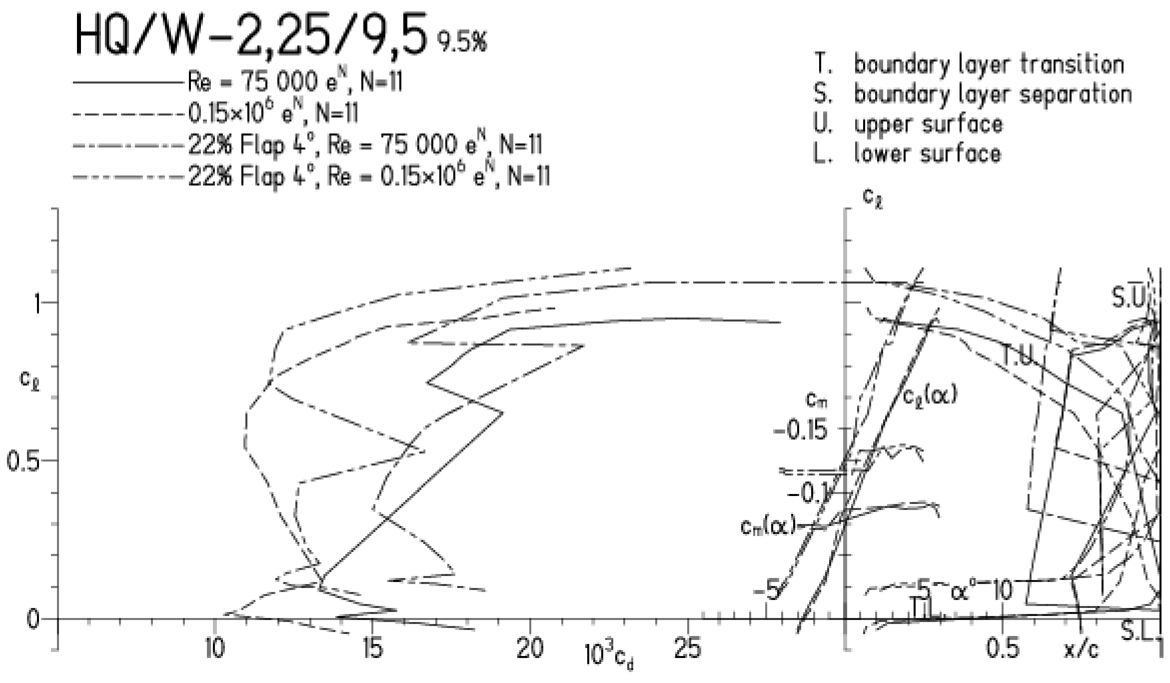


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

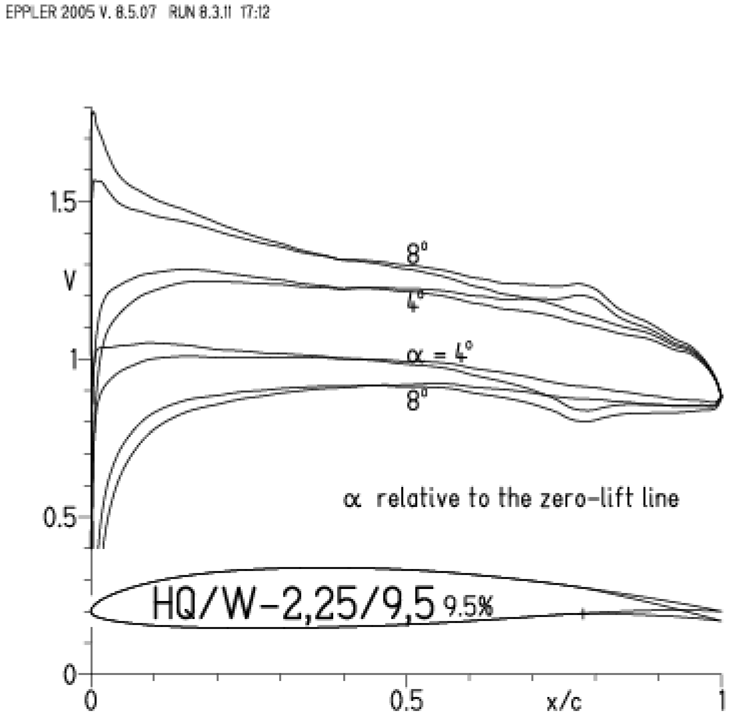
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

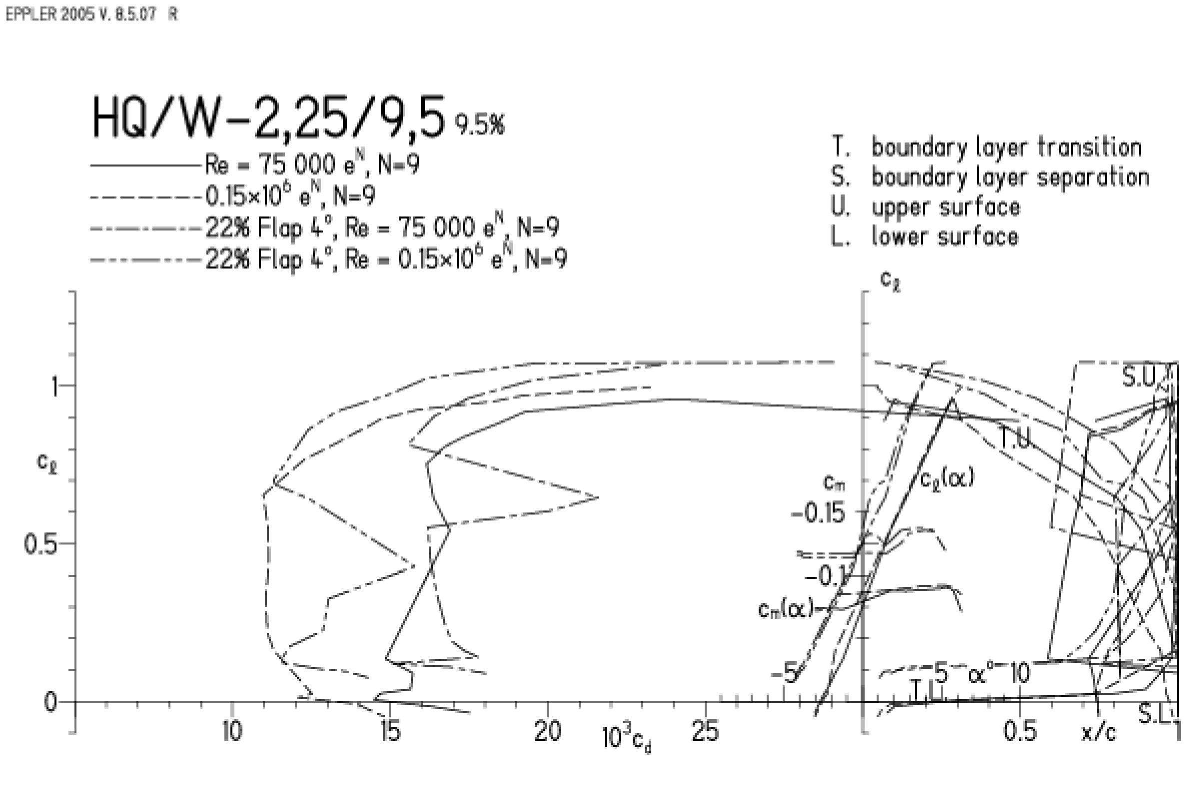


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



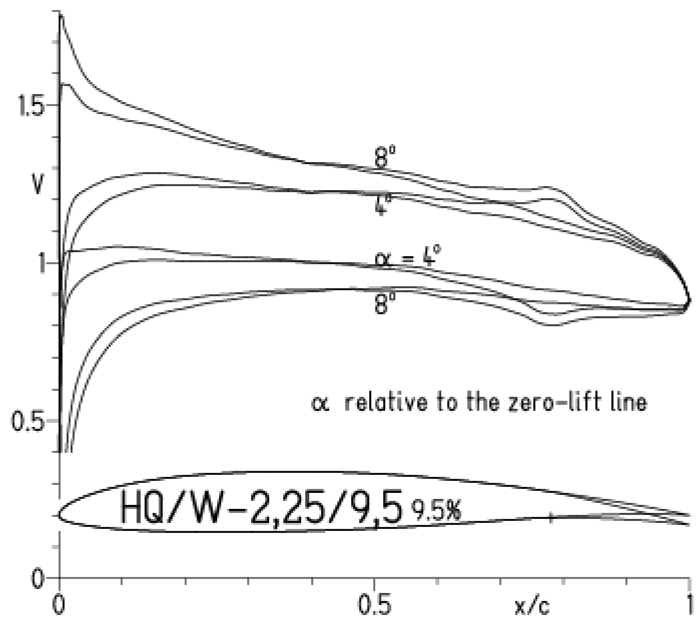
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



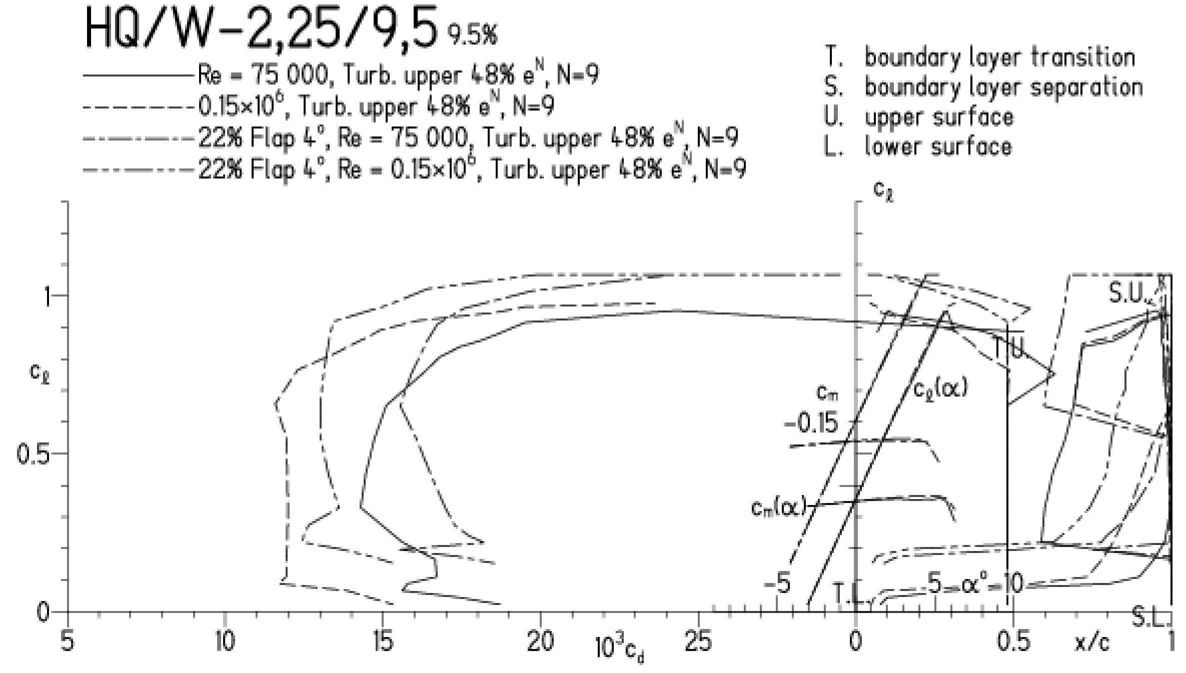


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

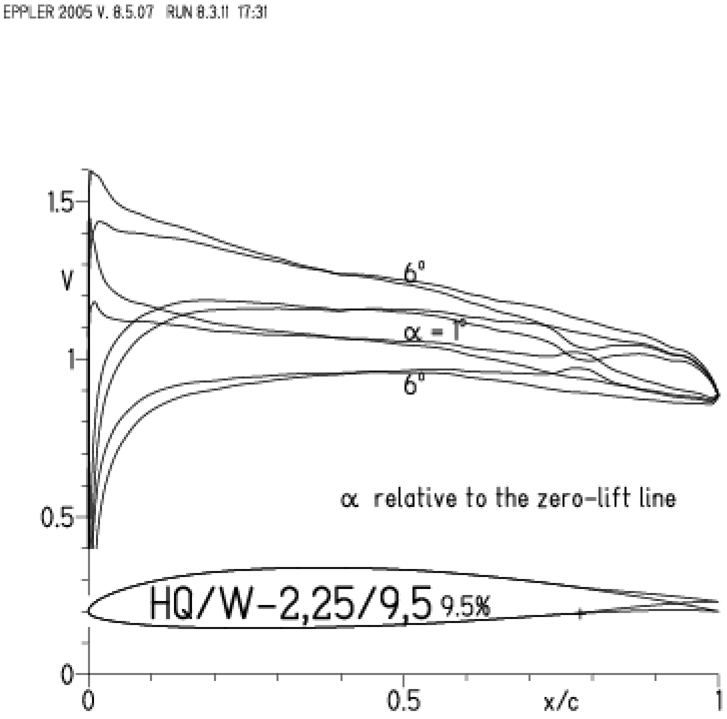
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

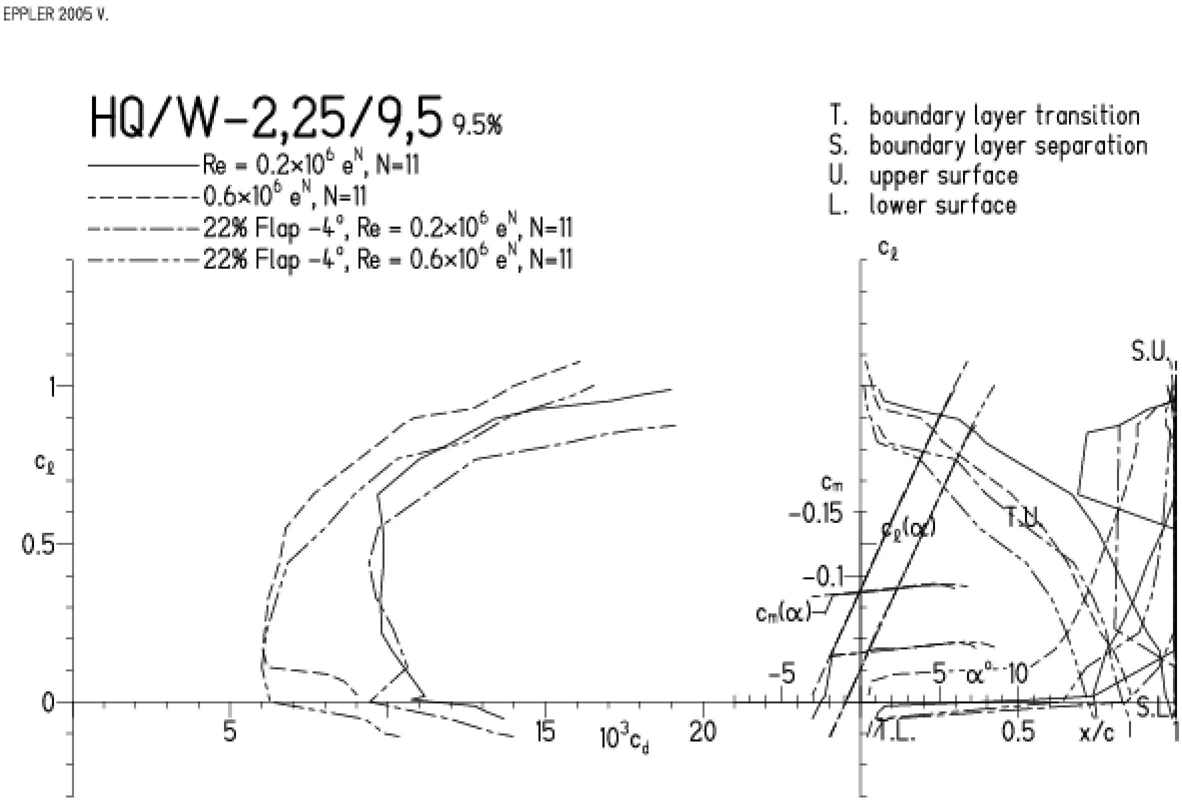


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



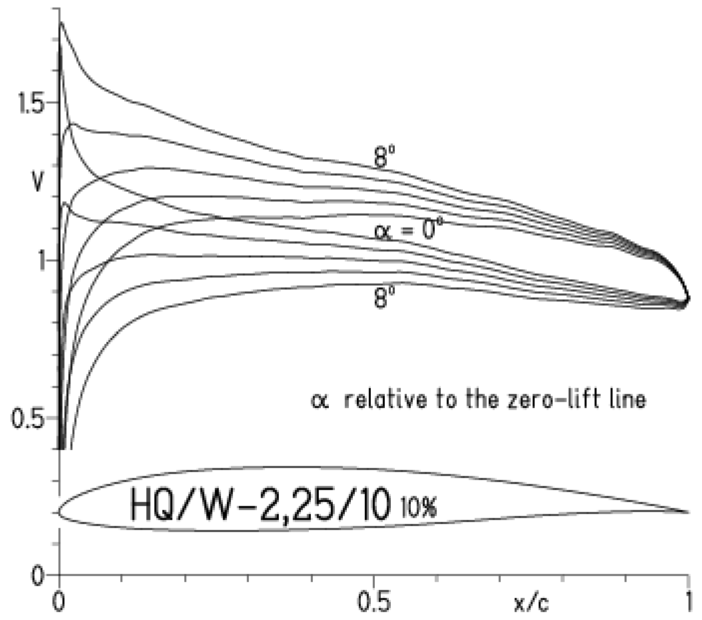
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



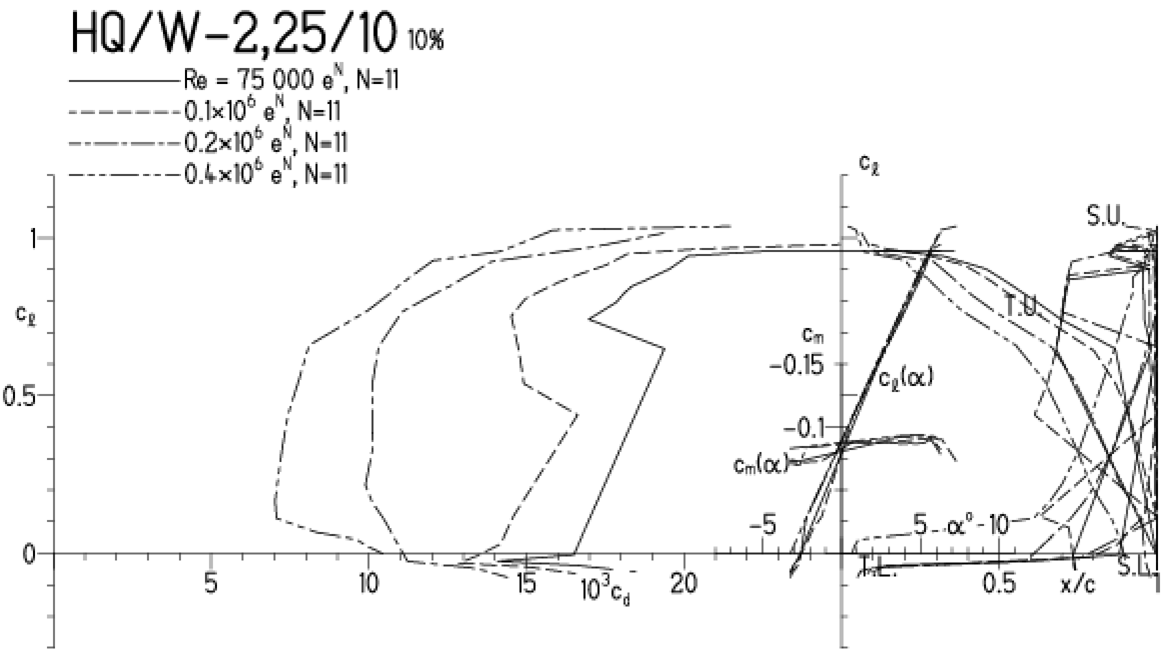


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

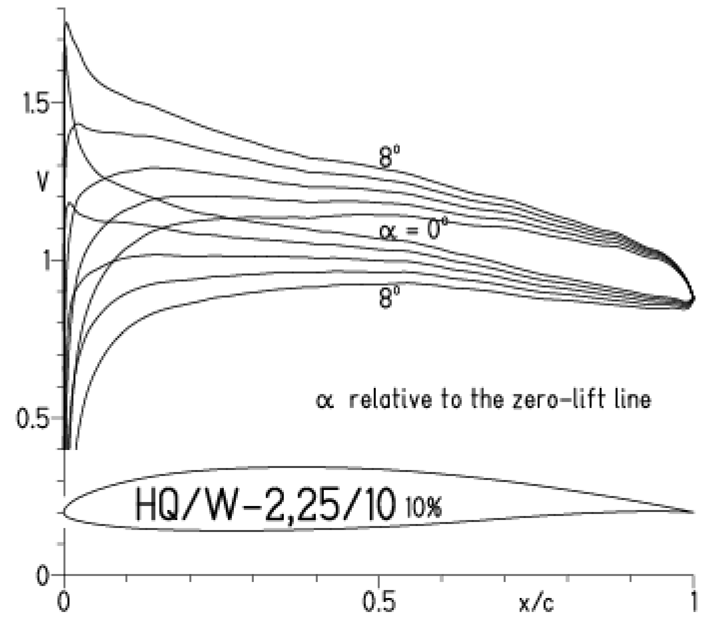


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

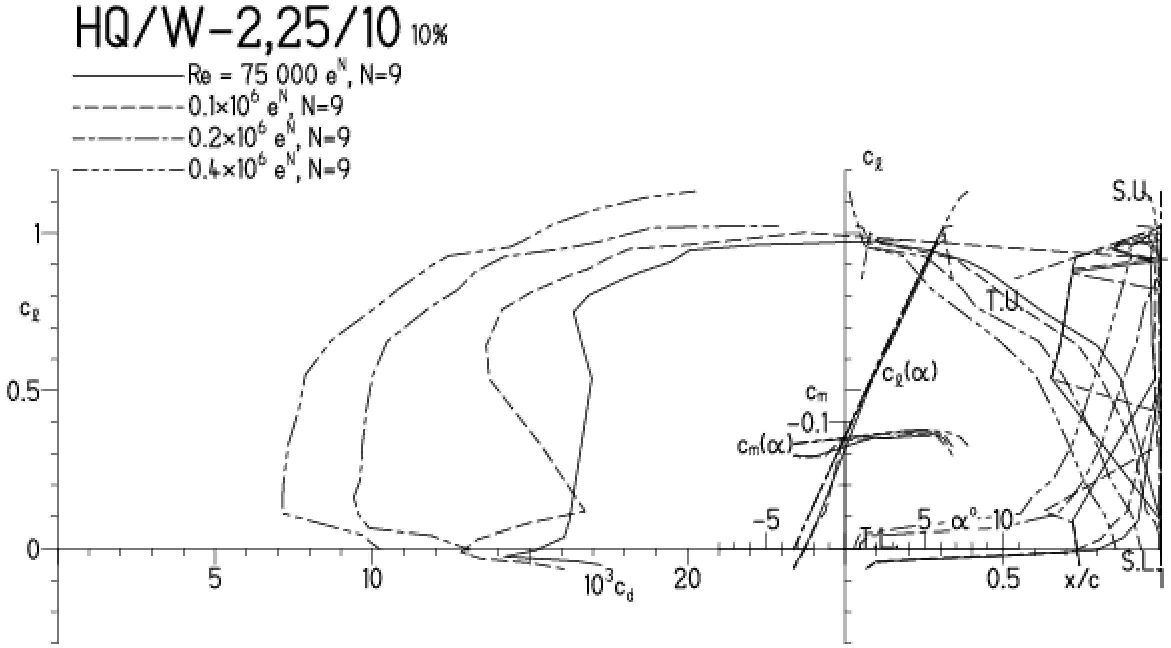


HQ/W-2,25/10, N=9

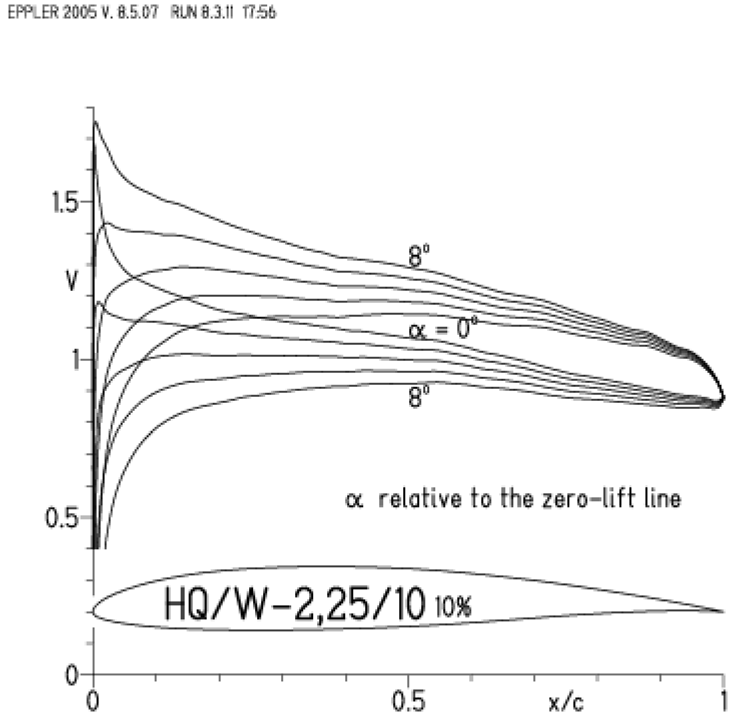
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

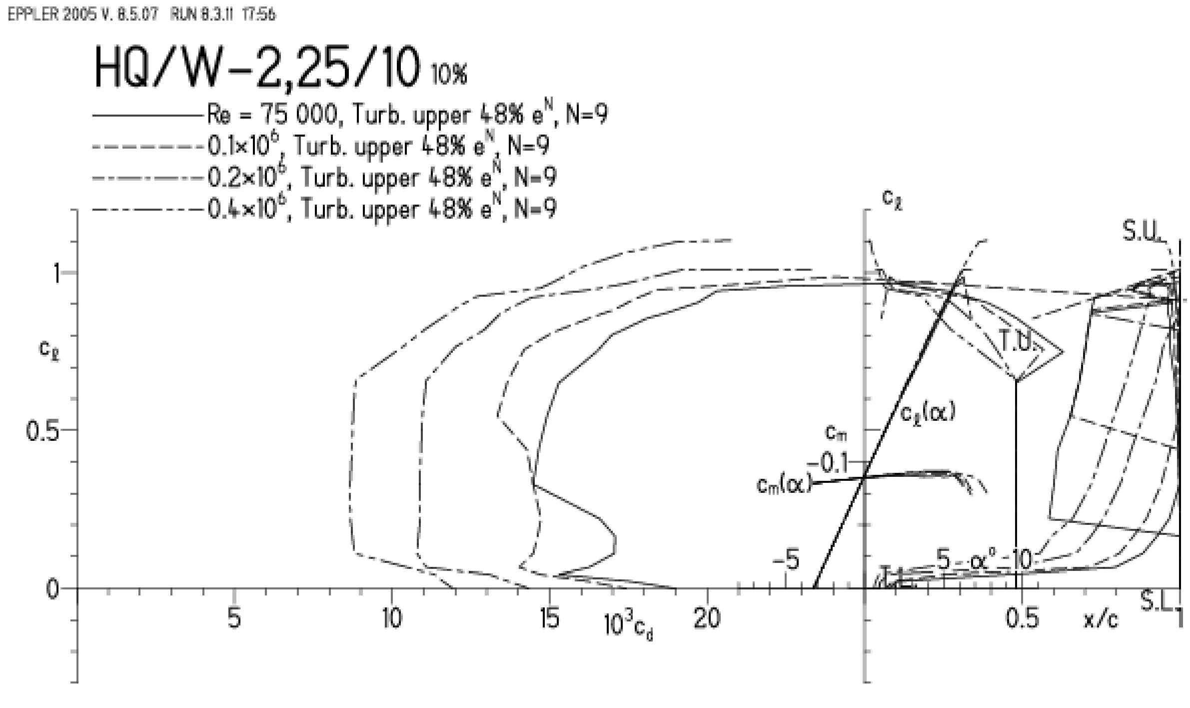


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



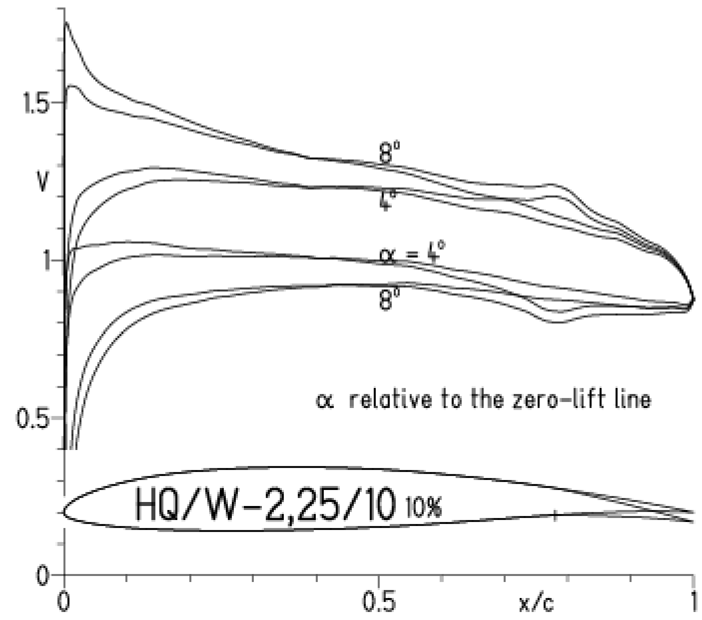
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



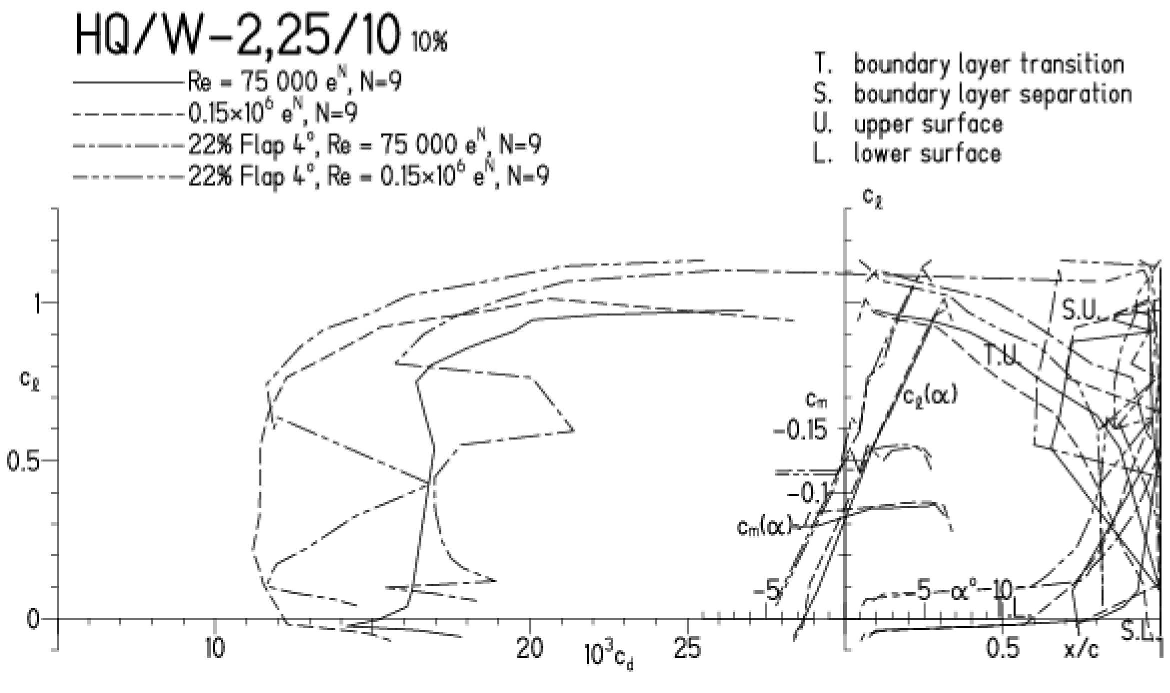


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

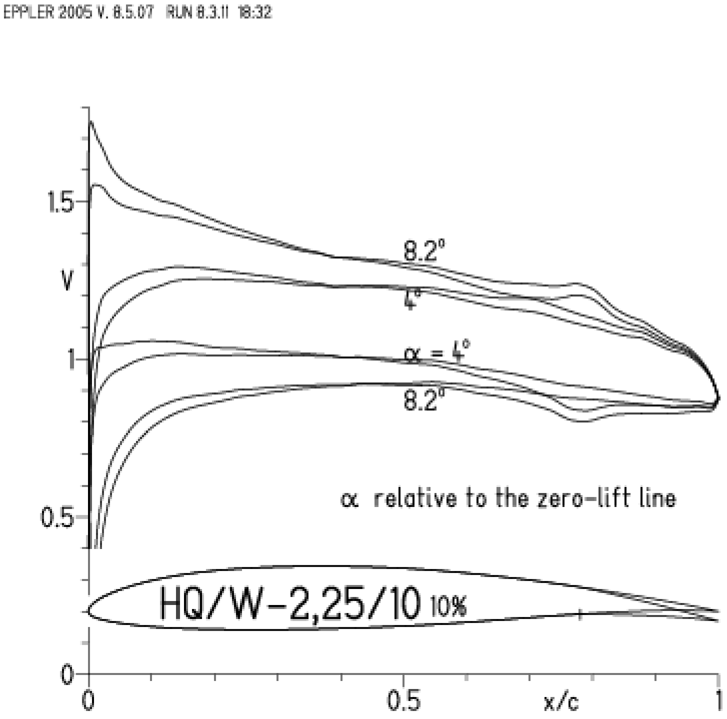
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

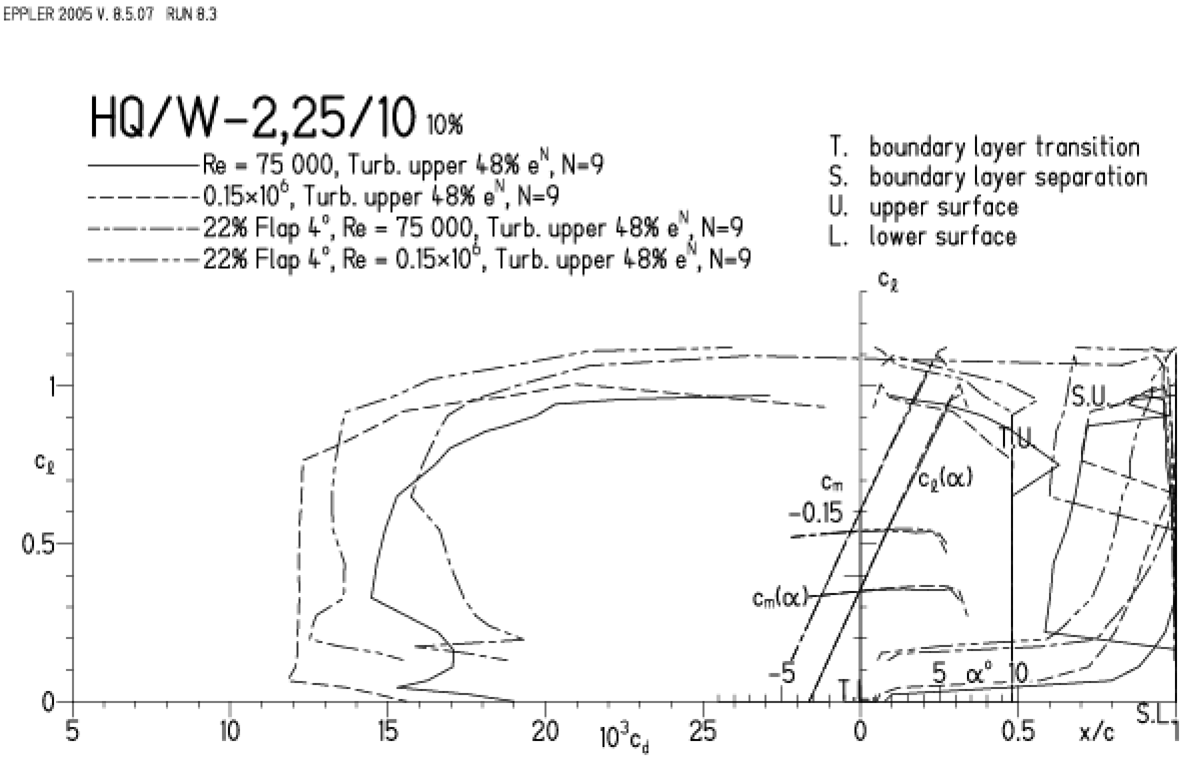


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



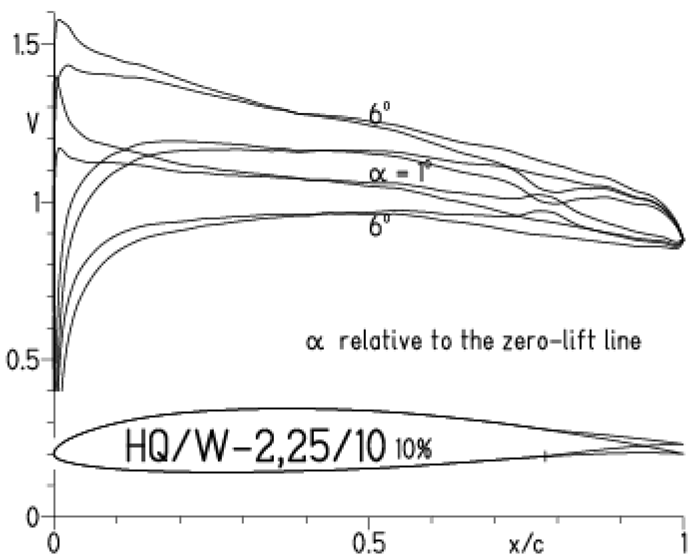
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



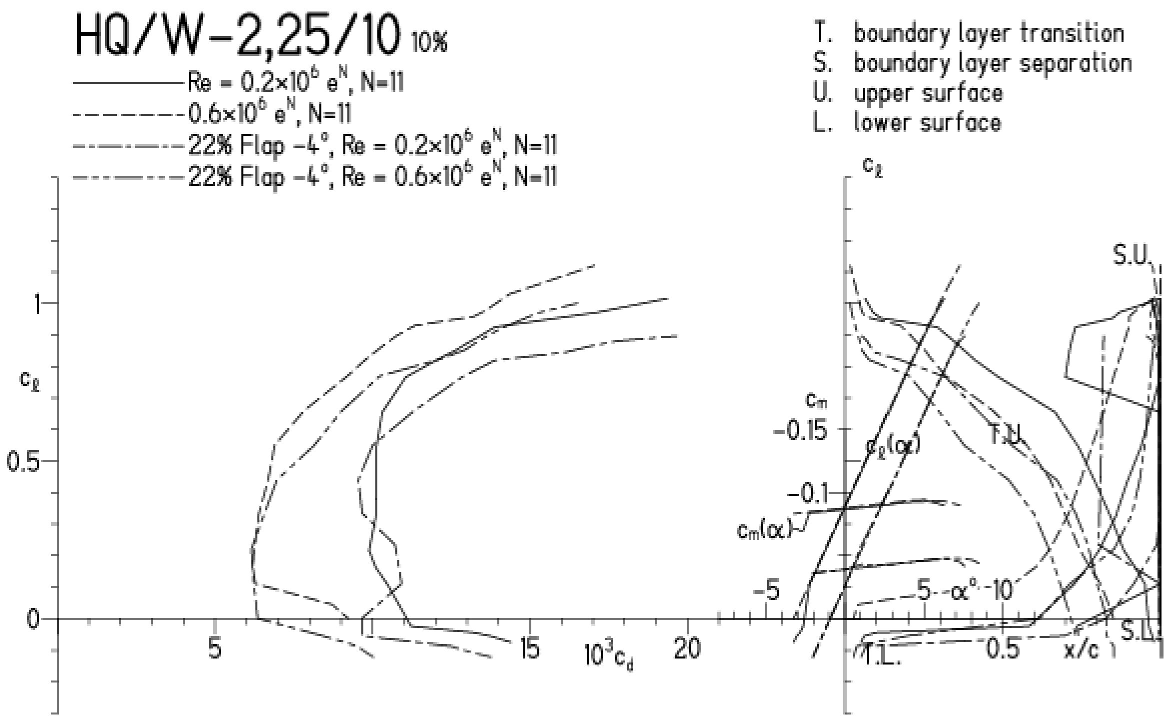


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

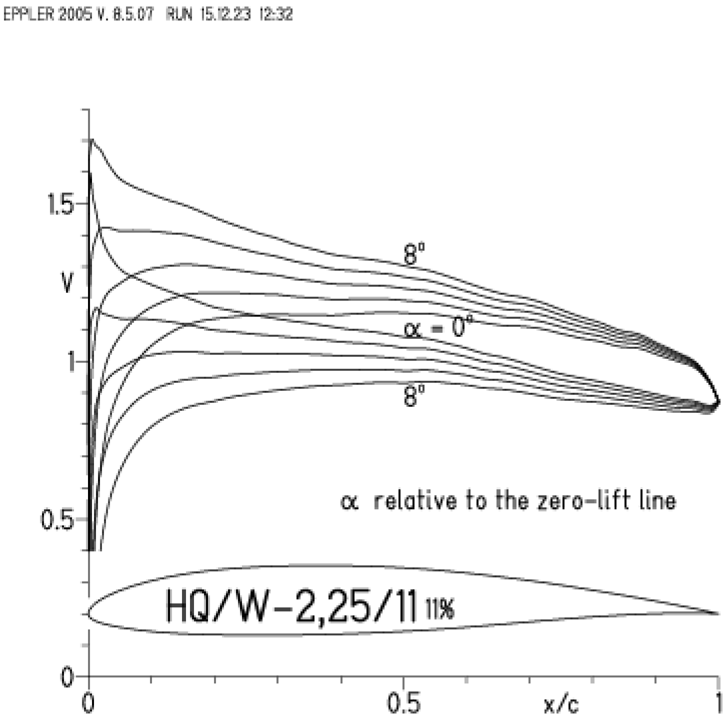
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

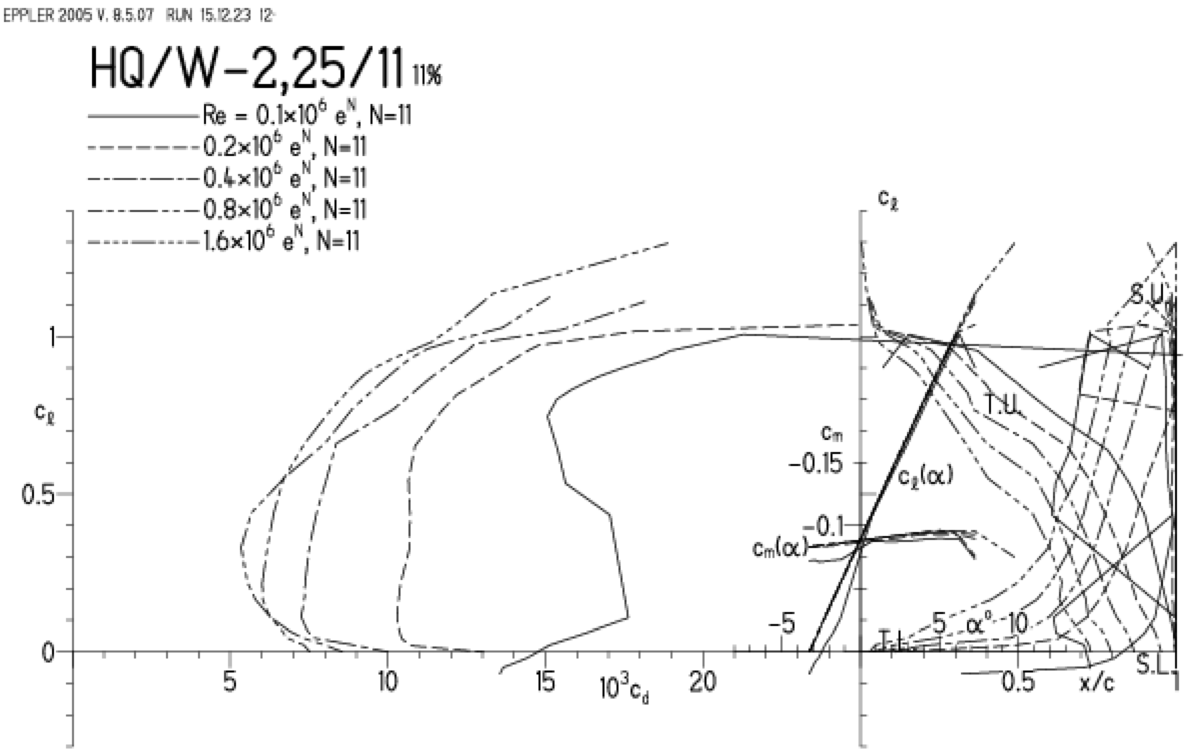


EPPLER 2005 V. 8.5.07 RUN



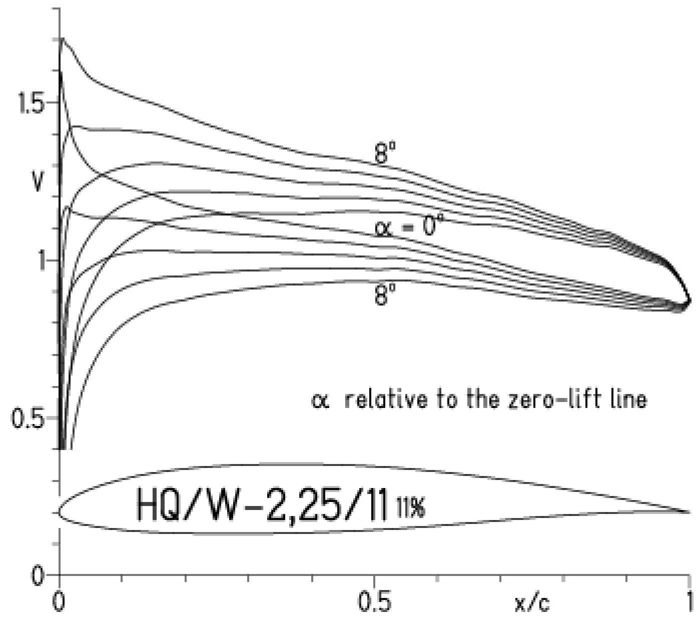
HQ/W-2,25/11, N=11



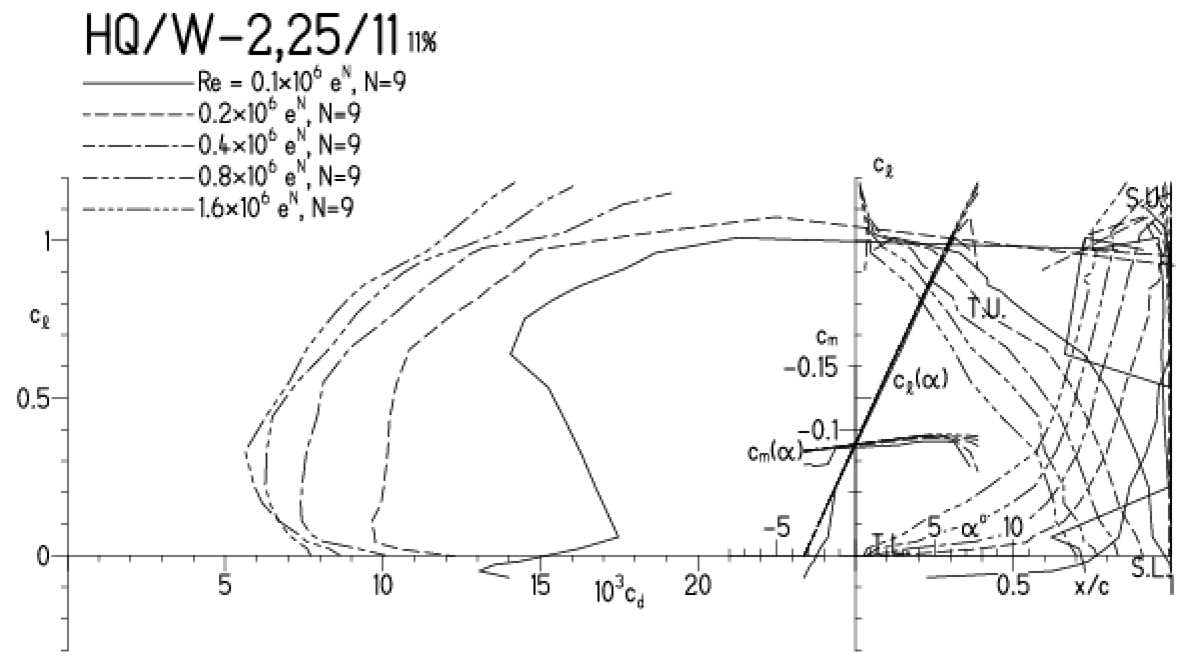


HQQ/W-2,25/11, N=9

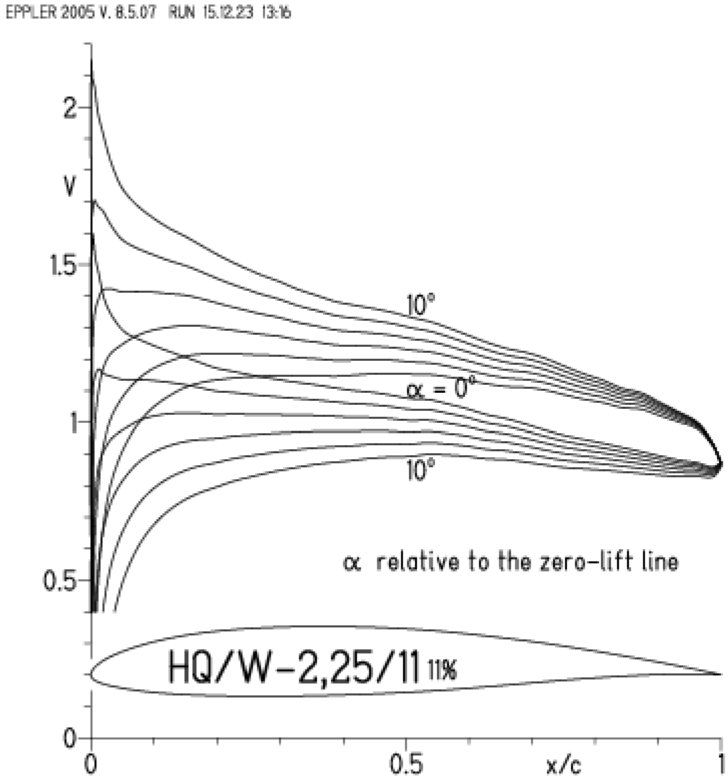
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

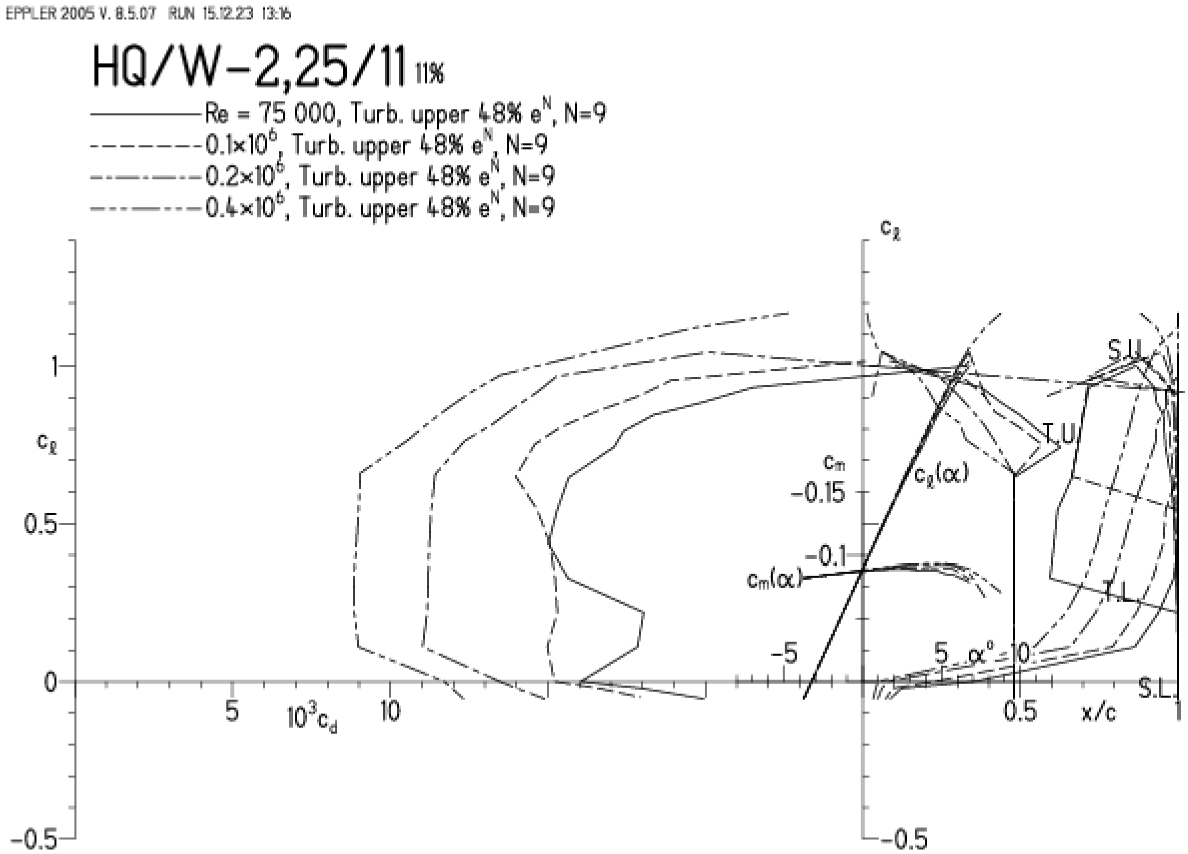


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

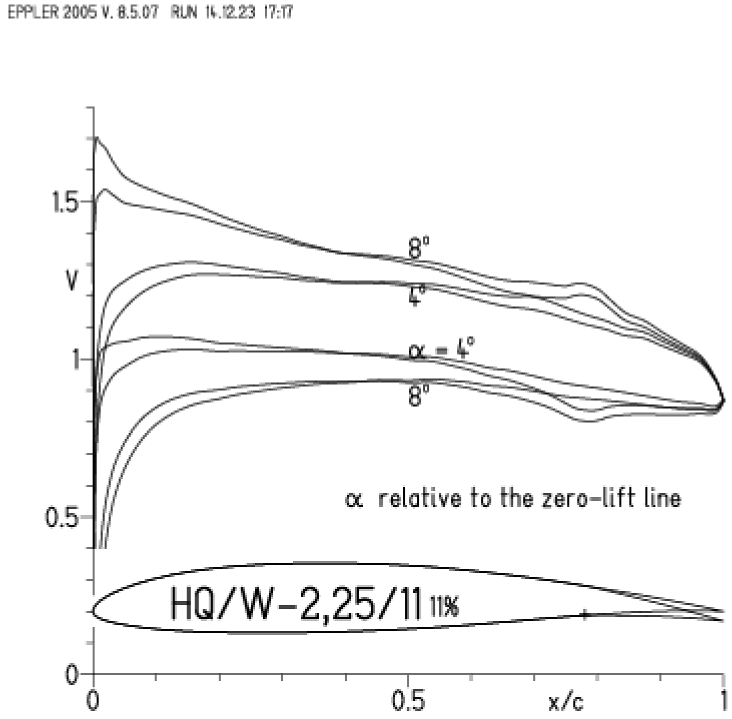


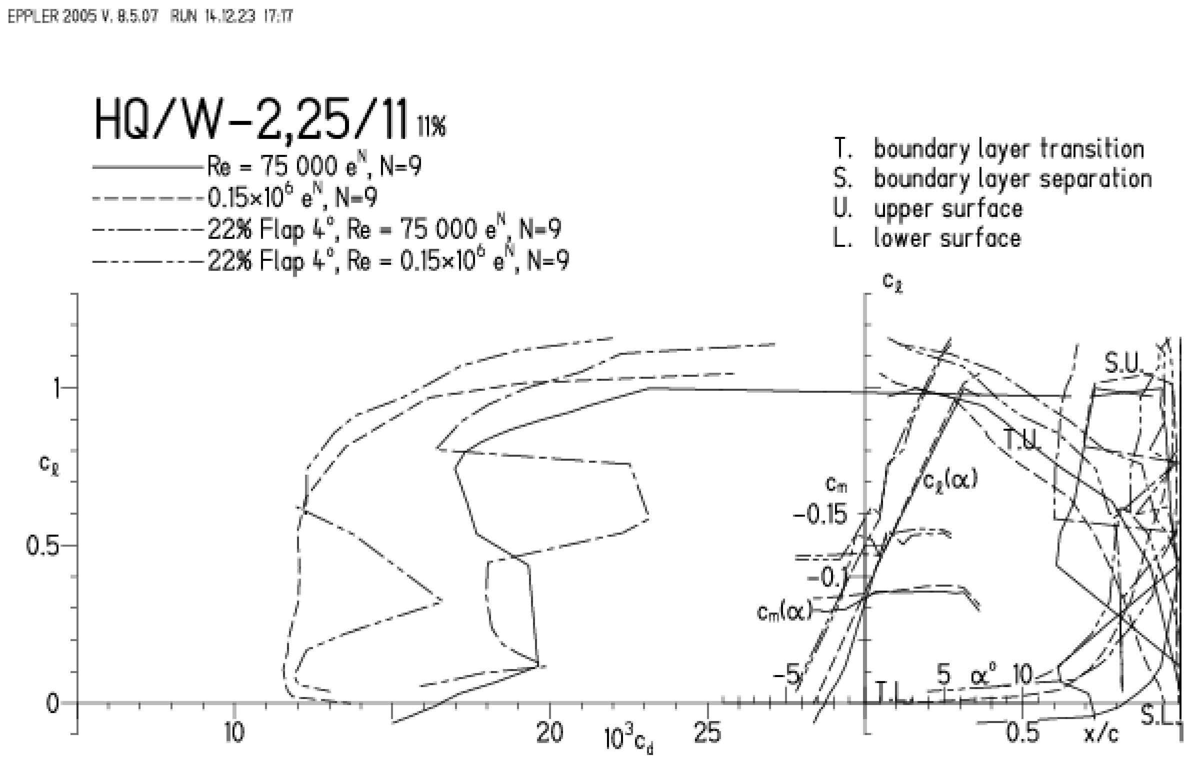
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





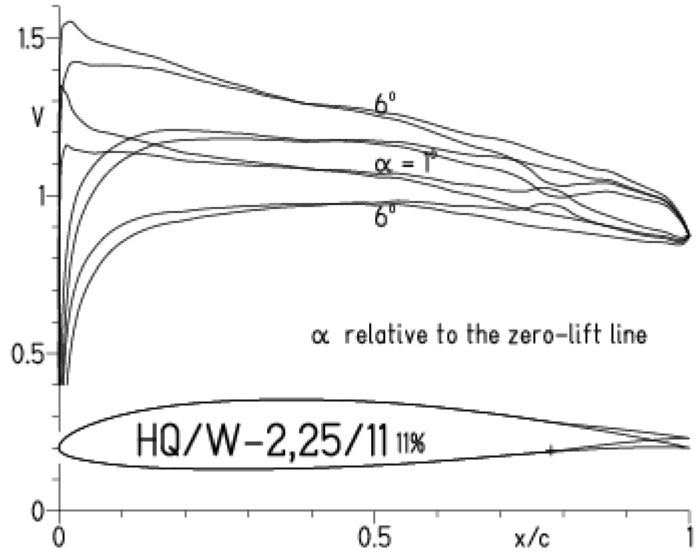
<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag



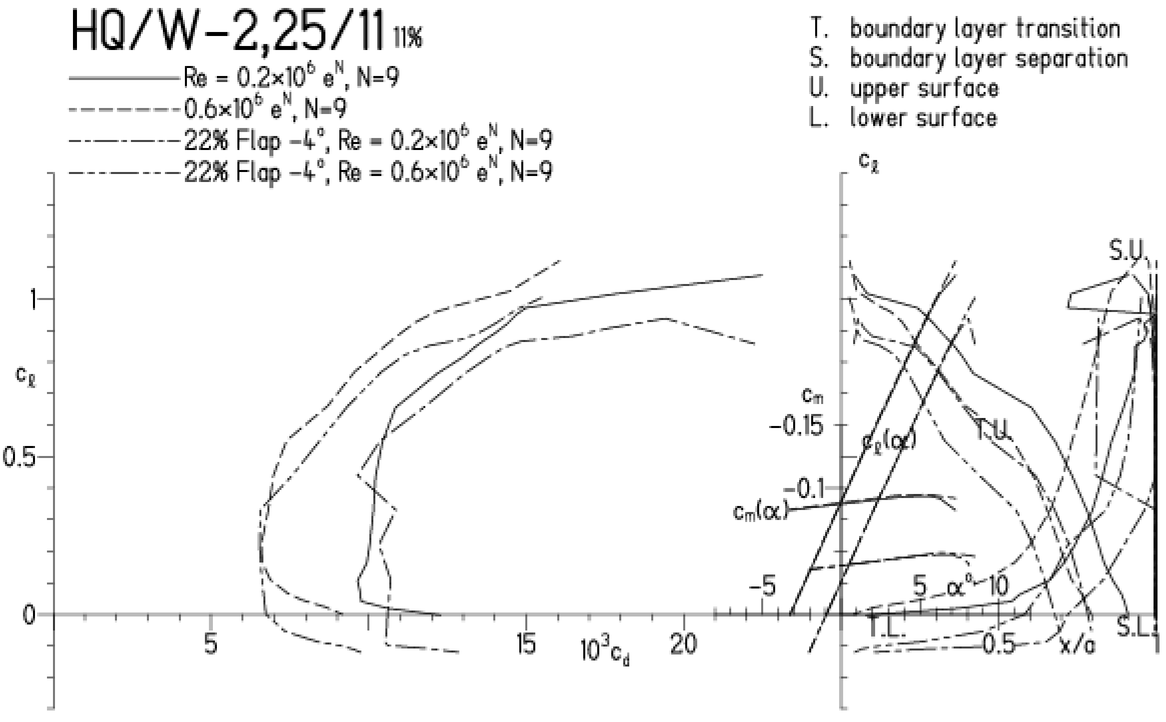


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

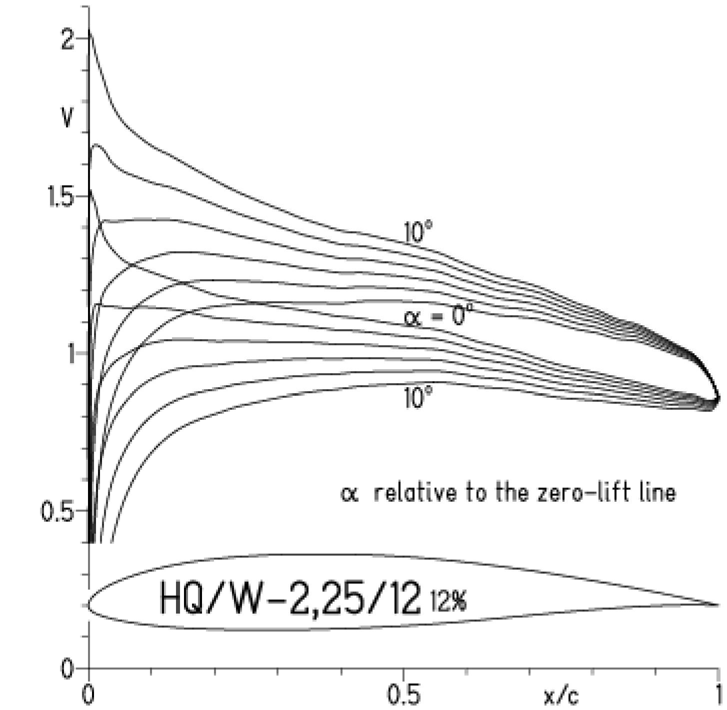


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

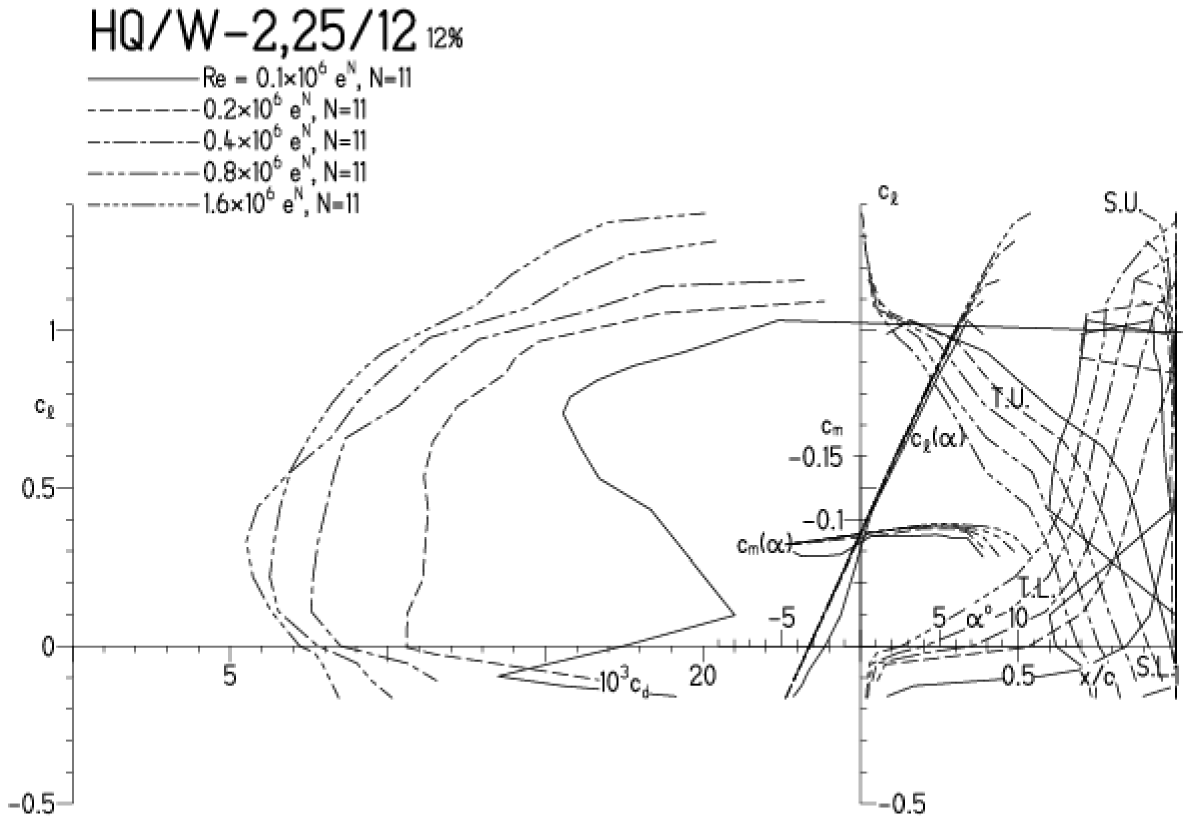


<u>HQ/W-2,25/12</u>, N=11

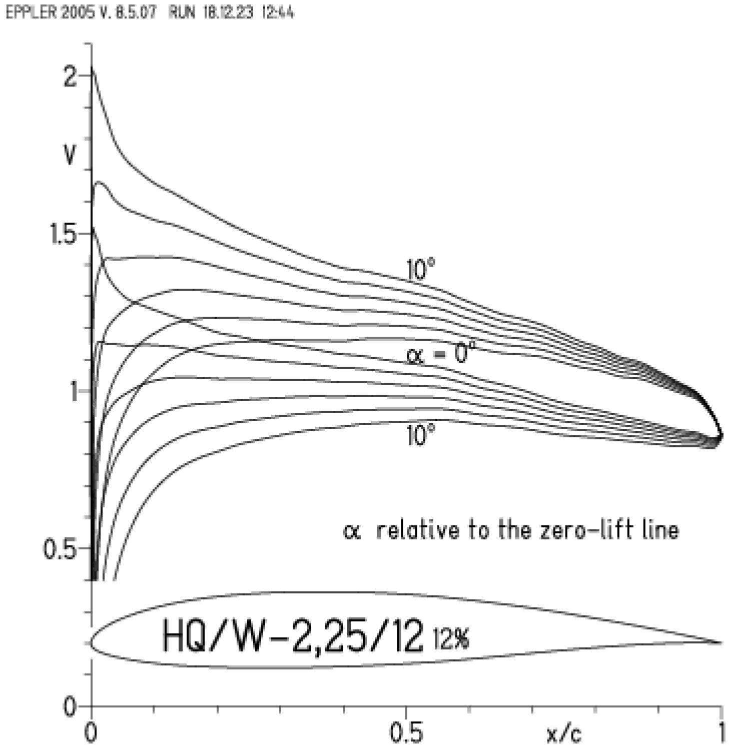
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

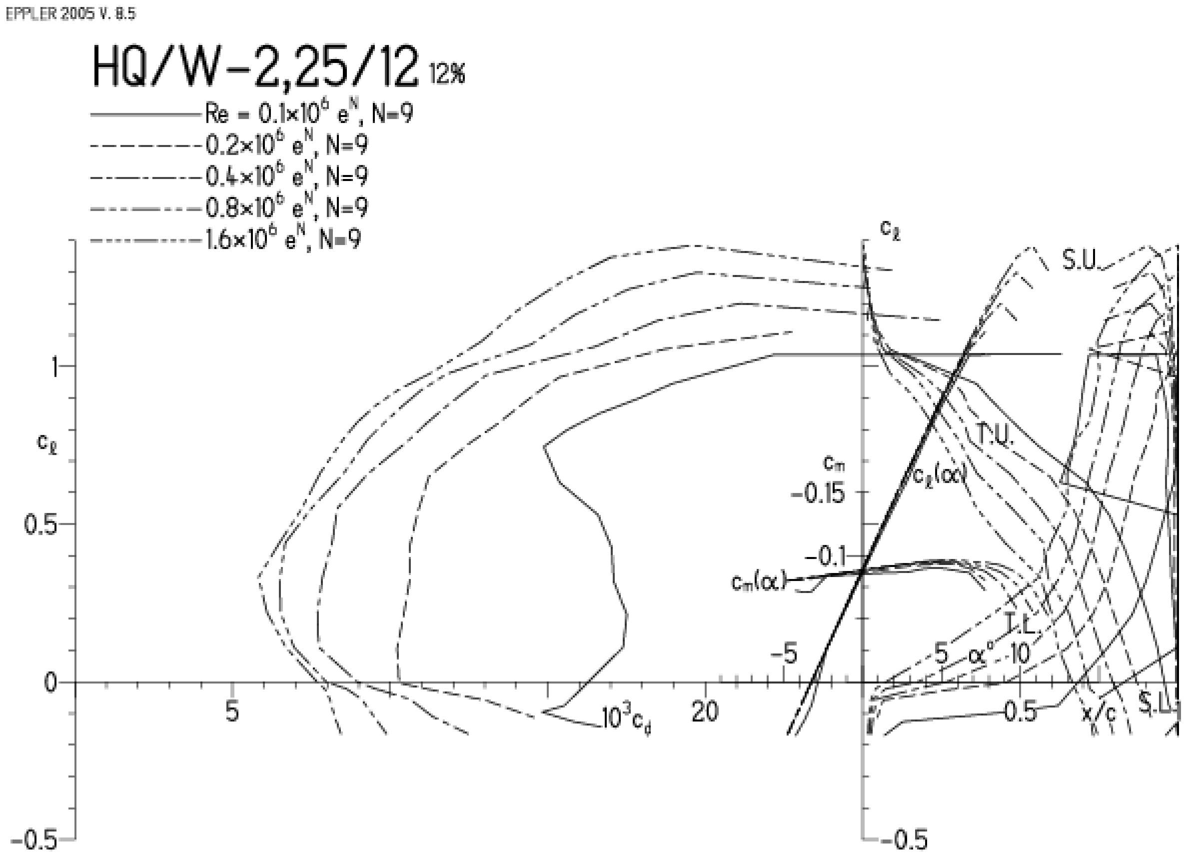


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

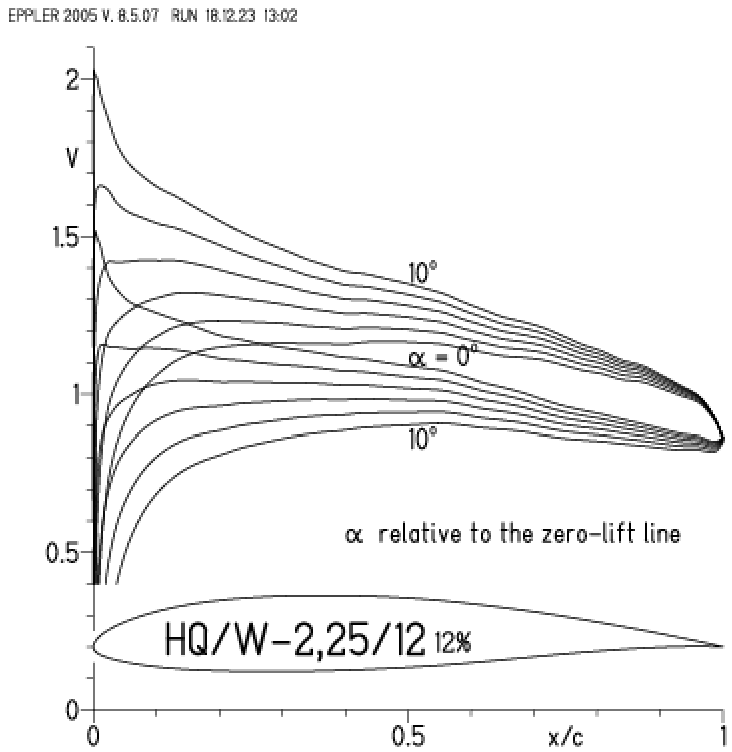


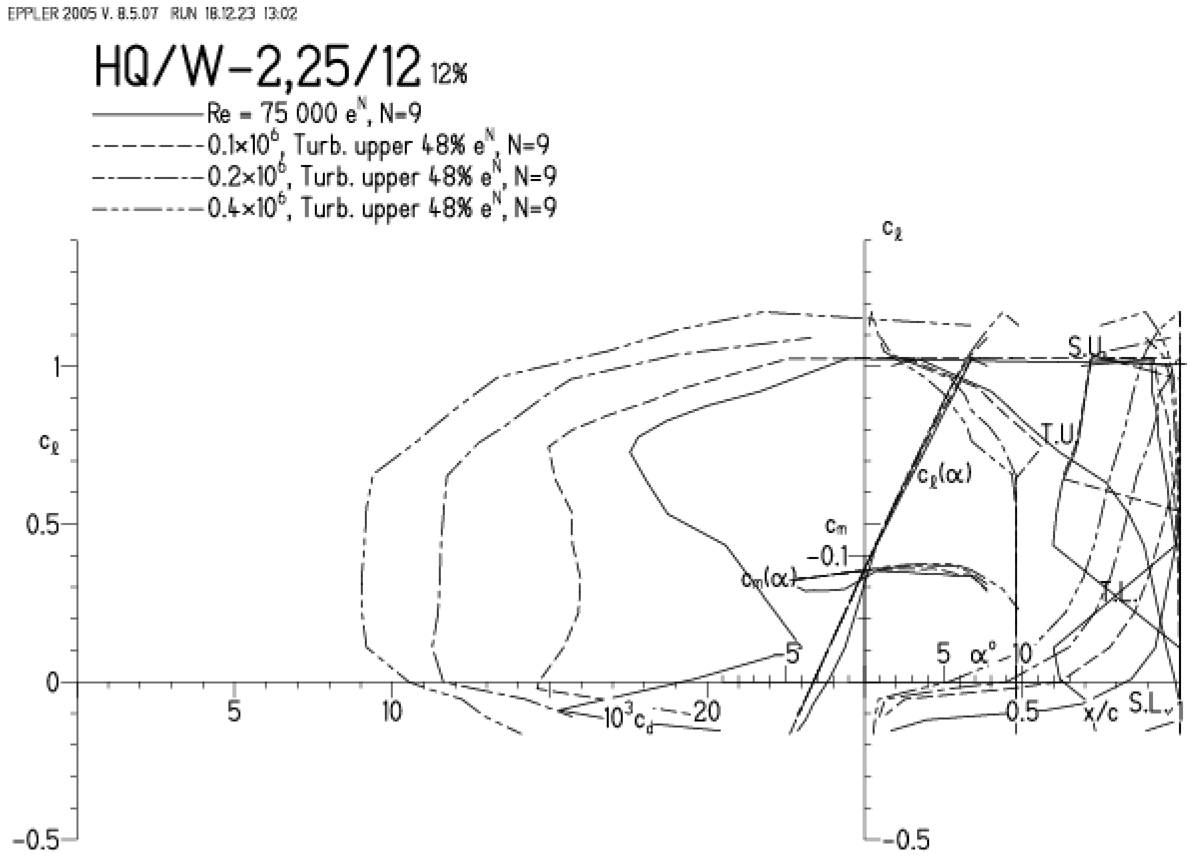
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
cℓ
cm
cℓ(α)
cm(α)
S.U.
T.U.
T.L.
S.L.
α°
10³cd
x/c

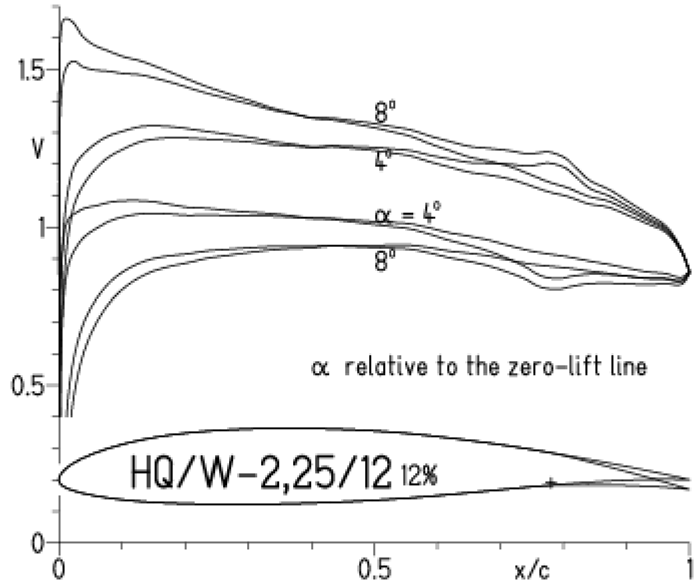
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



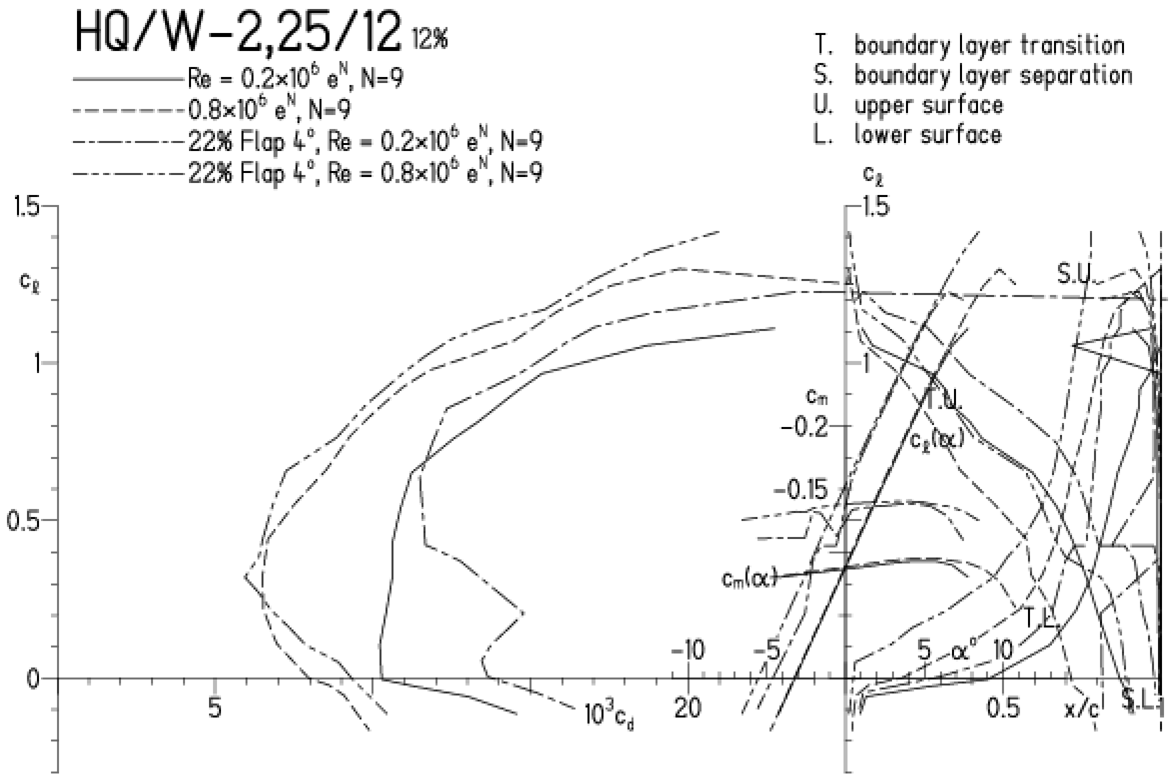


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

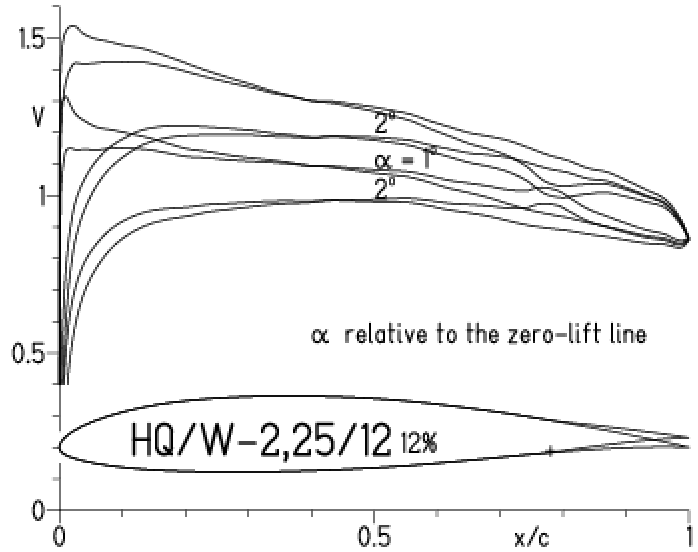


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

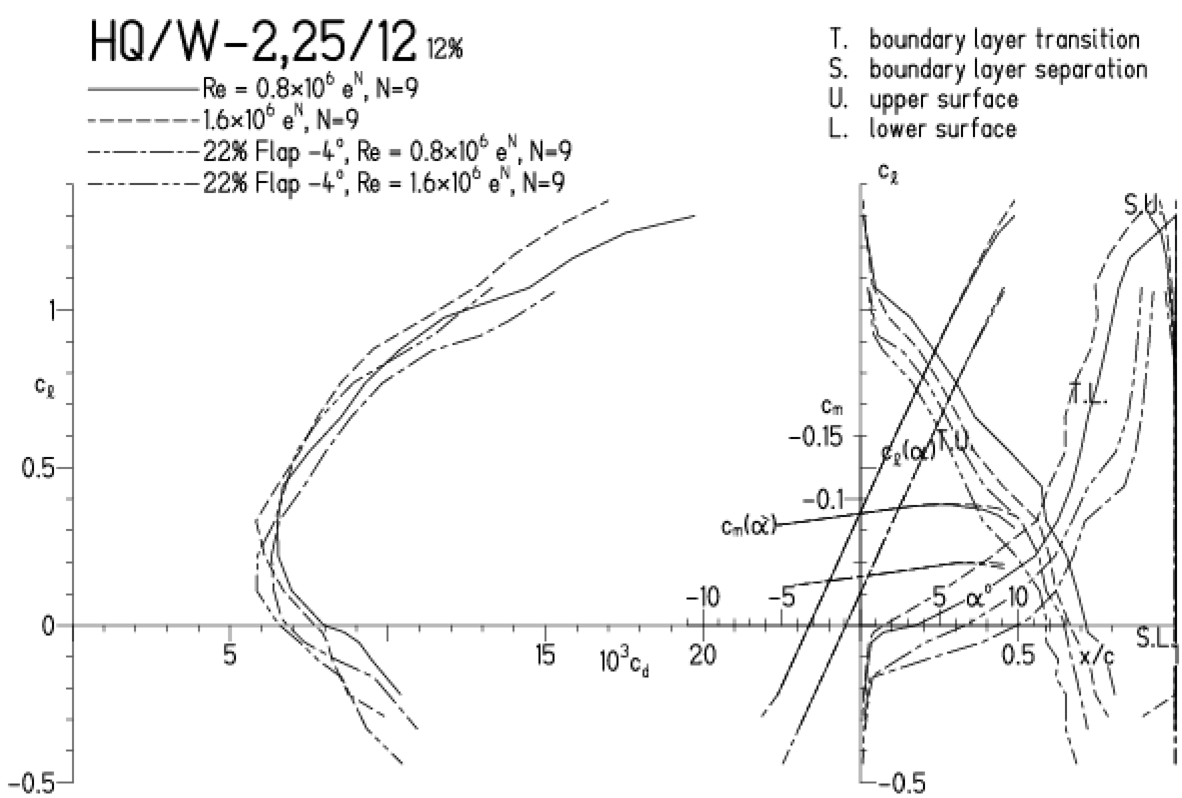


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

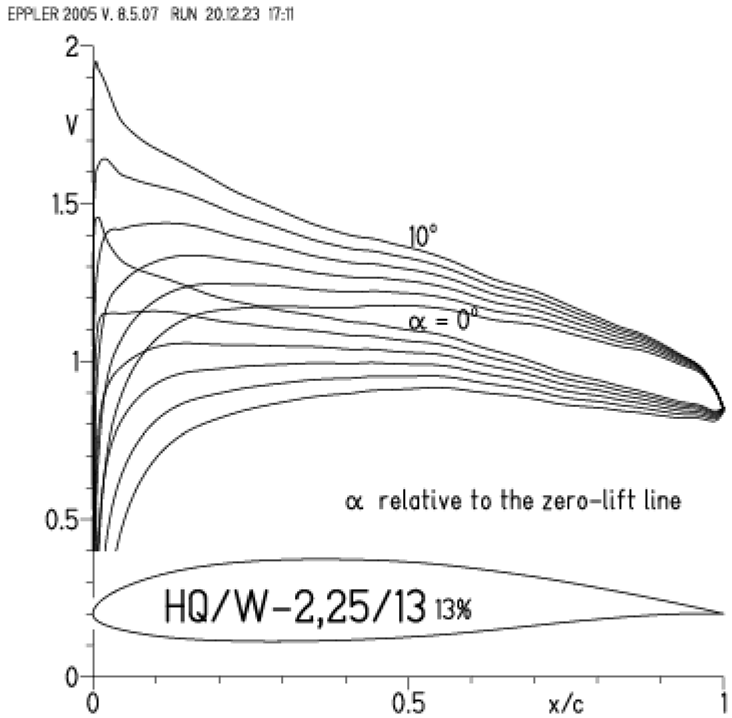
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

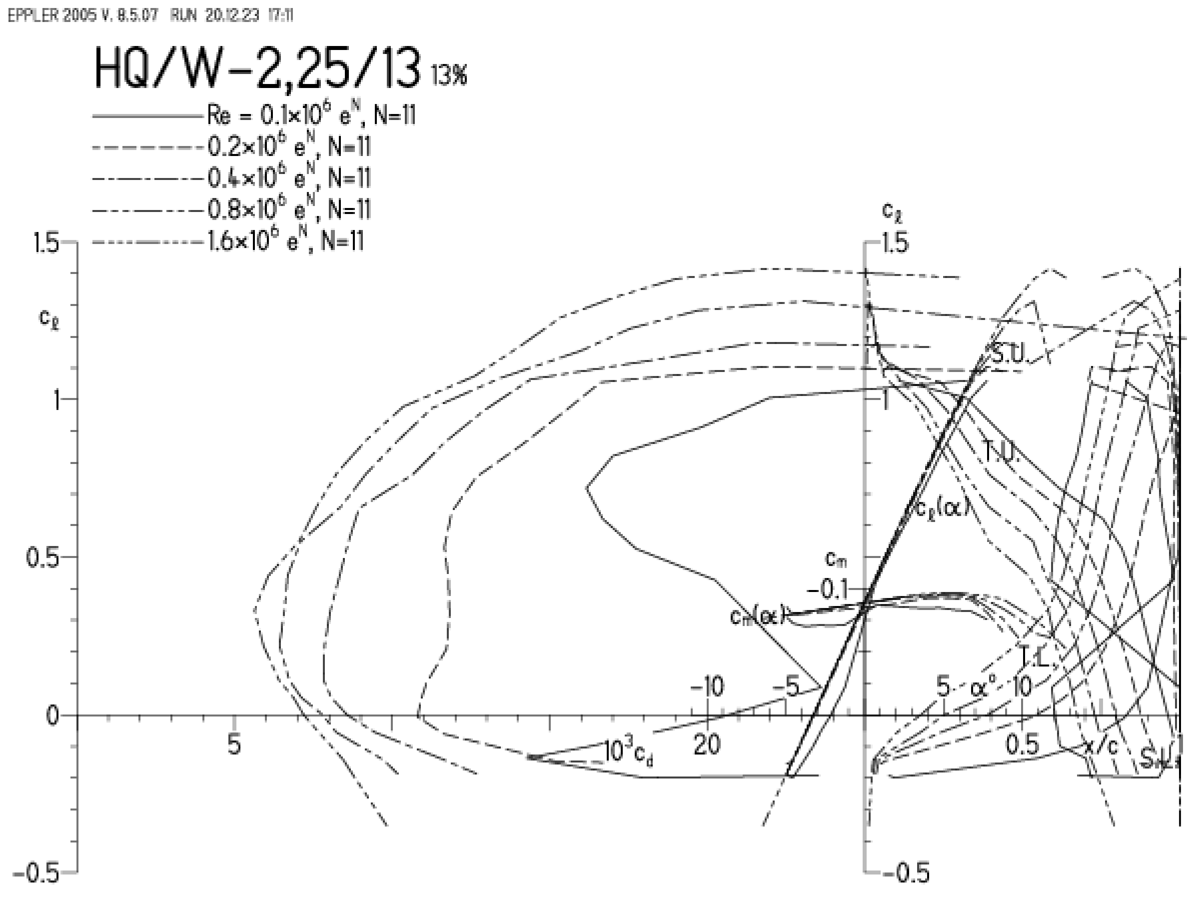


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

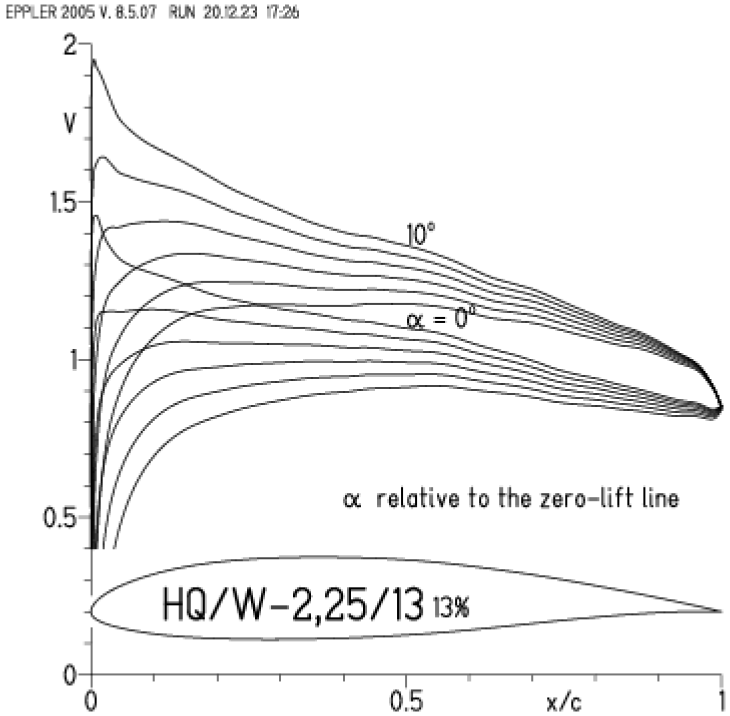


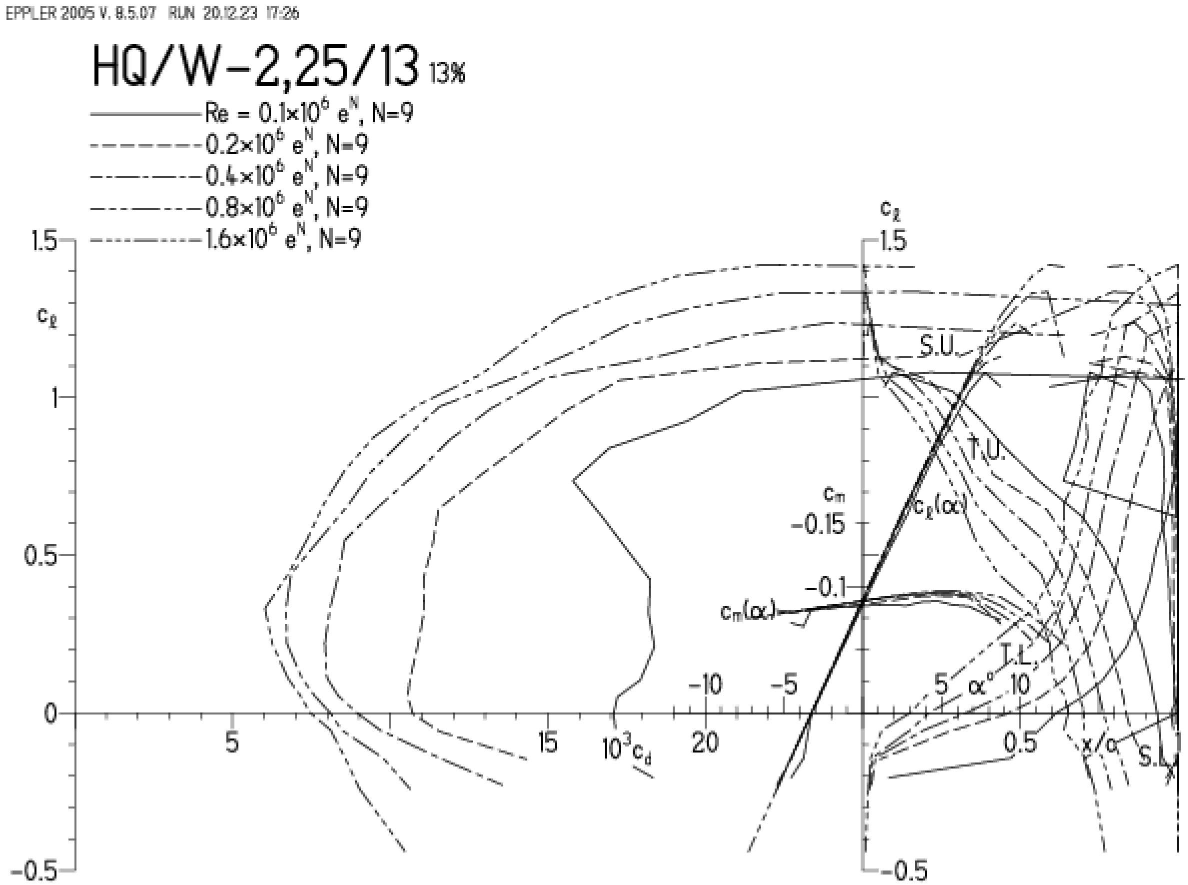
HQ/W-2,25/13, N=11



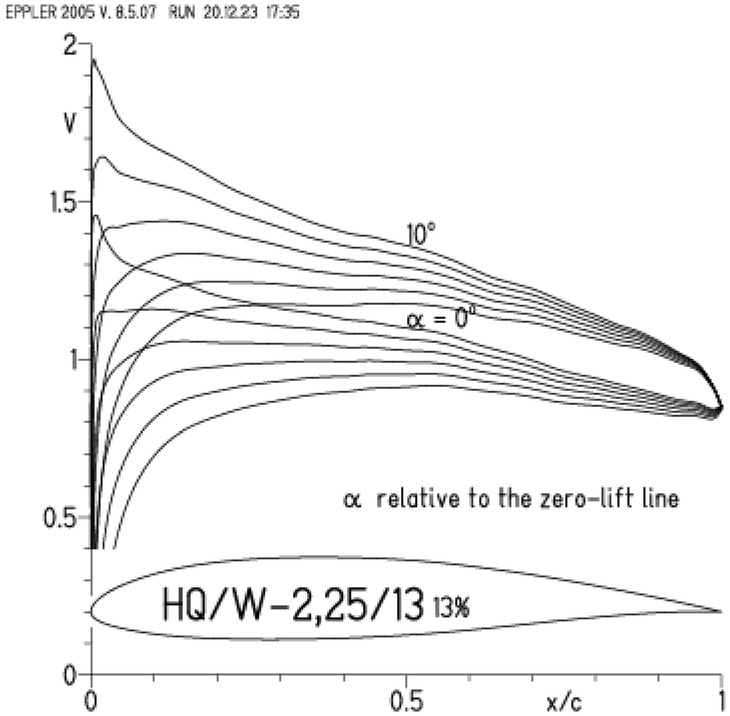


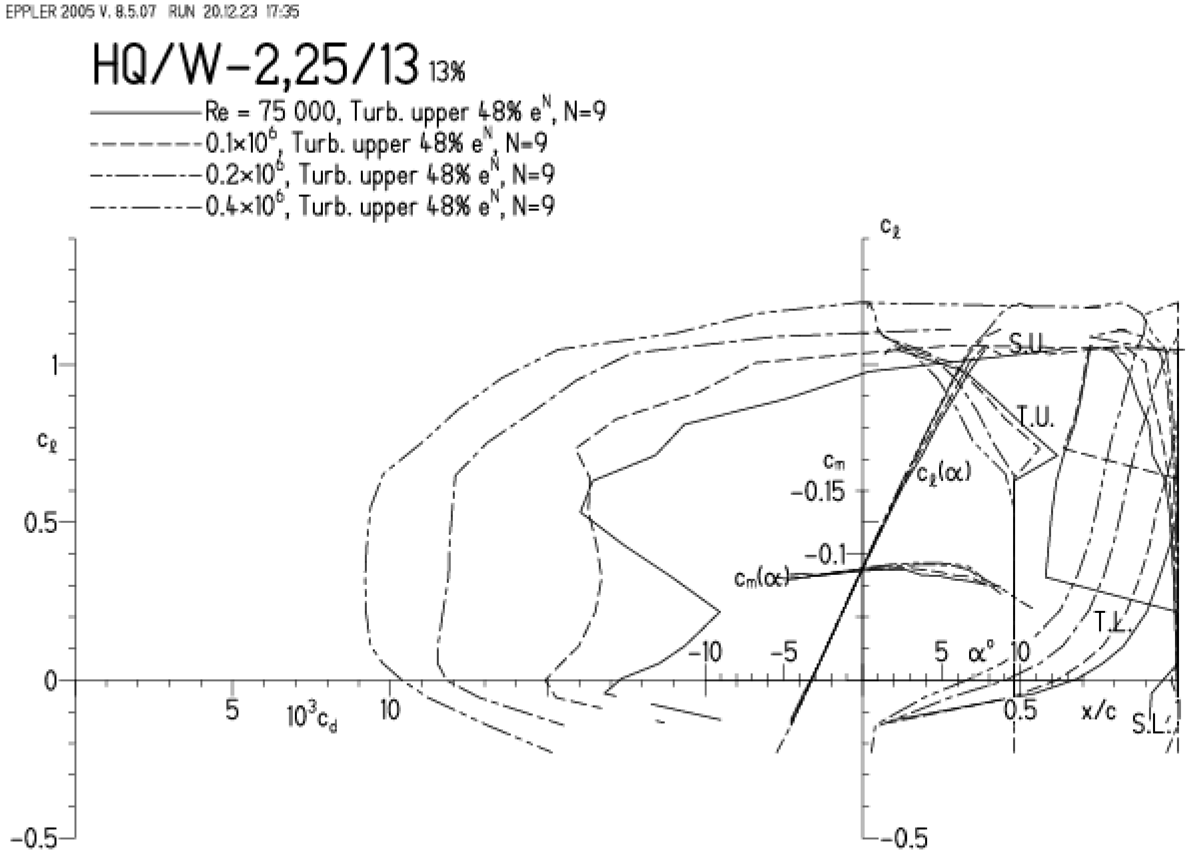
<u>HQ/W-2,25/13</u>, N=9





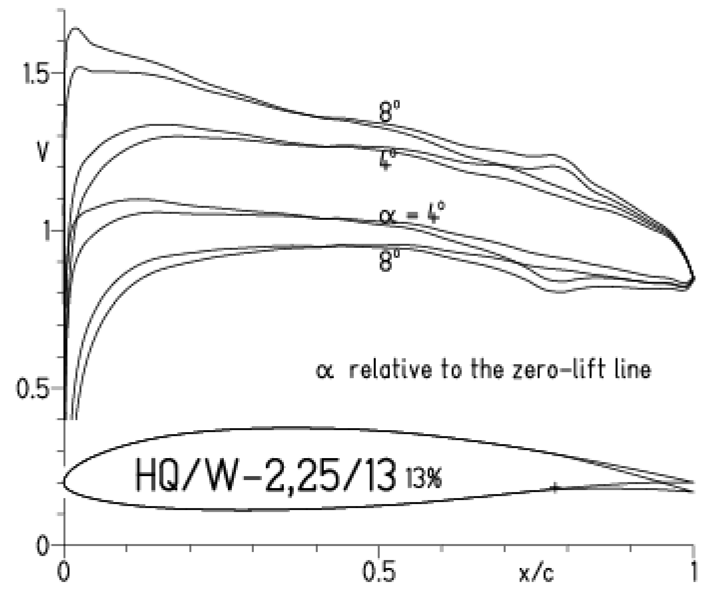
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



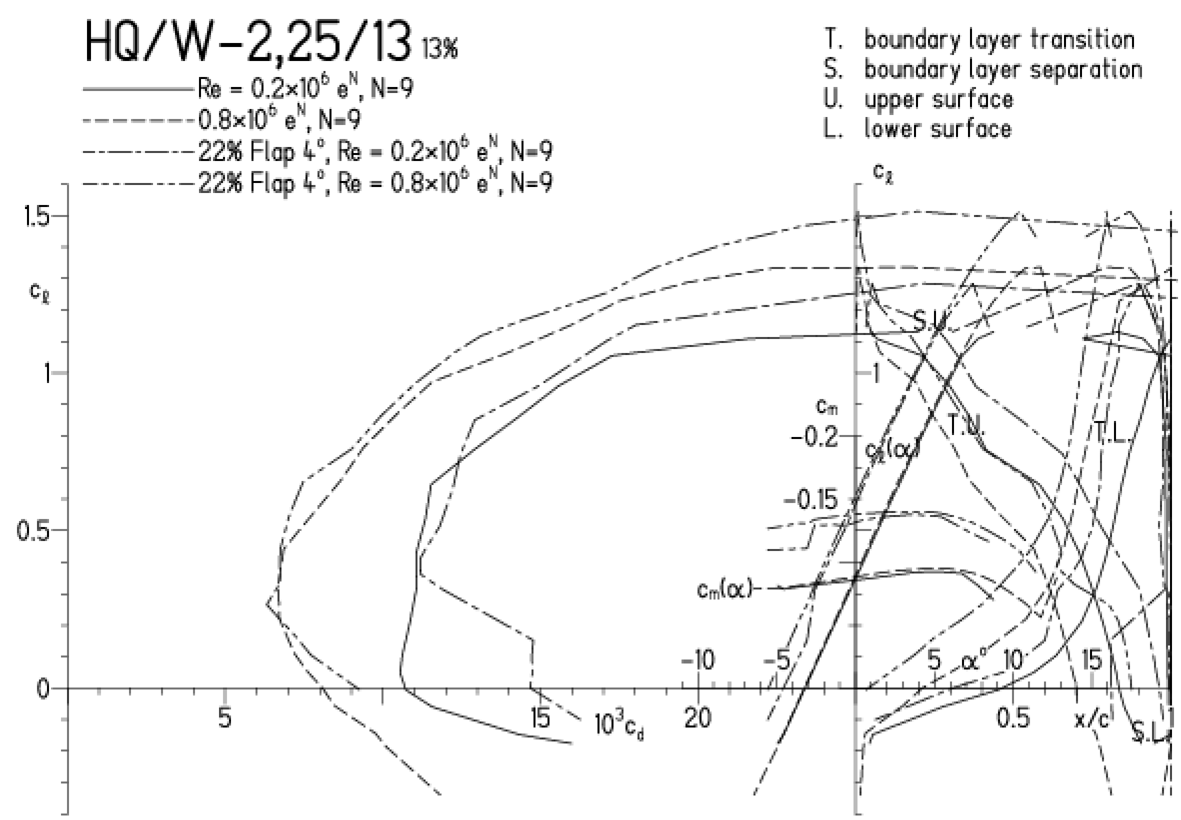


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

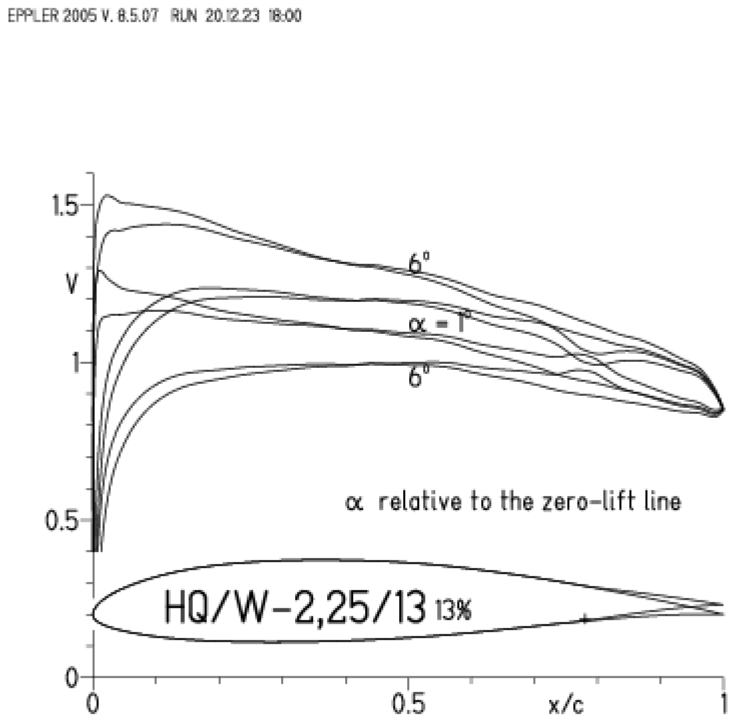
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

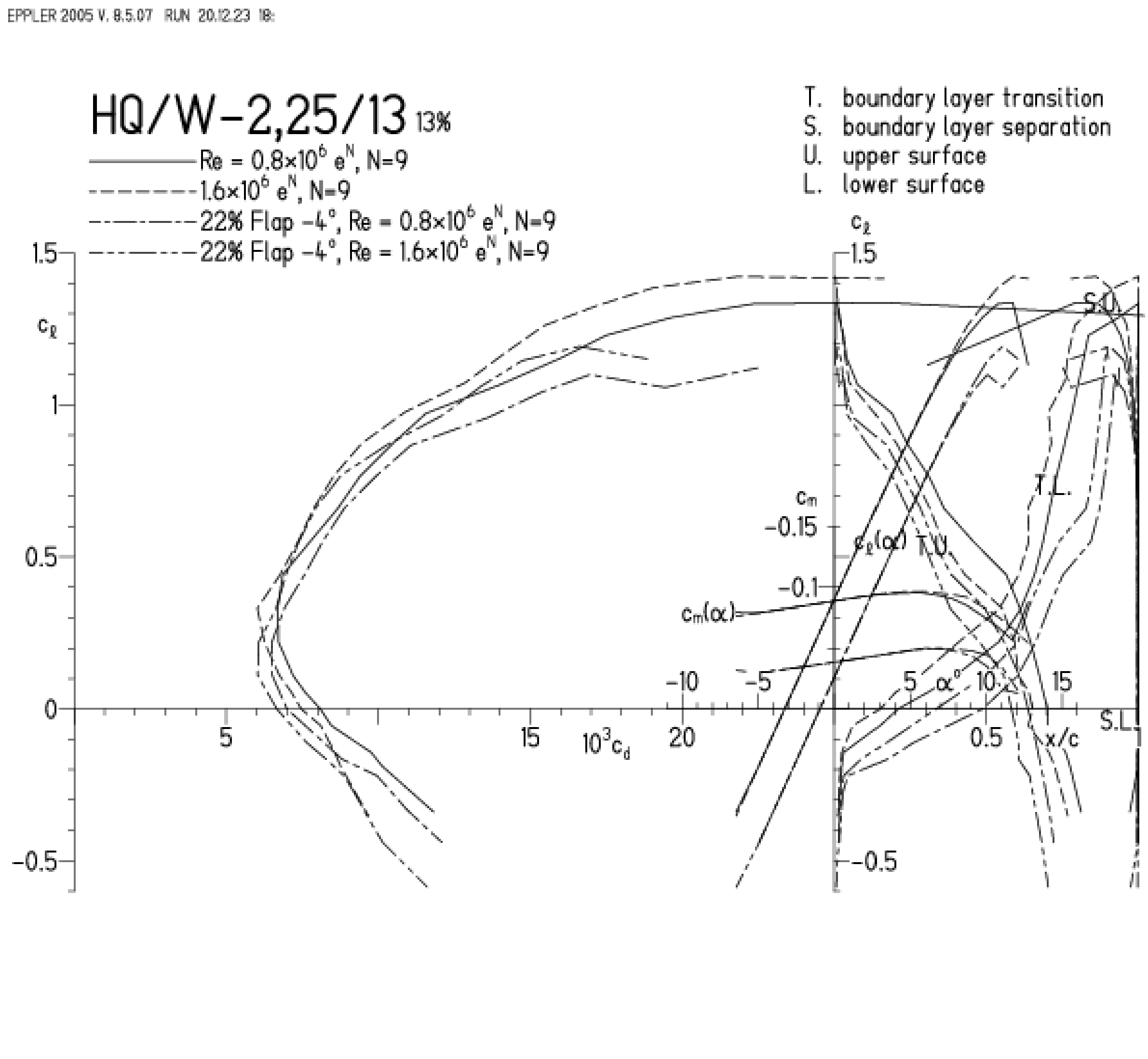


EPPLER 2005 V.



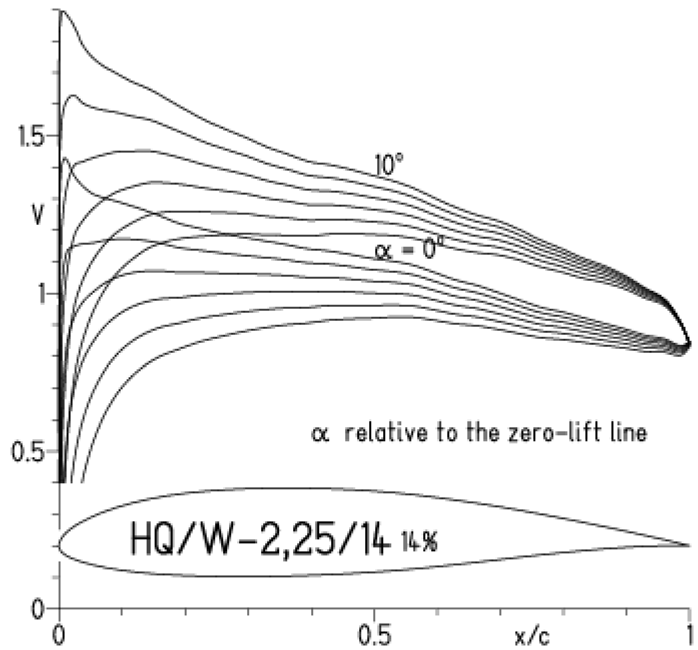
HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag



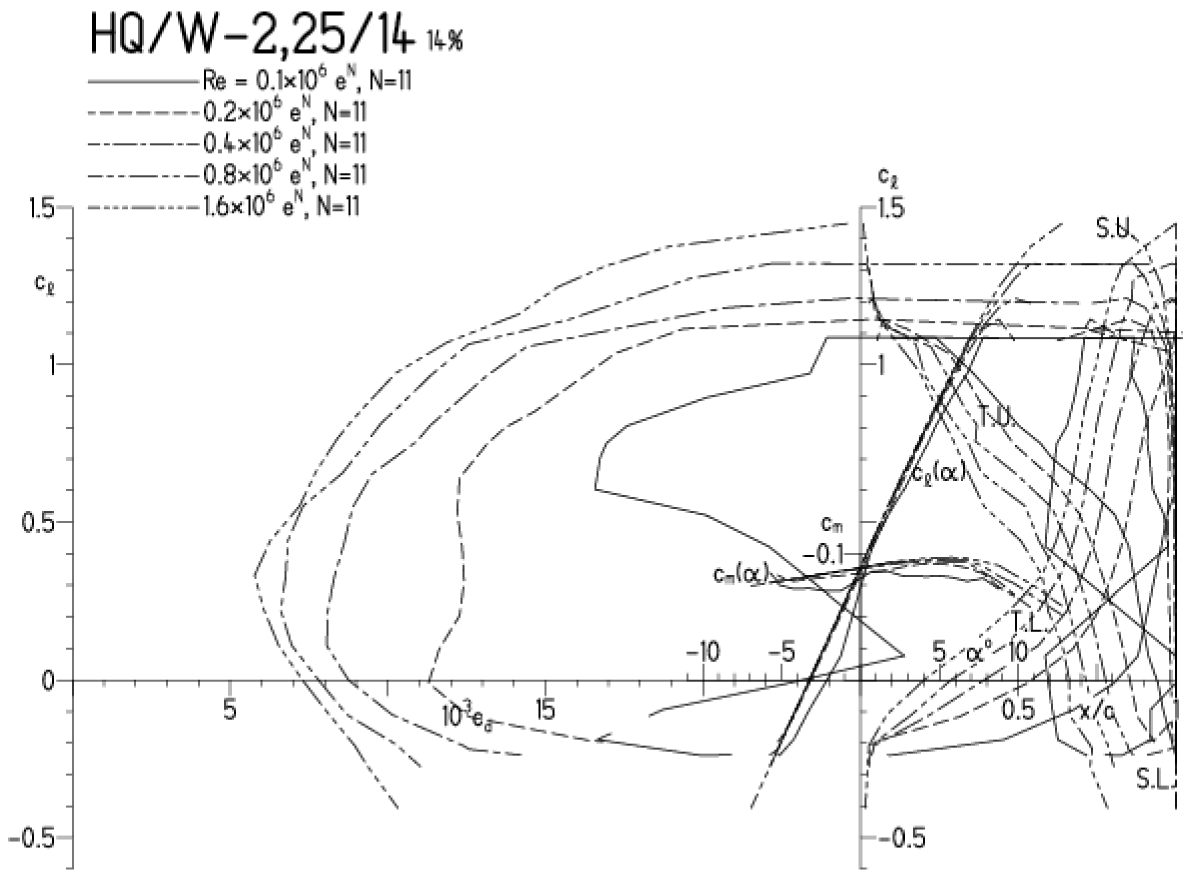


<u>HQ/W-2,25/14</u>, N=11

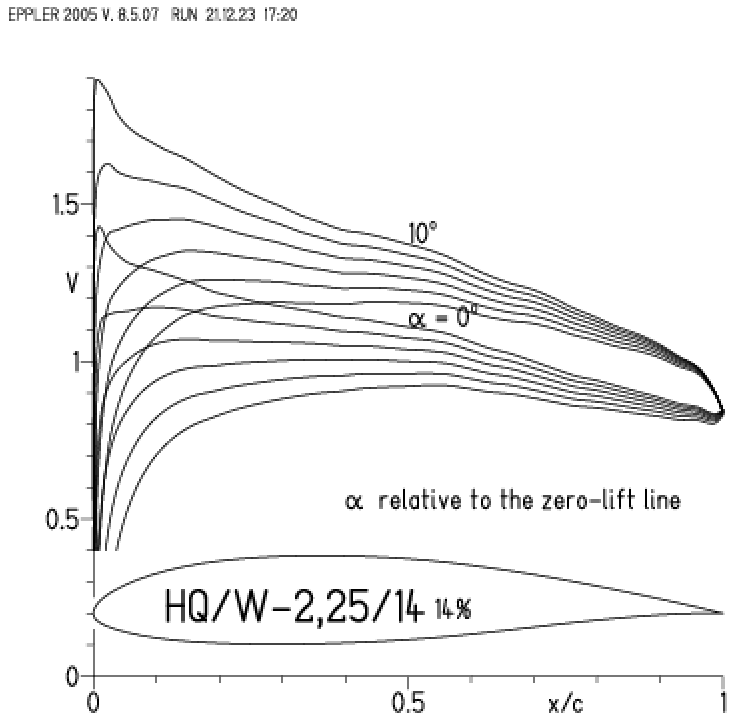
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

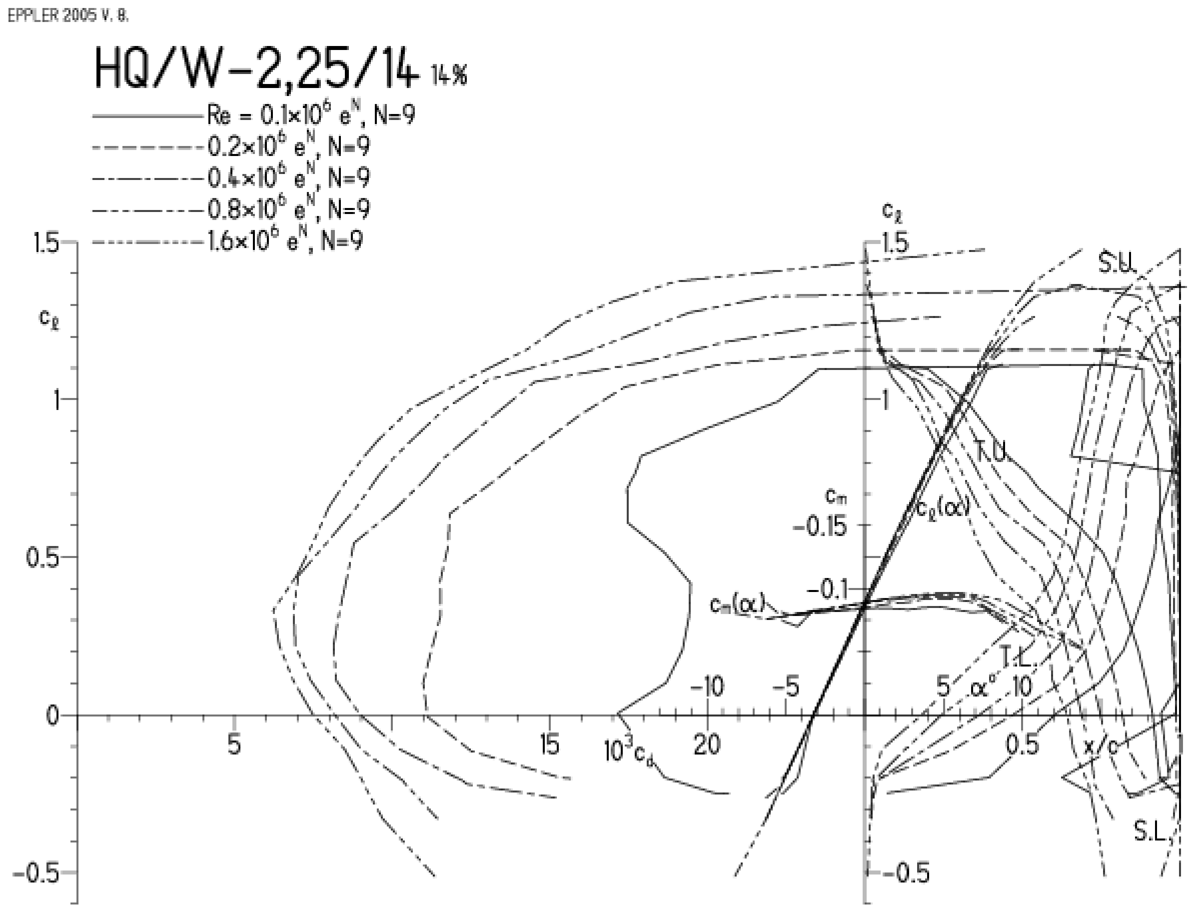


EPPLER 2005 V. 8.

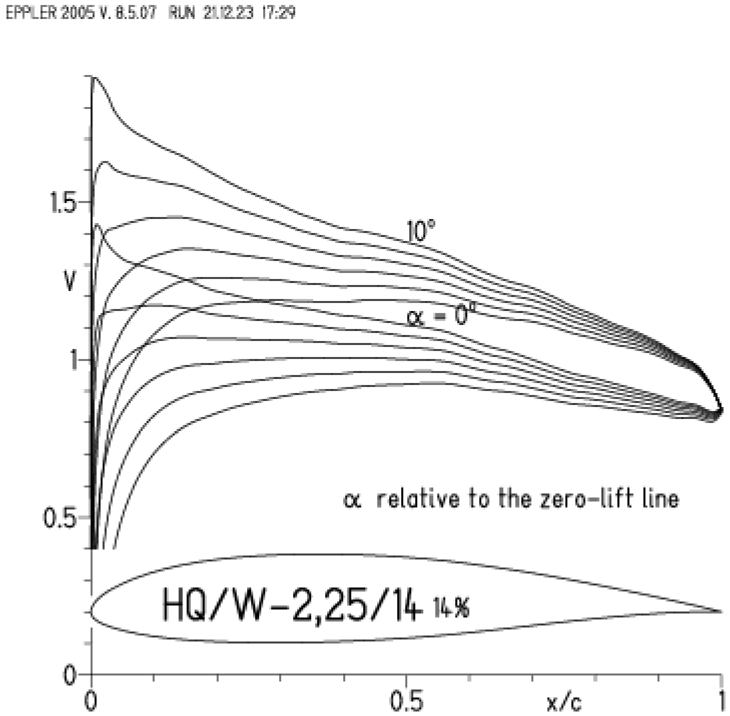


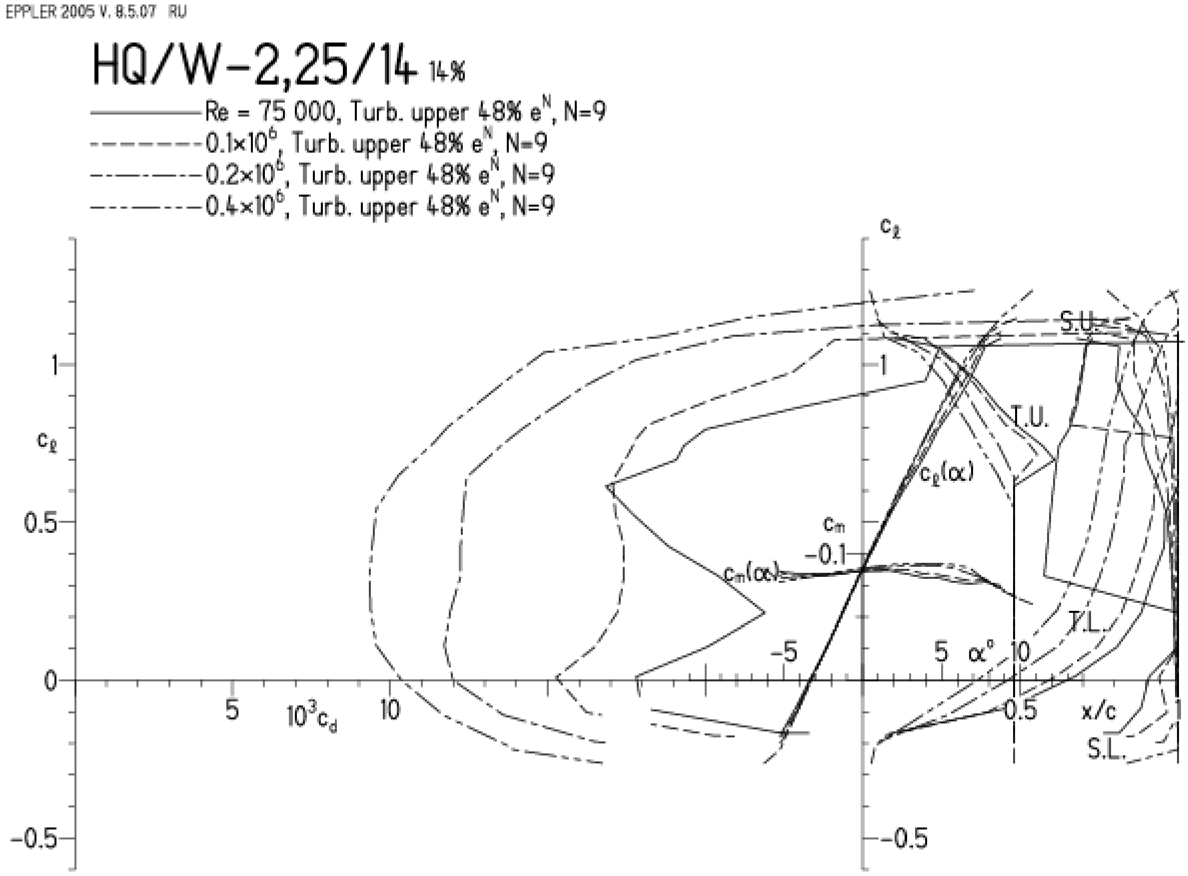
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−10
−5
5
α°
10
−0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

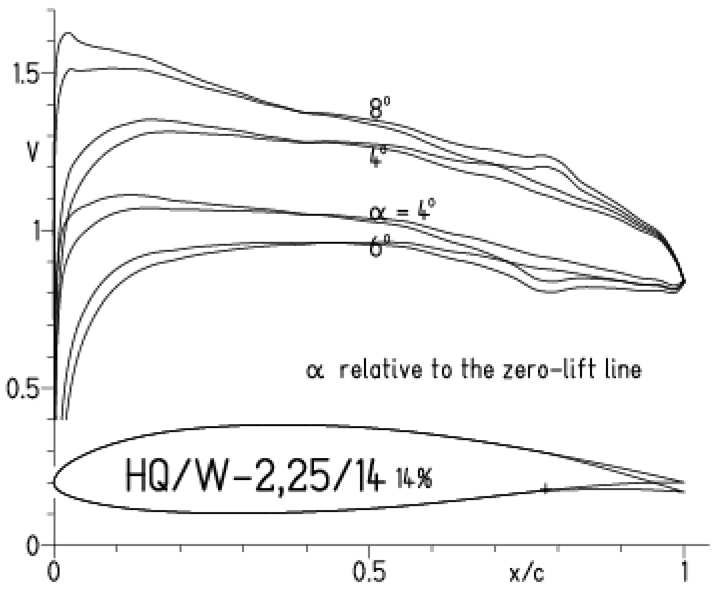
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



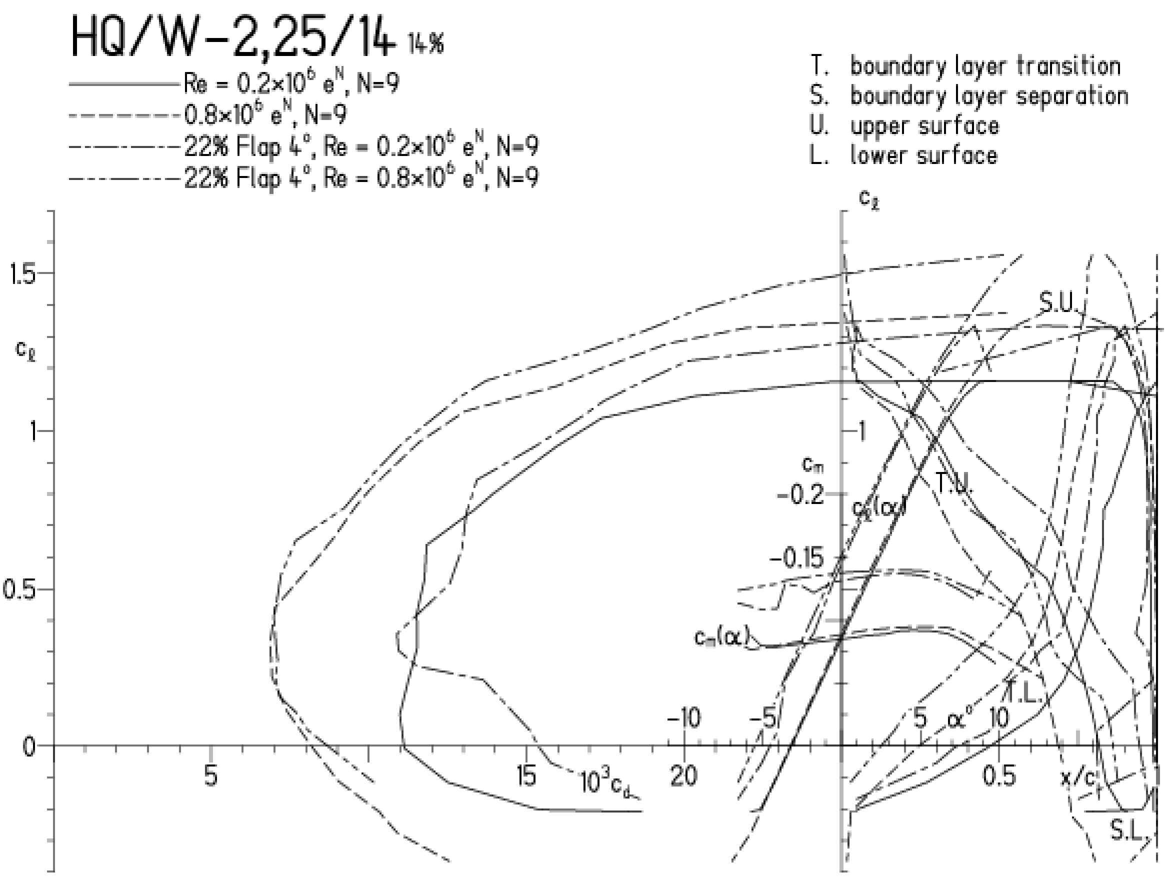


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

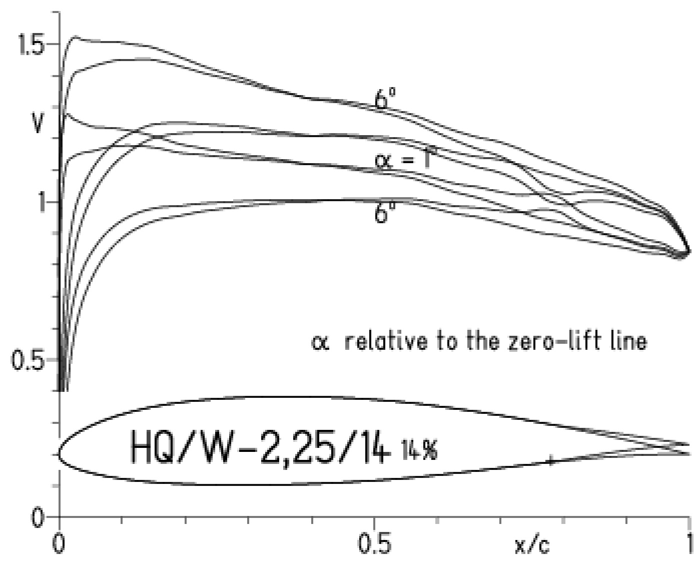


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

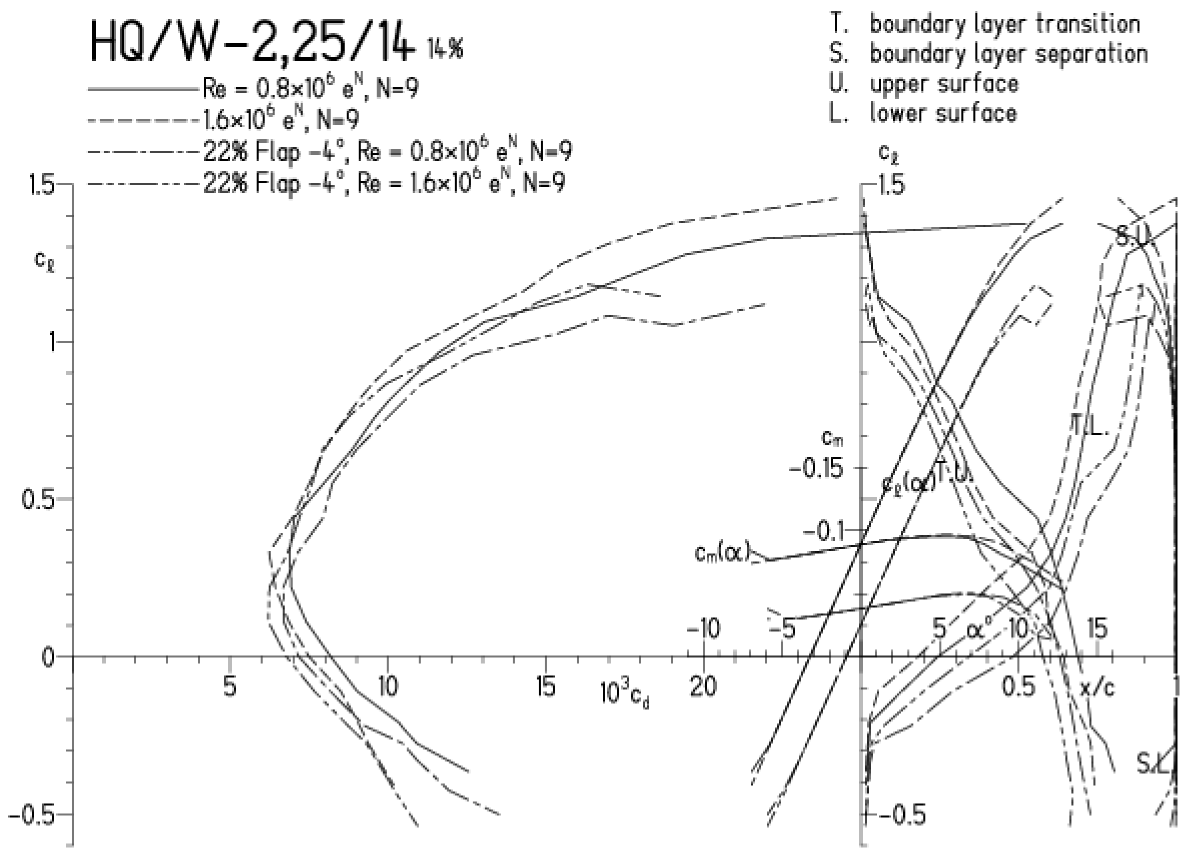


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

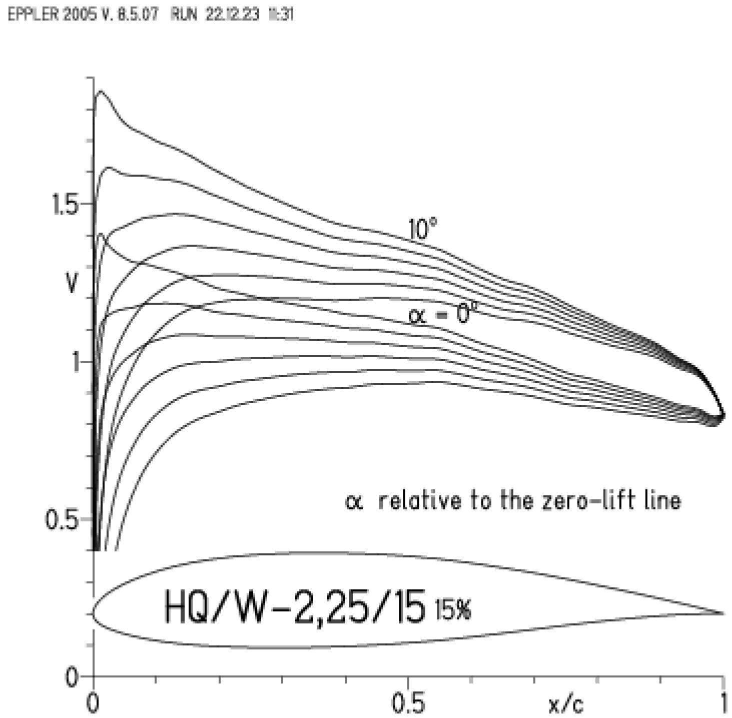
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

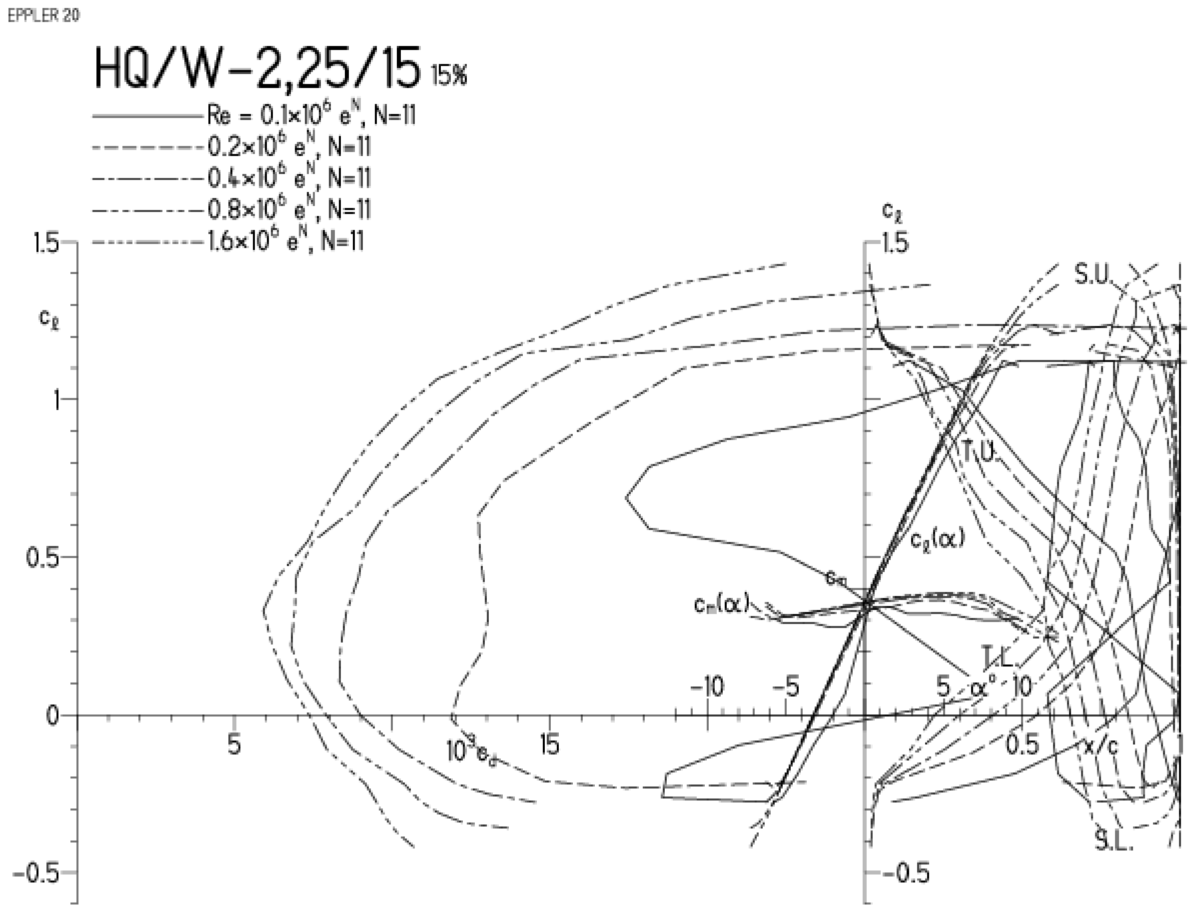


EPPLER 2005 V. 8.5.07



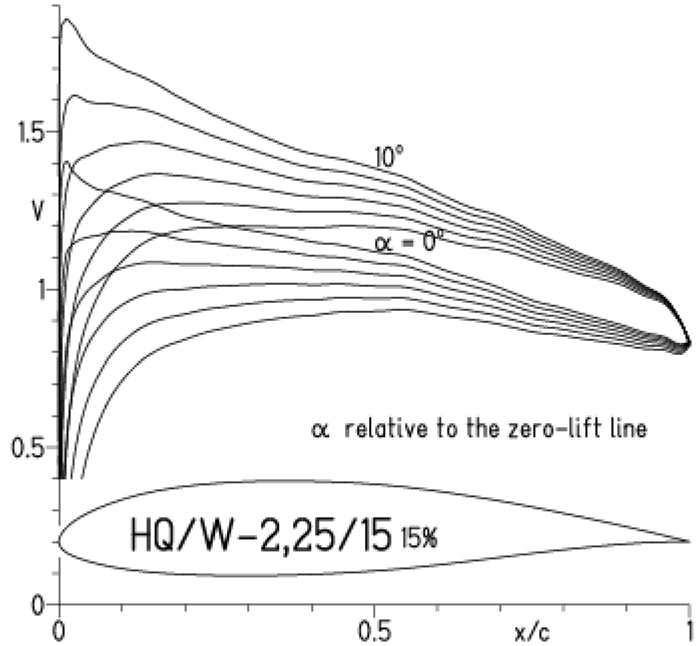
HQ/W-2,25/15, N=11



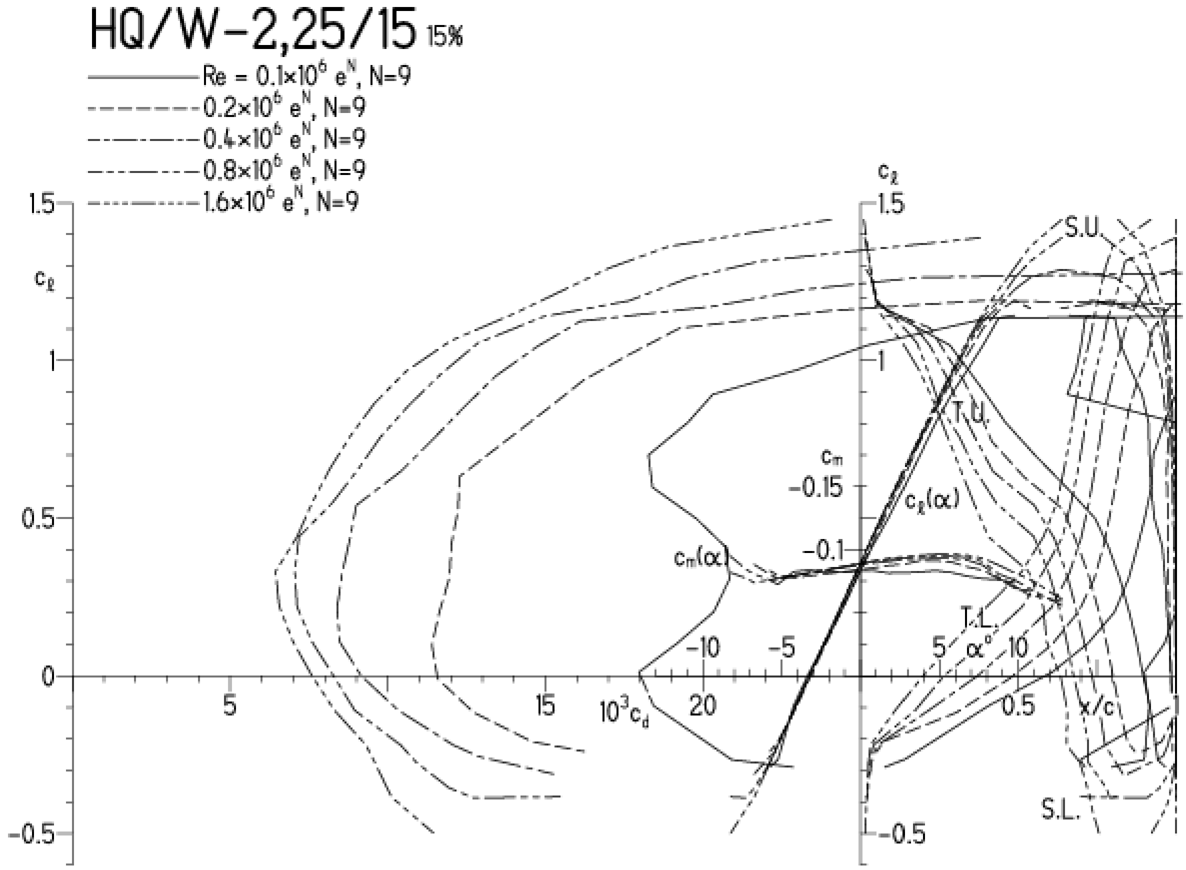


<u>HQ/W-2,25/15</u>, N=9

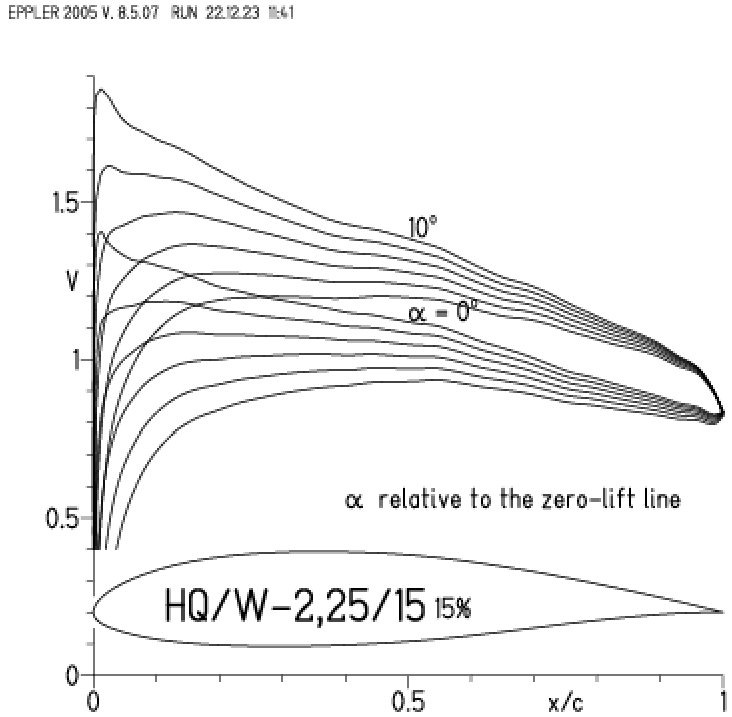
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

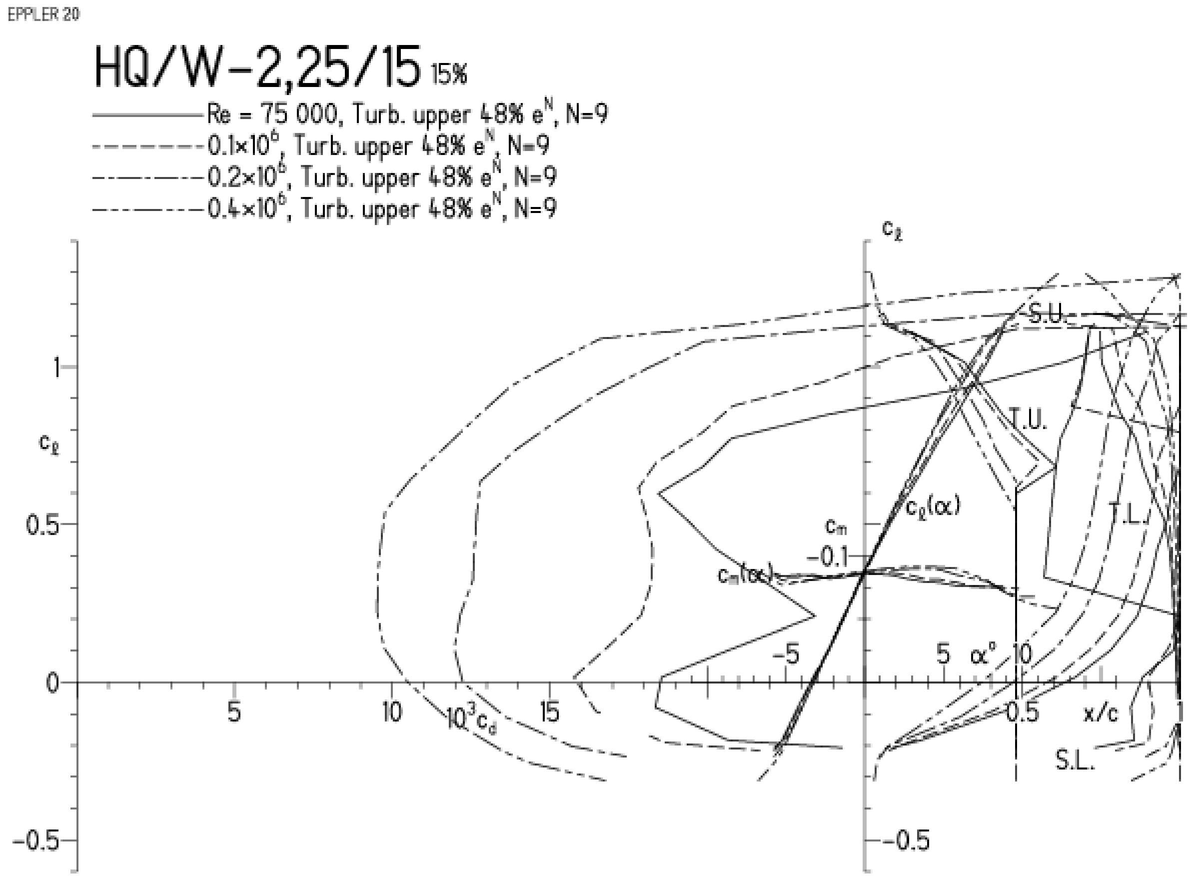


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



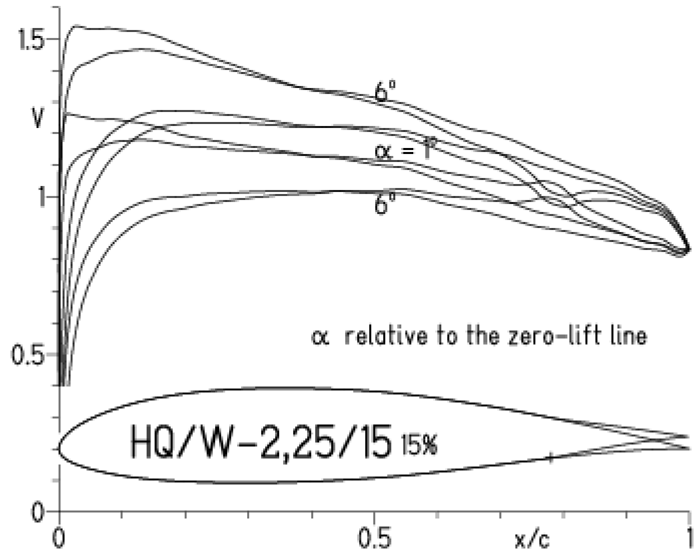


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

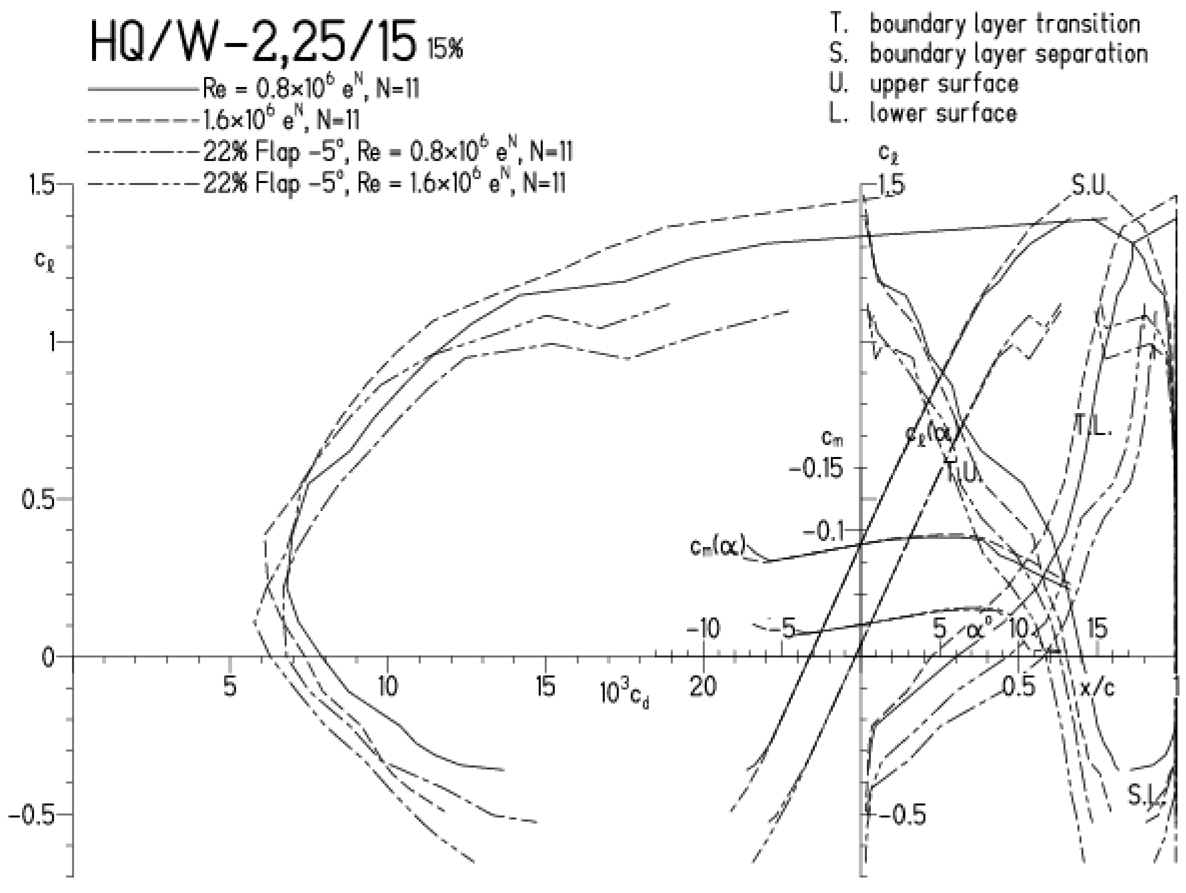
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

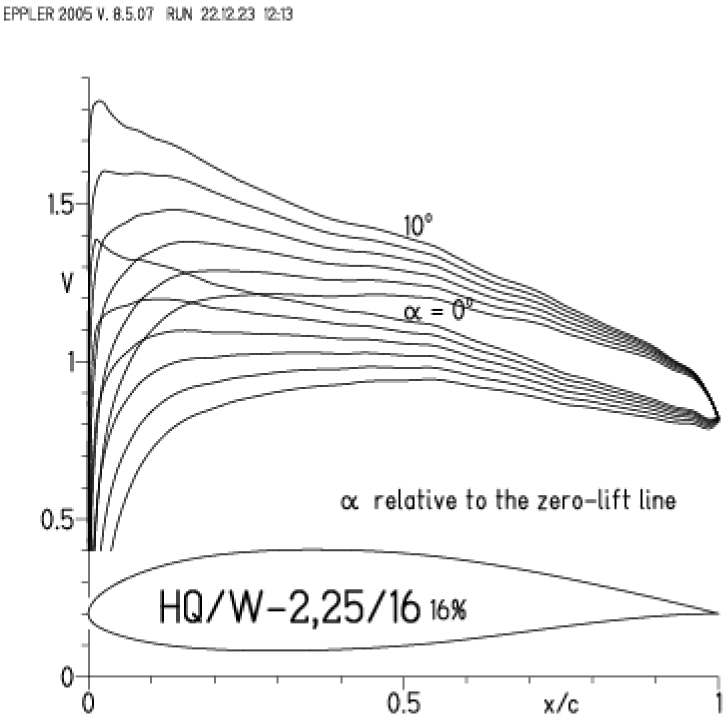
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

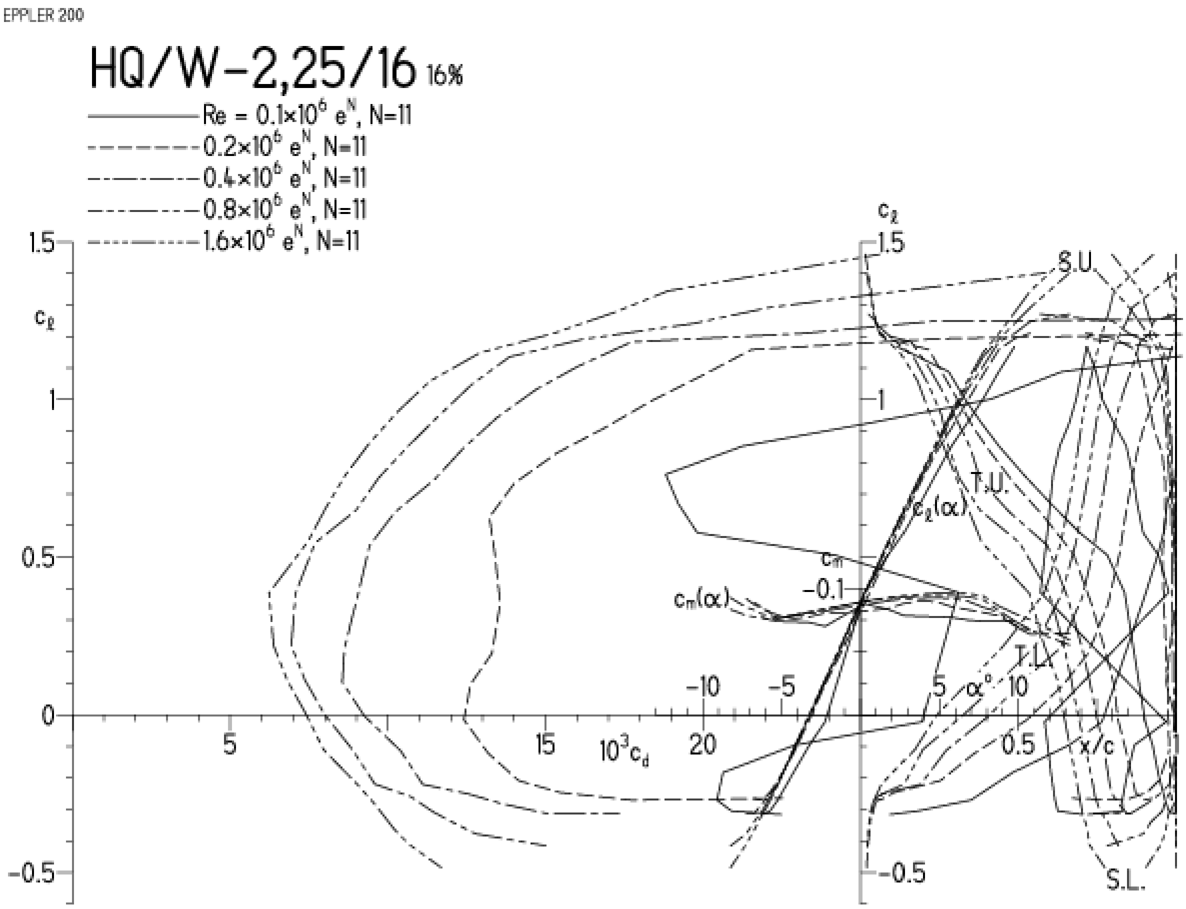


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

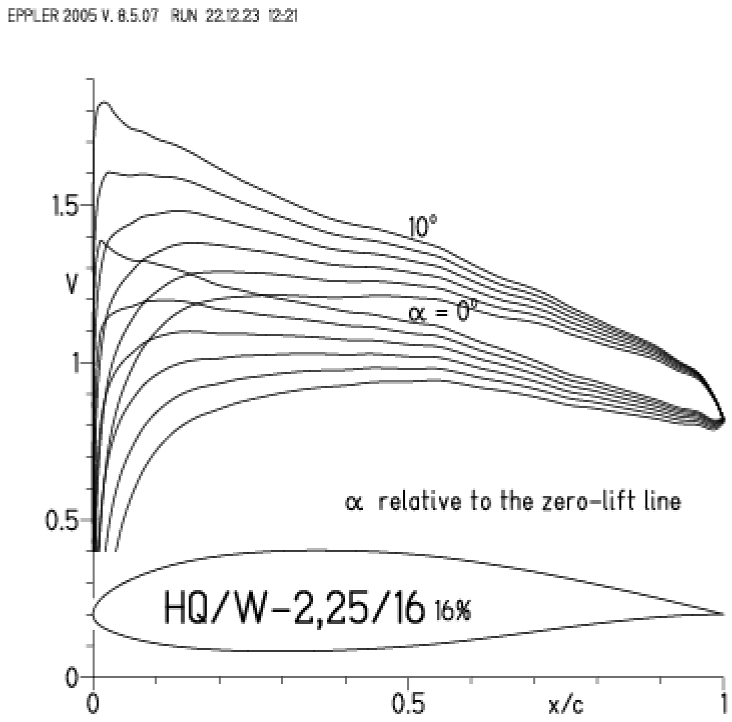


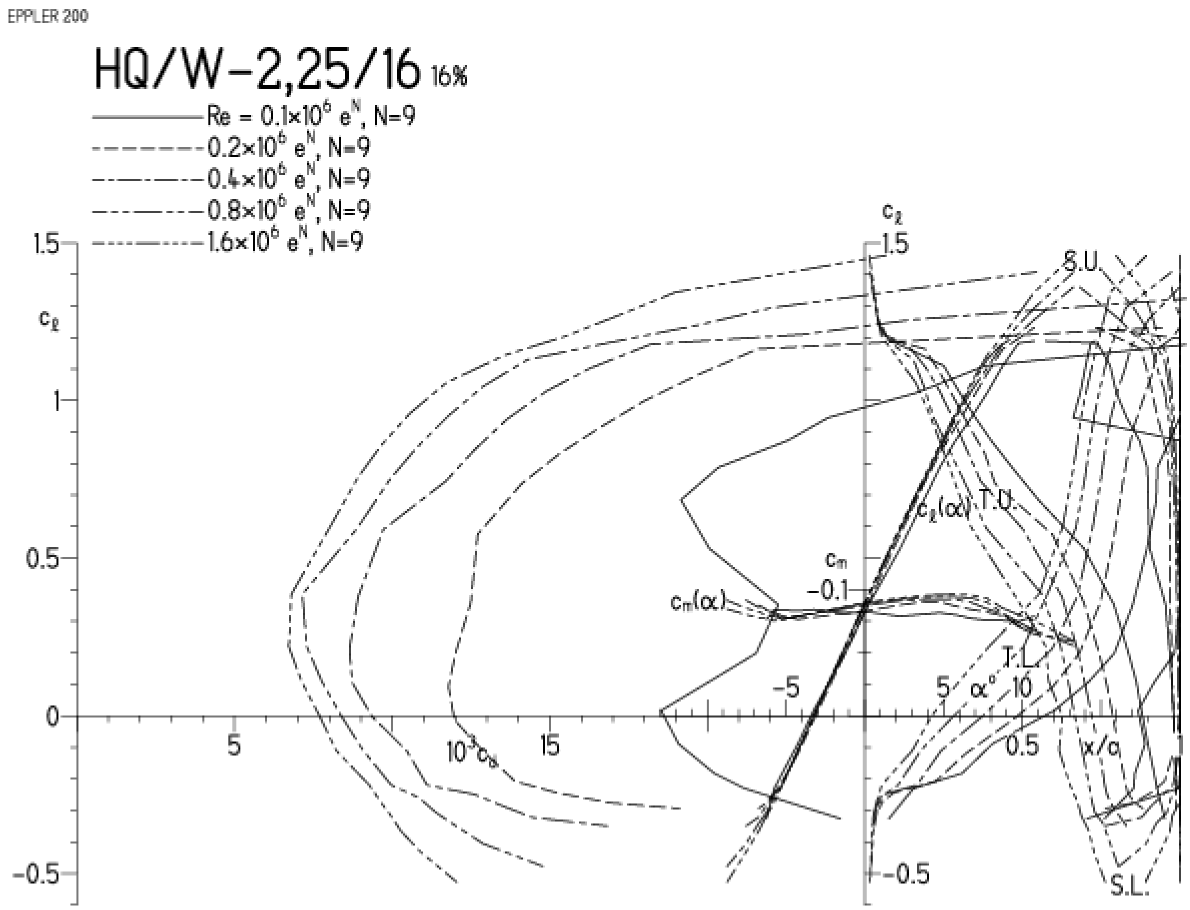
HQ/W-2,25/16, N=11



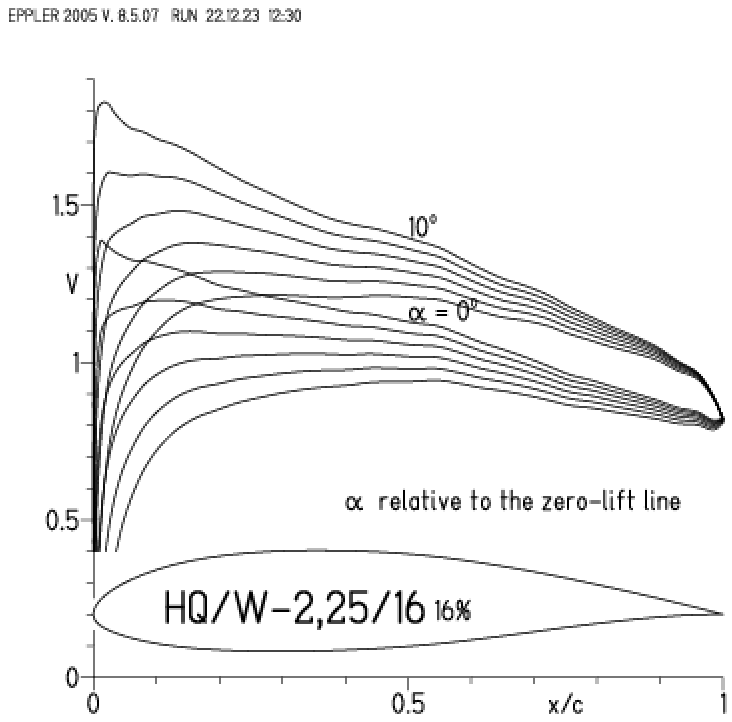


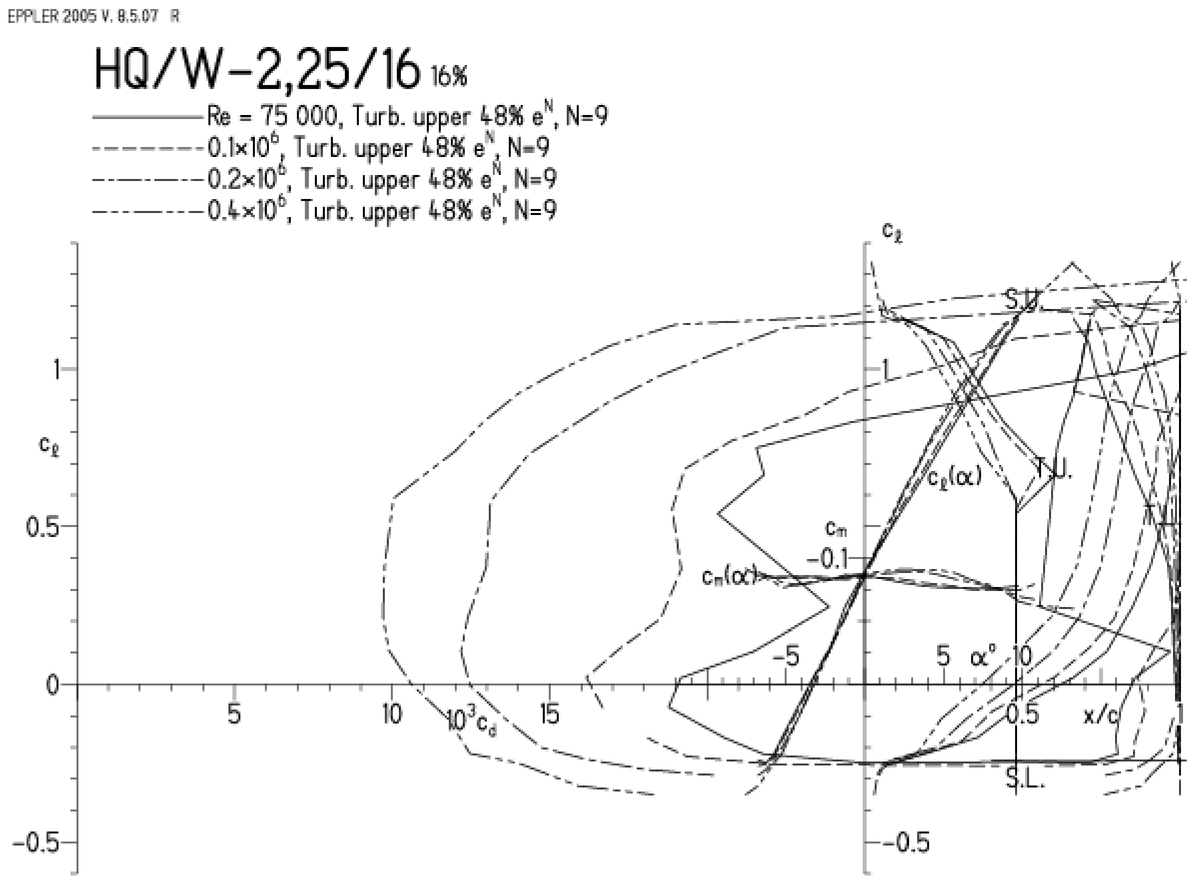
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
10^-3 c_d
15
c_l
1.5
S.U.
c_l(α) T.U.
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



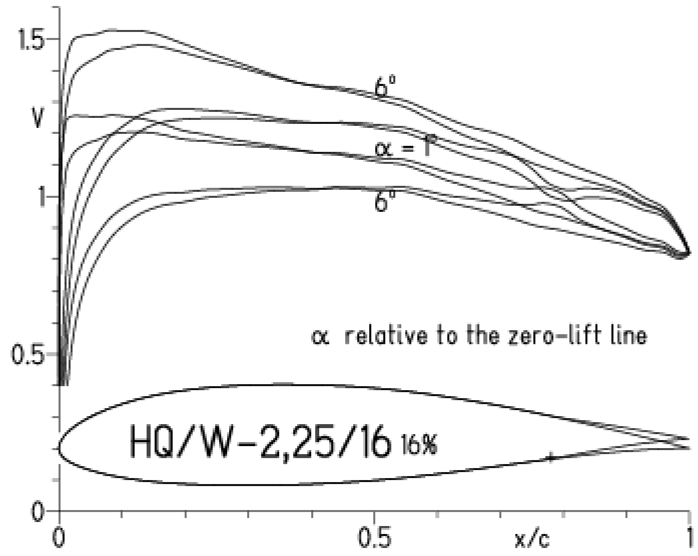


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

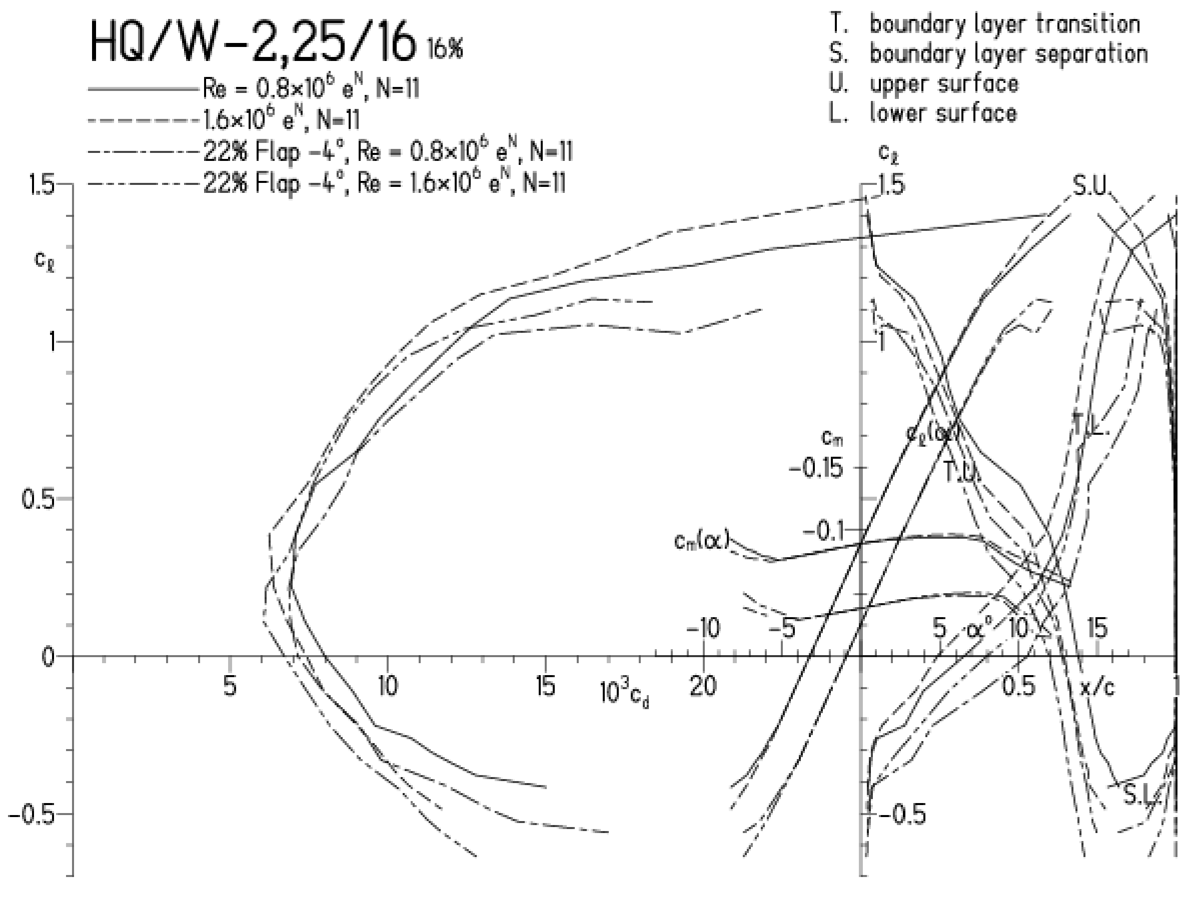
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

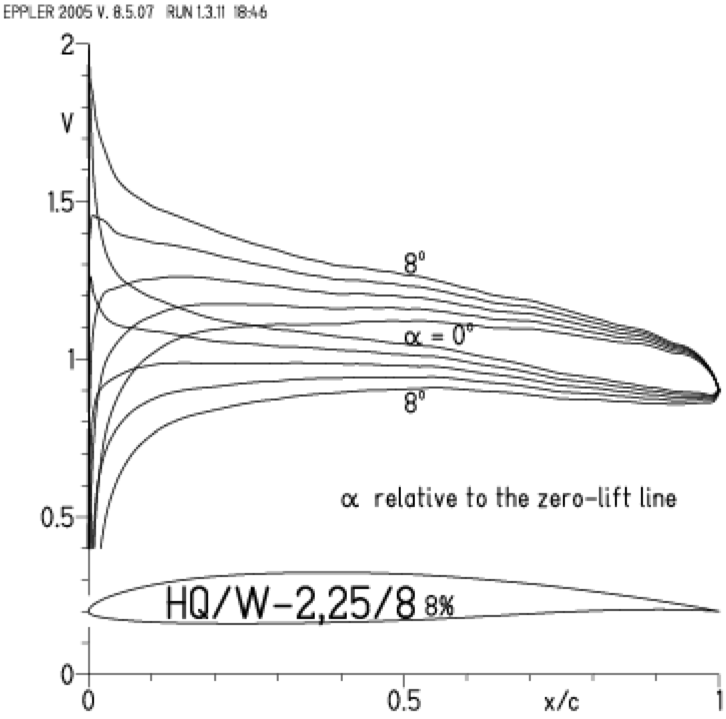
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

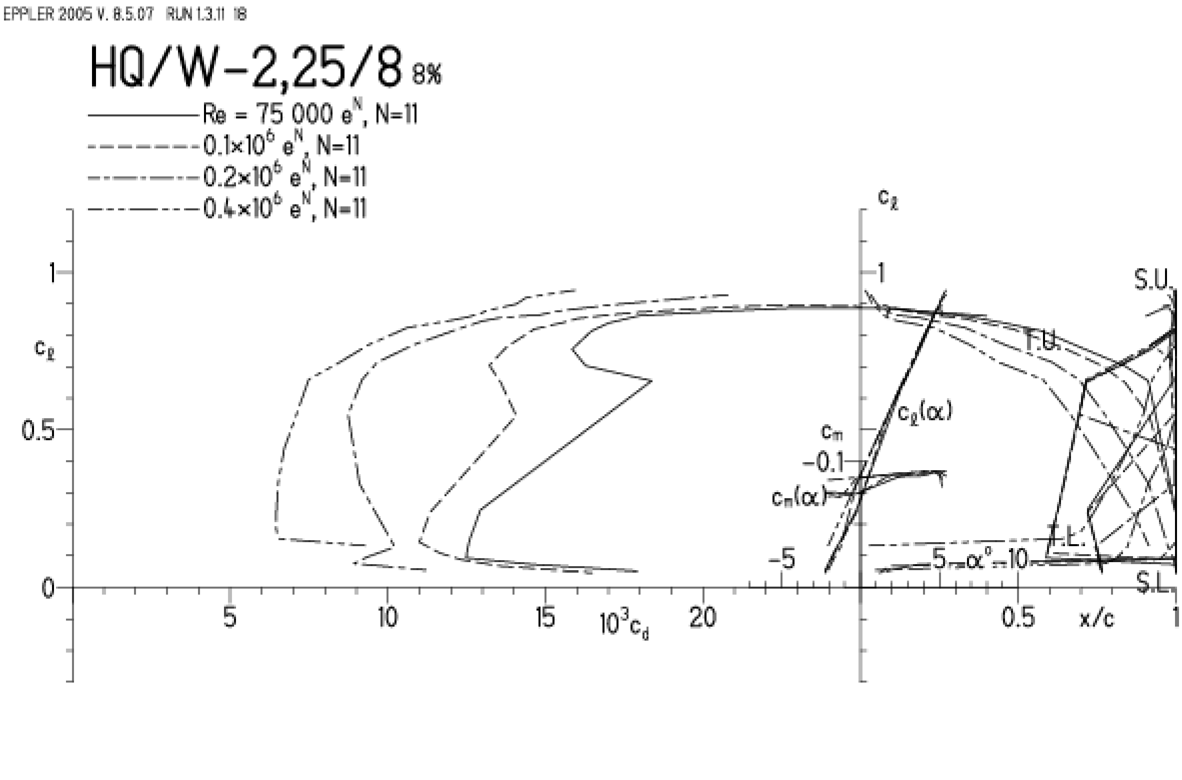


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



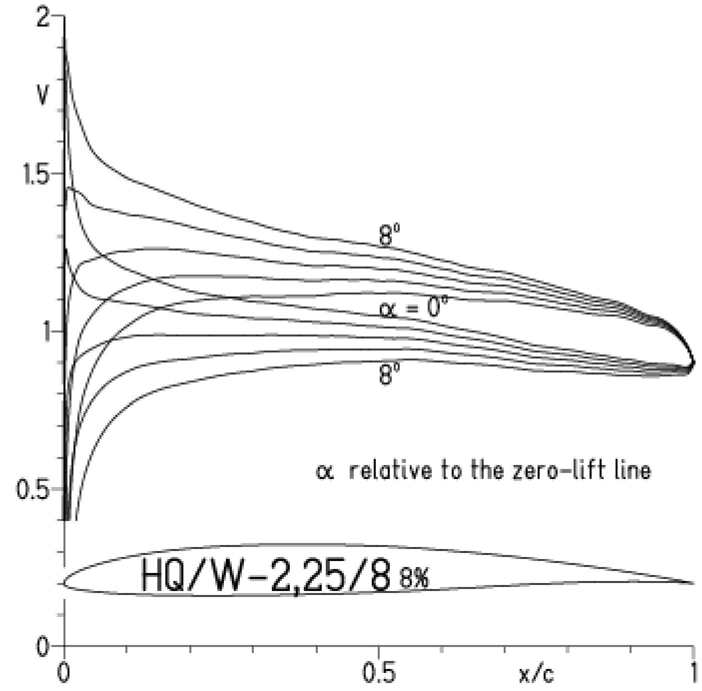
<u>HQ/W-2,25/8</u>, N=11



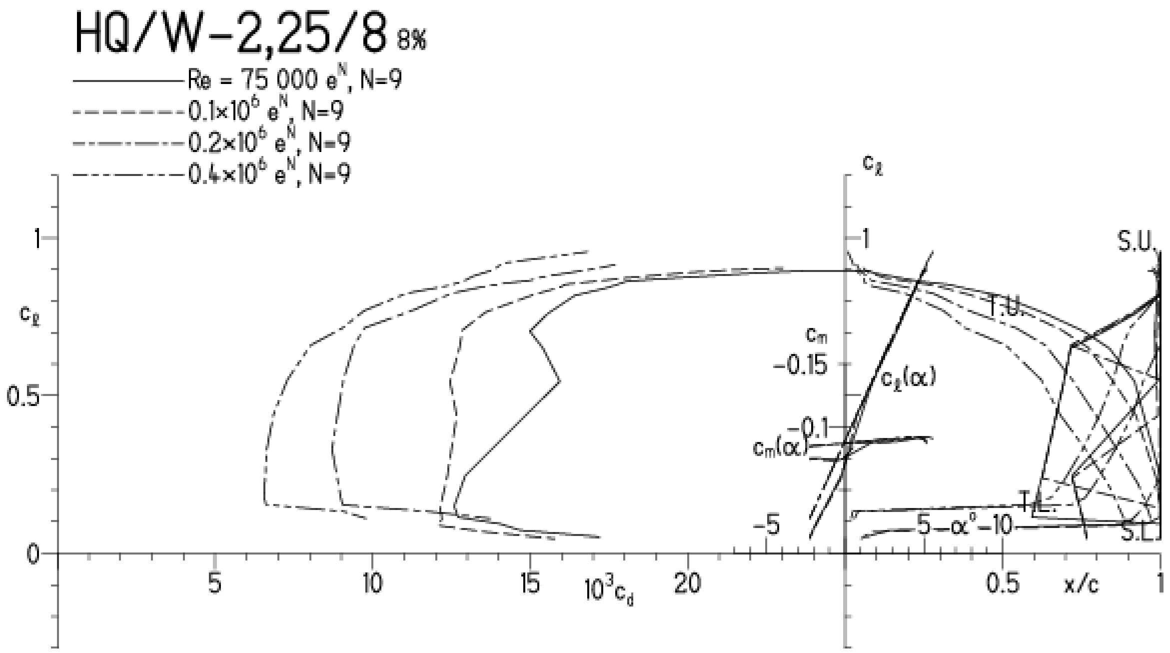


HQ/W-2,25/8, N=9

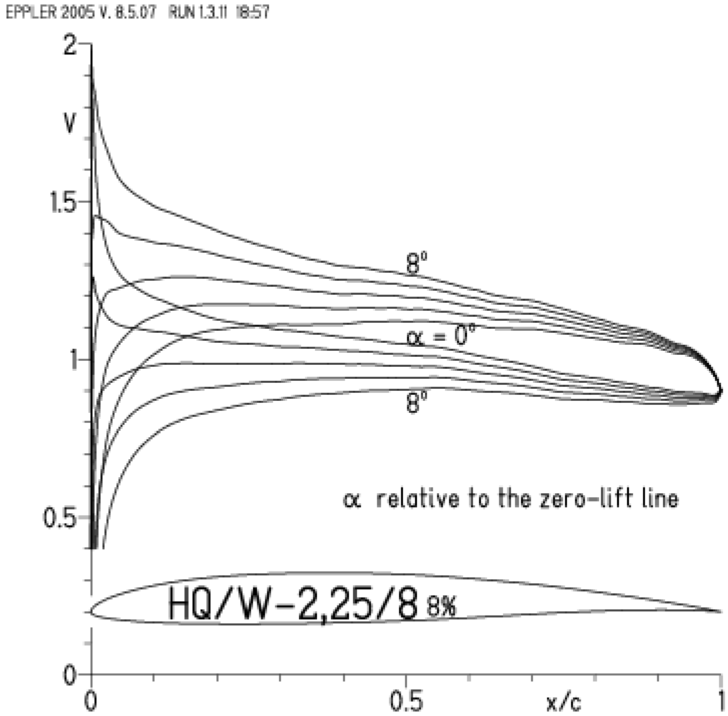
EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

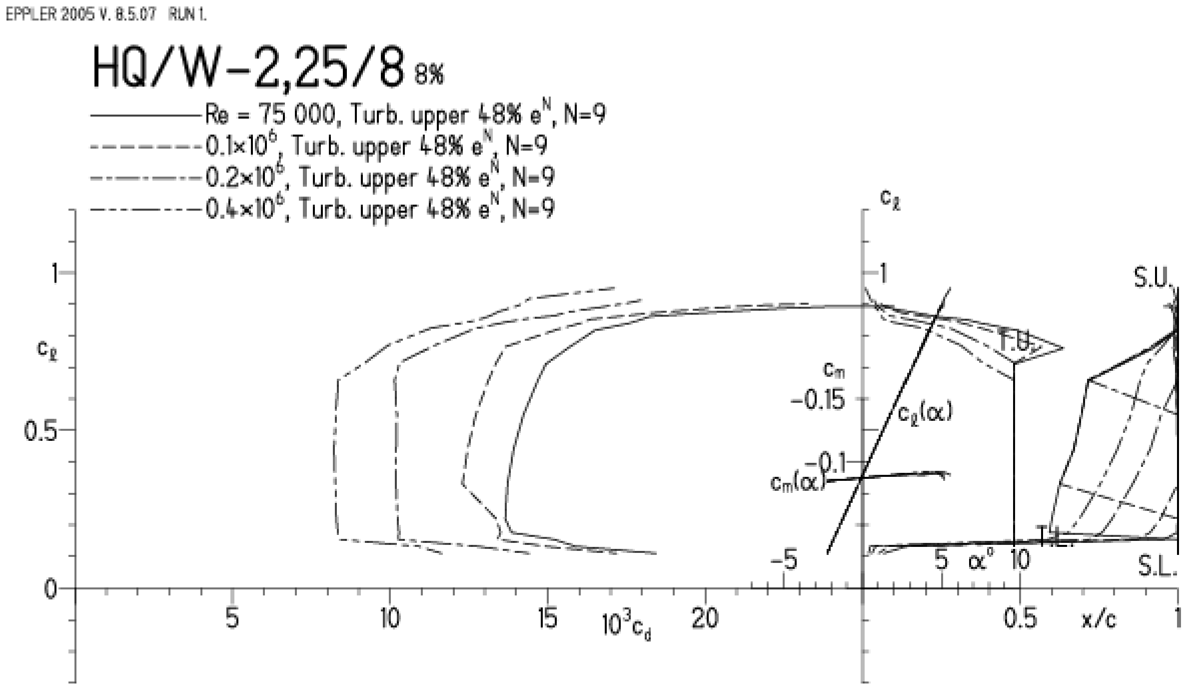


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52

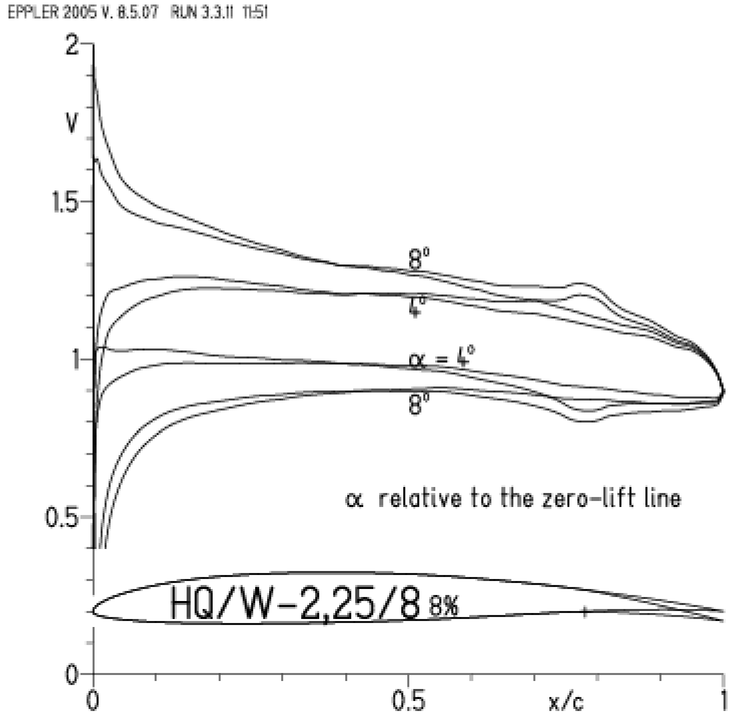


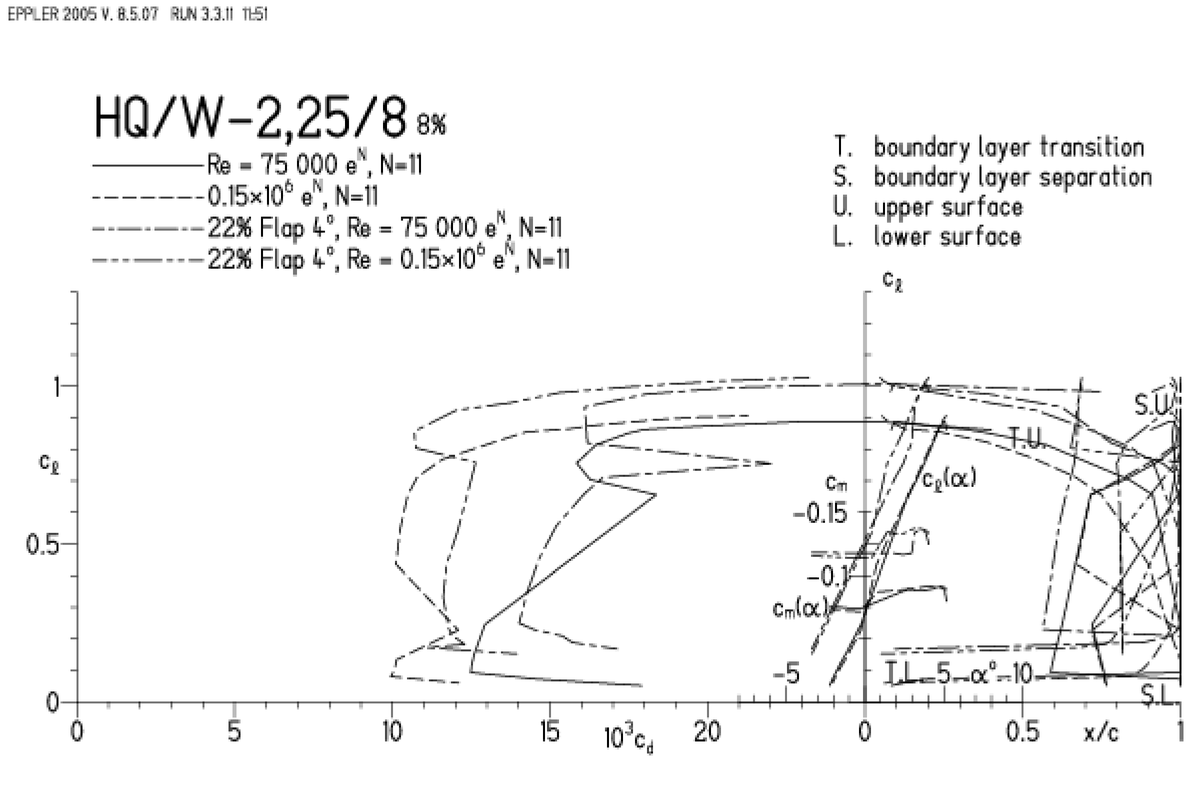
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



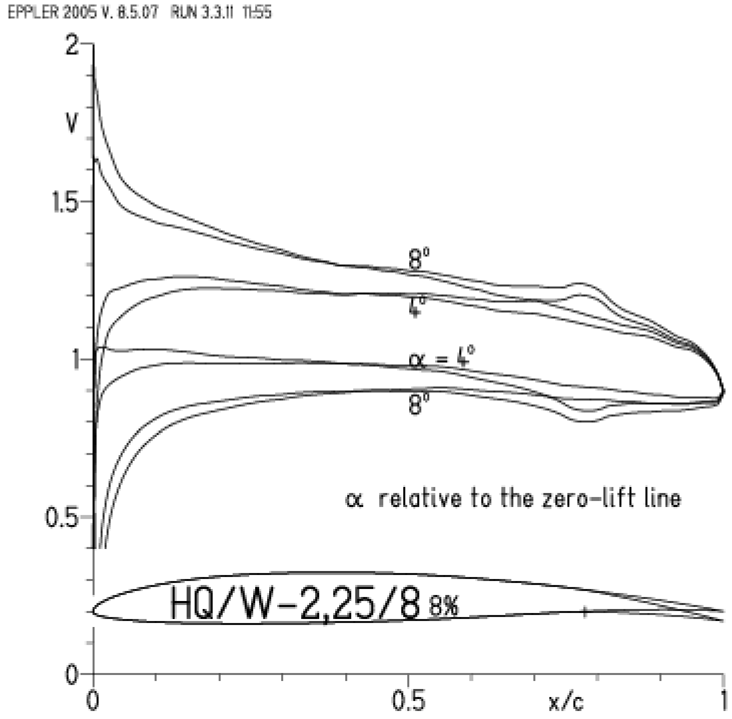


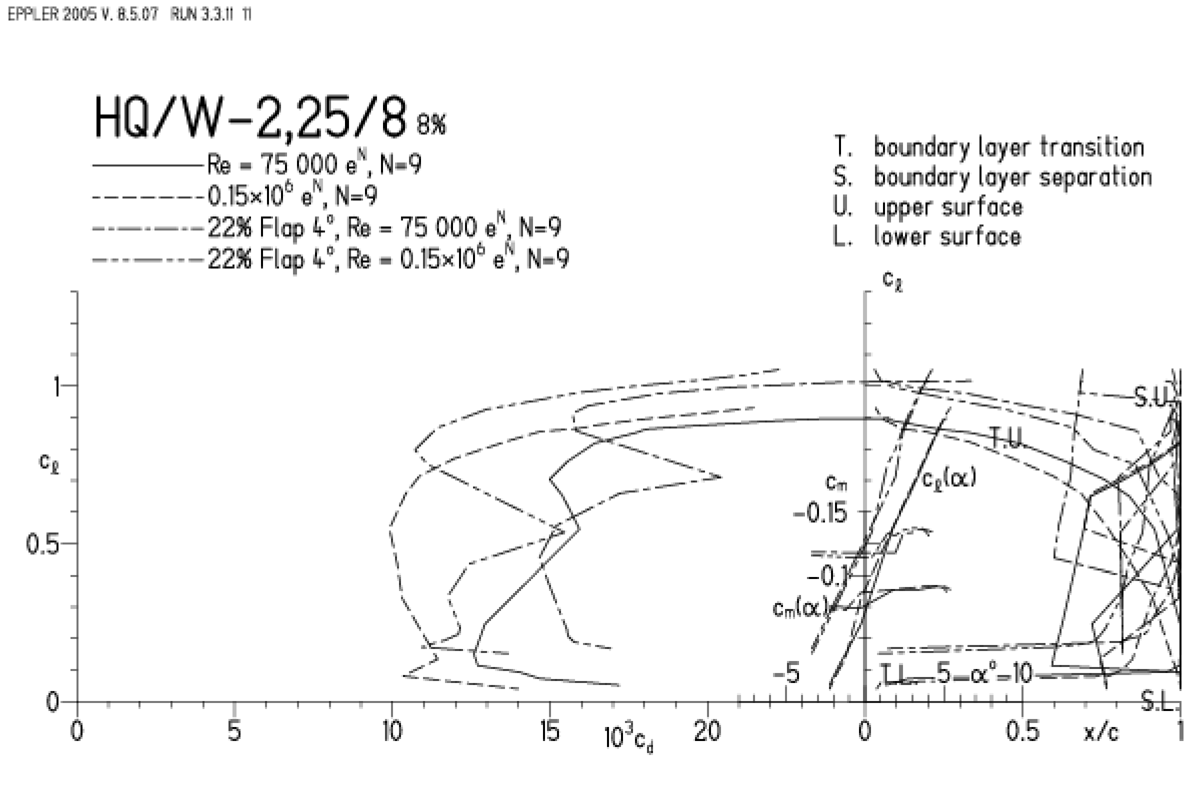
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



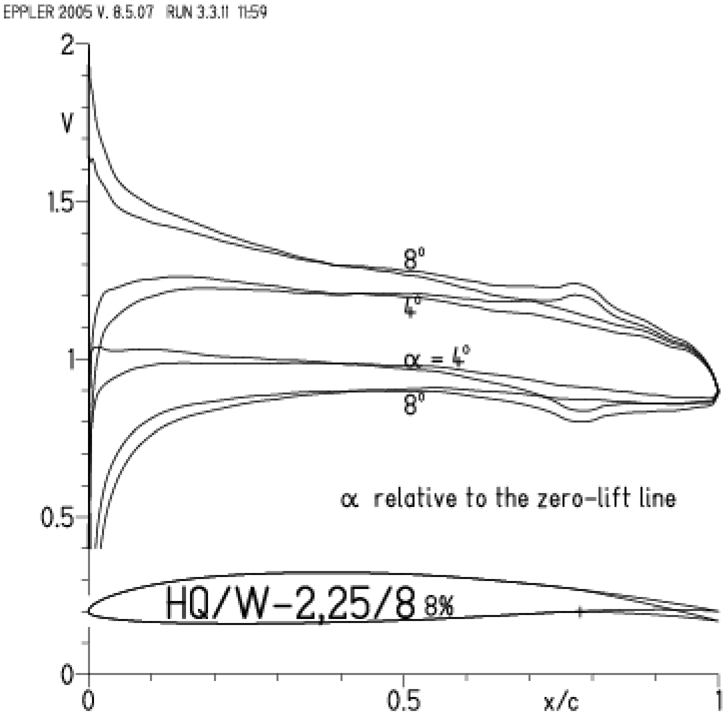


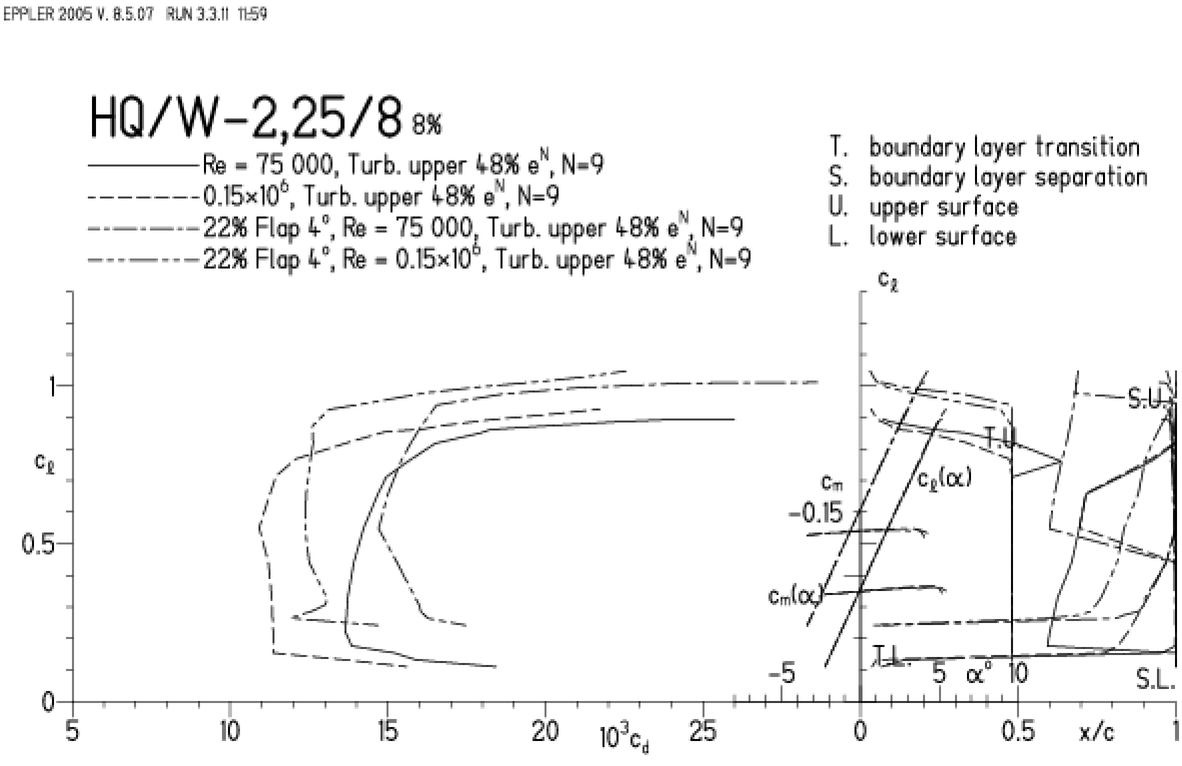
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





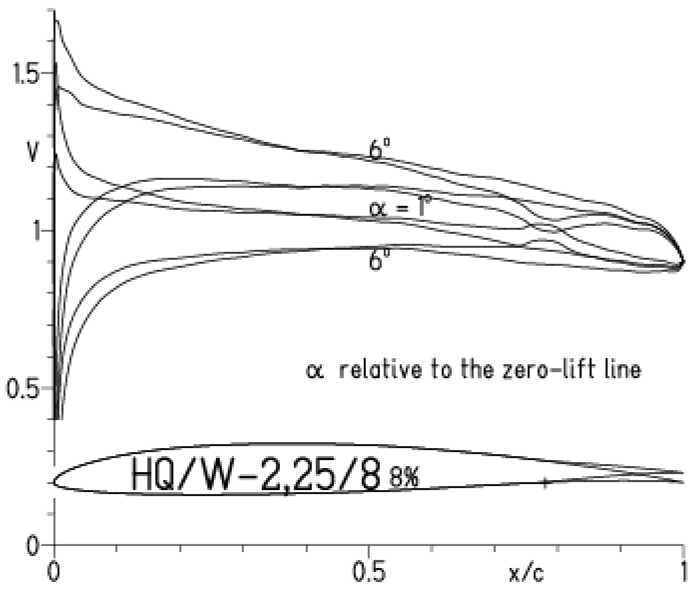
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



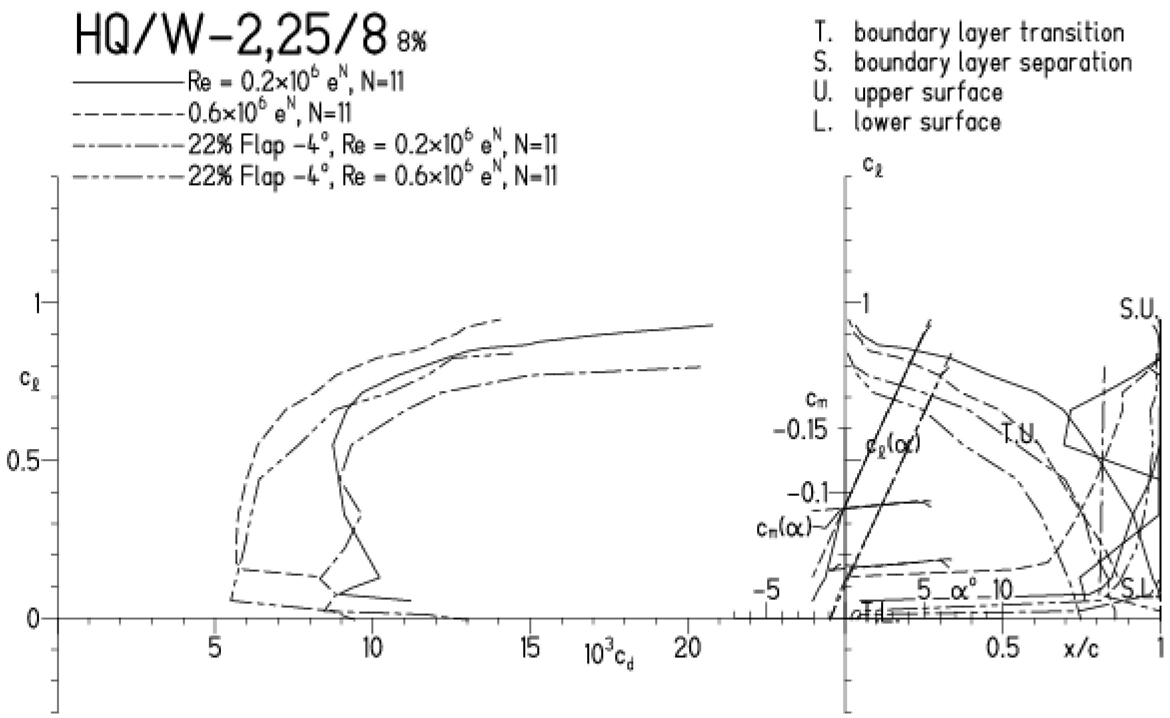


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

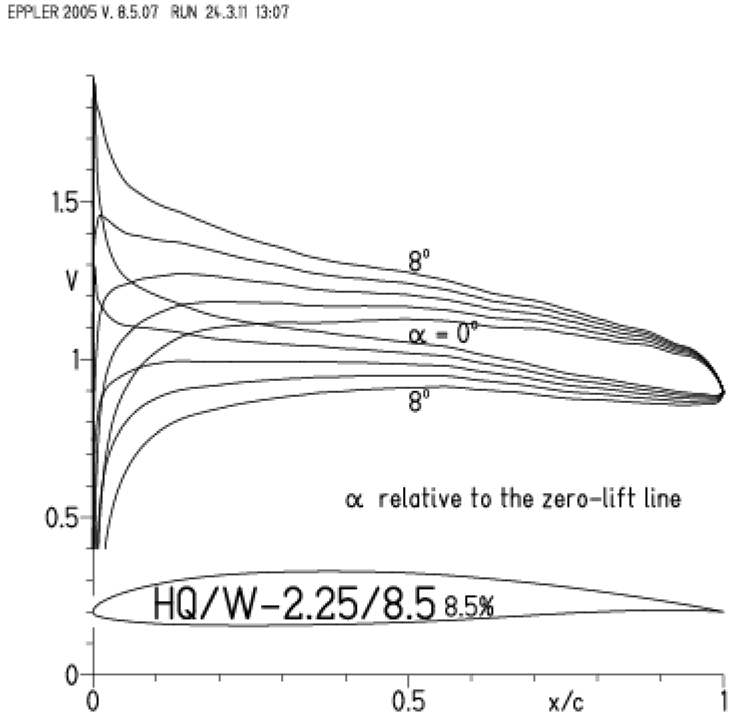
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

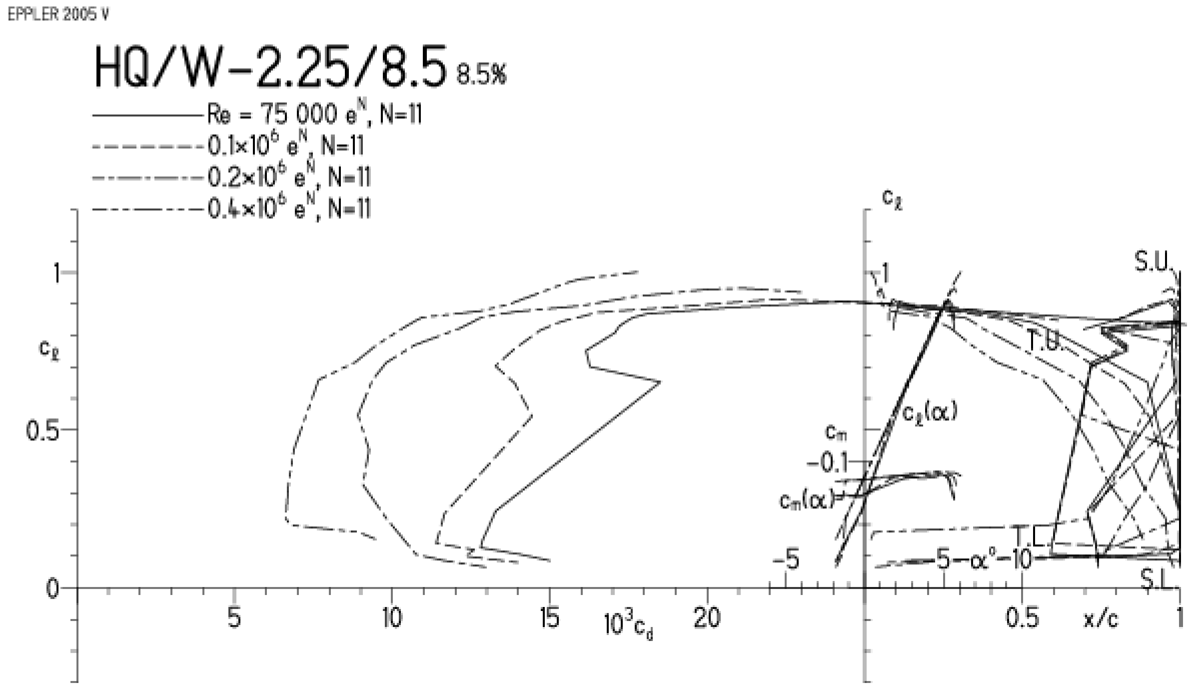


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



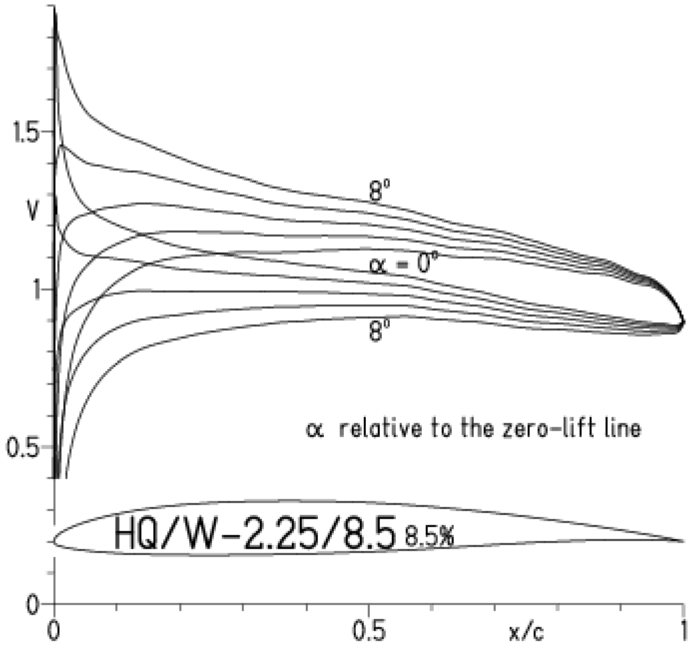
HQ/W-2,25/8,5, N=11



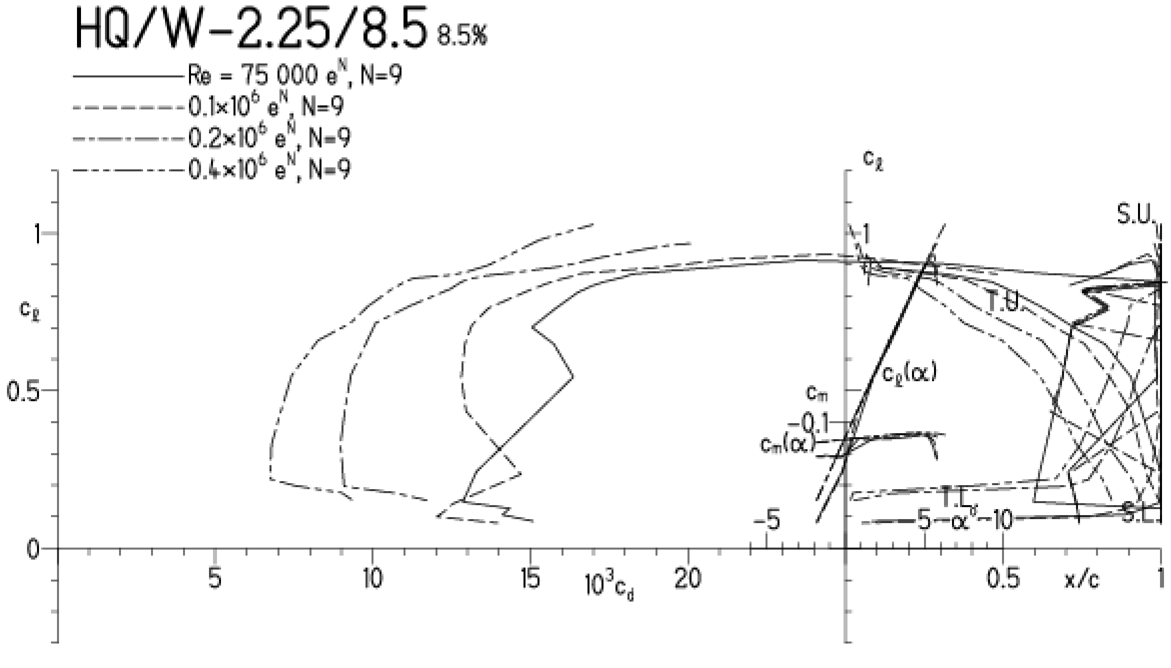


HQ/W-2,25/8,5, N=9

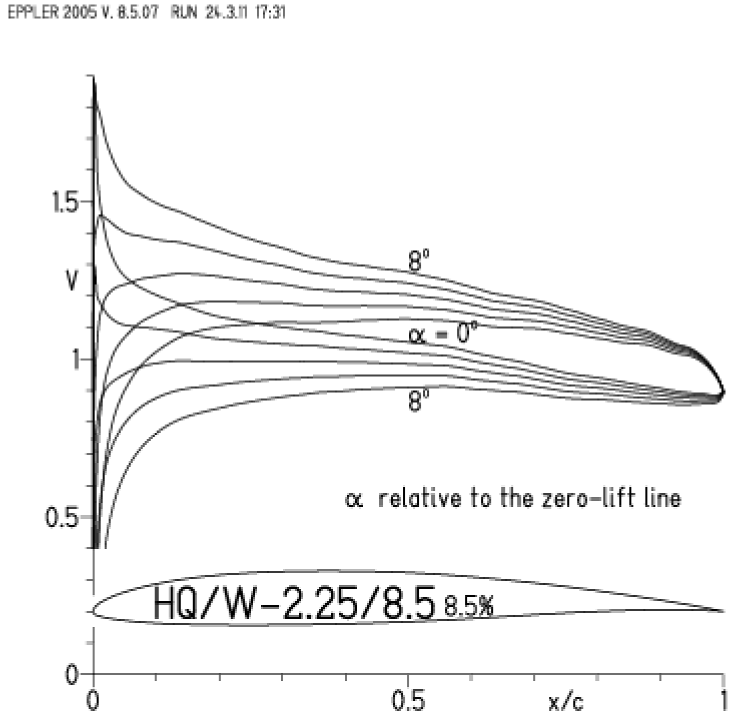
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

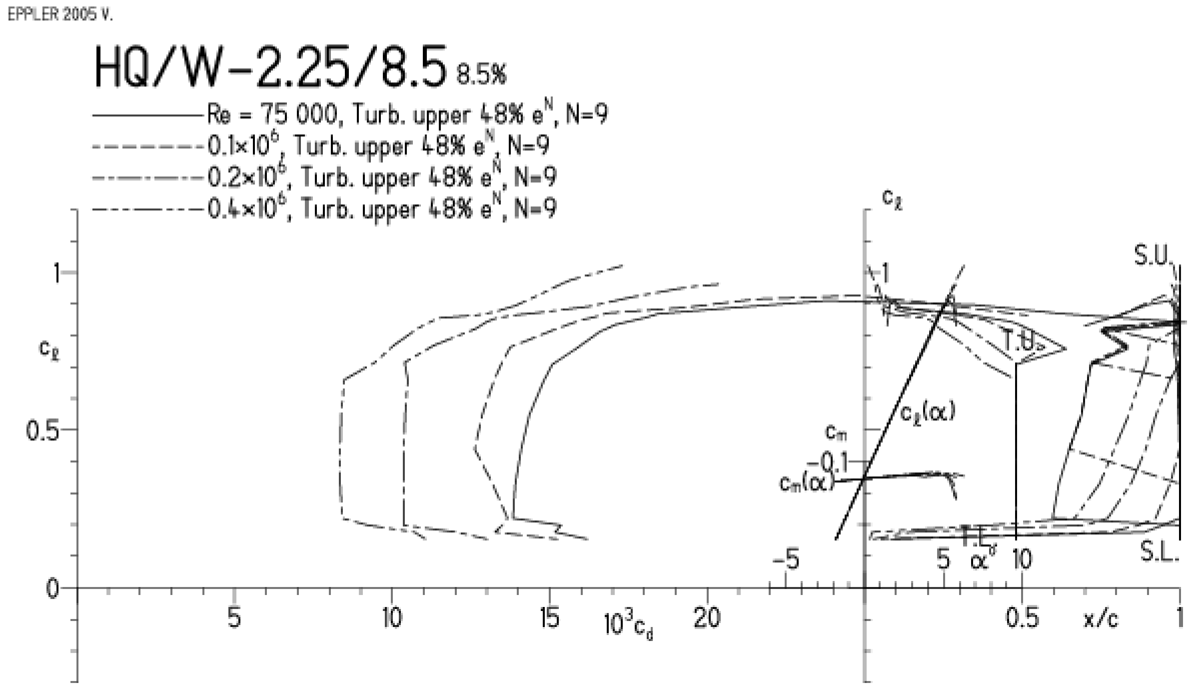


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



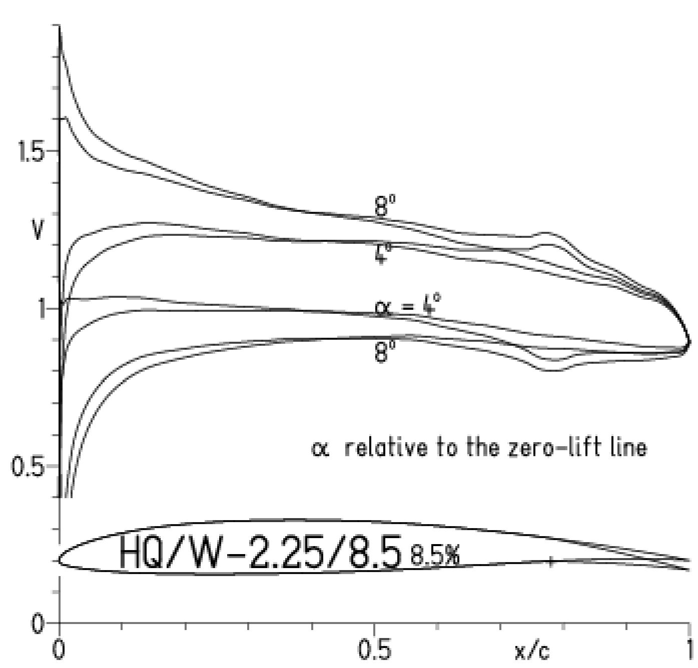
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



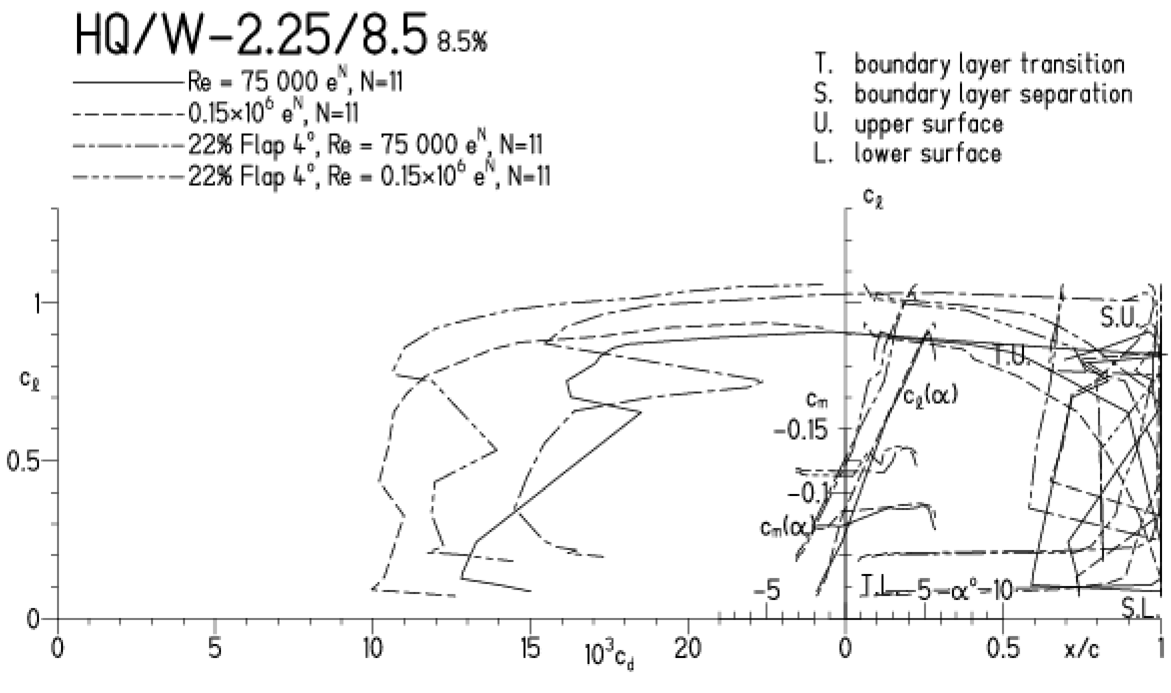


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

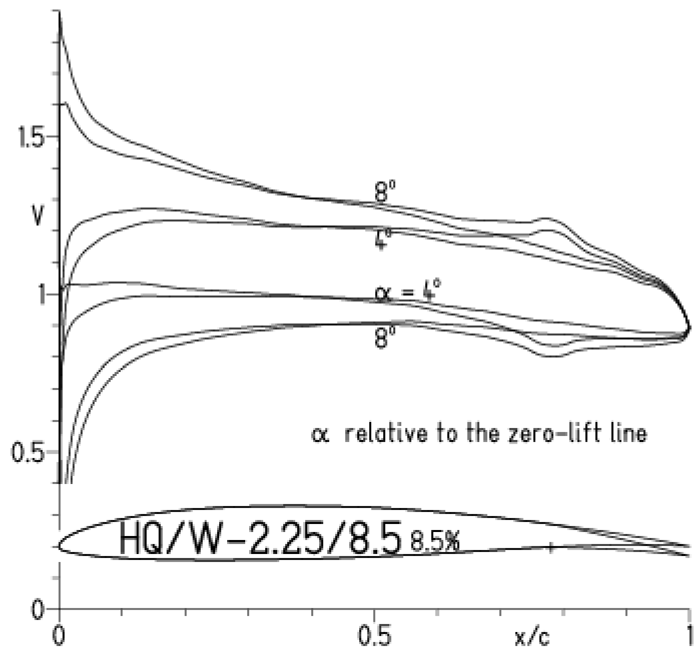


EPPLER 2005 V. 8.5.

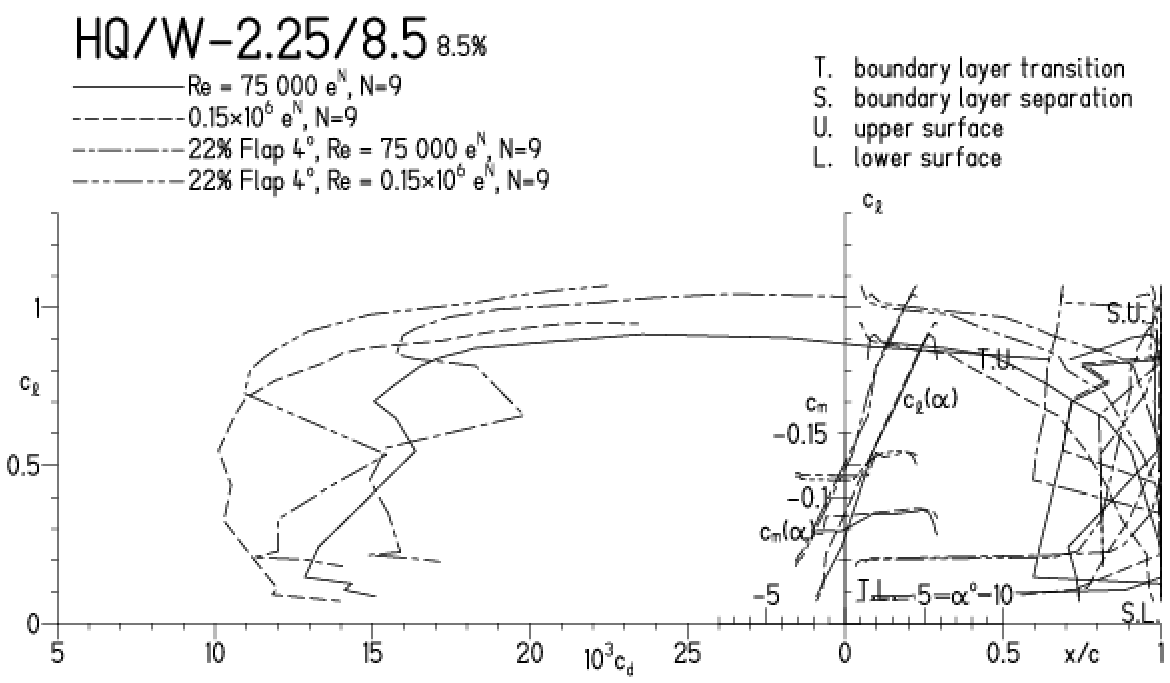


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

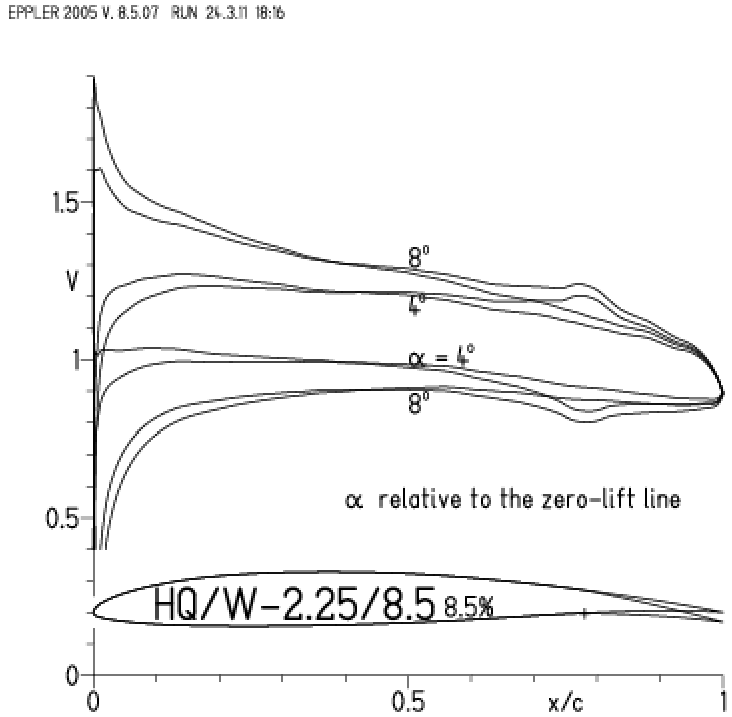
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

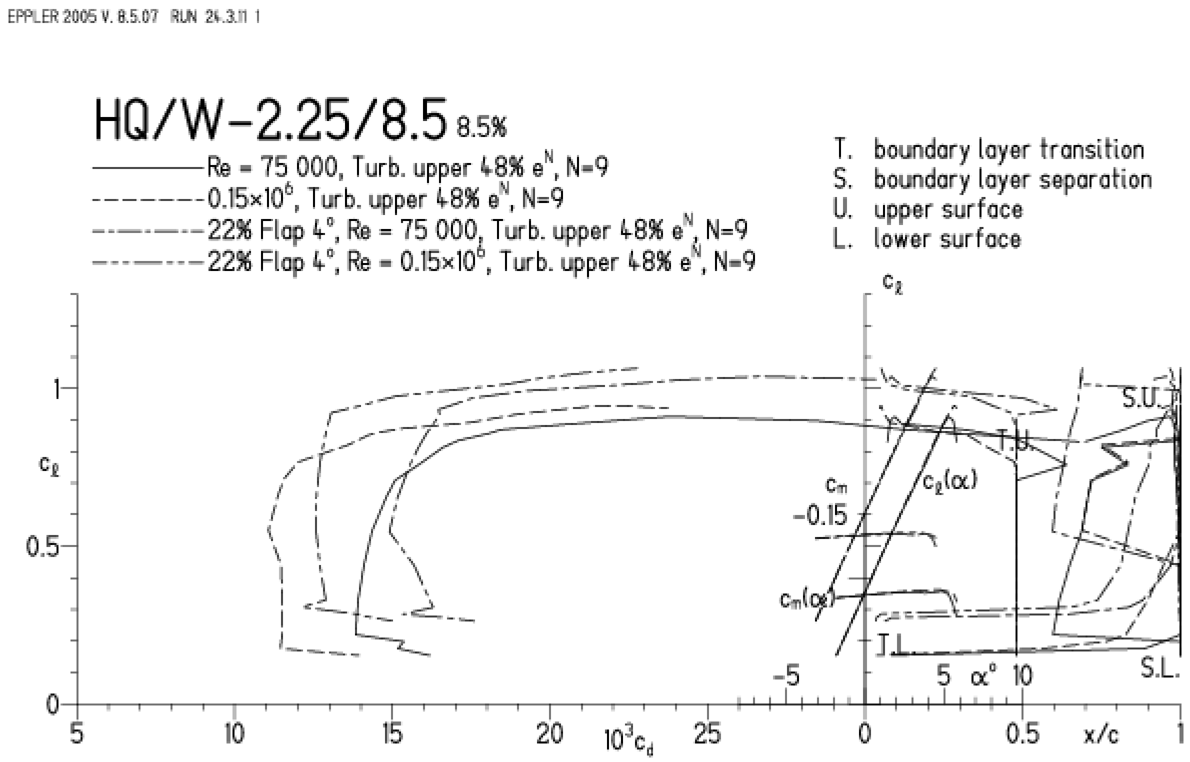


EPPLER 2005 V.



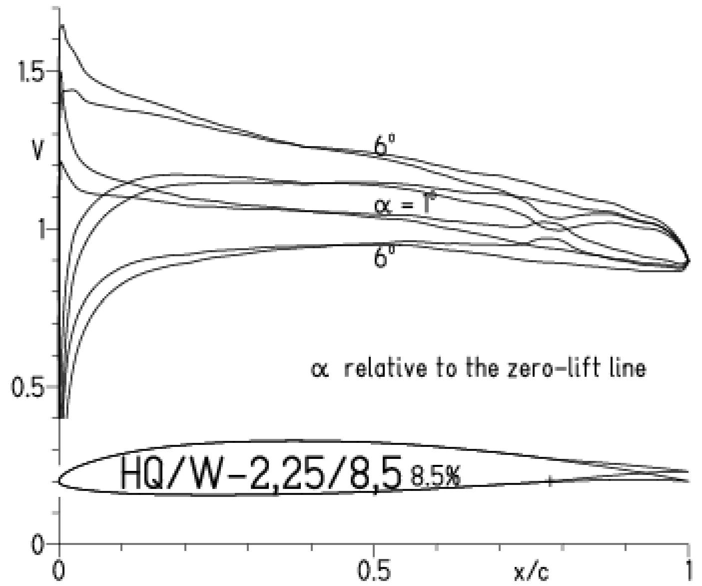
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



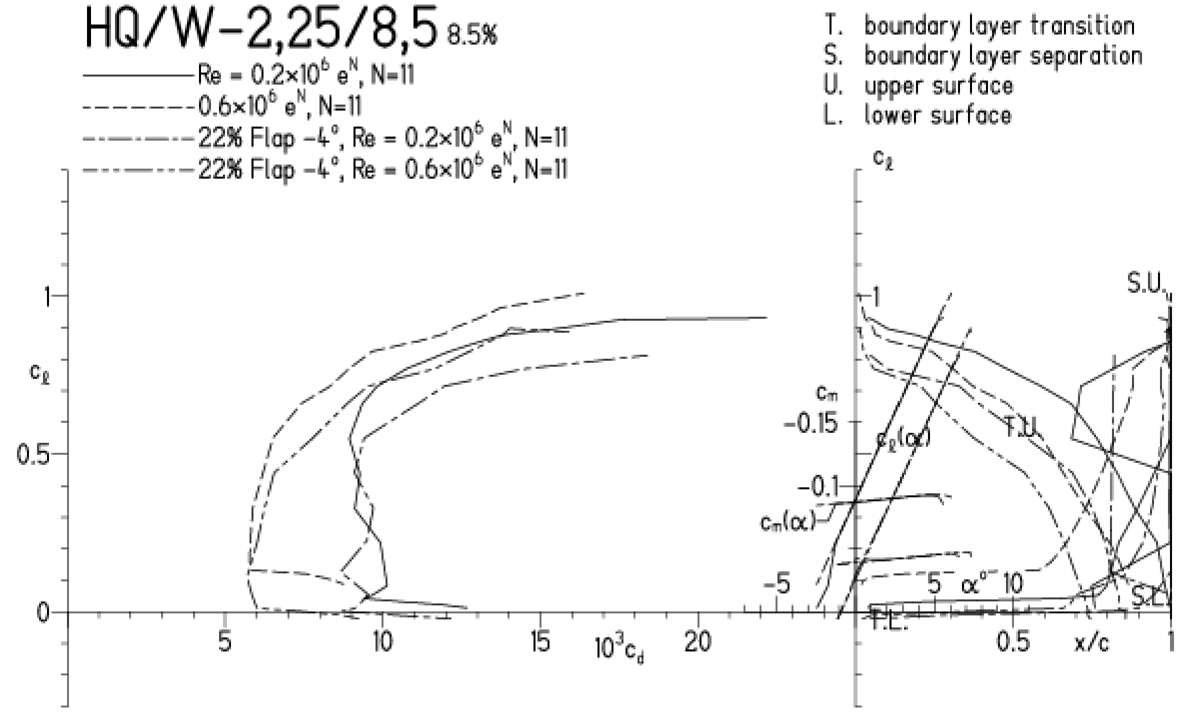


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

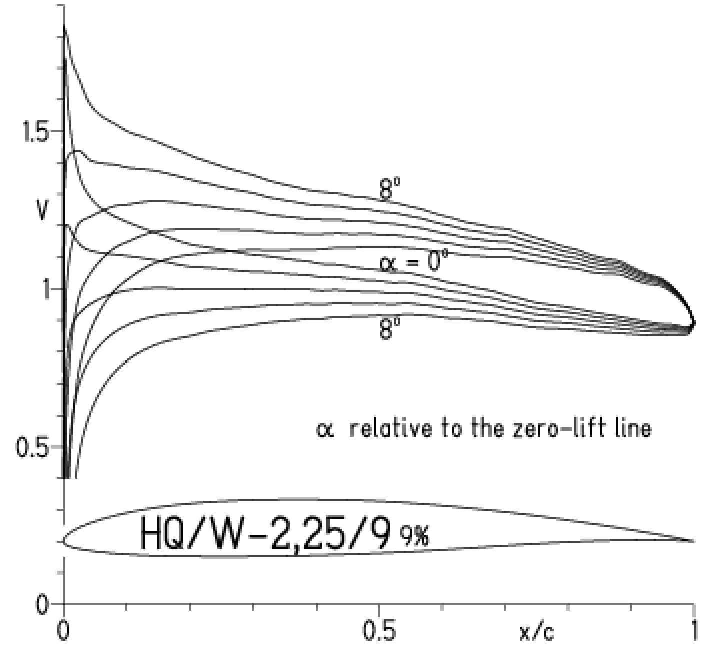


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

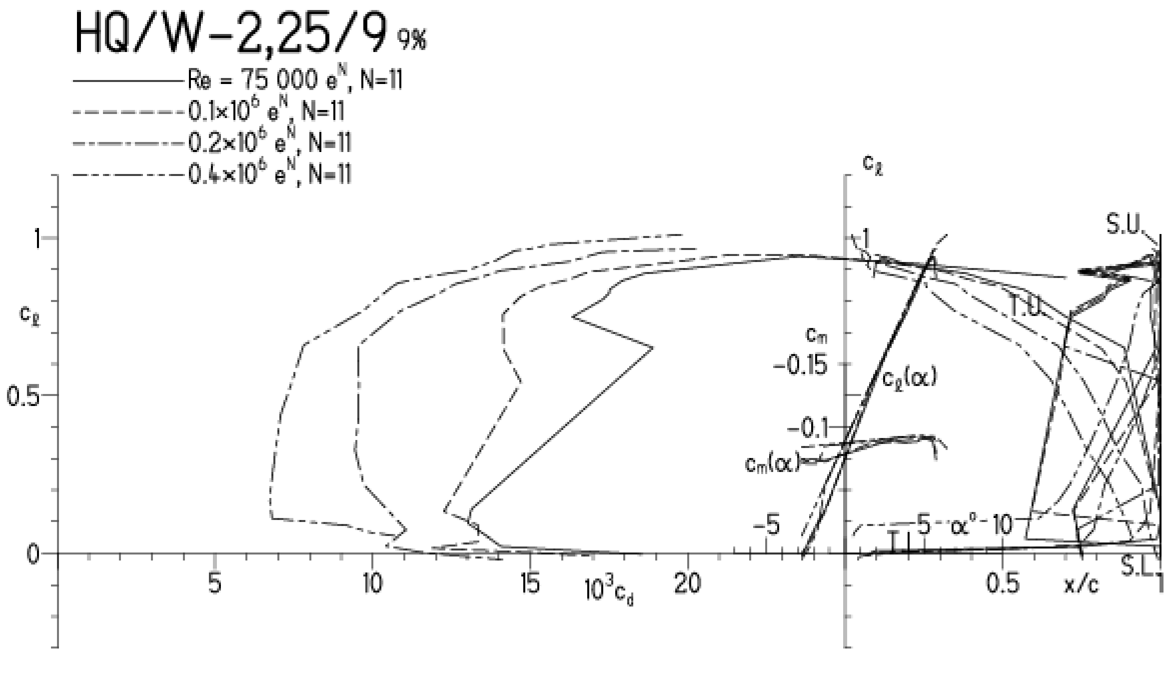


<u>HQ/W-2,25/9</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

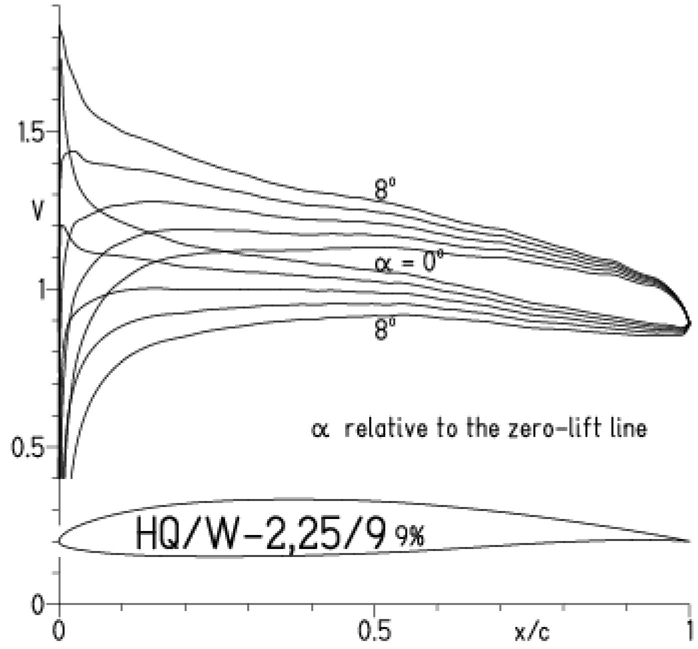


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

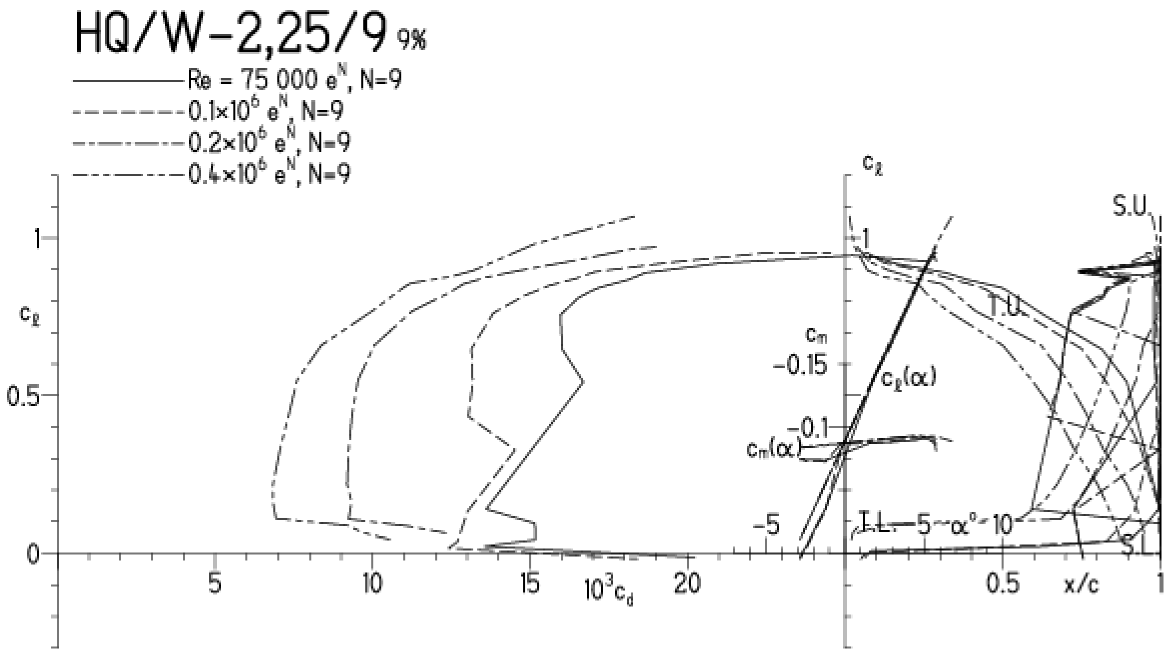


HQ/W-2,25/9, N=9

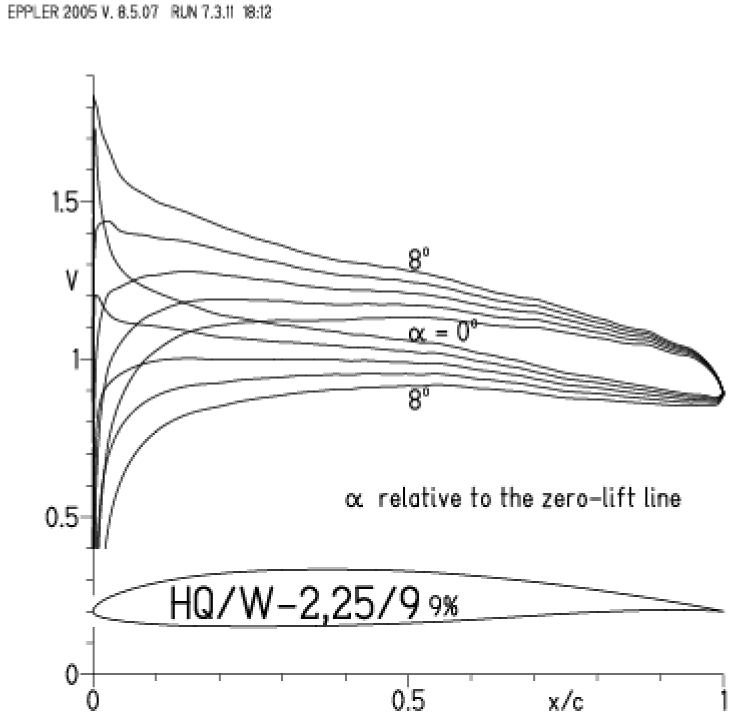
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

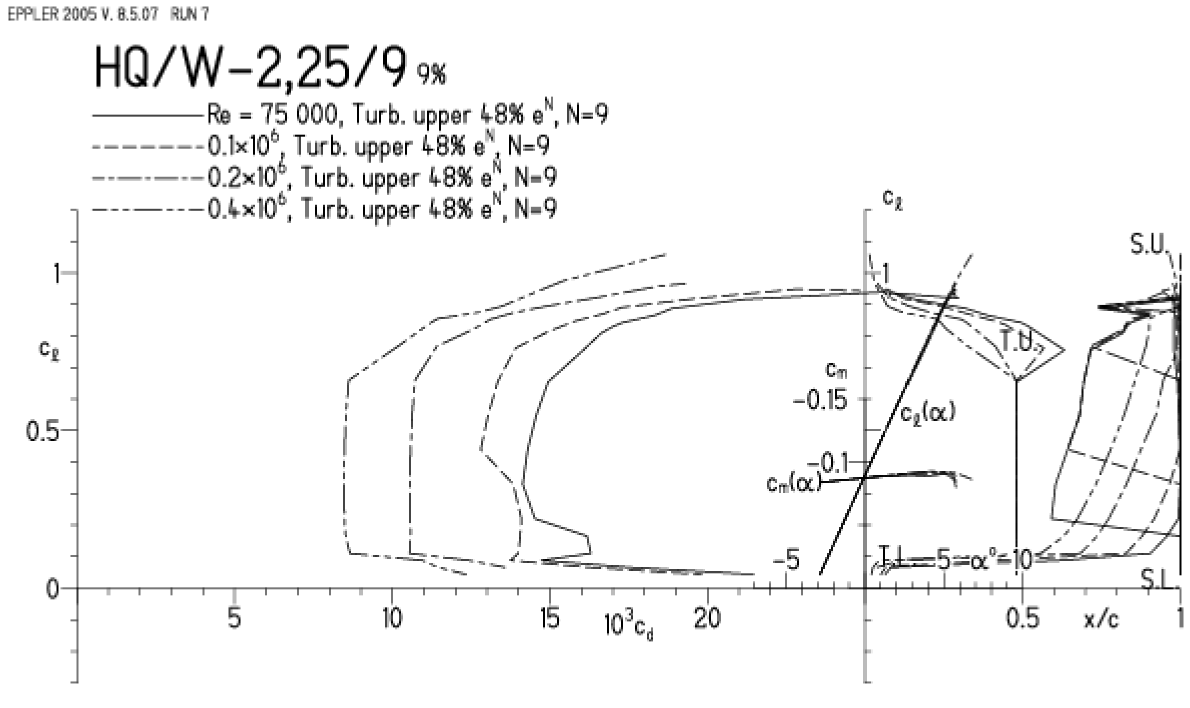


EPPLER 2005 V. 8.



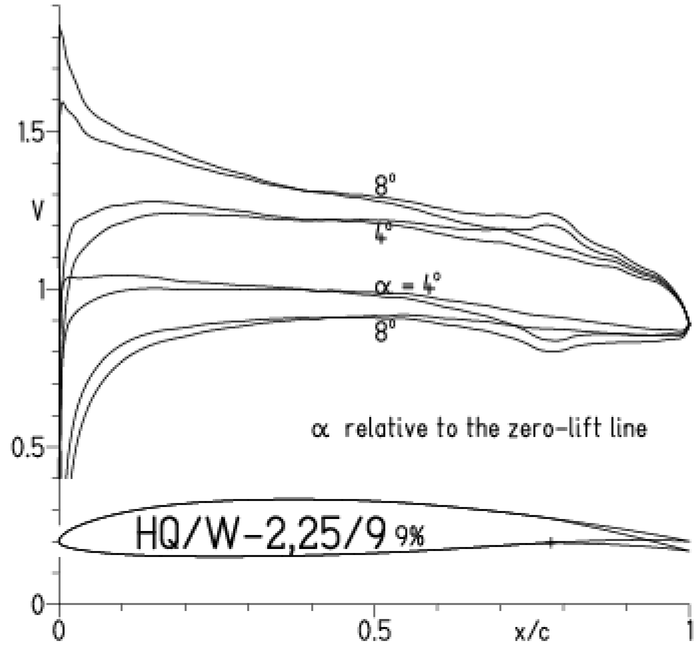
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



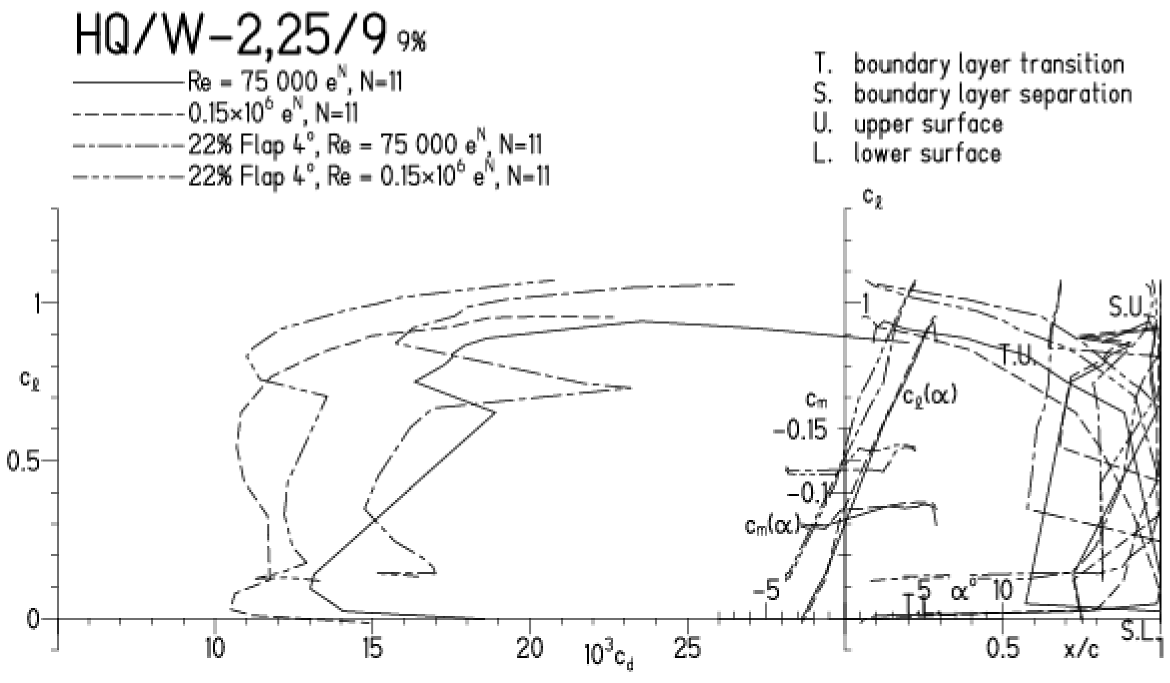


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

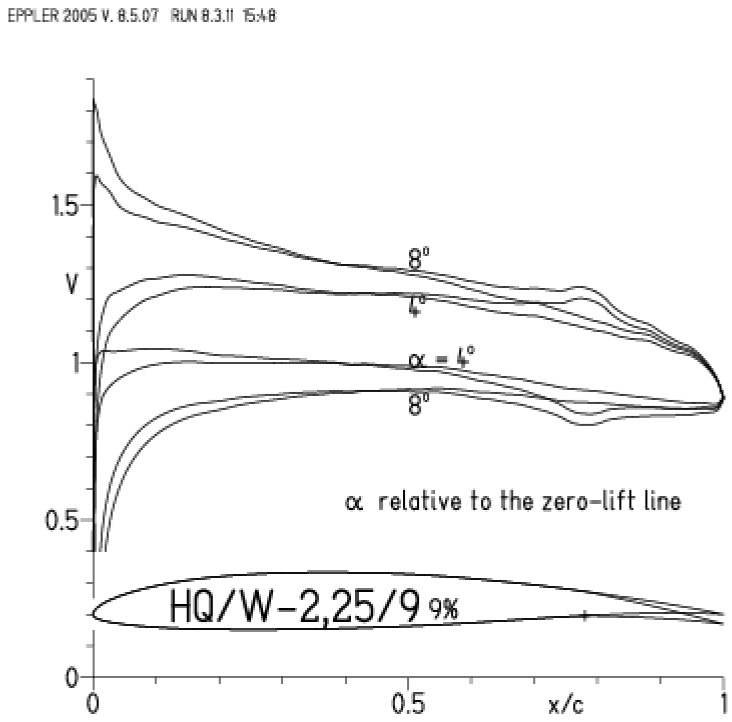
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

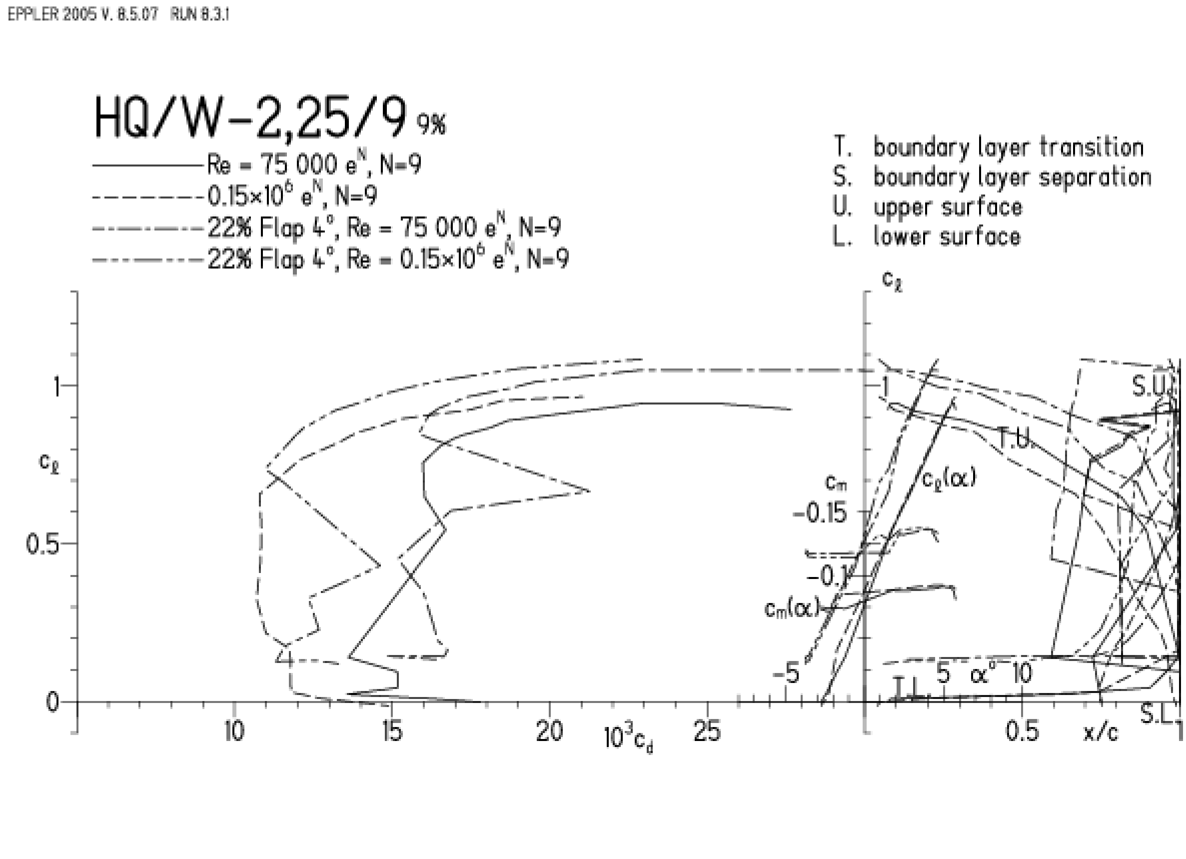


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

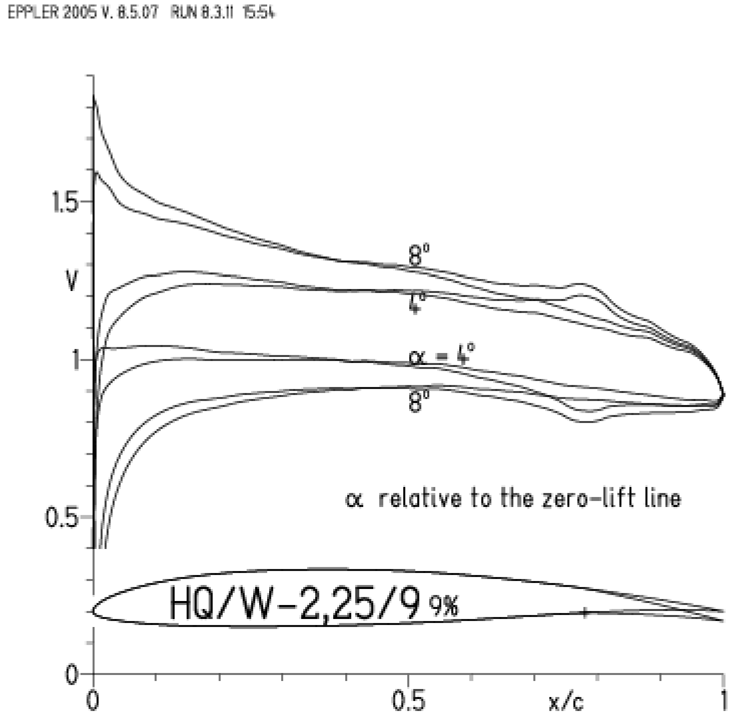


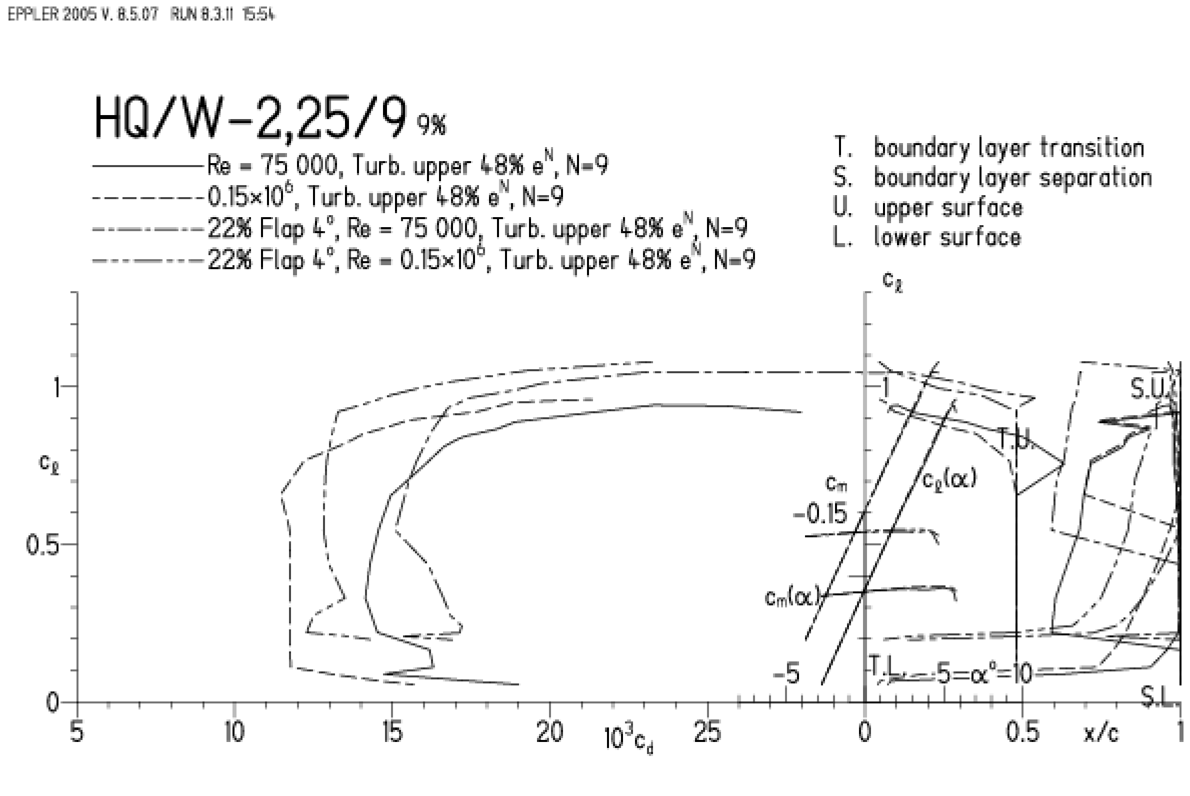
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



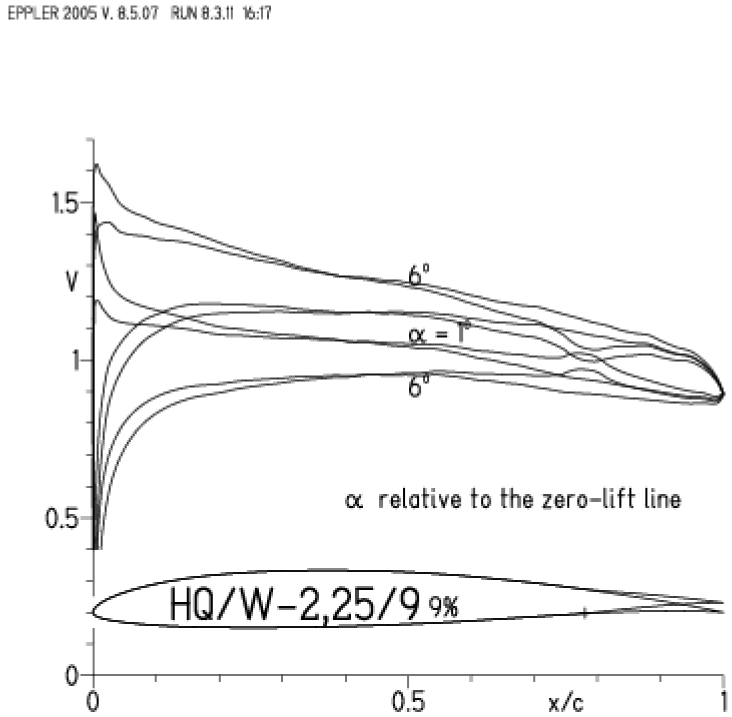


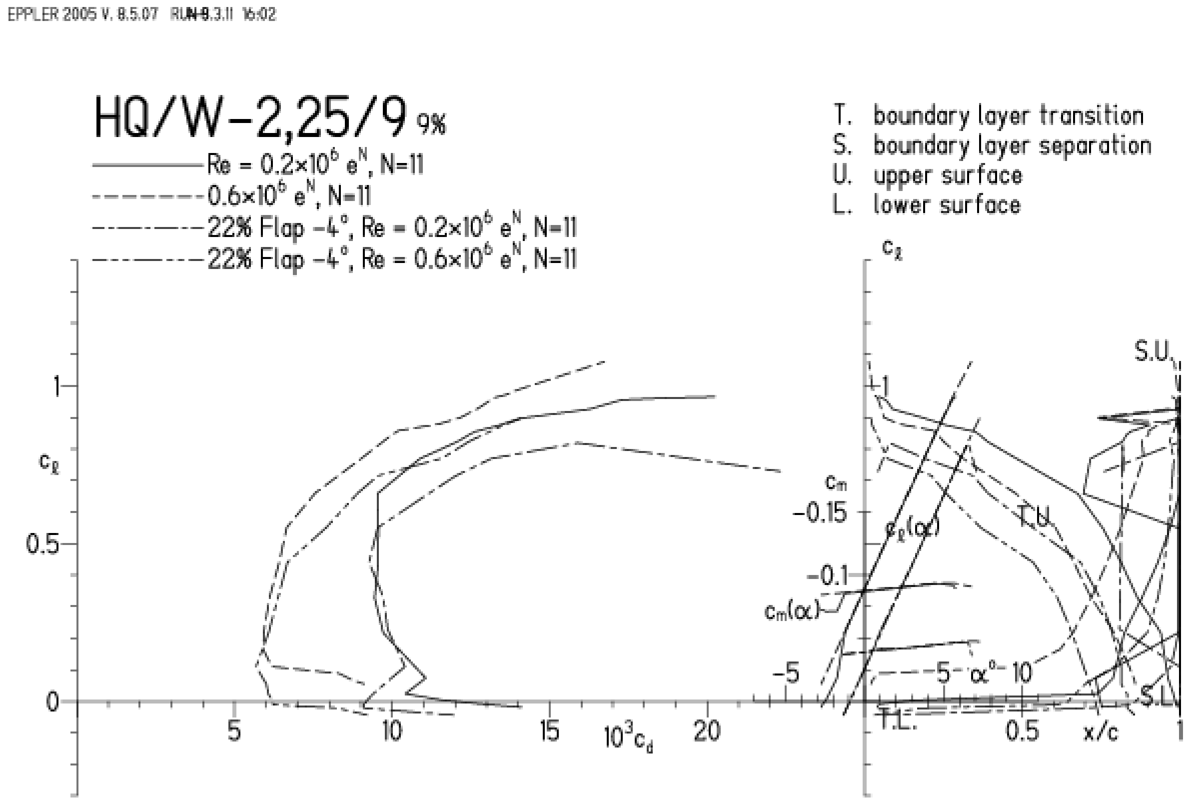
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





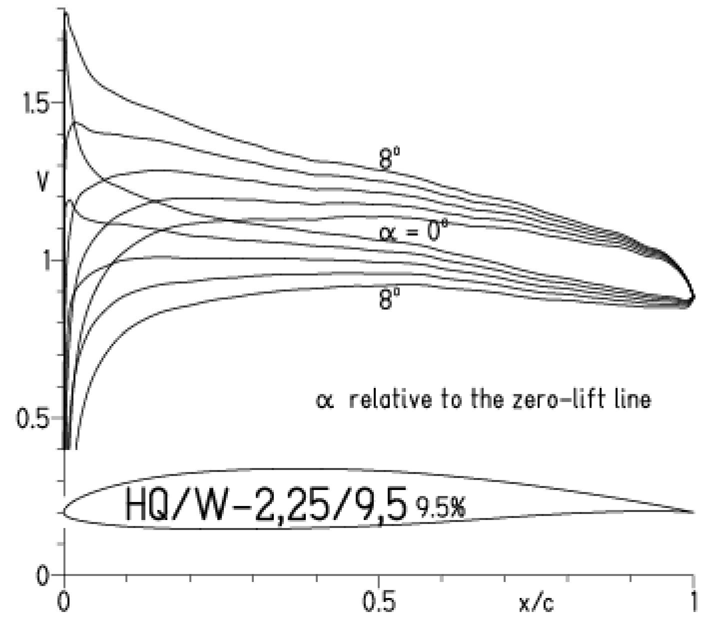
<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



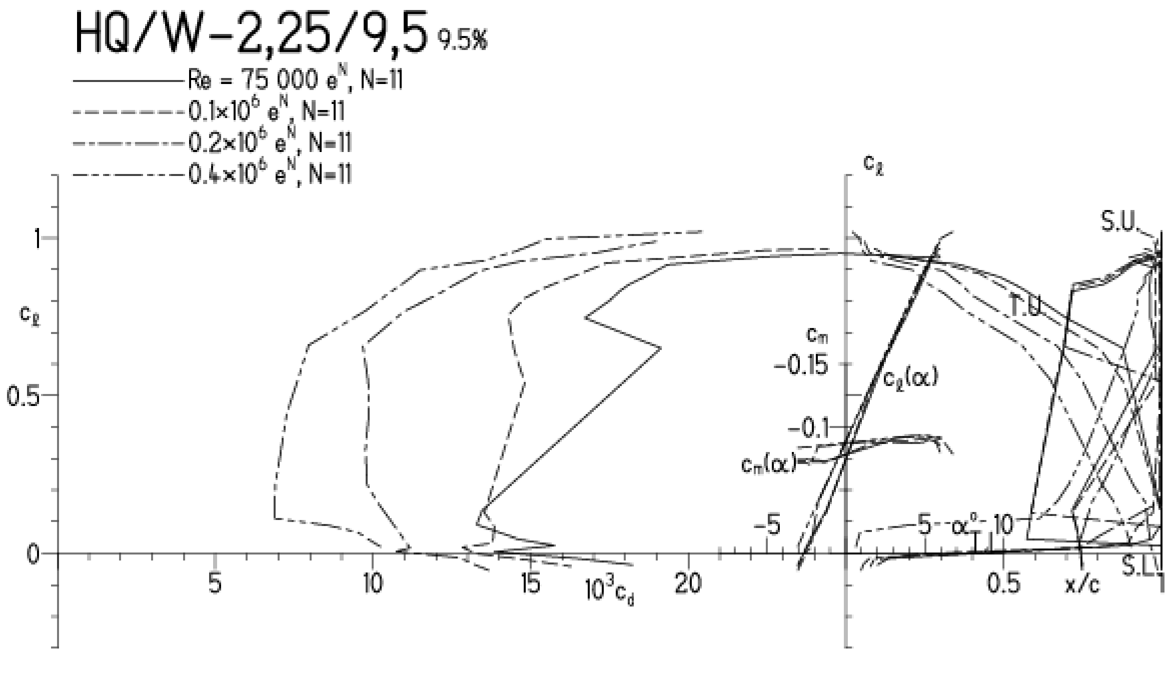


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

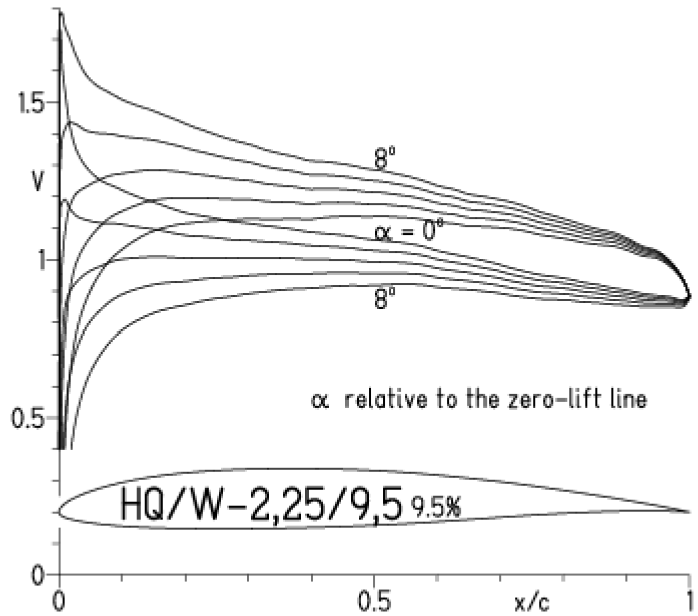


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

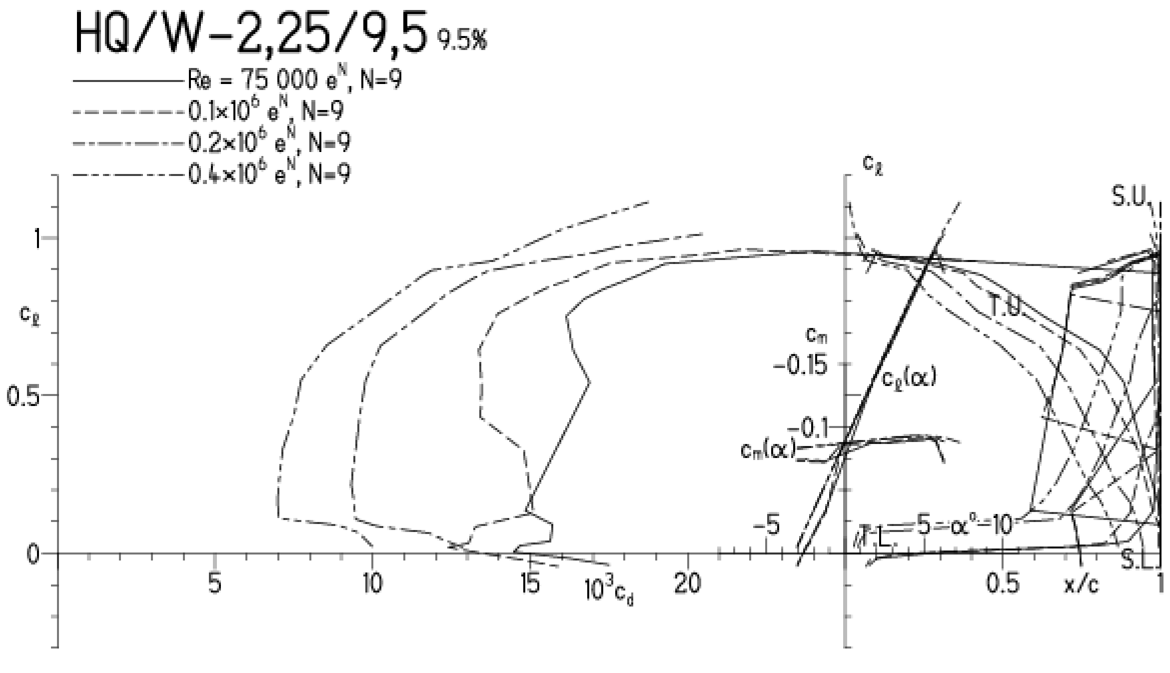


<u>HQ/W-2,25/9,5</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

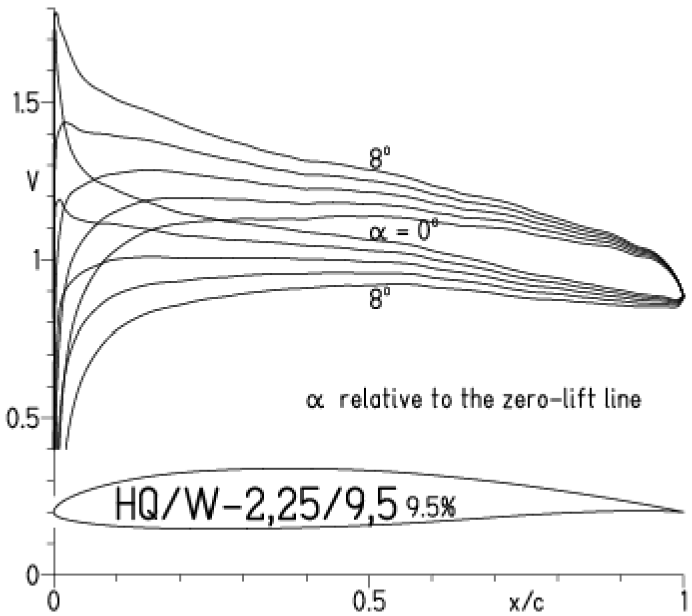


EPPLER 2005 V. 8.5.07 RUN 8.3.

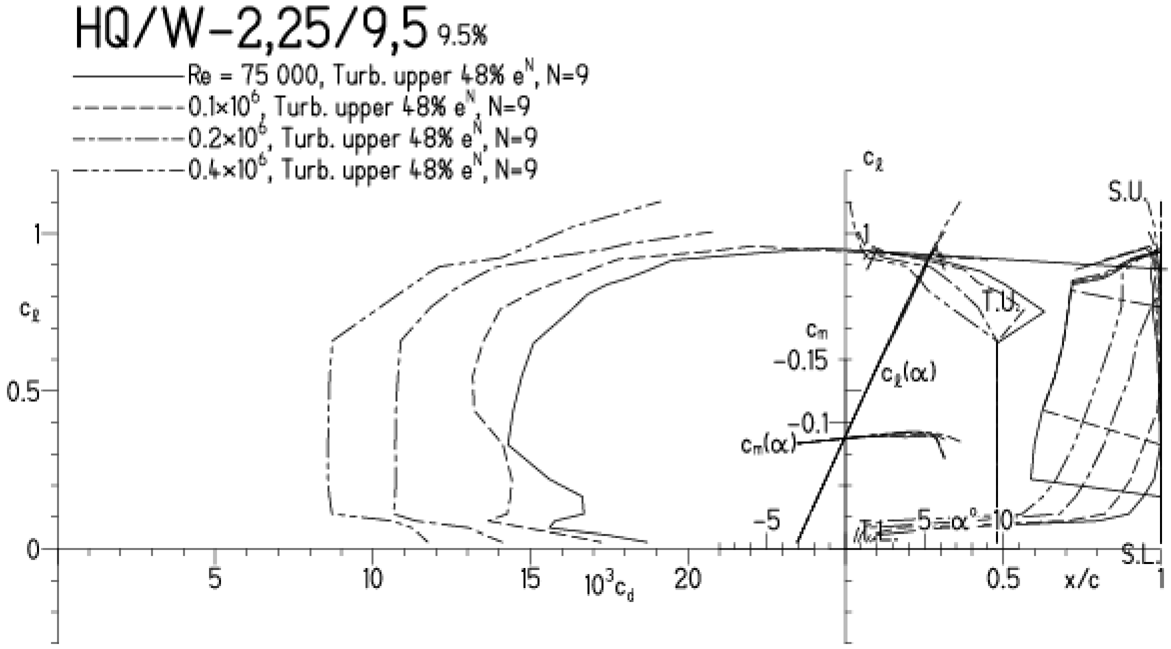


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

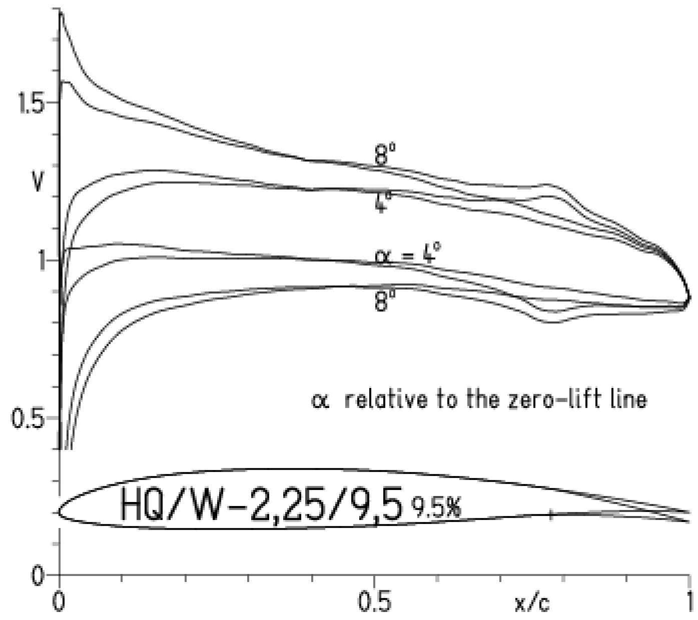


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

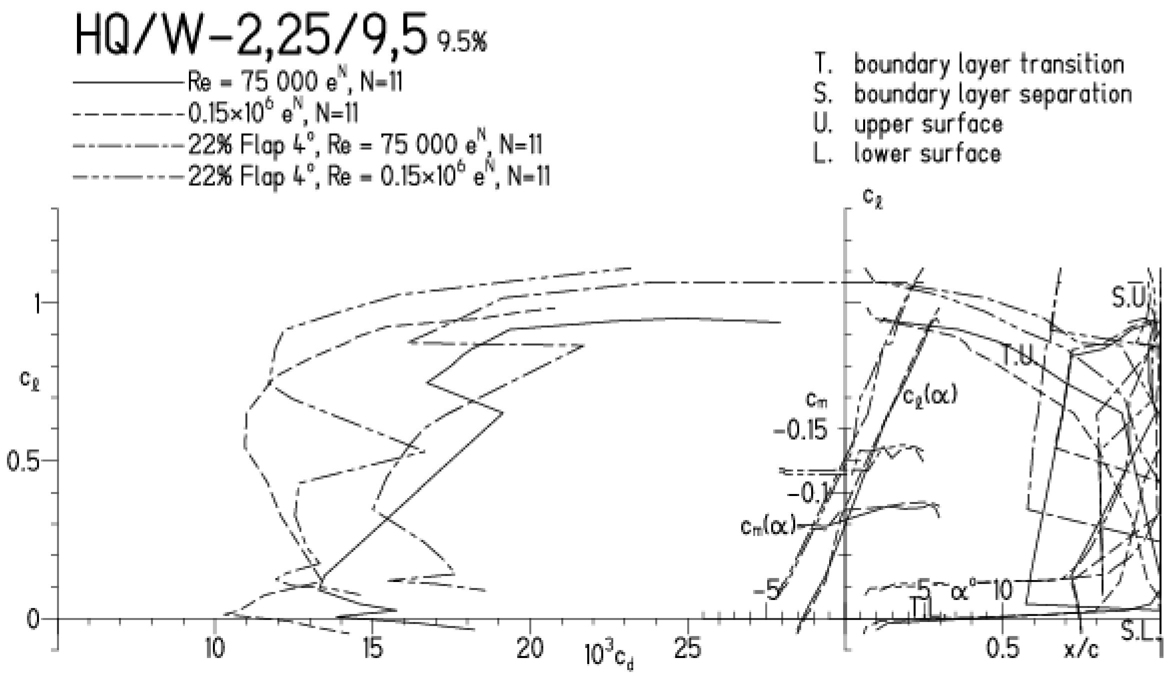


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

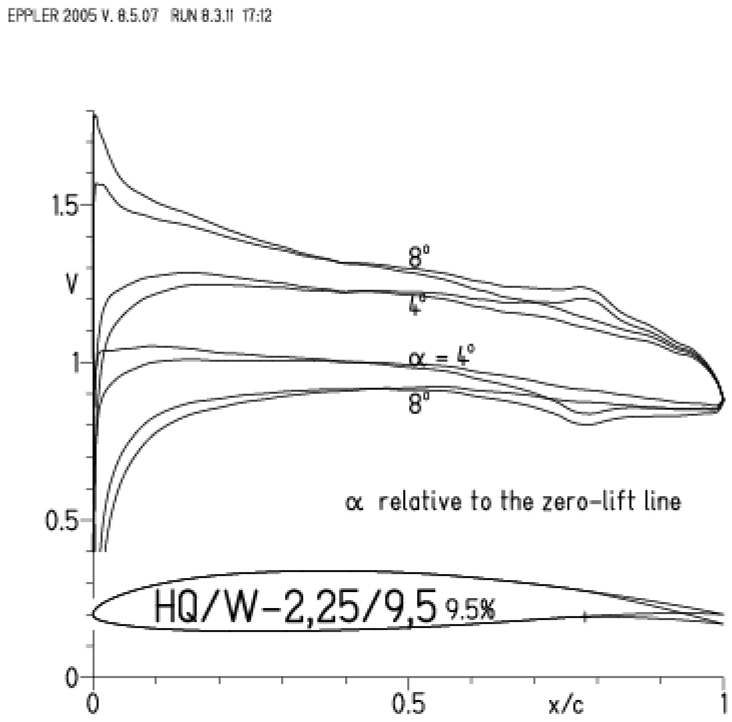
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

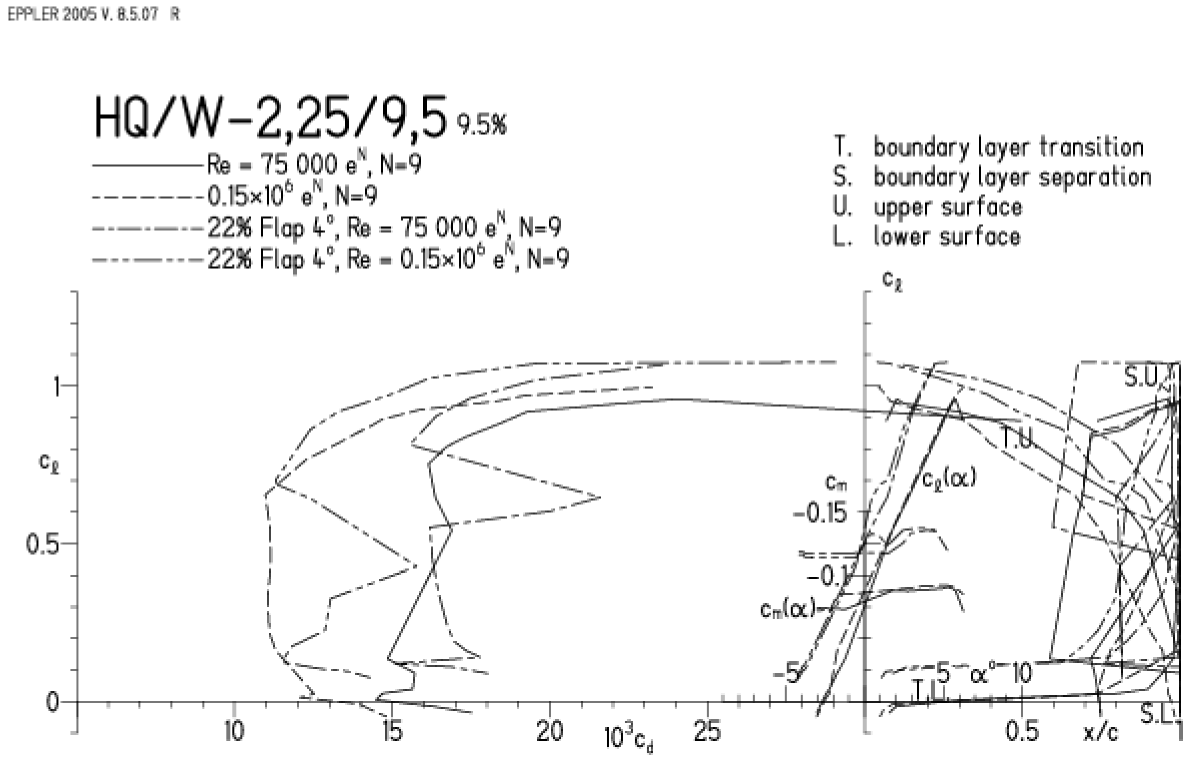


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



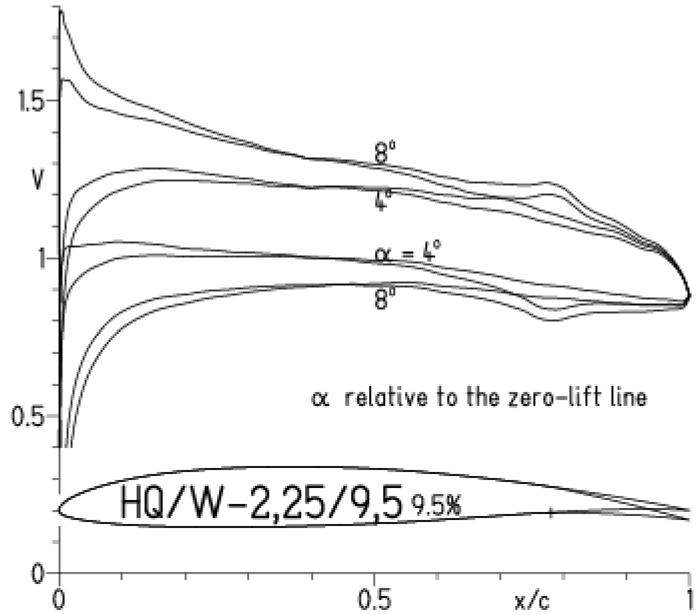
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



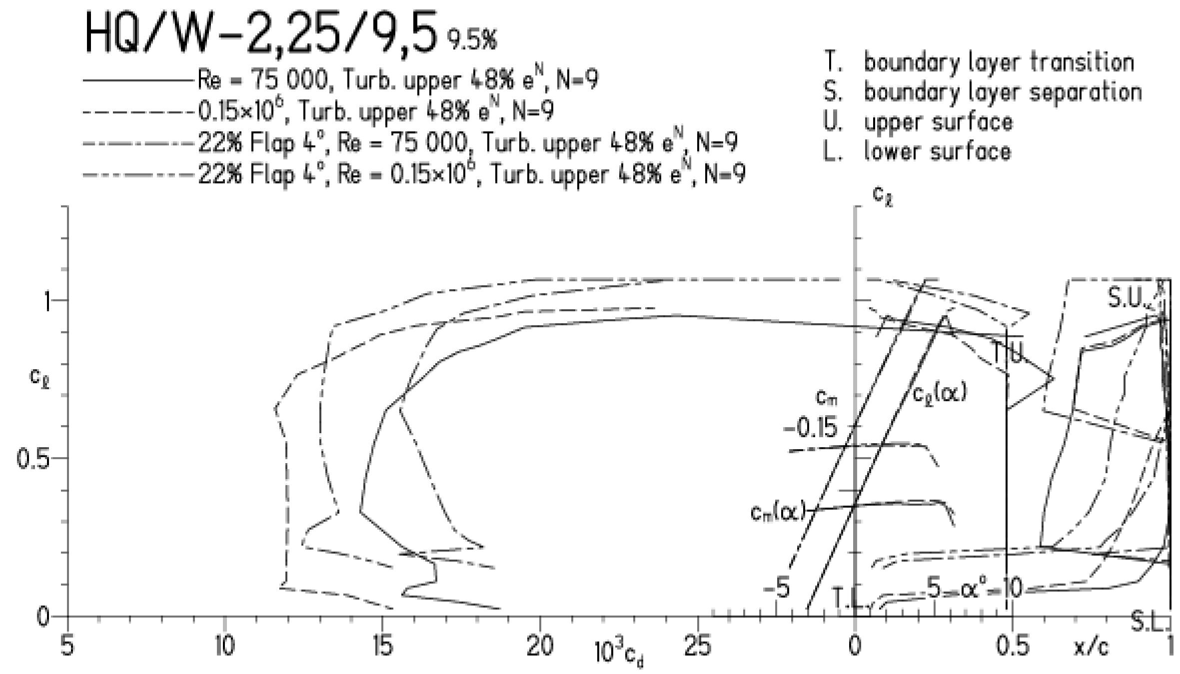


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

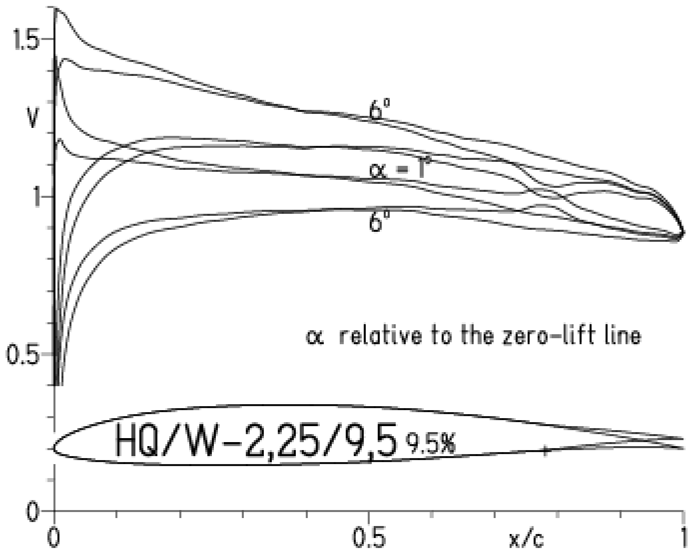


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

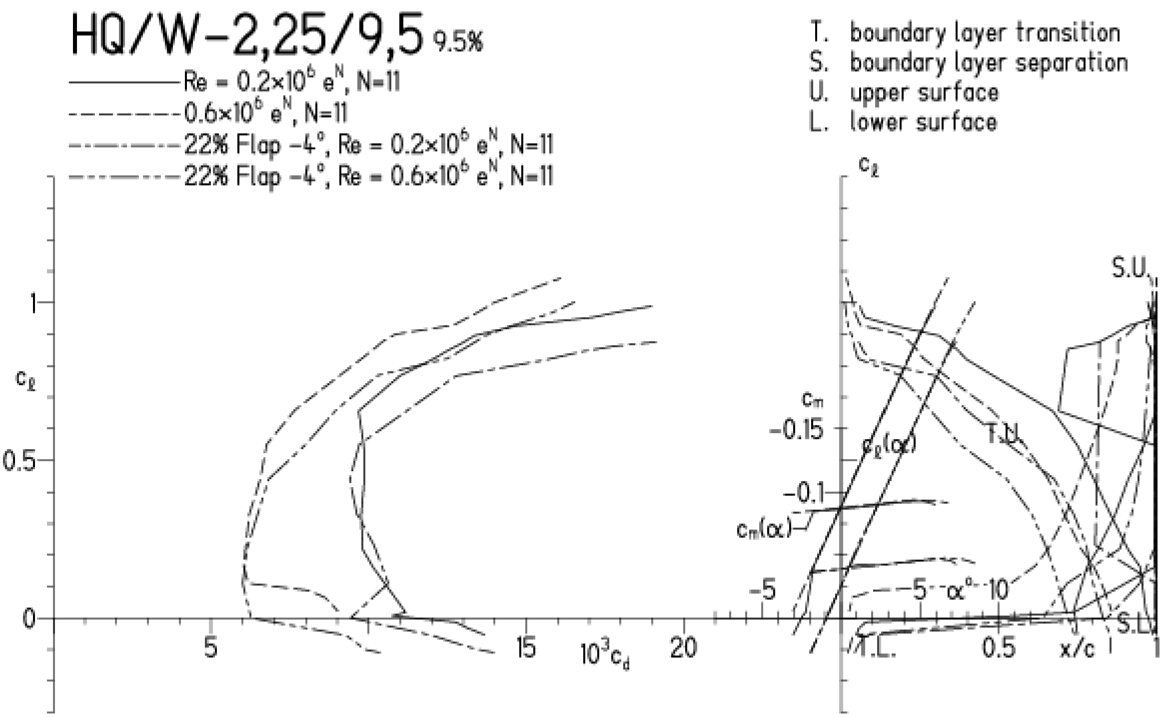


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

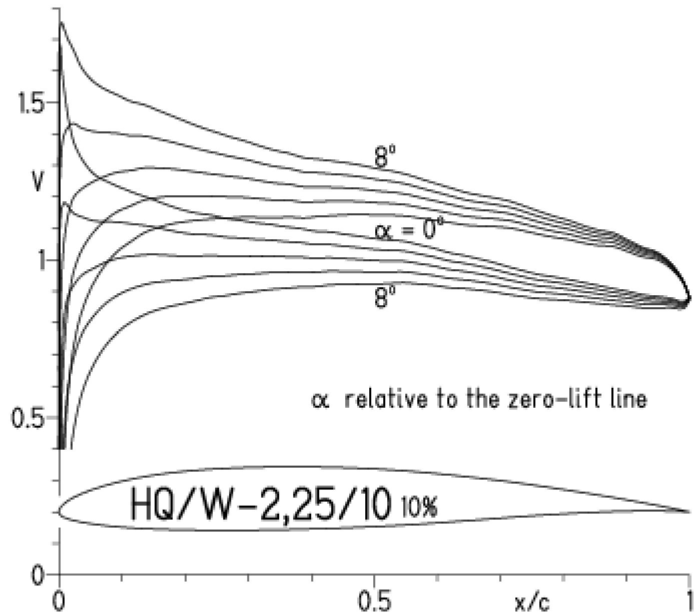


EPPLER 2005 V.

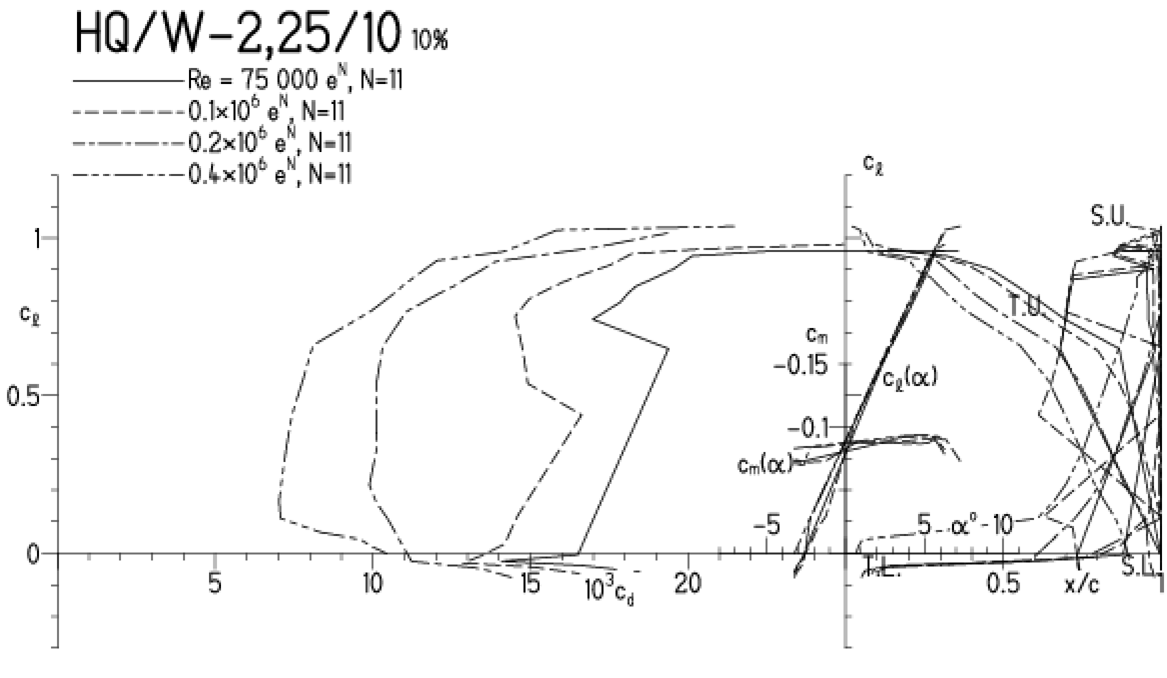


<u>HQ/W-2,25/10</u>, N=11

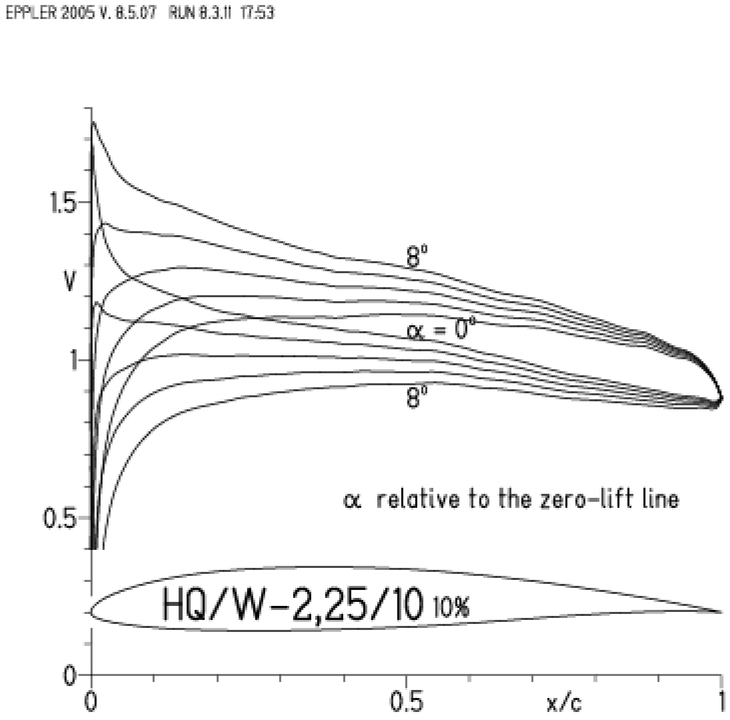
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

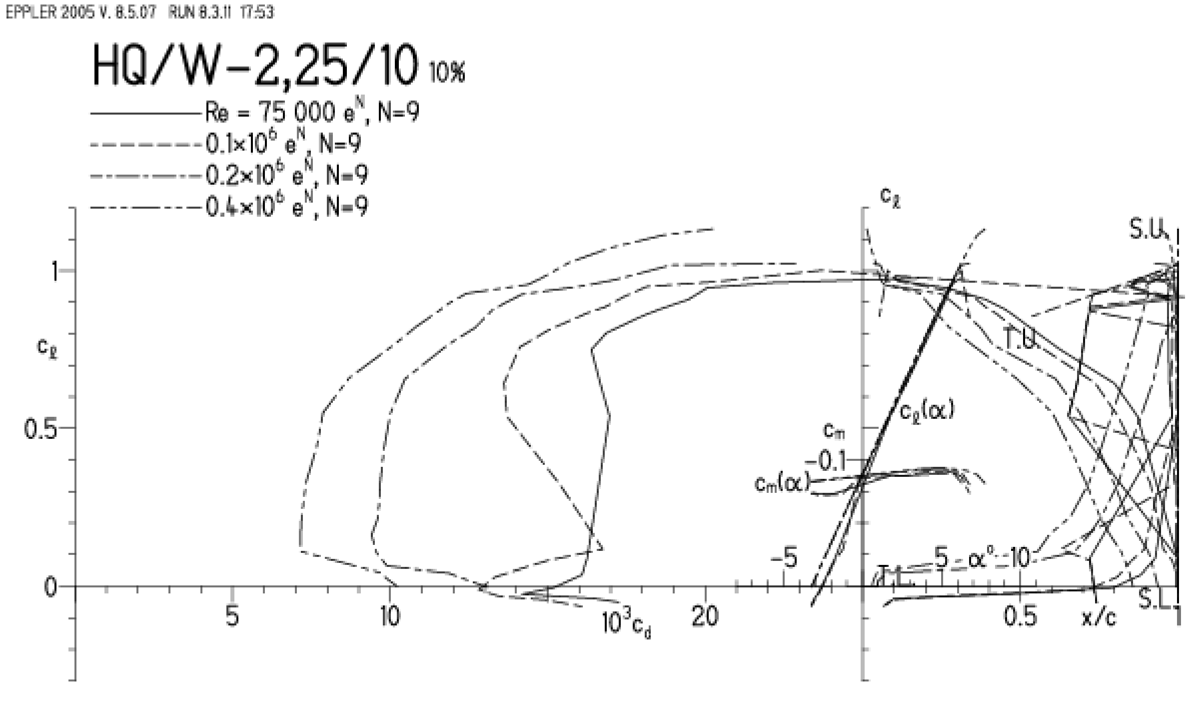


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

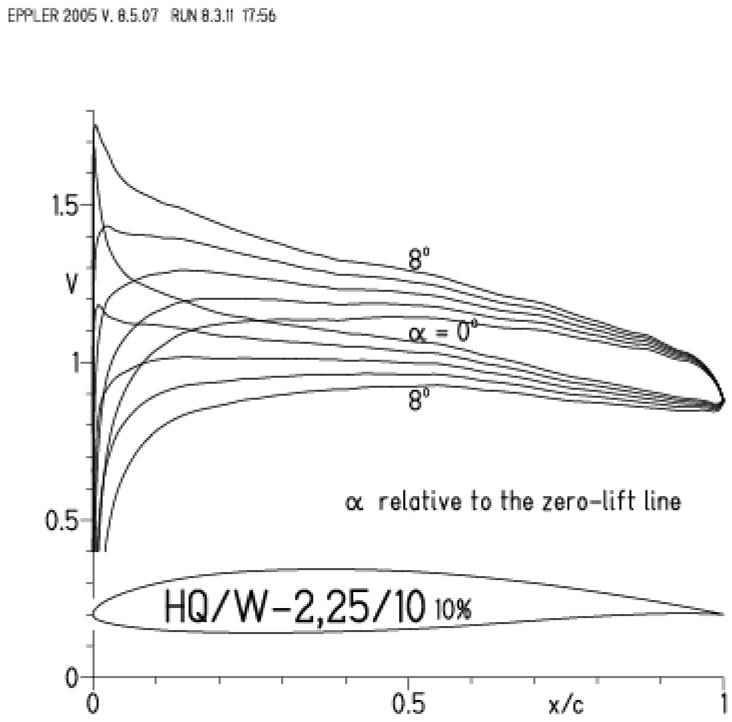


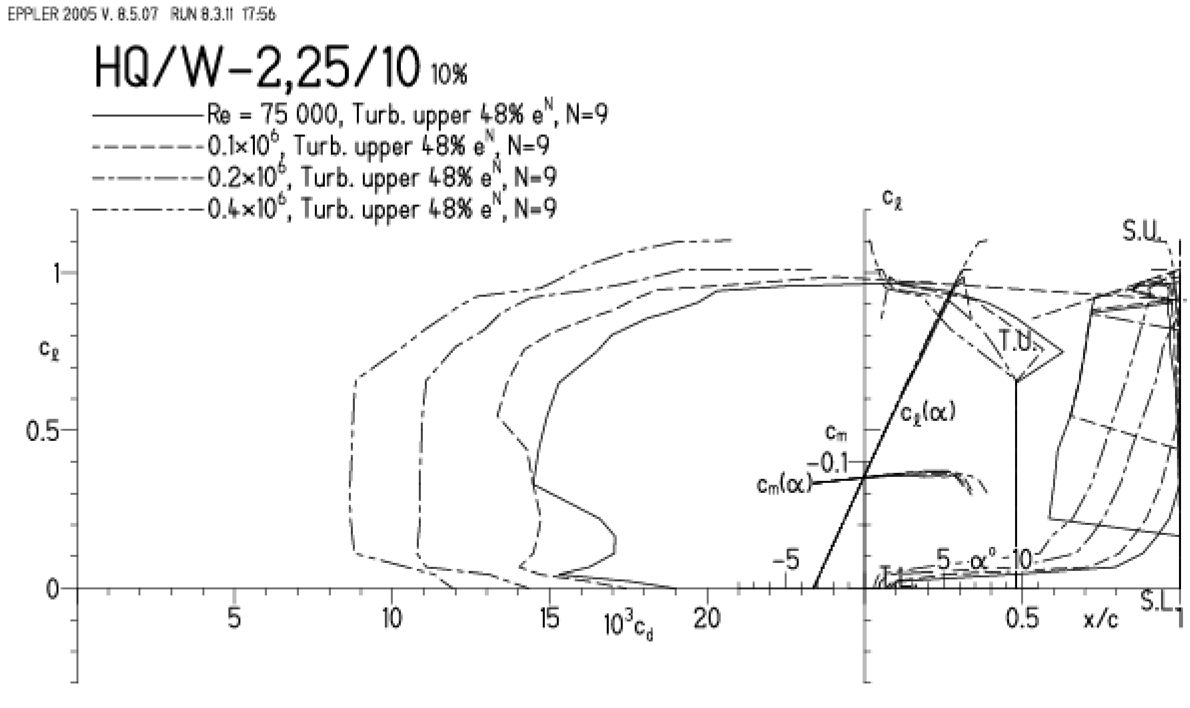
<u>HQ/W-2,25/10</u>, N=9





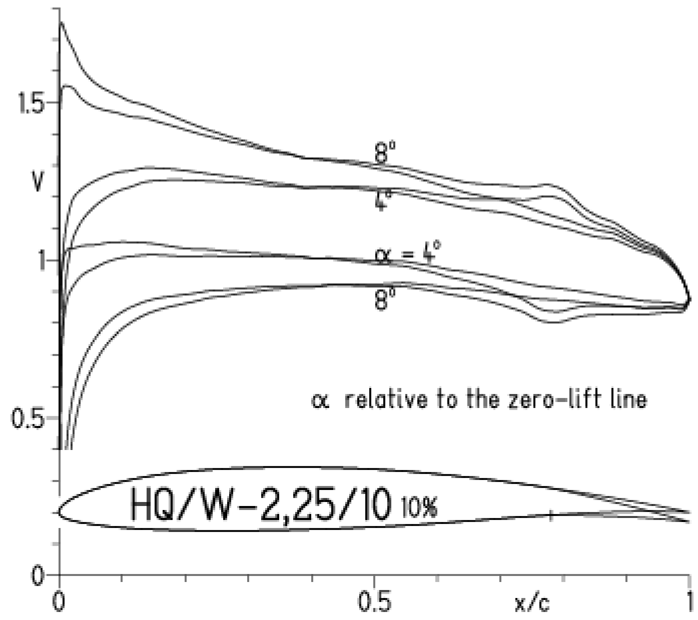
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



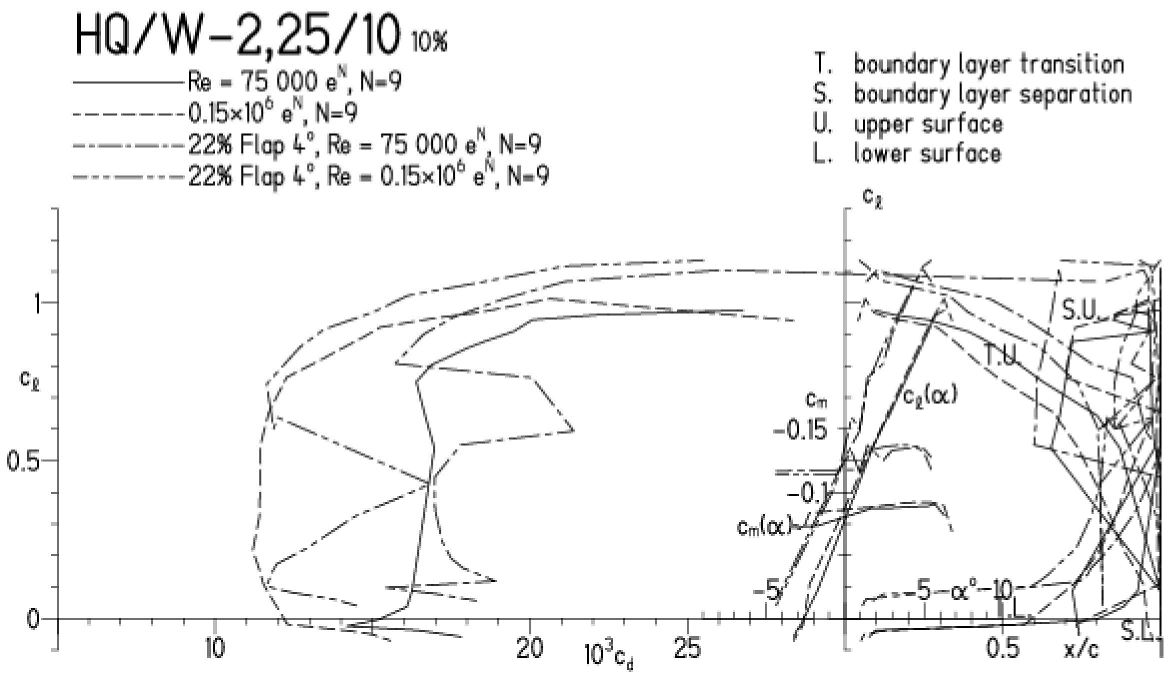


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

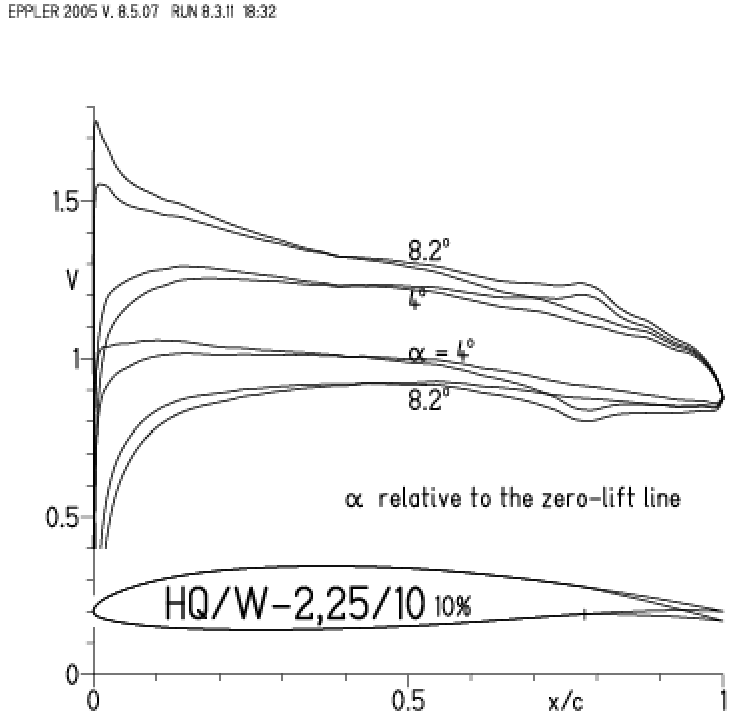
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

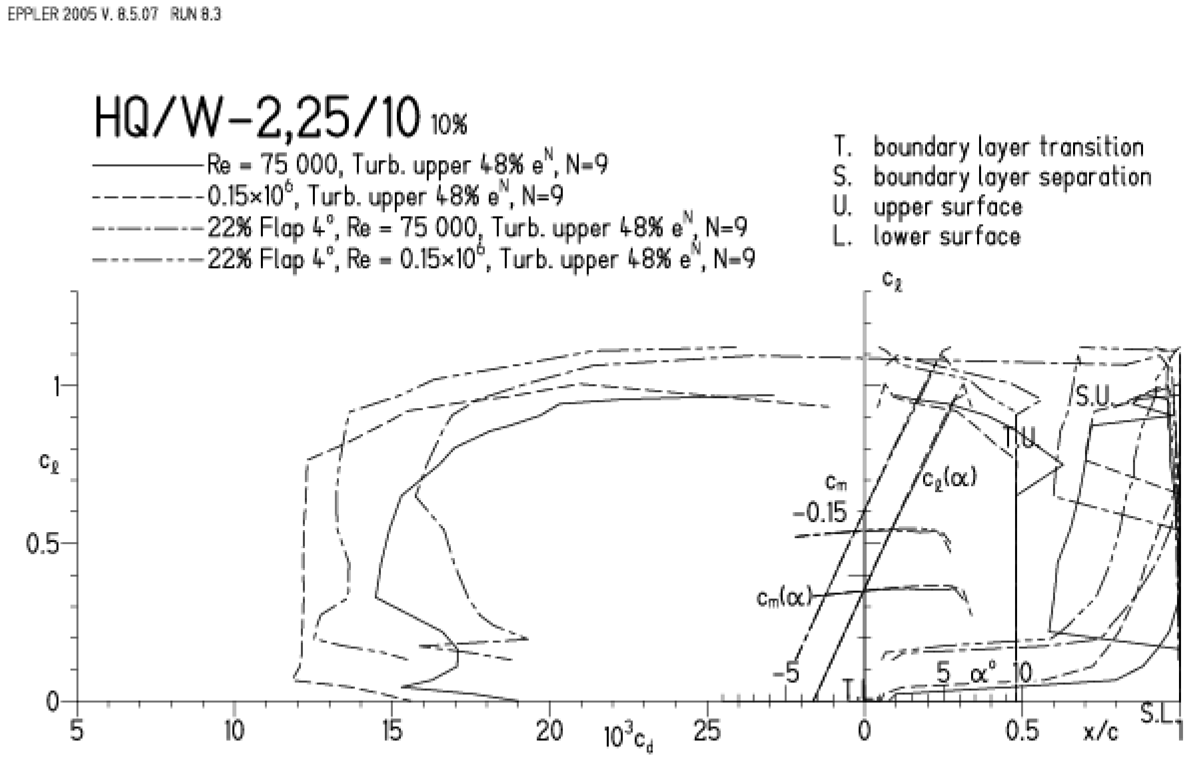


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



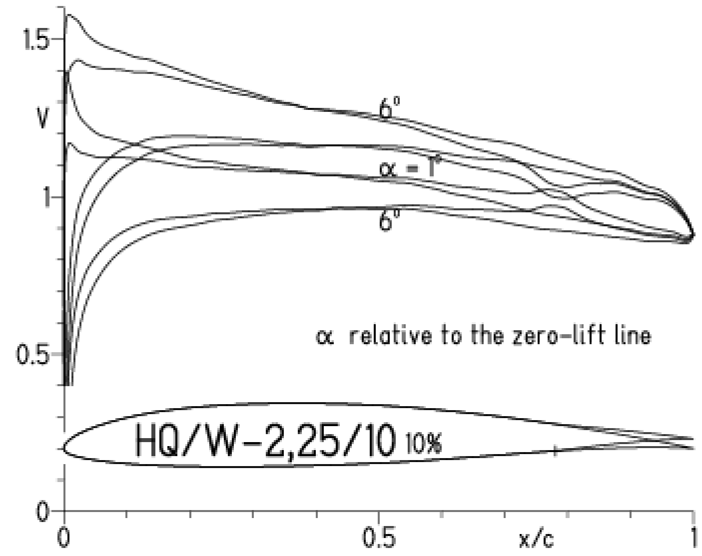
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



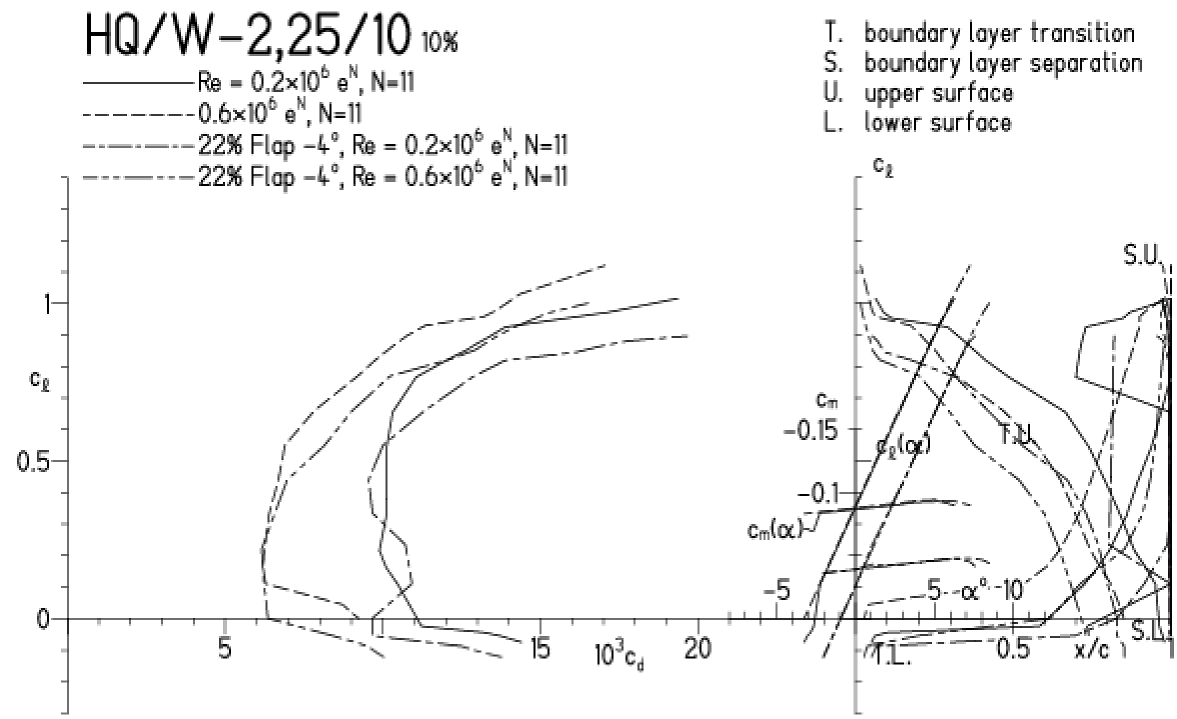


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

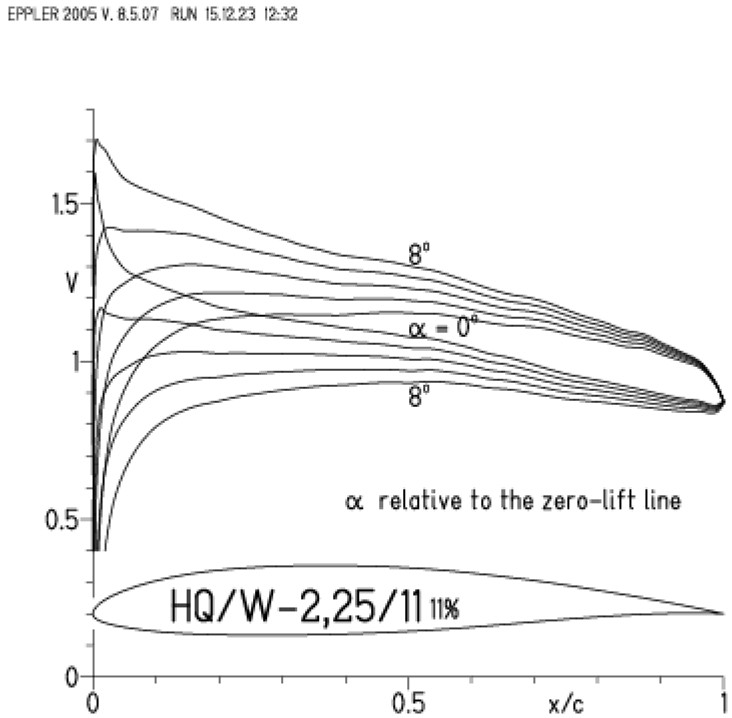
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

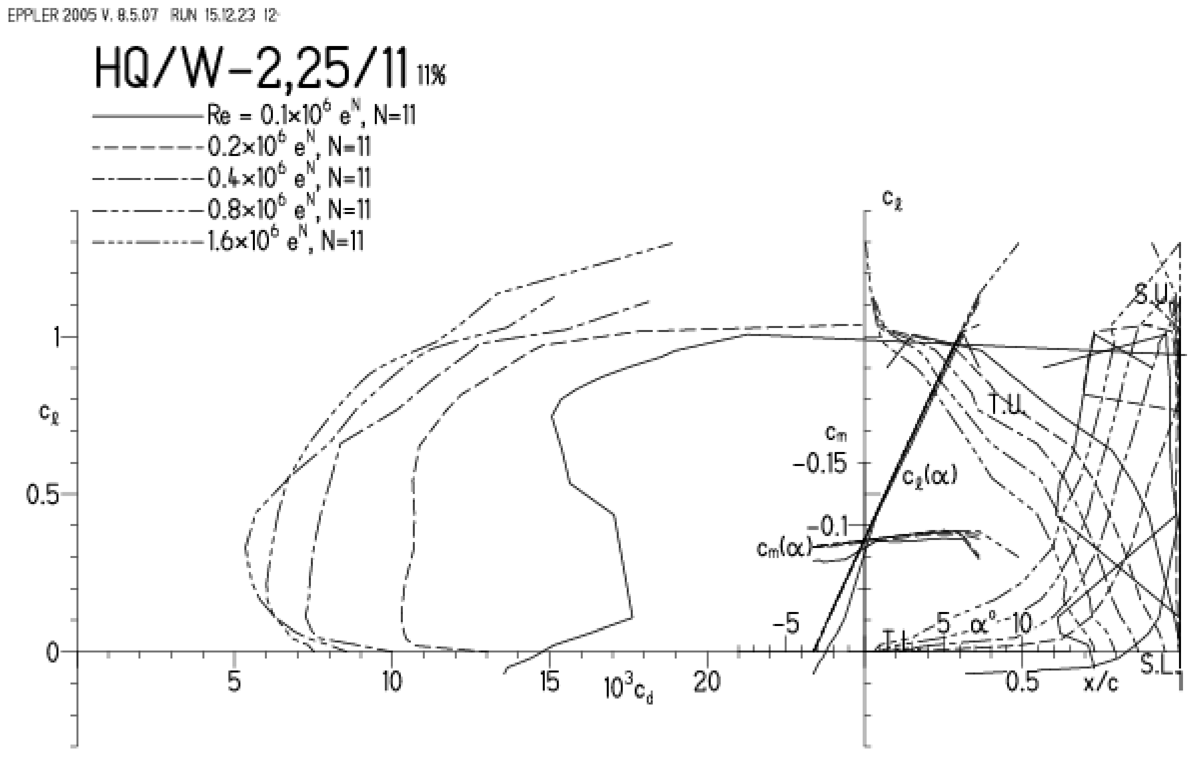


EPPLER 2005 V. 8.5.07 RUN

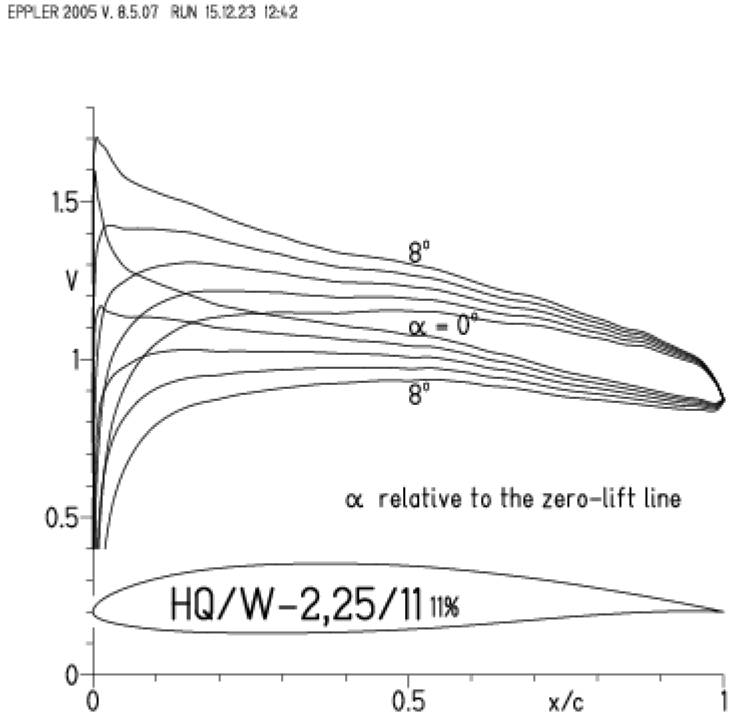


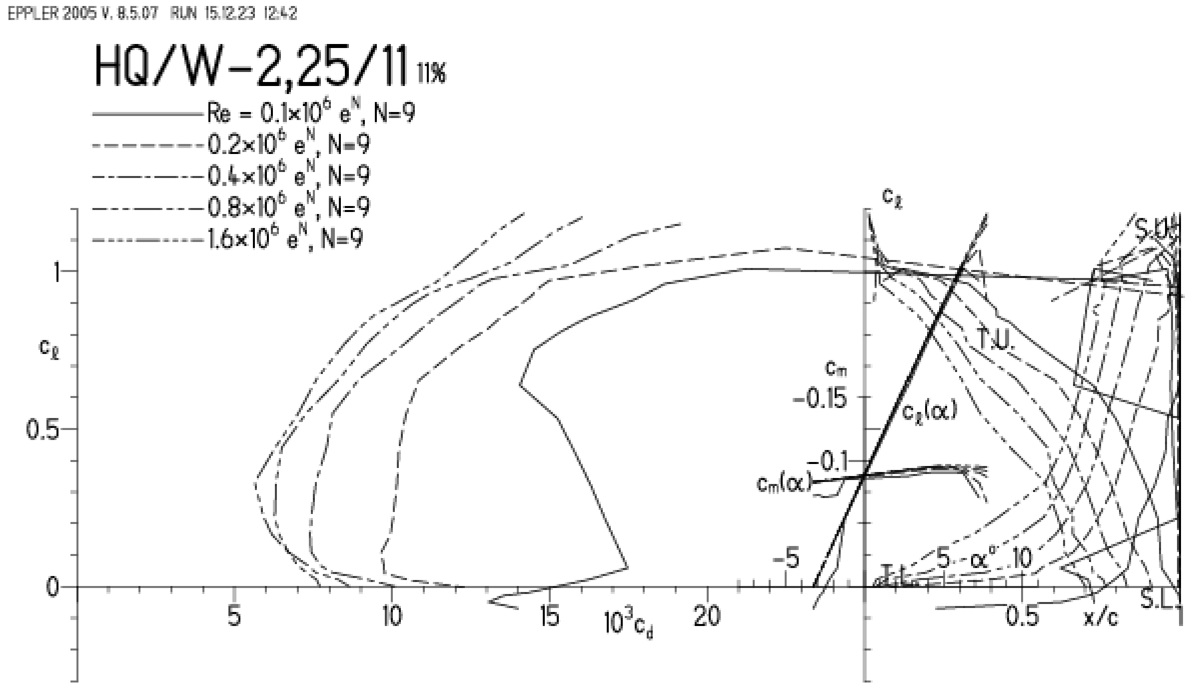
<u>HQ/W-2,25/11</u>, N=11



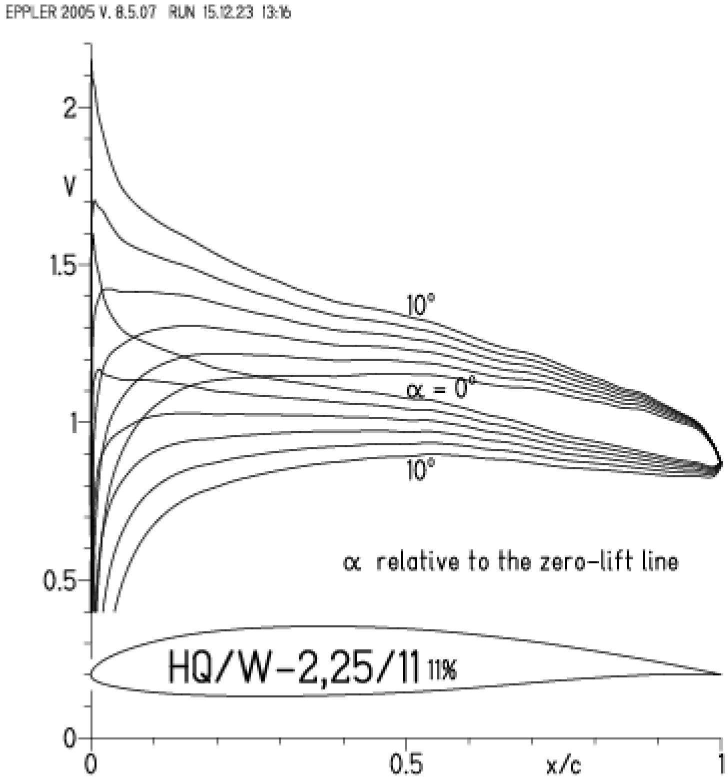


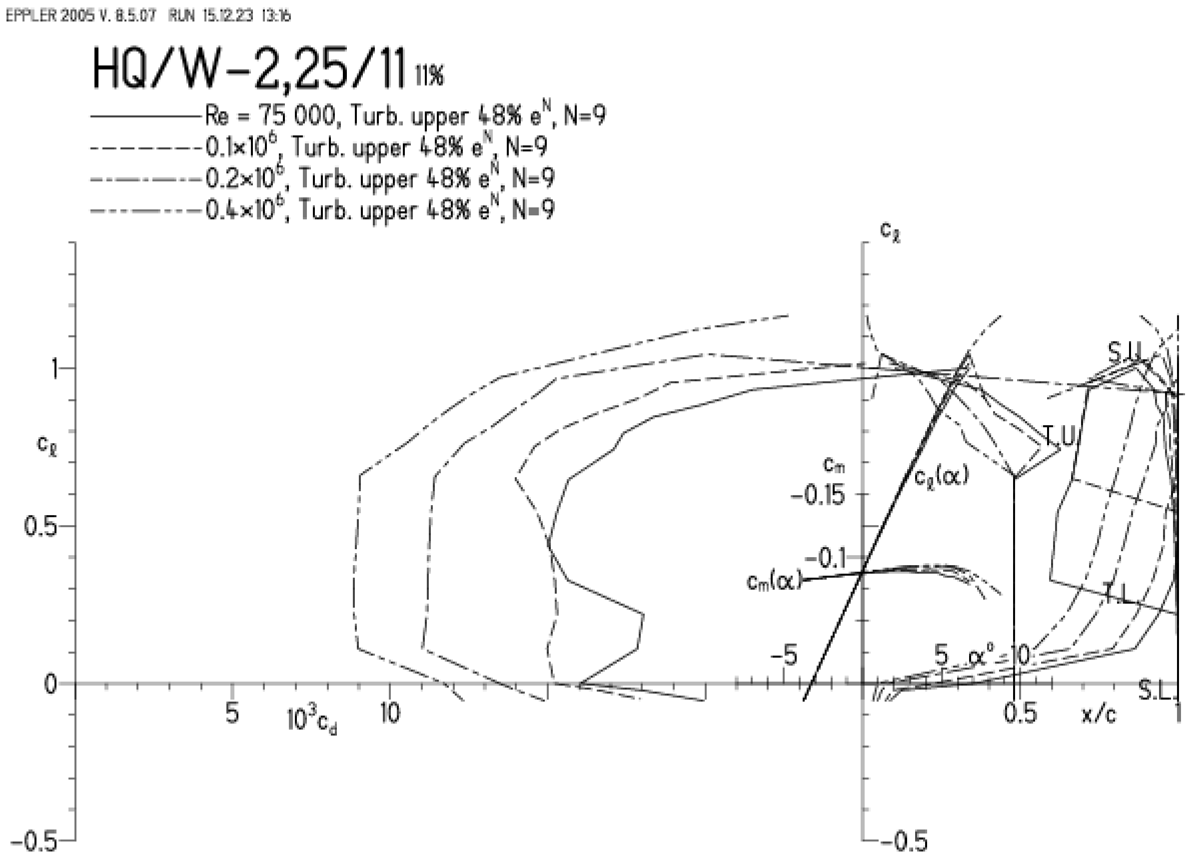
HQQ/W-2,25/11, N=9





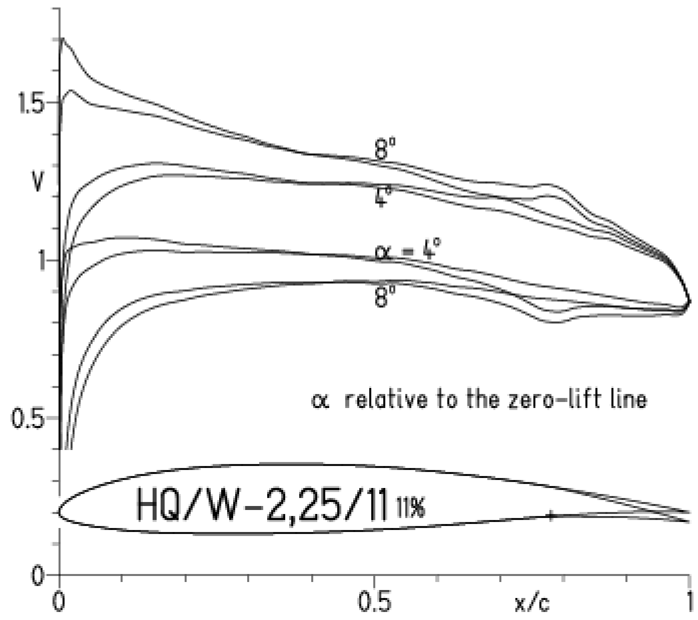
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



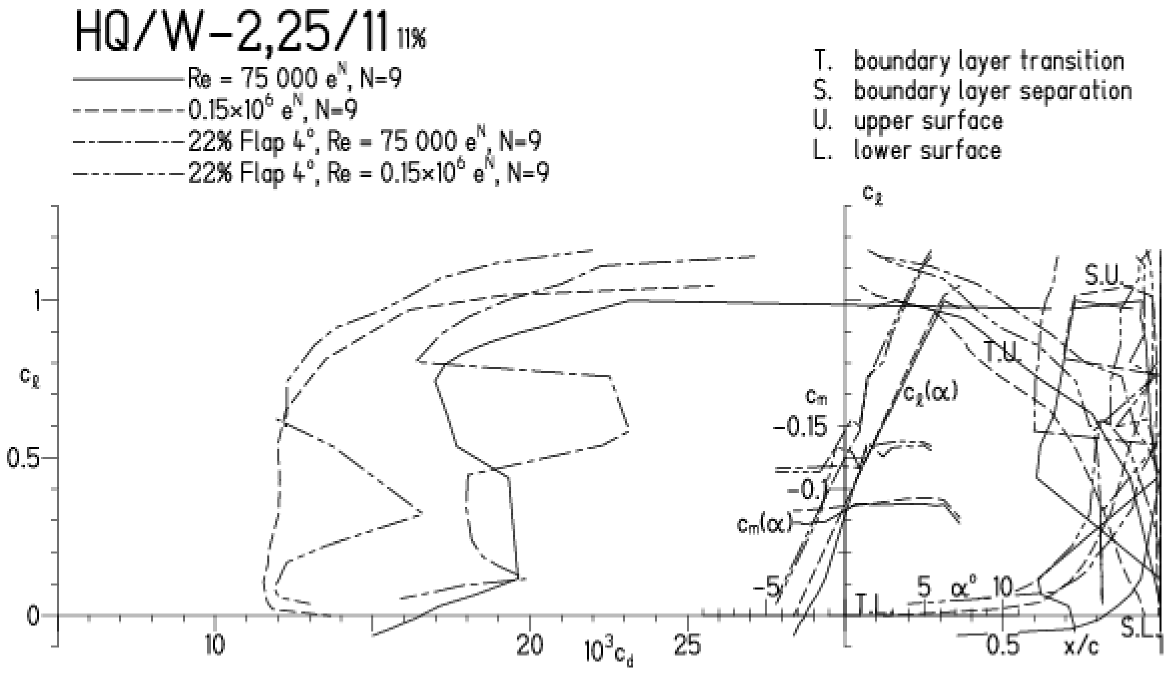


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

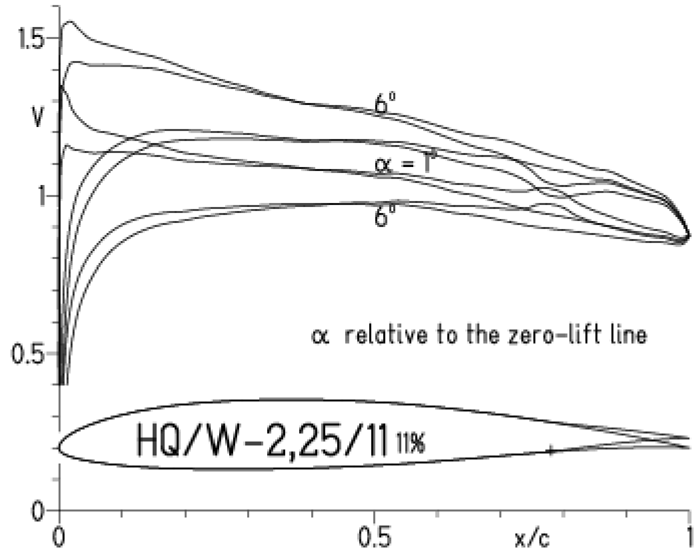


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

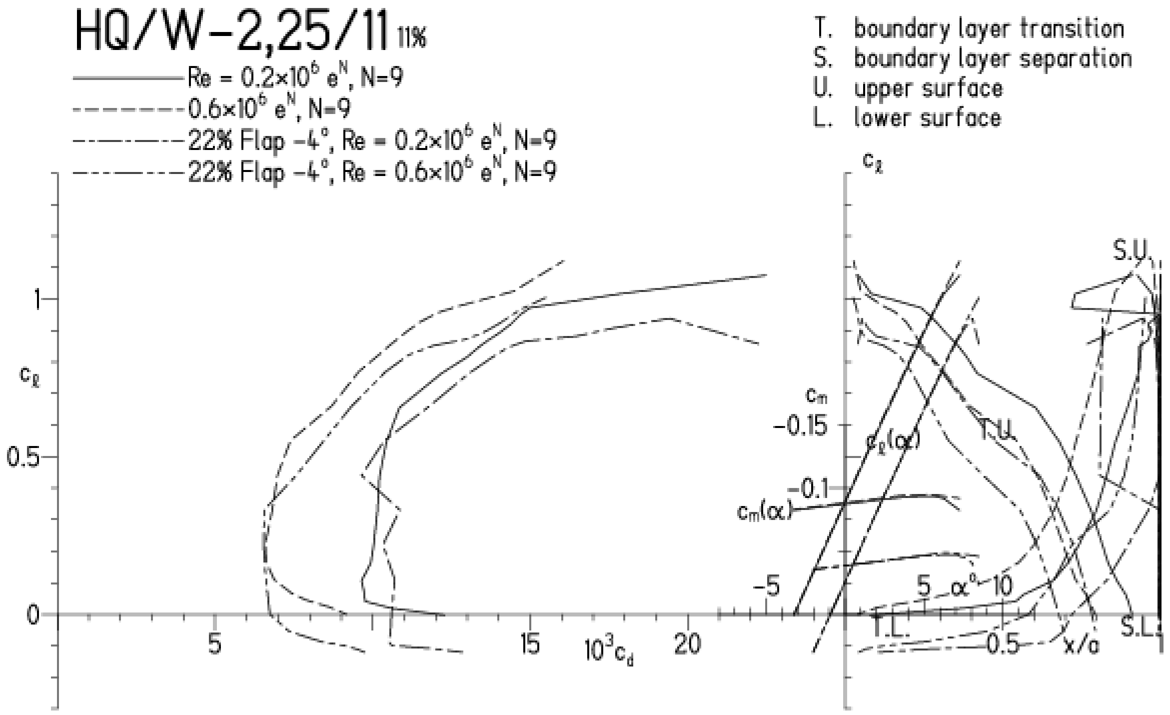


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

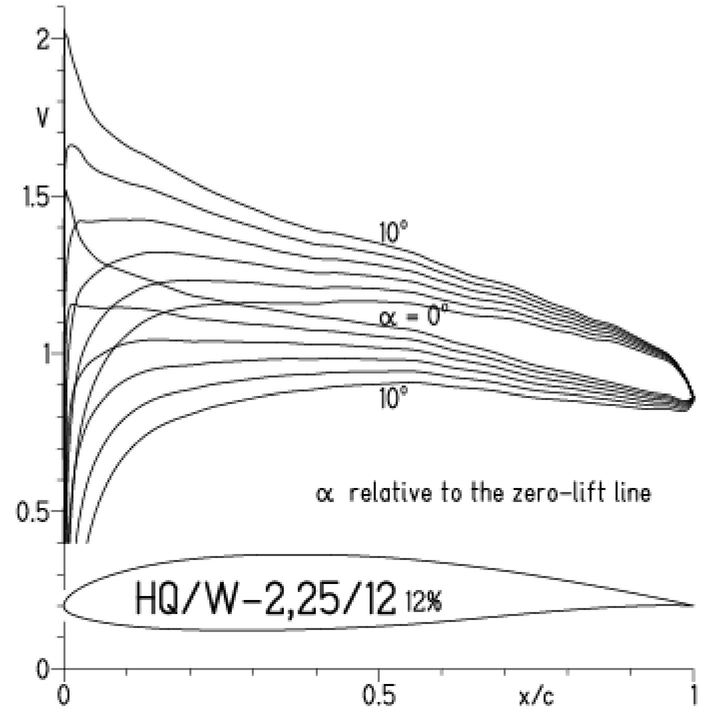


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

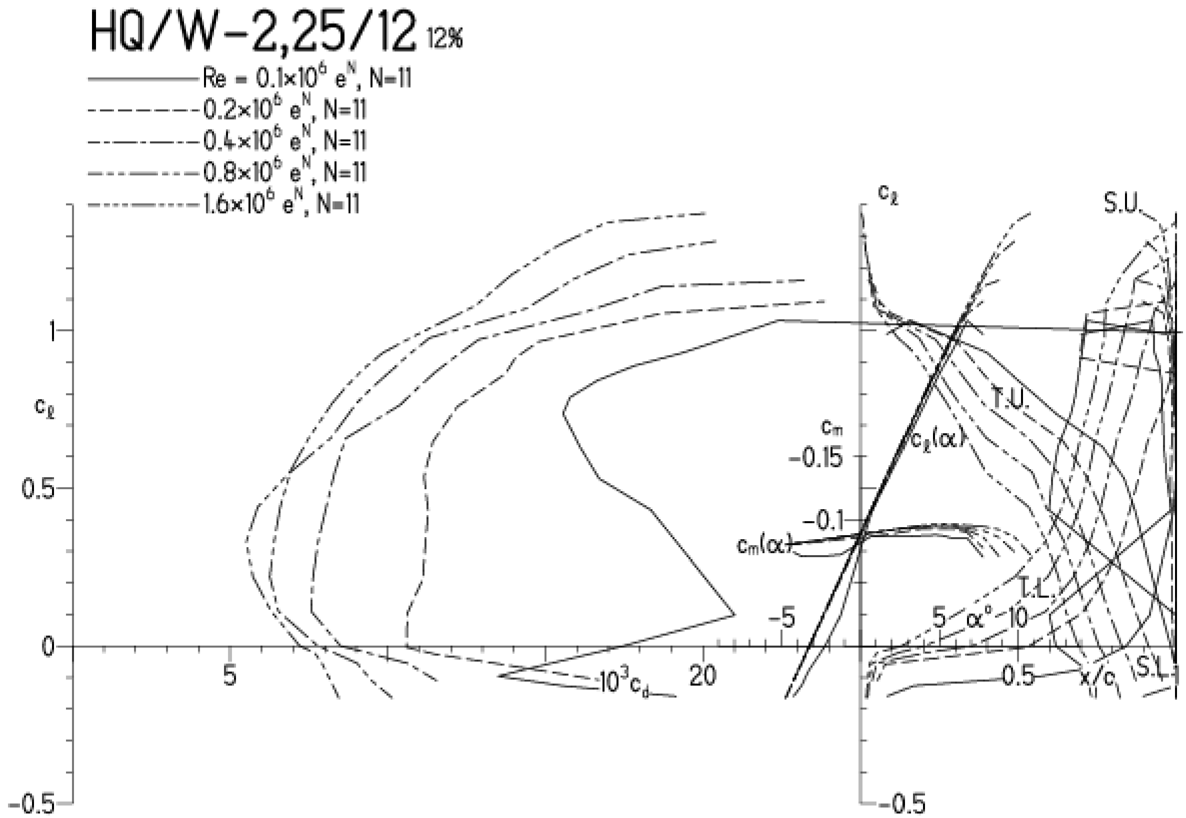


<u>HQ/W-2,25/12</u>, N=11

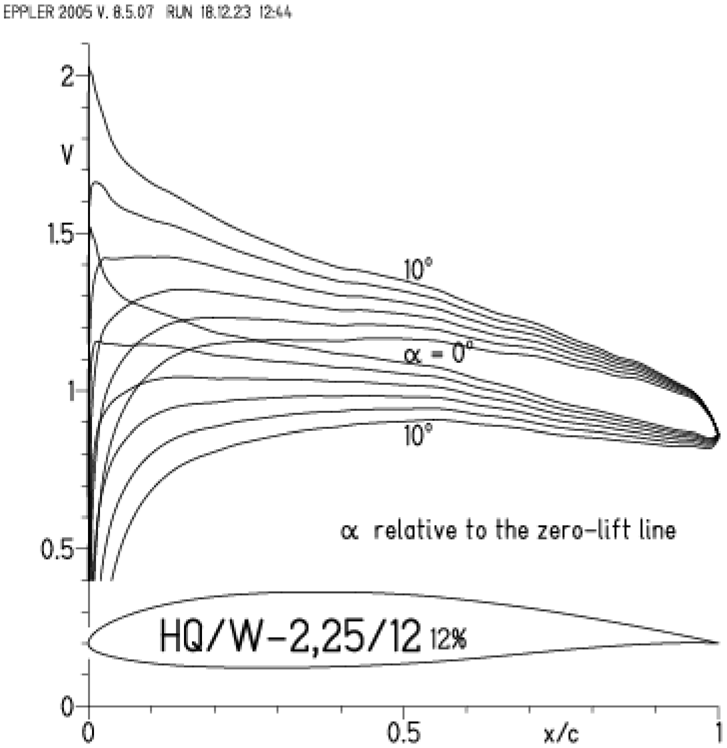
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

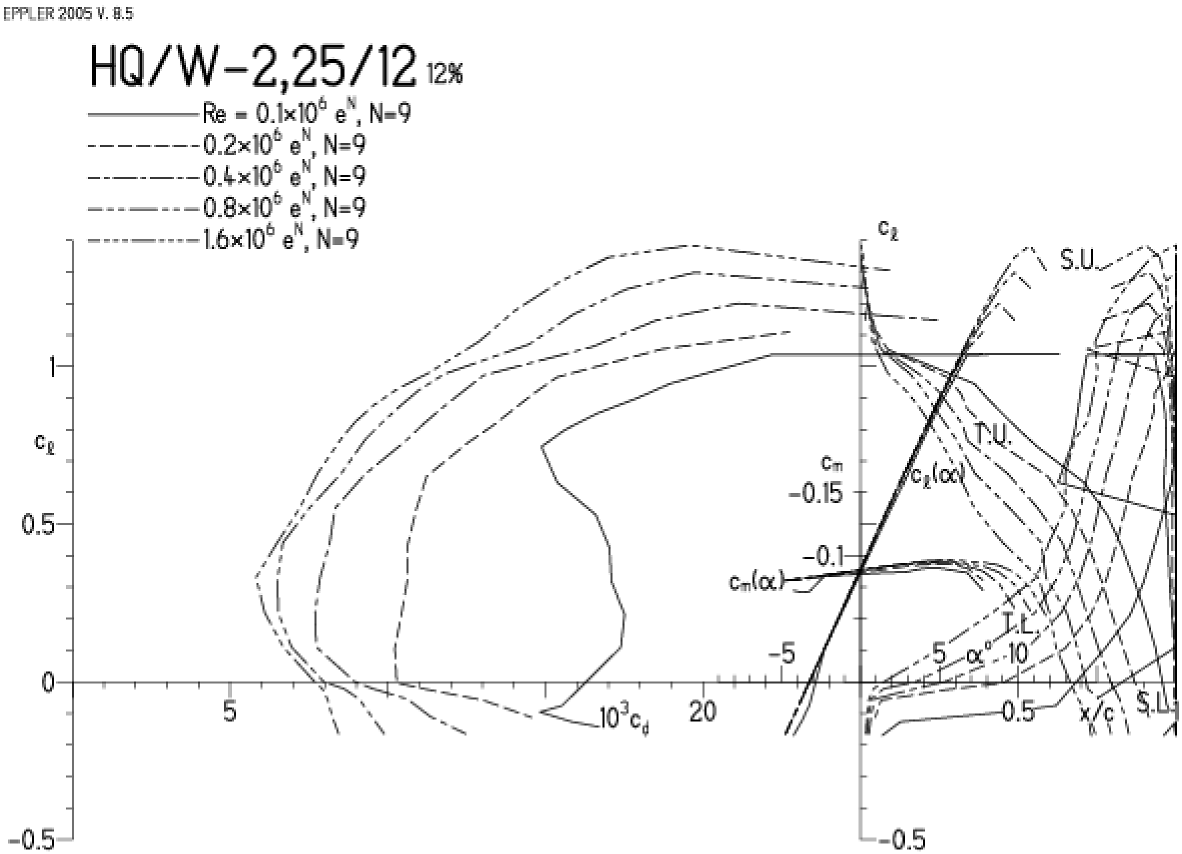


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

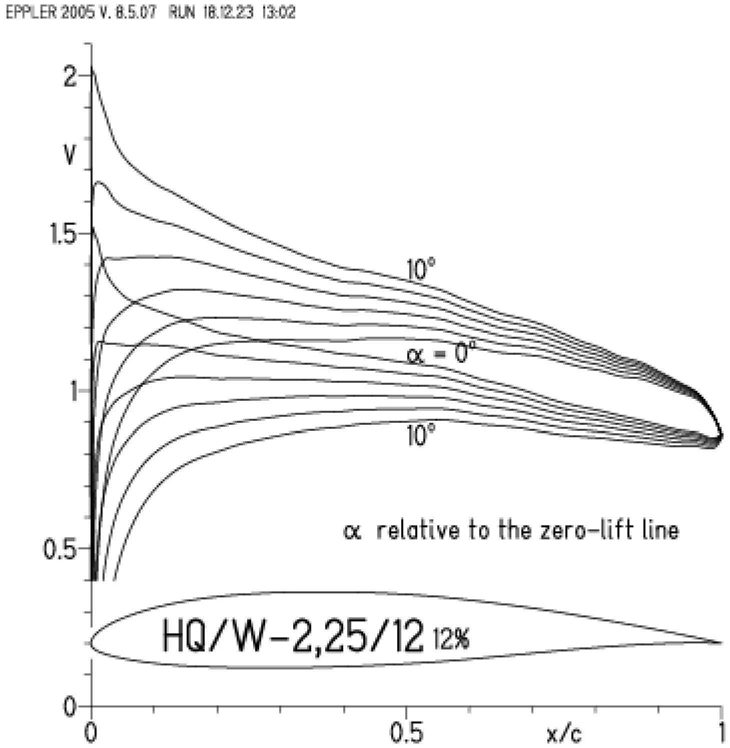


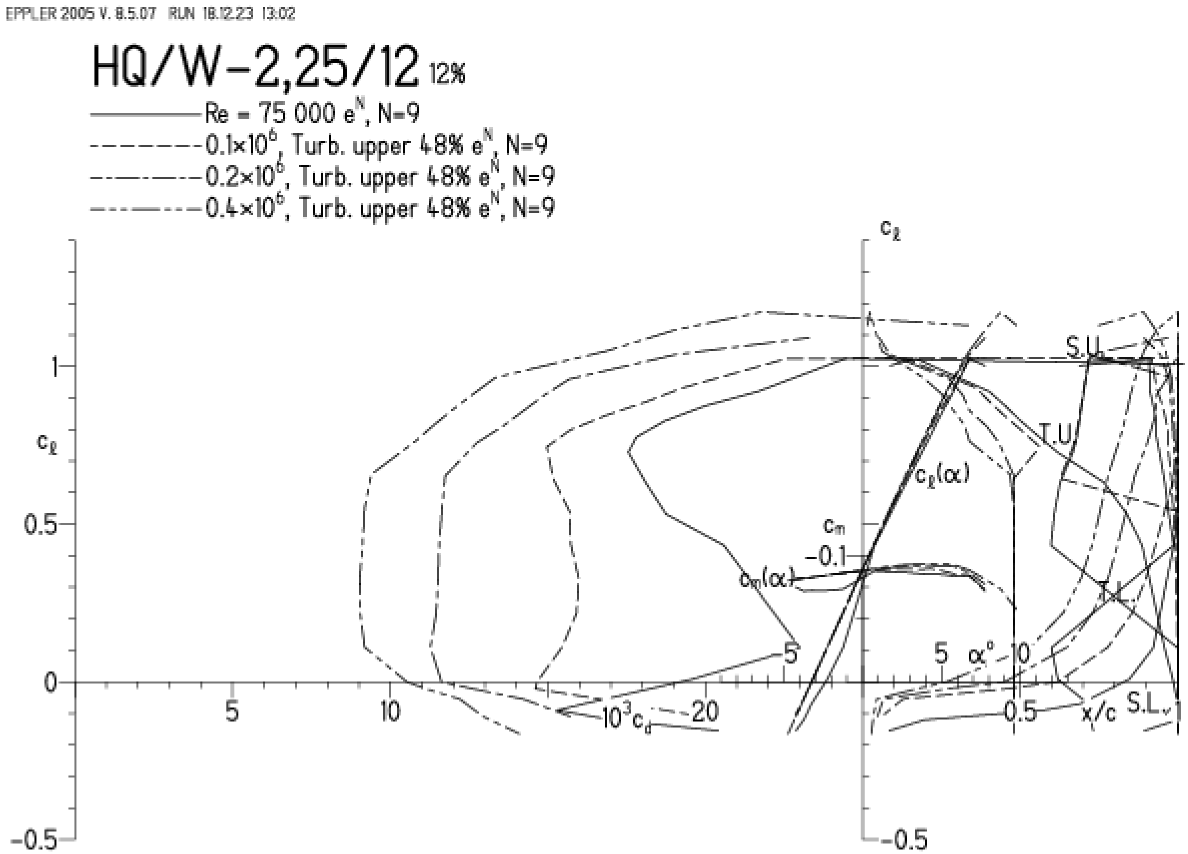
<u>HQ/W-2,25/12</u>, N=9





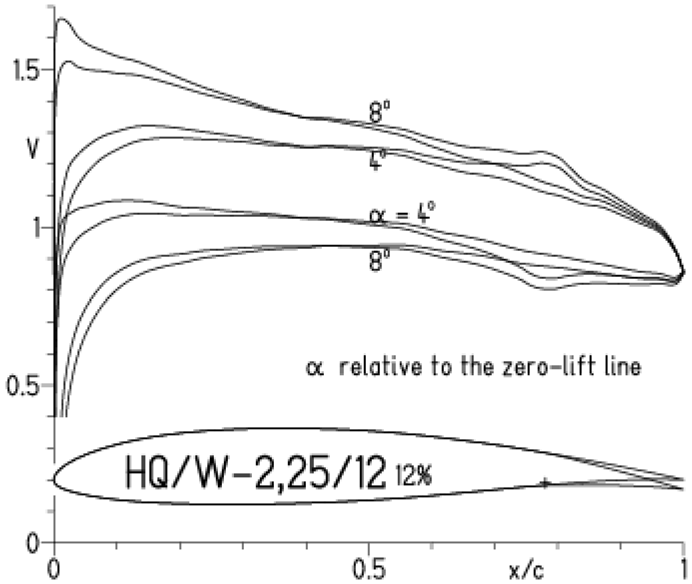
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



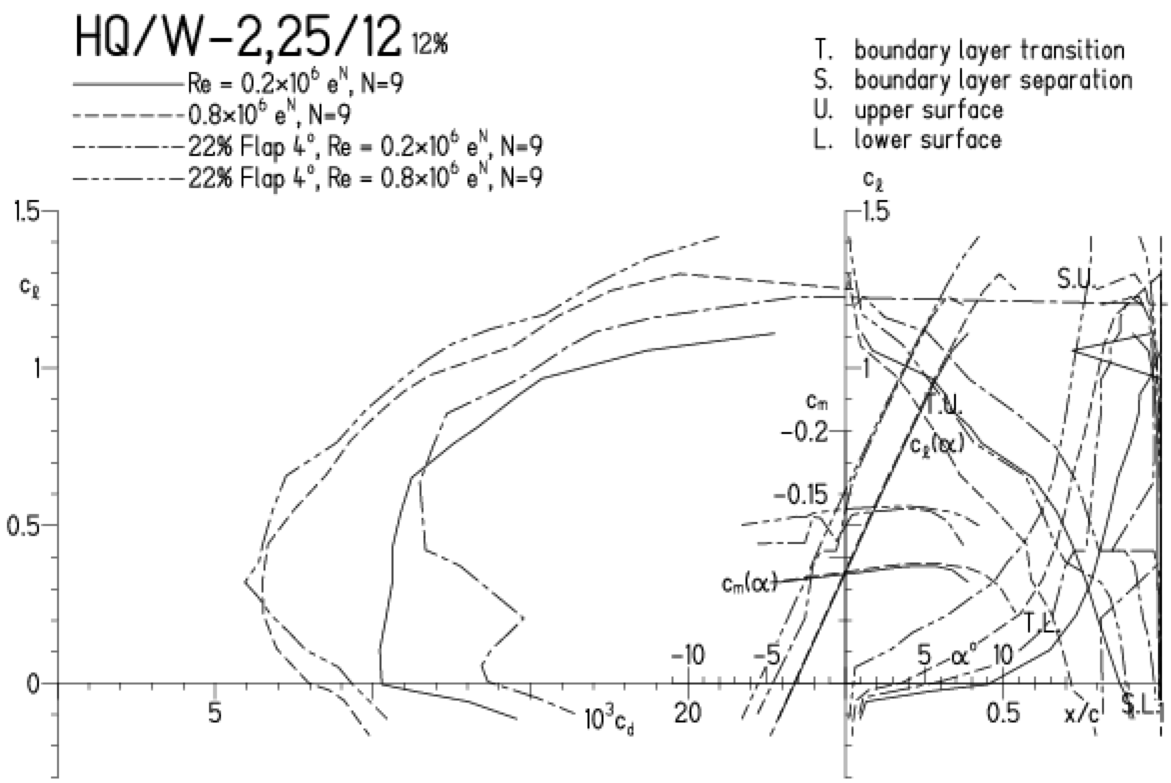


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

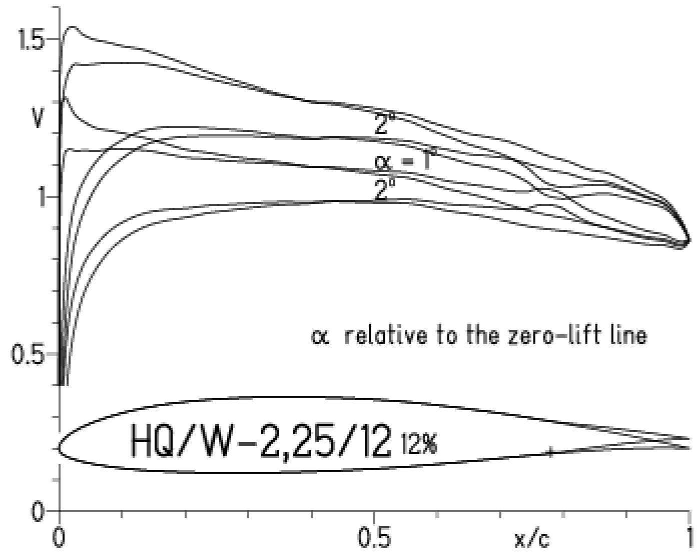


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

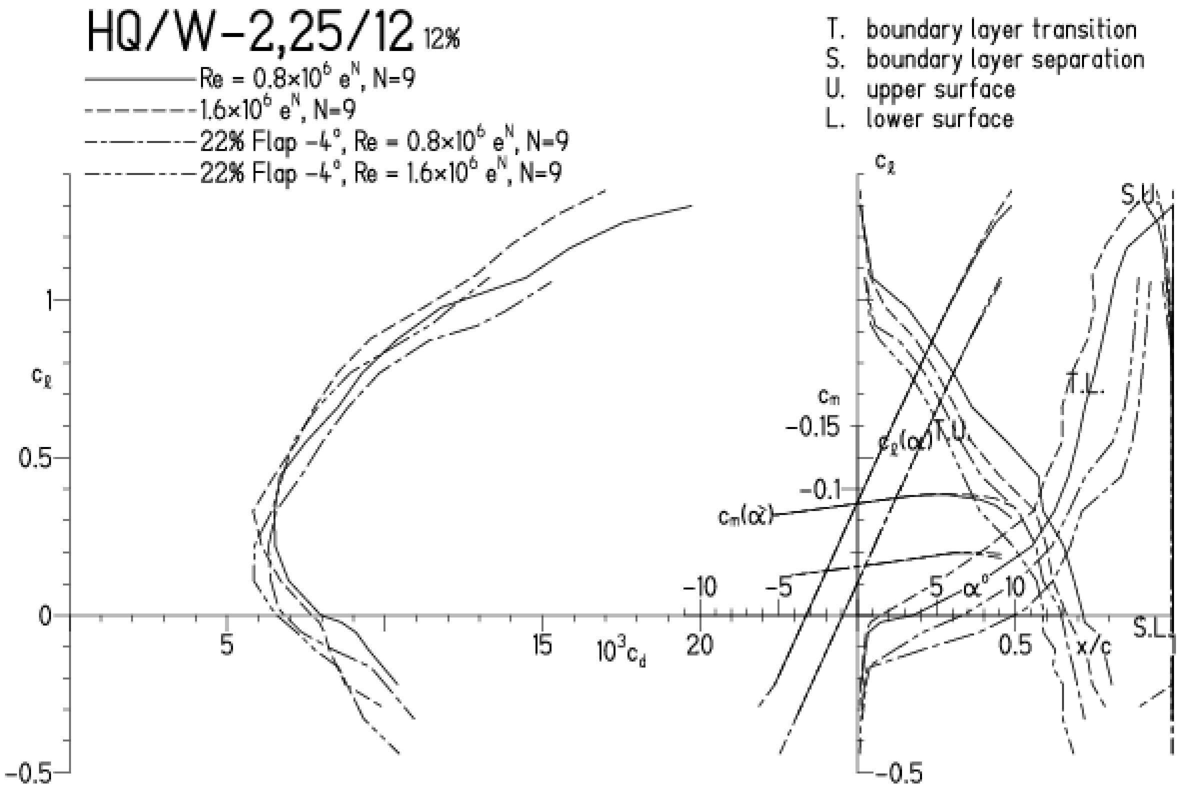


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

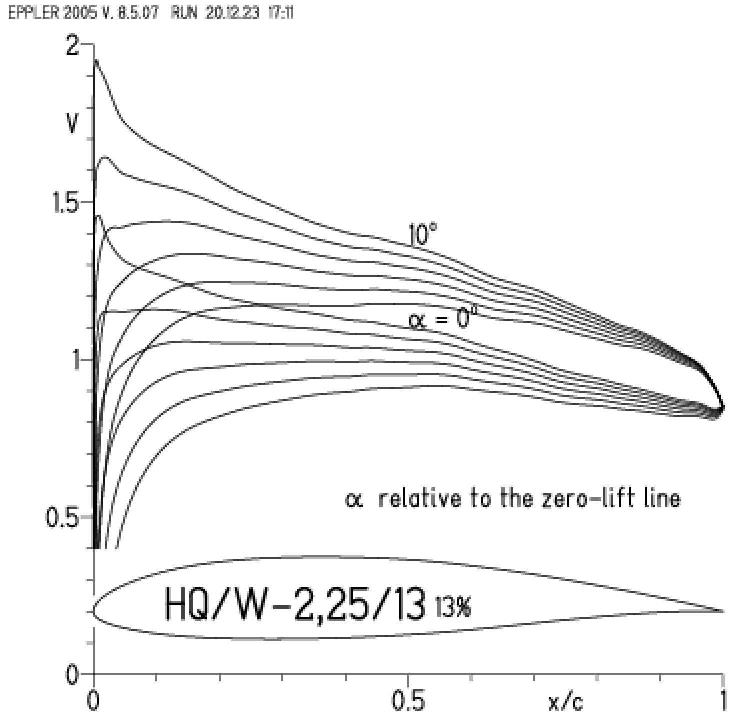
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

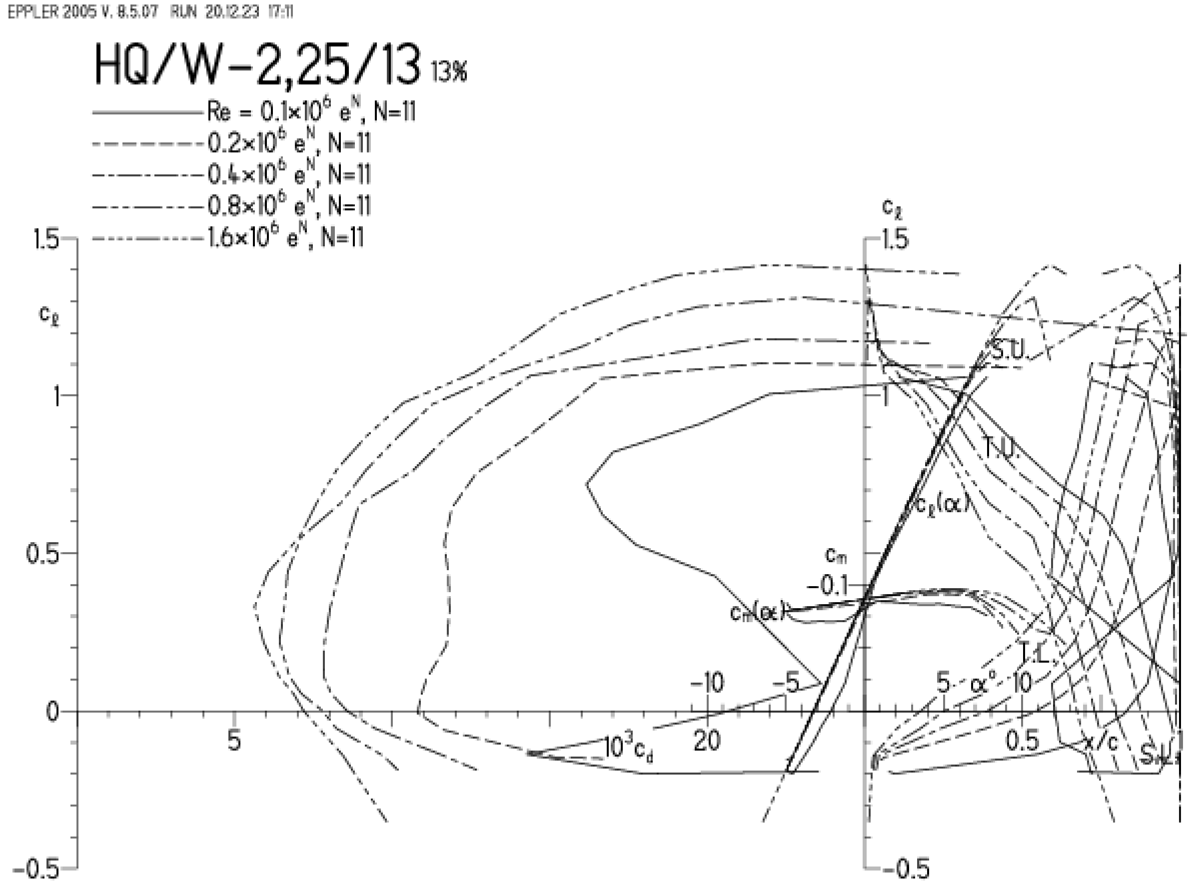


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

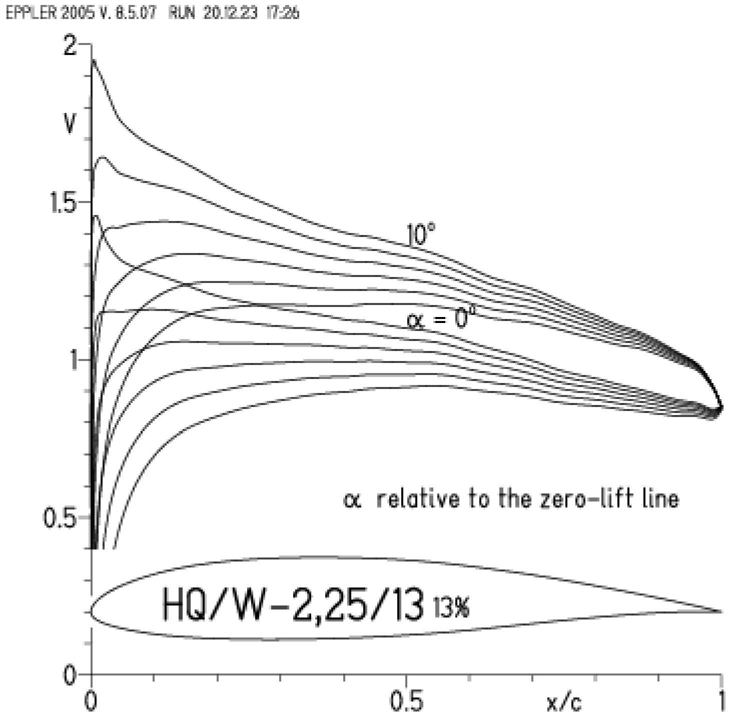


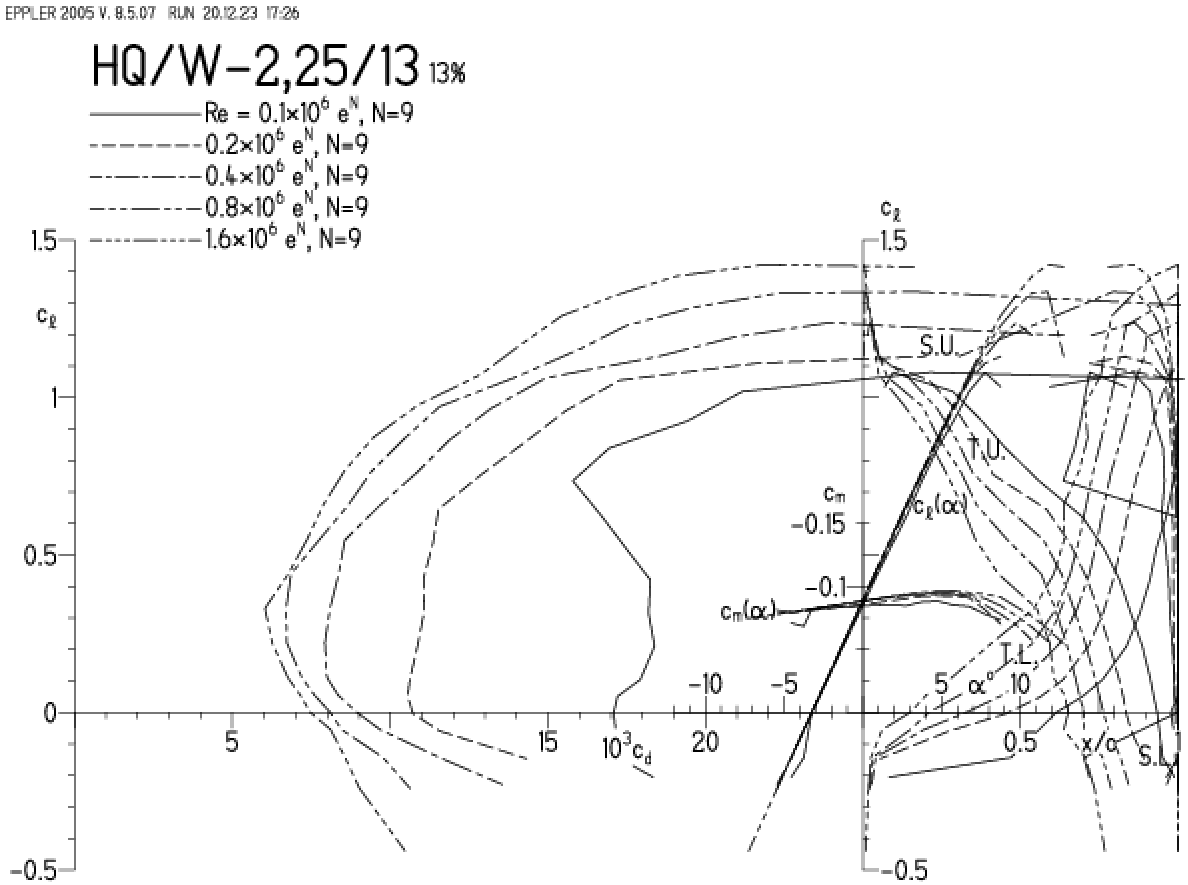
HQ/W-2,25/13, N=11



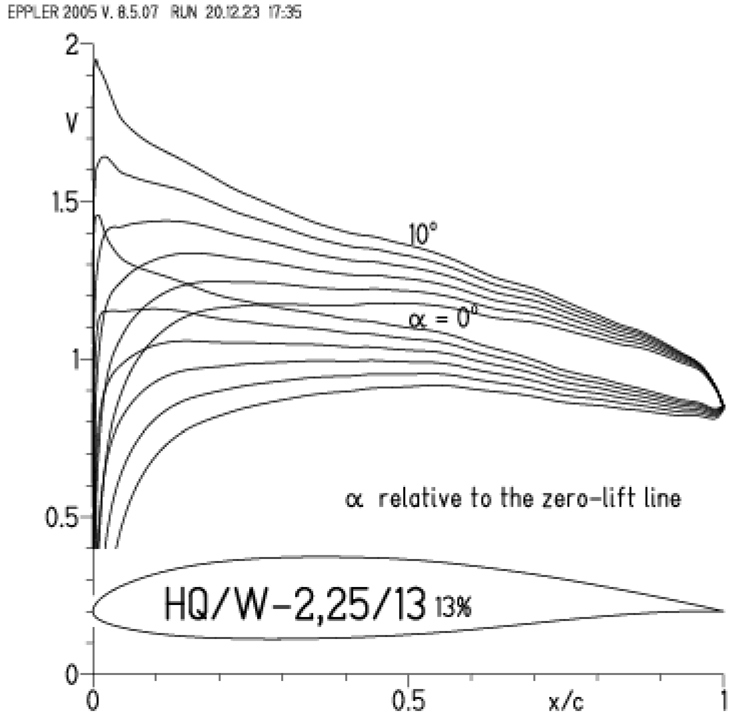


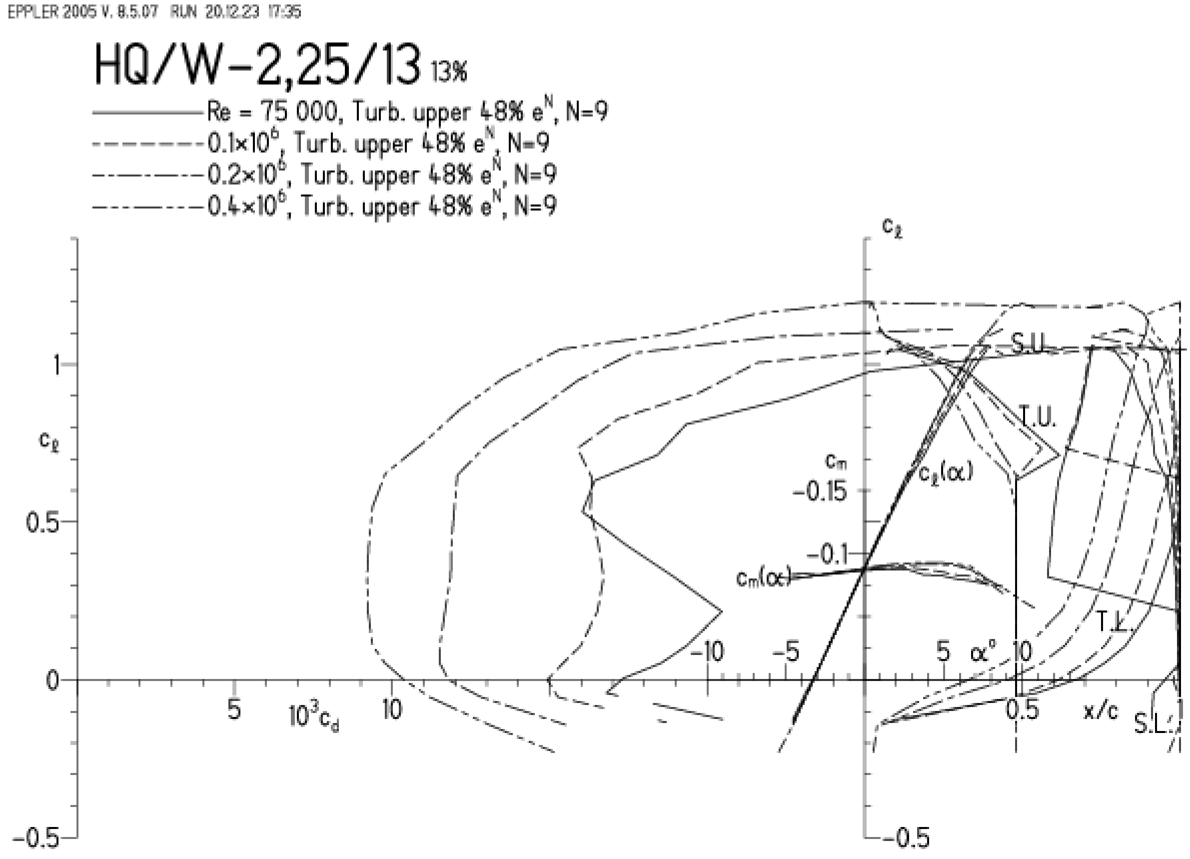
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
0.5
α relative to the zero-lift line
HQ/W-2,25/13 13%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
-10
-5
5
α°
10
c_ℓ
1.5
S.U.
T.U.
c_ℓ(α)
c_m
-0.15
-0.1
c_m(α)
T.L.
0.5
x/c
S.L.
-0.5

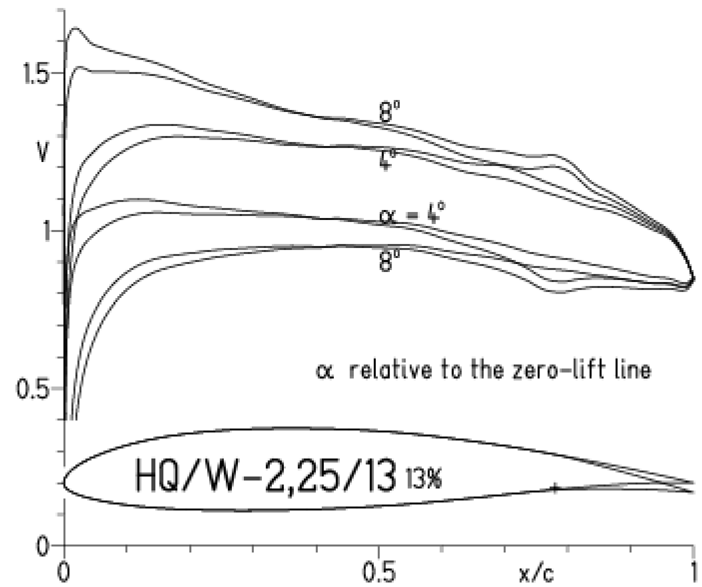
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



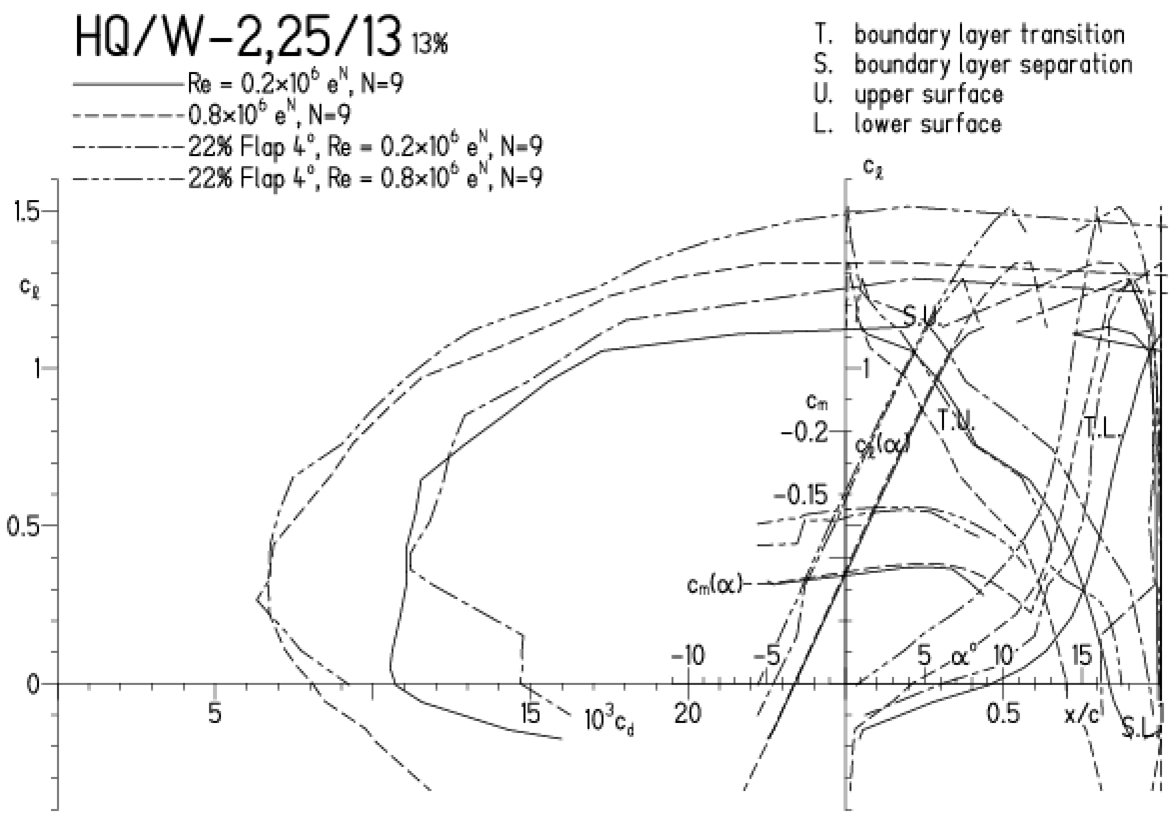


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

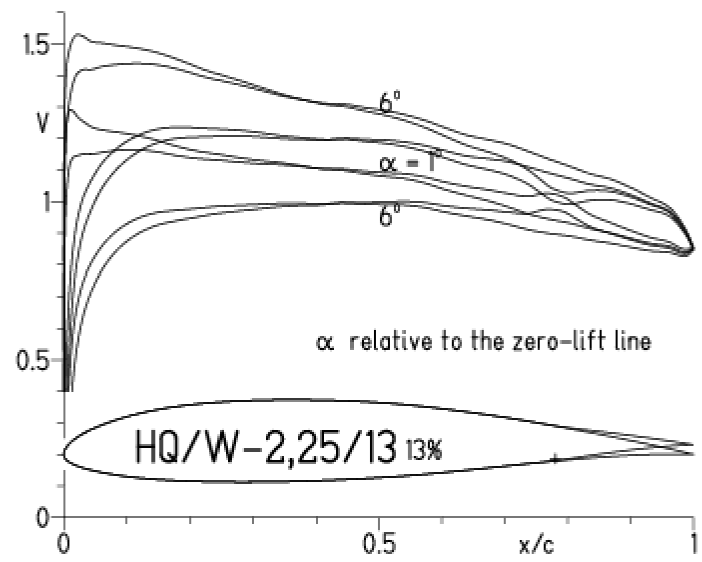


EPPLER 2005 V.

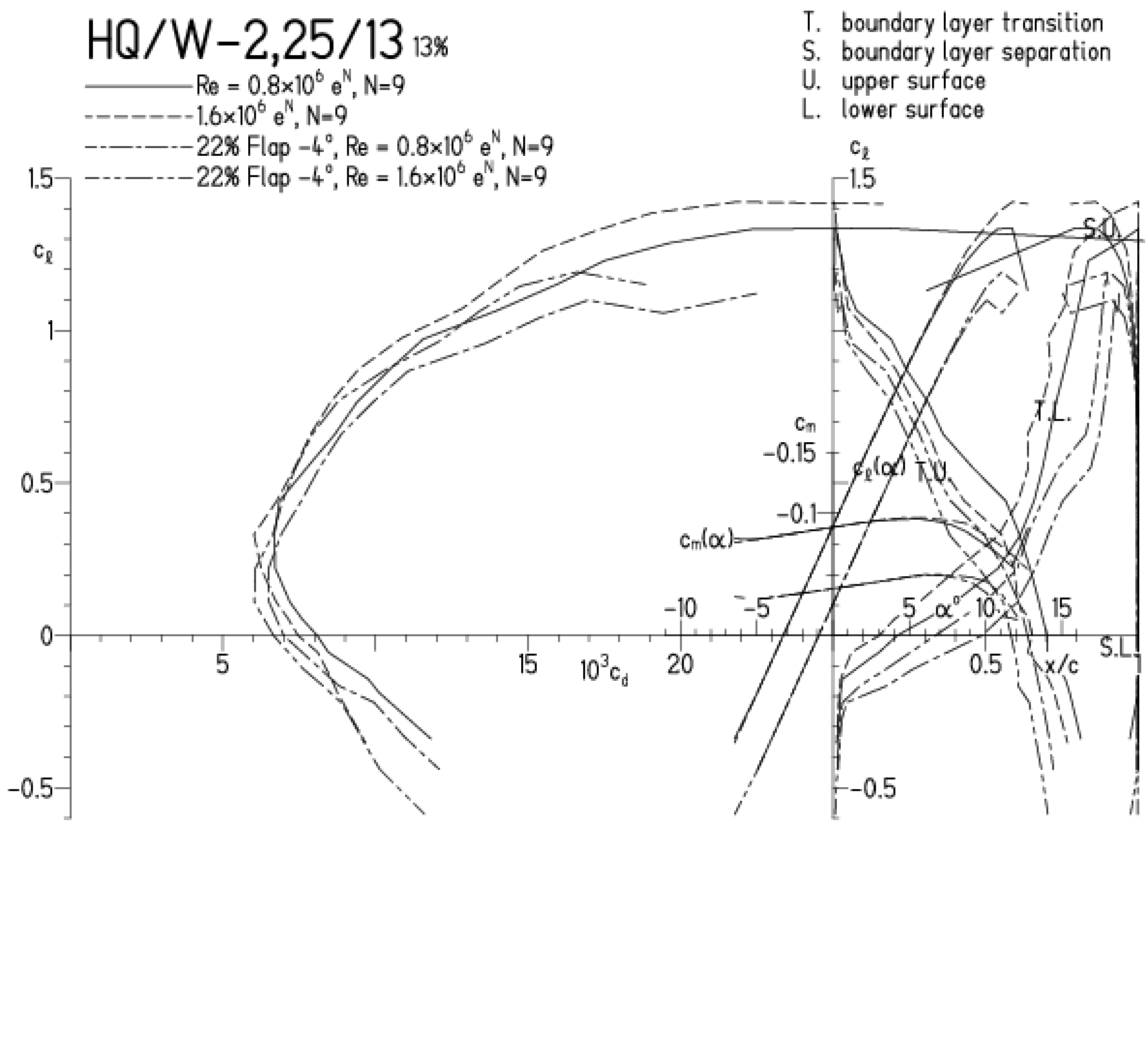


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

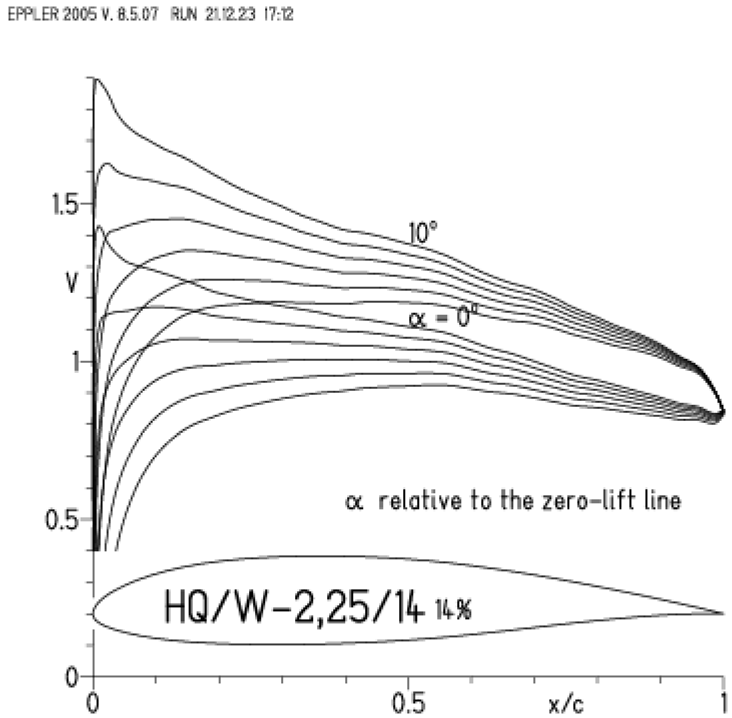
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

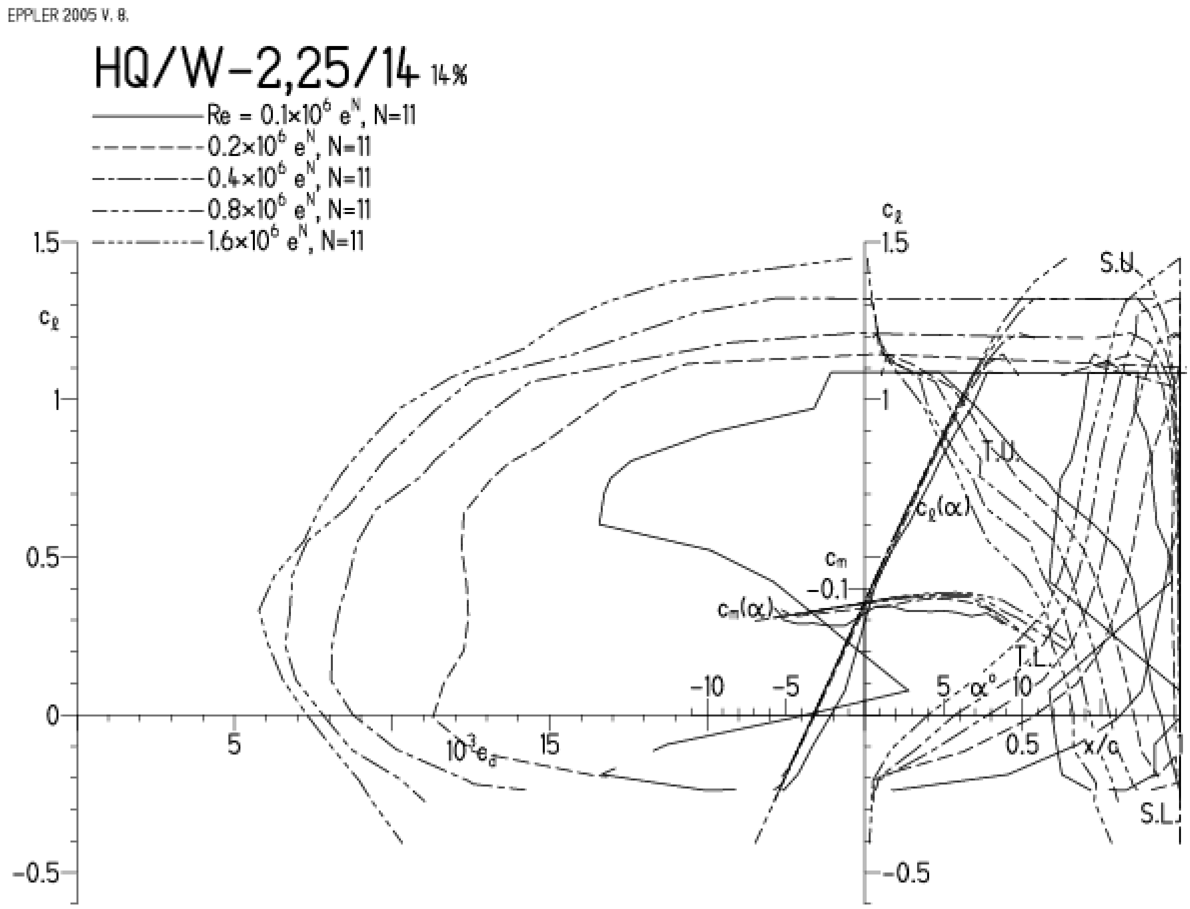


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

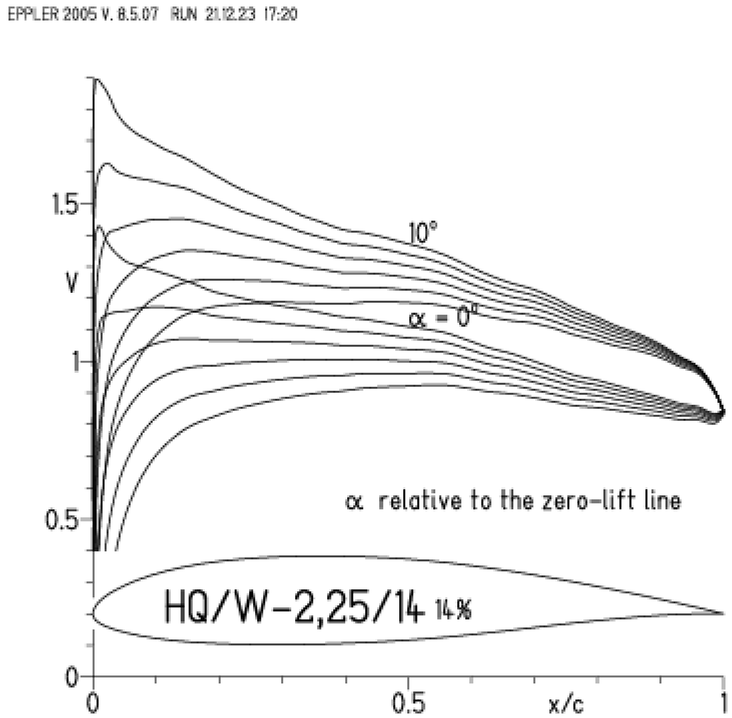


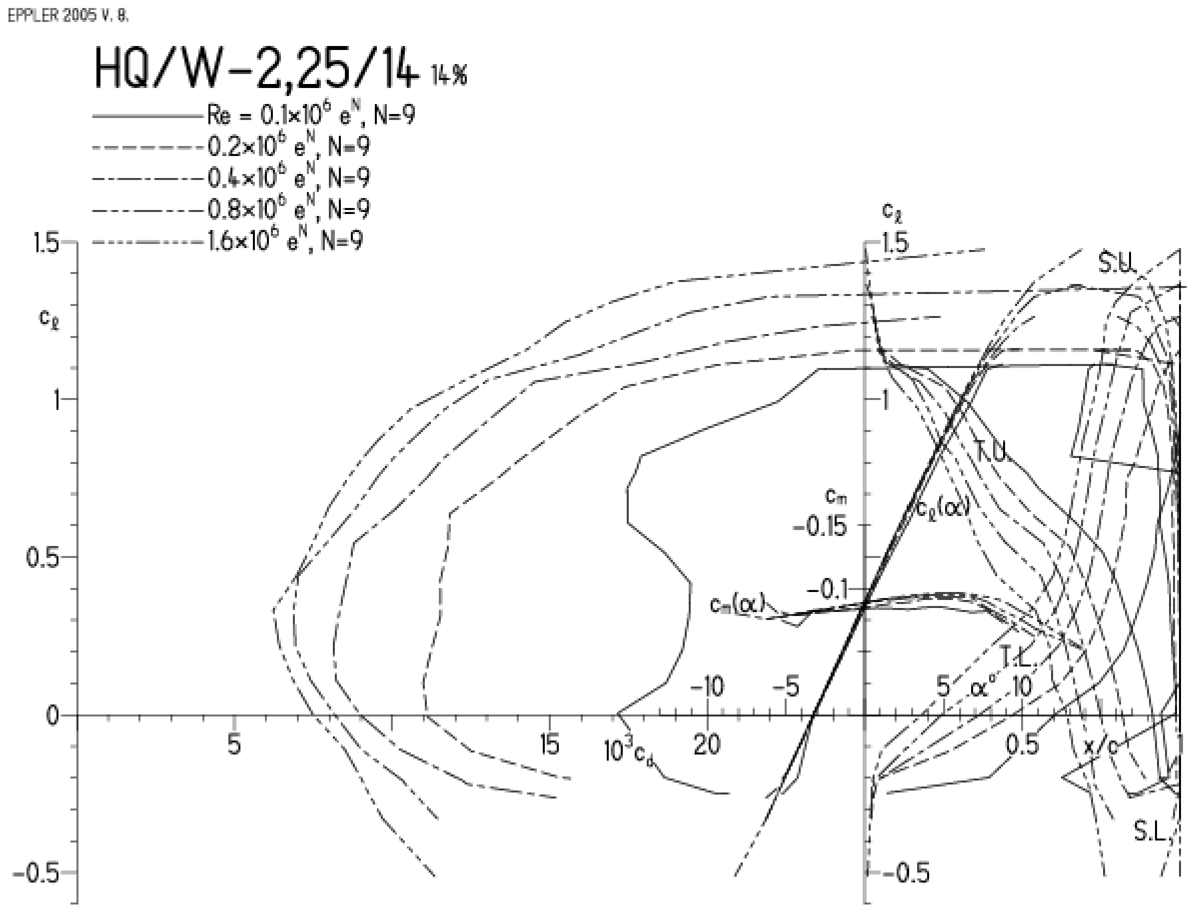
<u>HQ/W-2,25/14</u>, N=11



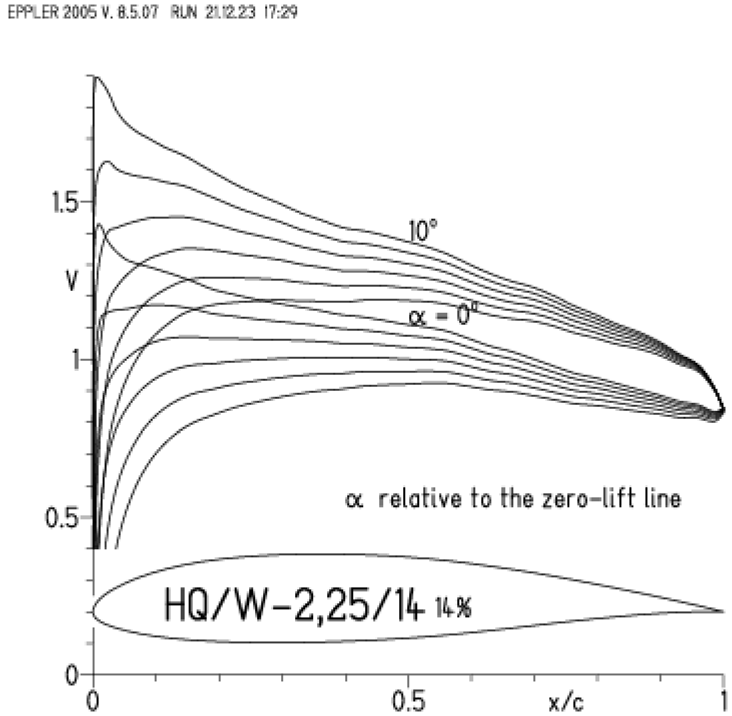


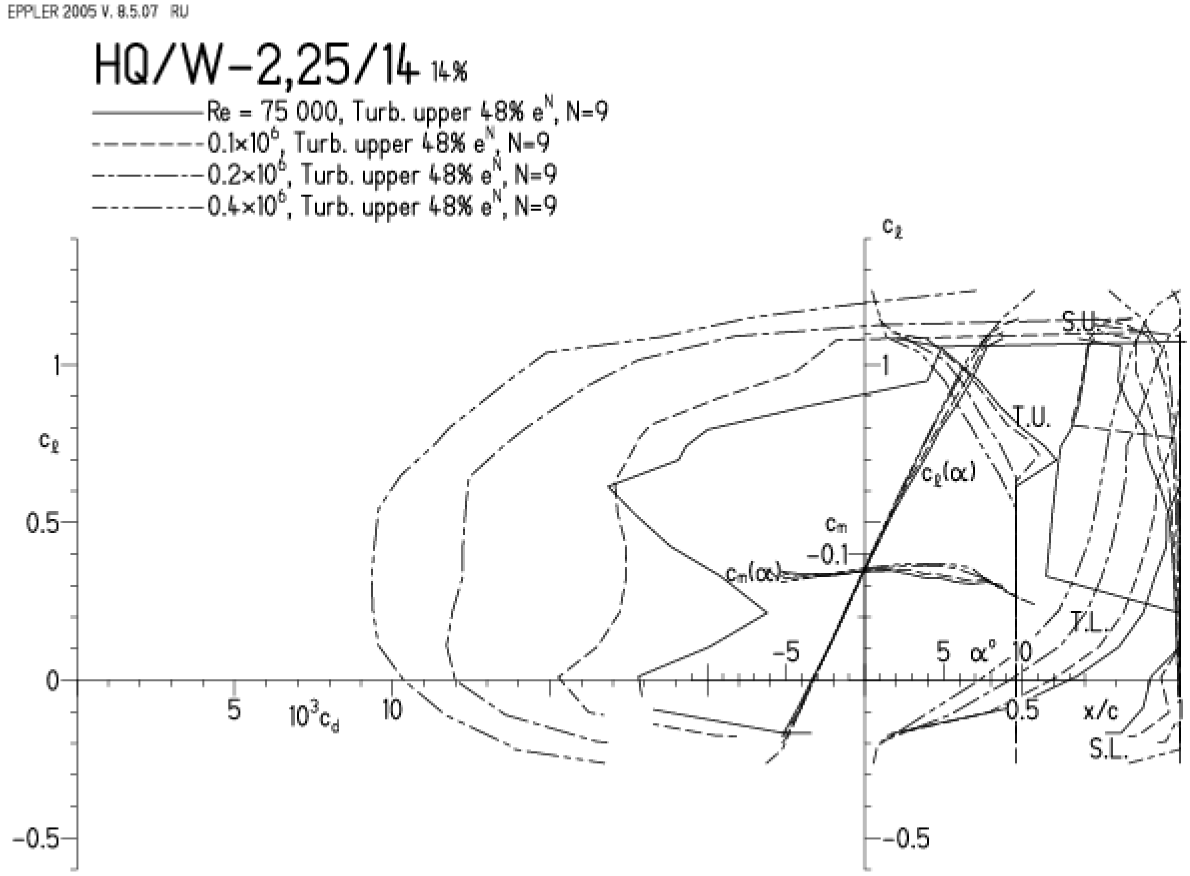
<u>HQ/W-2,25/14</u>, N=9





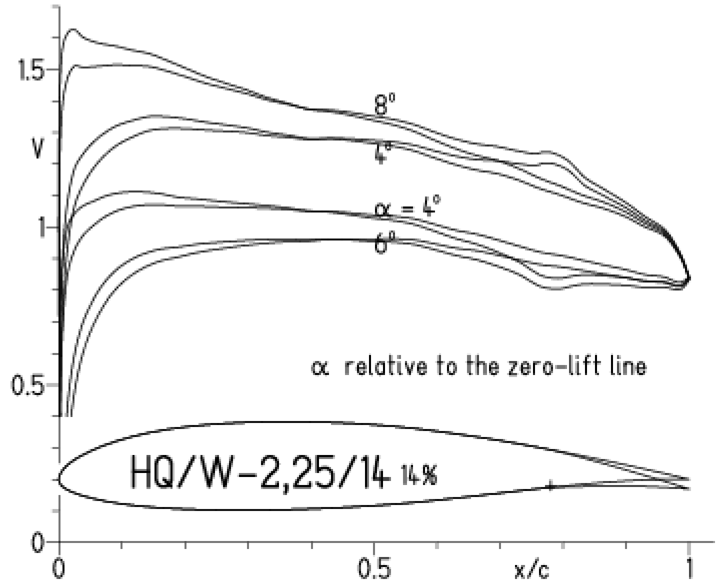
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



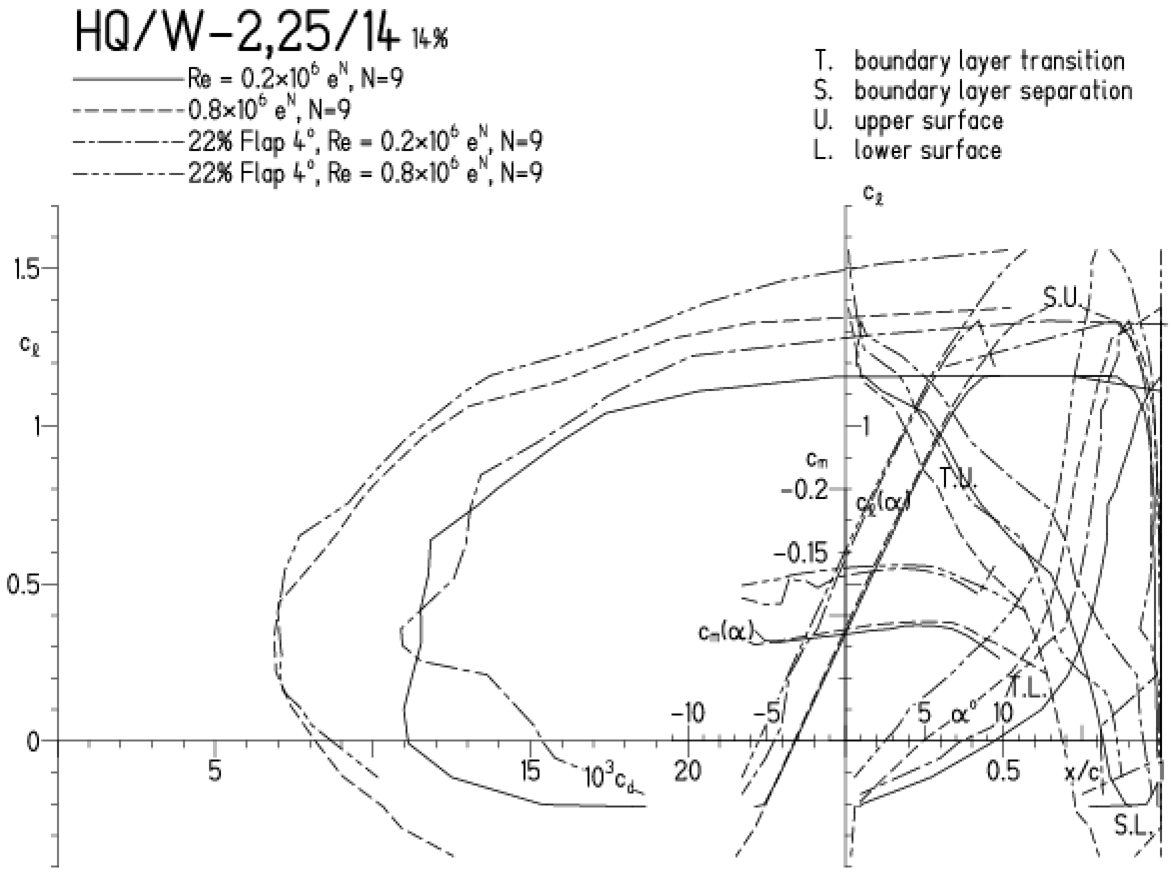


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

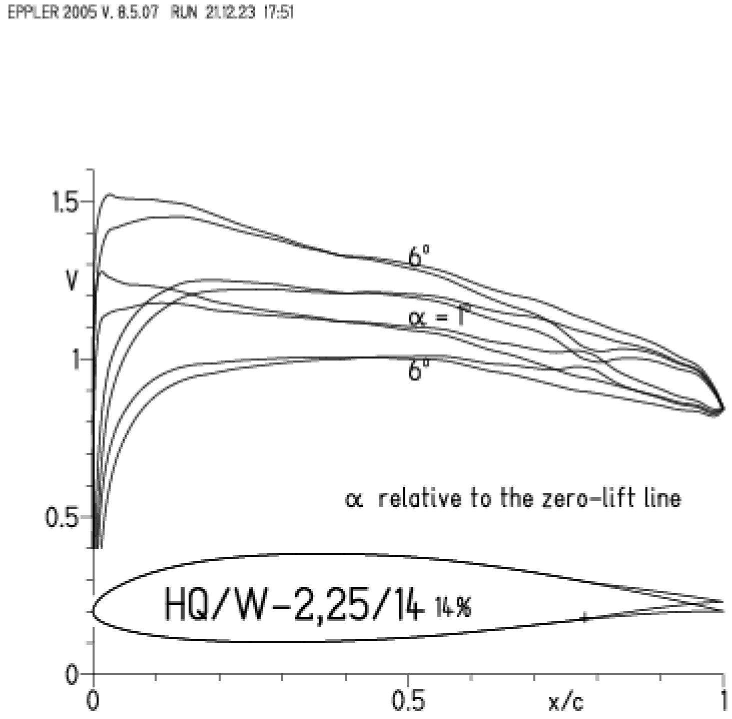
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

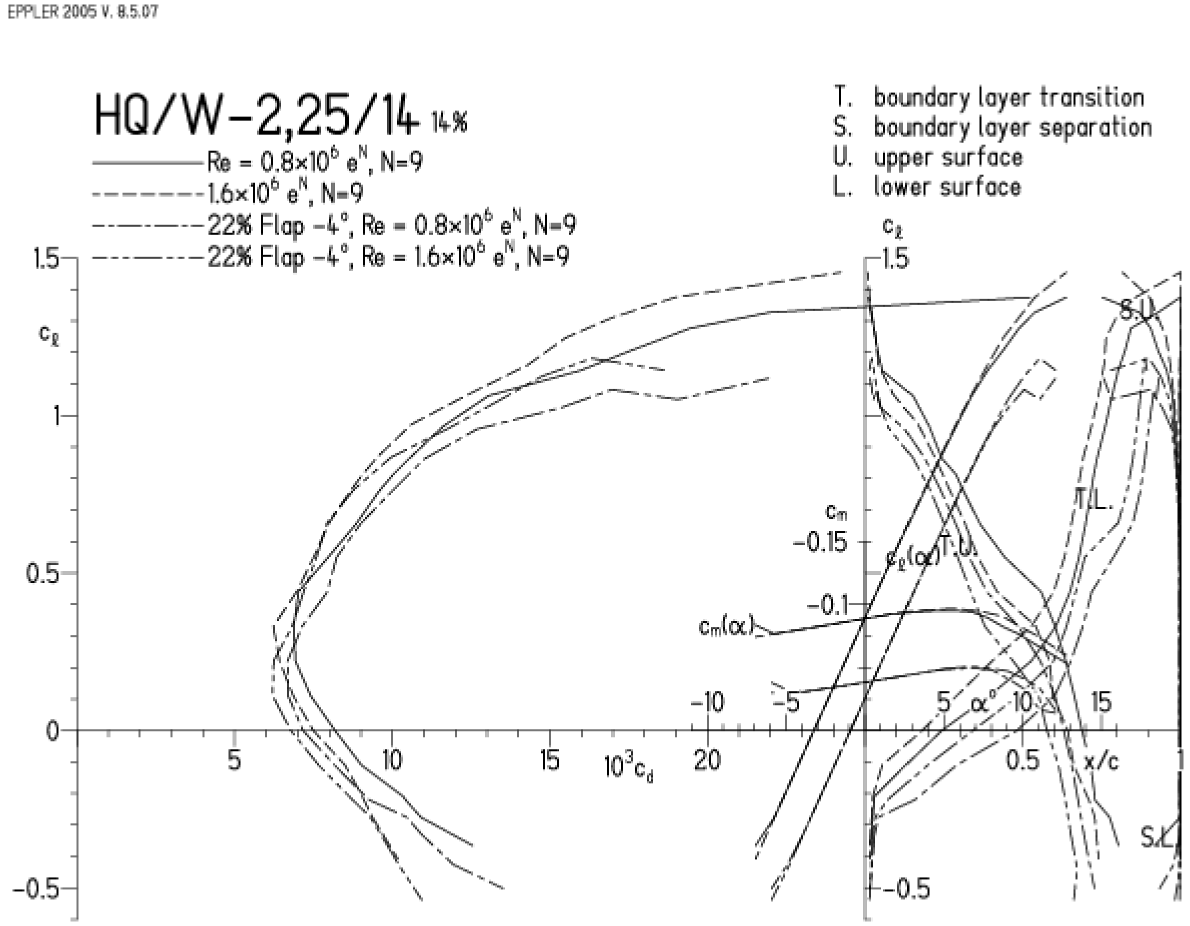


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

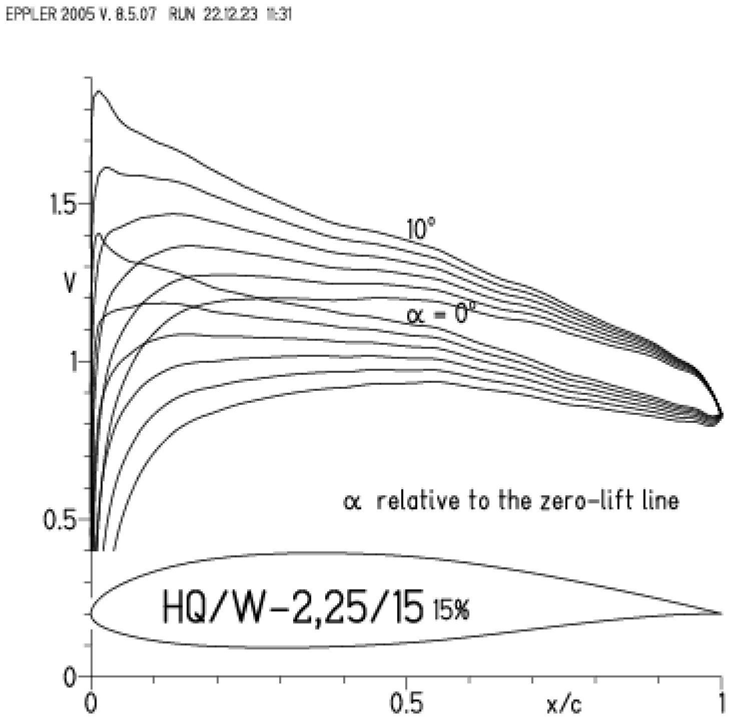


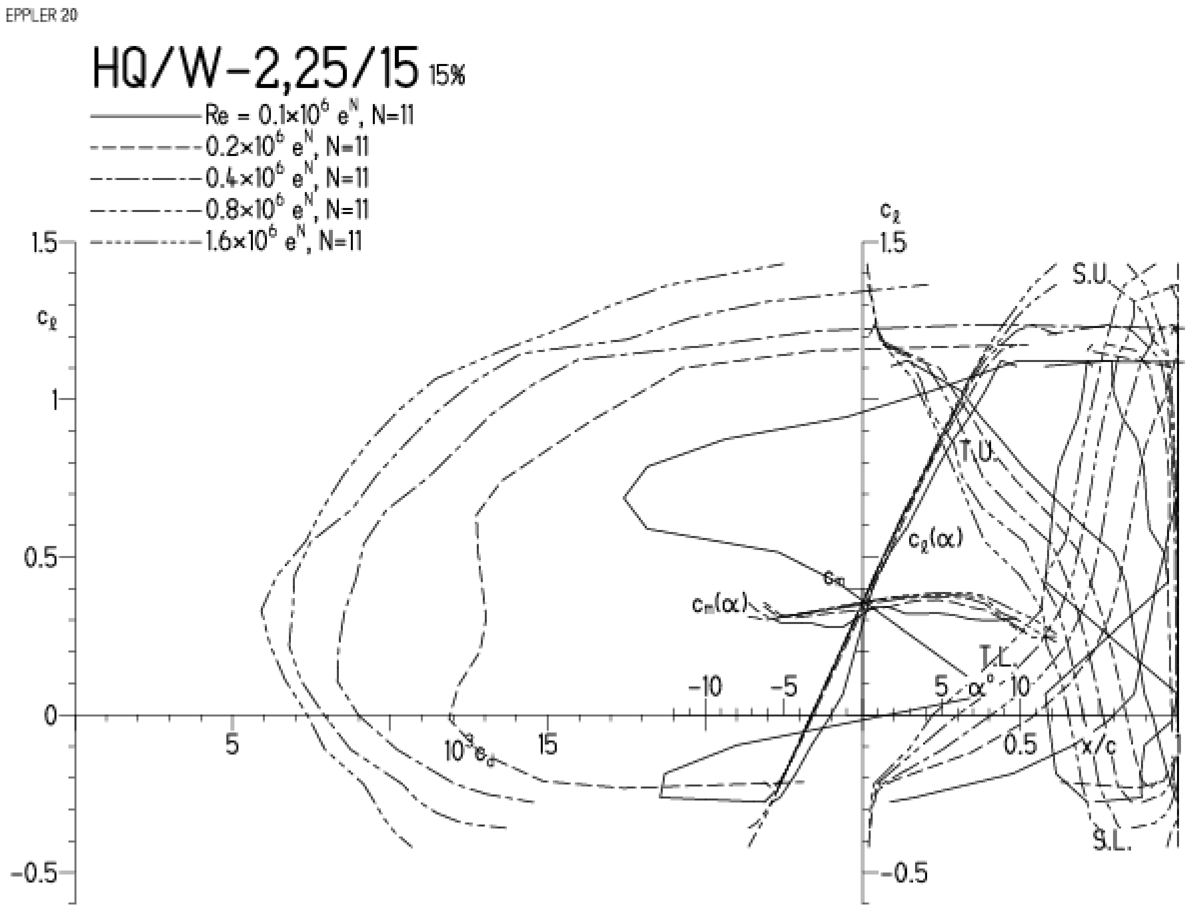
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag





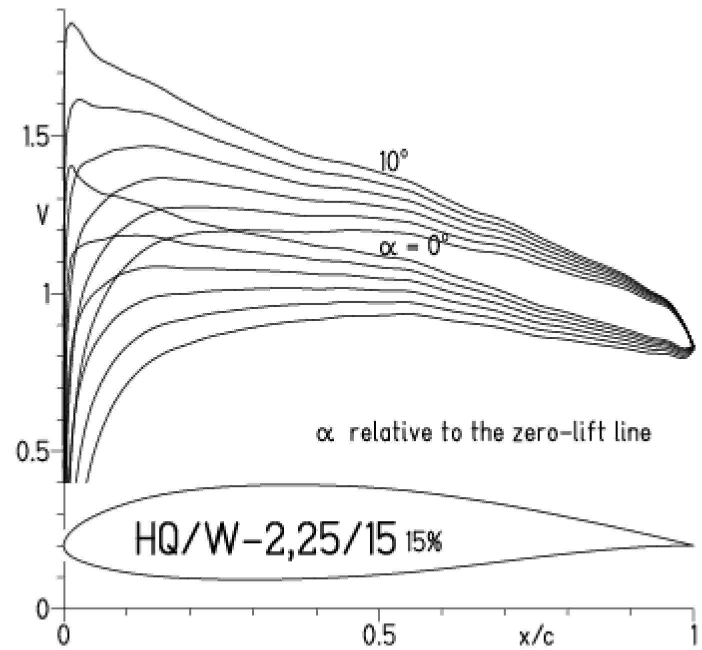
HQ/W-2,25/15, N=11



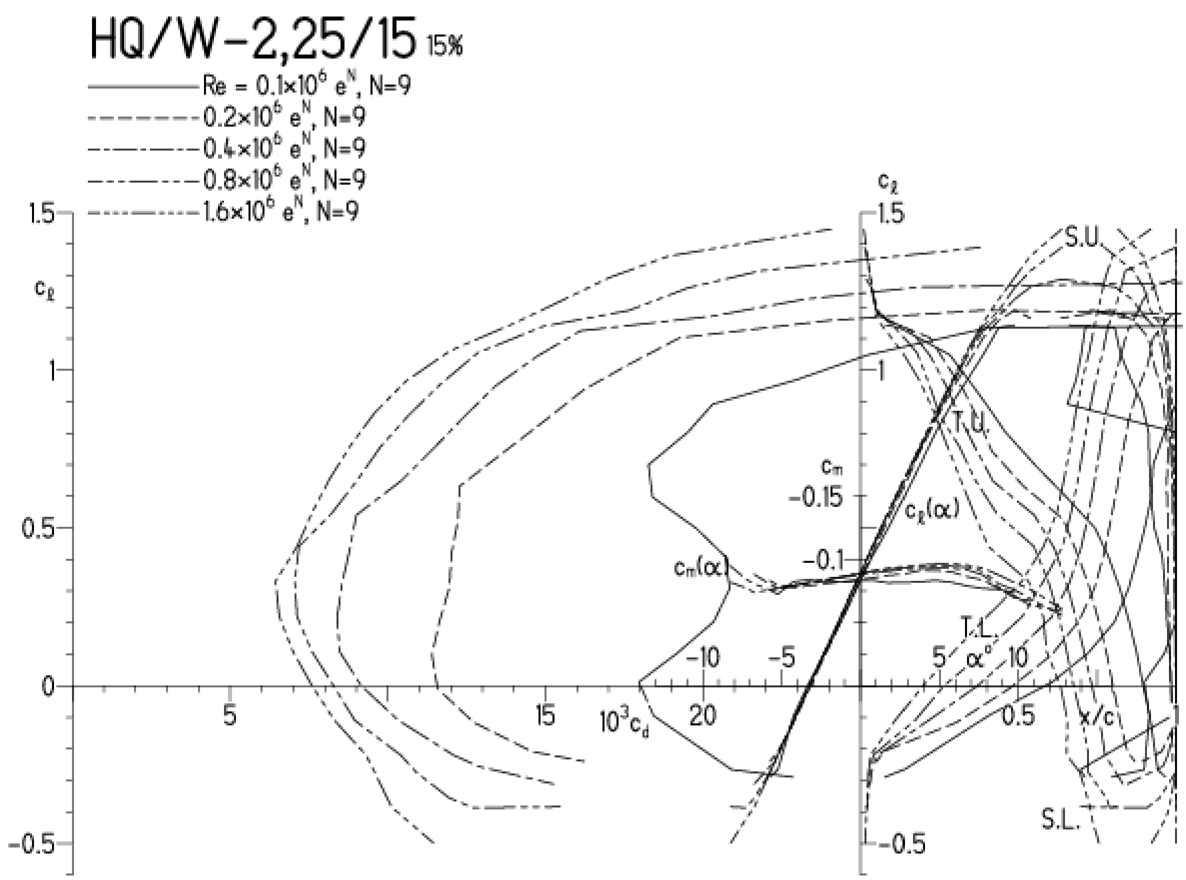


<u>HQ/W-2,25/15</u>, N=9

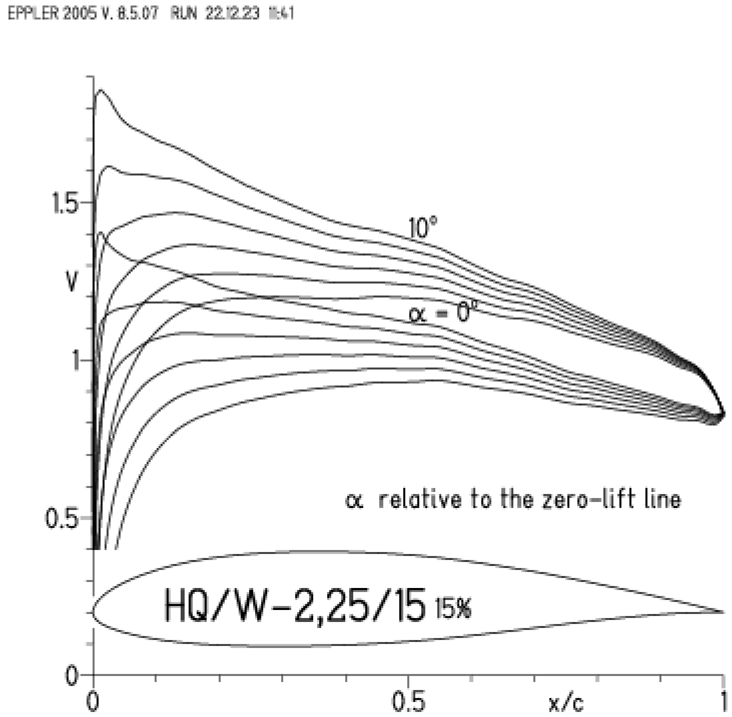
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

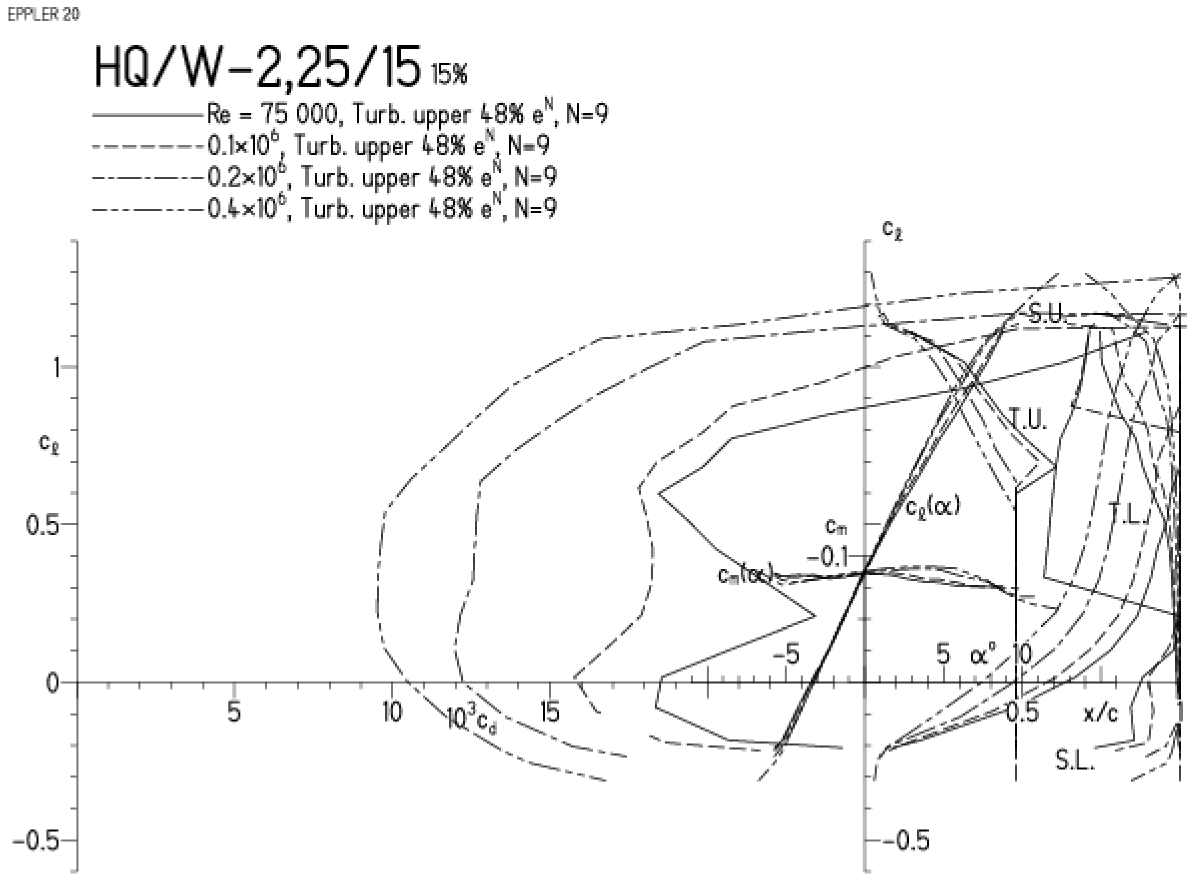


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



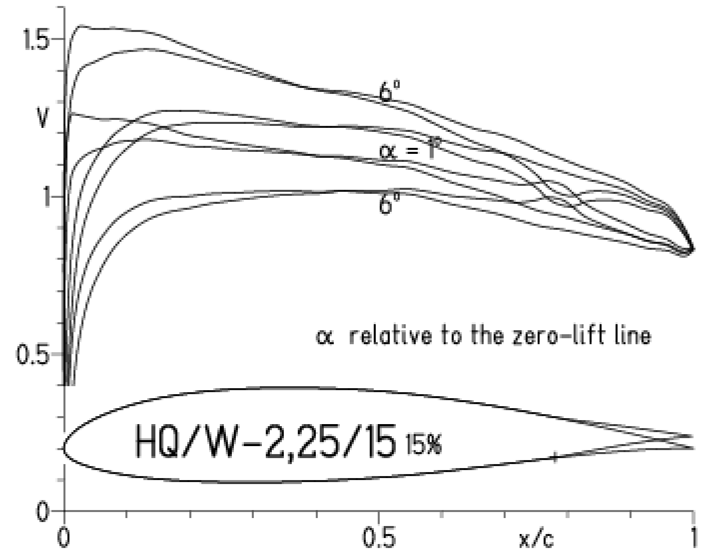


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

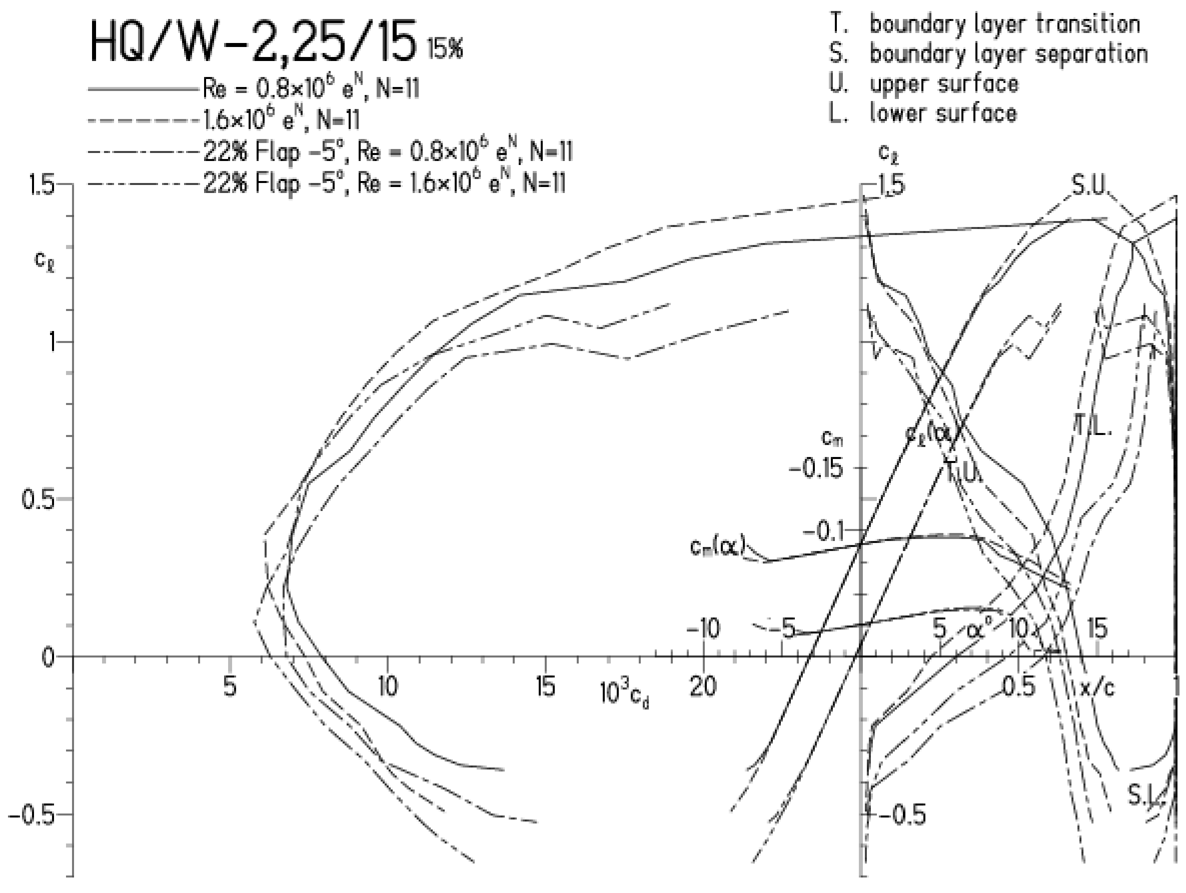
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

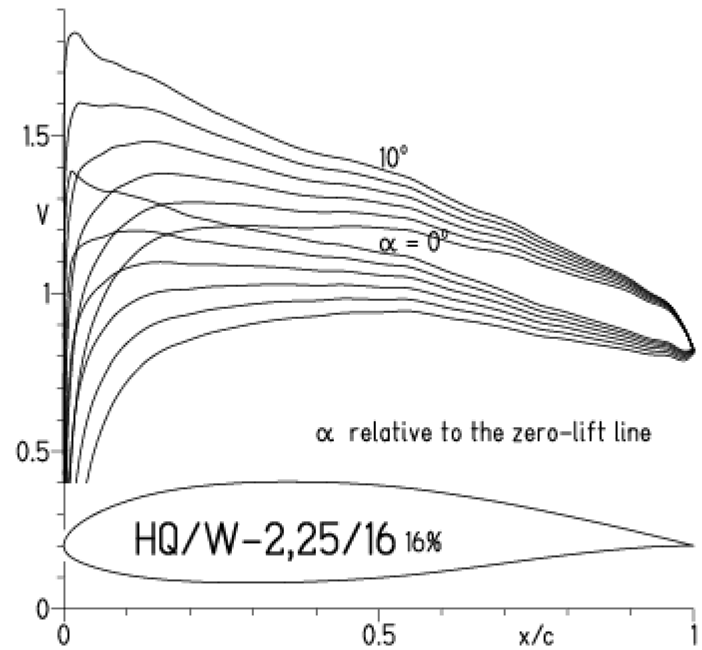


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

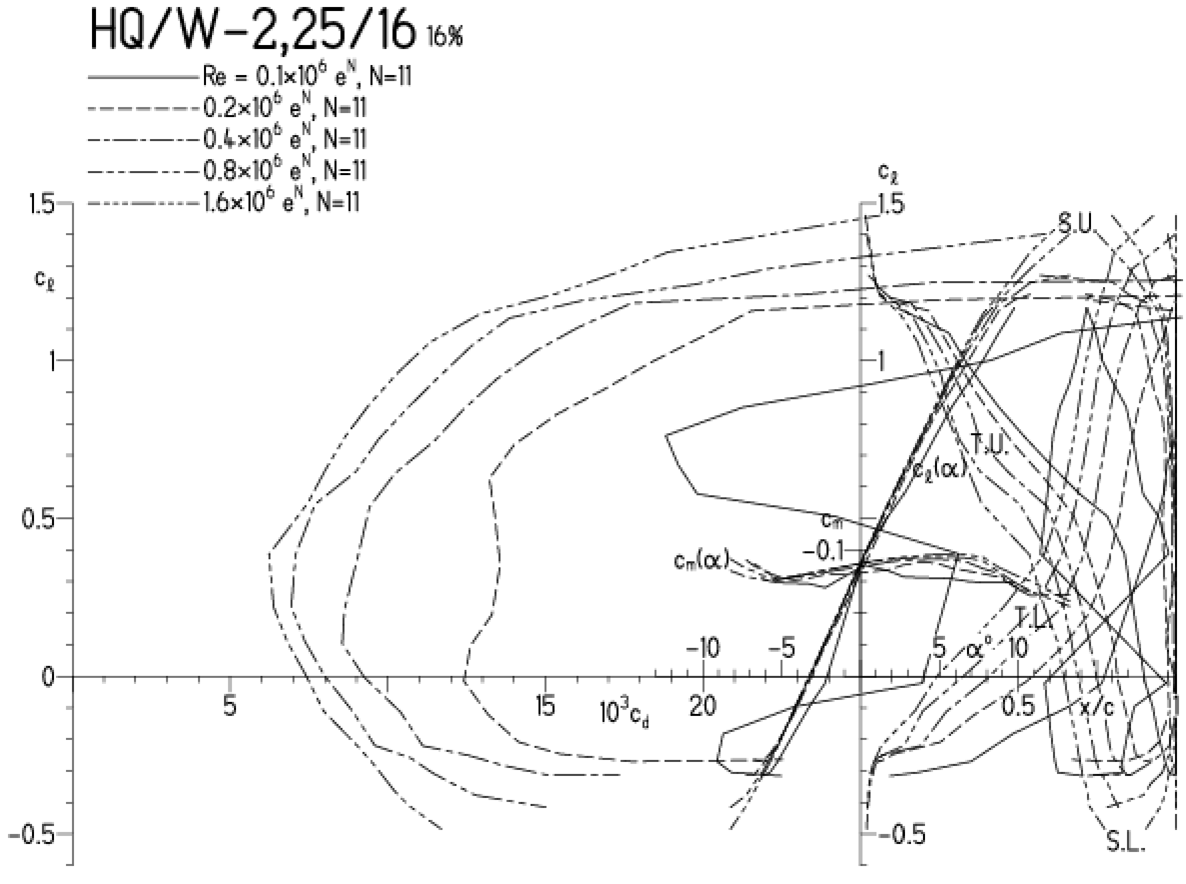


<u>HQ/W-2,25/16</u>, N=11

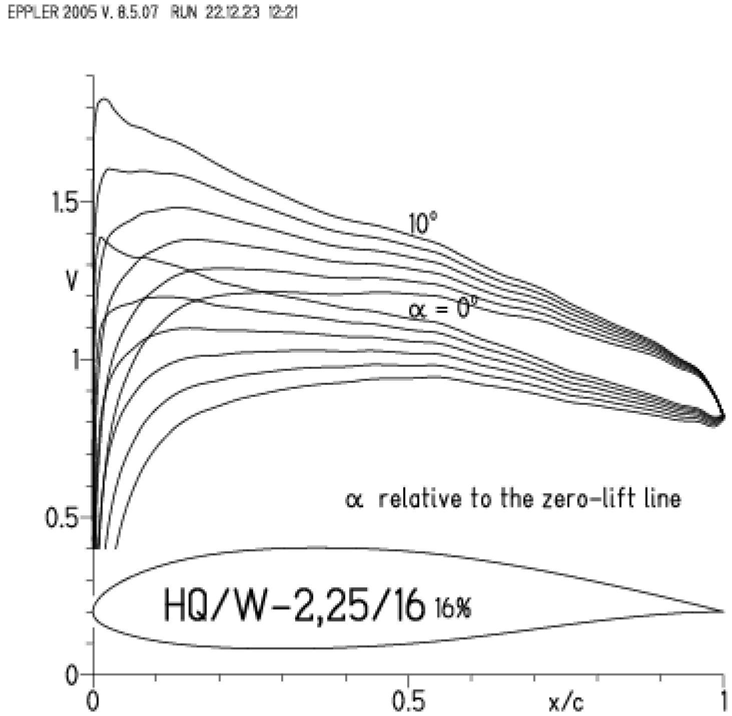
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

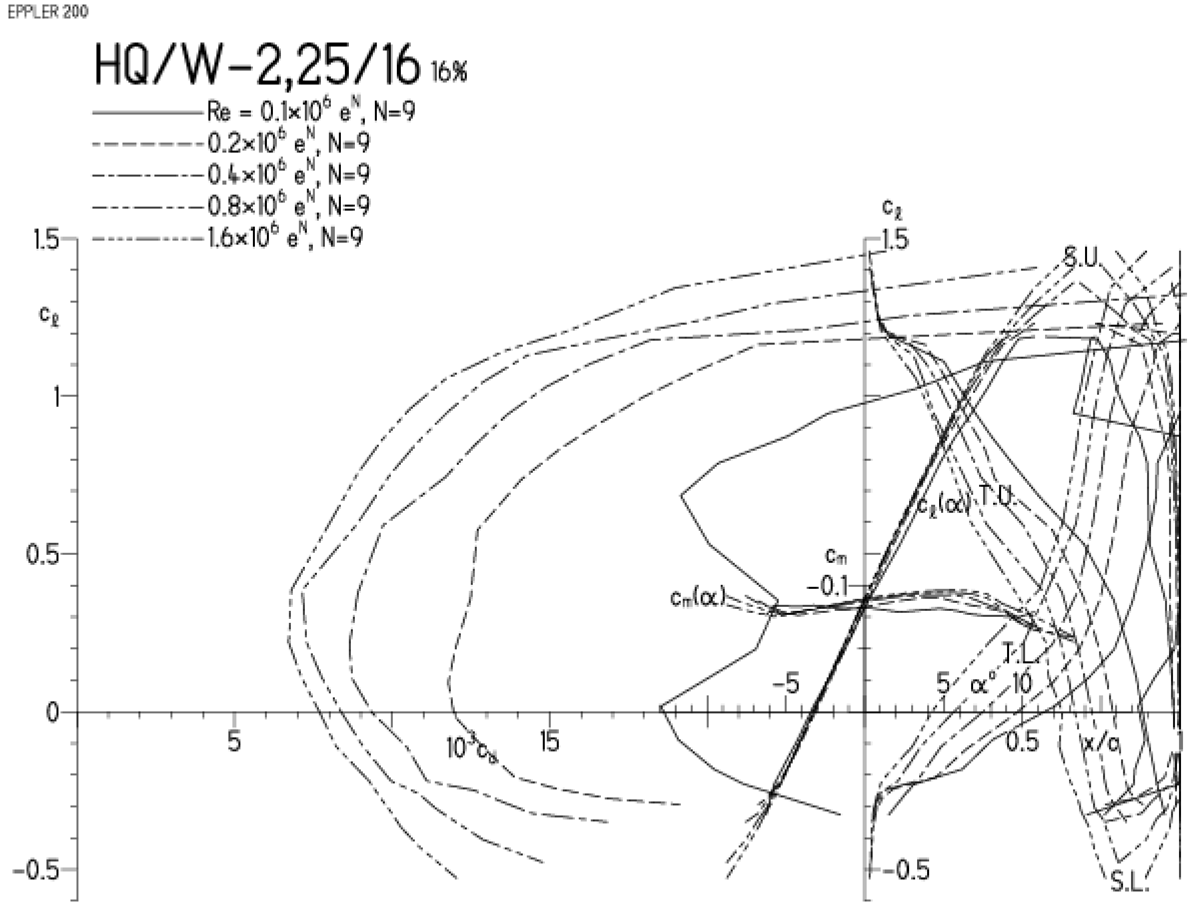


EPPLER 200

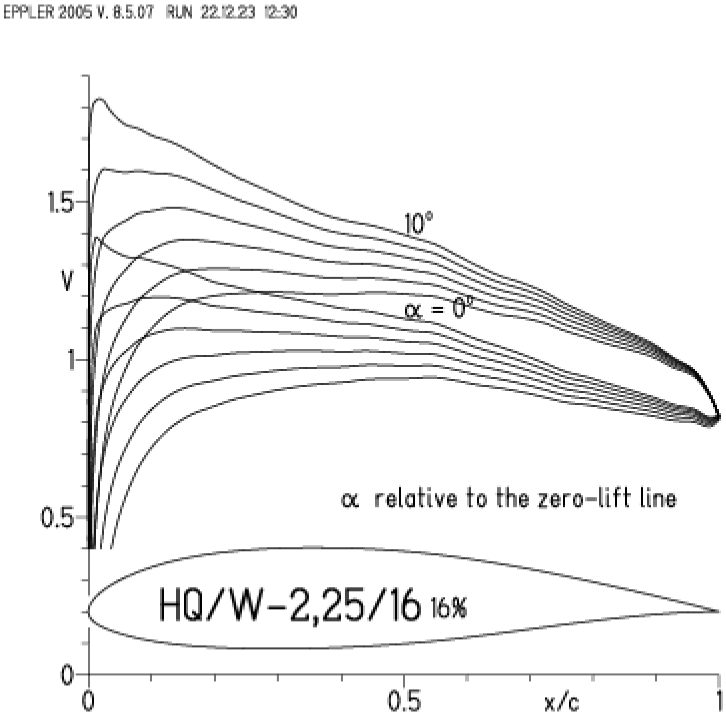


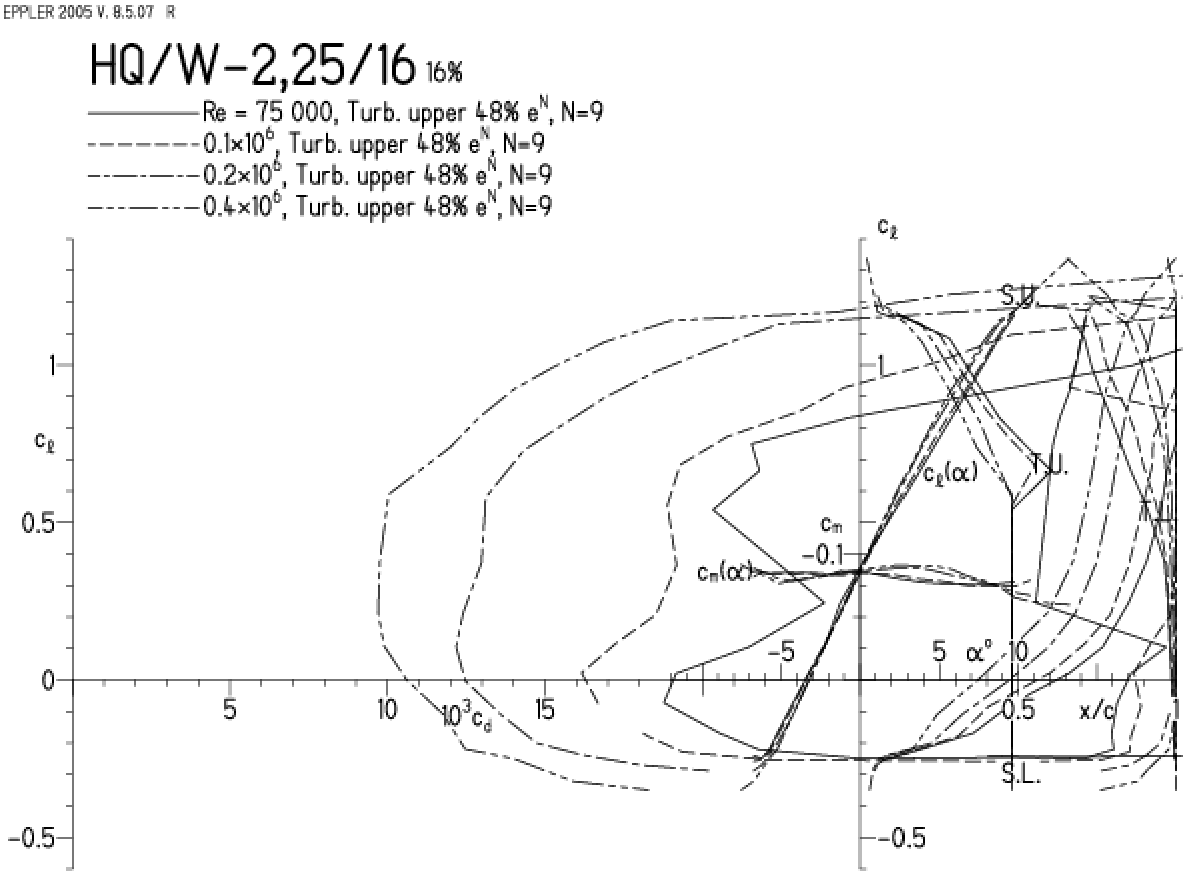
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
1
0.5
0
-0.5
5
15
10^-3 c_d
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
-0.5

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



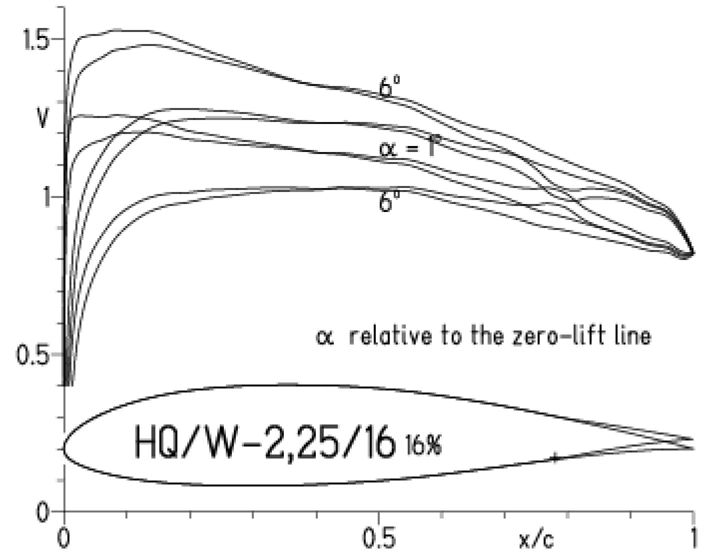


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

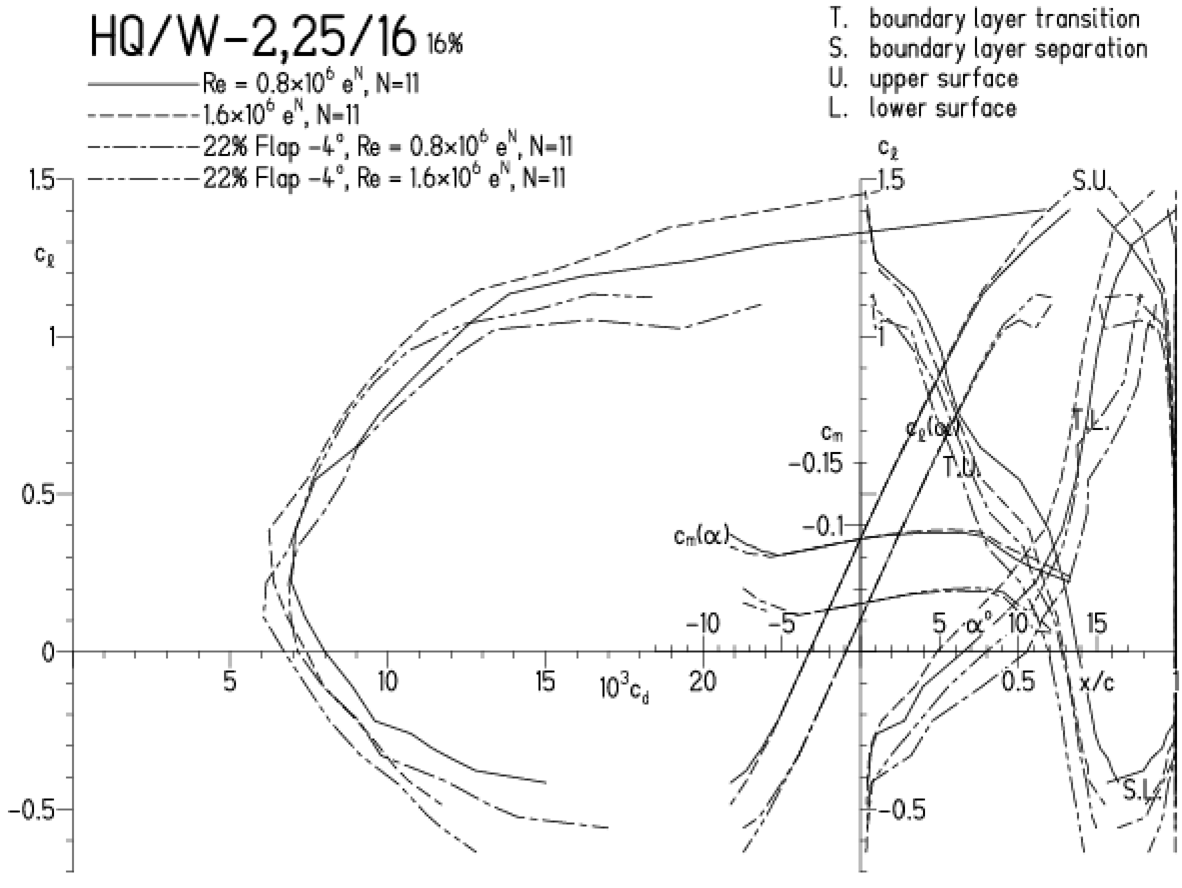
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

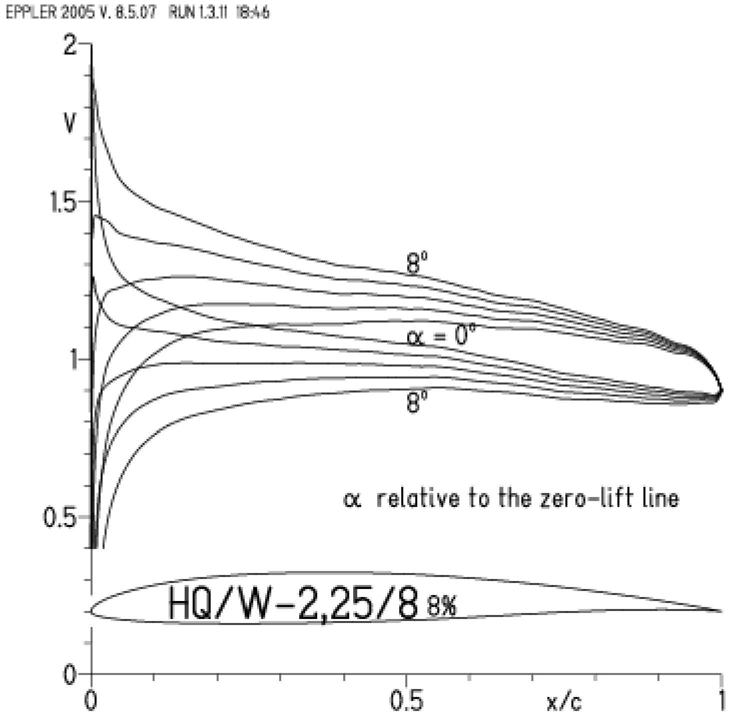
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

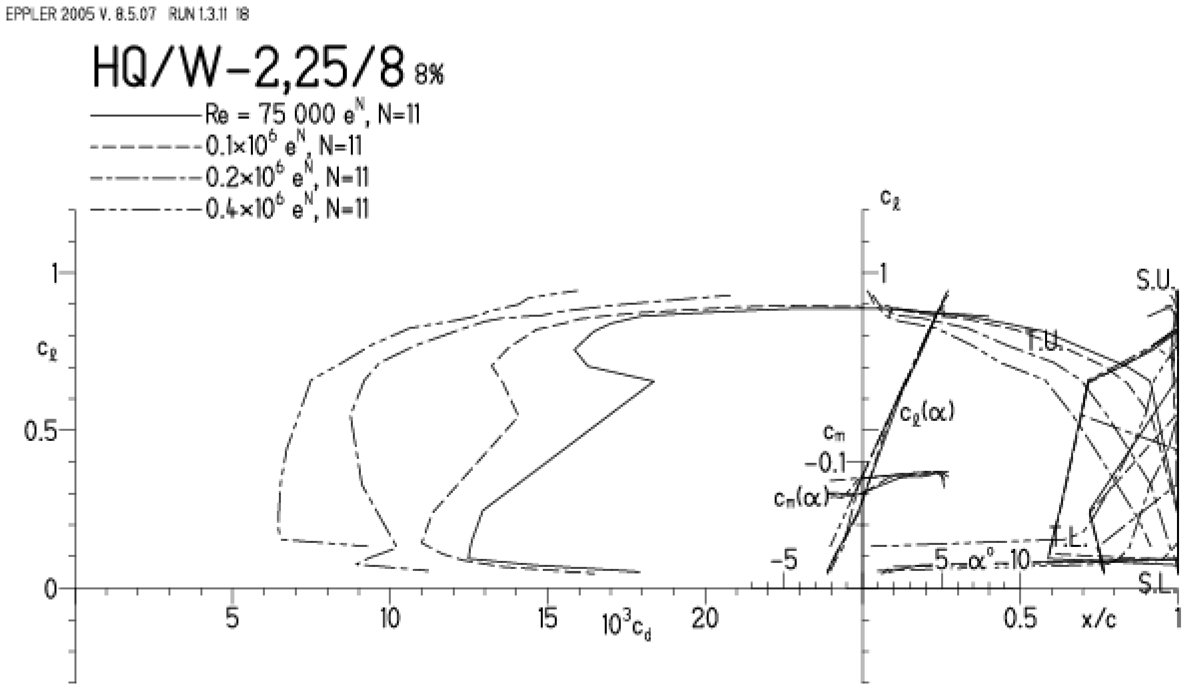


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

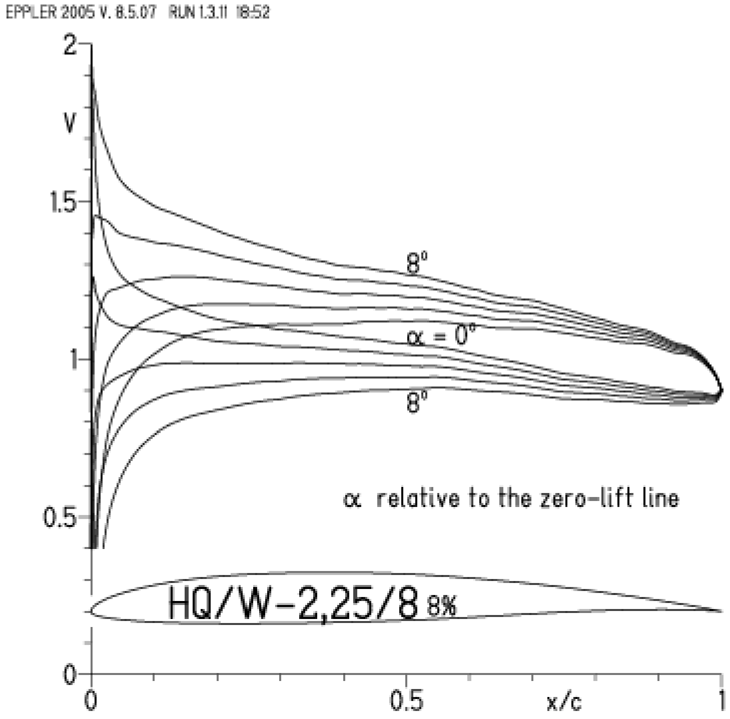


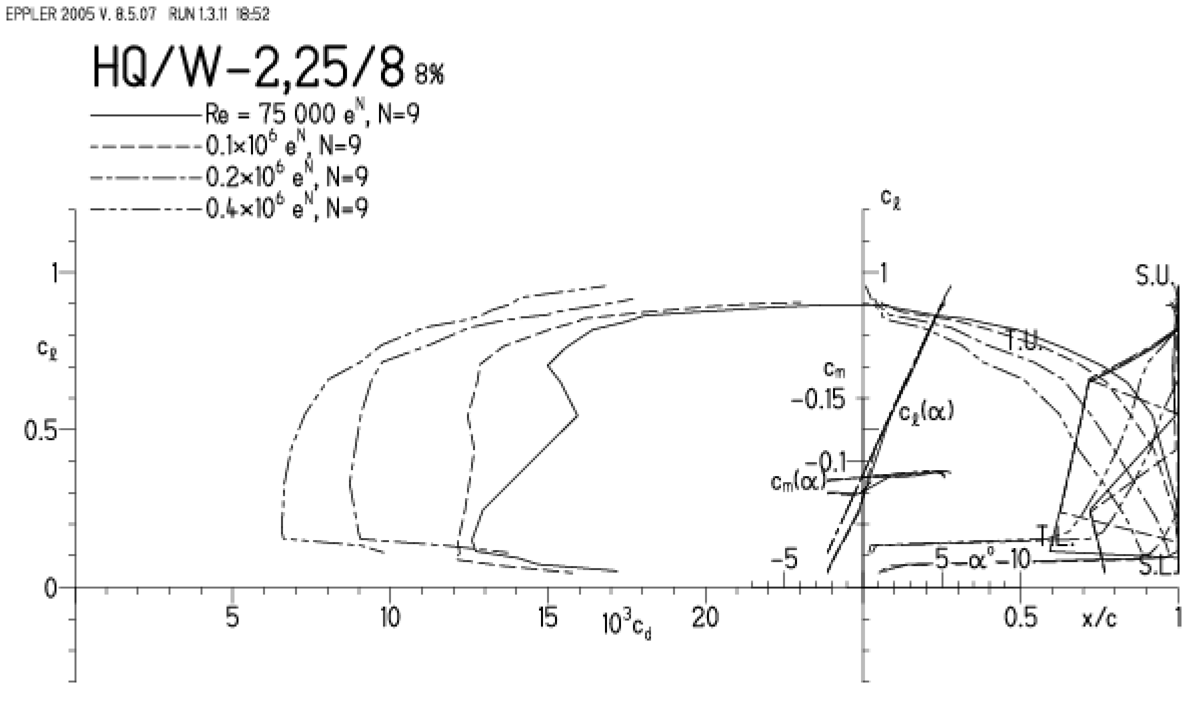
<u>HQ/W-2,25/8</u>, N=11



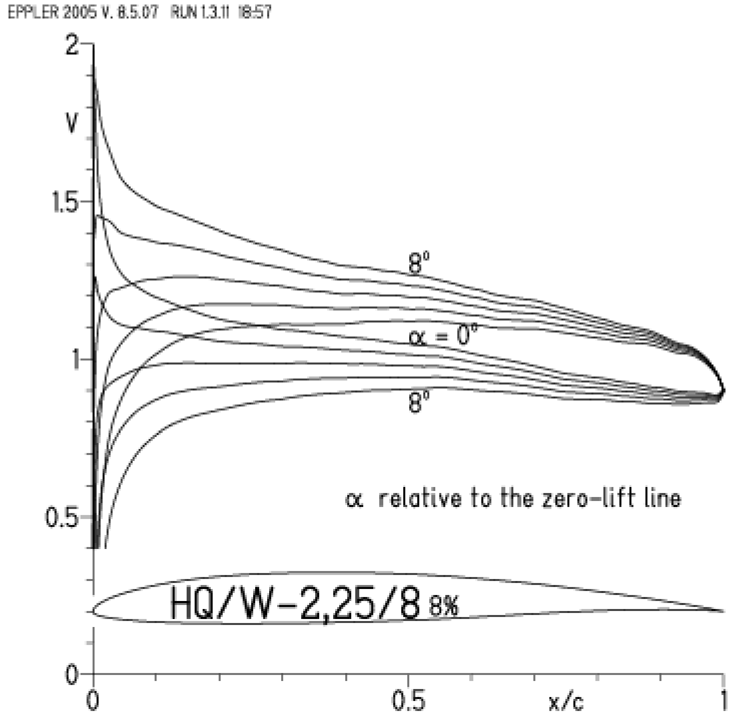


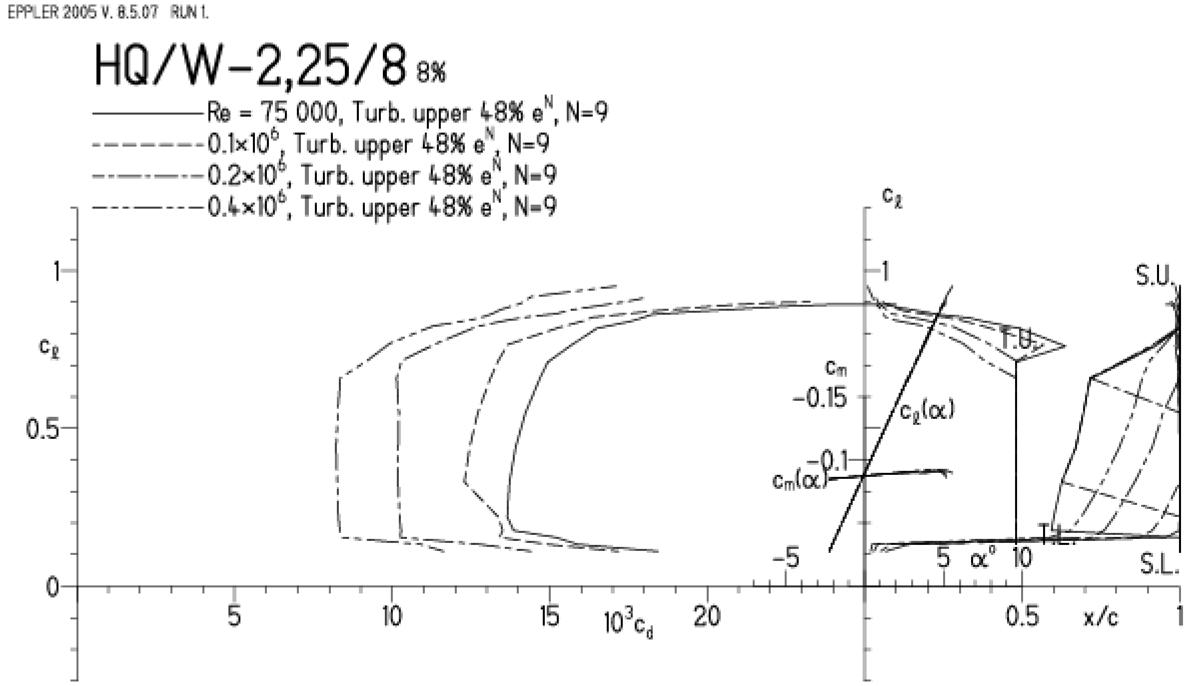
<u>HQ/W-2,25/8</u>, N=9



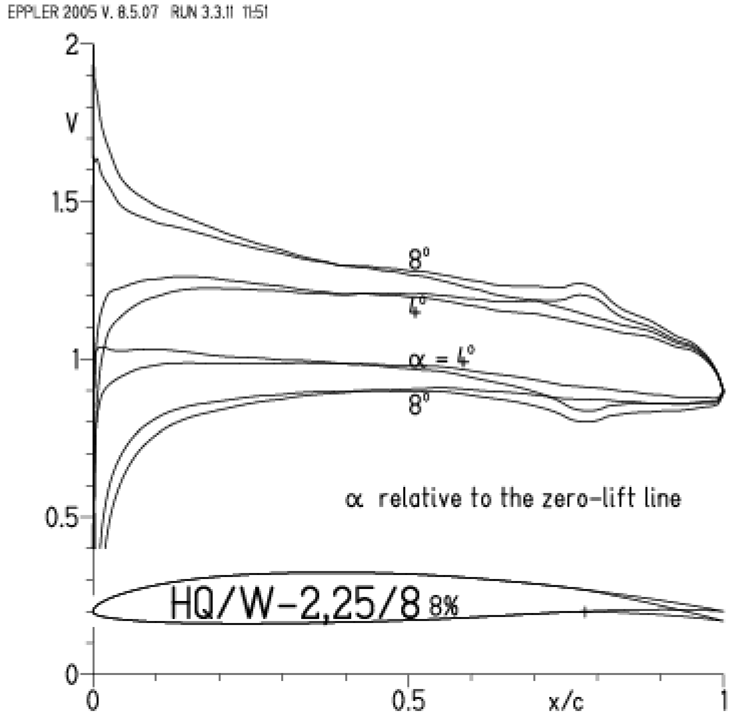


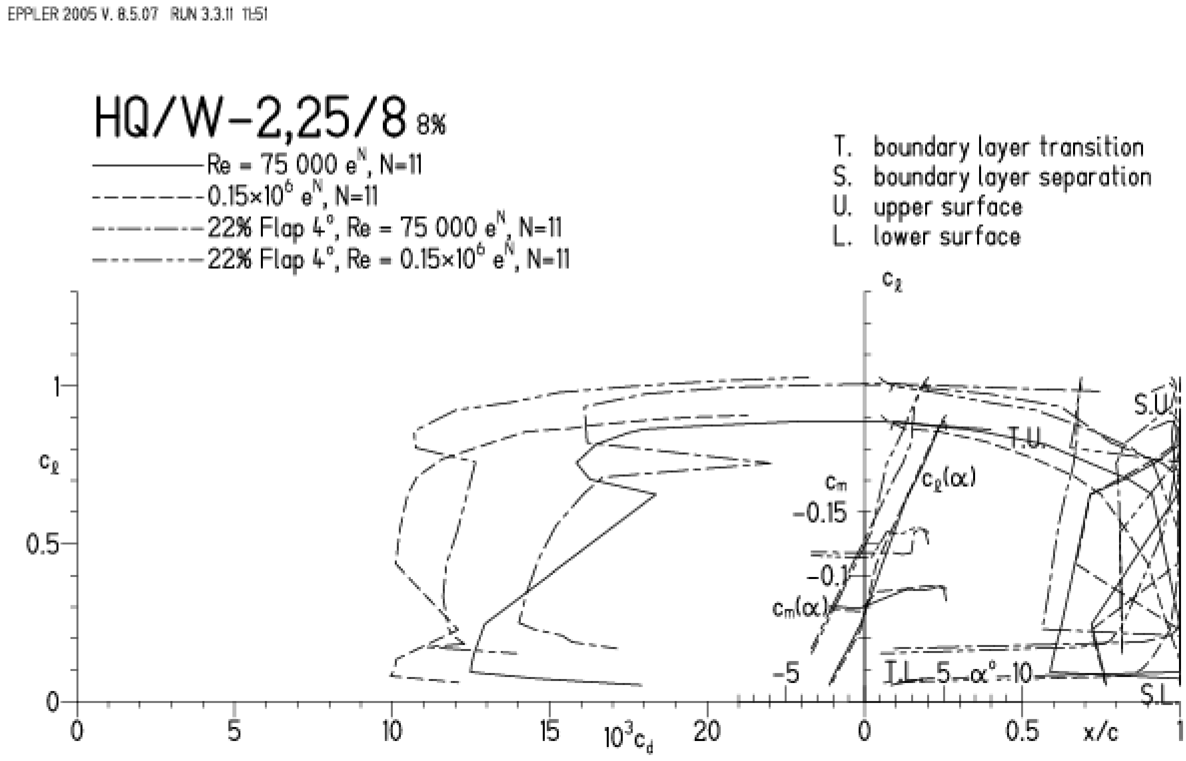
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



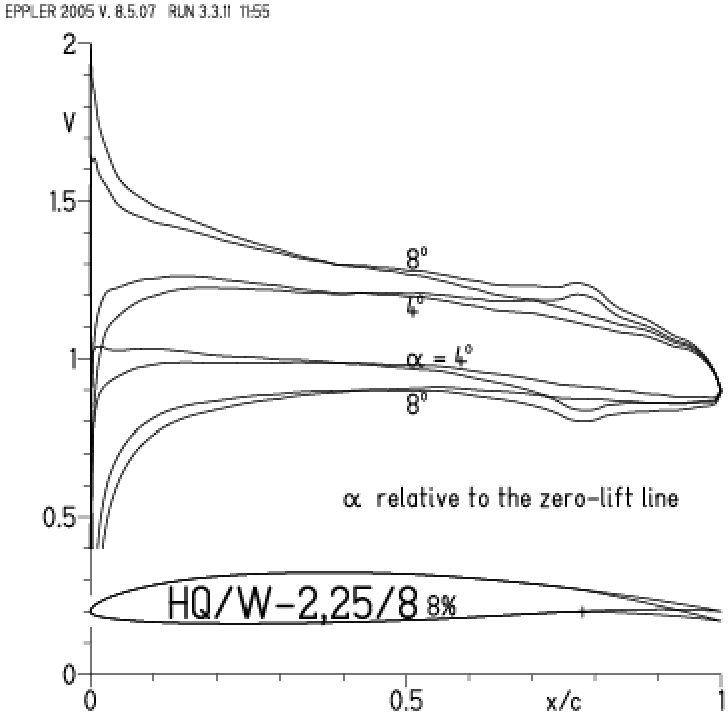


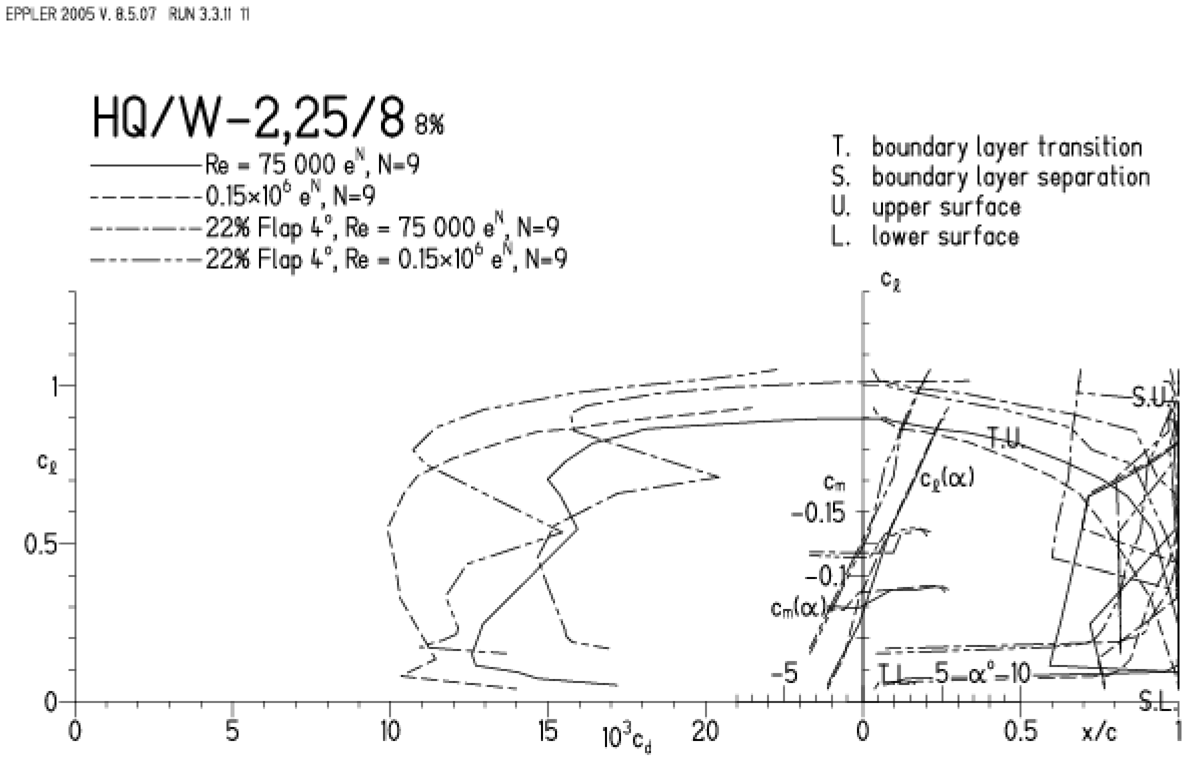
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



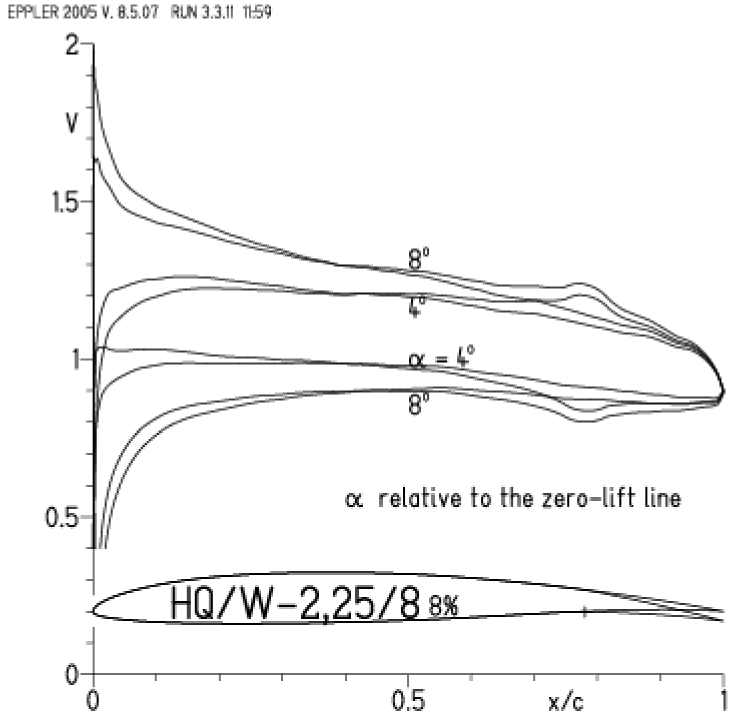


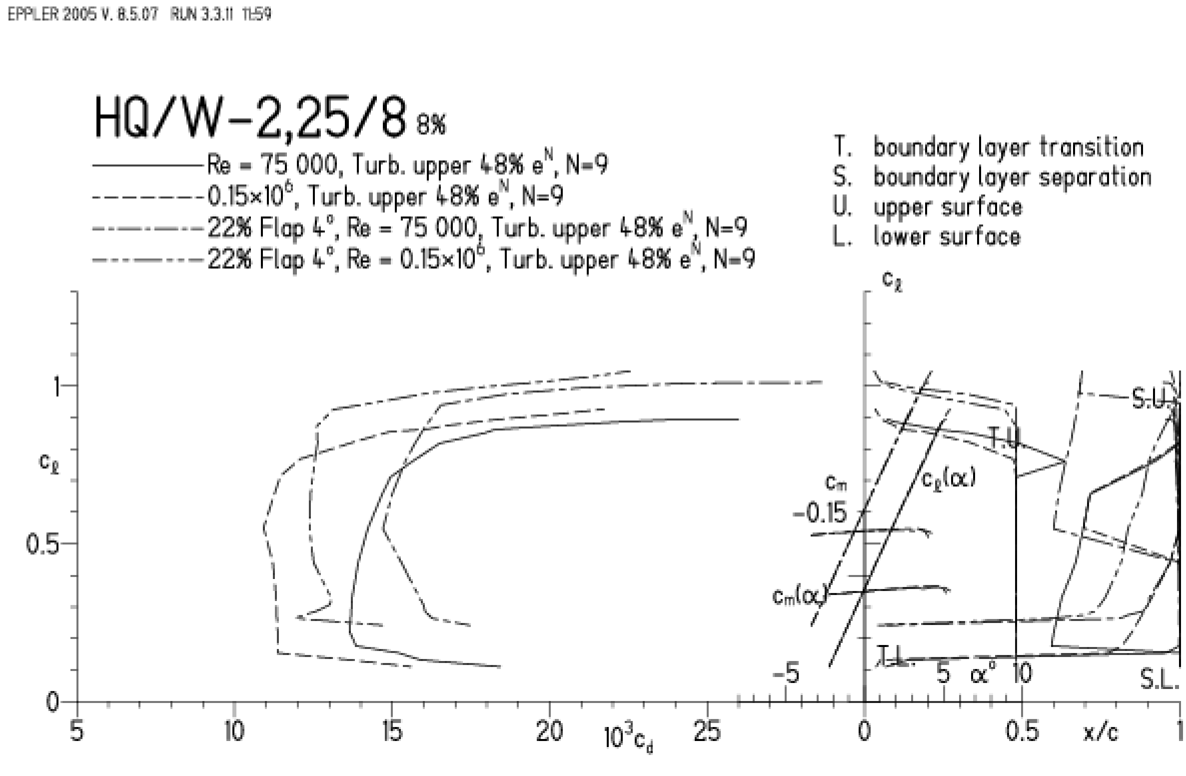
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





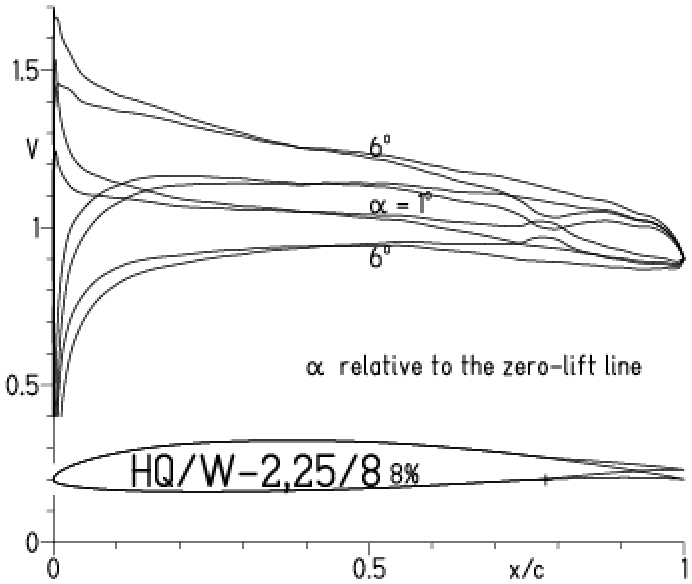
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



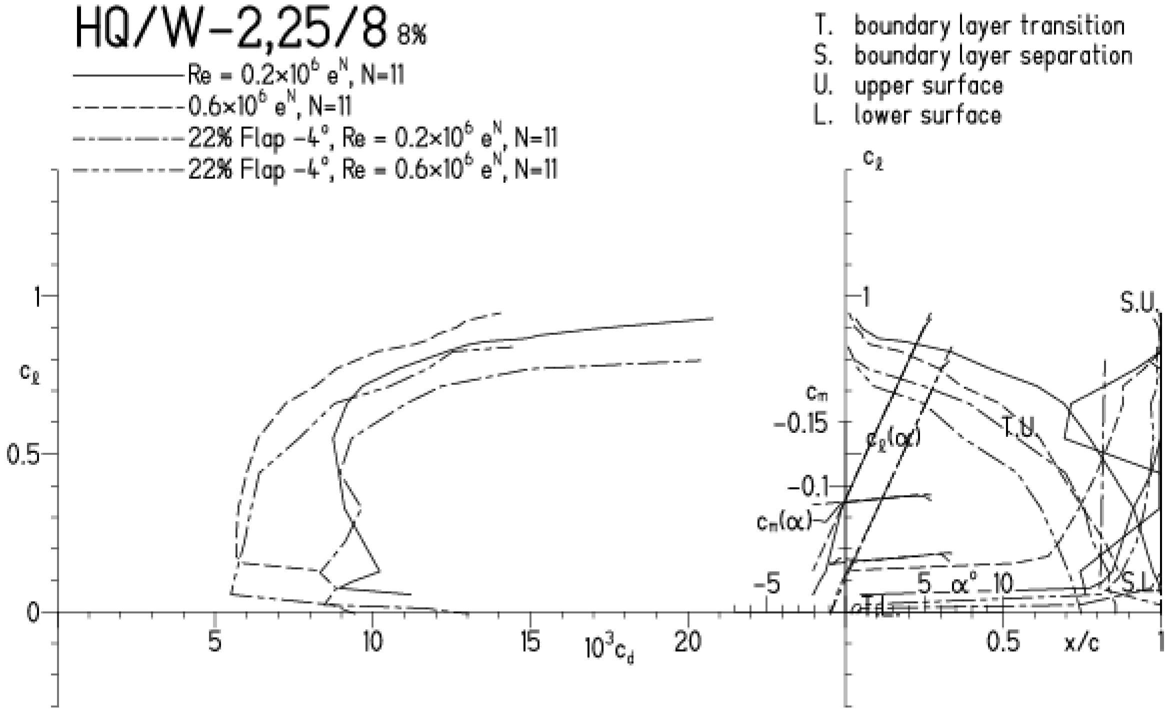


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

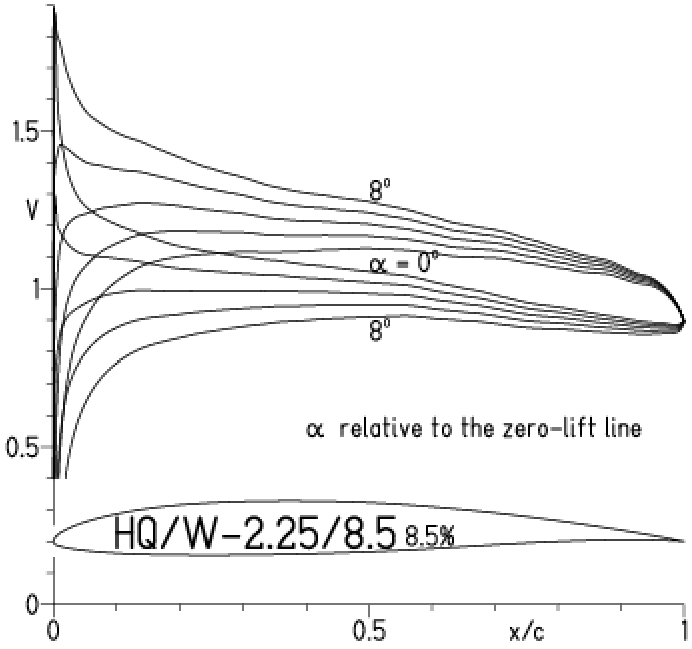


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

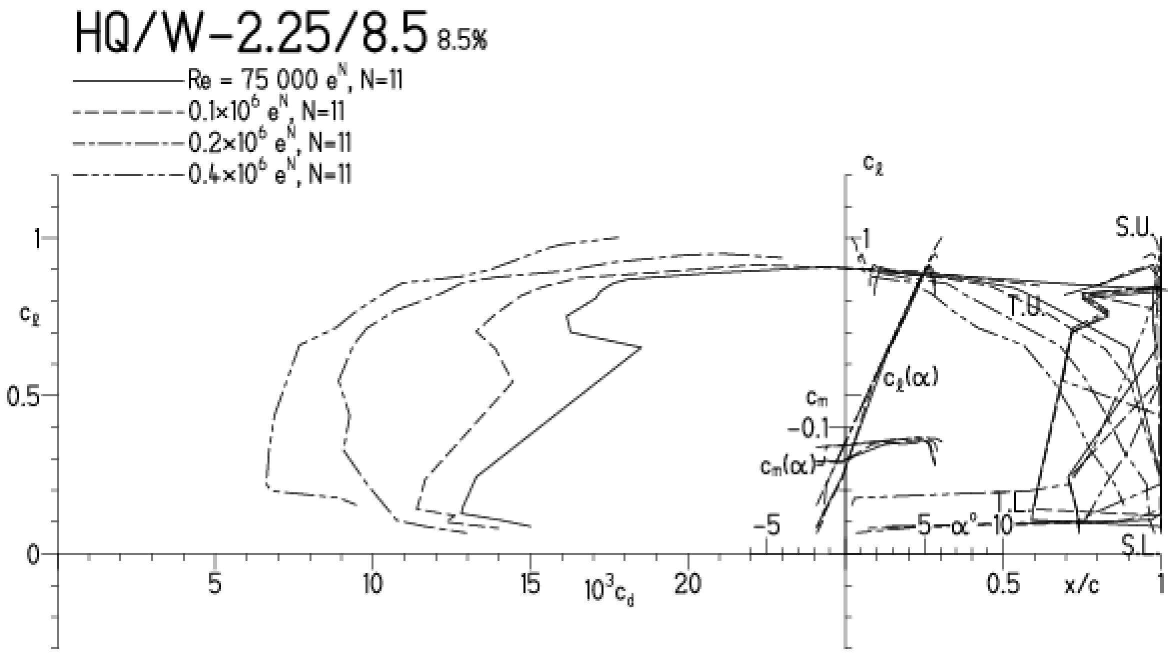


<u>HQ/W-2,25/8,5</u>, N=11

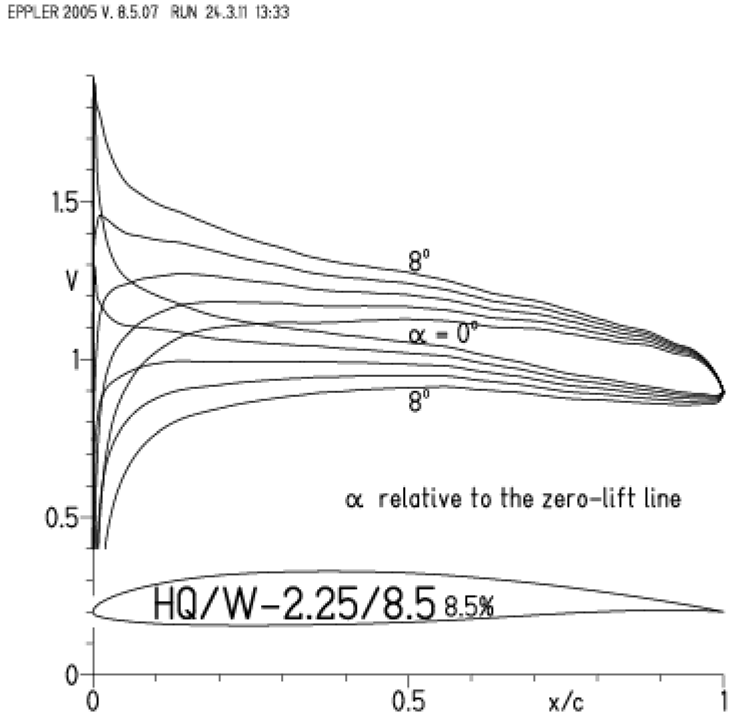
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

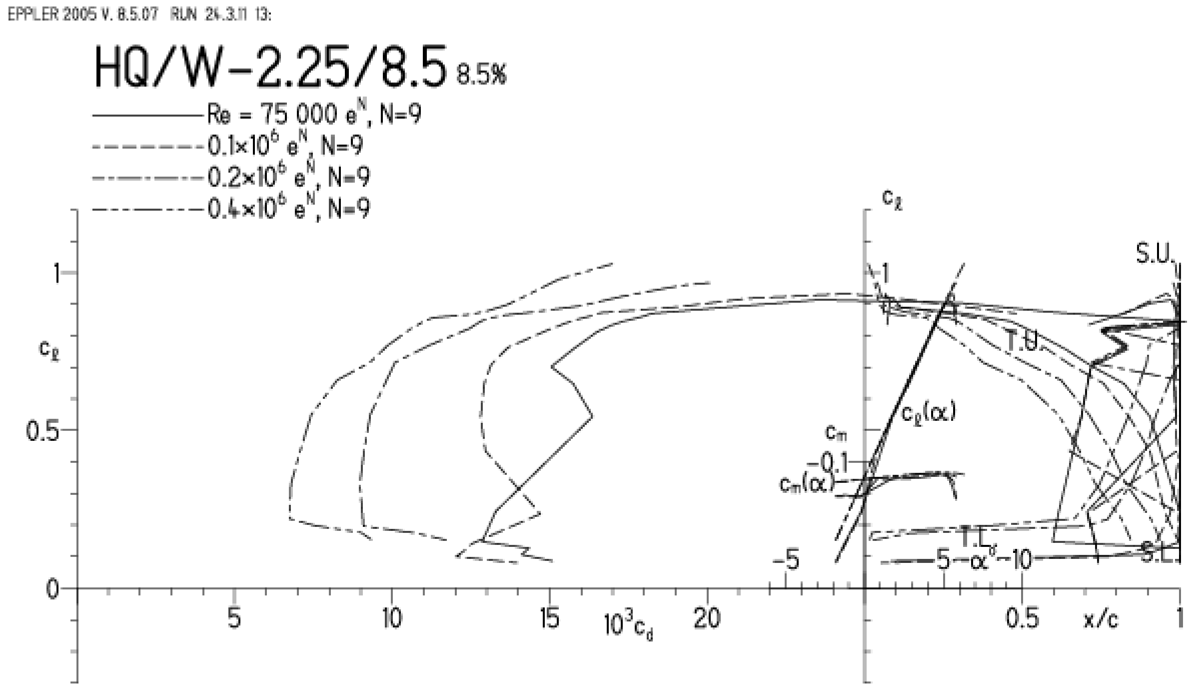


EPPLER 2005 V

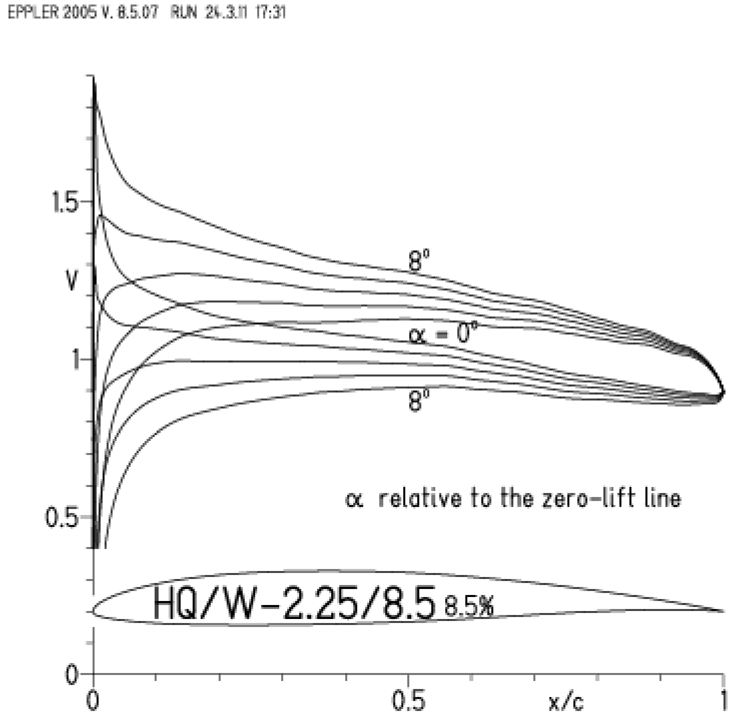


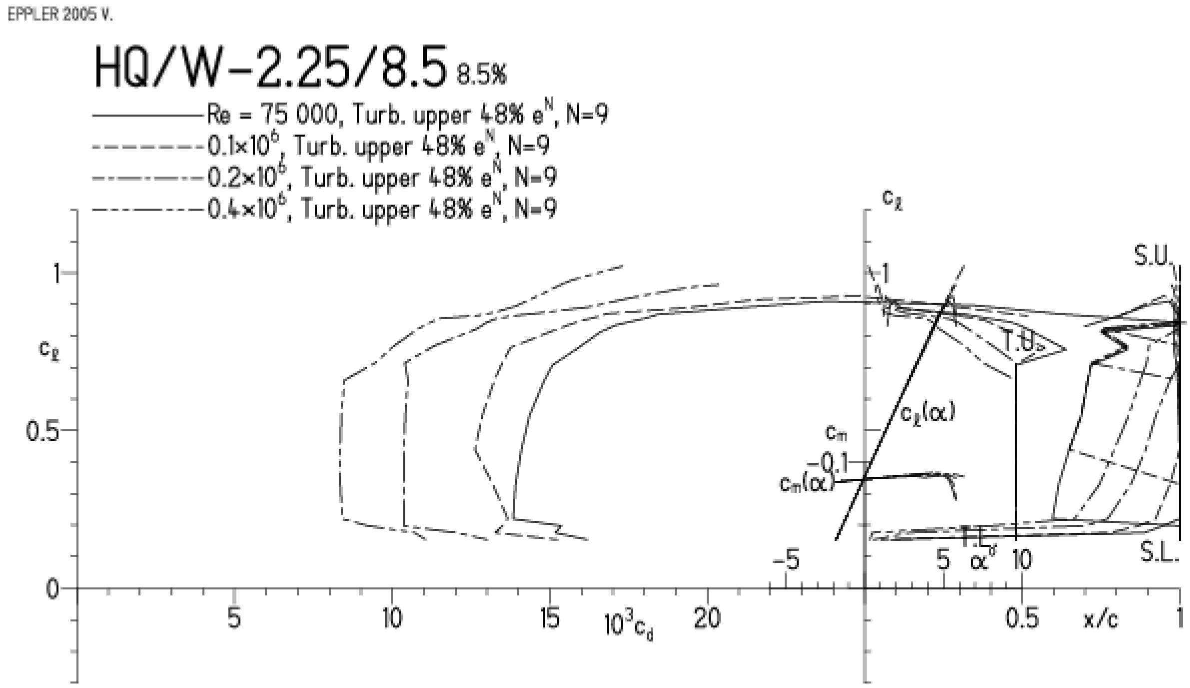
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
−0.1
c_m(α)
−5
T.U.
T.L.
S.U.
S.L.
5 α° 10
0.5
x/c
1

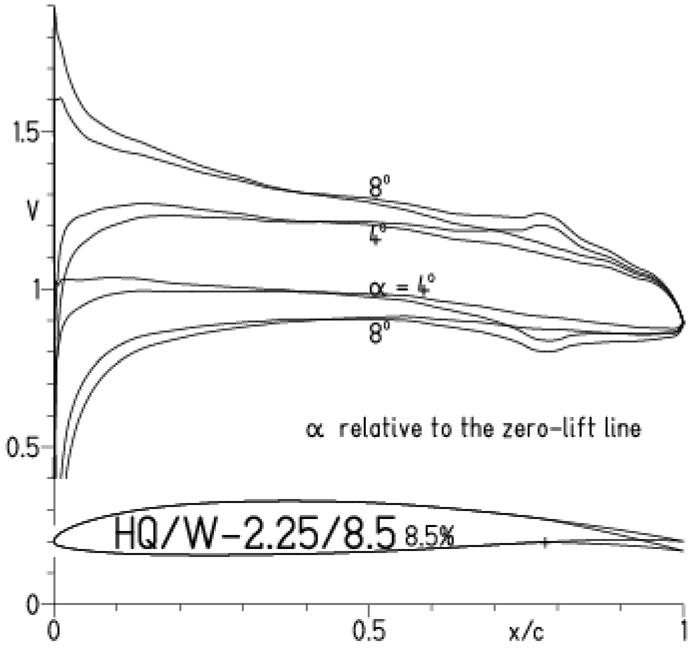
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



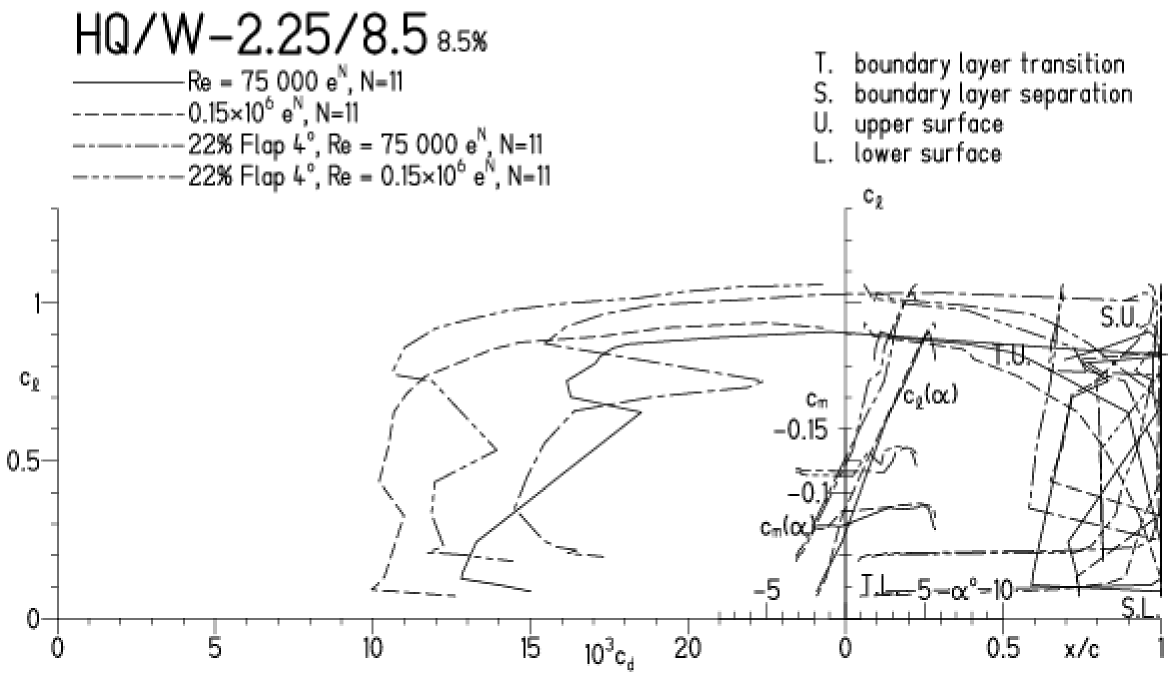


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

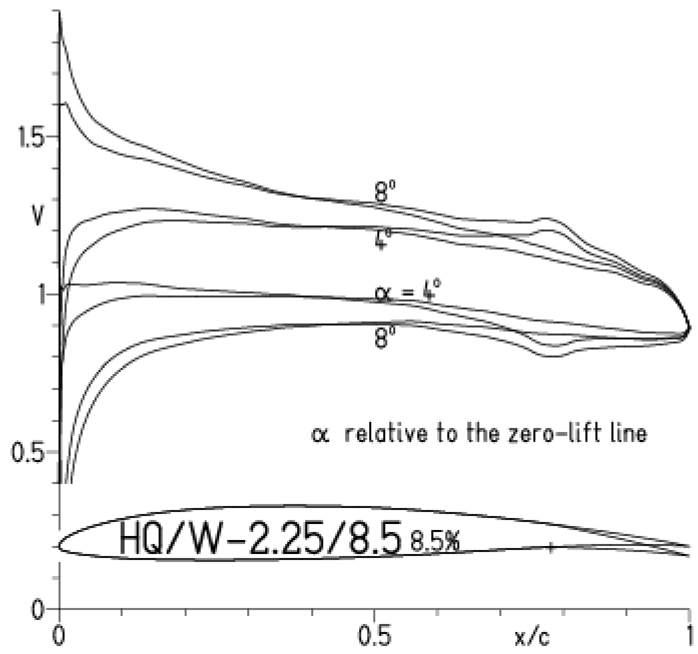


EPPLER 2005 V. 8.5.

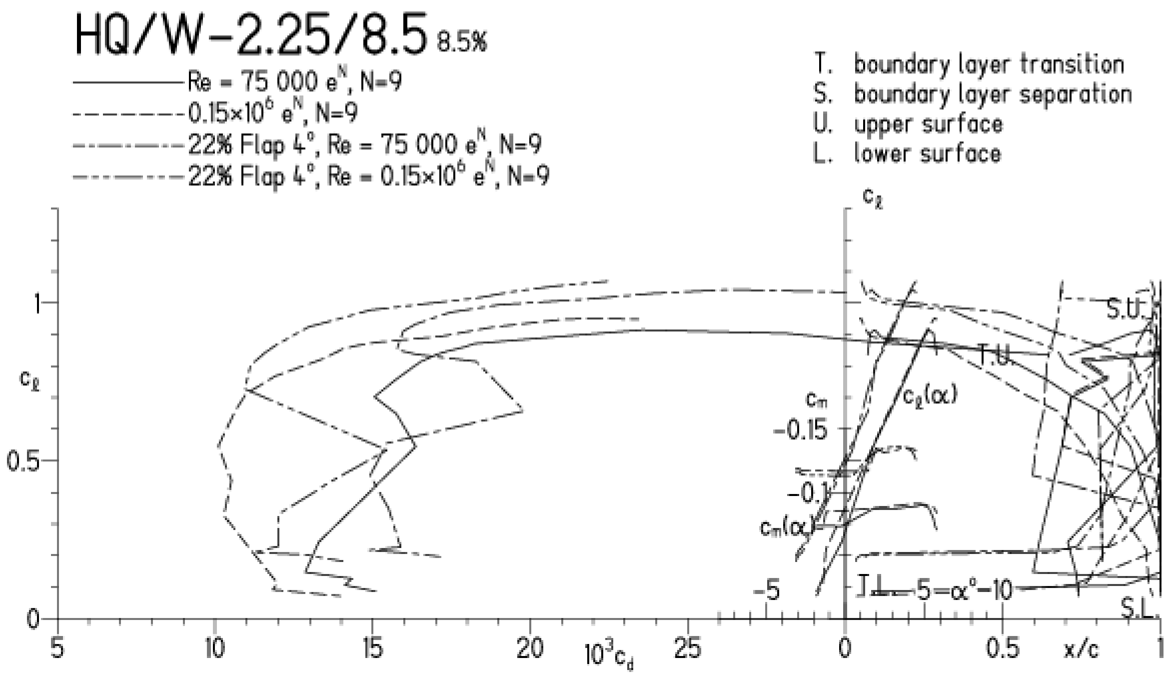


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

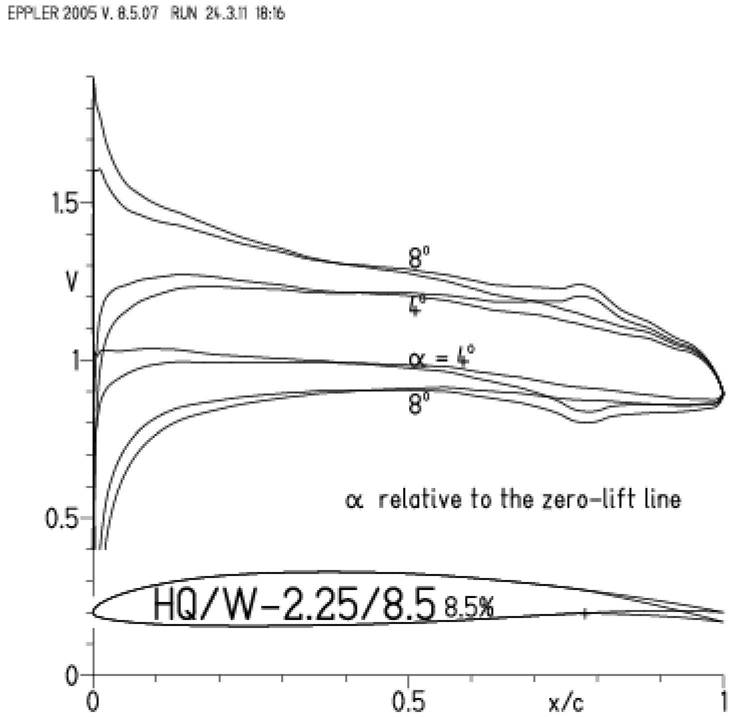
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

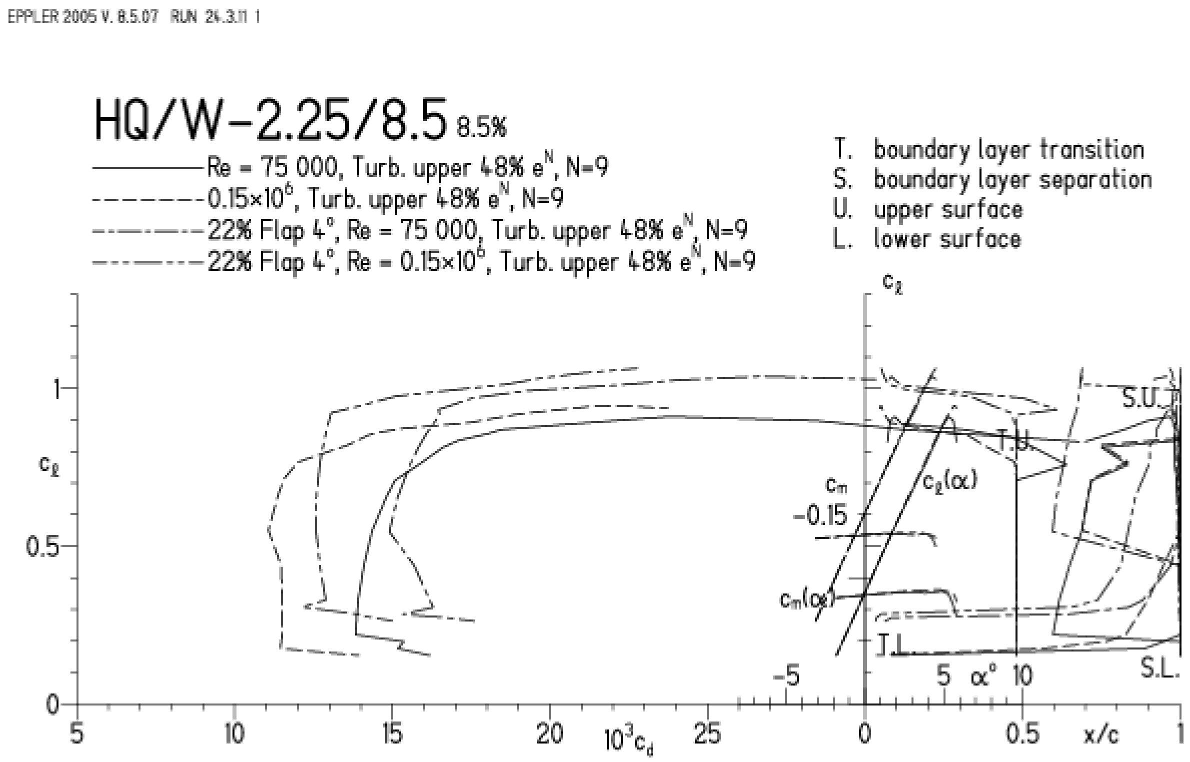


EPPLER 2005 V.



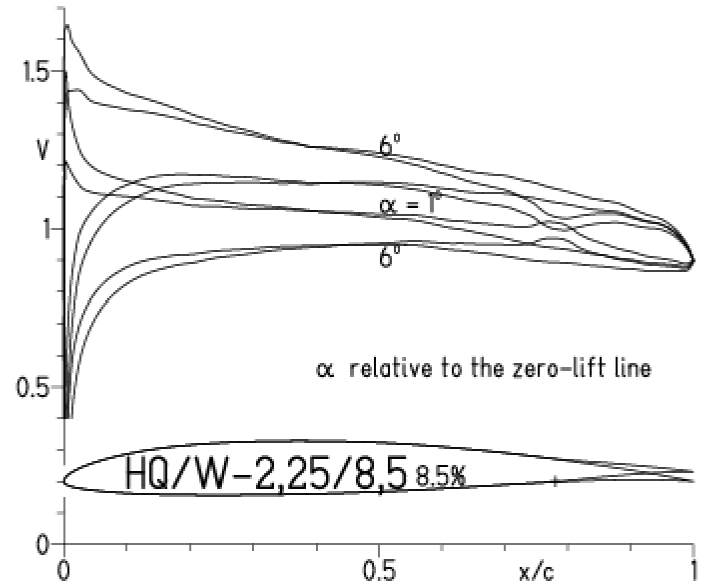
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



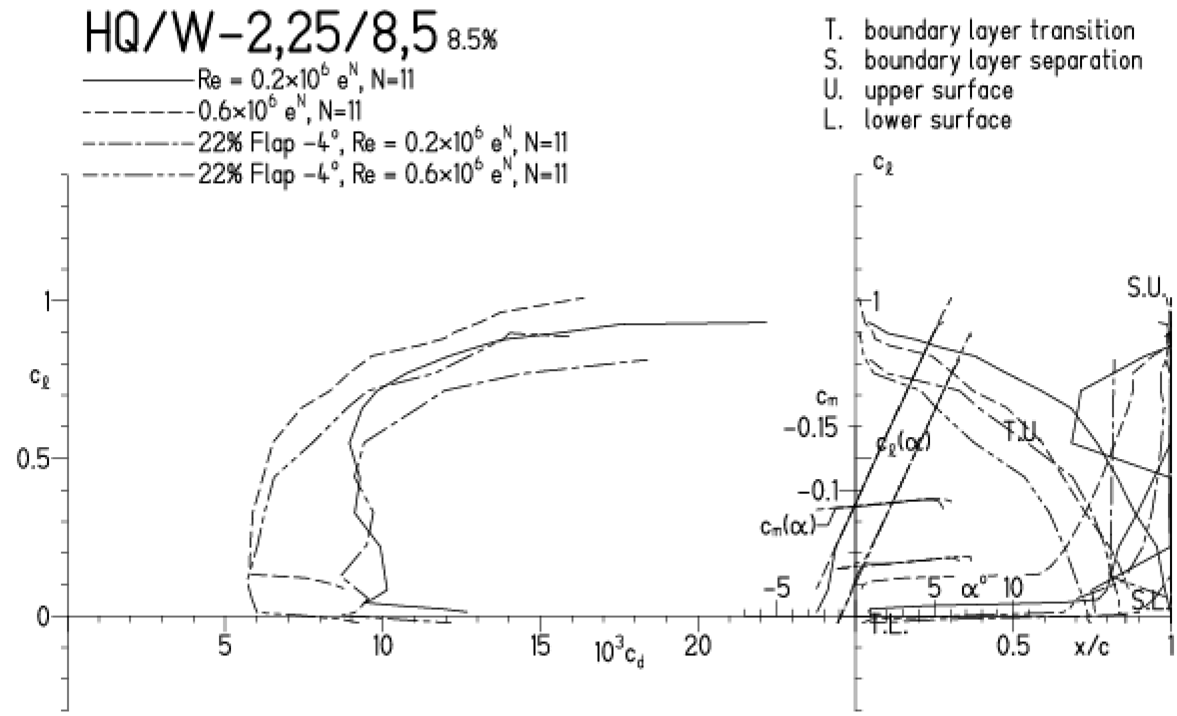


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

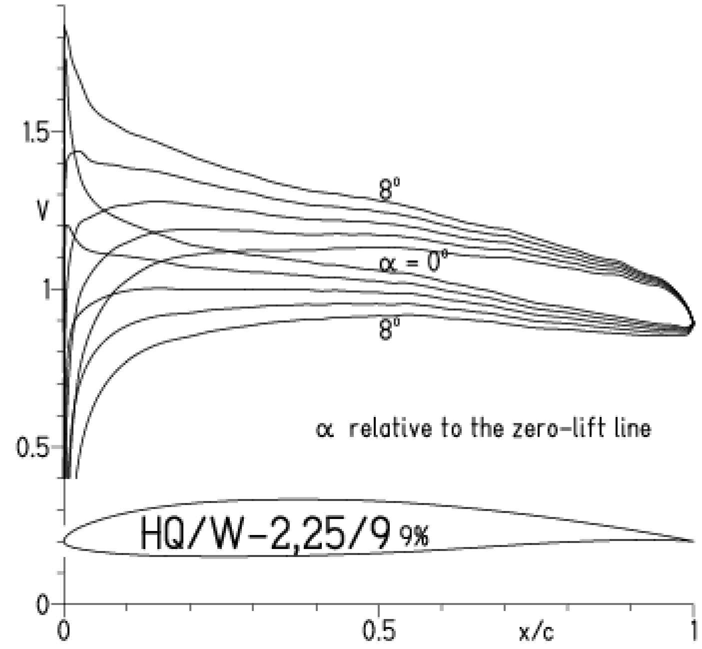


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

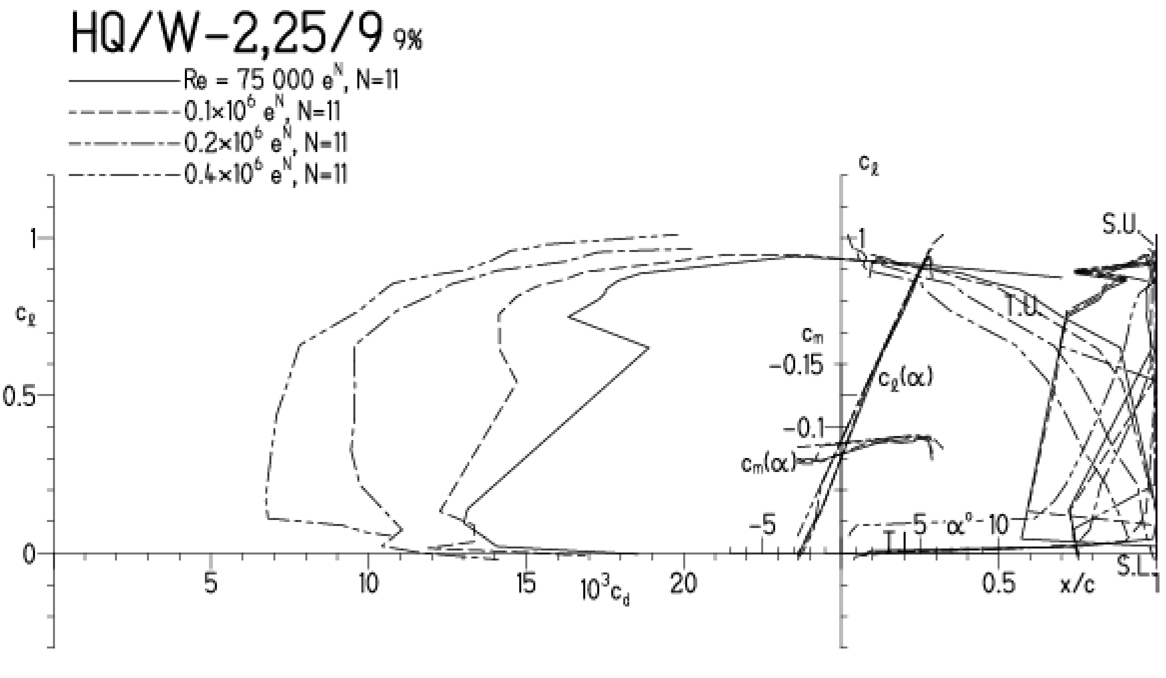


HQ/W-2,25/9, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

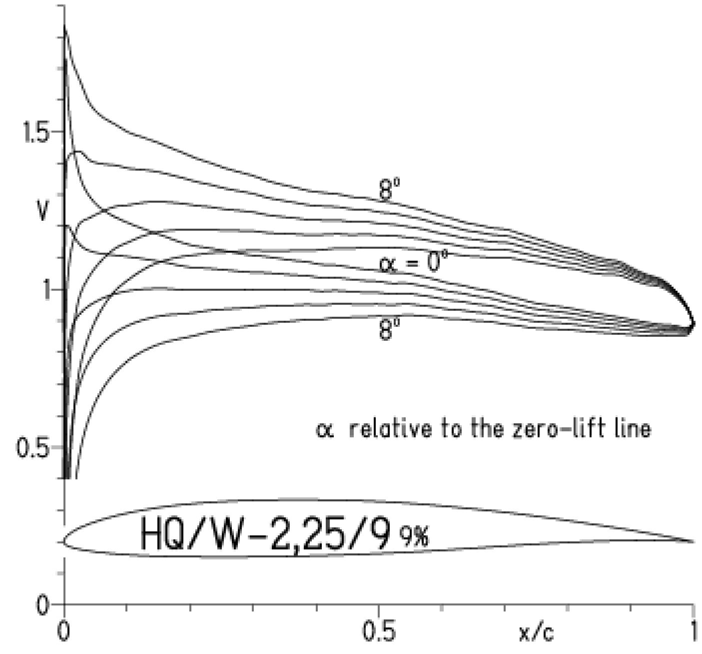


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

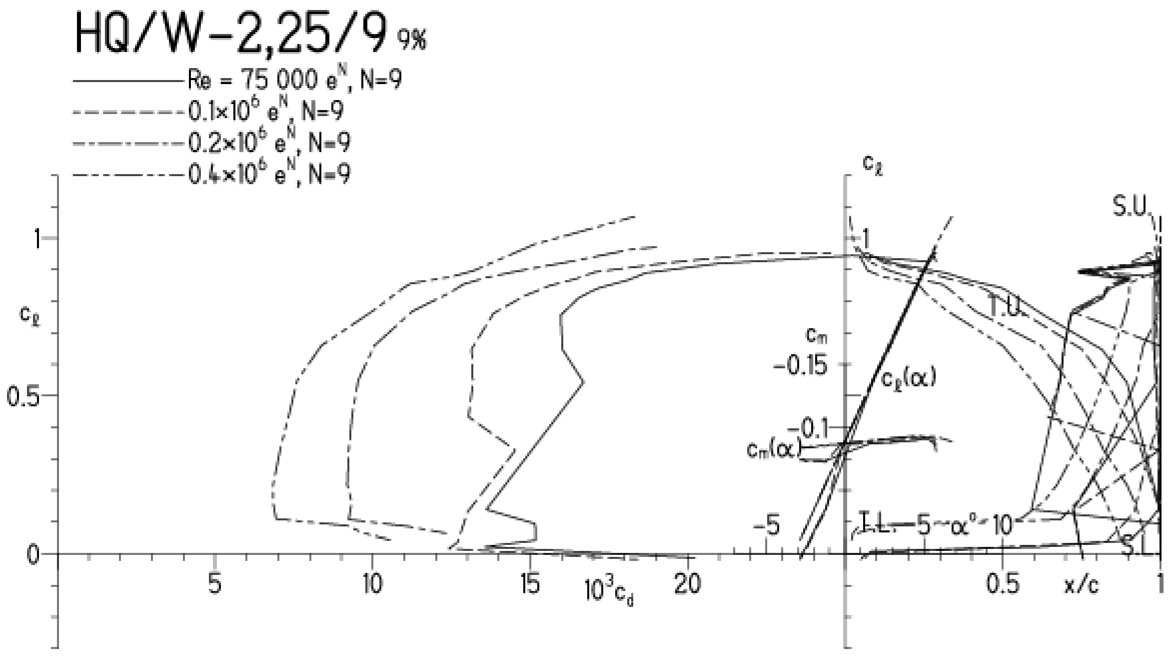


HQ/W-2,25/9, N=9

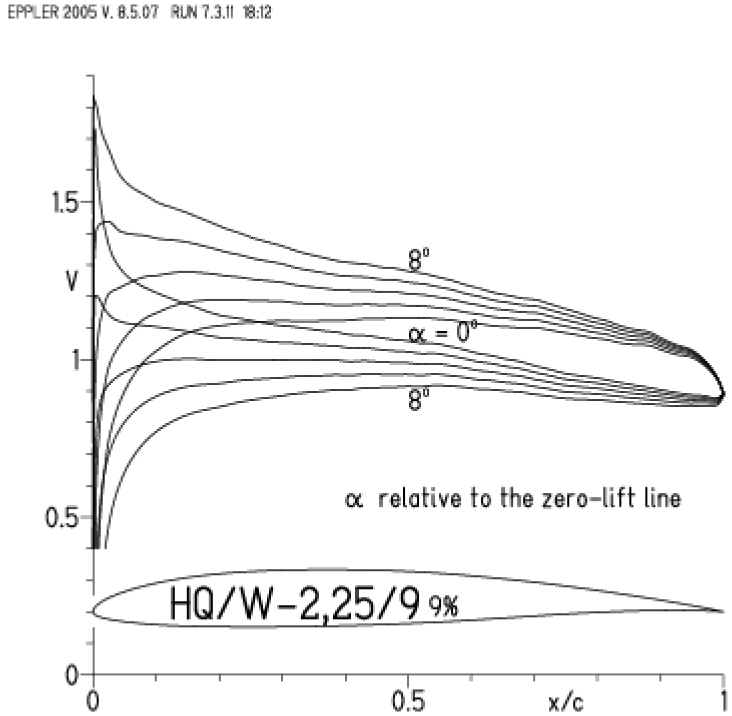
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

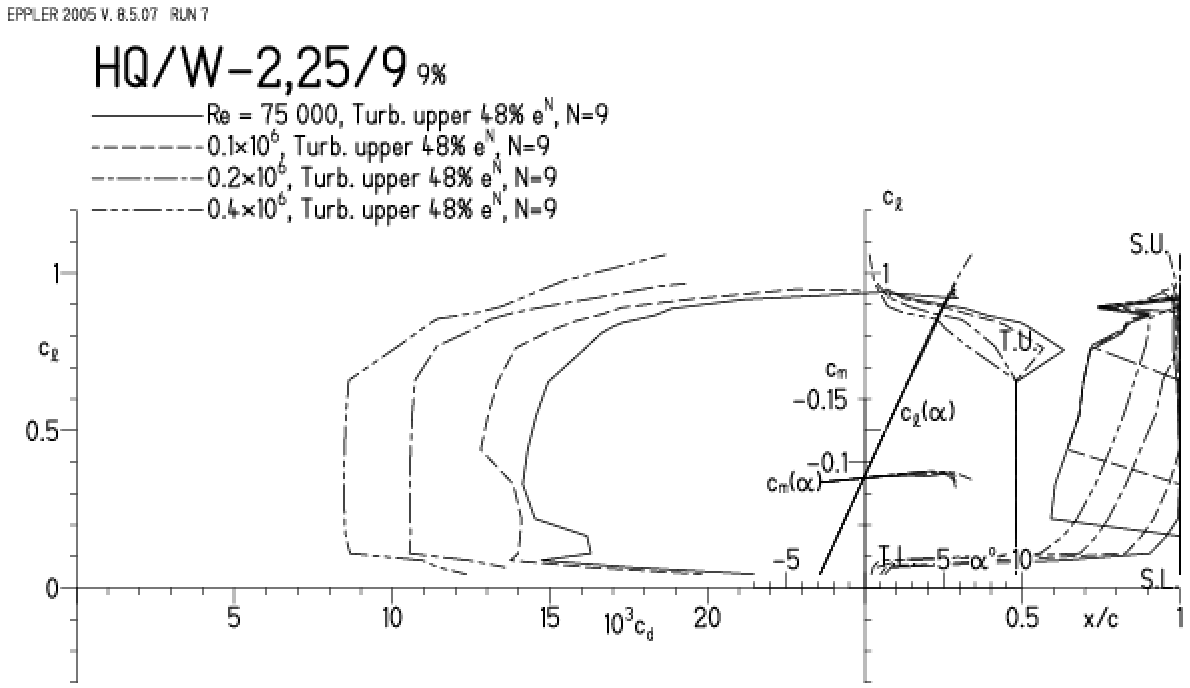


EPPLER 2005 V. 8.



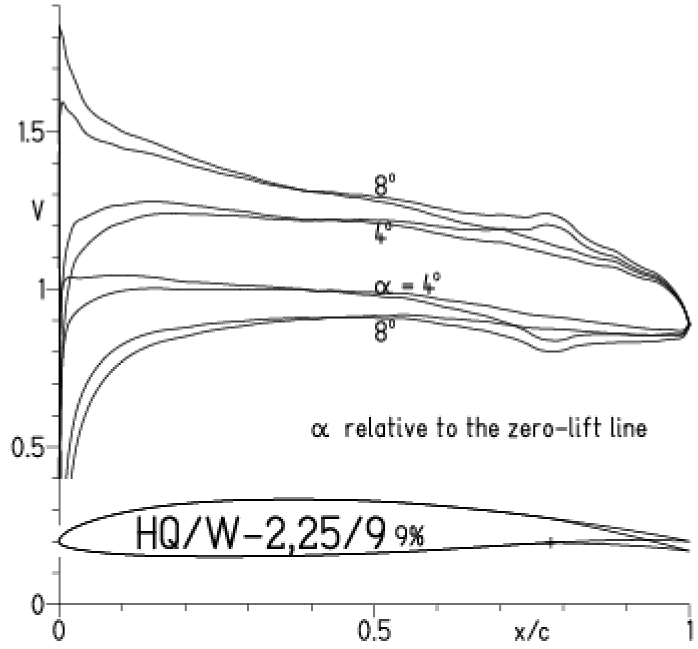
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



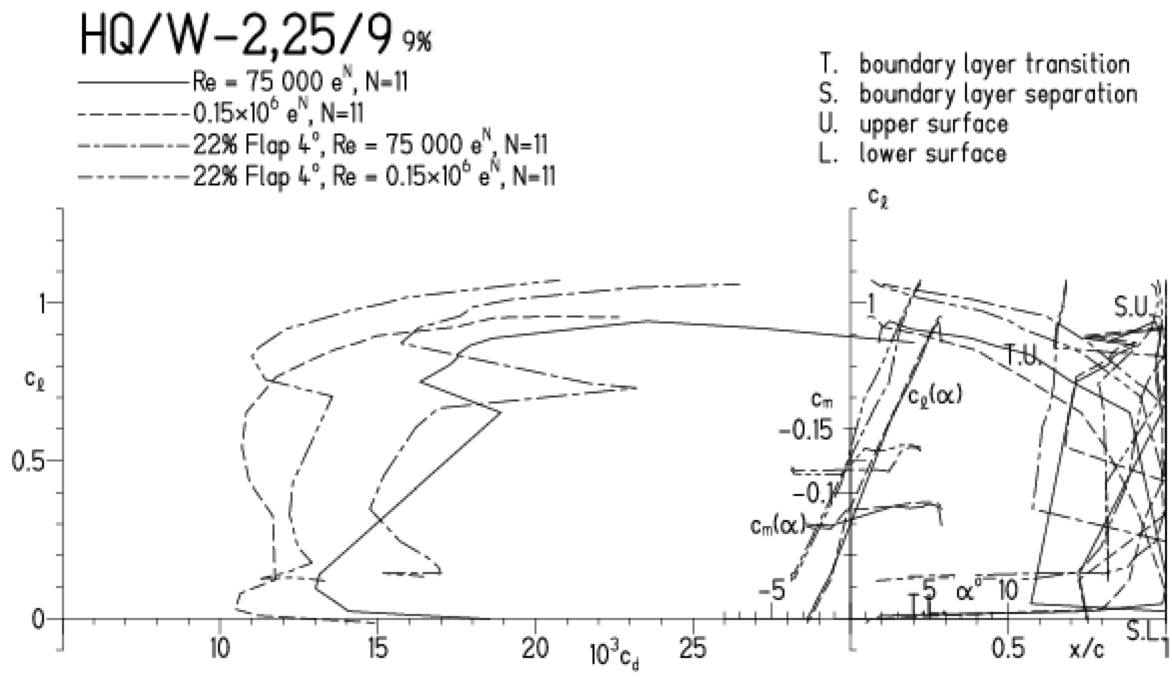


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

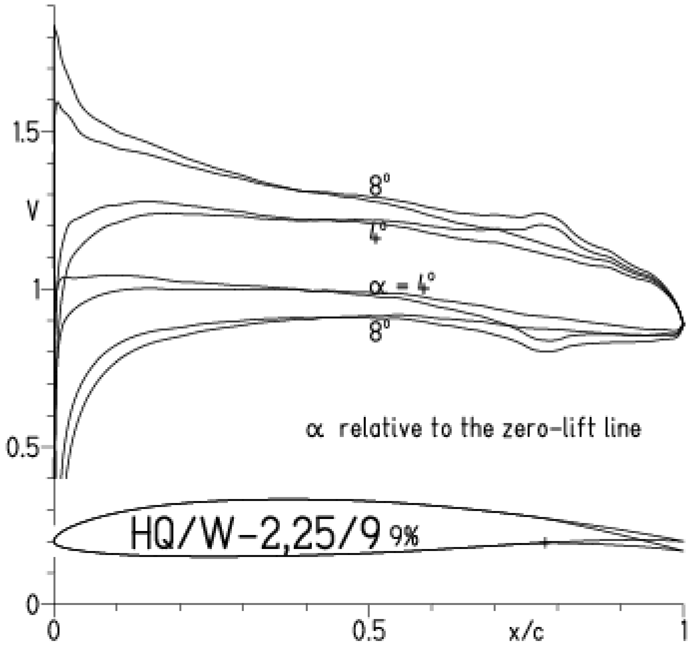


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

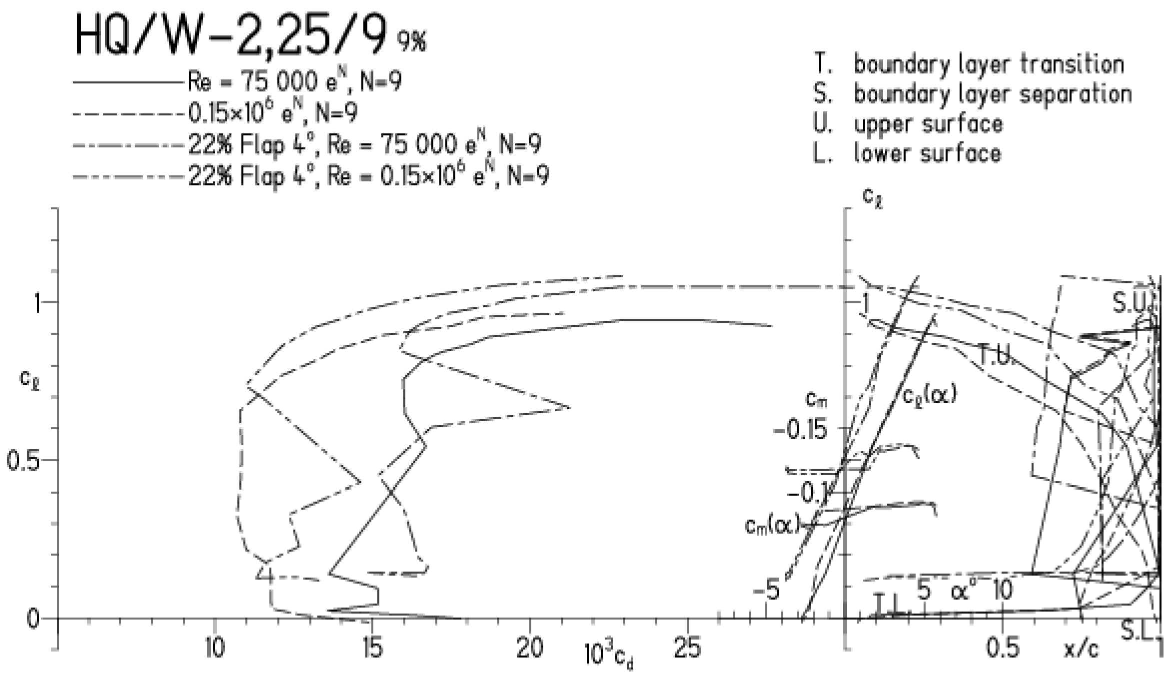


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

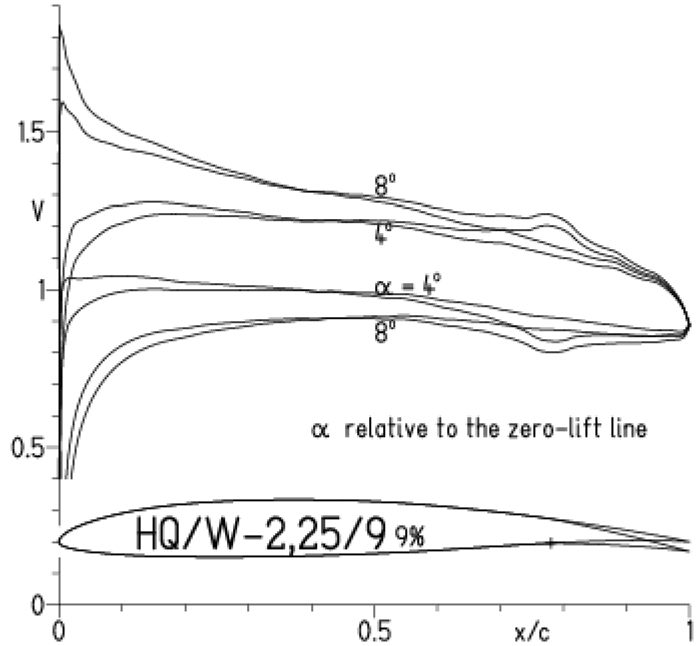


EPPLER 2005 V. 8.5.07 RUN 8.3.1

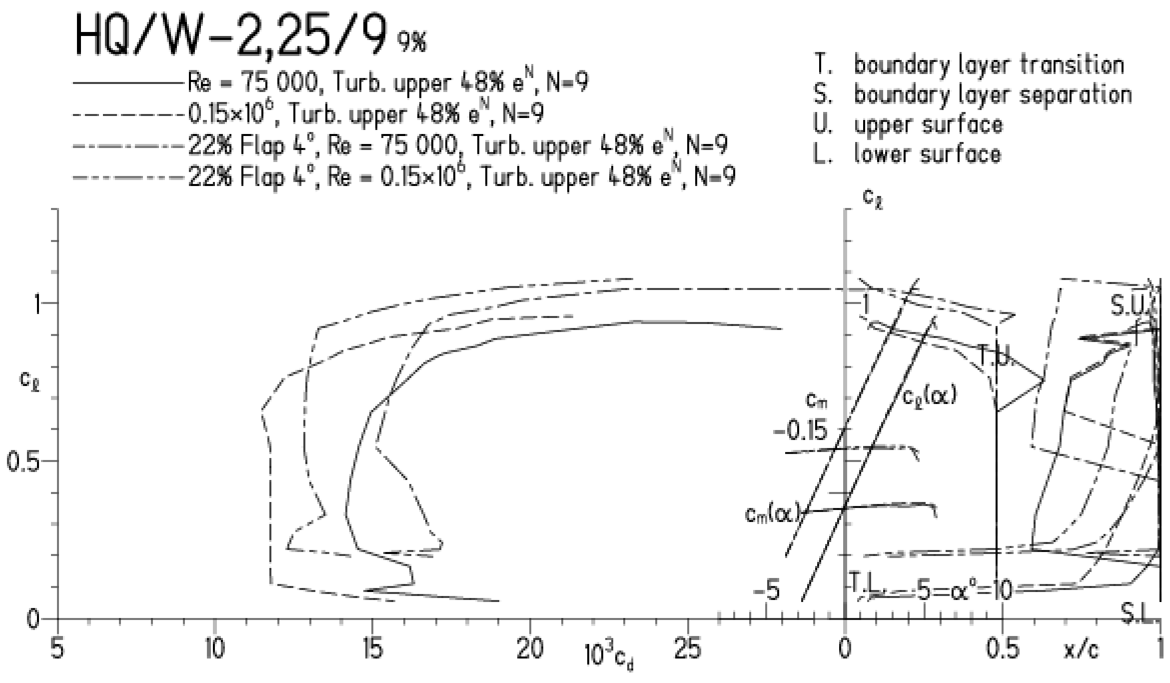


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

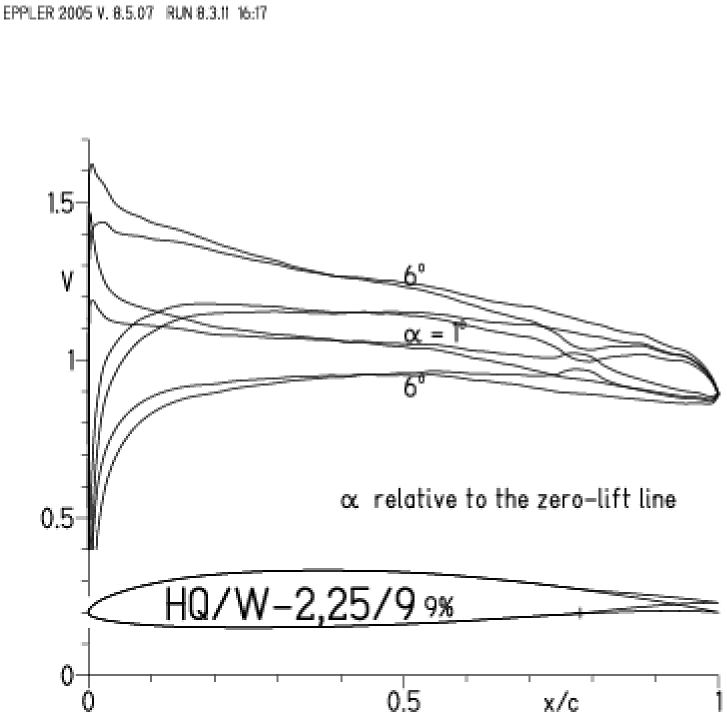
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

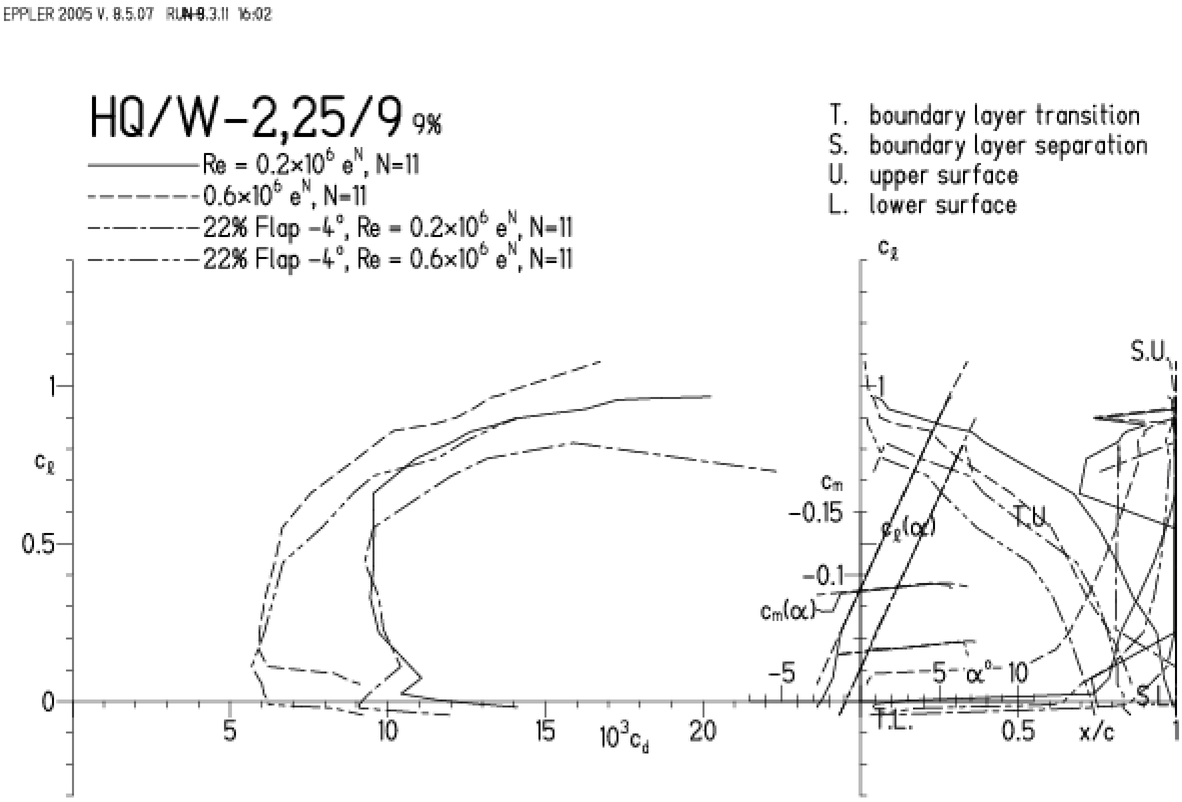


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

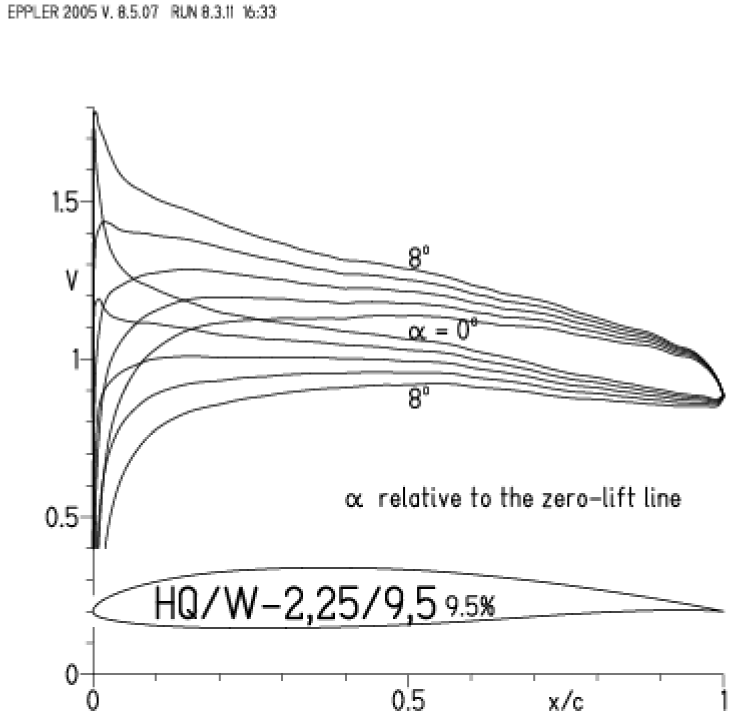


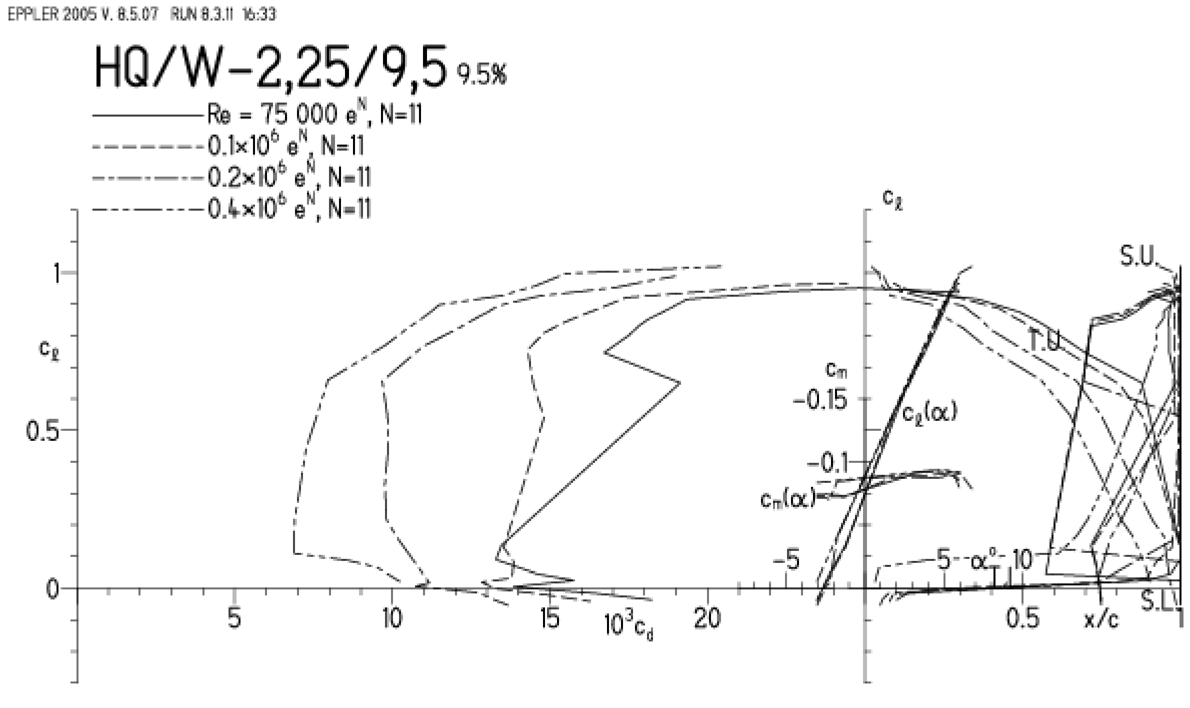
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



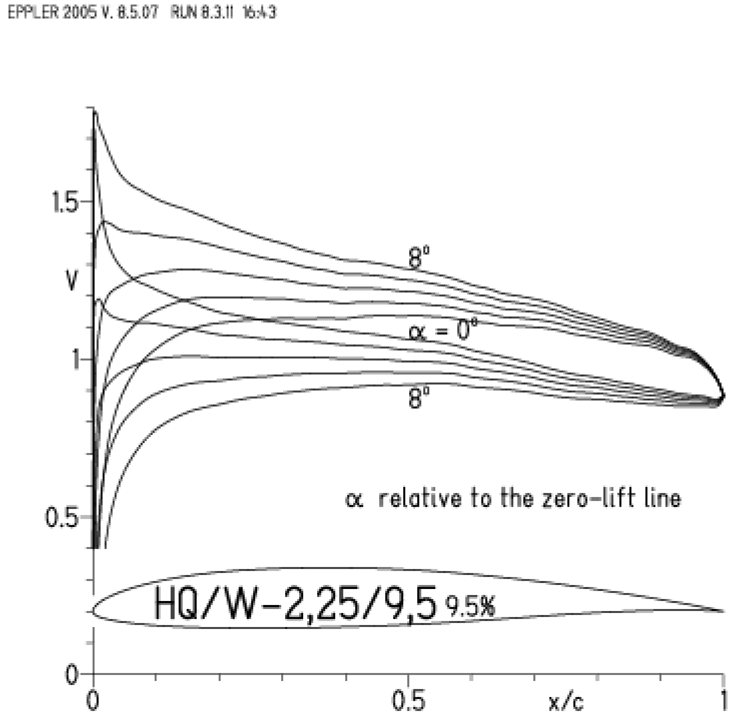


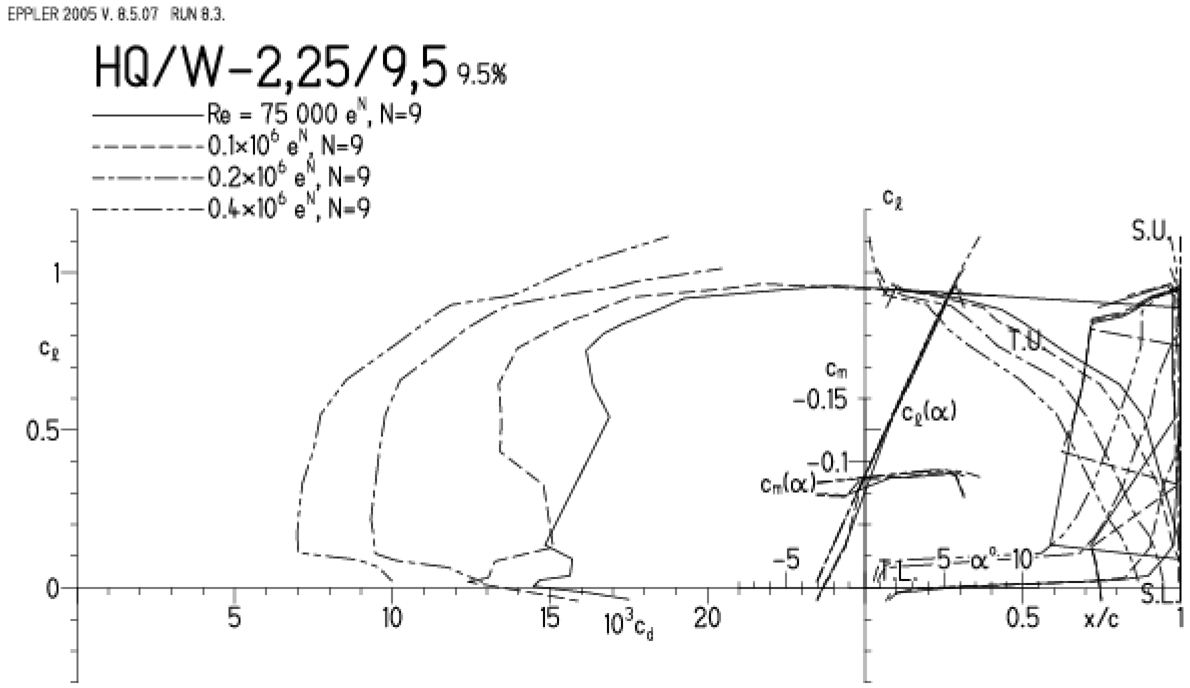
HQ/W-2,25/9,5, N=11





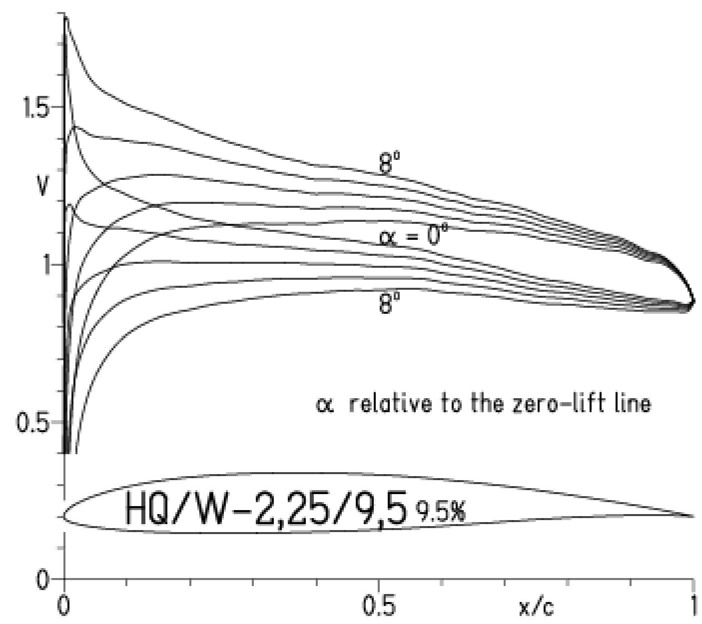
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

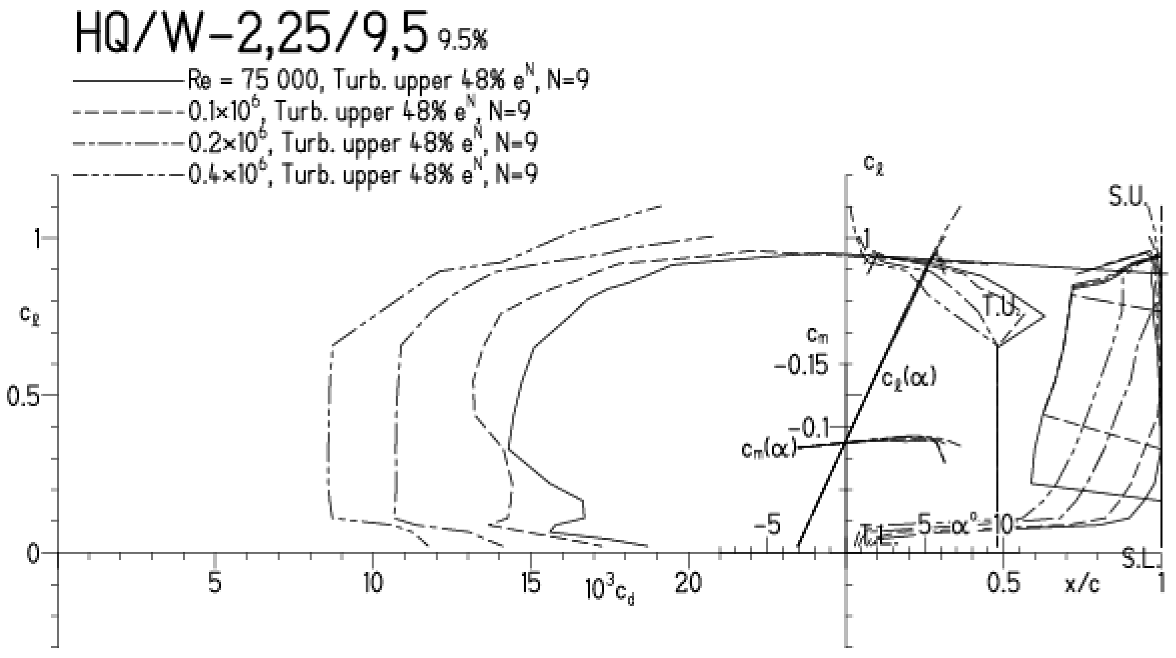

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

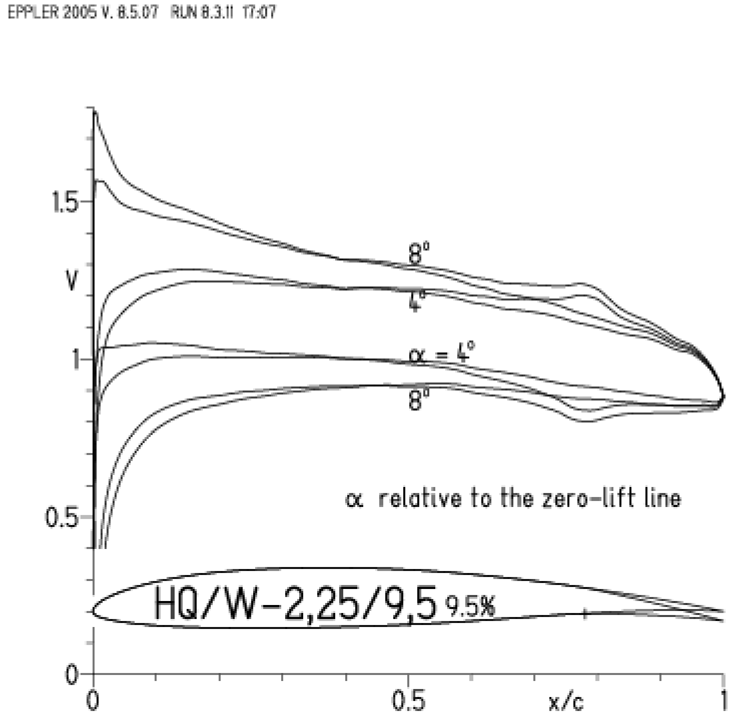
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

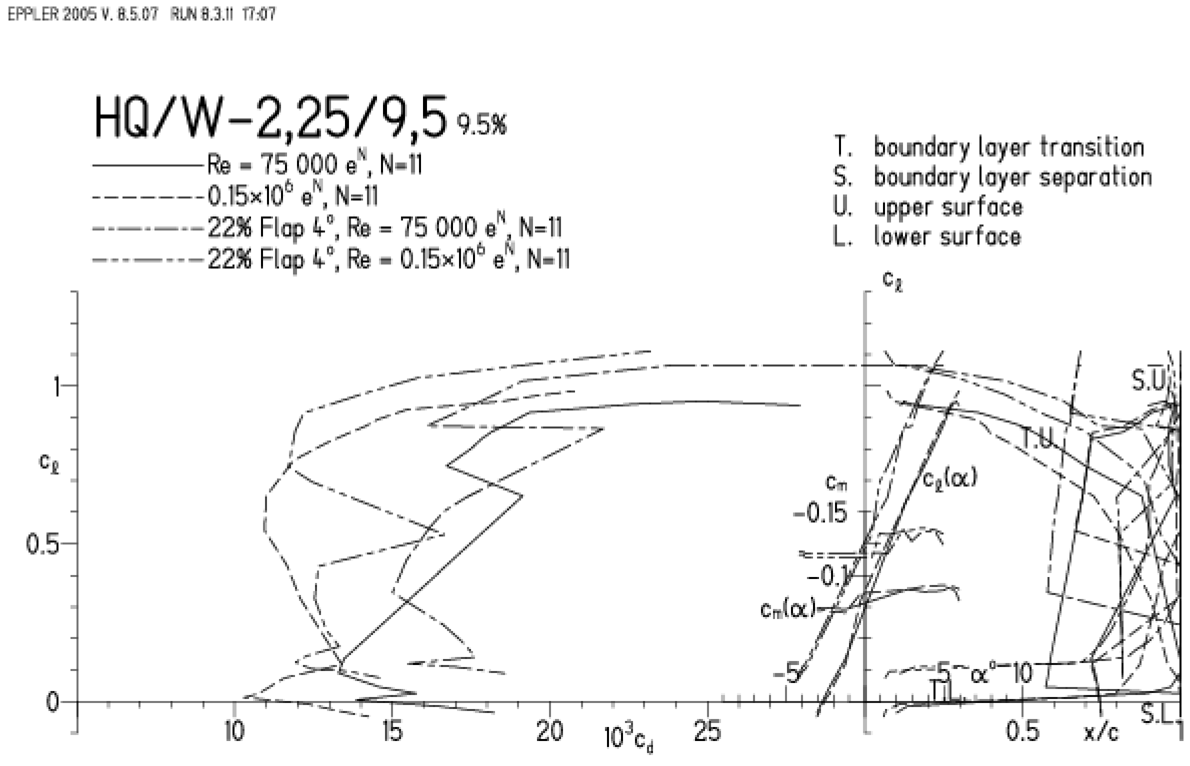


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

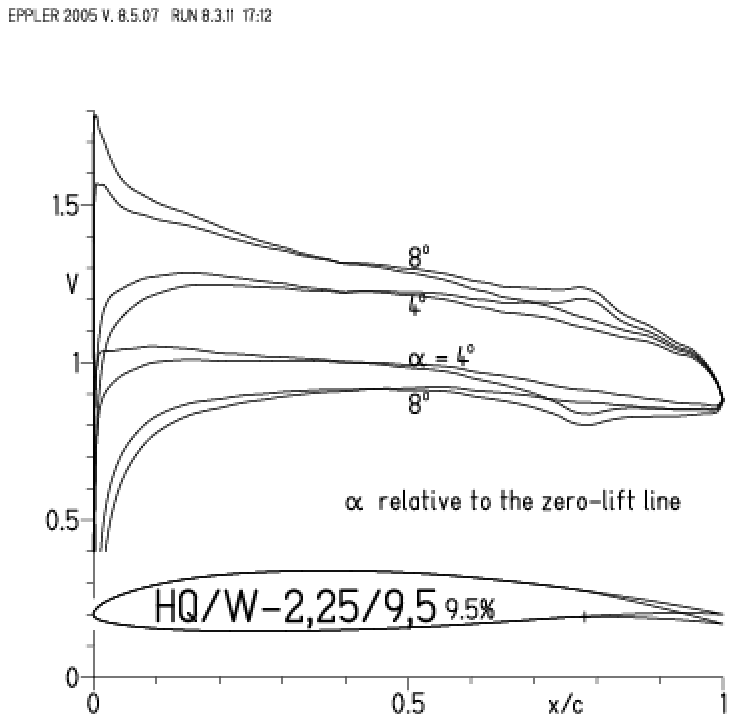


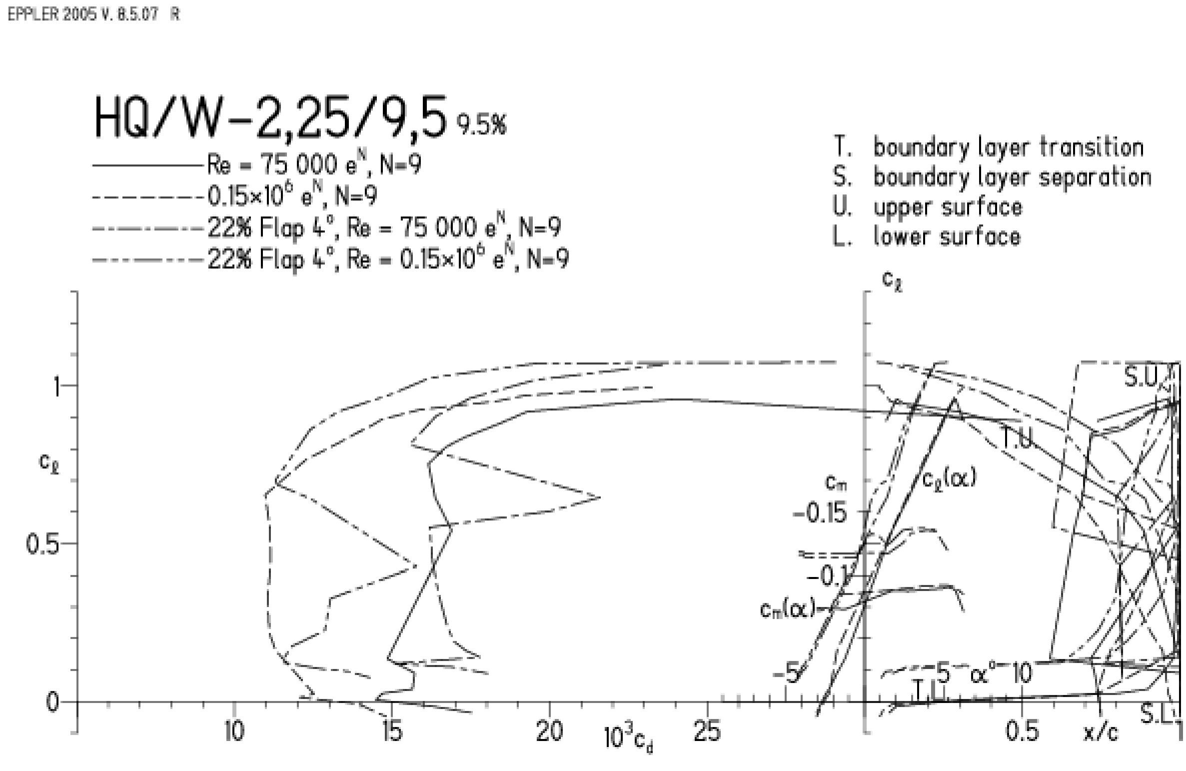
<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag





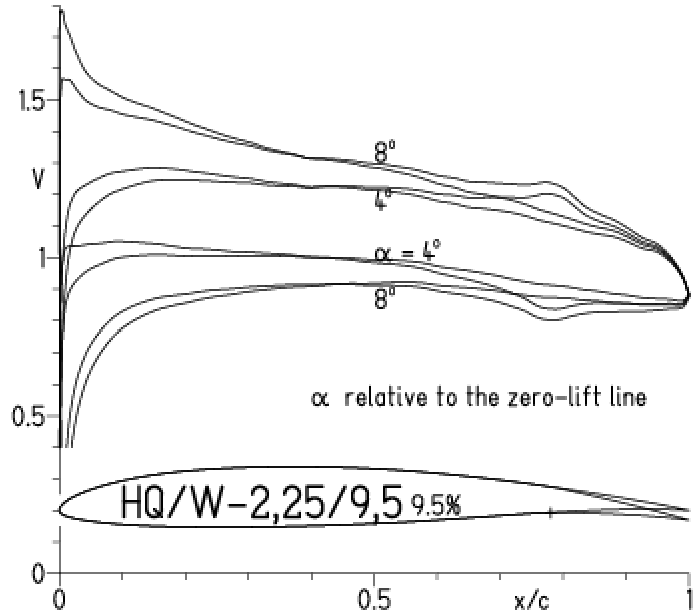
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



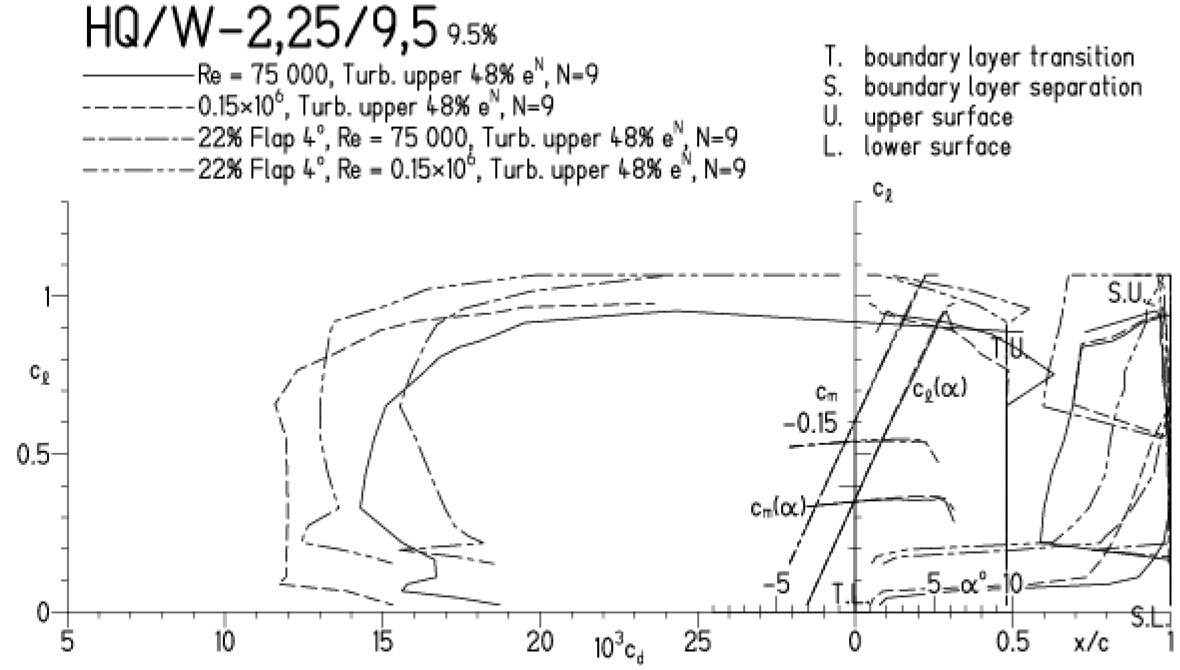


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

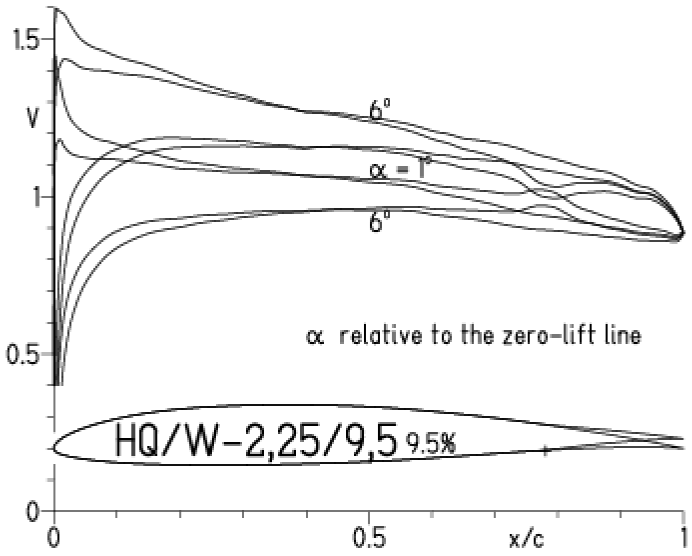


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

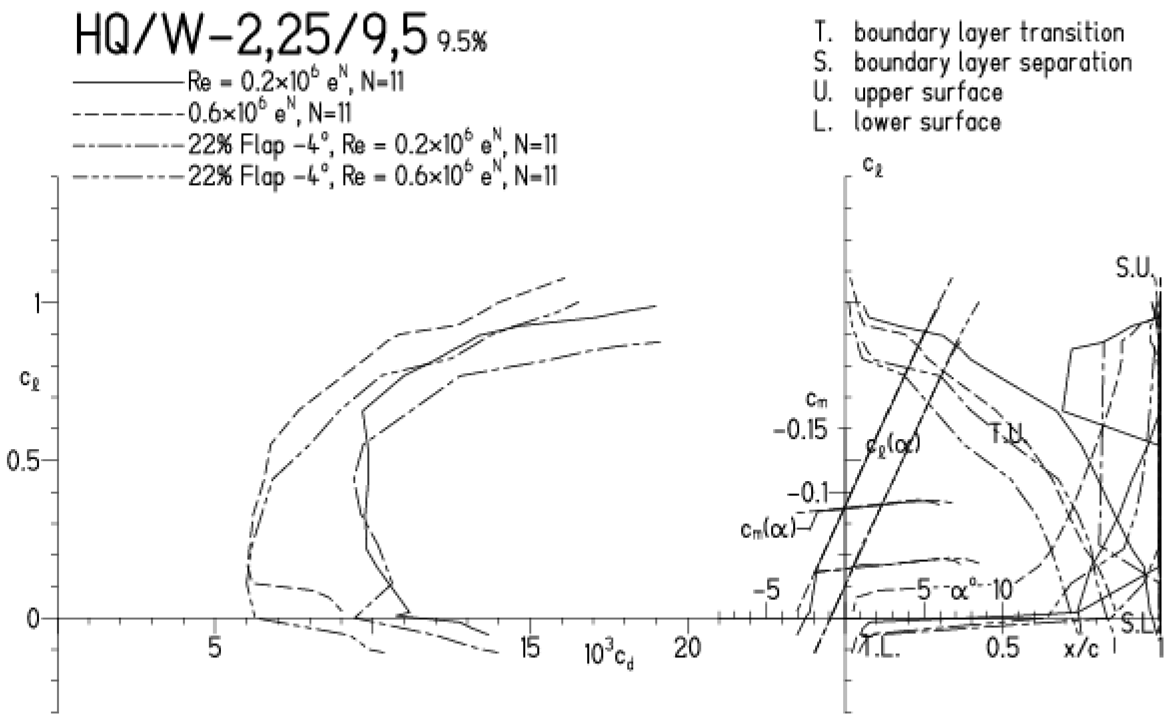


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

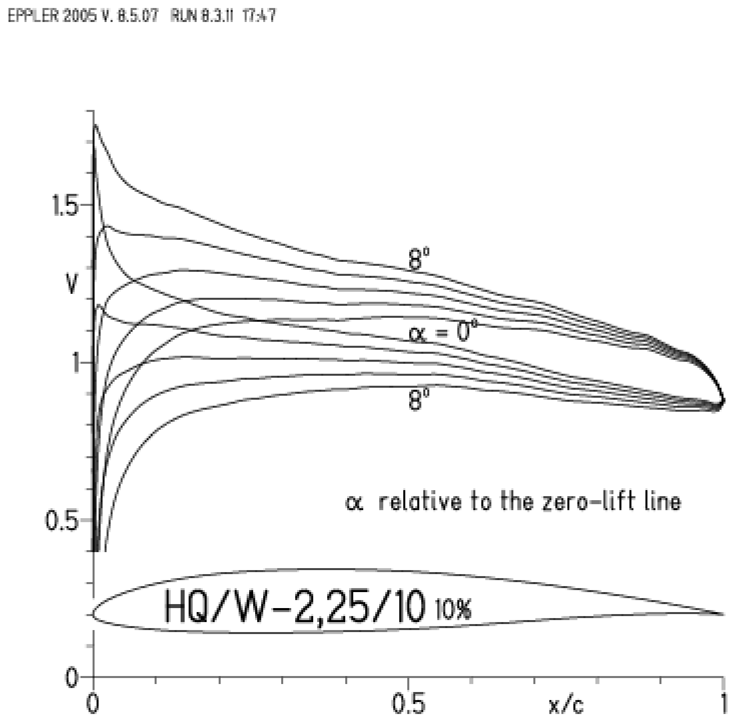
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

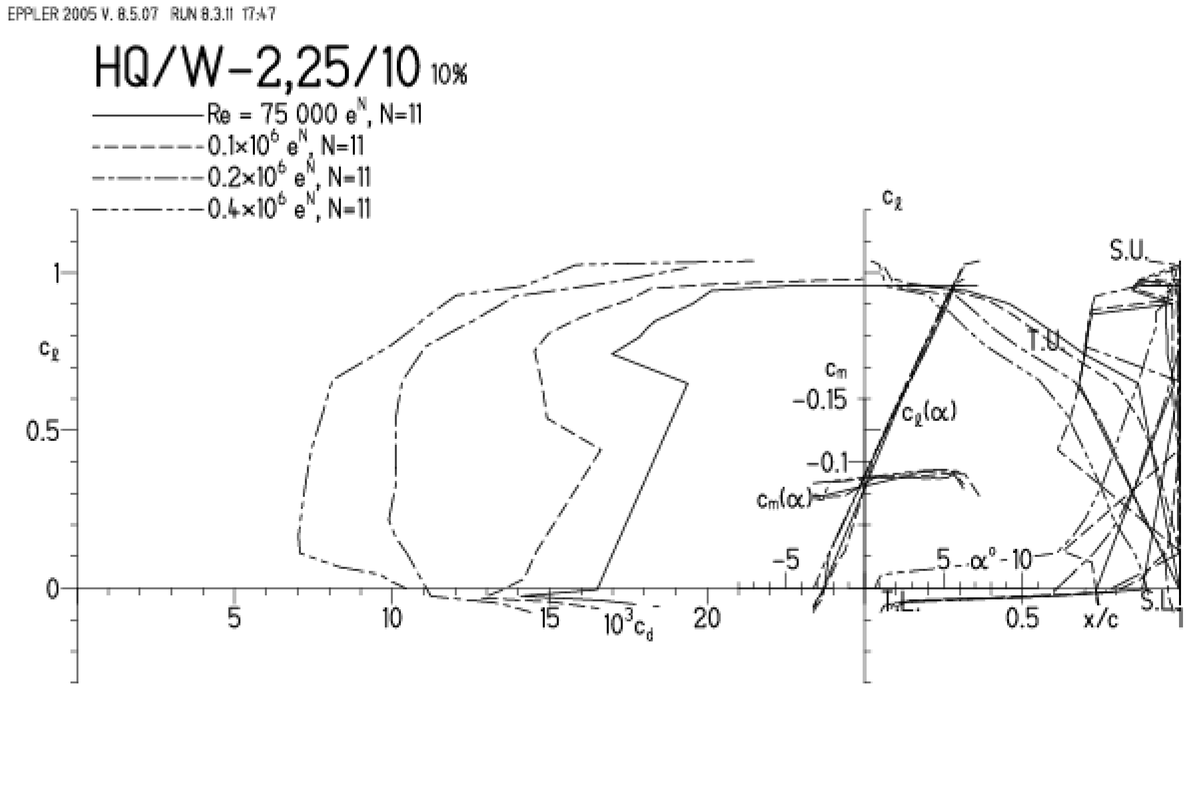


EPPLER 2005 V.

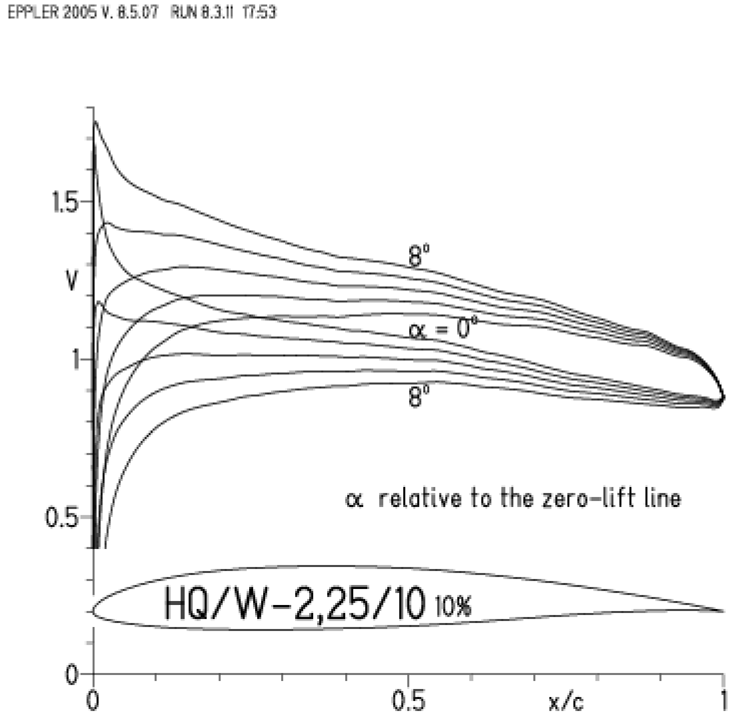


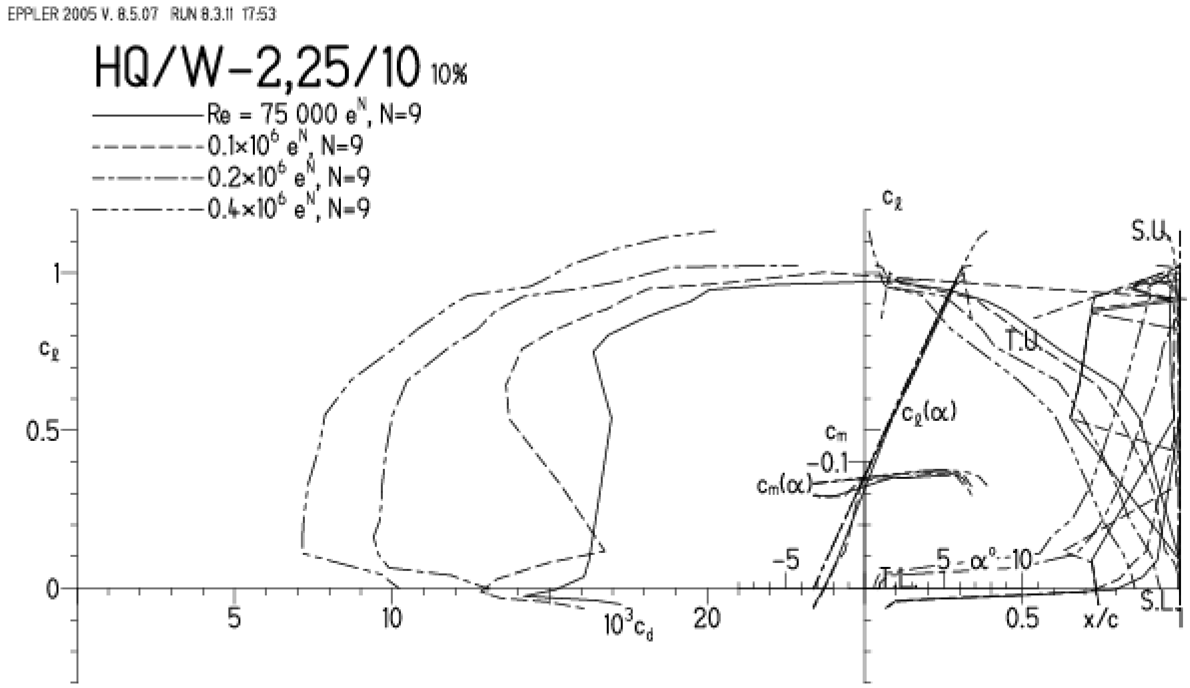
HQ/W-2,25/10, N=11



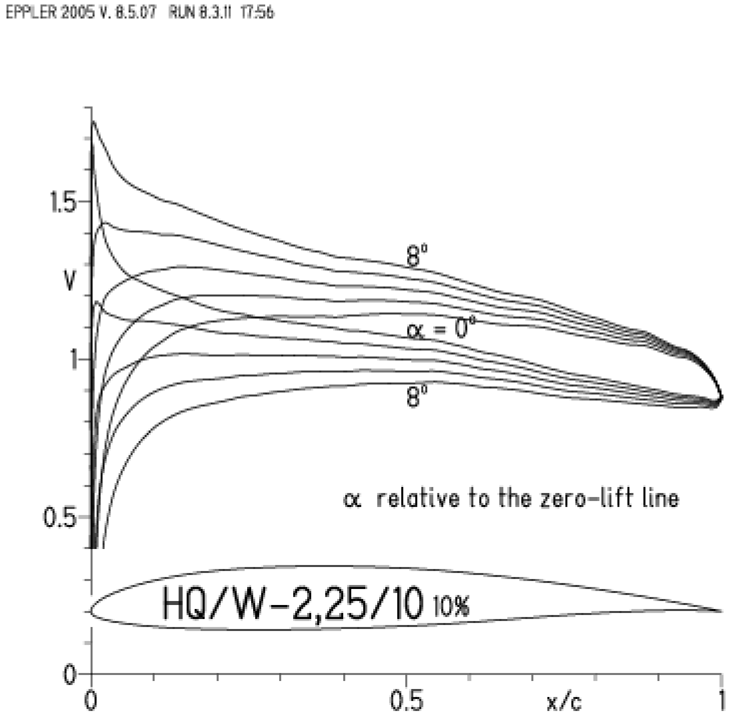


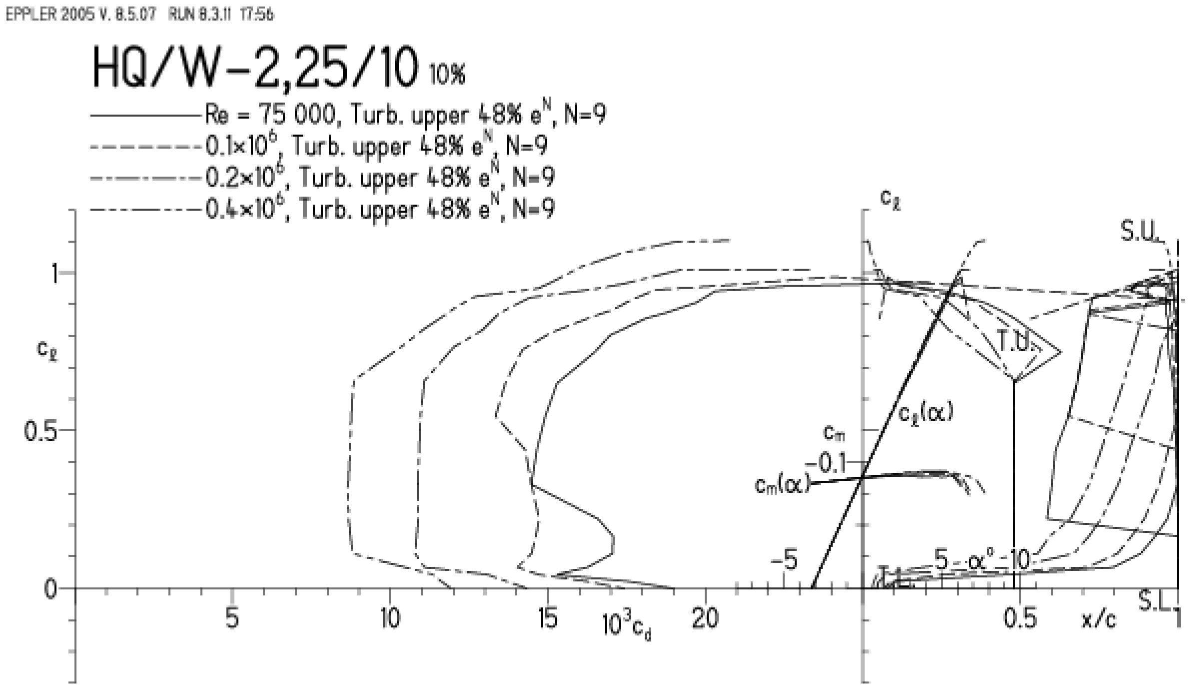
HQ/W-2,25/10, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/10 10%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
HQ/W-2,25/10 10%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
10^3 c_d
20
-5
-0.1
c_m
c_m(α)
c_l(α)
5
α°
10
T.U.
S.U.
T.L.
S.L.
0.5
x/c
1

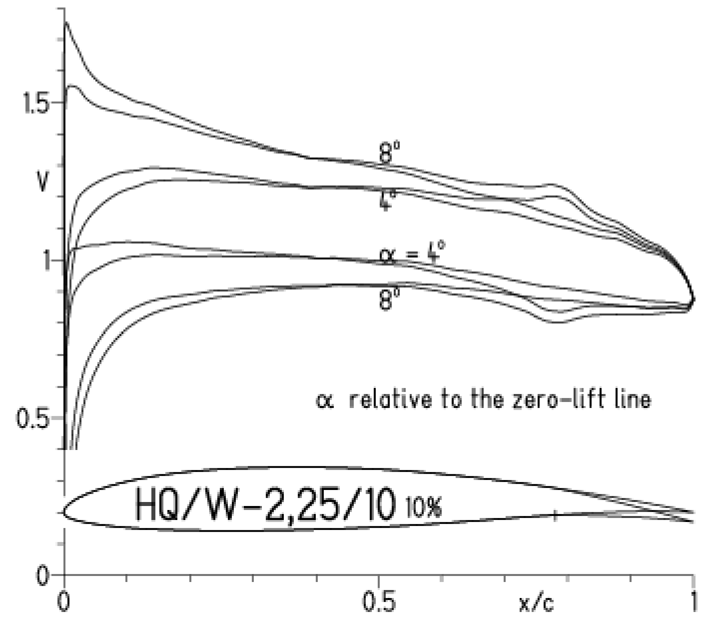
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



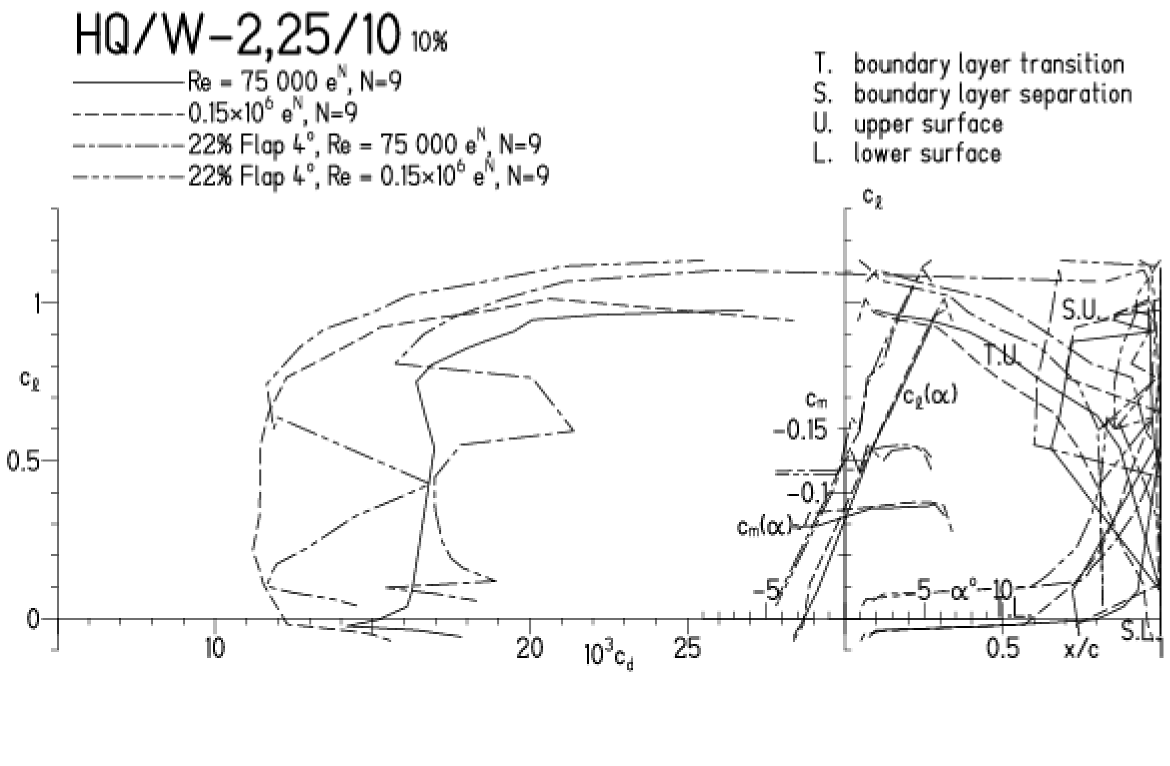


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

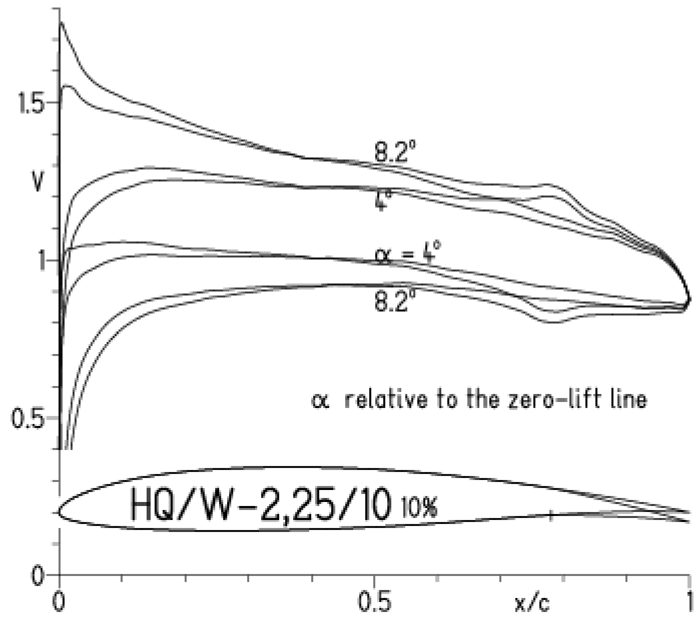


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

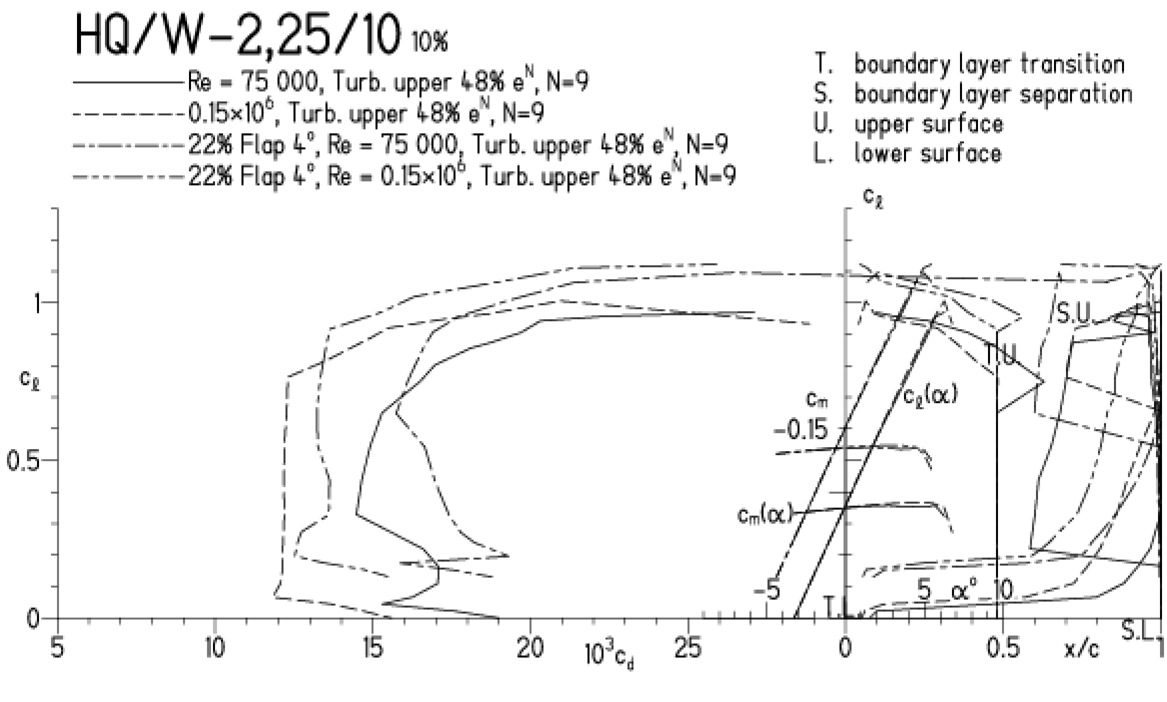


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

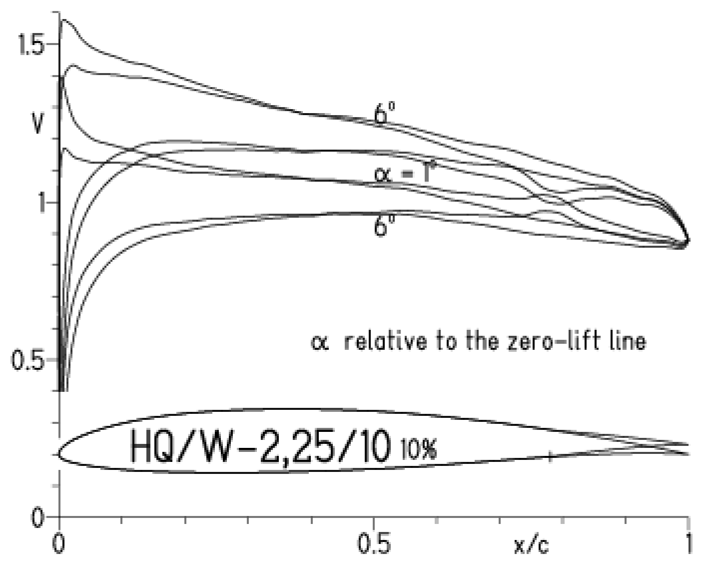


EPPLER 2005 V. 8.5.07 RUN 8.3

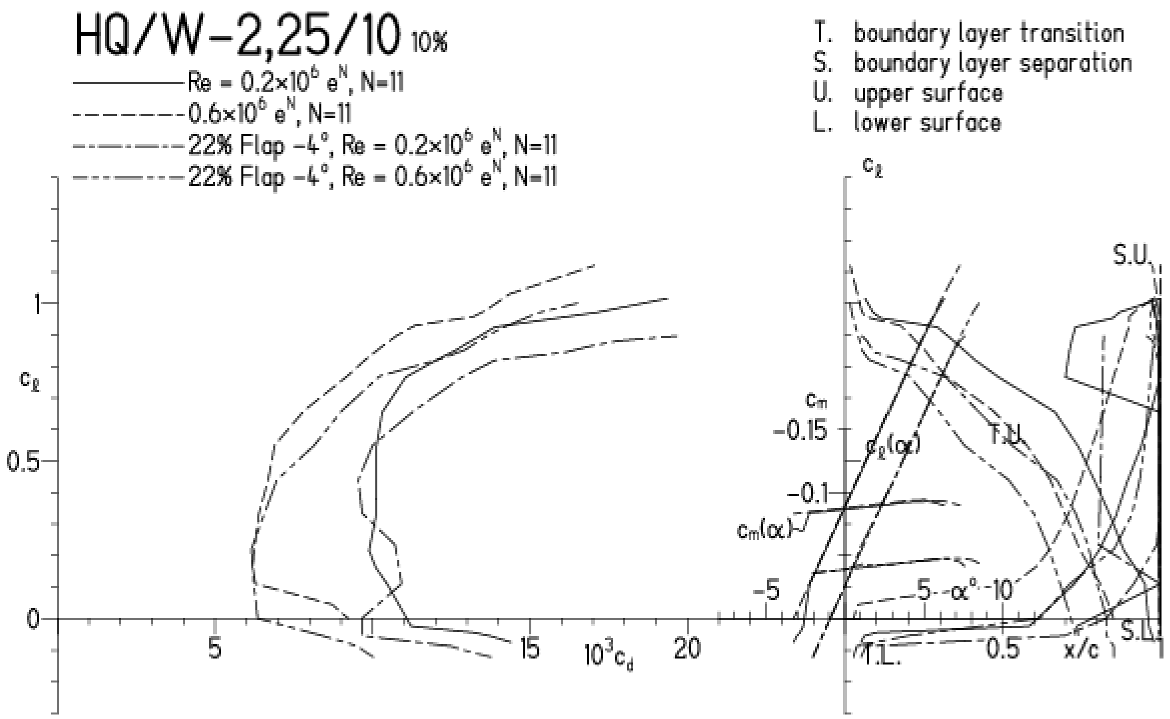


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

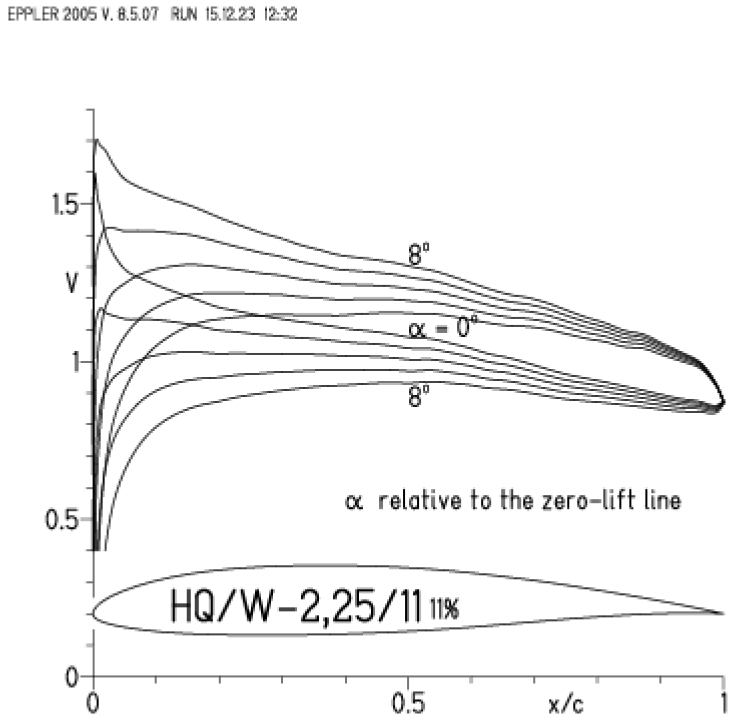
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

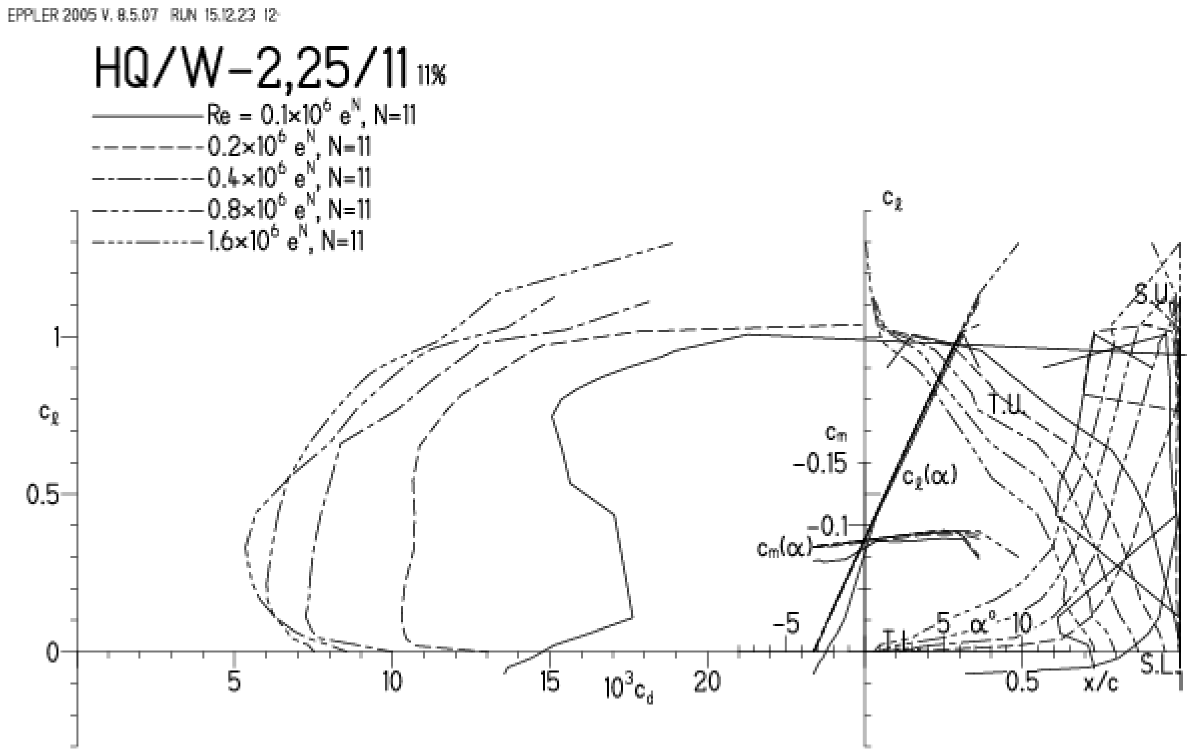


EPPLER 2005 V. 8.5.07 RUN



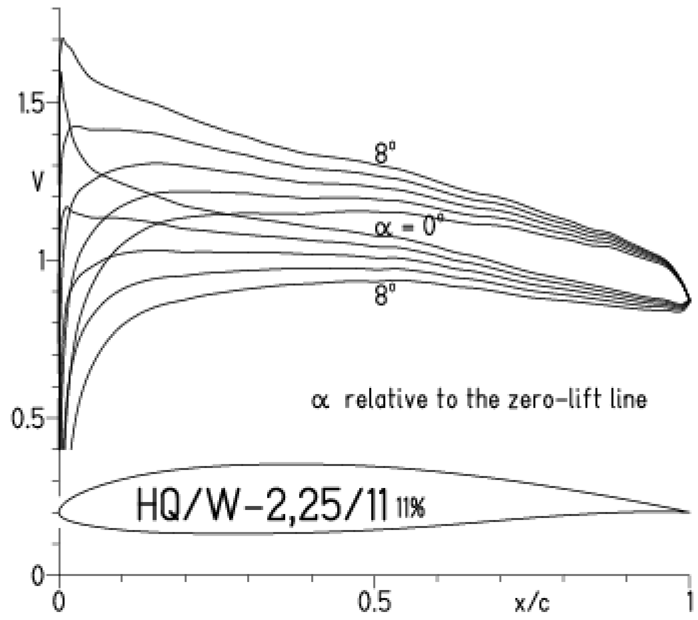
<u>HQ/W-2,25/11</u>, N=11



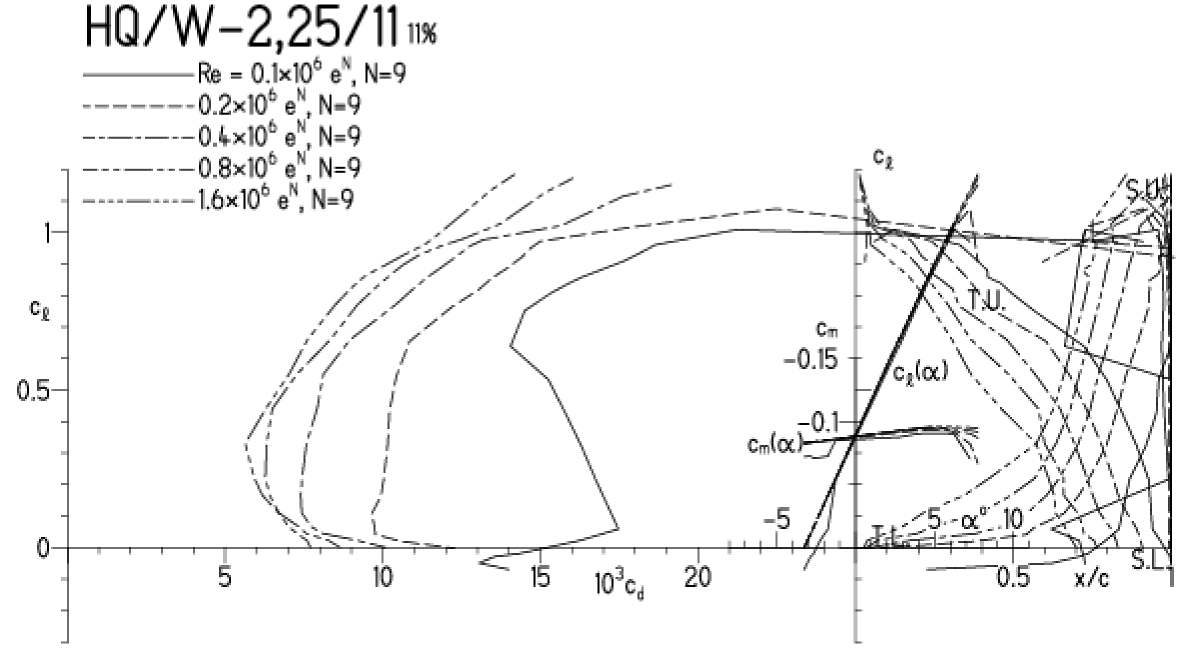


HQQ/W-2,25/11, N=9

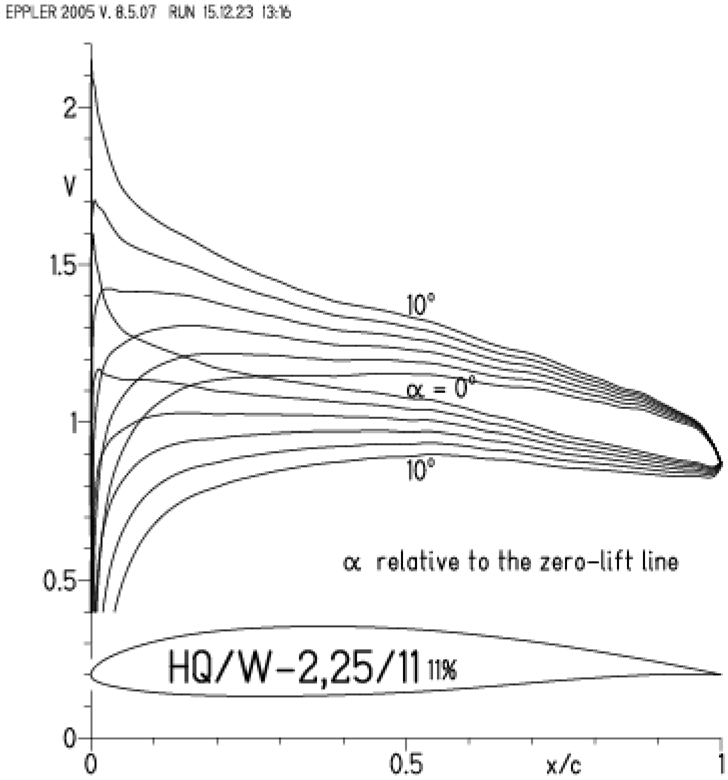
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

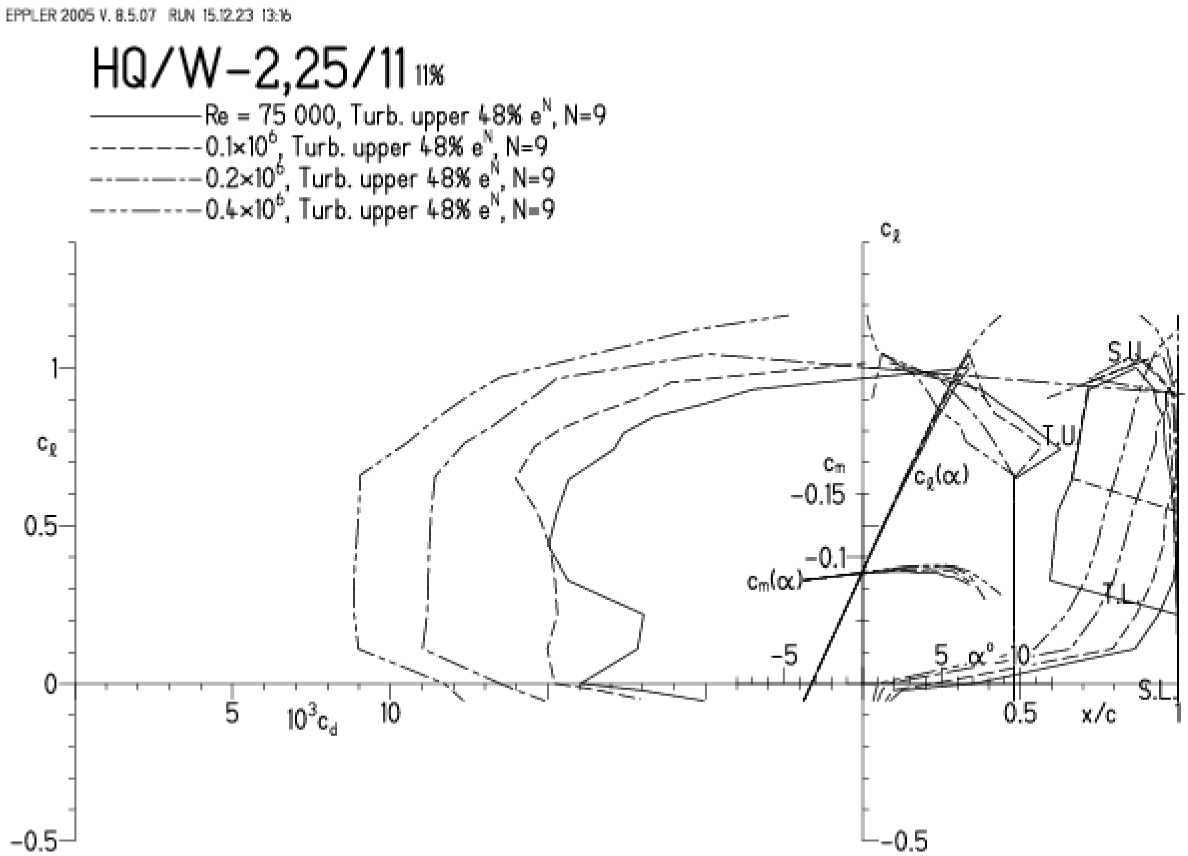


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



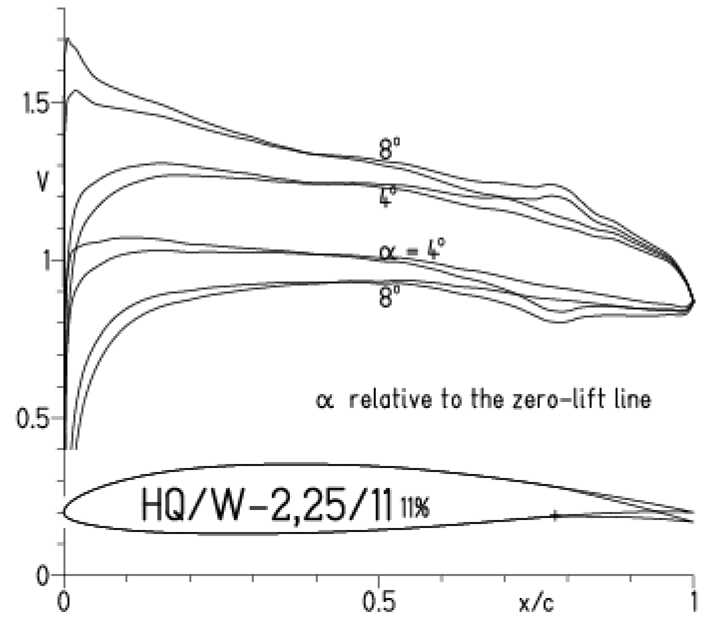
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



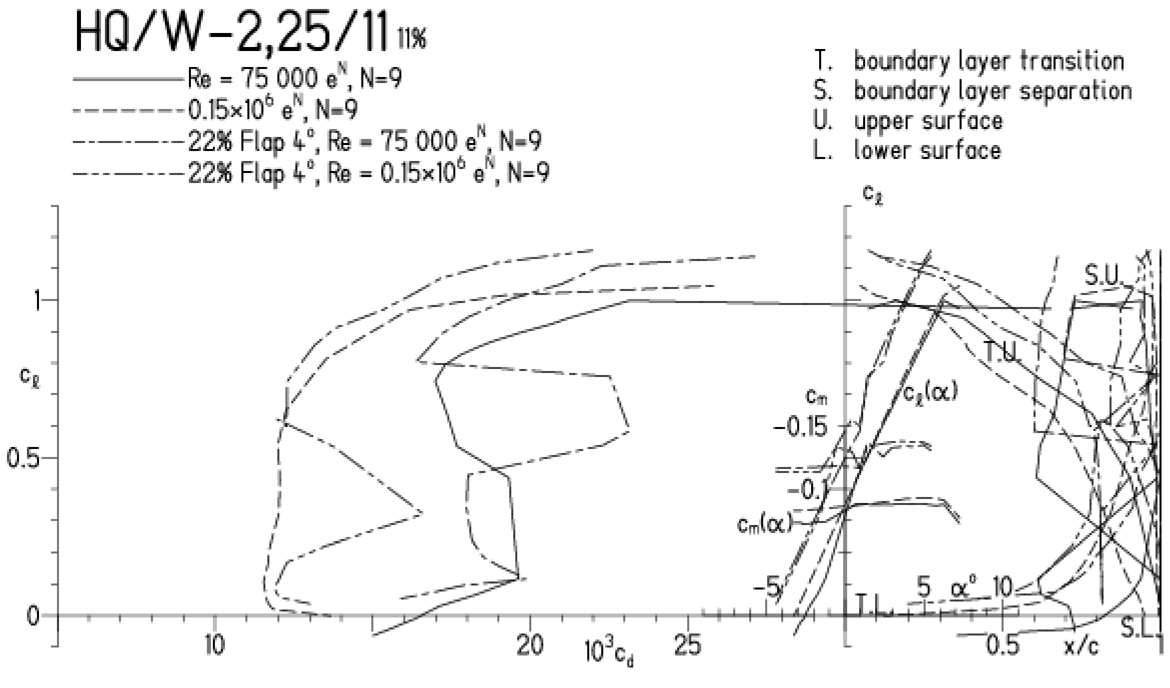


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

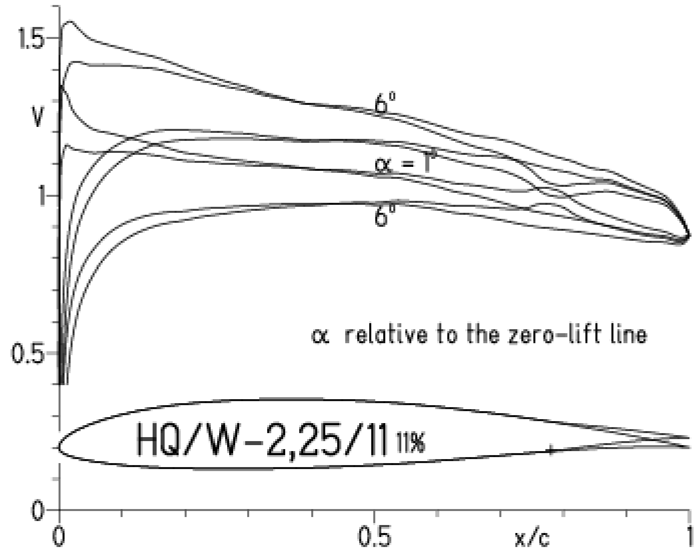


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

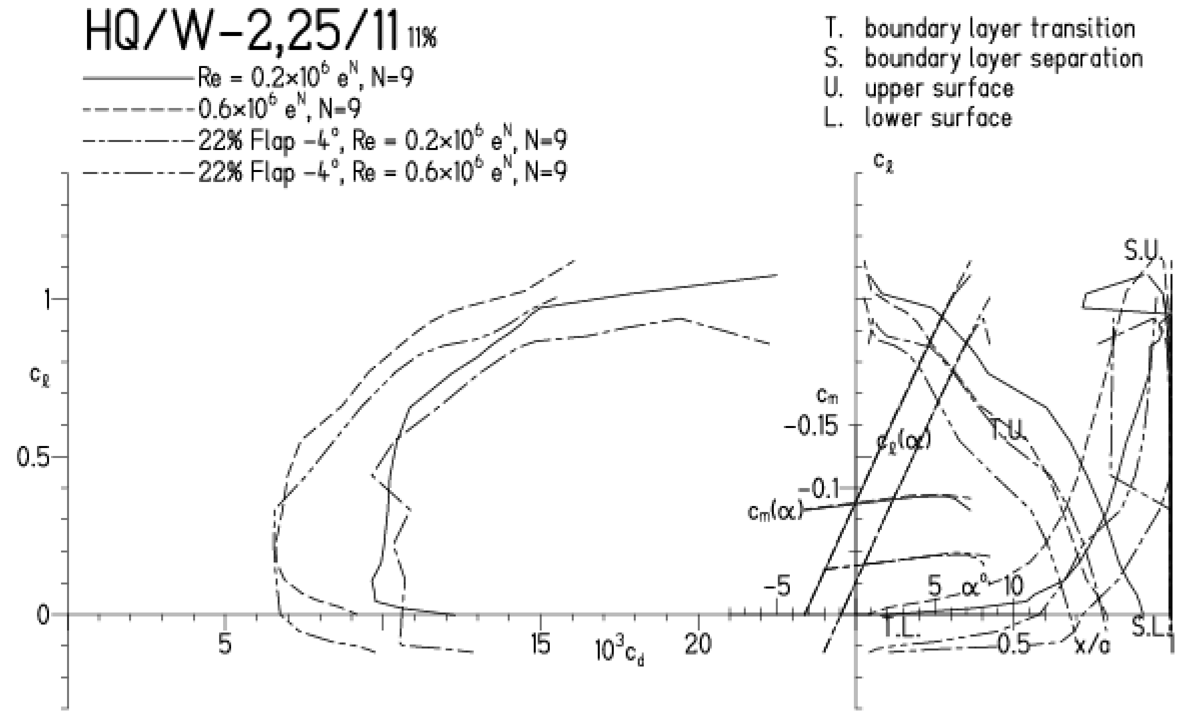


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

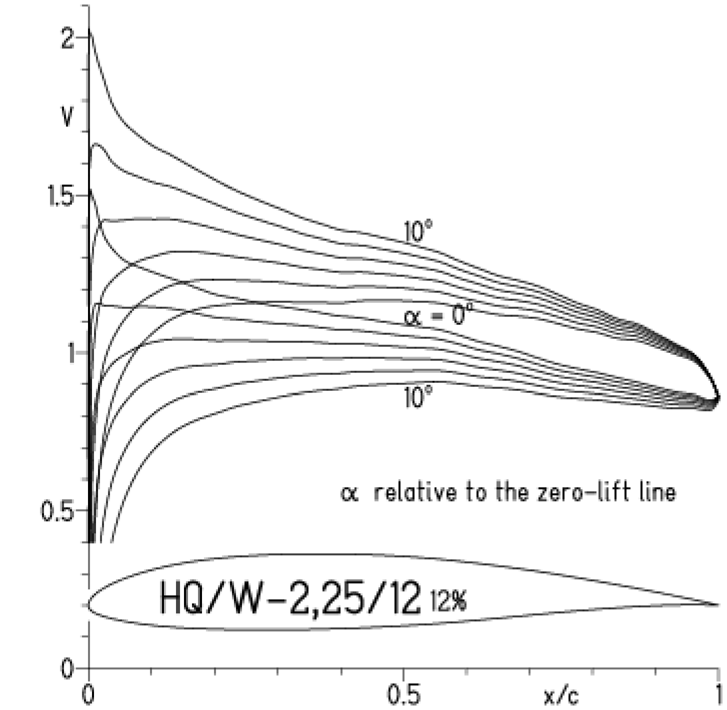
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

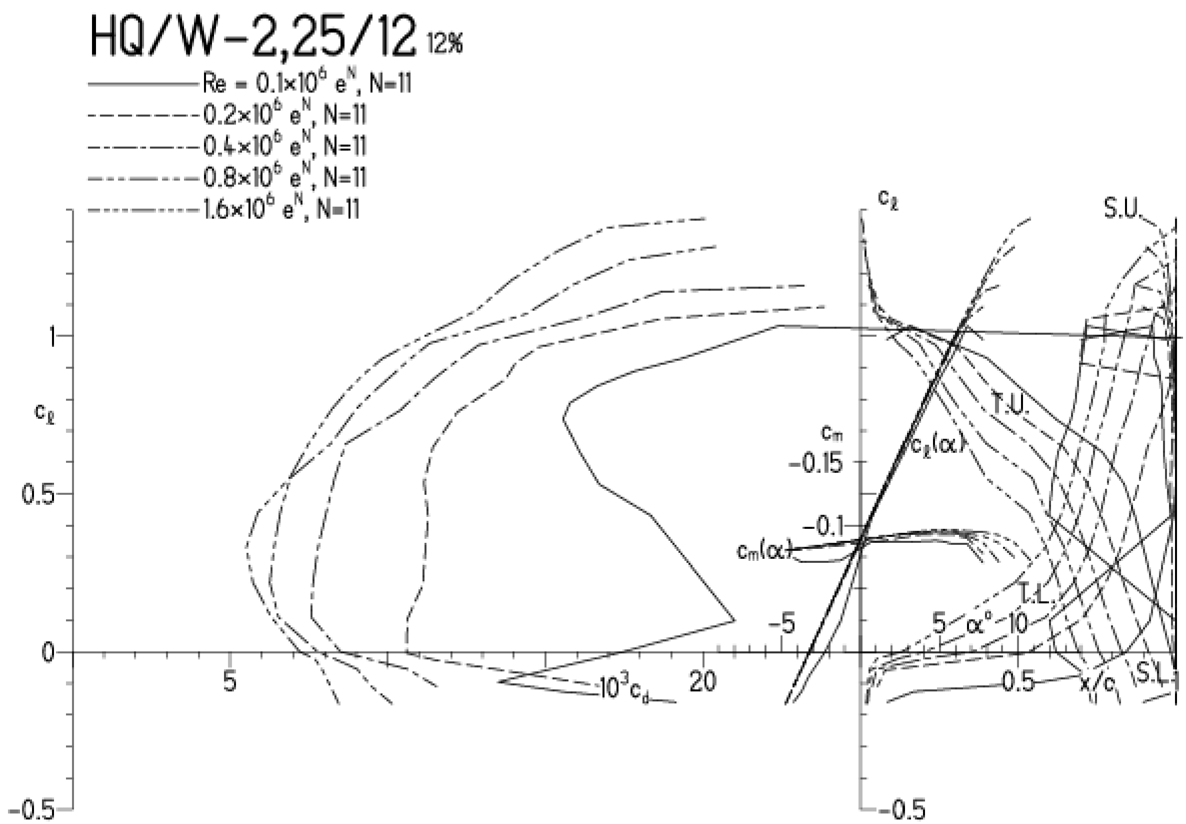


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

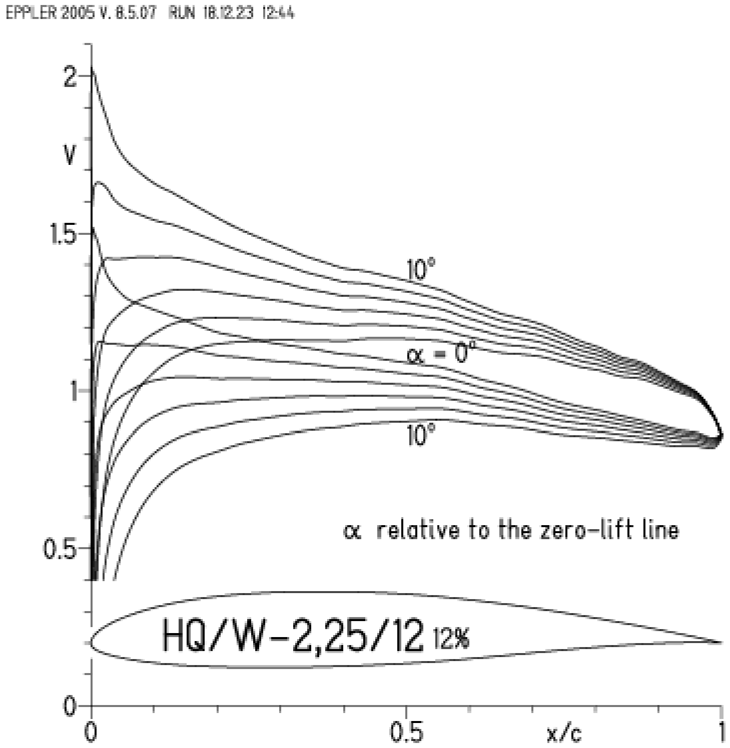


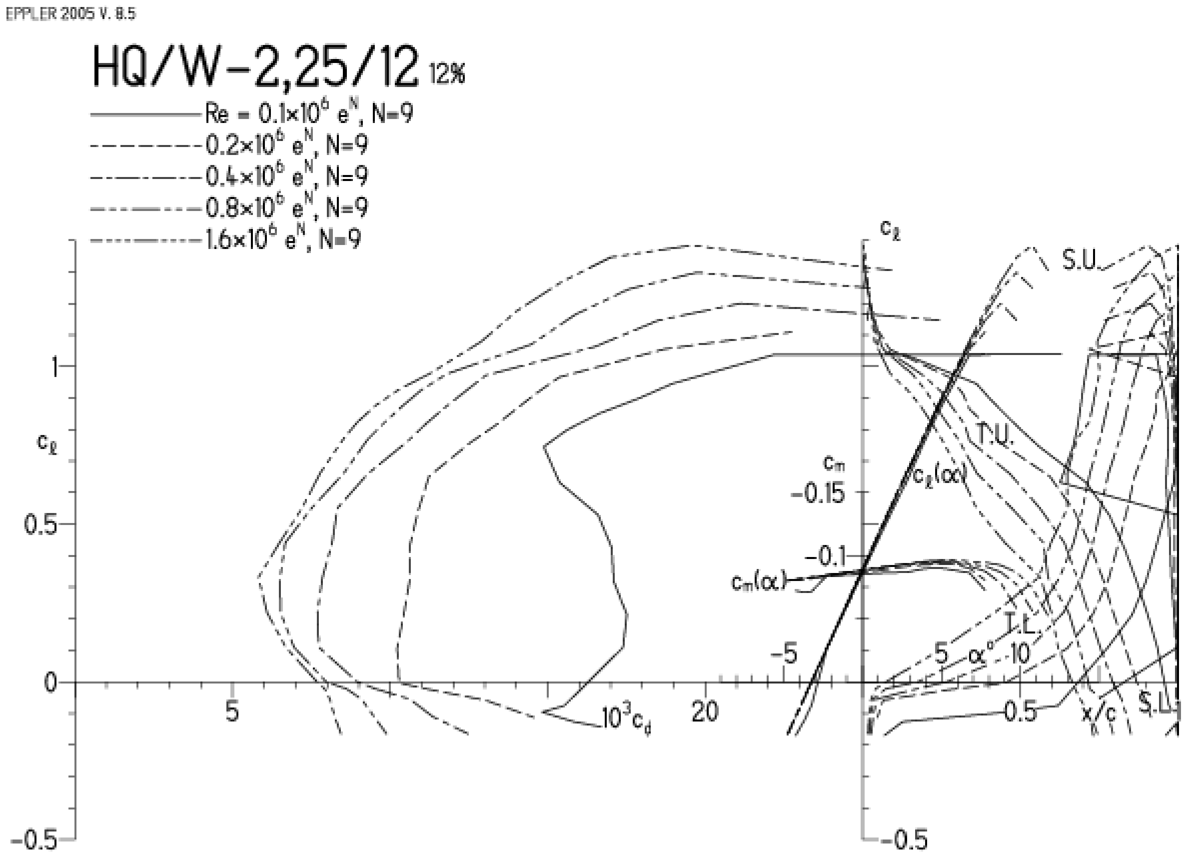
HQ/W-2,25/12, N=11



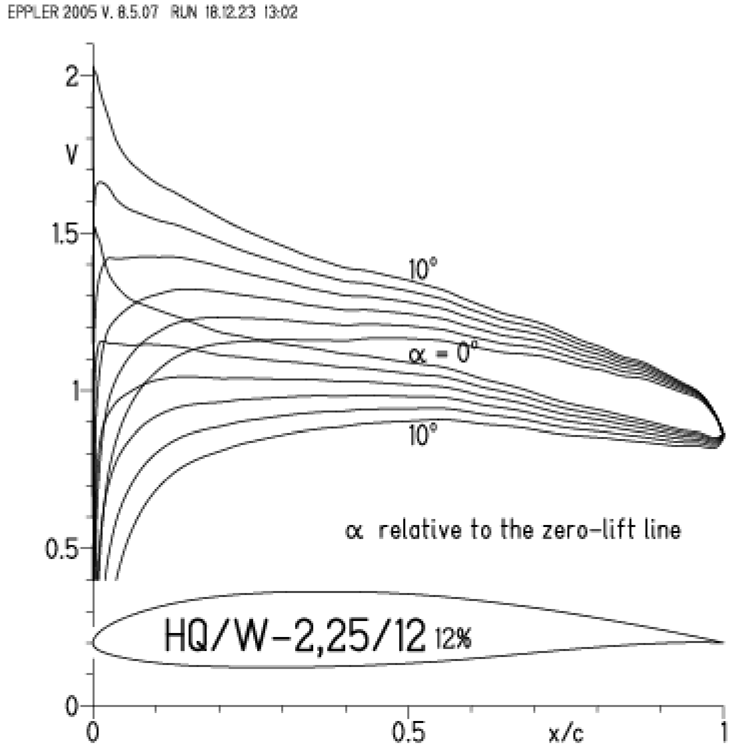


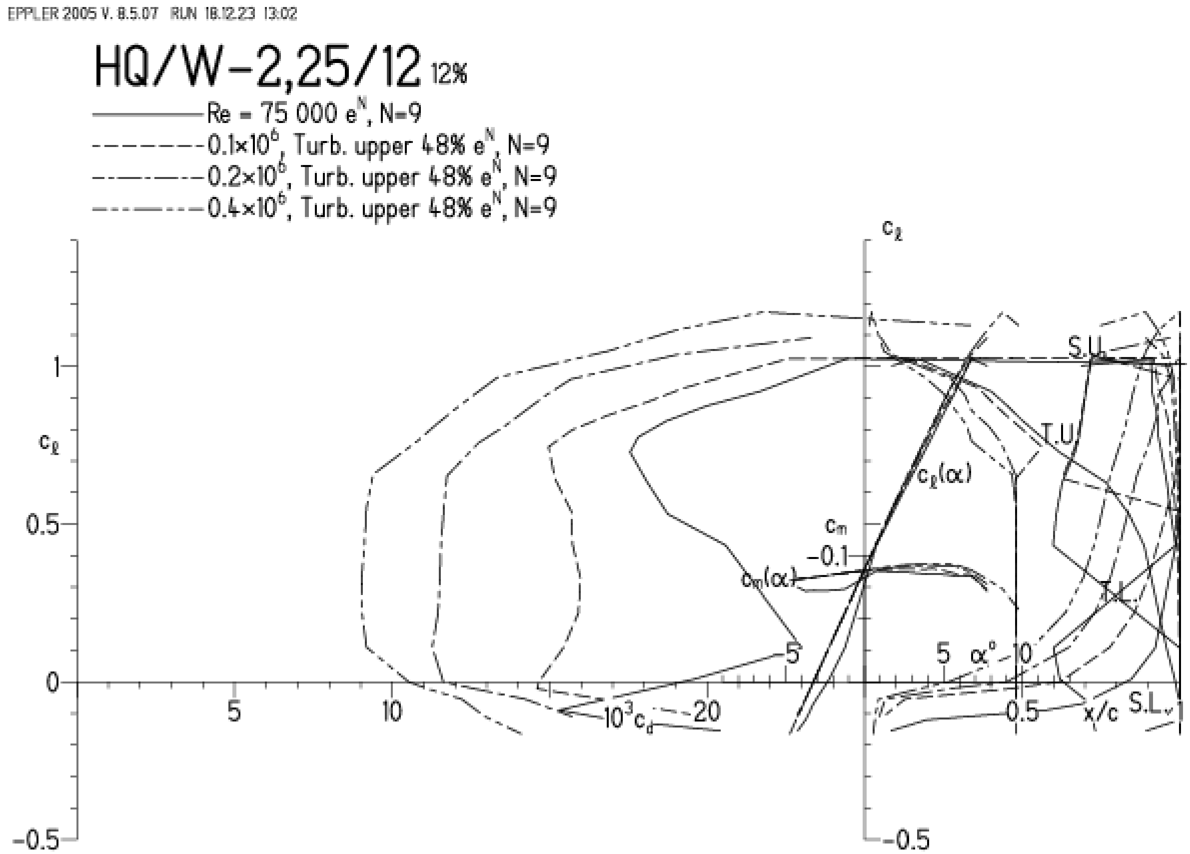
<u>HQ/W-2,25/12</u>, N=9





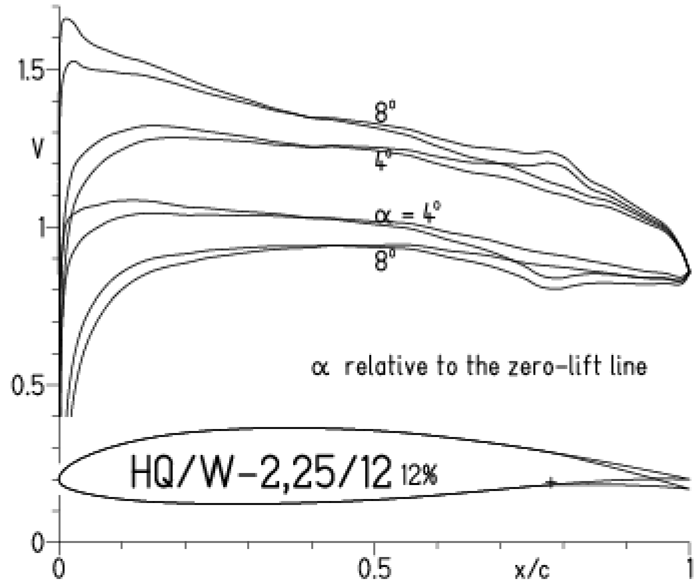
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



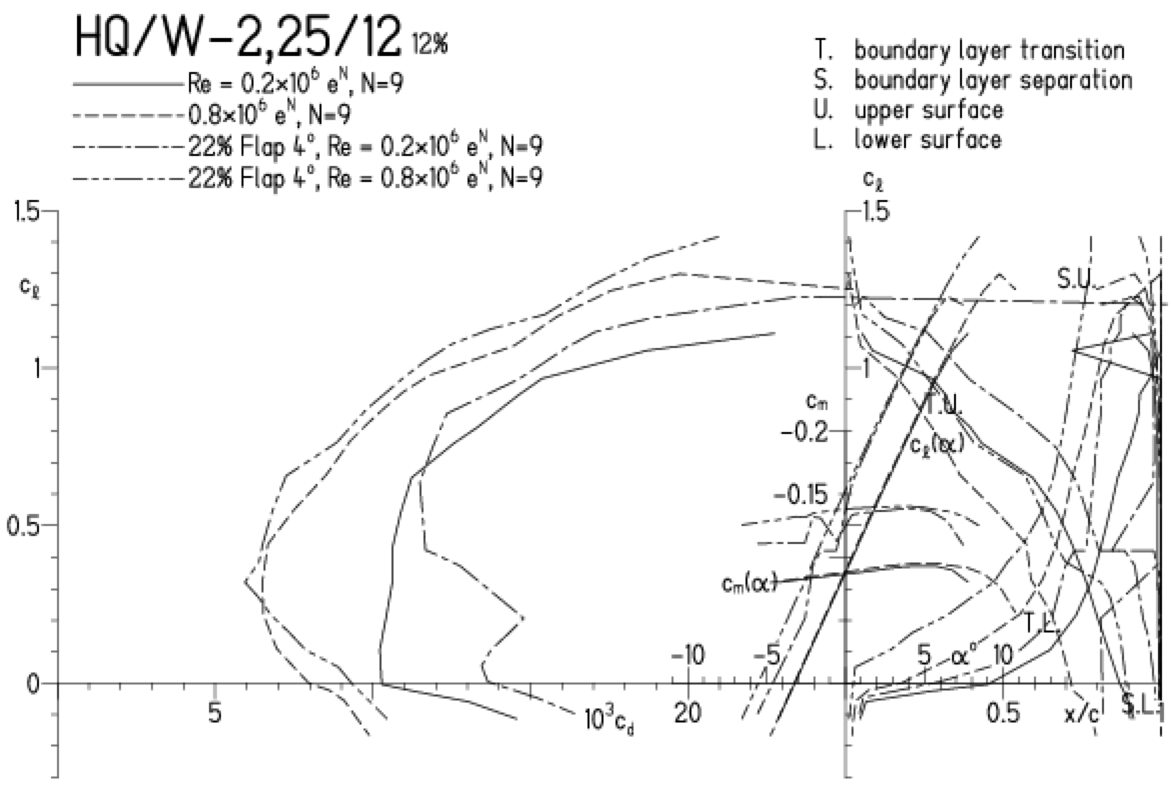


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

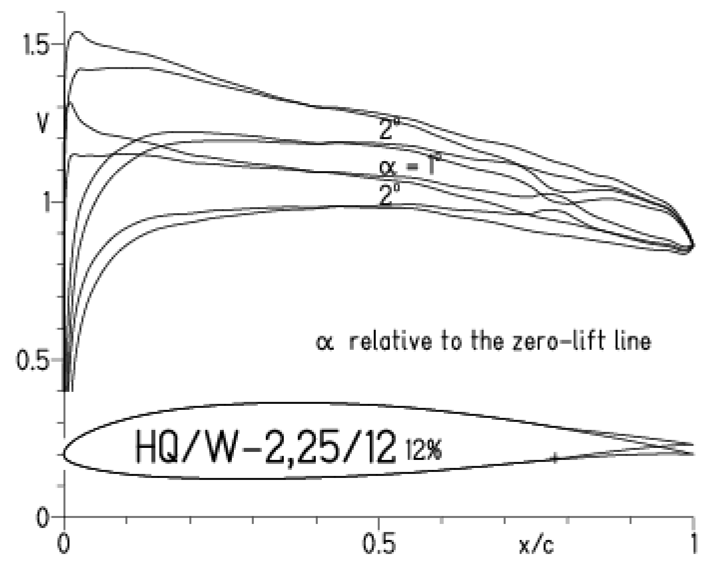


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

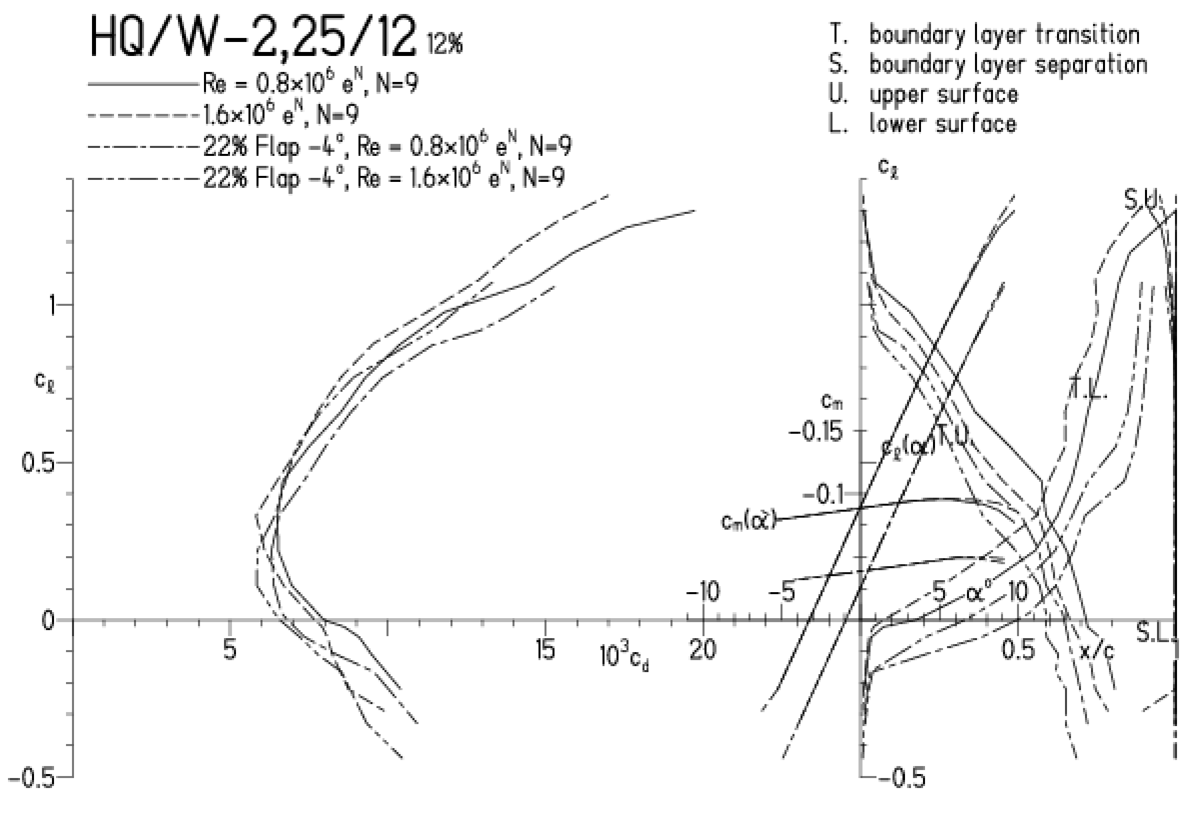


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

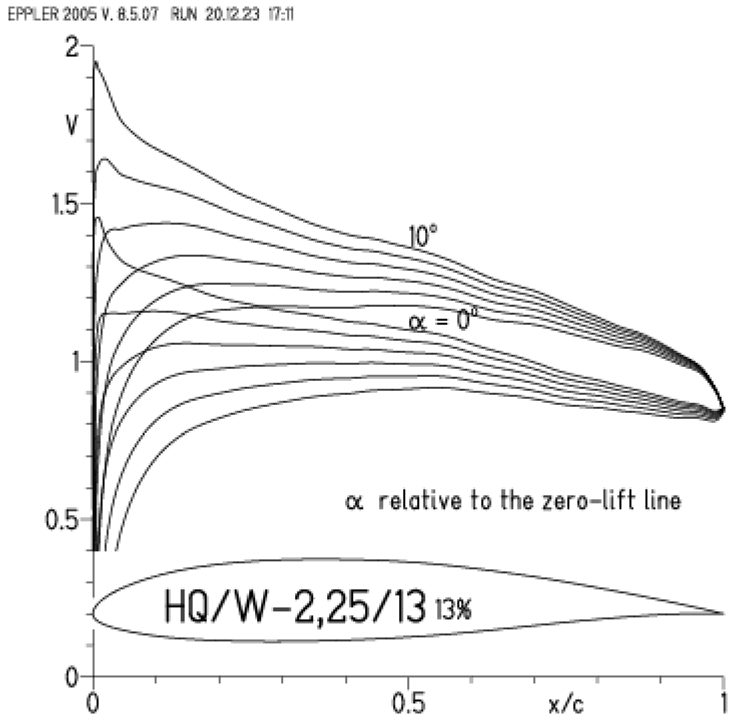
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

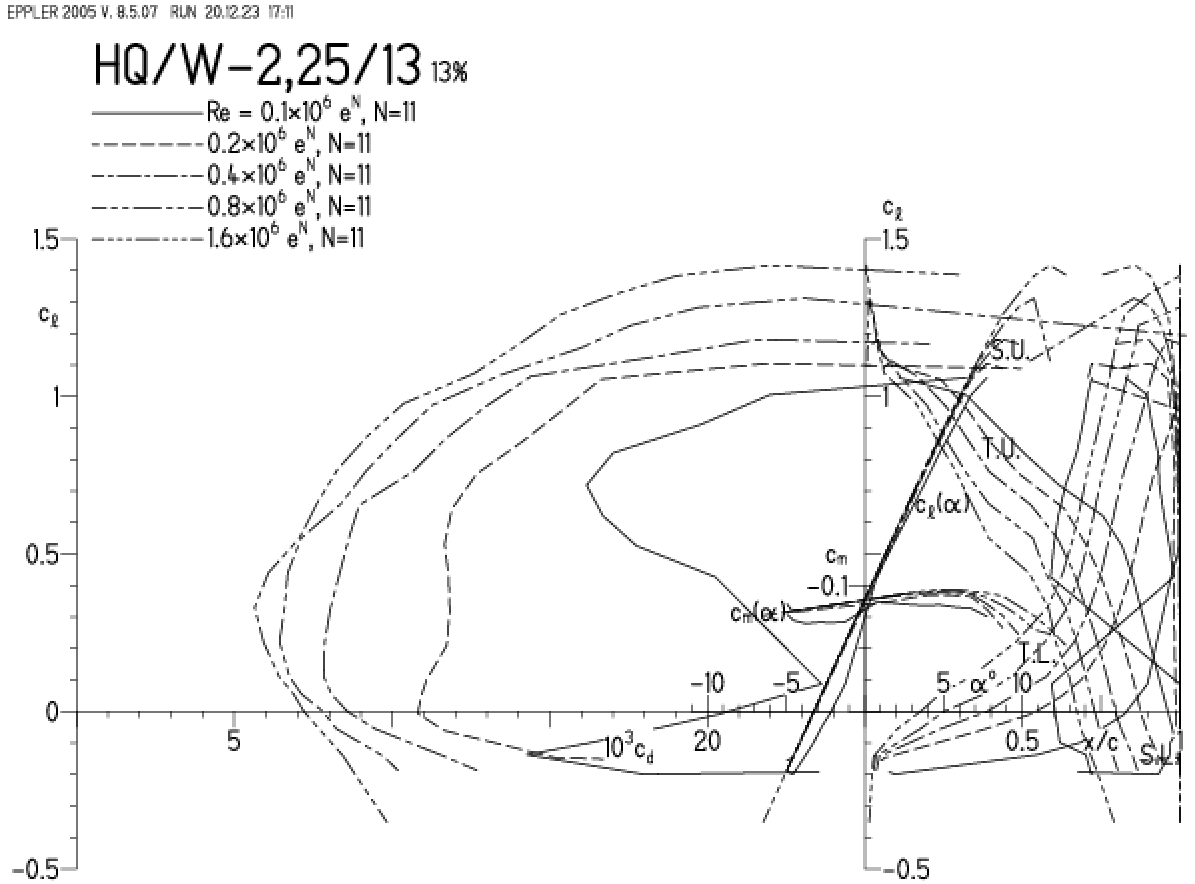


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

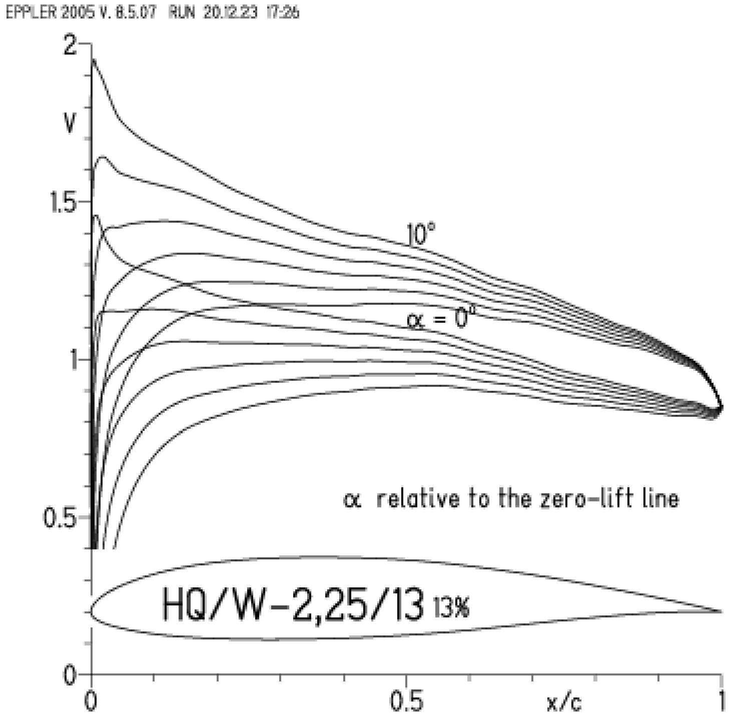


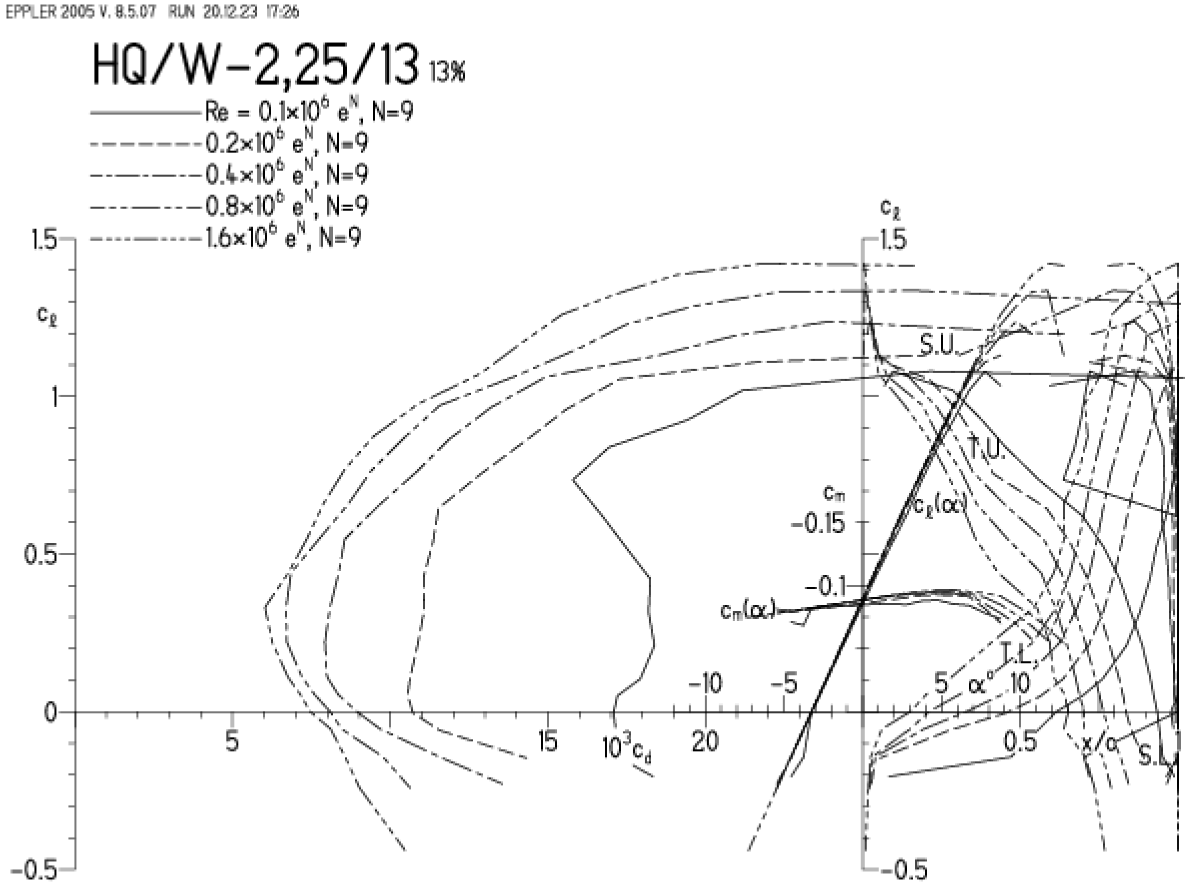
HQ/W-2,25/13, N=11



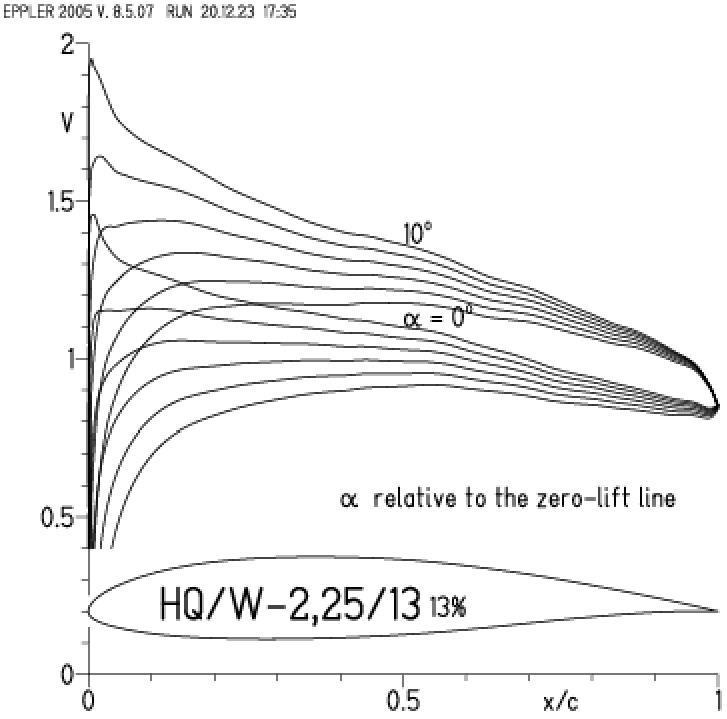


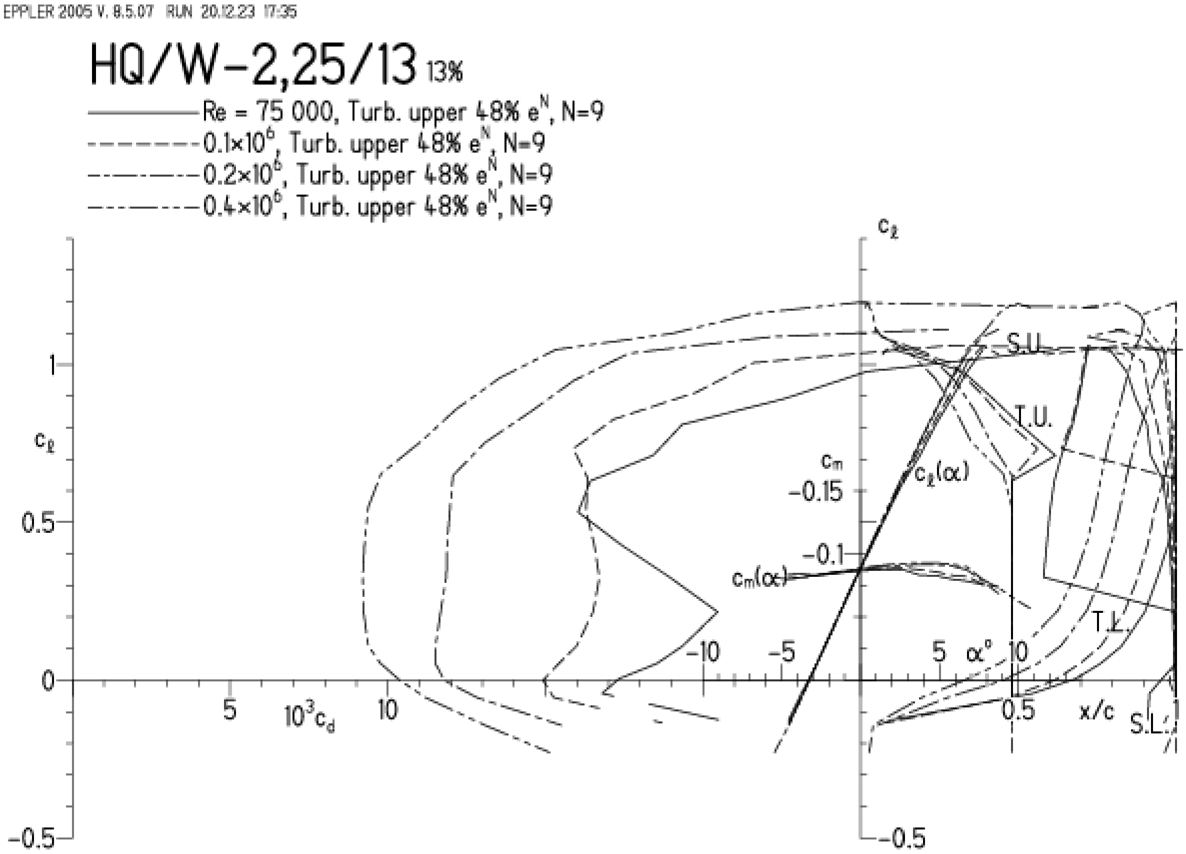
<u>HQ/W-2,25/13</u>, N=9





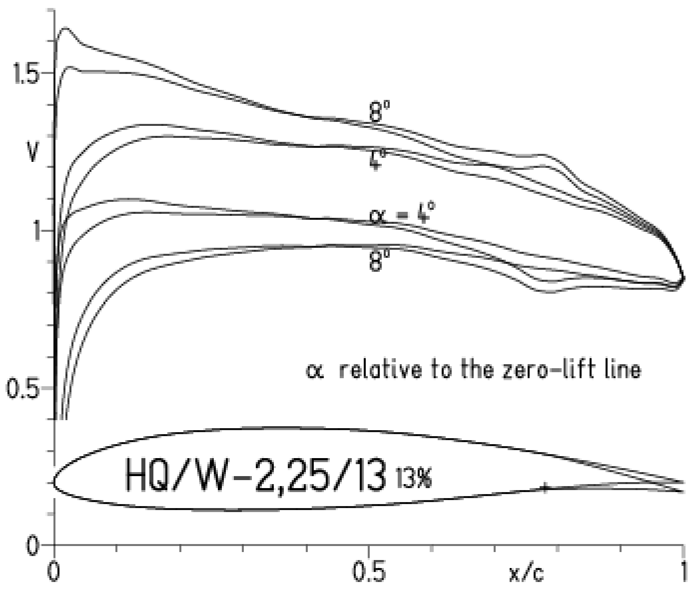
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



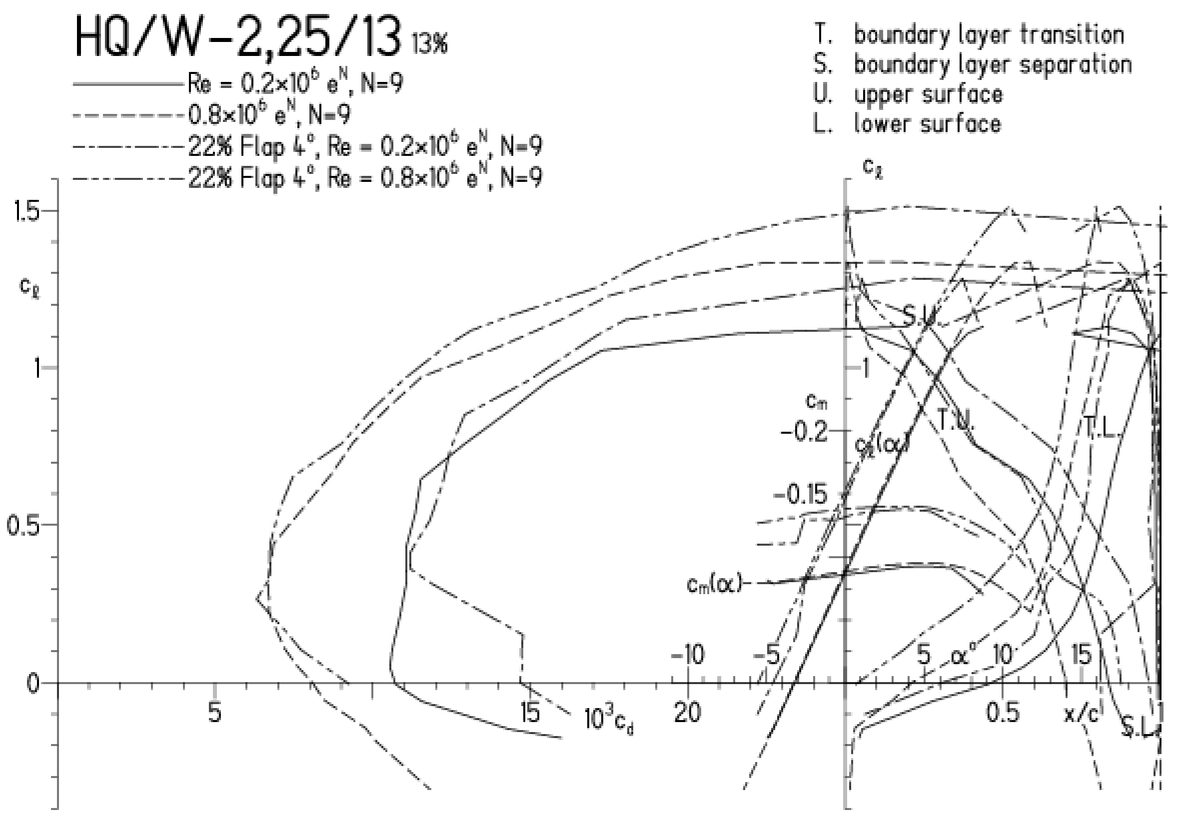


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

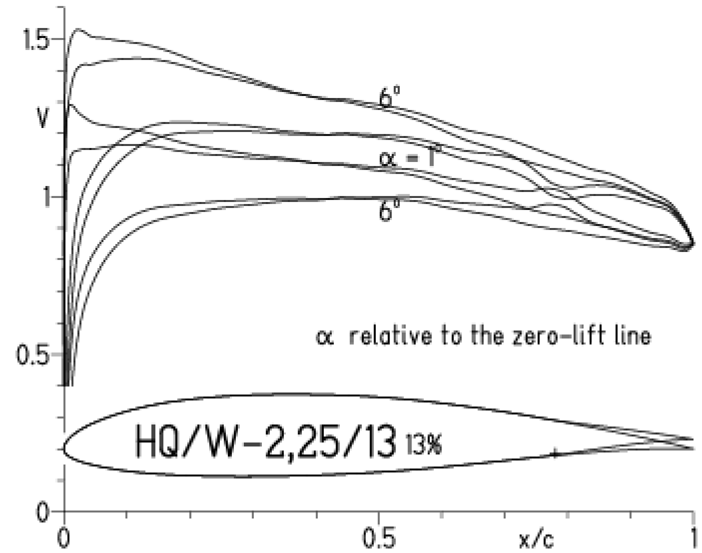


EPPLER 2005 V.

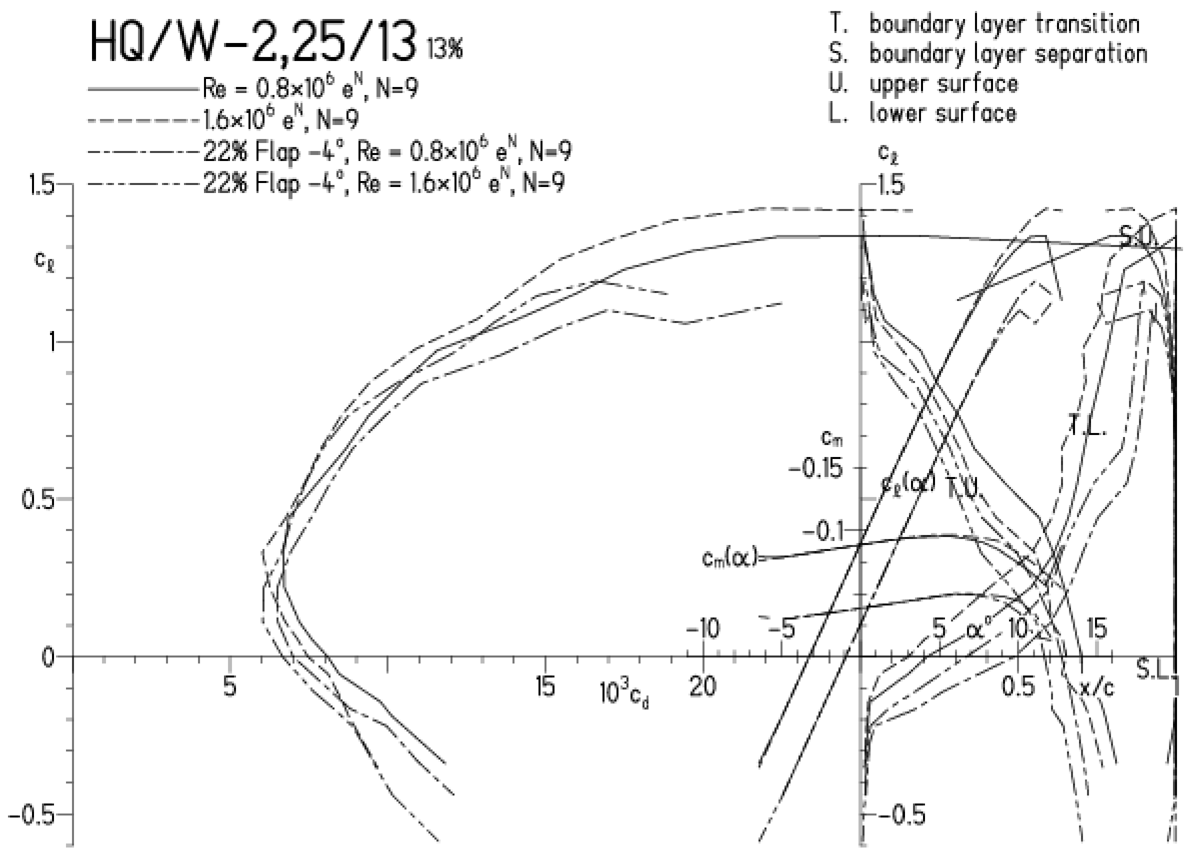


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

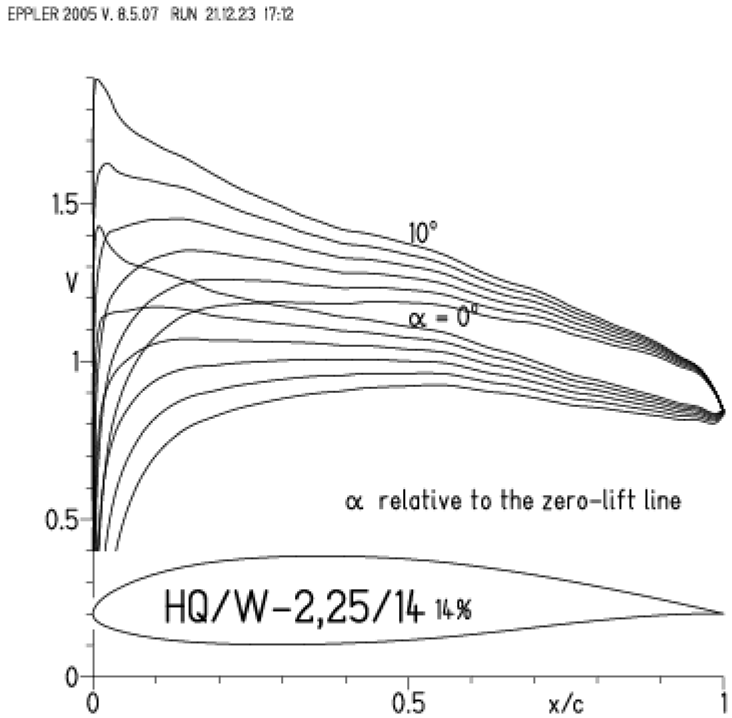
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

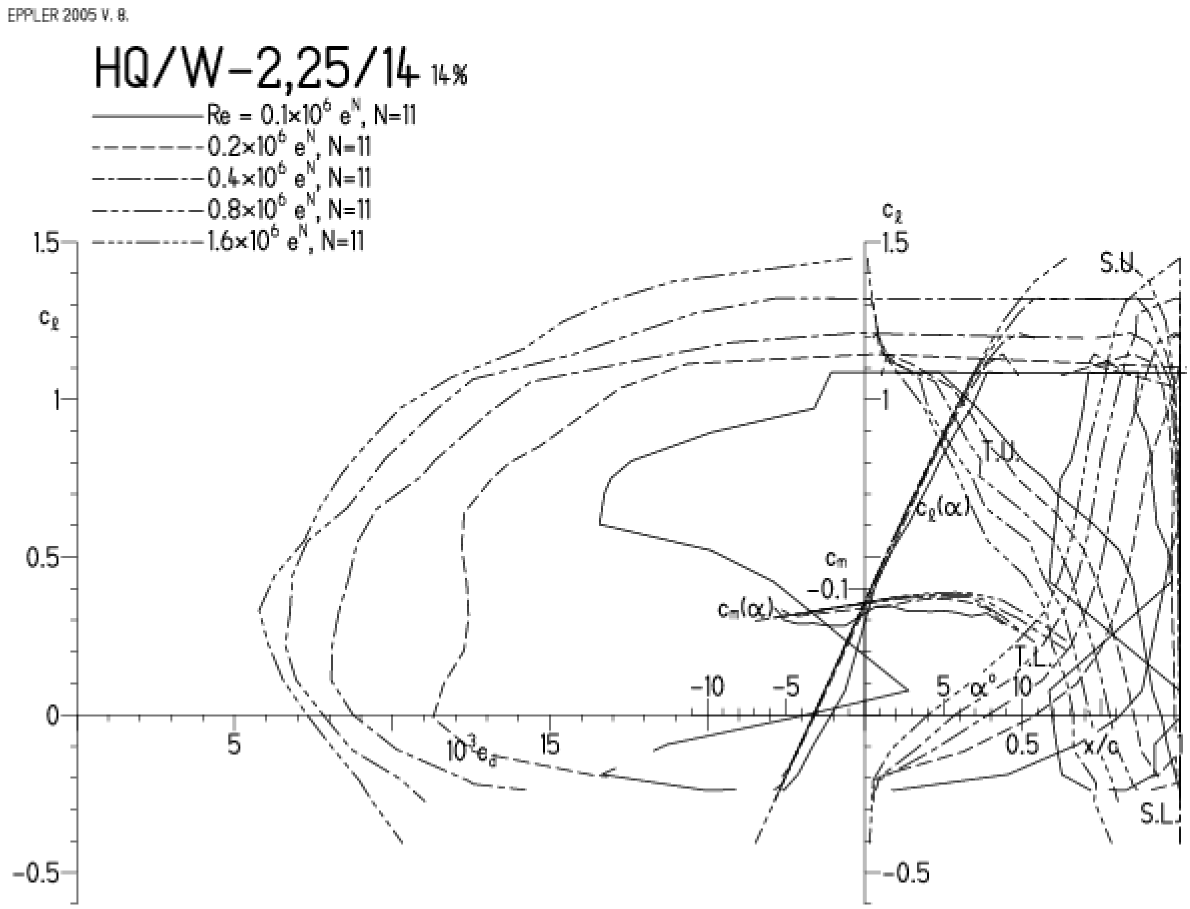


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:



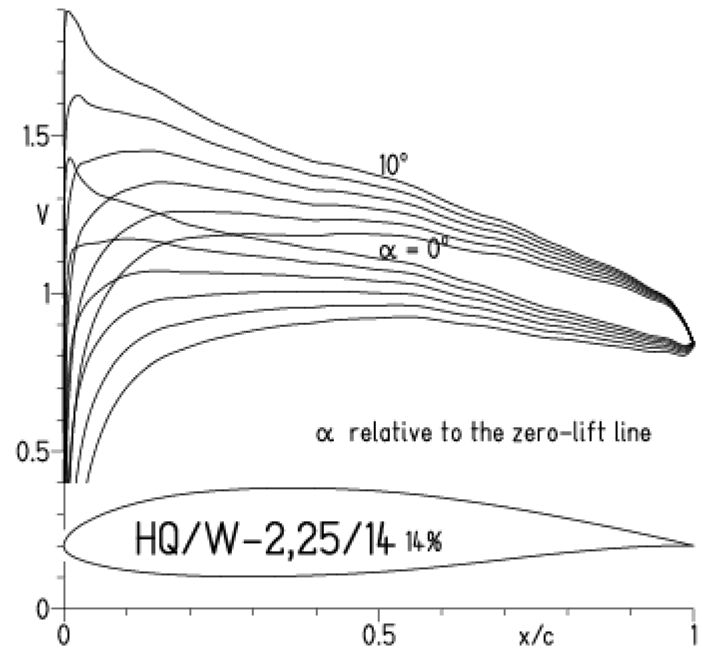
<u>HQ/W-2,25/14</u>, N=11



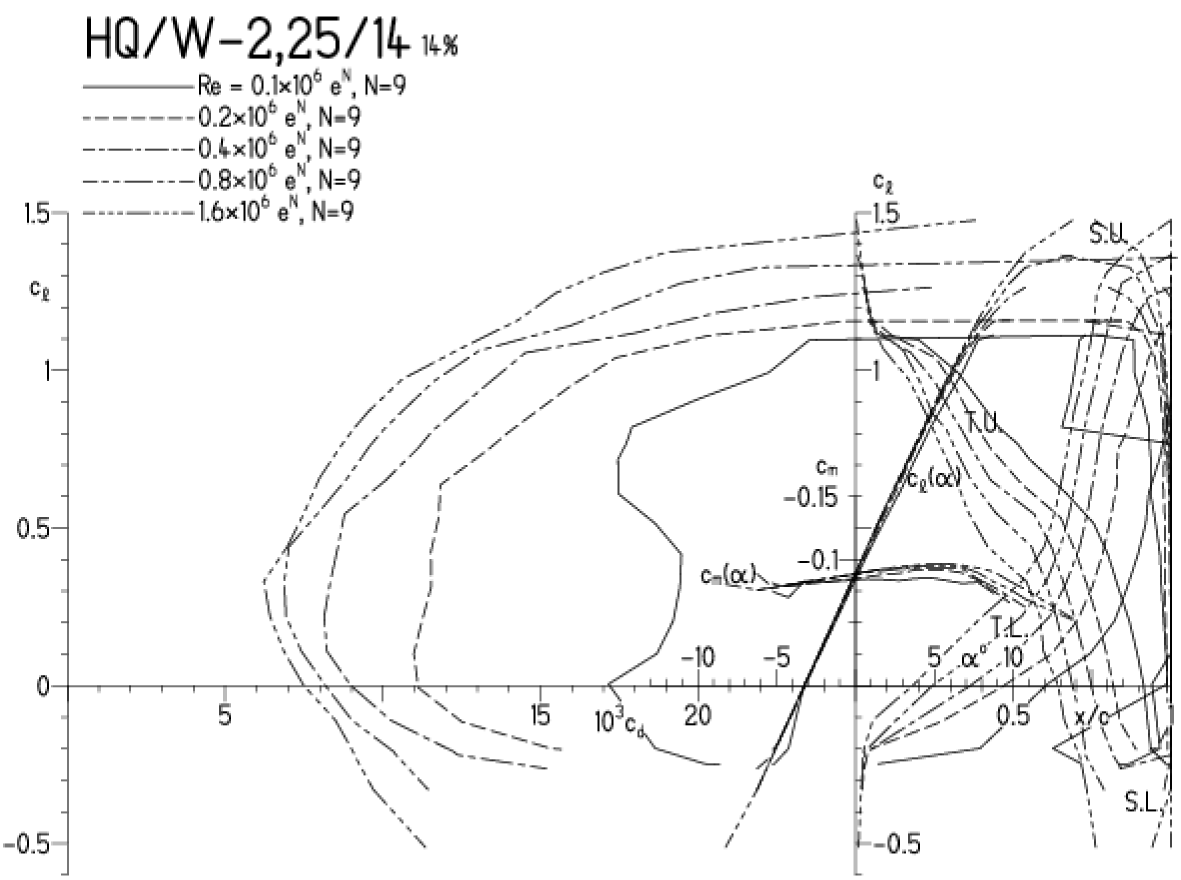


HQ/W-2,25/14, N=9

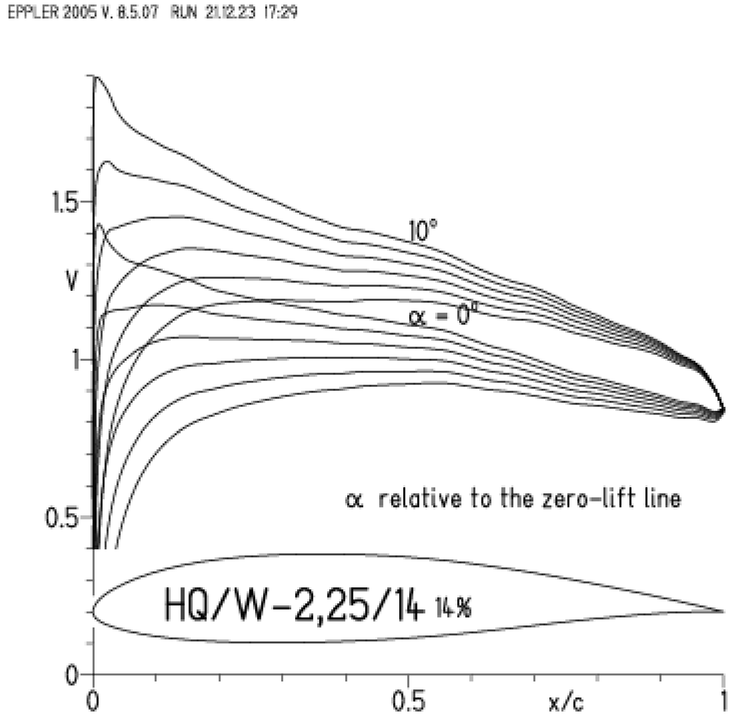
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

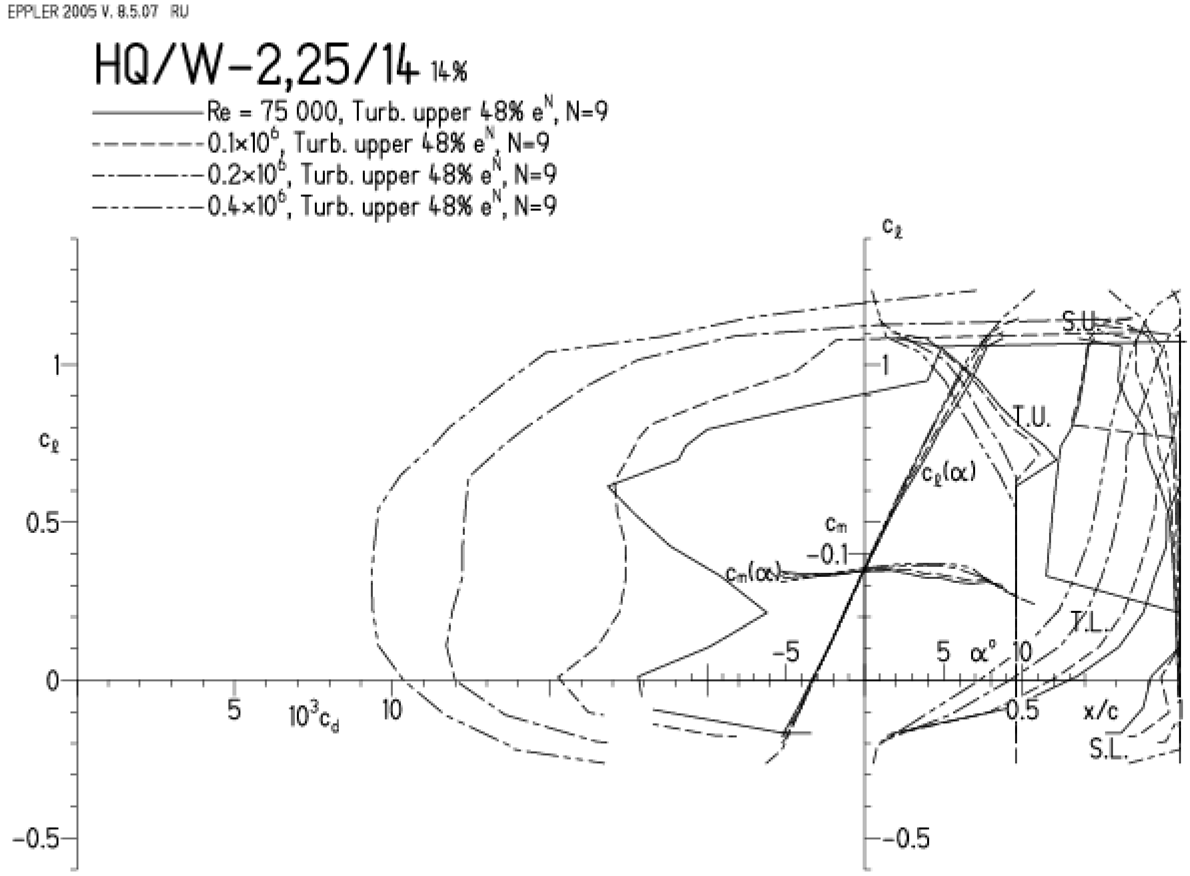


EPPLER 2005 V. 8.



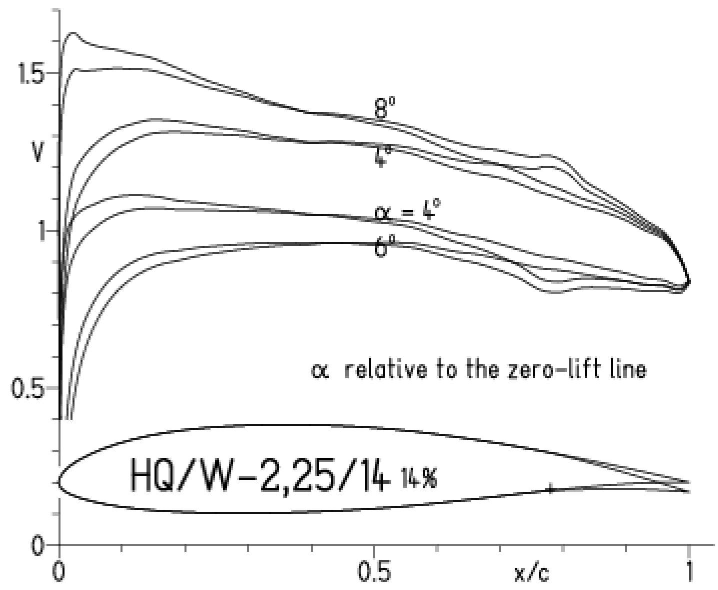
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



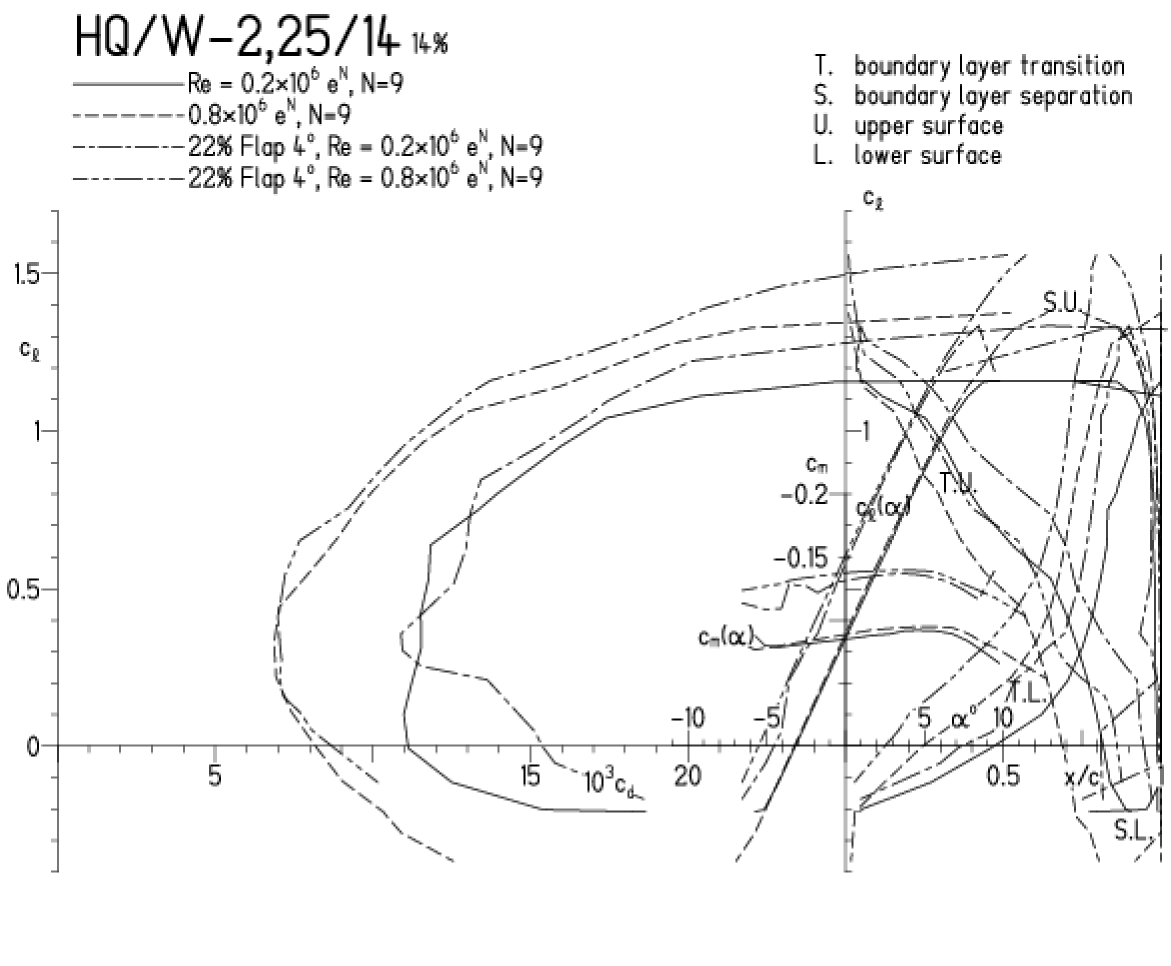


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

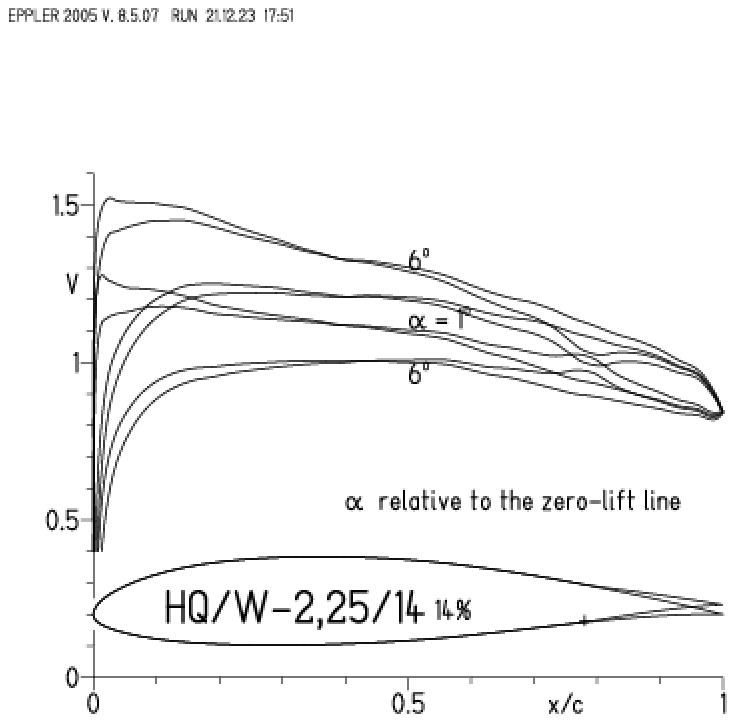
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

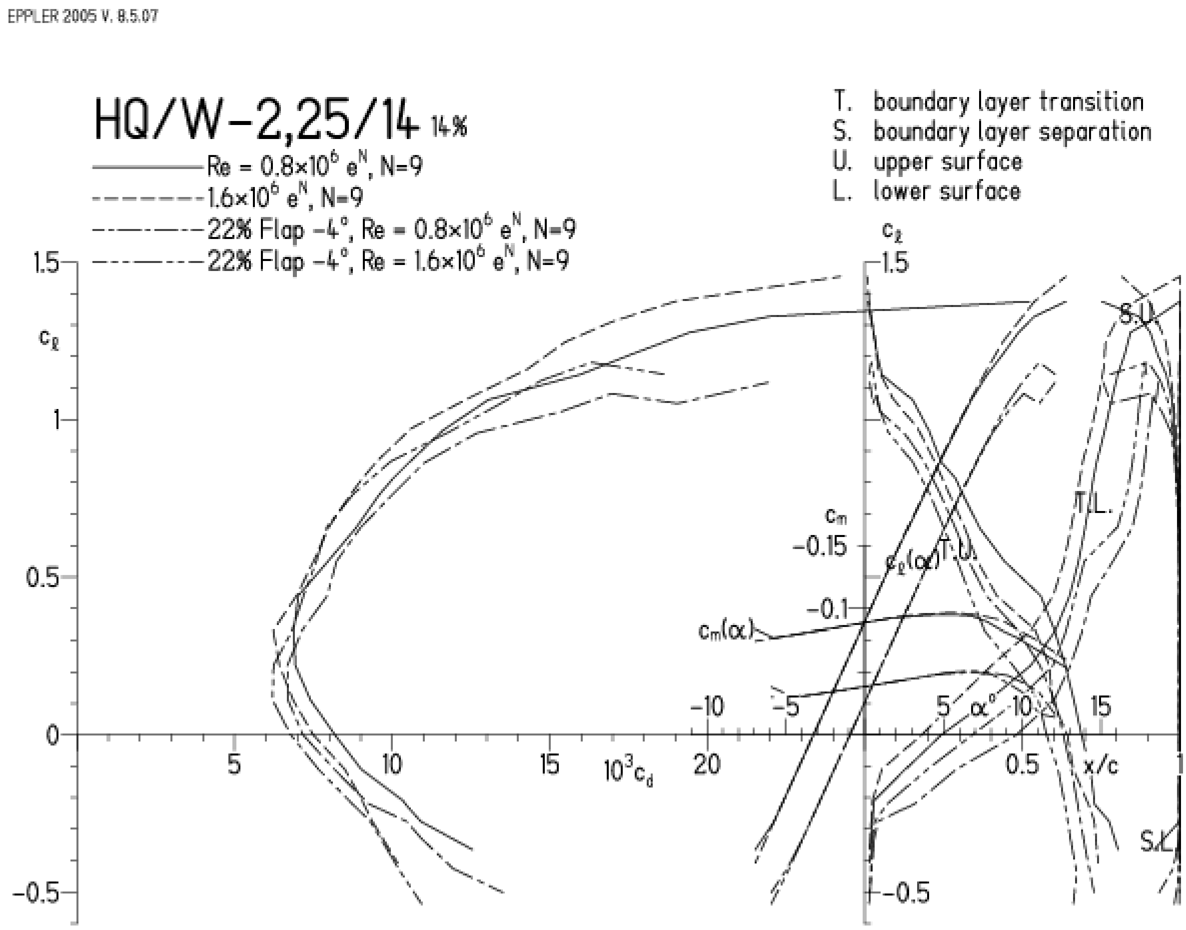


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

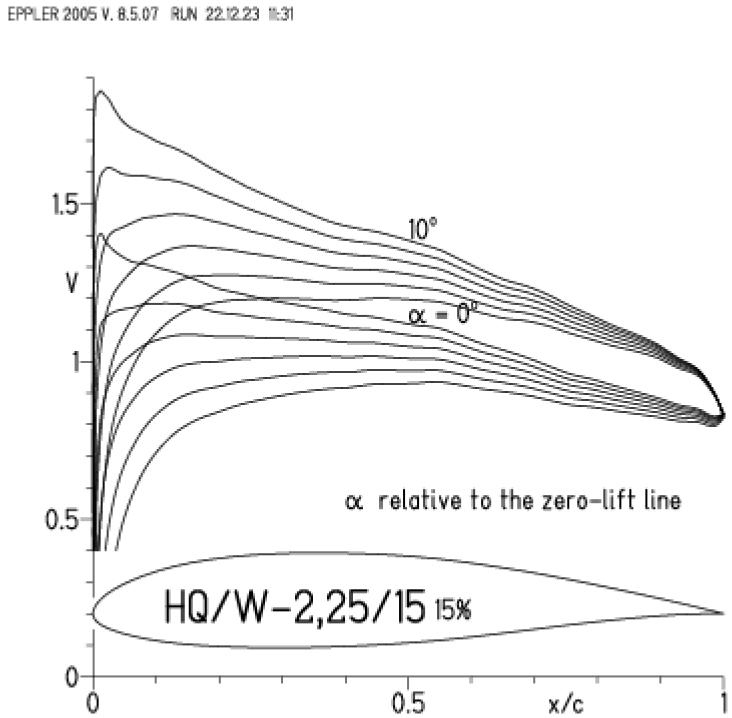


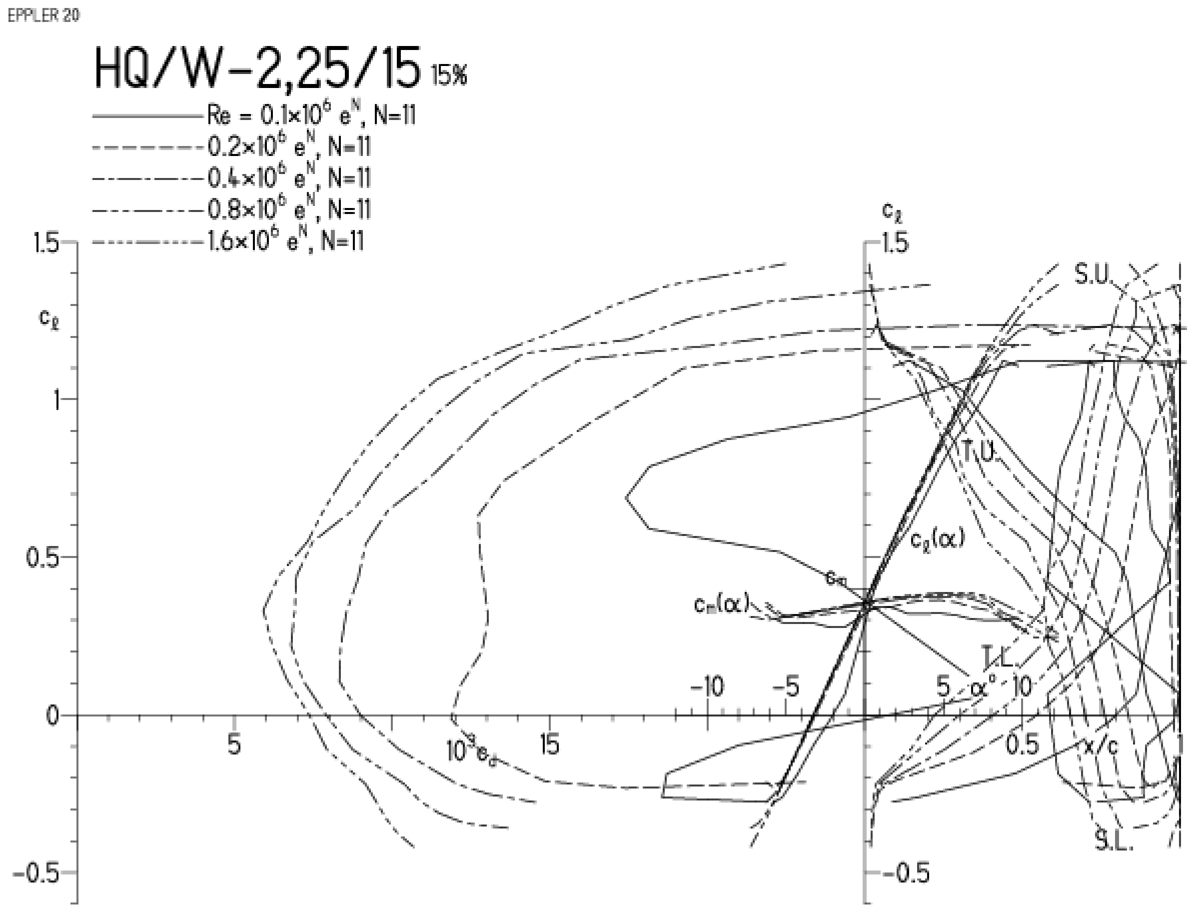
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag





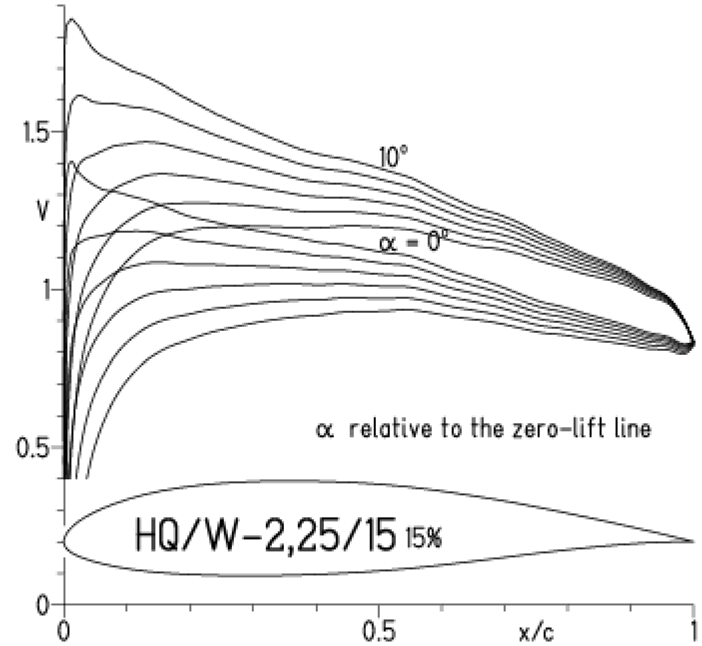
HQ/W-2,25/15, N=11



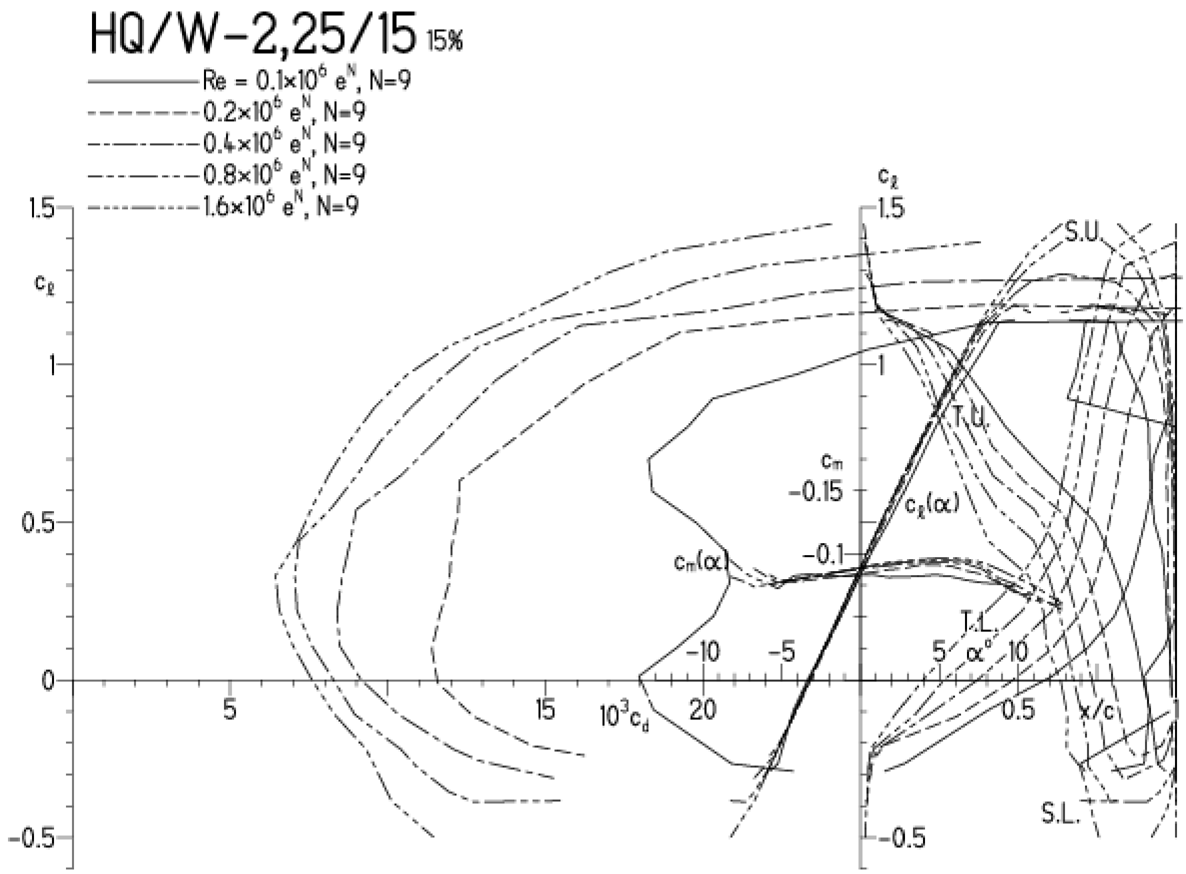


<u>HQ/W-2,25/15</u>, N=9

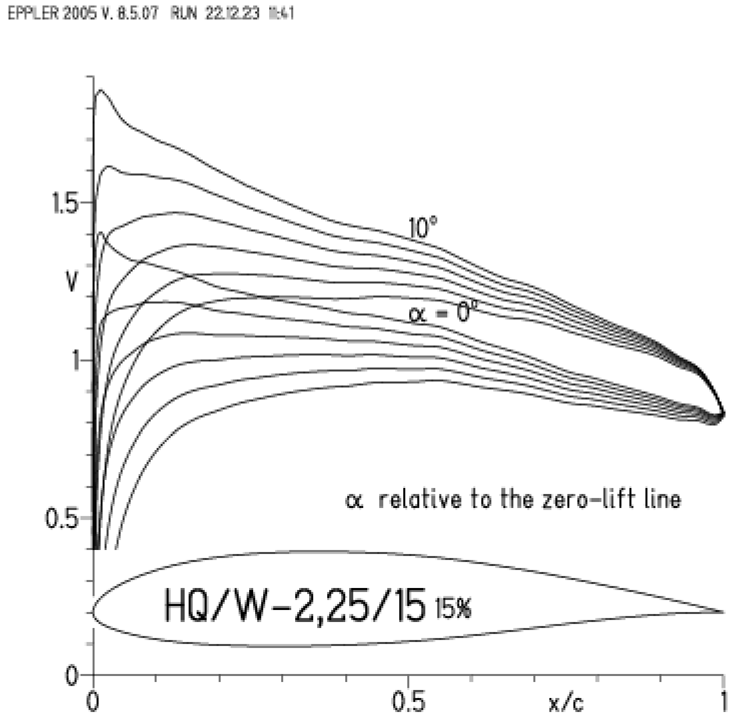
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

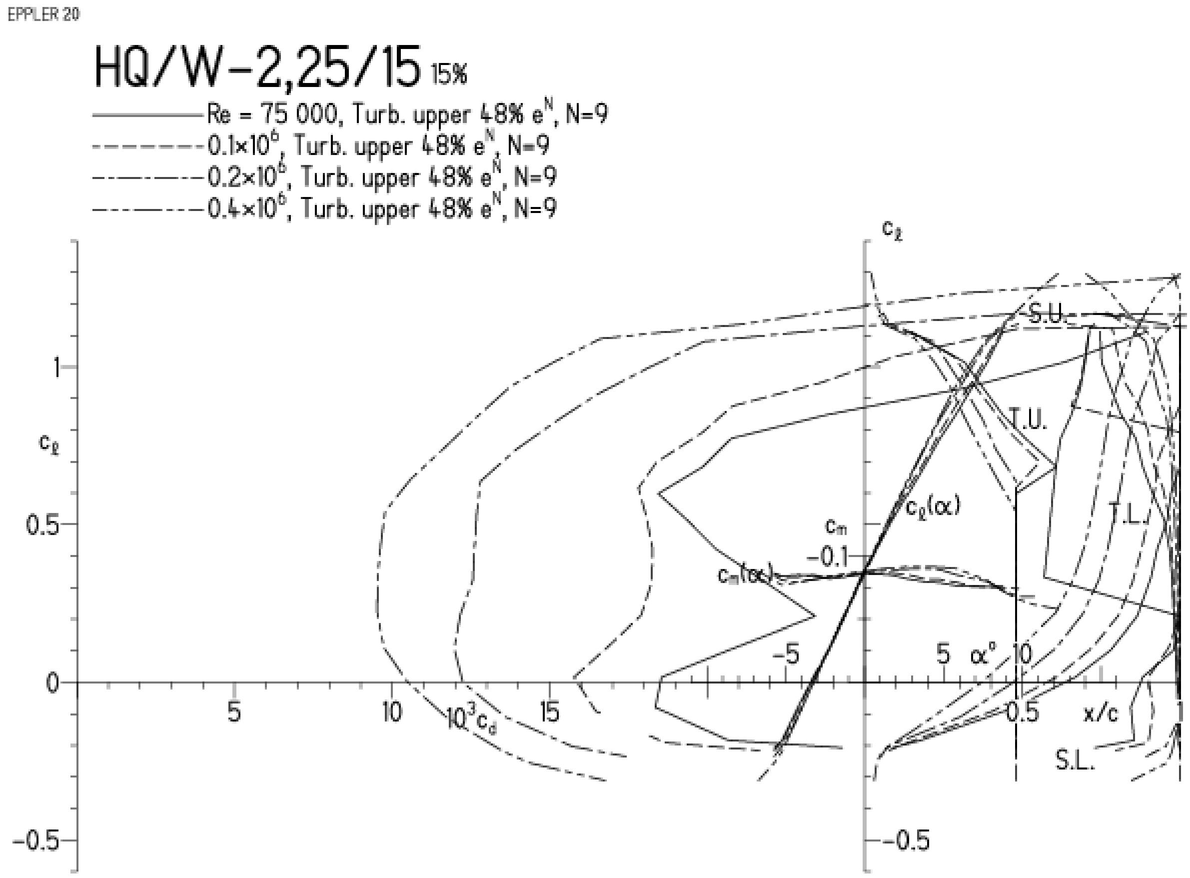


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



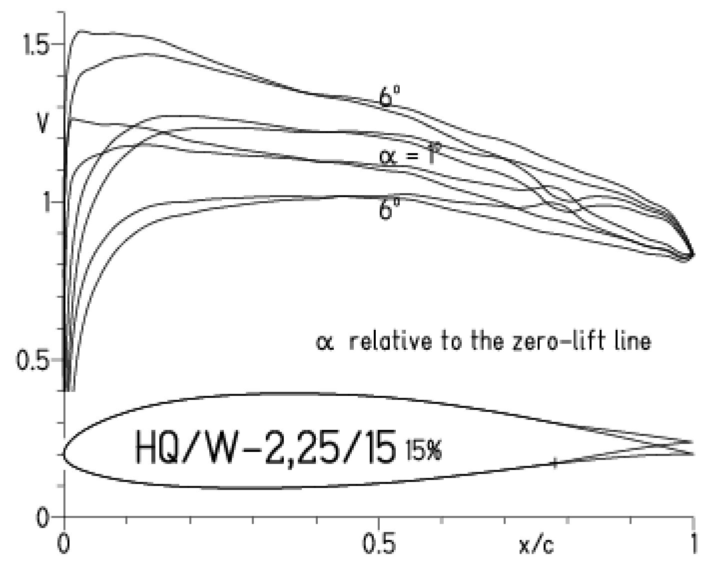


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

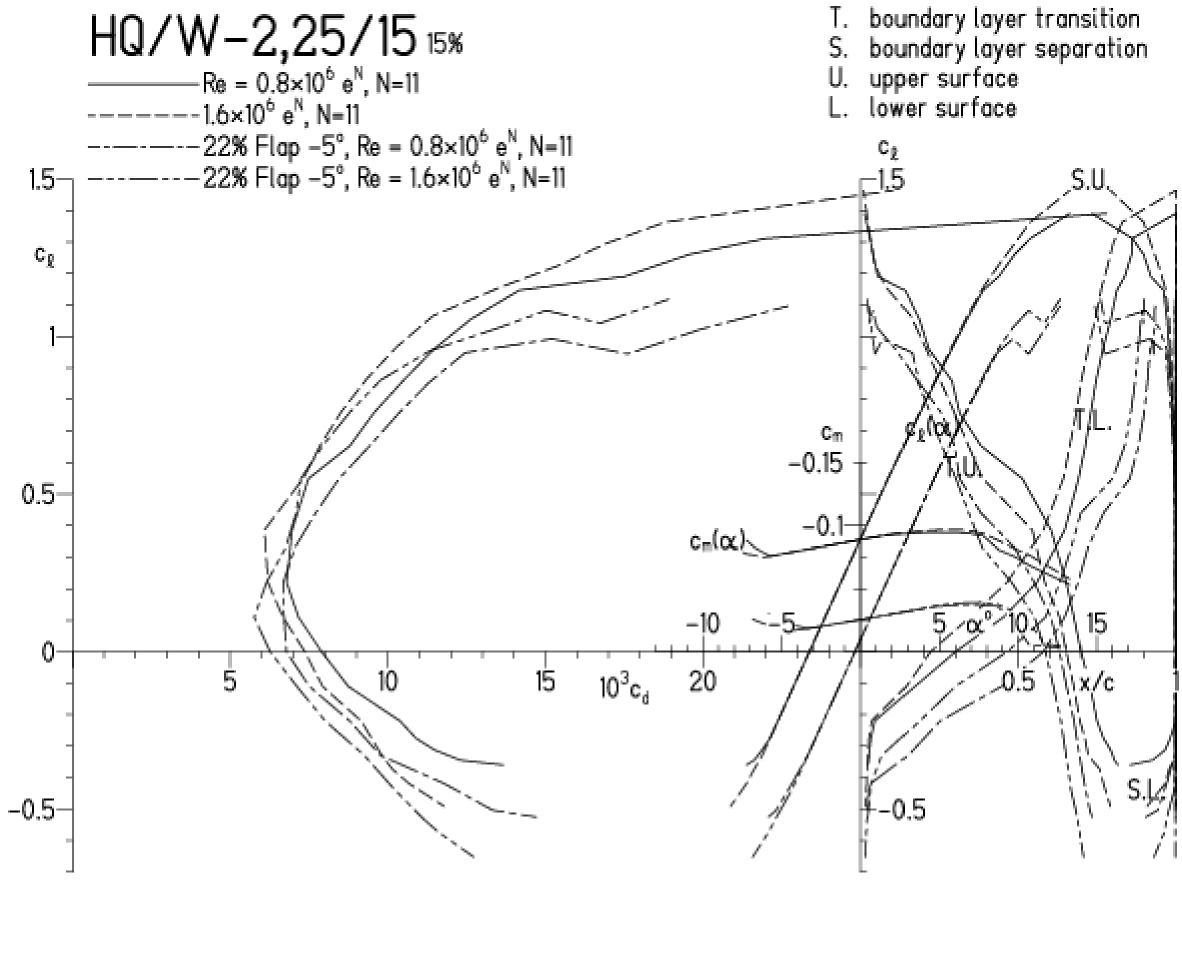
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

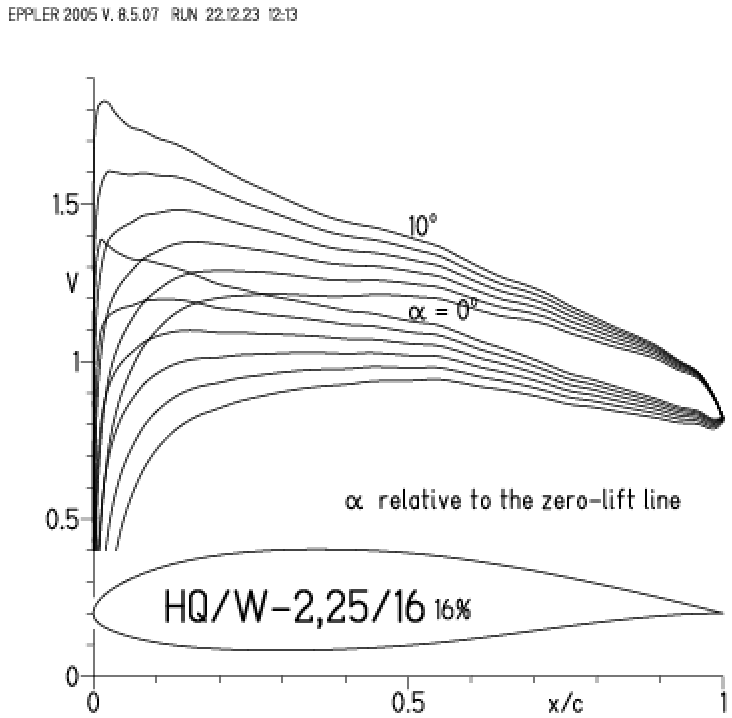
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

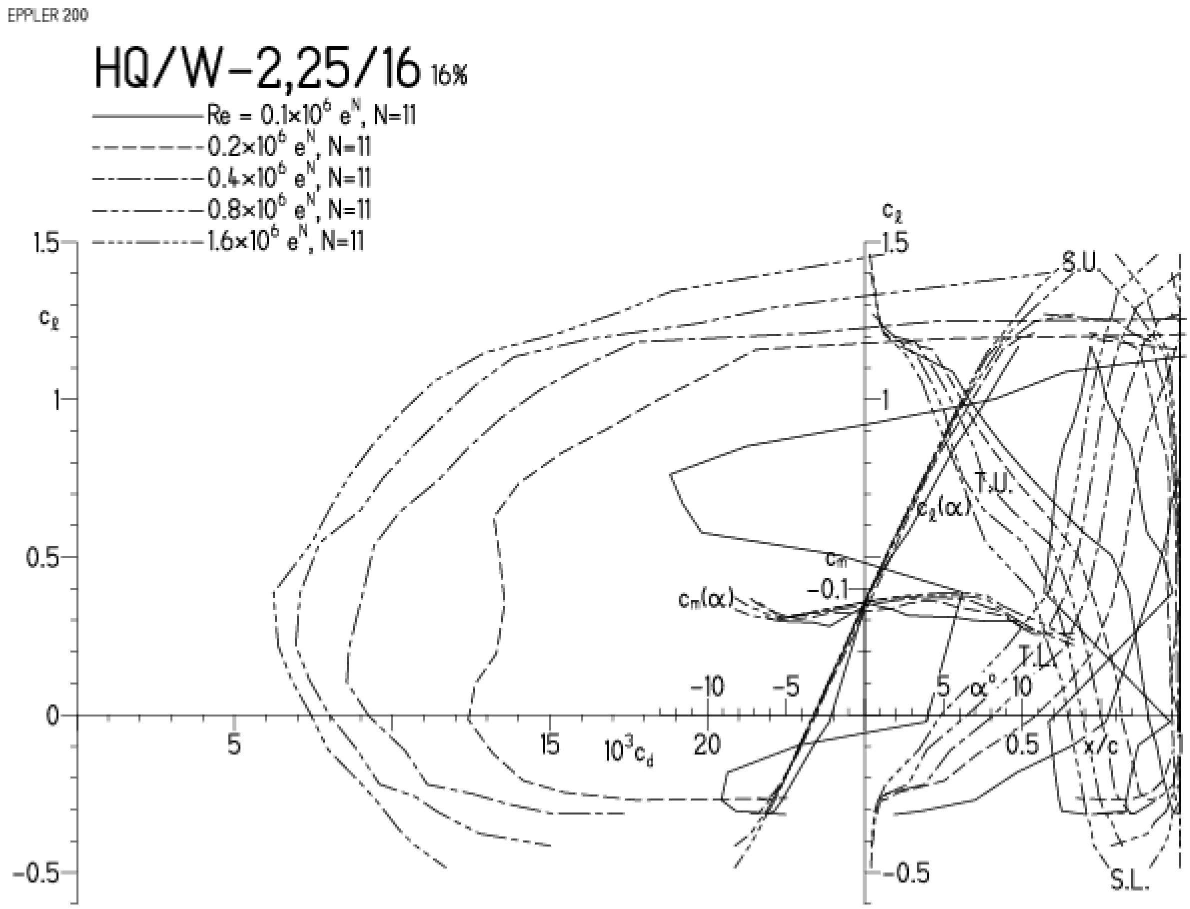


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

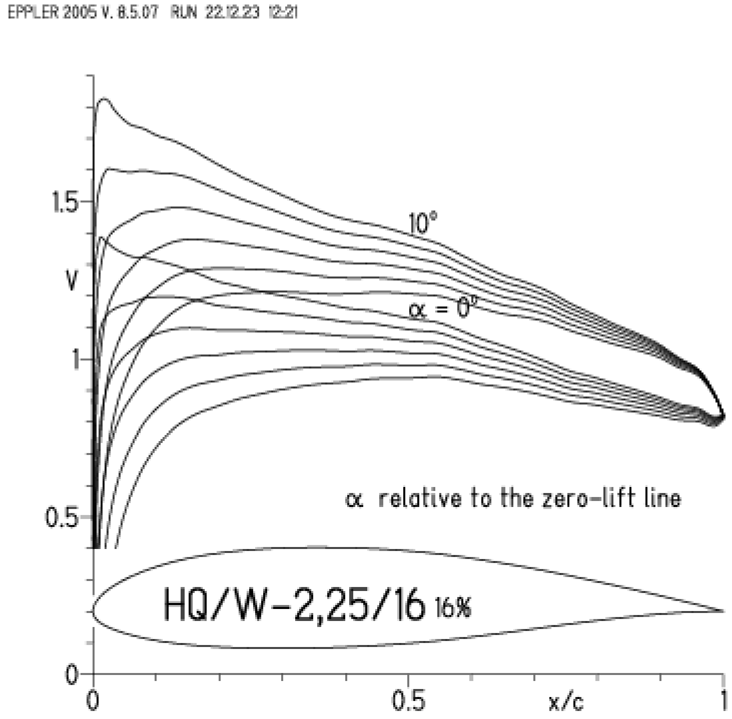


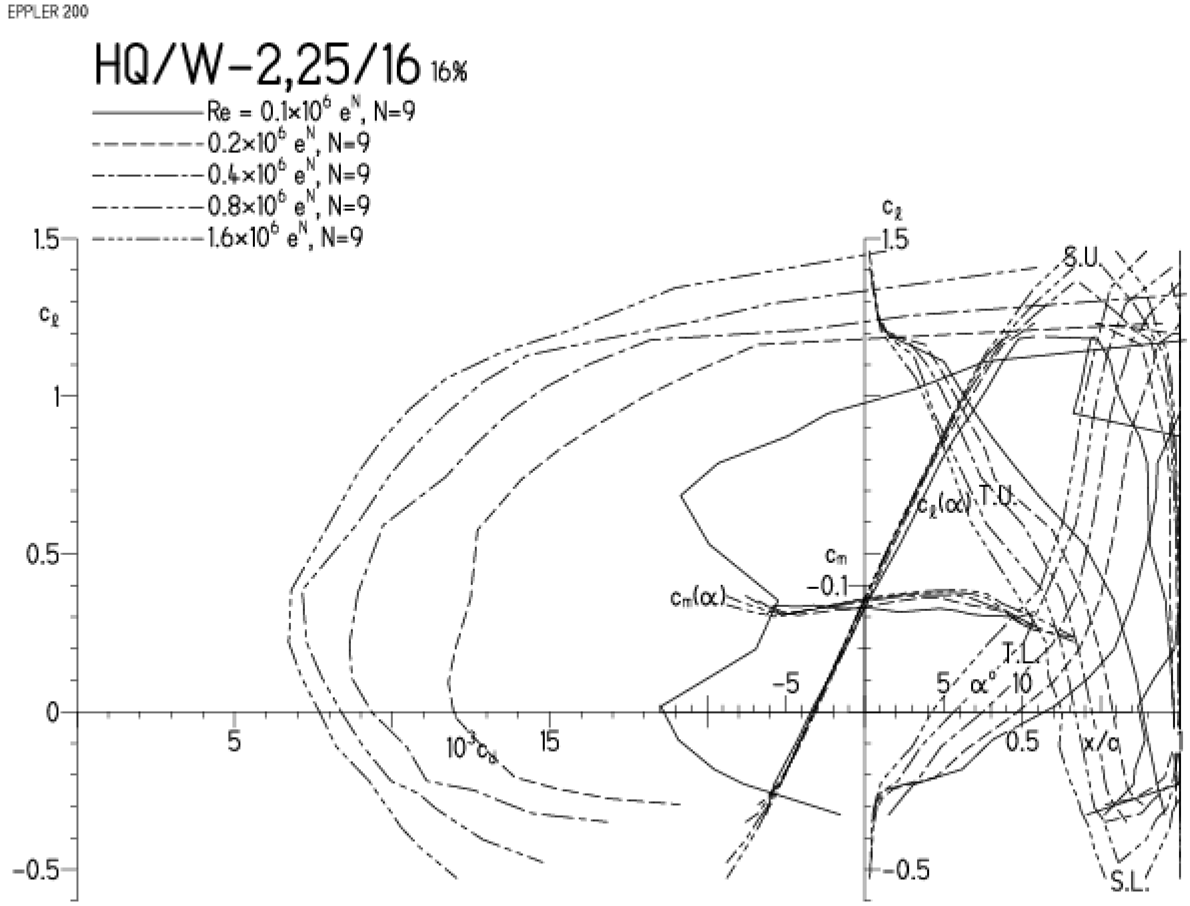
<u>HQ/W-2,25/16</u>, N=11



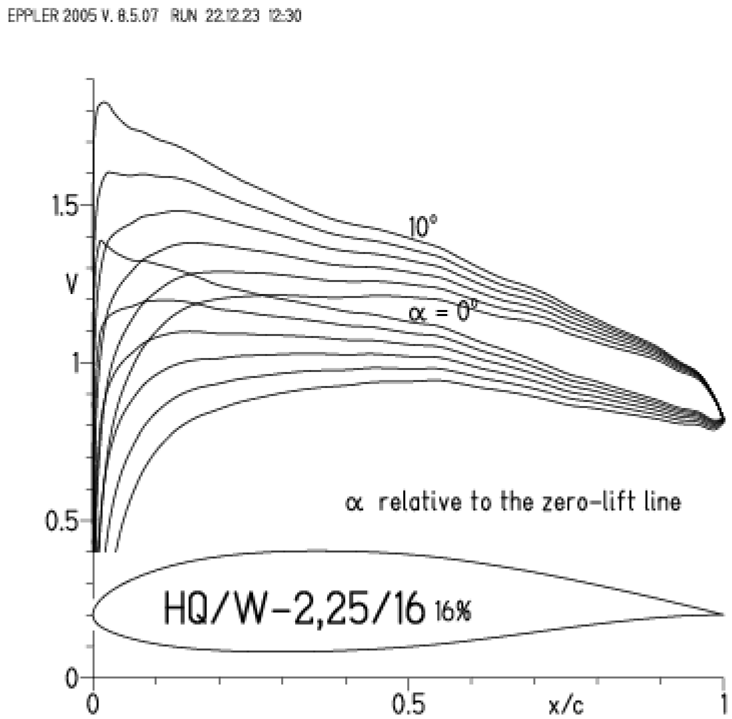


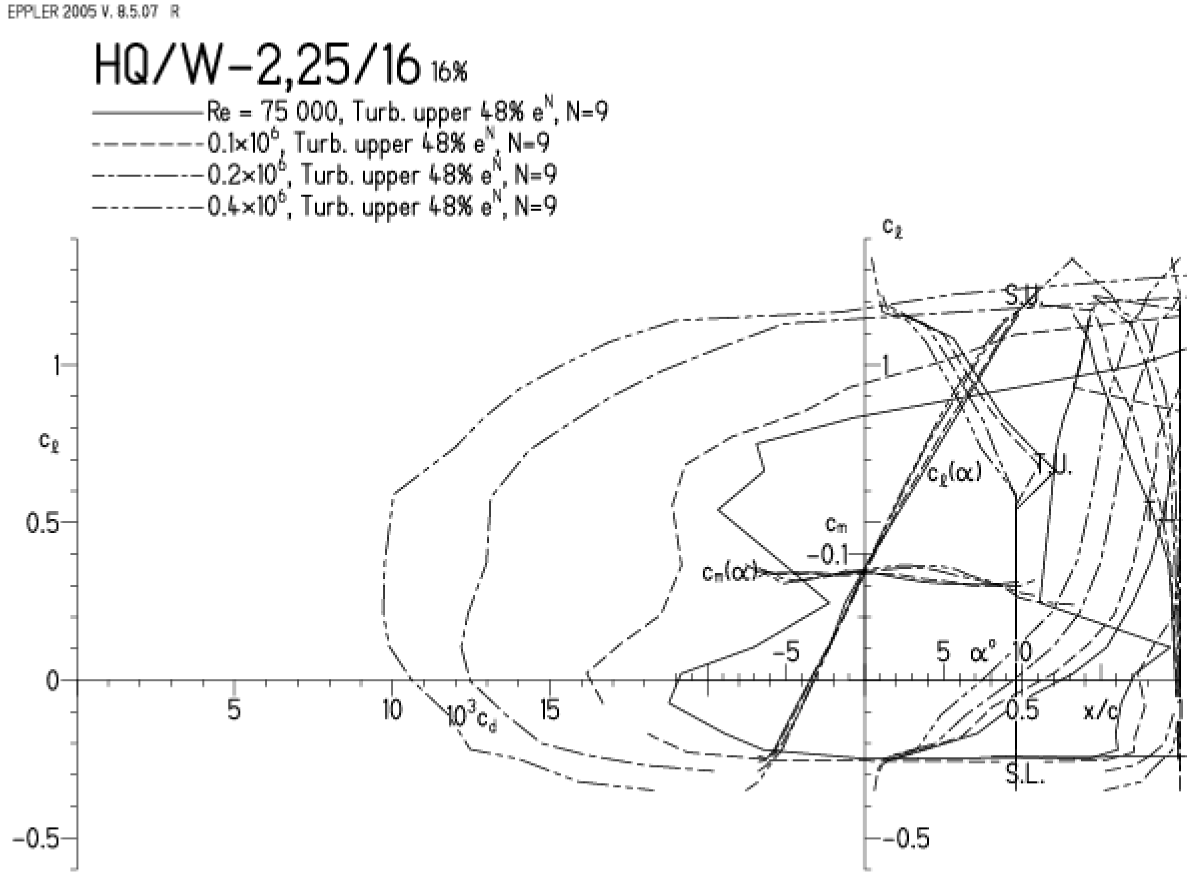
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
10^3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_l(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



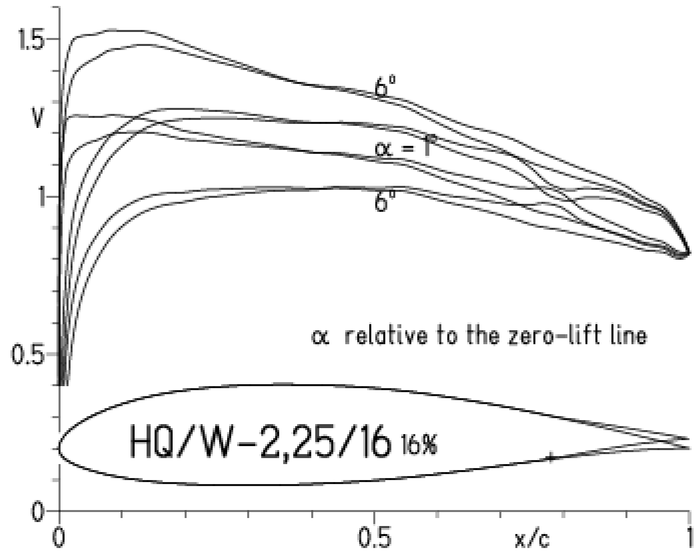


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

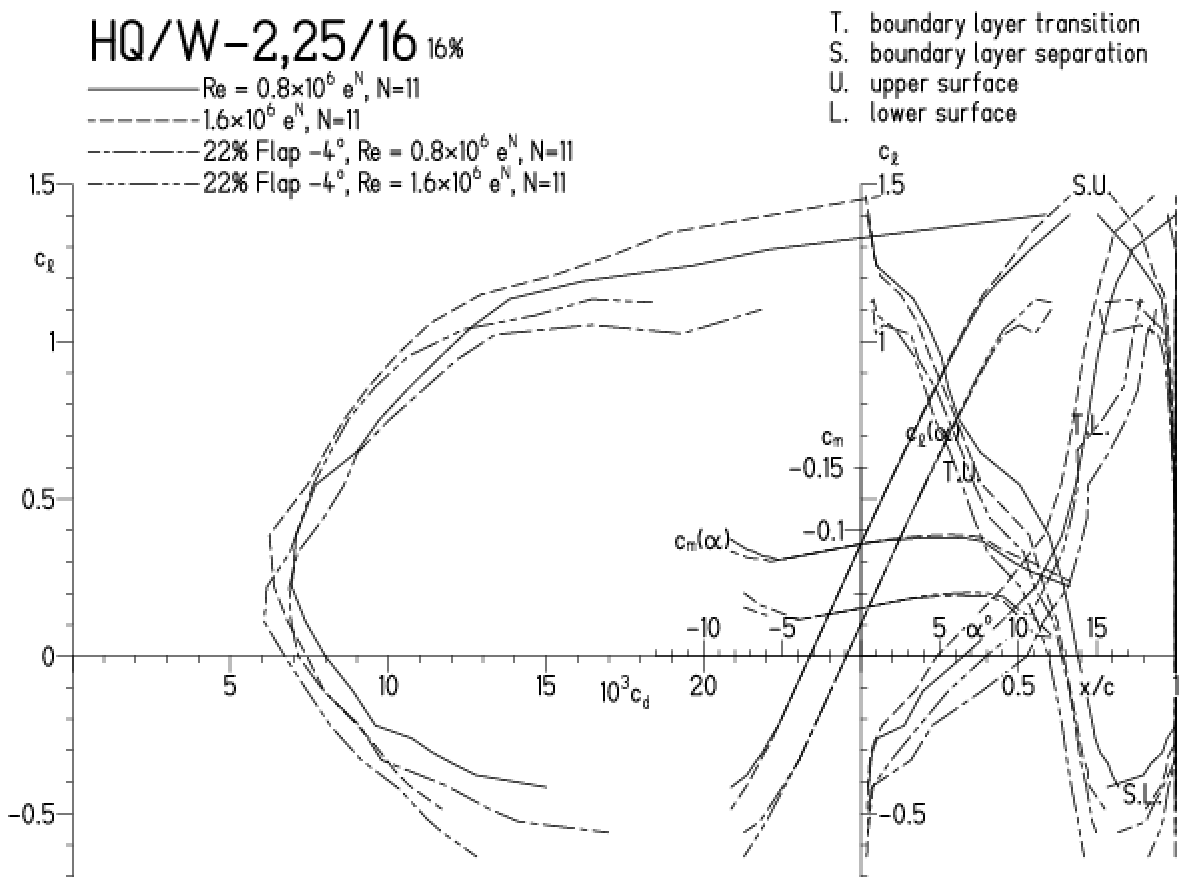
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

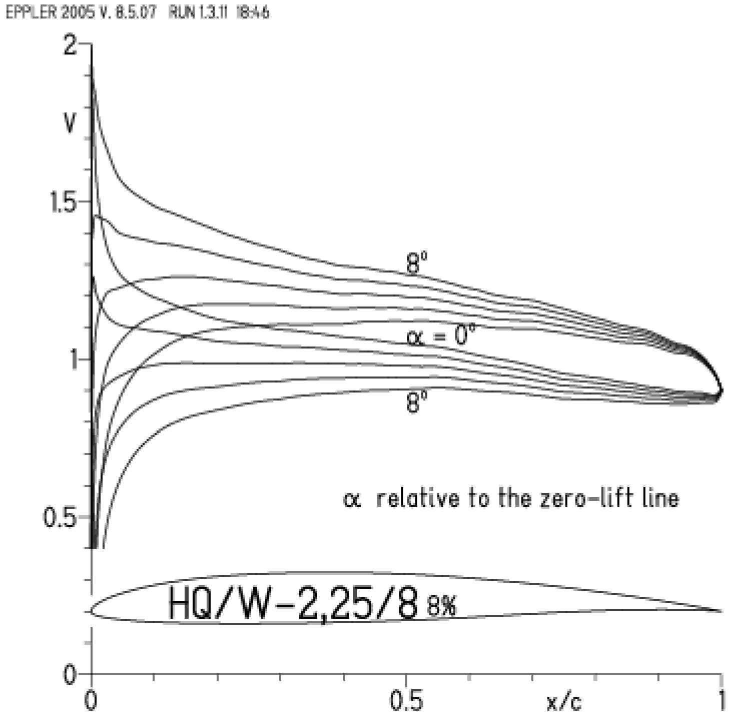
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

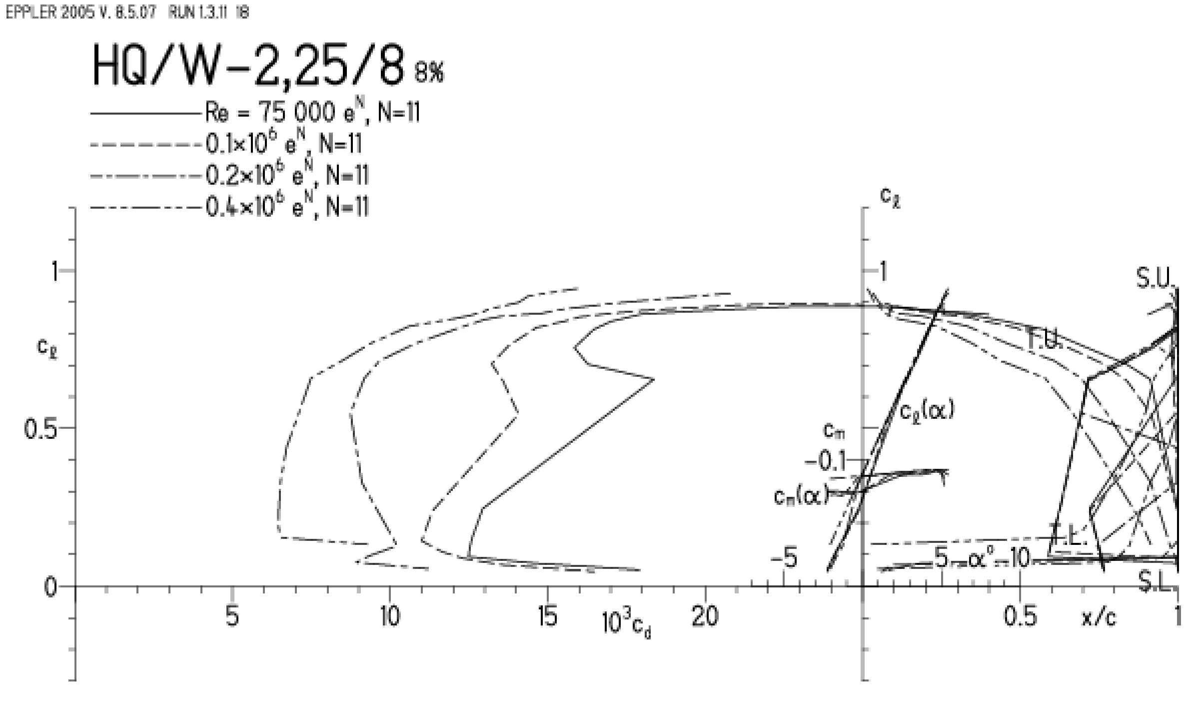


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

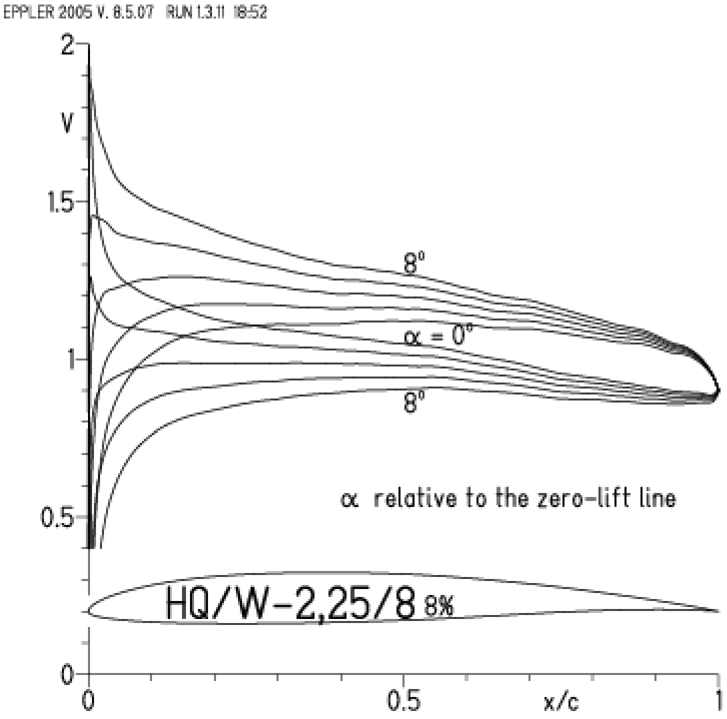


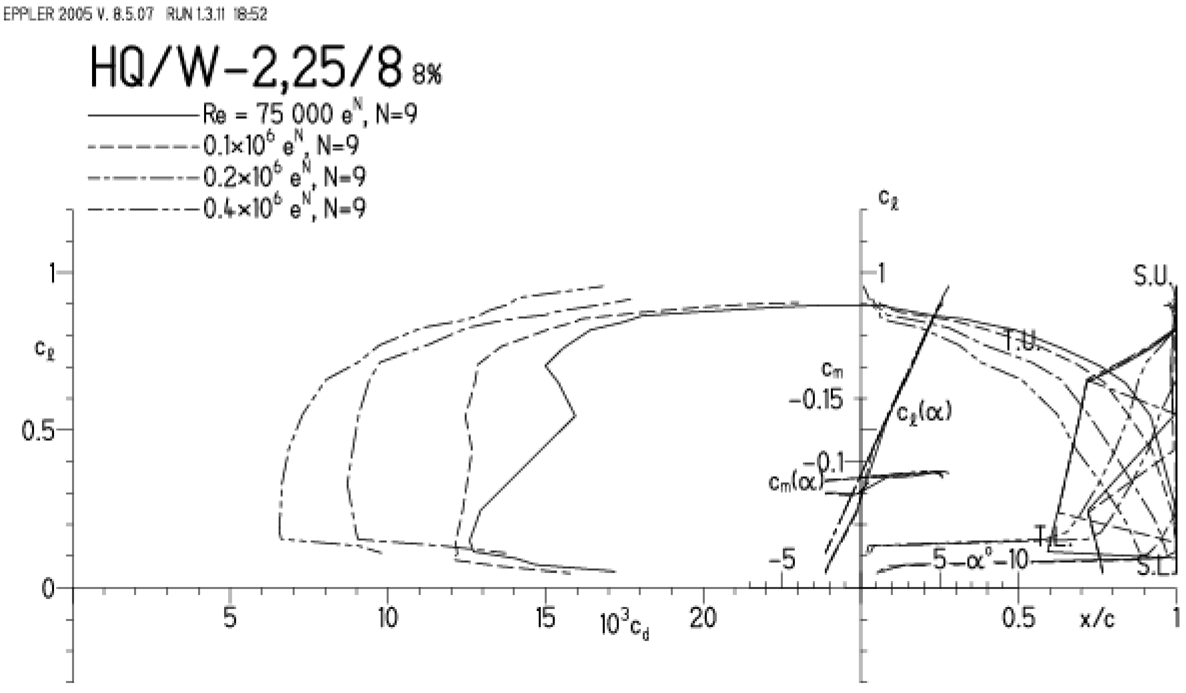
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

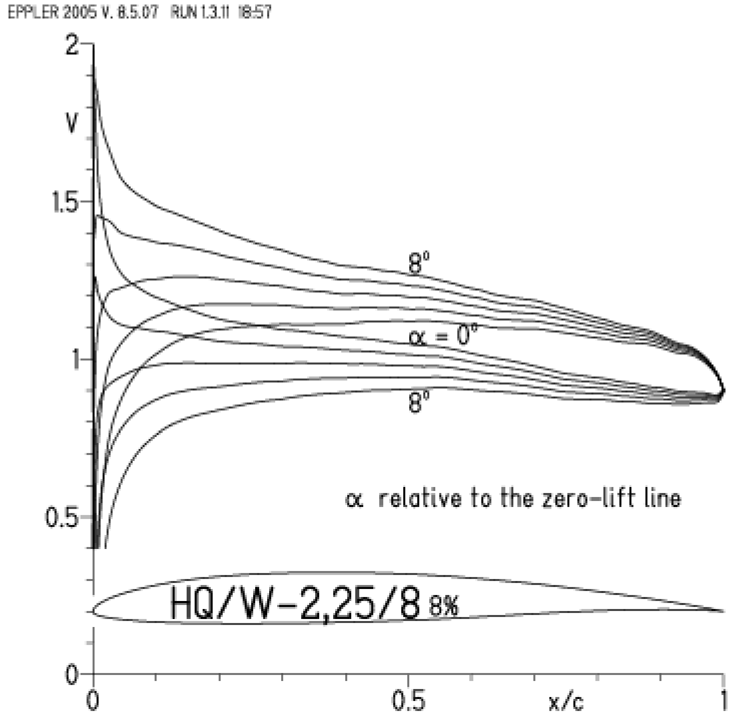

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

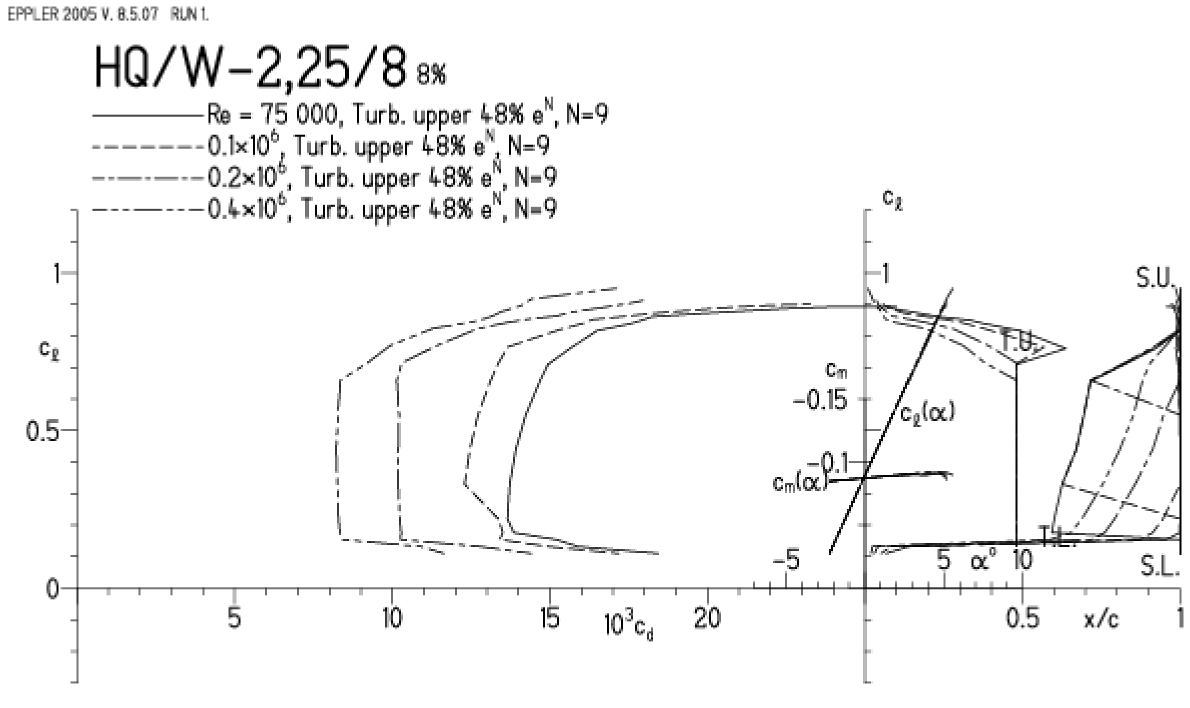
<u>HQ/W-2,25/8</u>, N=9





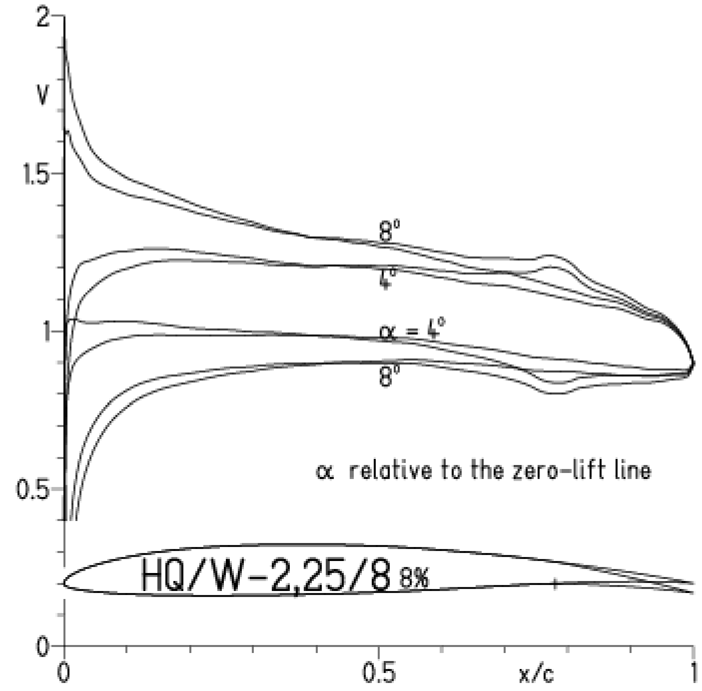
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



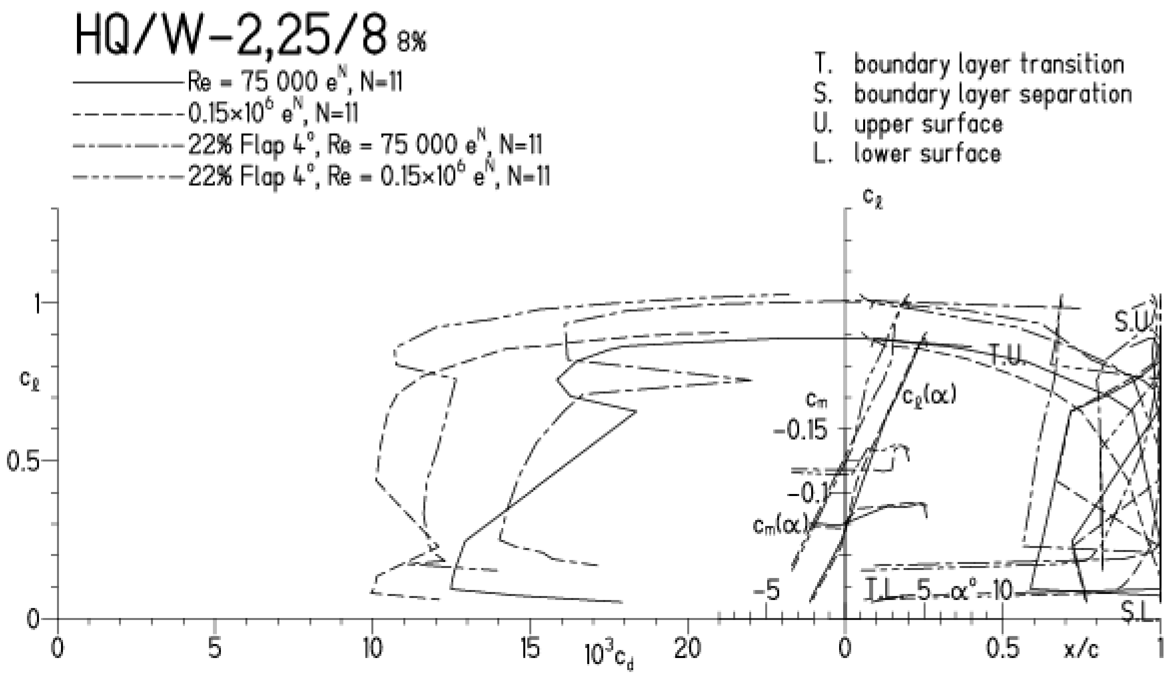


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

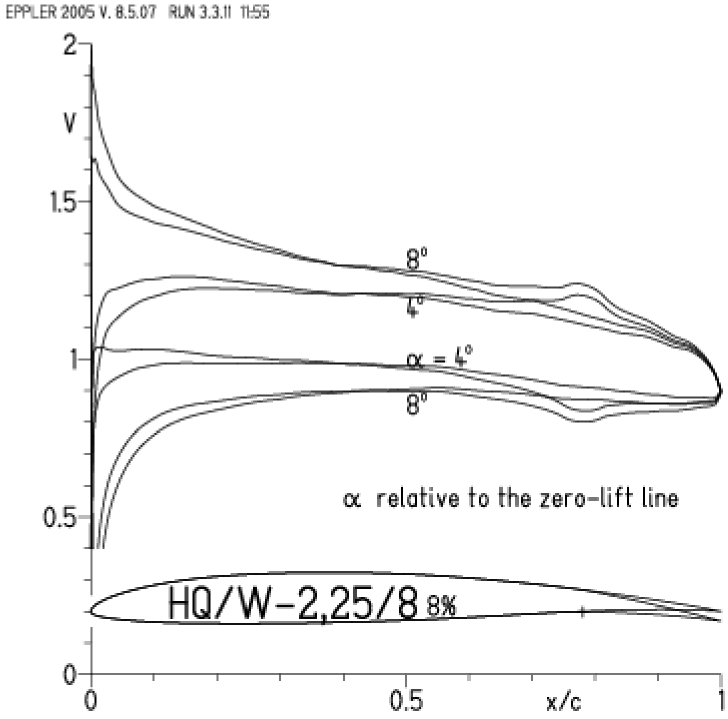
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

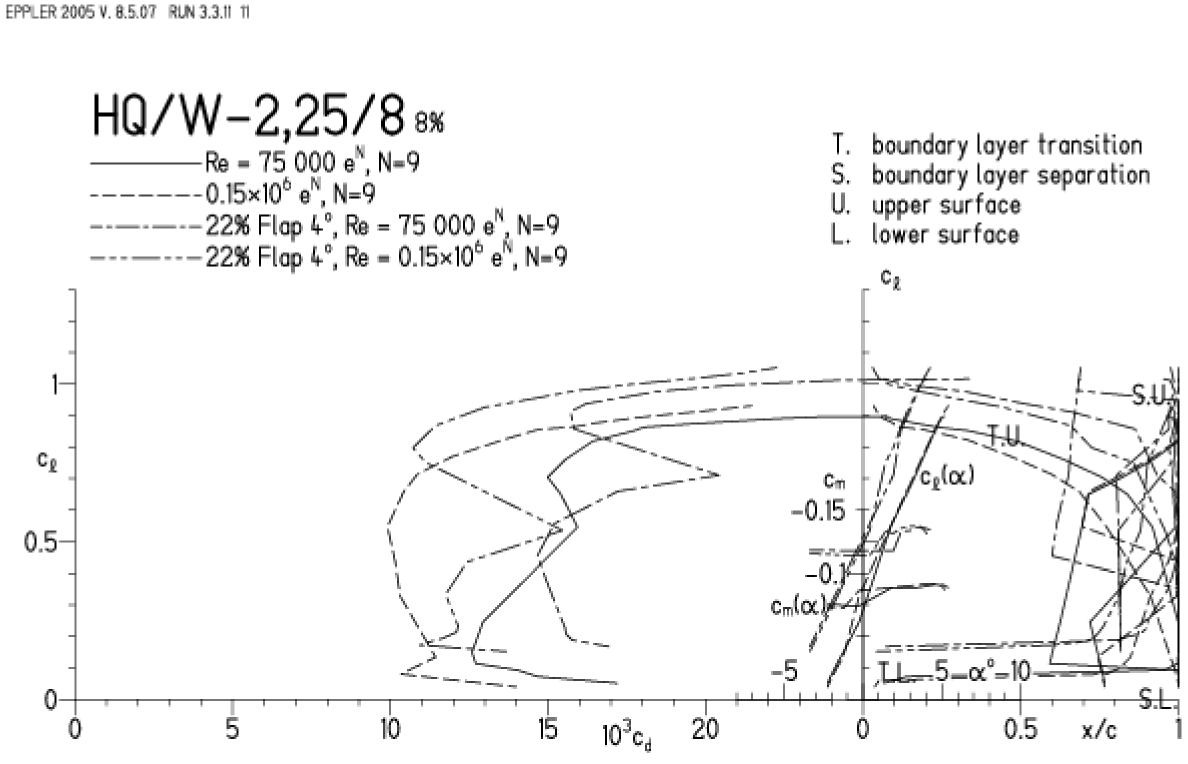


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

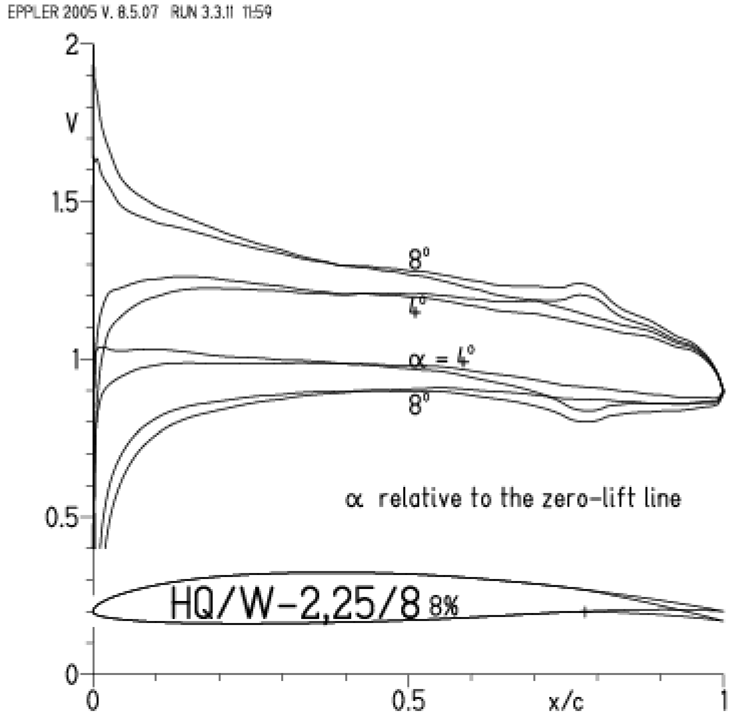


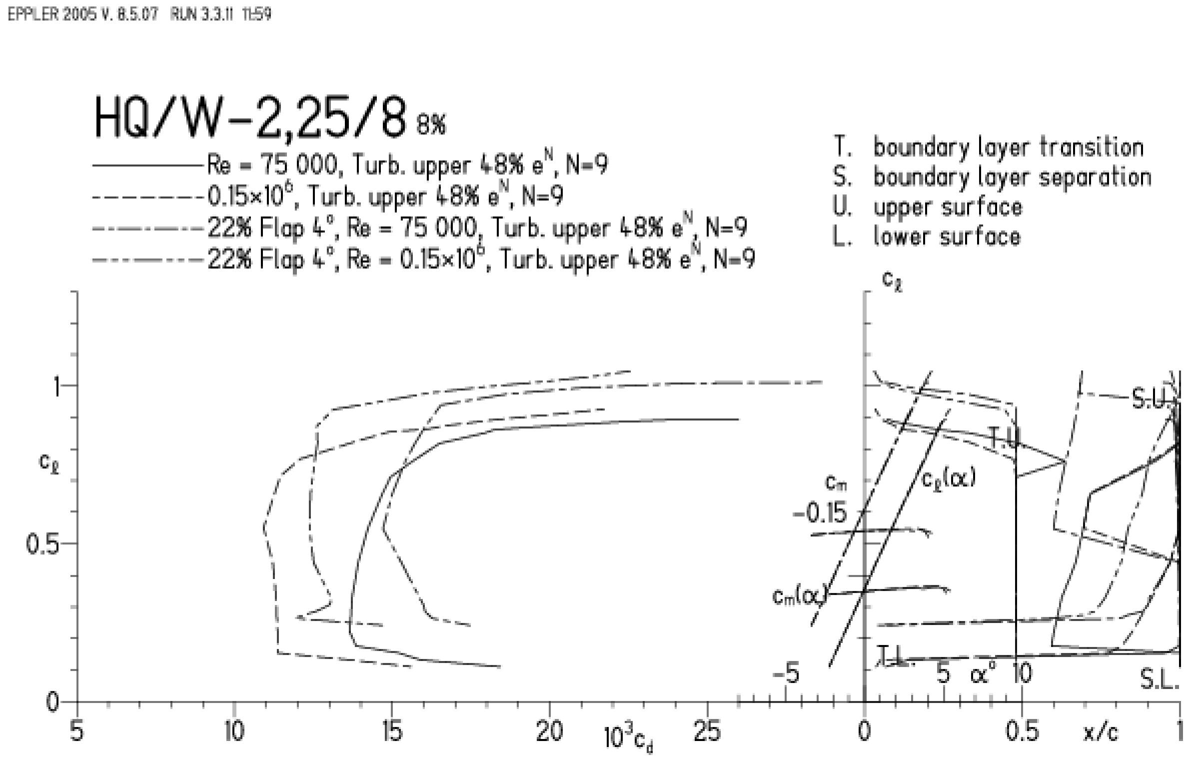
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





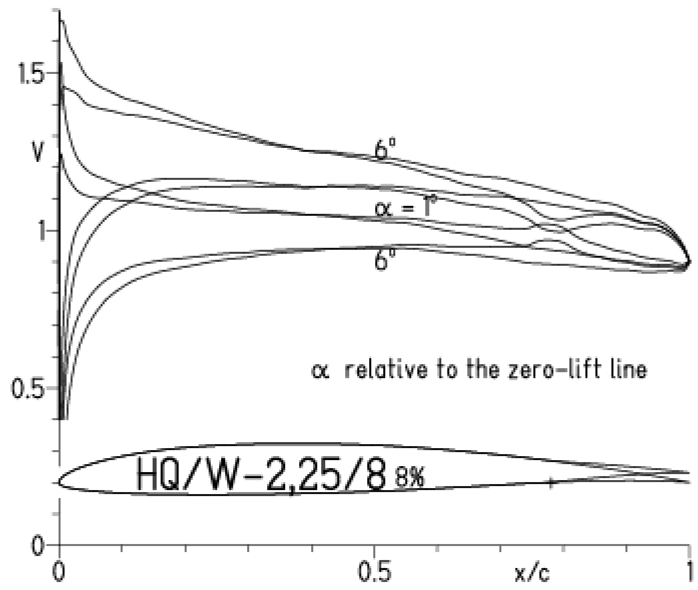
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



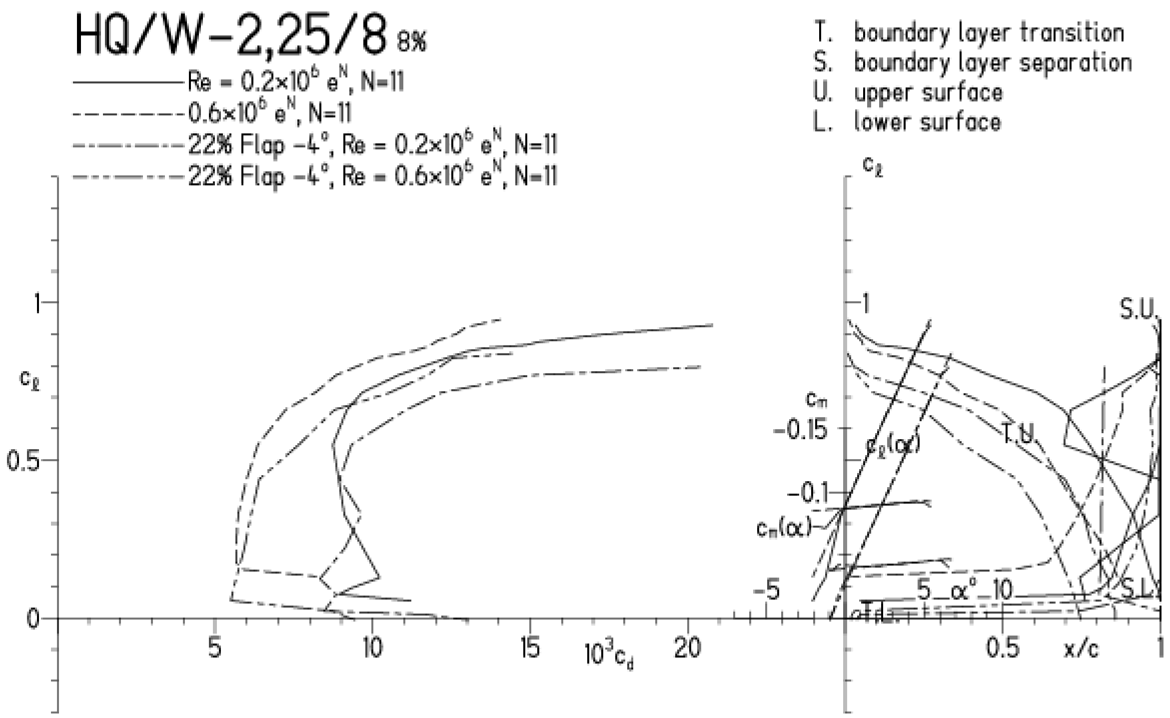


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

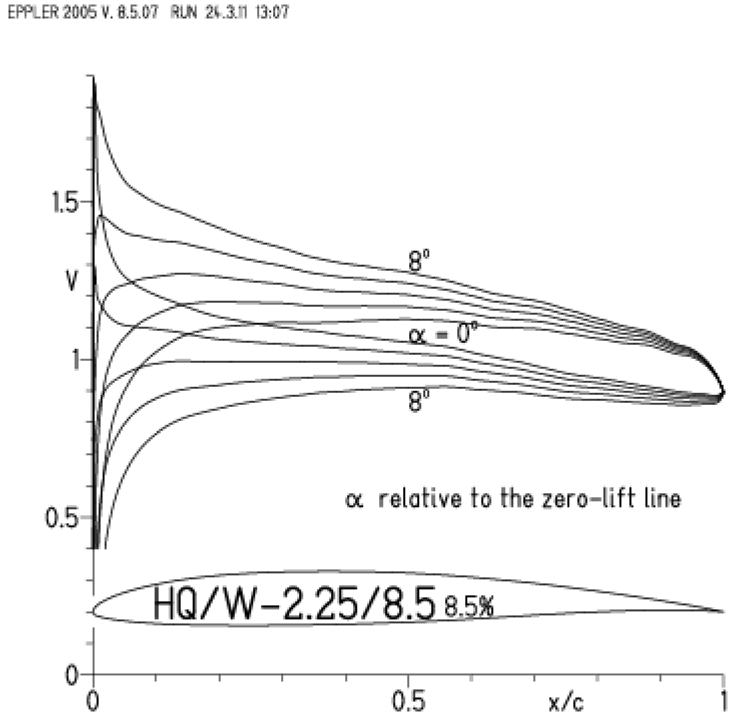
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

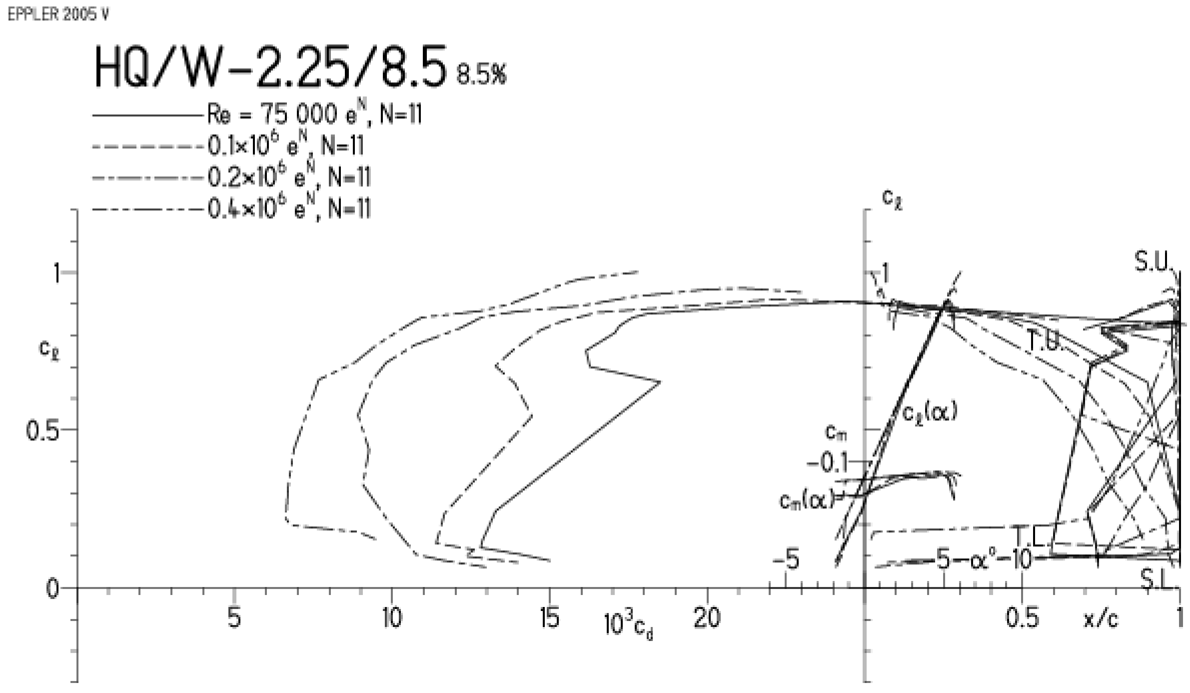


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



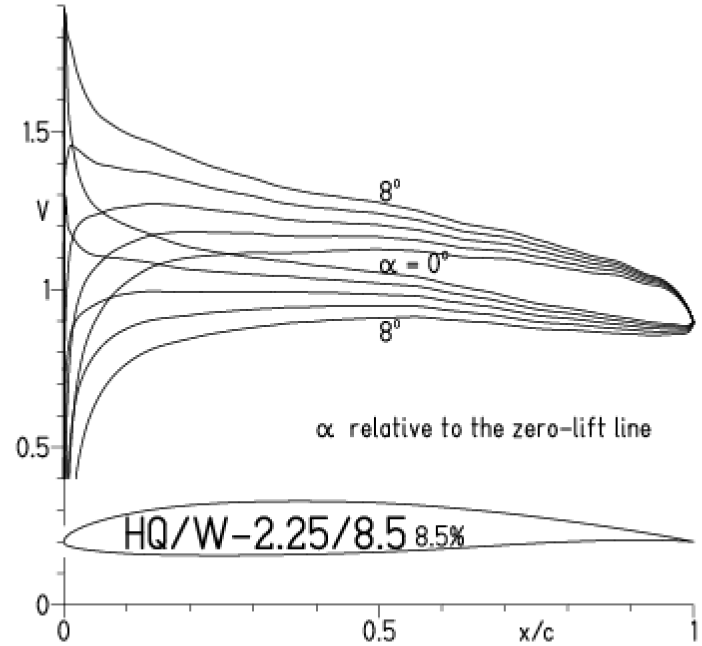
<u>HQ/W-2,25/8,5</u>, N=11



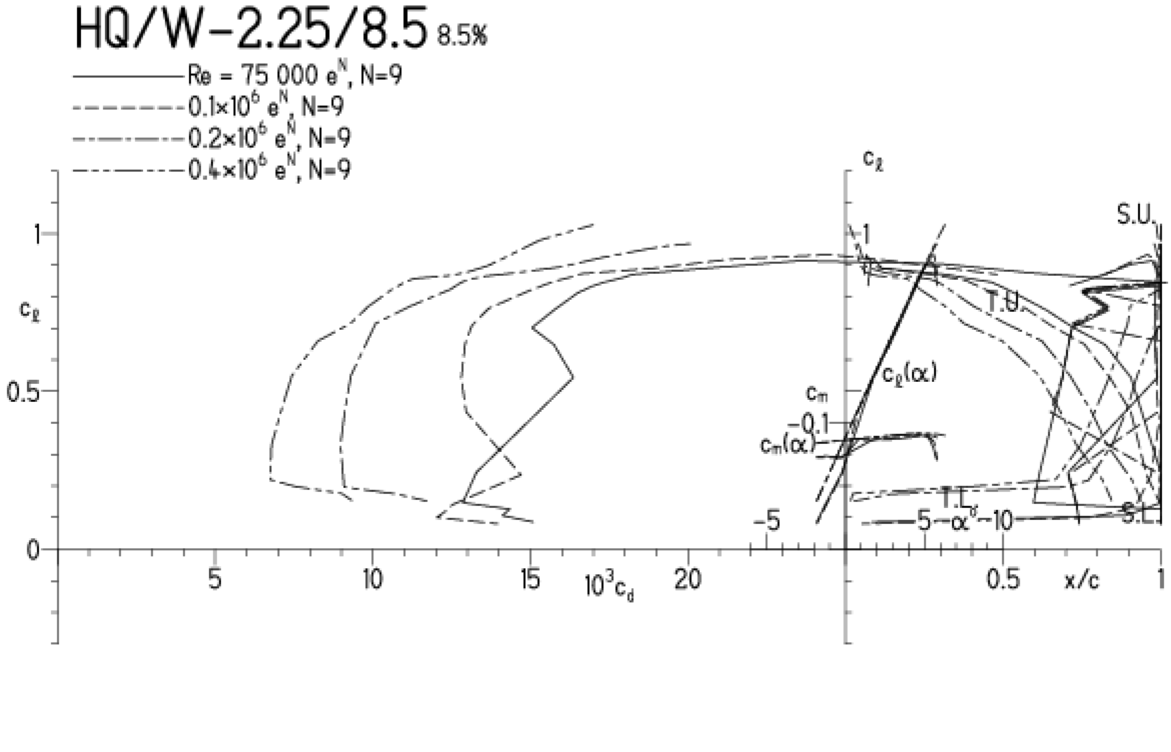


HQ/W-2,25/8,5, N=9

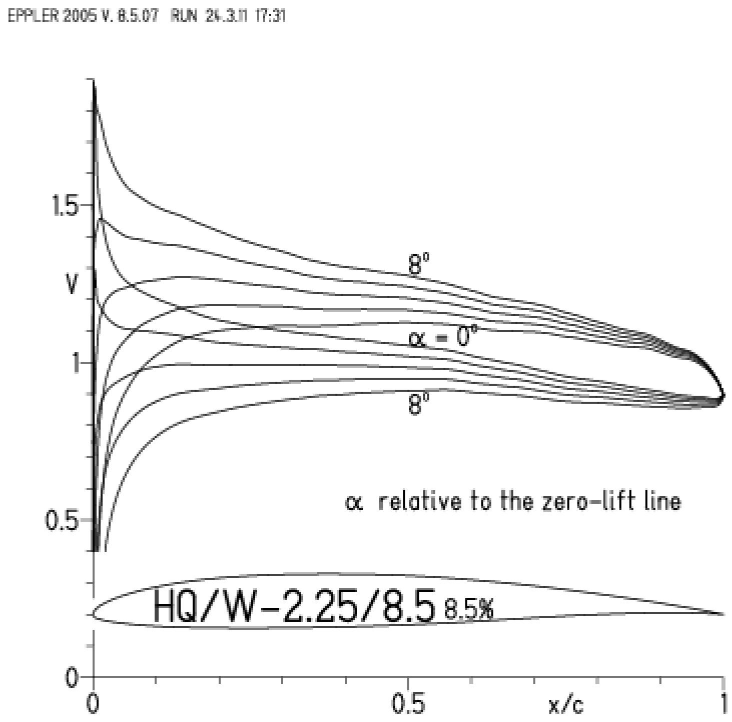
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

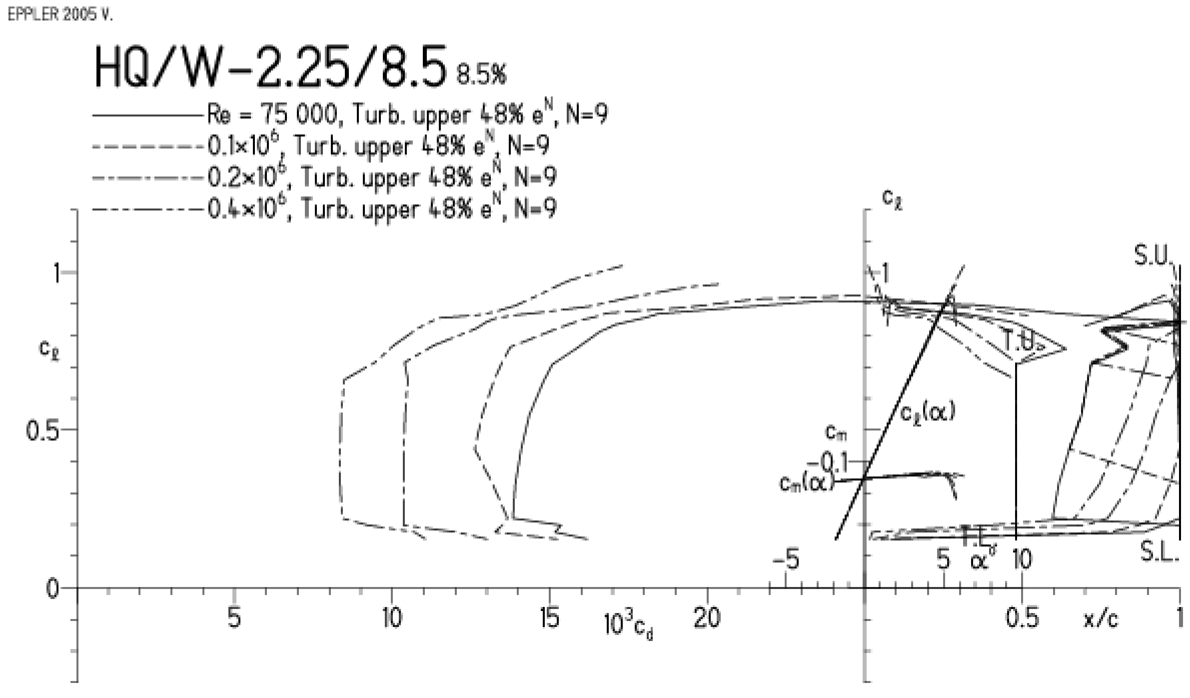


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

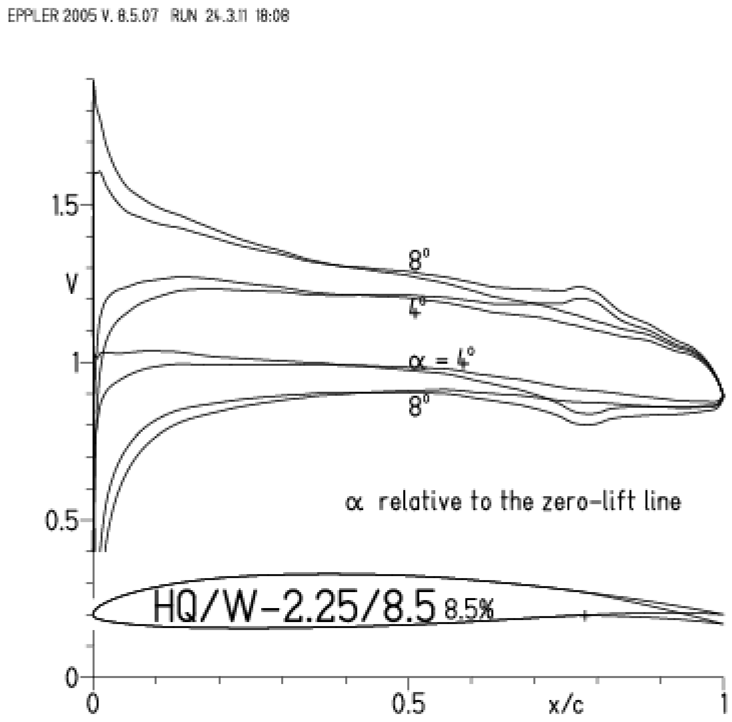


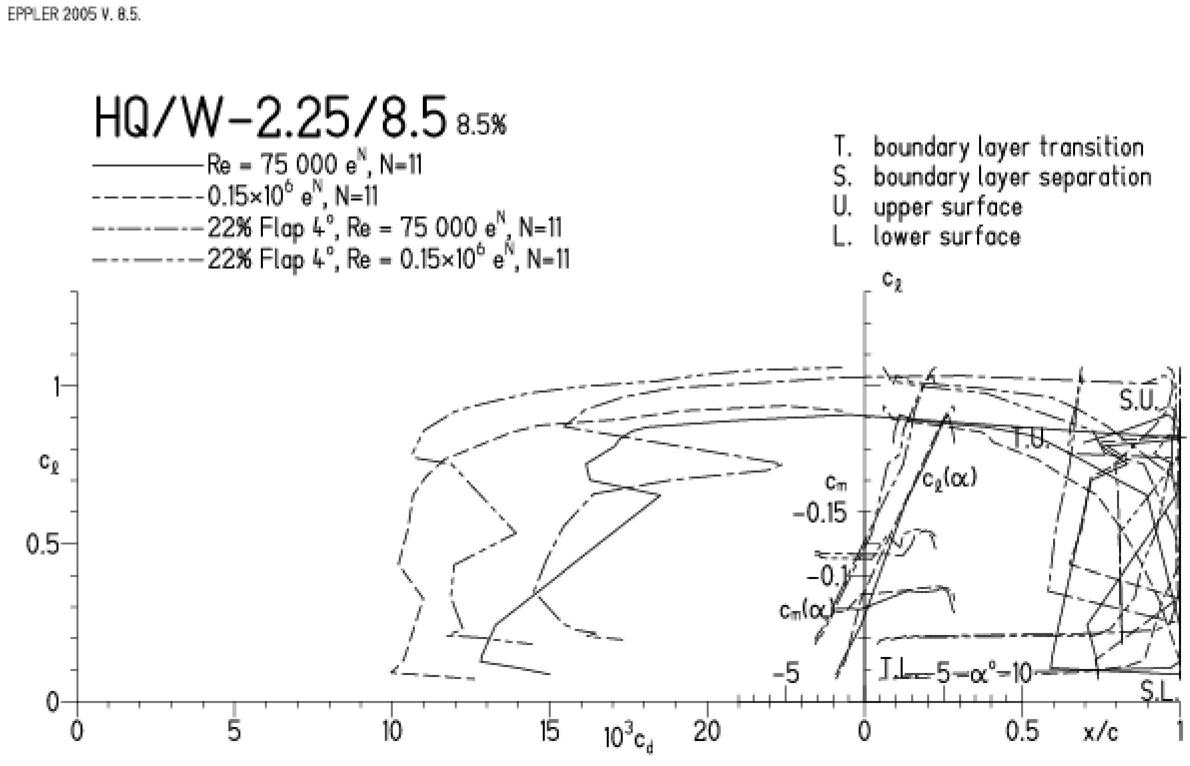
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



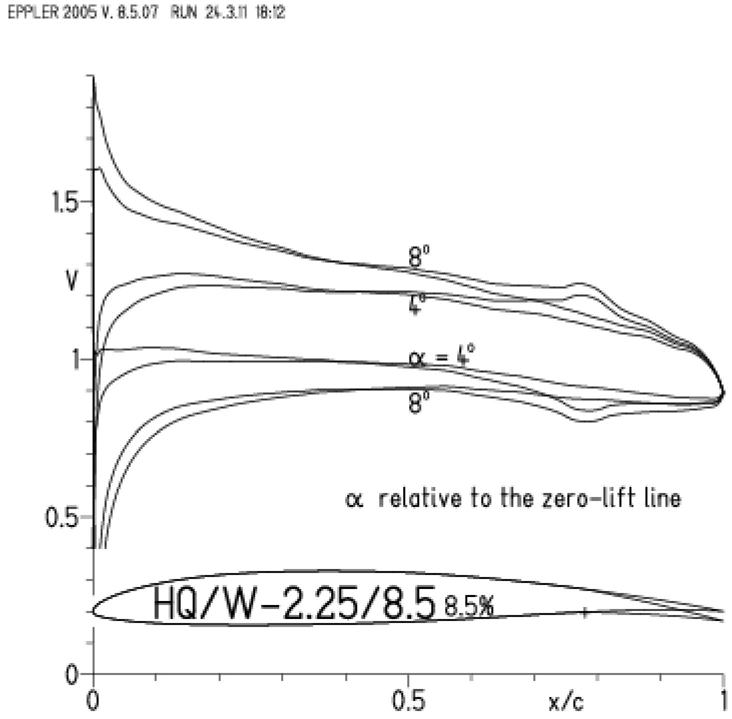


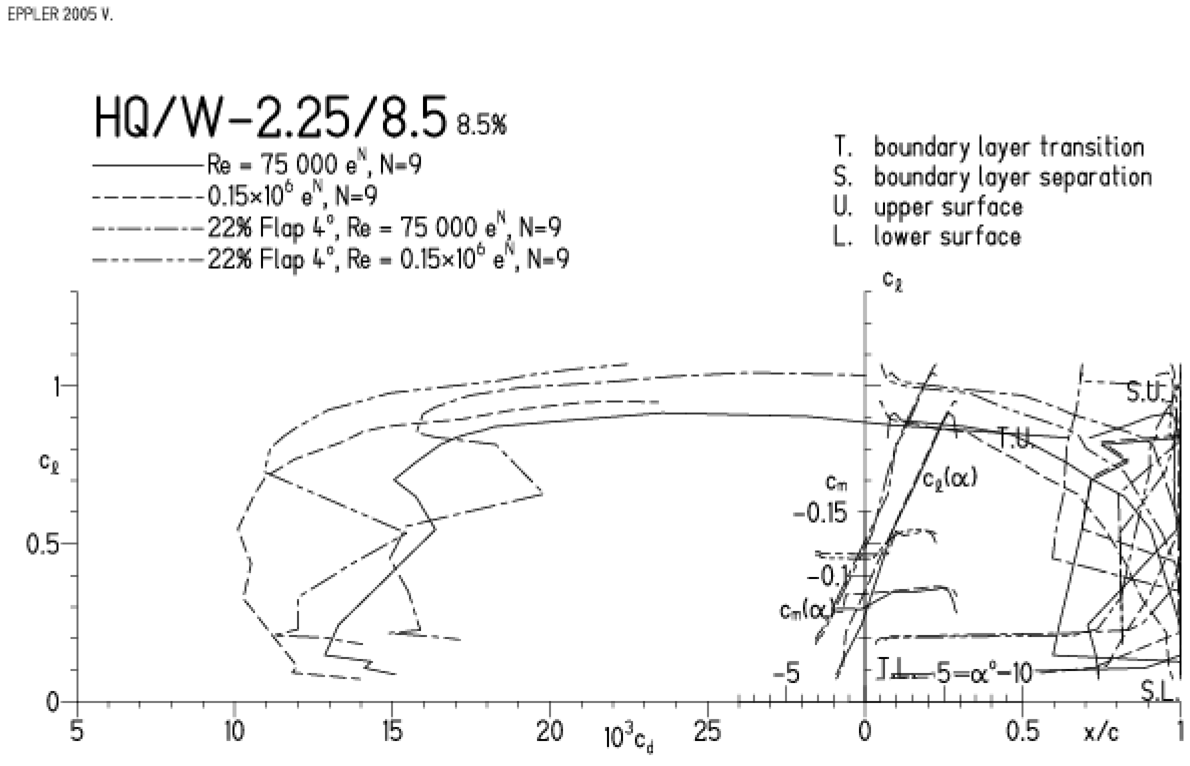
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag





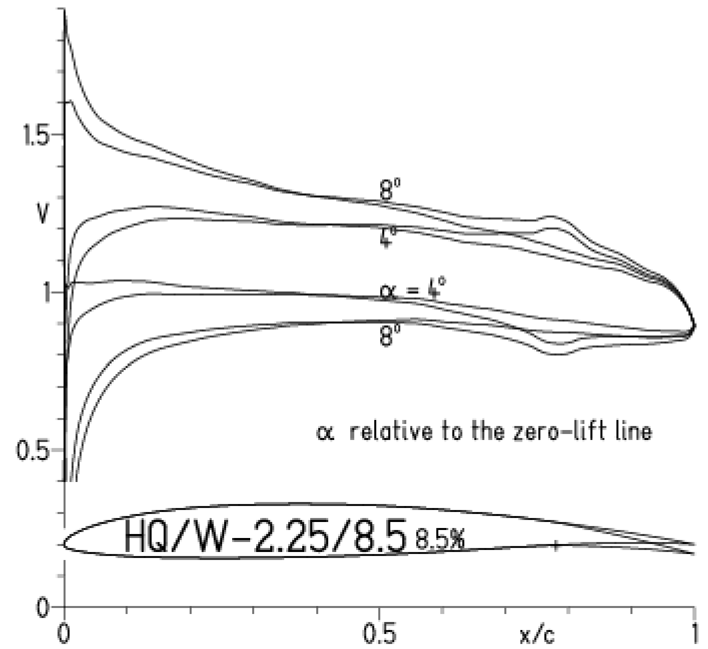
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



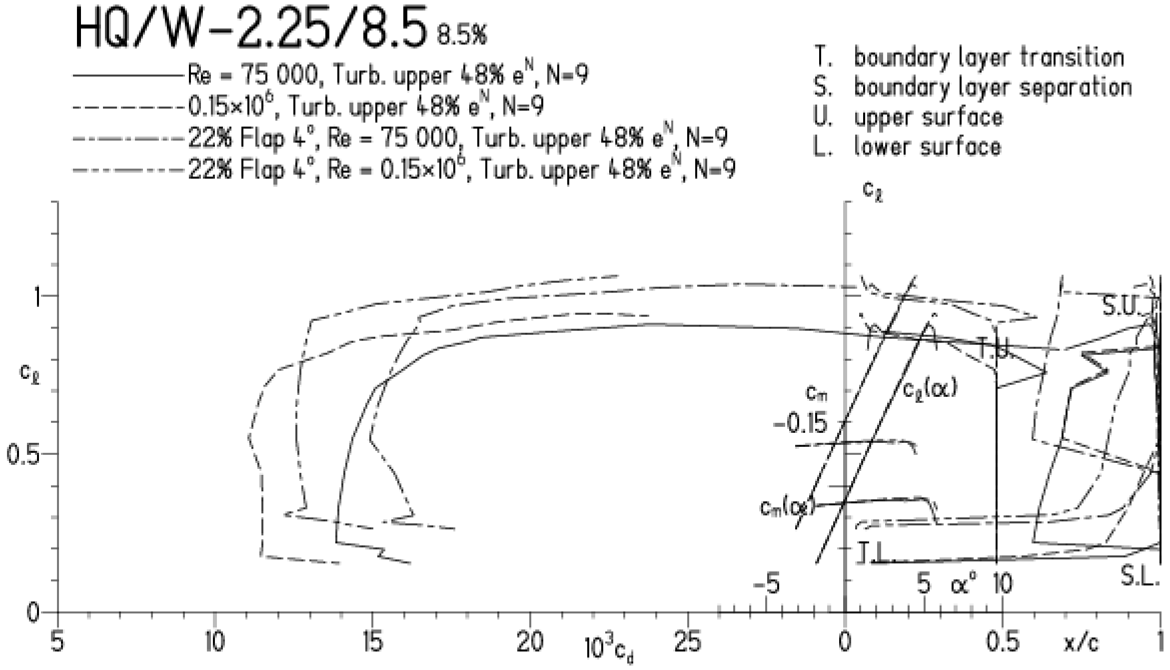


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

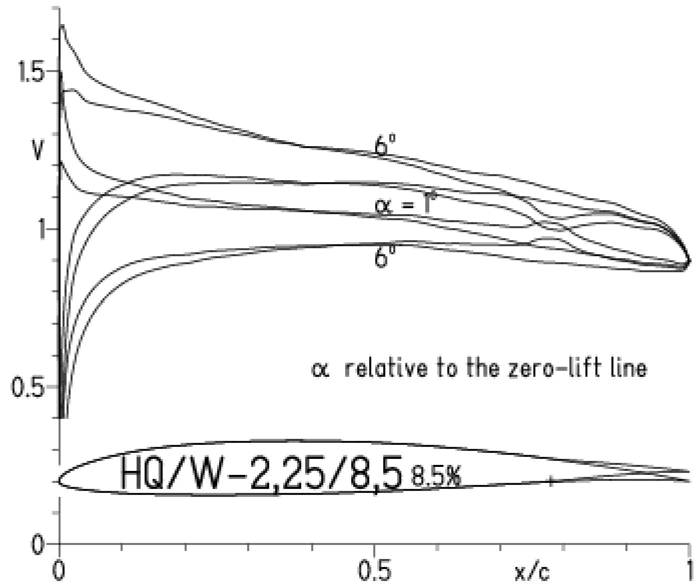


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

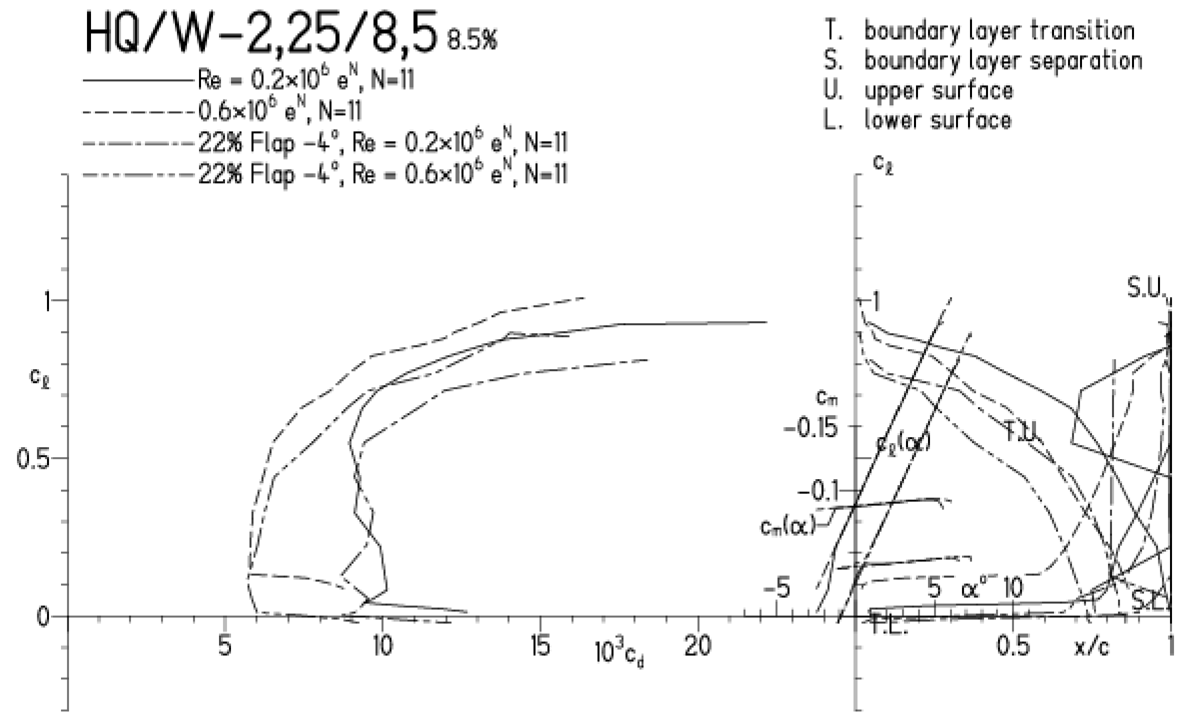


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

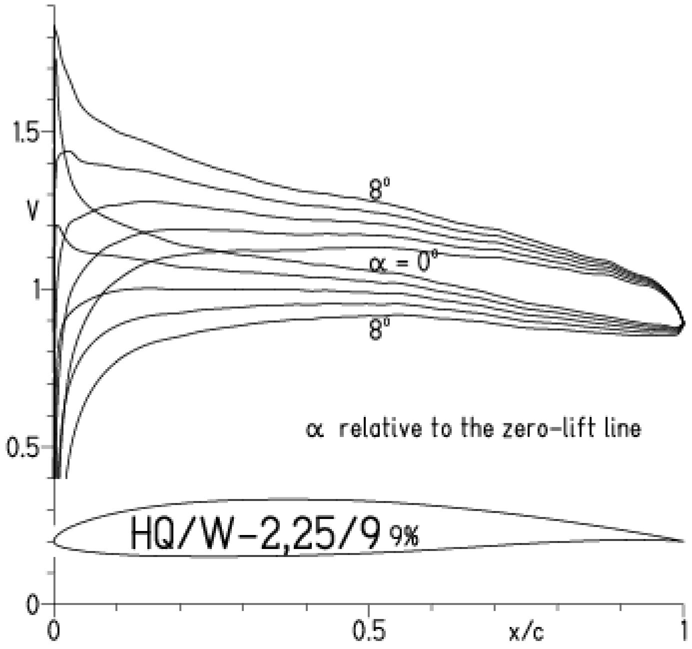


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

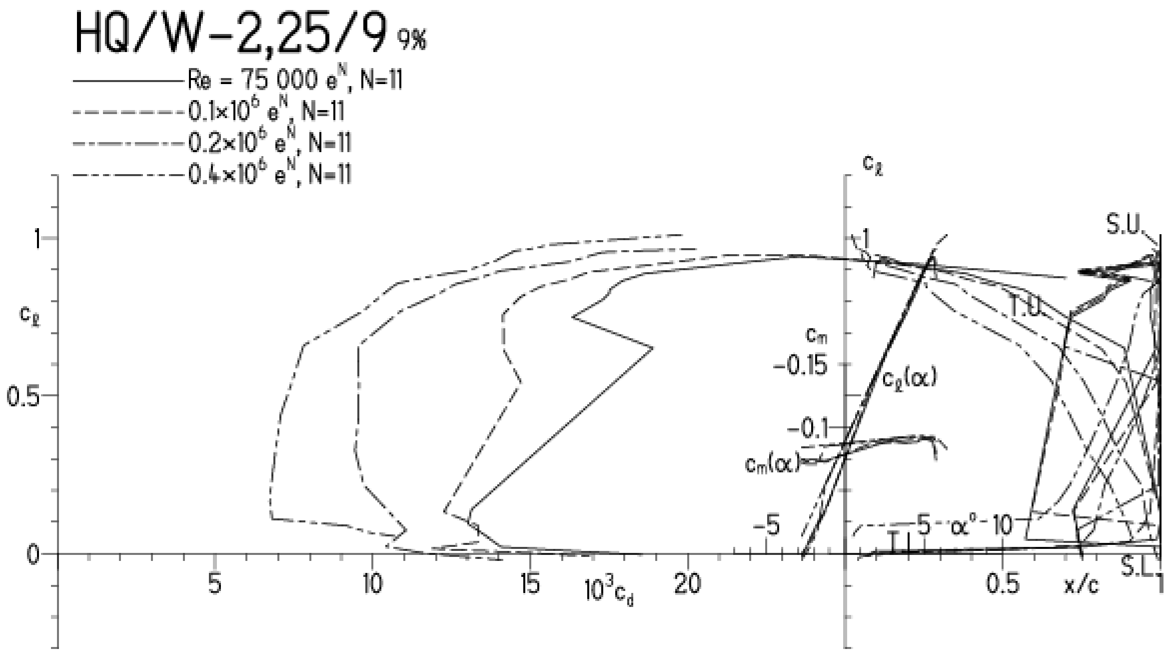


<u>HQ/W-2,25/9</u>, N=11

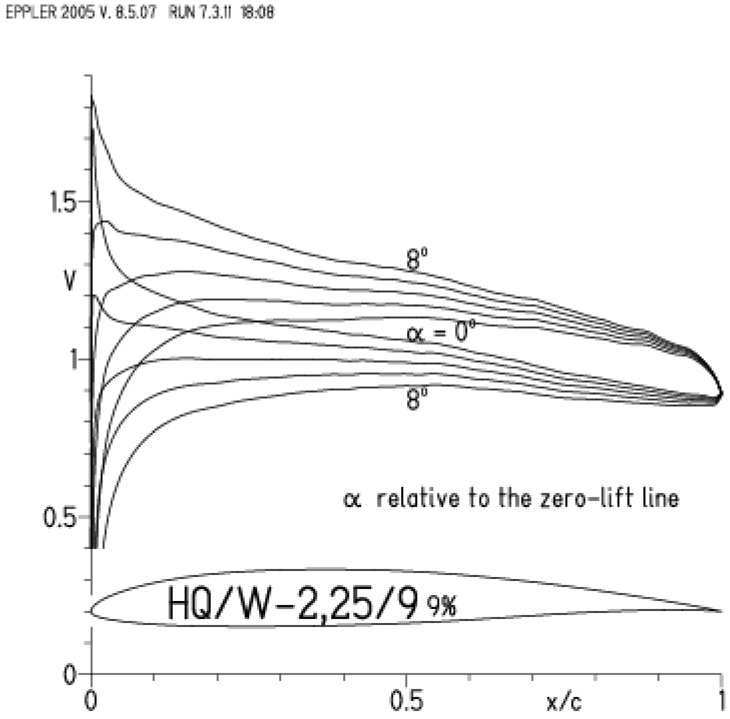
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

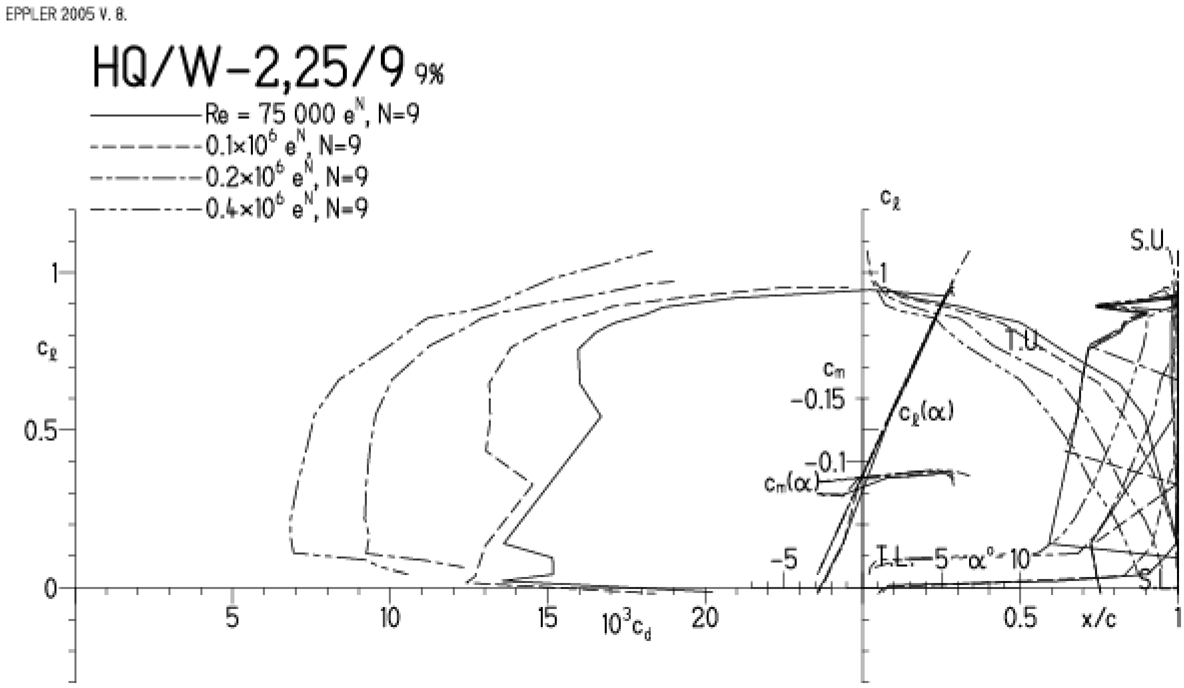


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

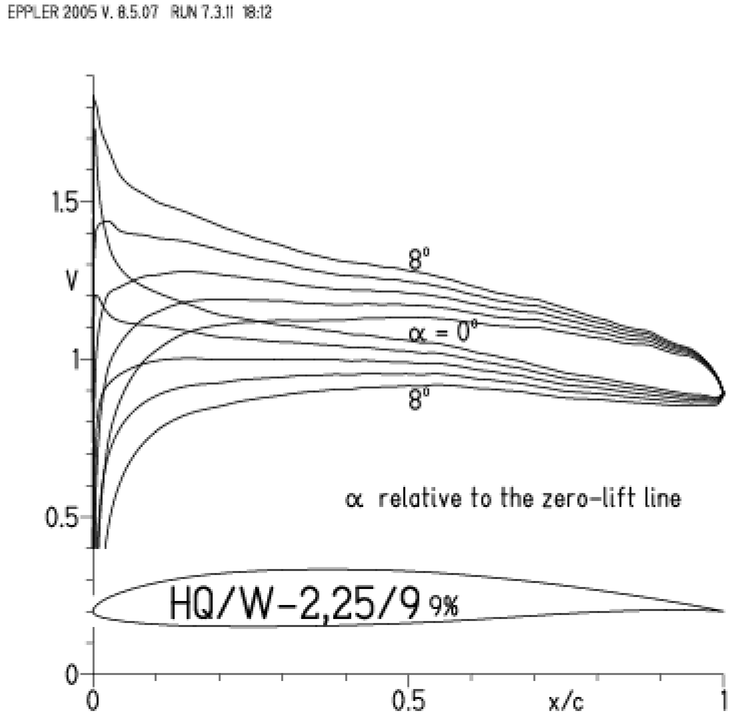


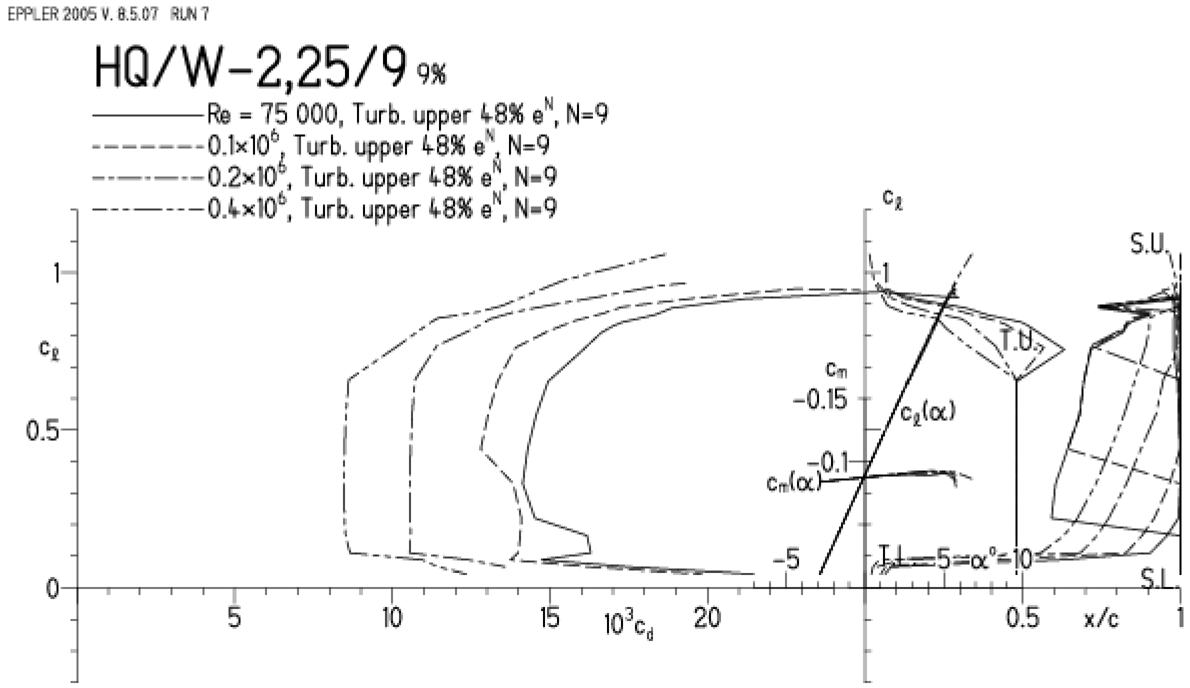
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

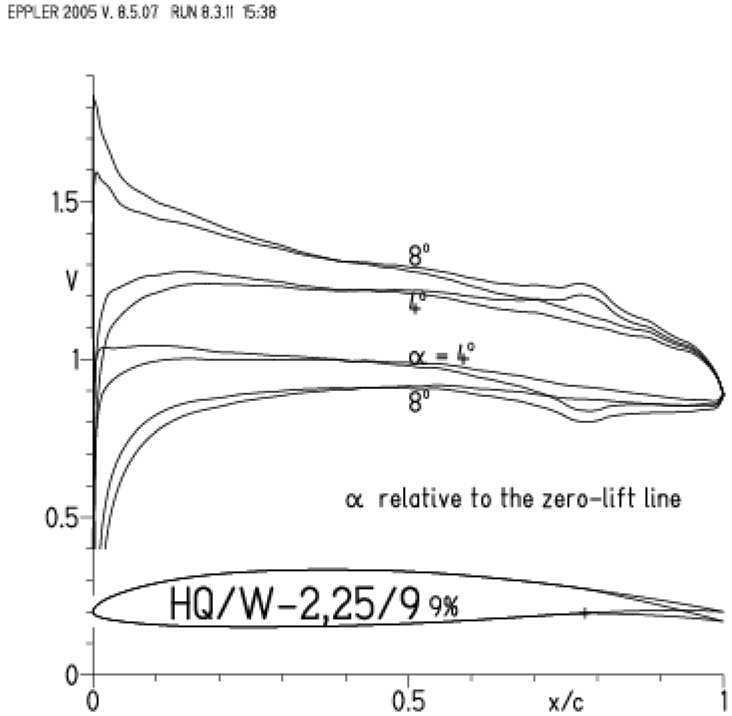

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

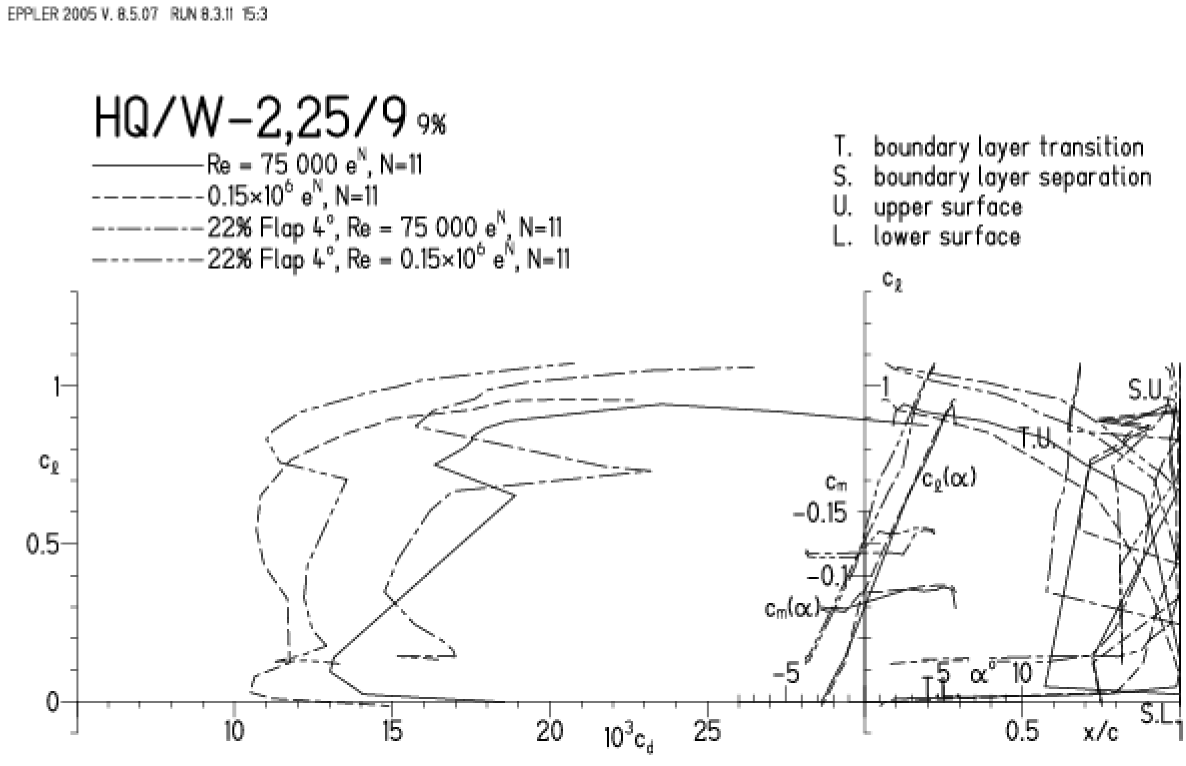
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





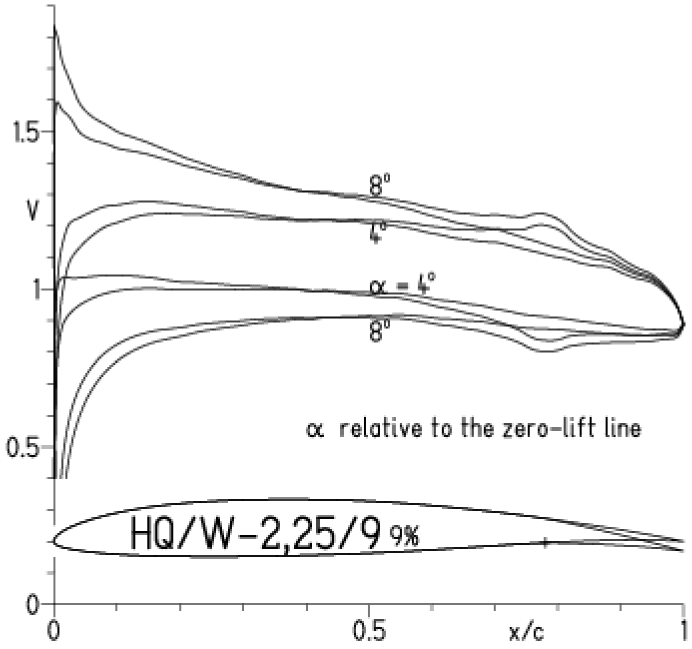
HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag



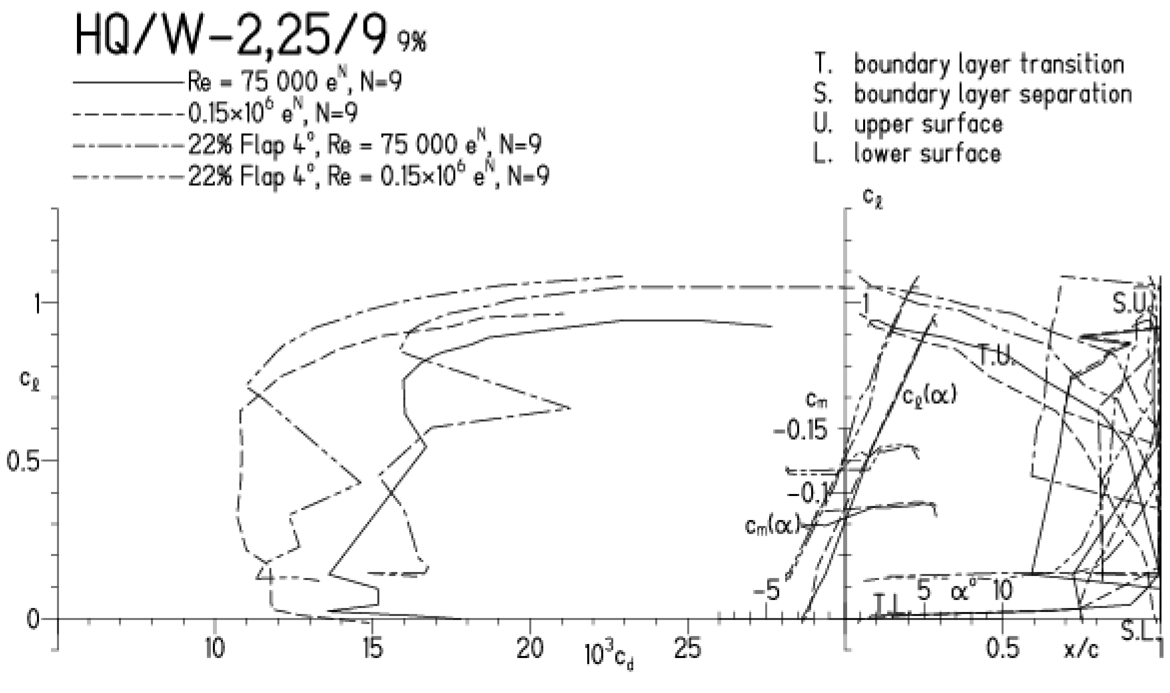


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

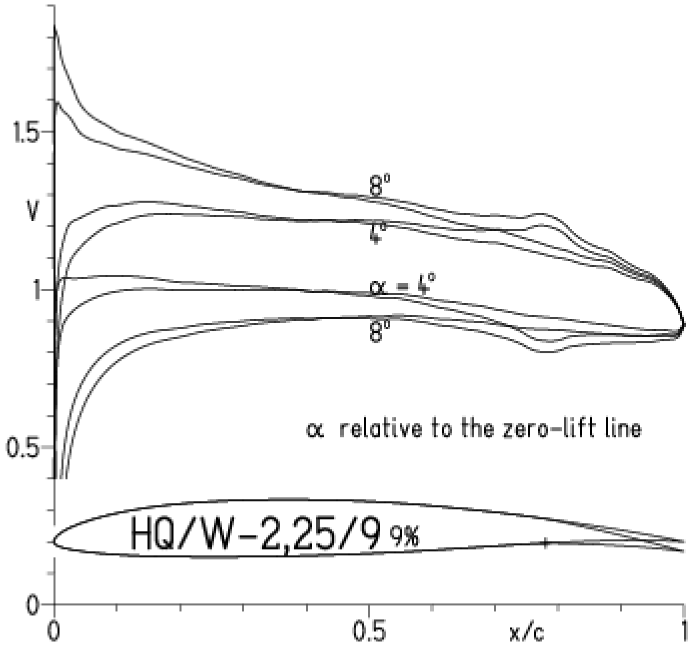


EPPLER 2005 V. 8.5.07 RUN 8.3.1

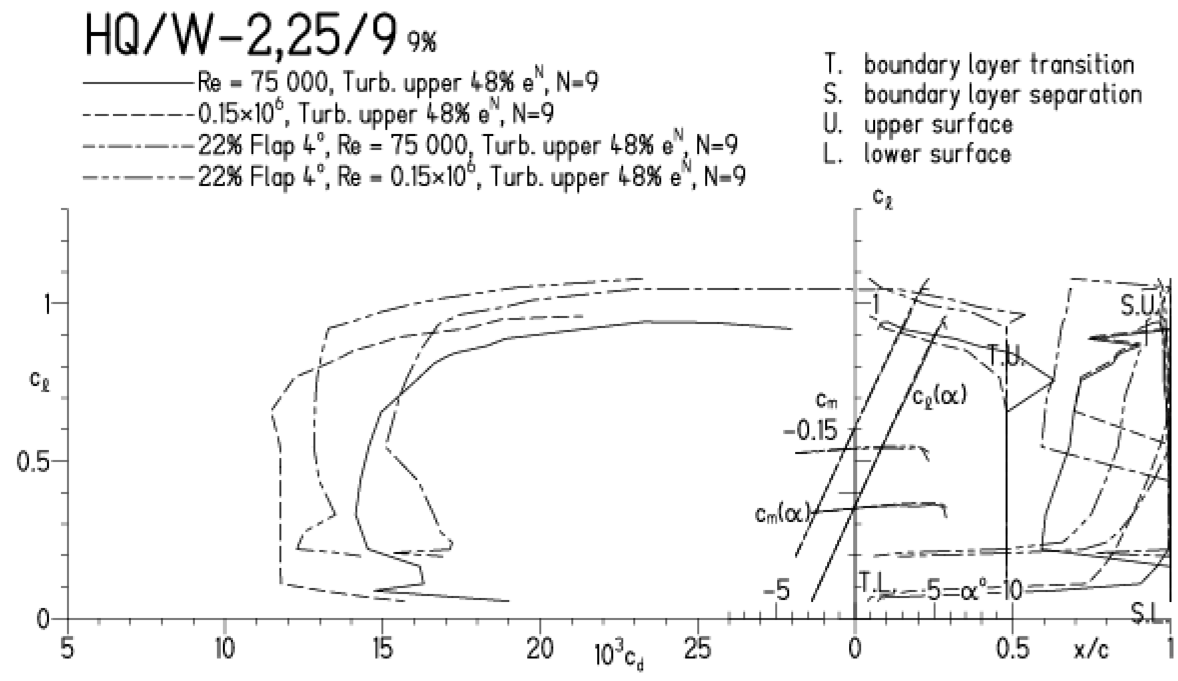


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

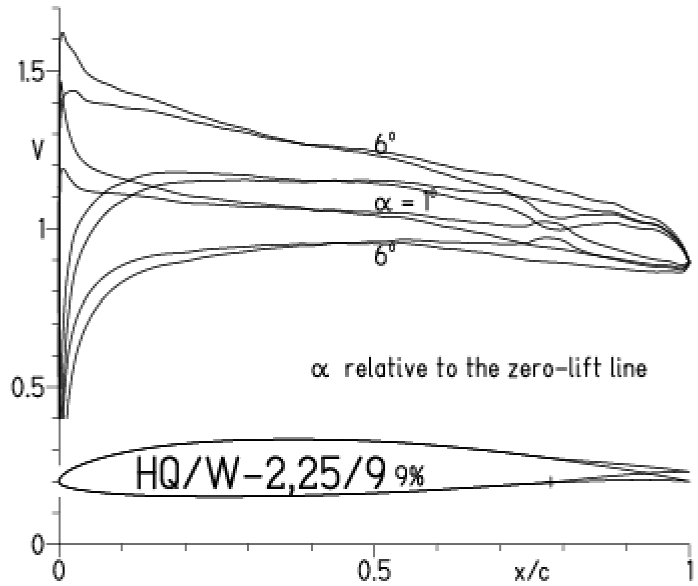


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

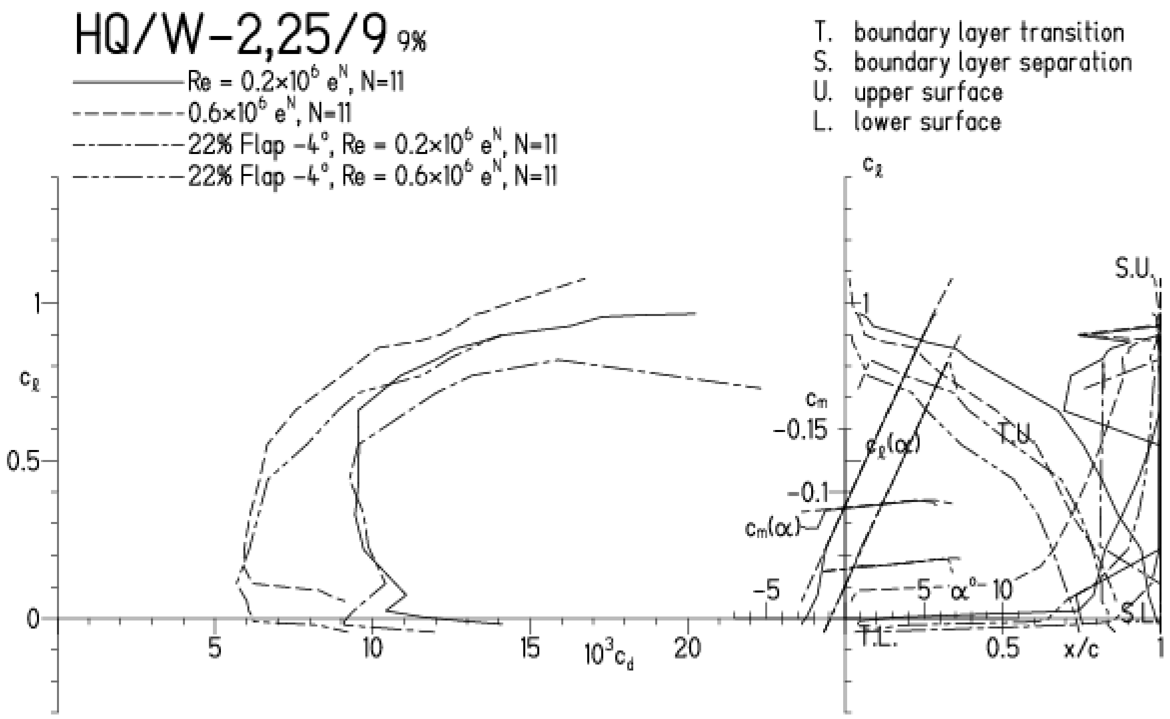


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

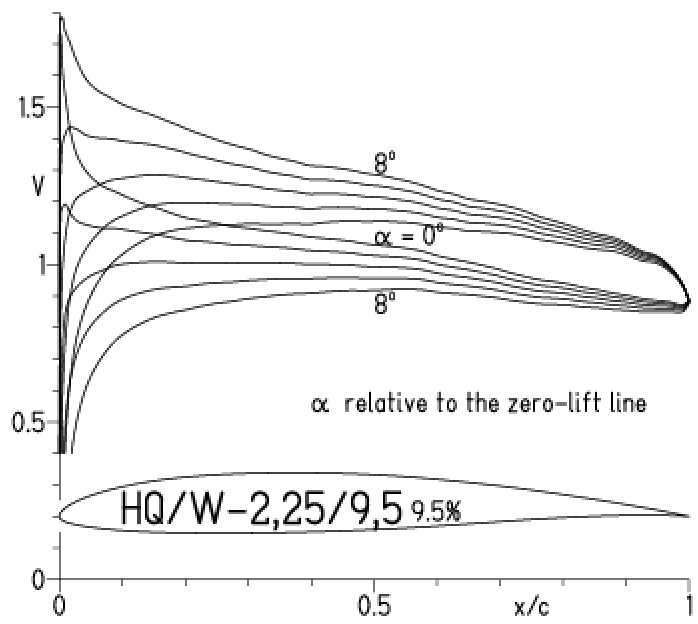


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

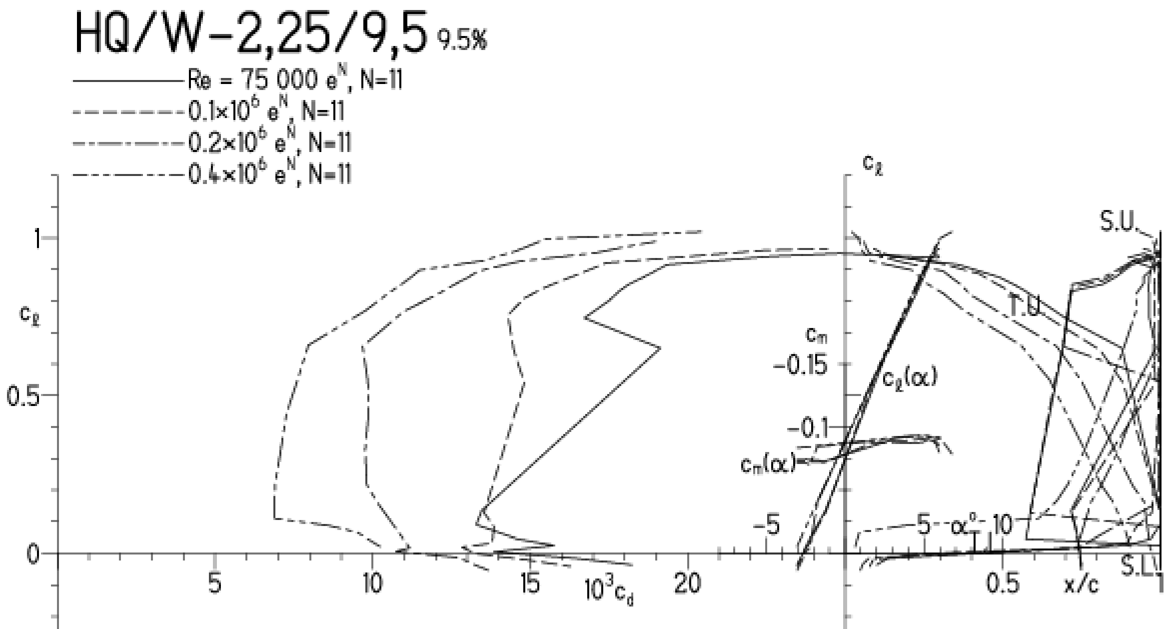


HQ/W-2,25/9,5, N=11

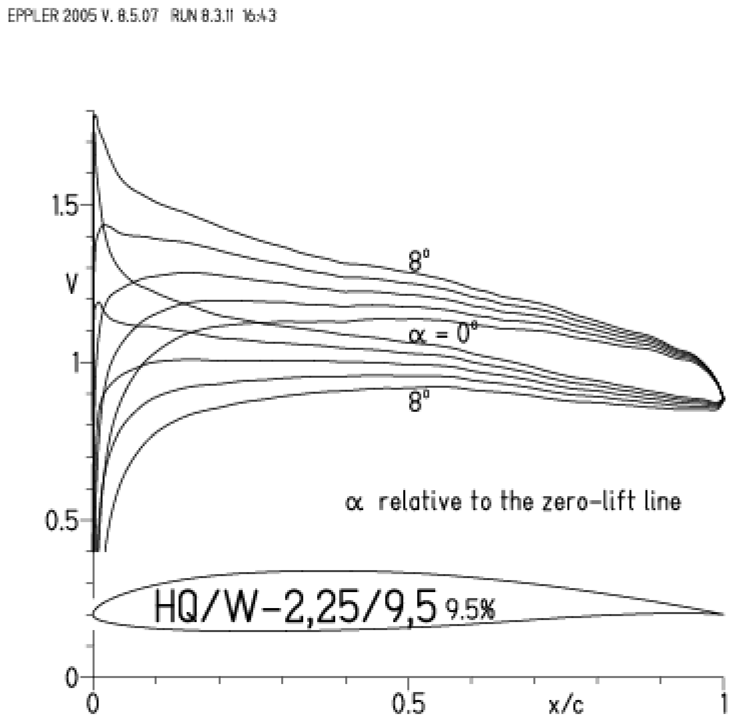
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

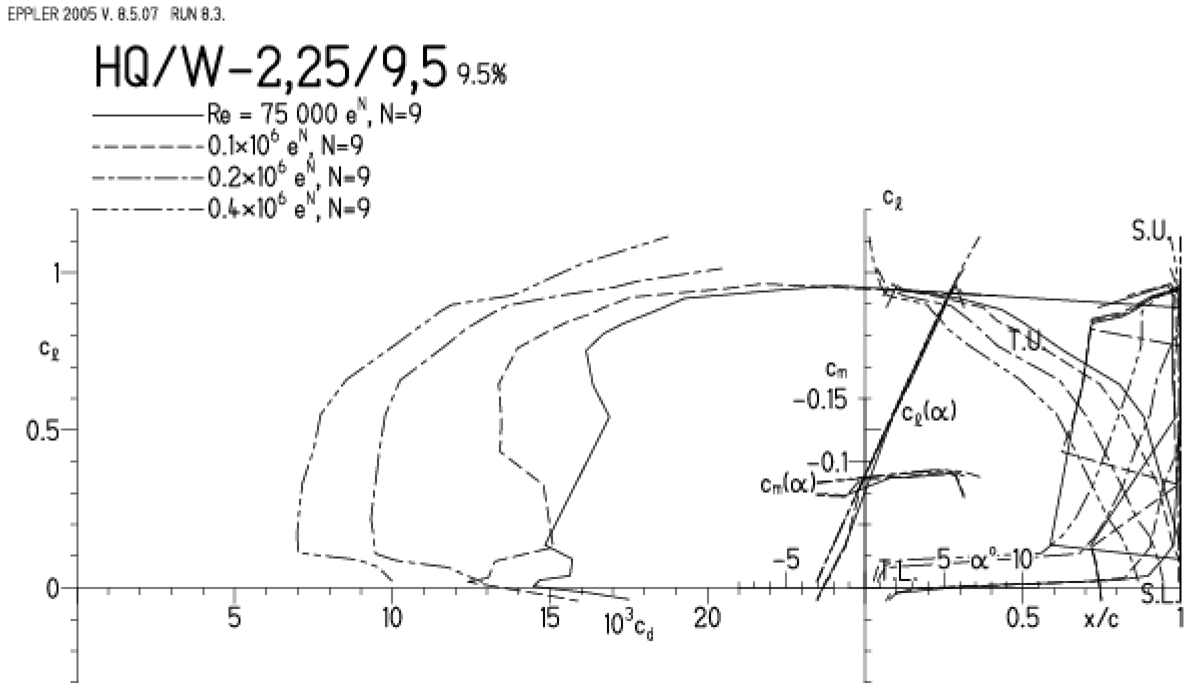


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



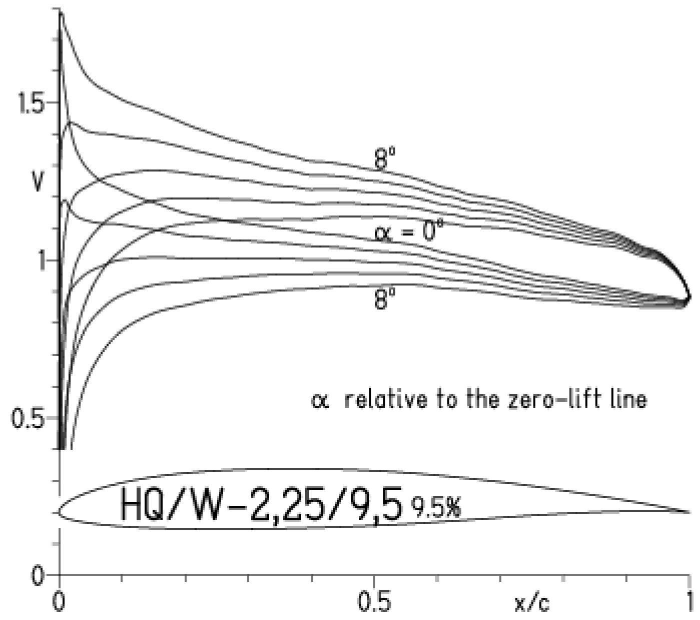
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

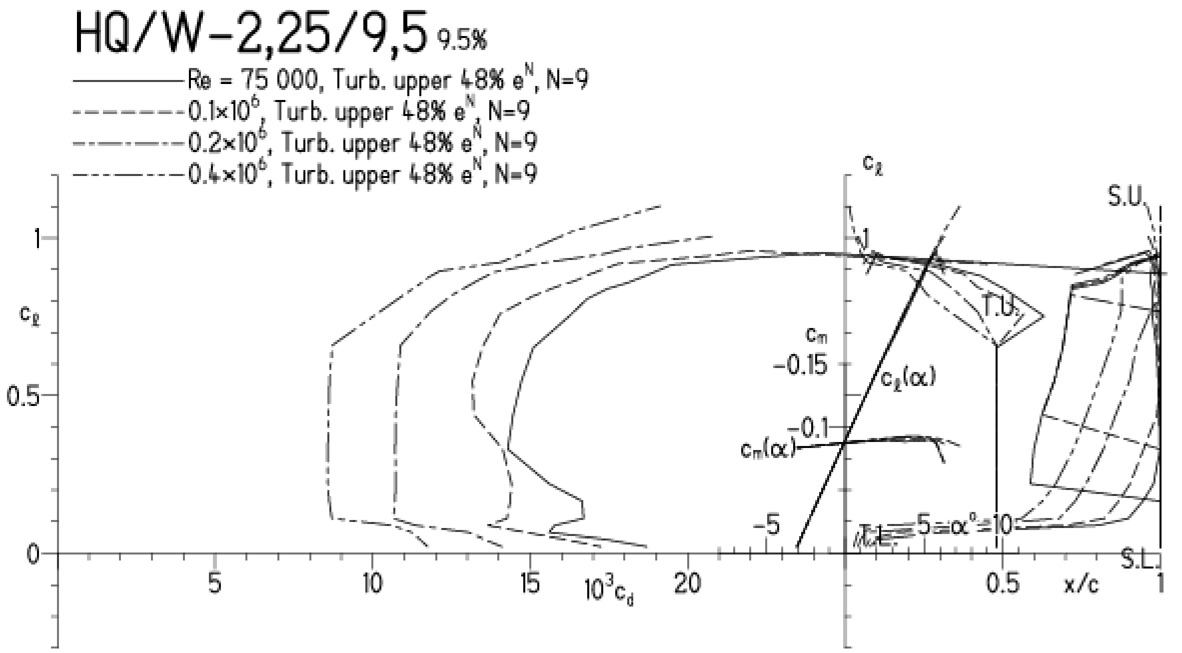

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
S.U.
T.U.
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
0.5
x/c
1
S.L.

<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

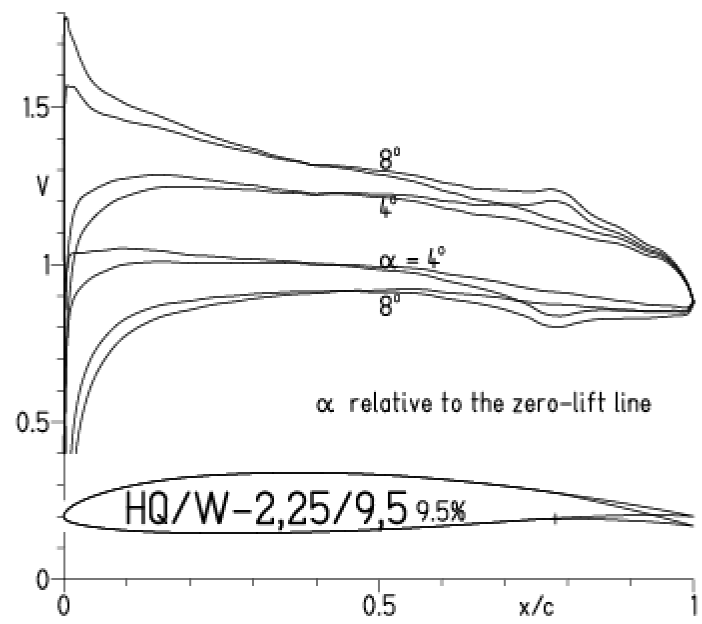


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

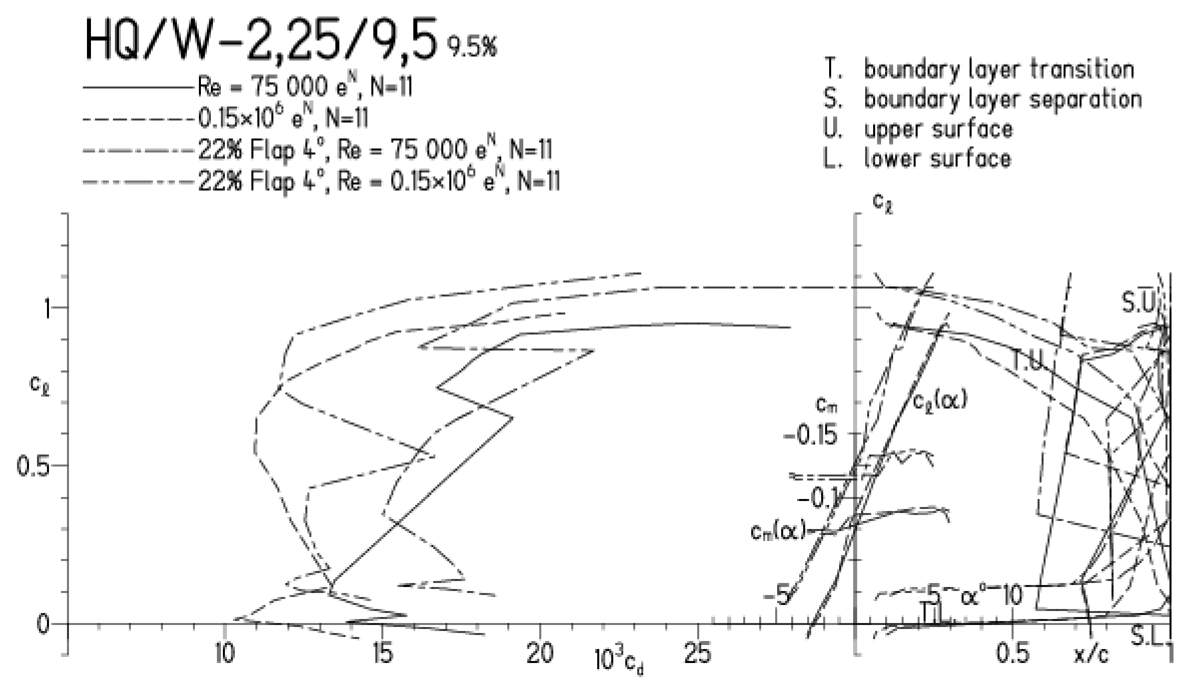


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

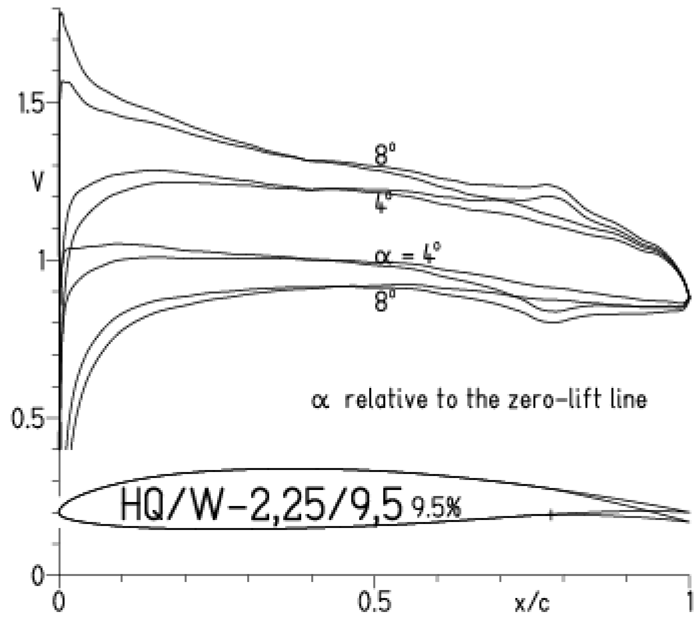


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

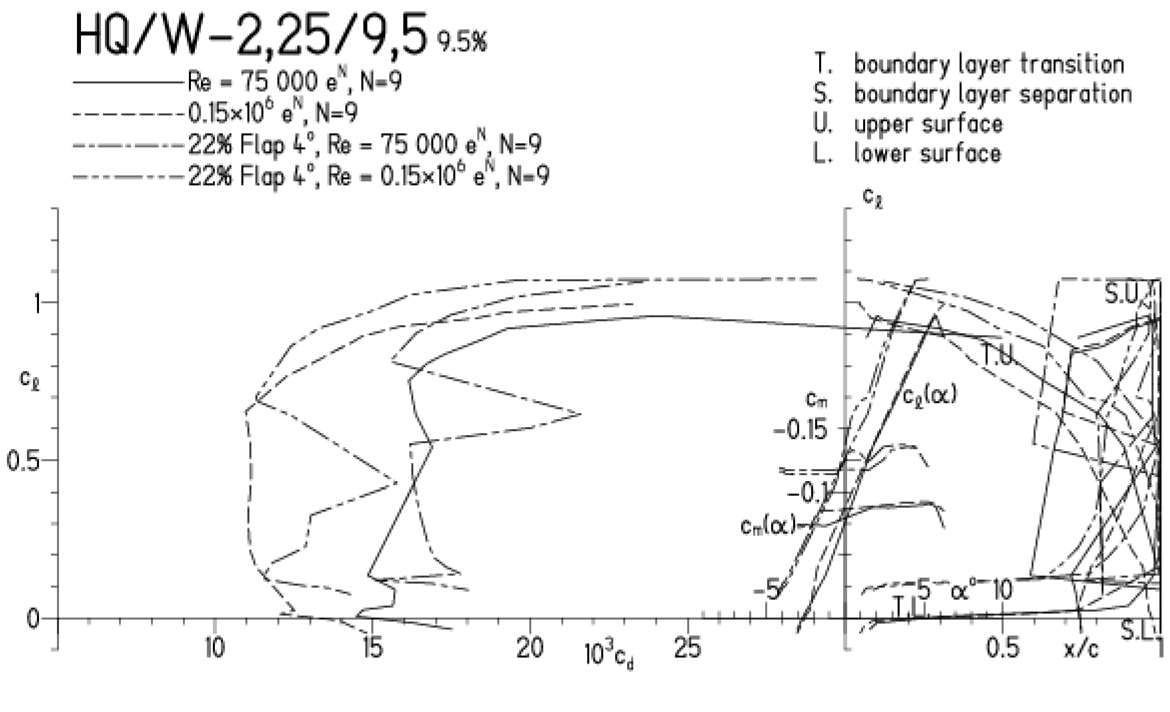


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

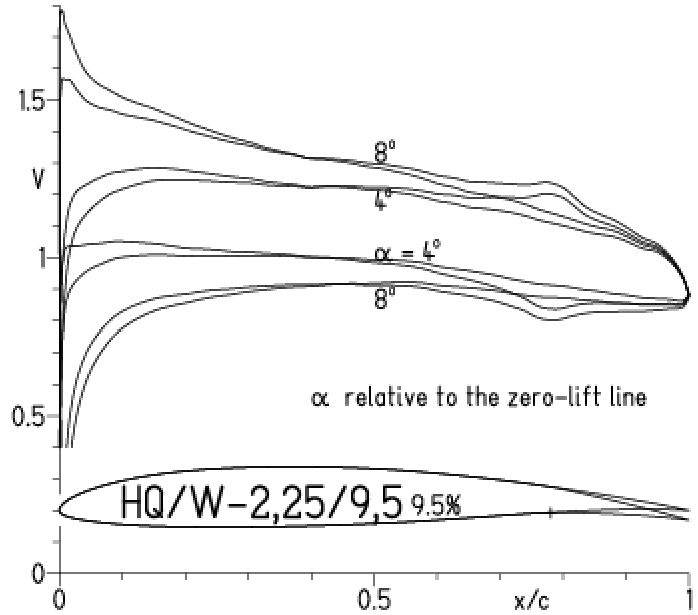


EPPLER 2005 V. 8.5.07 R

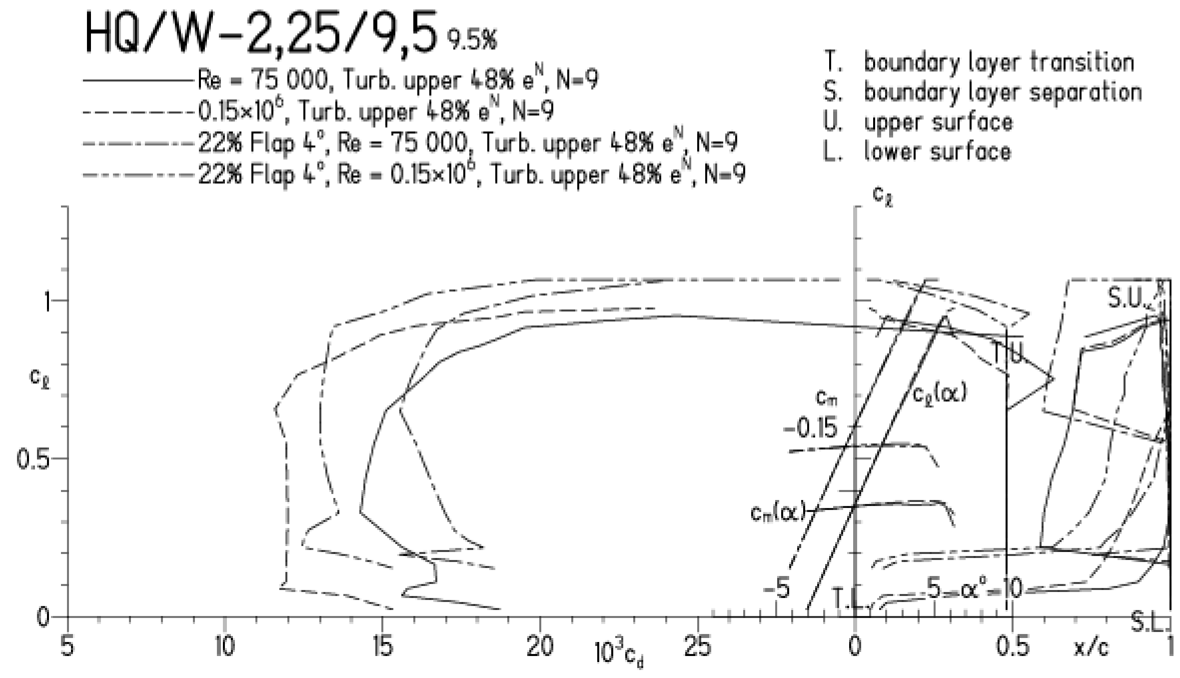


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

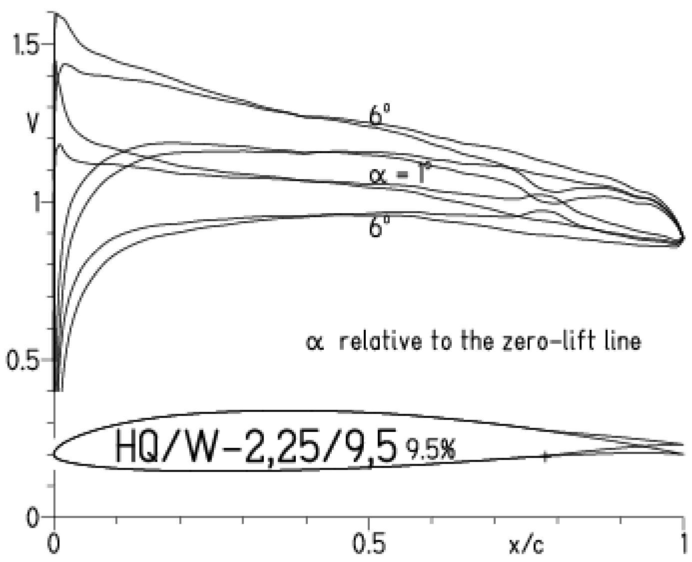


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

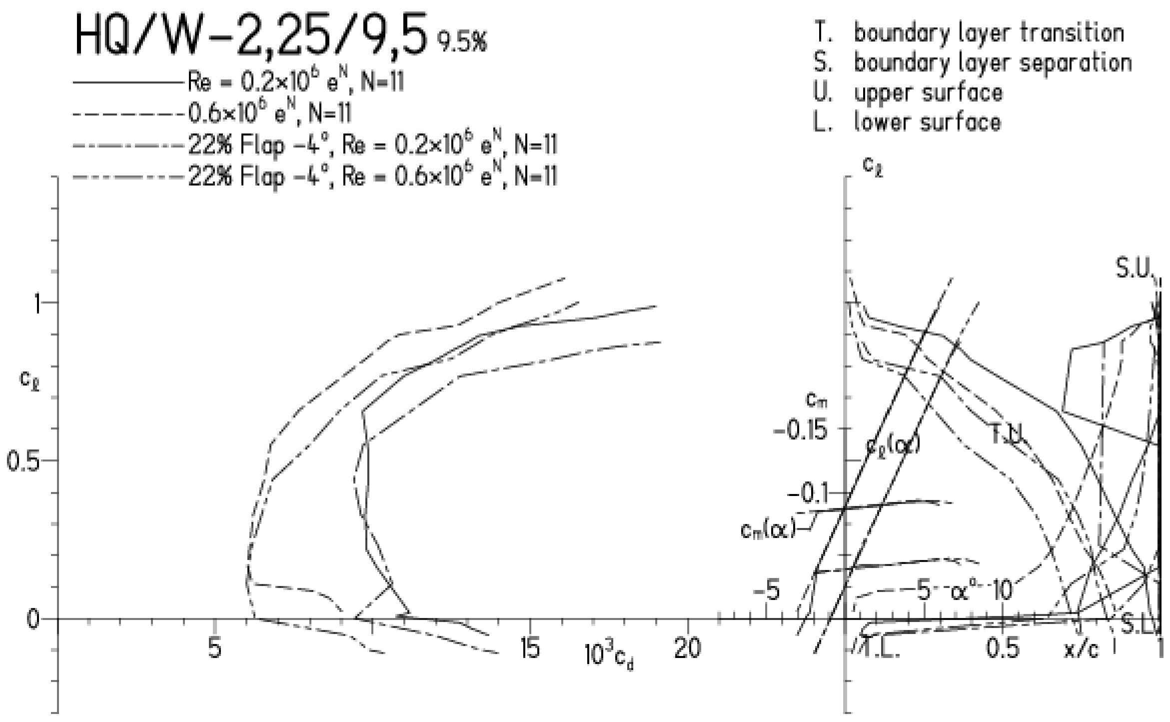


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

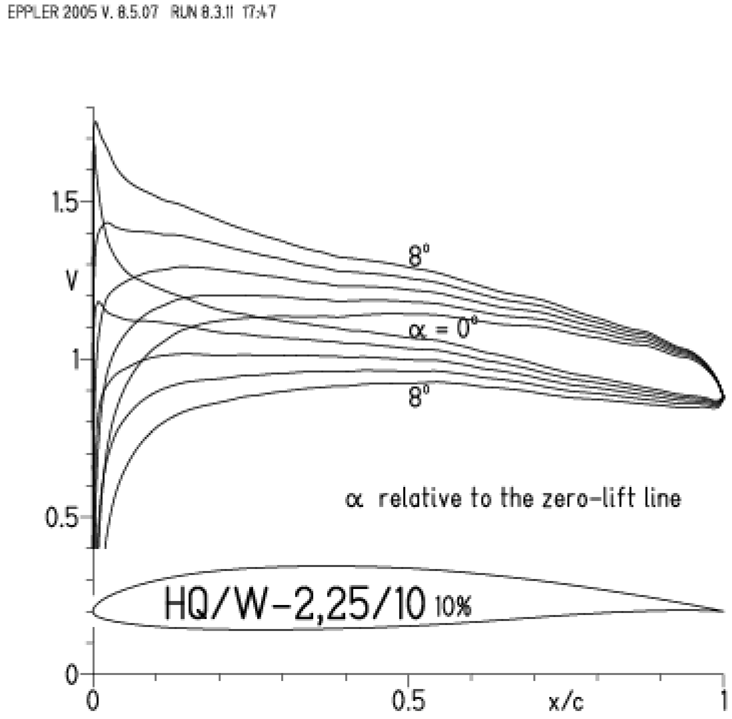
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

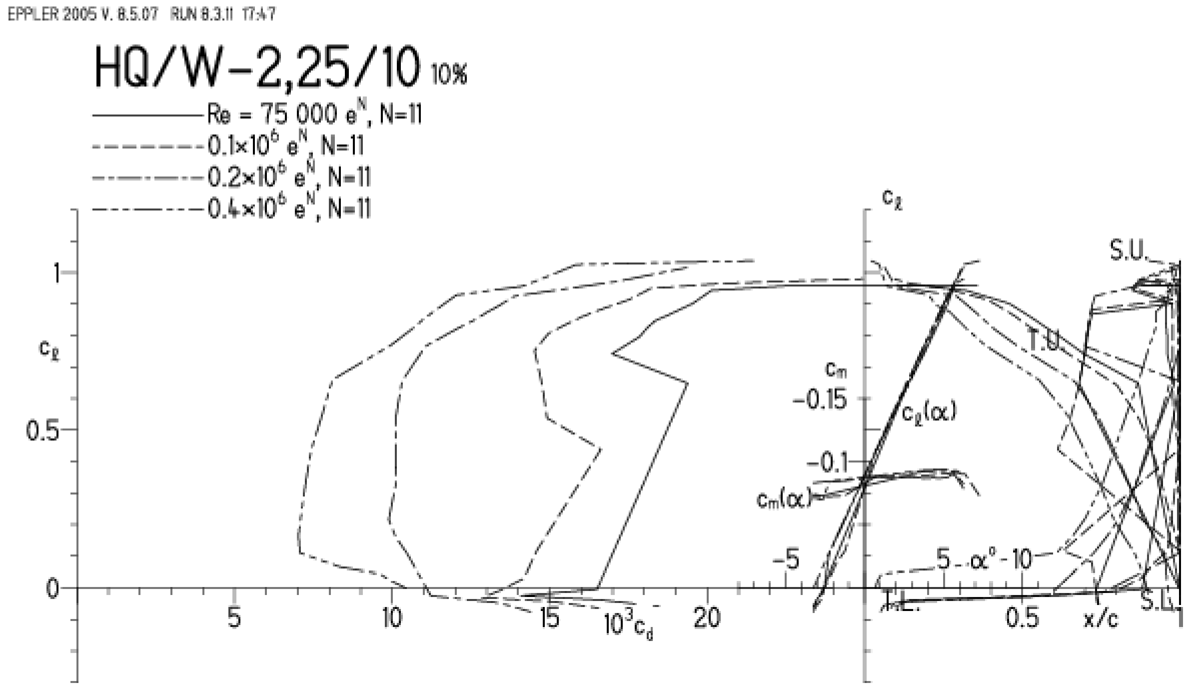


EPPLER 2005 V.



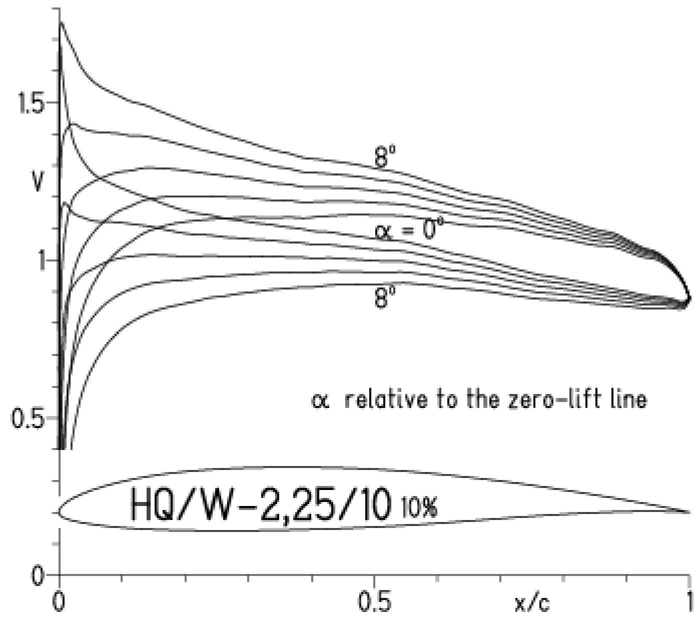
HQ/W-2,25/10, N=11



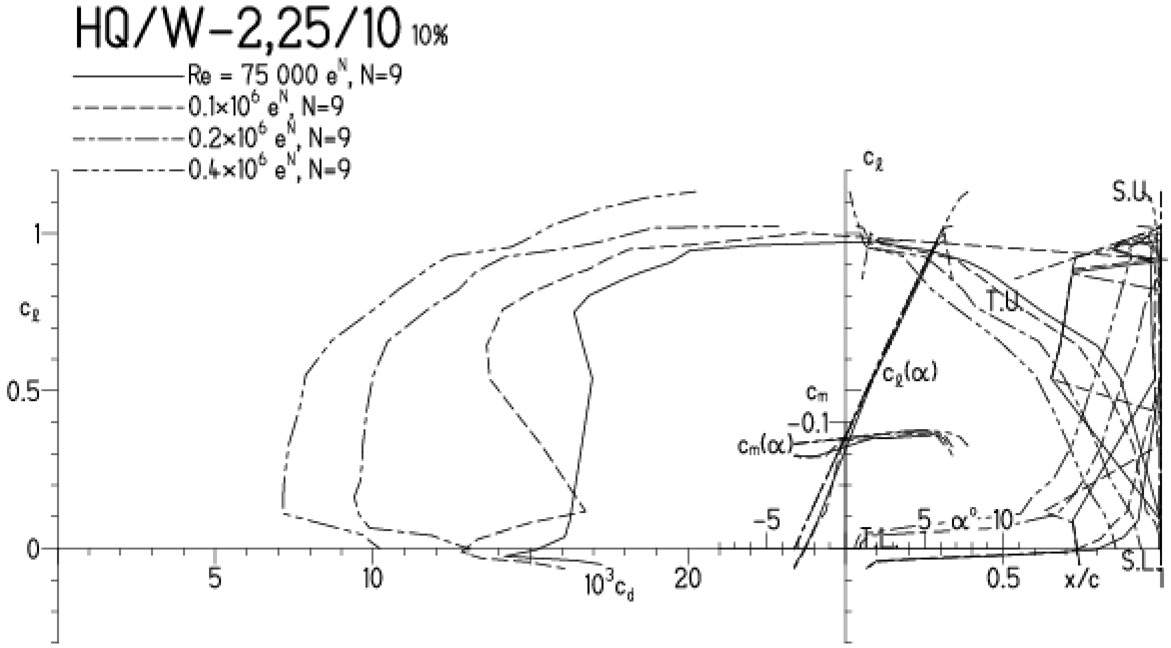


HQ/W-2,25/10, N=9

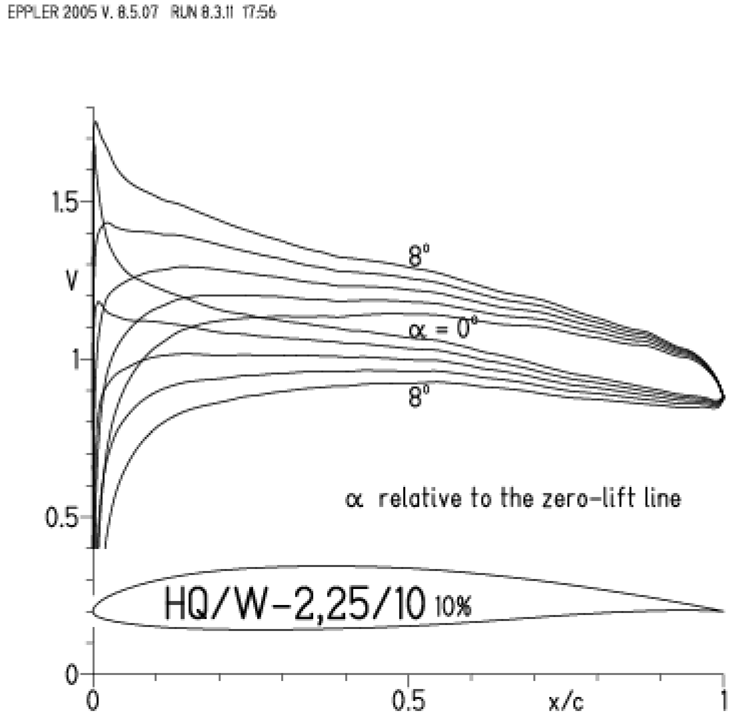
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

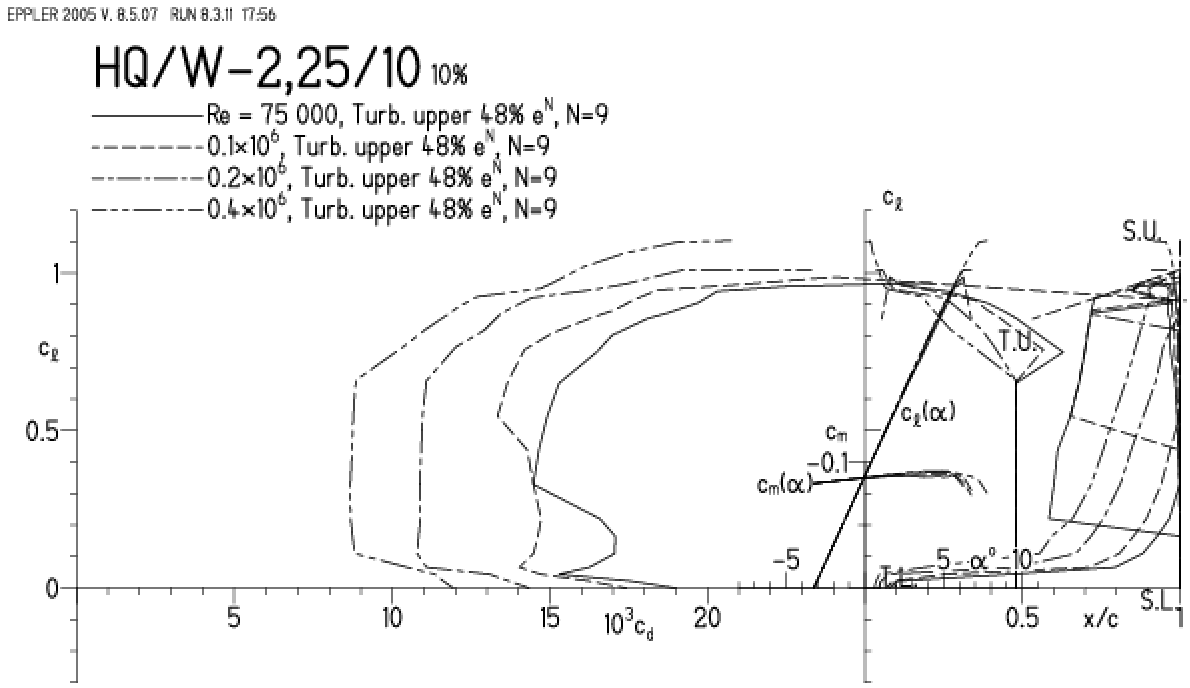


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



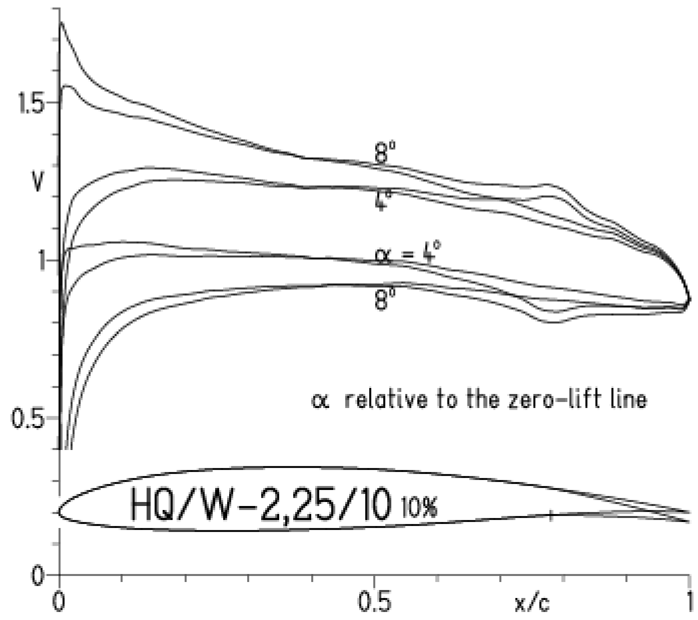
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



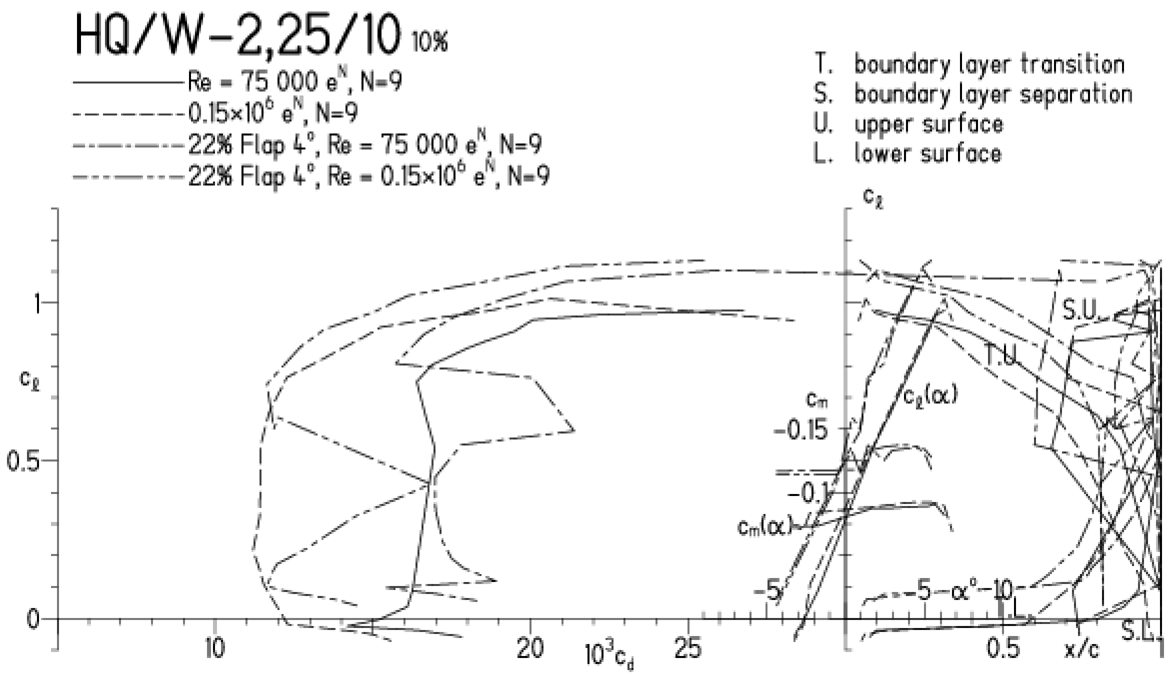


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

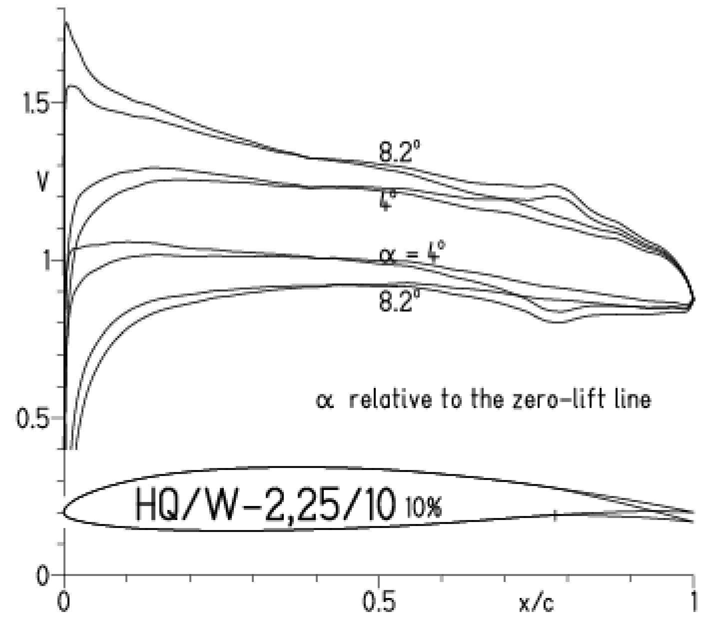


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

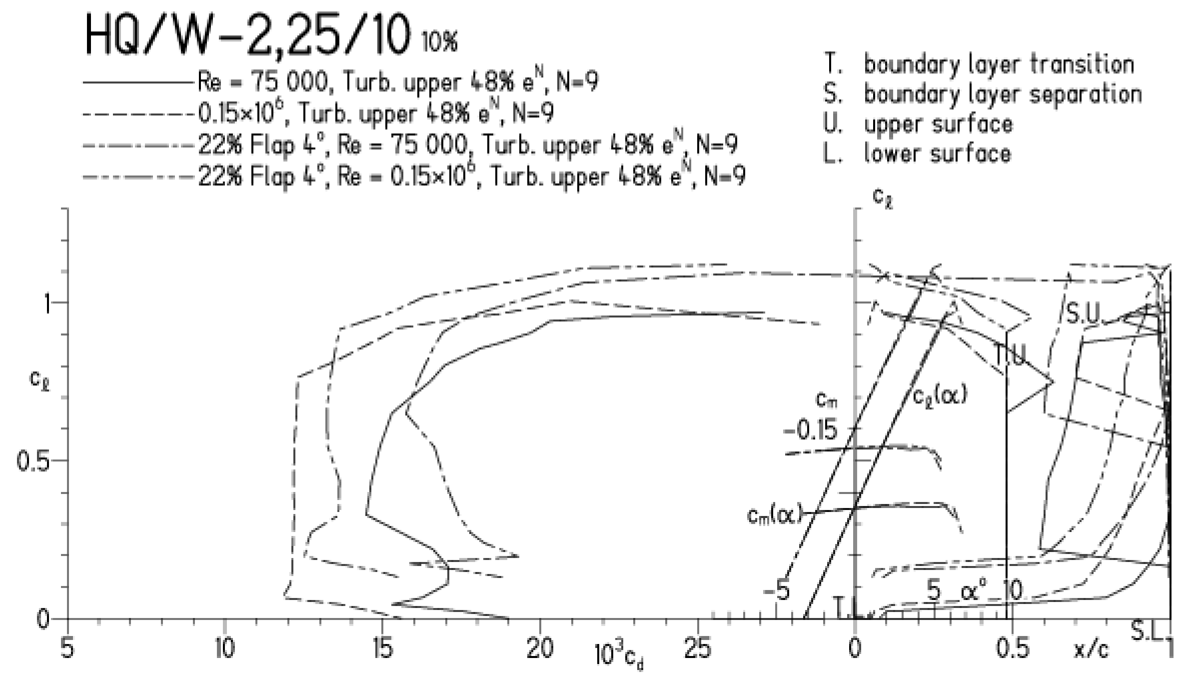


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

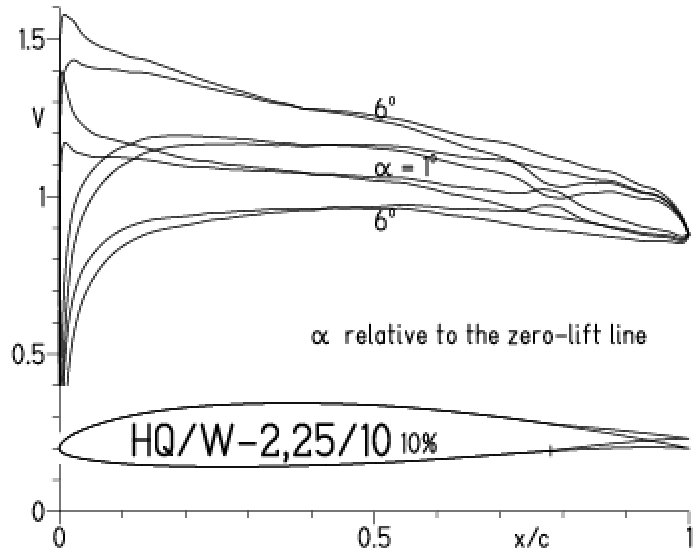


EPPLER 2005 V. 8.5.07 RUN 8.3

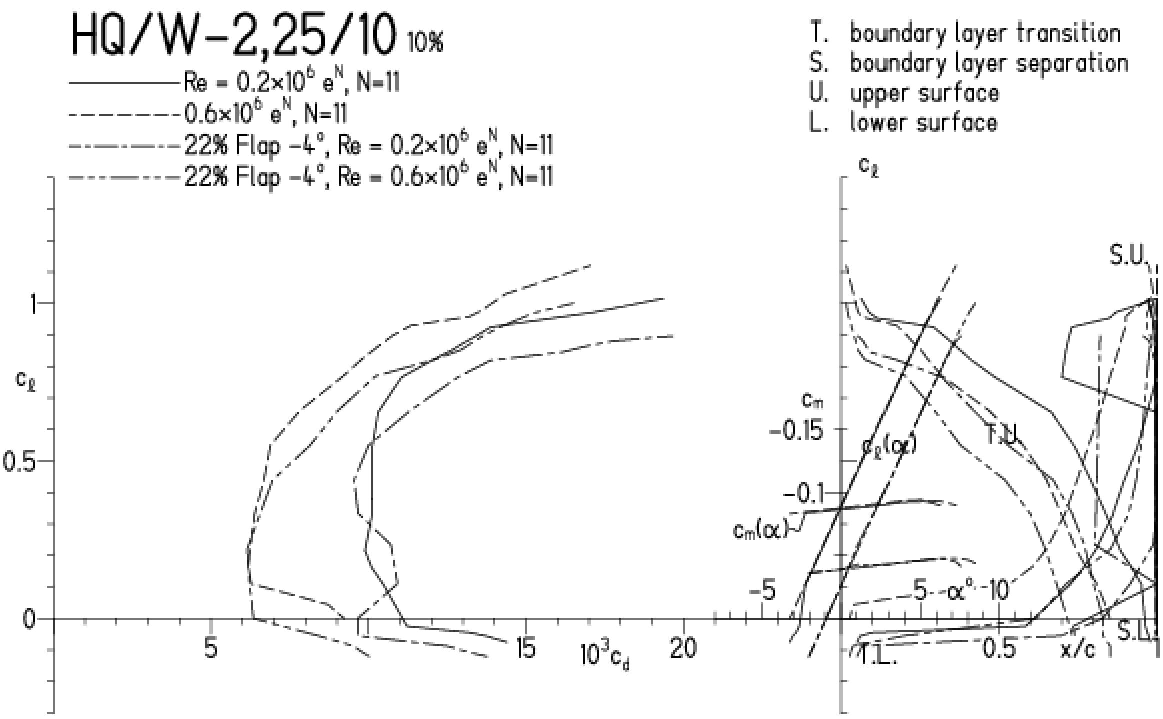


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

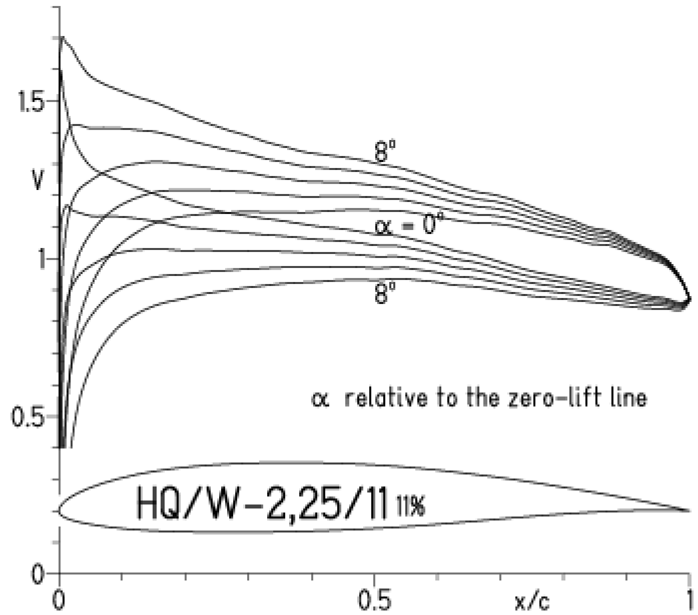


EPPLER 2005 V. 8.5.07 RUN

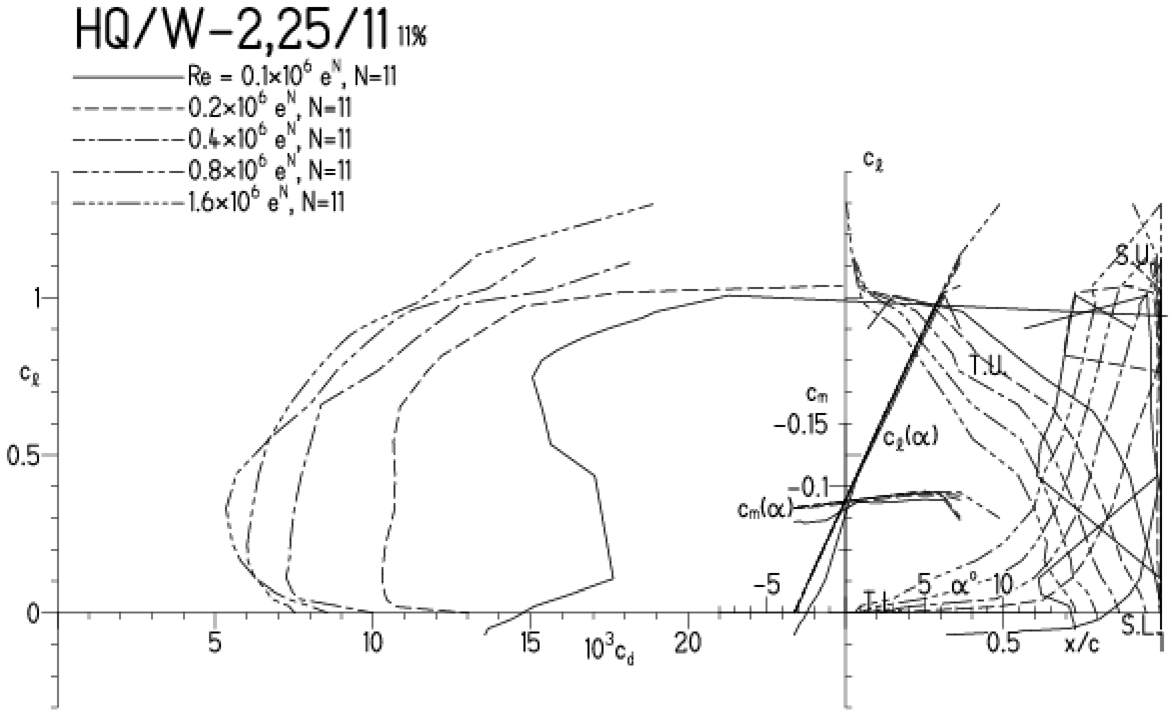


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

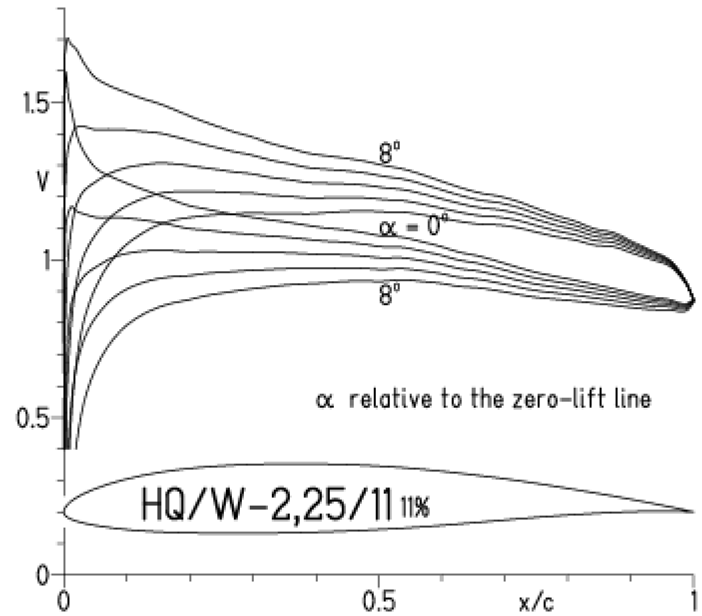


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12

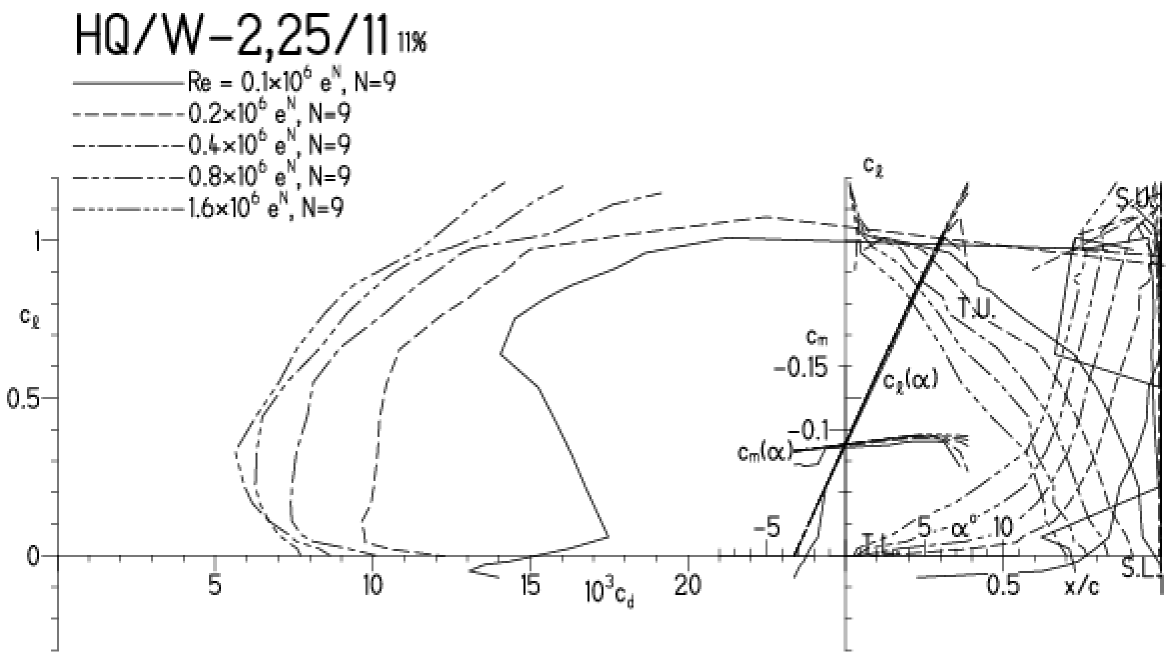


HQQ/W-2,25/11, N=9

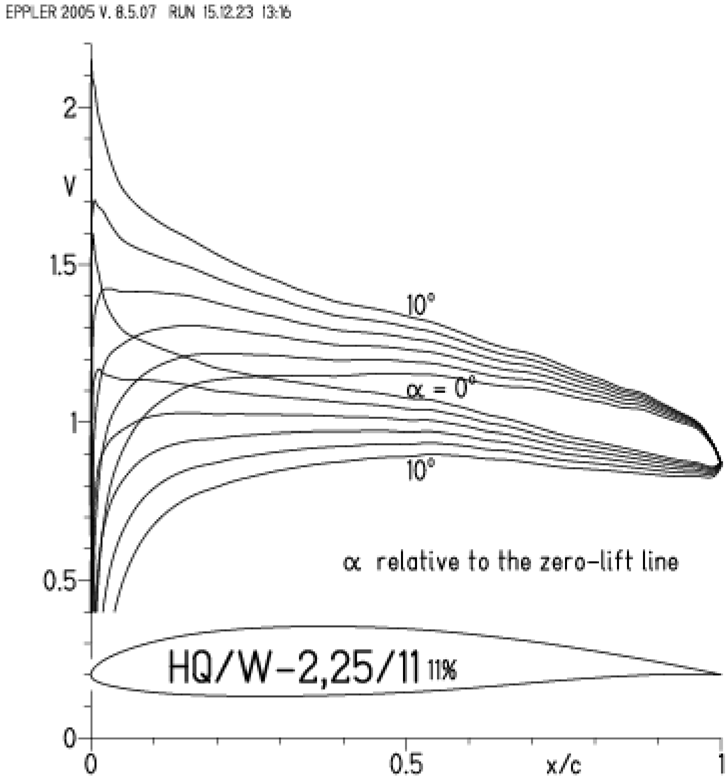
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

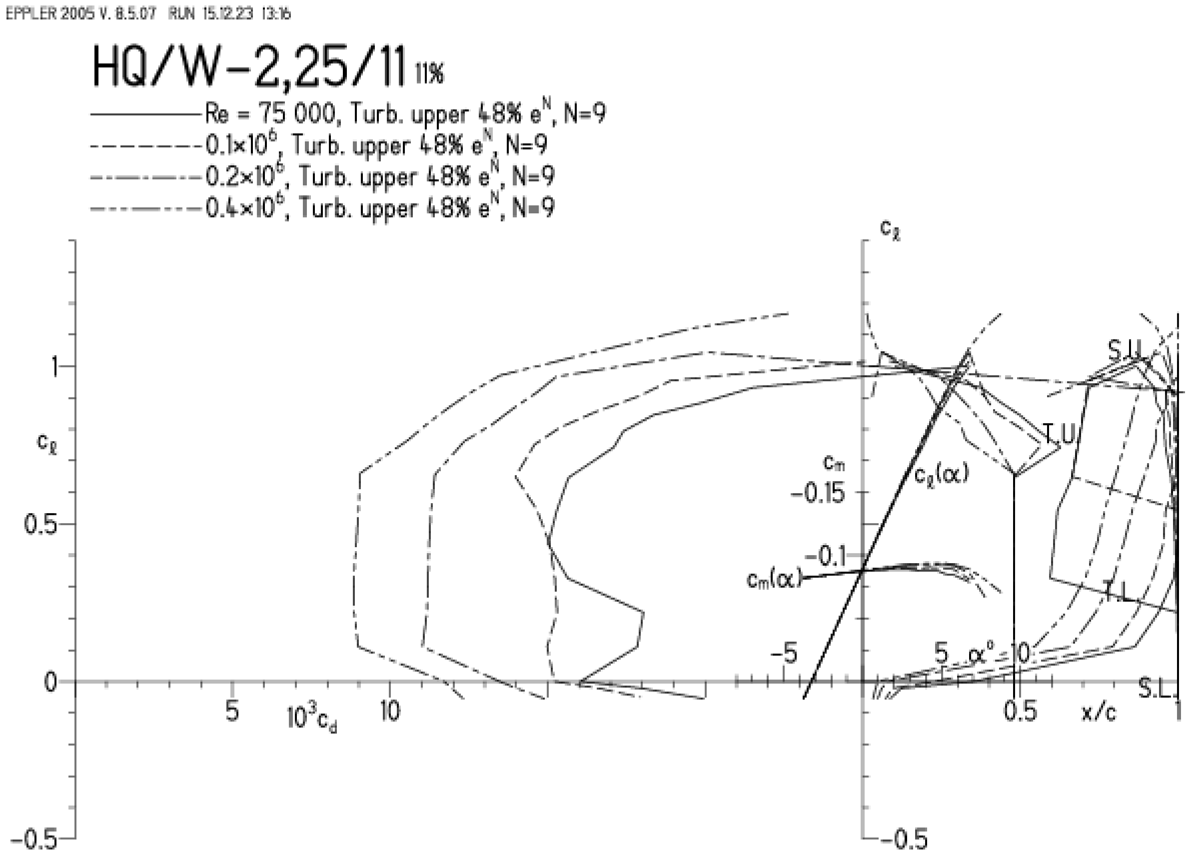


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



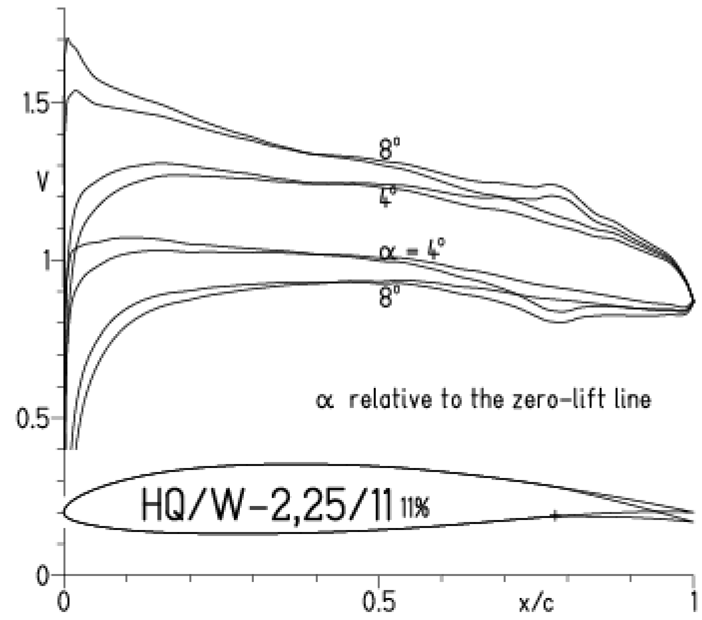
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



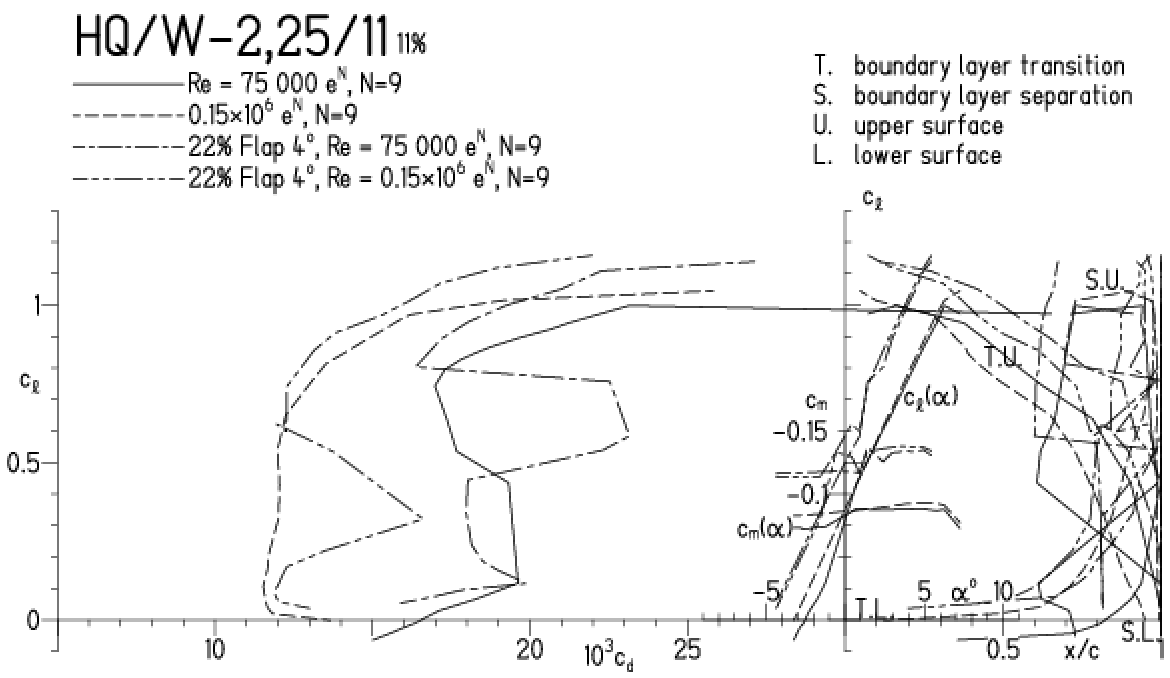


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

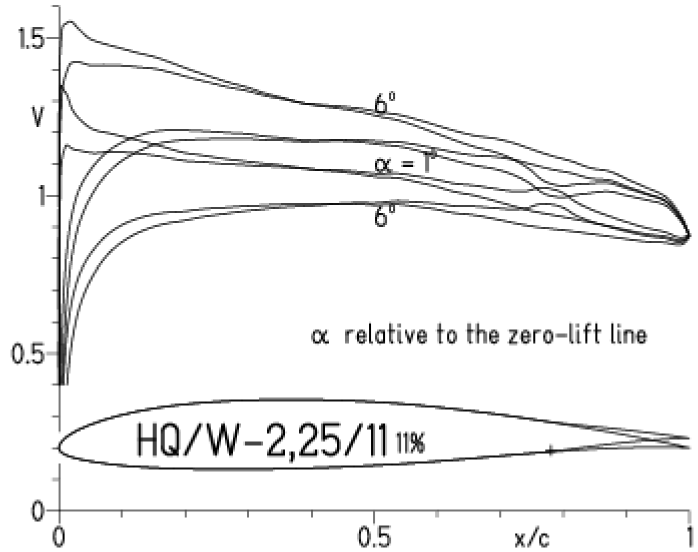


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

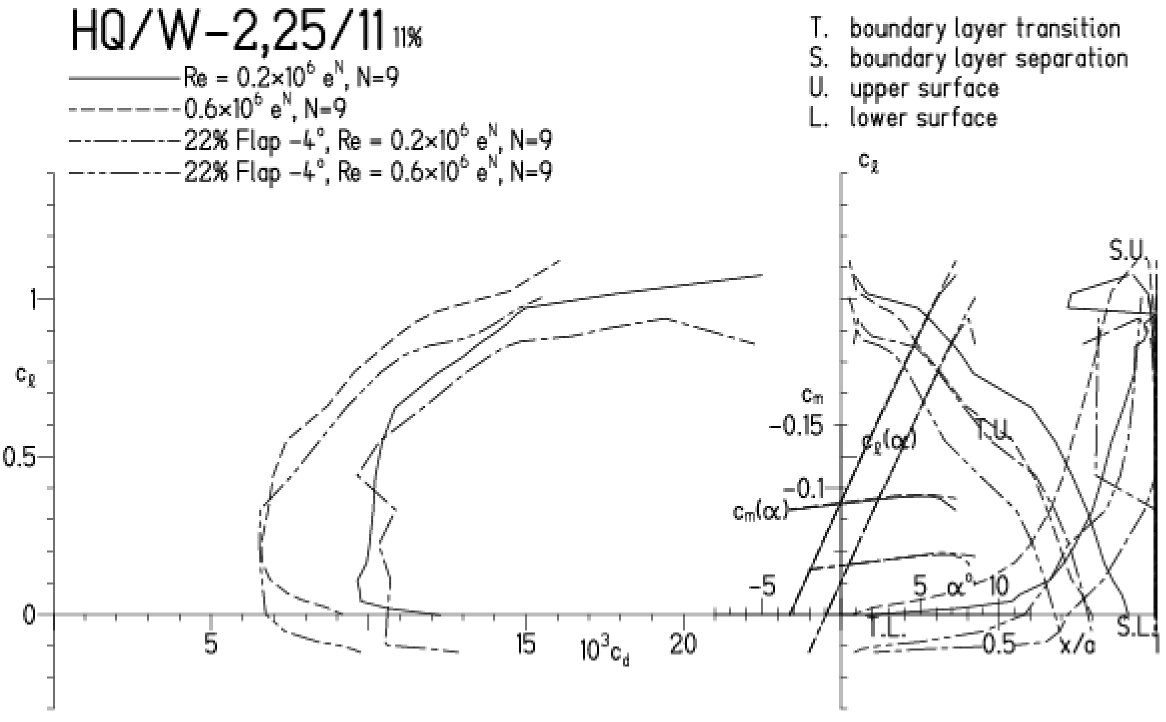


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

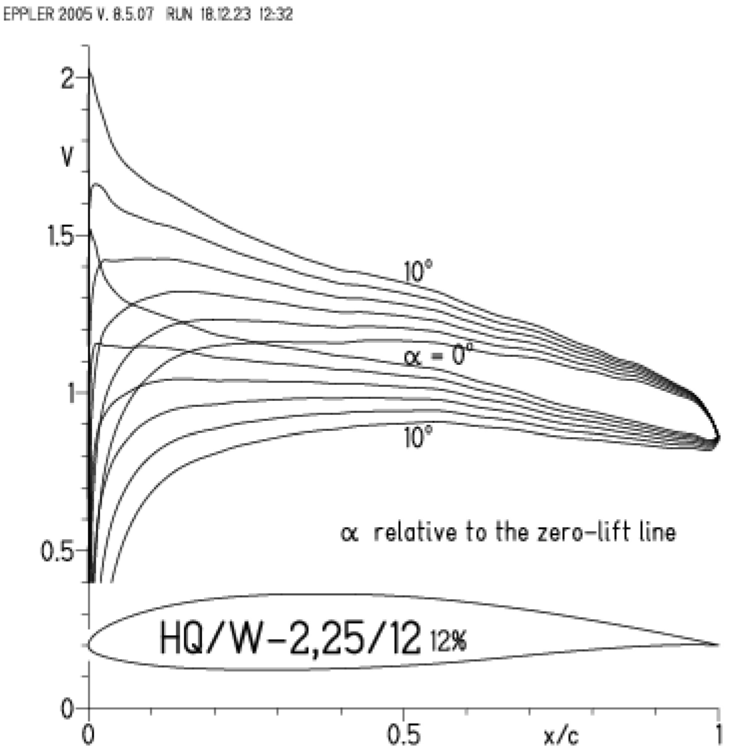
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

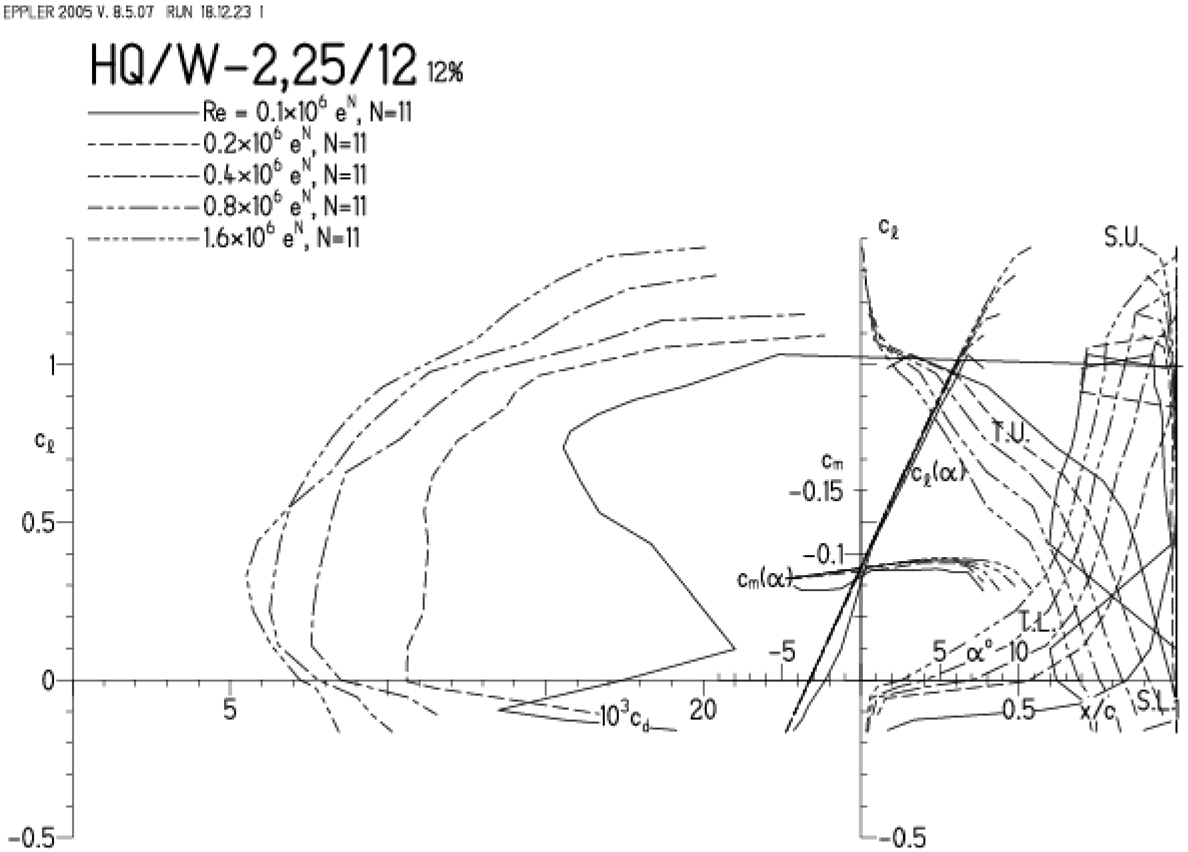


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

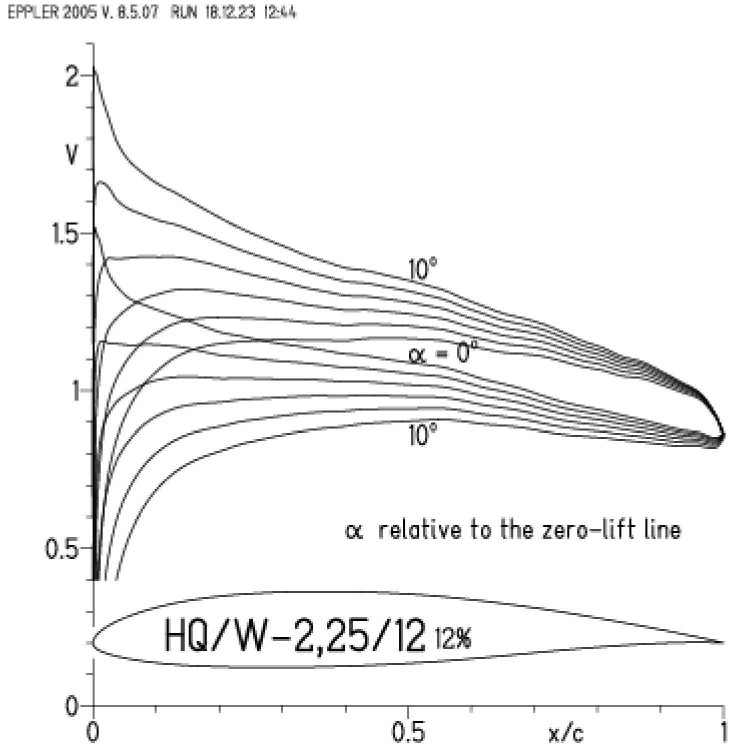


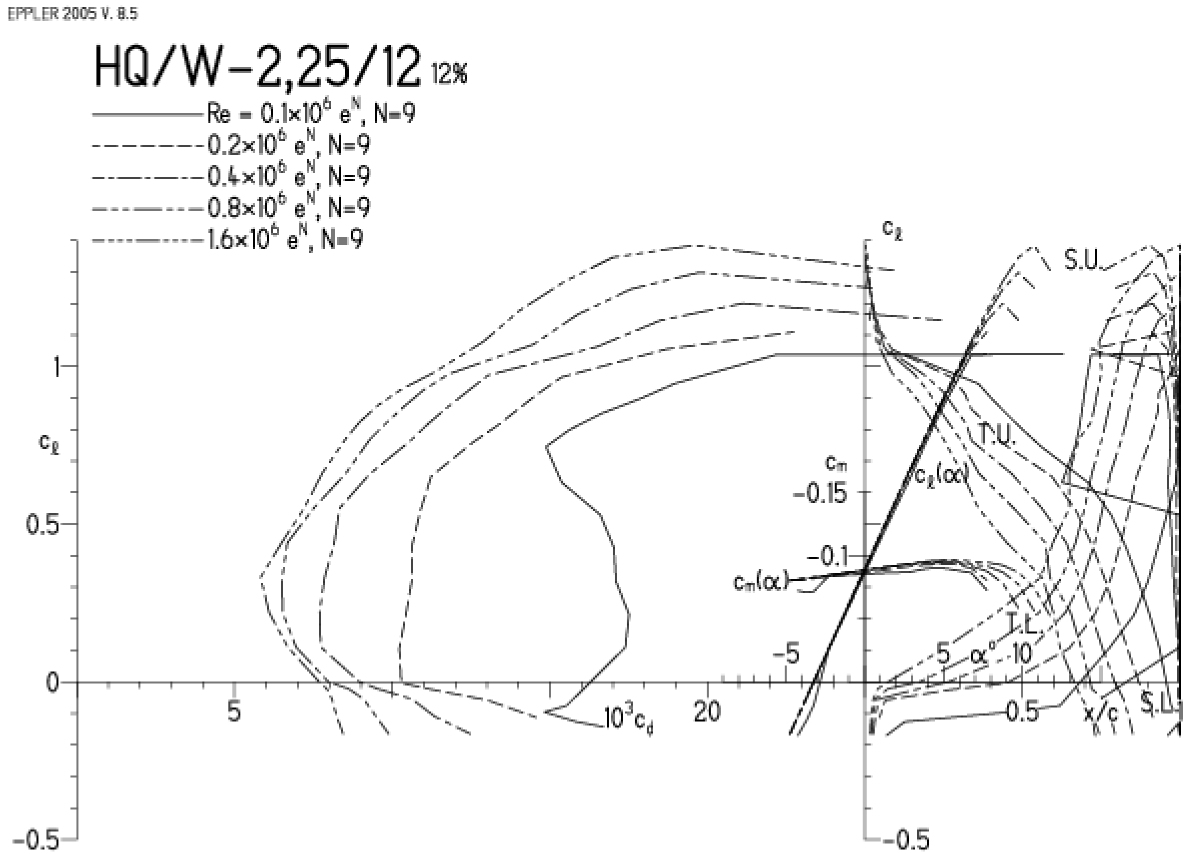
HQ/W-2,25/12, N=11



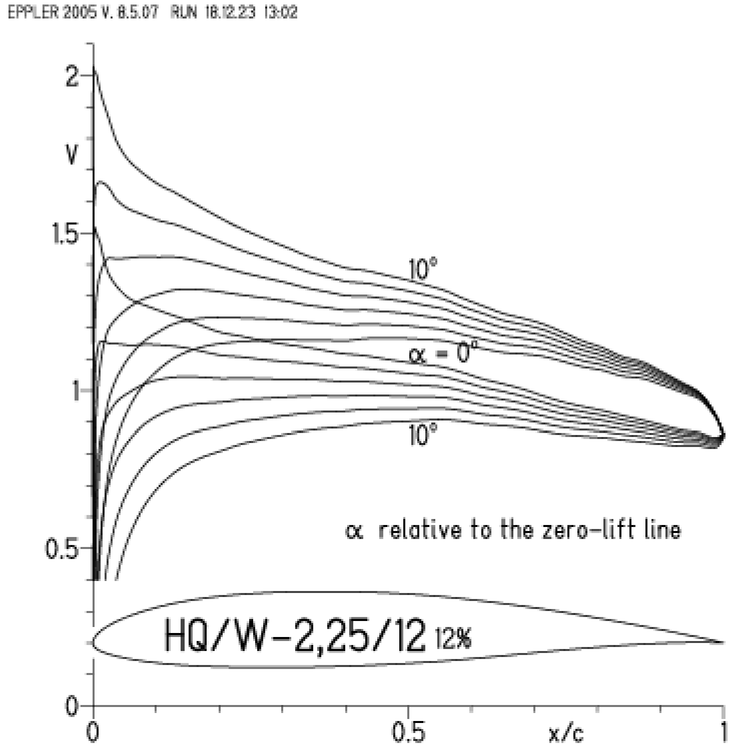


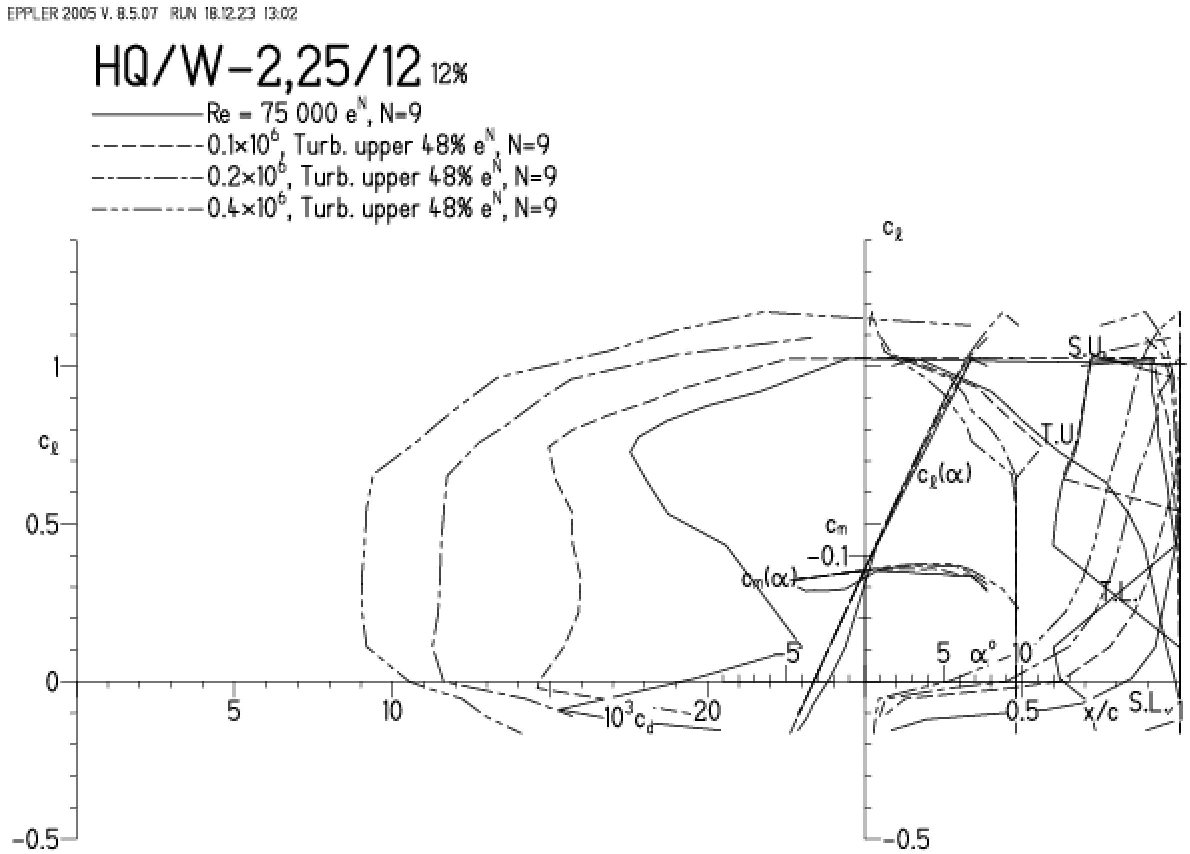
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
10³c_d
x/c

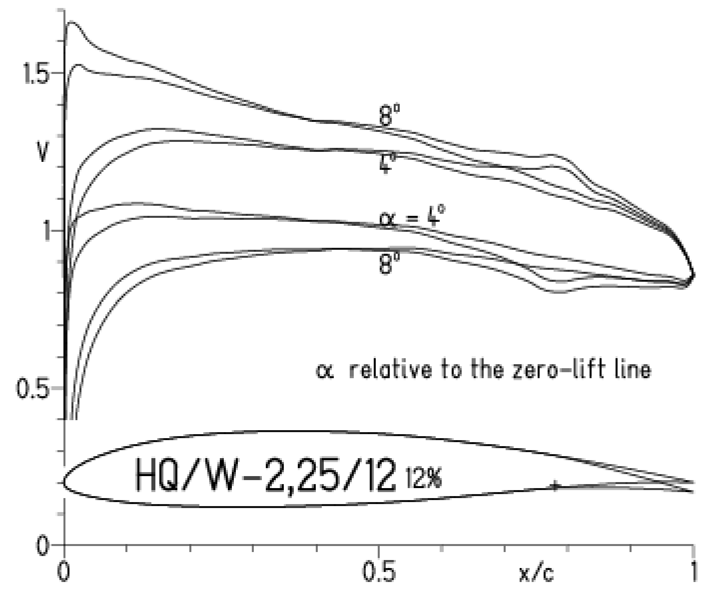
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



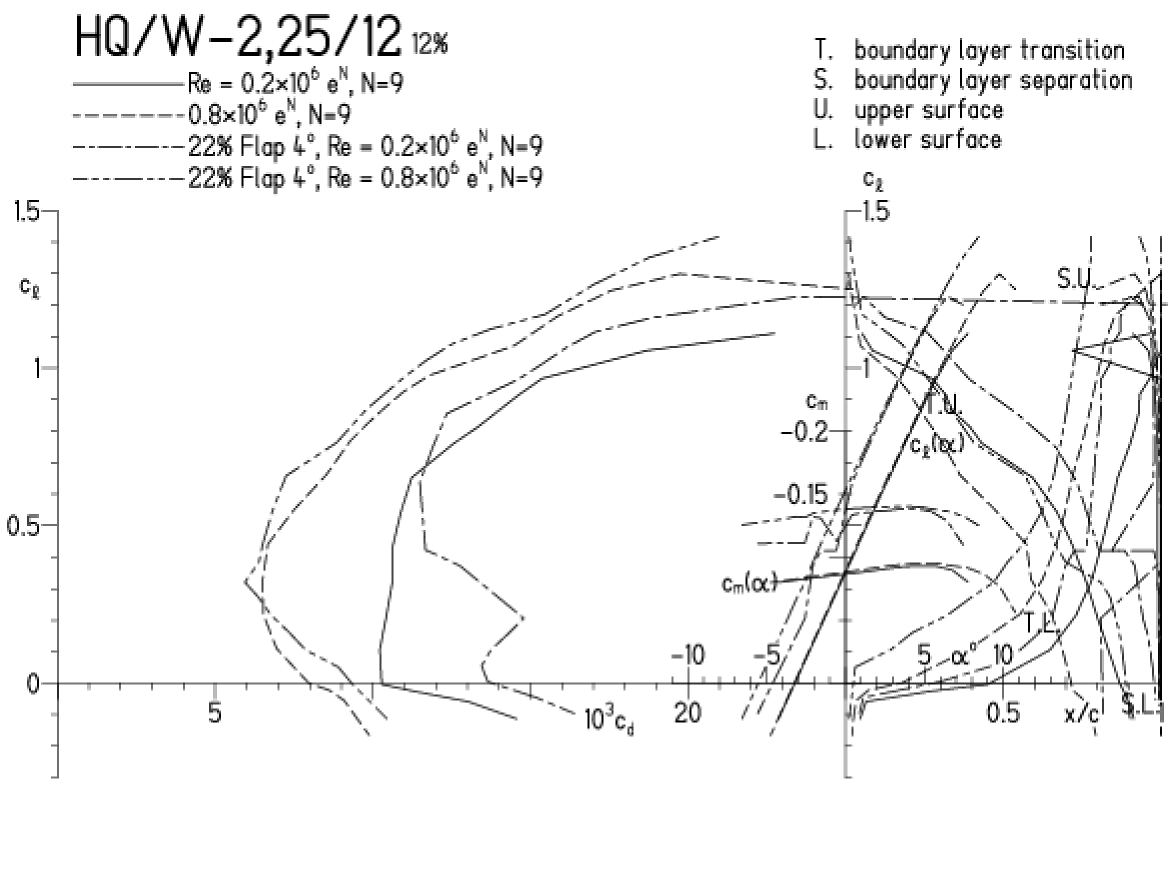


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

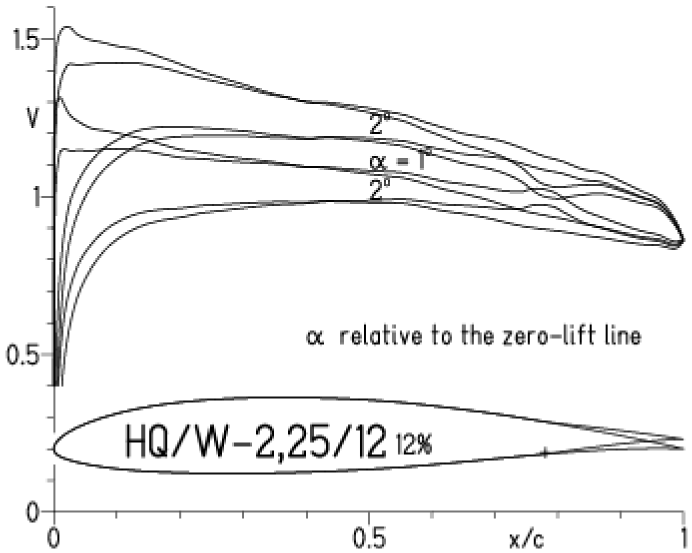


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

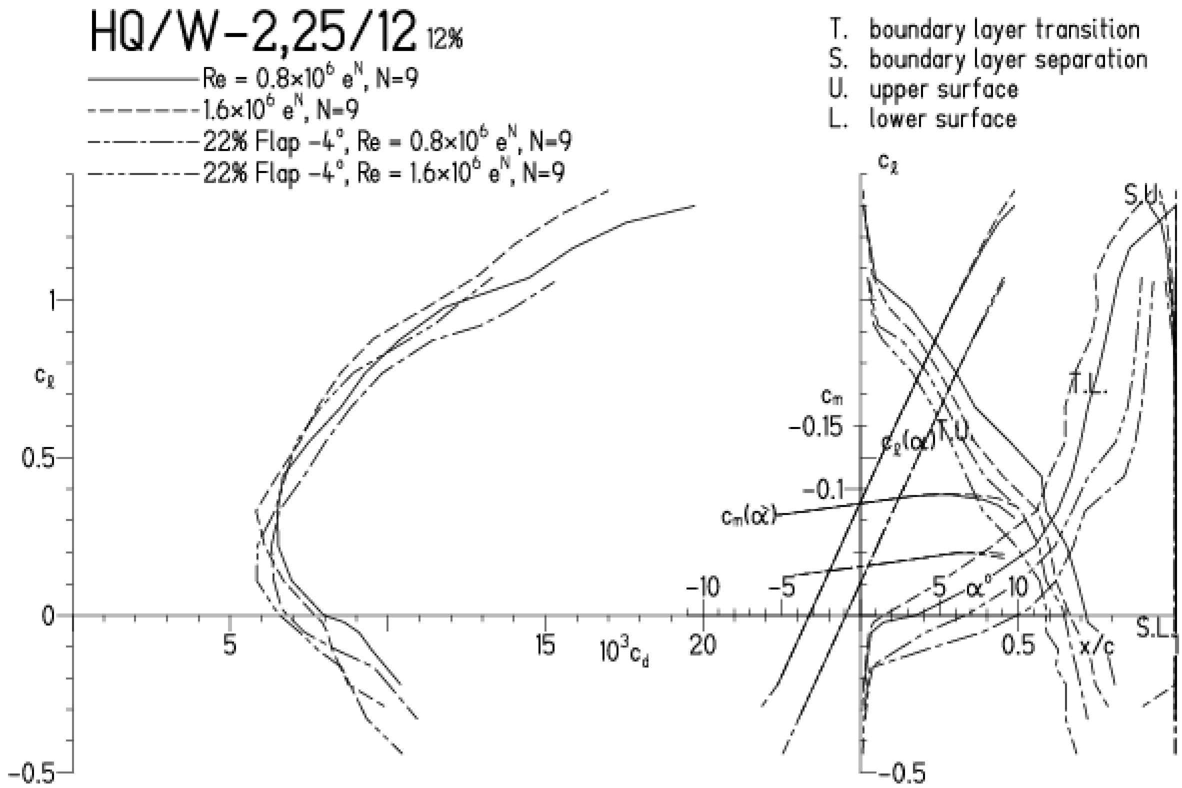


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

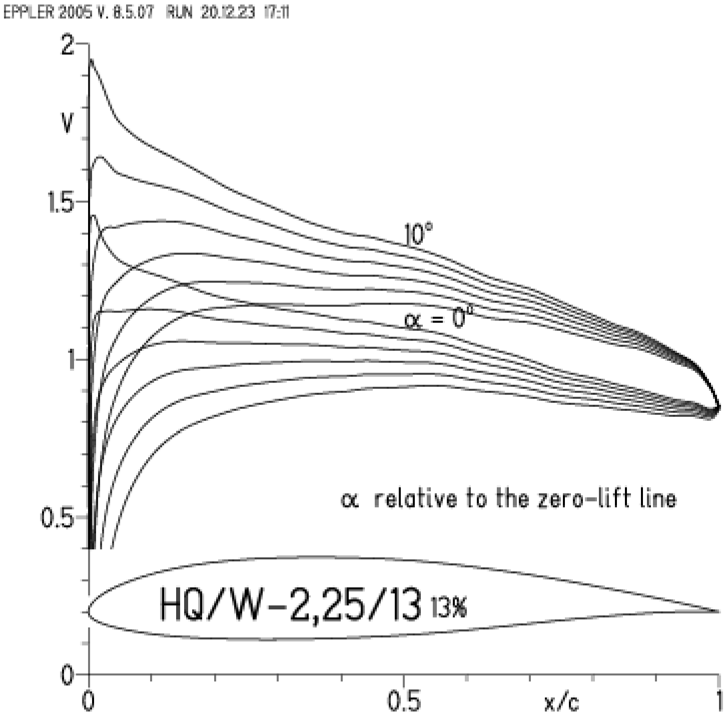
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

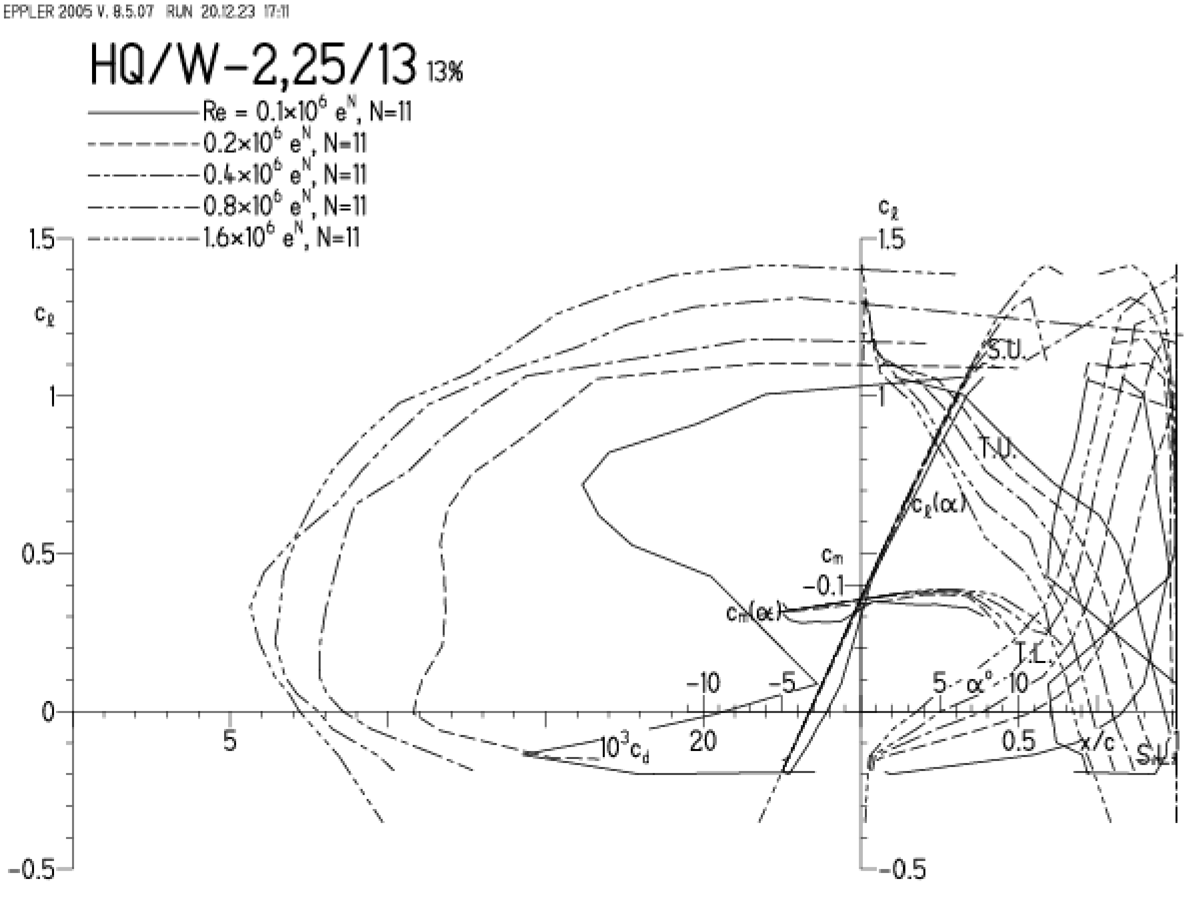


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

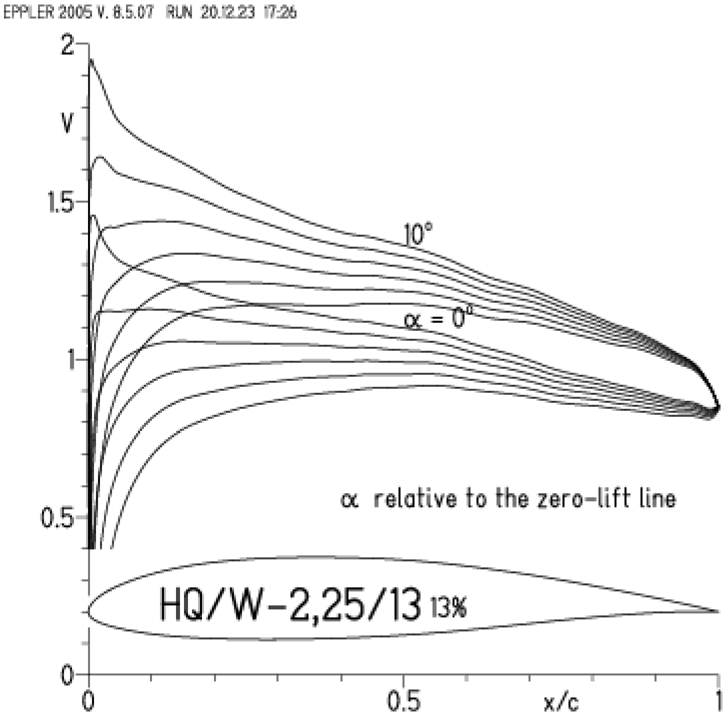


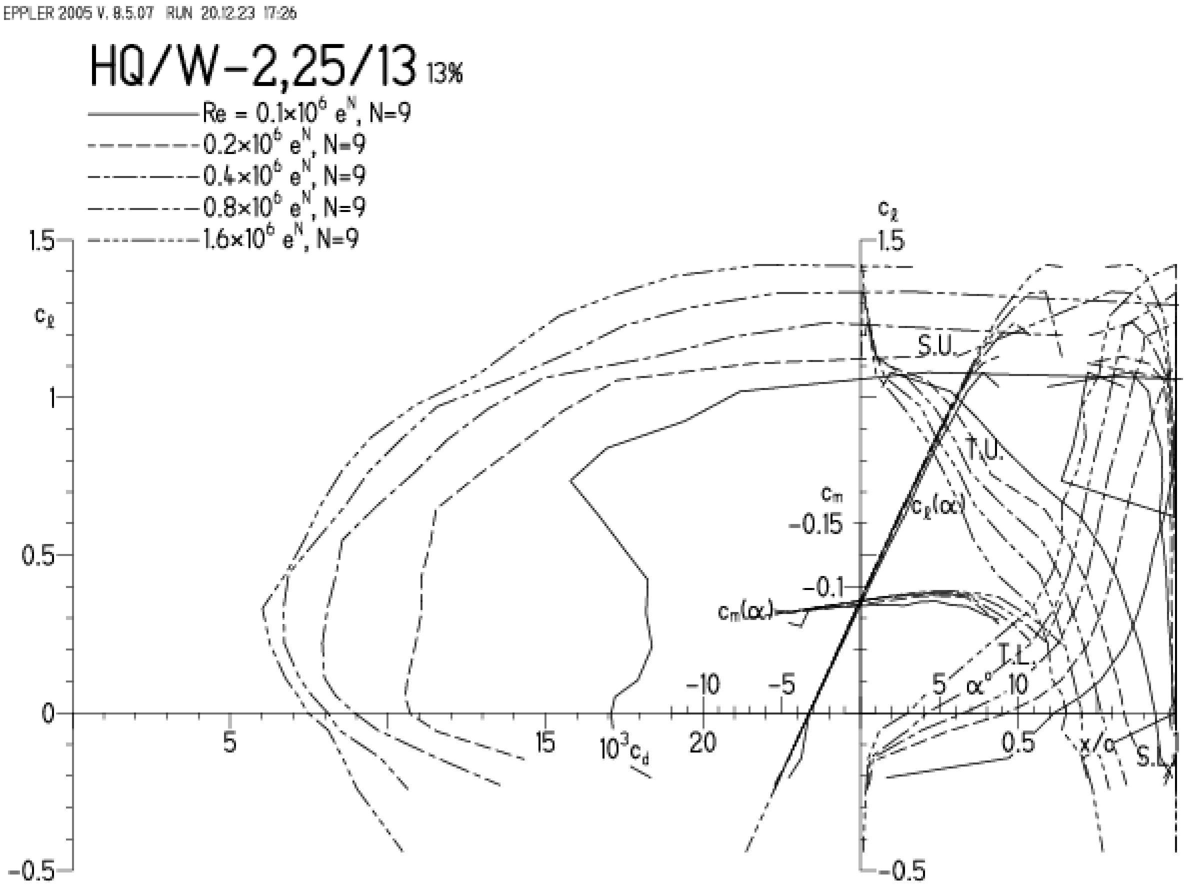
<u>HQ/W-2,25/13</u>, N=11



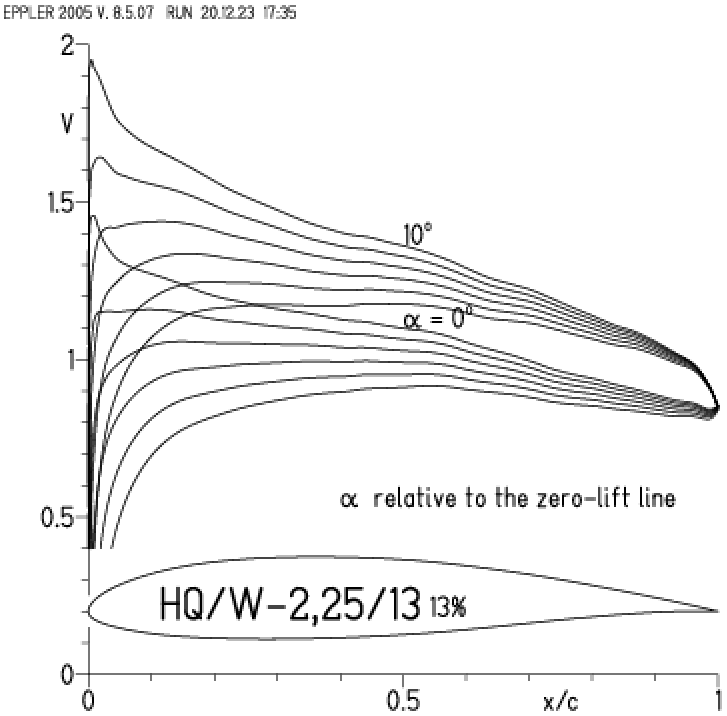


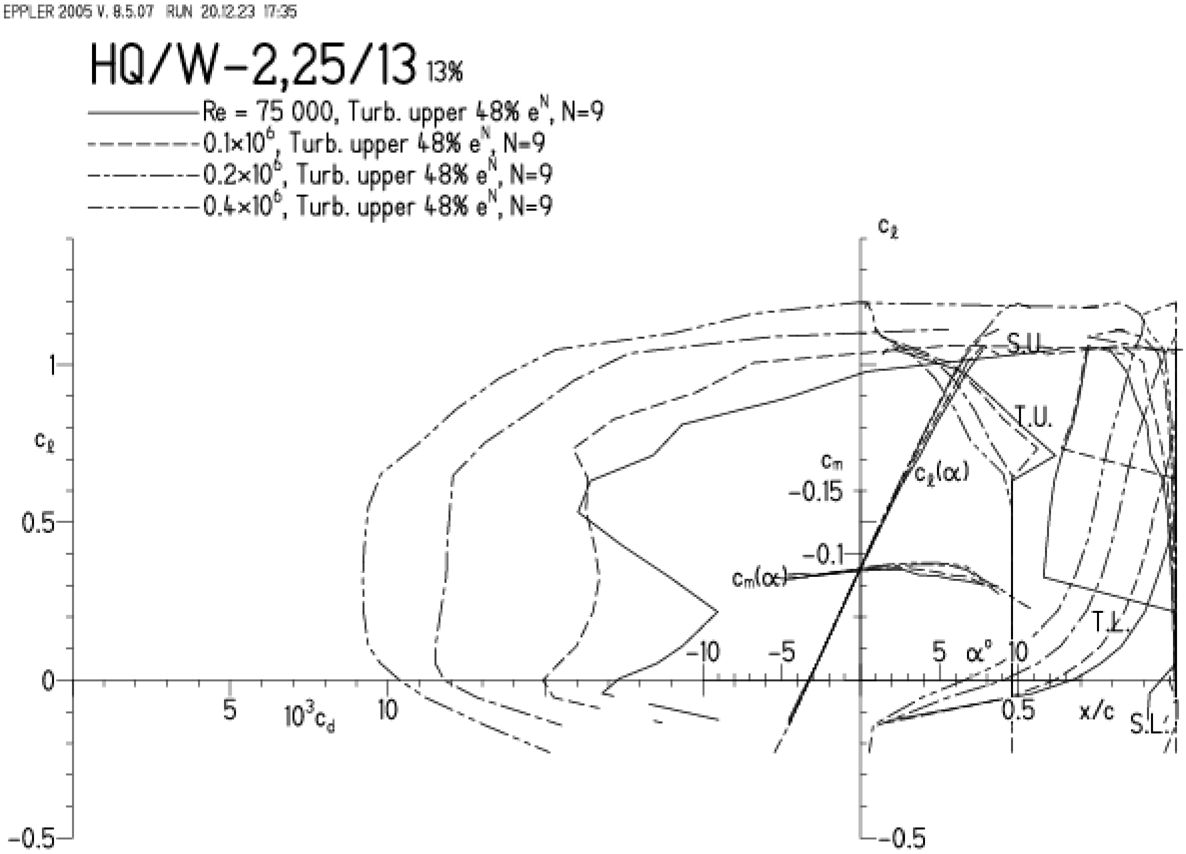
<u>HQ/W-2,25/13</u>, N=9





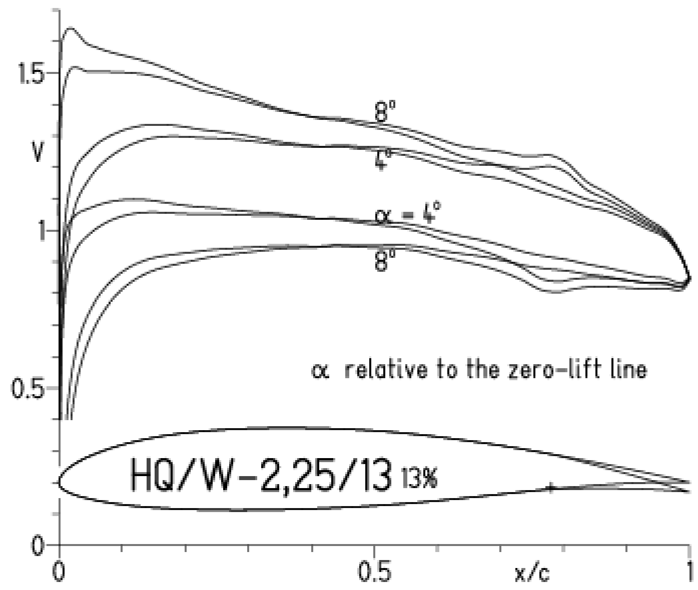
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



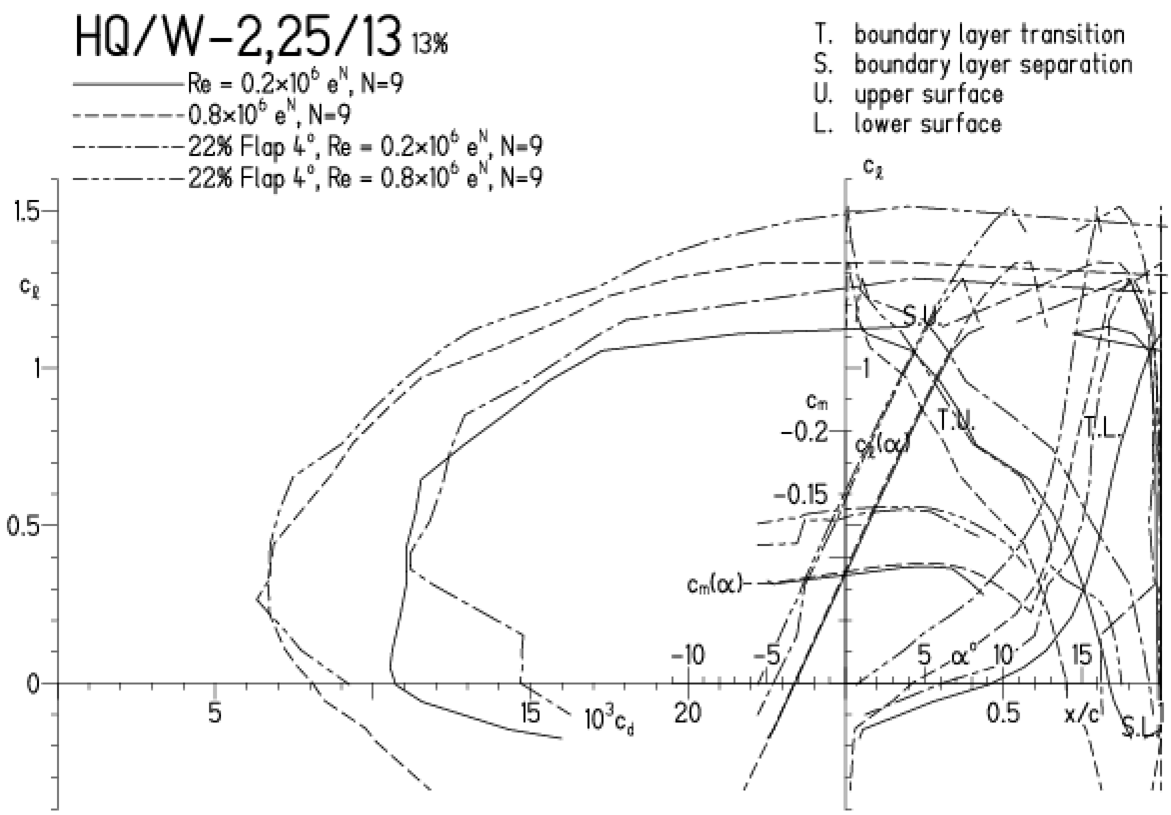


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

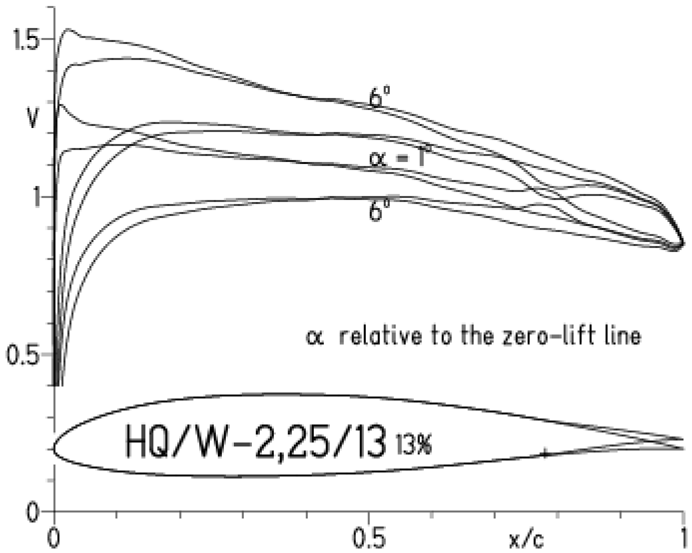


EPPLER 2005 V.

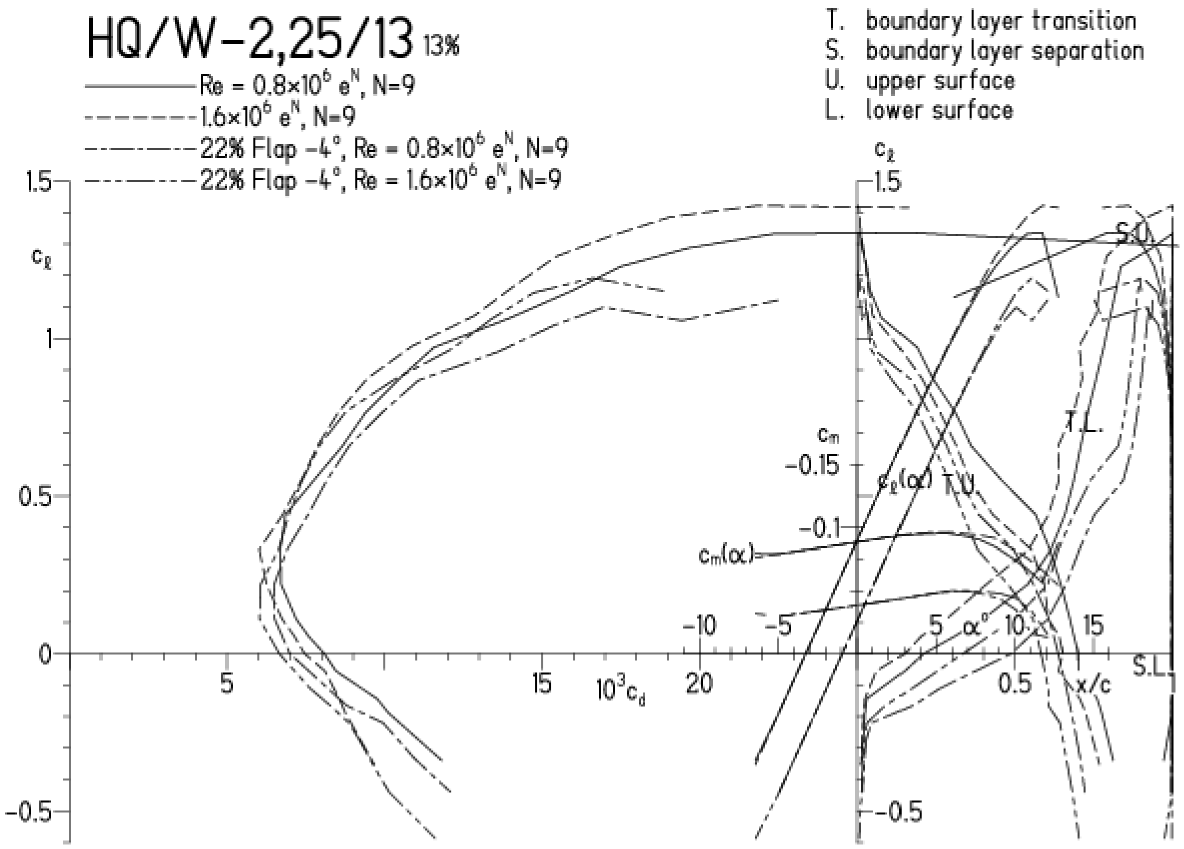


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

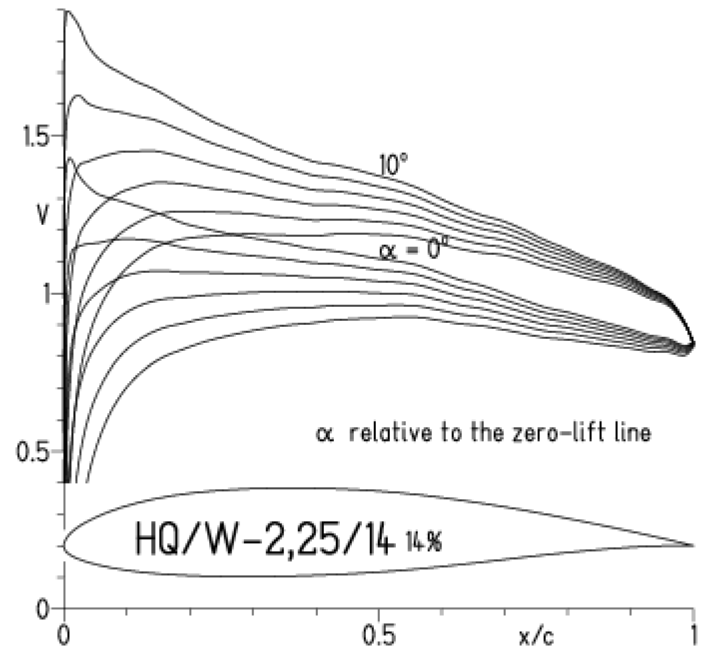


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

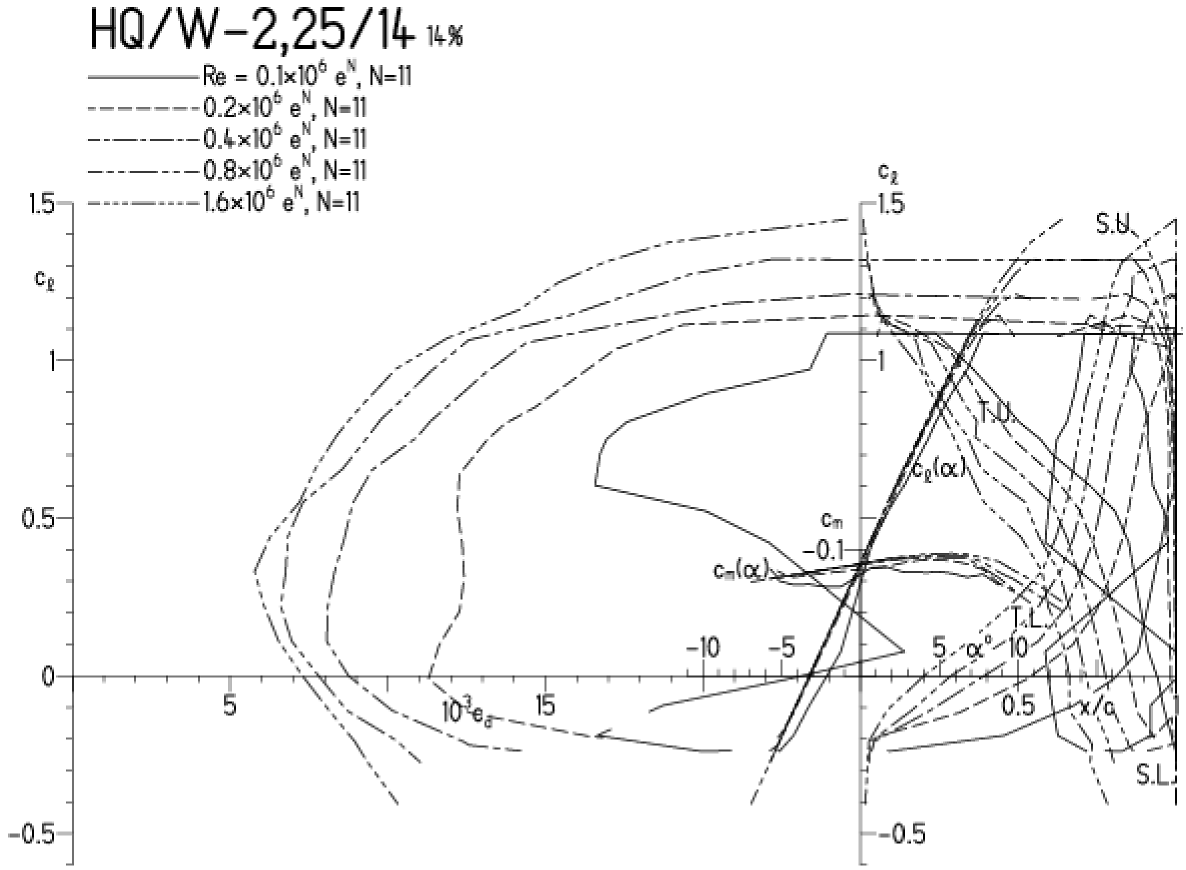


<u>HQ/W-2,25/14</u>, N=11

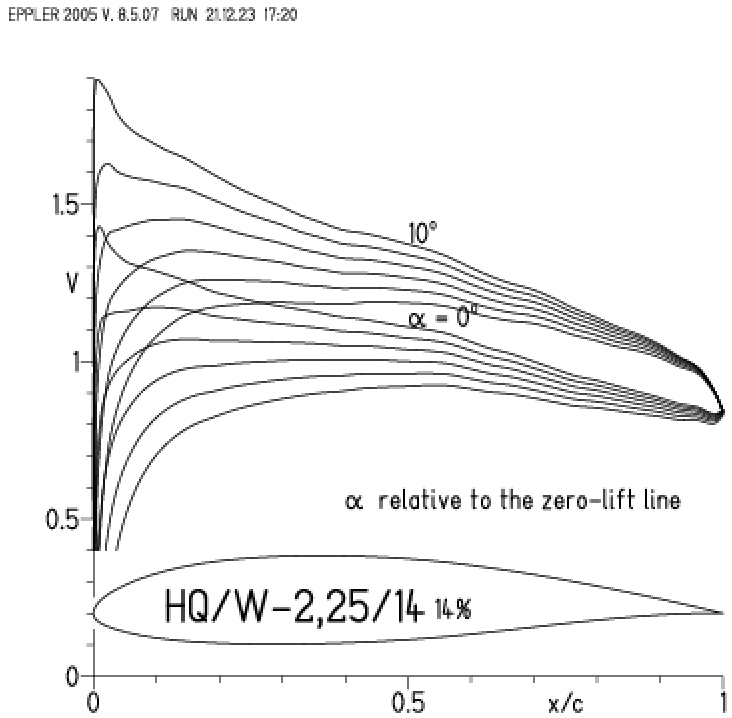
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

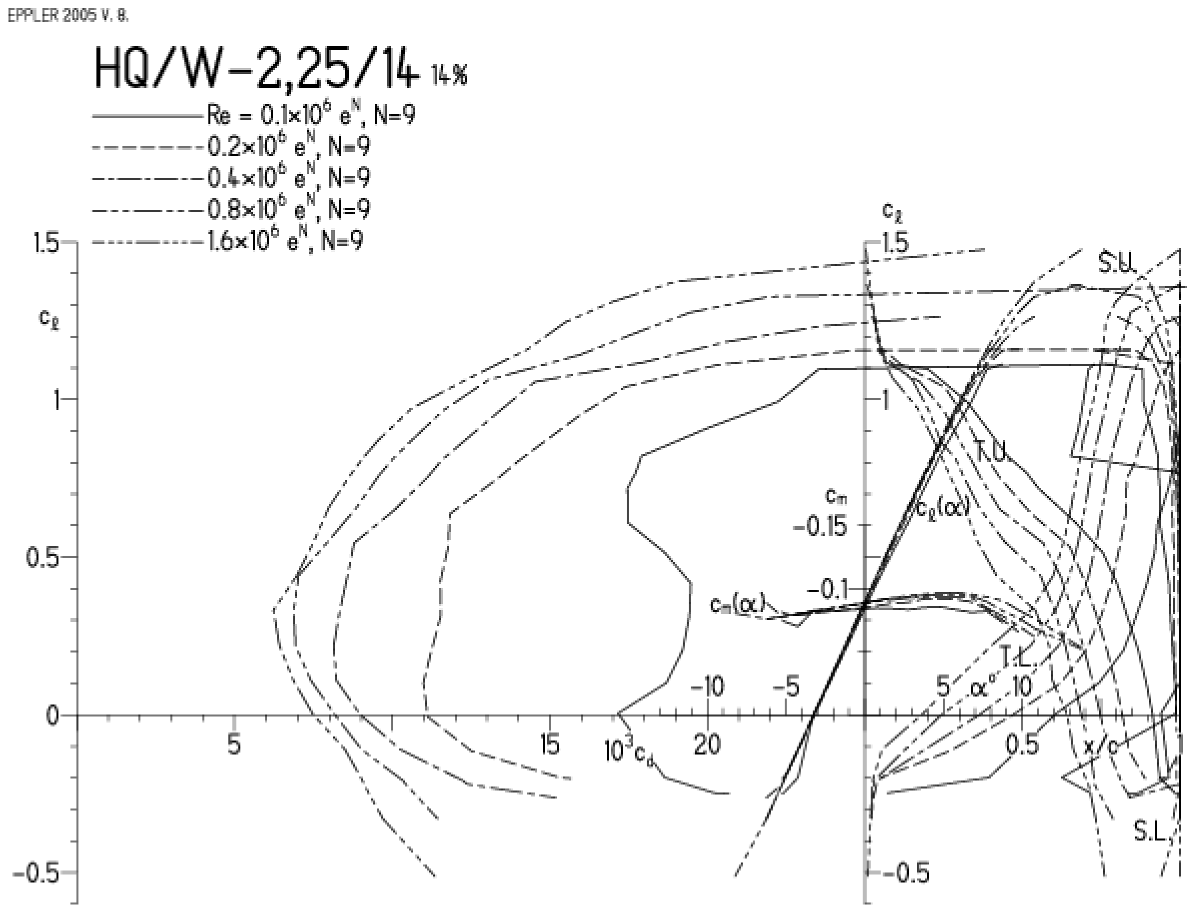


EPPLER 2005 V. 8.



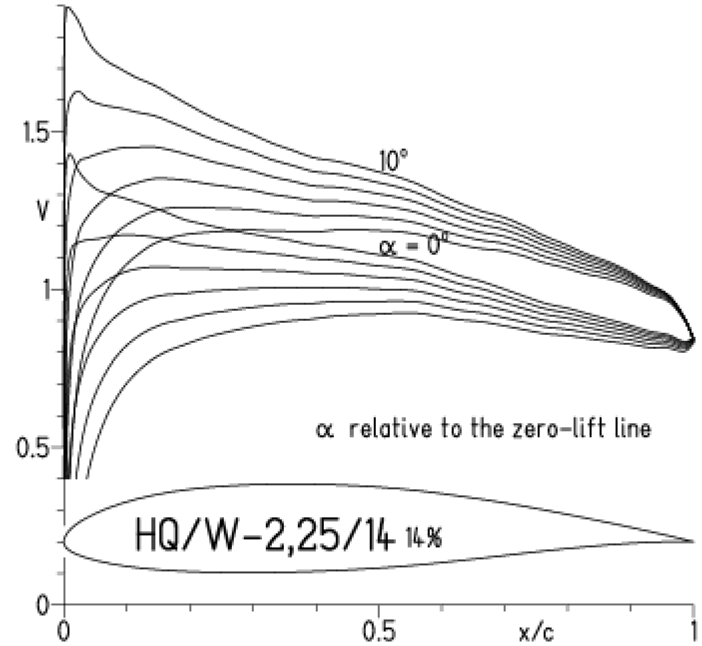
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

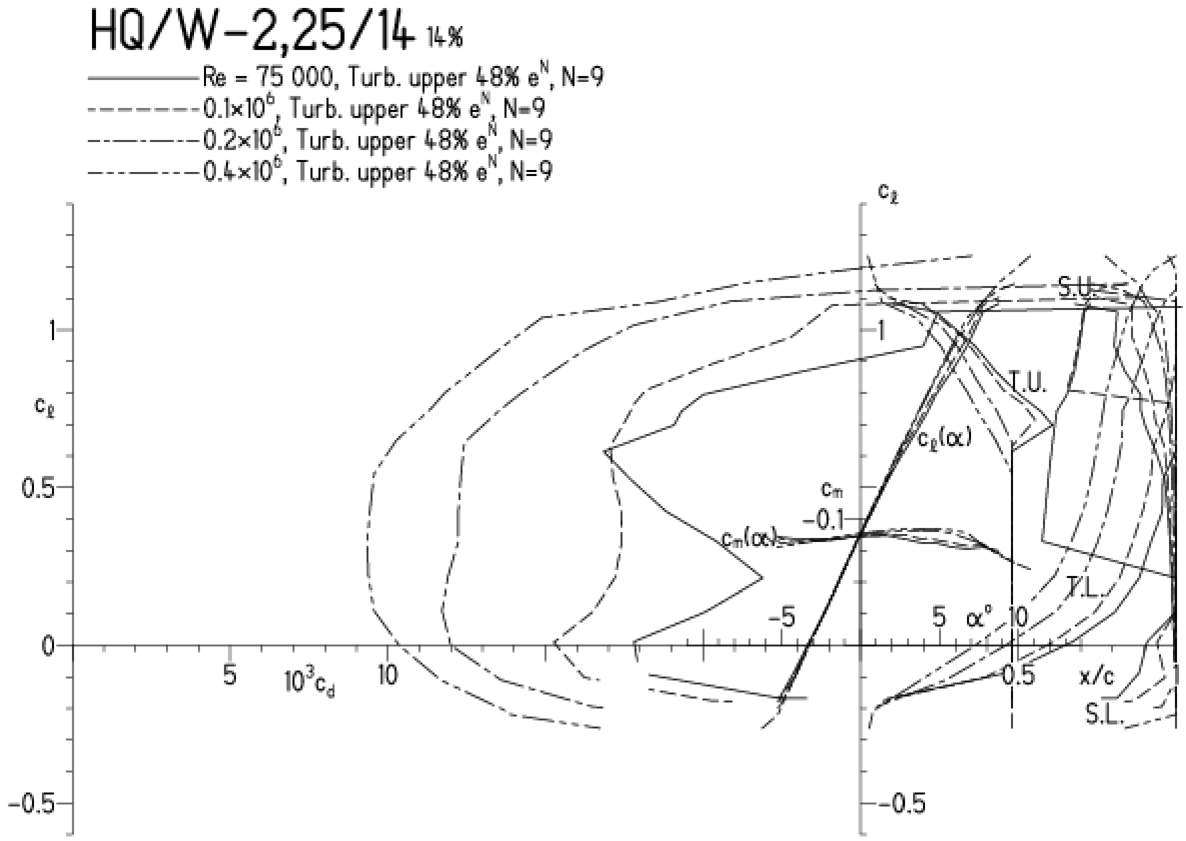

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10³c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

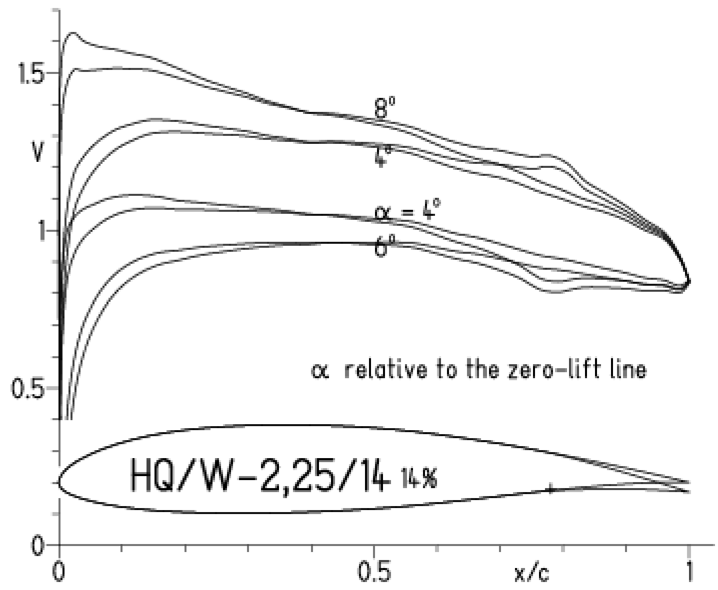


EPPLER 2005 V. 8.5.07 RU

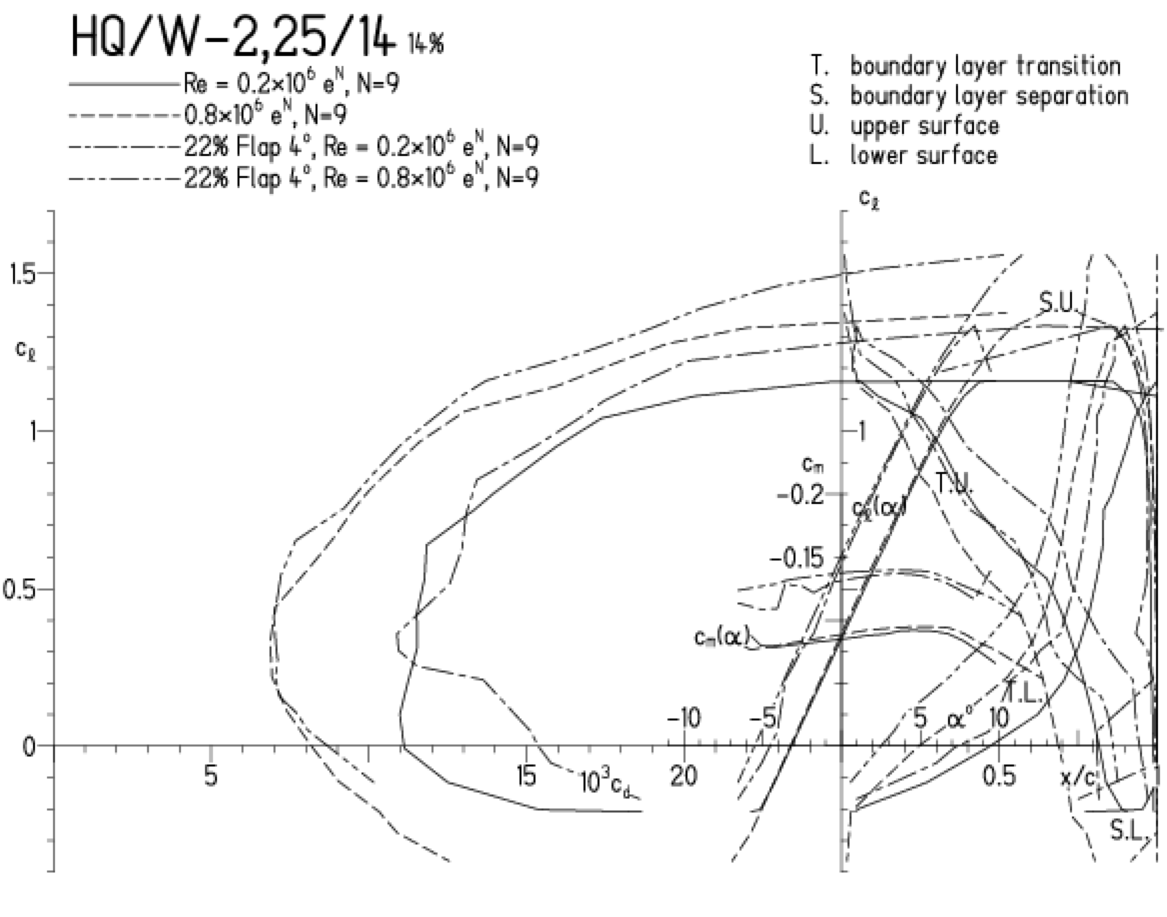


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

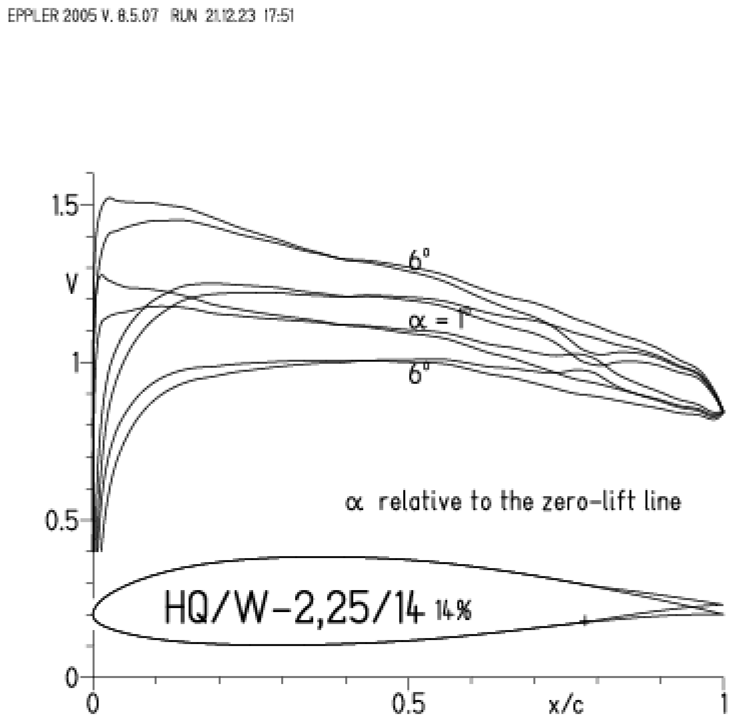
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

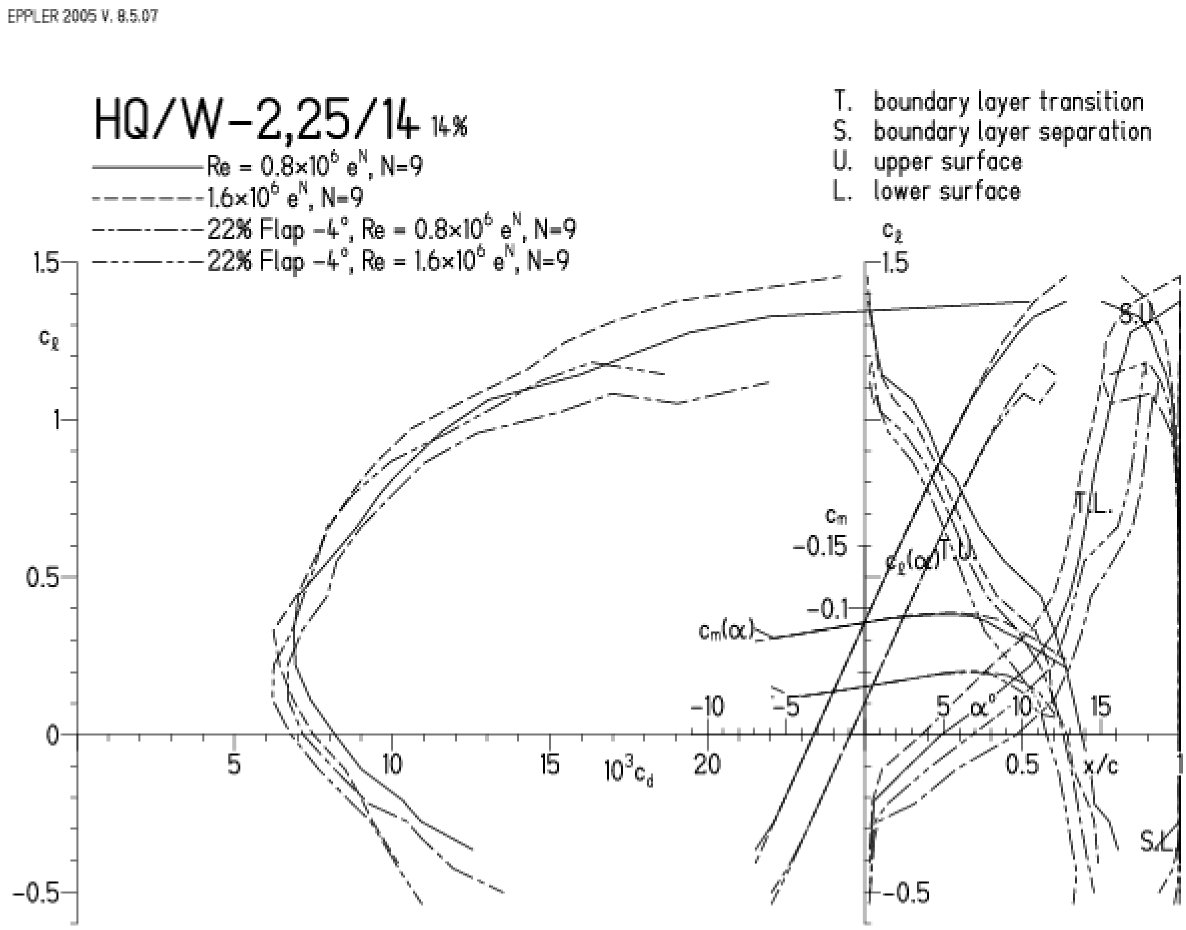


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

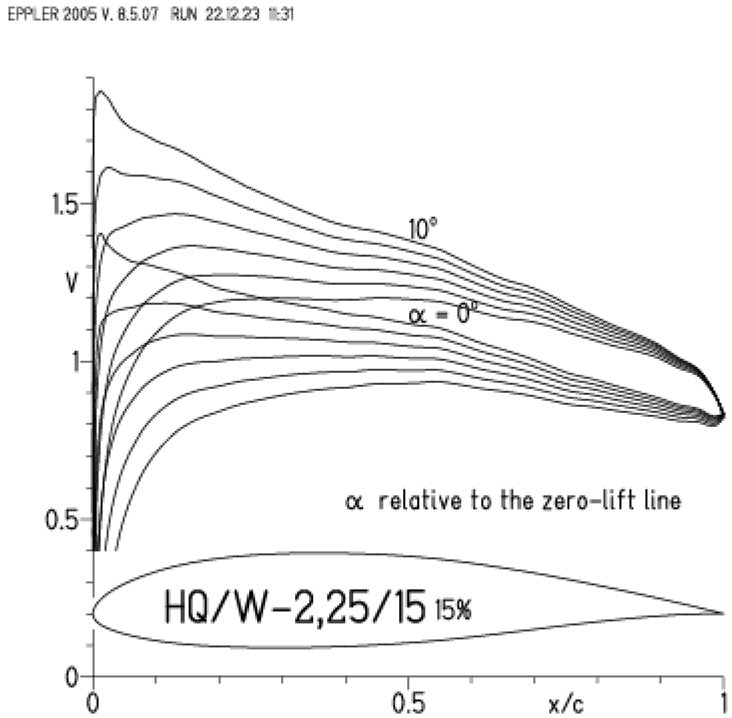


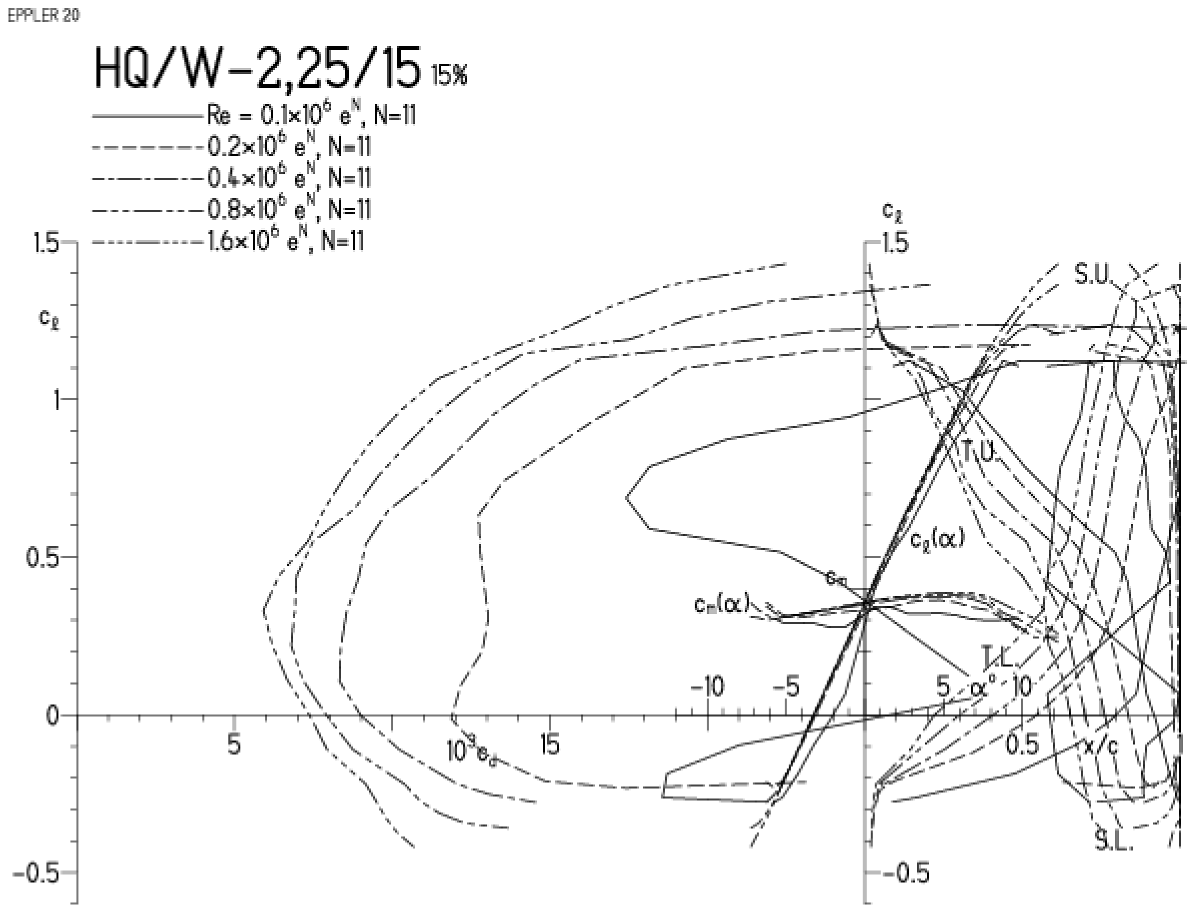
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag





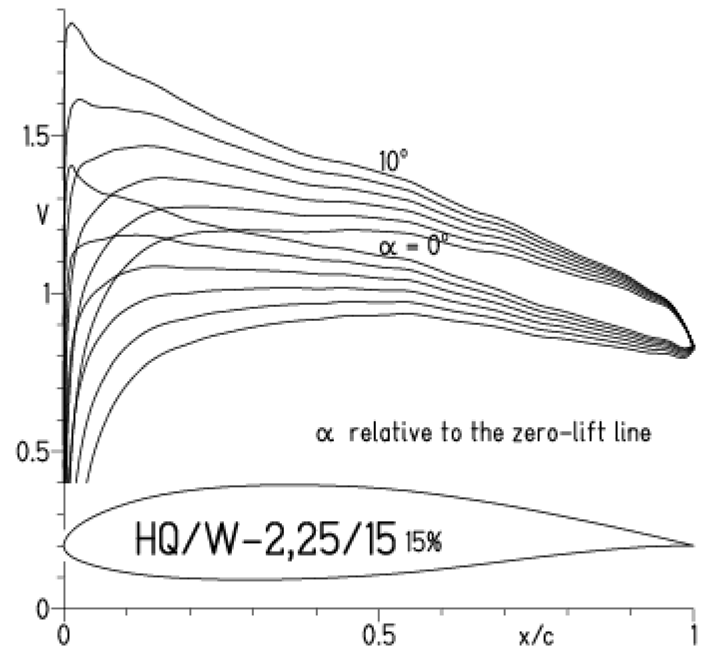
HQ/W-2,25/15, N=11



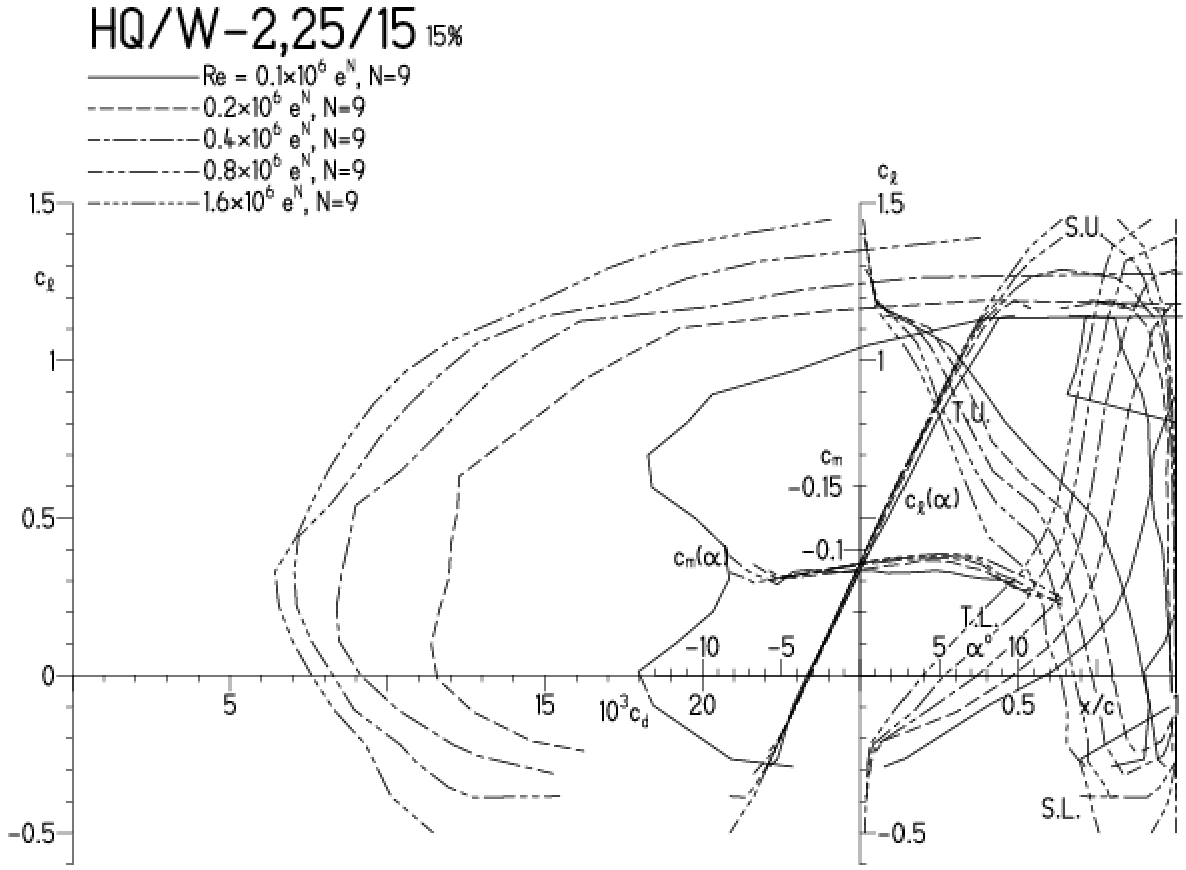


HQ/W-2,25/15, N=9

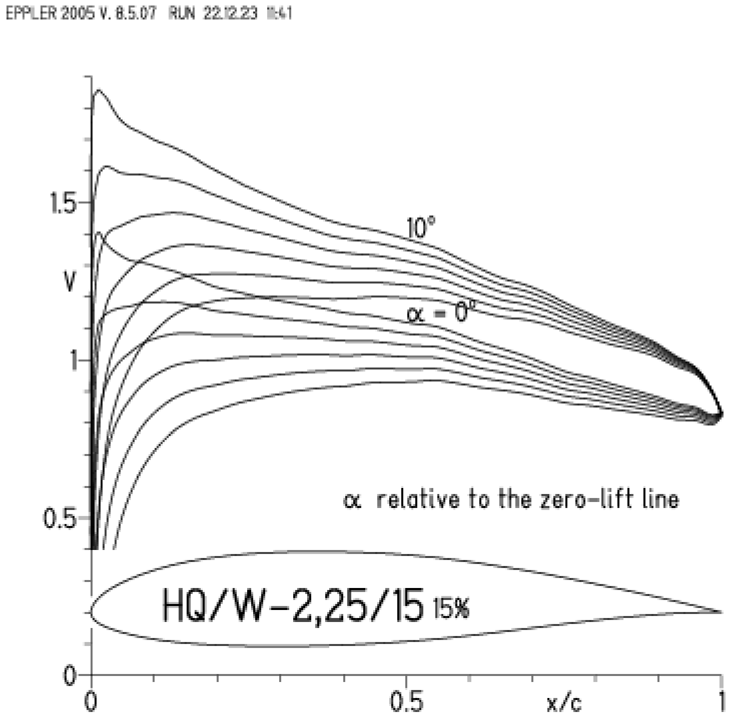
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

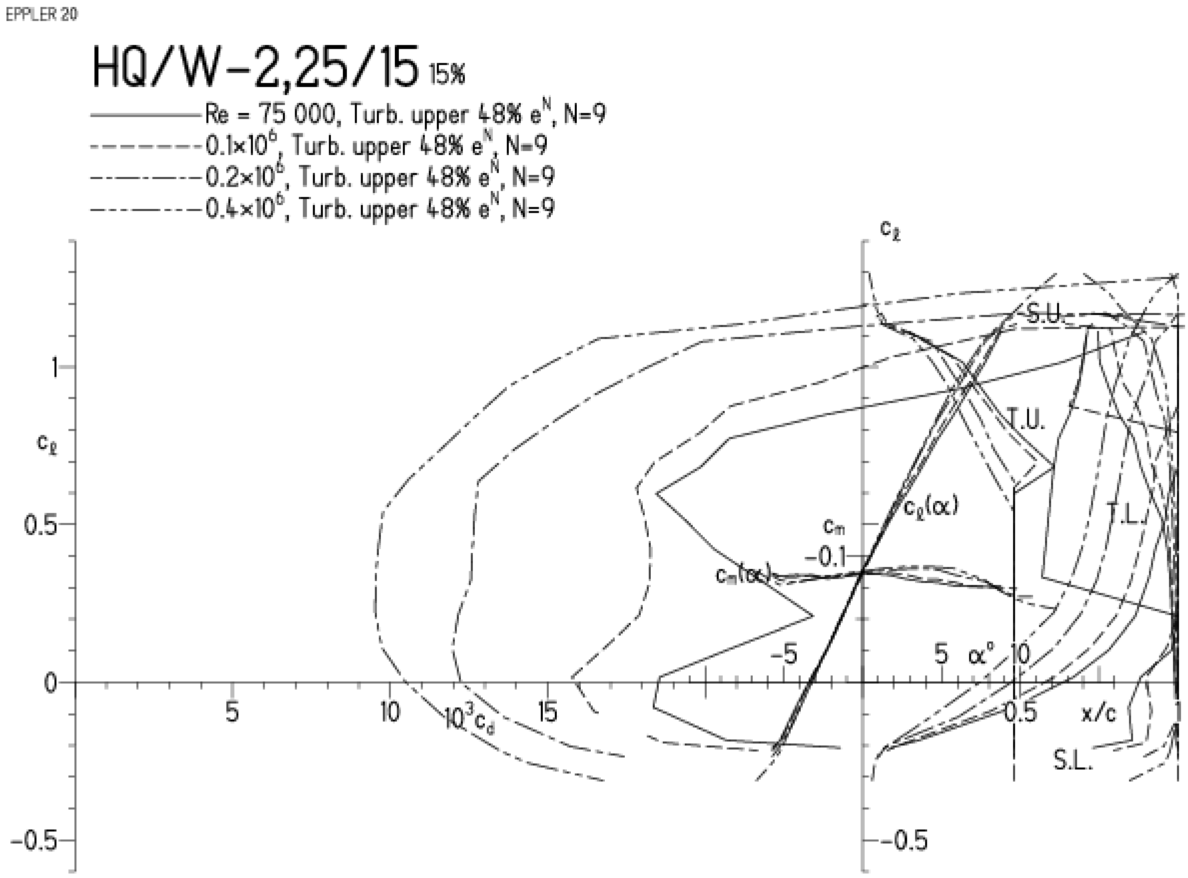


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



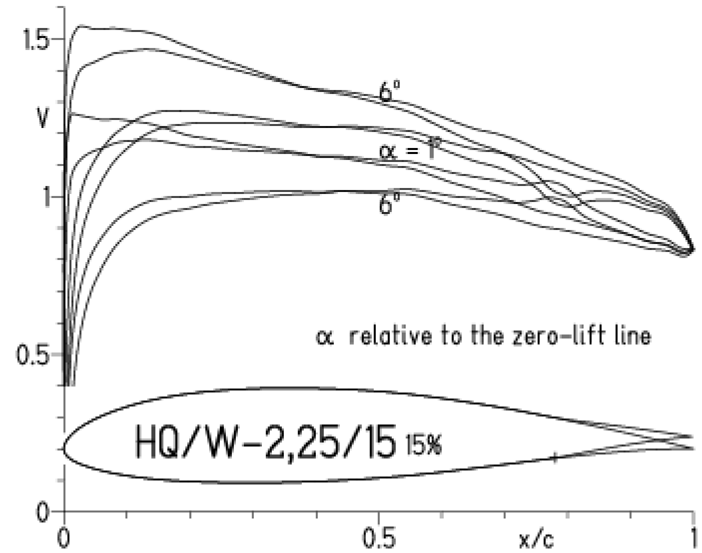


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

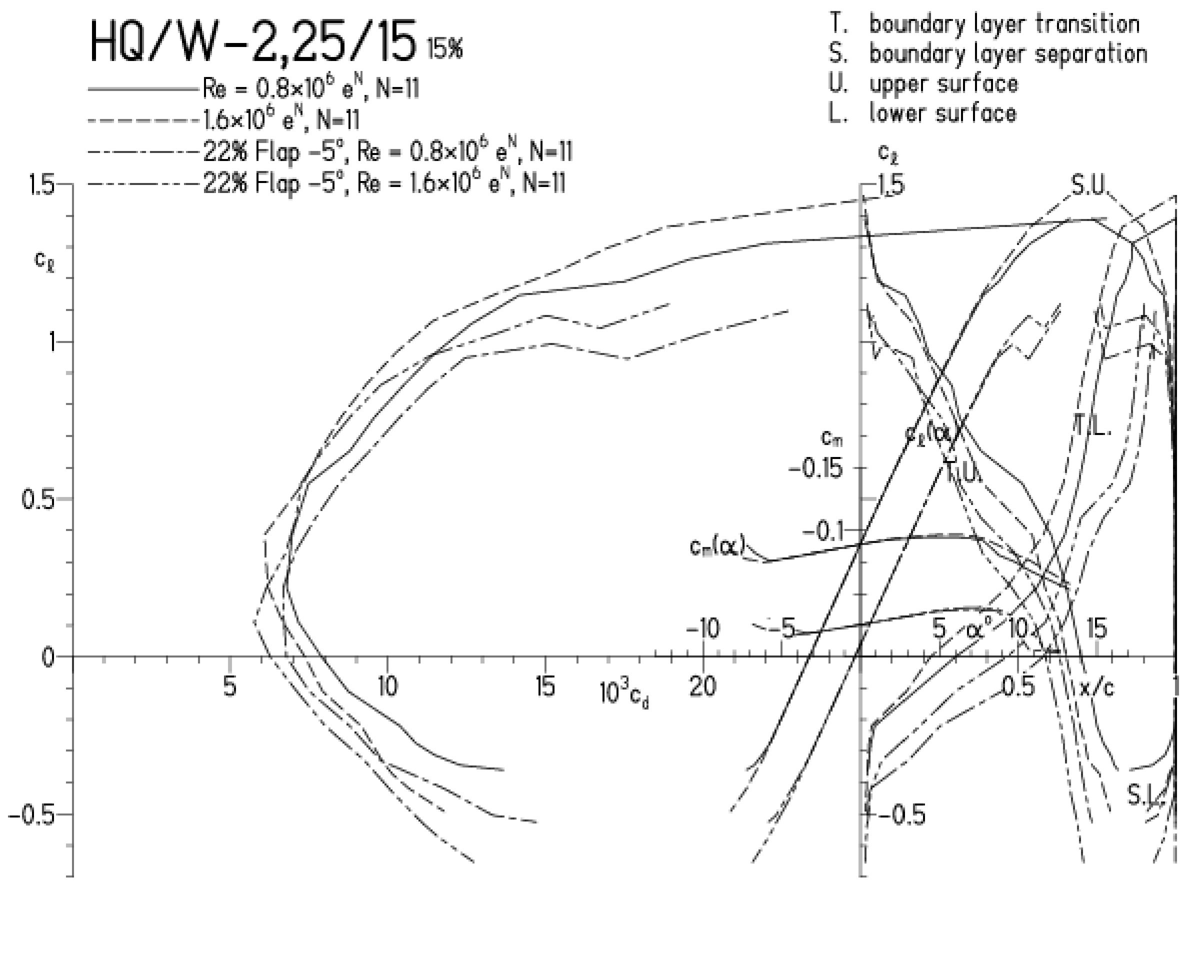
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

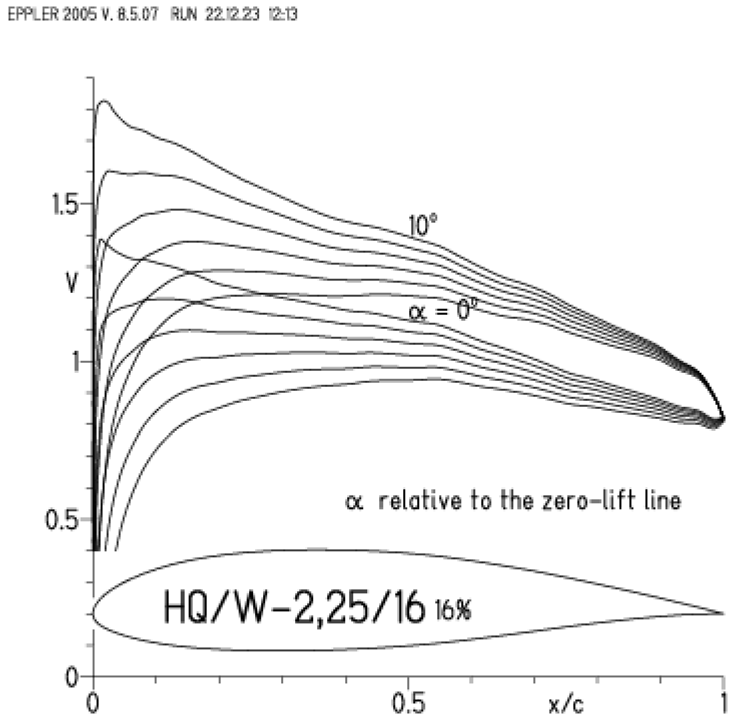
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

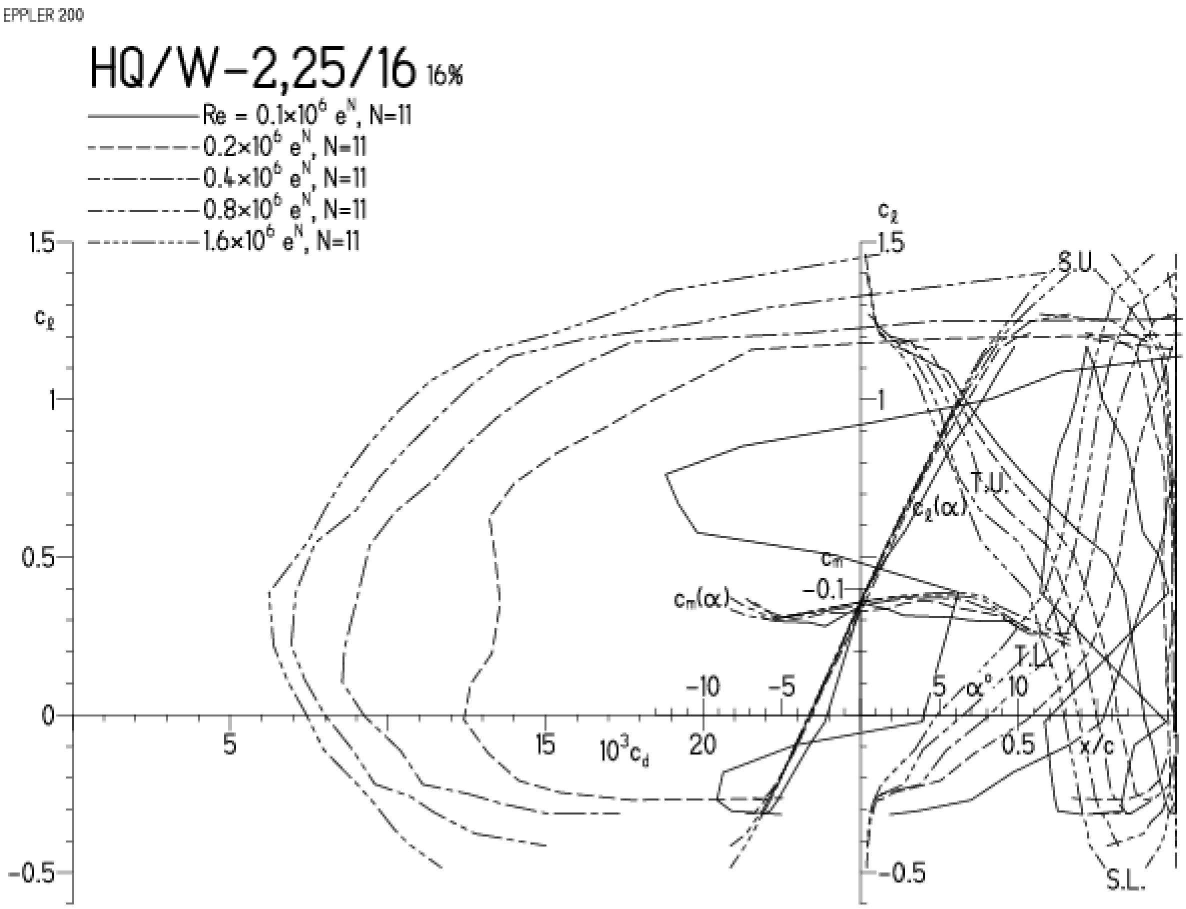


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

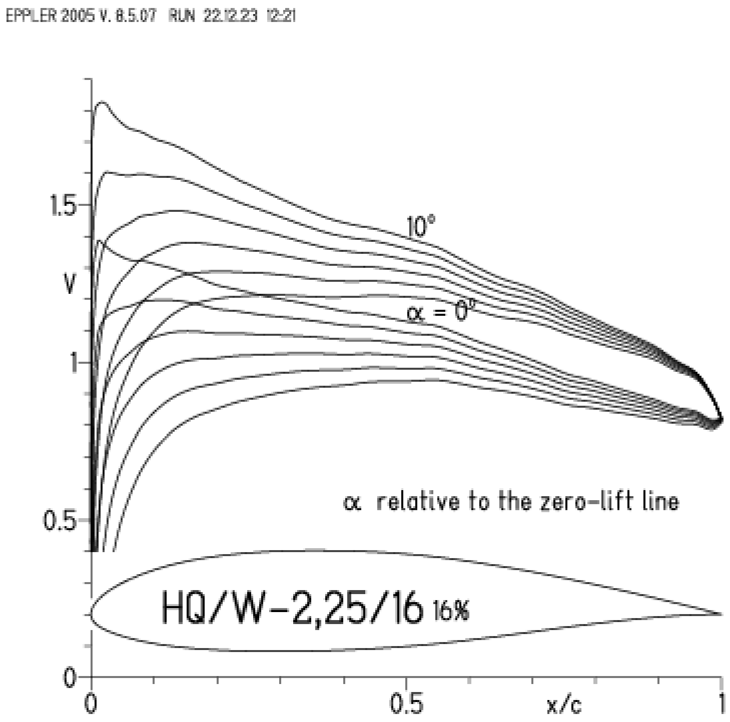


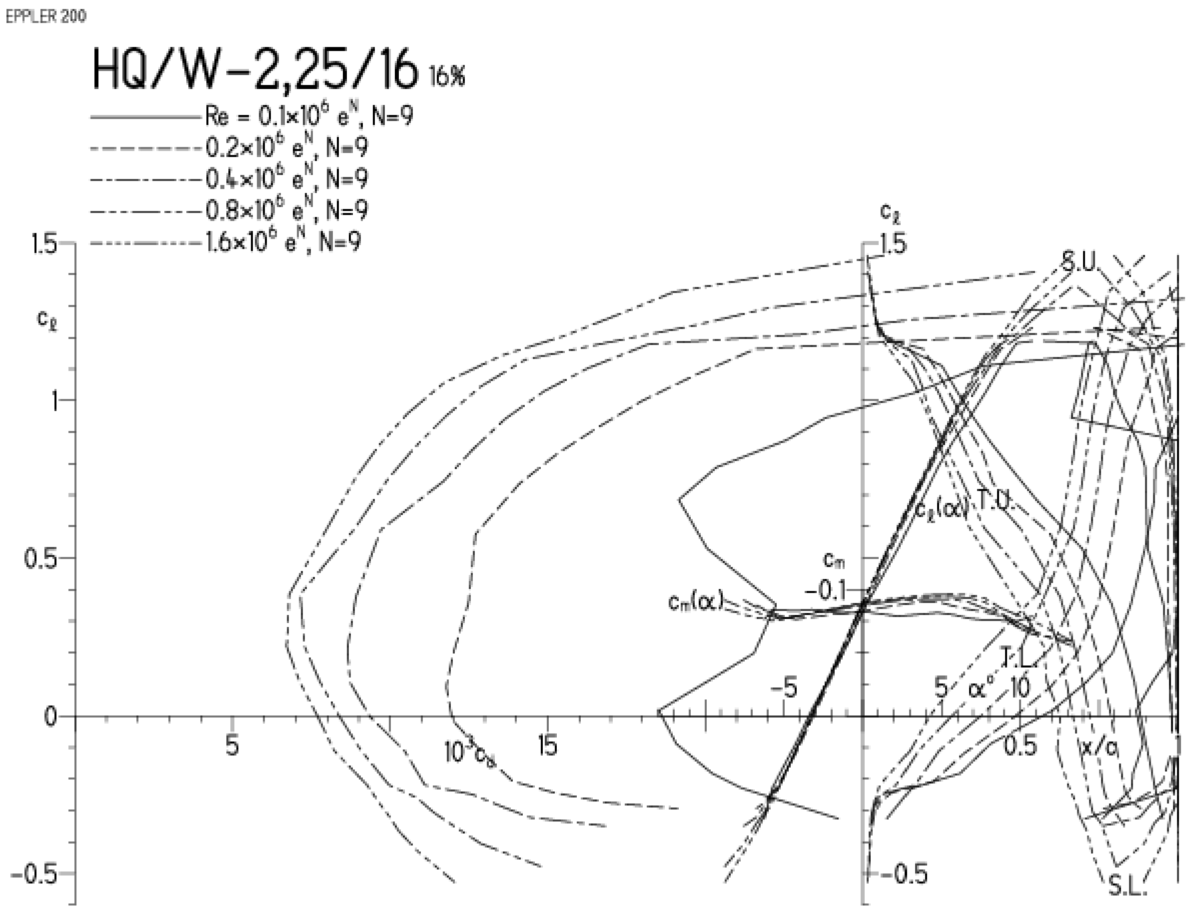
HQ/W-2,25/16, N=11



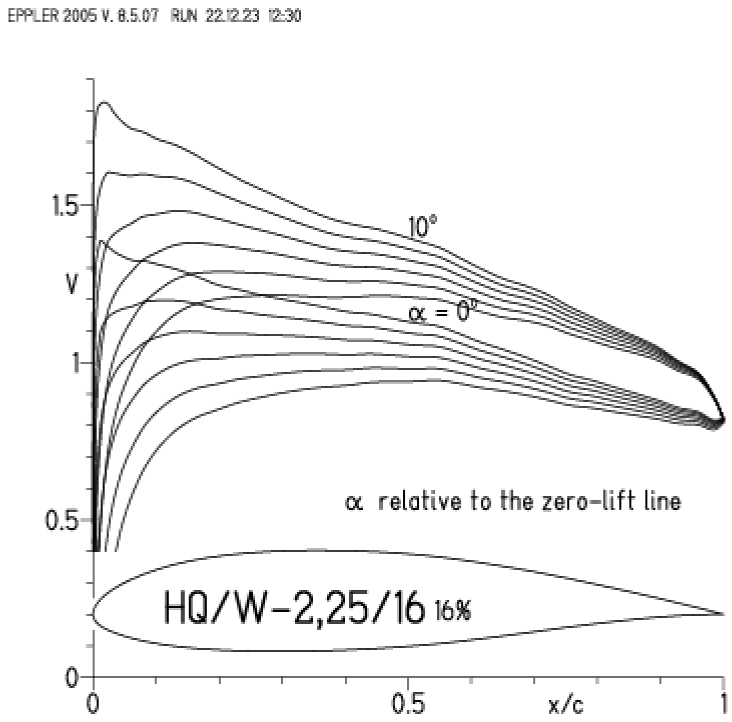


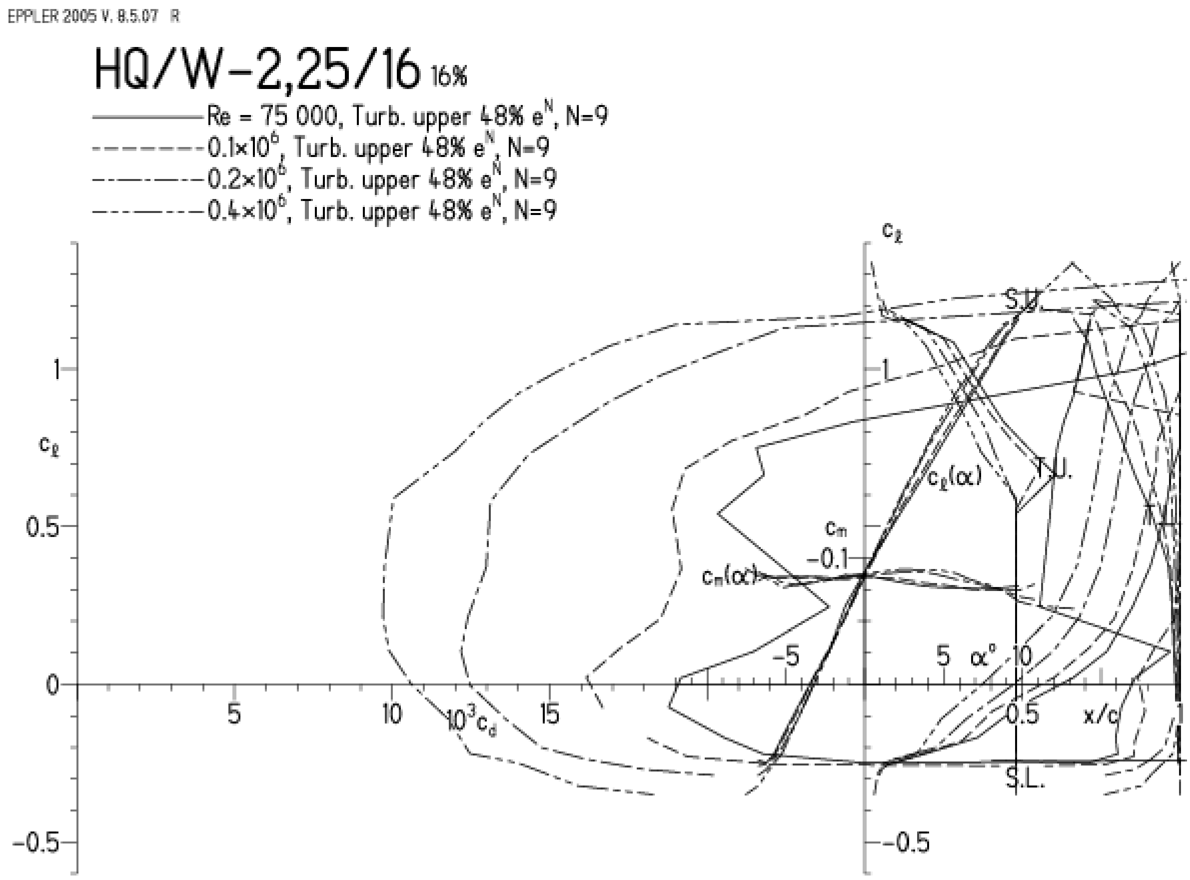
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
V
1.5
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1.5
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1.5
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



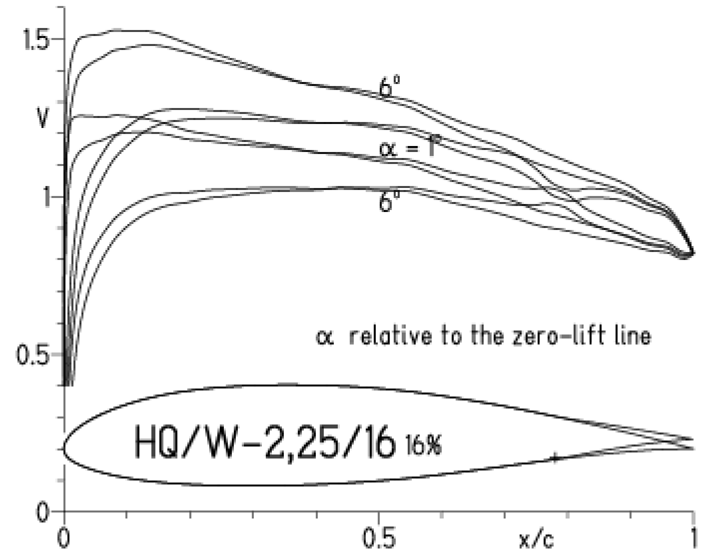


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

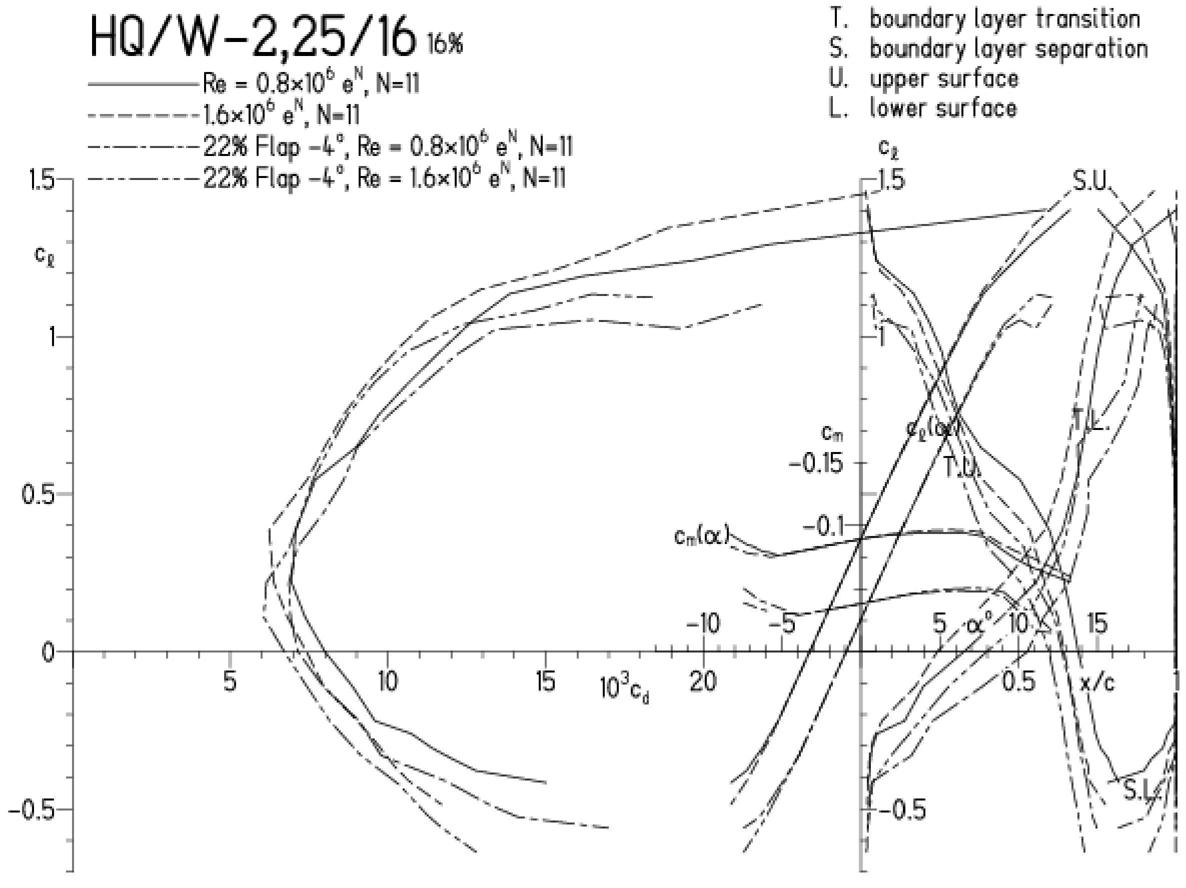
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

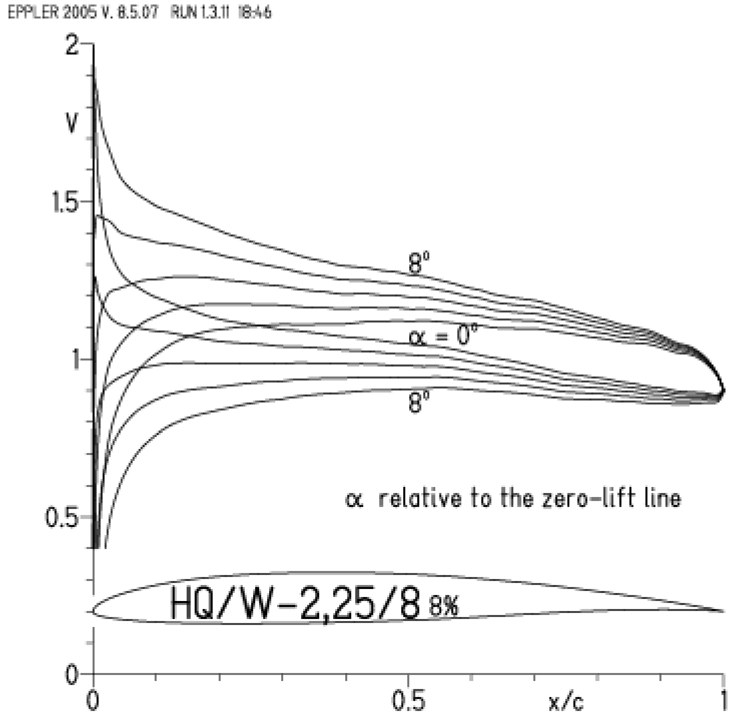
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

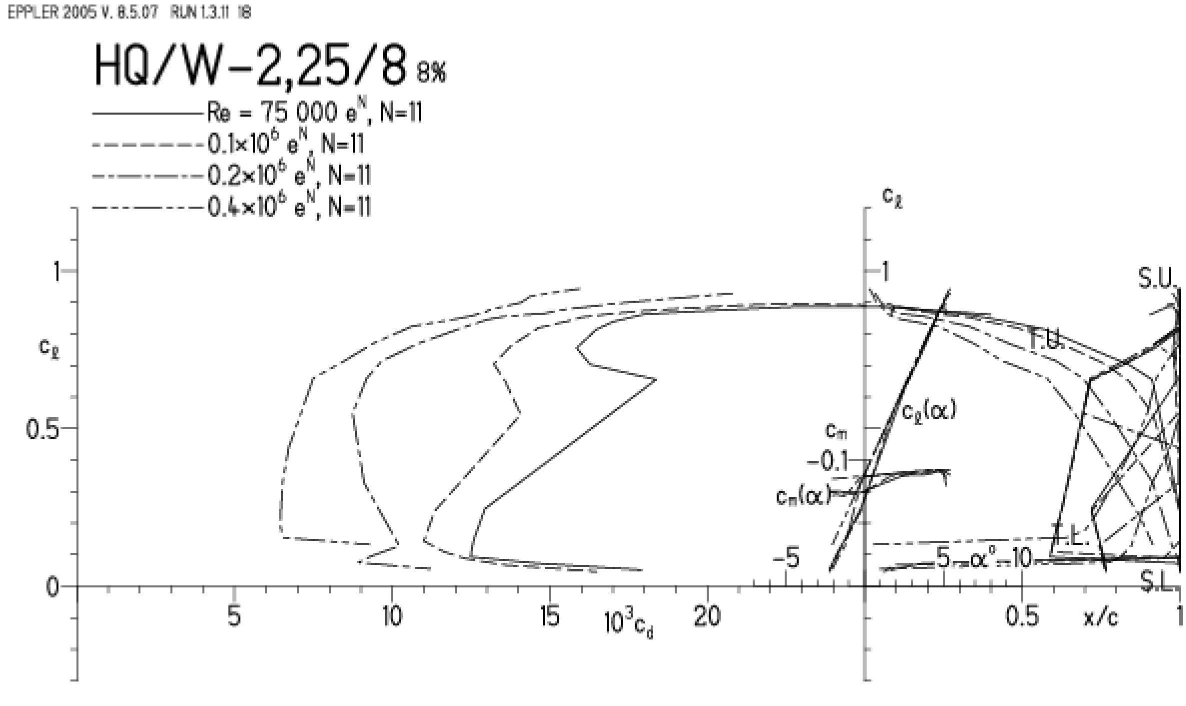


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

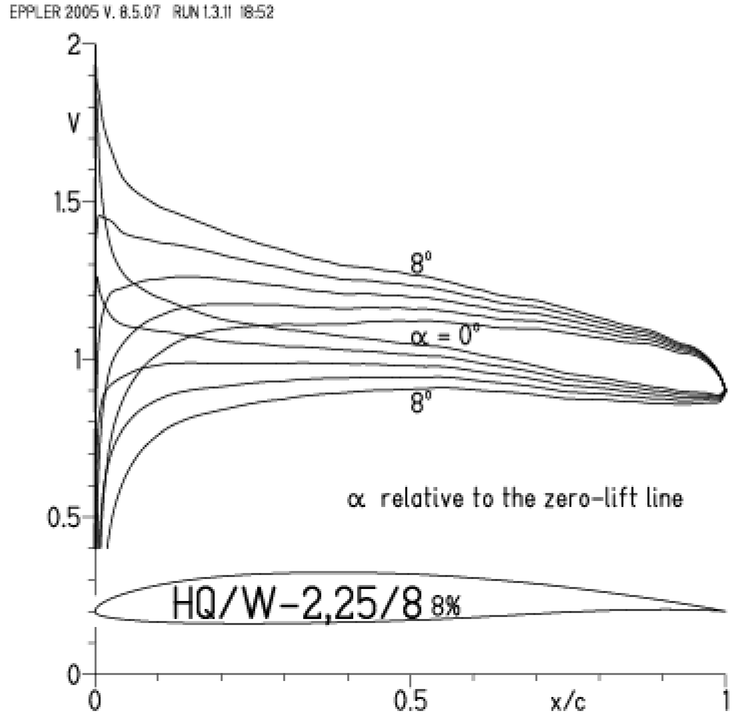


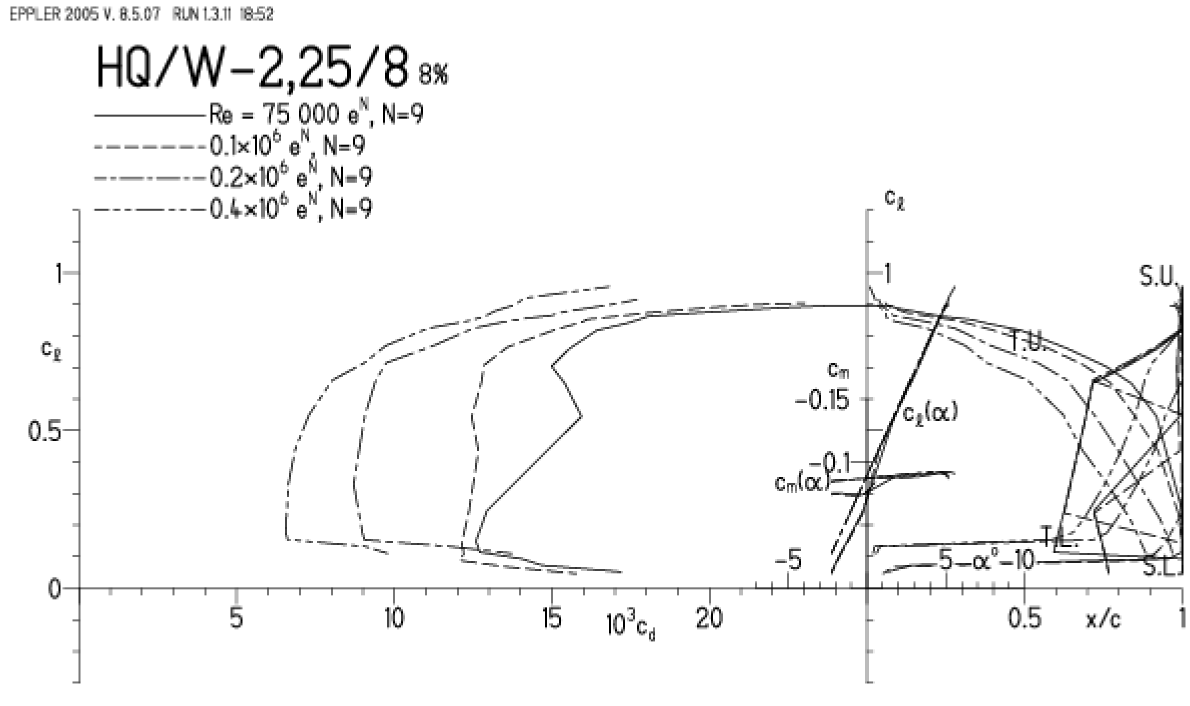
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

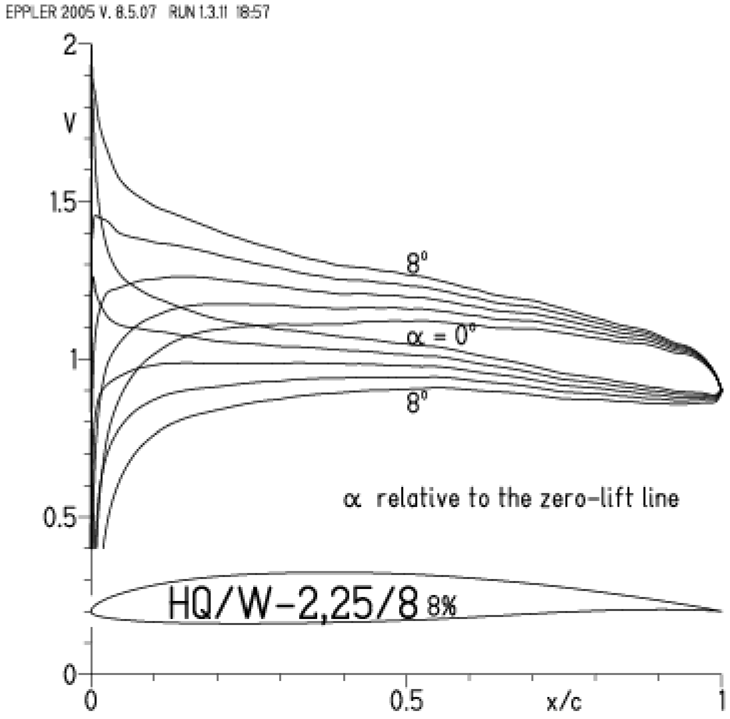

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

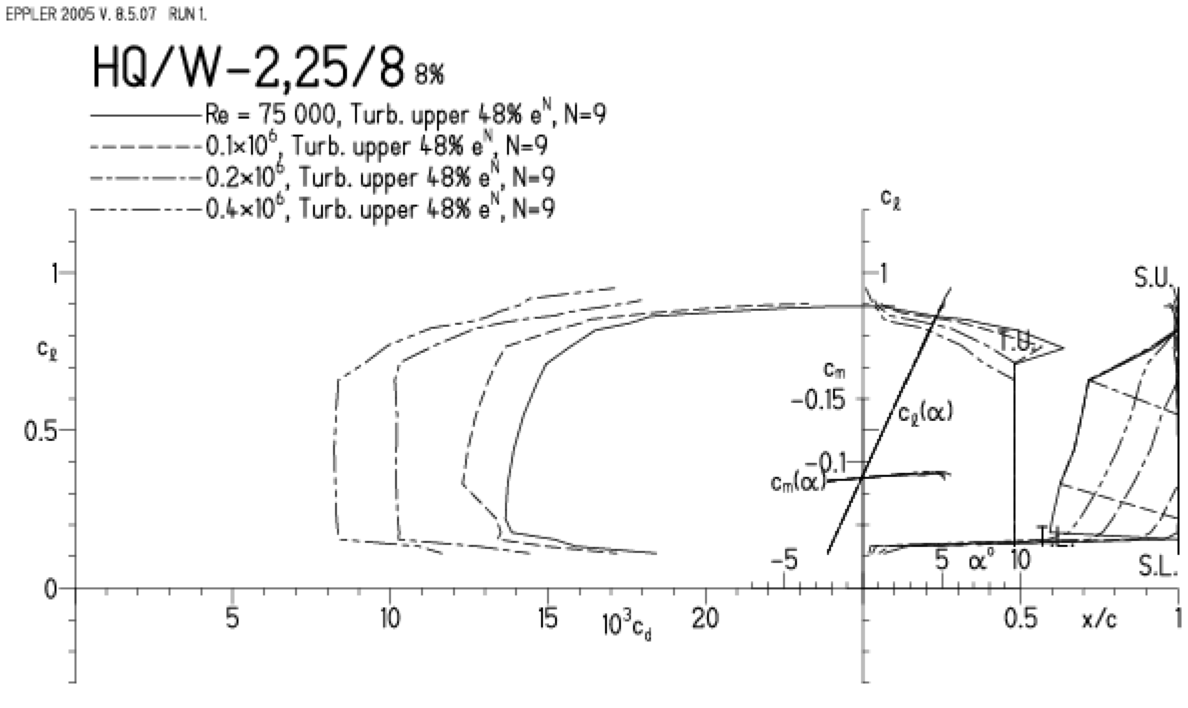
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

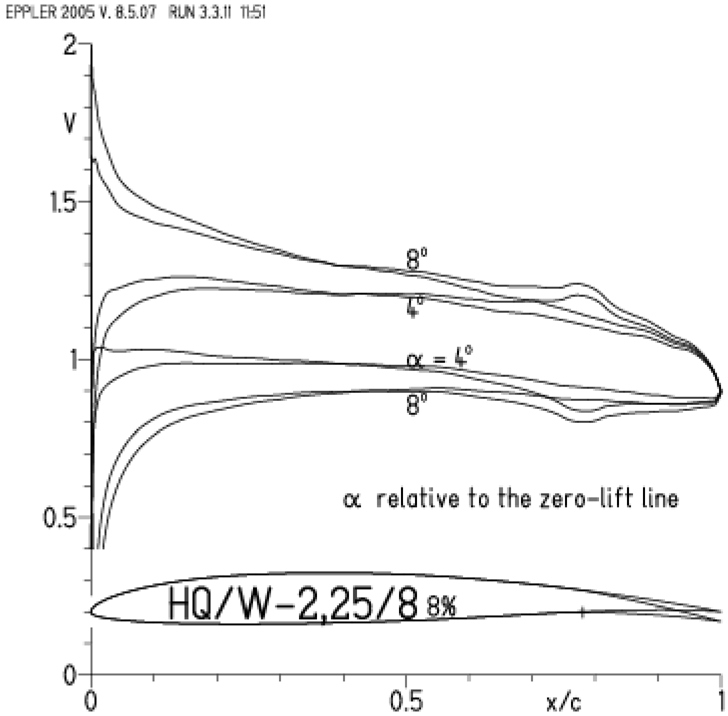

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
10^3 c_d
c_m(α)
c_l(α)
T.U.
S.U.
T.L.
S.L.
5 — α° — 10
x/c

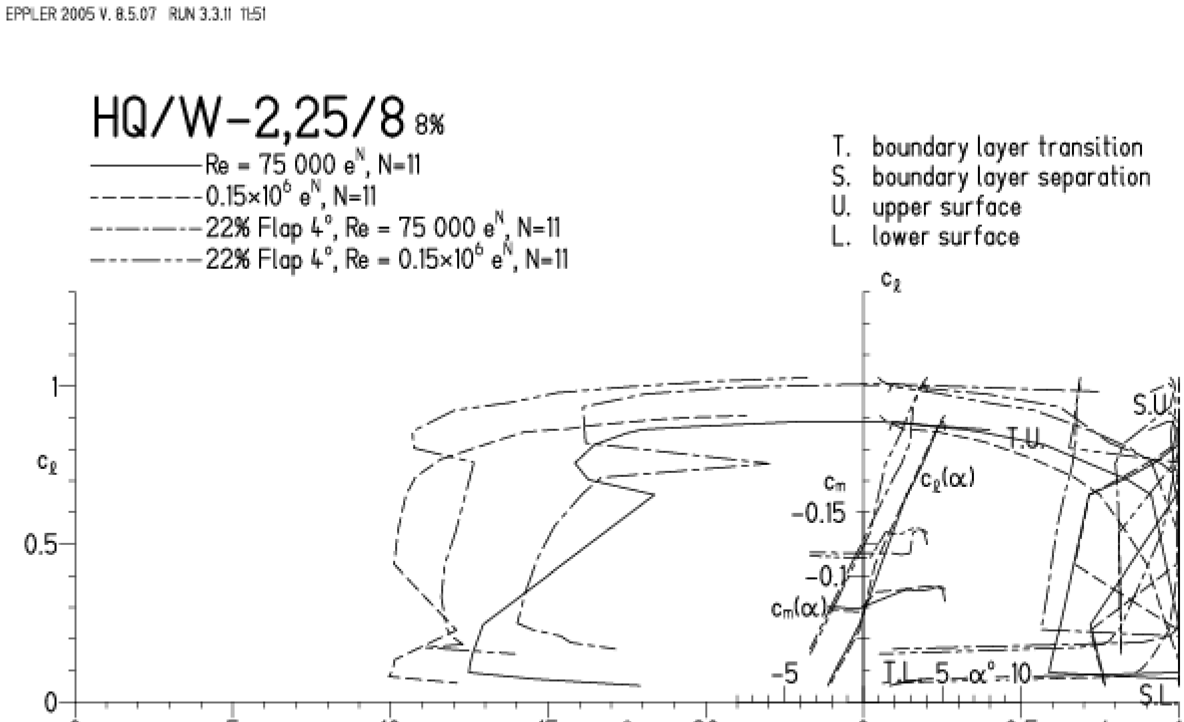
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



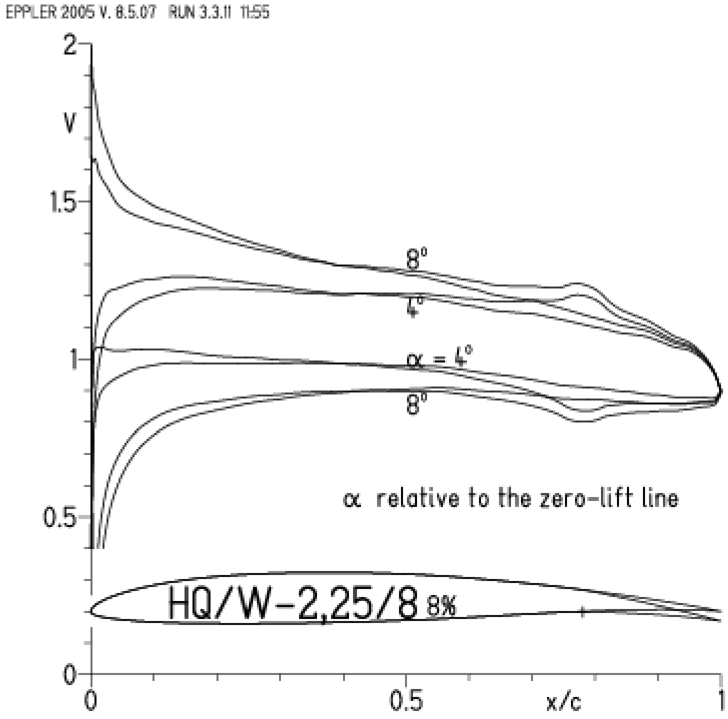


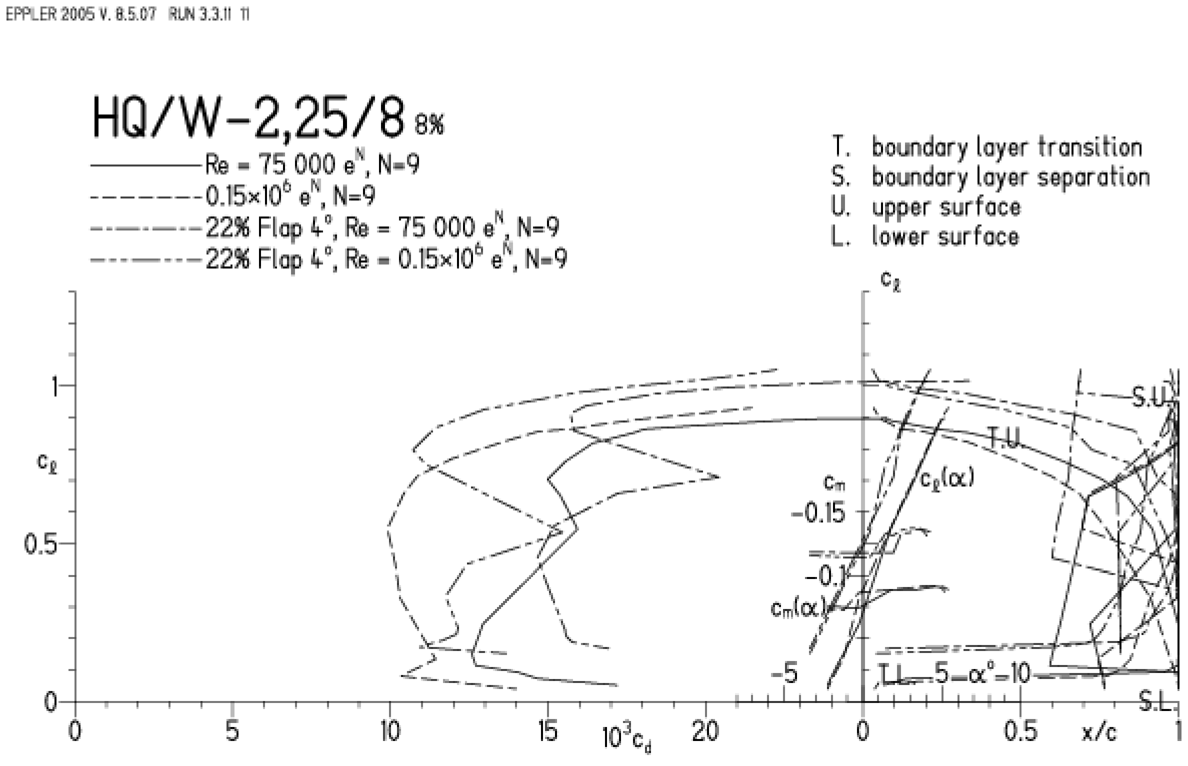
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



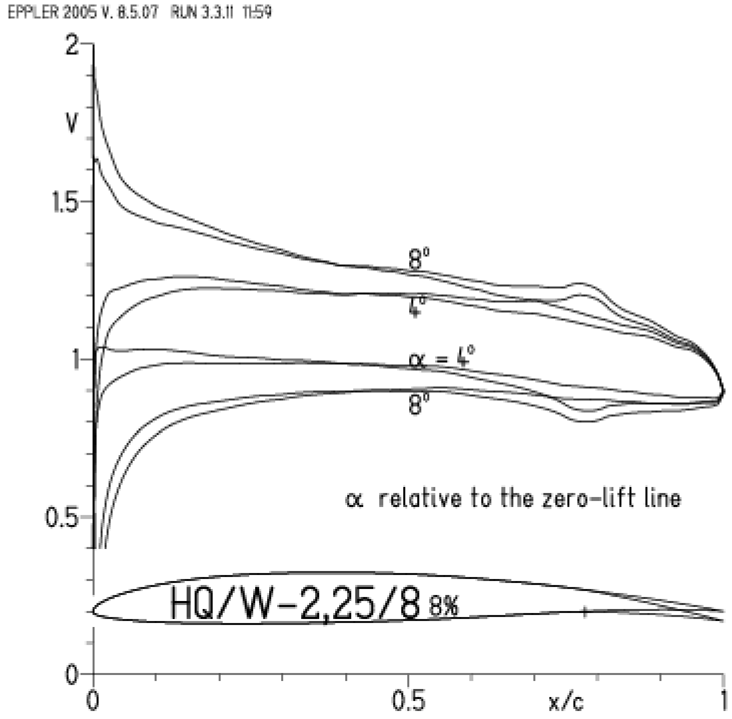


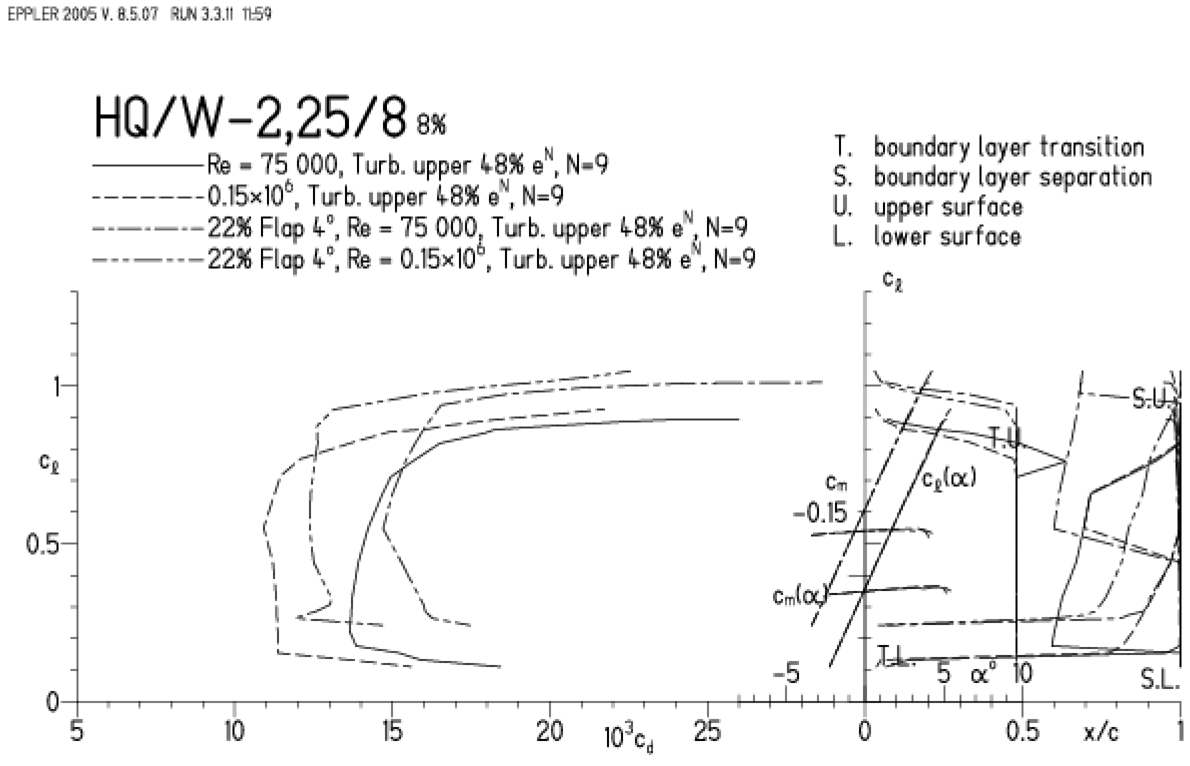
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





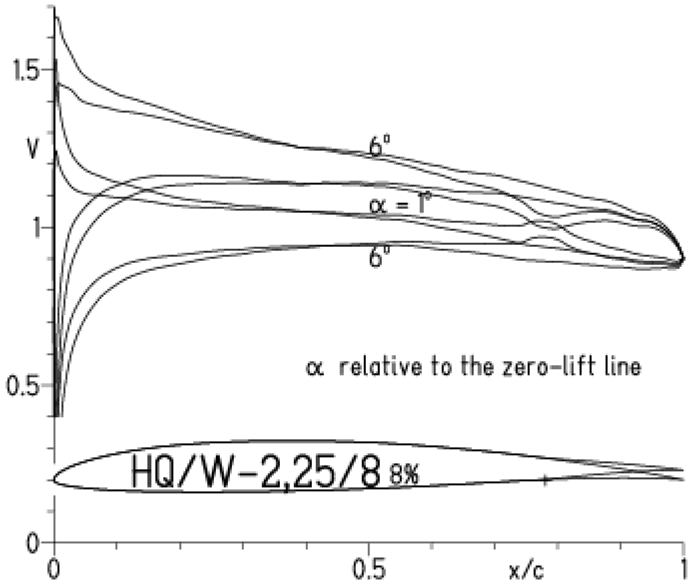
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



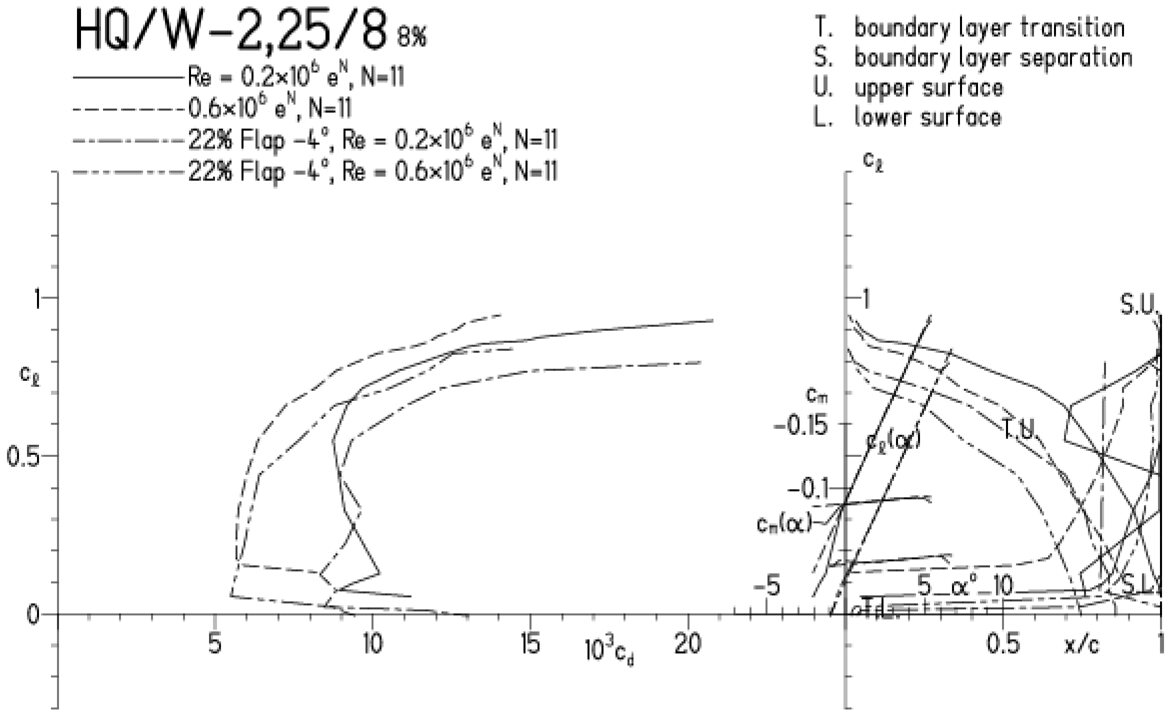


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

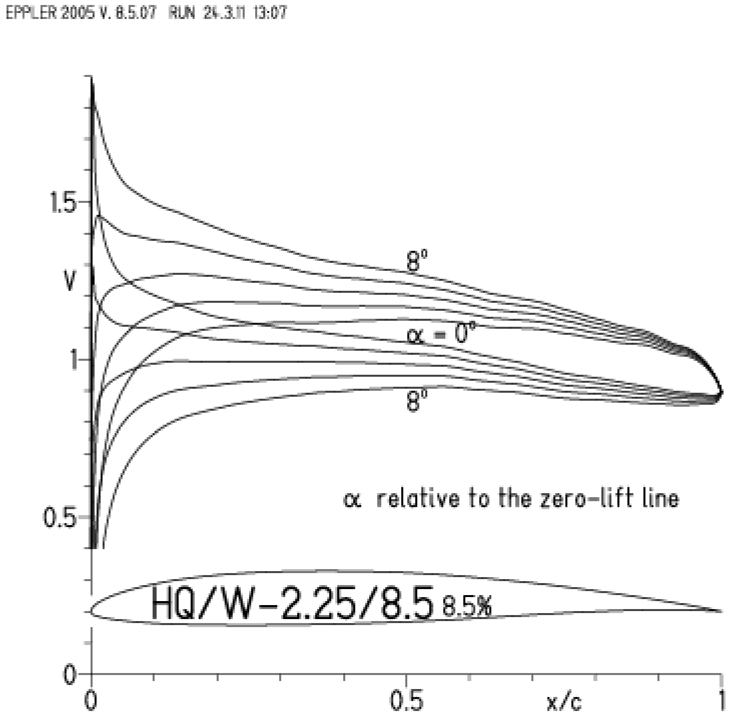
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

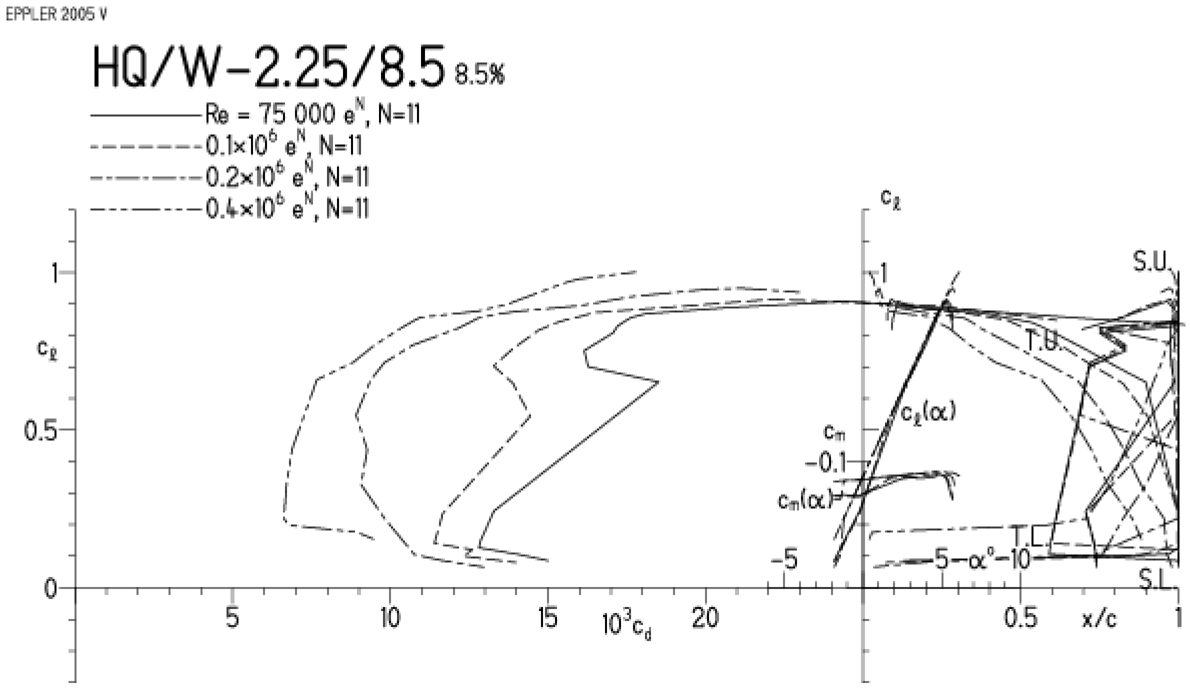


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



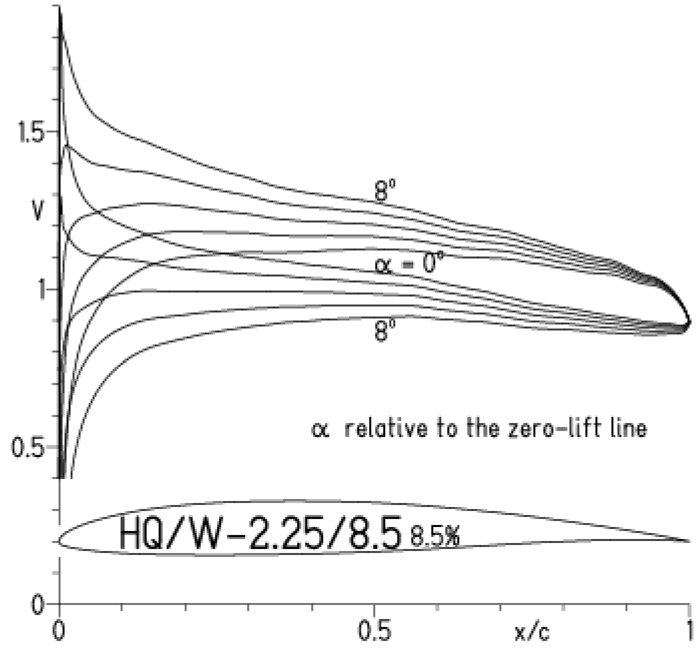
<u>HQ/W-2,25/8,5</u>, N=11



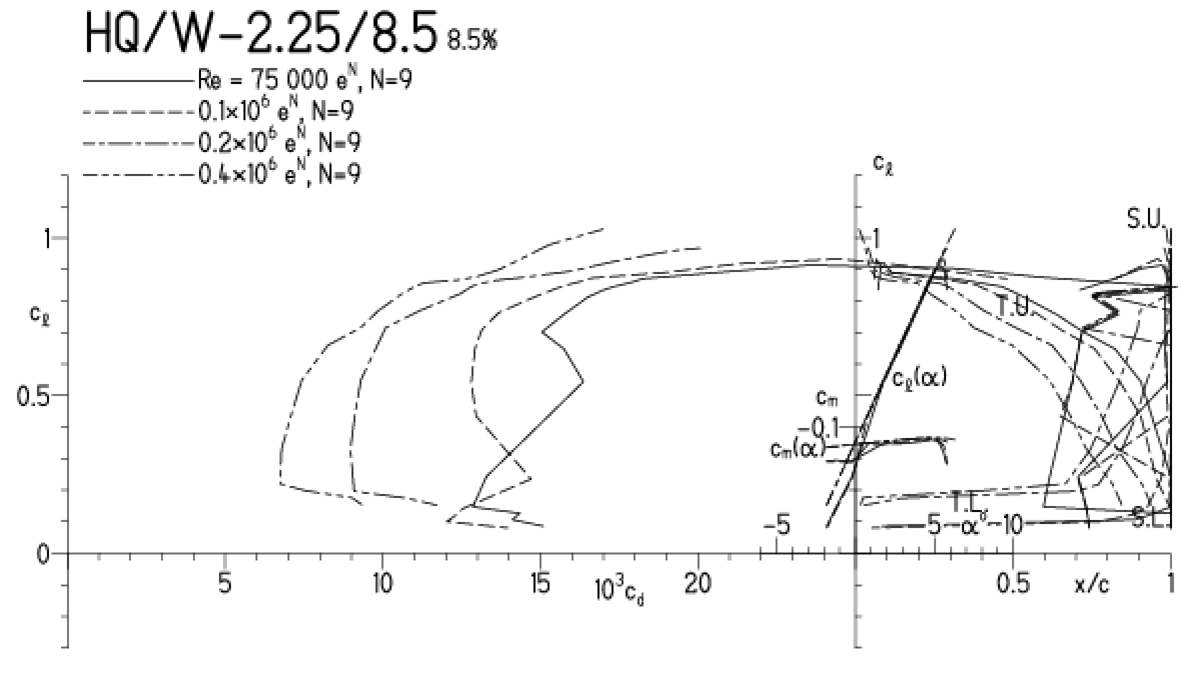


HQ/W-2,25/8,5, N=9

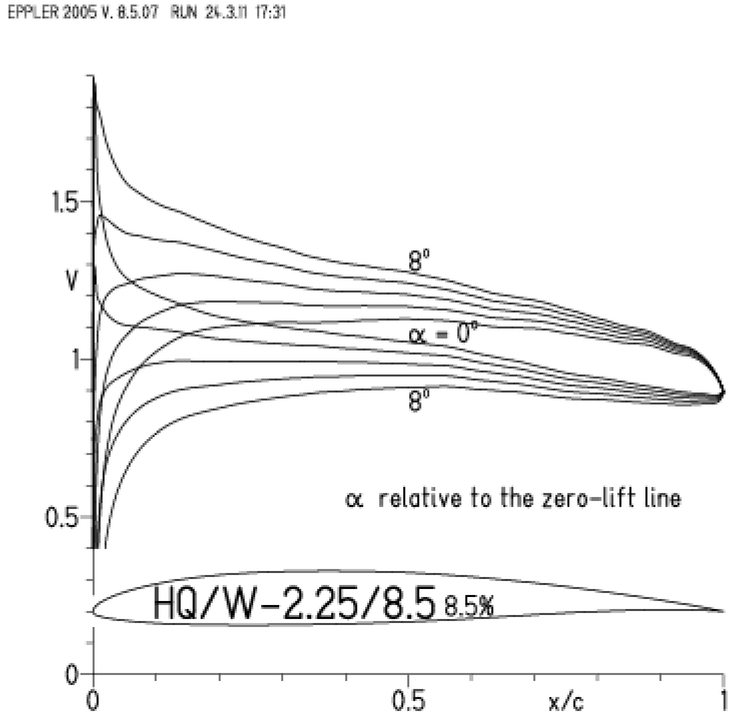
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

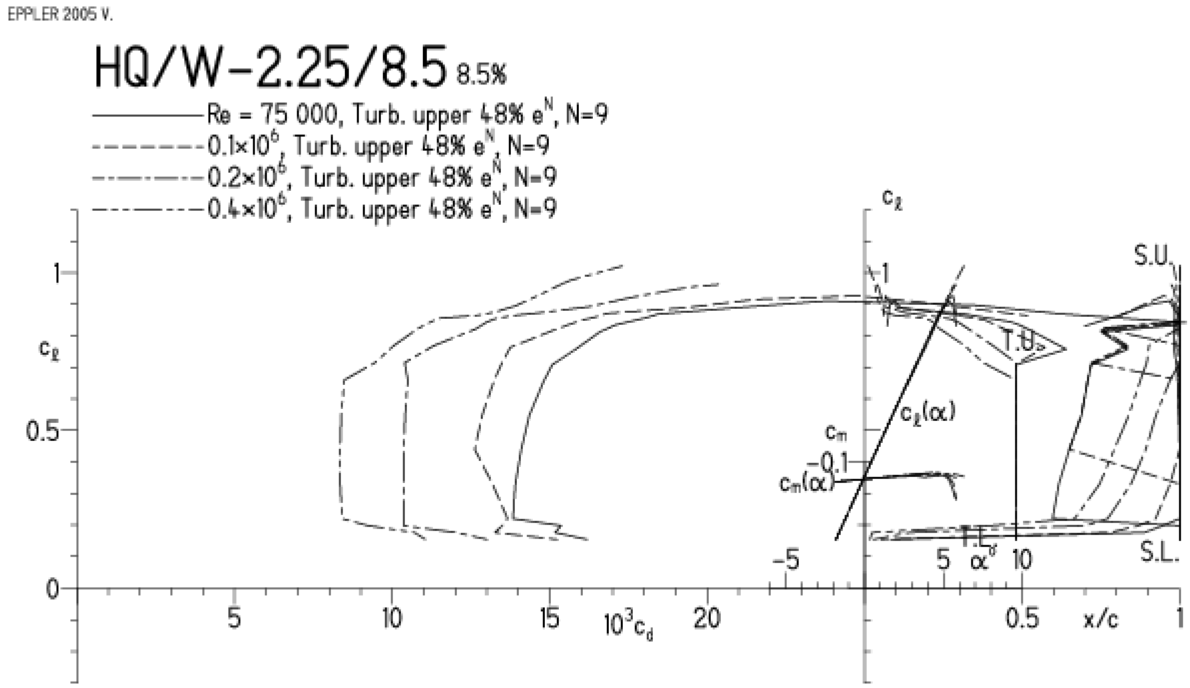


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



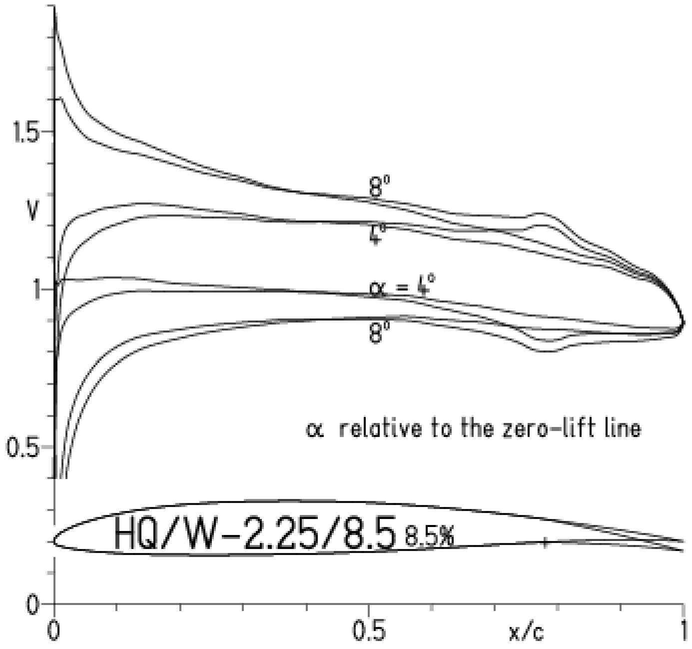
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



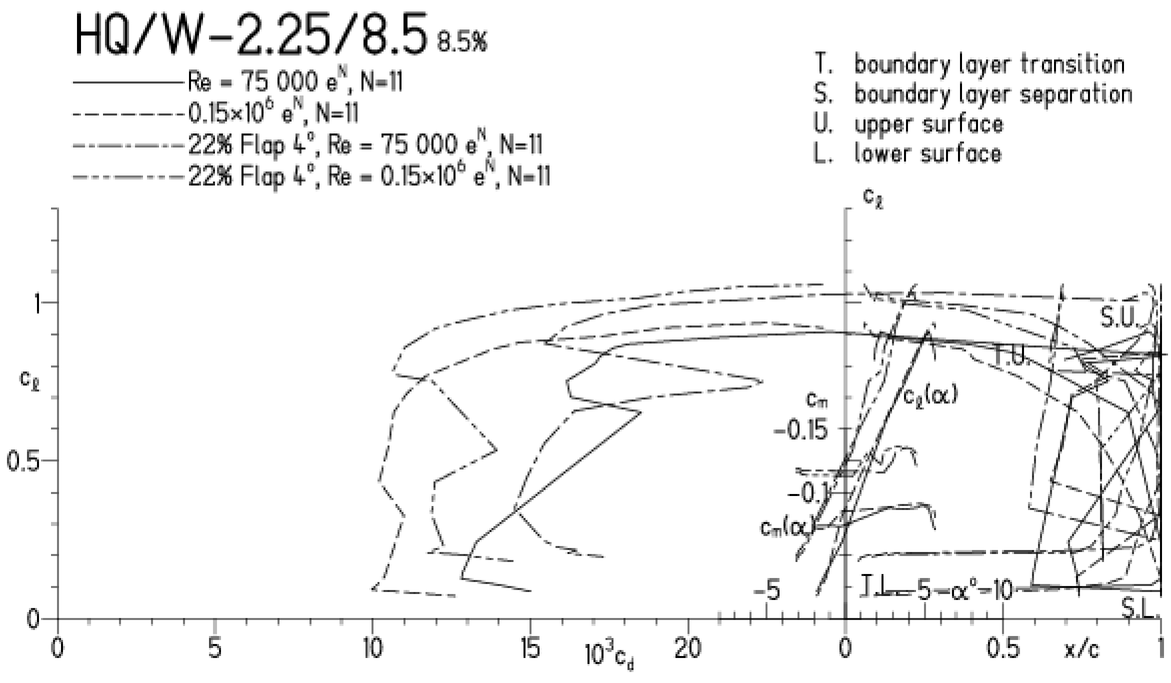


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

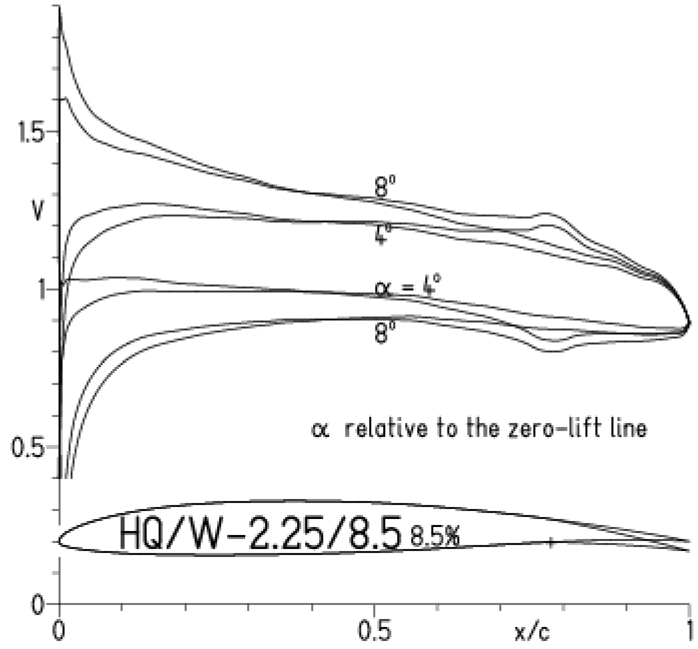


EPPLER 2005 V. 8.5.

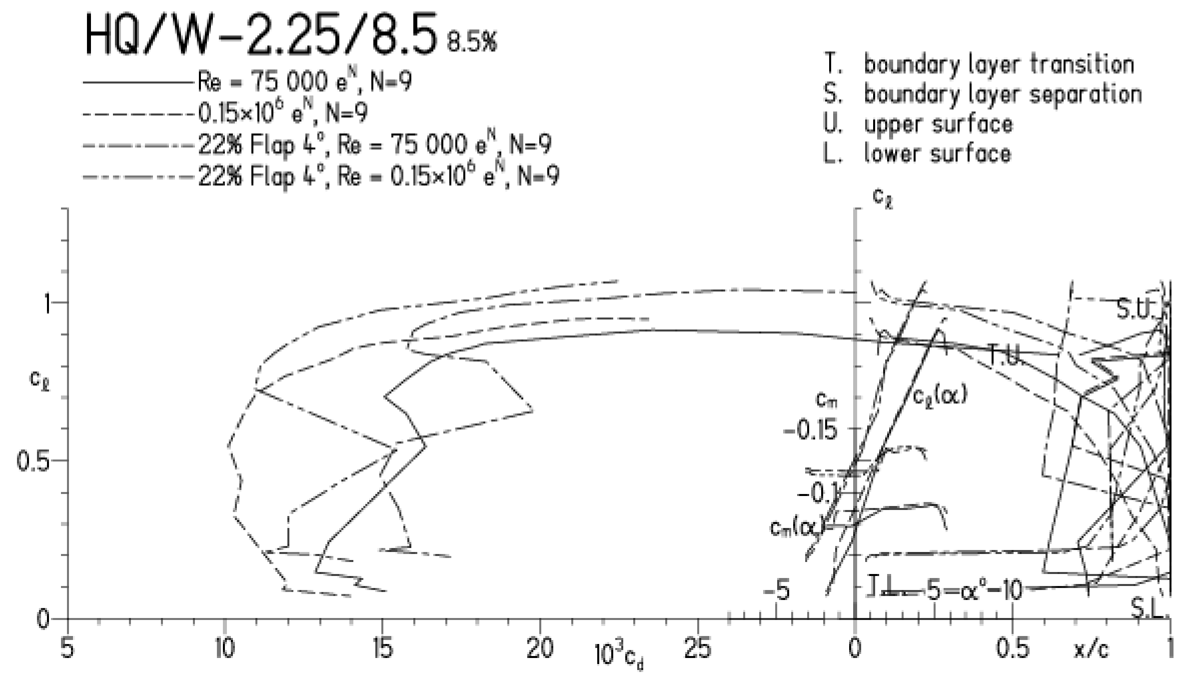


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

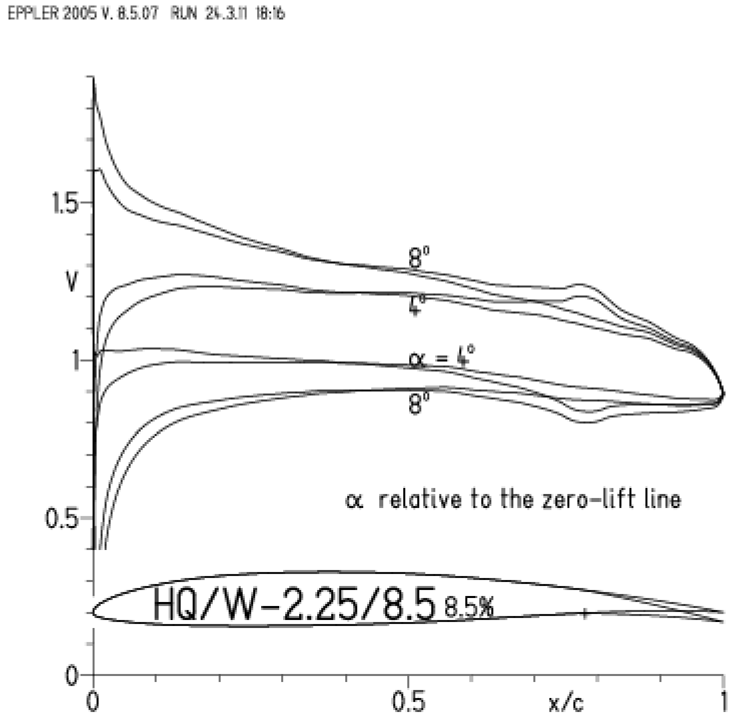
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

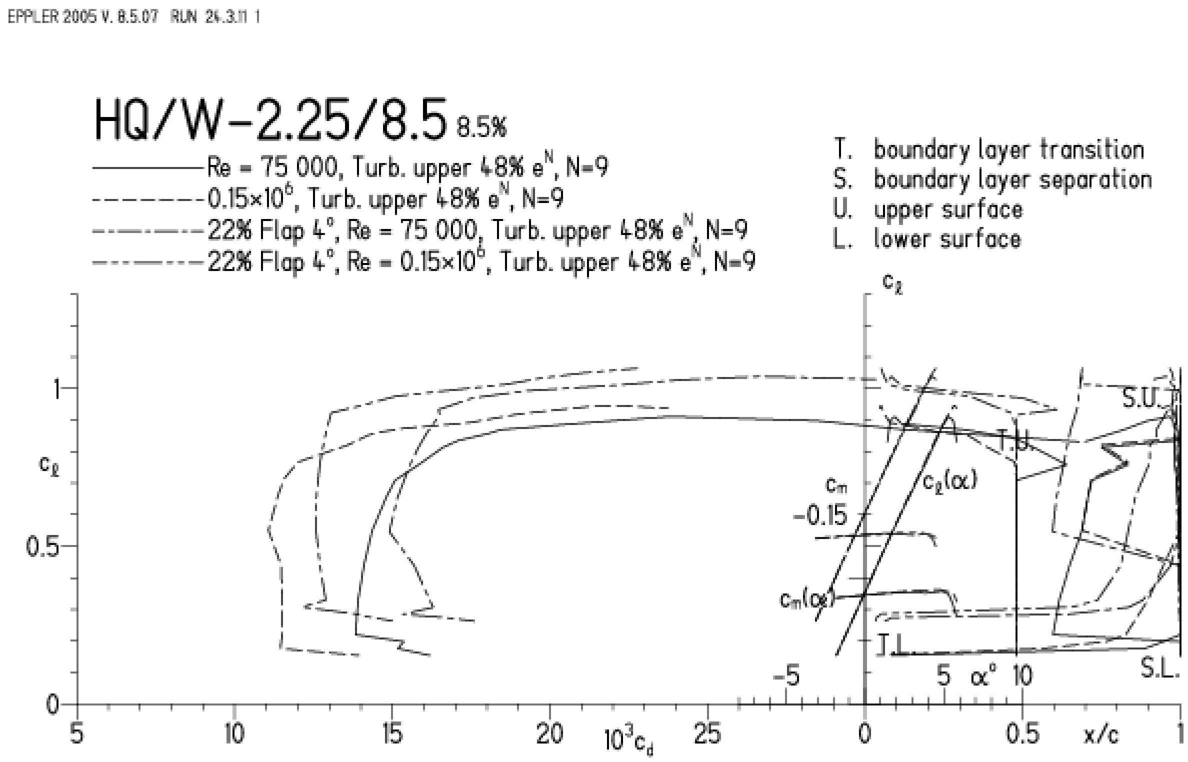


EPPLER 2005 V.

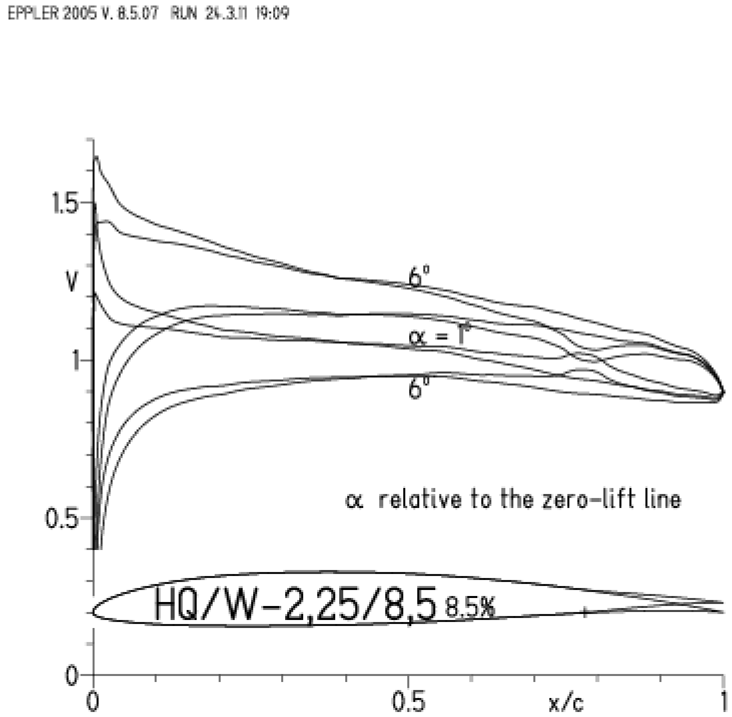


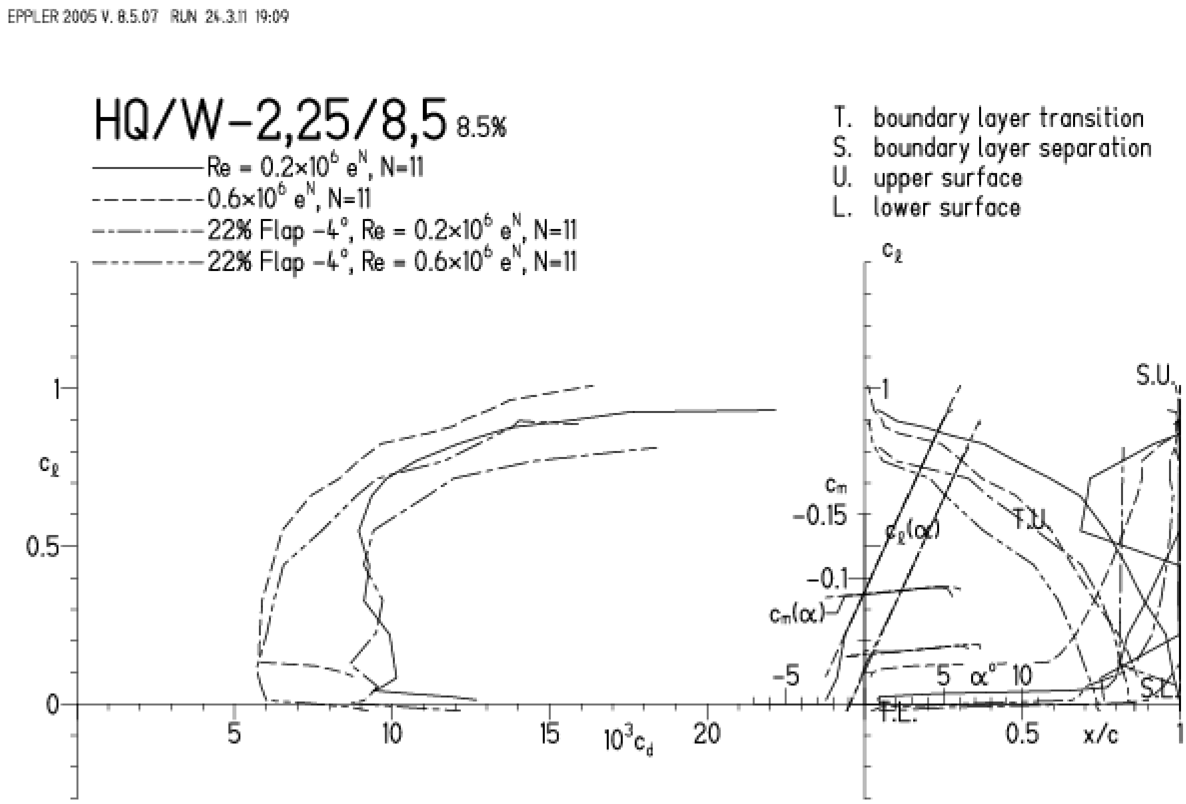
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





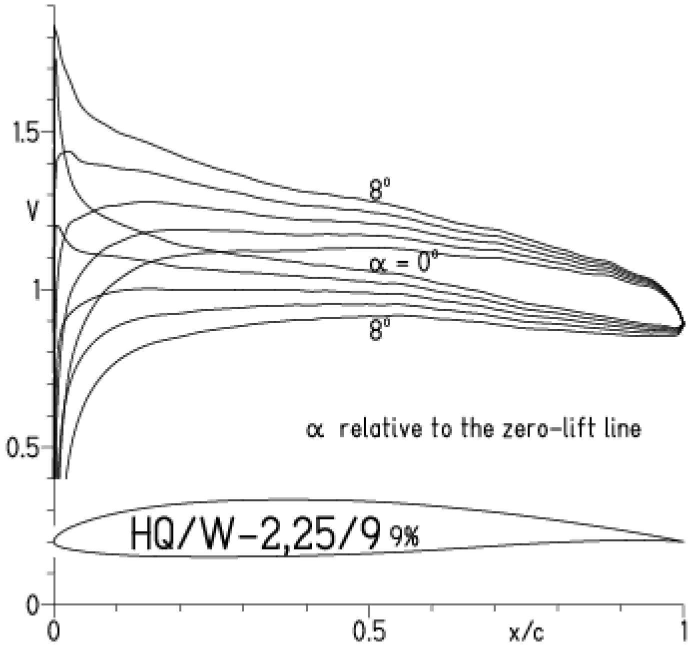
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



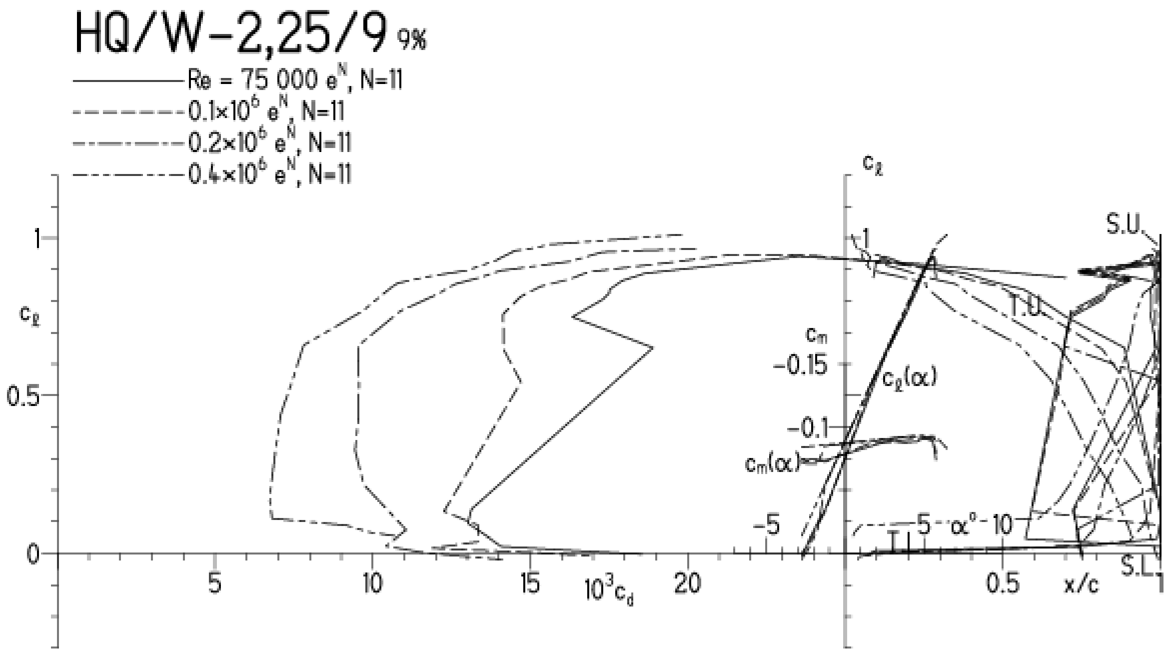


HQ/W-2,25/9, N=11

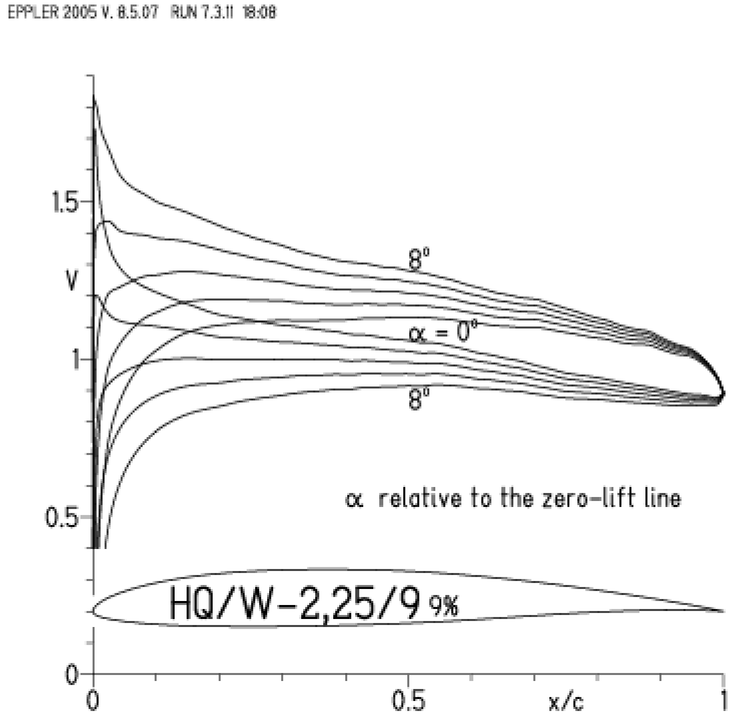
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

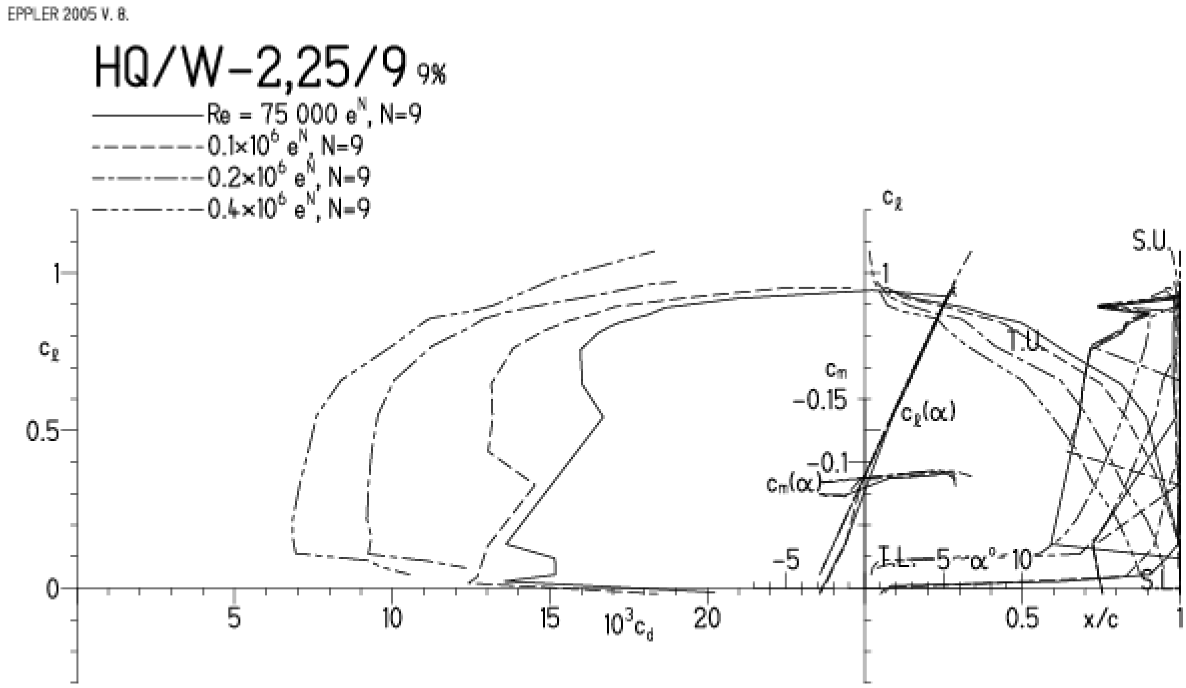


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

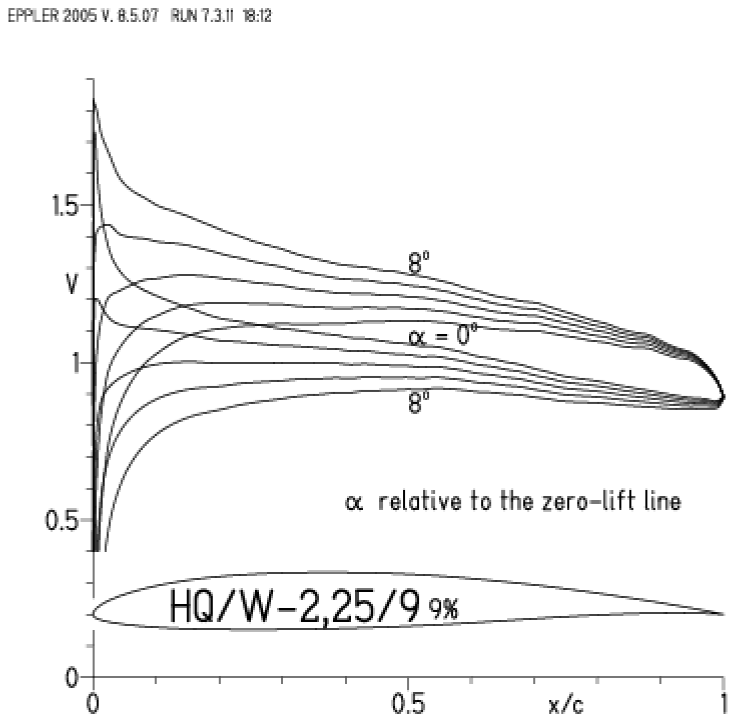


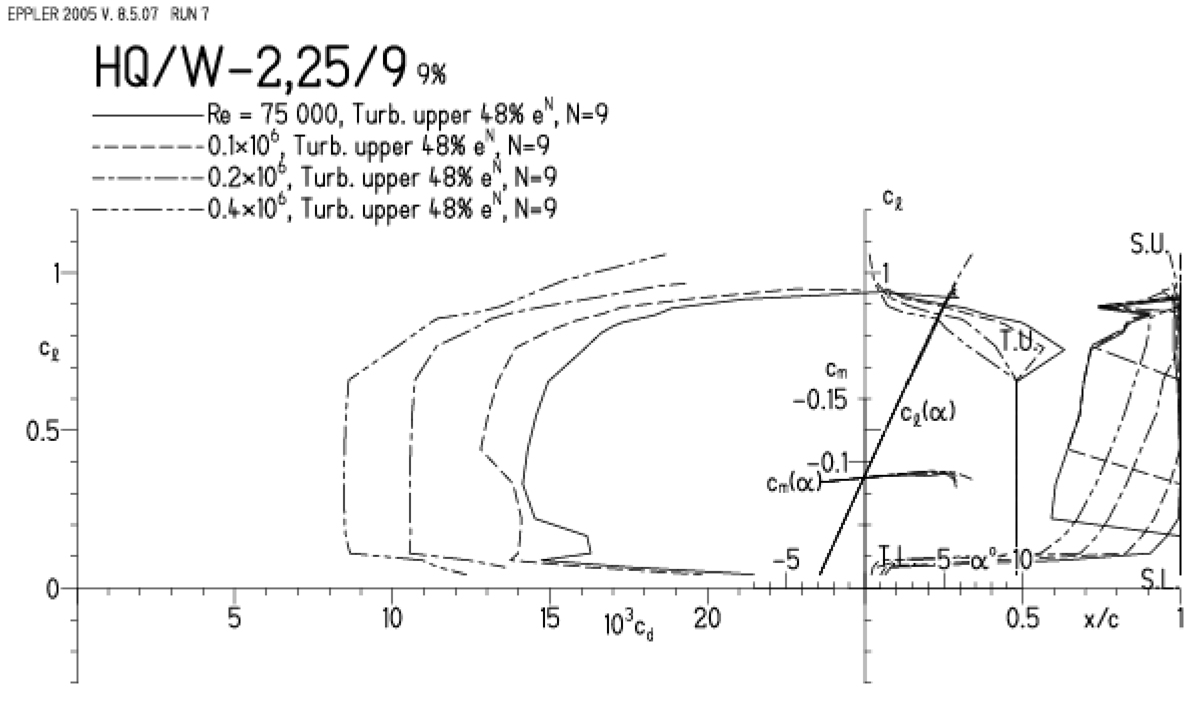
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
0.5
0
5
10
15
20
10^3 c_d
c_ℓ
c_m
-0.15
-0.1
c_ℓ(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

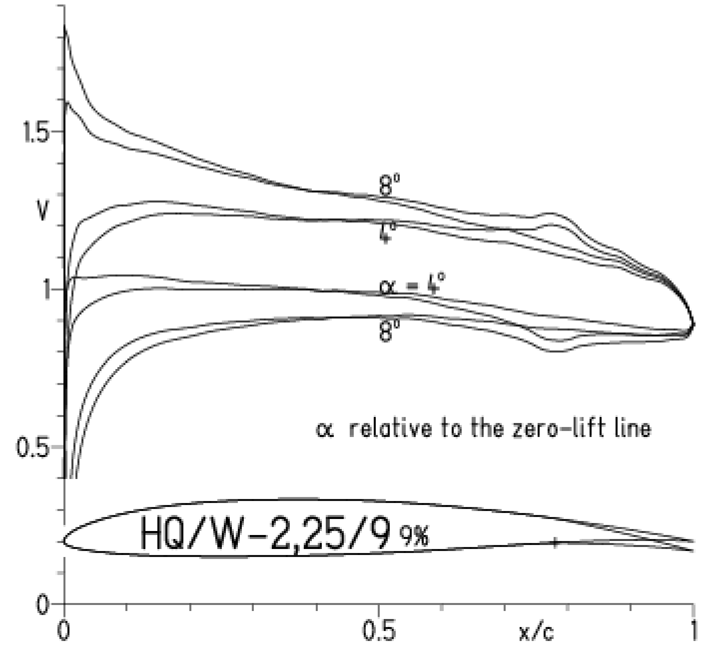
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



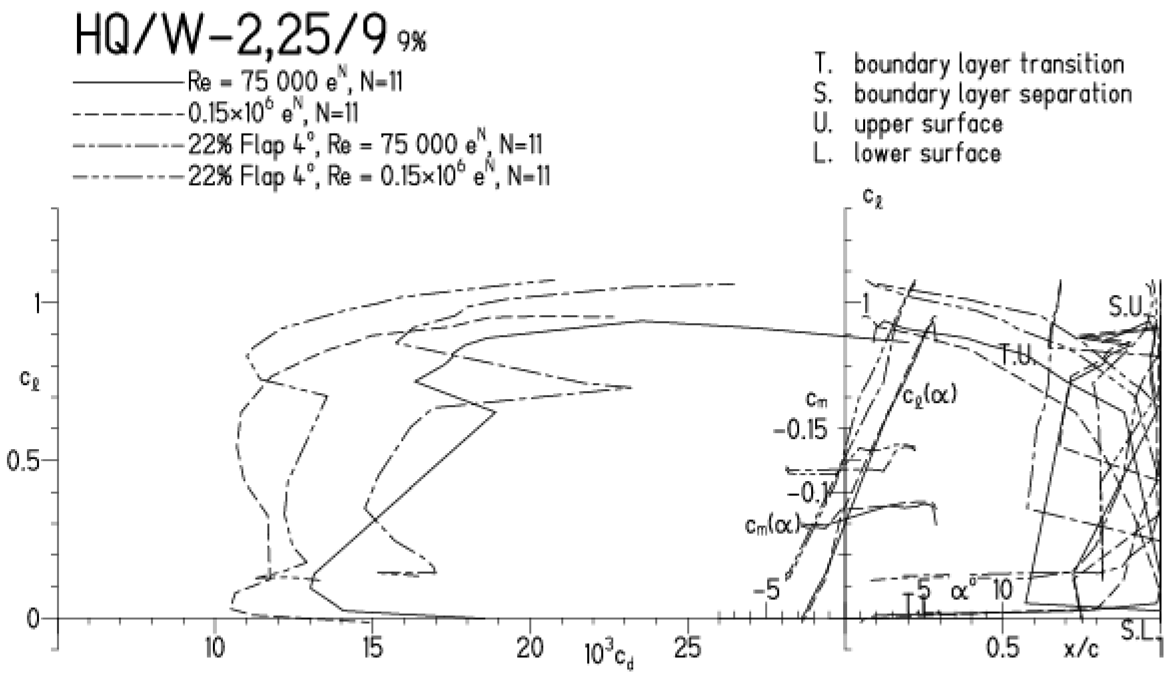


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

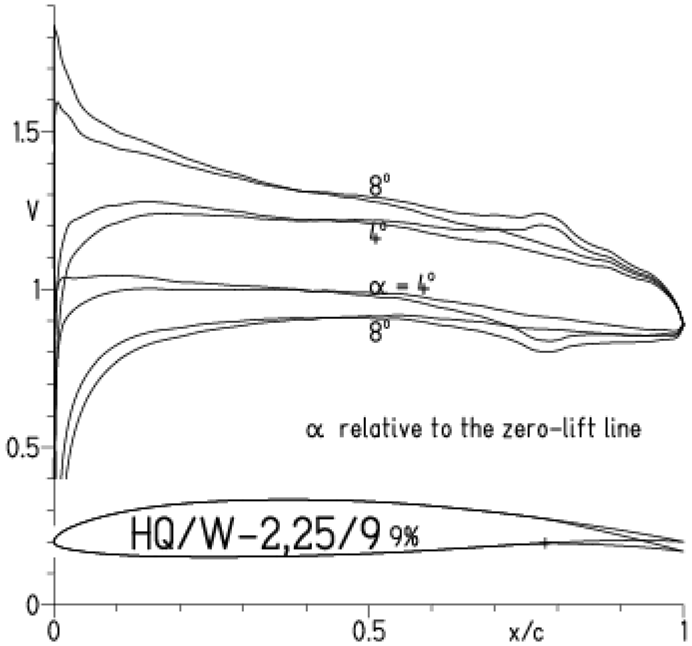


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

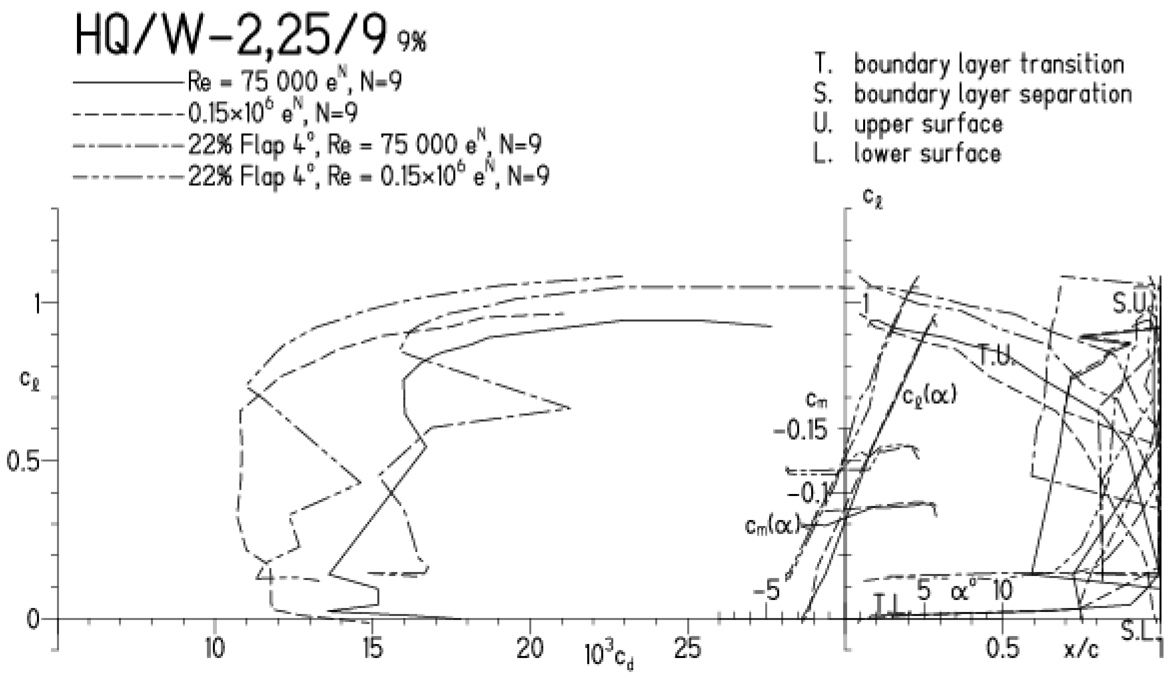


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

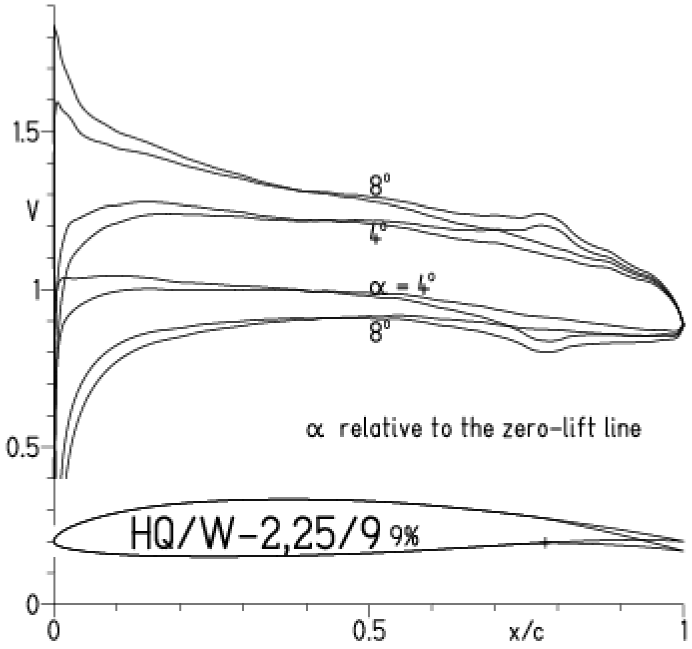


EPPLER 2005 V. 8.5.07 RUN 8.3.1

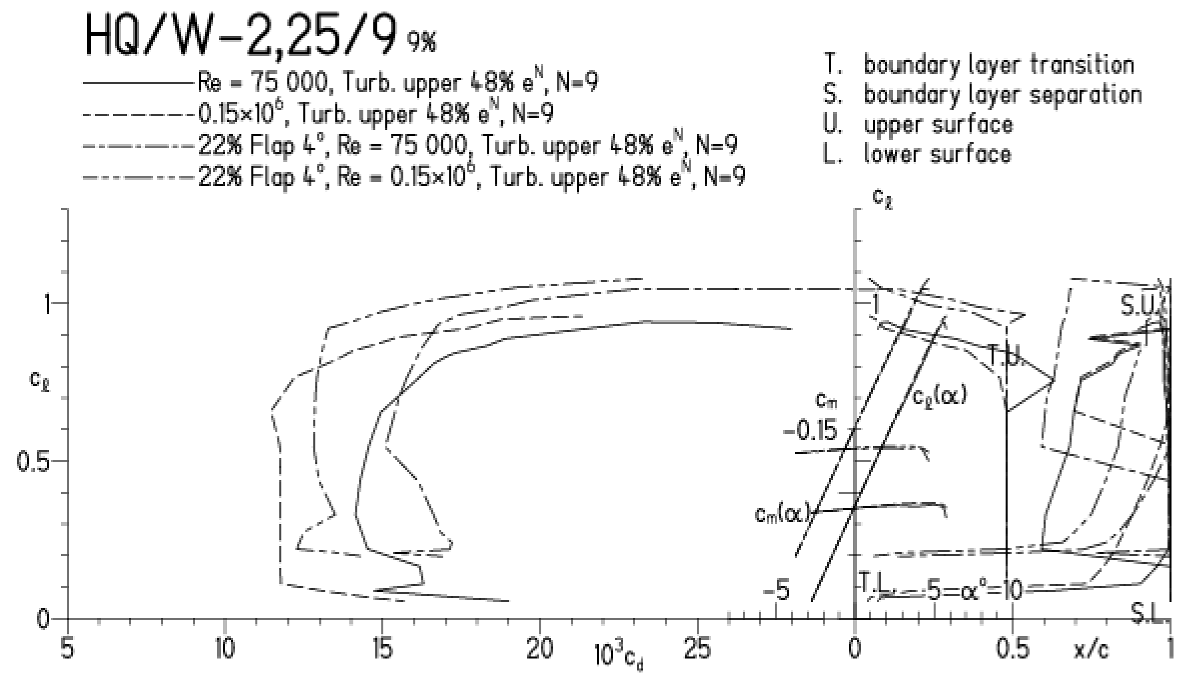


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

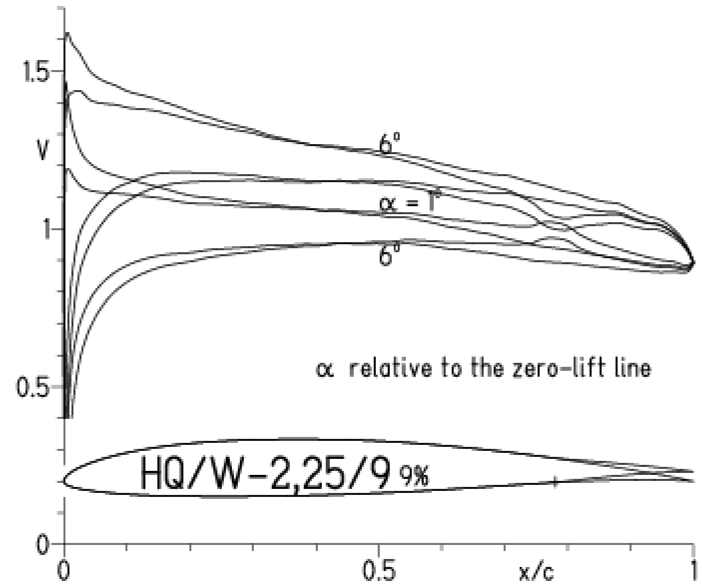


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

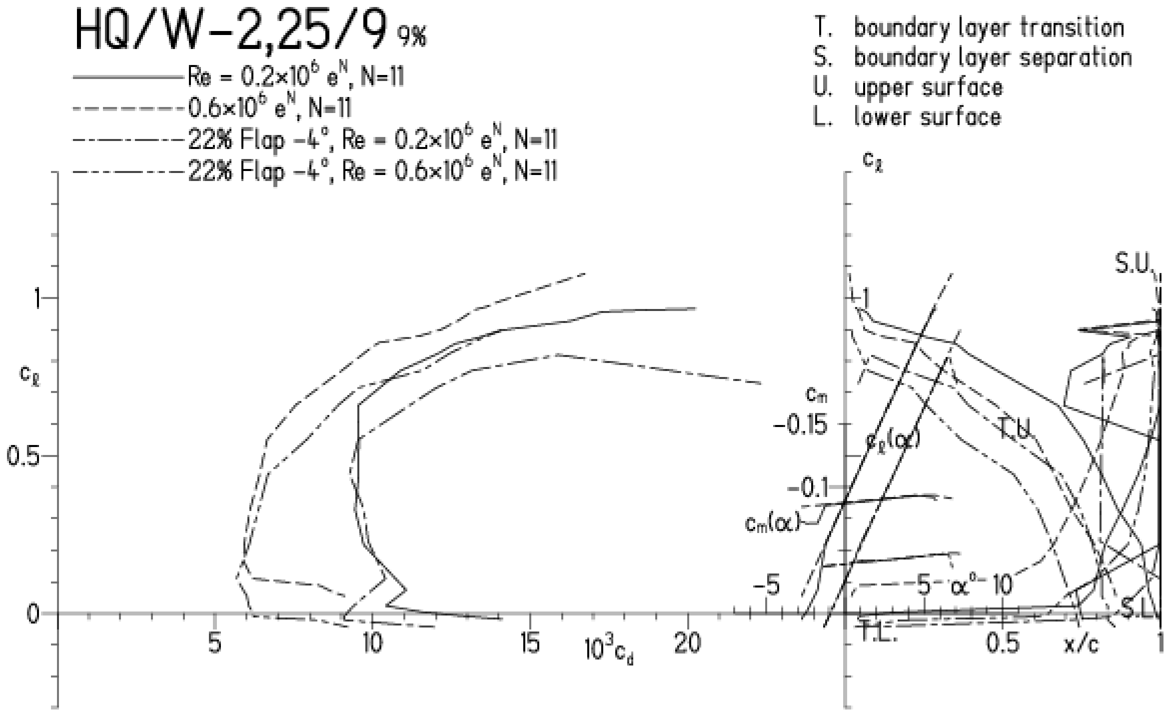


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

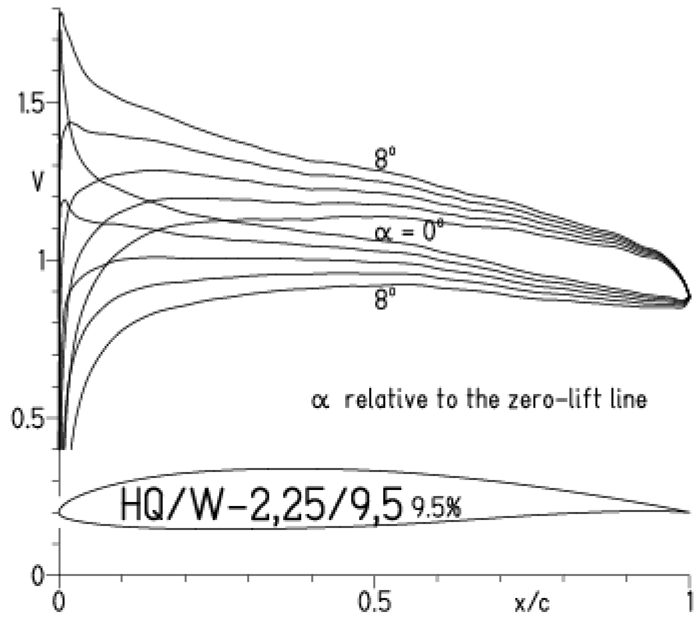


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

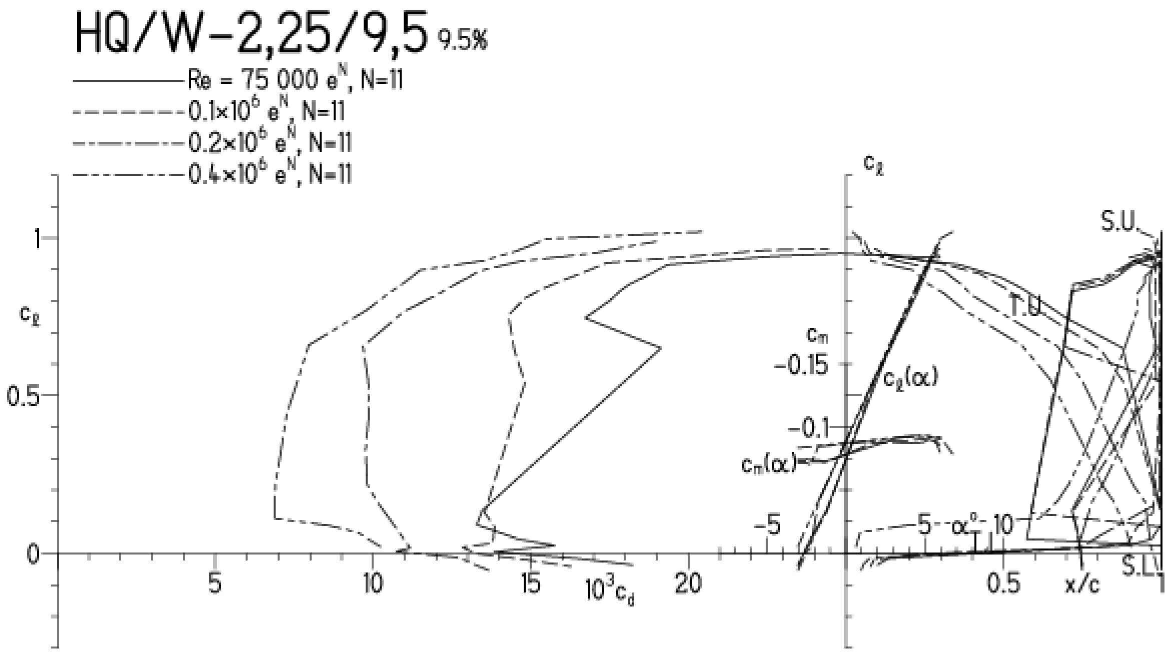


HQ/W-2,25/9,5, N=11

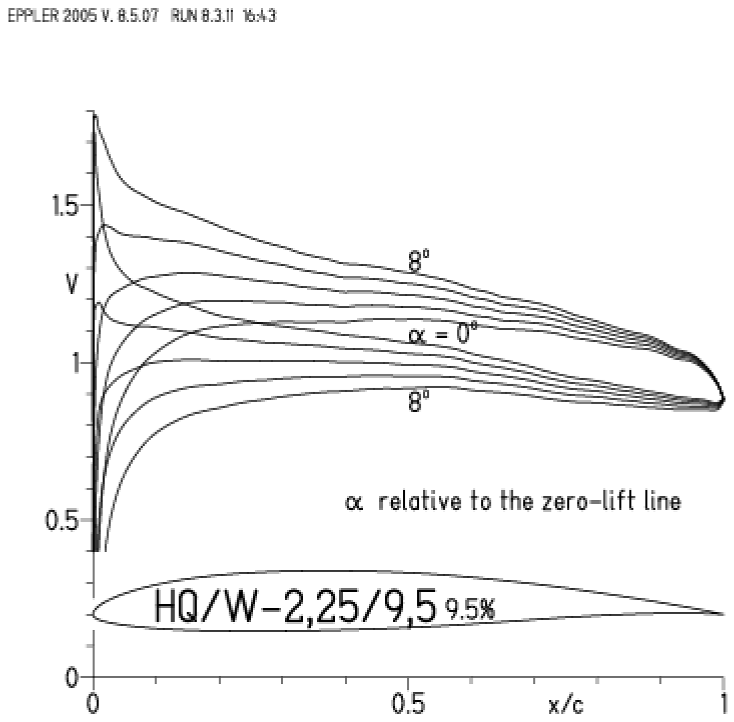
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

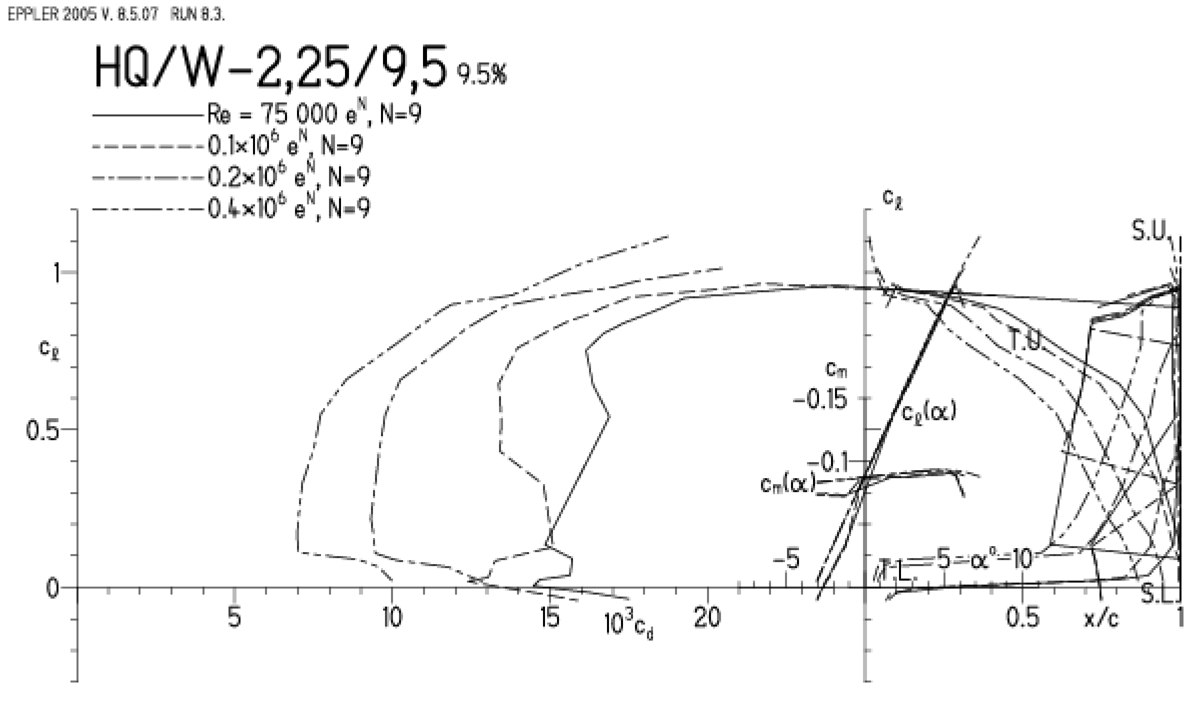


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



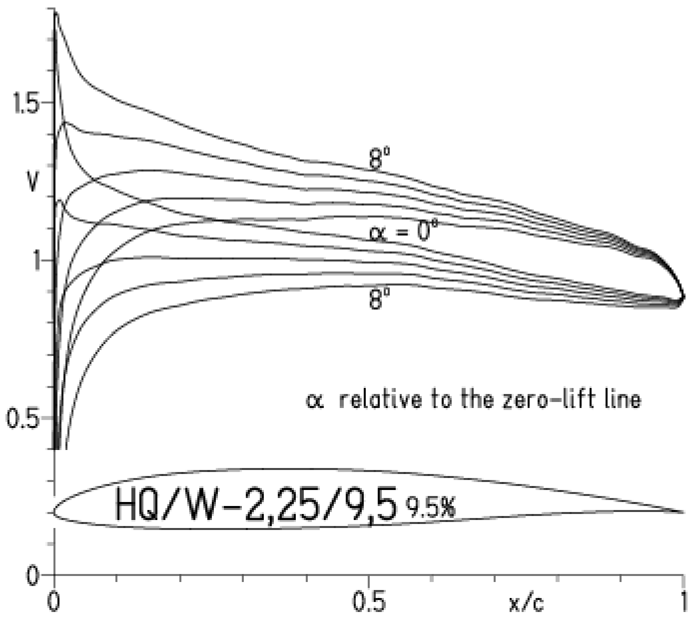
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

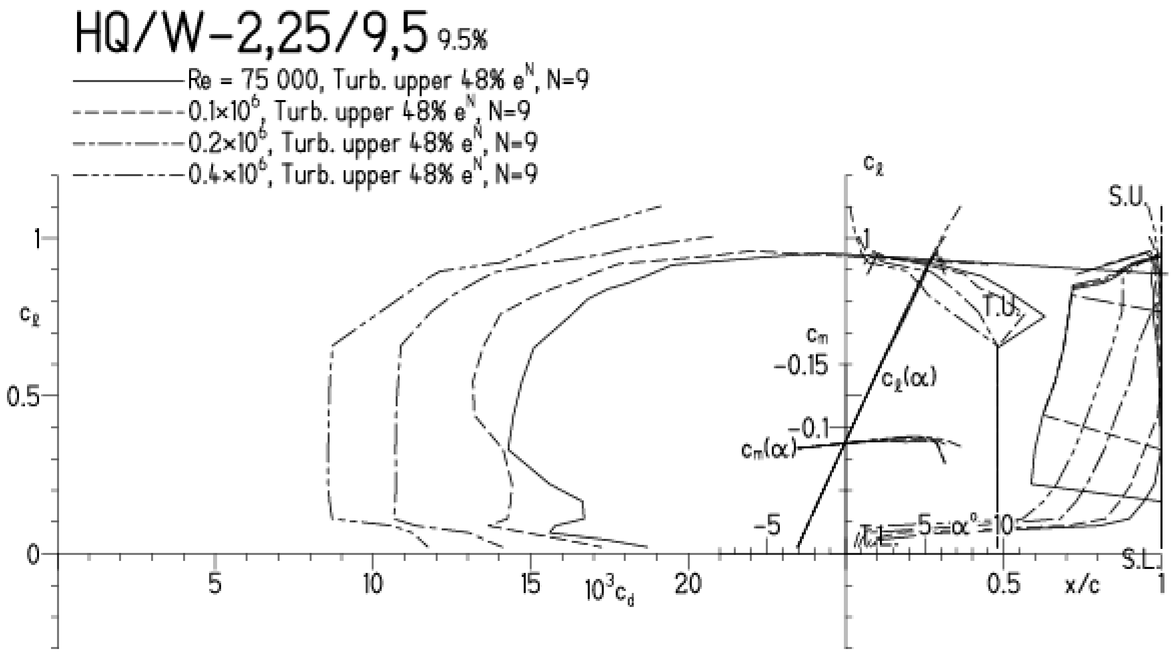

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

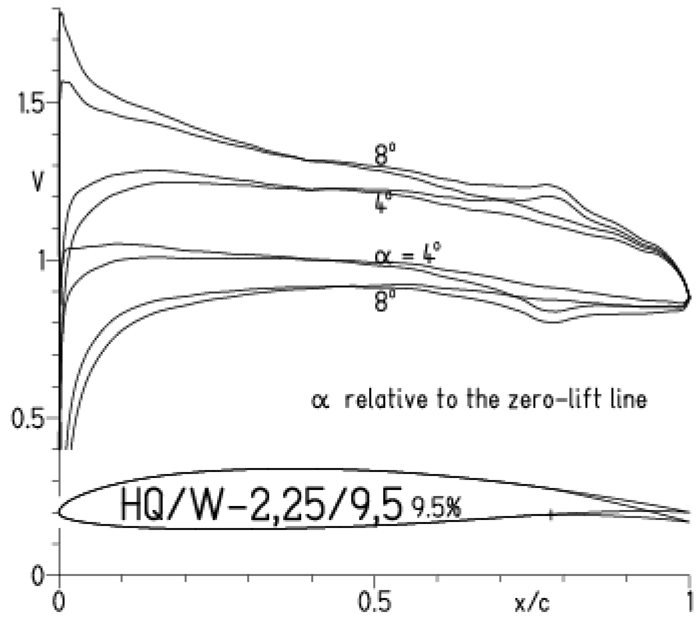


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

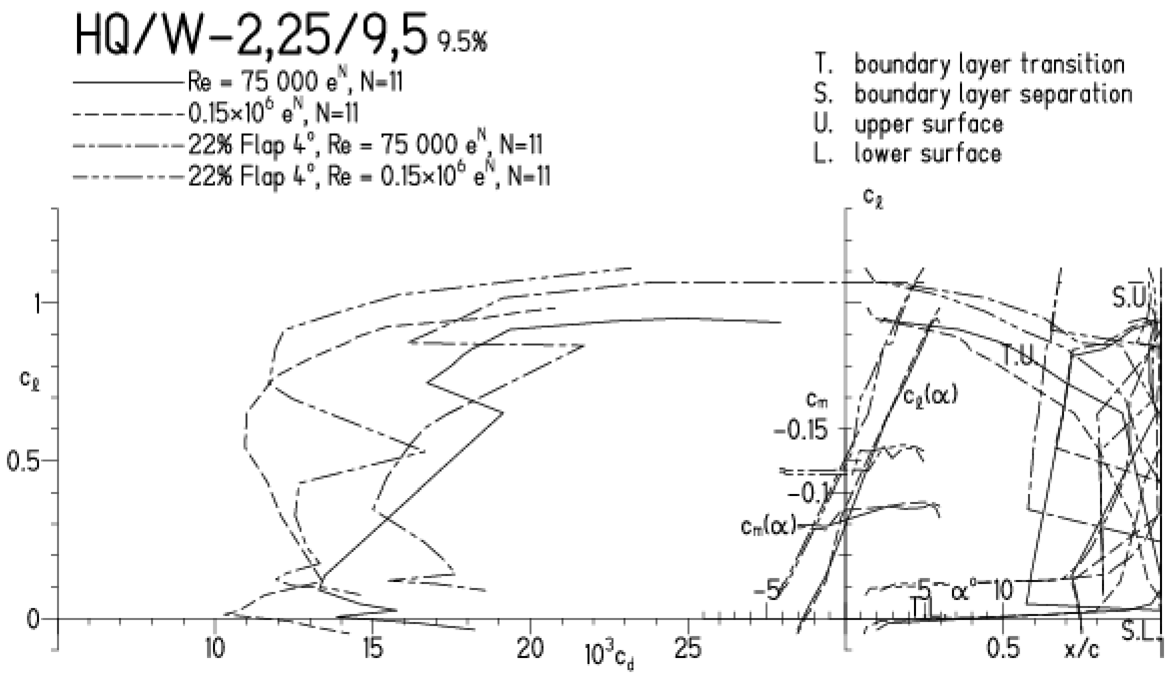


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

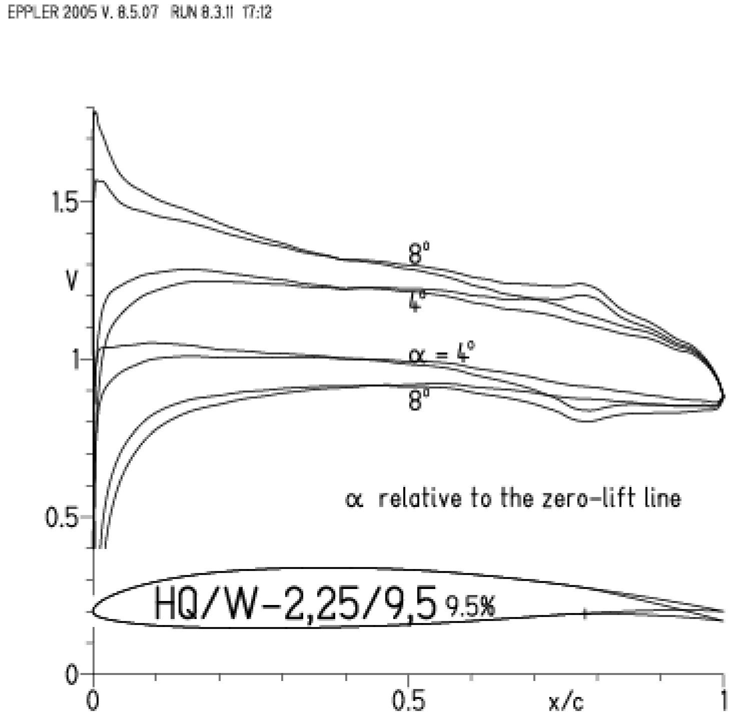
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

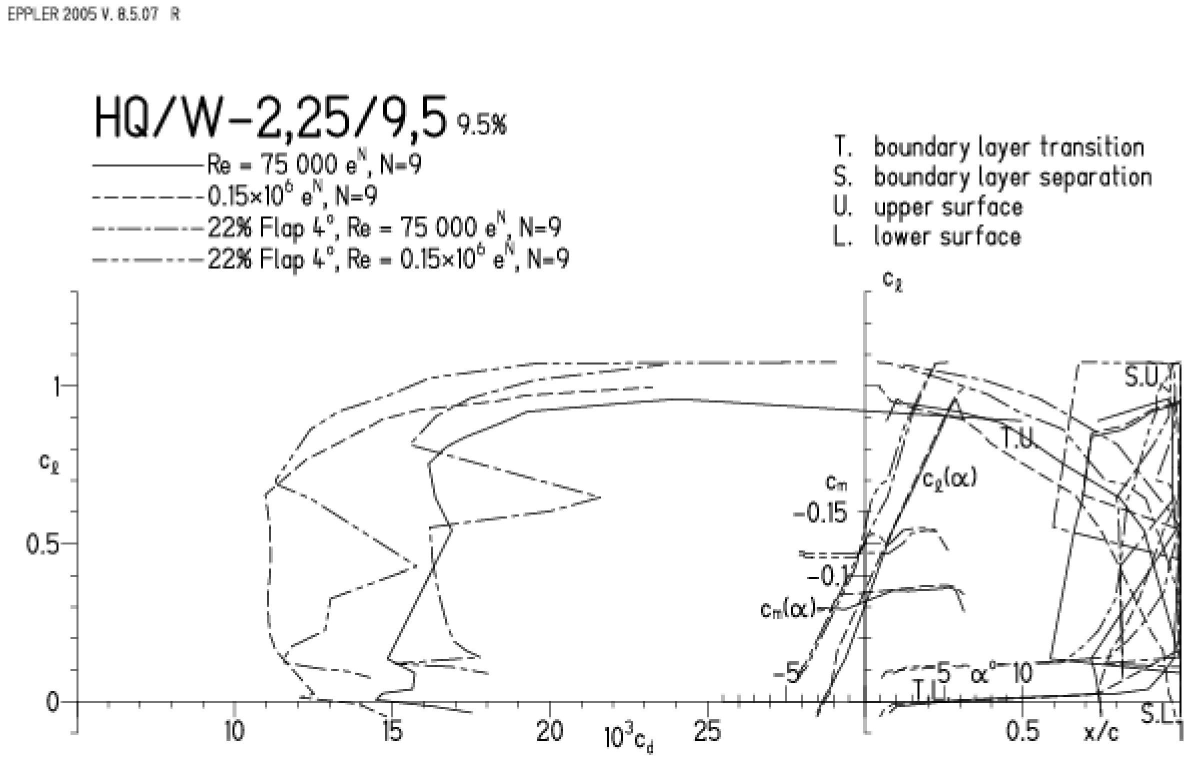


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



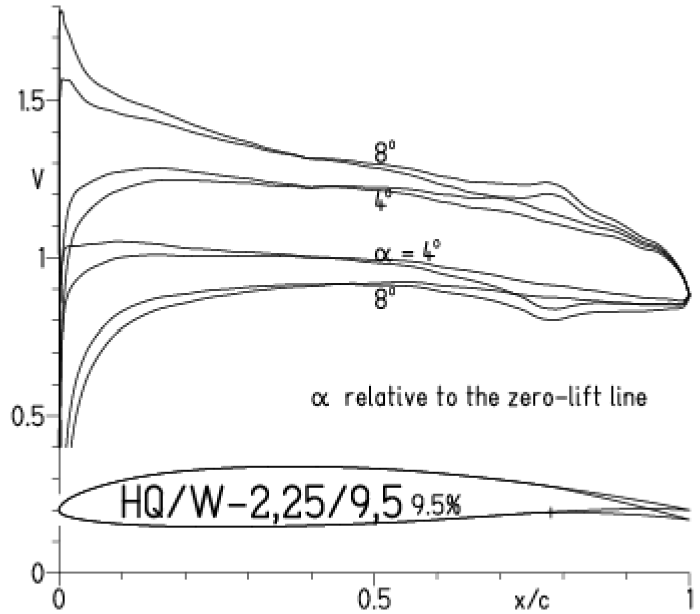
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



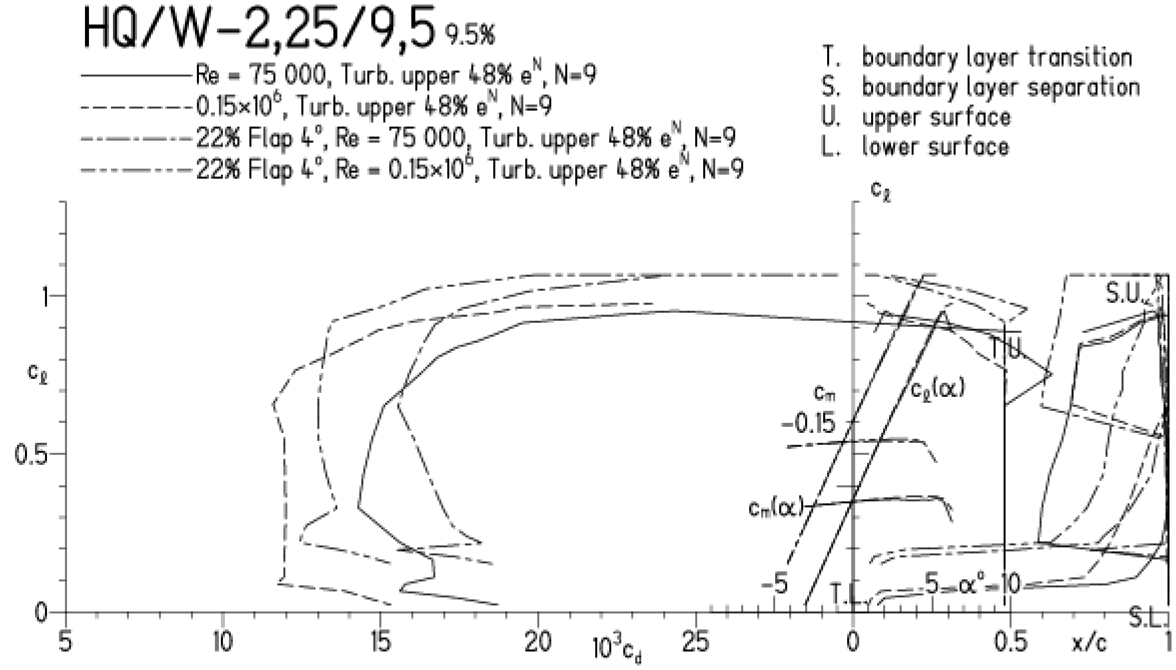


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

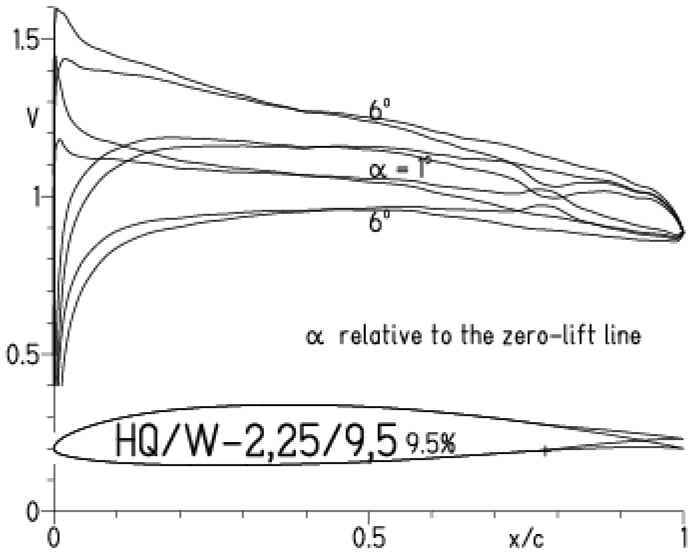


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

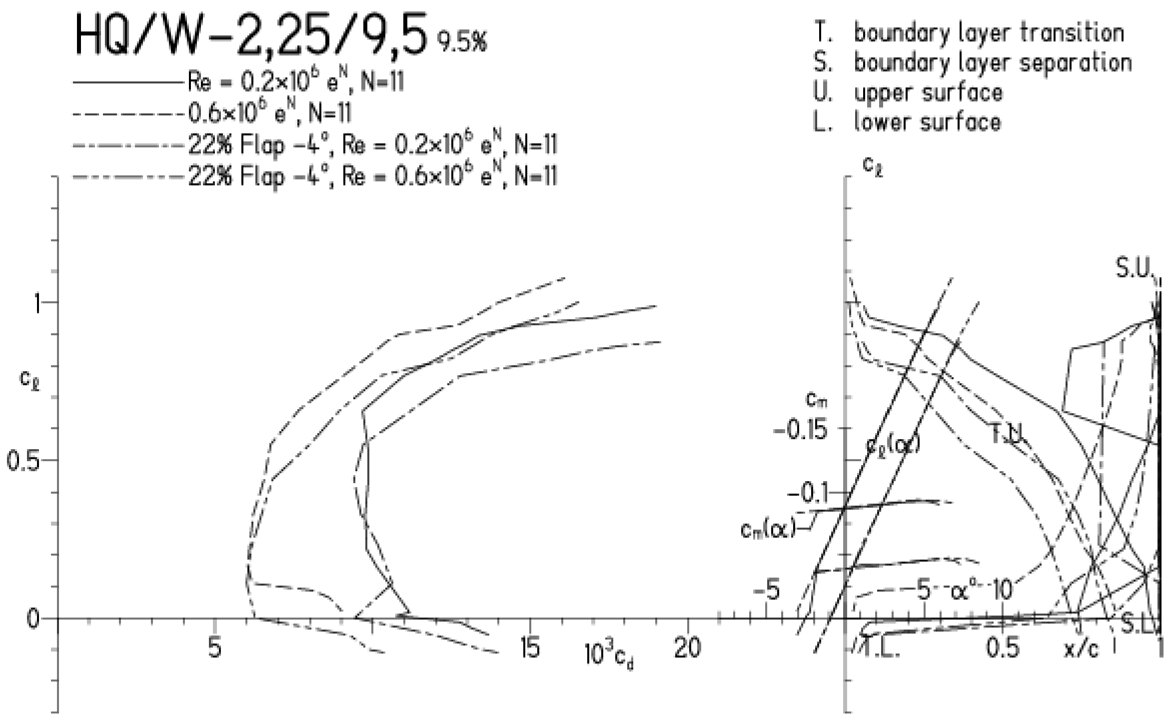


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

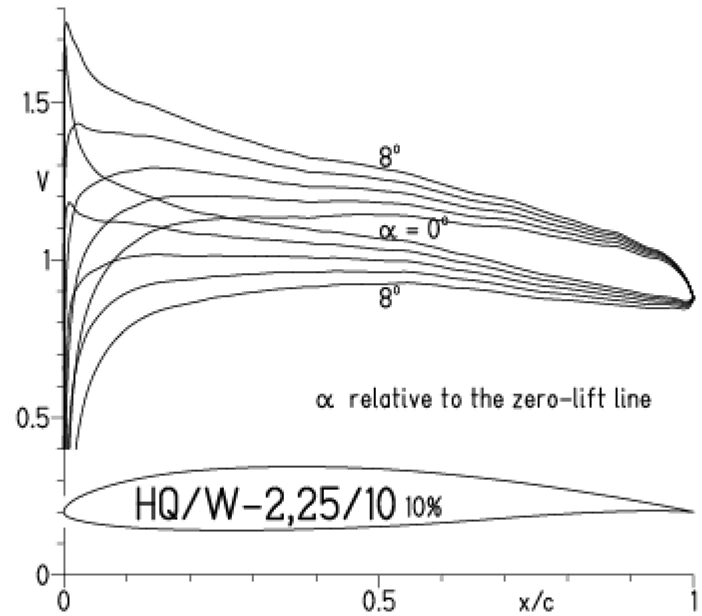


EPPLER 2005 V.

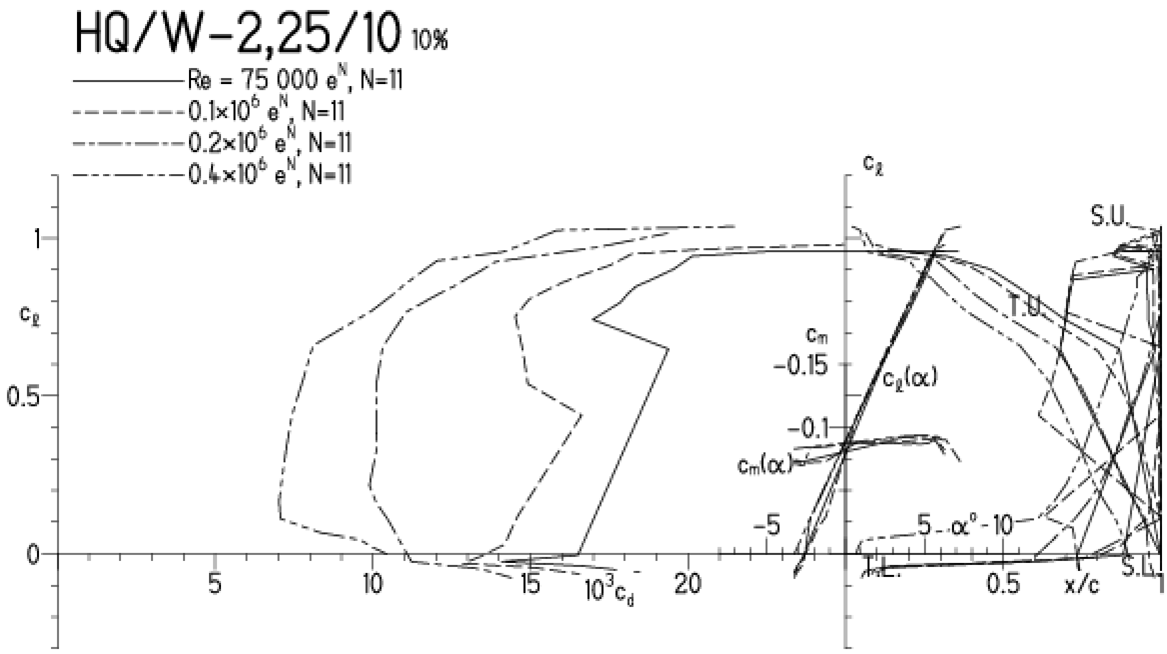


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

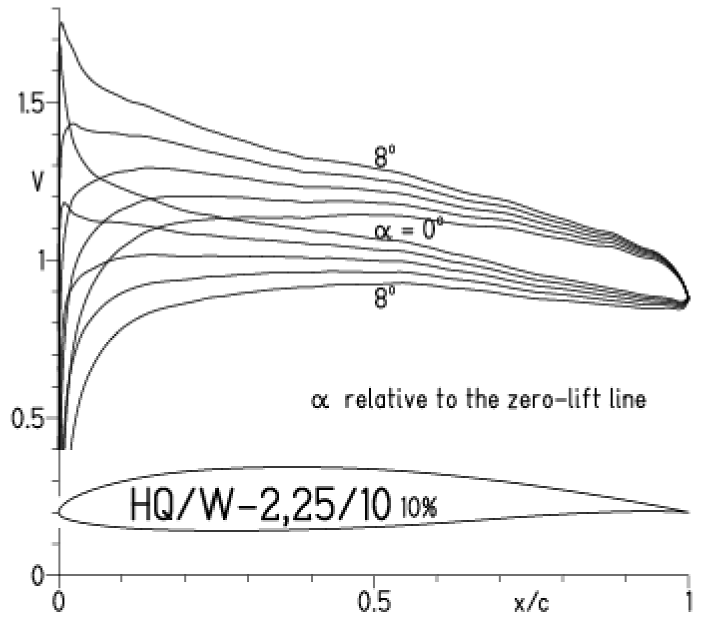


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

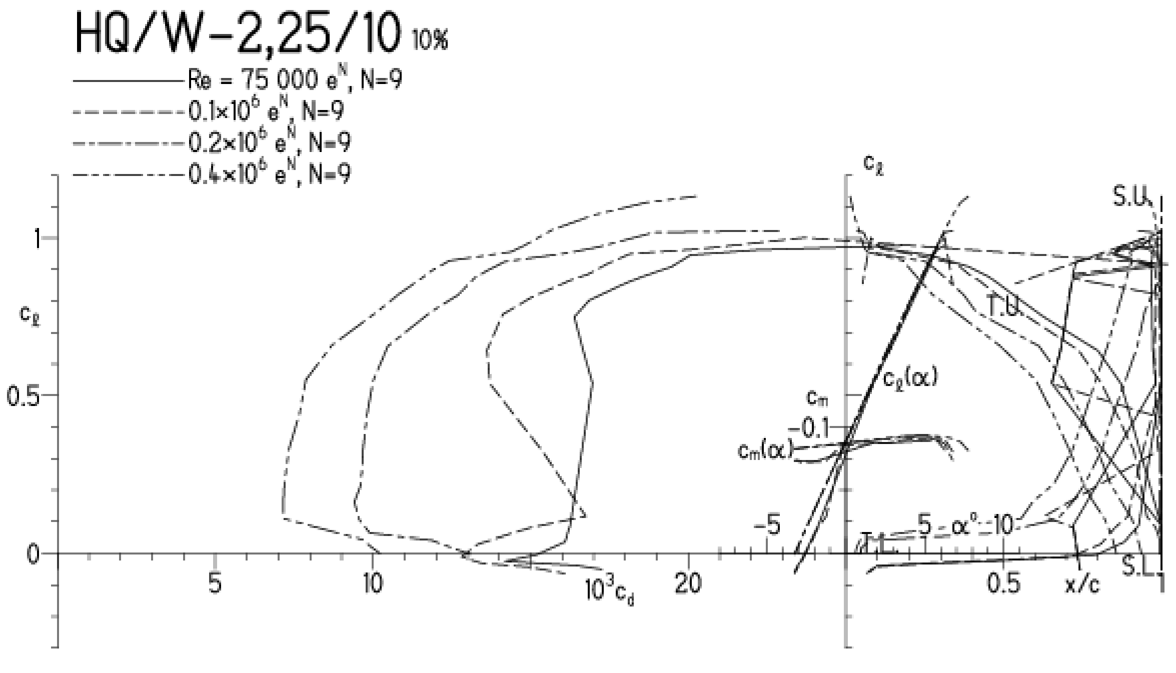


HQ/W-2,25/10, N=9

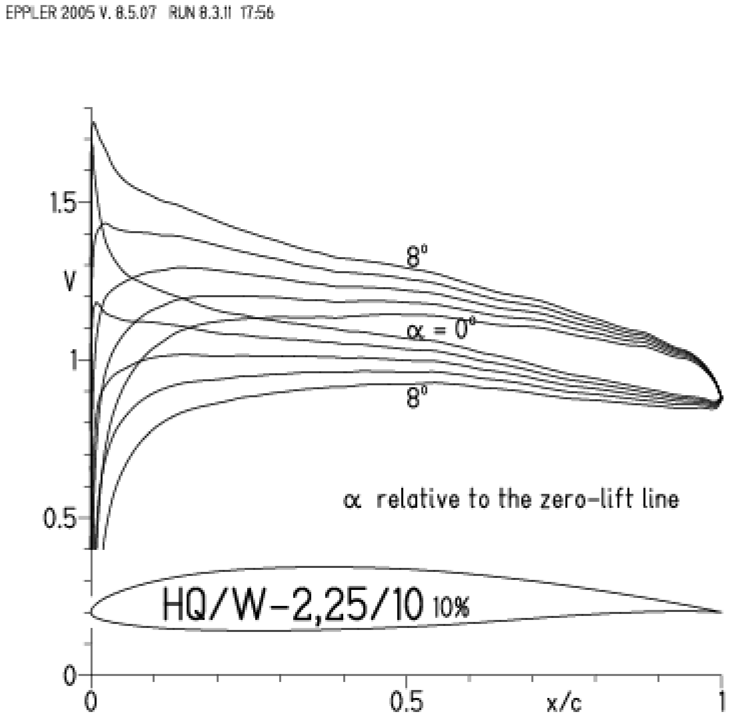
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

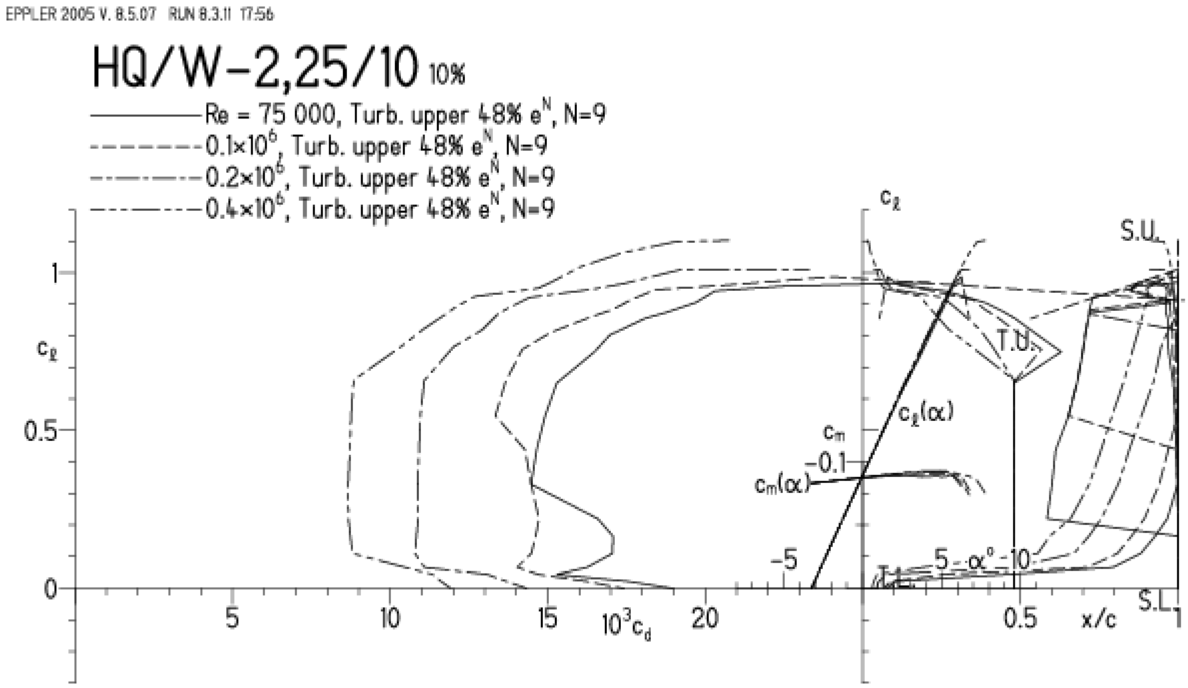


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



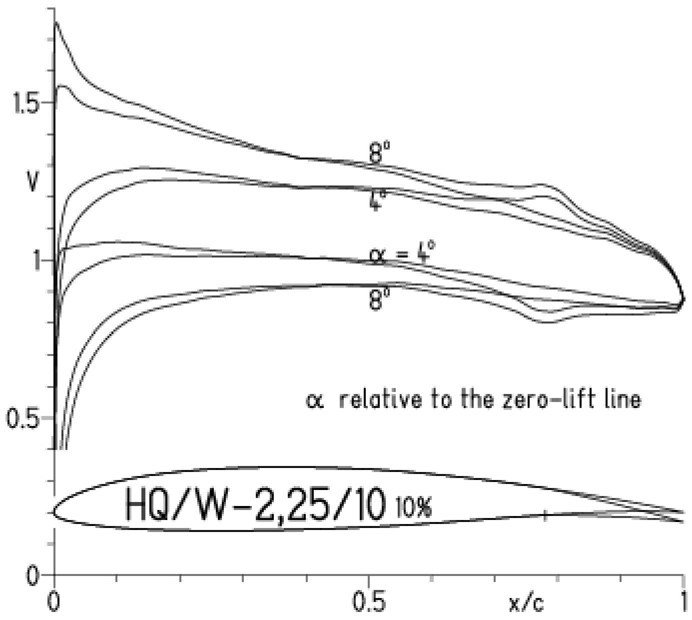
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



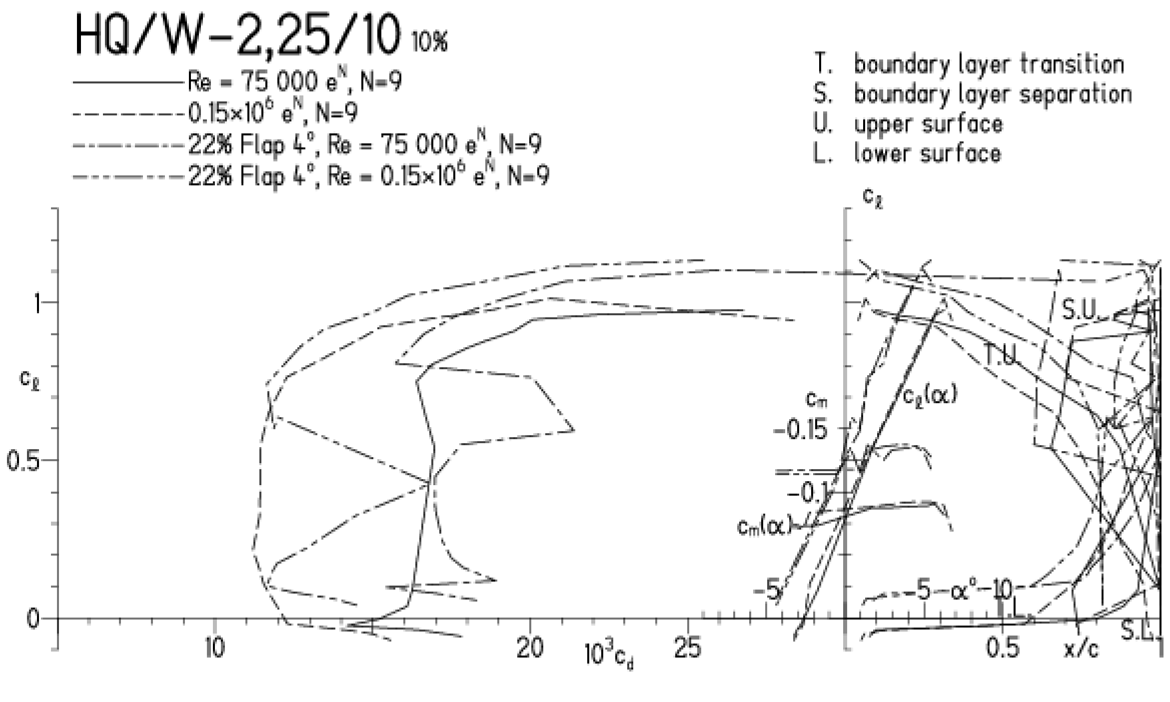


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

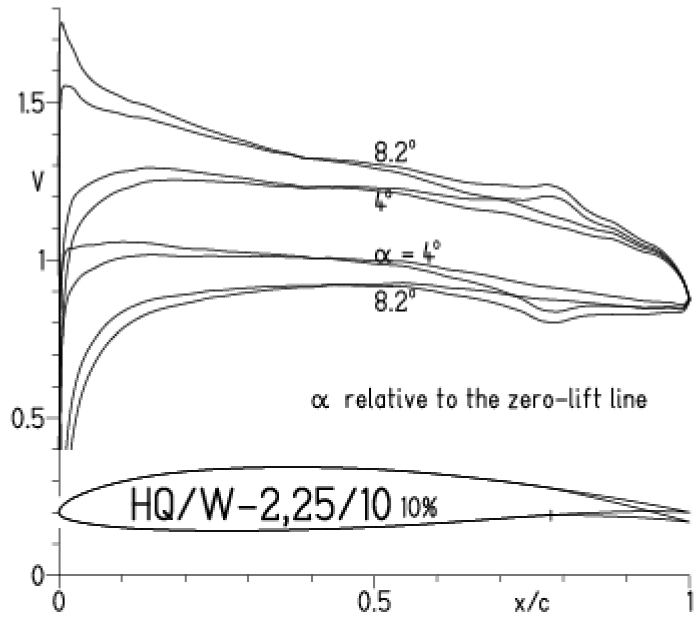


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

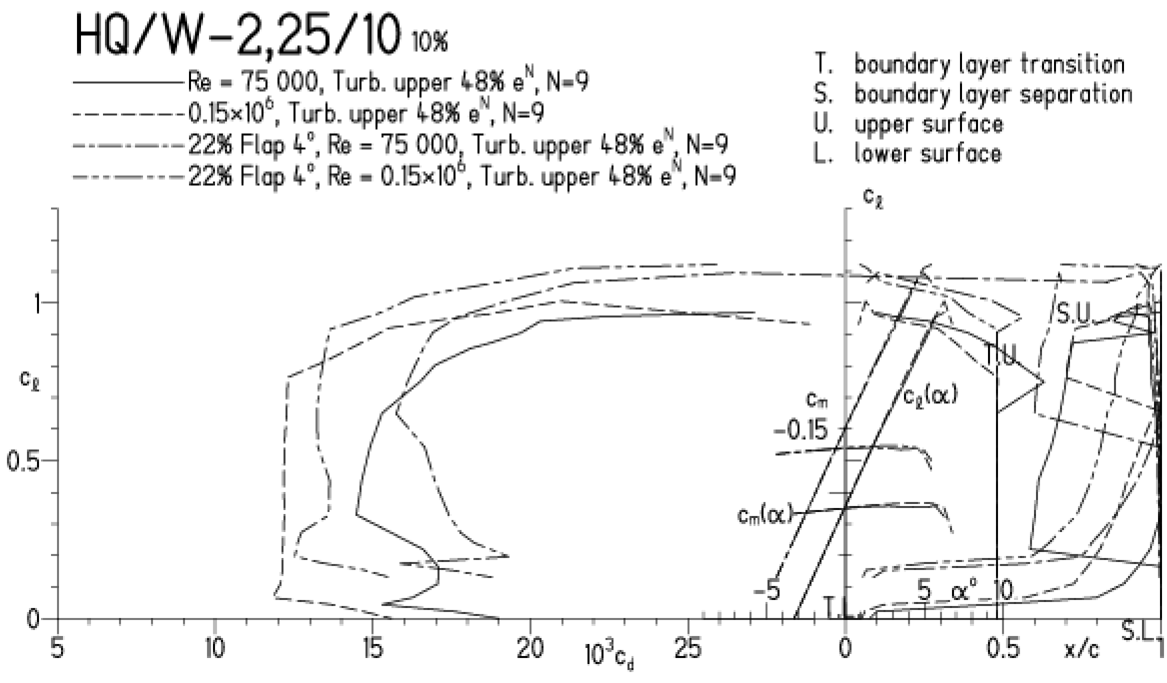


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

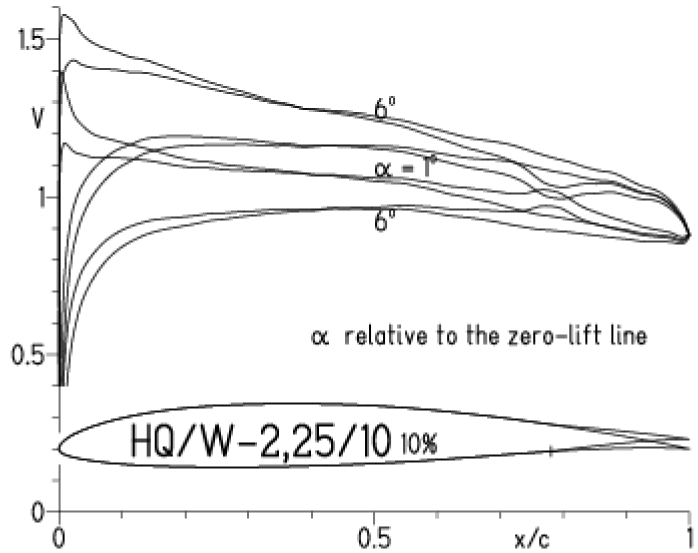


EPPLER 2005 V. 8.5.07 RUN 8.3

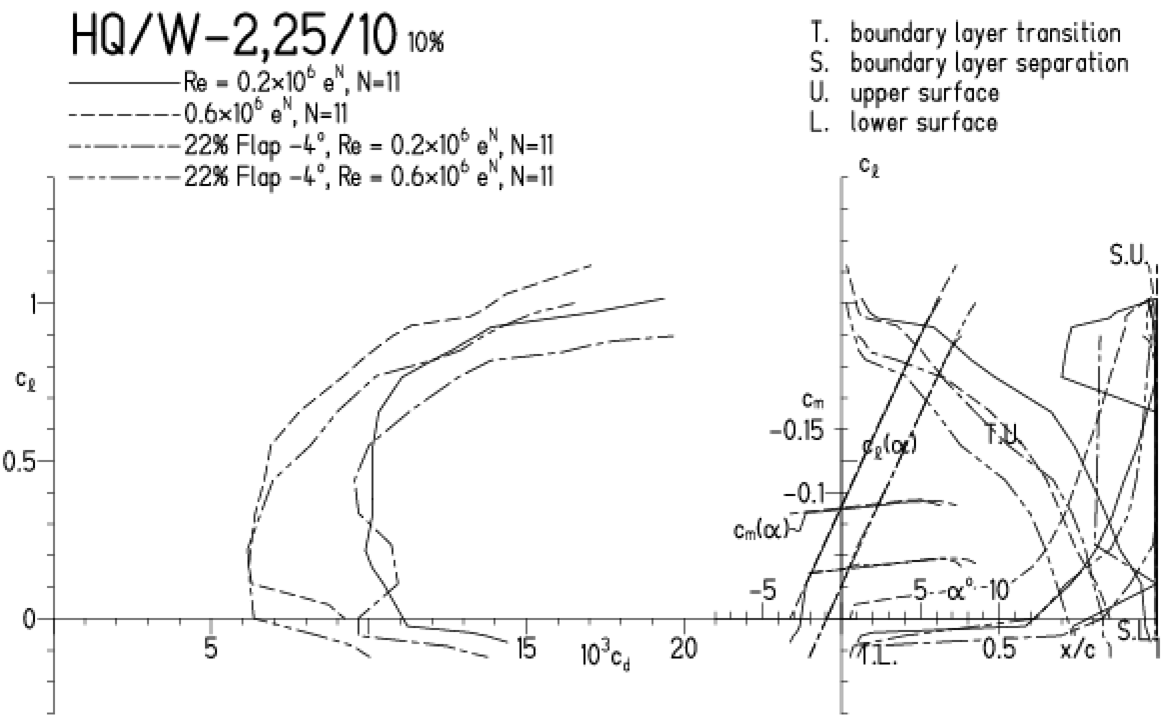


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

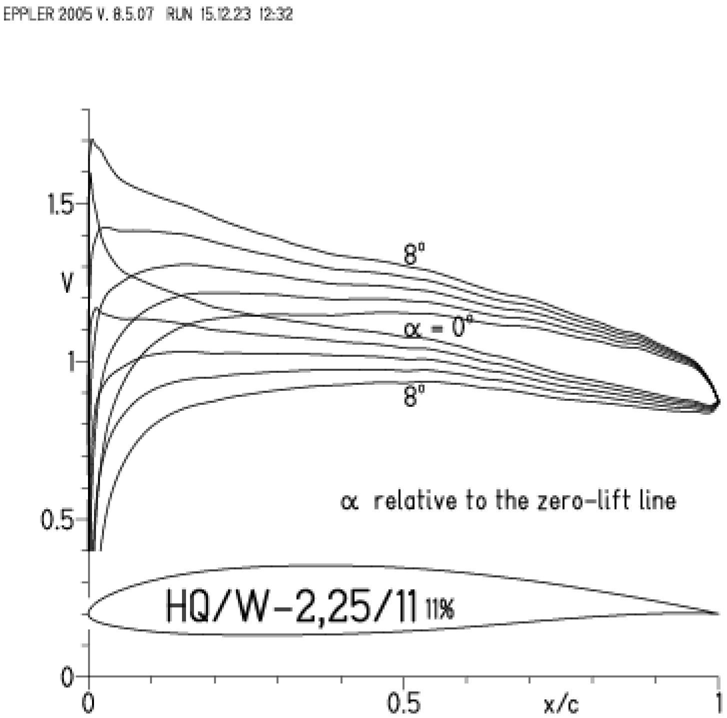
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

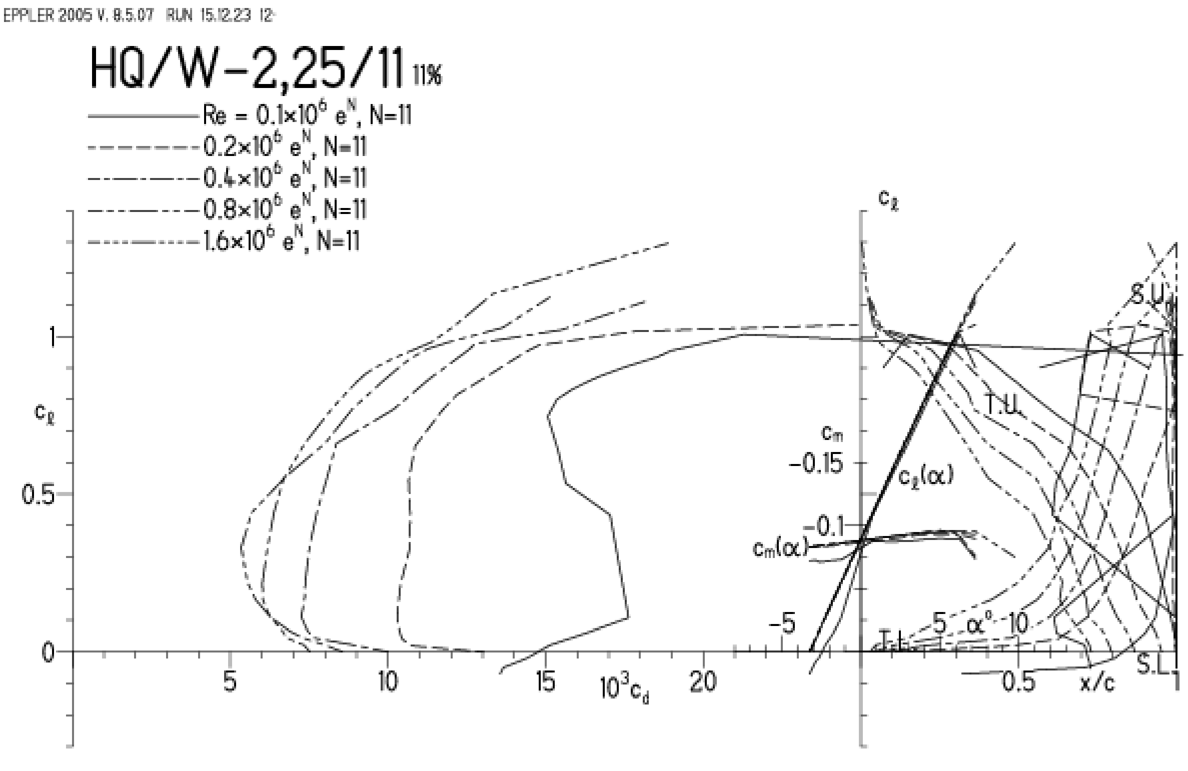


EPPLER 2005 V. 8.5.07 RUN



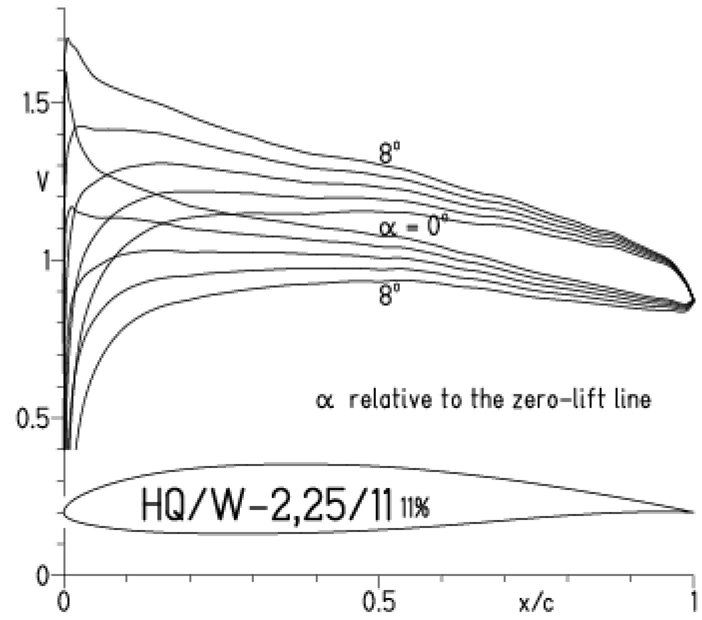
HQ/W-2,25/11, N=11



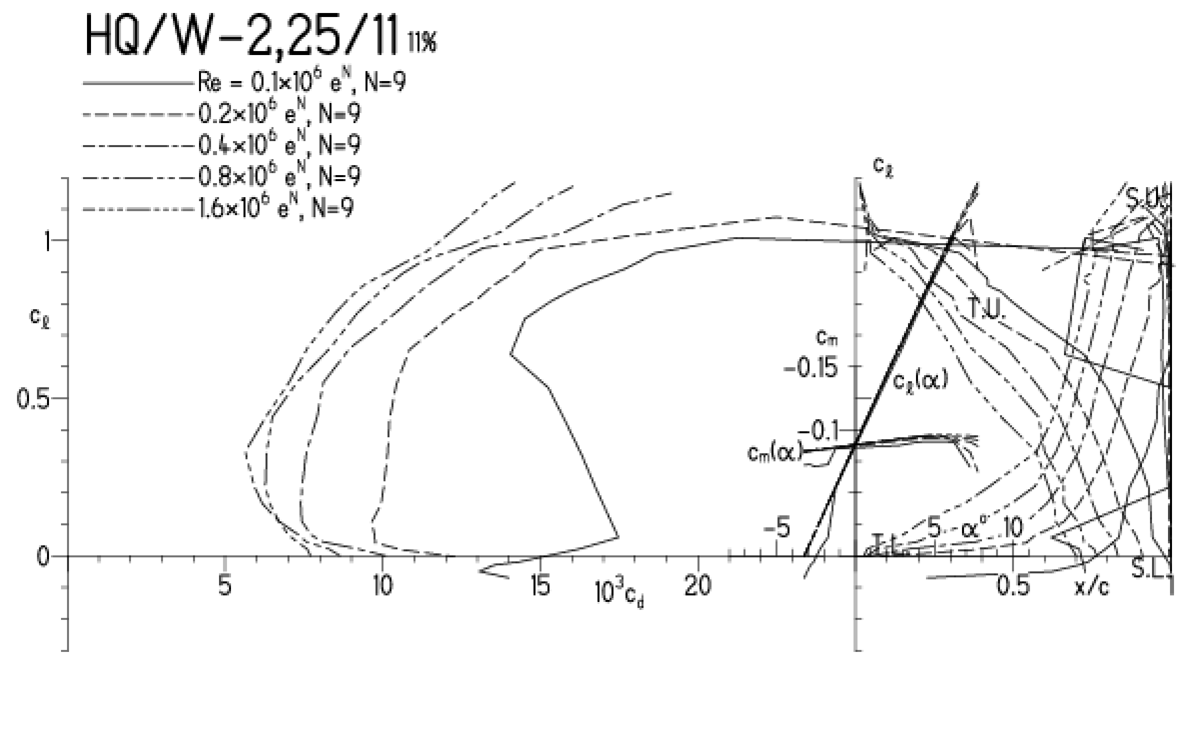


HQQ/W-2,25/11, N=9

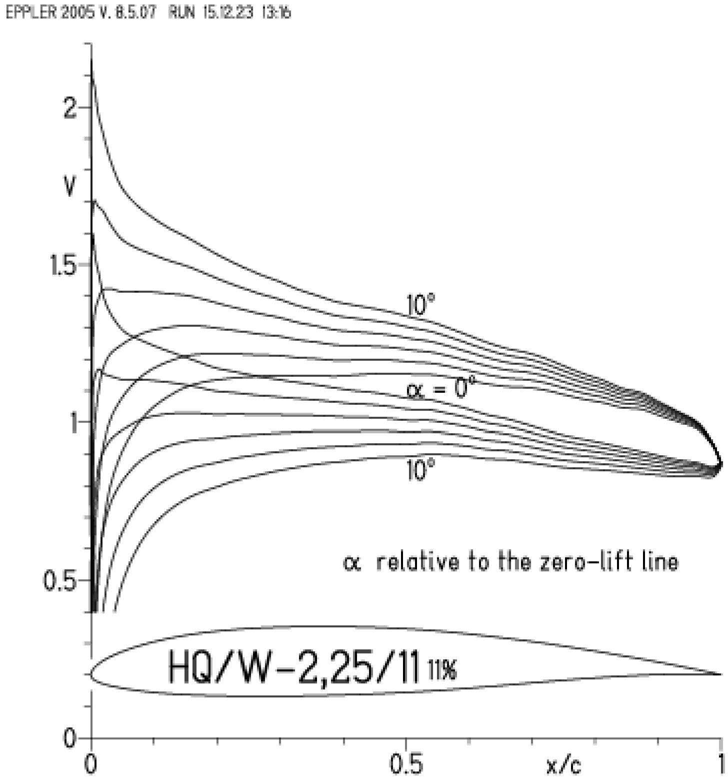
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

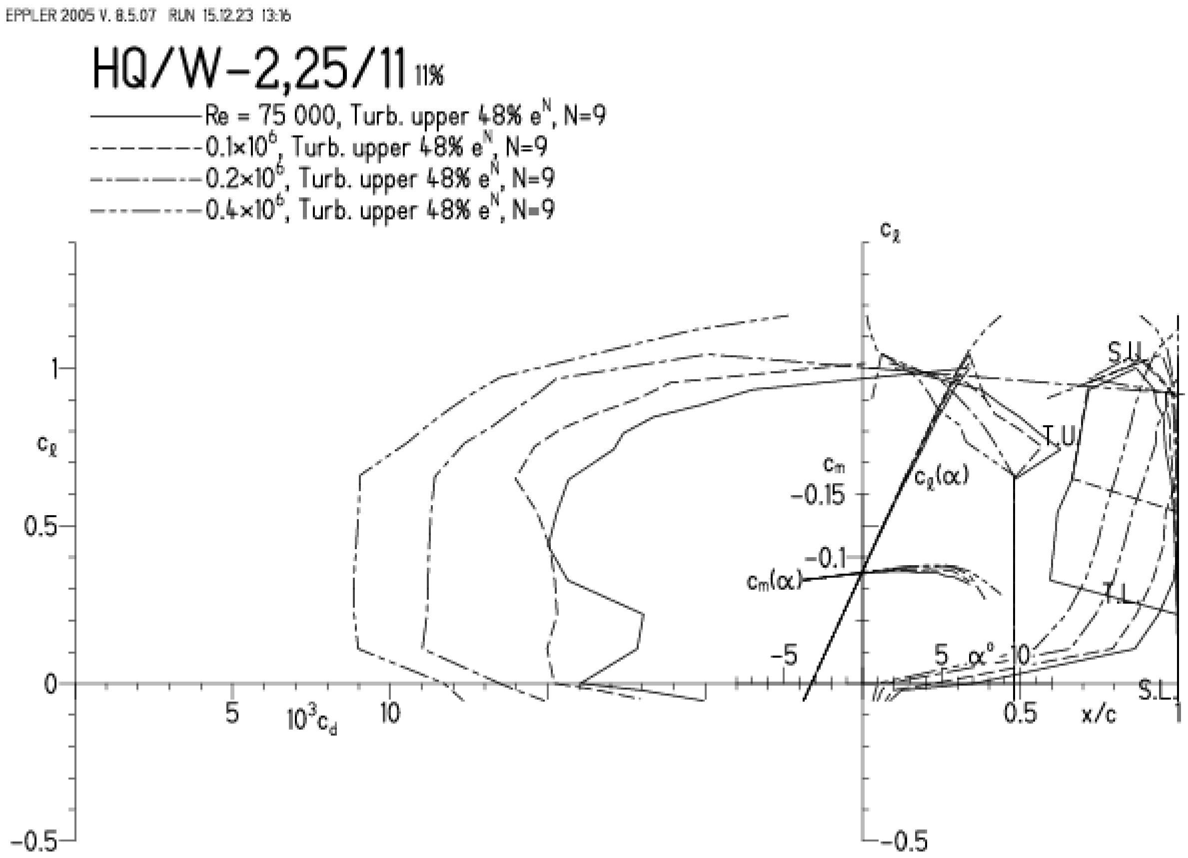


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



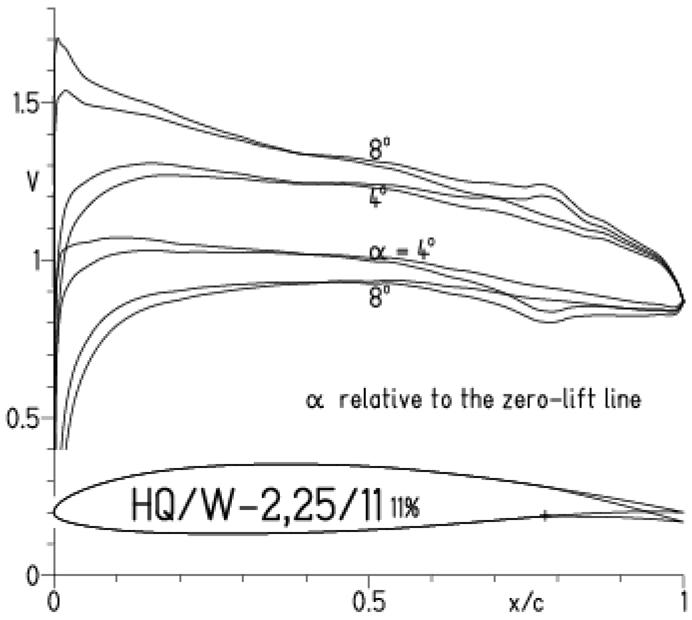
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



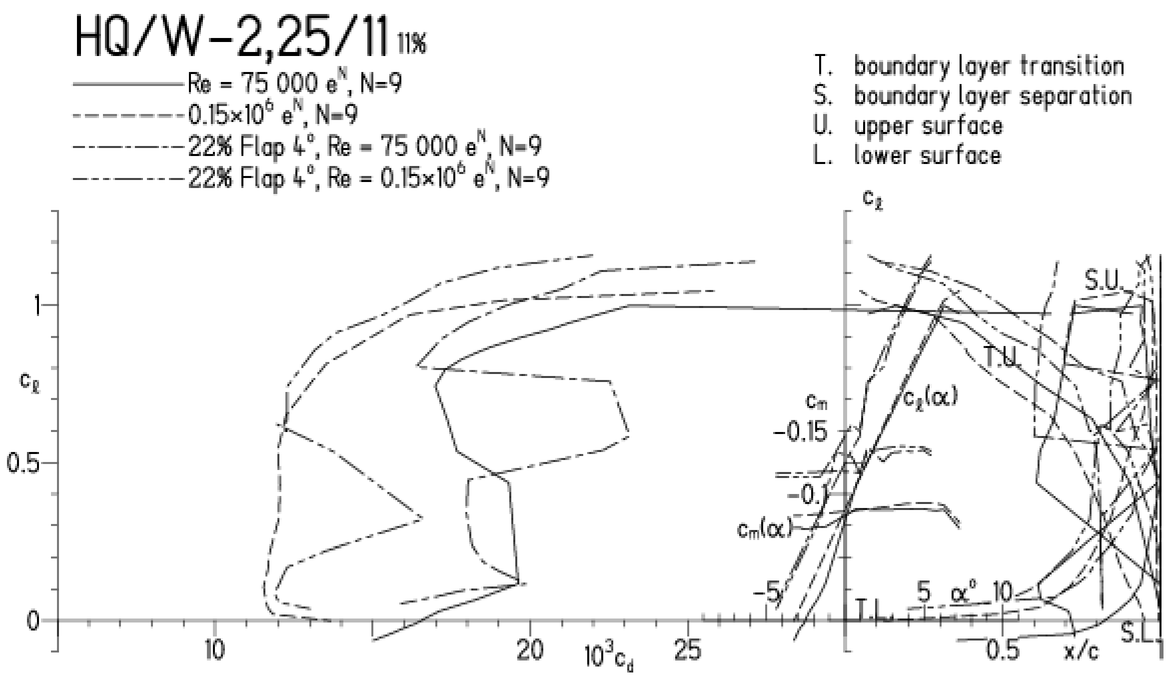


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

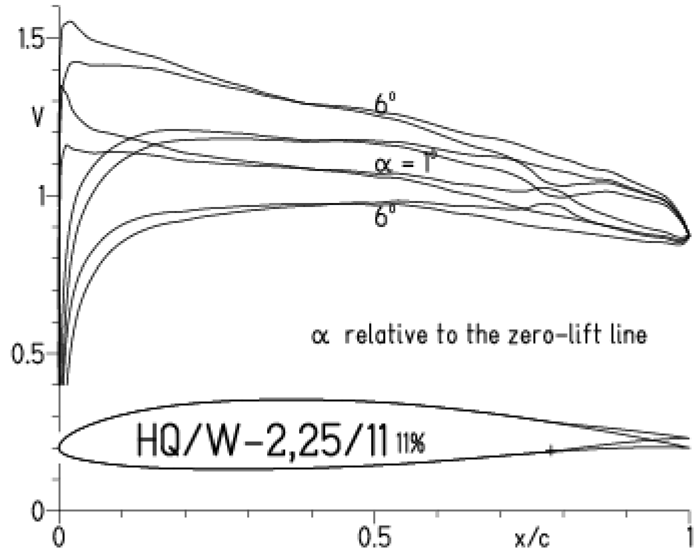


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

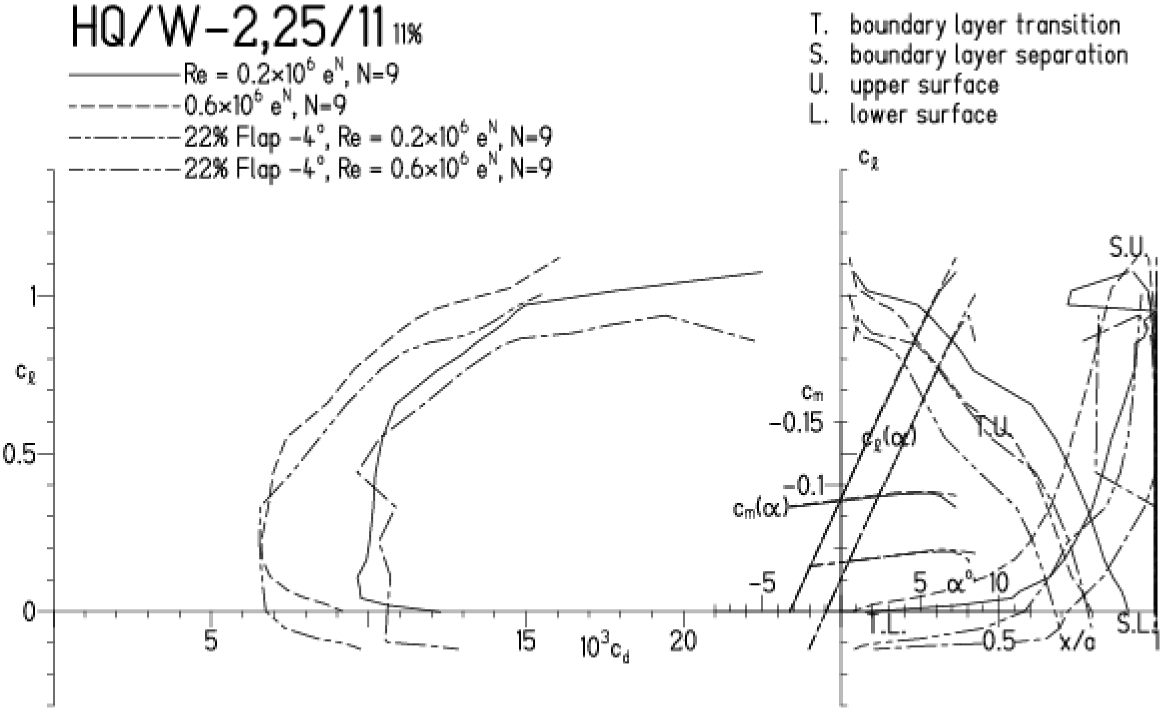


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

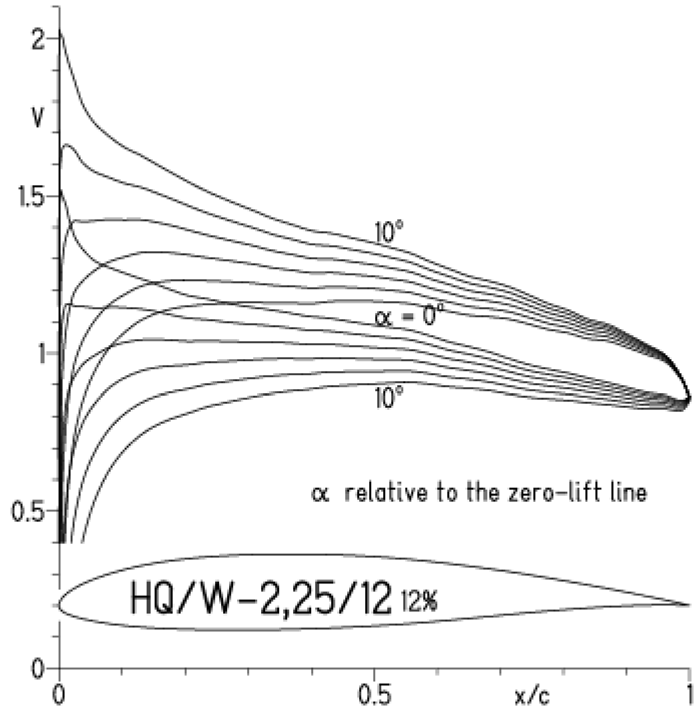


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

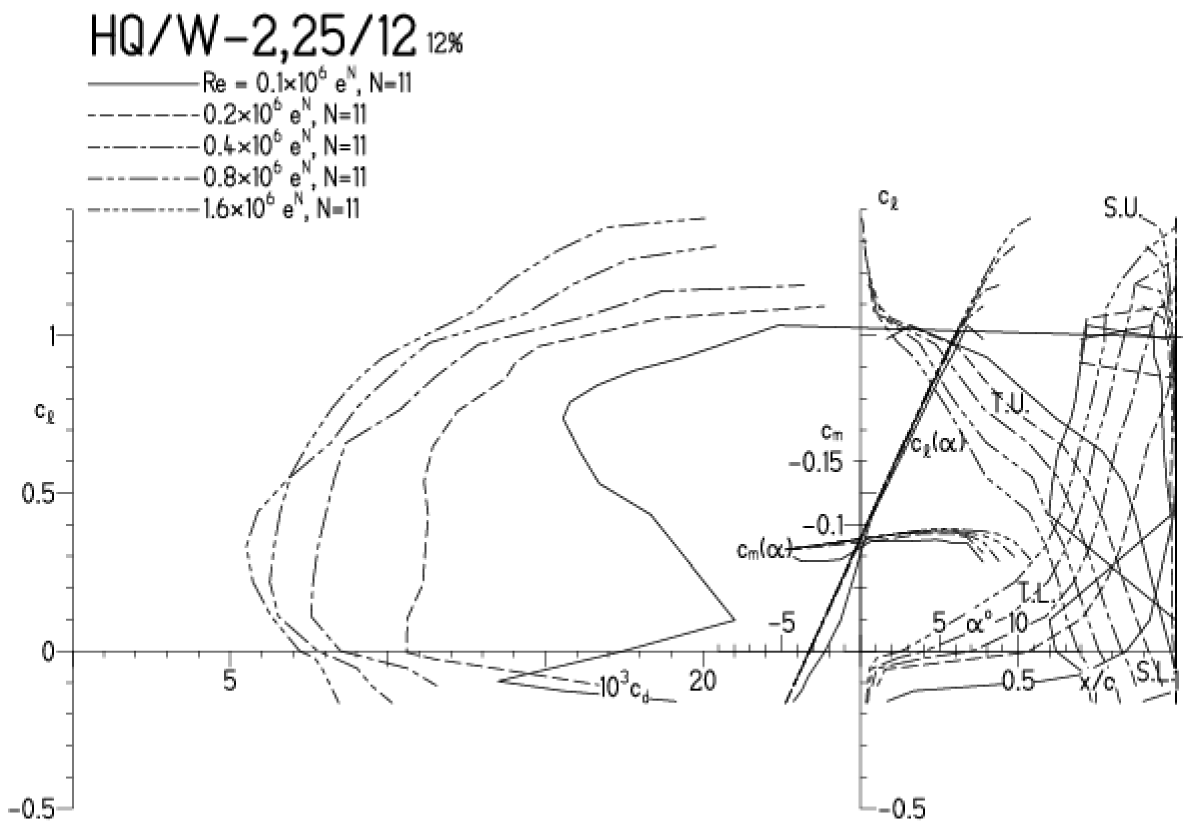


HQ/W-2,25/12, N=11

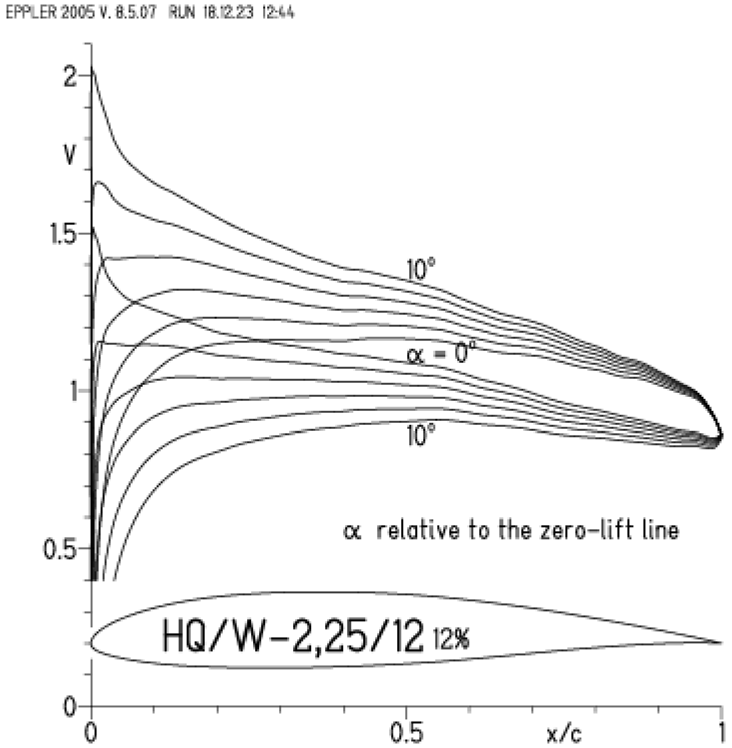
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

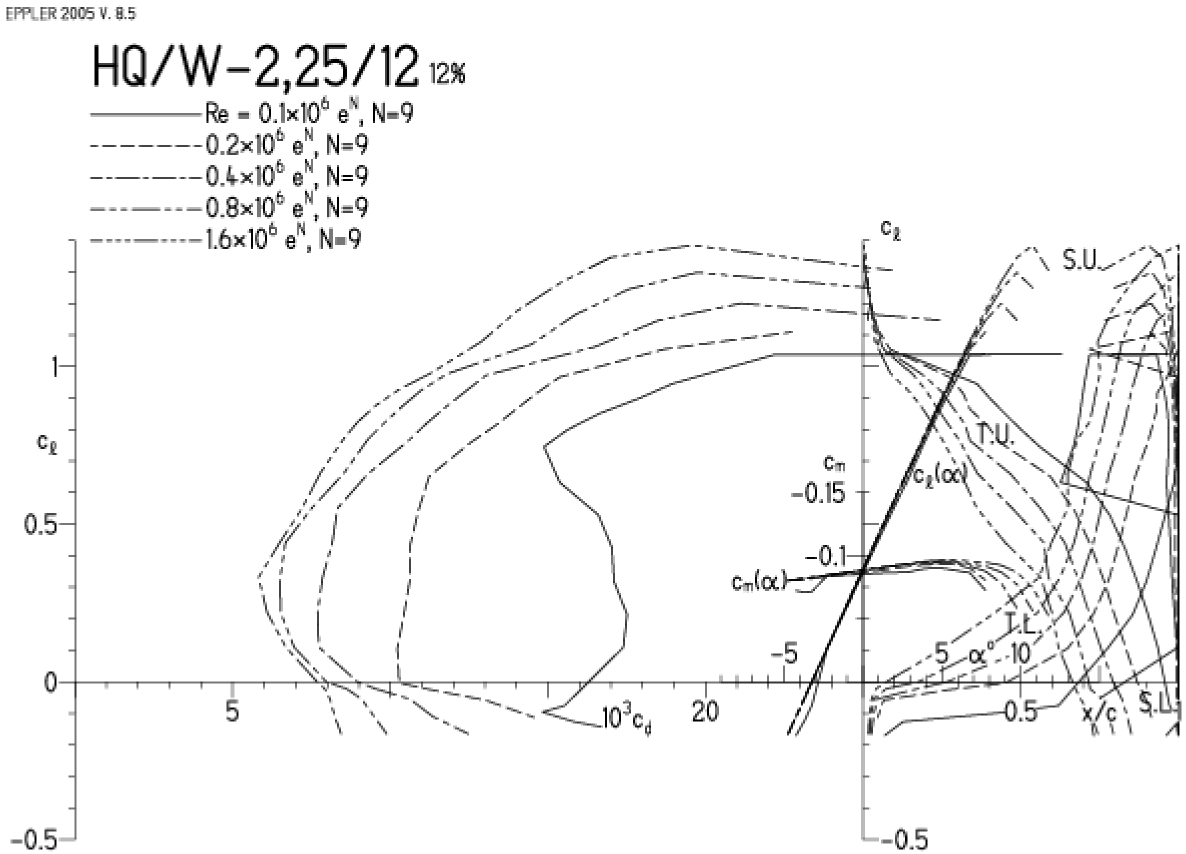


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

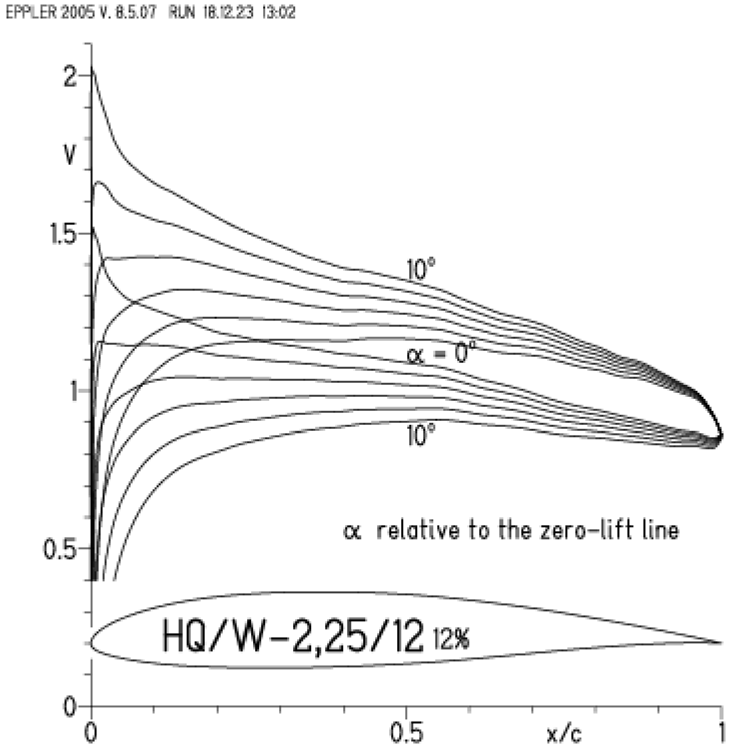


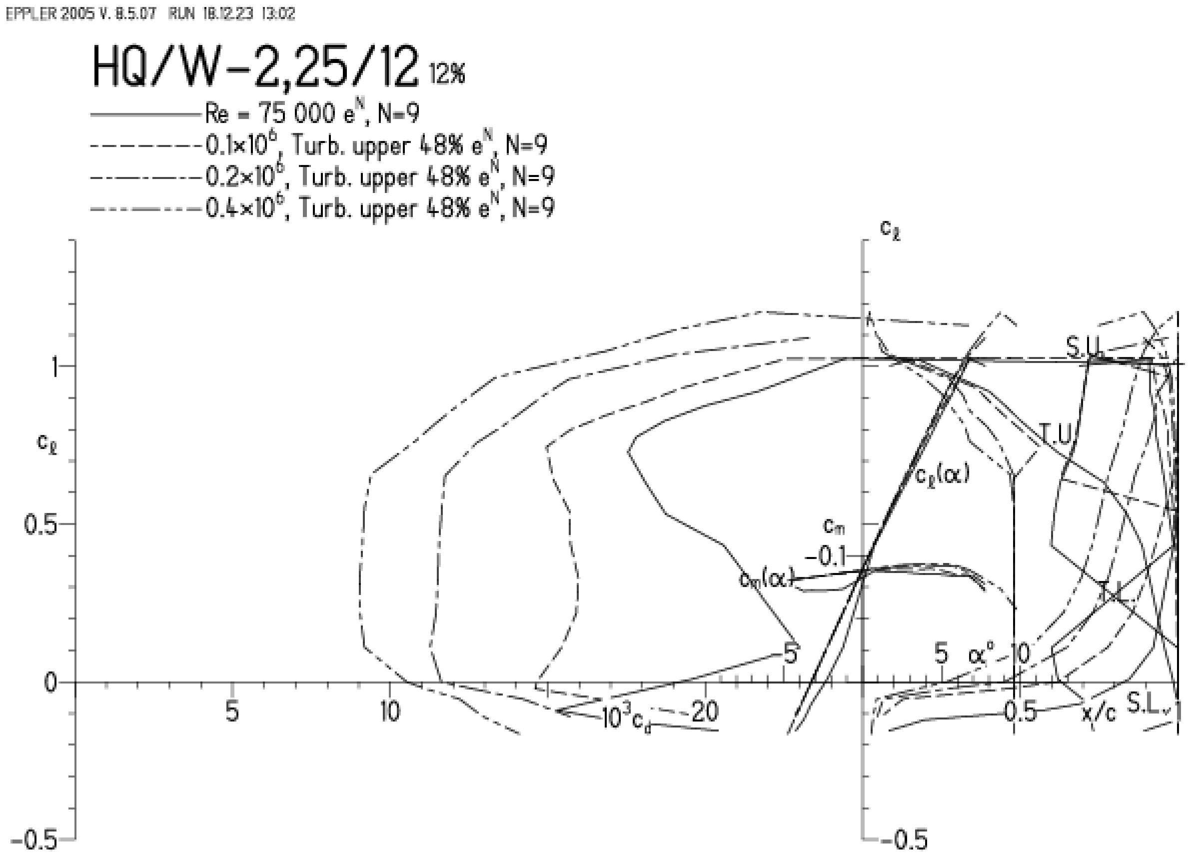
<u>HQ/W-2,25/12</u>, N=9





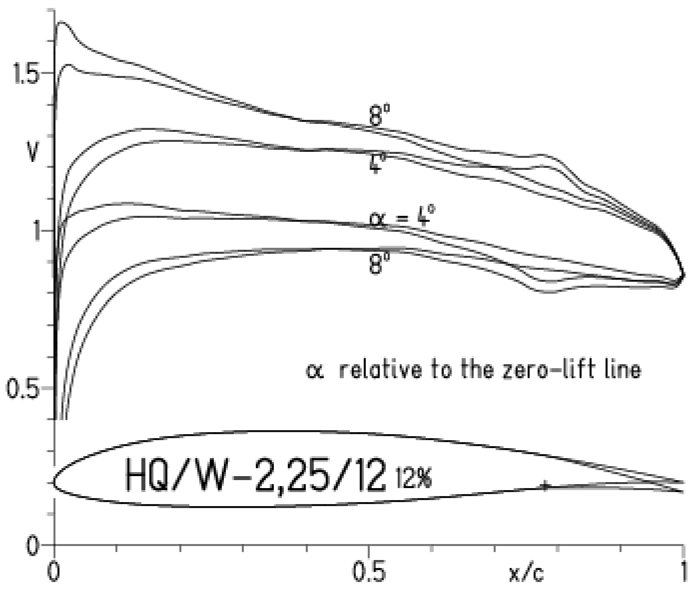
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



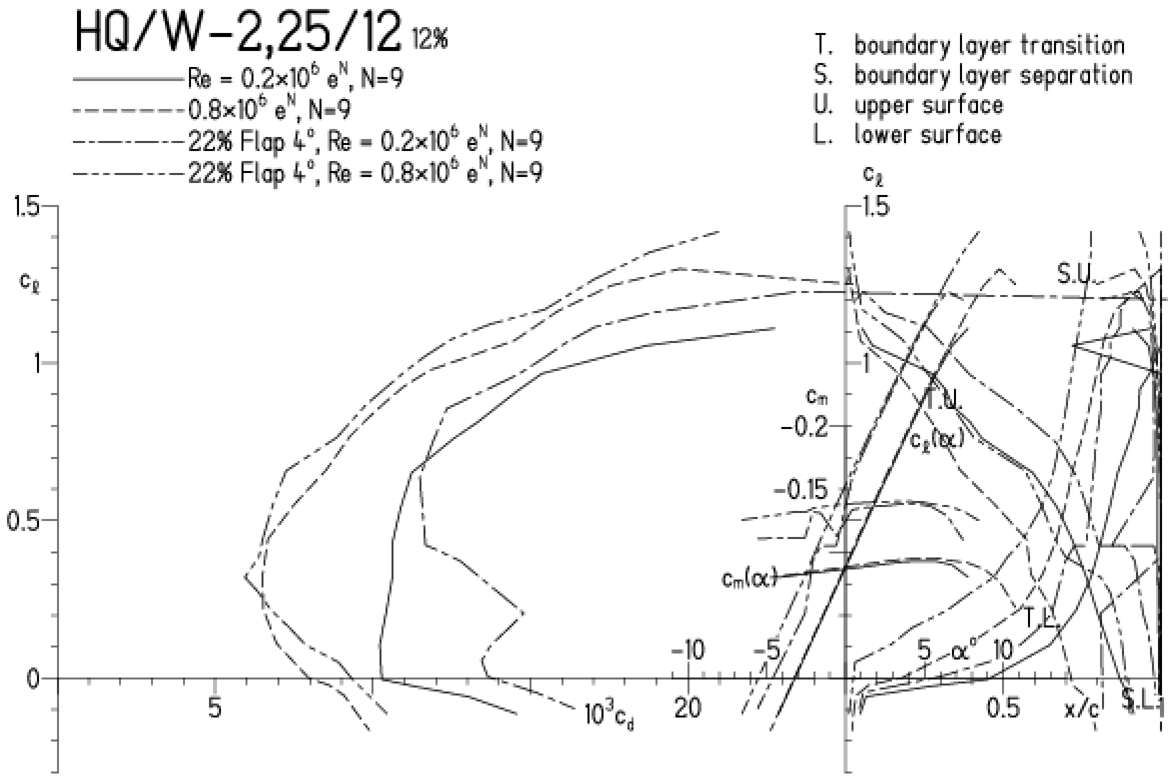


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

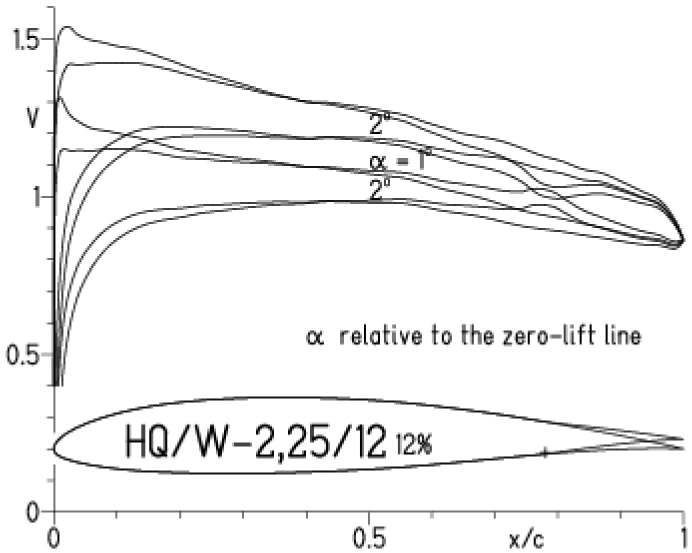


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

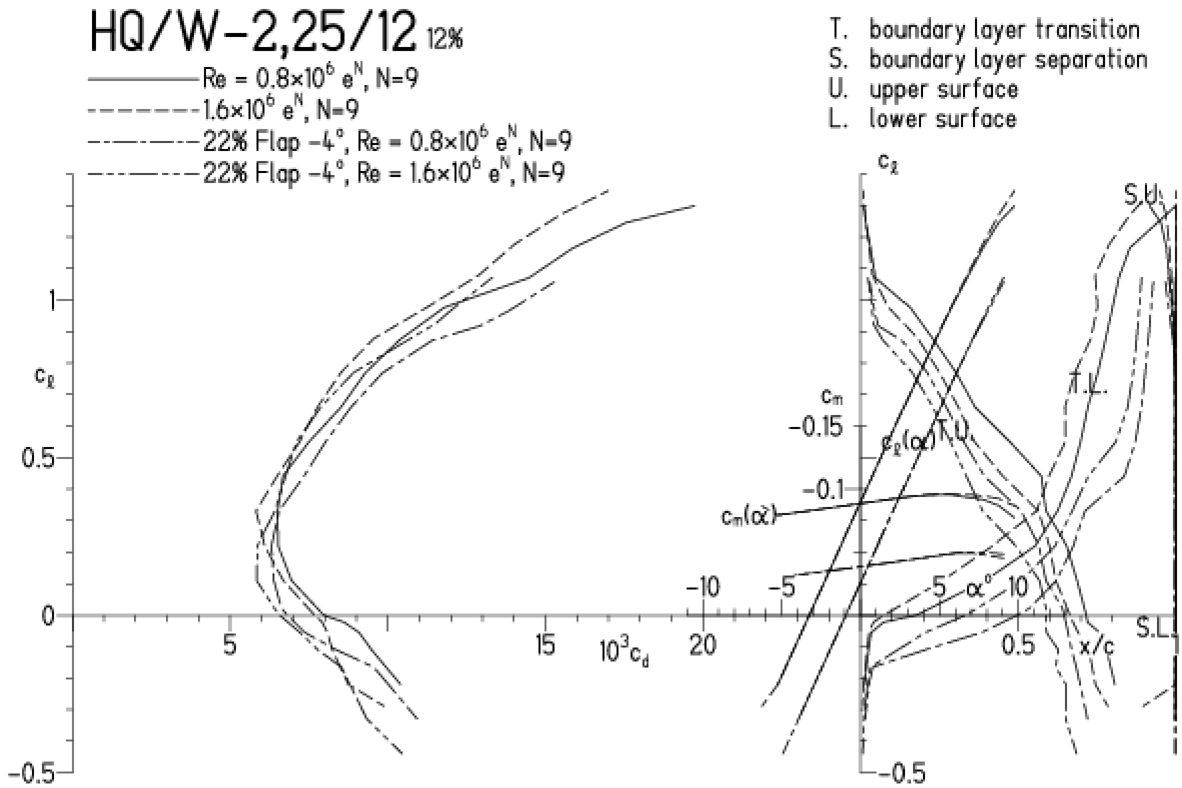


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

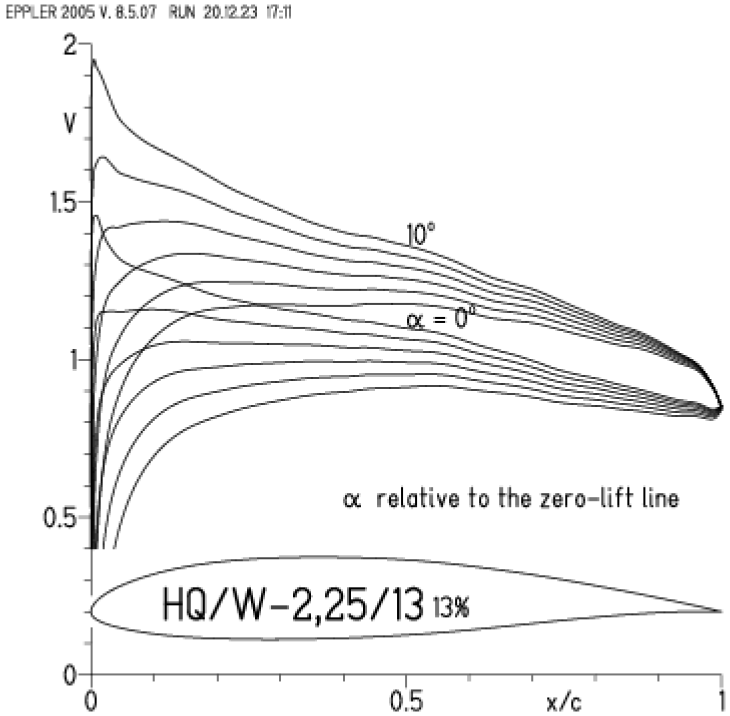
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

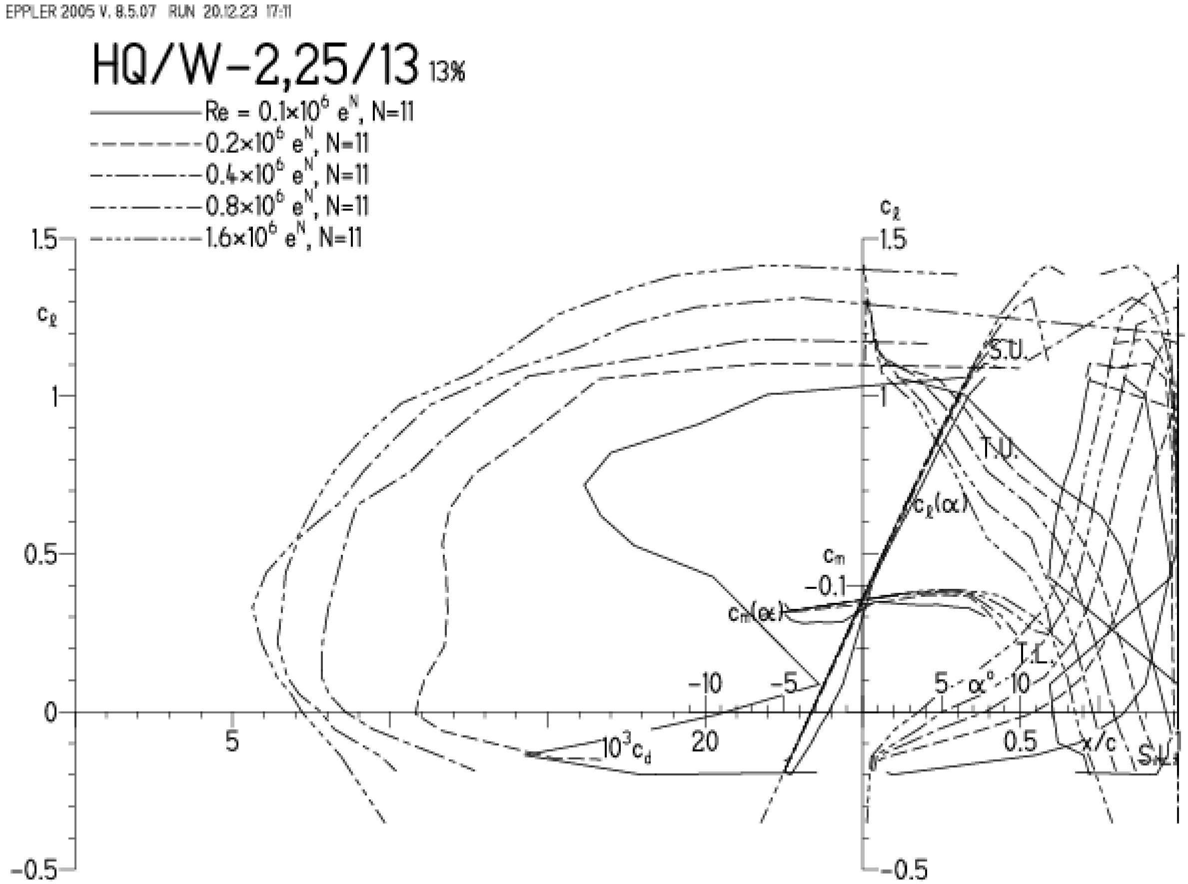


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

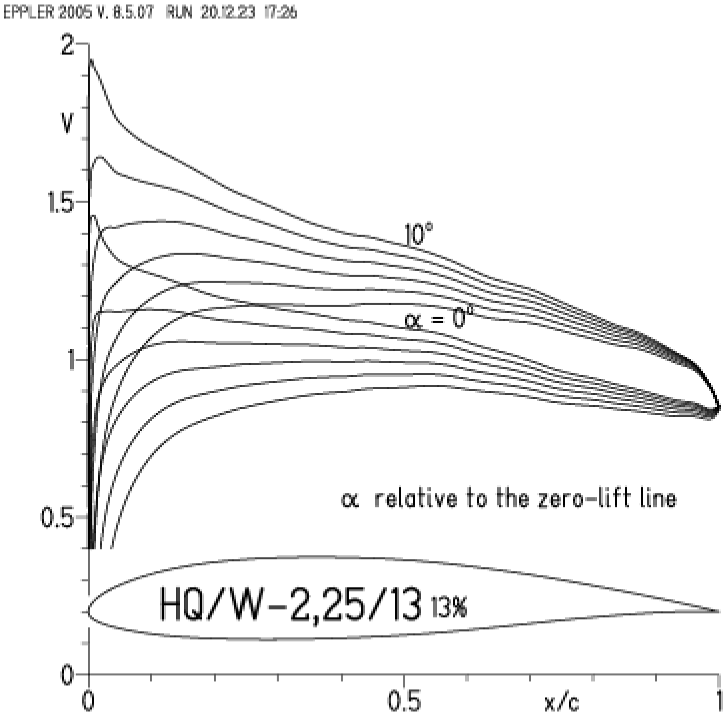


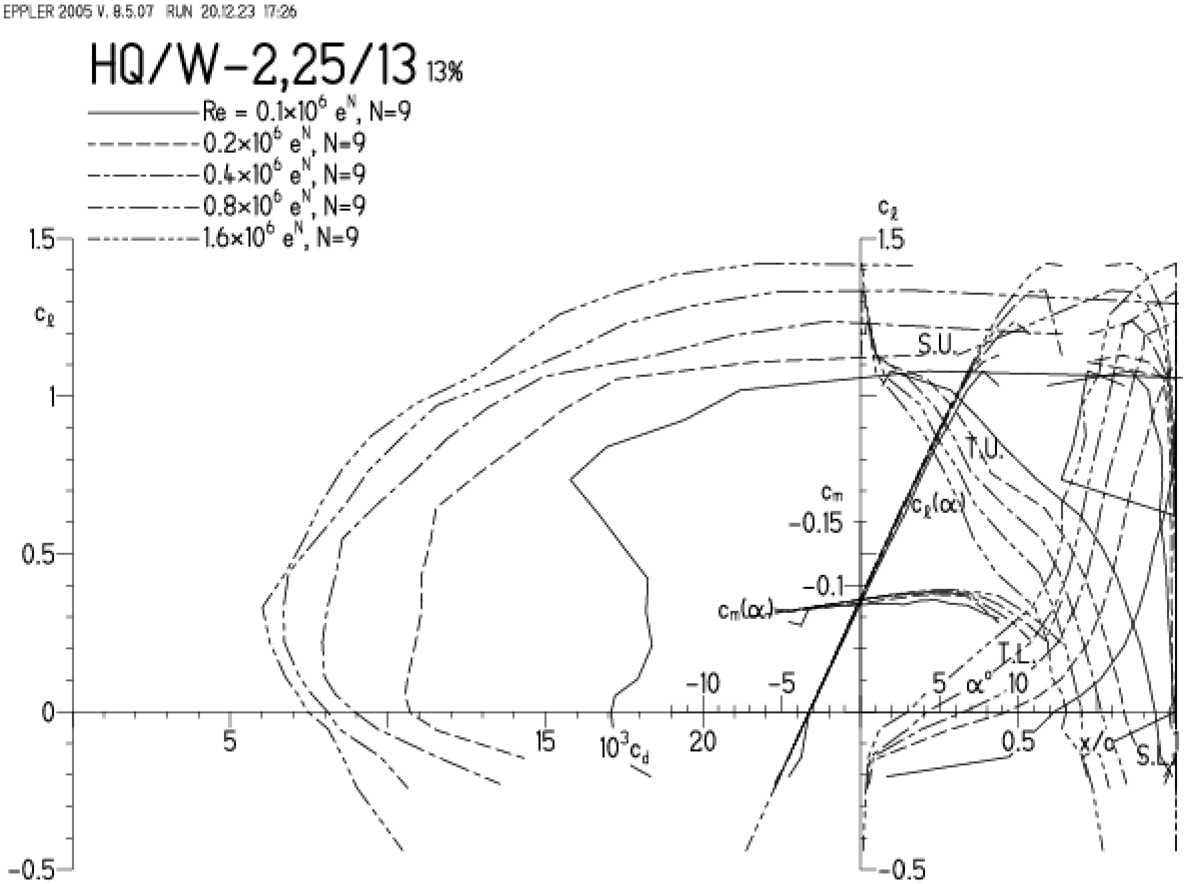
<u>HQ/W-2,25/13</u>, N=11



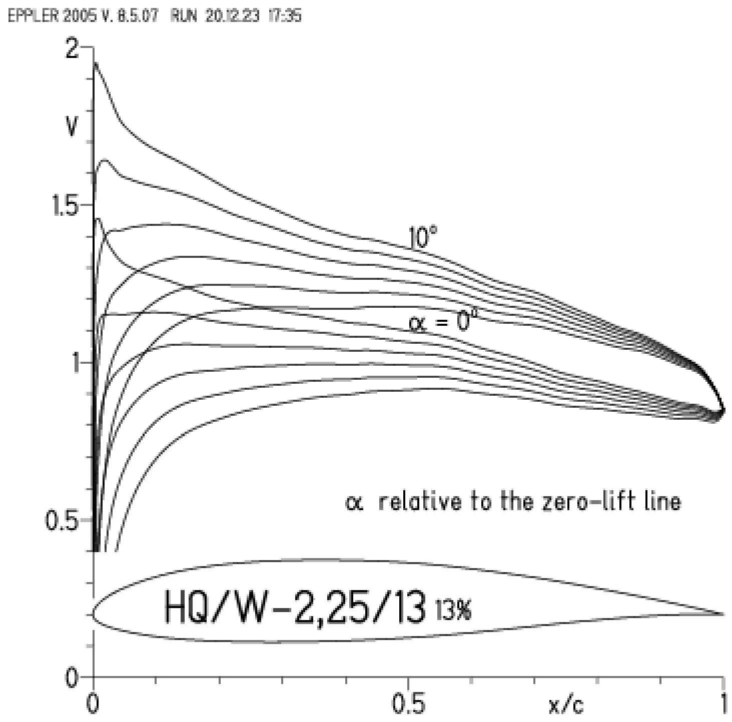


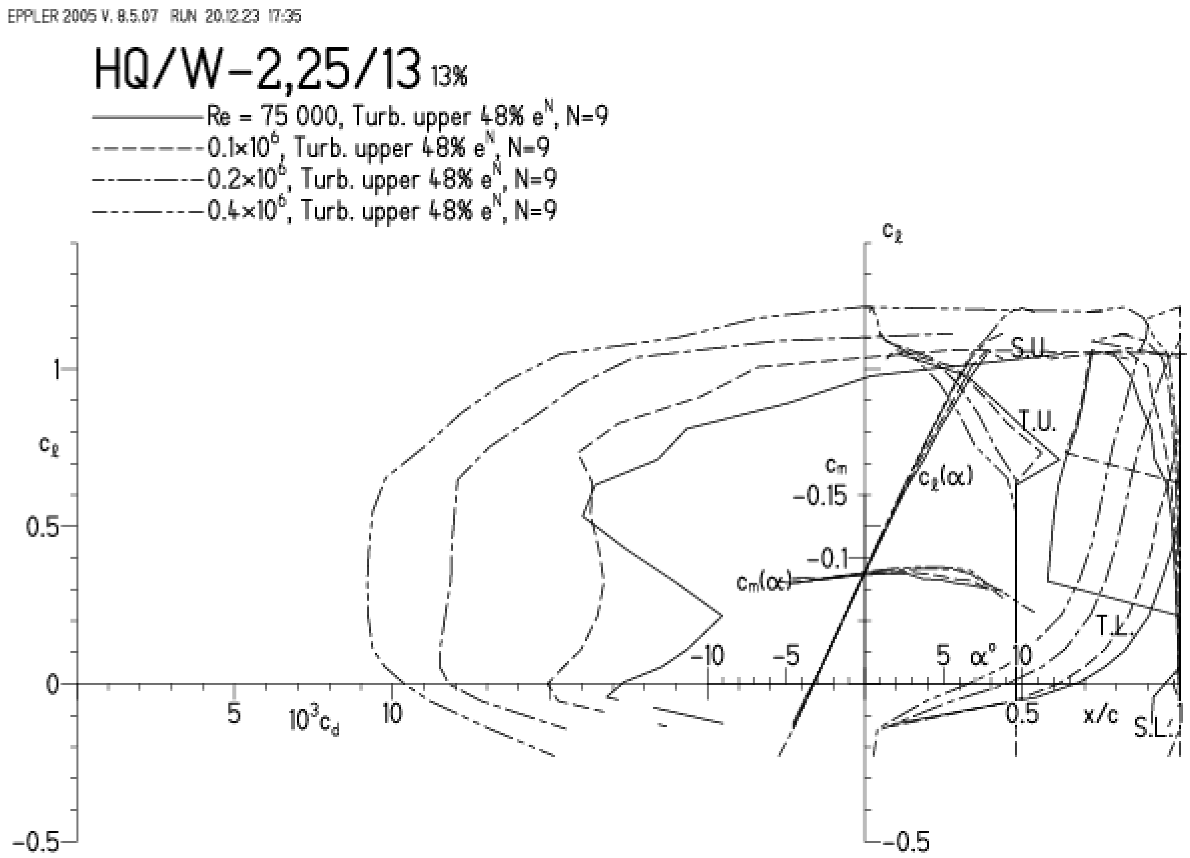
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c
0
0.5
1
1.5
2


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10⁶ e^N, N=9
0.2×10⁶ e^N, N=9
0.4×10⁶ e^N, N=9
0.8×10⁶ e^N, N=9
1.6×10⁶ e^N, N=9
c_ℓ
1.5
1
0.5
0
−0.5
5
15
10³c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
S.U.
T.U.
T.L.
S.L.
−10
−5
5
α°
10
0.5
x/c

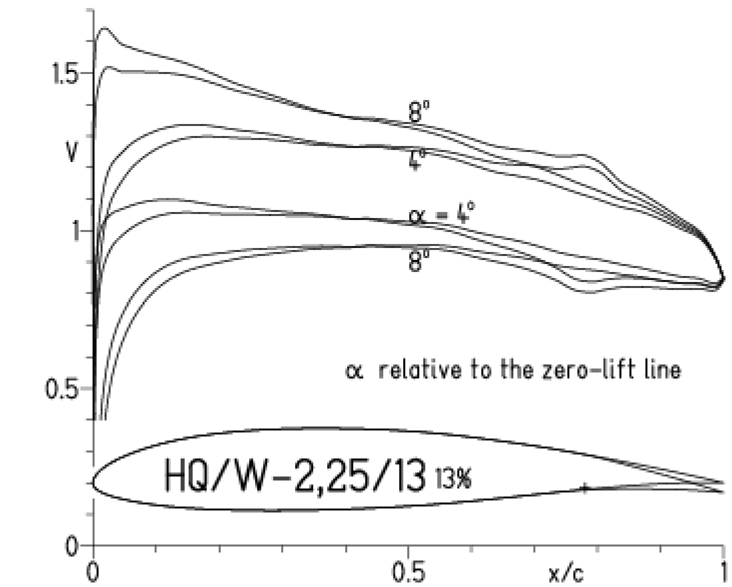
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



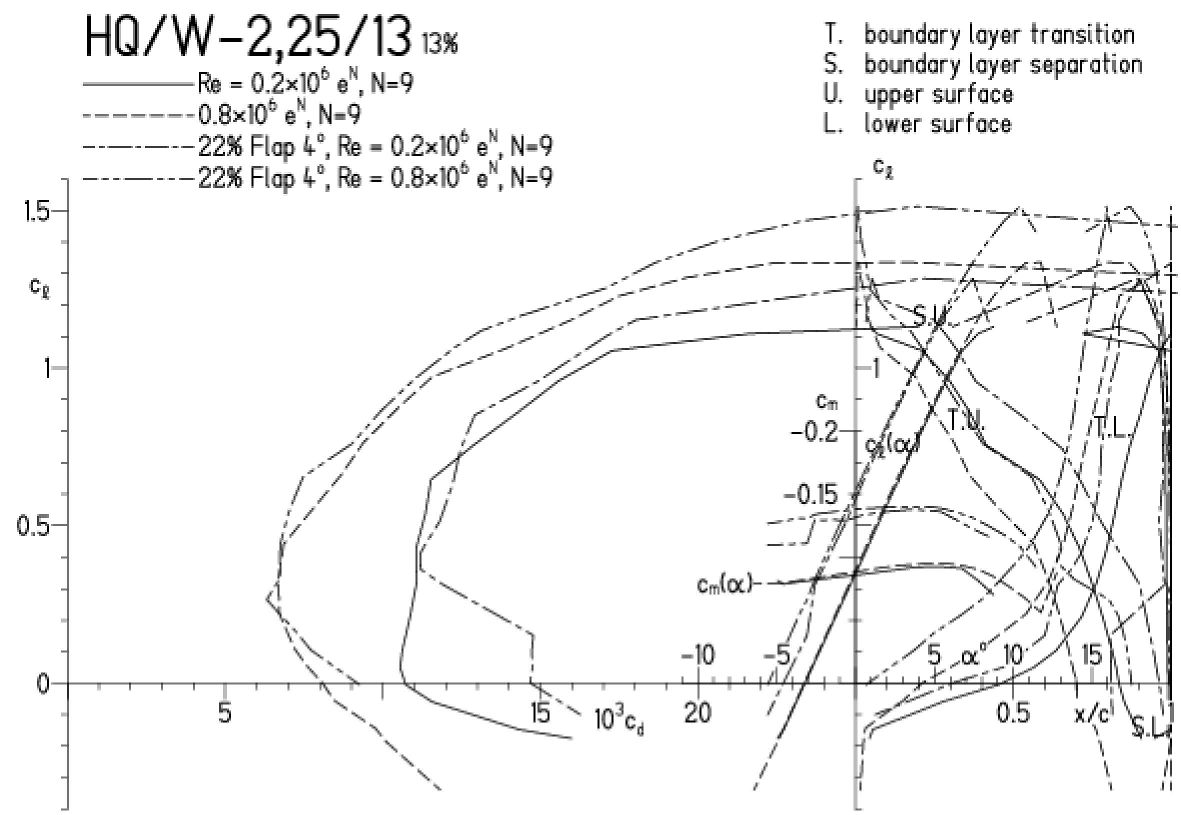


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

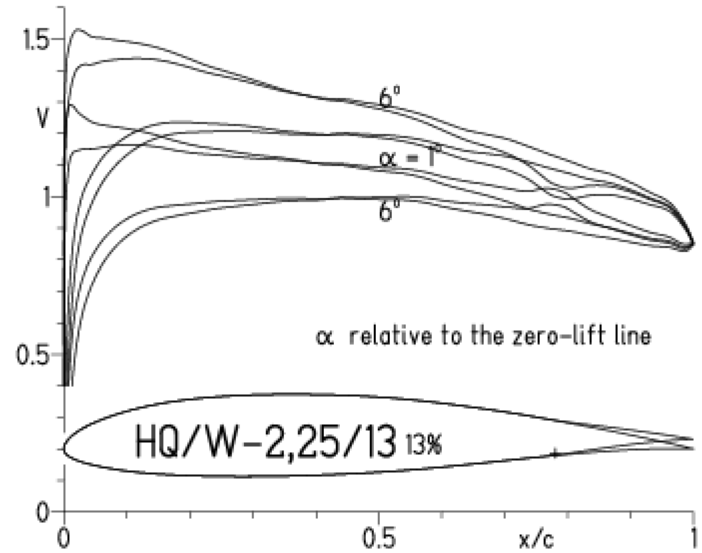


EPPLER 2005 V.

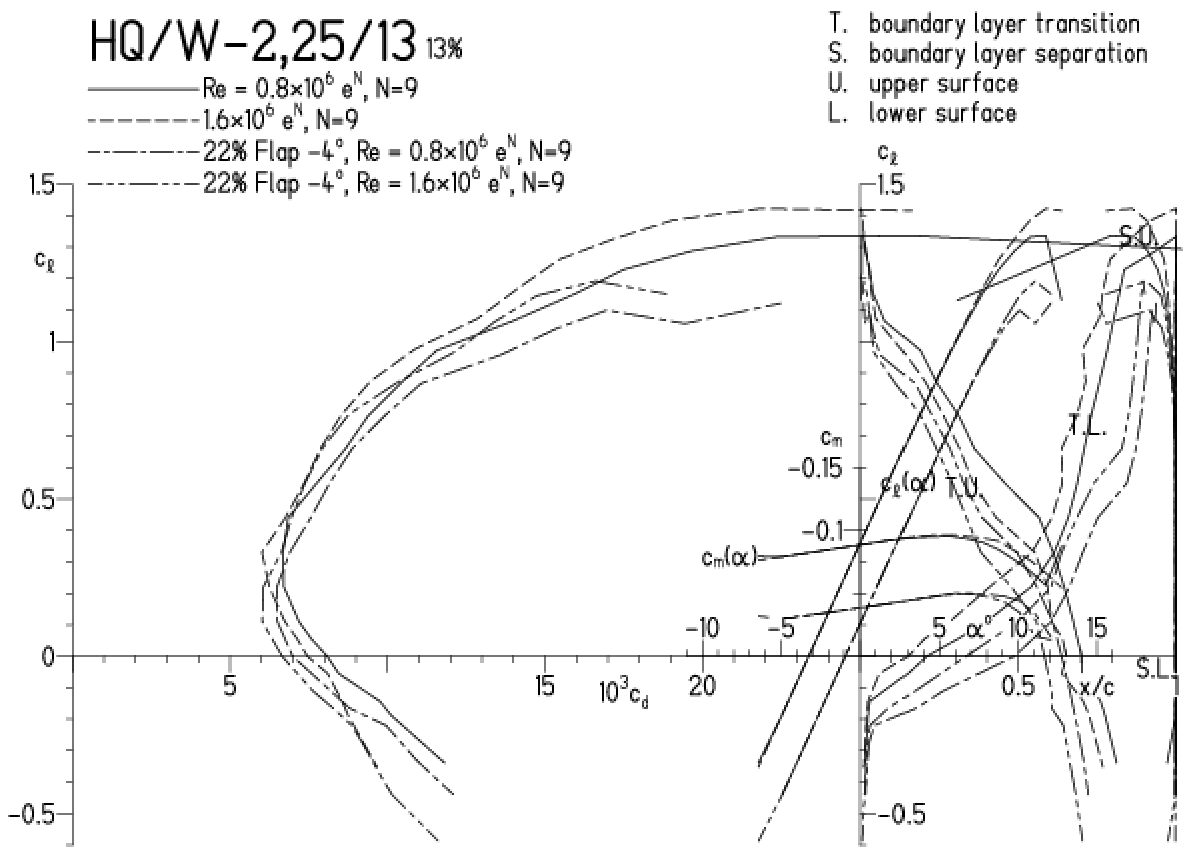


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

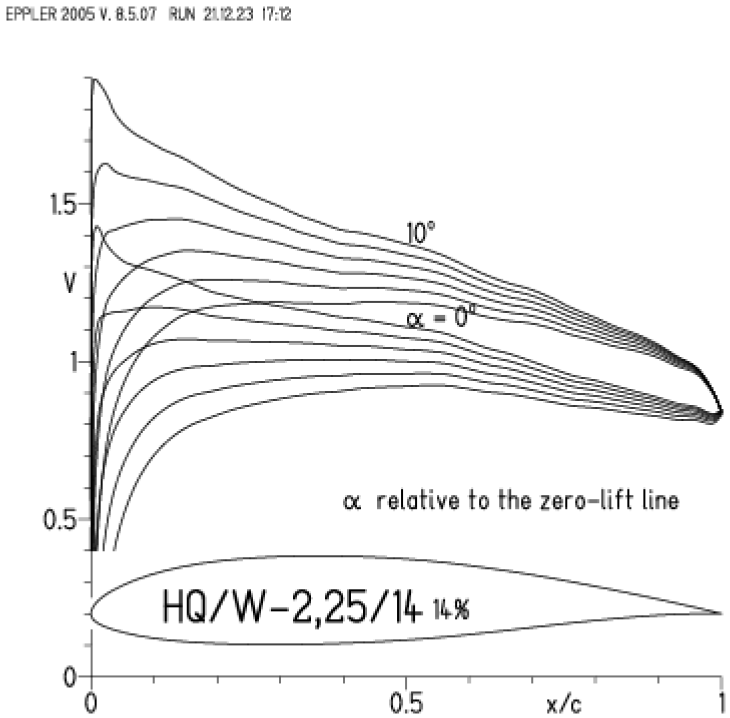
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

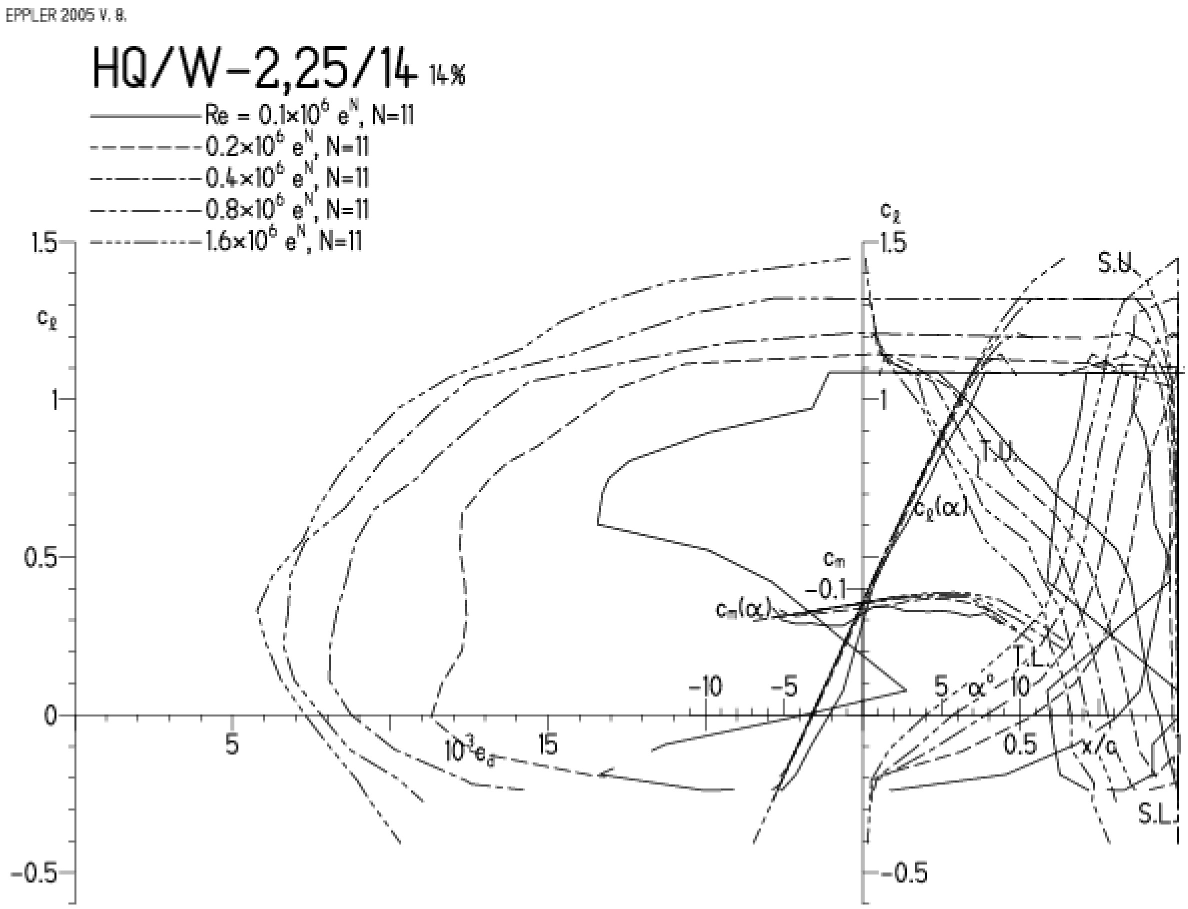


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

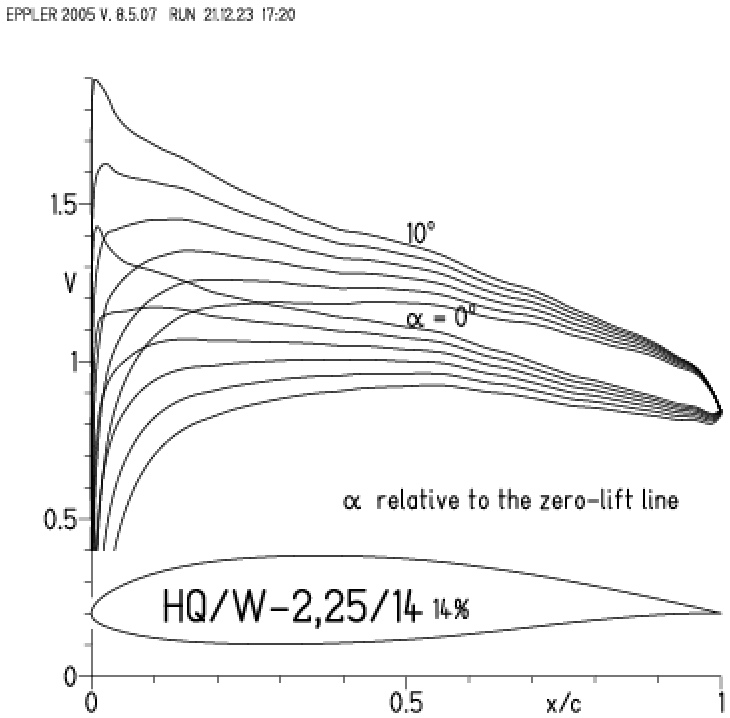


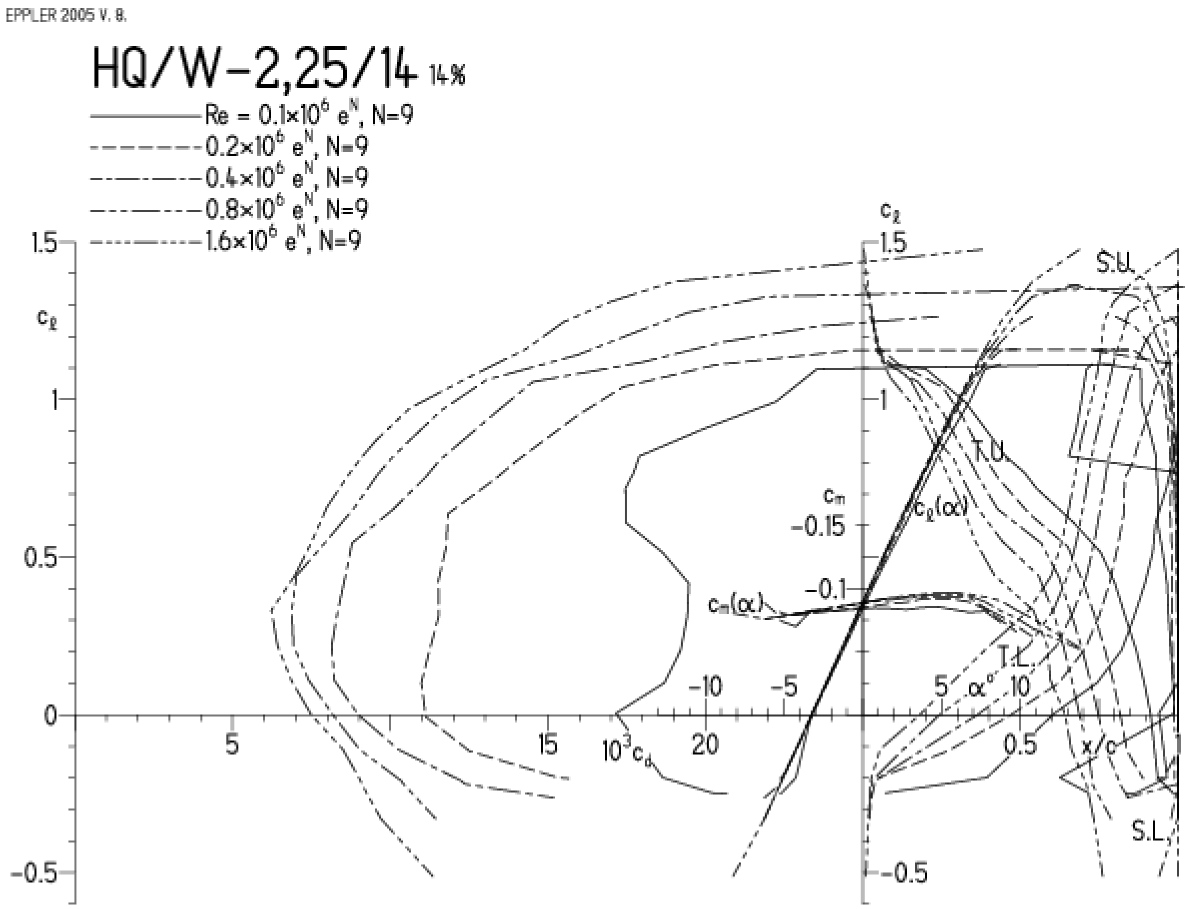
<u>HQ/W-2,25/14</u>, N=11





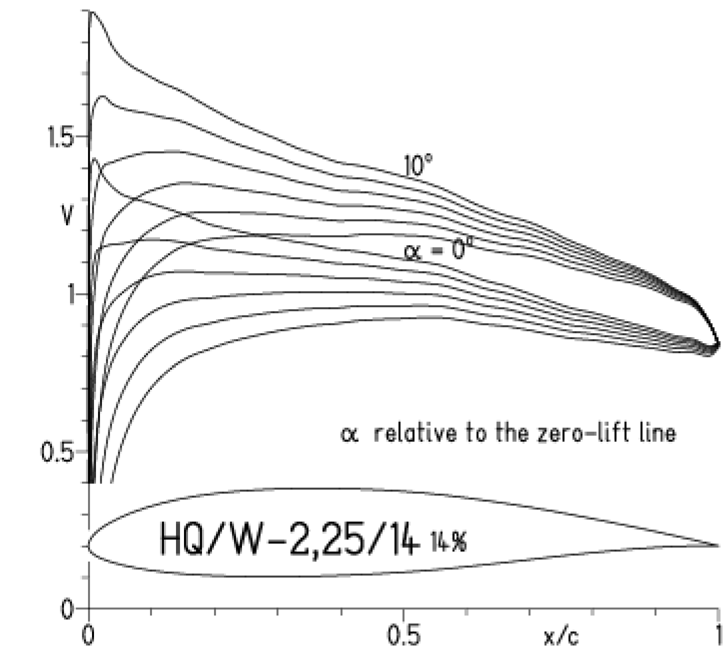
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c

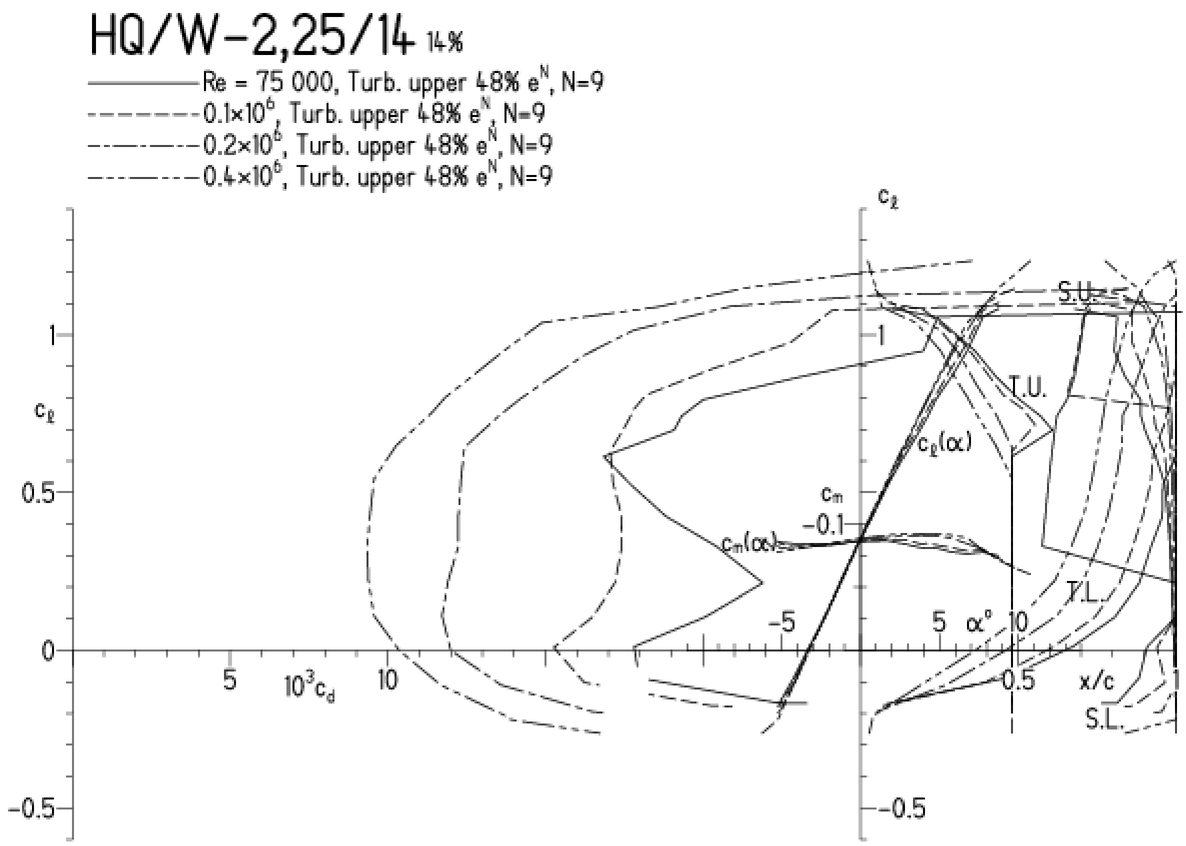

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
α°
x/c
S.L.
10³cd

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

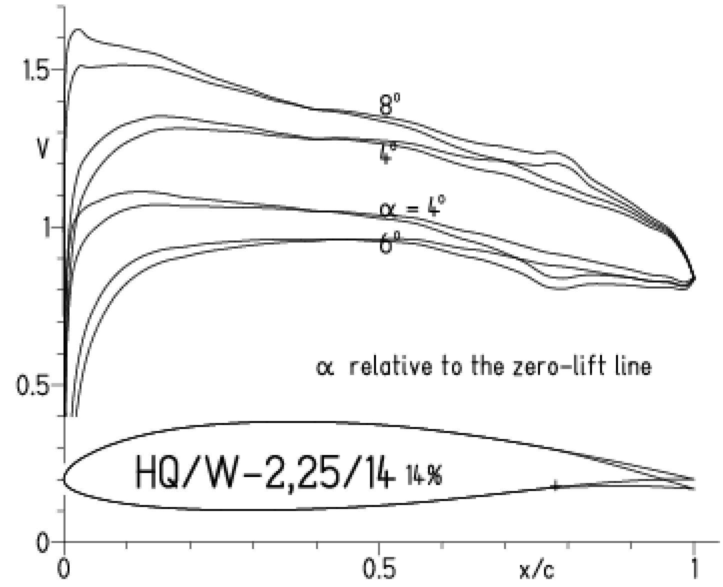


EPPLER 2005 V. 8.5.07 RU

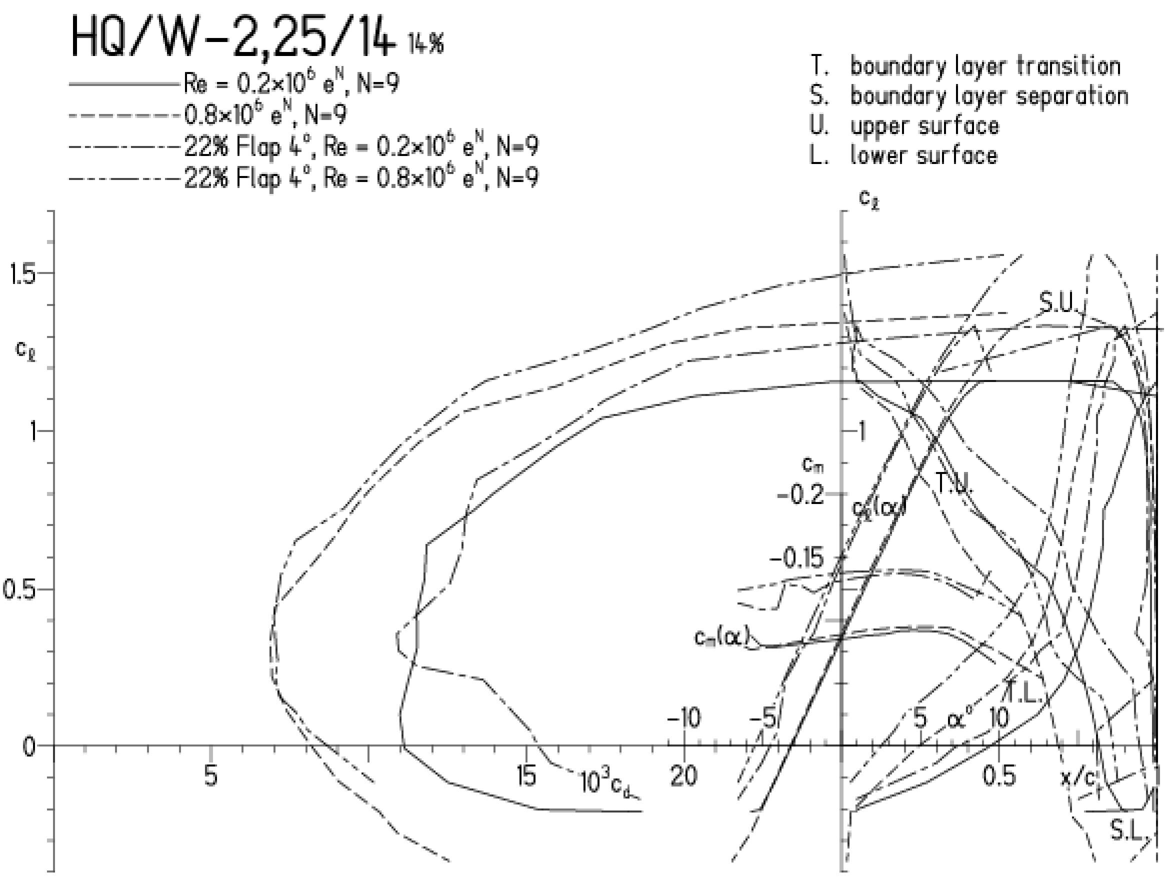


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

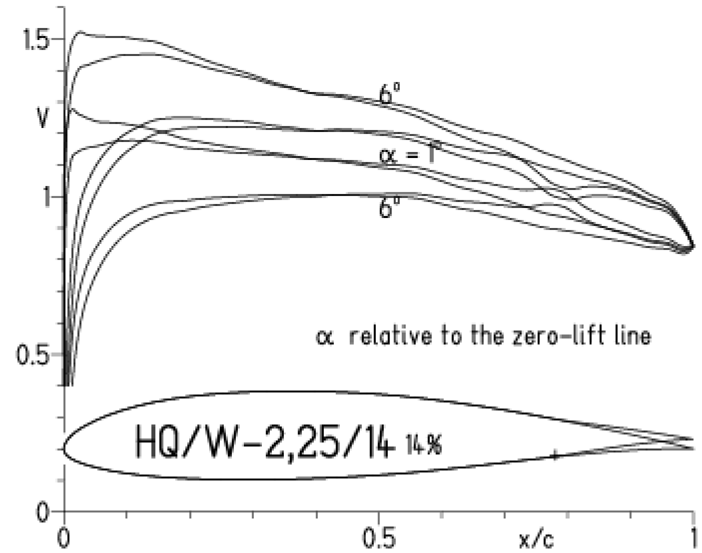


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

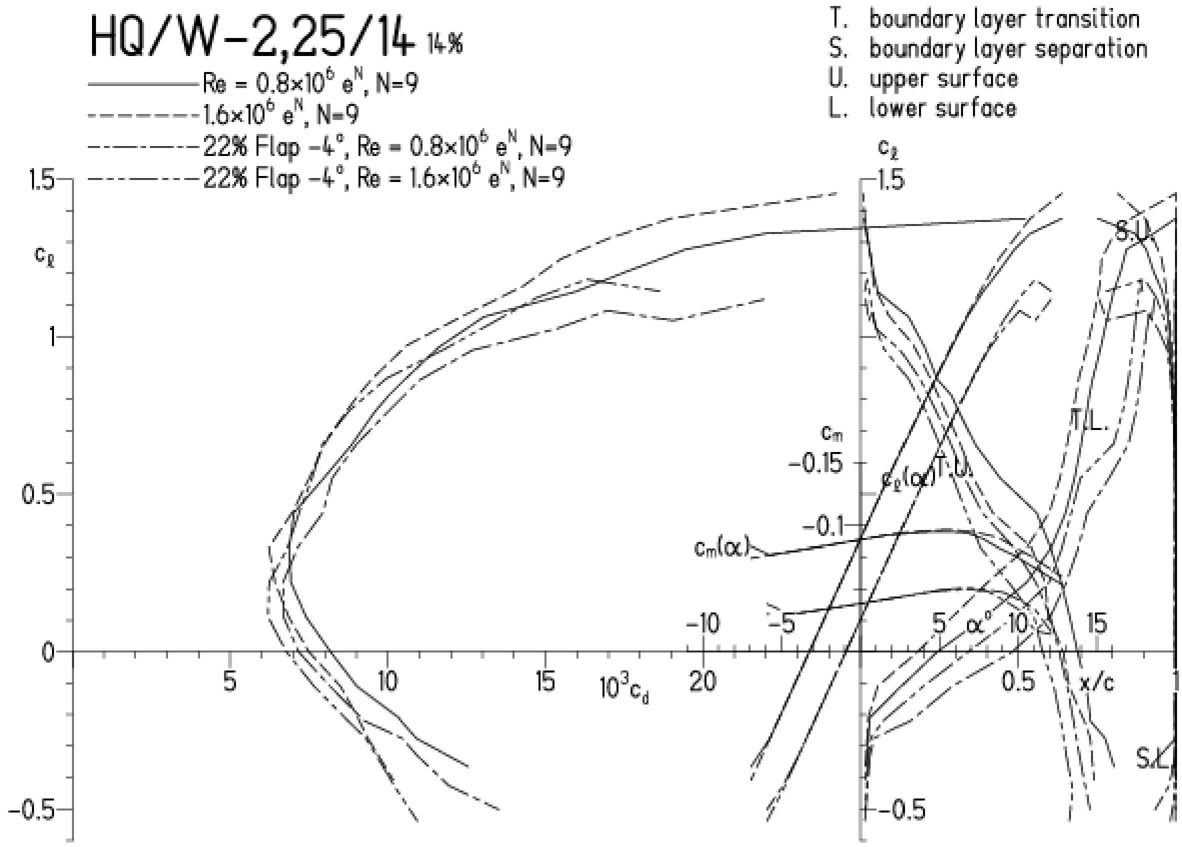


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

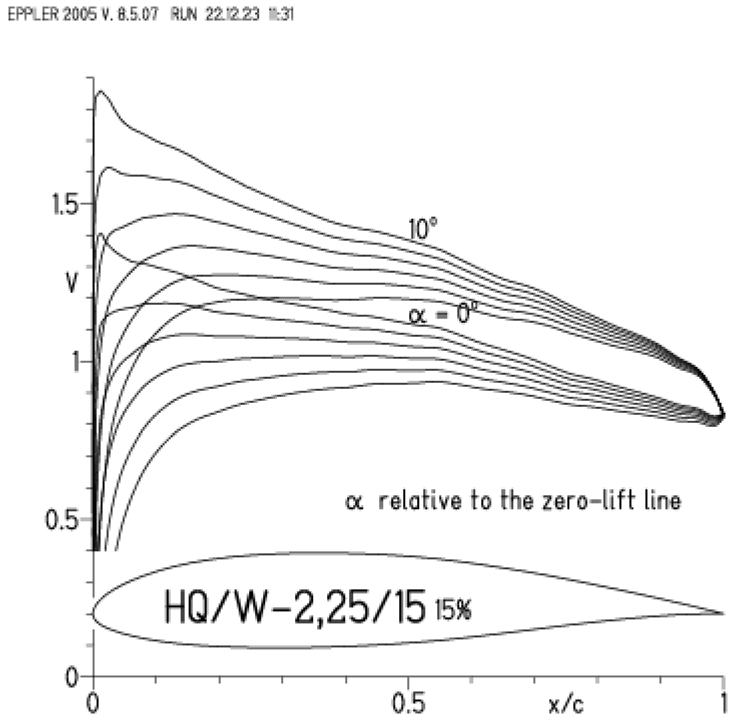
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

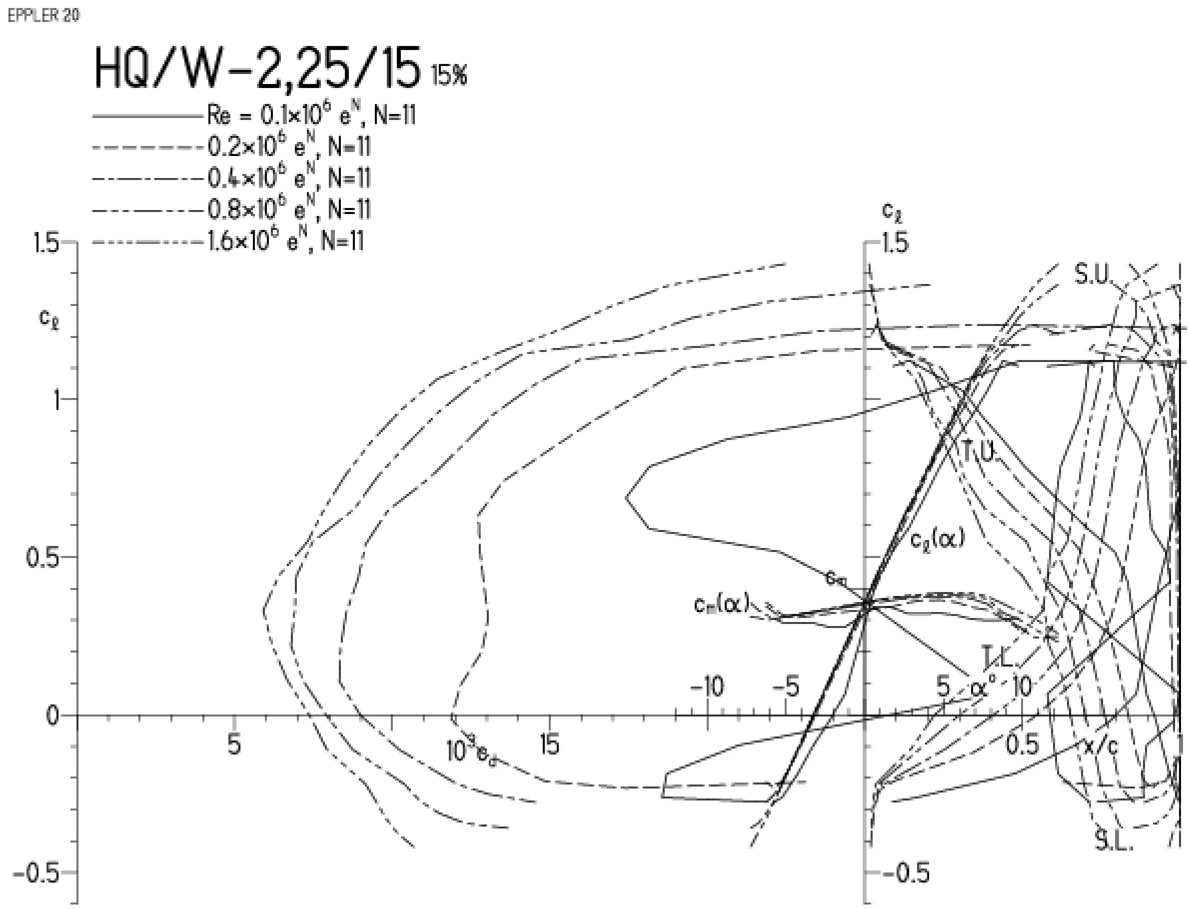


EPPLER 2005 V. 8.5.07

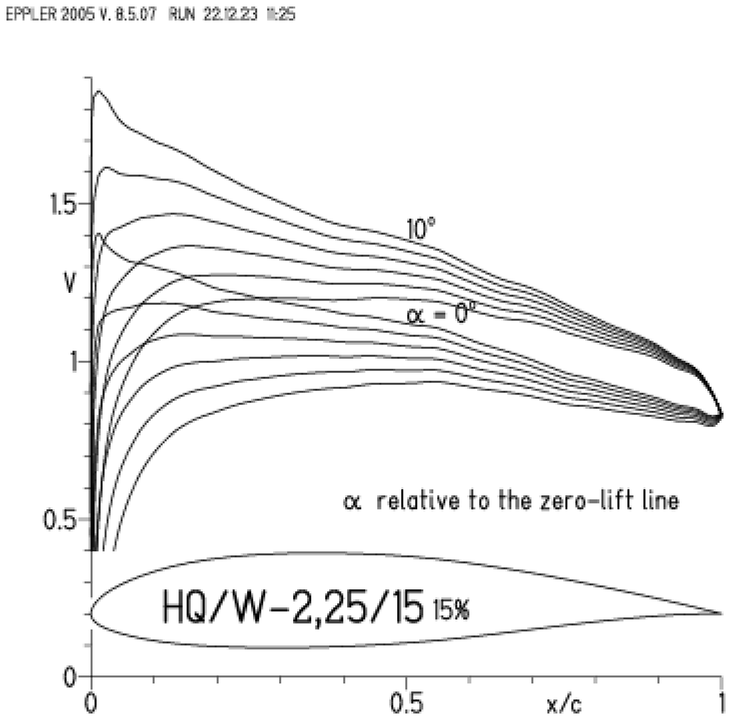


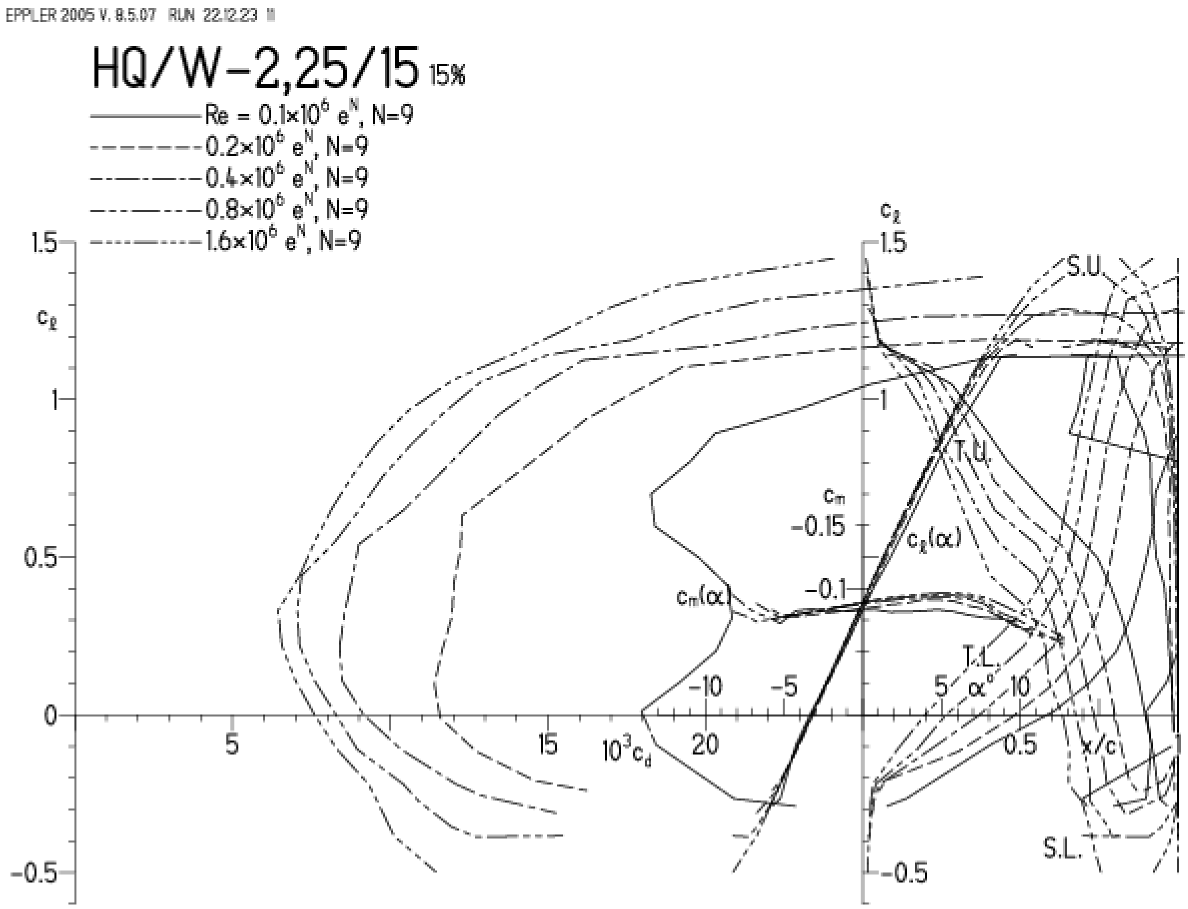
HQ/W-2,25/15, N=11



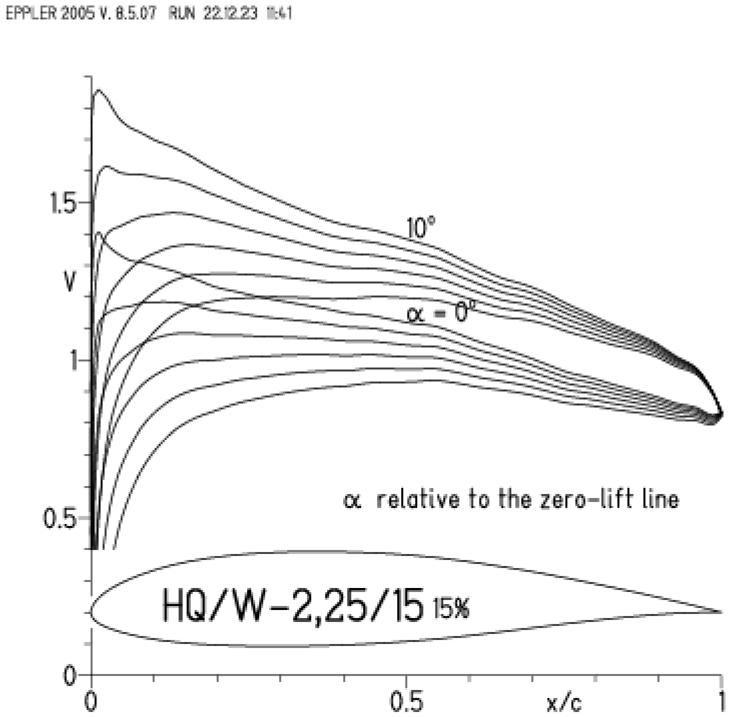


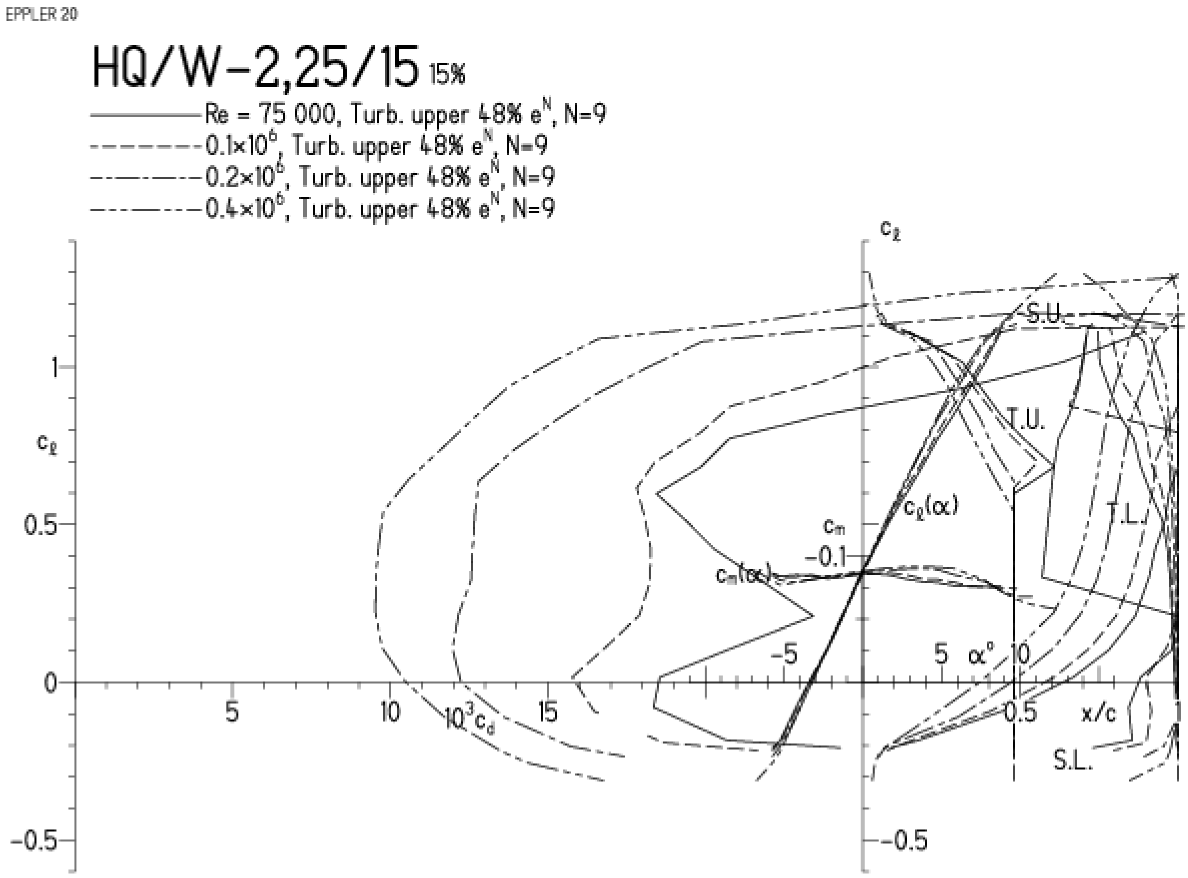
<u>HQ/W-2,25/15</u>, N=9





HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



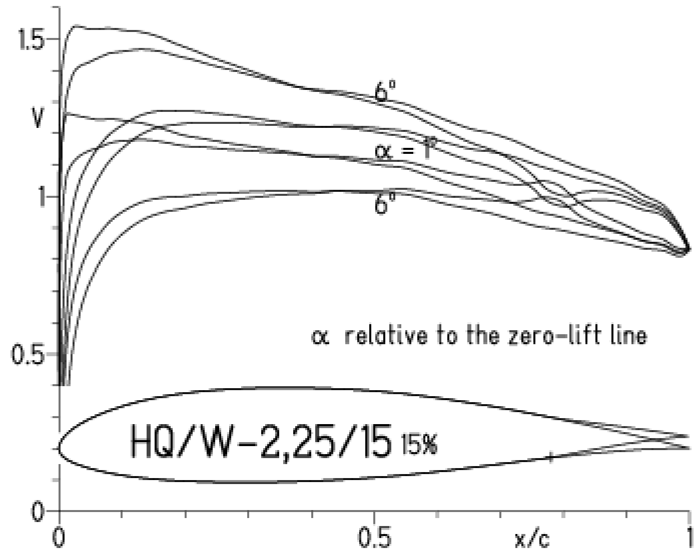


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

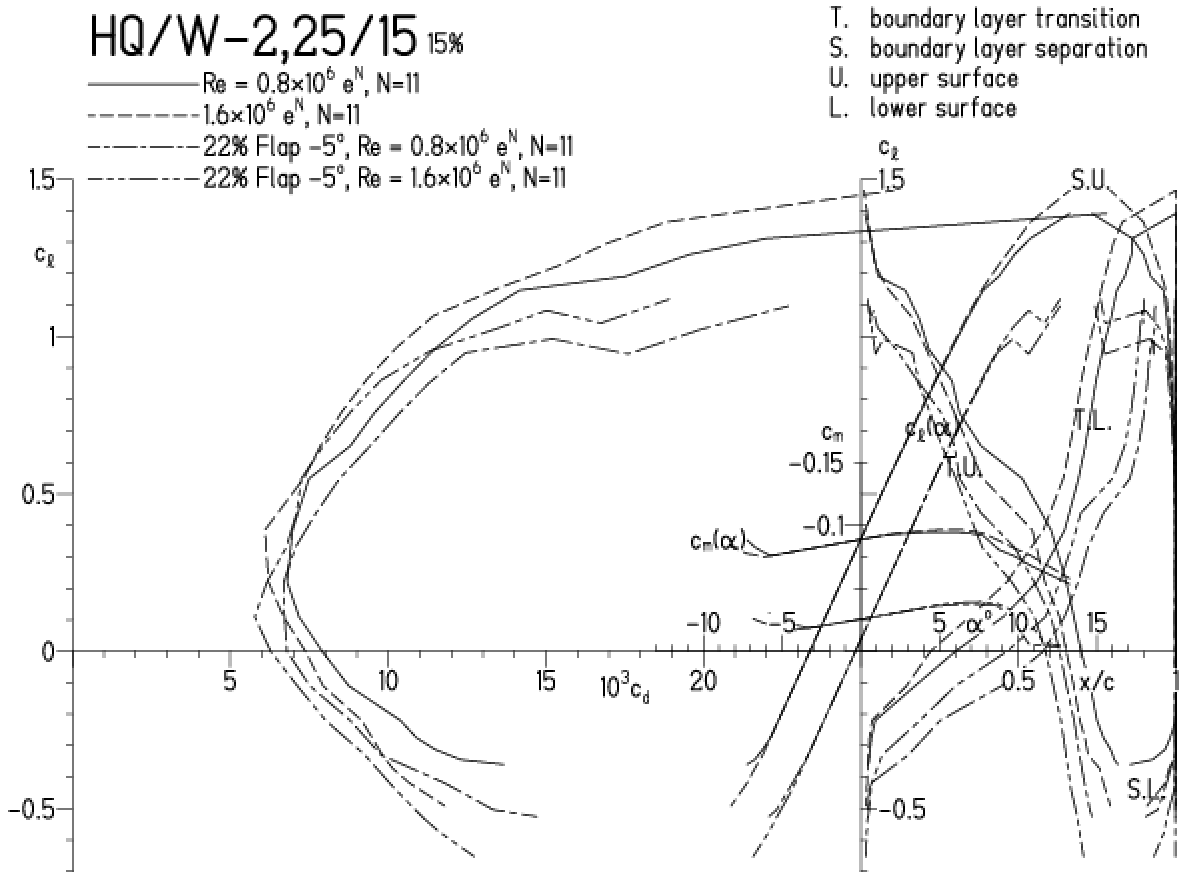
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

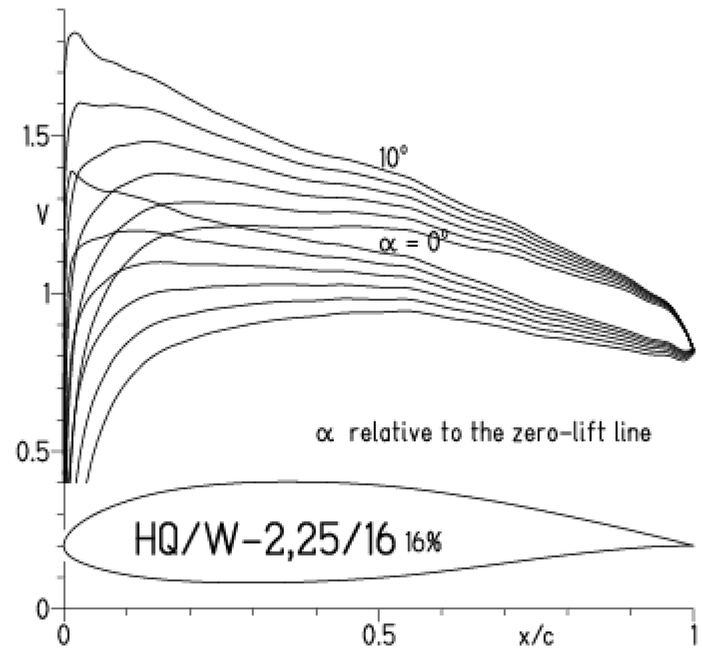


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

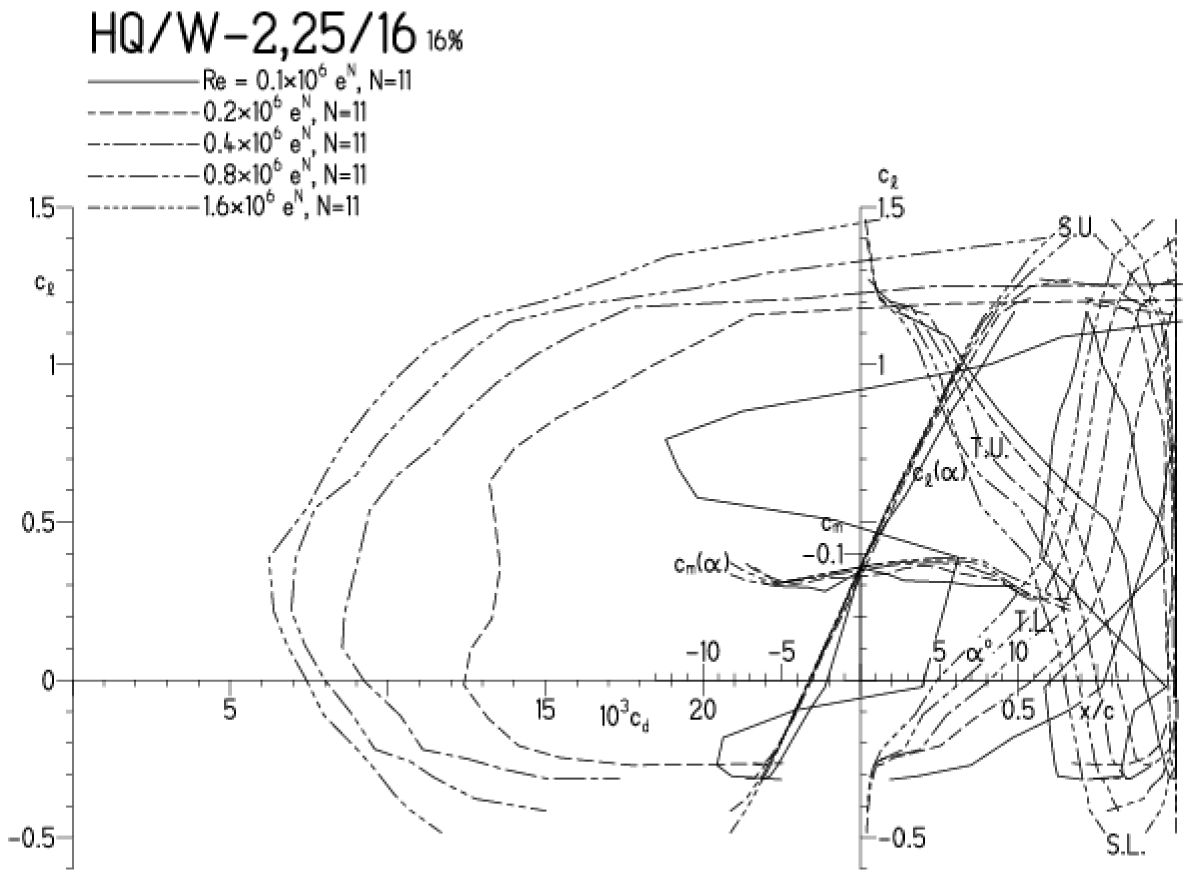


HQ/W-2,25/16, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

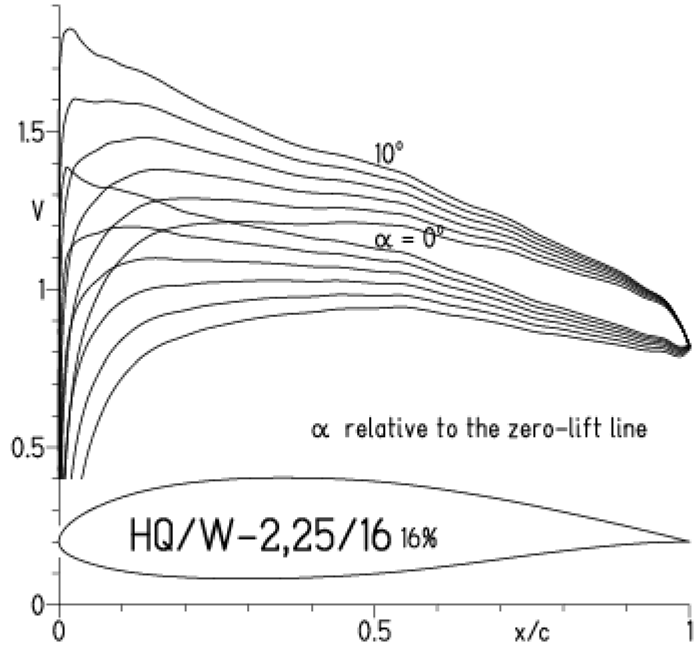


EPPLER 200

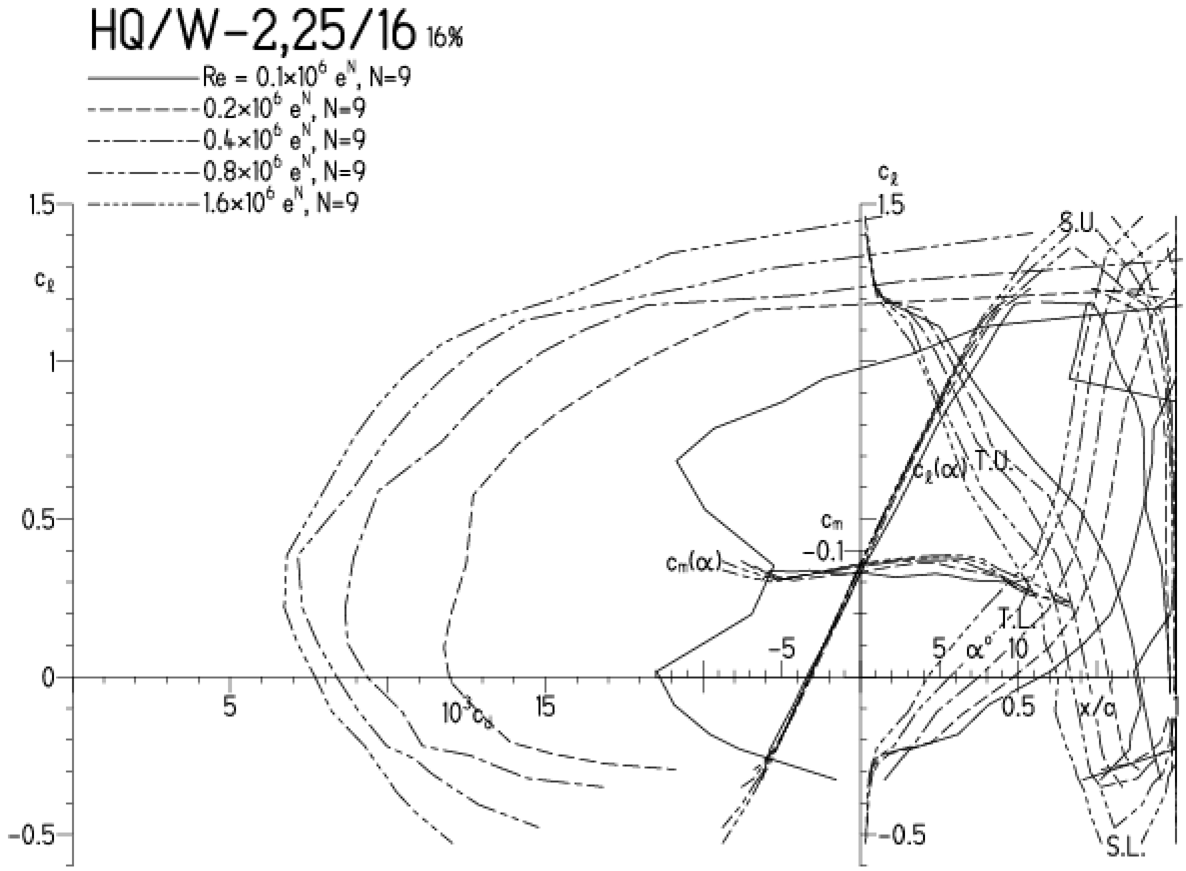


HQ/W-2,25/16, N=9

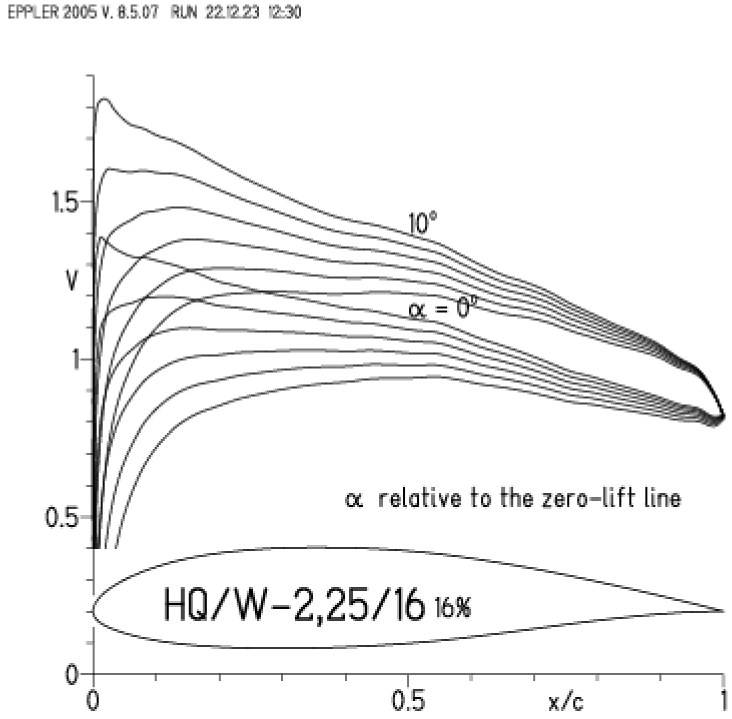
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

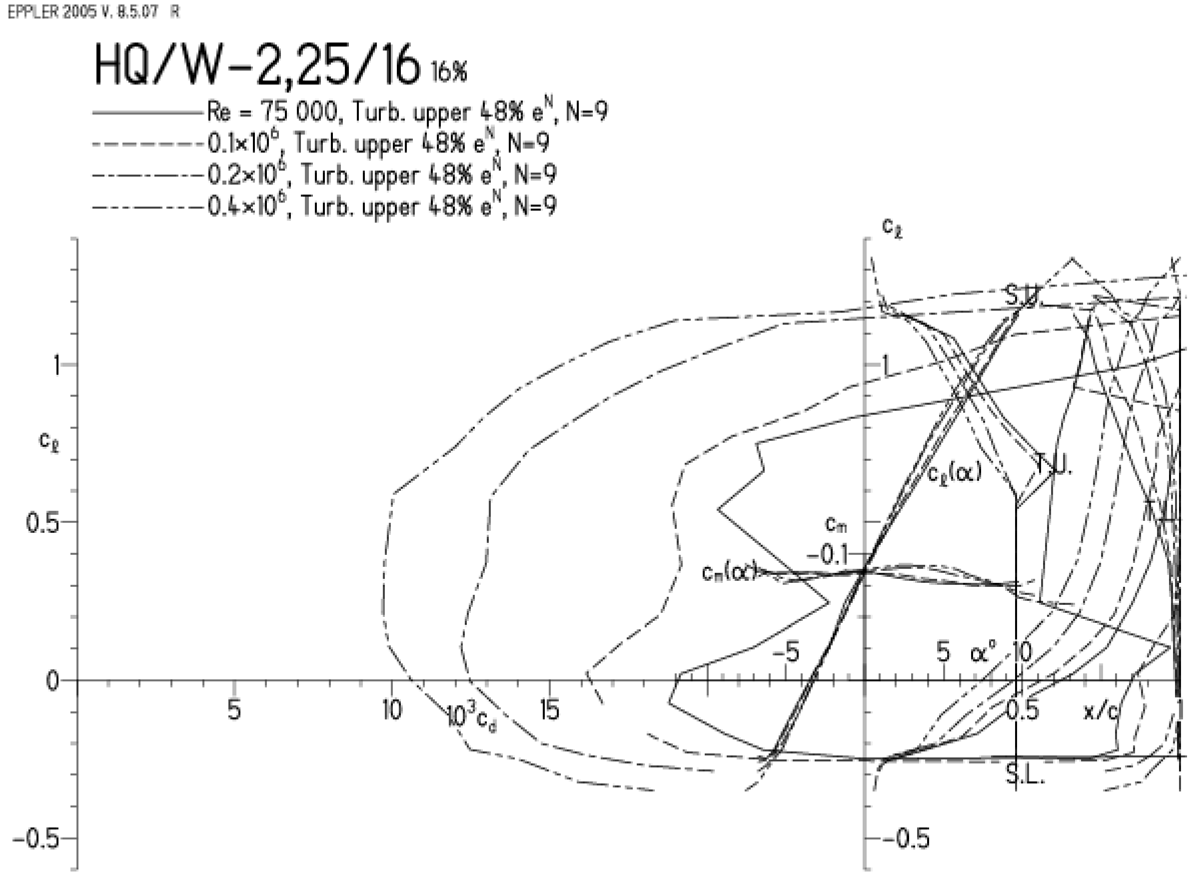


EPPLER 200



<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



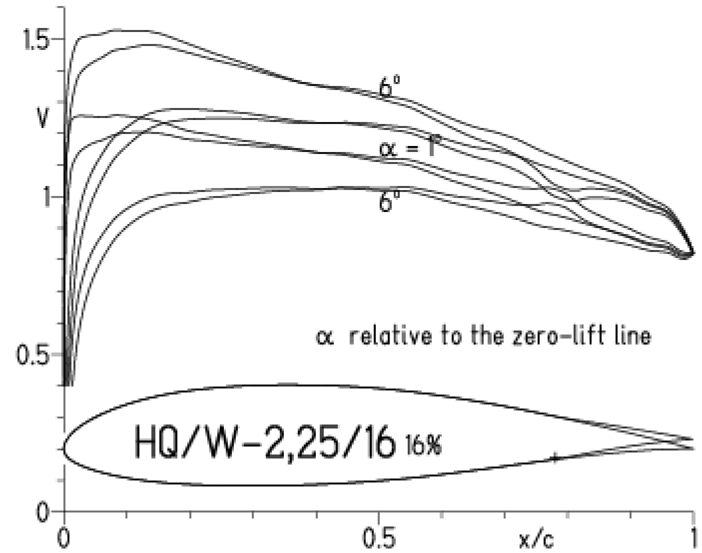


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

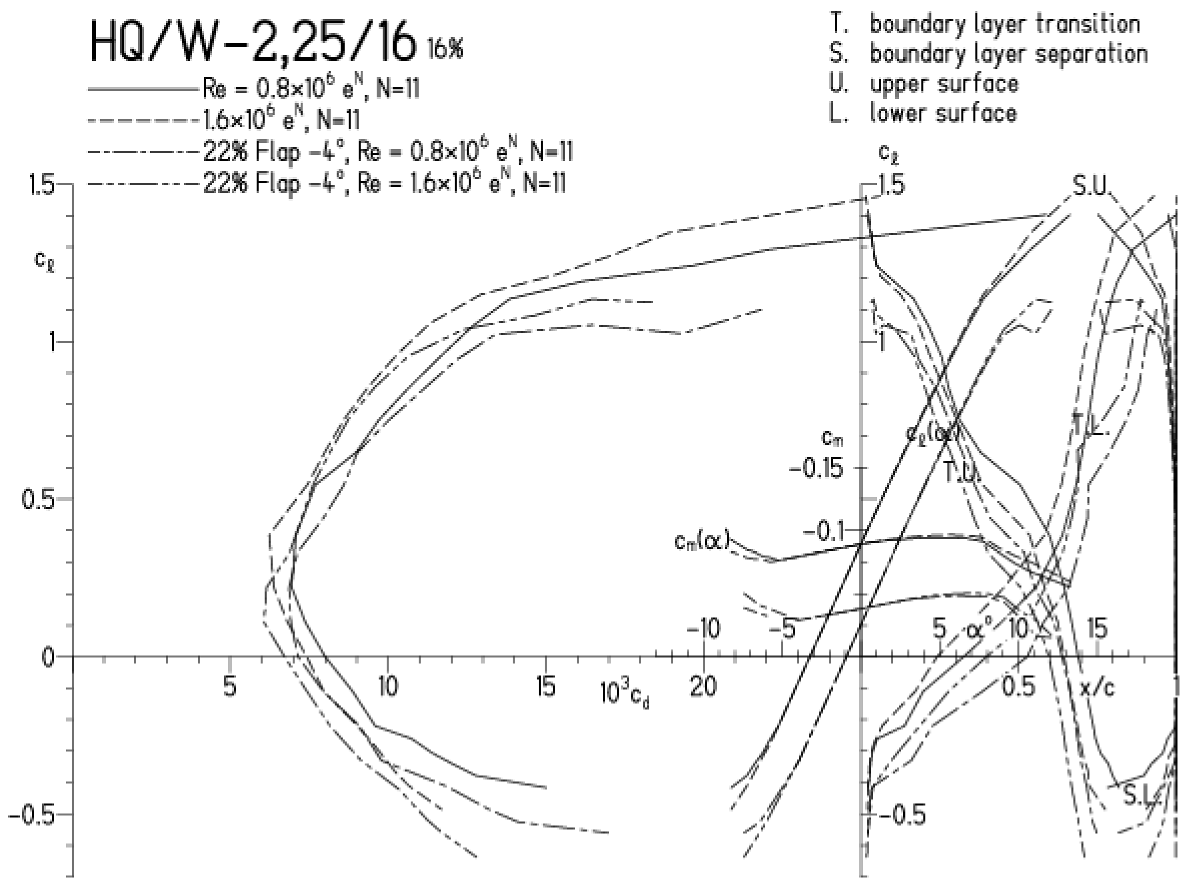
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

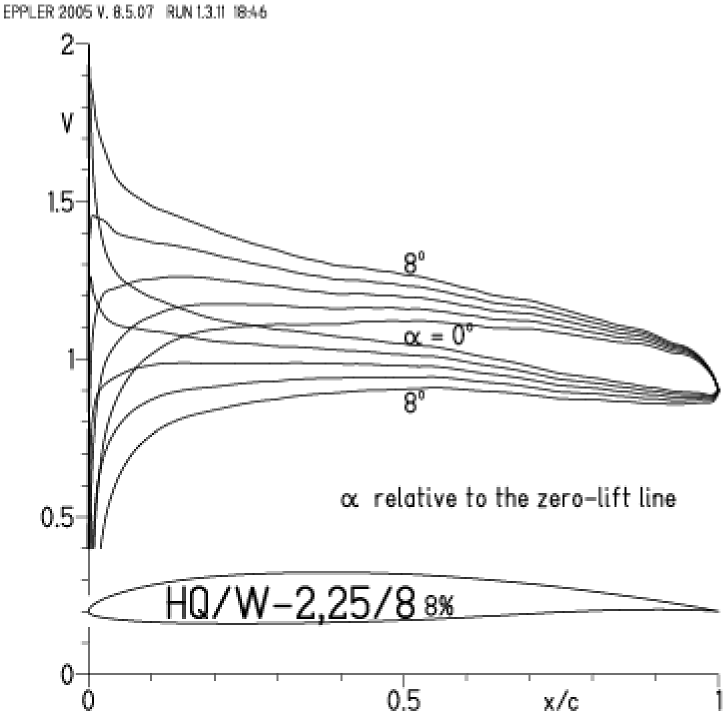
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

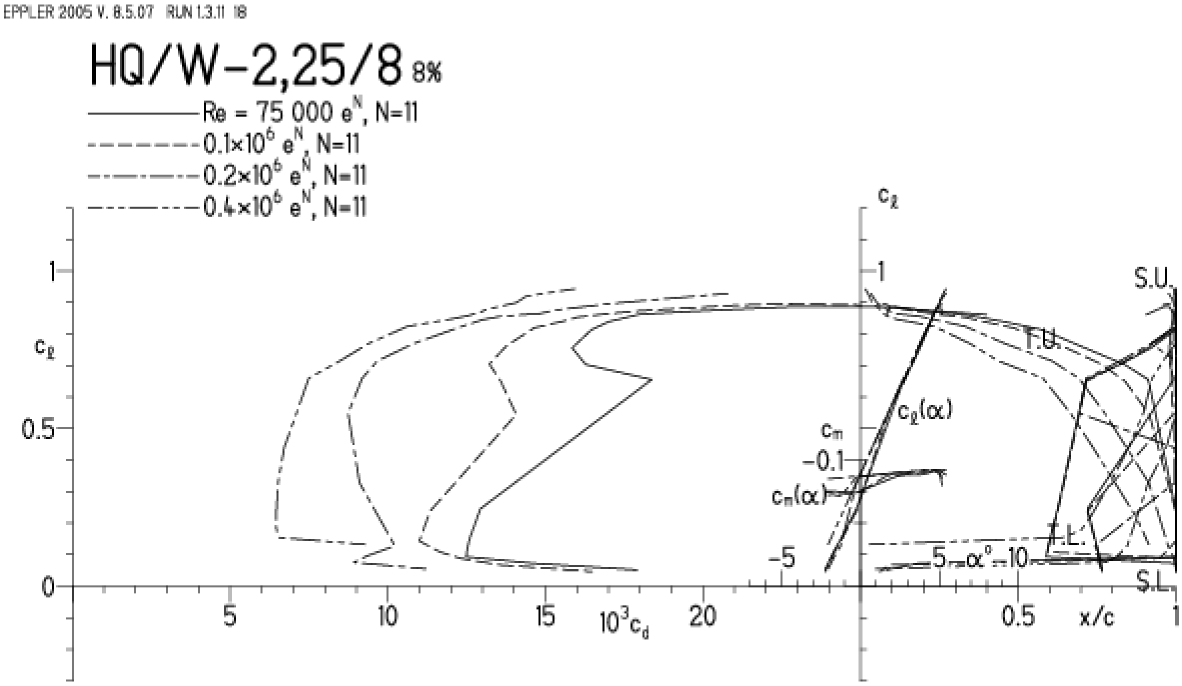


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

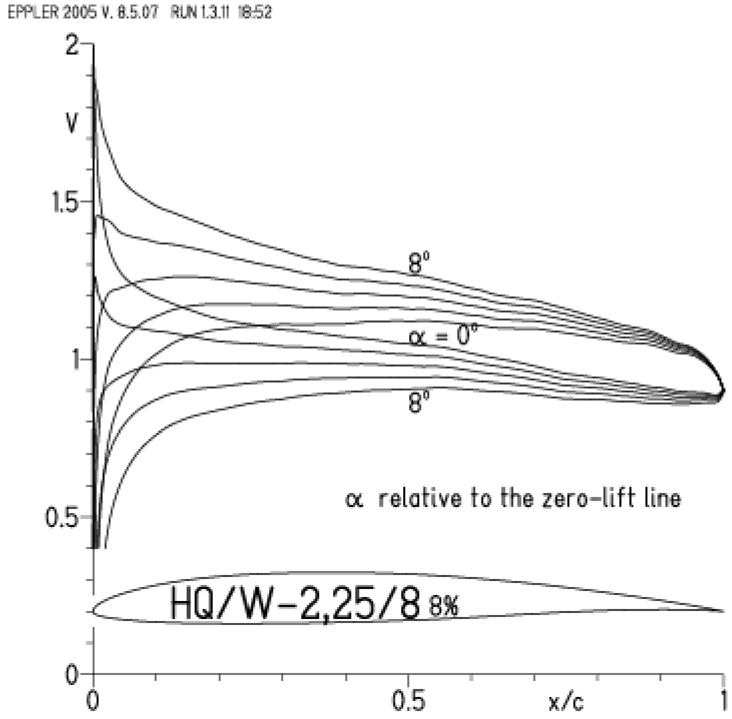


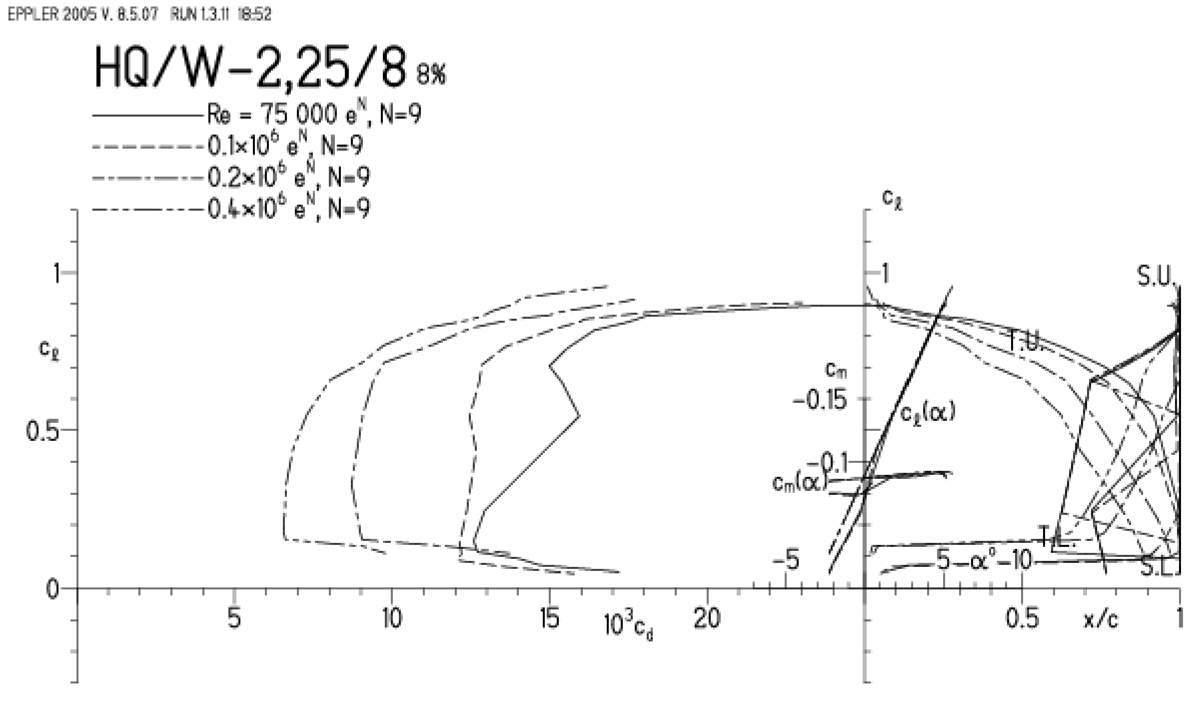
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

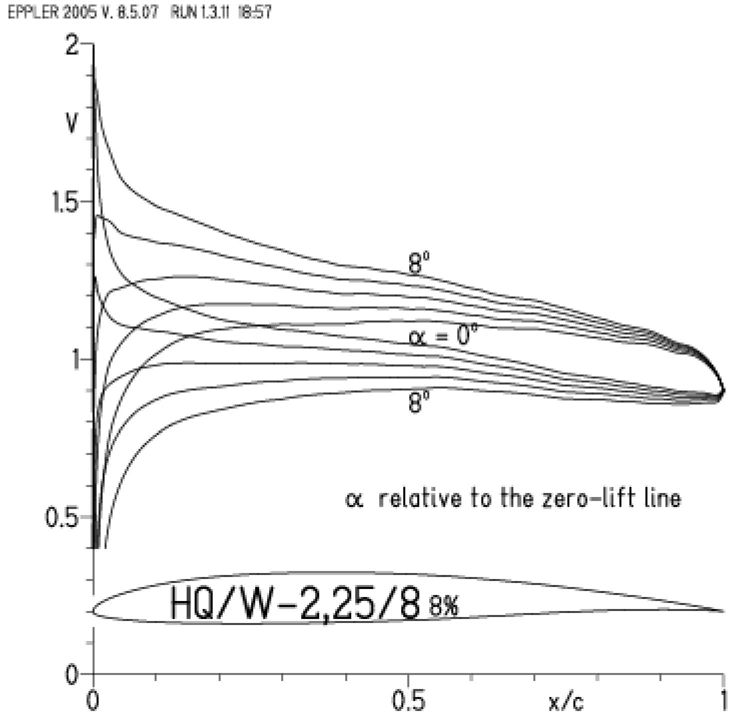

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
10^3 c_d
x/c

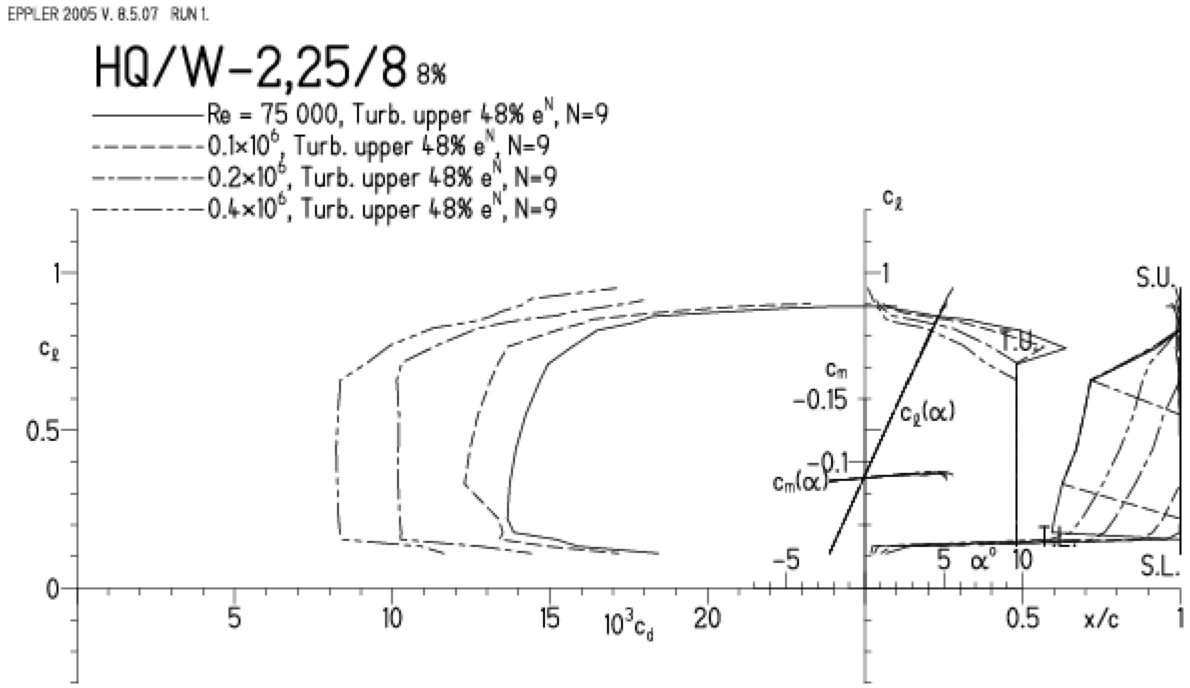
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

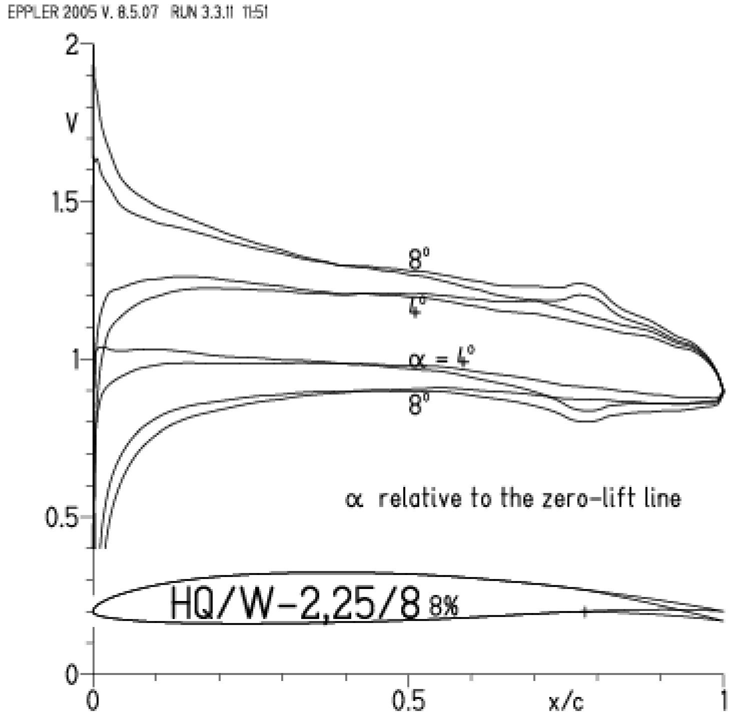

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5 -α°- 10
T.U.
S.U.
T.L.
S.L.
0.5
x/c
1

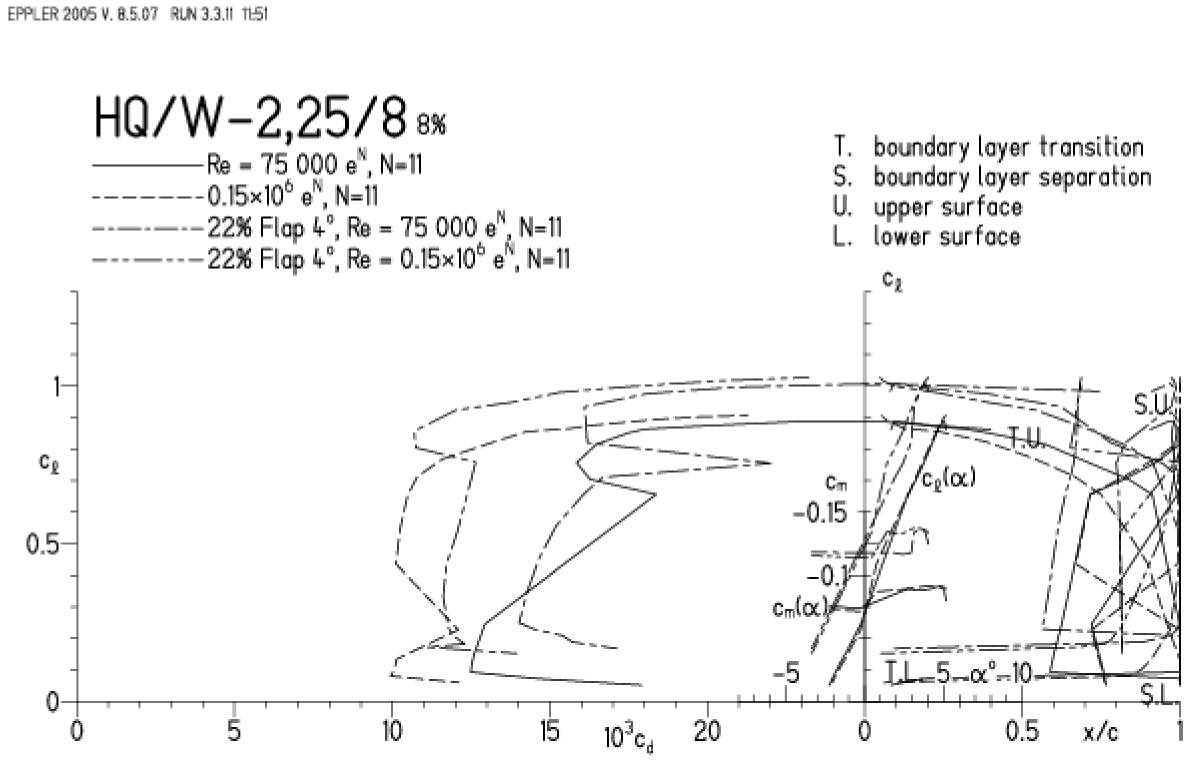
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



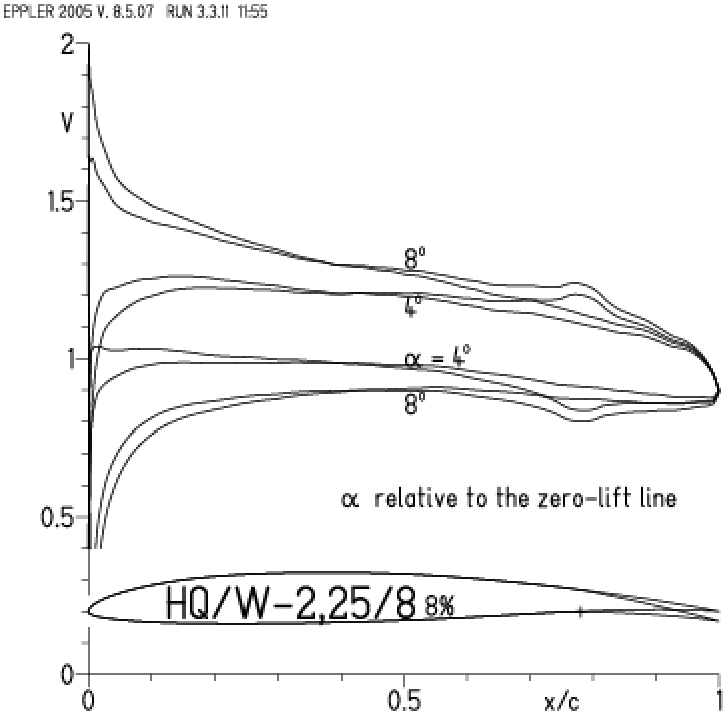


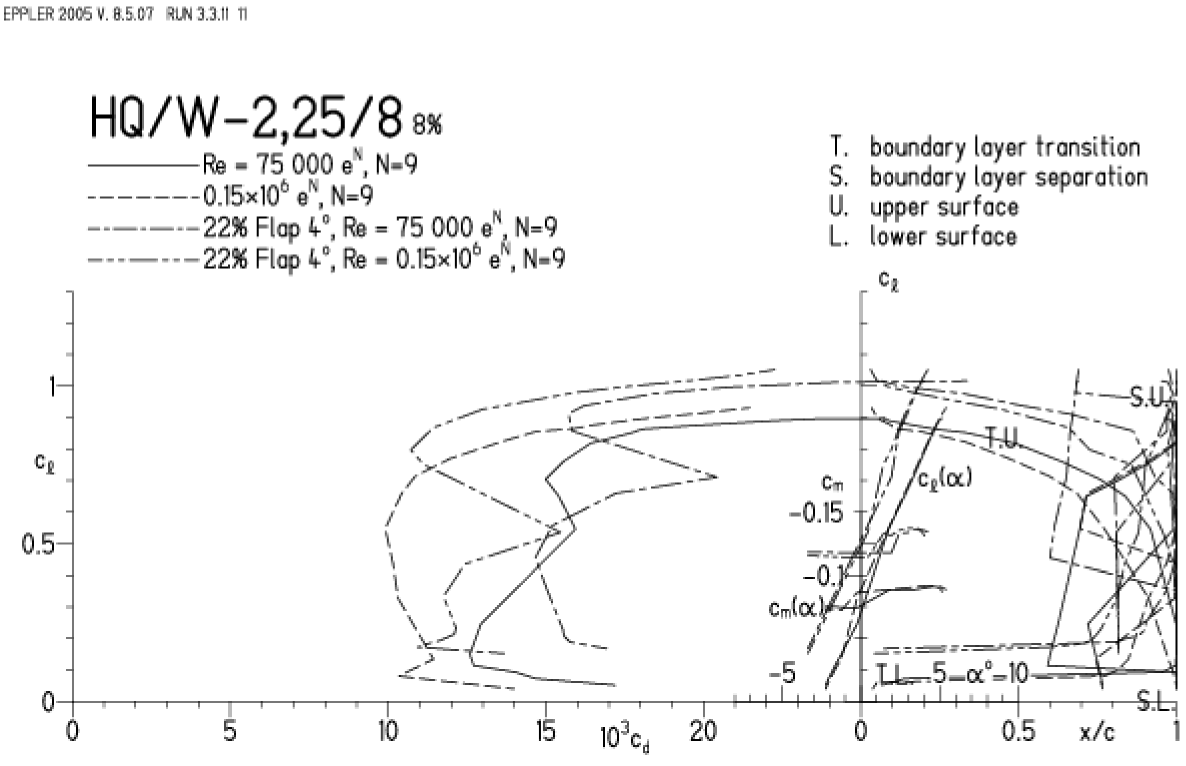
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag





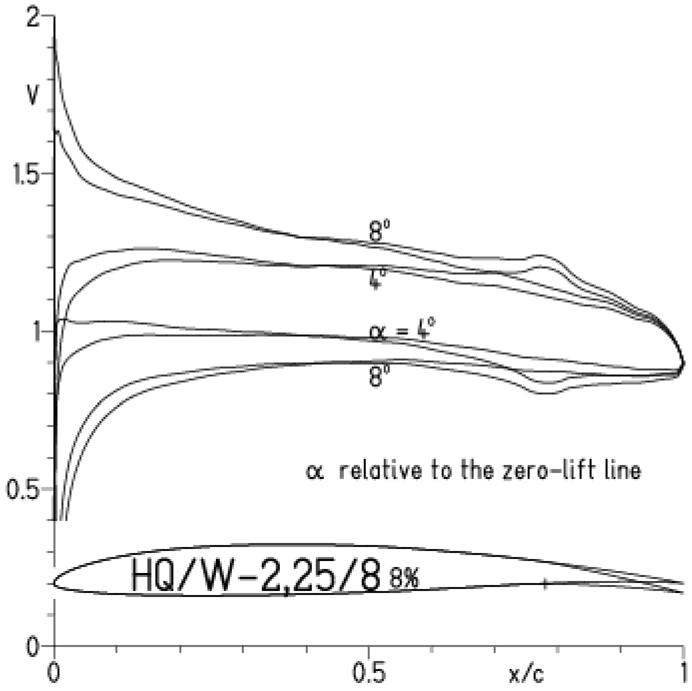
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



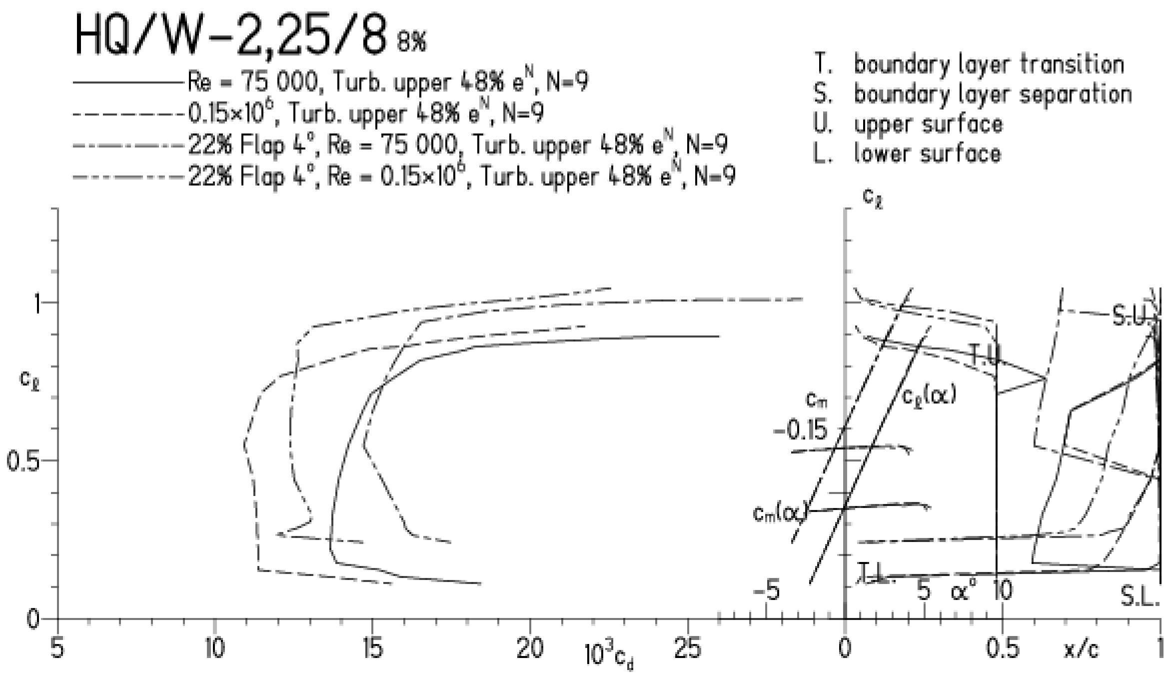


HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:59

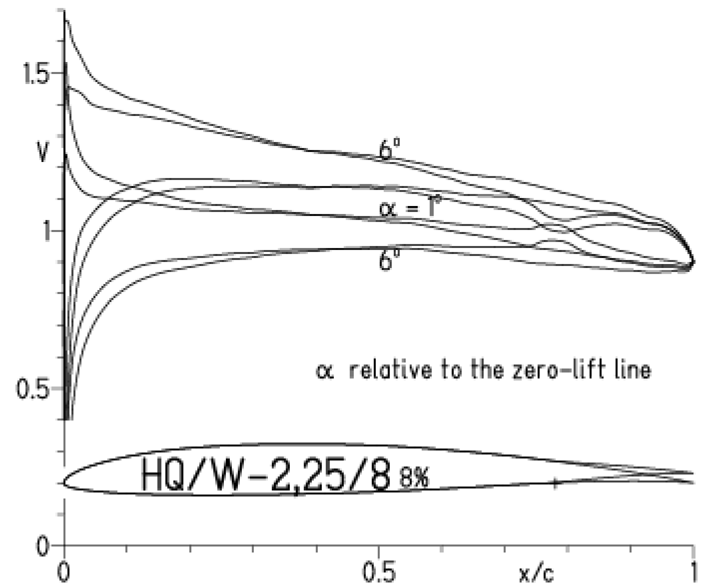


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:59

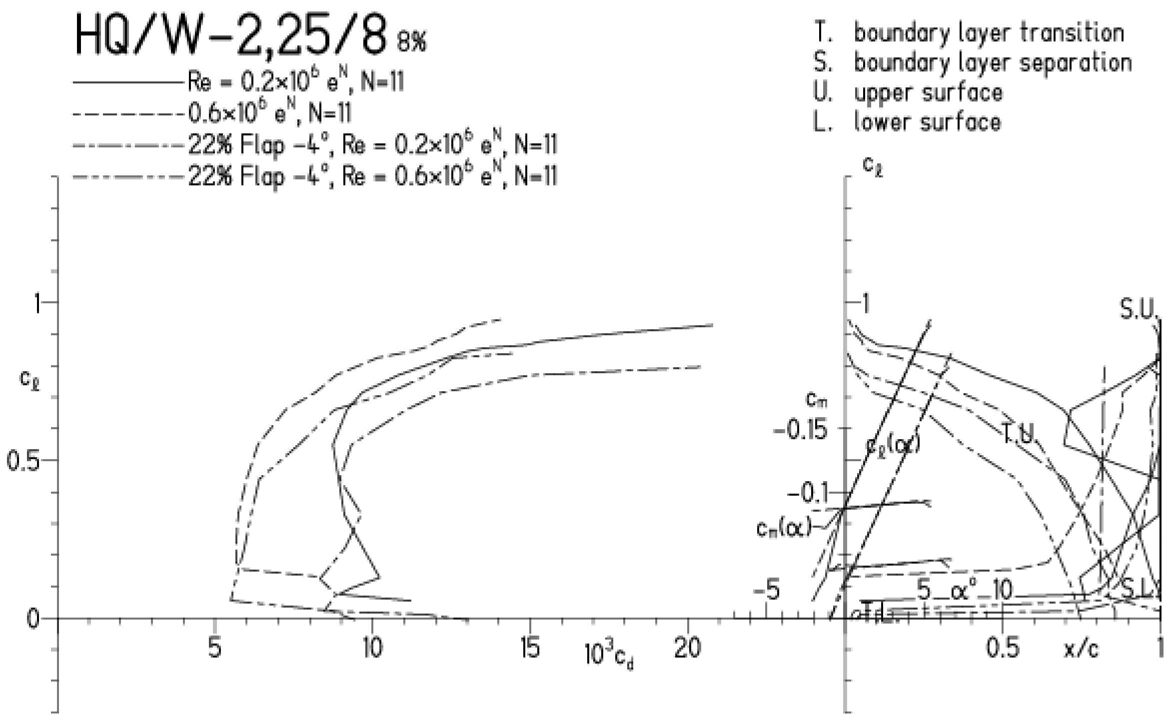


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

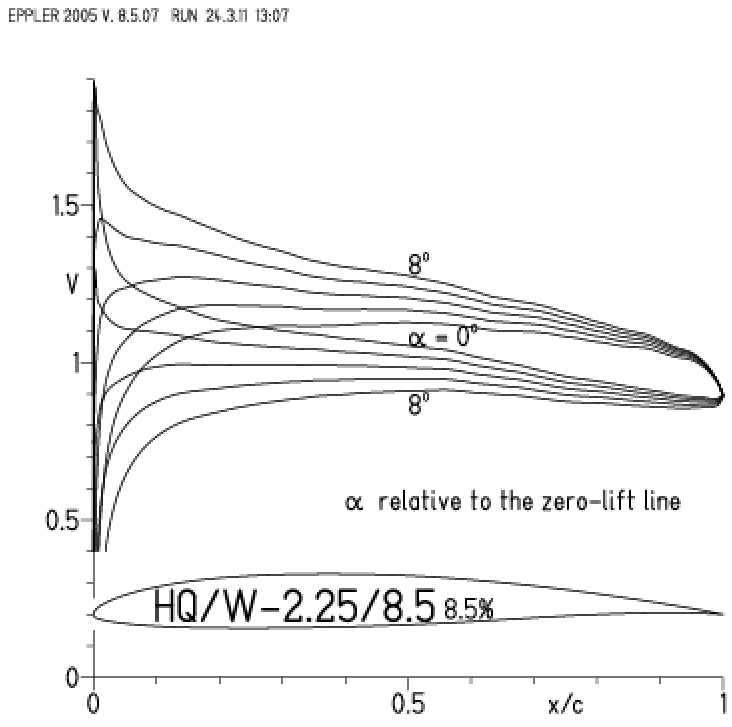
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

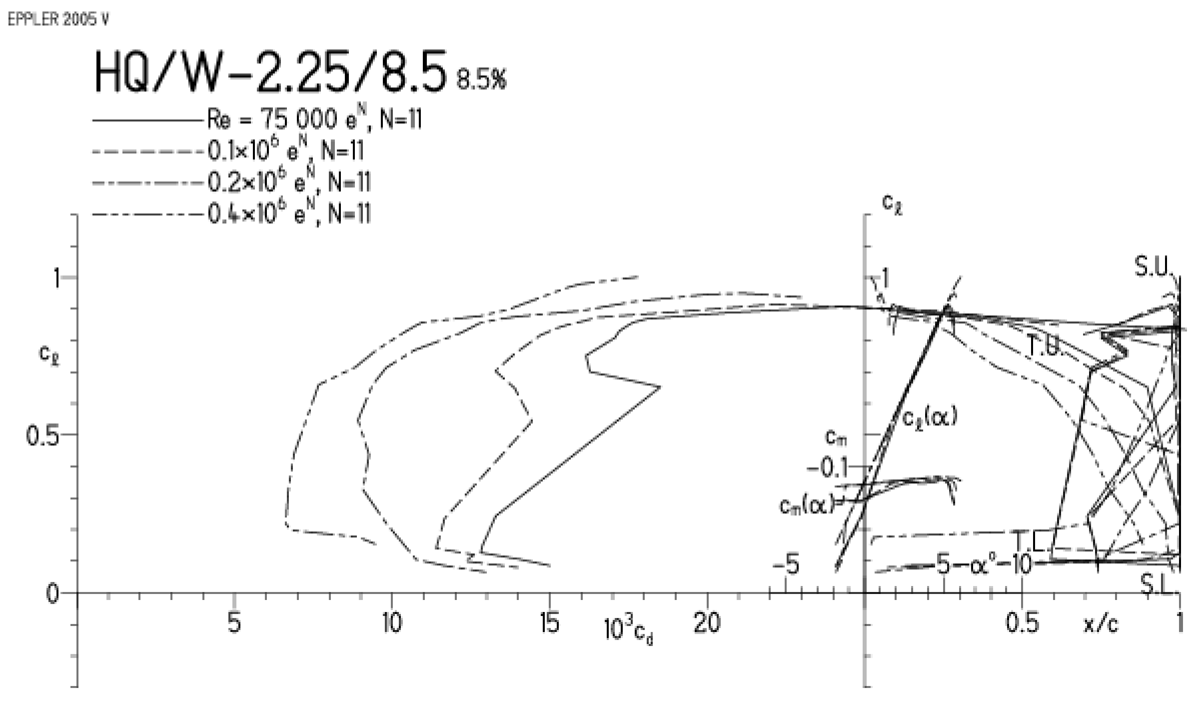


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

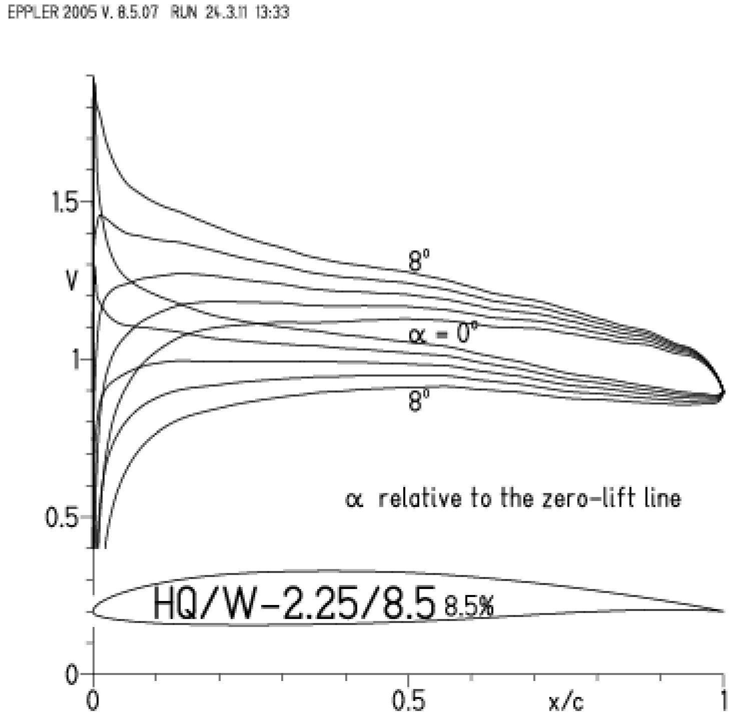


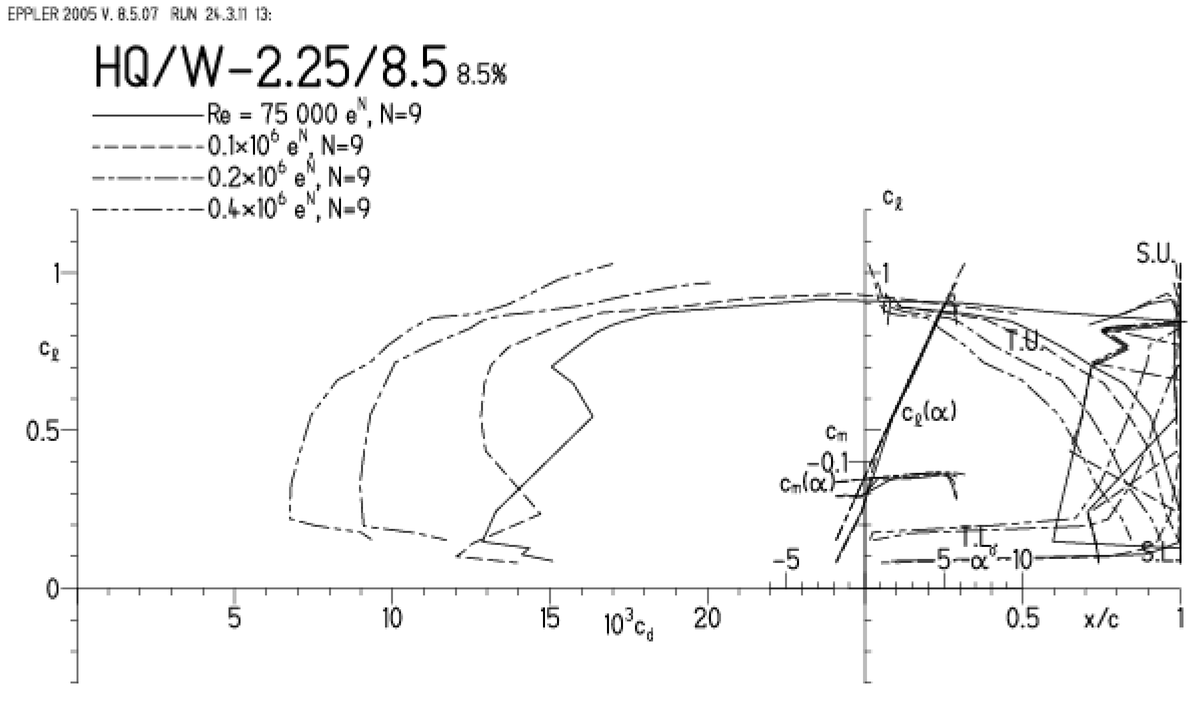
HQ/W-2,25/8,5, N=11



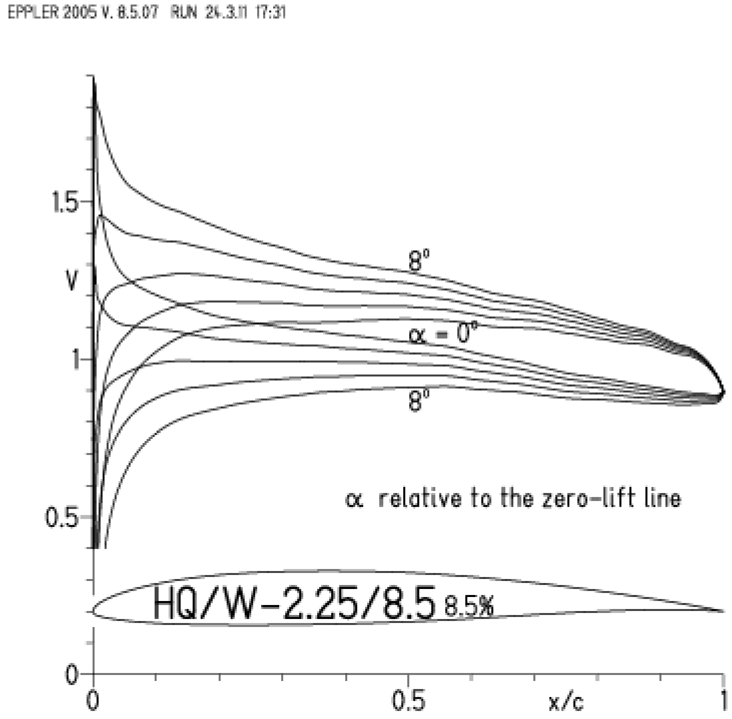


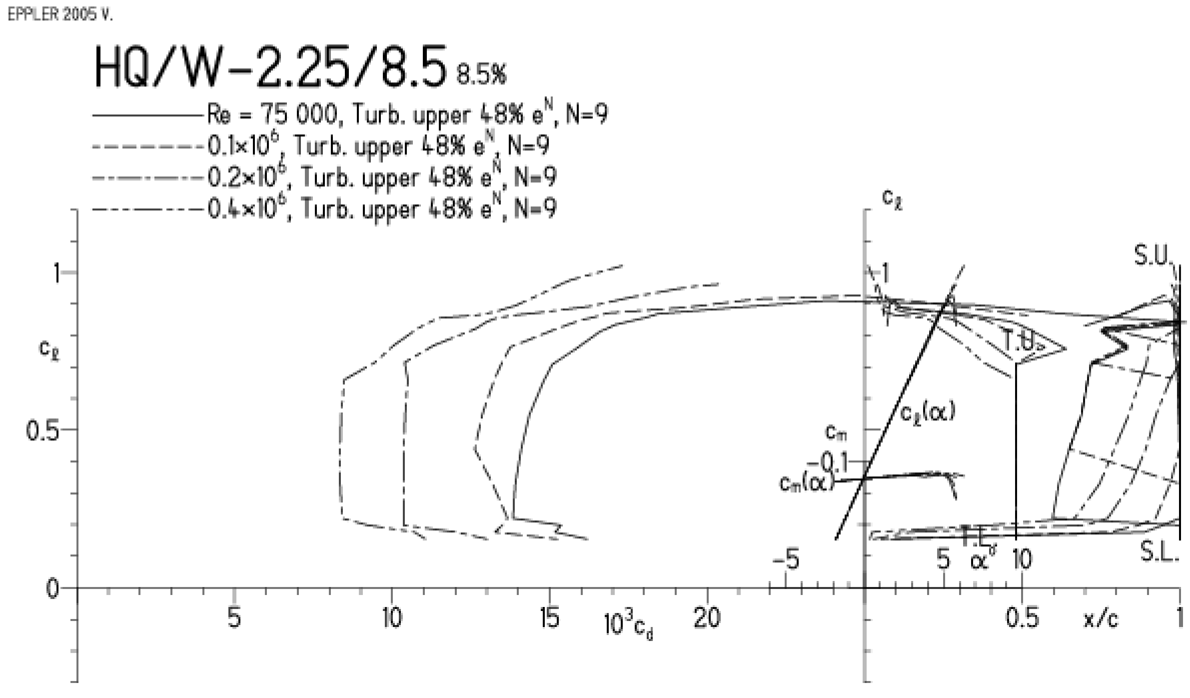
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

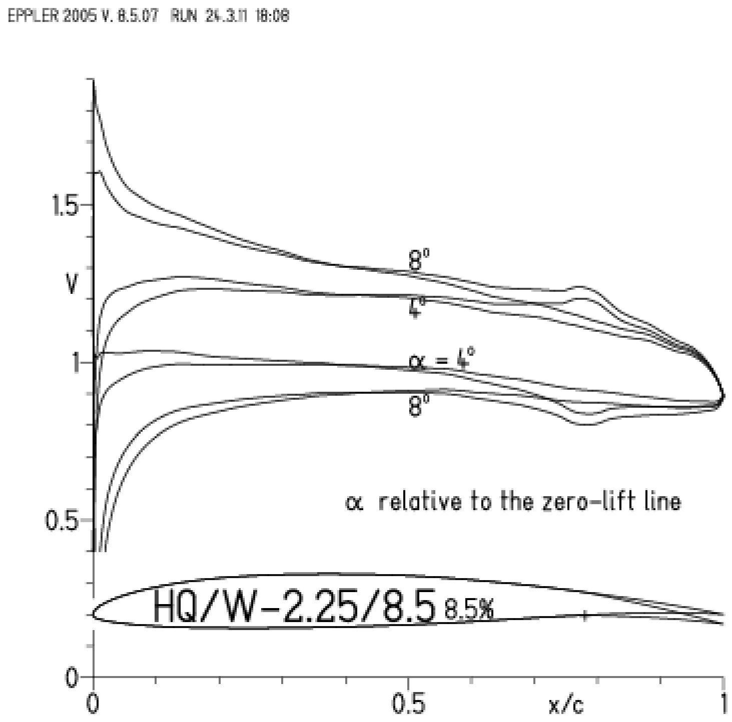

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_ℓ(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

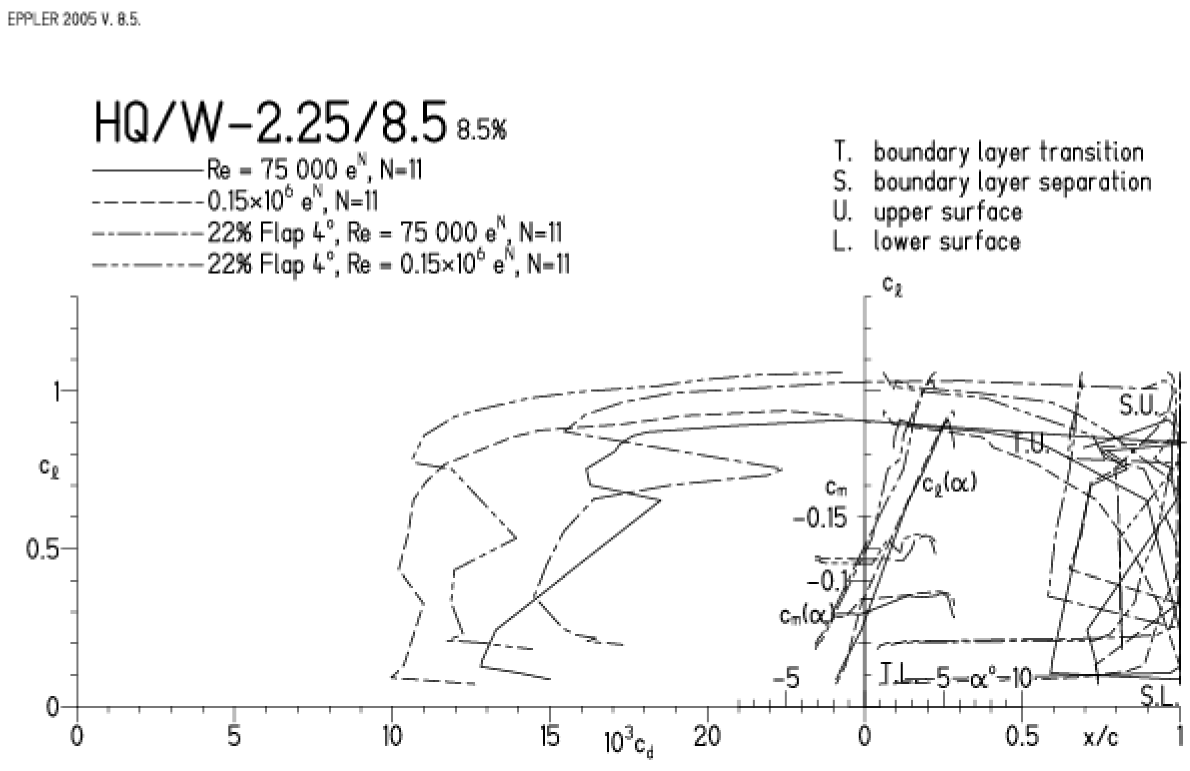
<u>HQ/W-2,25/8,5</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





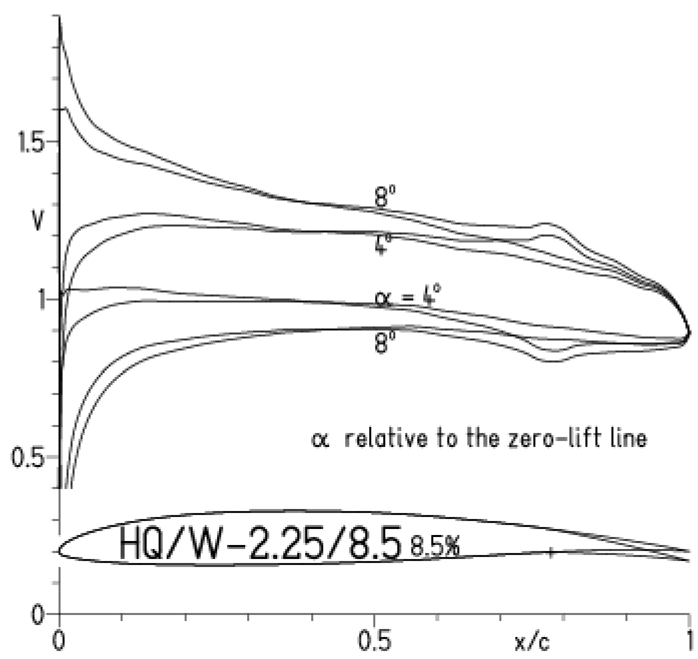
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



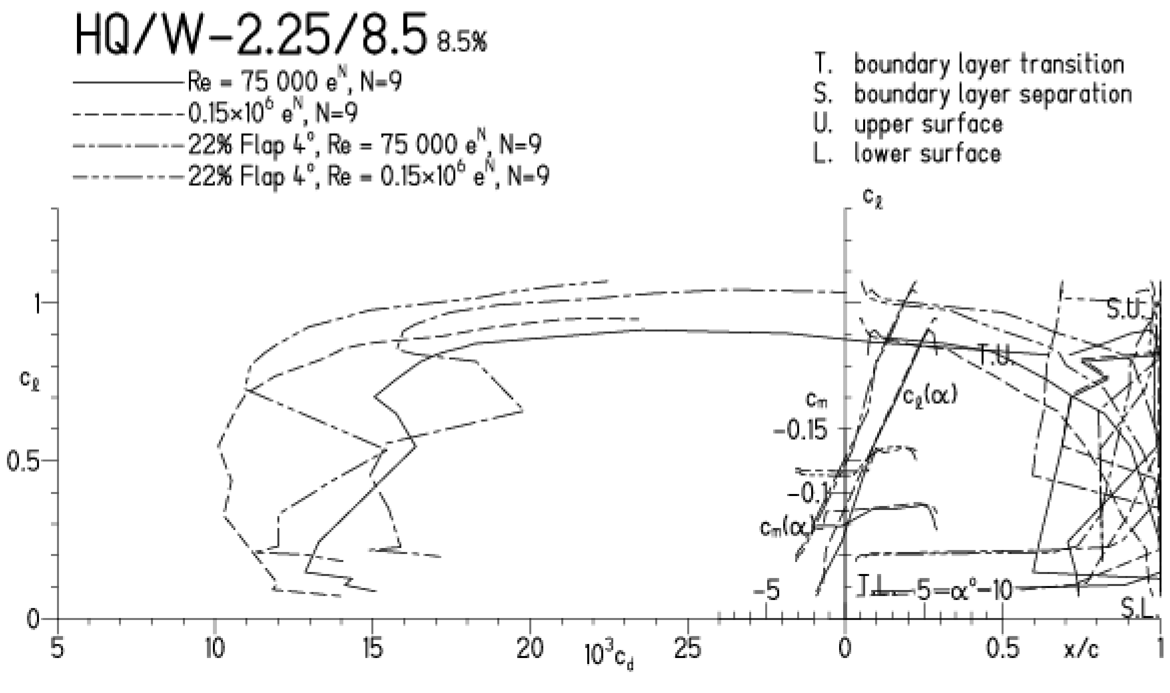


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

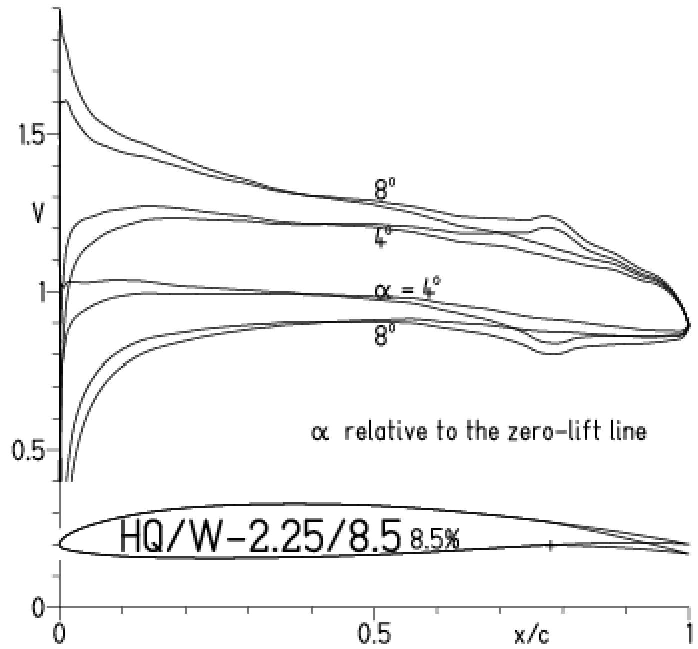


EPPLER 2005 V.

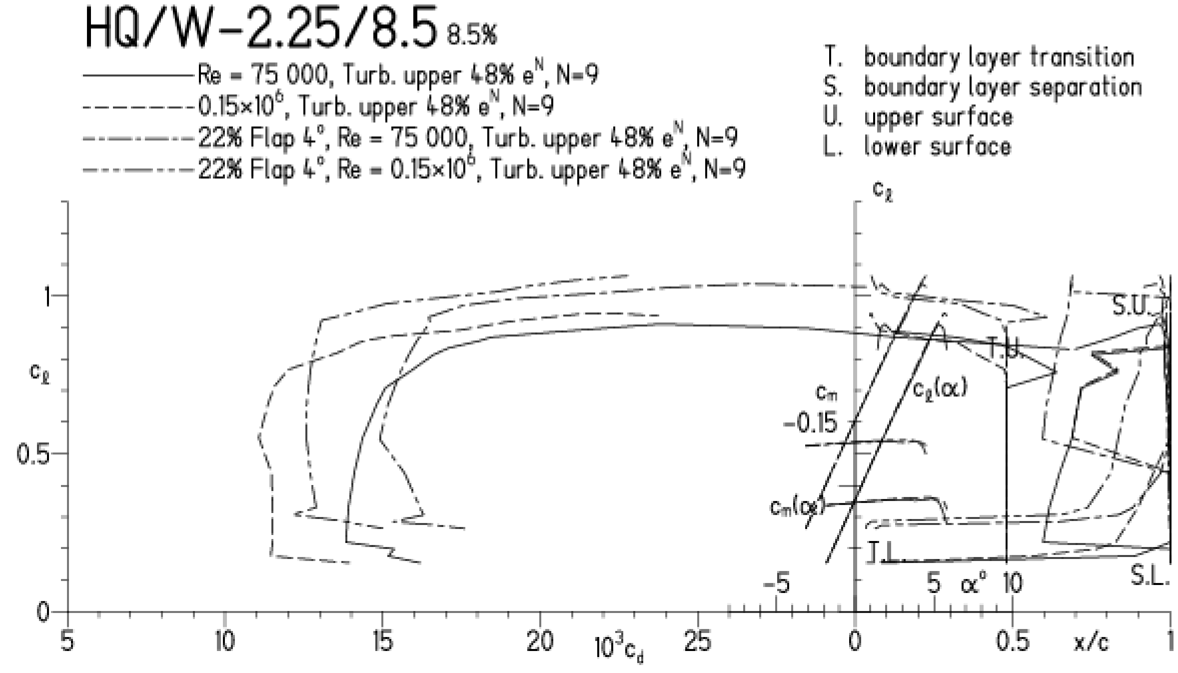


HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

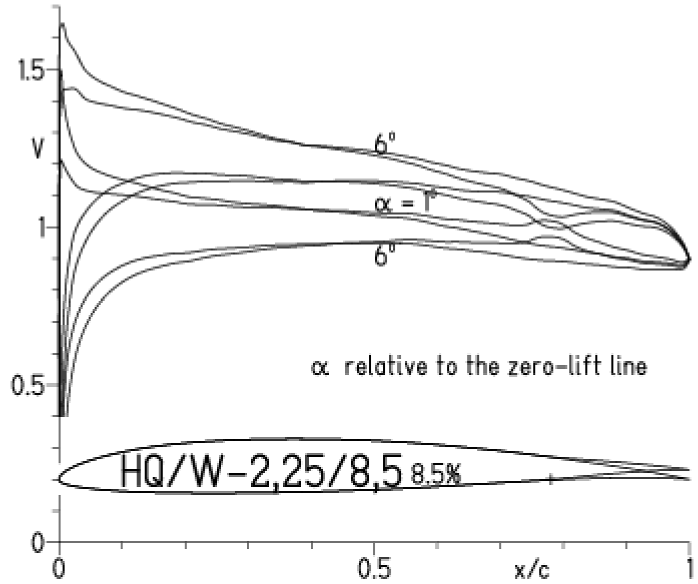


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

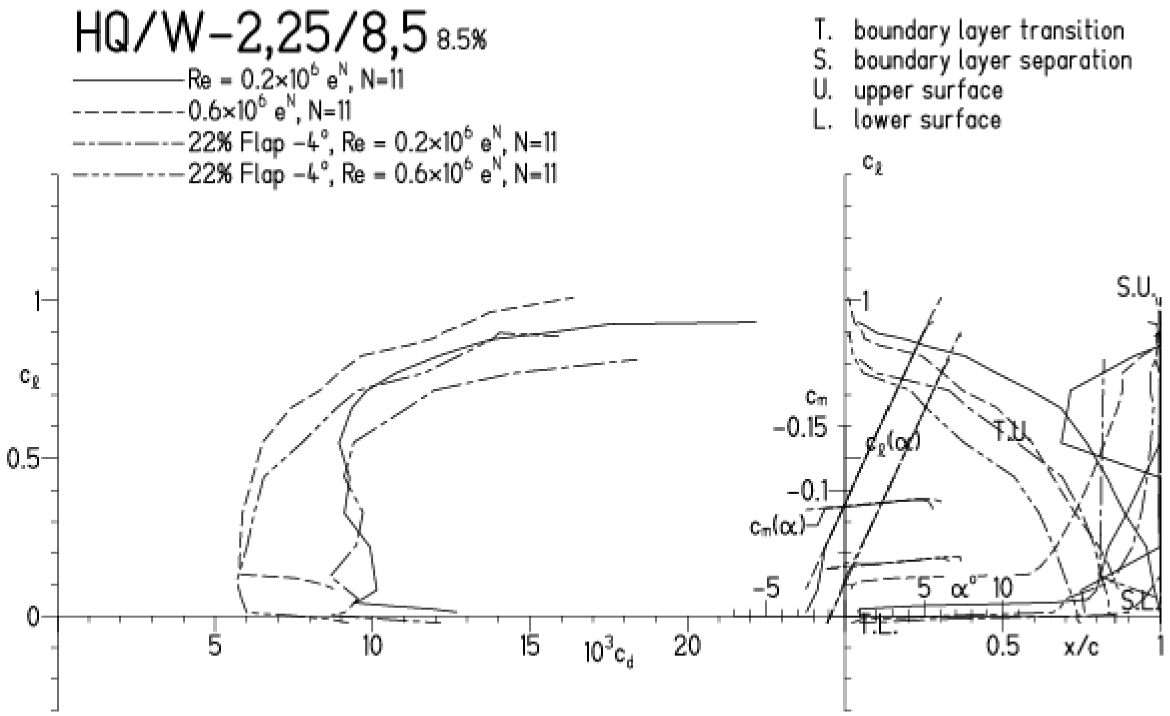


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

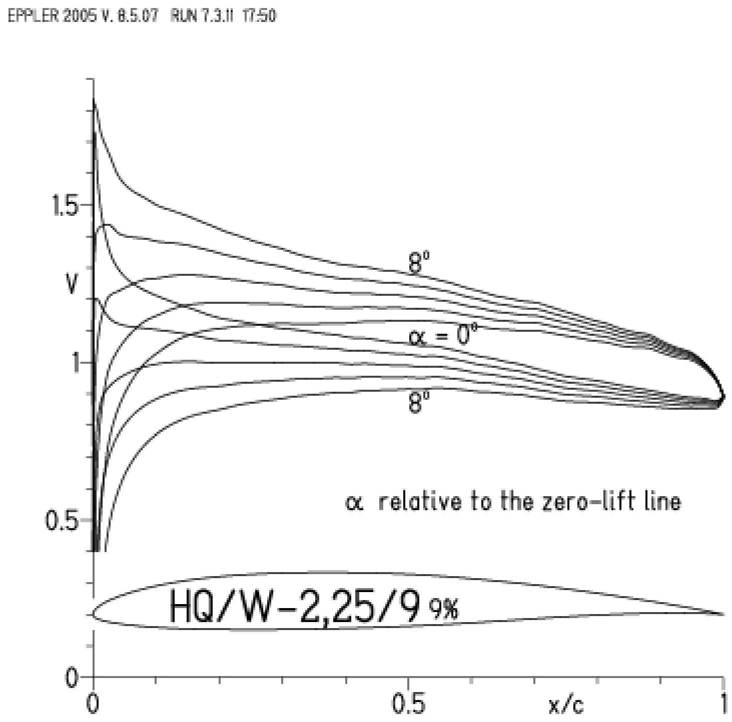
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



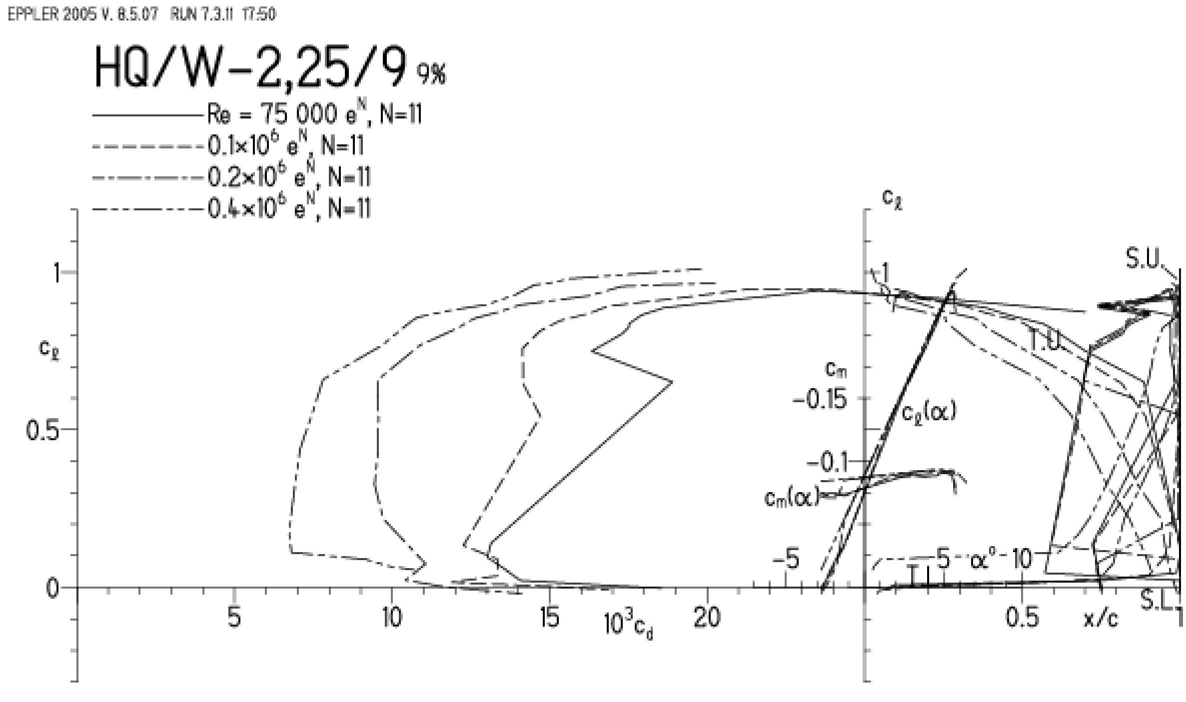
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



HQ/W-2,25/9, N=11

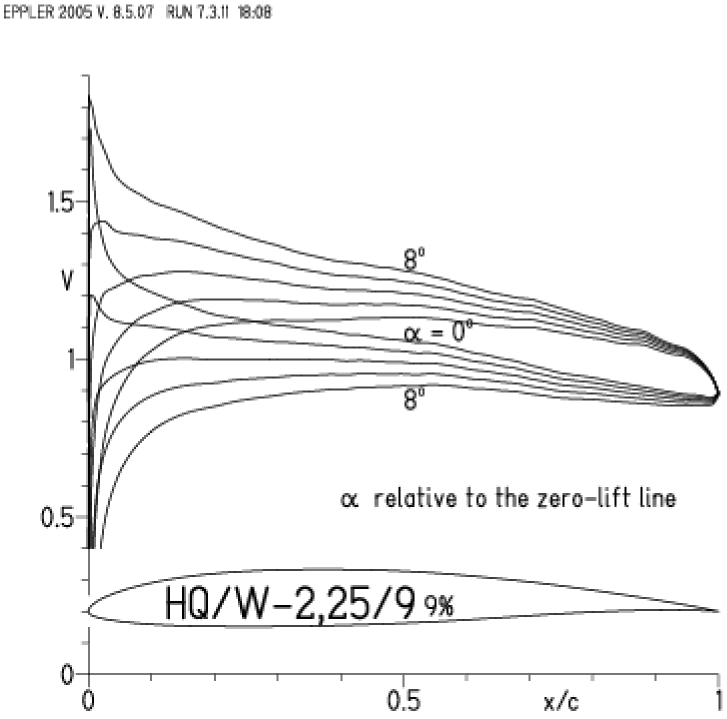


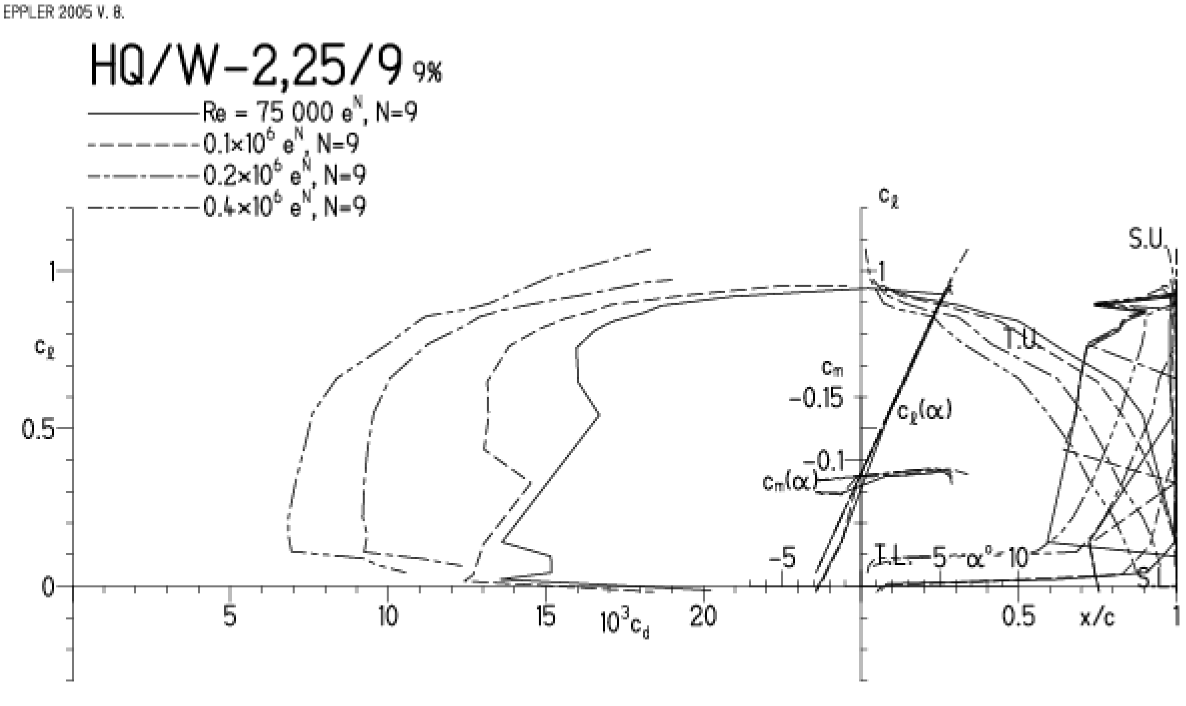
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1



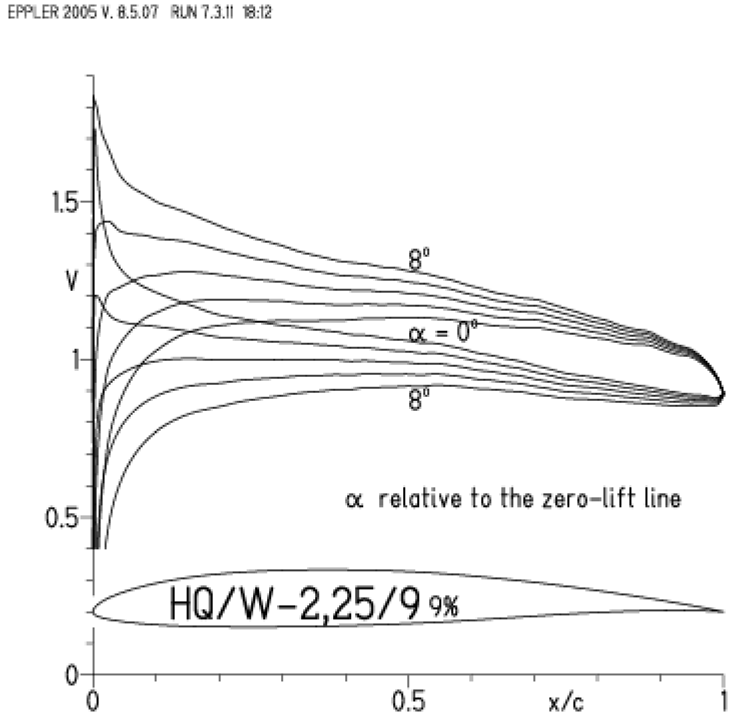
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

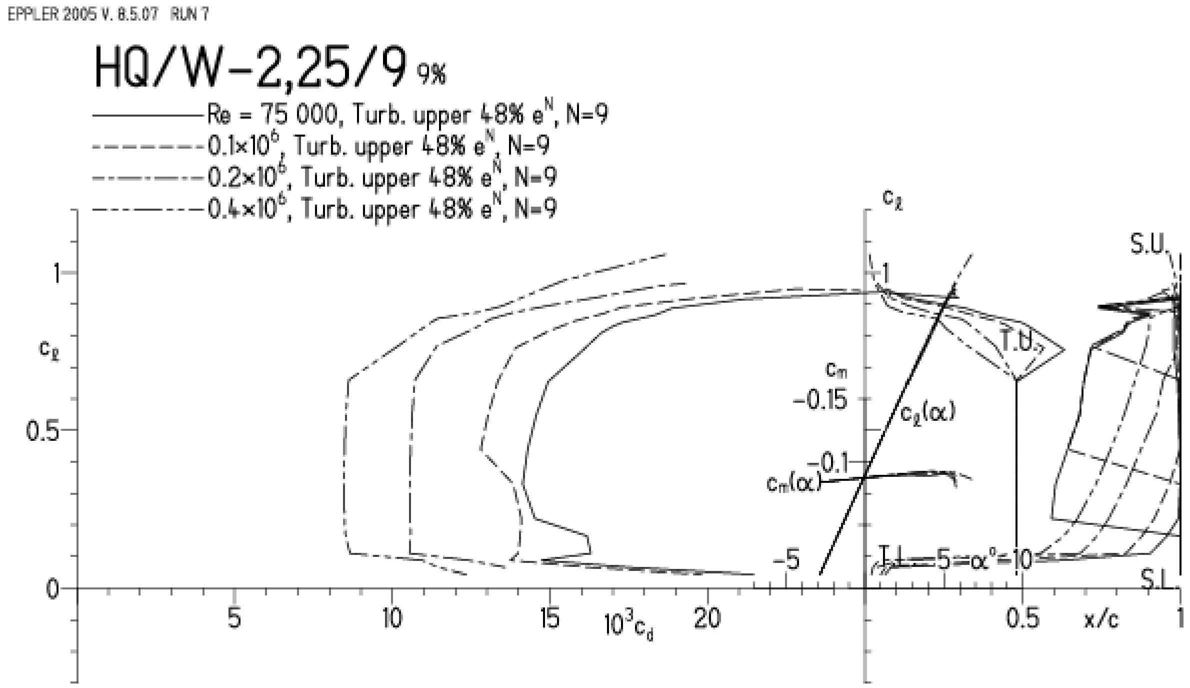
<u>HQ/W-2,25/9</u>, N=9





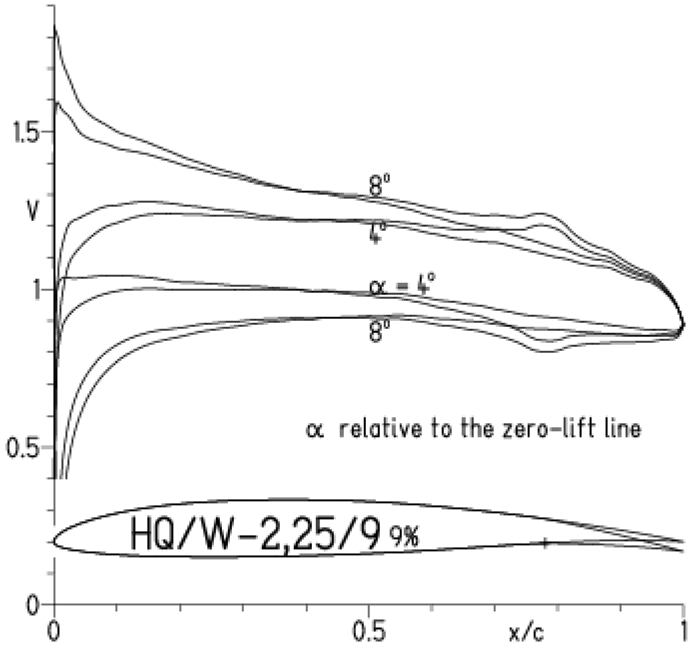
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



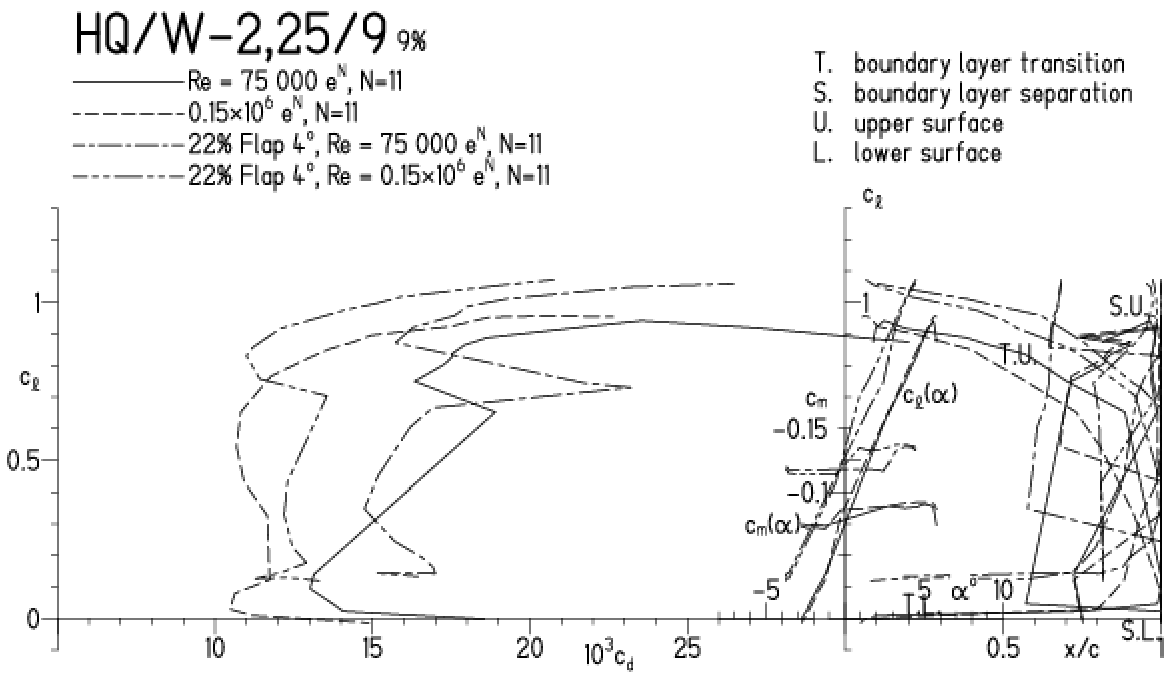


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

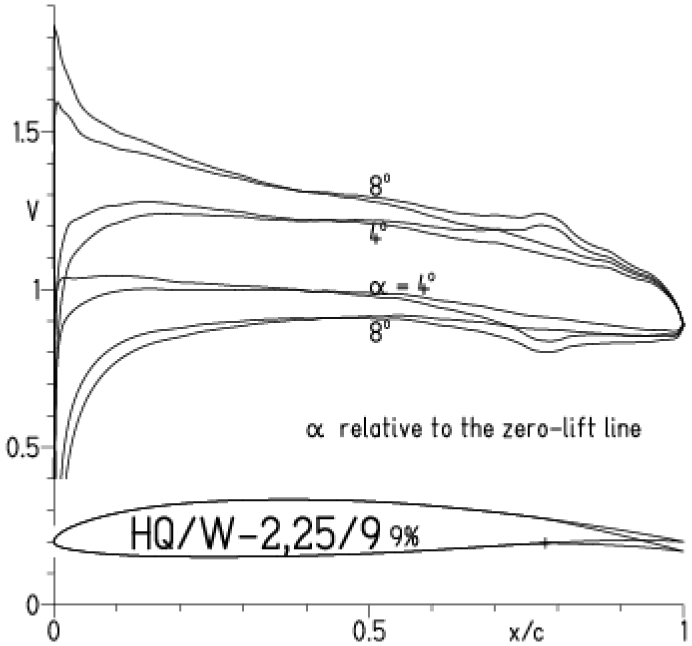


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

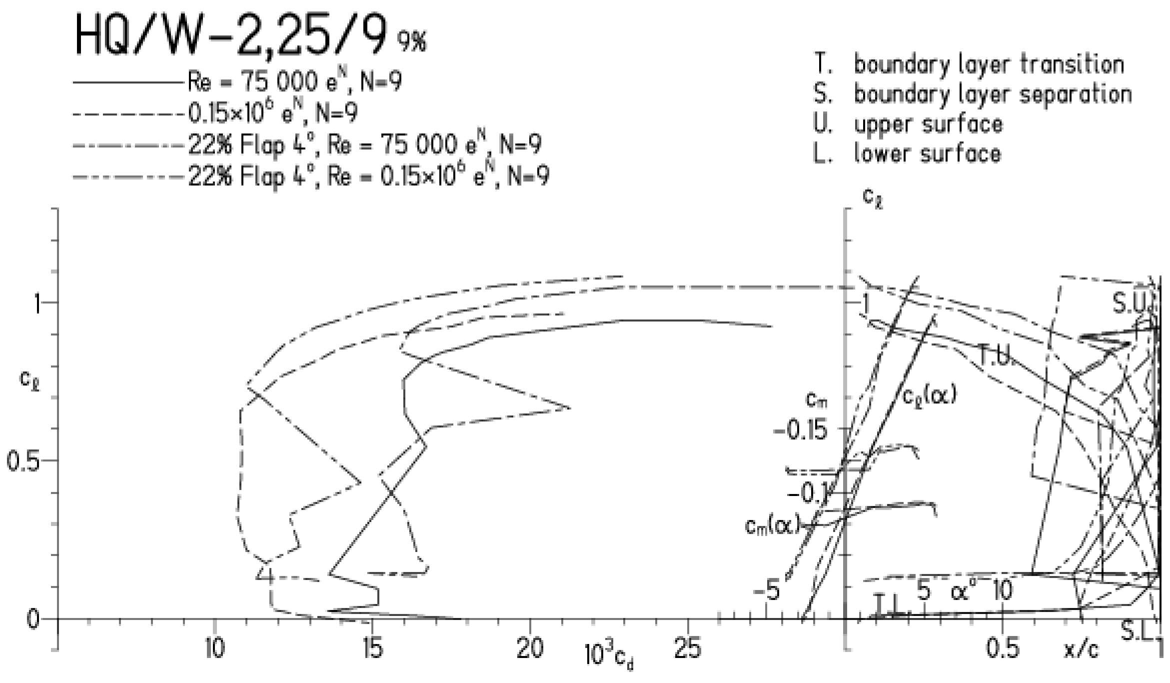


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

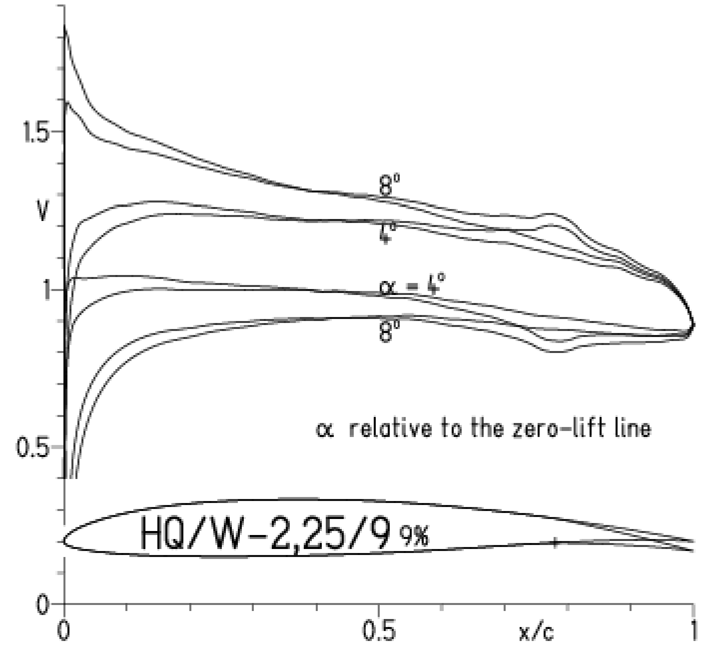


EPPLER 2005 V. 8.5.07 RUN 8.3.1

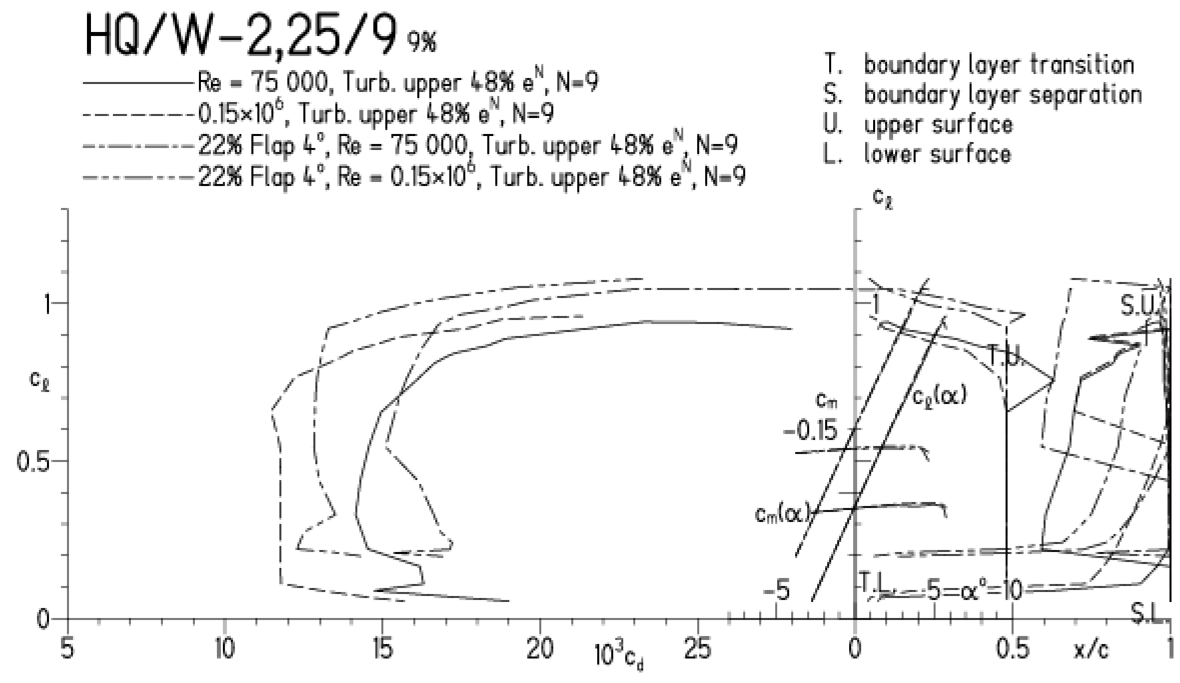


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

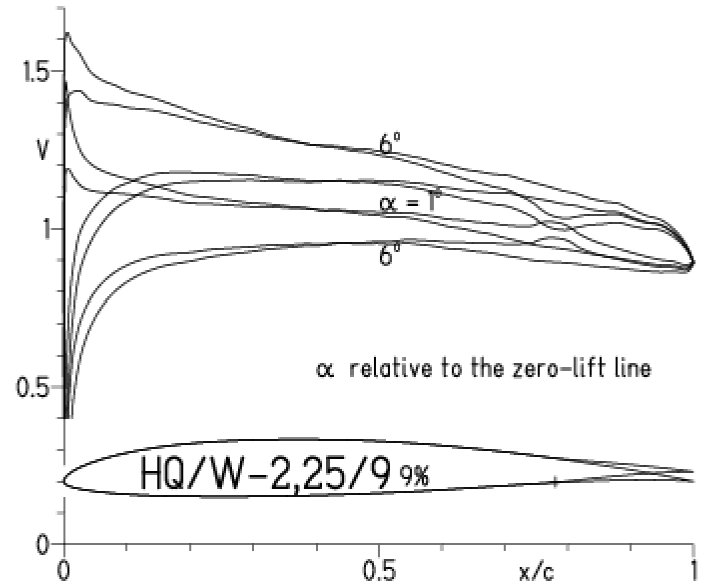


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

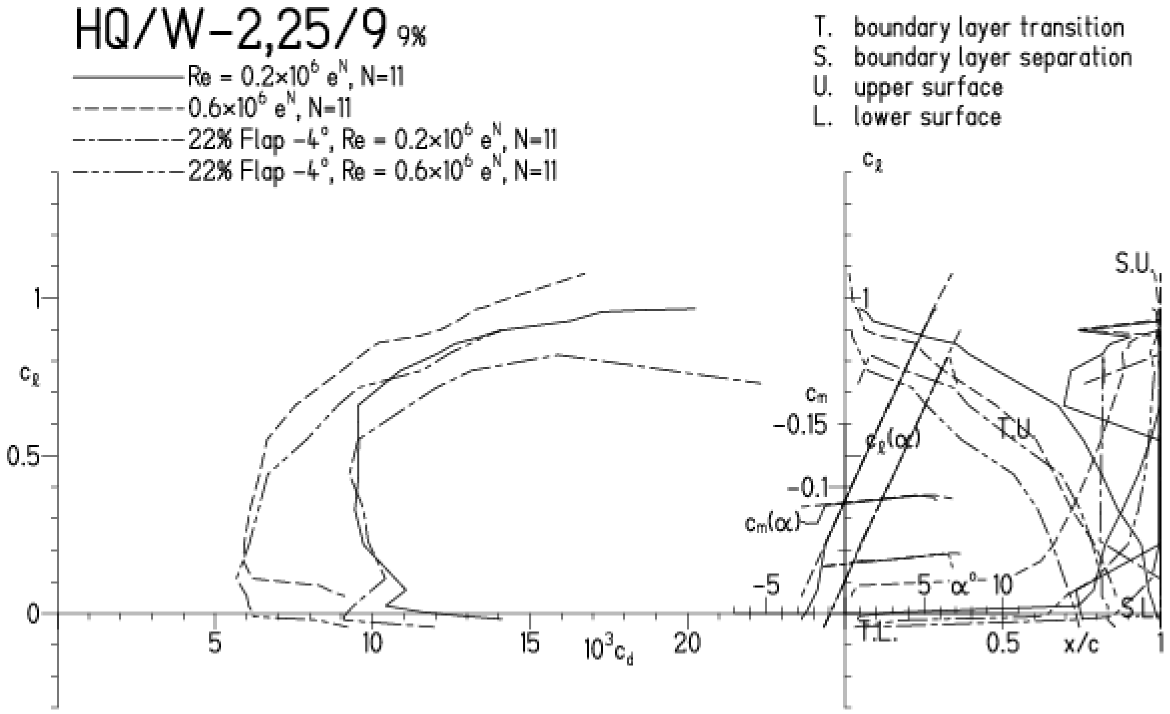


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

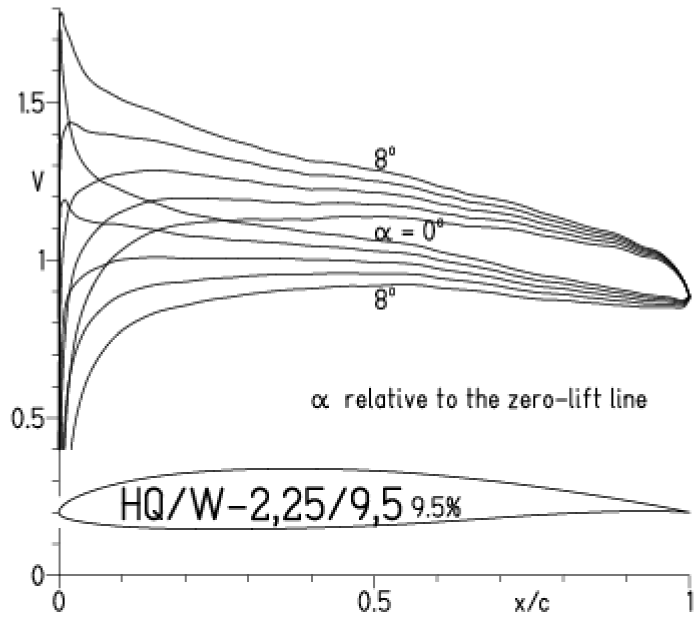


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

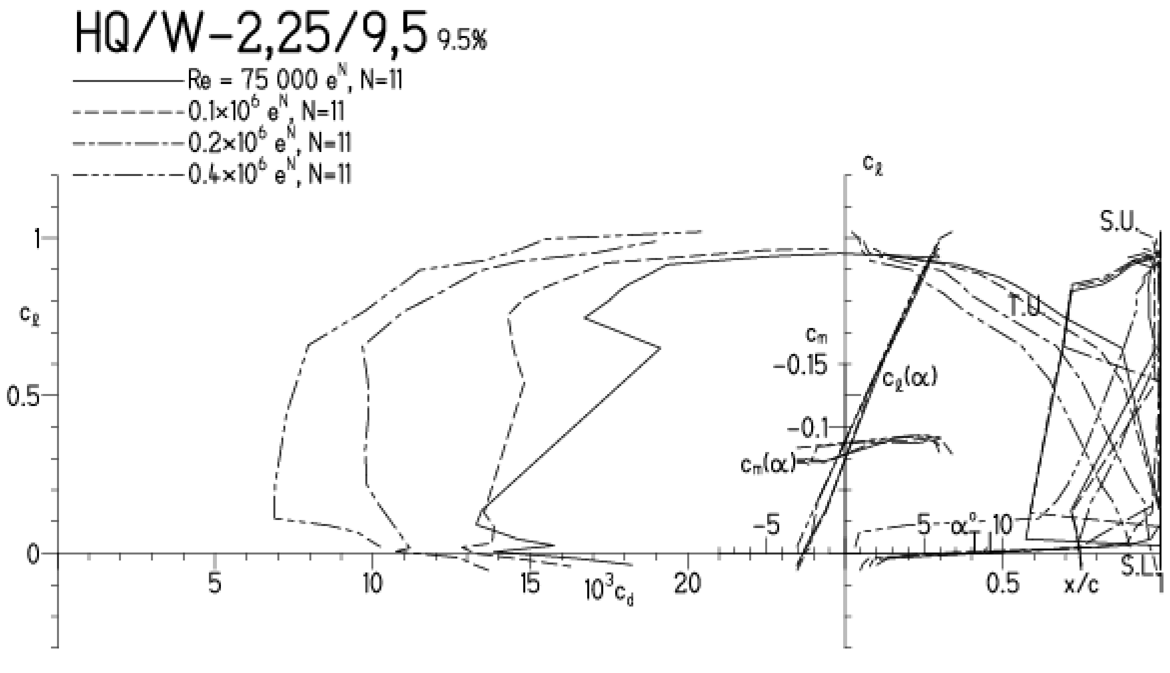


HQ/W-2,25/9,5, N=11

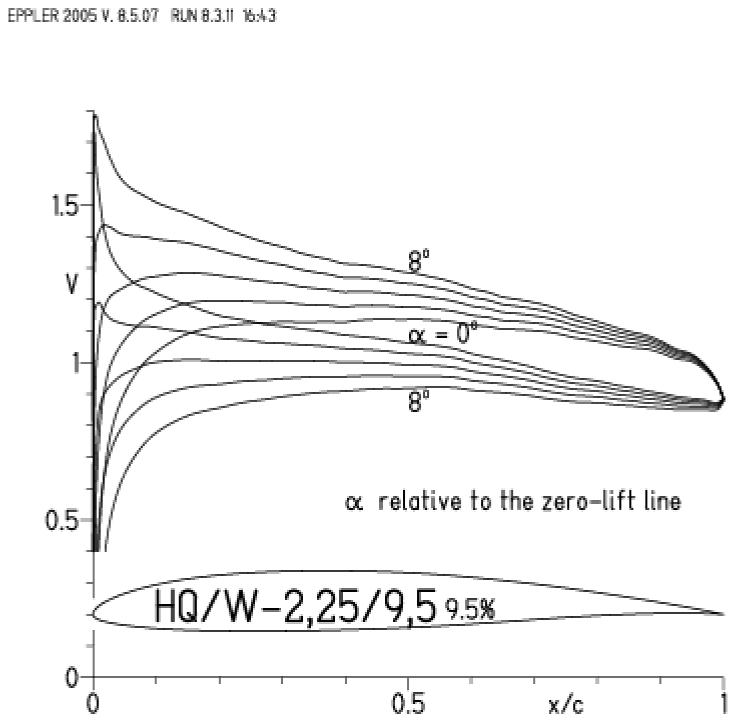
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

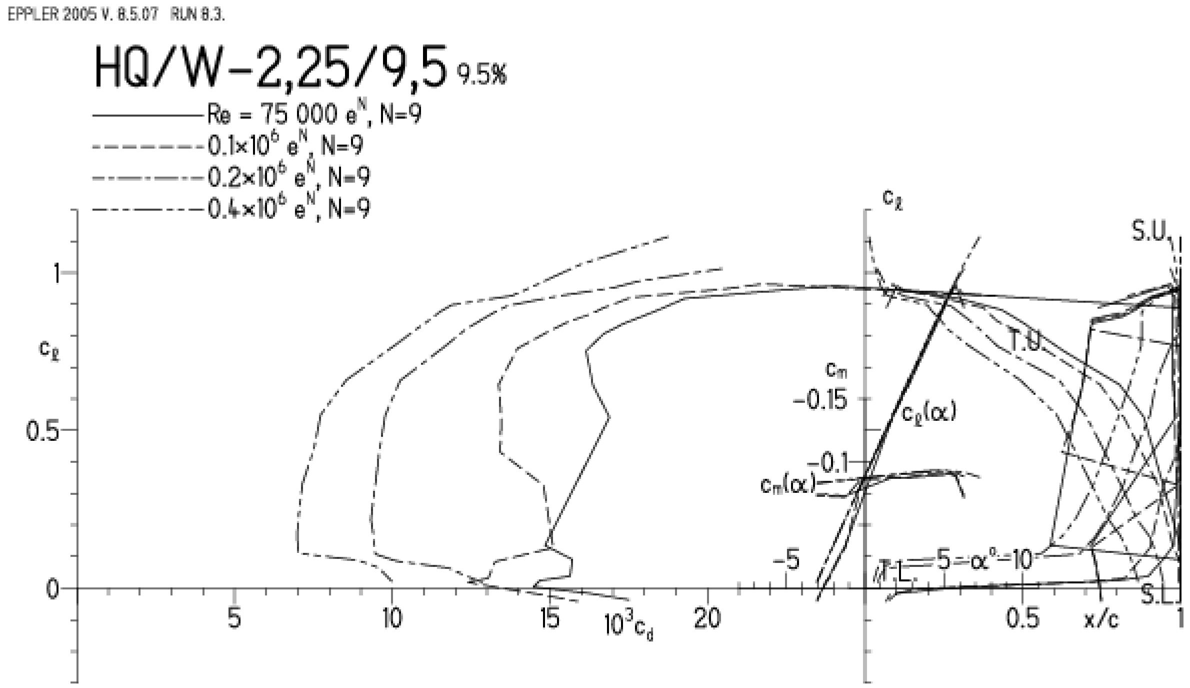


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

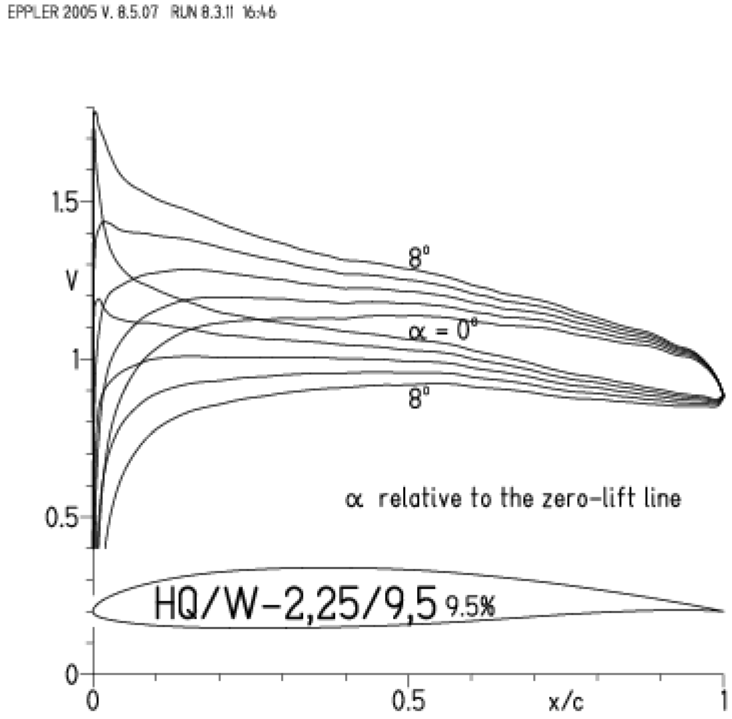


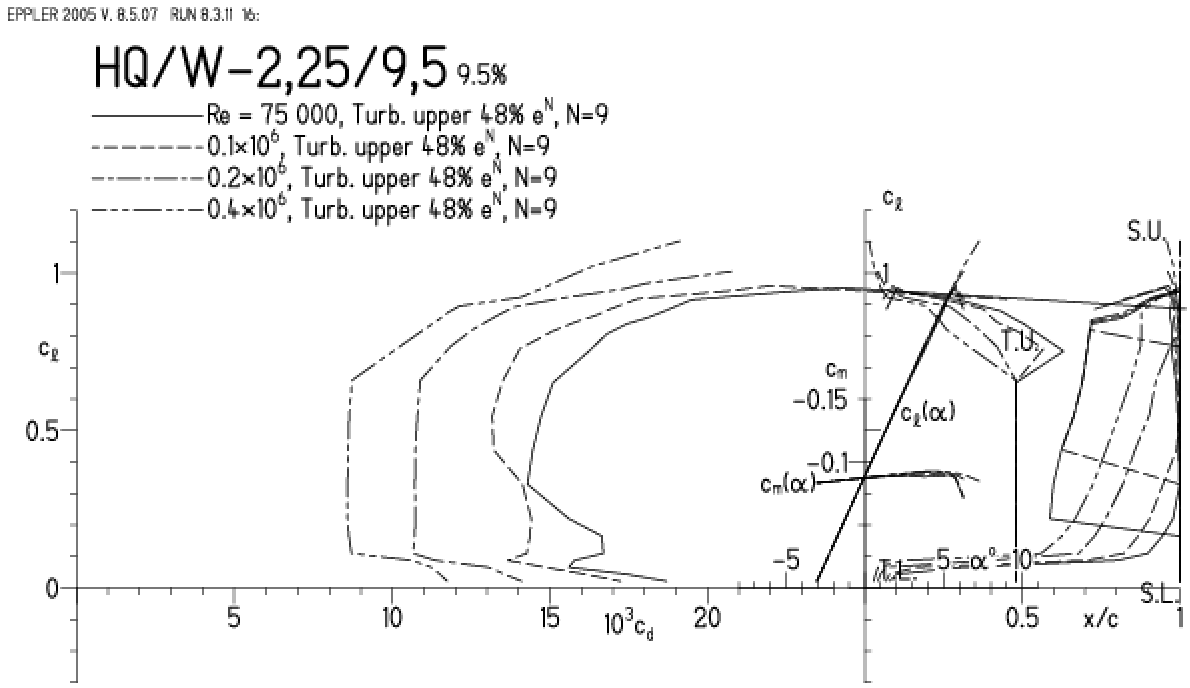
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
-5
c_l(α)
c_m(α)
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

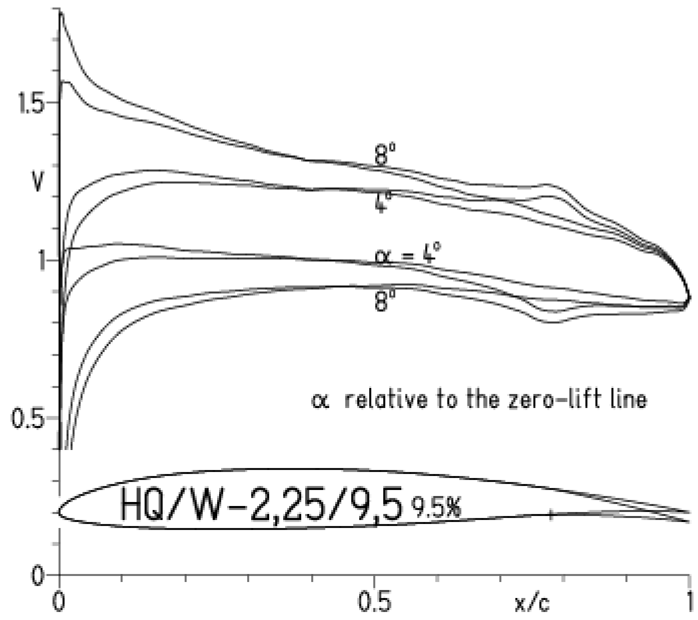
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



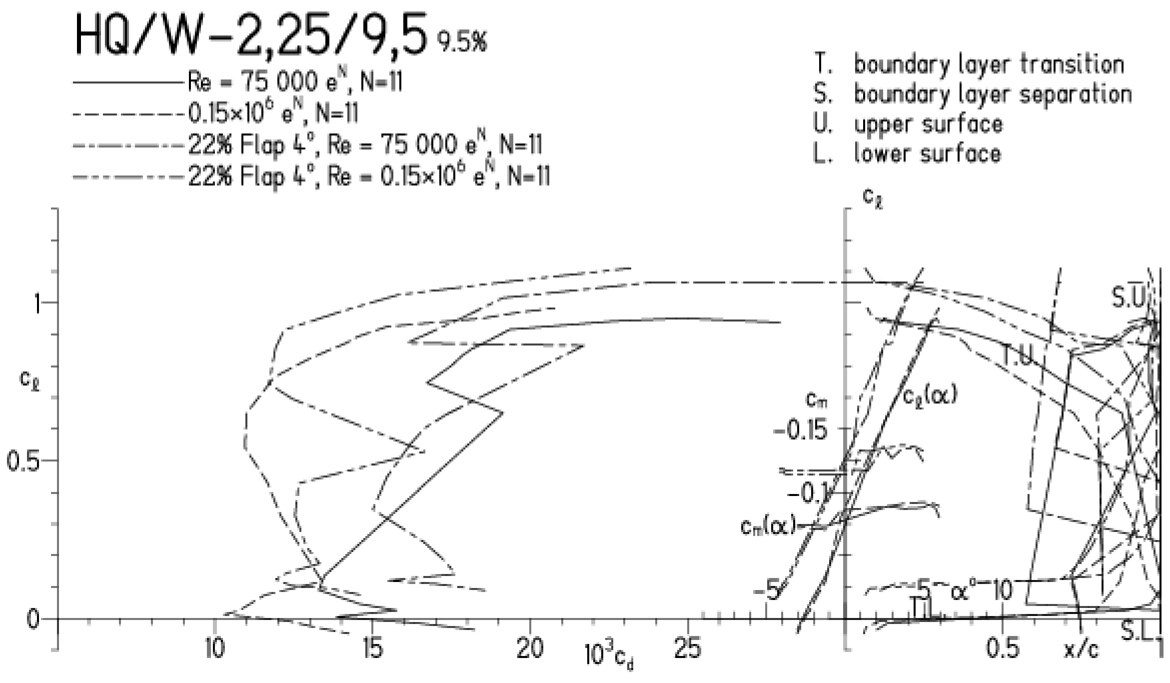


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

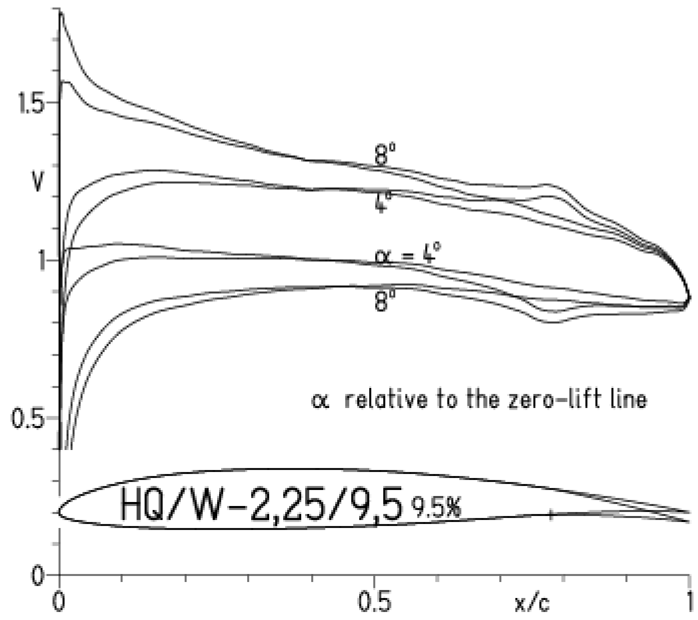


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

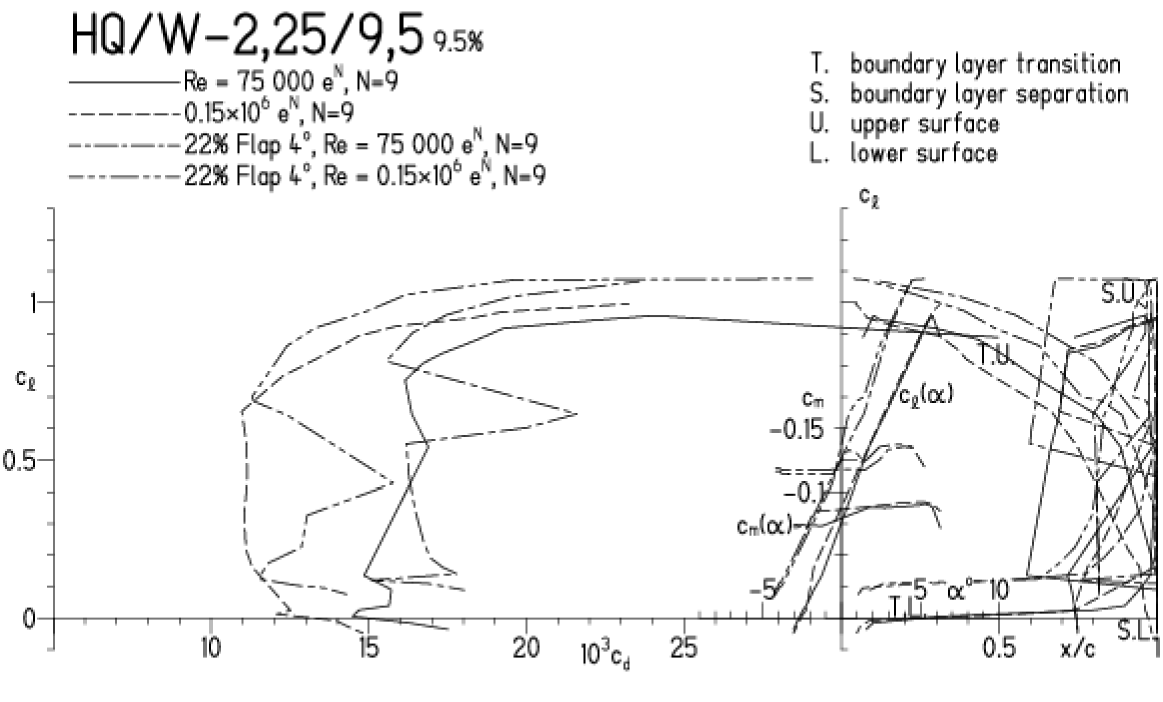


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

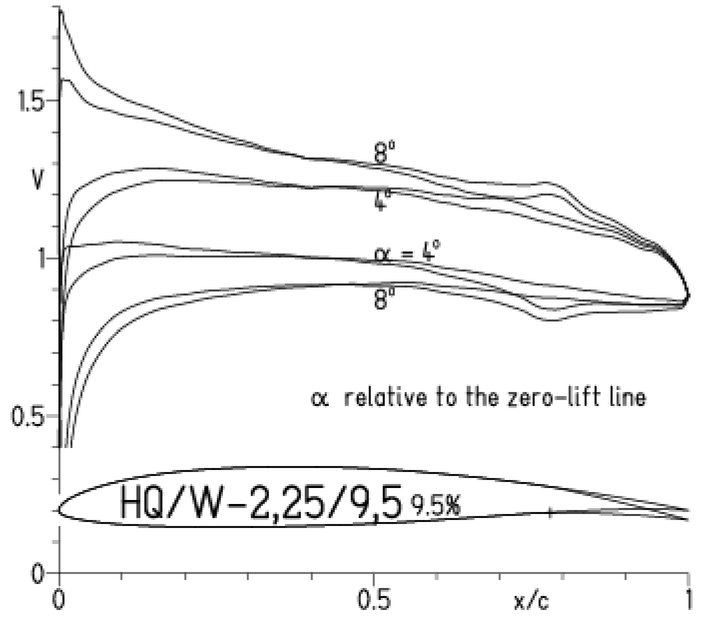


EPPLER 2005 V. 8.5.07 R

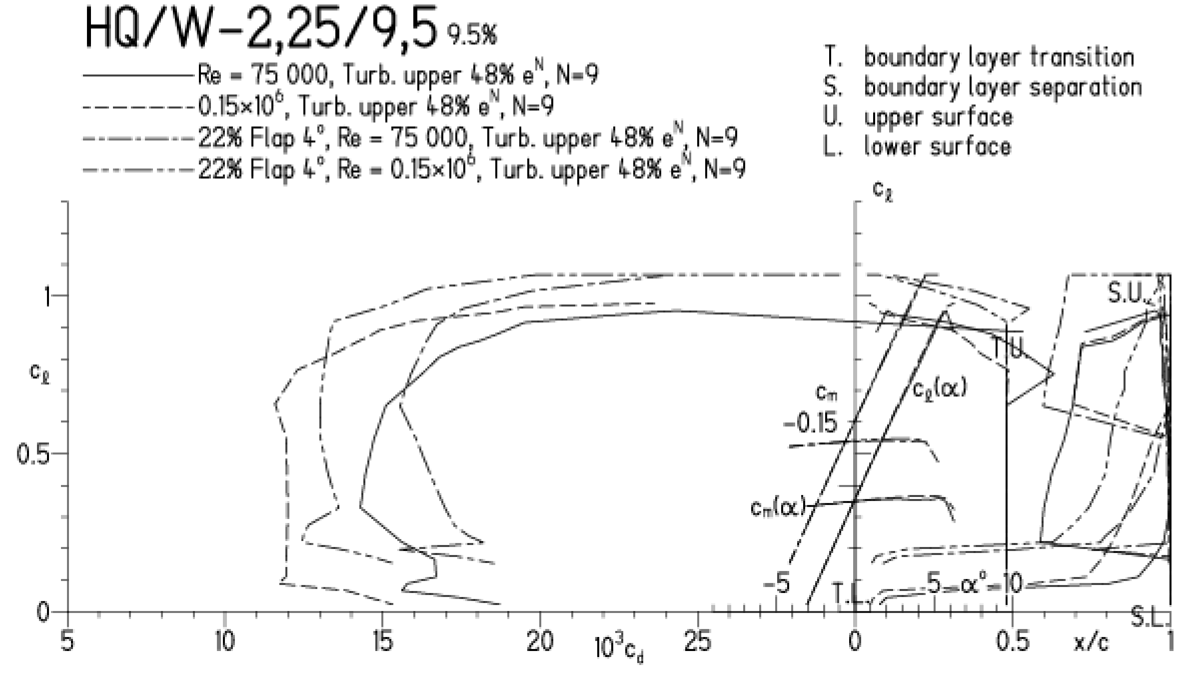


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

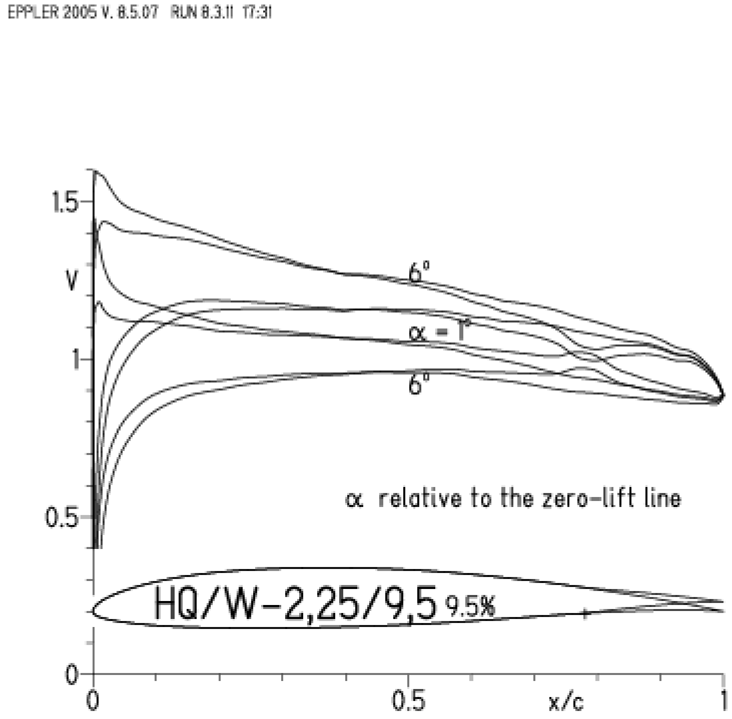
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

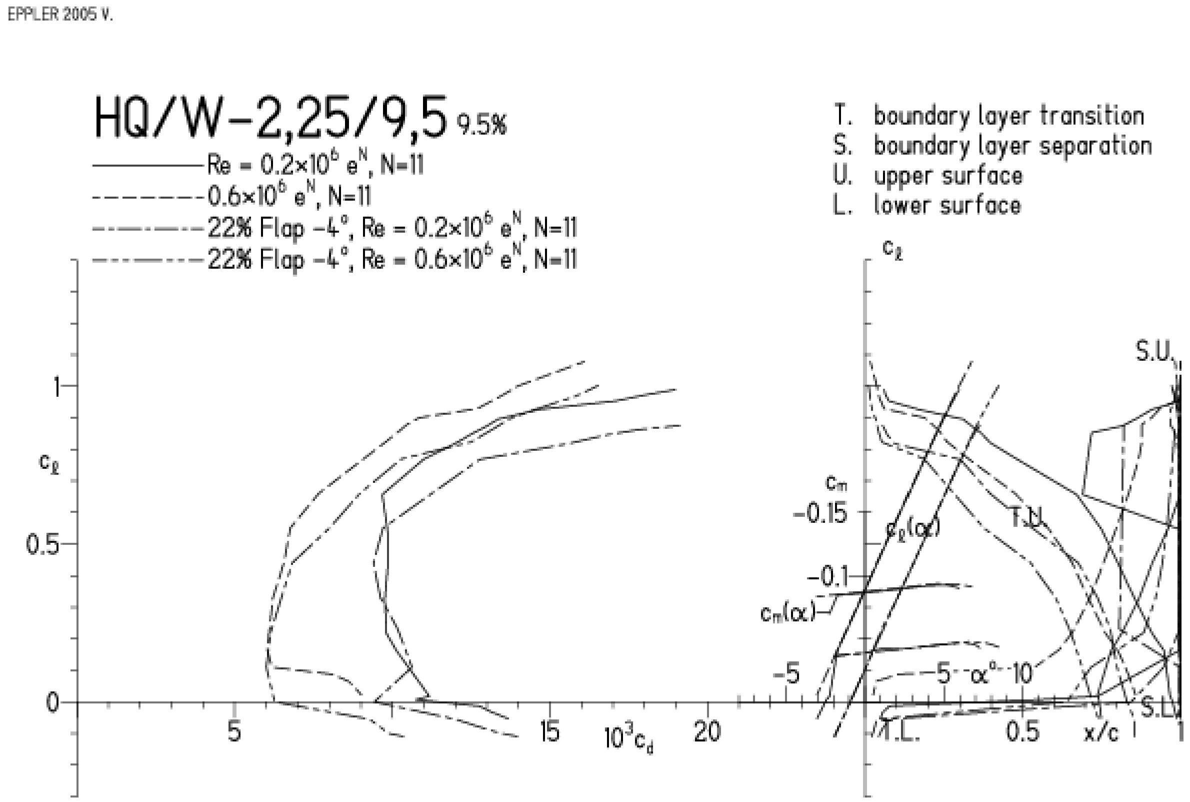


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



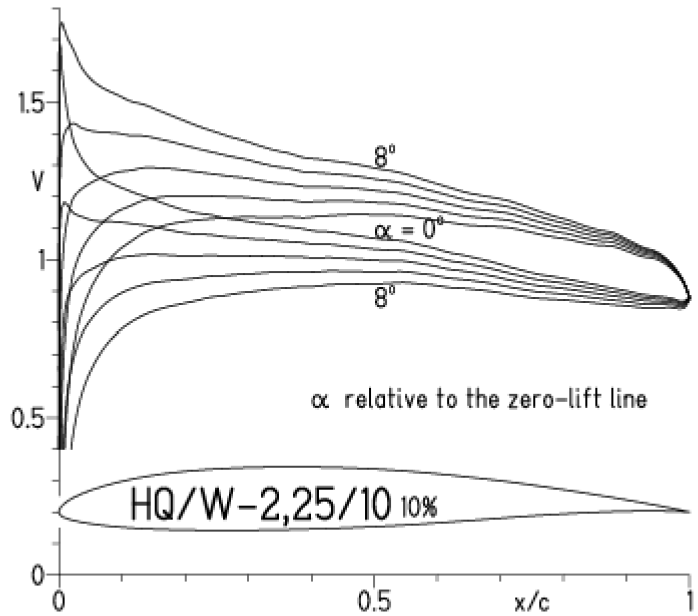
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



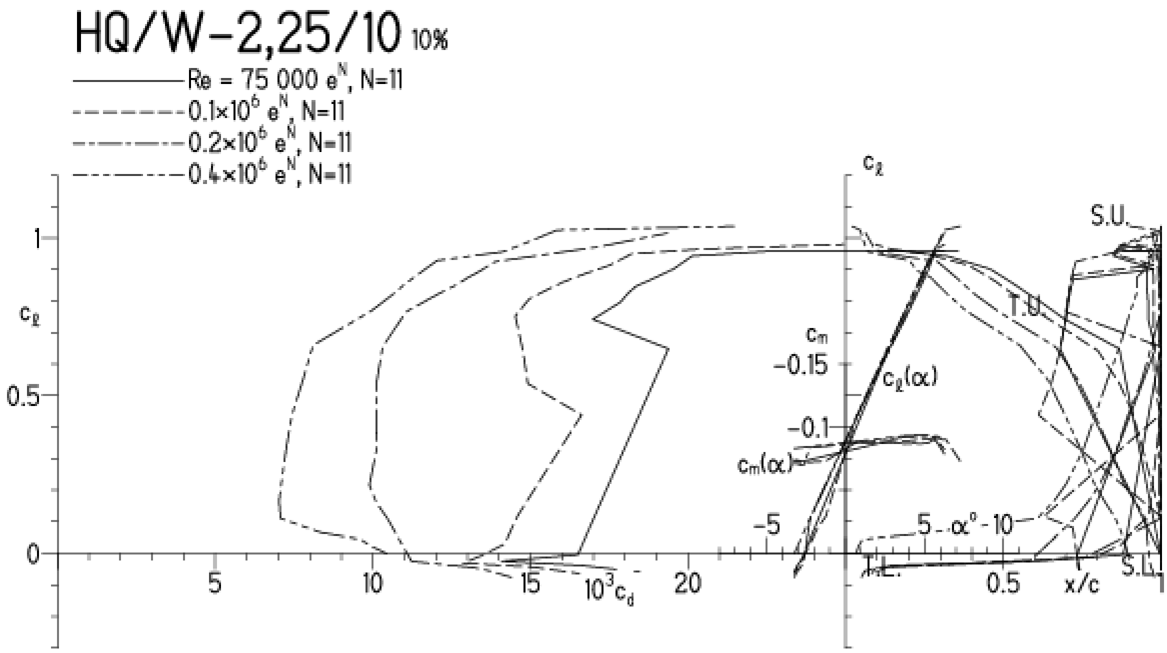


<u>HQ/W-2,25/10</u>, N=11

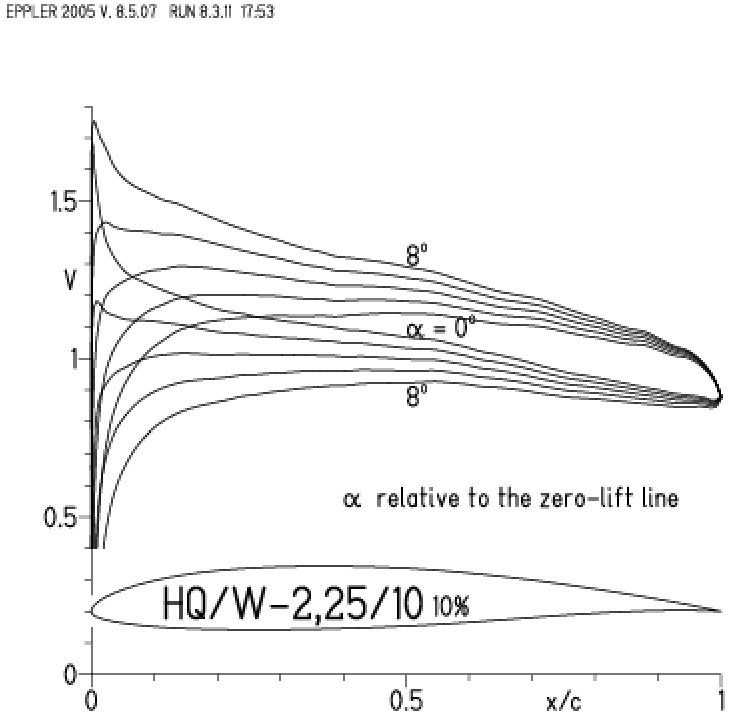
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

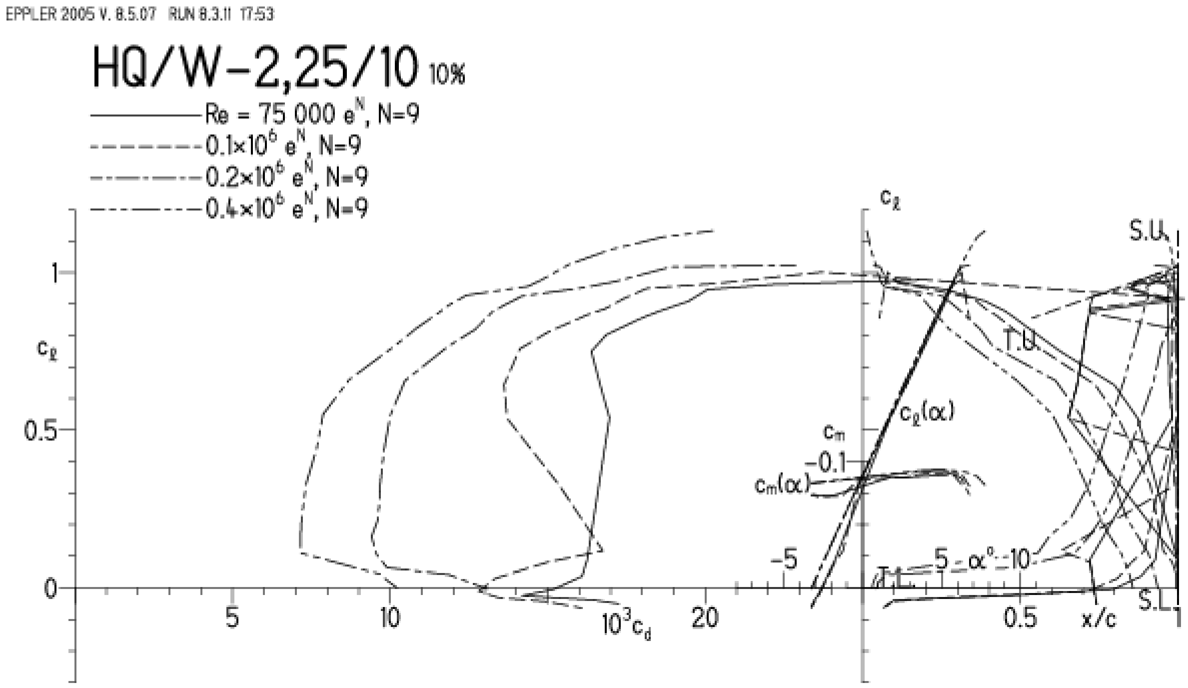


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

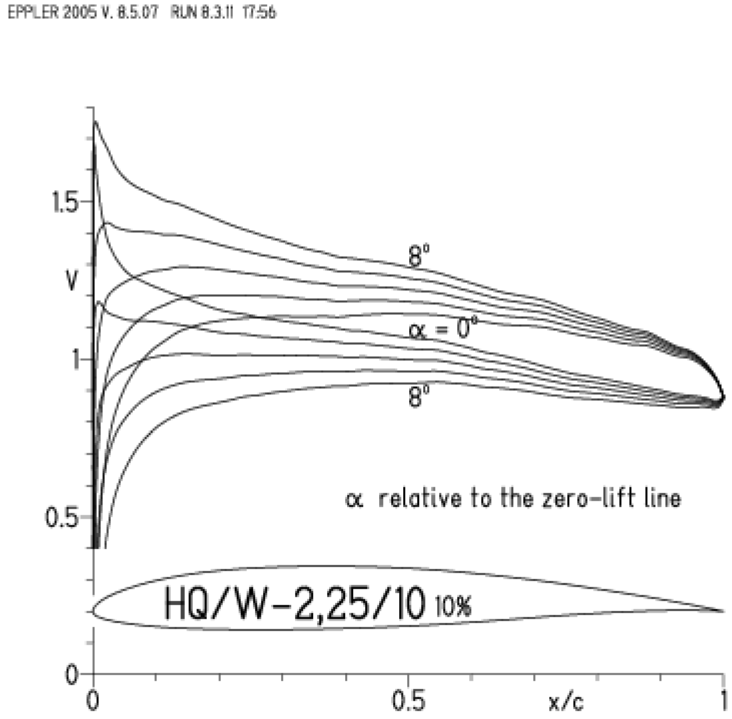


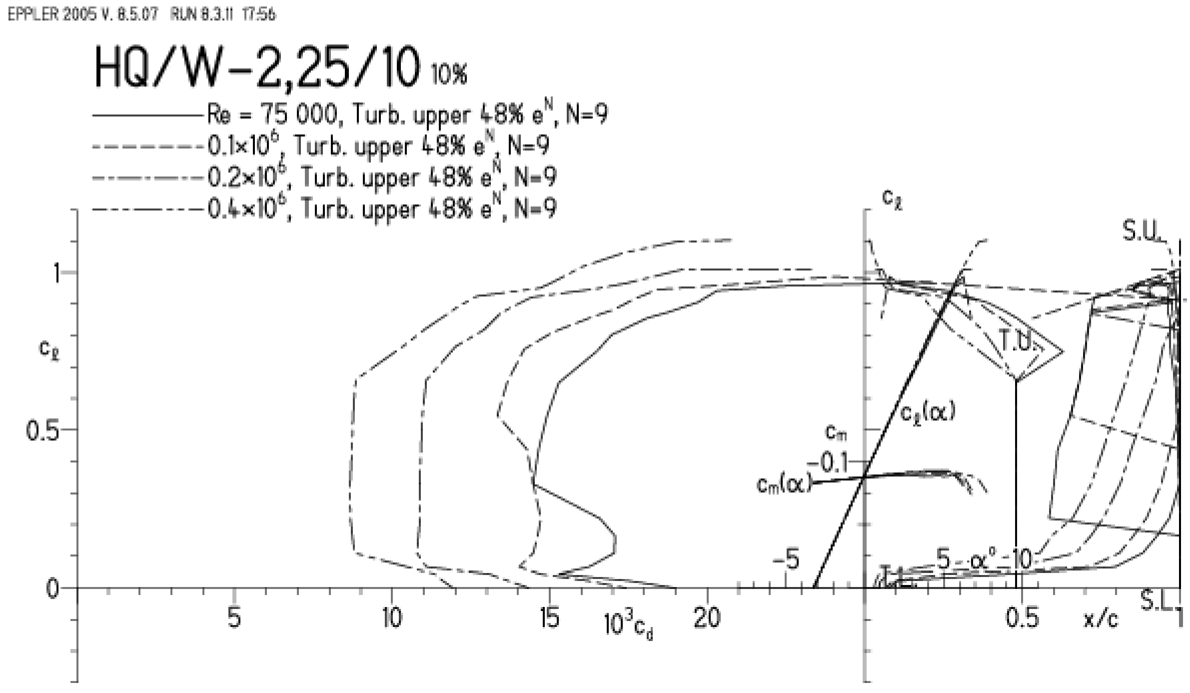
<u>HQ/W-2,25/10</u>, N=9





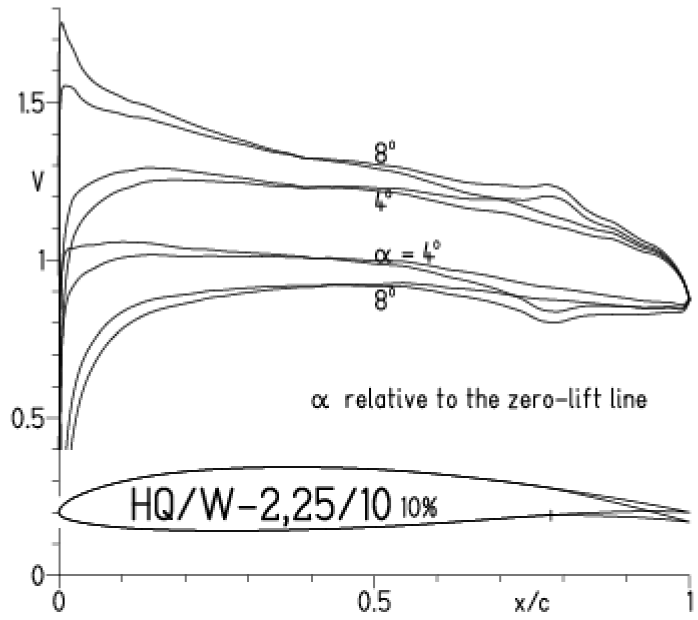
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



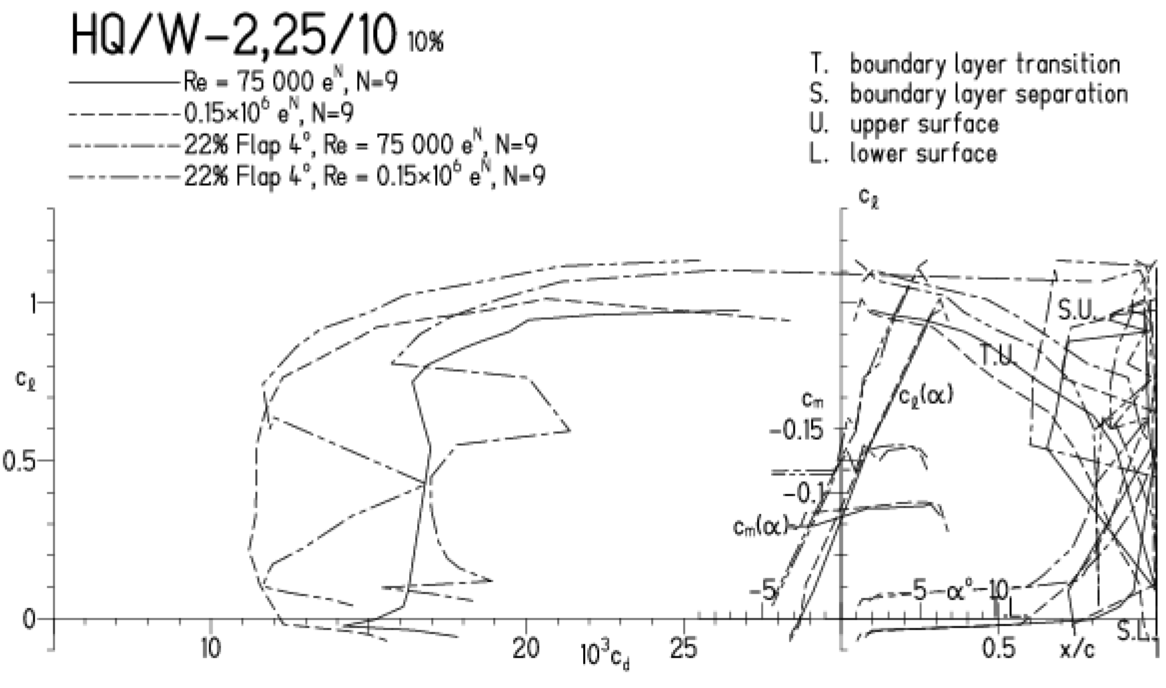


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

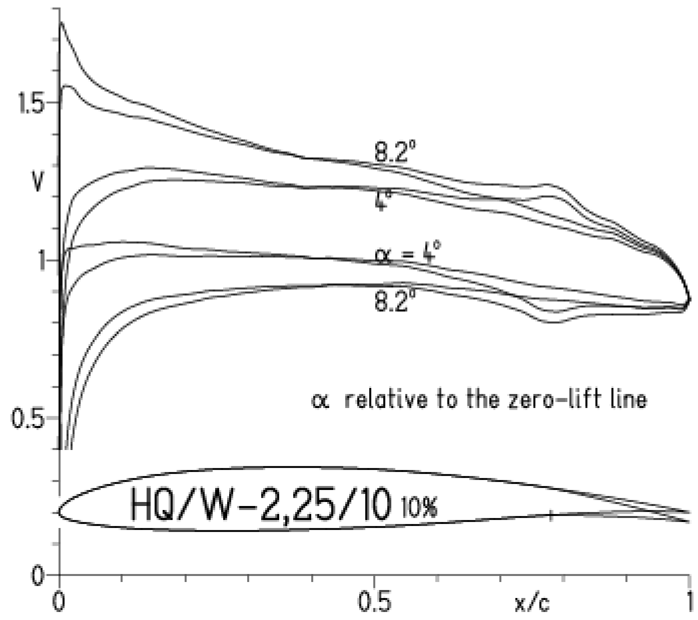


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

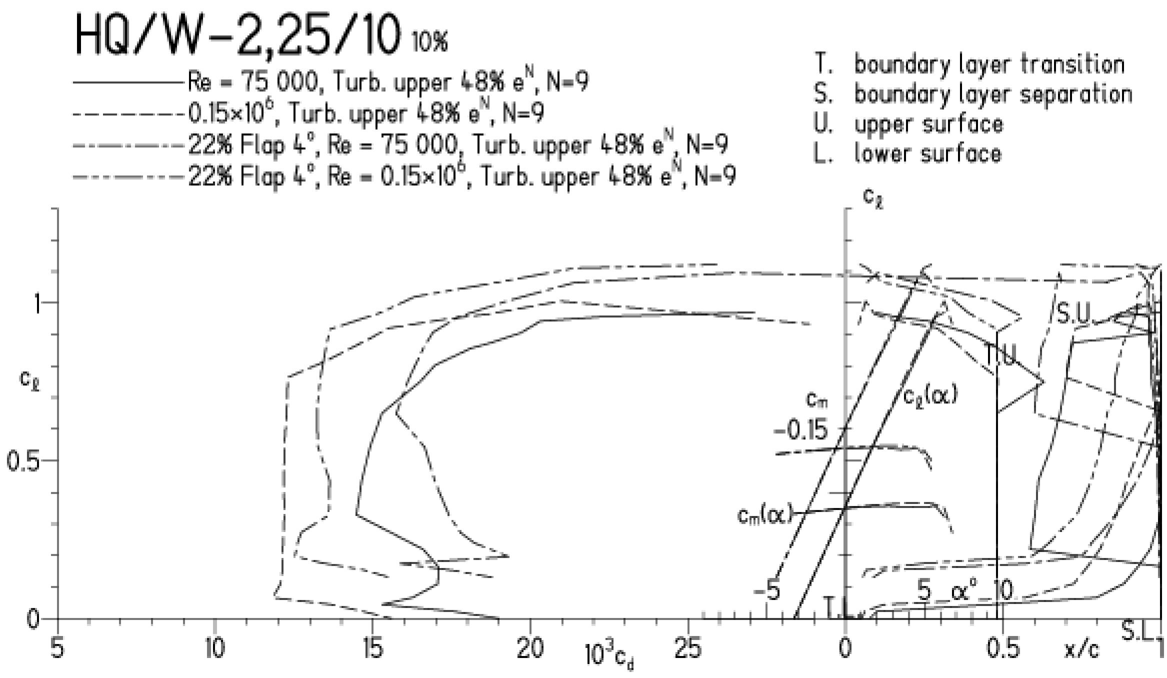


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

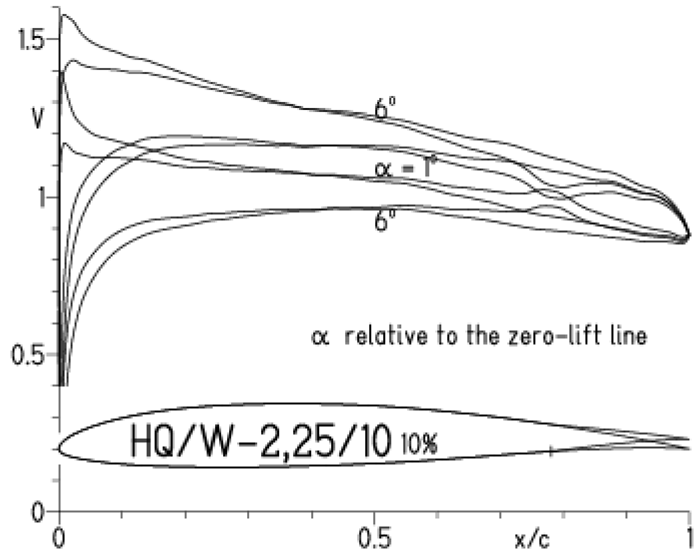


EPPLER 2005 V. 8.5.07 RUN 8.3

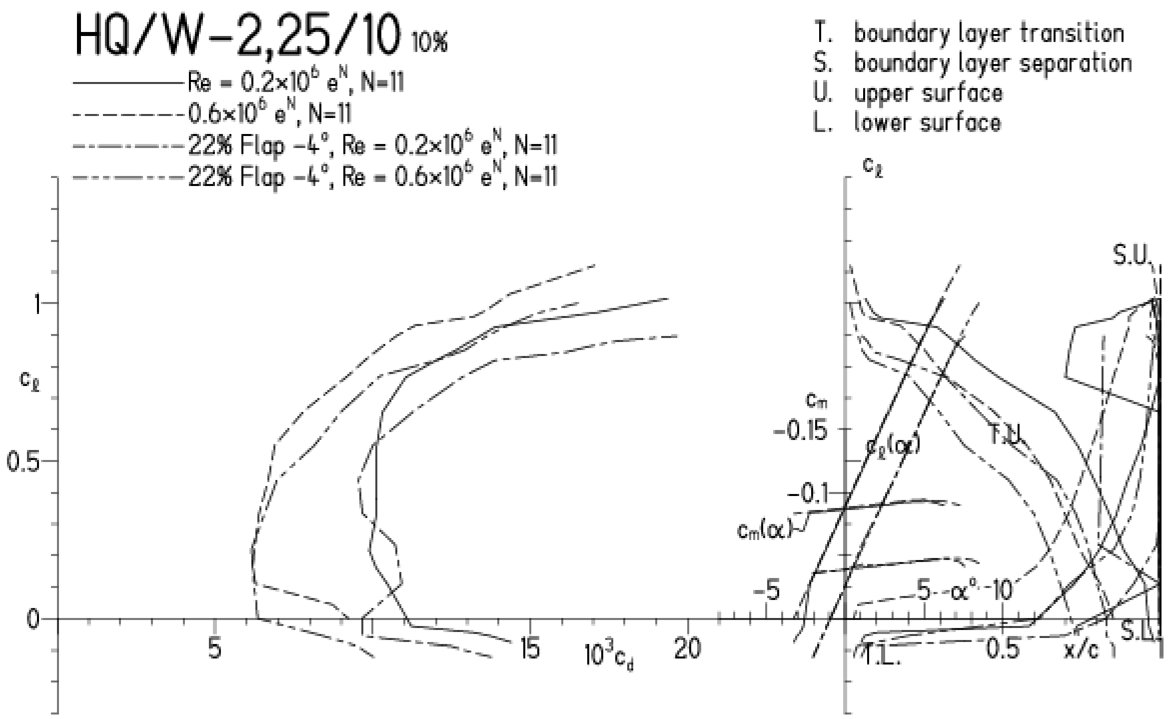


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

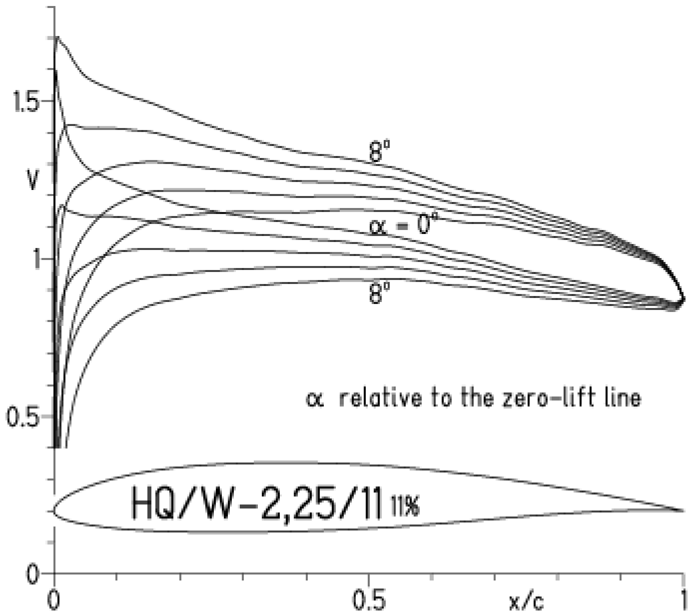


EPPLER 2005 V. 8.5.07 RUN

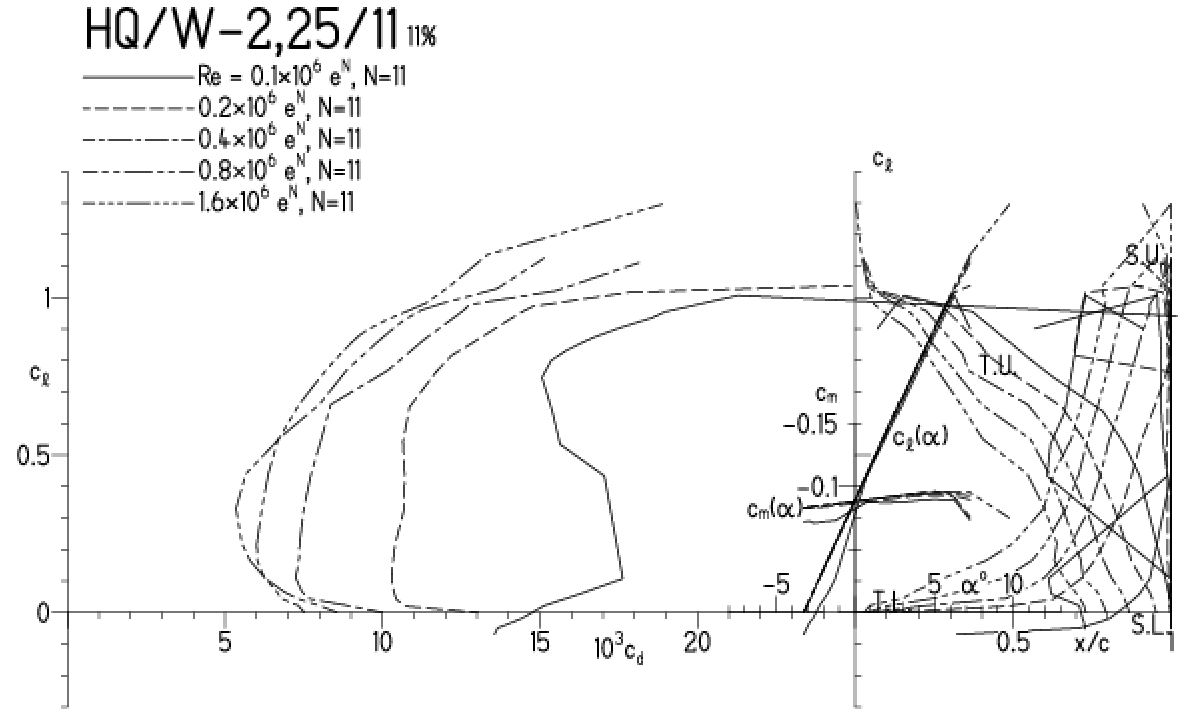


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

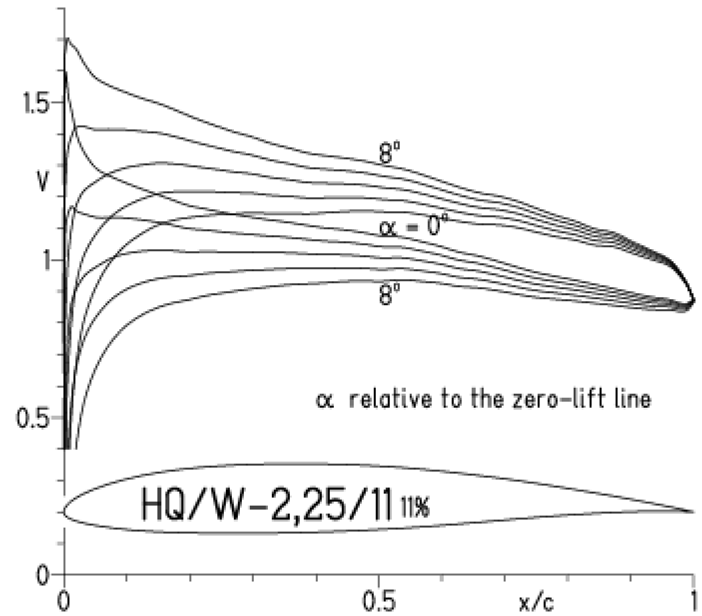


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

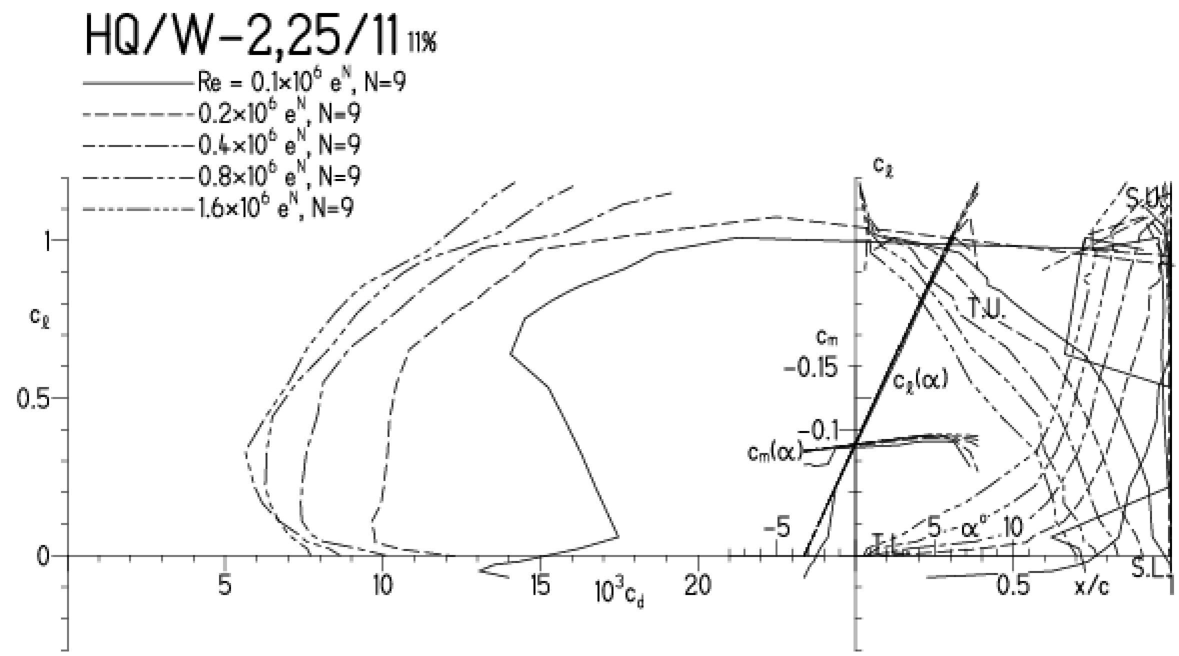


HQQ/W-2,25/11, N=9

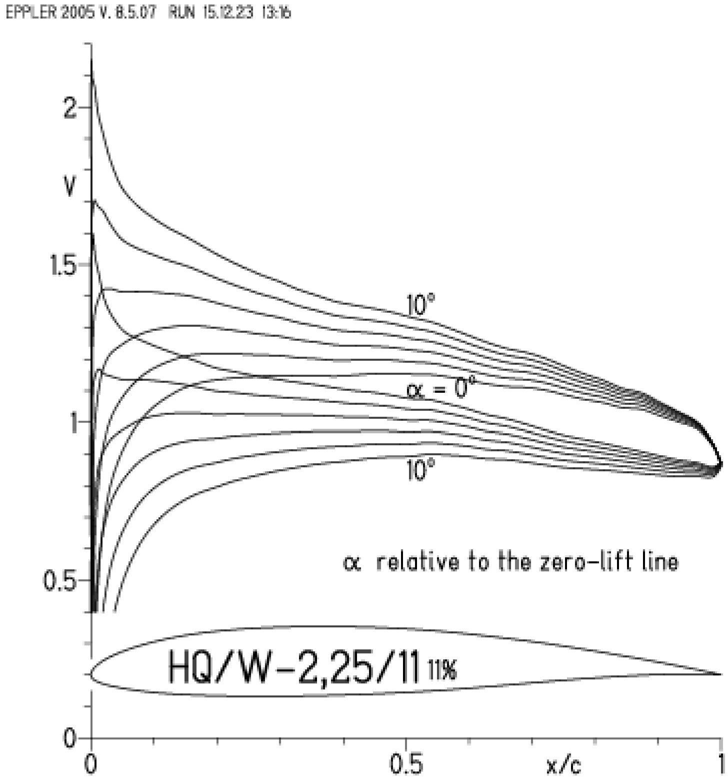
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

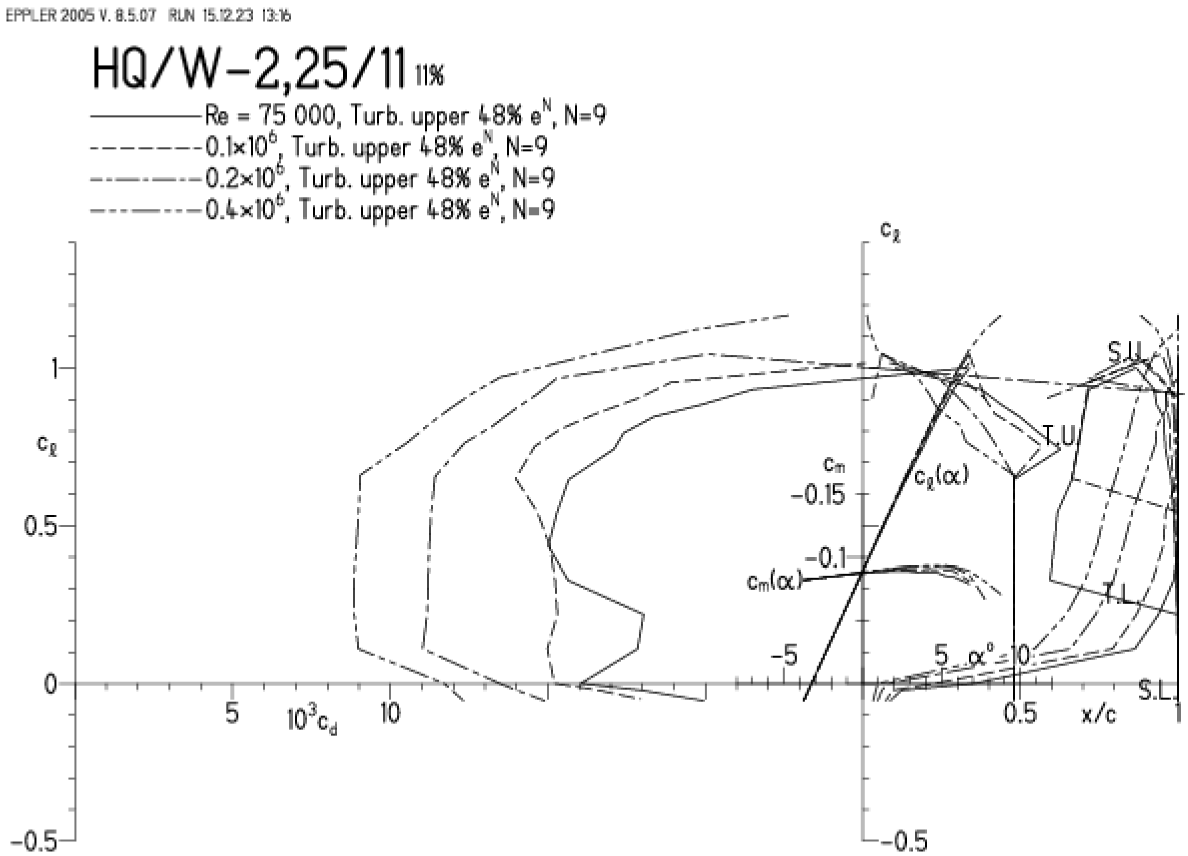


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



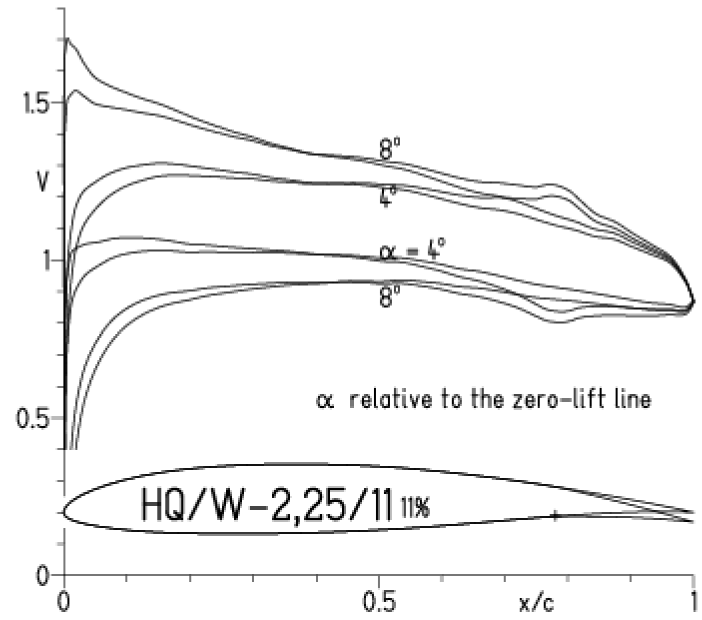
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



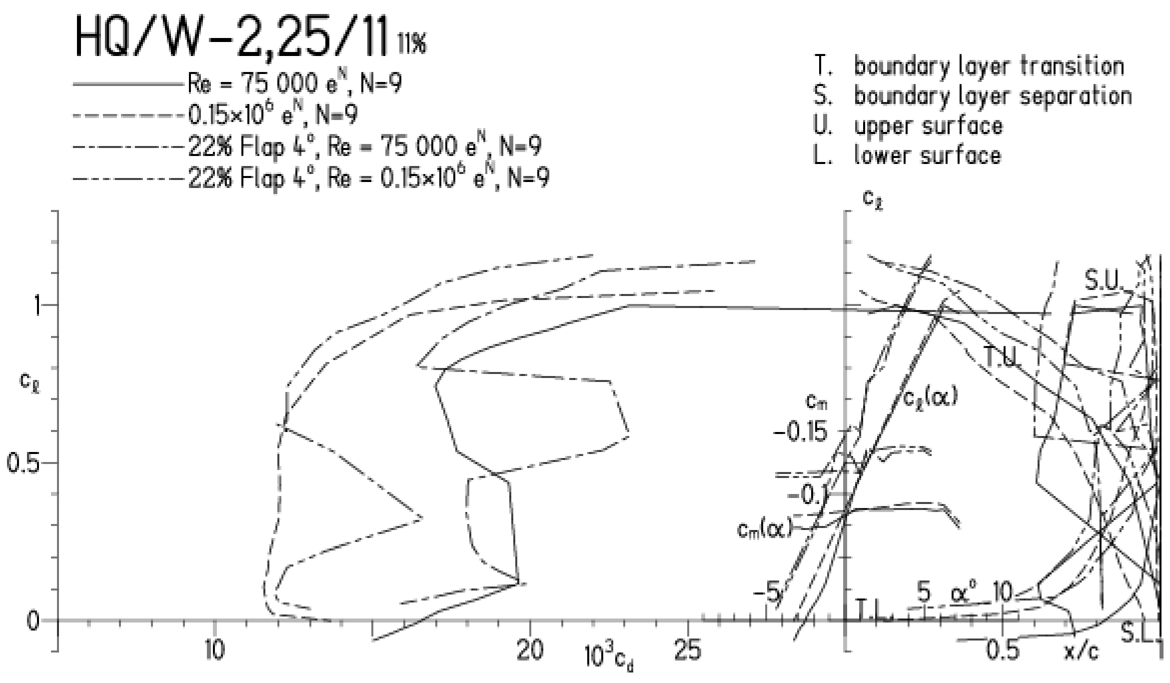


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

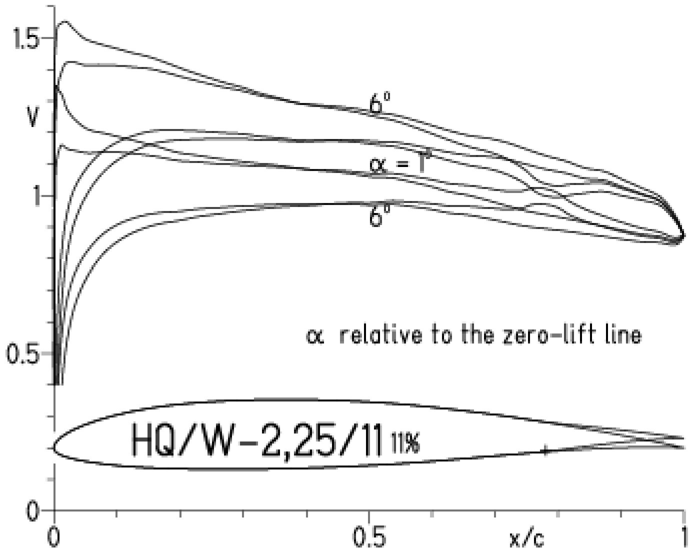


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

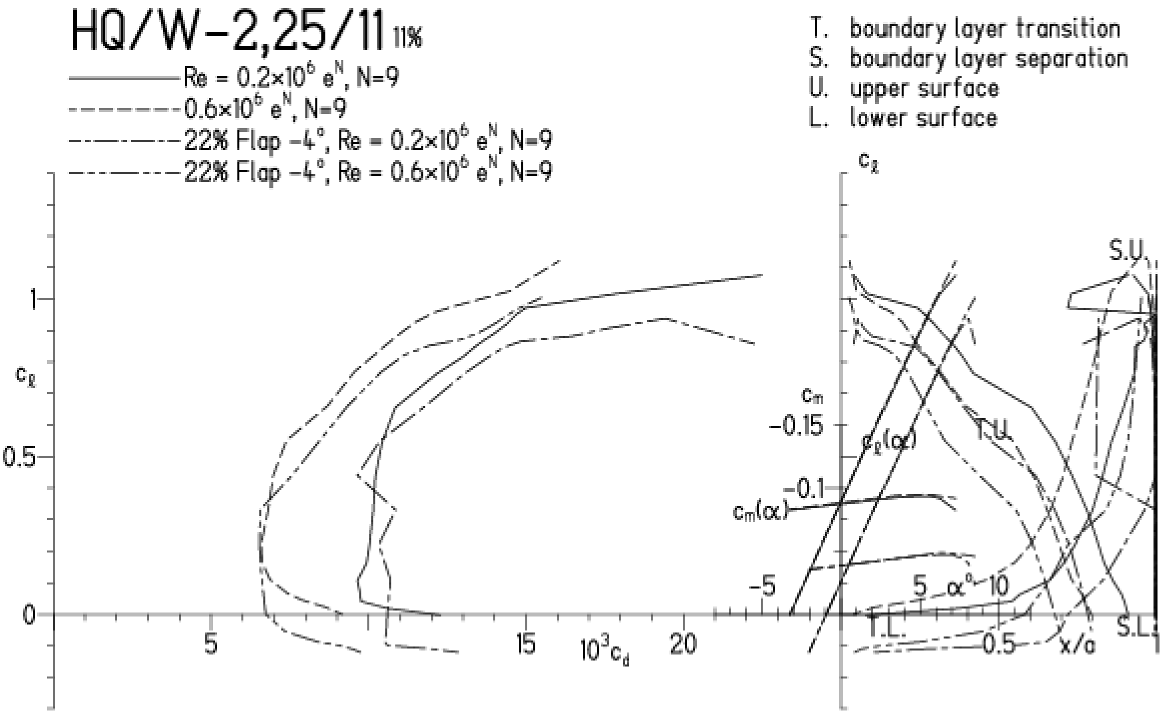


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

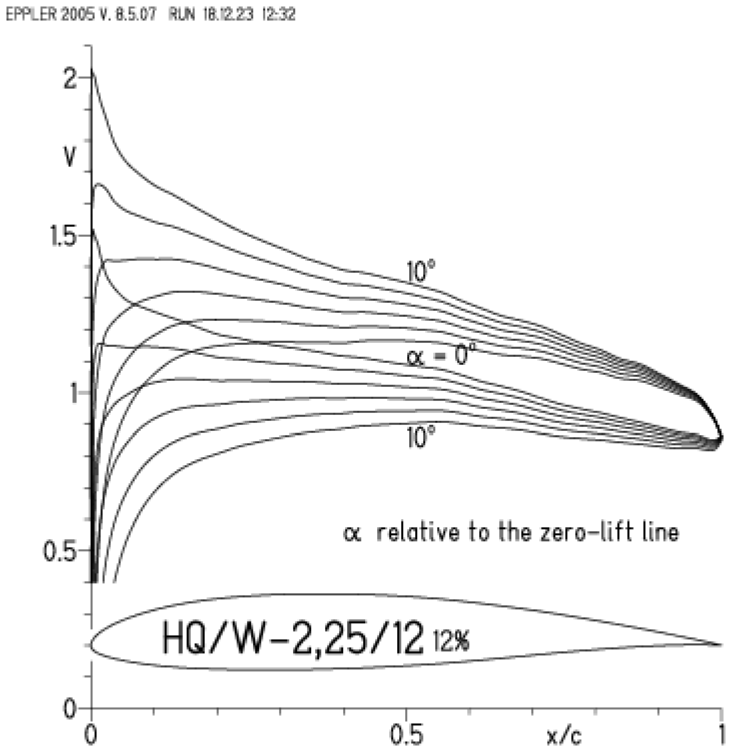
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

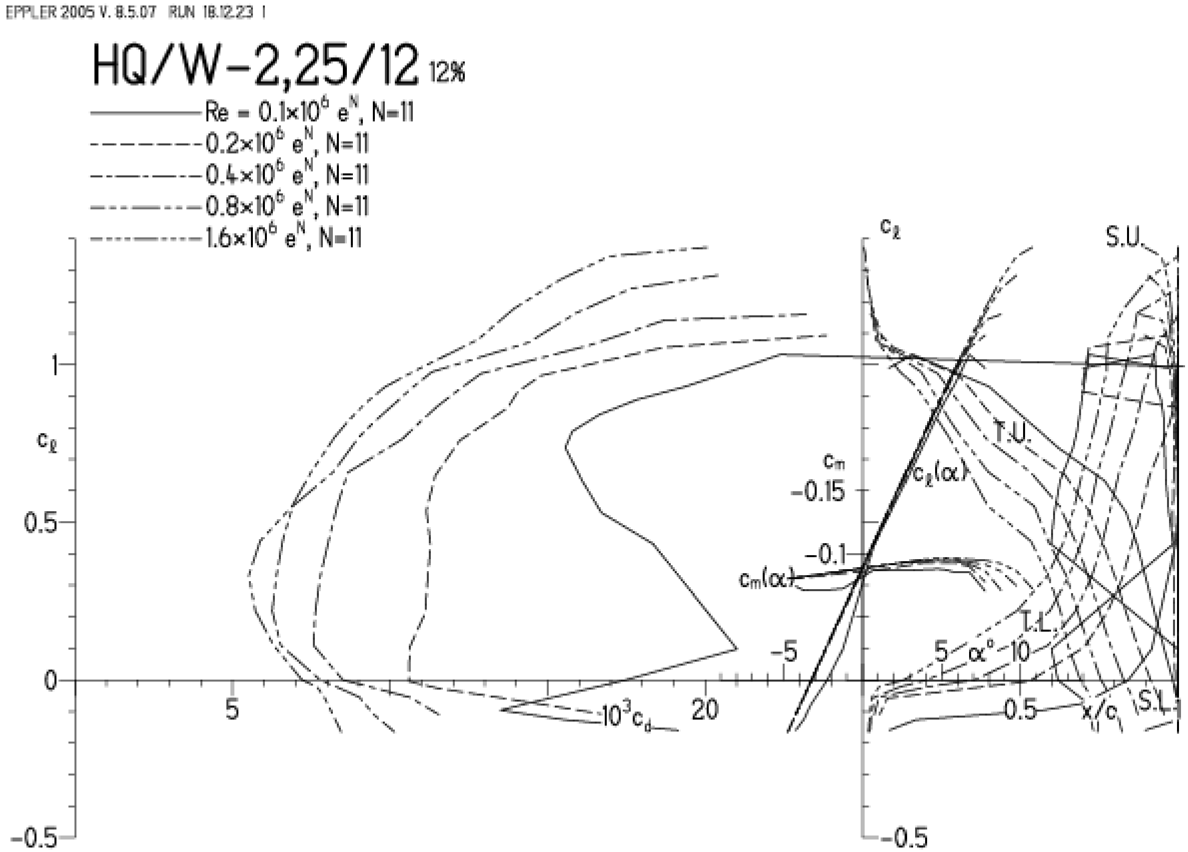


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

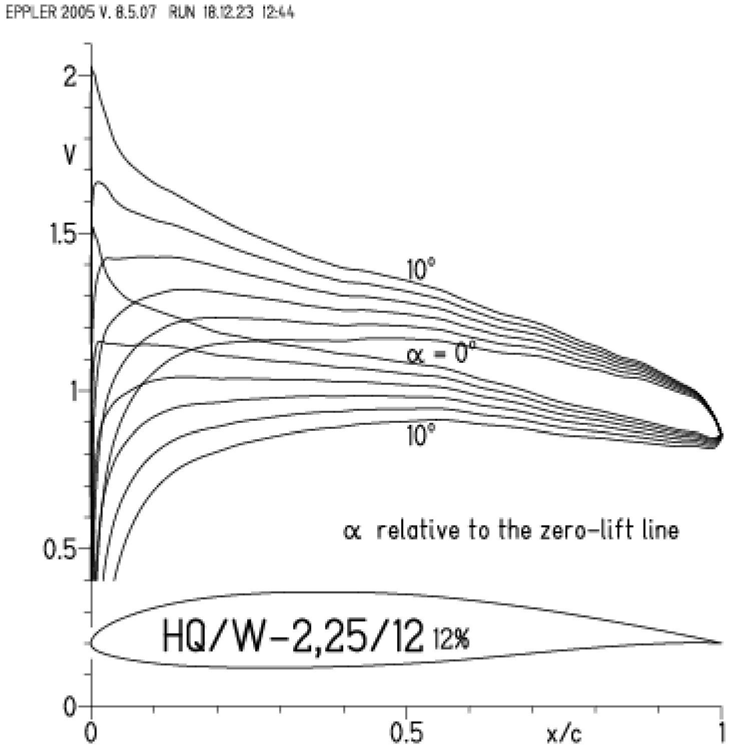


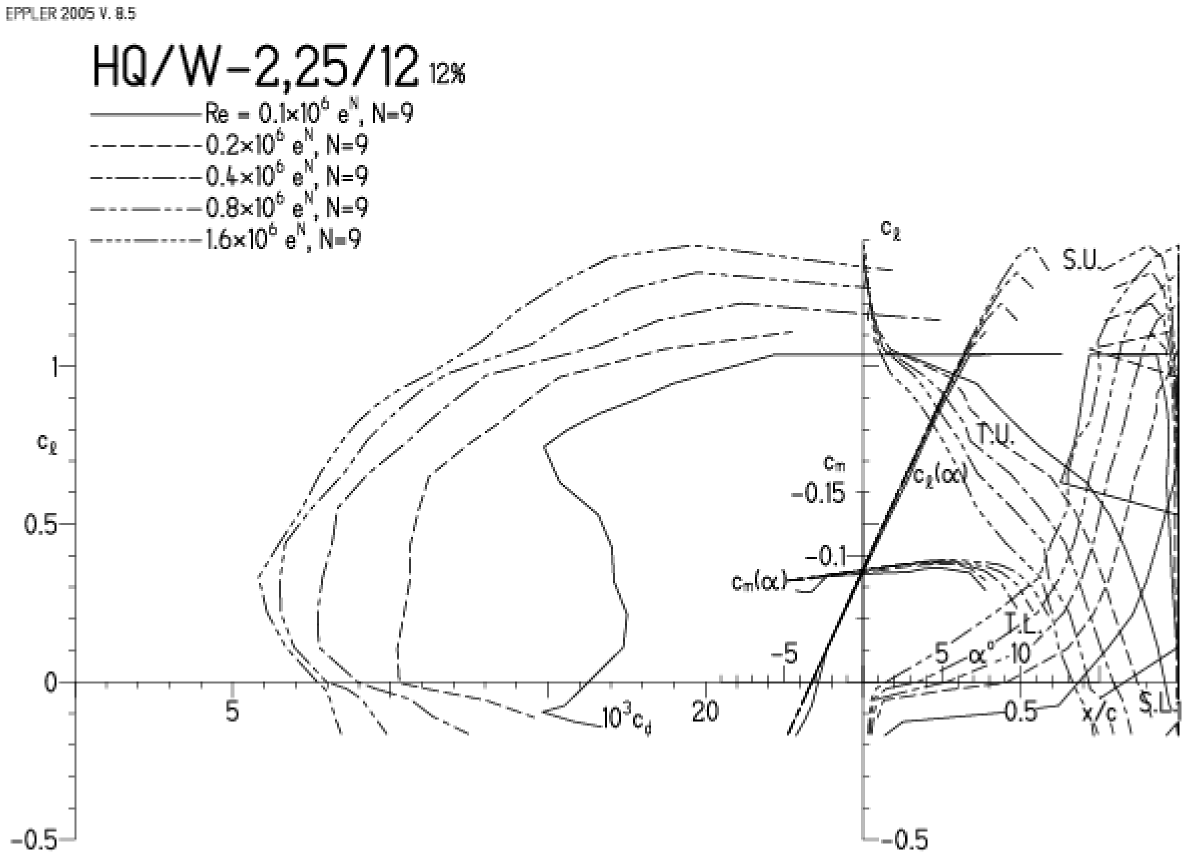
HQ/W-2,25/12, N=11



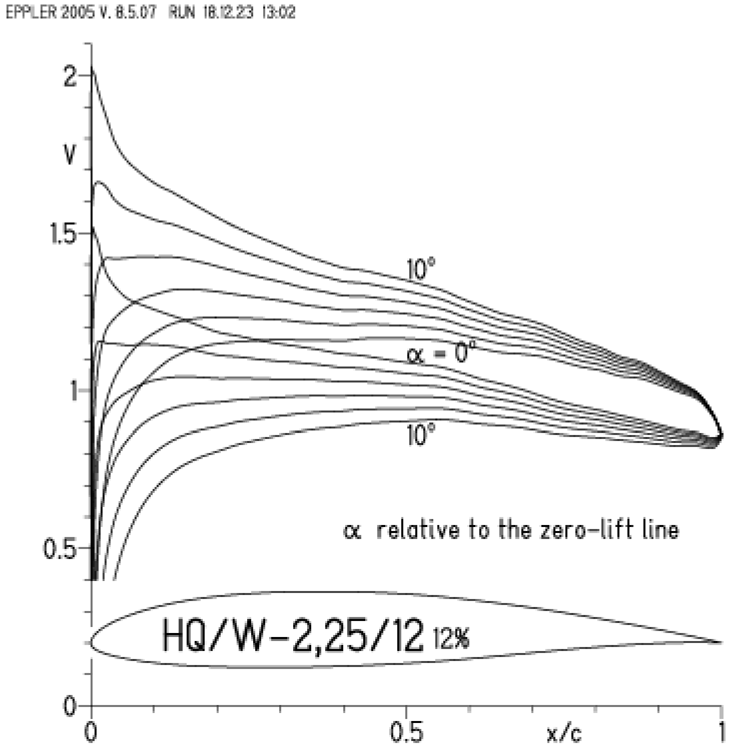


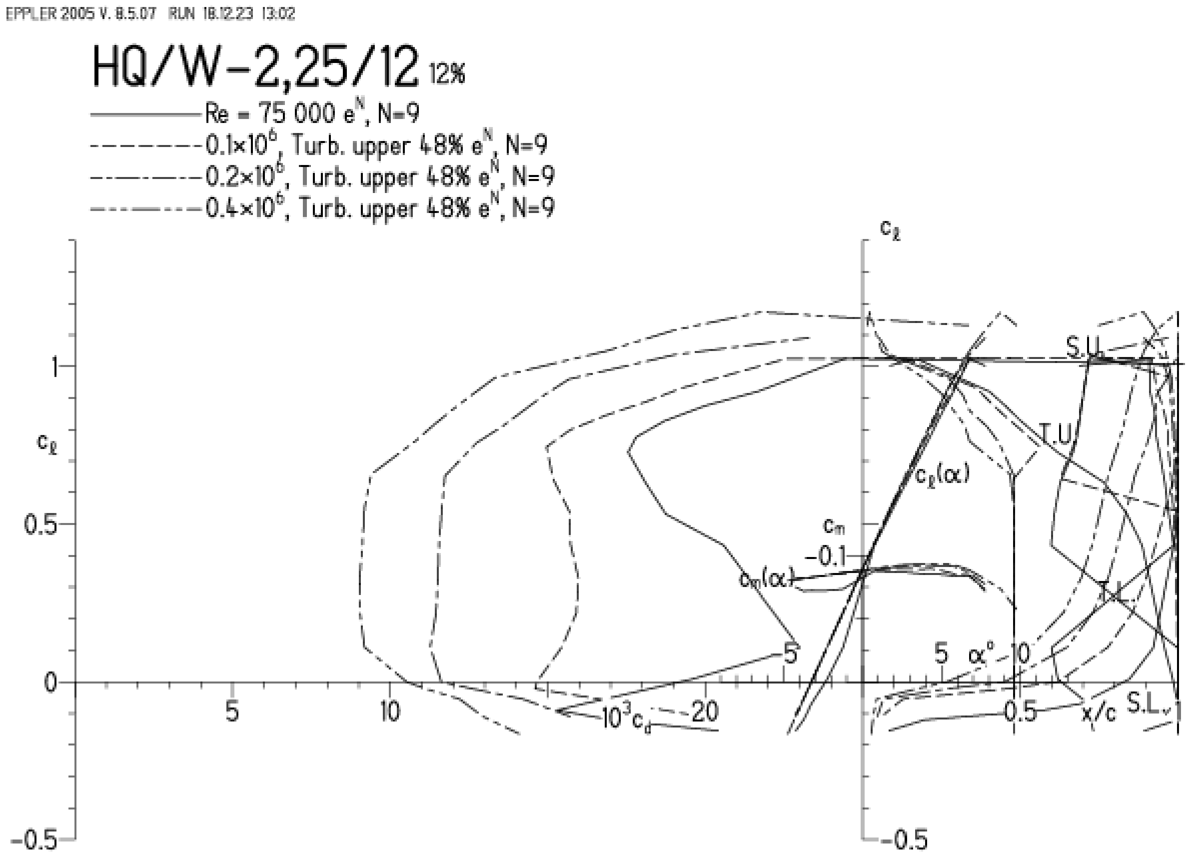
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
10^3 c_d
x/c

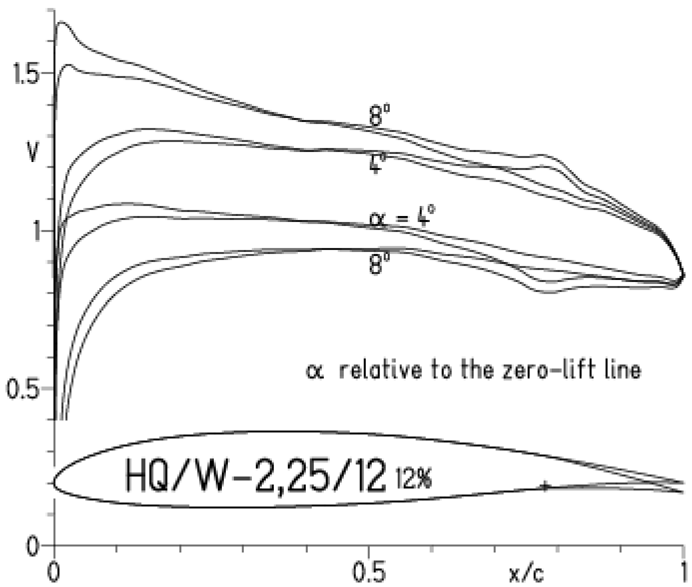
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



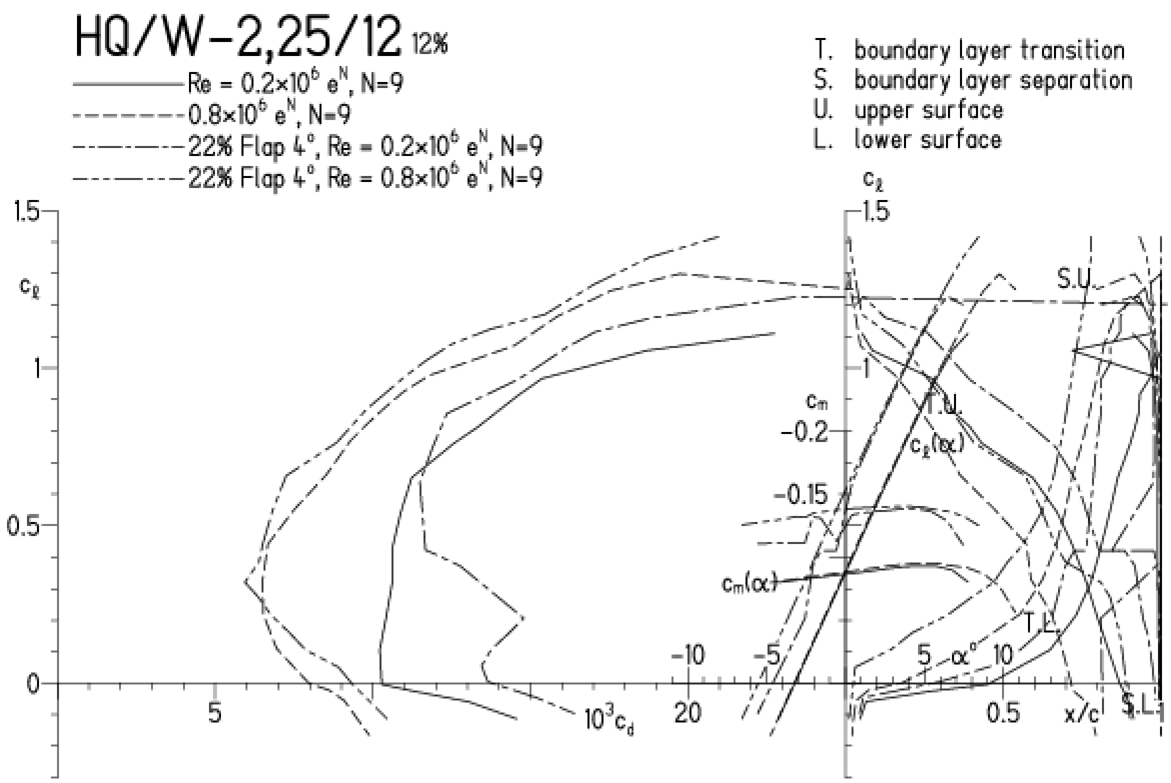


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

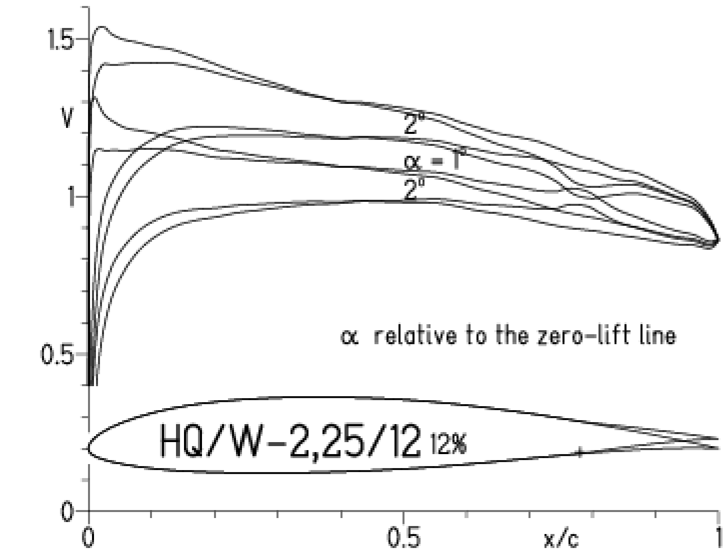


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

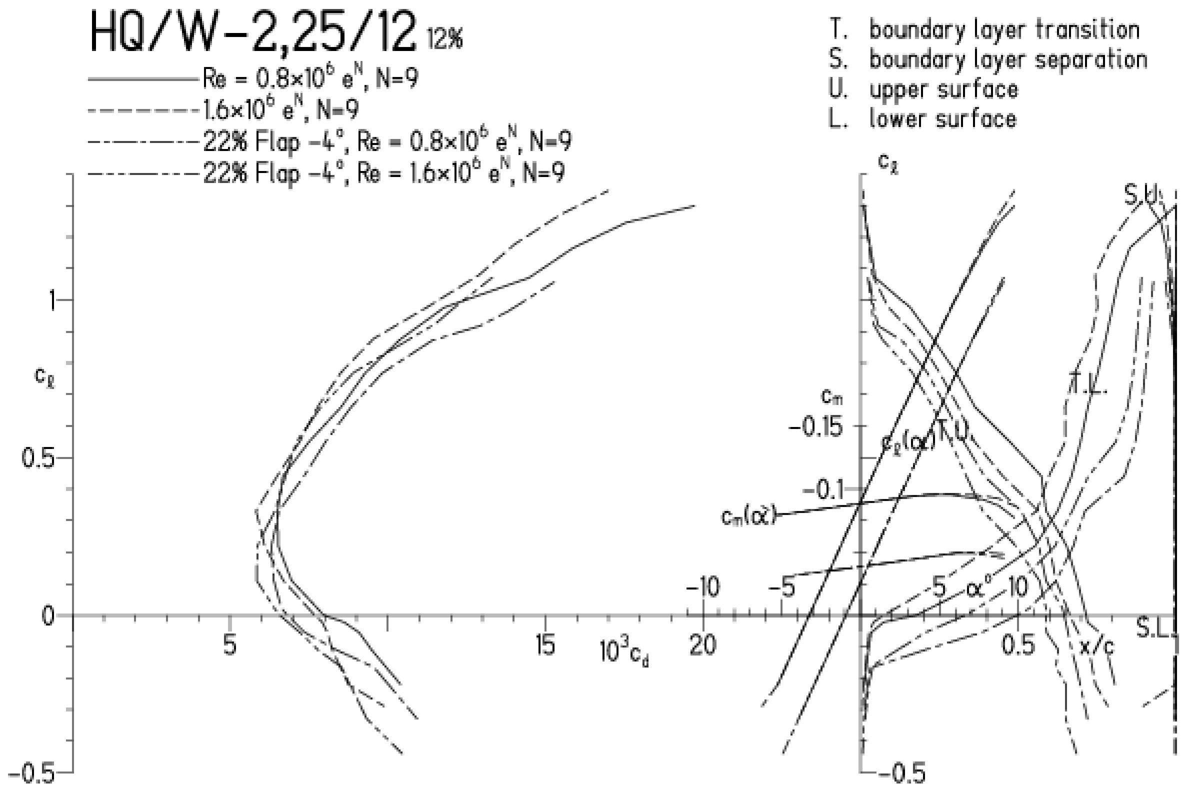


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

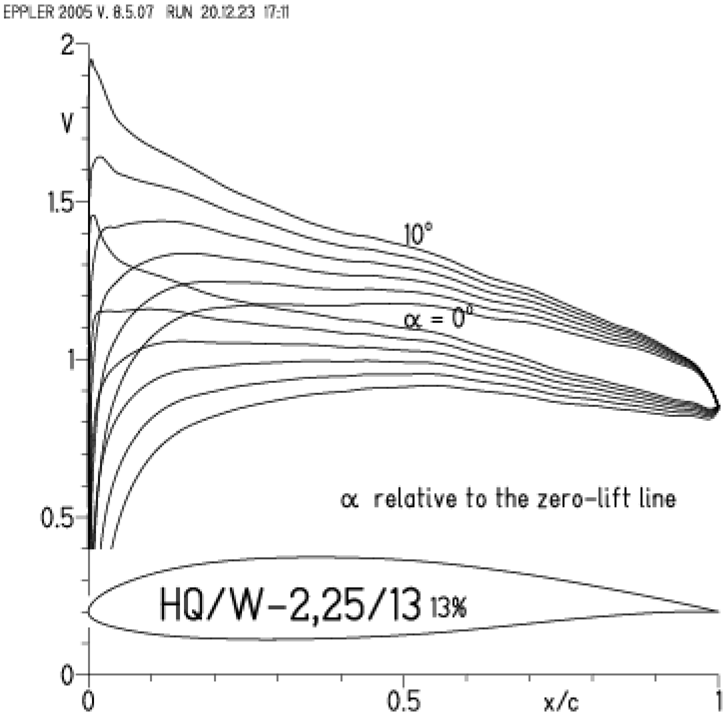
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

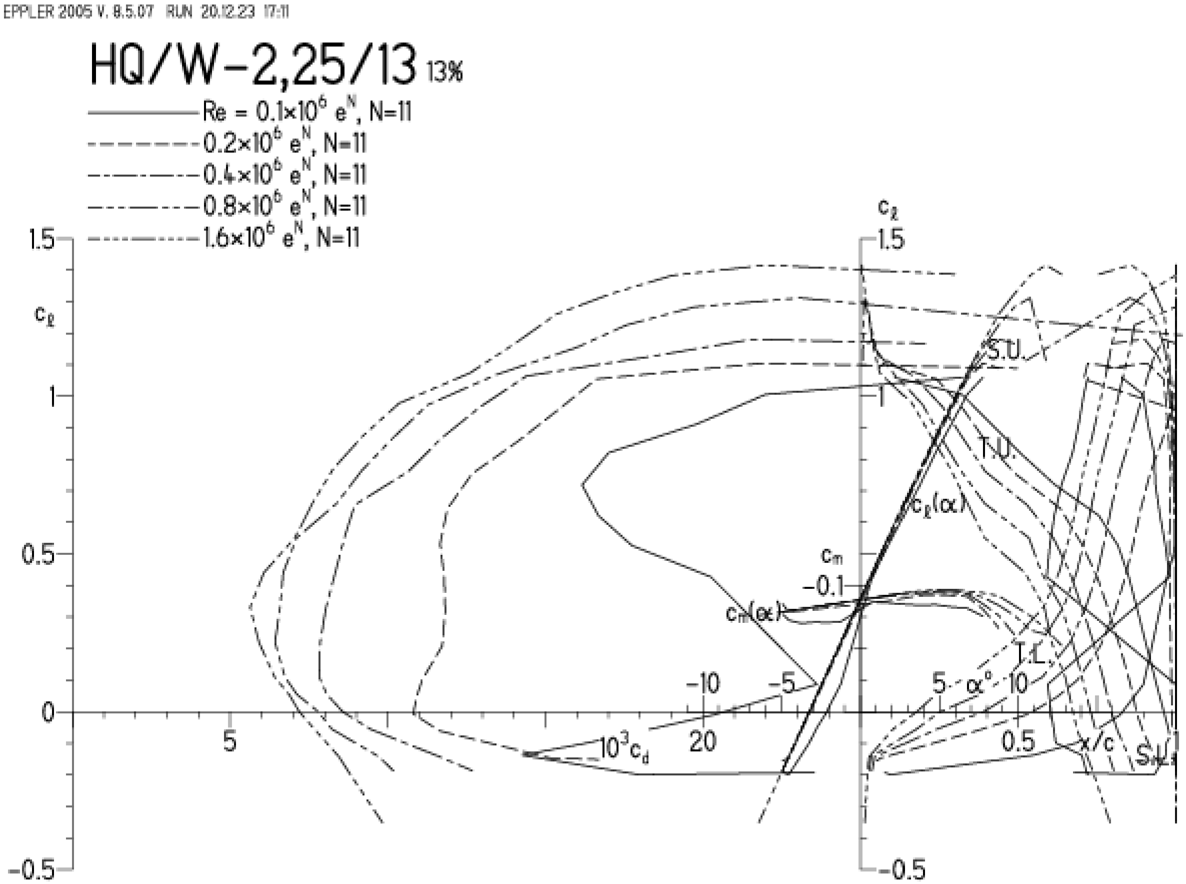


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

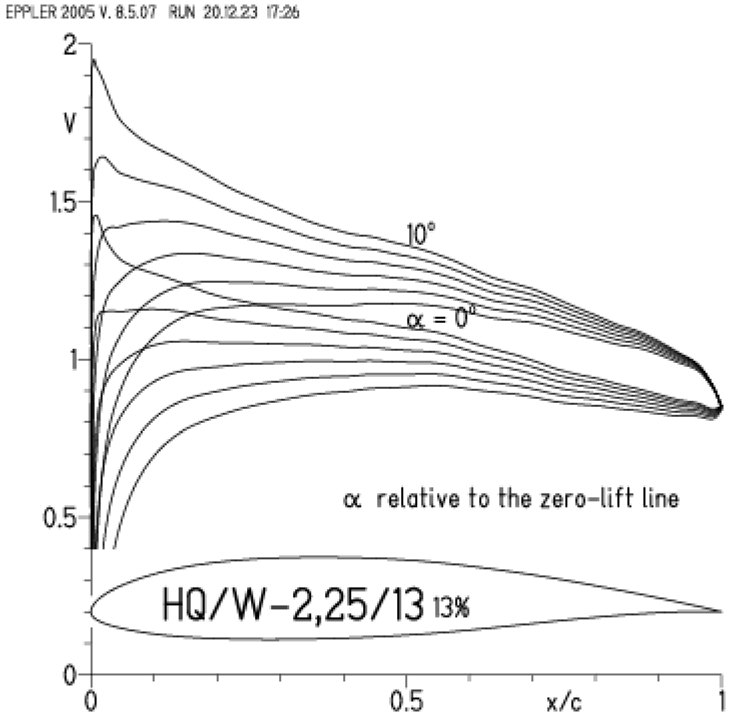


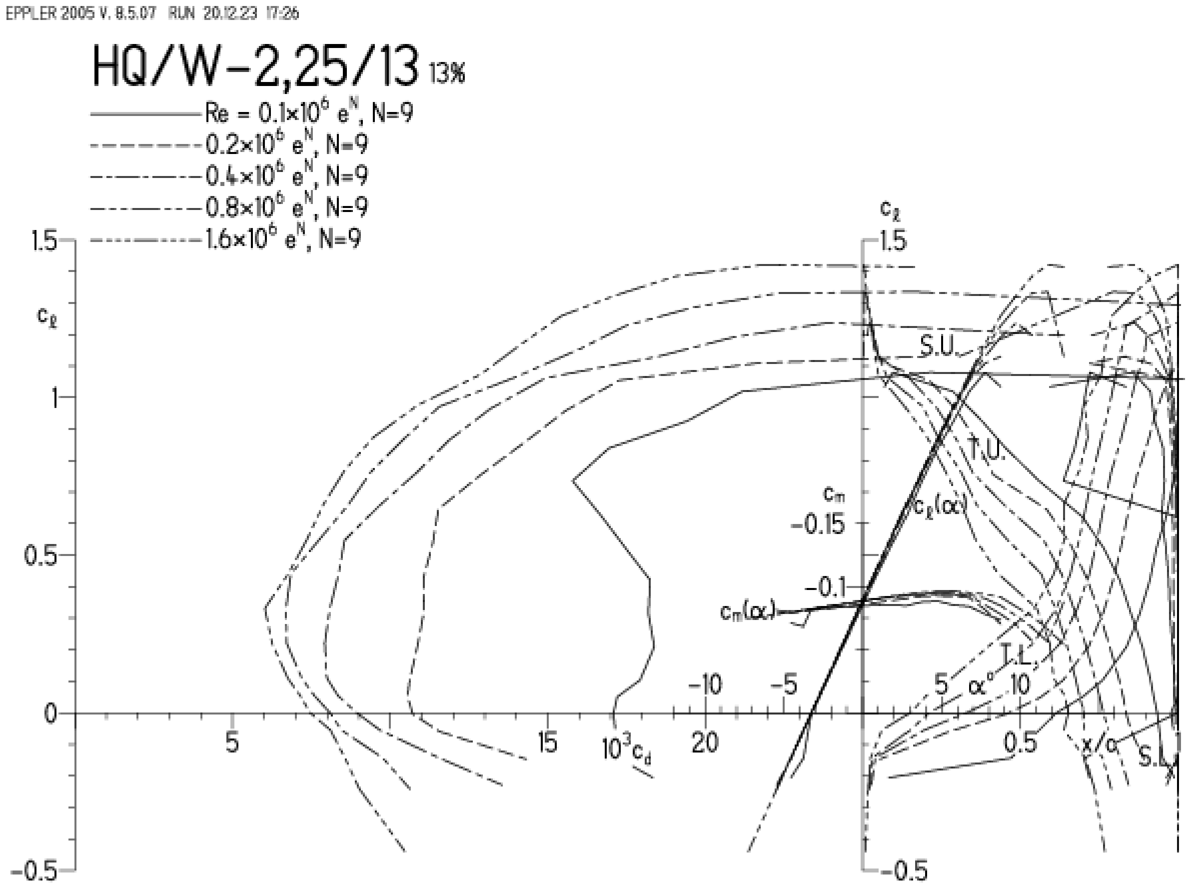
<u>HQ/W-2,25/13</u>, N=11



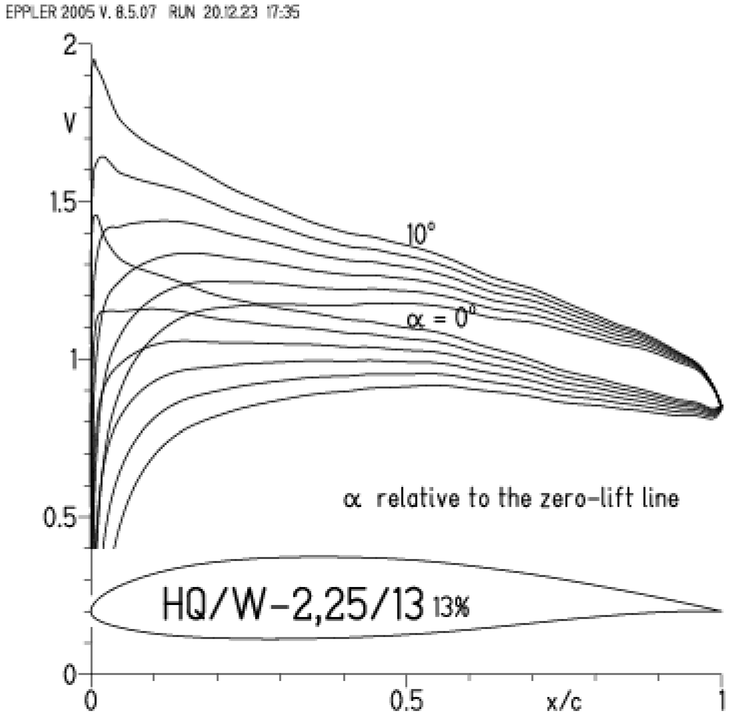


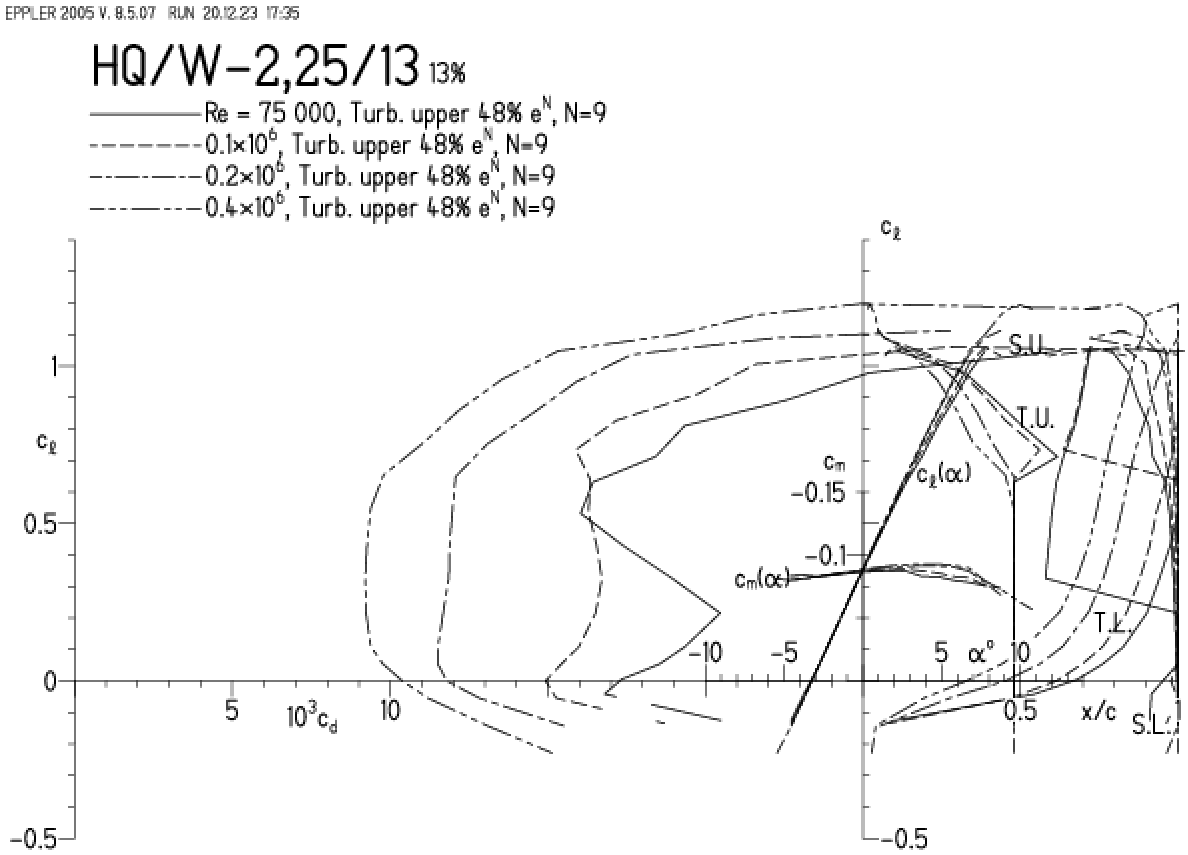
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
α relative to the zero-lift line
0.5
HQ/W-2,25/13 13%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cₗ(α)
cm(α)
T.L.
S.L.
-0.15
-0.1
-10
-5
5
α°
10
15
10³cd
20
0.5
x/c
1.5
1
0.5
0
-0.5

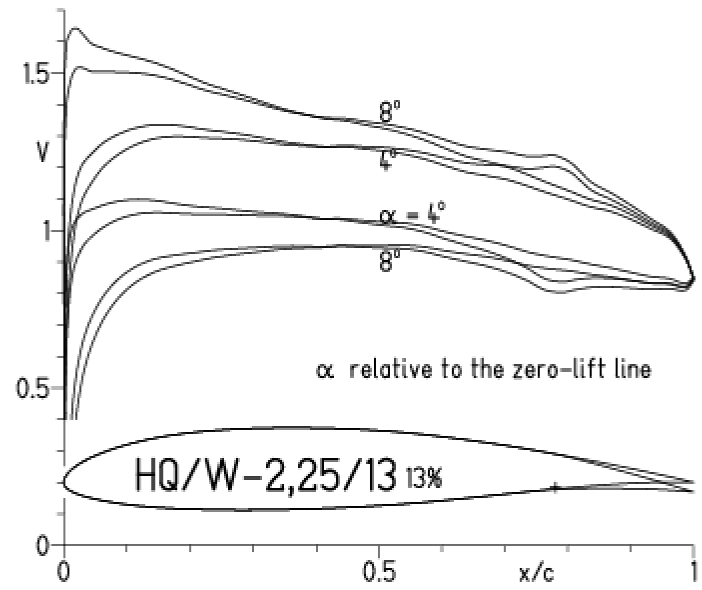
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



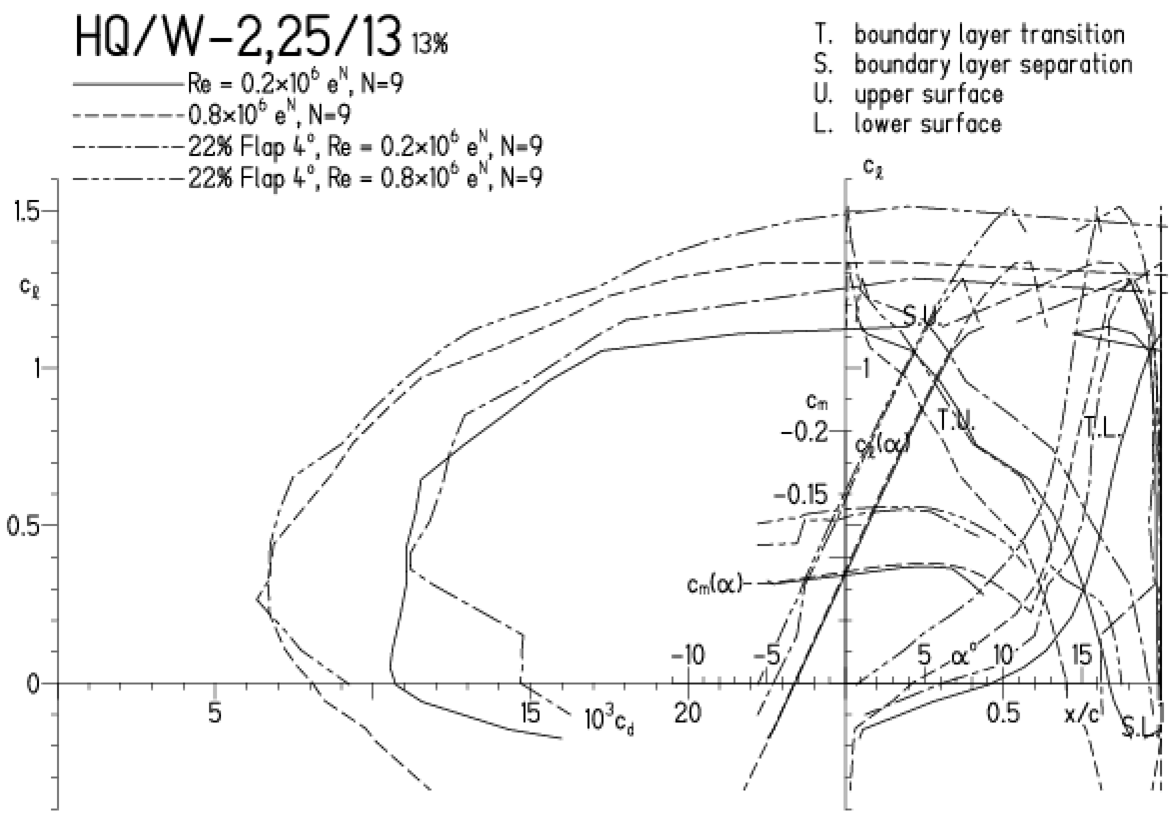


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

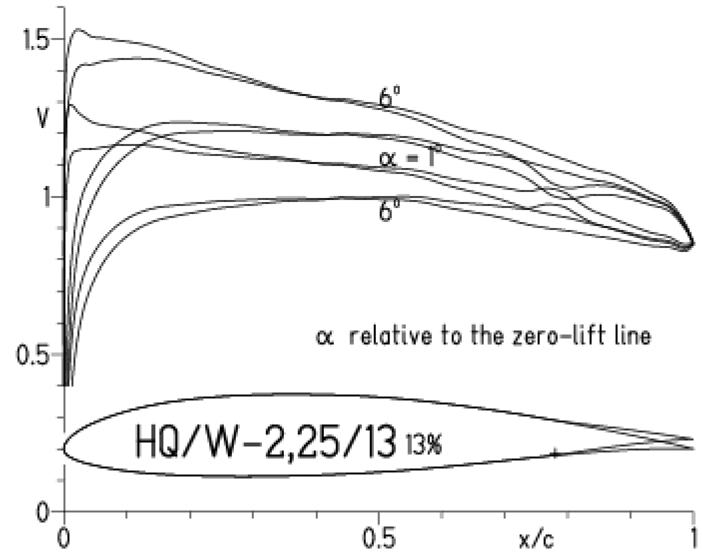


EPPLER 2005 V.

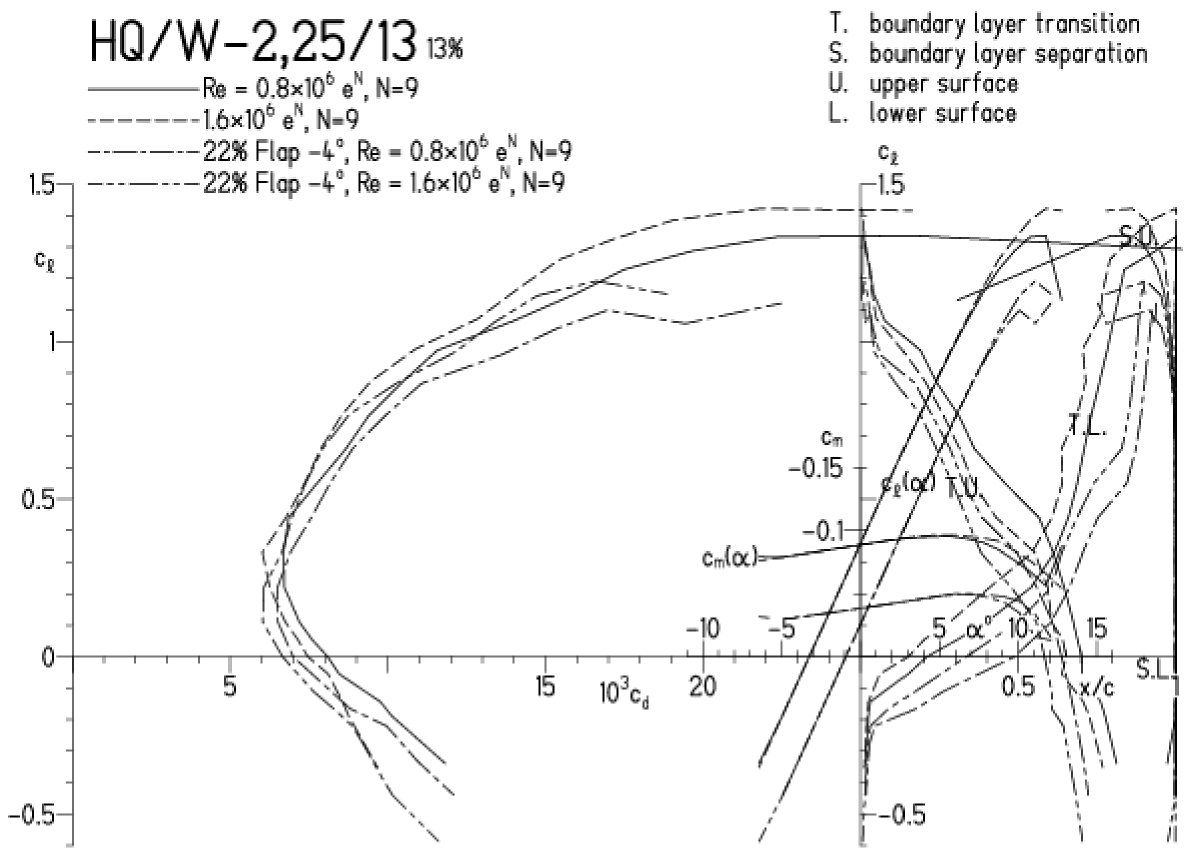


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

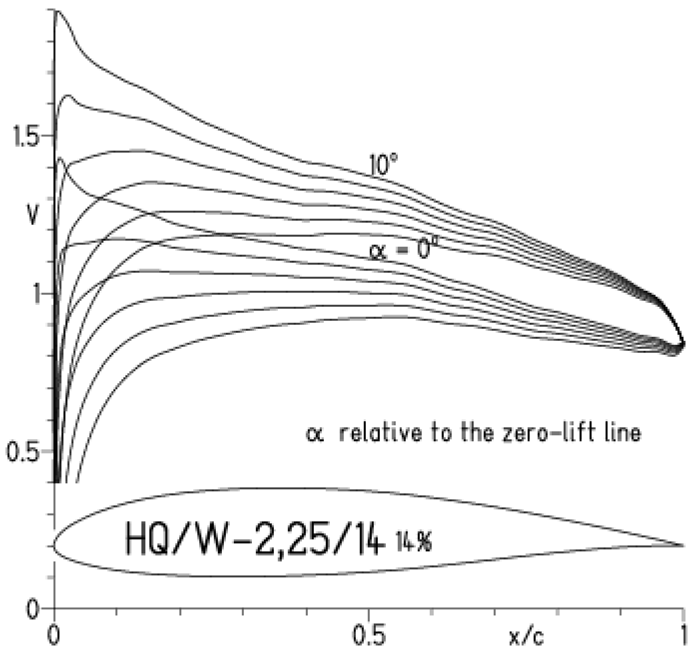


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

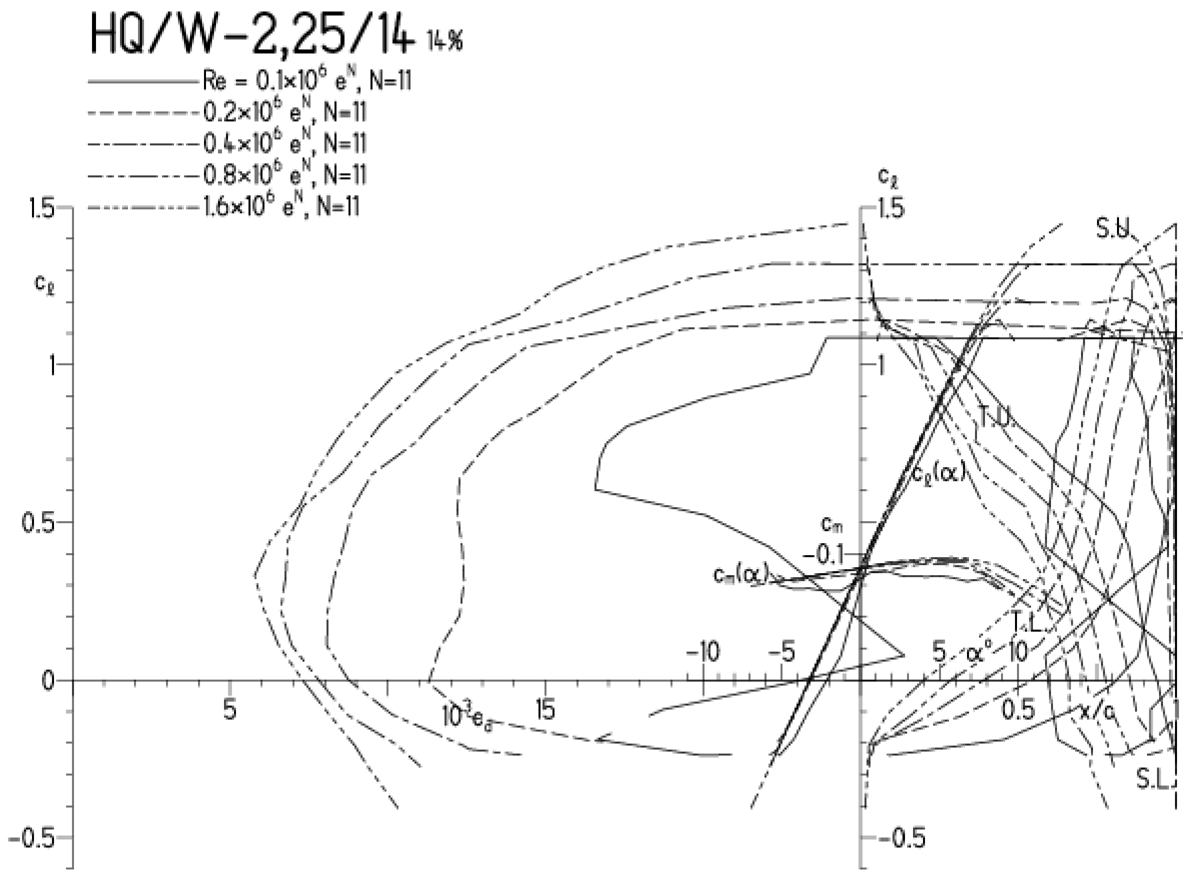


HQ/W-2,25/14, N=11

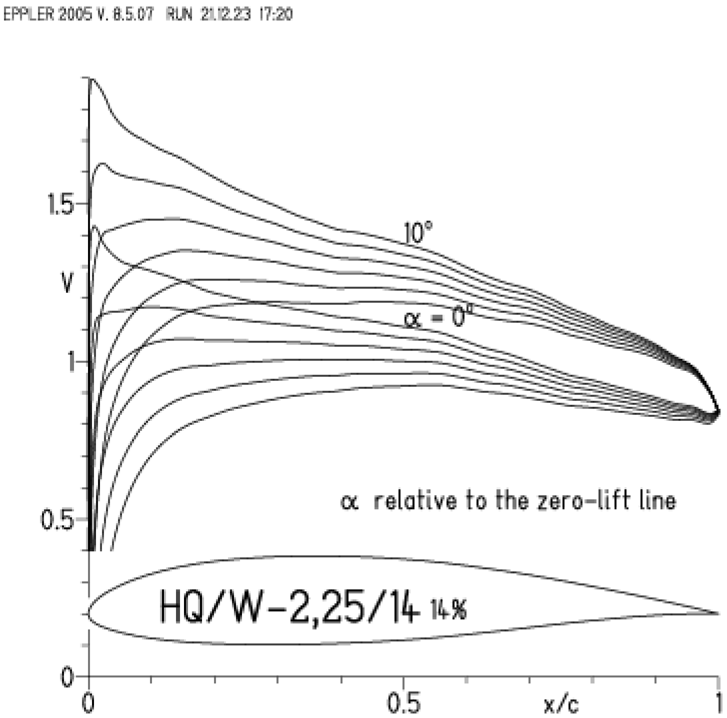
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

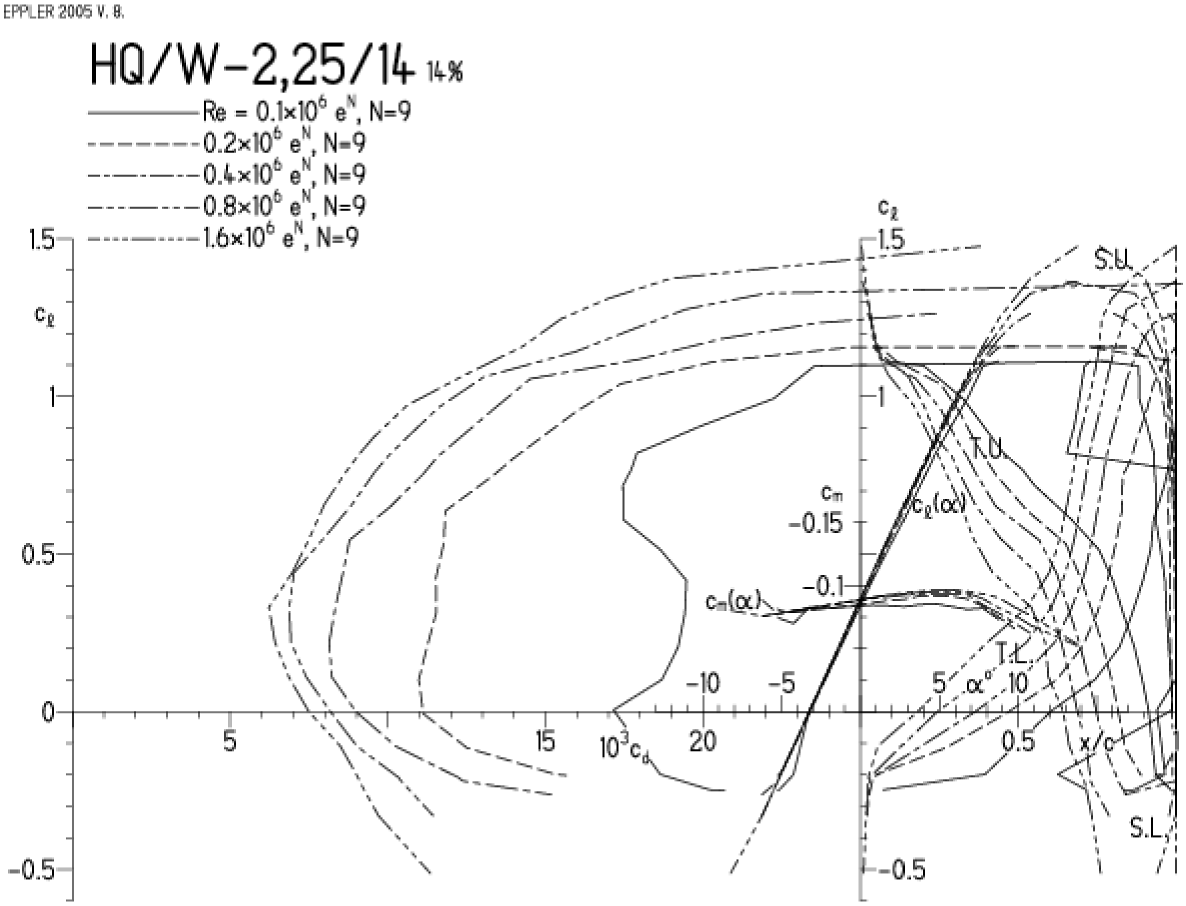


EPPLER 2005 V. 8.

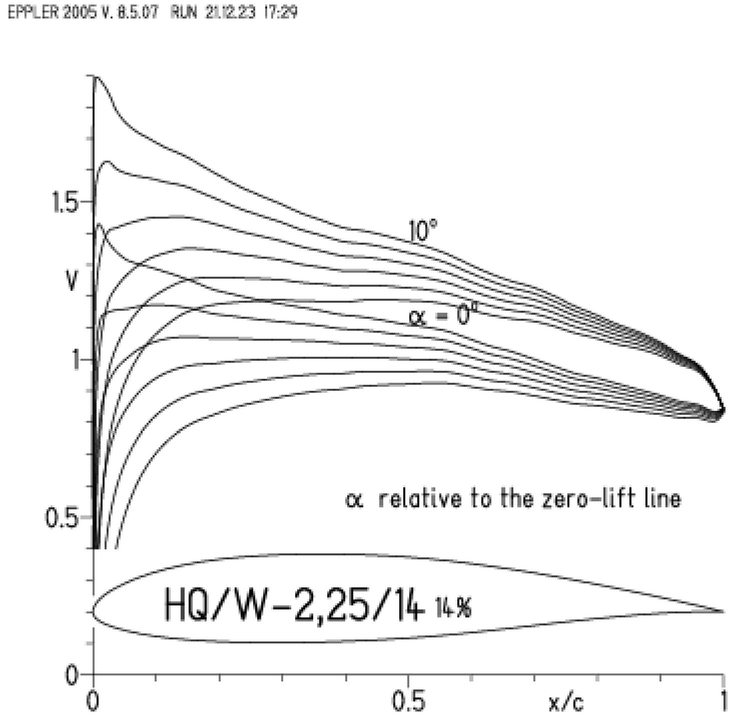


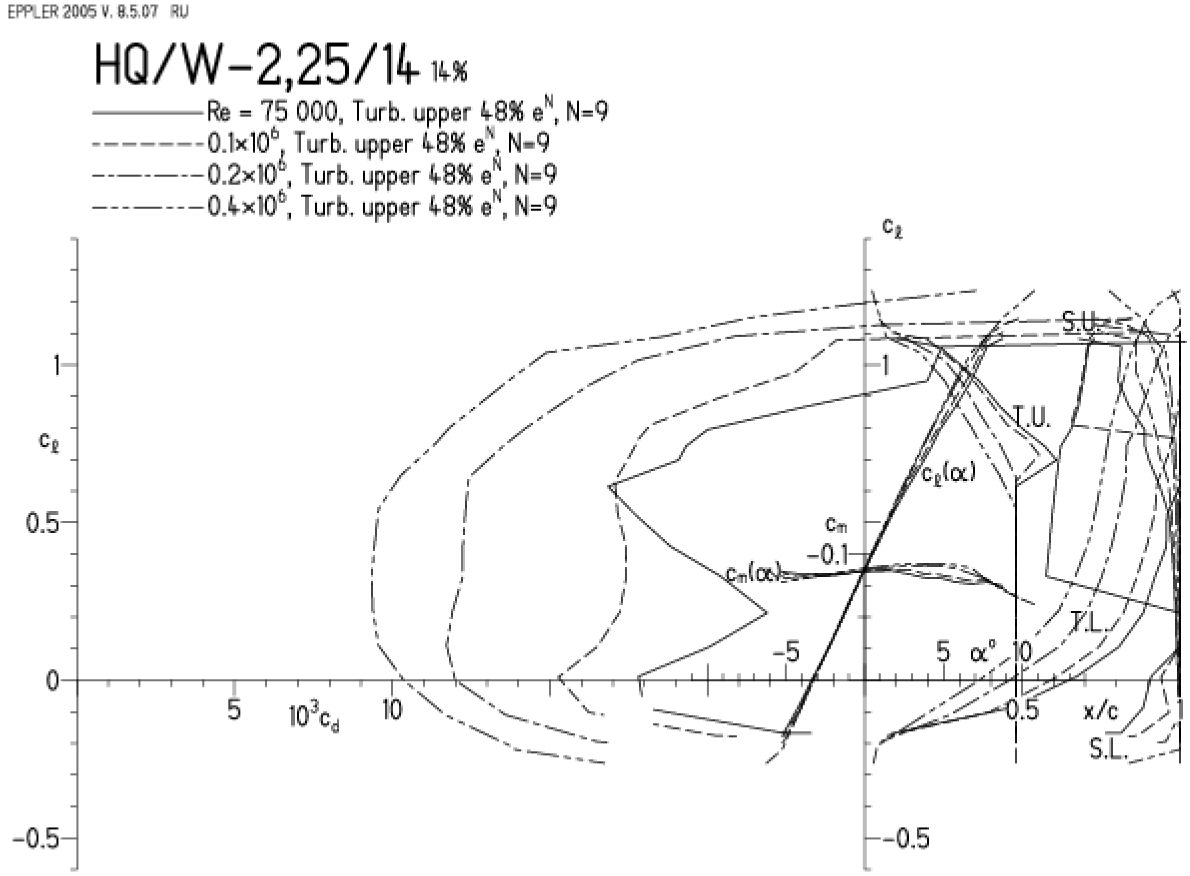
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

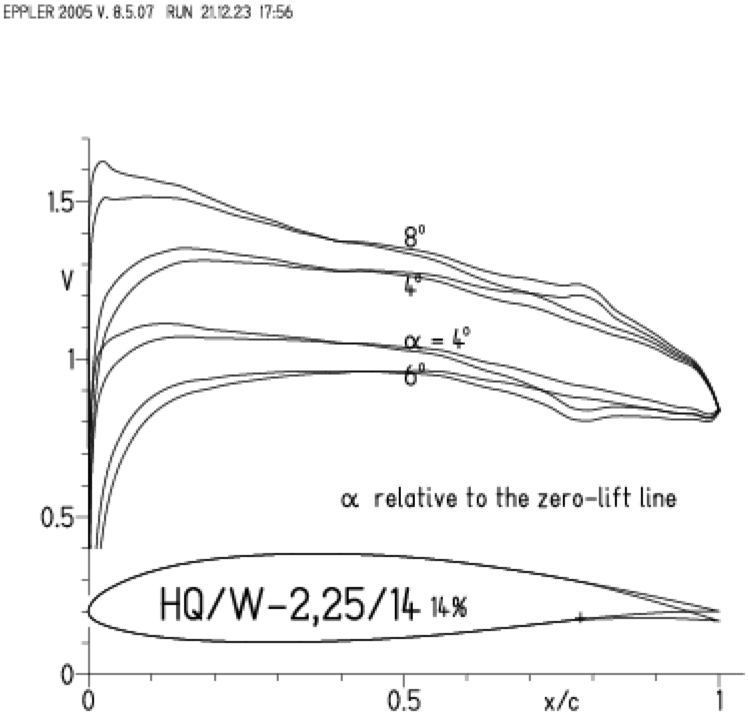

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_l
1.5
1
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-10
-5
5
α°
10
-0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

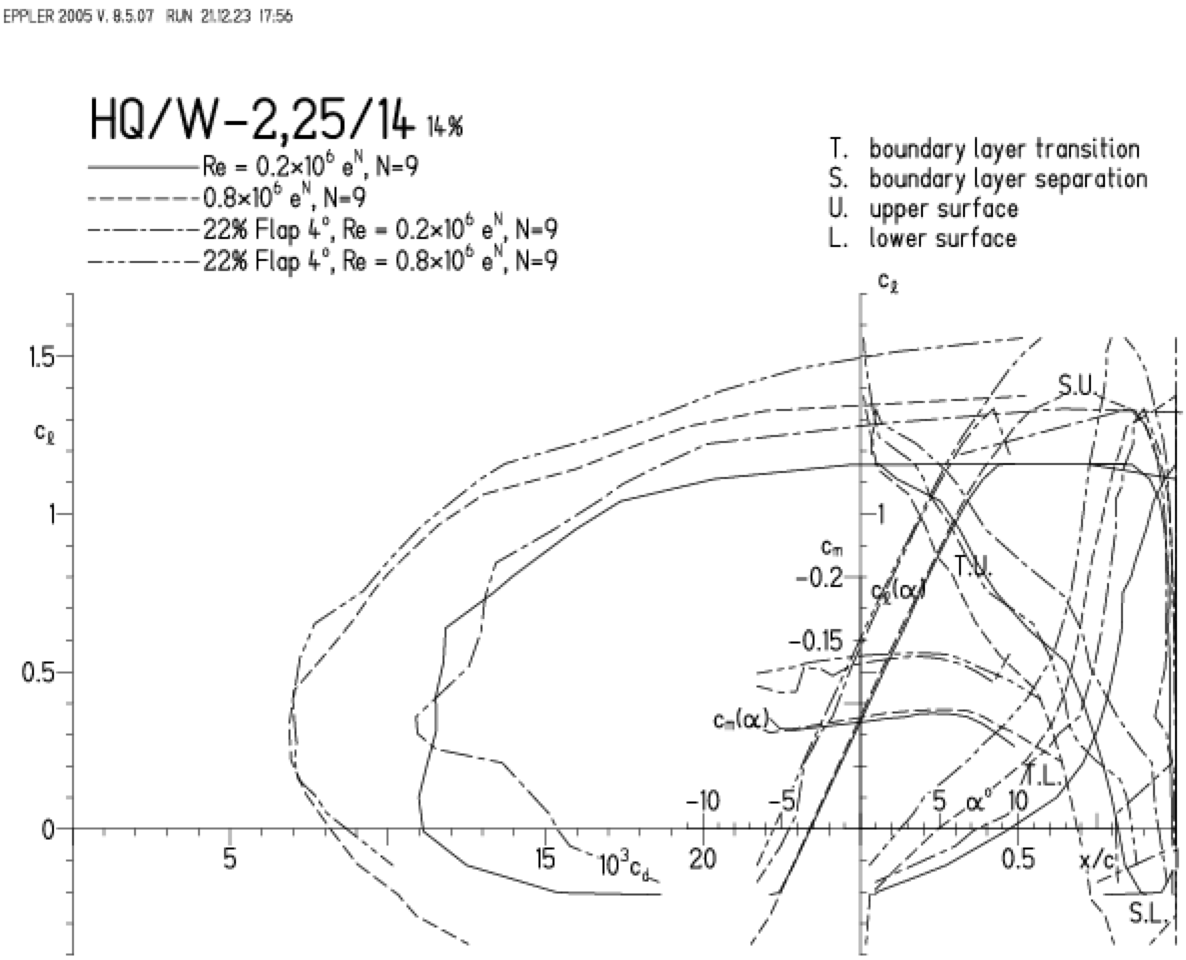
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



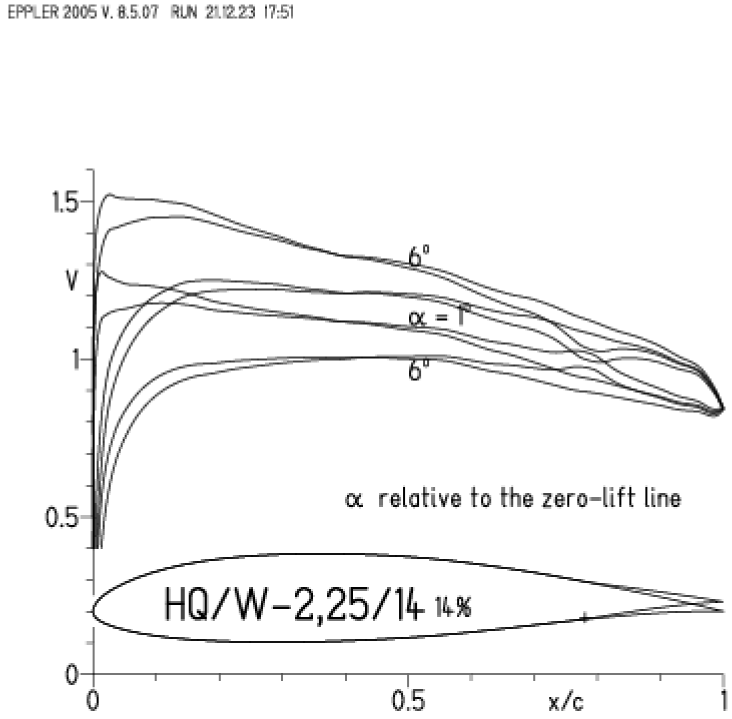


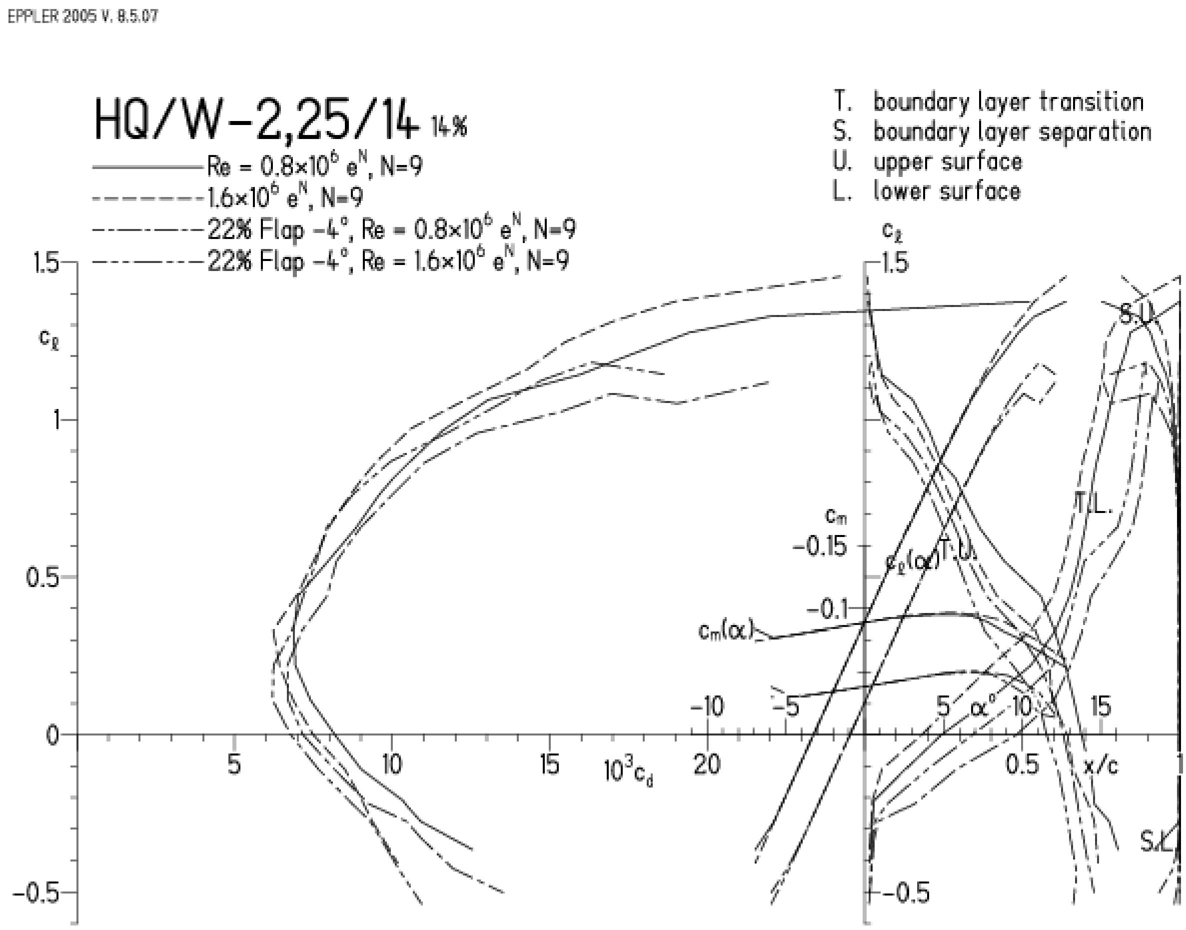
HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag



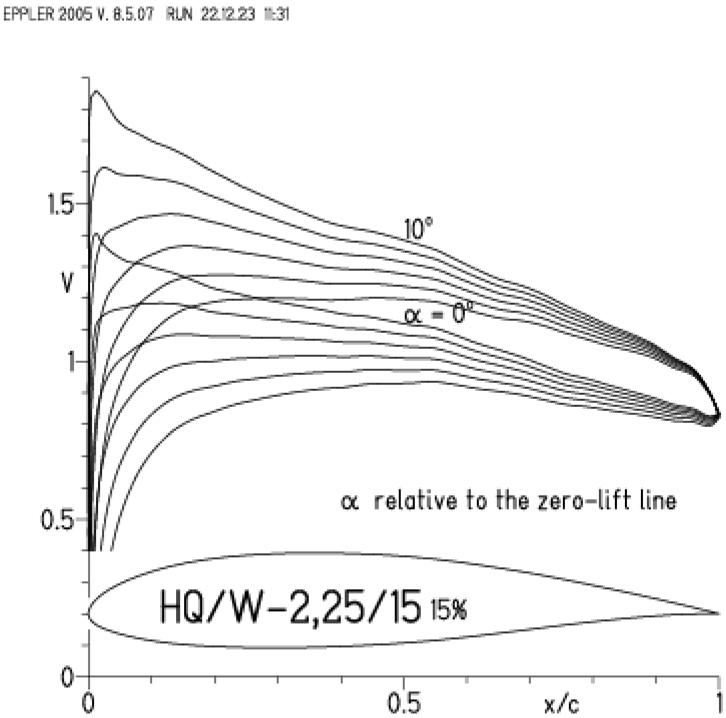


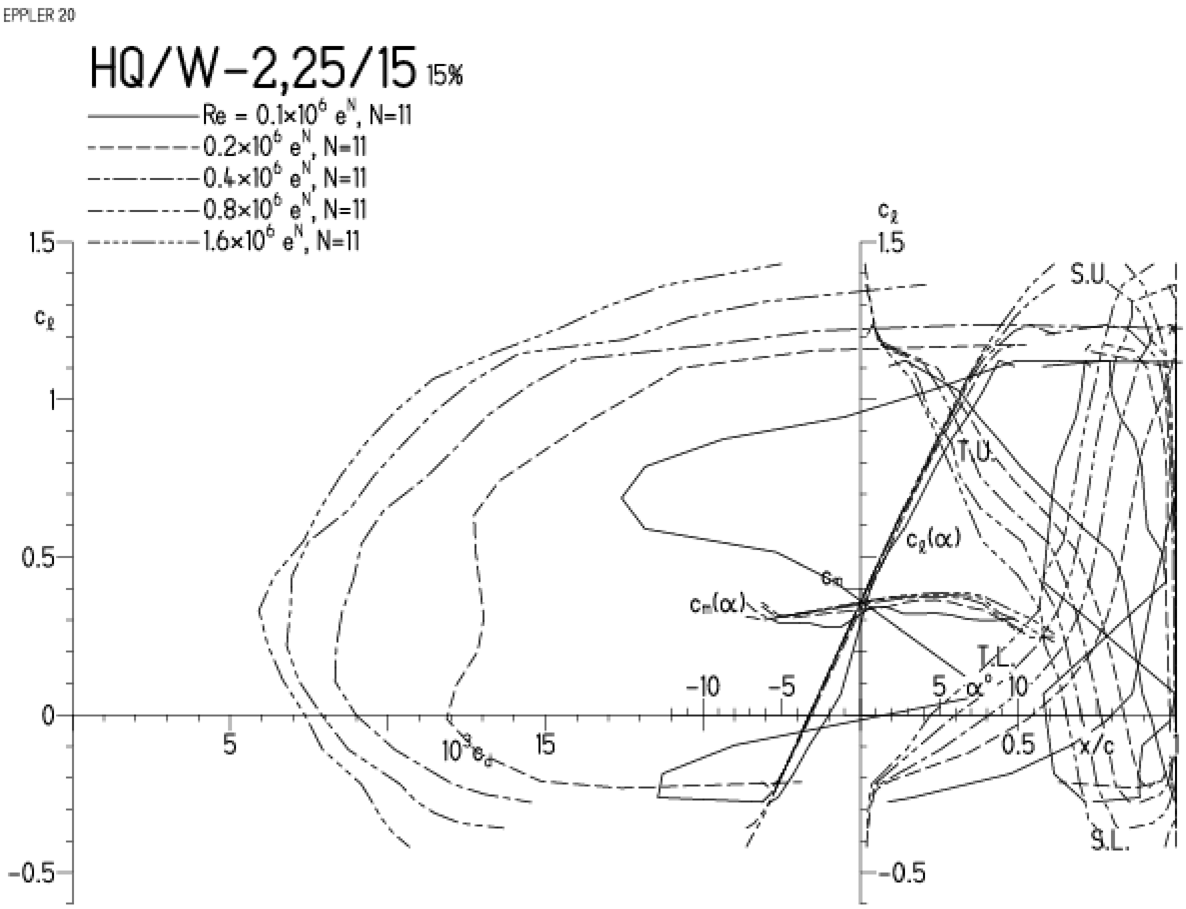
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag





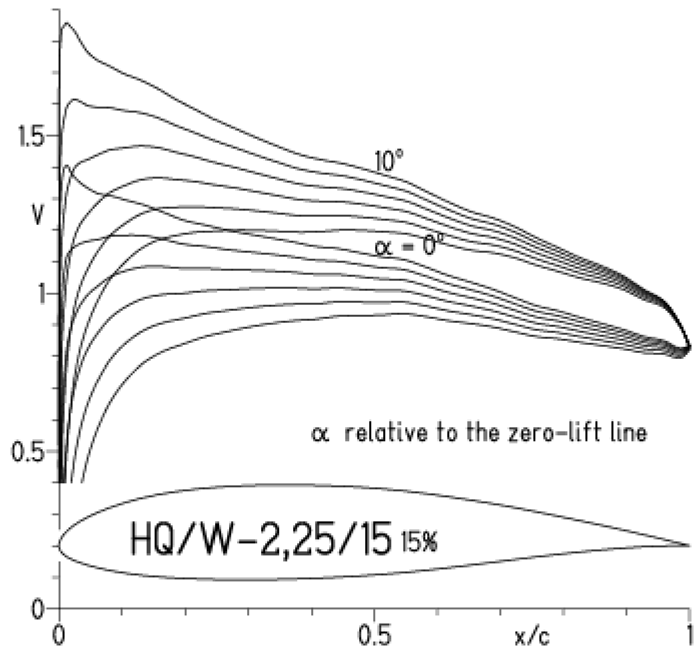
HQ/W-2,25/15, N=11



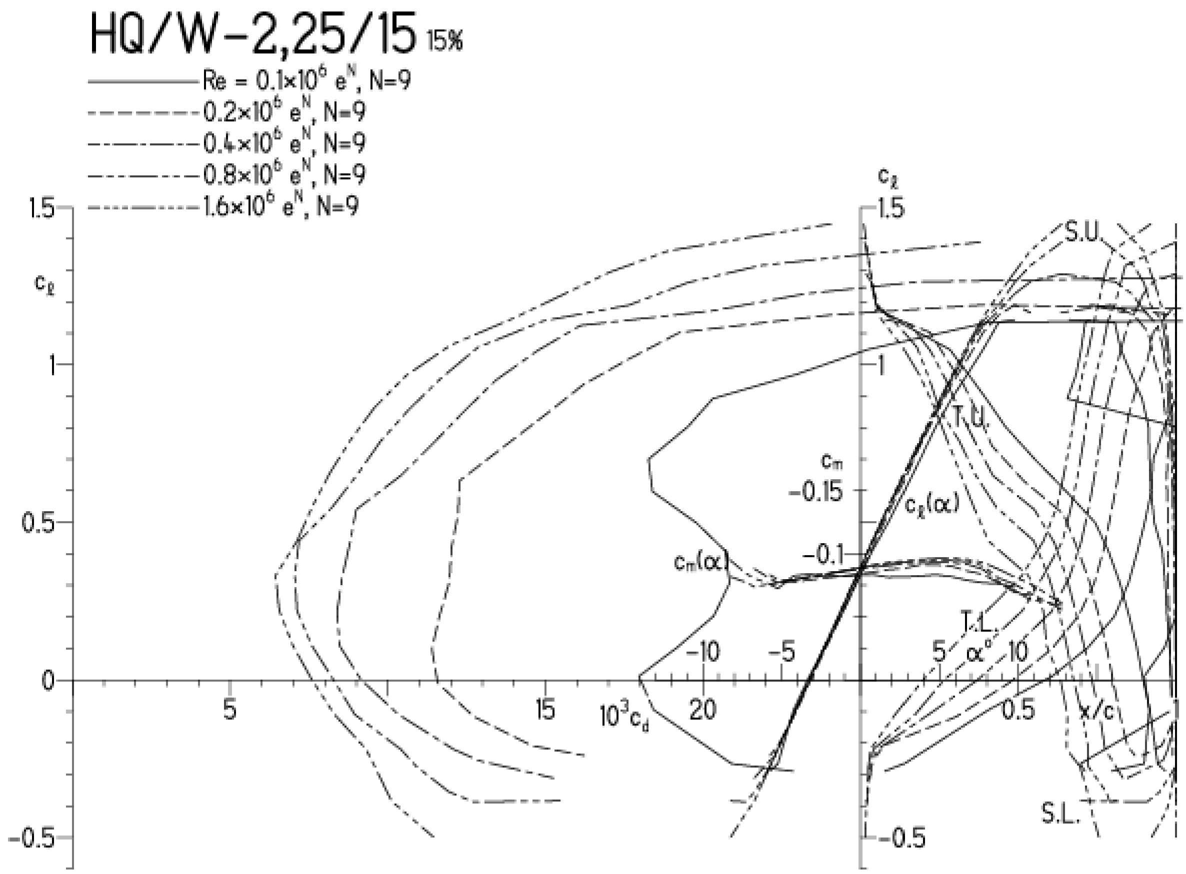


<u>HQ/W-2,25/15</u>, N=9

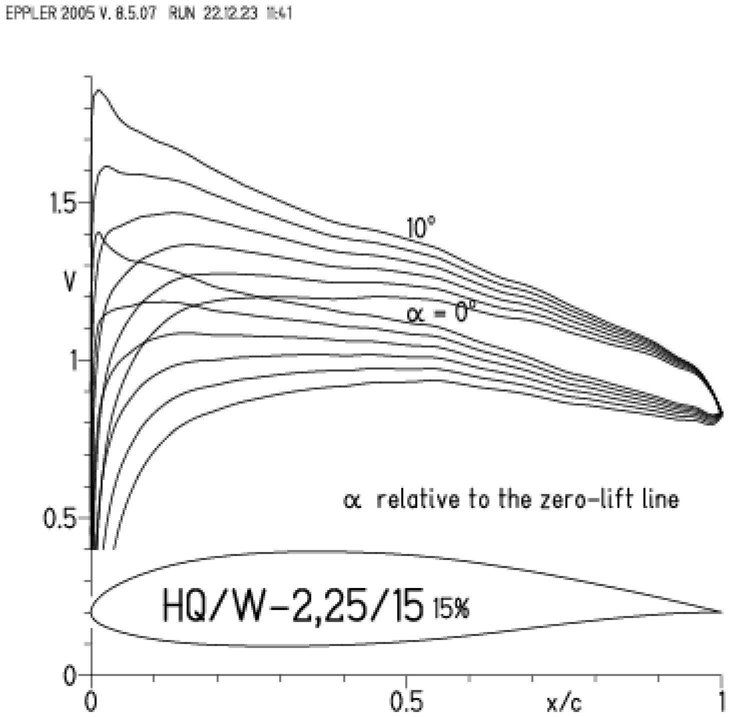
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

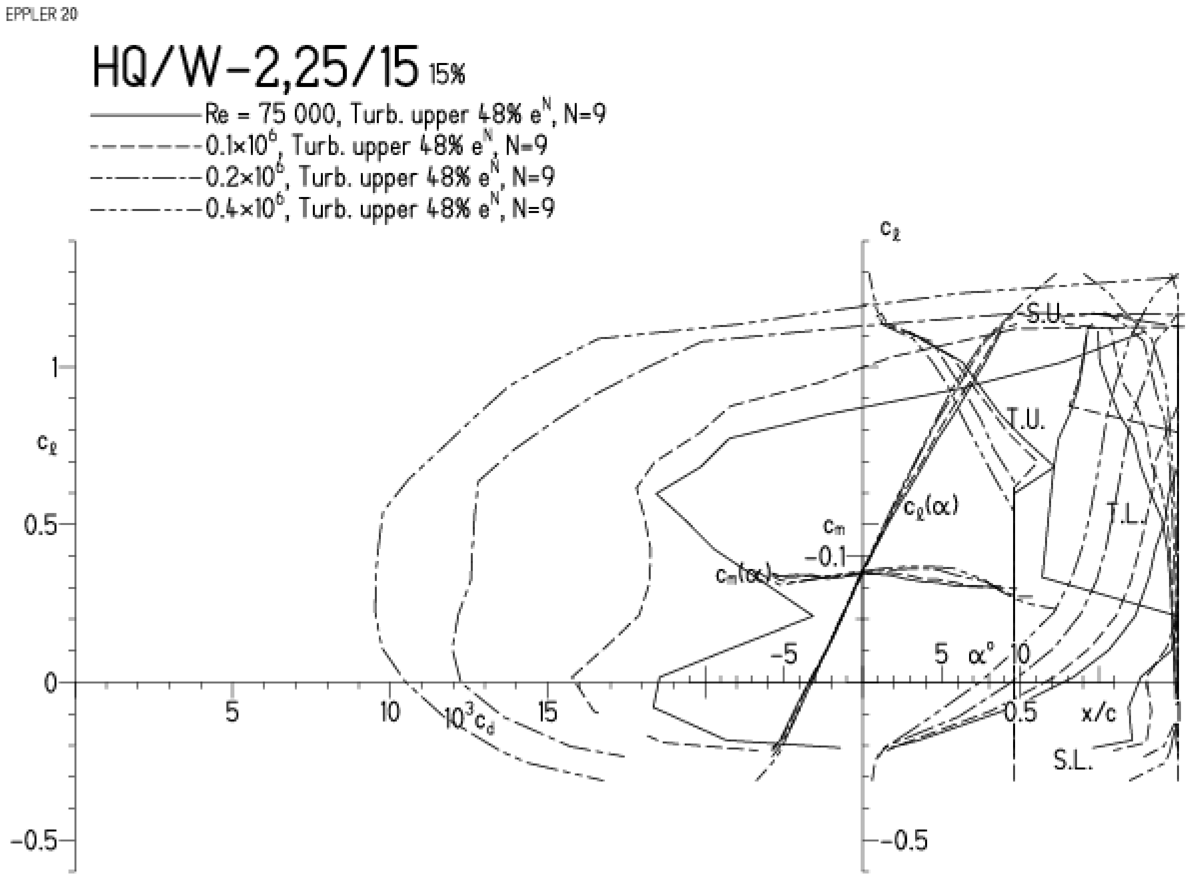


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



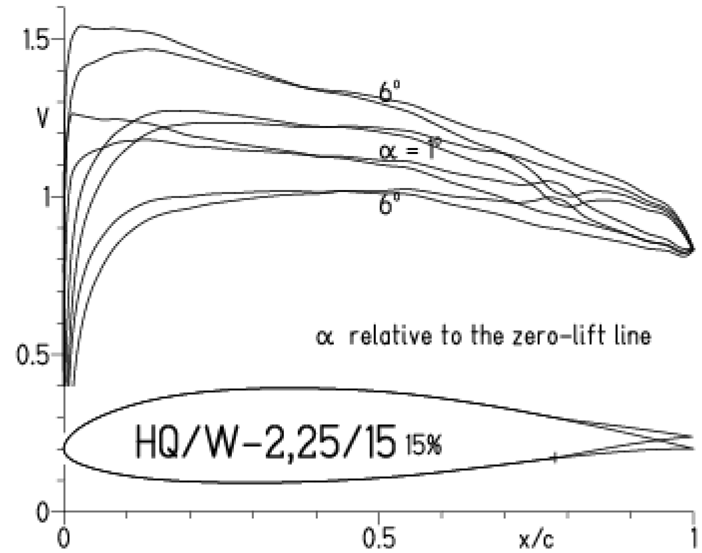


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

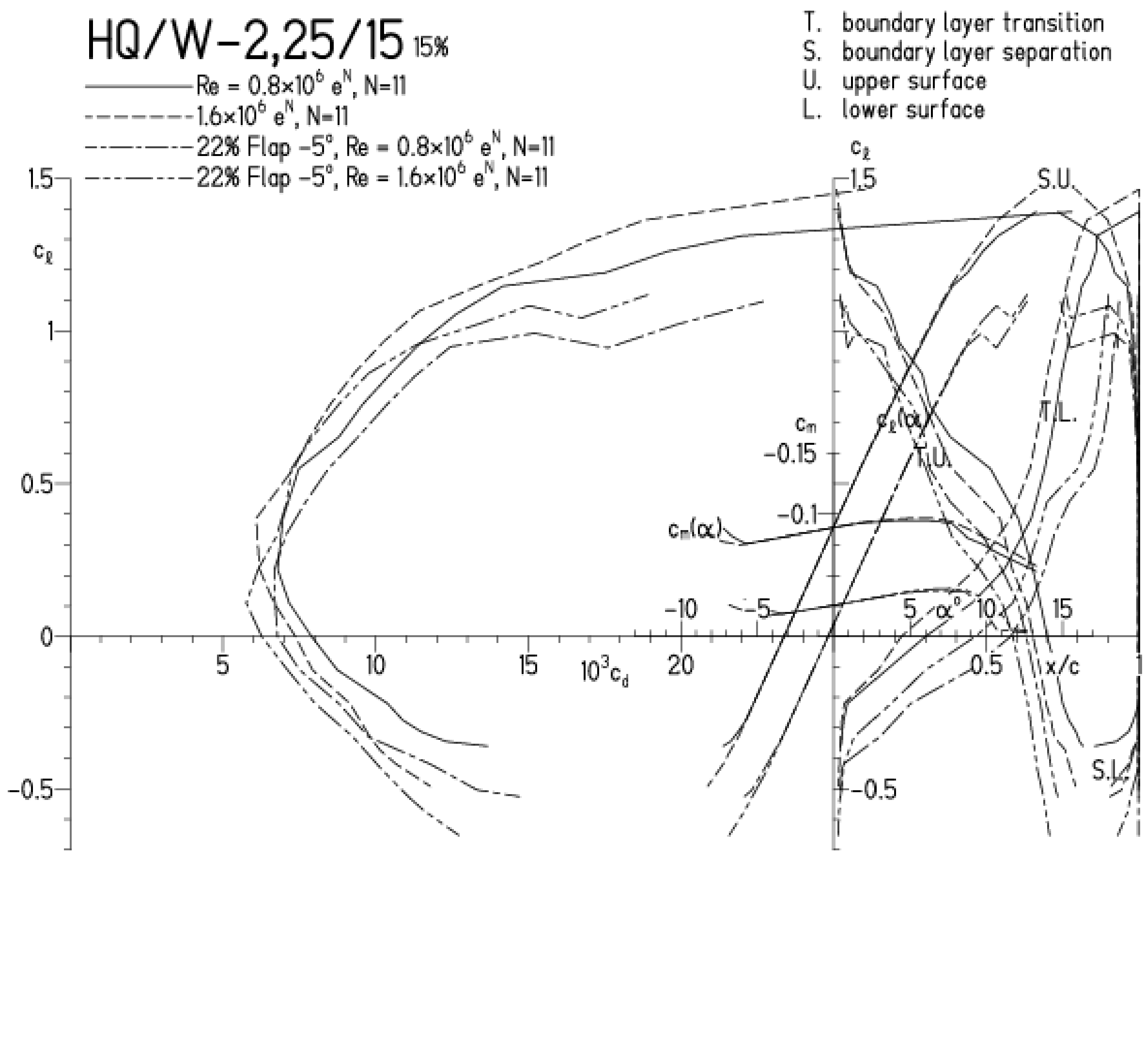
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

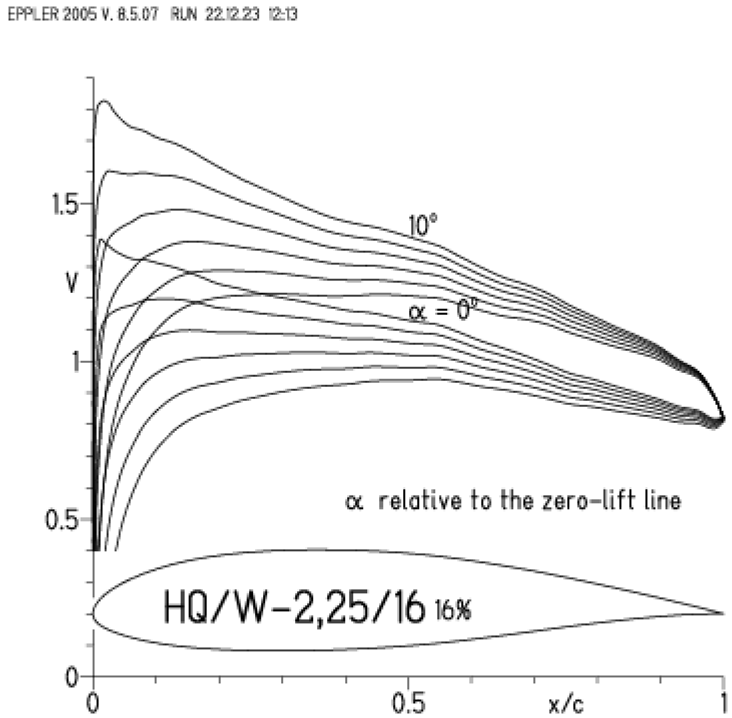
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

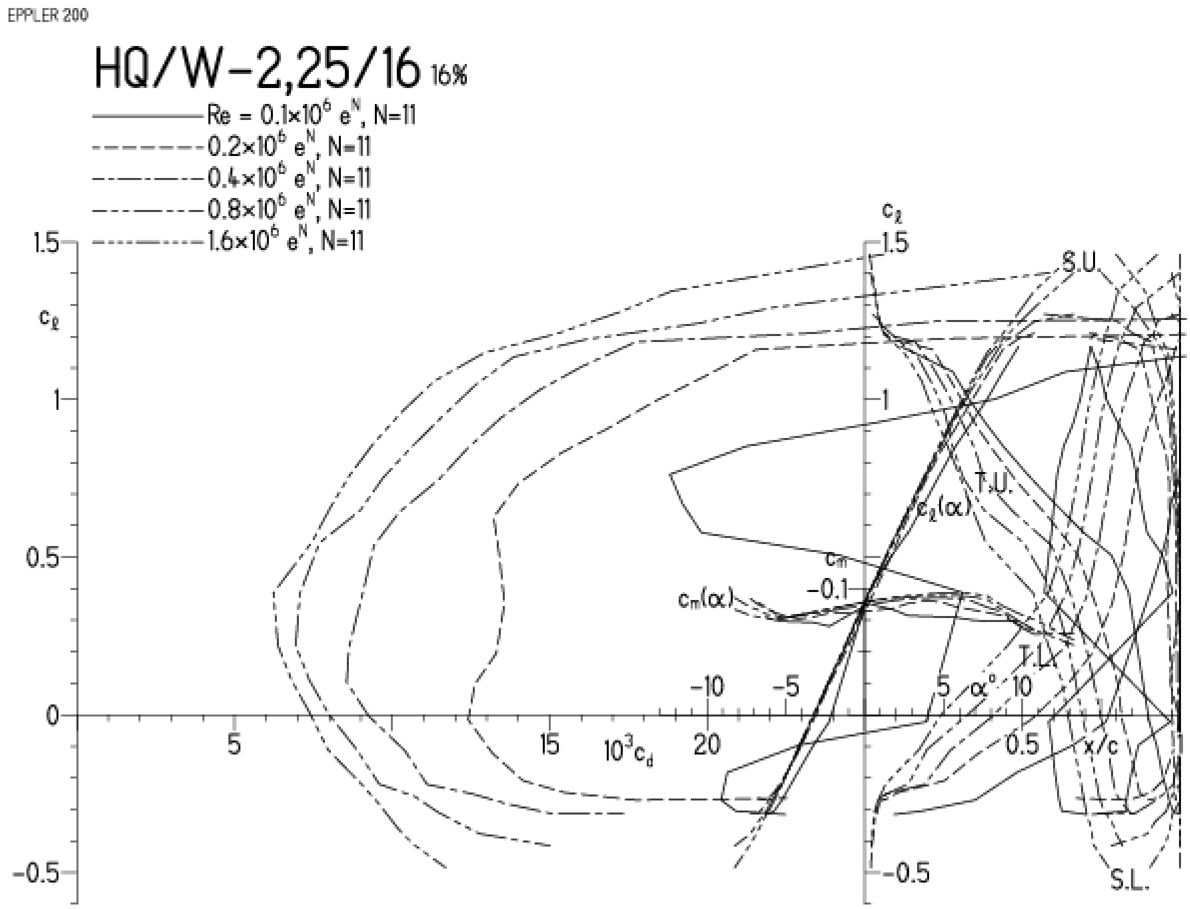


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

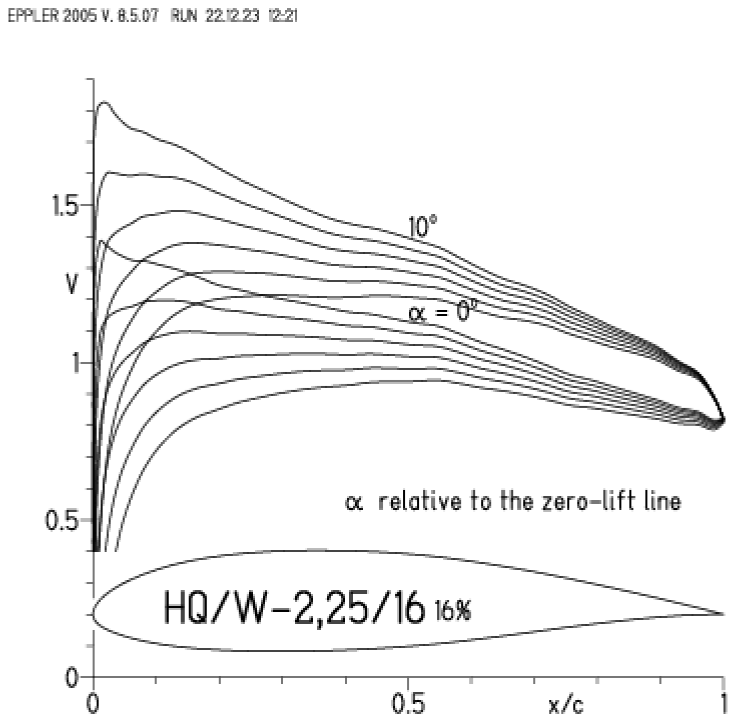


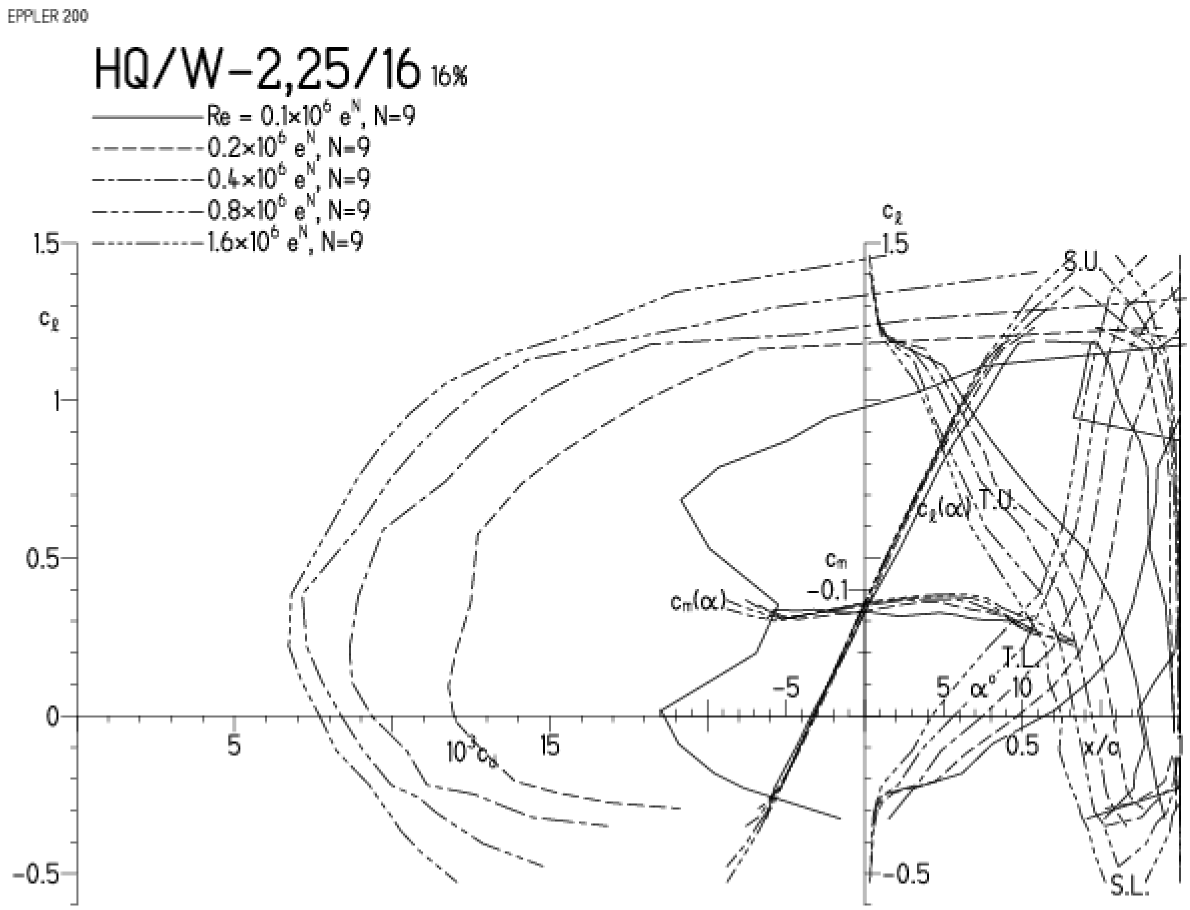
HQ/W-2,25/16, N=11





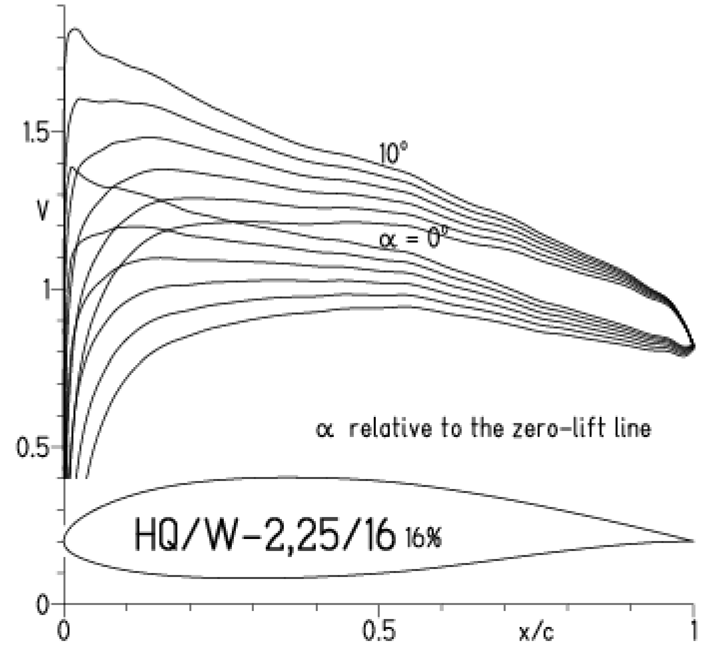
<u>HQ/W-2,25/16</u>, N=9



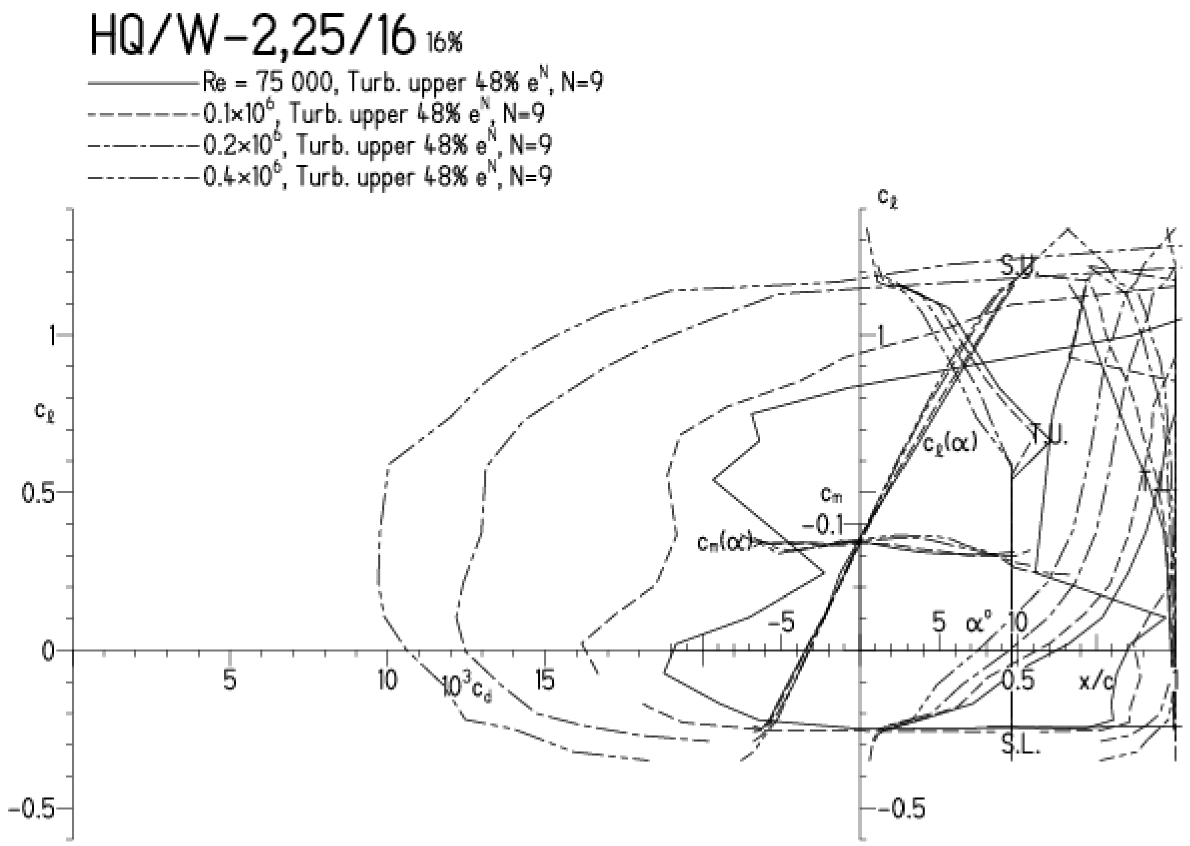


HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

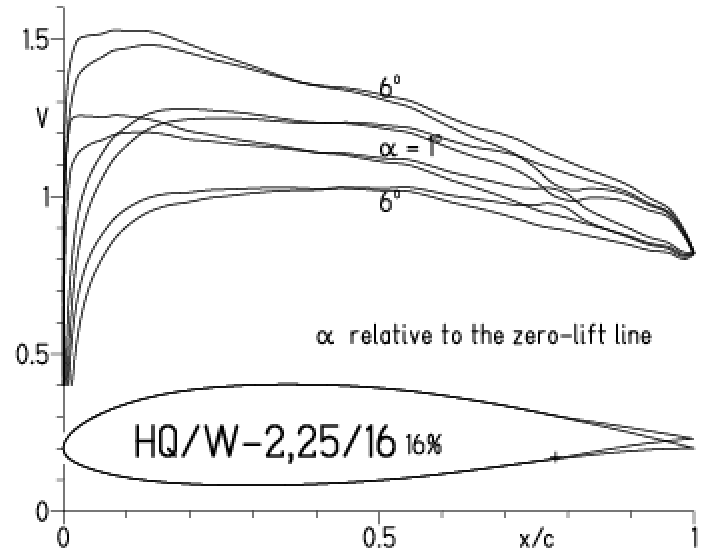


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

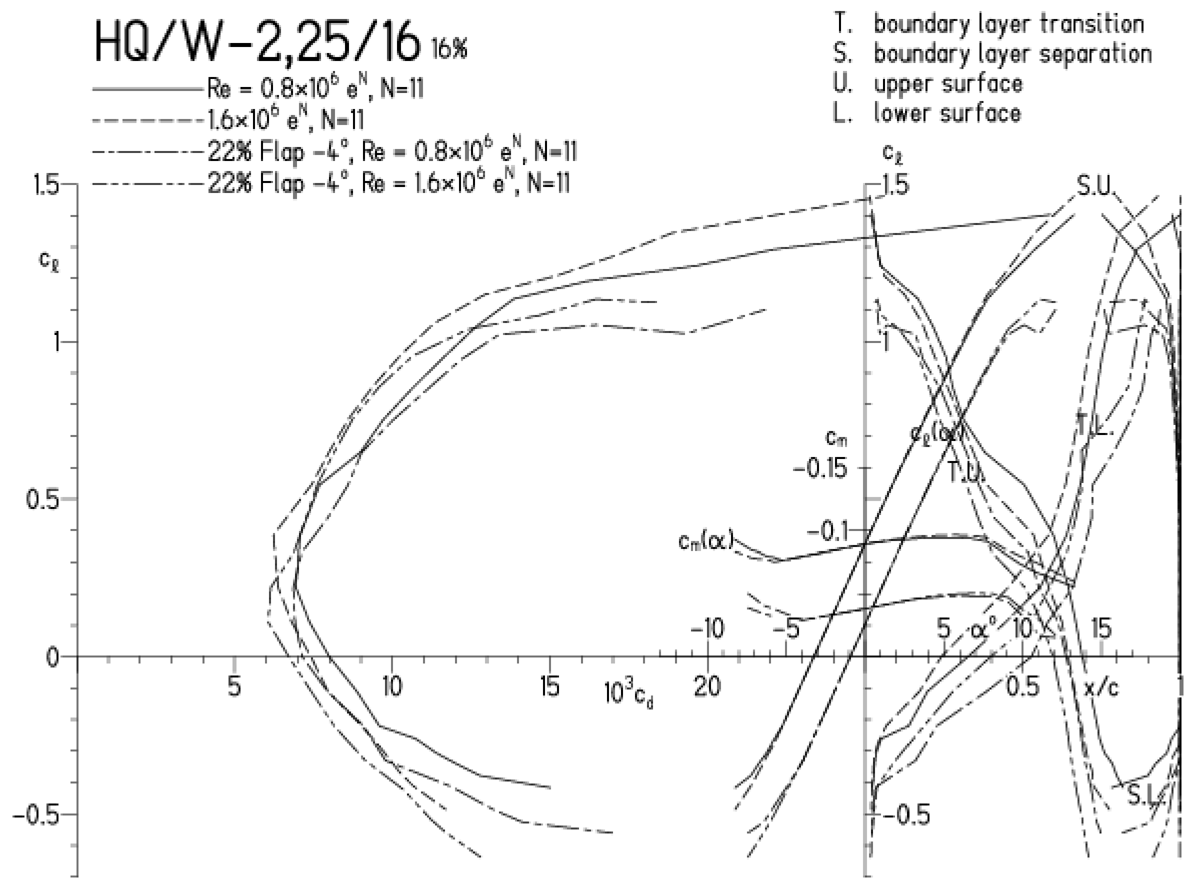
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

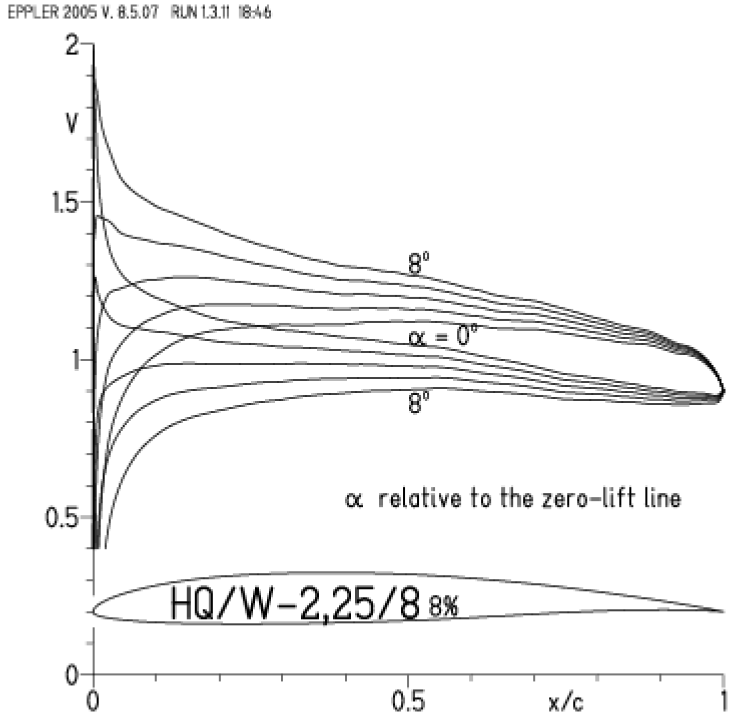
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

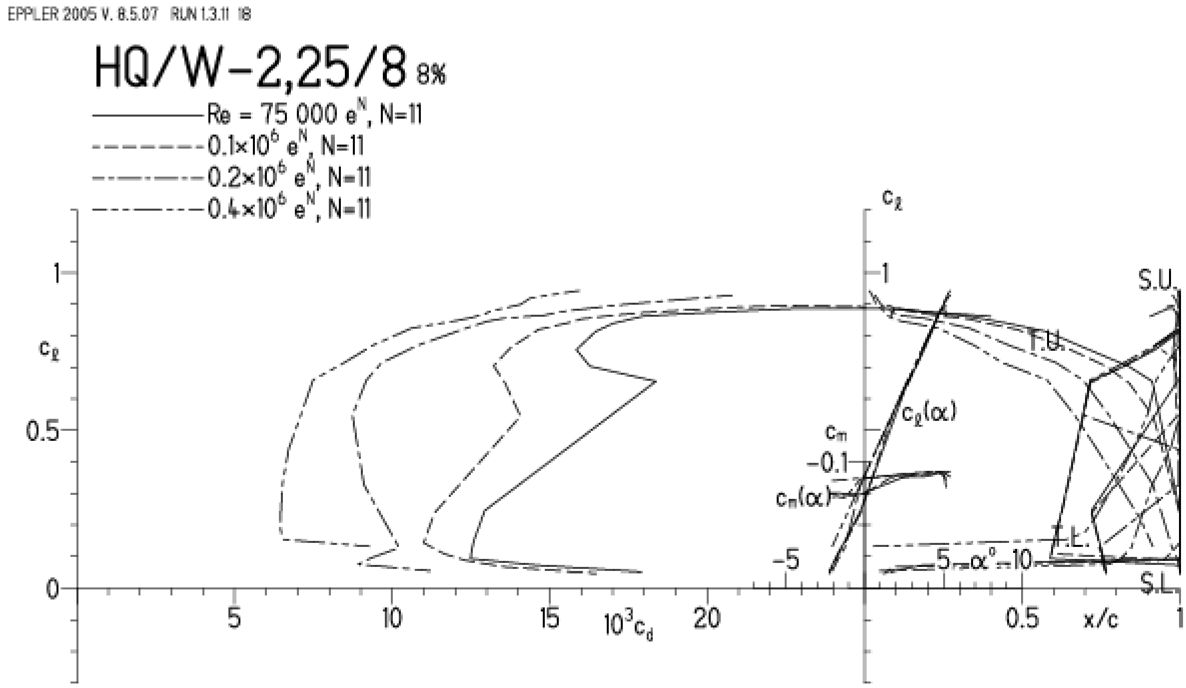


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

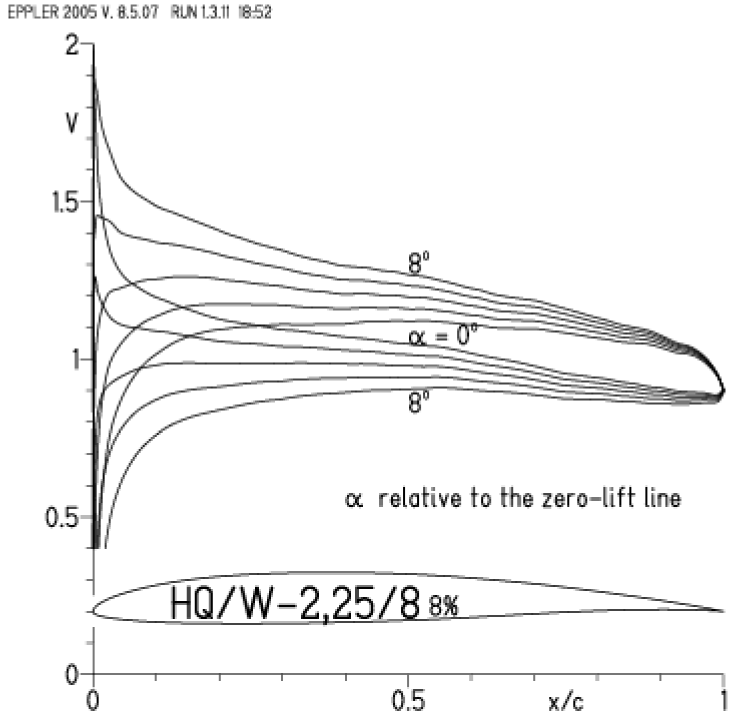


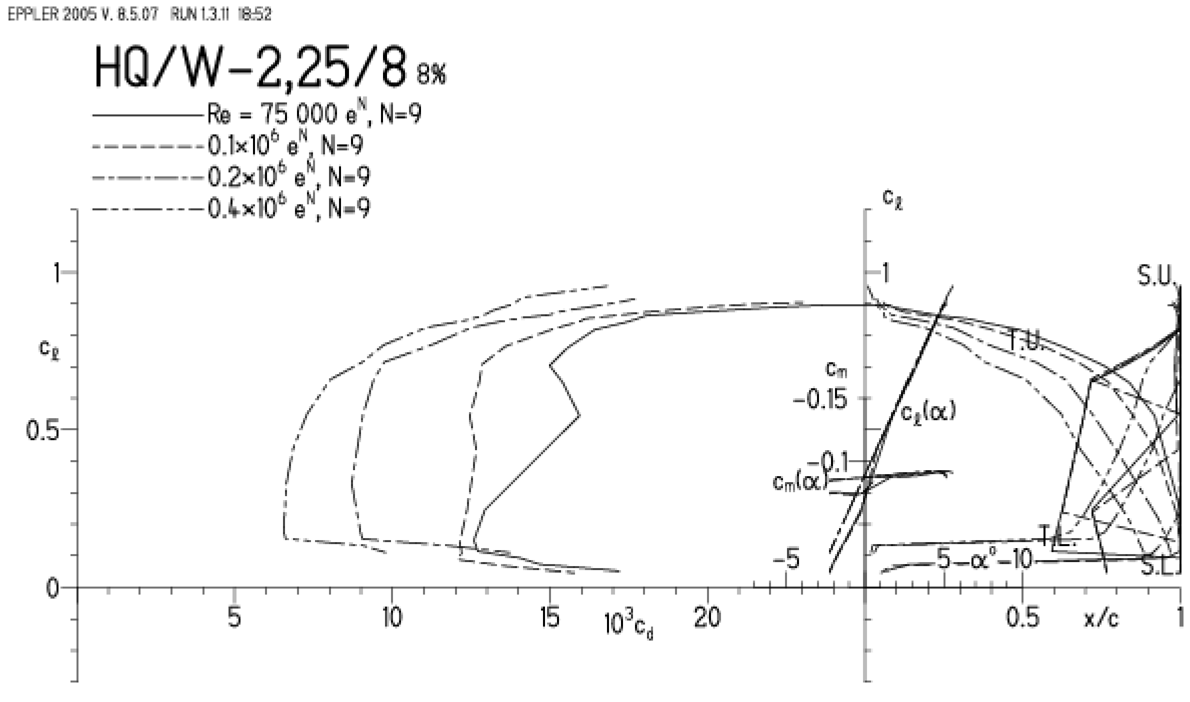
<u>HQ/W-2,25/8</u>, N=11



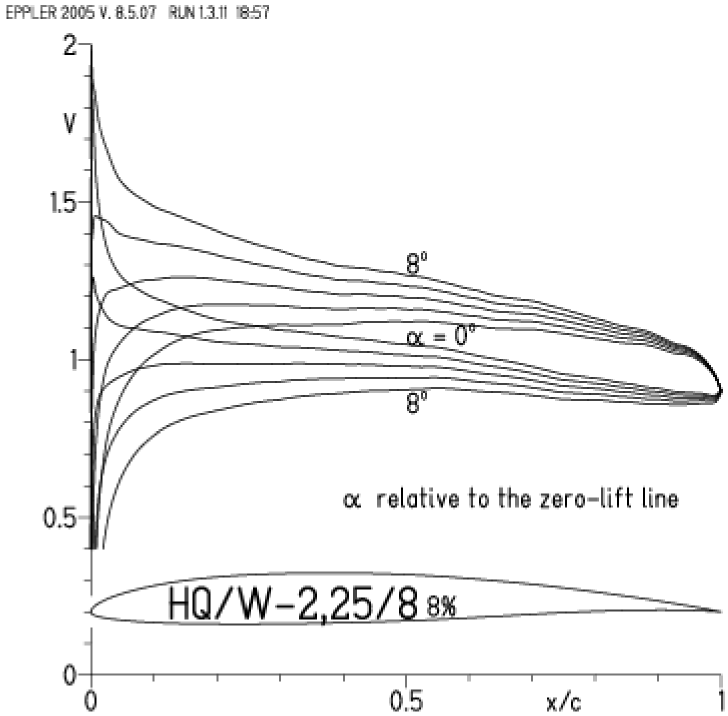


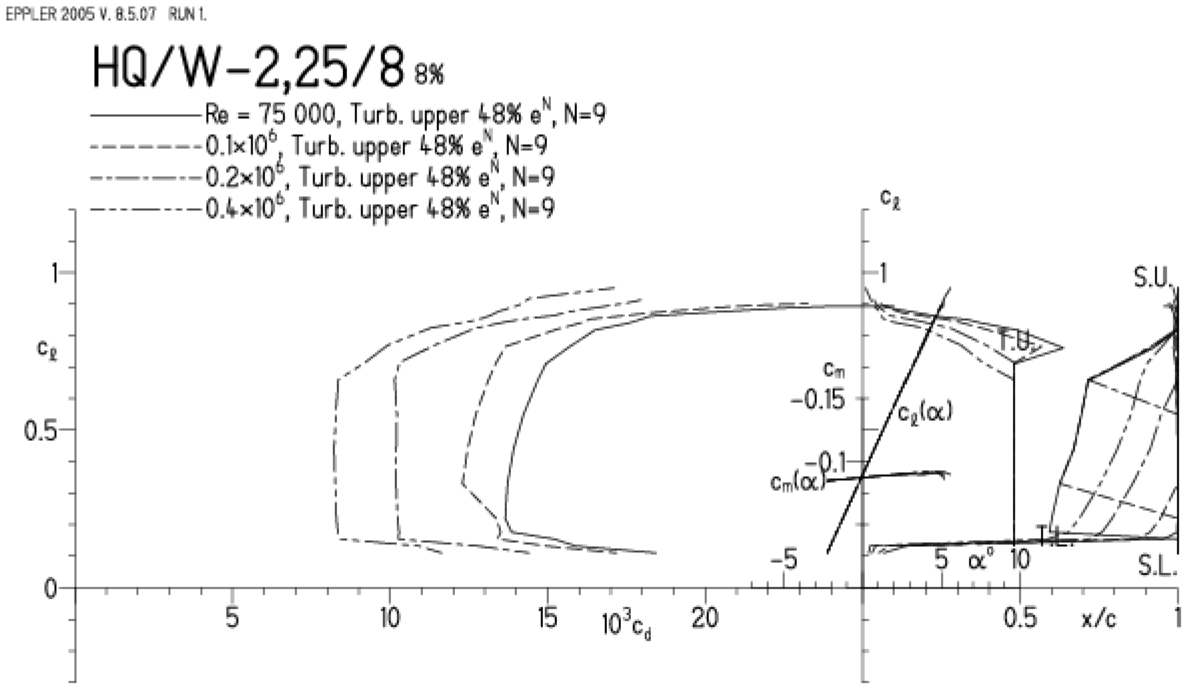
<u>HQ/W-2,25/8</u>, N=9



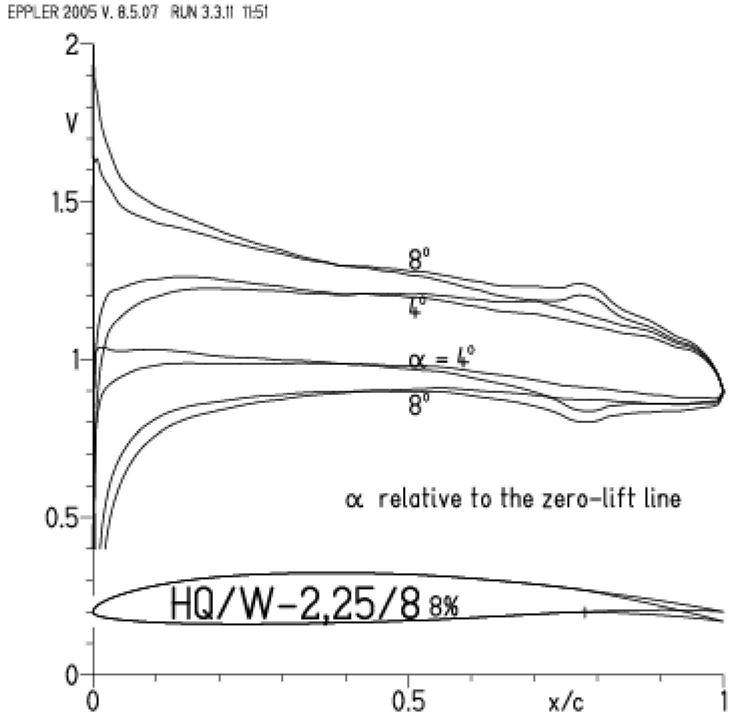


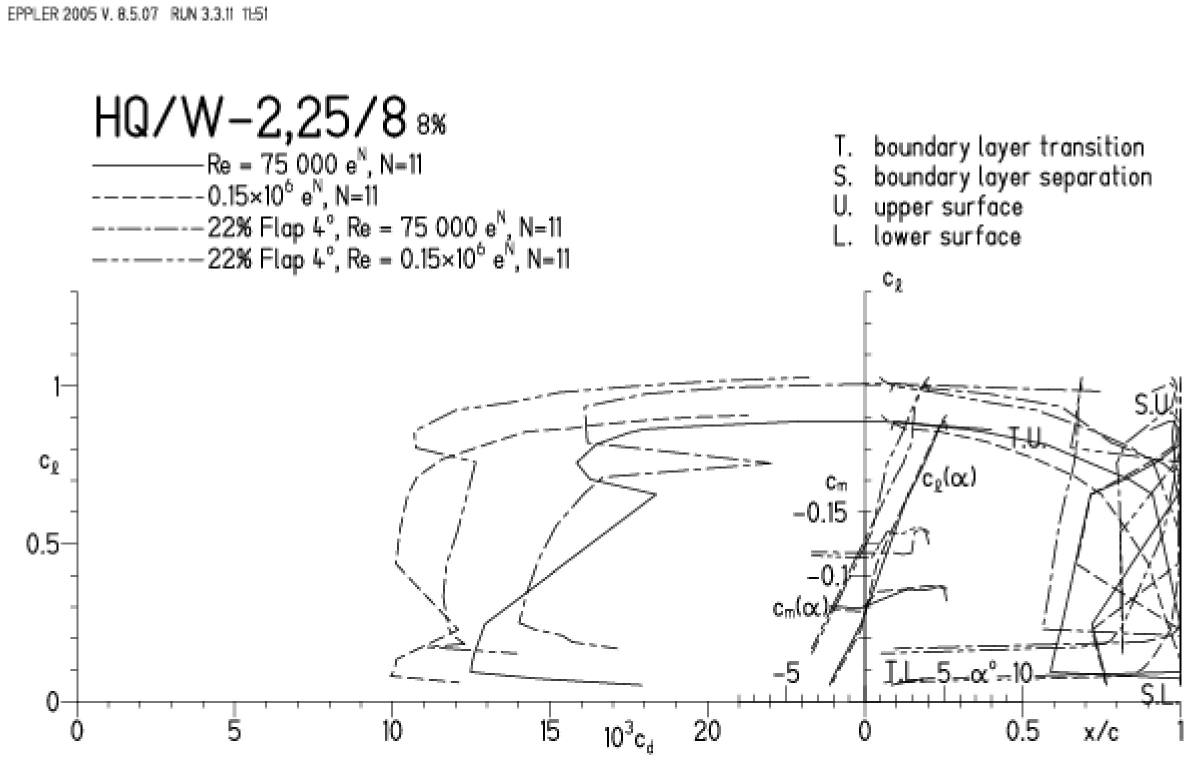
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



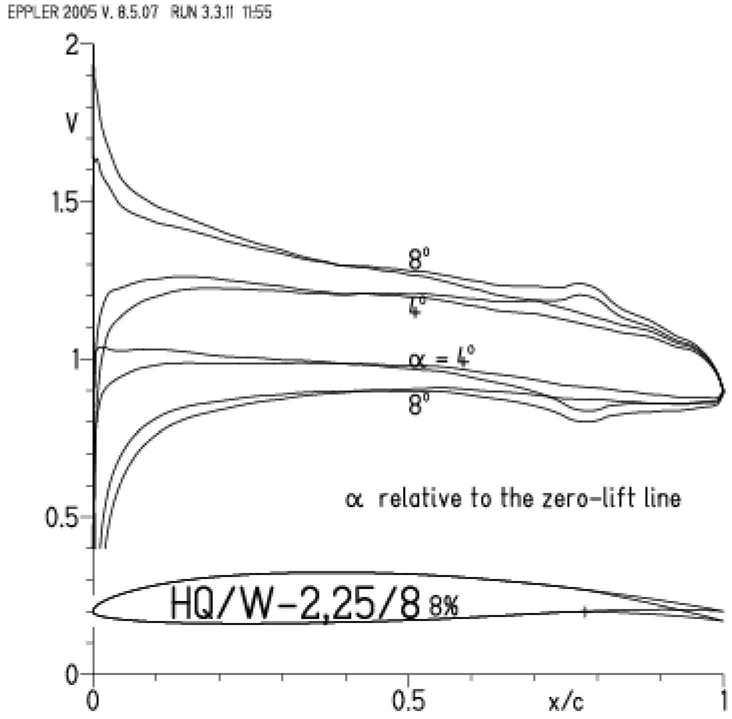


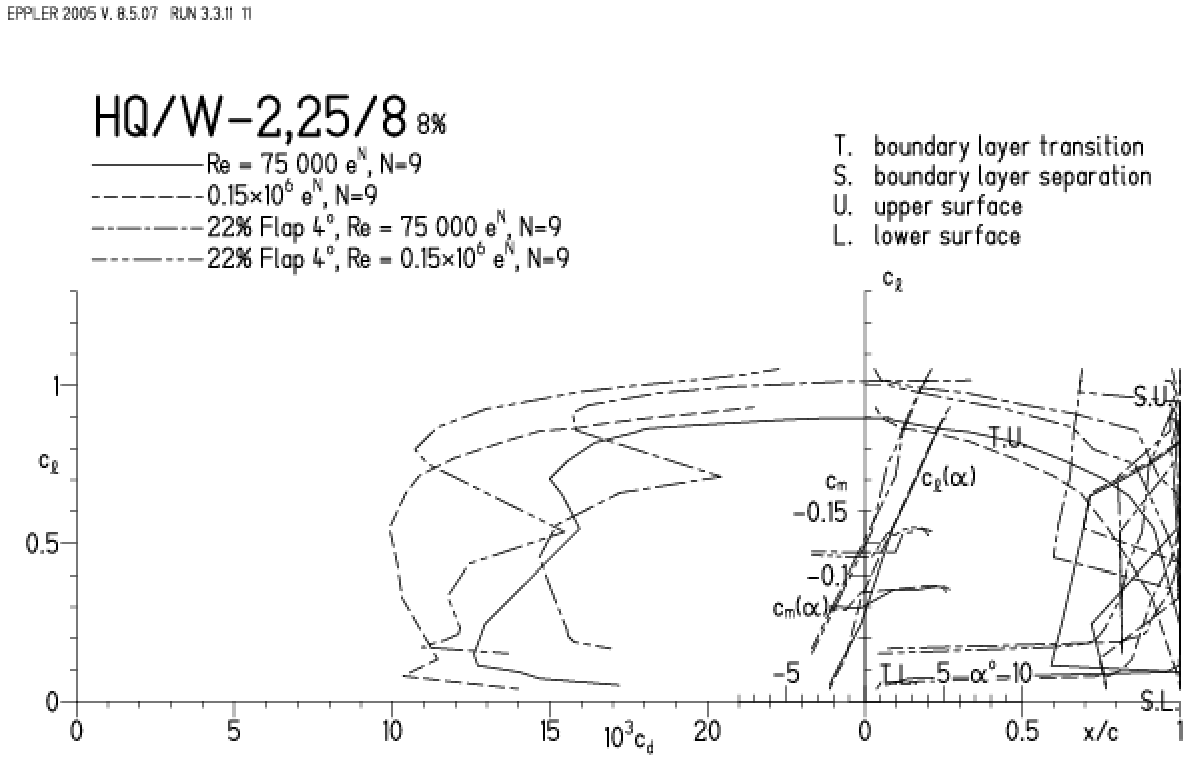
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



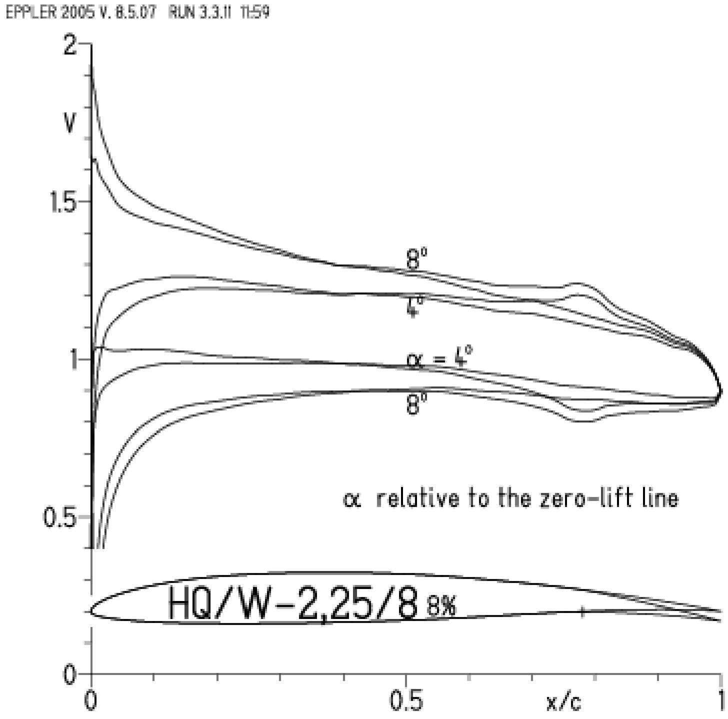


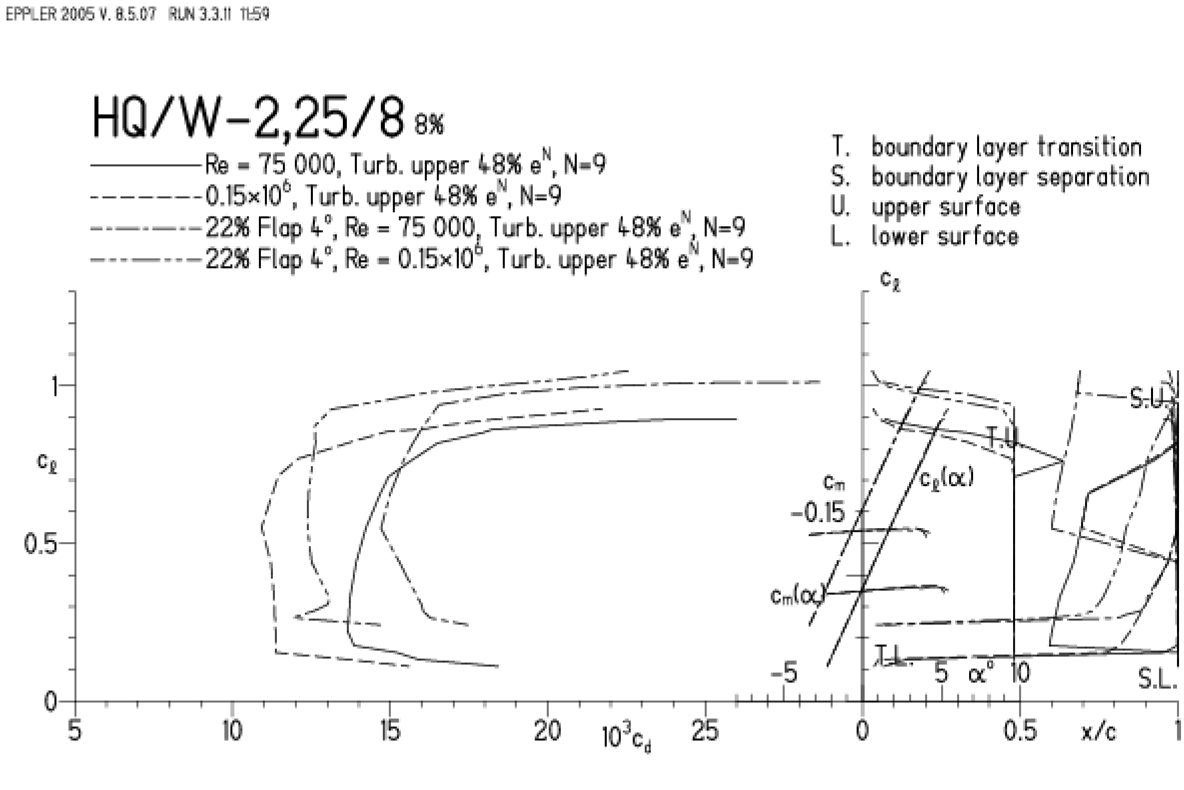
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





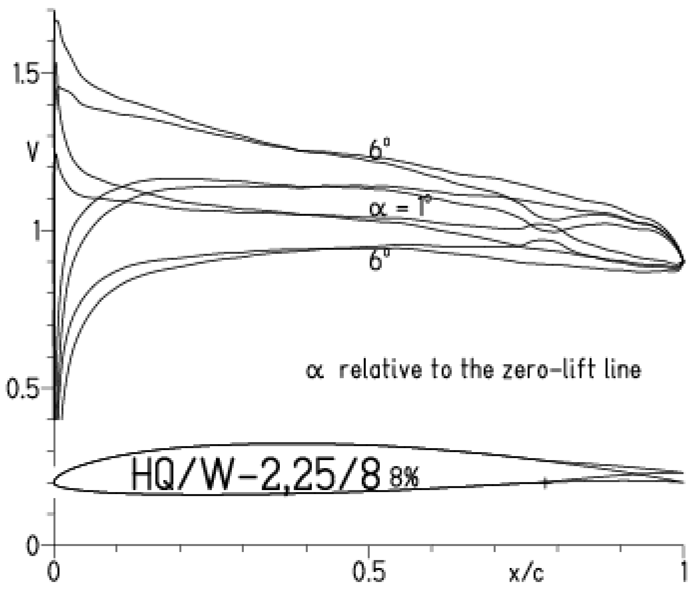
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



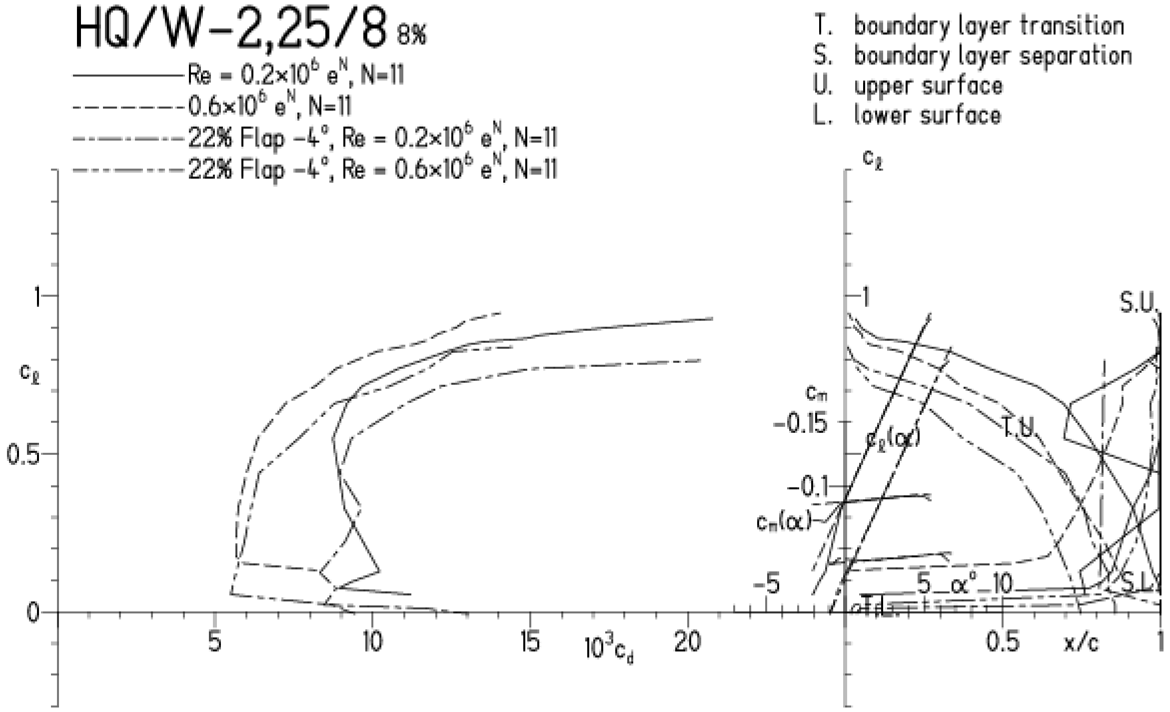


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

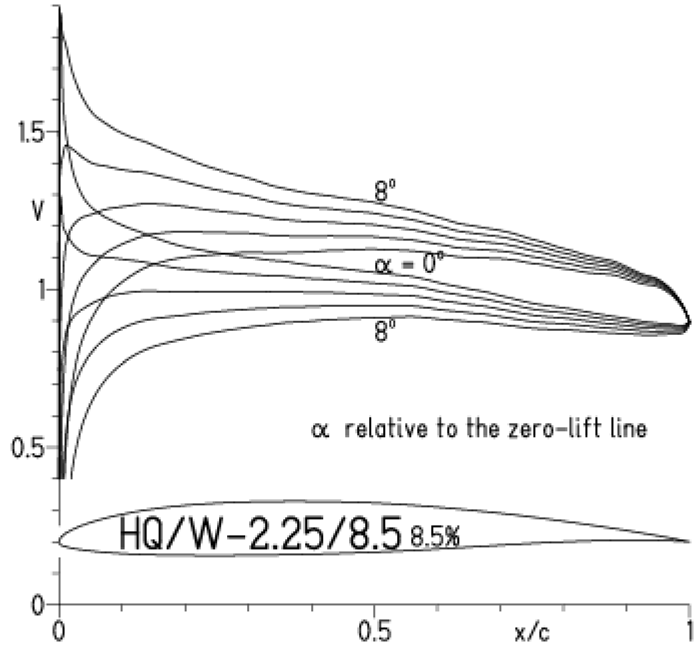


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

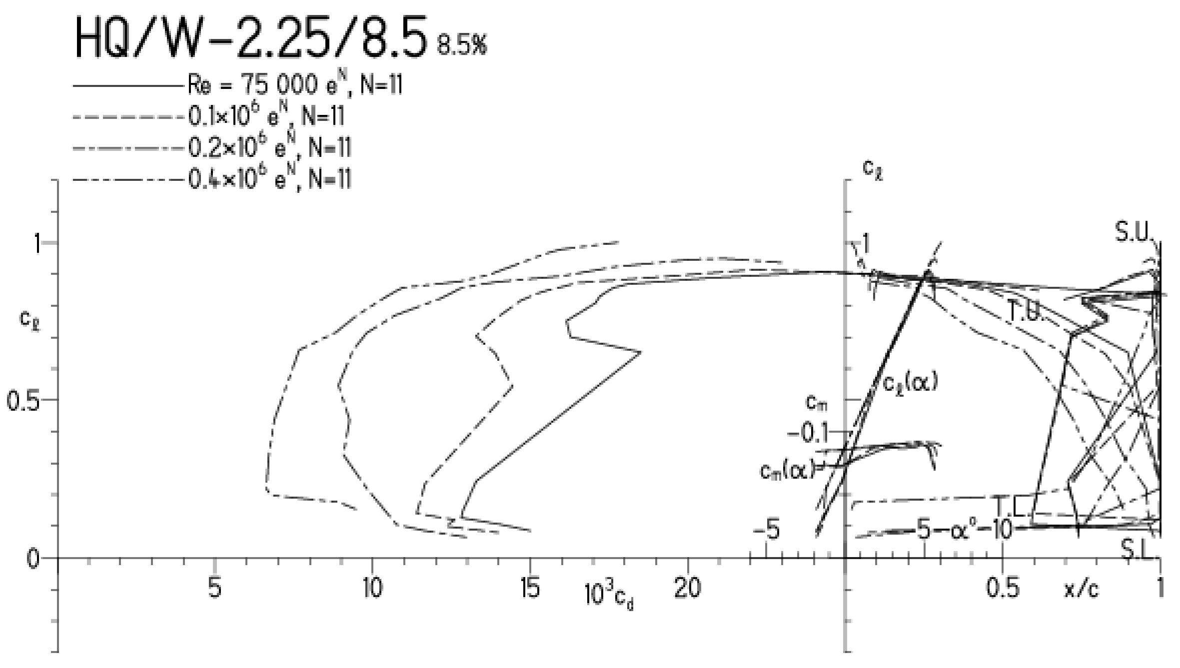


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

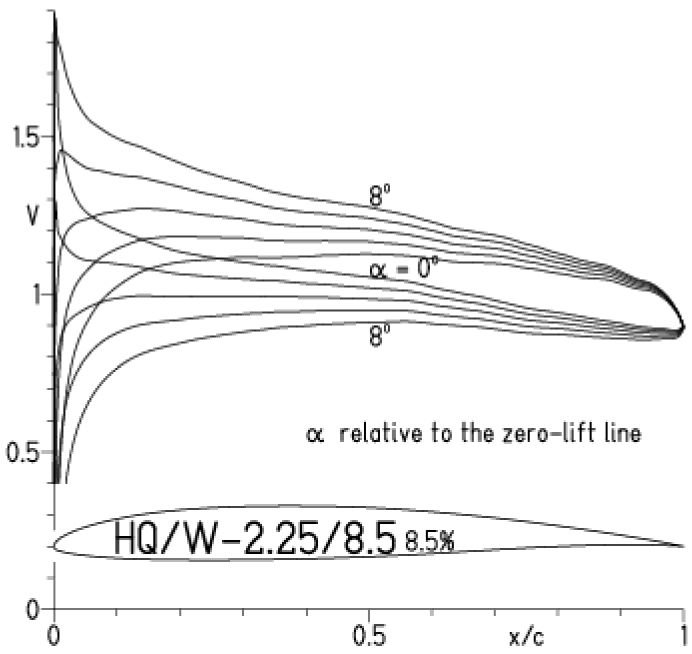


EPPLER 2005 V

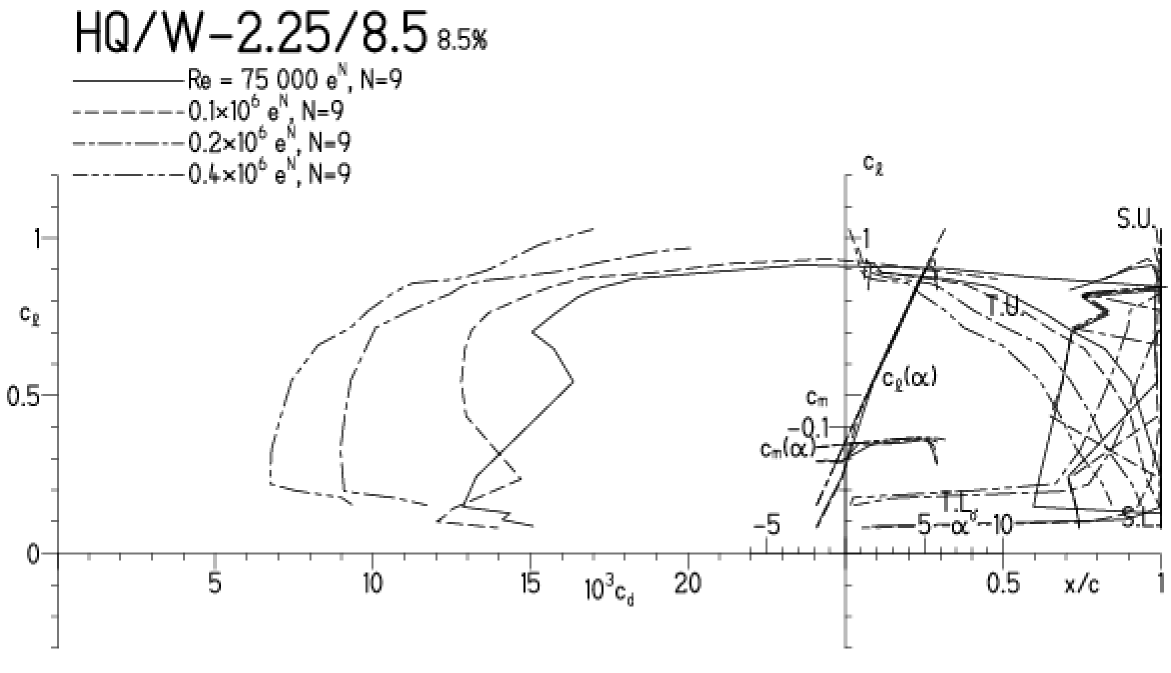


HQ/W-2,25/8,5, N=9

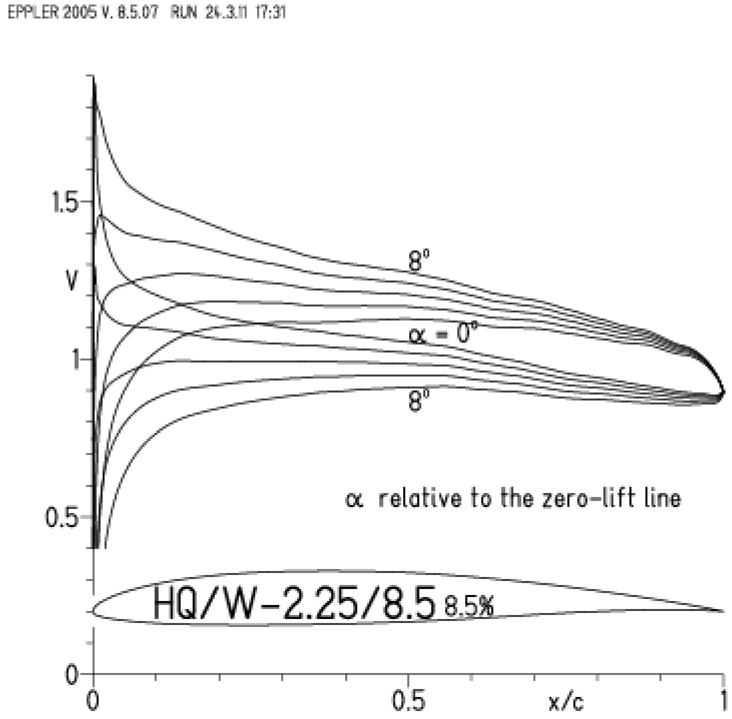
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

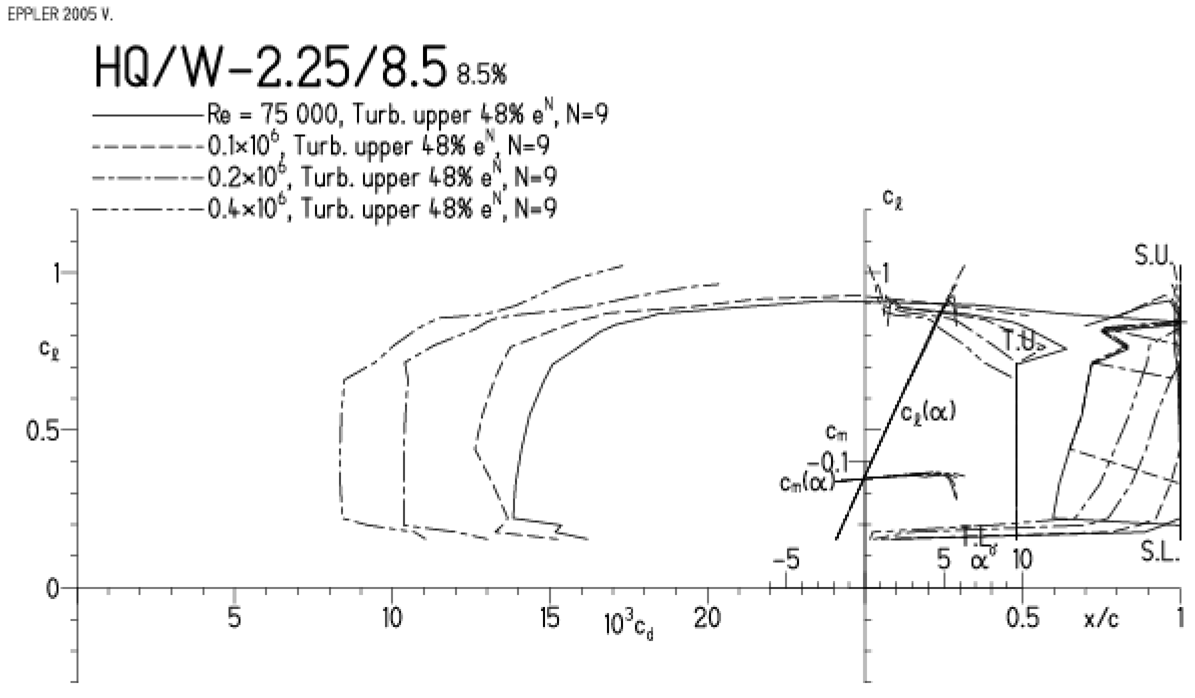


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

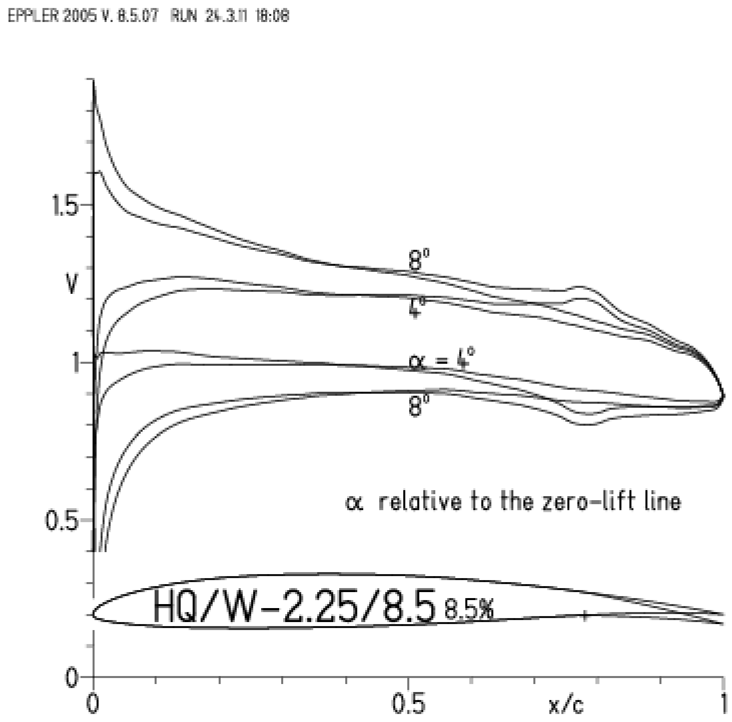


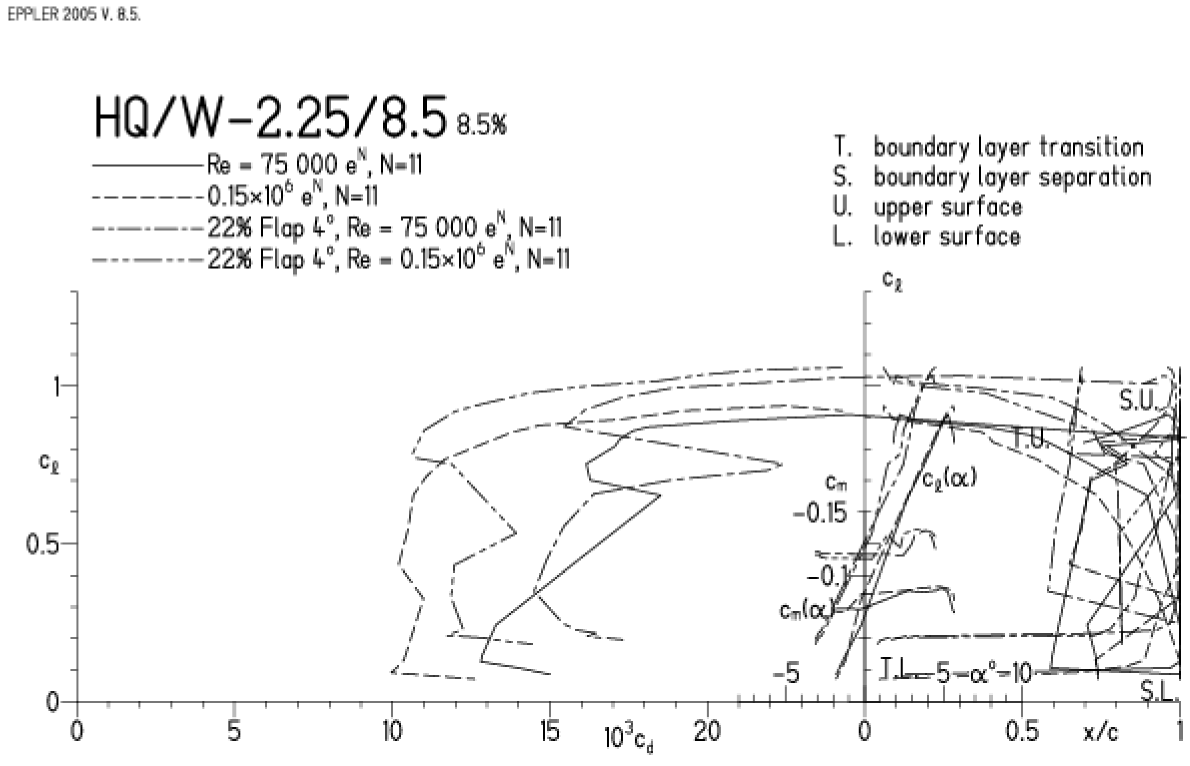
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





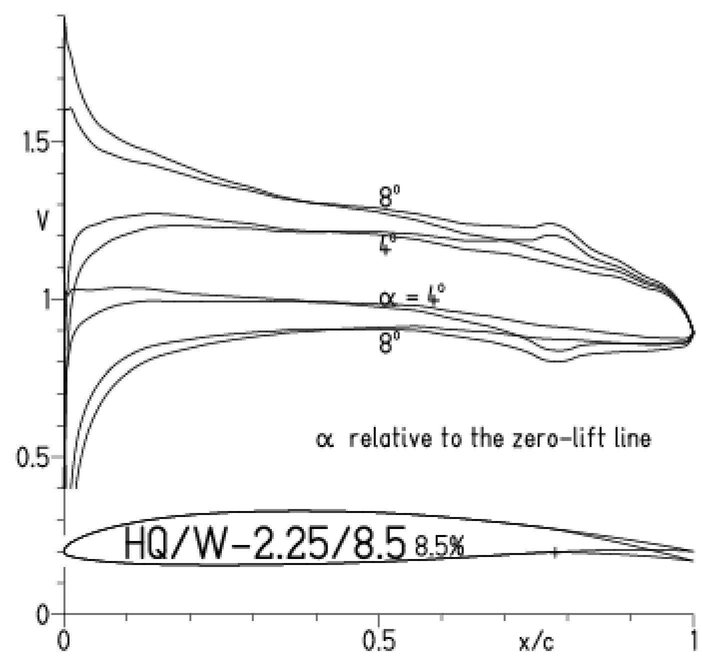
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



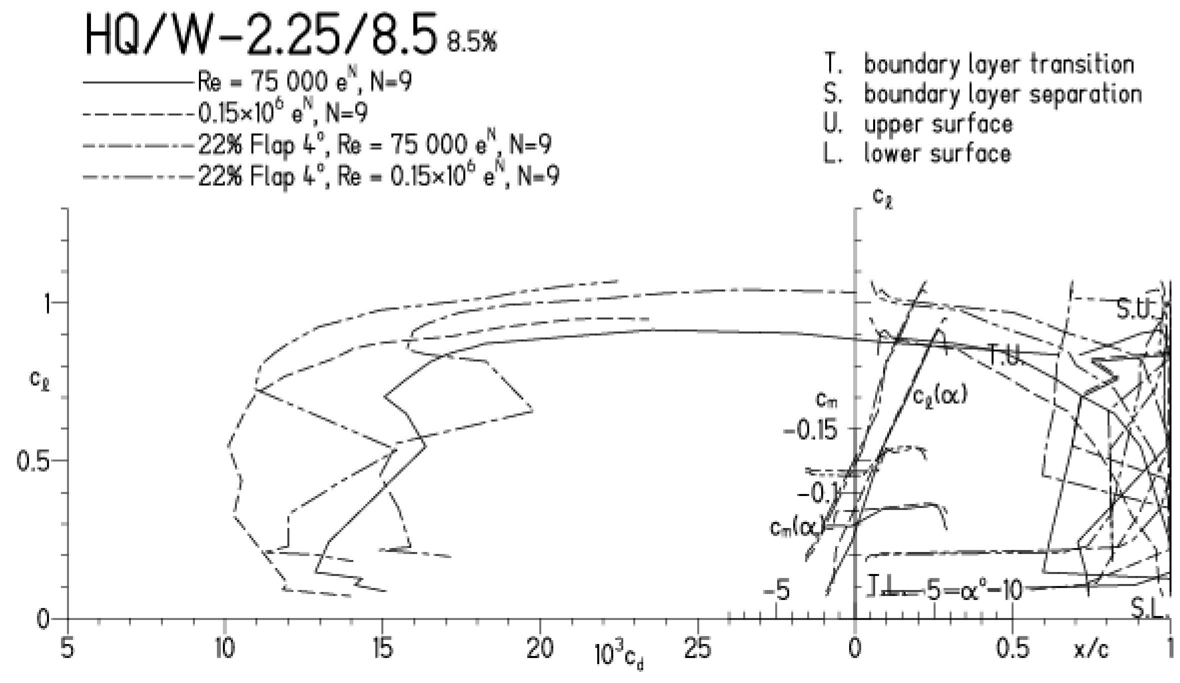


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

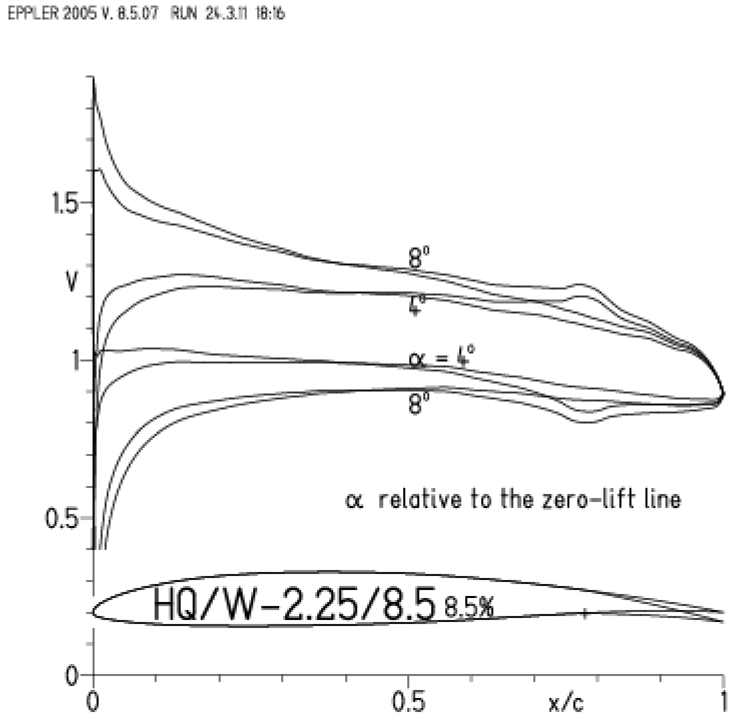
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

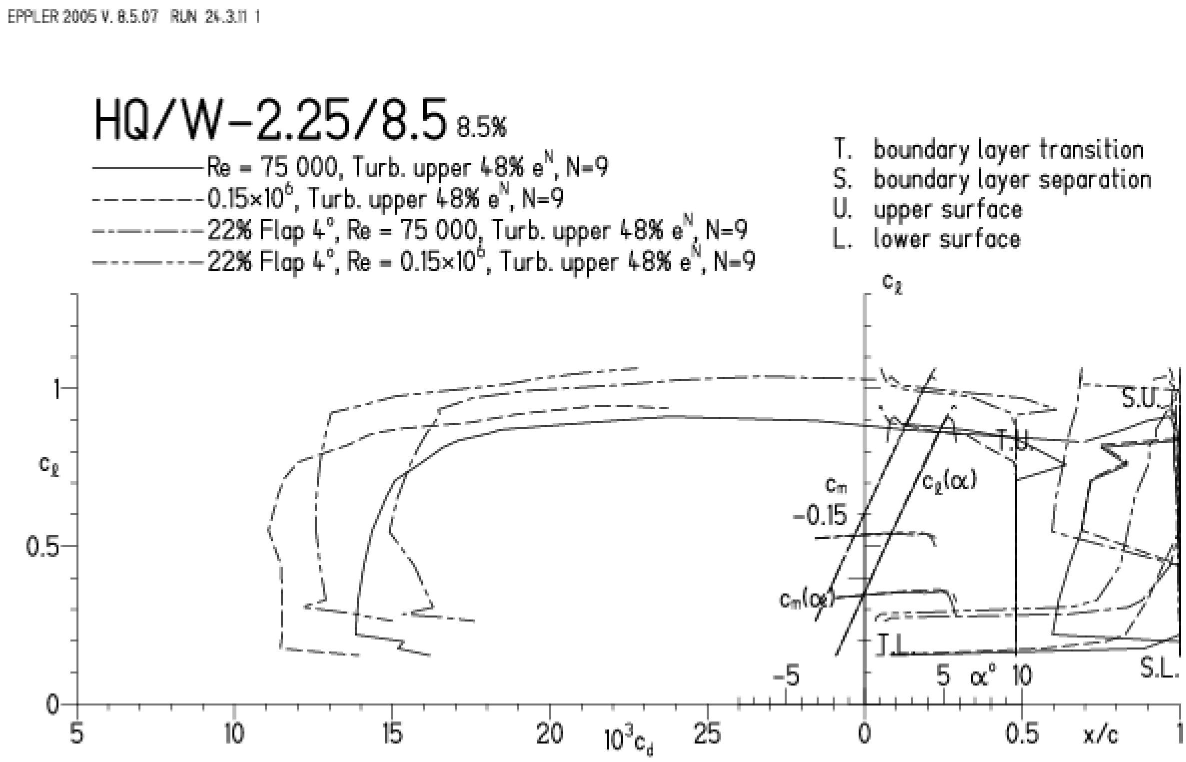


EPPLER 2005 V.



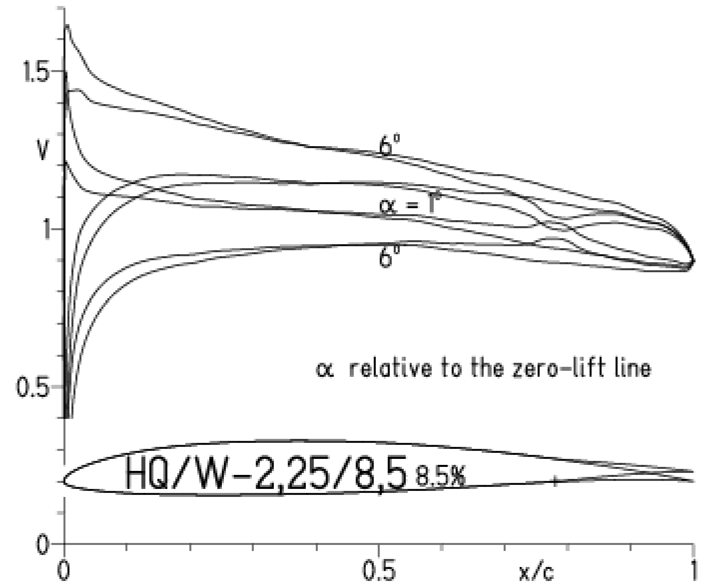
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



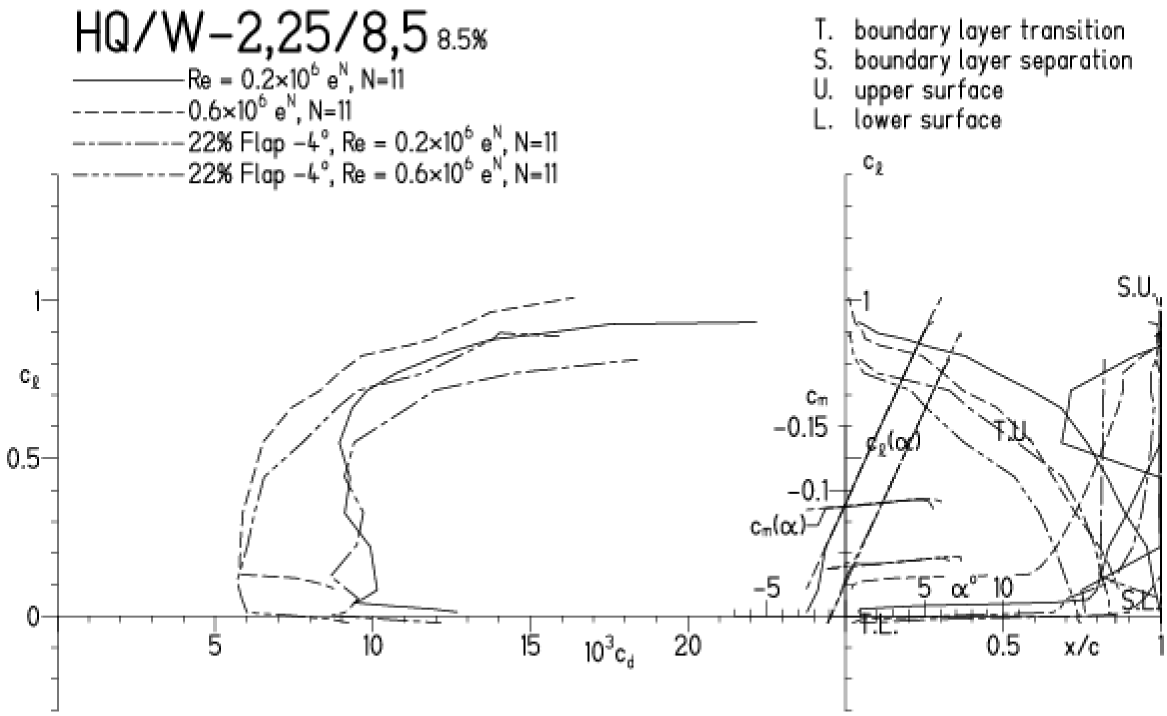


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

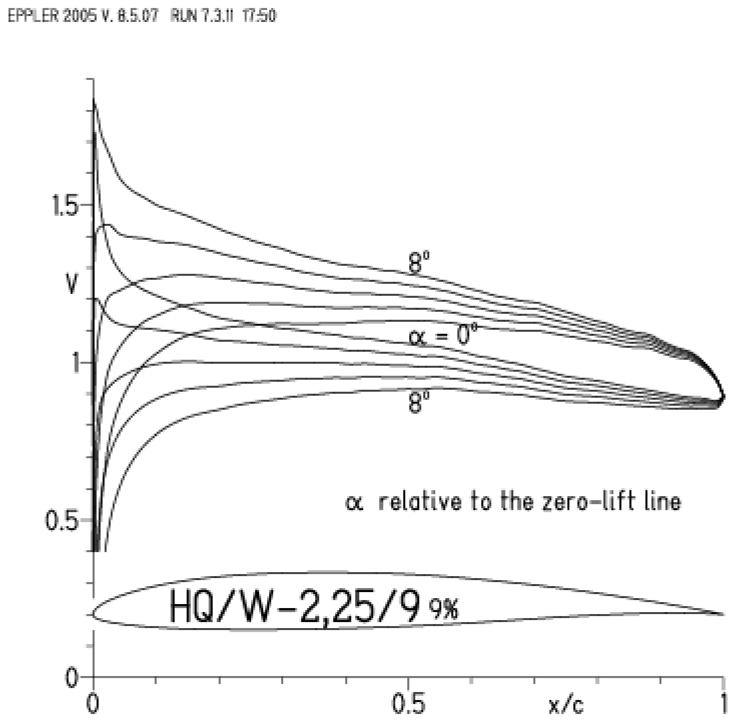
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

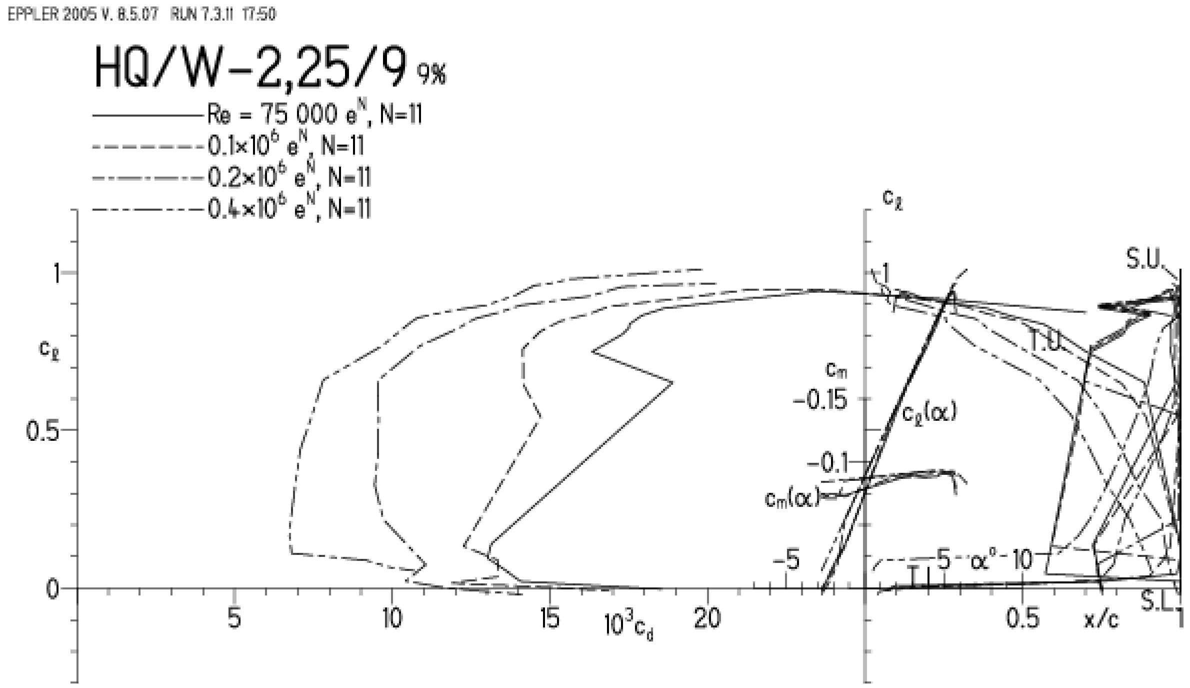


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

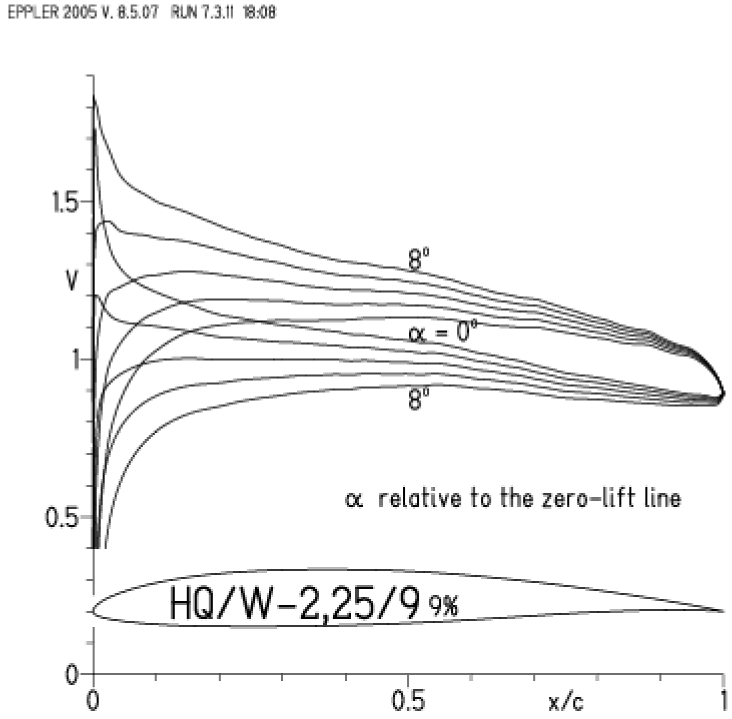


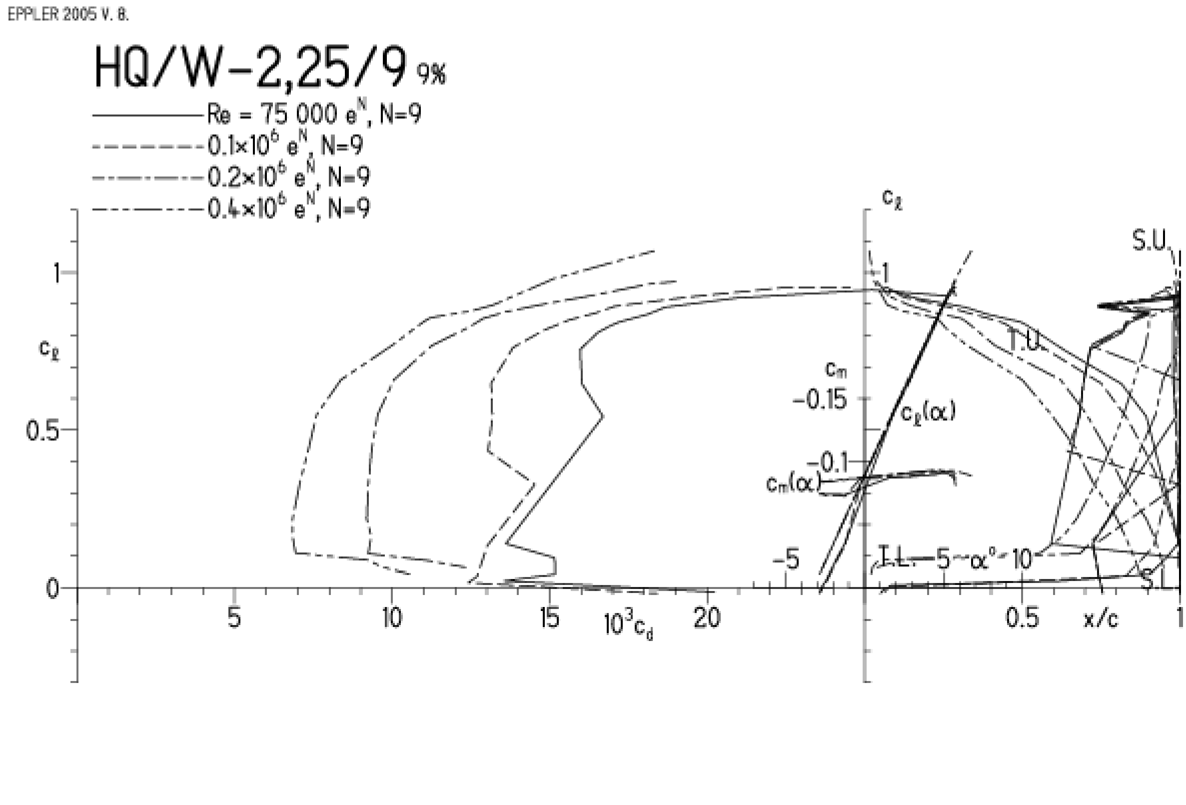
<u>HQ/W-2,25/9</u>, N=11



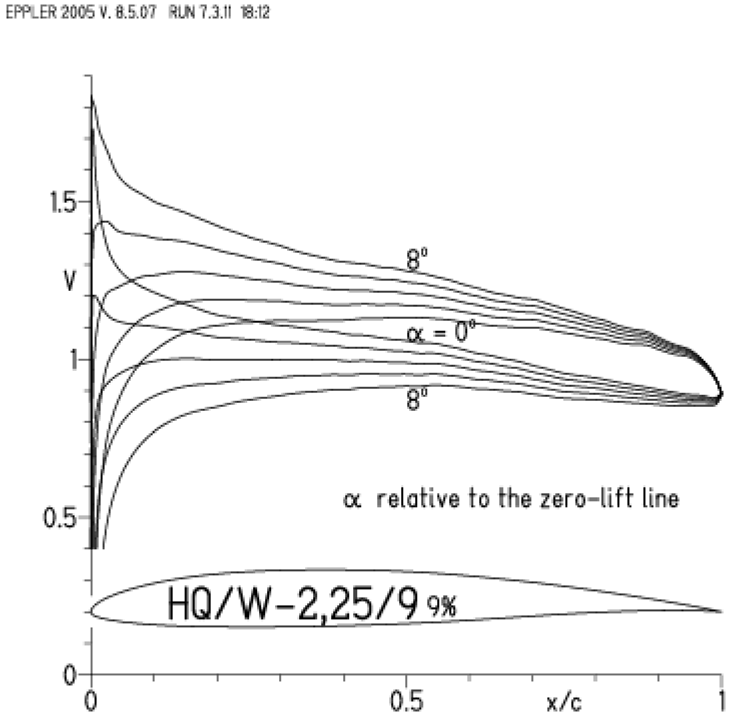


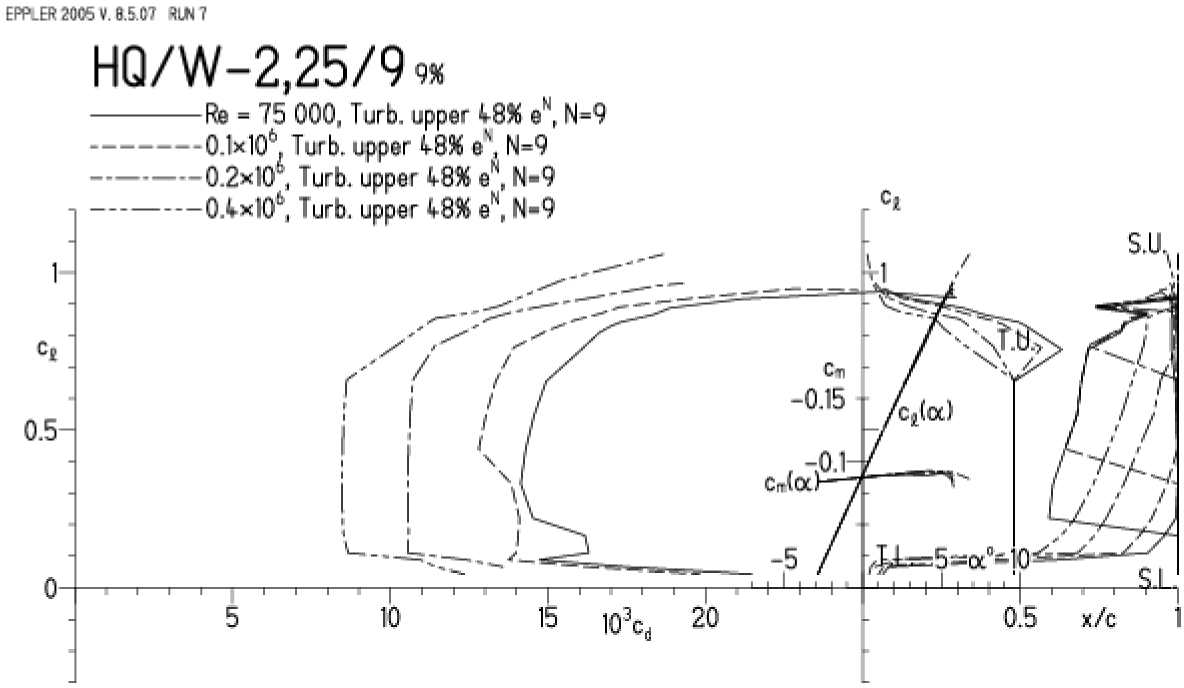
<u>HQ/W-2,25/9</u>, N=9





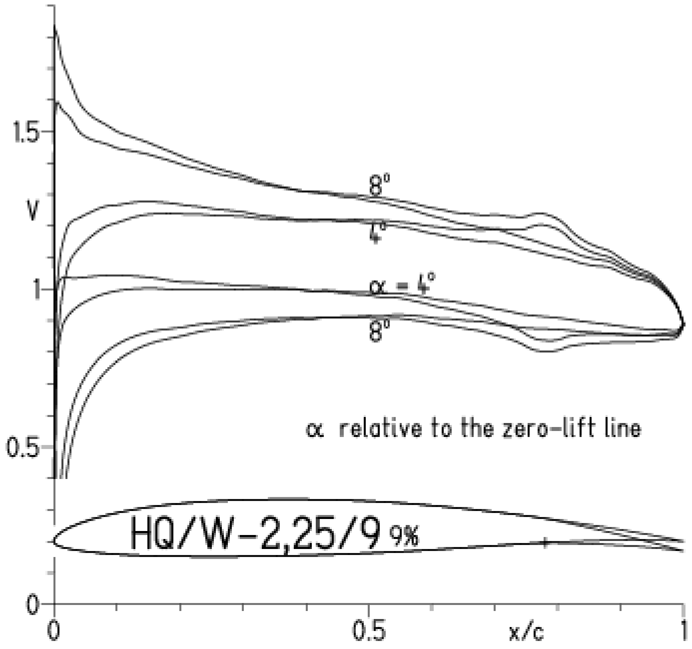
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



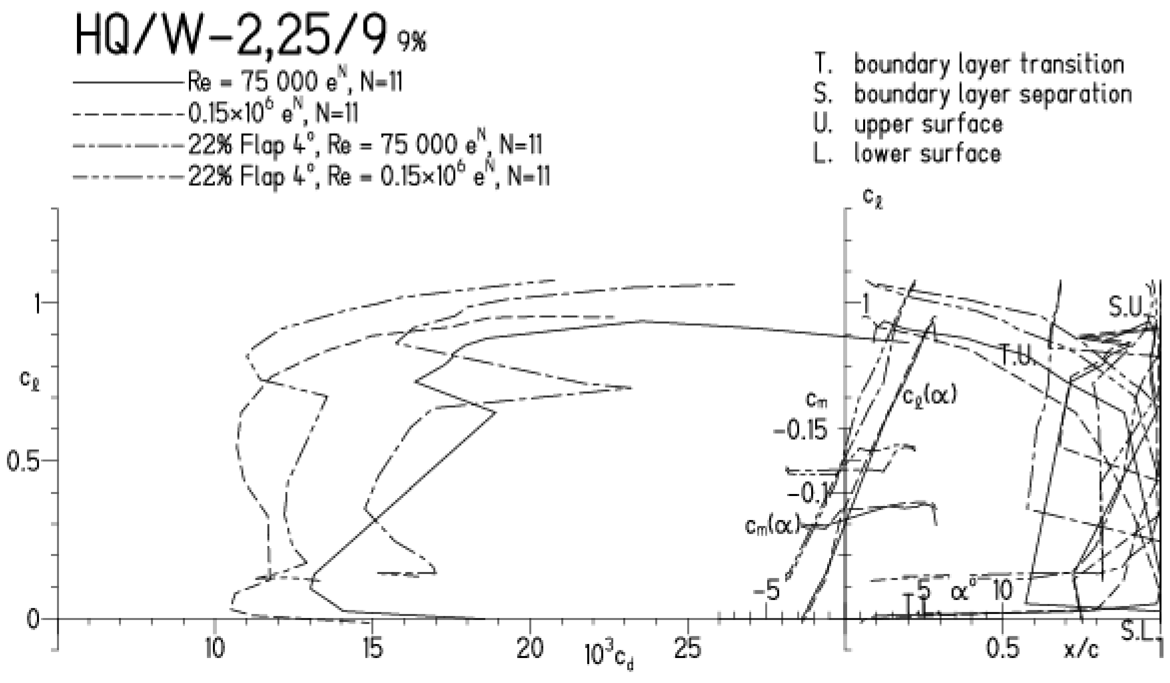


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

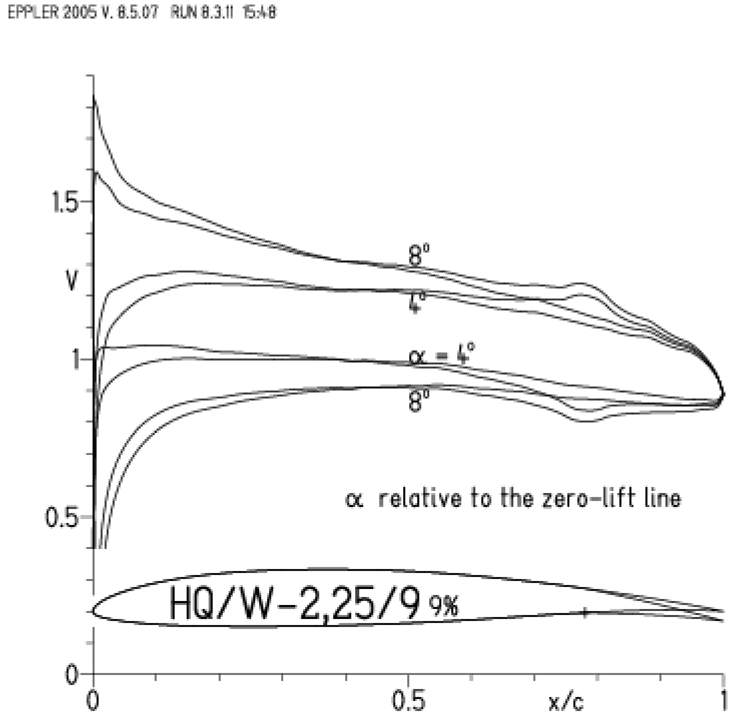
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

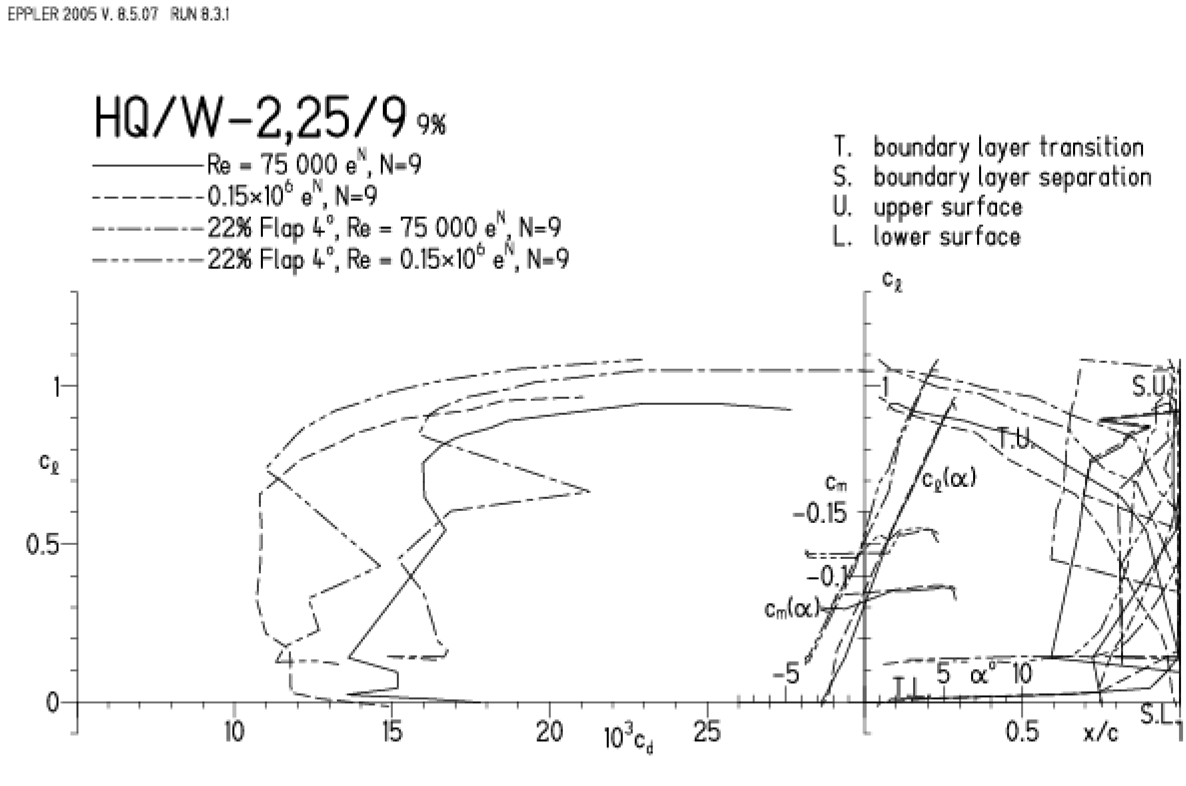


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

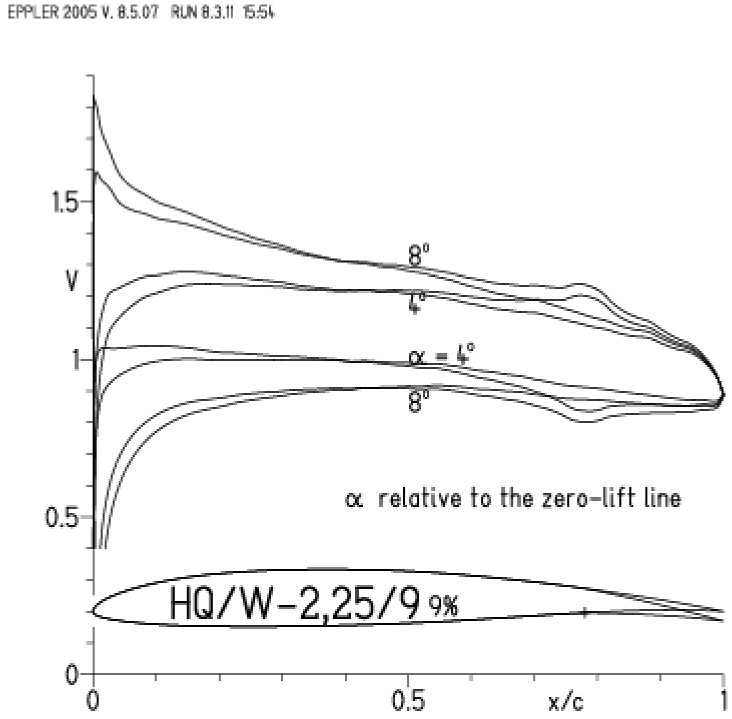


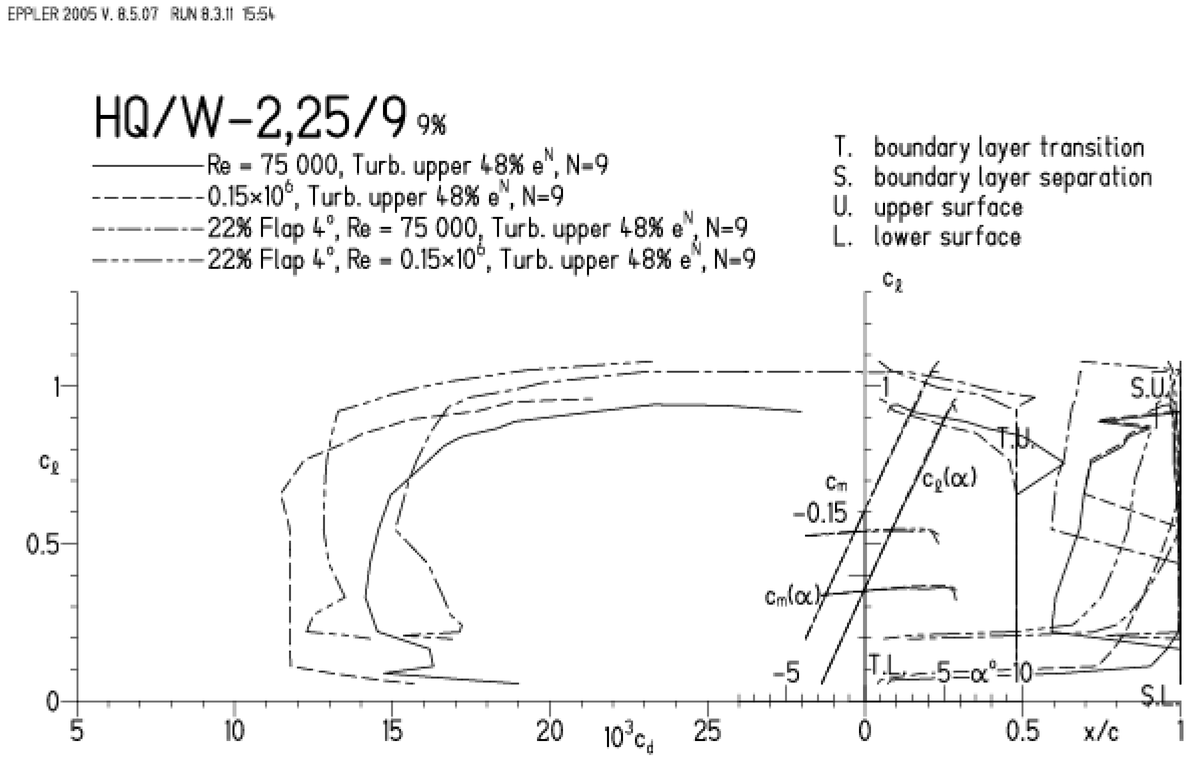
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





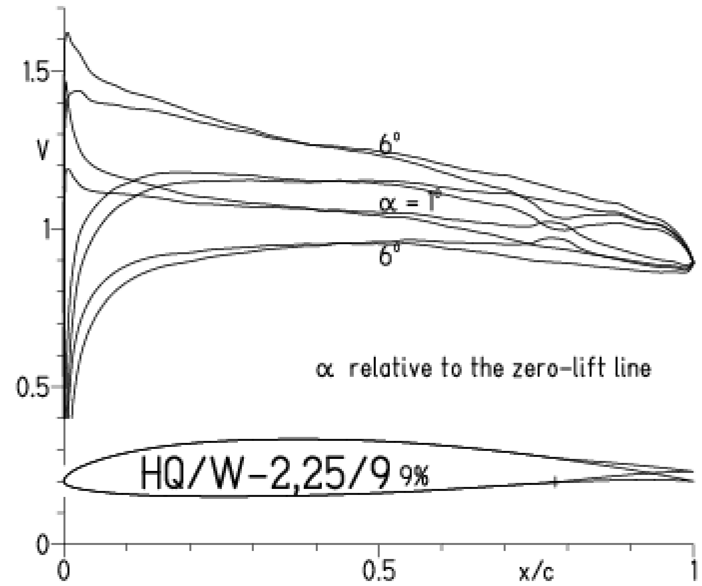
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



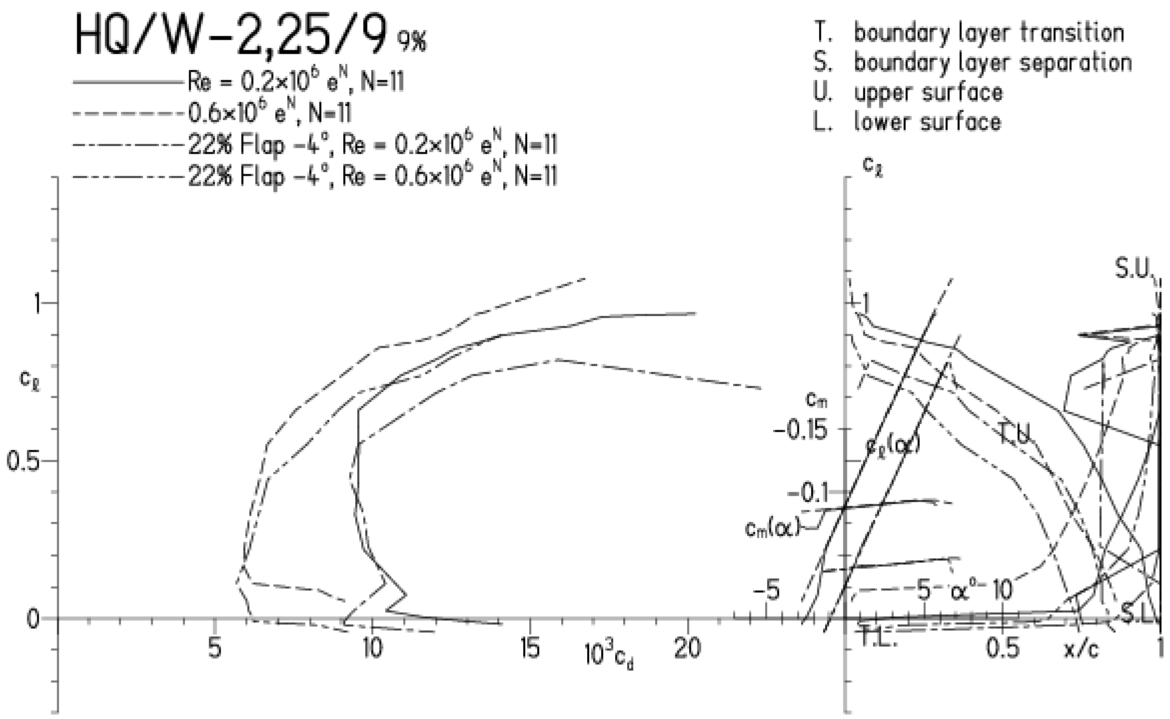


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

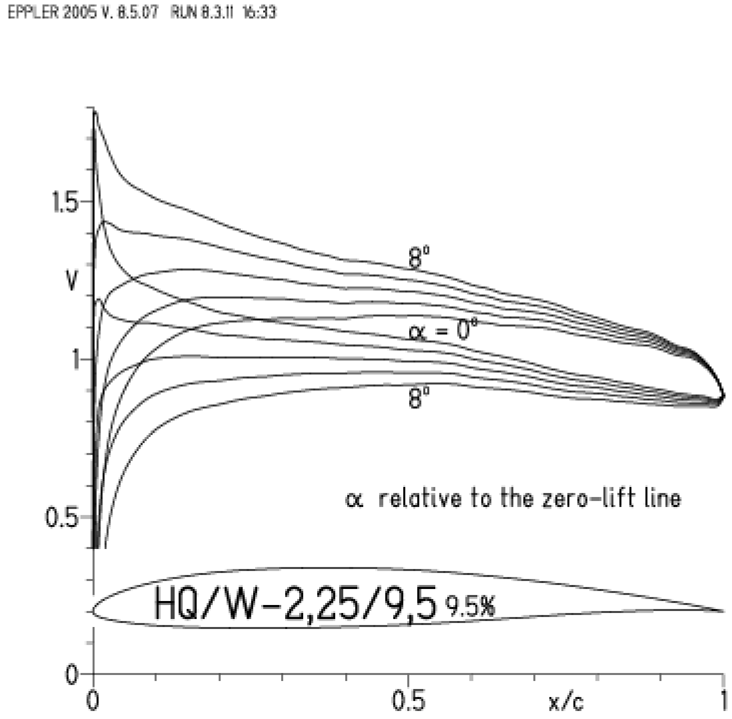
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

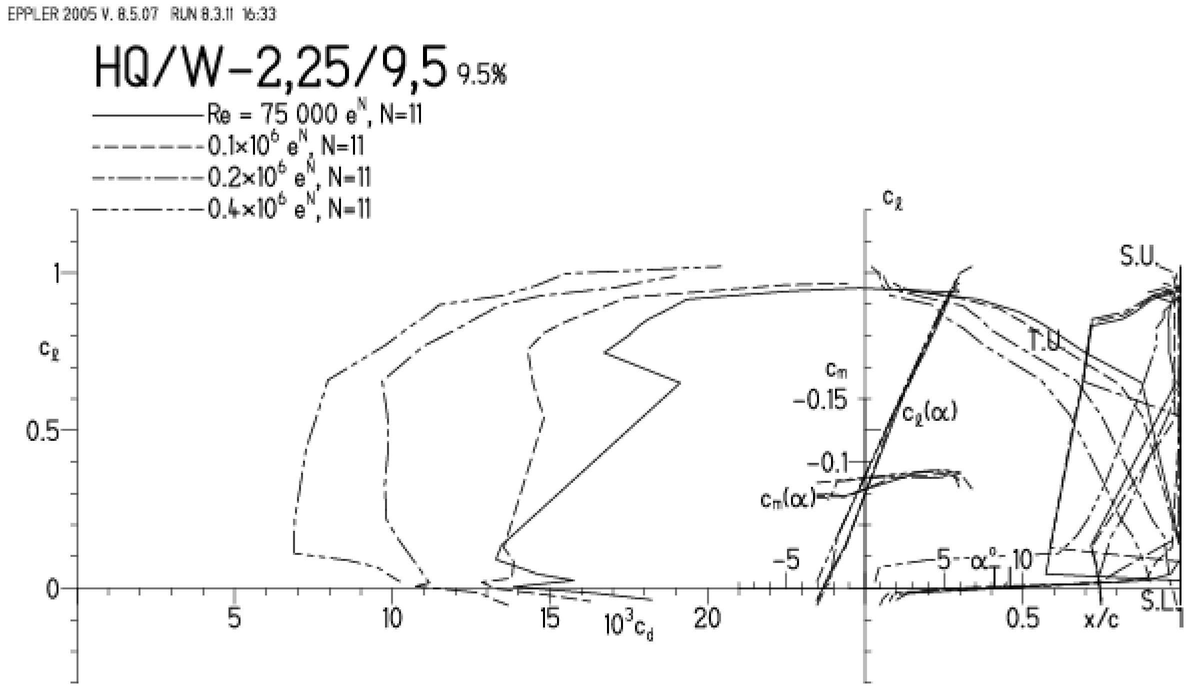


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



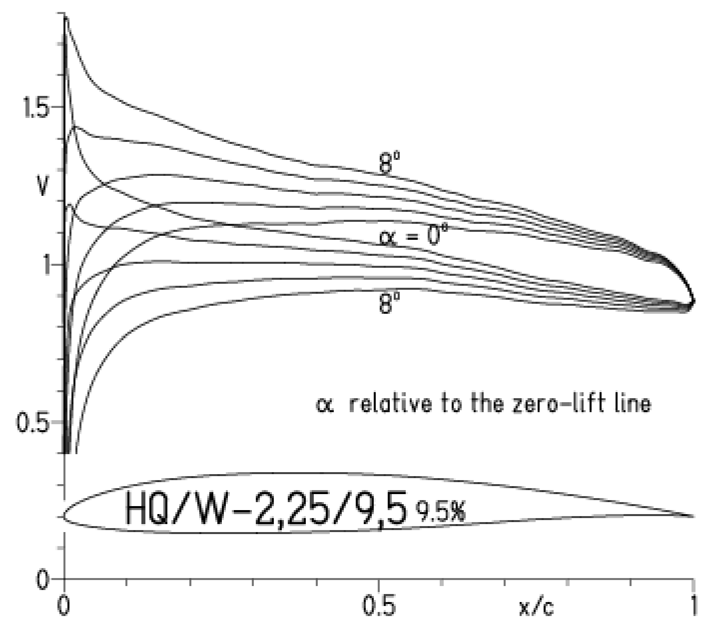
<u>HQ/W-2,25/9,5</u>, N=11



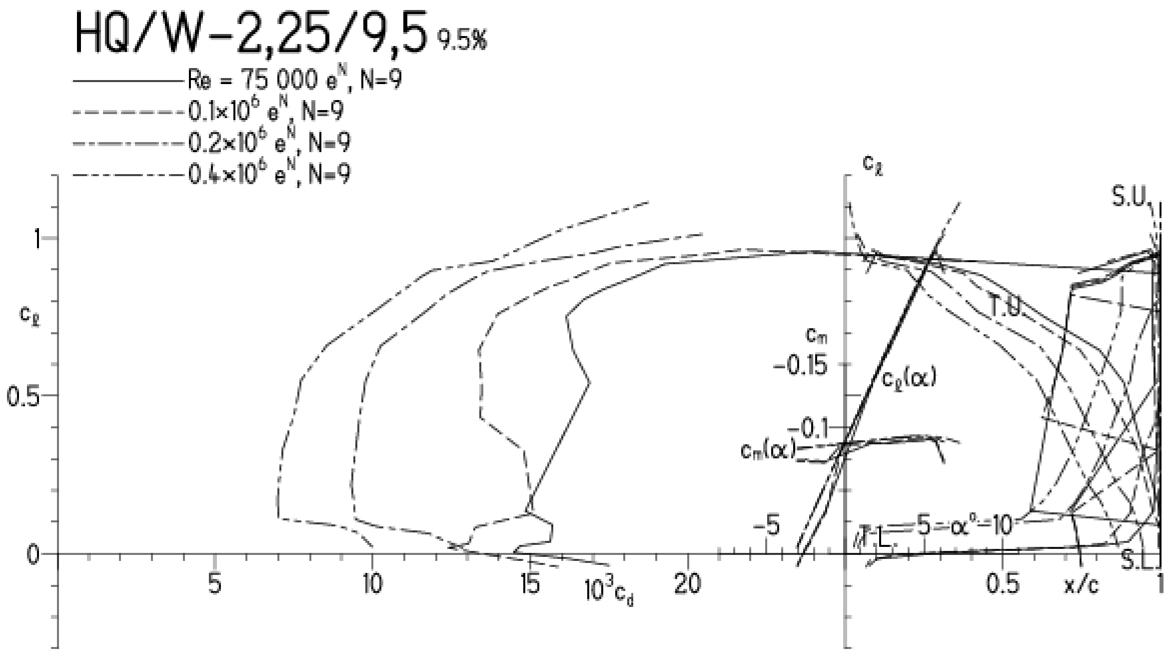


<u>HQ/W-2,25/9,5</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

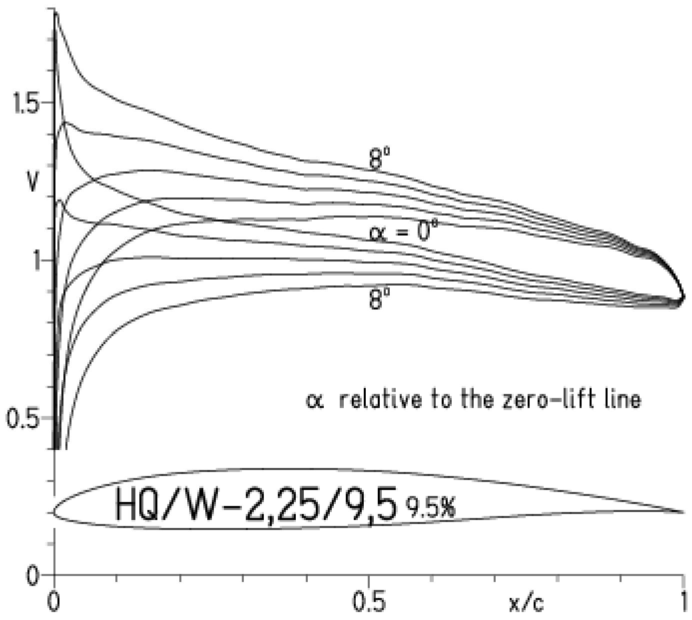


EPPLER 2005 V. 8.5.07 RUN 8.3.

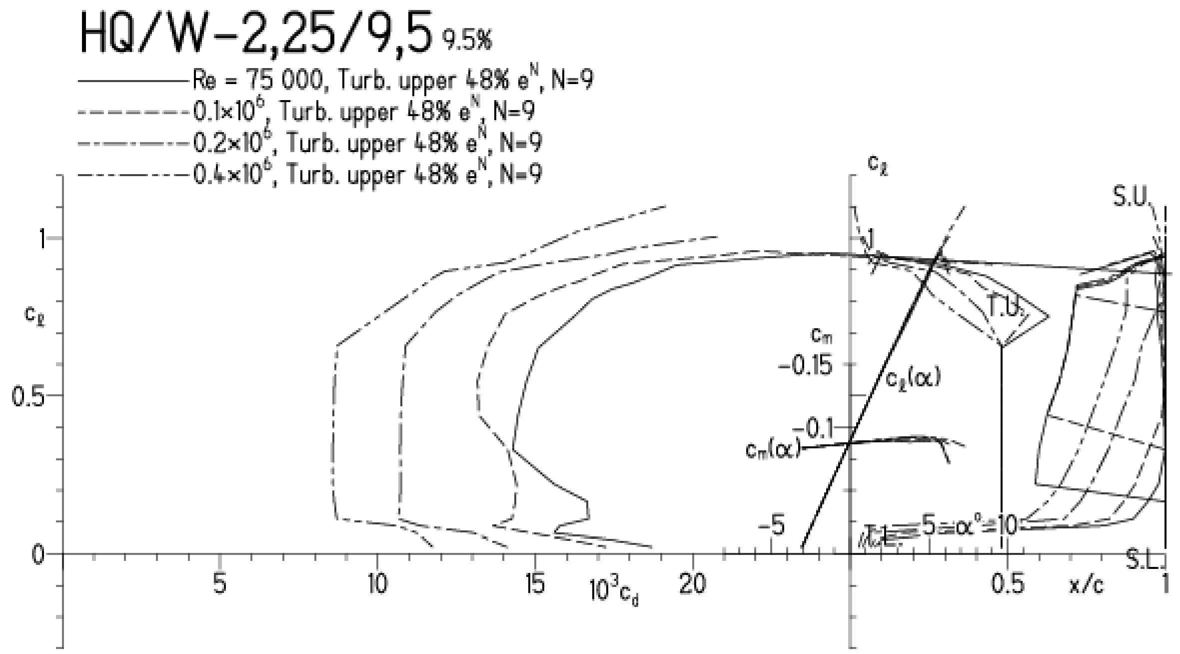


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

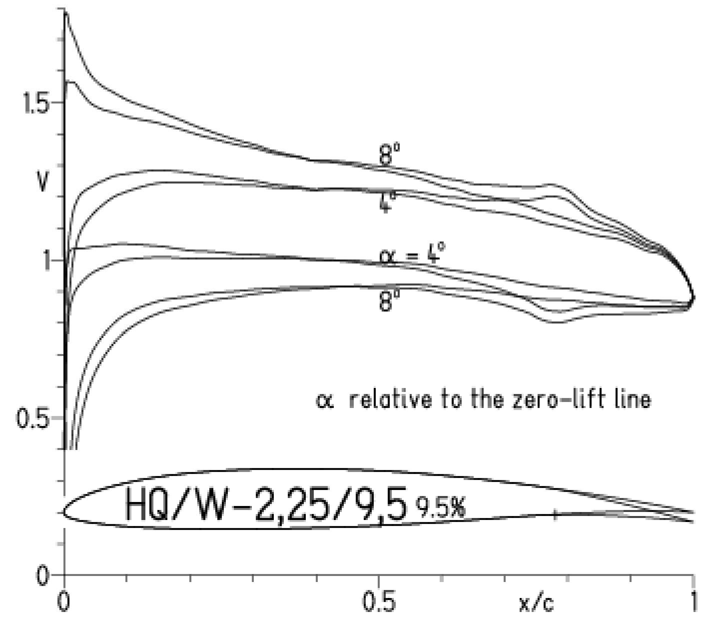


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

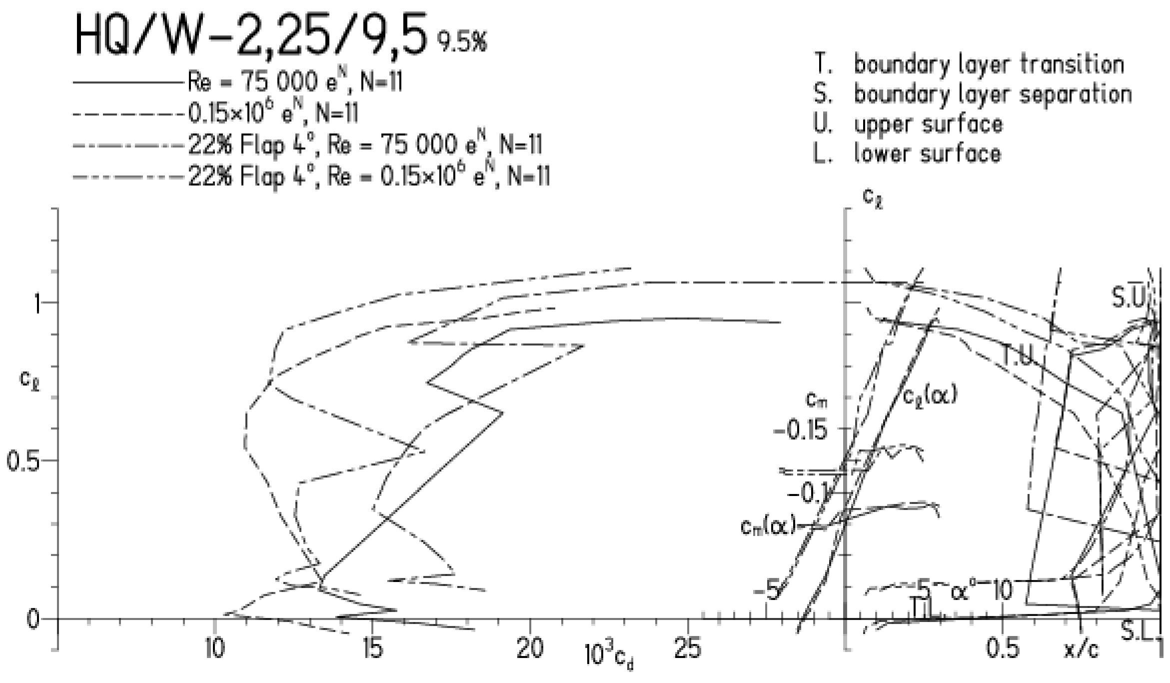


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

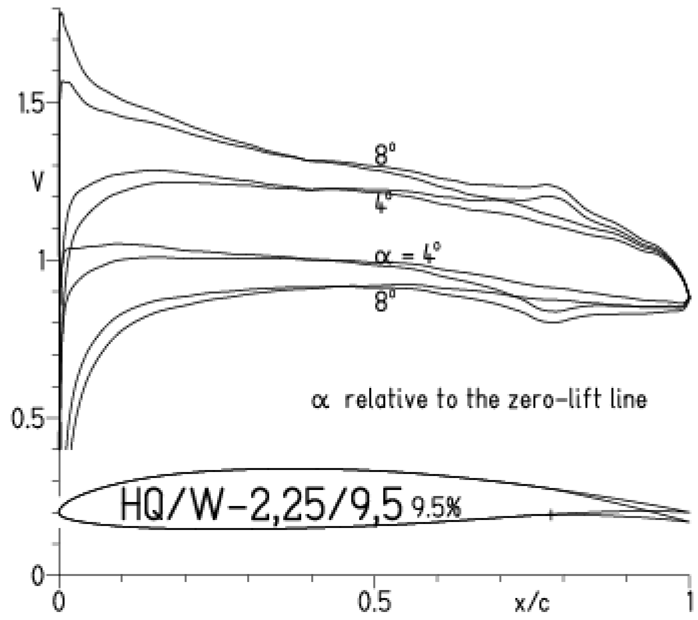


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

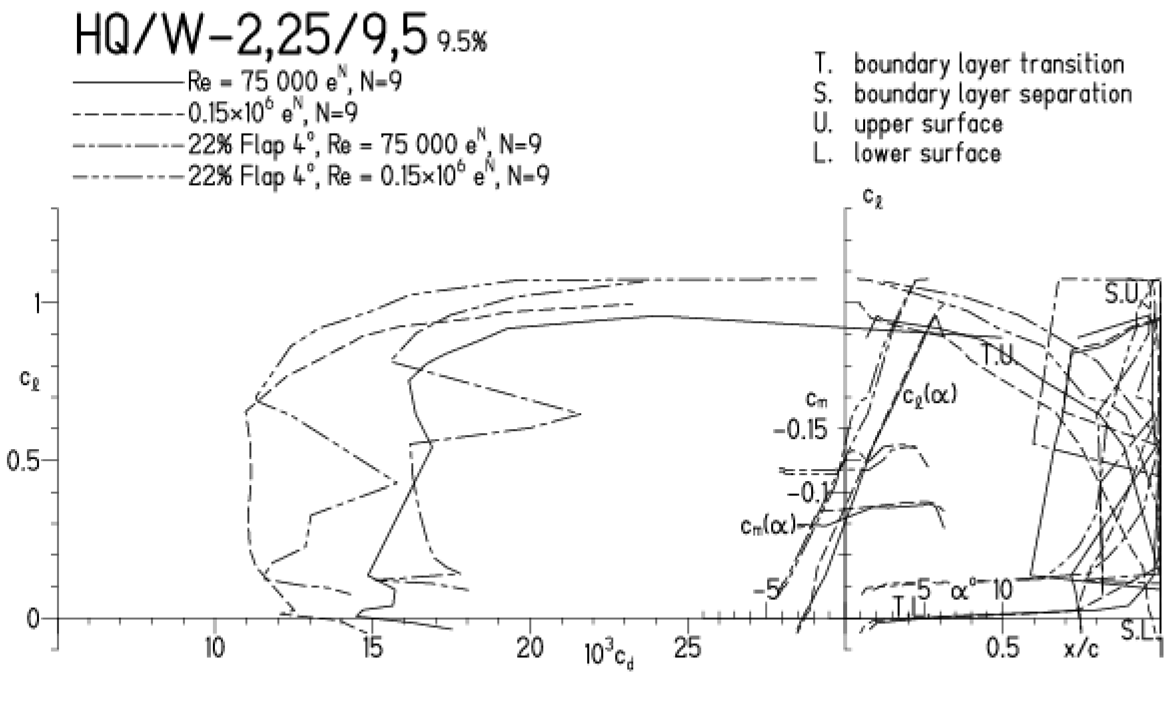


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

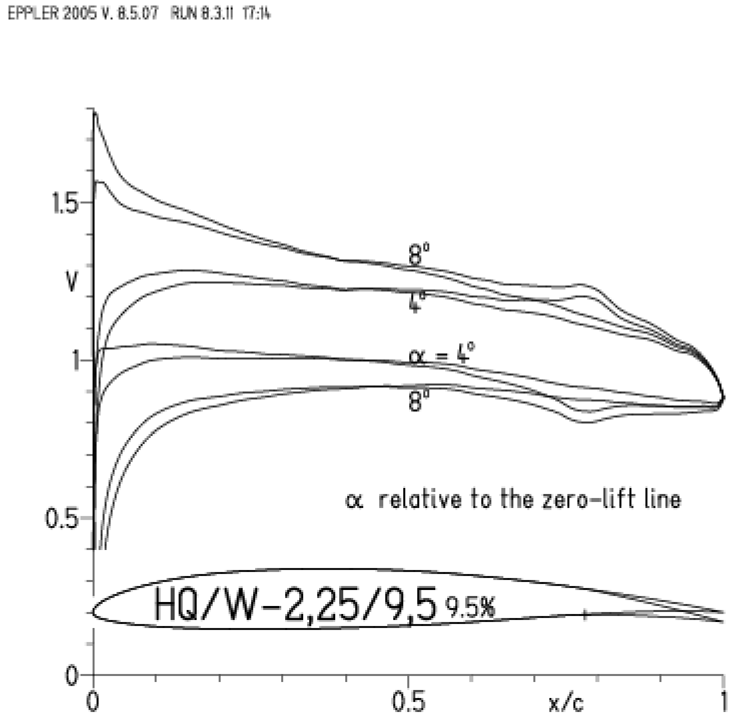
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

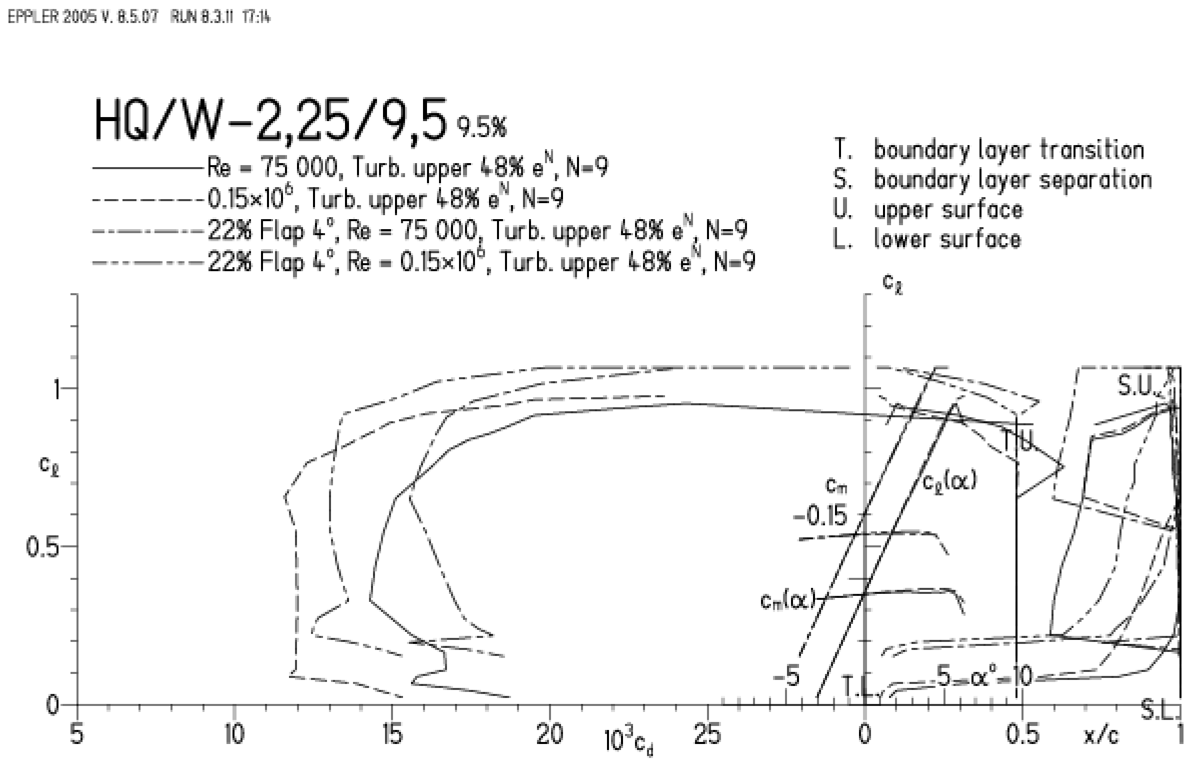


EPPLER 2005 V. 8.5.07 R



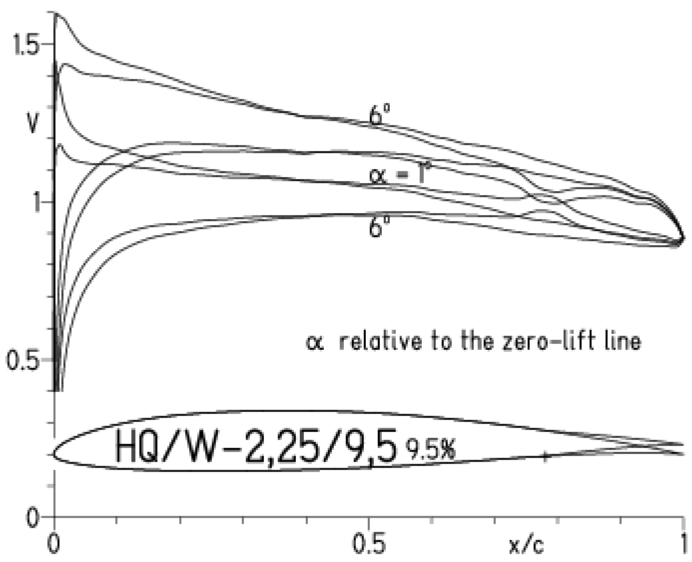
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



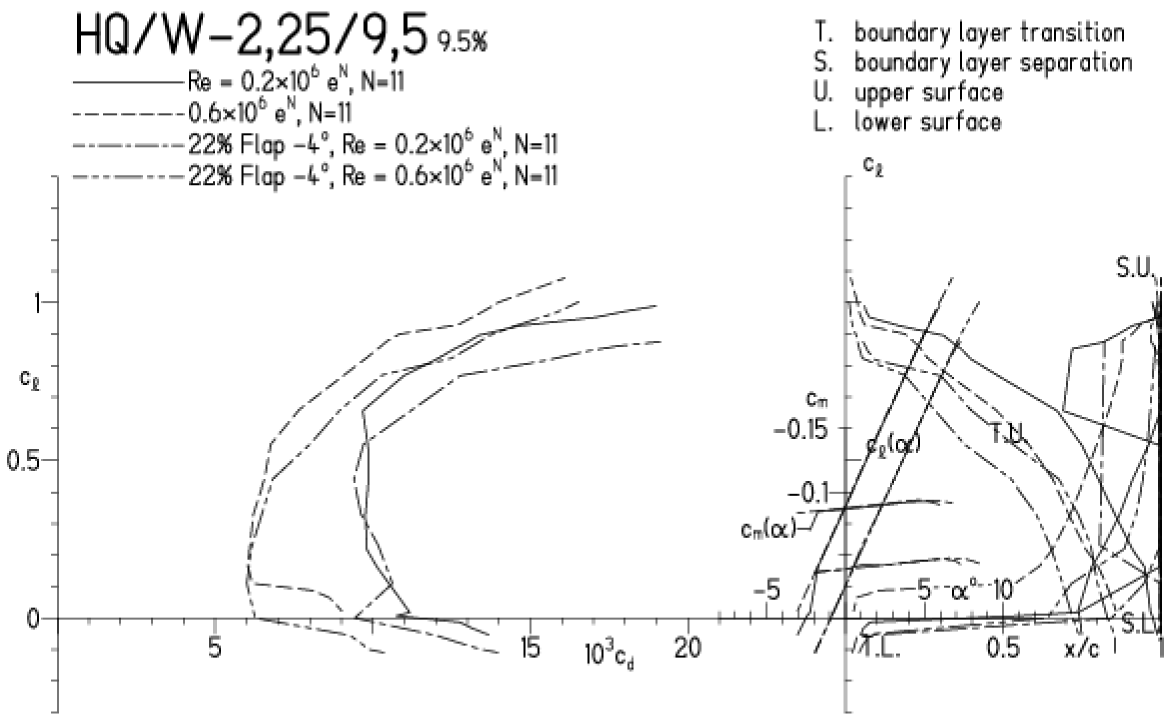


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

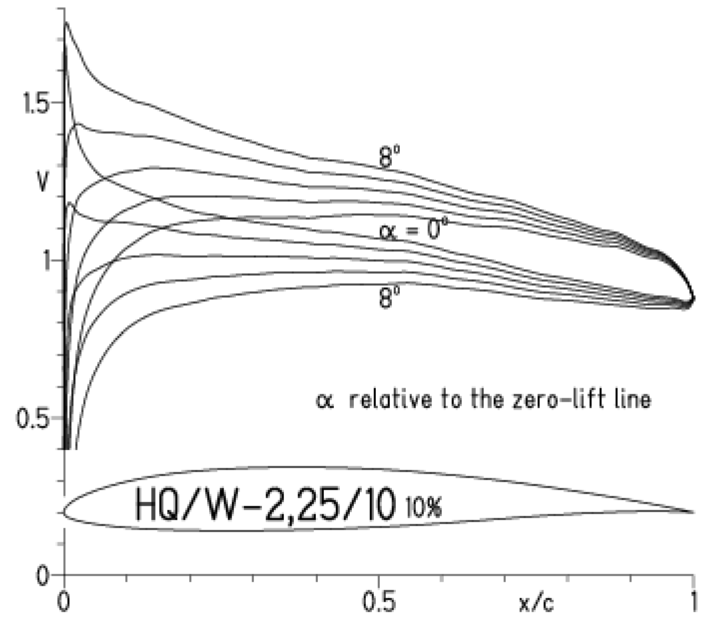


EPPLER 2005 V.

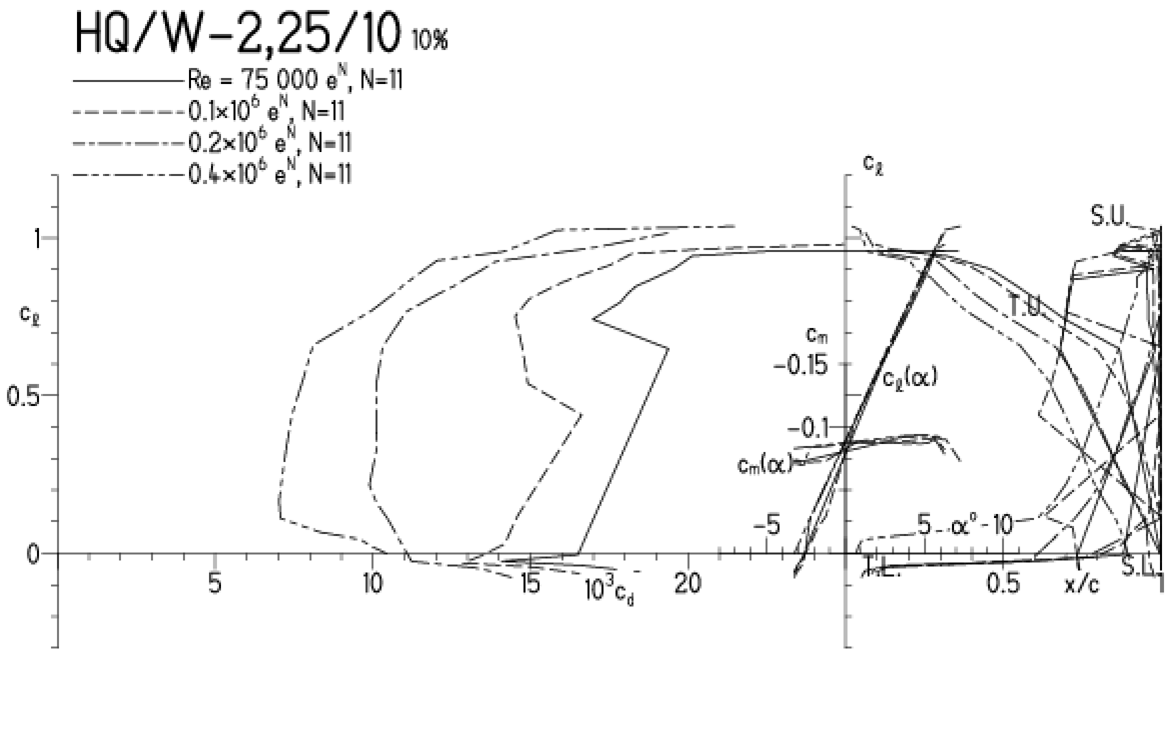


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

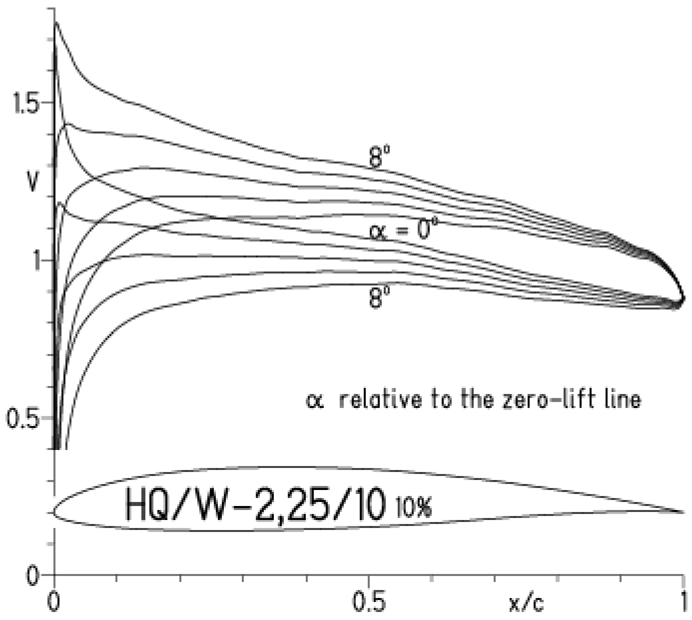


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

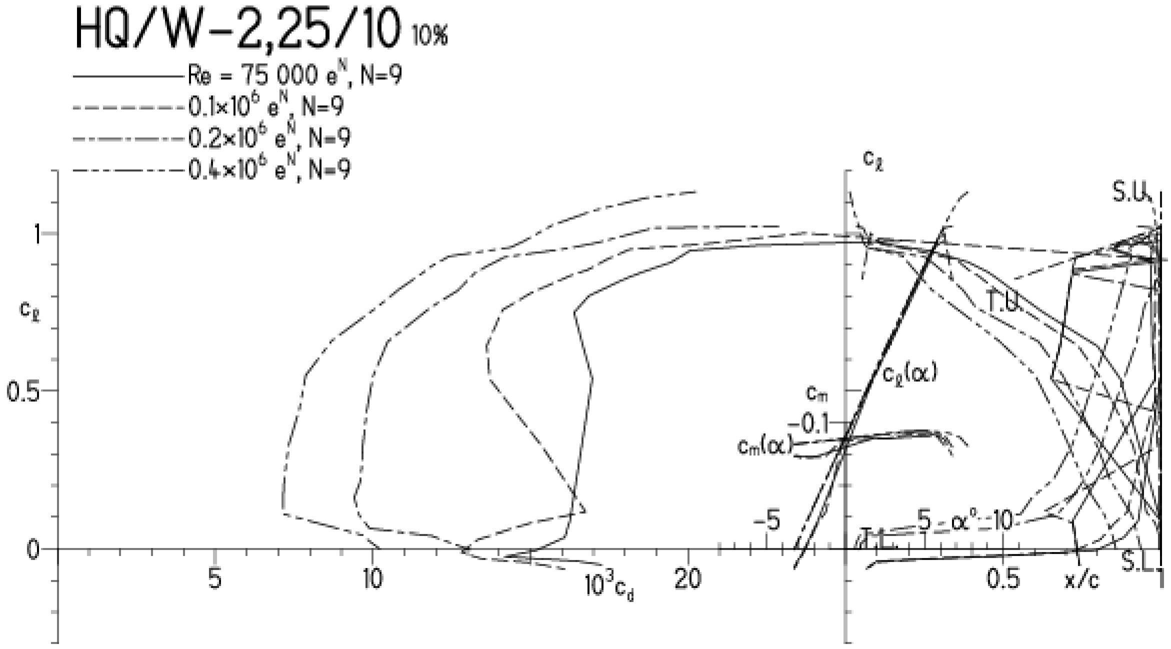


HQ/W-2,25/10, N=9

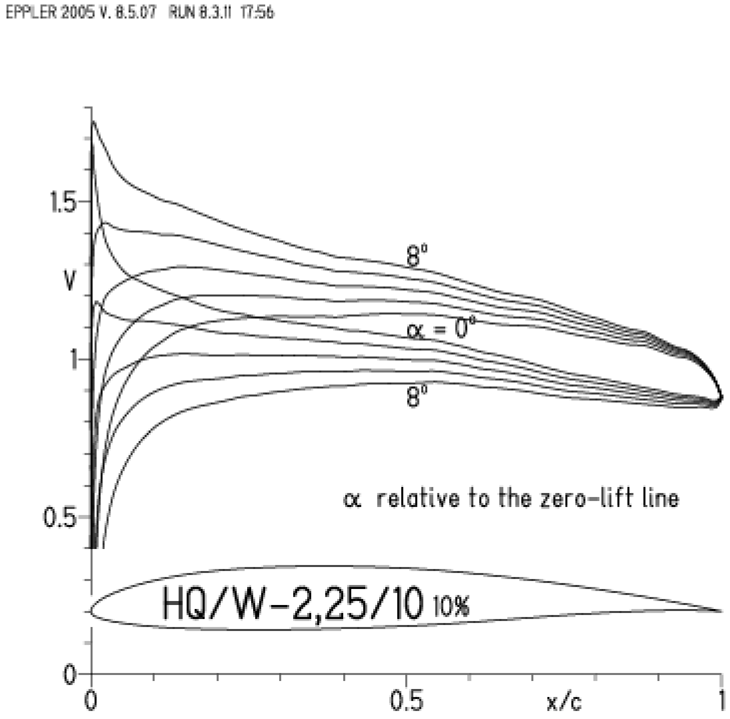
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

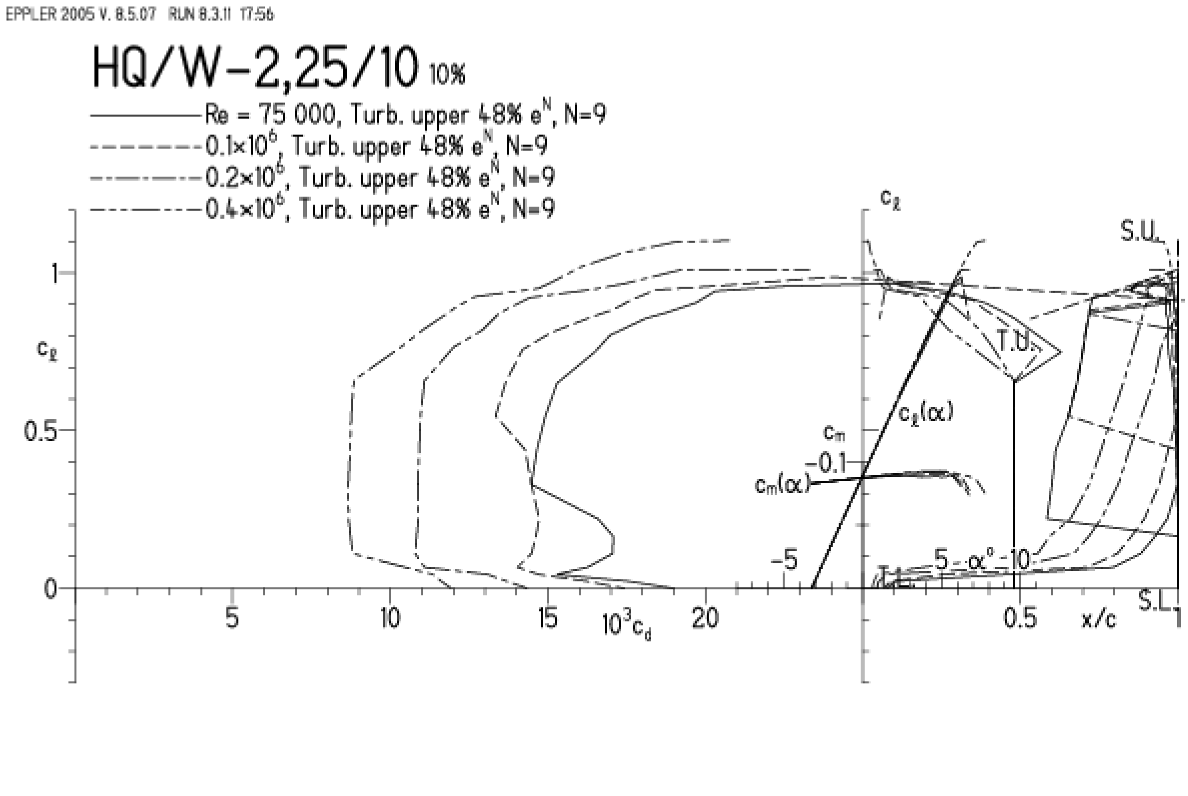


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



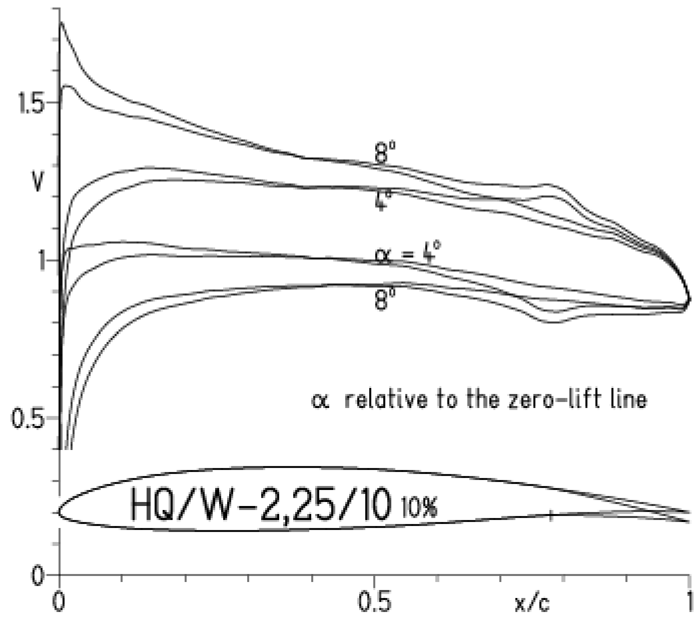
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



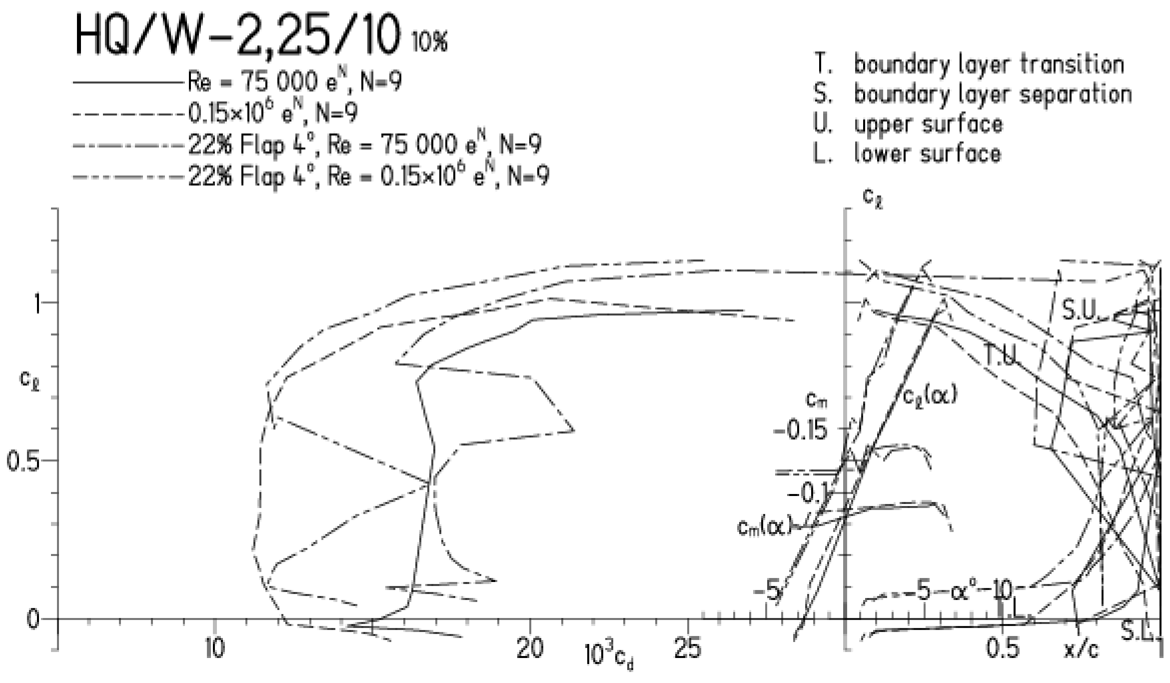


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

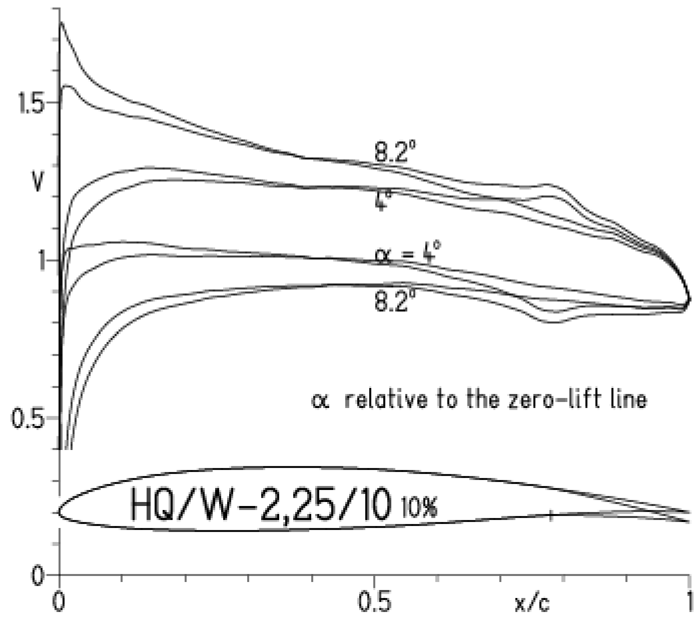


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

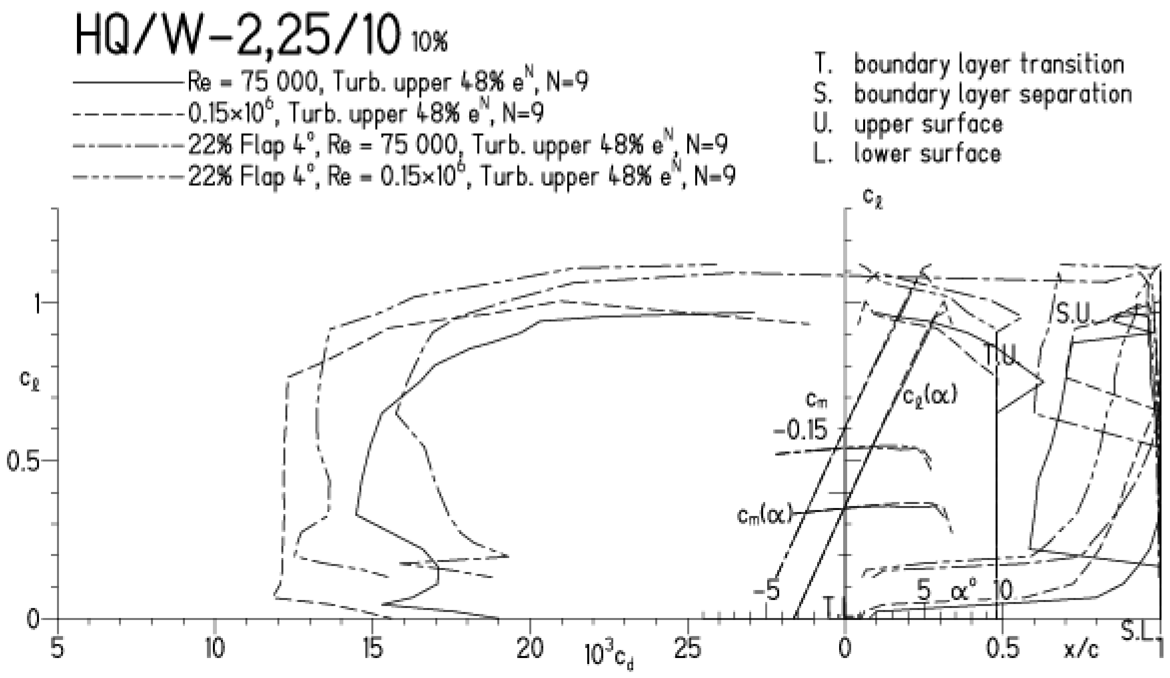


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

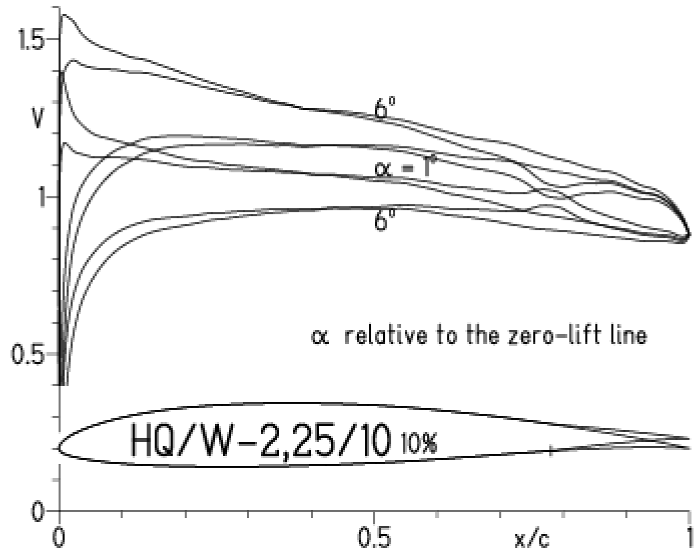


EPPLER 2005 V. 8.5.07 RUN 8.3

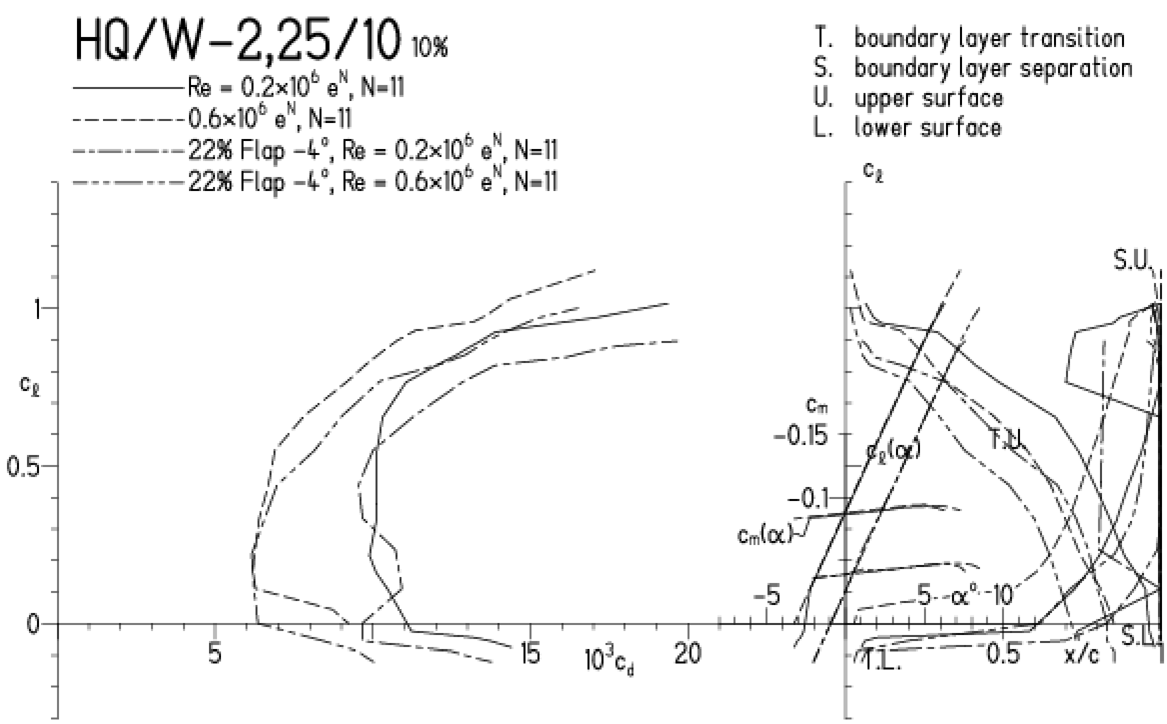


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

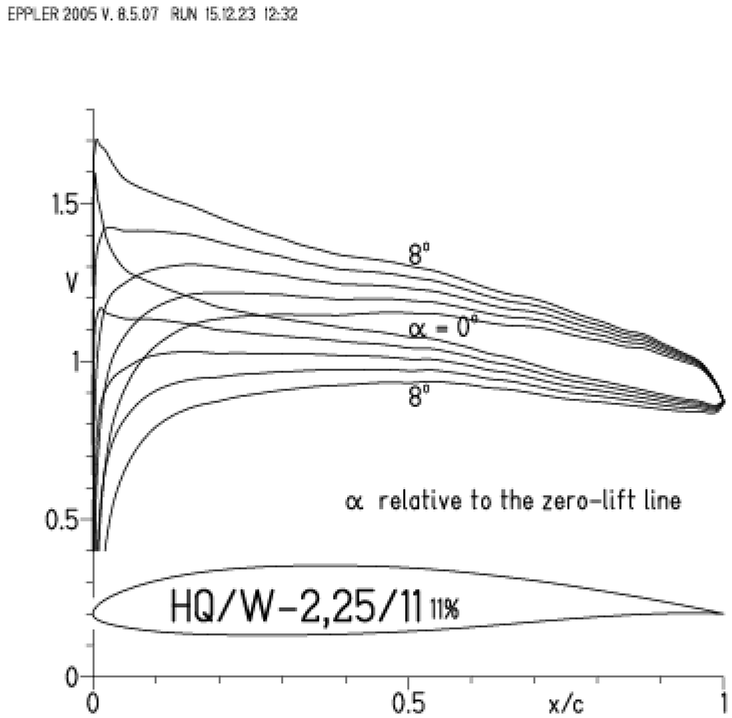
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

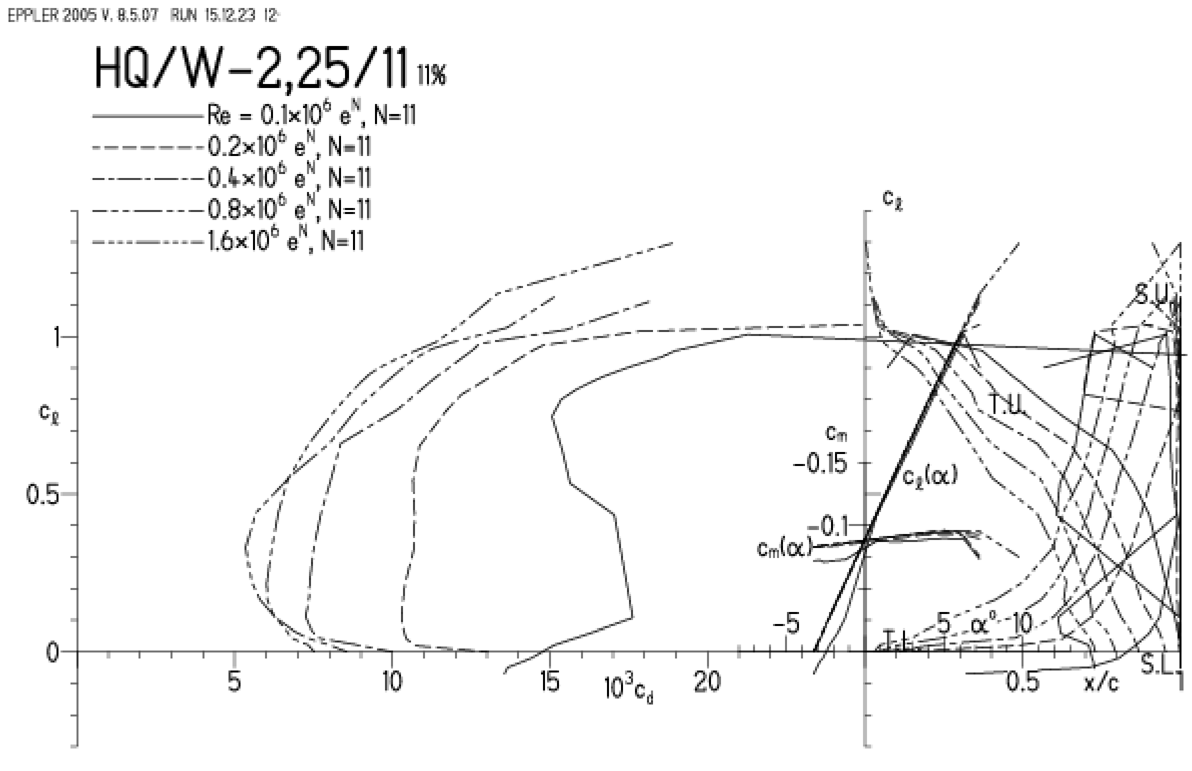


EPPLER 2005 V. 8.5.07 RUN

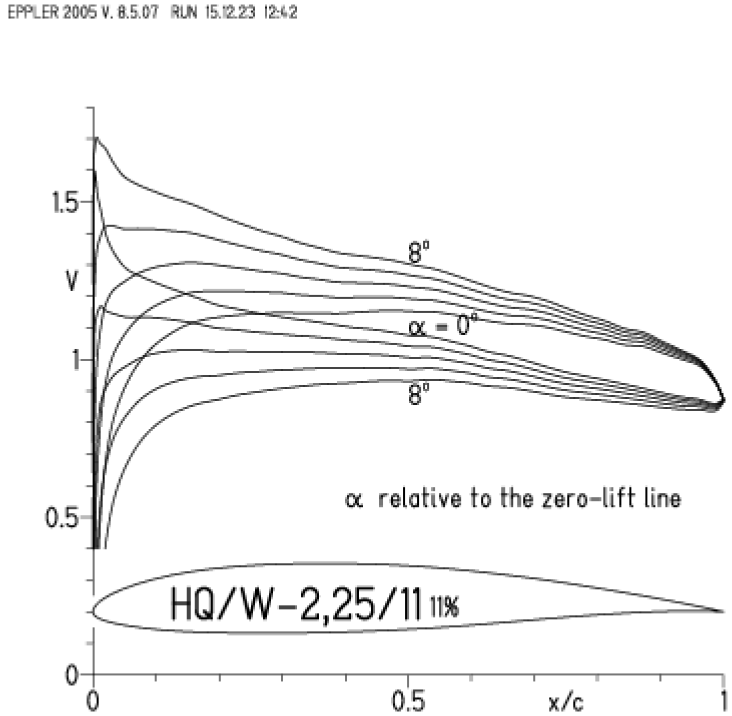


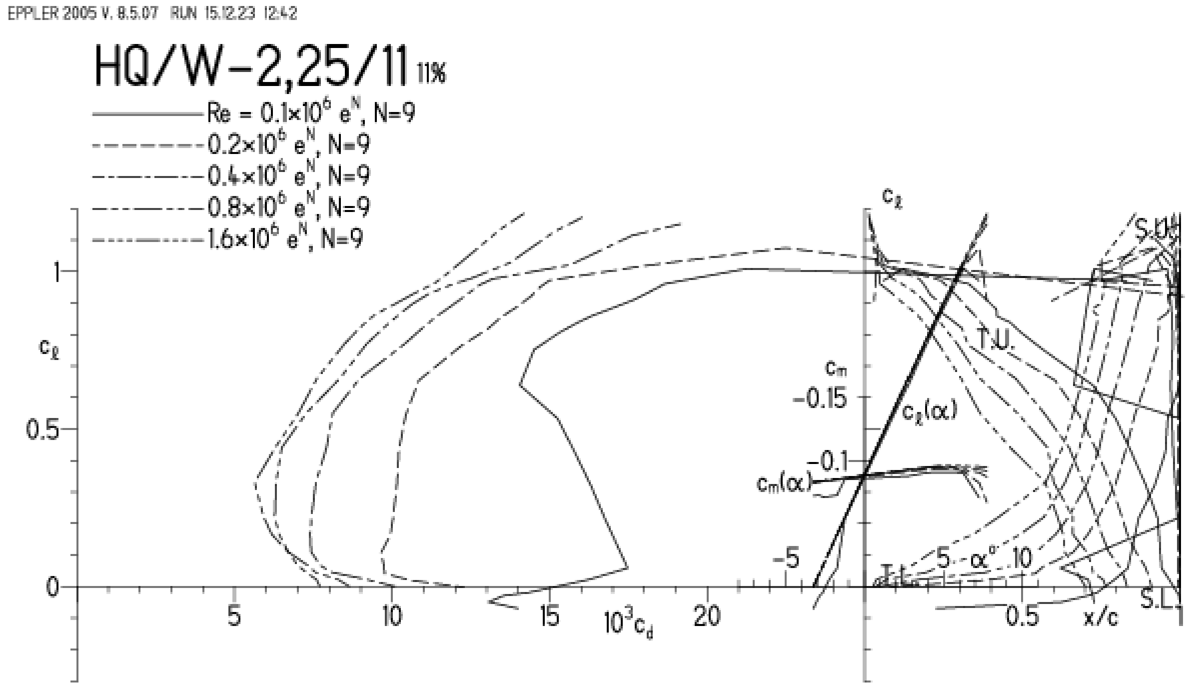
HQ/W-2,25/11, N=11



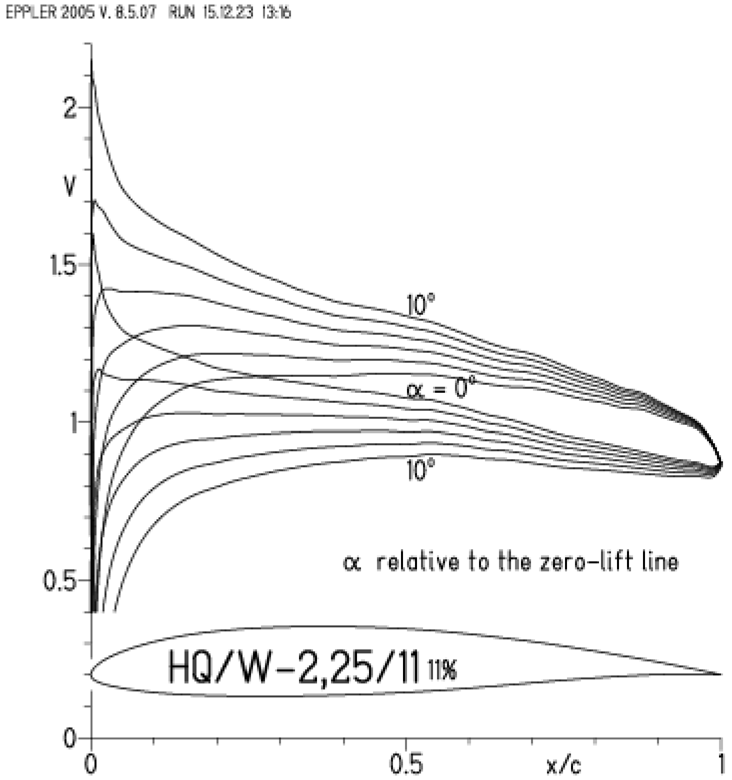


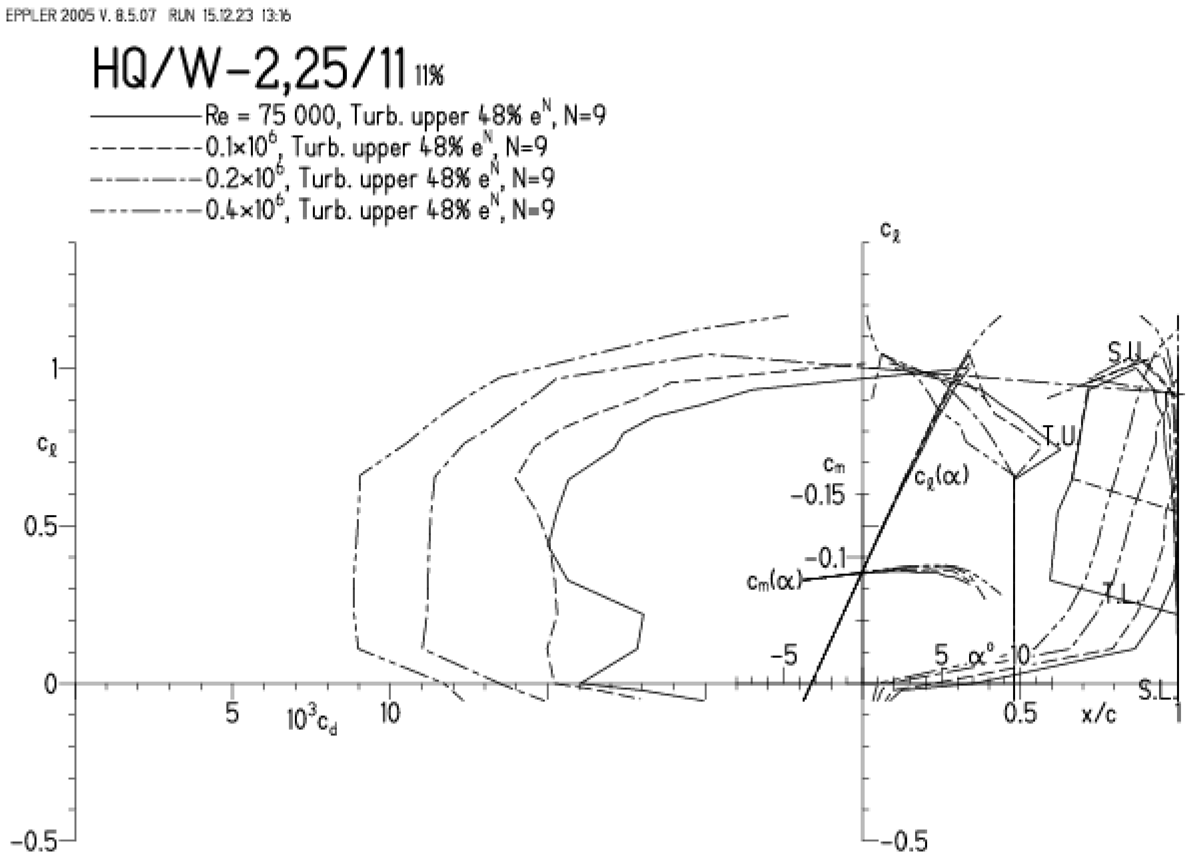
<u>HQQ/W-2,25/11</u>, N=9



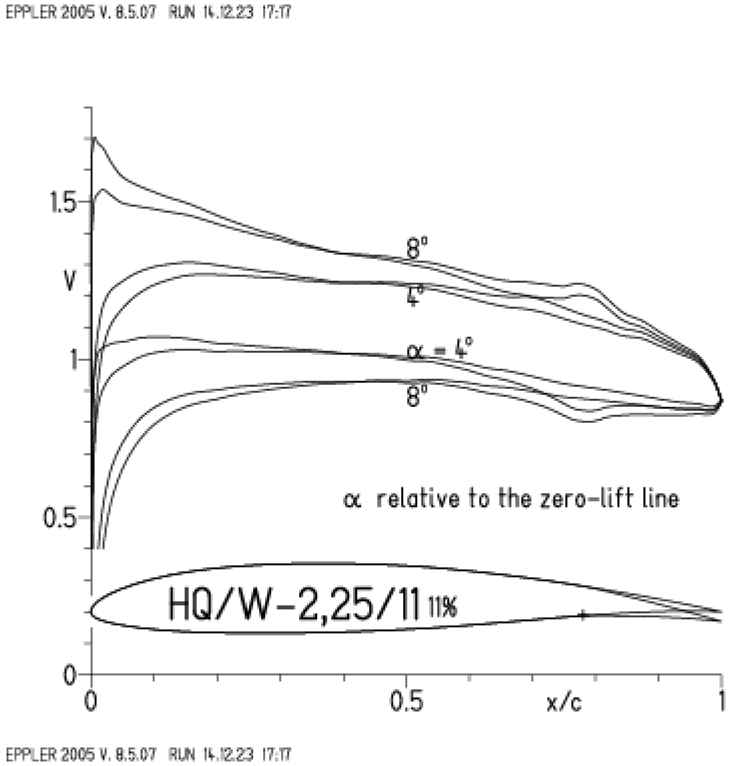


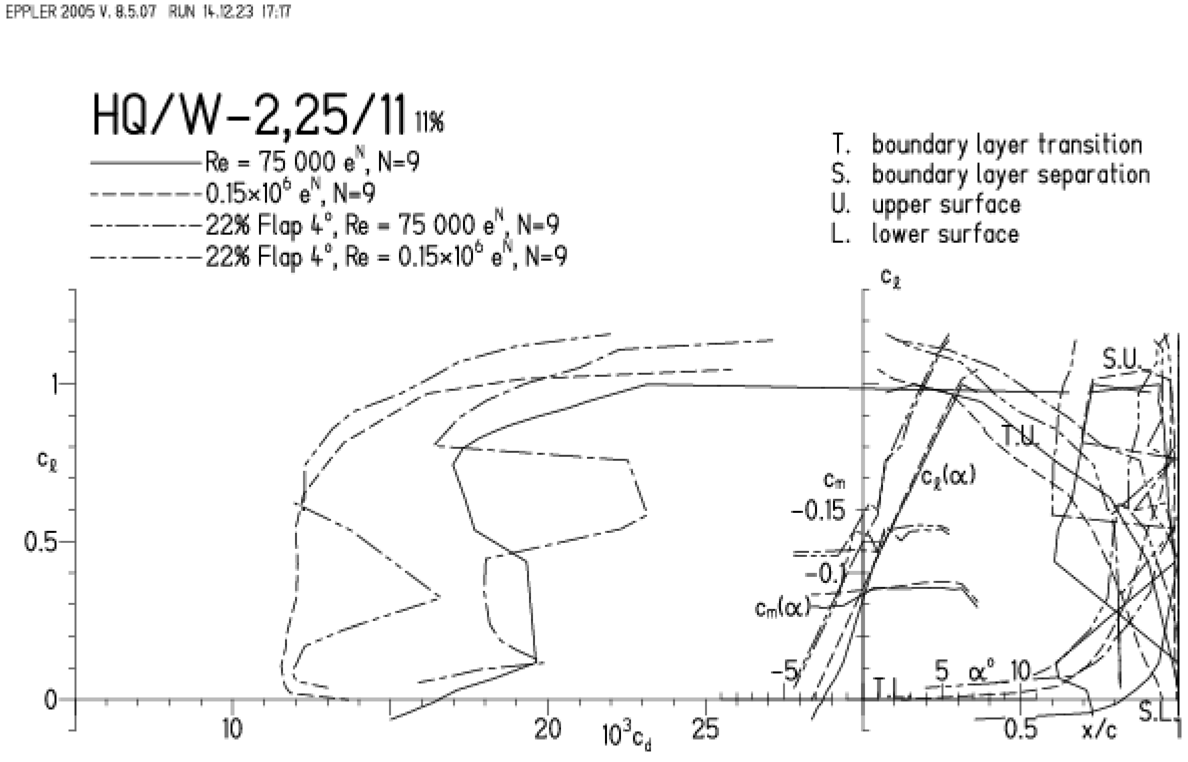
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





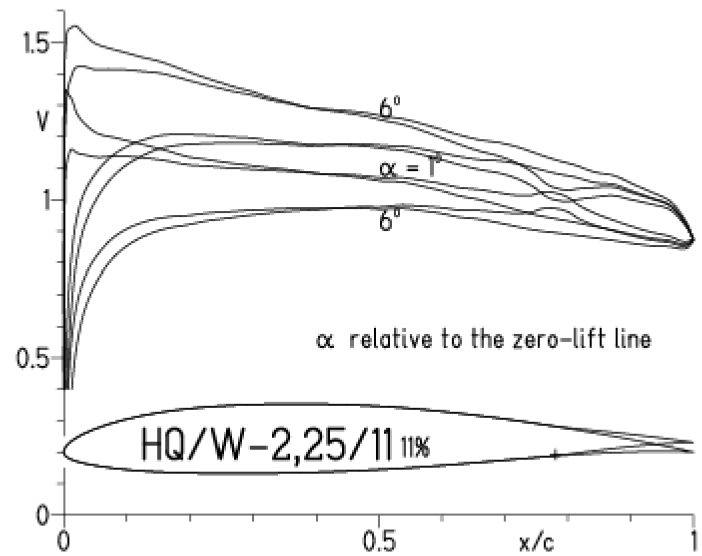
HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag



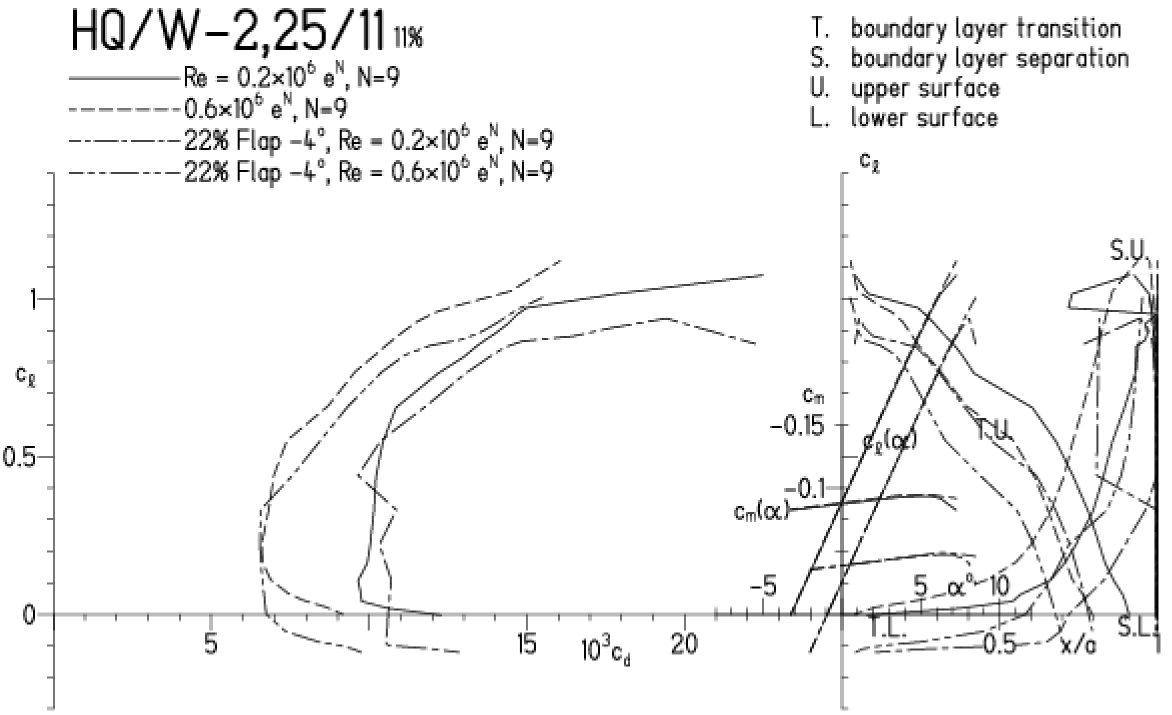


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

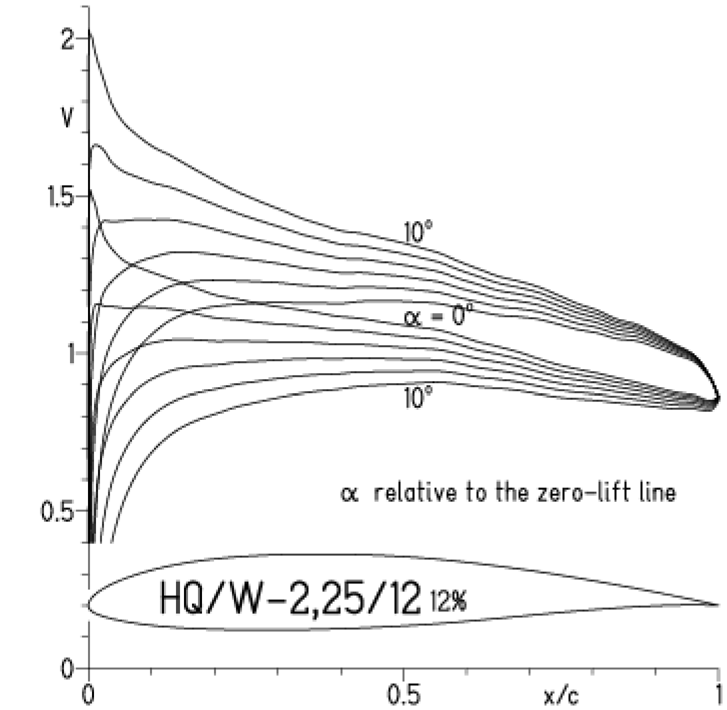


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

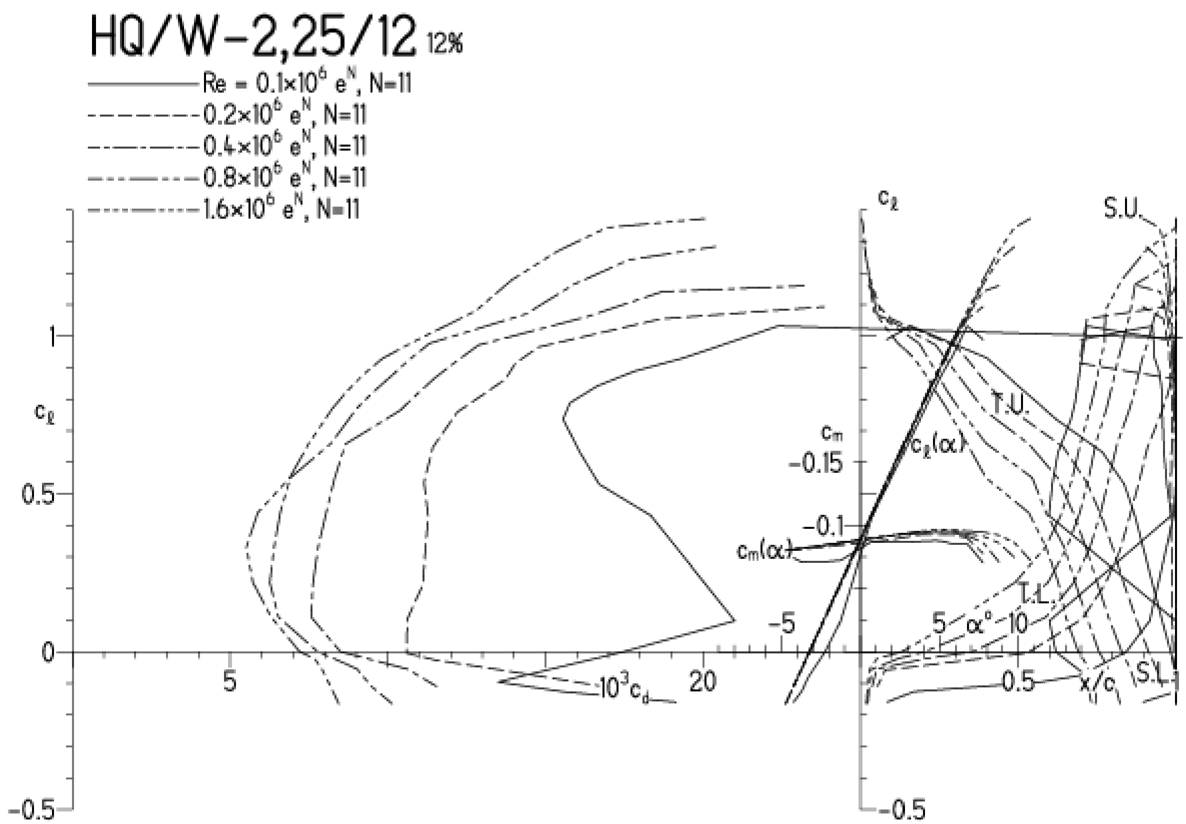


<u>HQ/W-2,25/12</u>, N=11

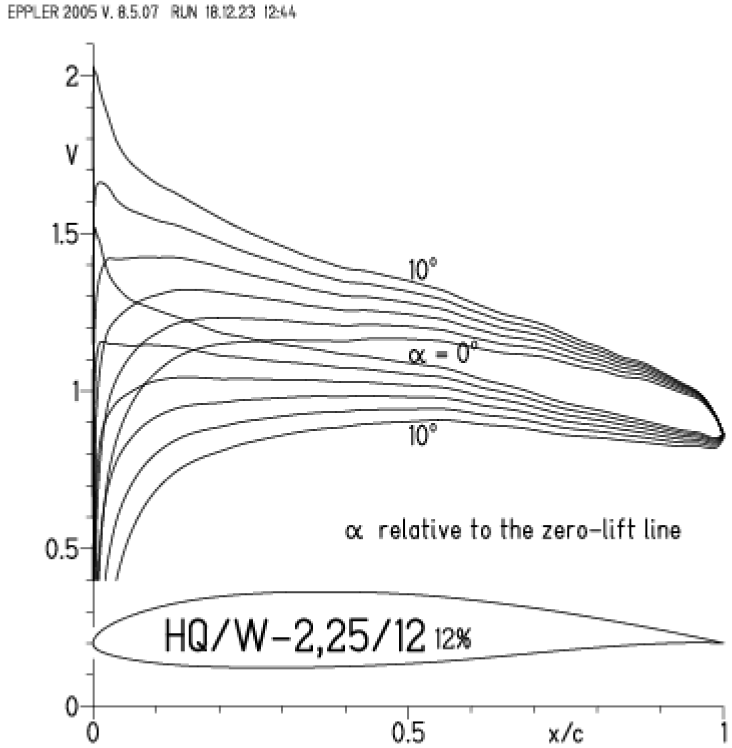
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

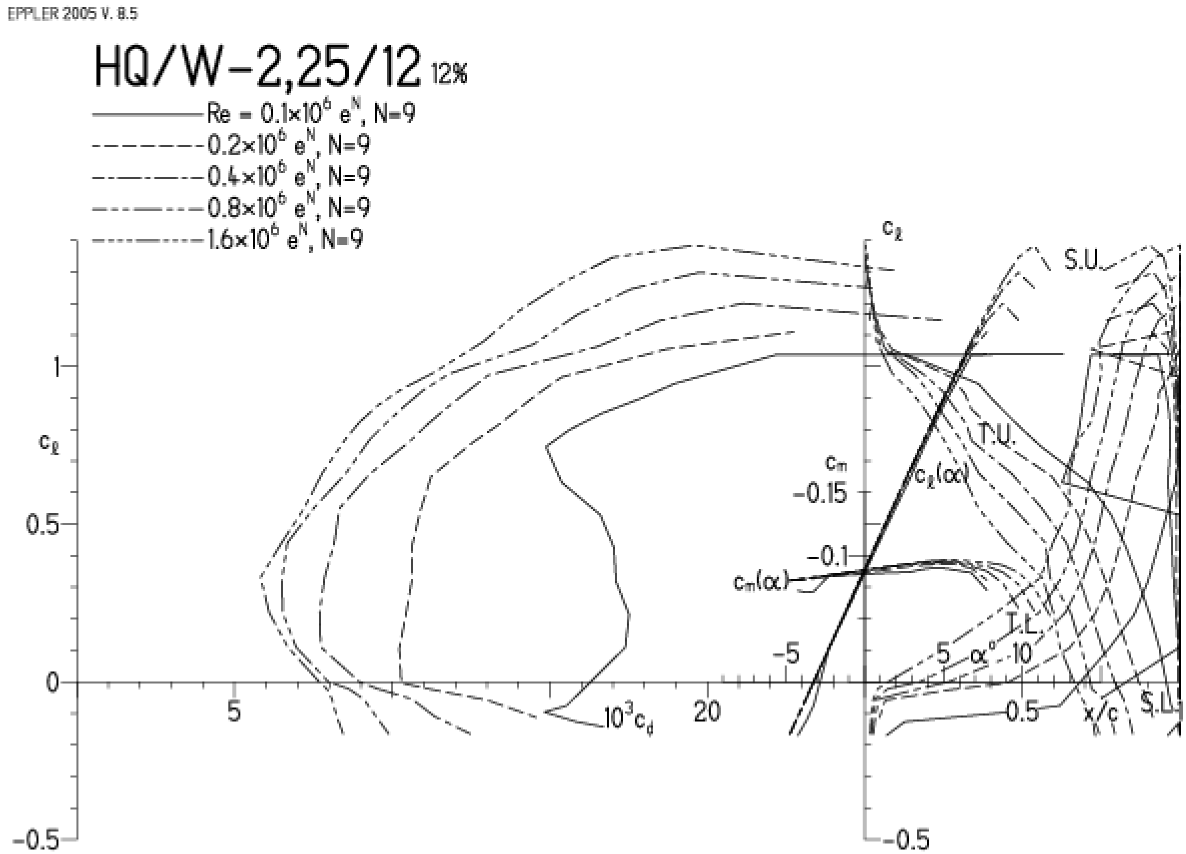


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

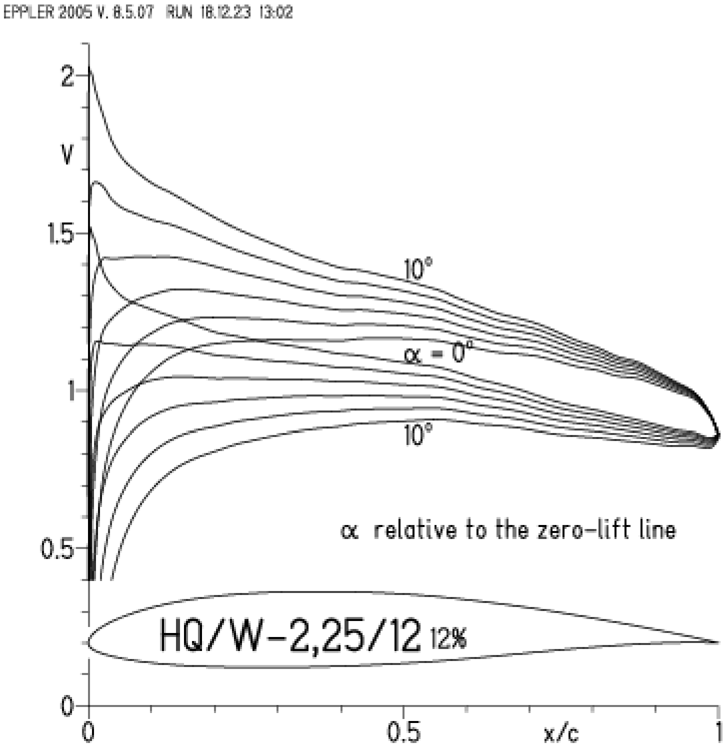


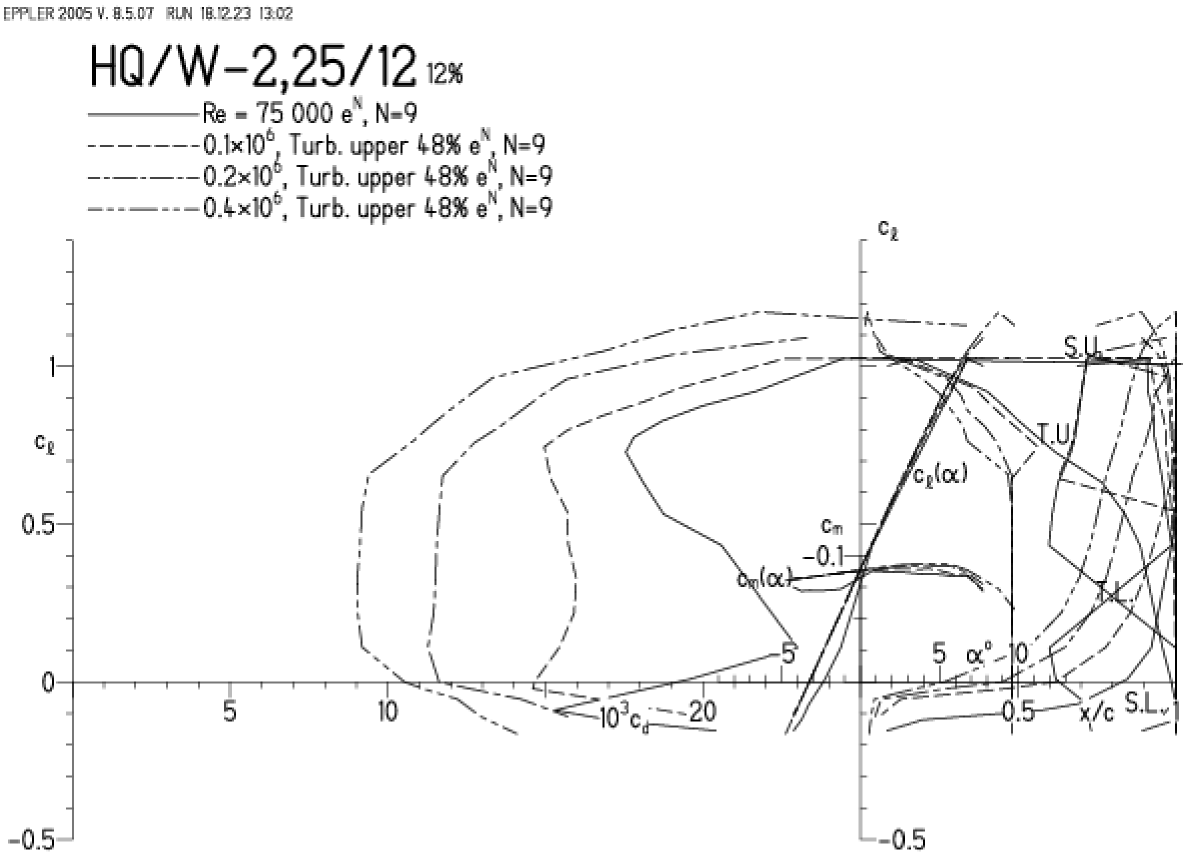
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
2
V
1.5
1
0.5
0
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
0
0.5
x/c
1


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1
0.5
0
−0.5
5
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
−0.5

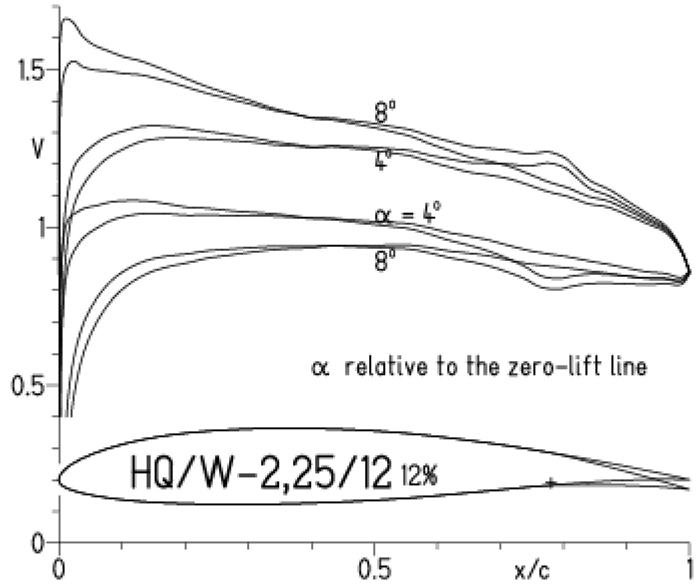
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



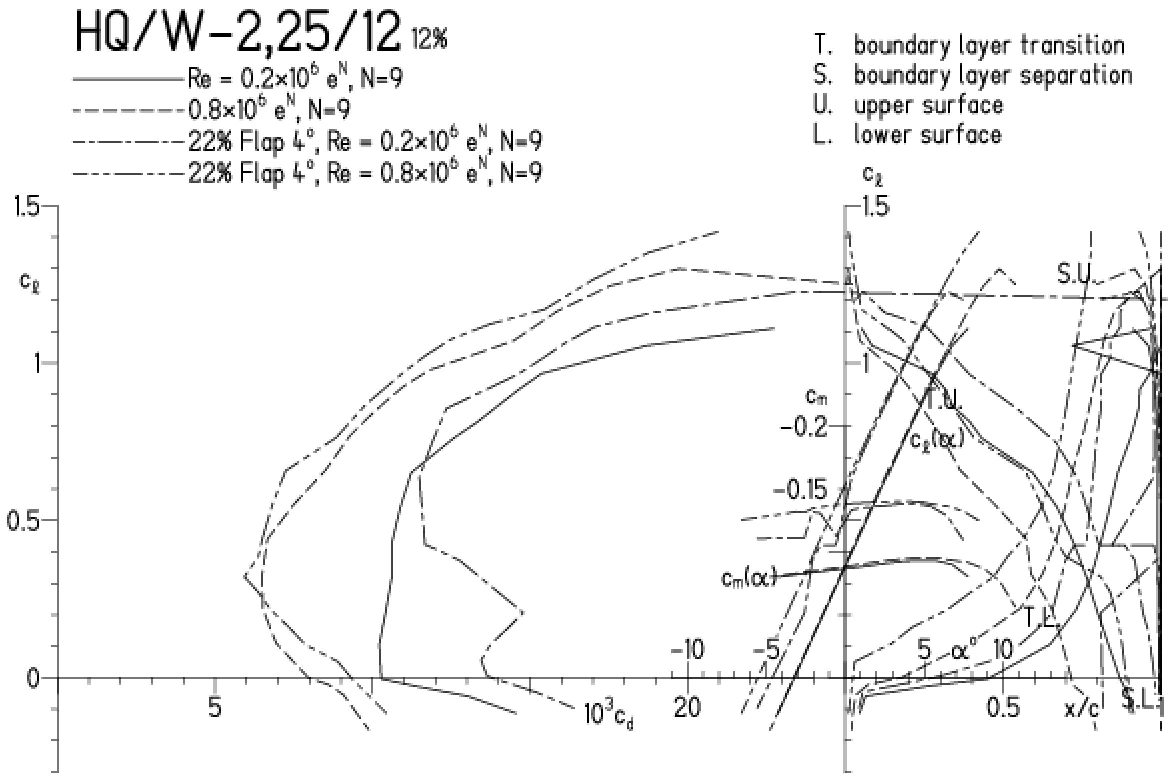


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

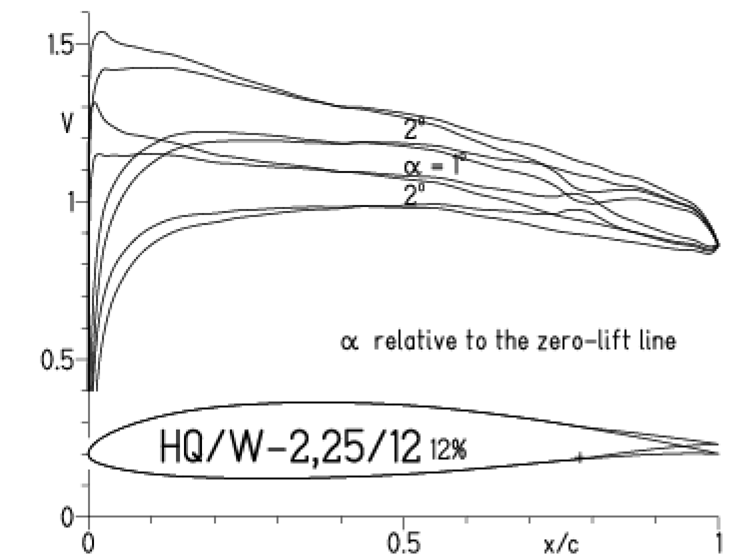


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

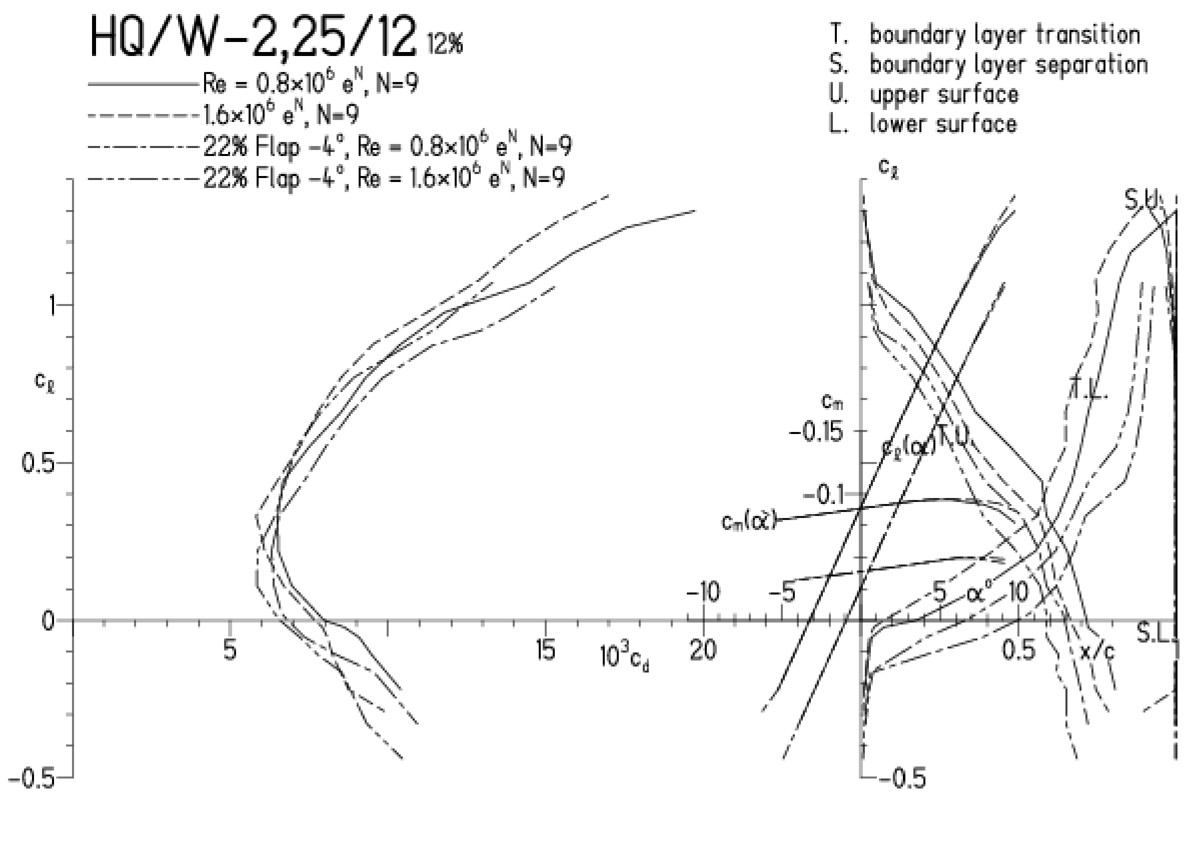


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

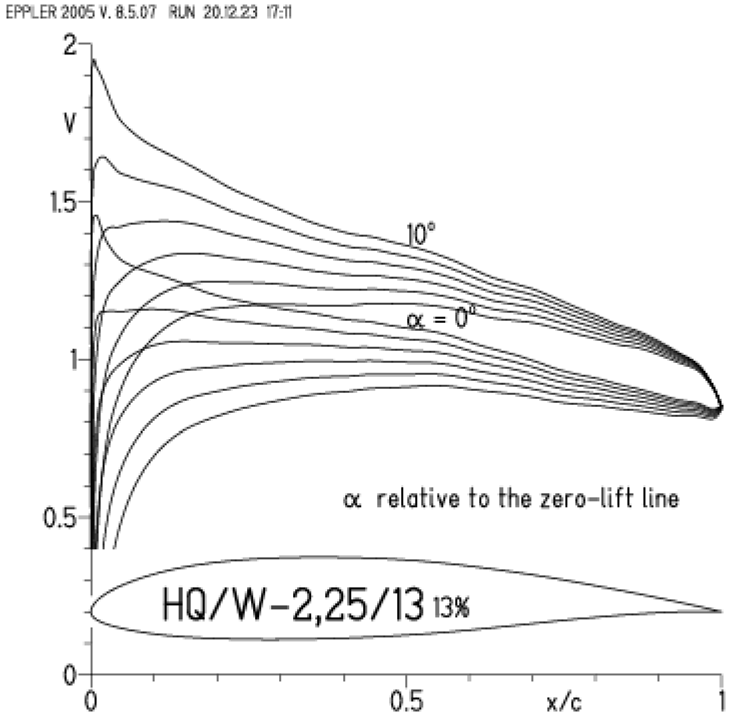
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

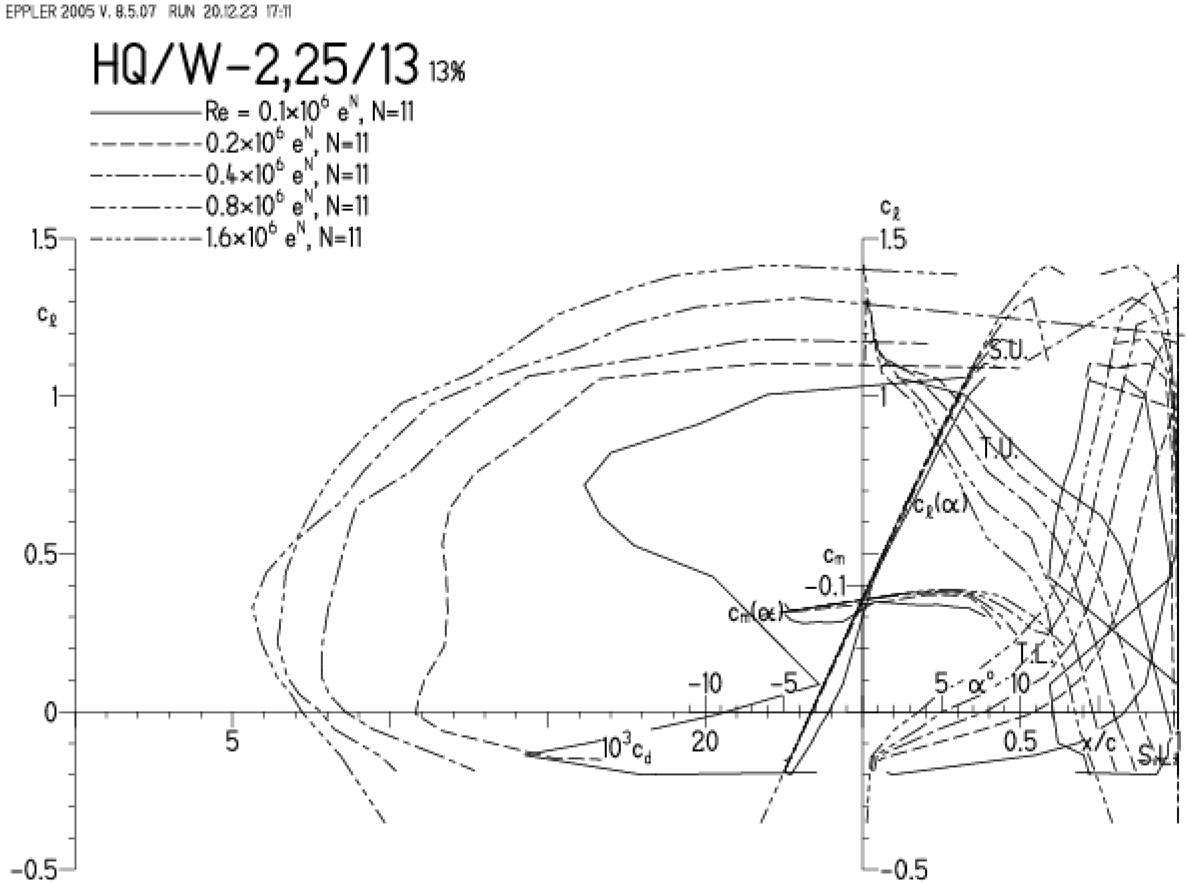


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

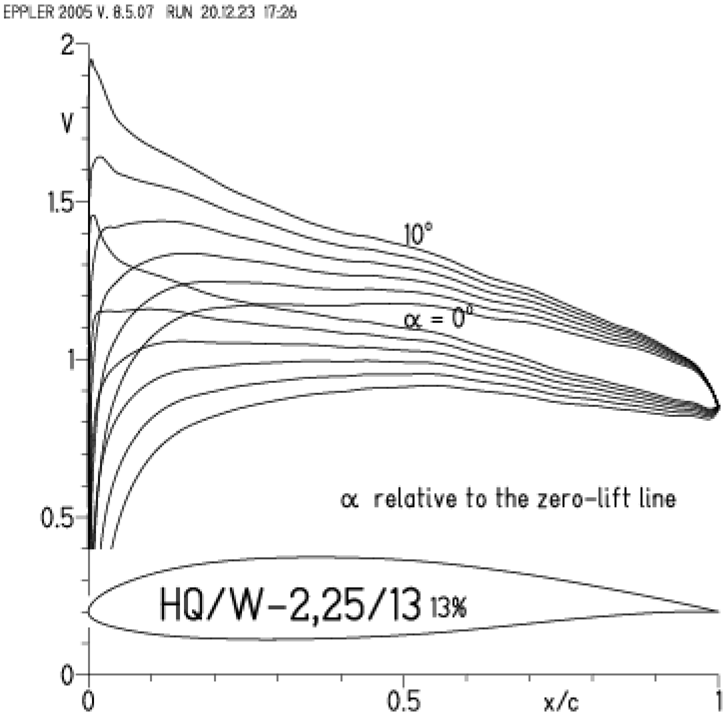


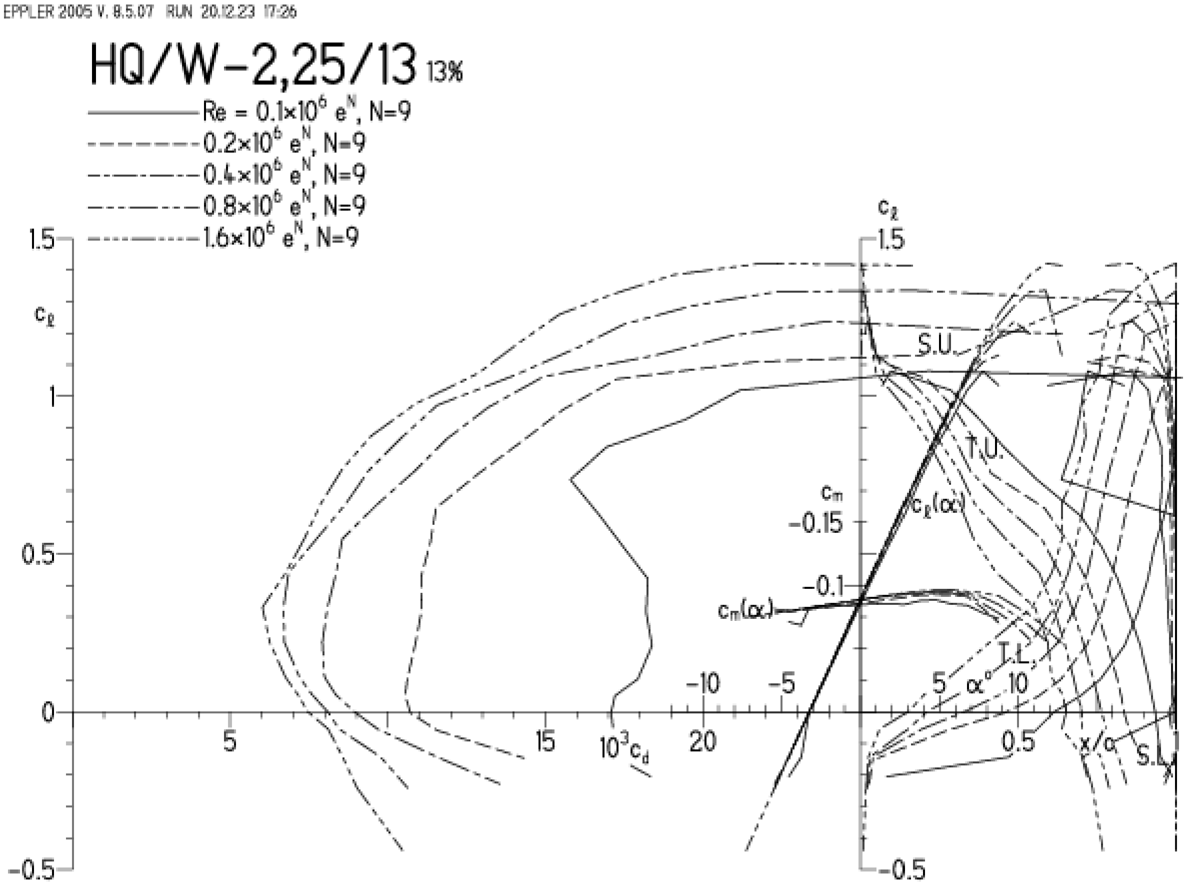
HQ/W-2,25/13, N=11



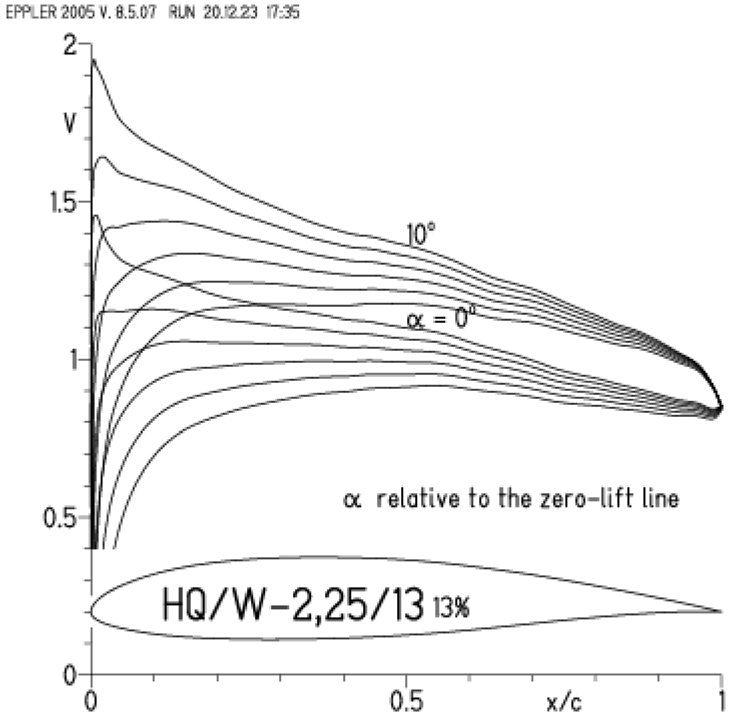


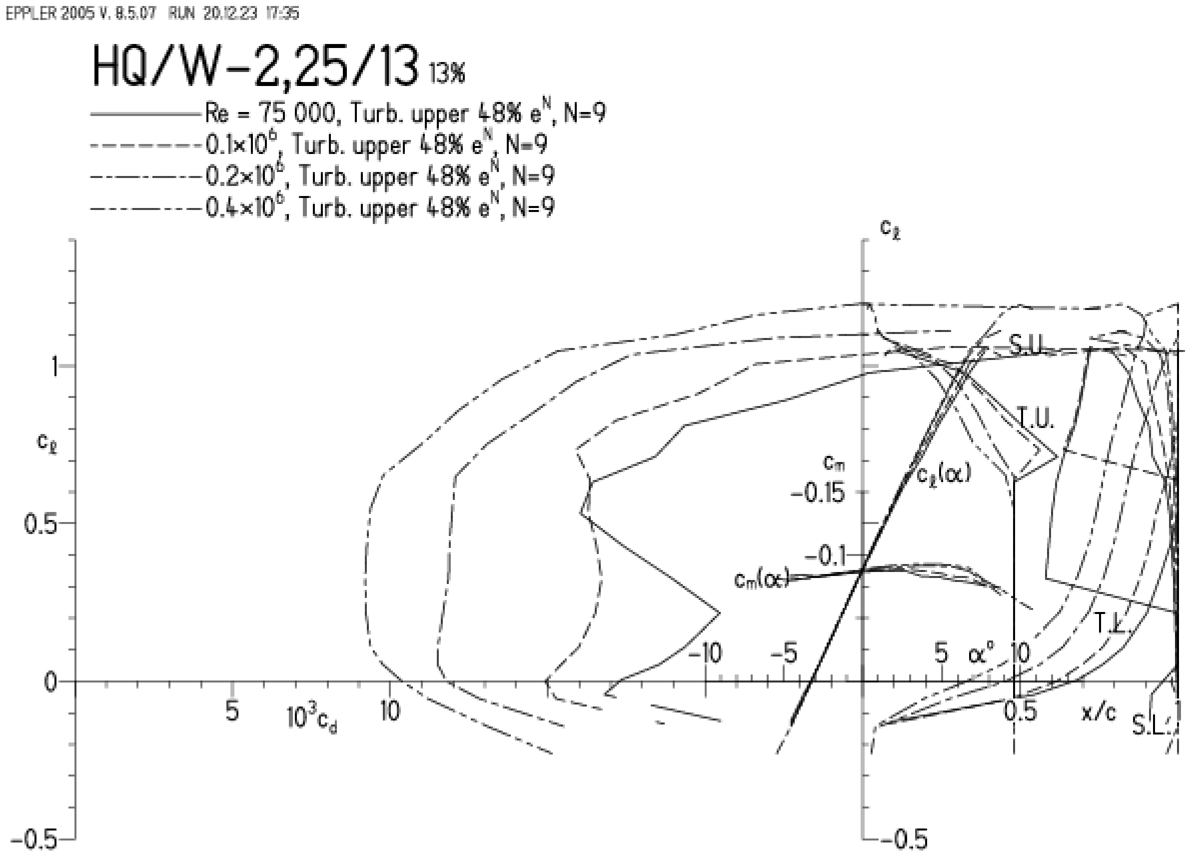
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
2
V
1.5
10°
α = 0°
1
α relative to the zero-lift line
0.5
HQ/W-2,25/13 13%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
cℓ
1
0.5
0
-0.5
5
15
10³cd
20
-10
-5
5
α°
10
0.5
x/c
S.U.
T.U.
cℓ(α)
cm
-0.15
-0.1
cm(α)
T.L.
S.L.
-0.5

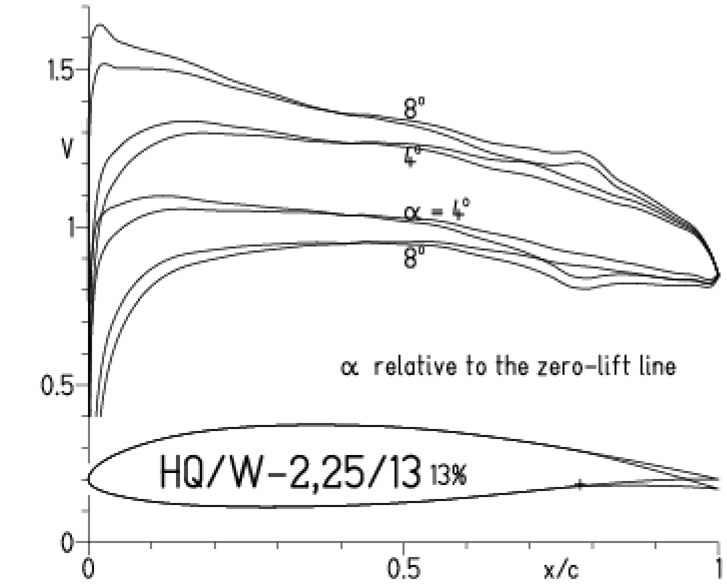
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



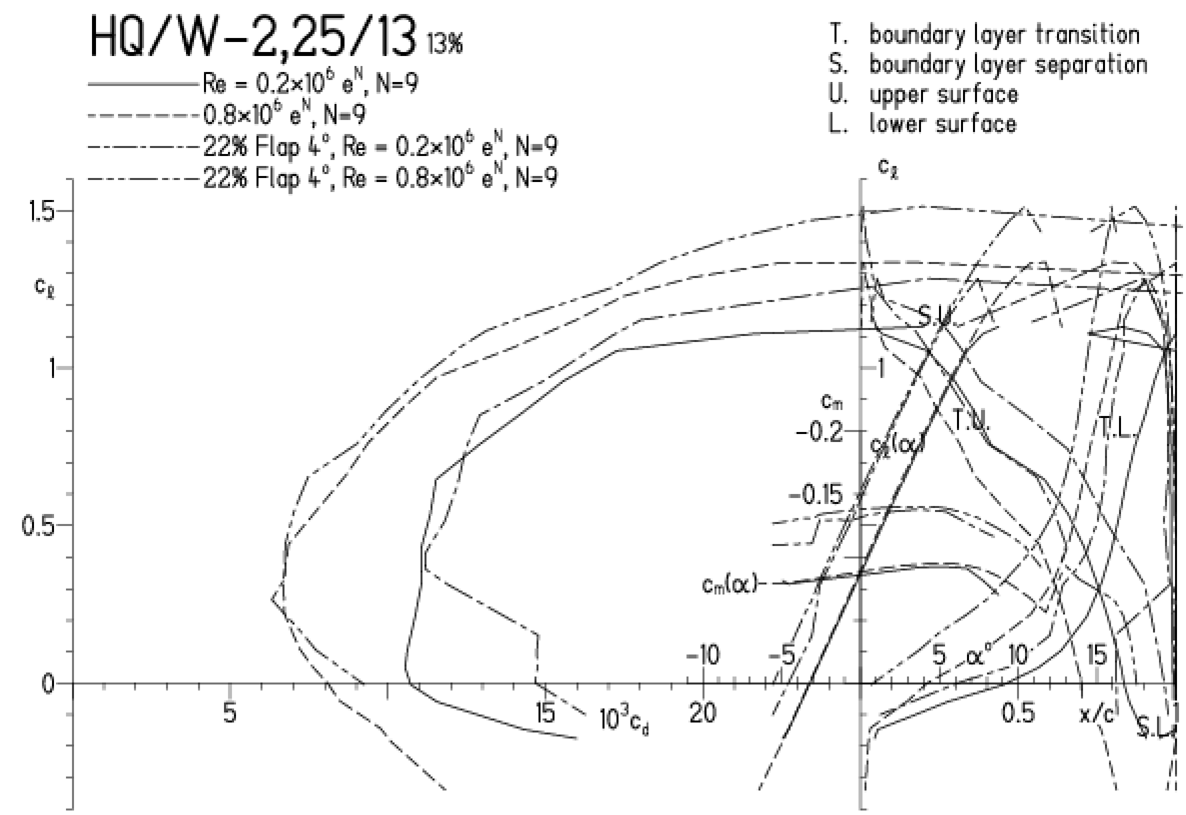


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

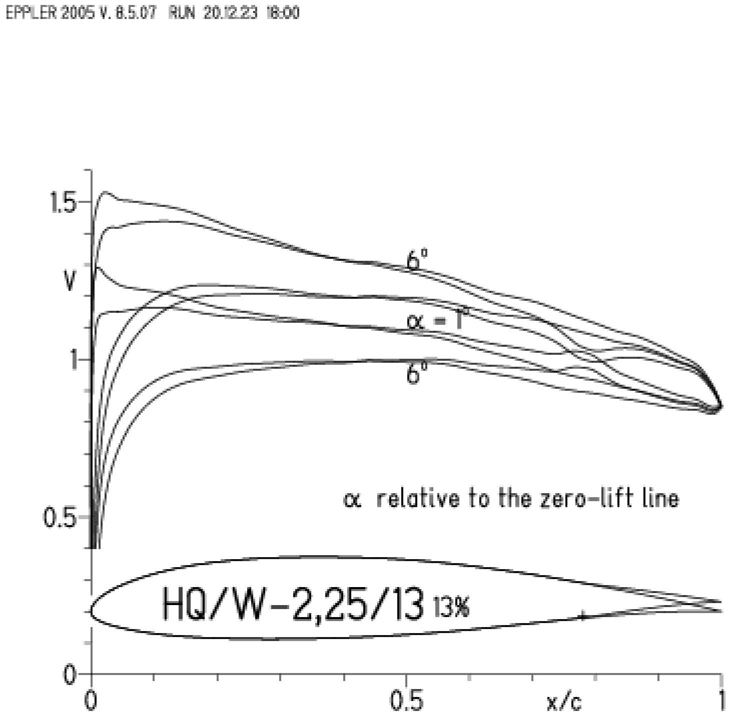
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

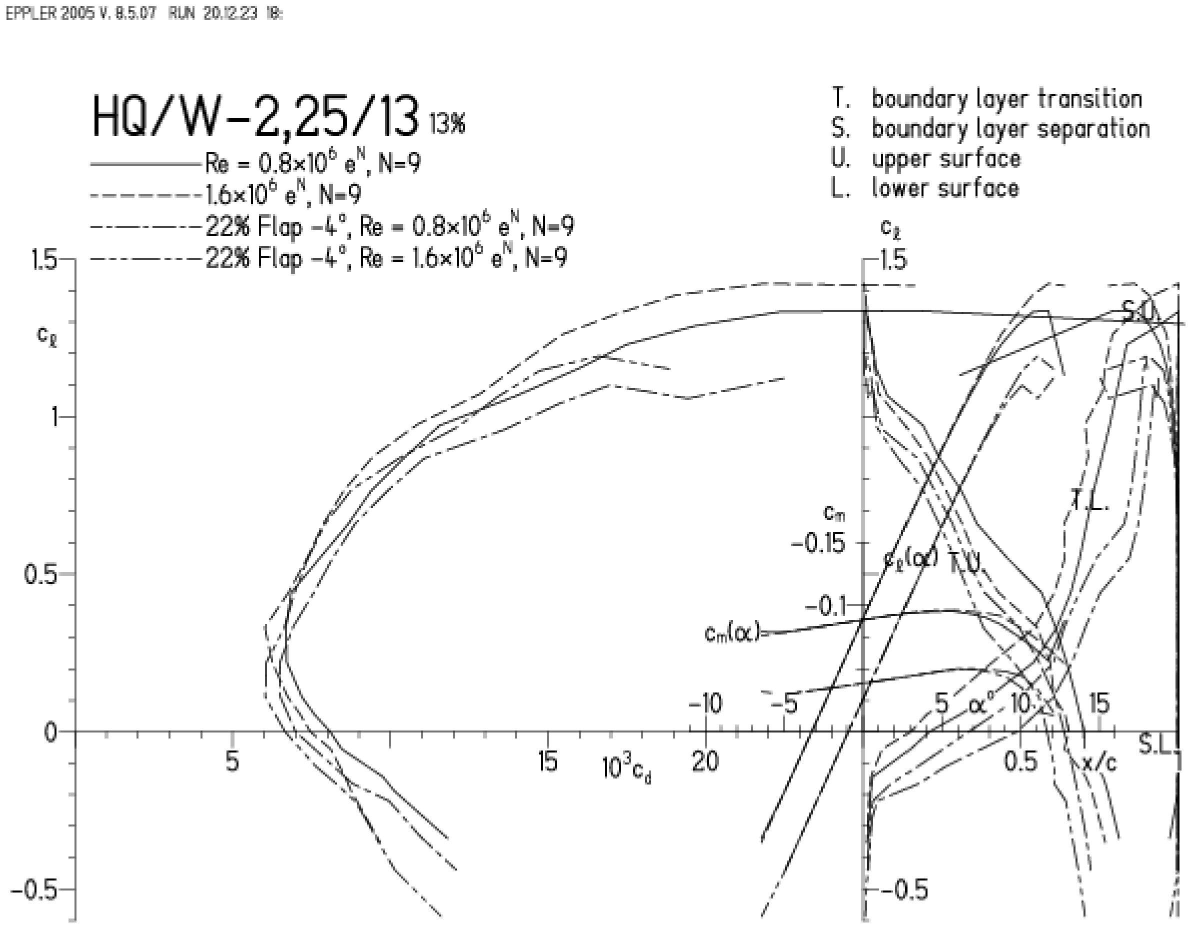


EPPLER 2005 V.

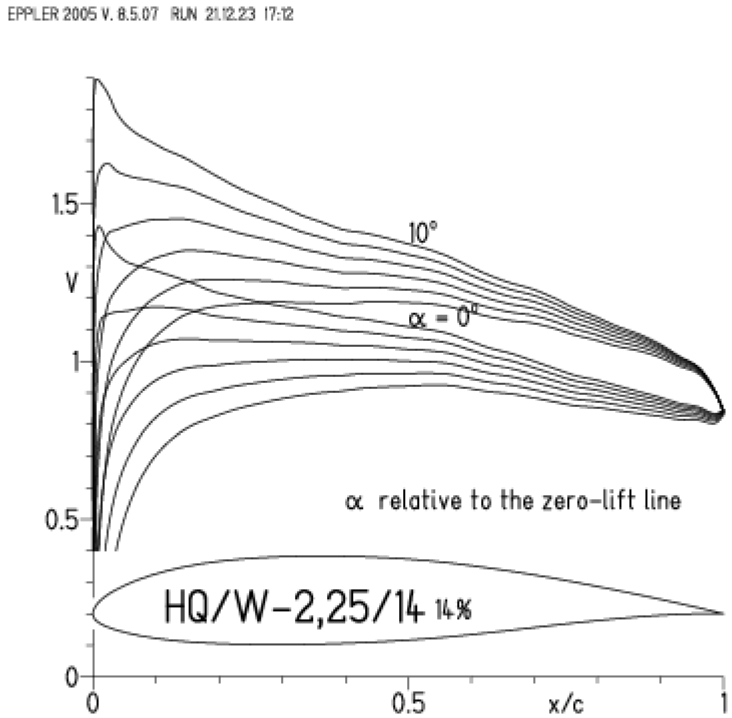


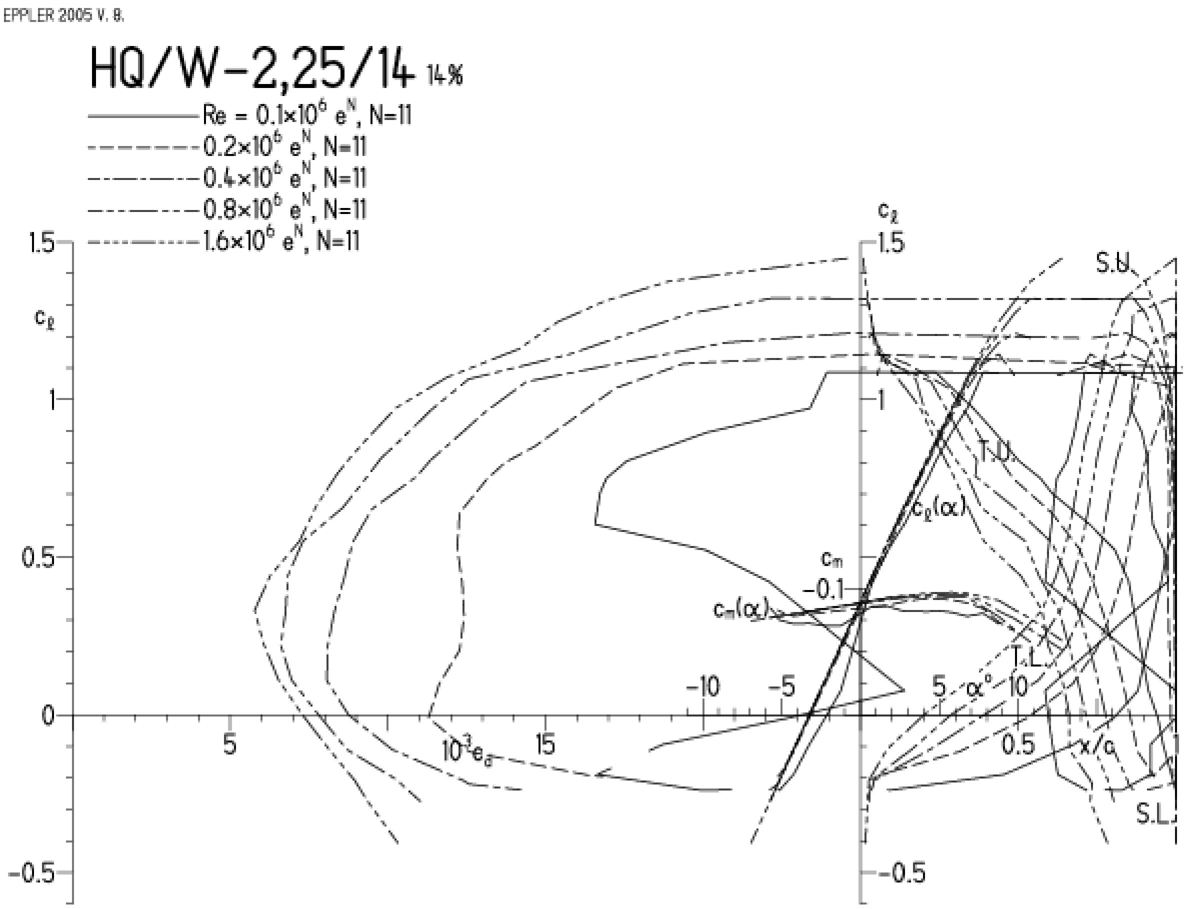
HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag



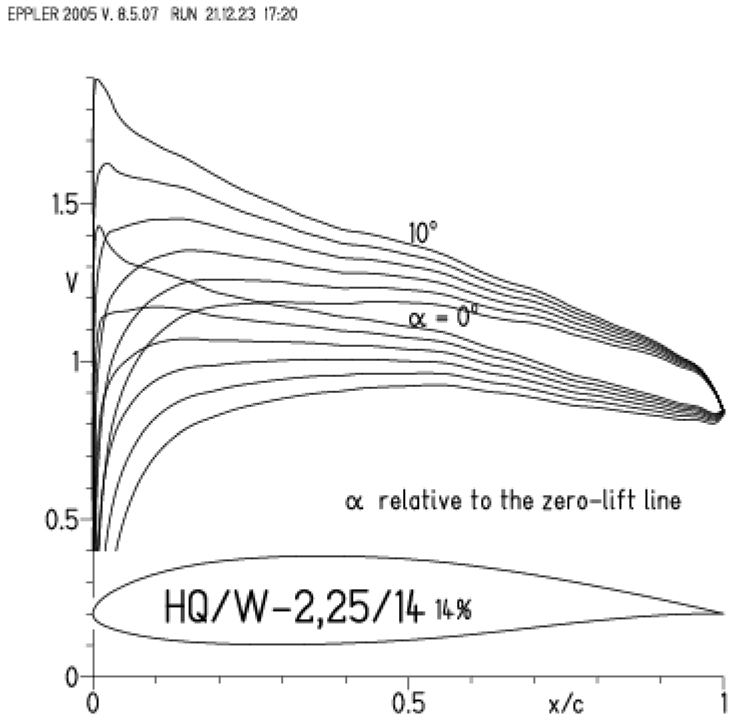


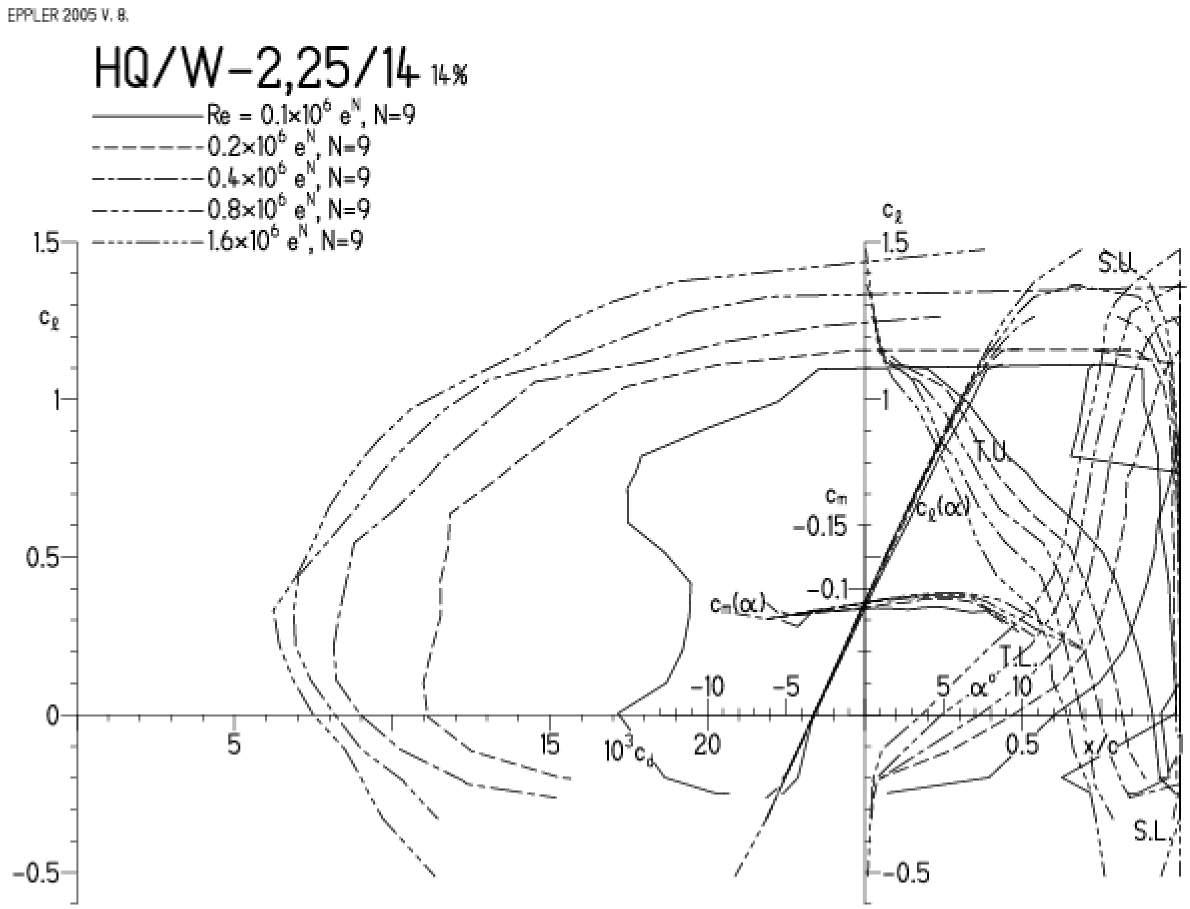
<u>HQ/W-2,25/14</u>, N=11



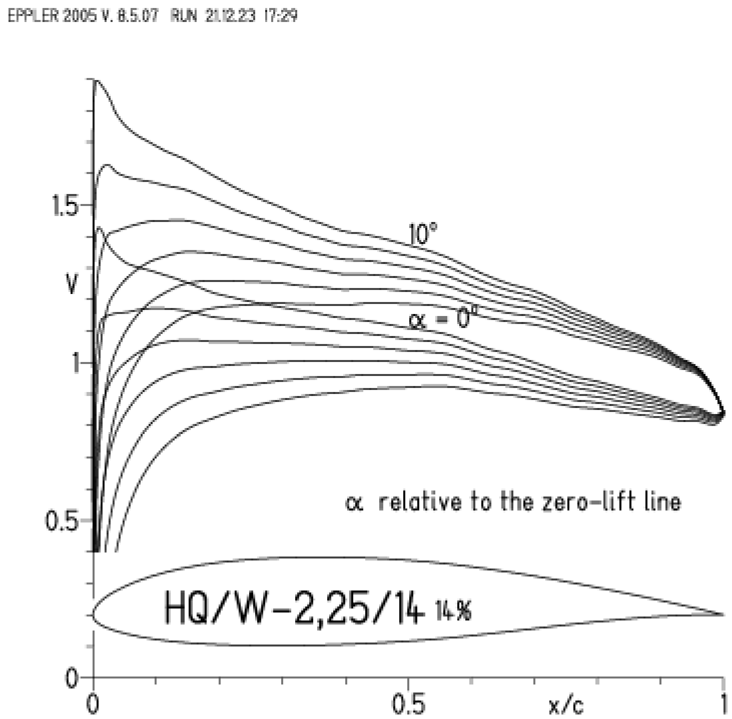


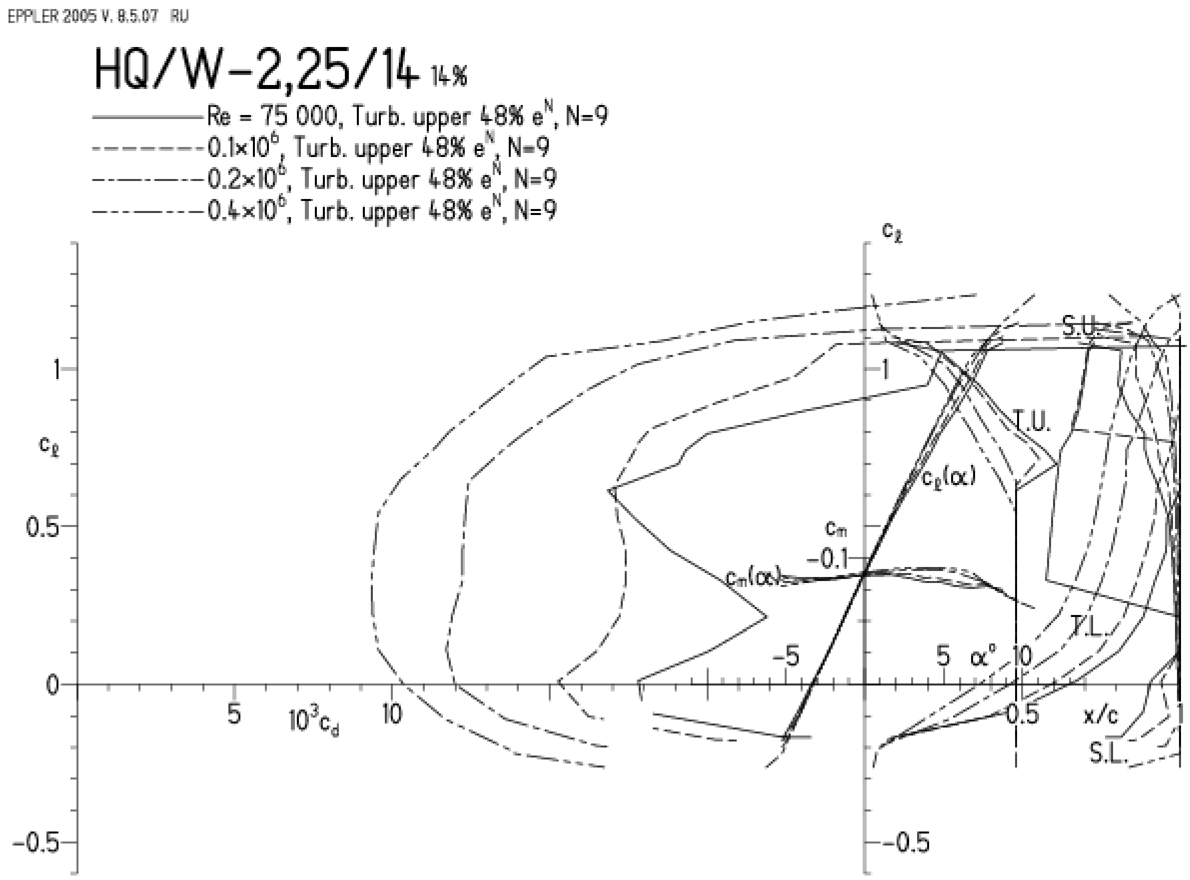
<u>HQ/W-2,25/14</u>, N=9





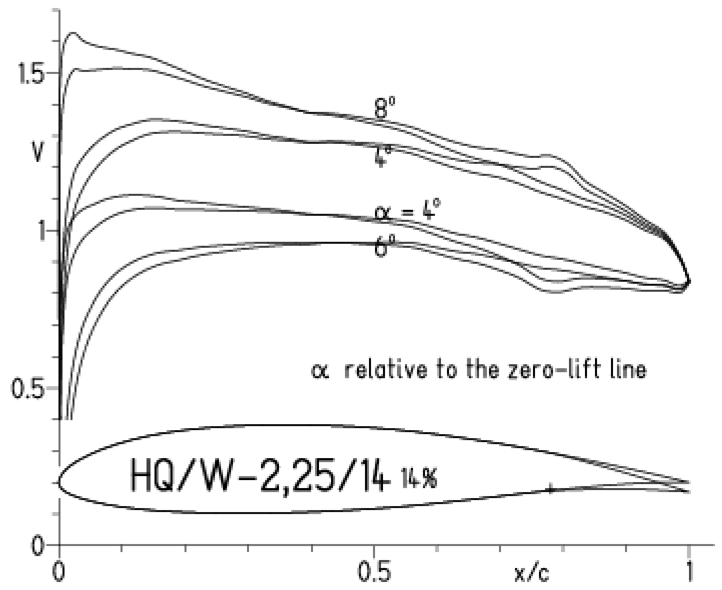
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



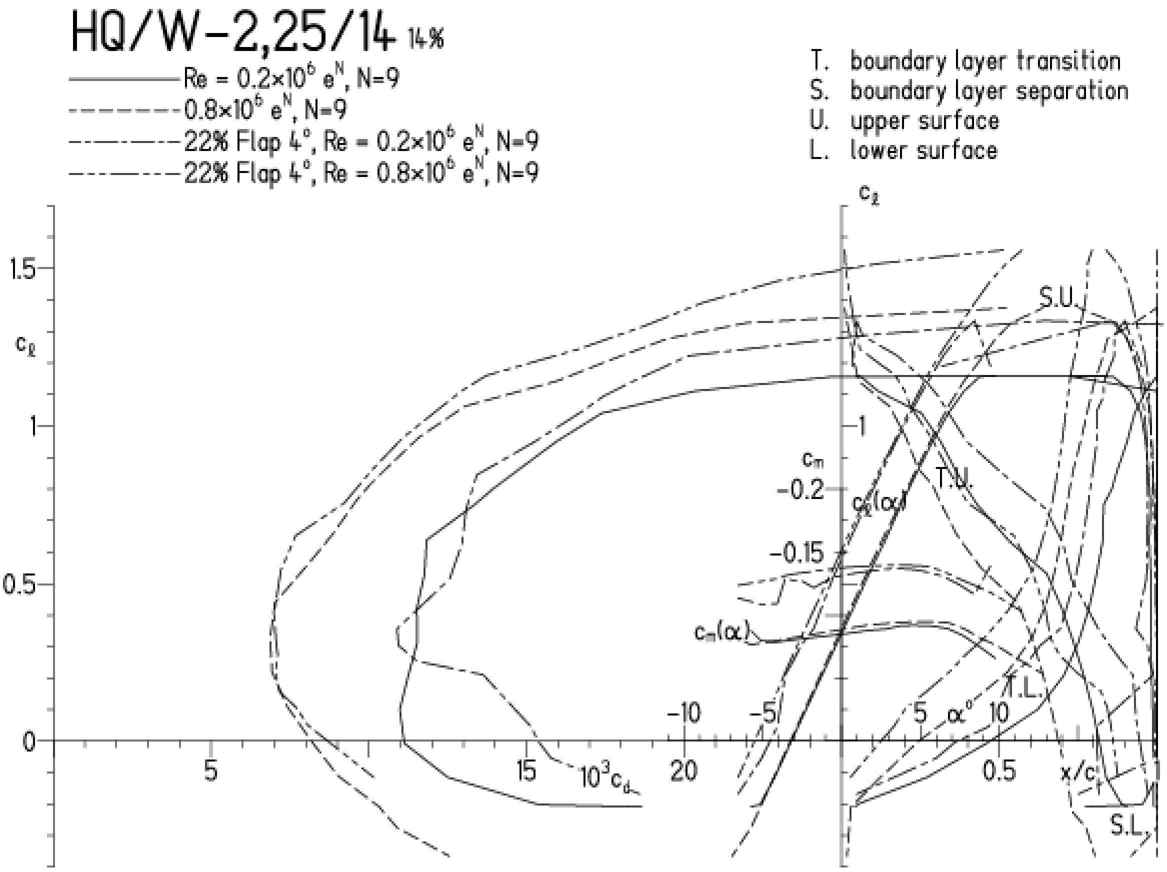


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

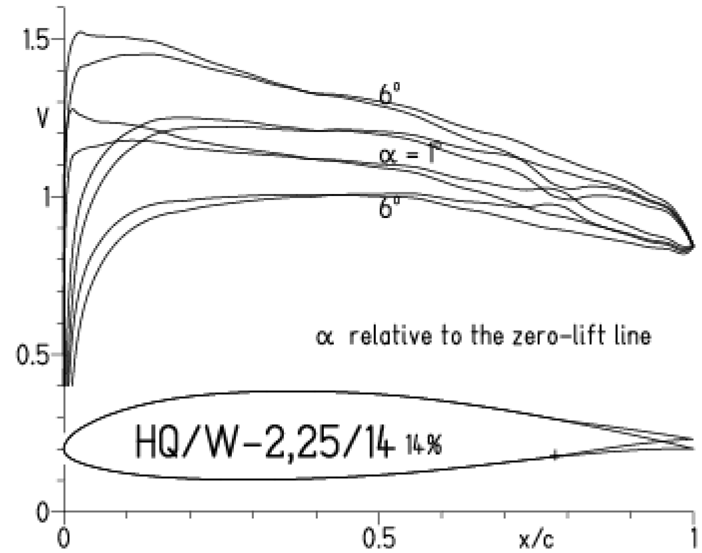


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

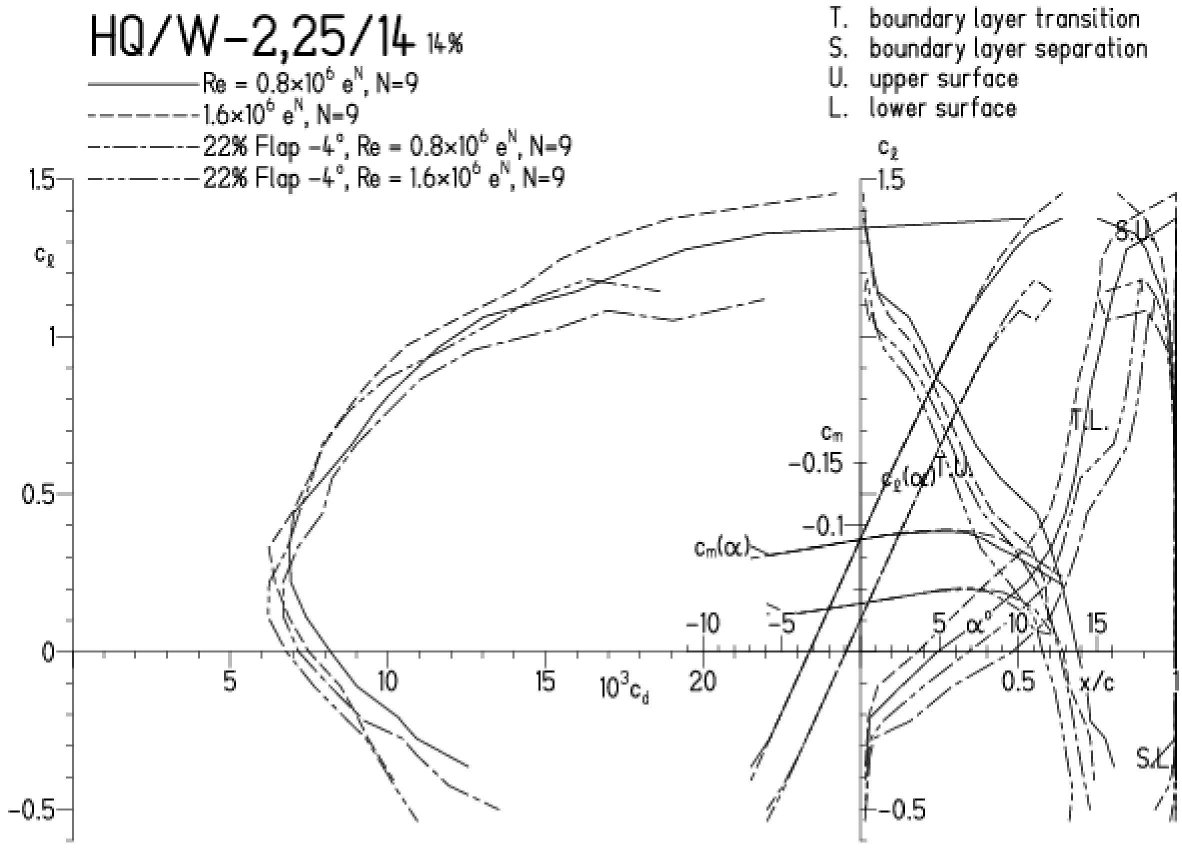


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

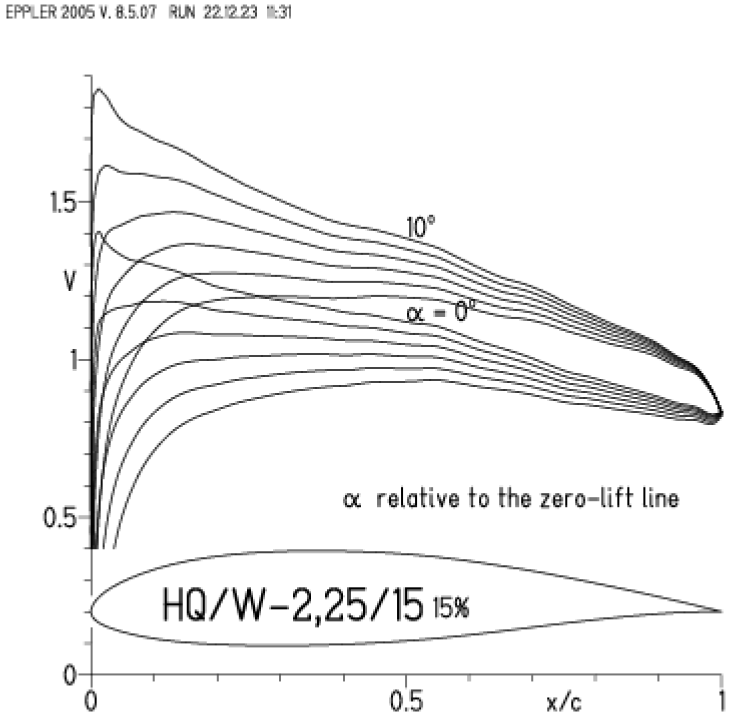
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

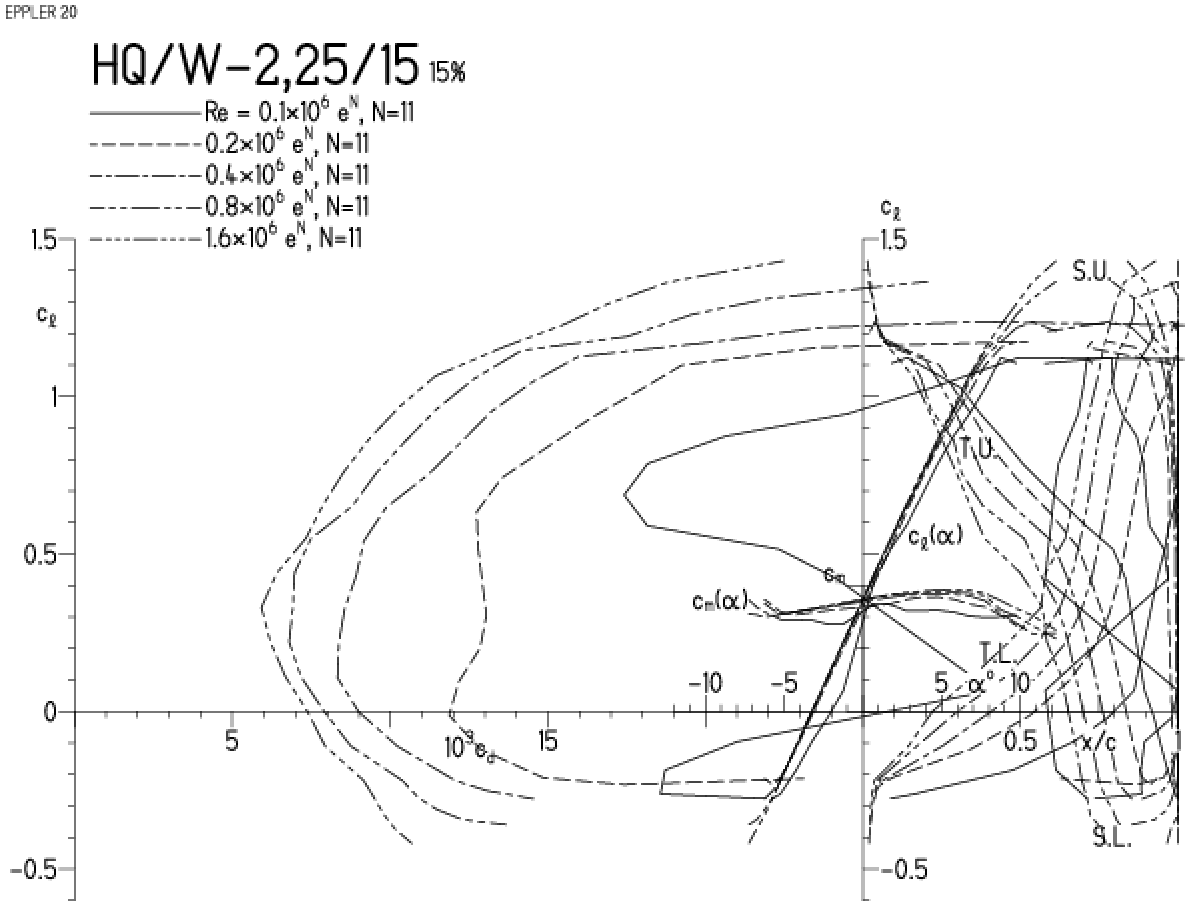


EPPLER 2005 V. 8.5.07

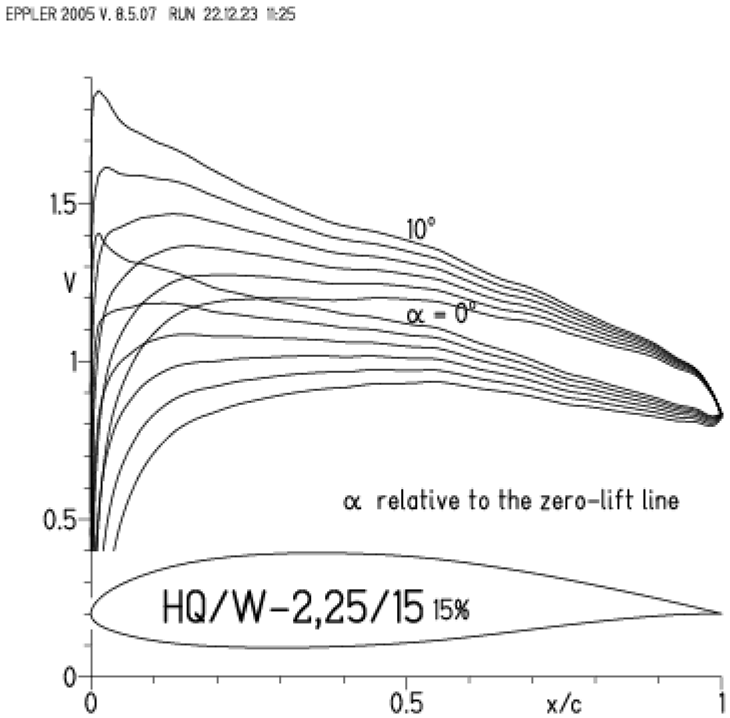


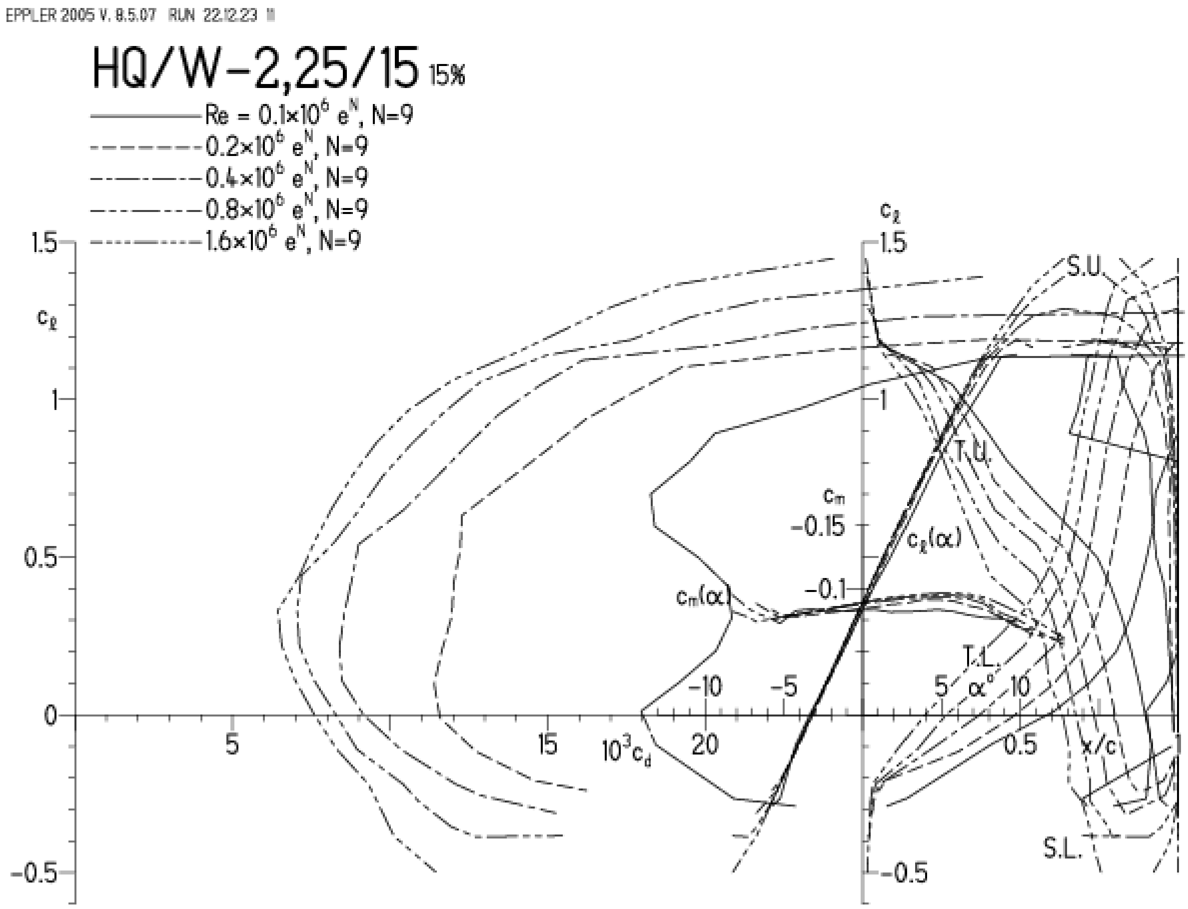
HQ/W-2,25/15, N=11



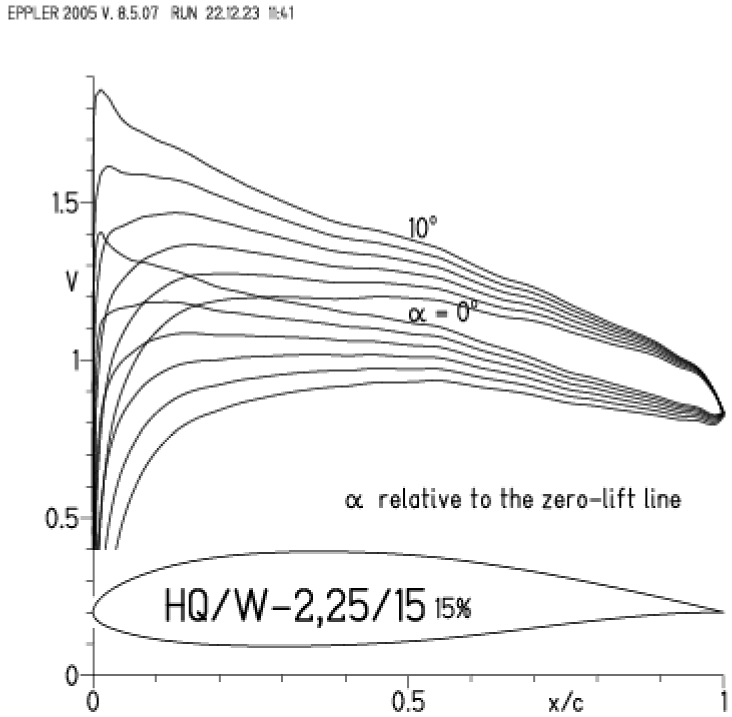


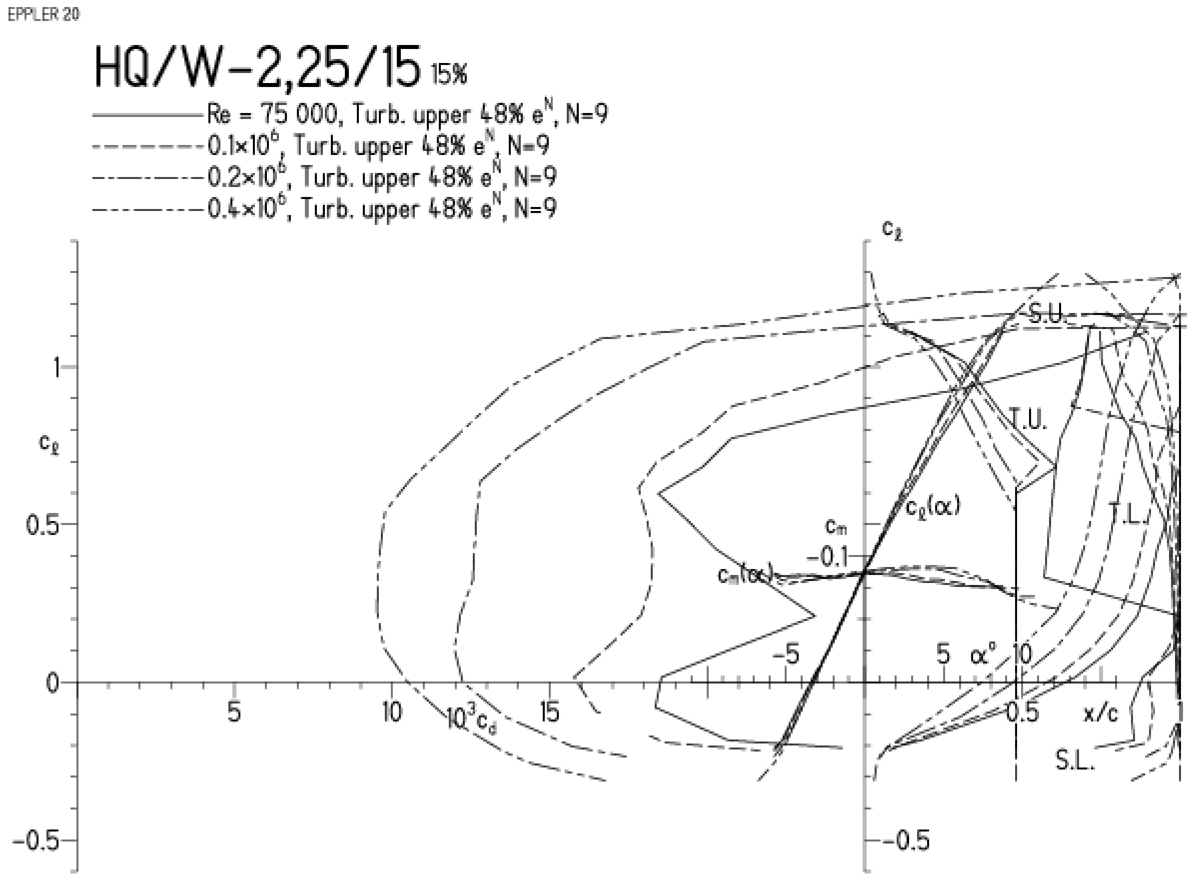
<u>HQ/W-2,25/15</u>, N=9





HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



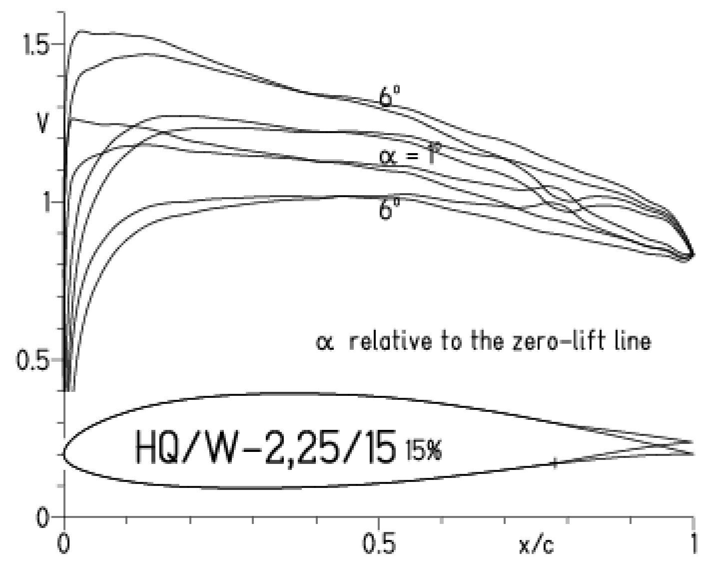


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

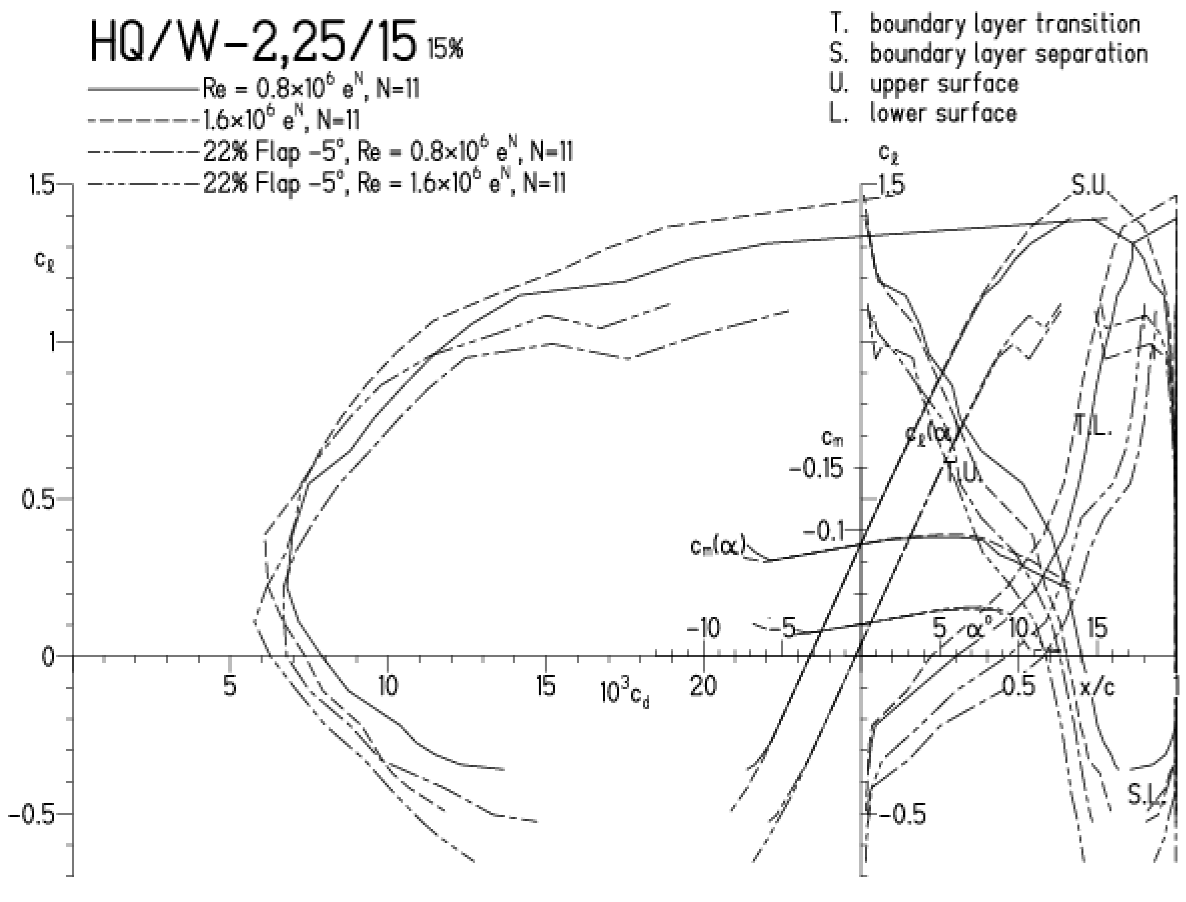
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

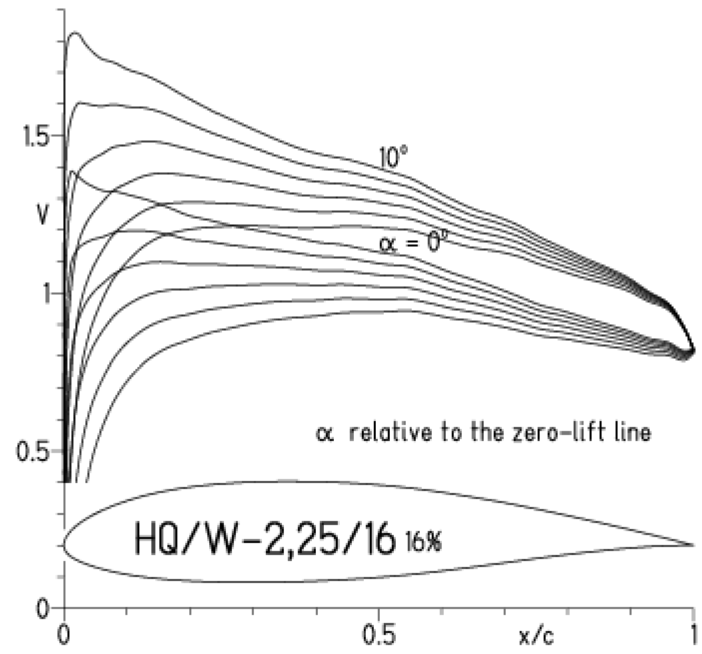


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

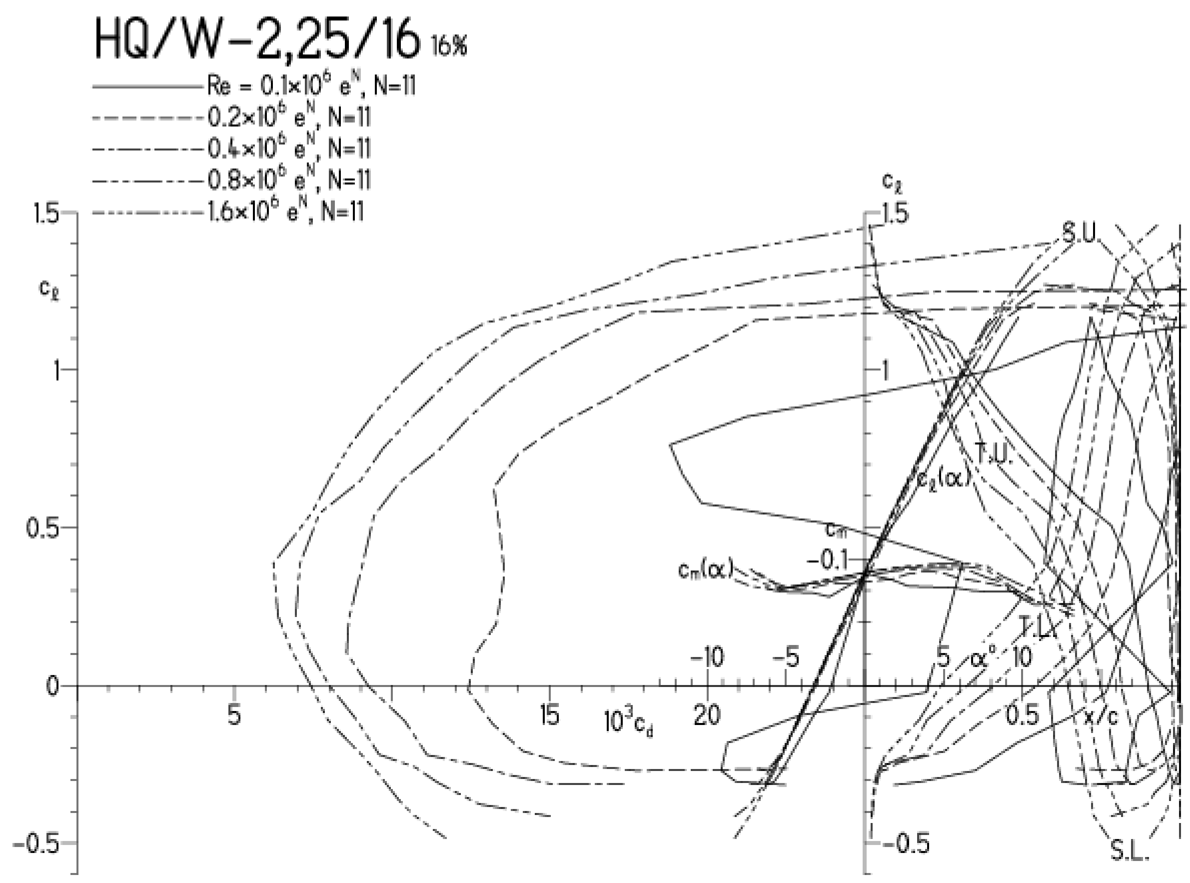


<u>HQ/W-2,25/16</u>, N=11

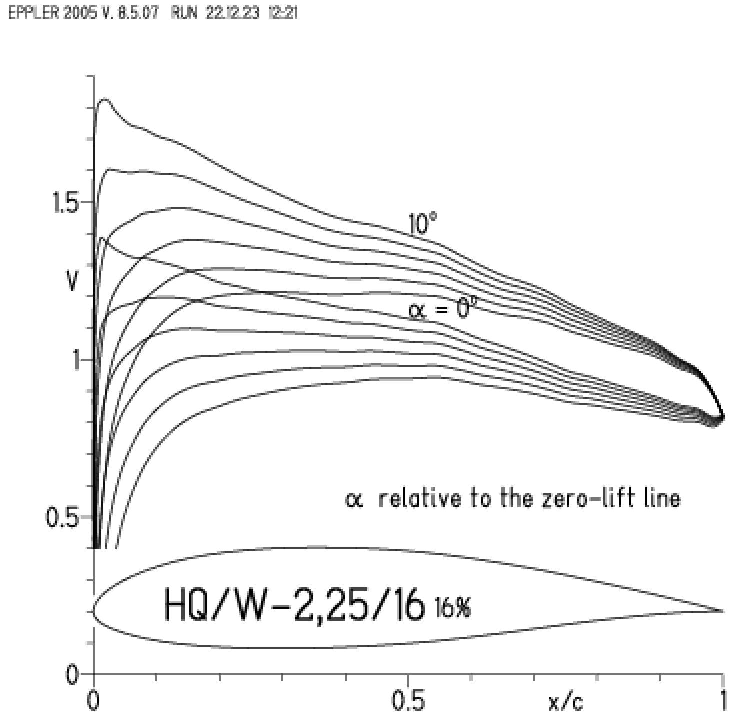
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

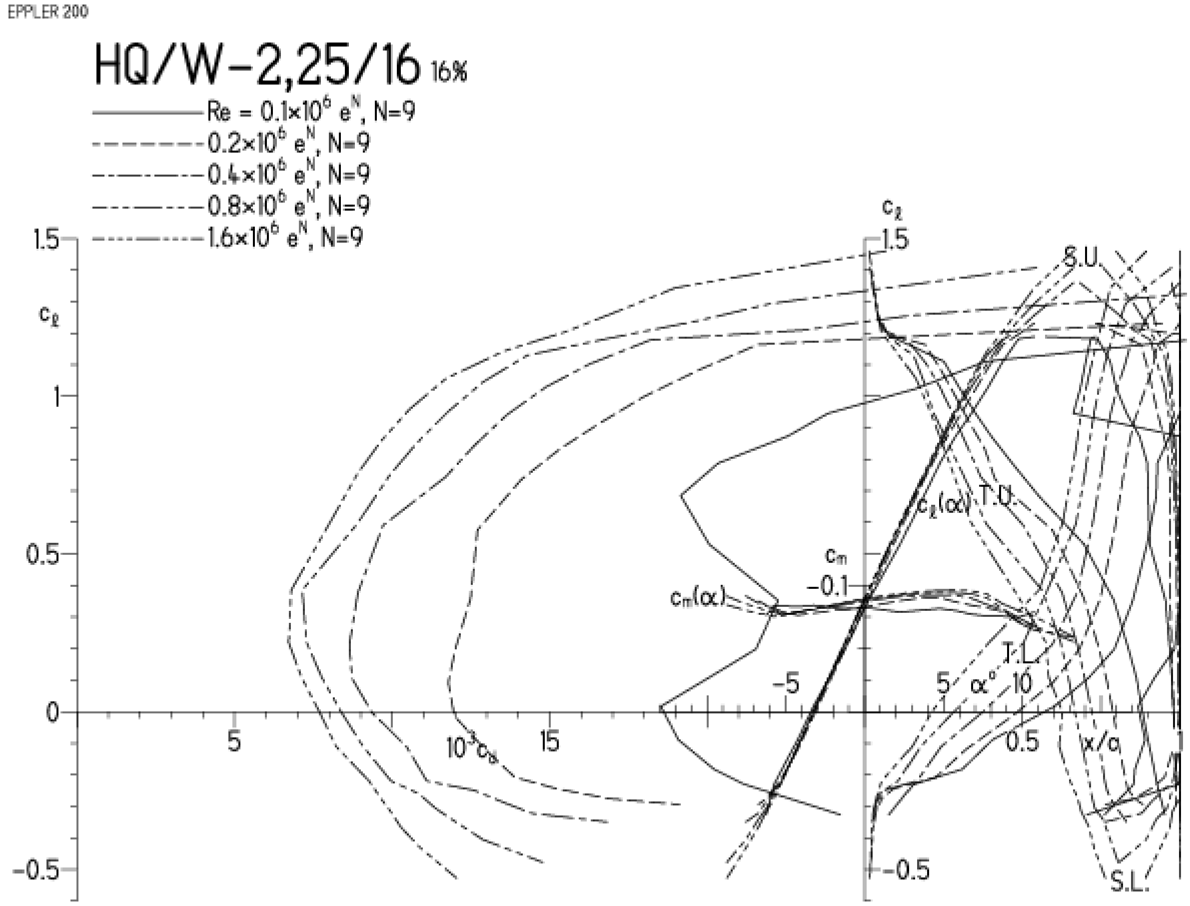


EPPLER 200

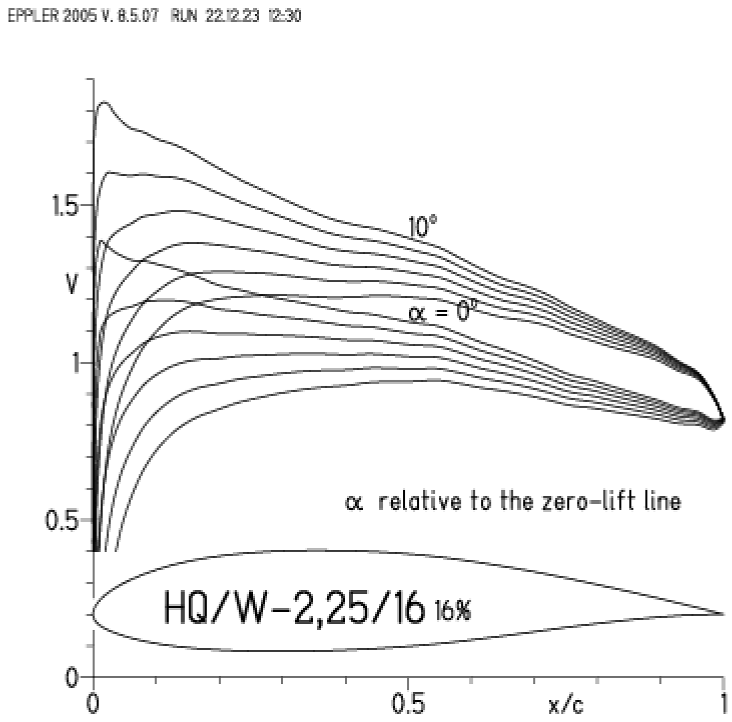


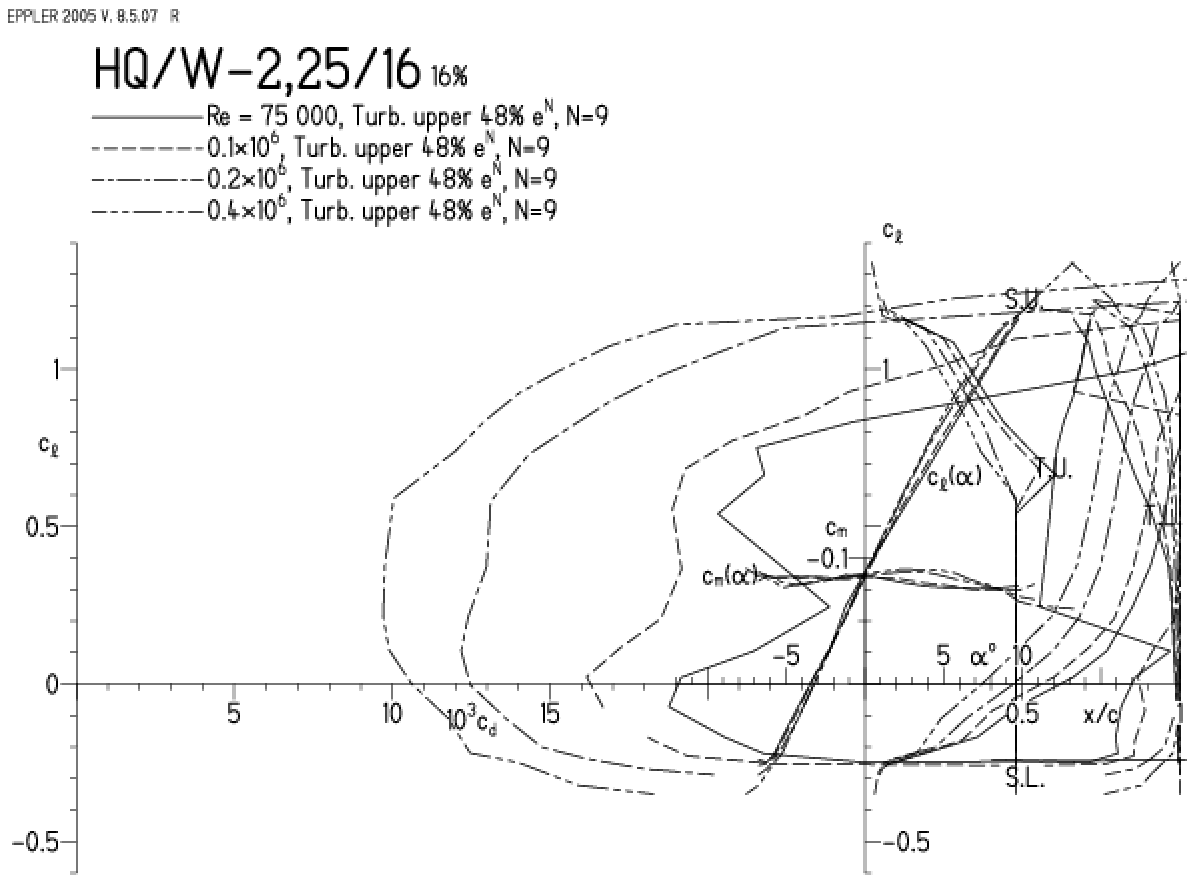
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
-0.5

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



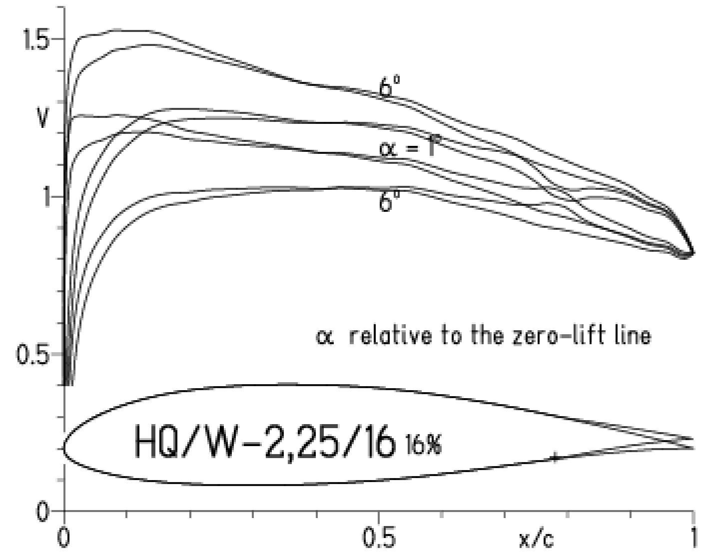


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

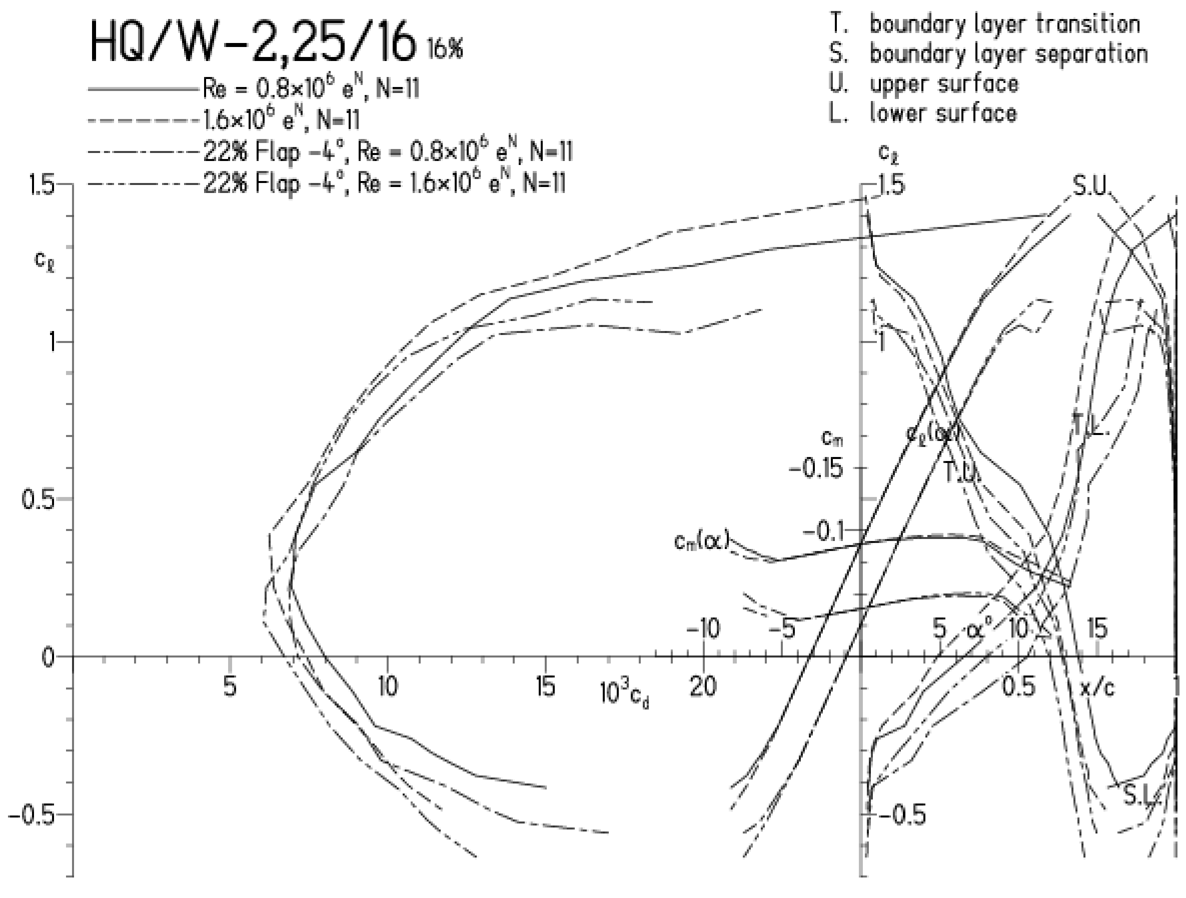
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

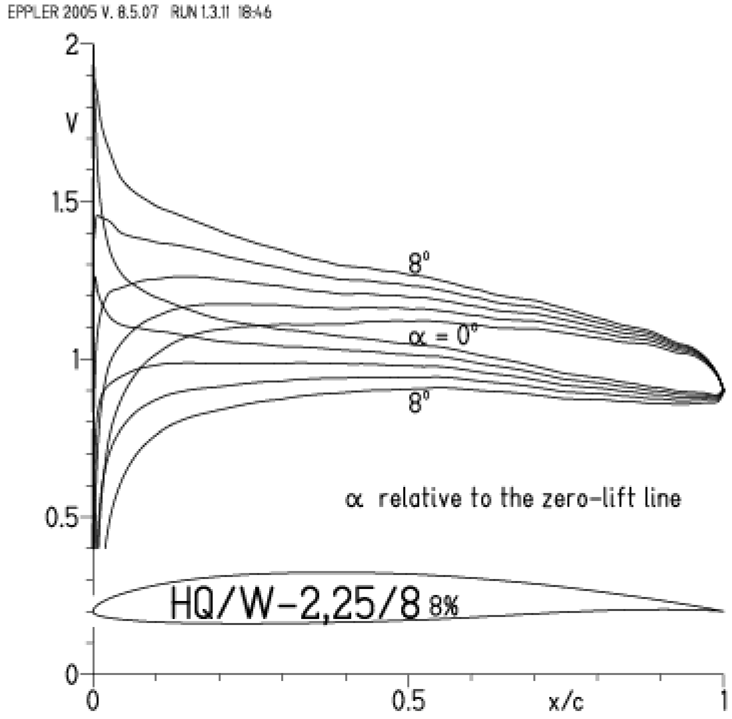
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

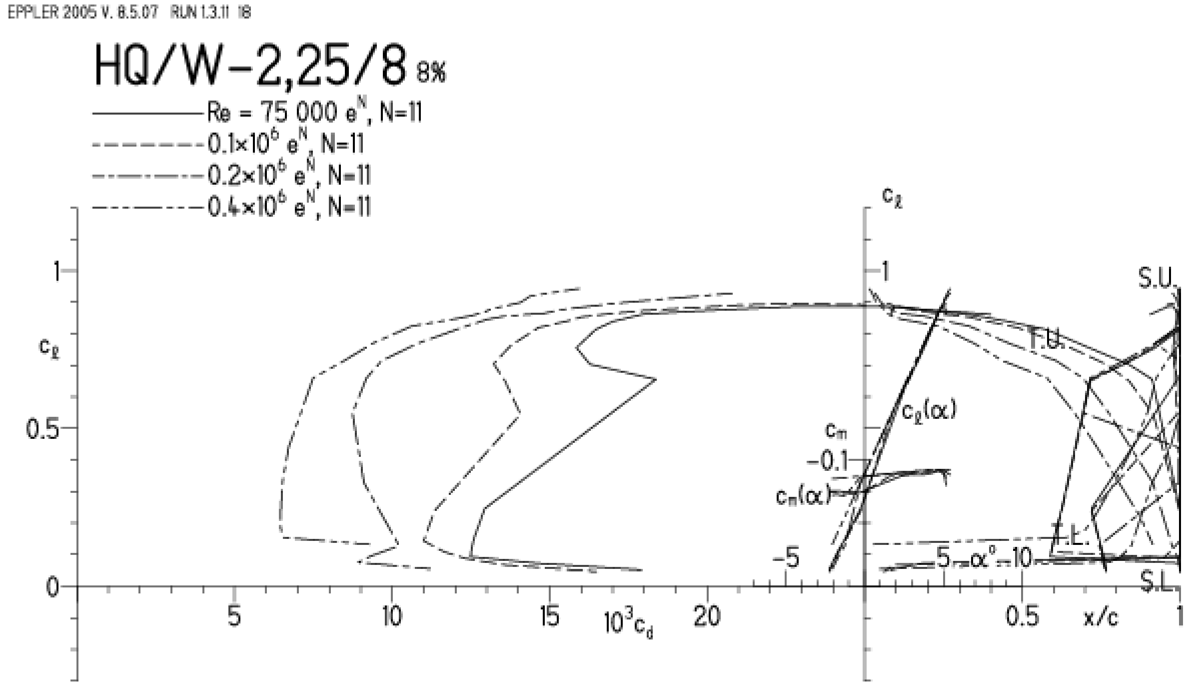


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

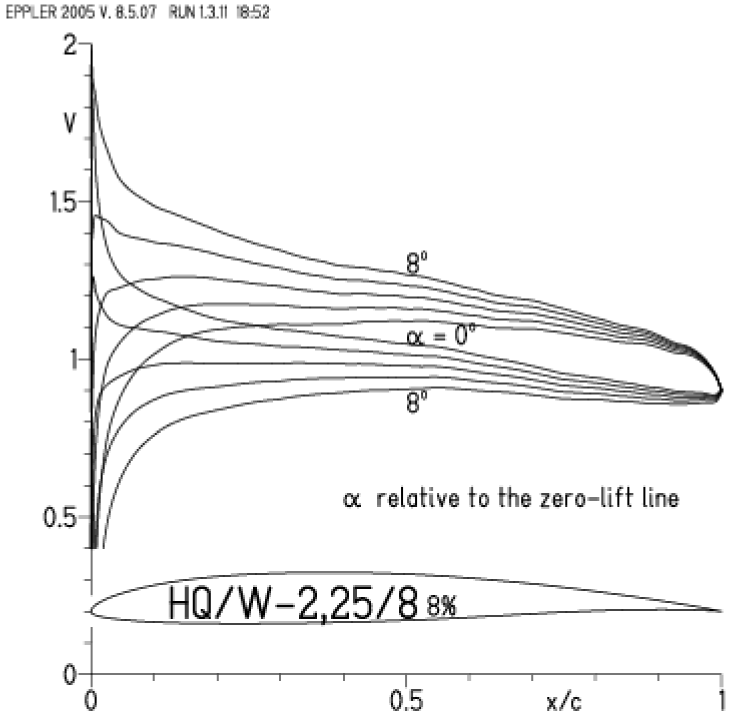


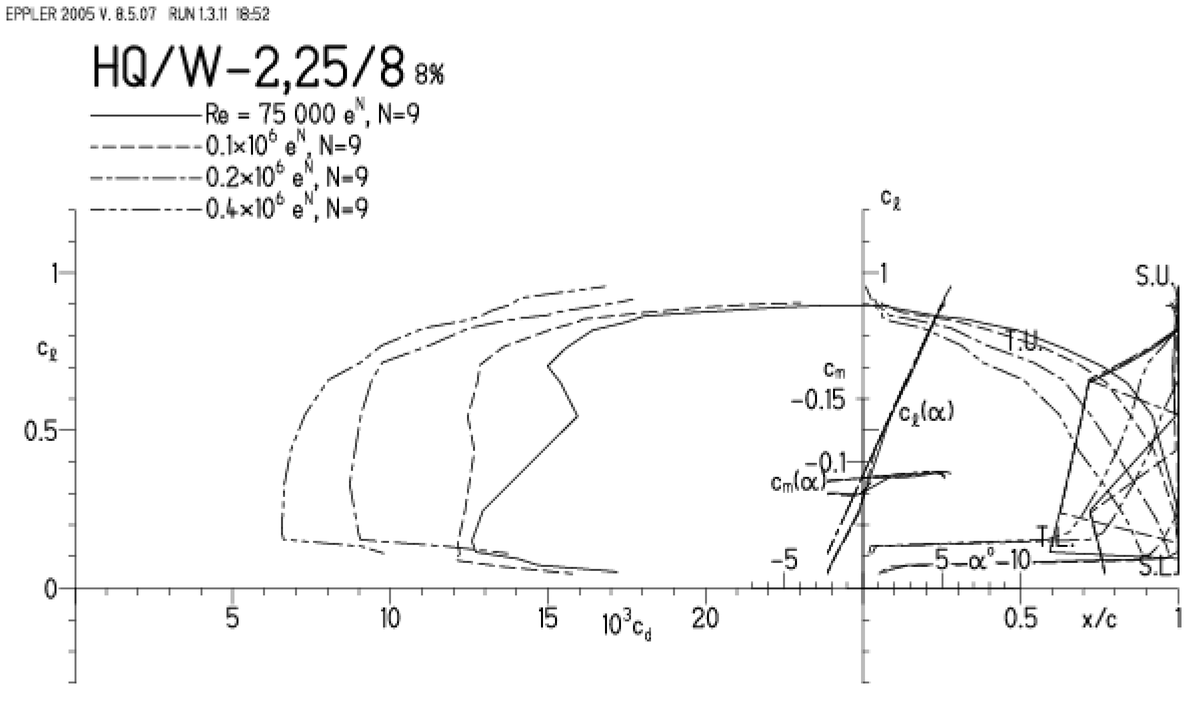
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

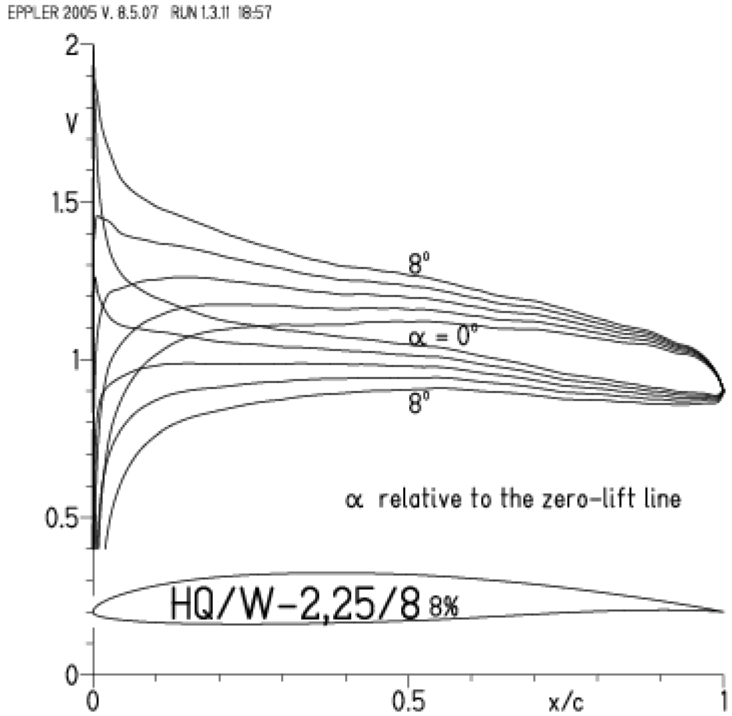

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_m
c_ℓ(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

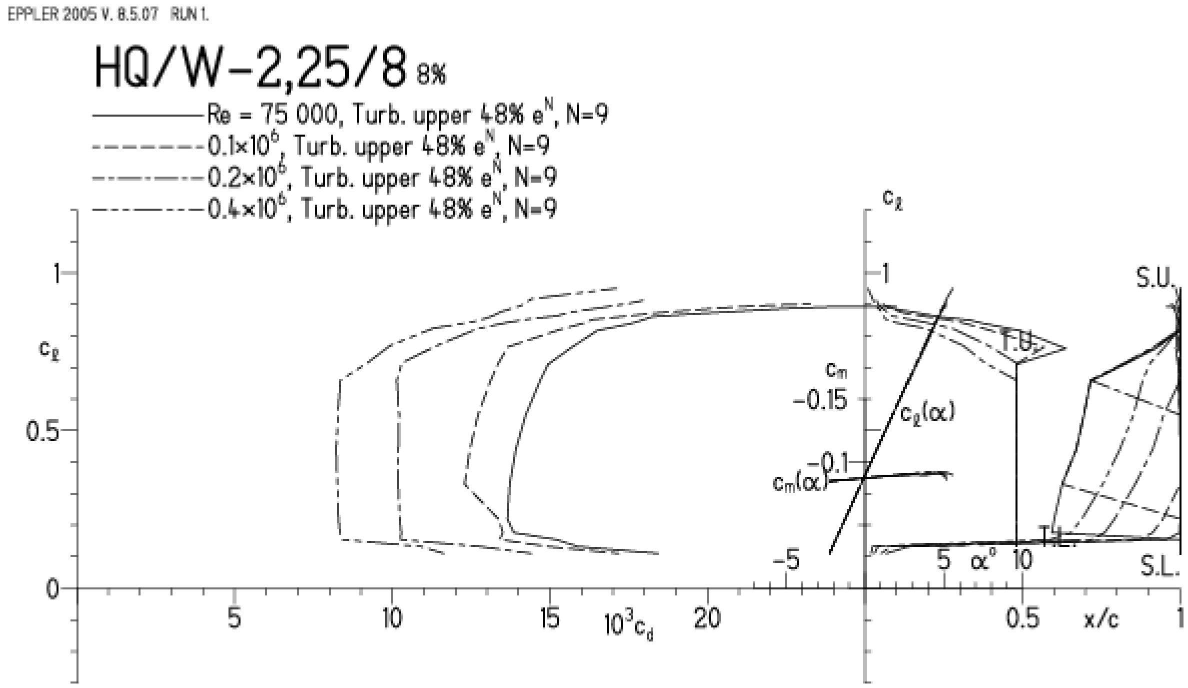
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

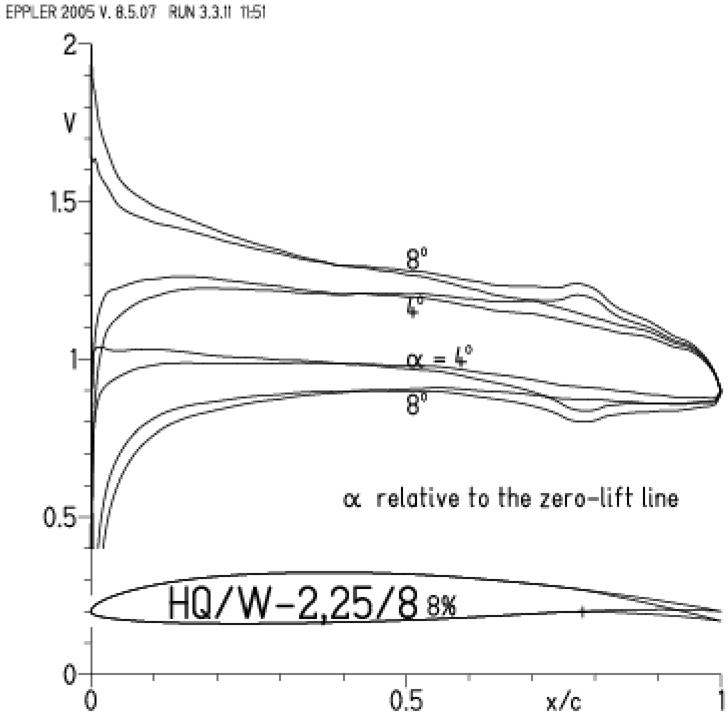

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
S.U.
T.U.
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
5 — α° — 10
T.L.
S.L.
0.5
x/c
1

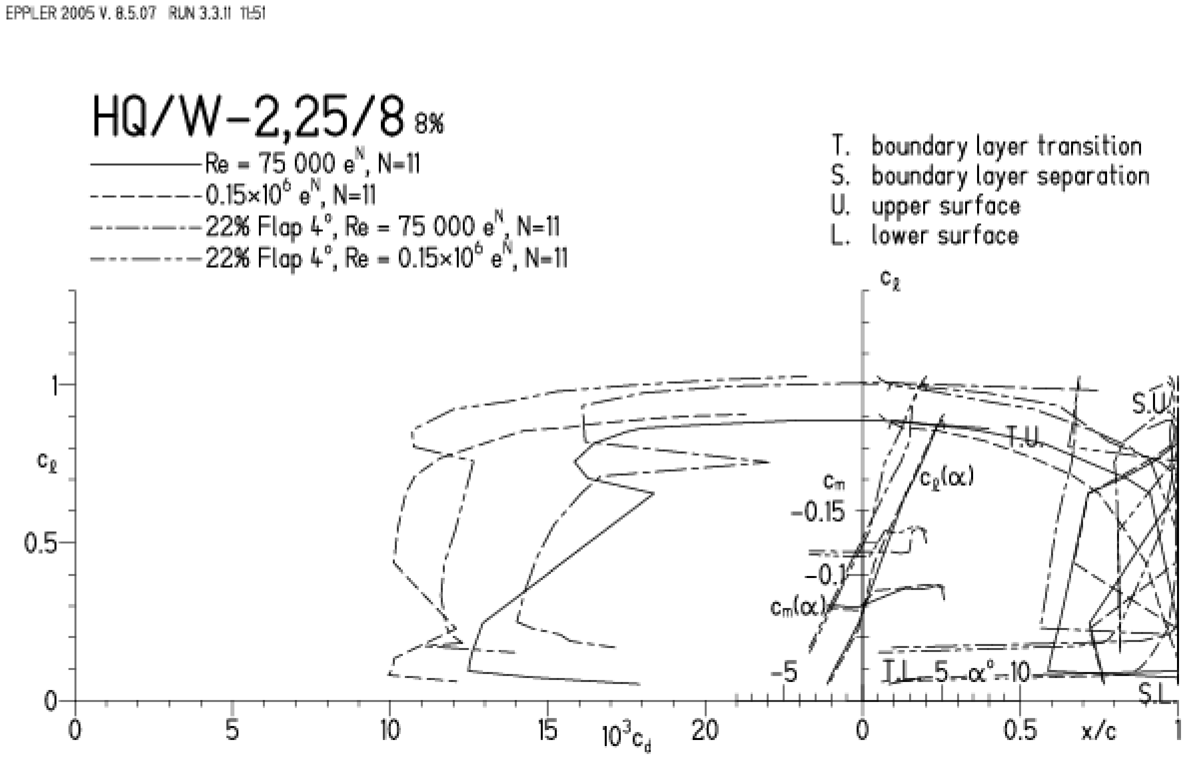
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



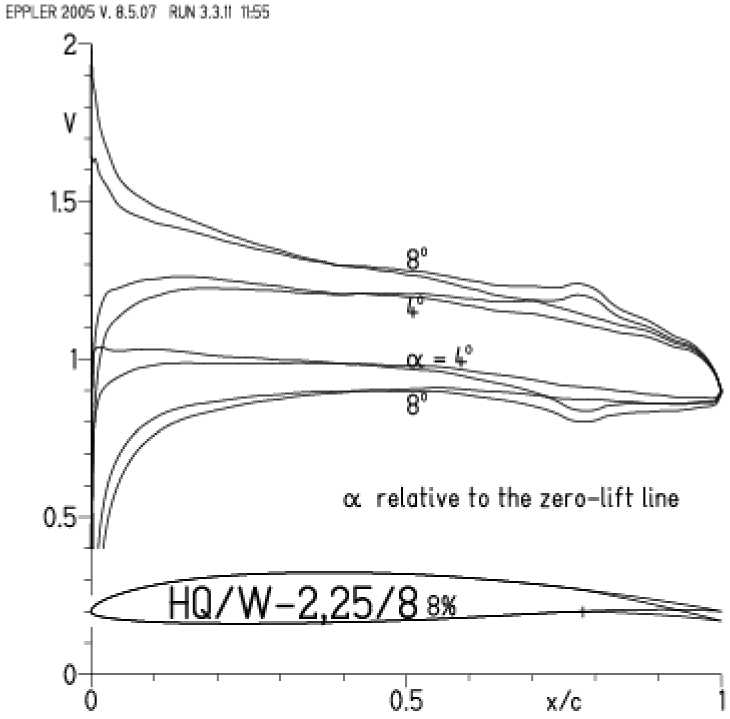


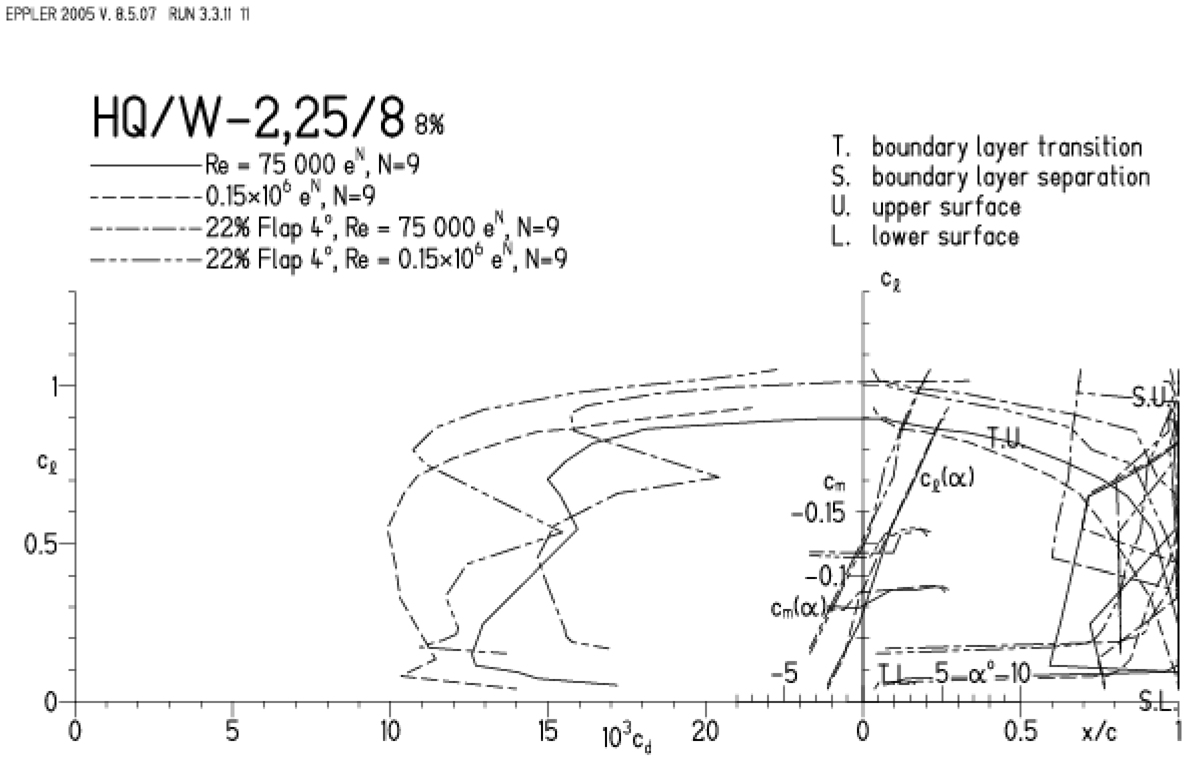
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



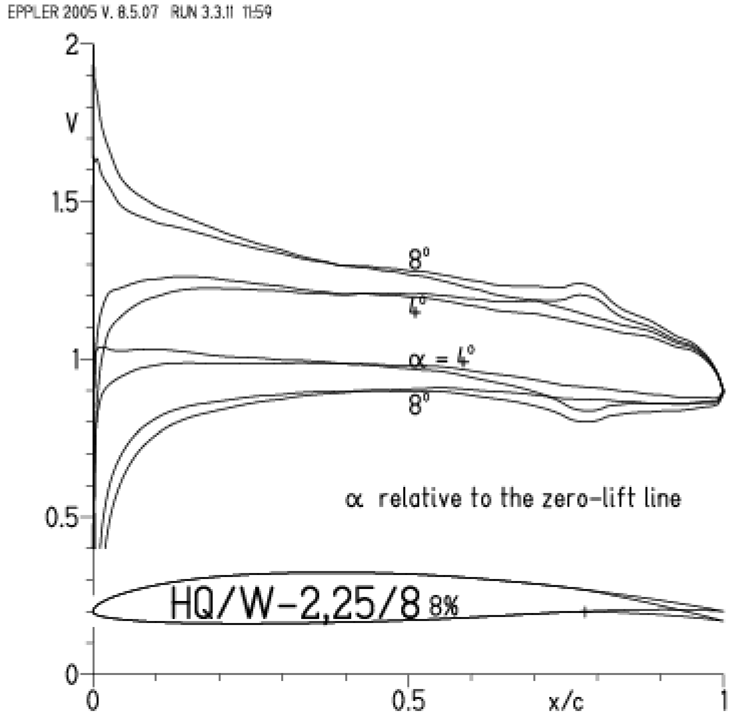


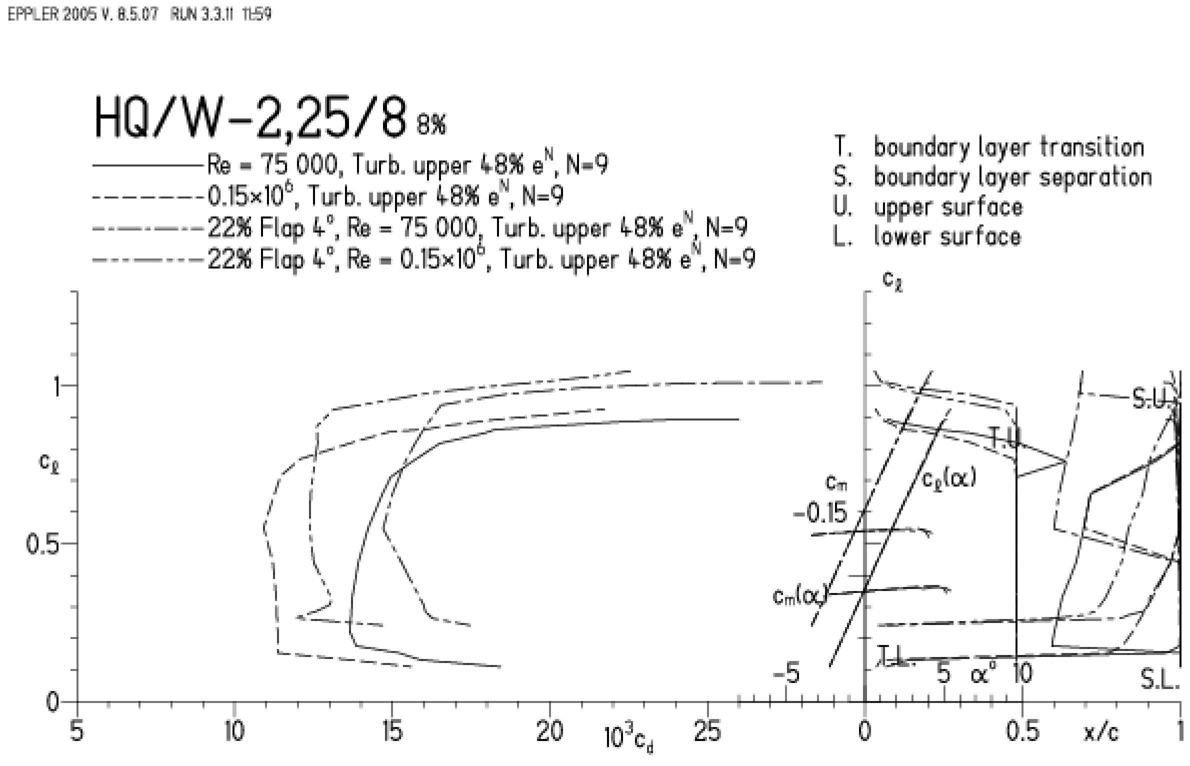
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag



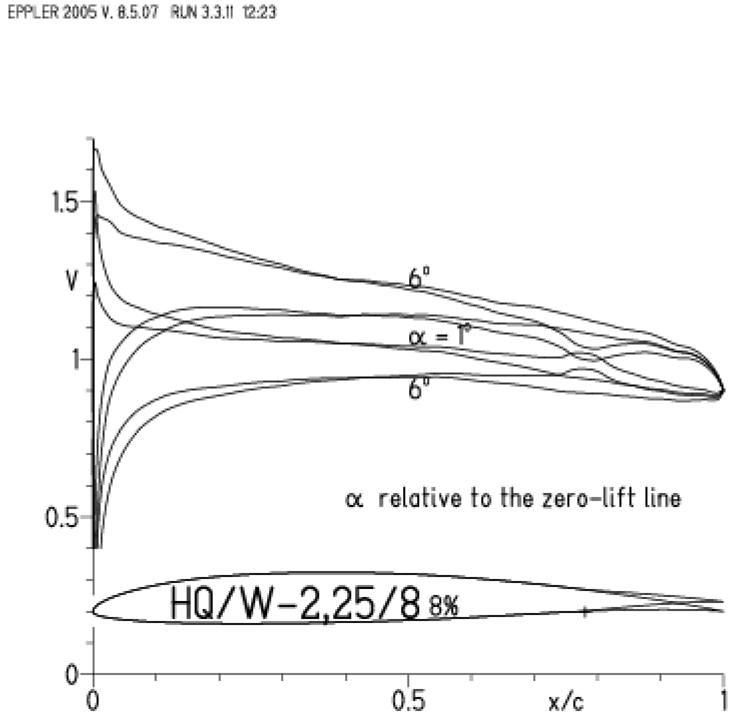


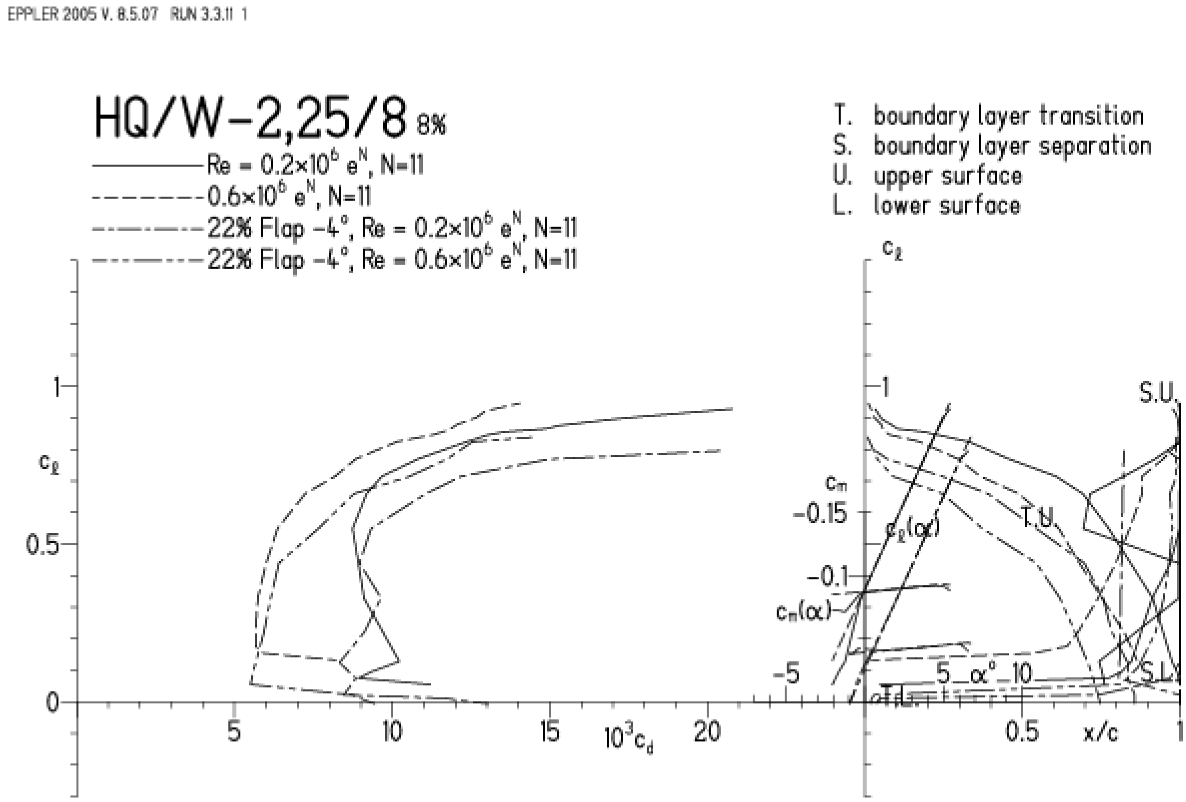
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



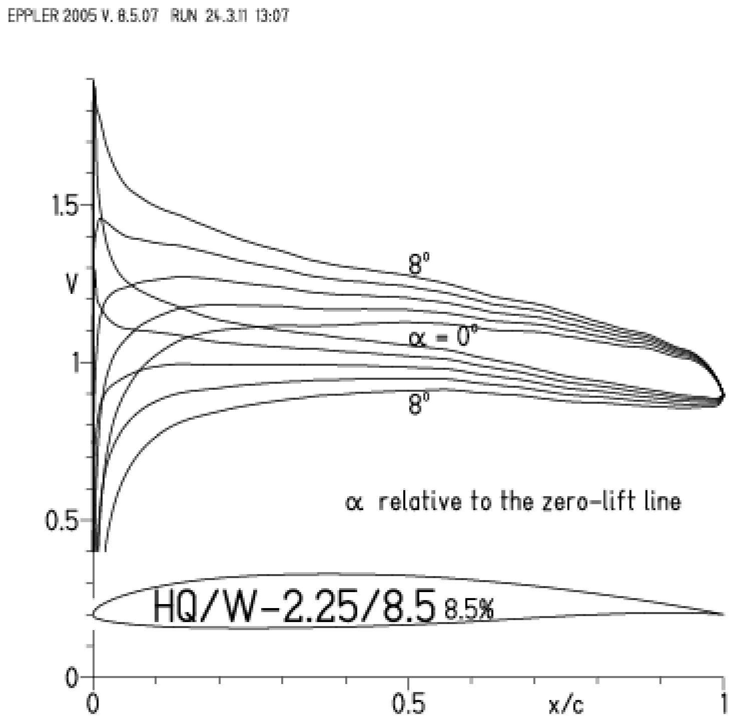


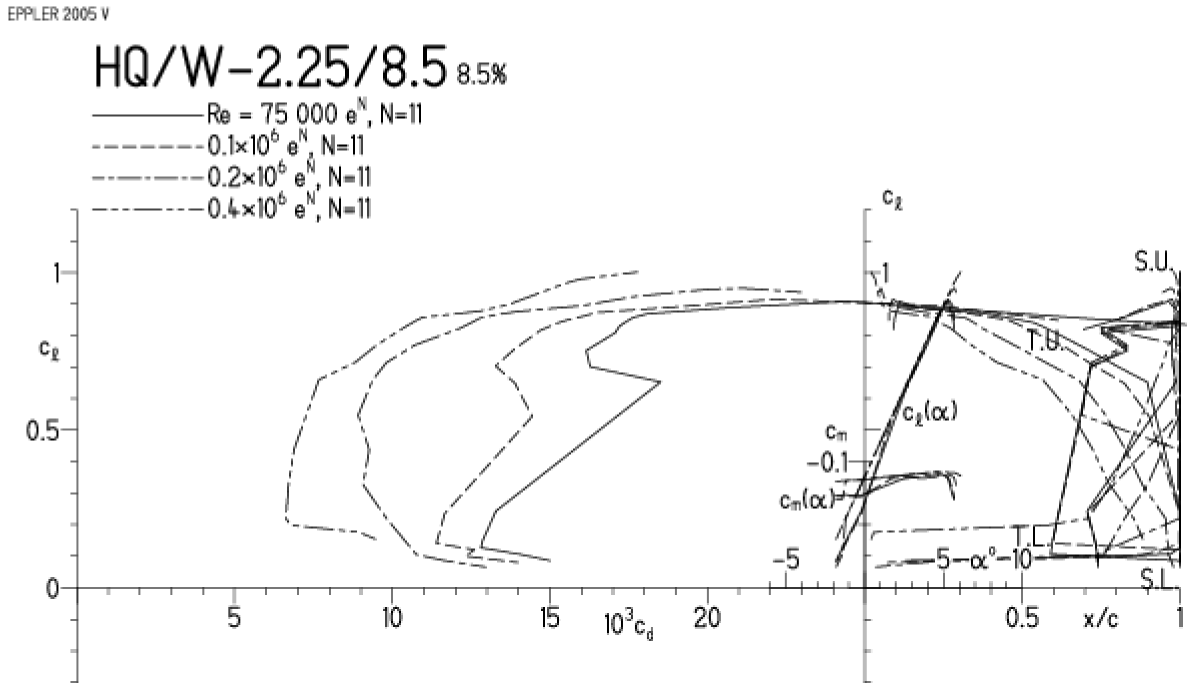
<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)



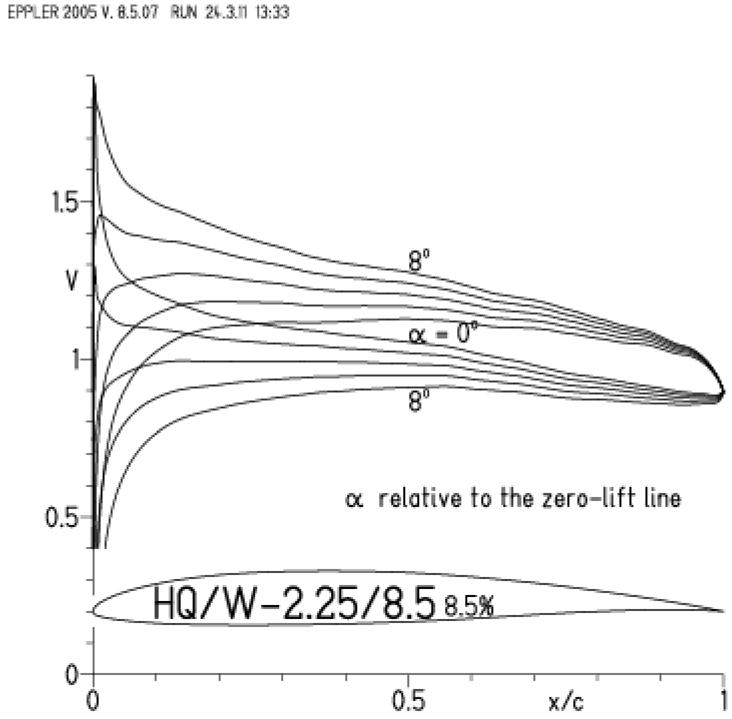


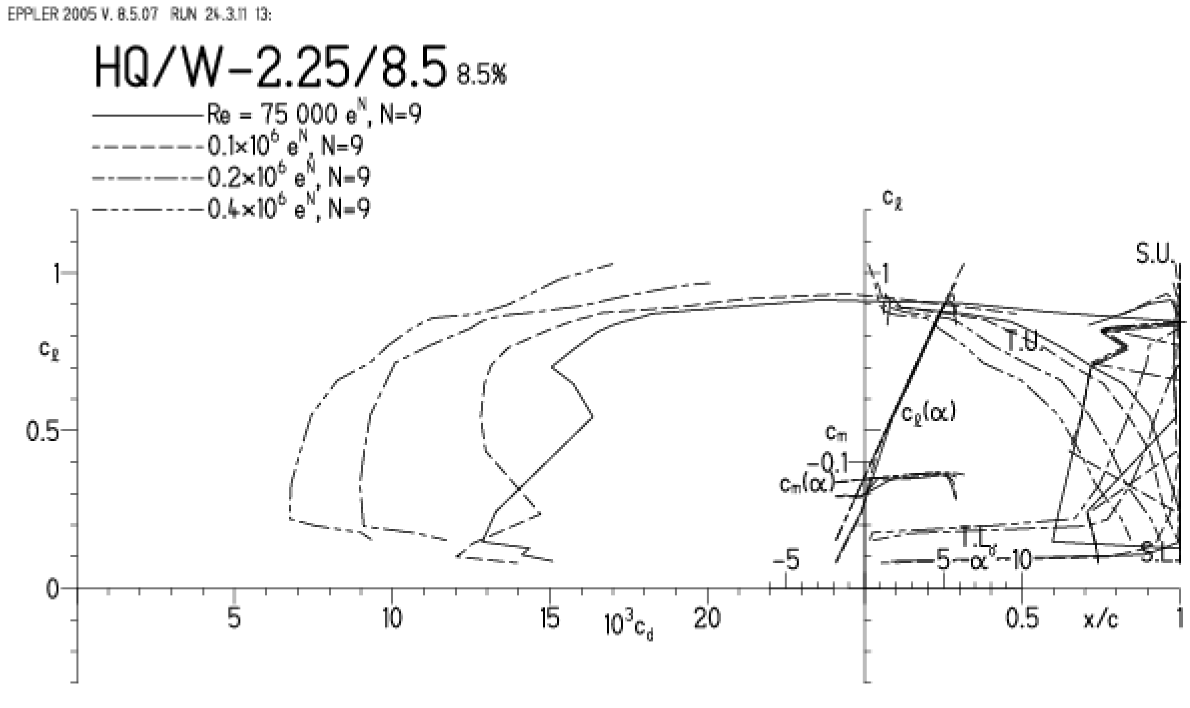
<u>HQ/W-2,25/8,5</u>, N=11



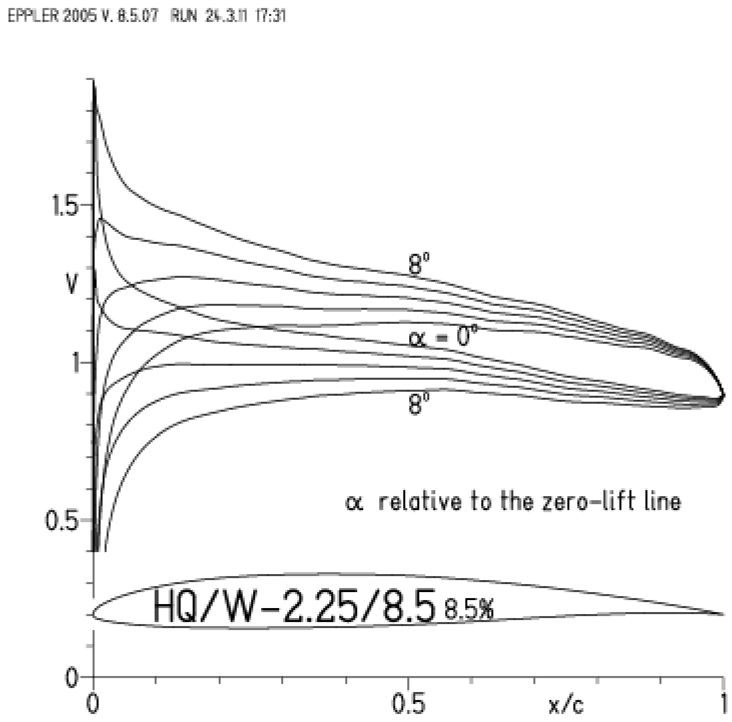


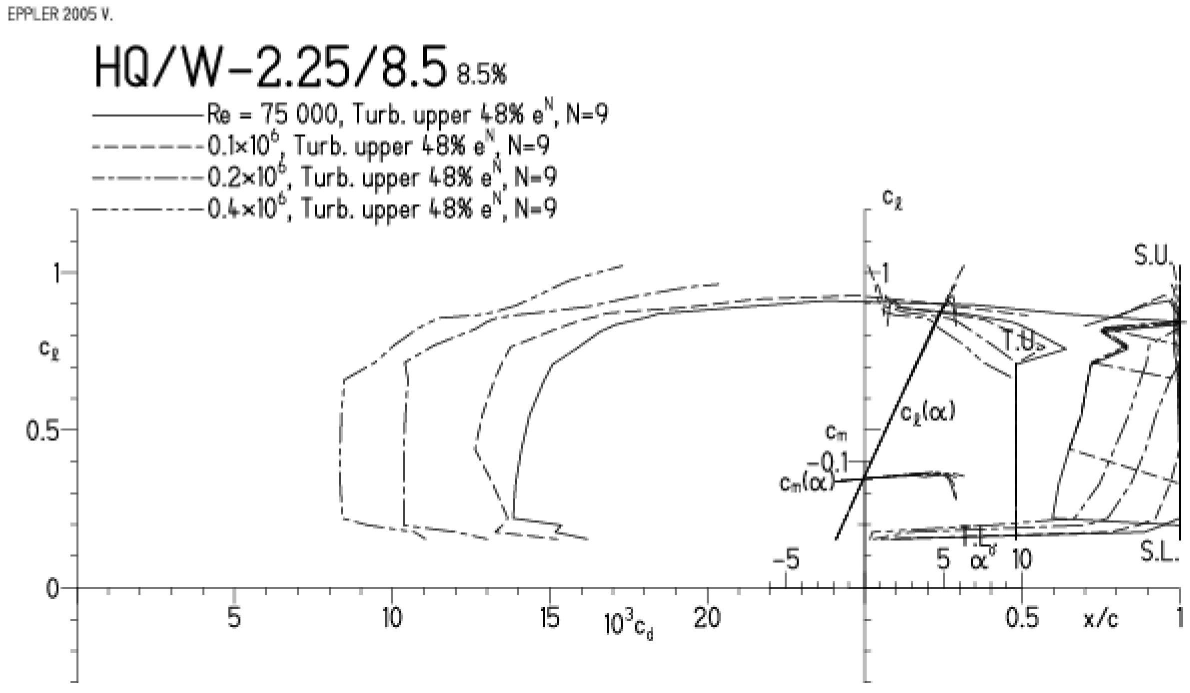
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

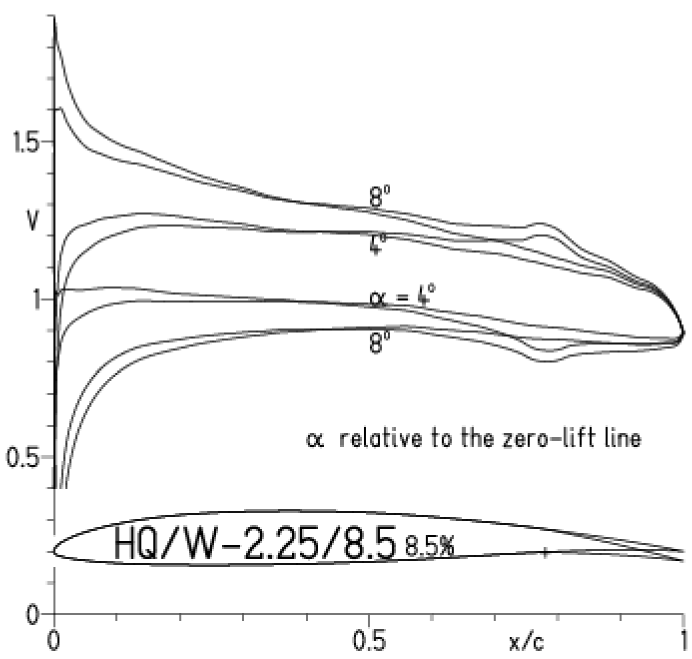
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



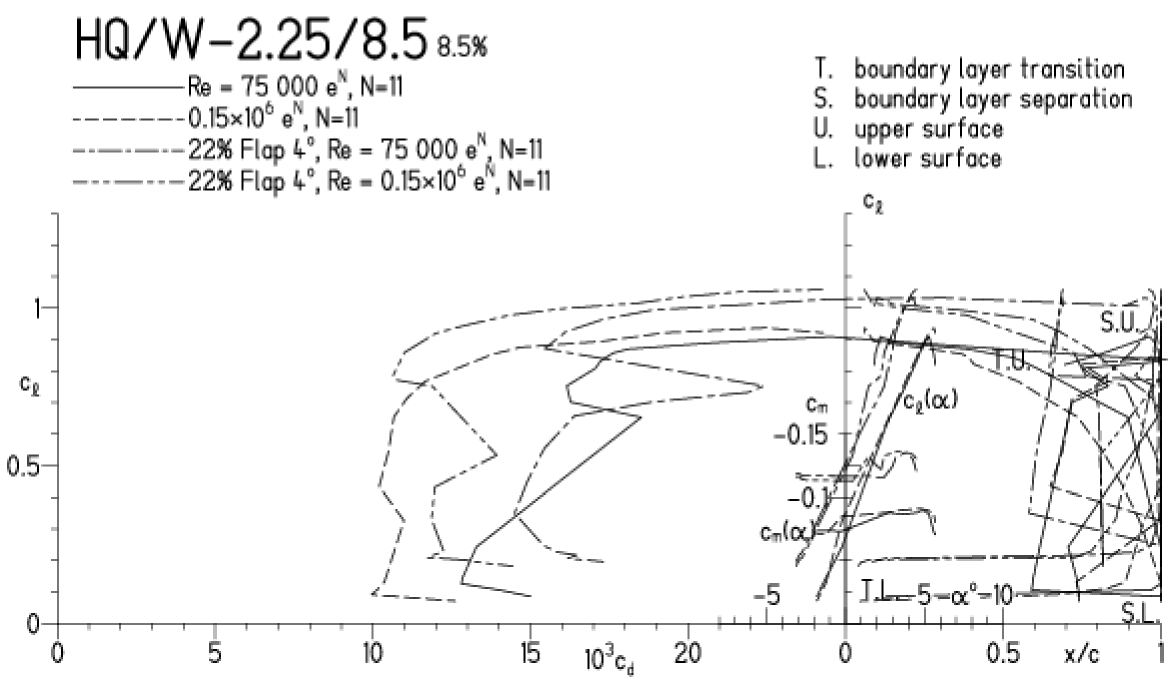


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

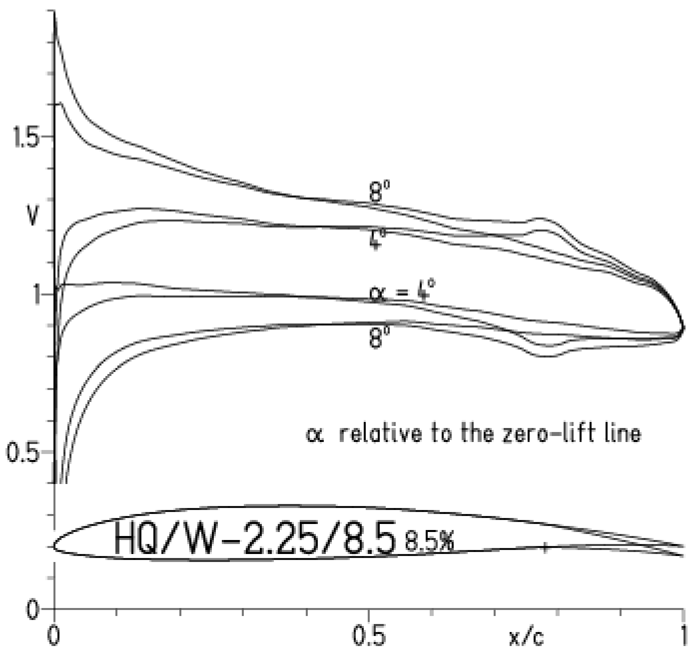


EPPLER 2005 V. 8.5.

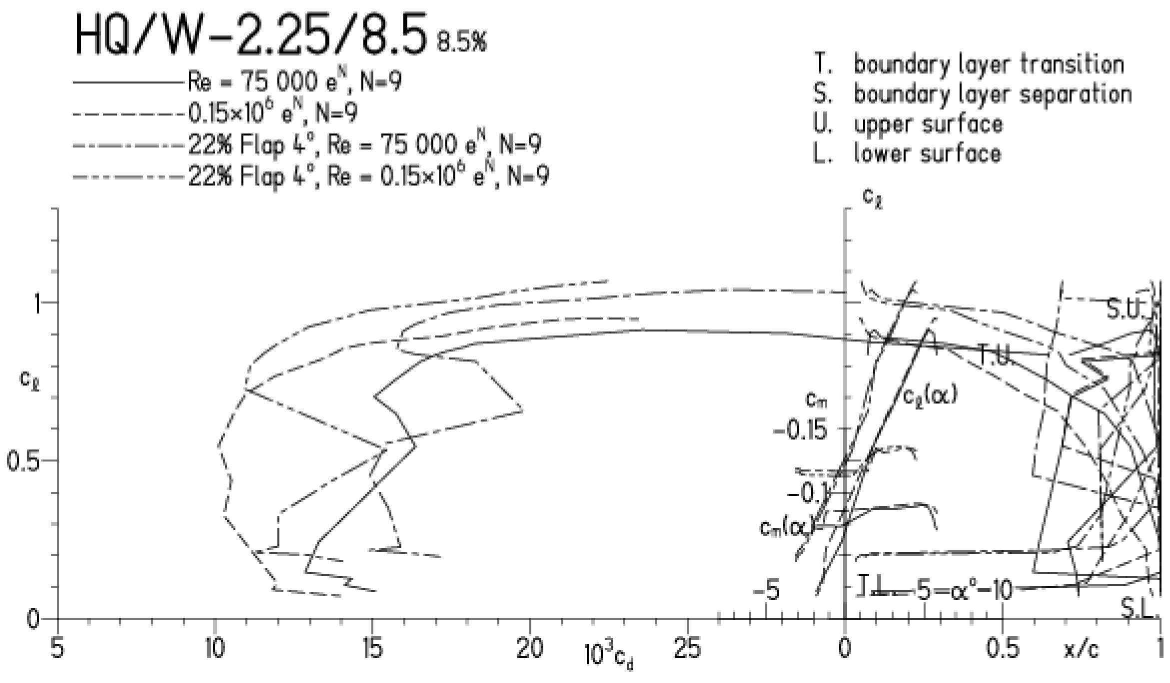


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

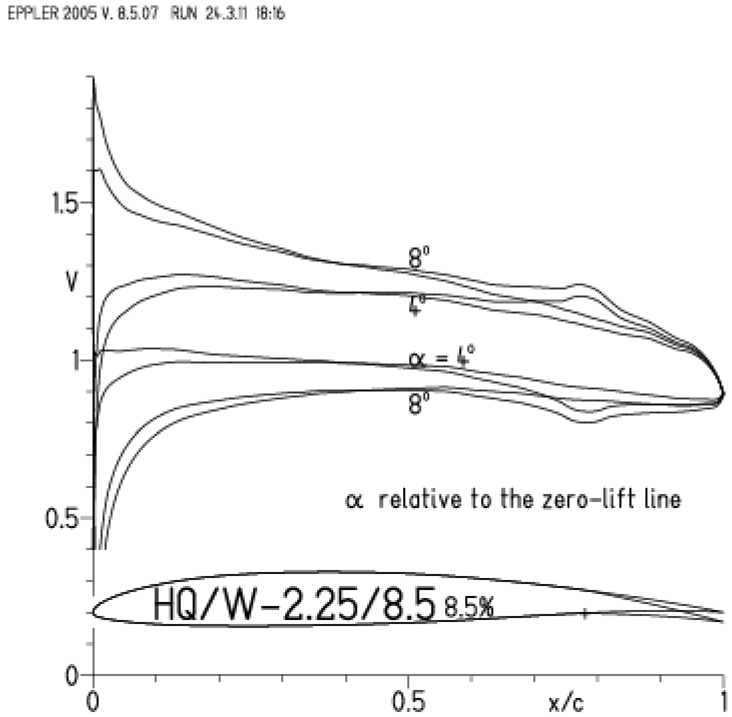
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

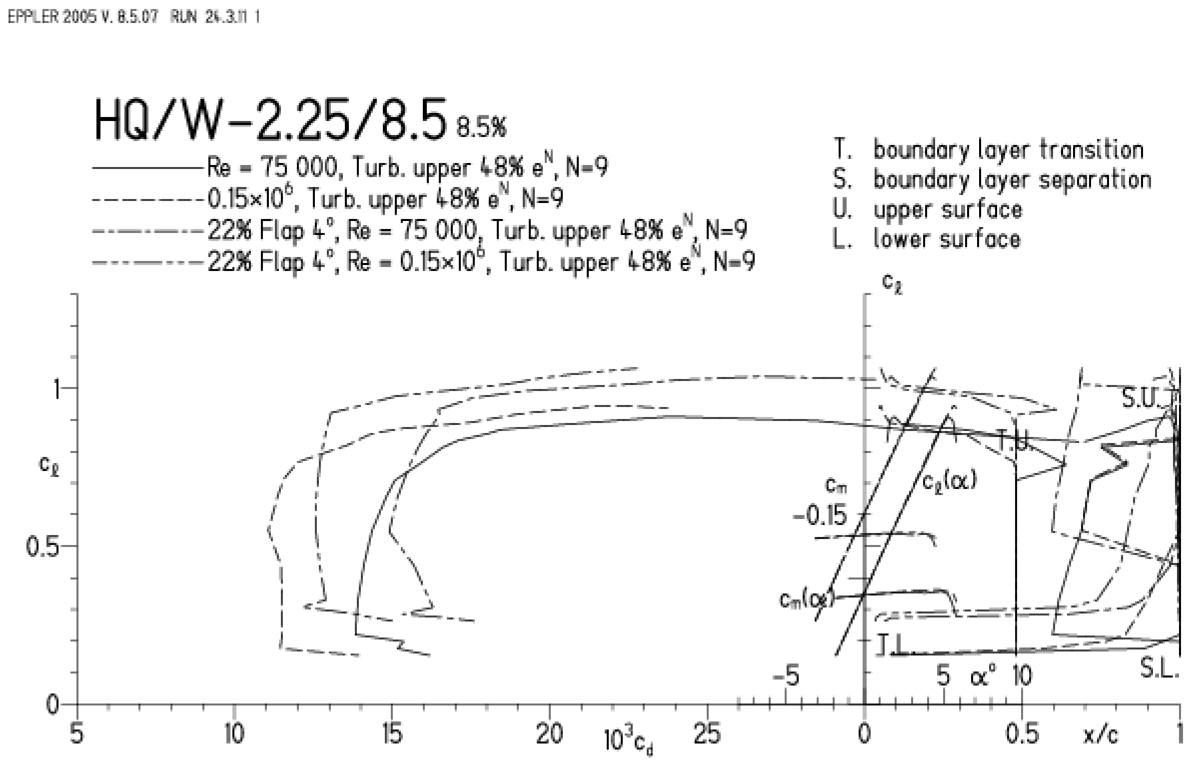


EPPLER 2005 V.



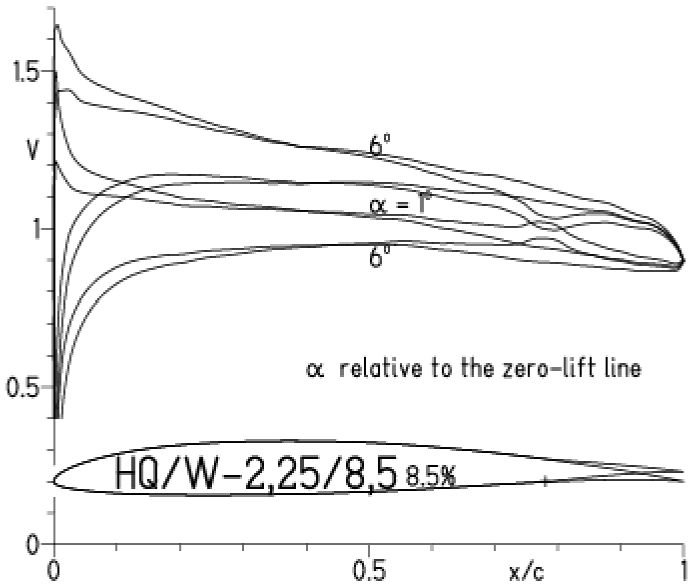
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



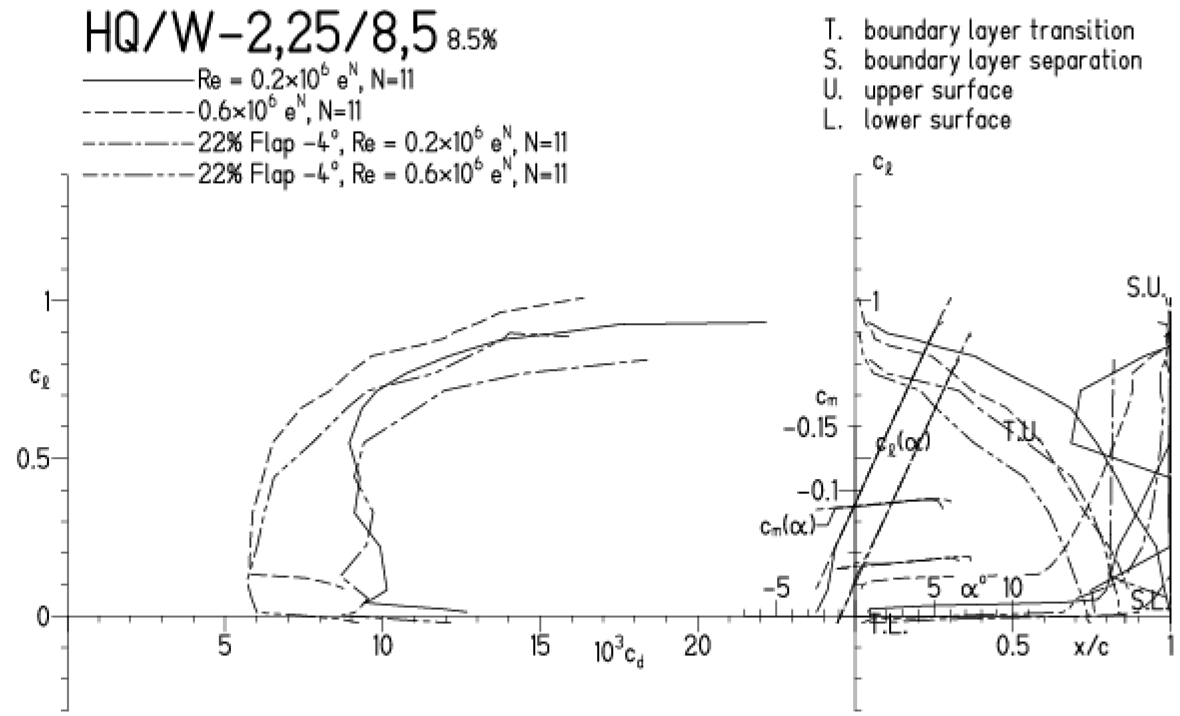


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

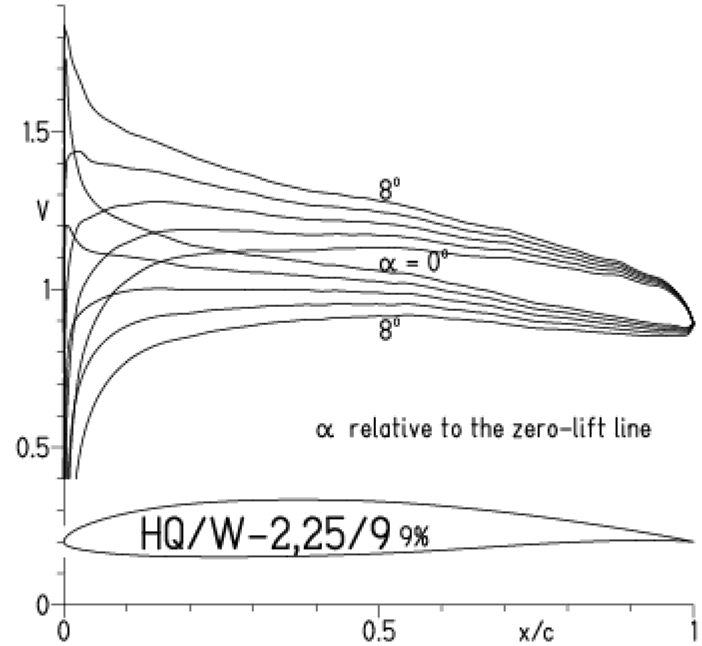


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

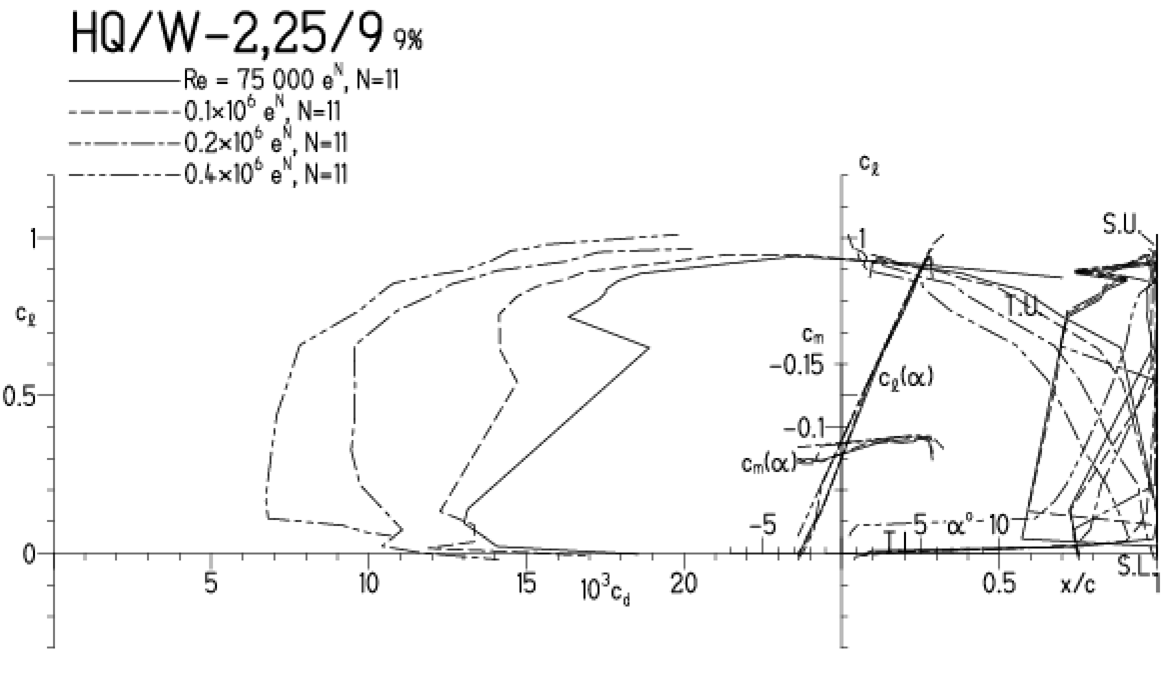


HQ/W-2,25/9, N=11

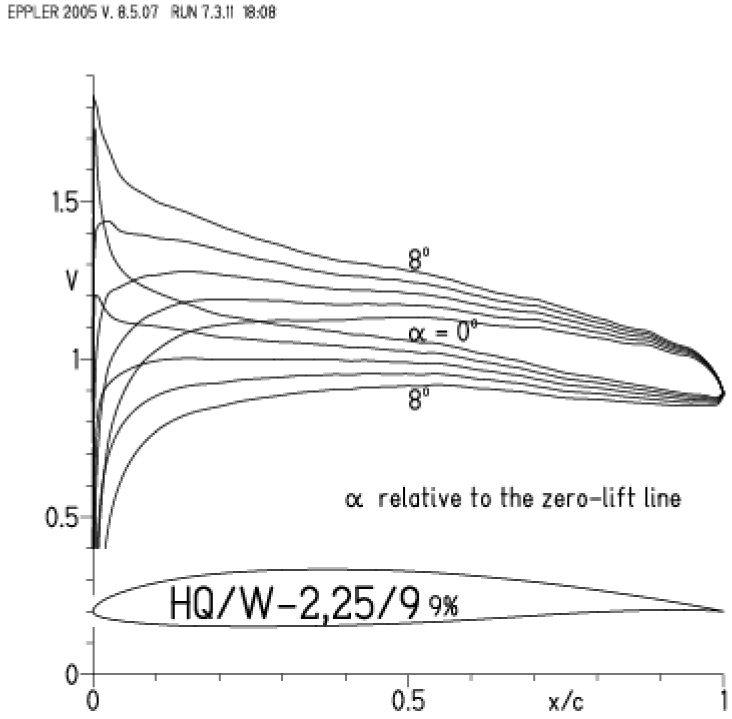
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

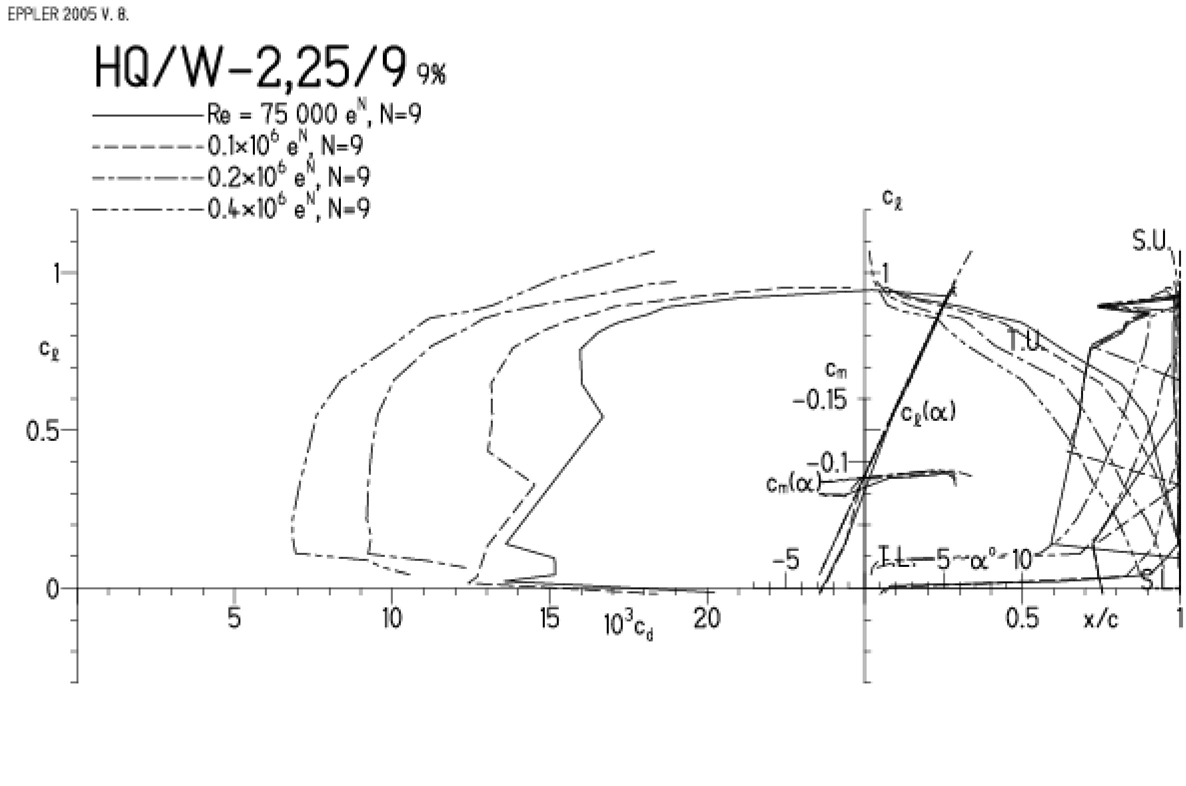


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50



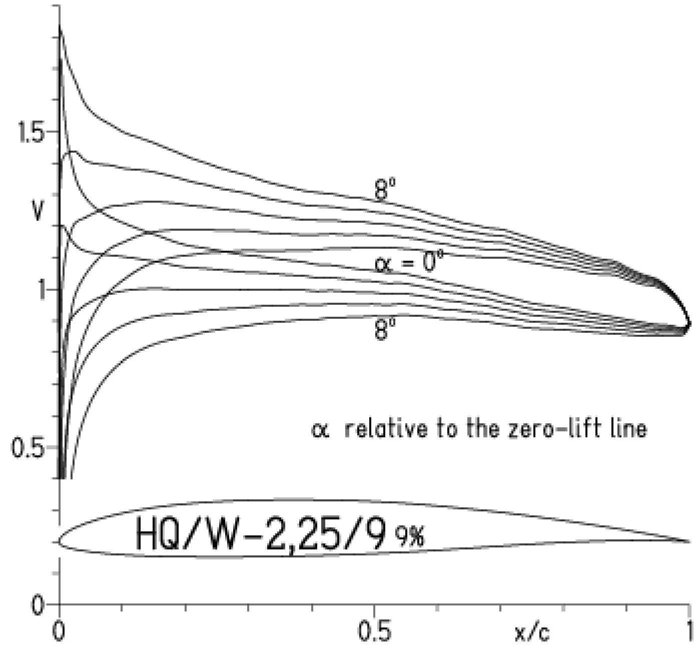
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

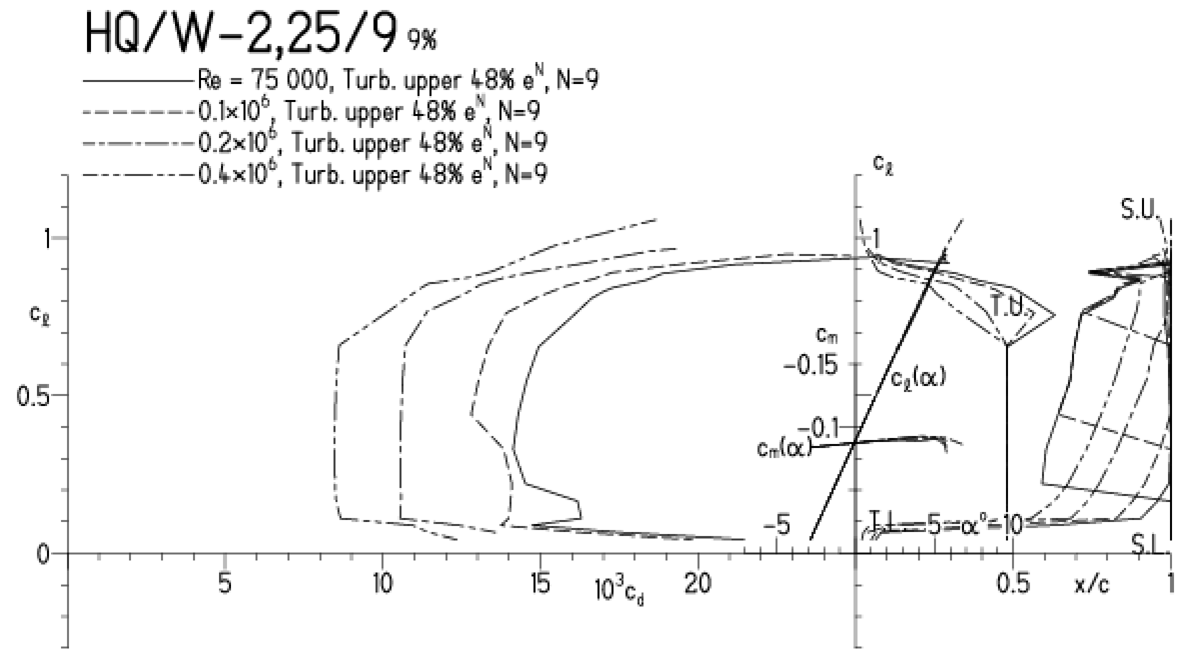

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
$10^3 c_d$
20
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

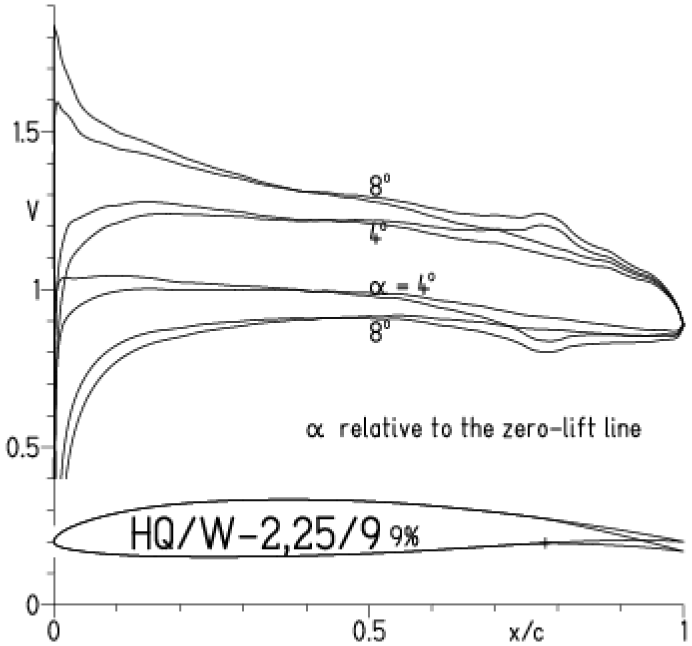


EPPLER 2005 V. 8.5.07 RUN 7

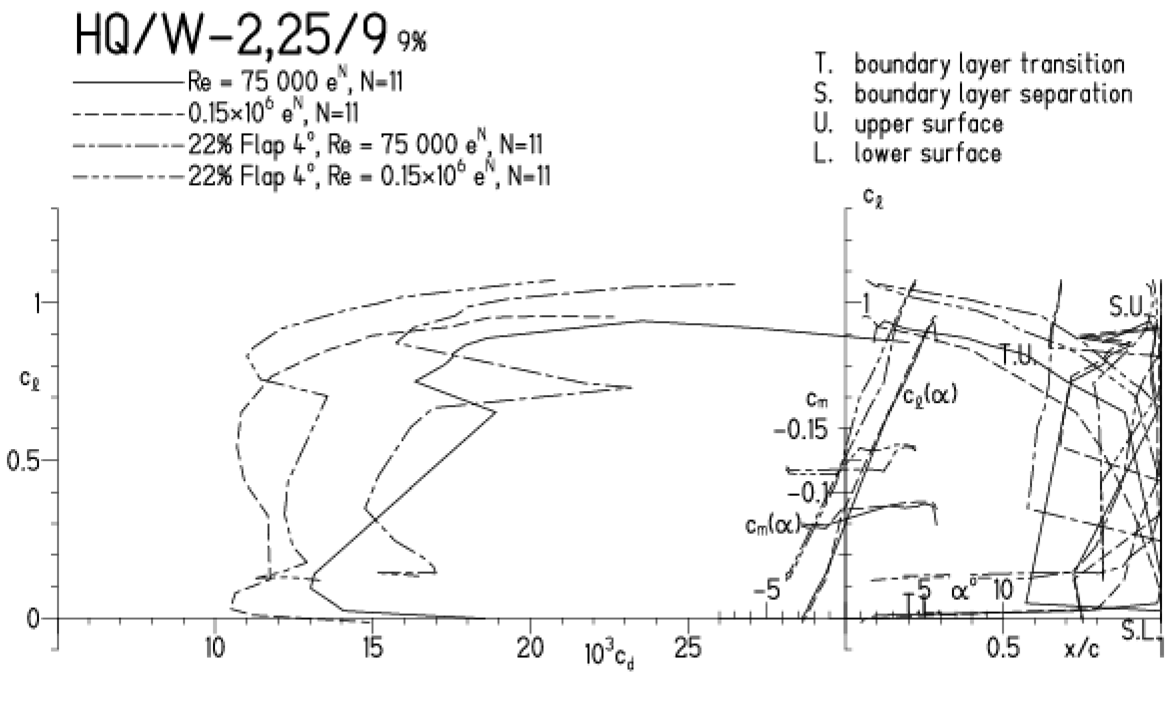


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

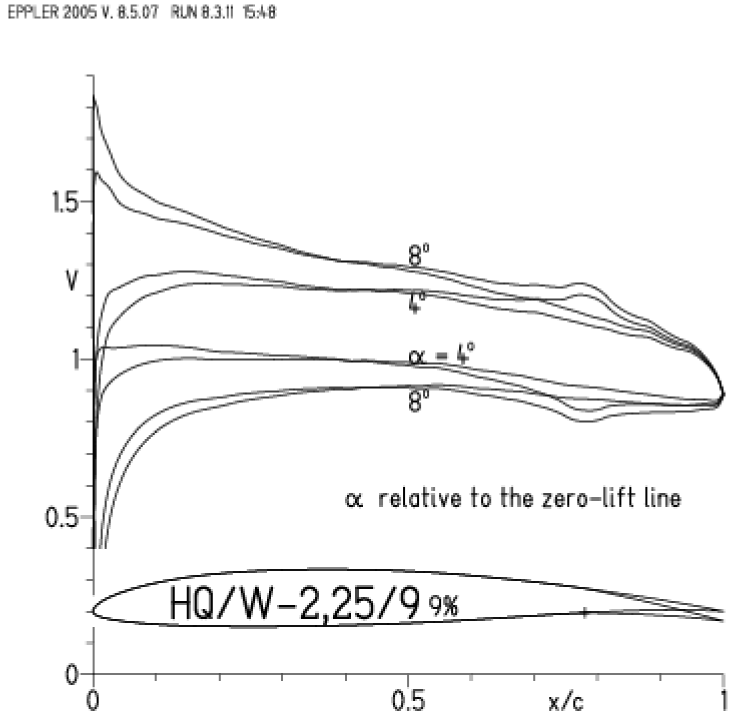
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

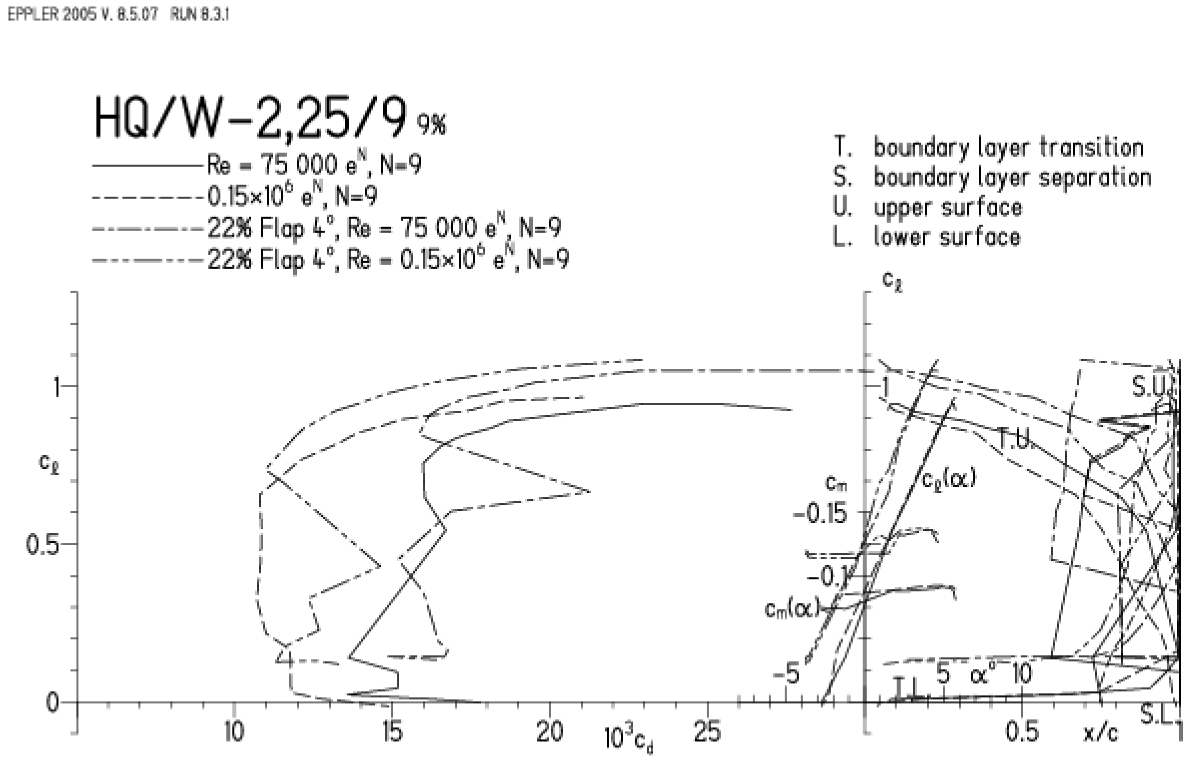


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

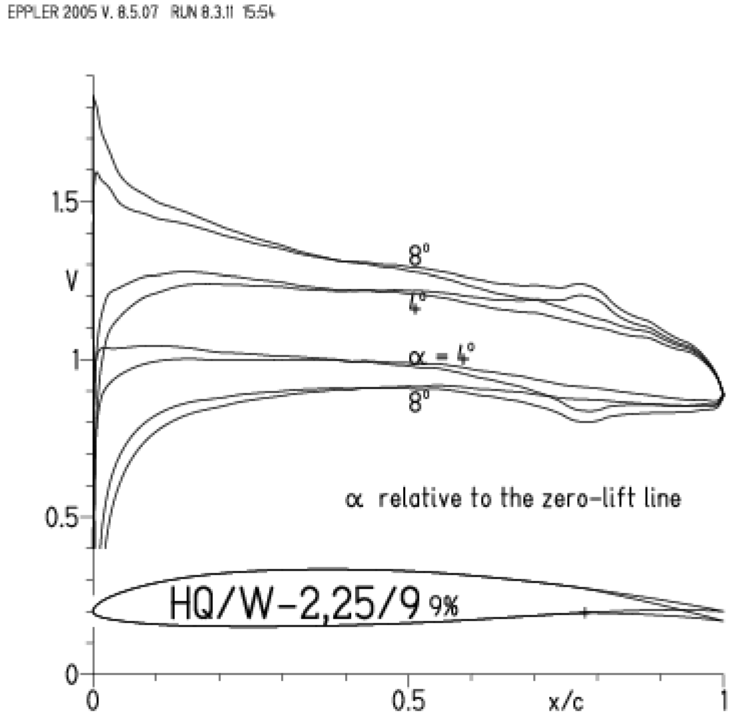


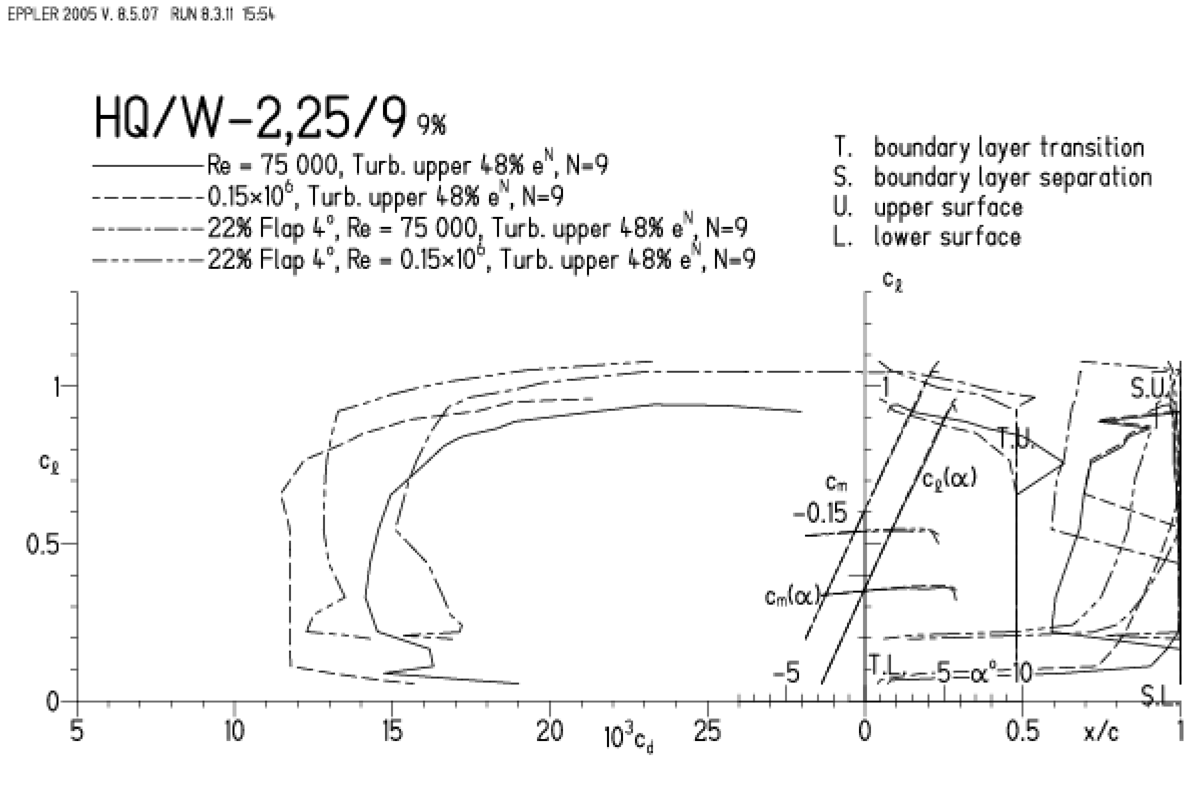
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



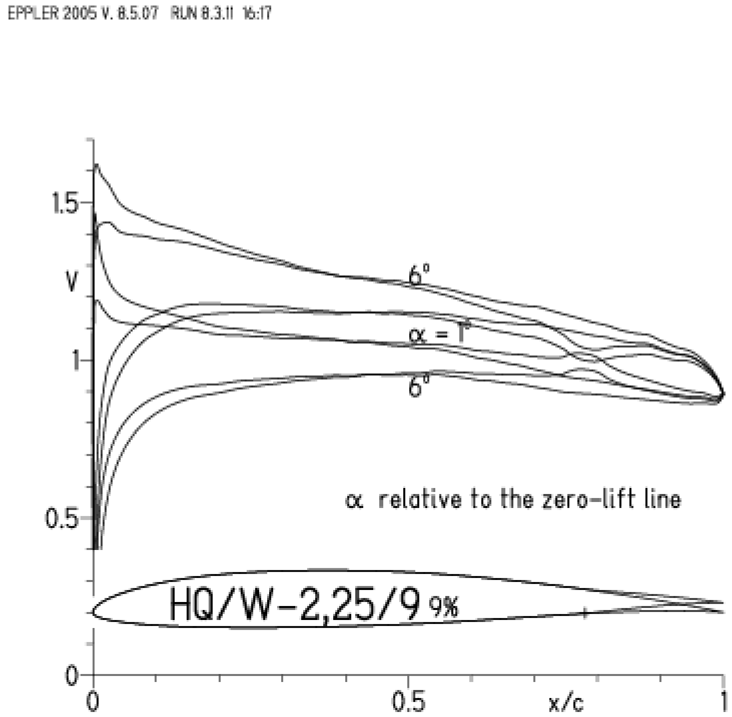


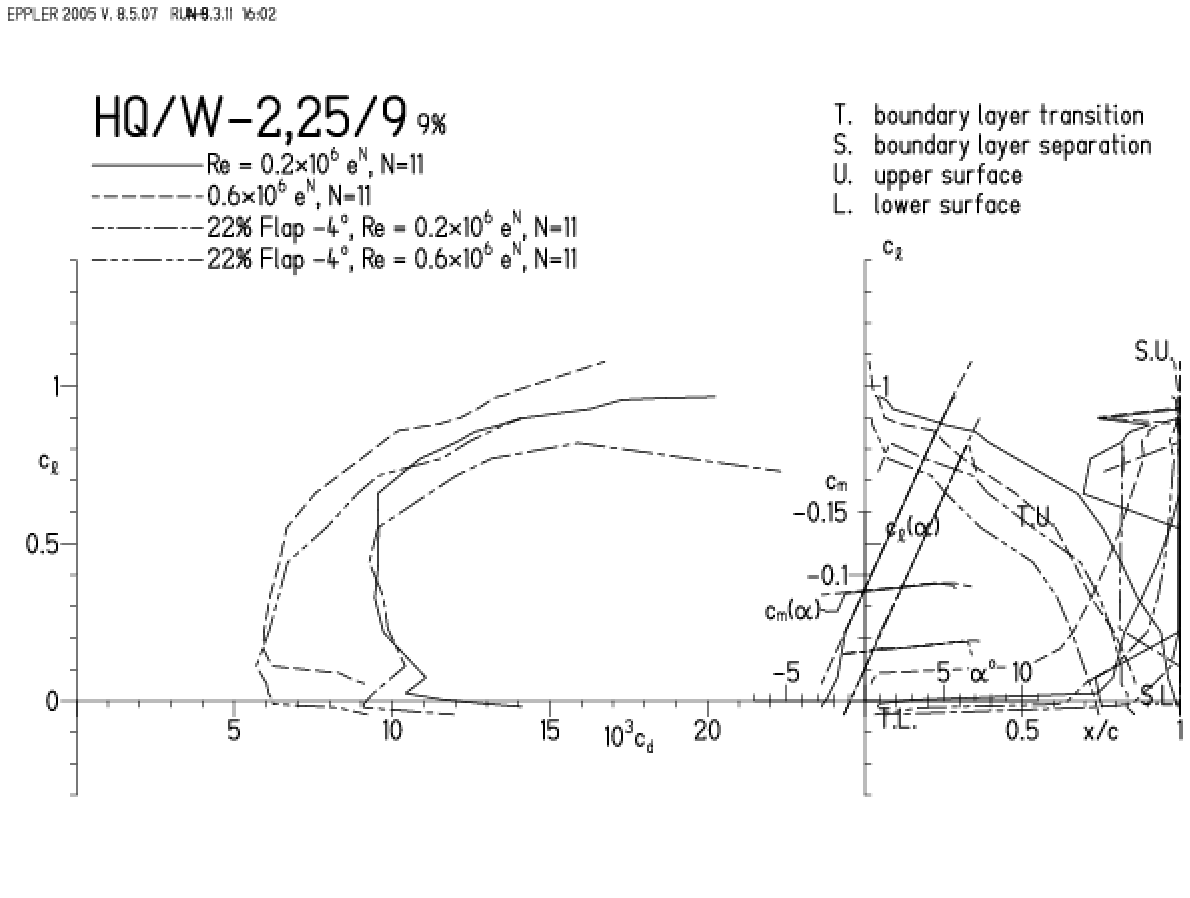
<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



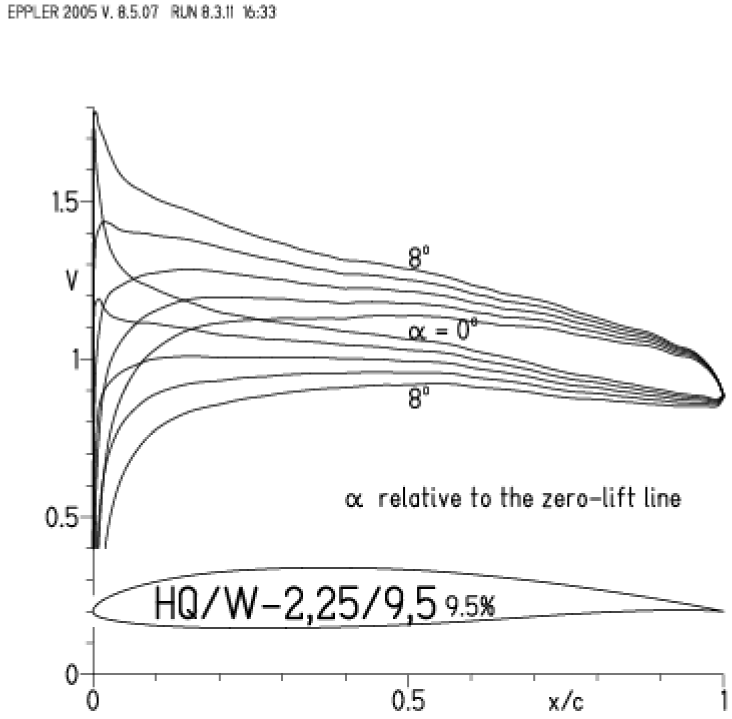


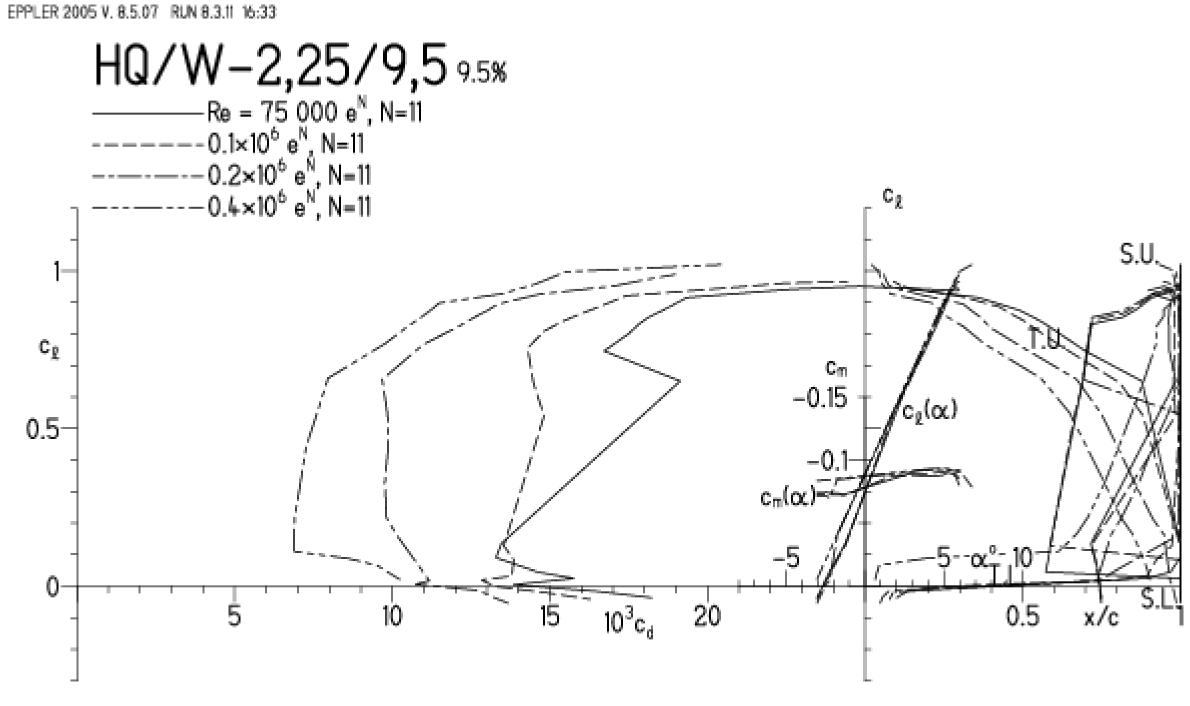
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



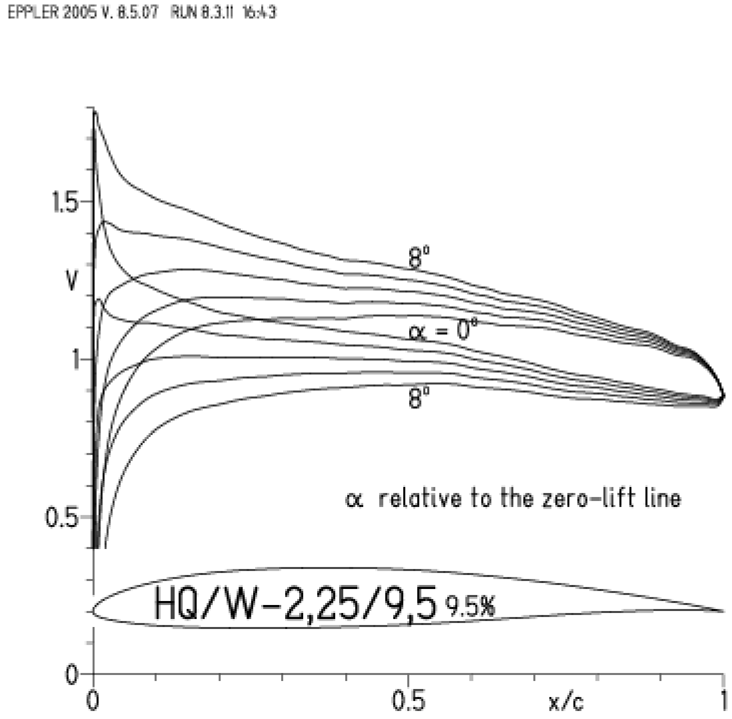


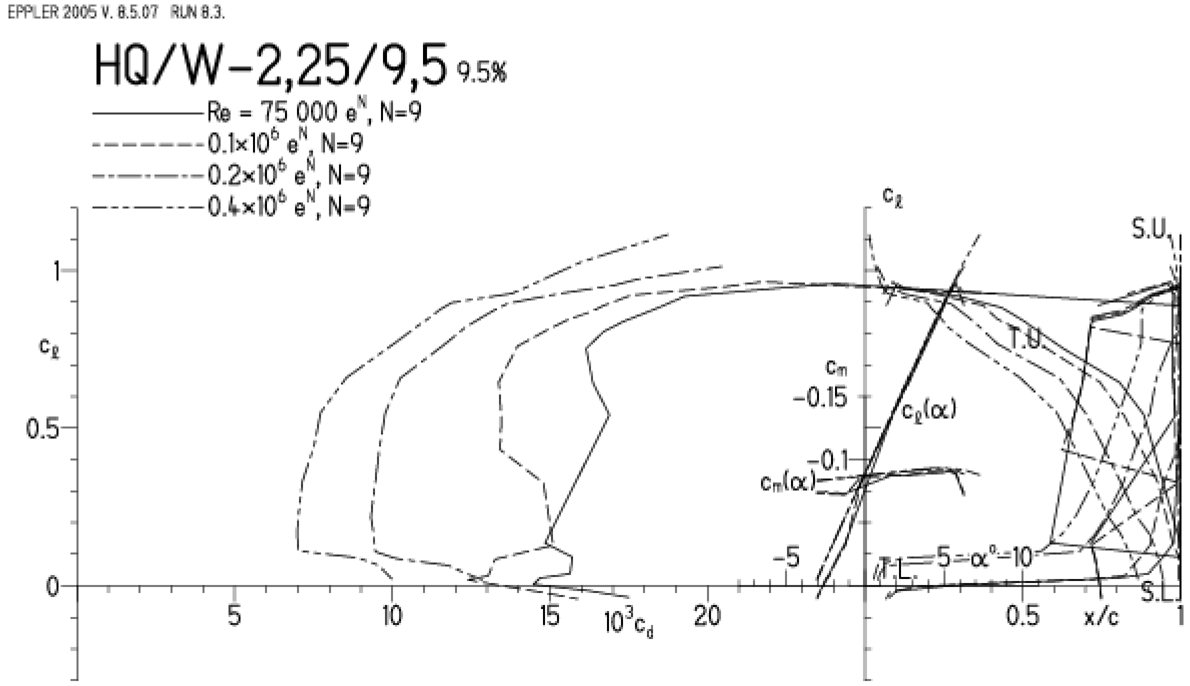
HQ/W-2,25/9,5, N=11



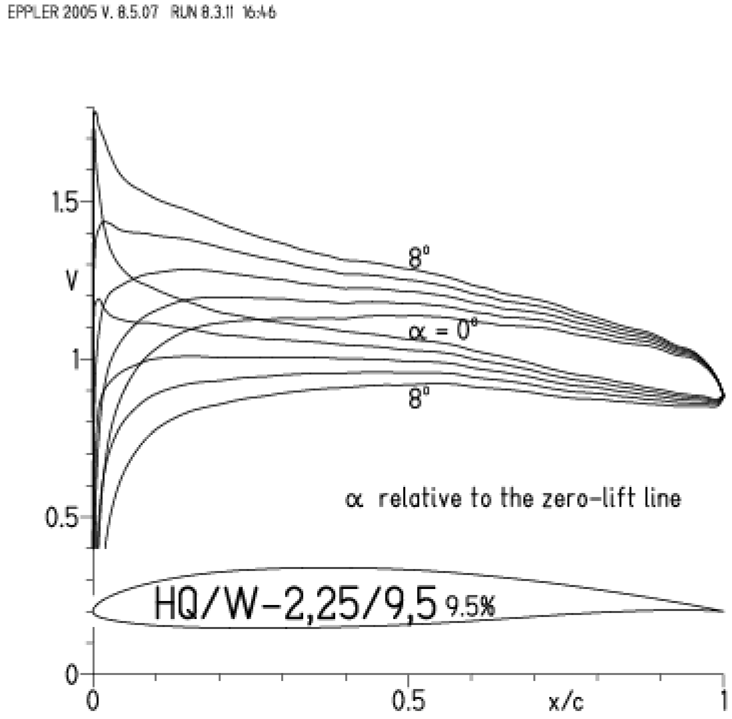


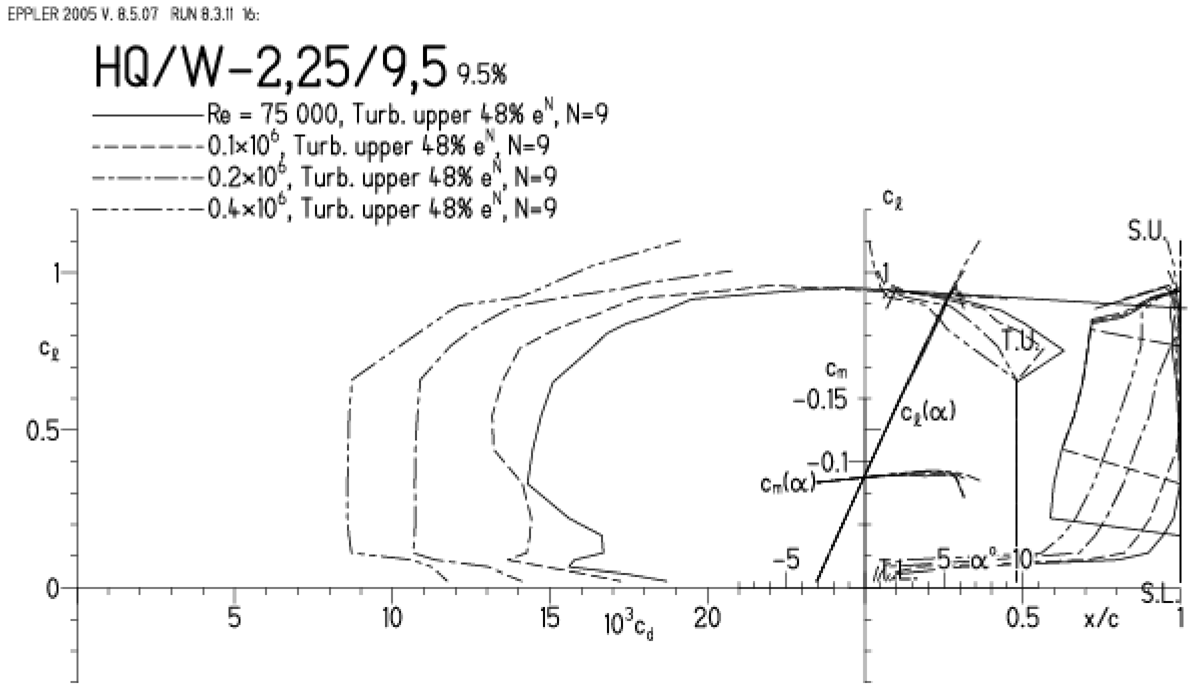
<u>HQ/W-2,25/9,5</u>, N=9





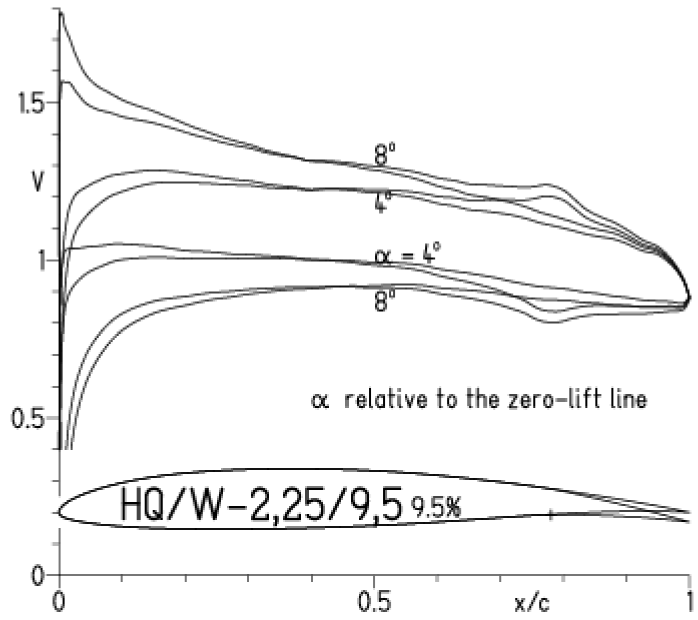
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



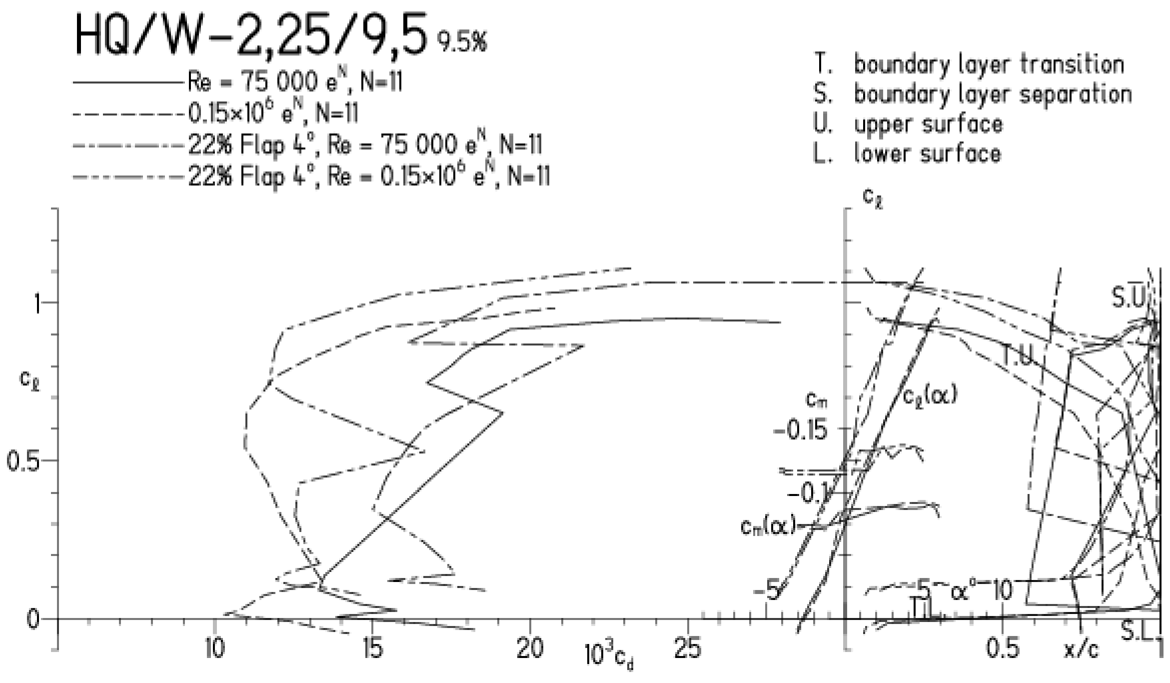


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

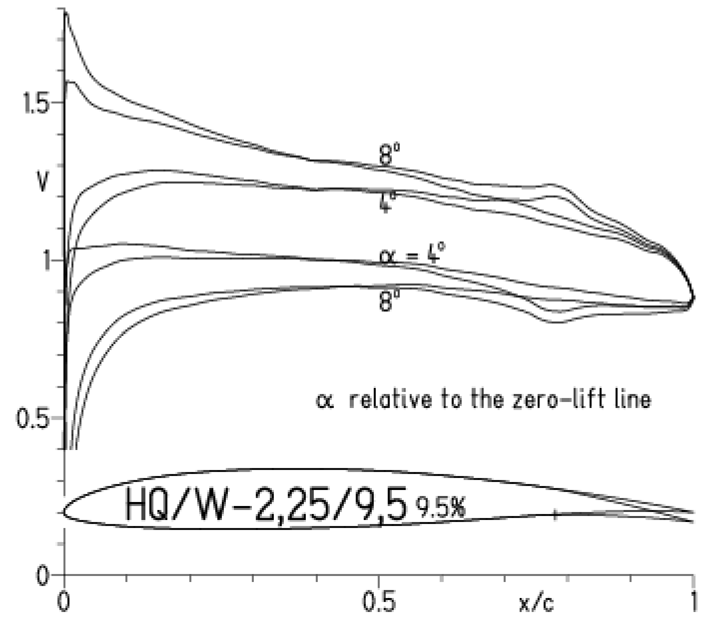


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

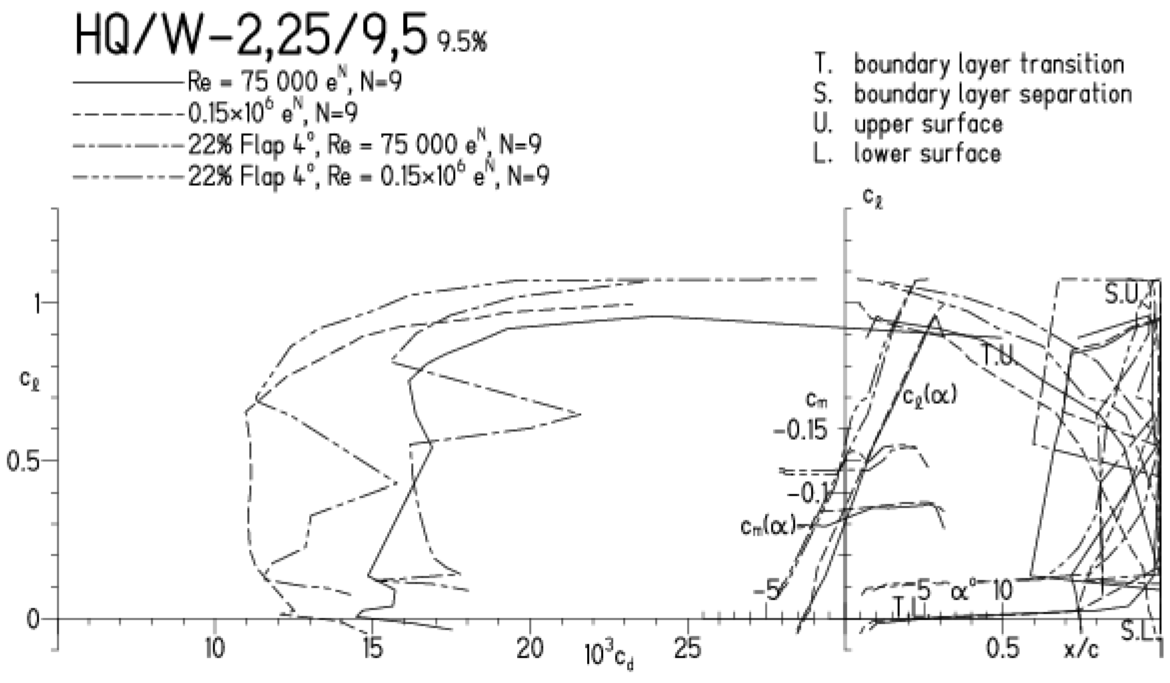


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

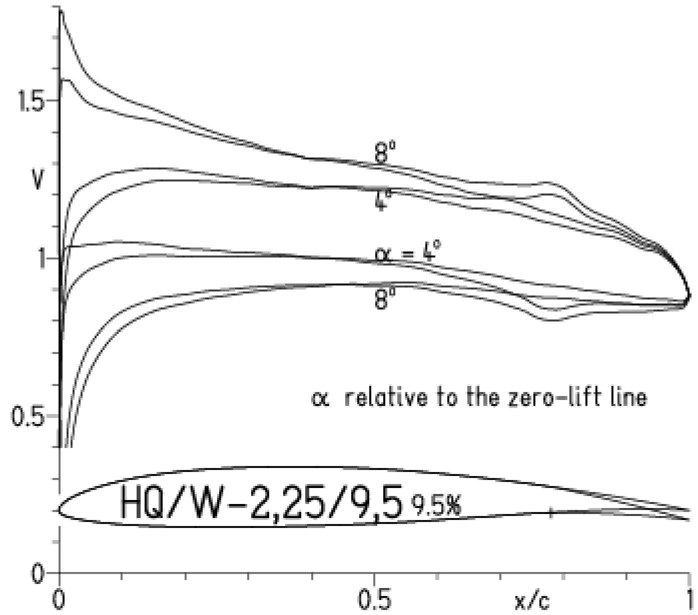


EPPLER 2005 V. 8.5.07 R

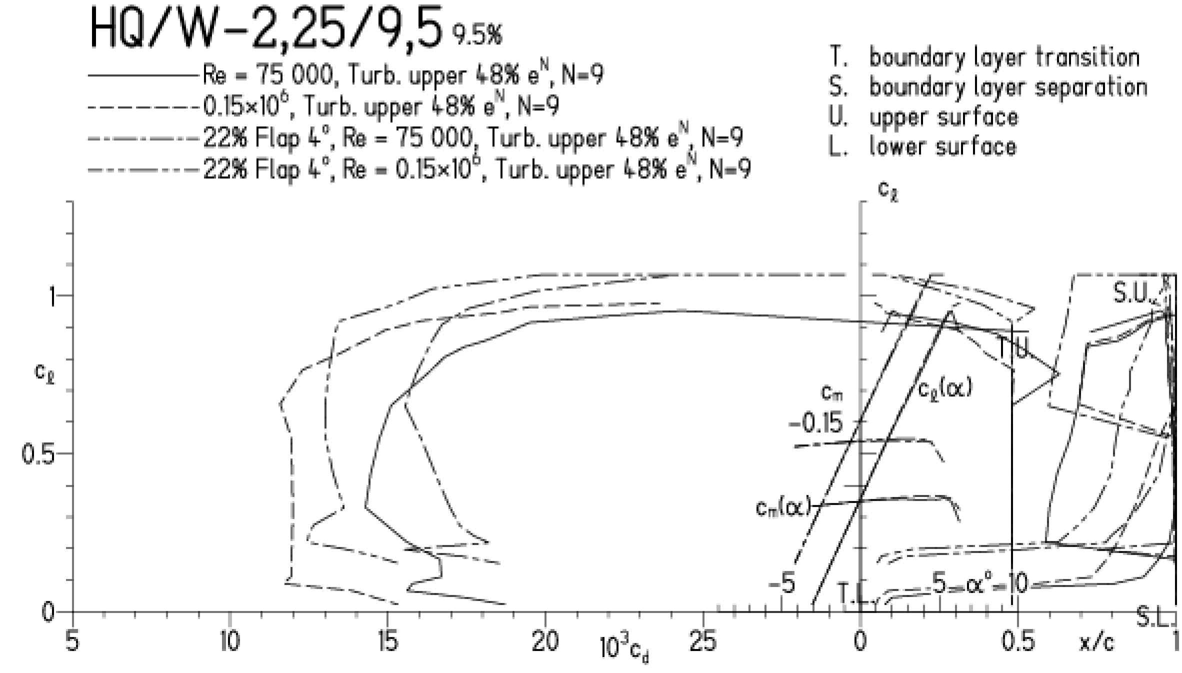


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

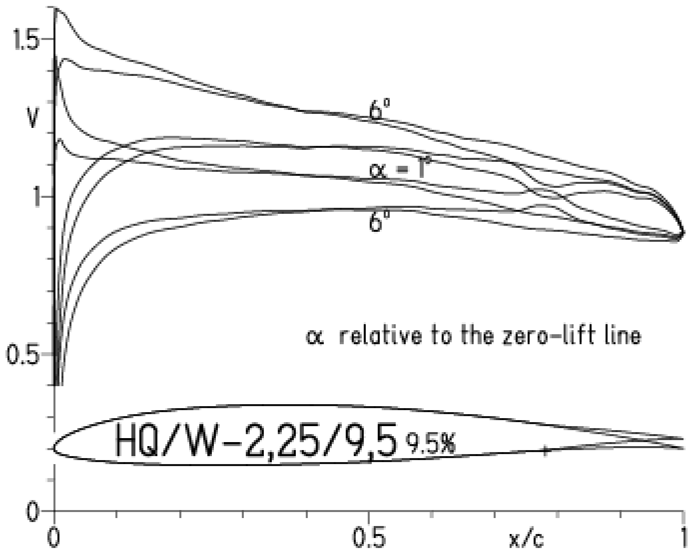


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

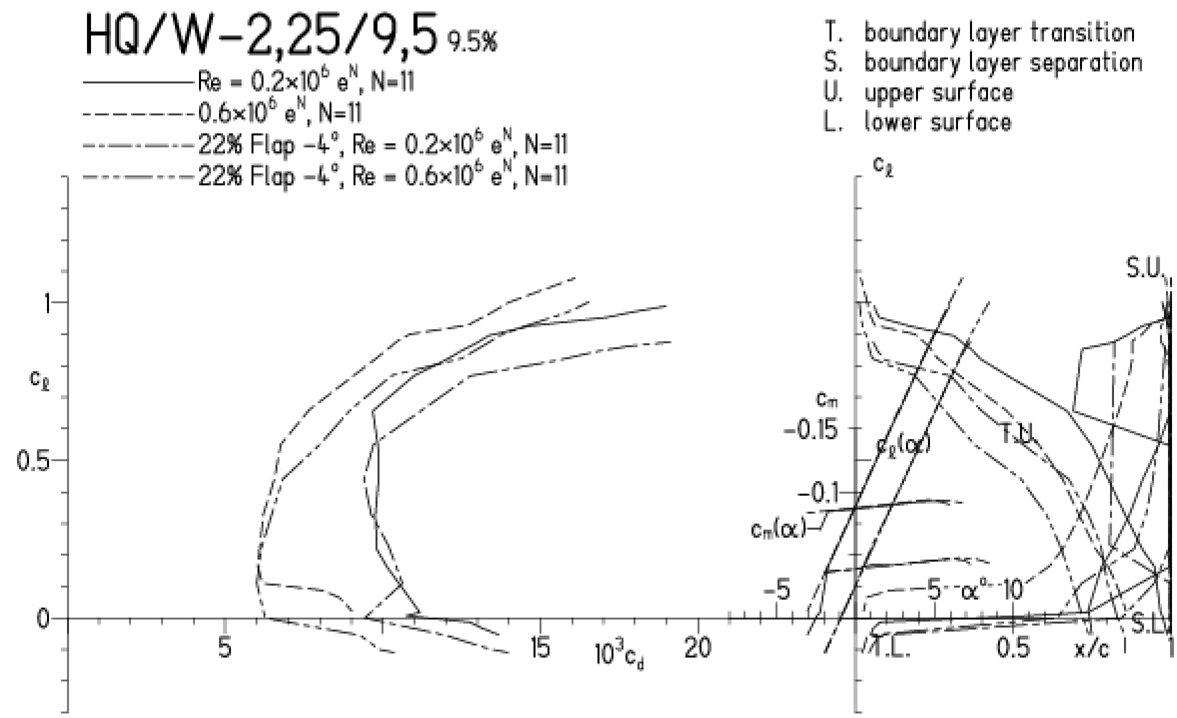


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

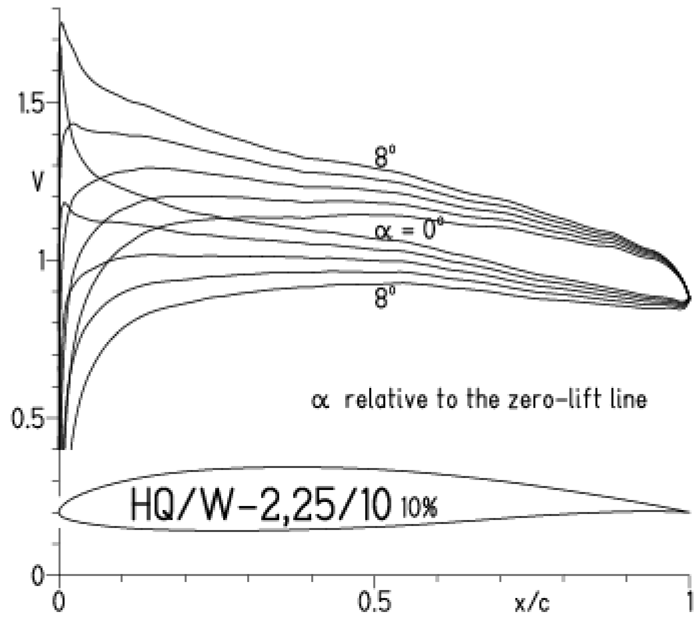


EPPLER 2005 V.

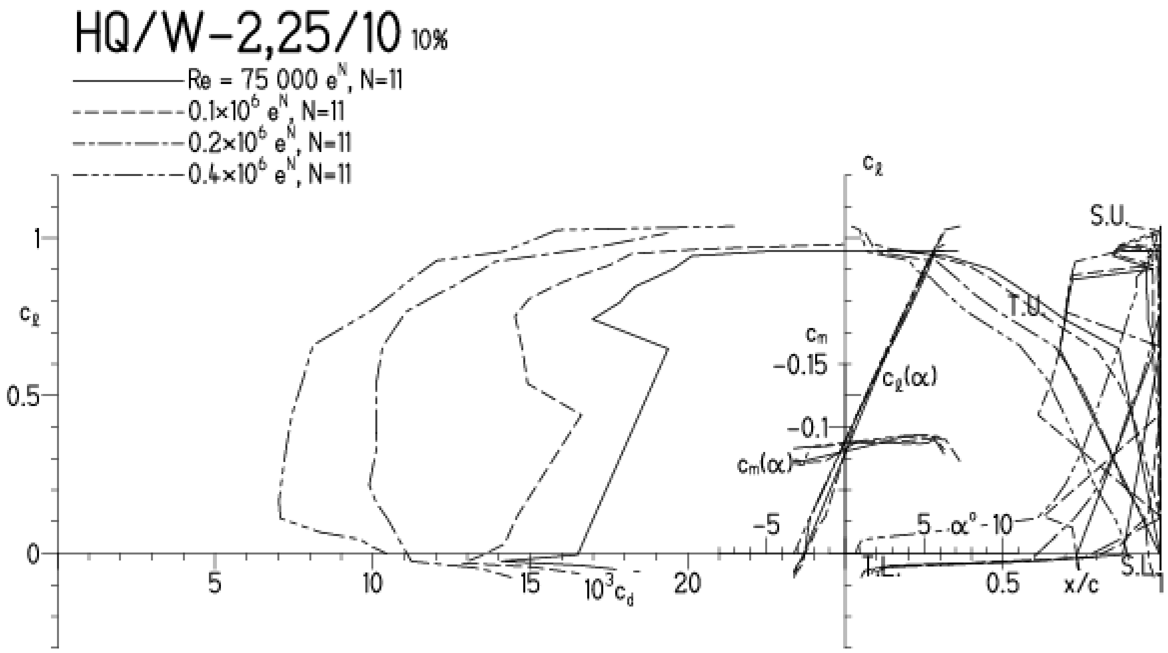


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

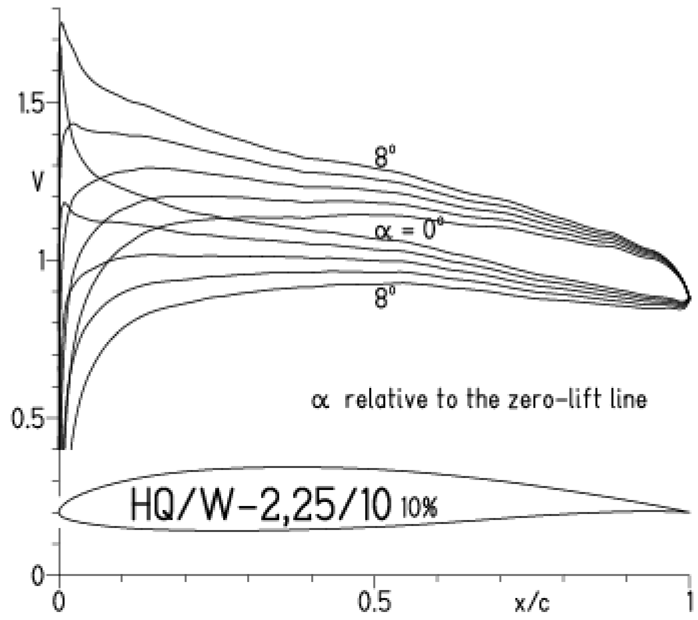


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

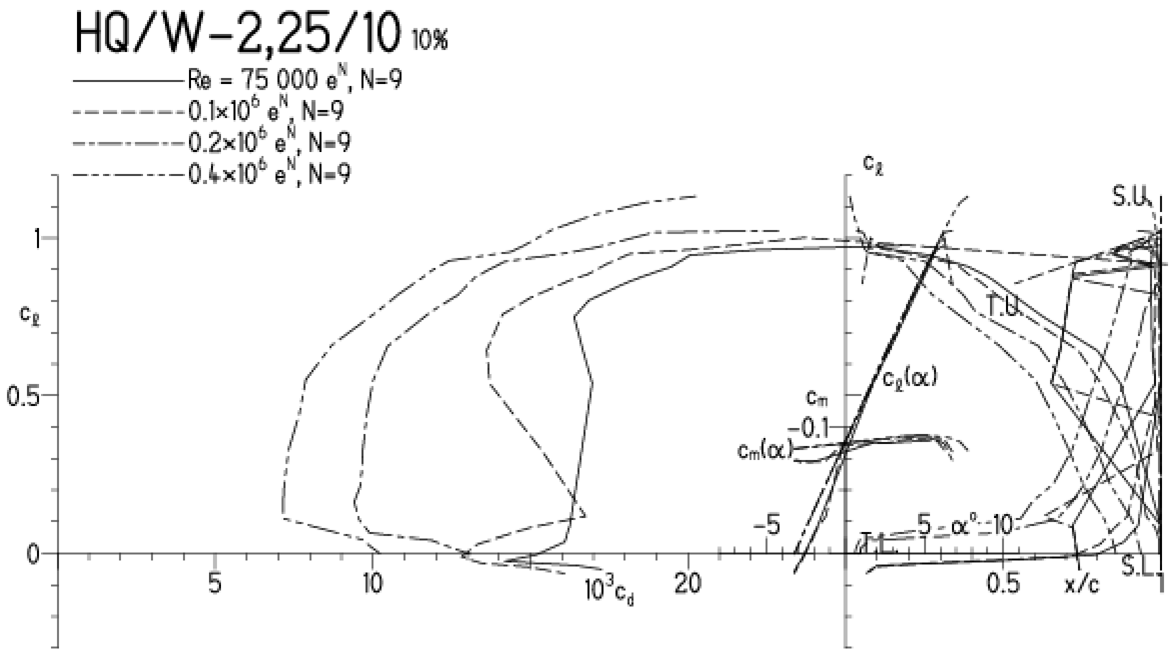


HQ/W-2,25/10, N=9

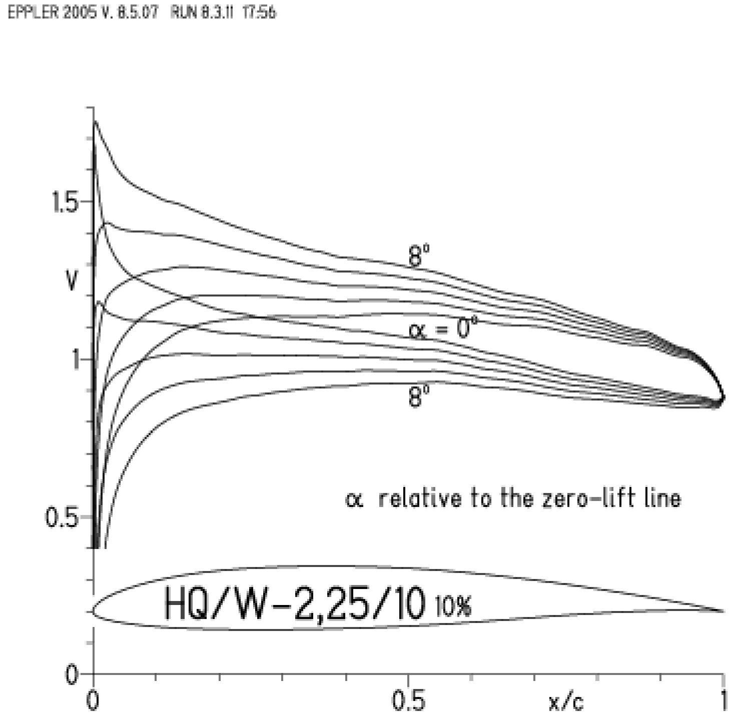
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

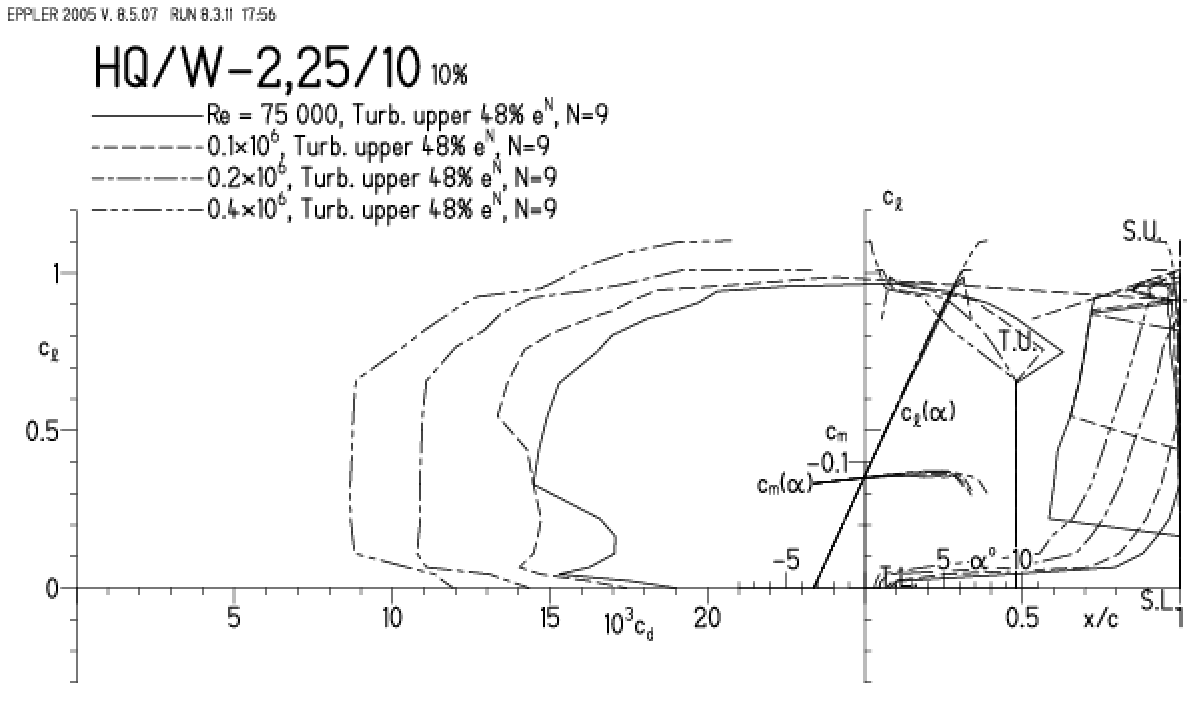


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

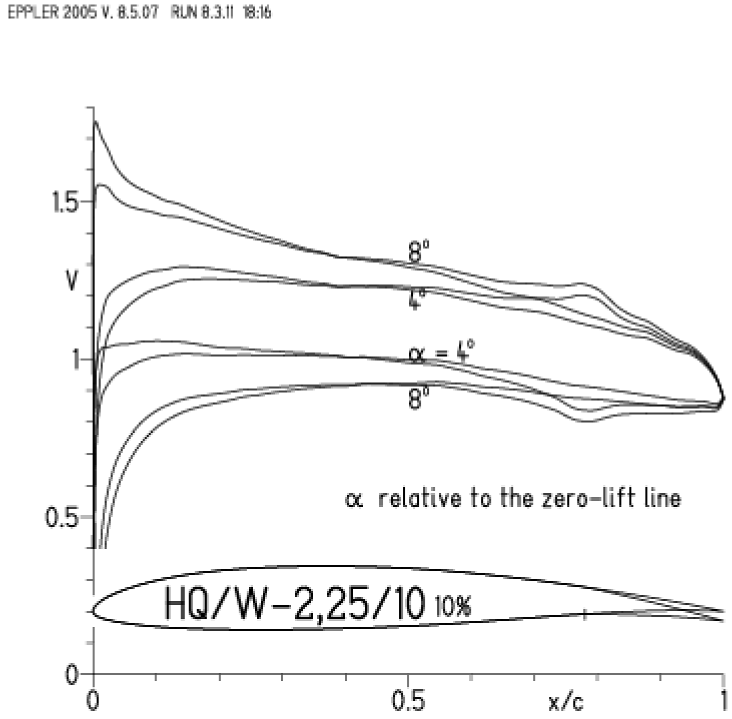


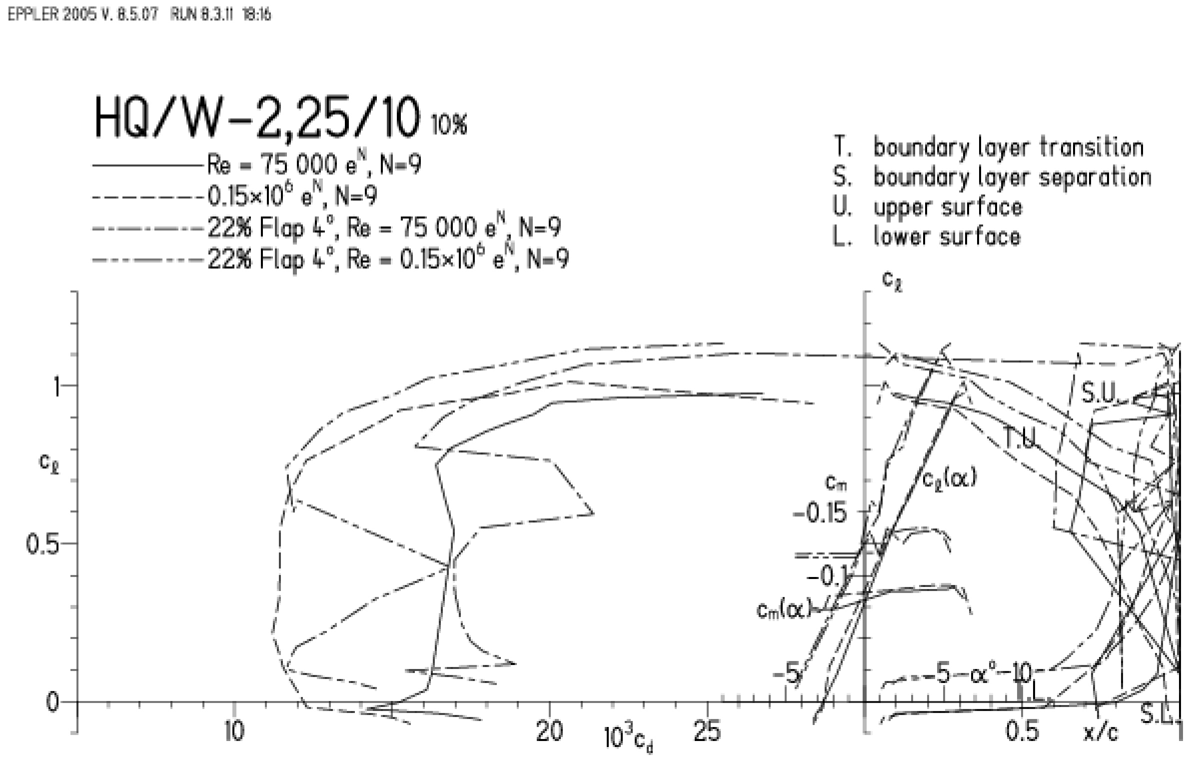
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



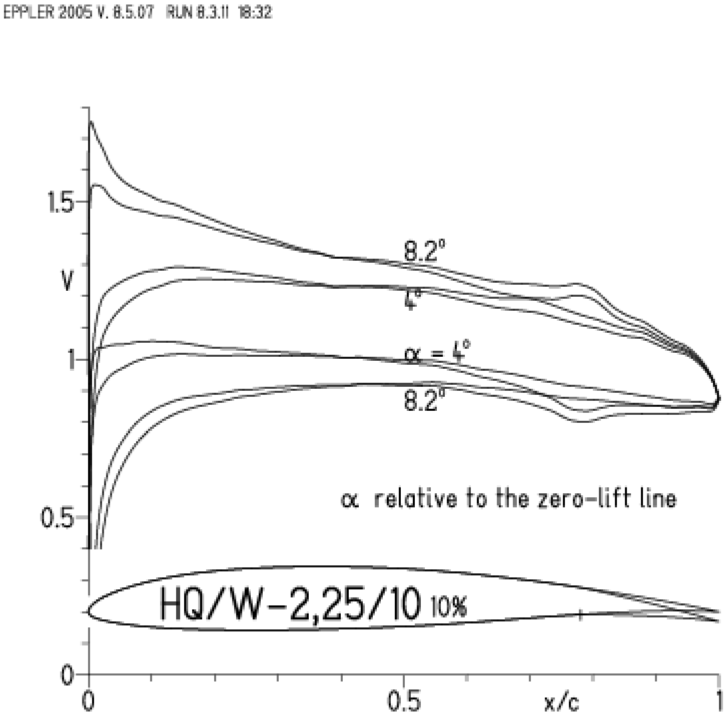


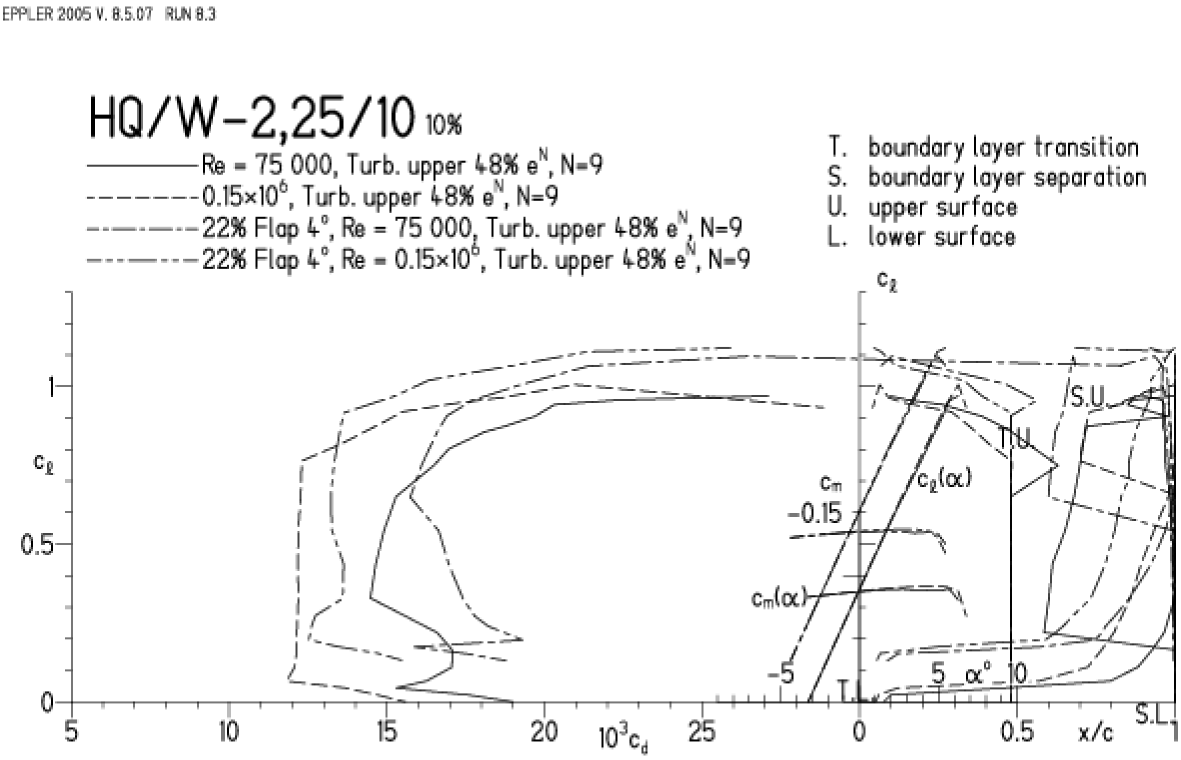
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag



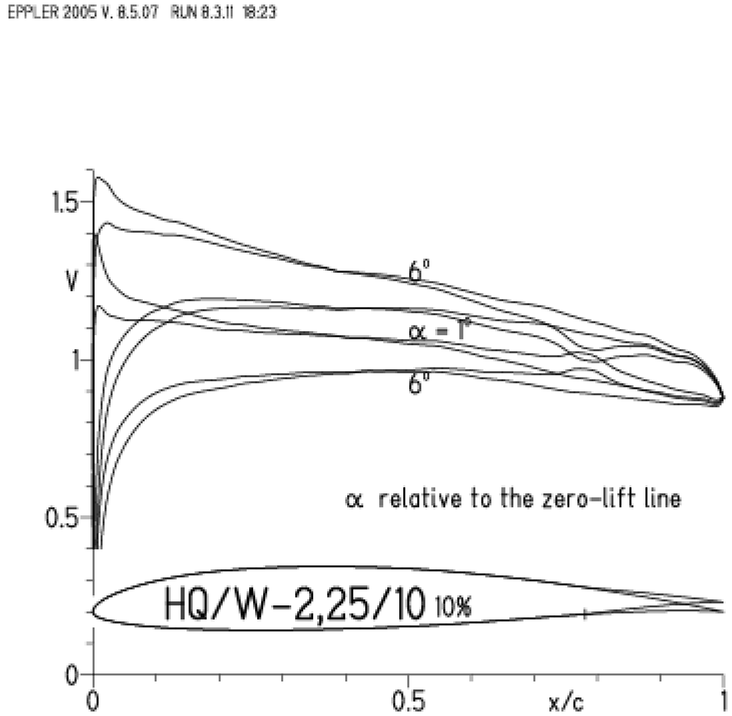


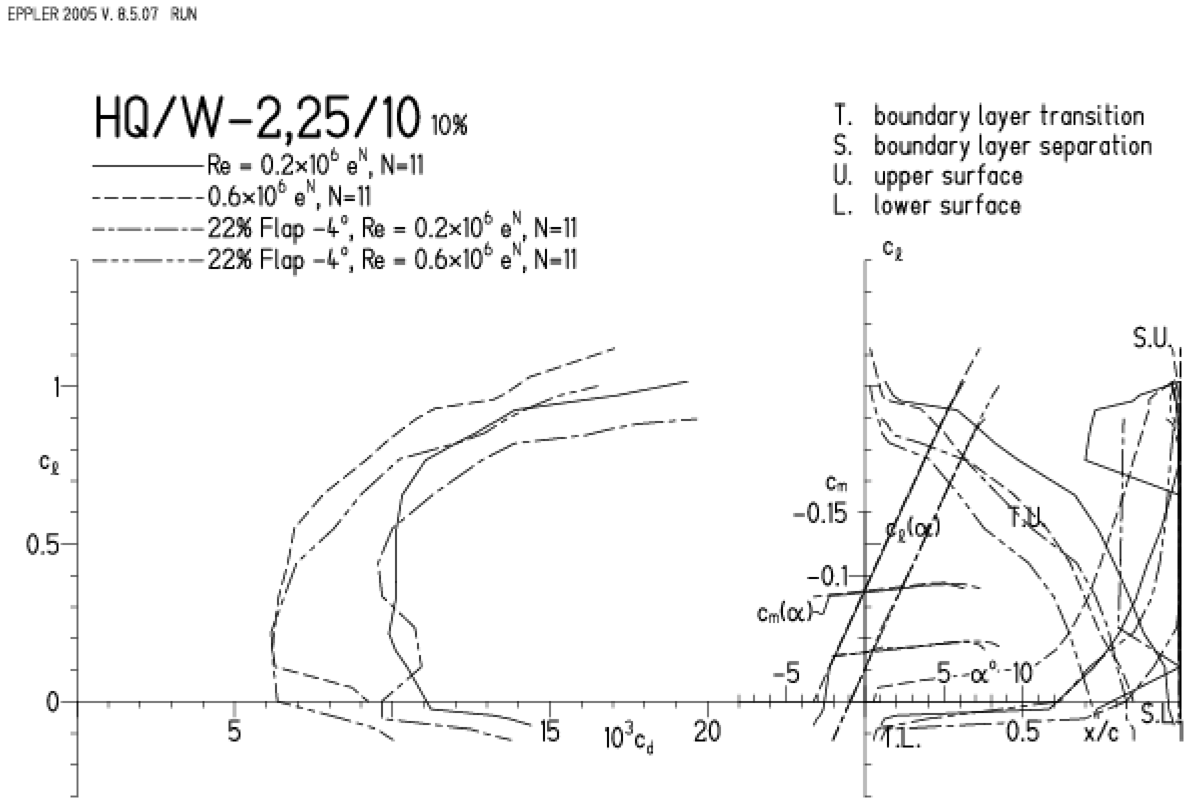
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt





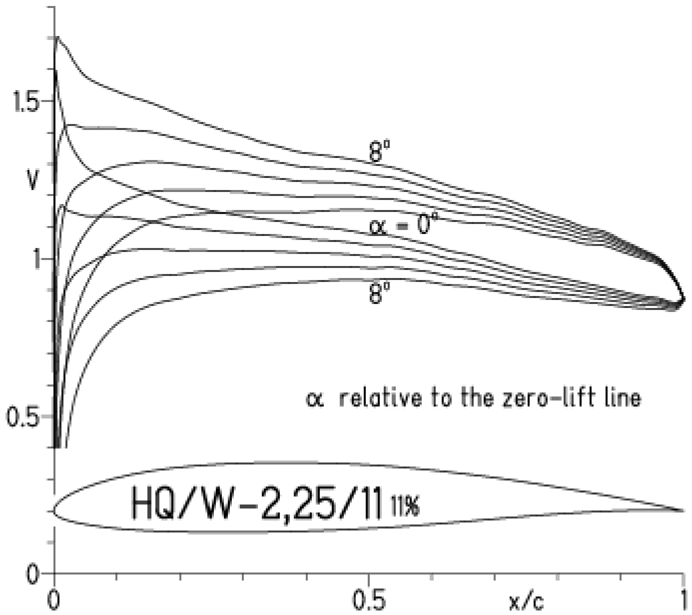
<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag



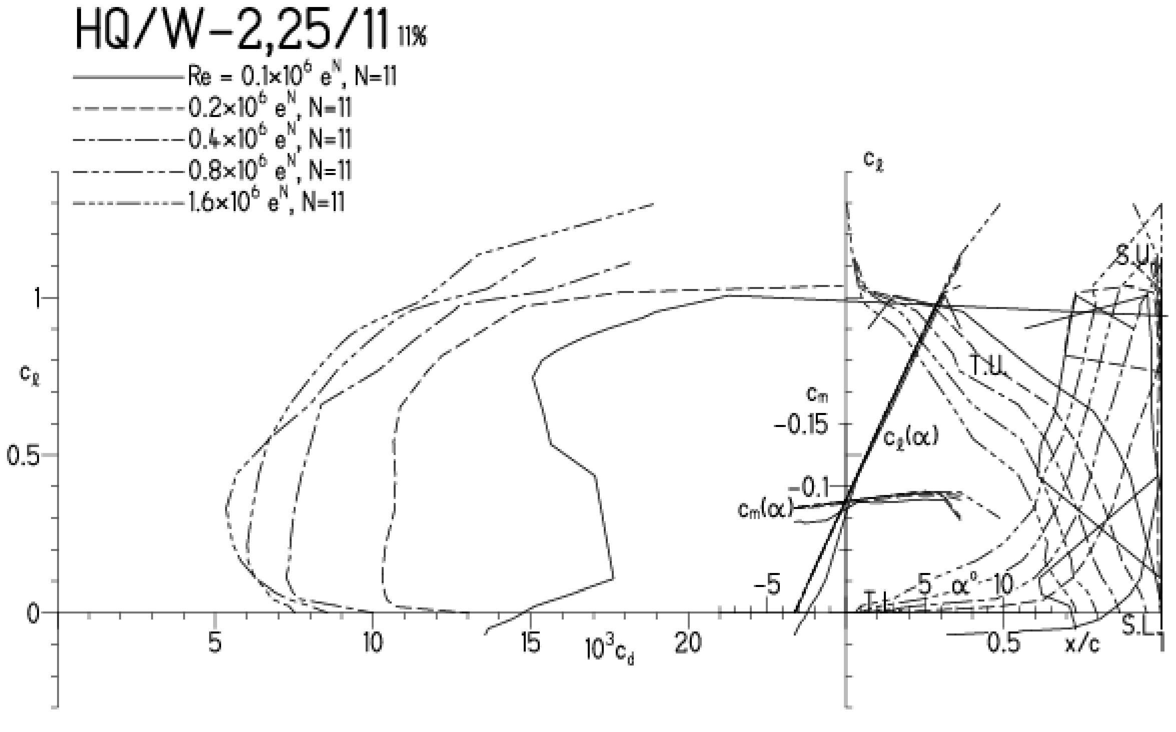


HQ/W-2,25/11, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

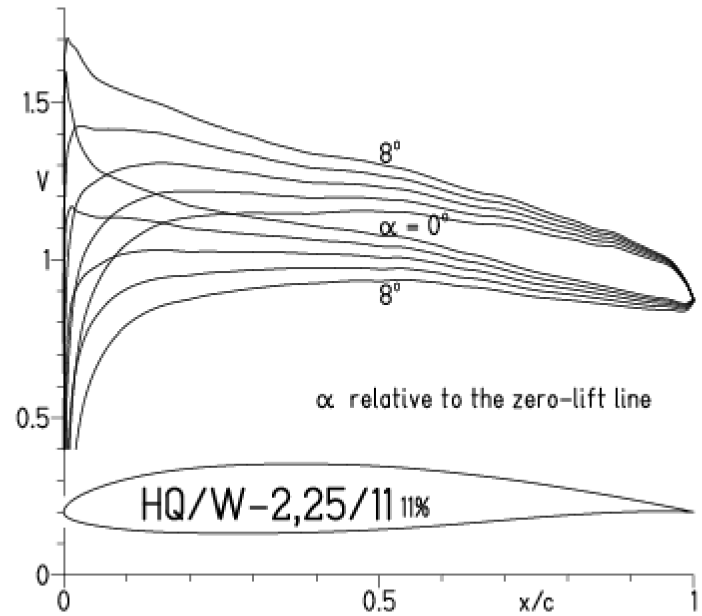


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

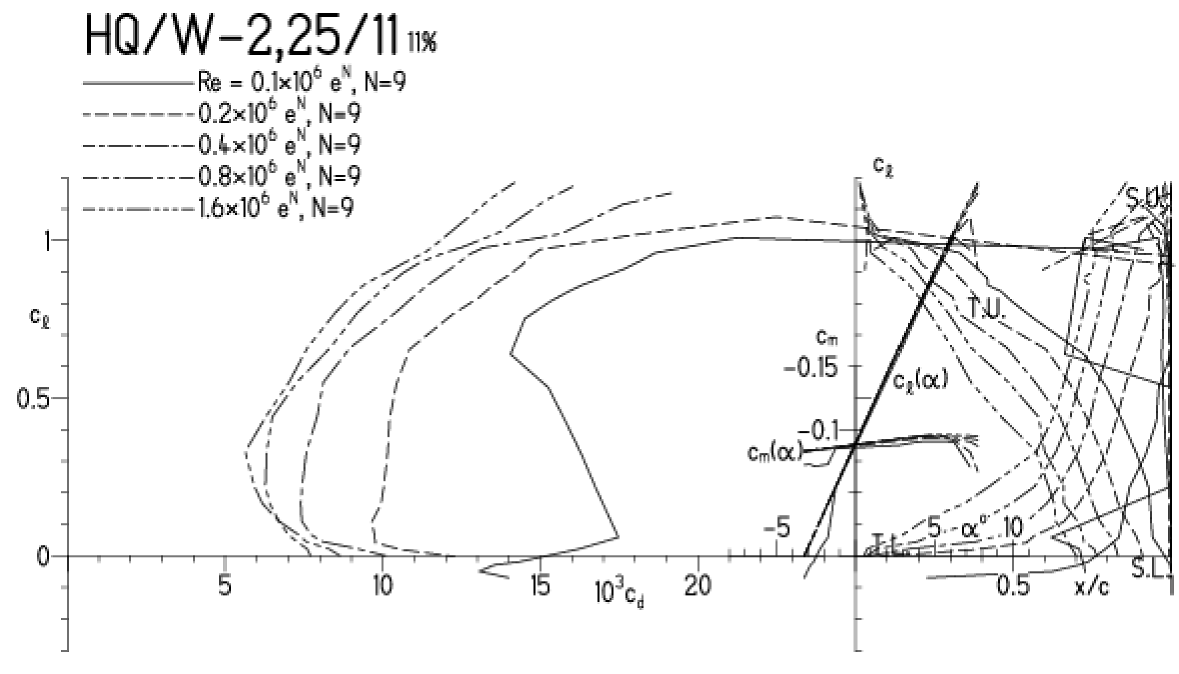


<u>HQQ/W-2,25/11</u>, N=9

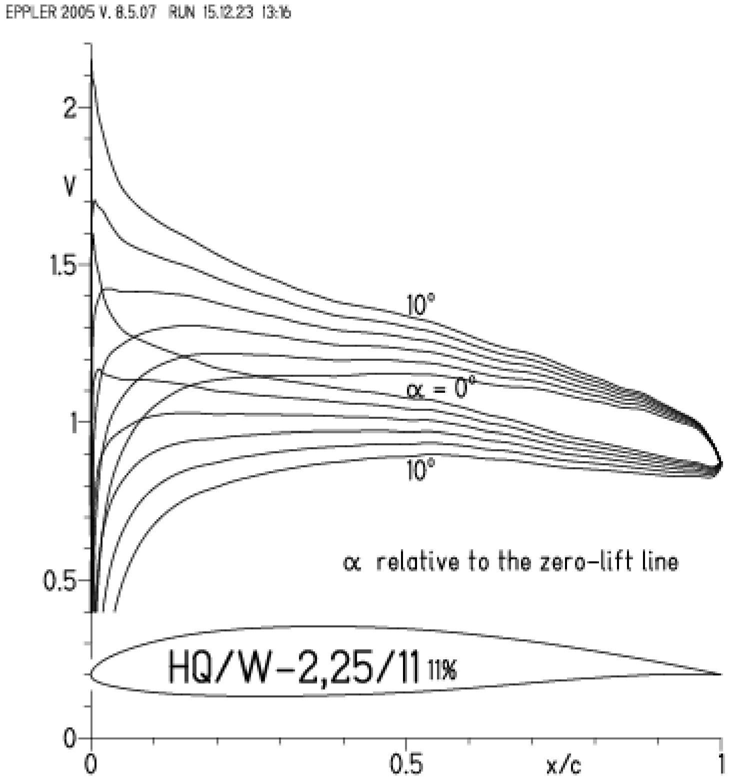
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

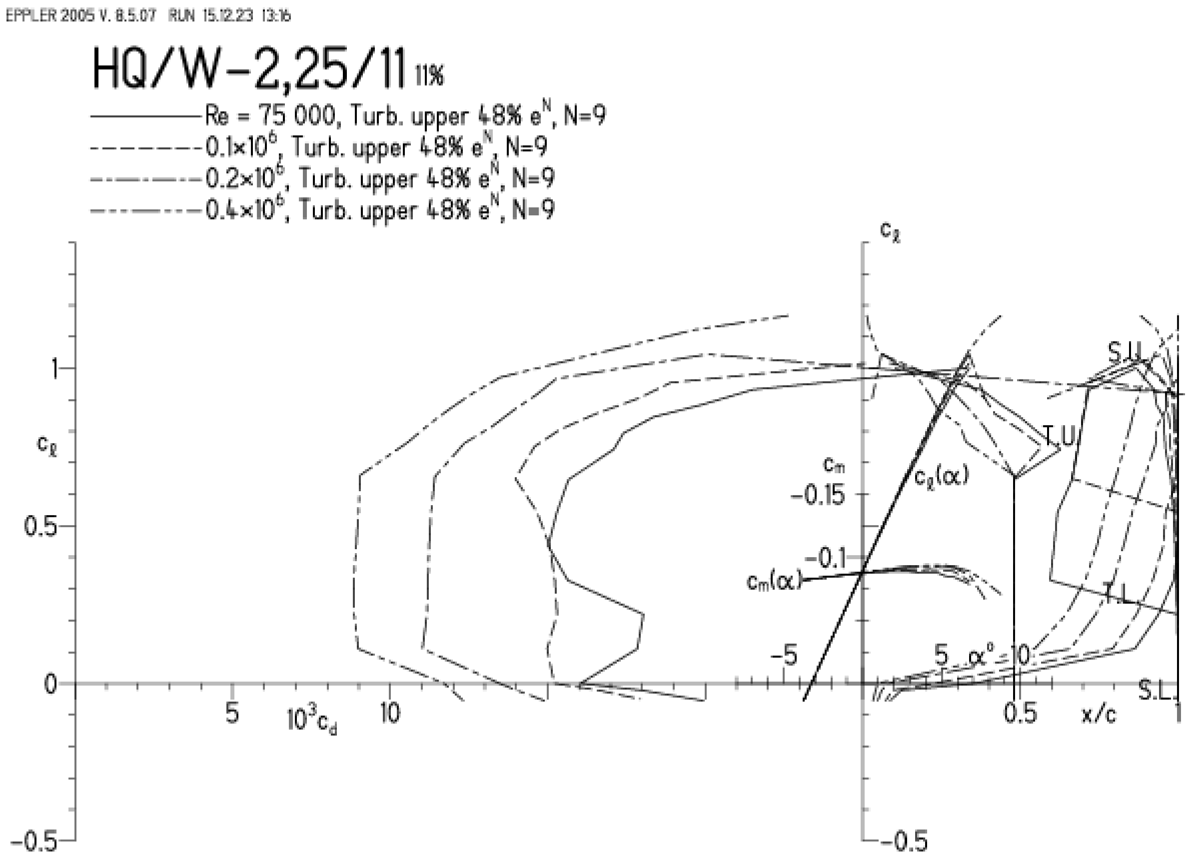


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



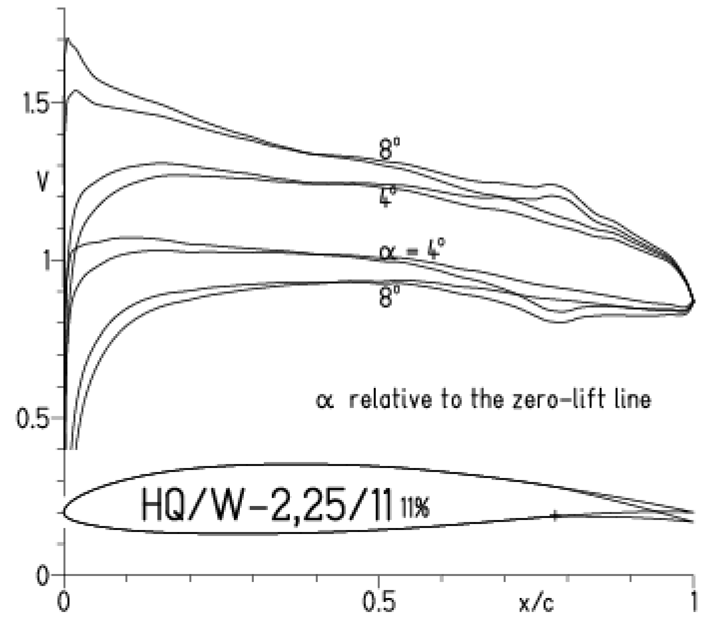
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



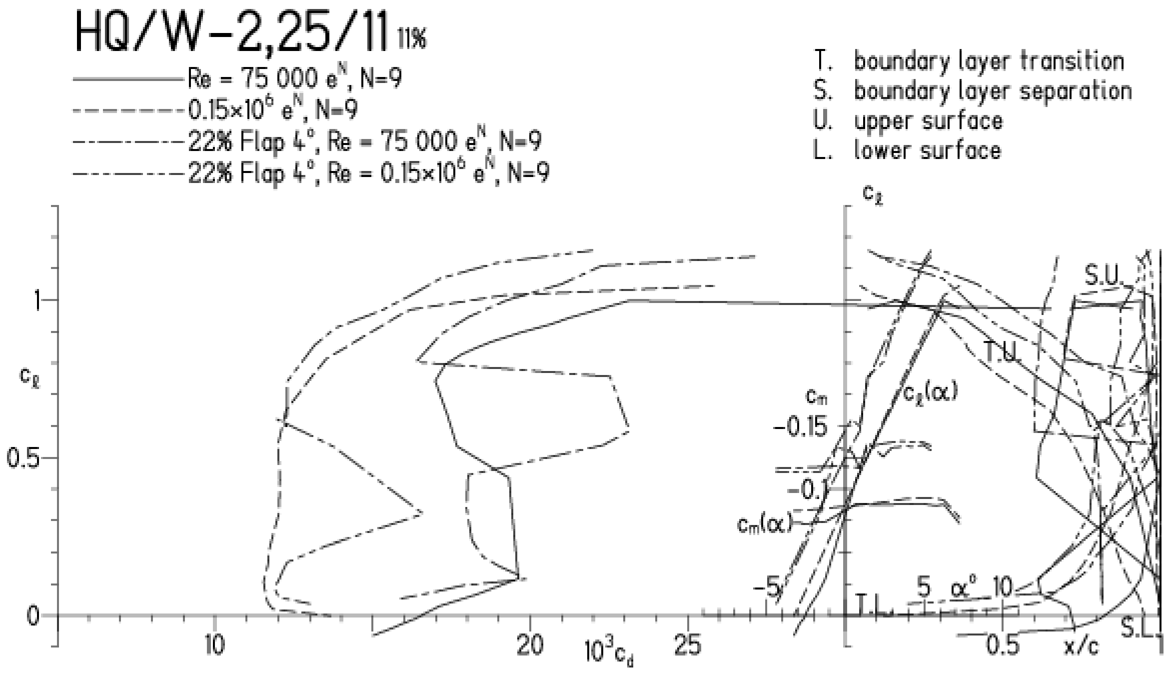


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

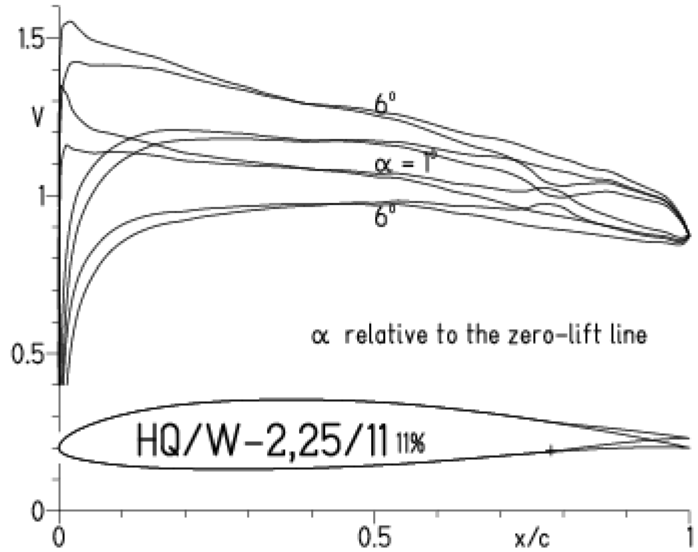


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

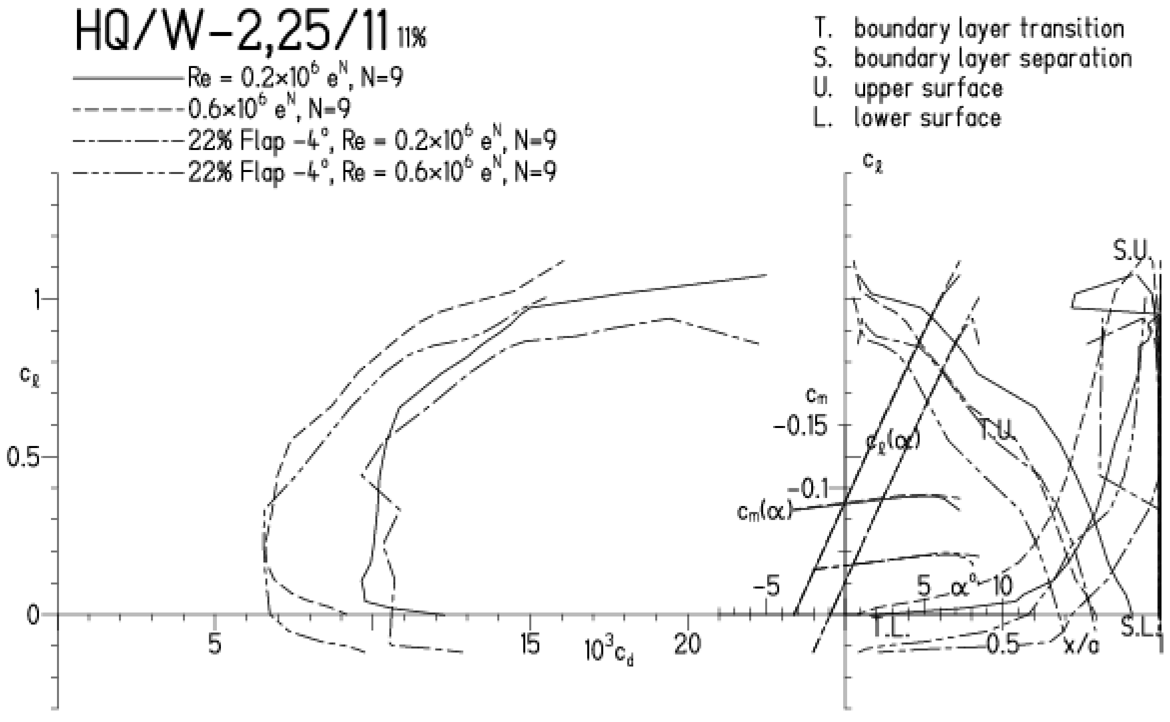


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

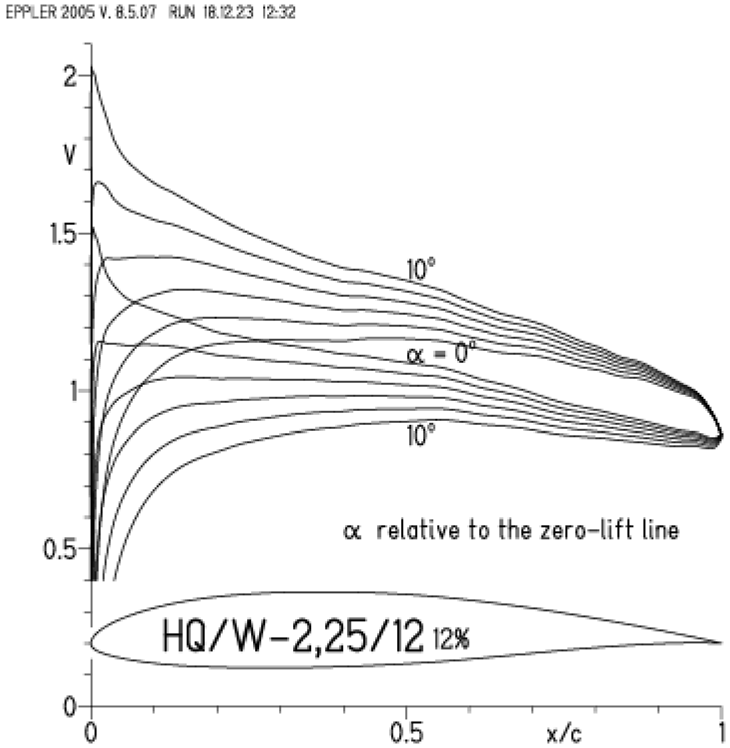
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

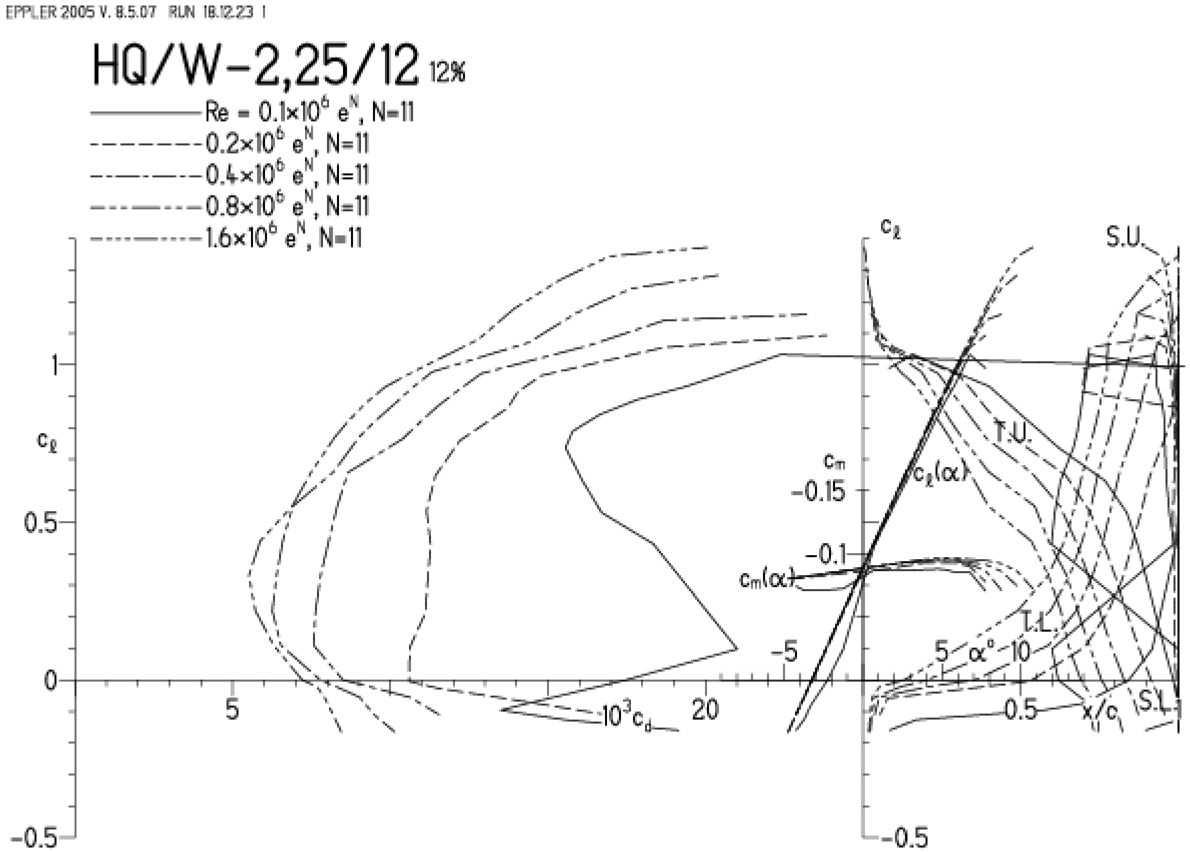


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

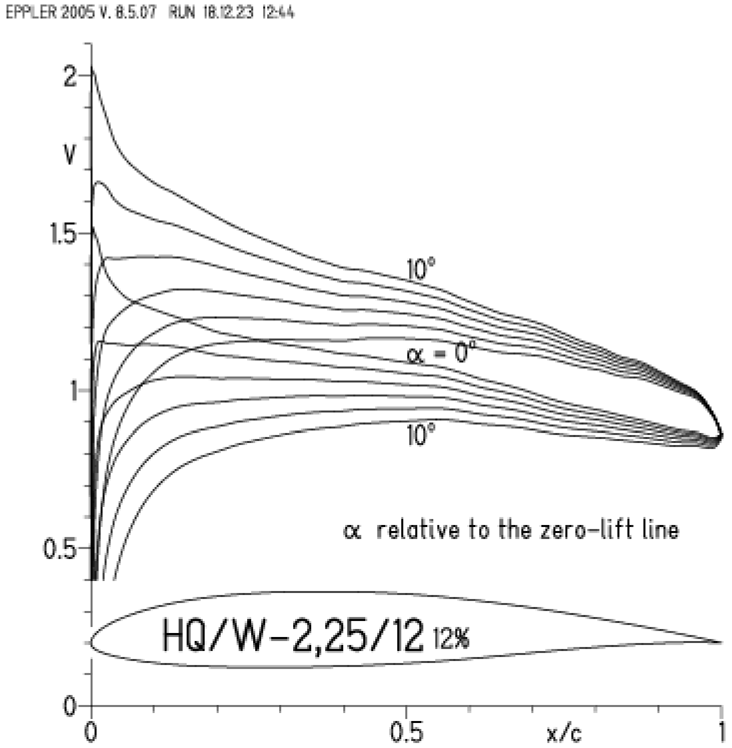


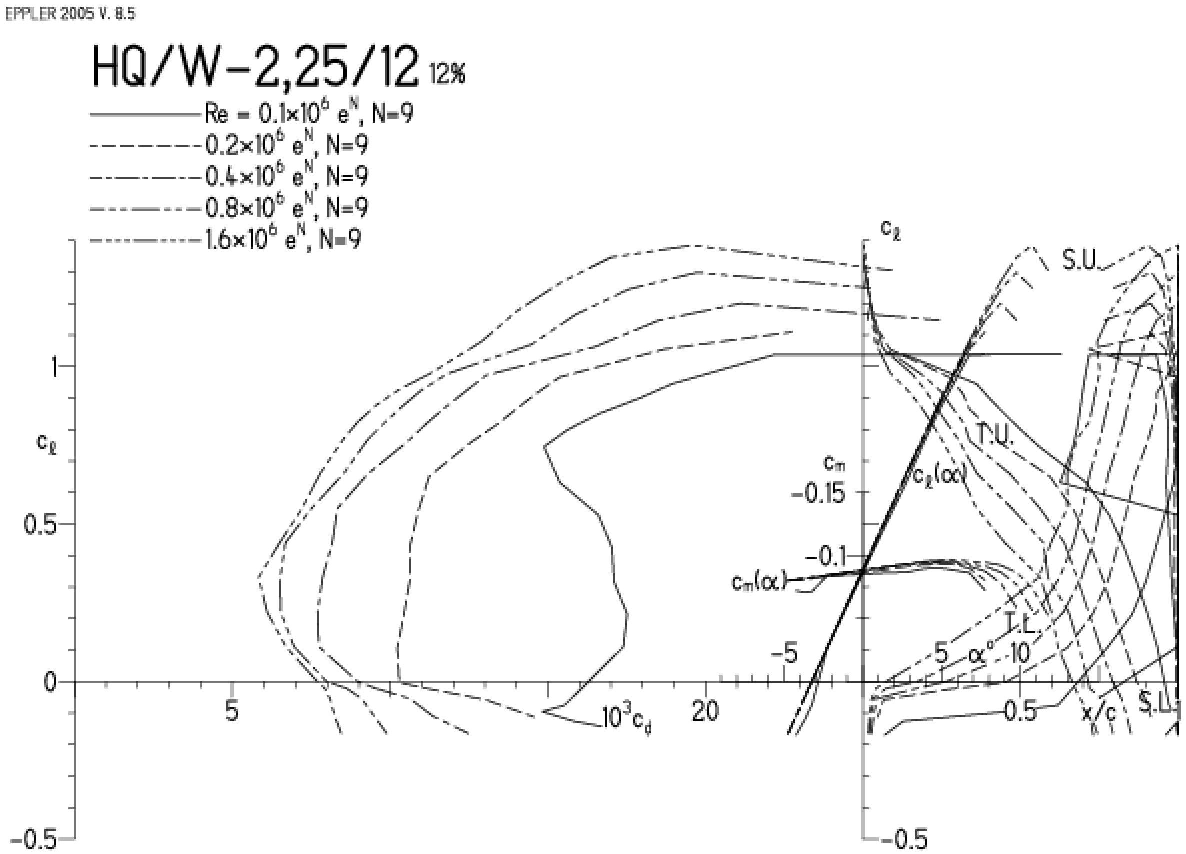
<u>HQ/W-2,25/12</u>, N=11



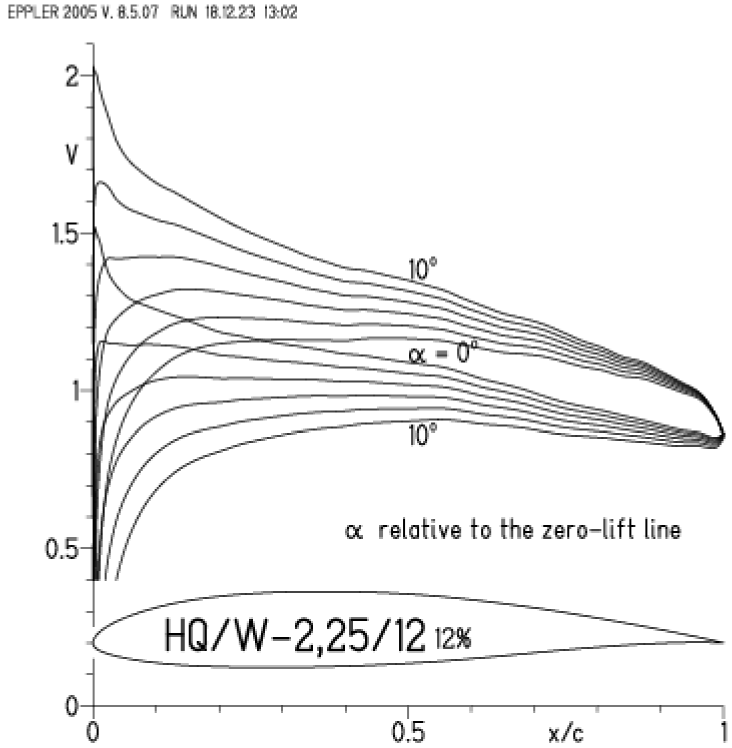


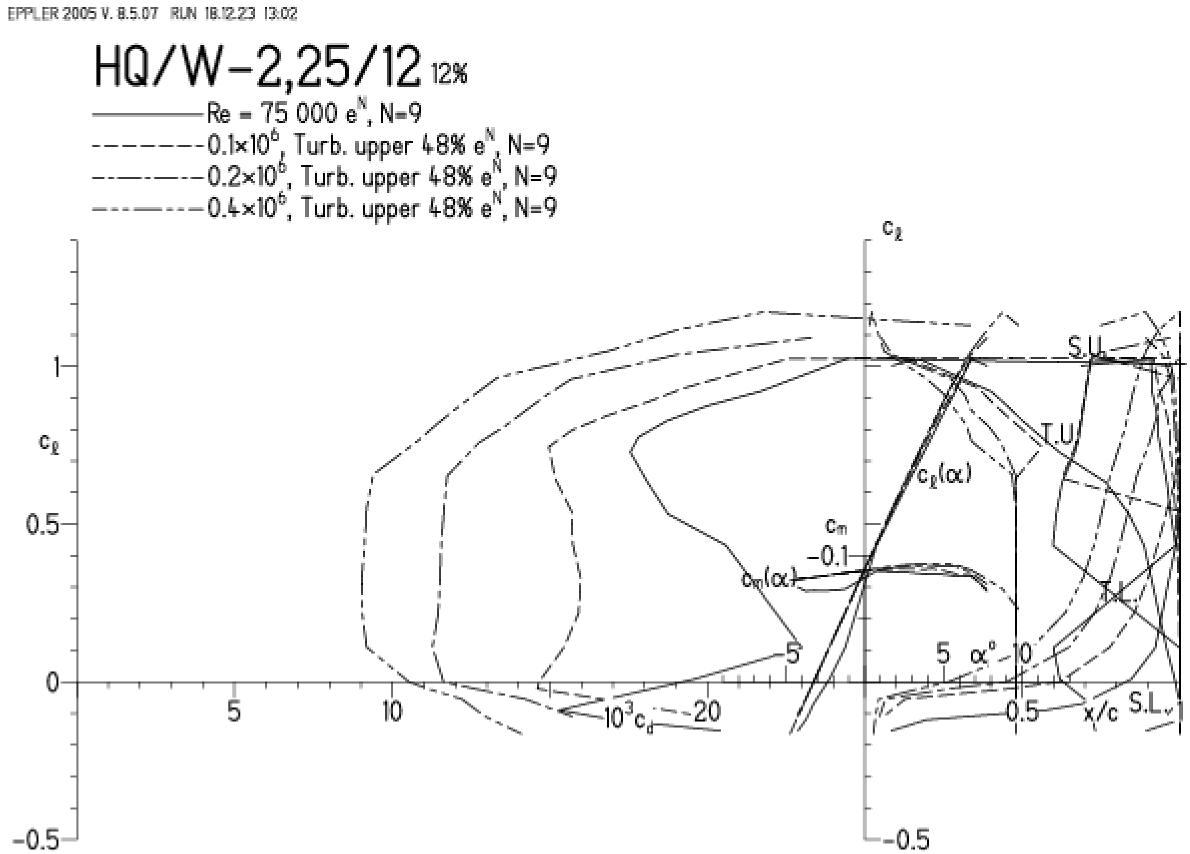
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
c_ℓ
c_m
$c_\ell(\alpha)$
$c_m(\alpha)$
$10^3 c_d$
S.U.
T.U.
T.L.
S.L.
α°
x/c

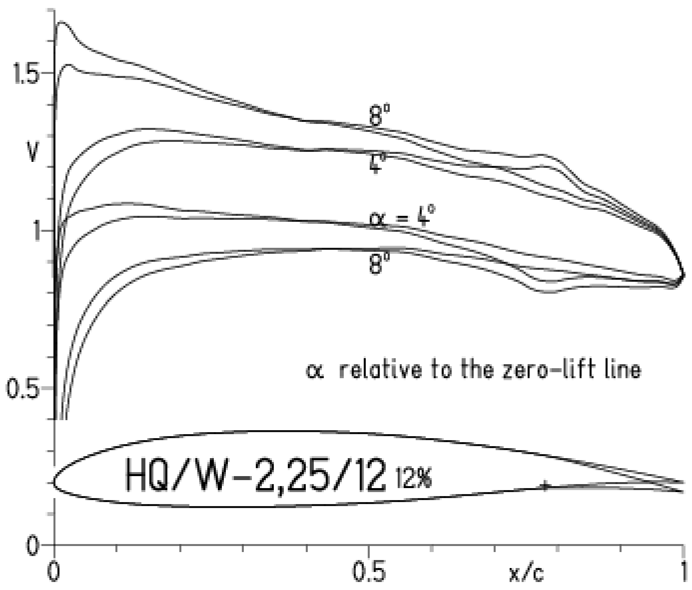
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



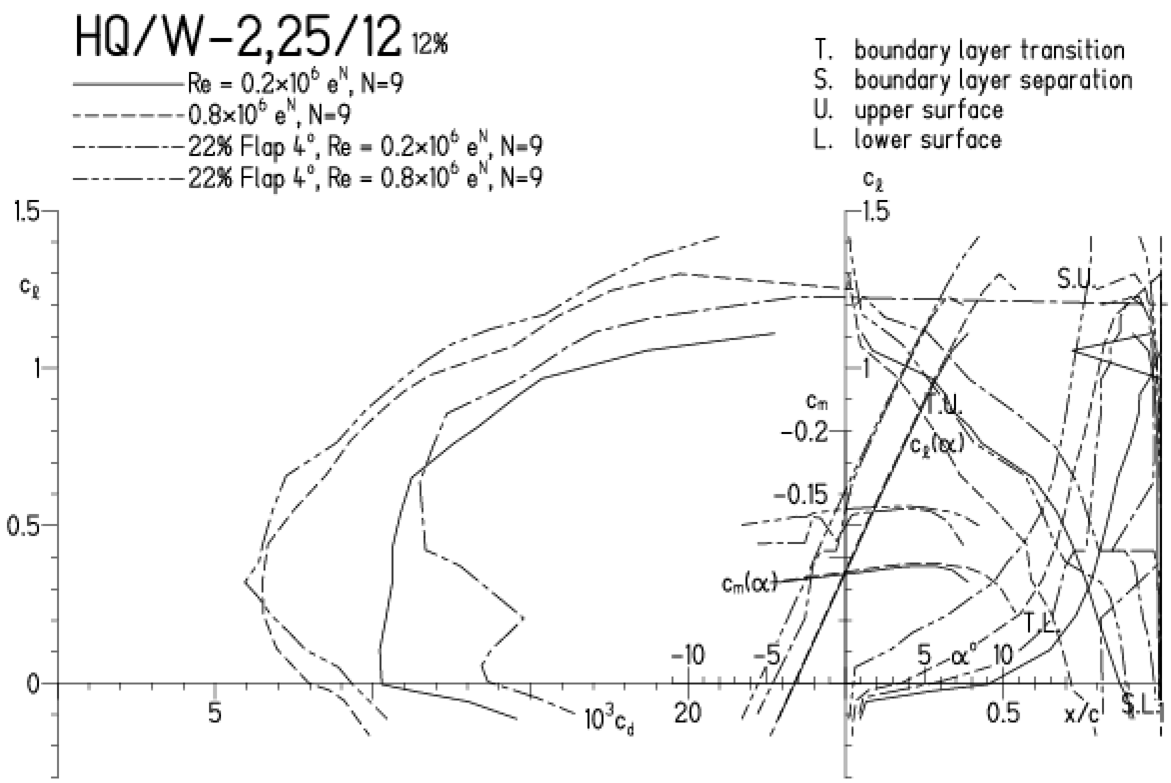


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

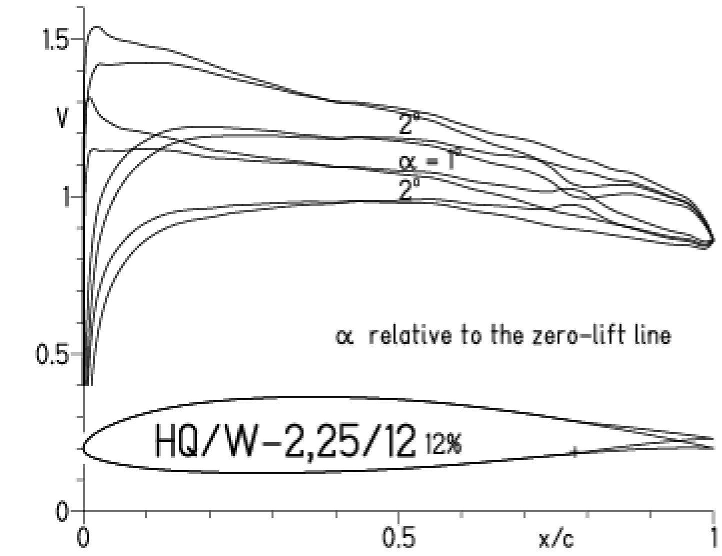


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

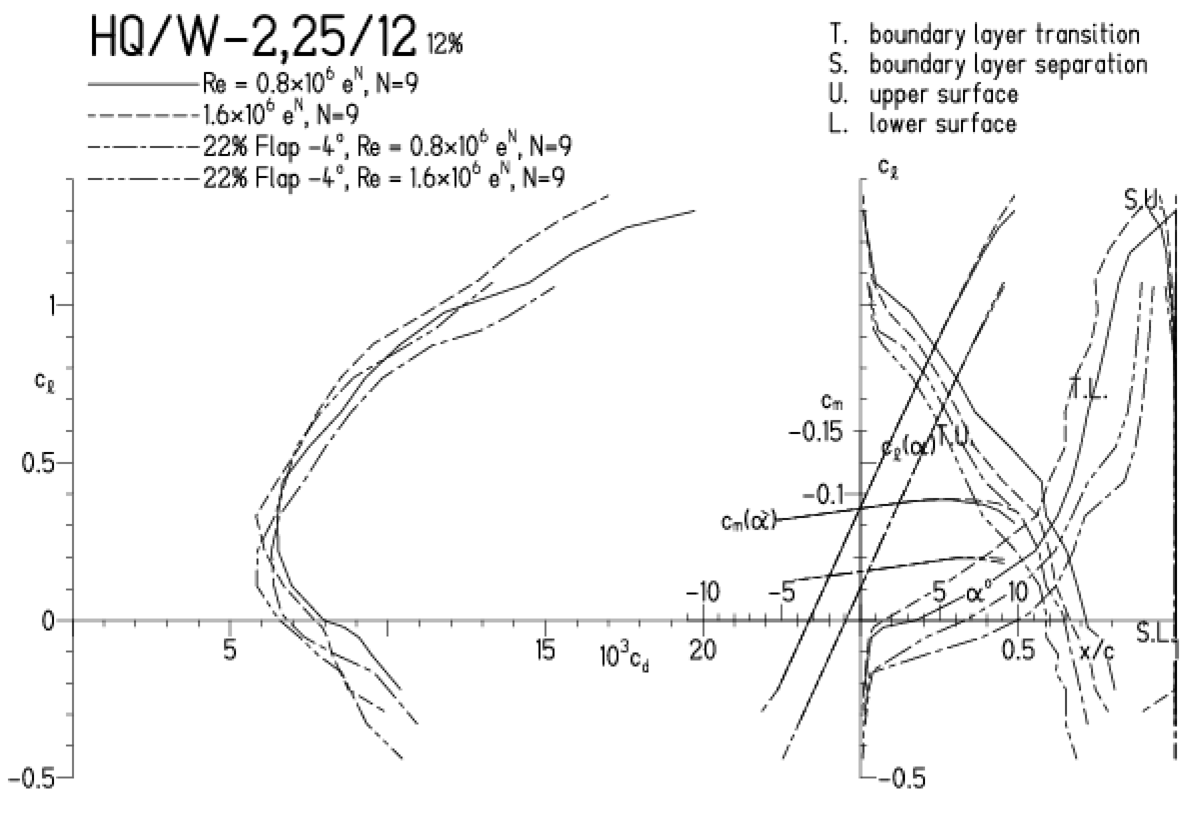


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

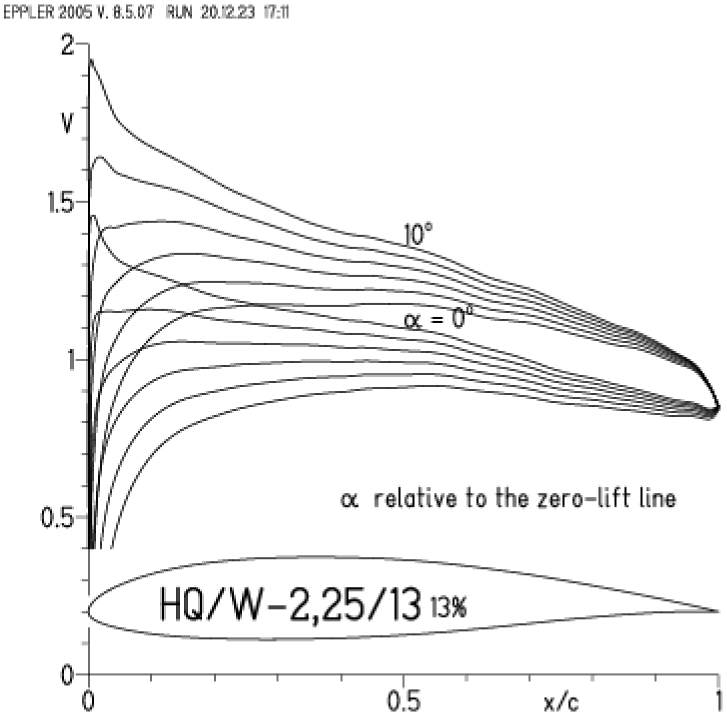
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

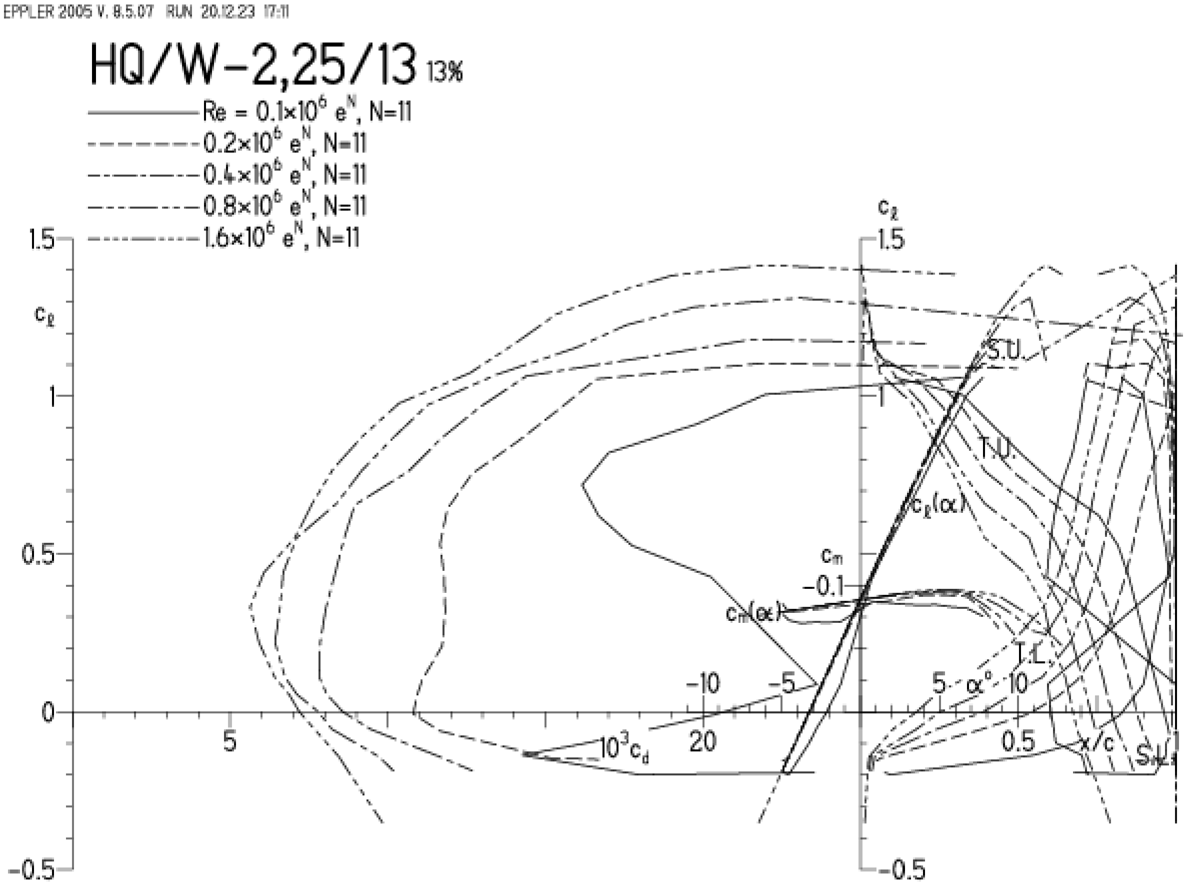


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

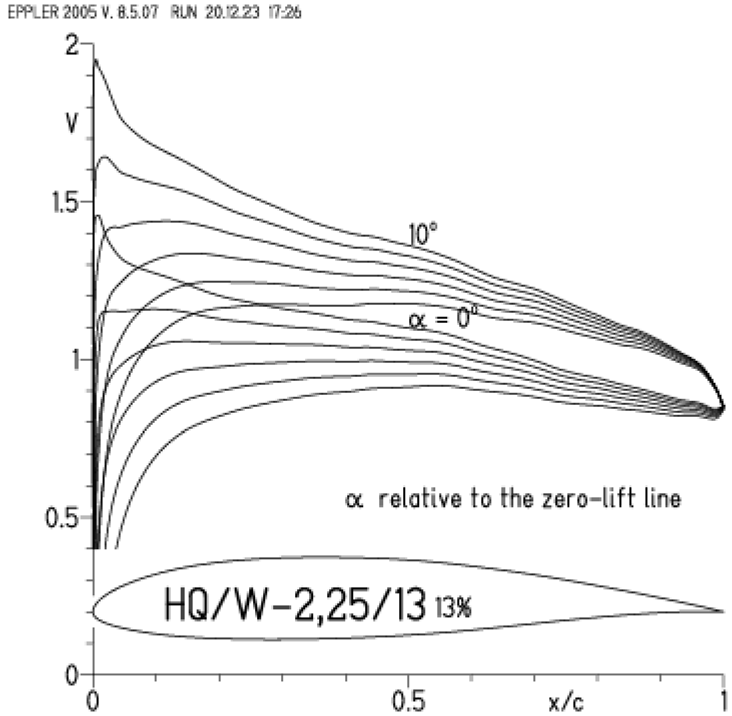


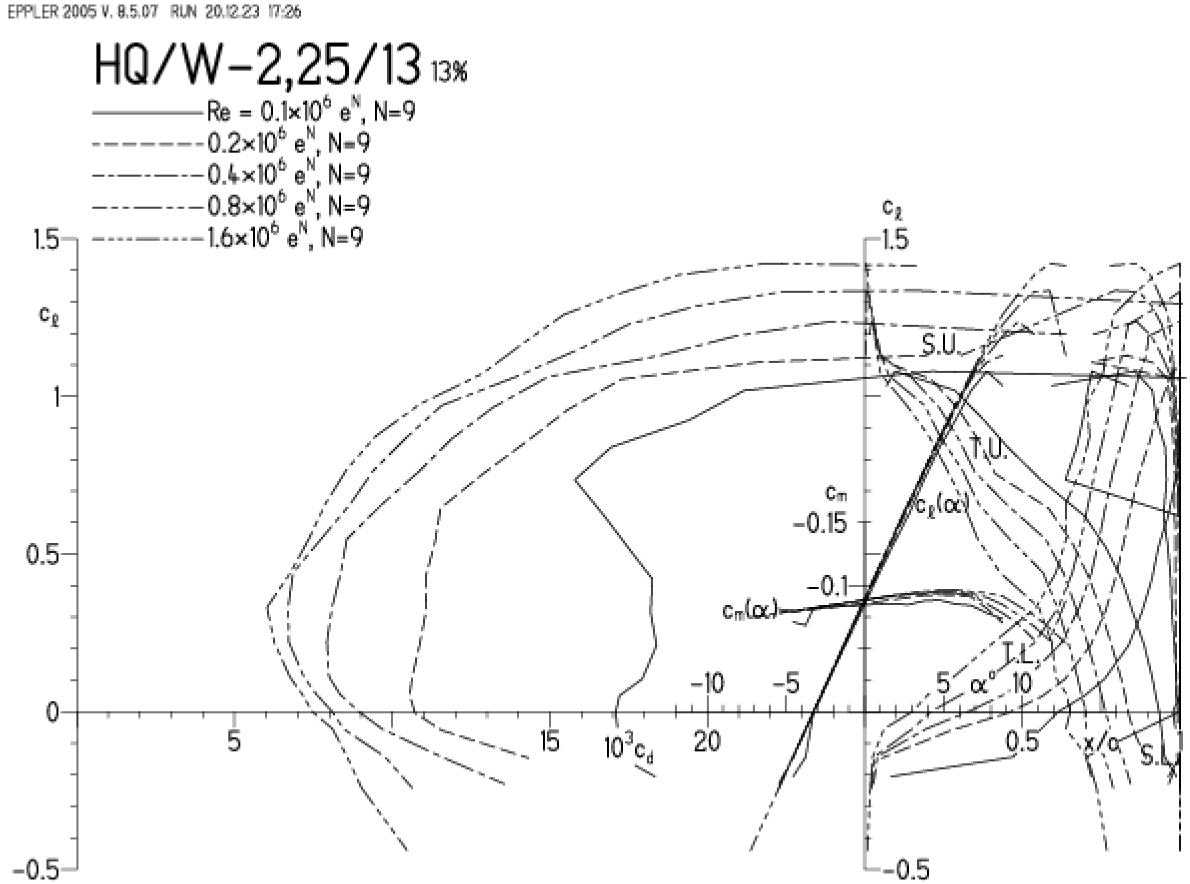
<u>HQ/W-2,25/13</u>, N=11



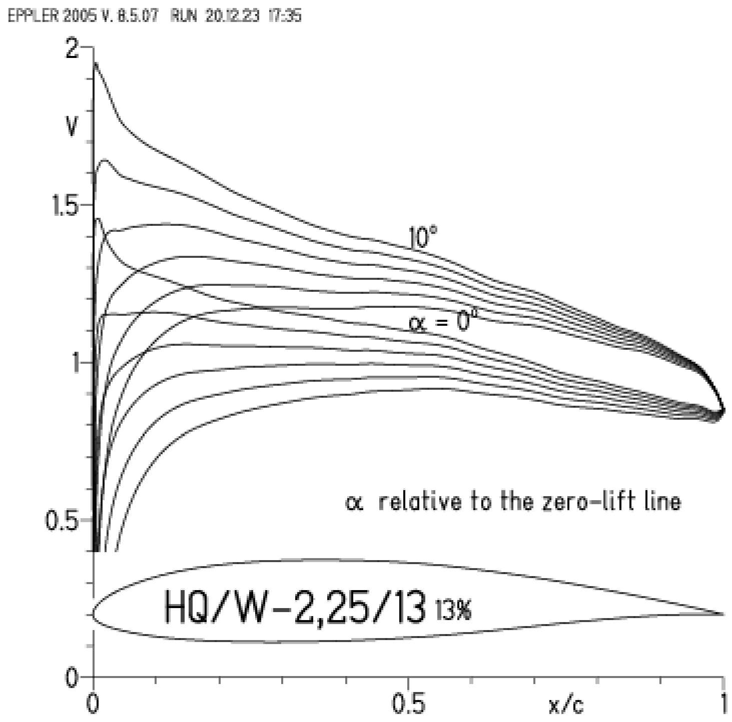


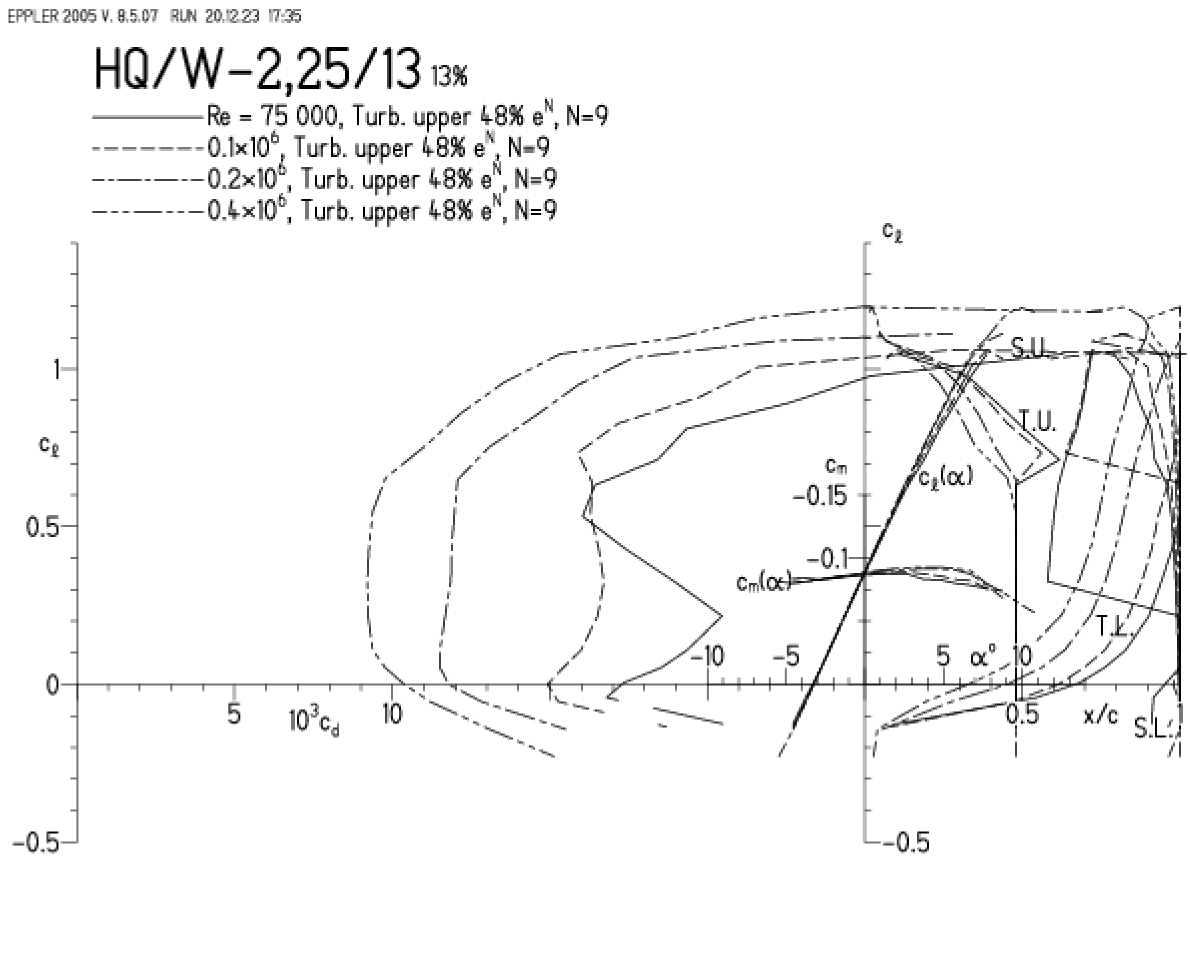
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
2
1.5
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
1
0.5
0
-0.5
5
15
10^3 c_d
20
-10
-5
5
α°
10
c_m
-0.15
-0.1
c_m(α)
c_l(α)
S.U.
T.U.
T.L.
S.L.
0.5
x/c
-0.5

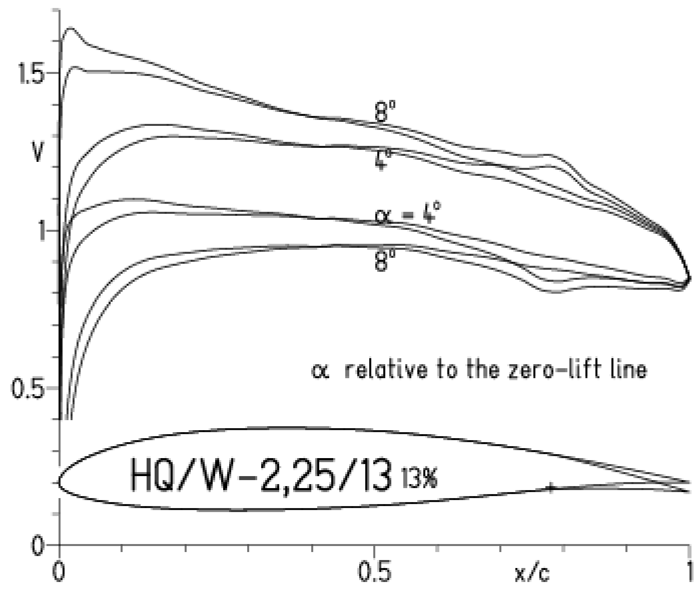
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



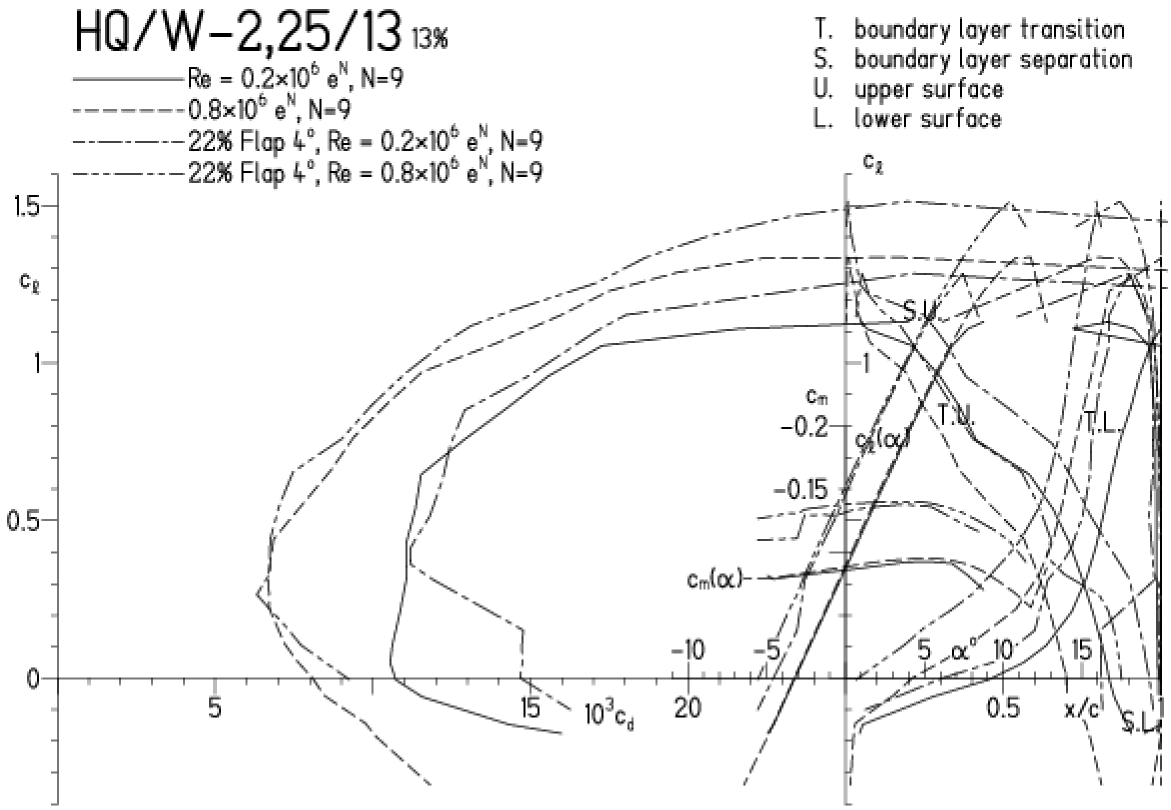


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

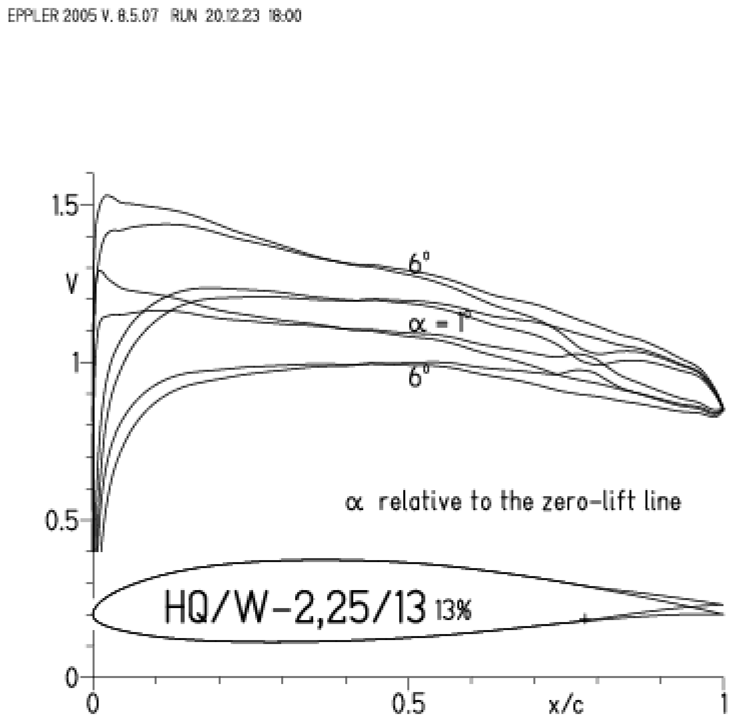
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

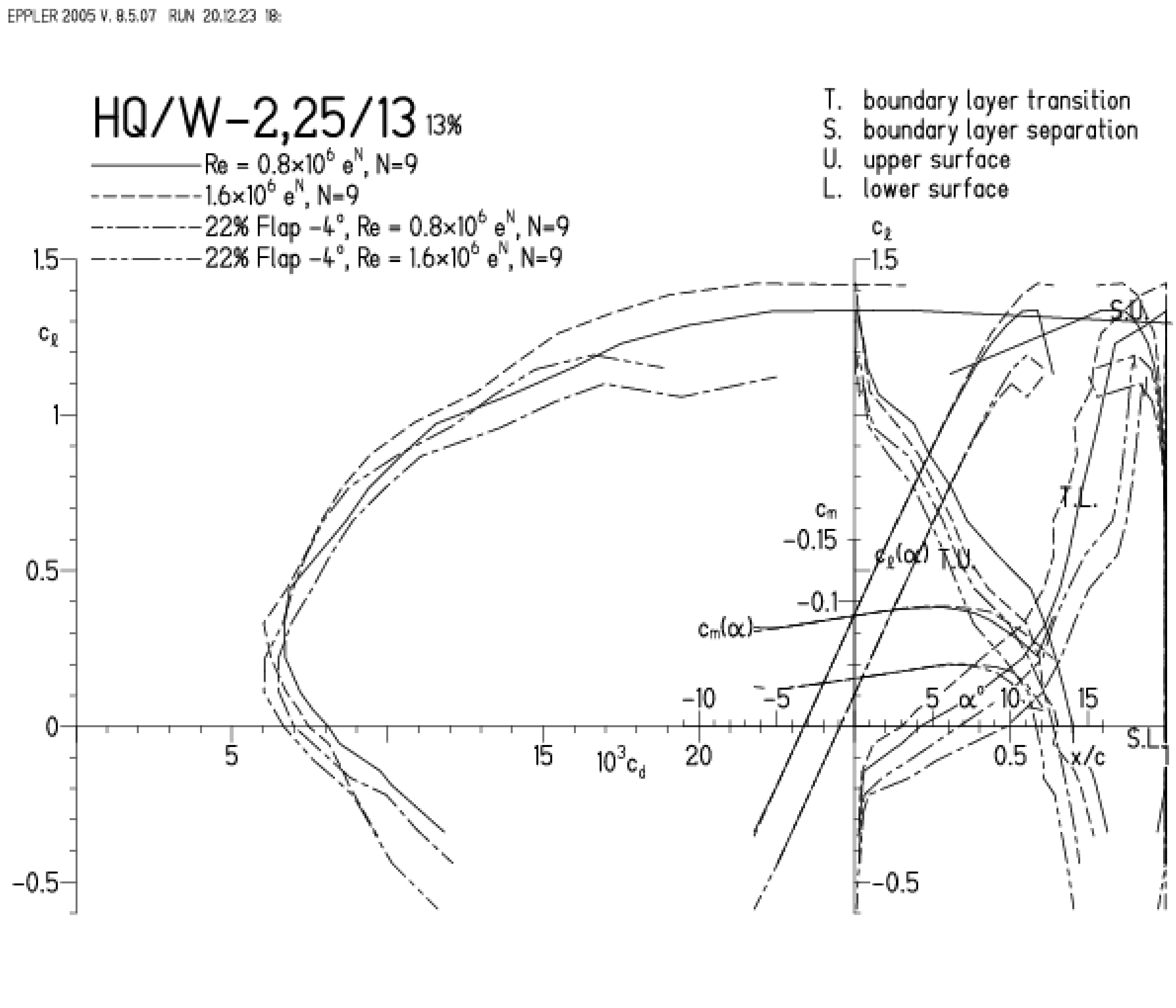


EPPLER 2005 V.

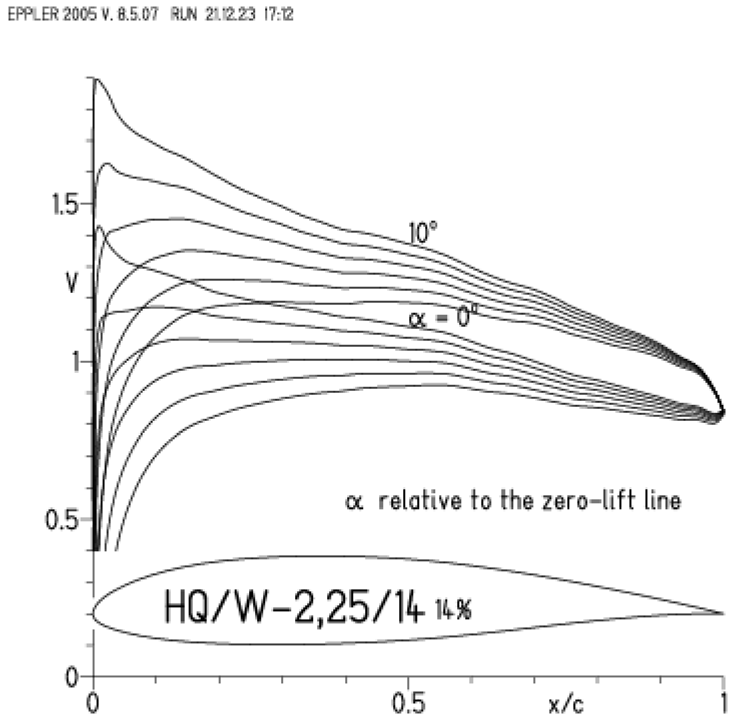


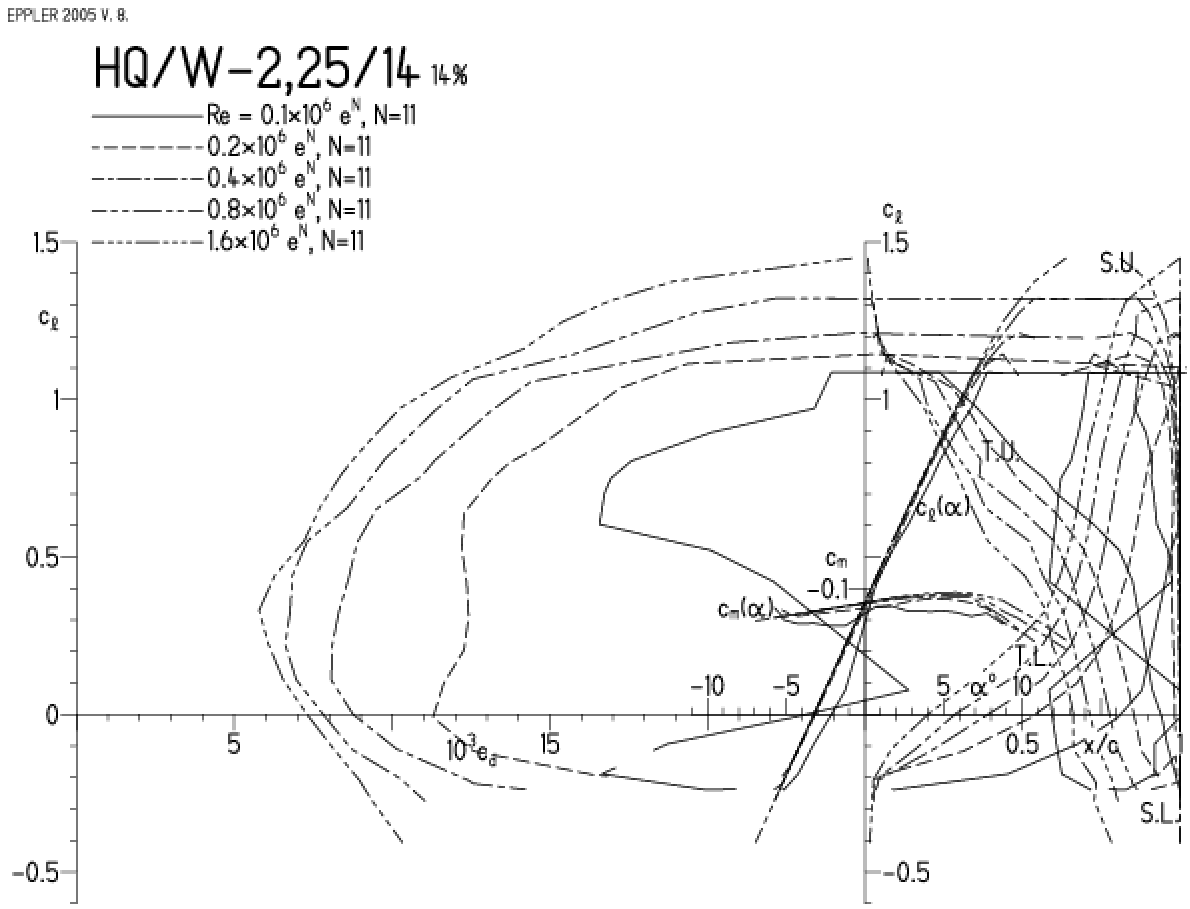
<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag





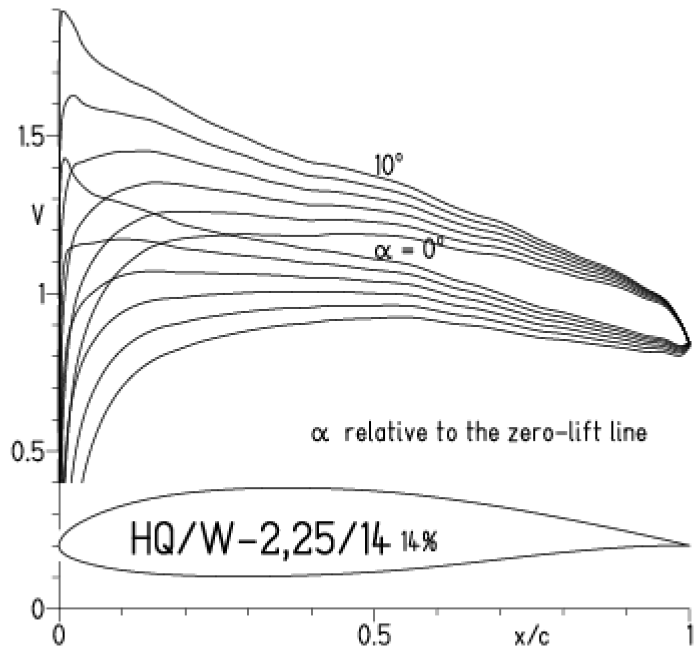
HQ/W-2,25/14, N=11



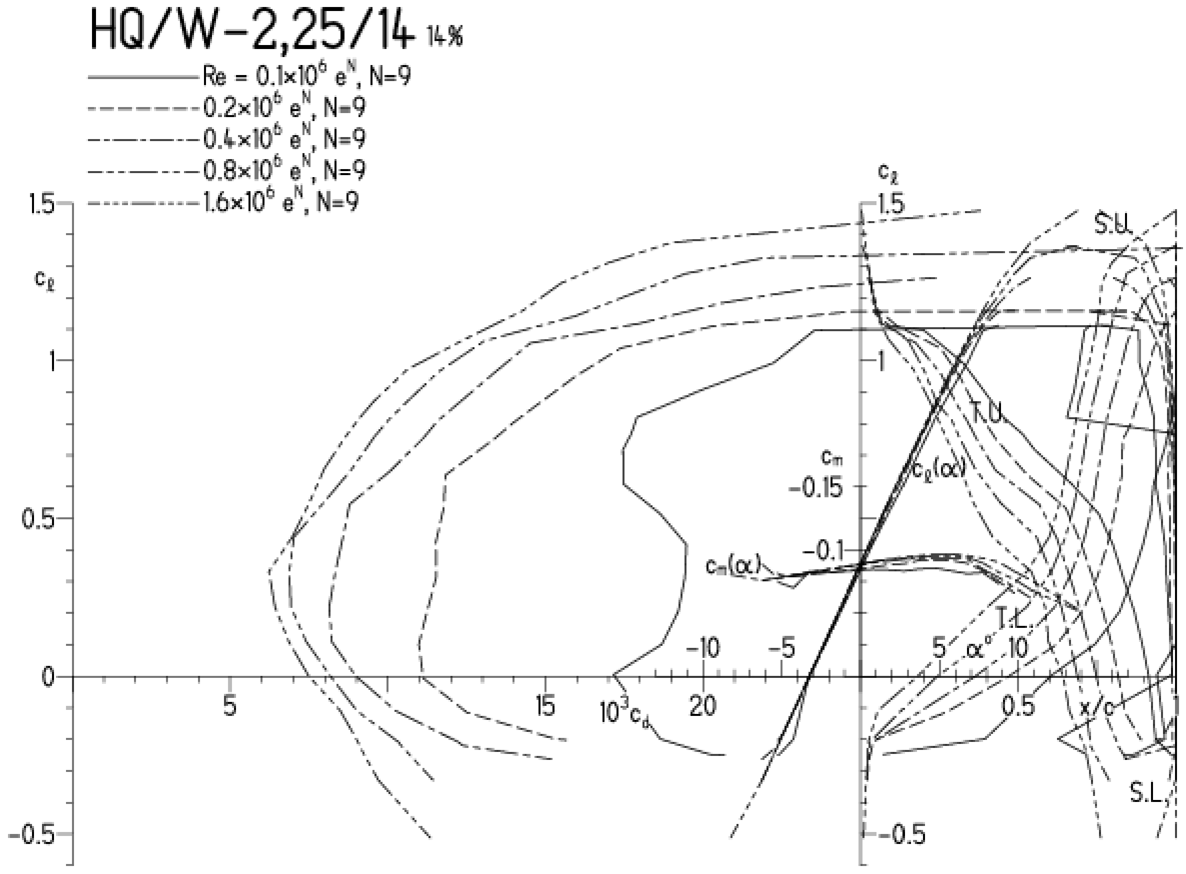


HQ/W-2,25/14, N=9

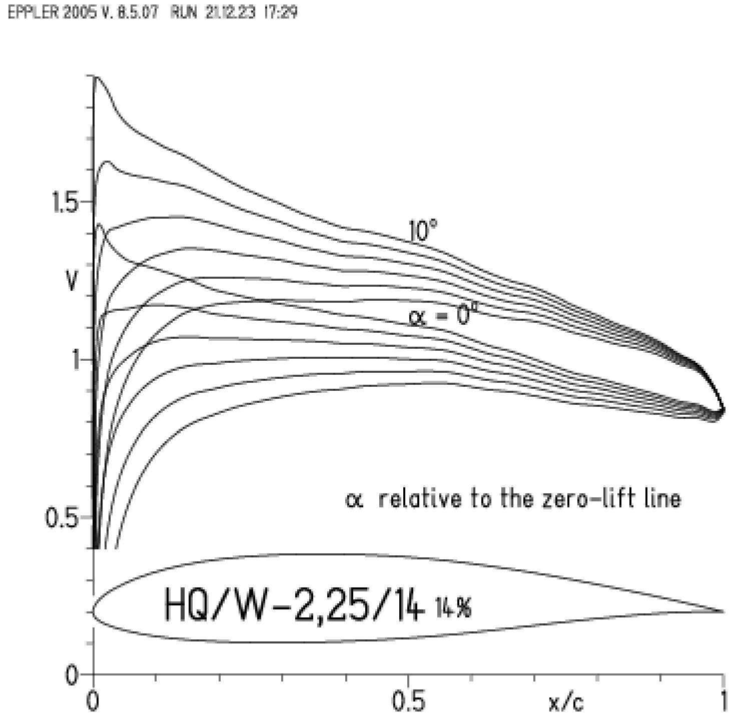
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

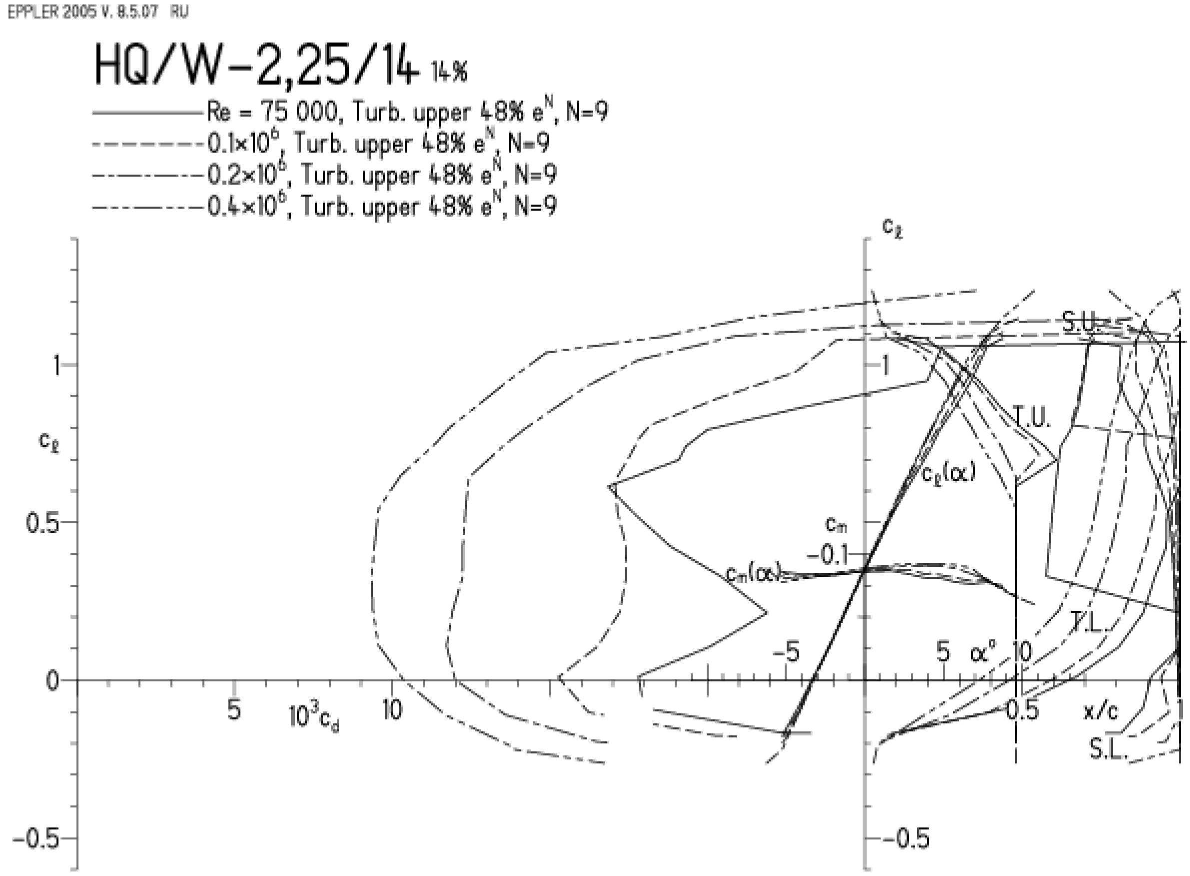


EPPLER 2005 V. 8.



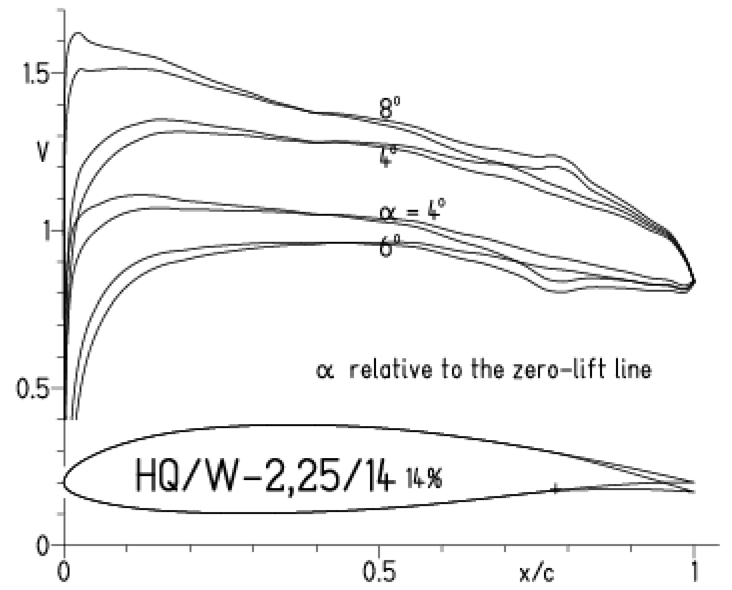
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



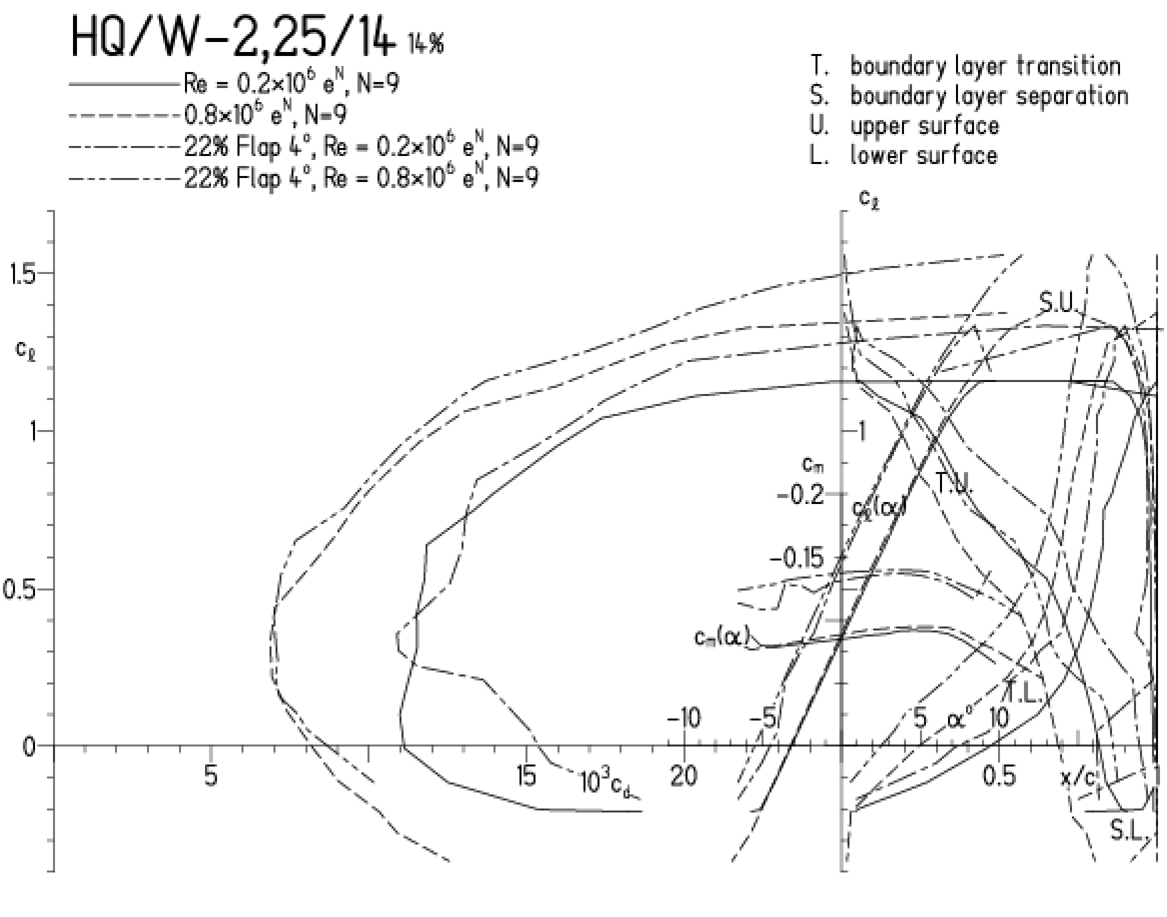


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

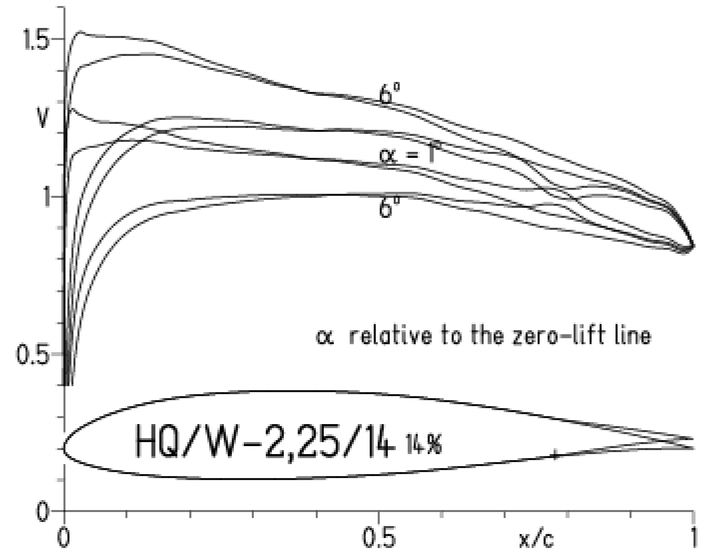


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

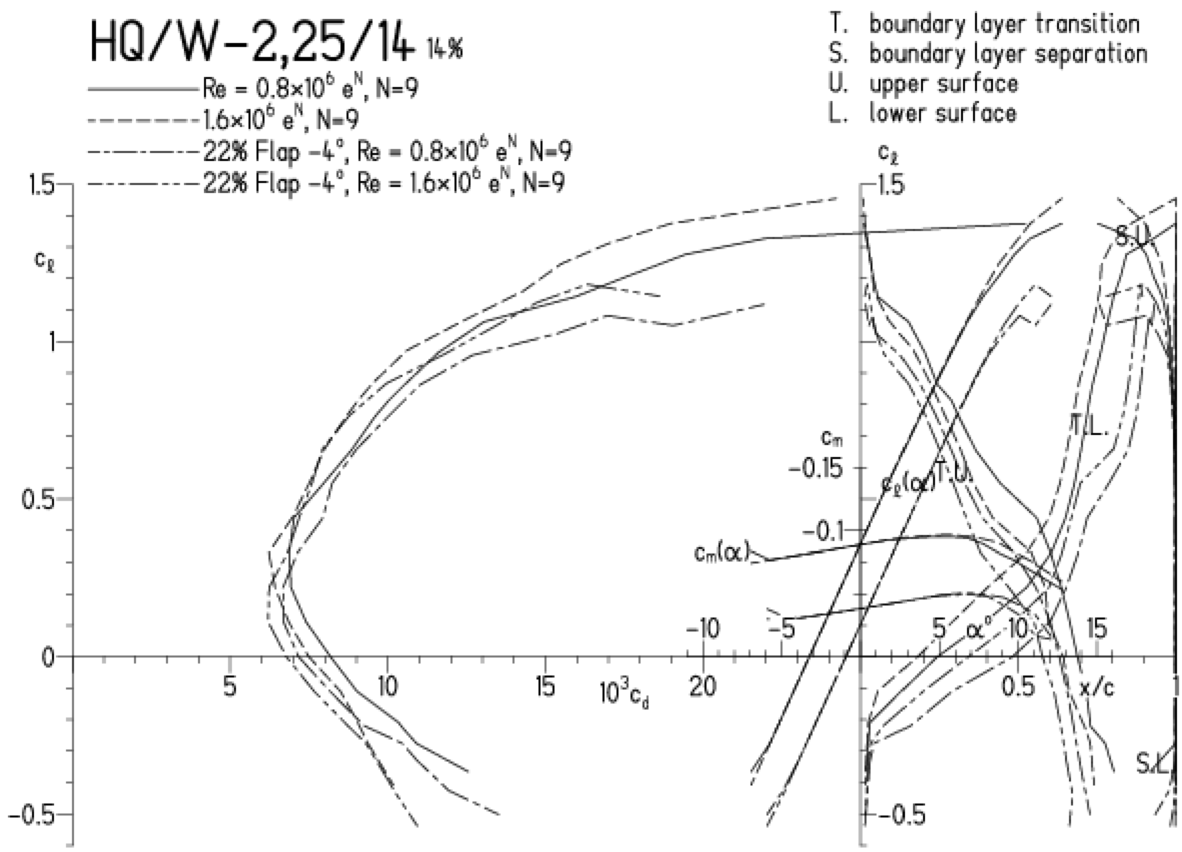


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

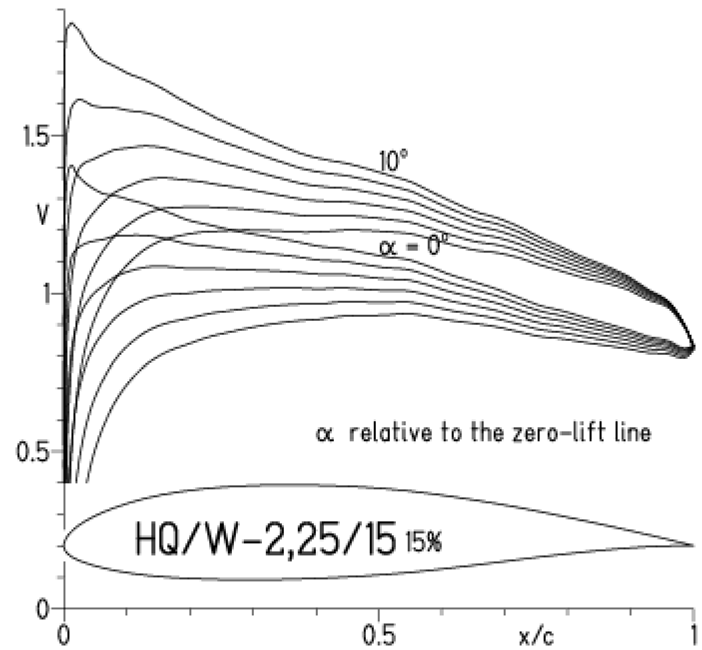


EPPLER 2005 V. 8.5.07

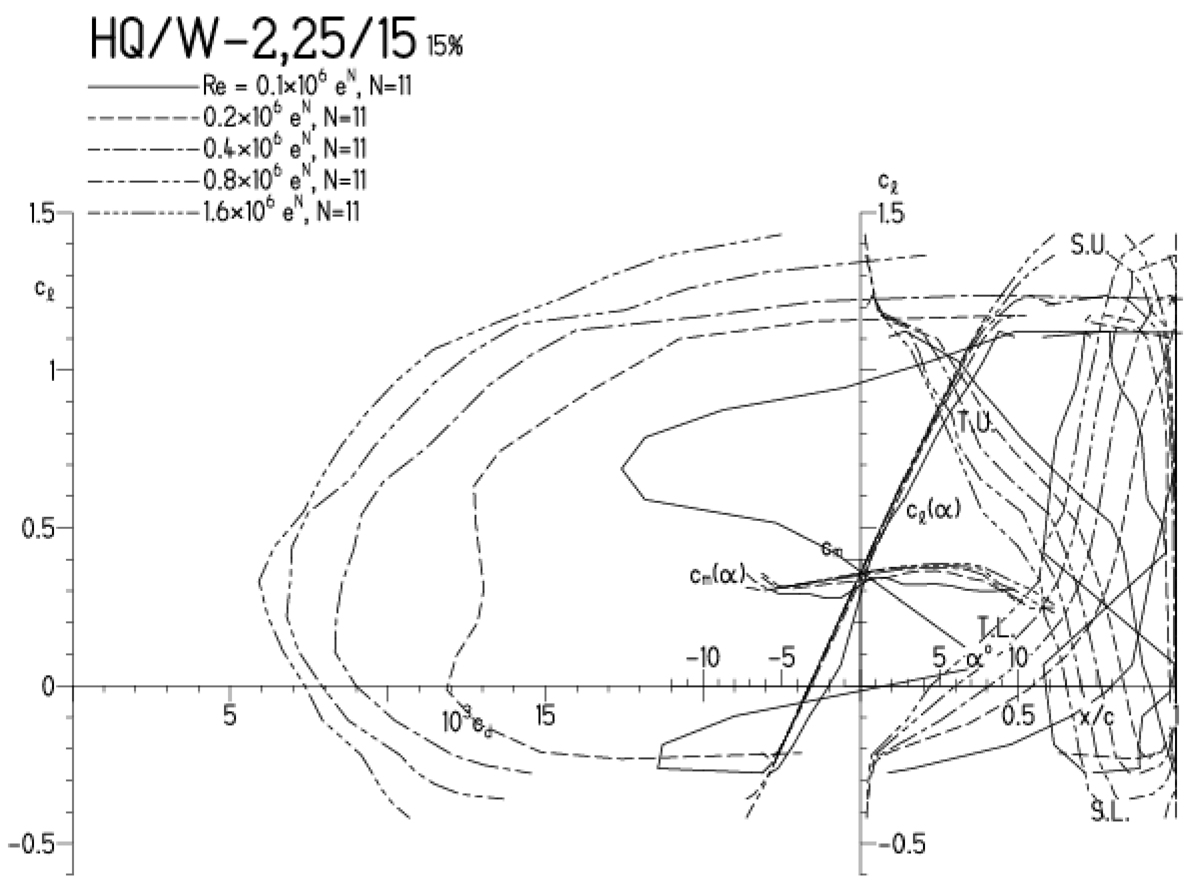


<u>HQ/W-2,25/15</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

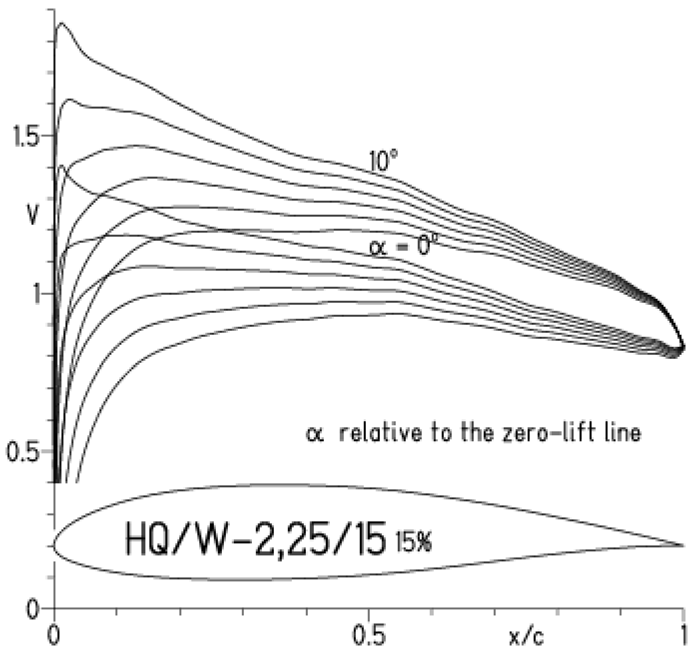


EPPLER 20

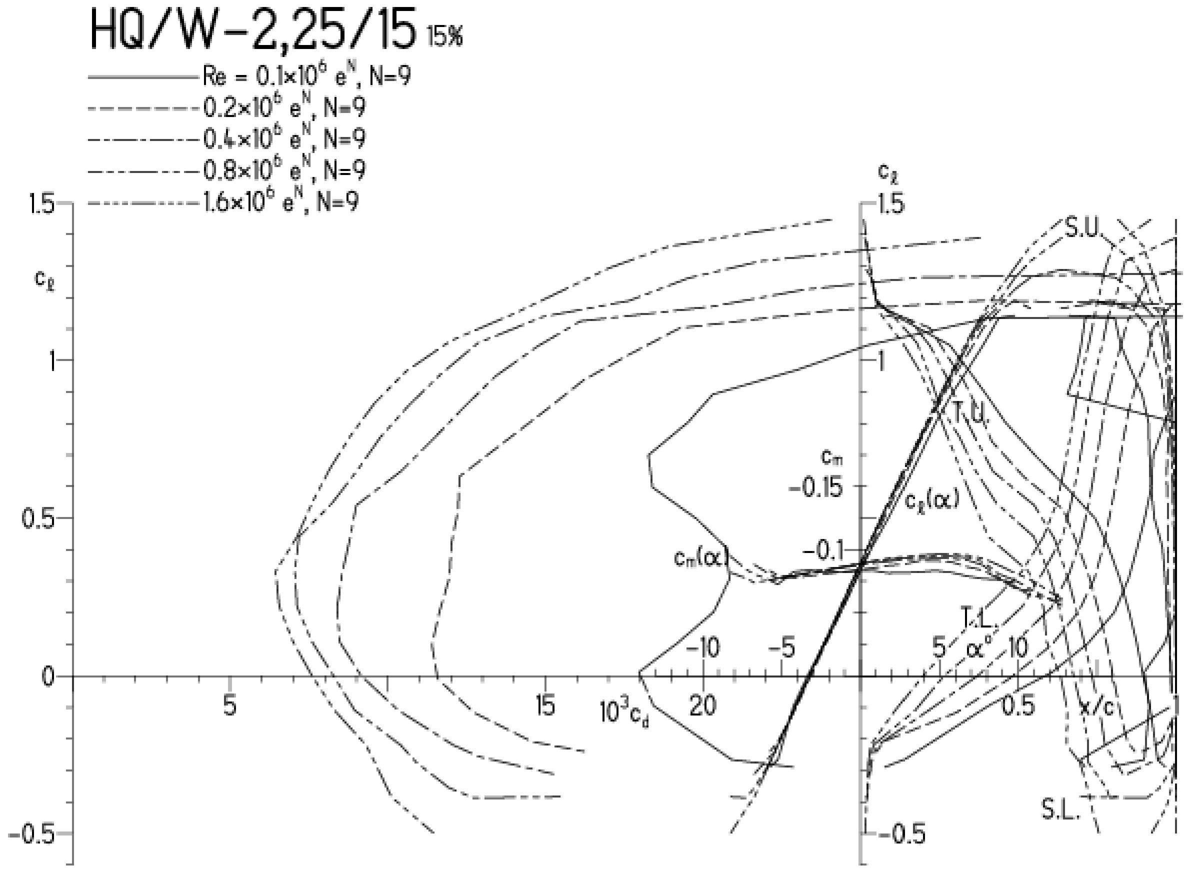


HQ/W-2,25/15, N=9

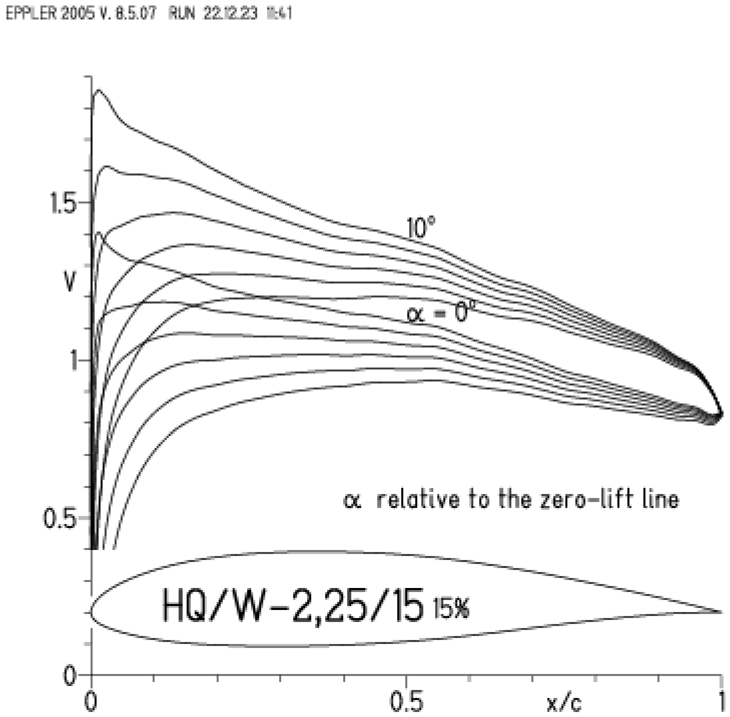
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

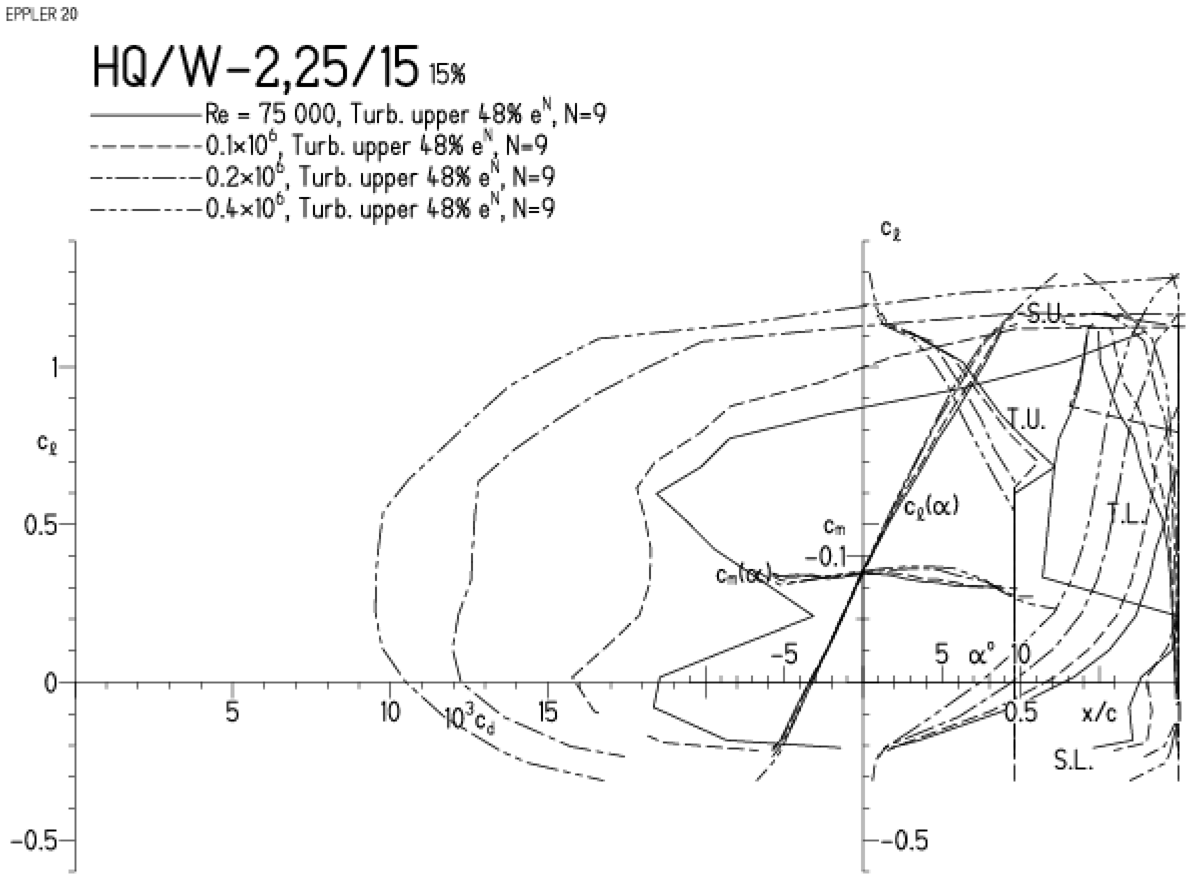


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



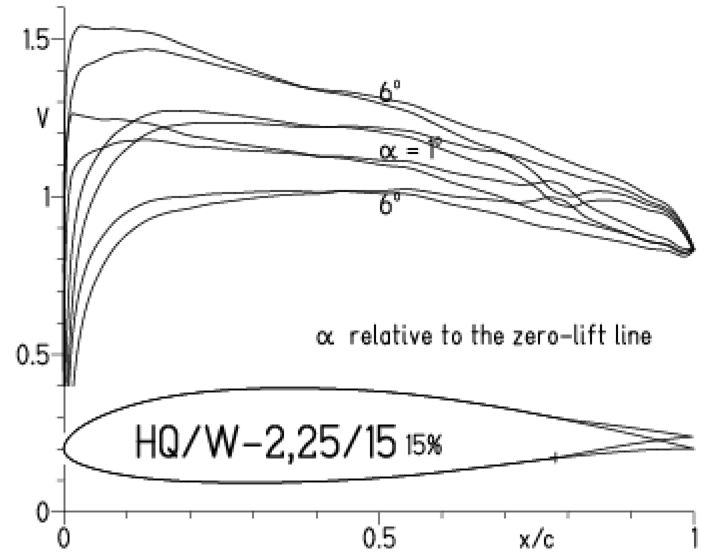


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

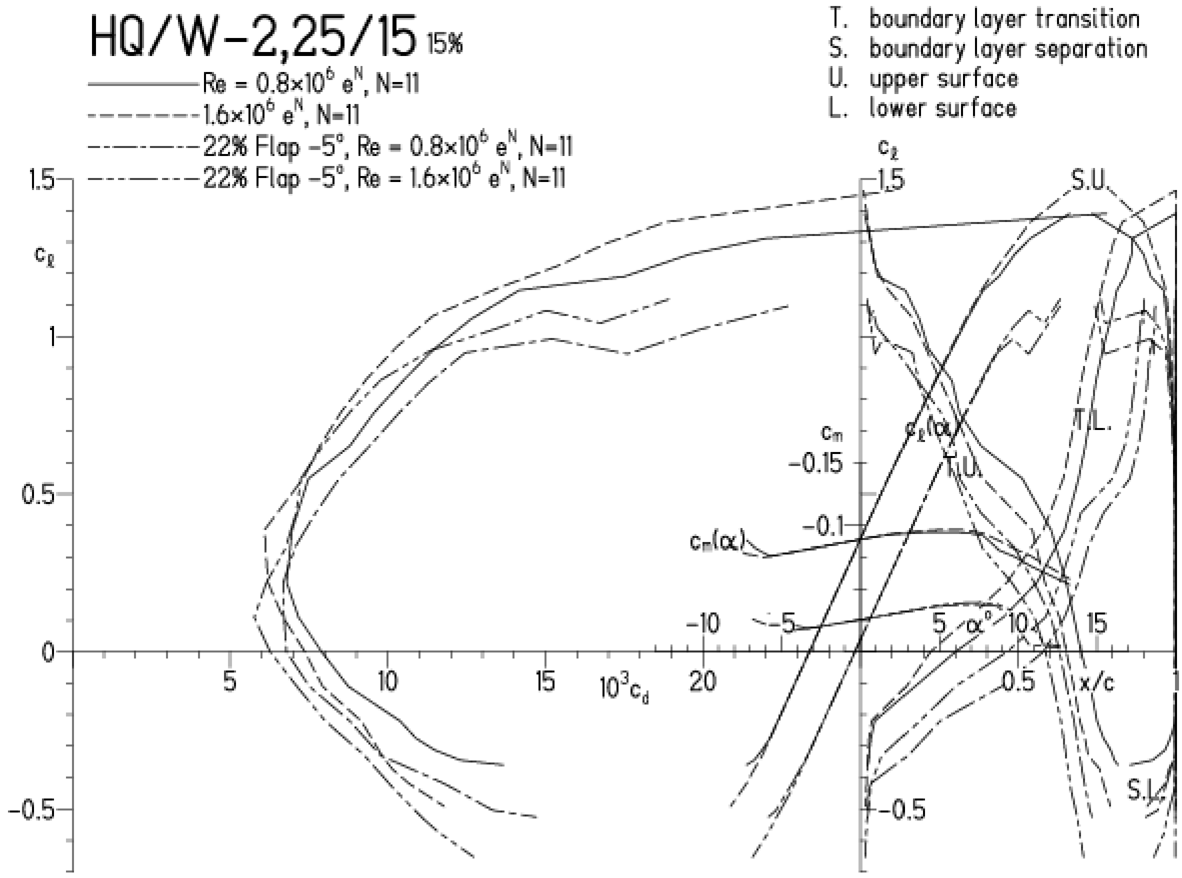
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

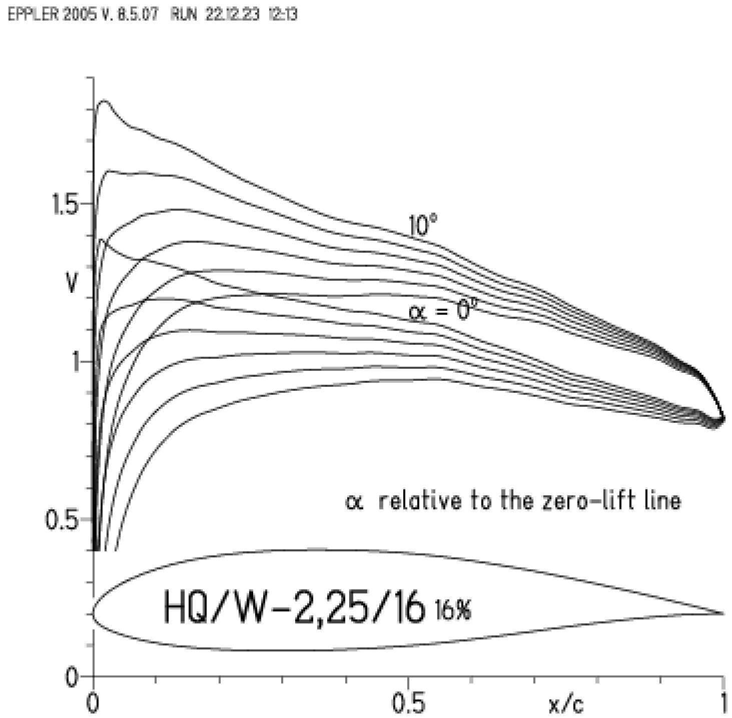
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

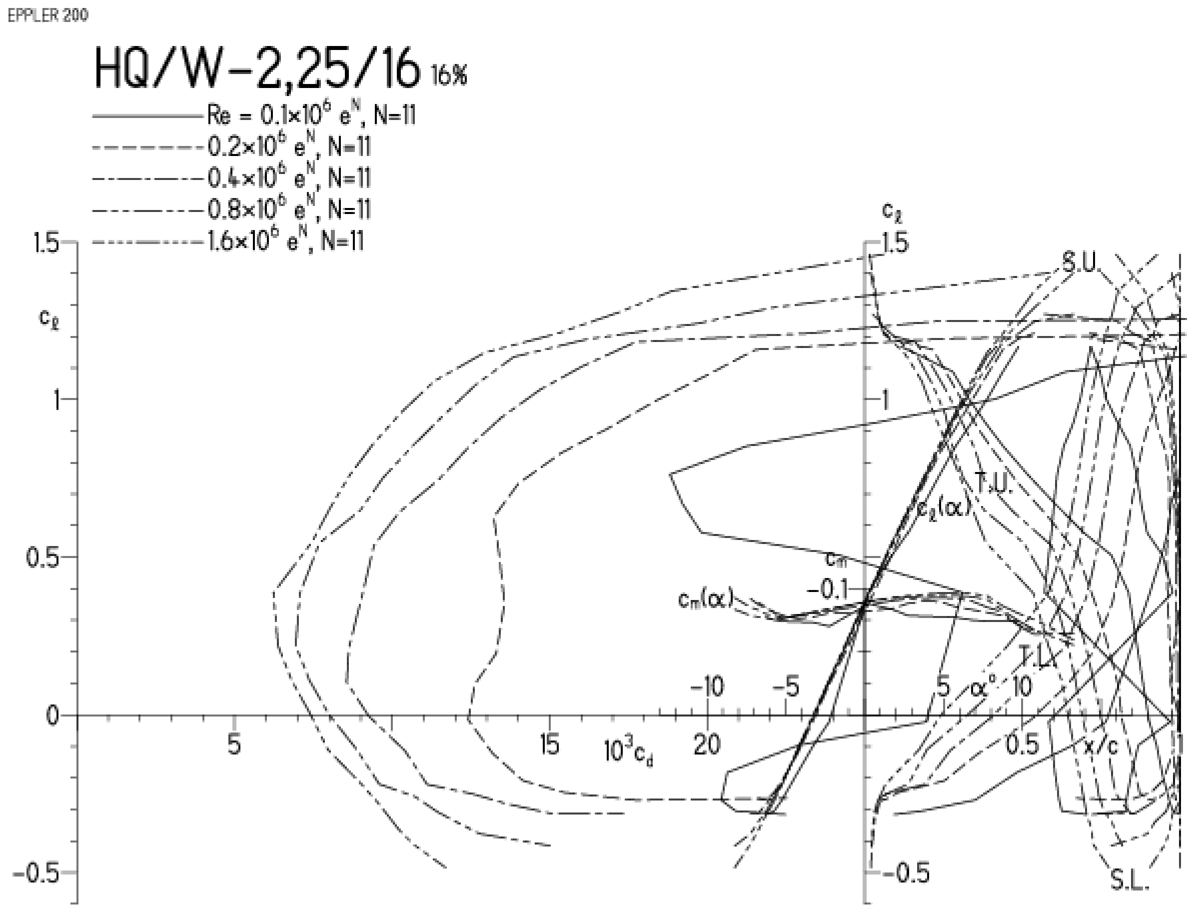


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

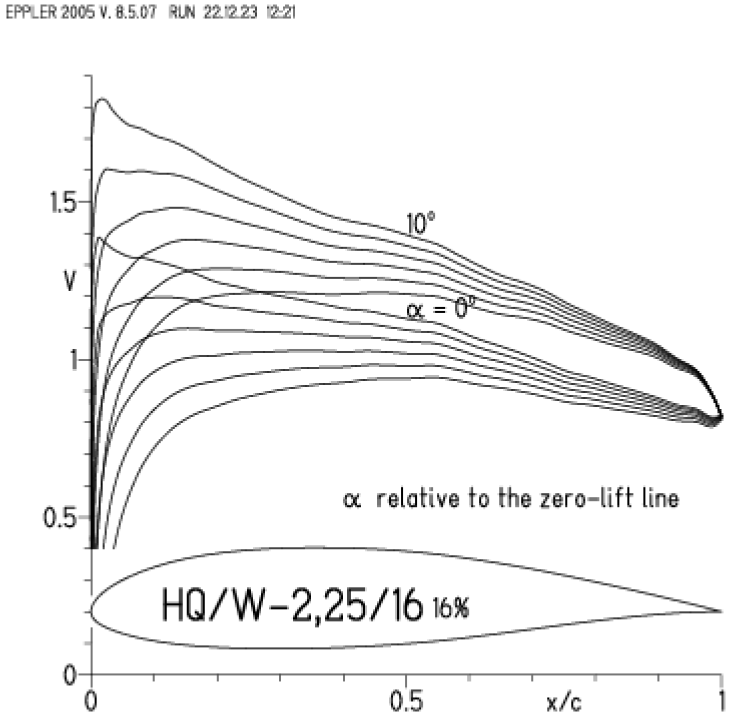


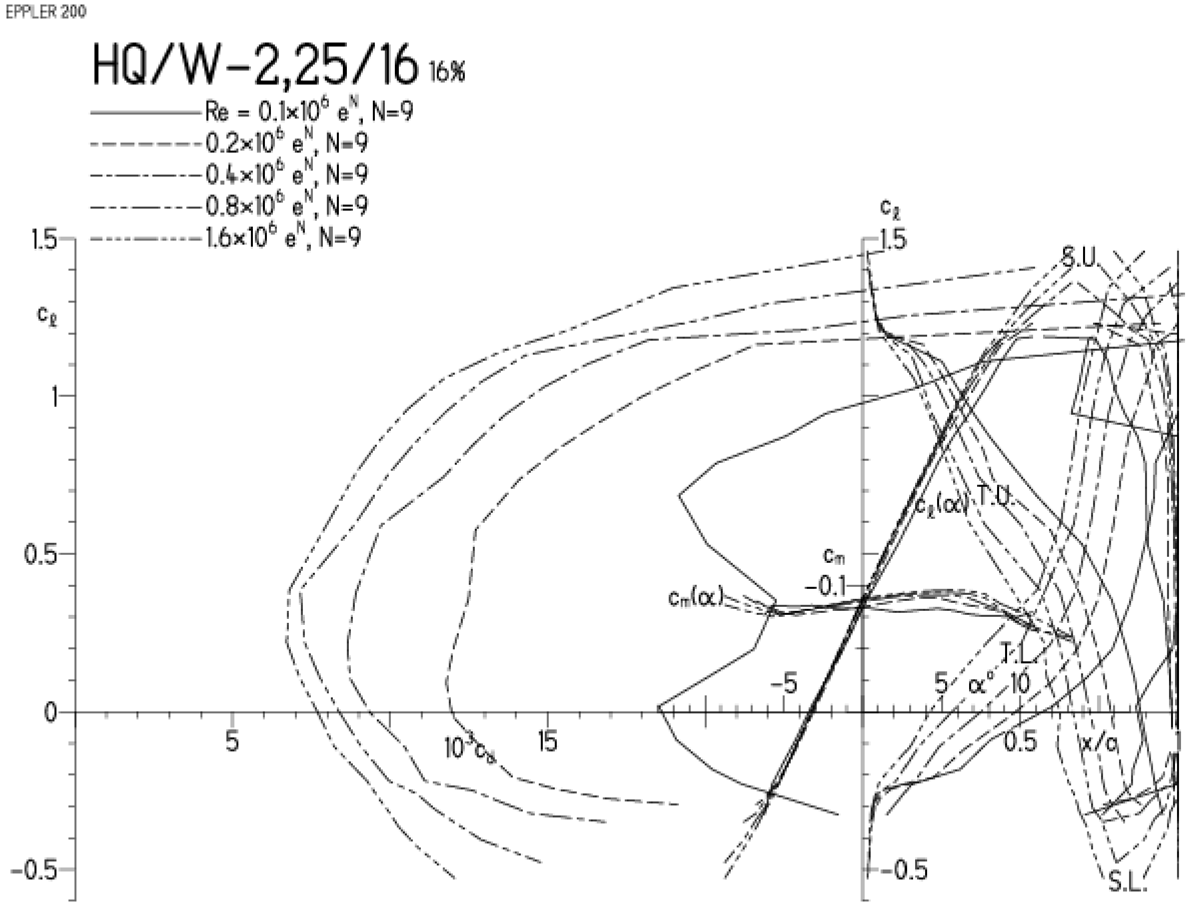
HQ/W-2,25/16, N=11



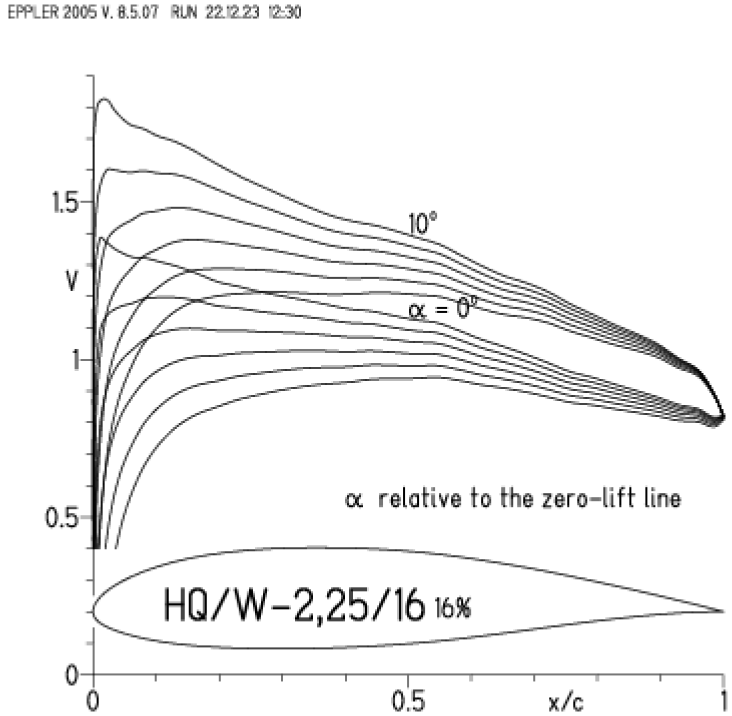


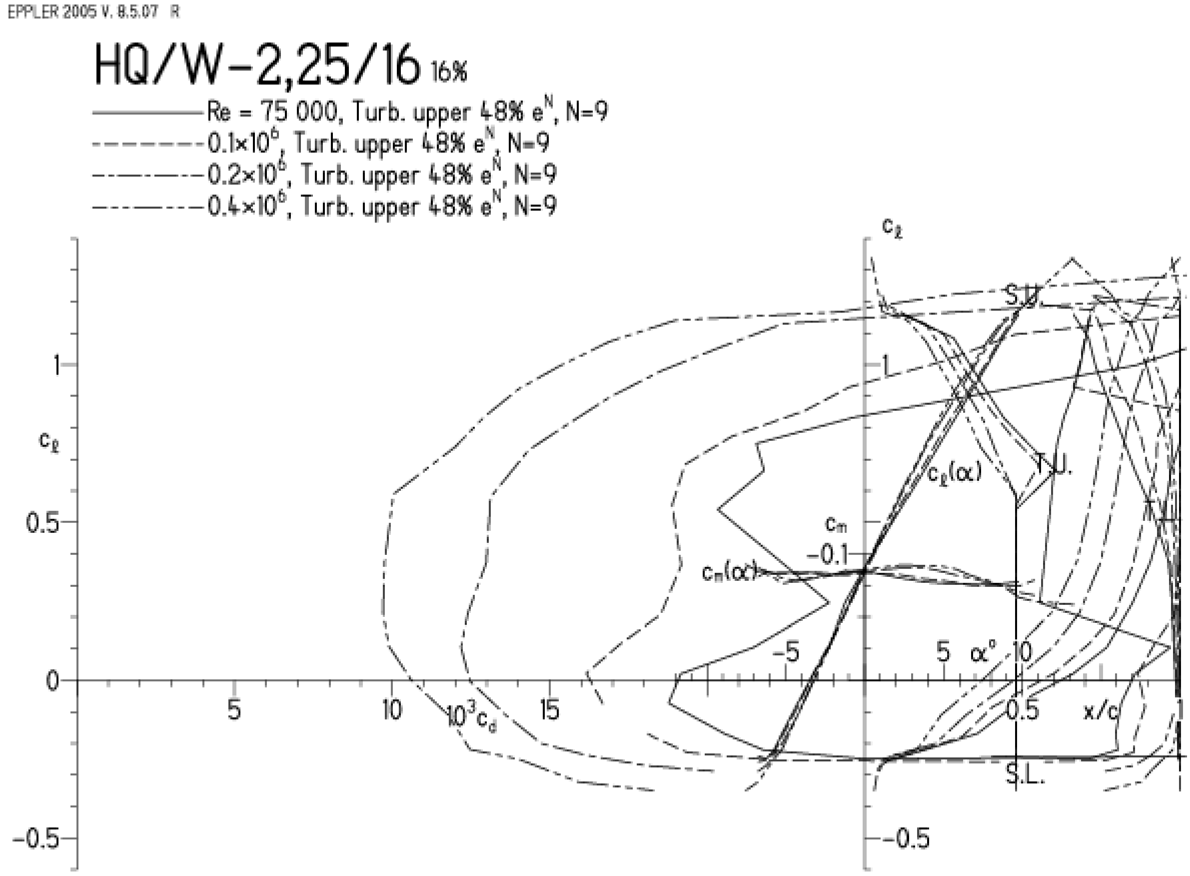
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



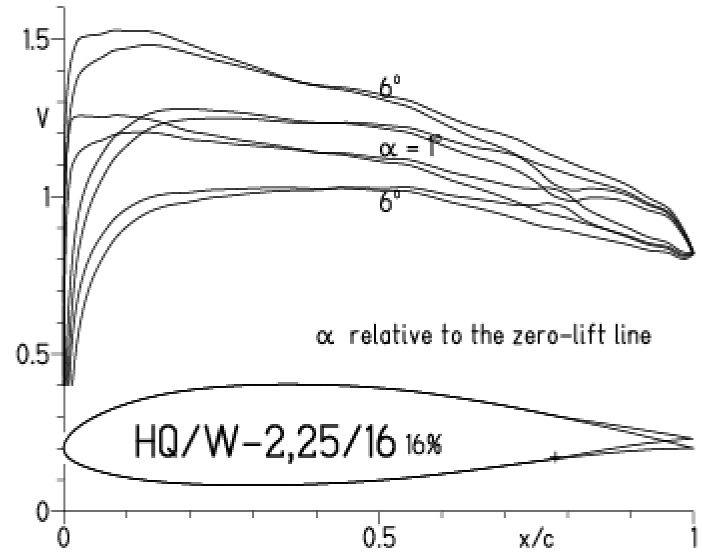


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

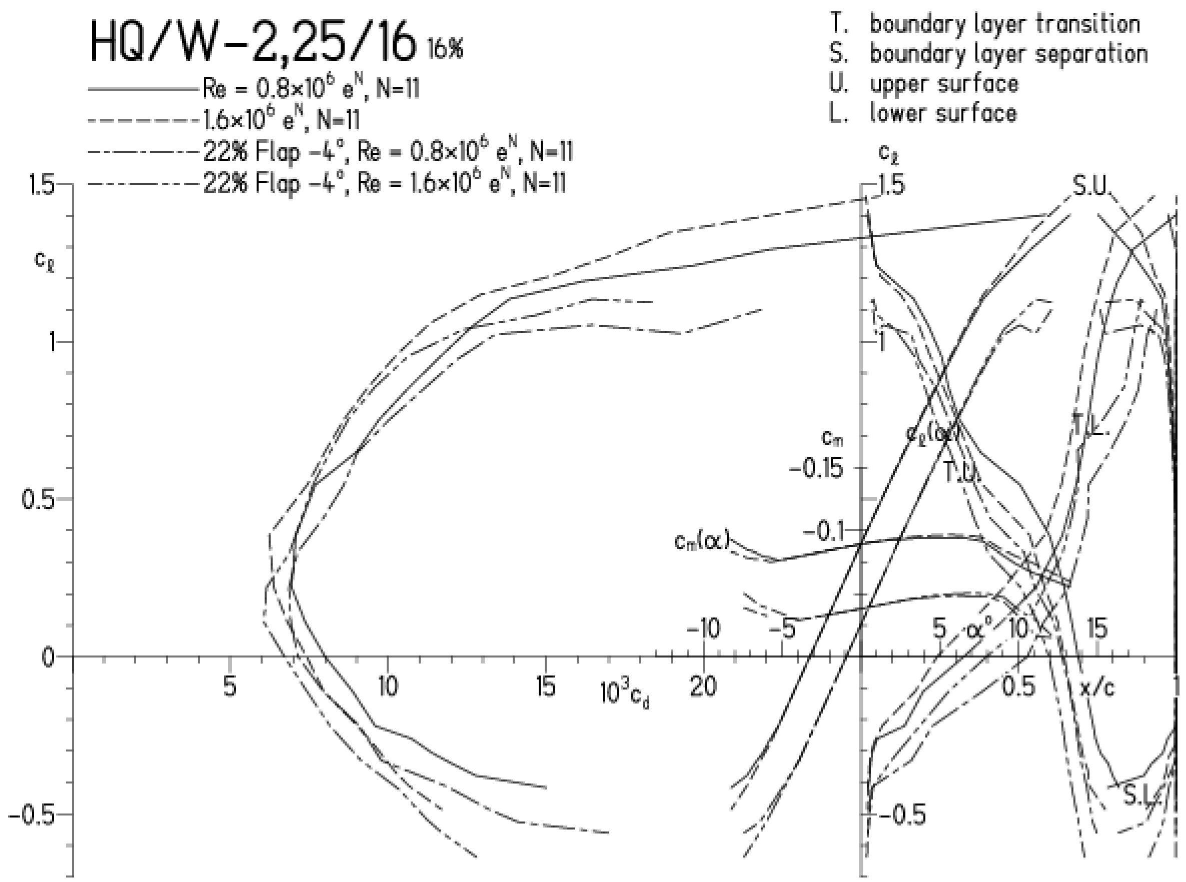
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

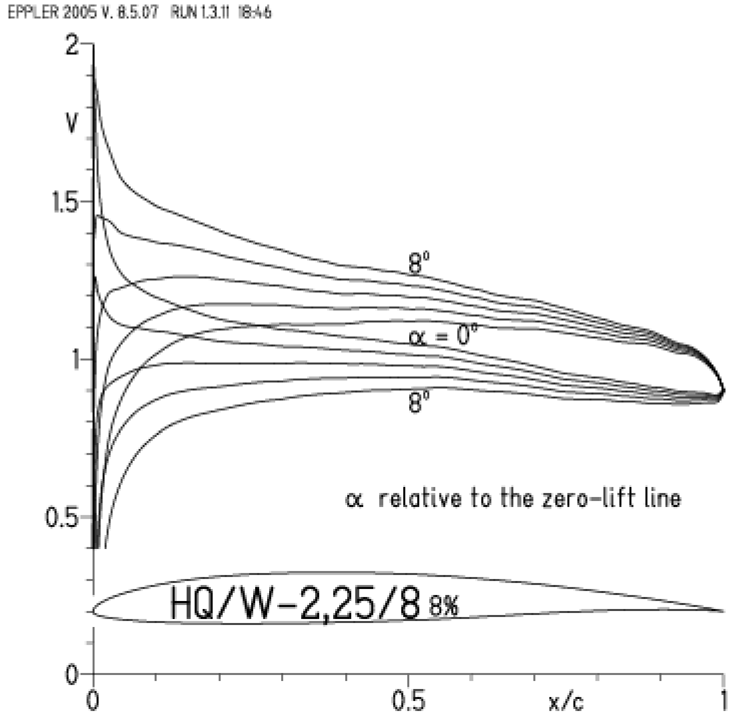
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

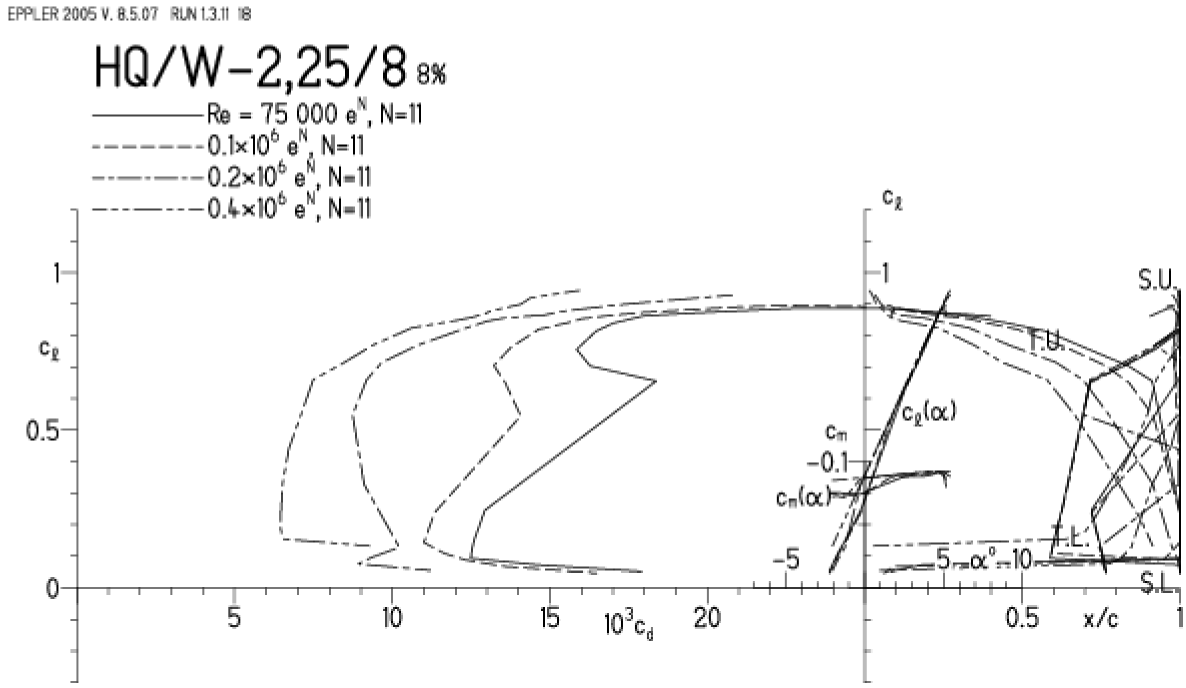


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

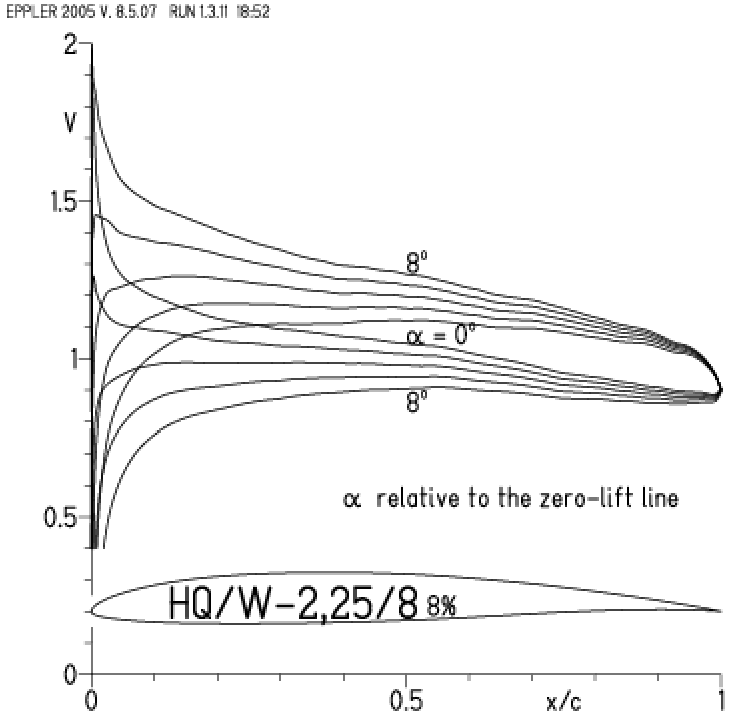


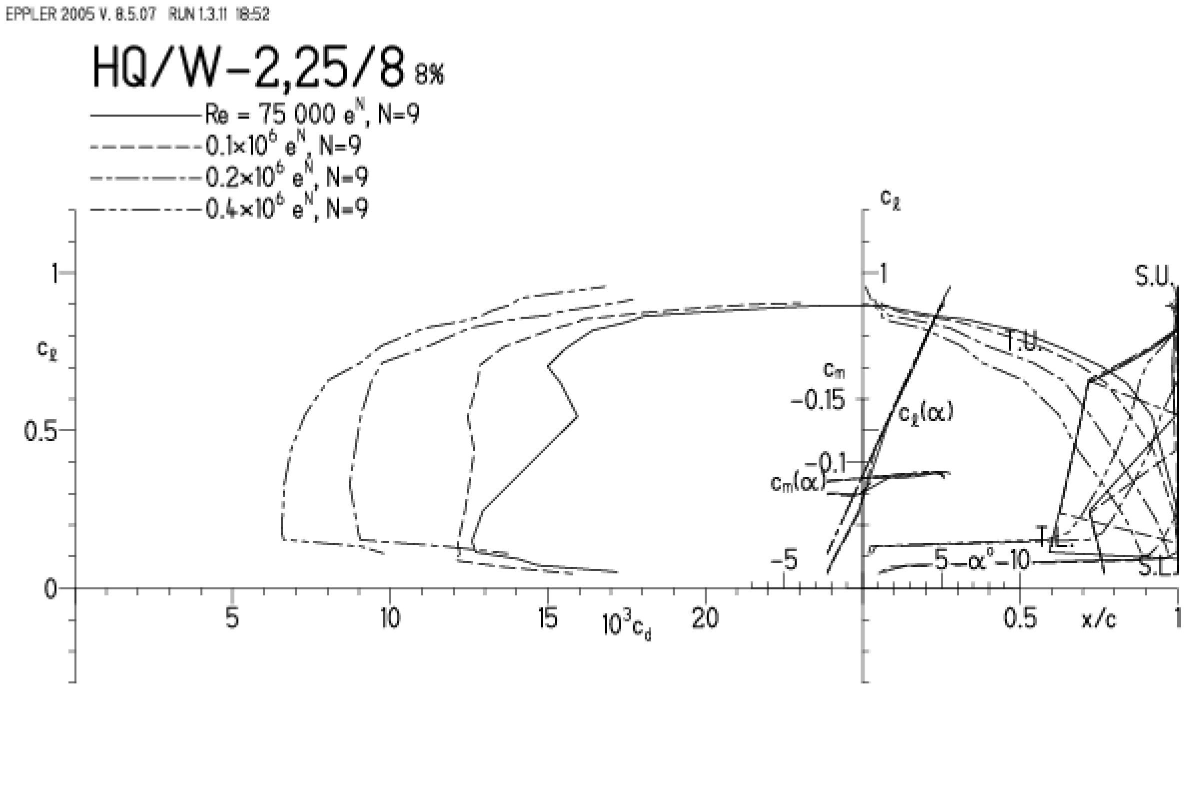
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

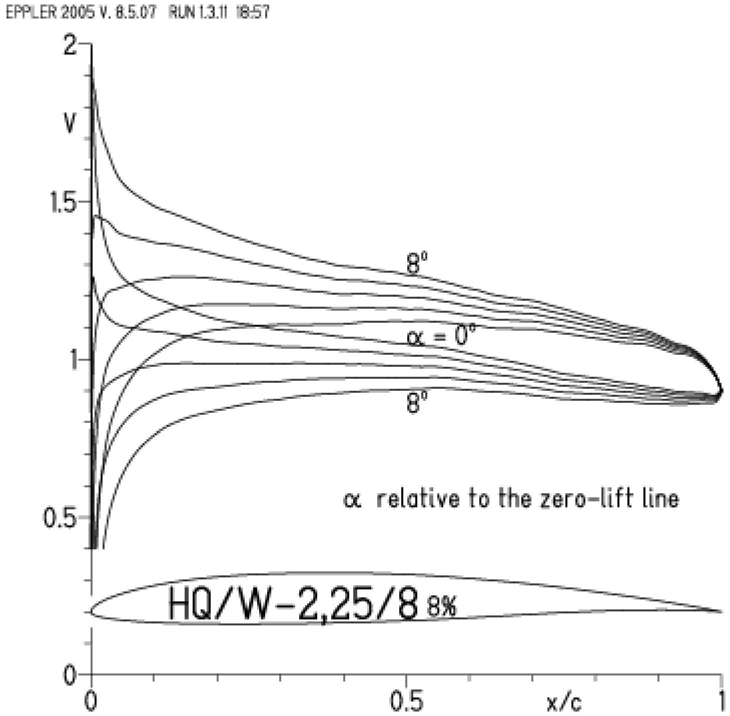

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
10^3 c_d
c_ℓ(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
x/c

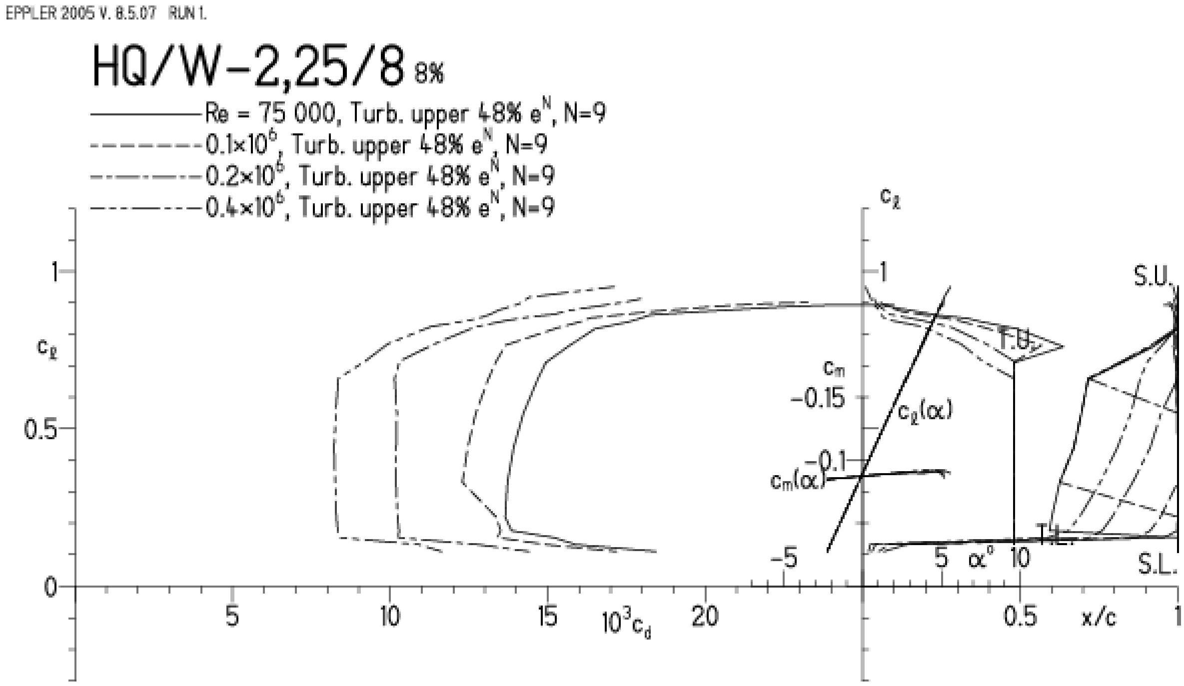
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

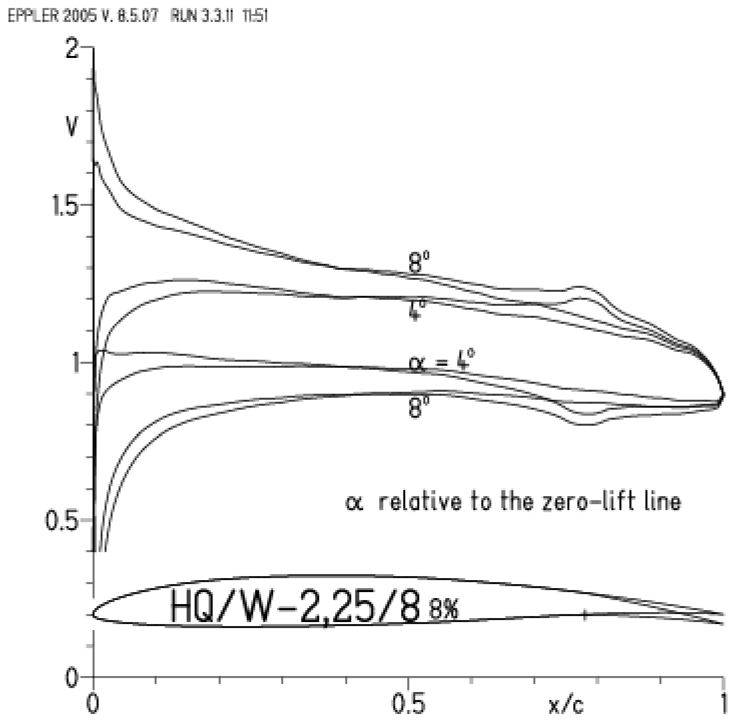

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
c_m
c_l(α)
c_m(α)
T.U.
S.U.
T.L.
S.L.
5 – α° – 10
10^3 c_d
x/c

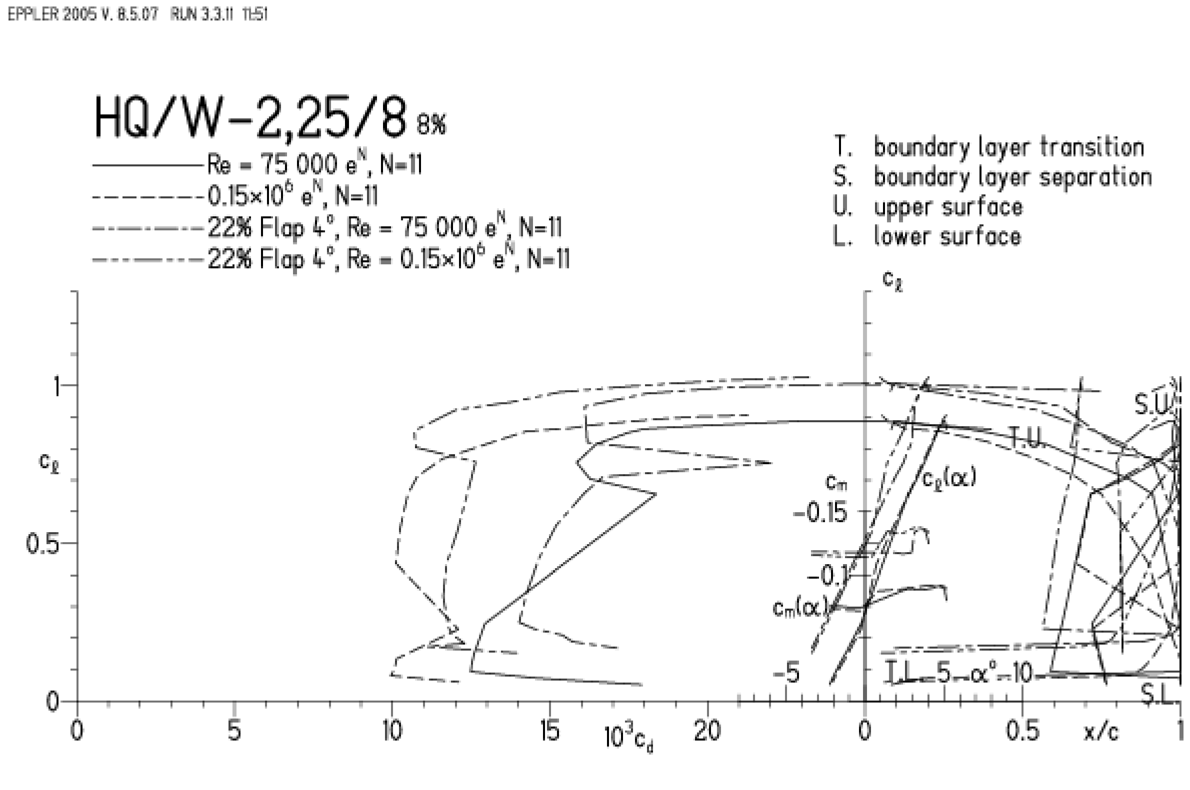
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





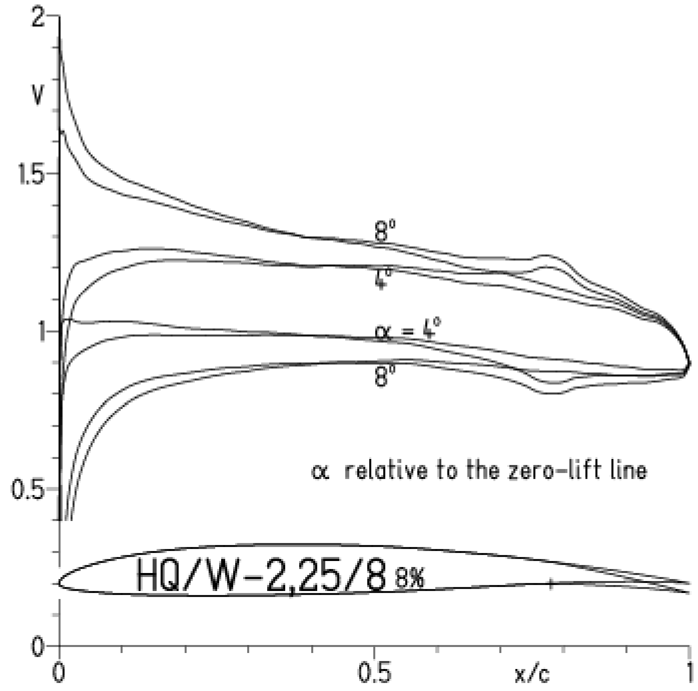
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



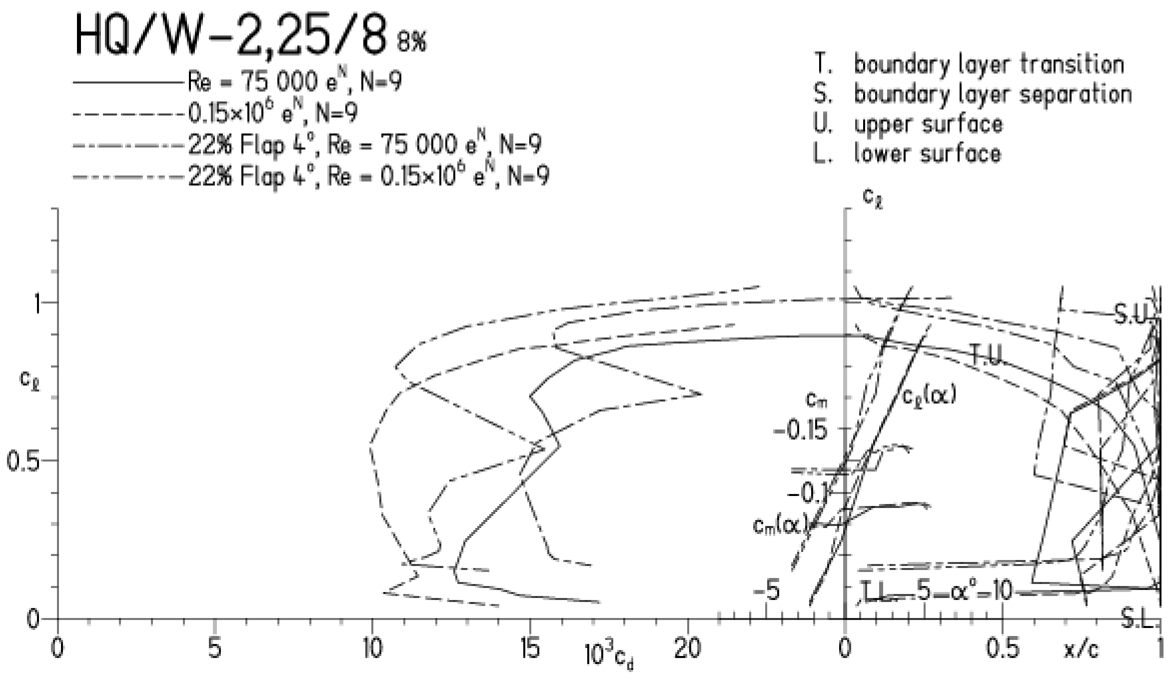


<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag

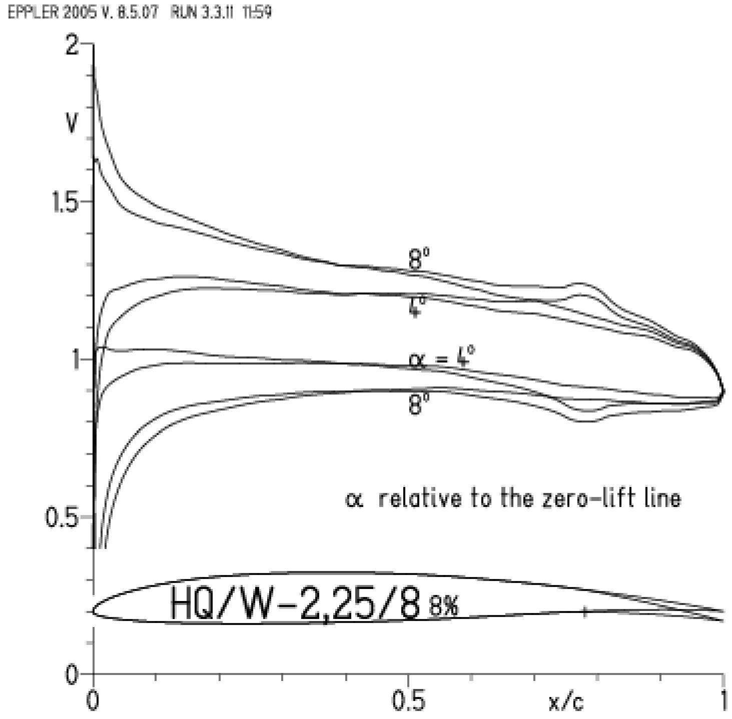
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

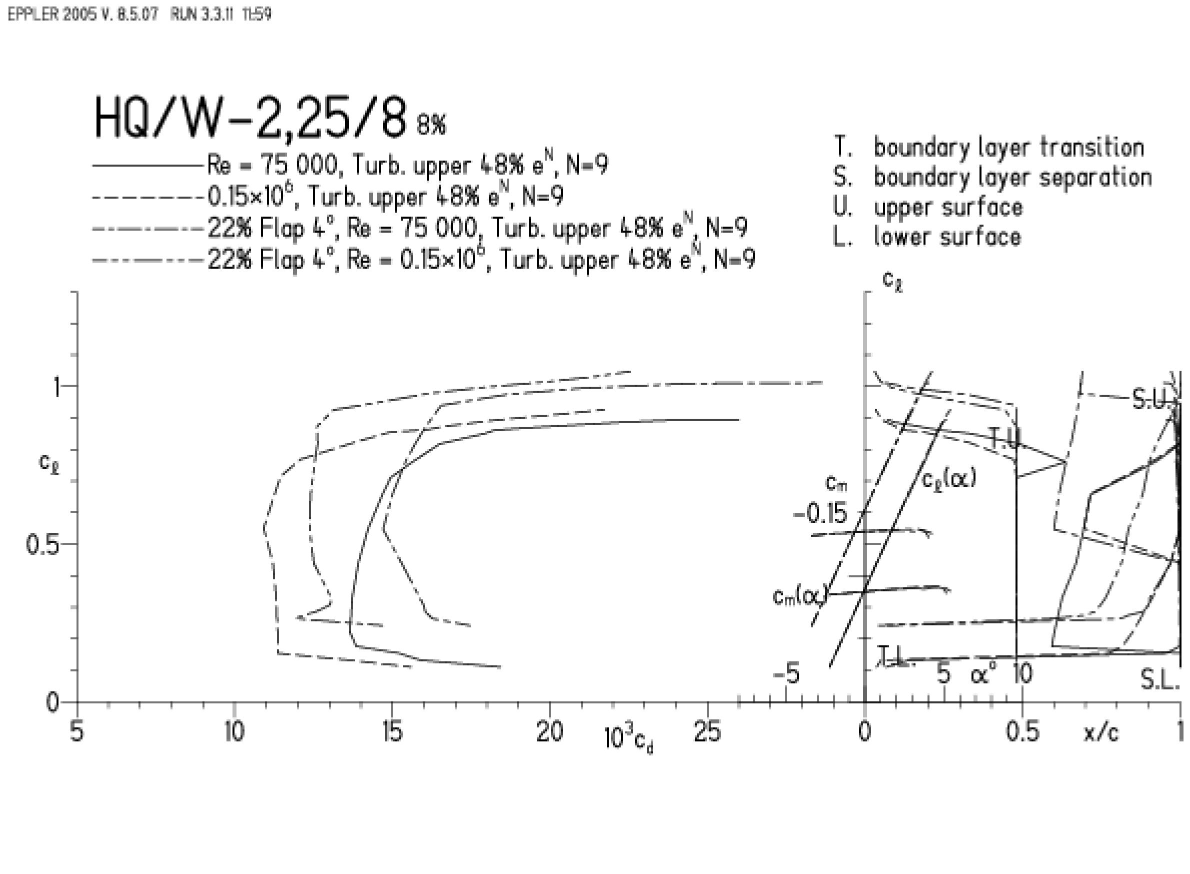


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



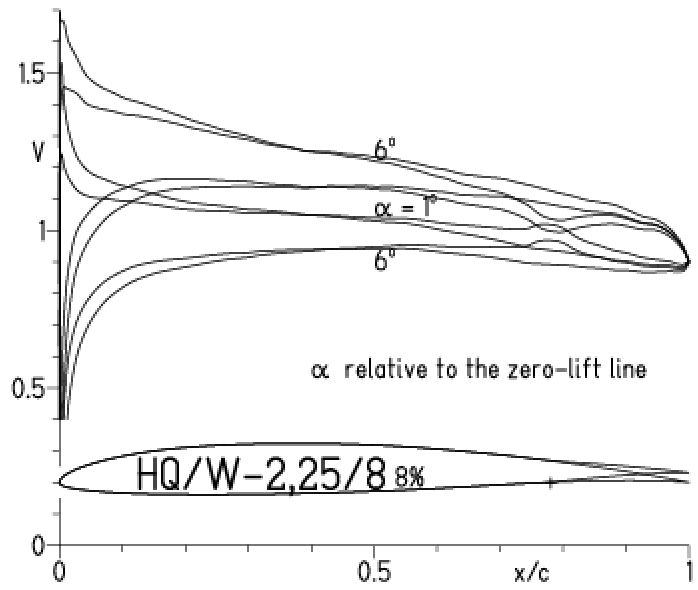
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



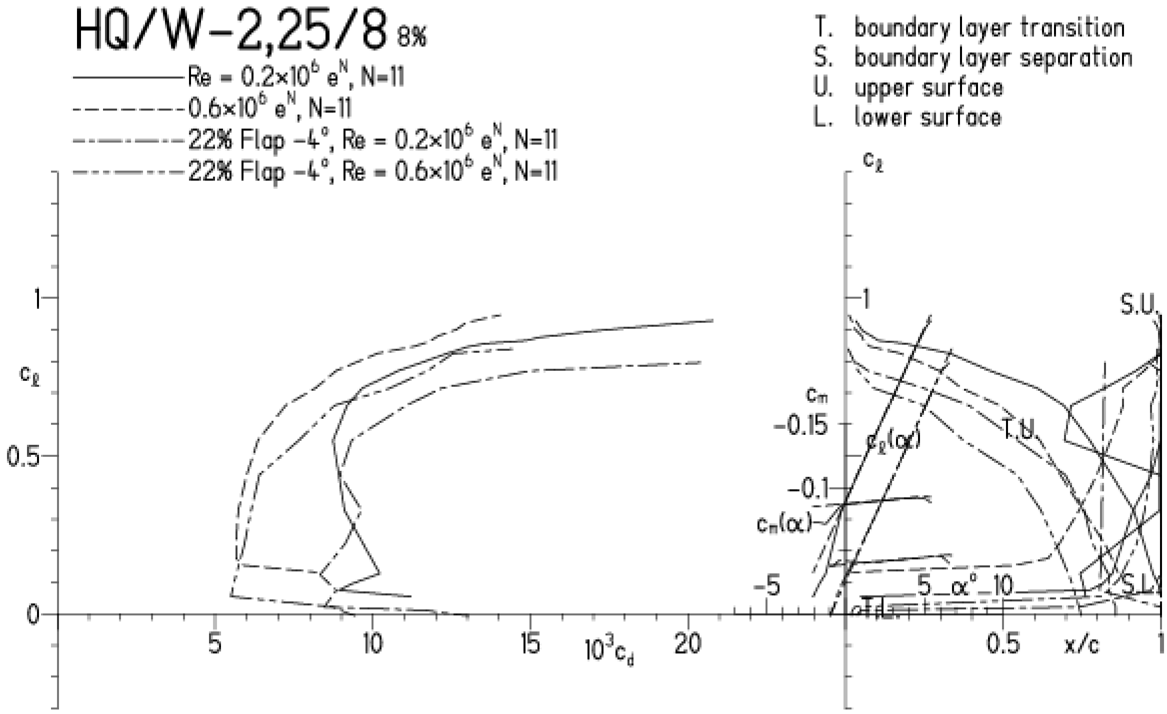


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

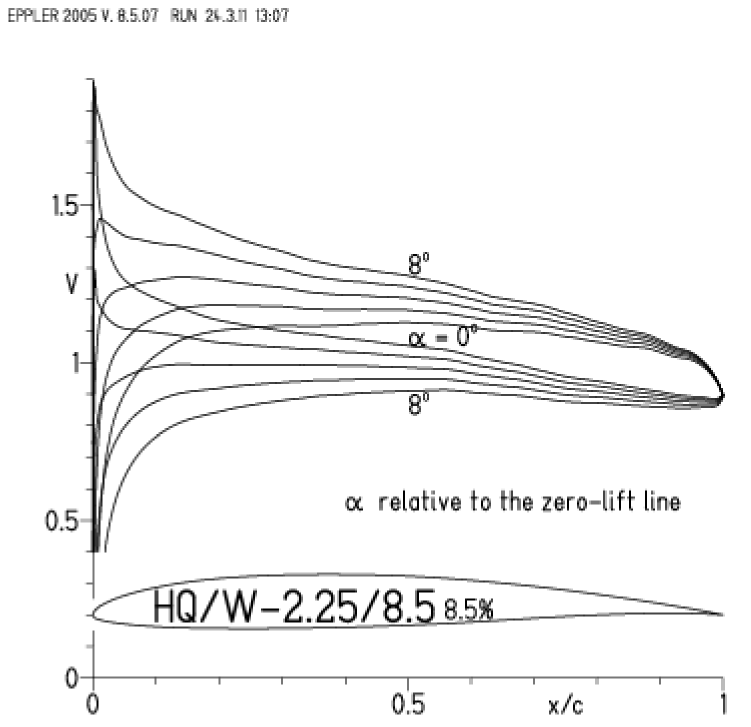
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

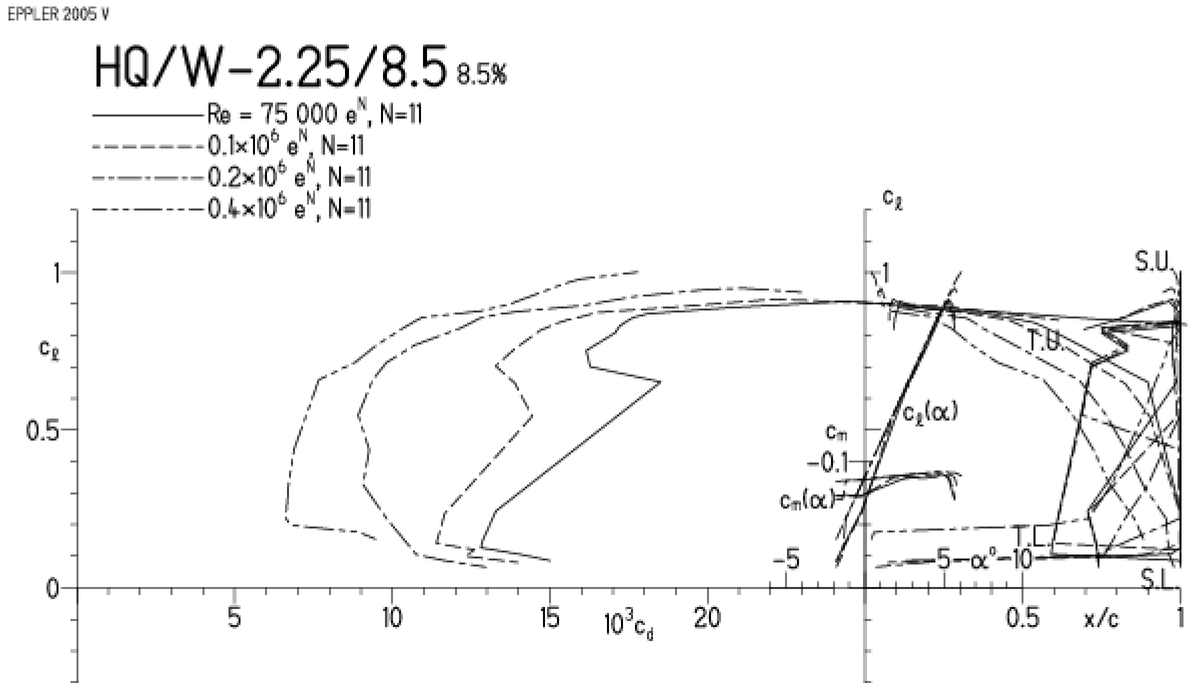


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

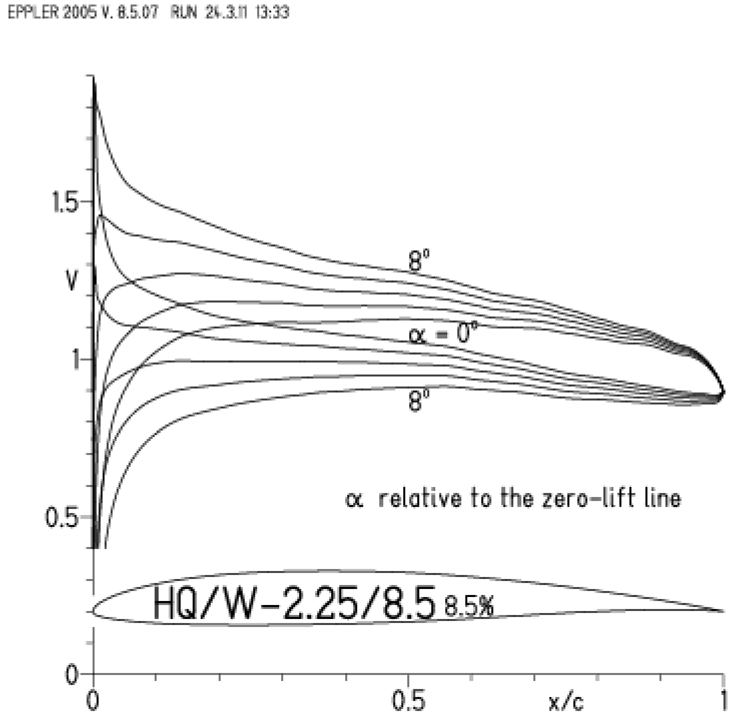


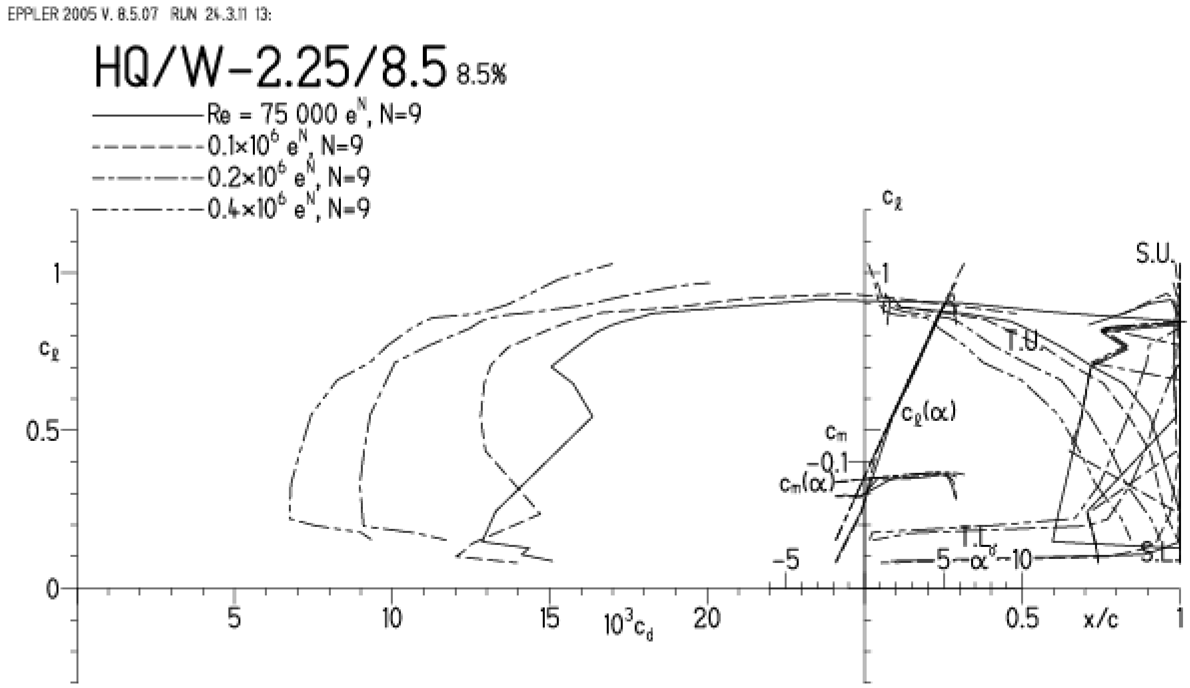
HQ/W-2,25/8,5, N=11



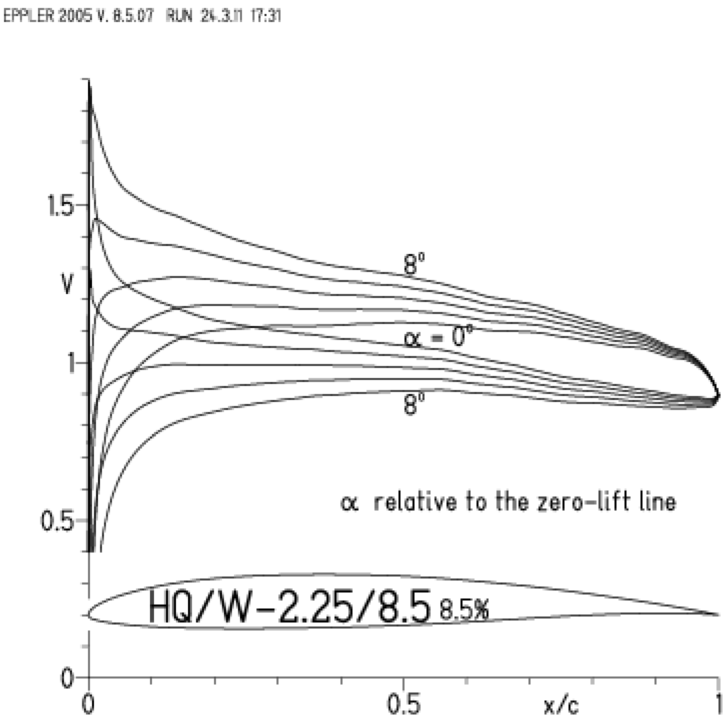


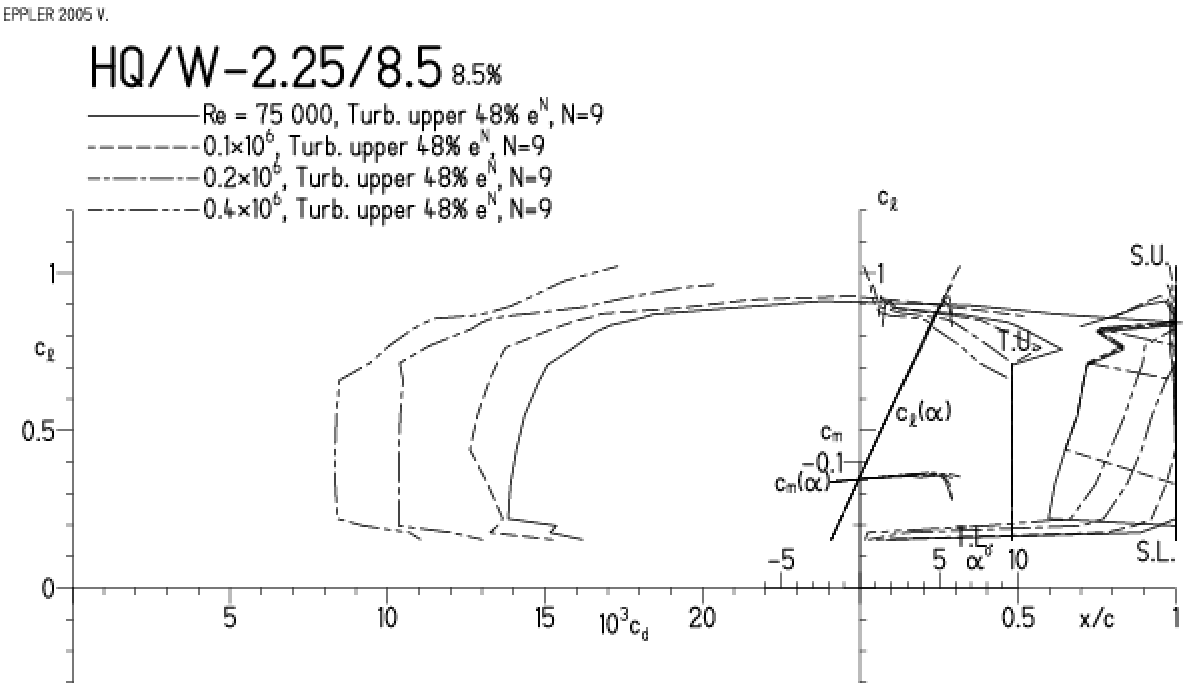
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

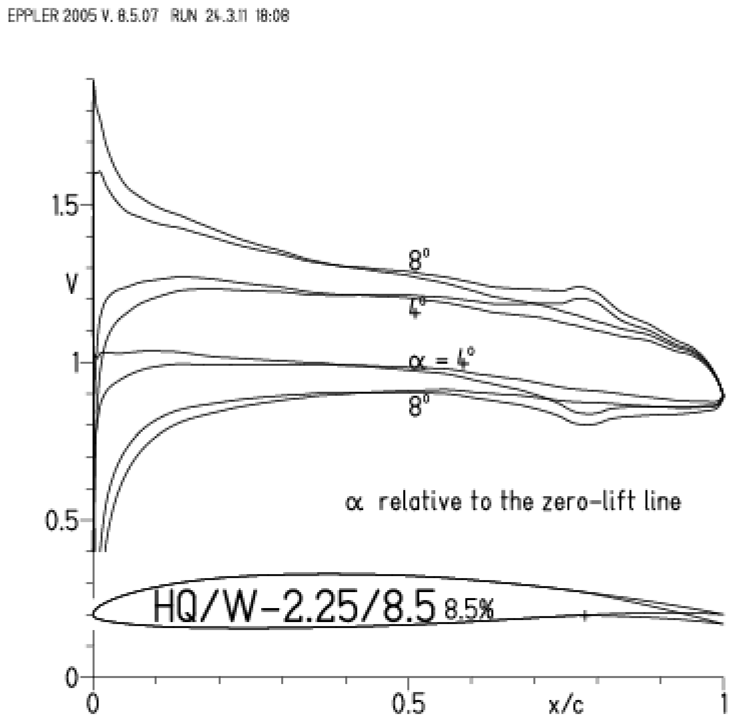

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_l(α)
c_m
-0.1
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

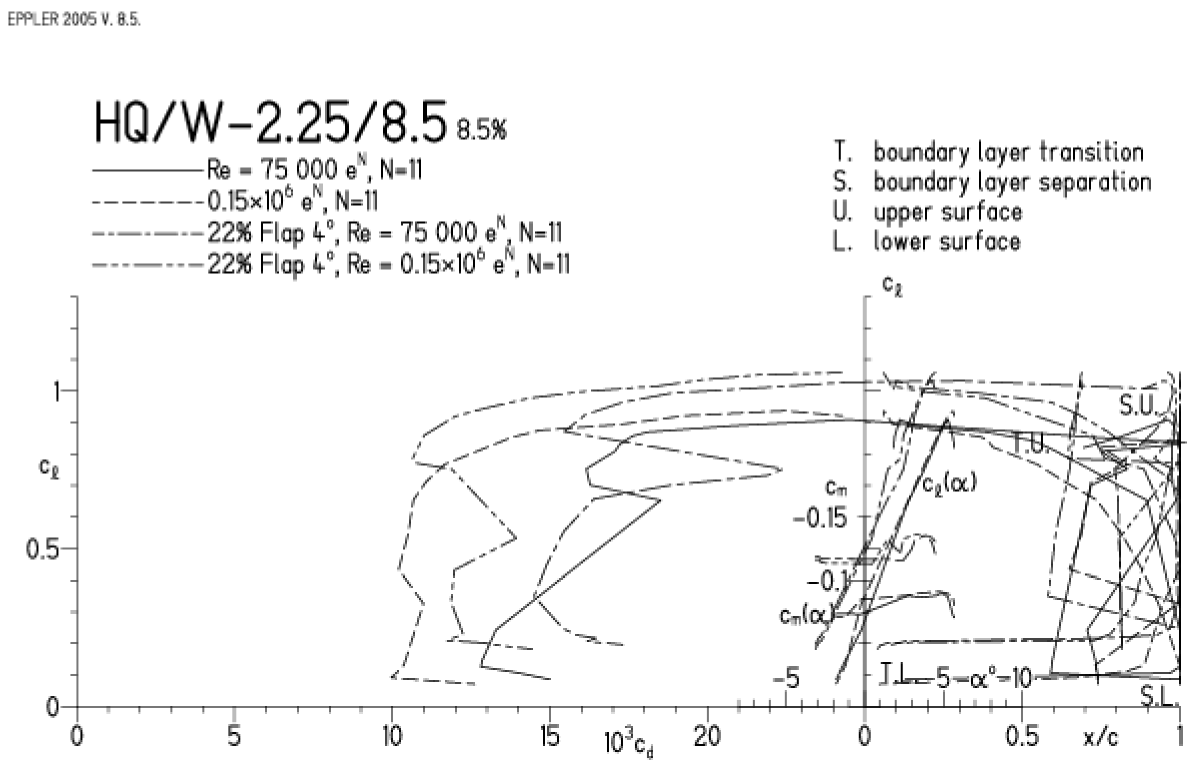
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





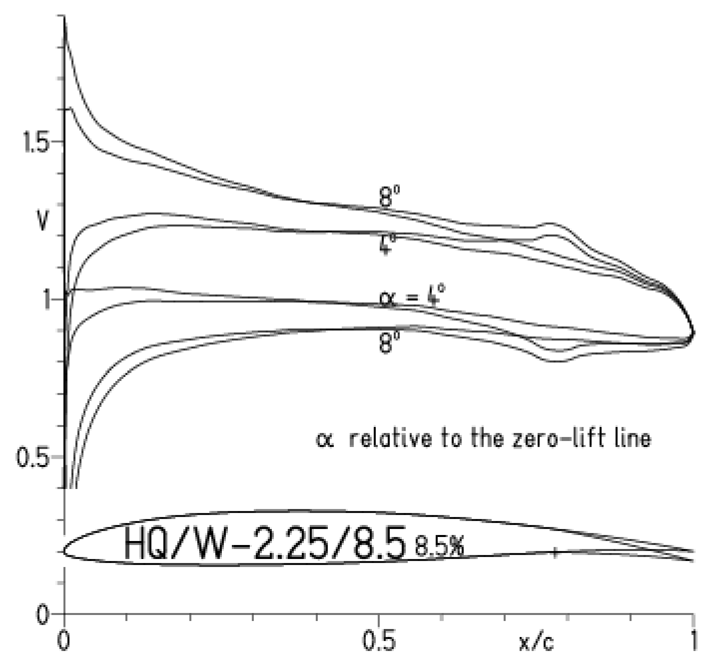
HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag



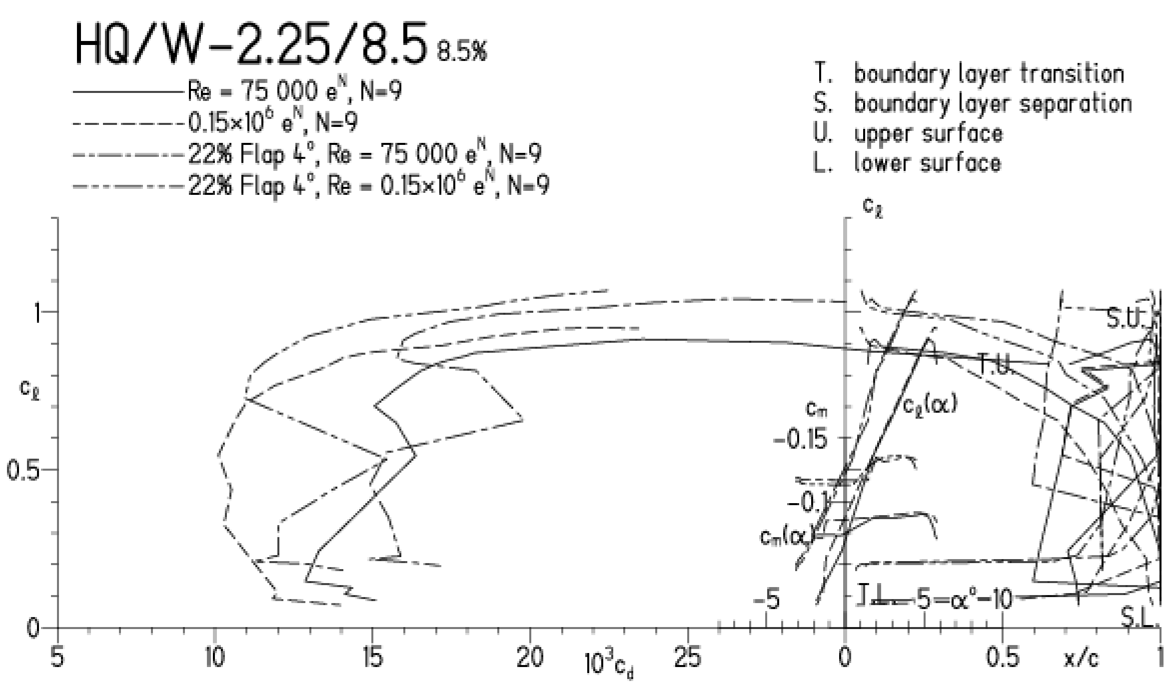


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

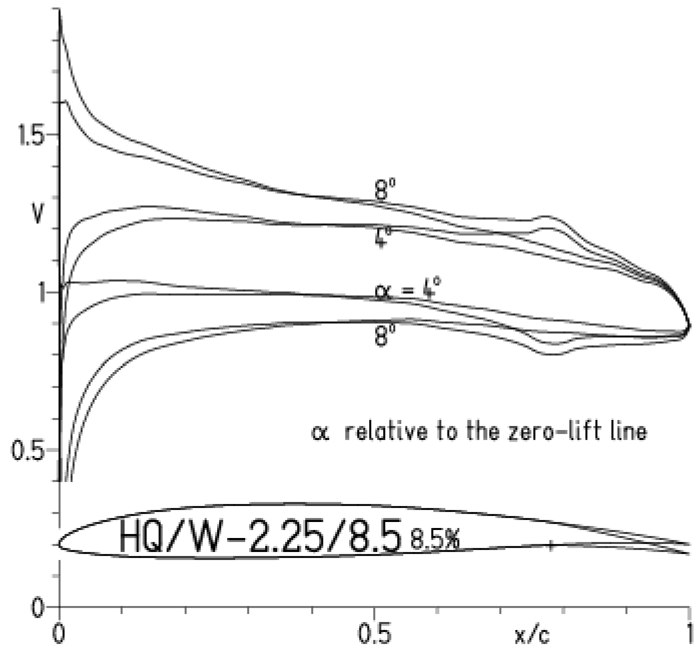


EPPLER 2005 V.

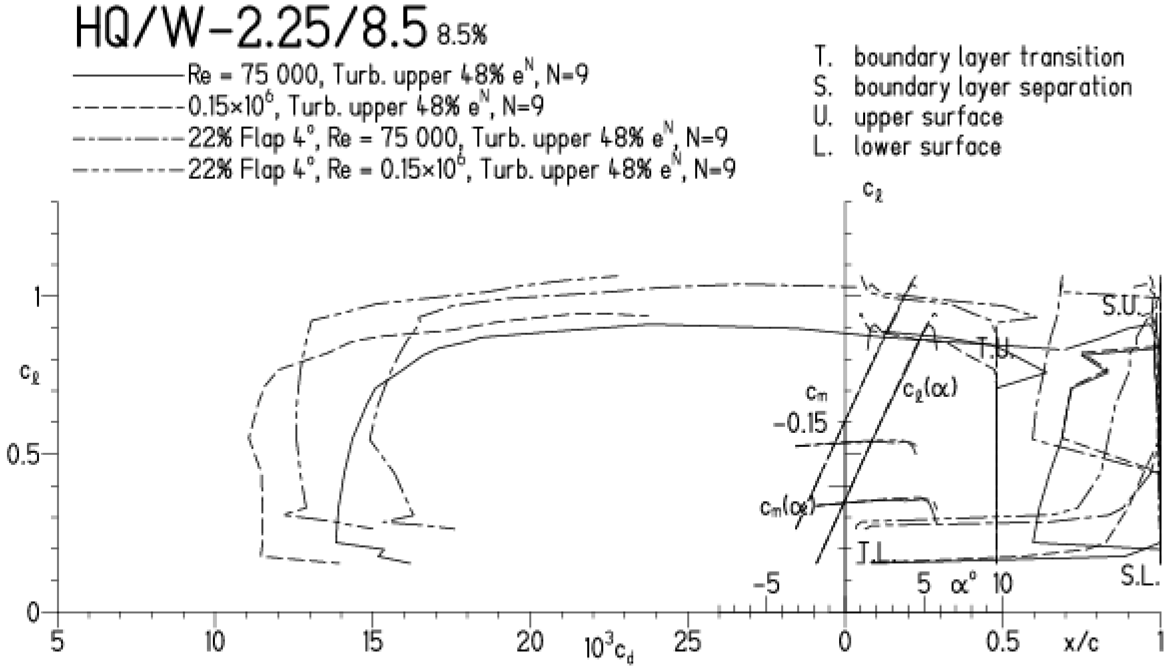


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

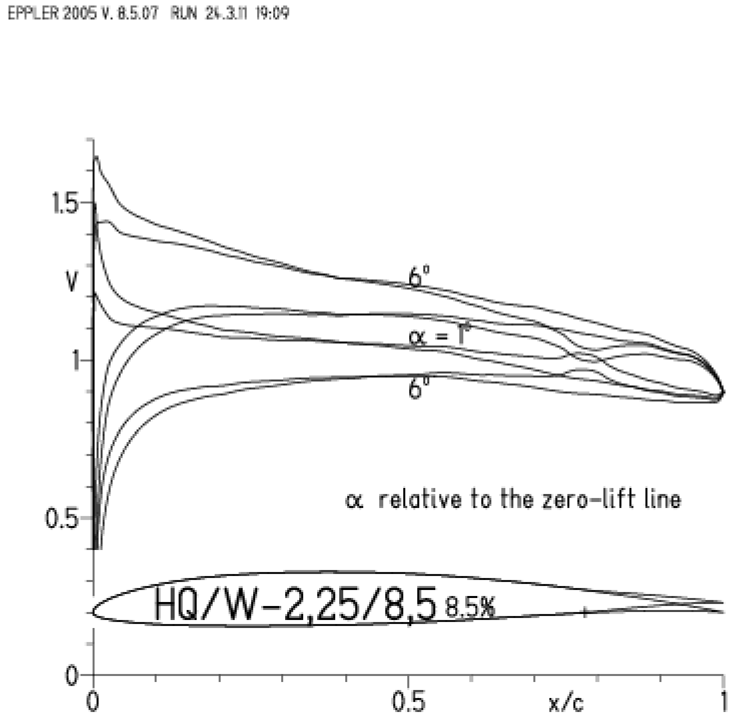
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

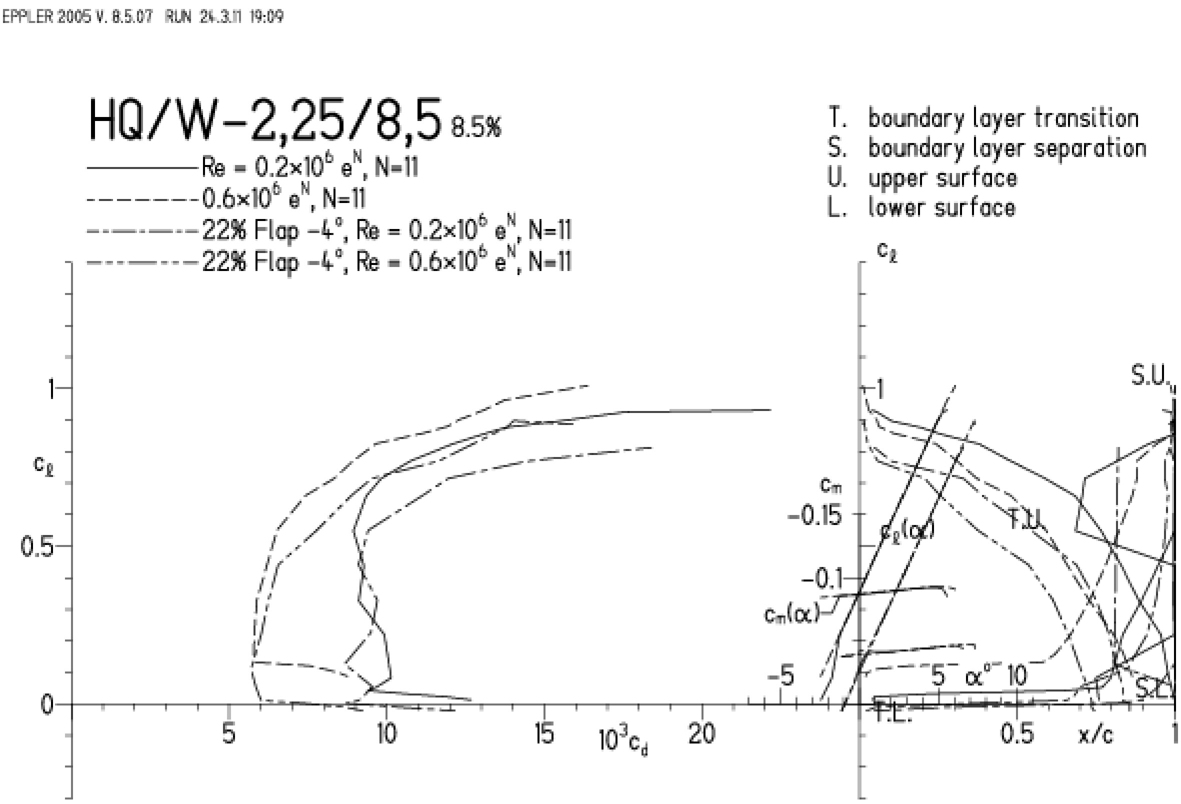


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1



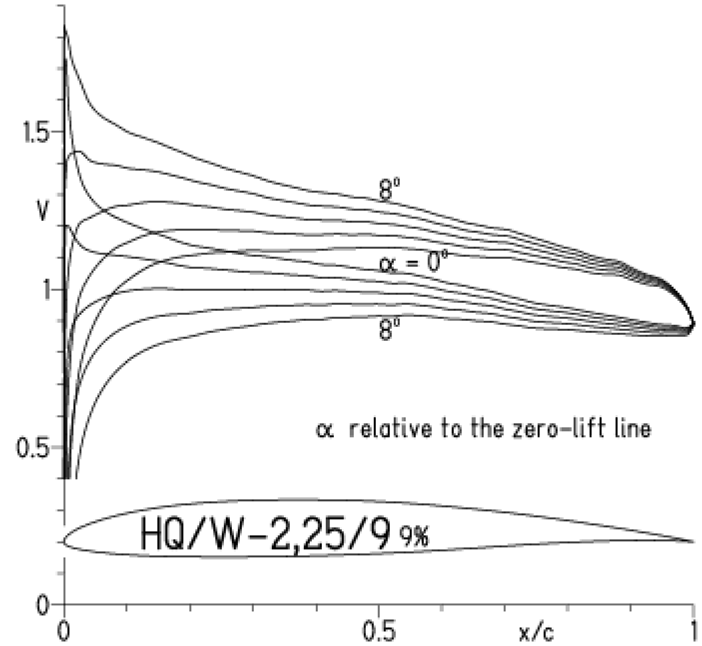
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



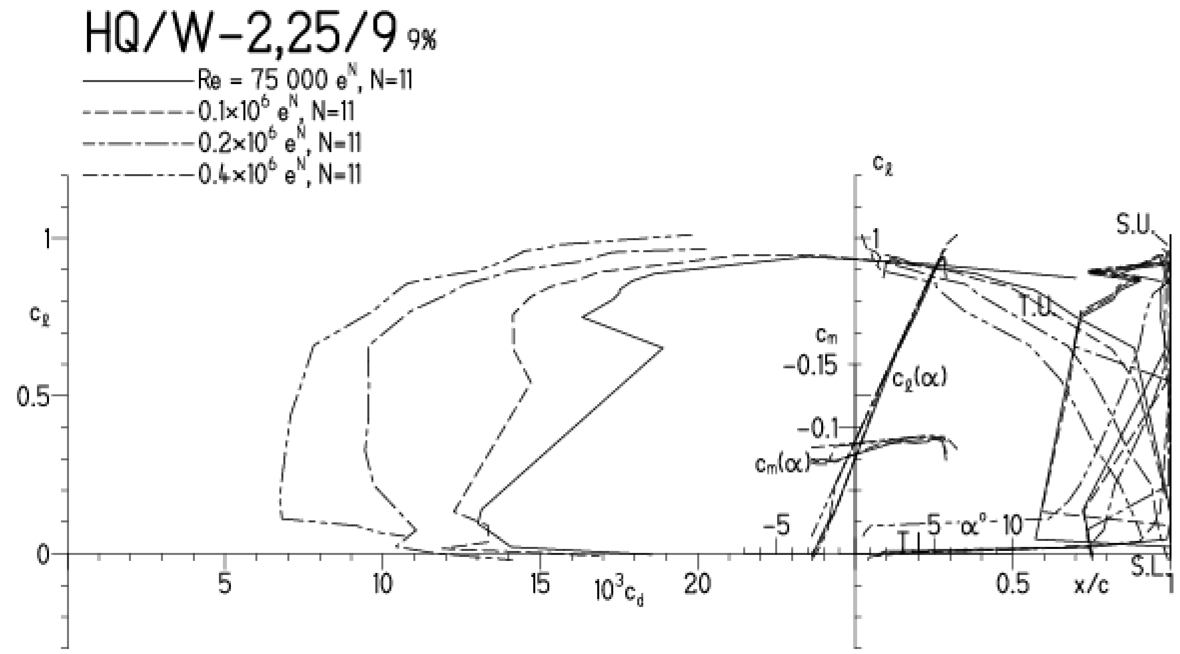


HQ/W-2,25/9, N=11

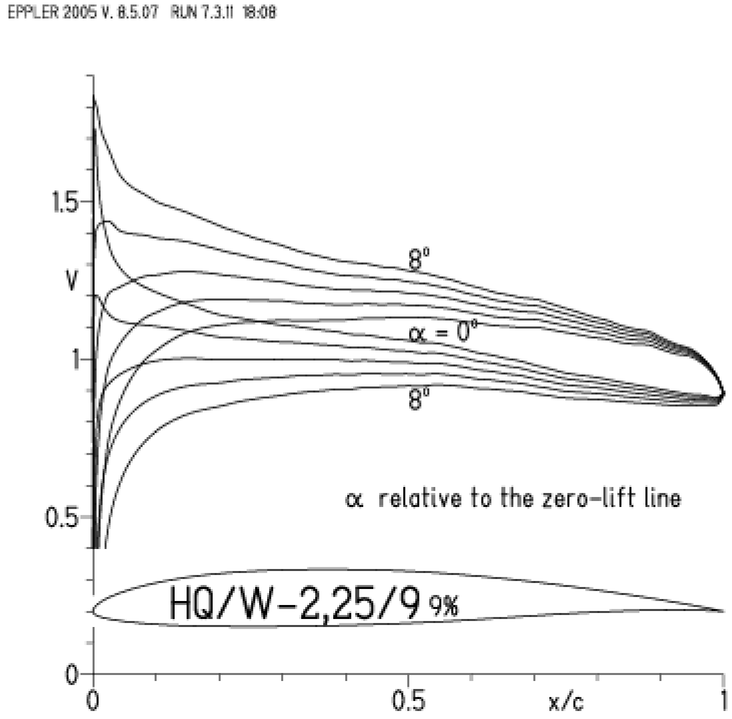
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

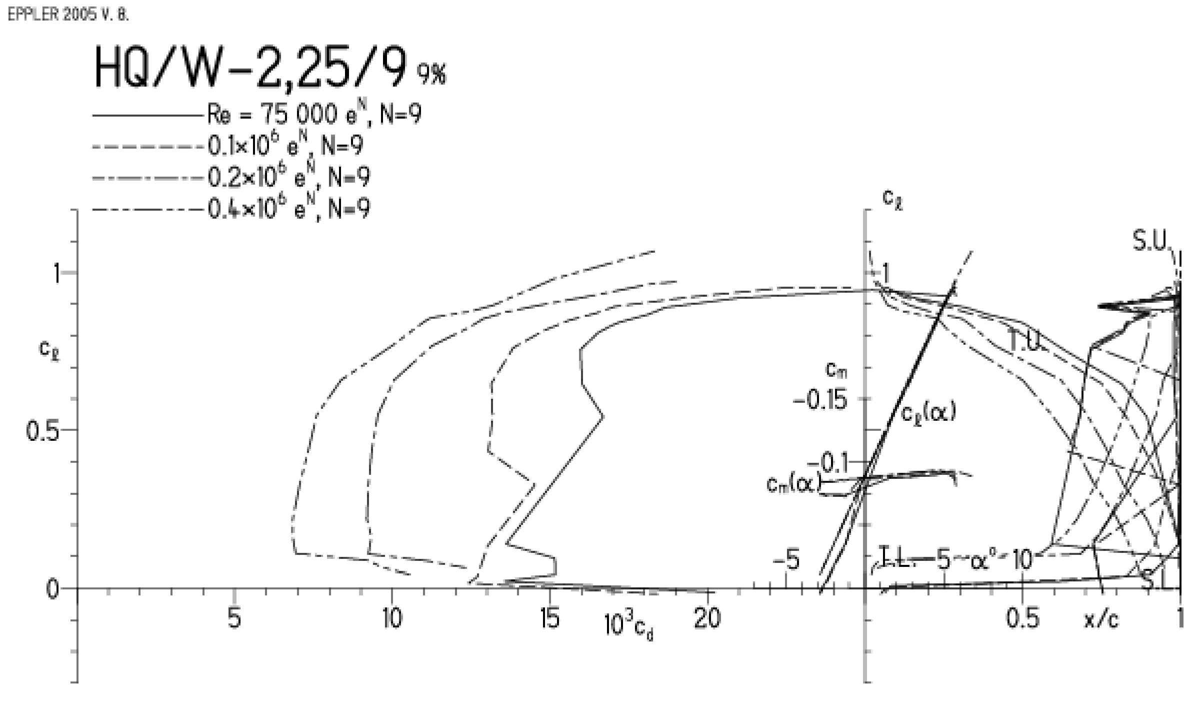


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

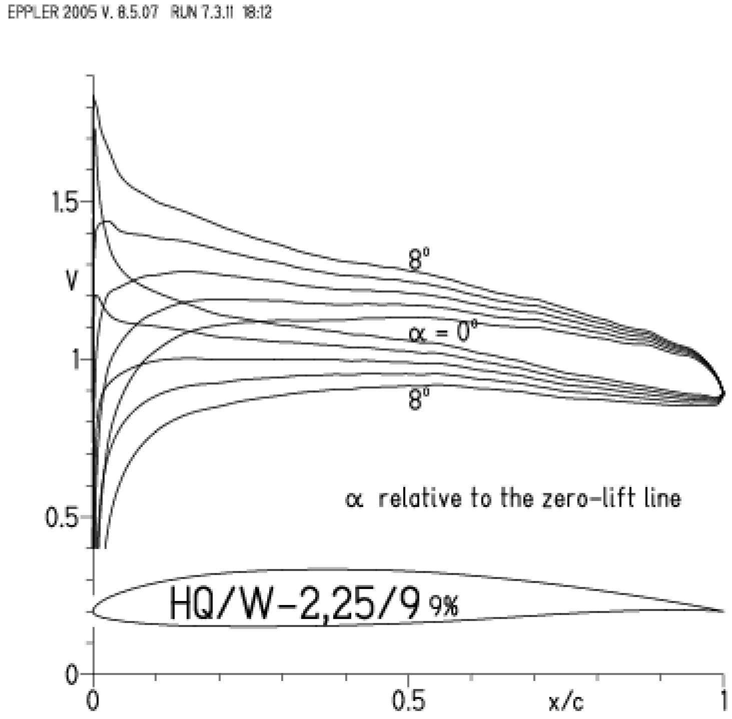


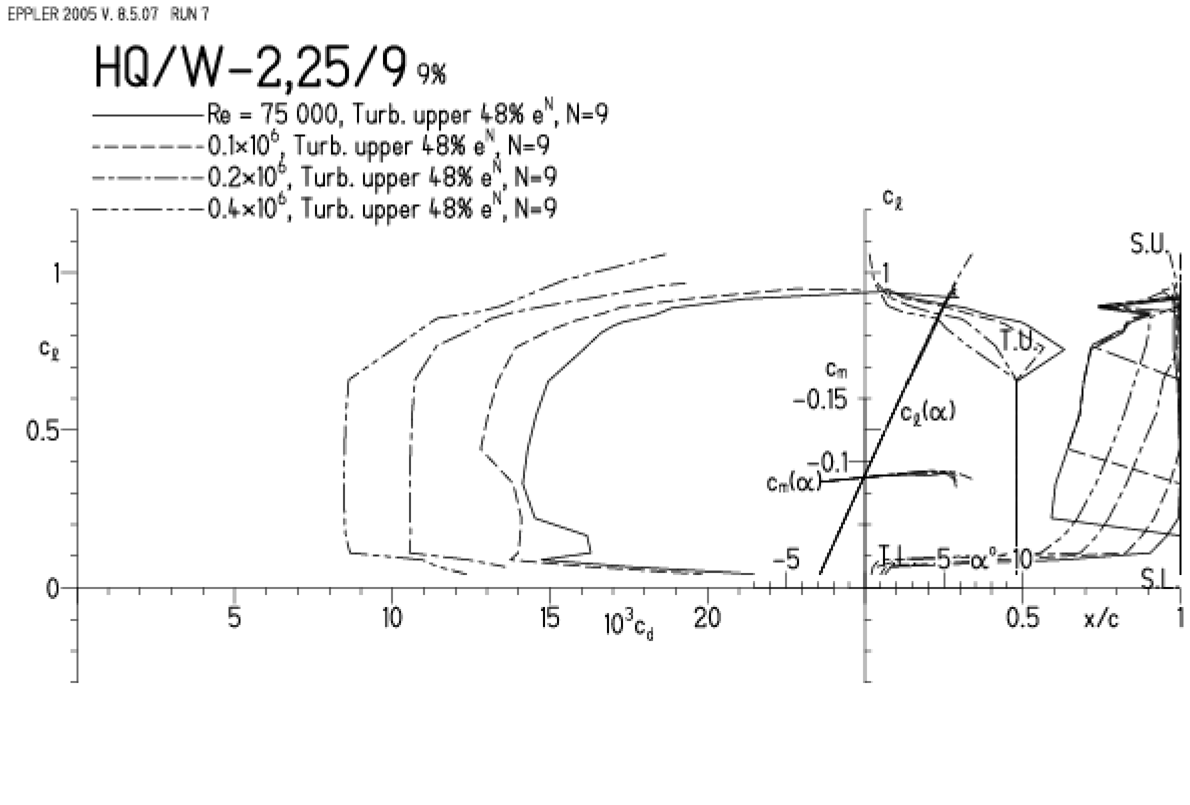
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

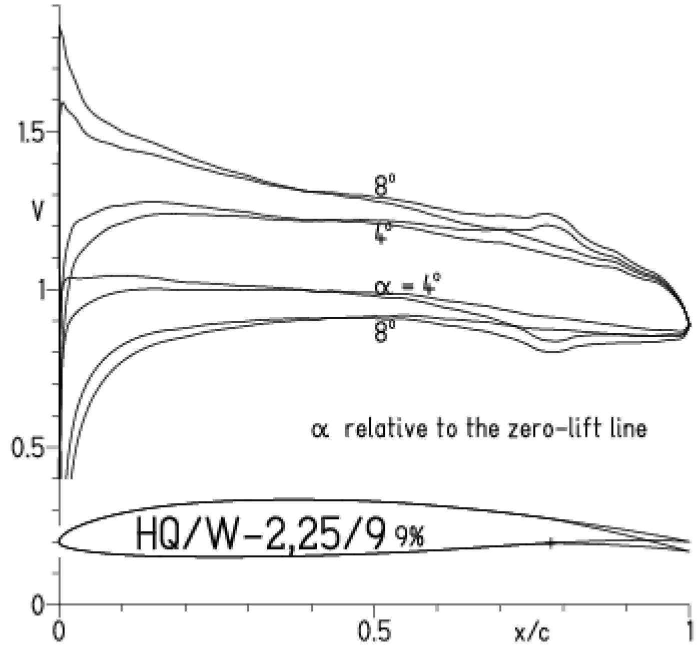
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



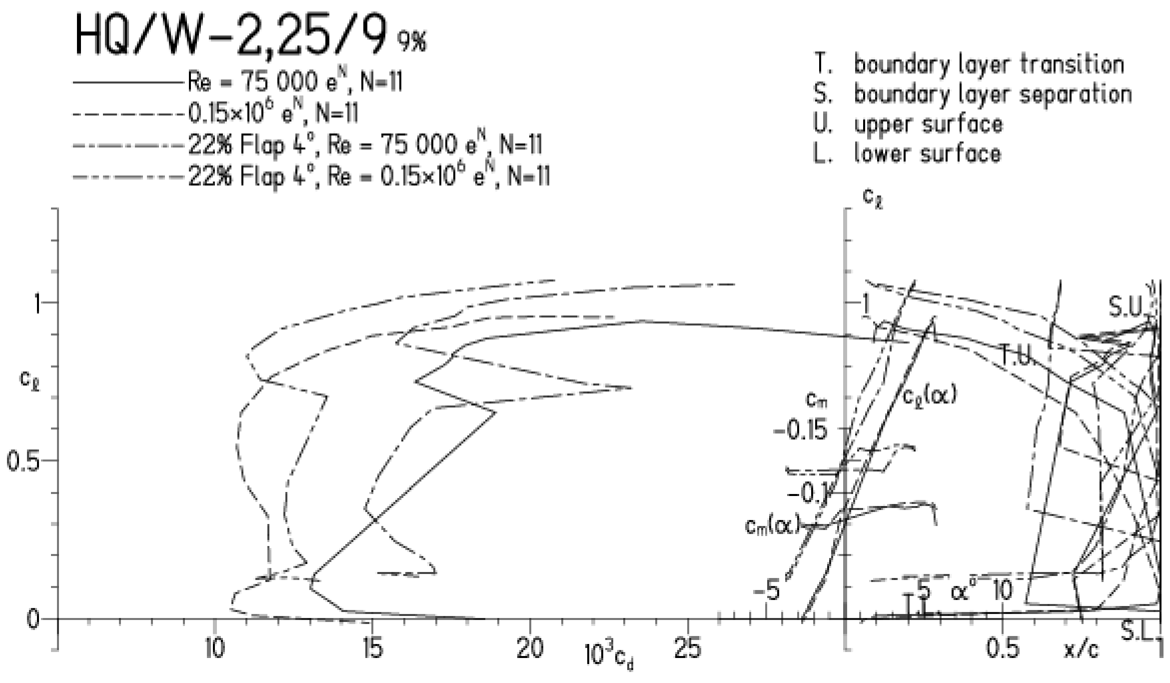


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

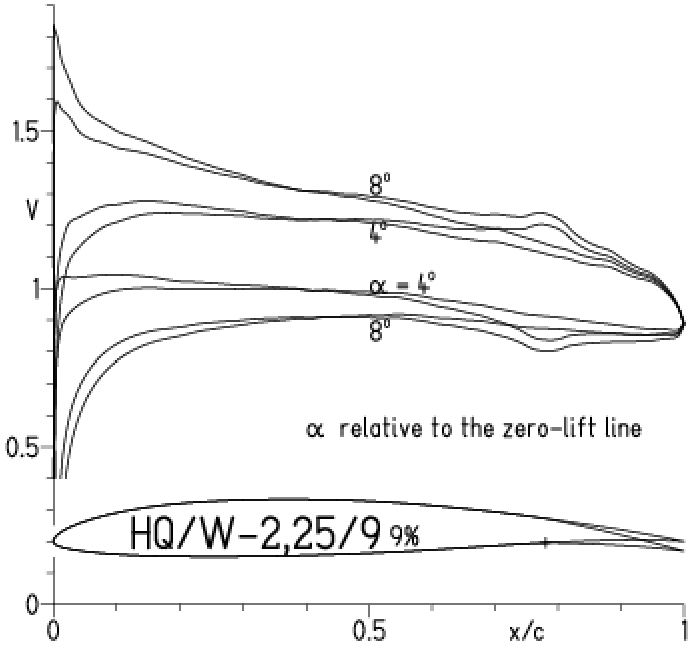


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

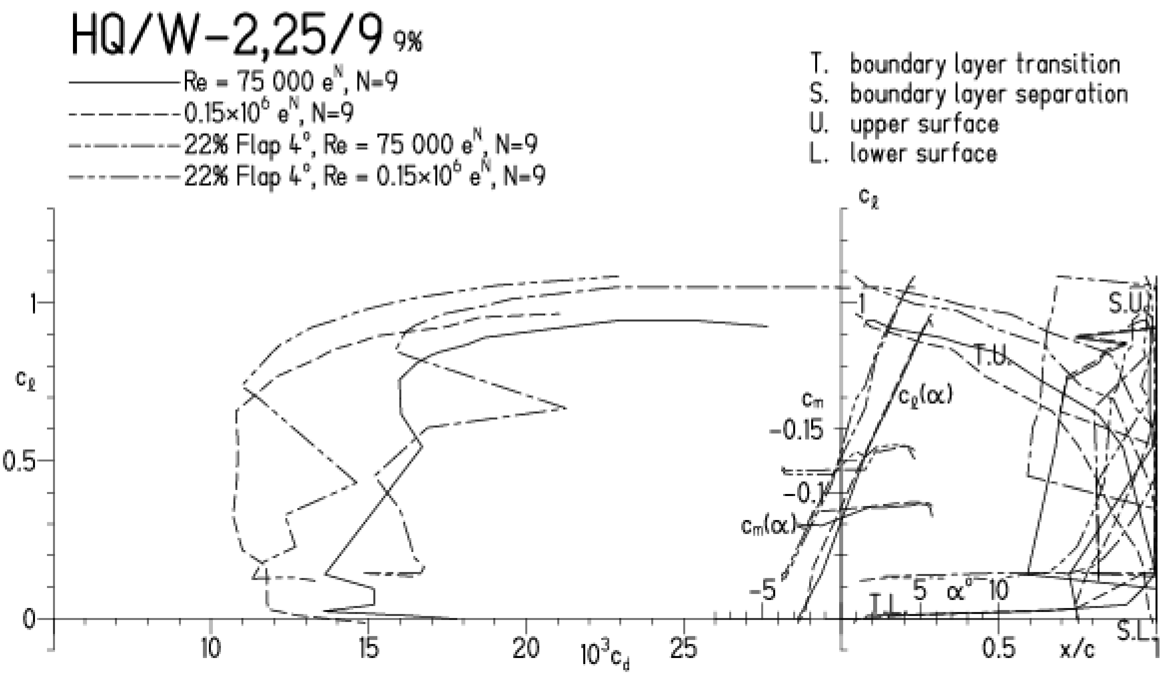


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

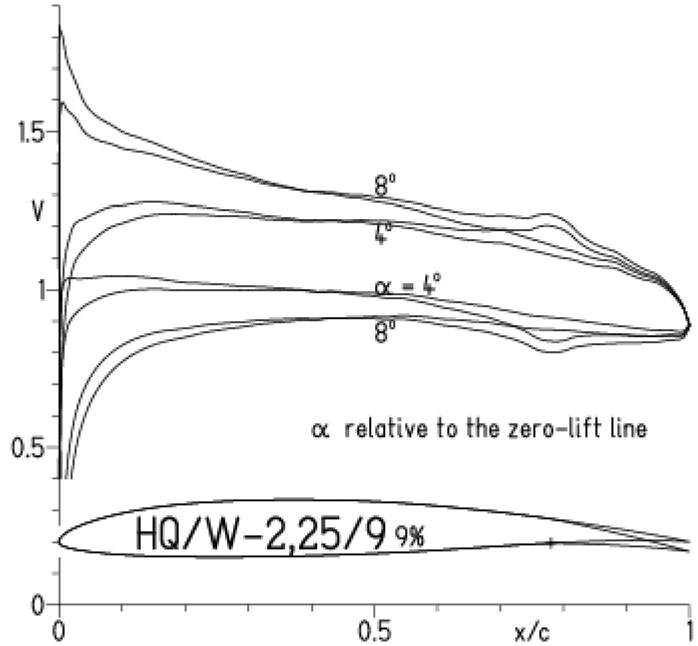


EPPLER 2005 V. 8.5.07 RUN 8.3.1

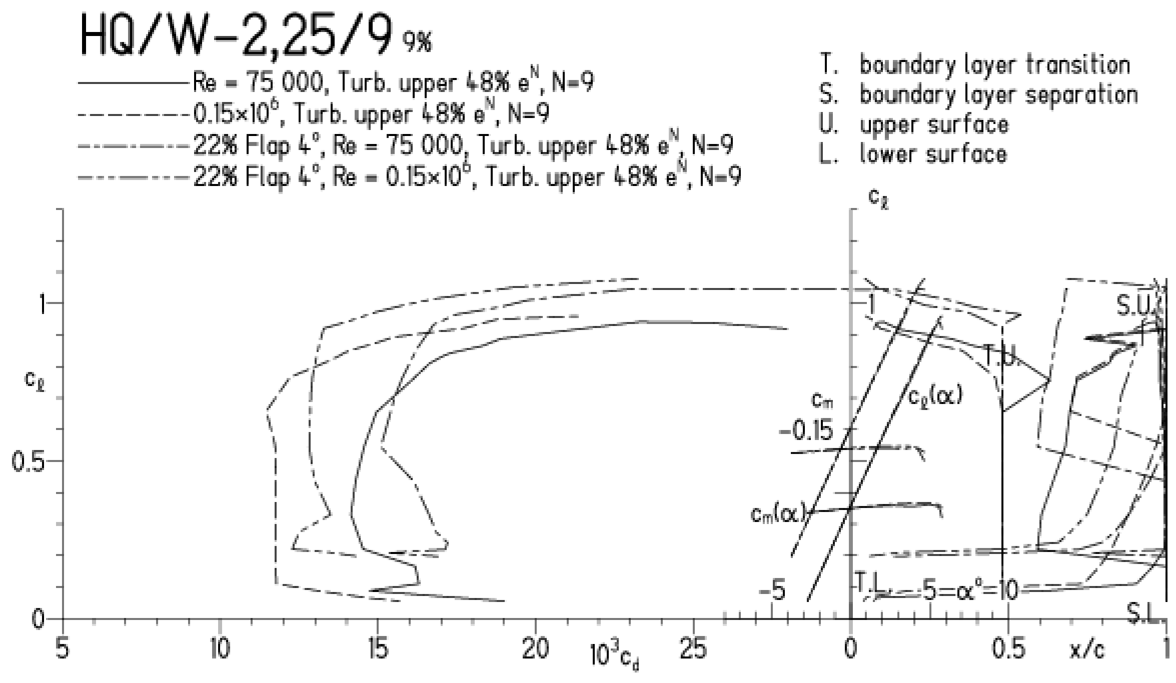


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

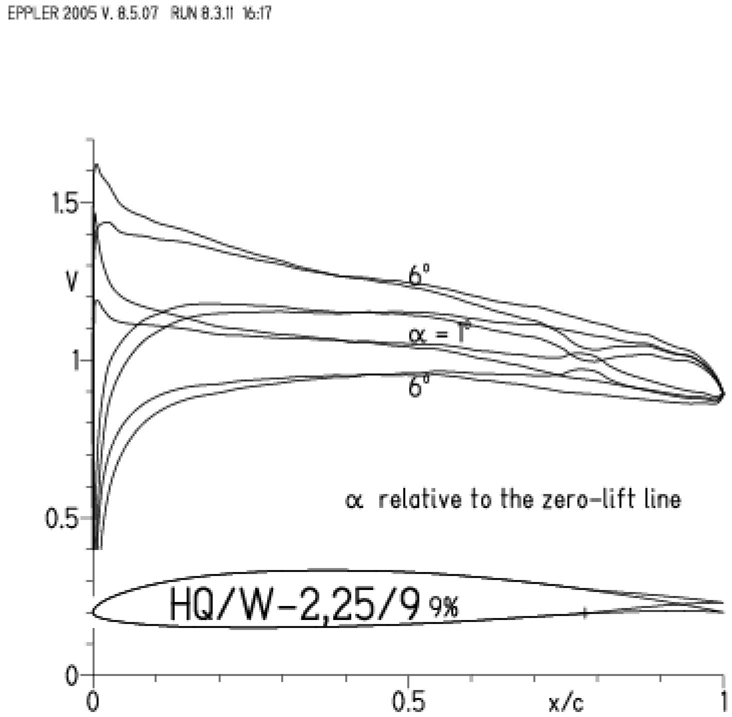
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

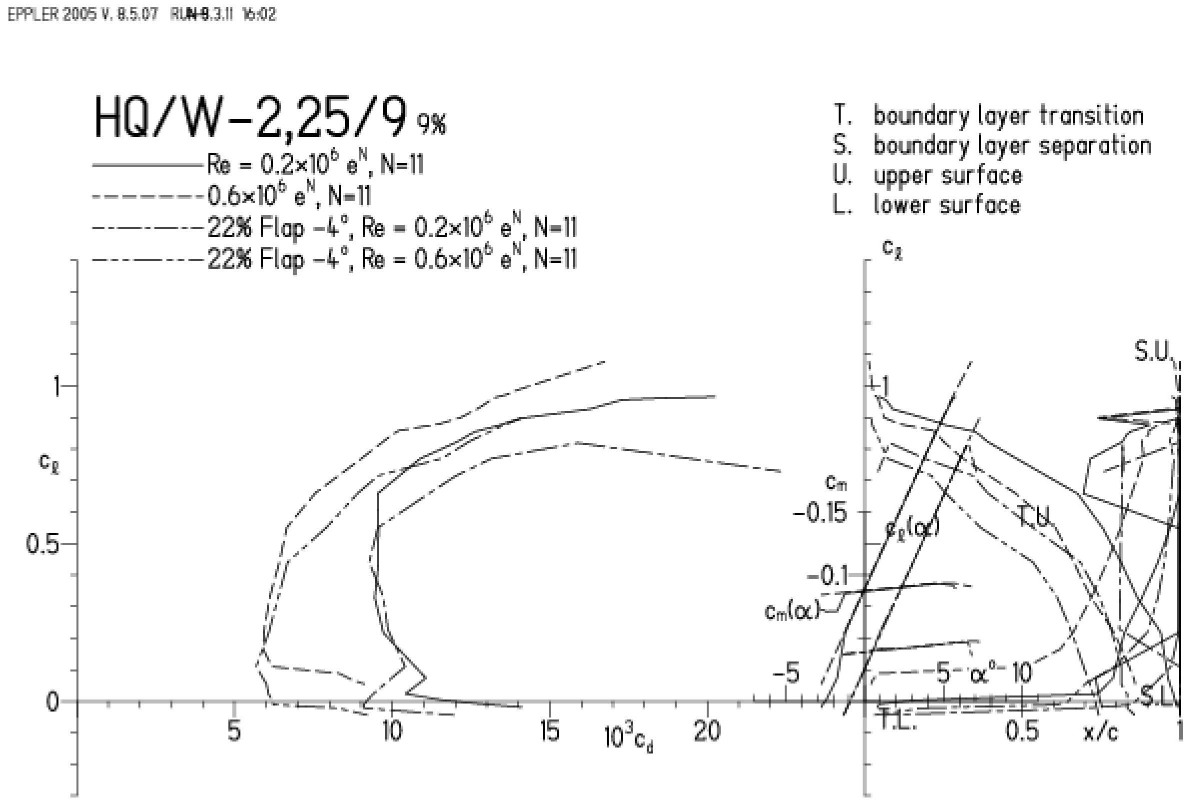


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54



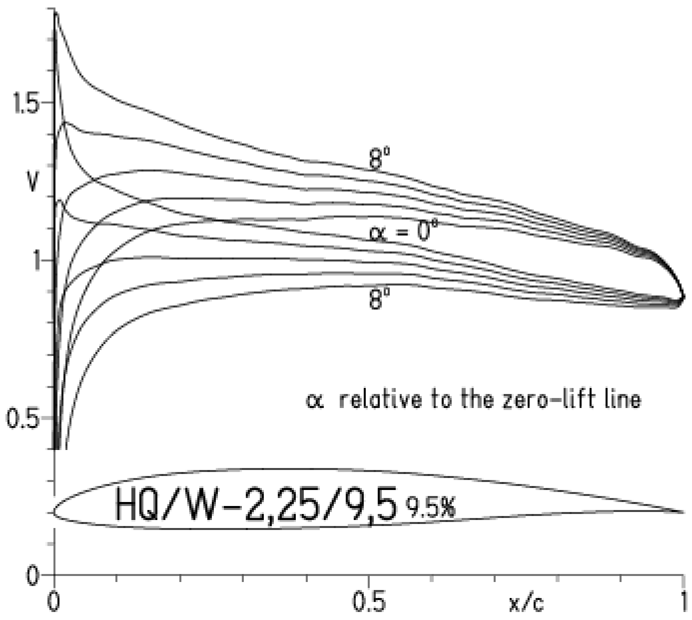
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



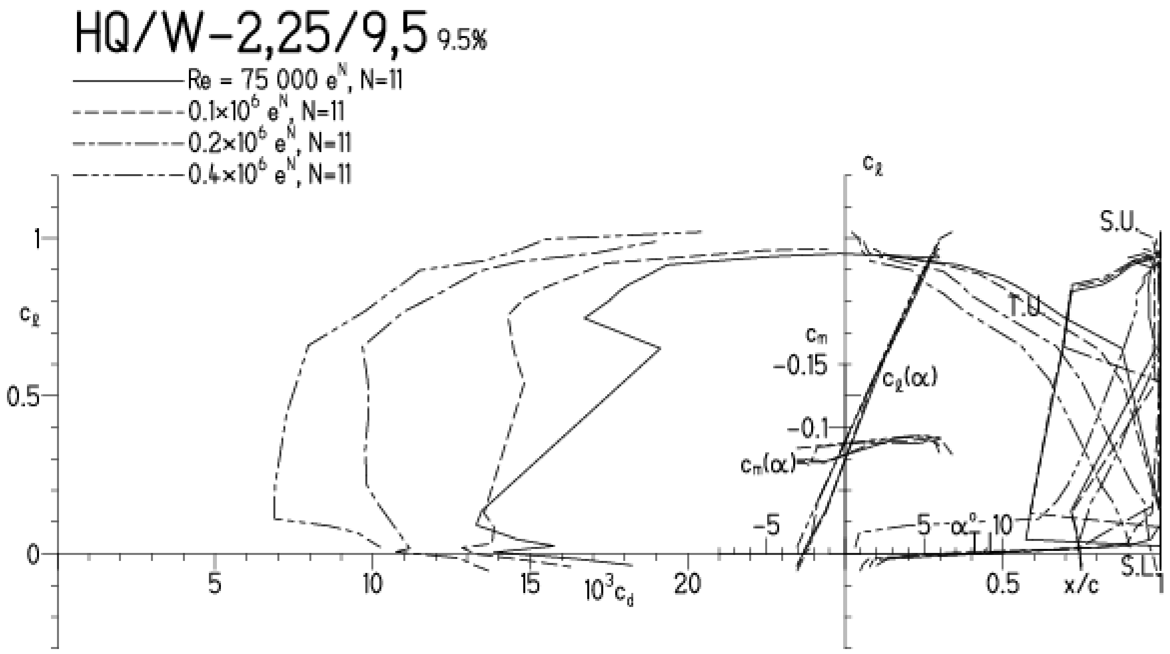


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

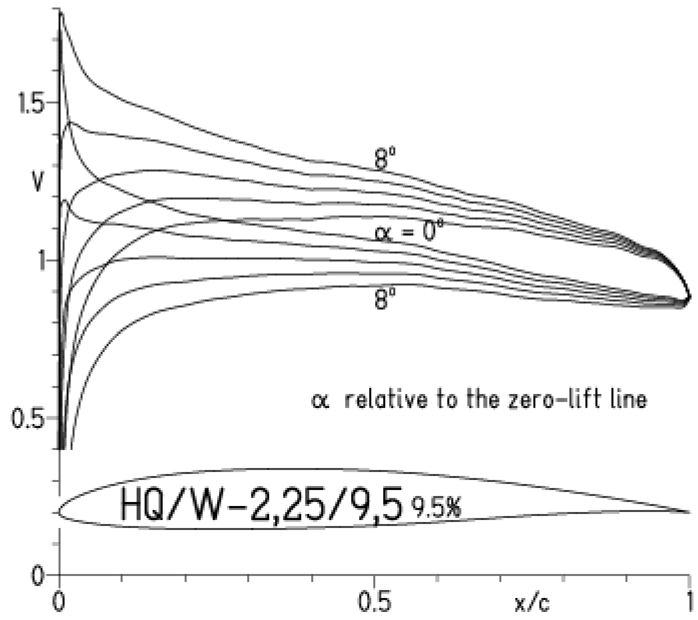


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

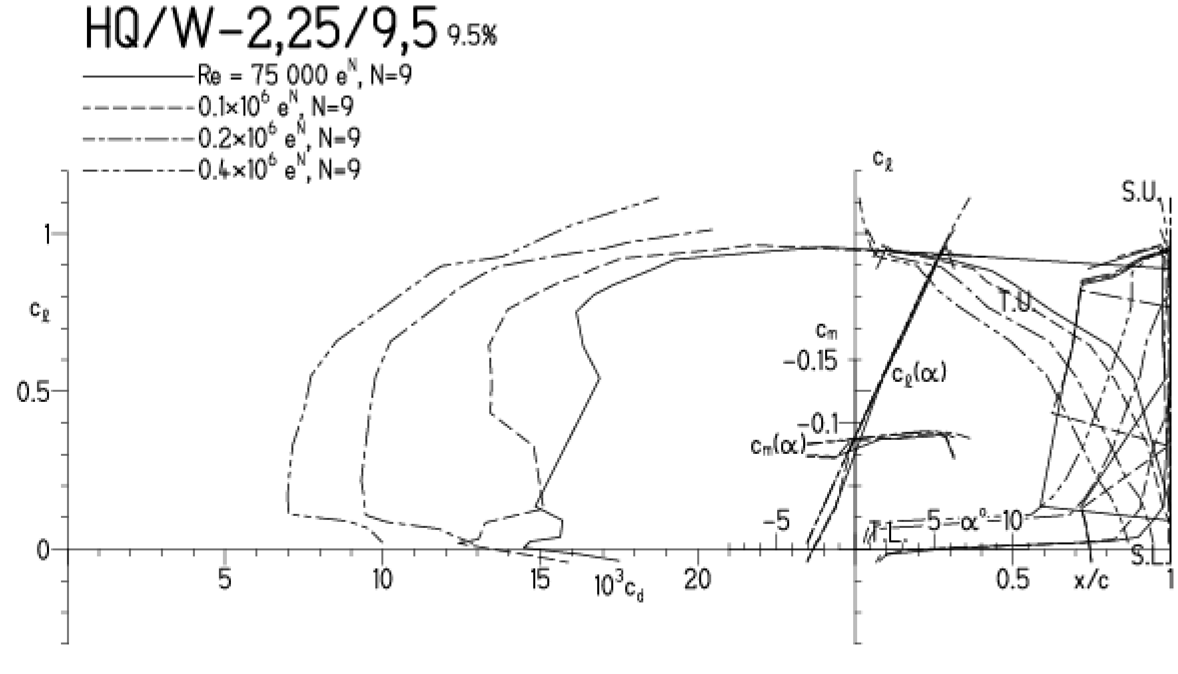


HQ/W-2,25/9,5, N=9

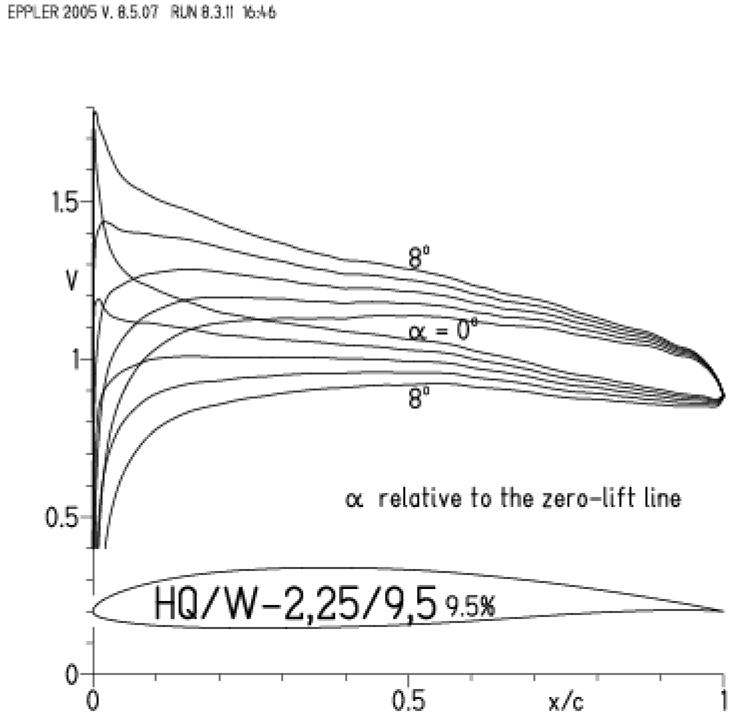
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

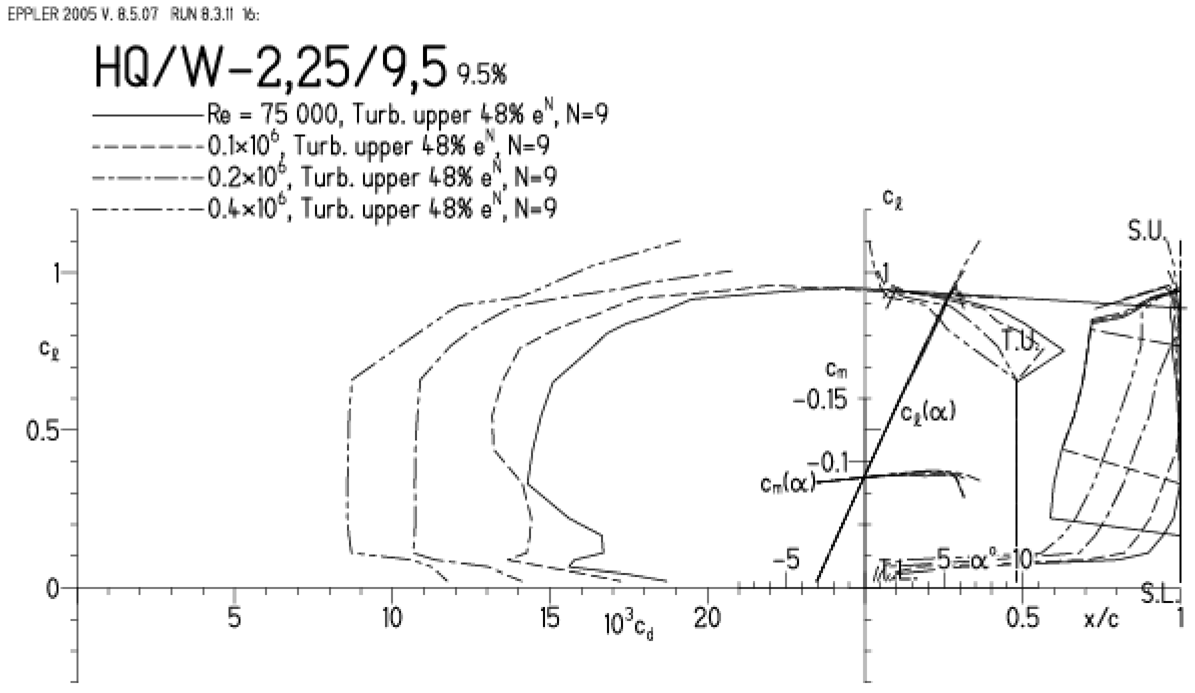


EPPLER 2005 V. 8.5.07 RUN 8.3.

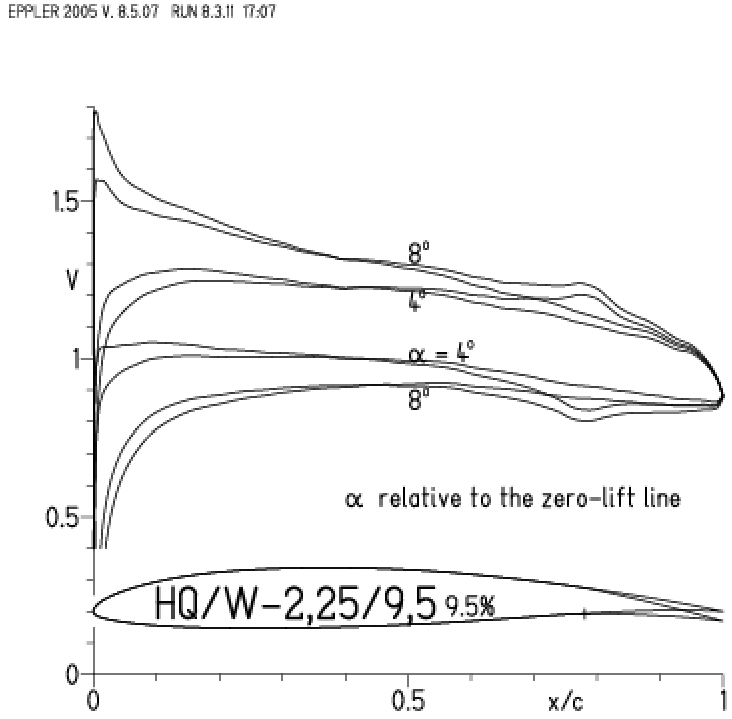


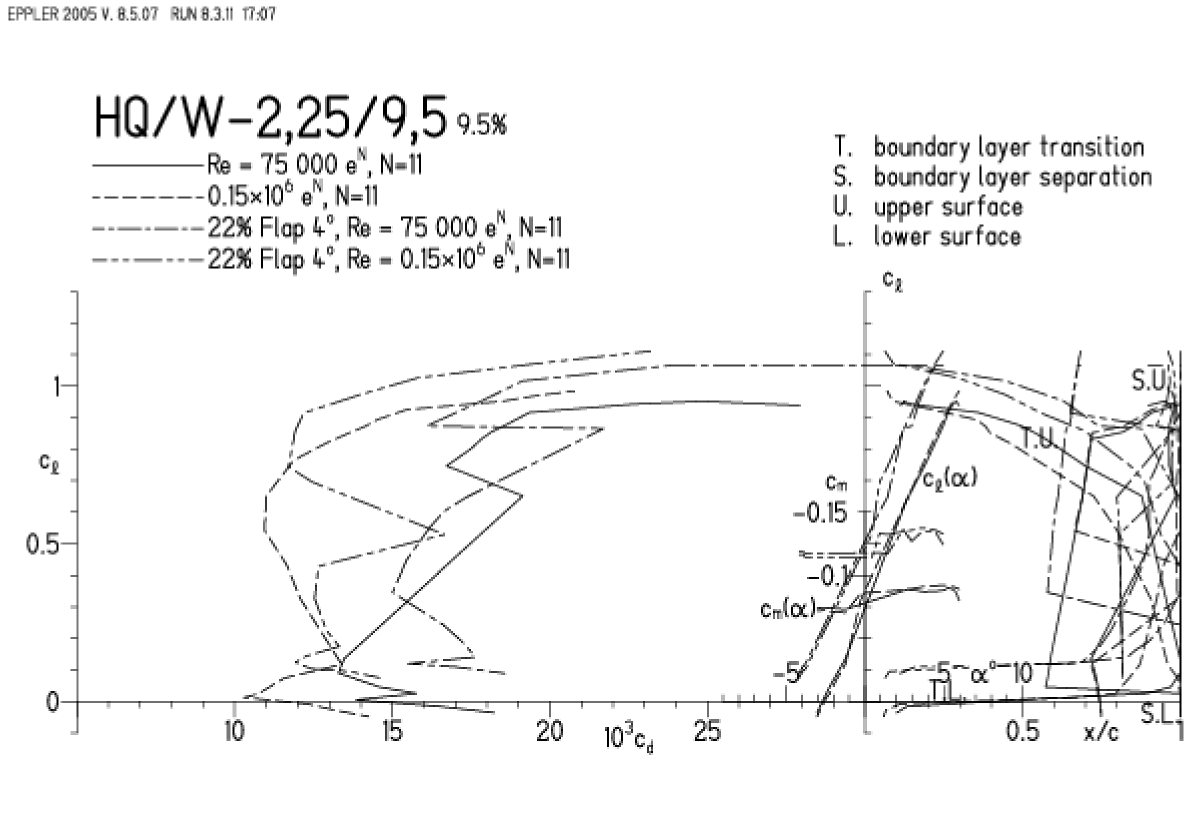
HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





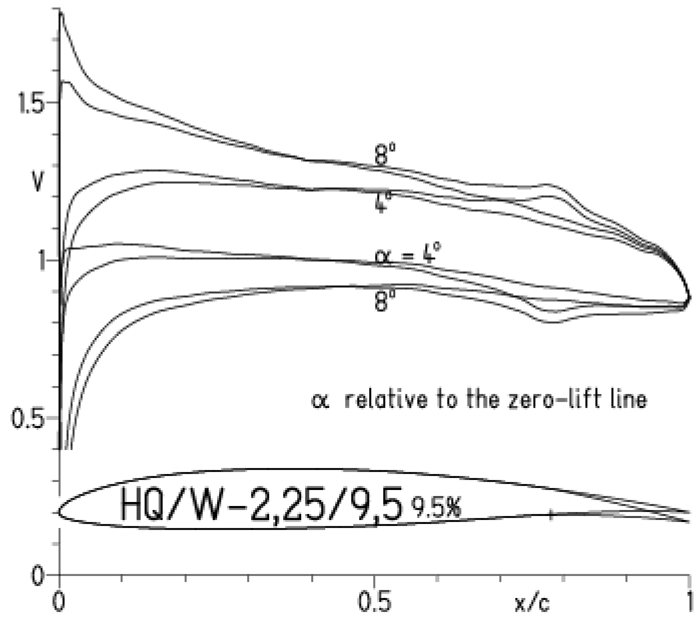
HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag



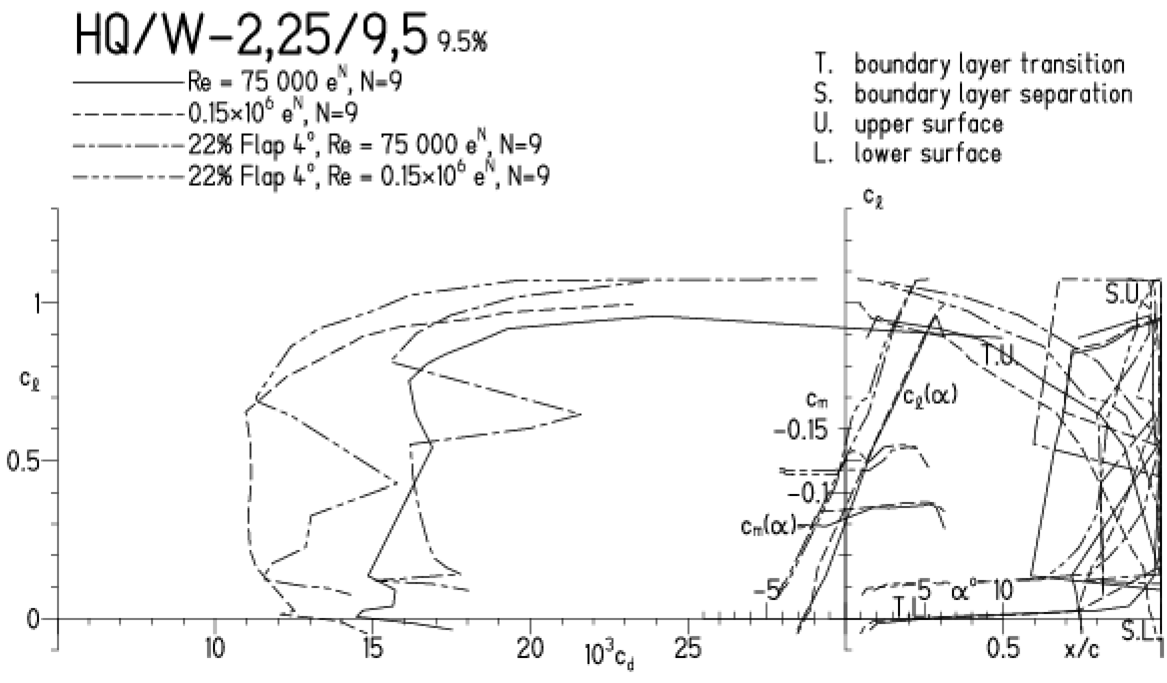


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

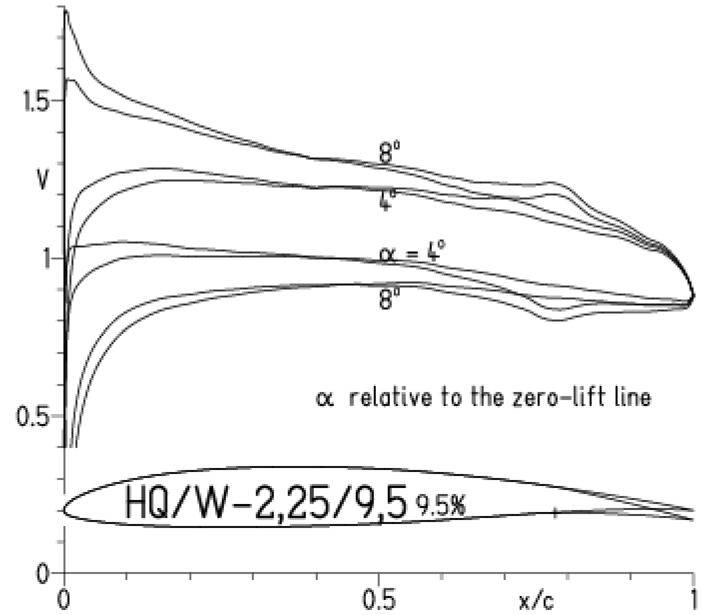


EPPLER 2005 V. 8.5.07 R

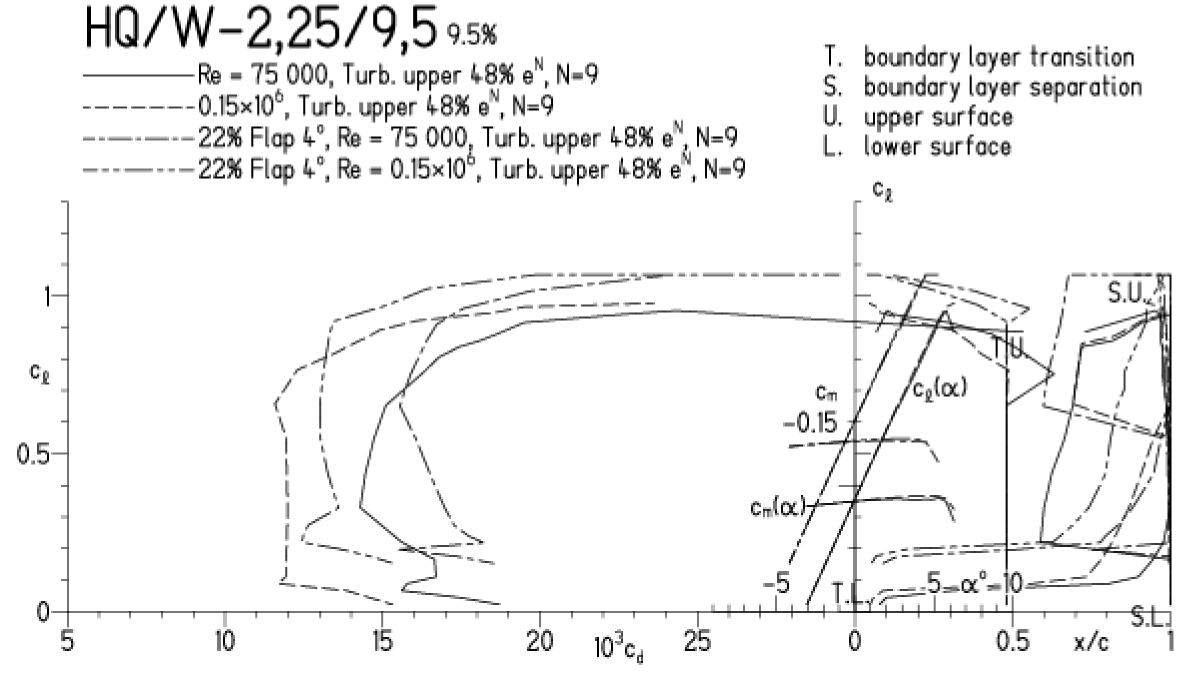


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

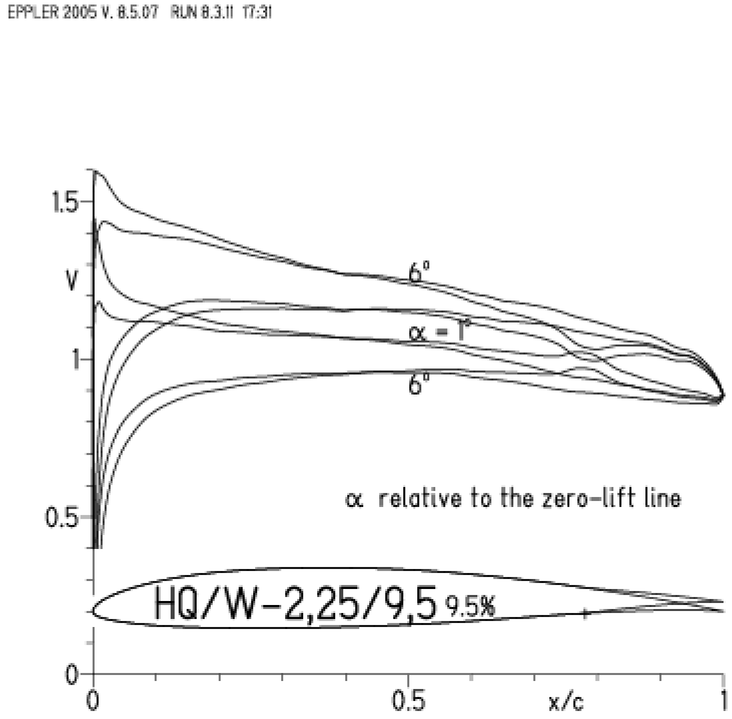
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

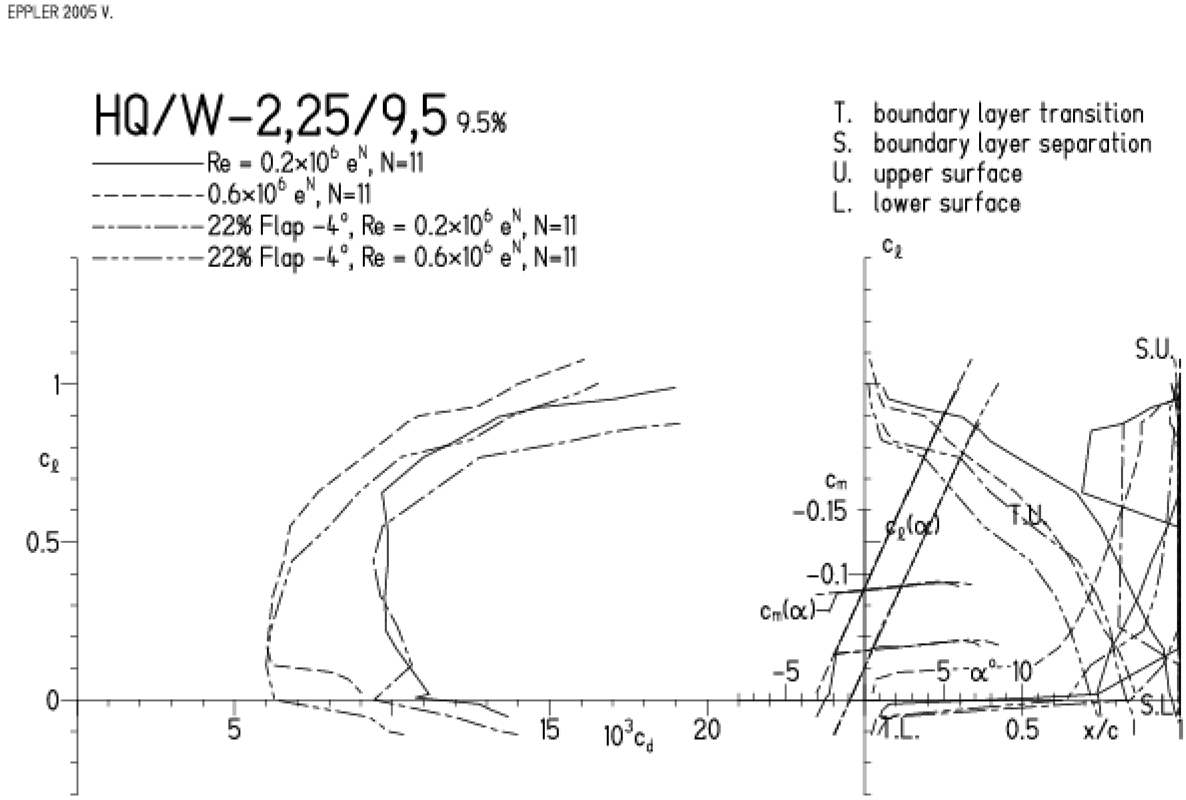


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14



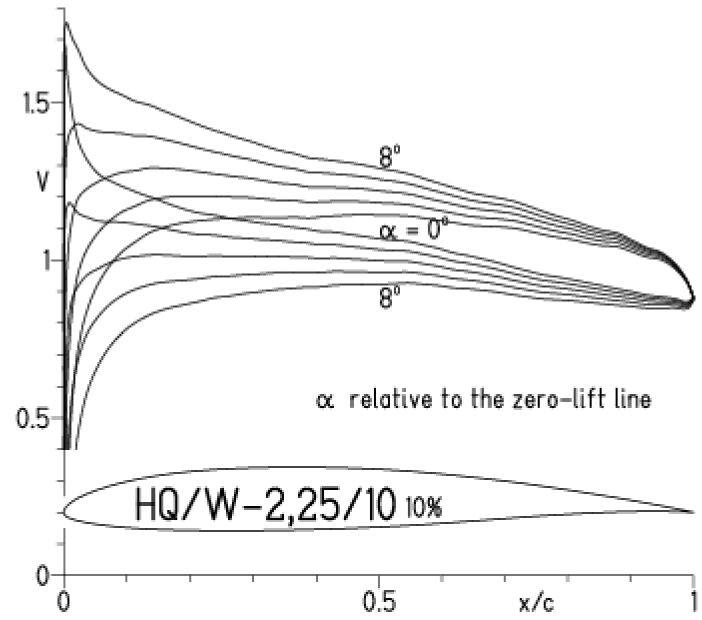
HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag



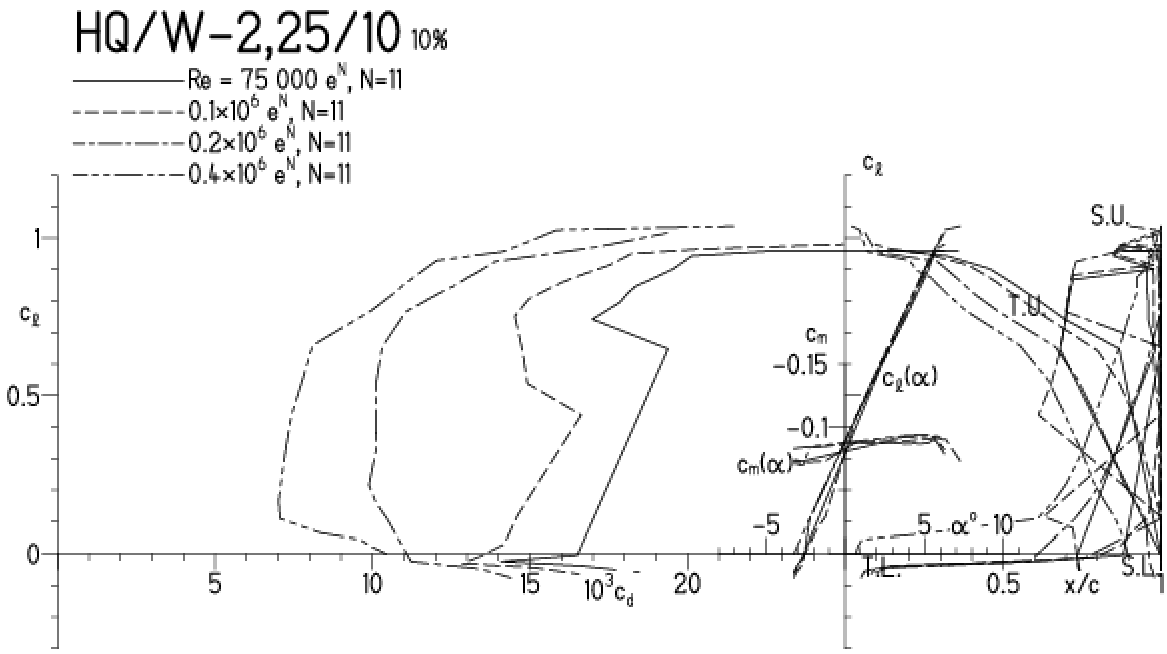


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

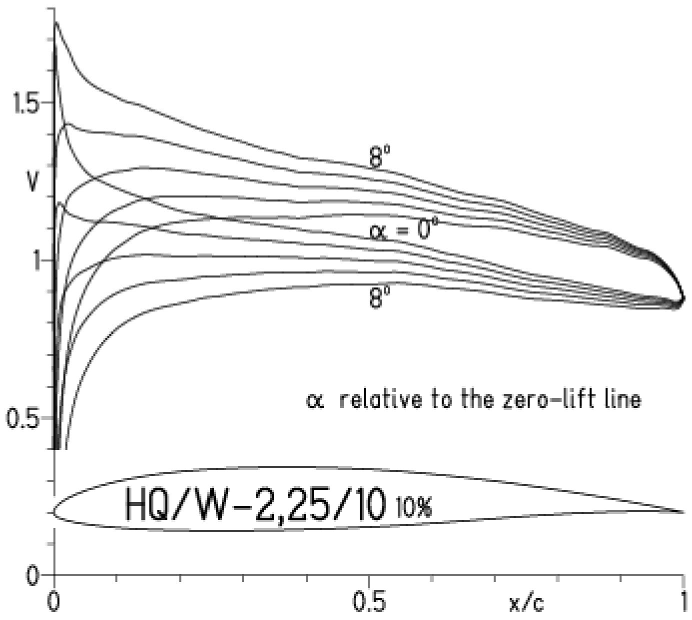


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

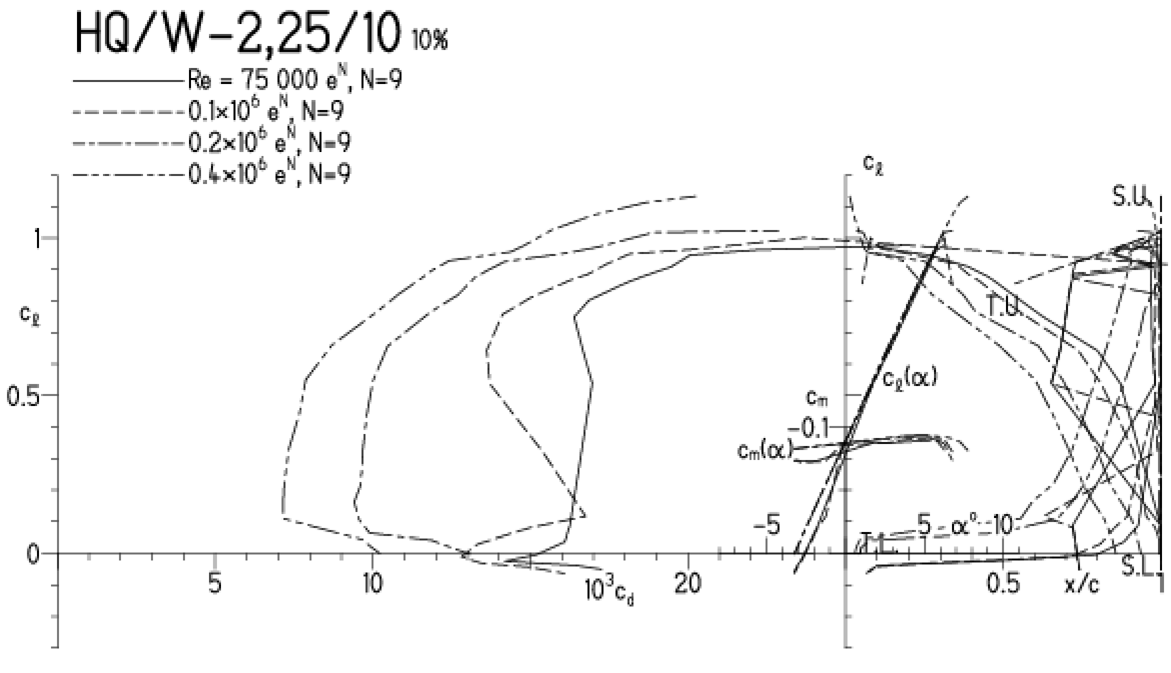


<u>HQ/W-2,25/10</u>, N=9

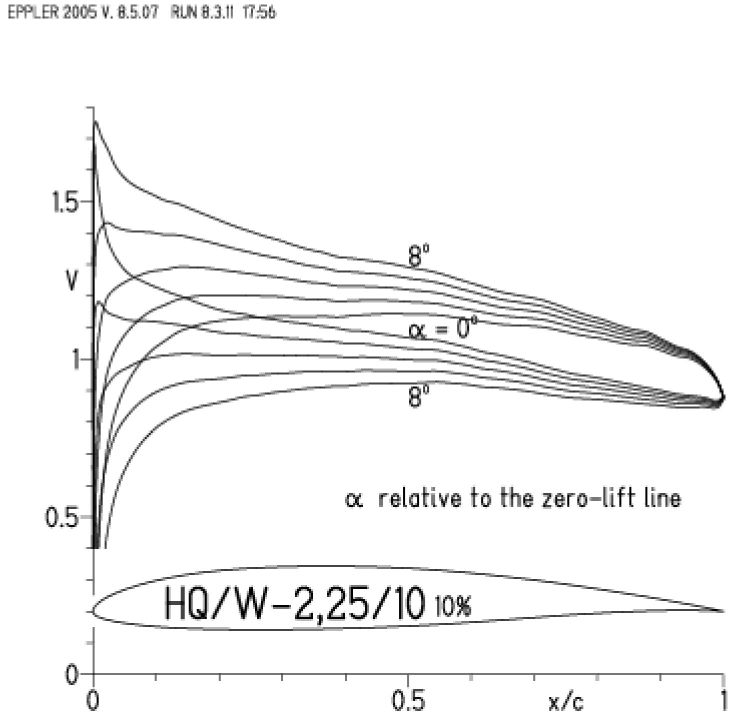
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

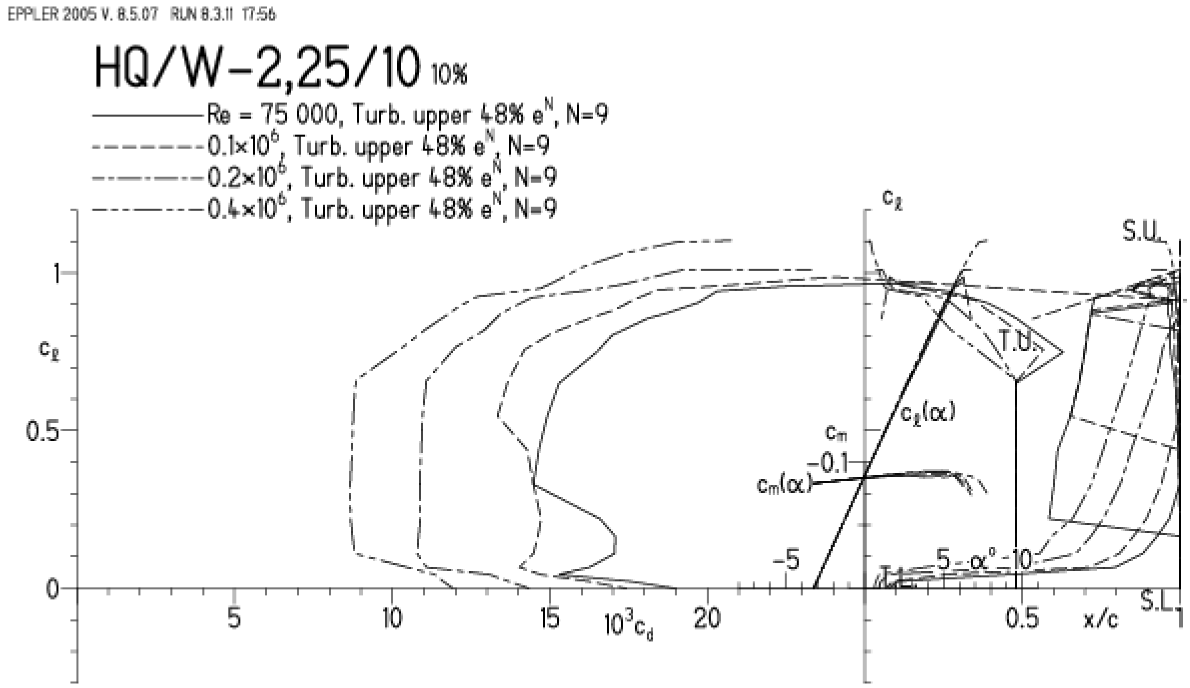


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



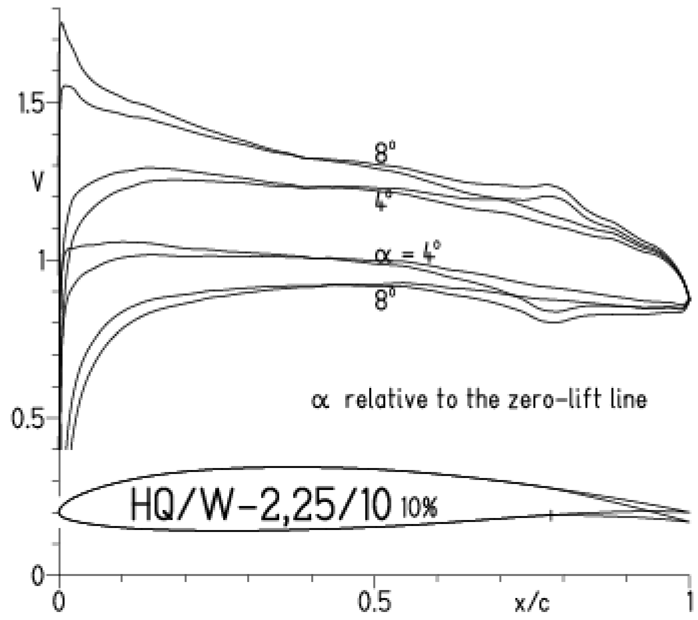
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



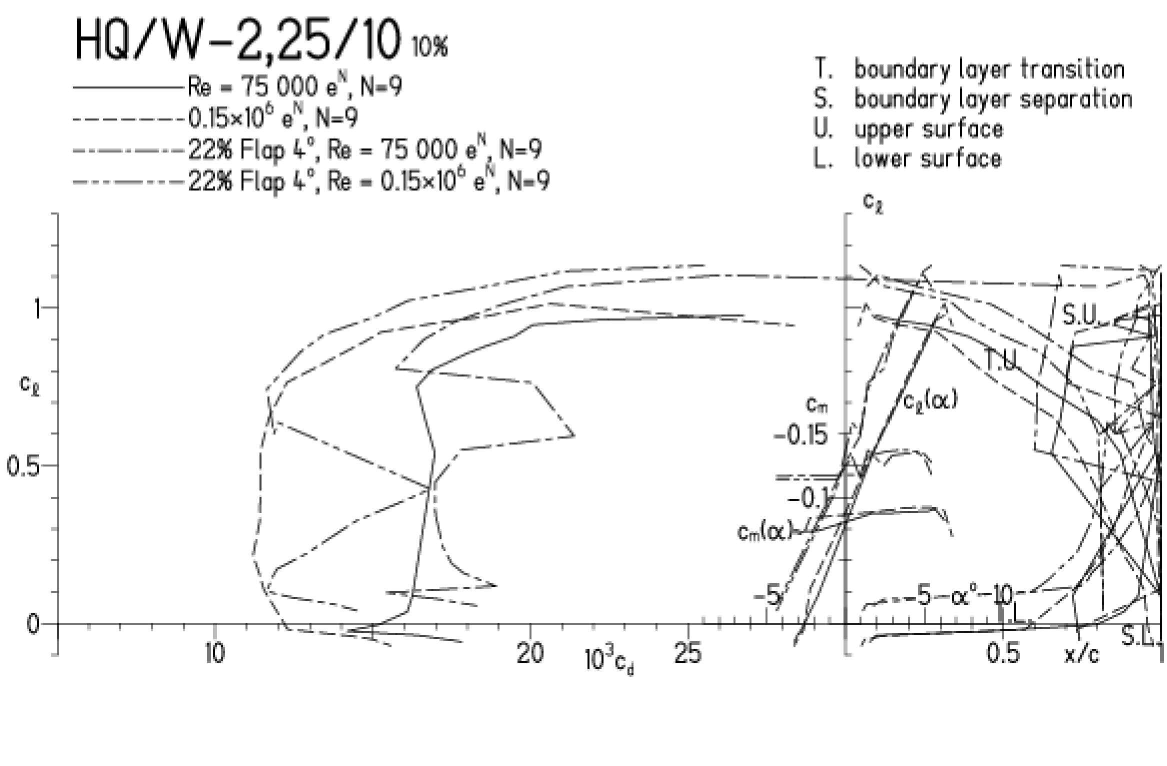


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

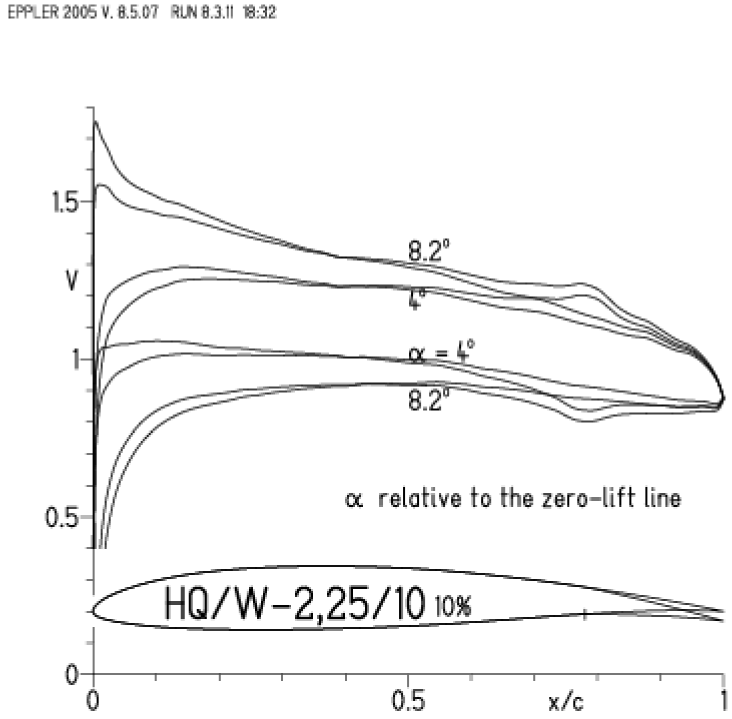
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

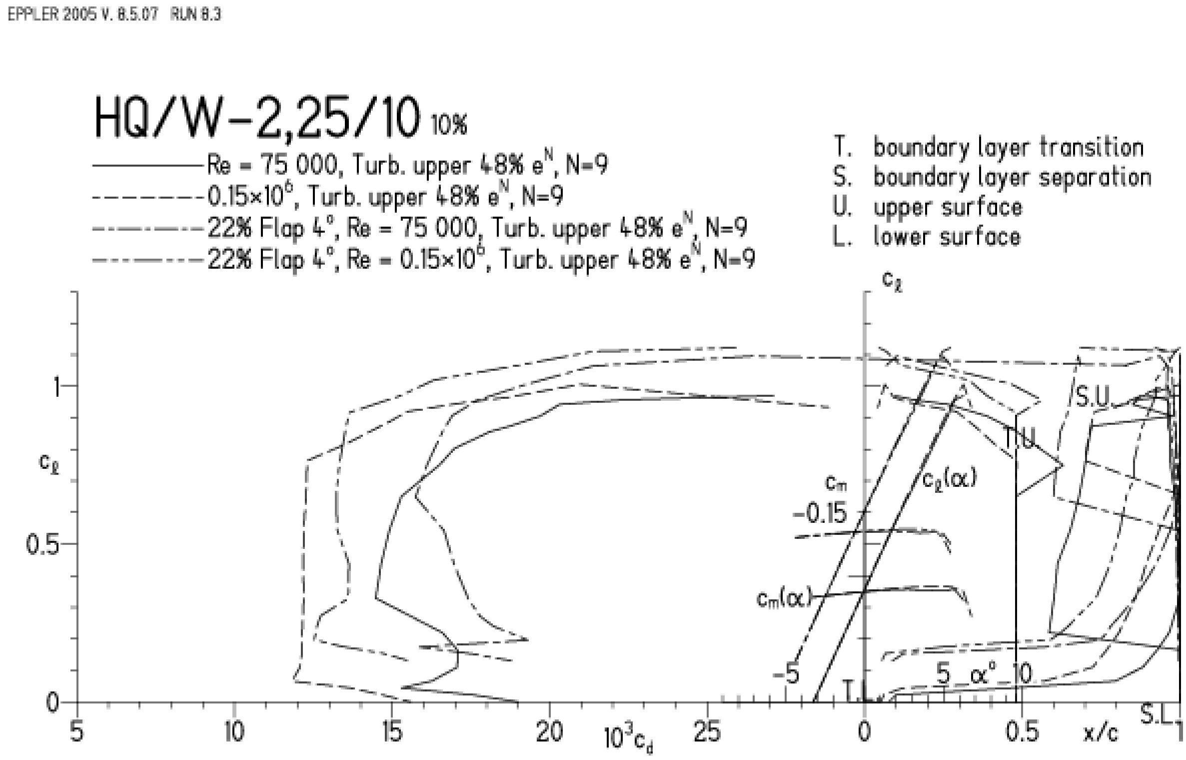


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



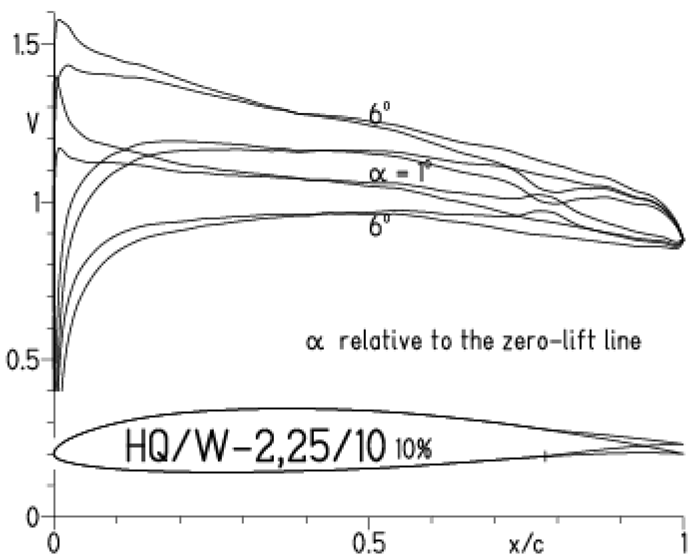
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



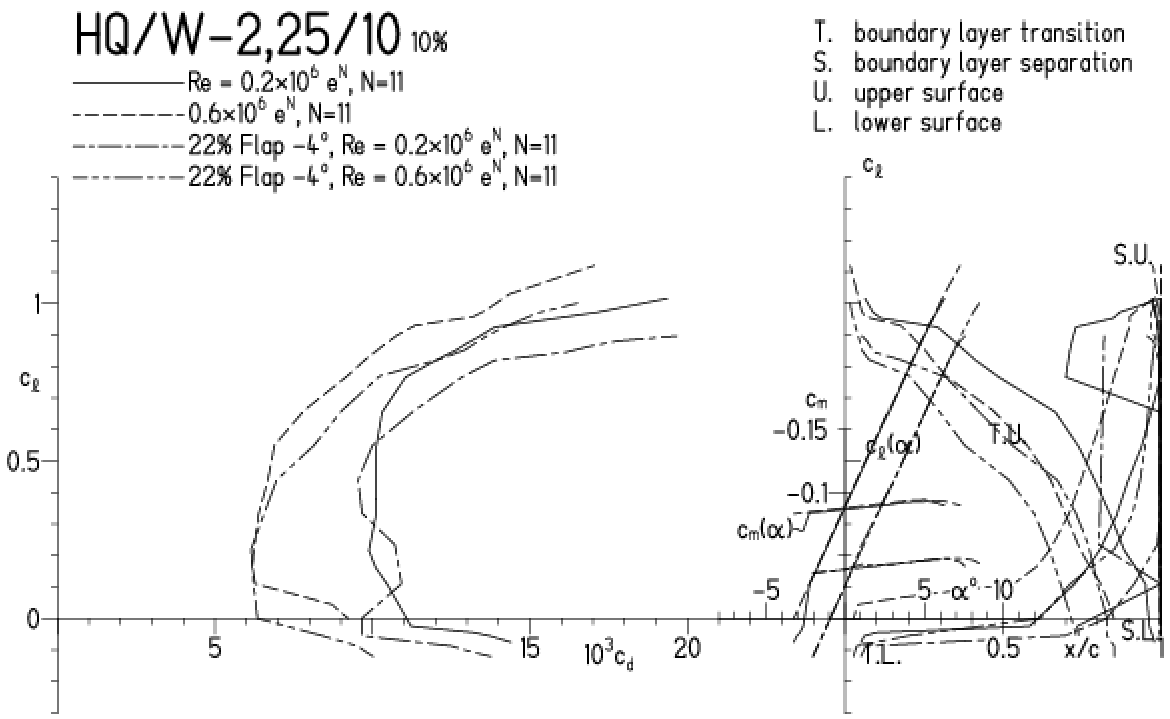


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

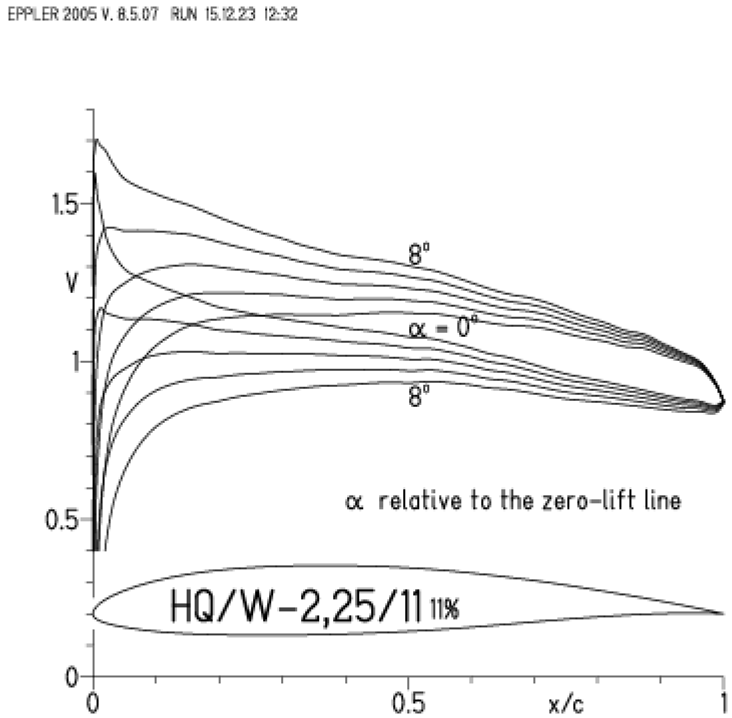
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

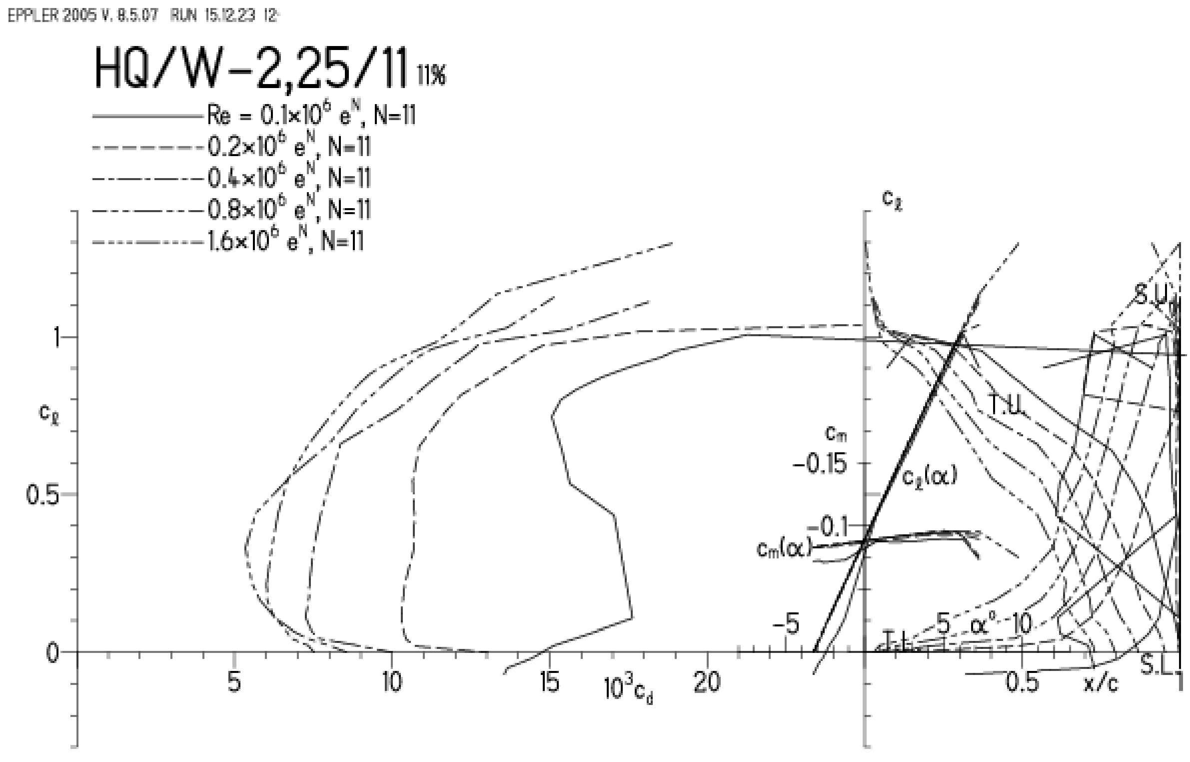


EPPLER 2005 V. 8.5.07 RUN



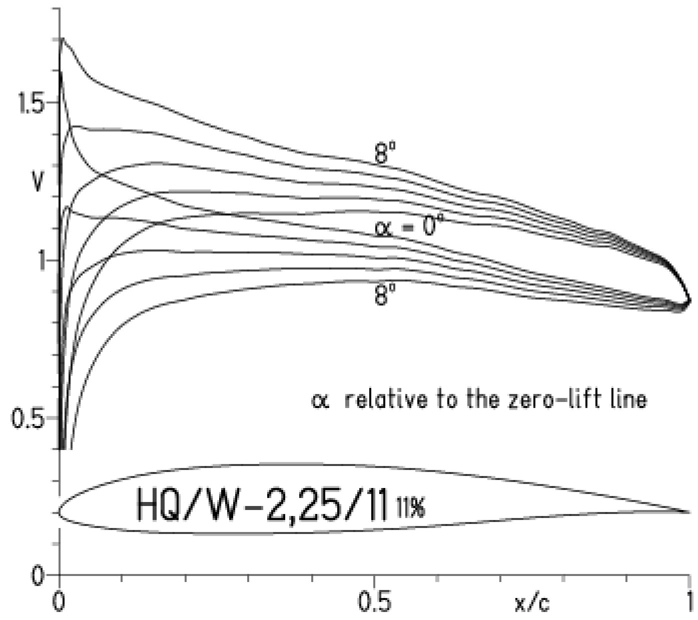
HQ/W-2,25/11, N=11



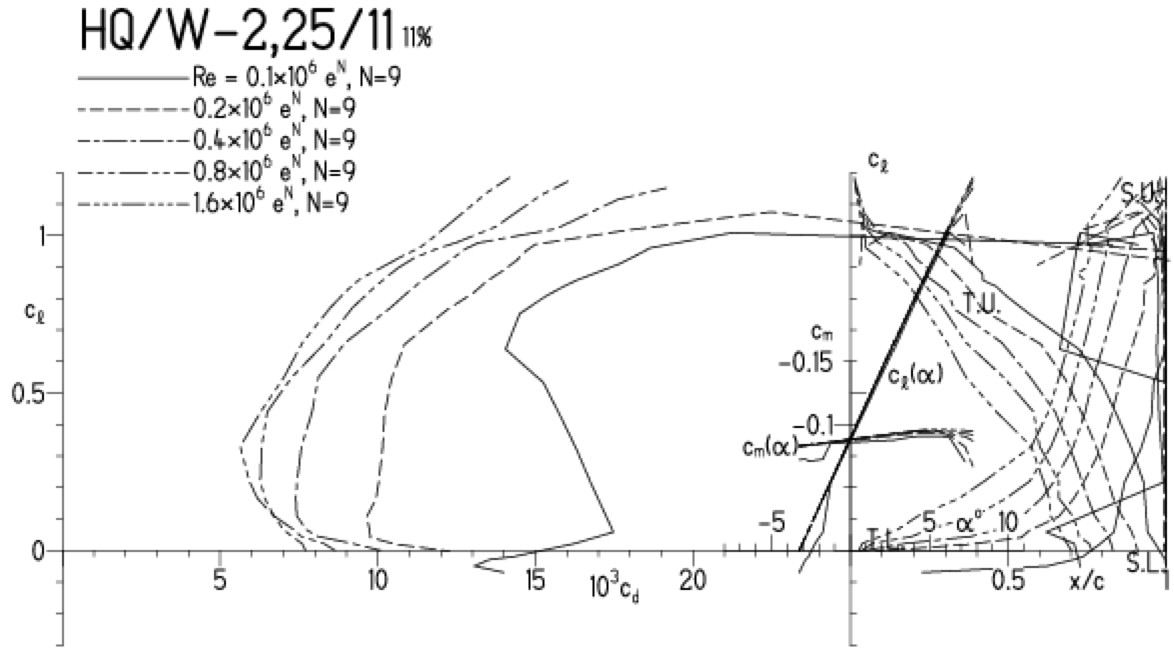


HQQ/W-2,25/11, N=9

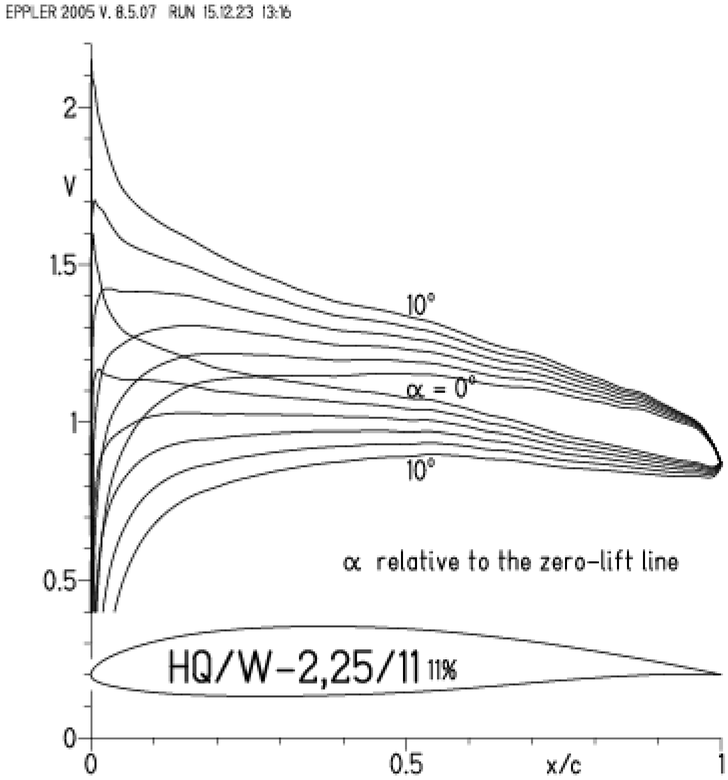
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

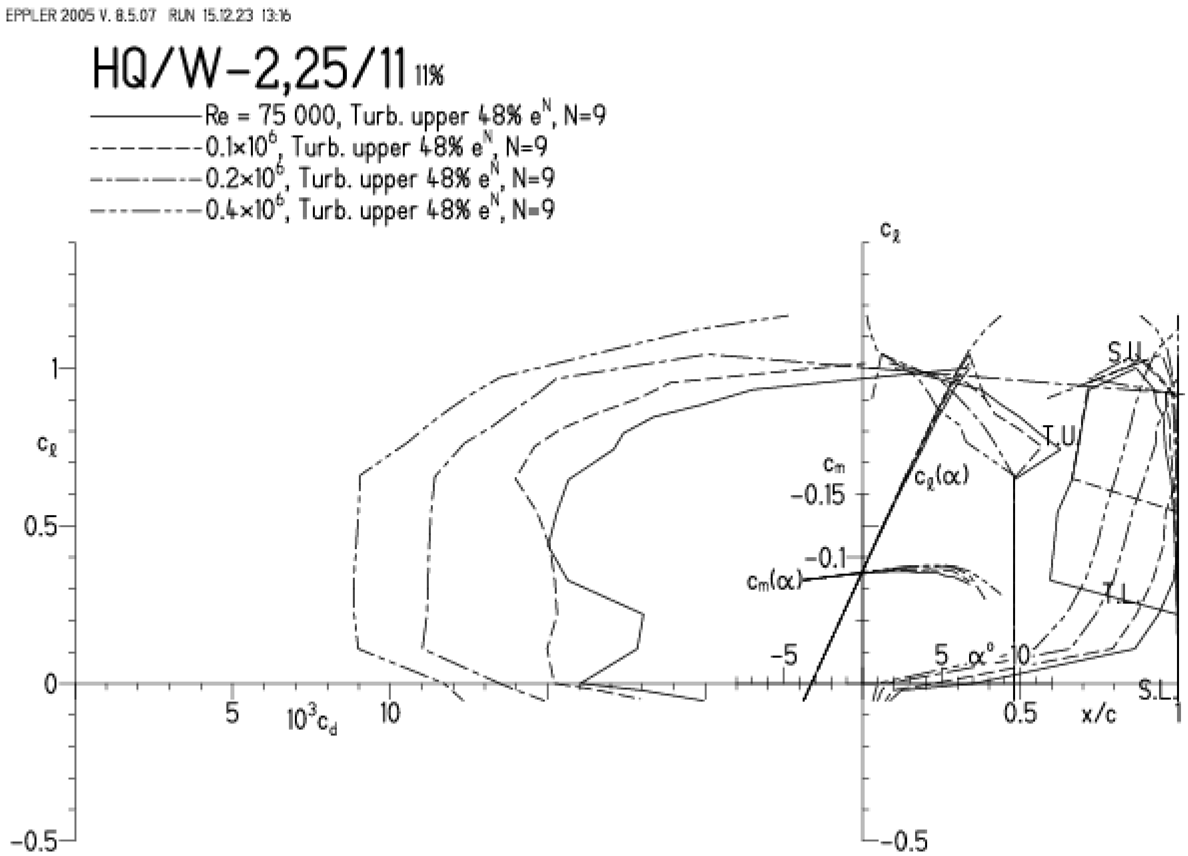


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



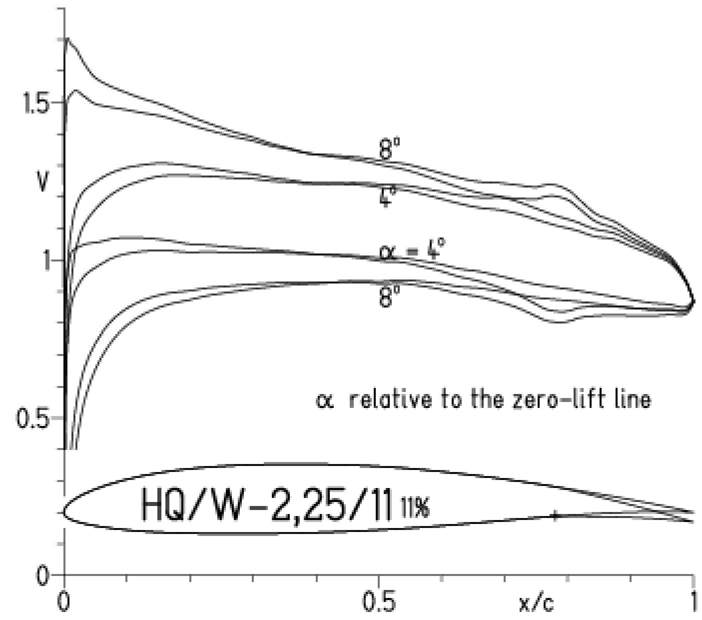
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



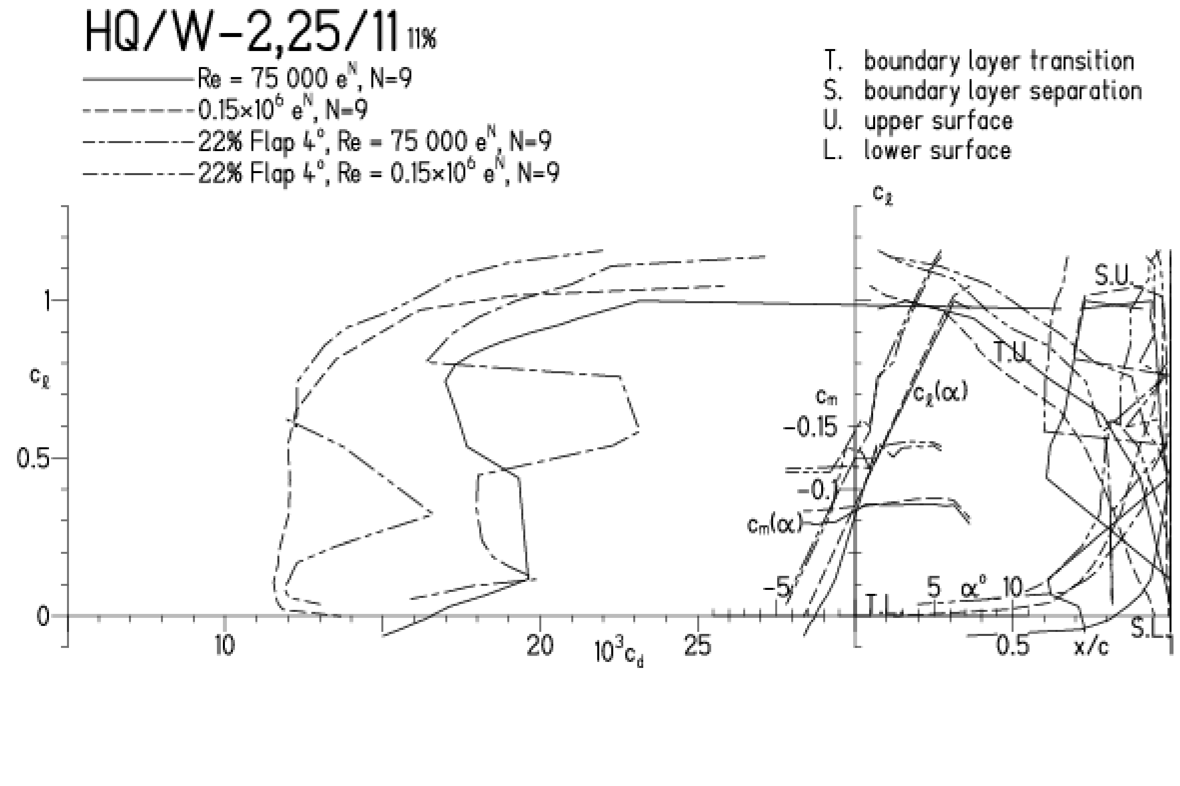


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

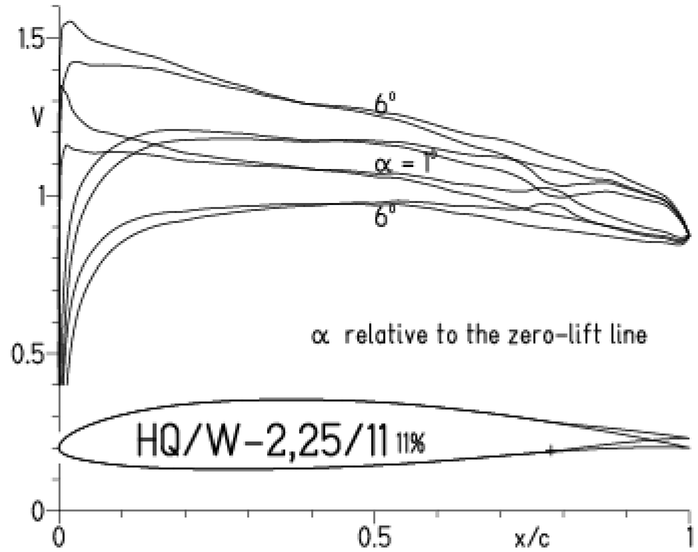


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

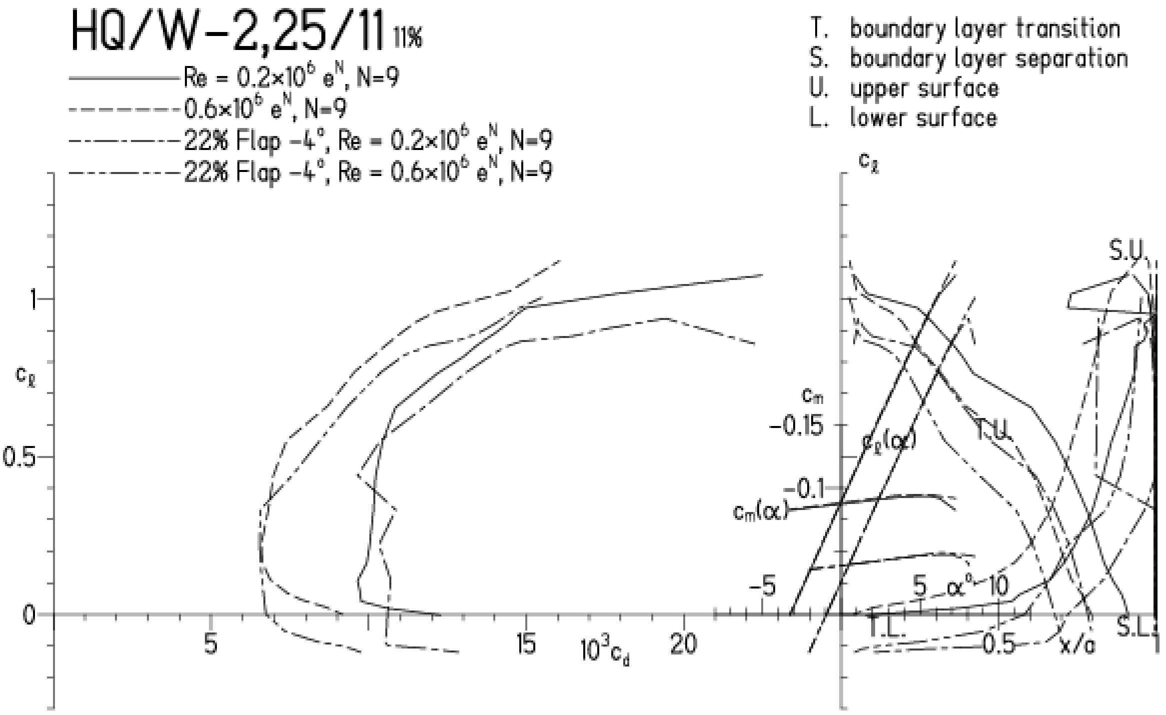


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

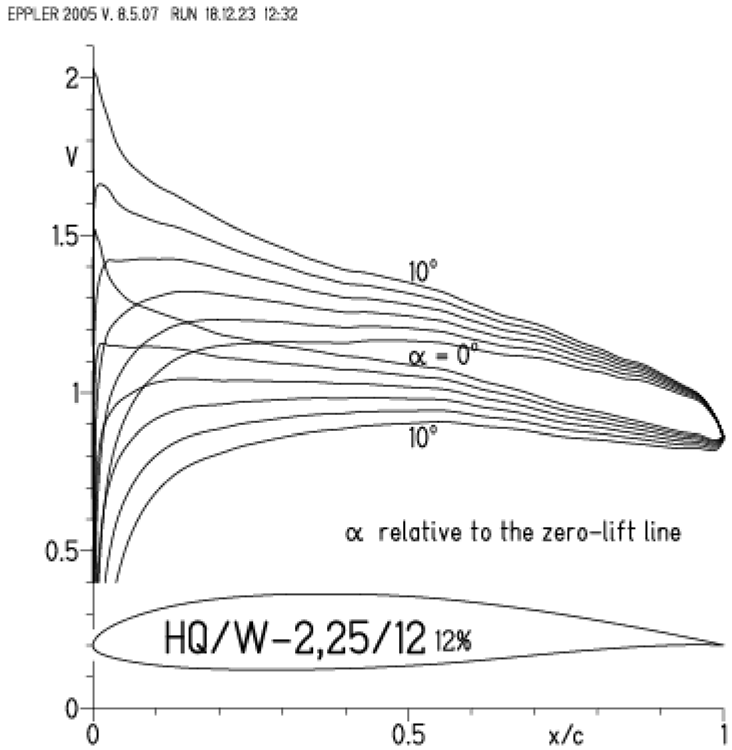
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

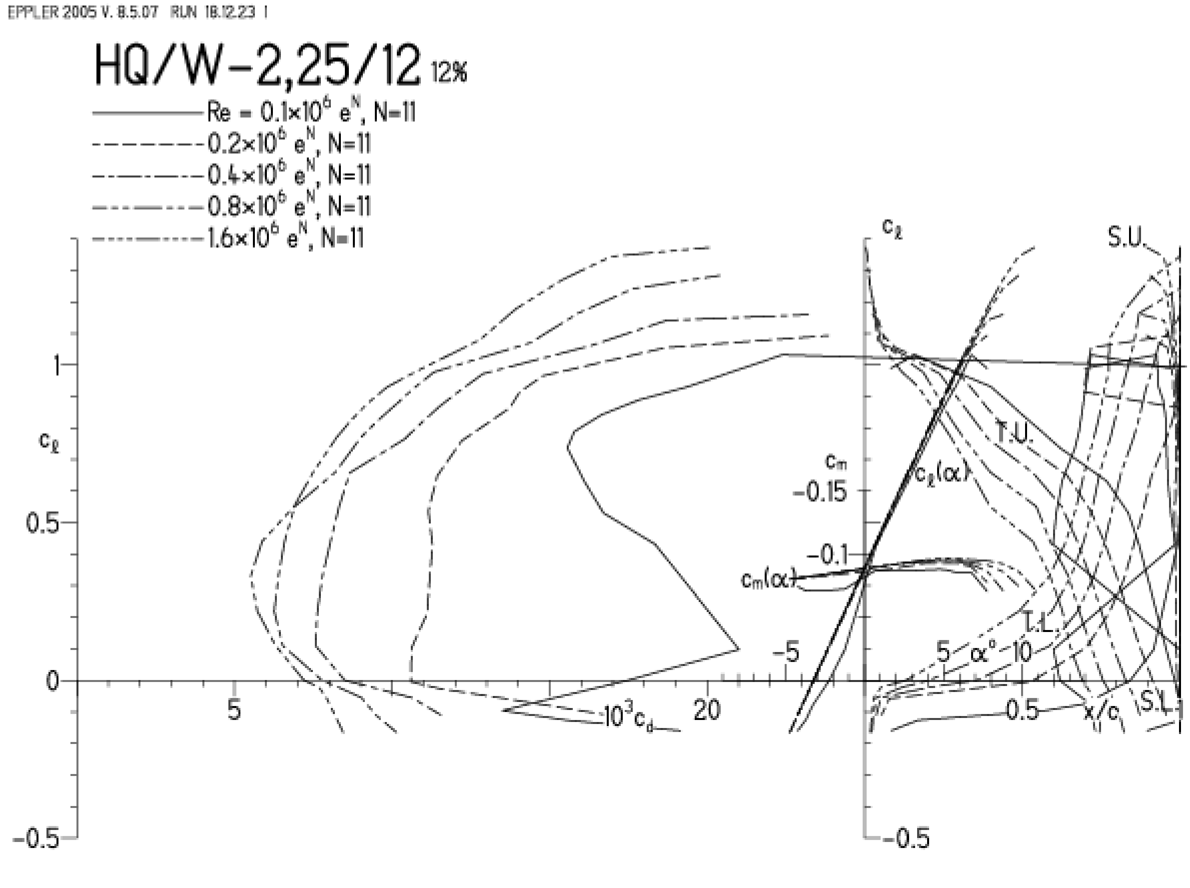


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

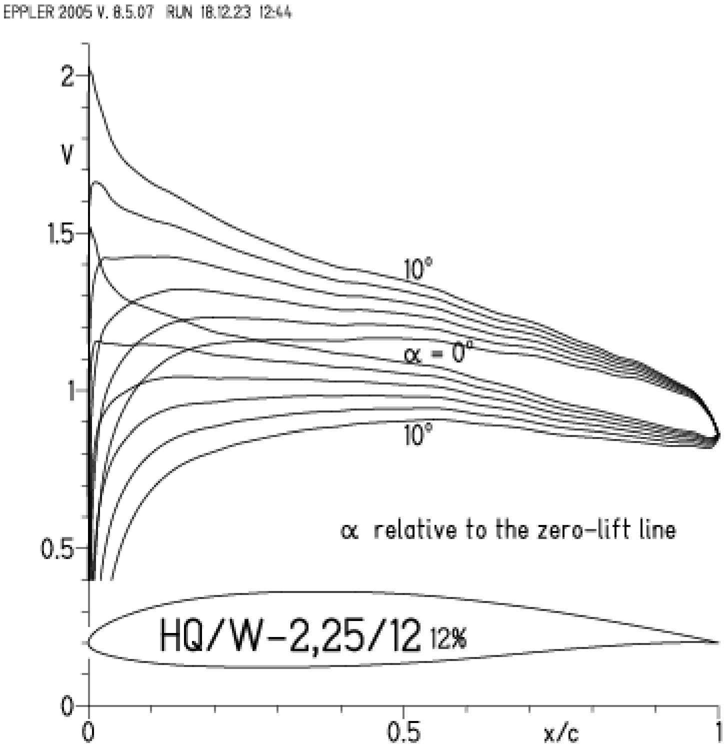


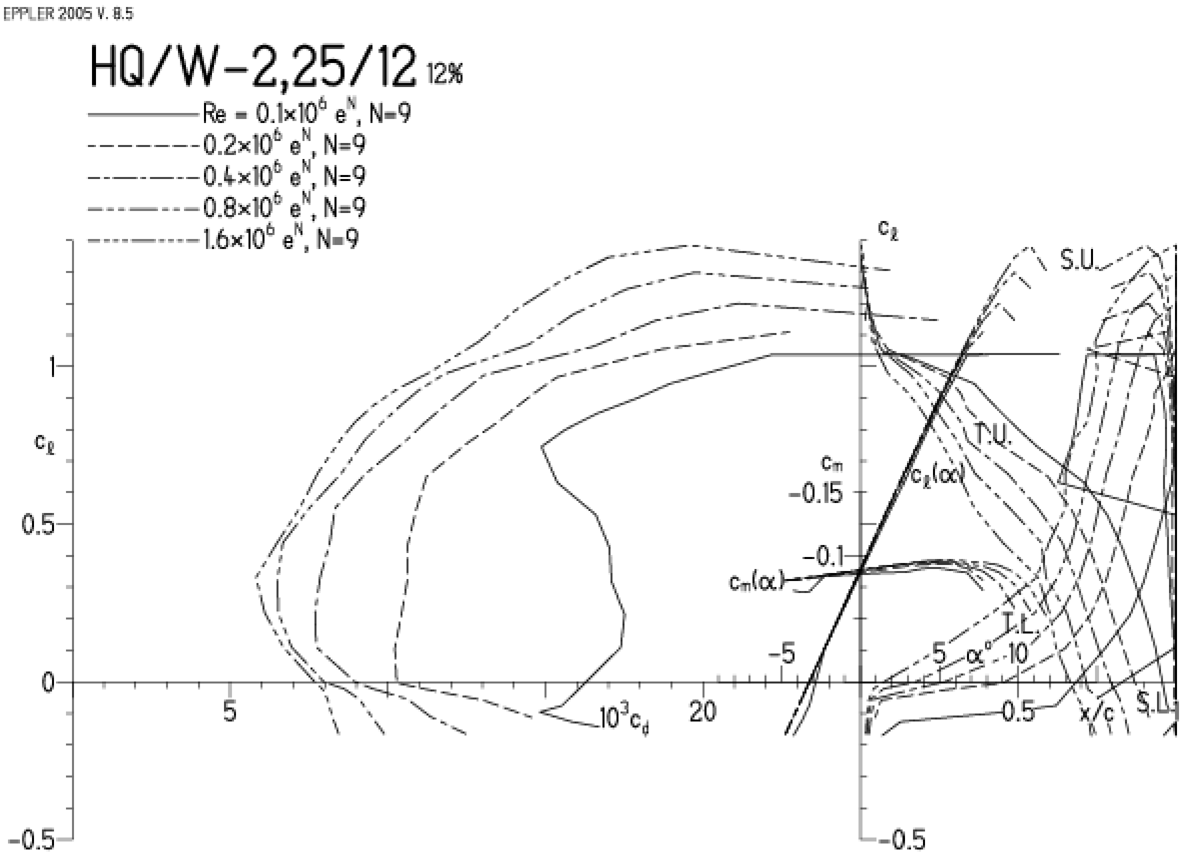
<u>HQ/W-2,25/12</u>, N=11



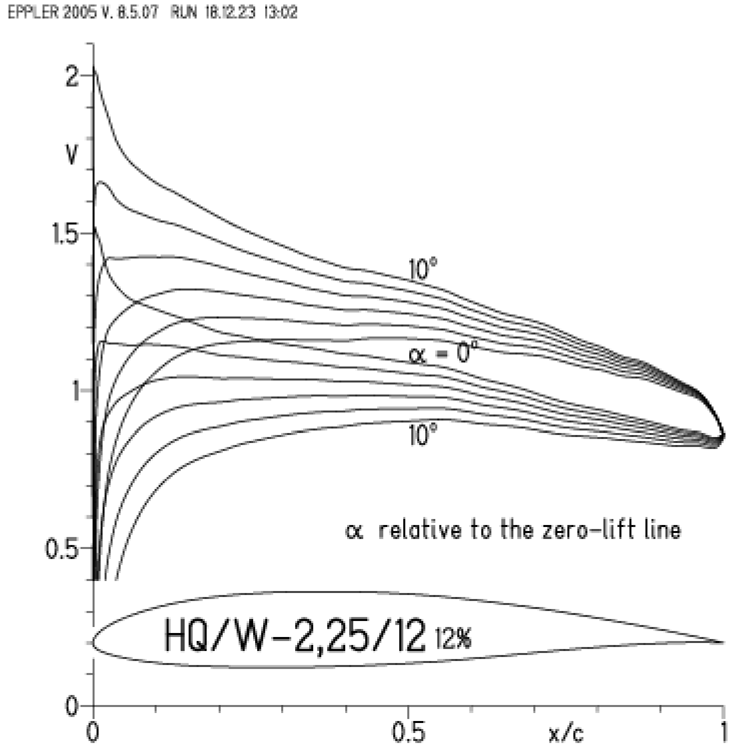


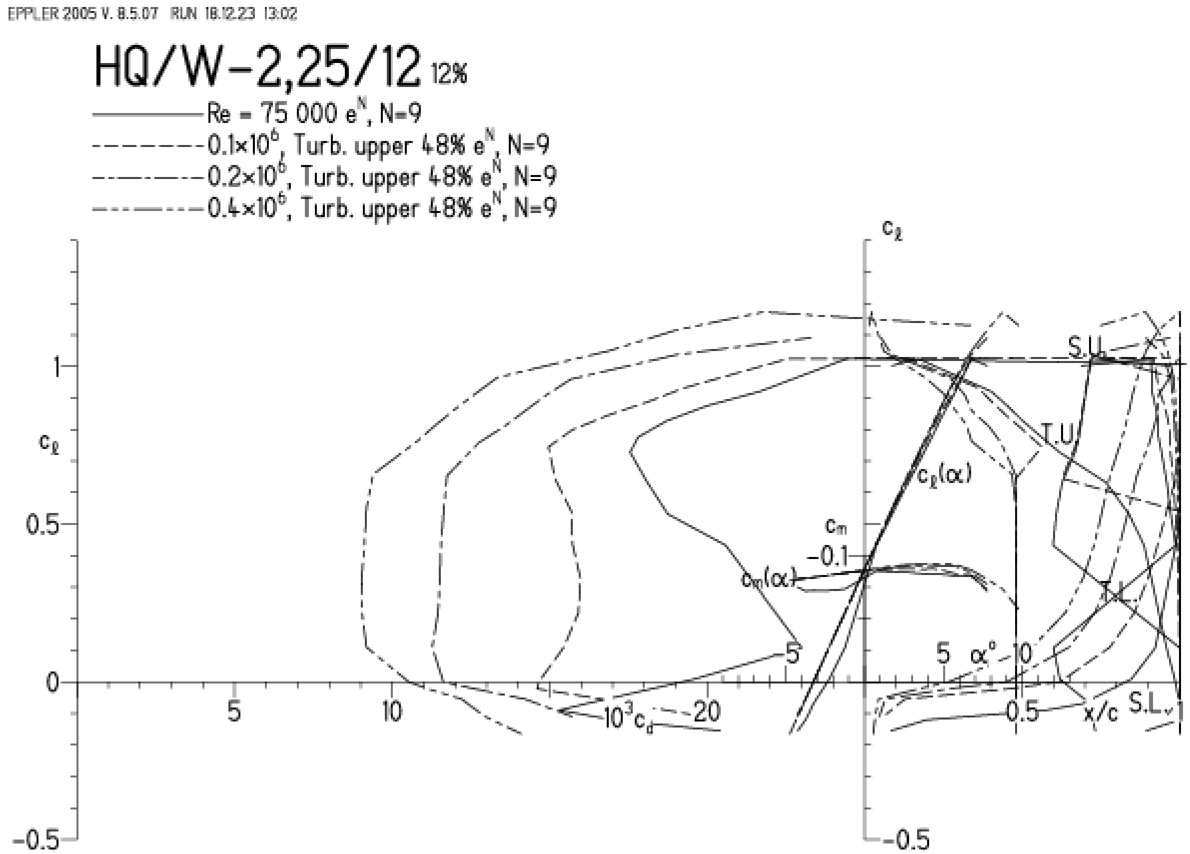
<u>HQ/W-2,25/12</u>, N=9





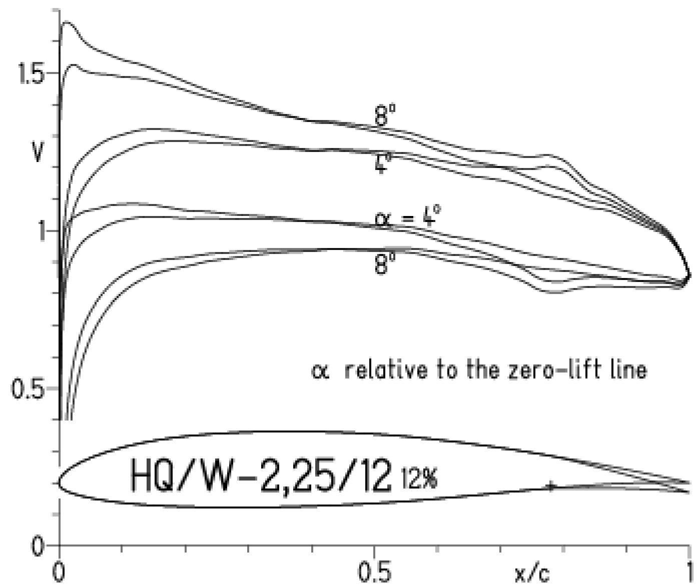
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



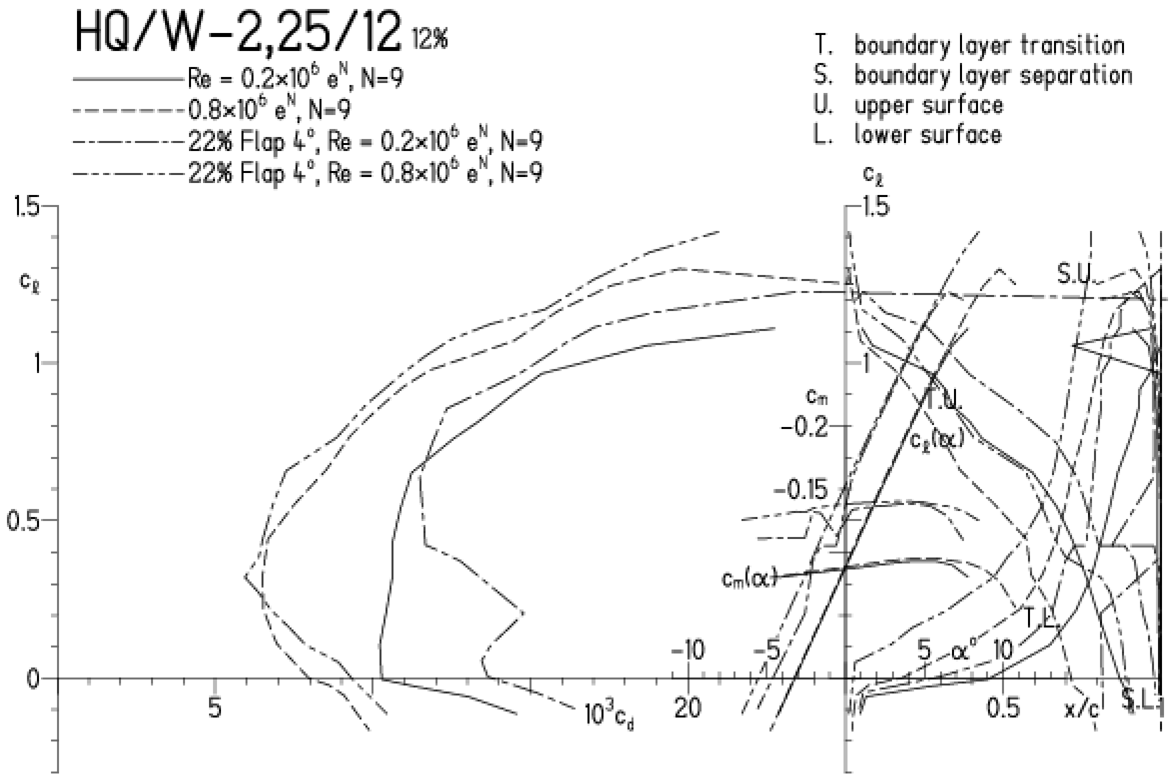


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

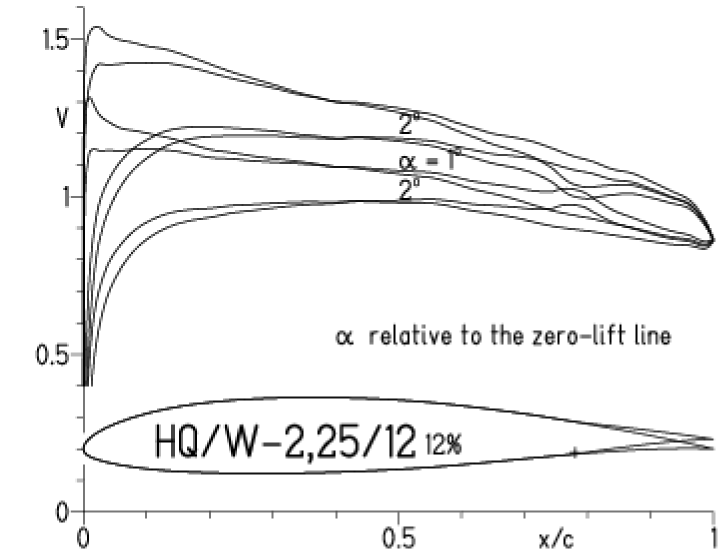


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

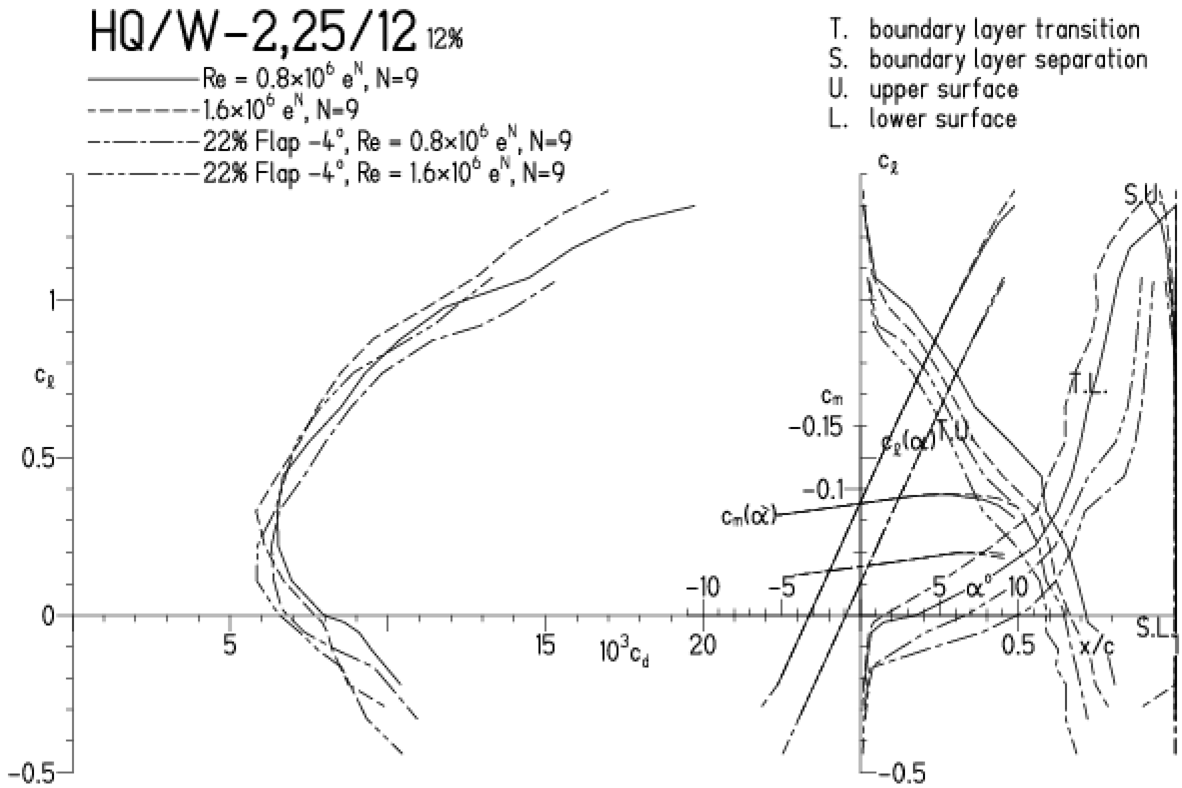


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

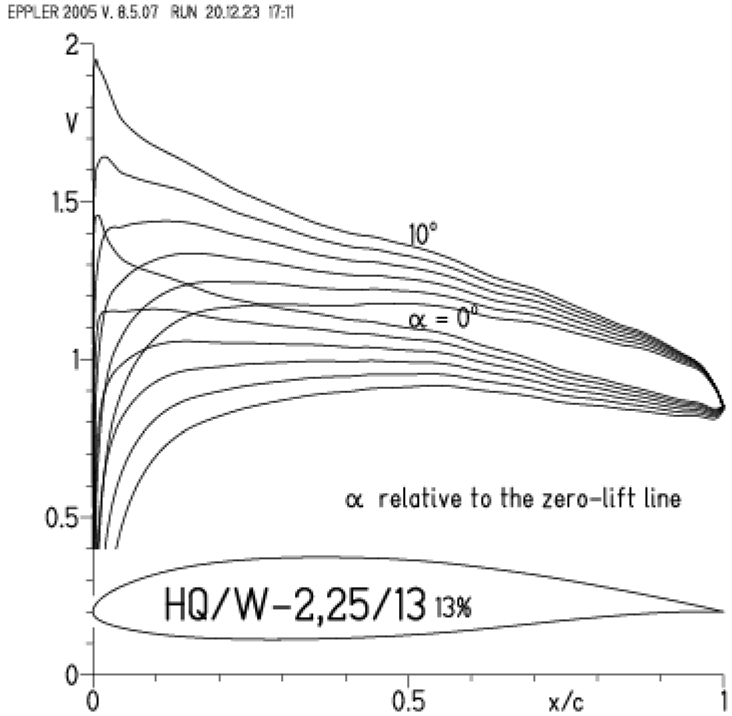
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

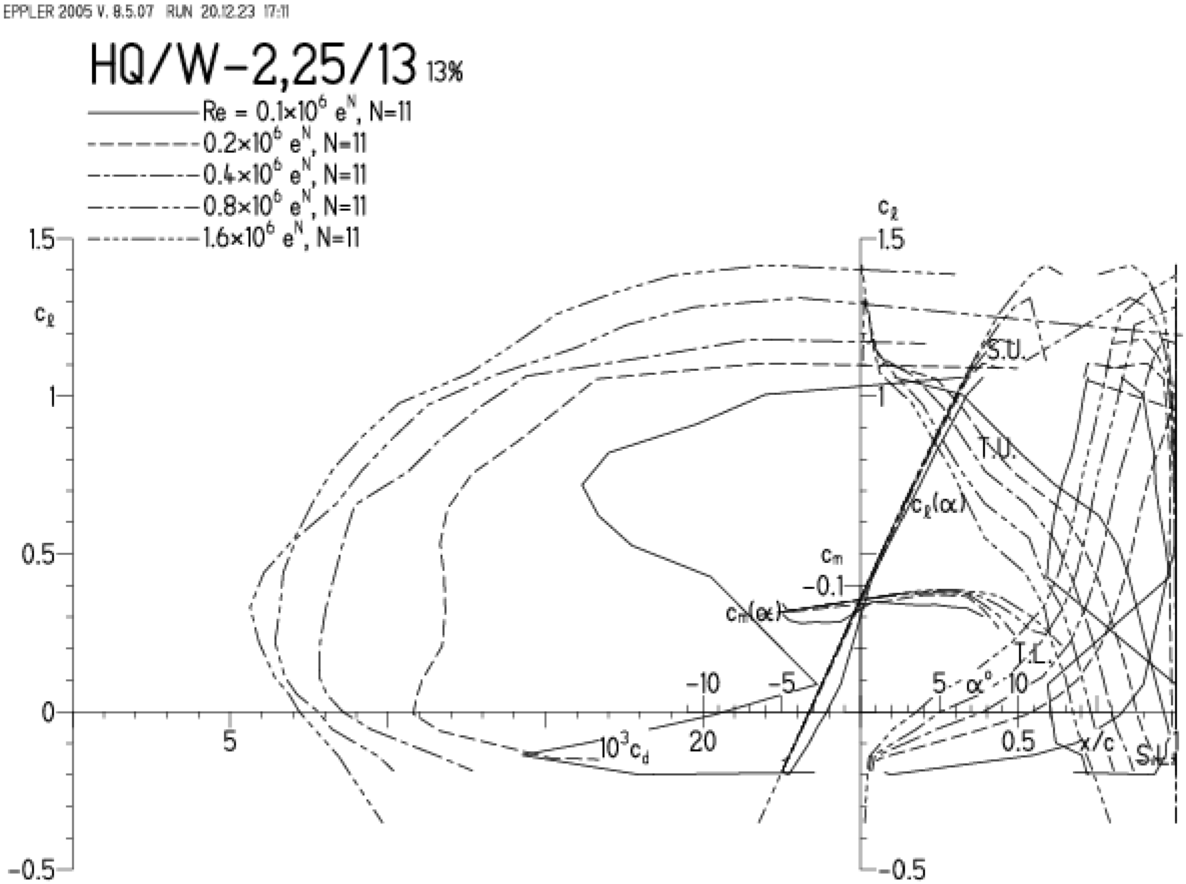


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

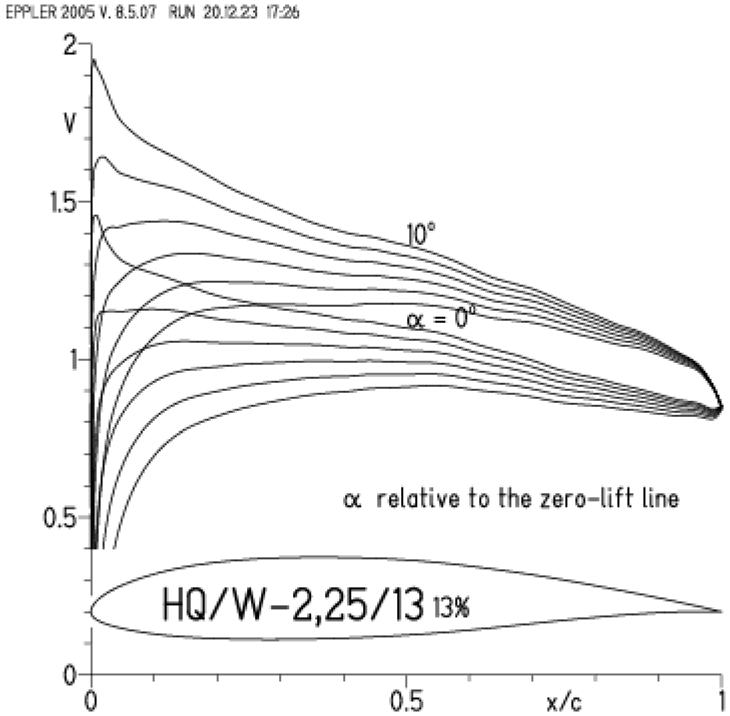


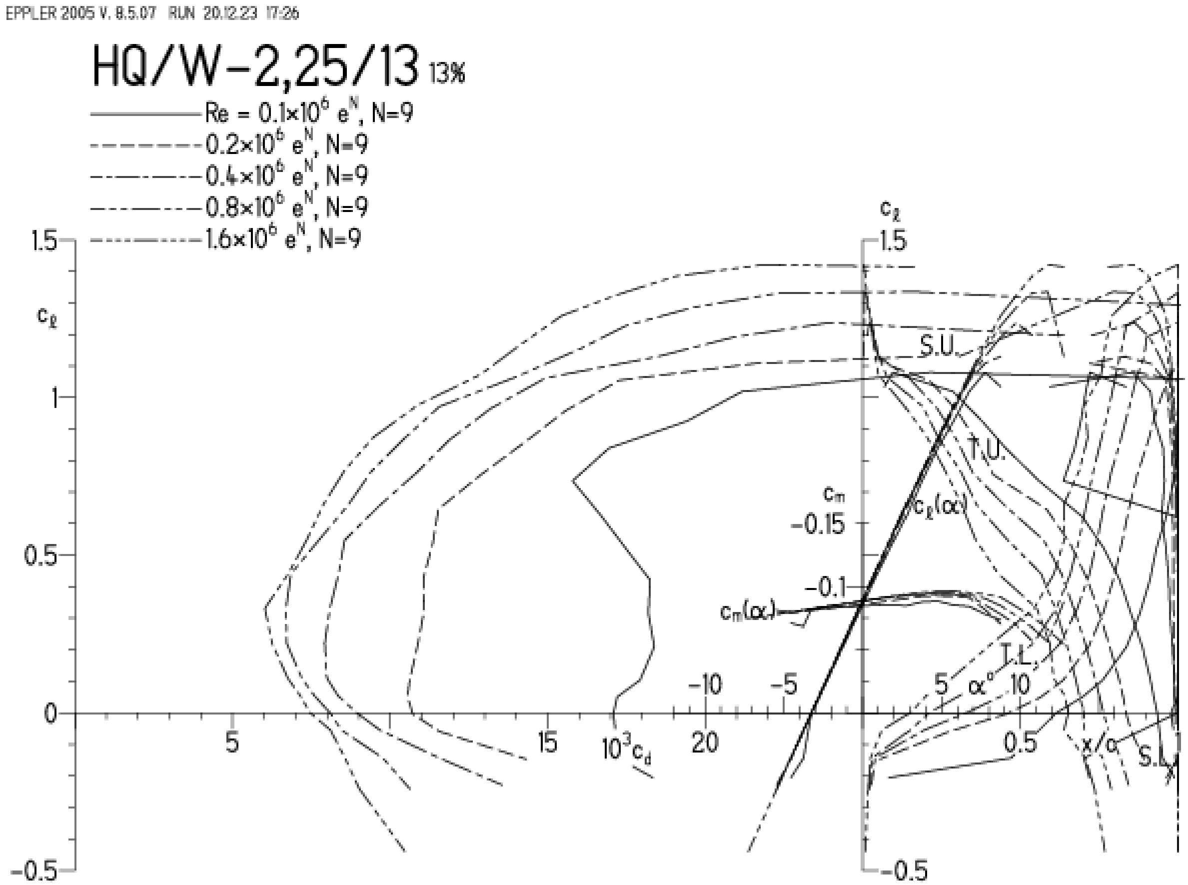
HQ/W-2,25/13, N=11



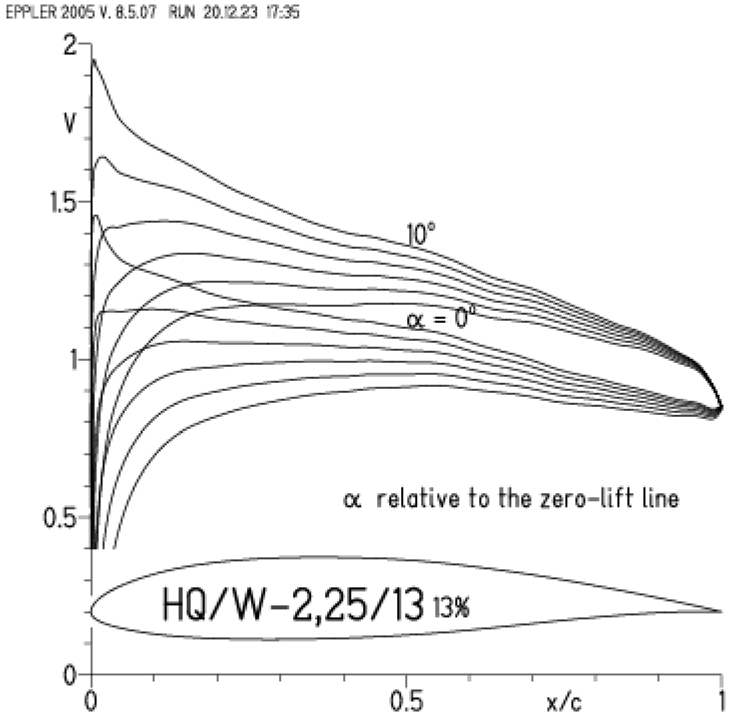


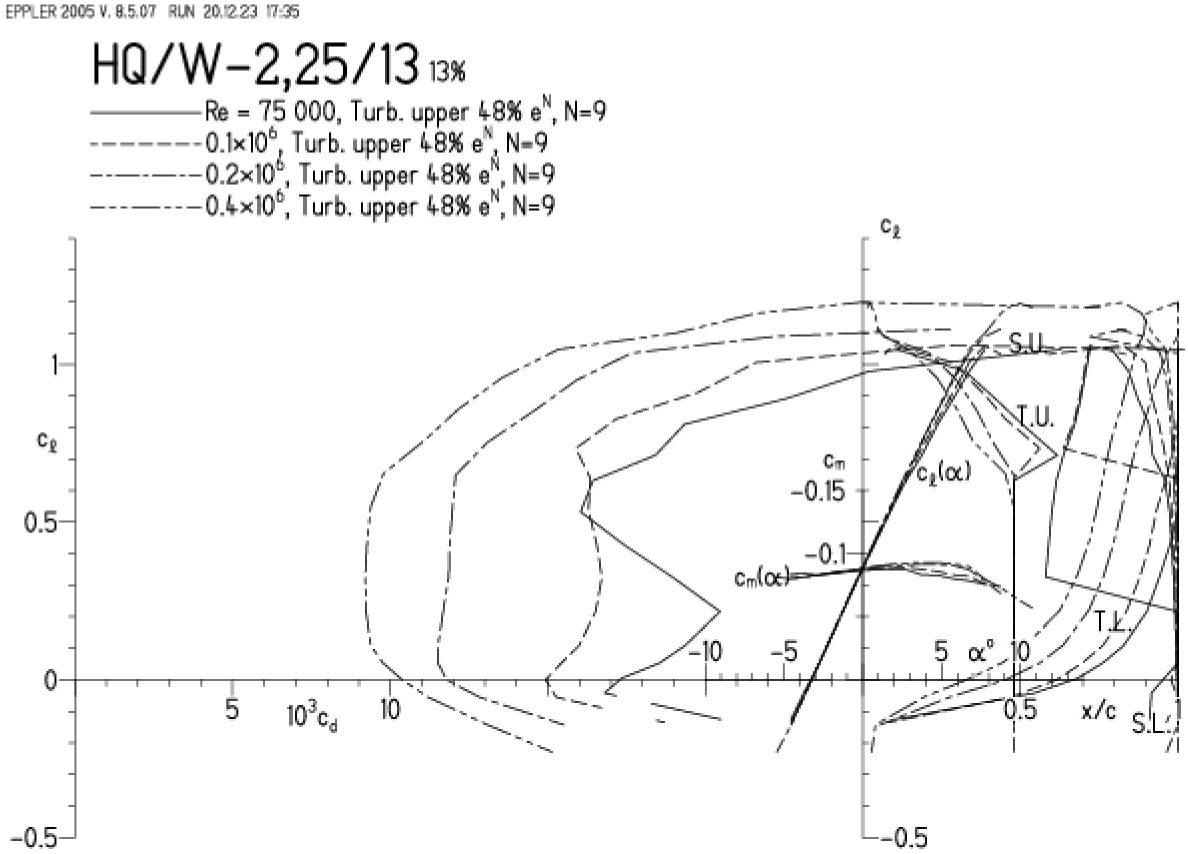
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c
0
0.5
1
1.5
2

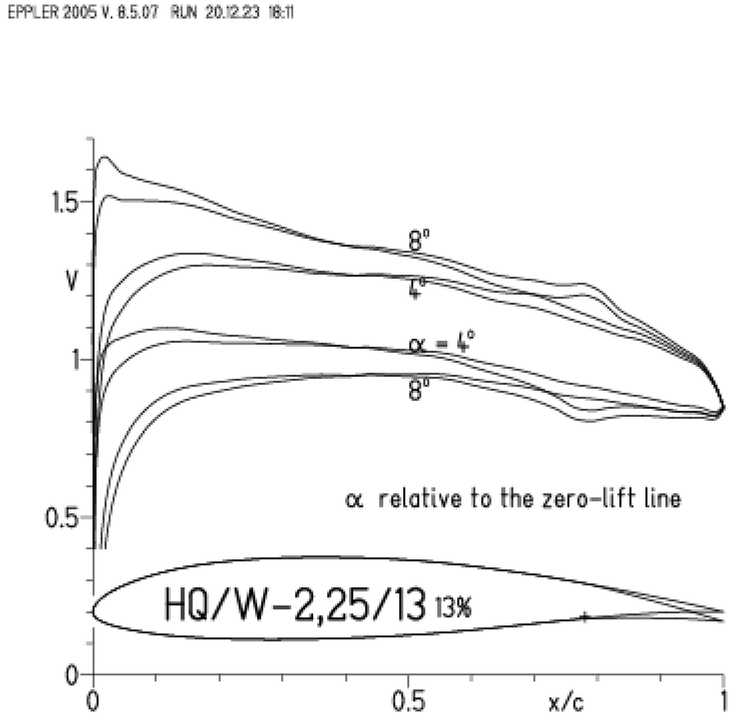

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
S.U.
T.U.
c_ℓ(α)
c_m(α)
T.L.
S.L.
α°
x/c
10^3 c_d
1.5
1
0.5
0
-0.5
5
15
20
-10
-5
10
-0.15
-0.1

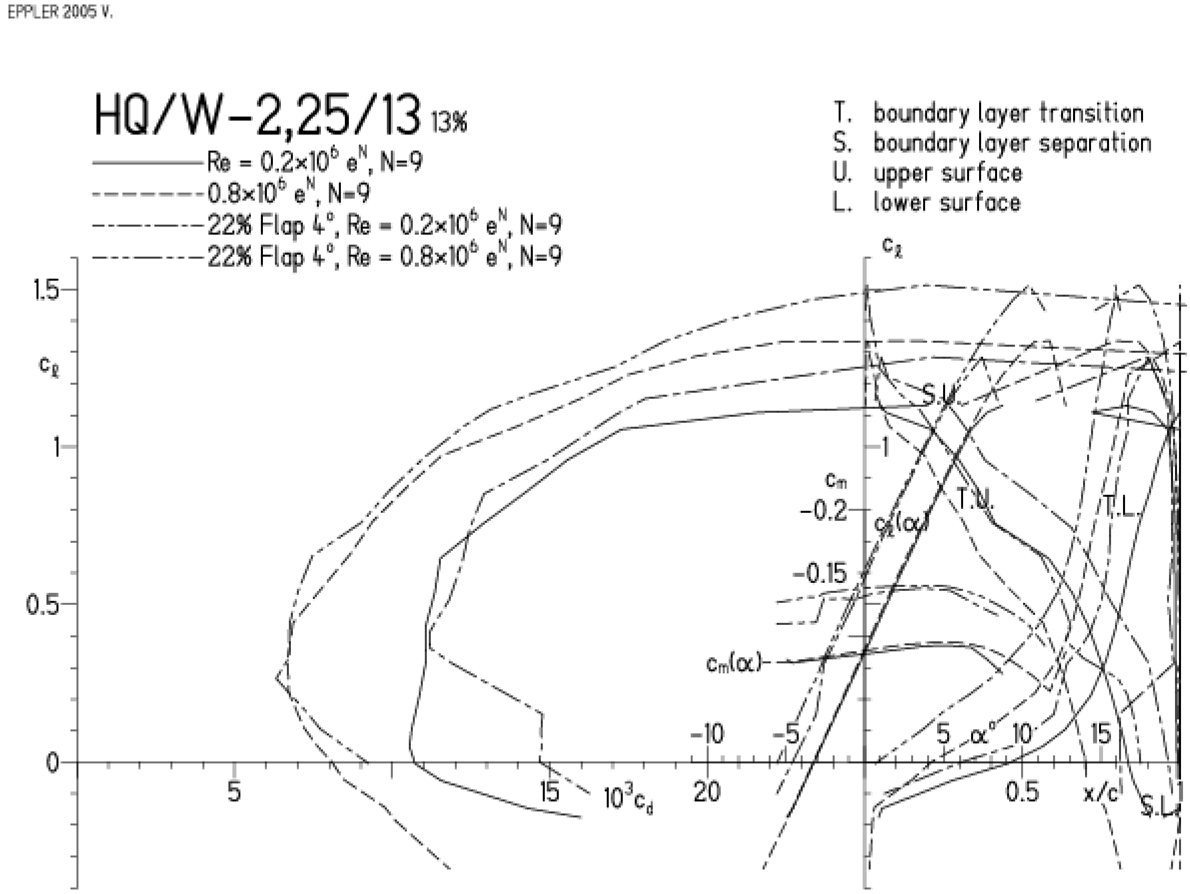
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





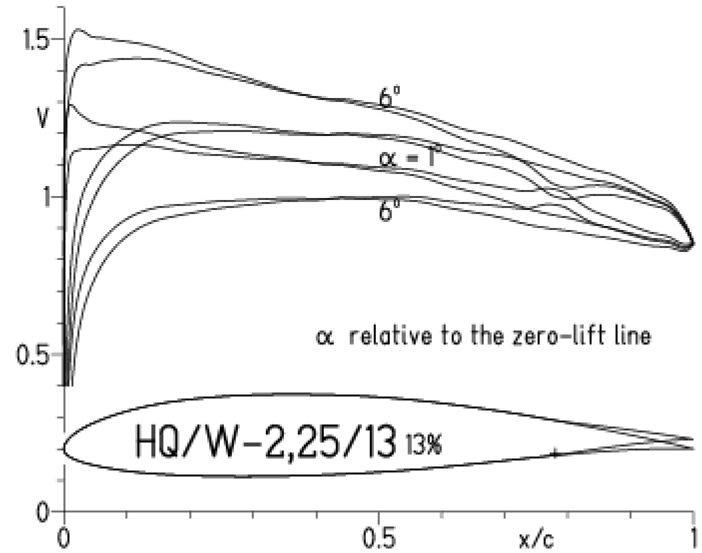
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



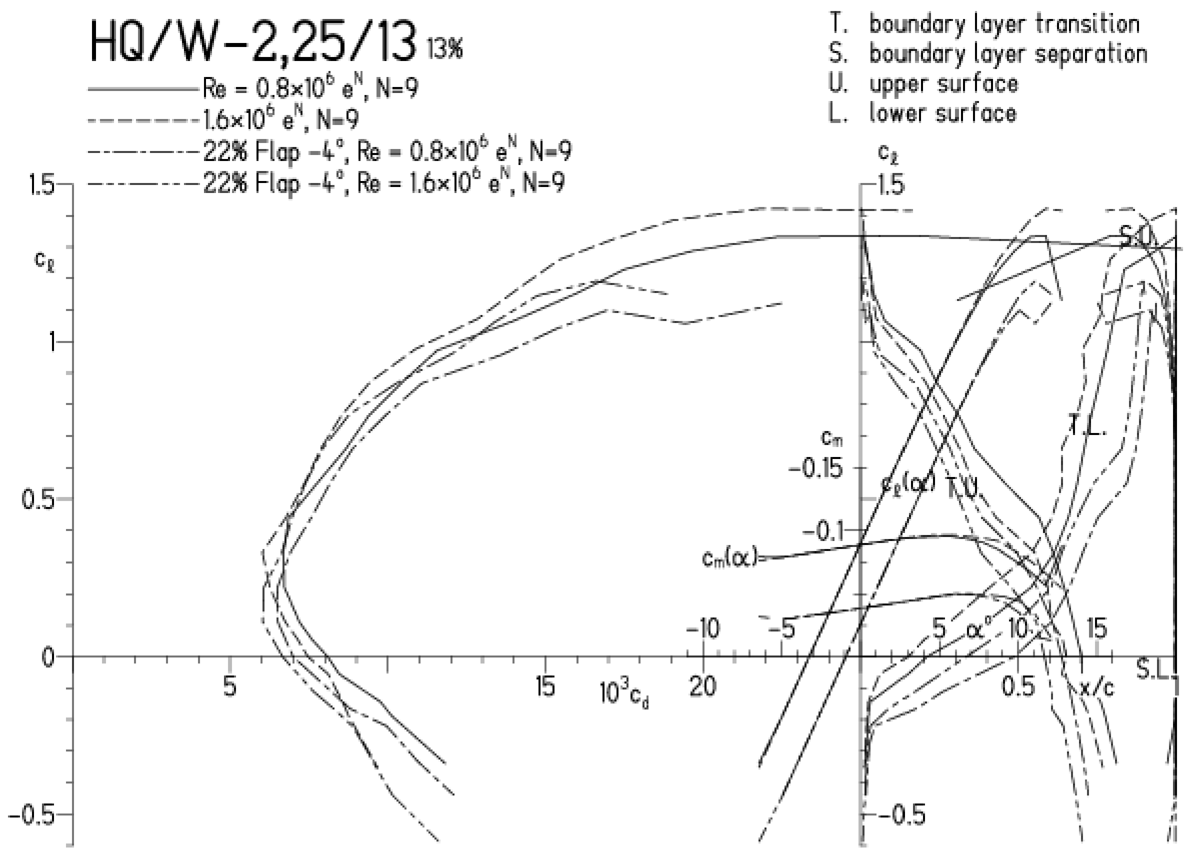


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

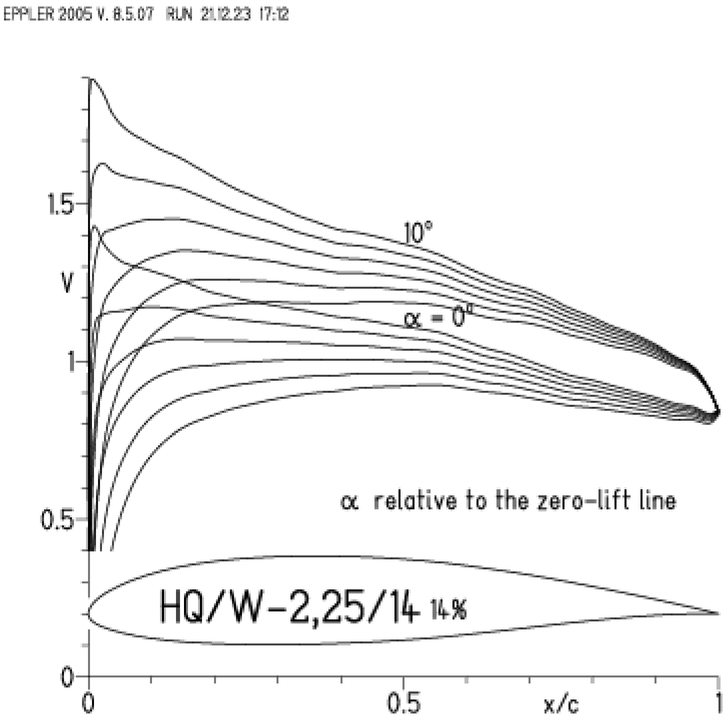
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

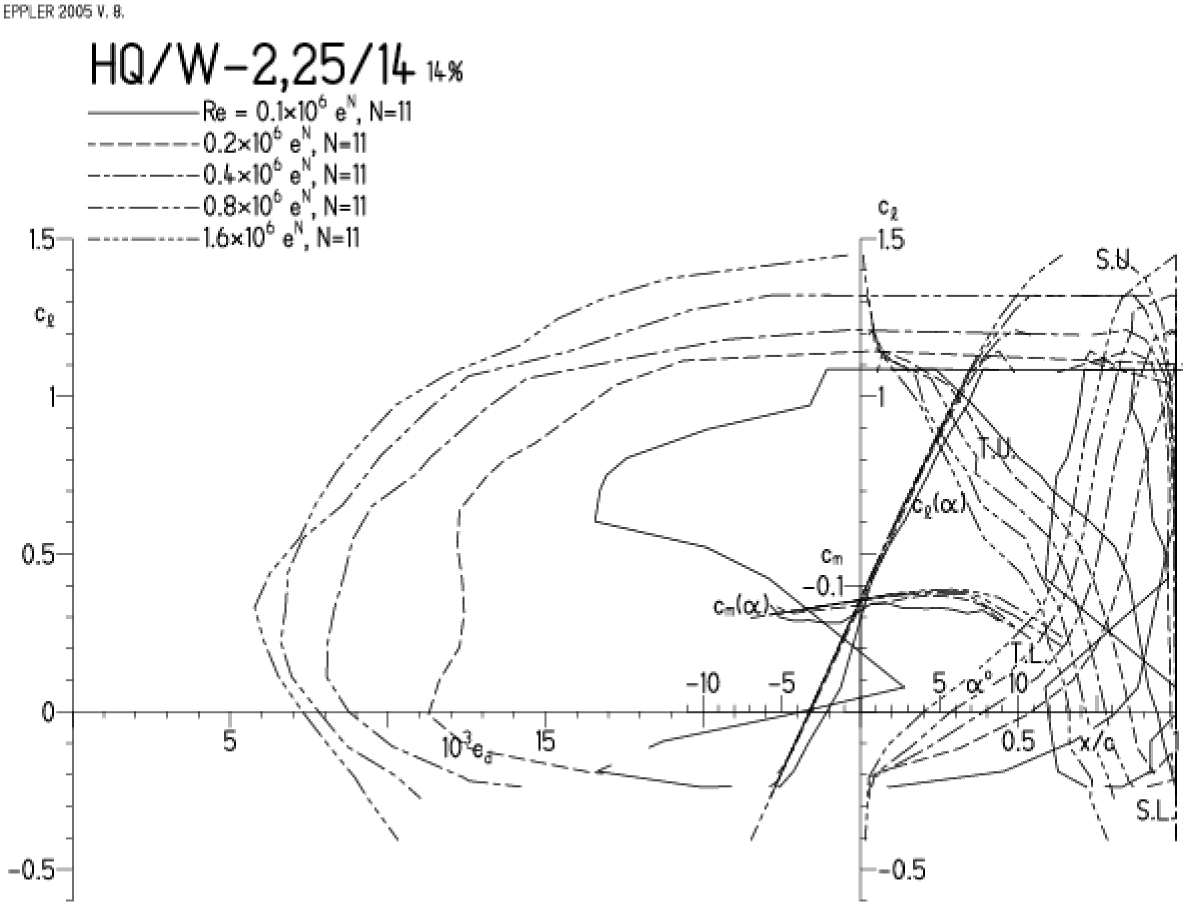


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

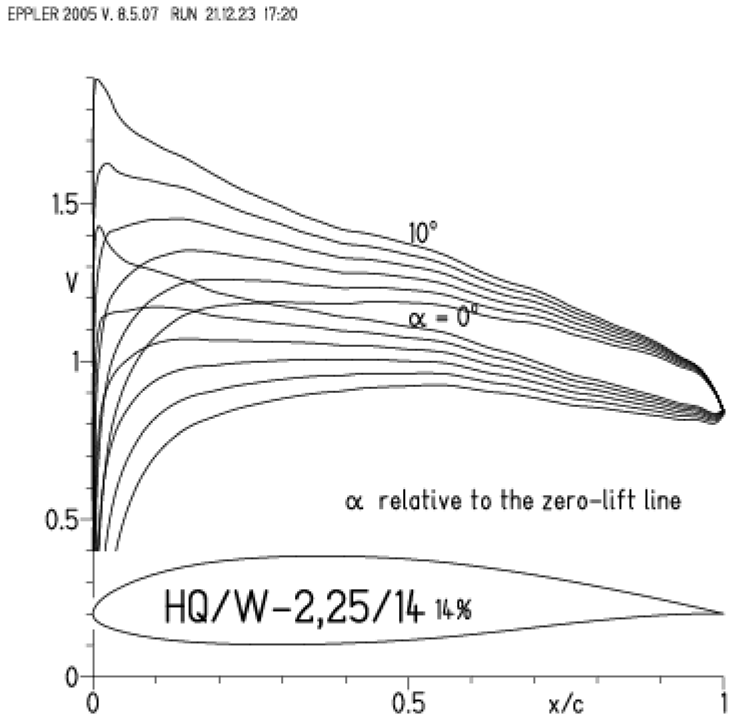


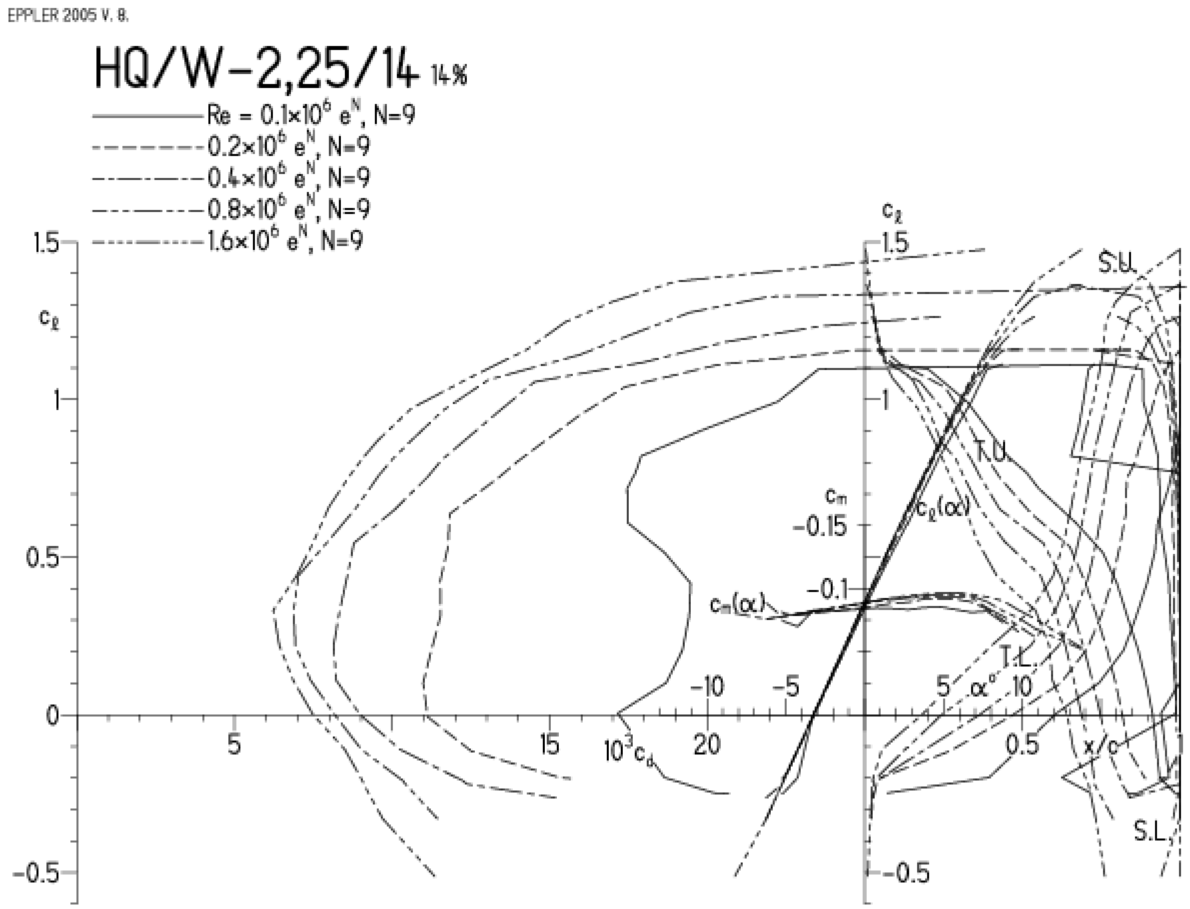
HQ/W-2,25/14, N=11



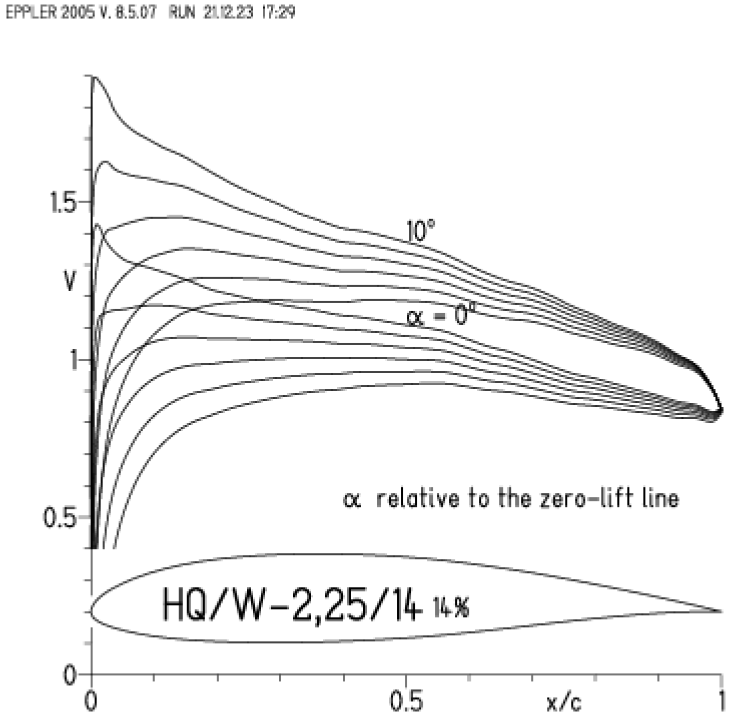


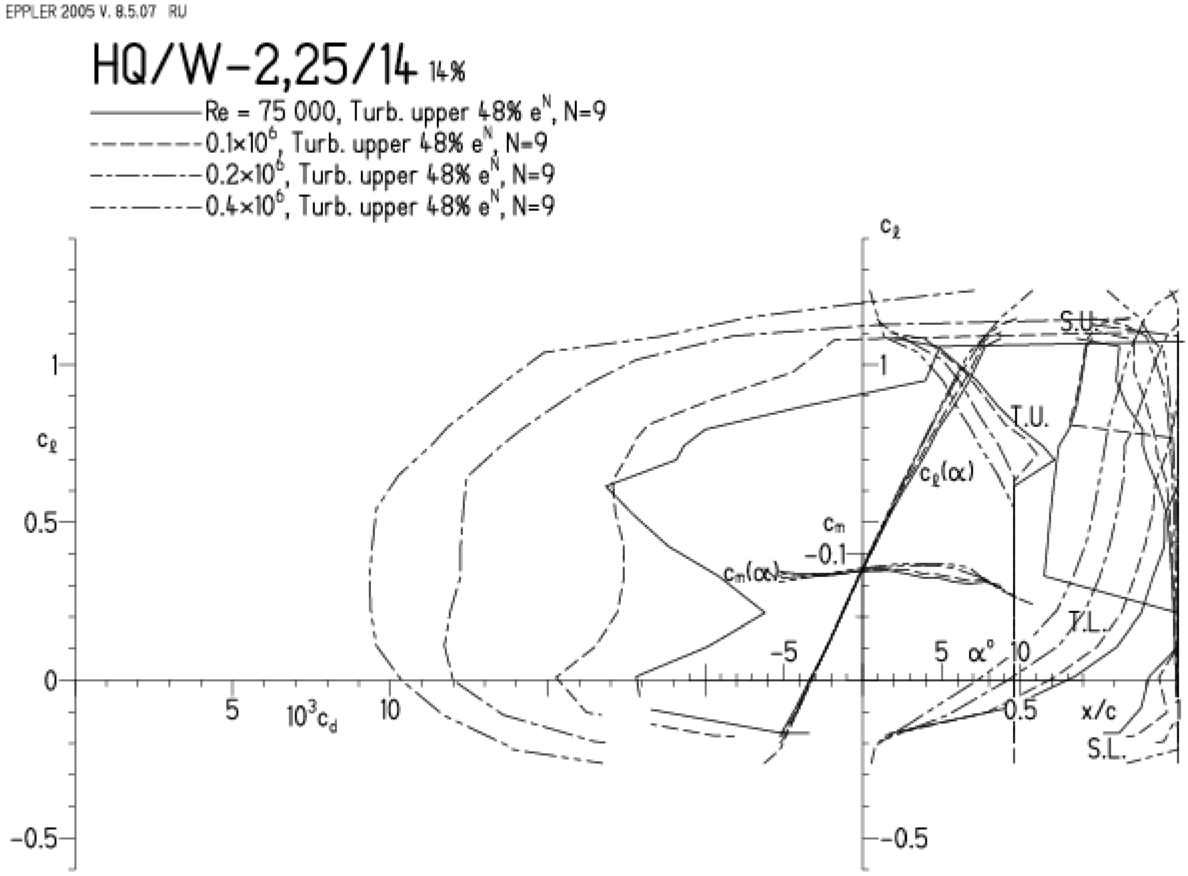
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
-0.15
-0.1
c_ℓ(α)
c_m(α)
-10
-5
5
α°
10
-0.5
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

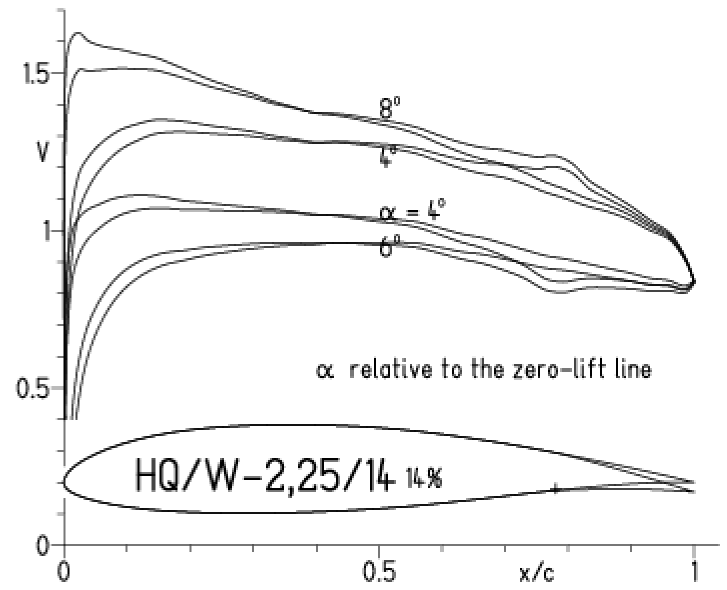
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



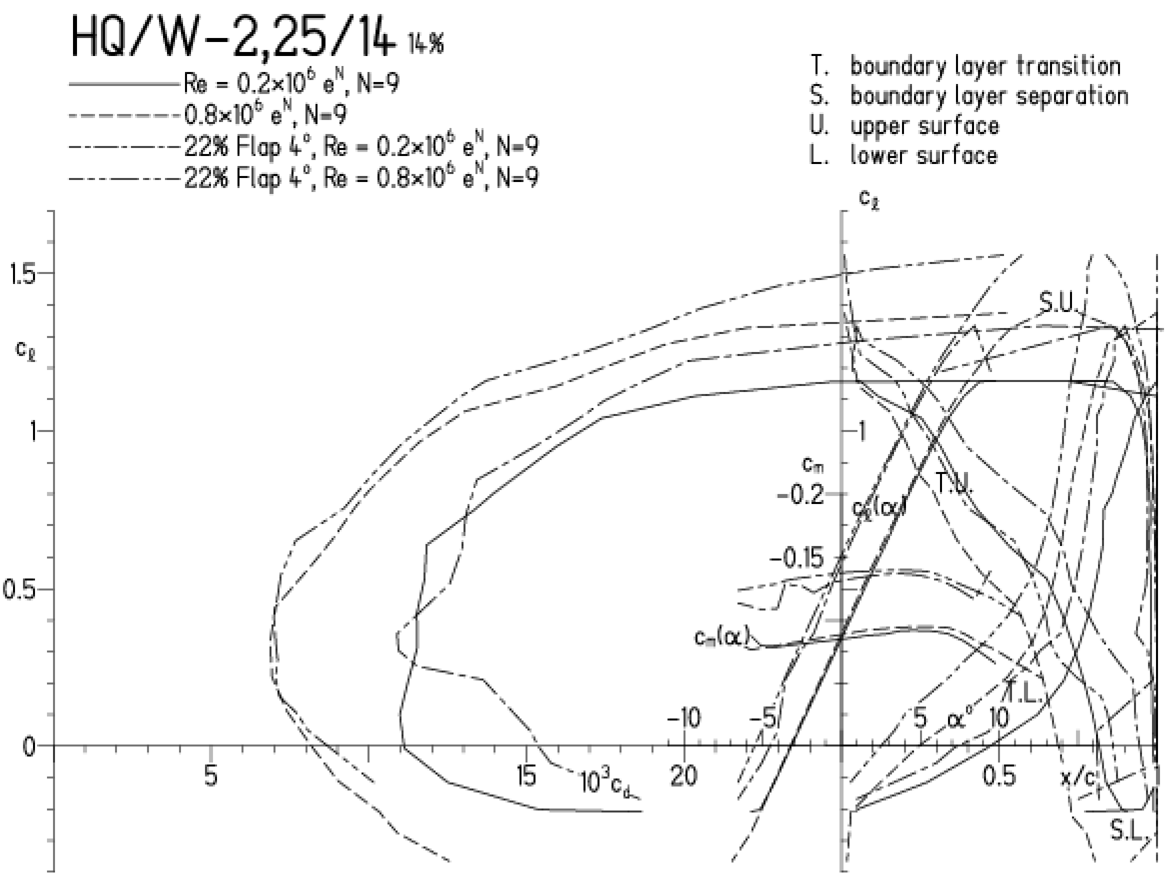


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

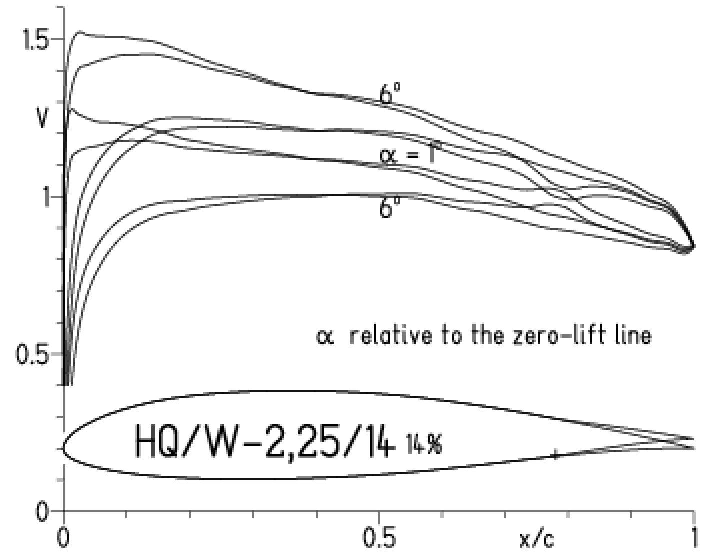


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

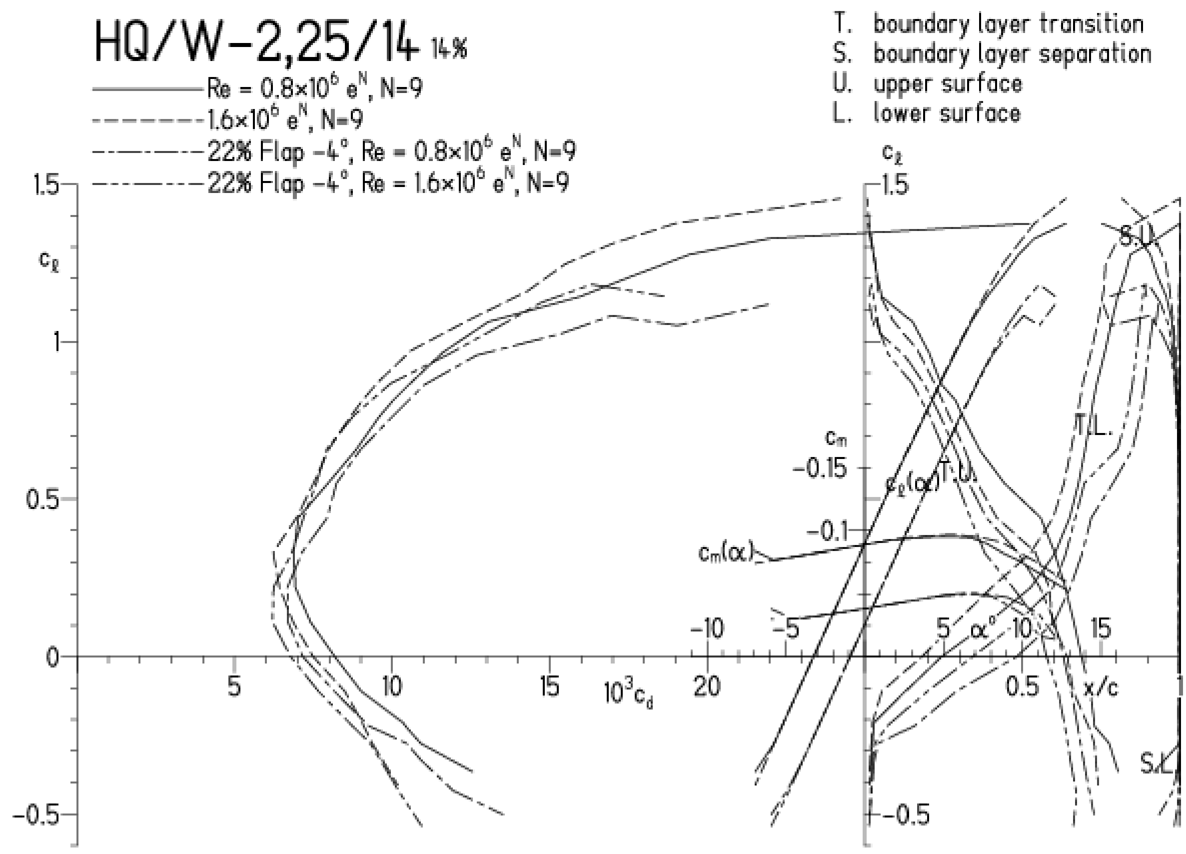


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

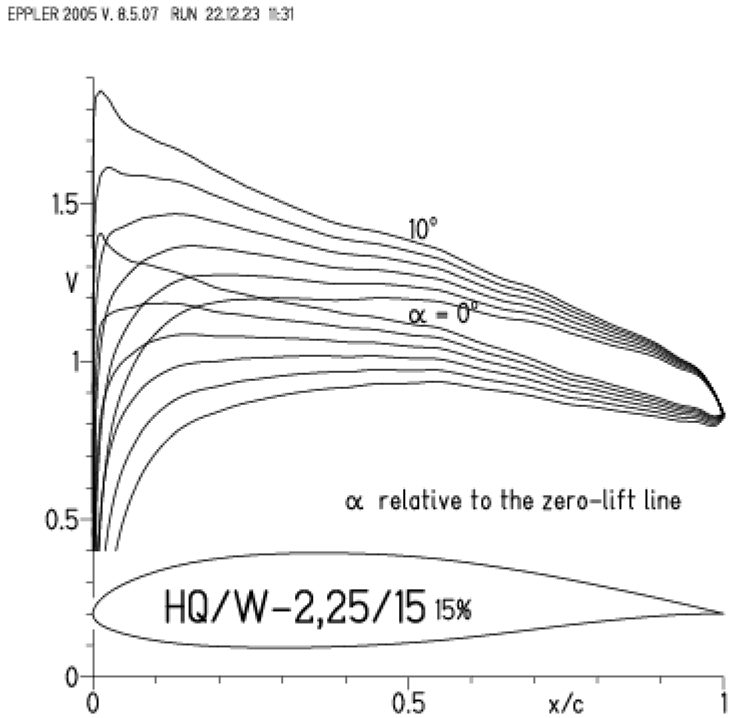
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

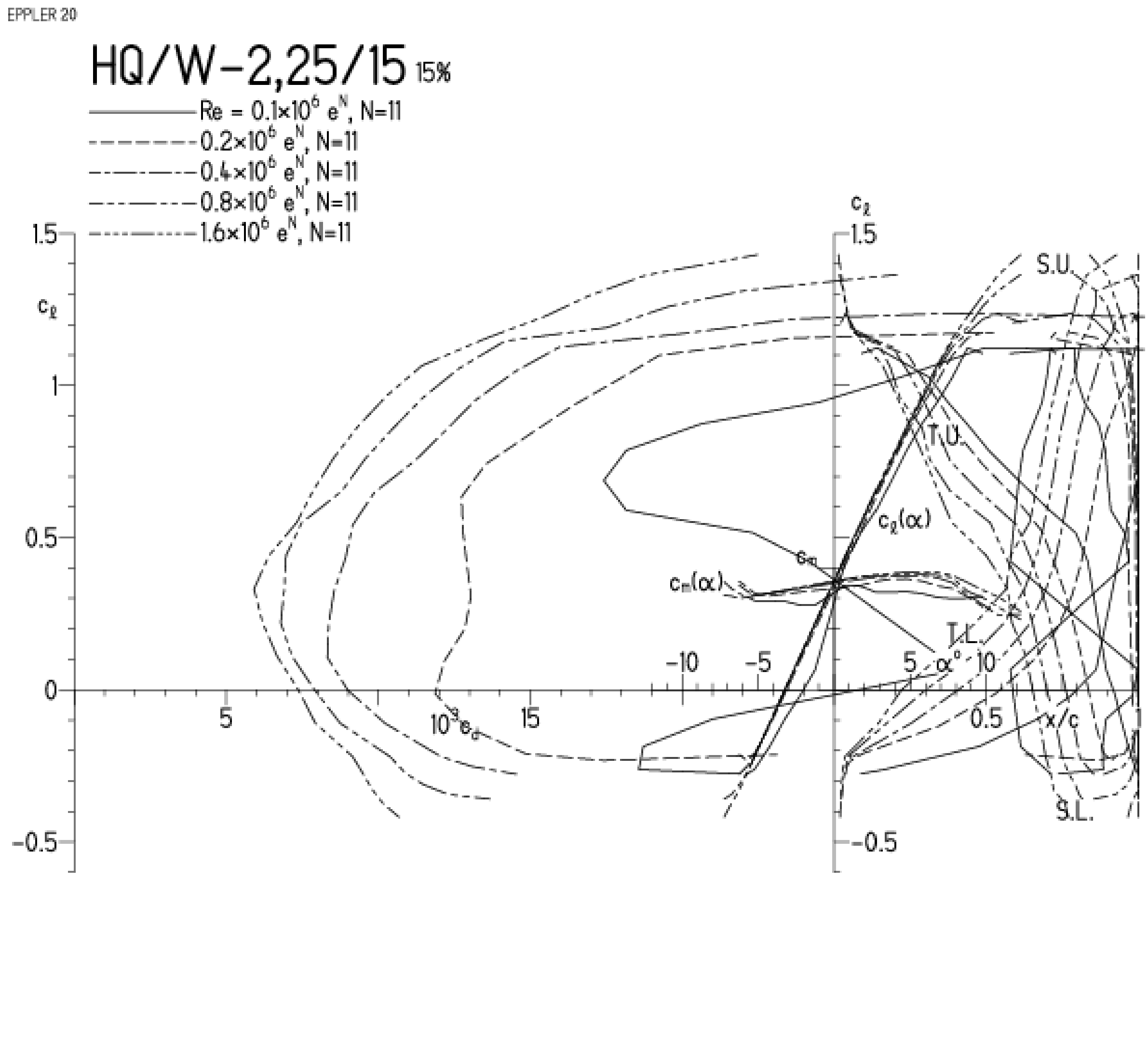


EPPLER 2005 V. 8.5.07



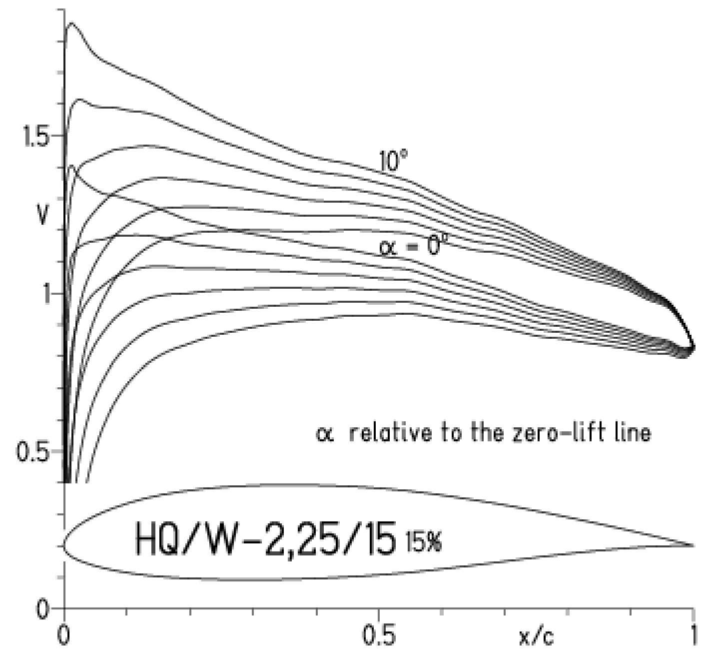
<u>HQ/W-2,25/15</u>, N=11



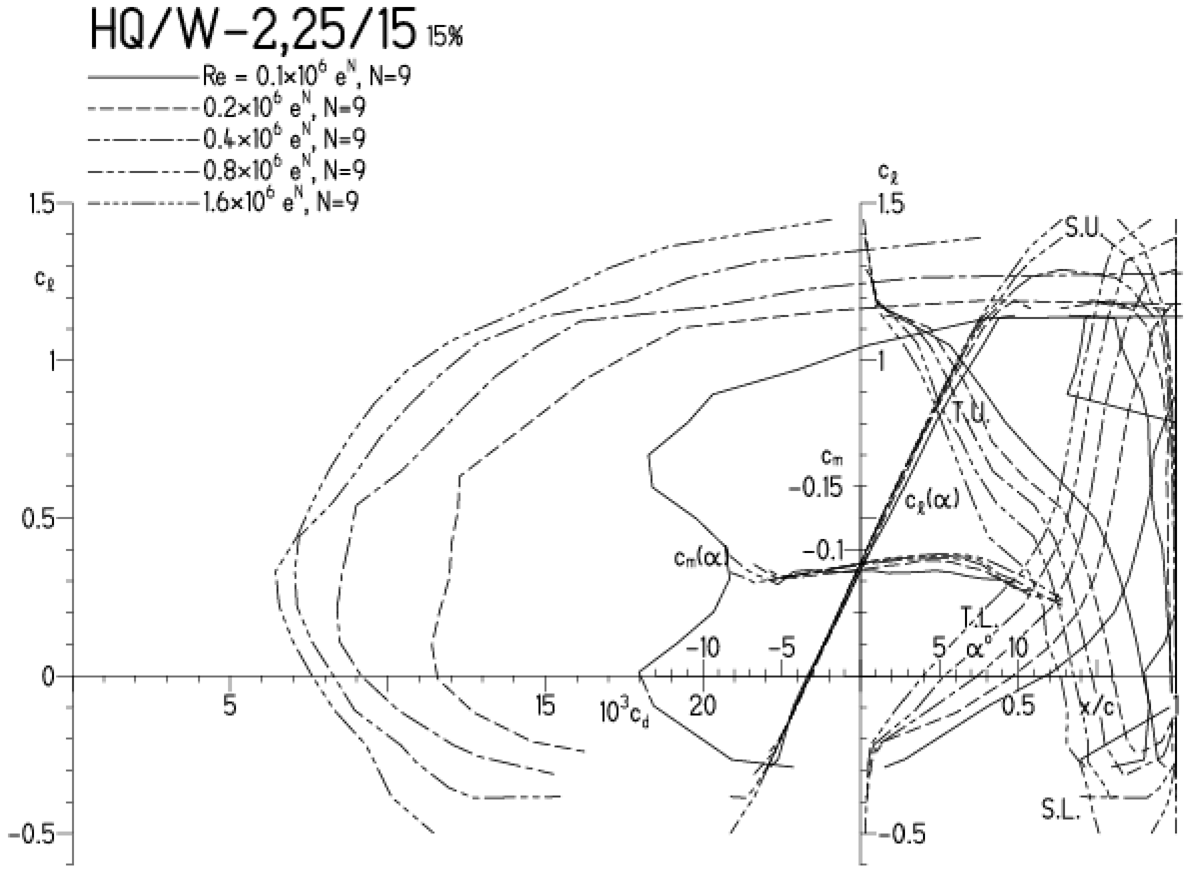


HQ/W-2,25/15, N=9

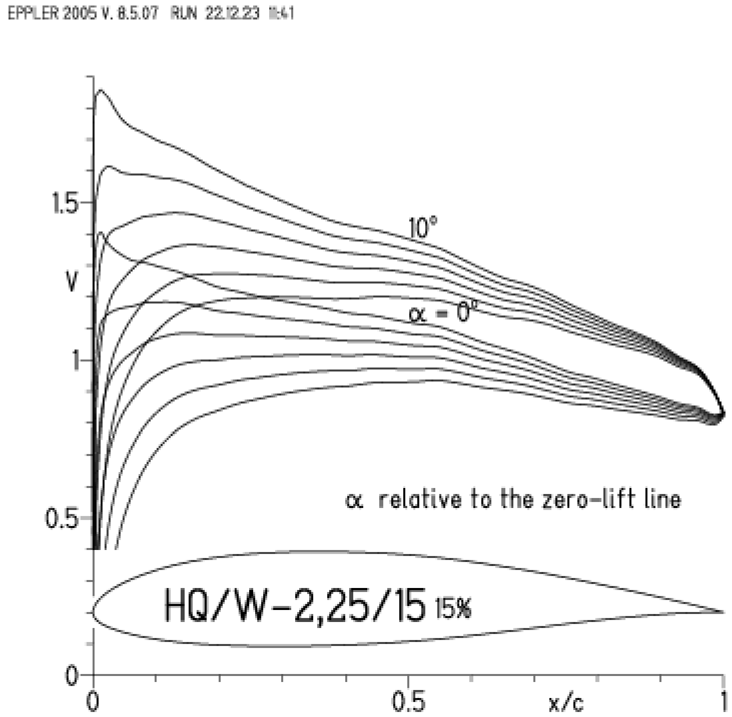
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

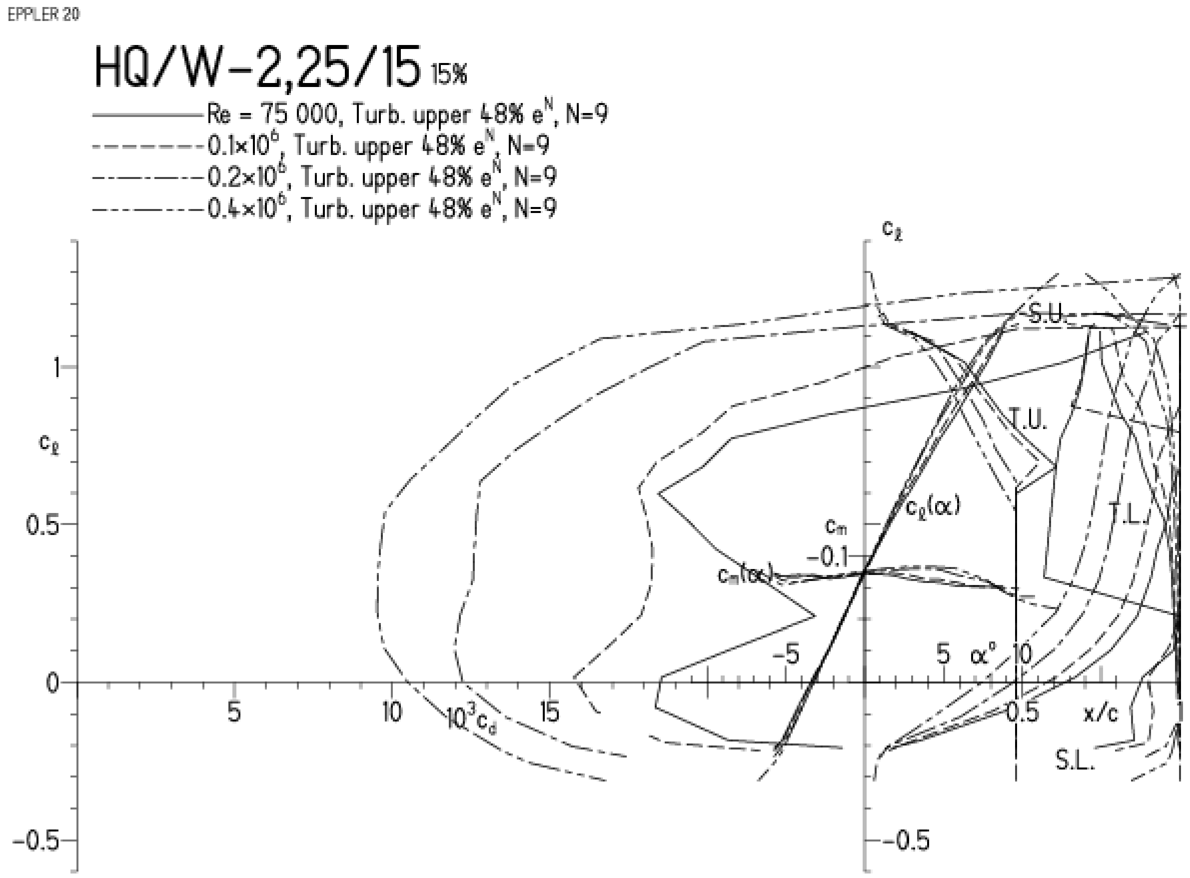


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



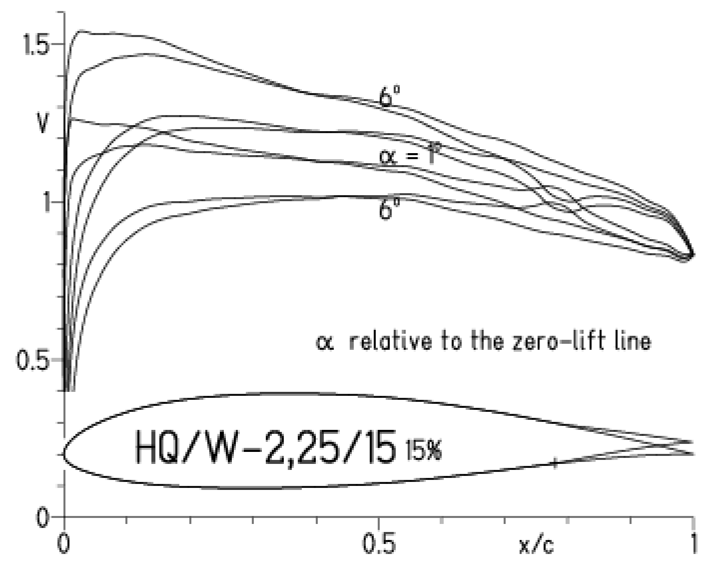


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

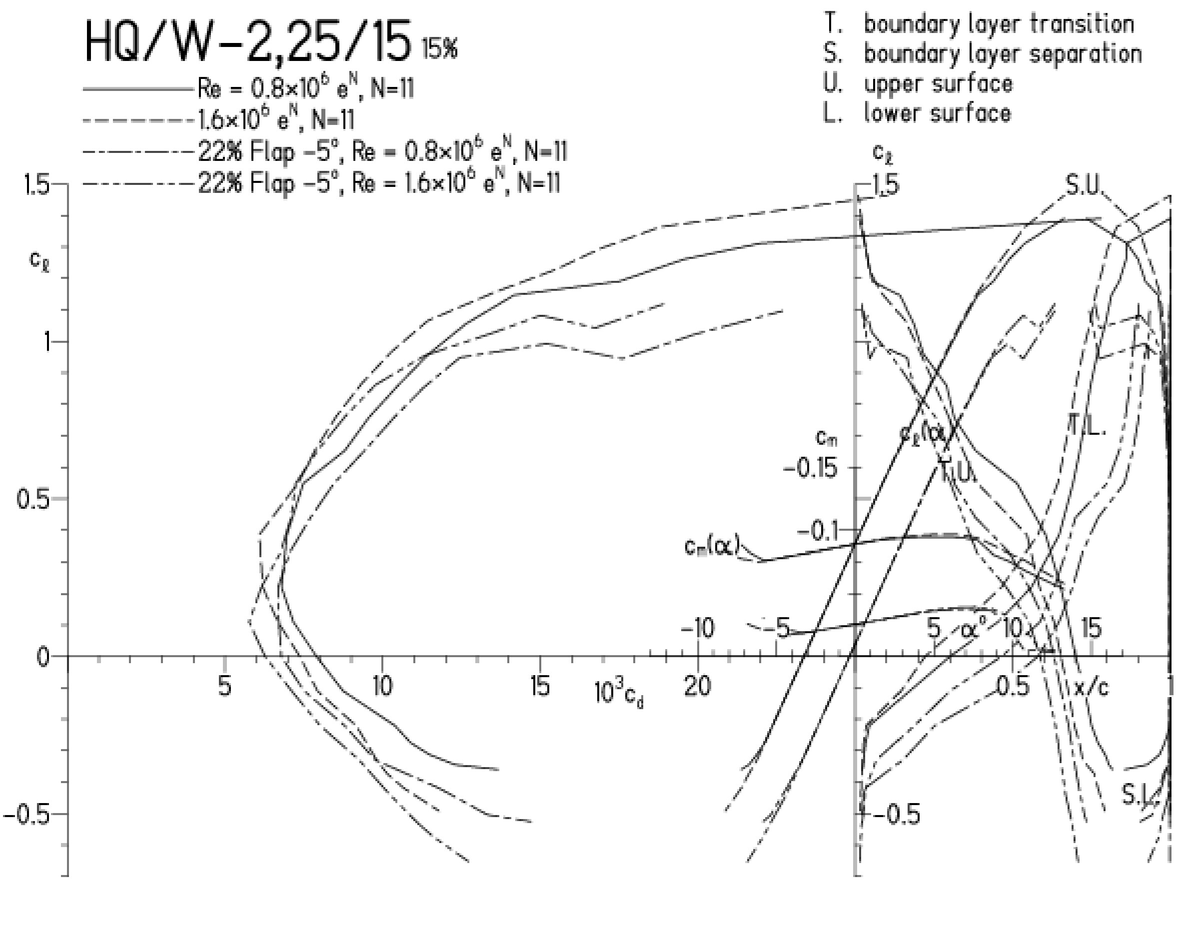
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

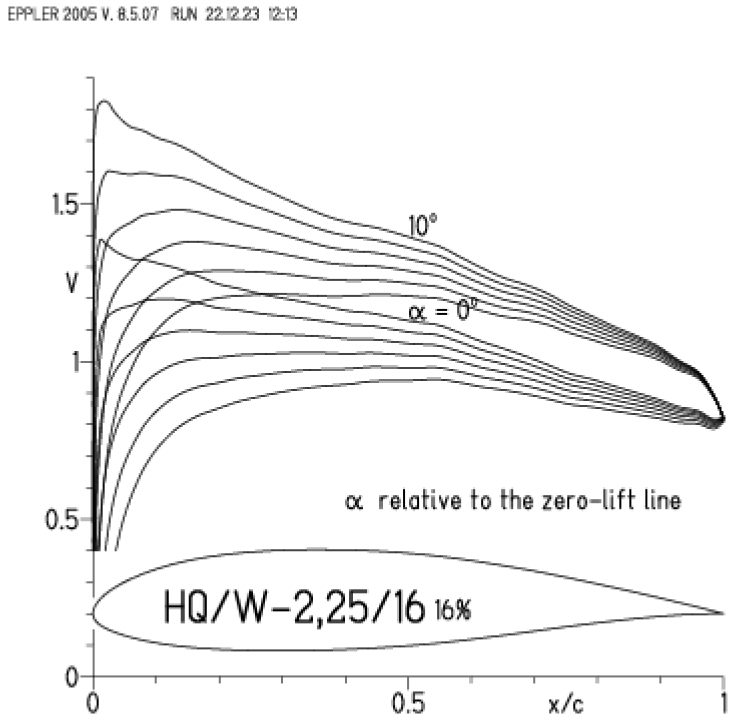
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

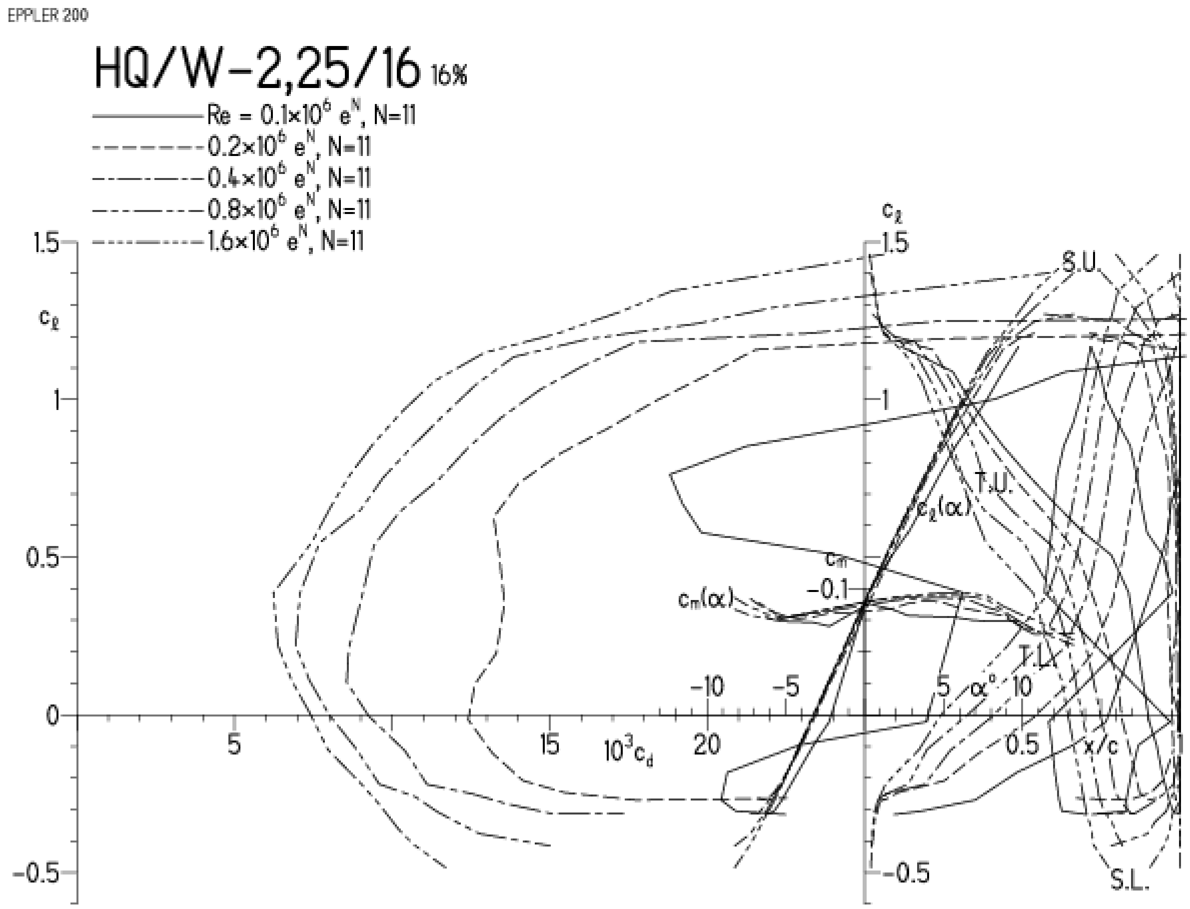


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

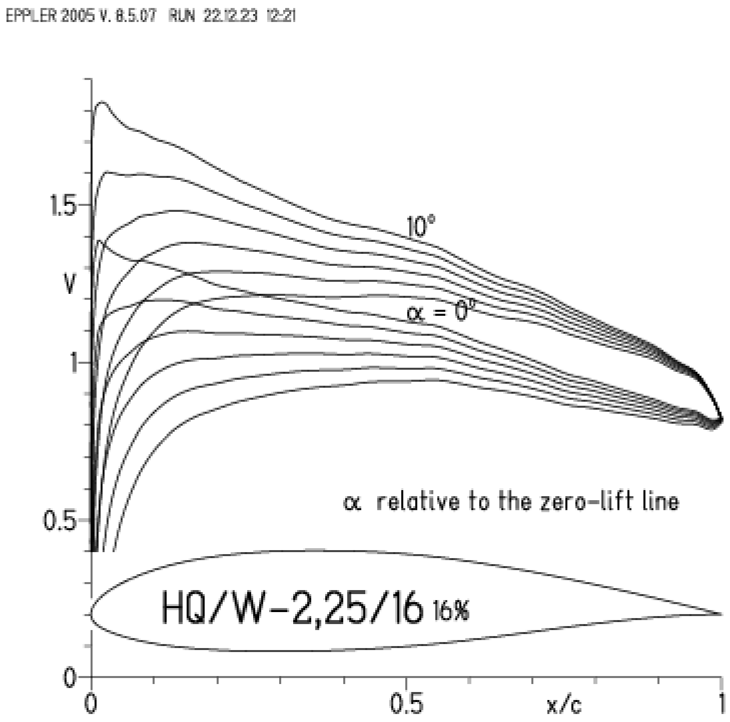


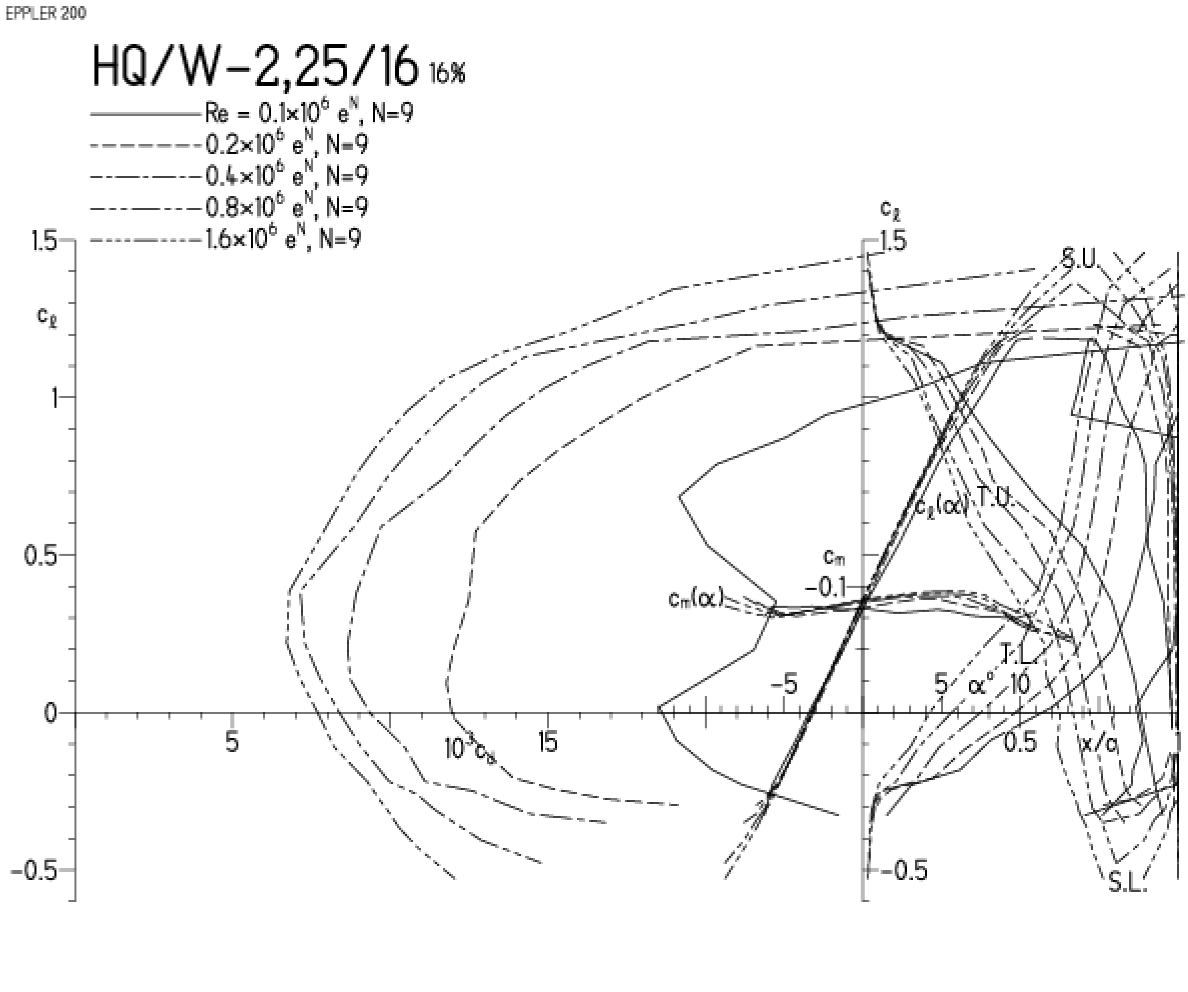
HQ/W-2,25/16, N=11



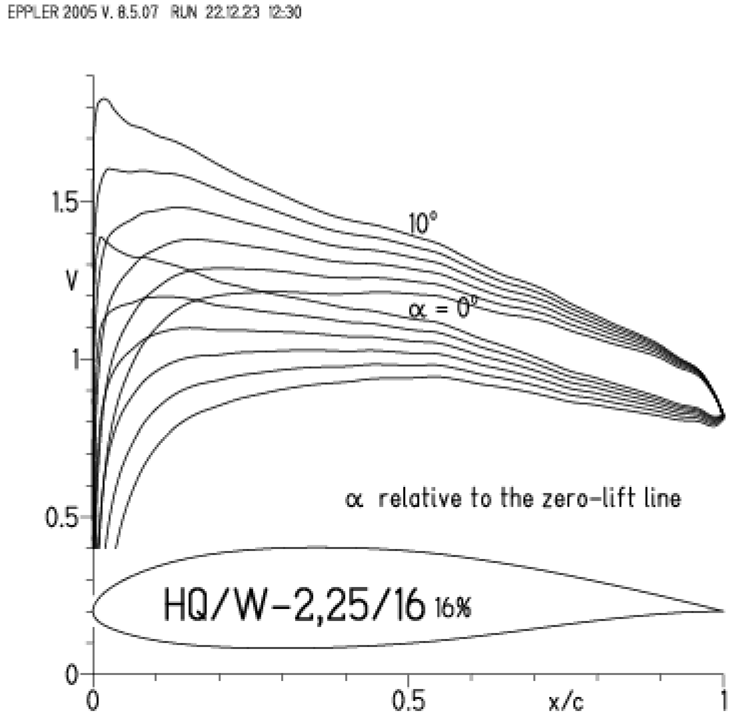


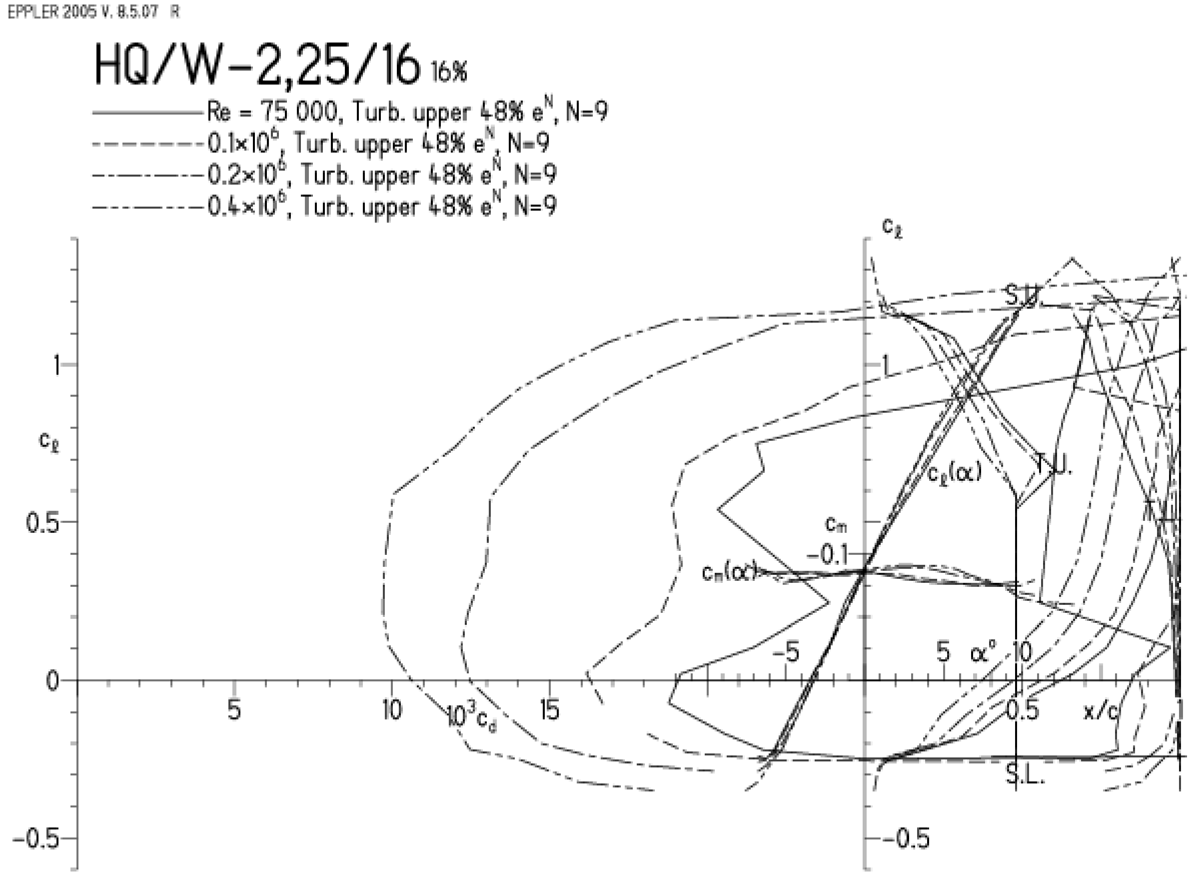
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
V
α relative to the zero-lift line
HQ/W-2,25/16 16%
x/c


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cm(α)
cℓ(α)
10^-3 cd
α°
x/c

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



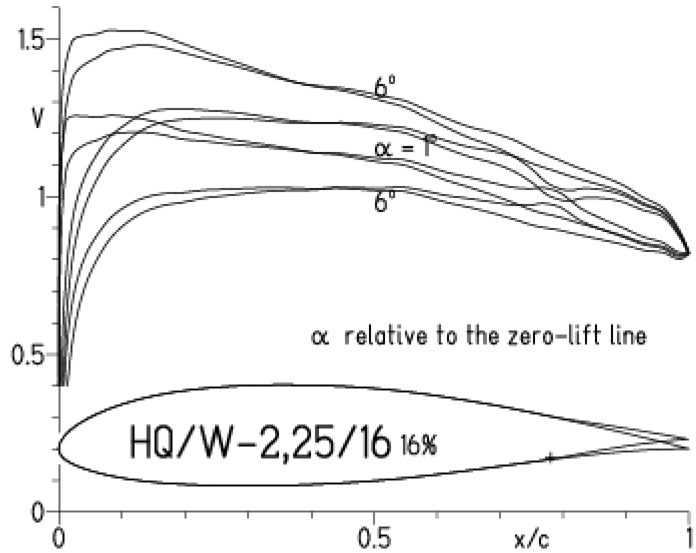


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

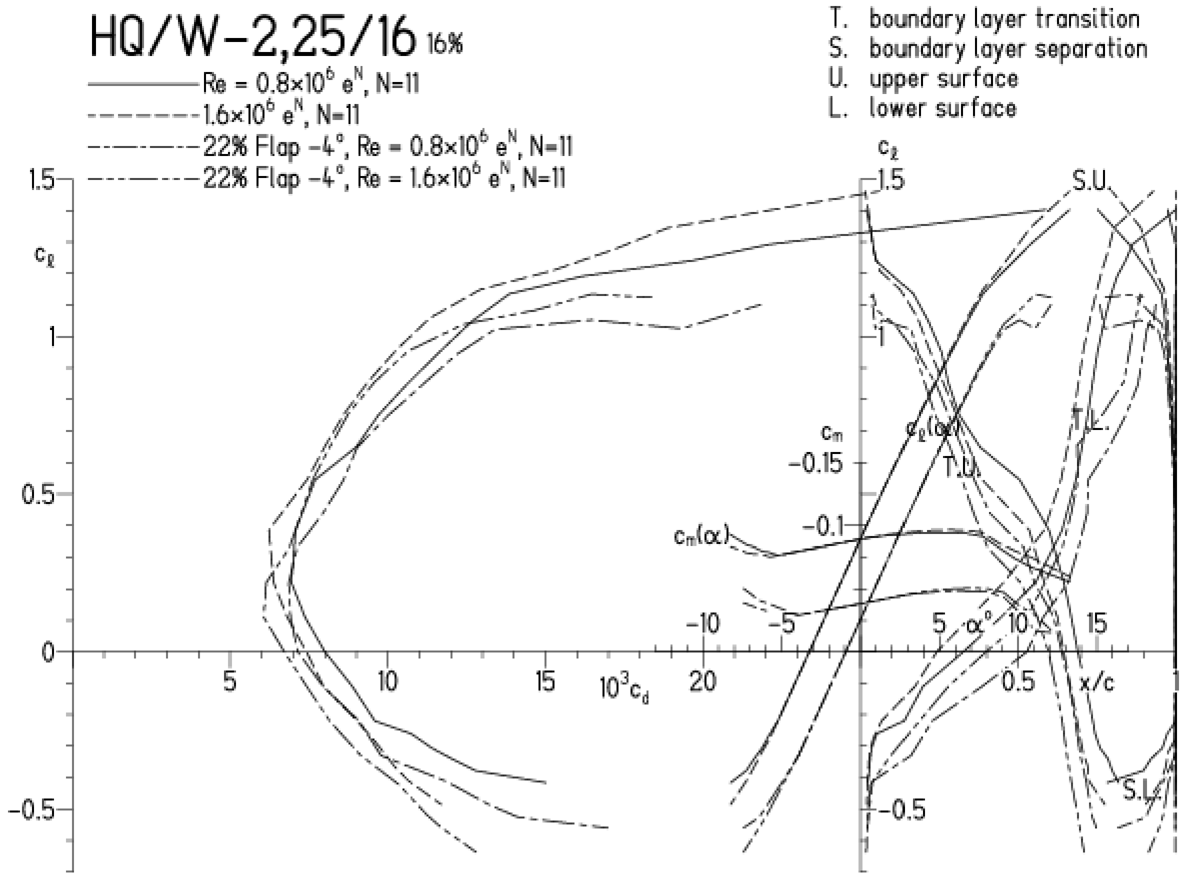
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

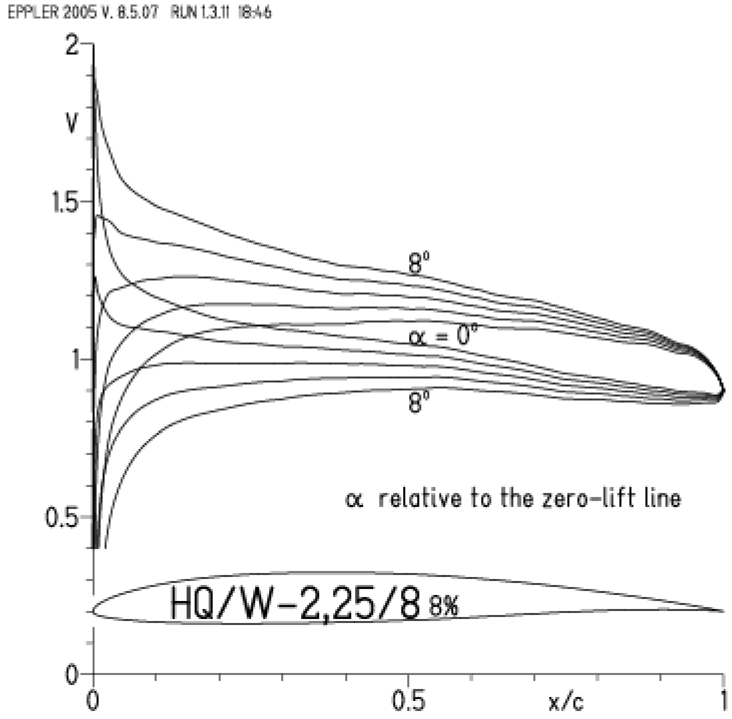
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

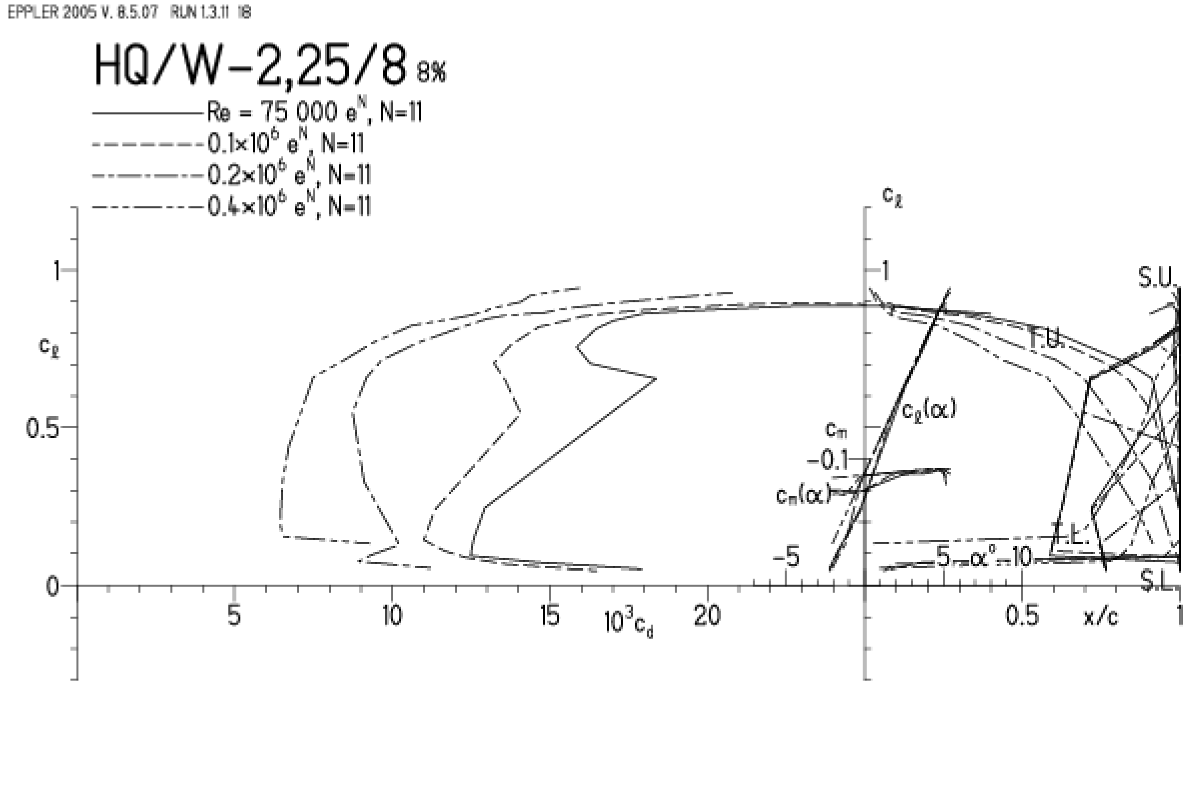


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

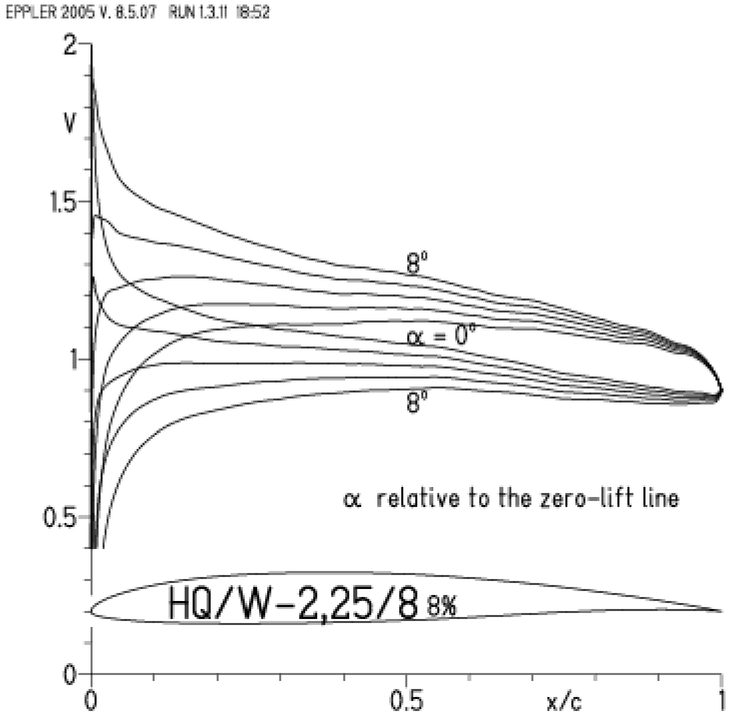


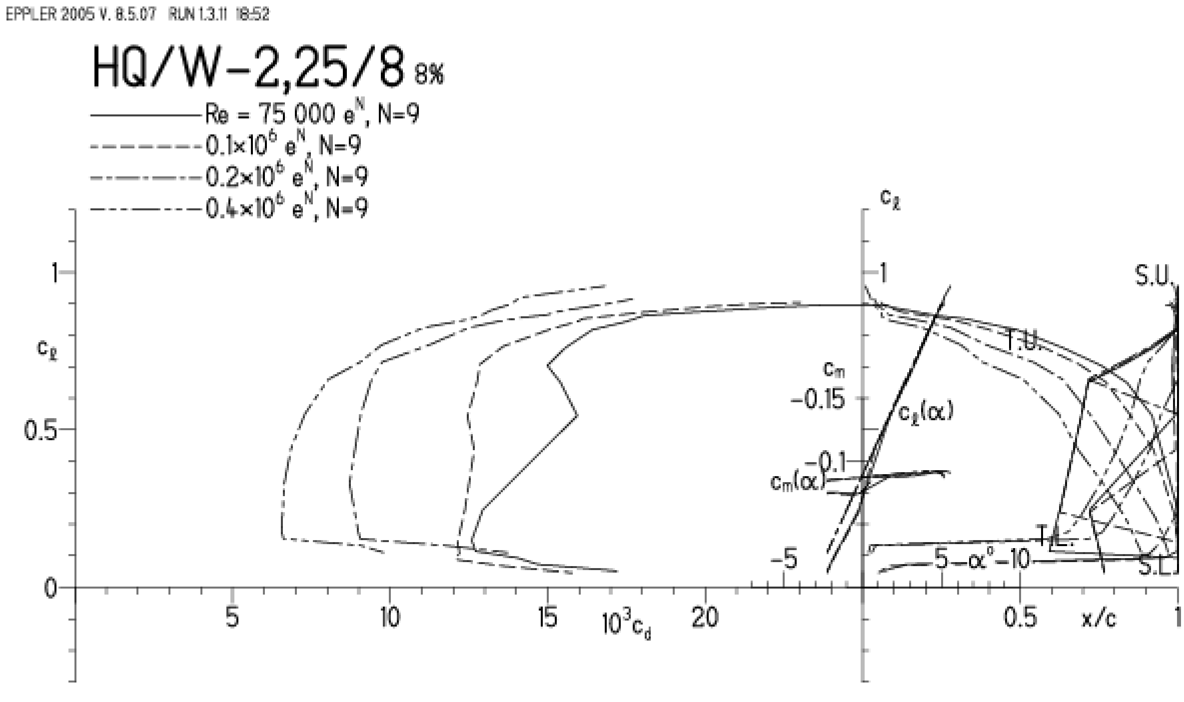
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

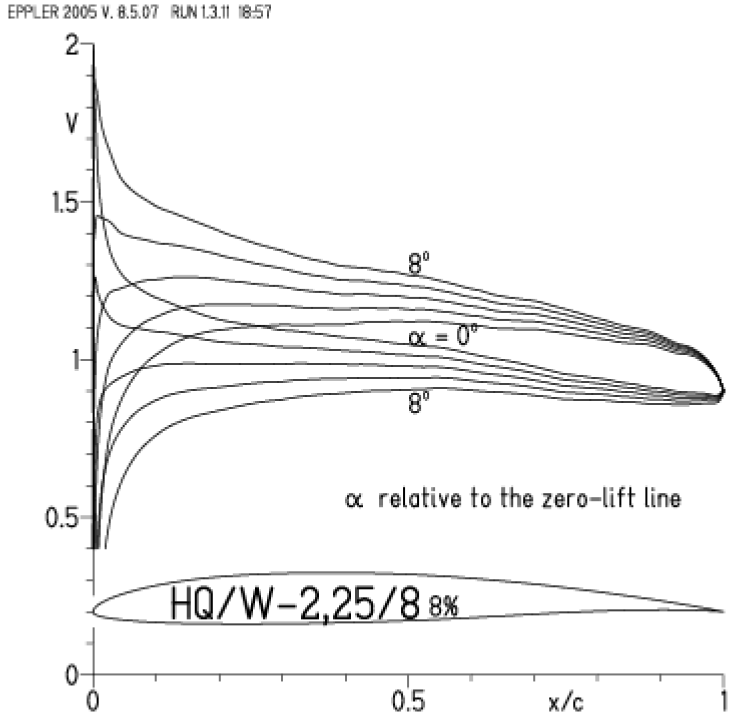

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
cℓ
cℓ(α)
cm
cm(α)
T.U.
S.U.
T.L.
S.L.
α°
10³cd
x/c

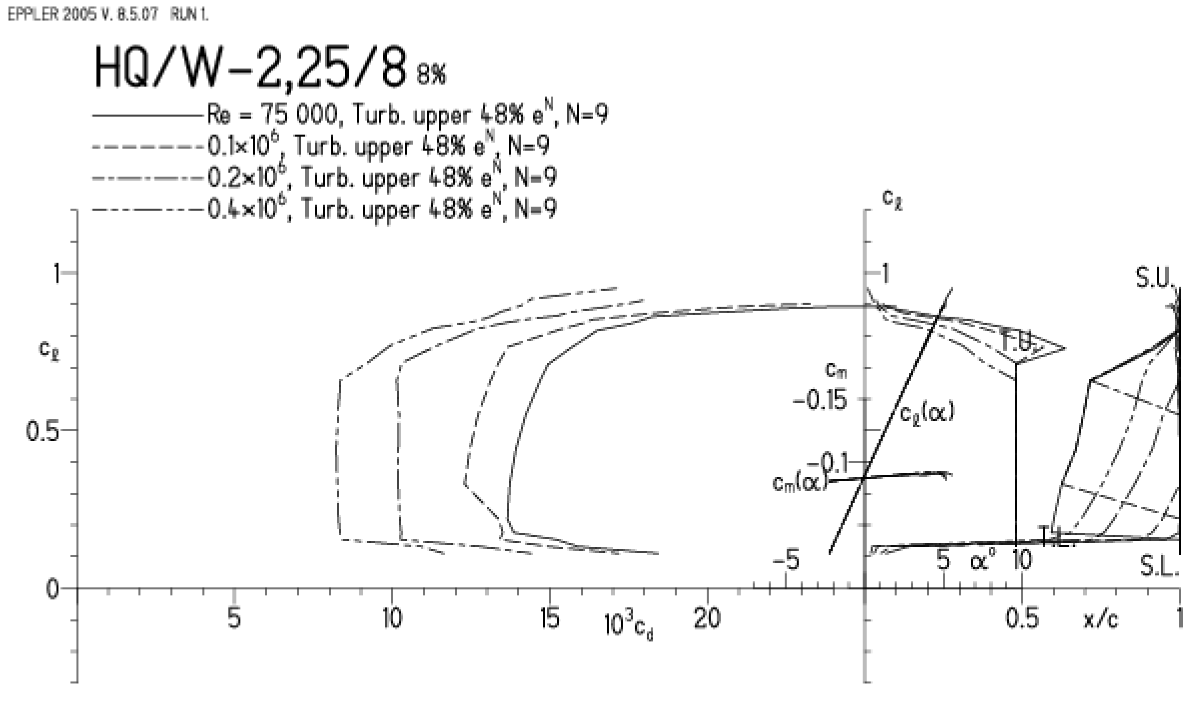
<u>HQ/W-2,25/8</u>, N=9



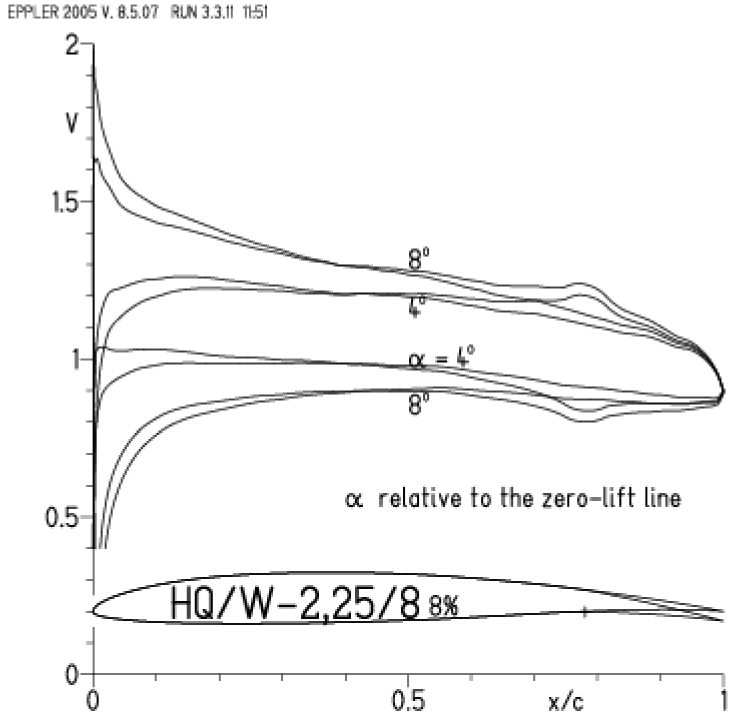


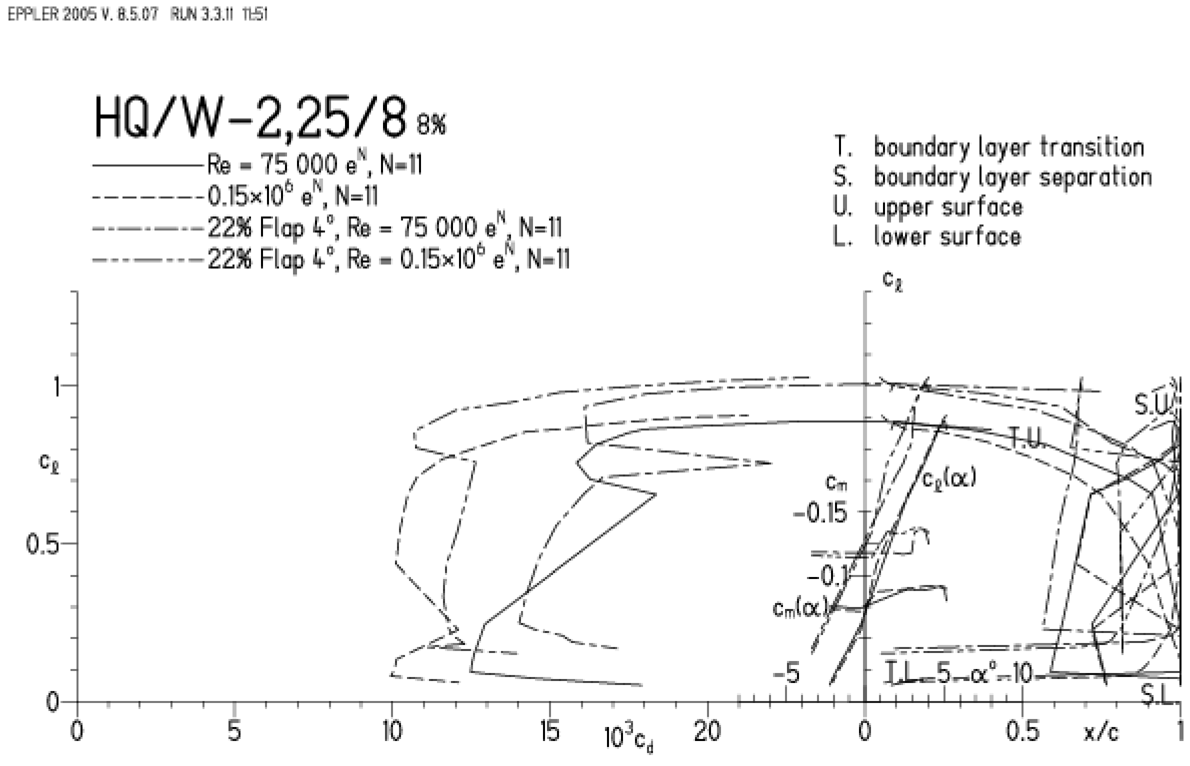
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



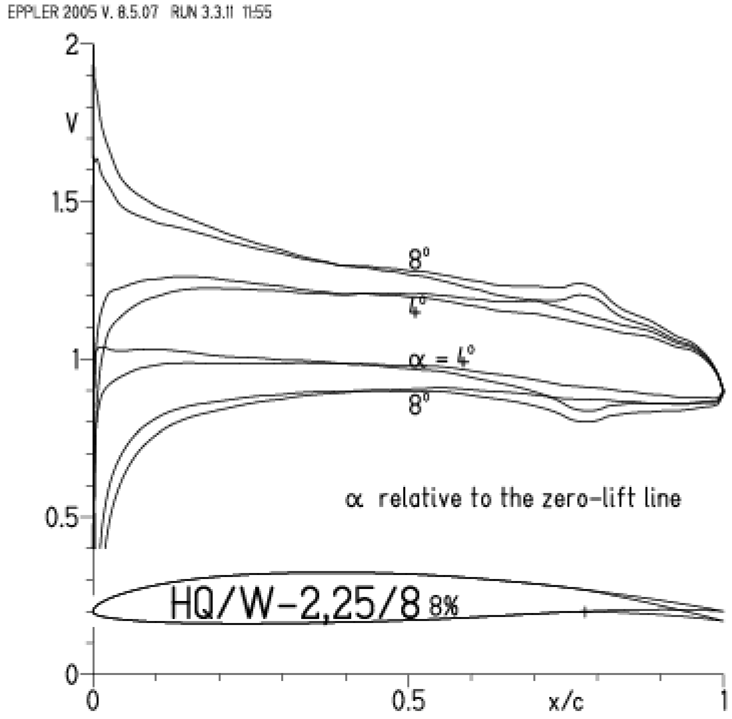


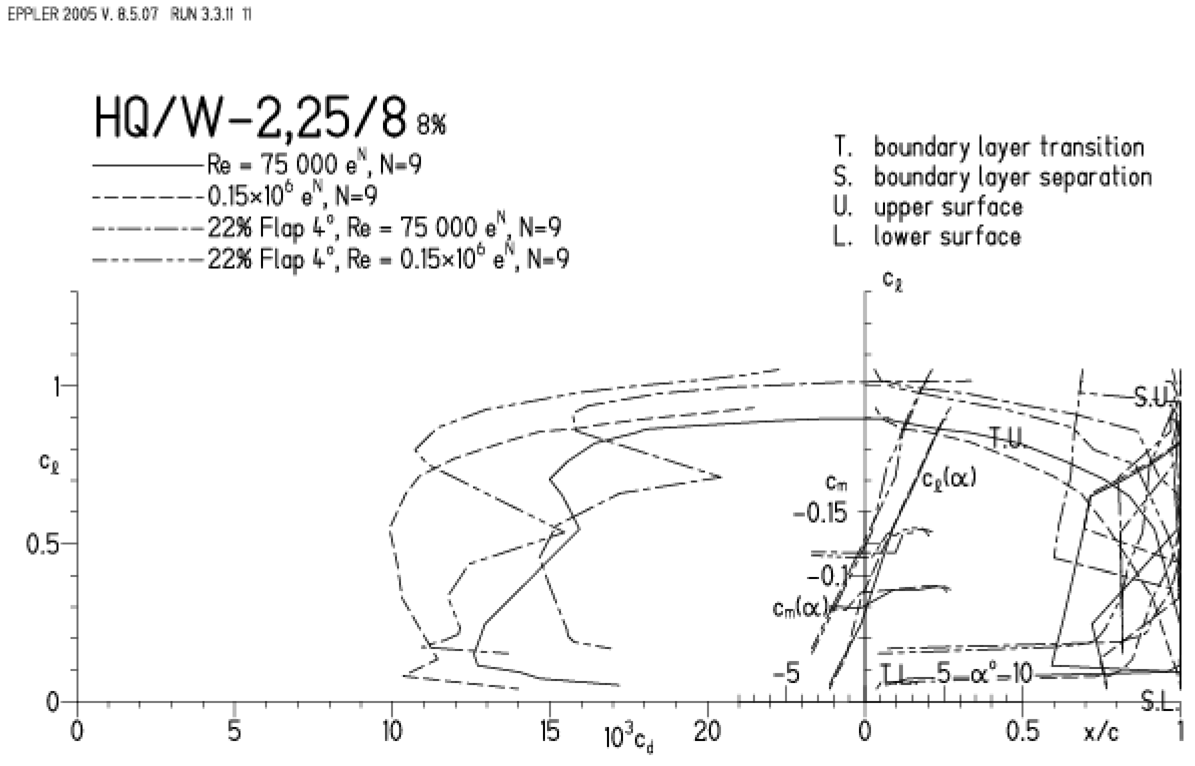
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



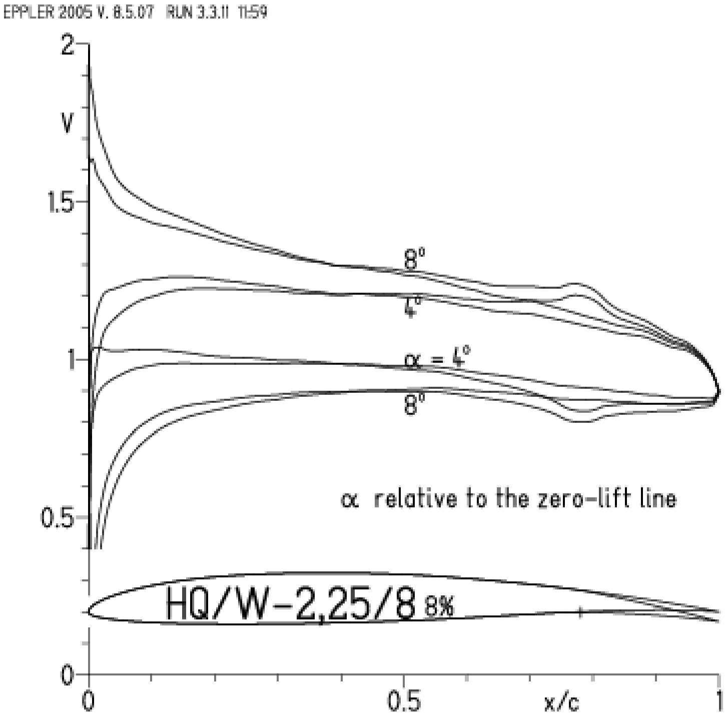


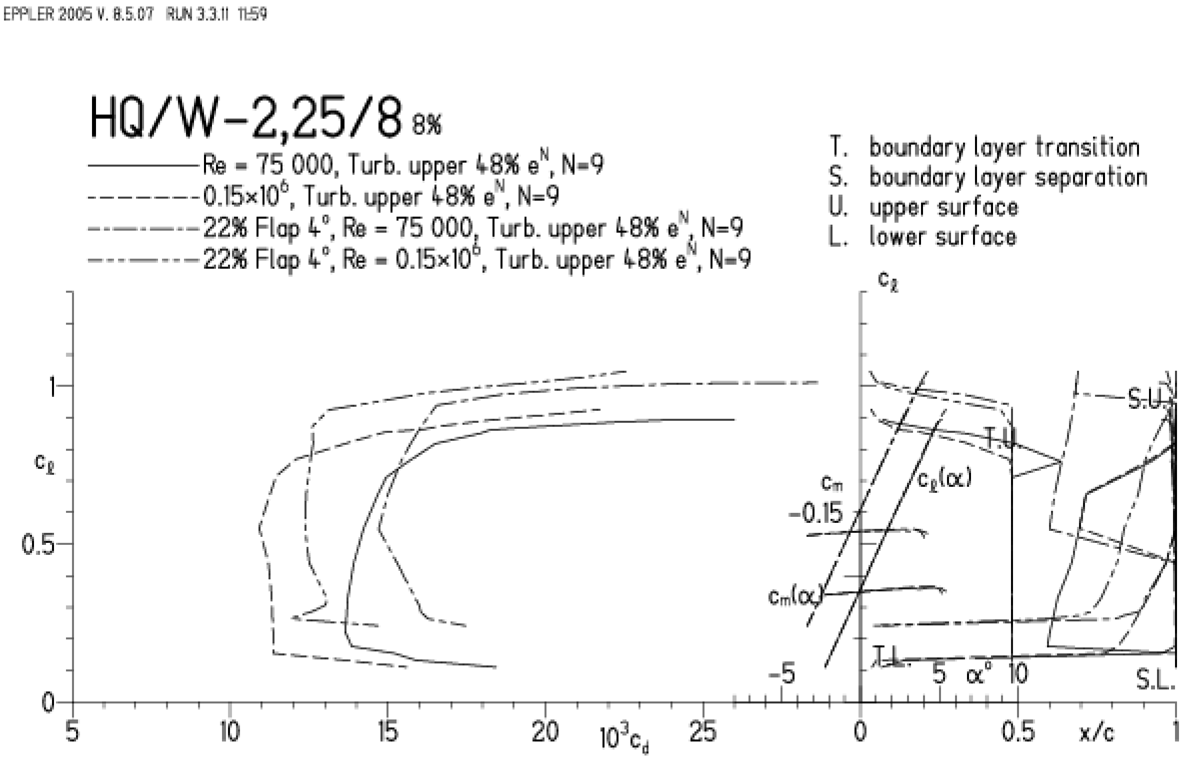
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





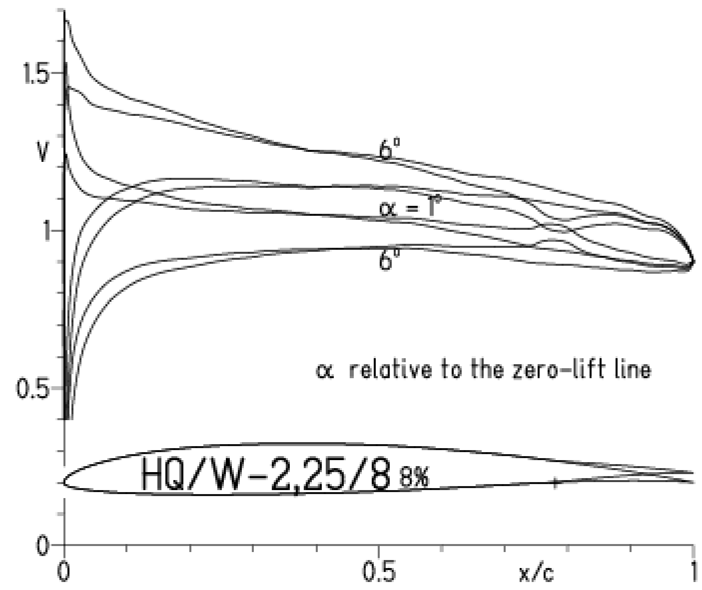
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



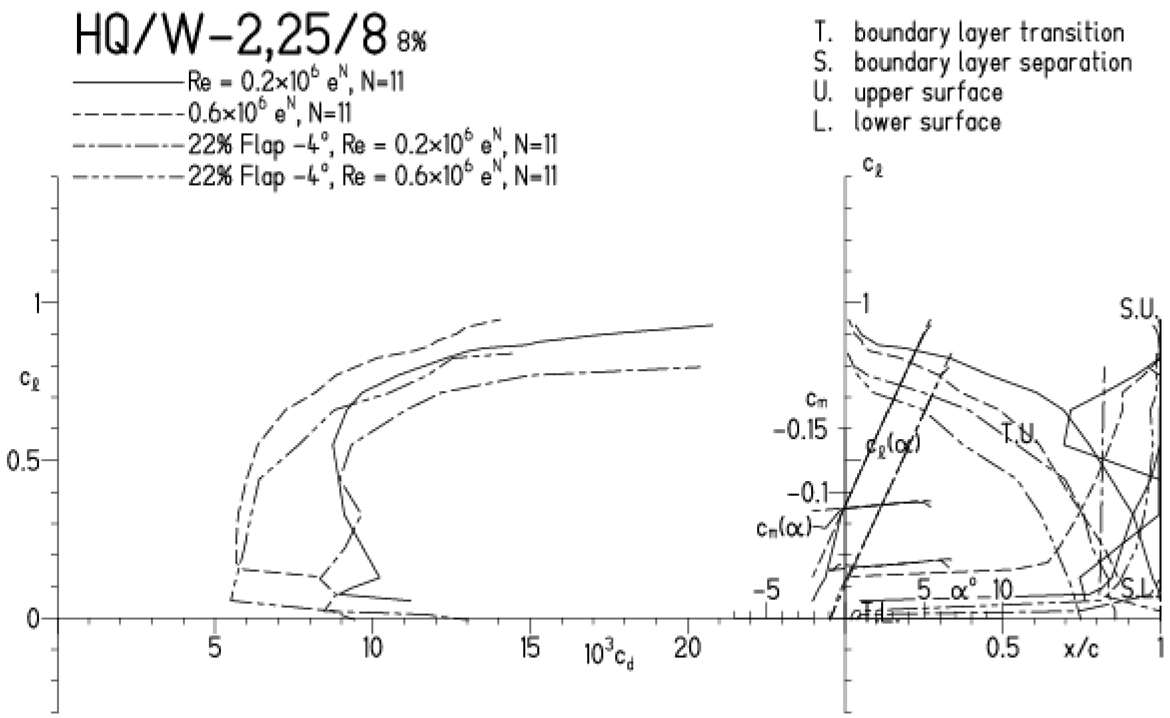


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm[2] erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

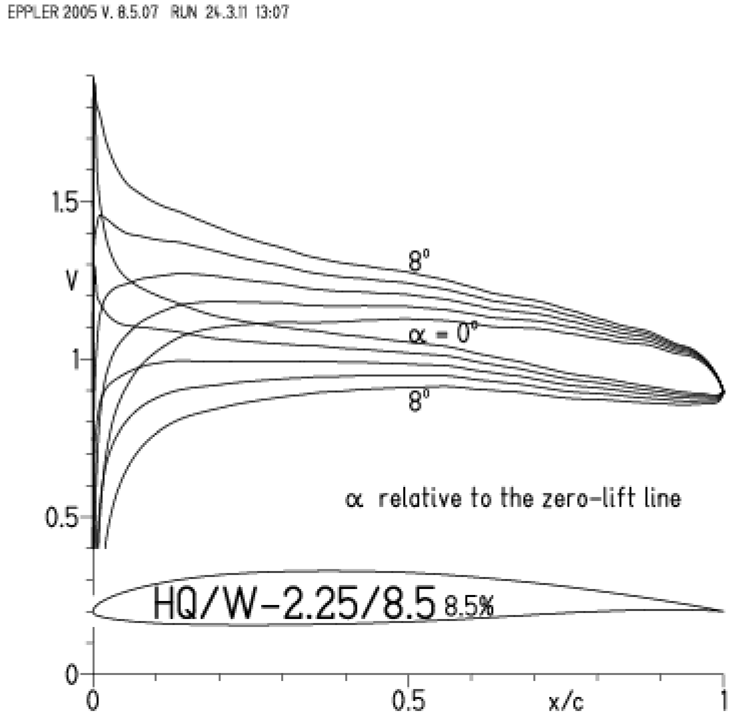
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

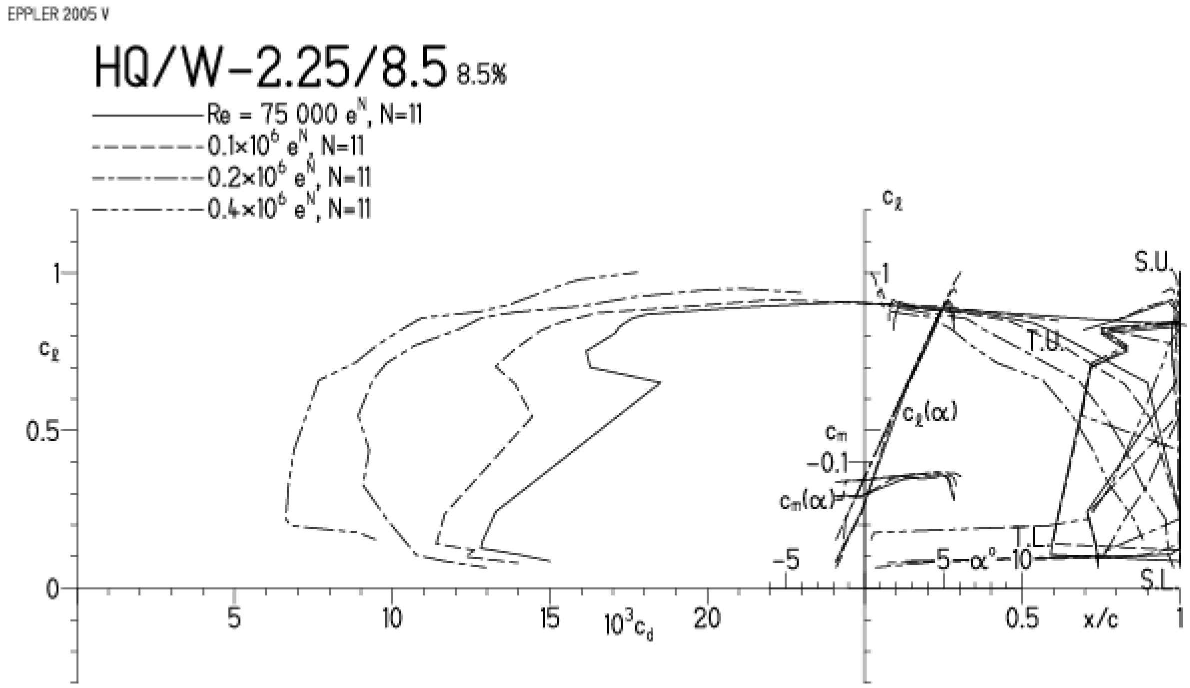


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

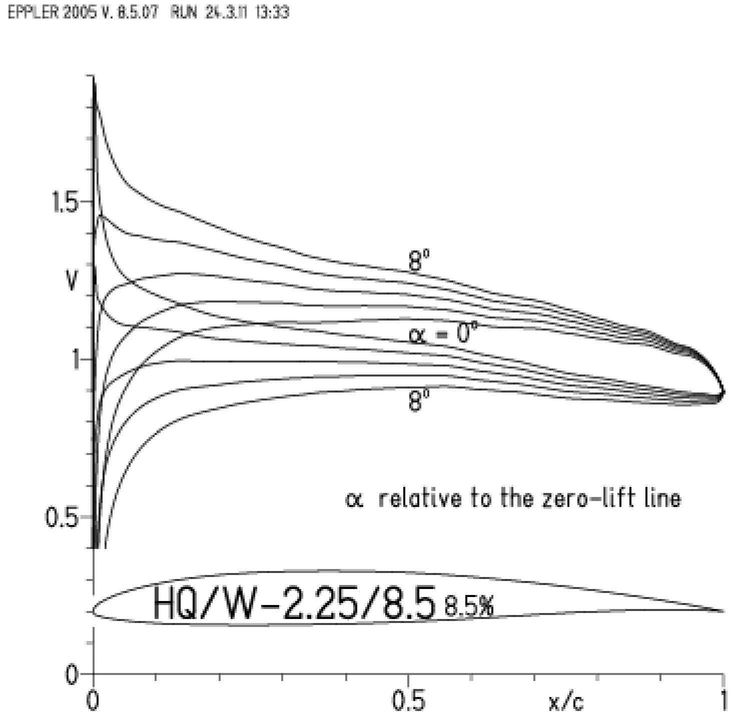


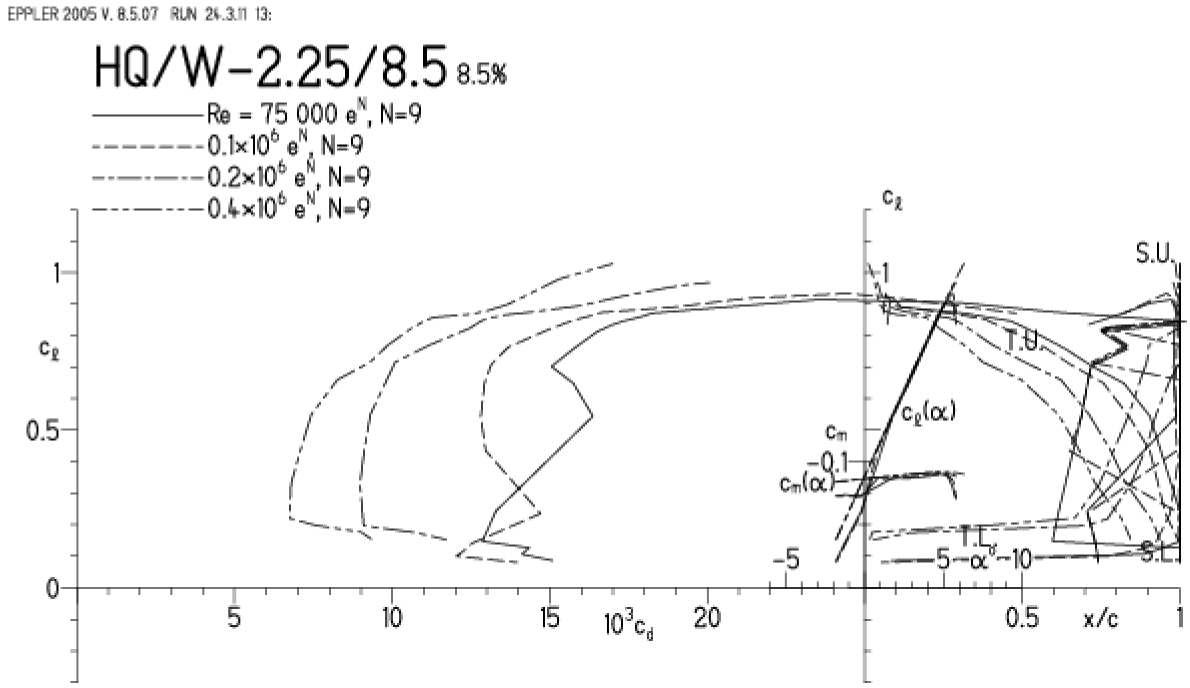
HQ/W-2,25/8,5, N=11



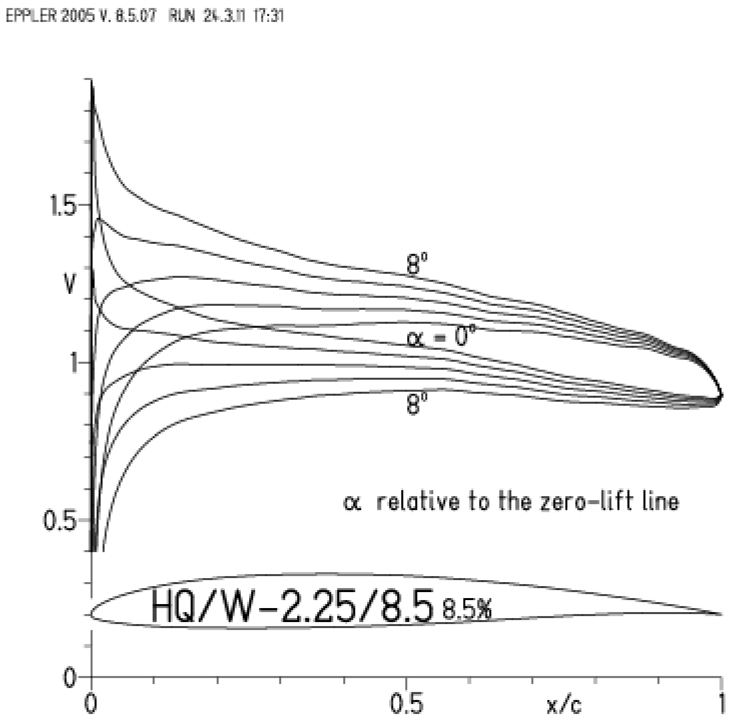


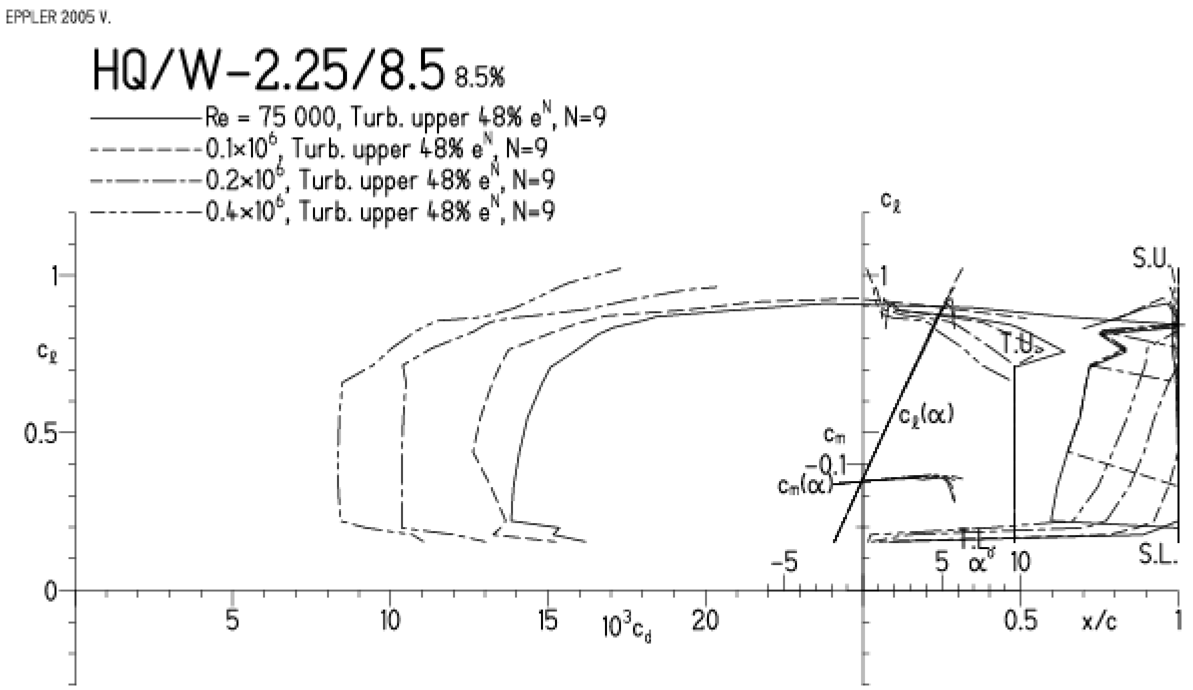
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
1
S.U.
T.U.
c_ℓ(α)
c_m
-0.1
c_m(α)
T.L.
-5
5
α°
10
S.L.
0.5
x/c
1

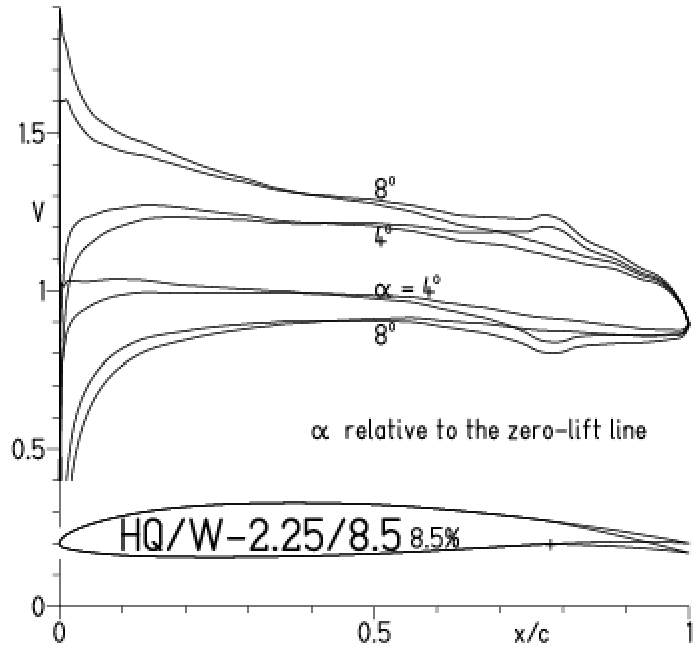
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



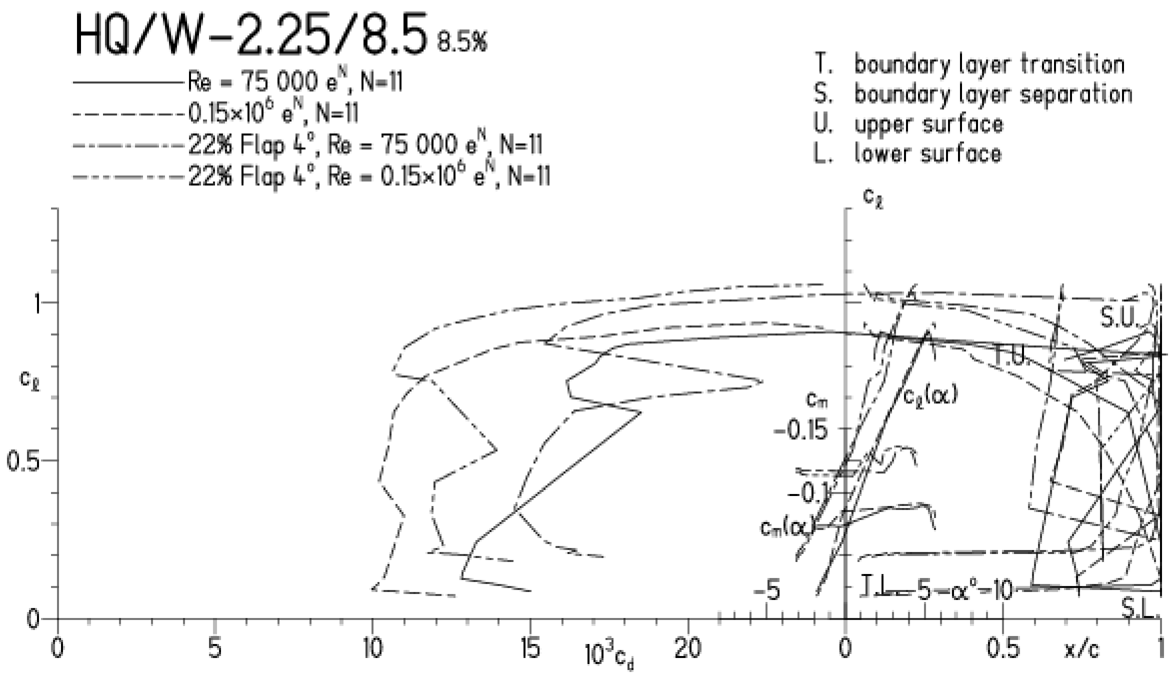


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

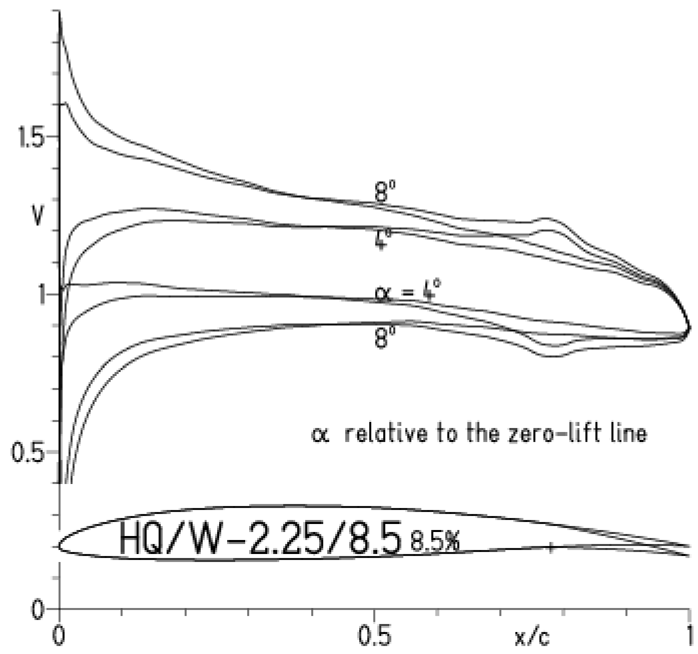


EPPLER 2005 V. 8.5.

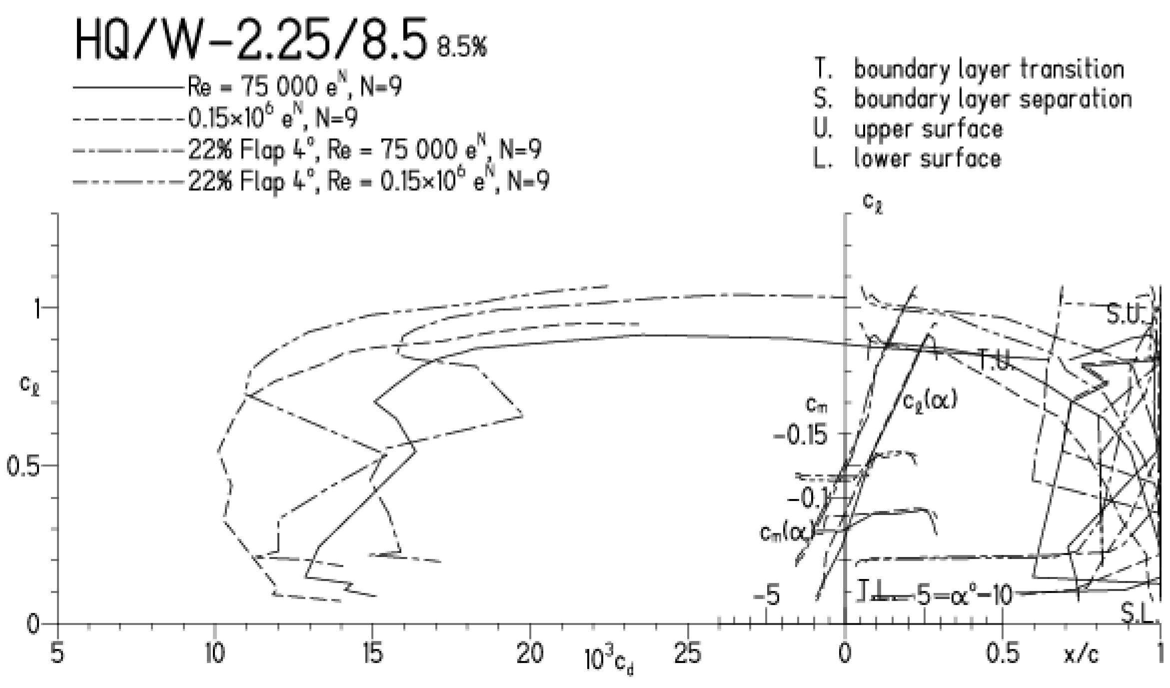


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

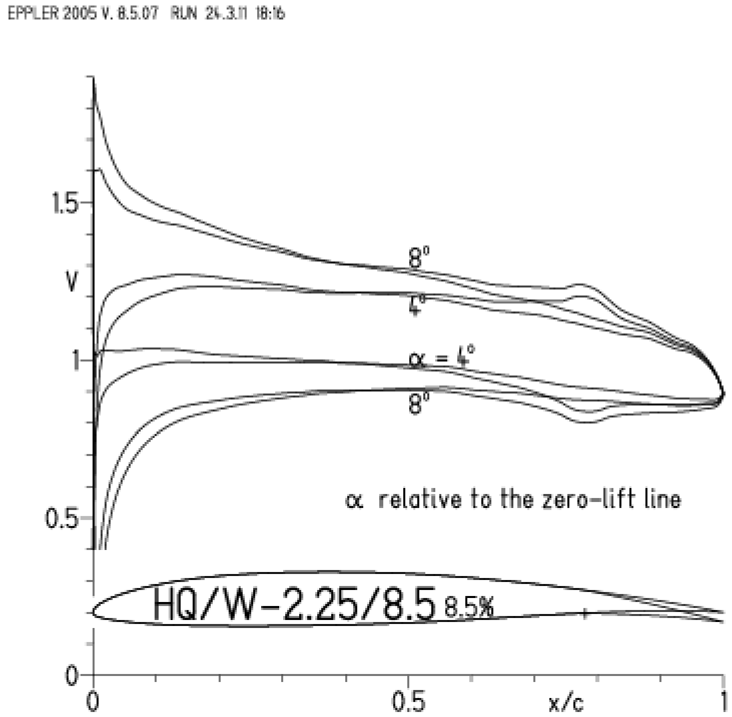
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

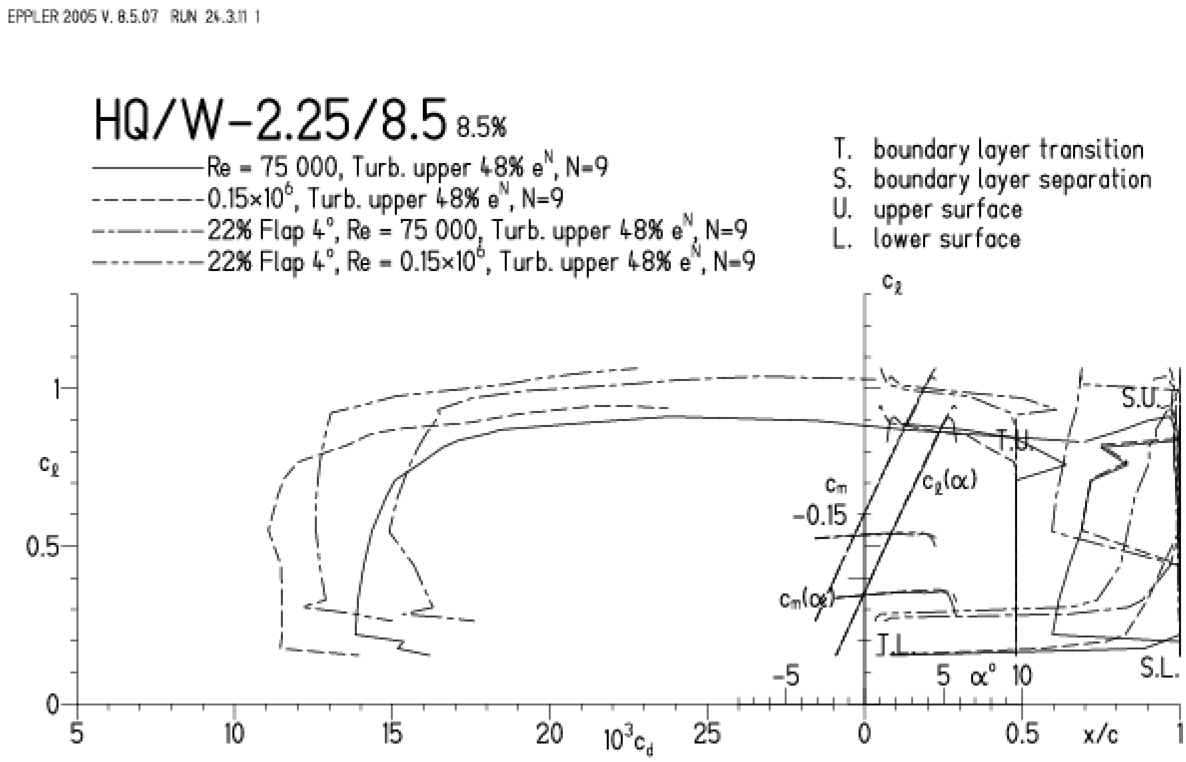


EPPLER 2005 V.

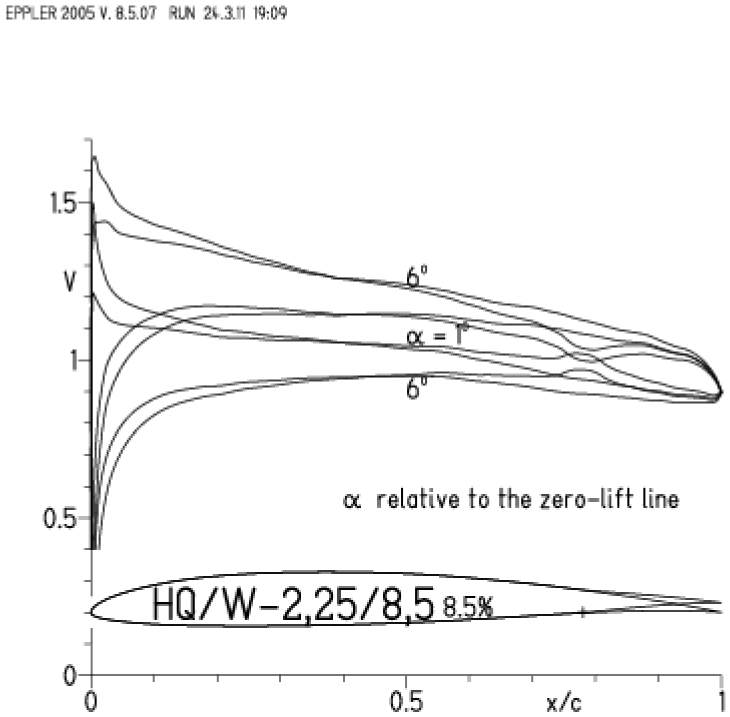


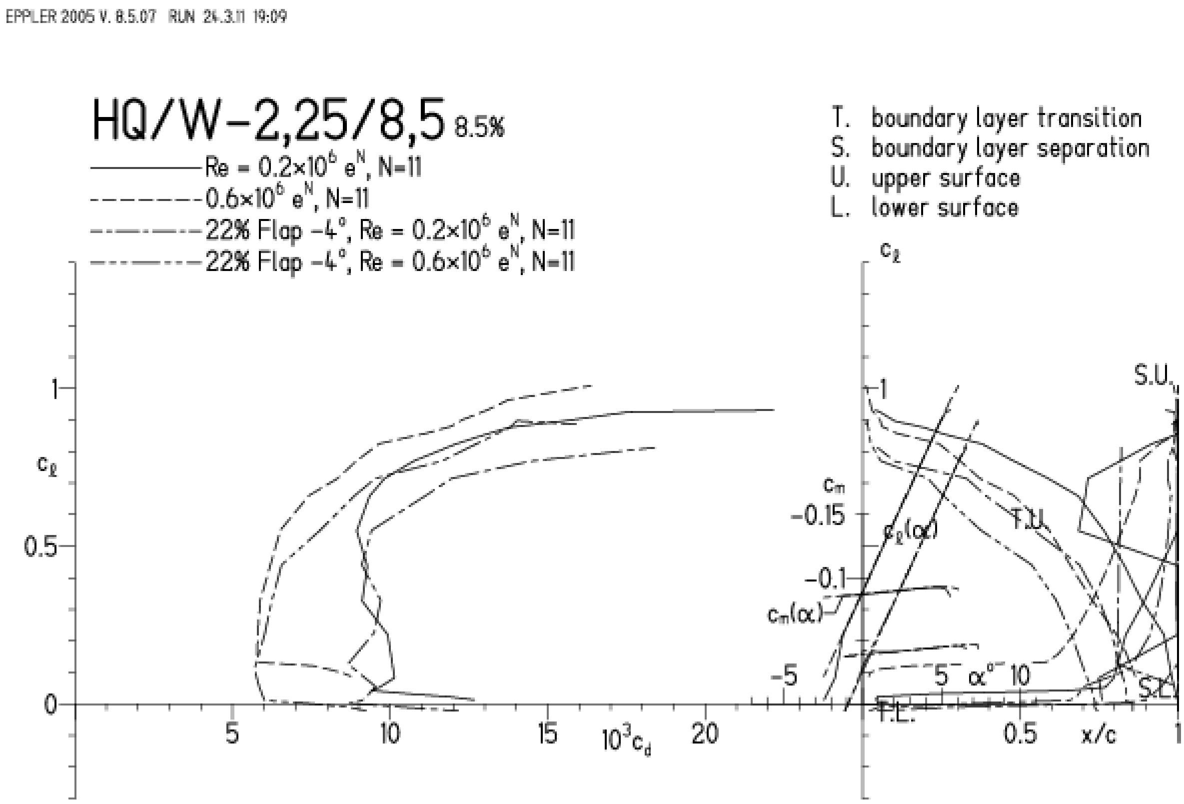
HQ/W-2,25/8,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





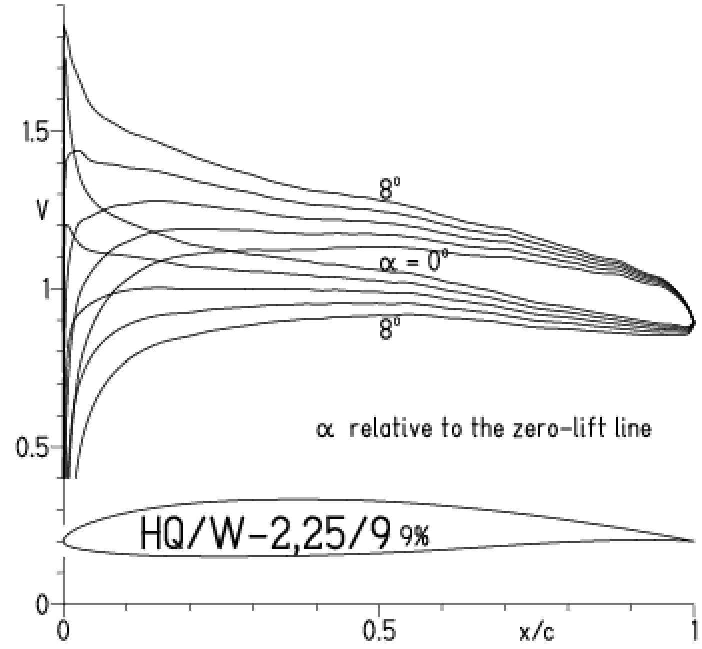
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



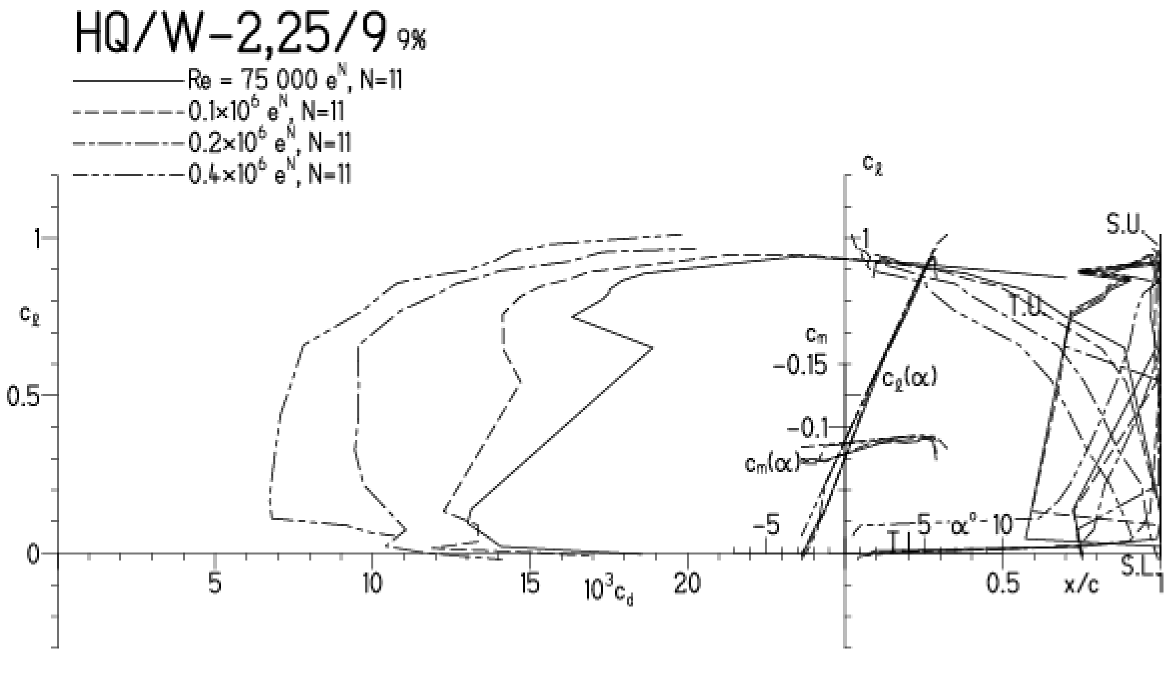


HQ/W-2,25/9, N=11

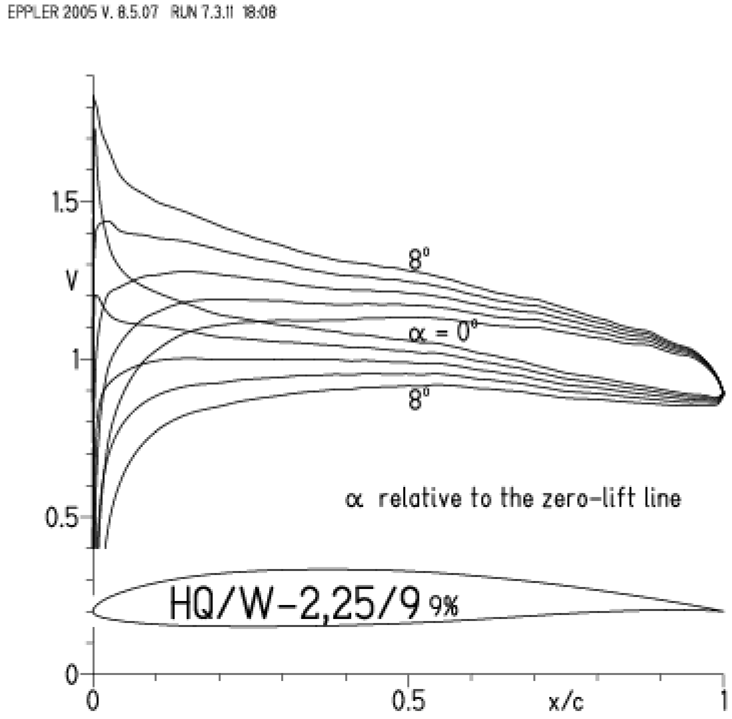
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

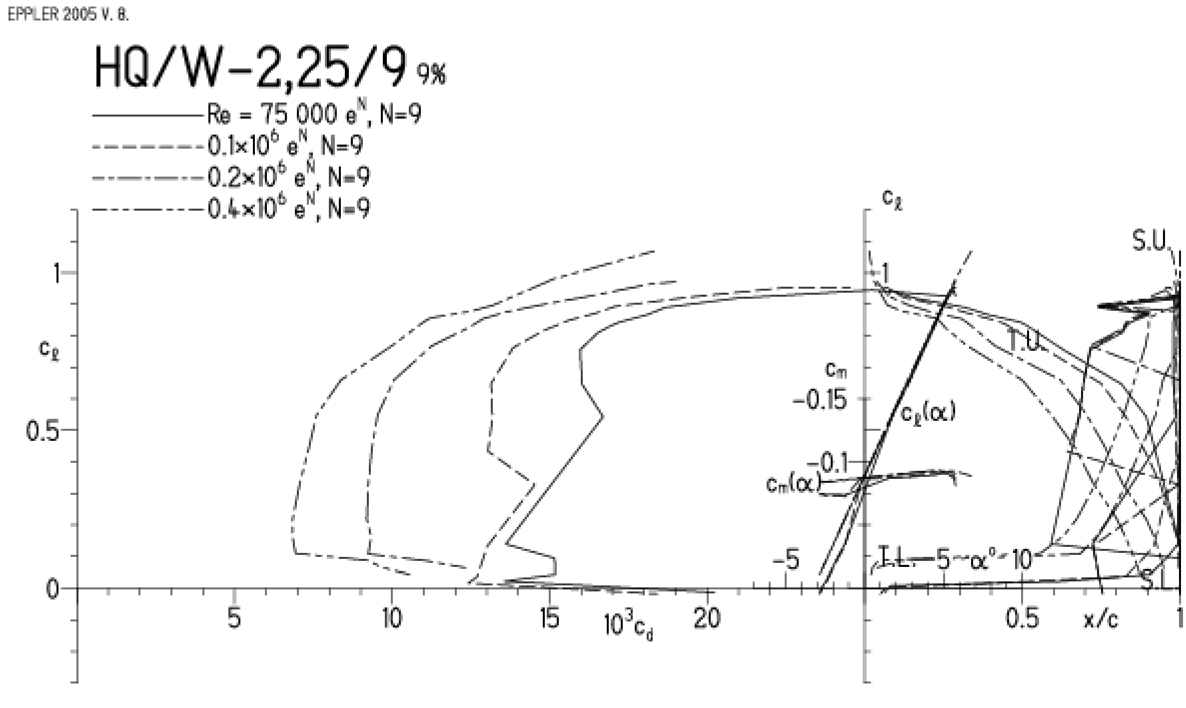


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

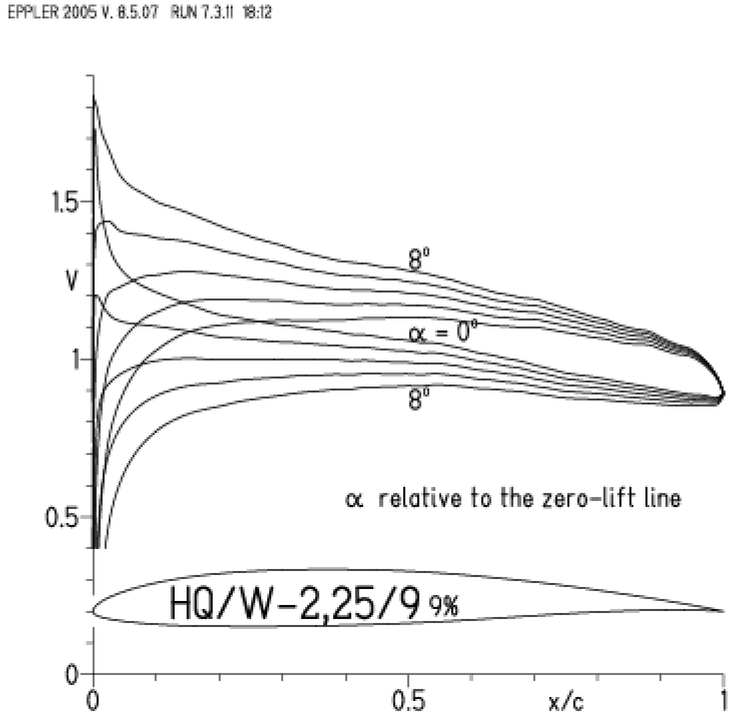


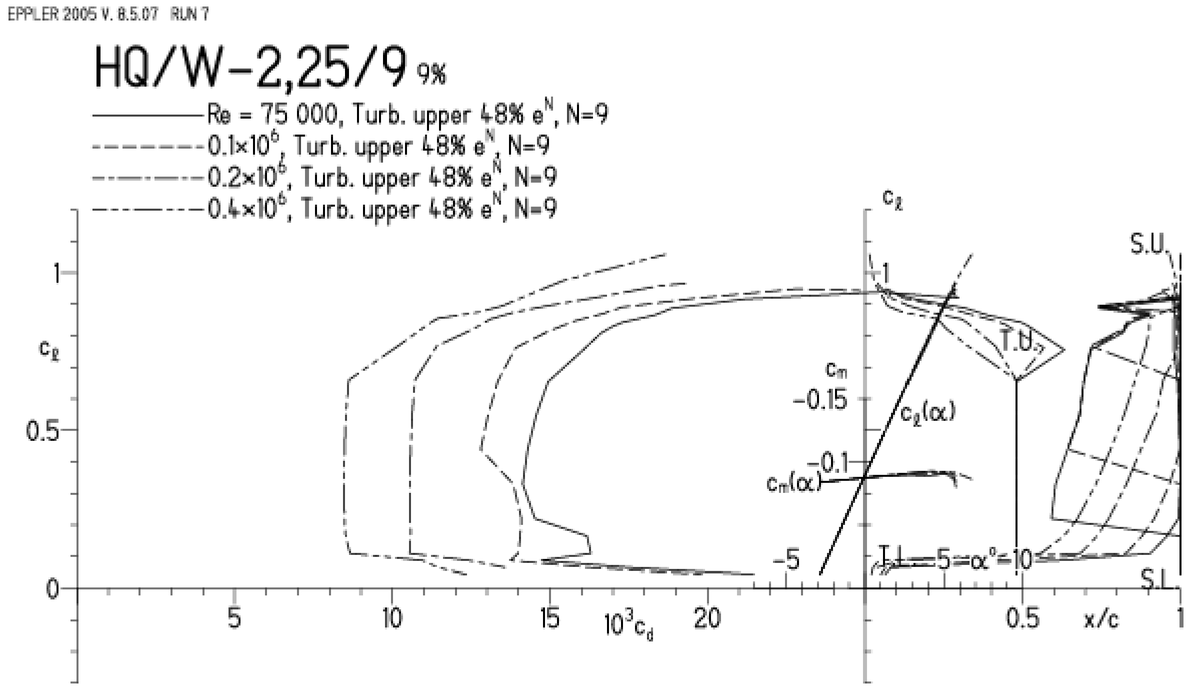
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
15
10^3 c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

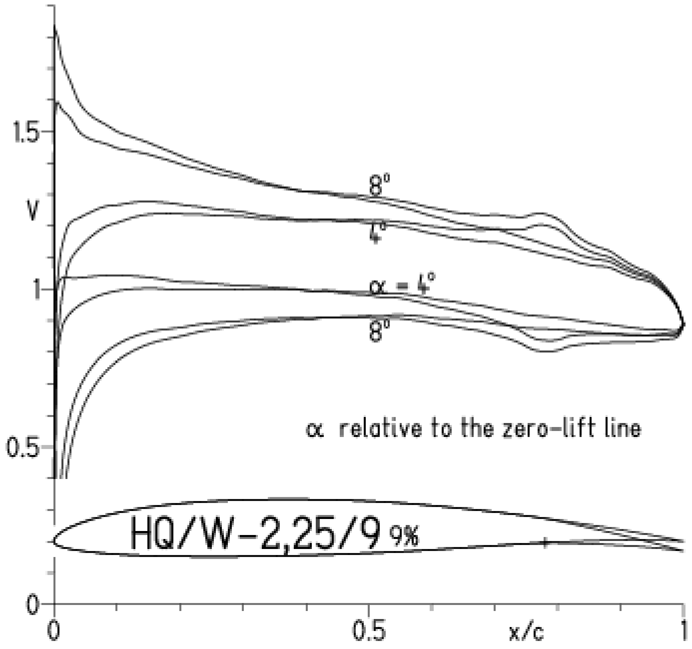
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



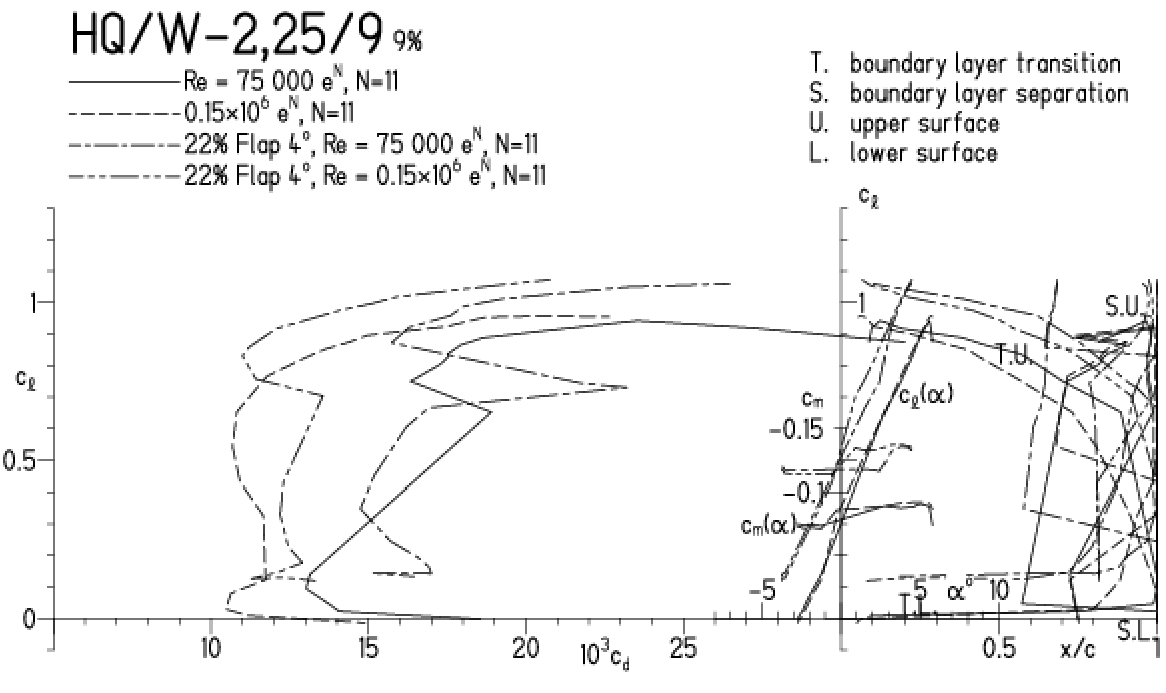


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

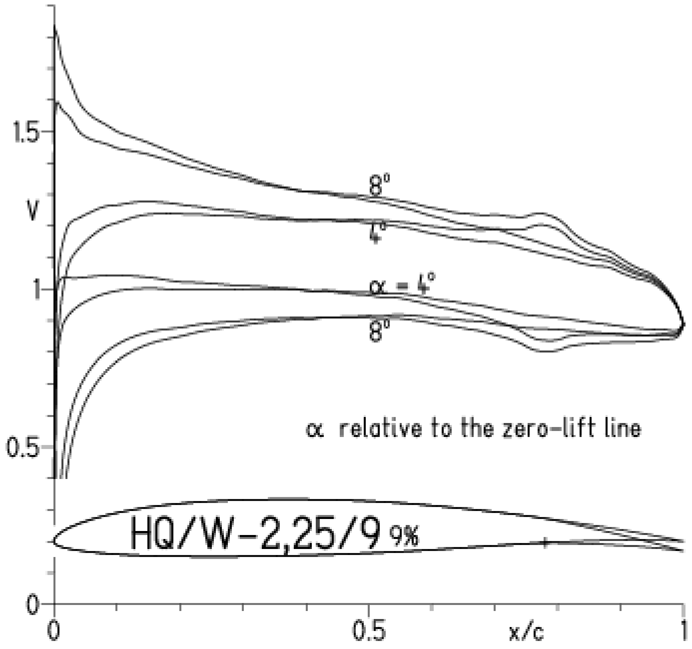


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

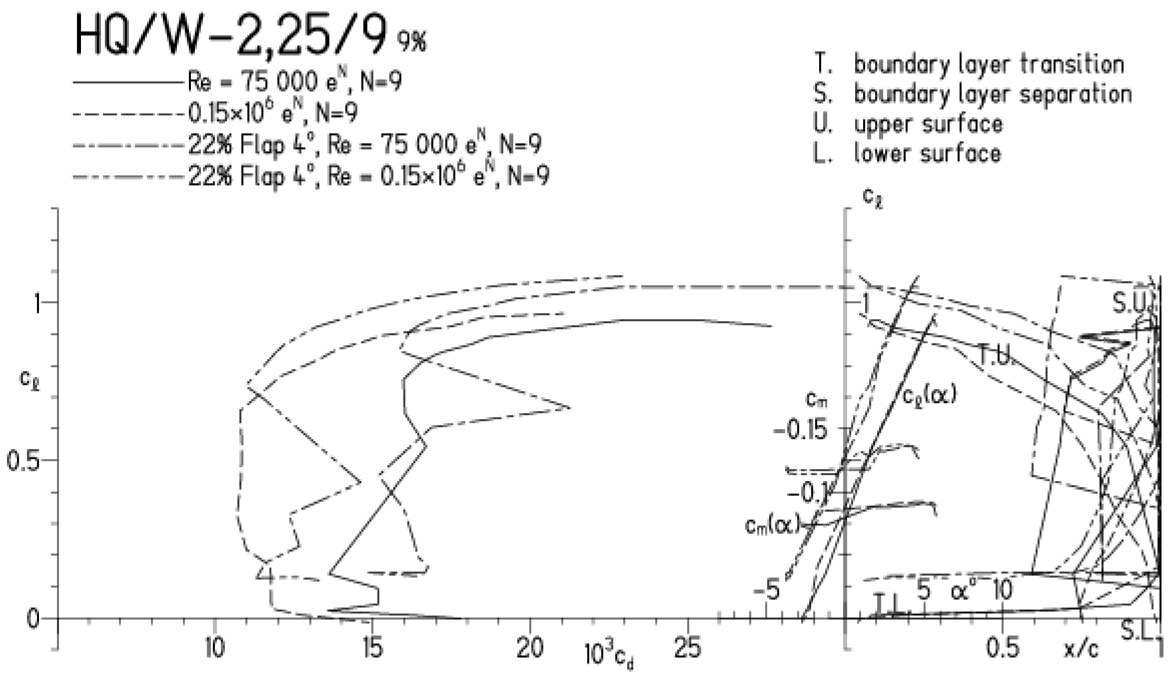


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

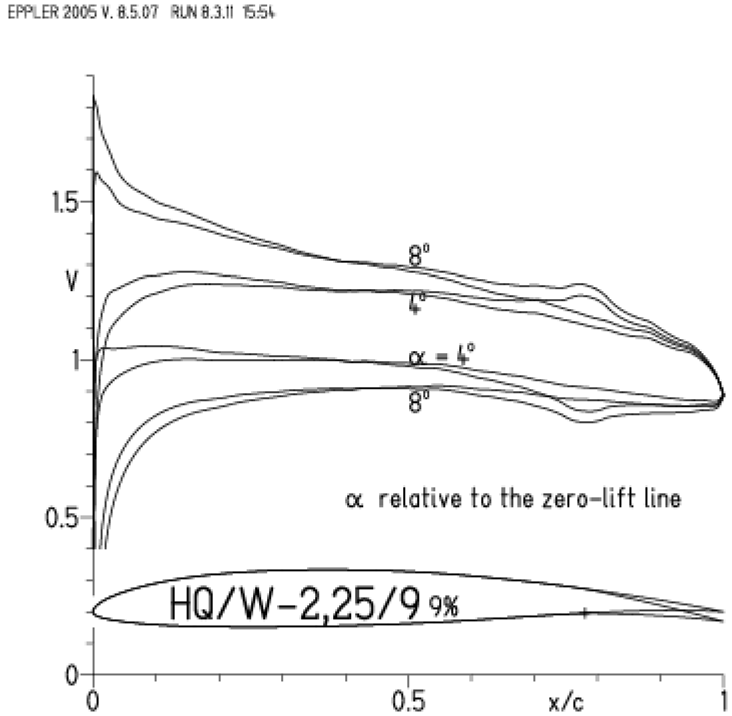
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

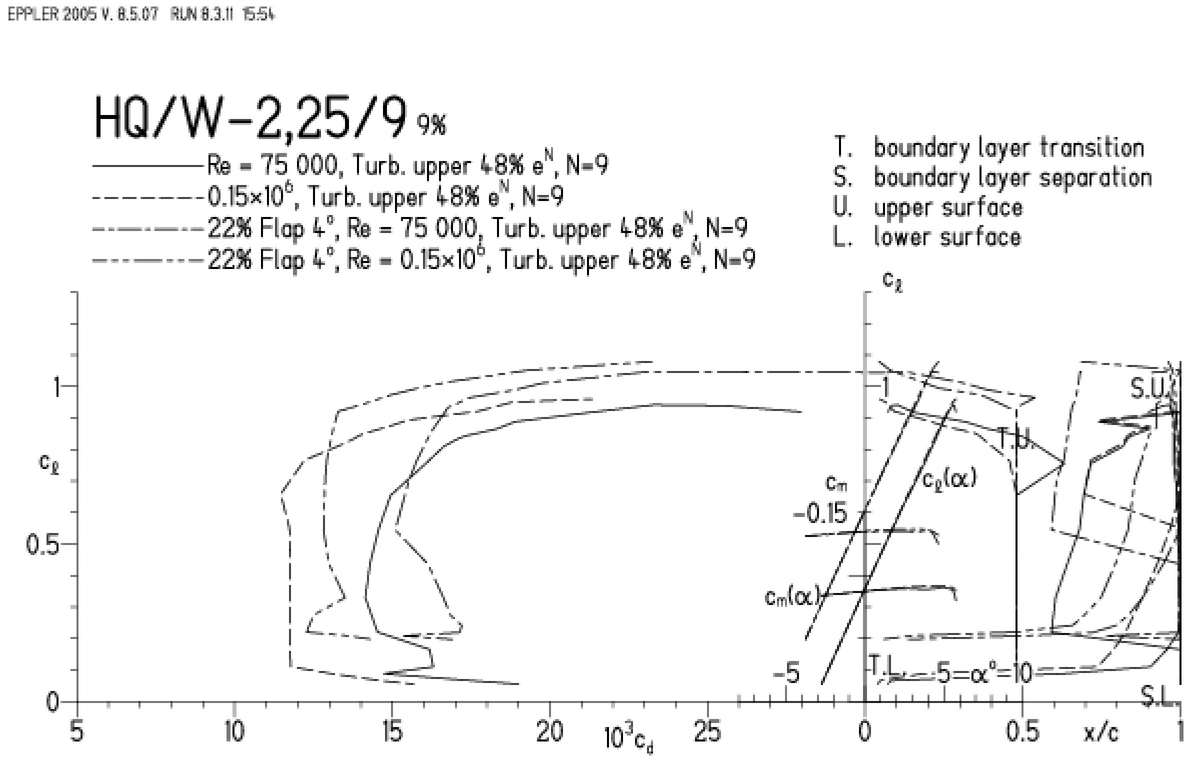


EPPLER 2005 V. 8.5.07 RUN 8.3.1

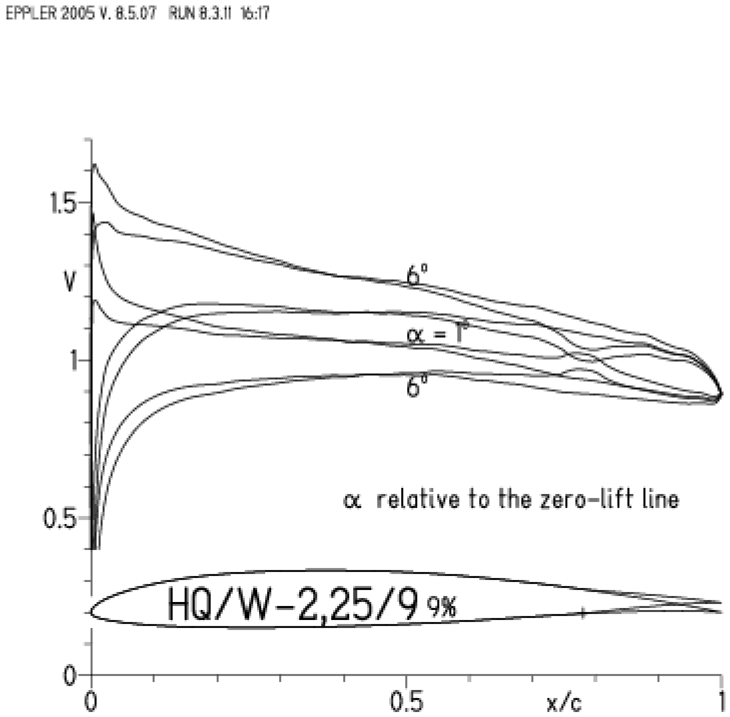


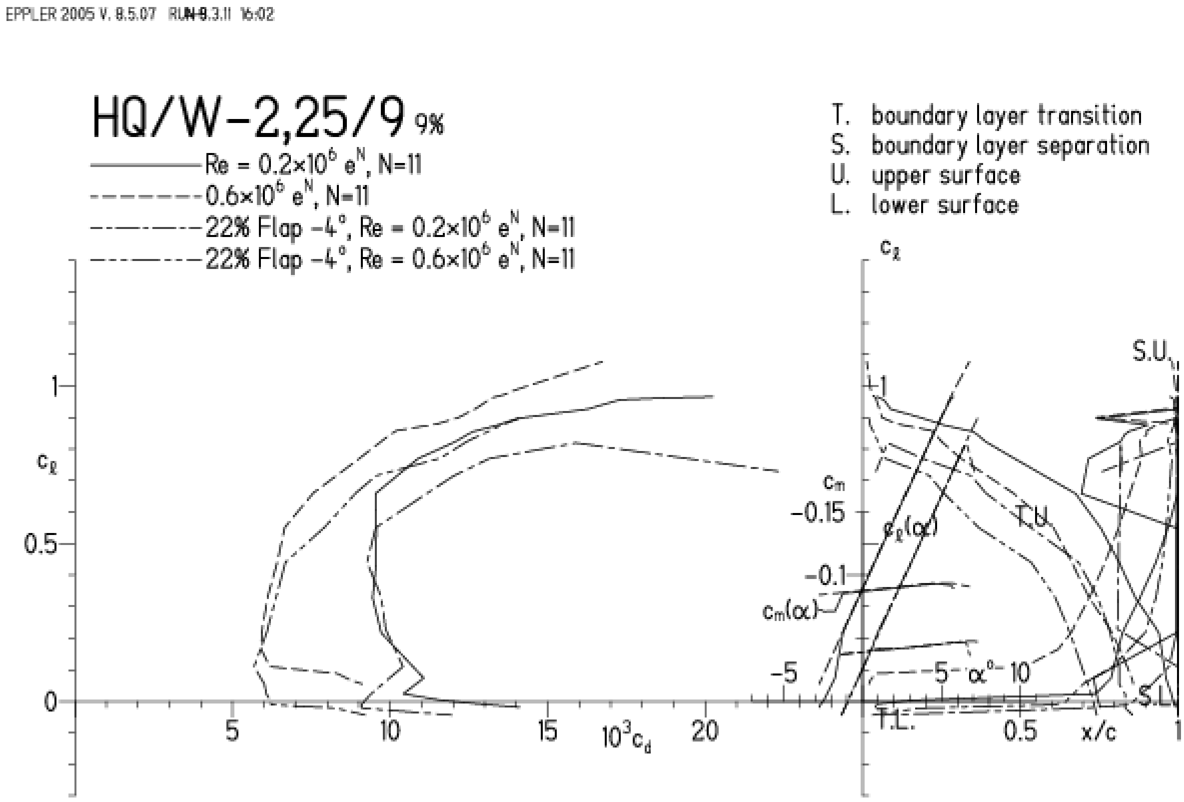
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





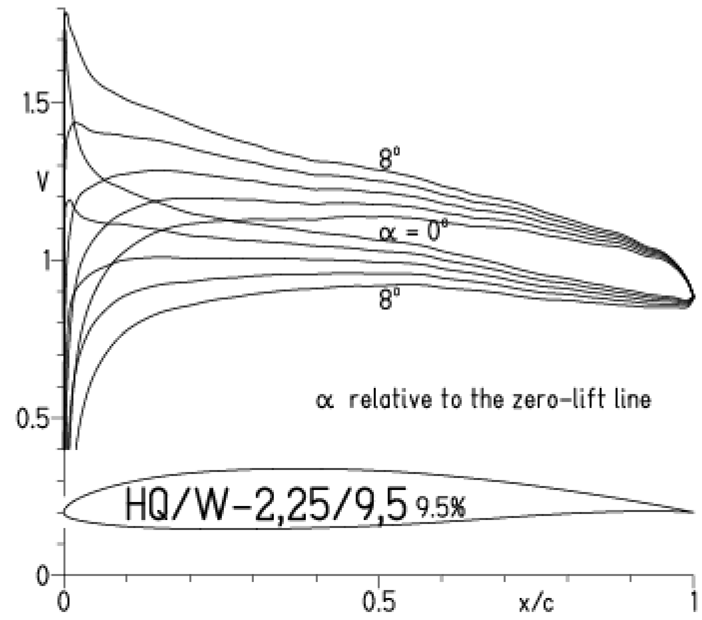
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



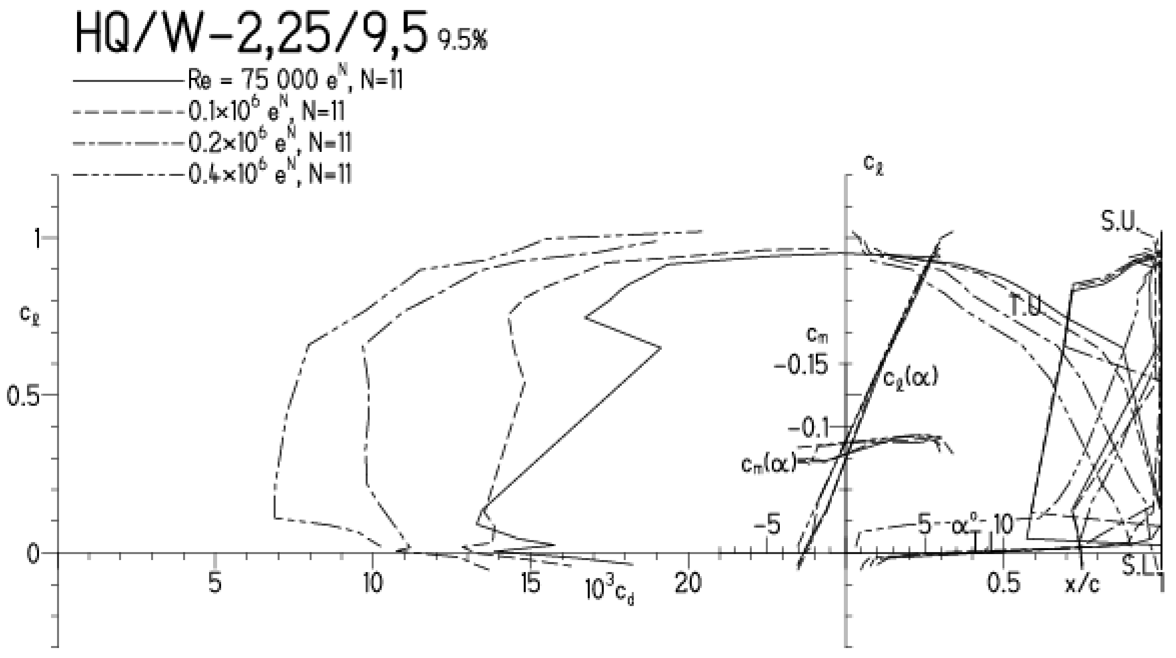


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

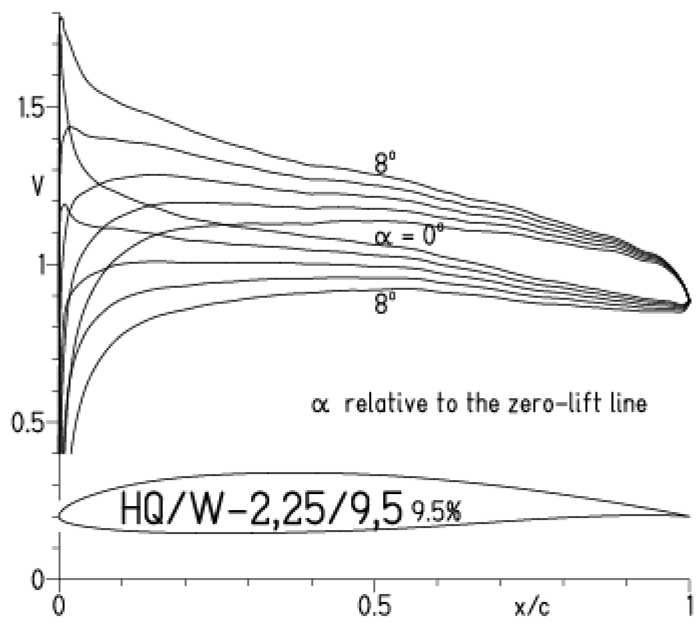


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

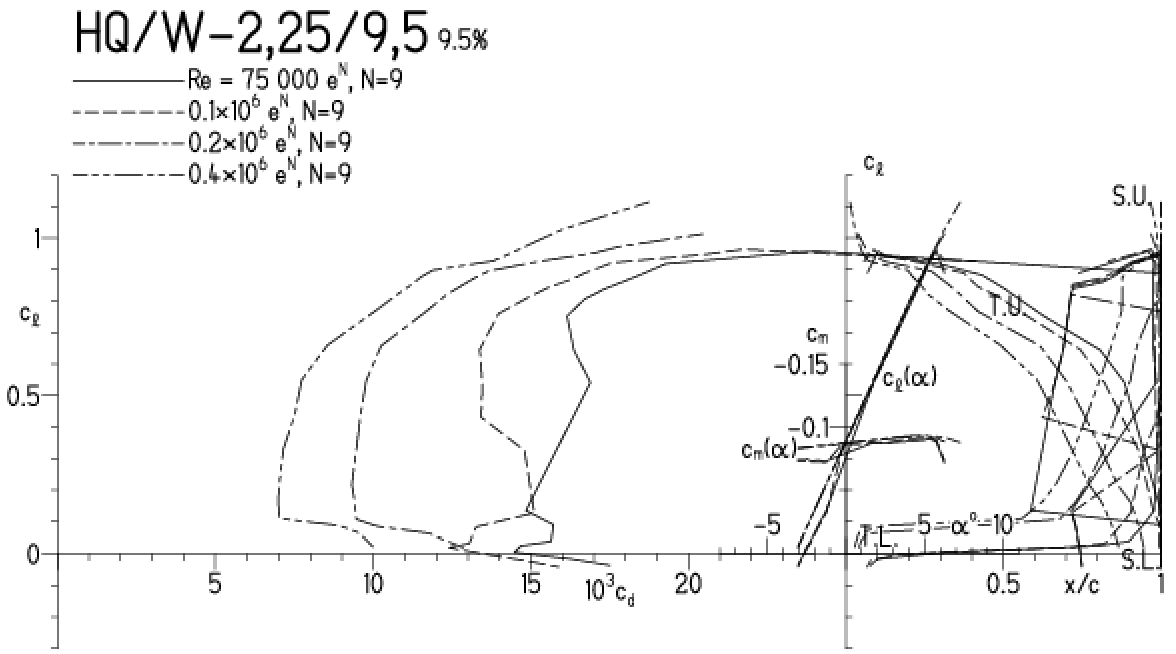


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

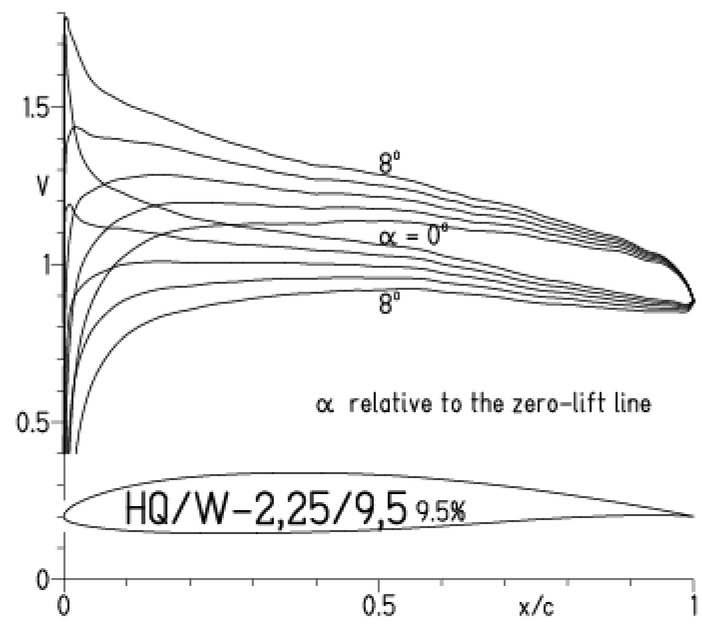


EPPLER 2005 V. 8.5.07 RUN 8.3.

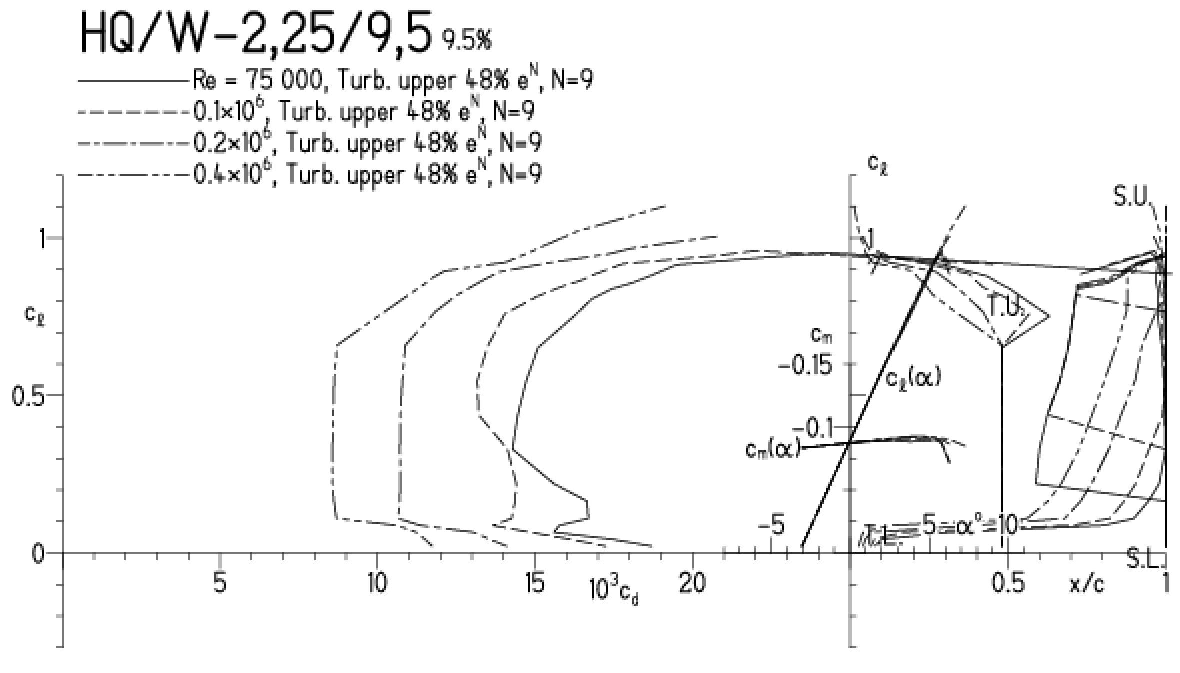


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

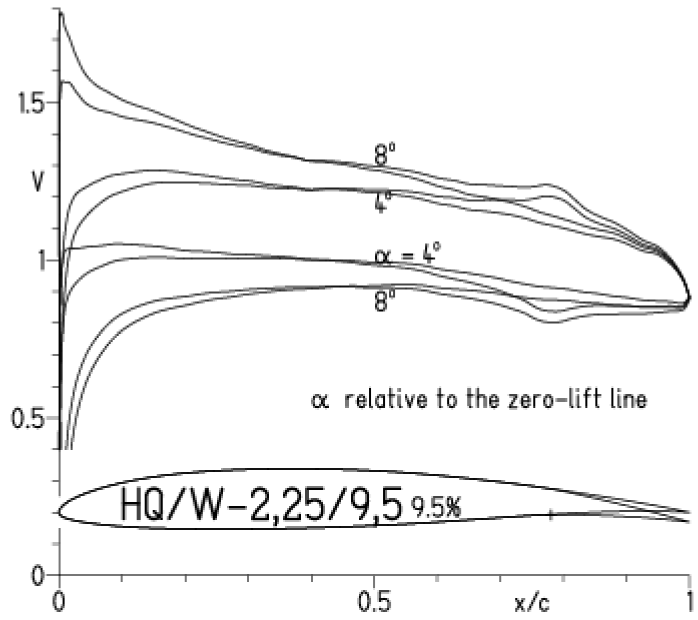


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

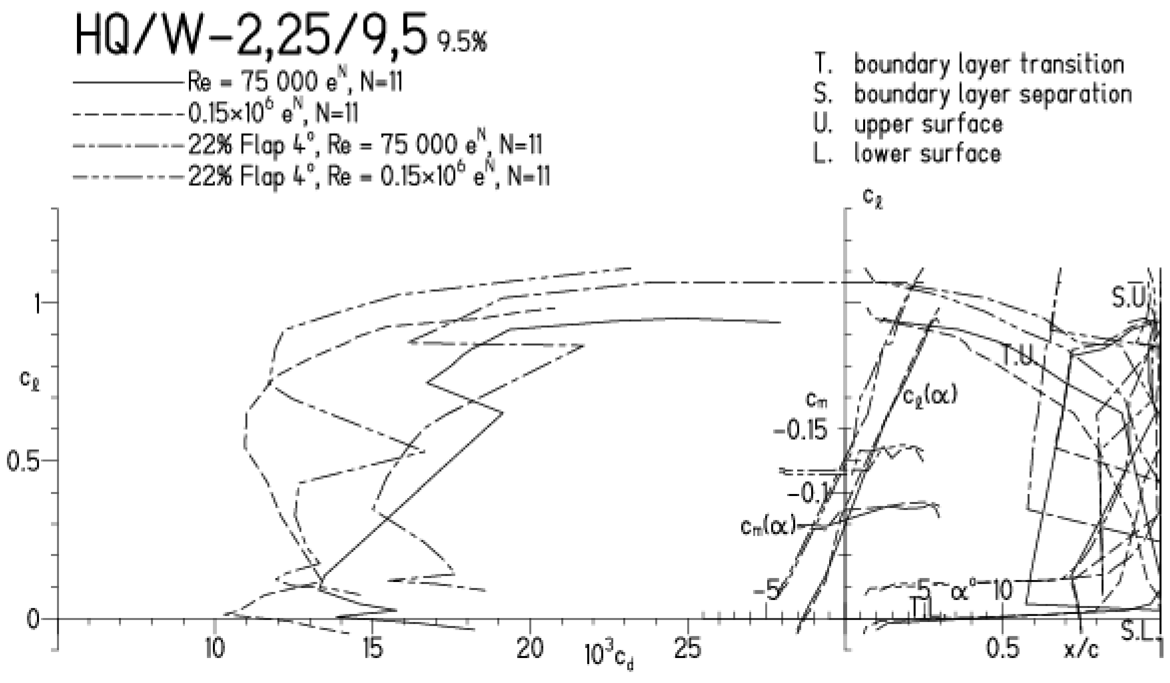


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

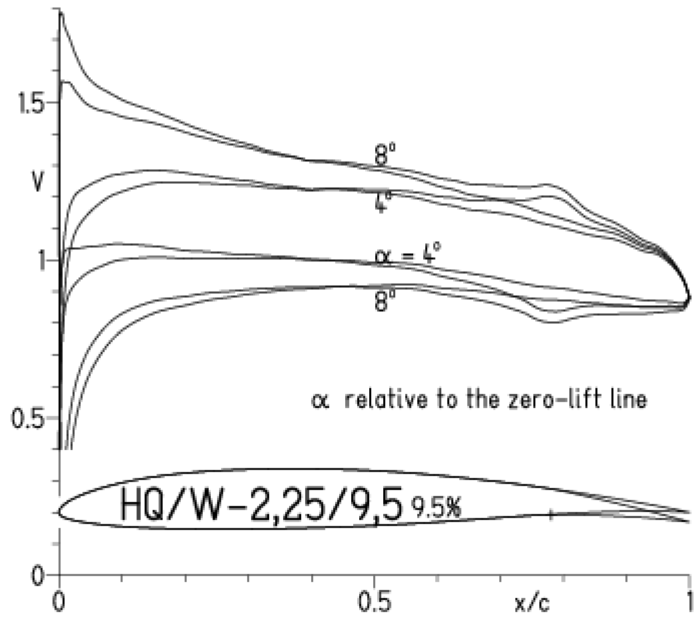


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

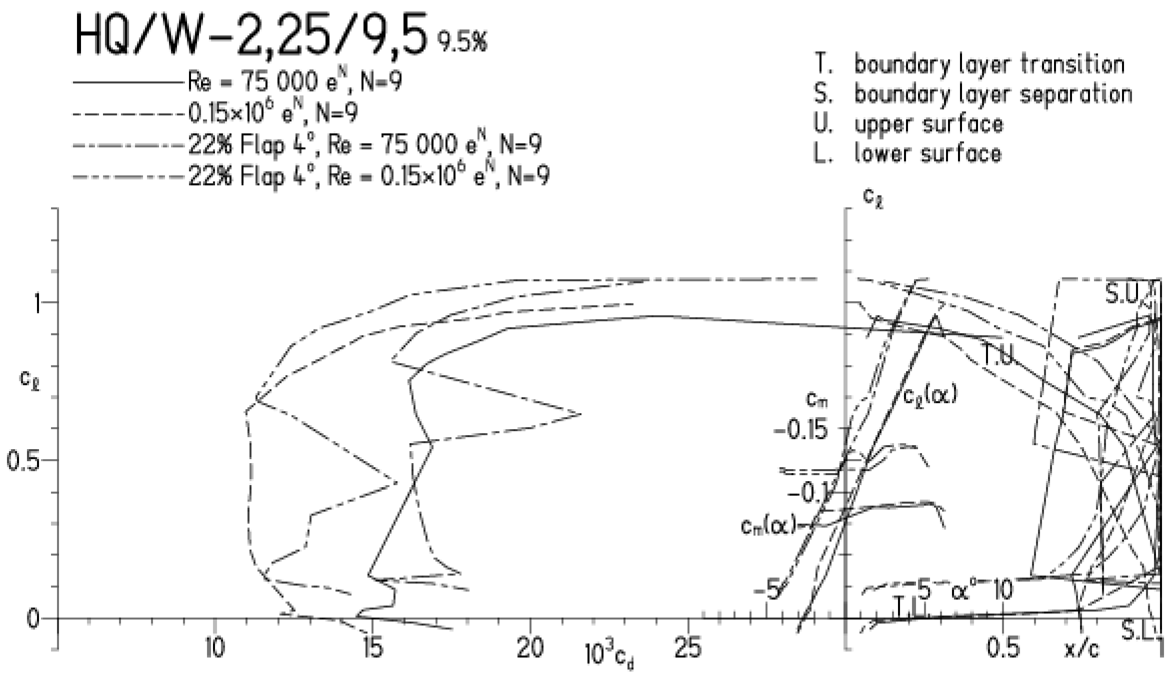


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

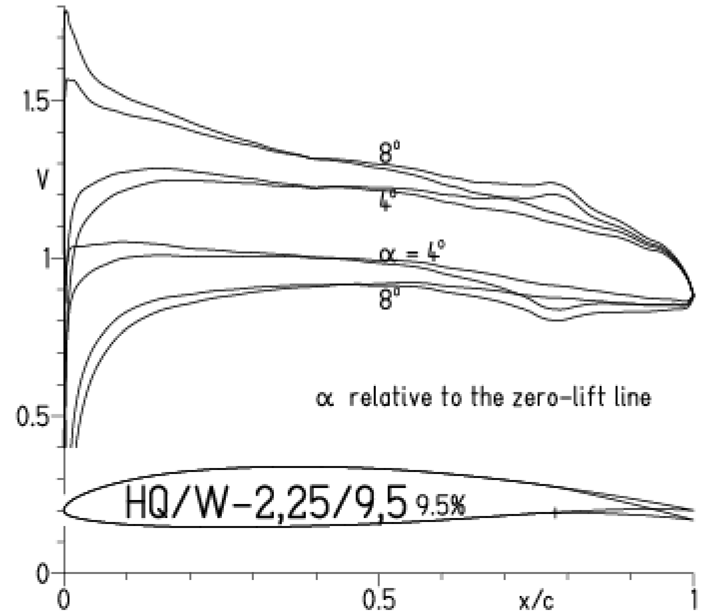


EPPLER 2005 V. 8.5.07 R

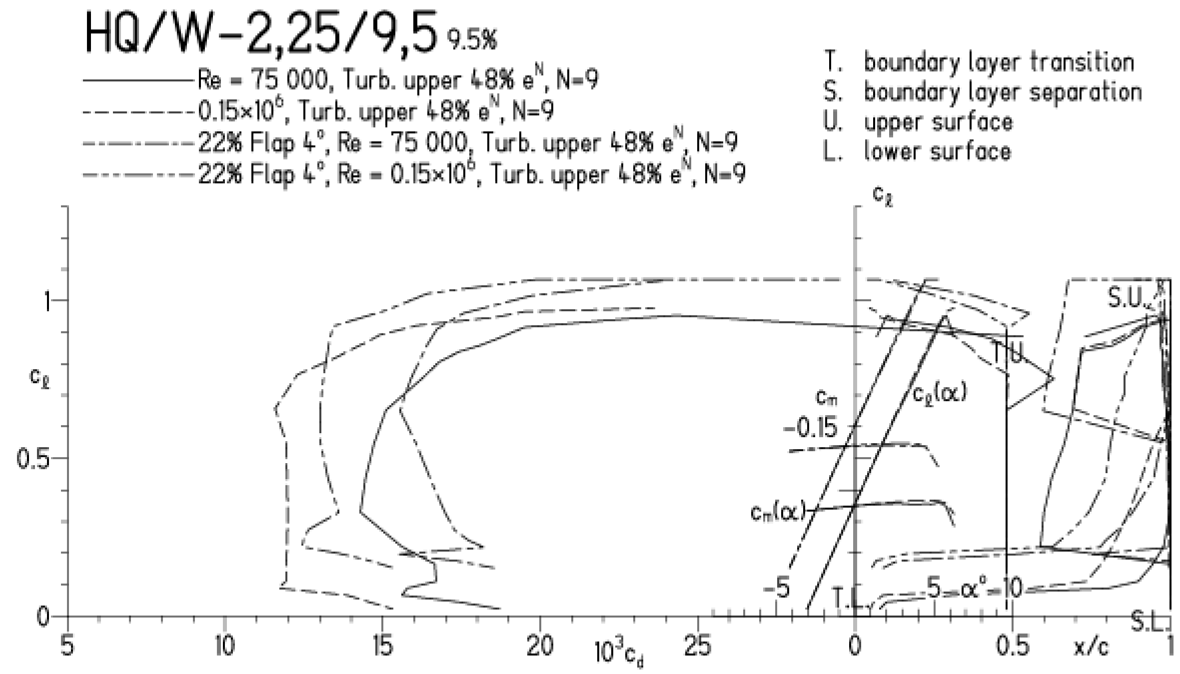


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

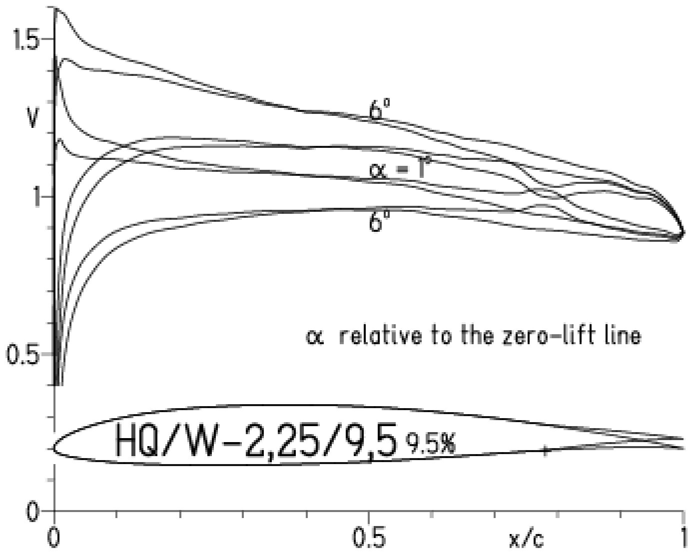


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

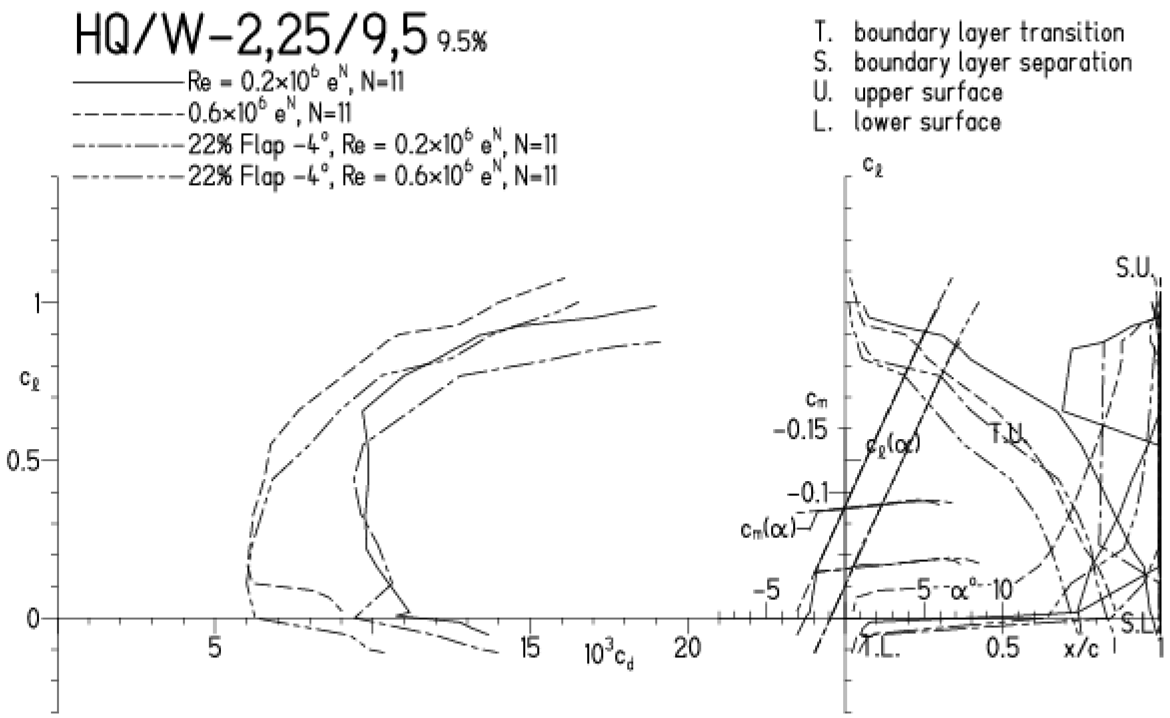


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

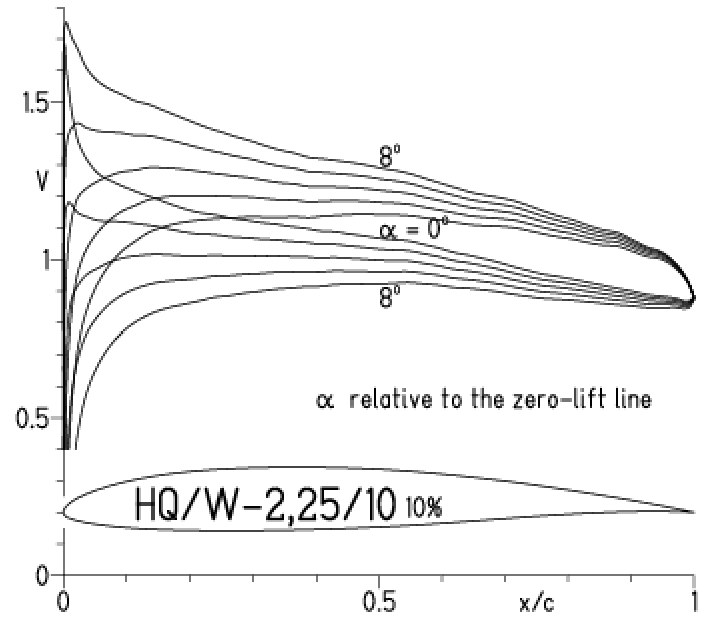


EPPLER 2005 V.

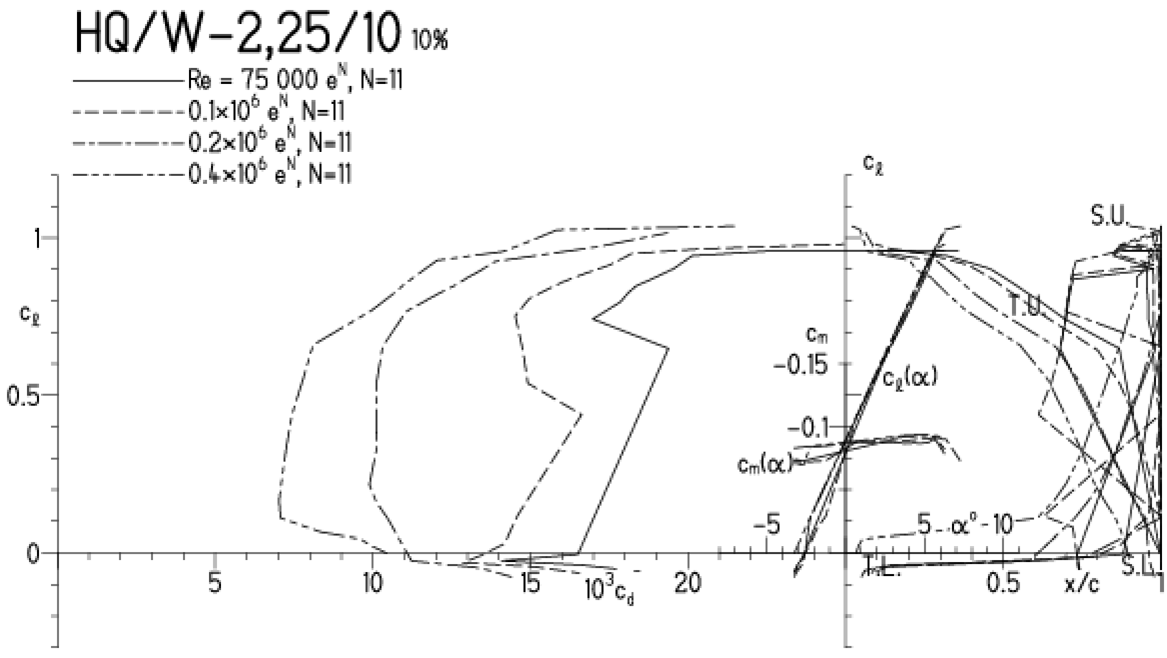


HQ/W-2,25/10, N=11

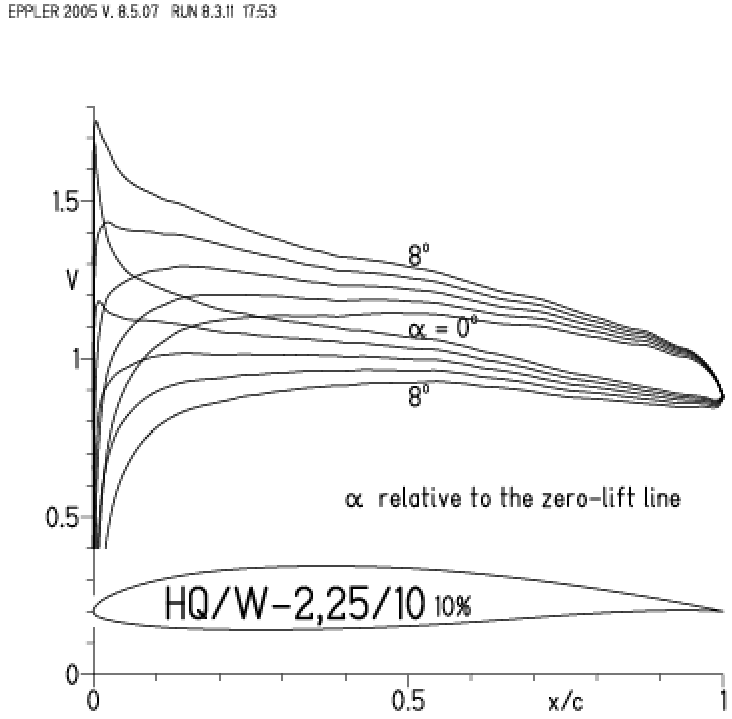
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

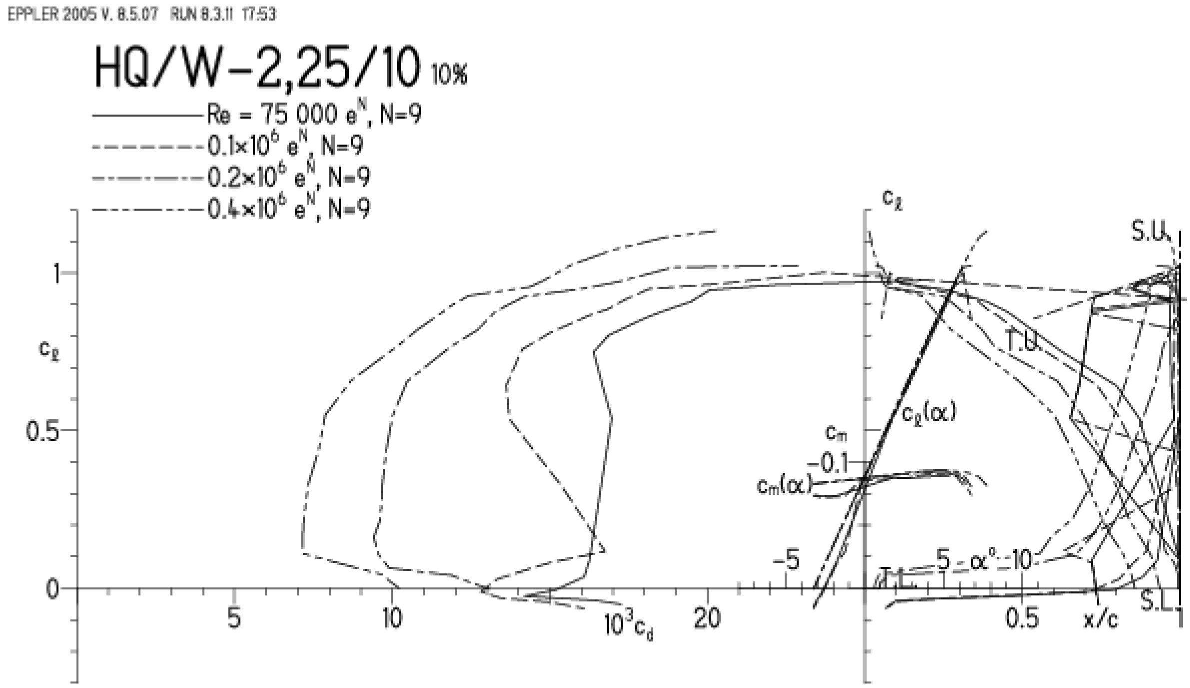


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

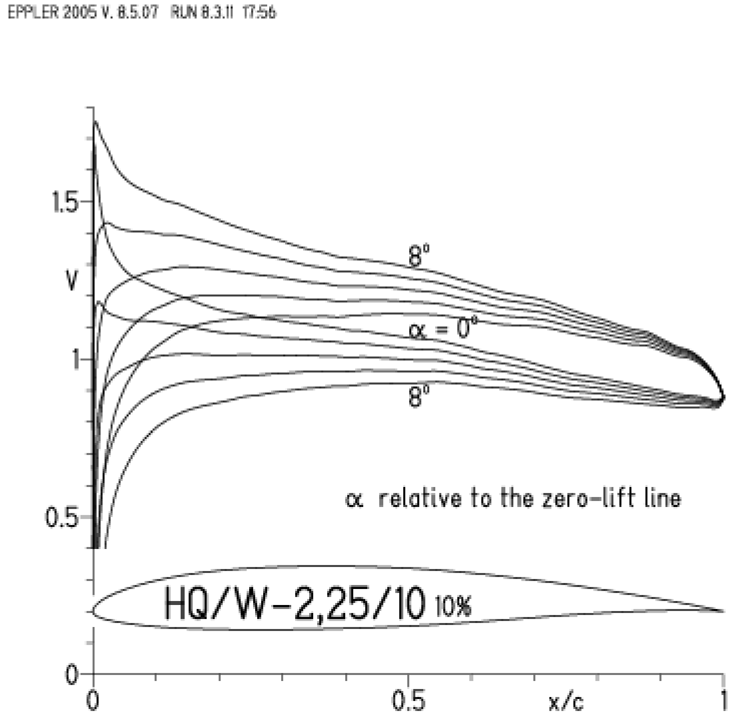


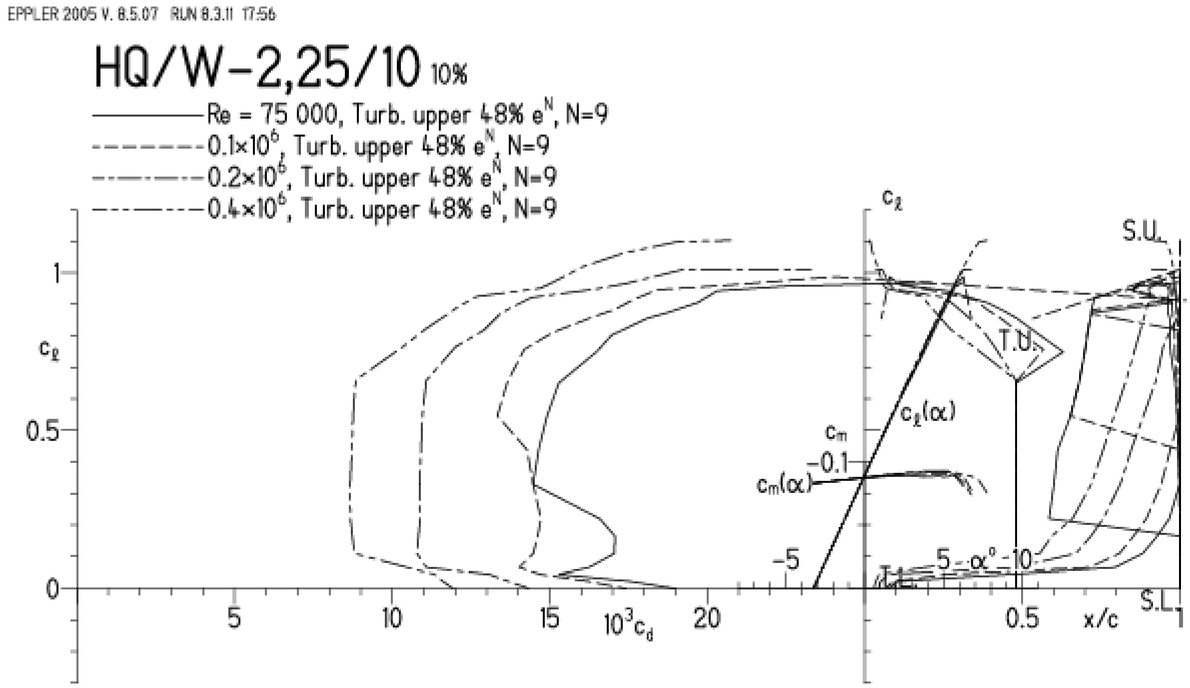
HQ/W-2,25/10, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/10 10%
0
0.5
x/c
1

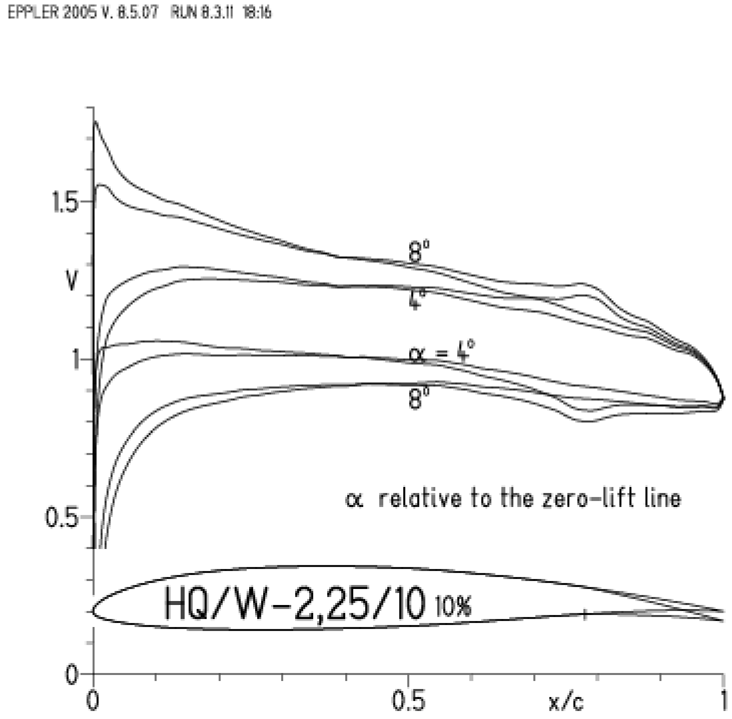

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53
HQ/W-2,25/10 10%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
1
0.5
0
5
10
10^3 c_d
20
c_ℓ(α)
c_m
−0.1
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

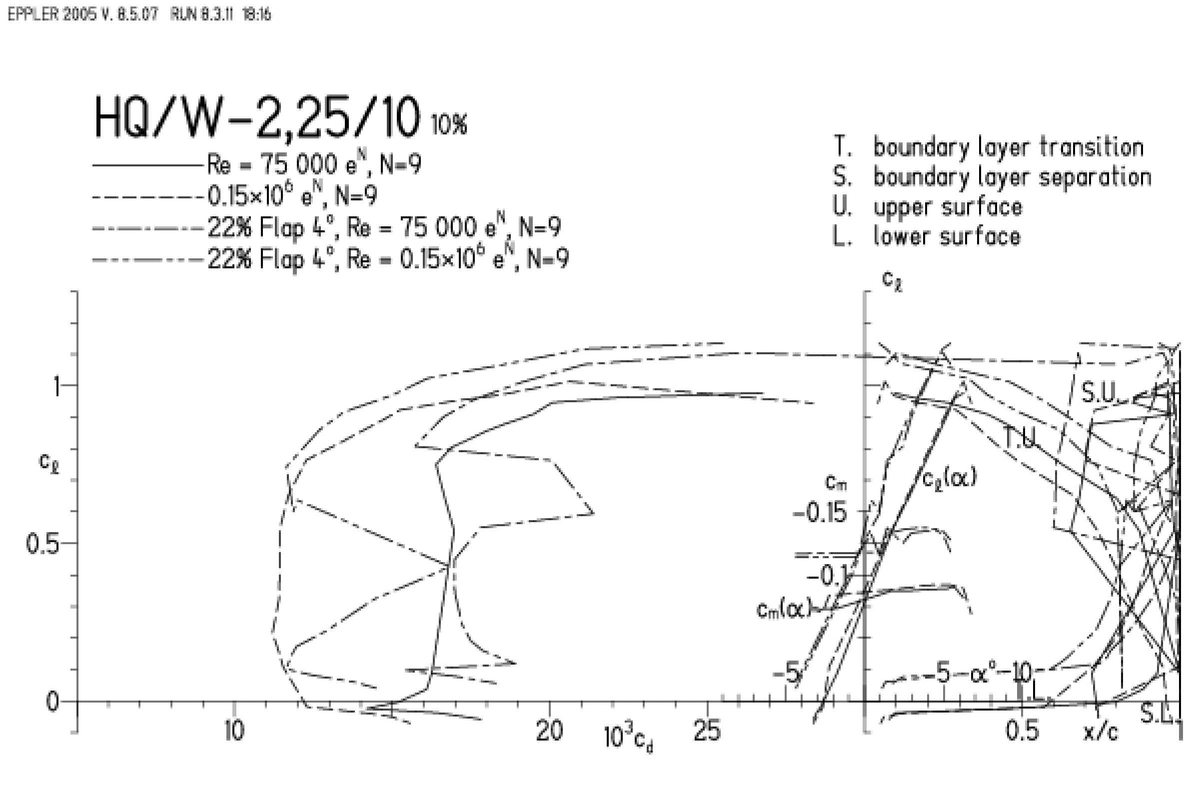
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



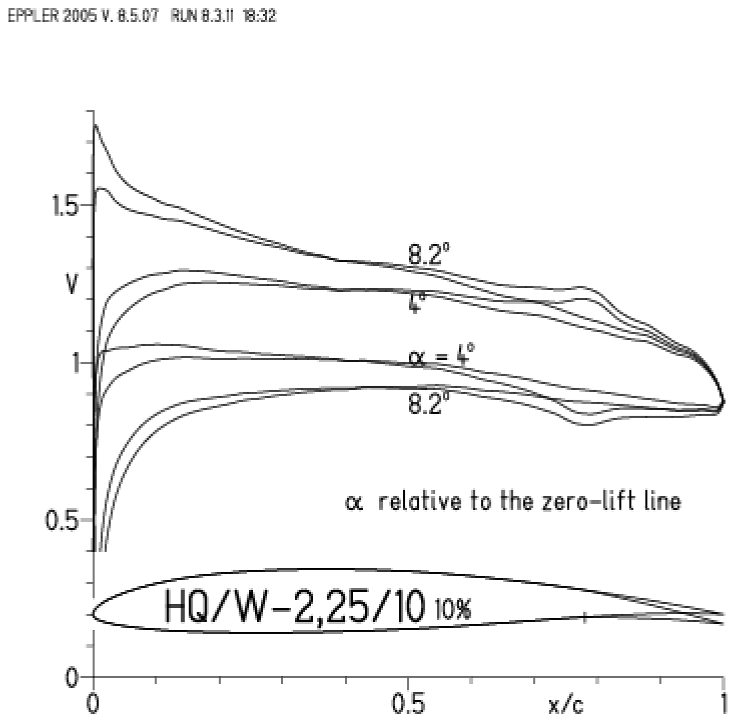


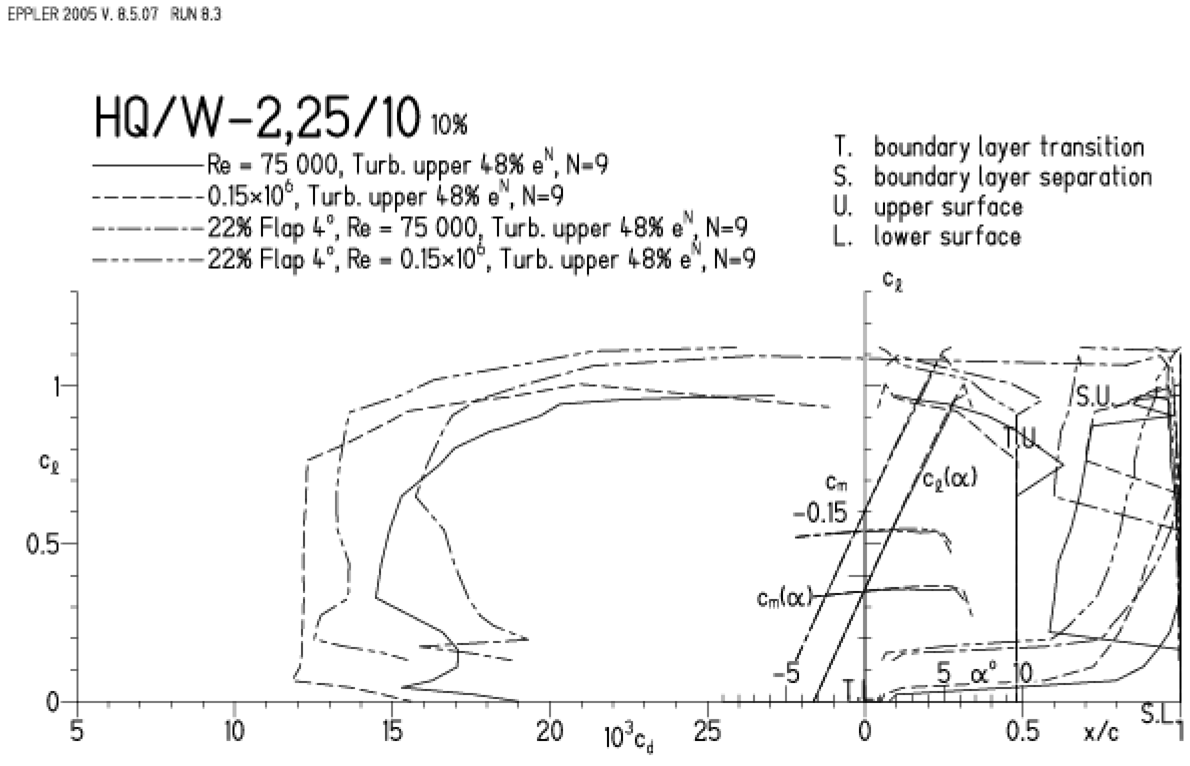
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag





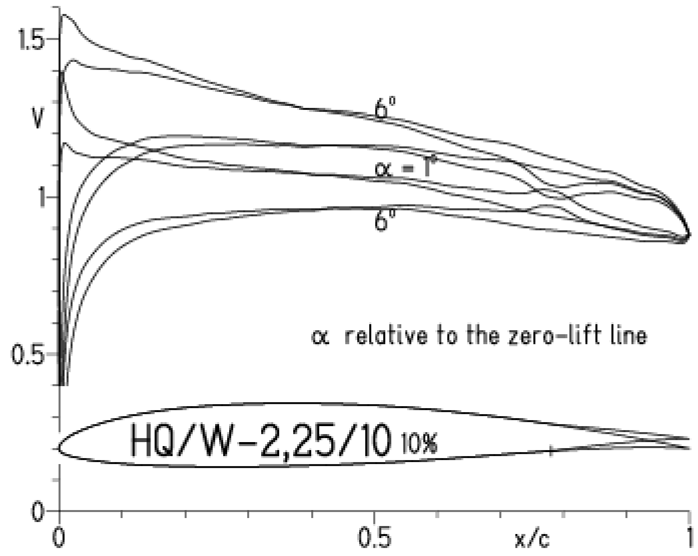
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



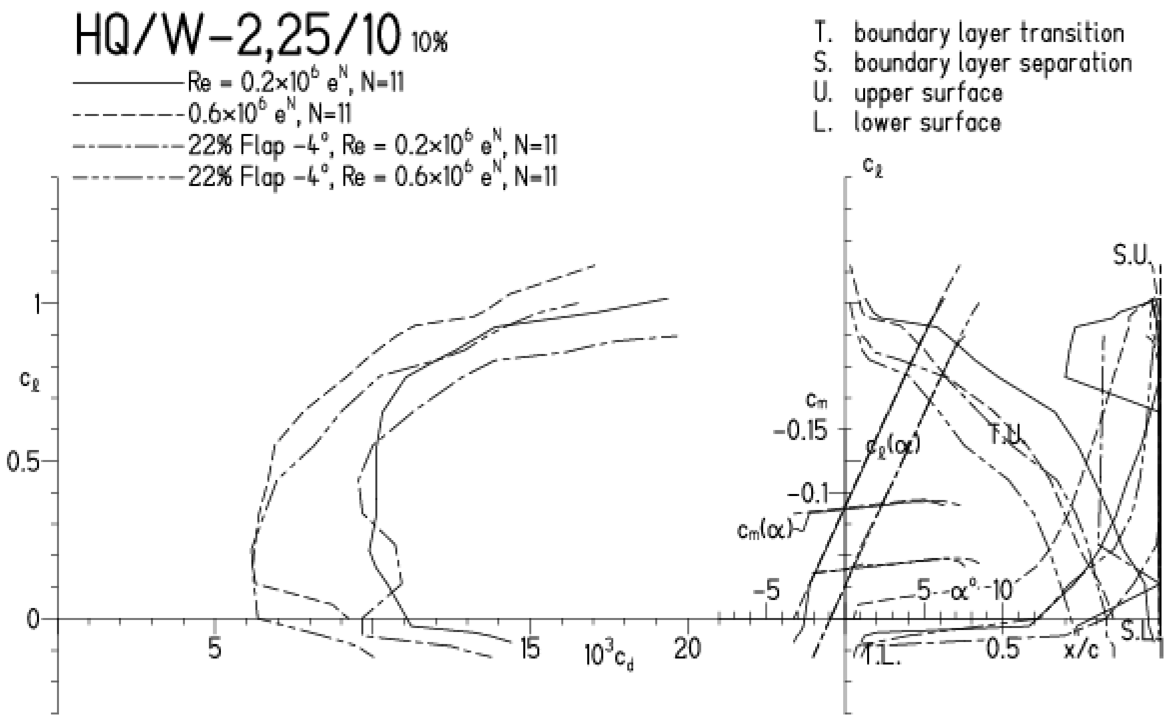


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

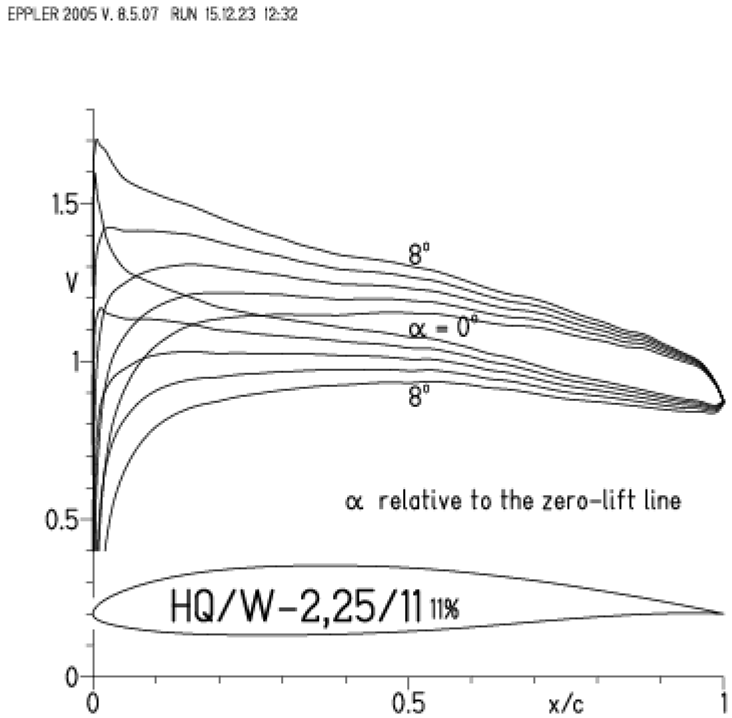
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

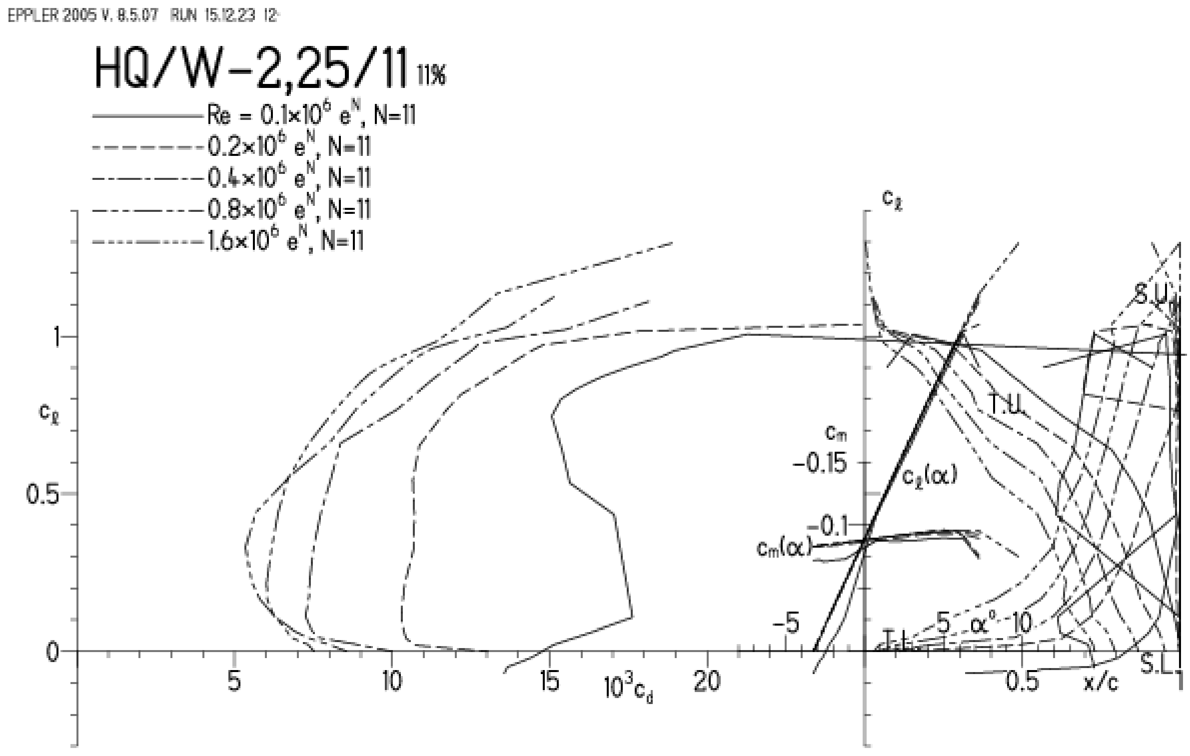


EPPLER 2005 V. 8.5.07 RUN



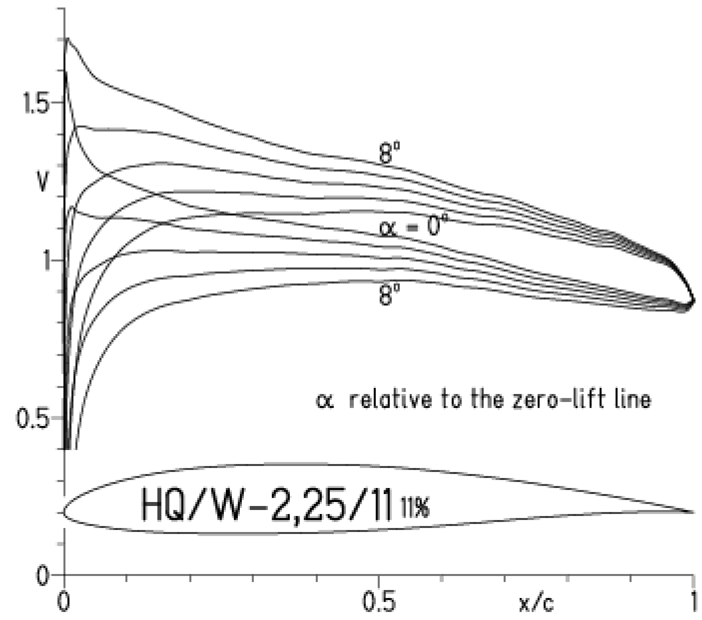
HQ/W-2,25/11, N=11



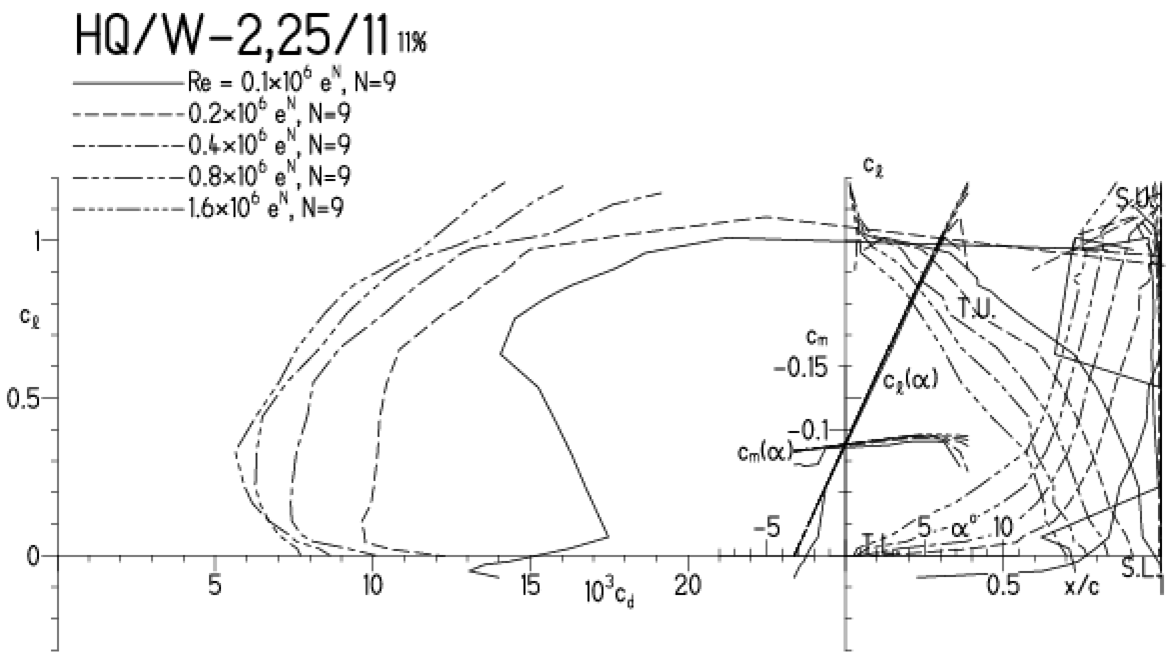


HQQ/W-2,25/11, N=9

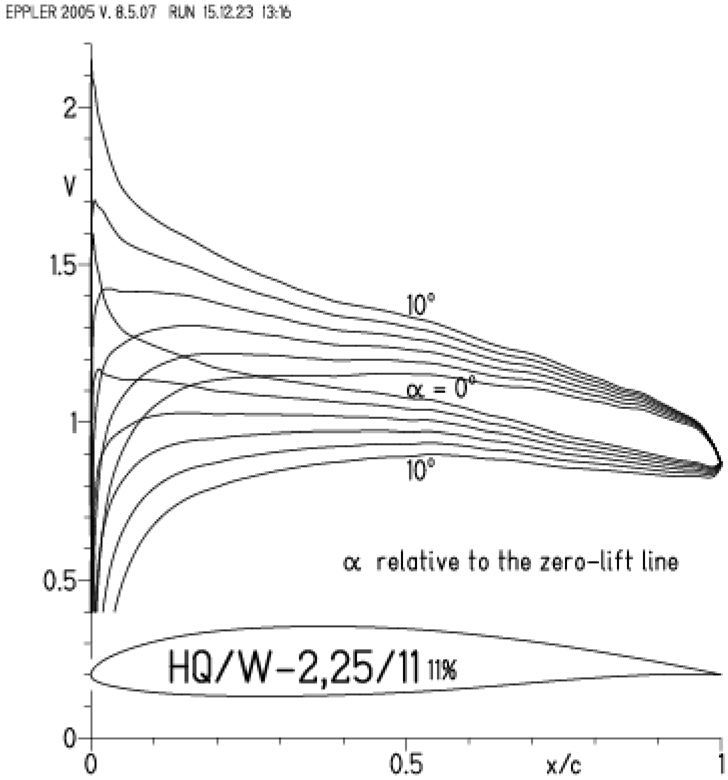
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

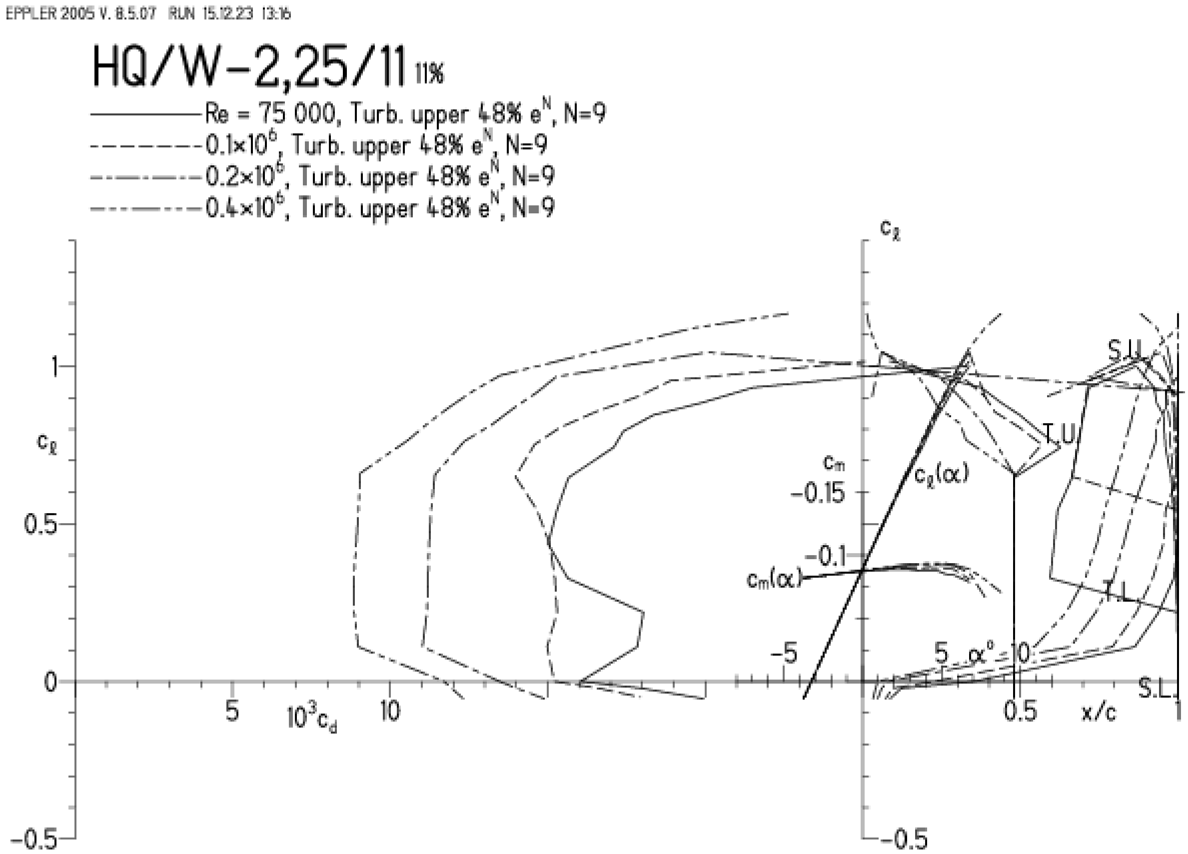


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



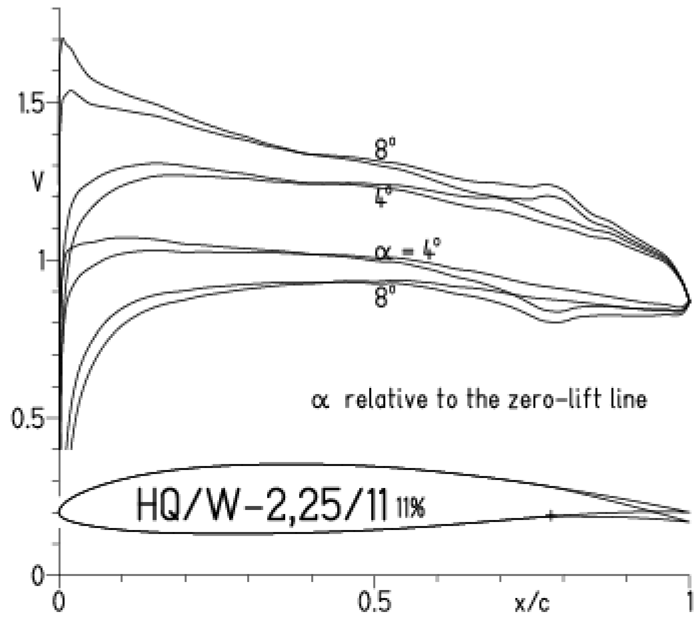
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



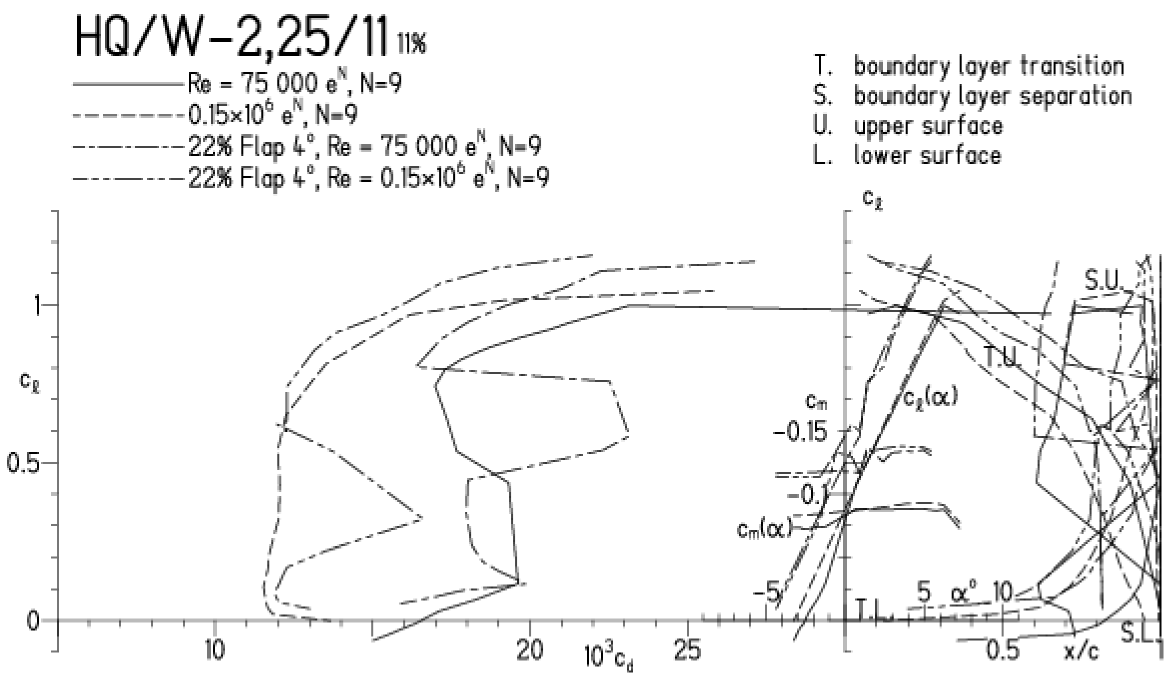


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

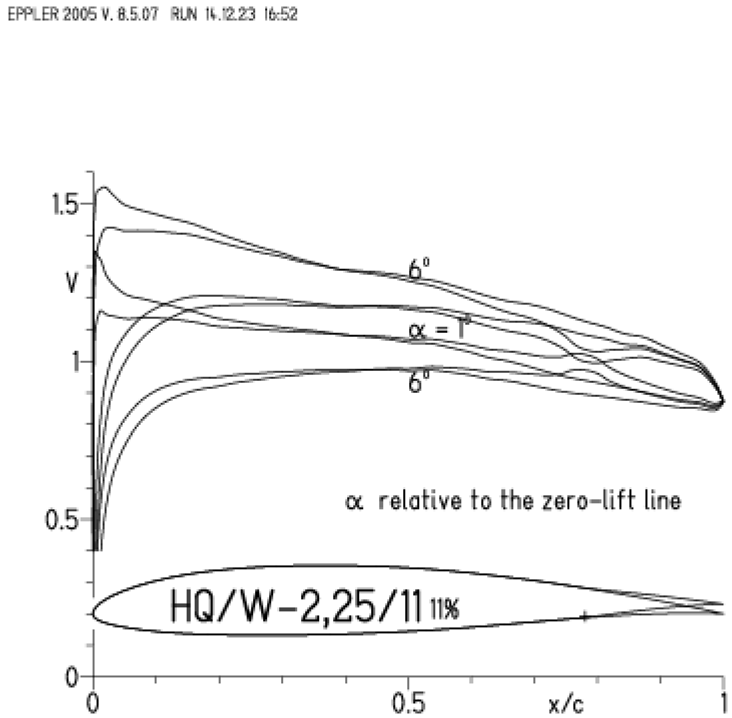
EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

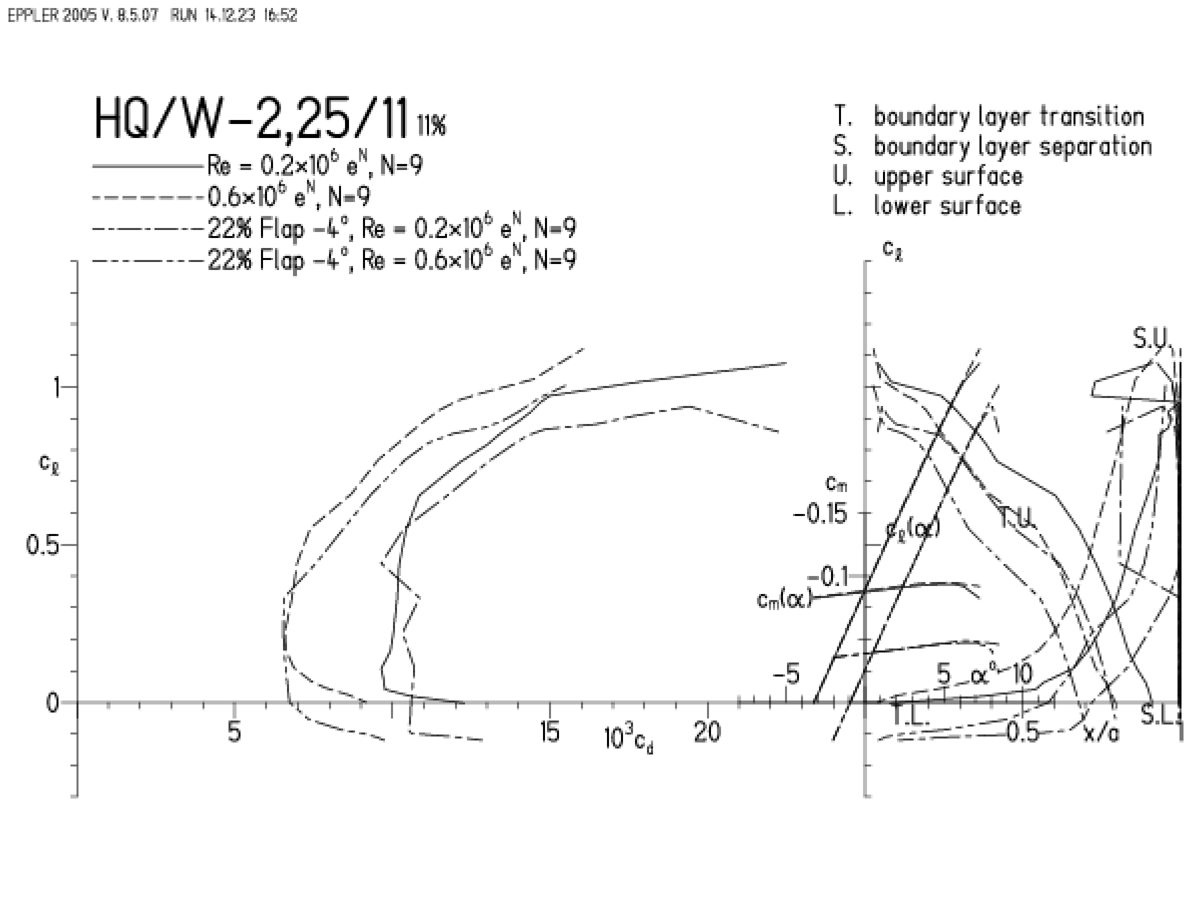


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

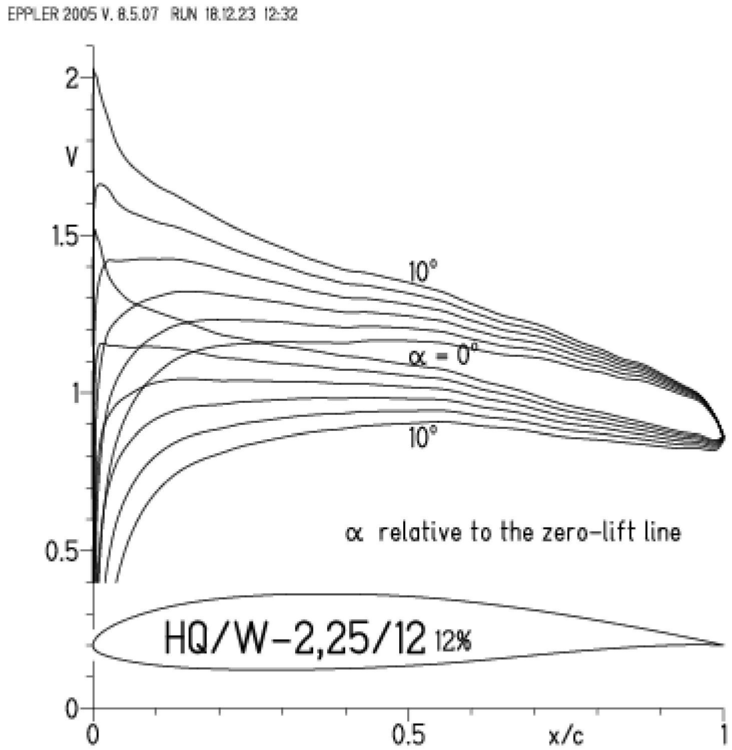


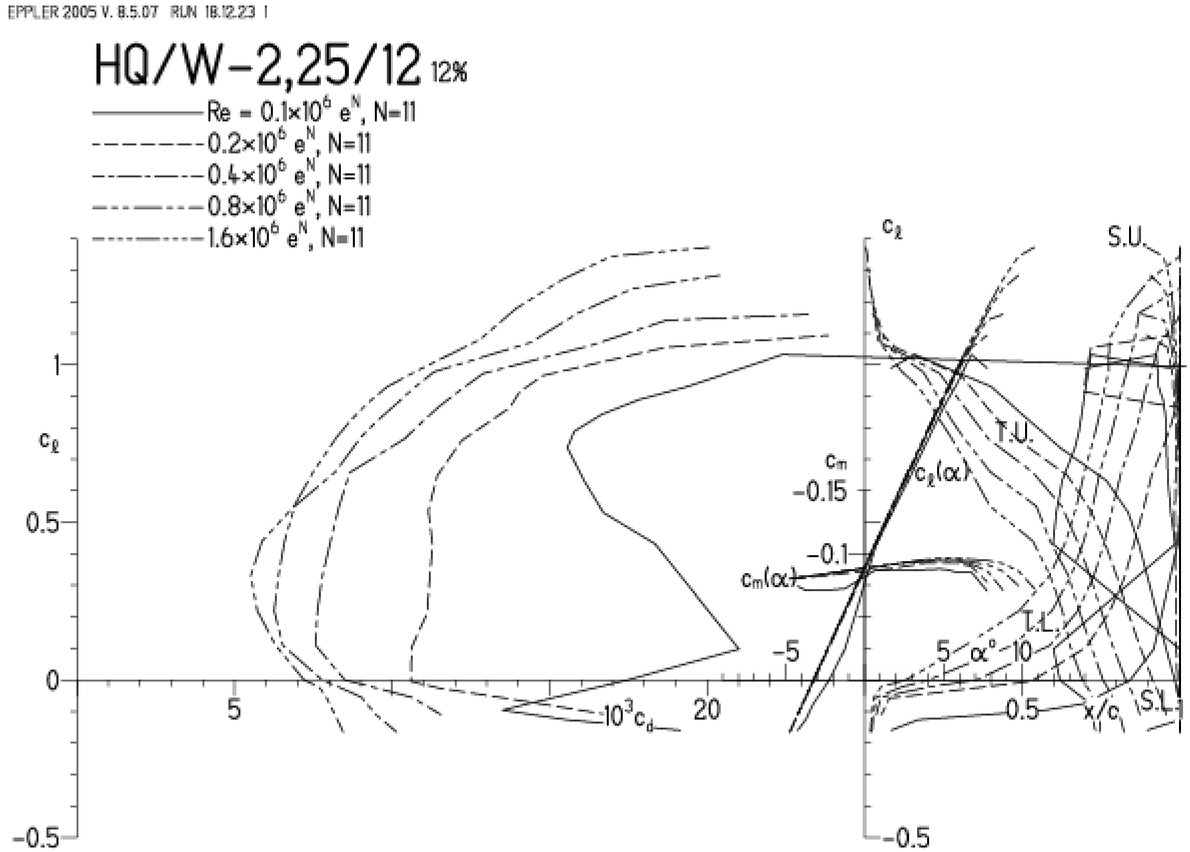
HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag



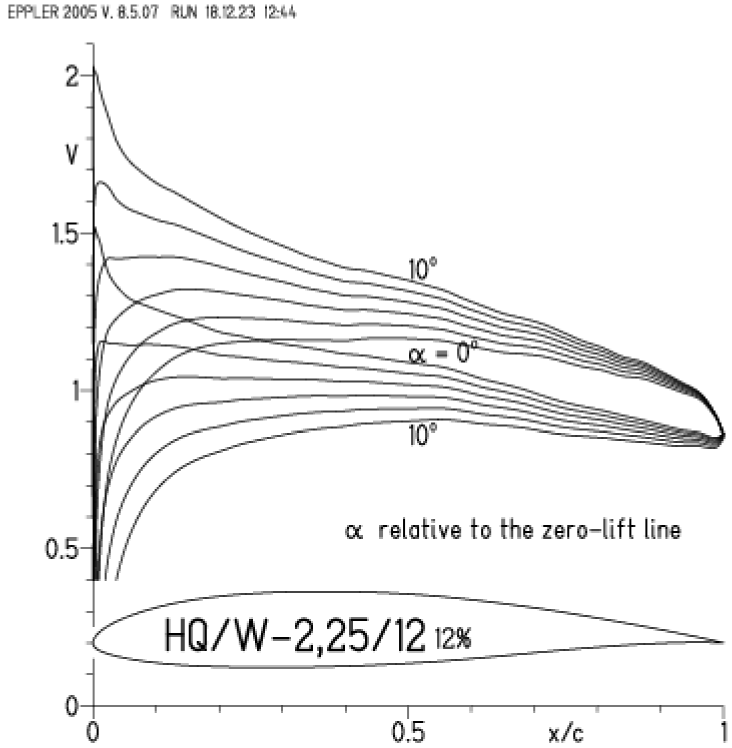


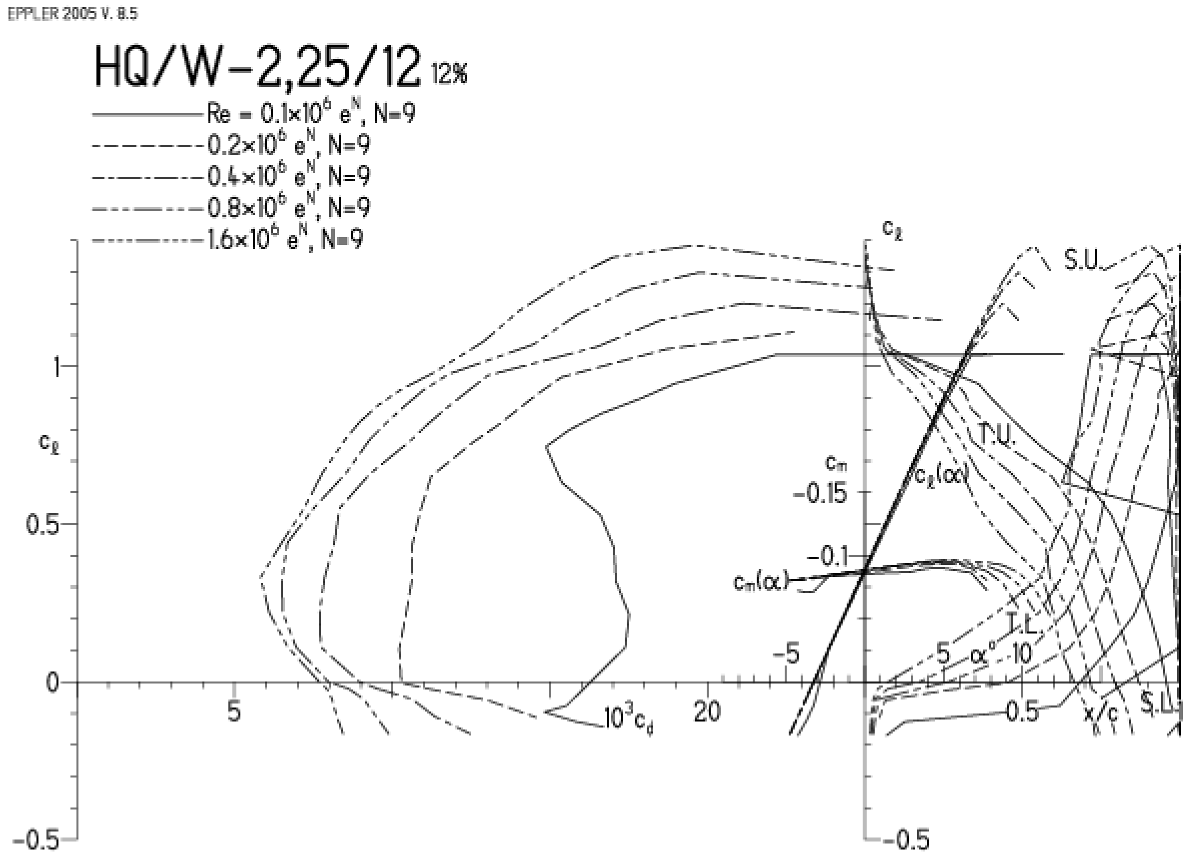
<u>HQ/W-2,25/12</u>, N=11



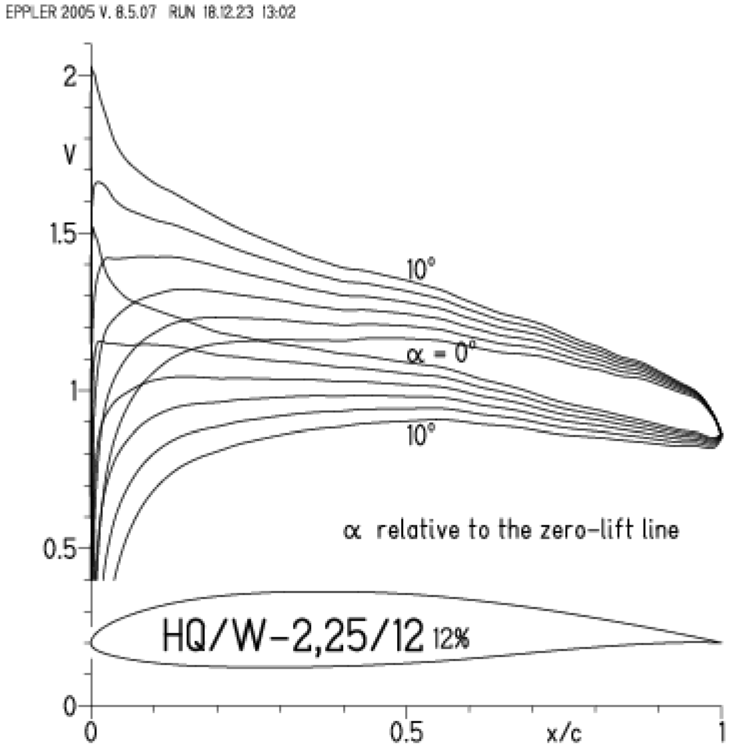


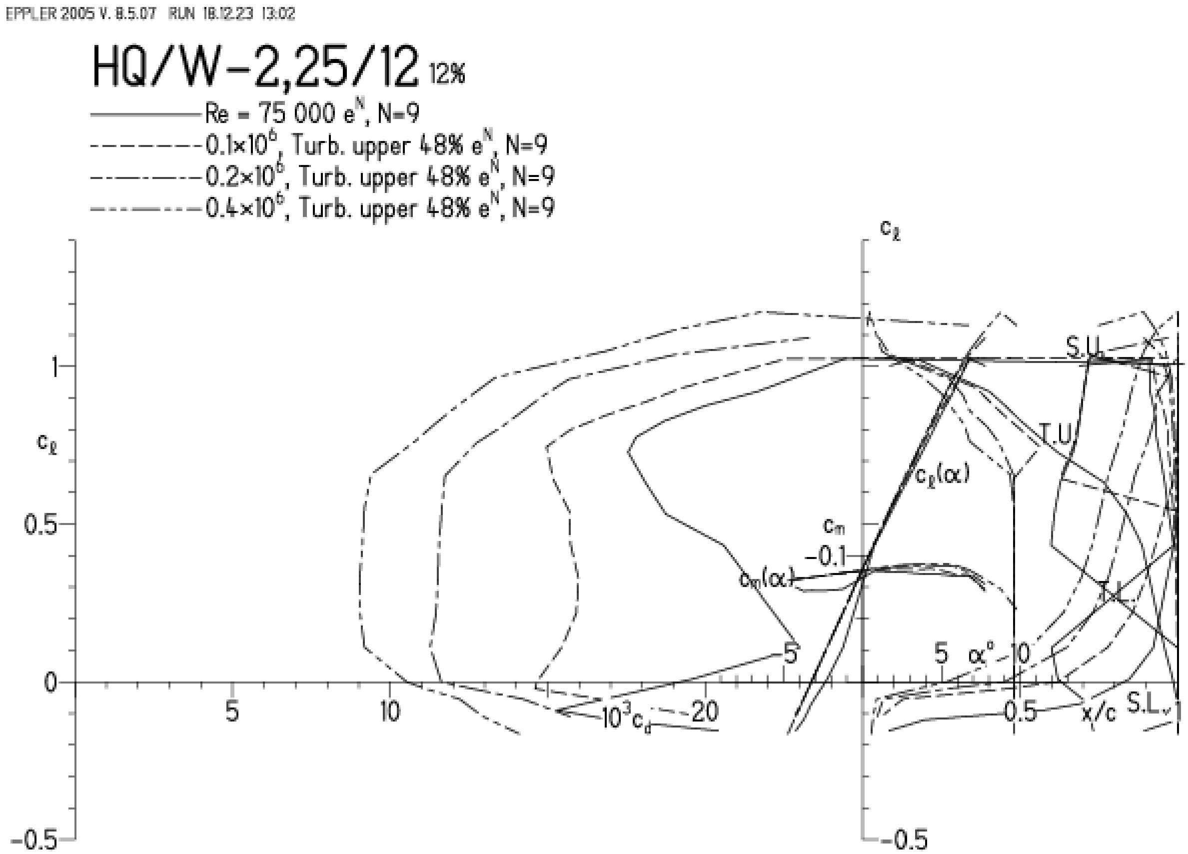
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
2
V
1.5
1
0.5
0
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
0
0.5
x/c
1


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1
cℓ
0.5
0
−0.5
5
10³cd
20
cℓ
cm
−0.15
−0.1
cm(α)
cℓ(α)
−5
5
α°
10
S.U.
T.U.
T.L.
0.5
x/c
S.L.
−0.5

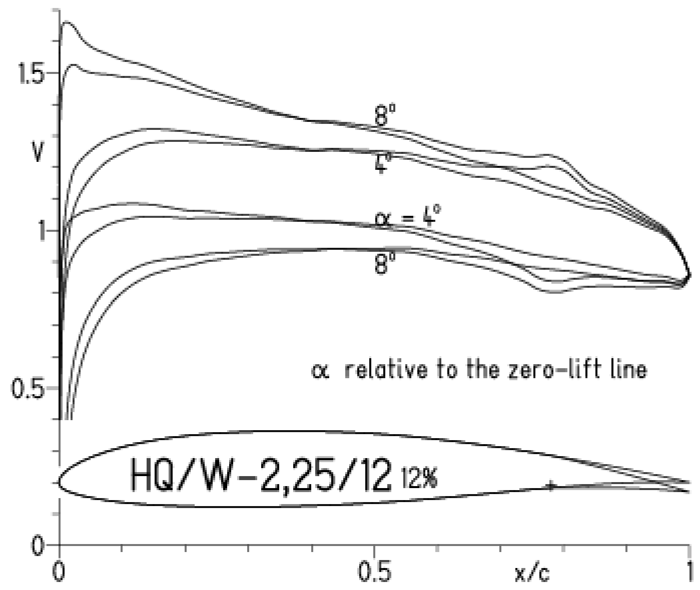
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



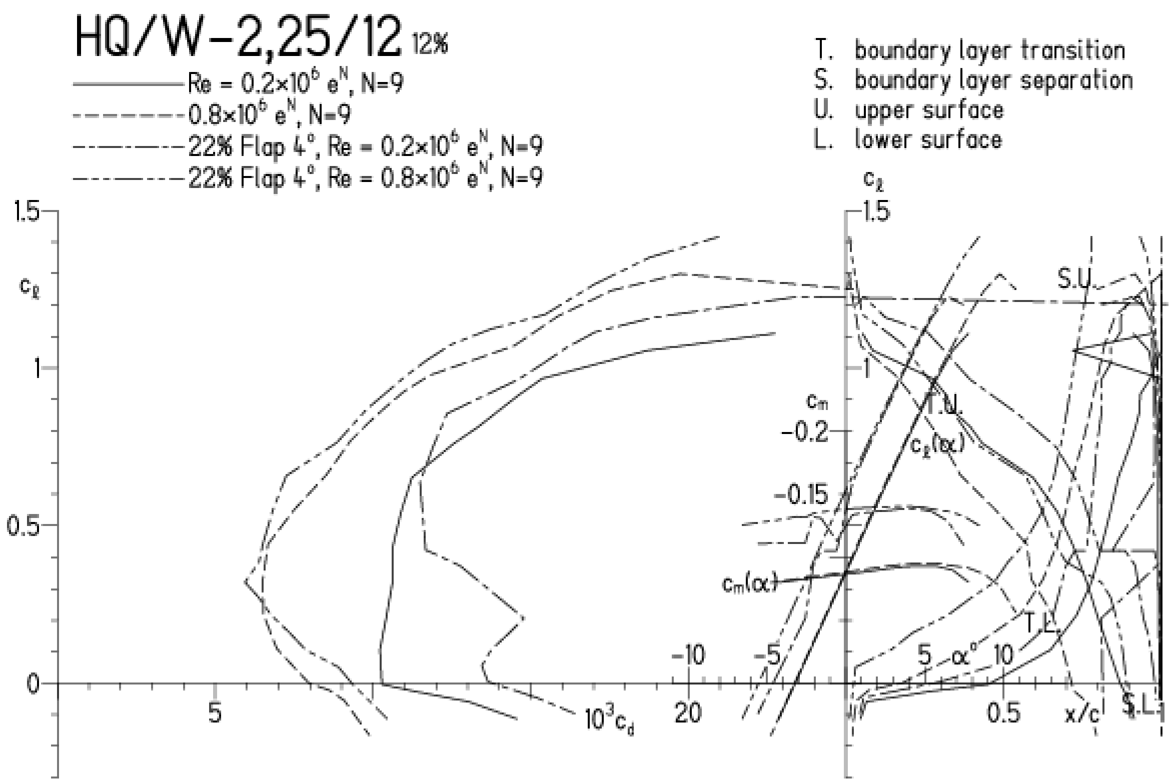


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

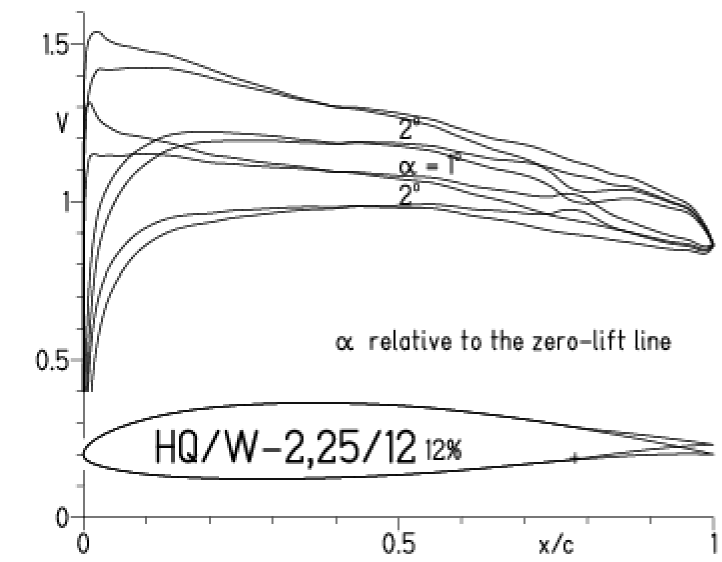


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

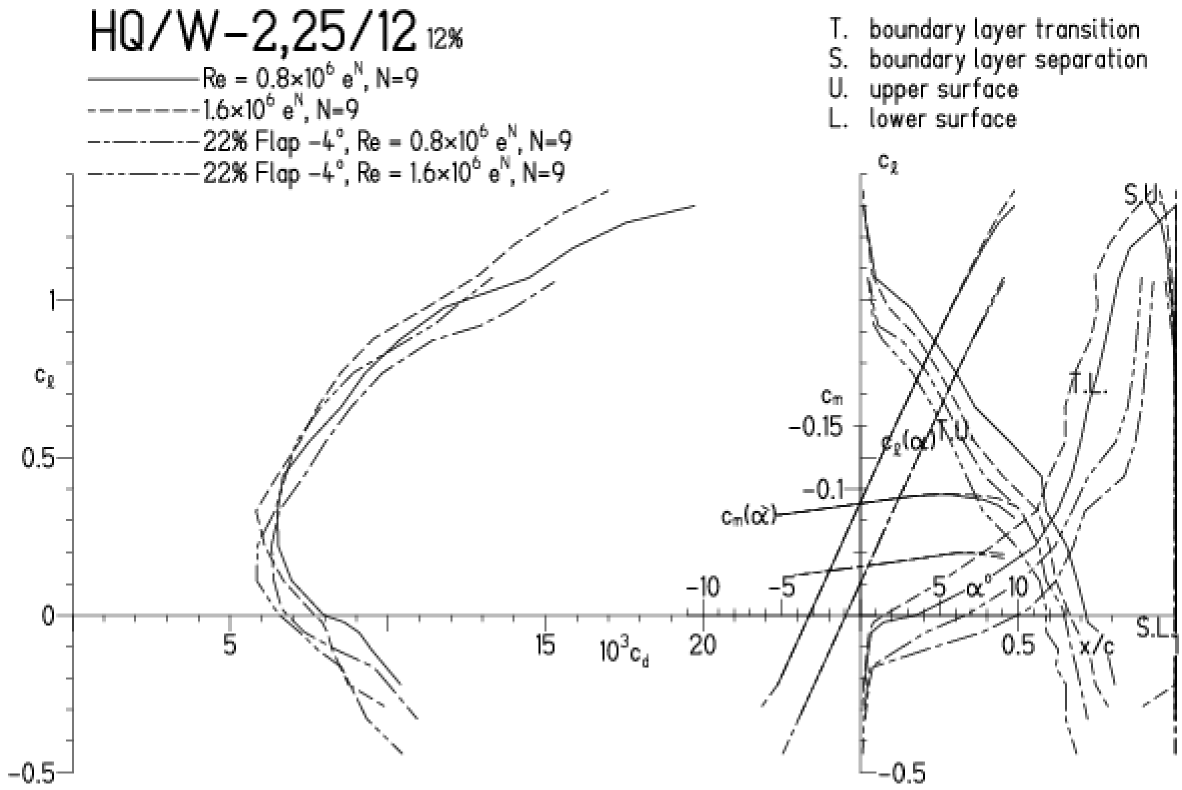


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

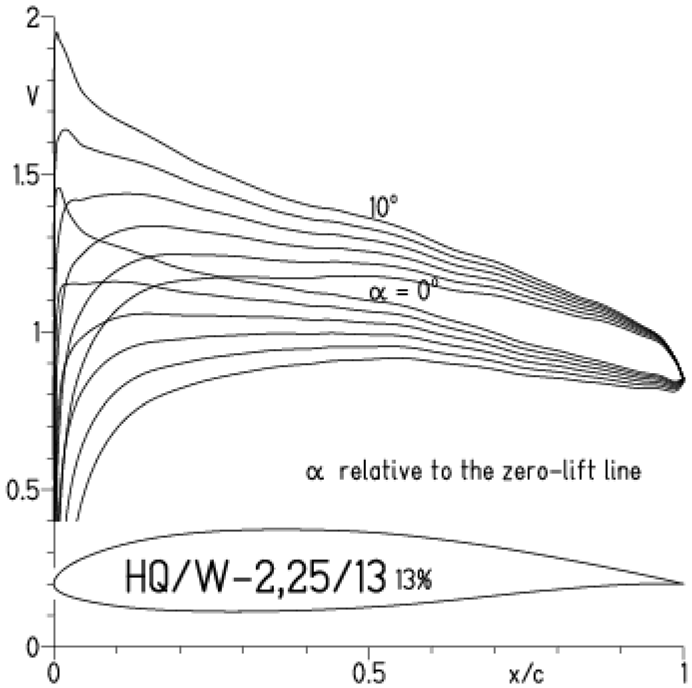


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

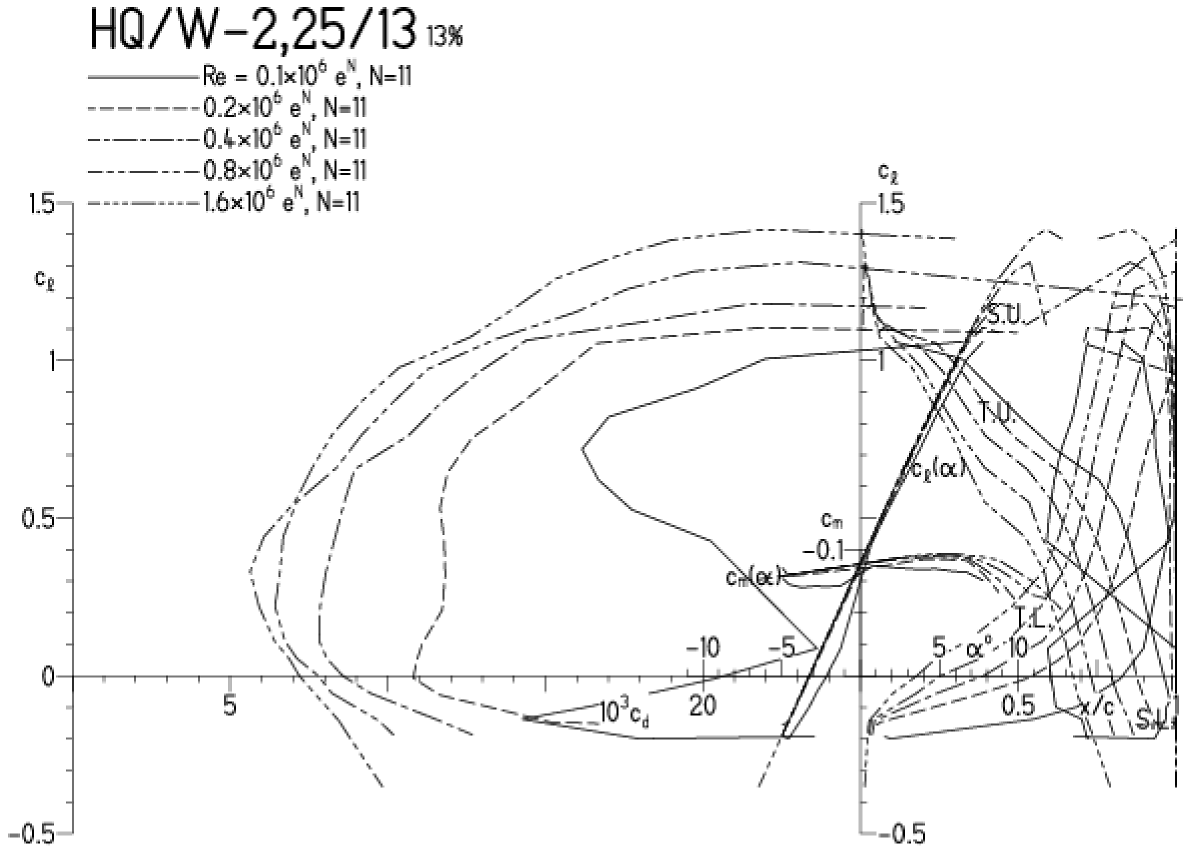


HQ/W-2,25/13, N=11

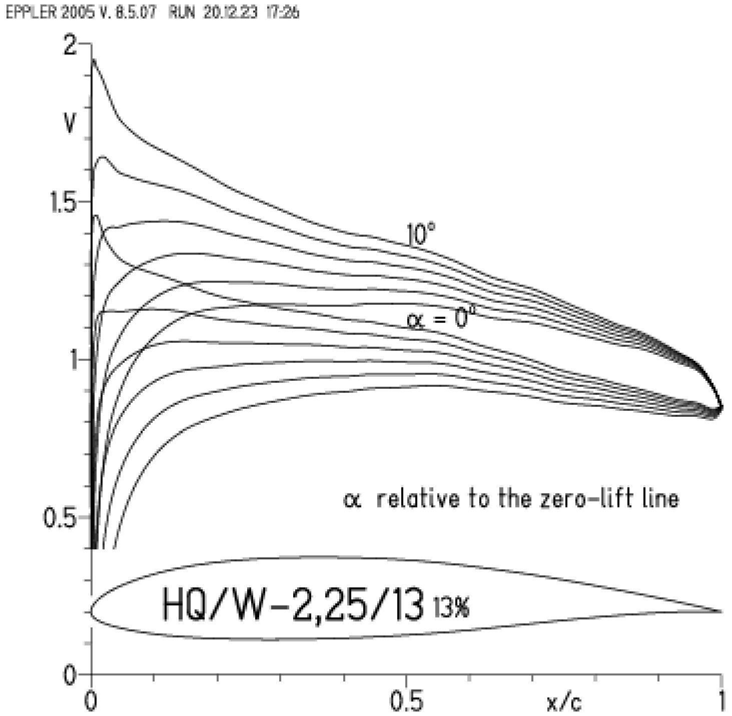
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:11

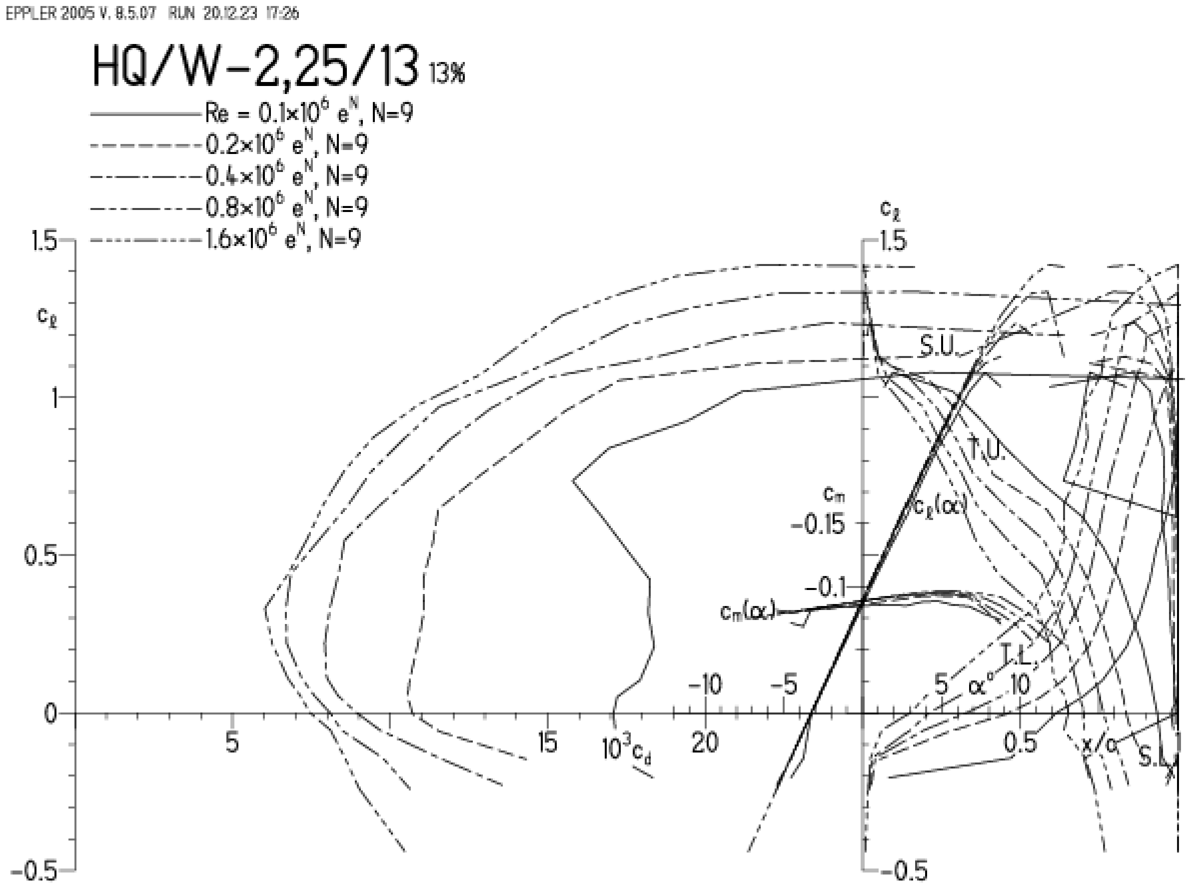


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:11

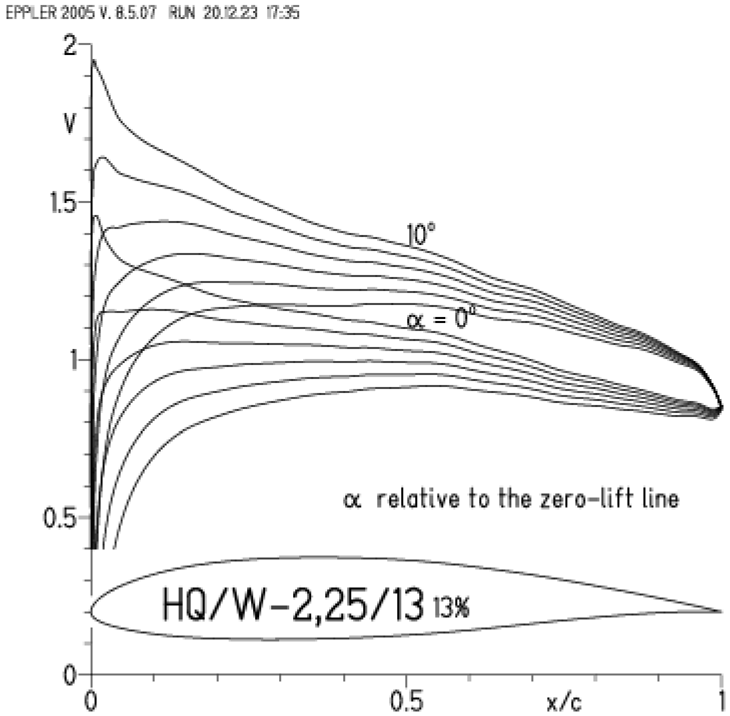


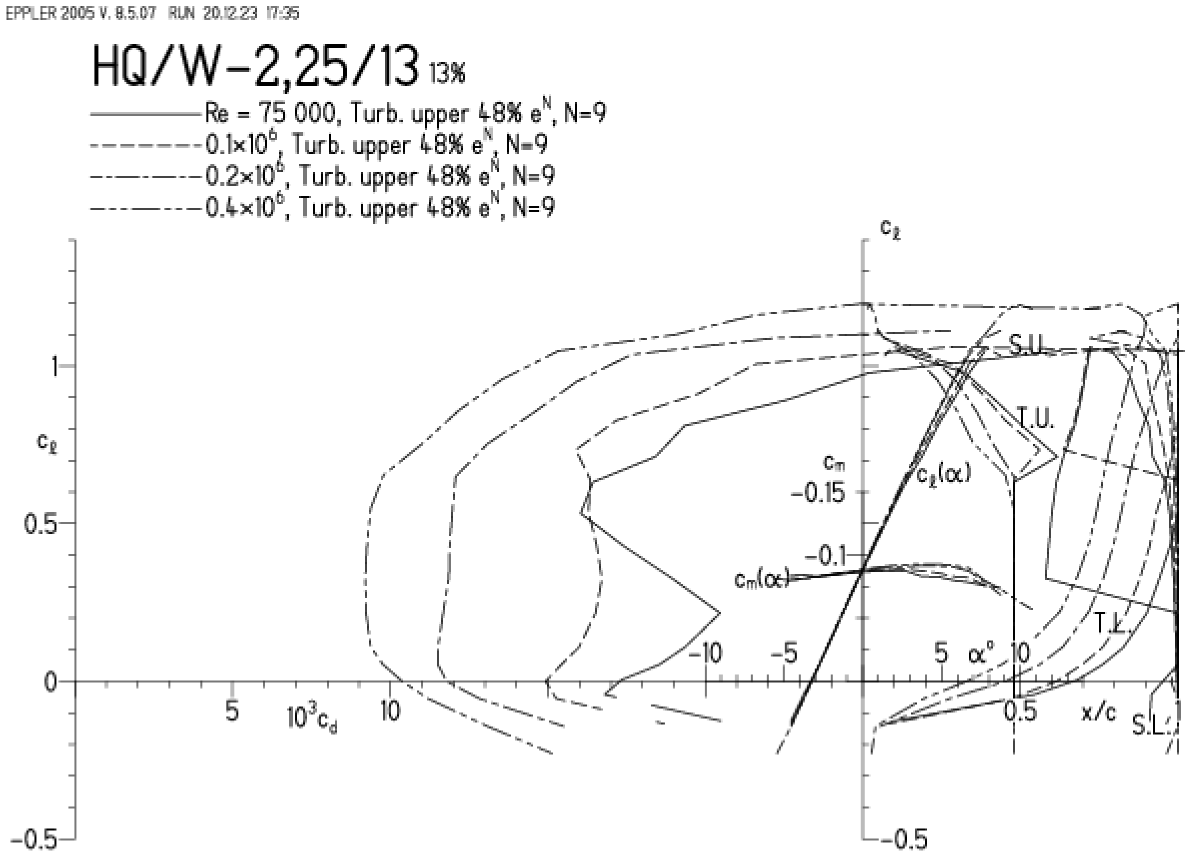
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
S.U.
T.U.
c_ℓ(α)
c_m
c_m(α)
T.L.
α°
10^3 c_d
x/c
S.L.

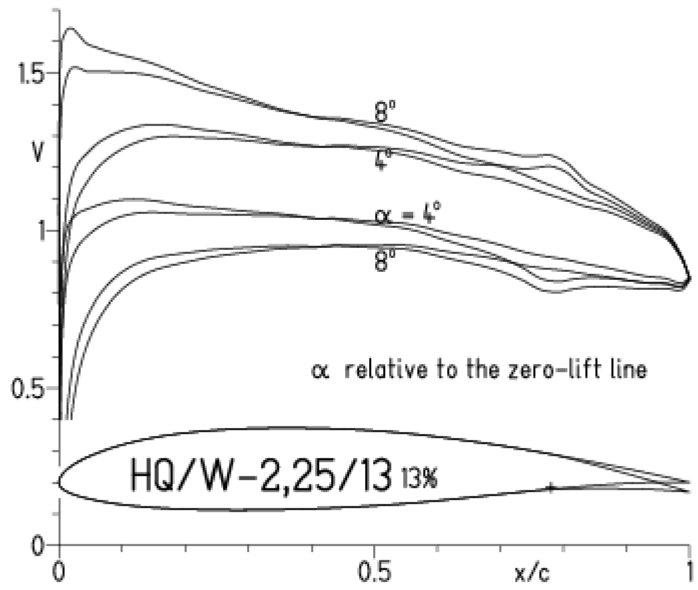
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



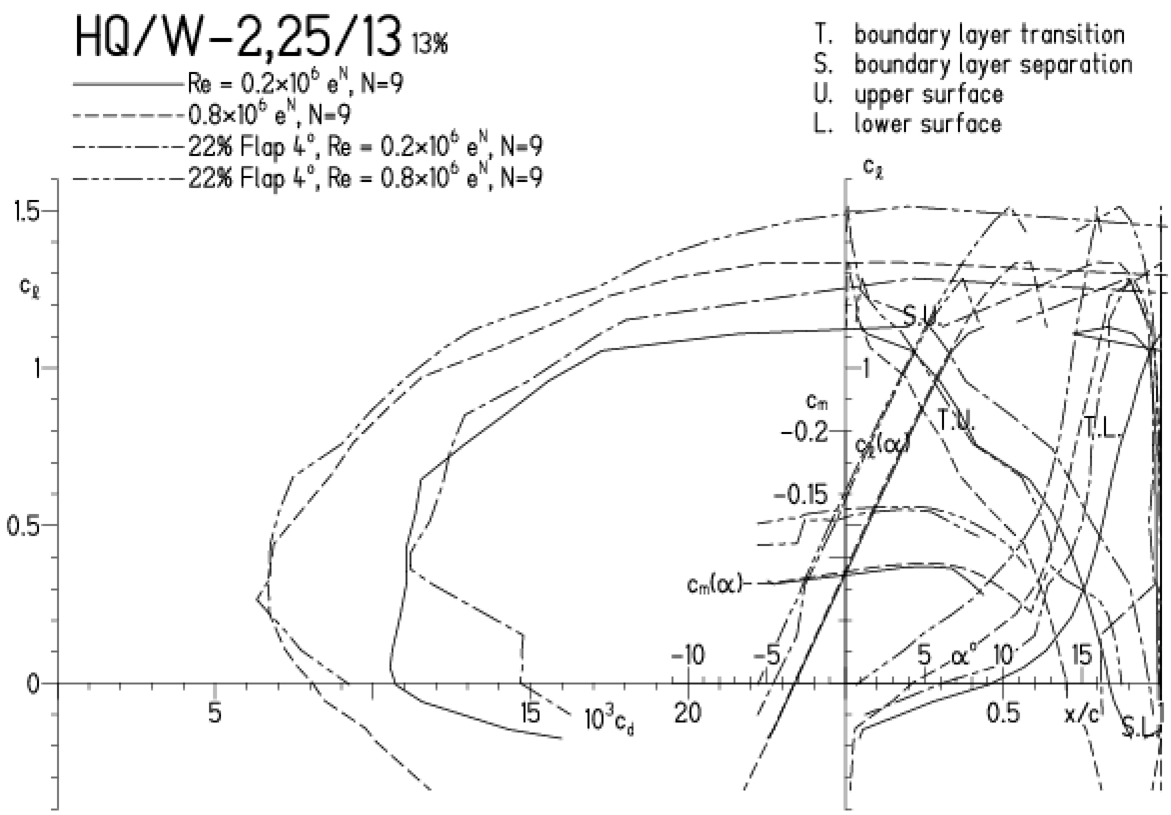


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

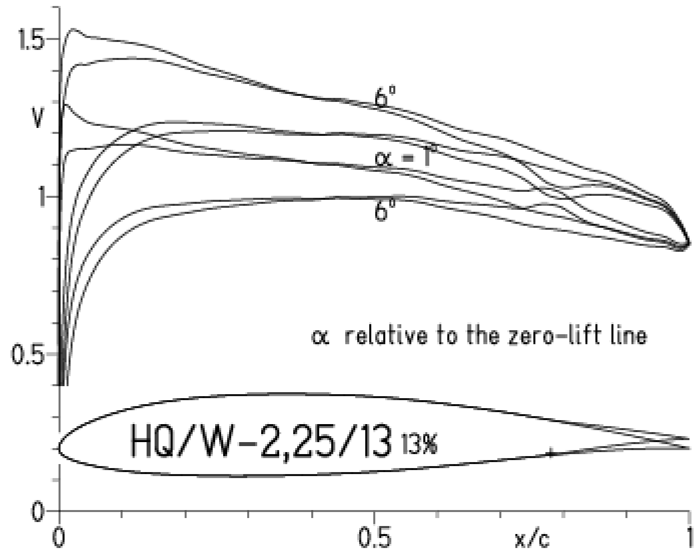


EPPLER 2005 V.

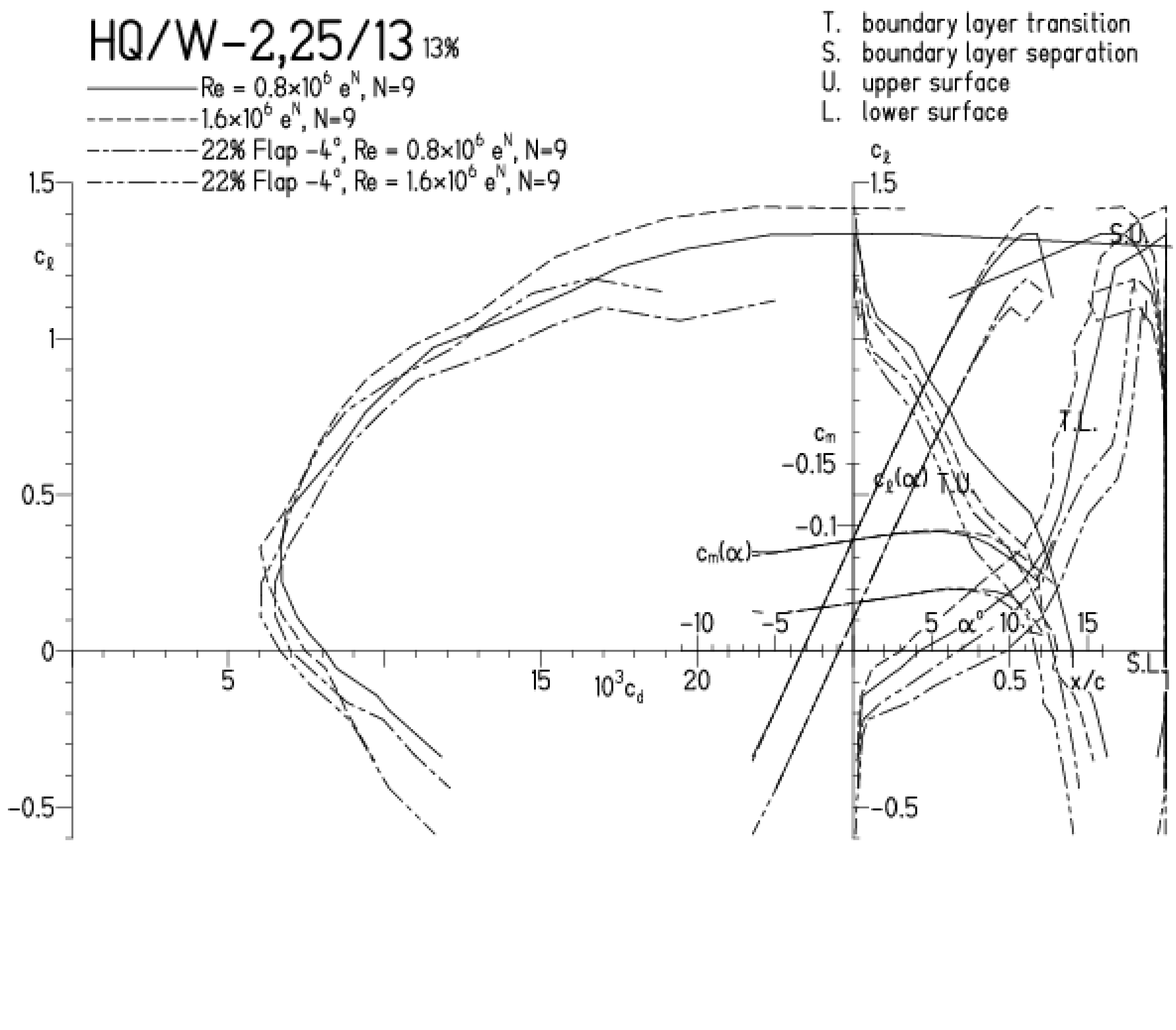


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

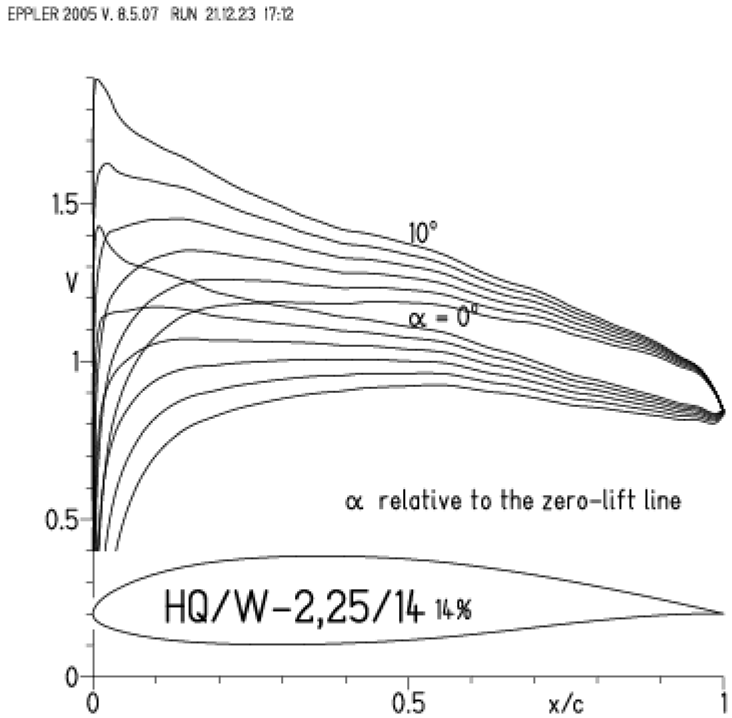
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

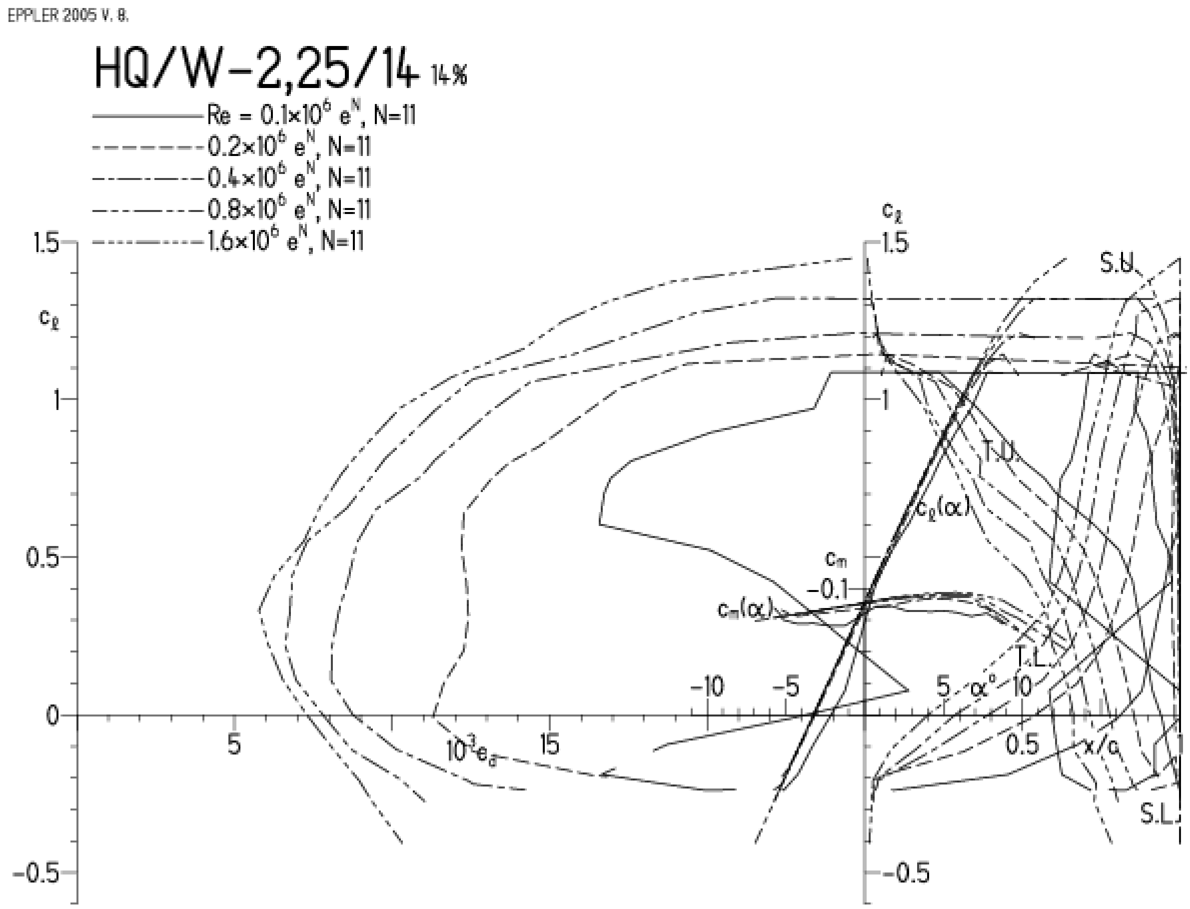


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

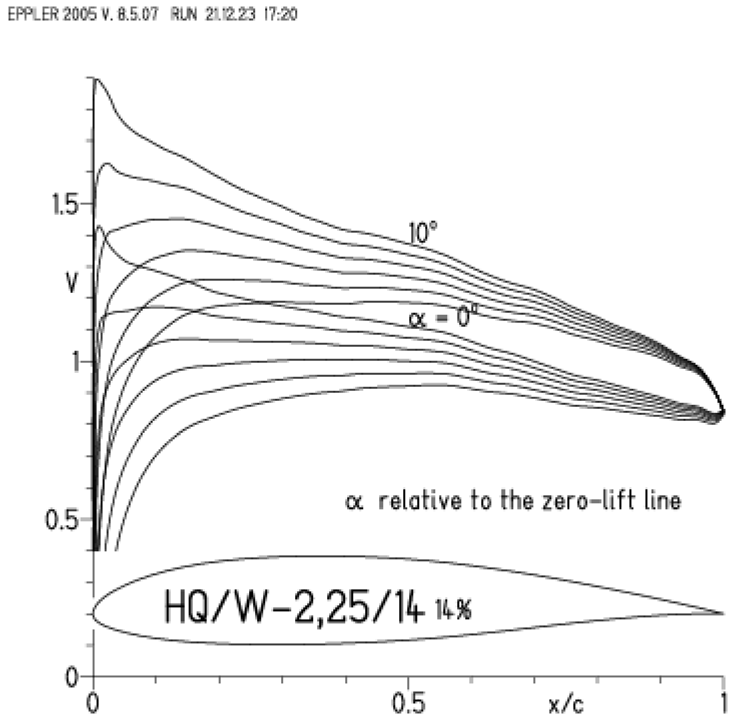


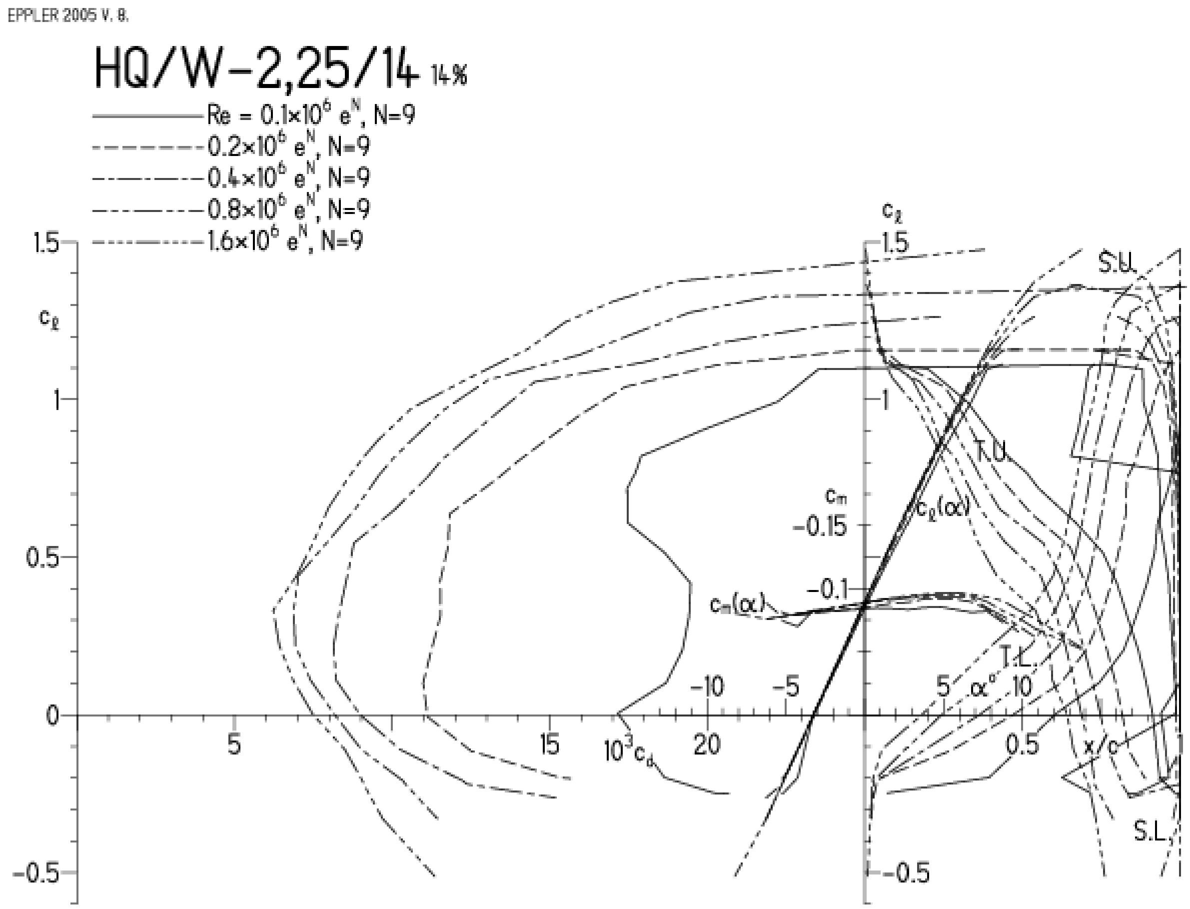
HQ/W-2,25/14, N=11



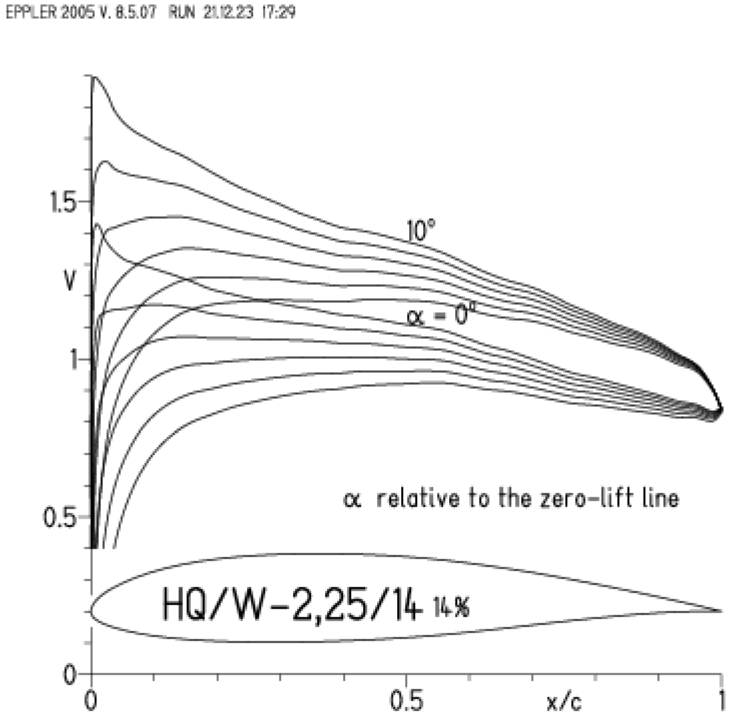


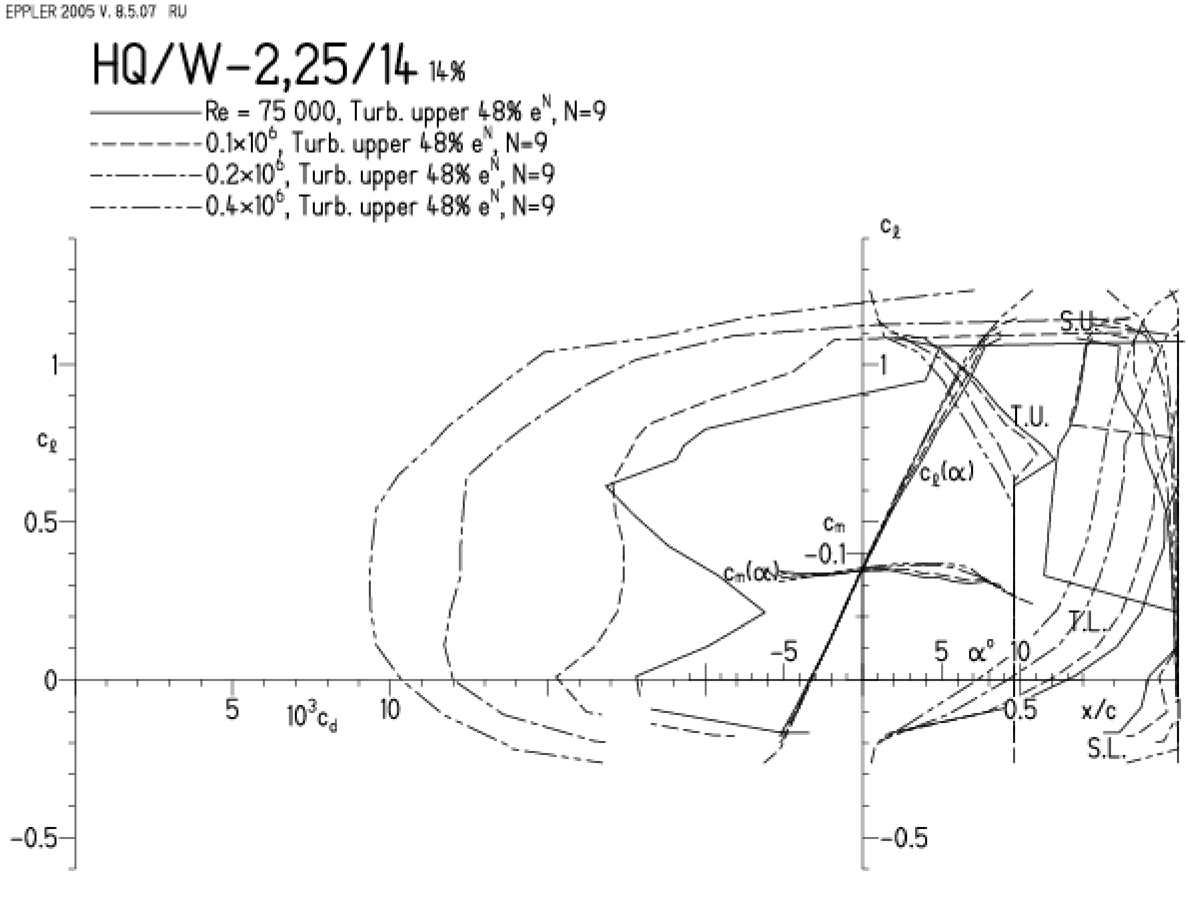
<u>HQ/W-2,25/14</u>, N=9





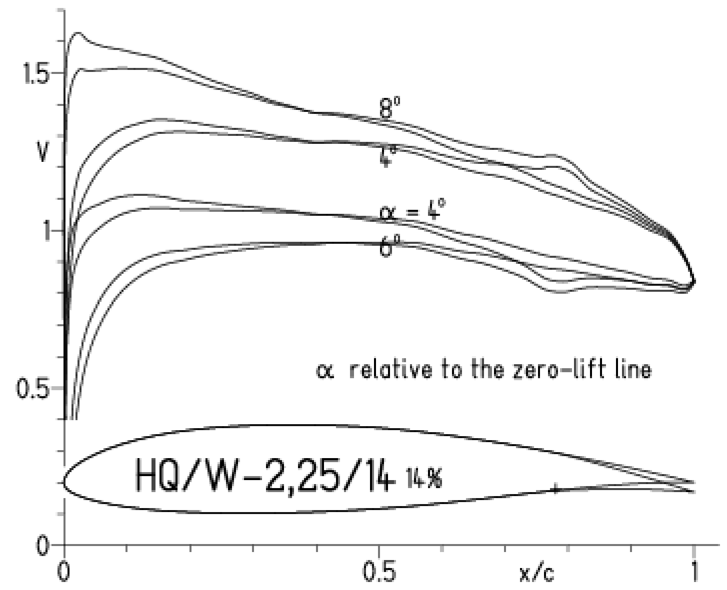
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



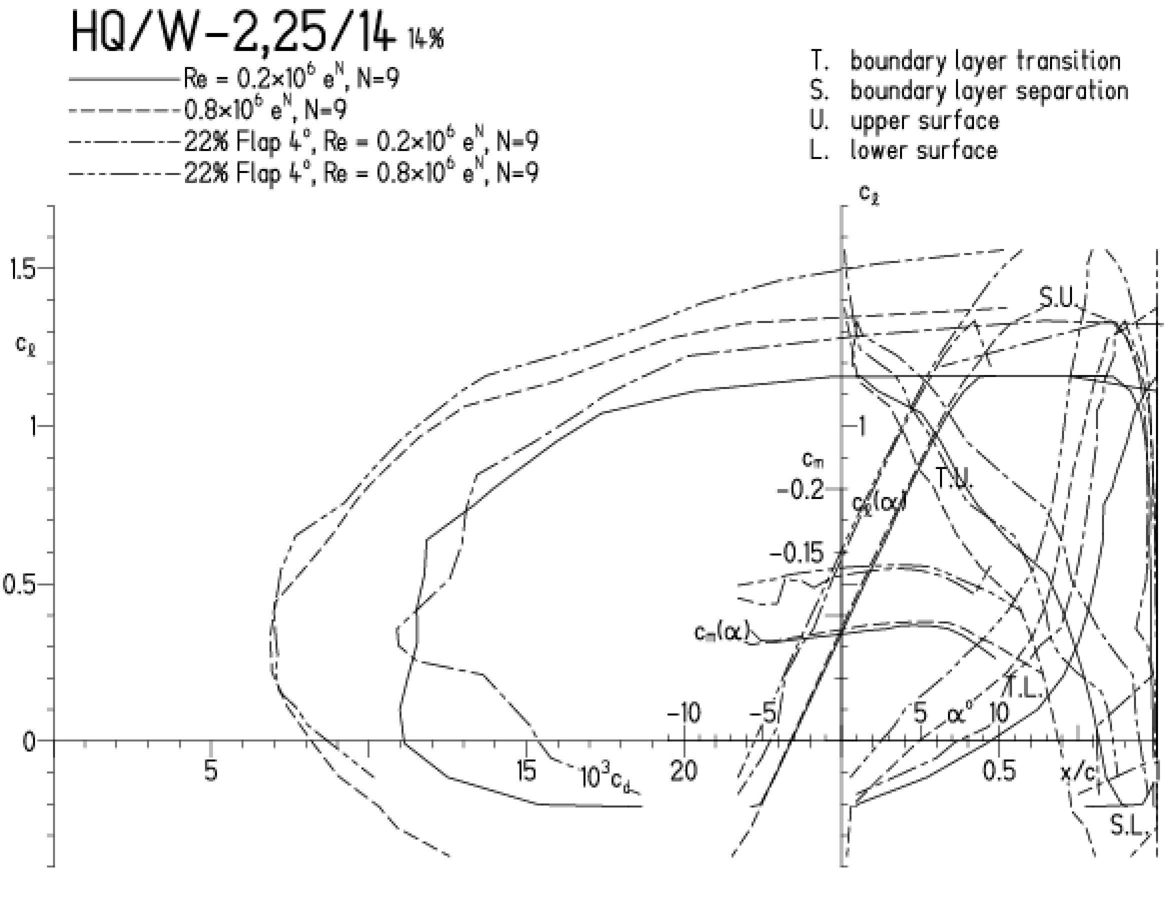


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

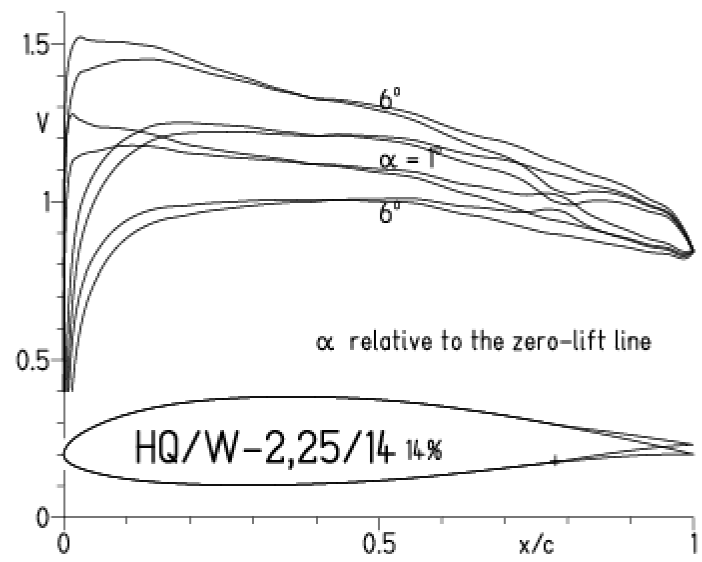


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

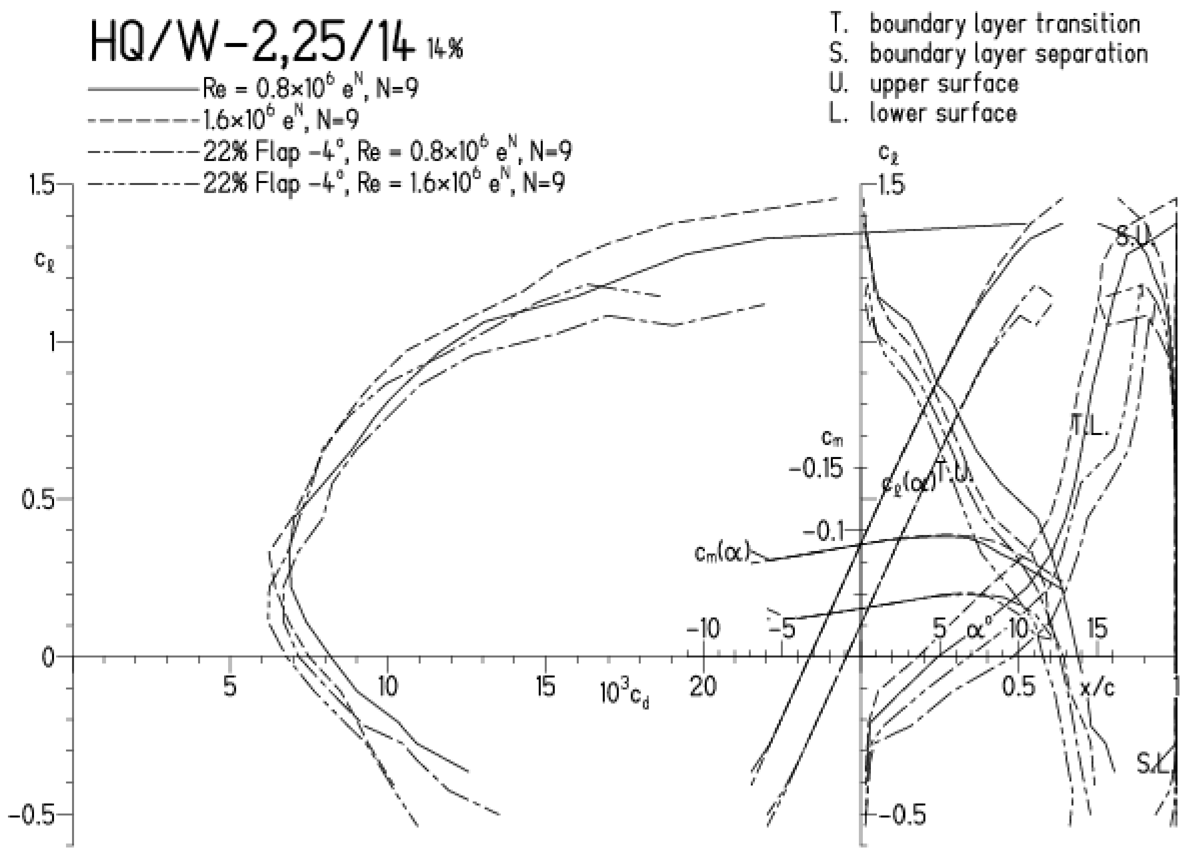


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

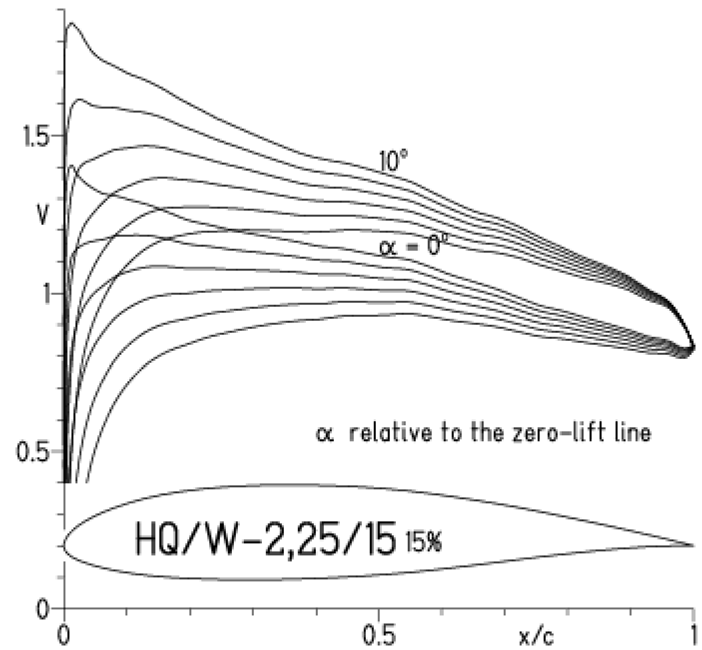


EPPLER 2005 V. 8.5.07

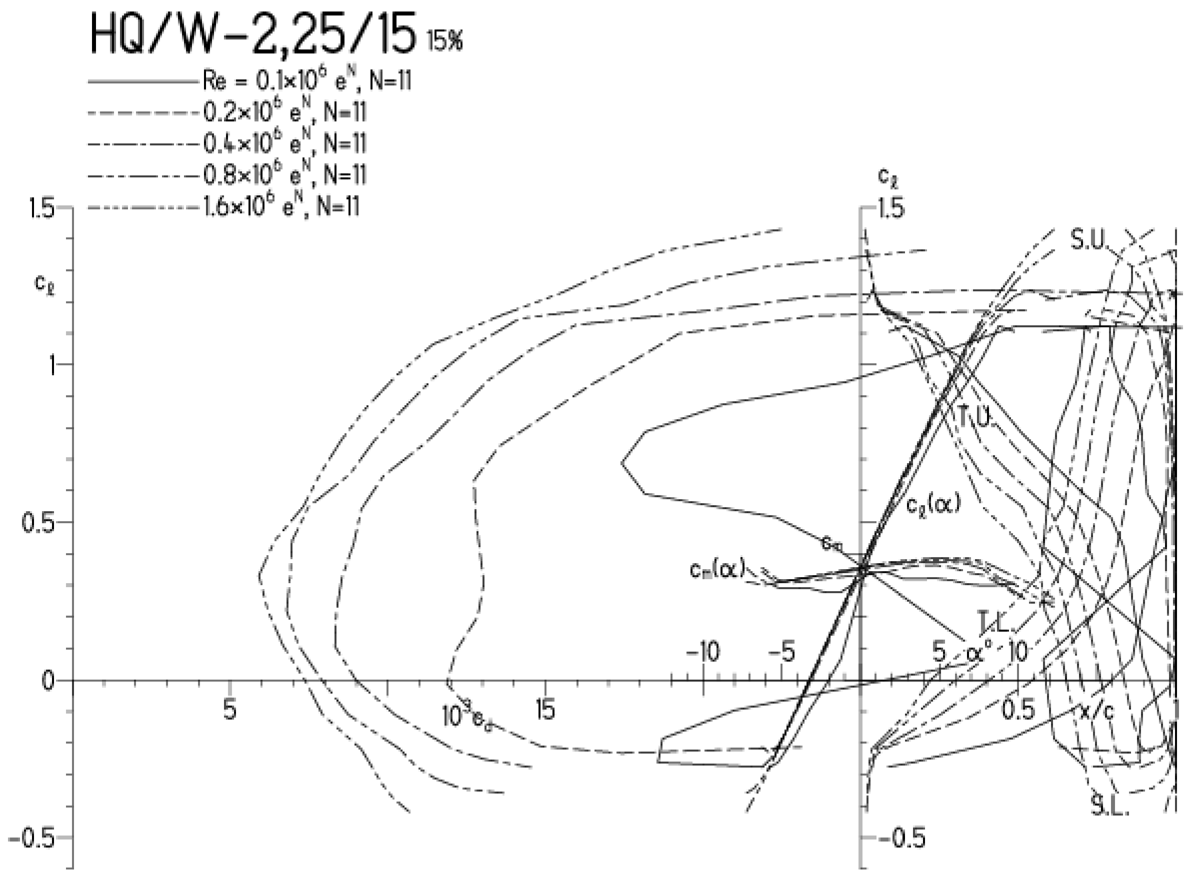


HQ/W-2,25/15, N=11

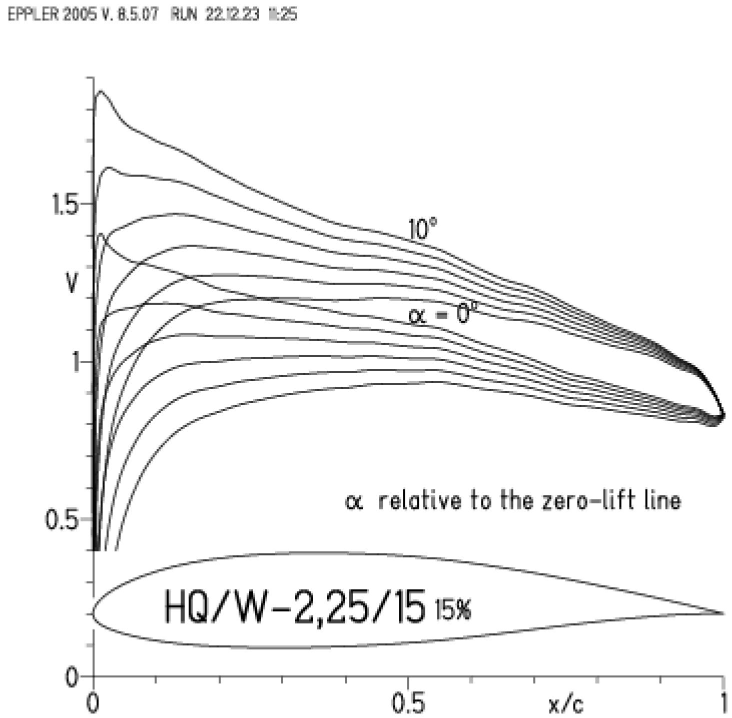
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

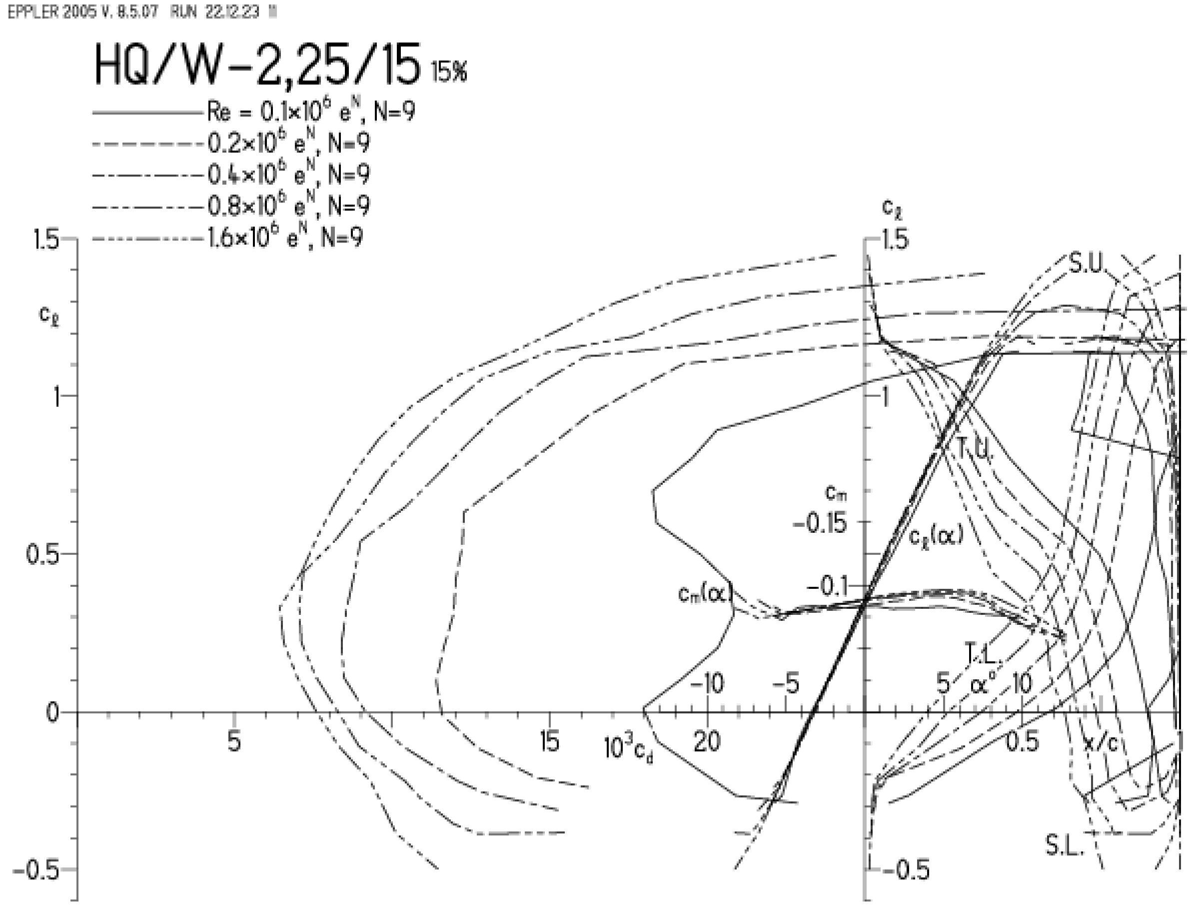


EPPLER 20

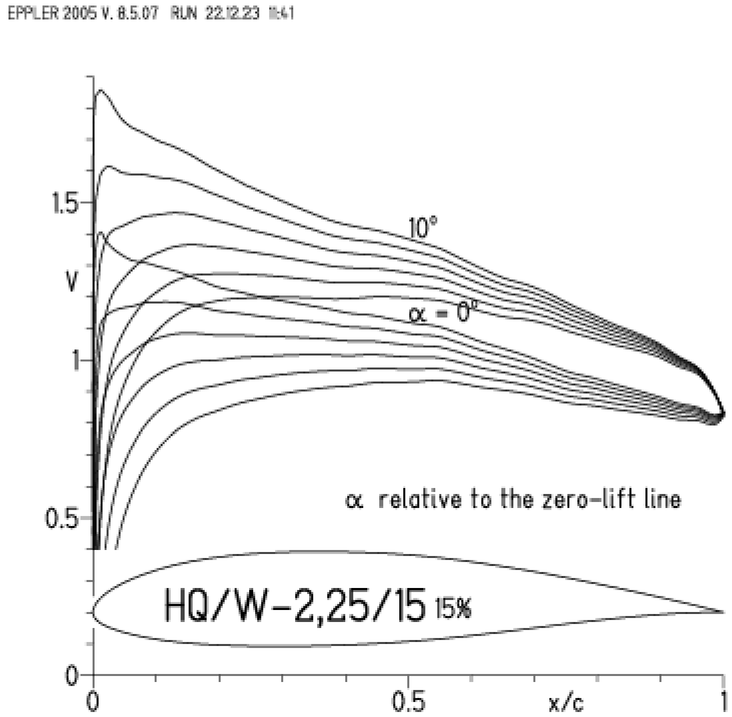


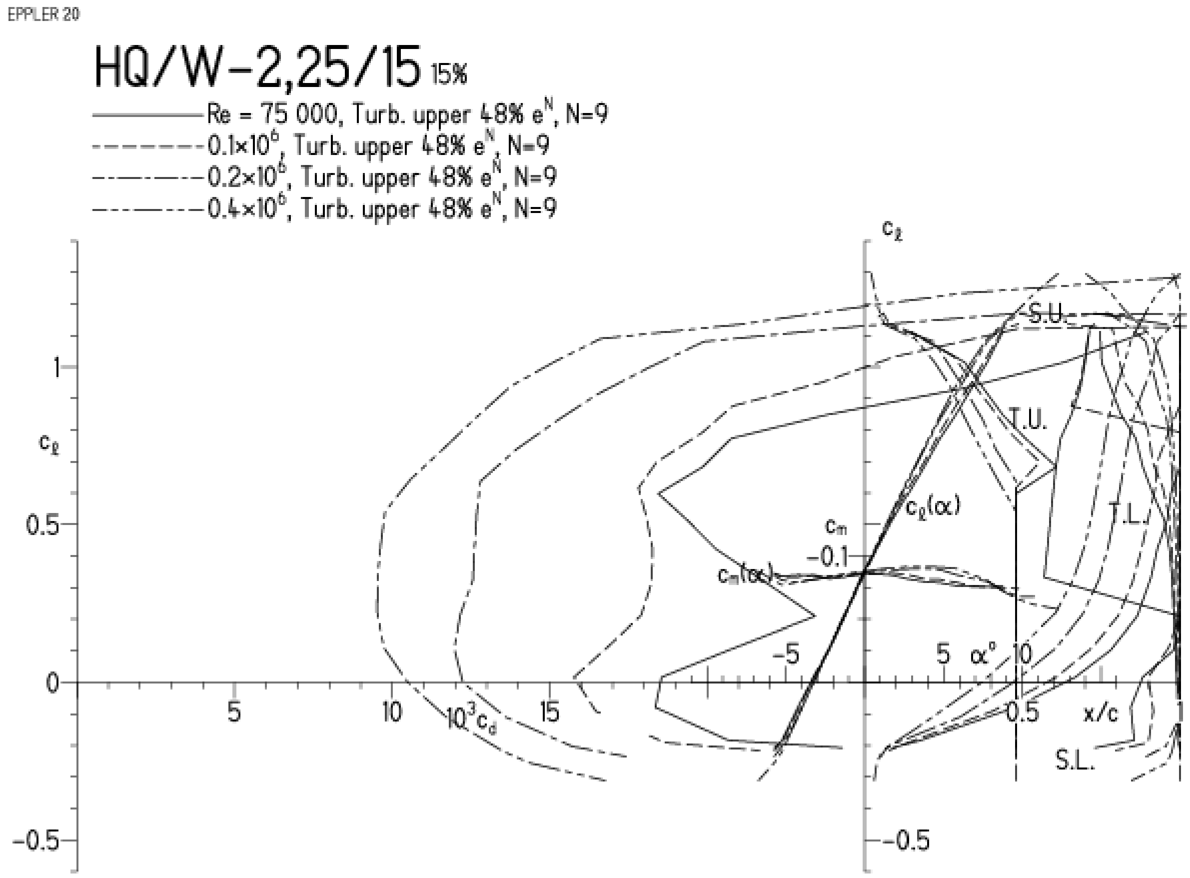
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



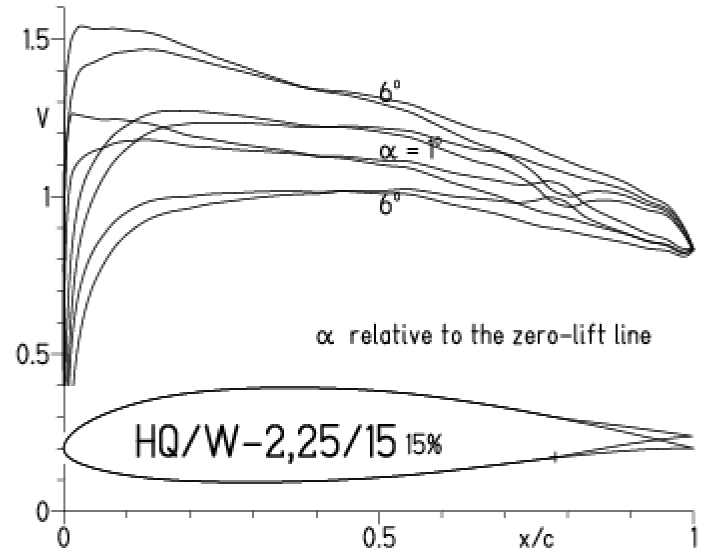


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

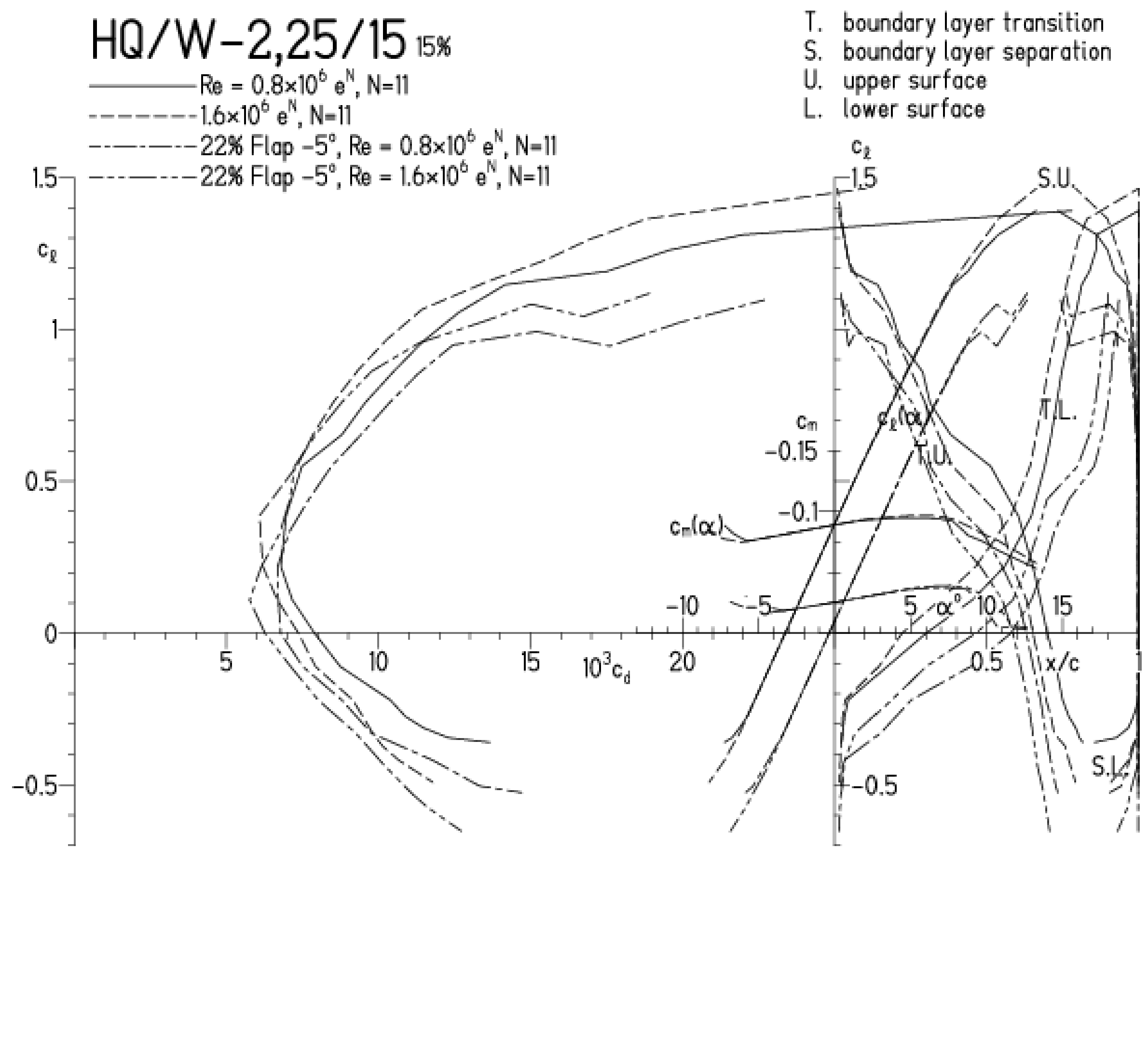
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

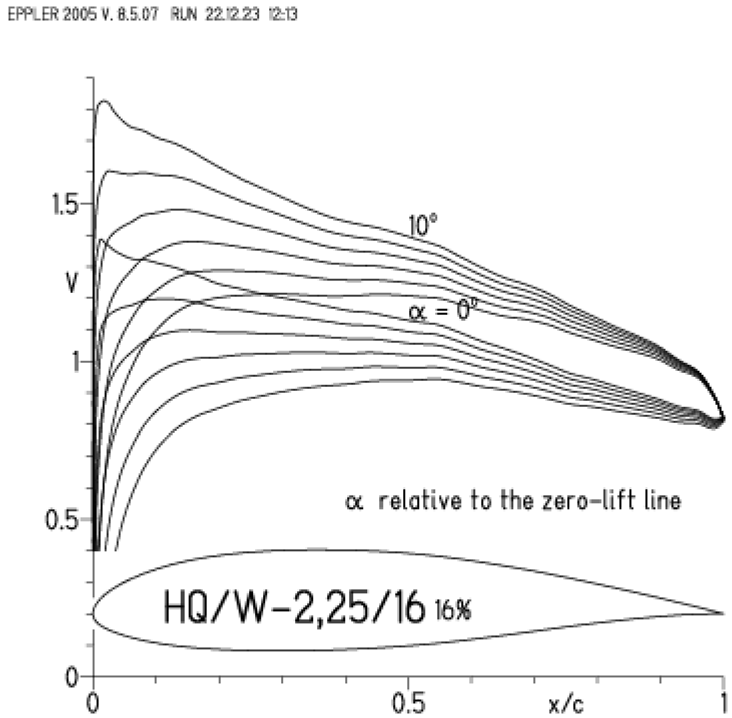
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

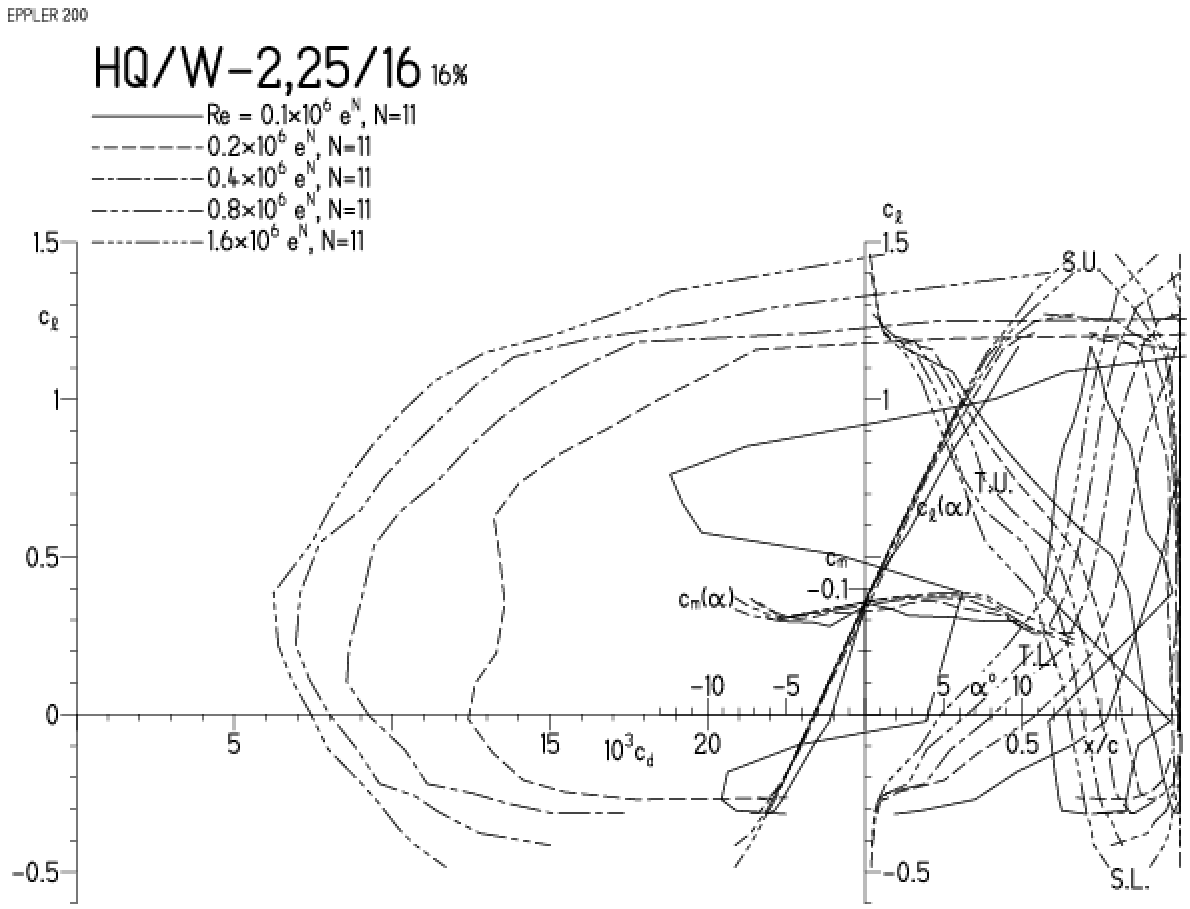


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

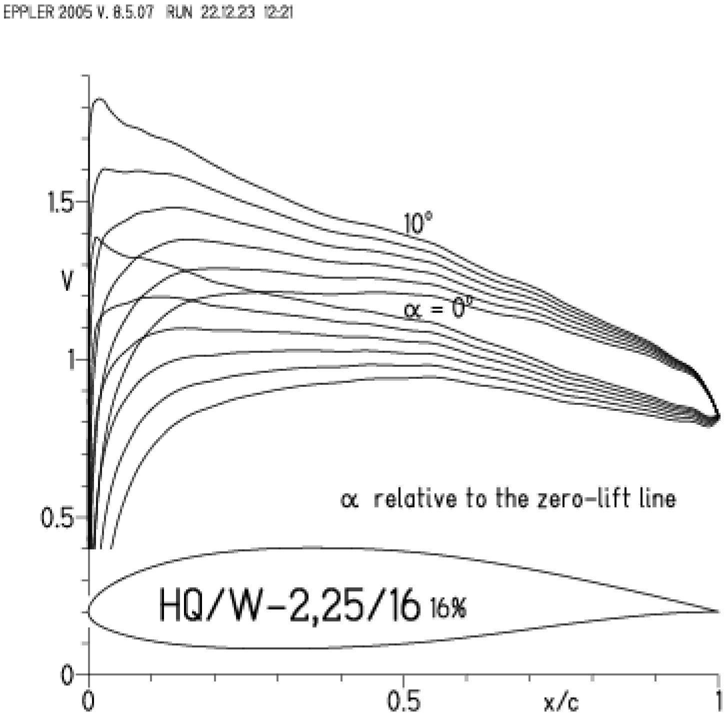


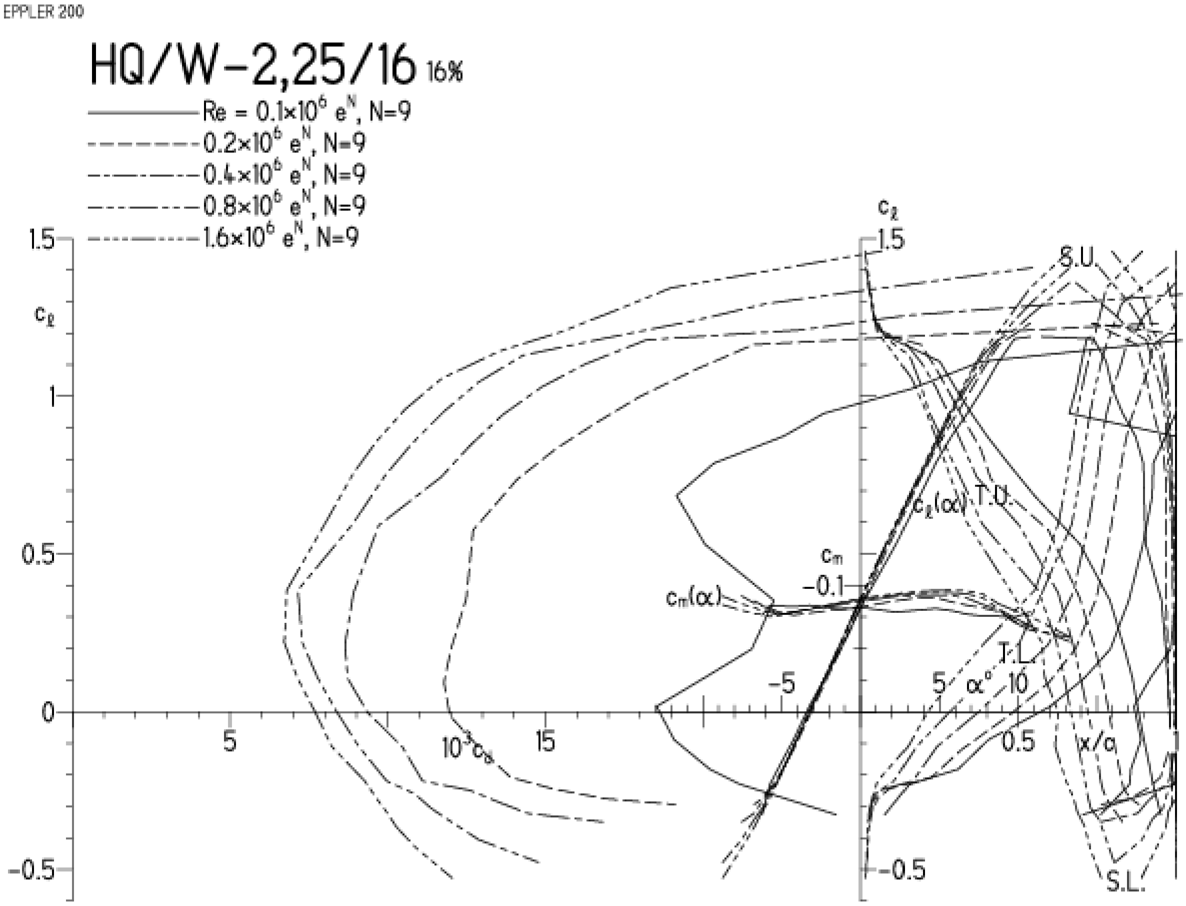
HQ/W-2,25/16, N=11



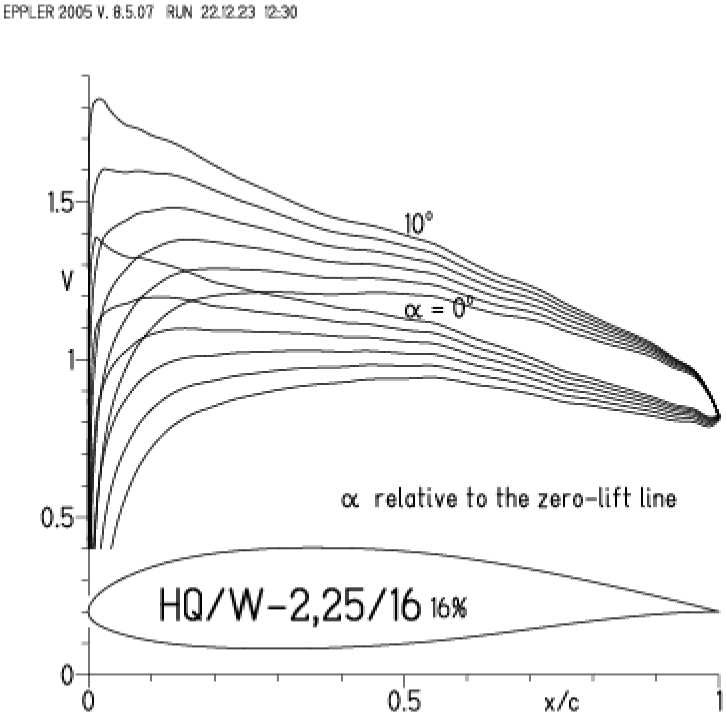


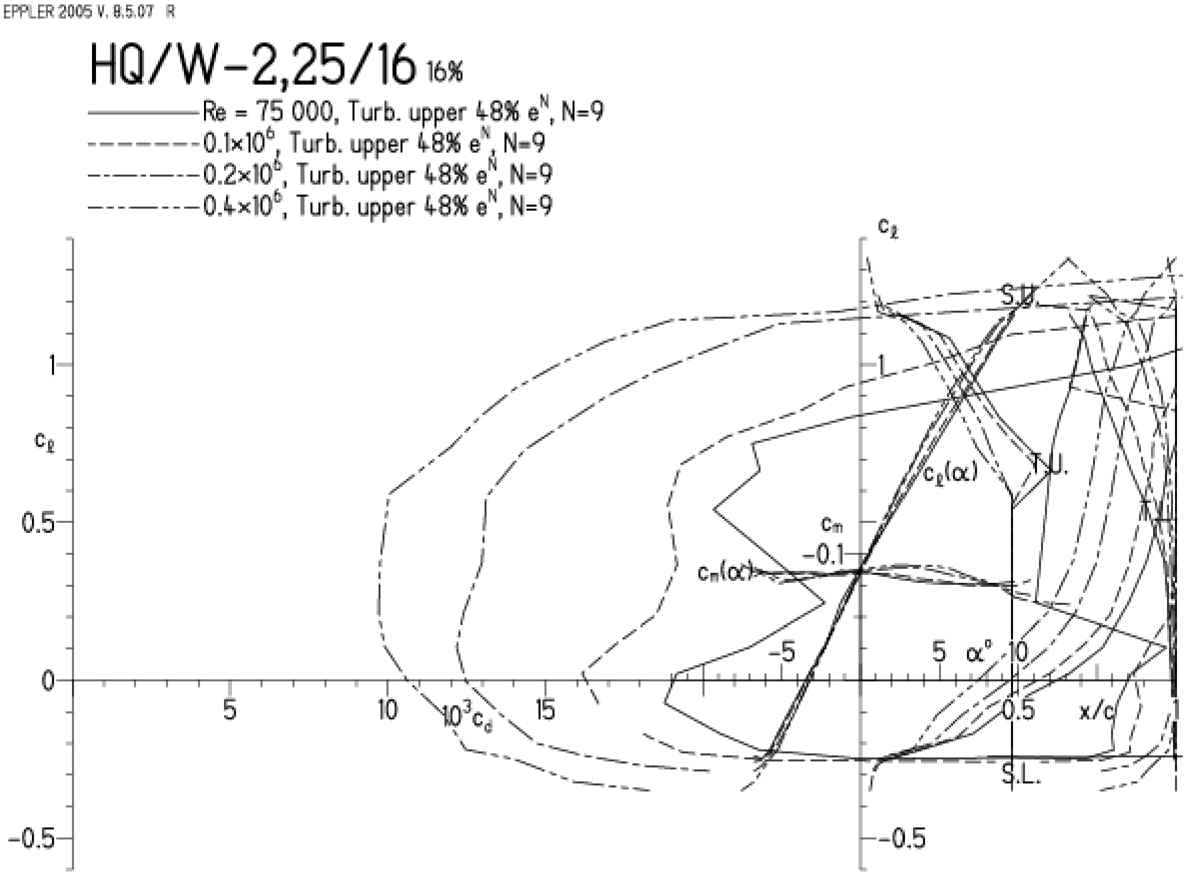
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
-5
c_m
-0.1
c_l
1.5
S.U.
c_l(α) T.U.
T.L.
5 α° 10
0.5 x/c
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



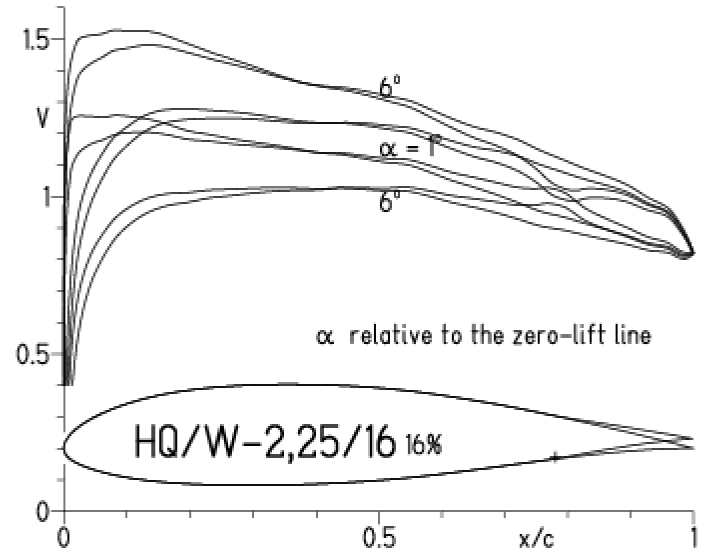


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

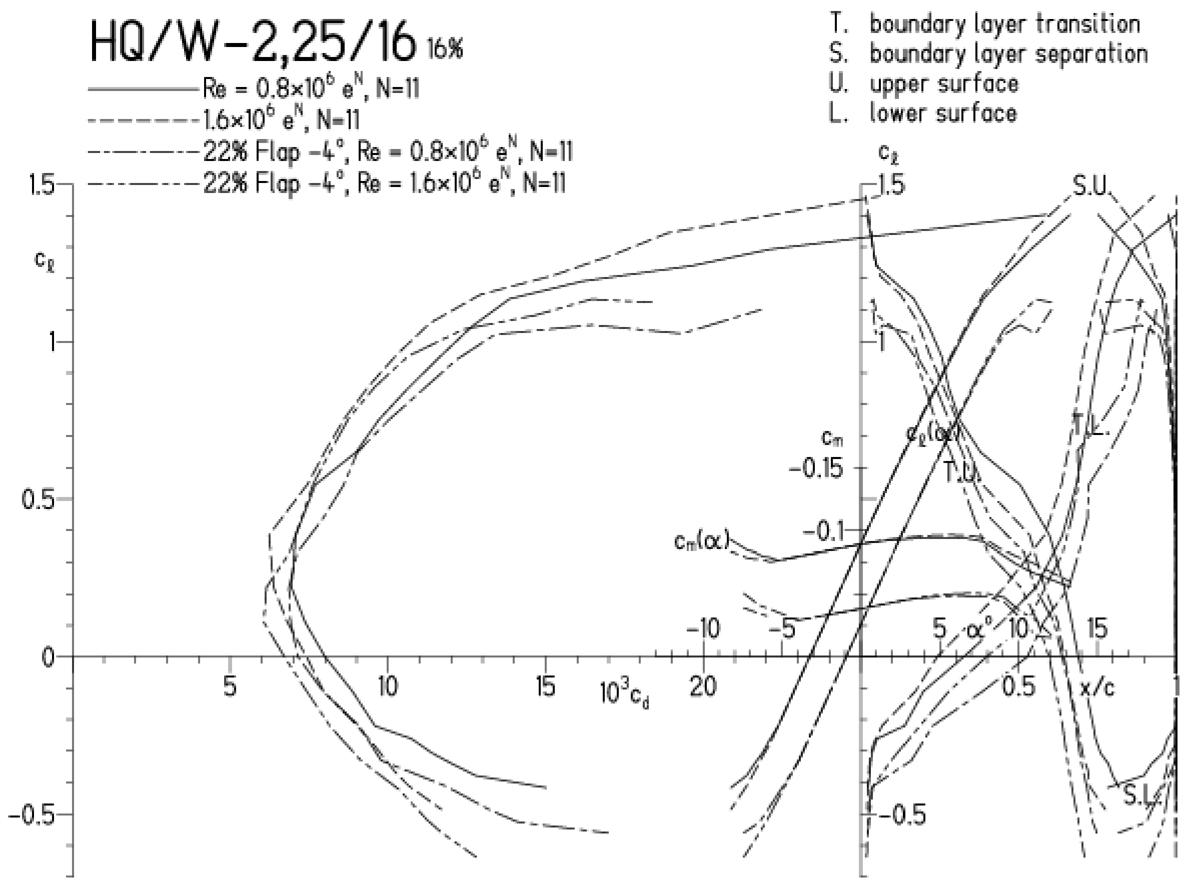
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

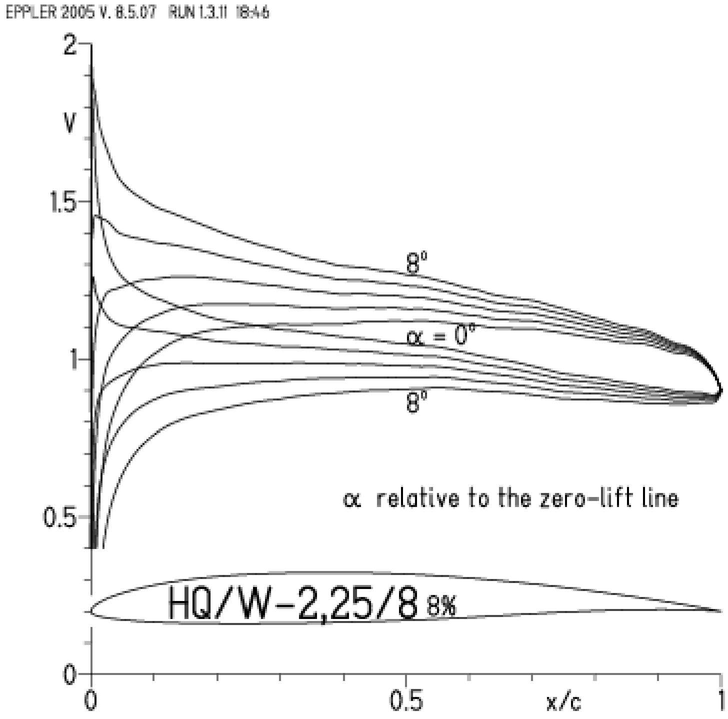
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

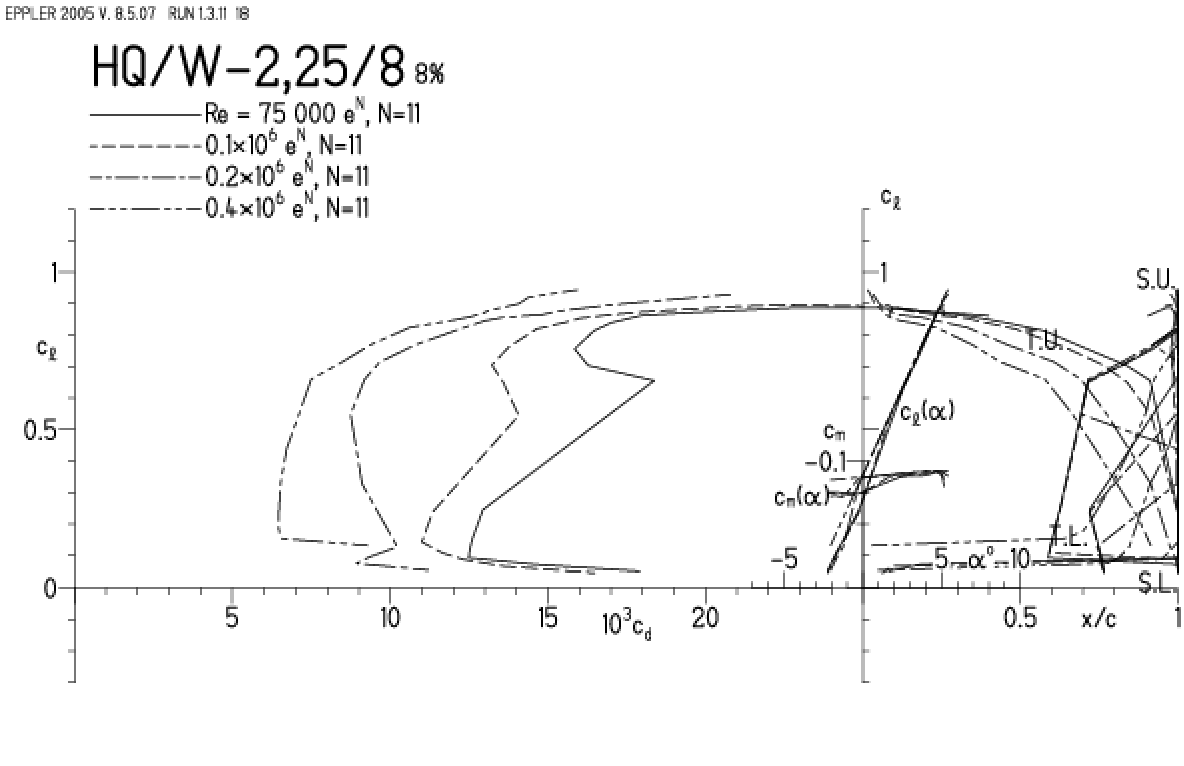


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

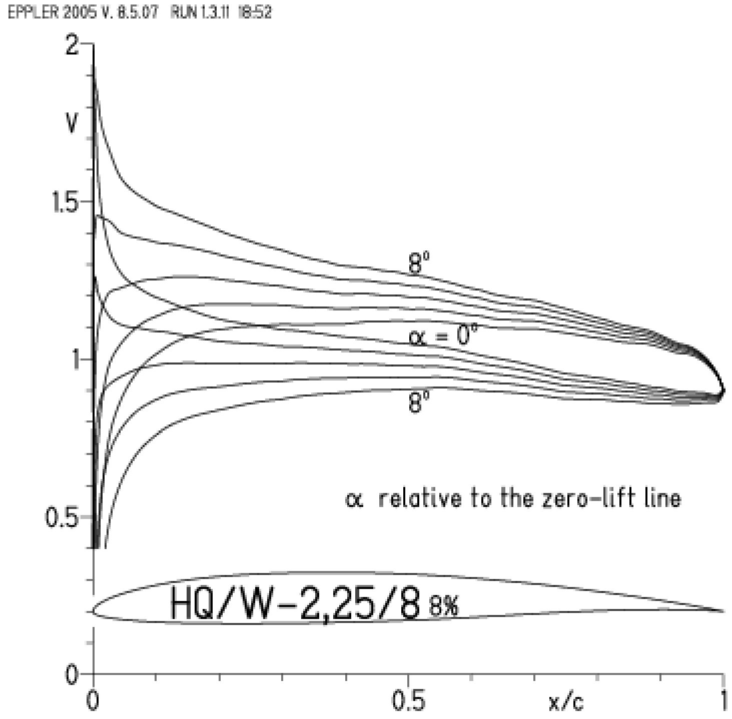


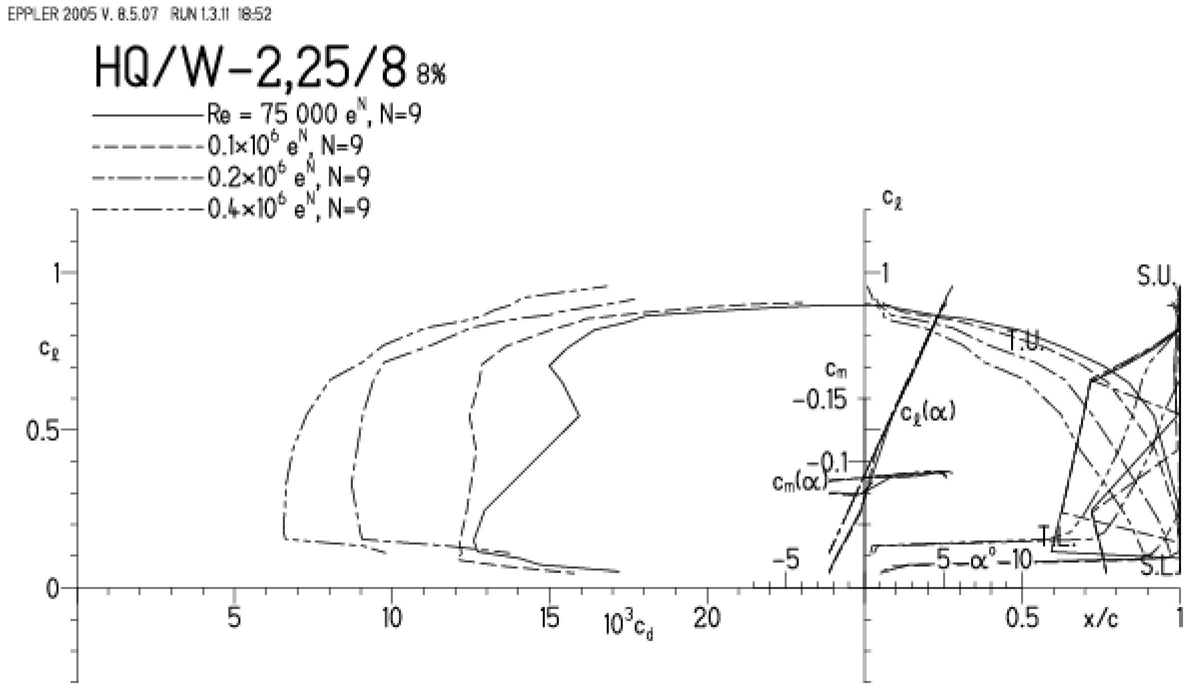
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

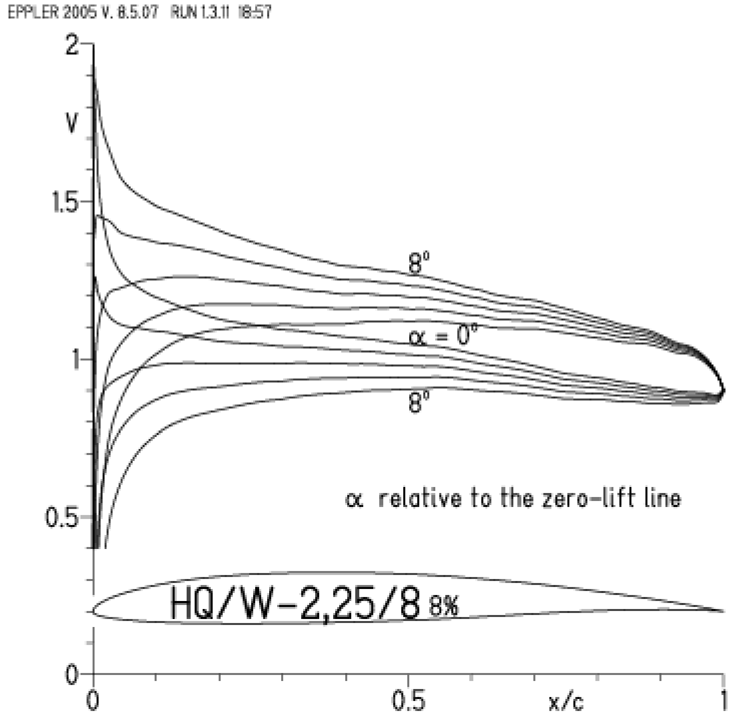

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

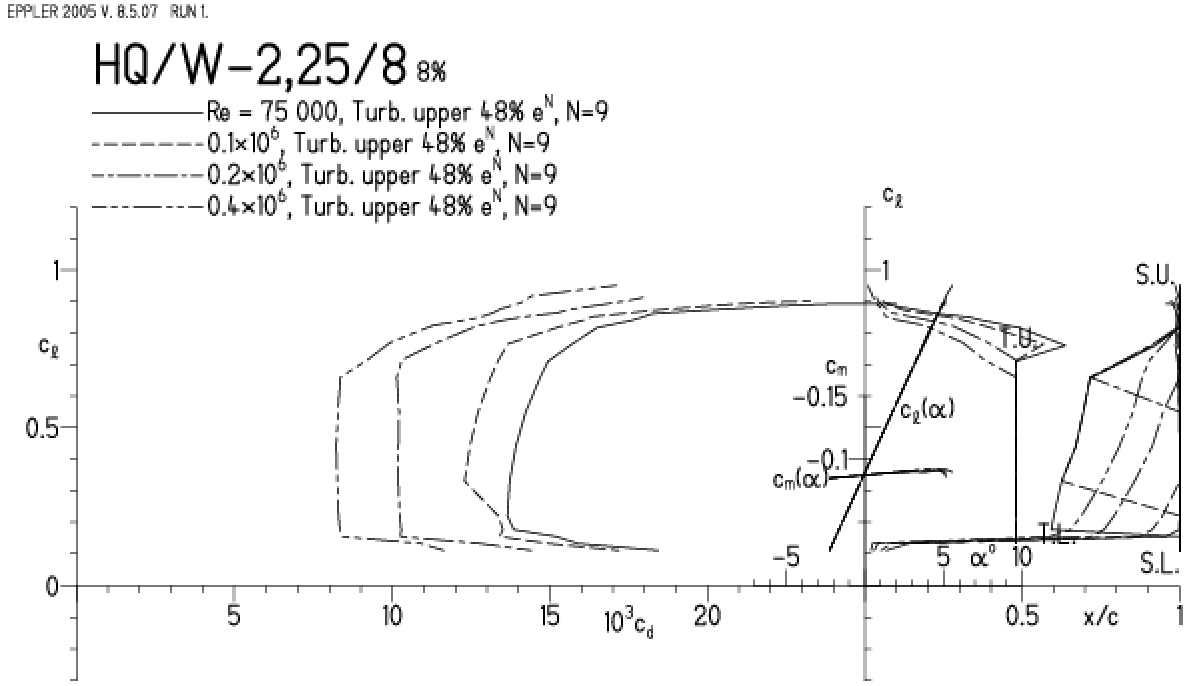
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

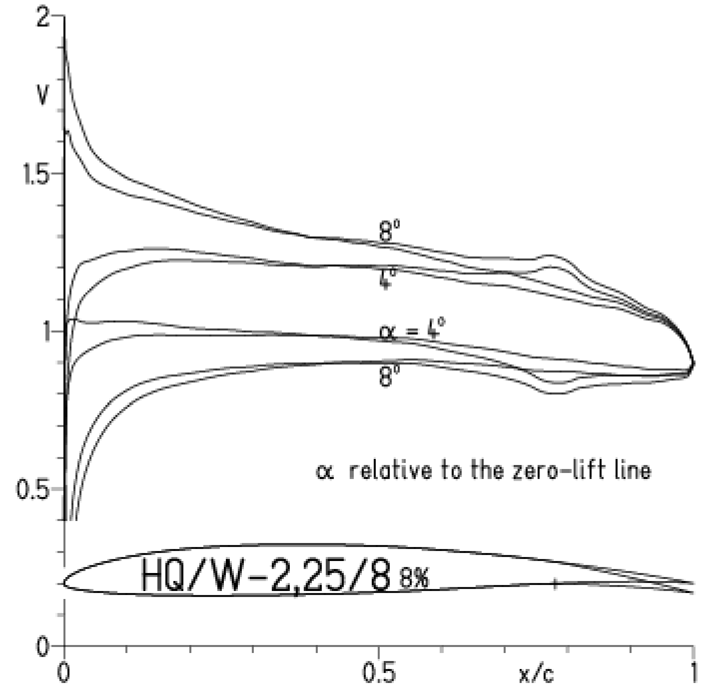
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



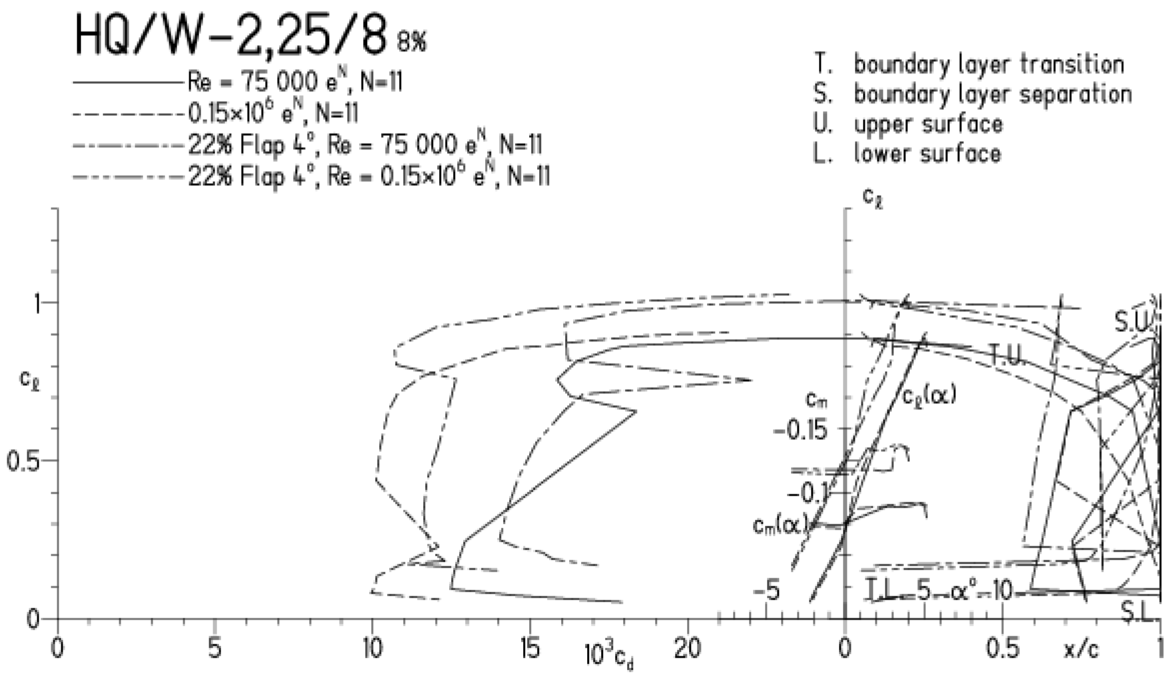


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

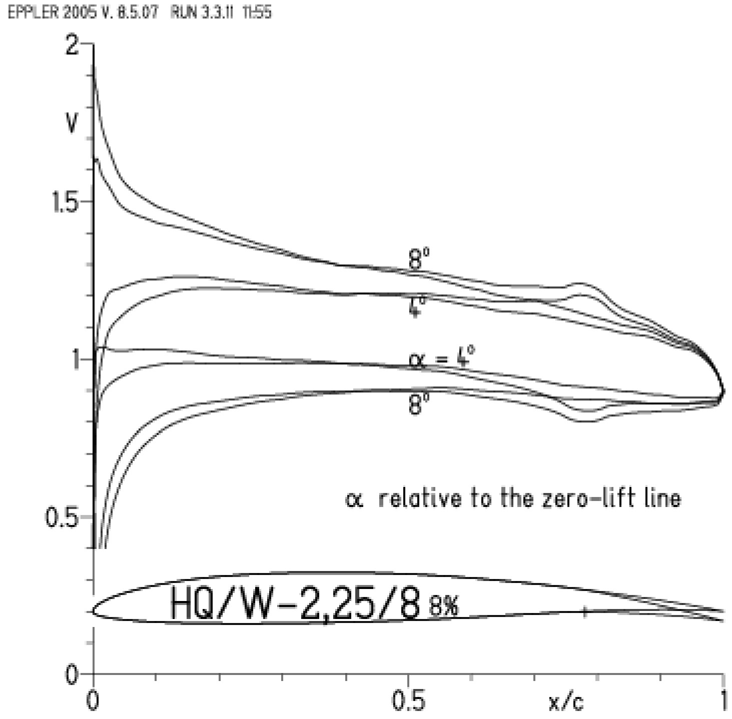
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

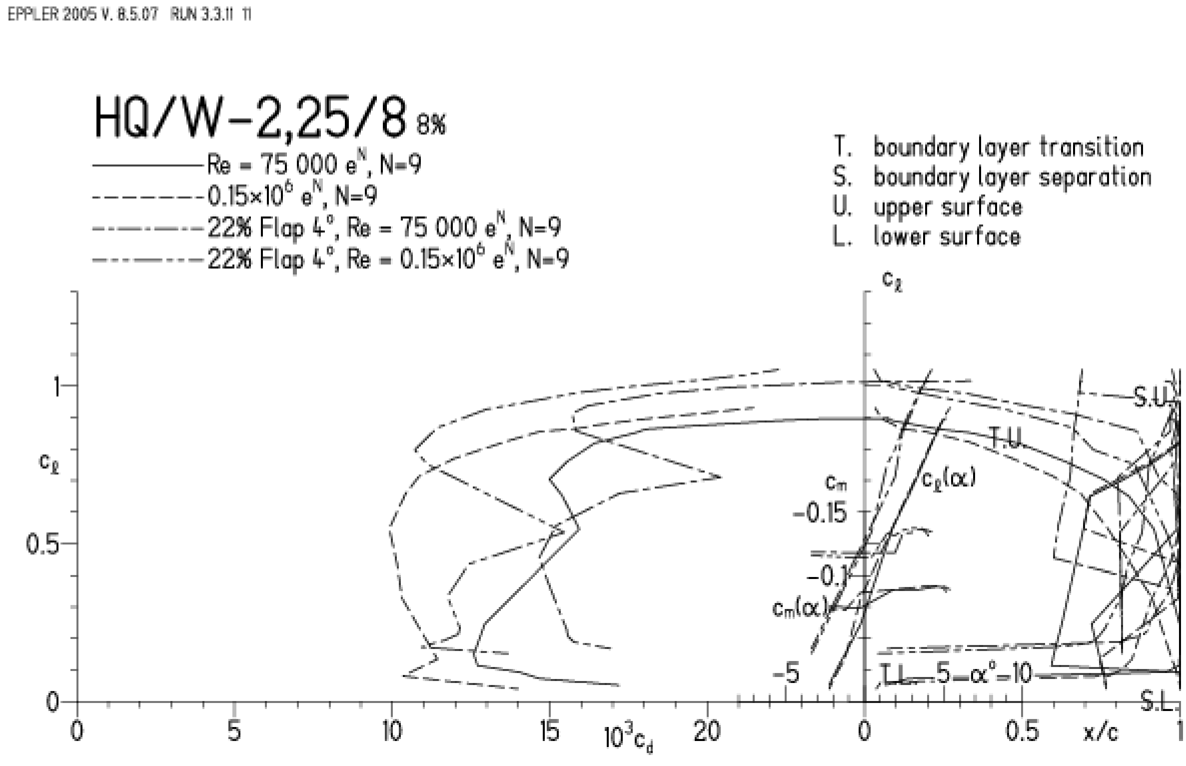


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

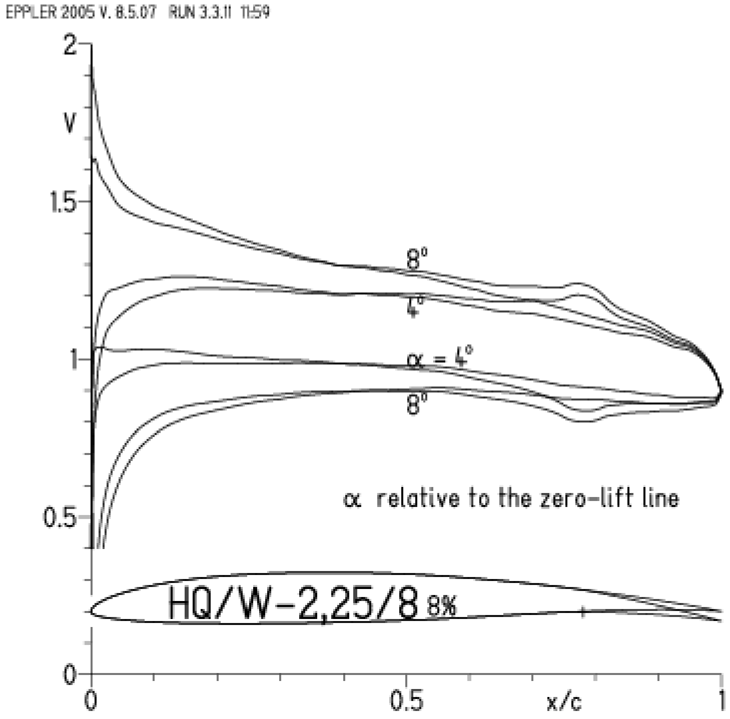


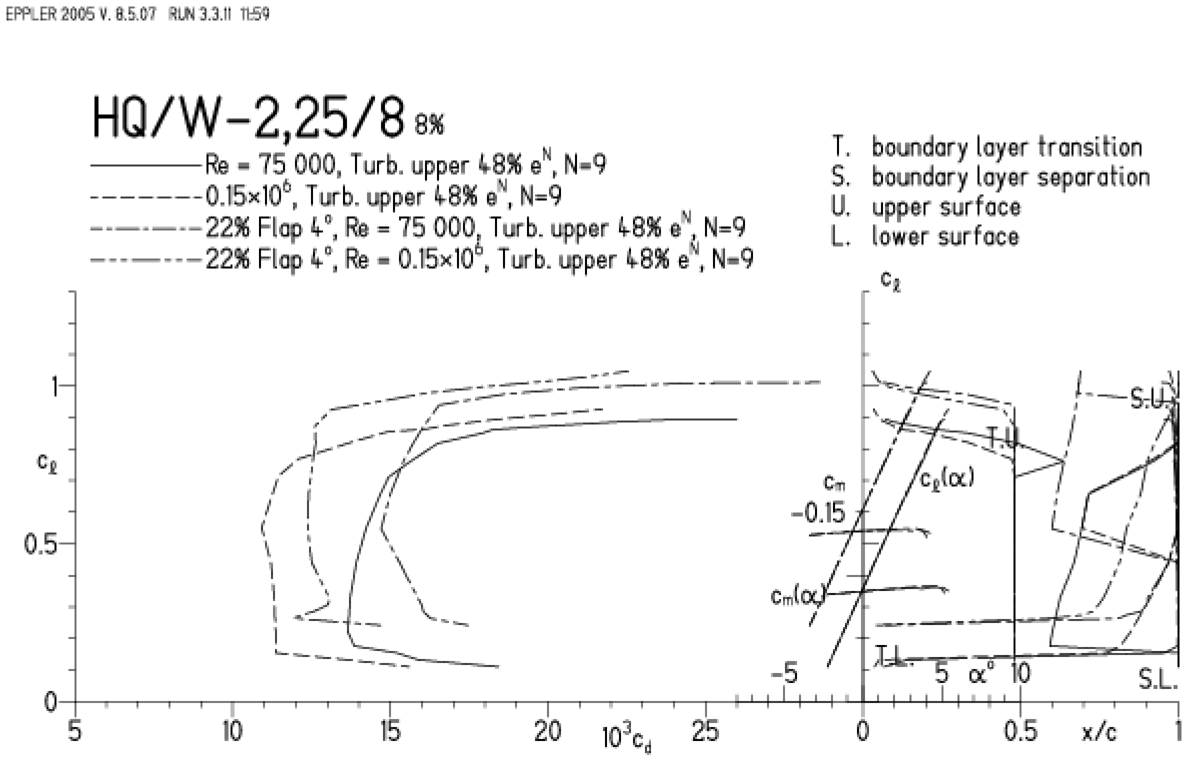
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





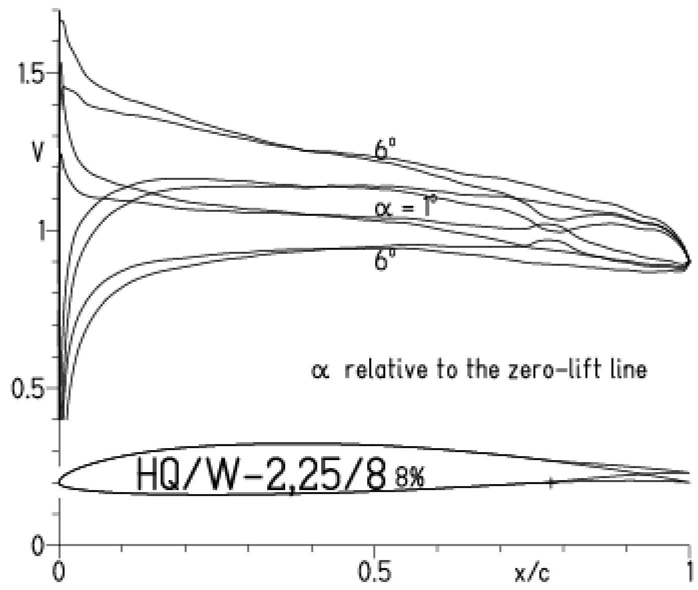
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



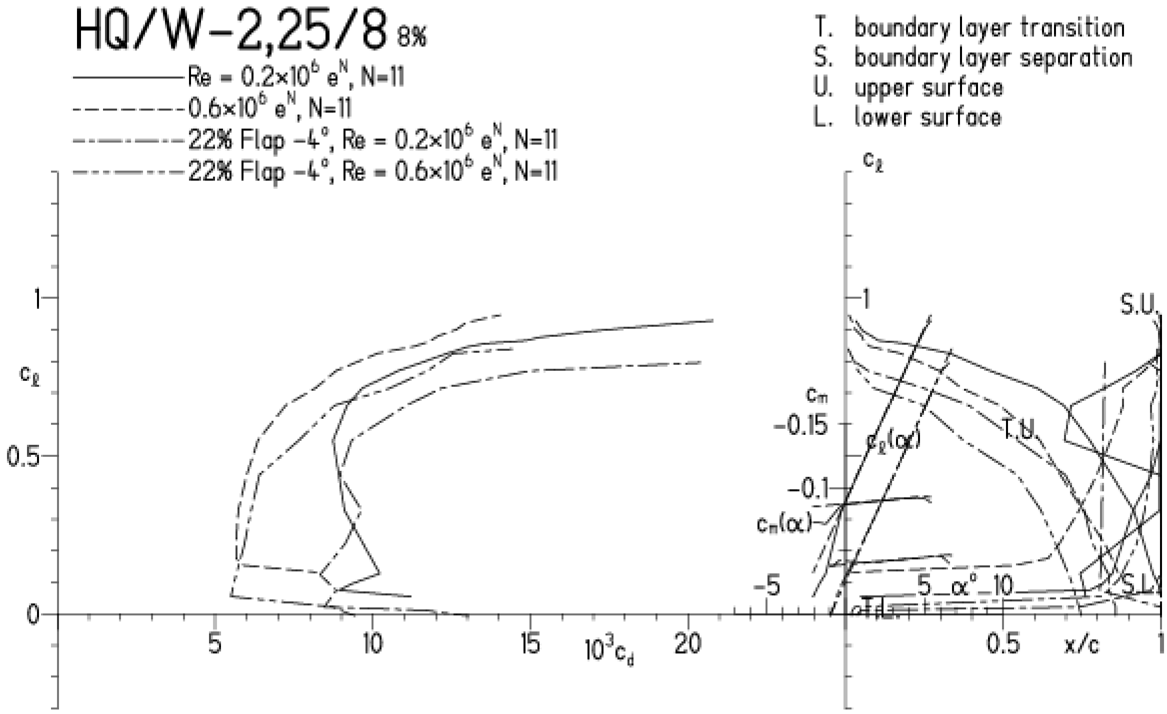


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

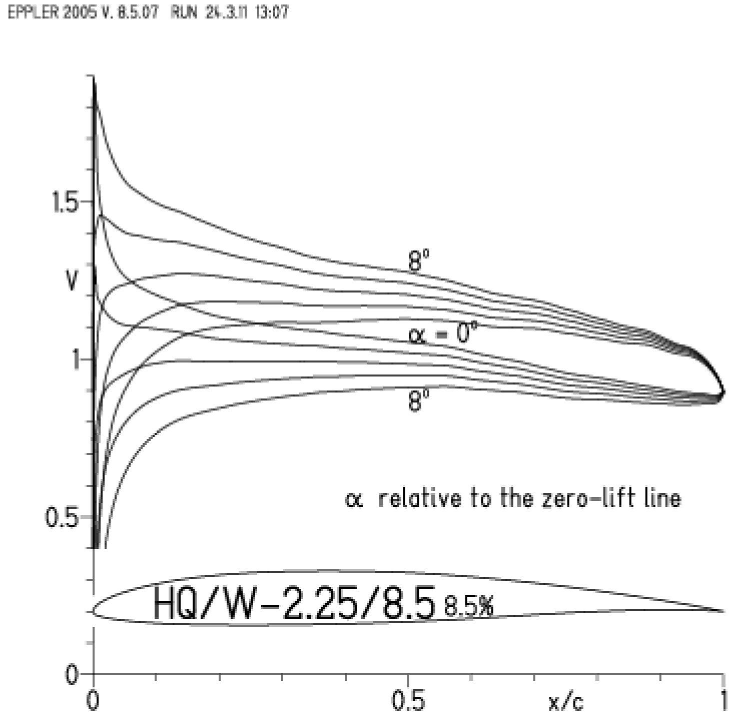
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

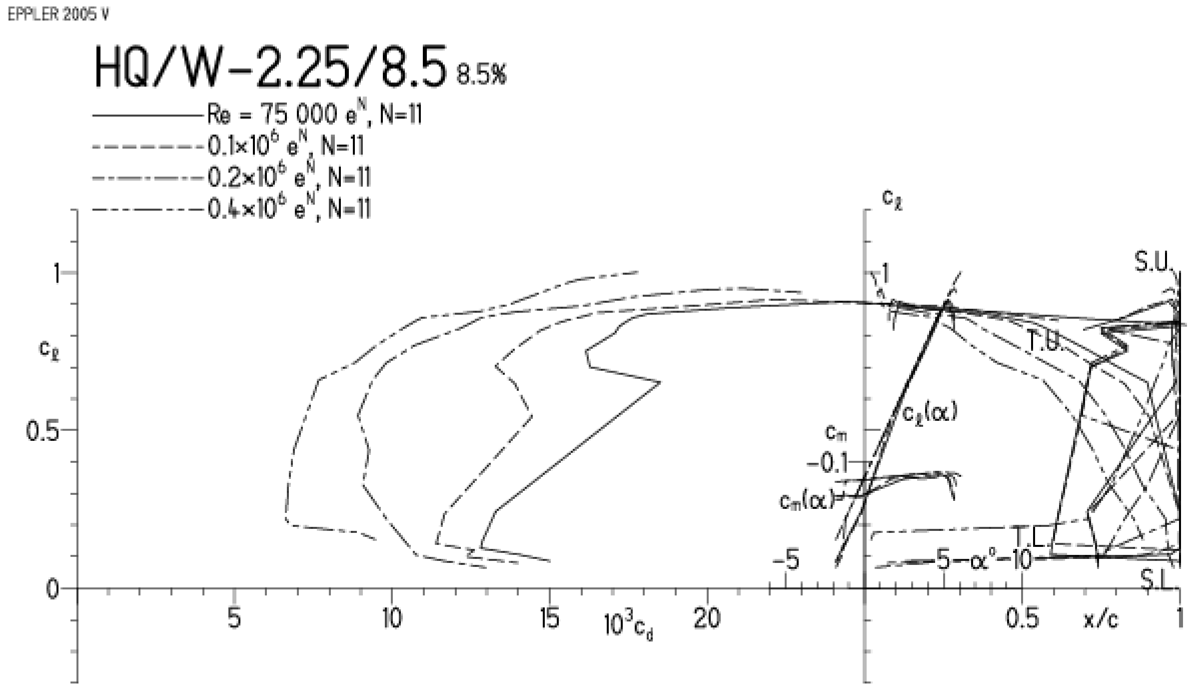


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



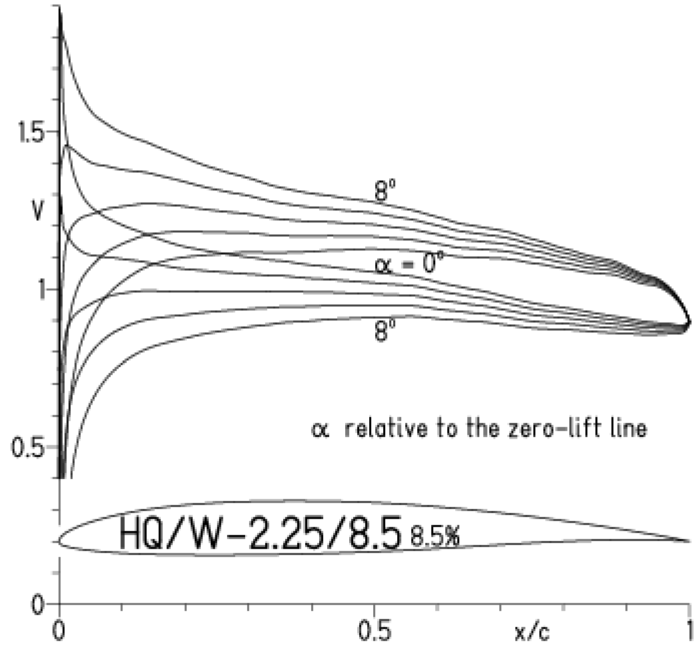
<u>HQ/W-2,25/8,5</u>, N=11



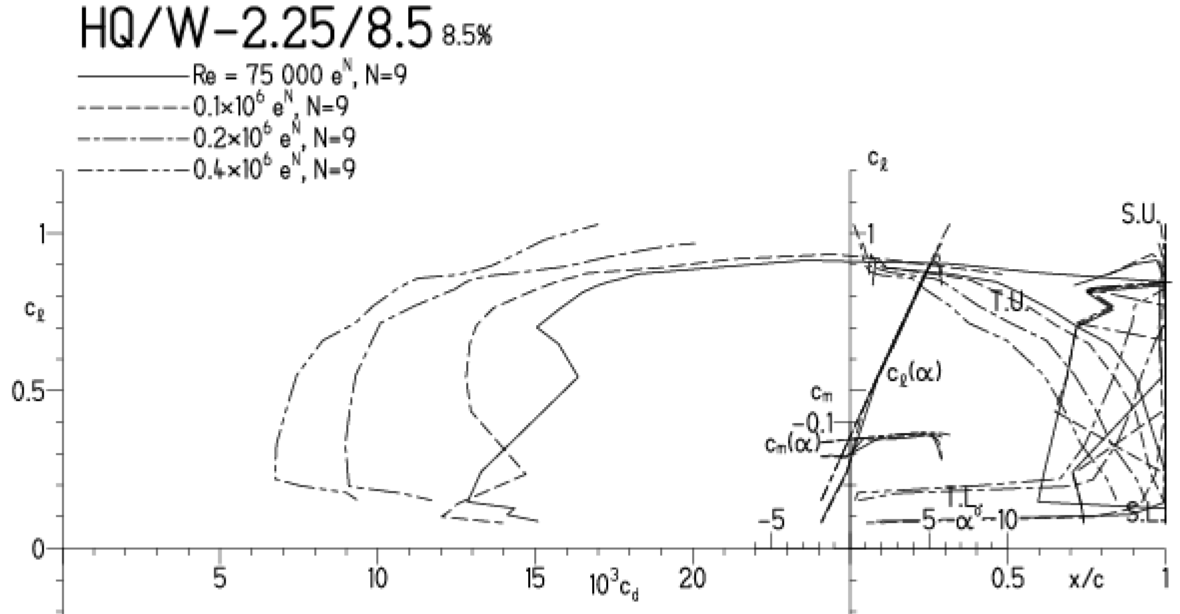


HQ/W-2,25/8,5, N=9

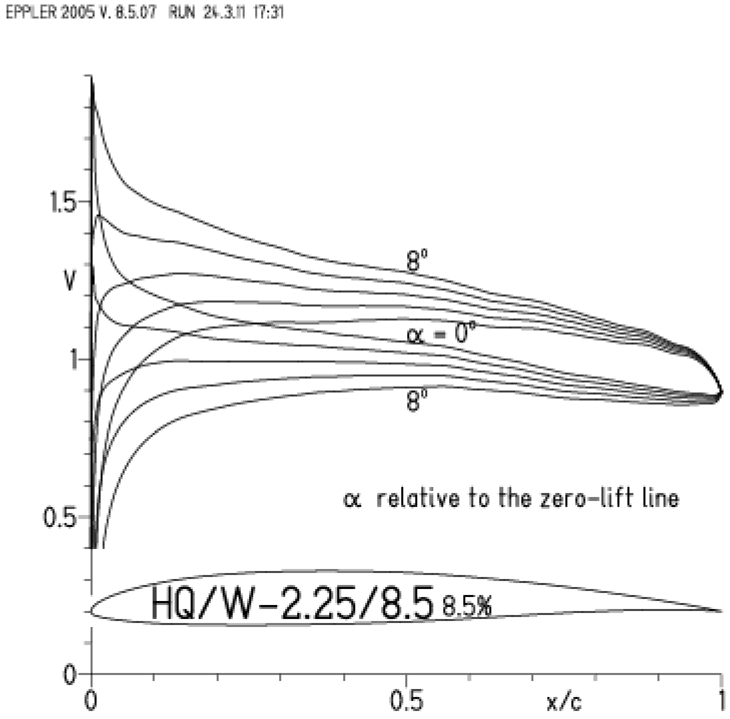
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

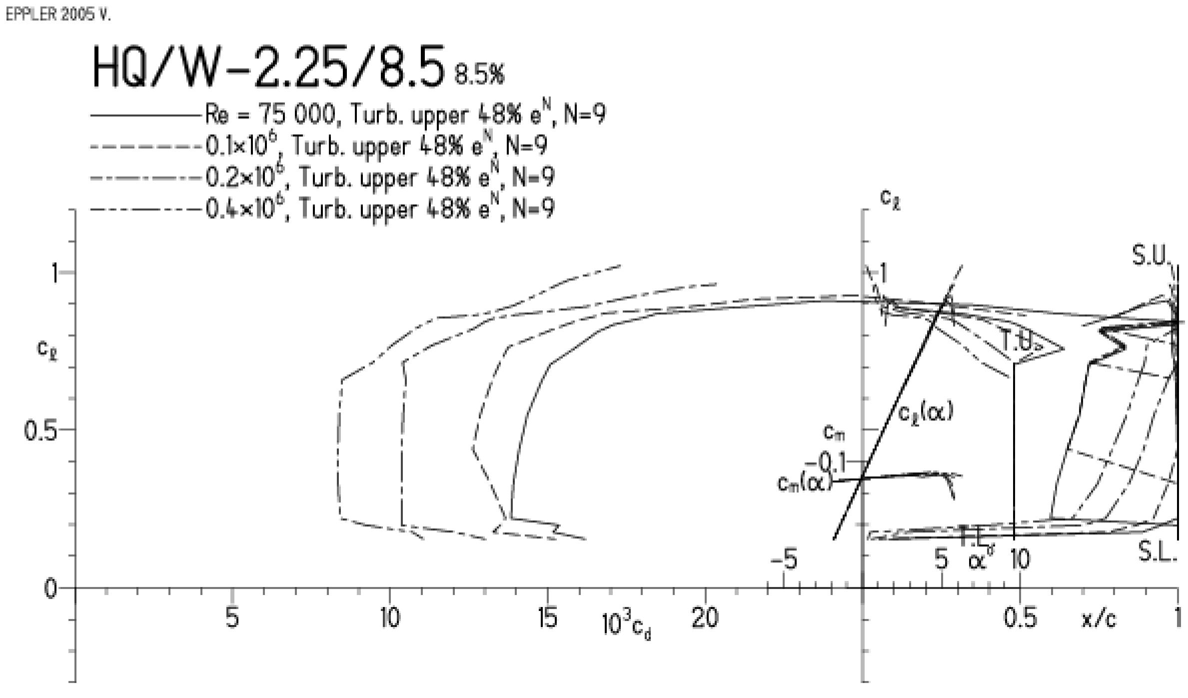


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



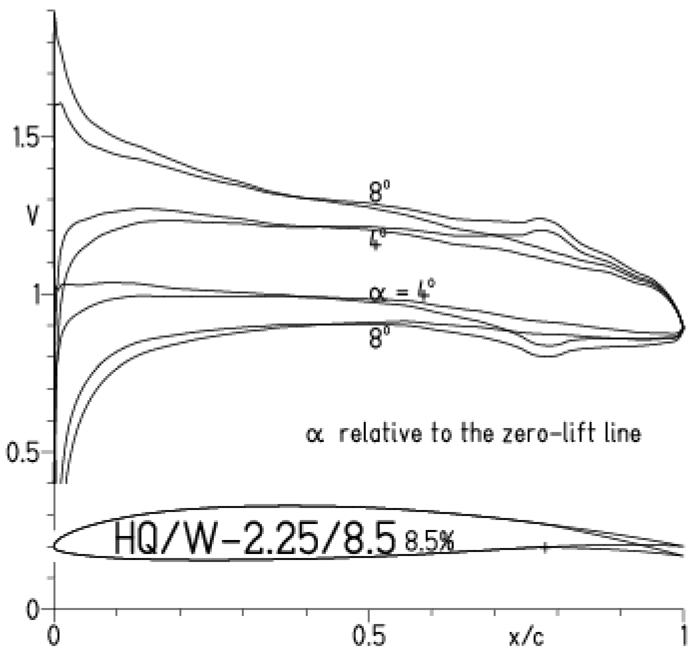
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



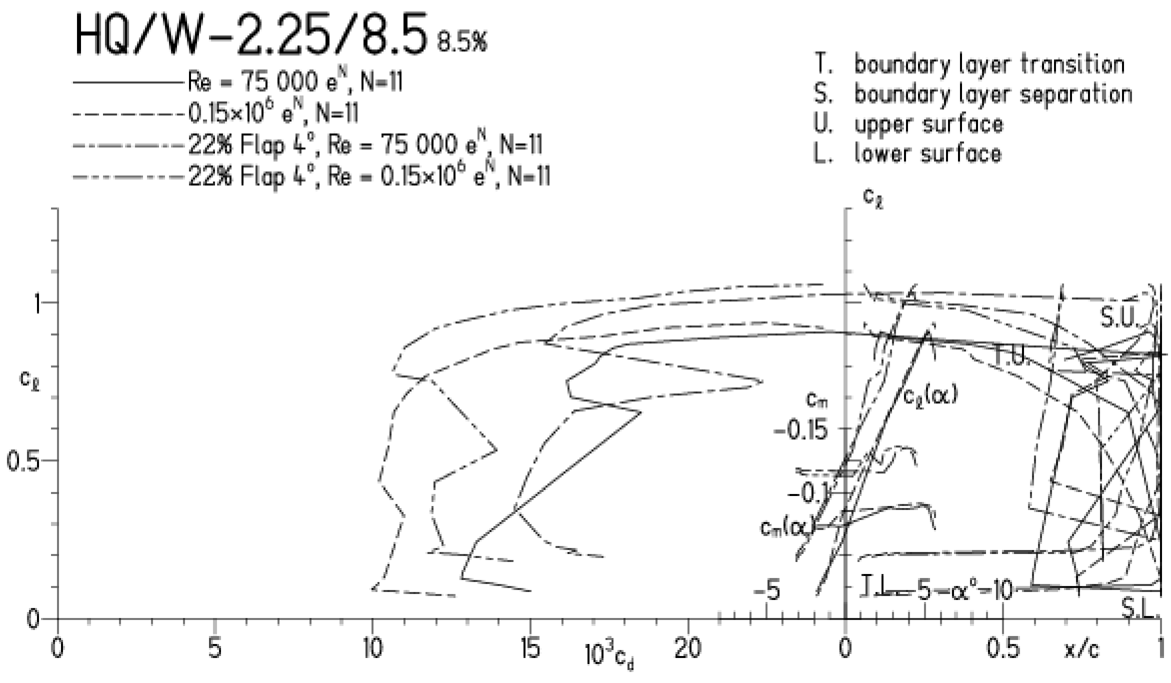


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

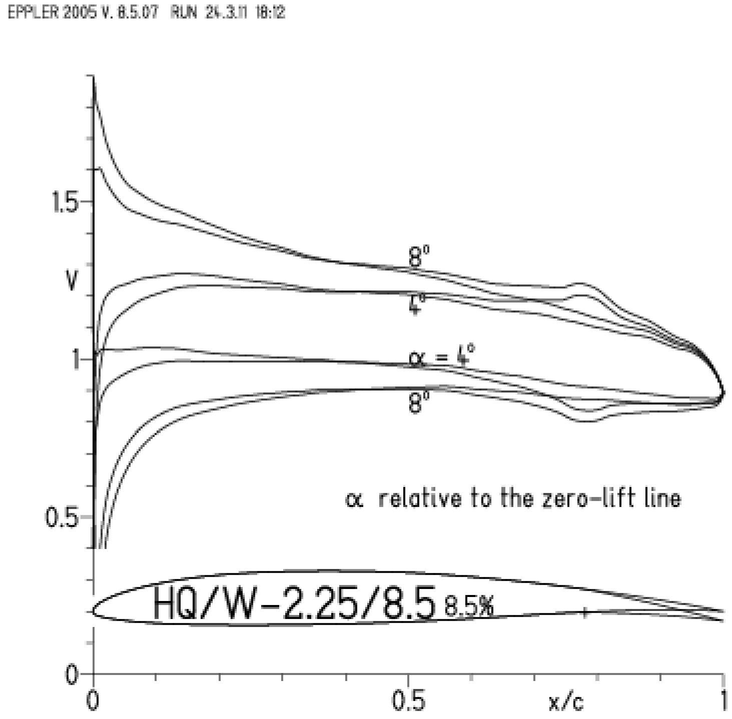
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

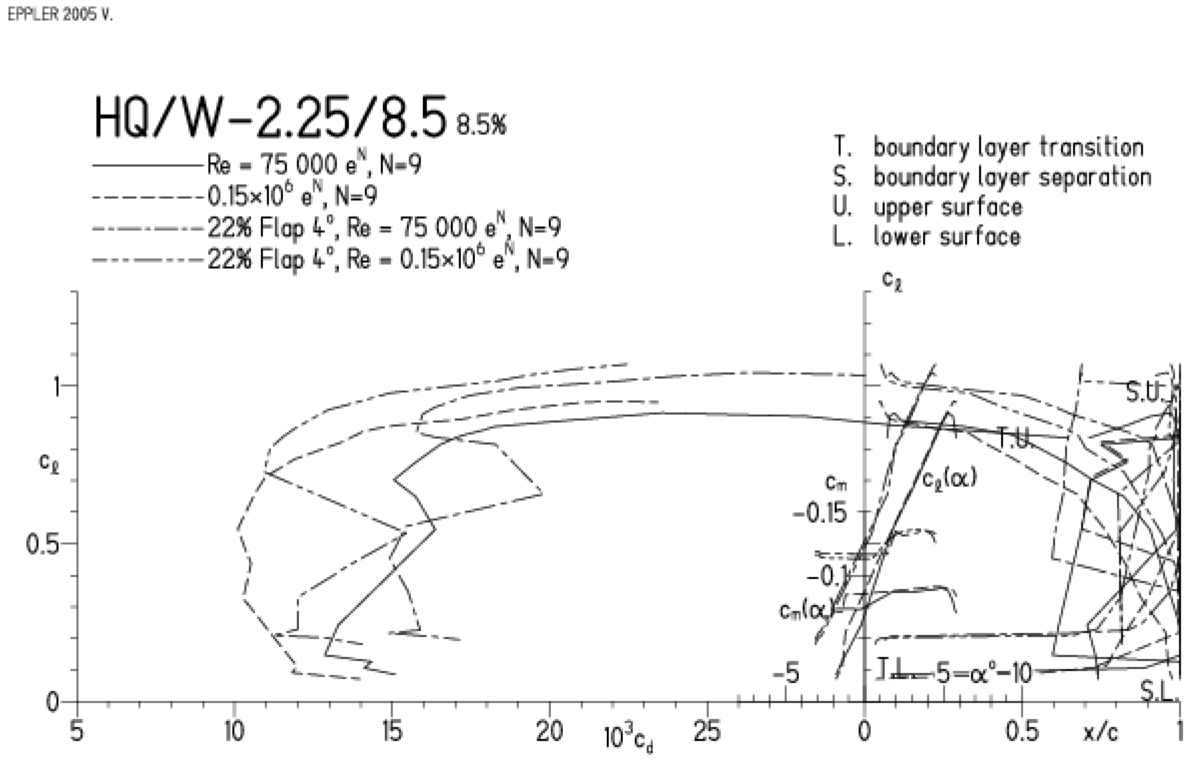


EPPLER 2005 V. 8.5.



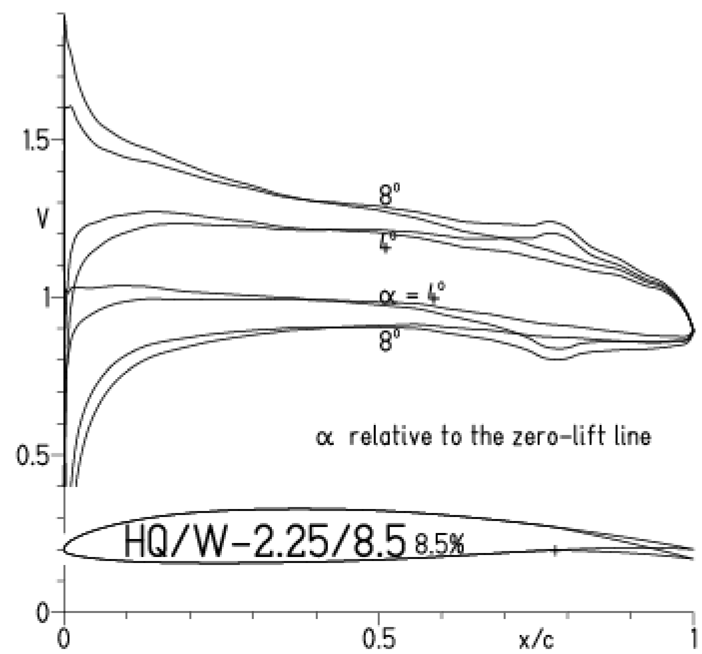
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



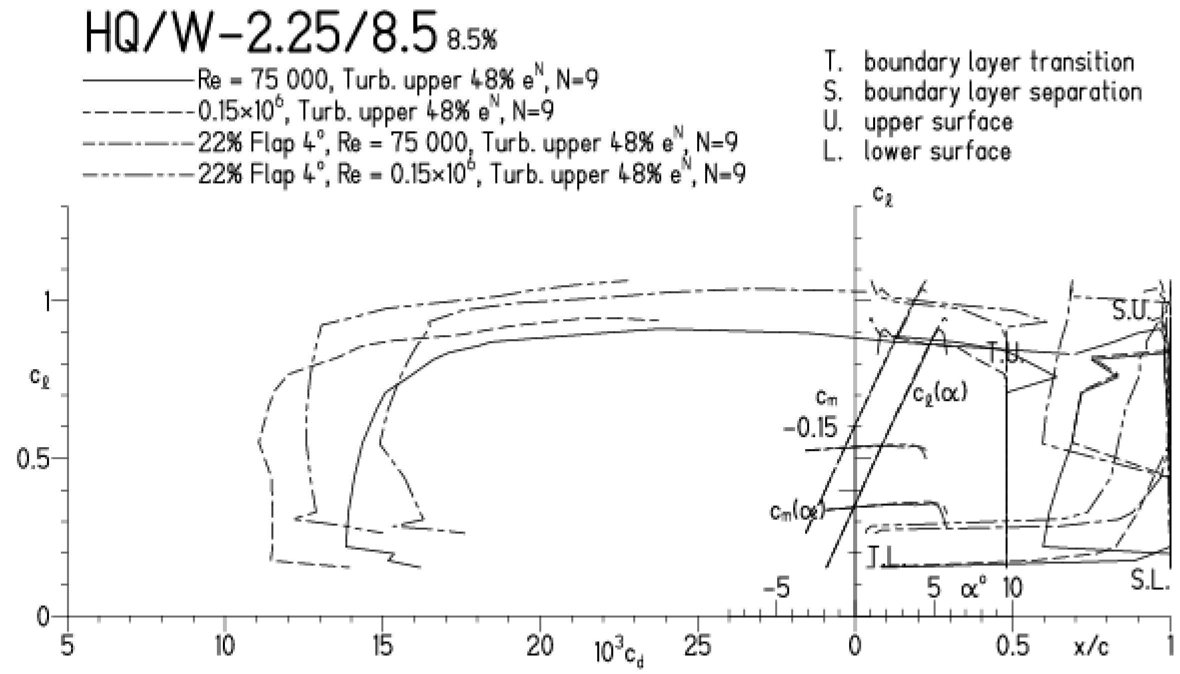


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

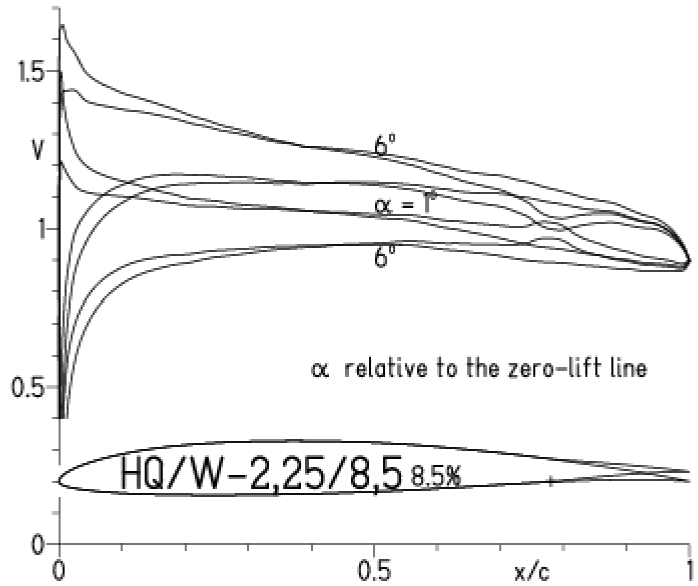


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

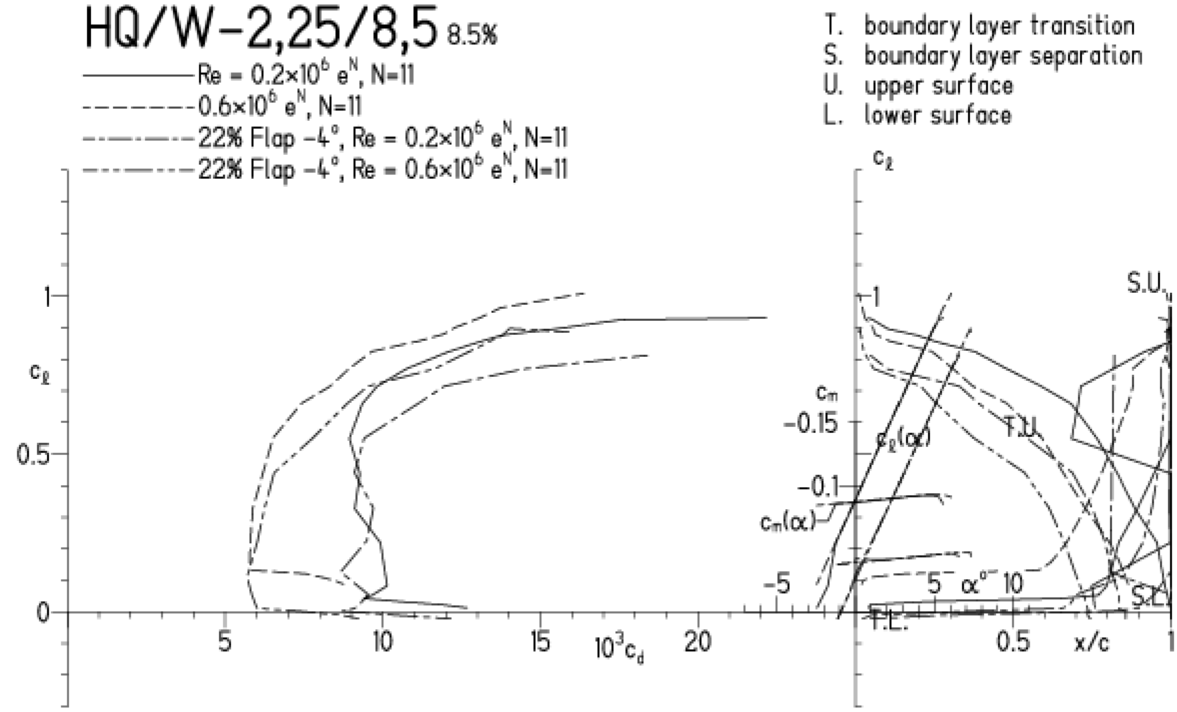


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

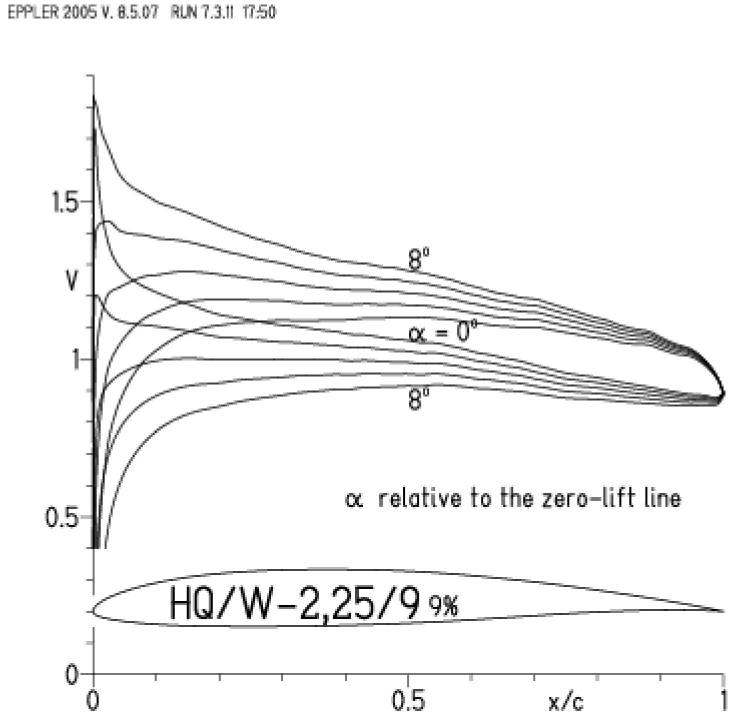
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

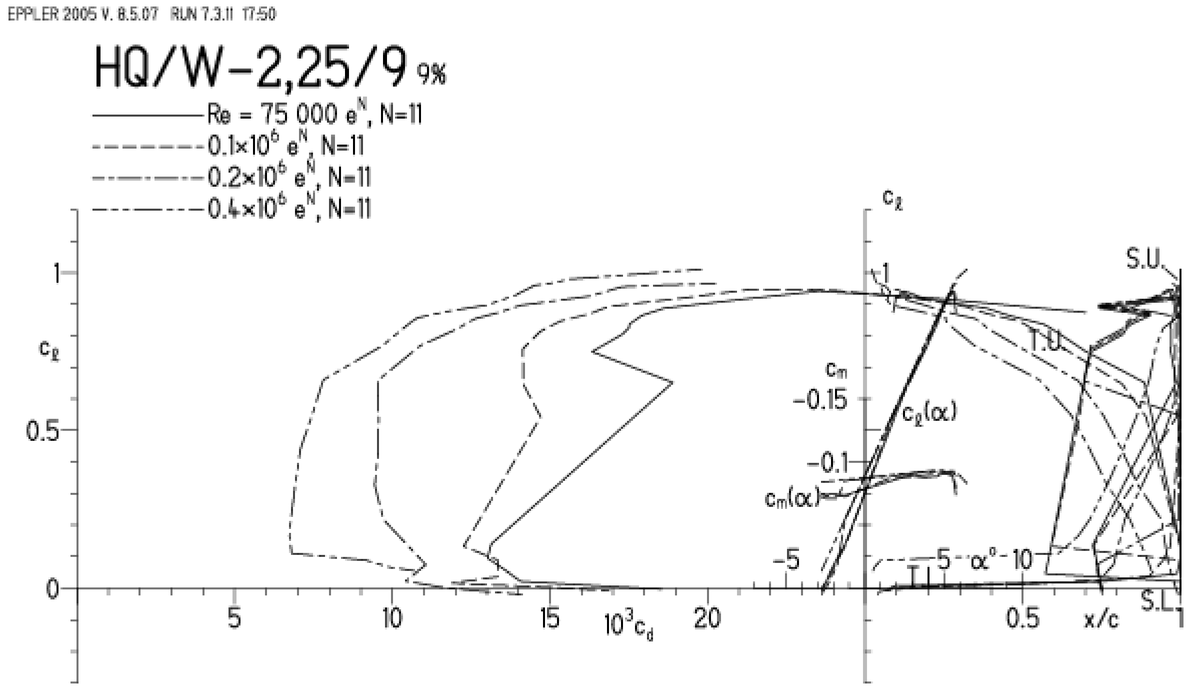


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

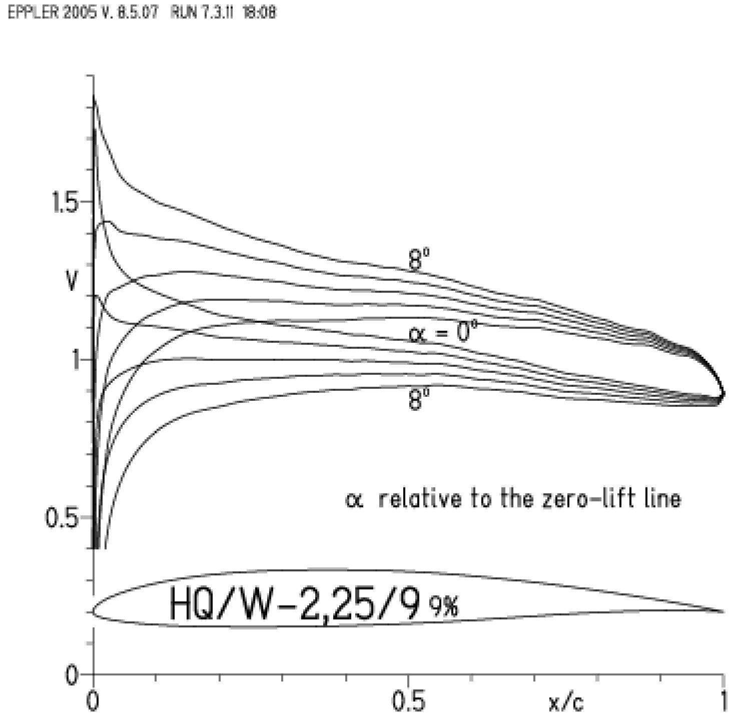


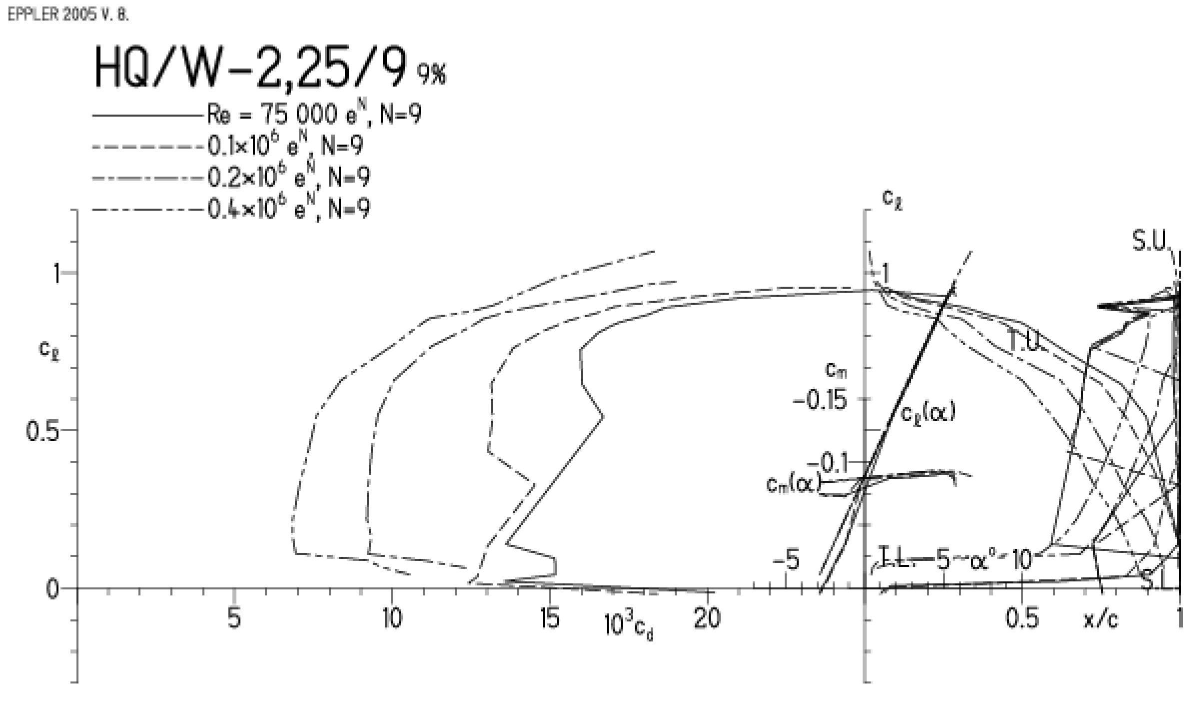
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

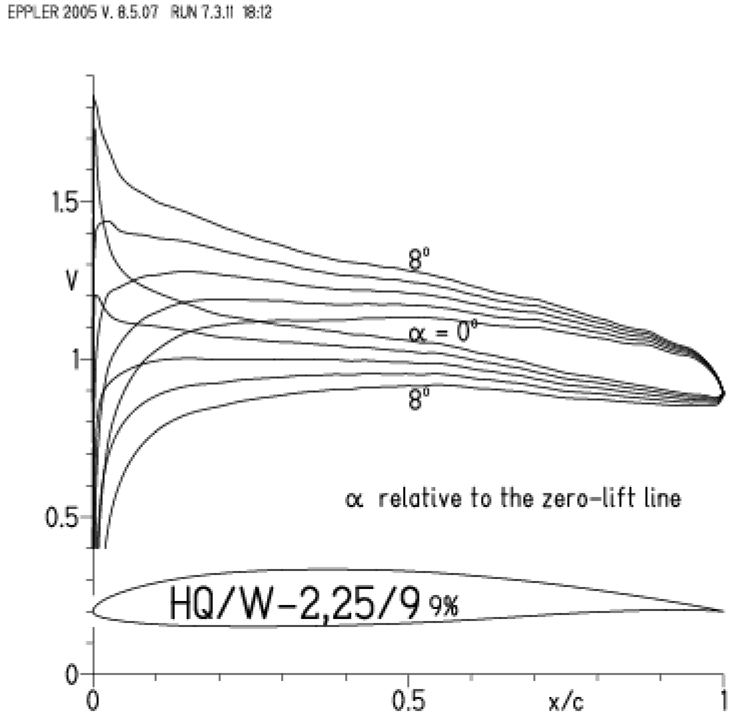

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

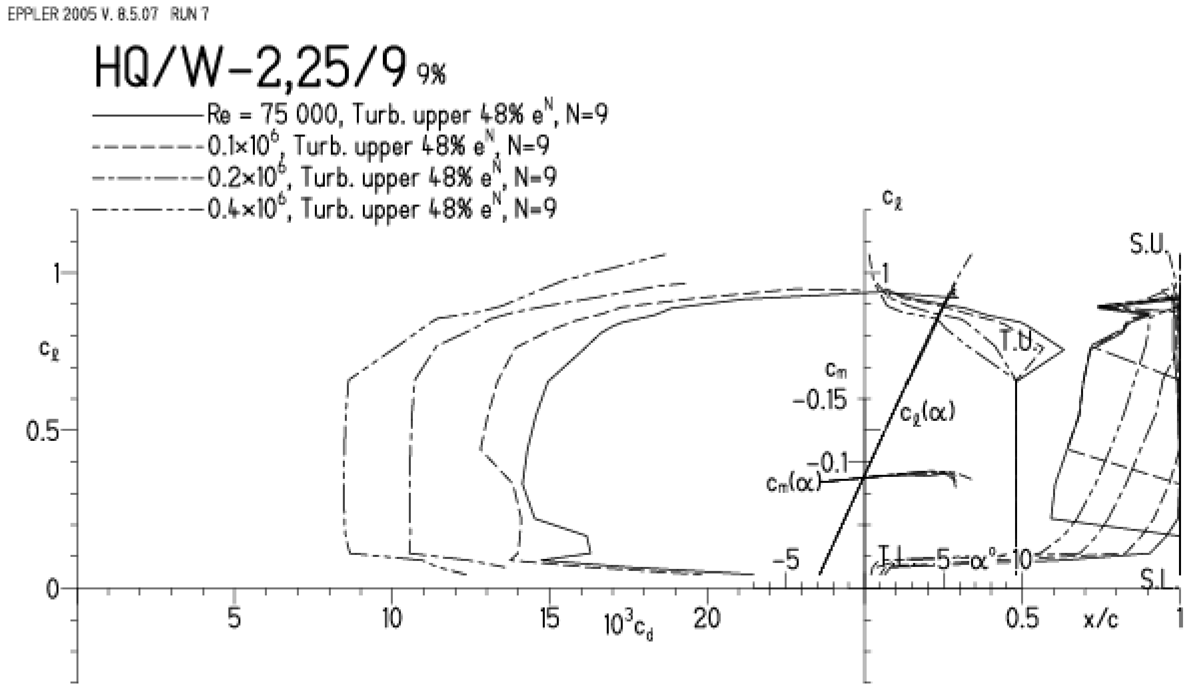
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

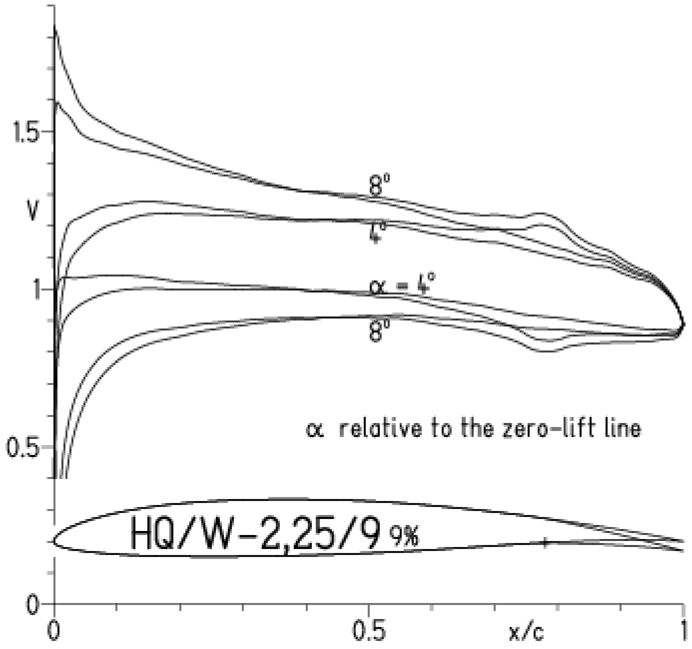
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



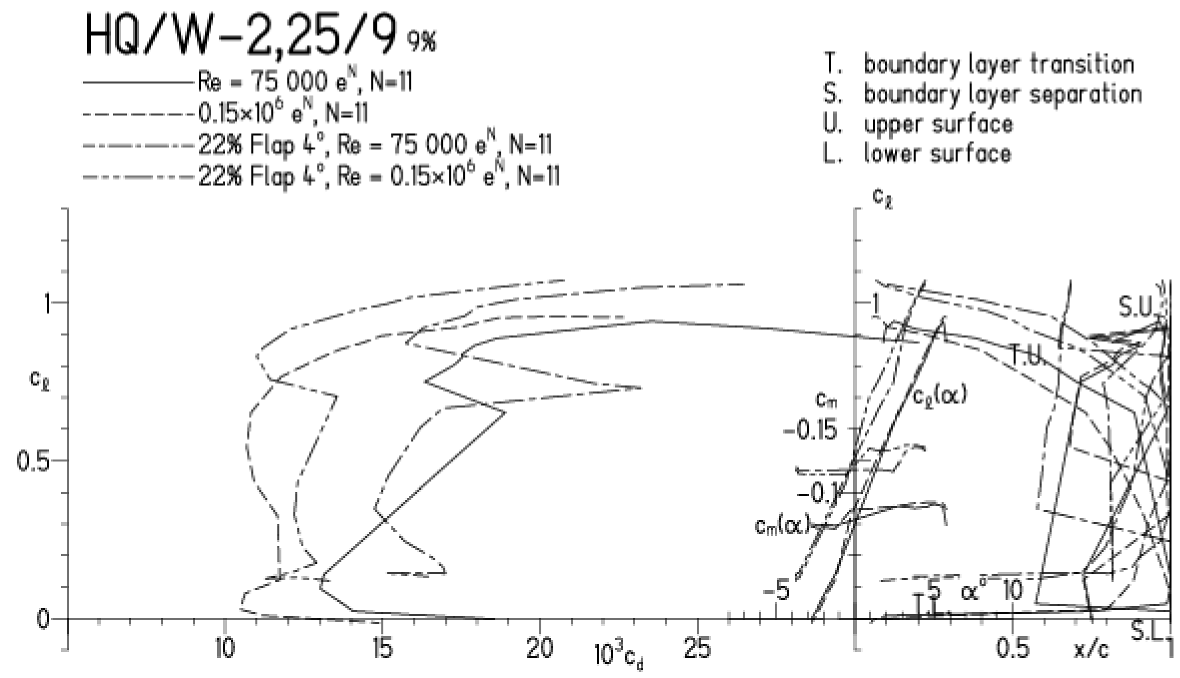


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

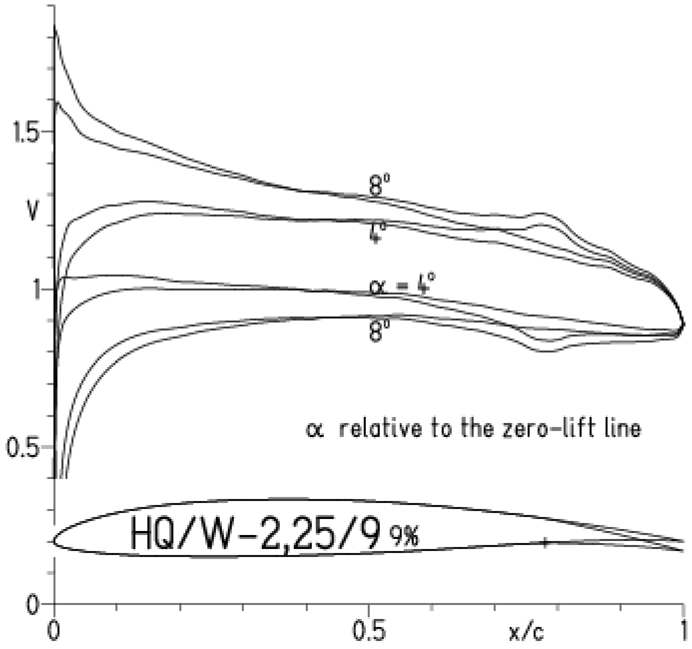


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

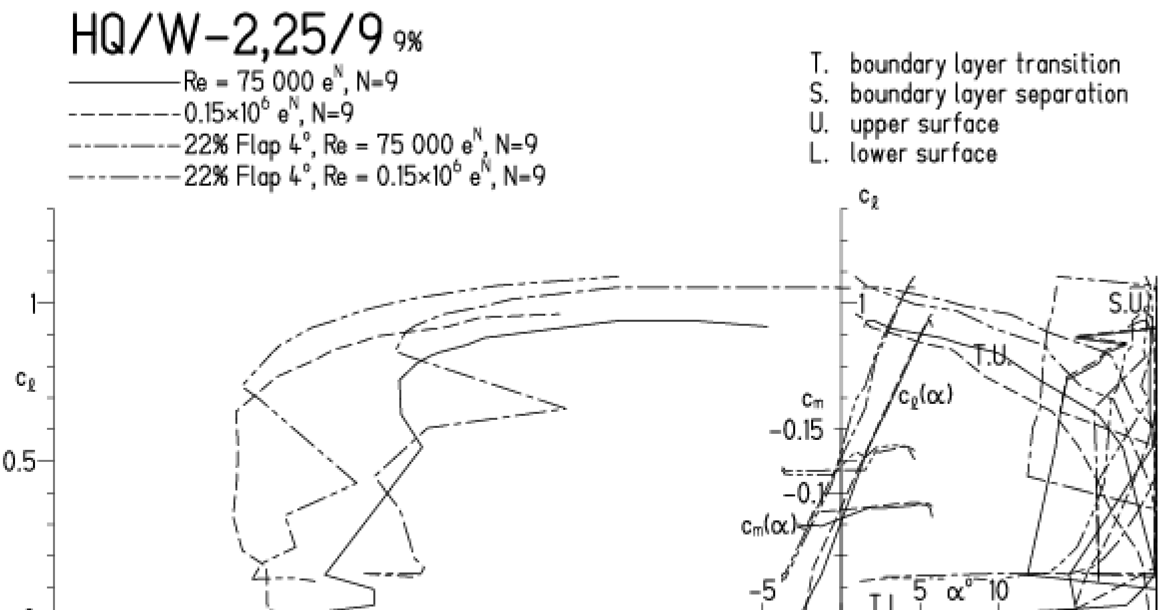


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

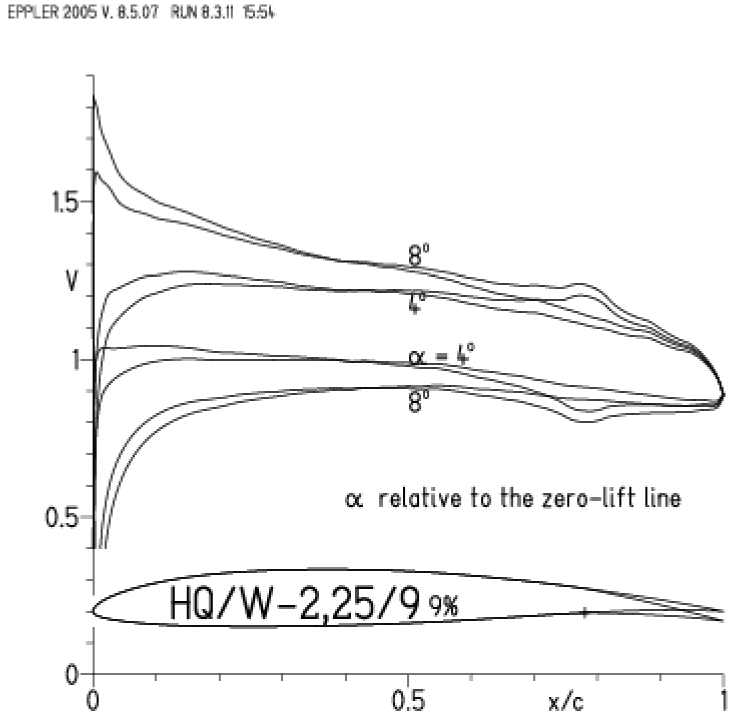
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

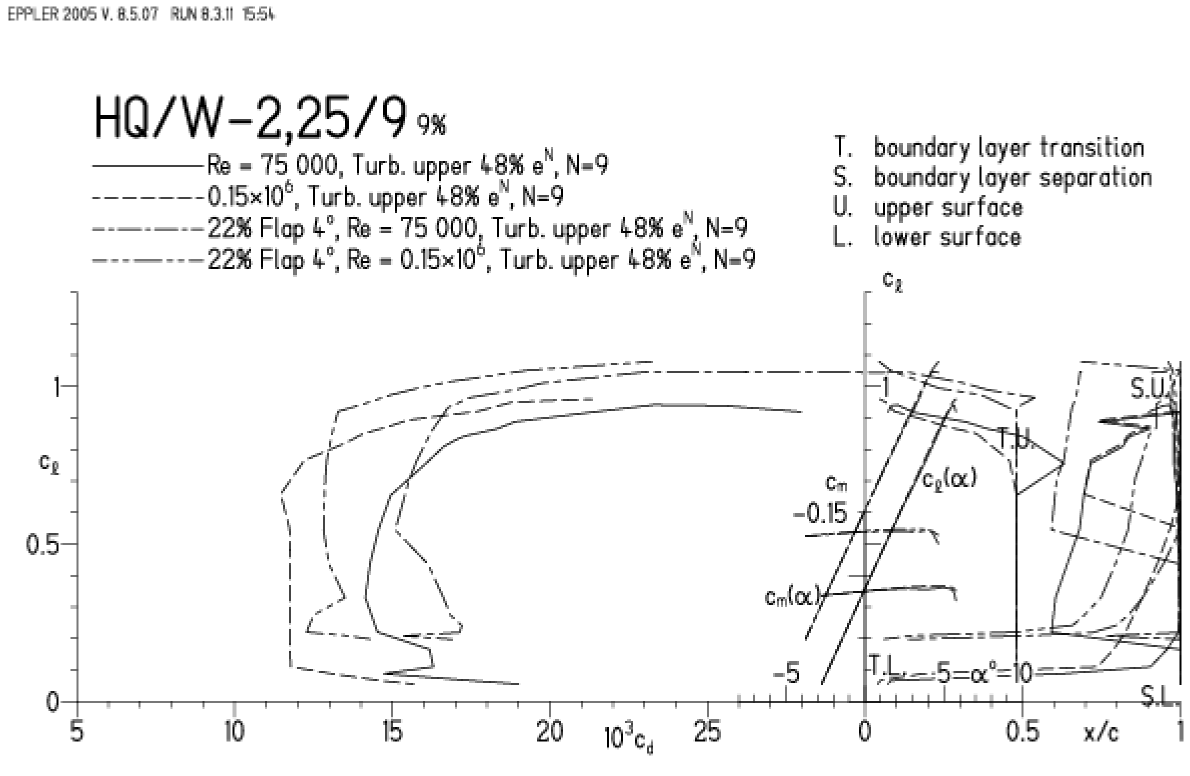


EPPLER 2005 V. 8.5.07 RUN 8.3.1

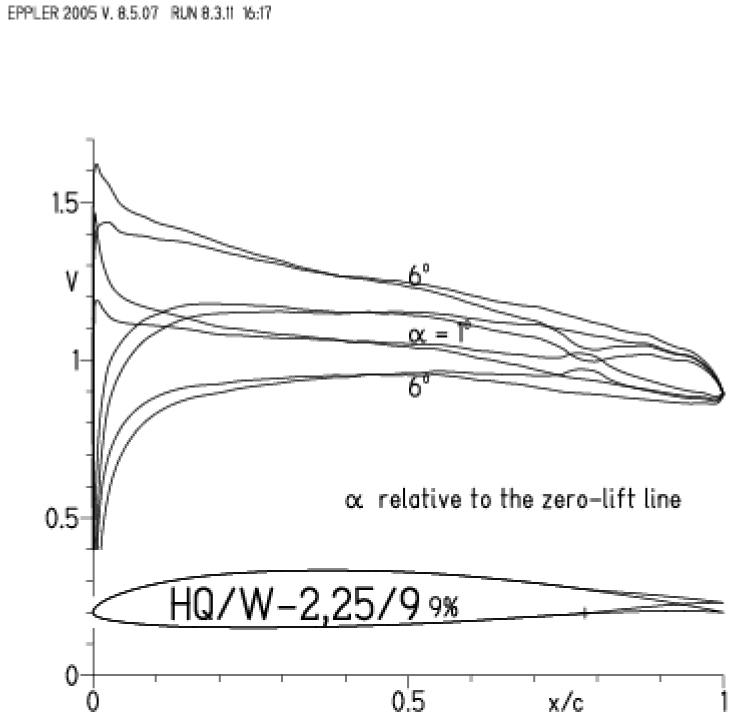


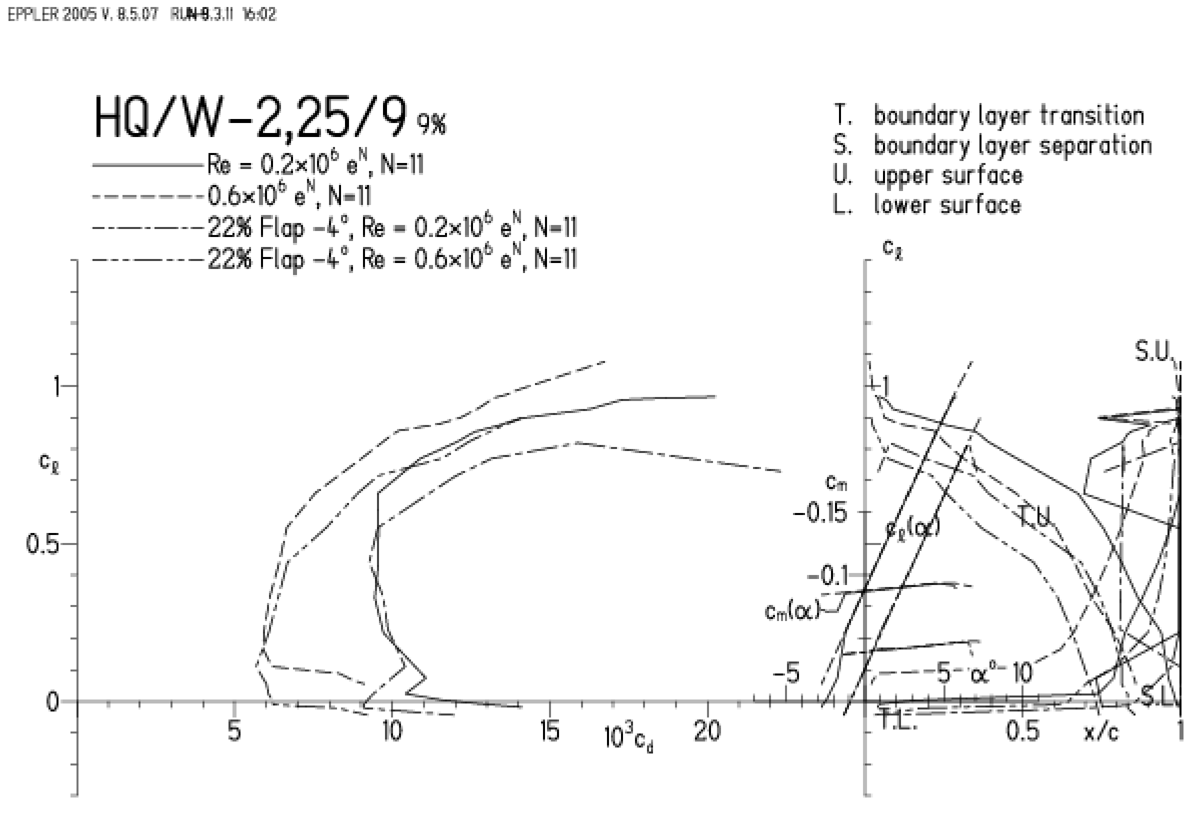
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





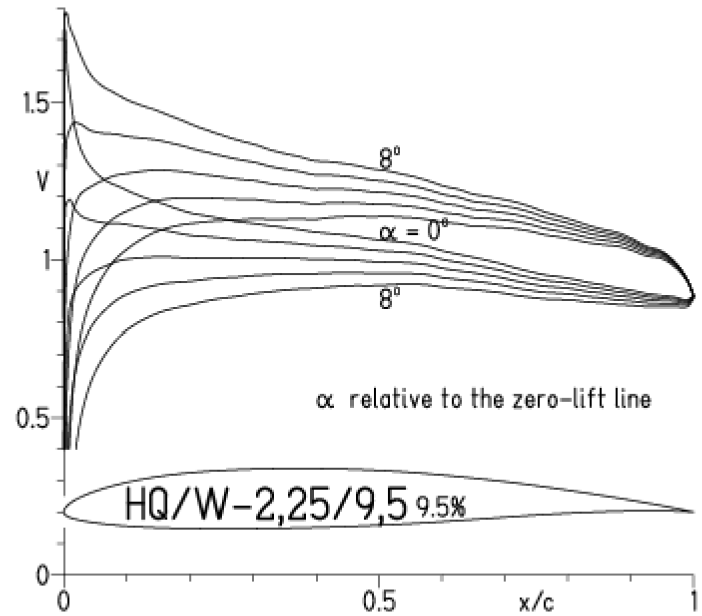
HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



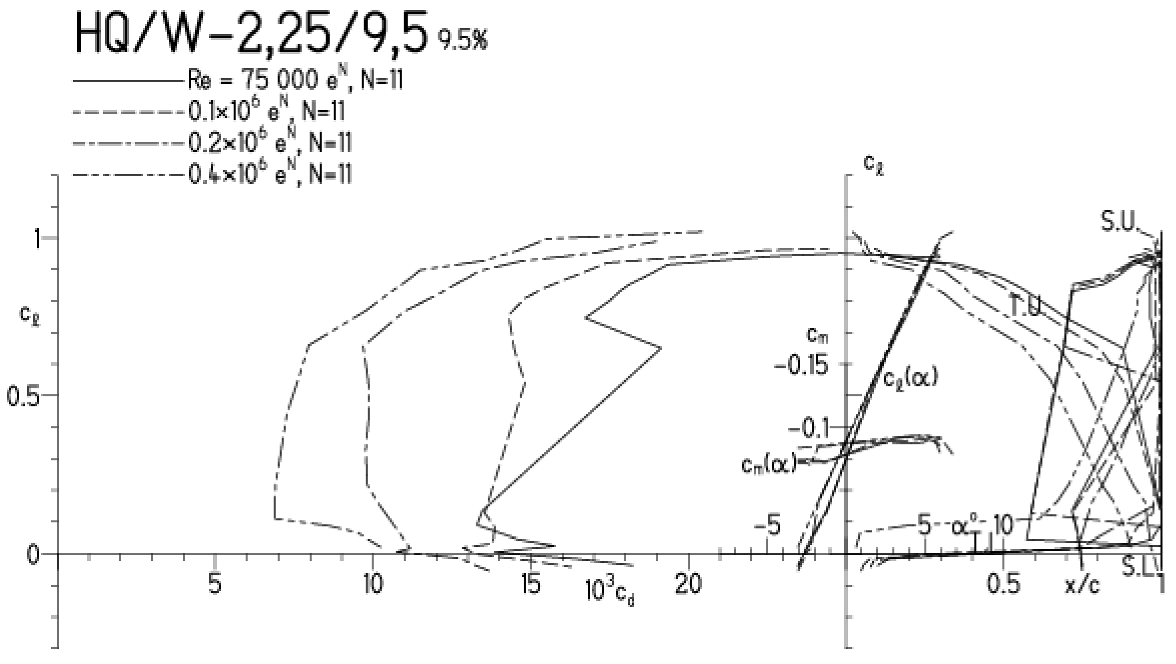


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

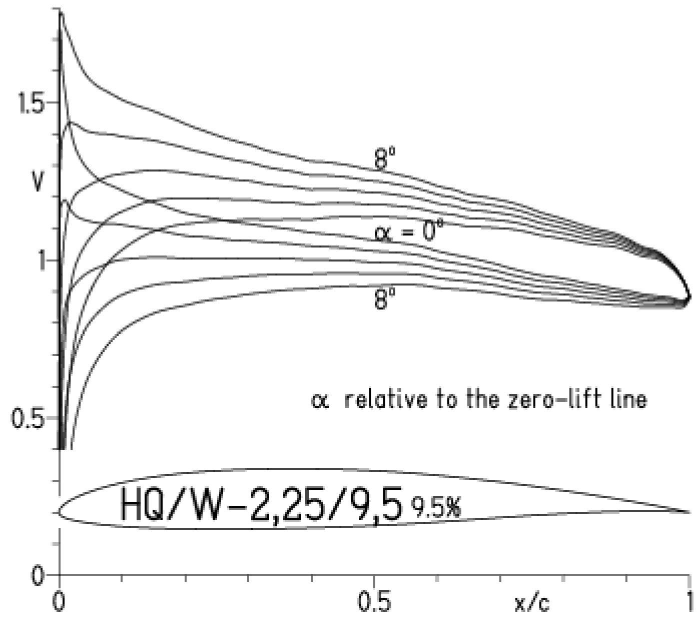


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

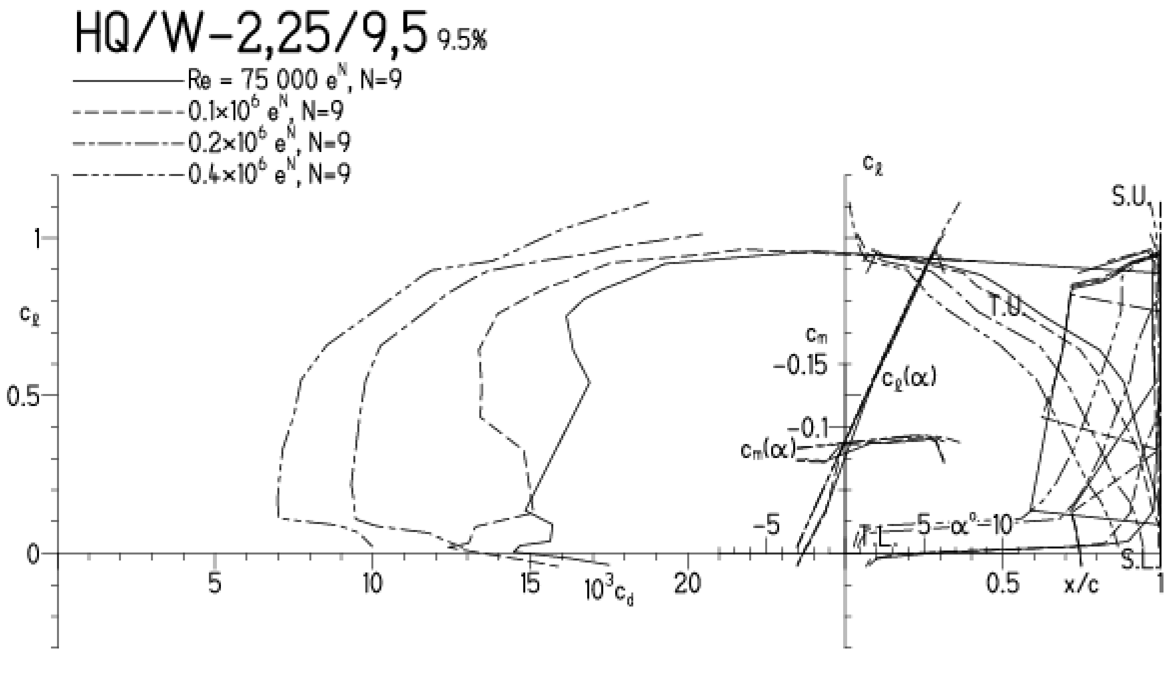


<u>HQ/W-2,25/9,5</u>, N=9

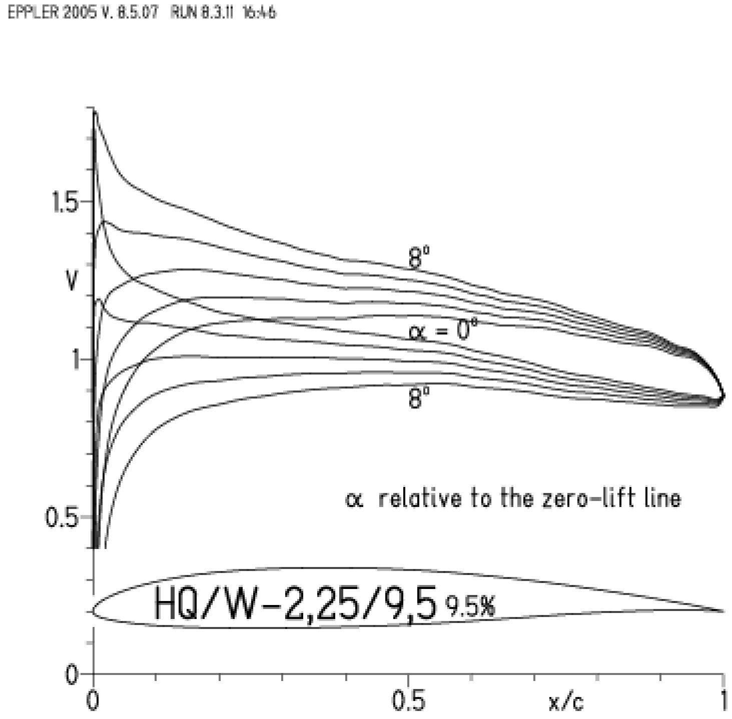
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

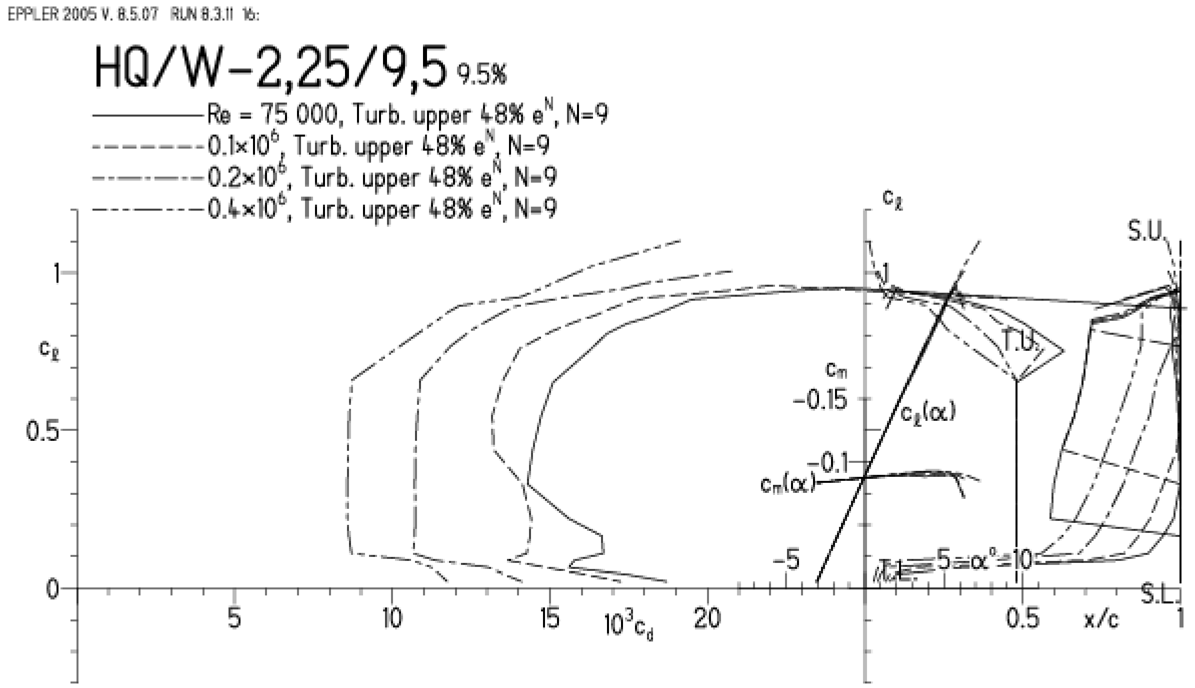


EPPLER 2005 V. 8.5.07 RUN 8.3.



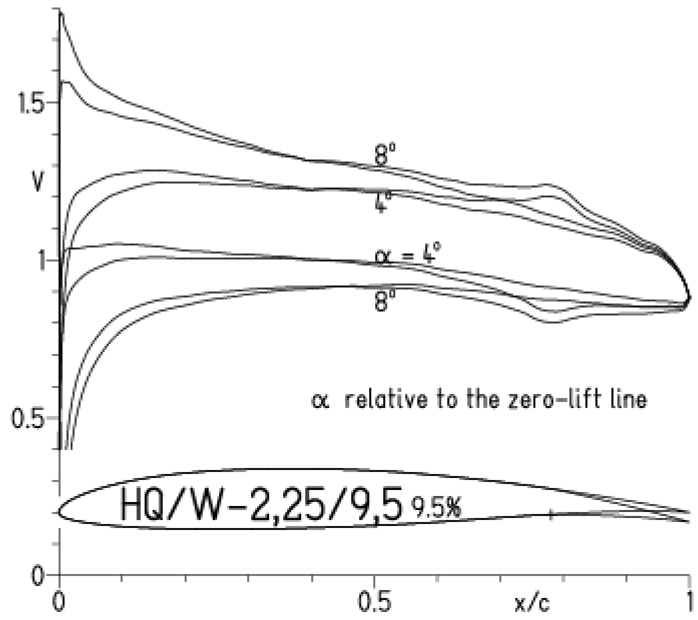
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



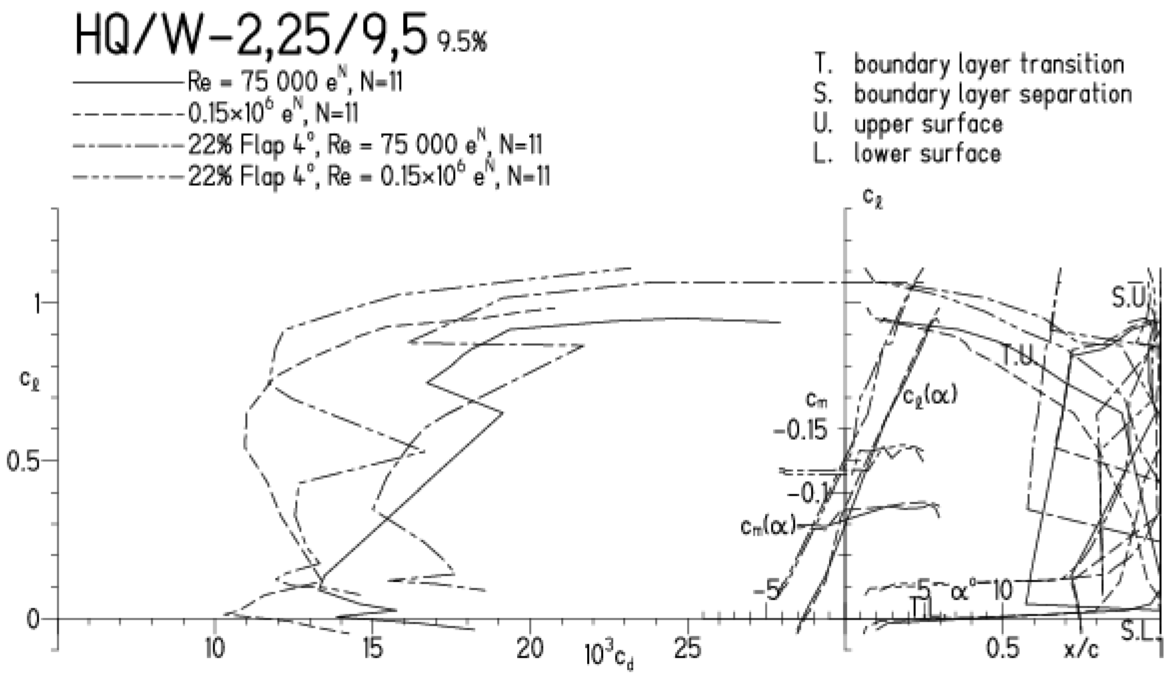


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

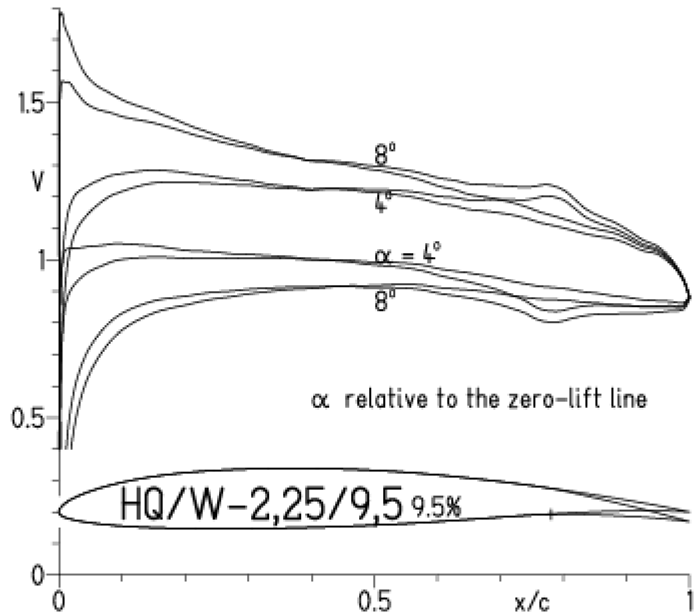


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

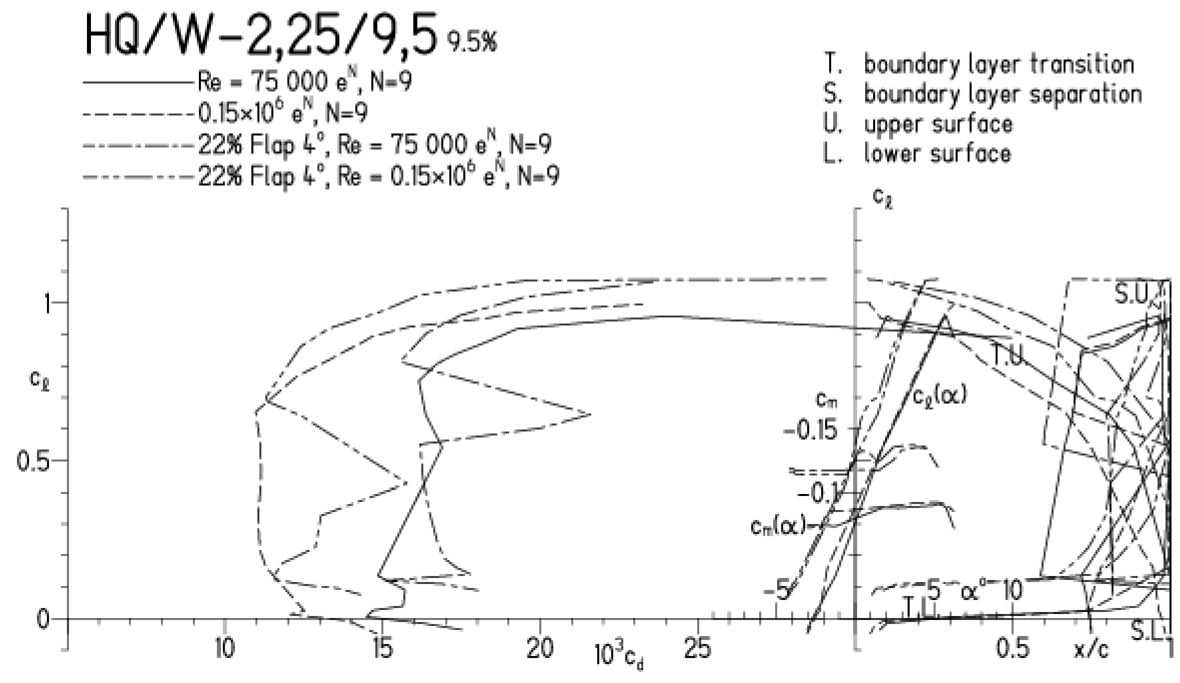


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

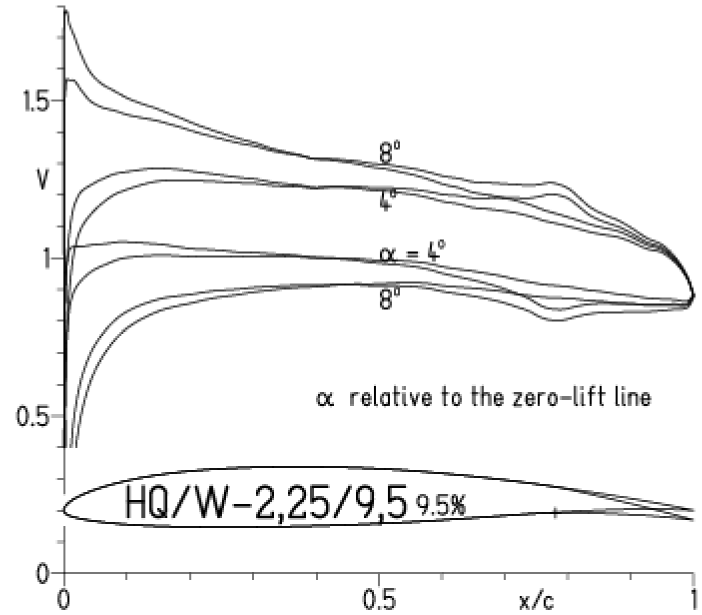


EPPLER 2005 V. 8.5.07 R

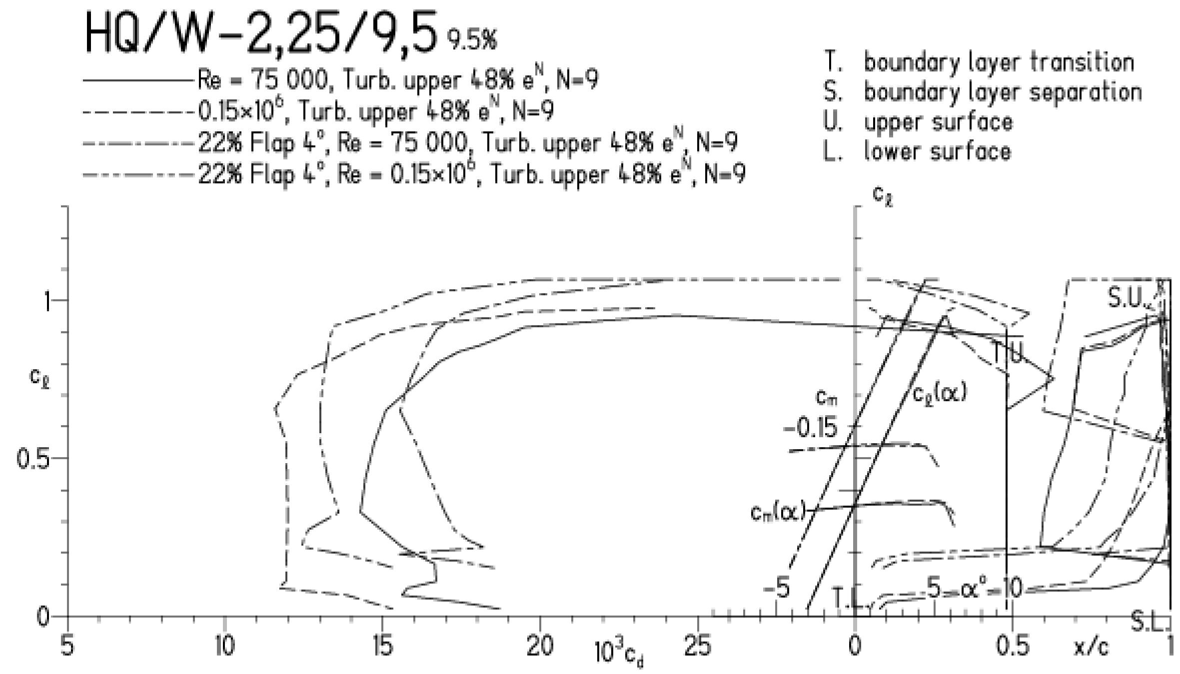


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

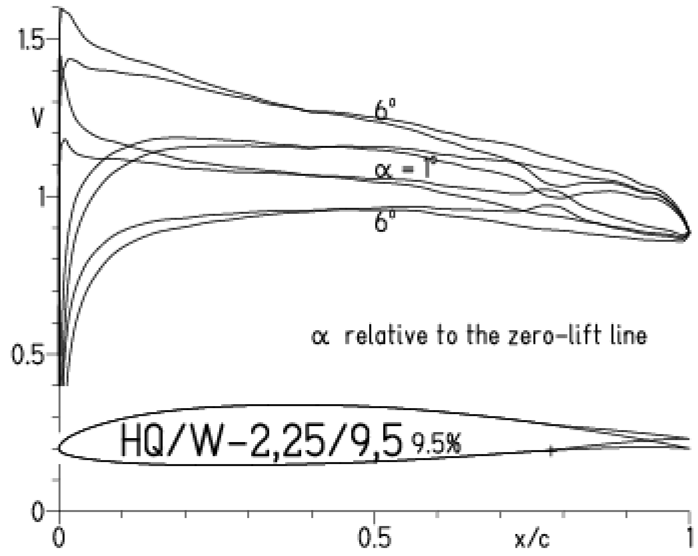


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

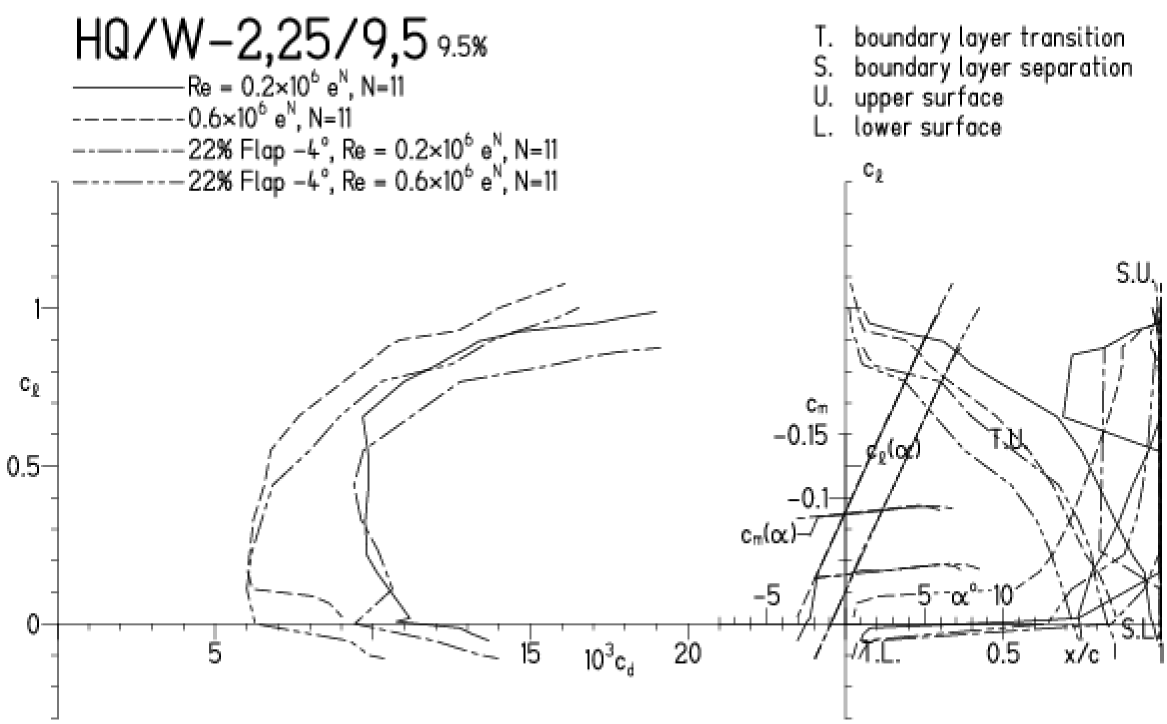


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

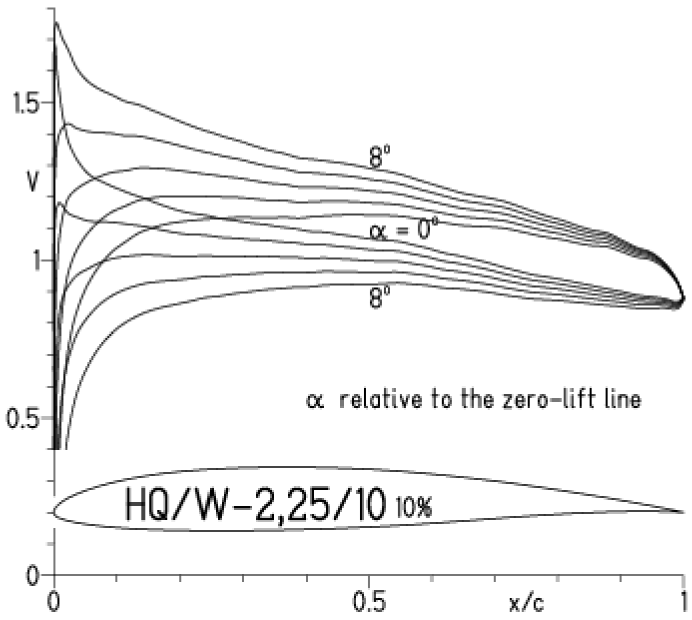


EPPLER 2005 V.

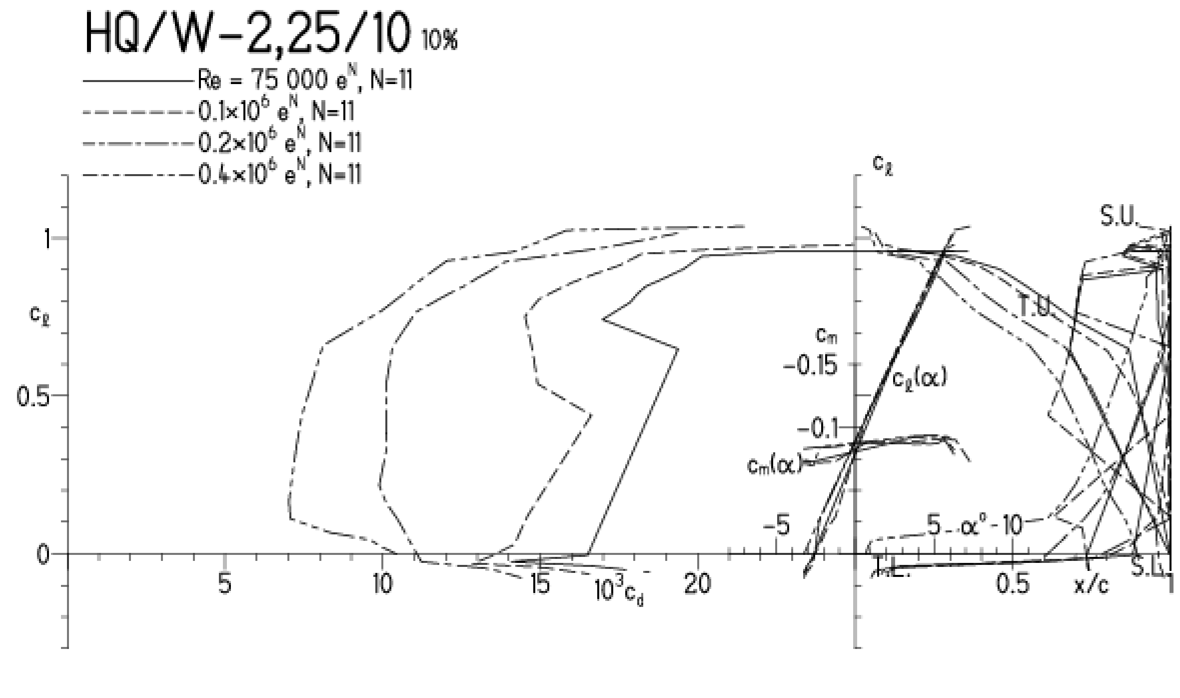


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

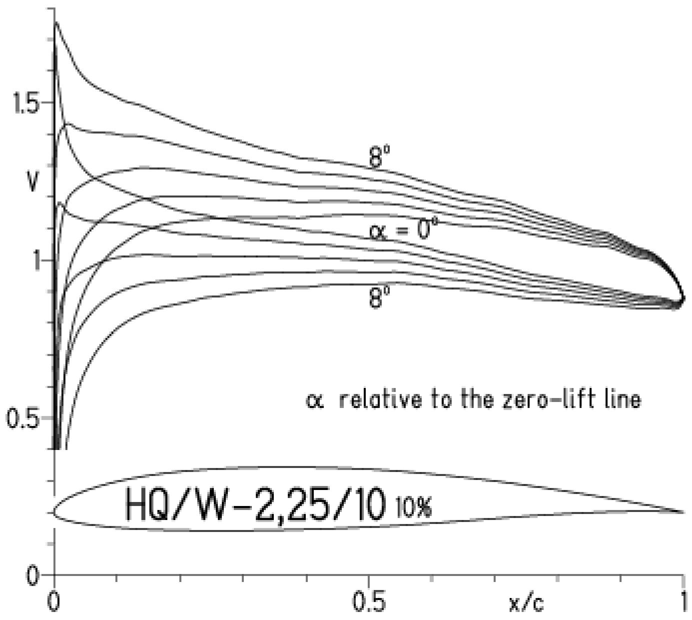


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

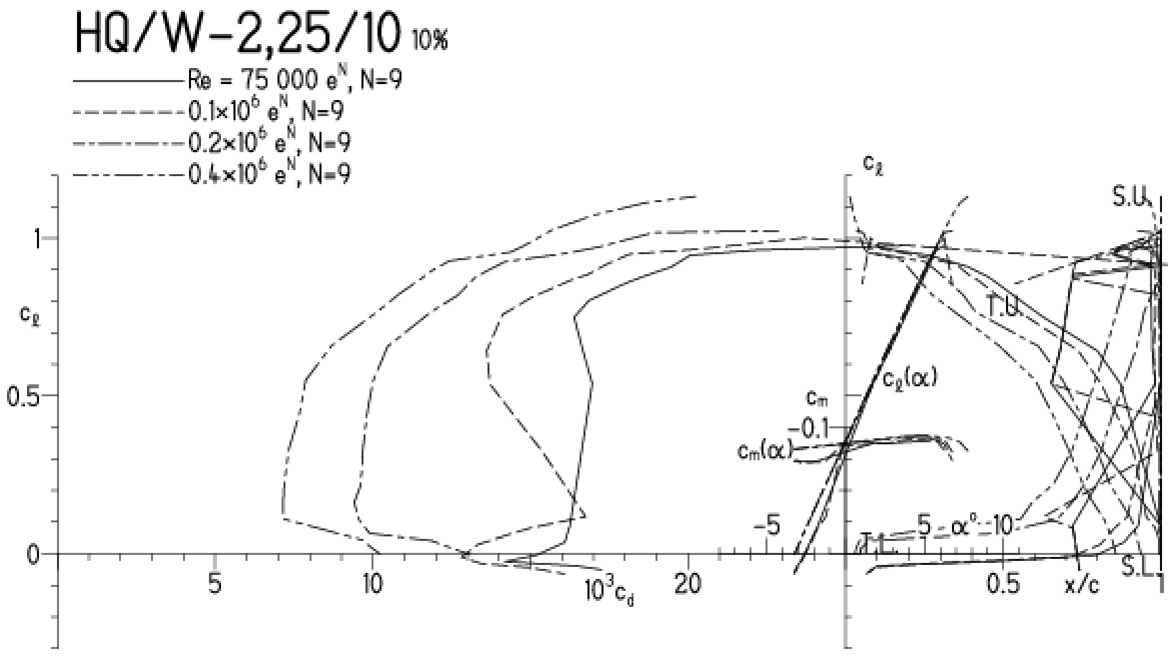


<u>HQ/W-2,25/10</u>, N=9

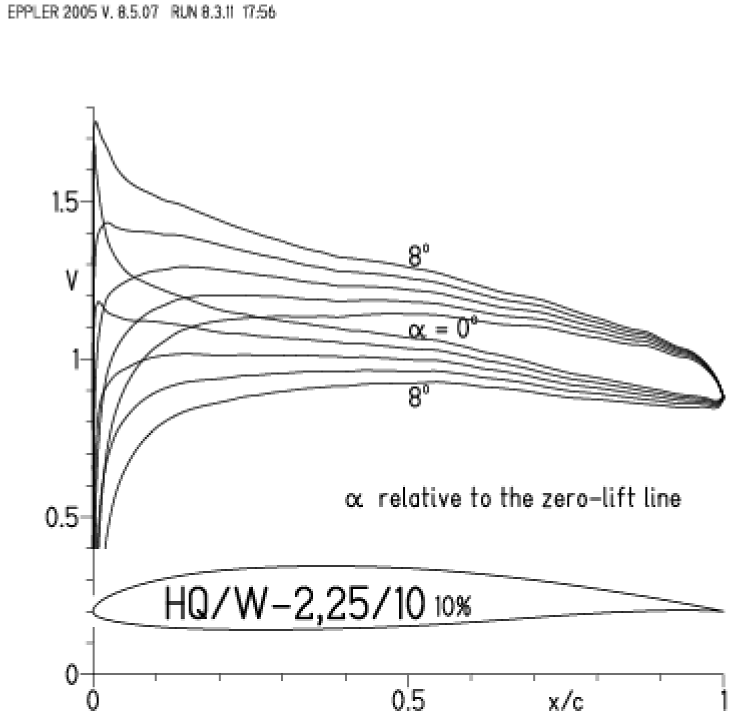
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

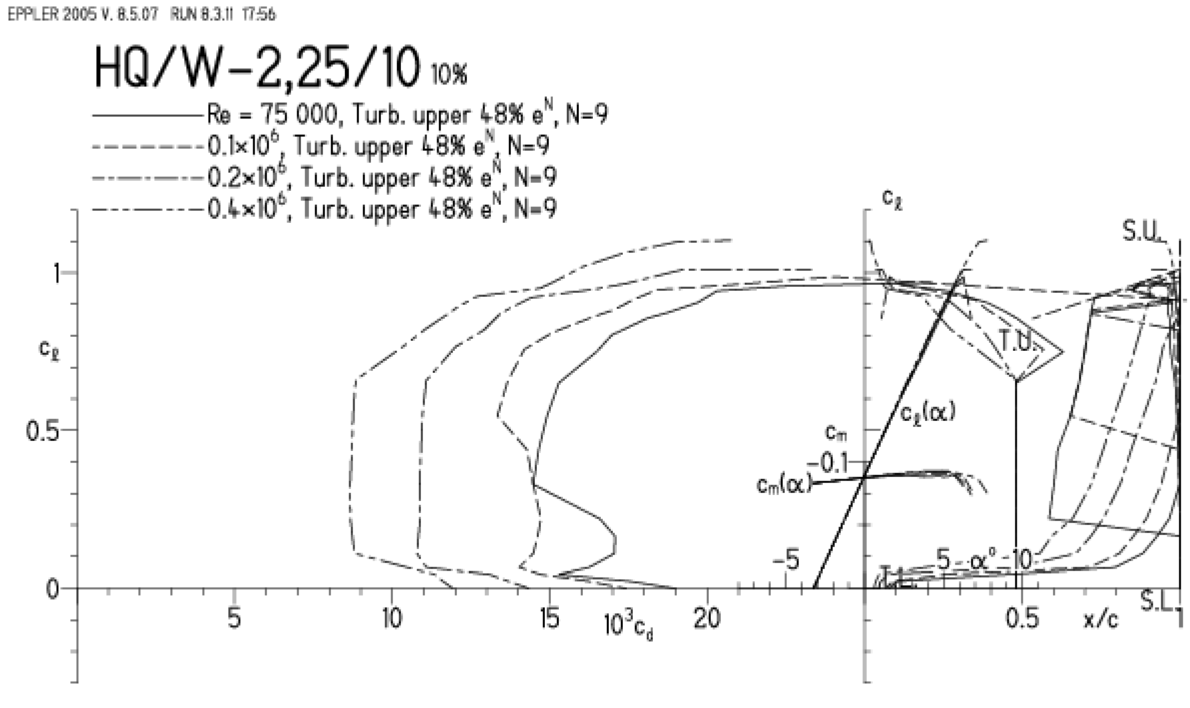


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



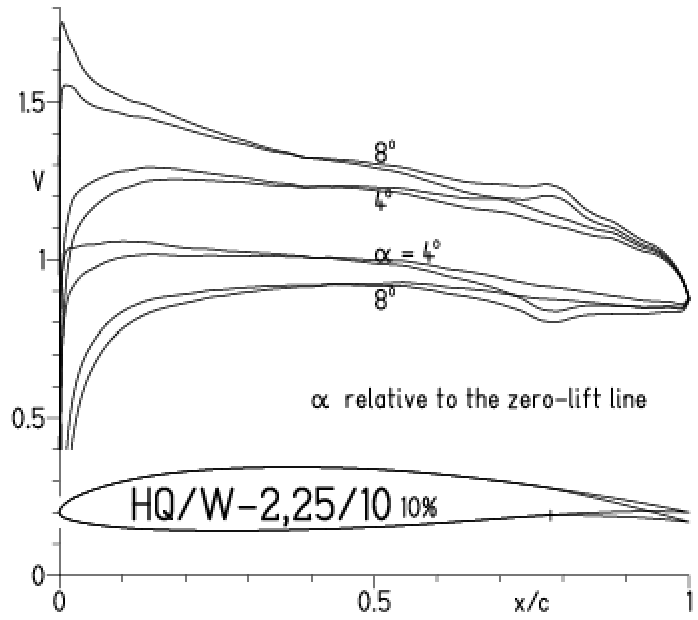
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



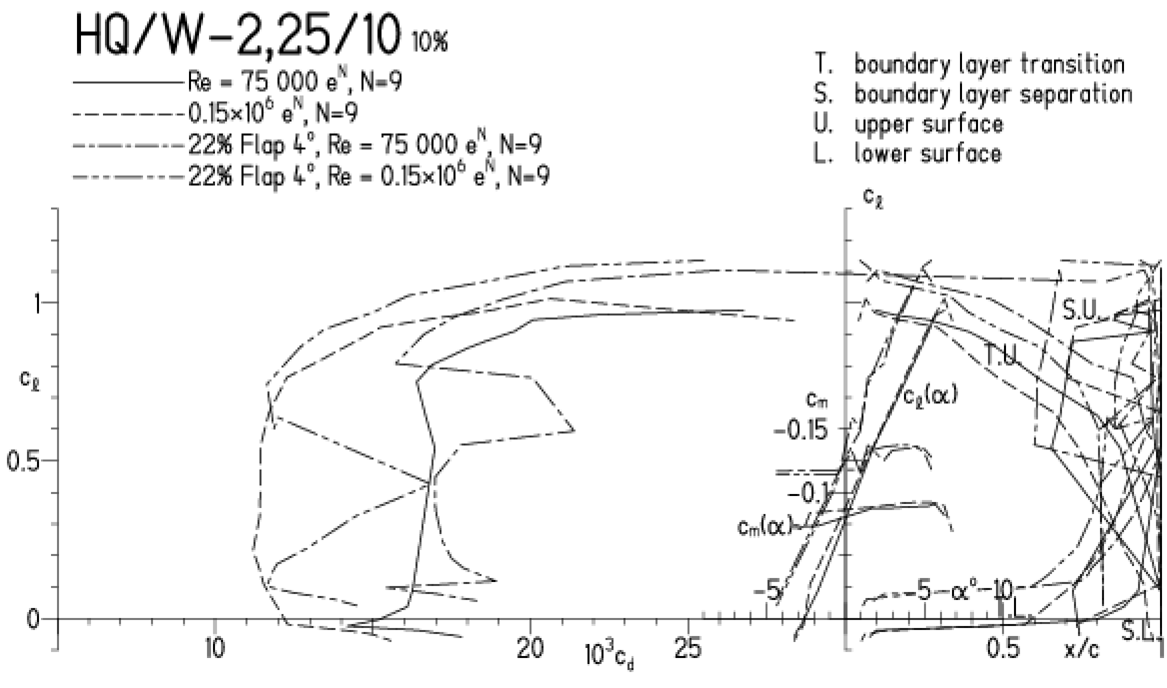


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

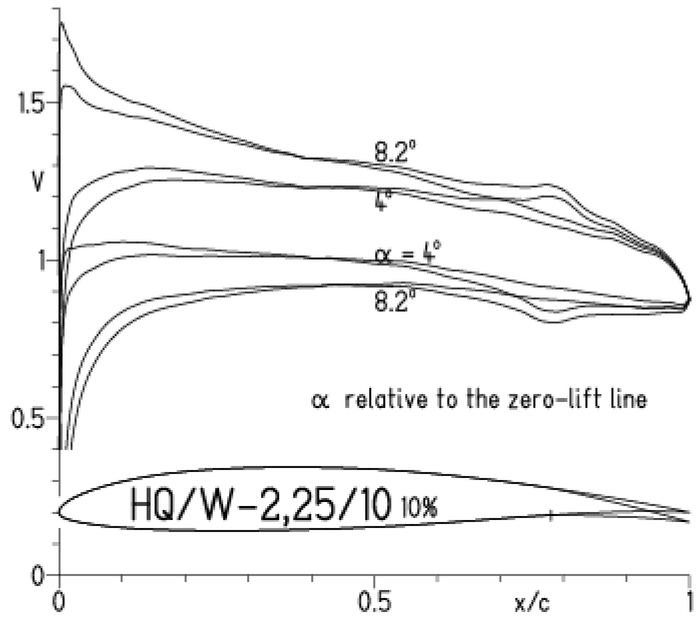


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

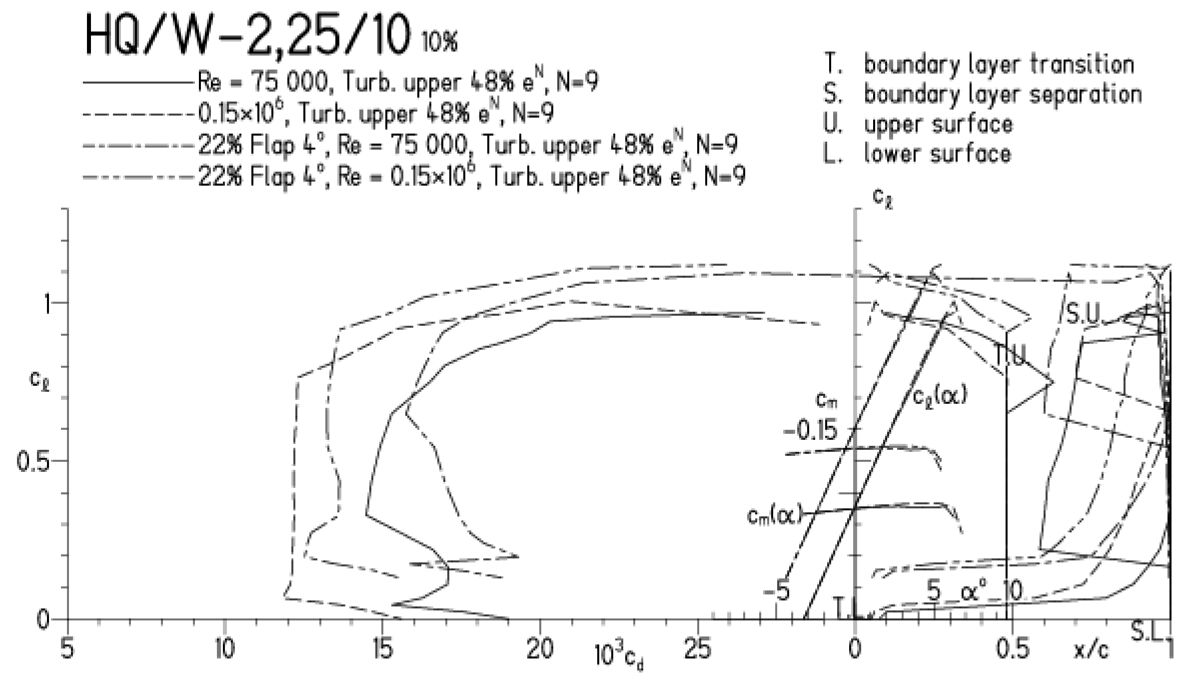


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

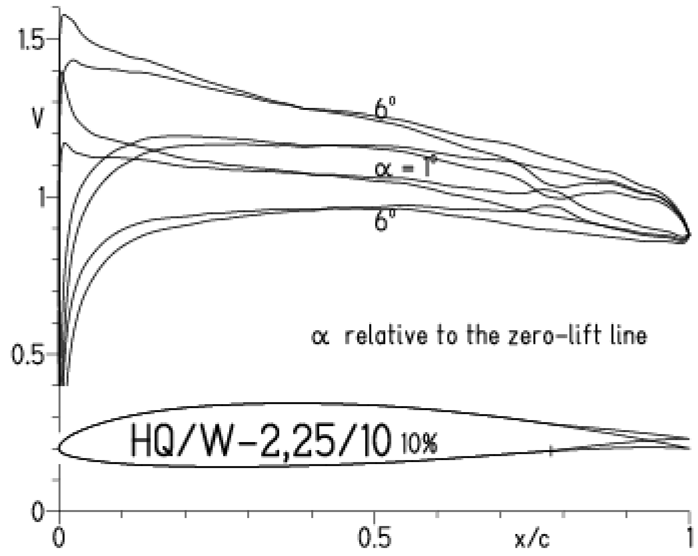


EPPLER 2005 V. 8.5.07 RUN 8.3

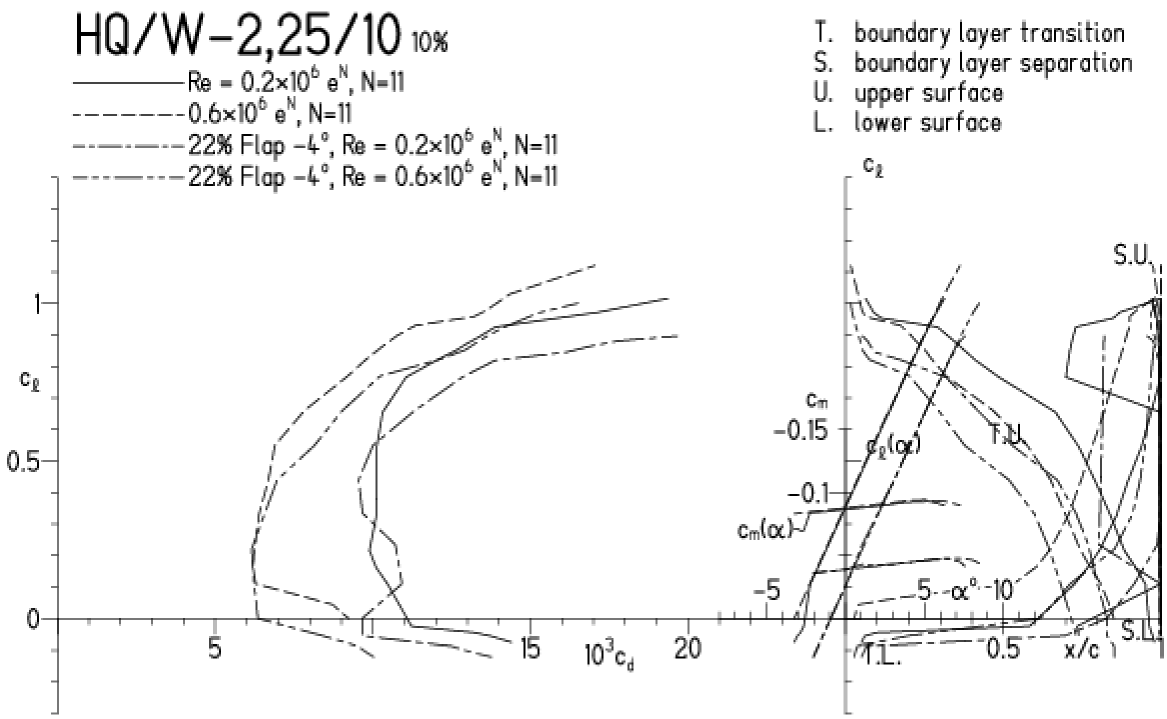


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

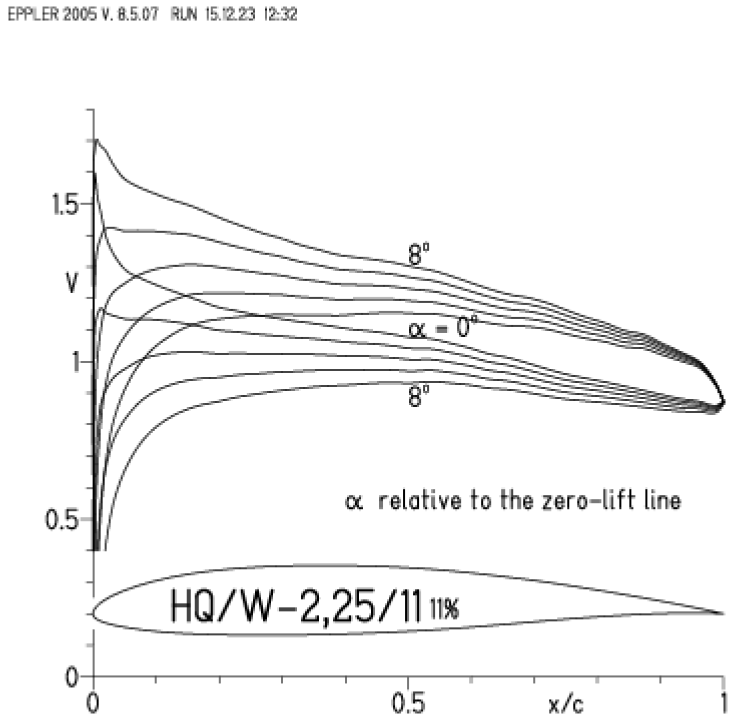
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

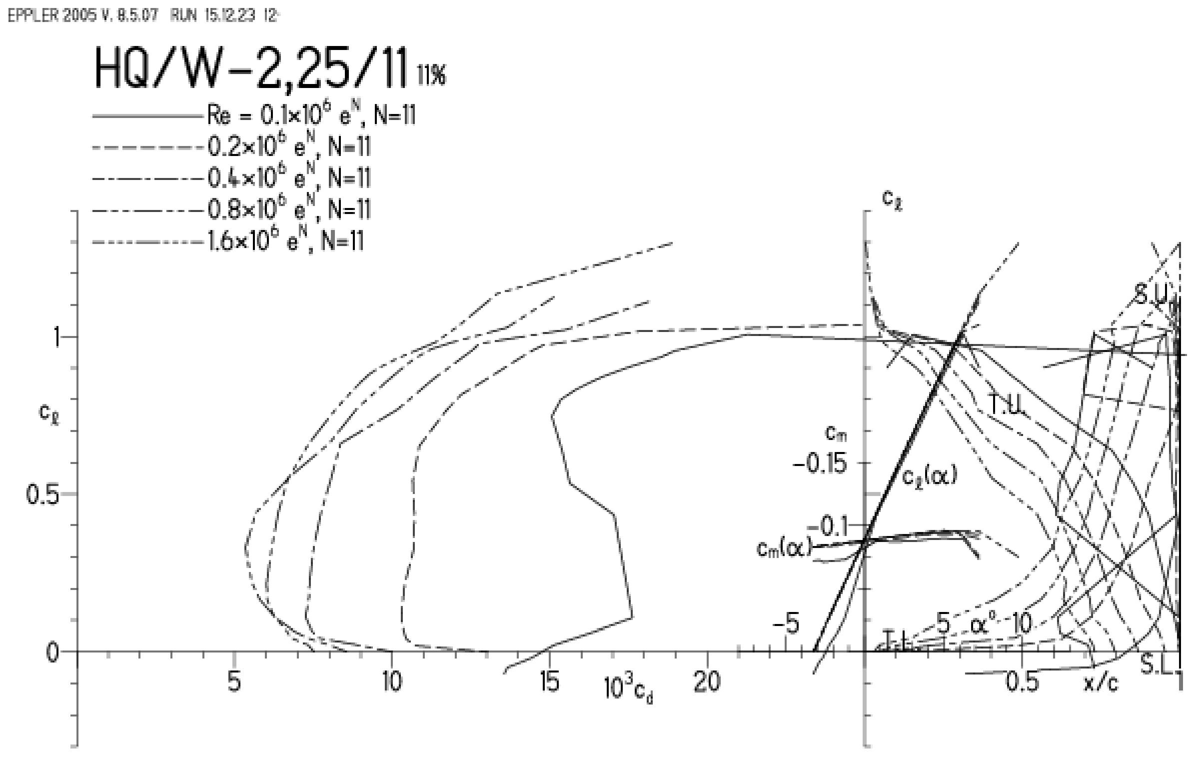


EPPLER 2005 V. 8.5.07 RUN



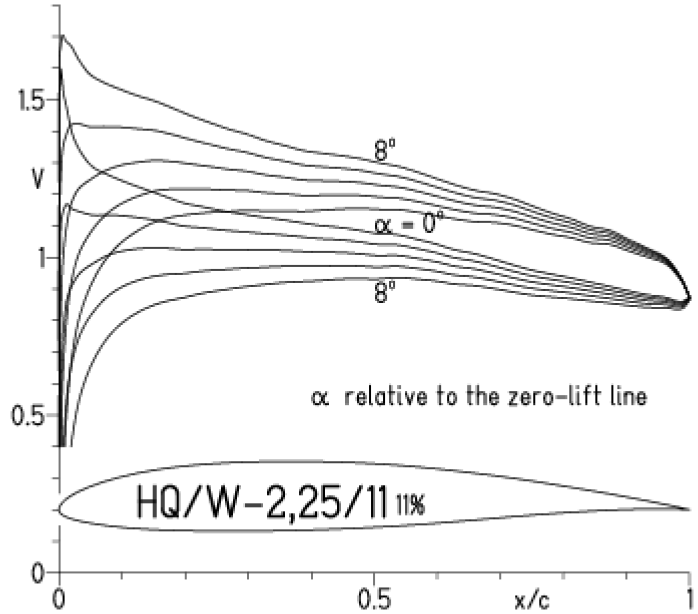
<u>HQ/W-2,25/11</u>, N=11



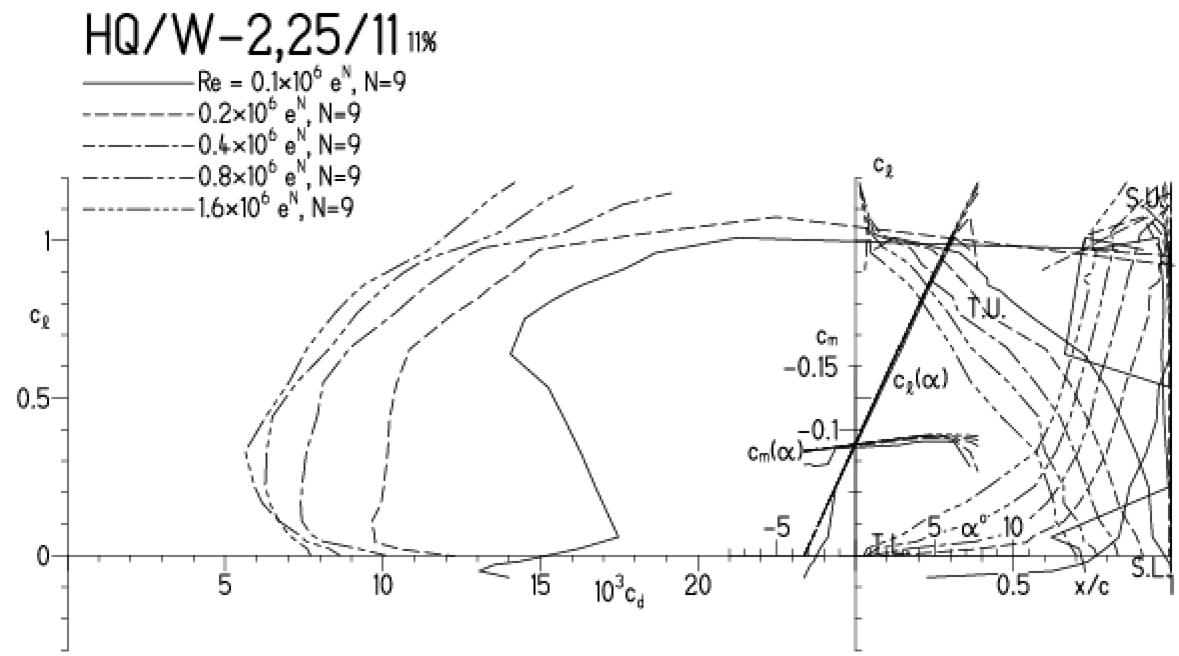


HQQ/W-2,25/11, N=9

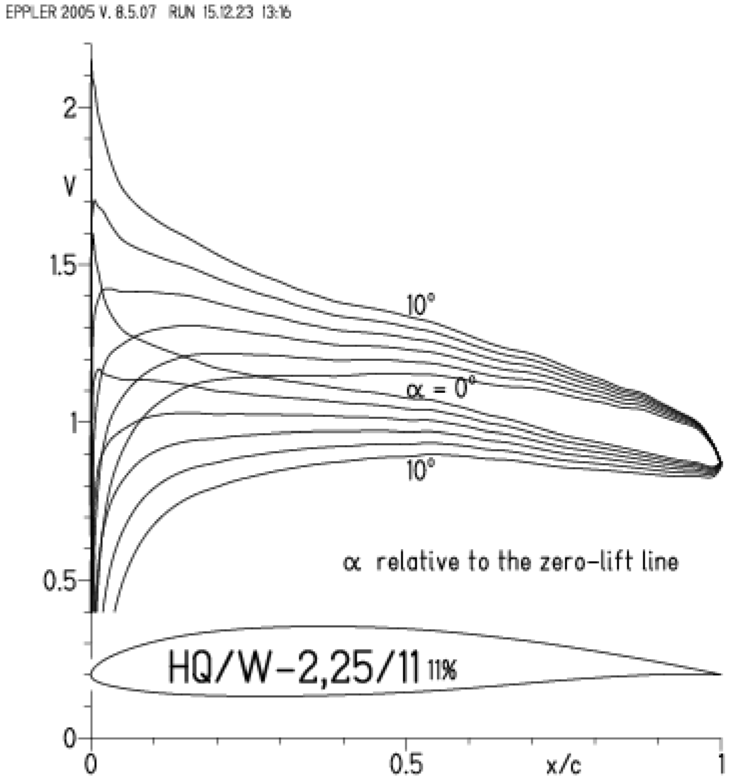
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

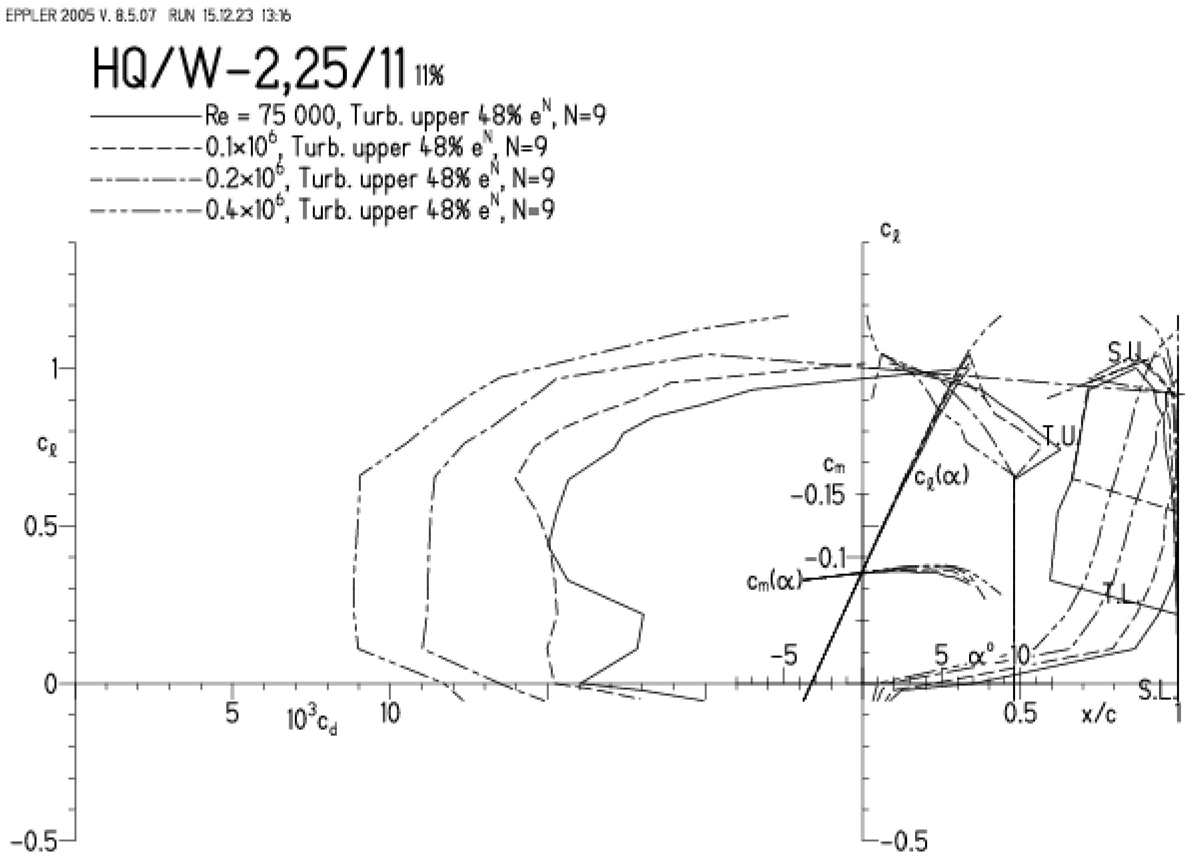


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



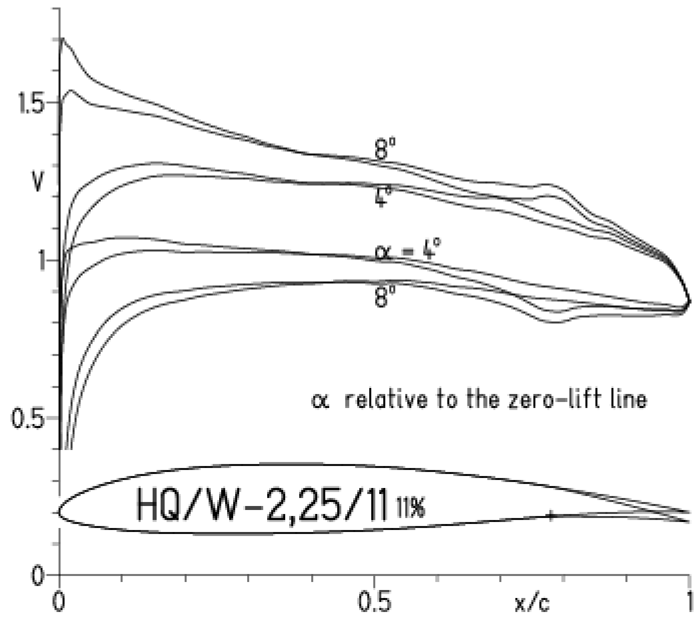
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



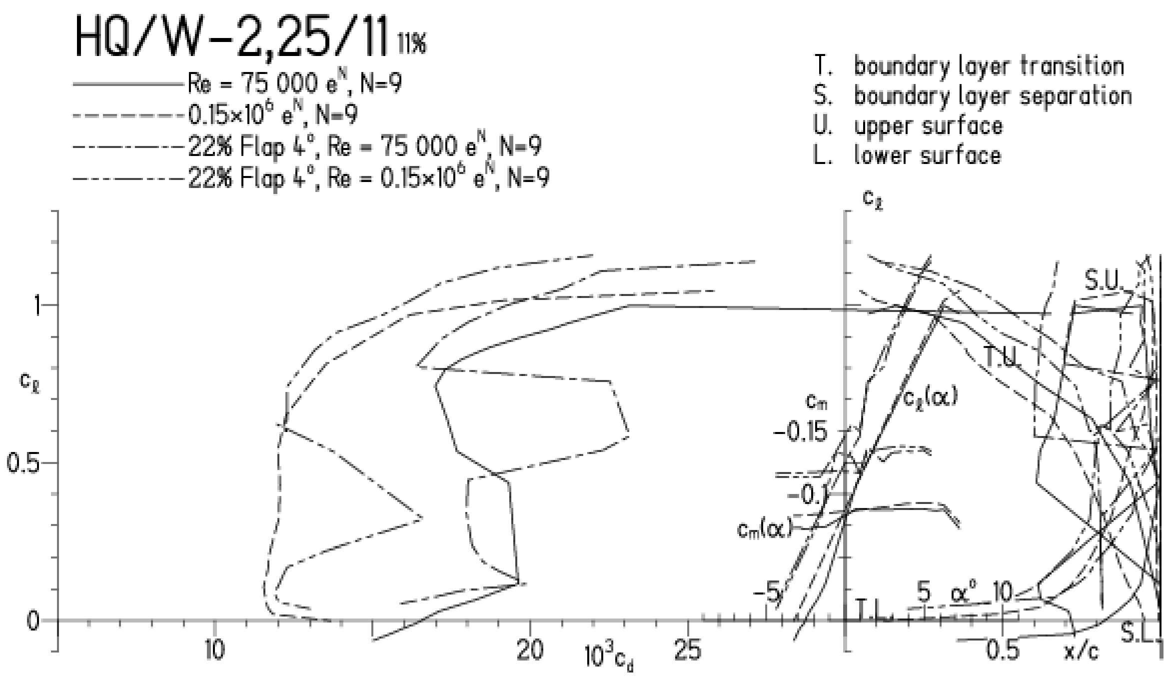


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

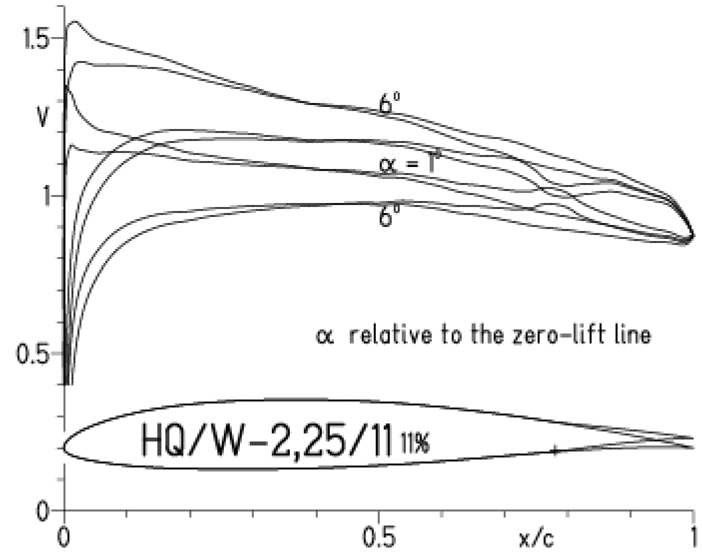


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

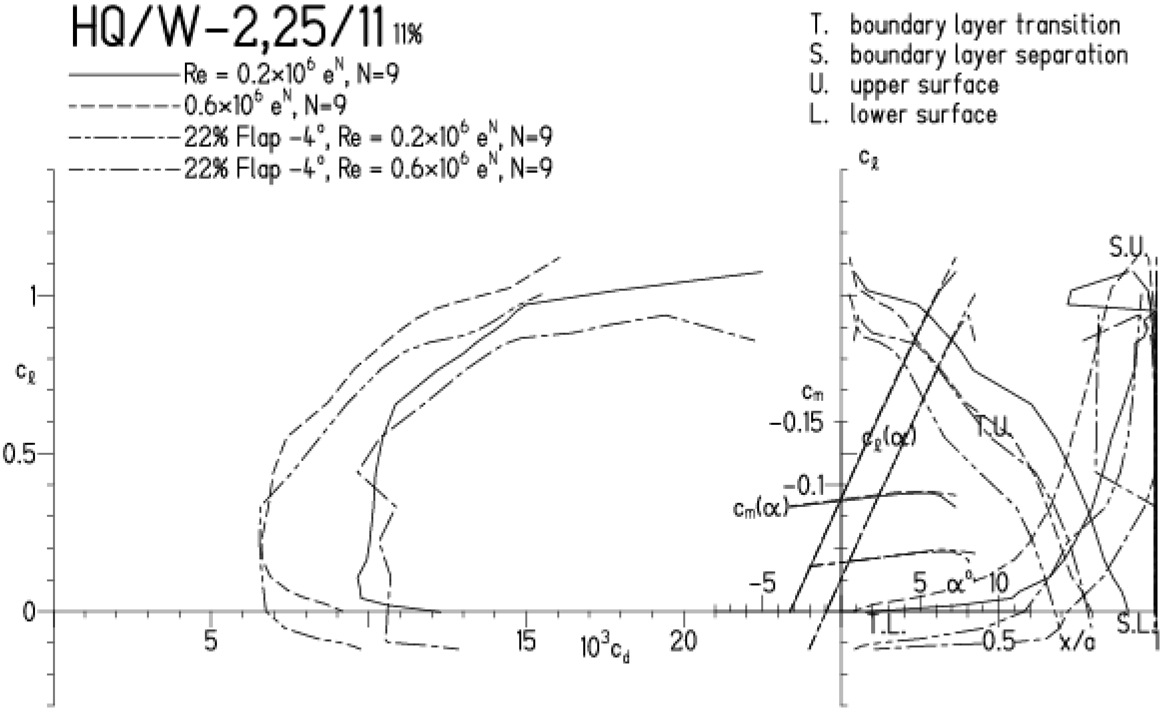


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

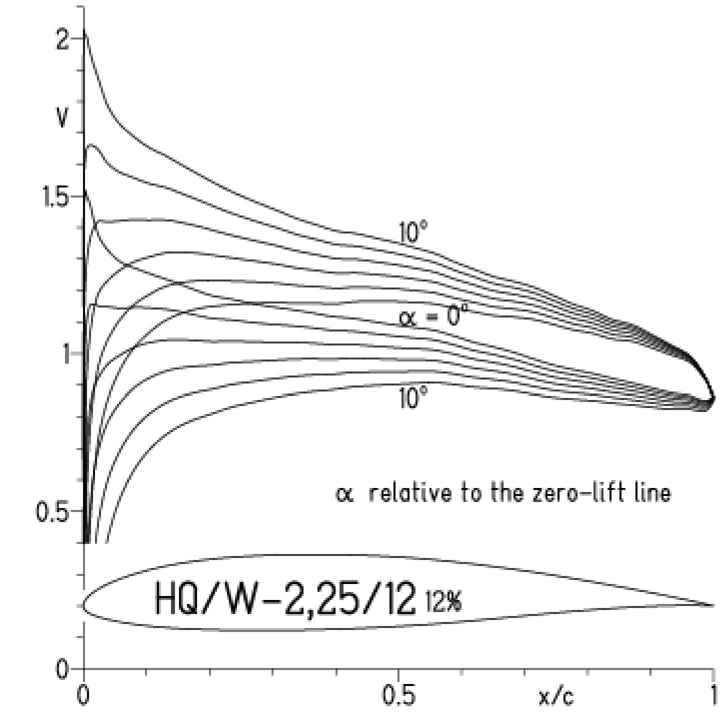


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

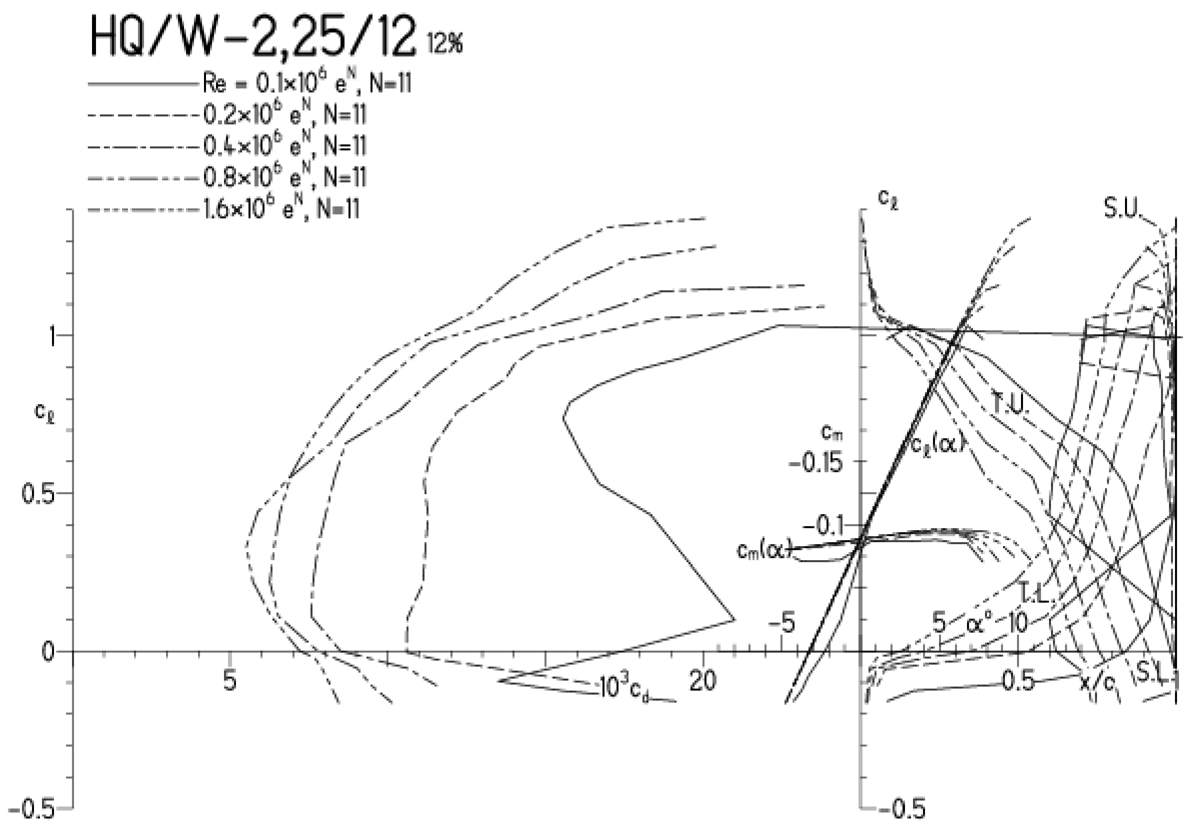


<u>HQ/W-2,25/12</u>, N=11

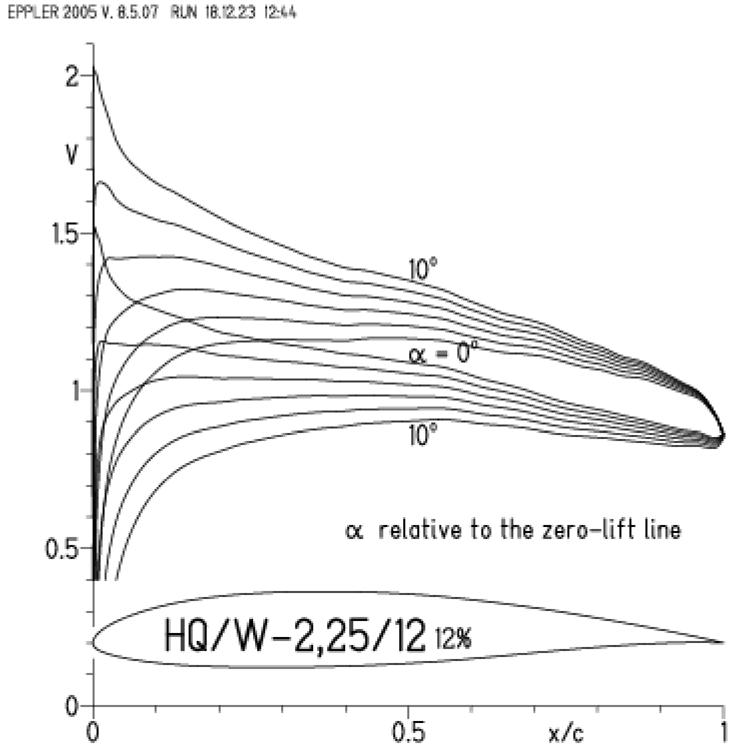
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

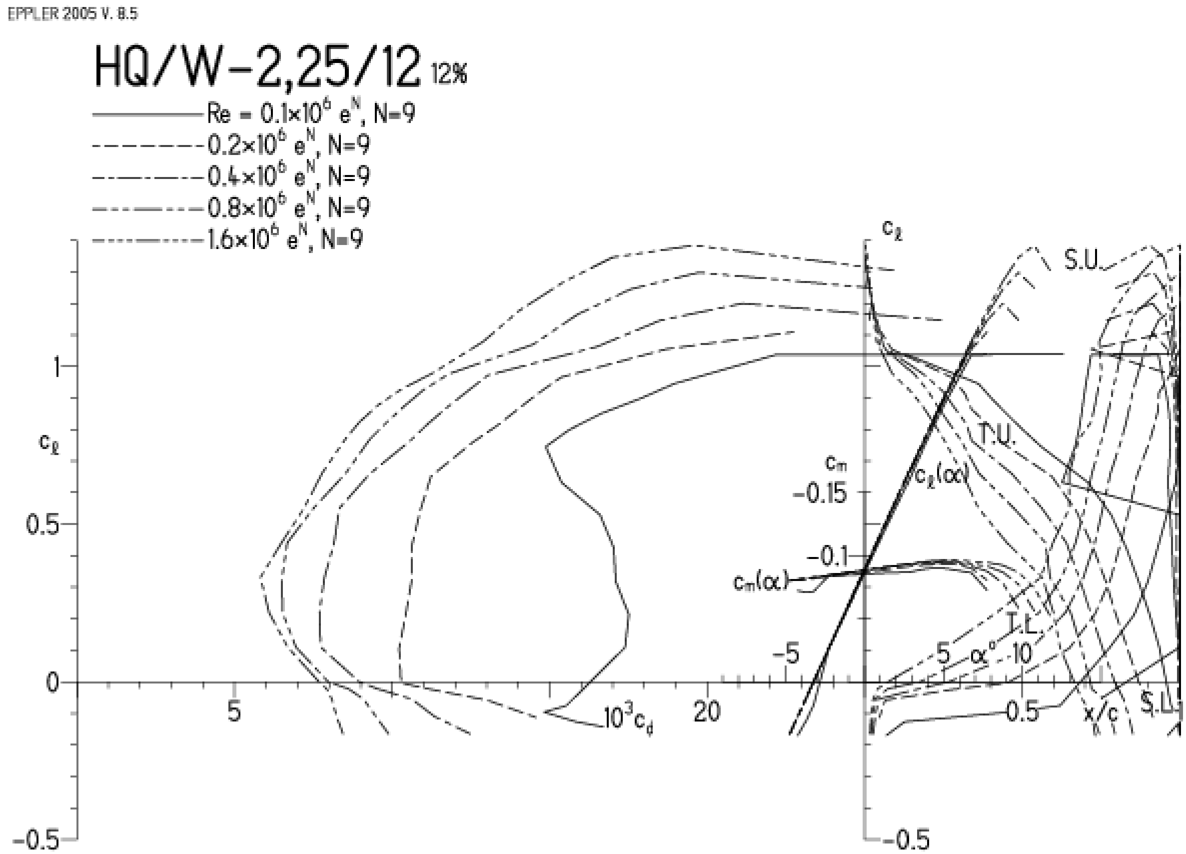


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1



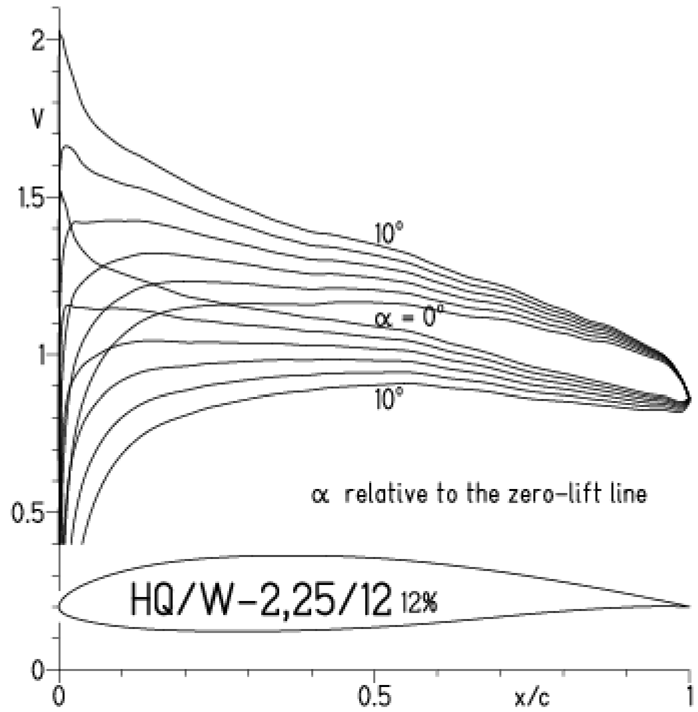
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c

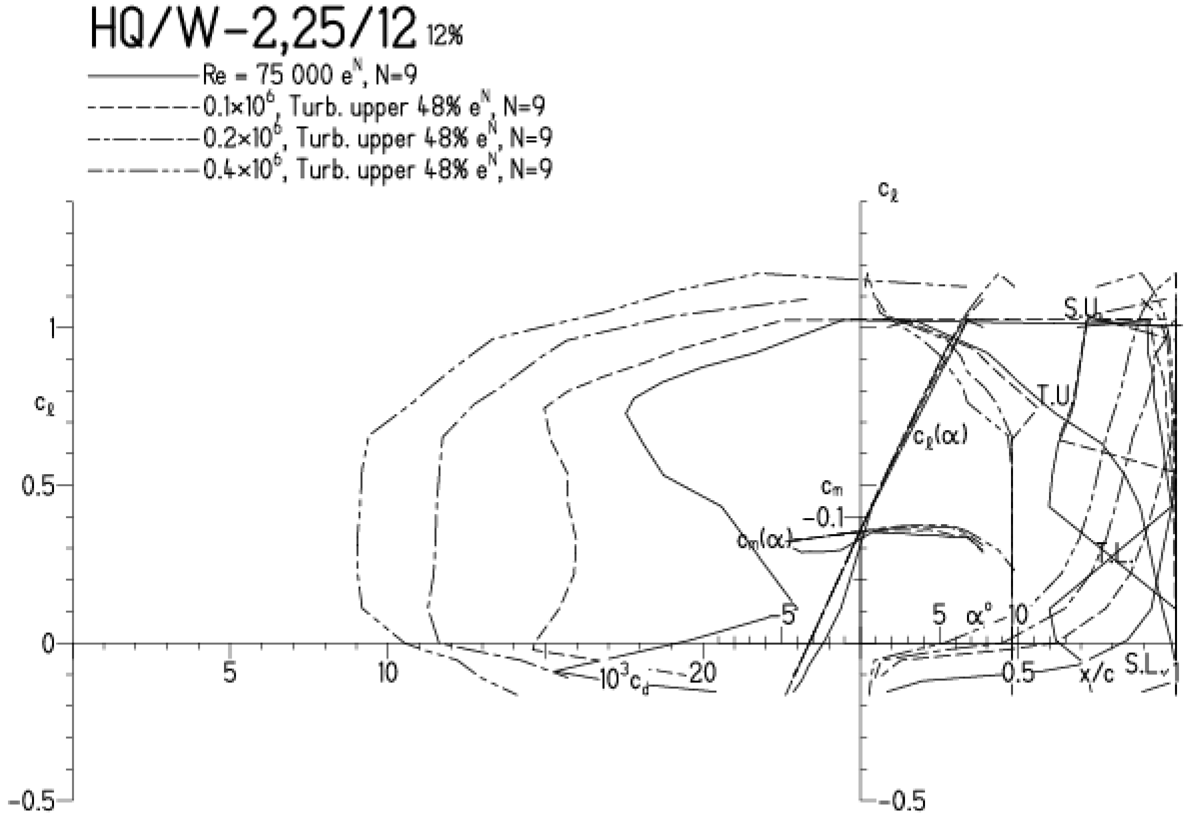

EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cₘ(α)
cℓ(α)
10³c_d
α°
x/c

HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 18.12.23 13:02

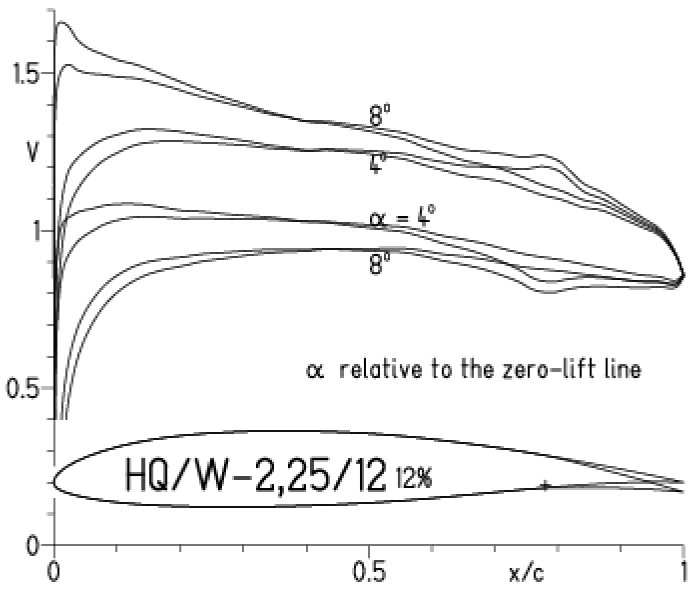


EPPLER 2005 V. 8.5.07 RUN 18.12.23 13:02

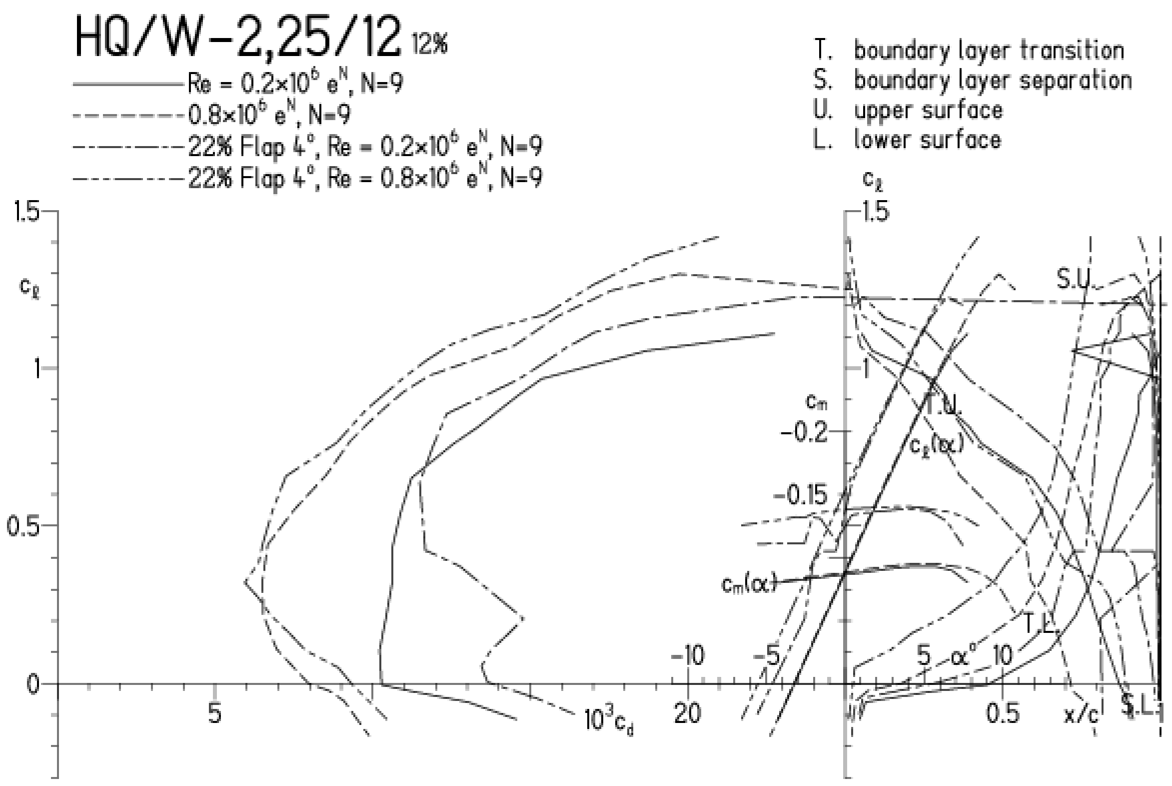


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

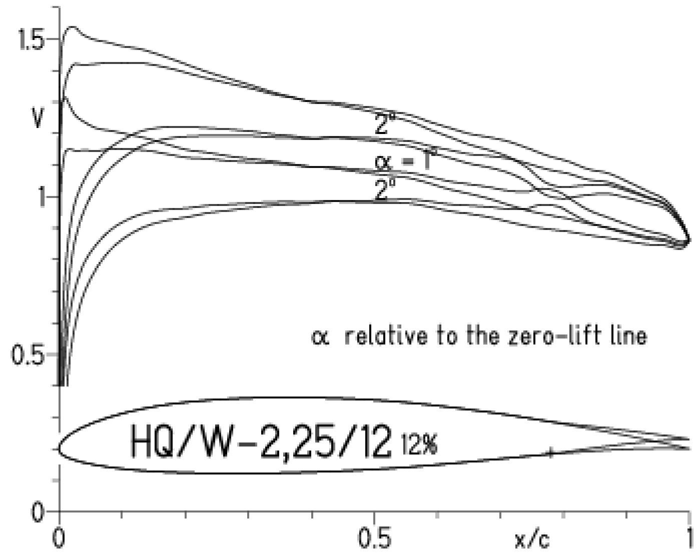


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

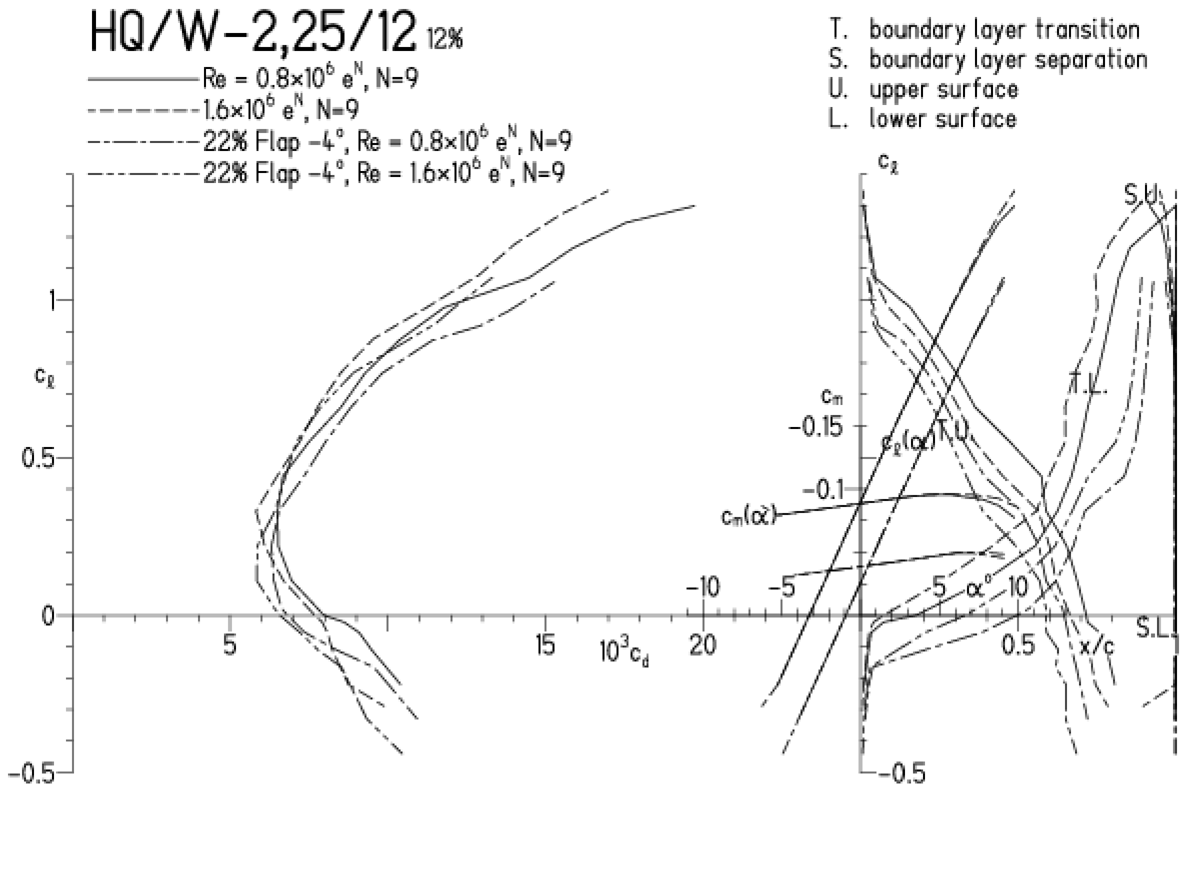


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

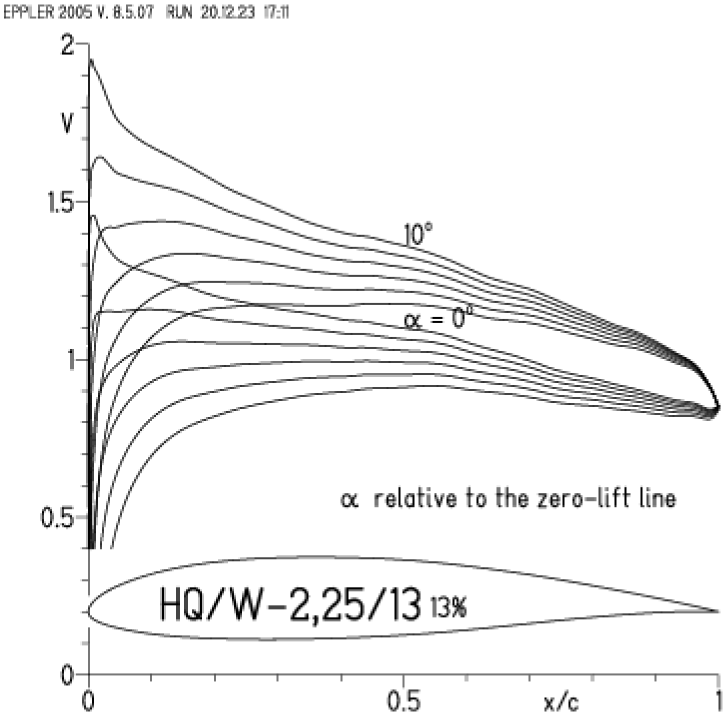
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

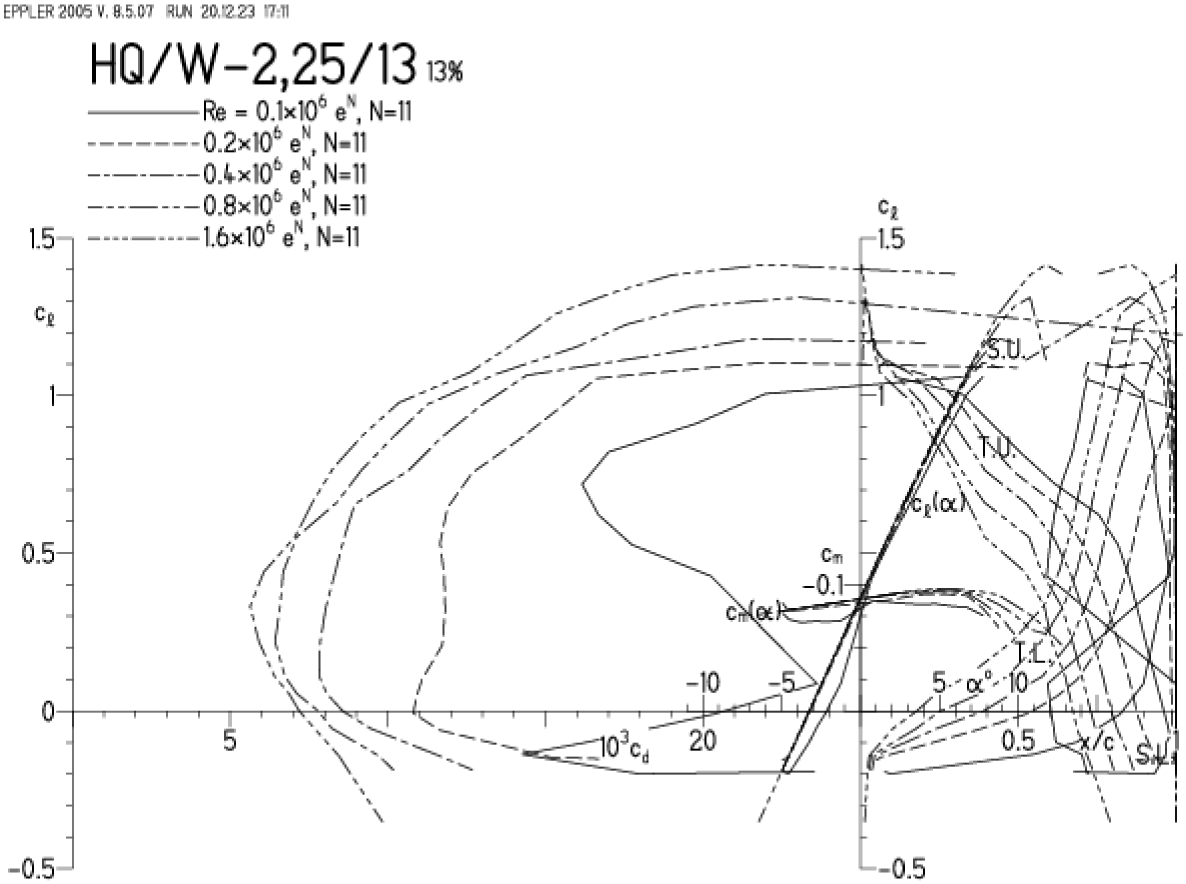


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

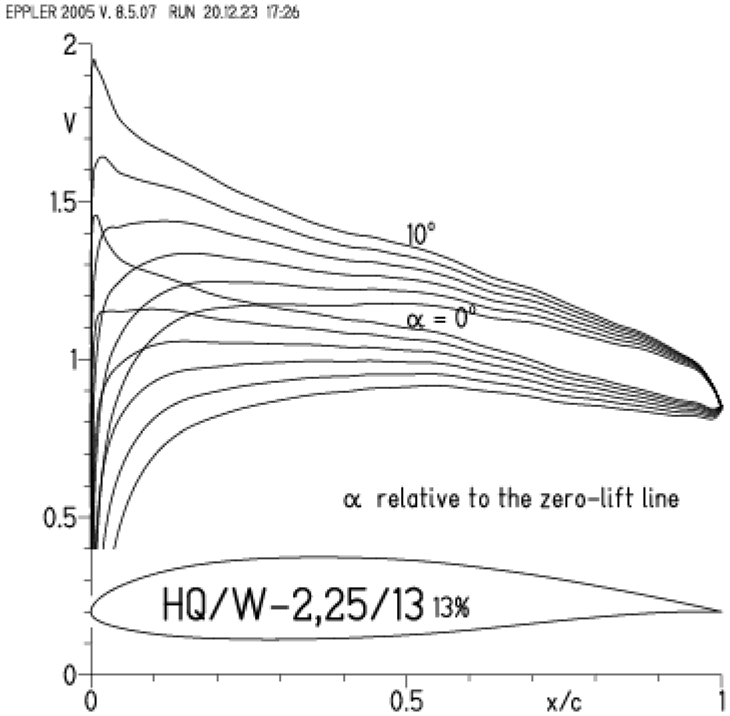


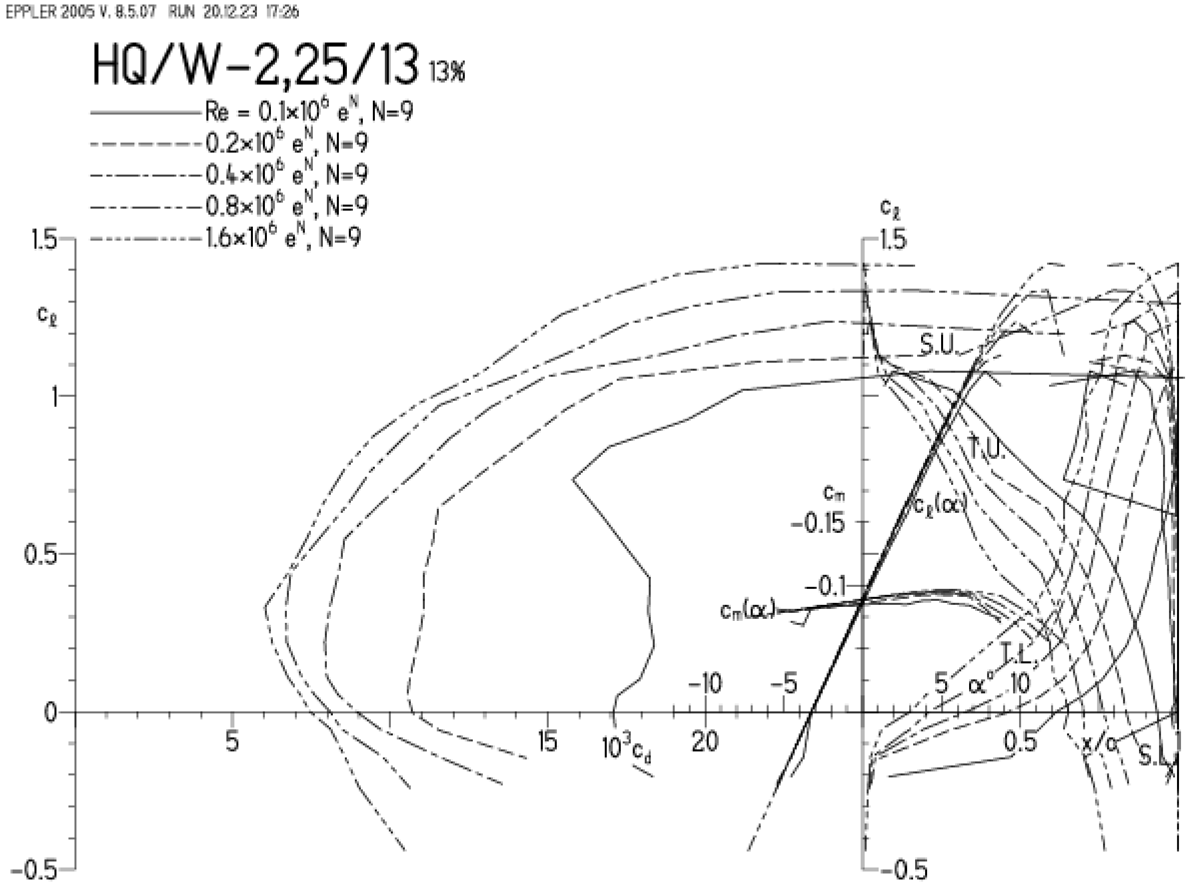
<u>HQ/W-2,25/13</u>, N=11



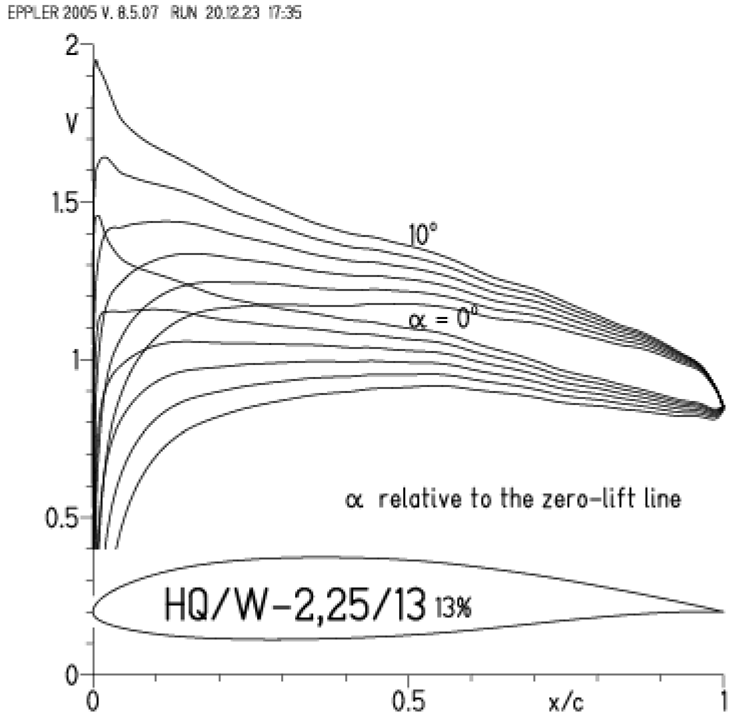


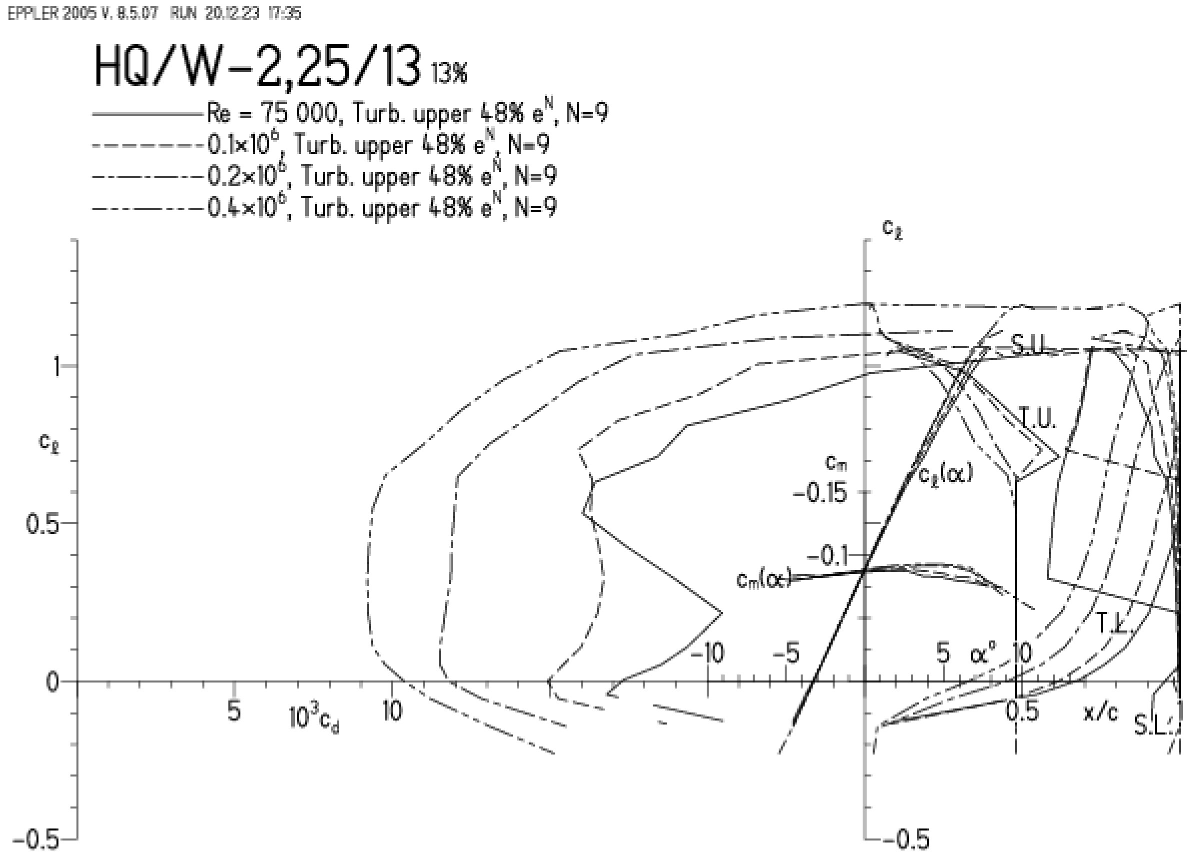
<u>HQ/W-2,25/13</u>, N=9





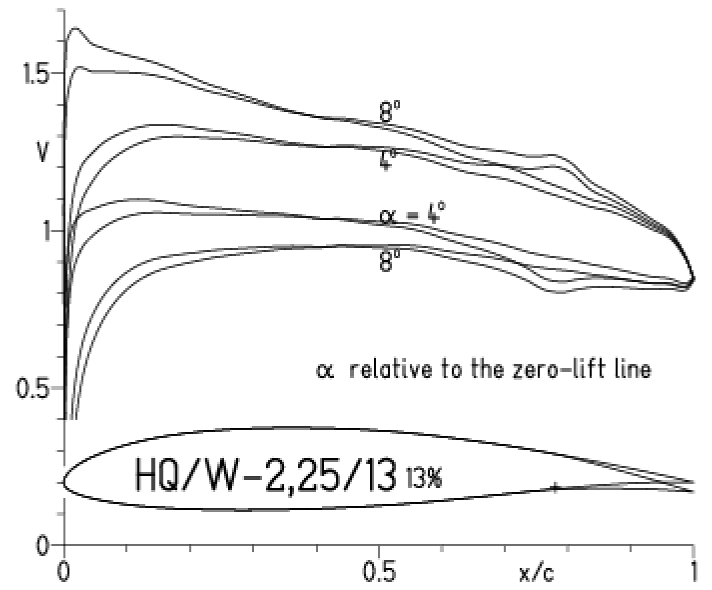
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



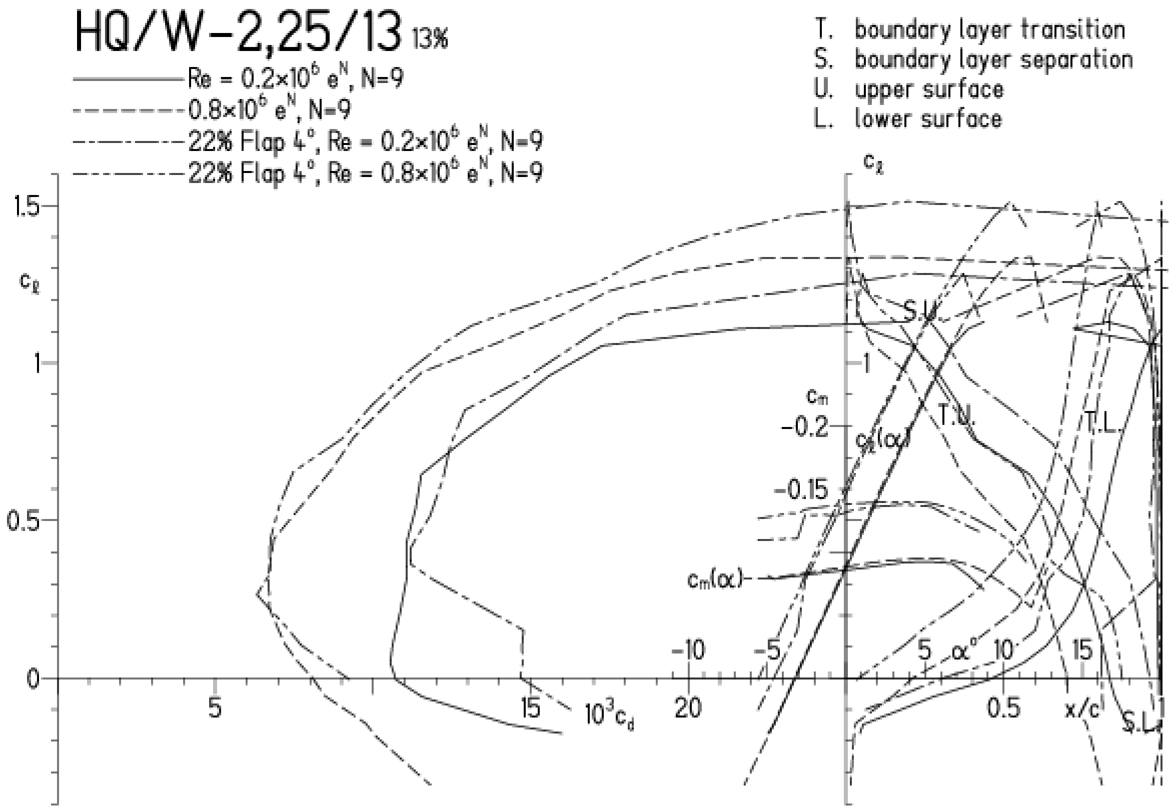


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

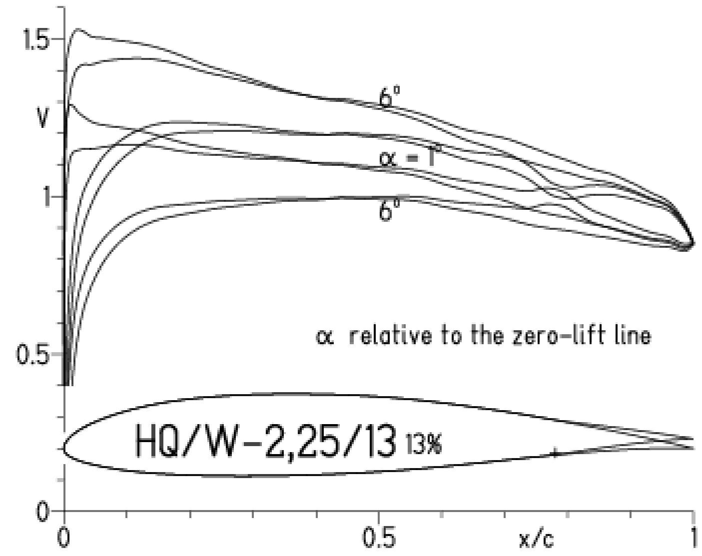


EPPLER 2005 V.

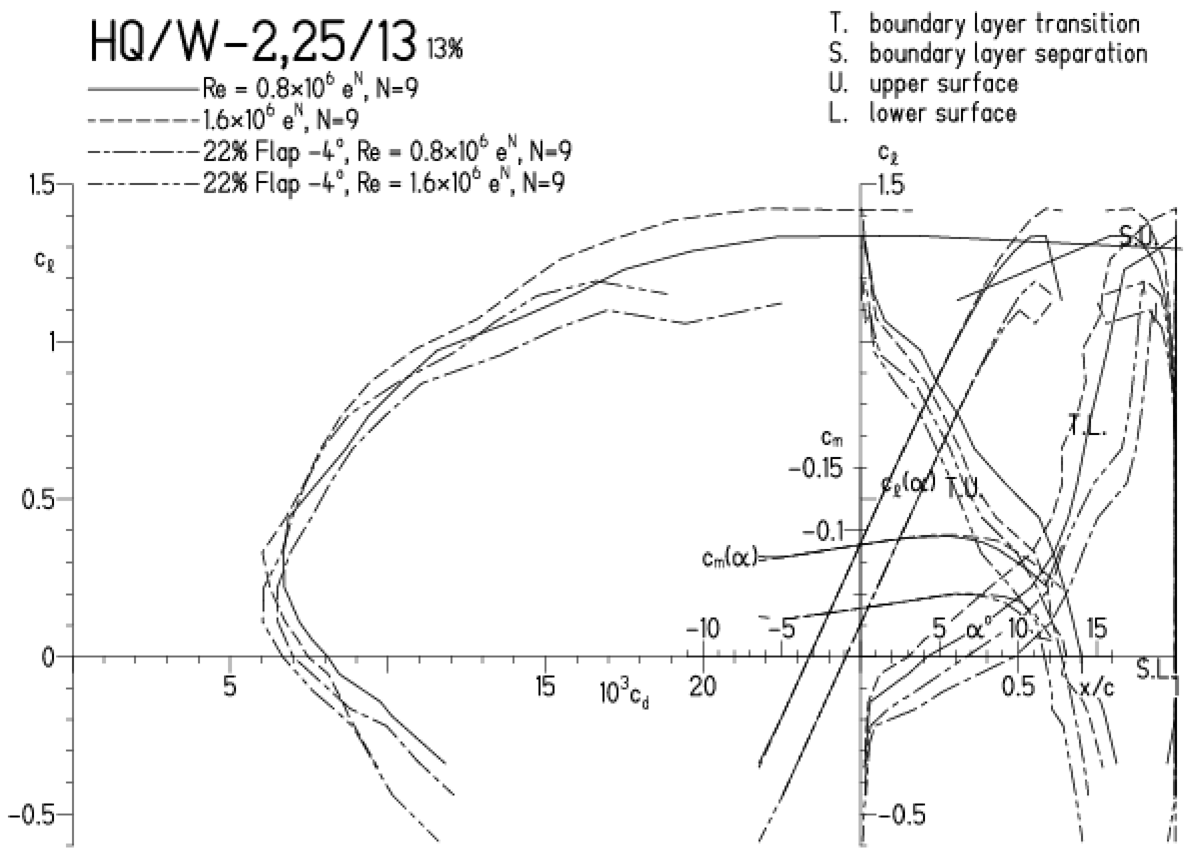


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

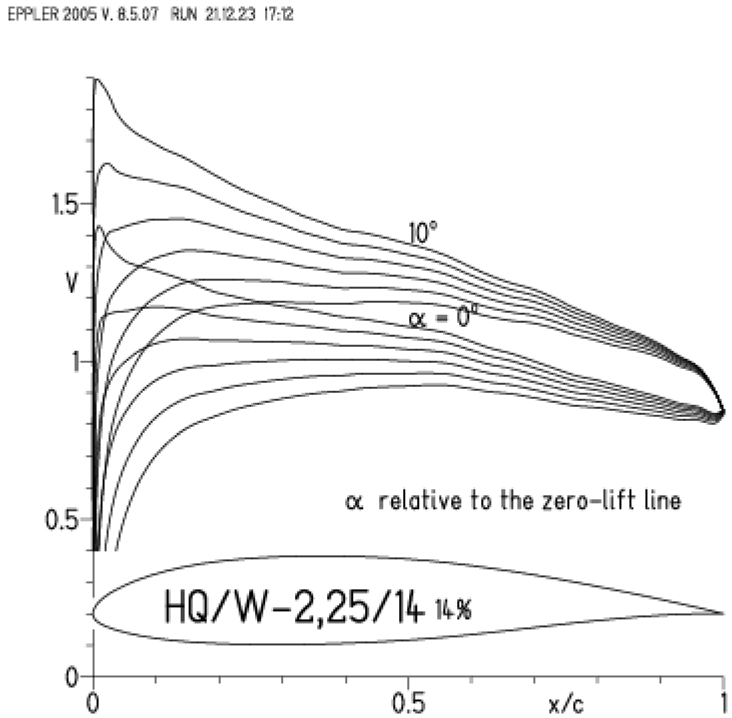
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

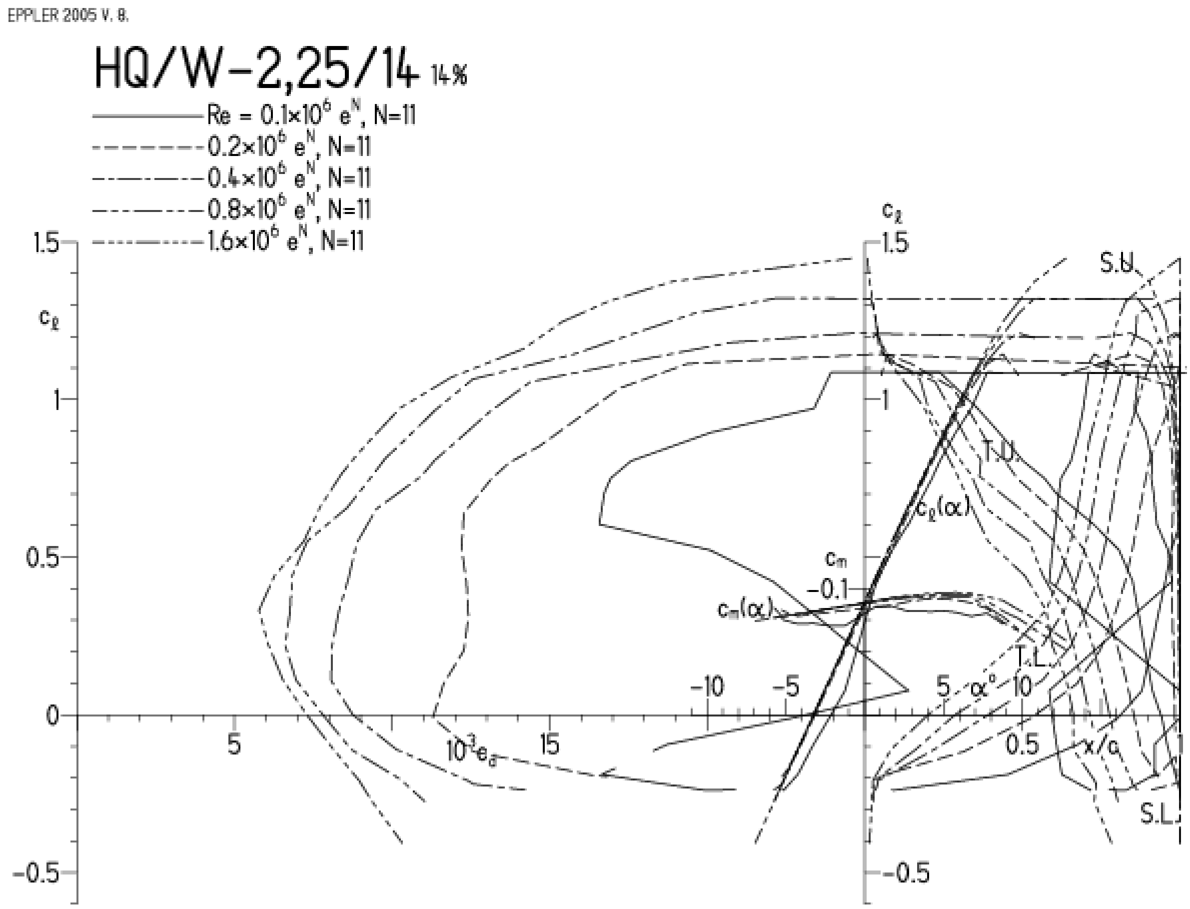


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

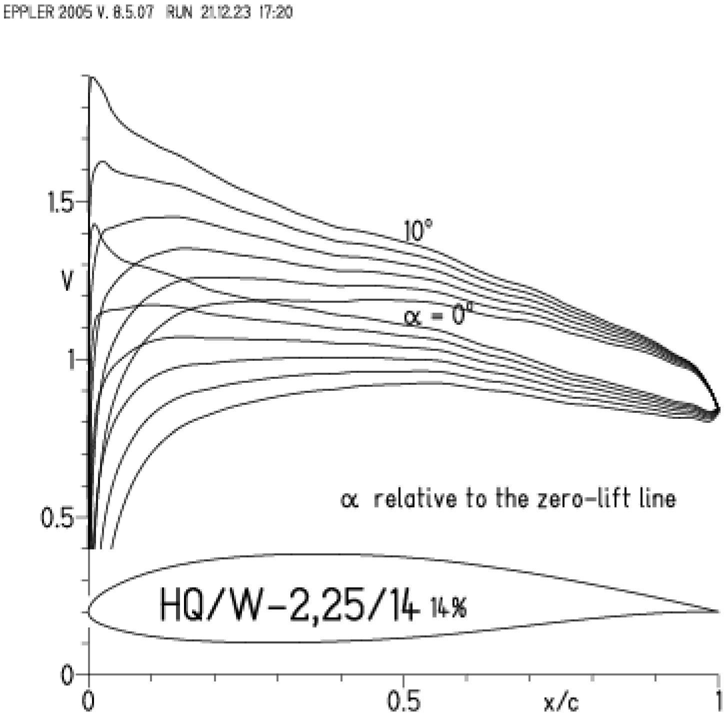


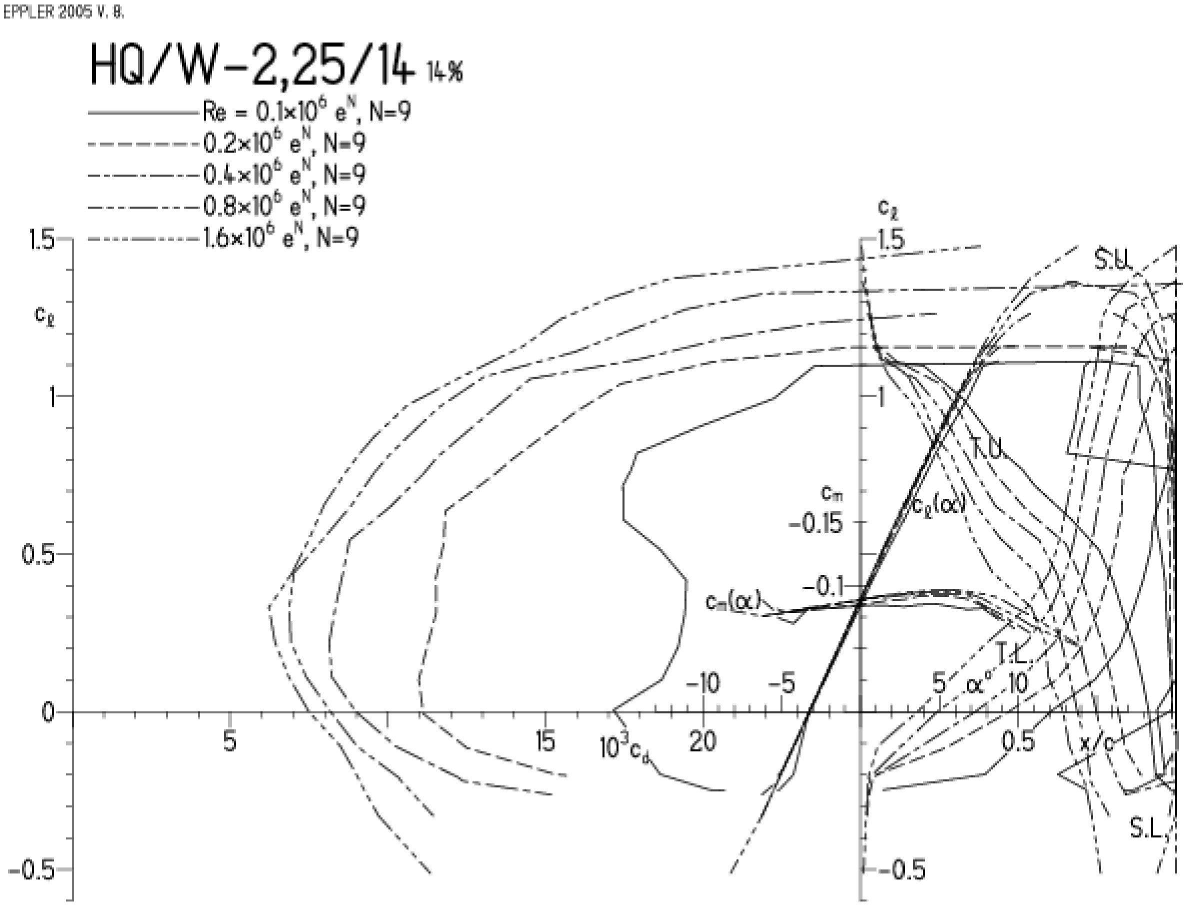
HQ/W-2,25/14, N=11





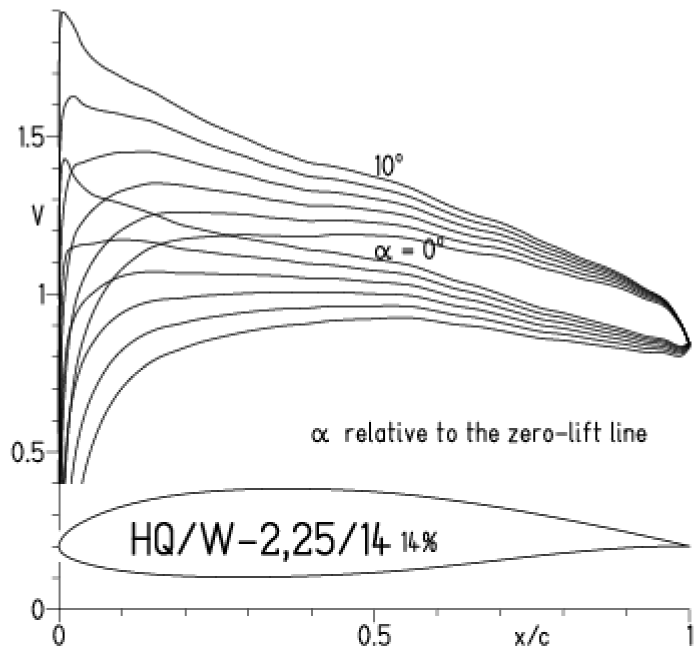
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

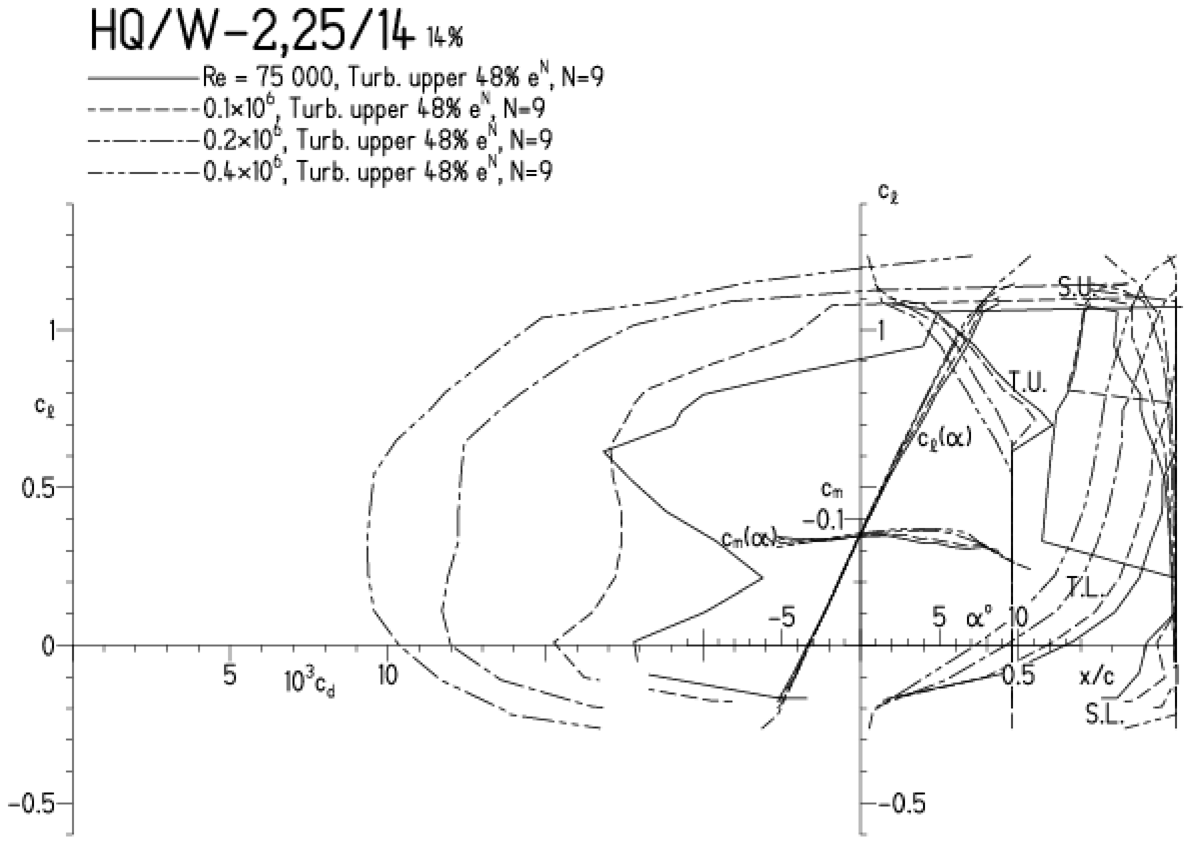

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_l(α)
c_m(α)
c_m
−0.15
−0.1
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

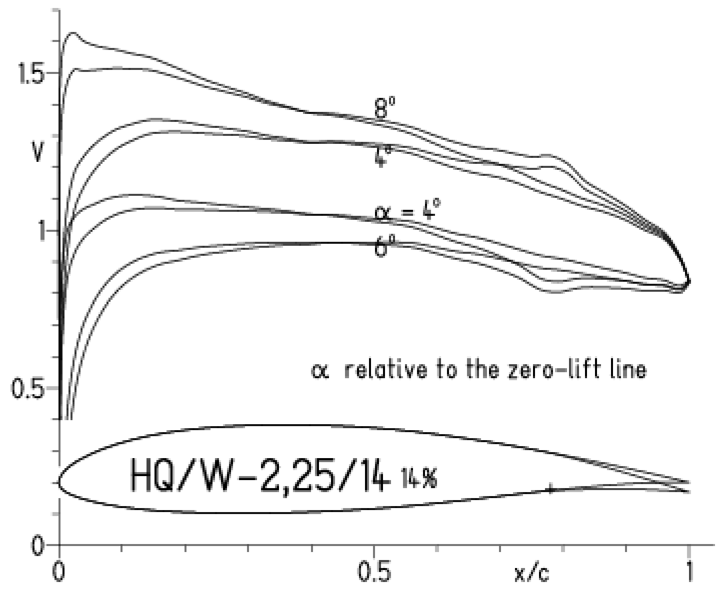


EPPLER 2005 V. 8.5.07 RU

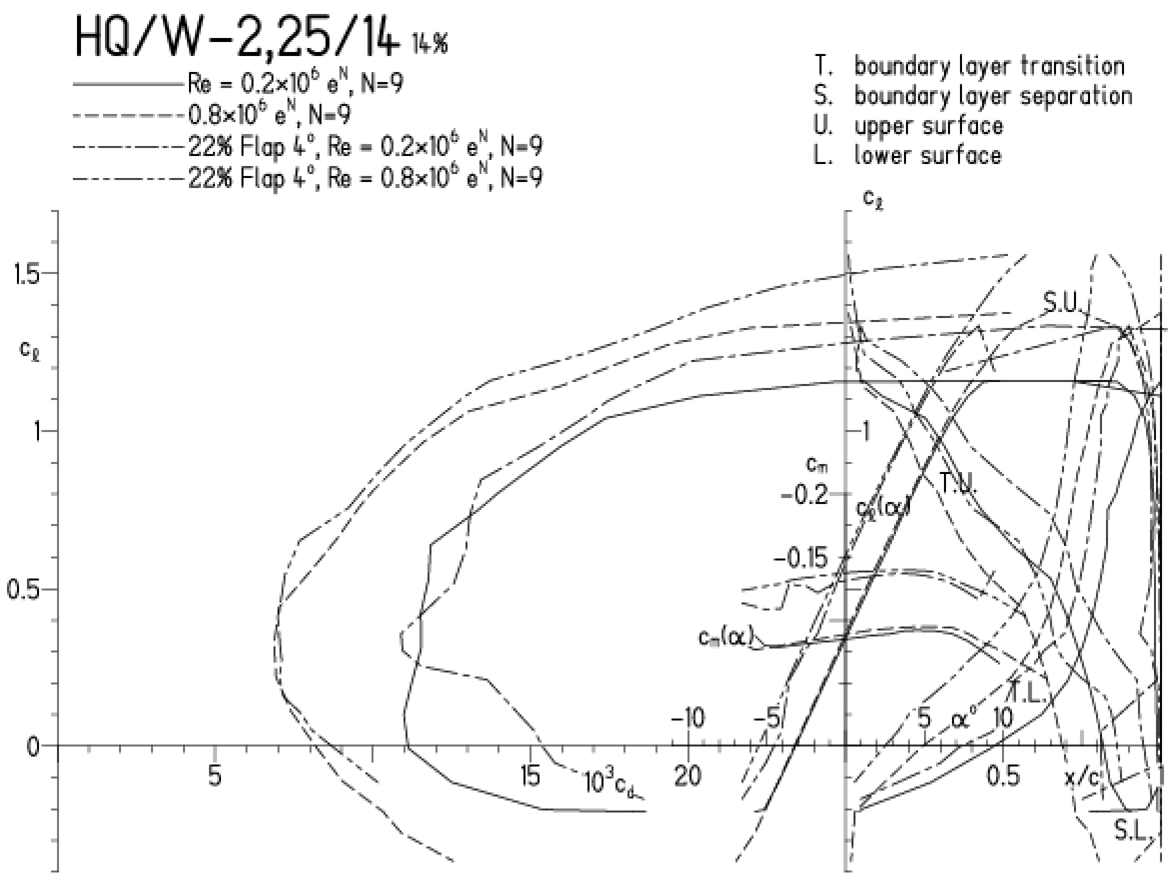


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

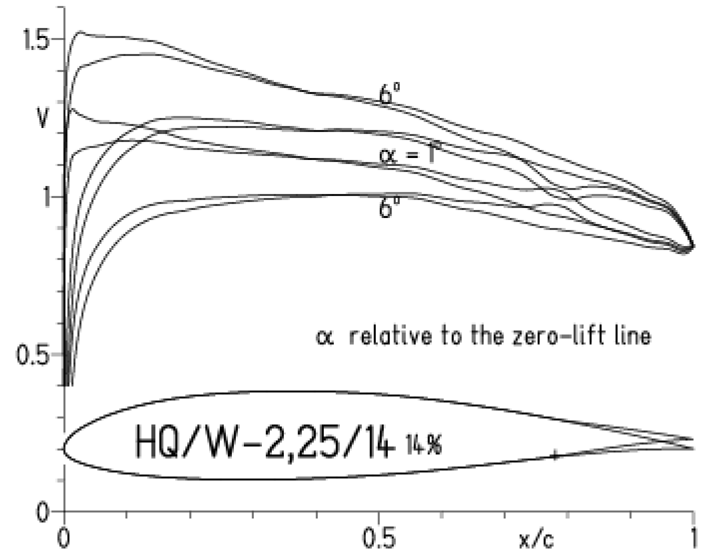


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

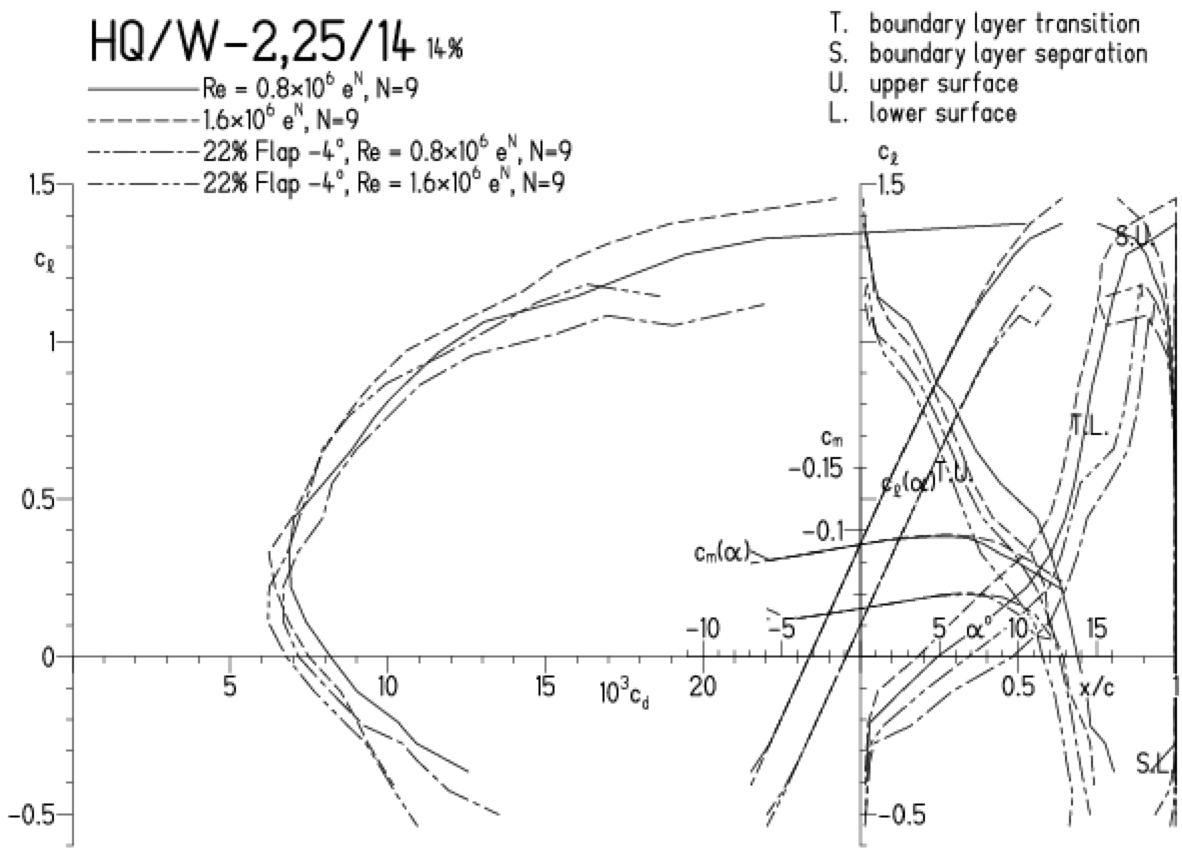


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

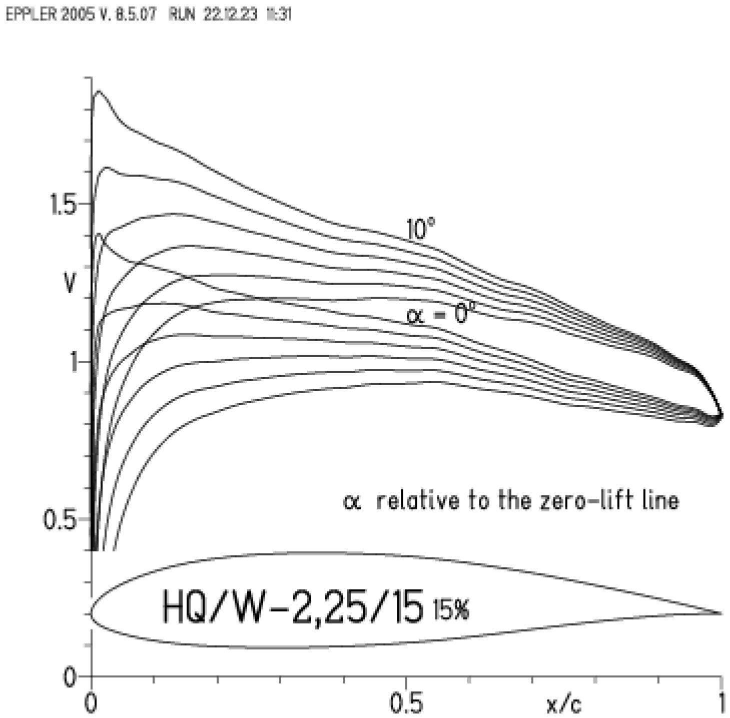
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

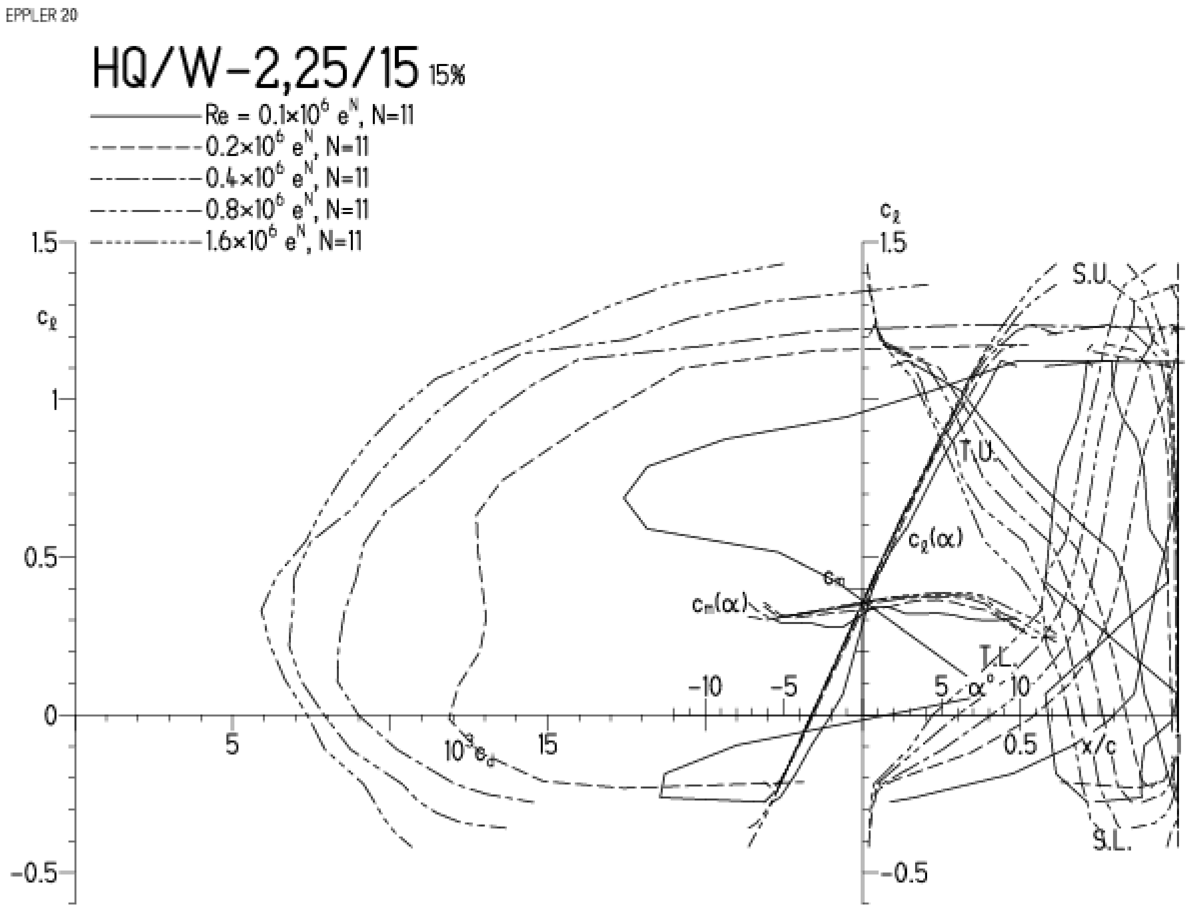


EPPLER 2005 V. 8.5.07

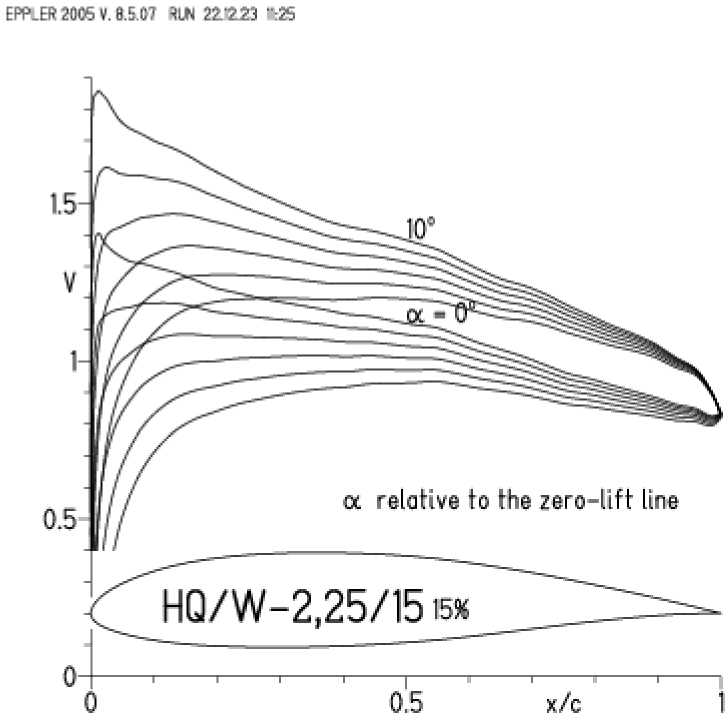


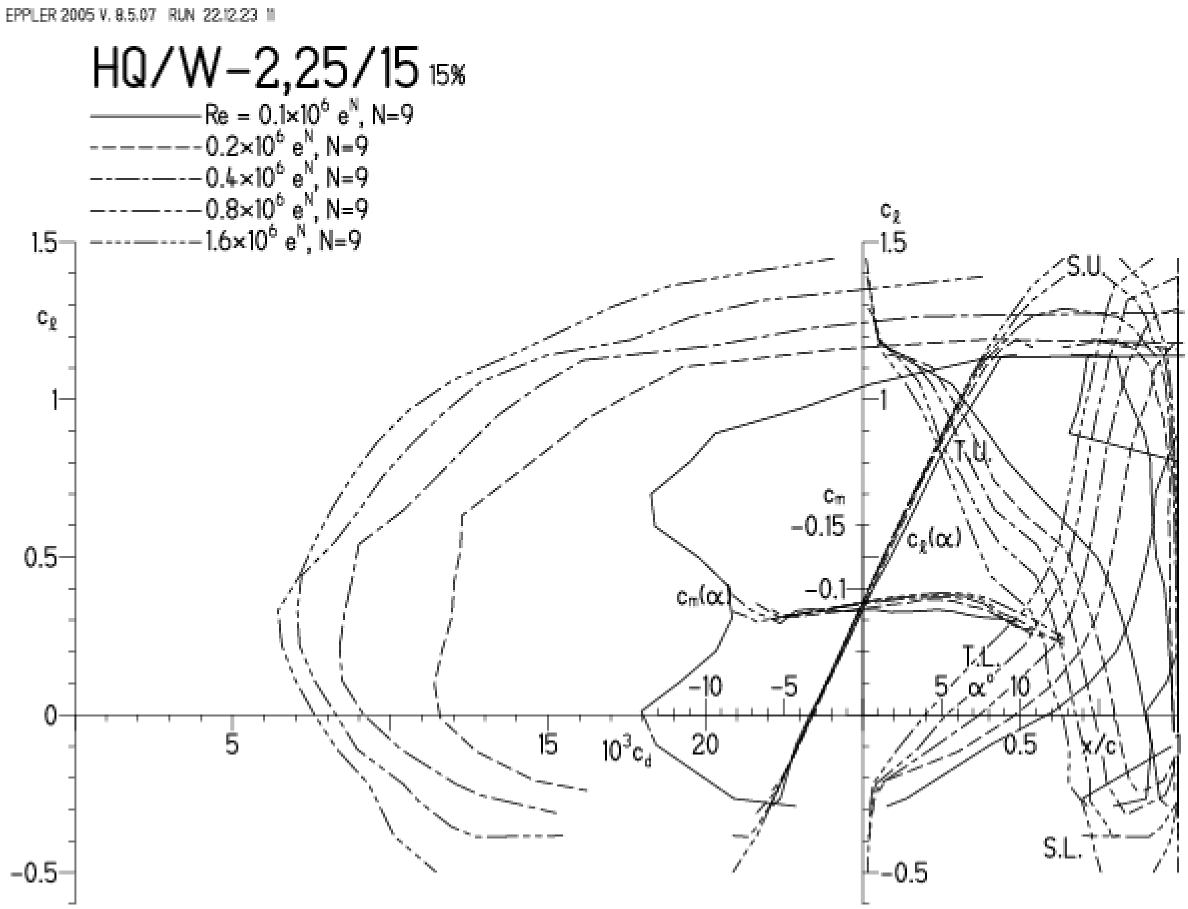
HQ/W-2,25/15, N=11



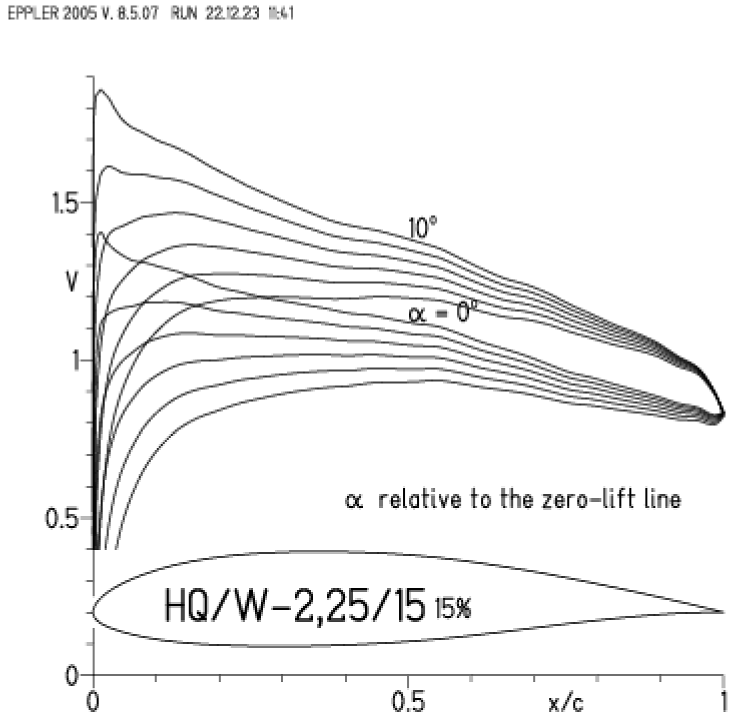


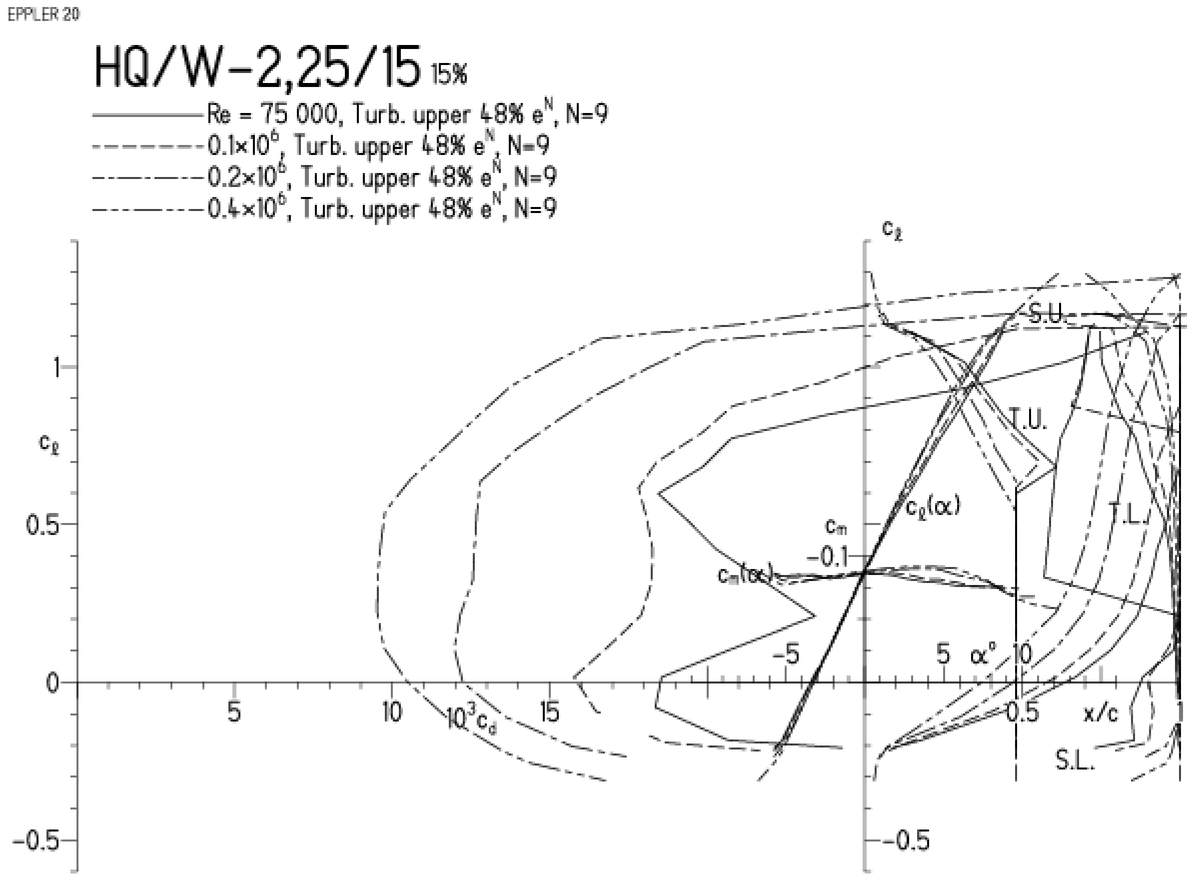
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_ℓ(α)
-10
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



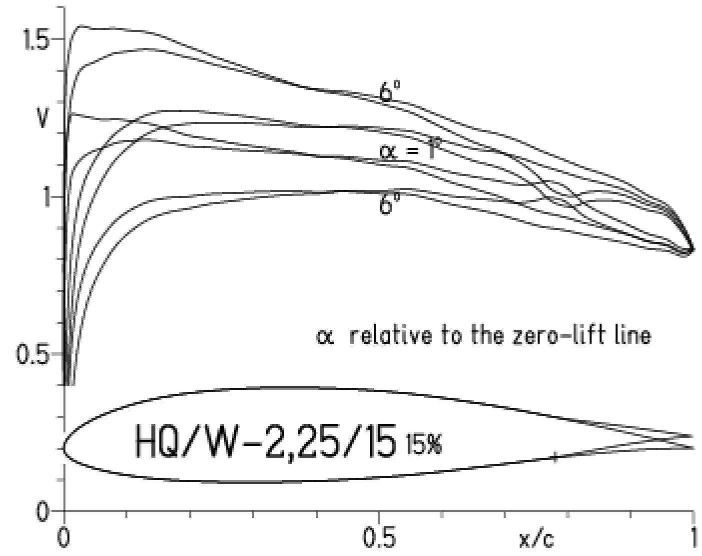


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

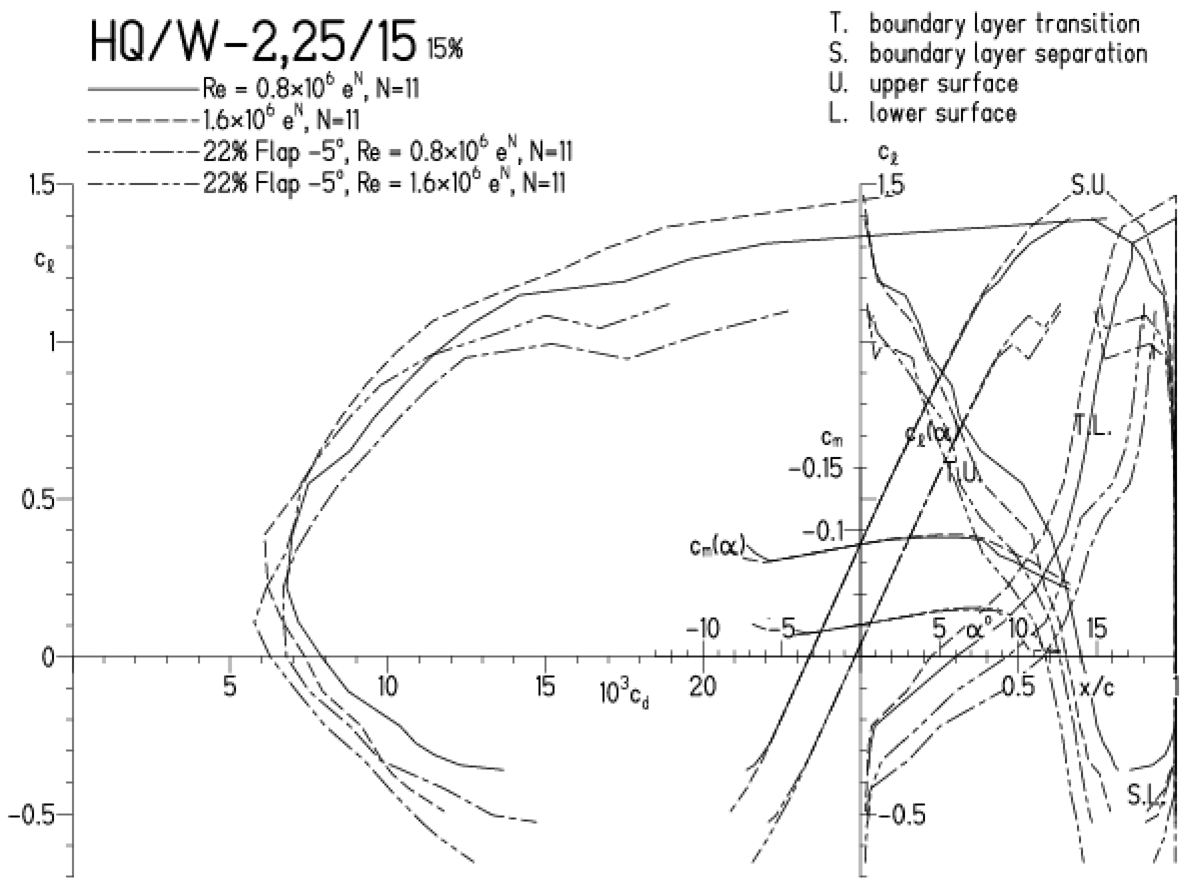
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

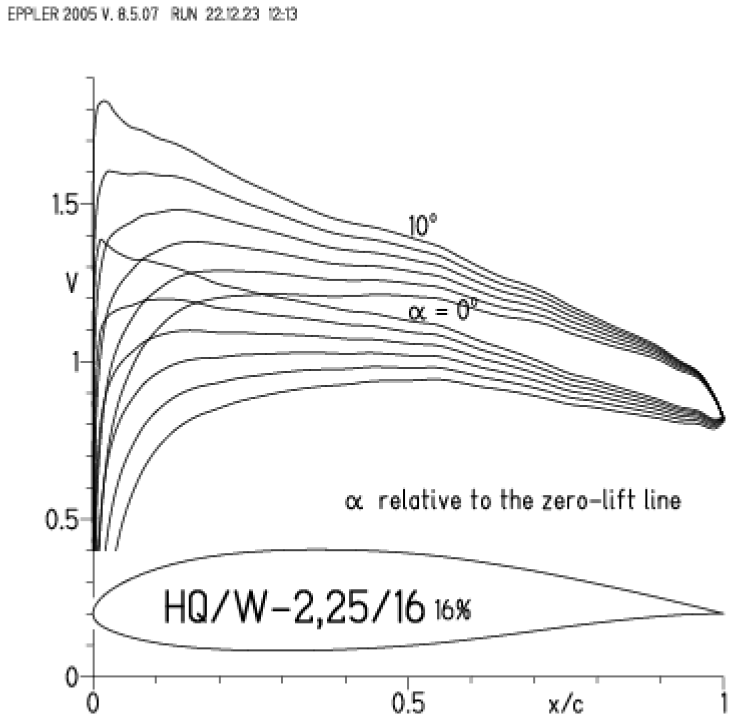
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

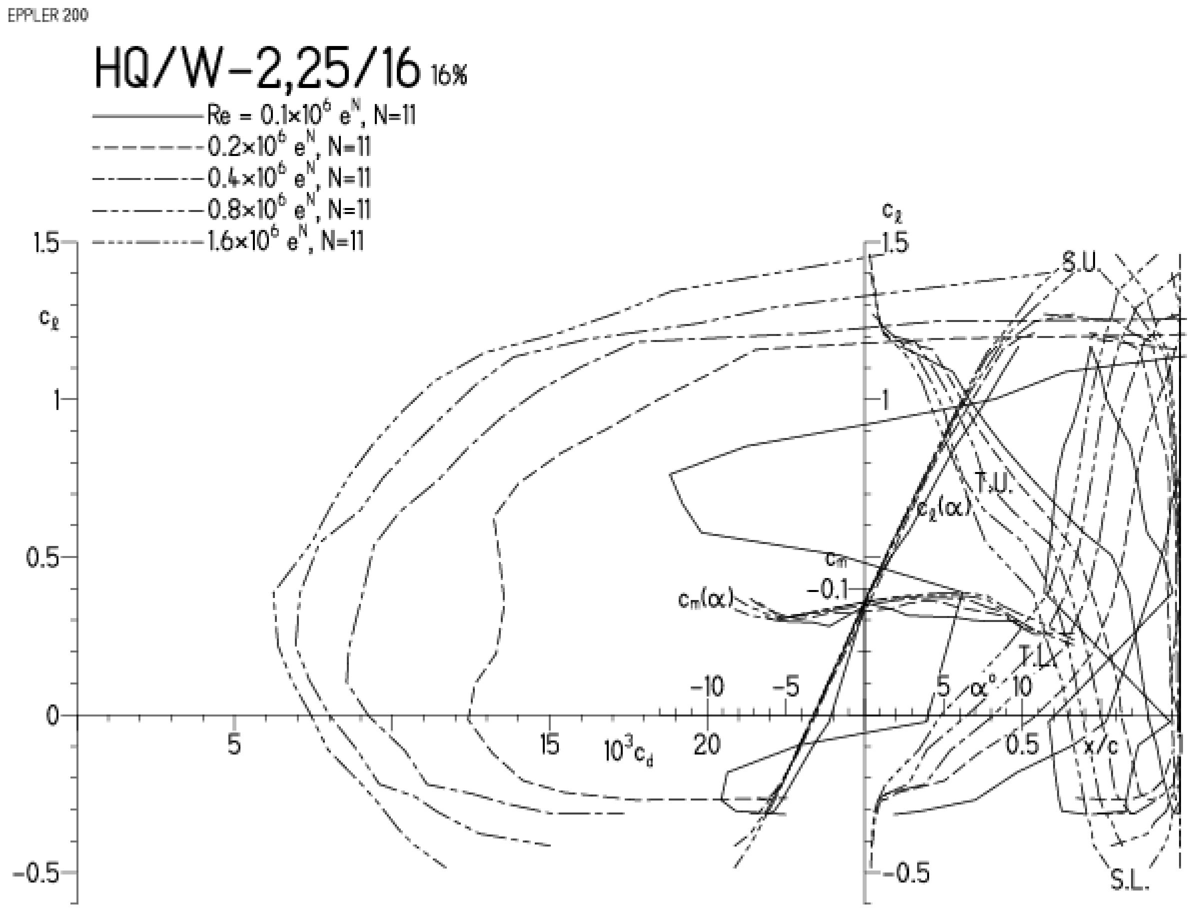


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

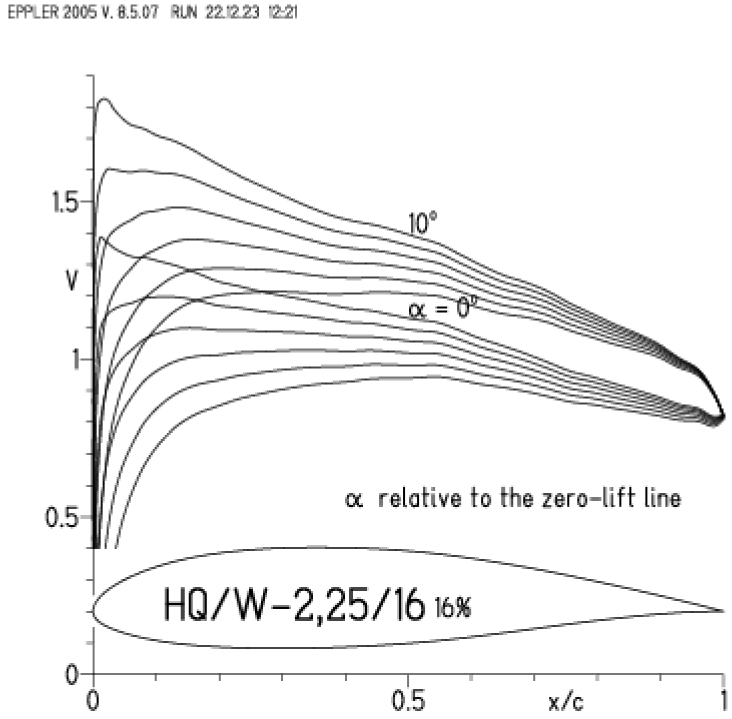


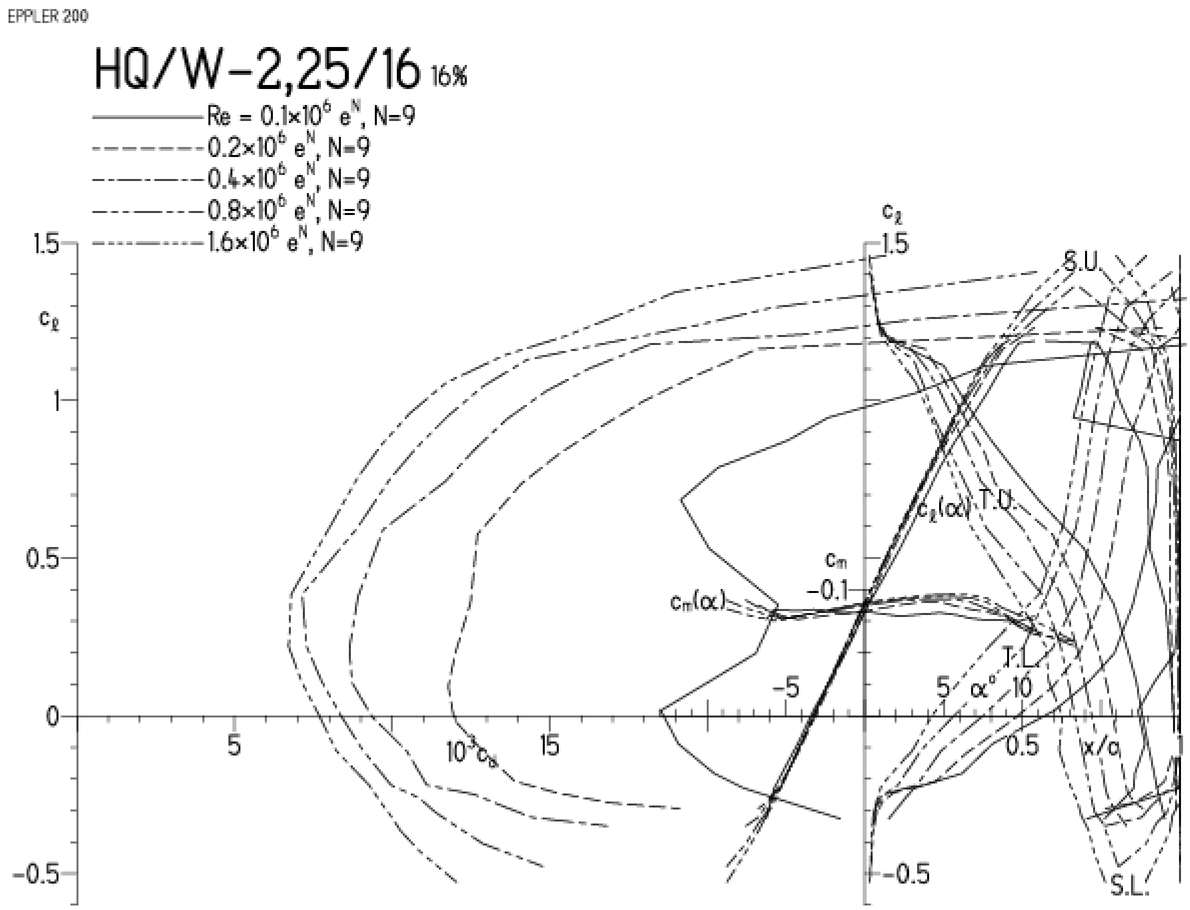
HQ/W-2,25/16, N=11





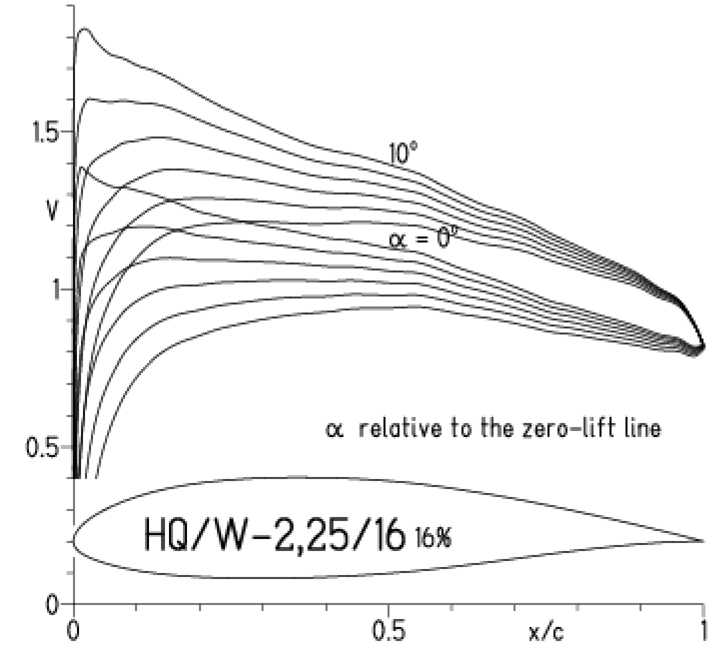
<u>HQ/W-2,25/16</u>, N=9



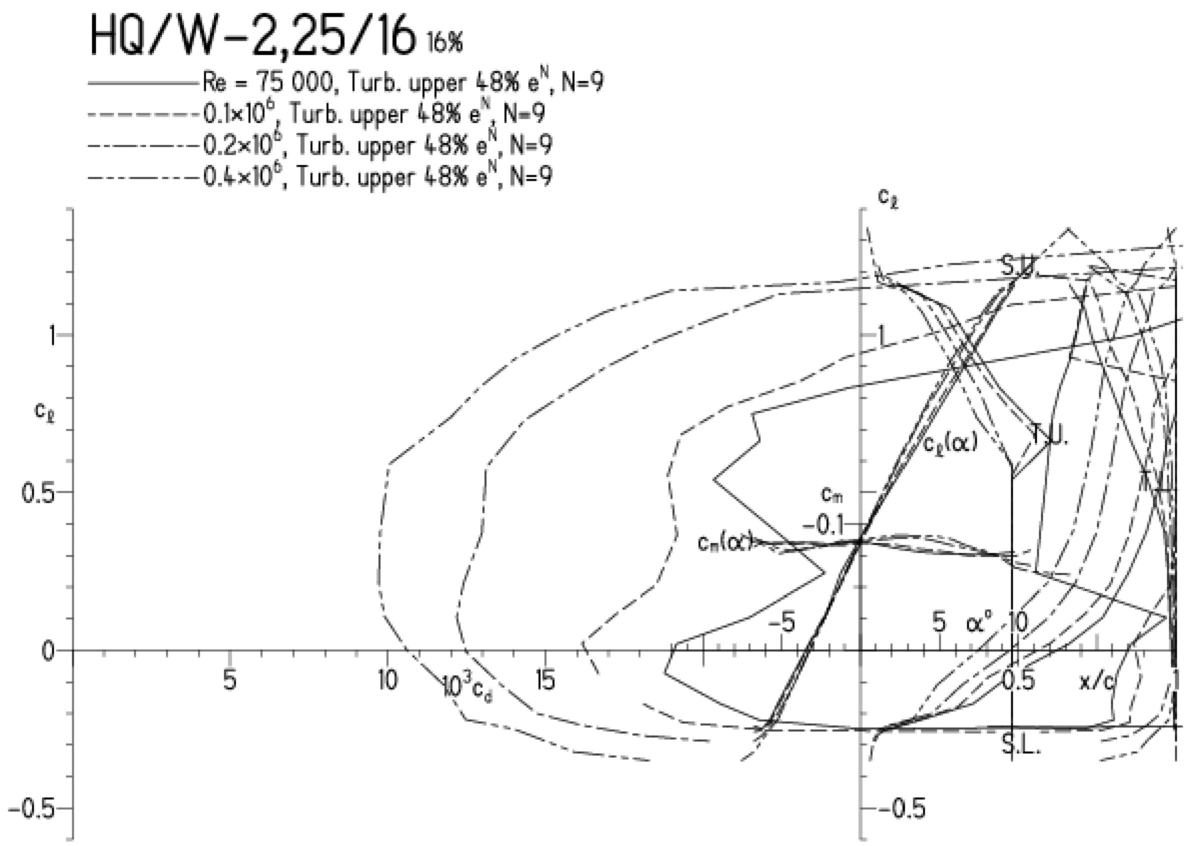


HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

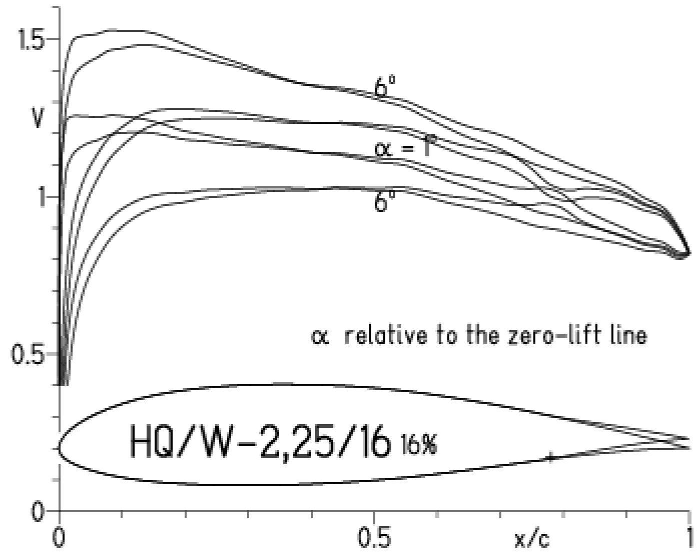


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

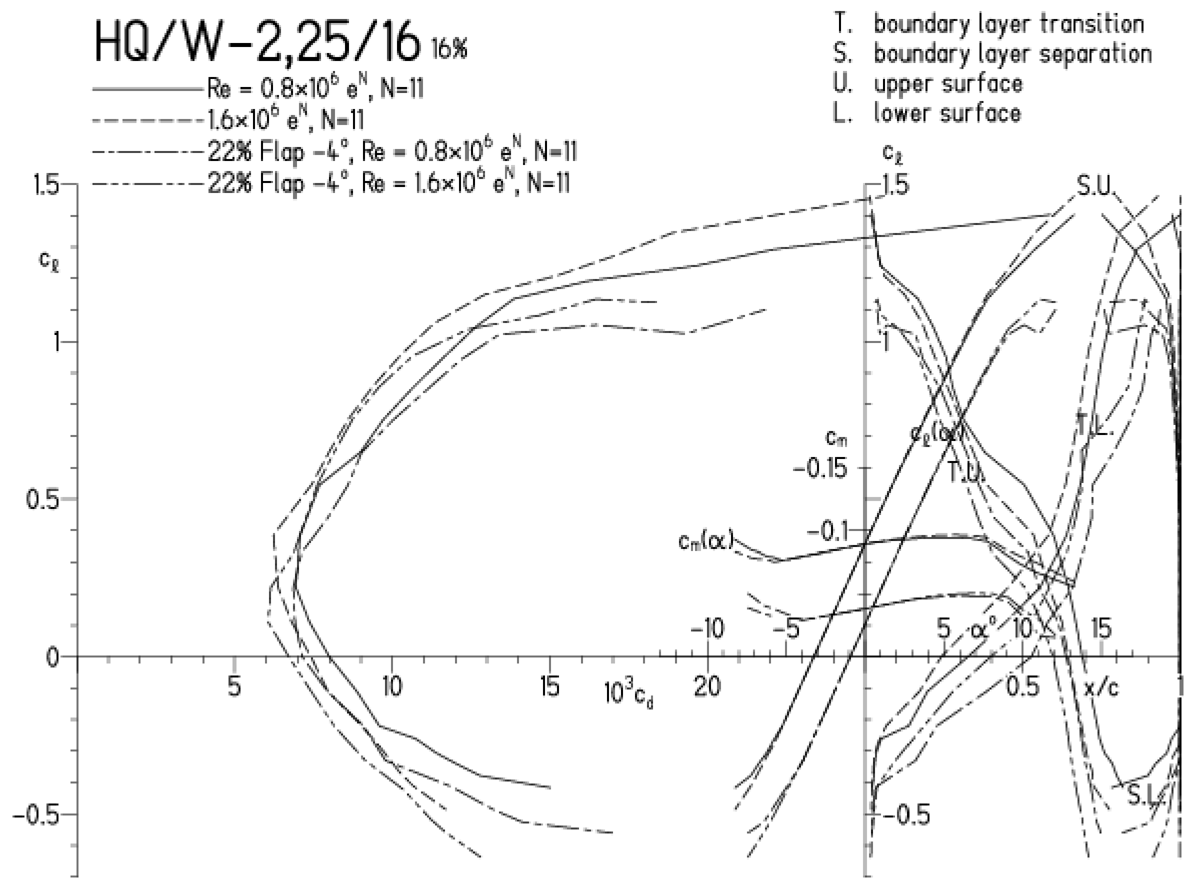
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

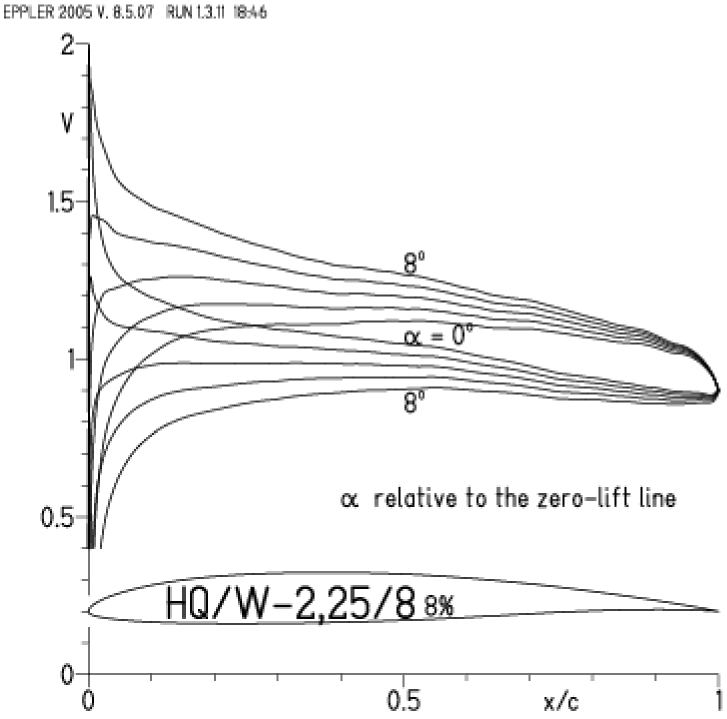
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

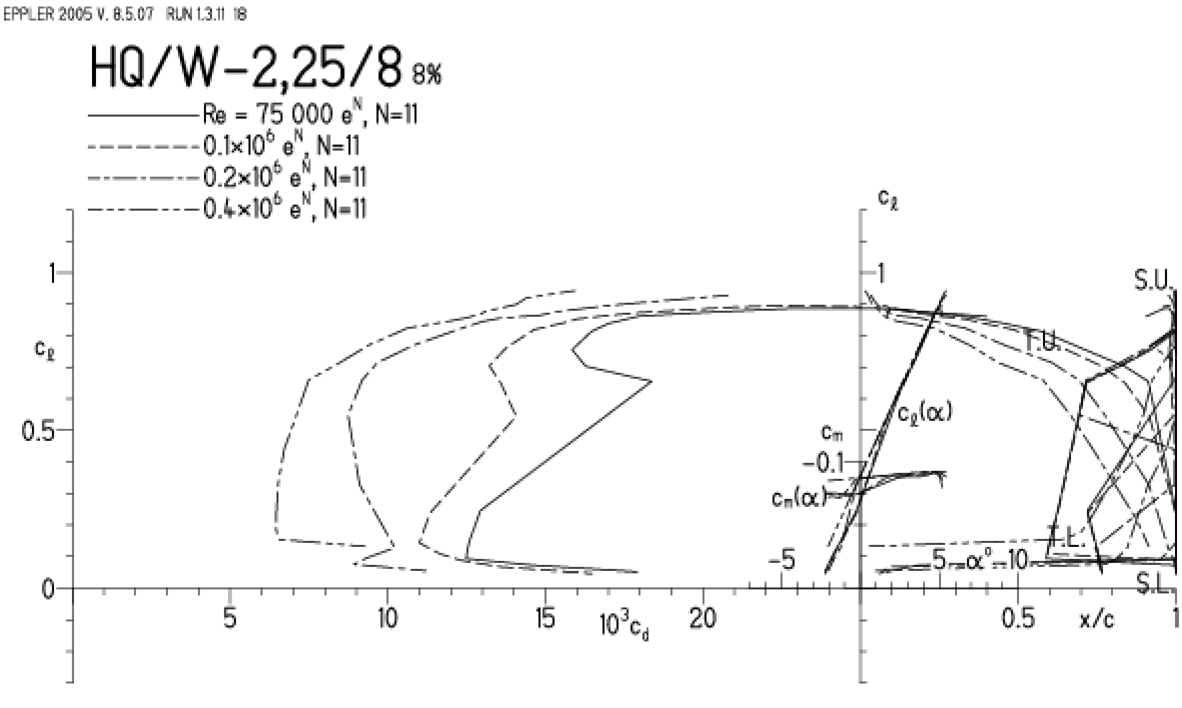


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

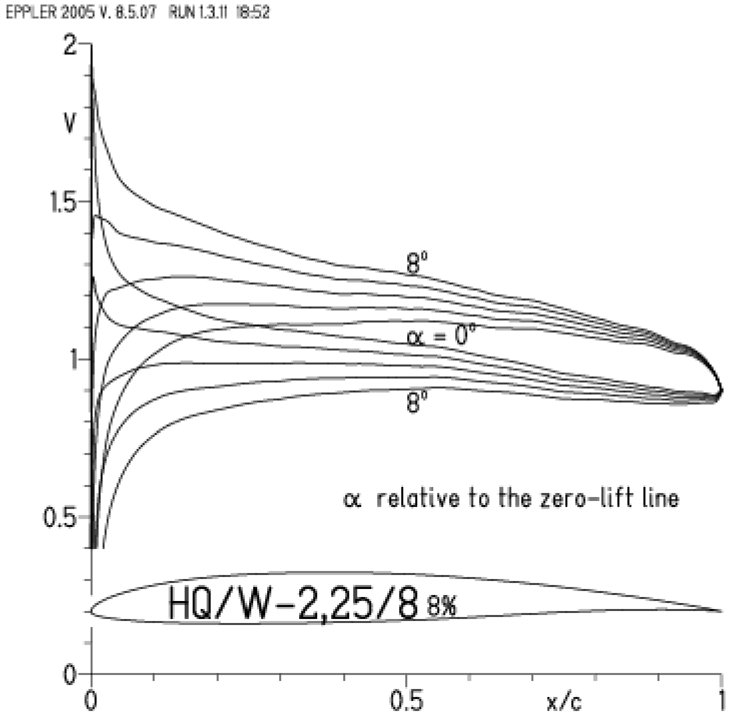


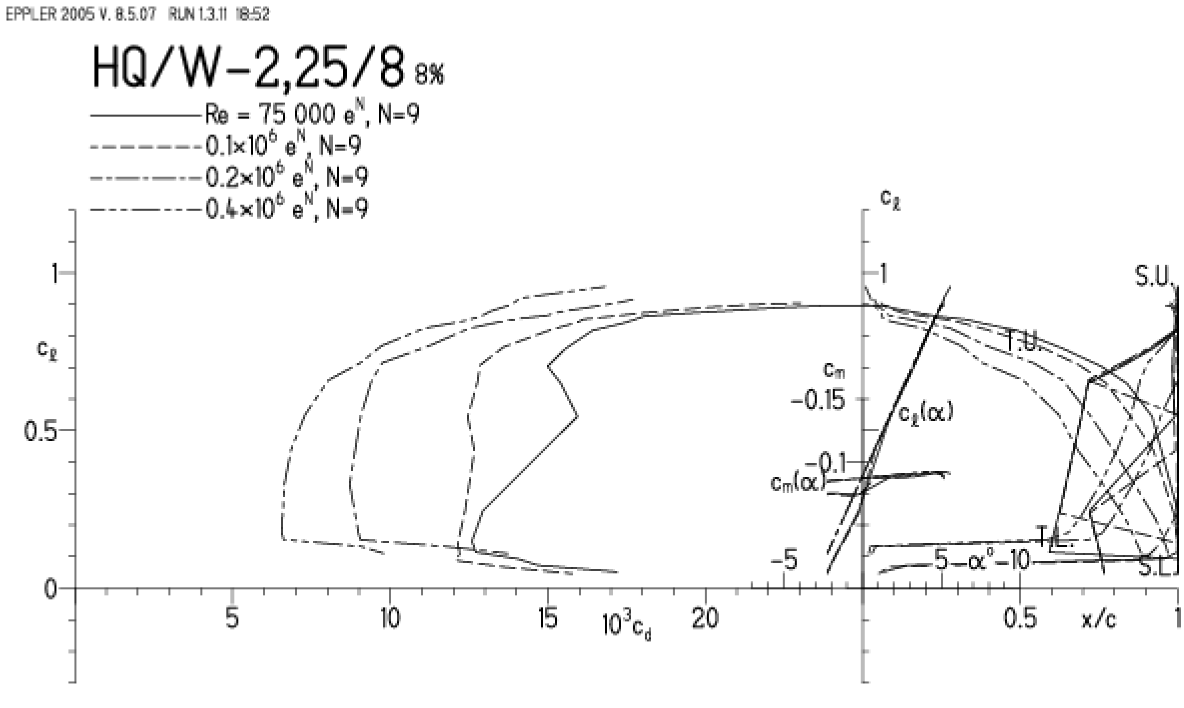
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

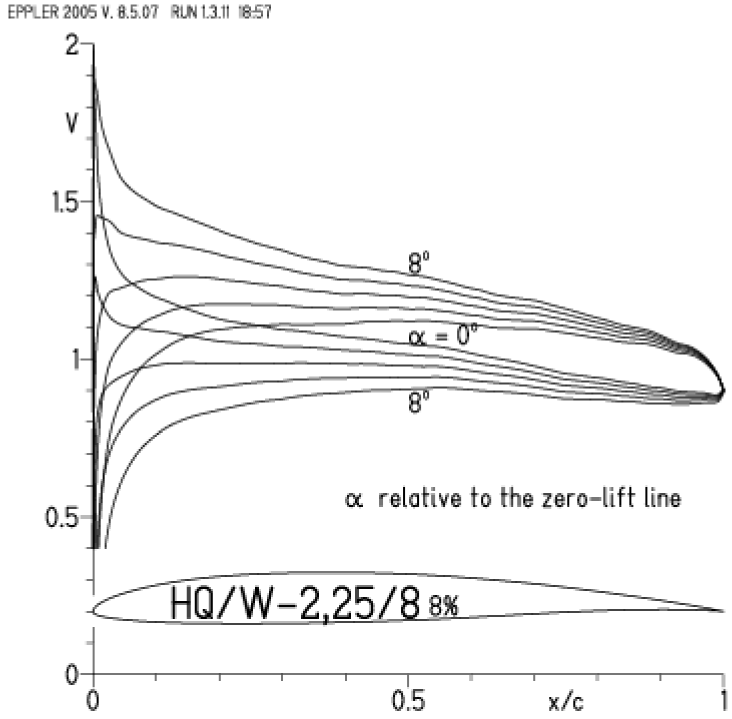

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_l(α)
c_m
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
α°
x/c

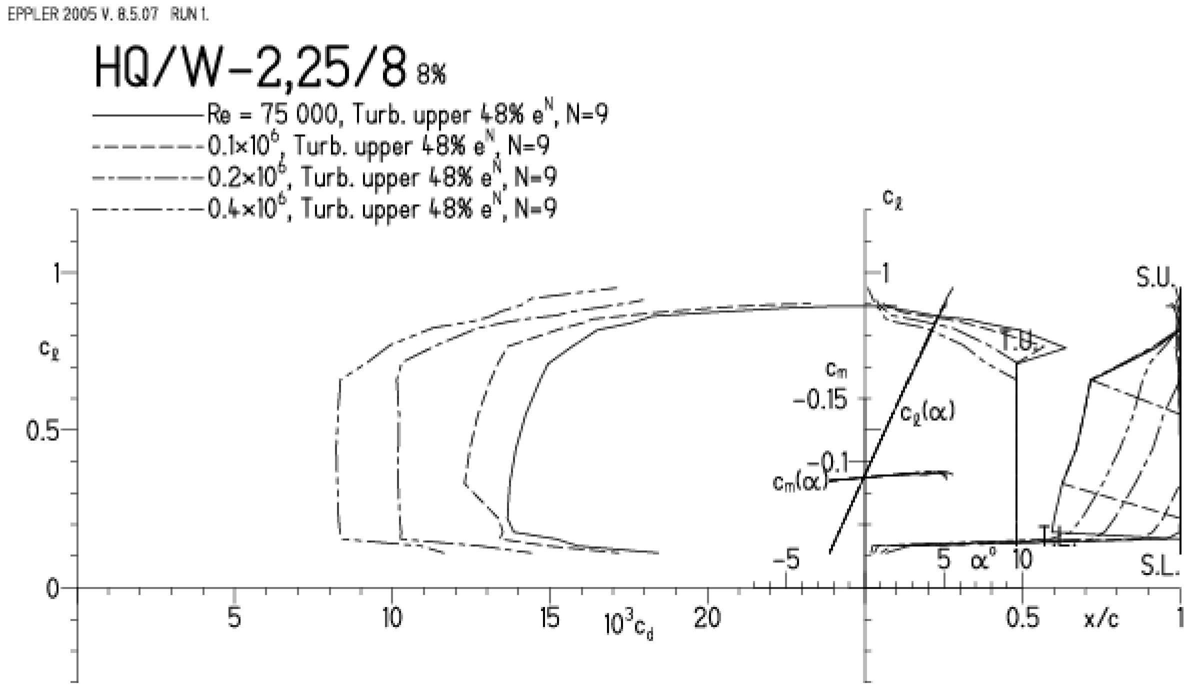
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
0.5
α relative to the zero-lift line
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

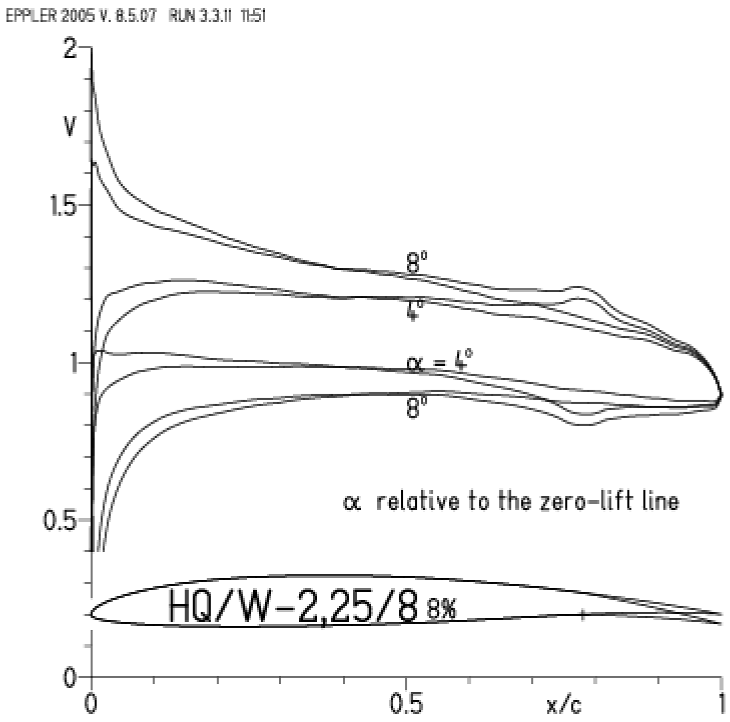

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5 α° 10
0.5
x/c
1
S.U.
T.U.
T.L.
S.L.

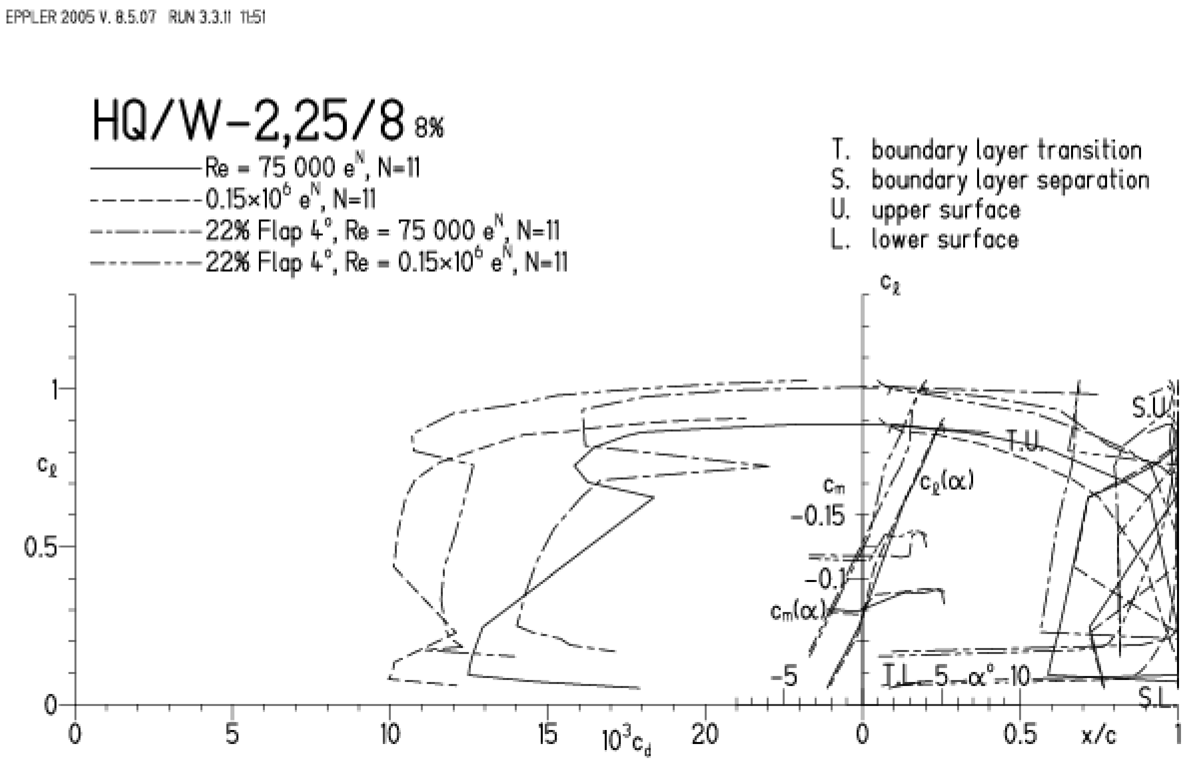
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



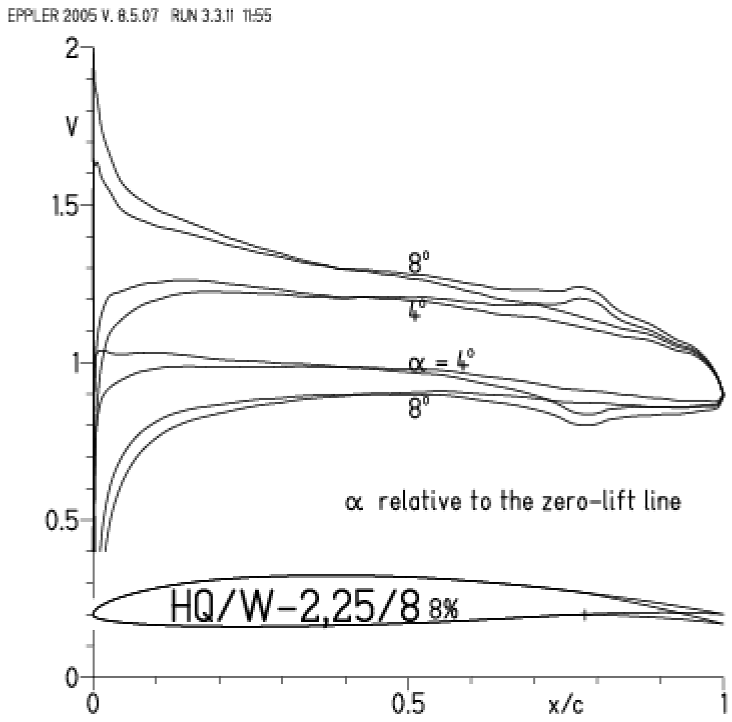


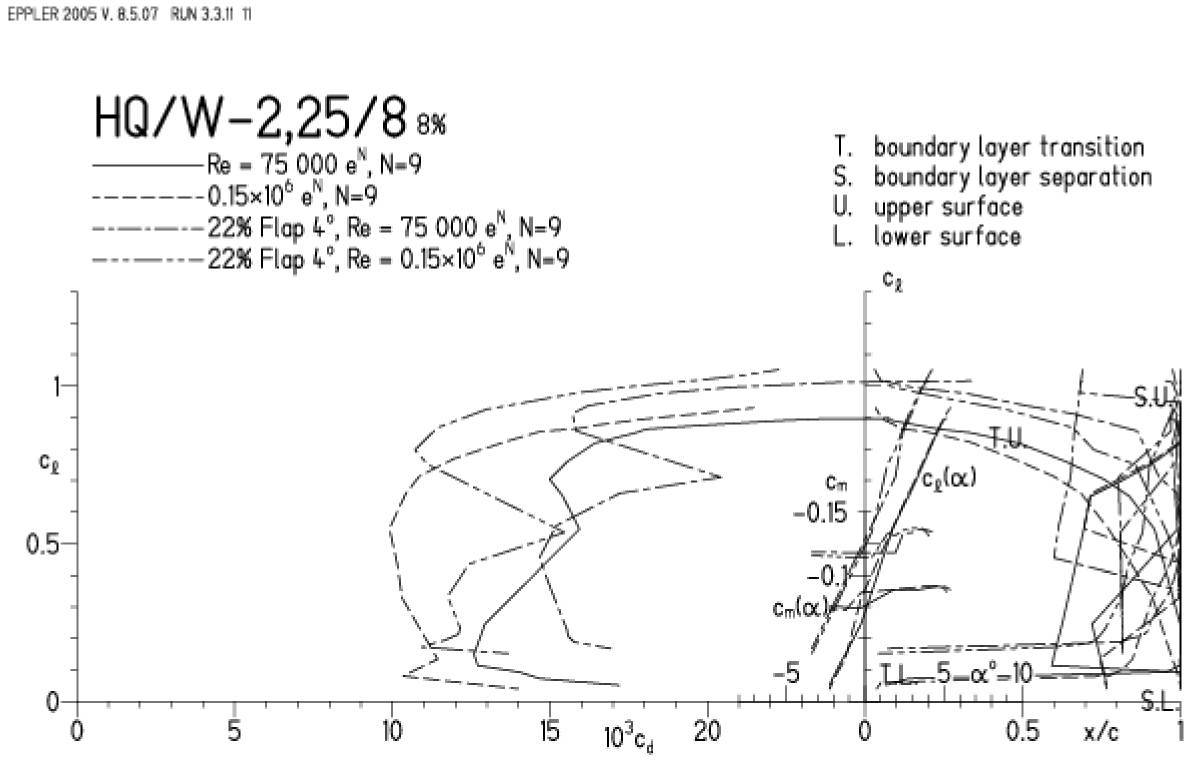
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



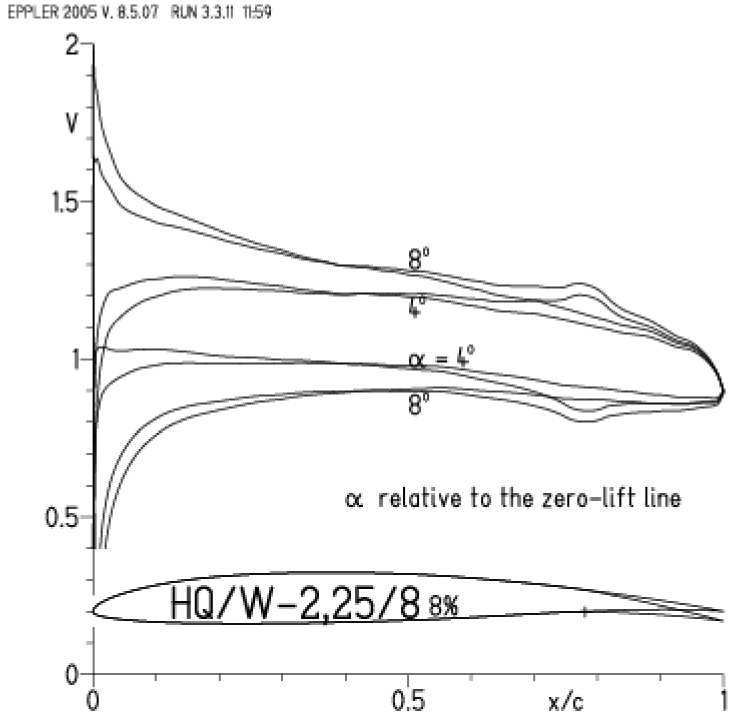


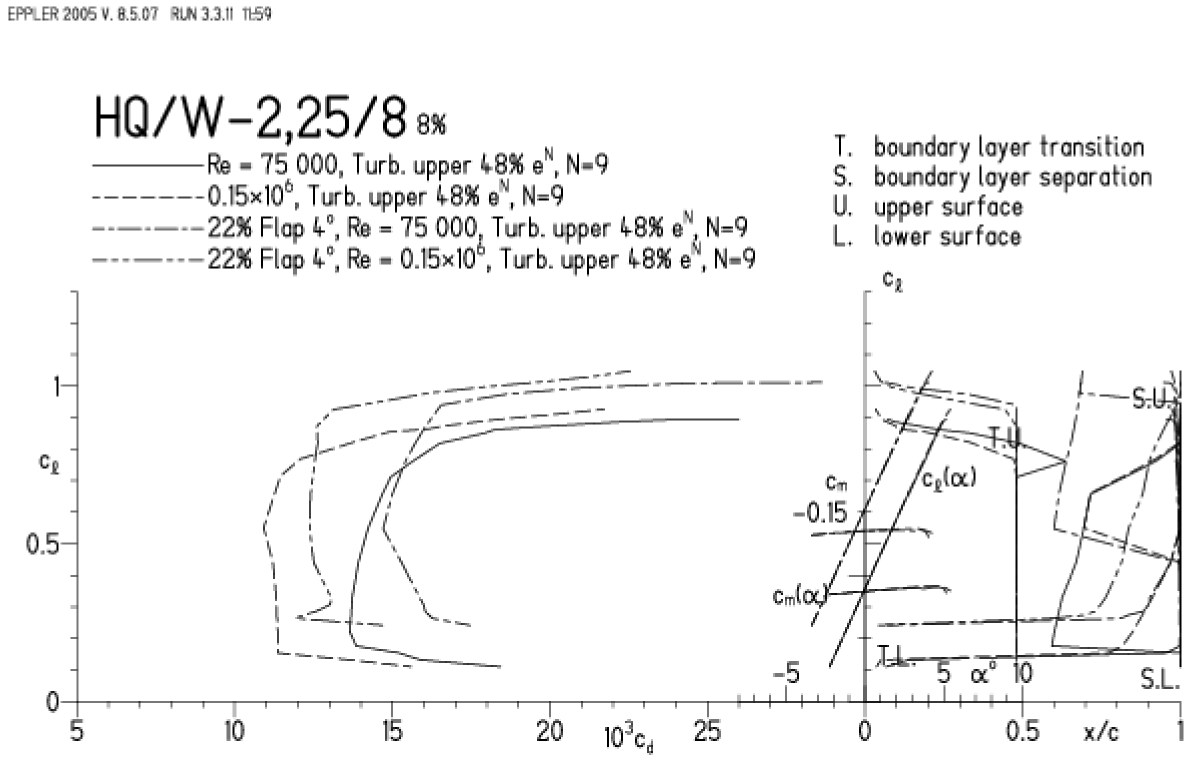
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





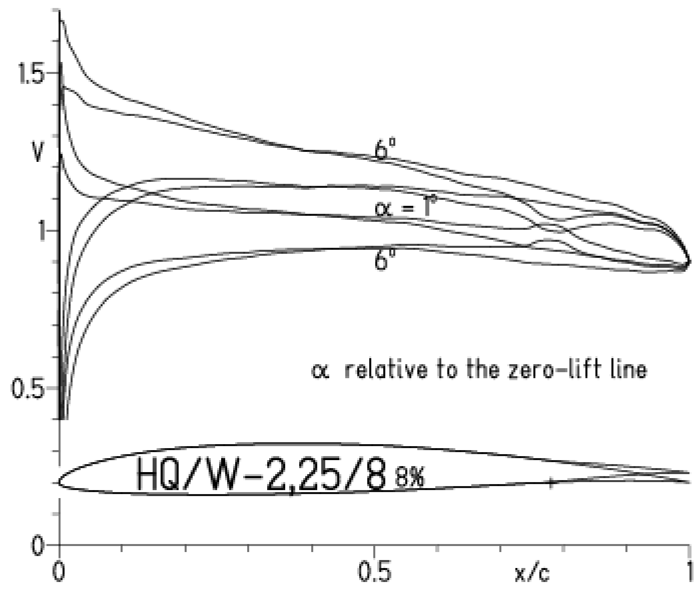
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



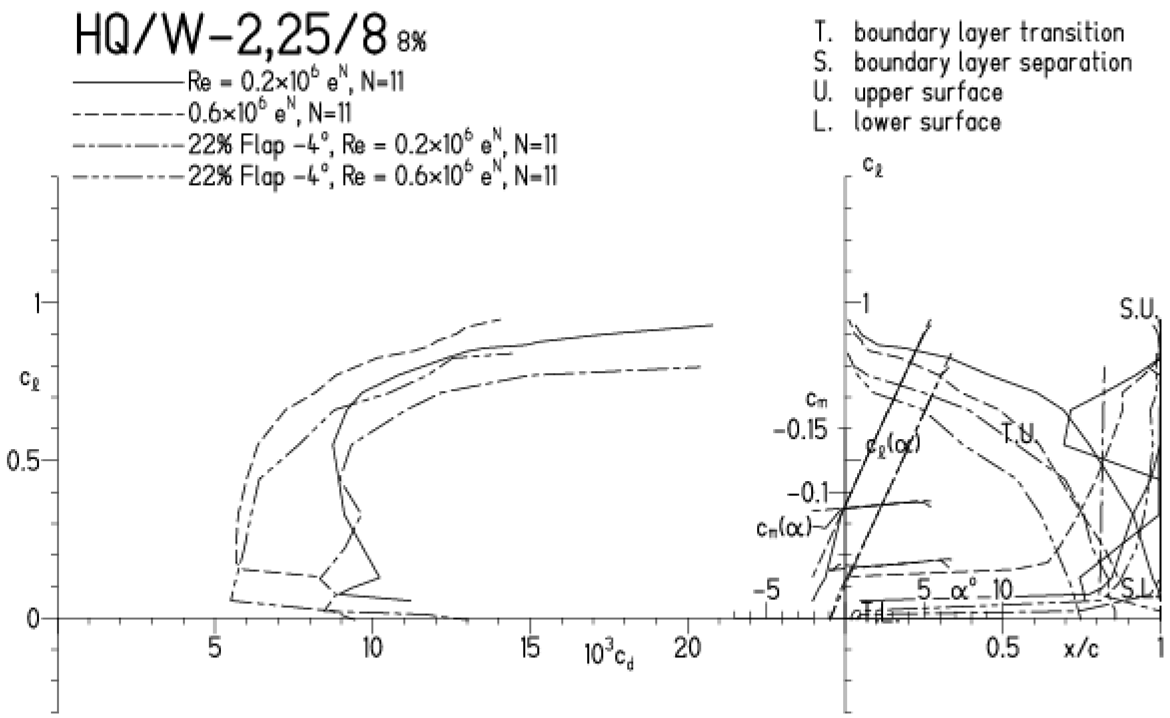


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

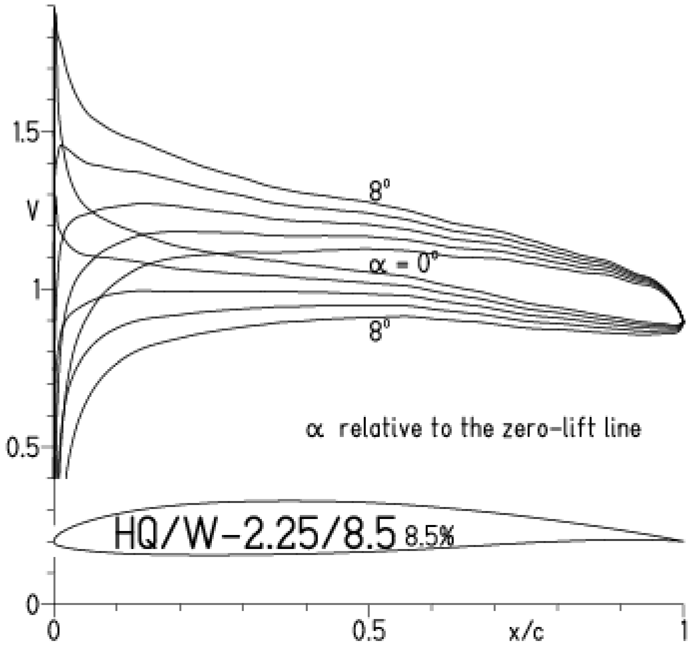


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

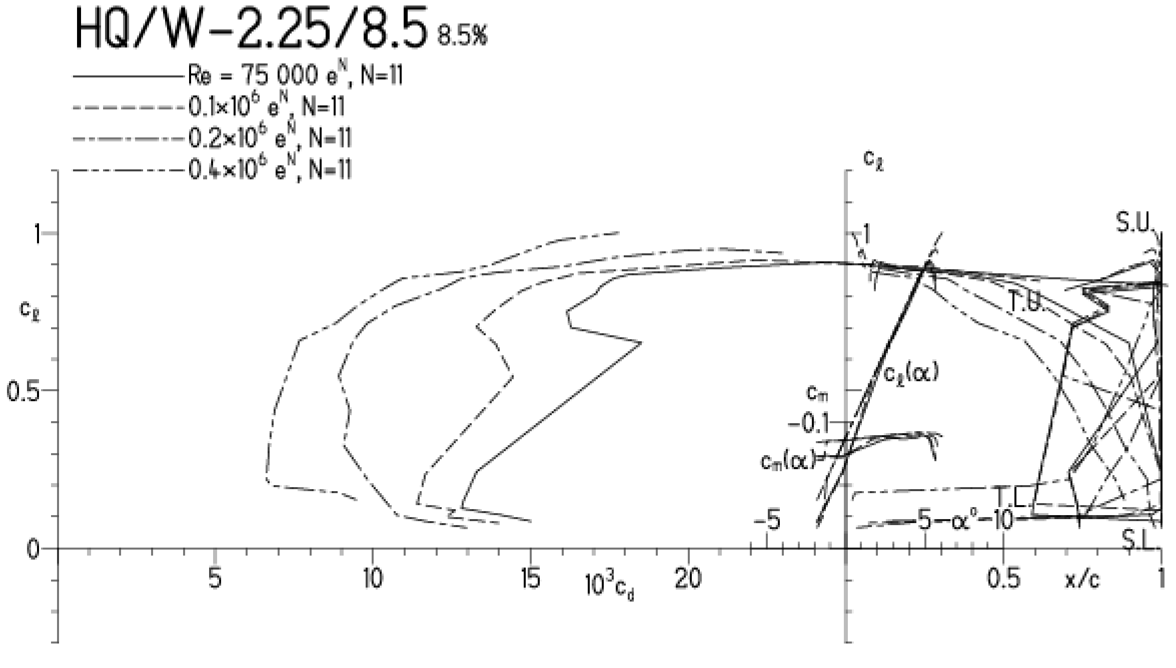


<u>HQ/W-2,25/8,5</u>, N=11

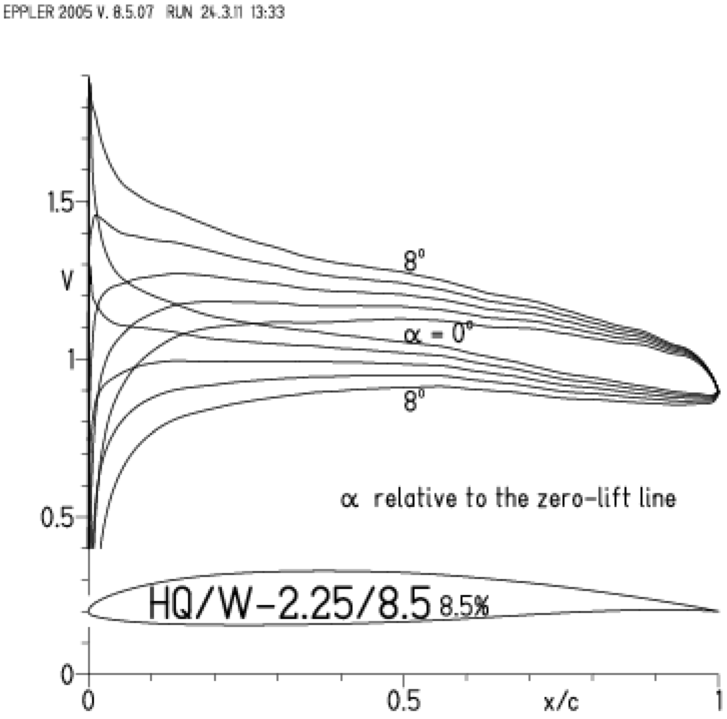
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

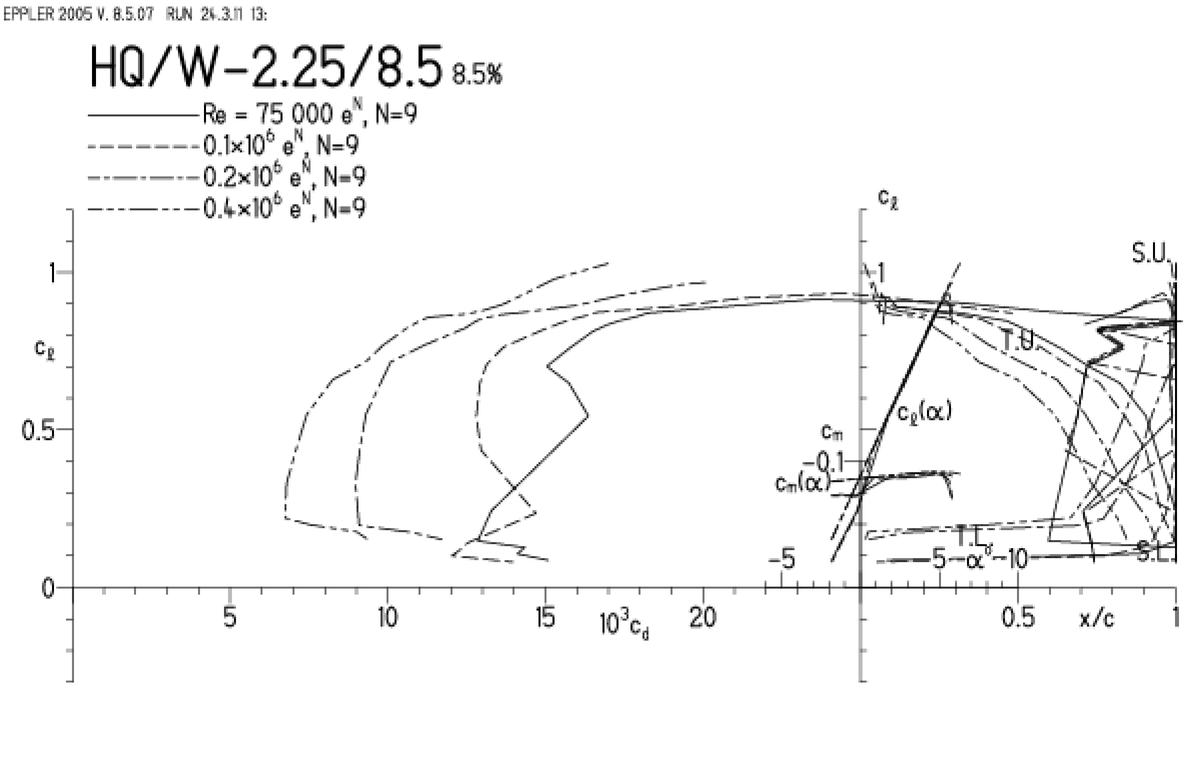


EPPLER 2005 V



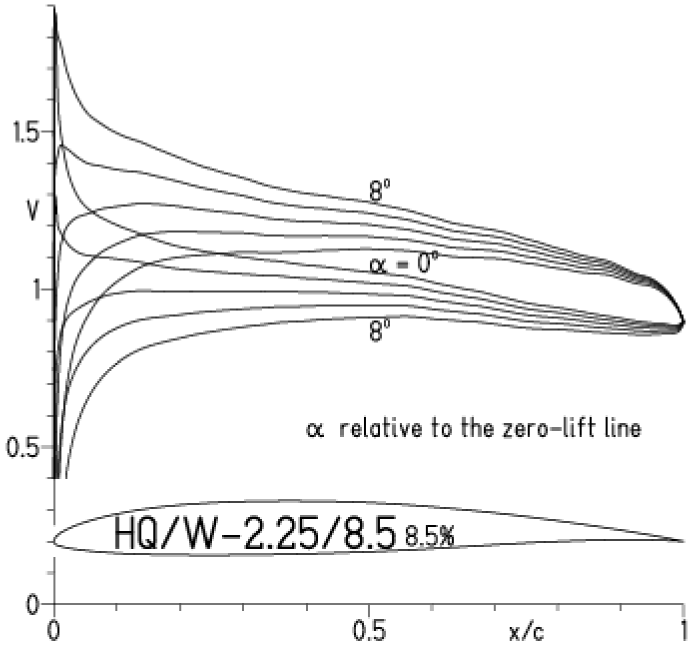
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

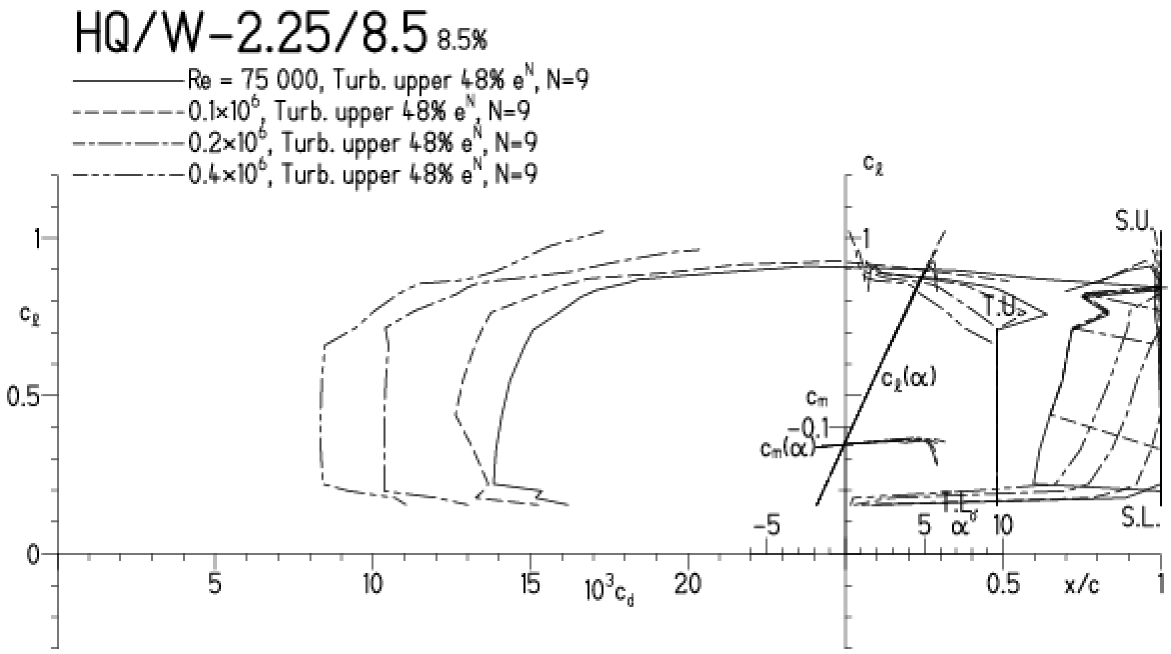

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
S.U.
T.U.
c_ℓ(α)
c_m
-0.1
c_m(α)
-5
T.L.
5 α° 10
S.L.
0.5
x/c
1

HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 17:31

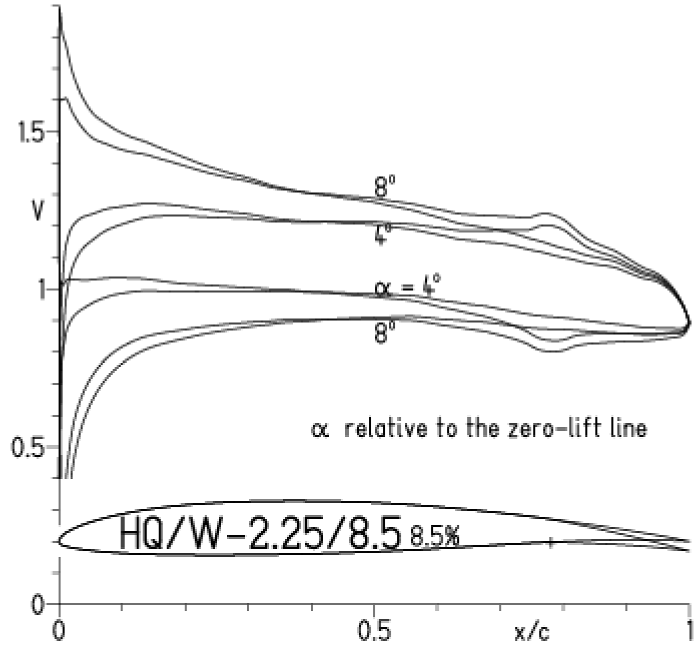


EPPLER 2005 V.

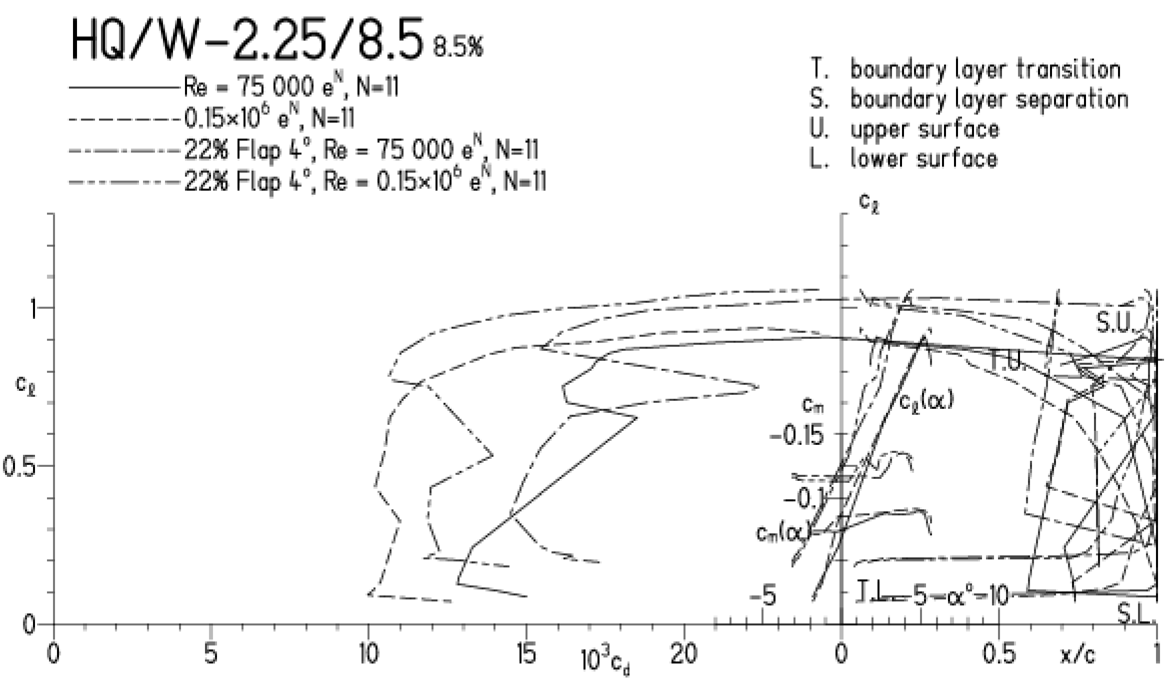


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

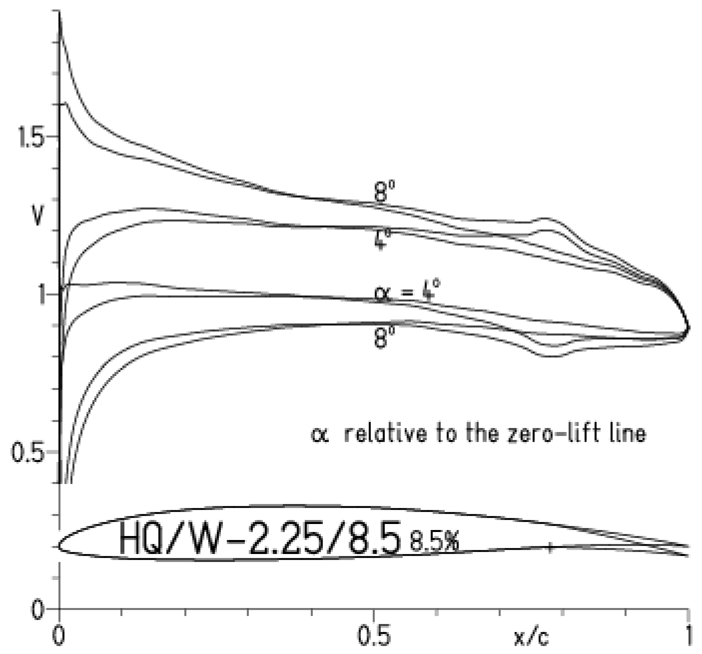


EPPLER 2005 V. 8.5.

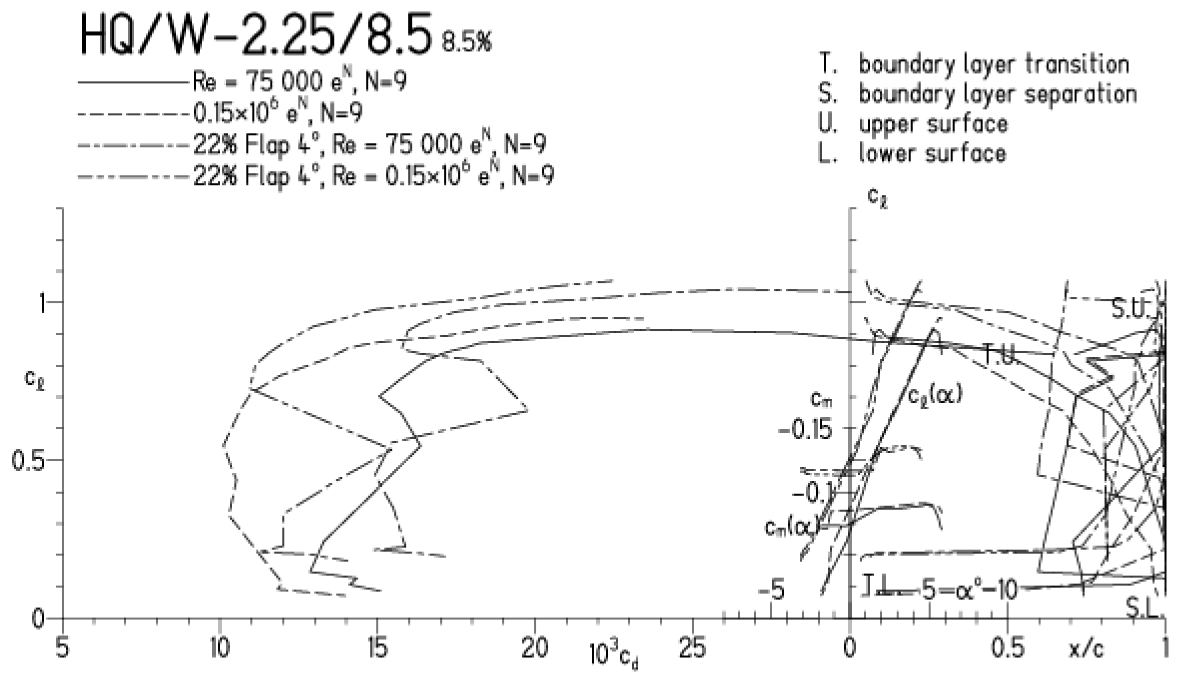


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

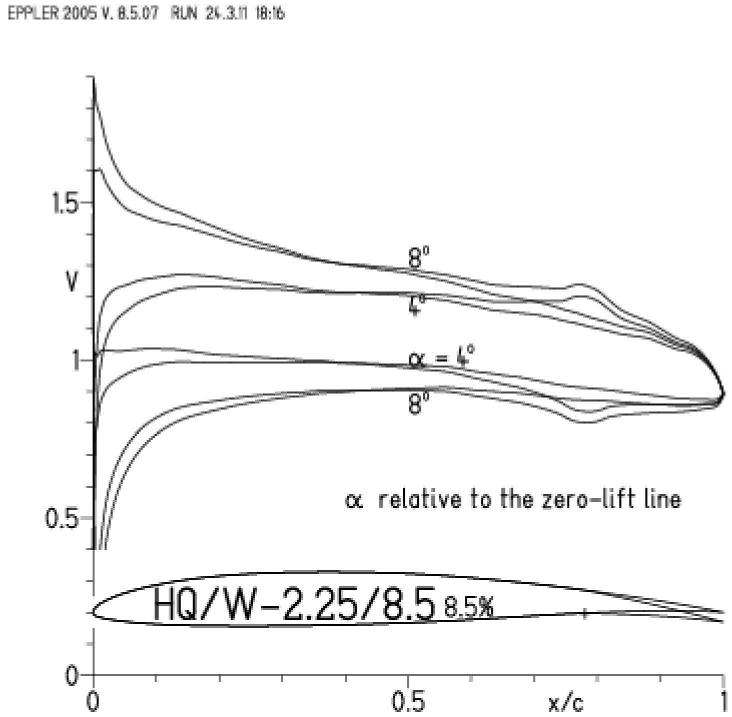
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

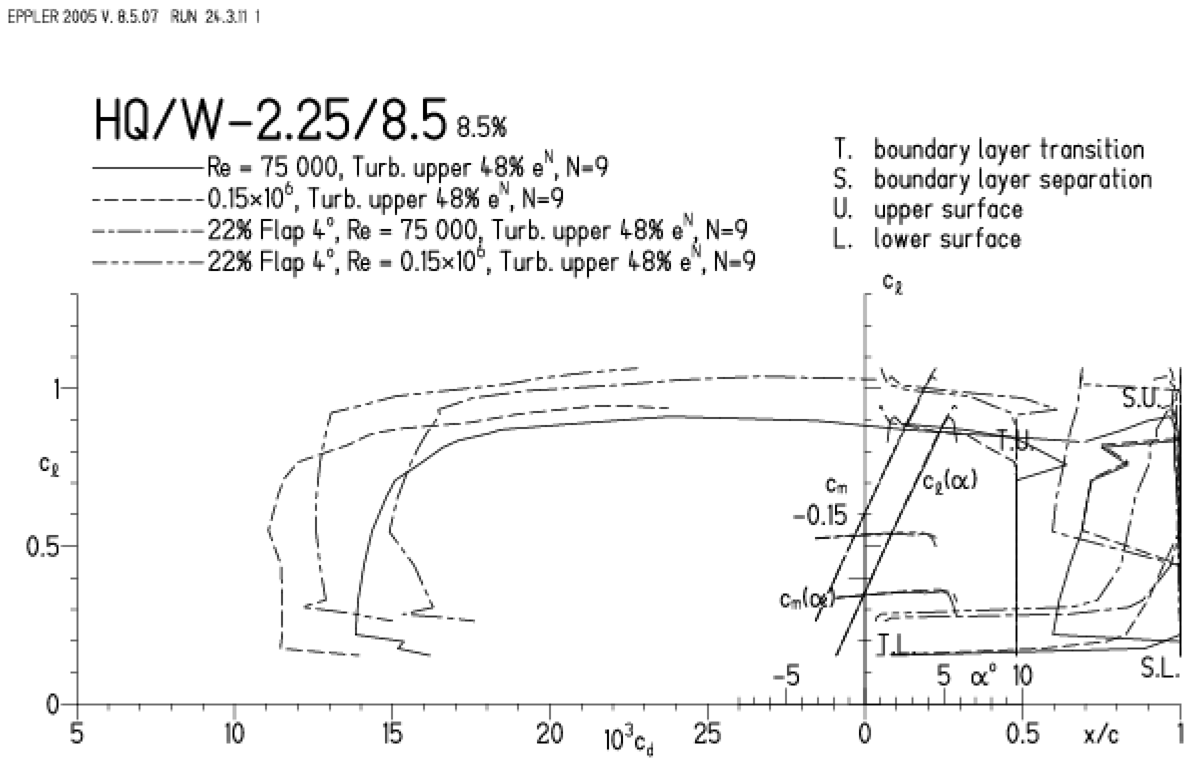


EPPLER 2005 V.

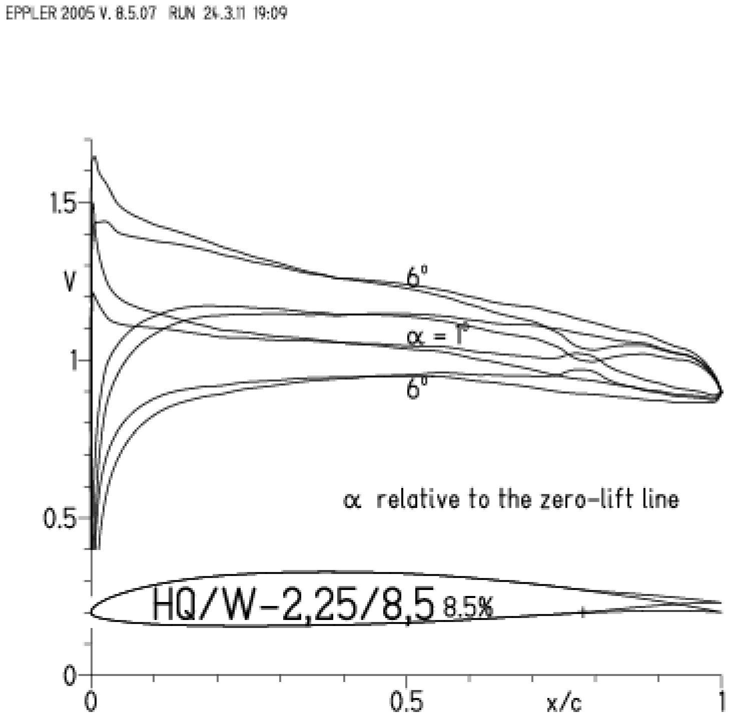


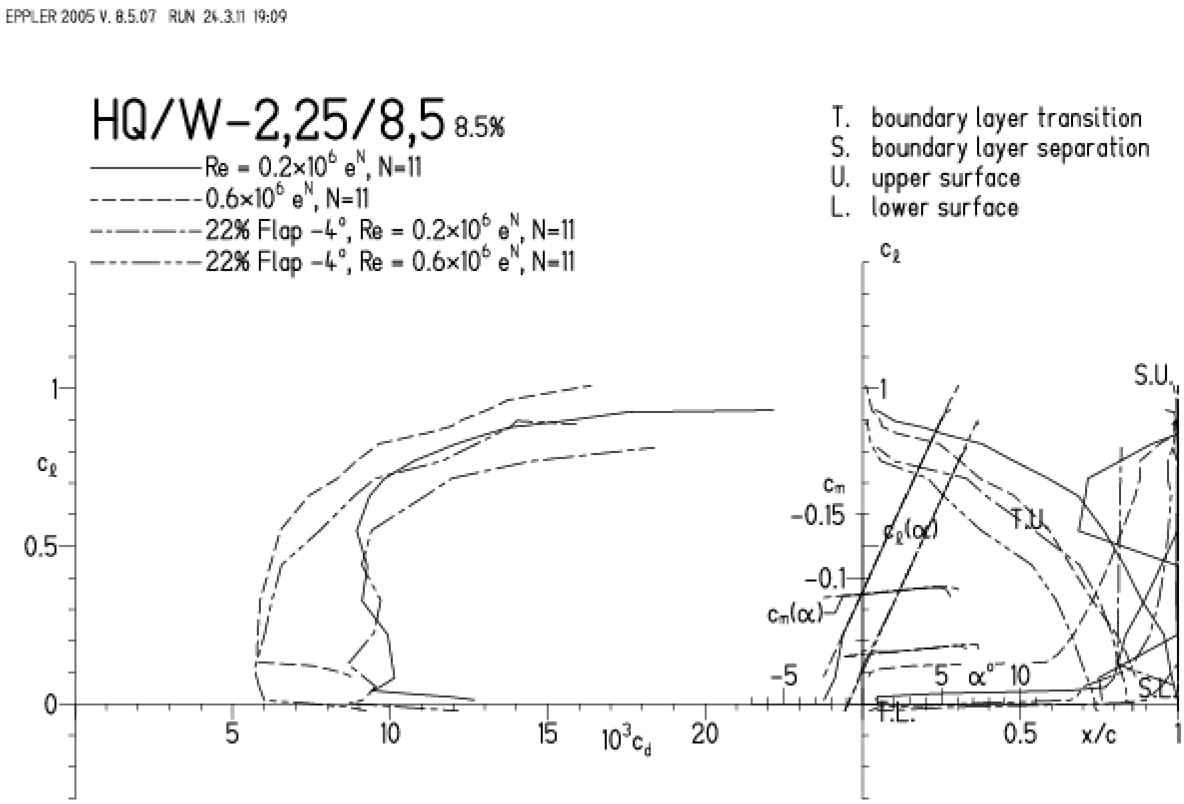
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)





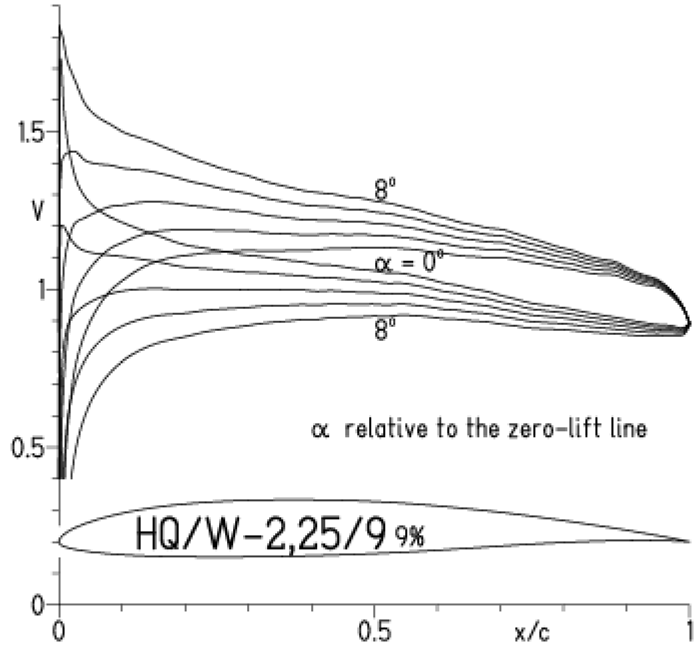
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



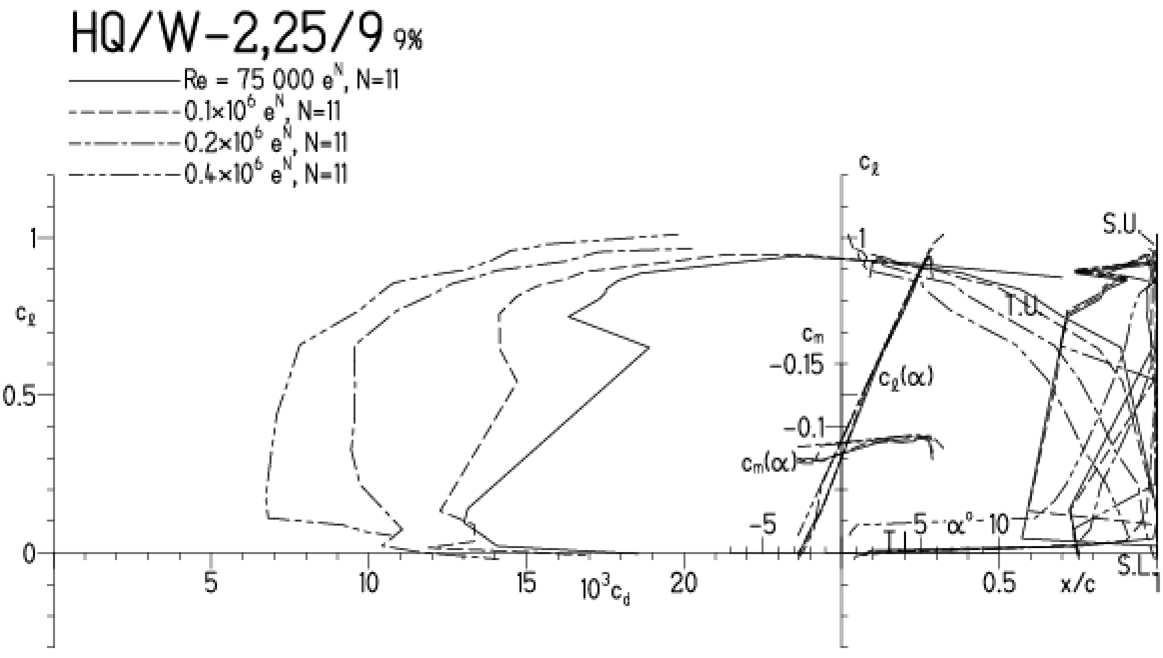


HQ/W-2,25/9, N=11

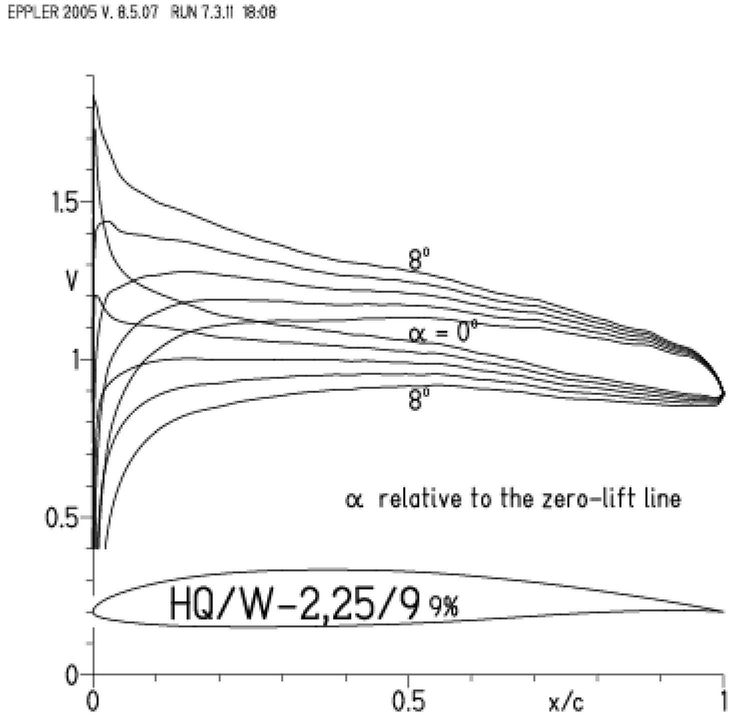
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

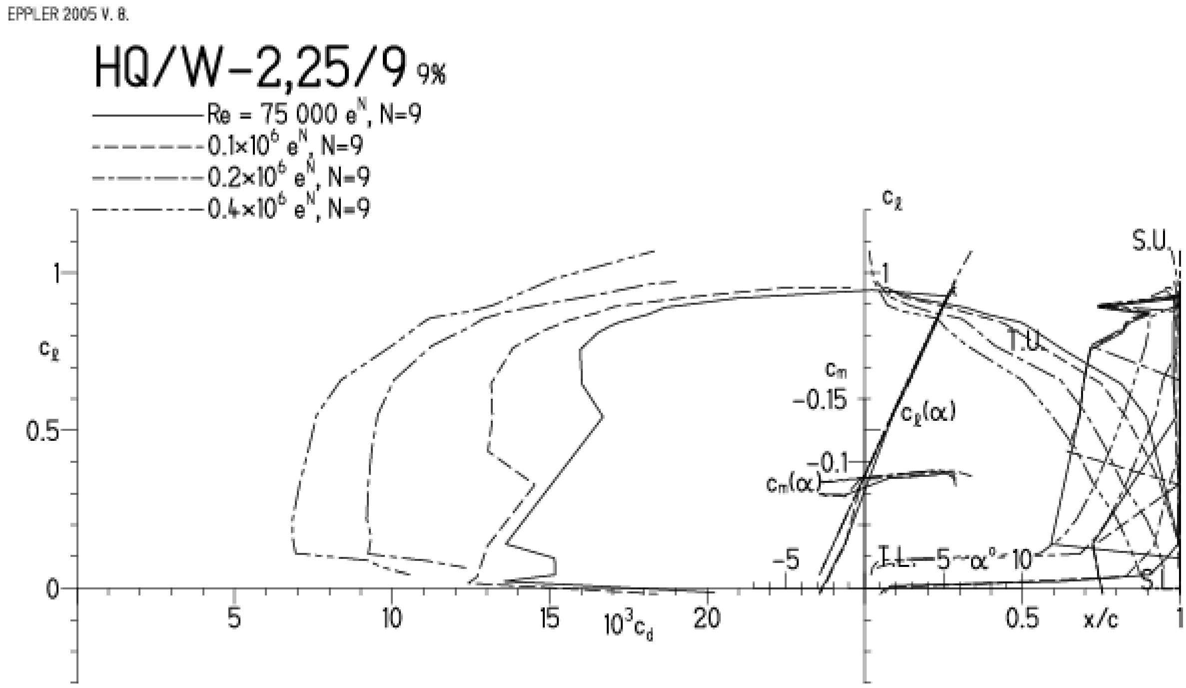


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

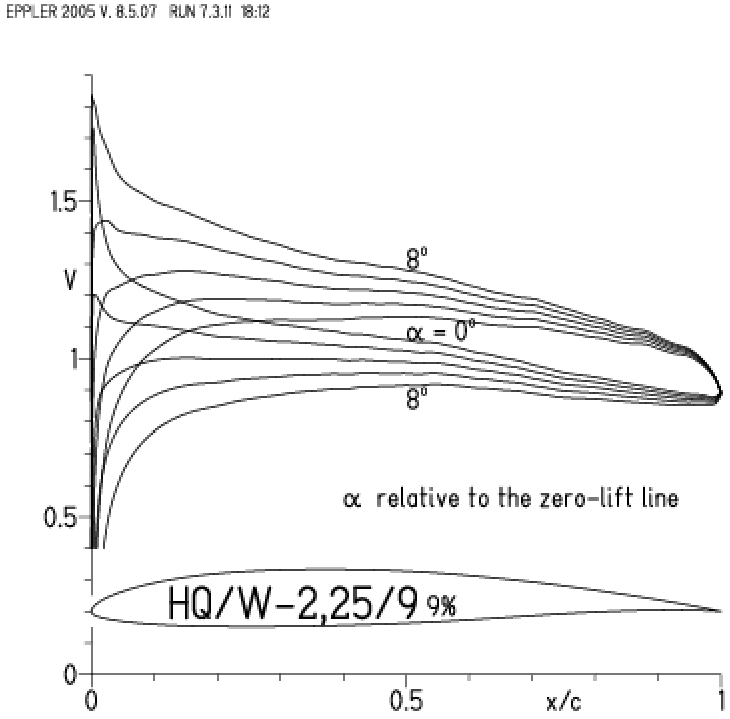


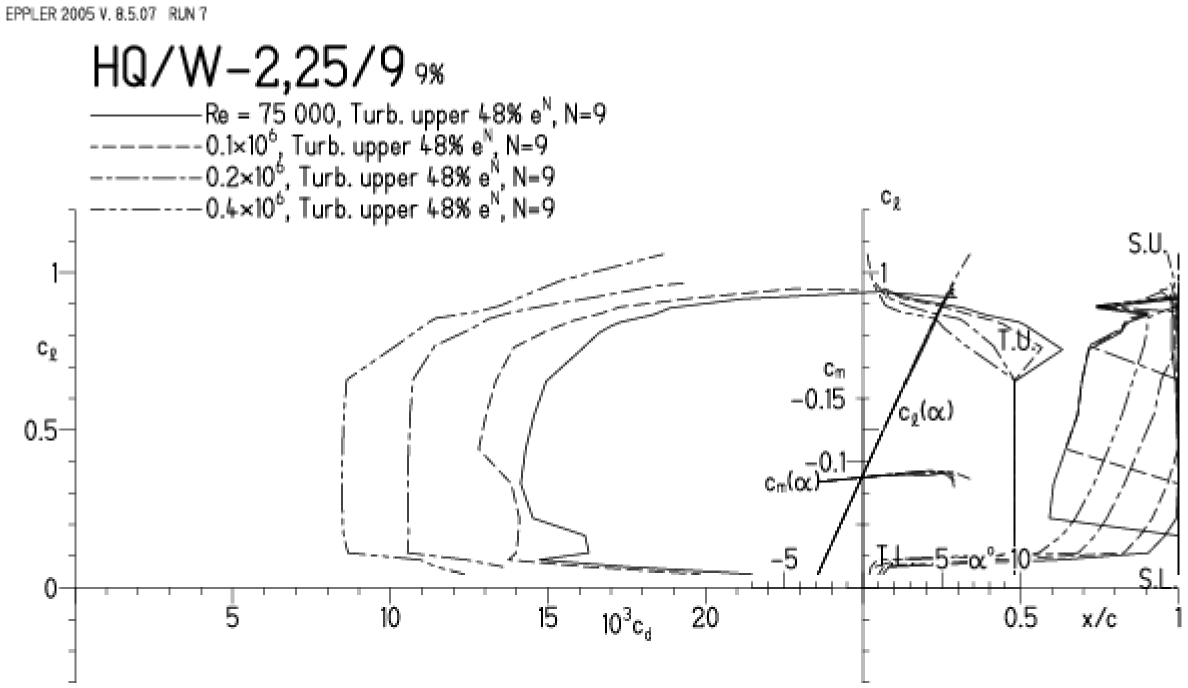
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

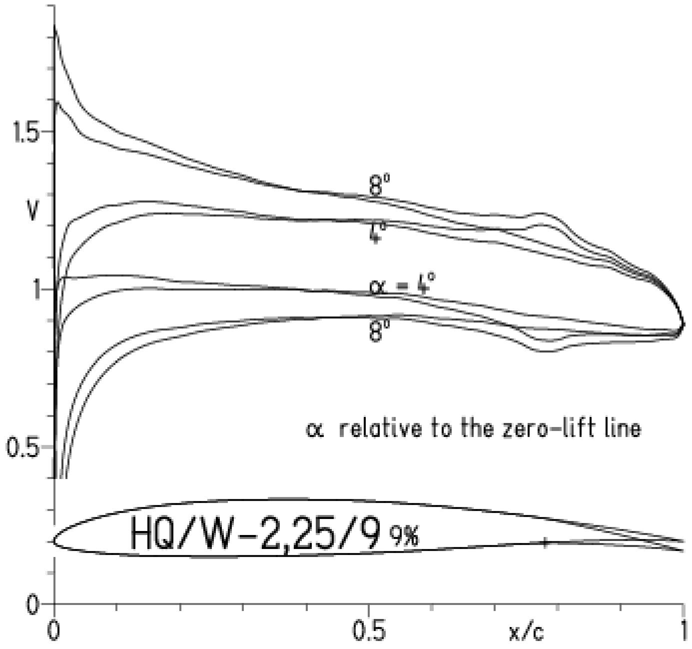
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



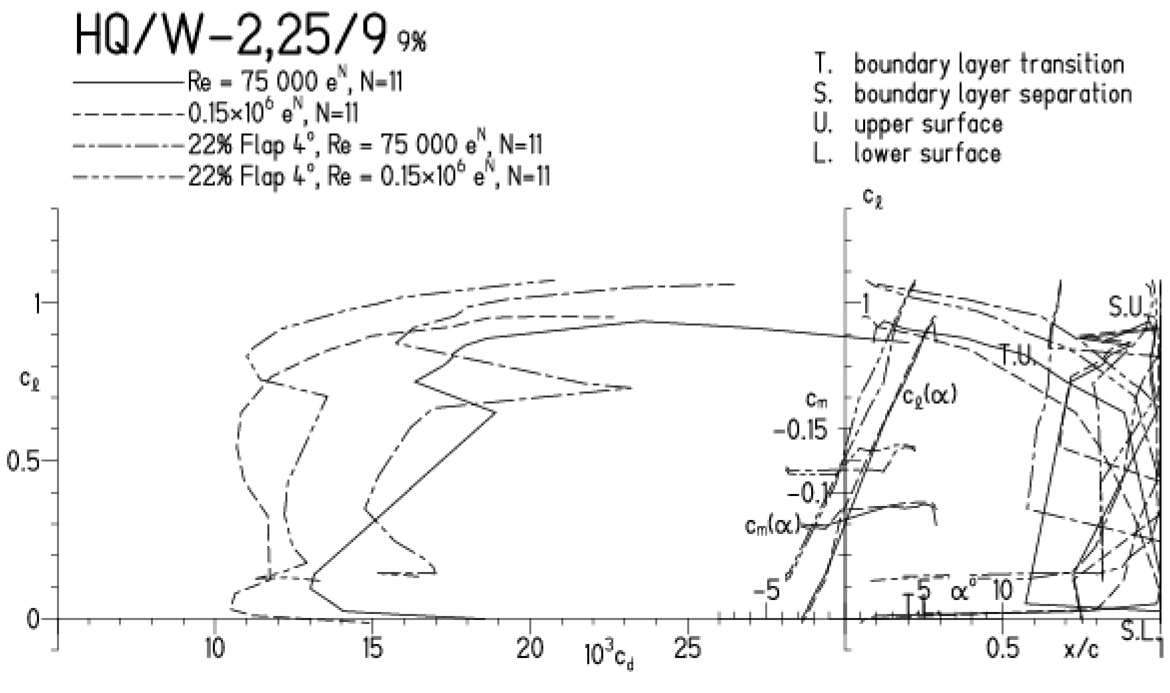


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

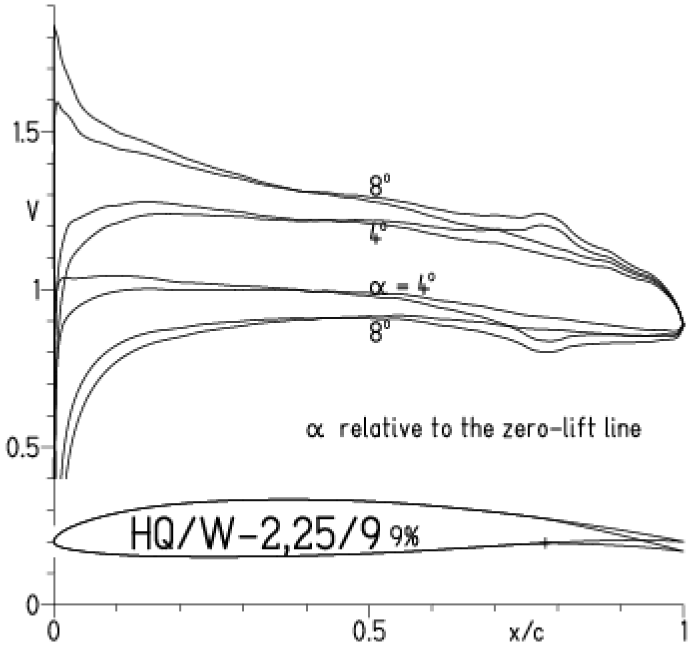


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

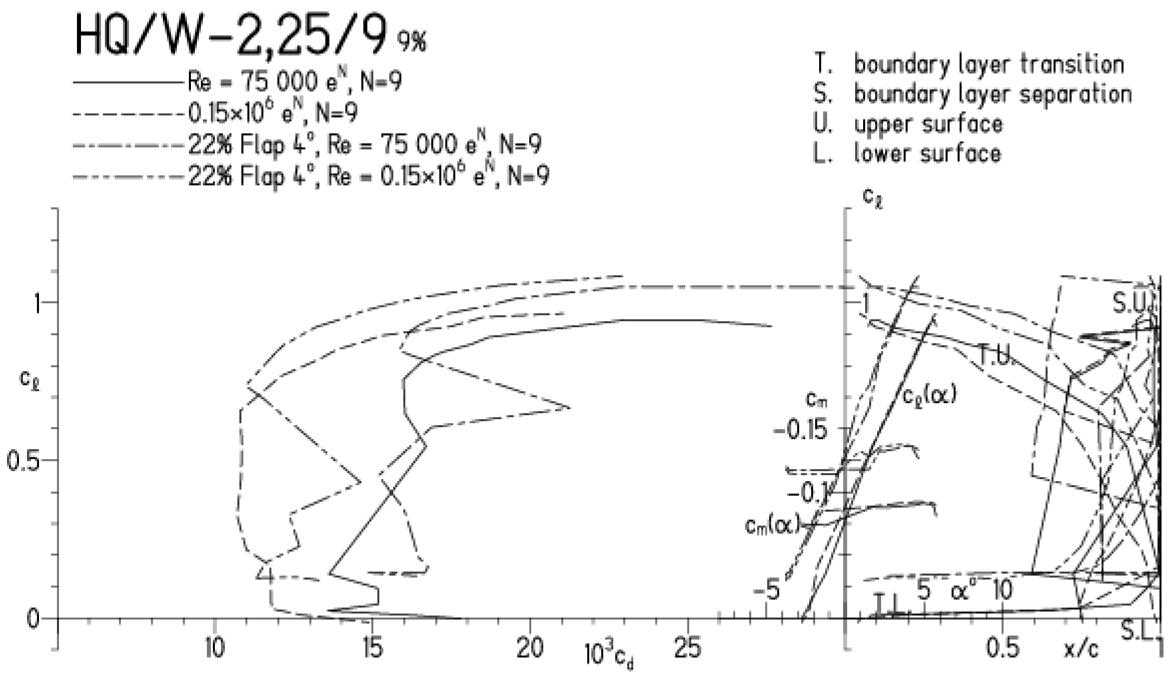


<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag

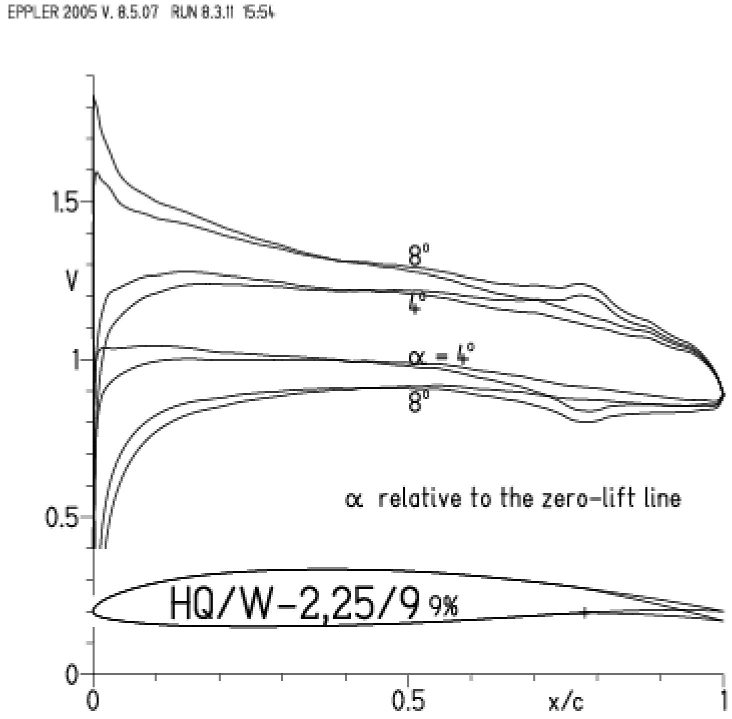
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

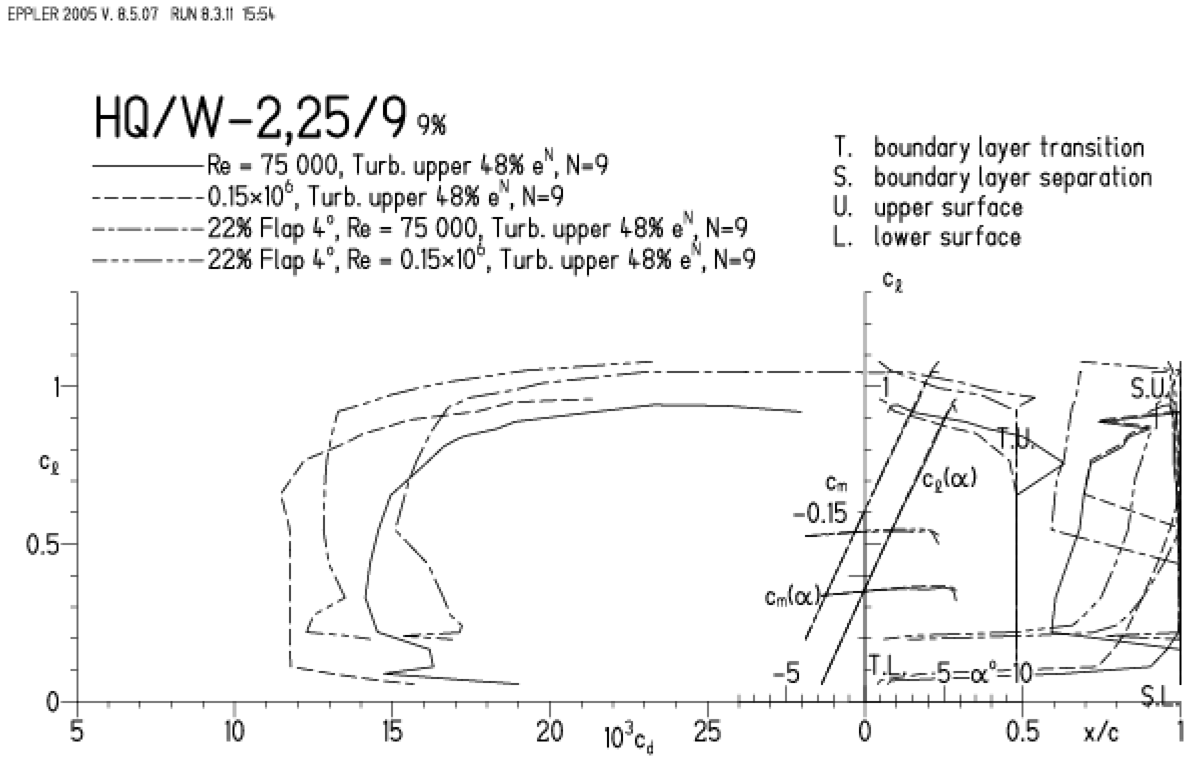


EPPLER 2005 V. 8.5.07 RUN 8.3.1



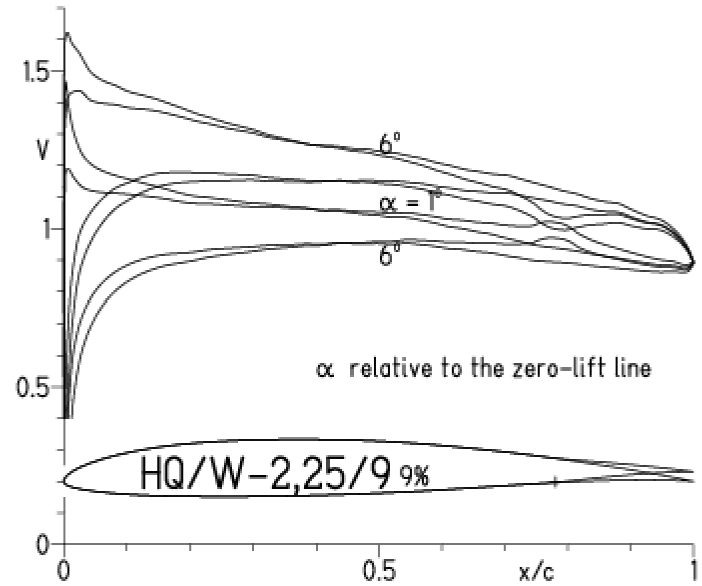
<u>HQ/W-2,25/</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



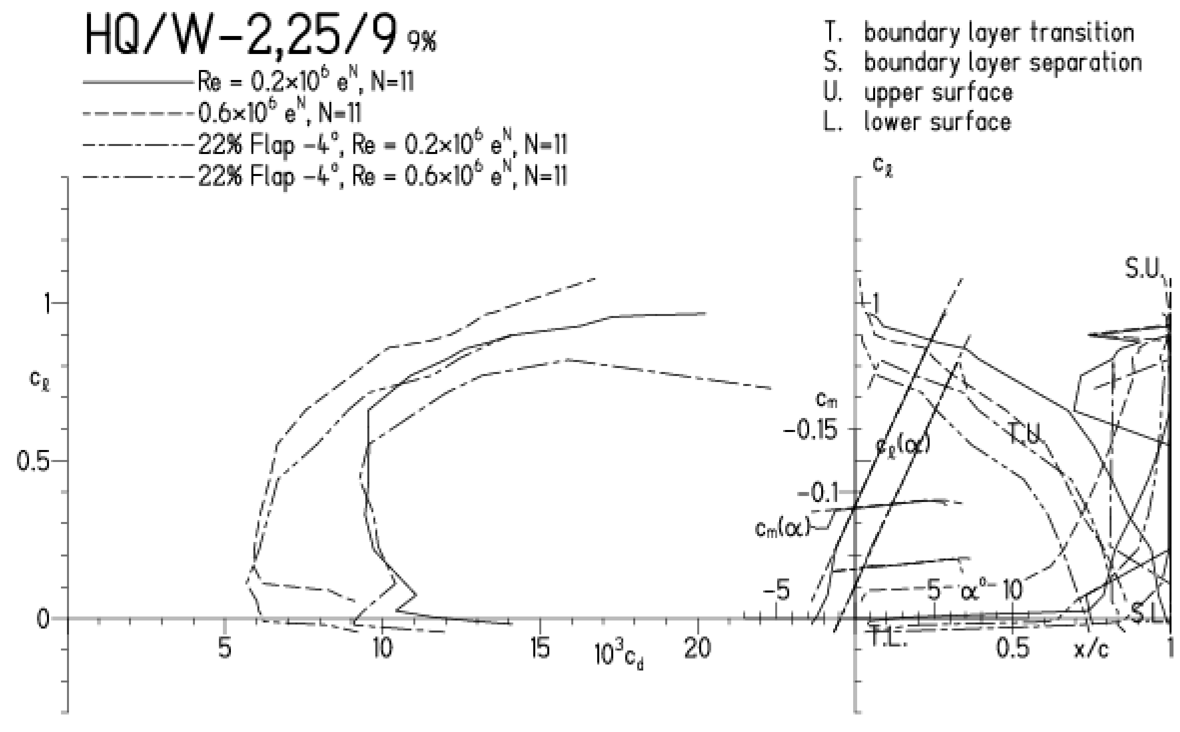


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

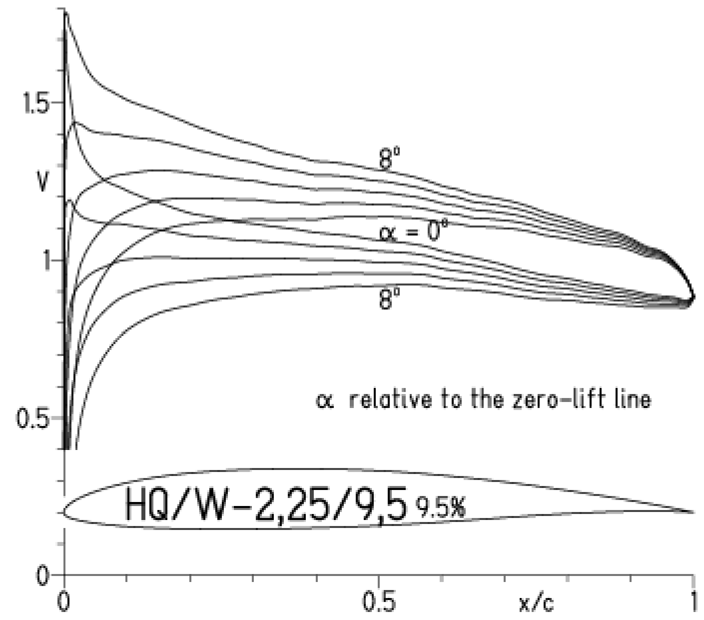


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

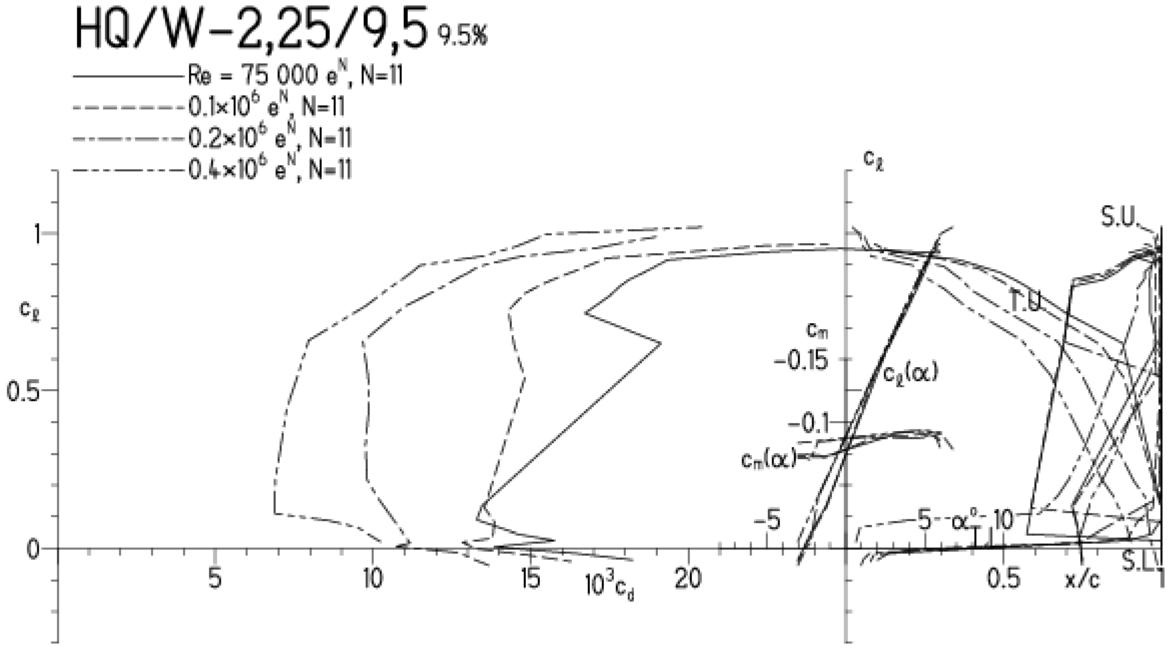


HQ/W-2,25/9,5, N=11

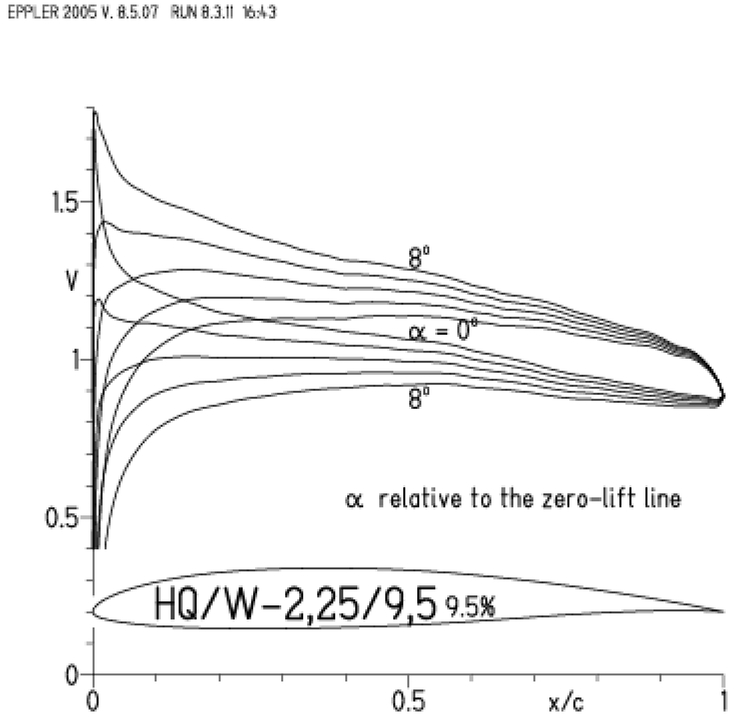
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

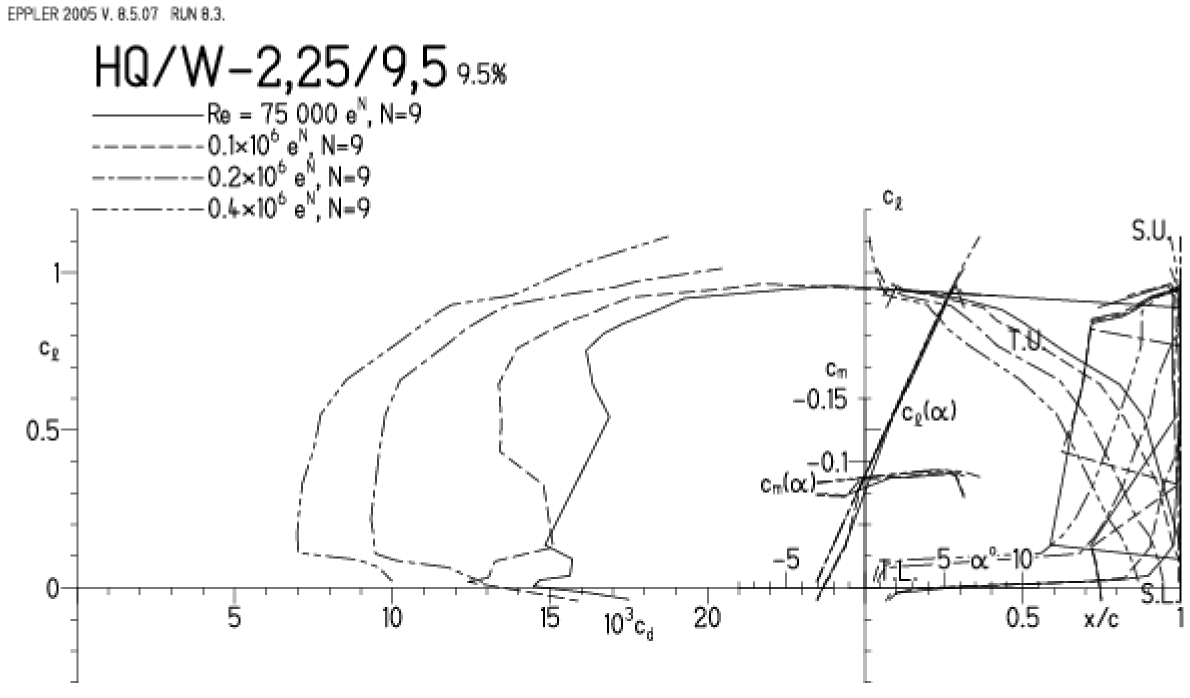


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

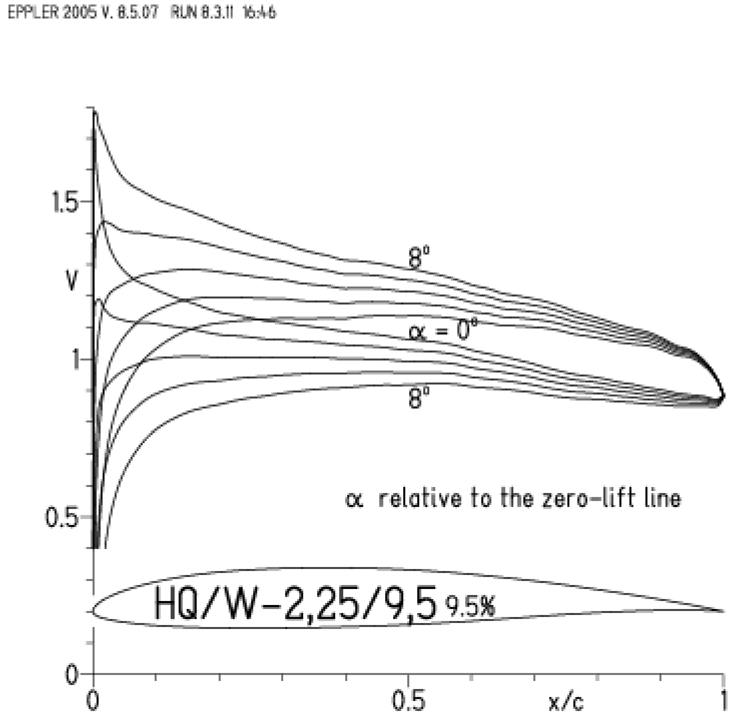


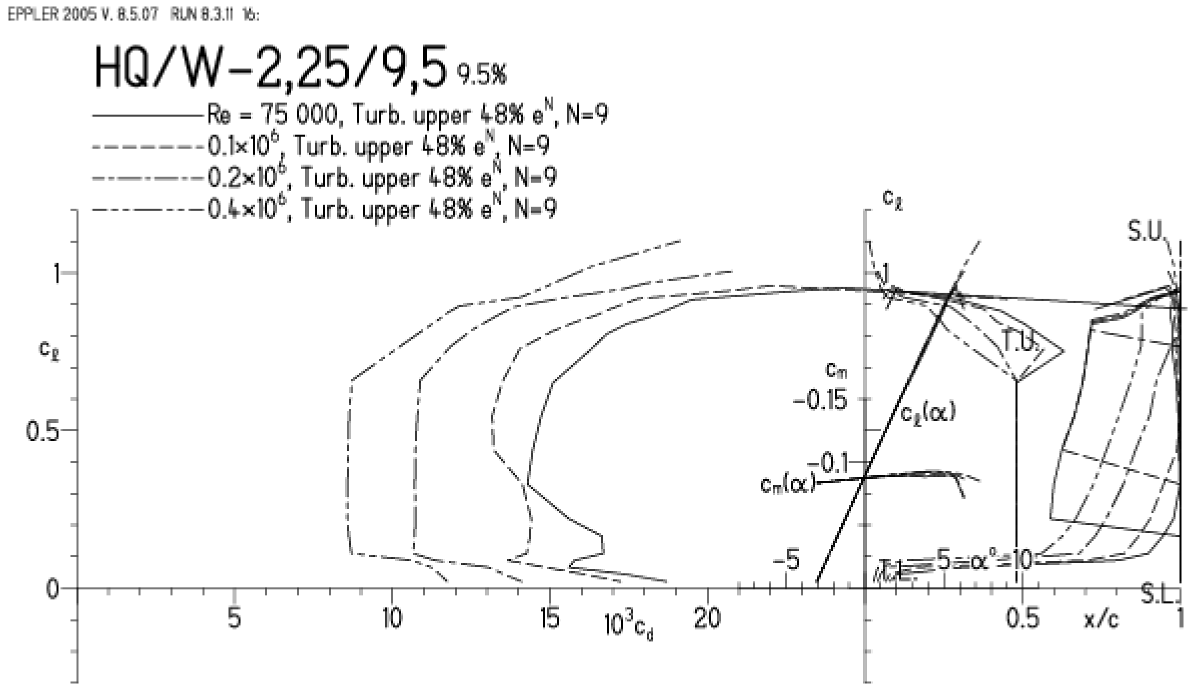
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
x/c

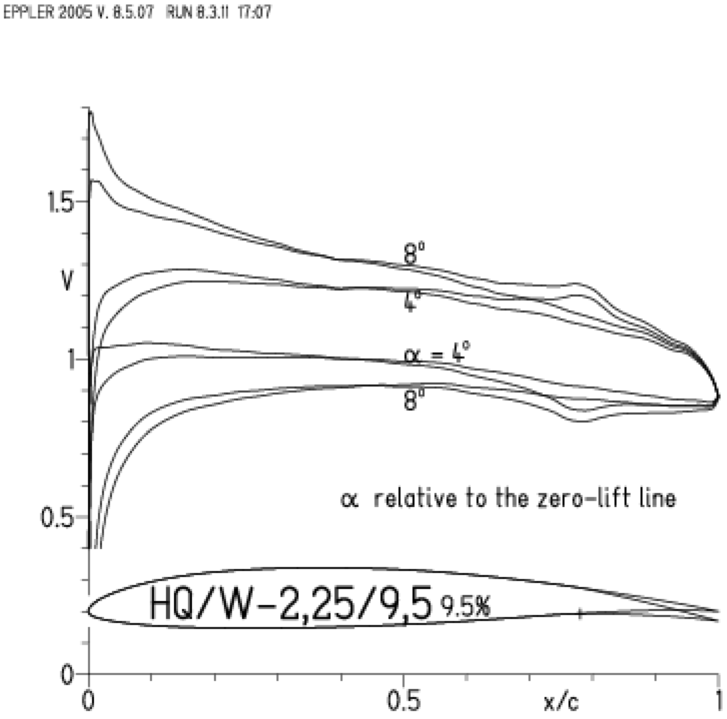

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
cℓ
10³cd
cm
cℓ(α)
cm(α)
T.U.
T.L.
S.U.
S.L.
α°
x/c

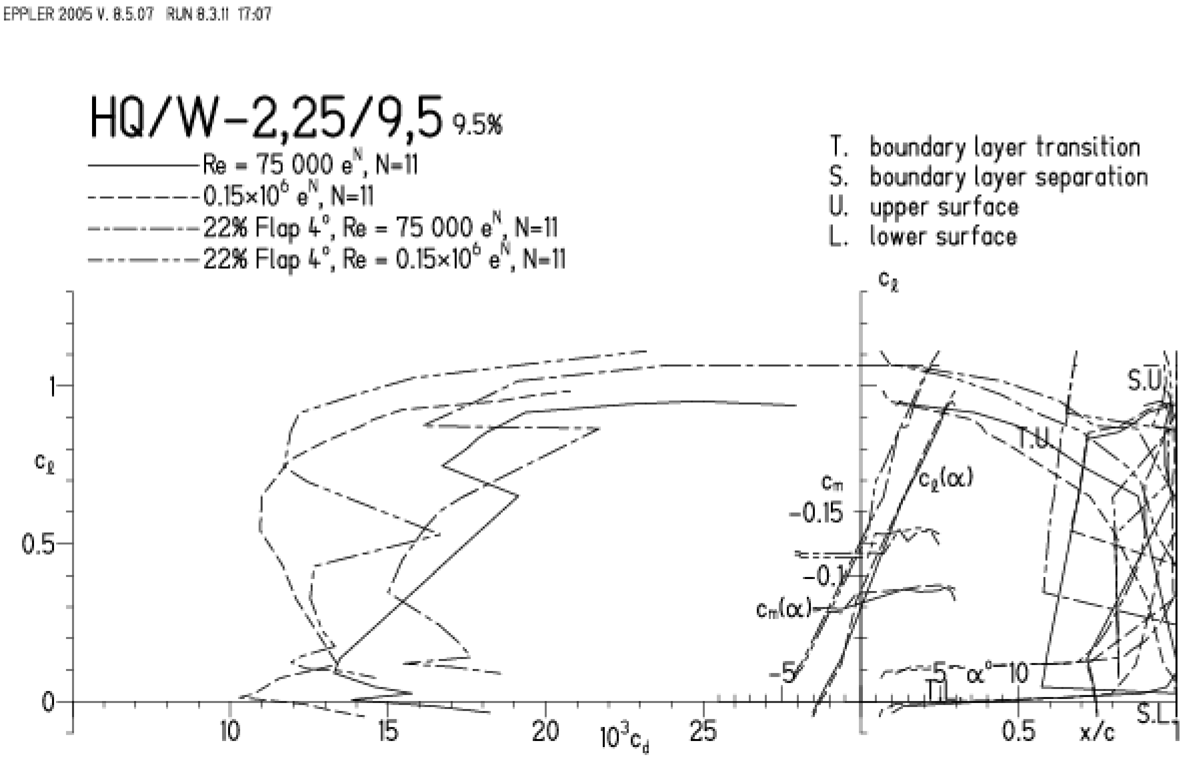
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





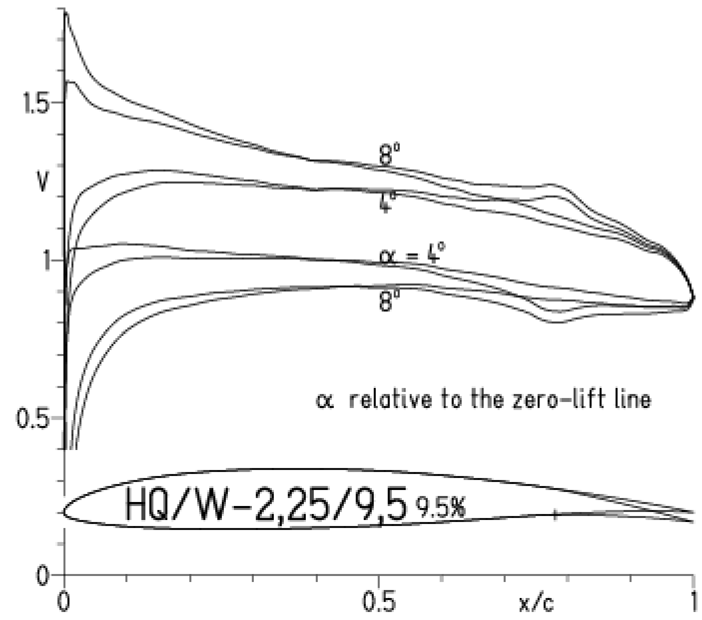
<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag



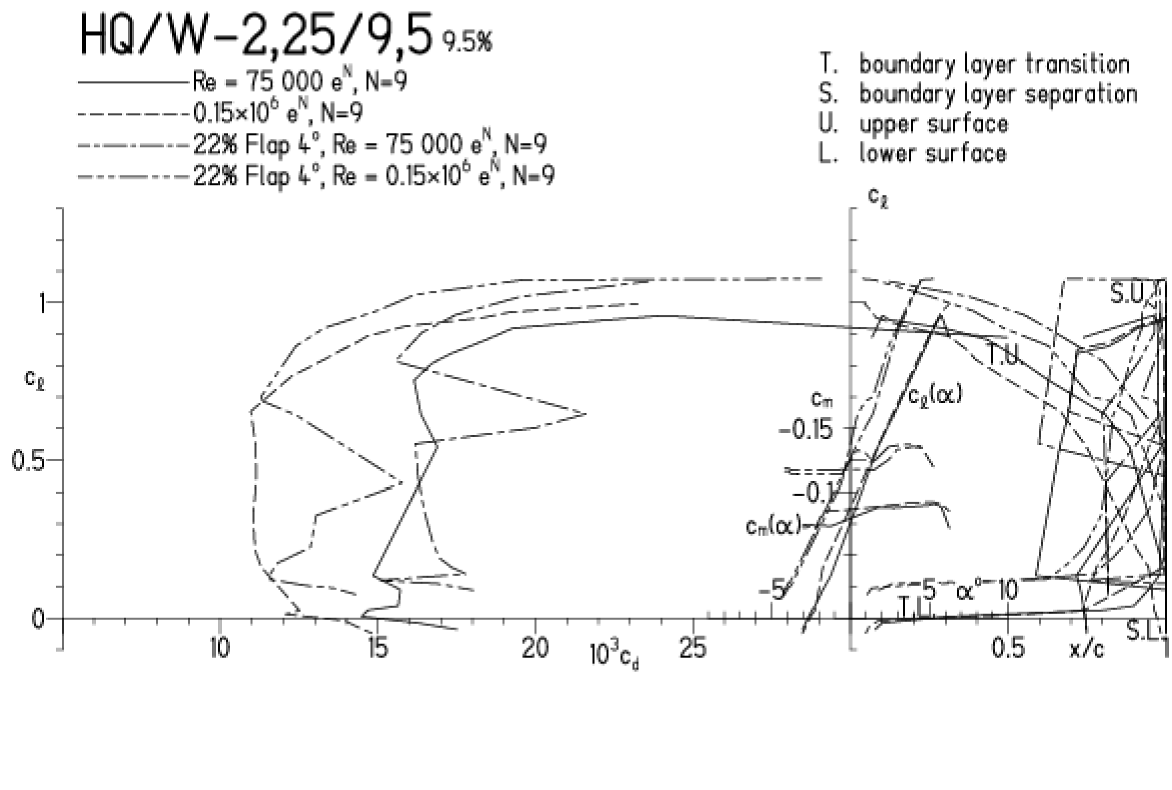


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

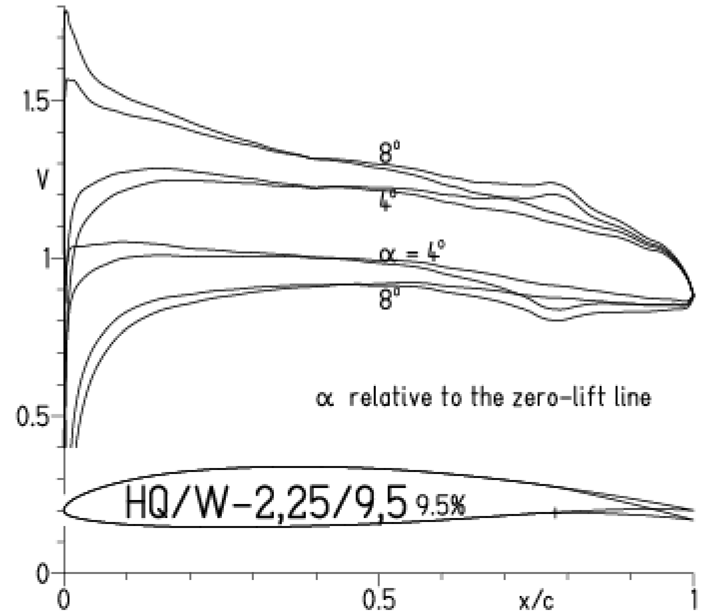


EPPLER 2005 V. 8.5.07 R

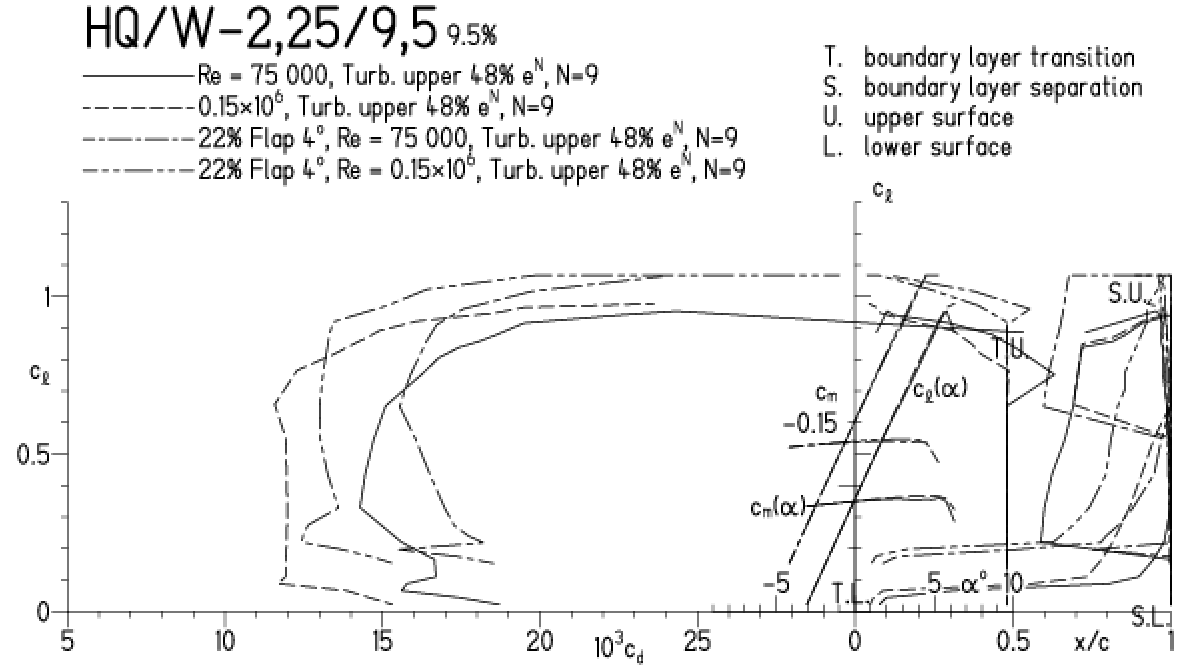


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

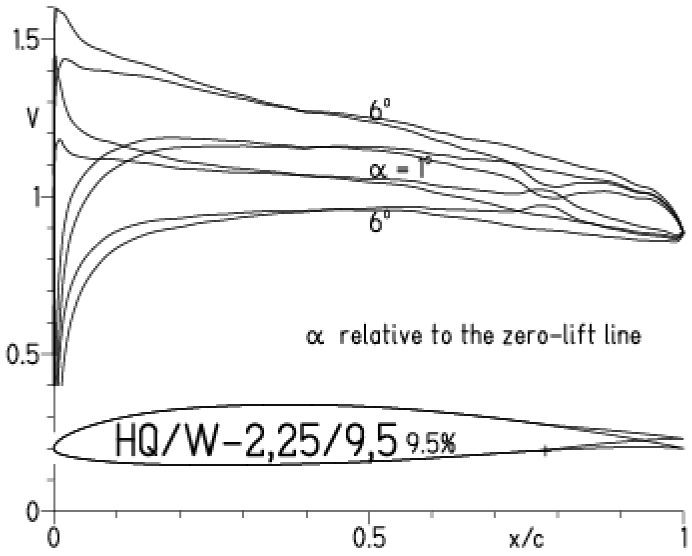


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

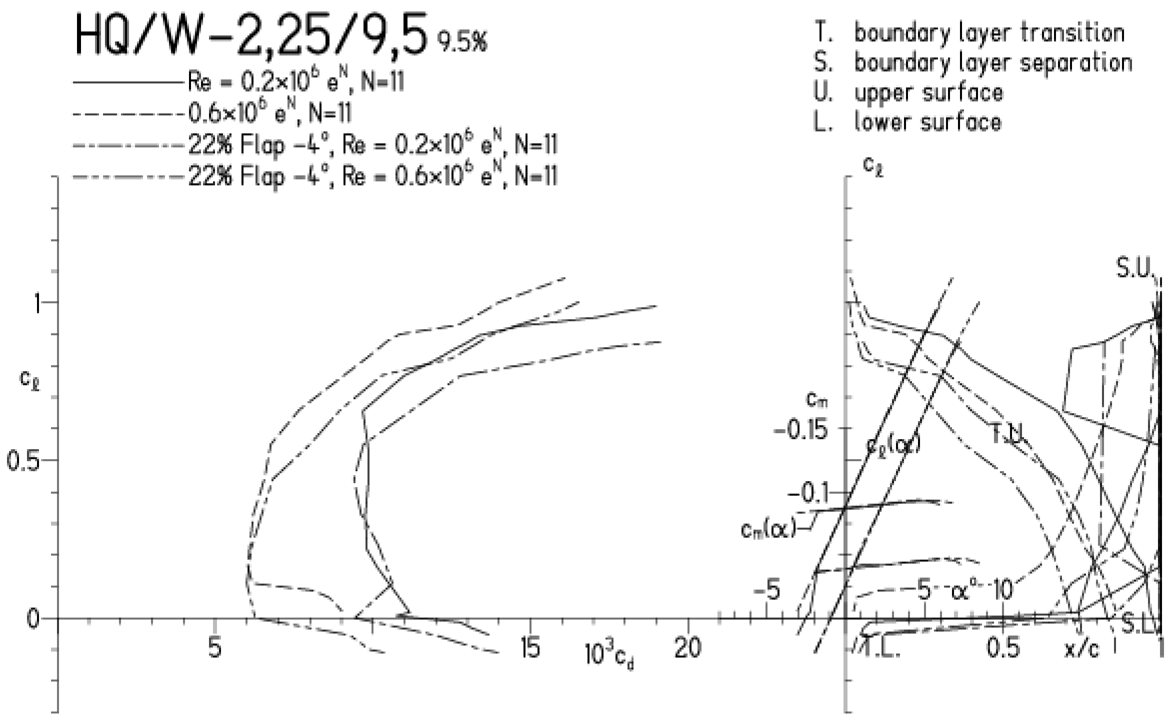


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

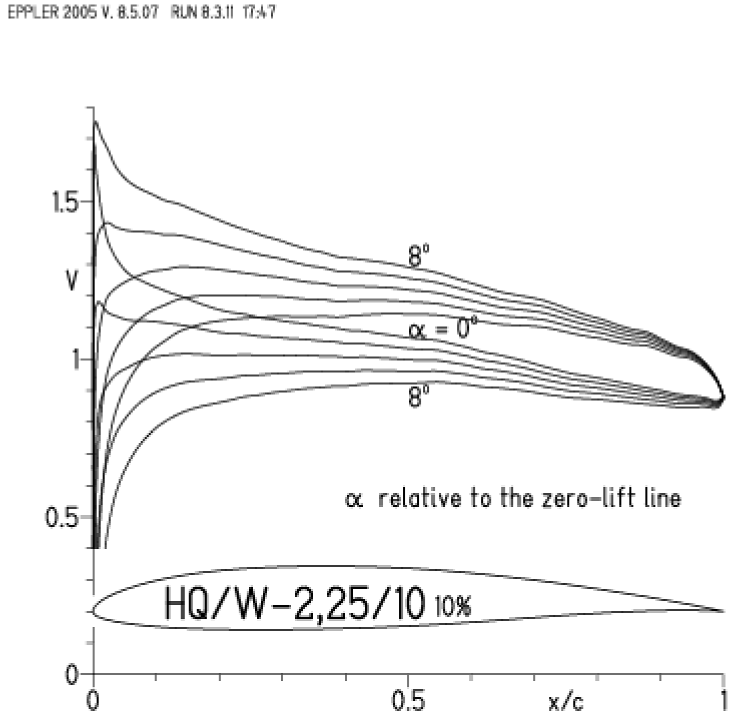
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

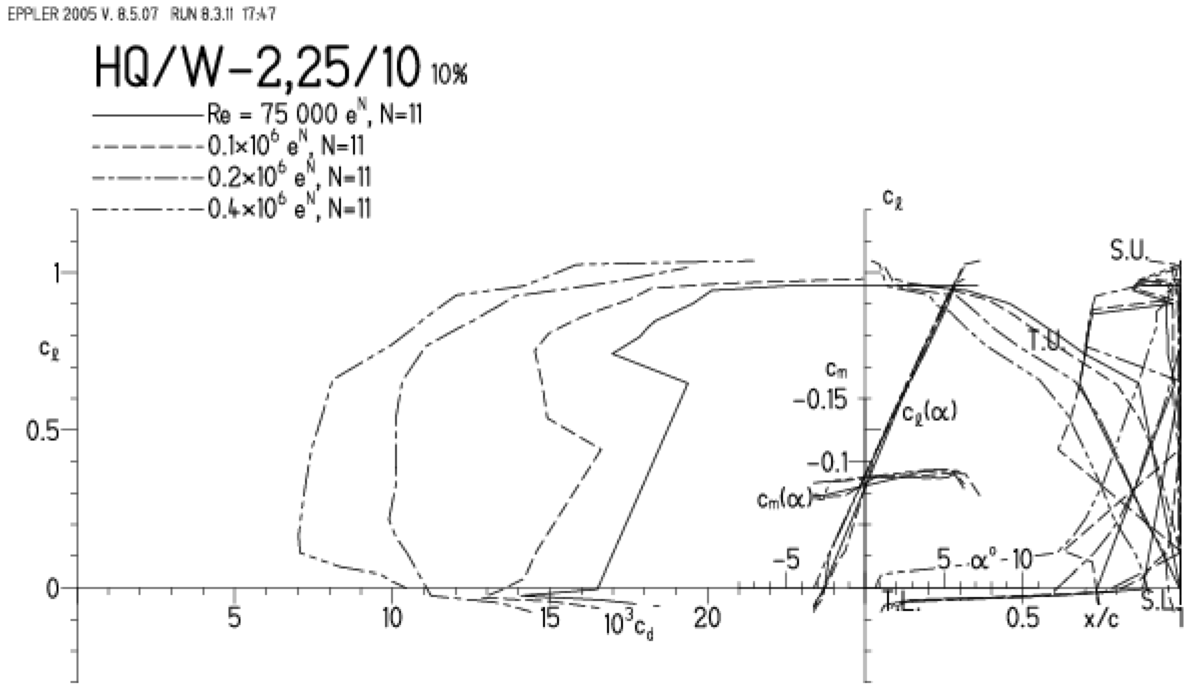


EPPLER 2005 V.

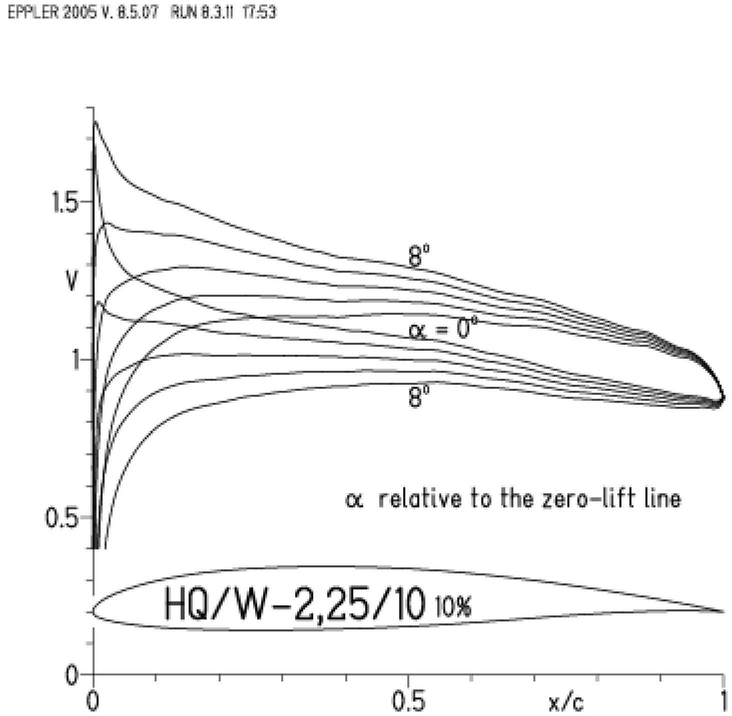


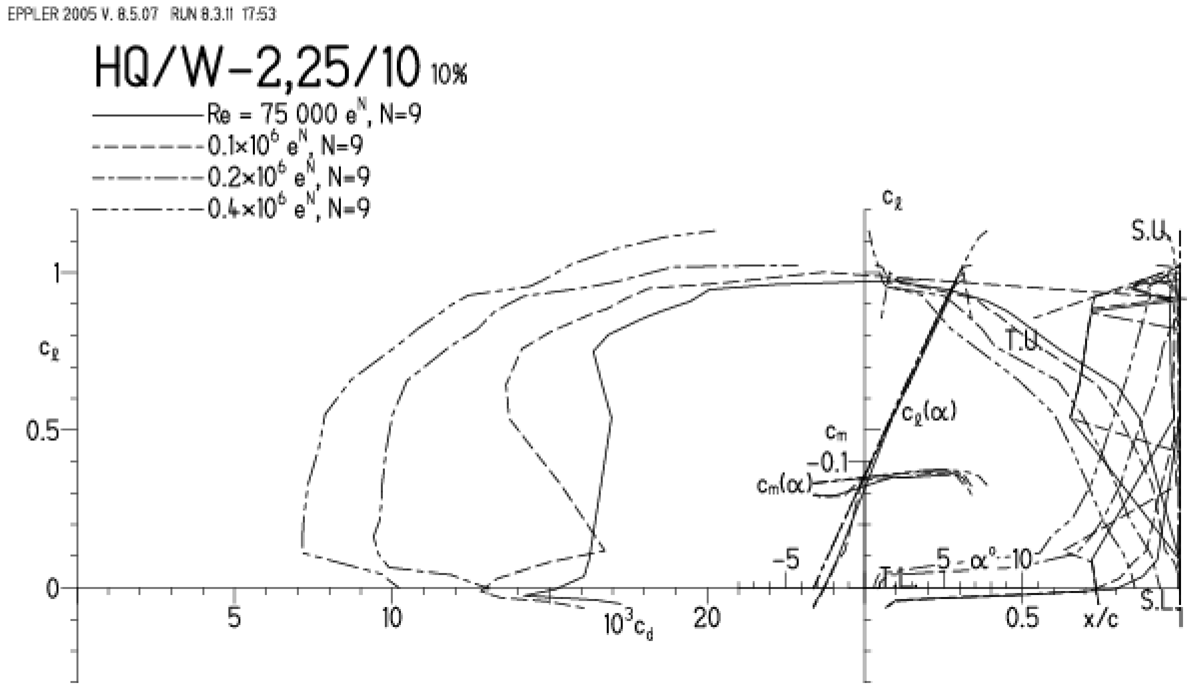
HQ/W-2,25/10, N=11





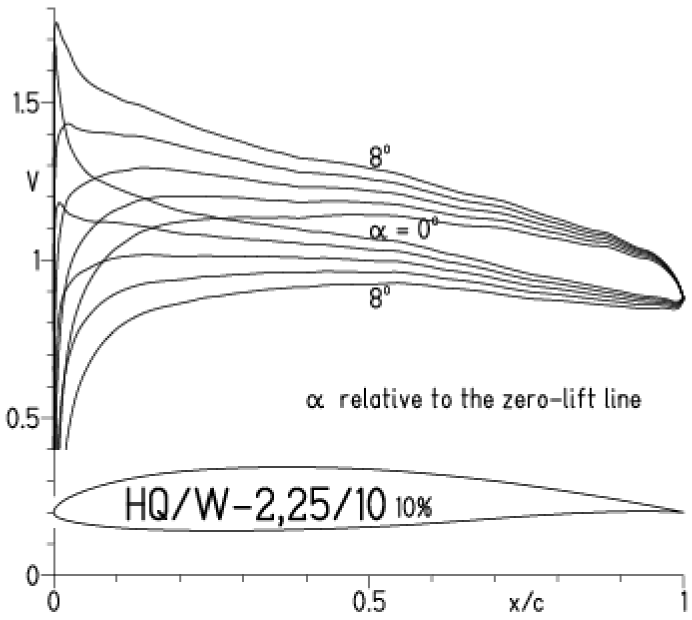
<u>HQ/W-2,25/10</u>, N=9



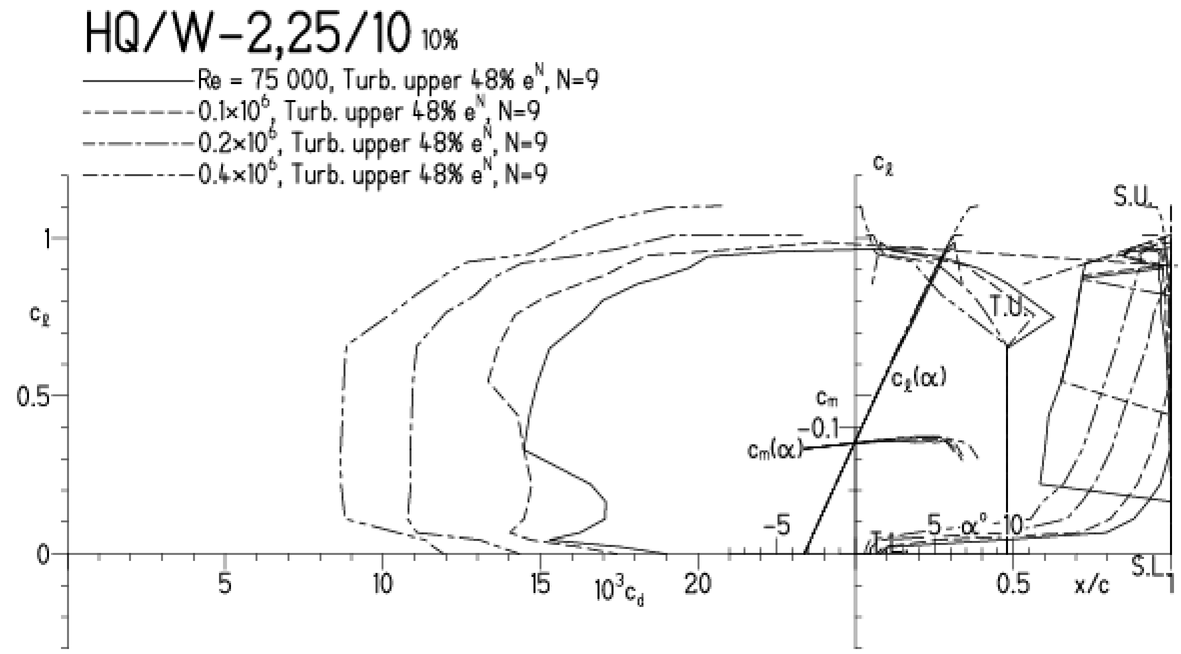


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

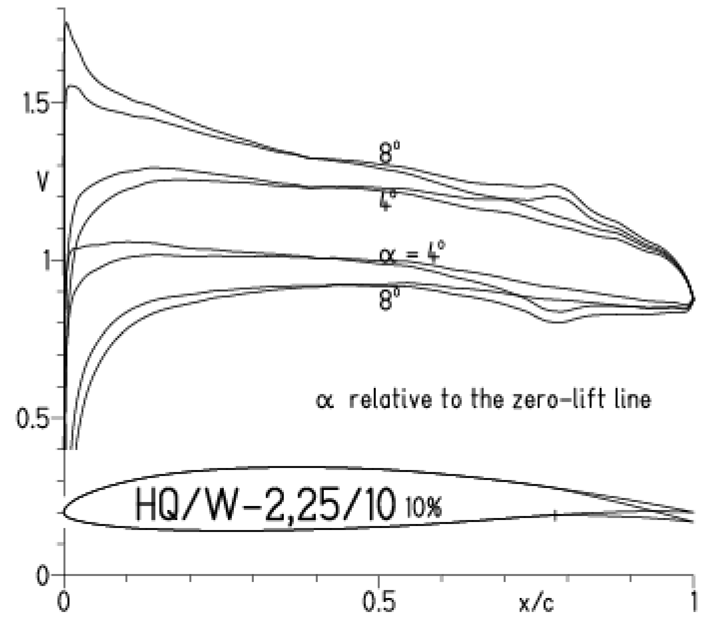


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

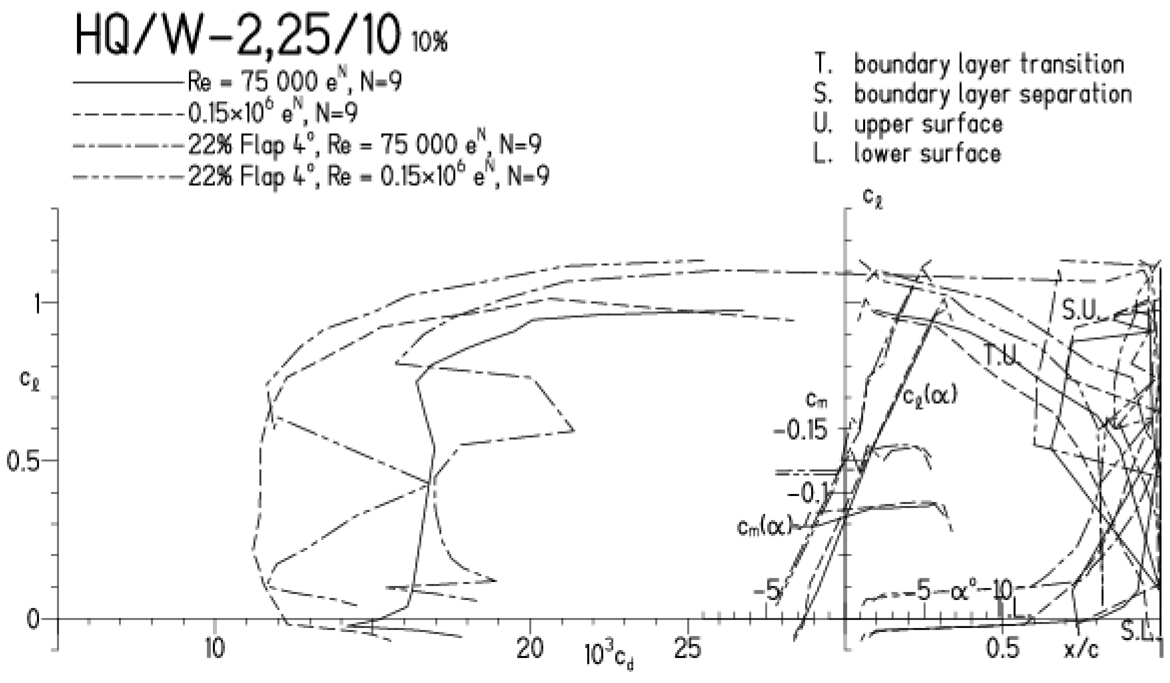


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

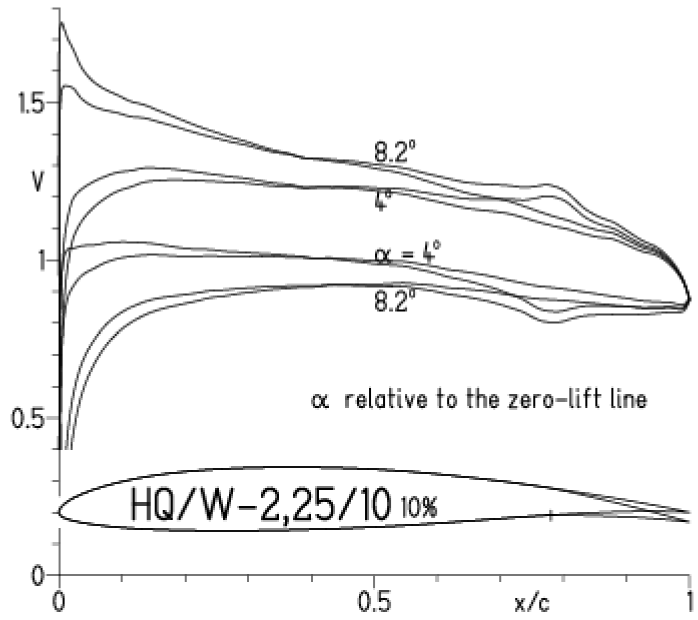


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

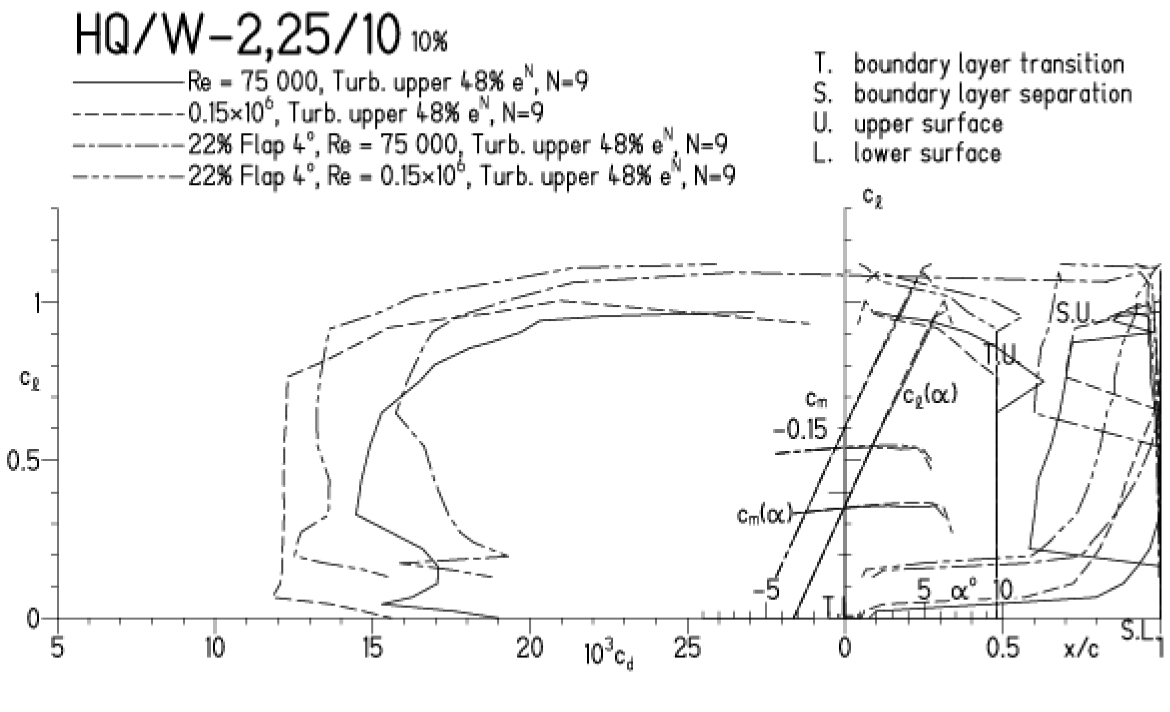


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

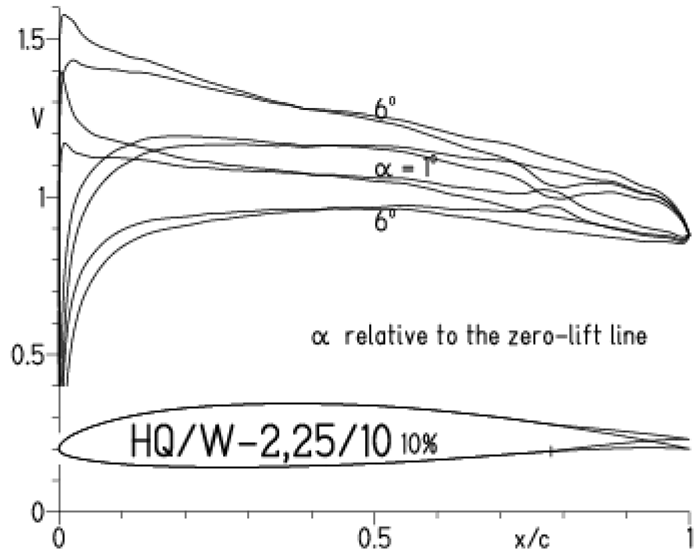


EPPLER 2005 V. 8.5.07 RUN 8.3

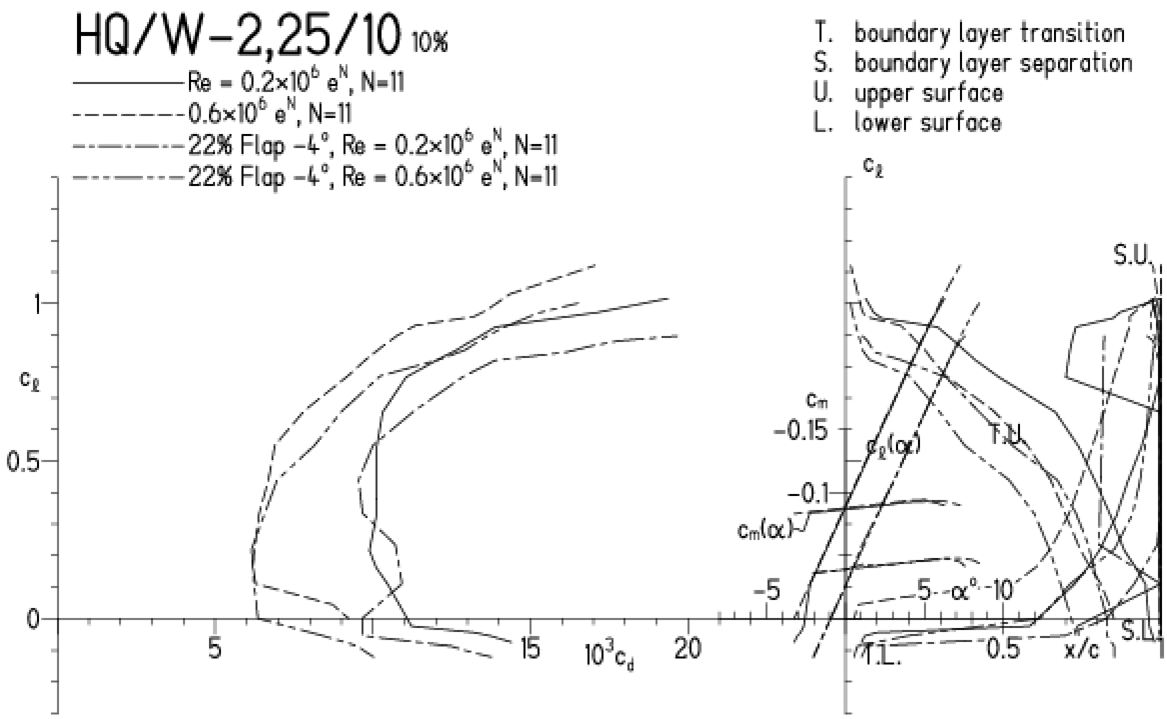


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

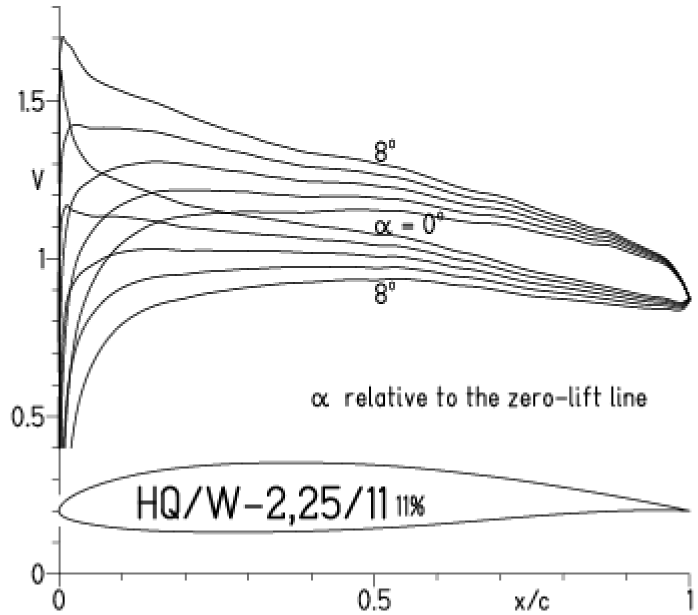


EPPLER 2005 V. 8.5.07 RUN

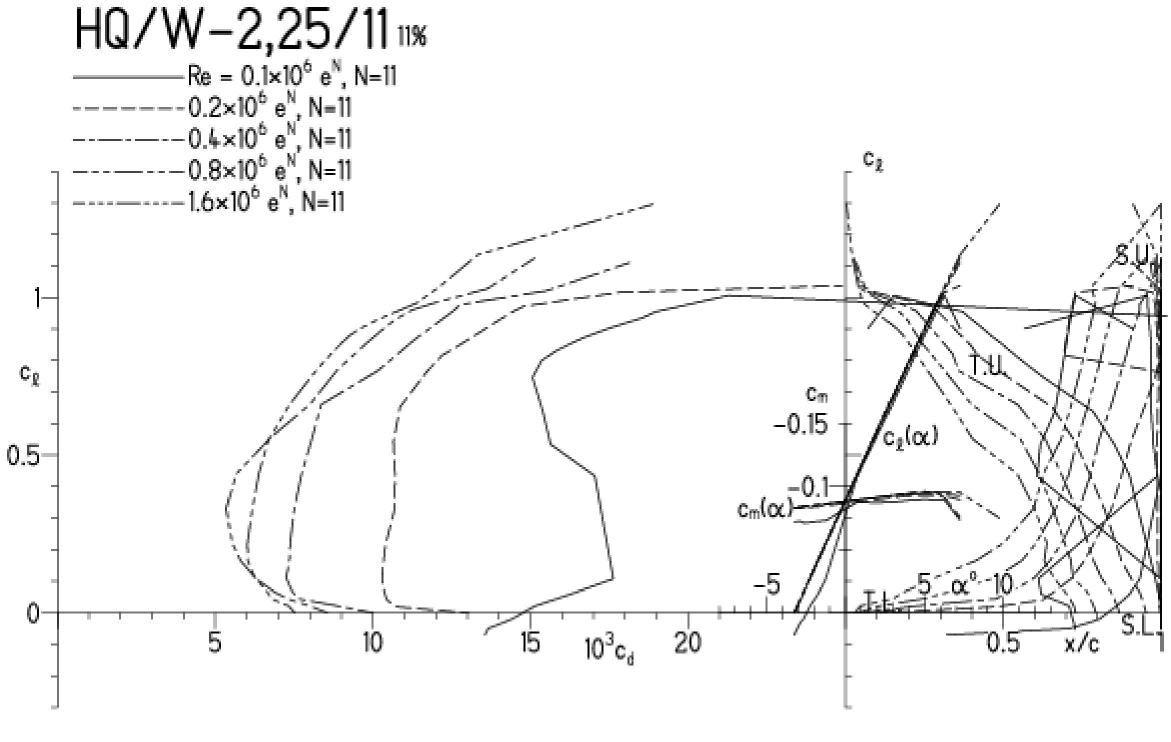


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

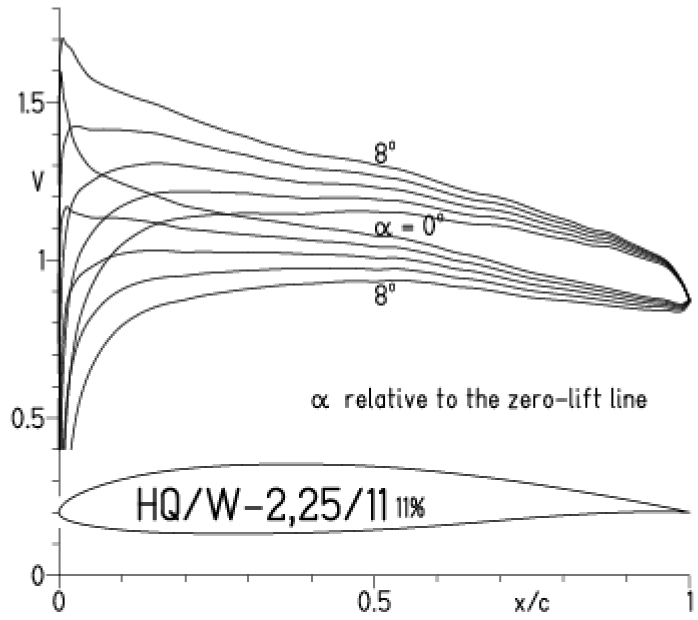


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

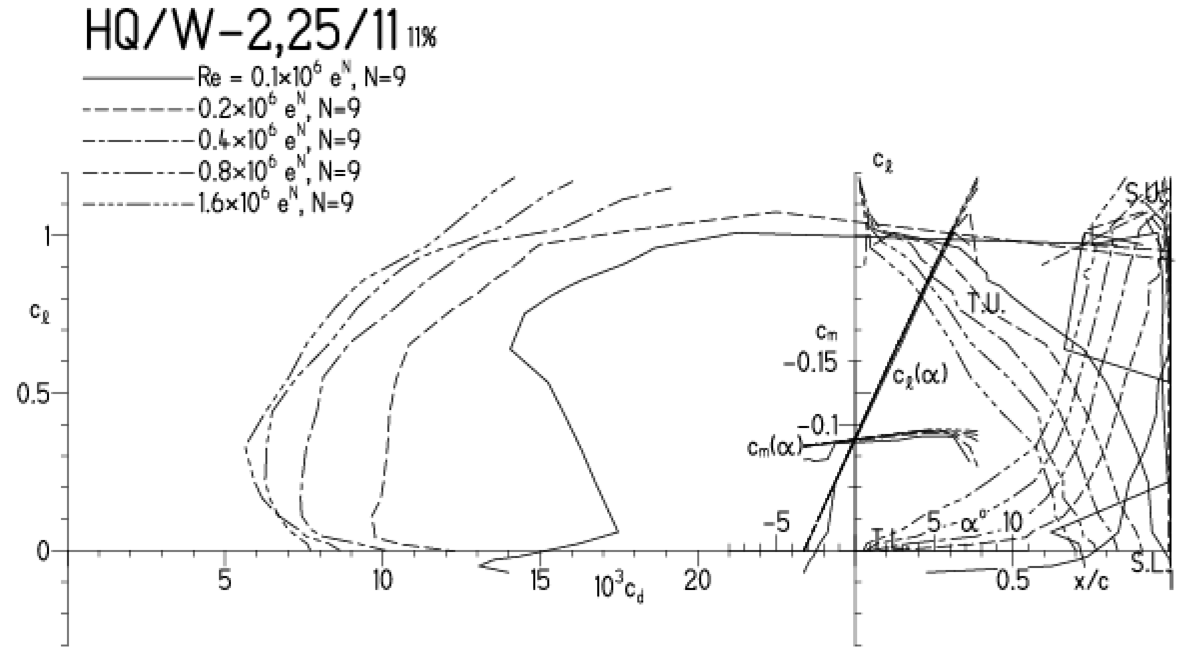


HQQ/W-2,25/11, N=9

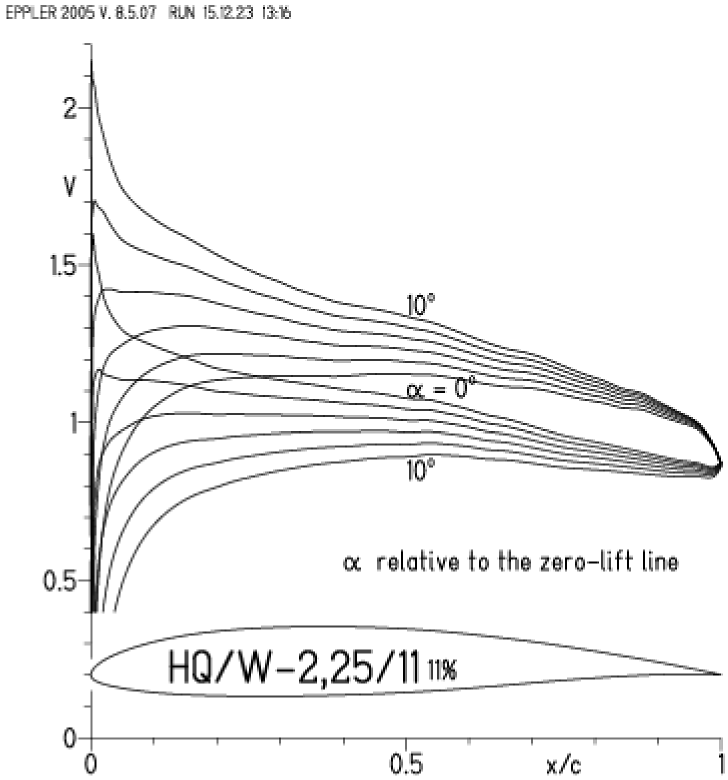
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

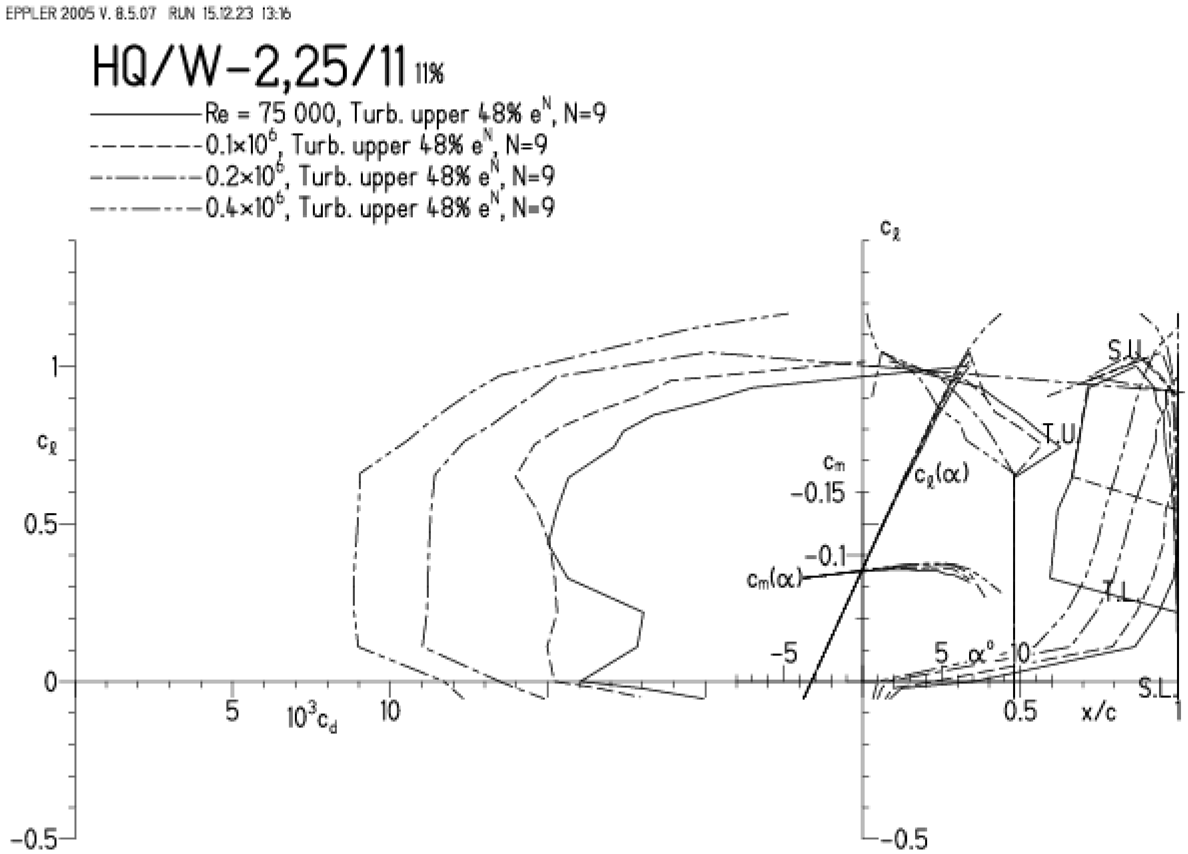


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



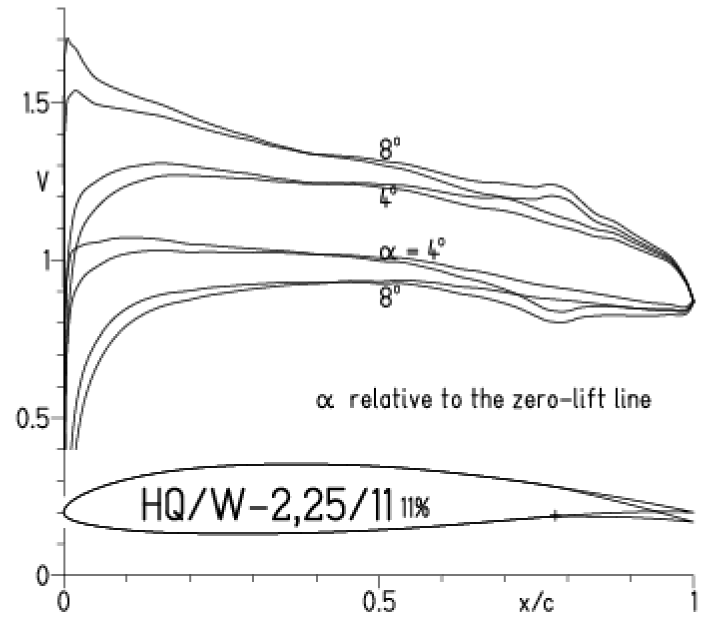
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



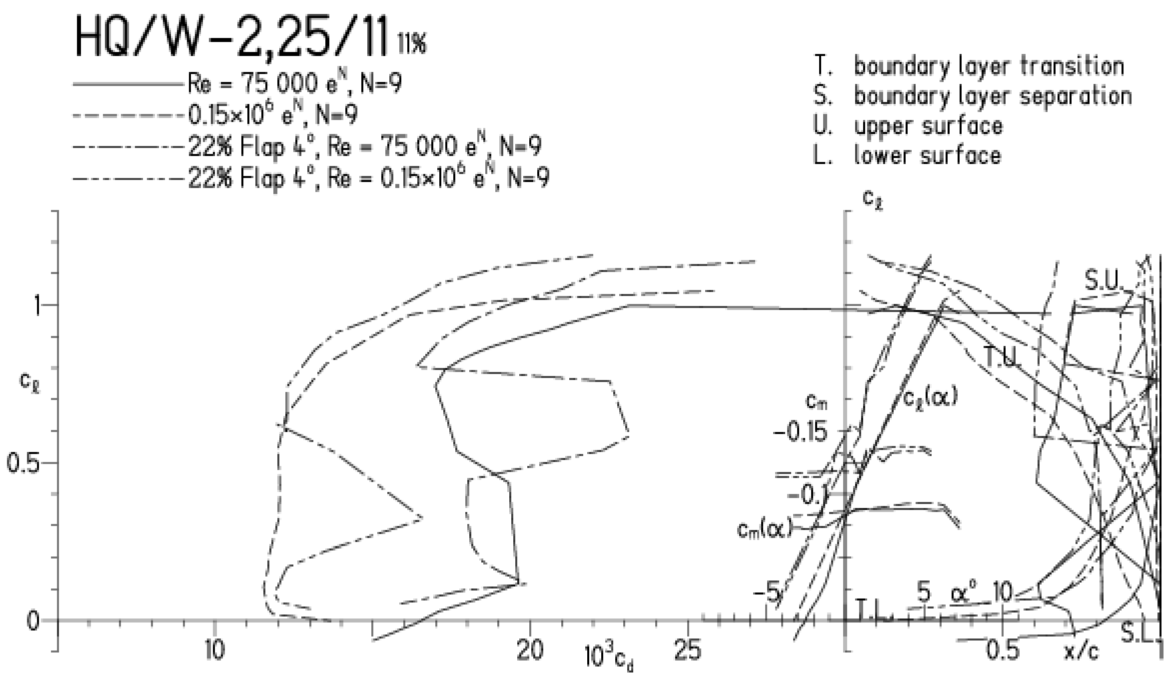


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

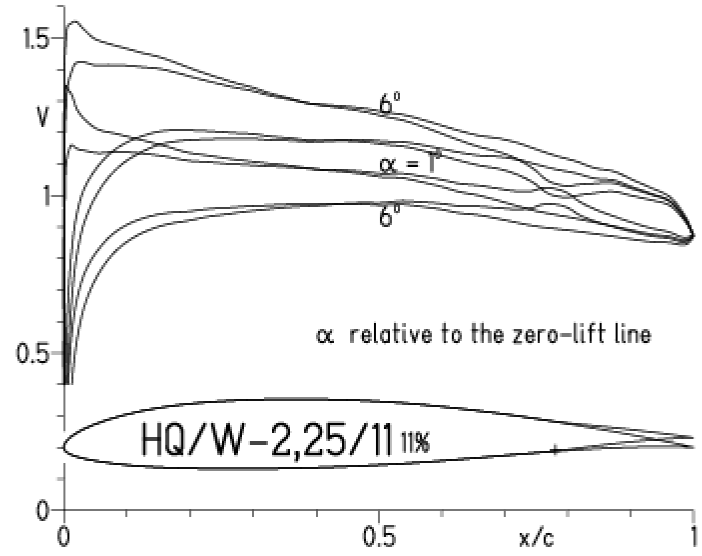


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

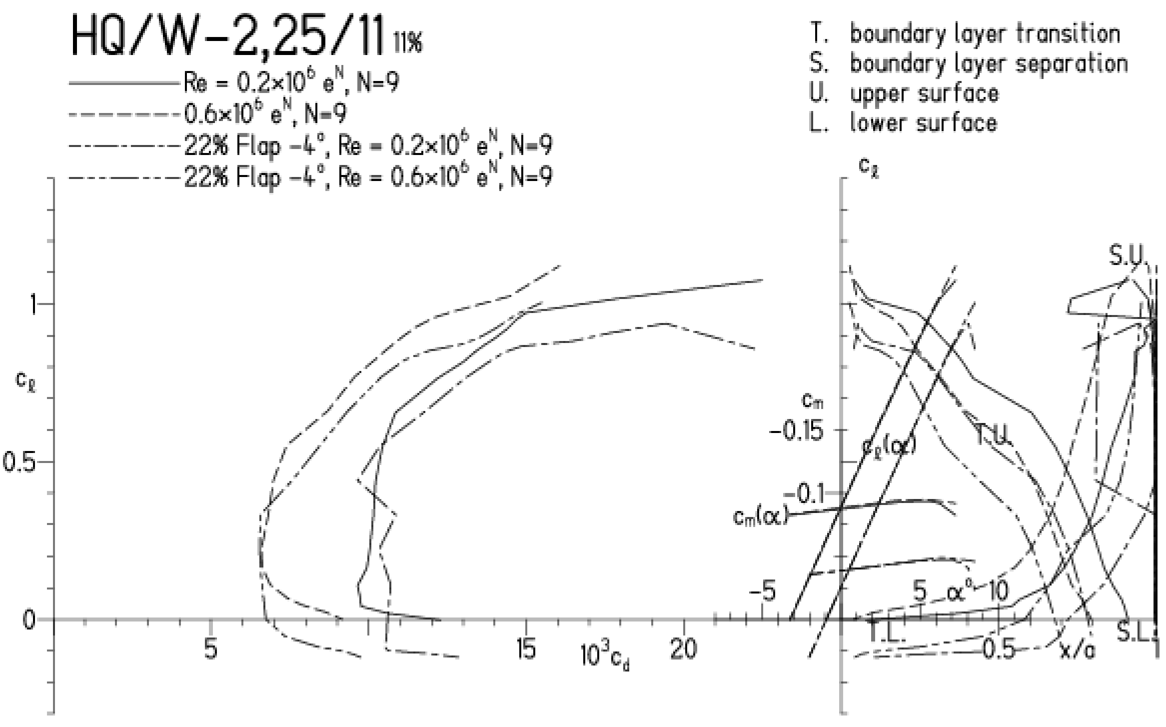


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

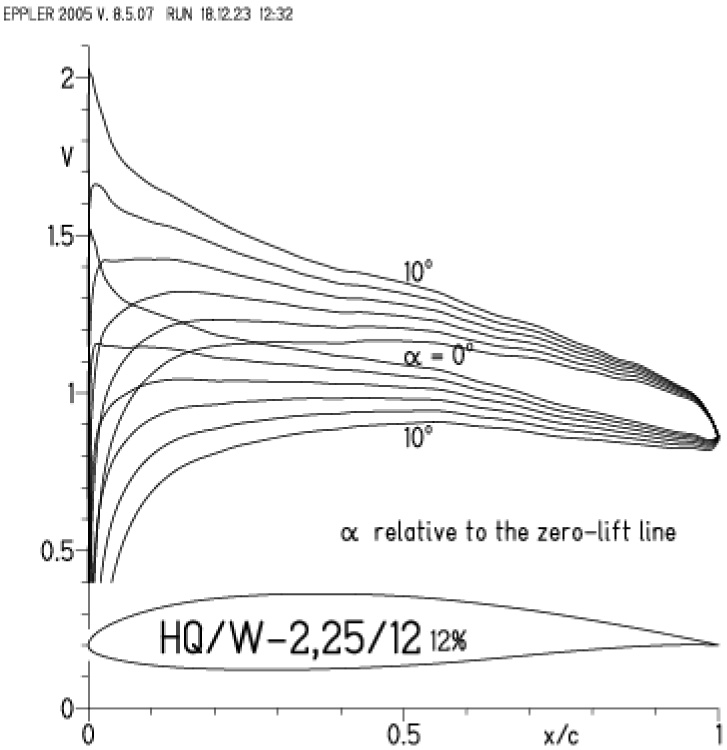
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

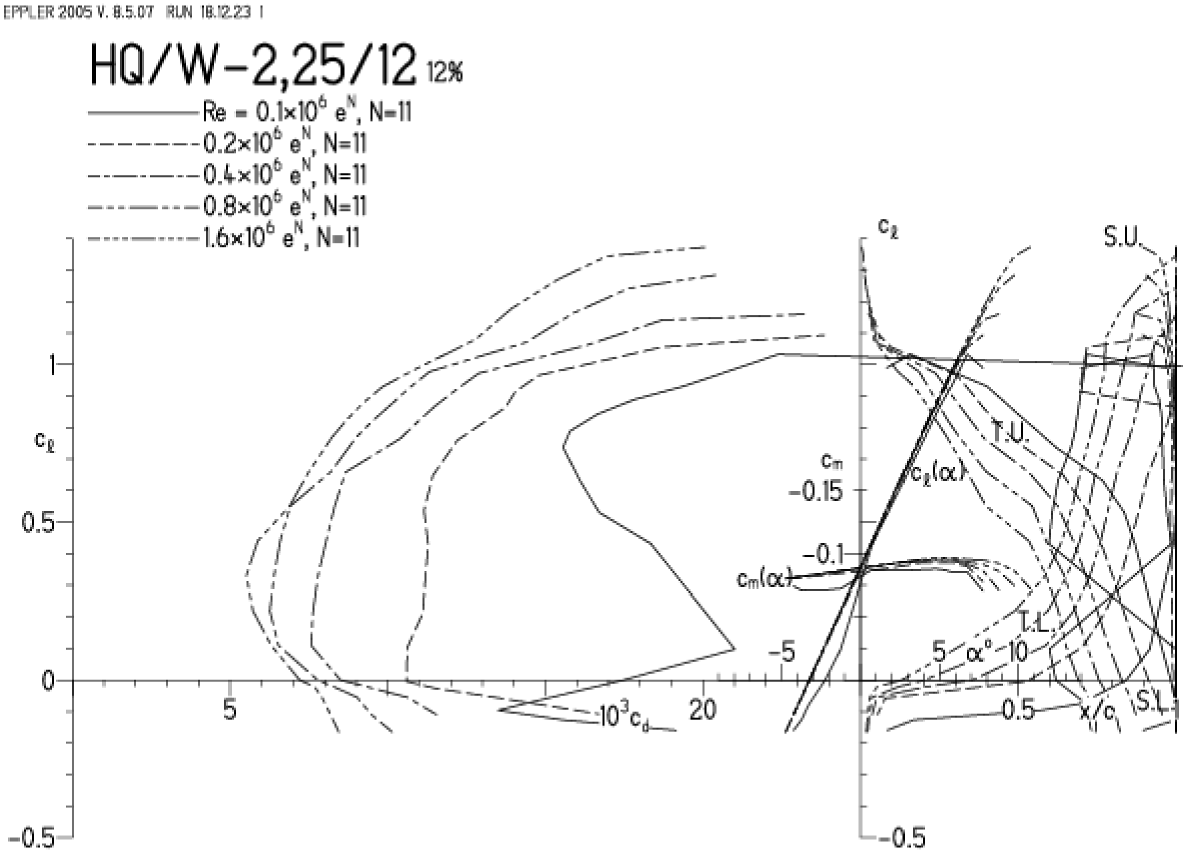


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

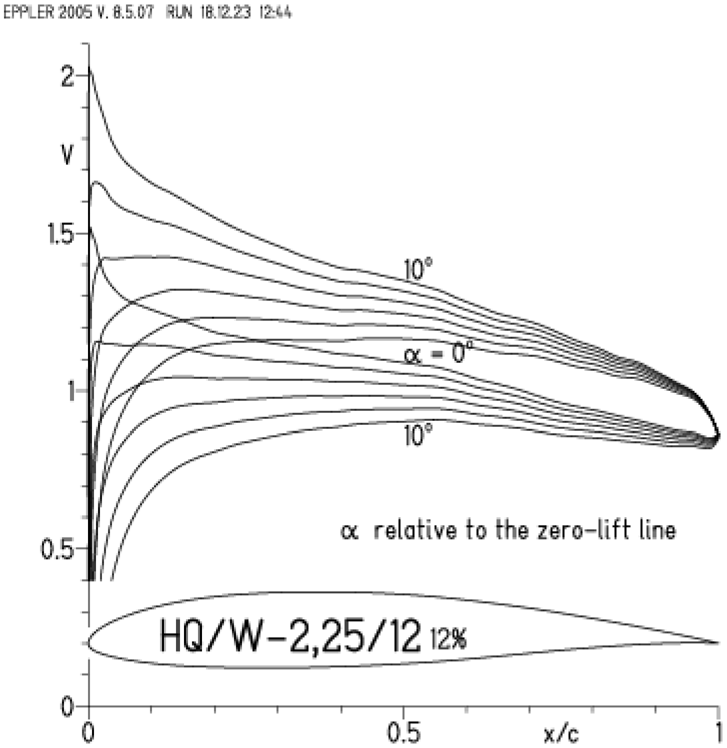


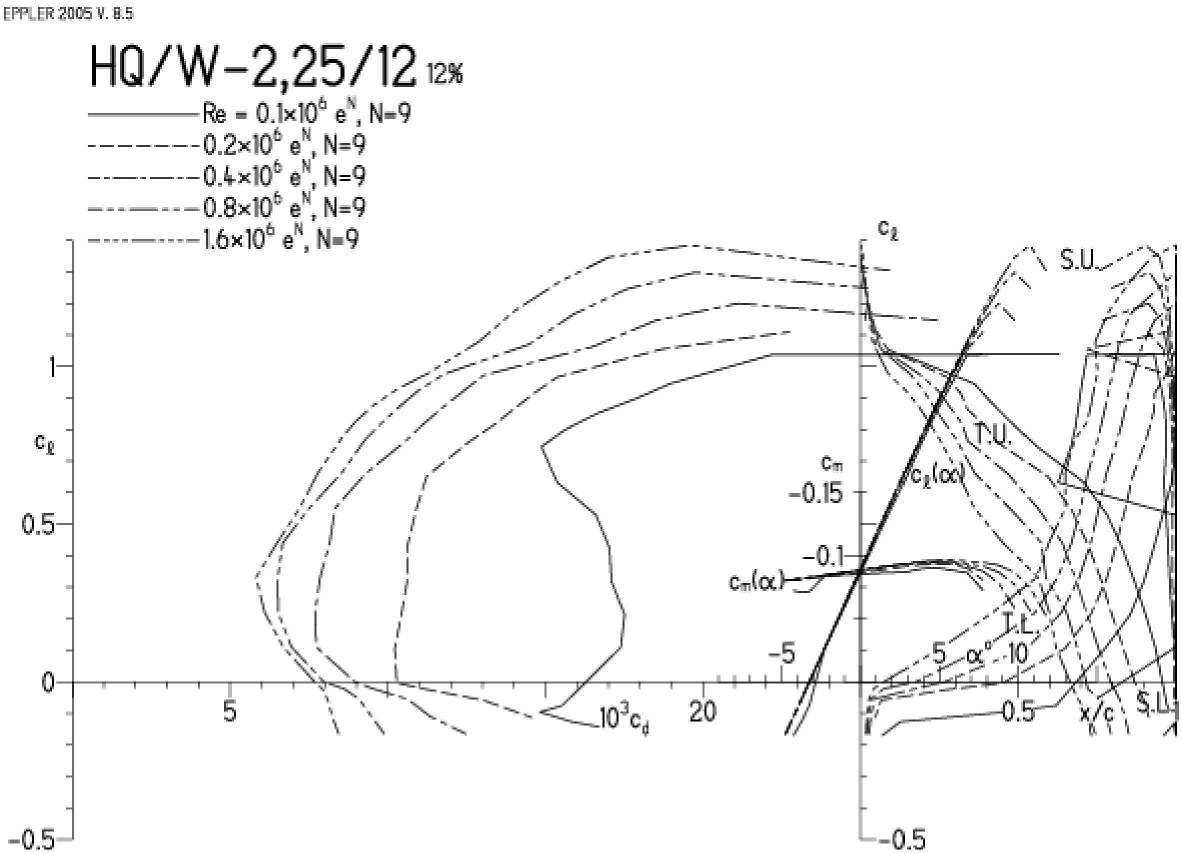
HQ/W-2,25/12, N=11



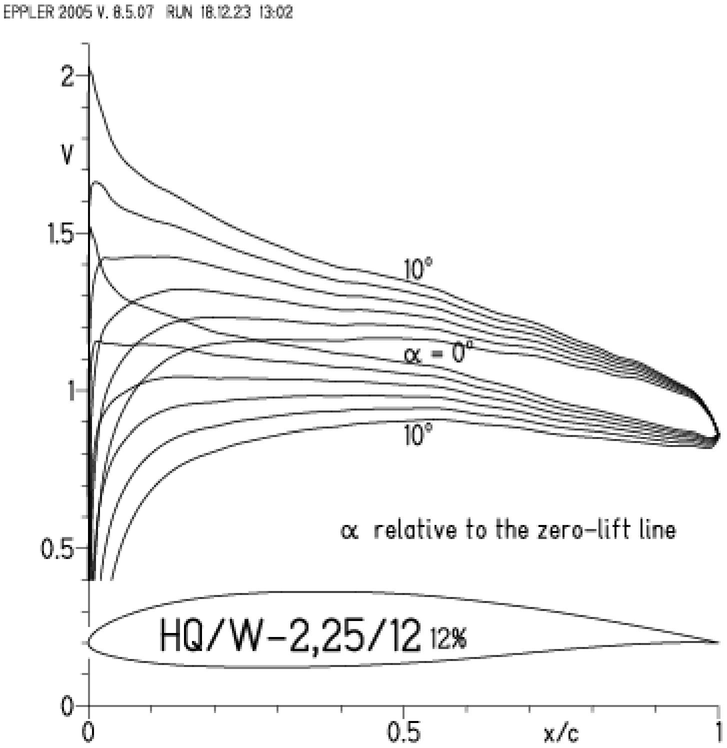


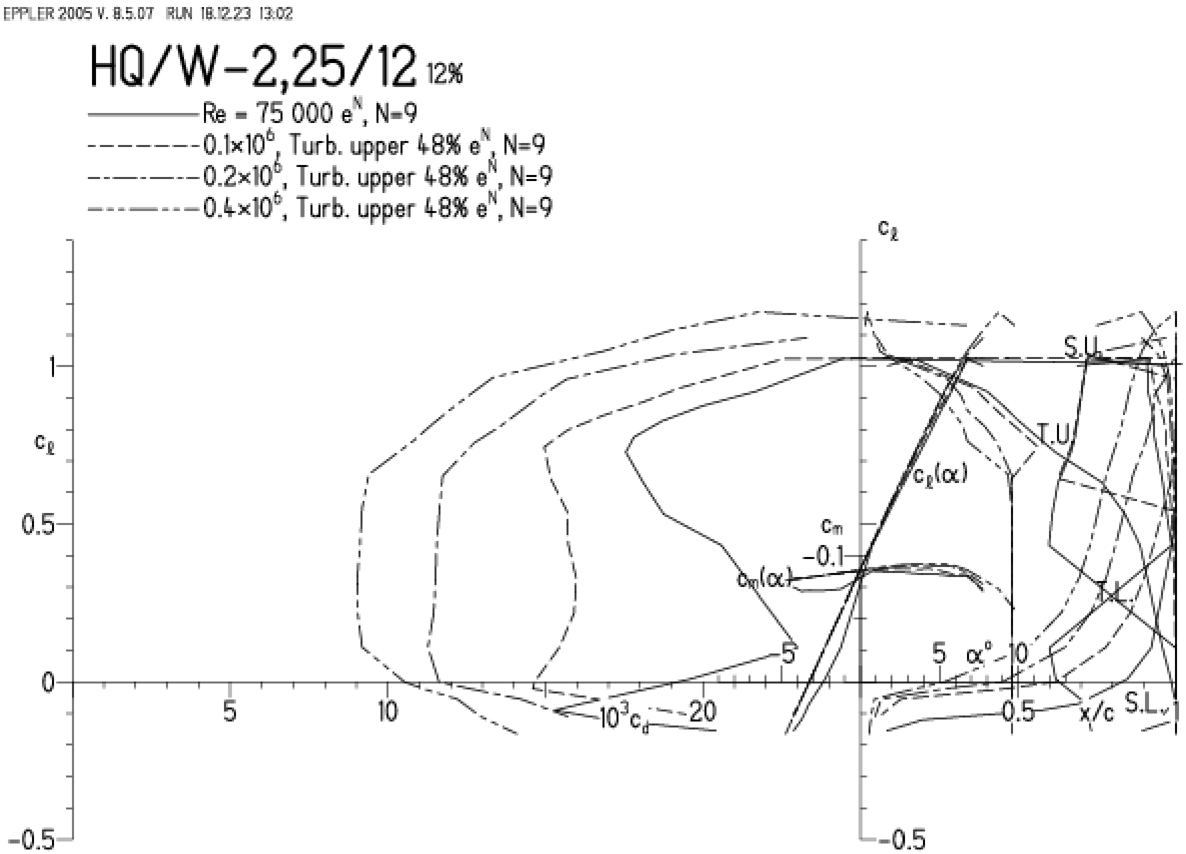
<u>HQ/W-2,25/12</u>, N=9





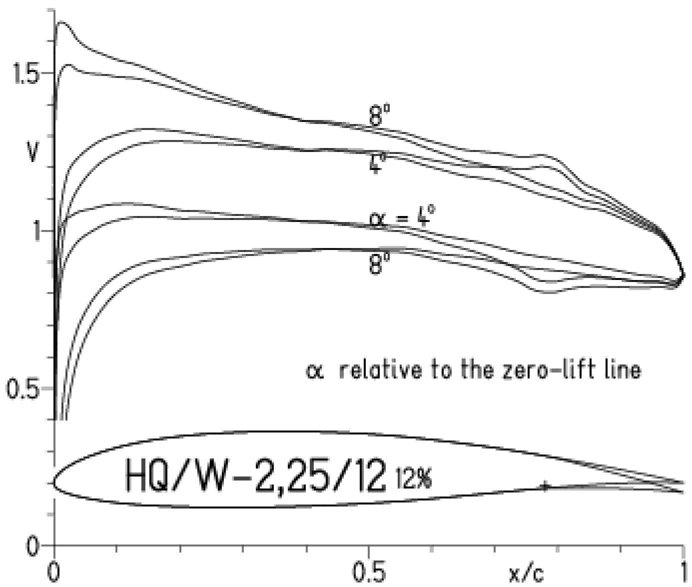
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



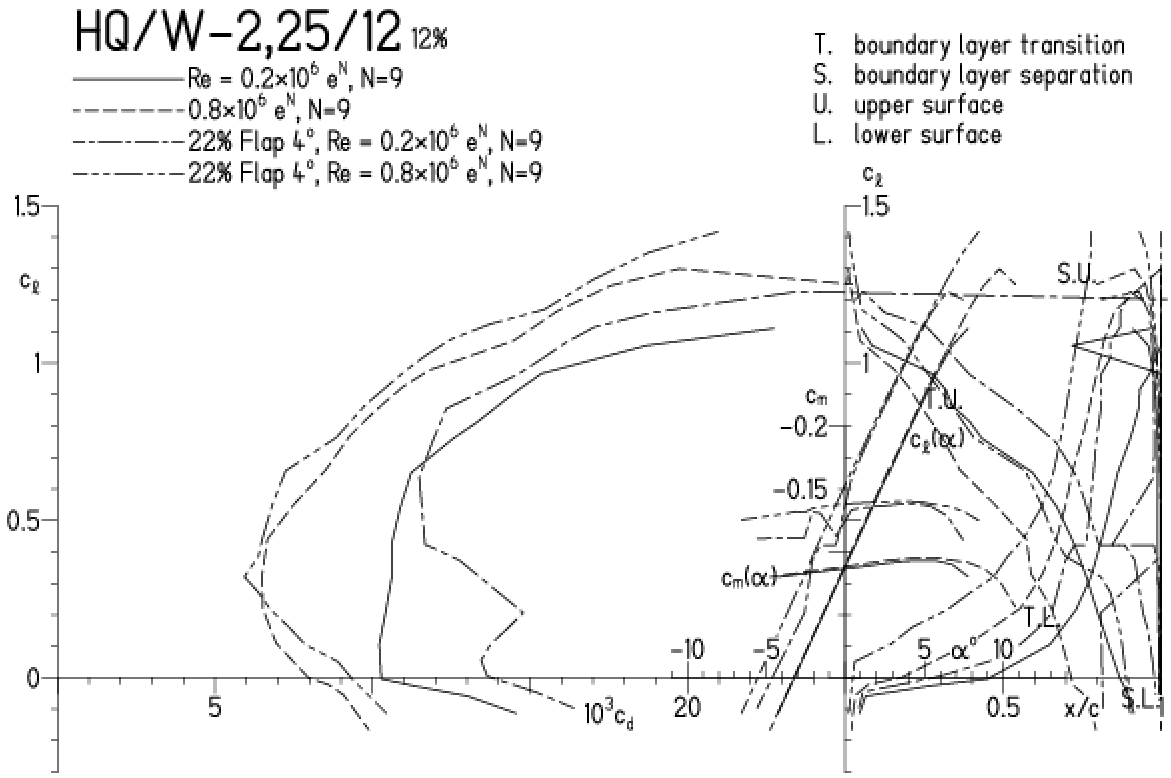


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

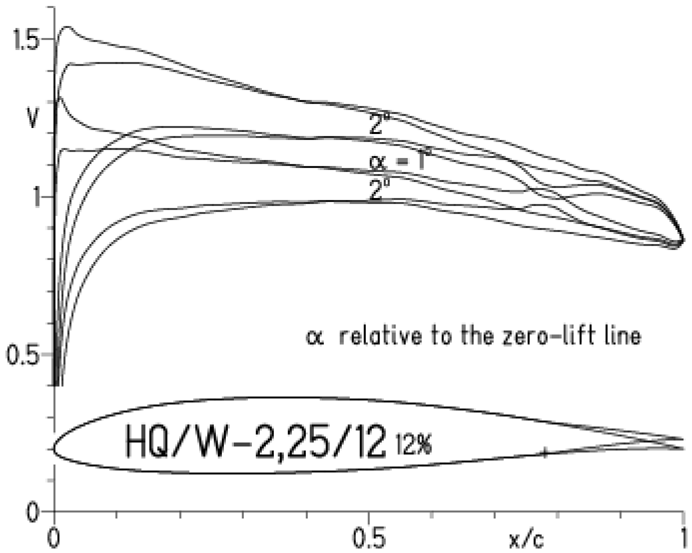


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

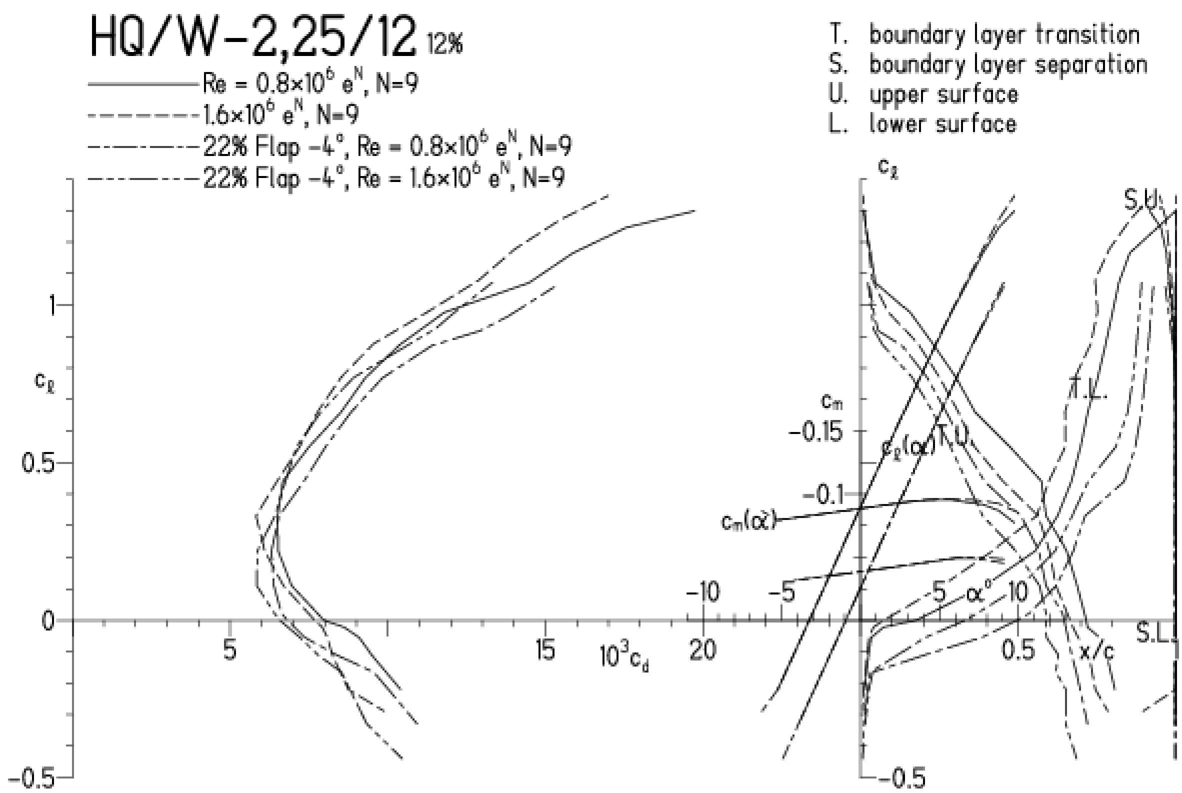


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

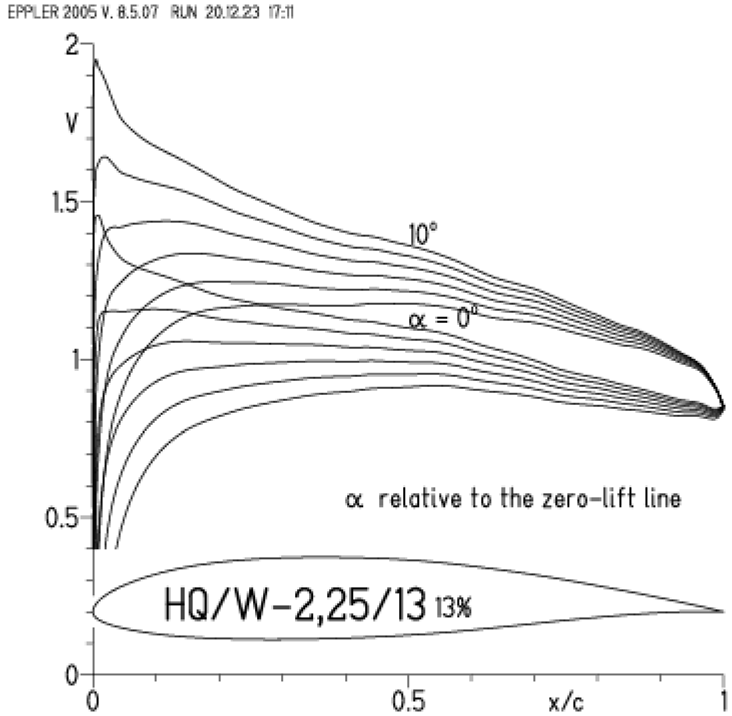
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

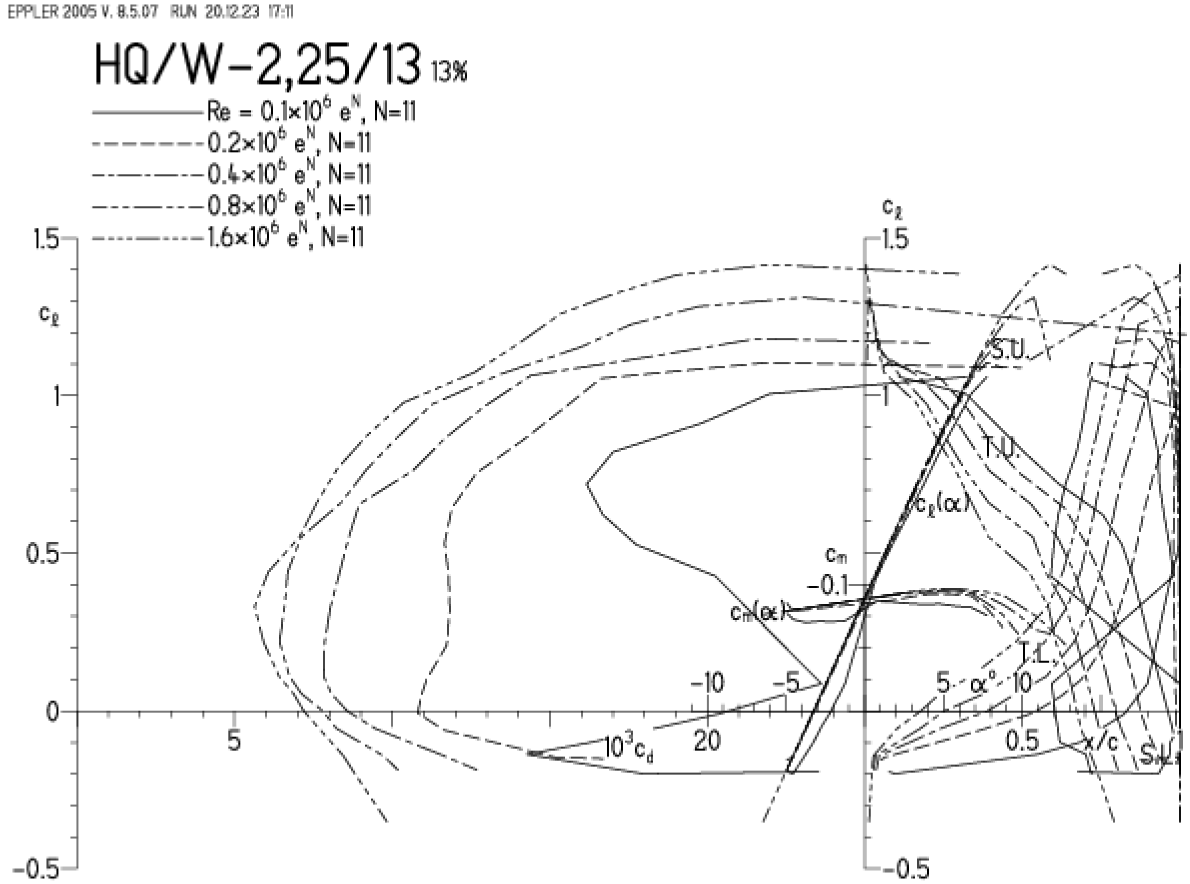


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

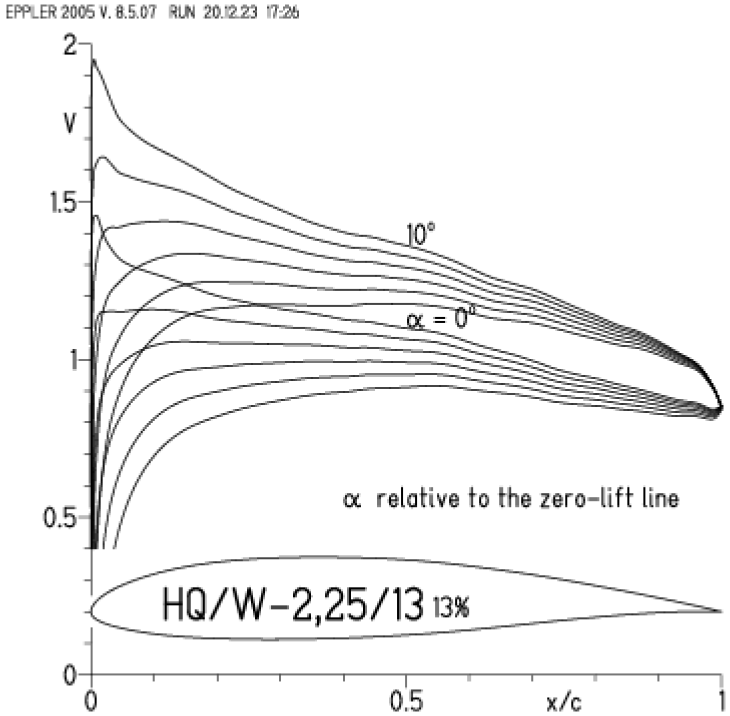


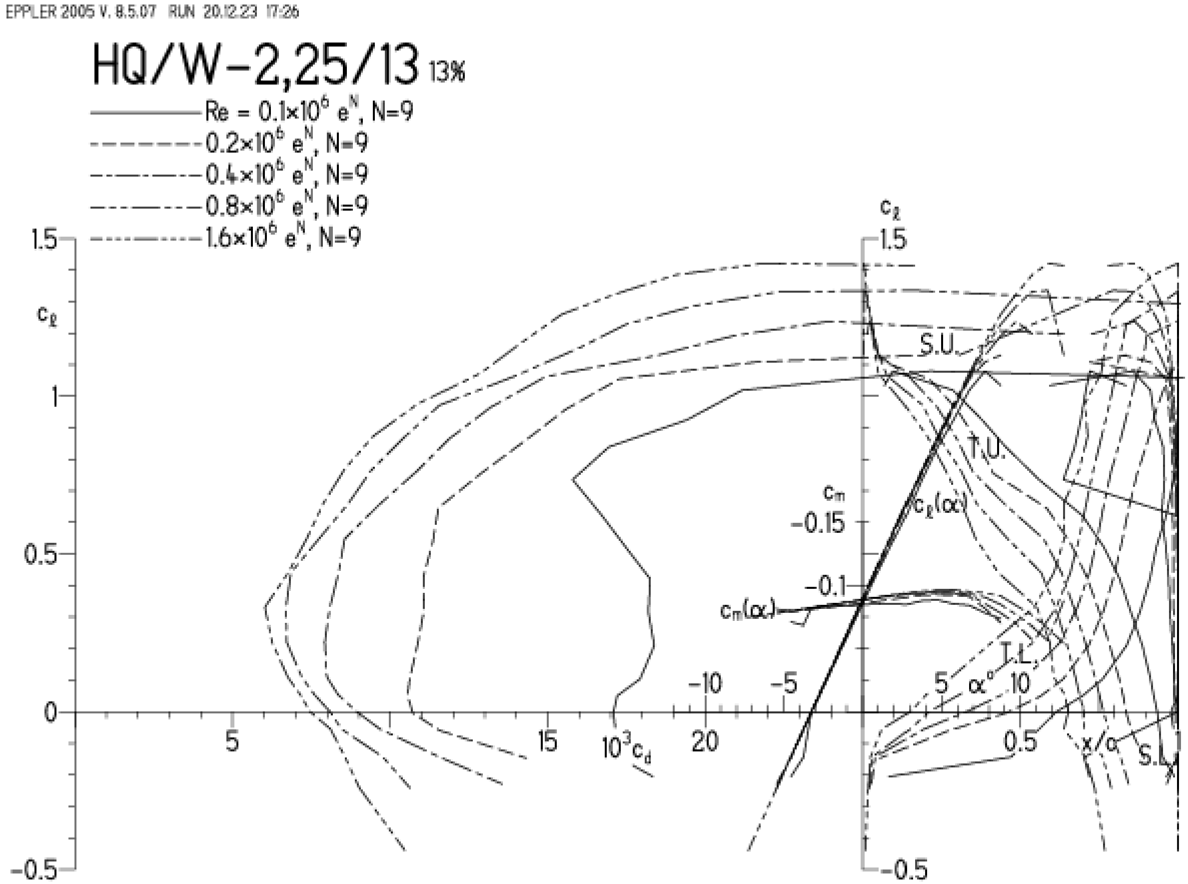
<u>HQ/W-2,25/13</u>, N=11



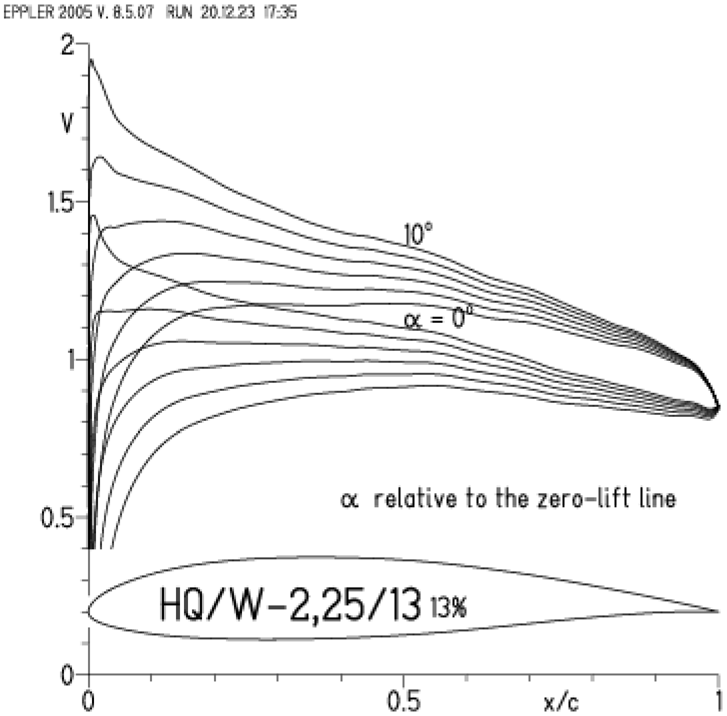


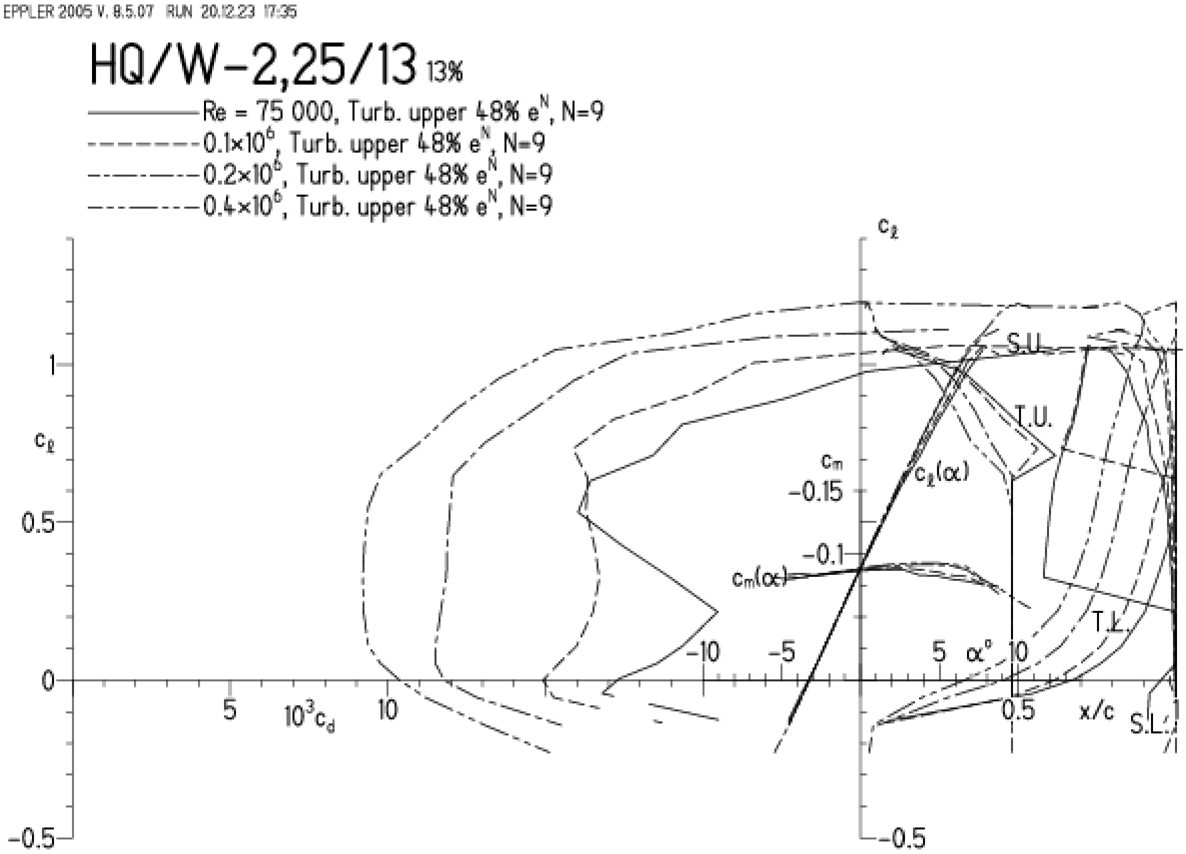
<u>HQ/W-2,25/13</u>, N=9





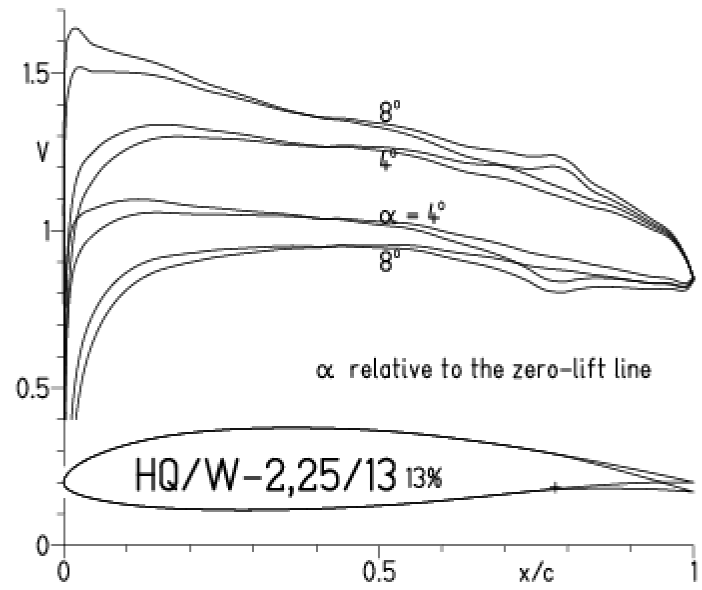
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



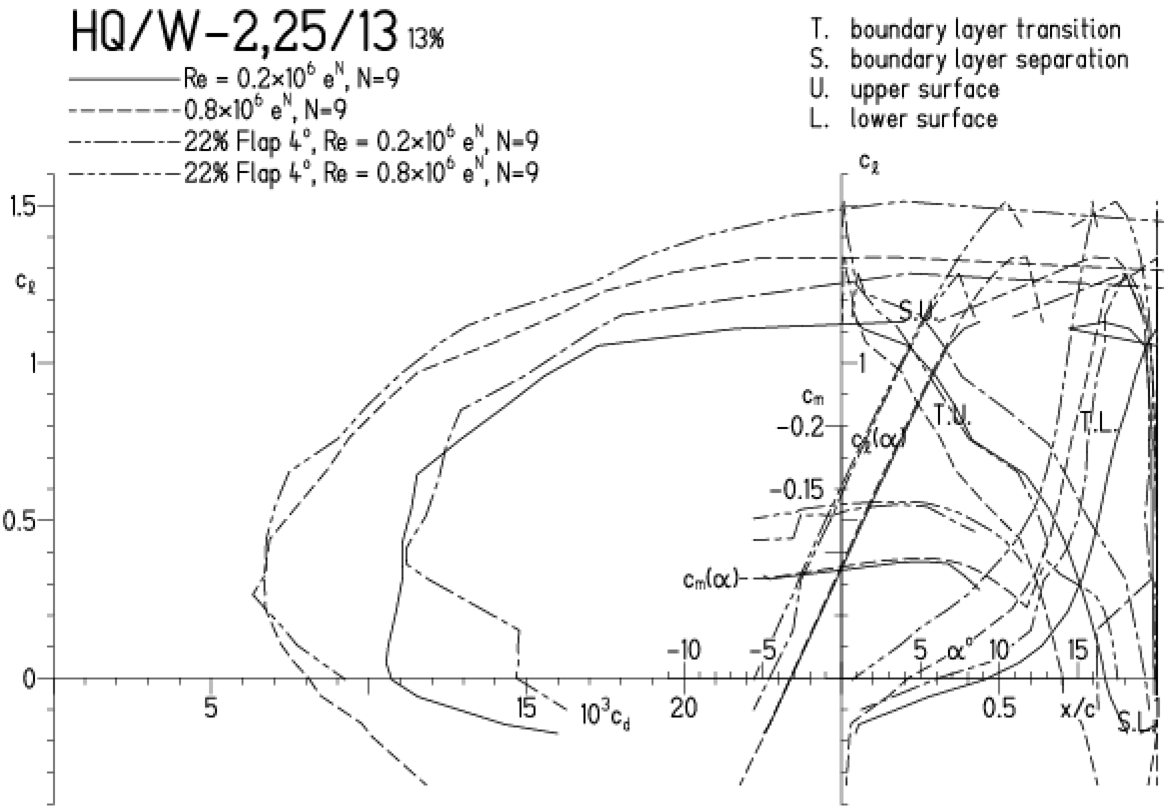


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

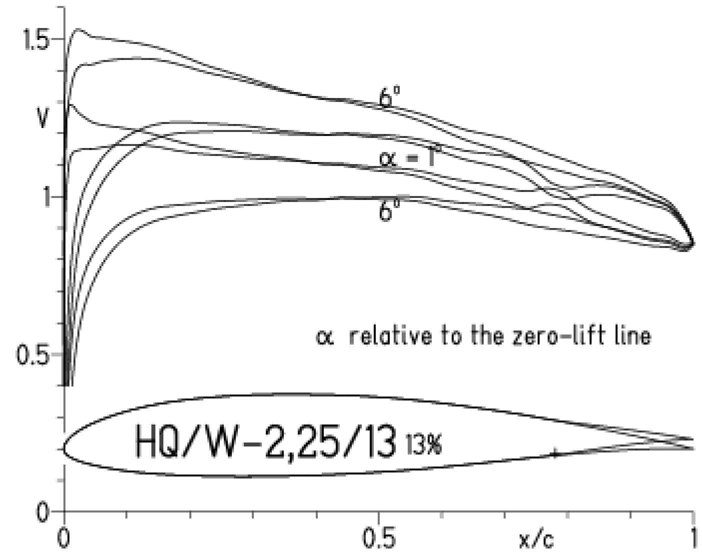


EPPLER 2005 V.

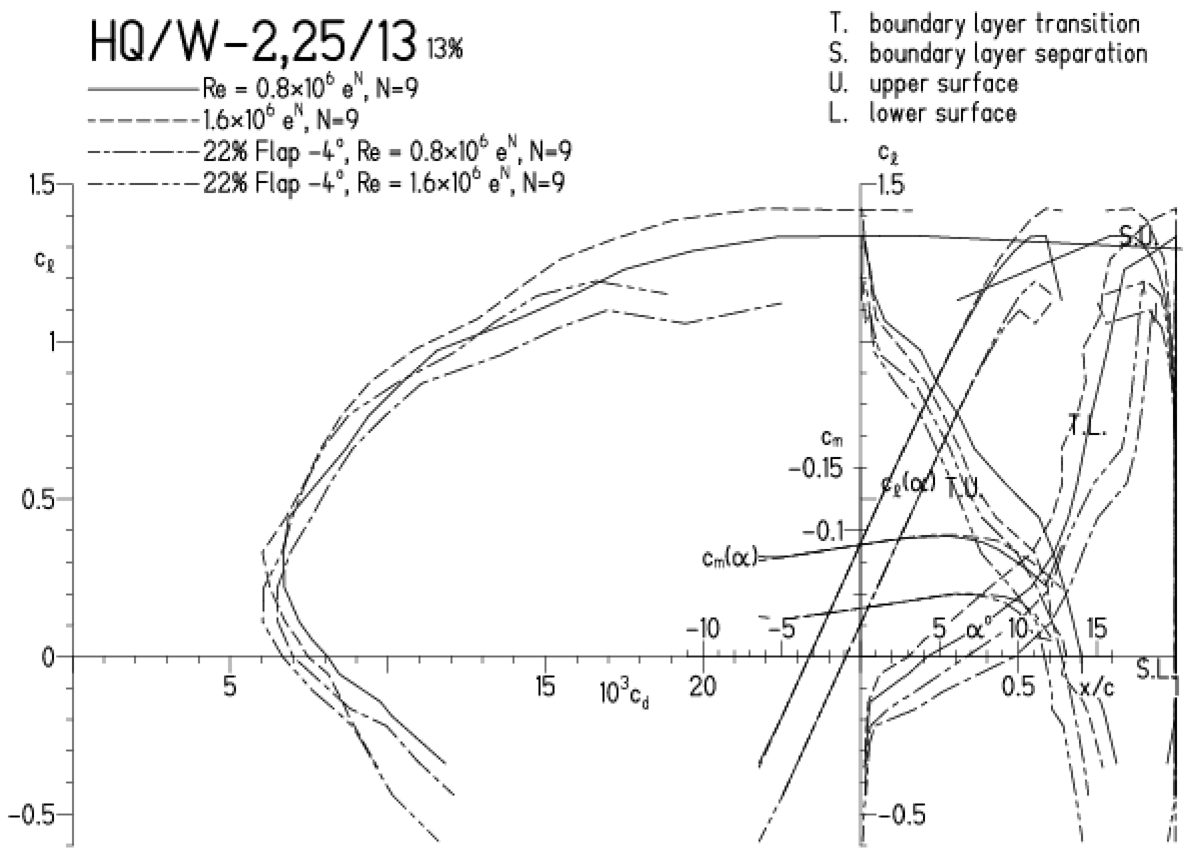


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

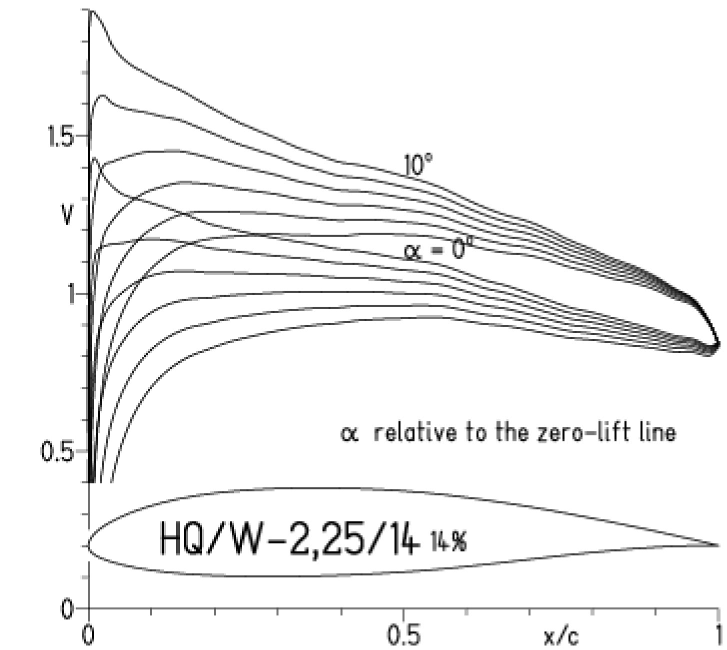


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

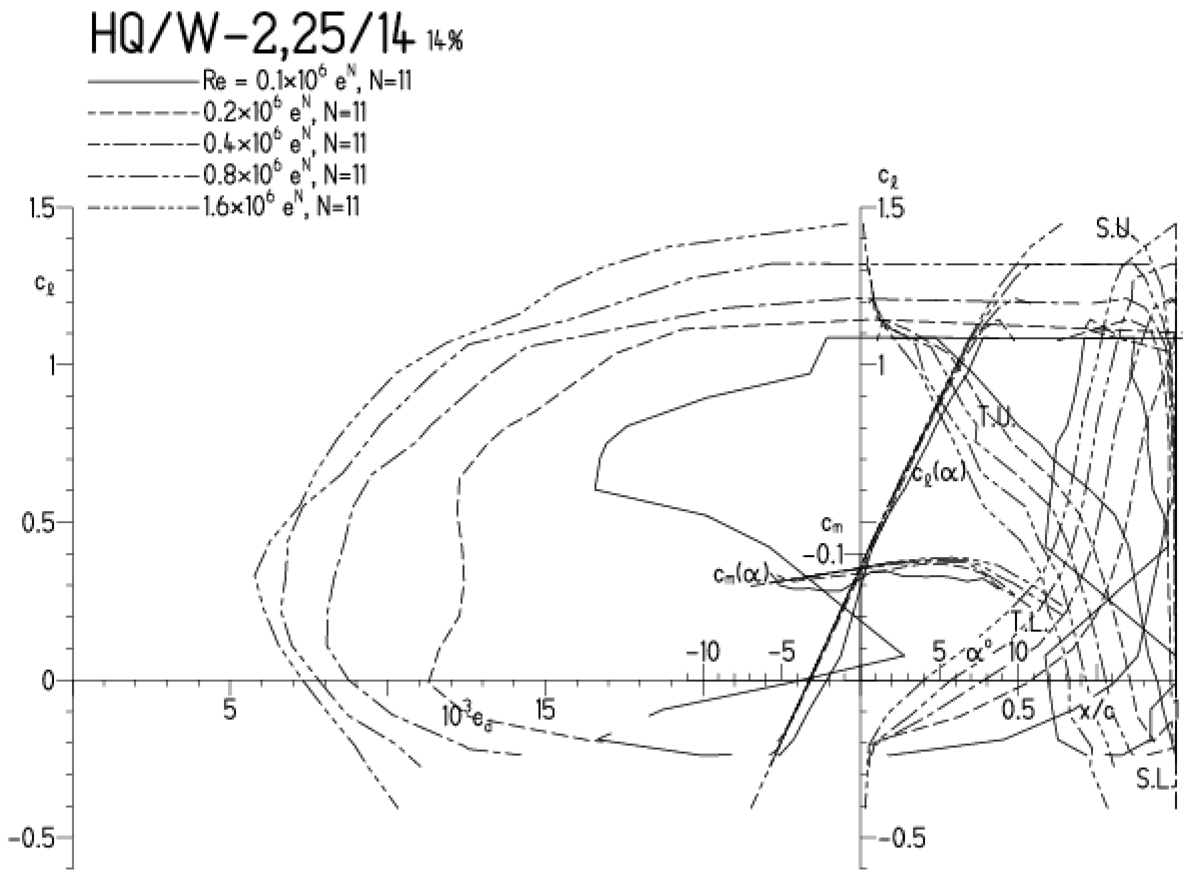


HQ/W-2,25/14, N=11

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

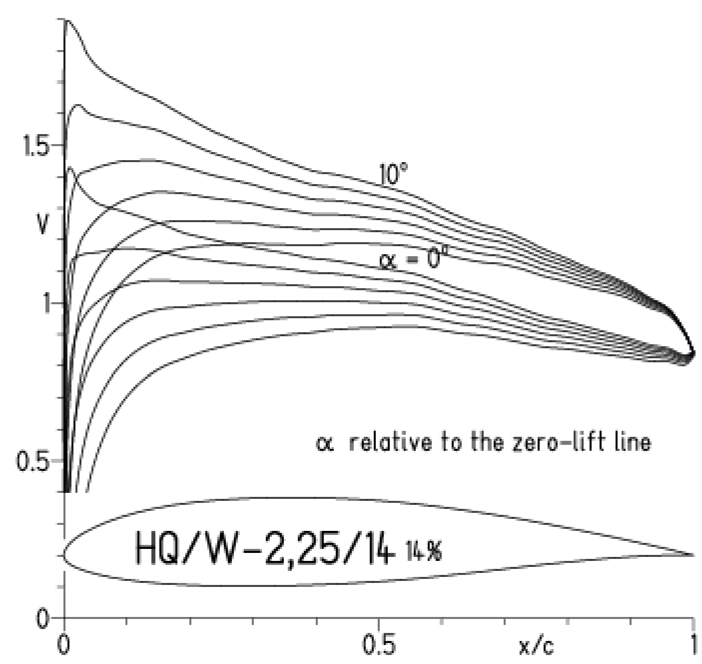


EPPLER 2005 V. 8.

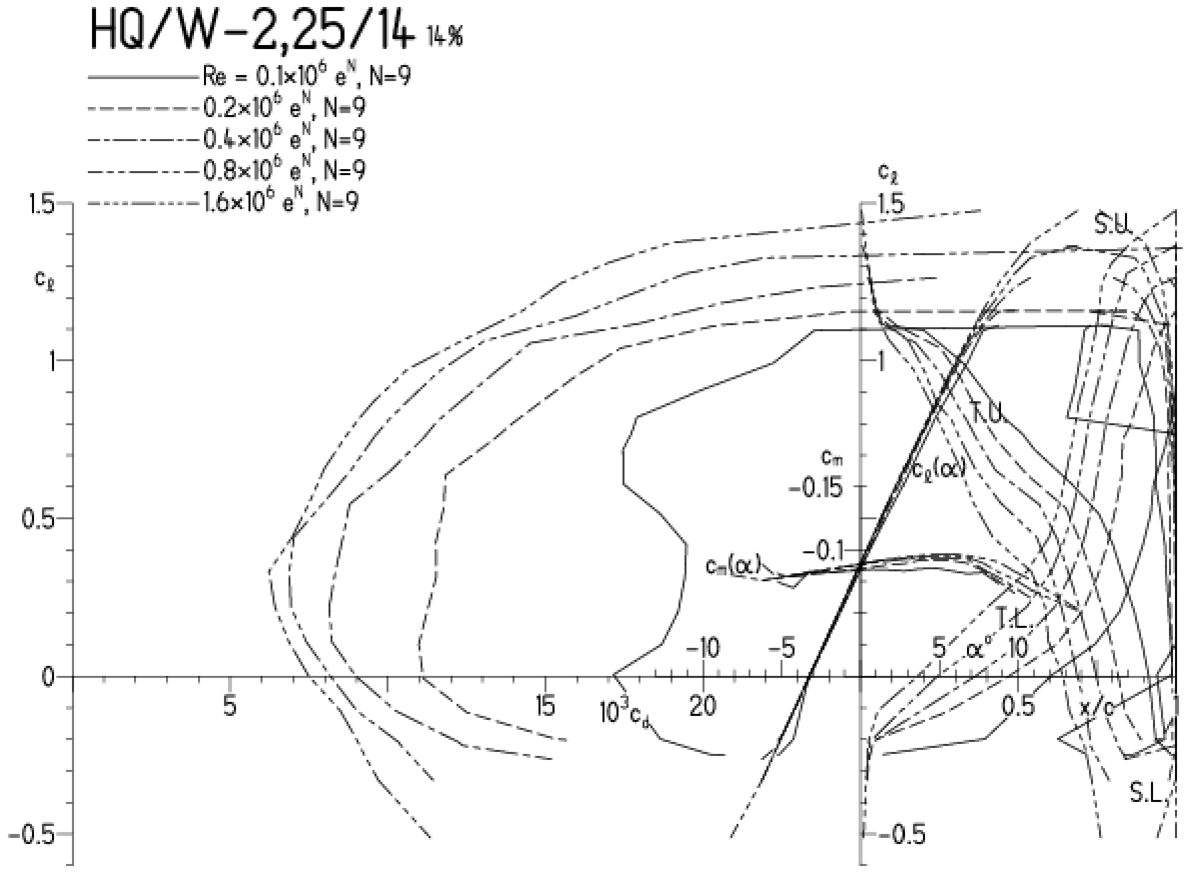


<u>HQ/W-2,25/14</u>, N=9

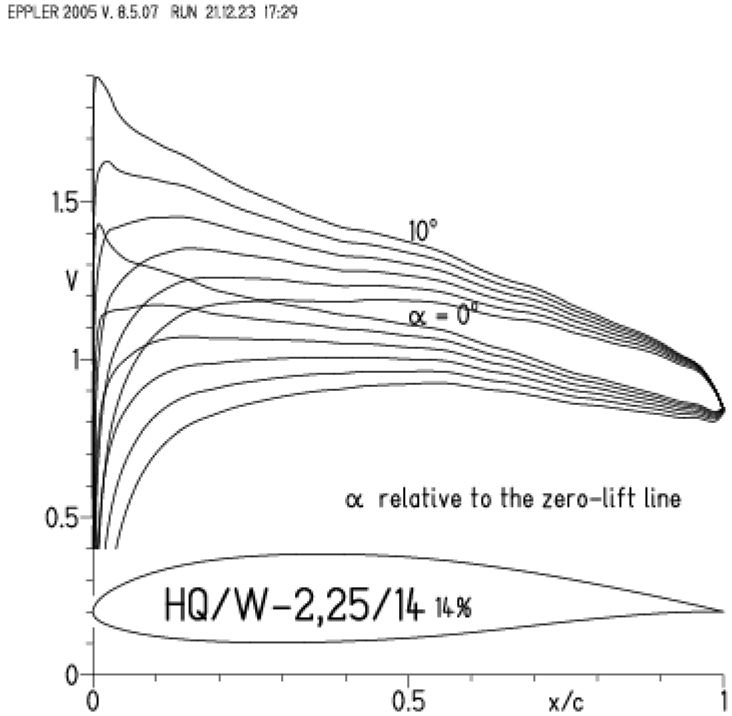
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20

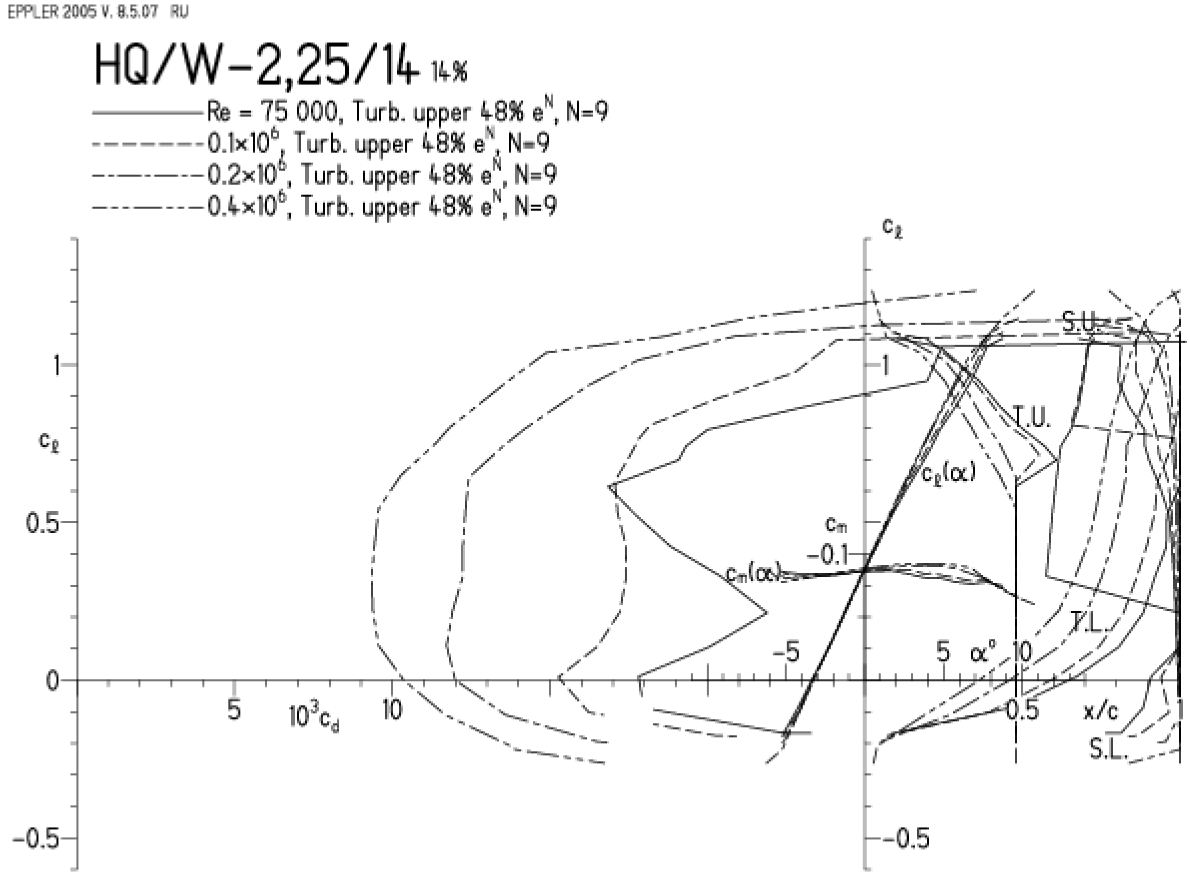


EPPLER 2005 V. 8.



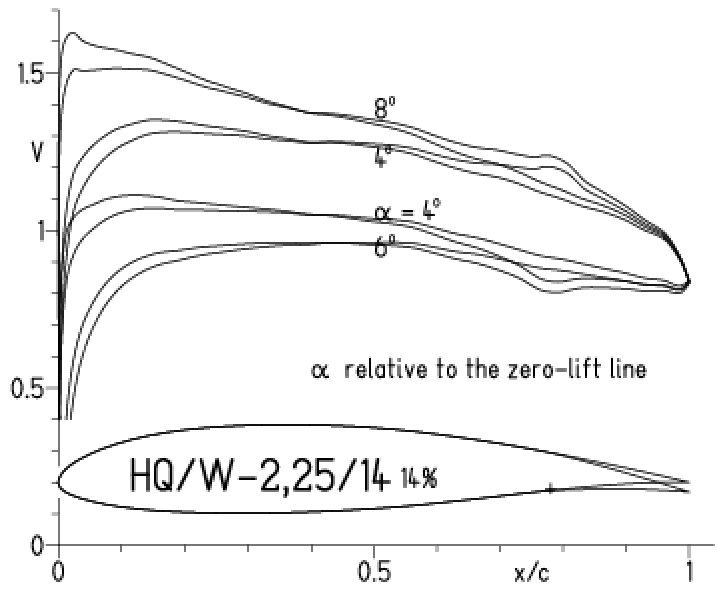
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



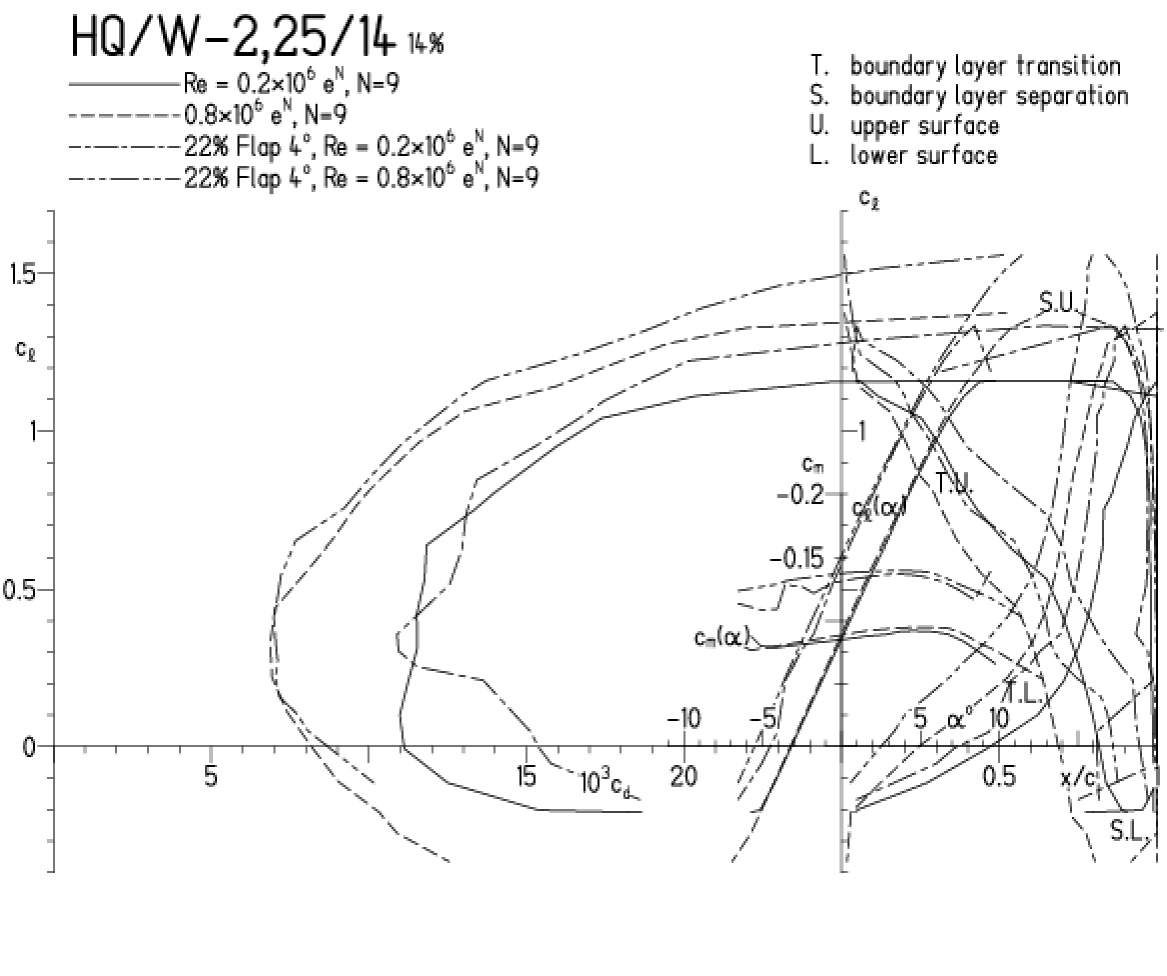


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

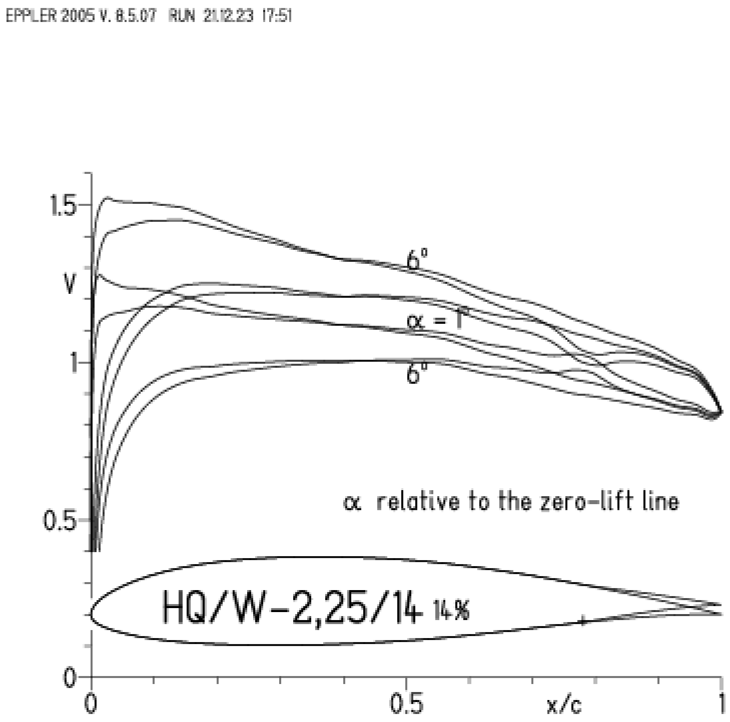
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

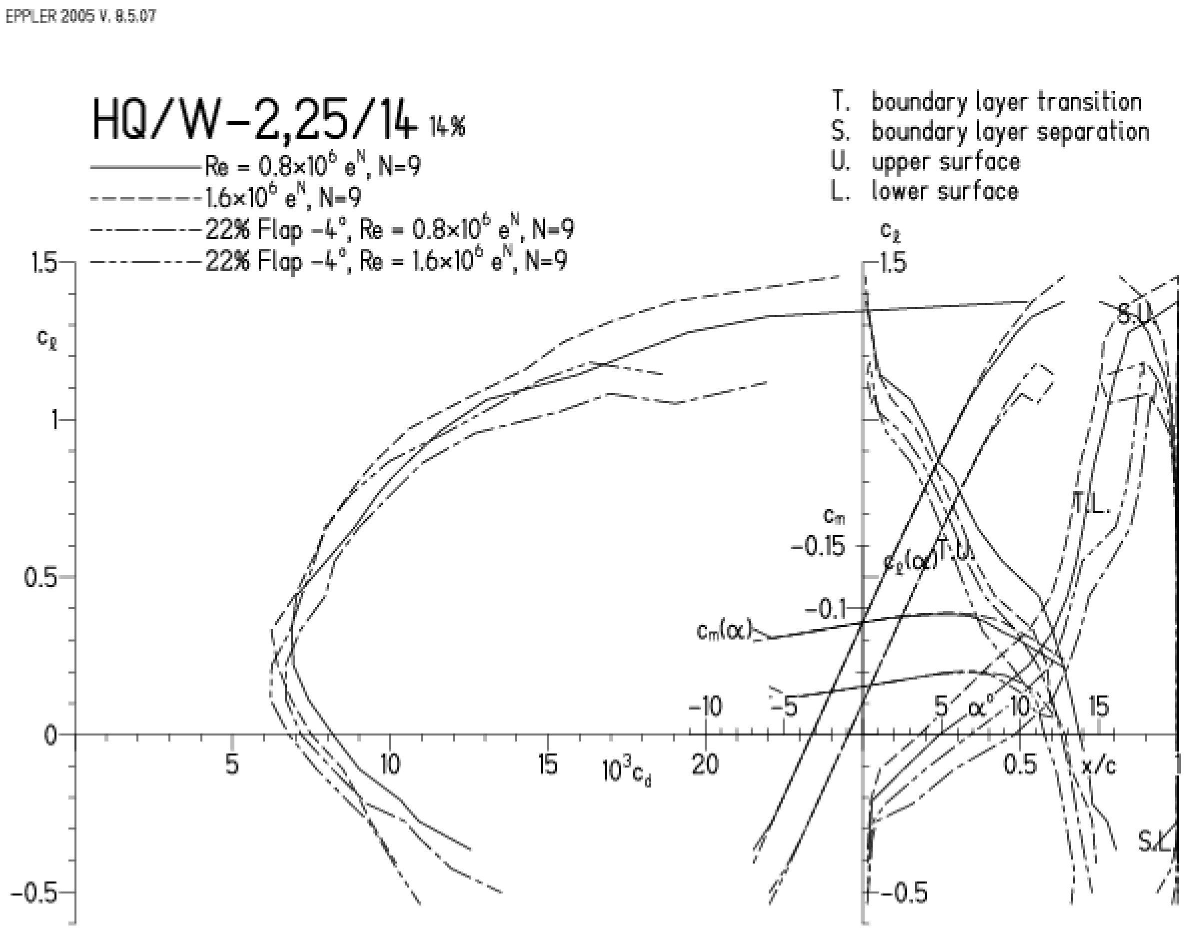


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

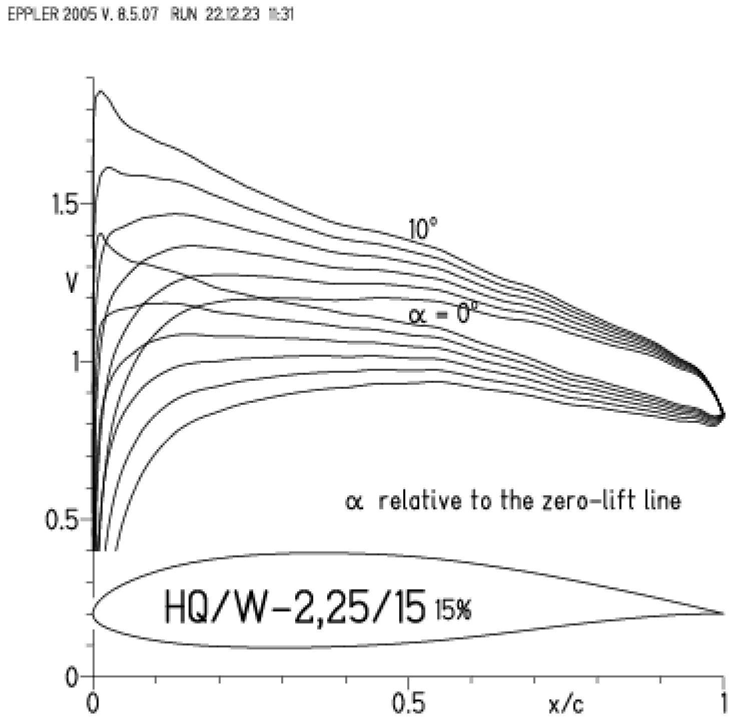


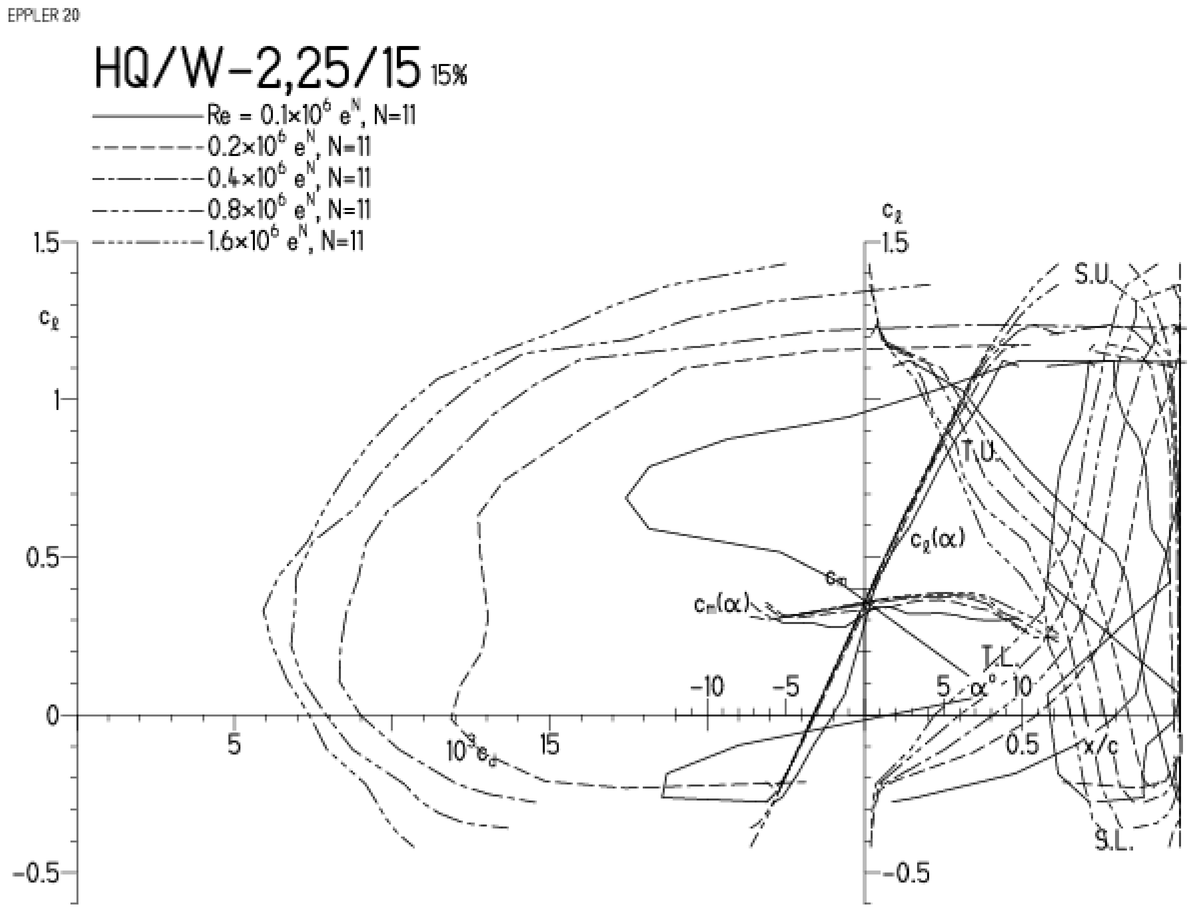
HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag



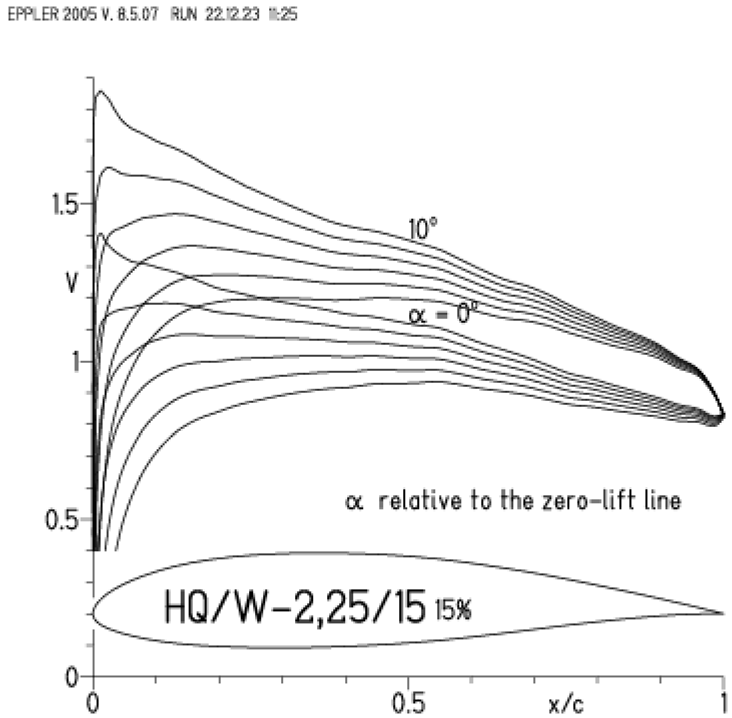


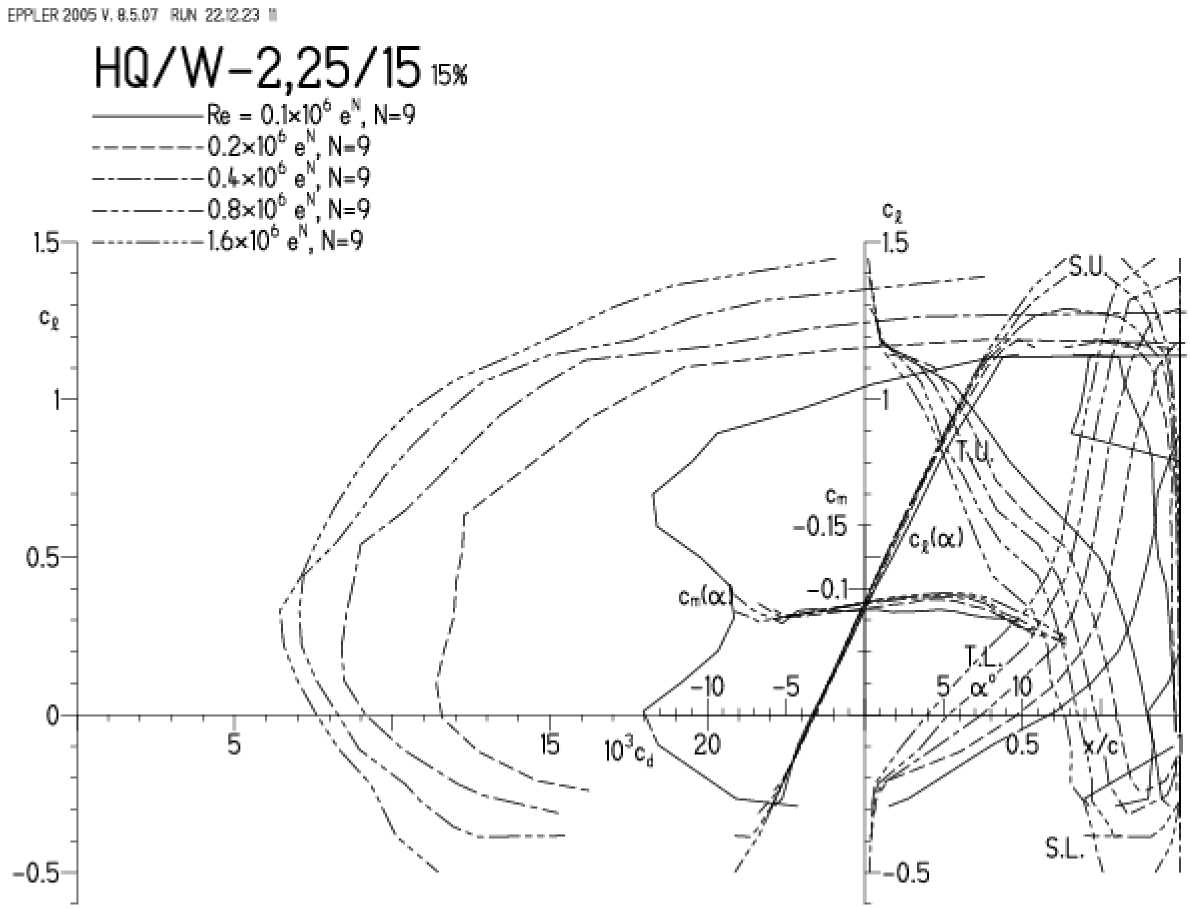
HQ/W-2,25/15, N=11



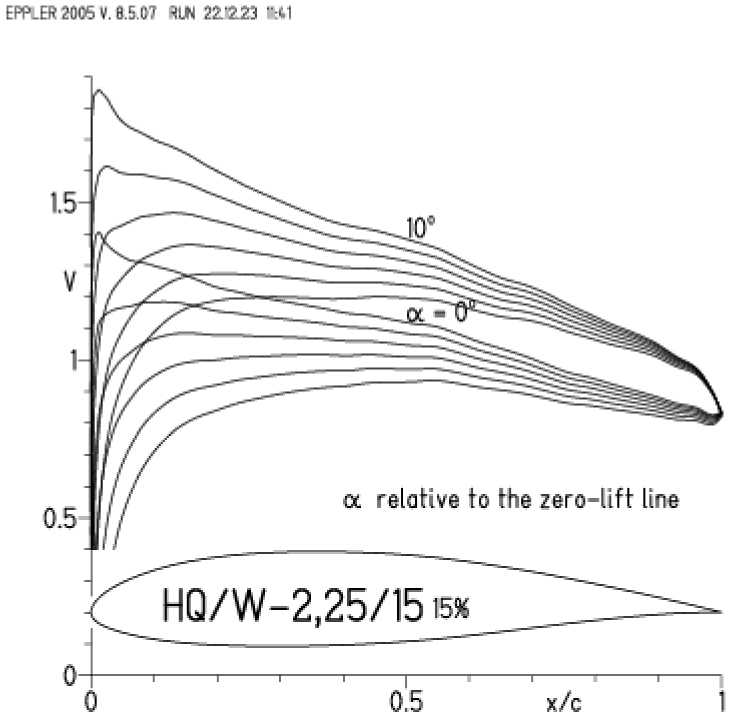


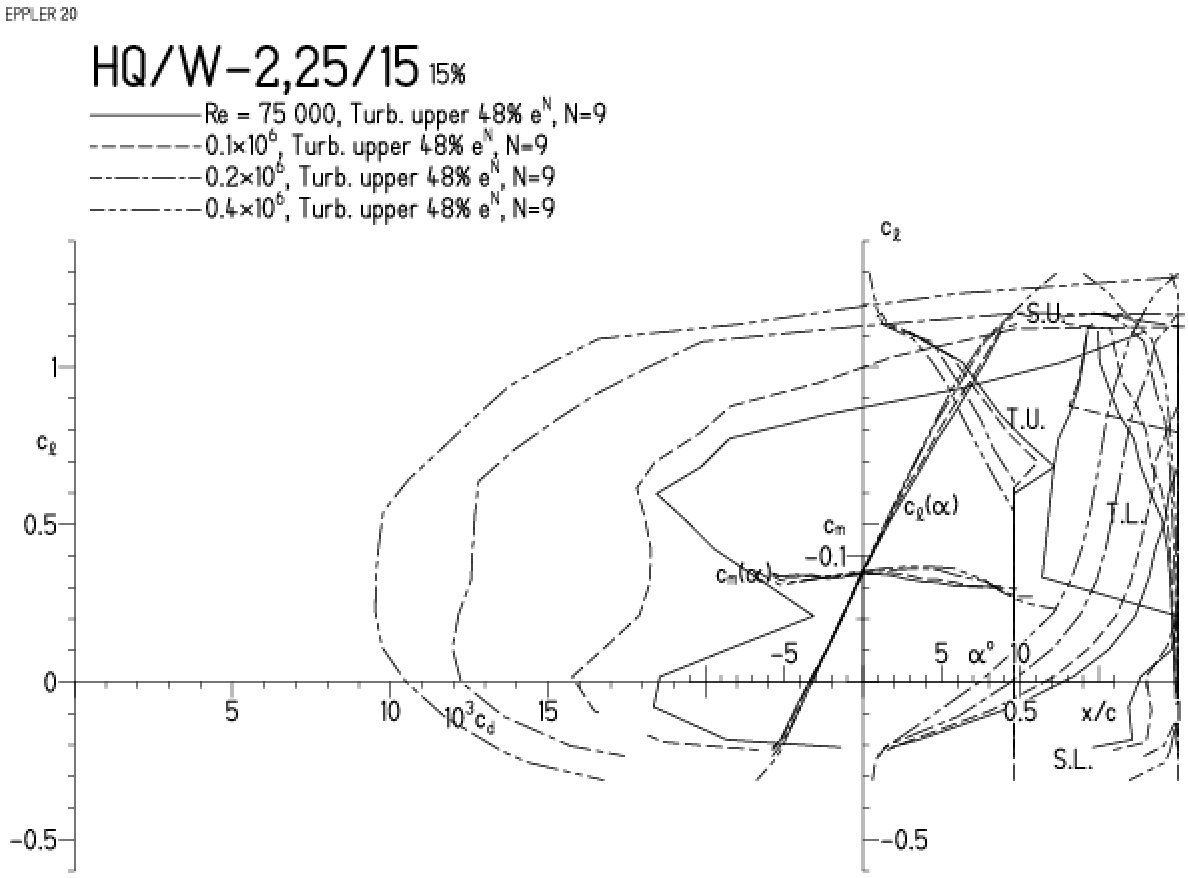
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



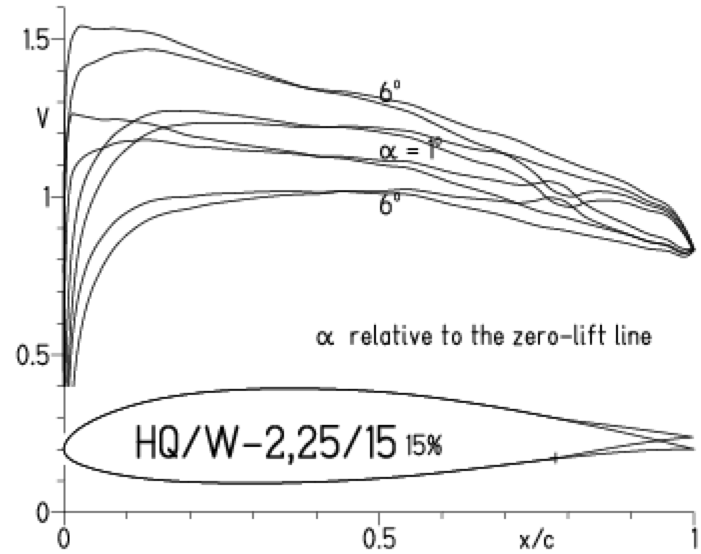


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

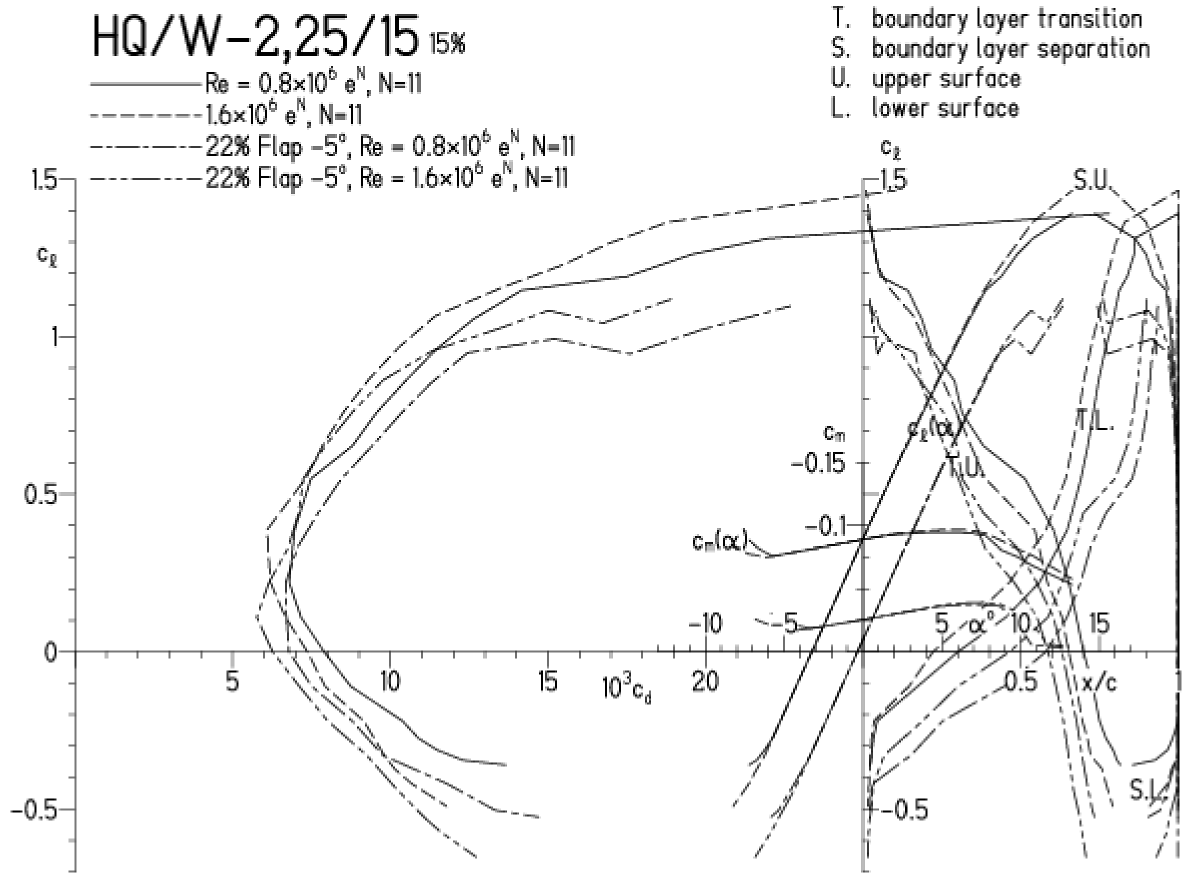
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

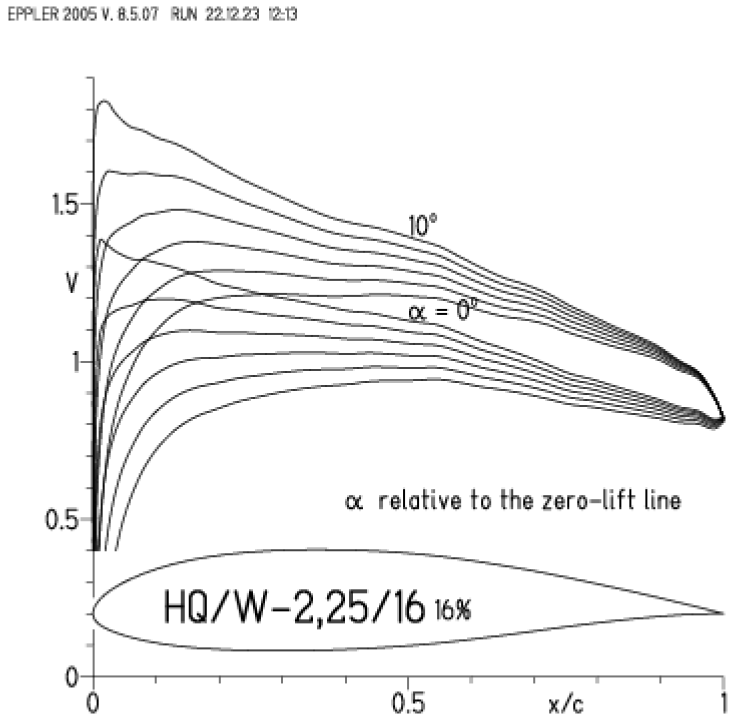
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

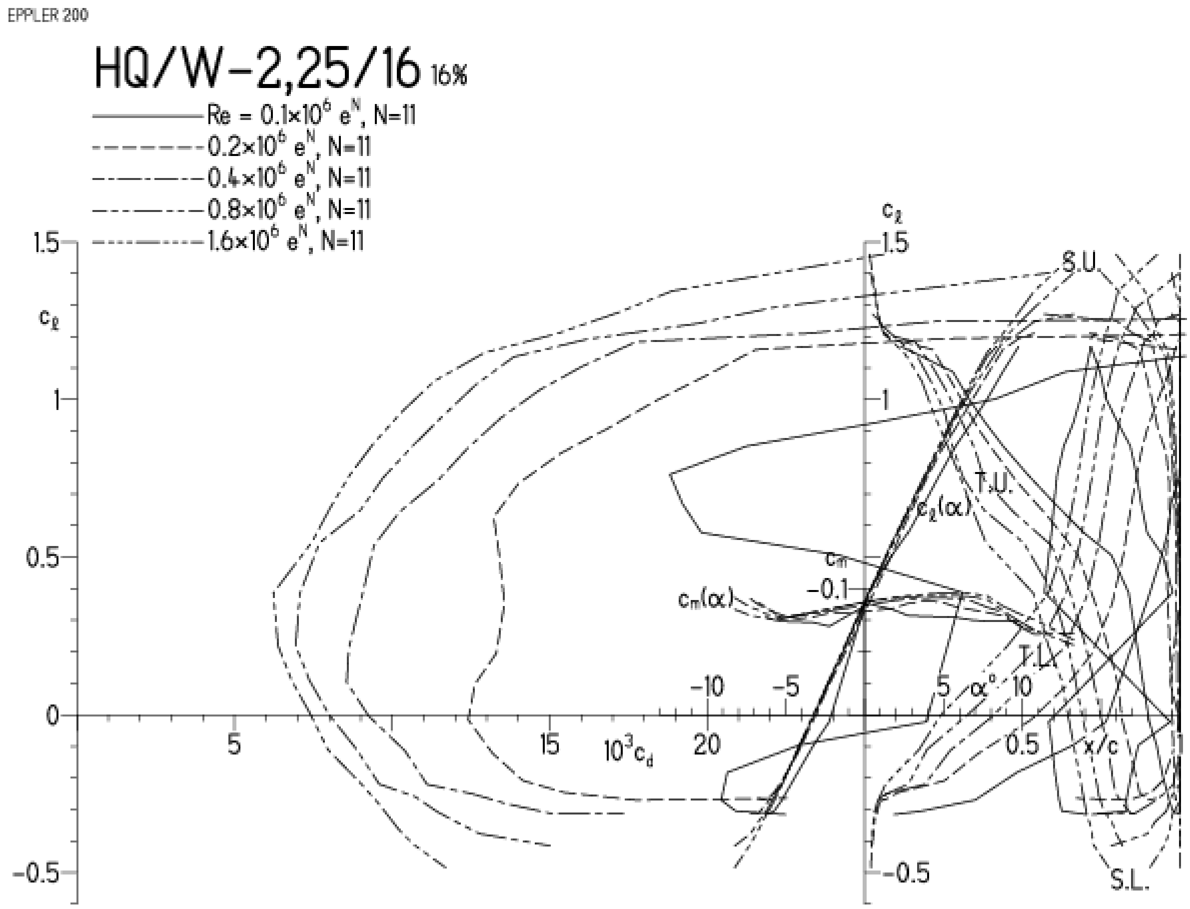


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:



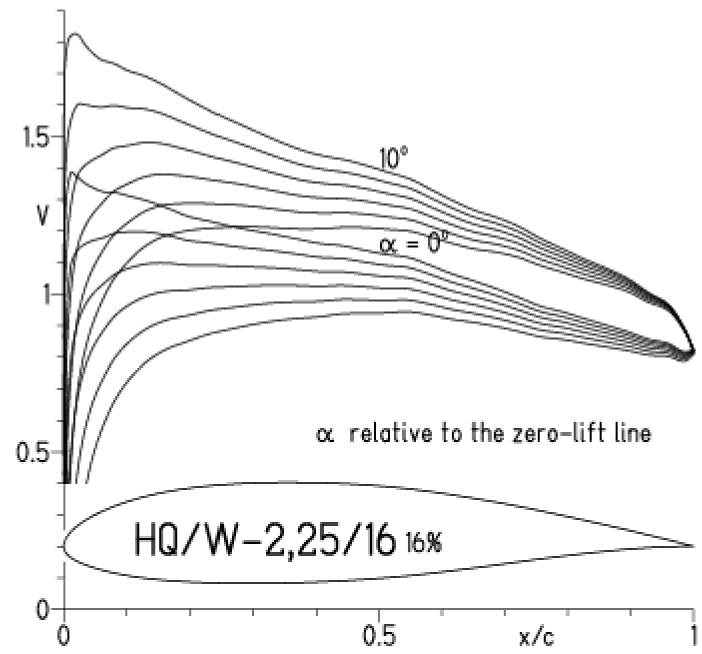
<u>HQ/W-2,25/16</u>, N=11



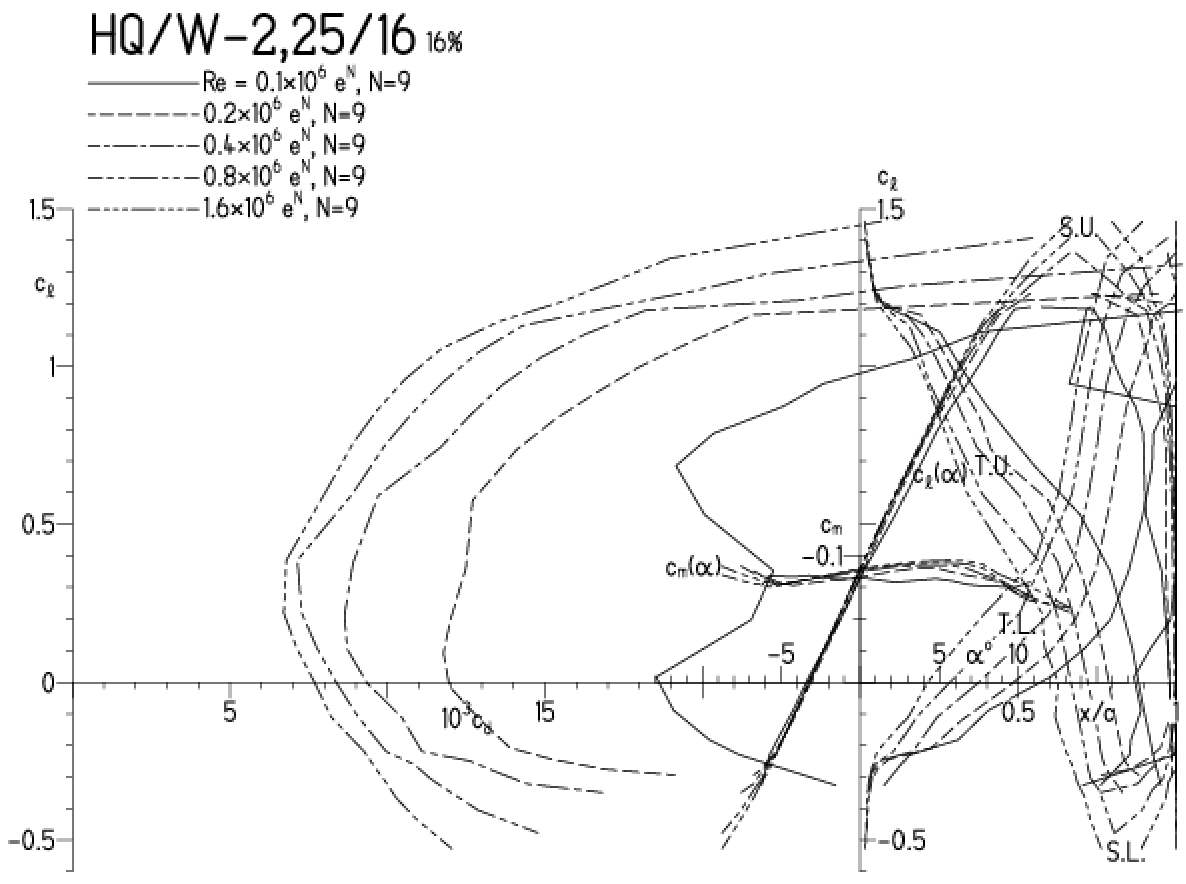


HQ/W-2,25/16, N=9

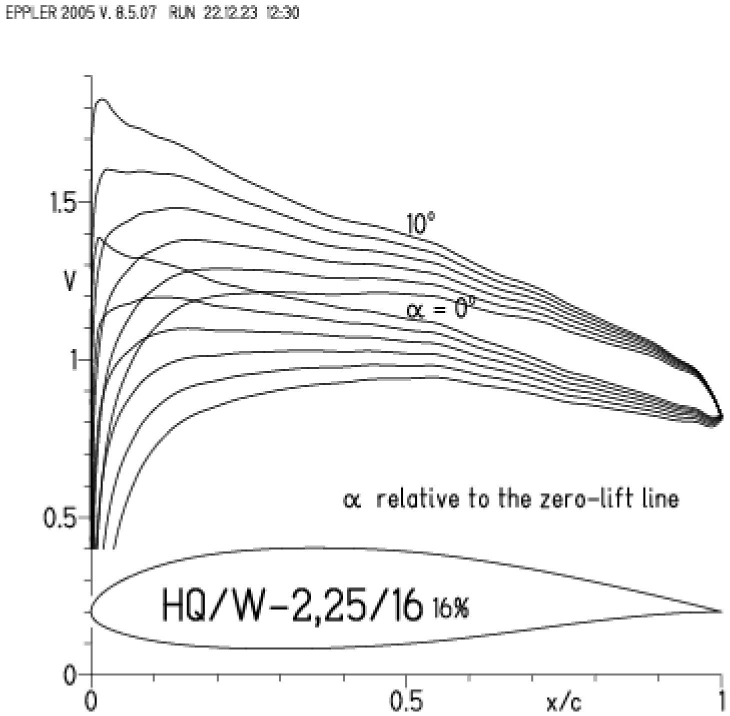
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

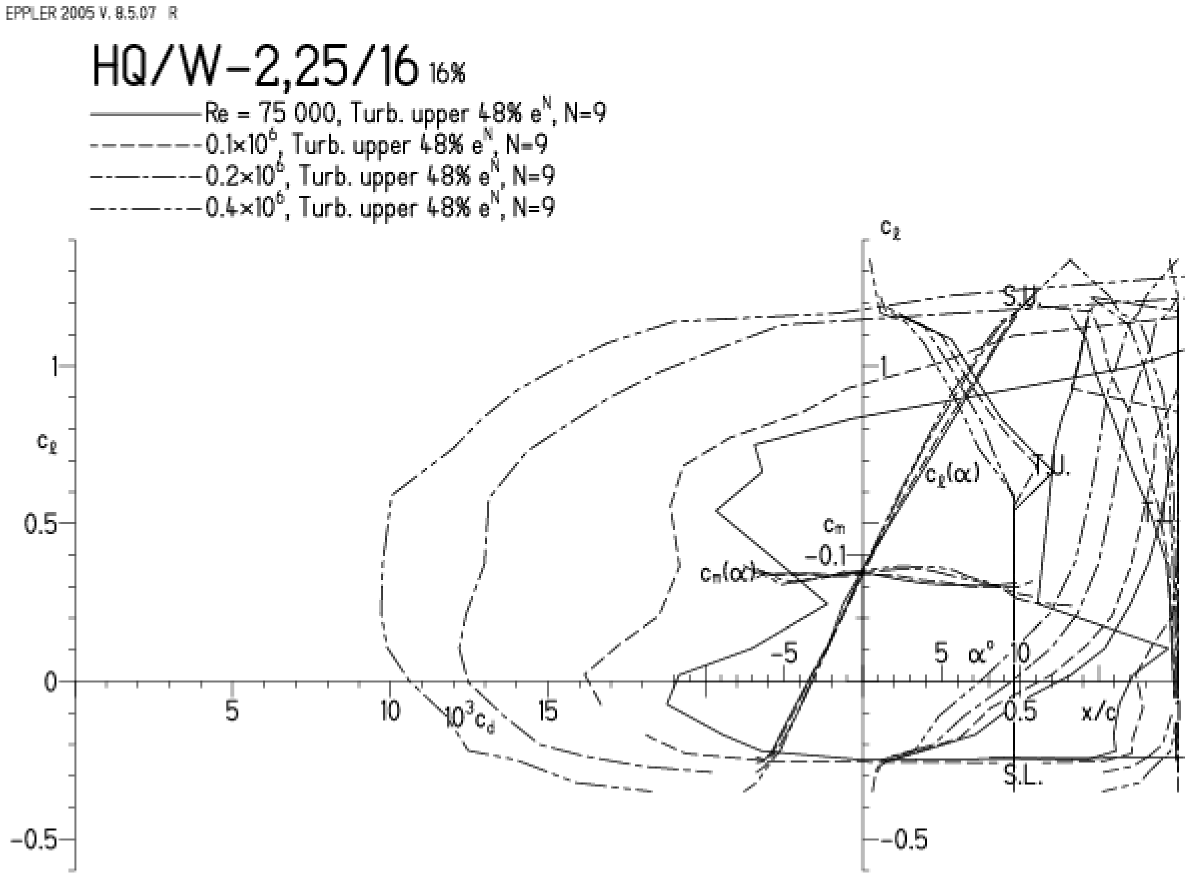


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



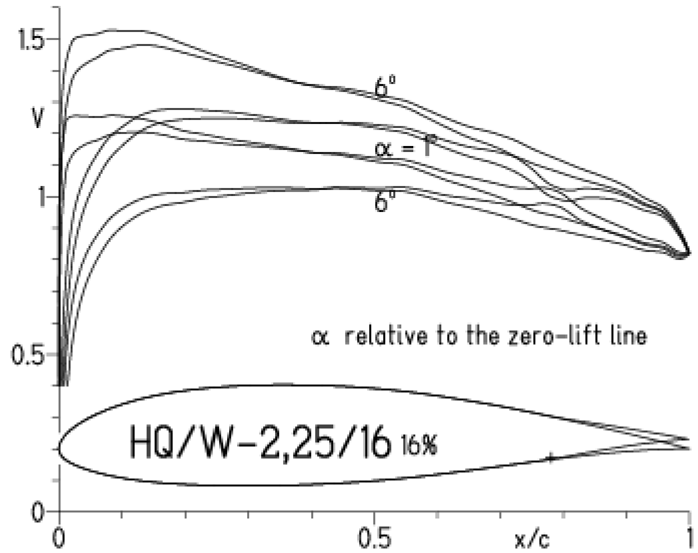


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

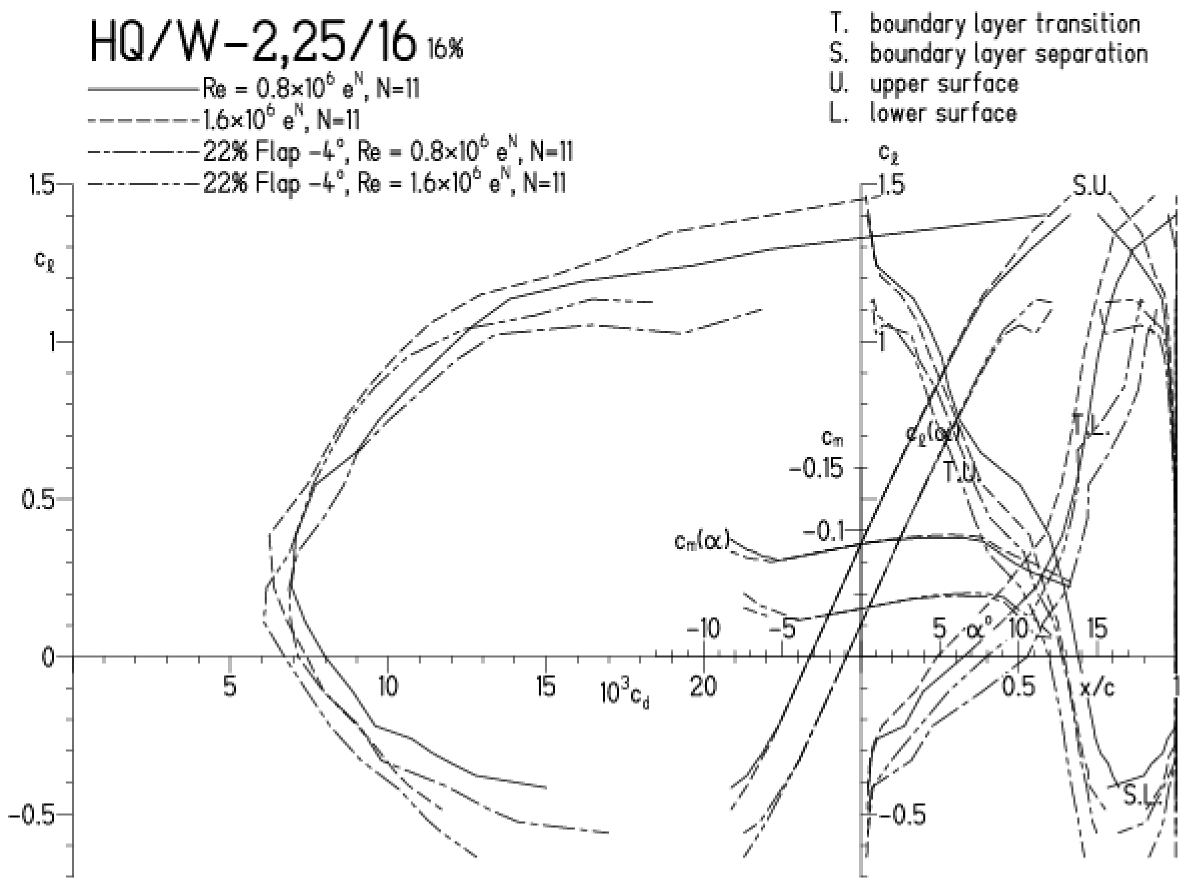
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

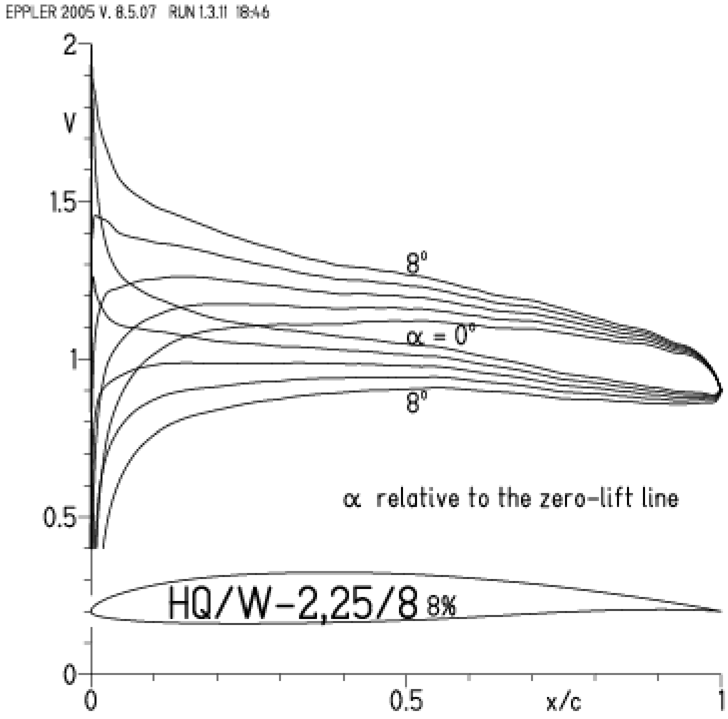
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

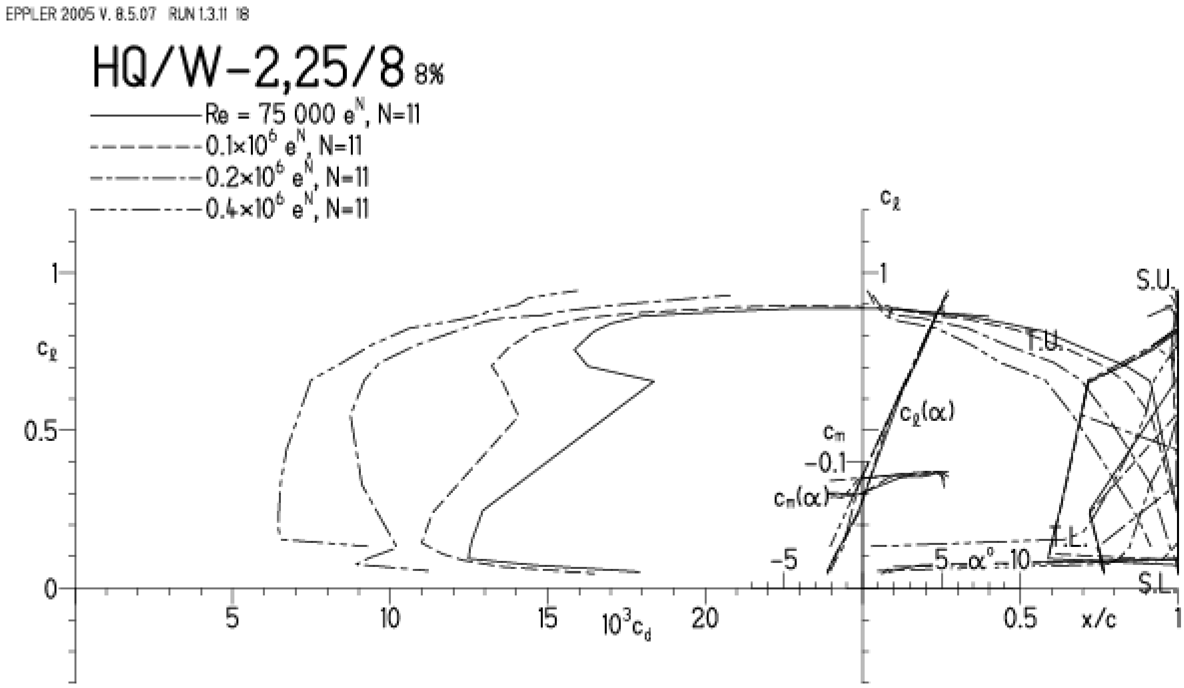


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

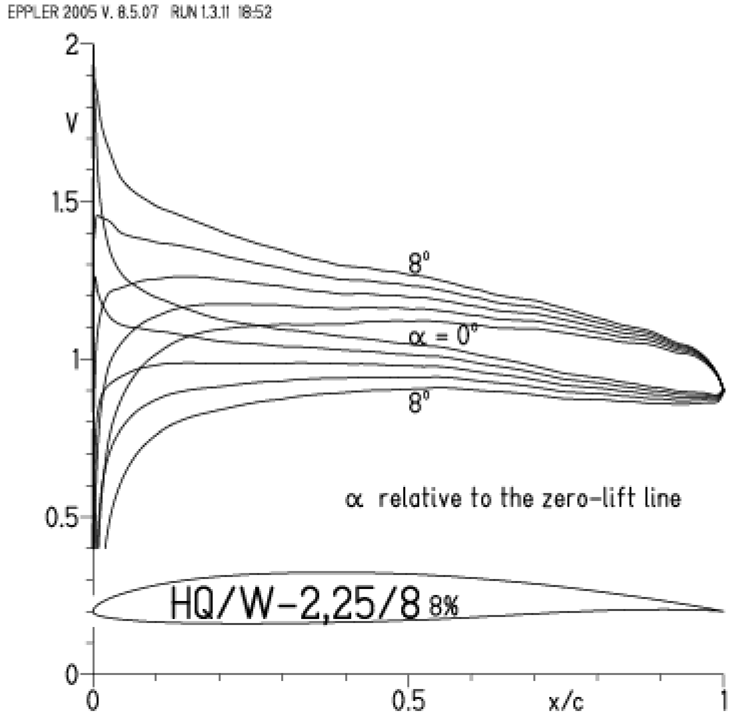


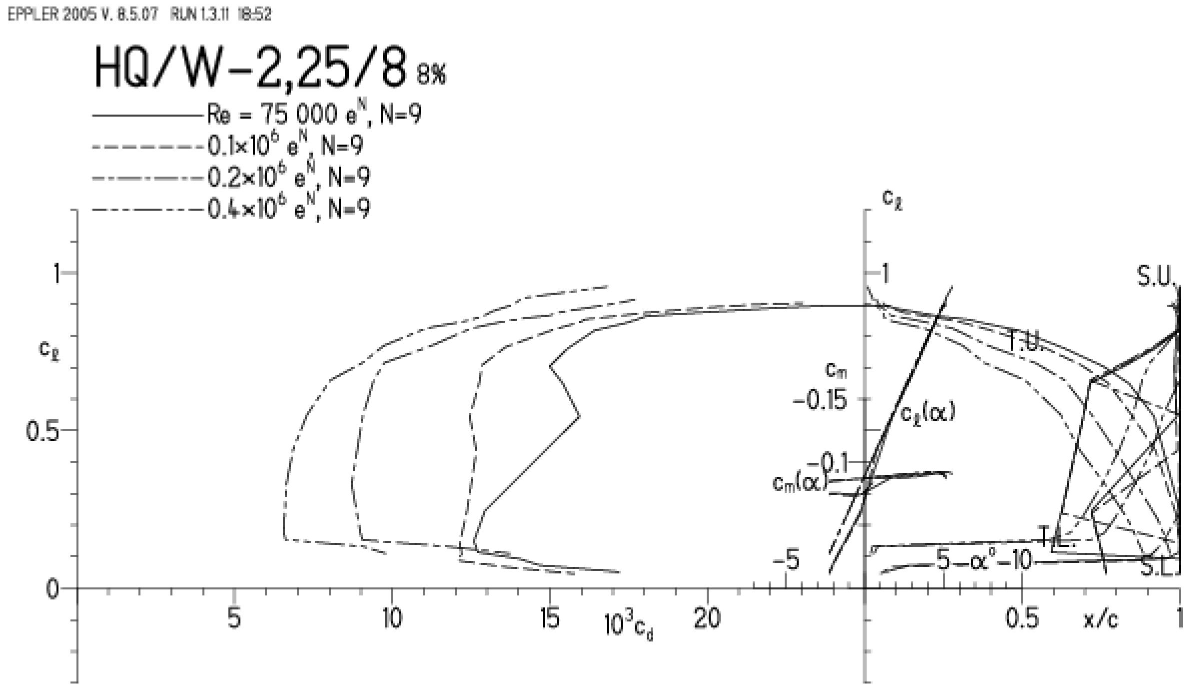
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

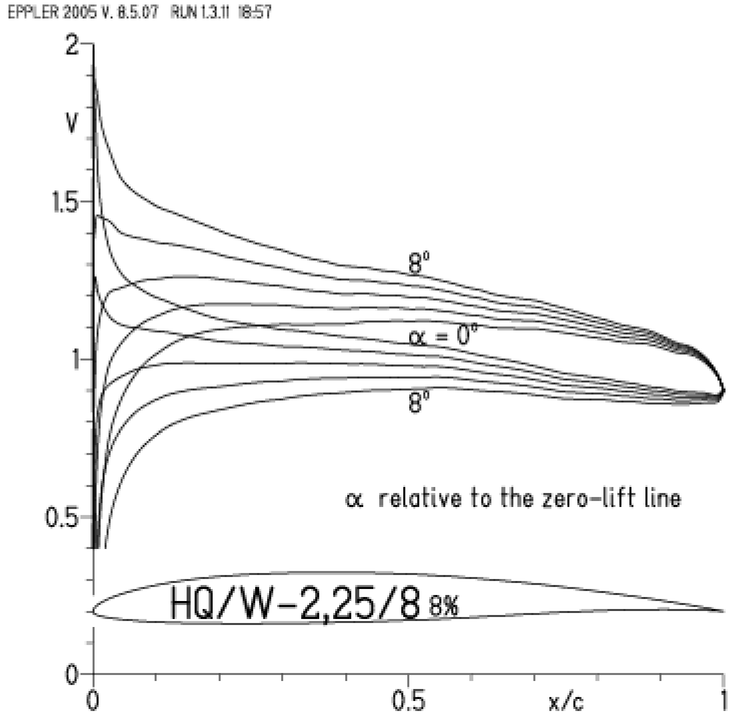

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
$10^3 c_d$
c_l(α)
c_m
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c

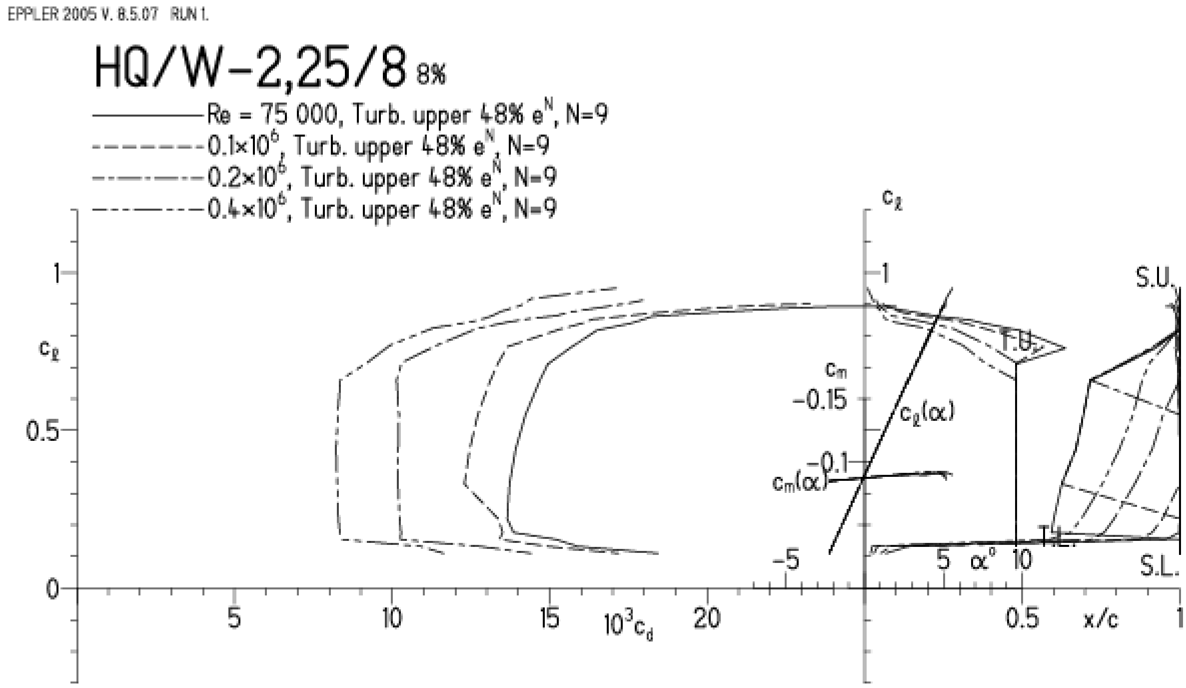
<u>HQ/W-2,25/8</u>, N=9



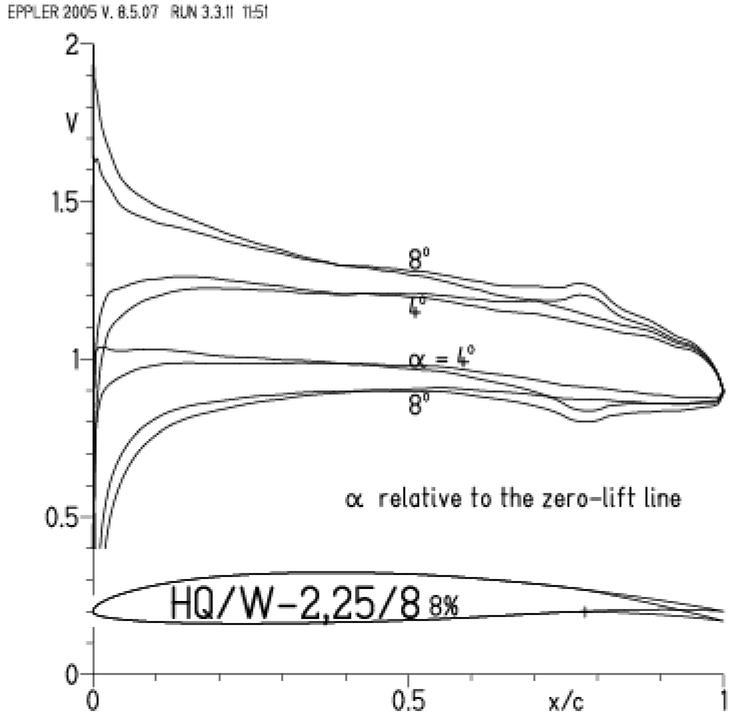


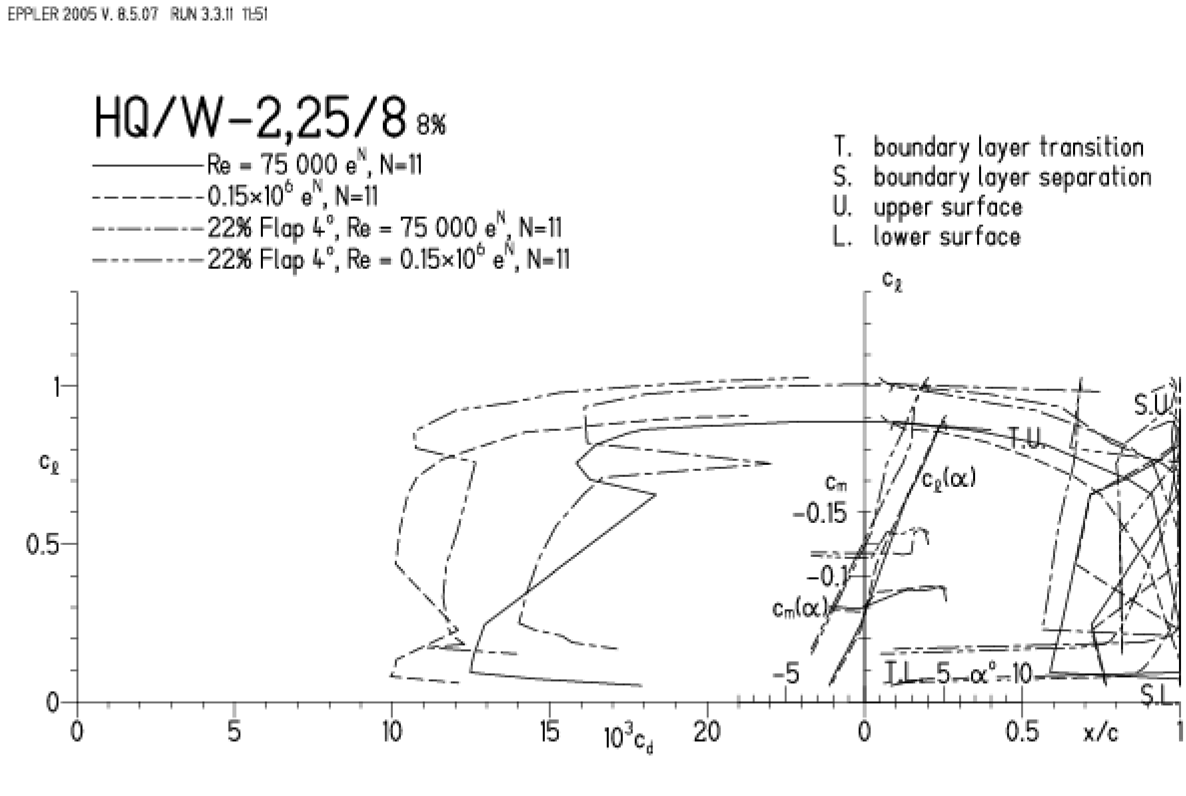
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



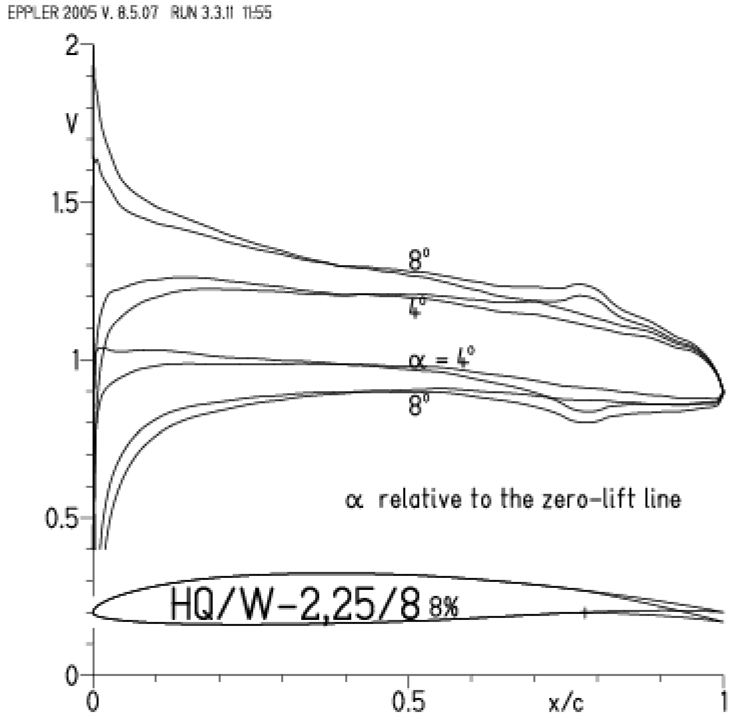


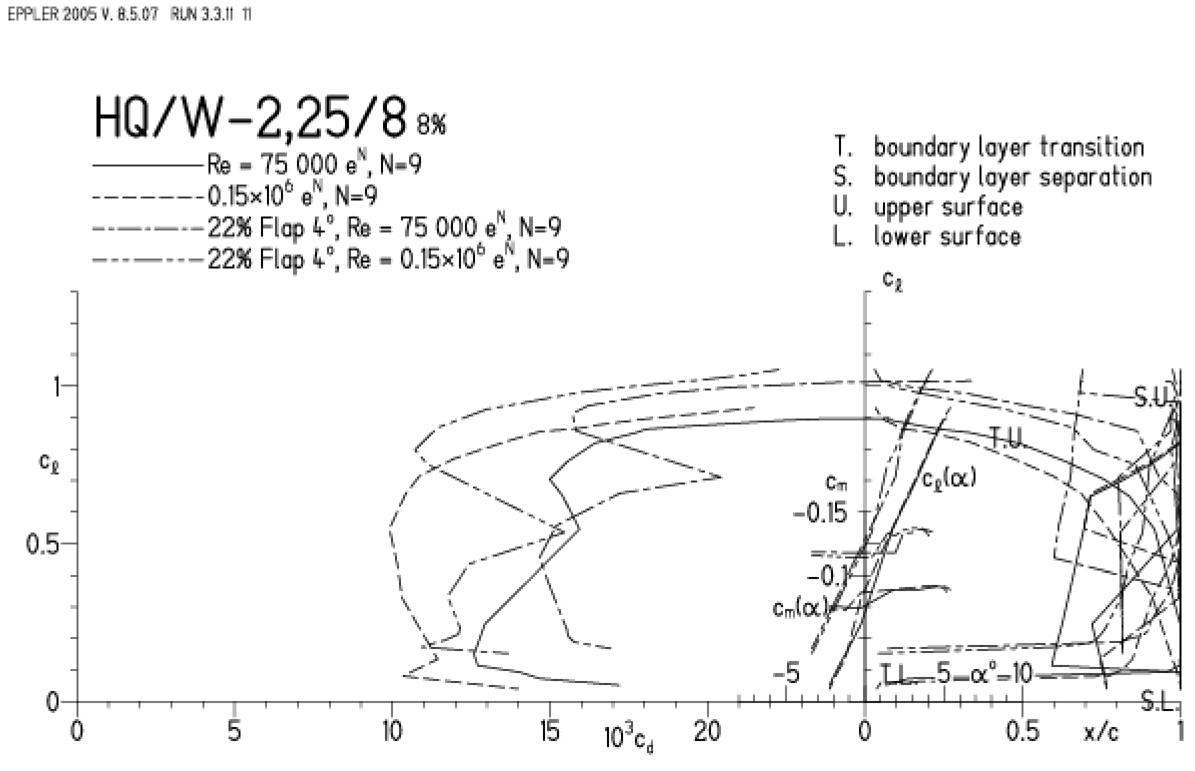
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



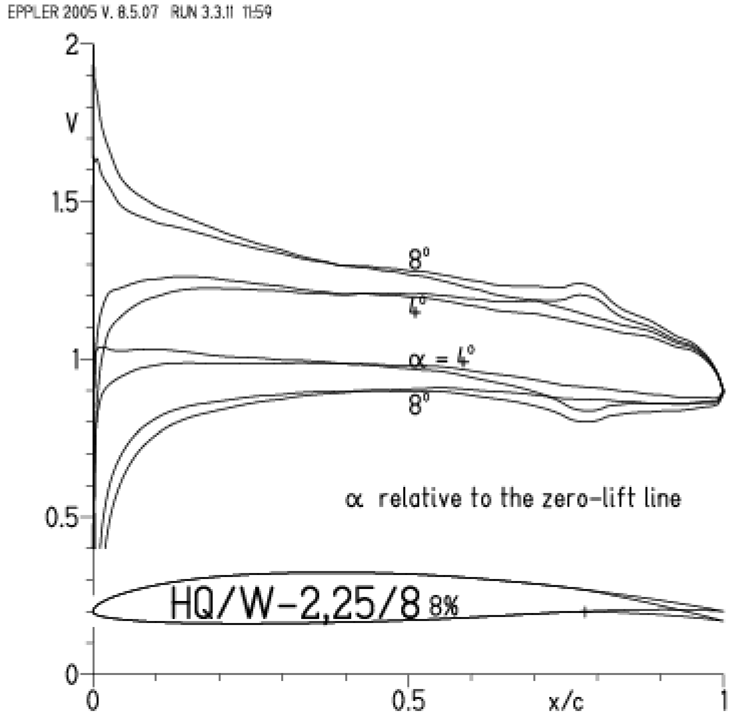


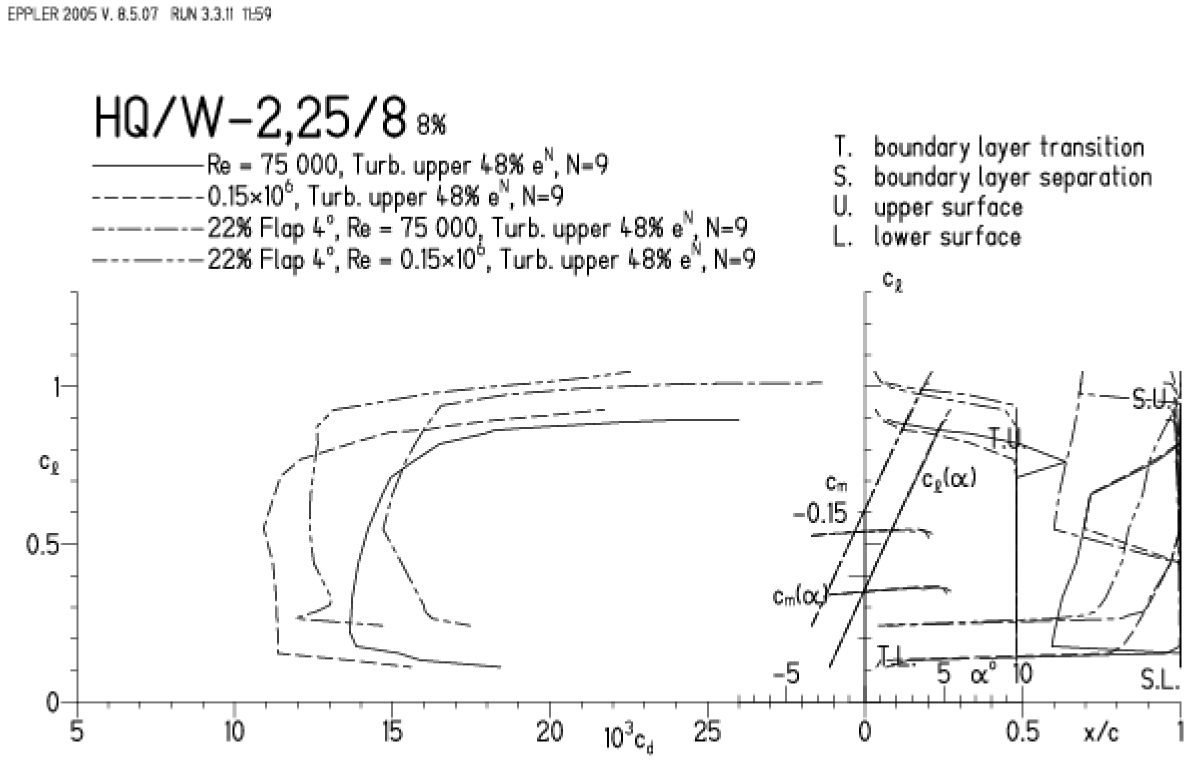
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





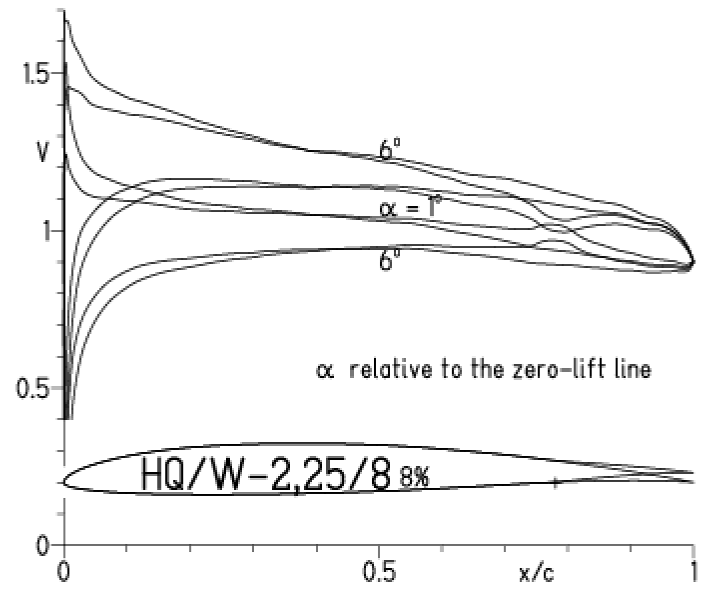
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



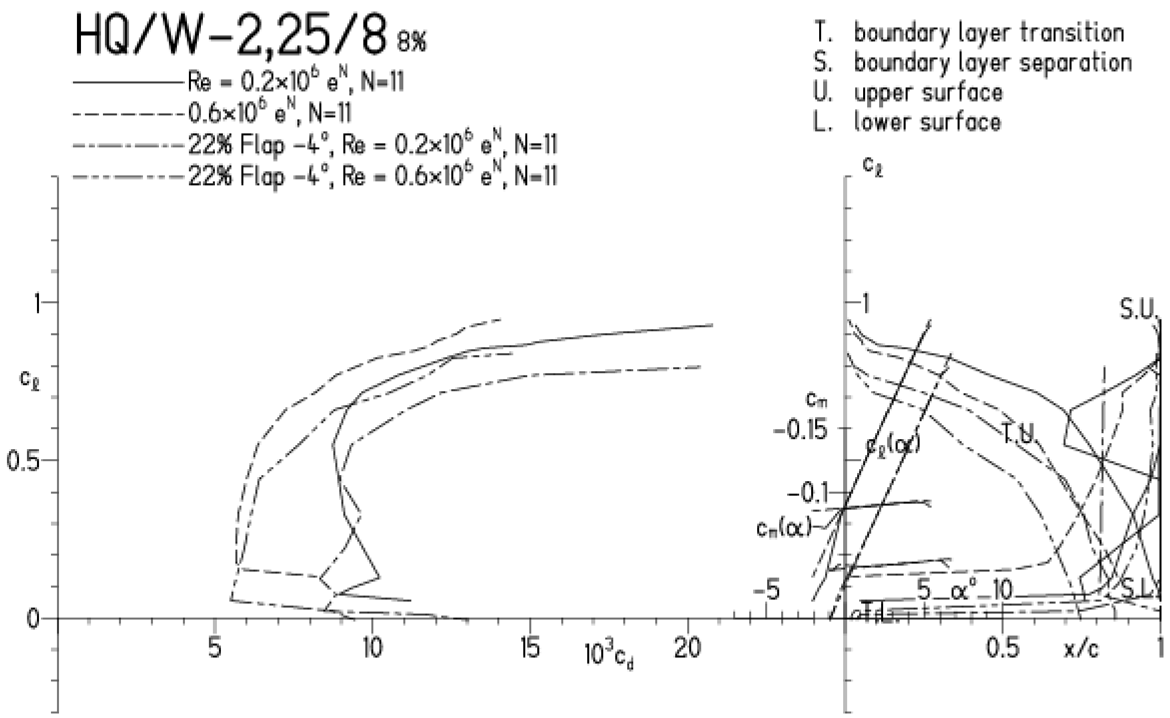


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

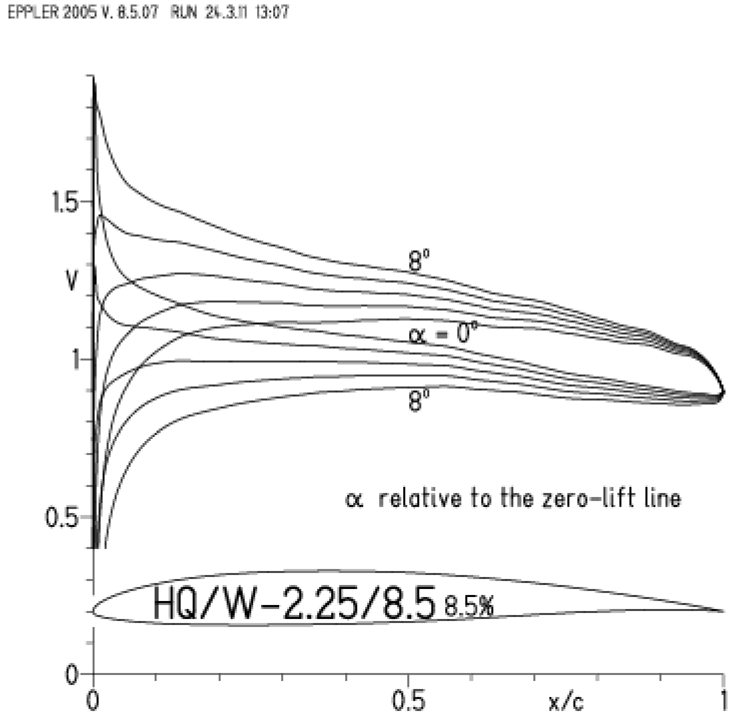
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

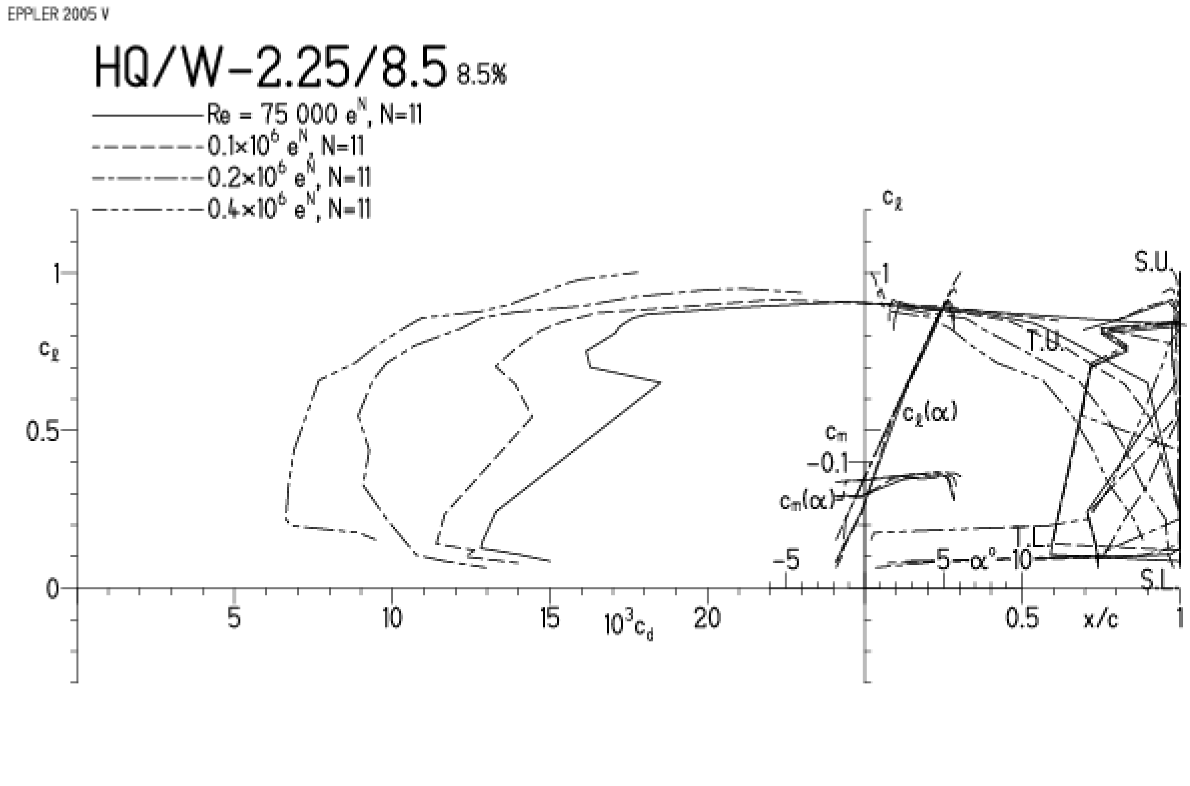


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



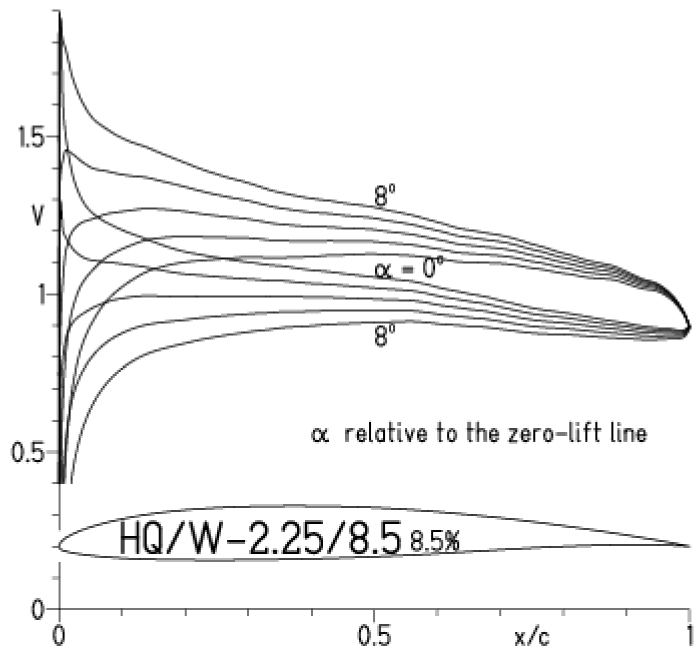
<u>HQ/W-2,25/8,5</u>, N=11



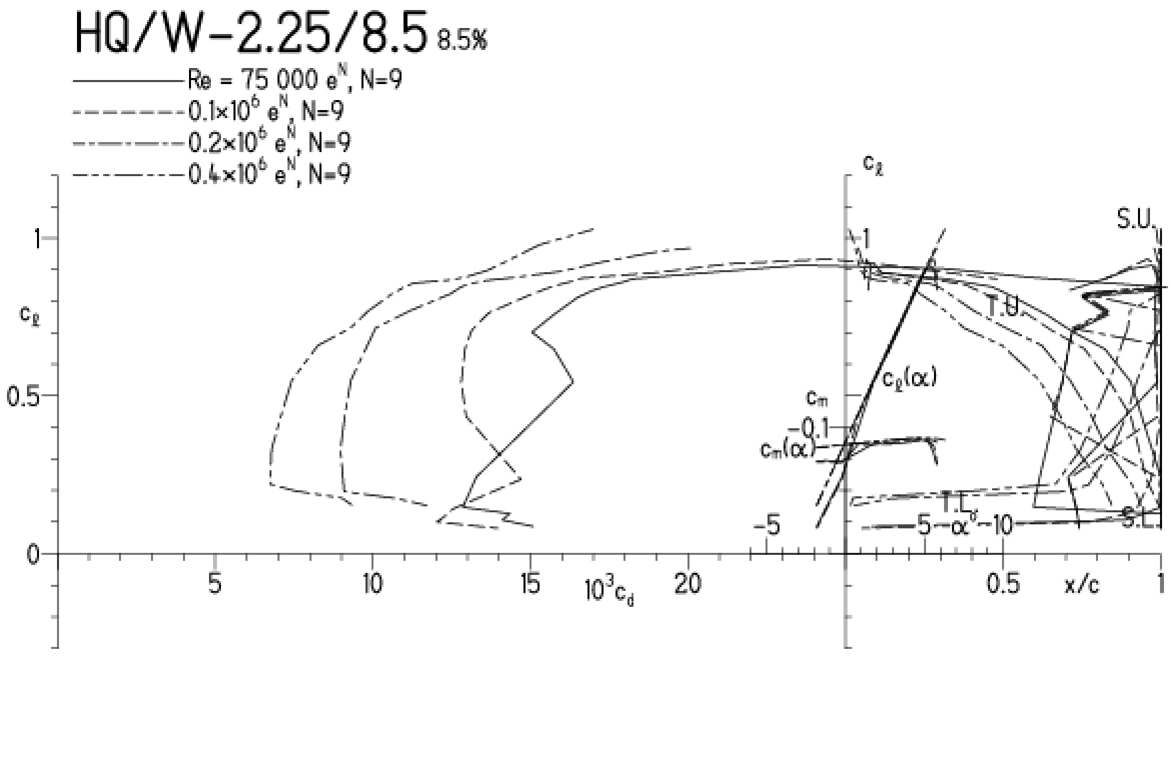


HQ/W-2,25/8,5, N=9

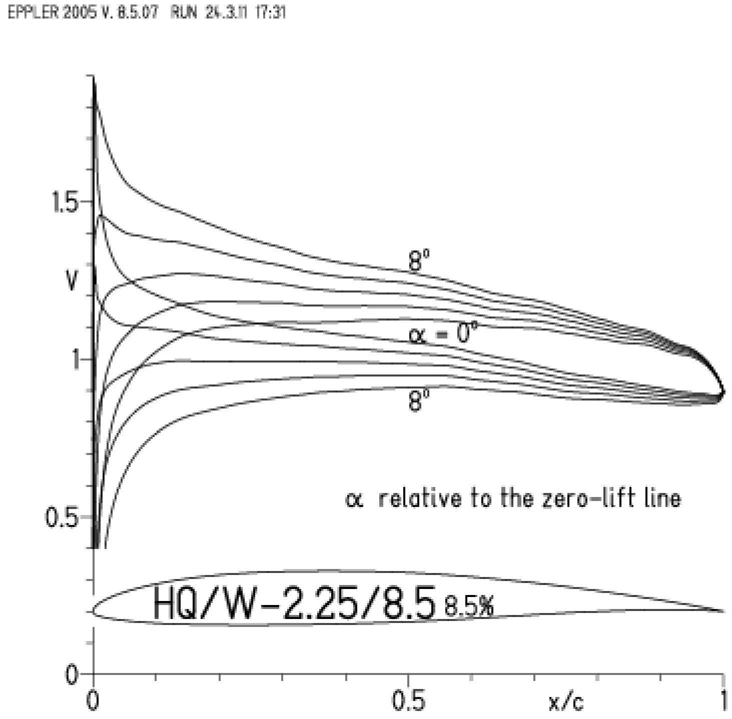
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

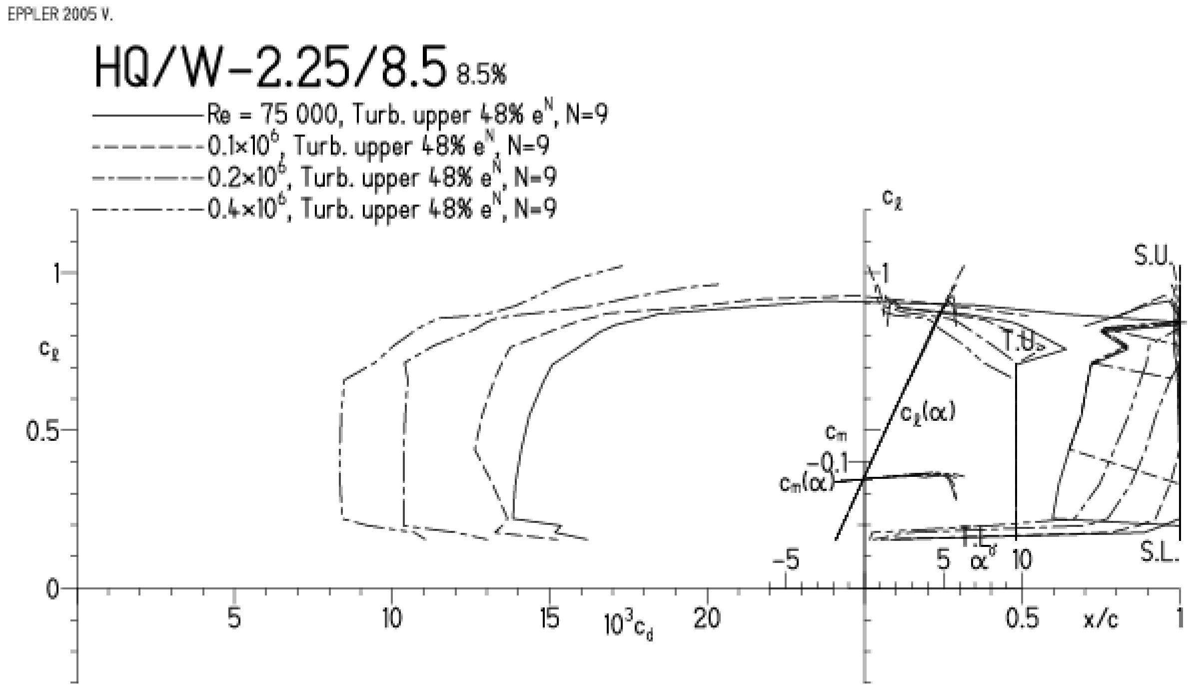


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



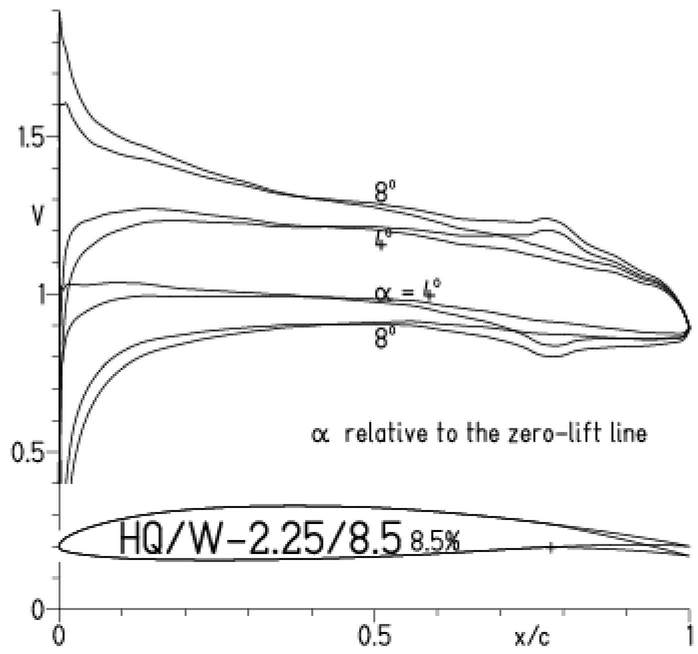
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



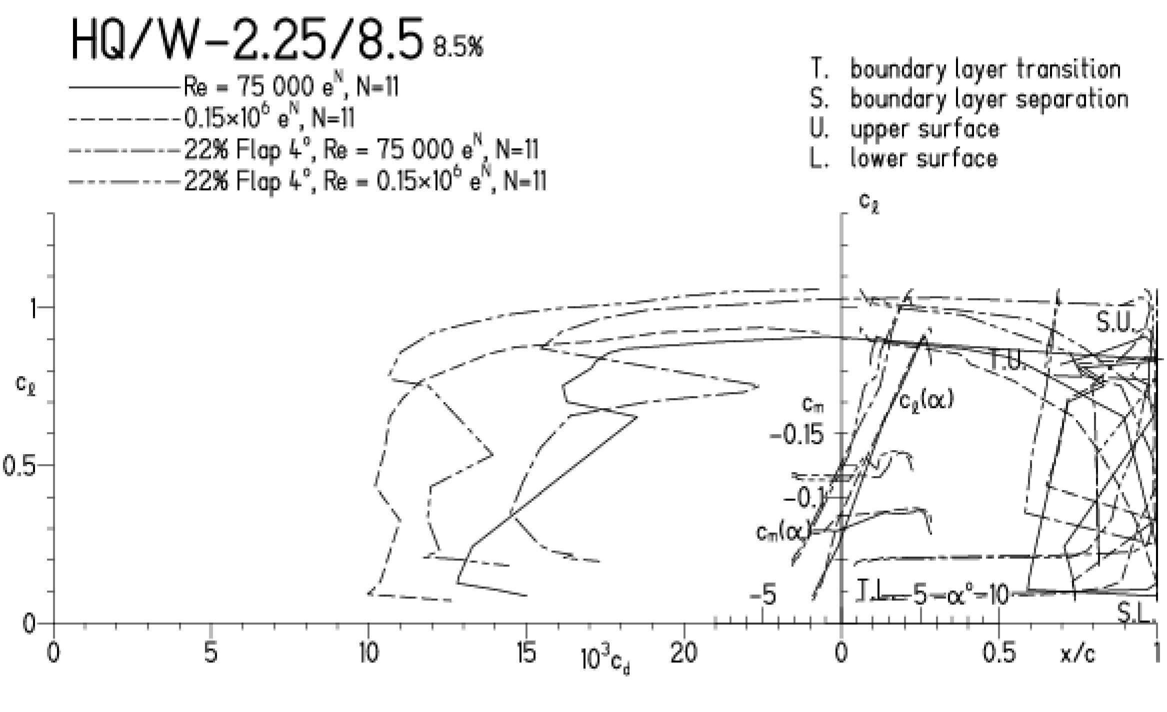


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

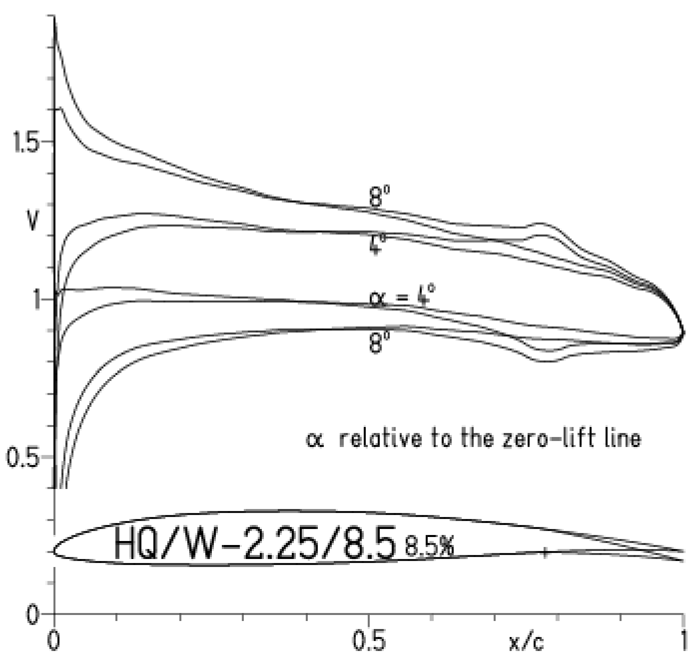


EPPLER 2005 V. 8.5.

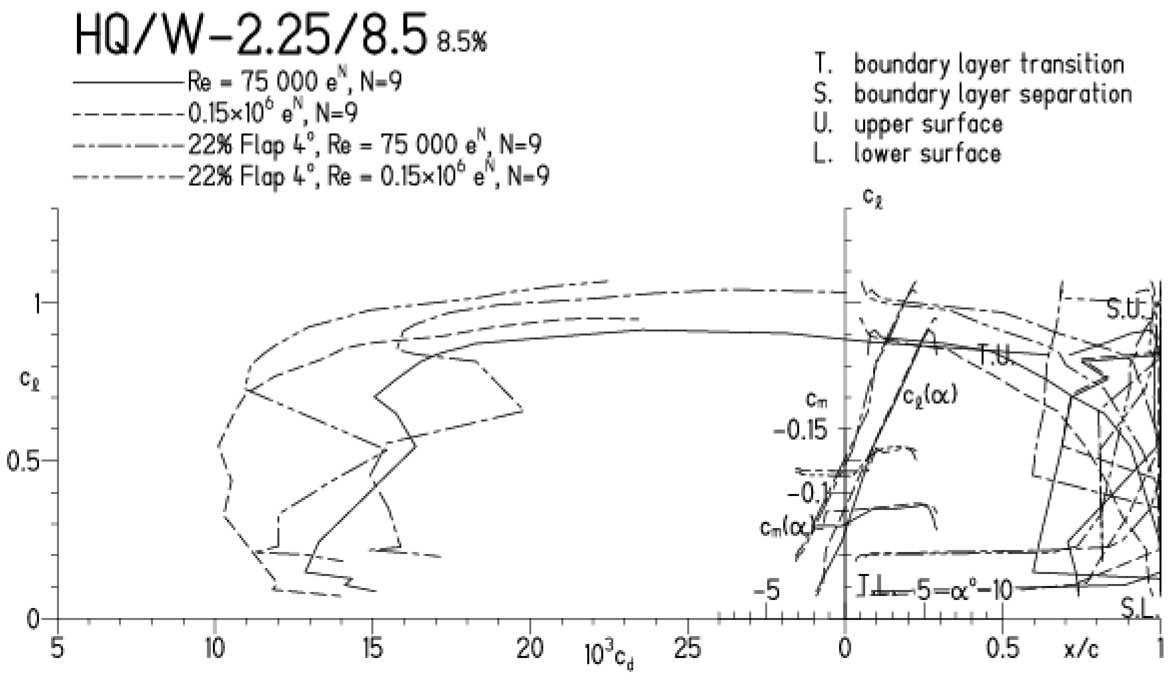


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

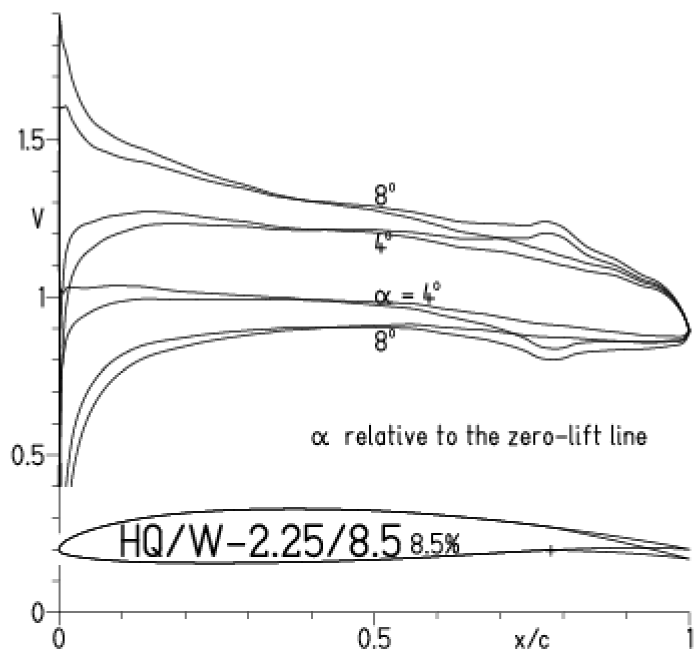


EPPLER 2005 V.

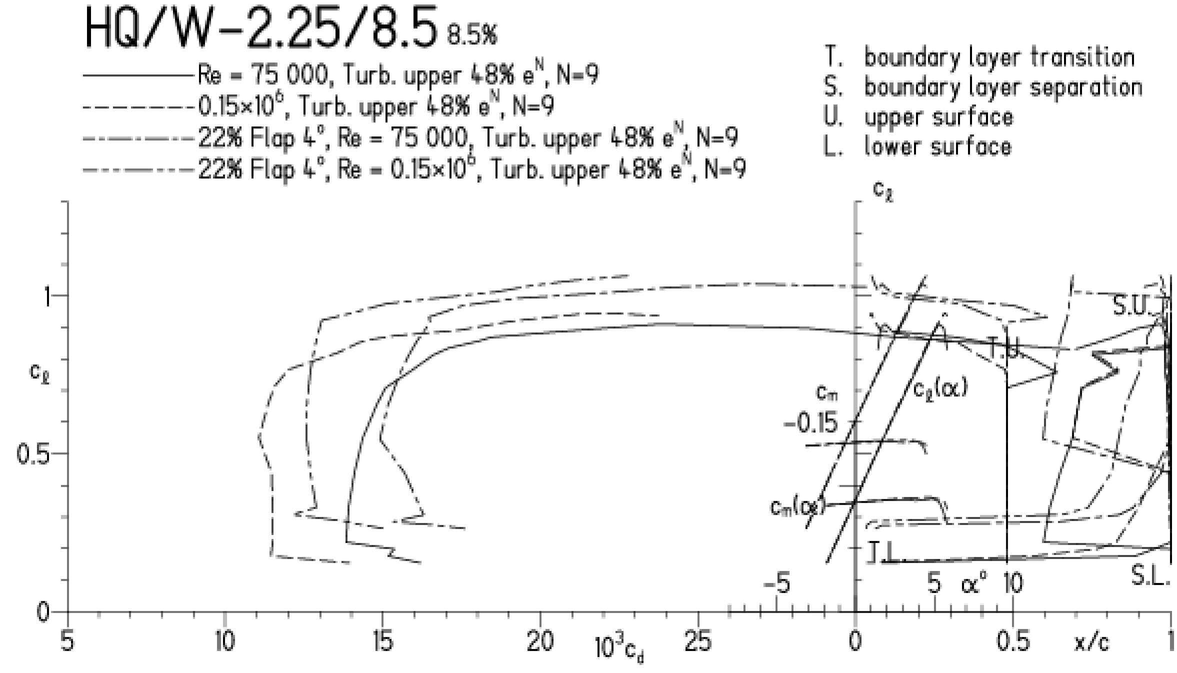


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

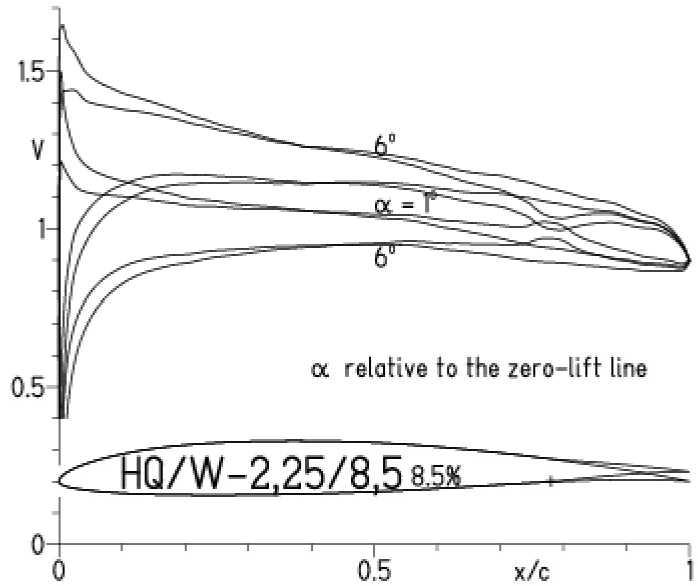


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

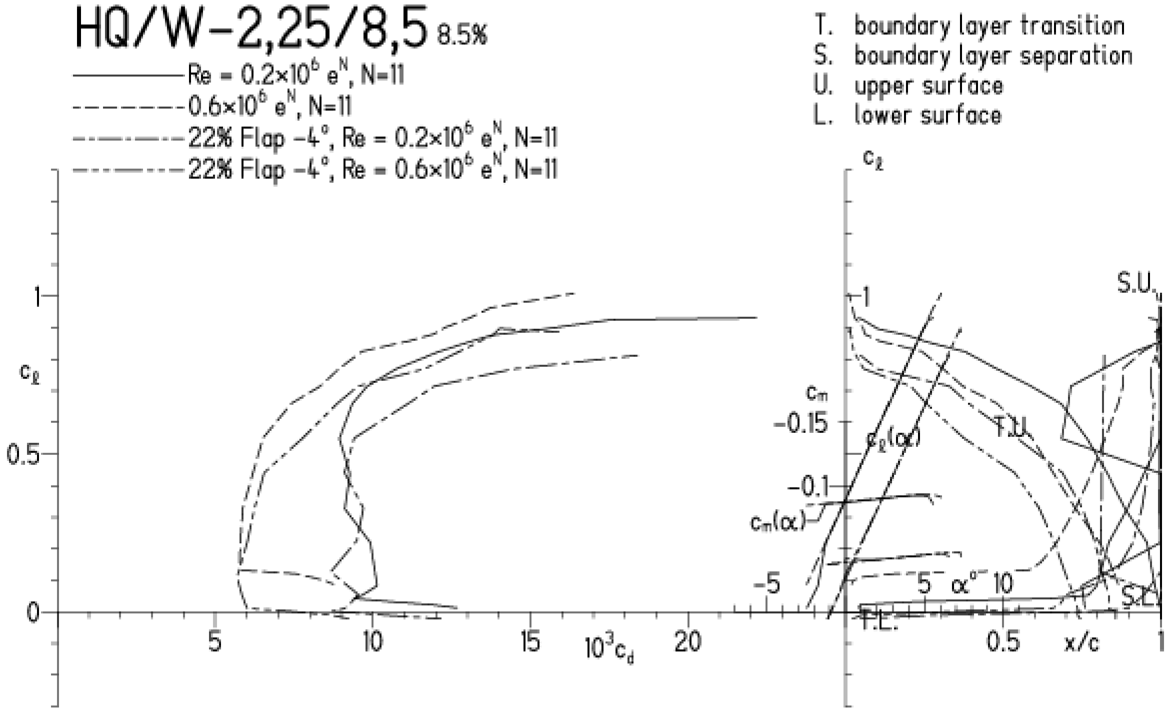


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

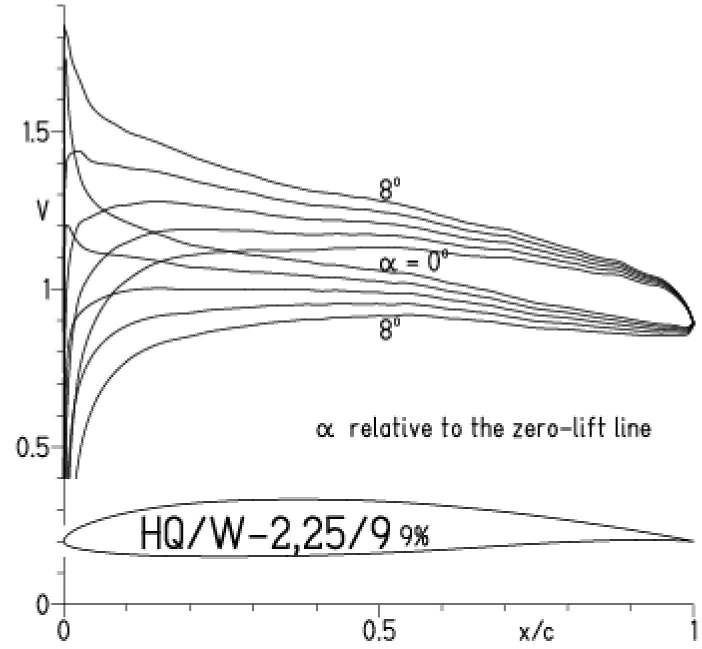


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

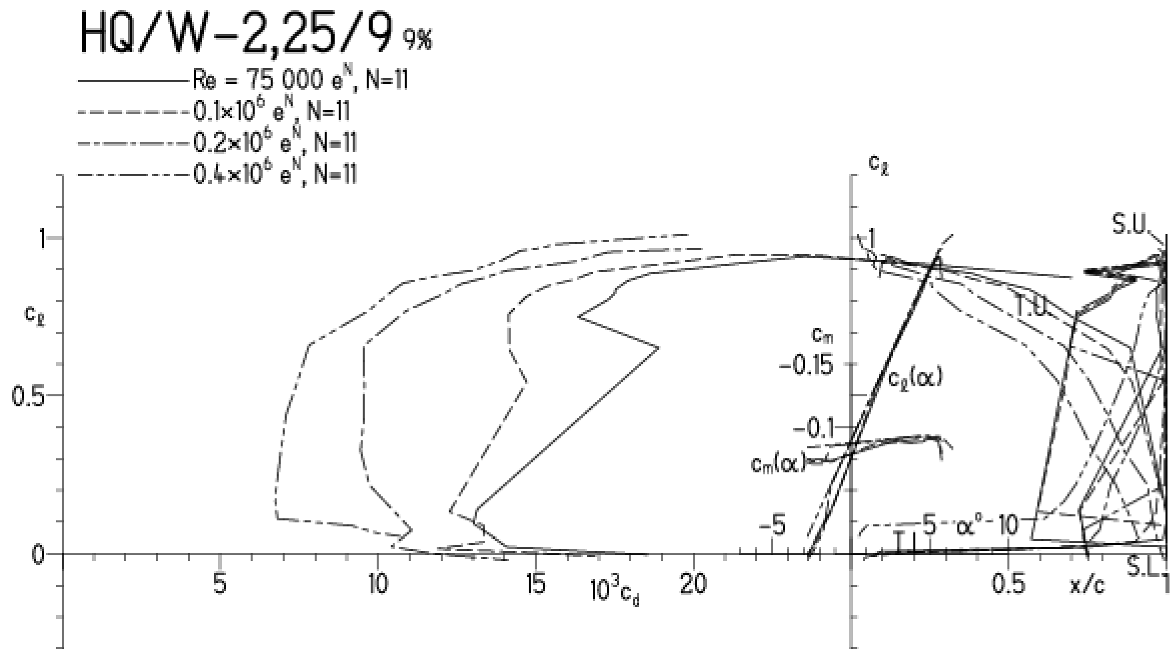


<u>HQ/W-2,25/9</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

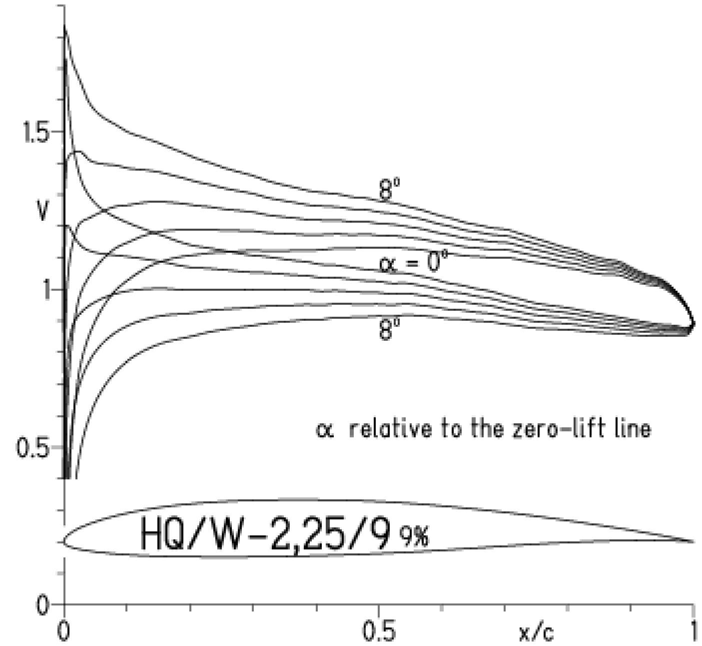


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

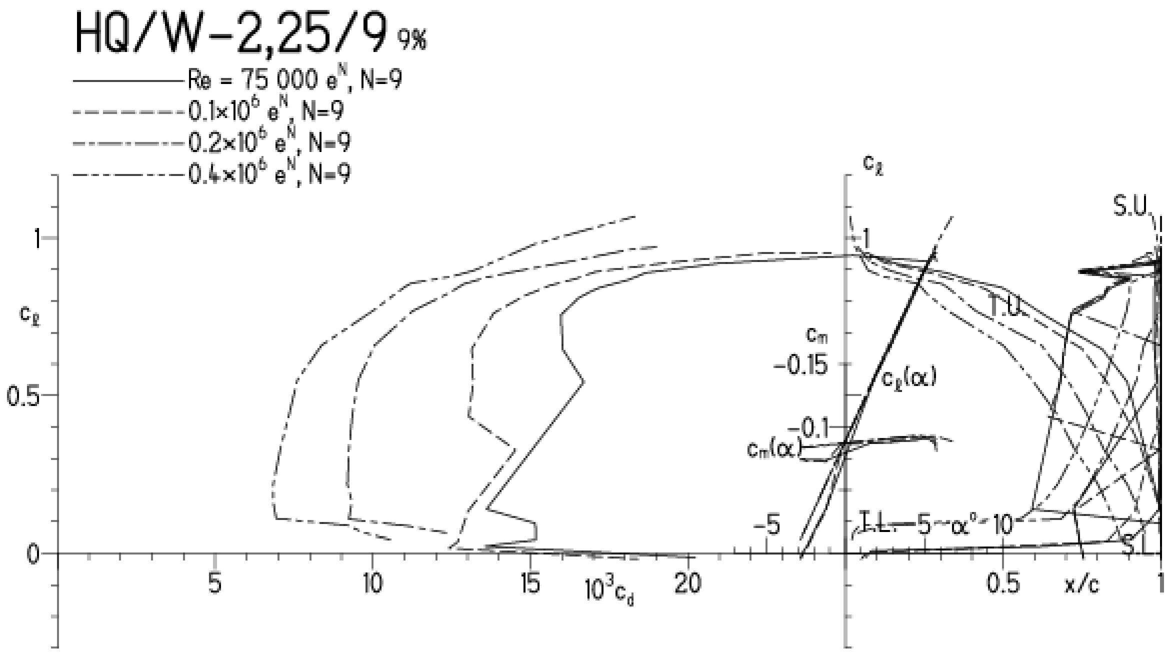


HQ/W-2,25/9, N=9

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

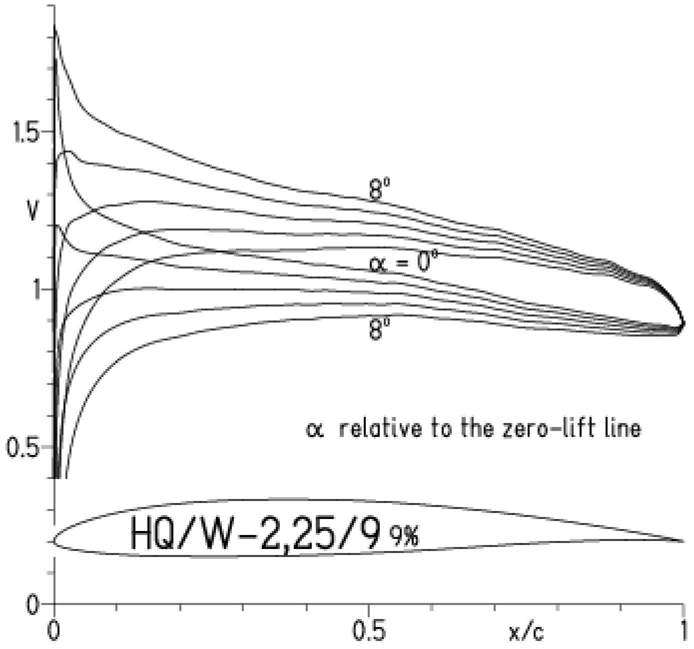


EPPLER 2005 V. 8.

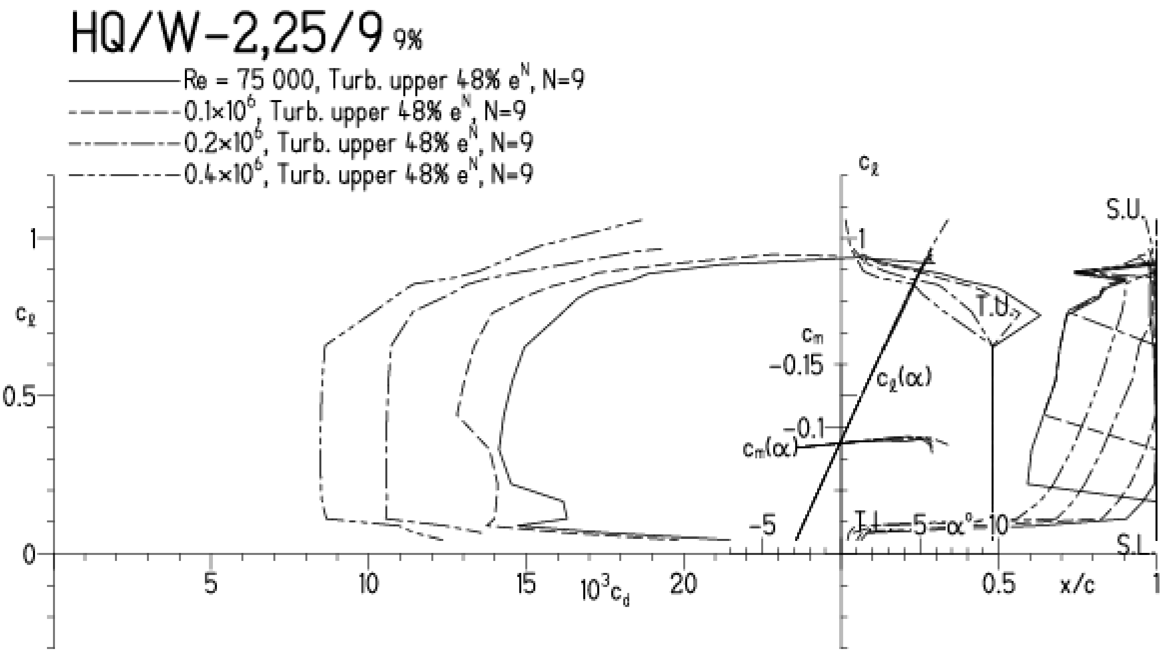


HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

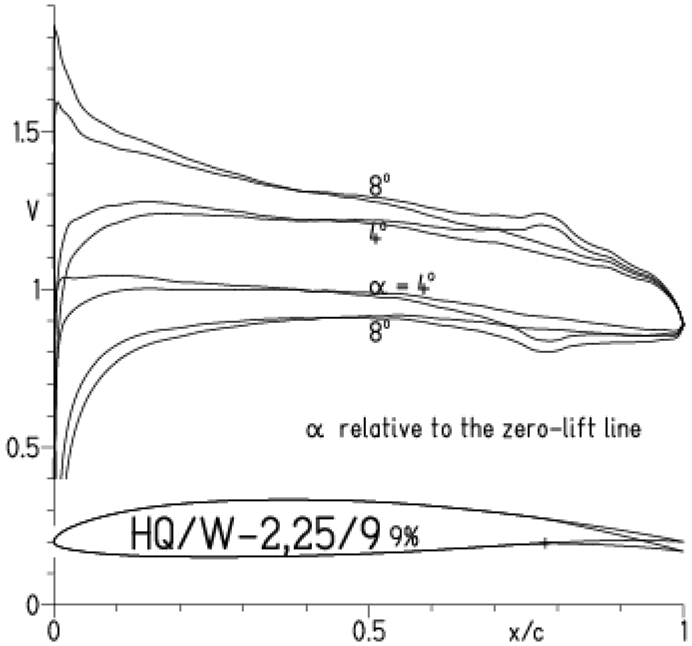


EPPLER 2005 V. 8.5.07 RUN 7

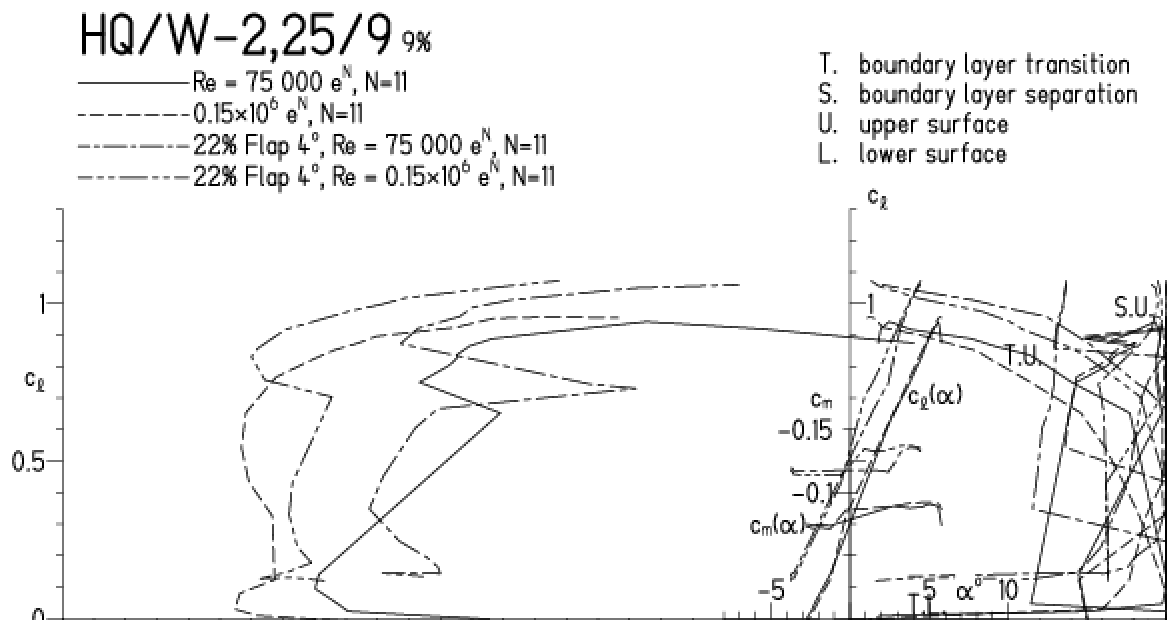


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

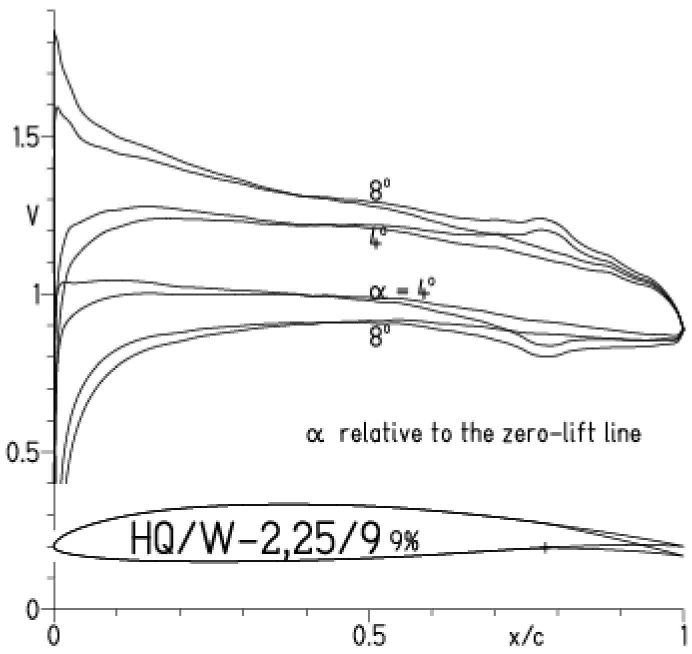


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

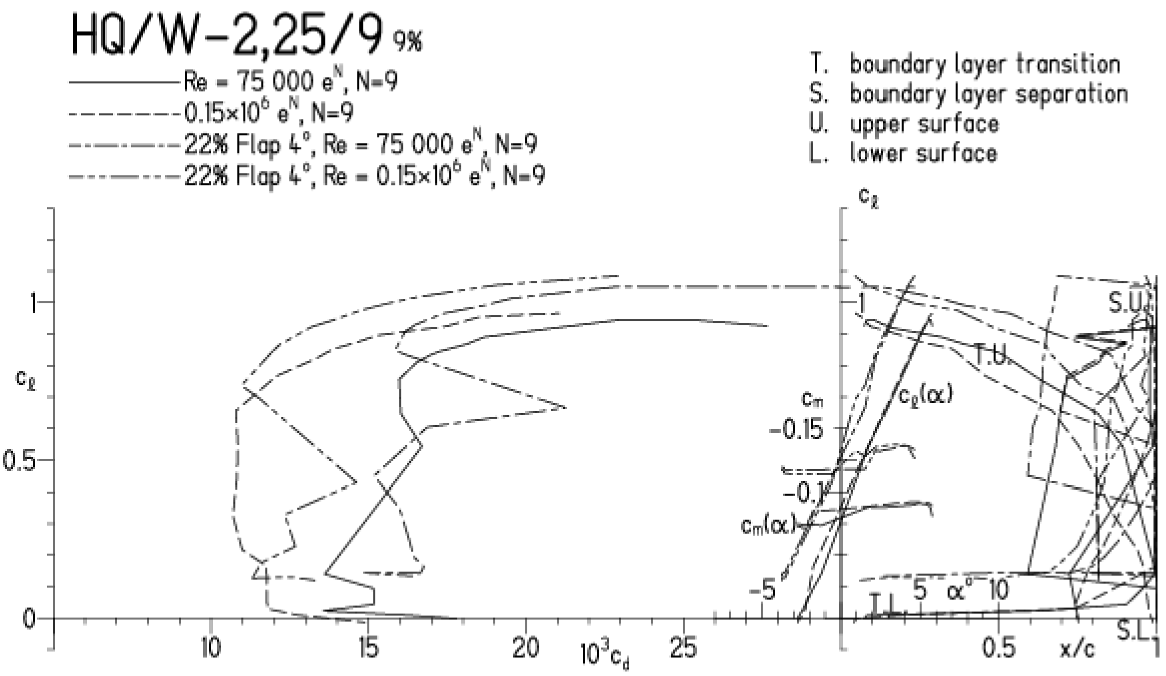


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

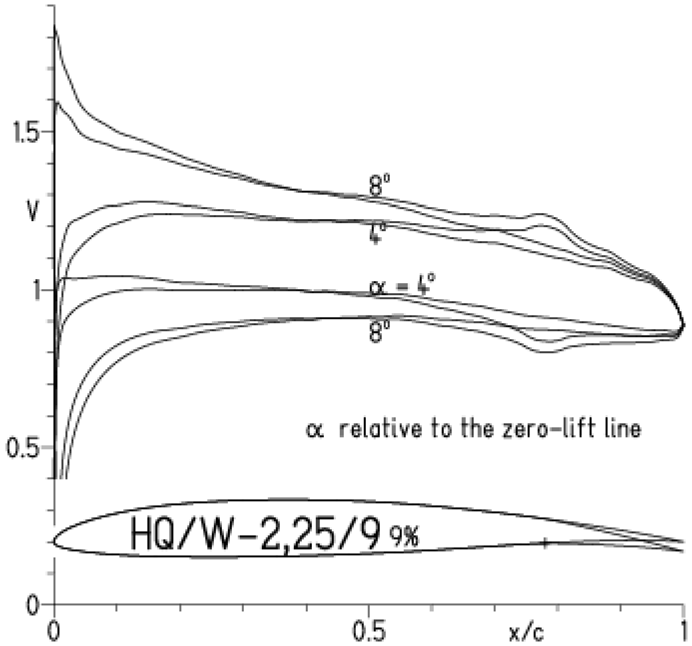


EPPLER 2005 V. 8.5.07 RUN 8.3.1

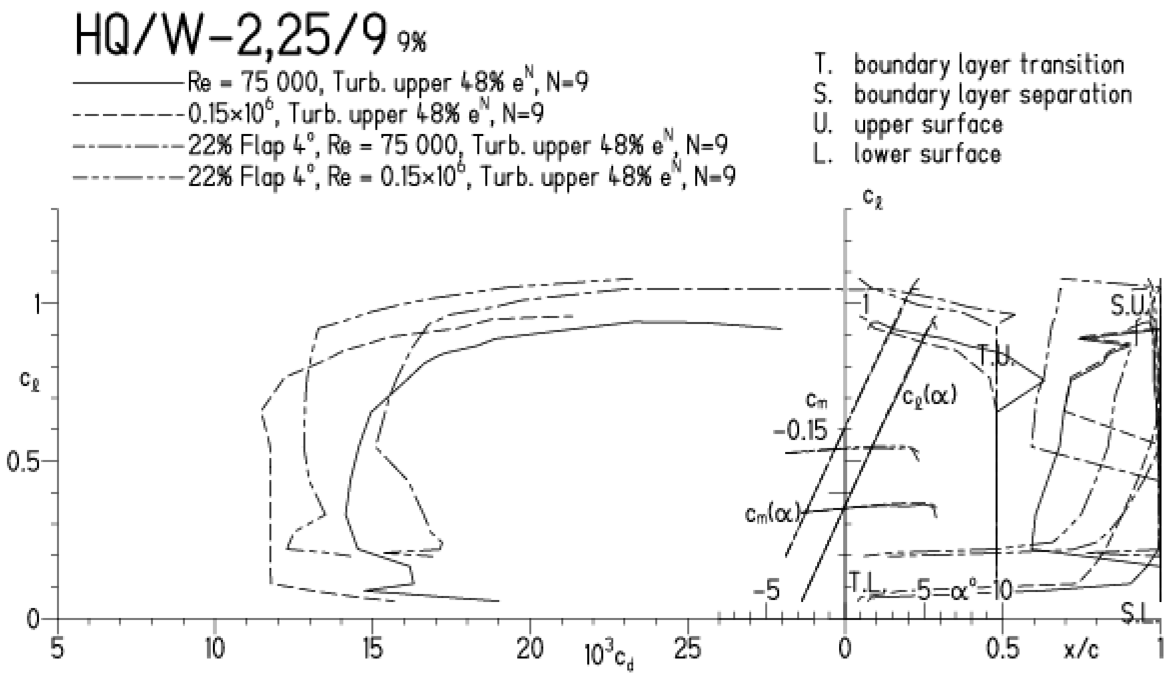


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

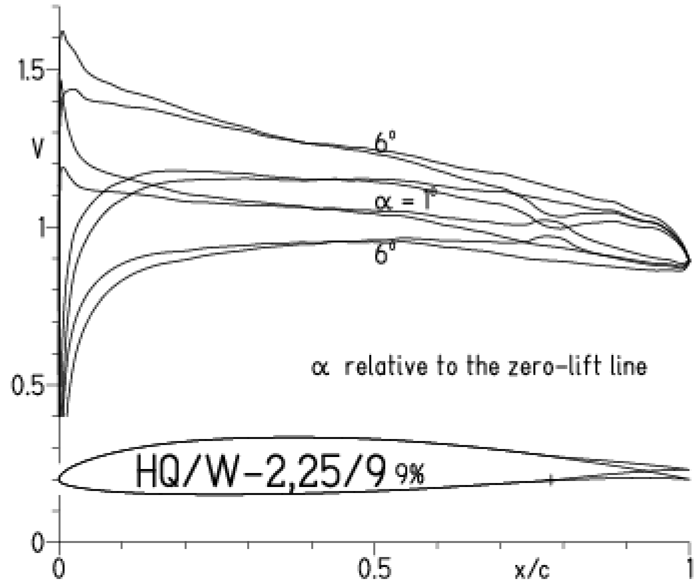


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

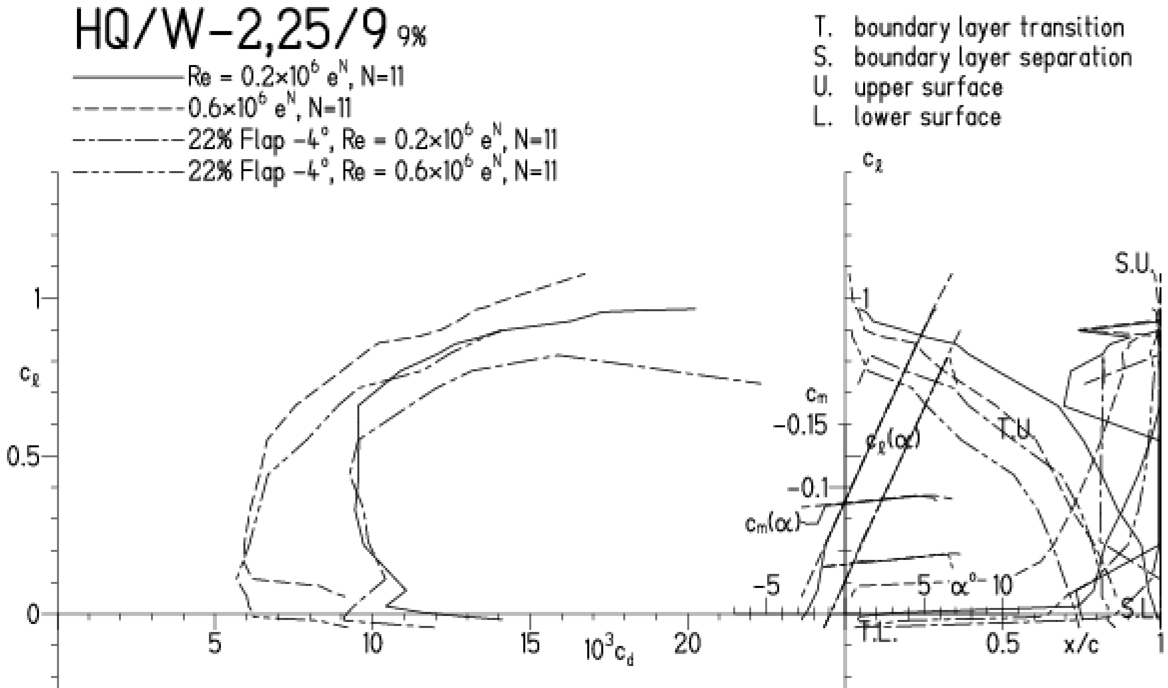


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

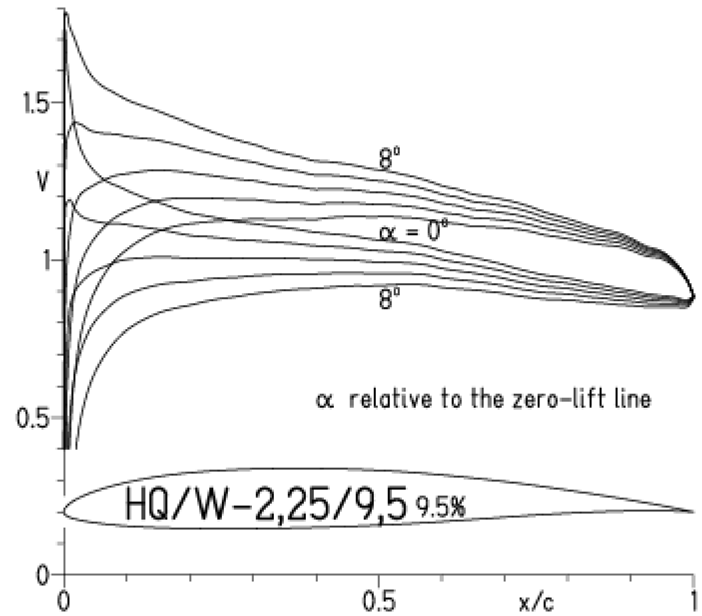


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

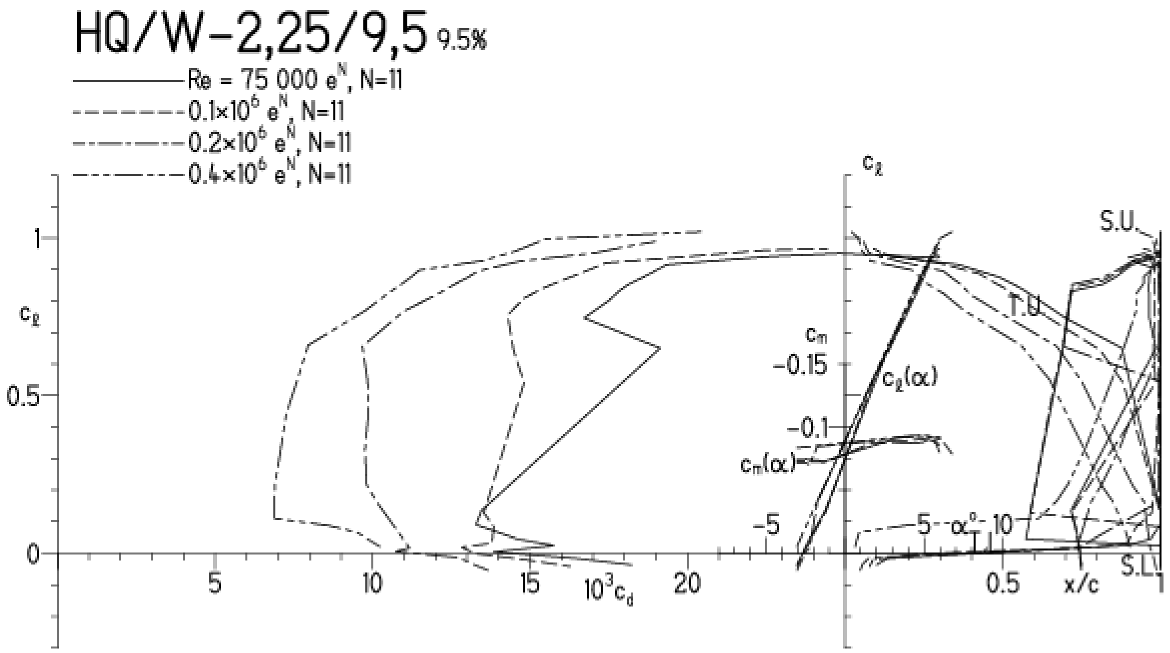


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

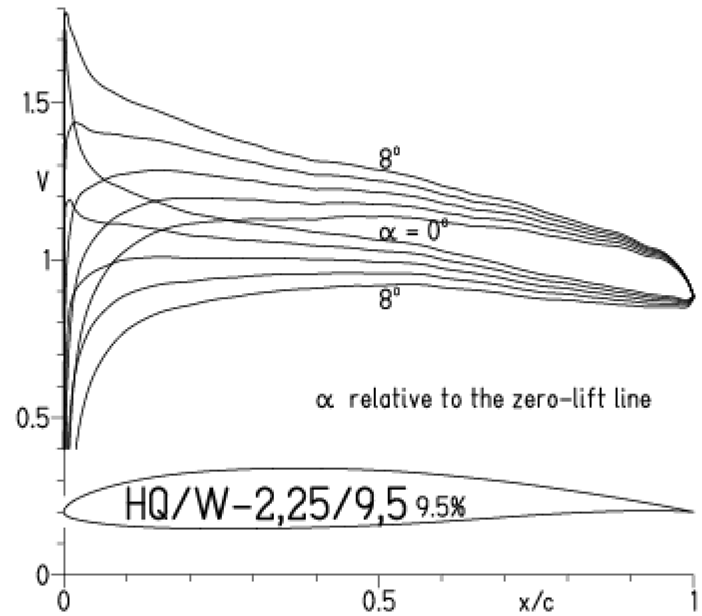


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

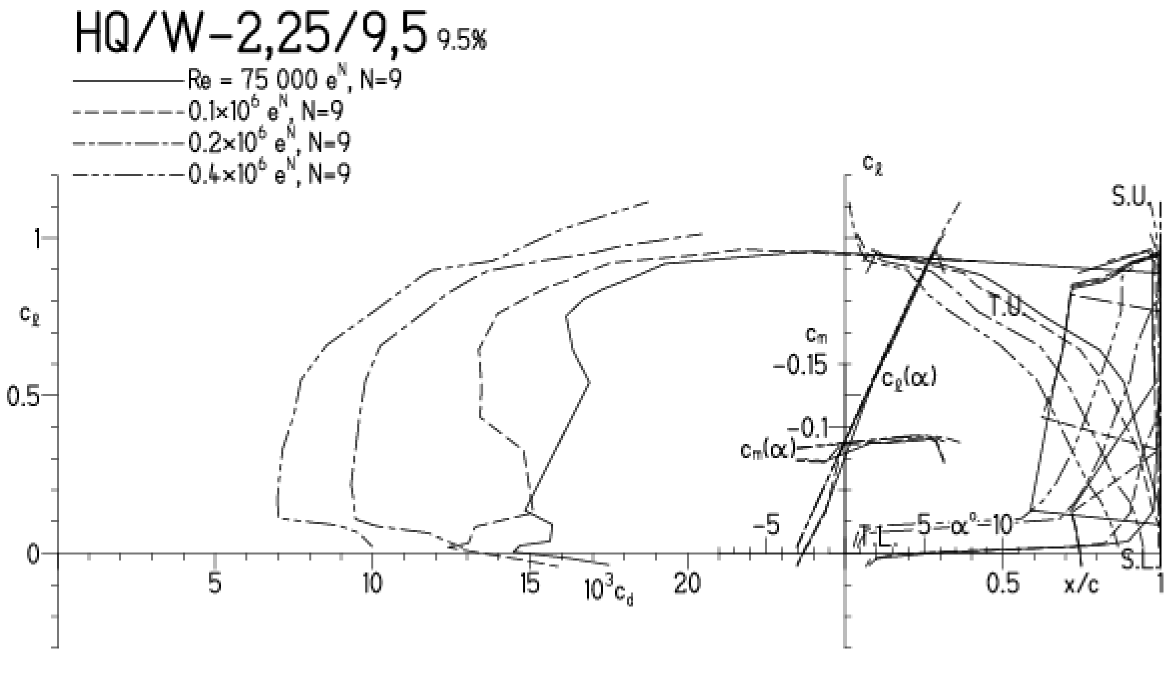


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

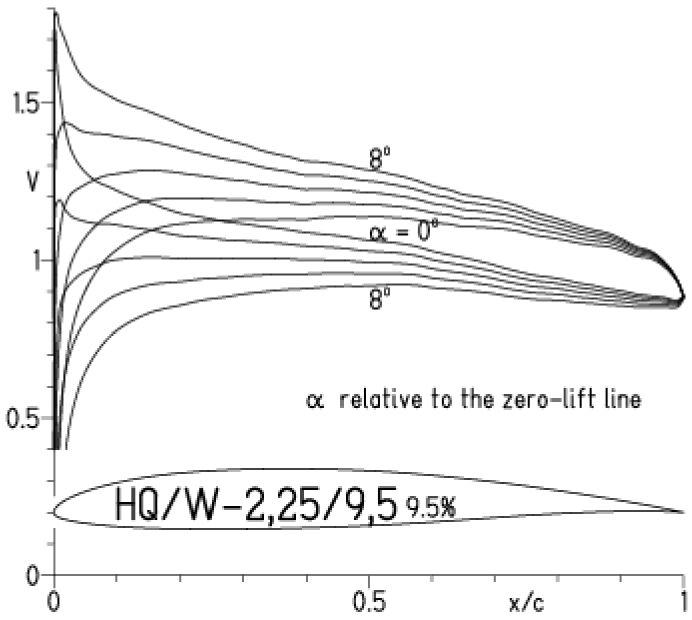


EPPLER 2005 V. 8.5.07 RUN 8.3.

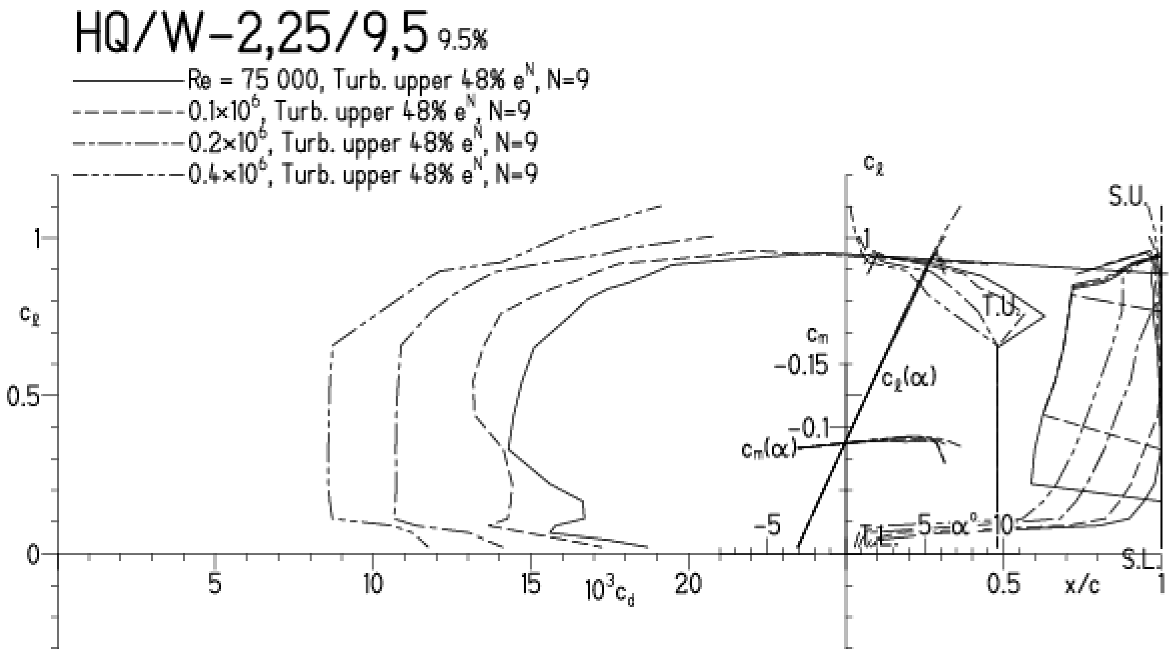


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

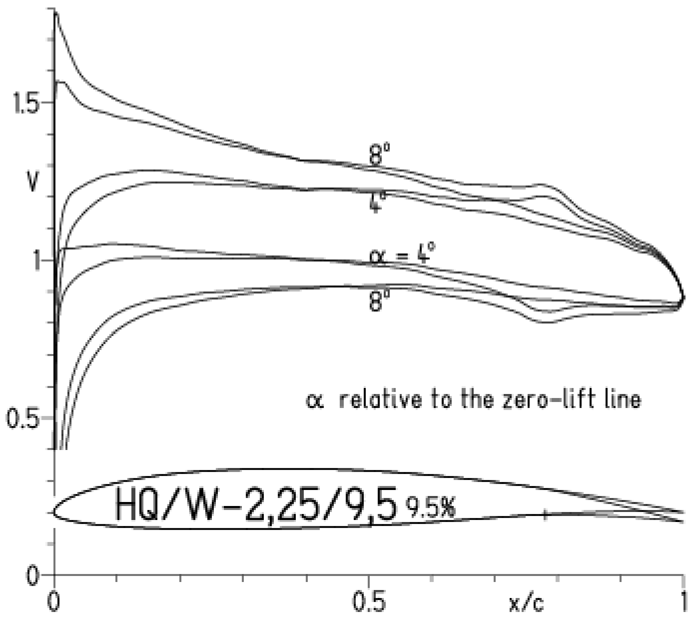


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

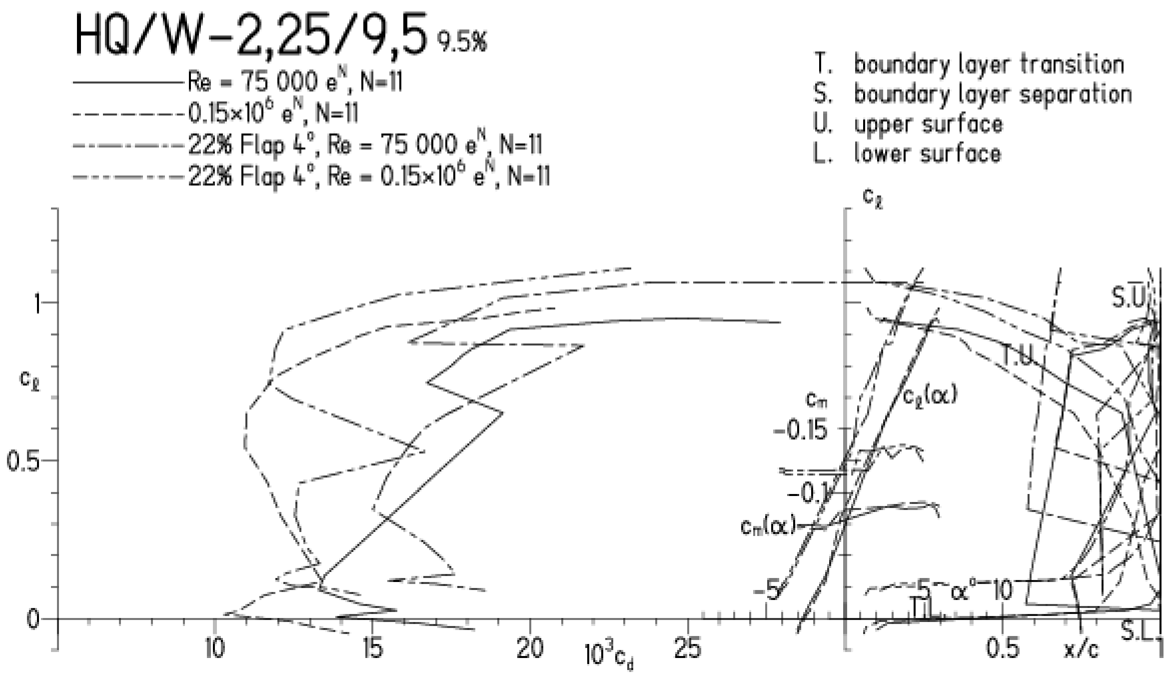


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

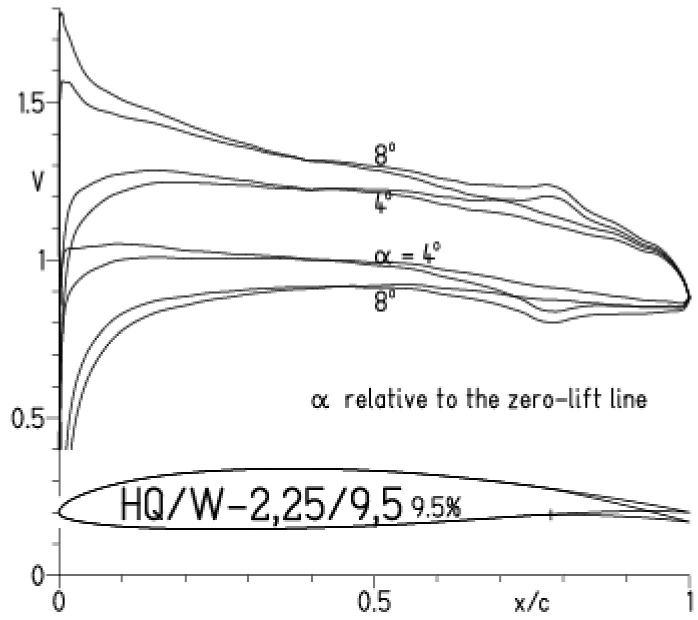


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

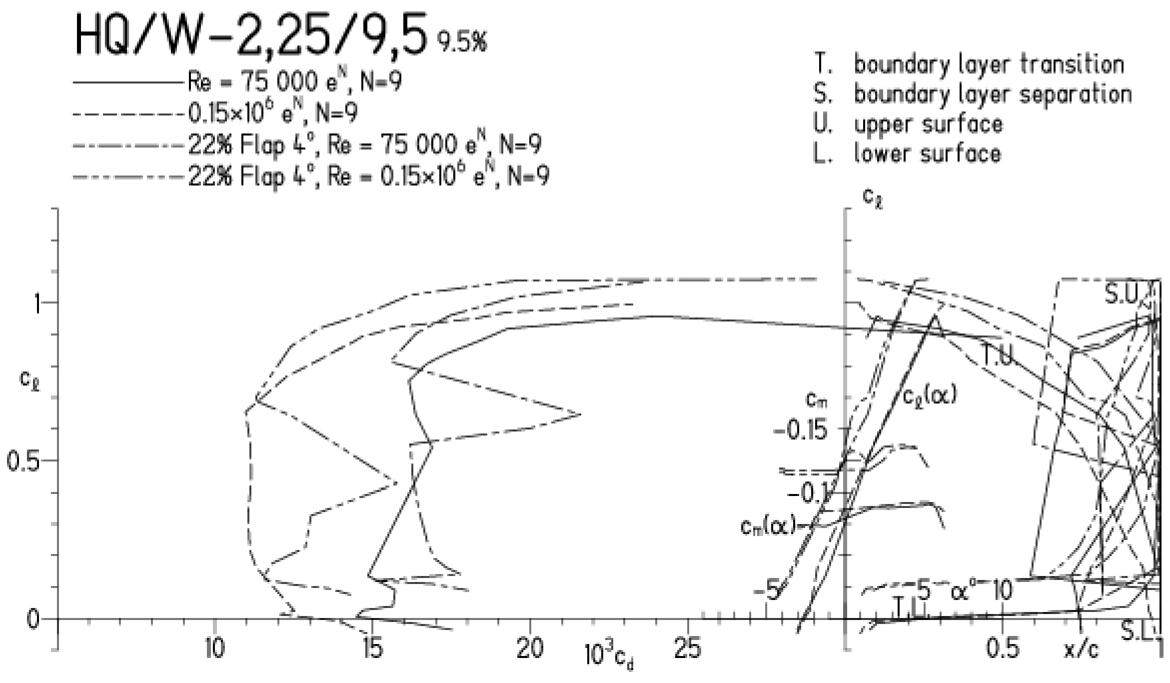


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

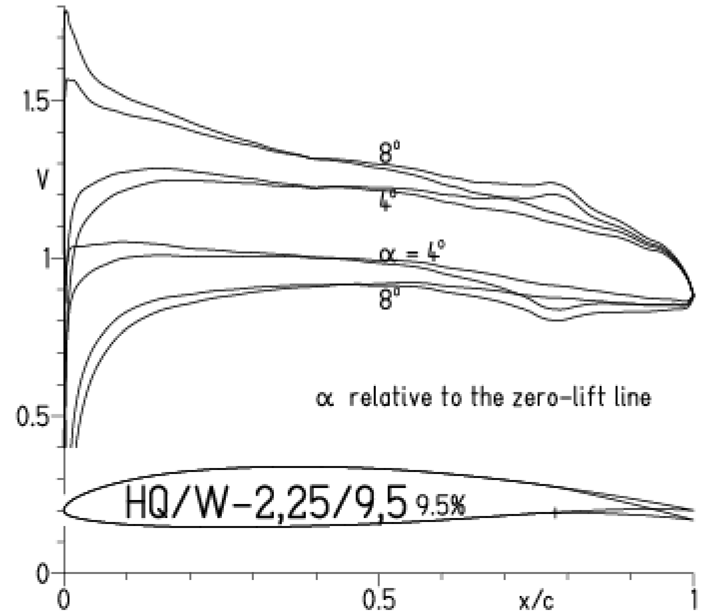


EPPLER 2005 V. 8.5.07 R

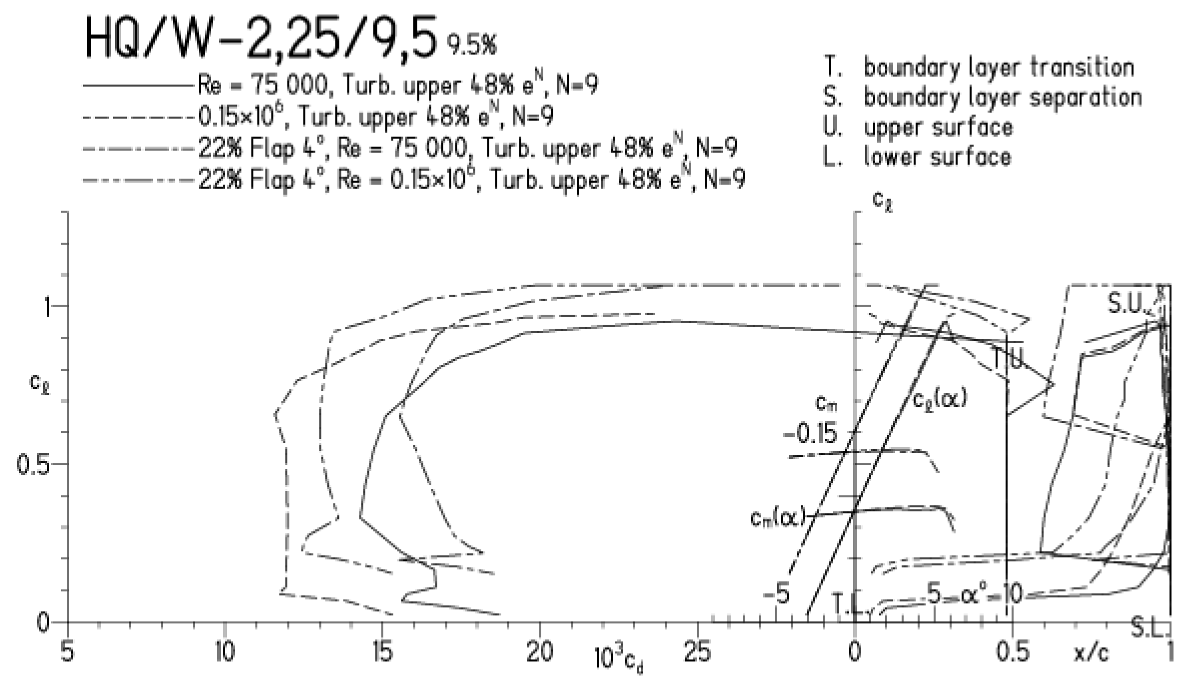


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

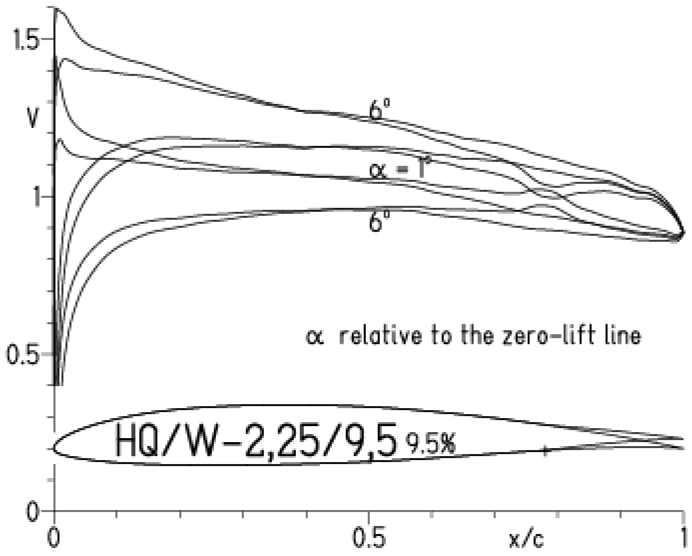


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

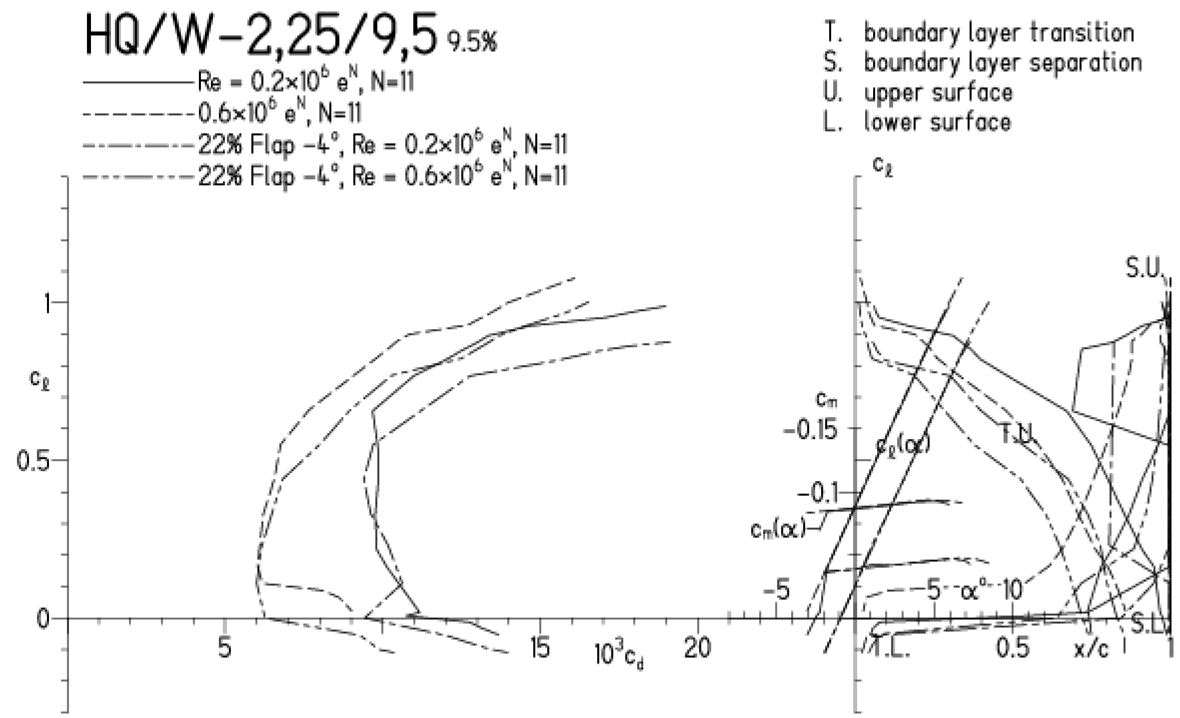


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

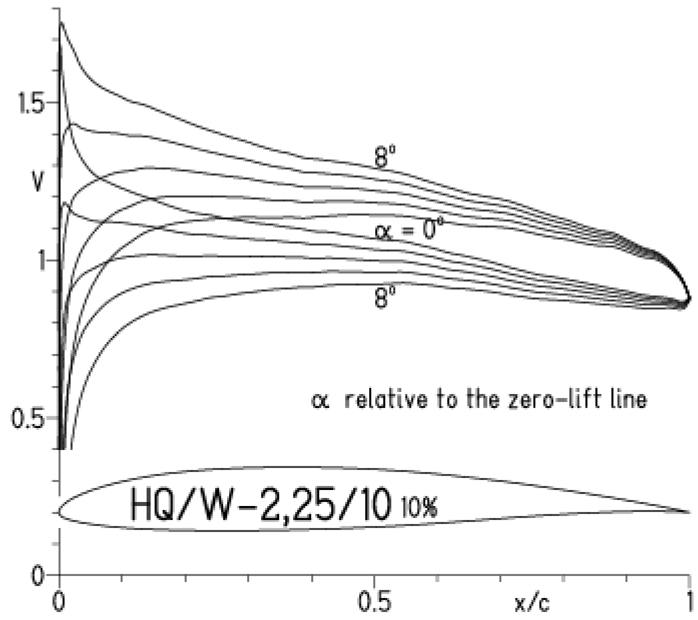


EPPLER 2005 V.

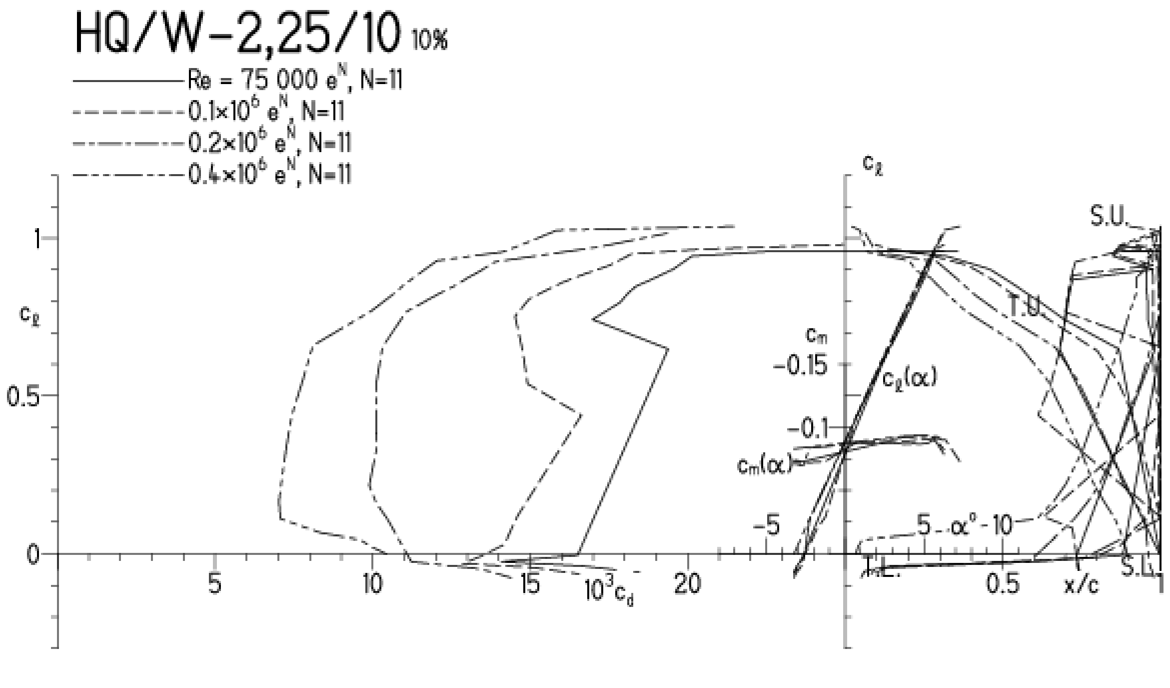


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

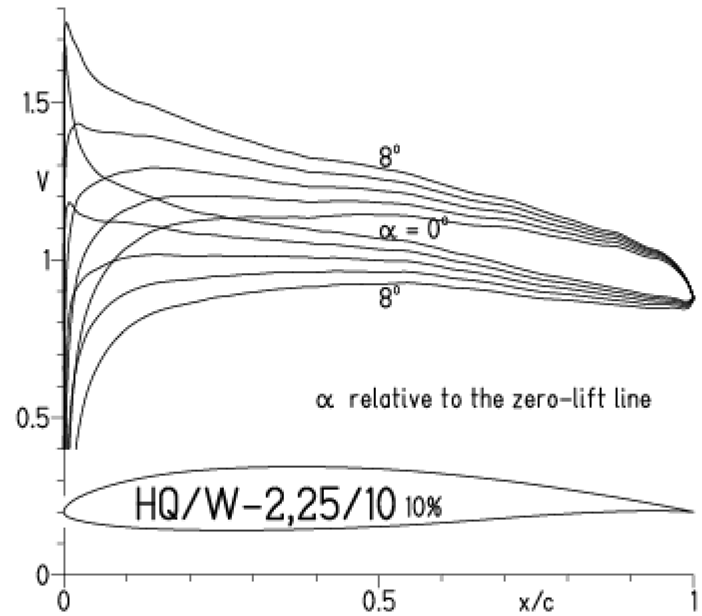


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

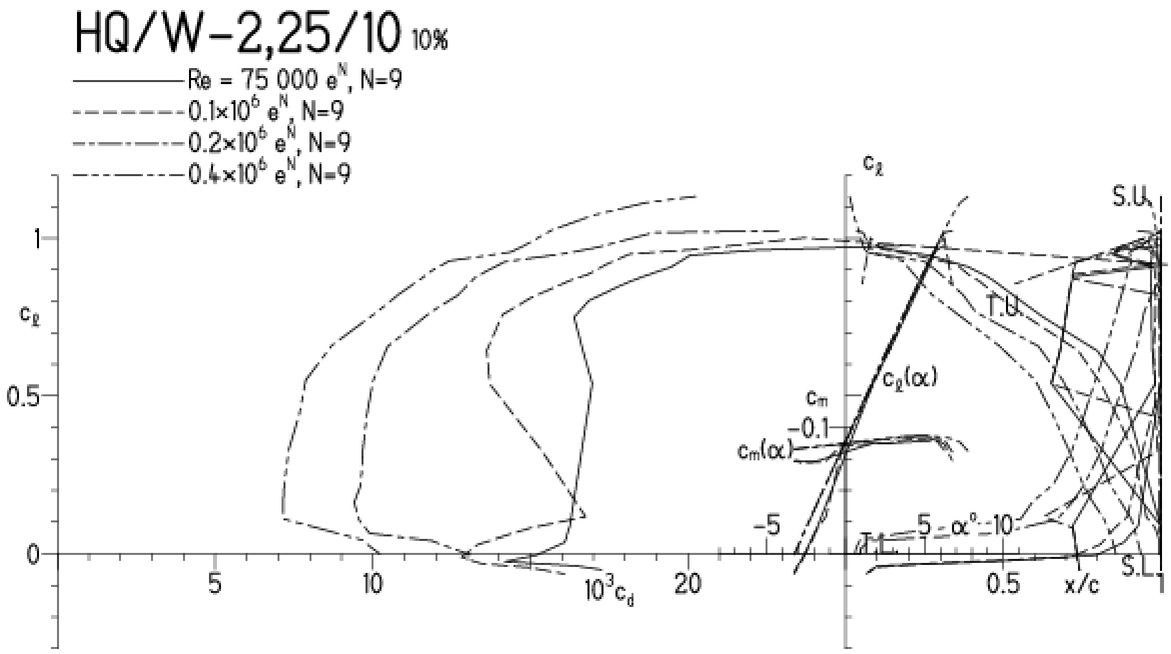


<u>HQ/W-2,25/10</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

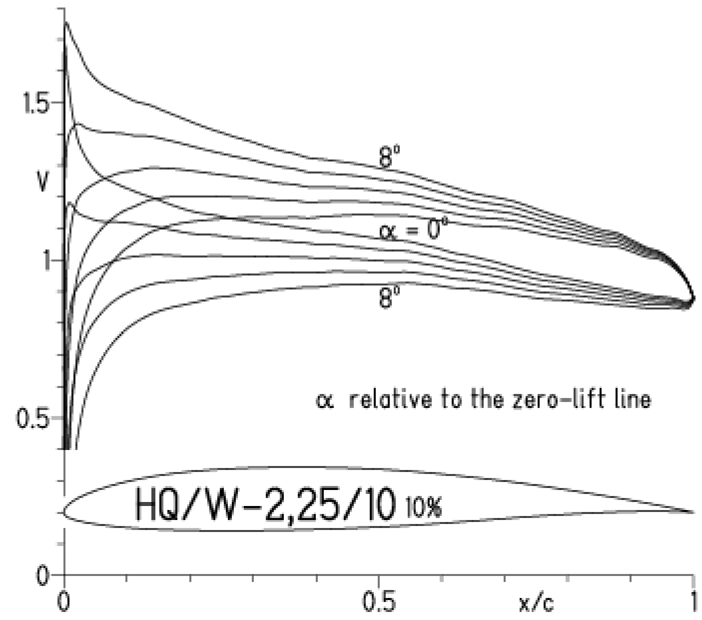


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

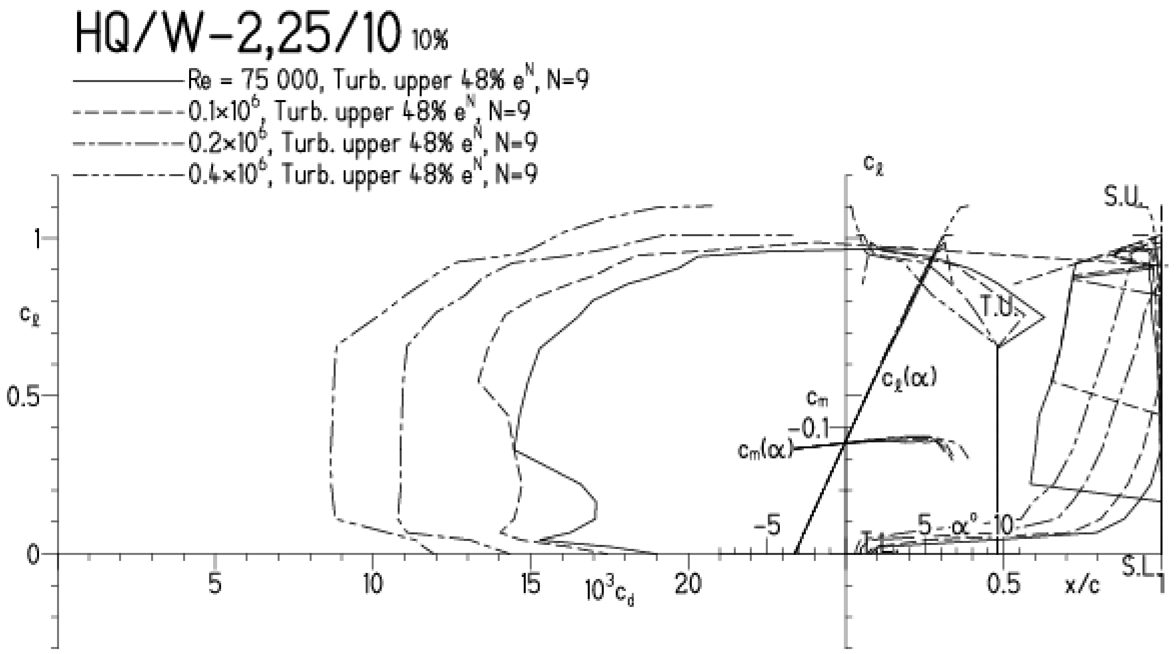


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

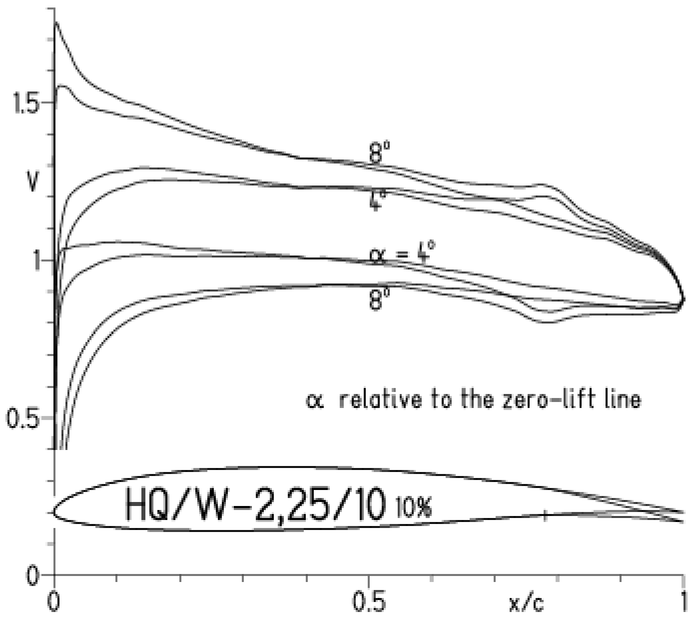


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

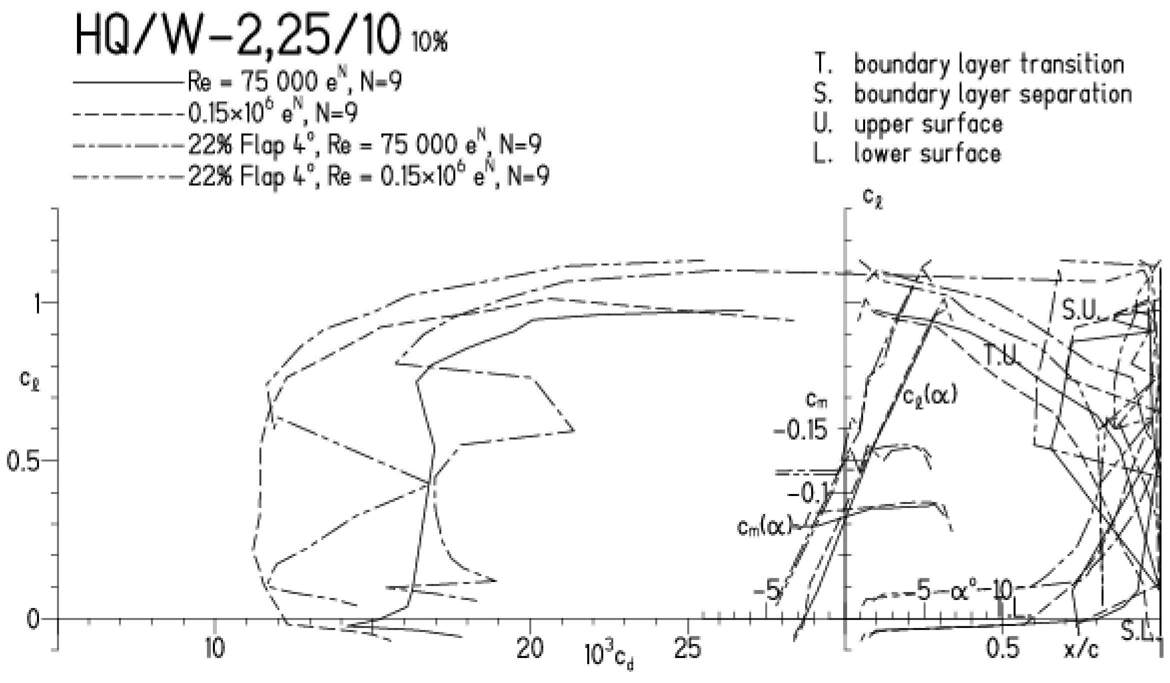


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

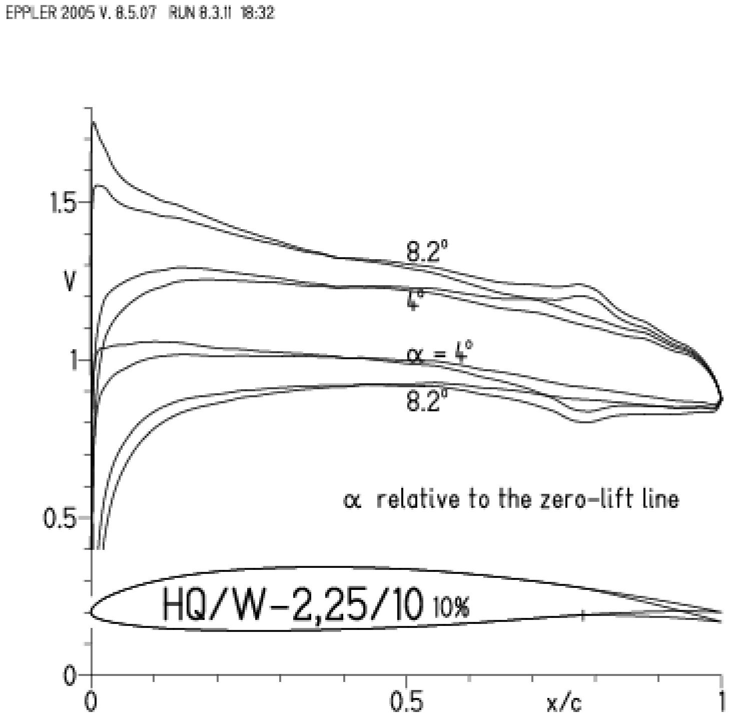
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

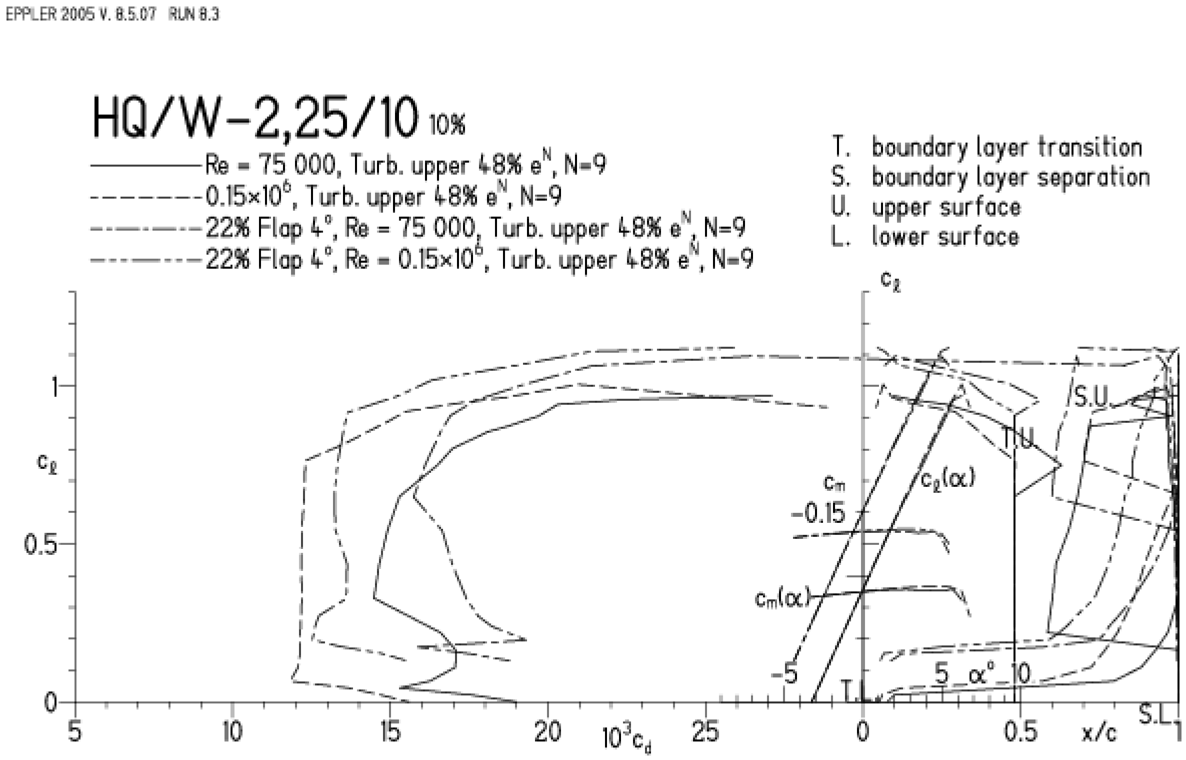


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



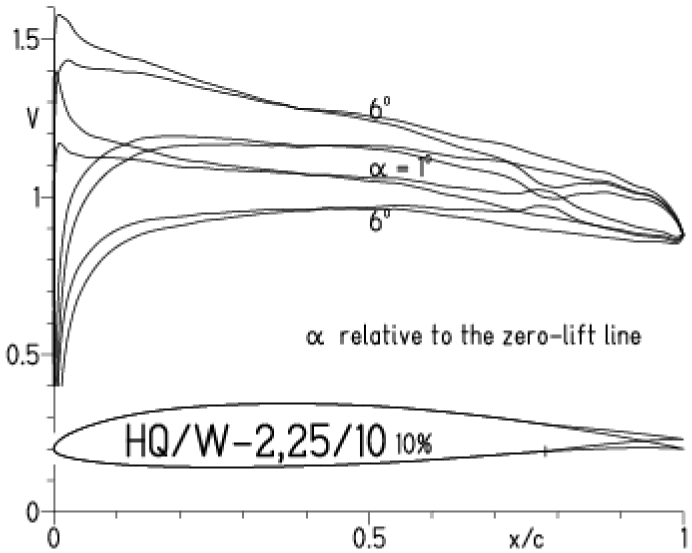
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



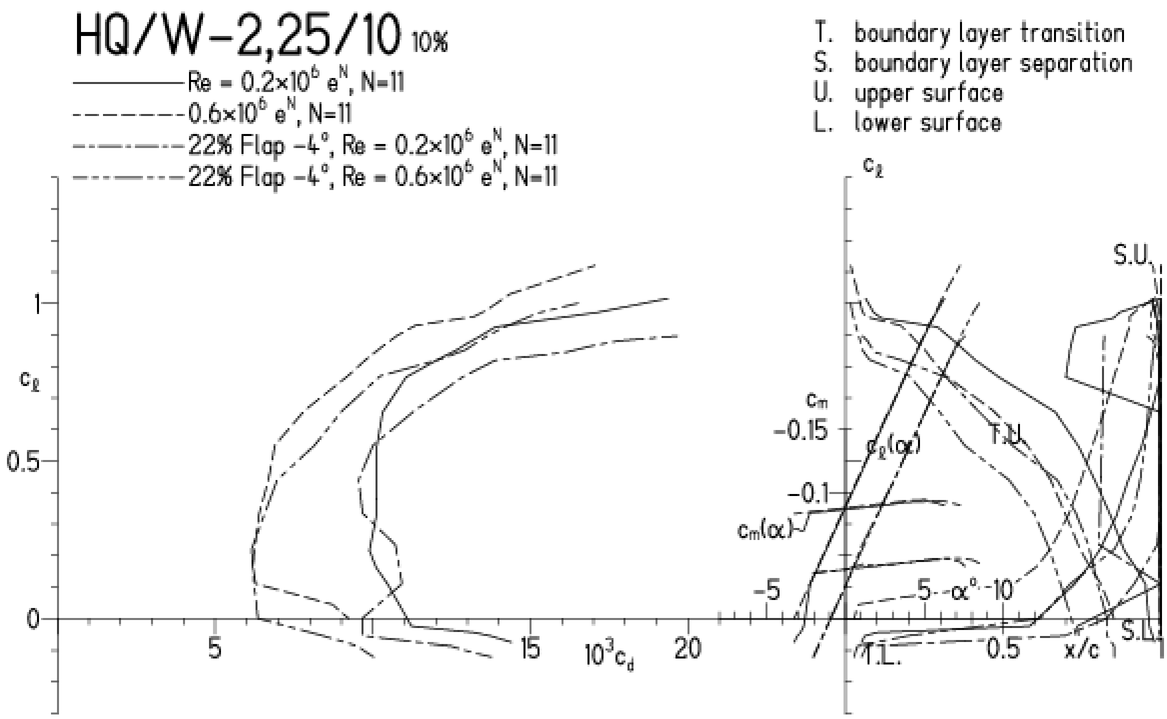


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

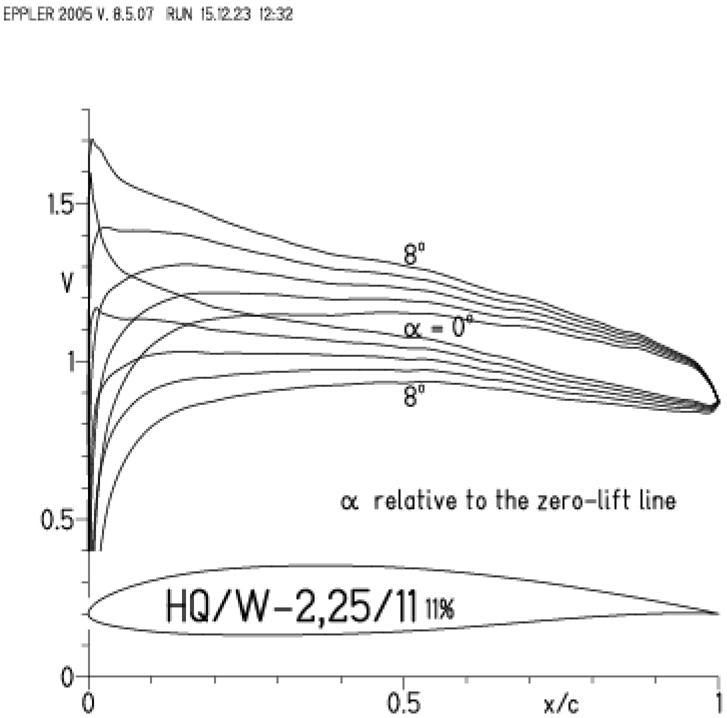
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

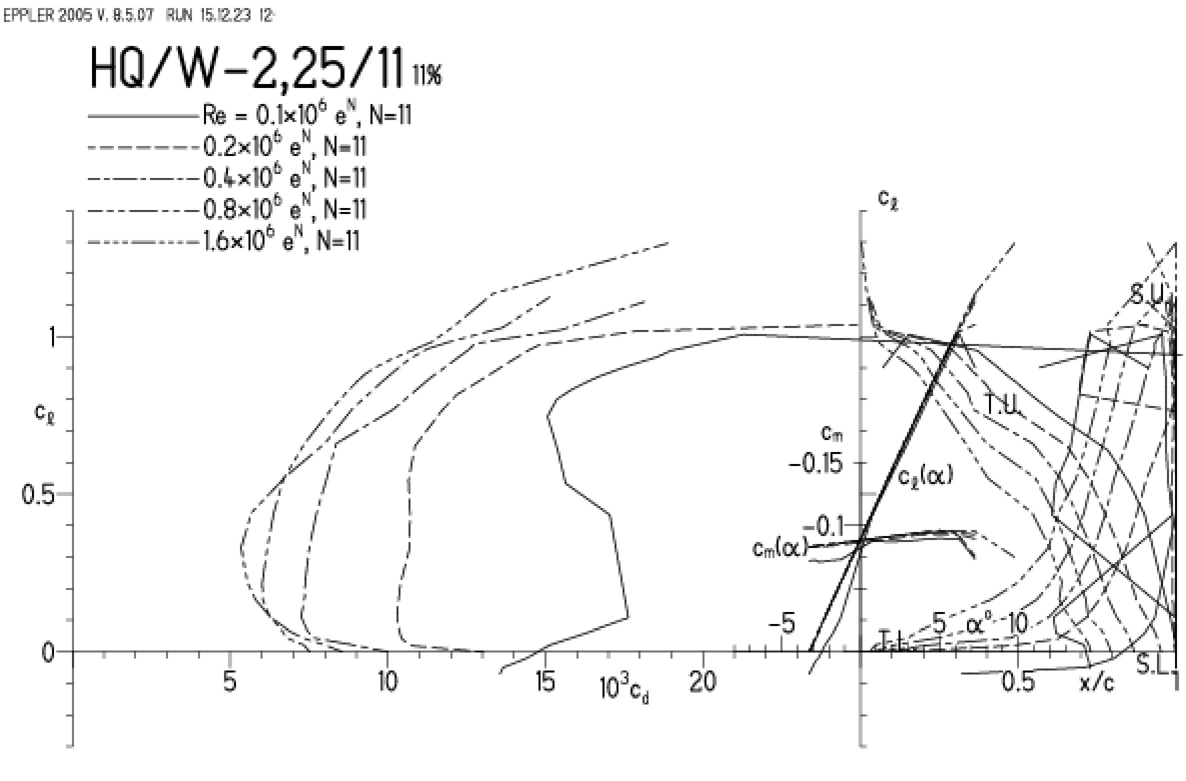


EPPLER 2005 V. 8.5.07 RUN



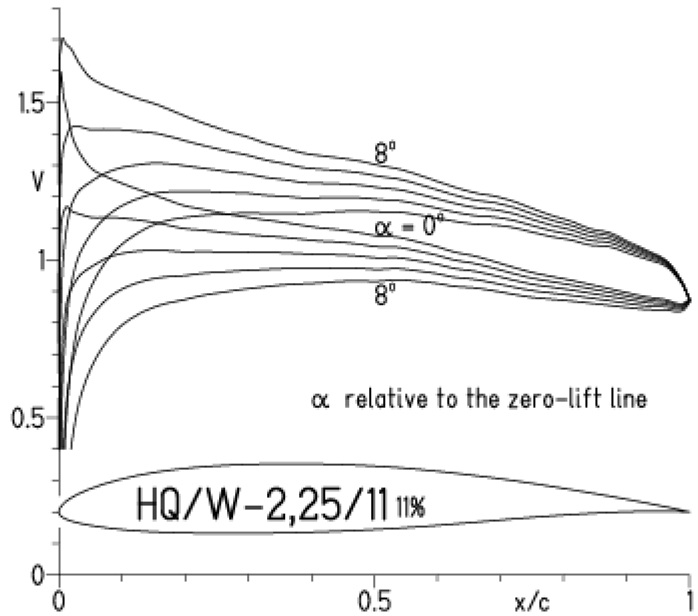
HQ/W-2,25/11, N=11



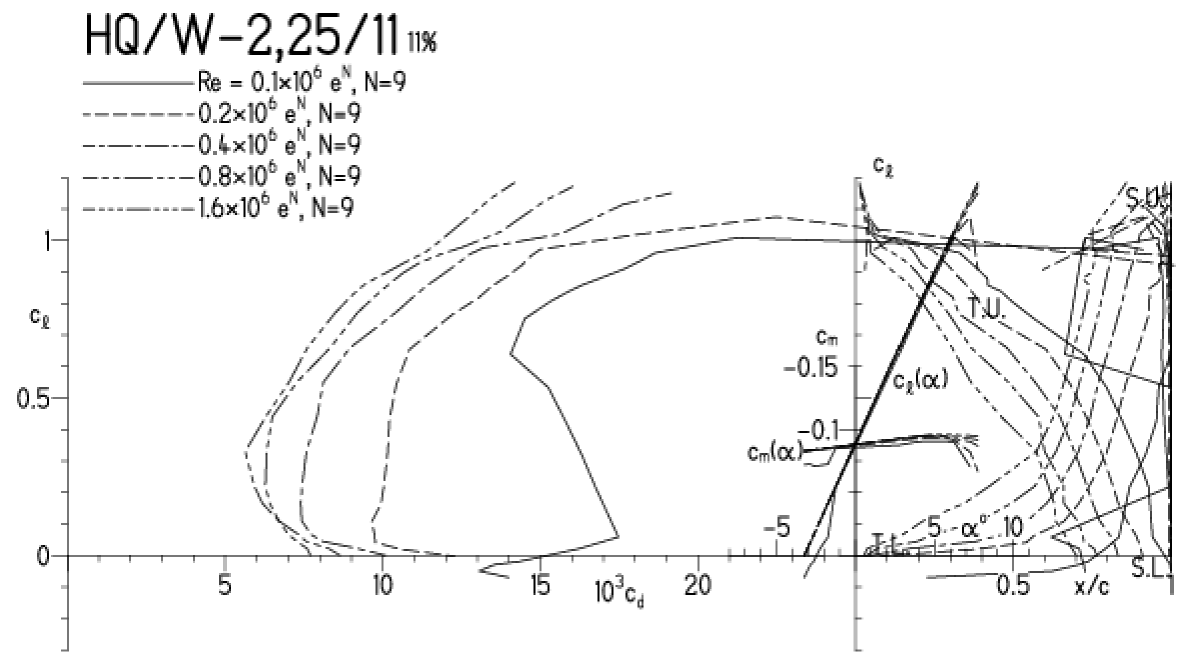


<u>HQQ/W-2,25/11</u>, N=9

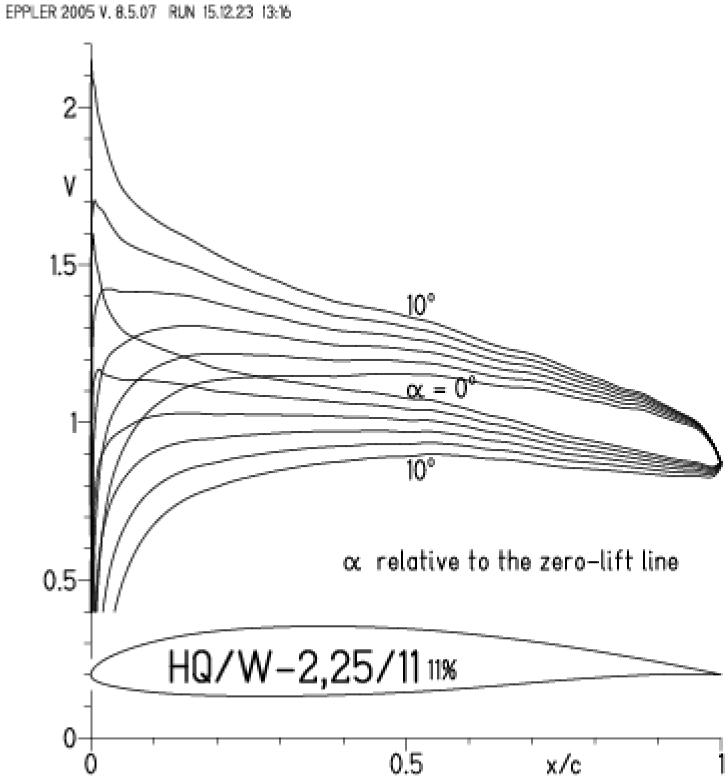
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

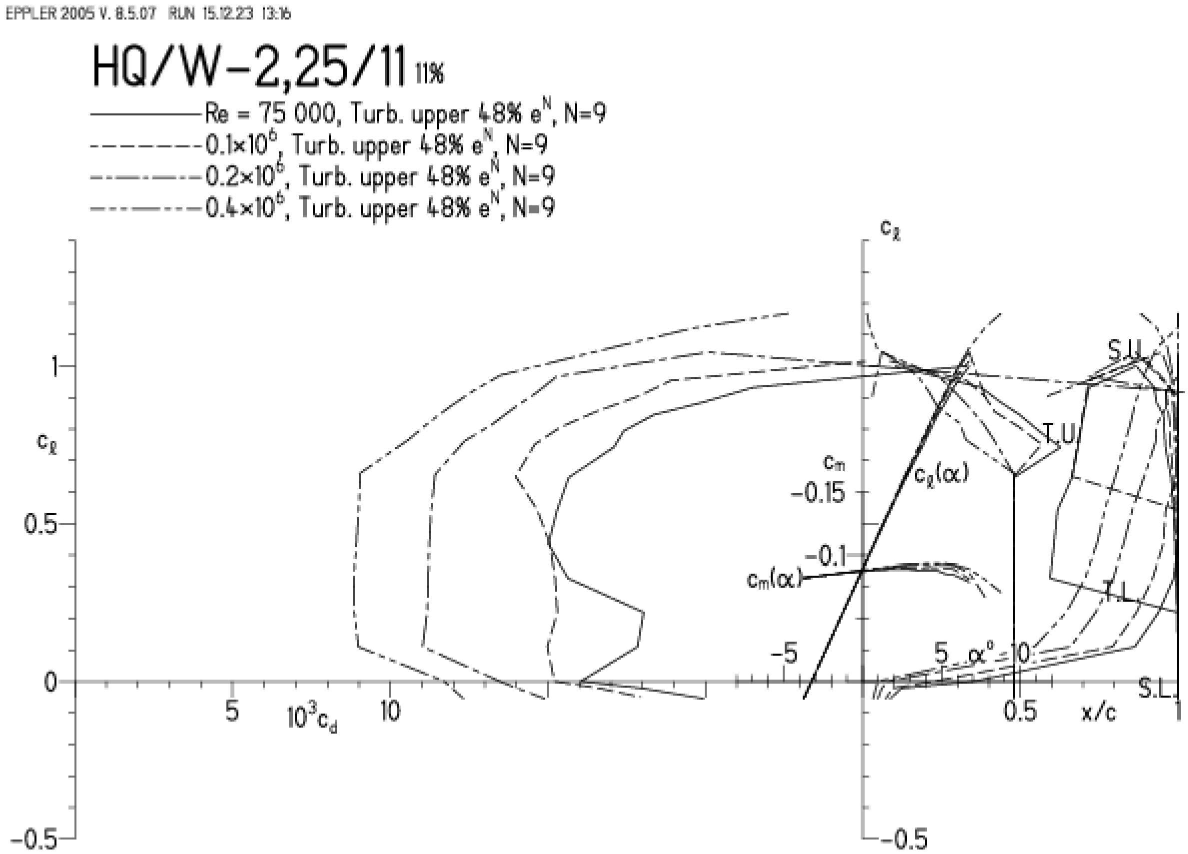


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



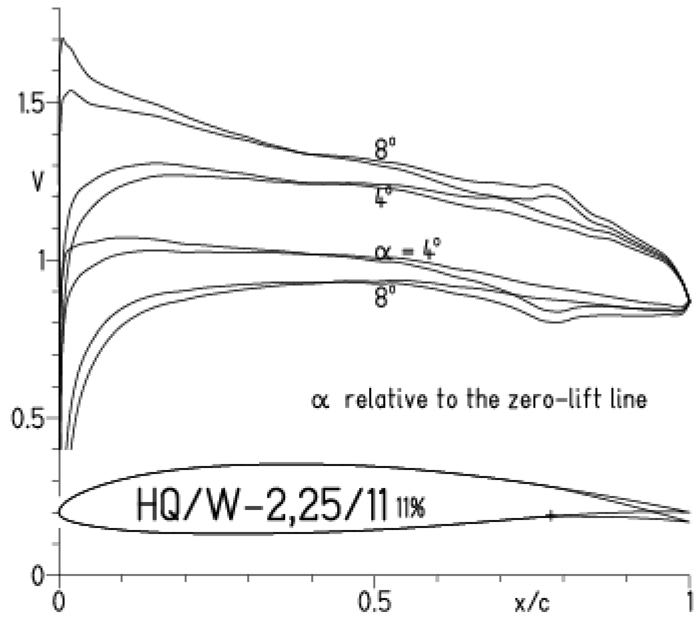
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



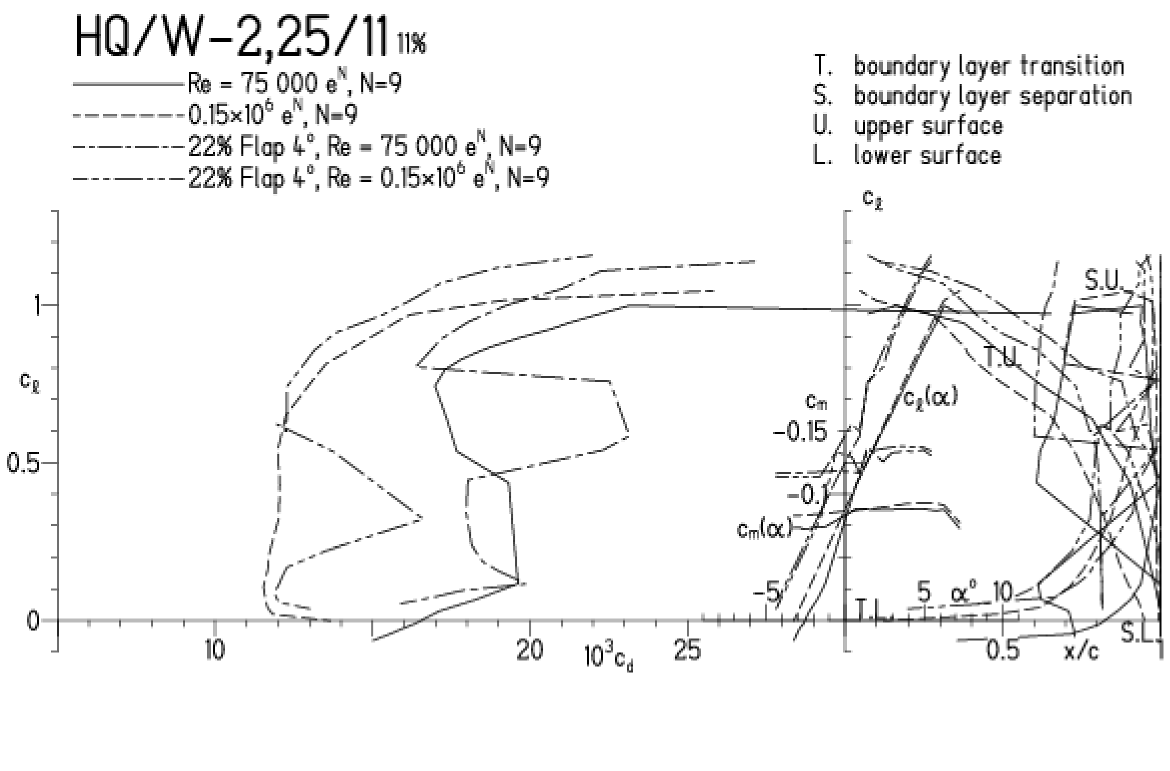


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

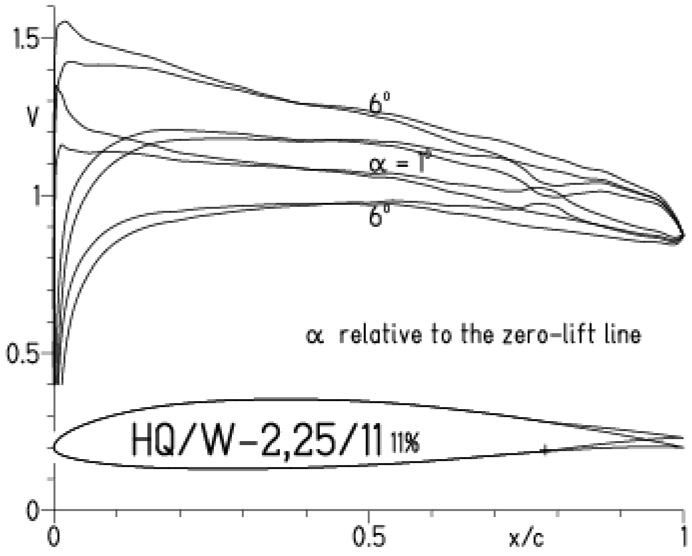


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

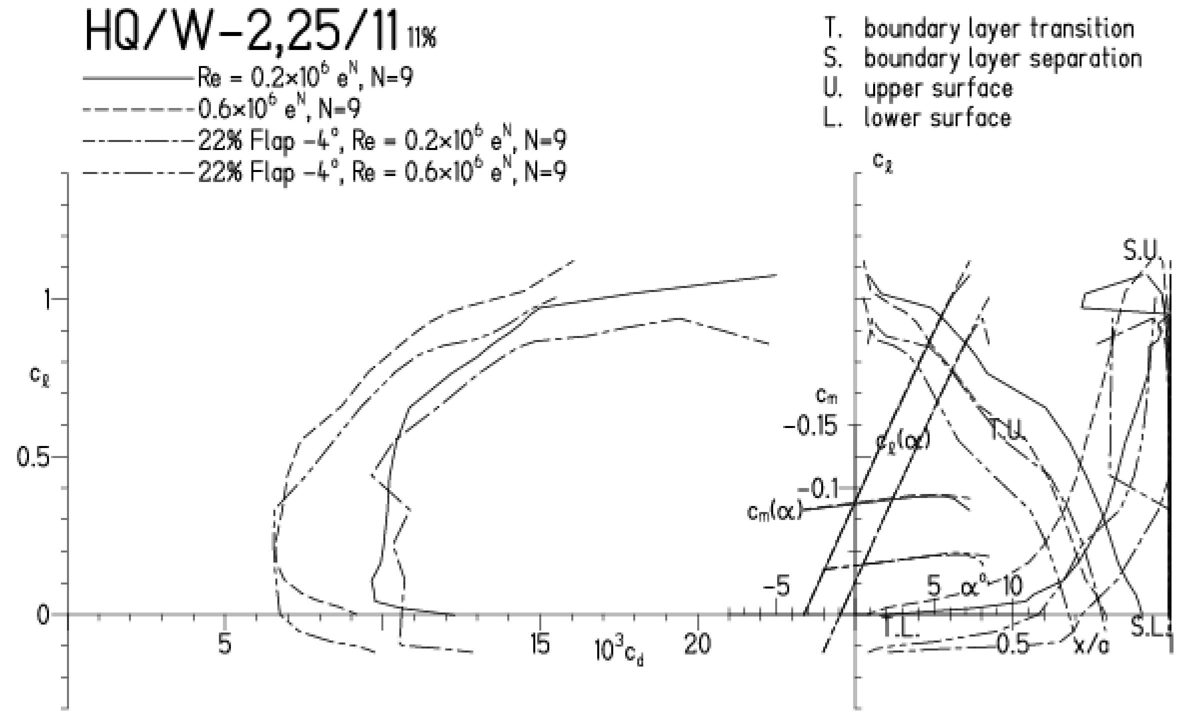


<u>HQ/W-2,25/10</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

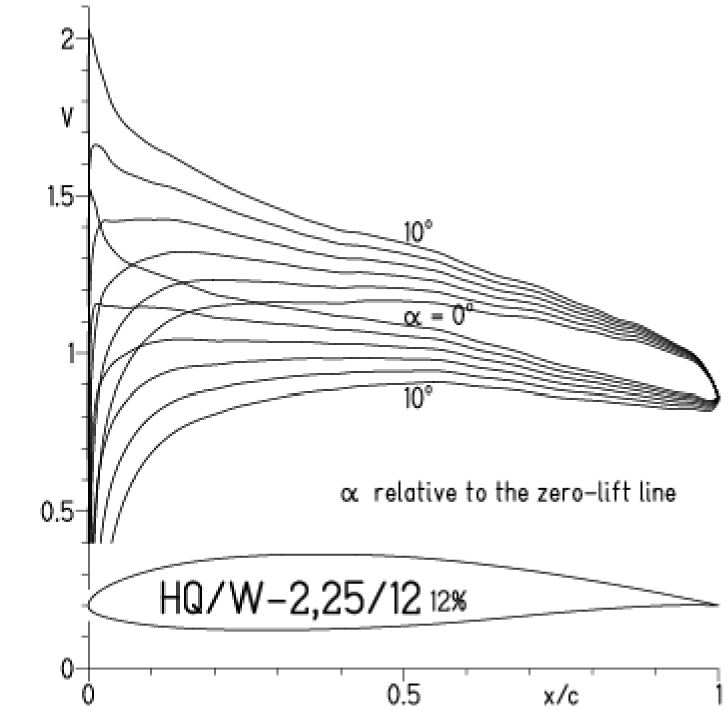


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

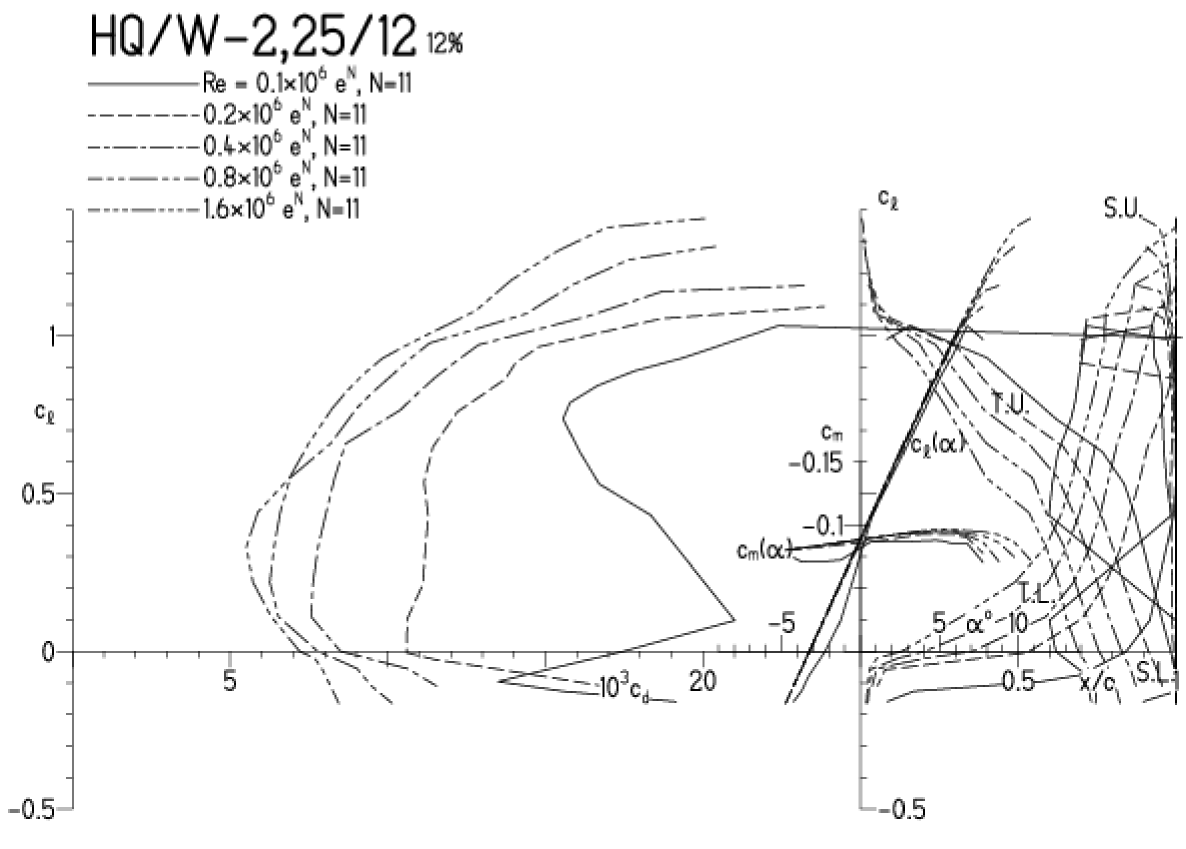


<u>HQ/W-2,25/12</u>, N=11

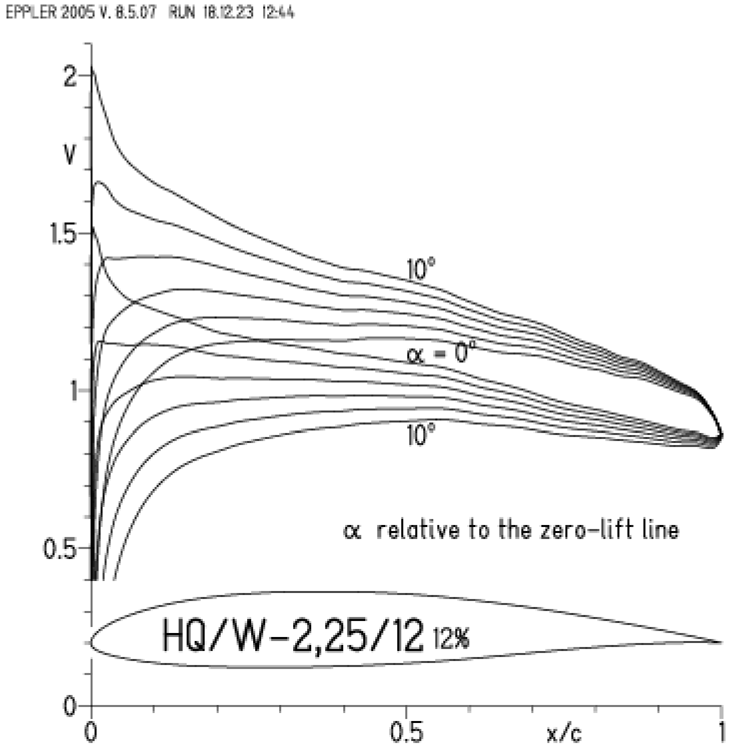
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

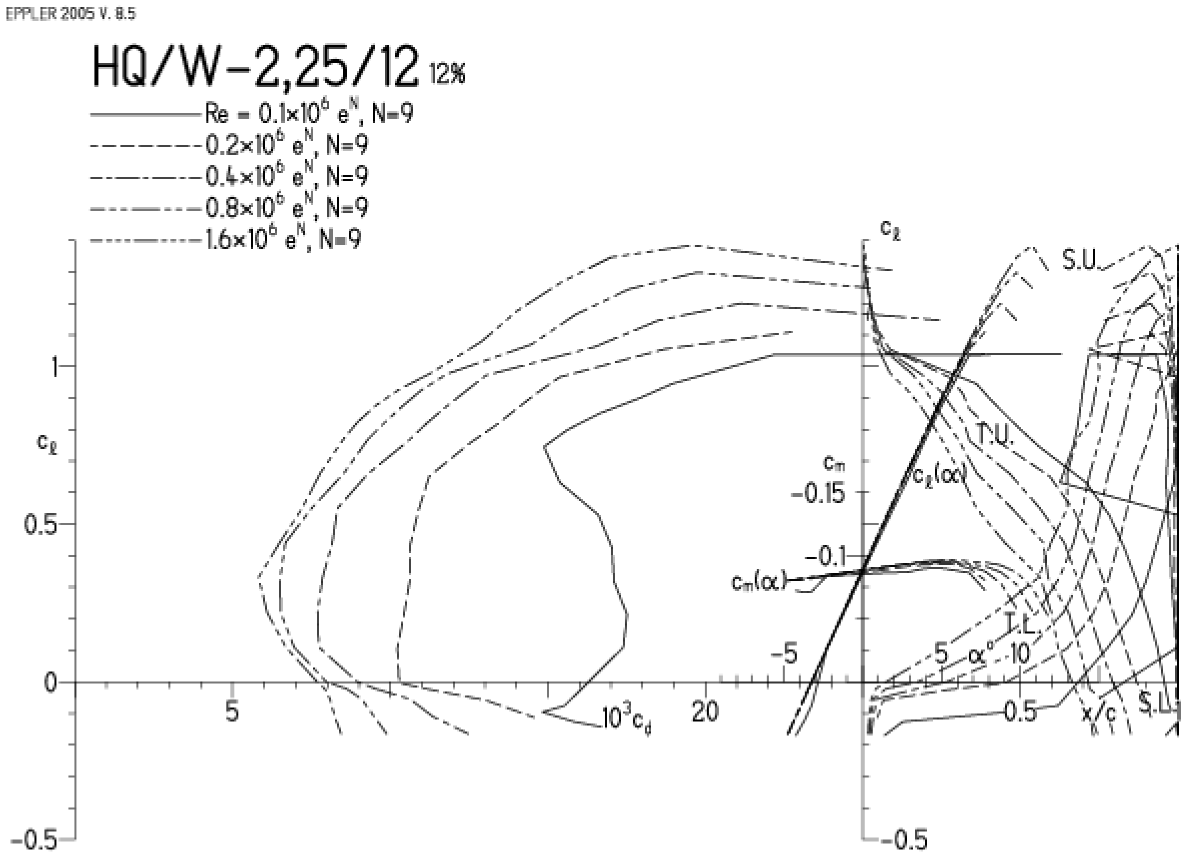


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

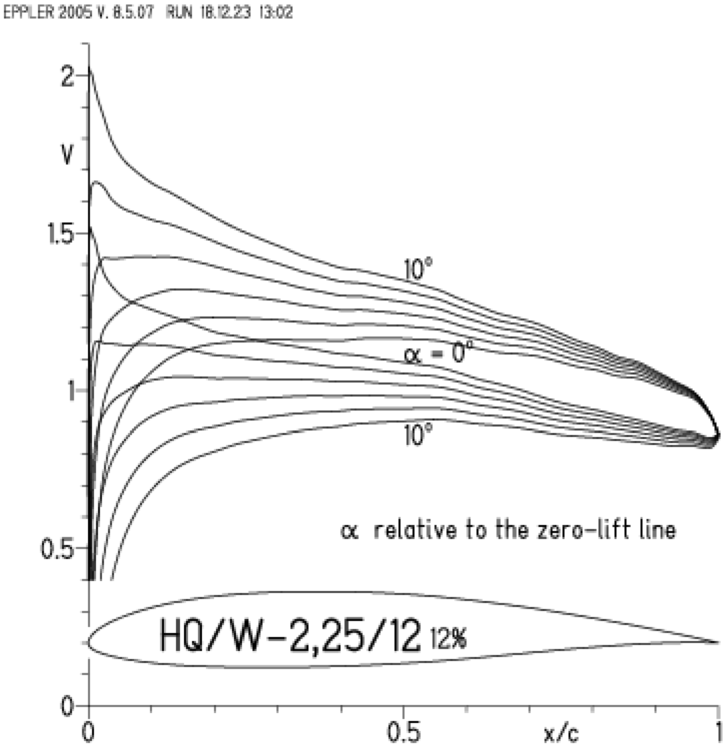


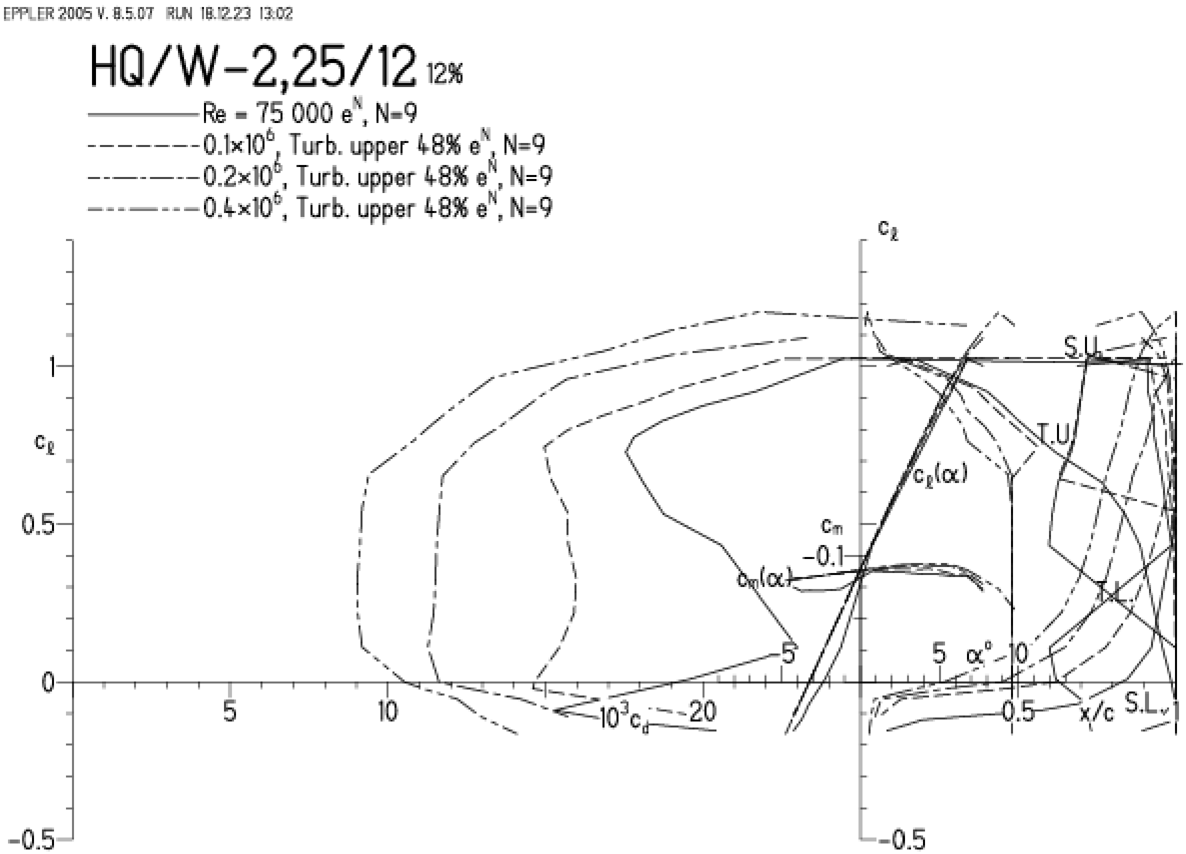
<u>HQ/W-2,25/12</u>, N=9





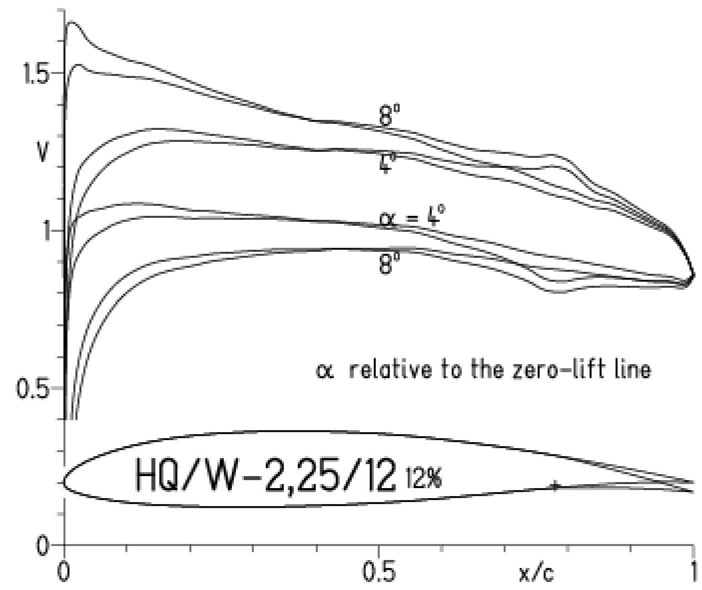
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



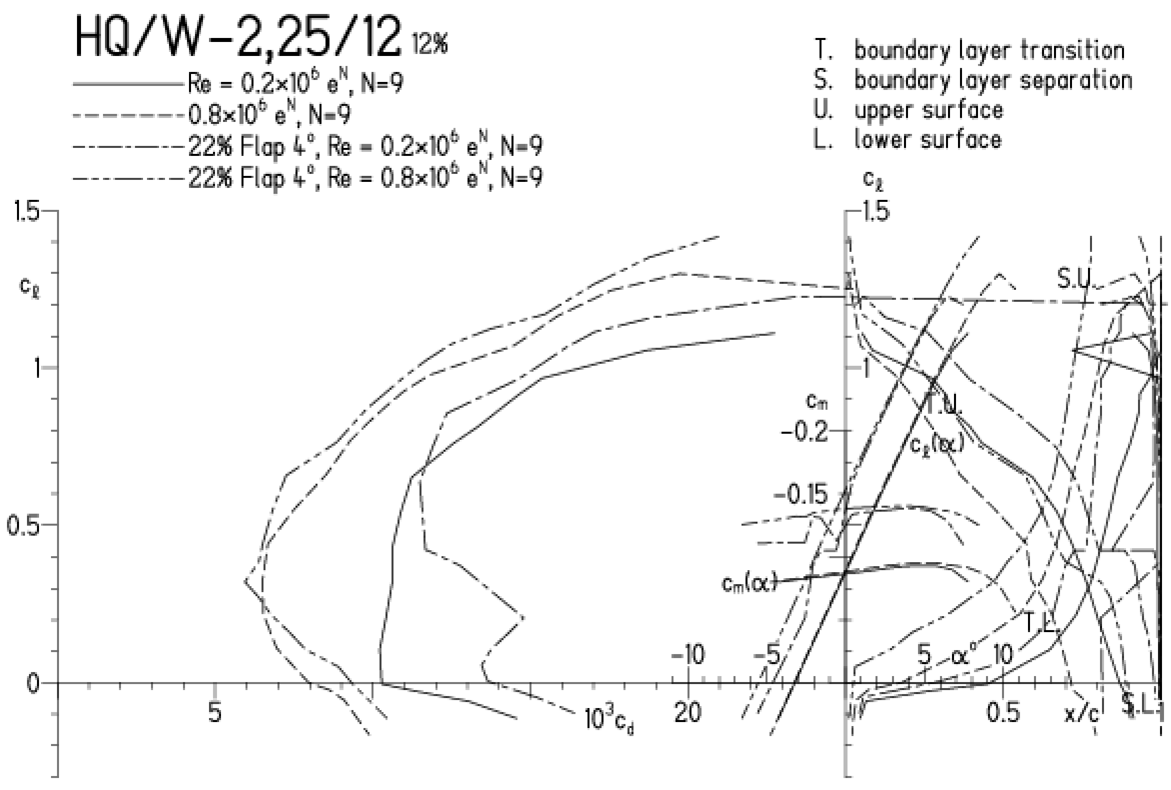


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

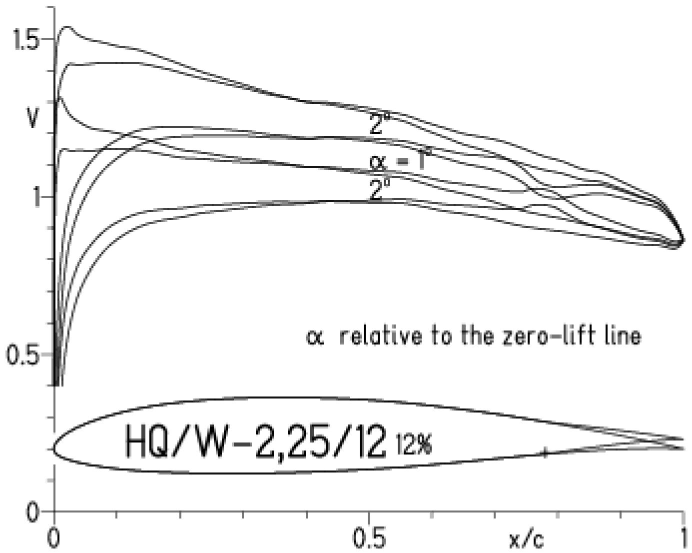


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

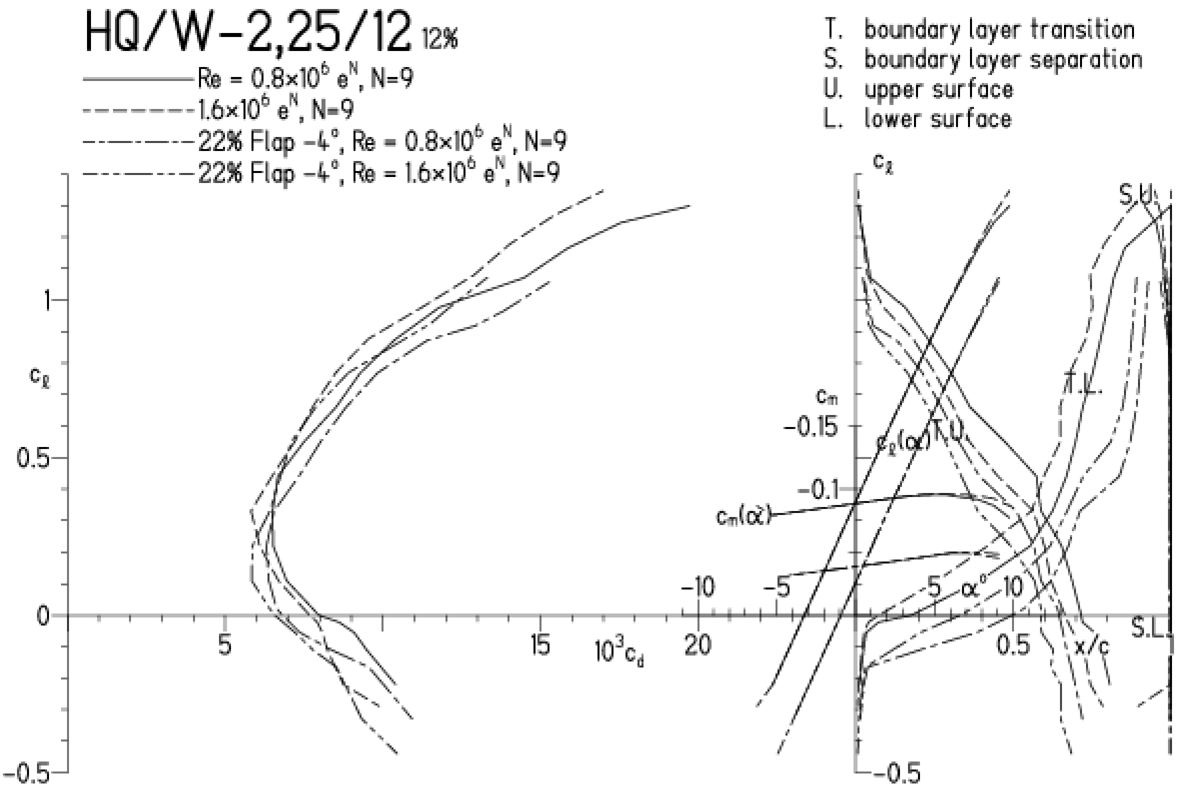


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

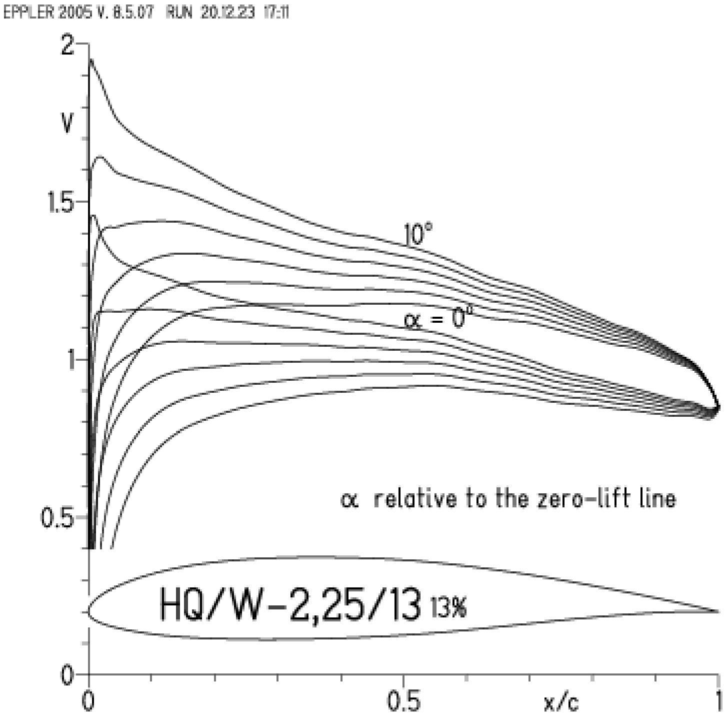
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

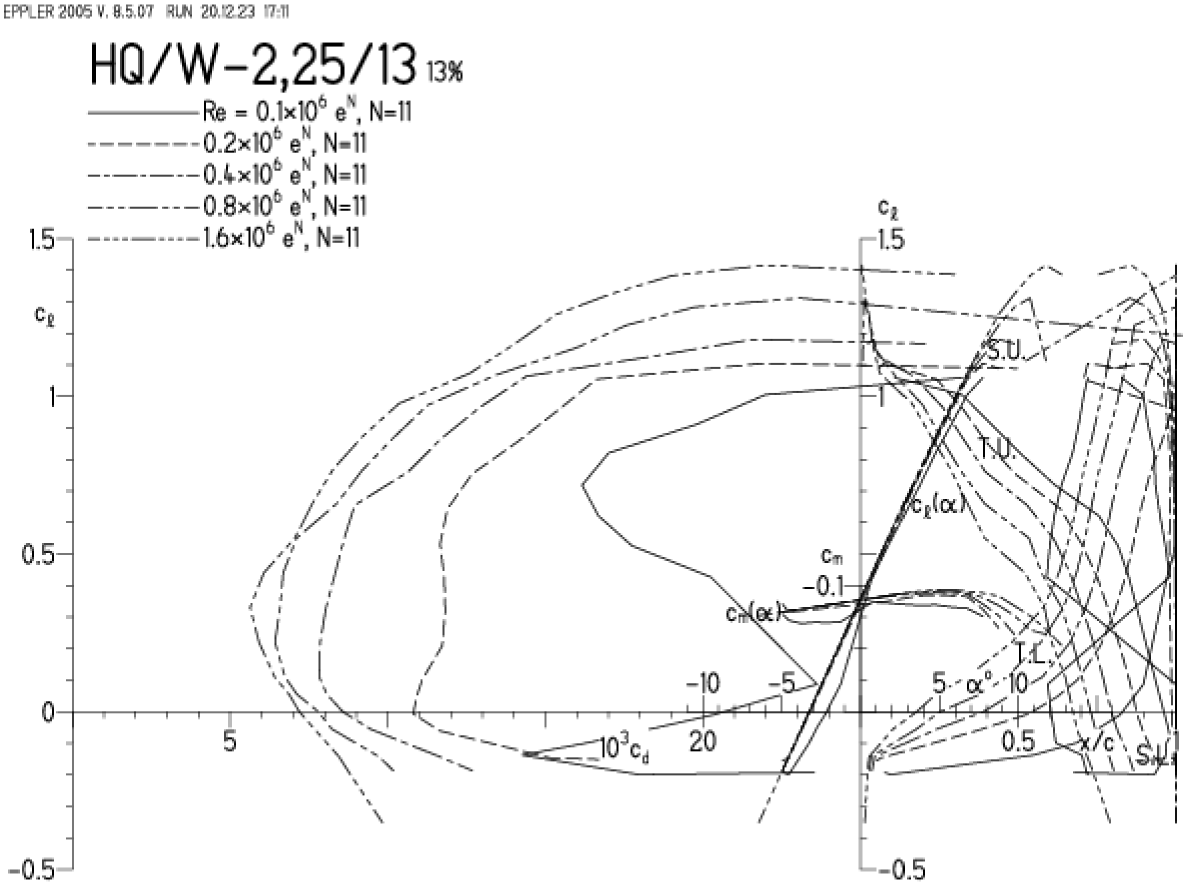


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

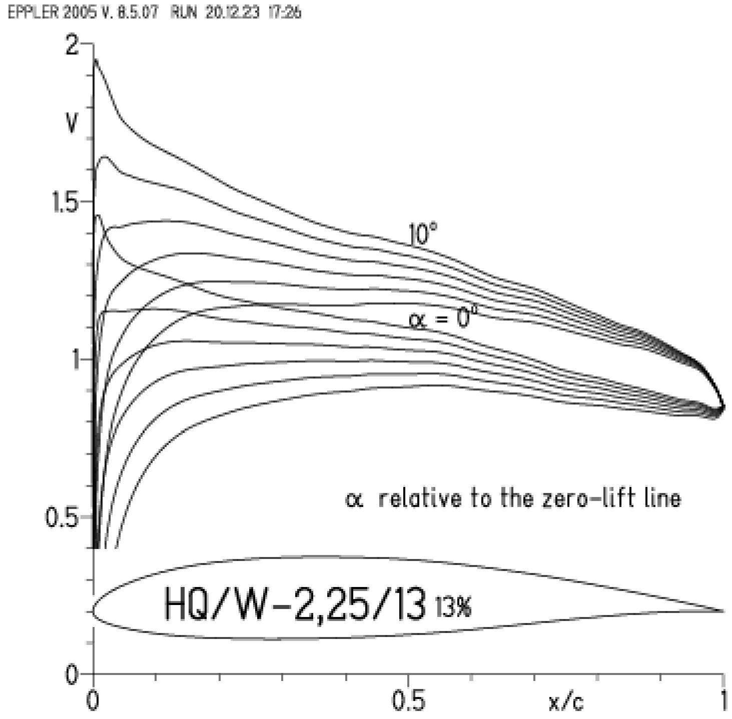


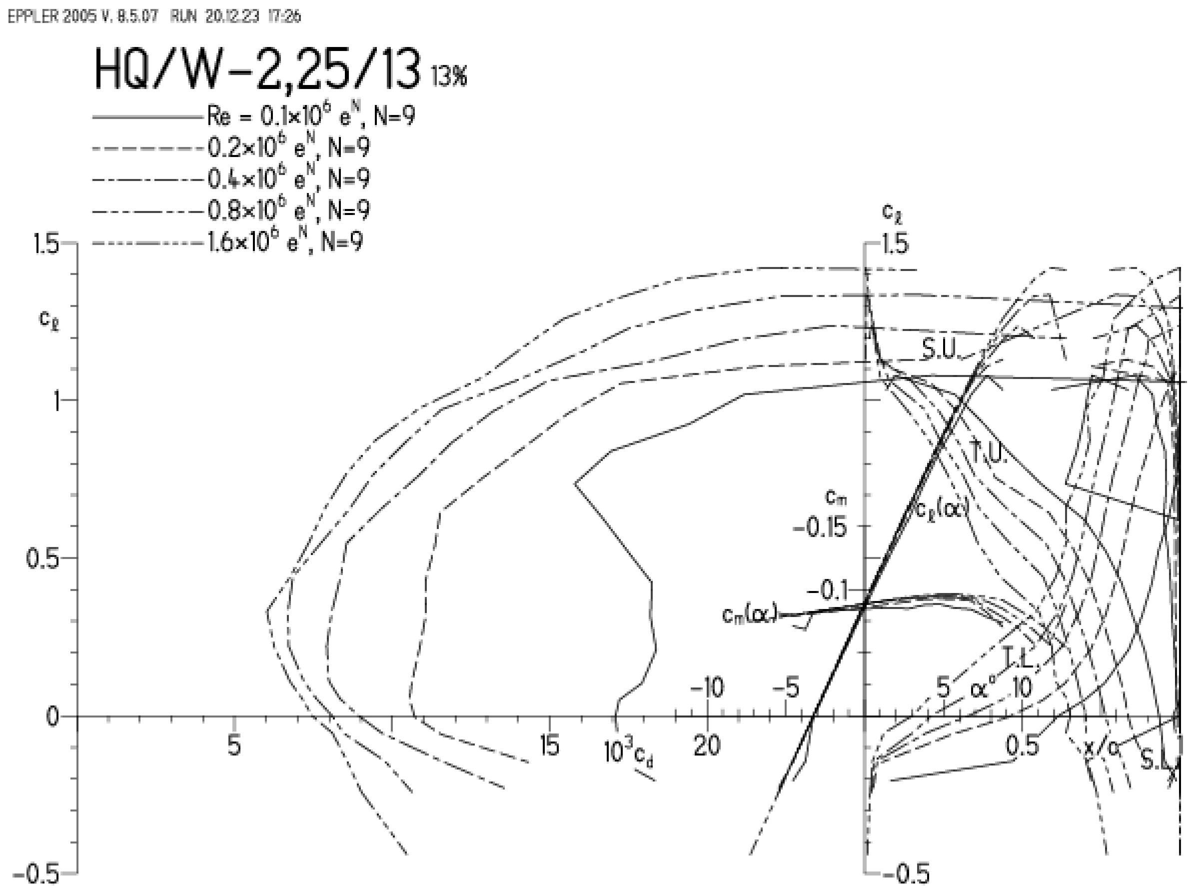
HQ/W-2,25/13, N=11



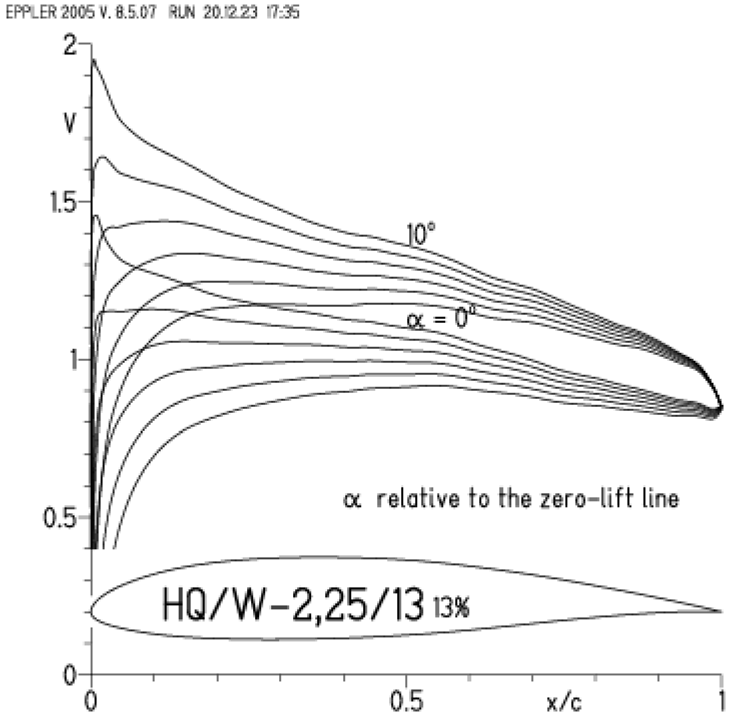


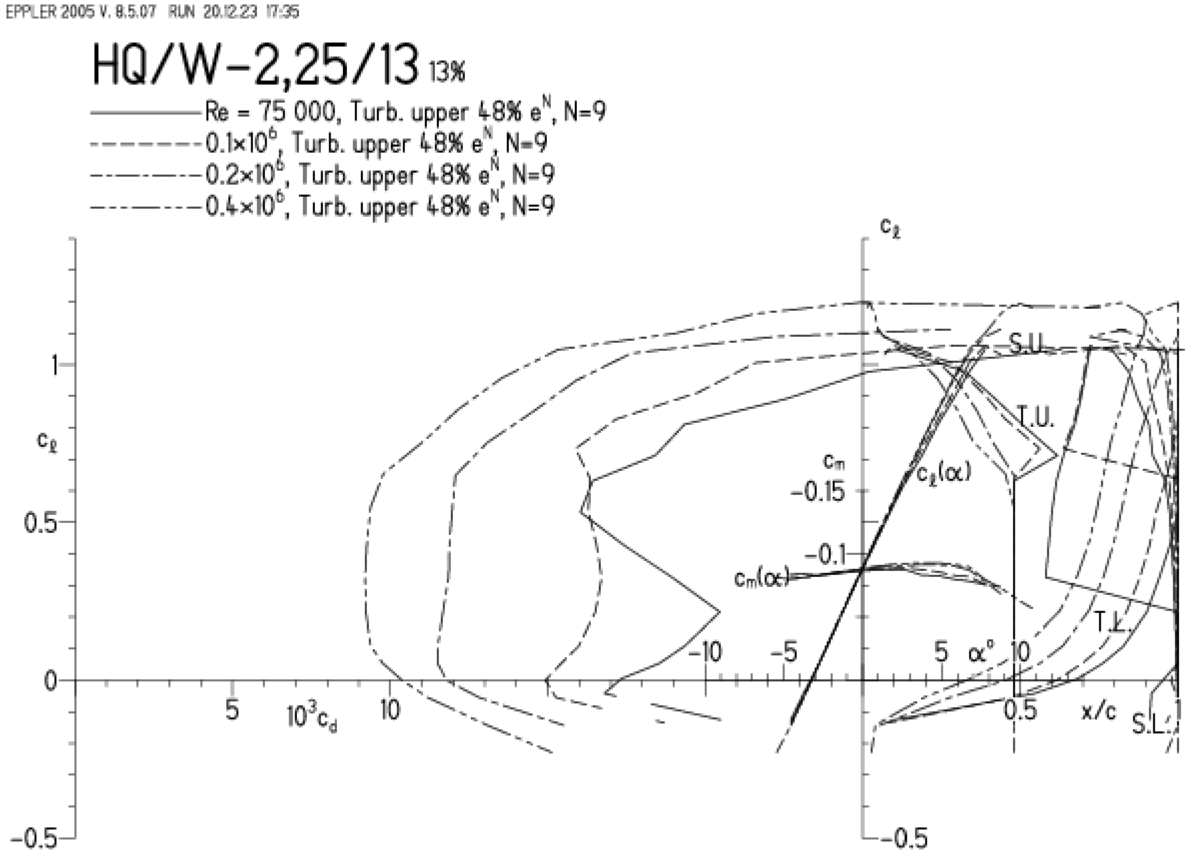
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c

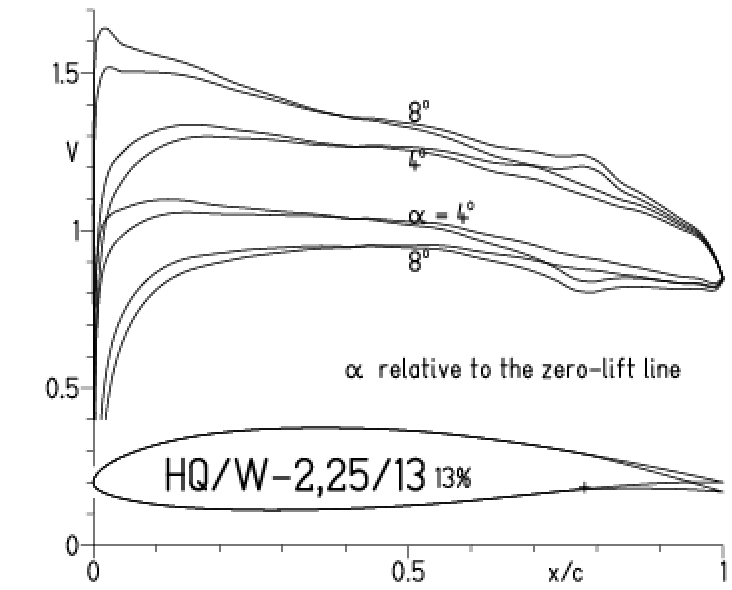

EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
x/c
10^3 cd

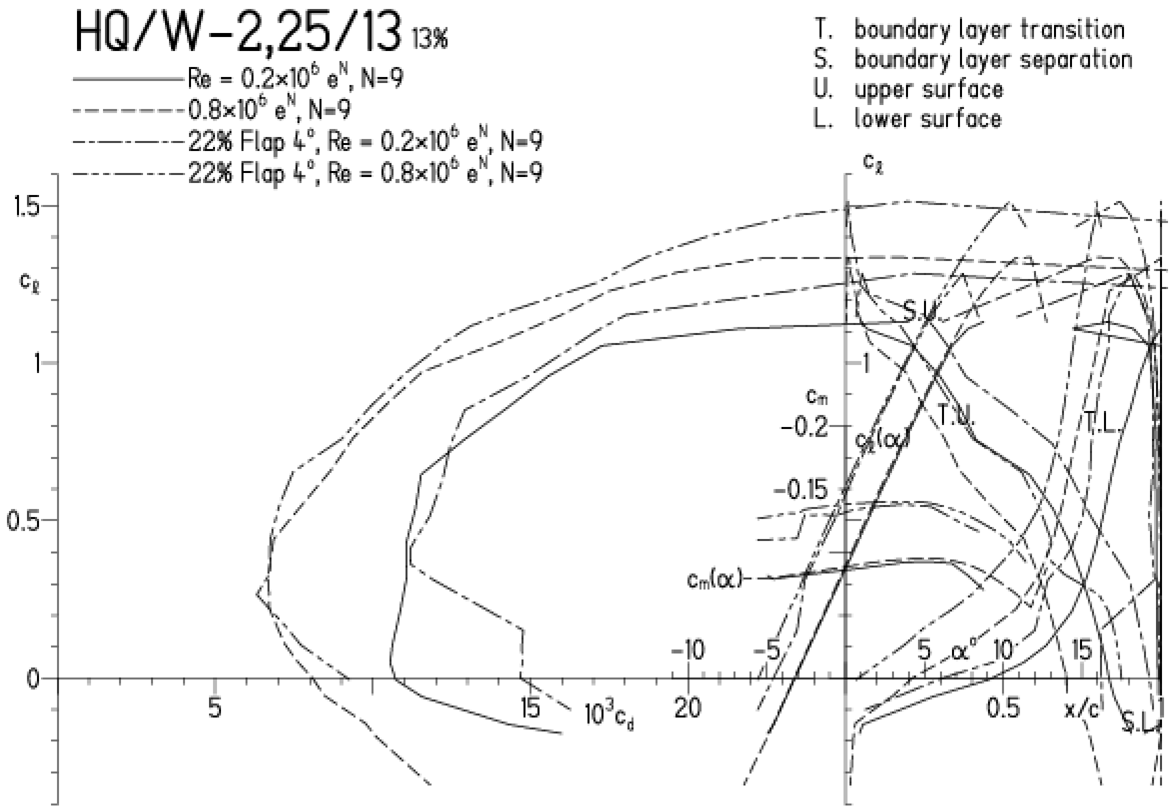
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





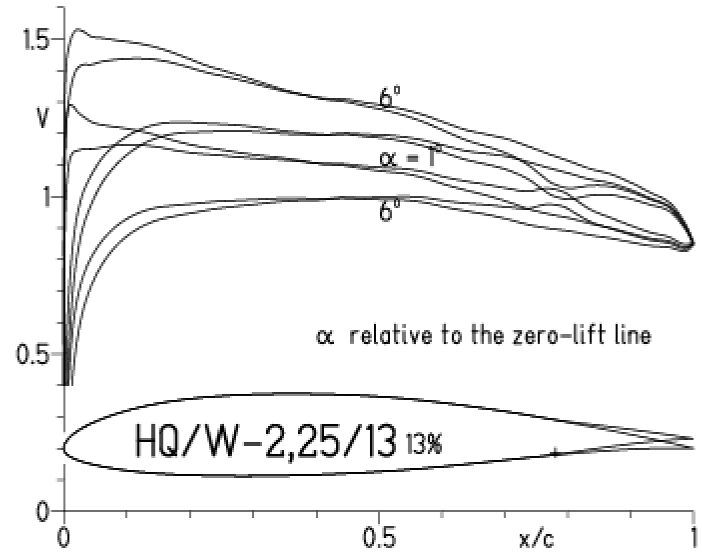
HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag



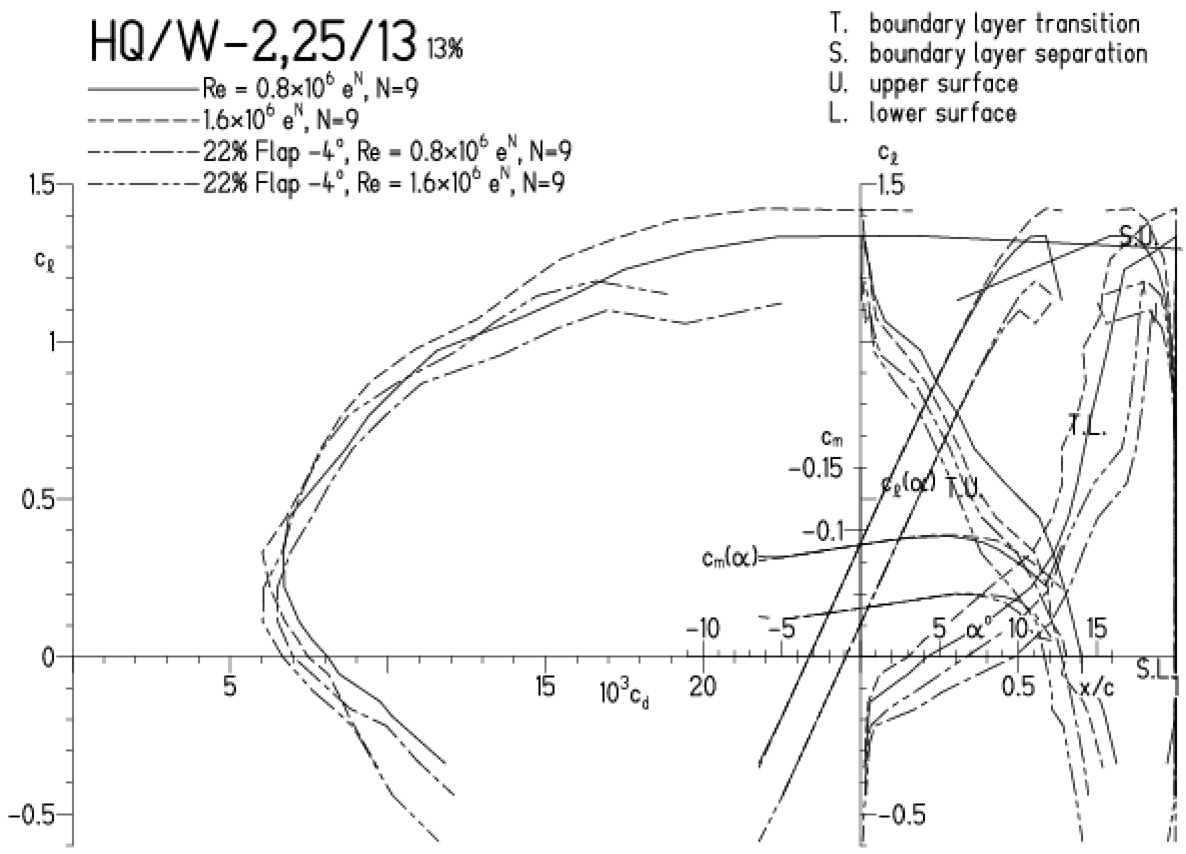


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

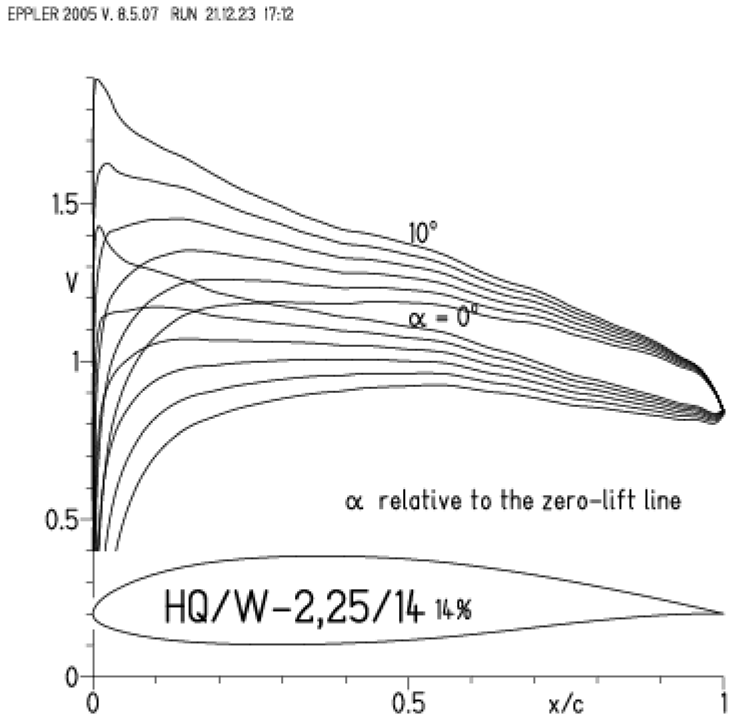
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

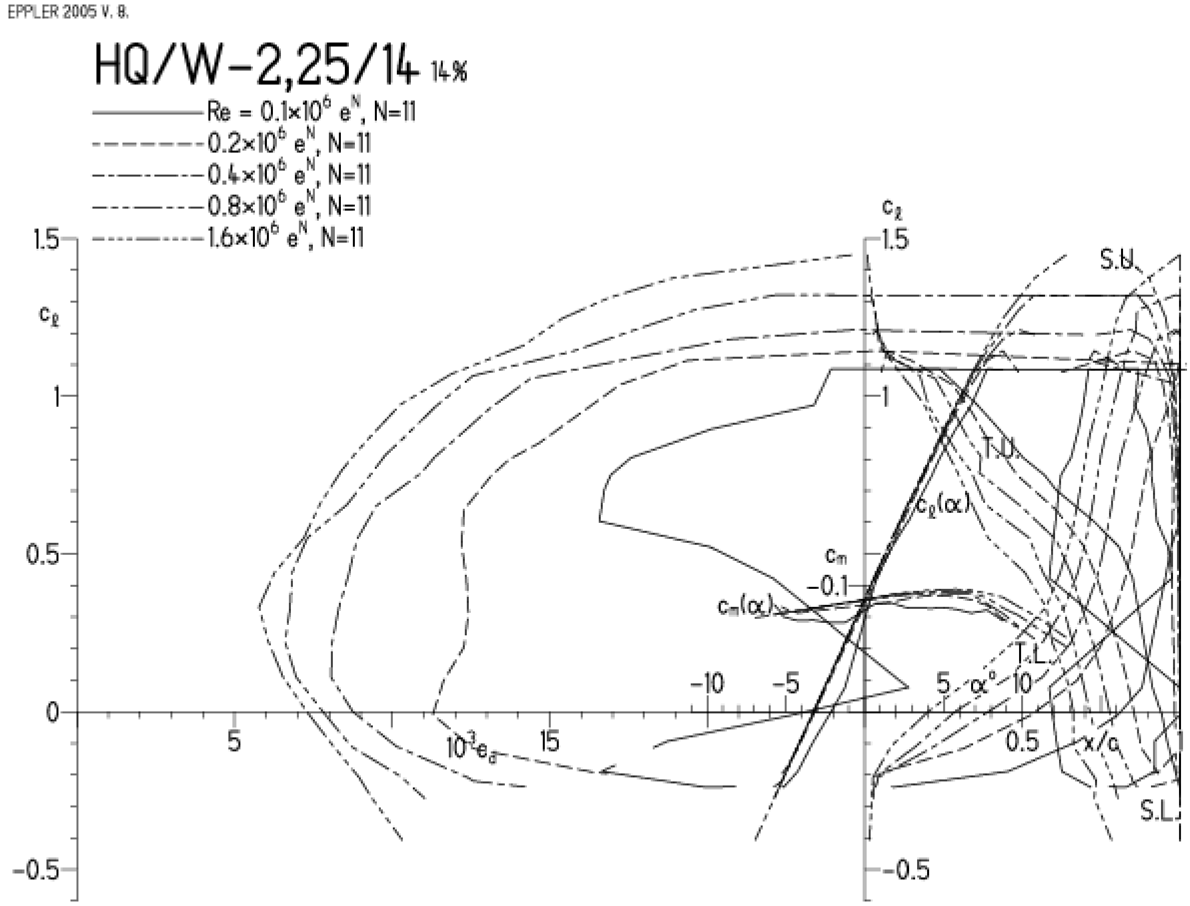


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

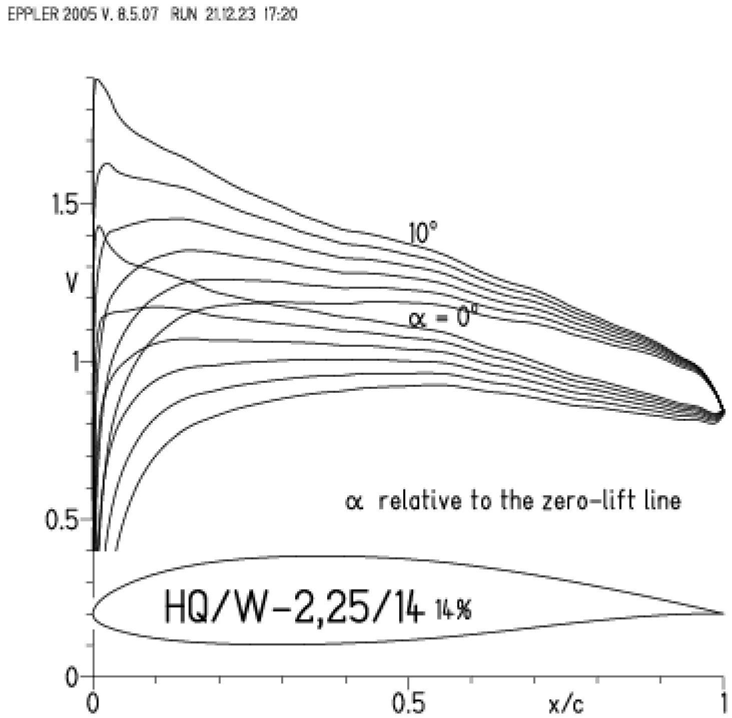


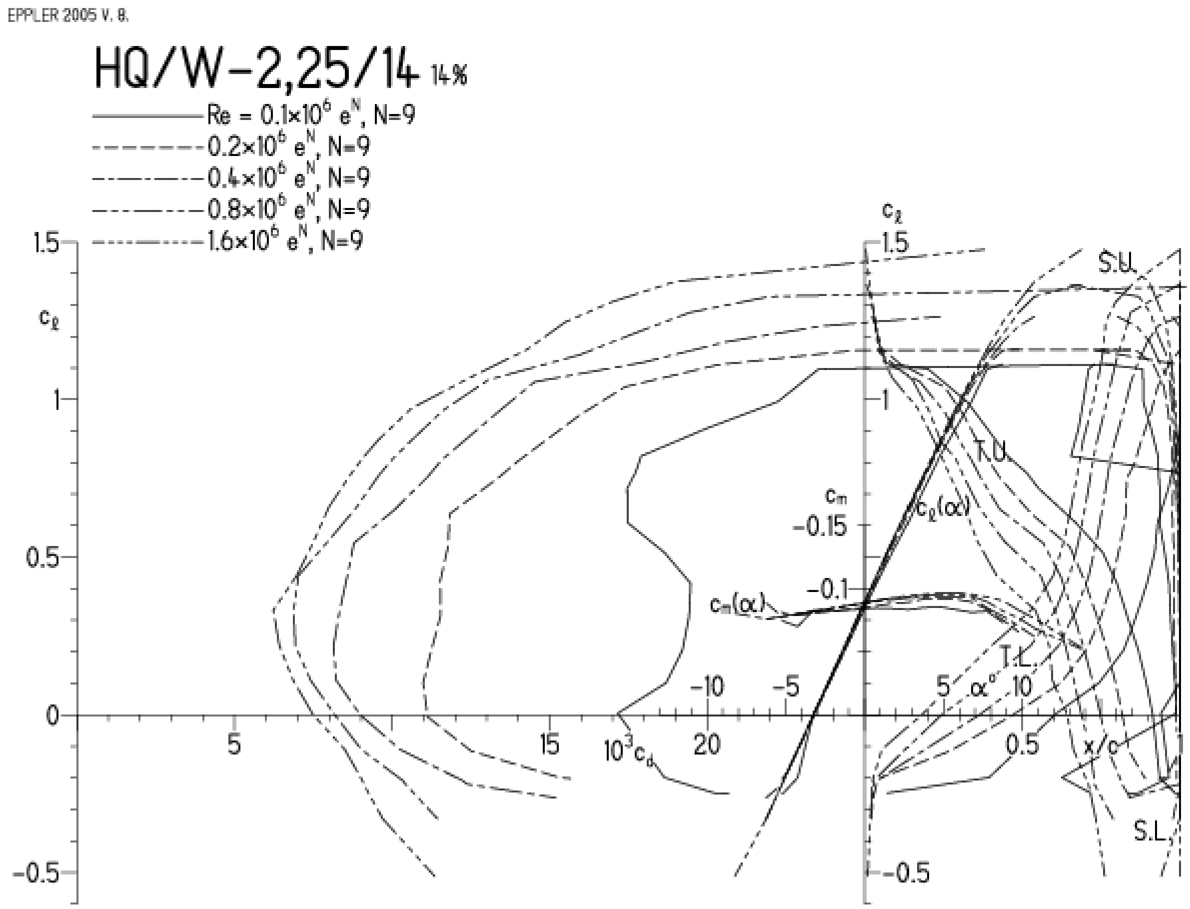
<u>HQ/W-2,25/14</u>, N=11



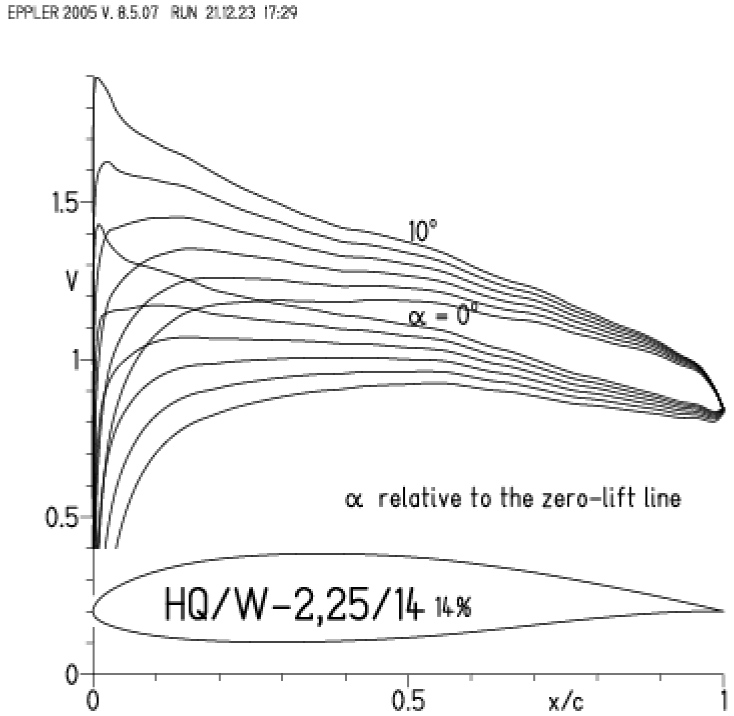


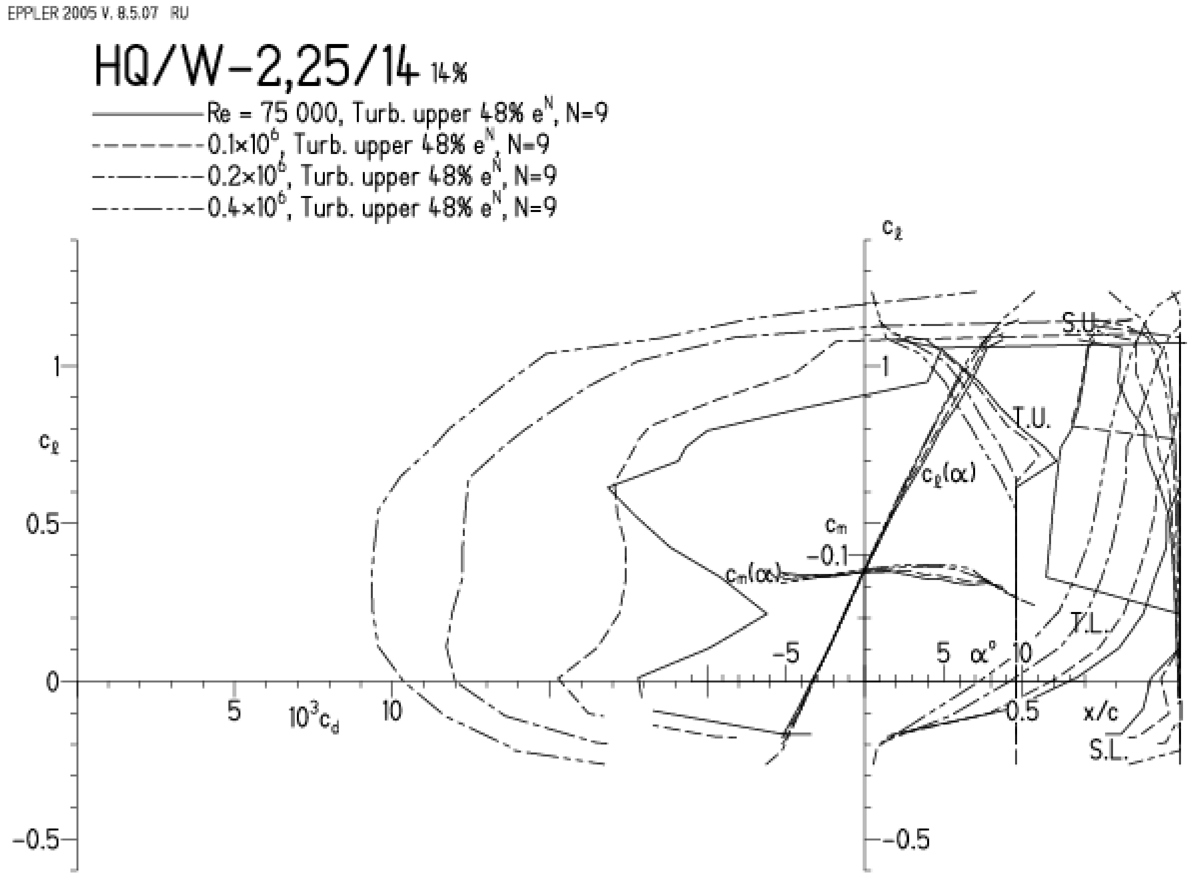
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

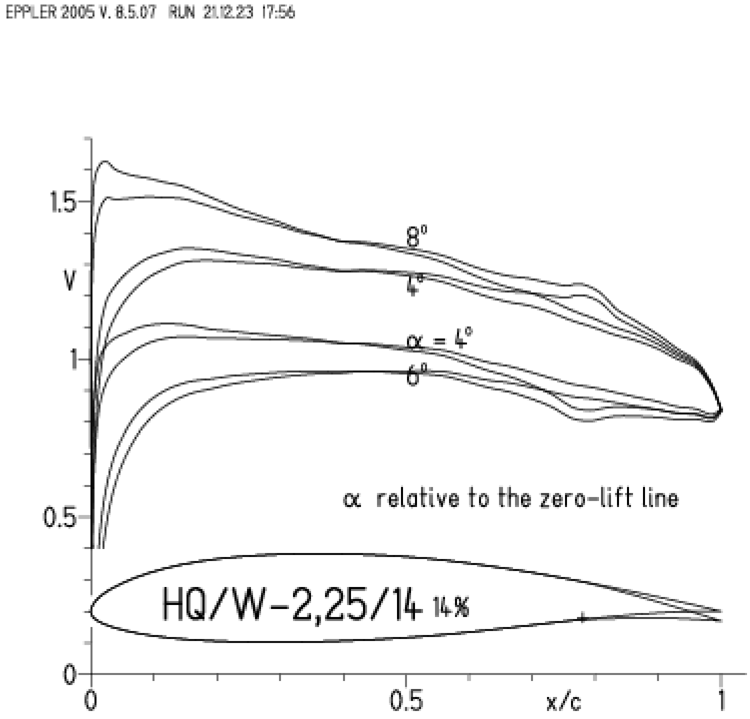

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
−0.5

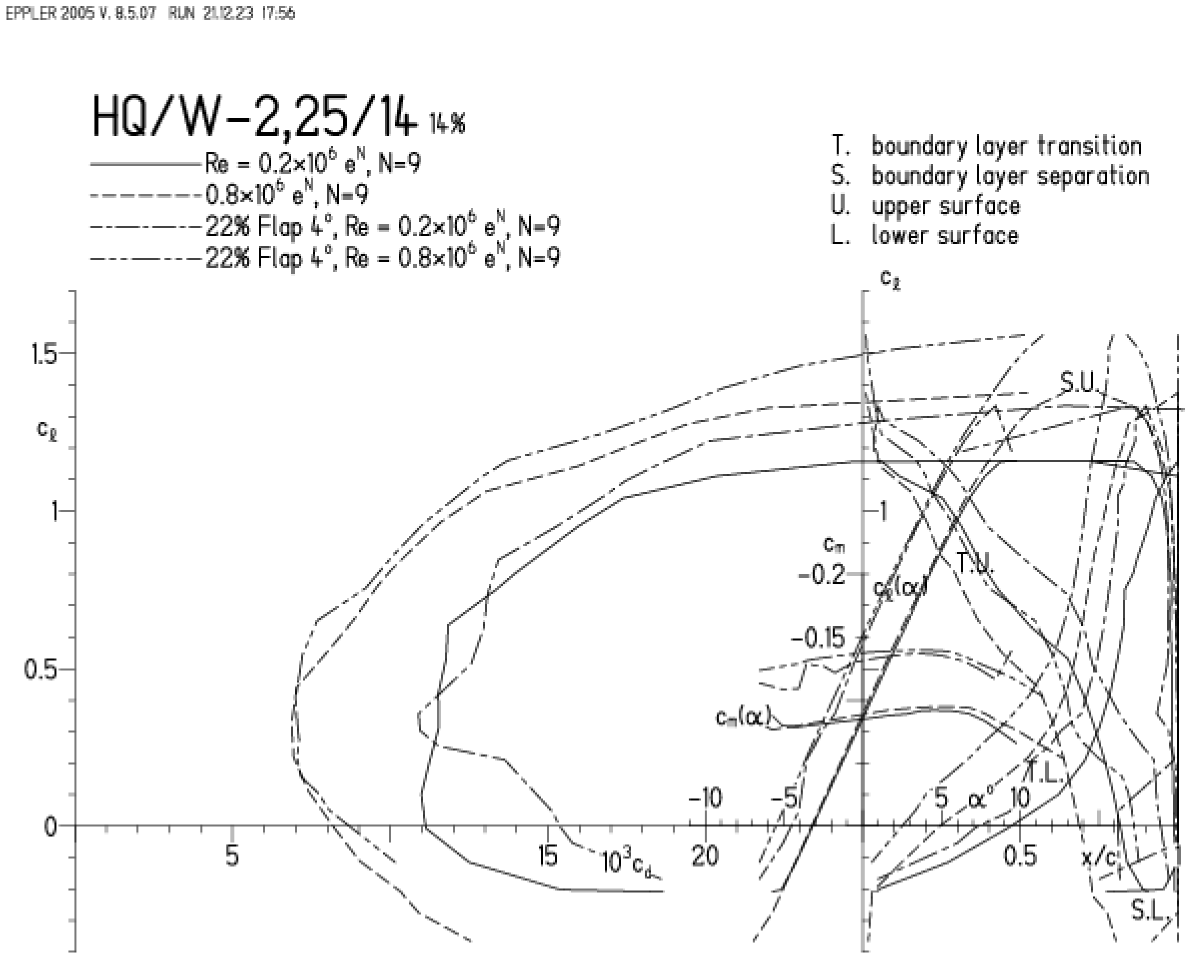
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





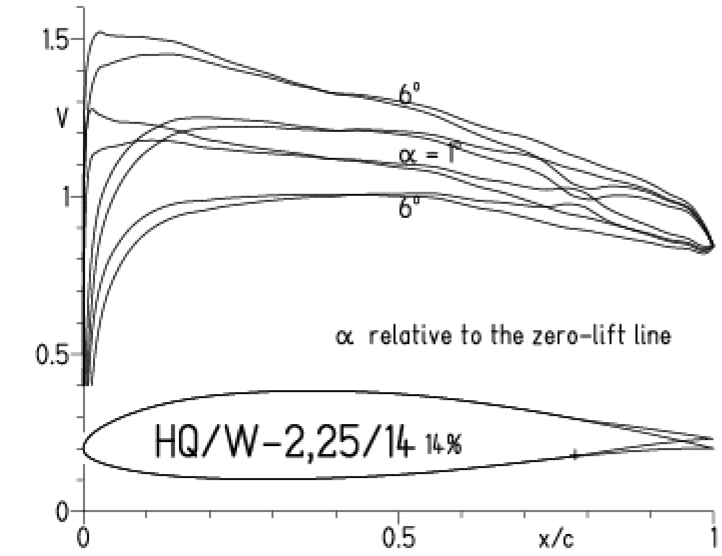
<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag



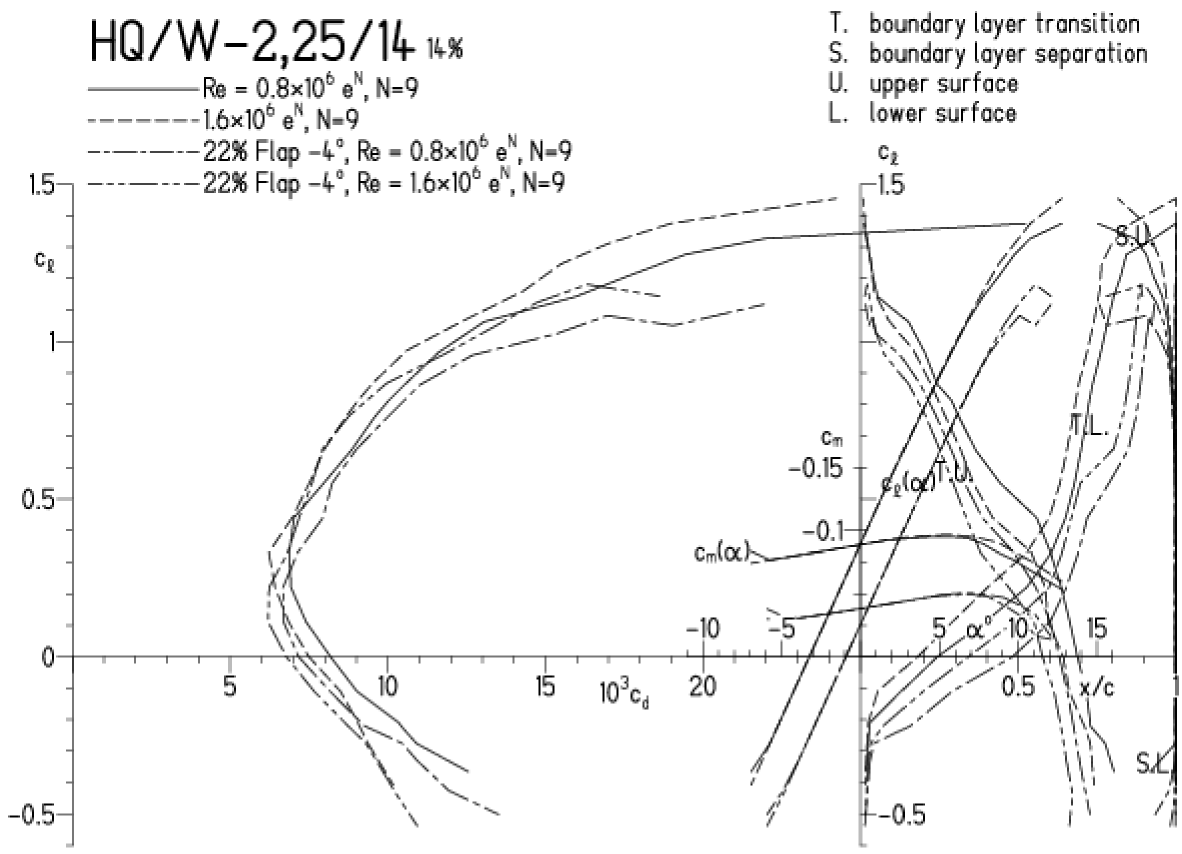


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

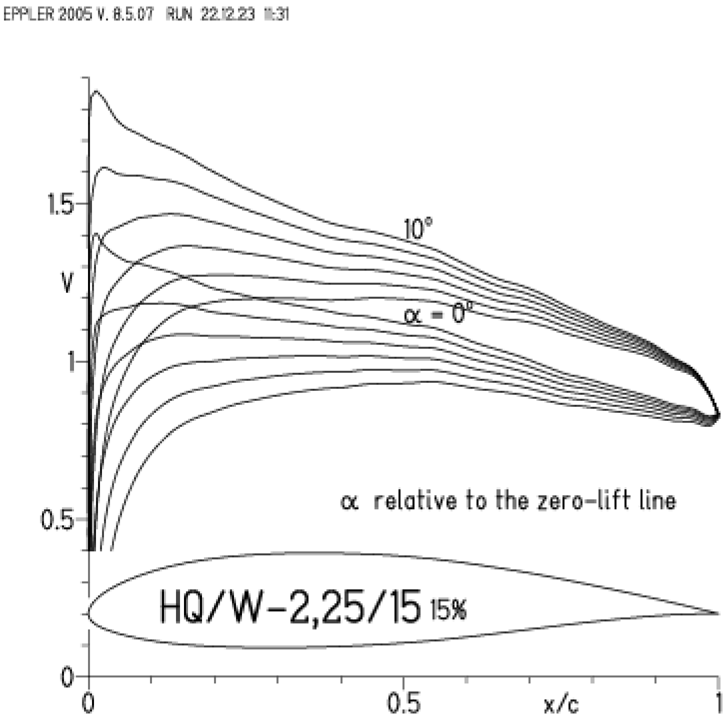
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

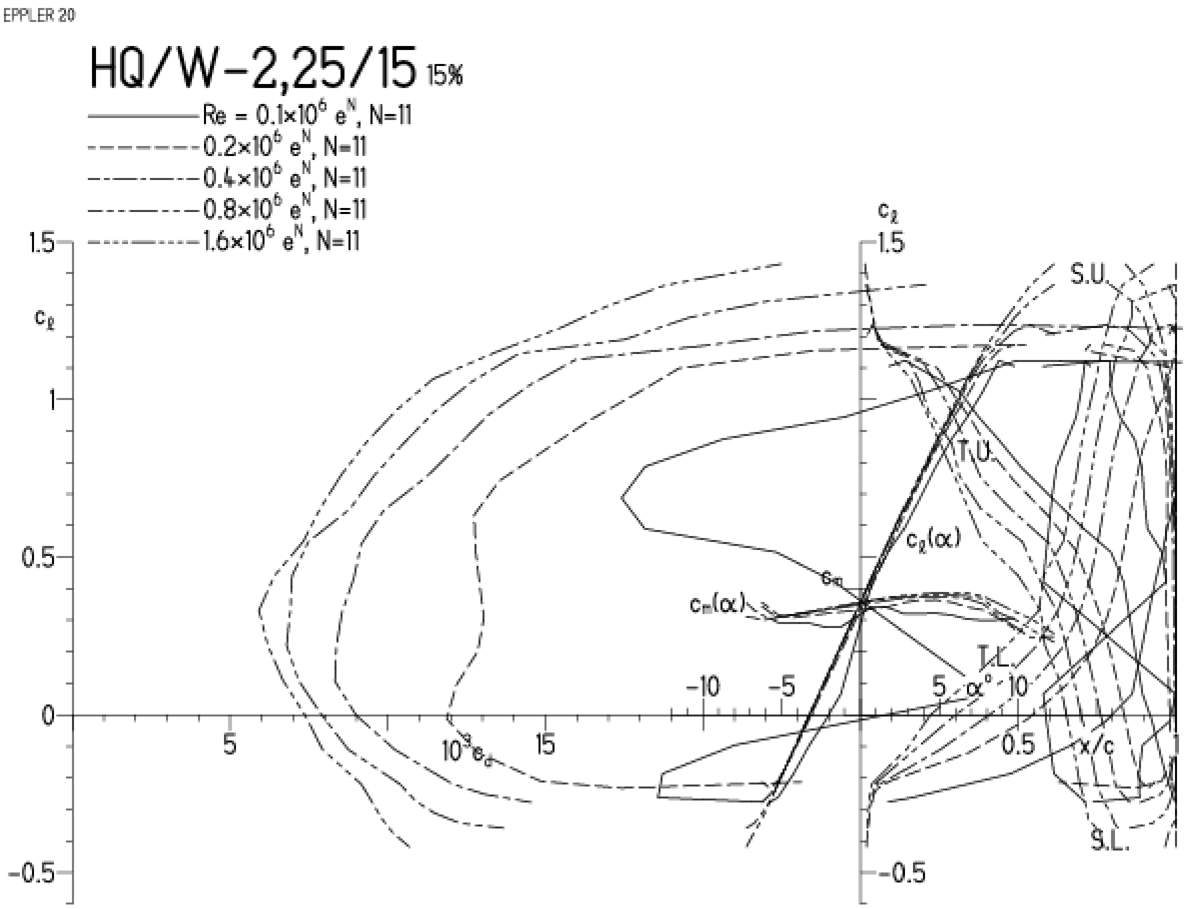


EPPLER 2005 V. 8.5.07



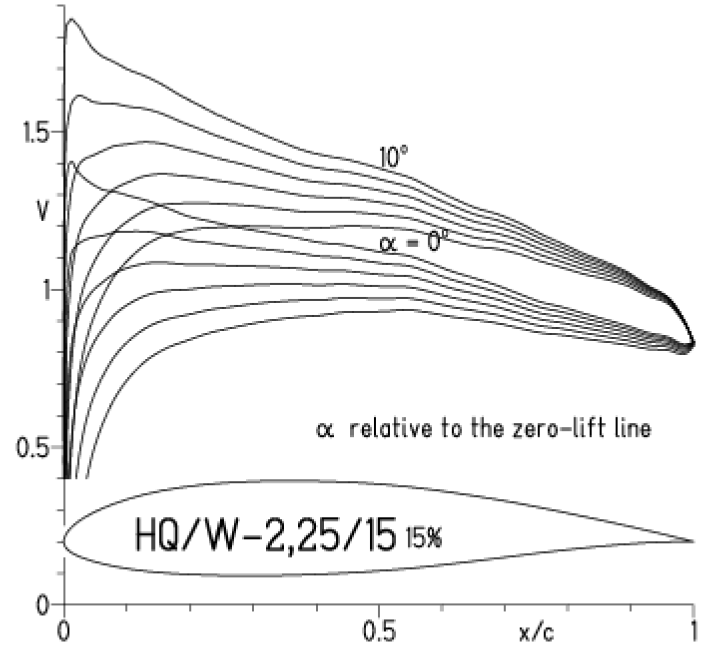
HQ/W-2,25/15, N=11



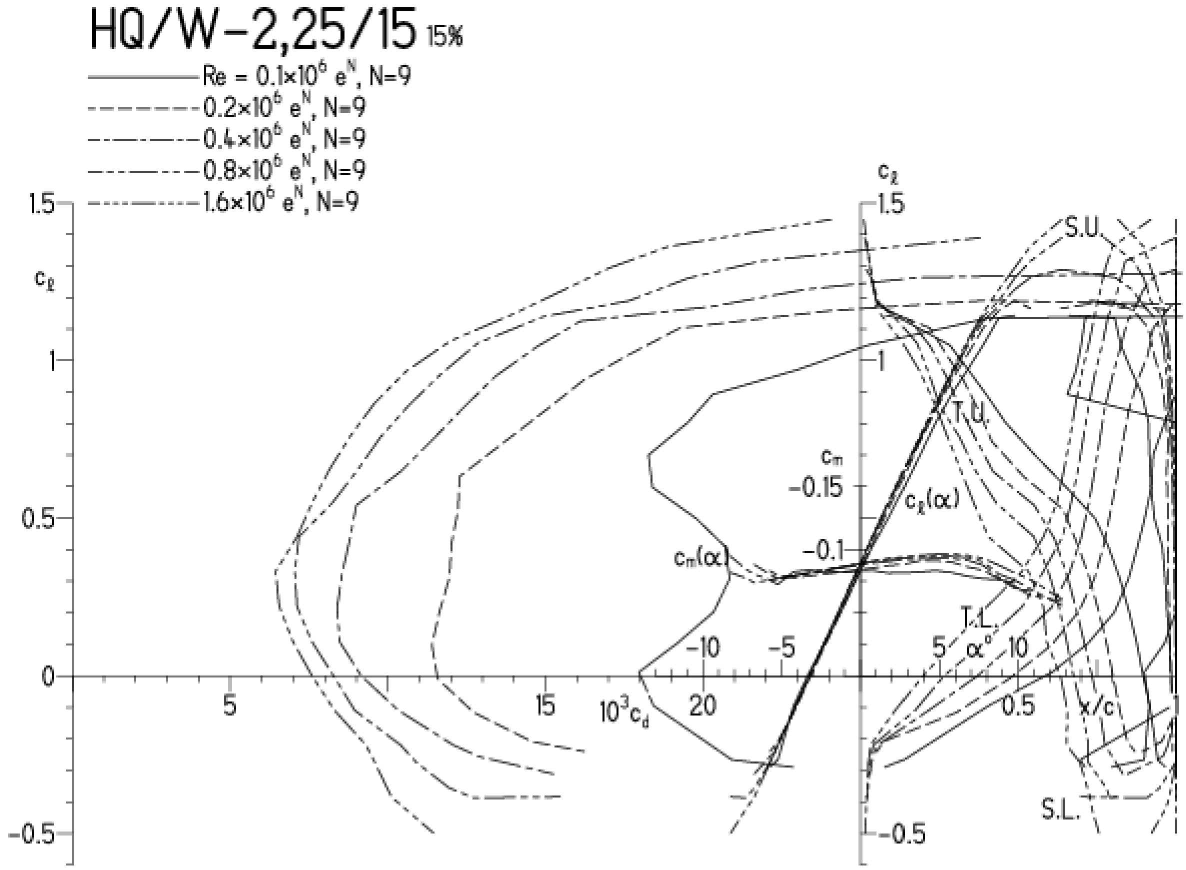


<u>HQ/W-2,25/15</u>, N=9

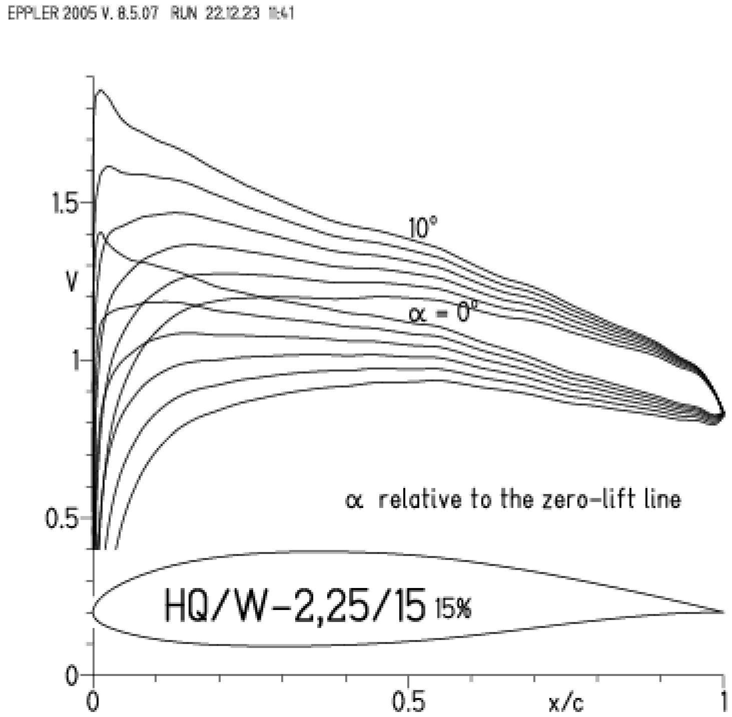
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

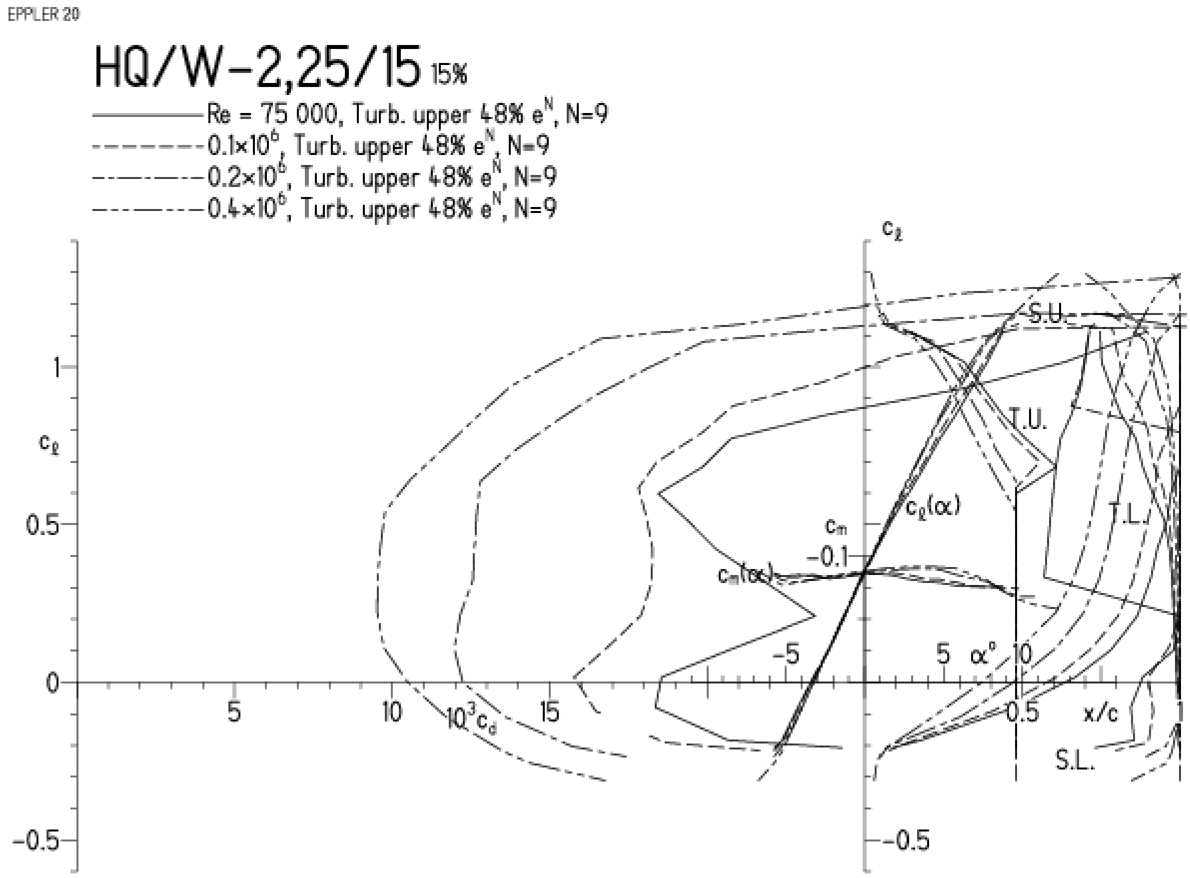


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



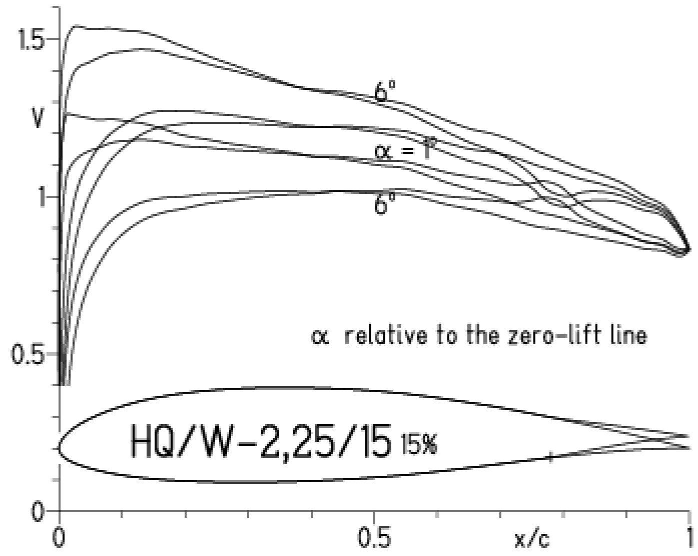


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

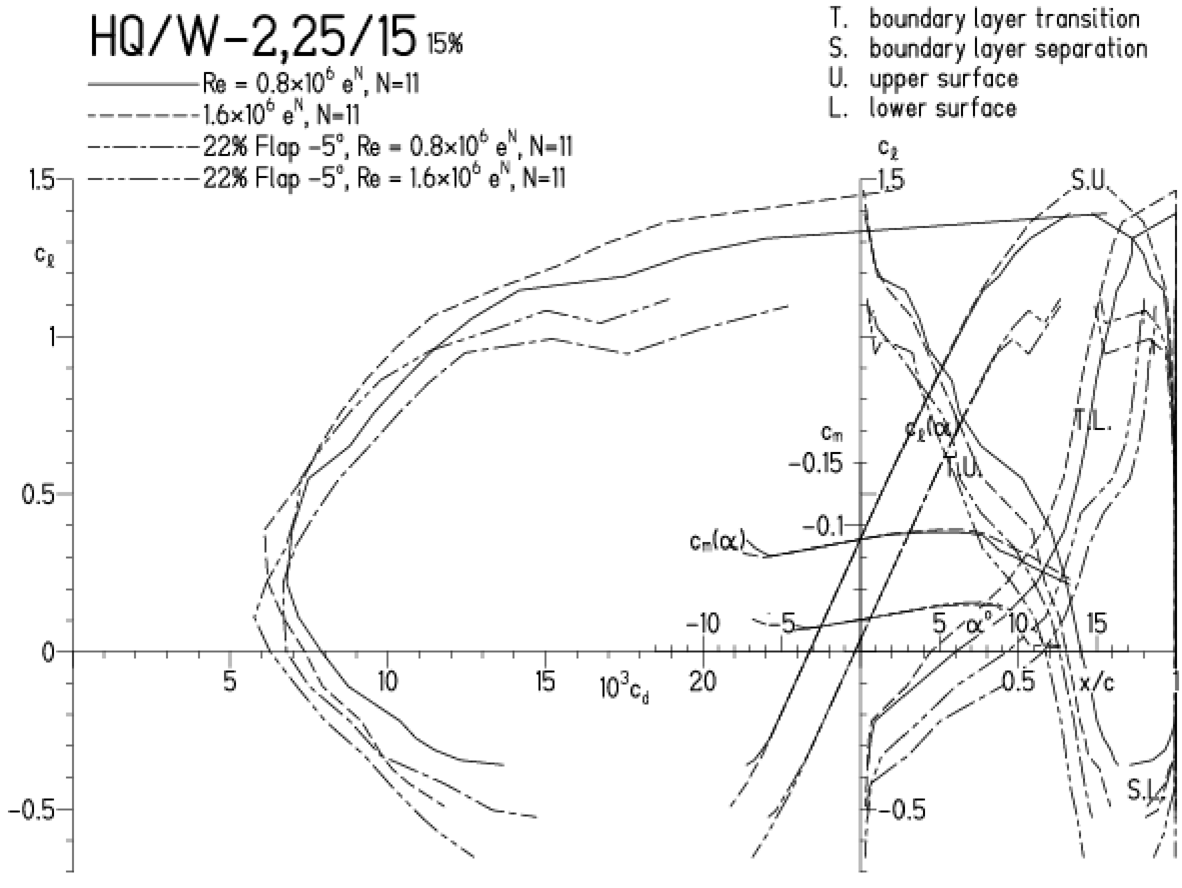
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

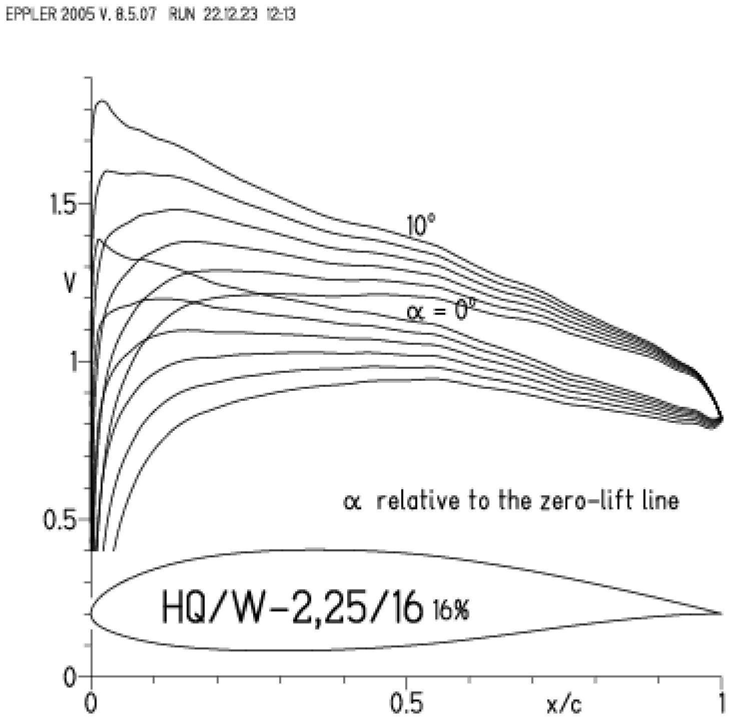
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

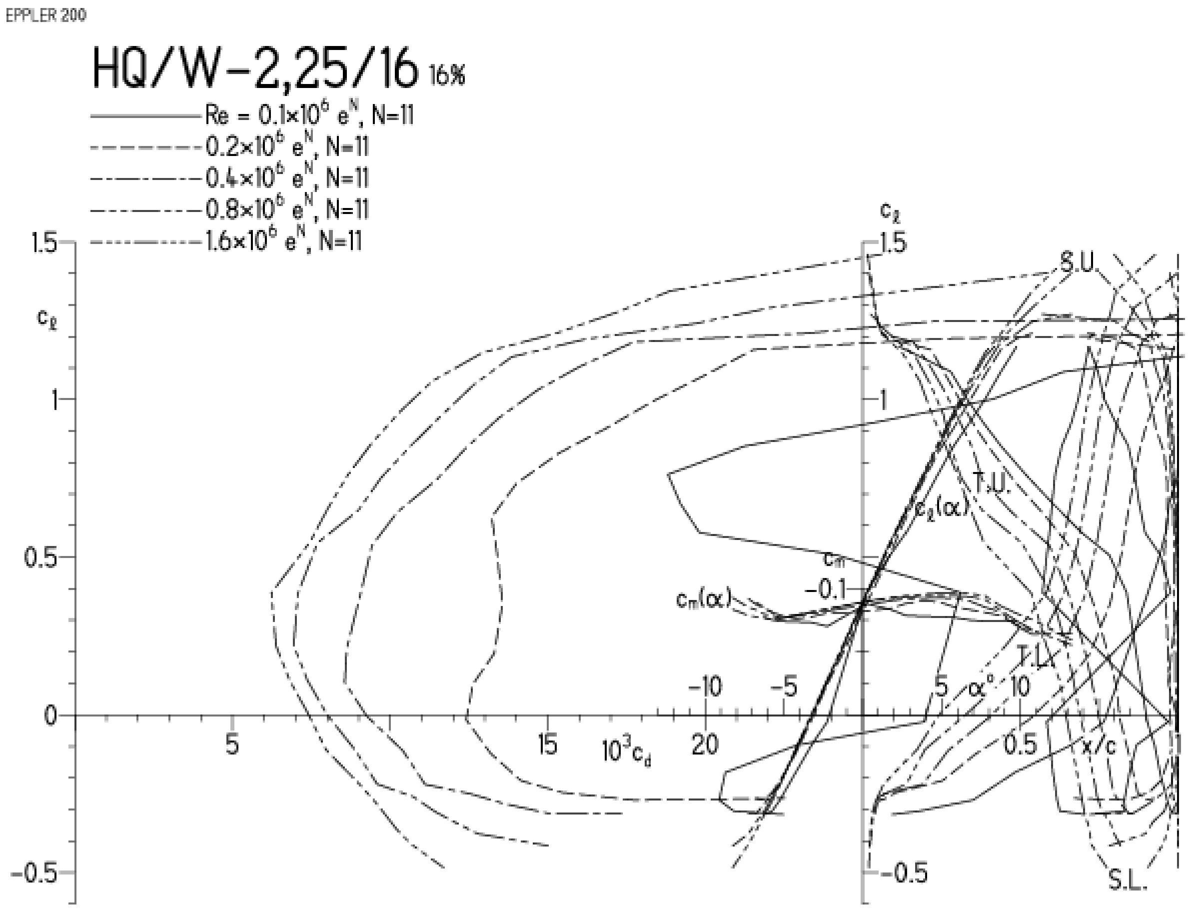


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

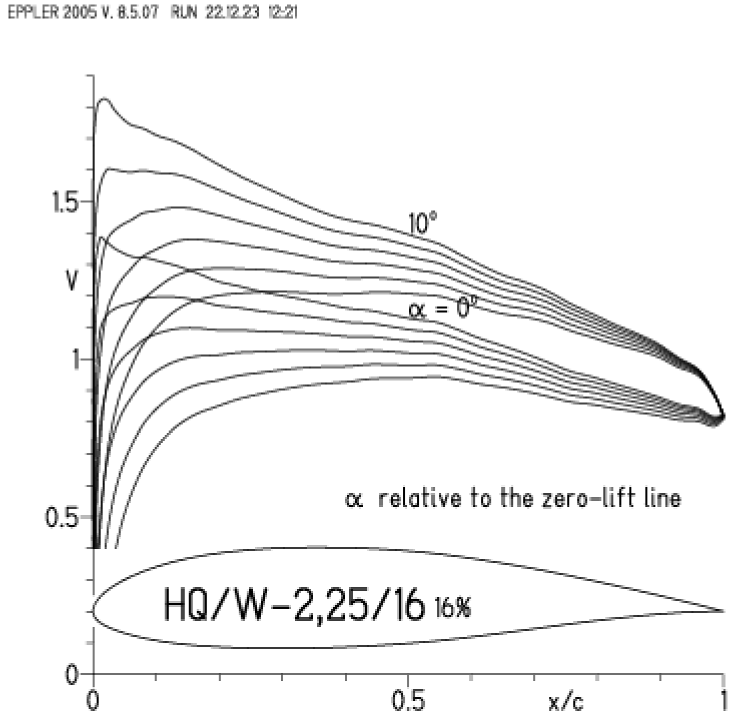


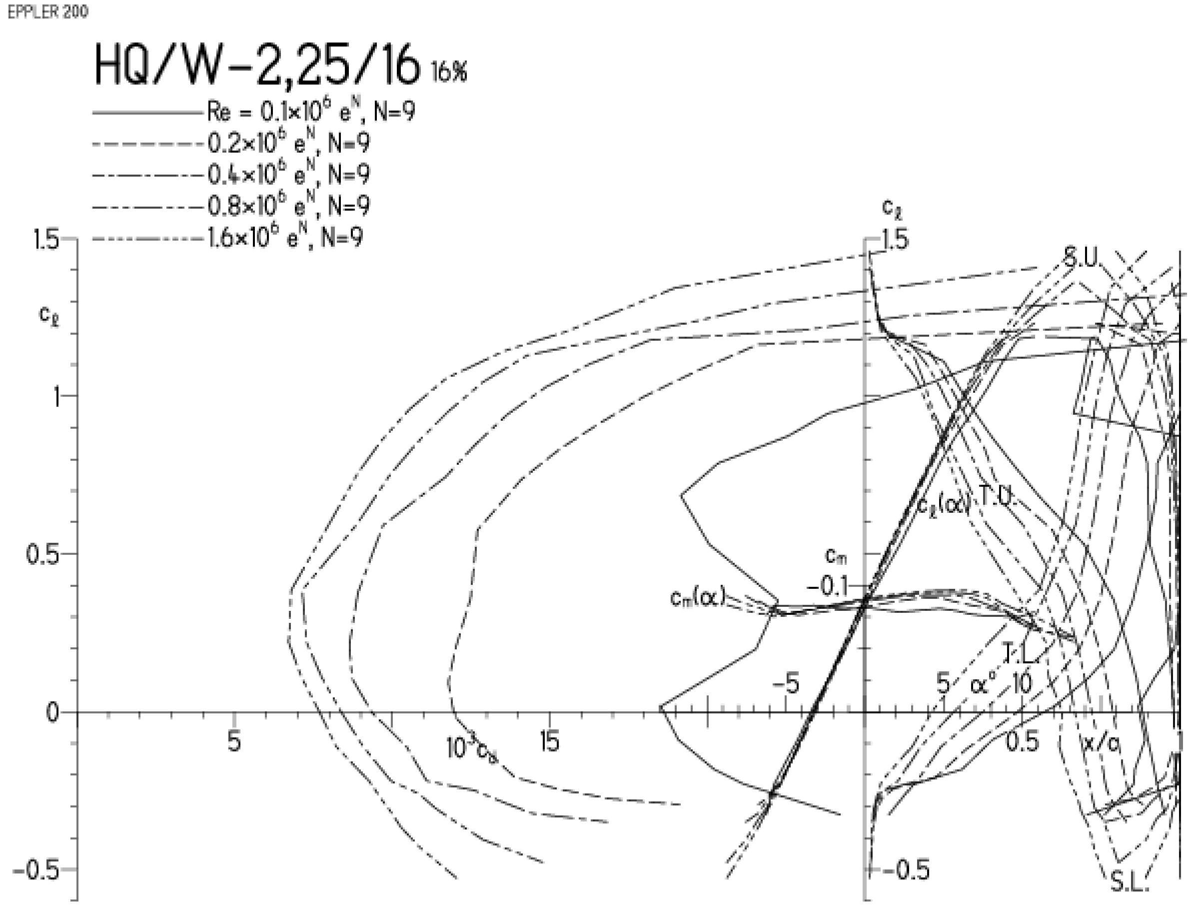
<u>HQ/W-2,25/16</u>, N=11



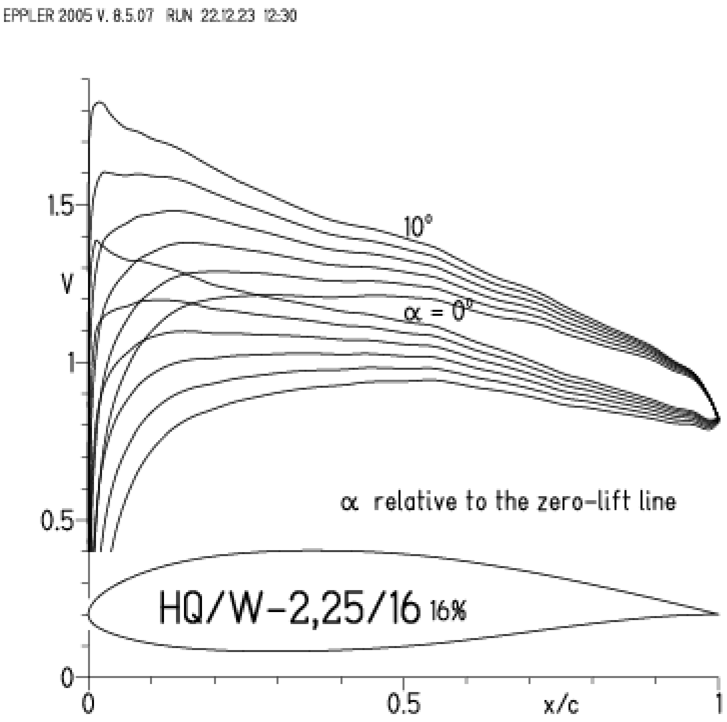


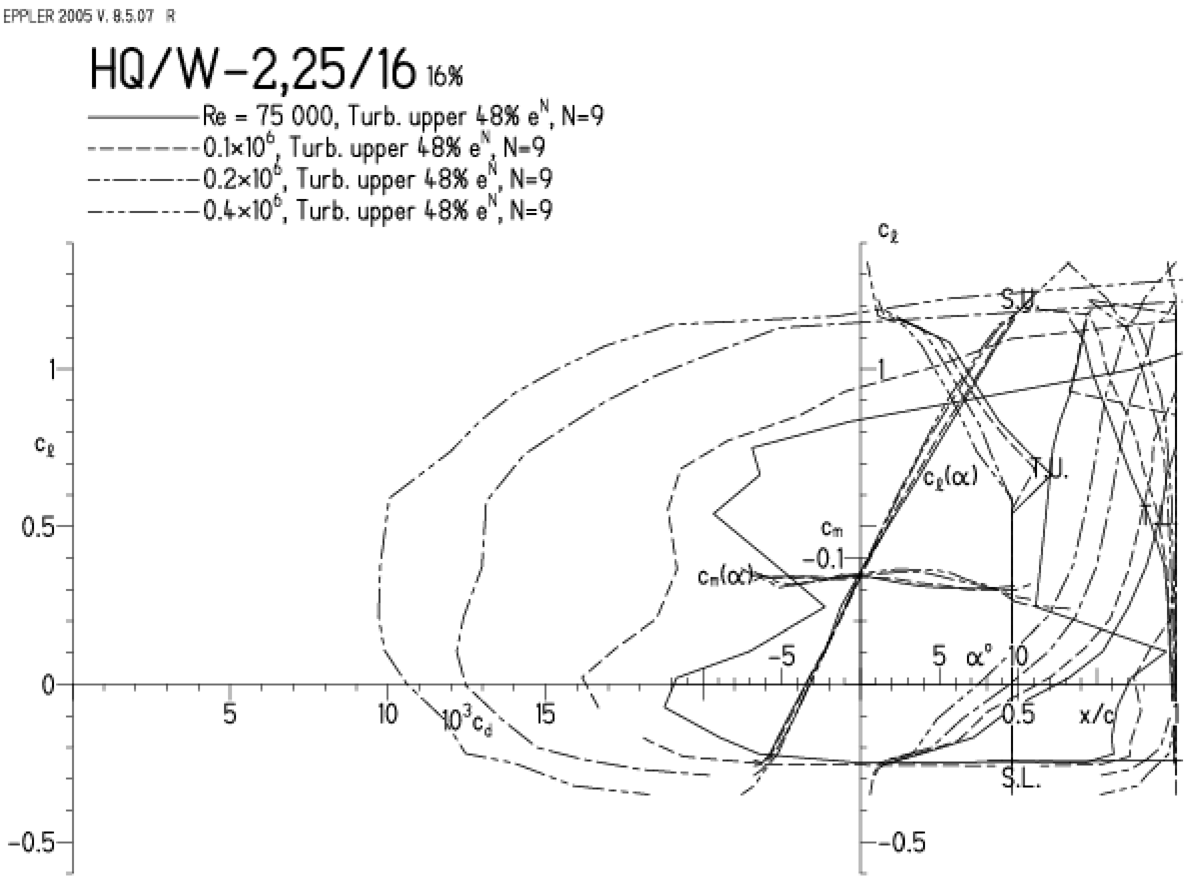
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
V
1.5
1
0.5
0
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1.5
1
0.5
0
-0.5
5
10^3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



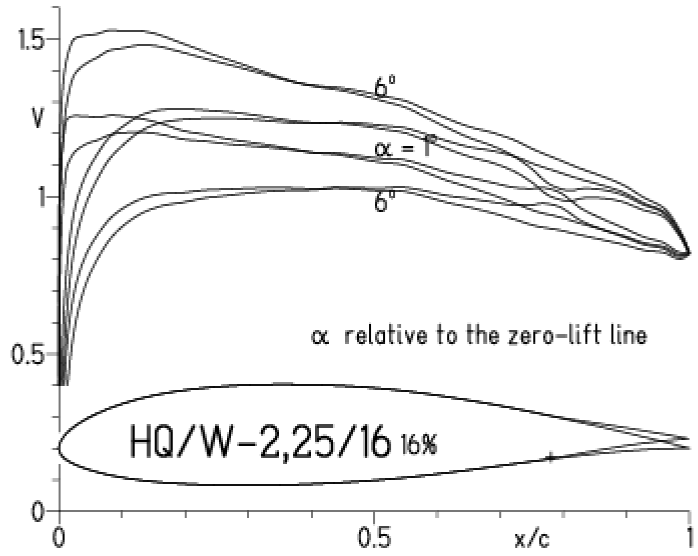


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

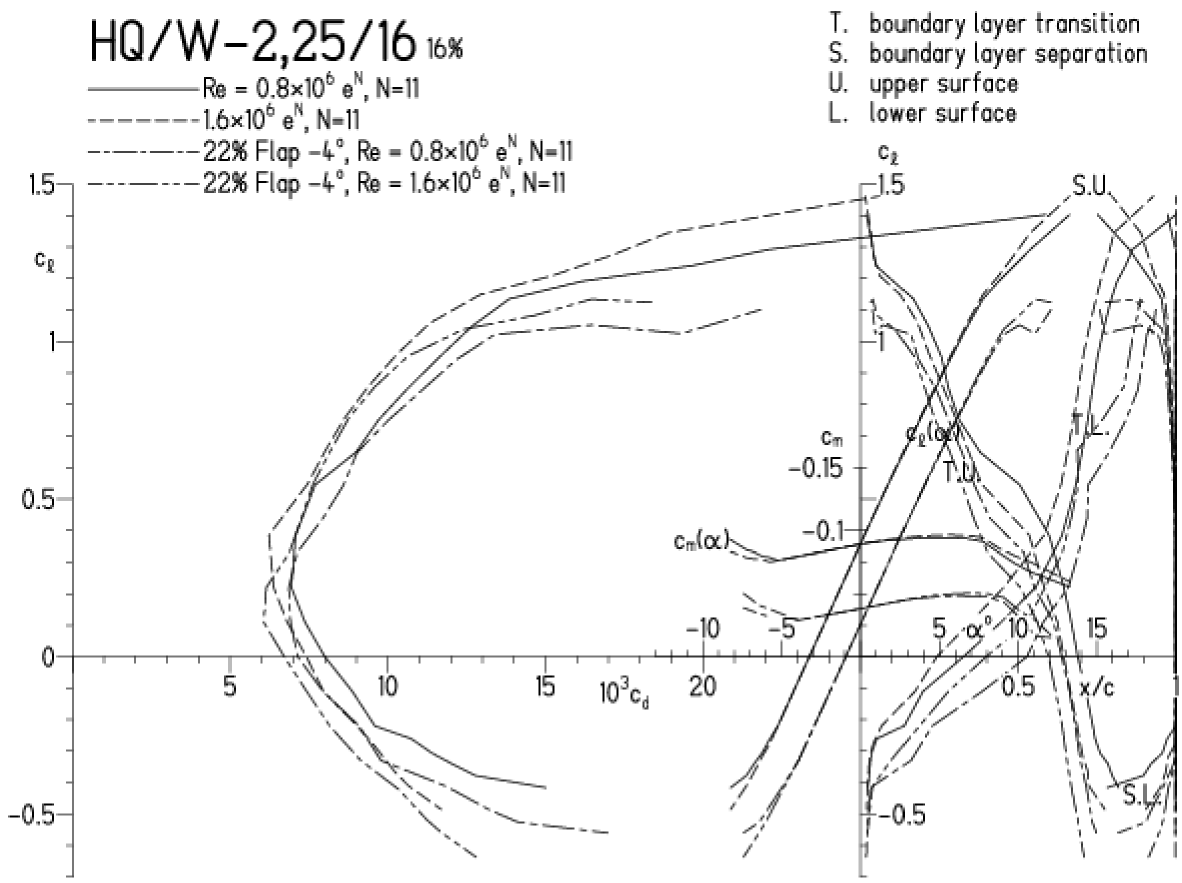
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

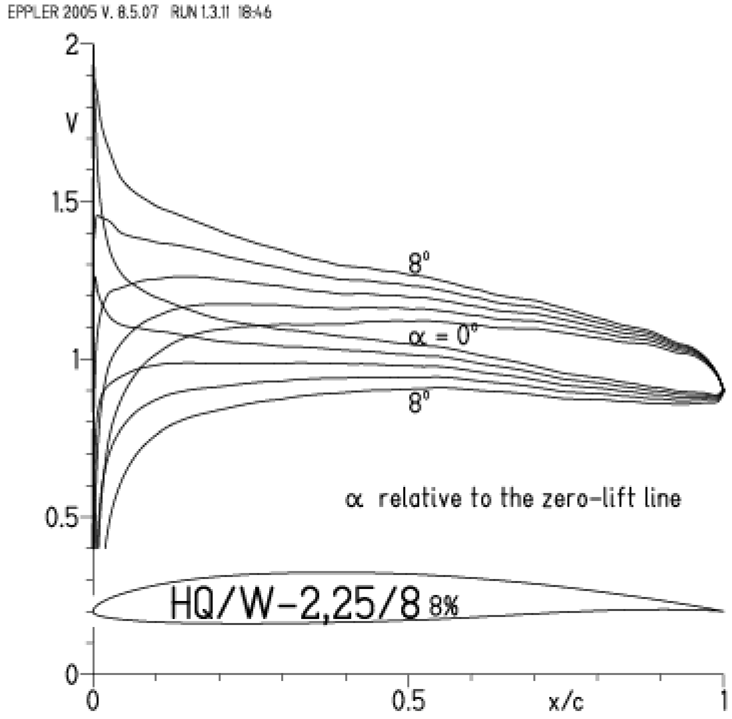
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

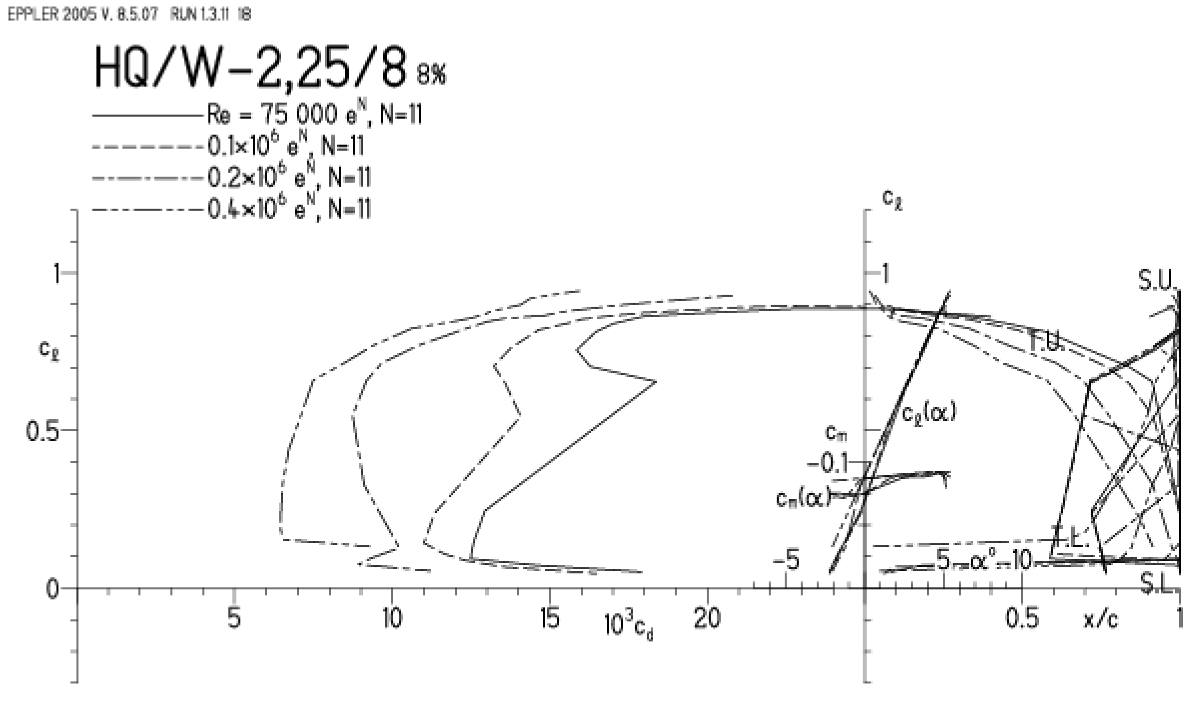


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

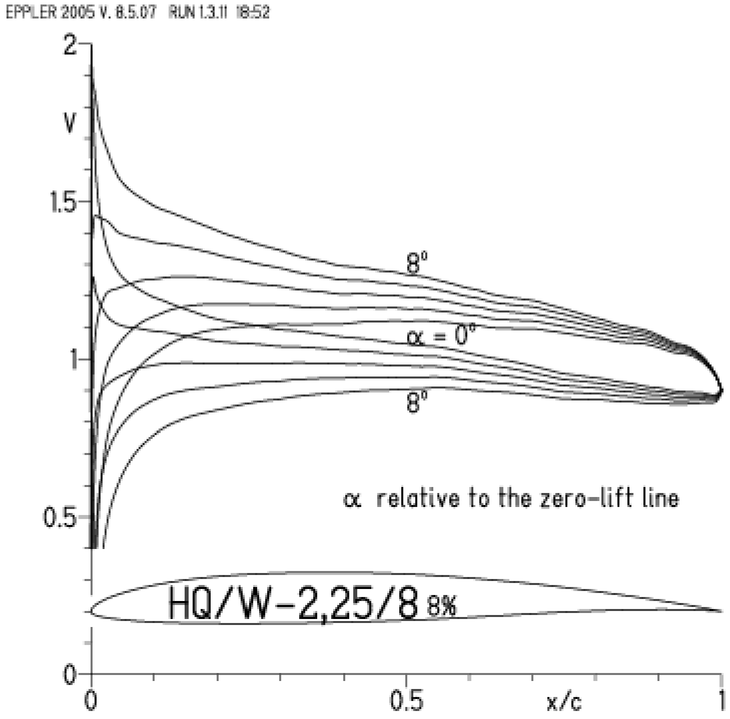


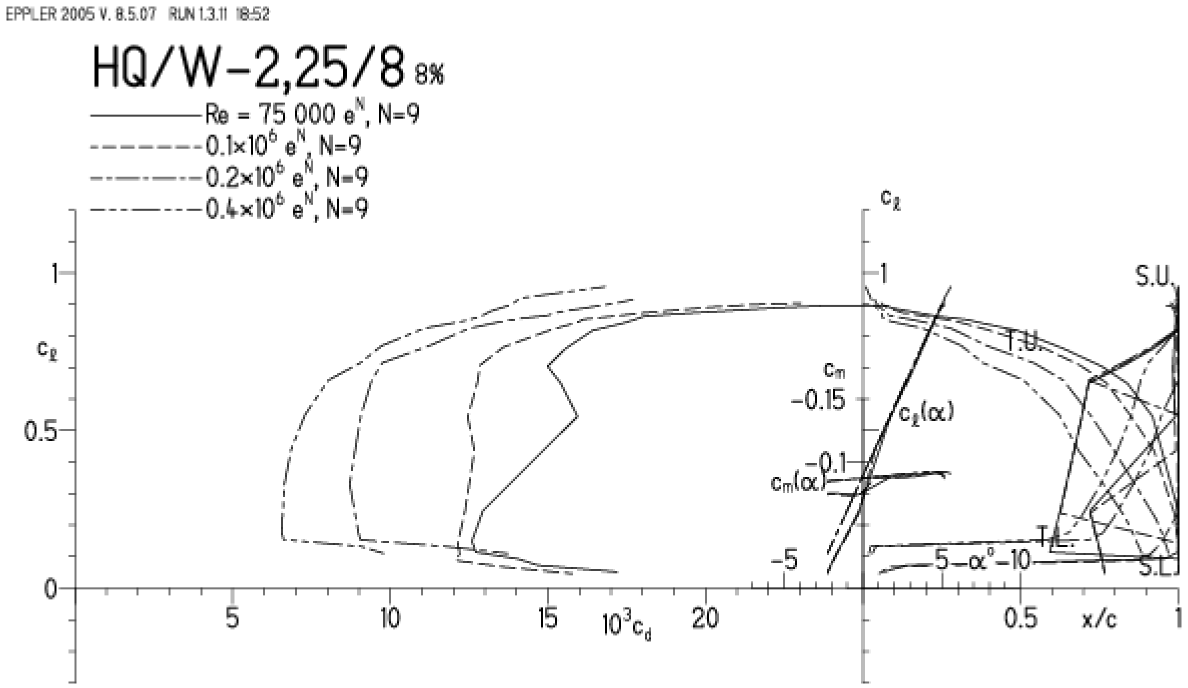
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

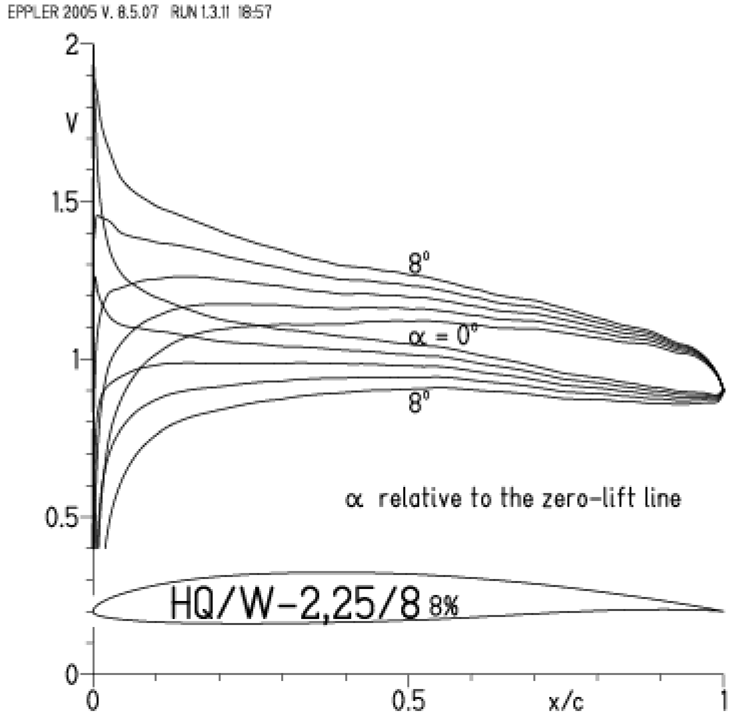

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l(α)
c_m(α)
T.U.
T.L.
S.U.
S.L.
10^3 c_d
x/c

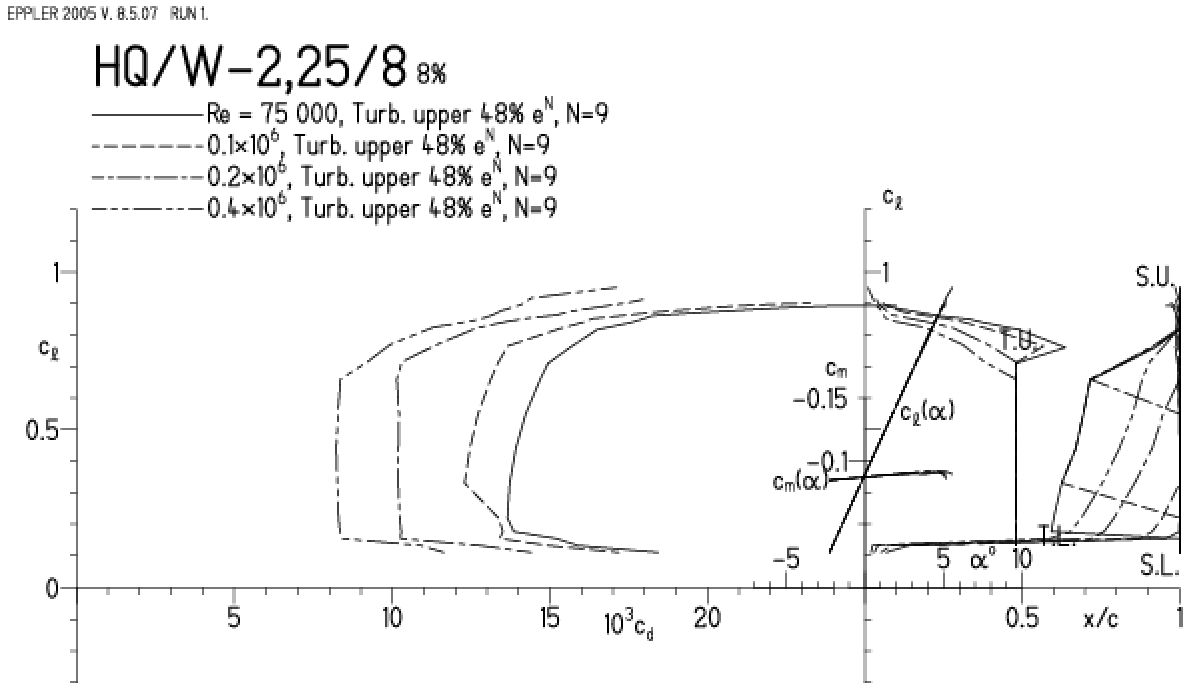
<u>HQ/W-2,25/8</u>, N=9





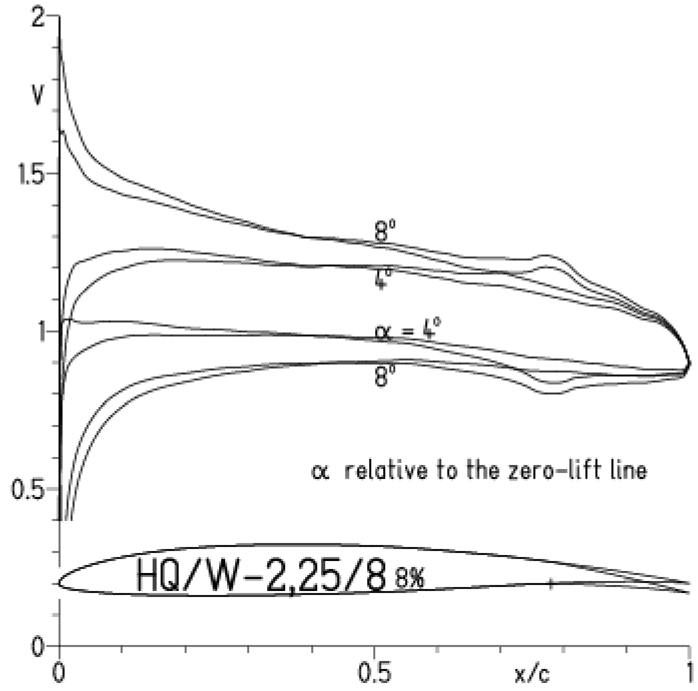
<u>HQ/W-2,25/8</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



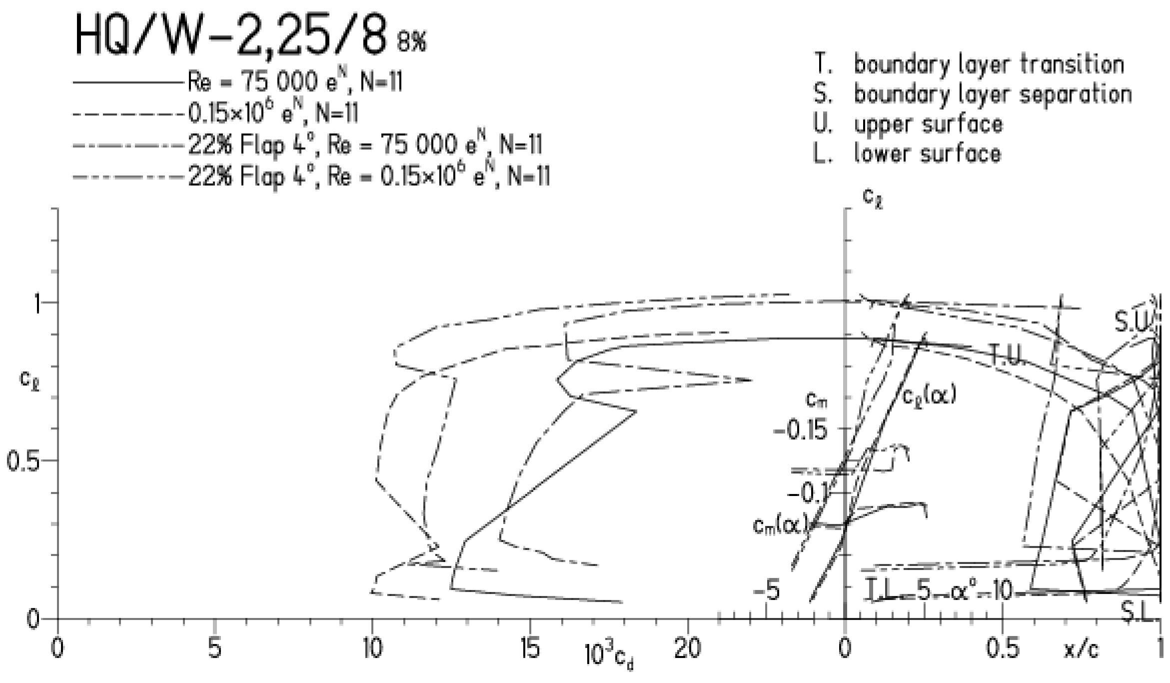


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

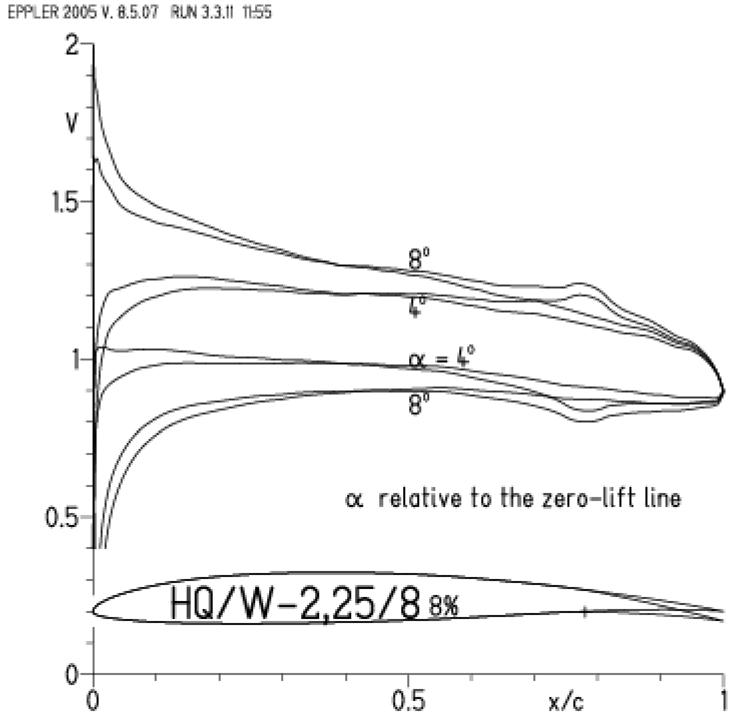
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

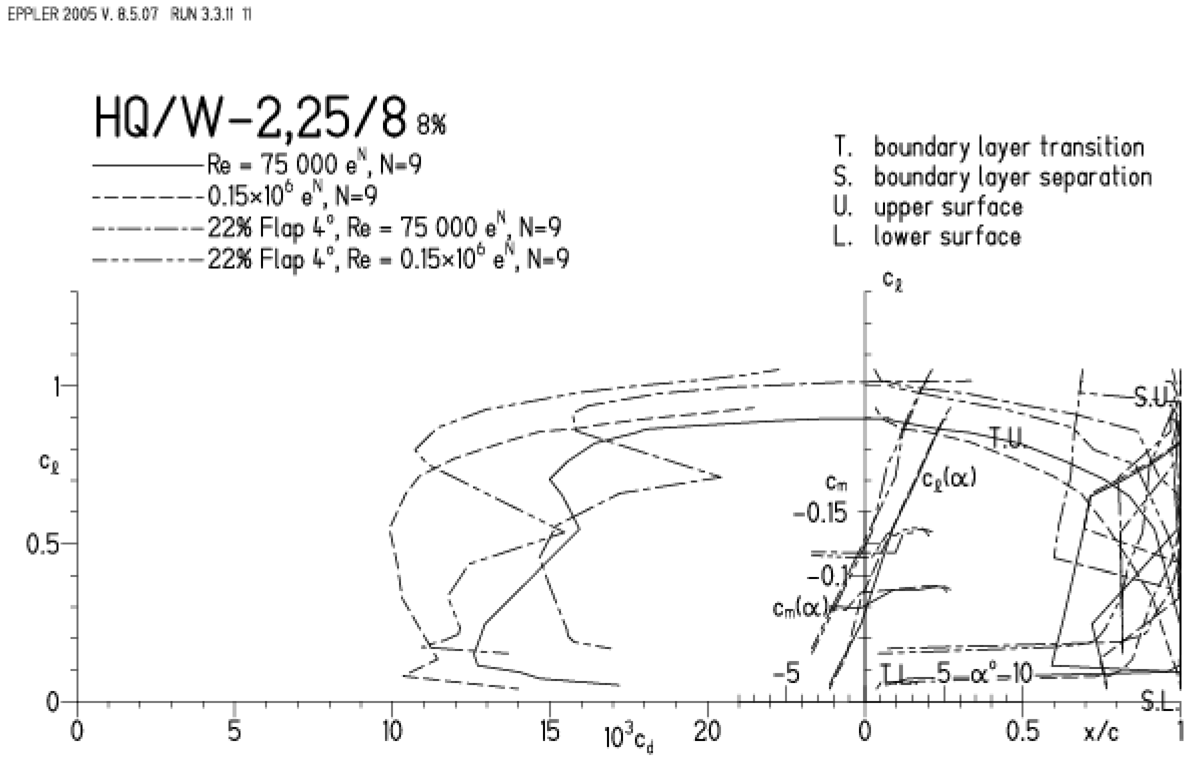


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

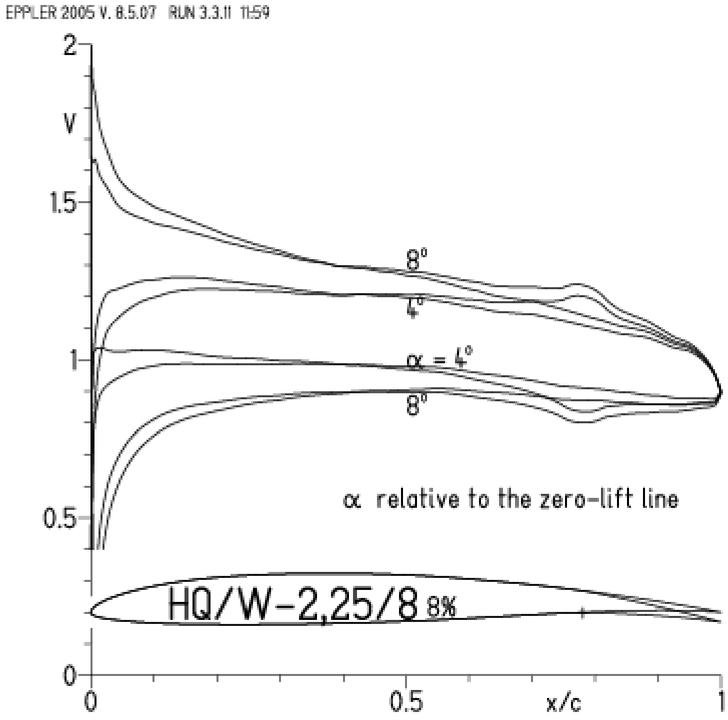


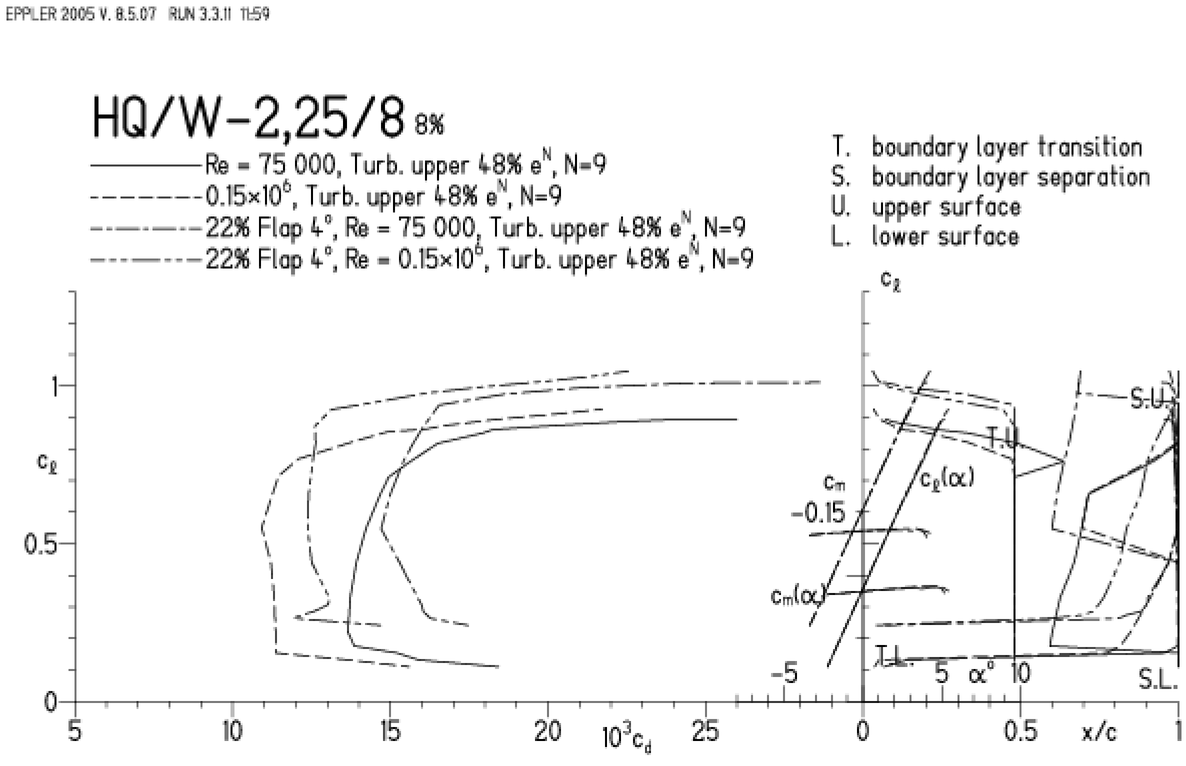
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





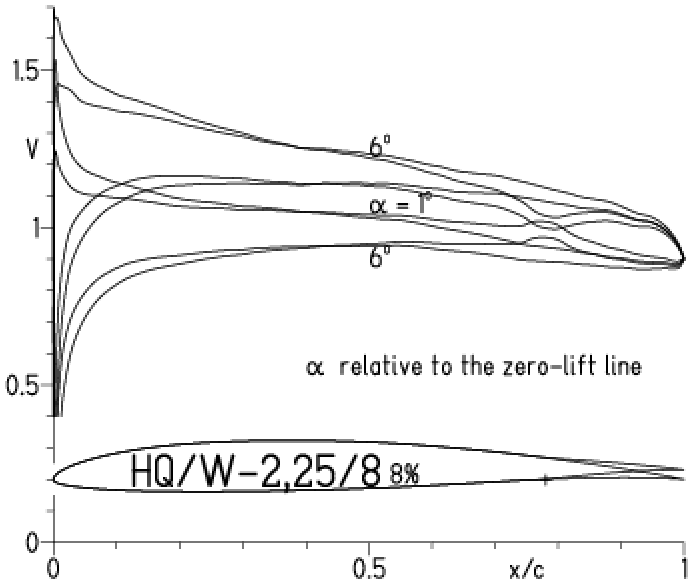
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



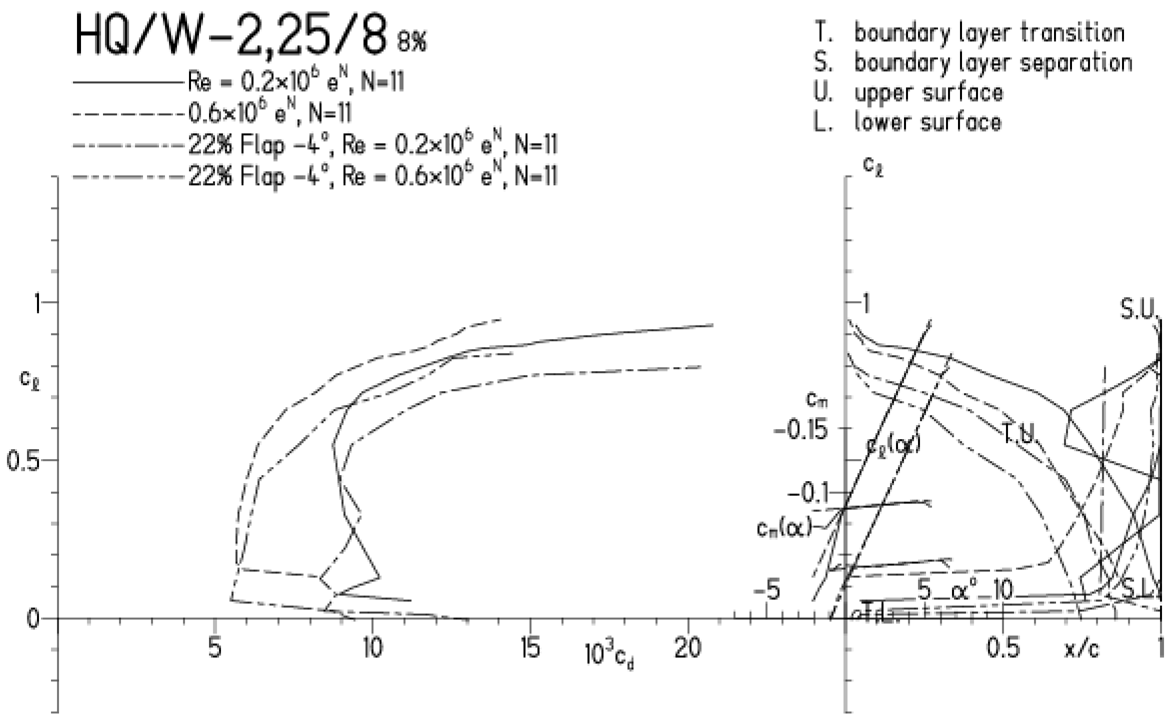


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

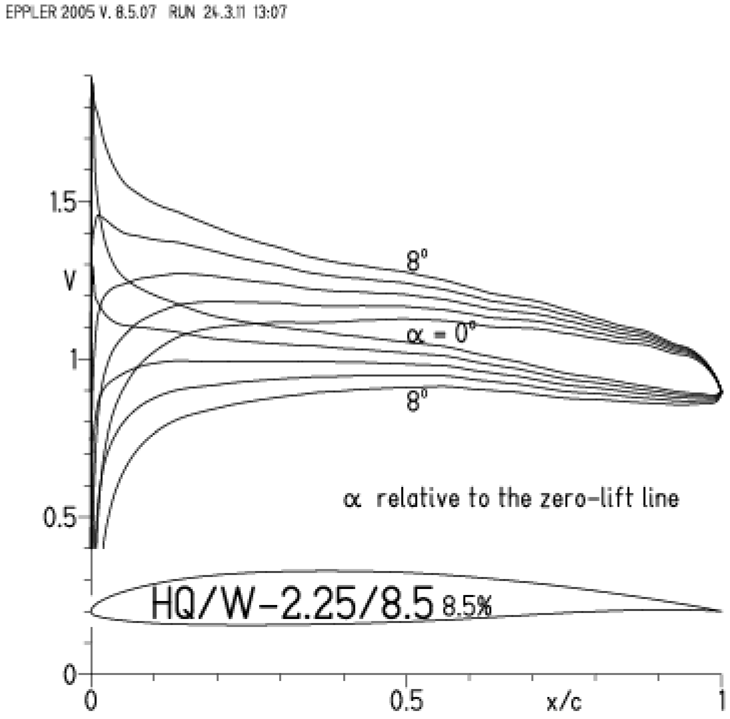
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

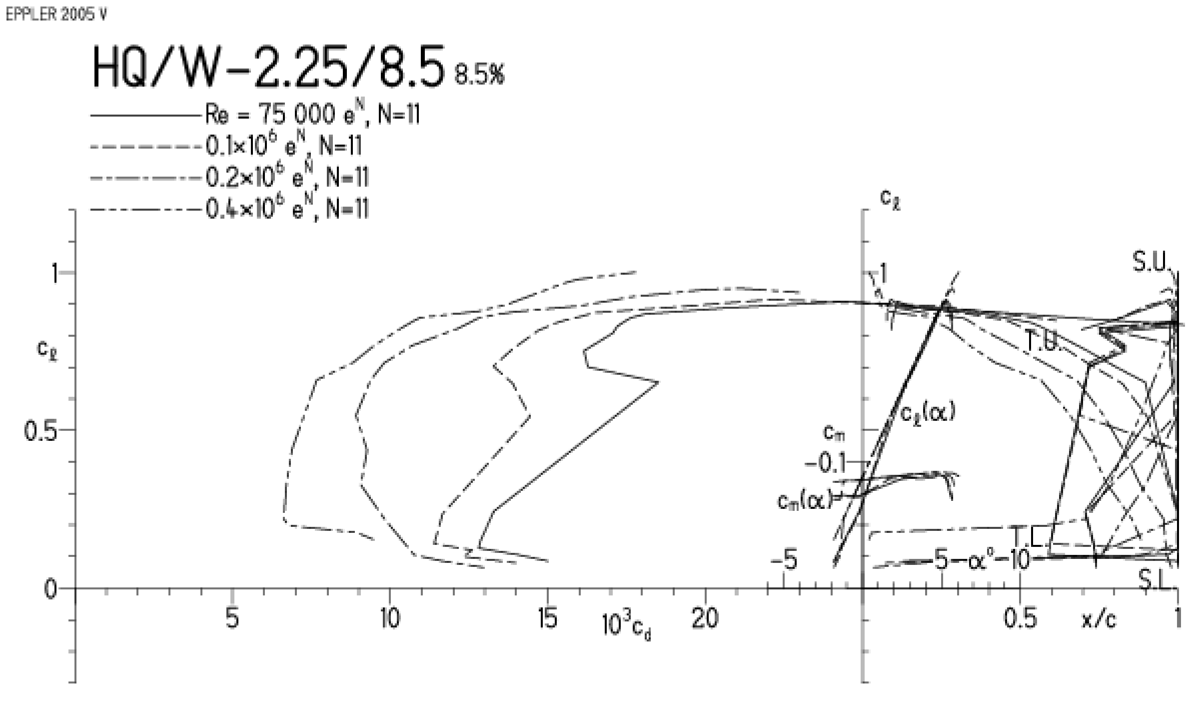


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



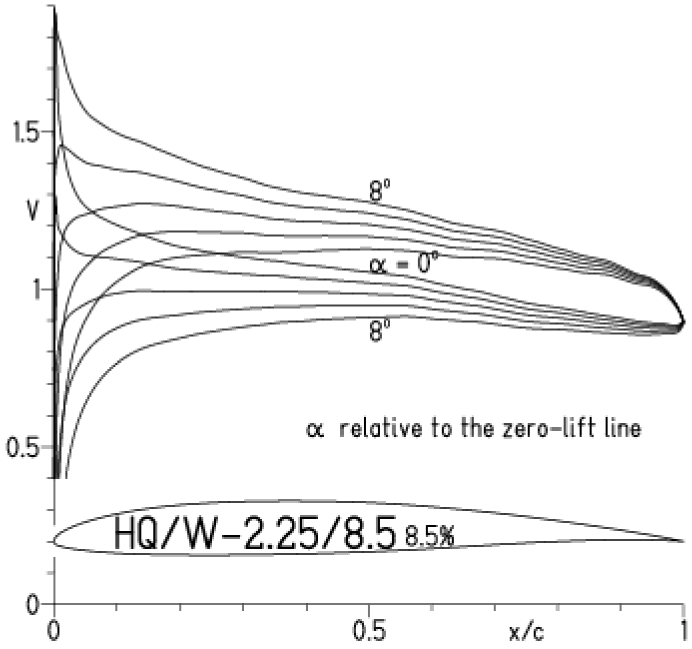
HQ/W-2,25/8,5, N=11



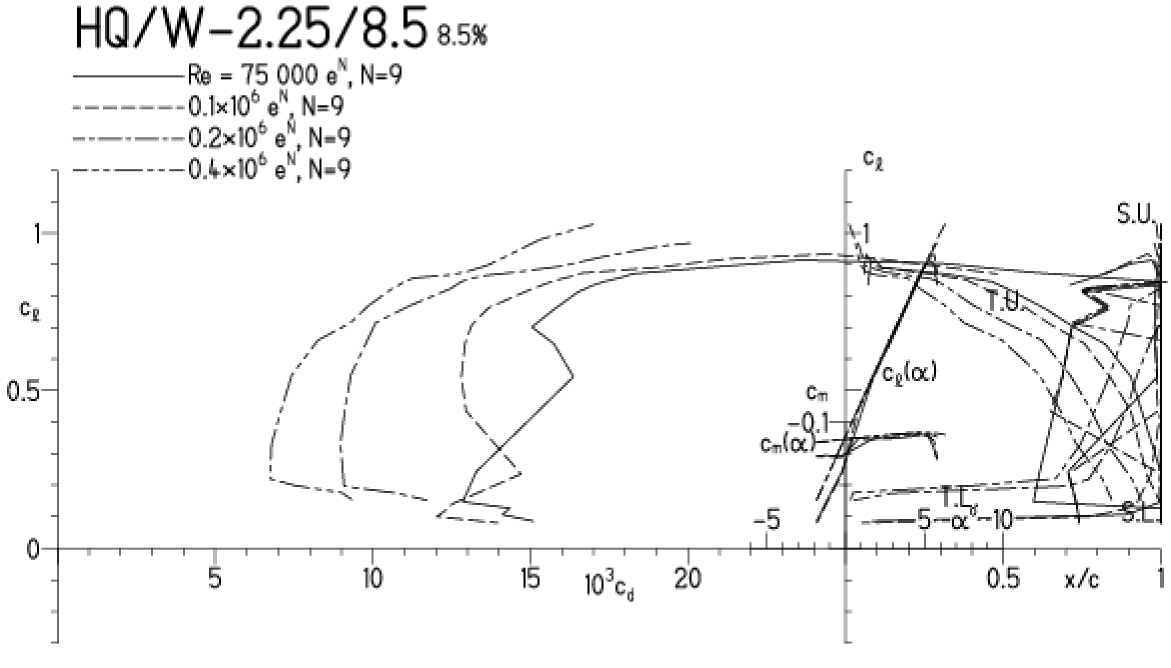


<u>HQ/W-2,25/8,5</u>, N=9

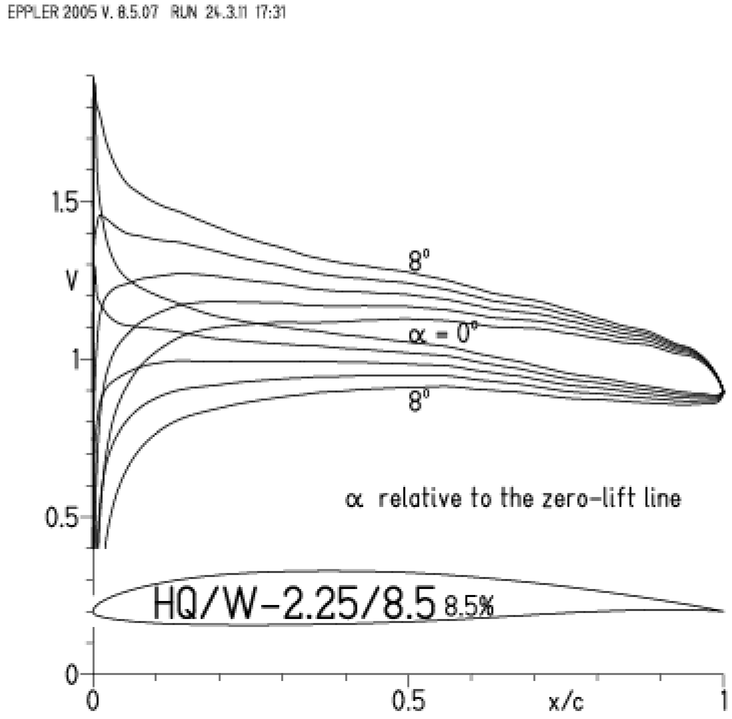
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

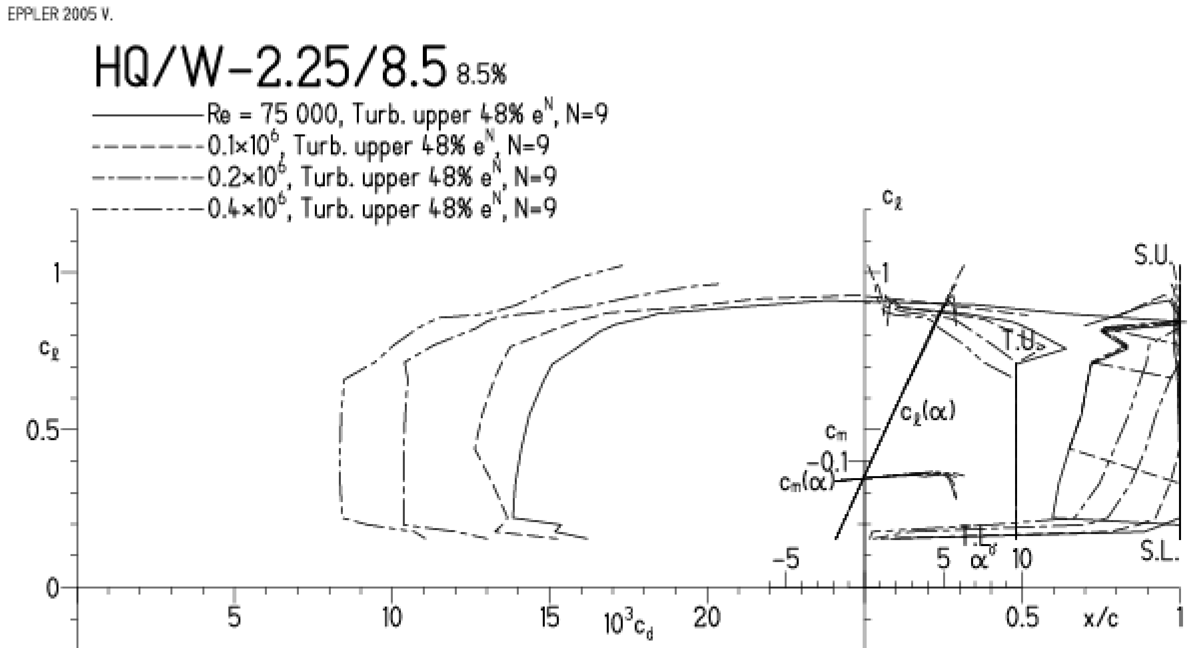


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



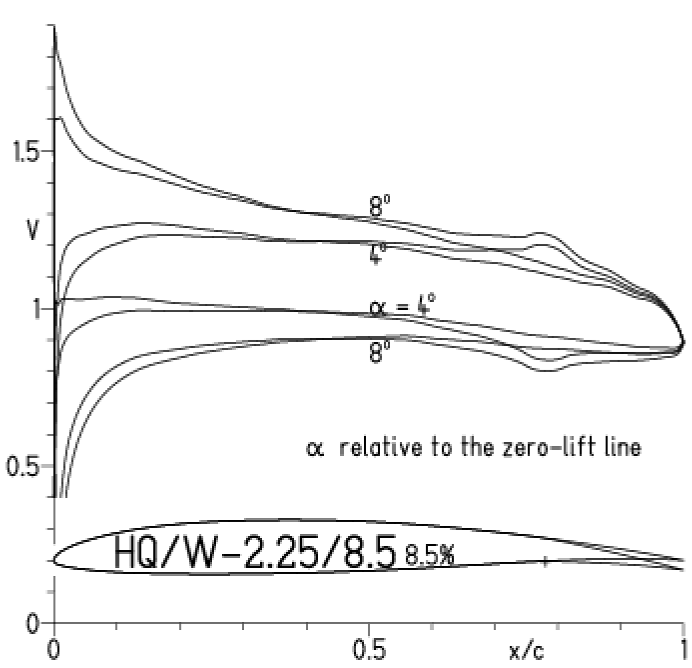
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



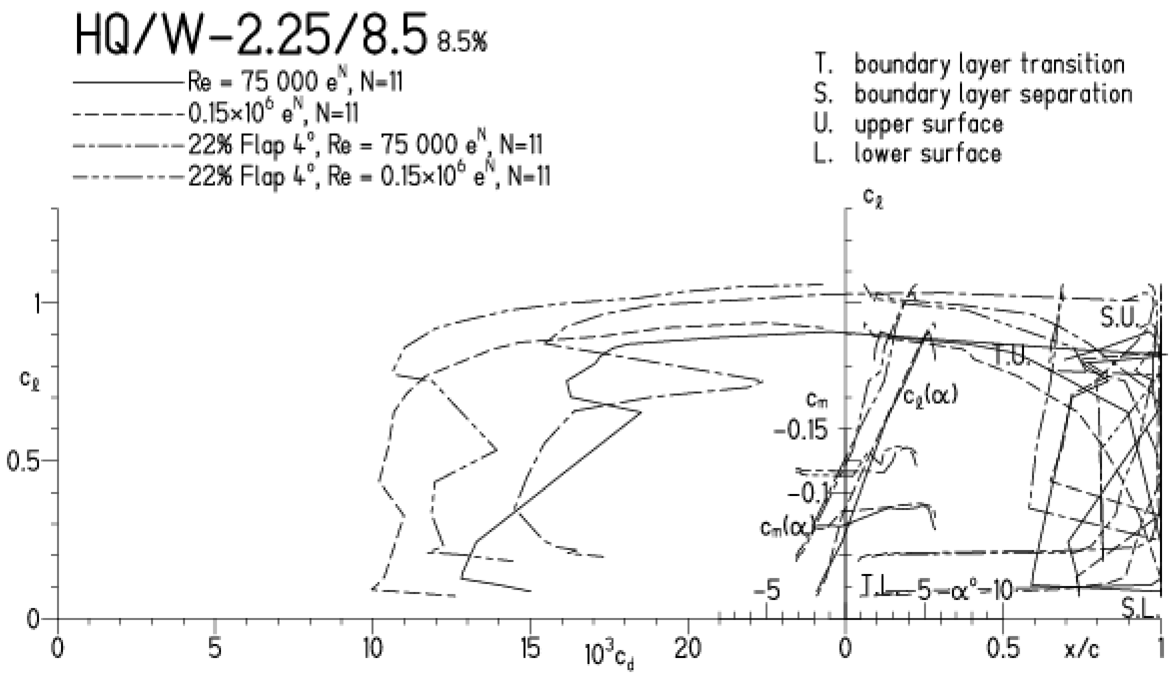


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

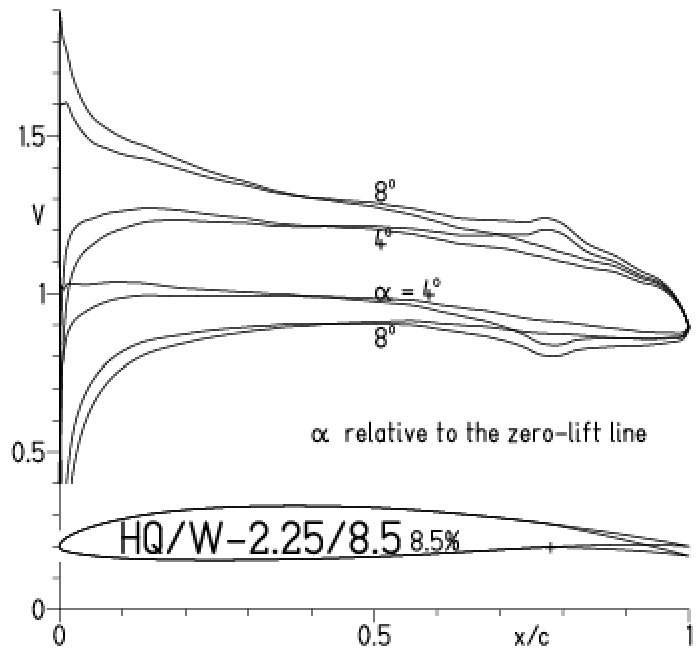


EPPLER 2005 V. 8.5.

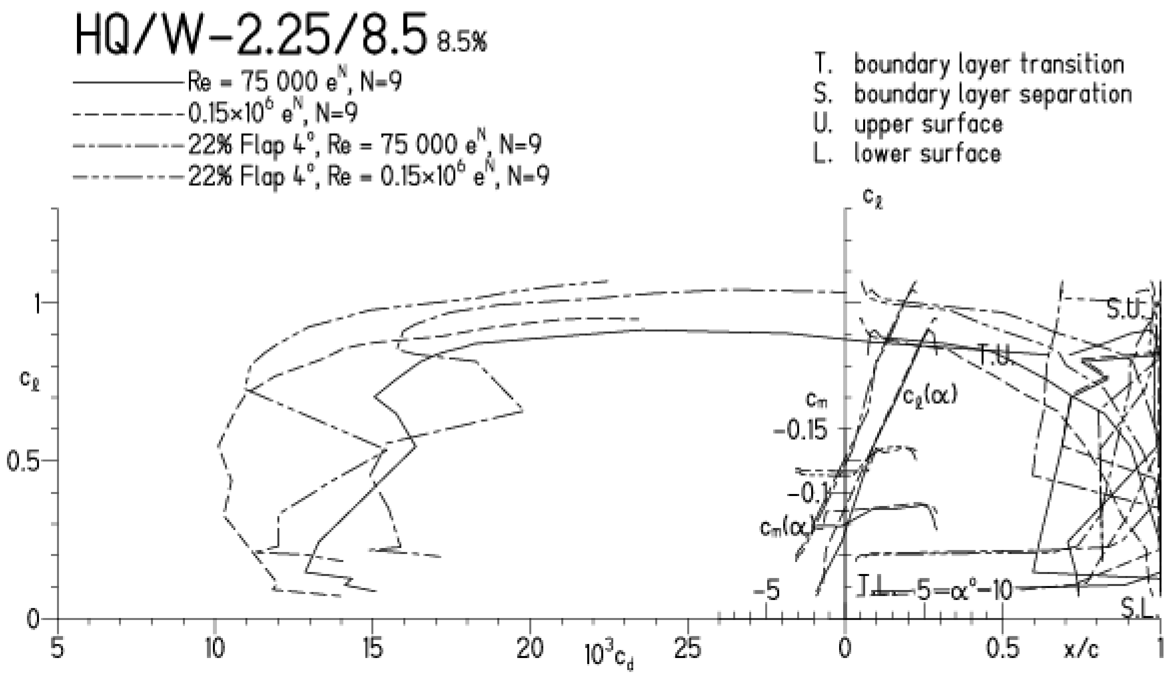


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

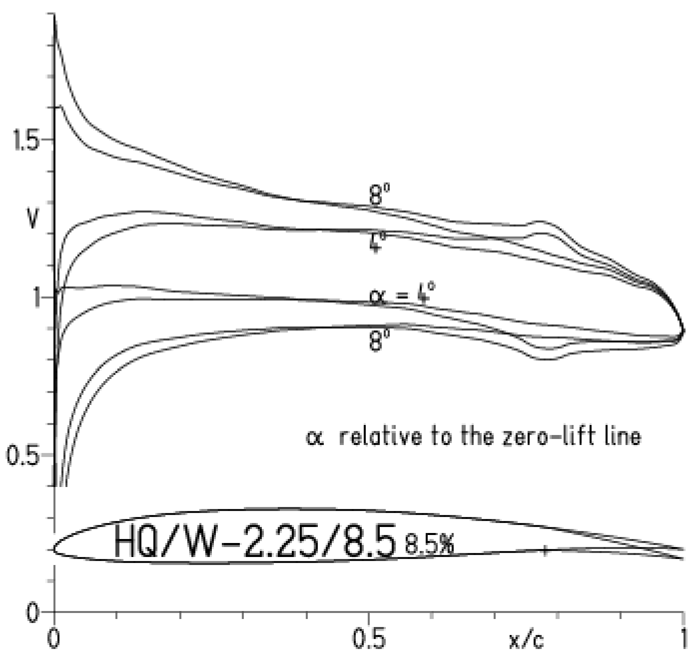
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

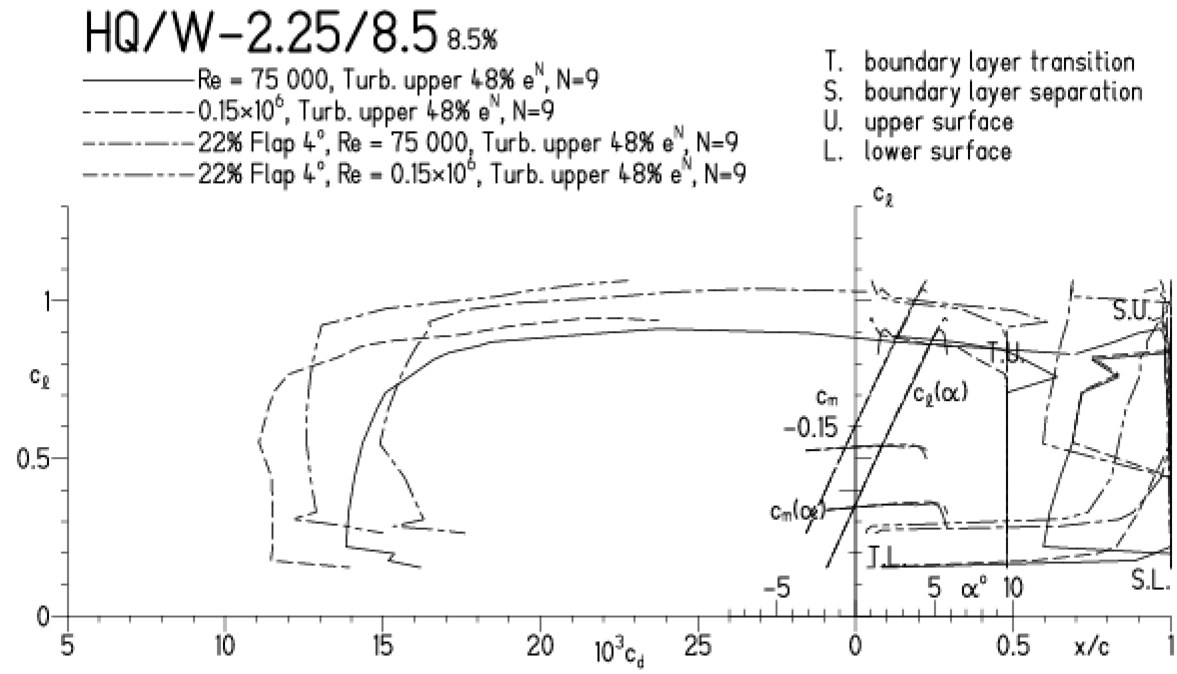


EPPLER 2005 V.



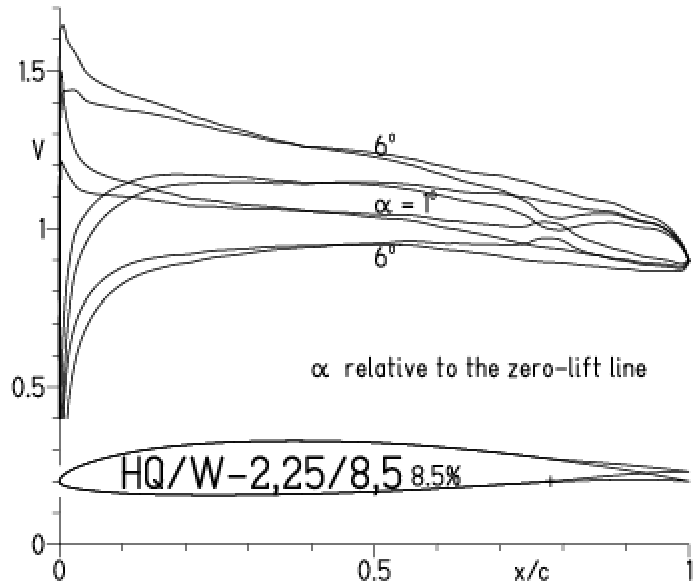
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



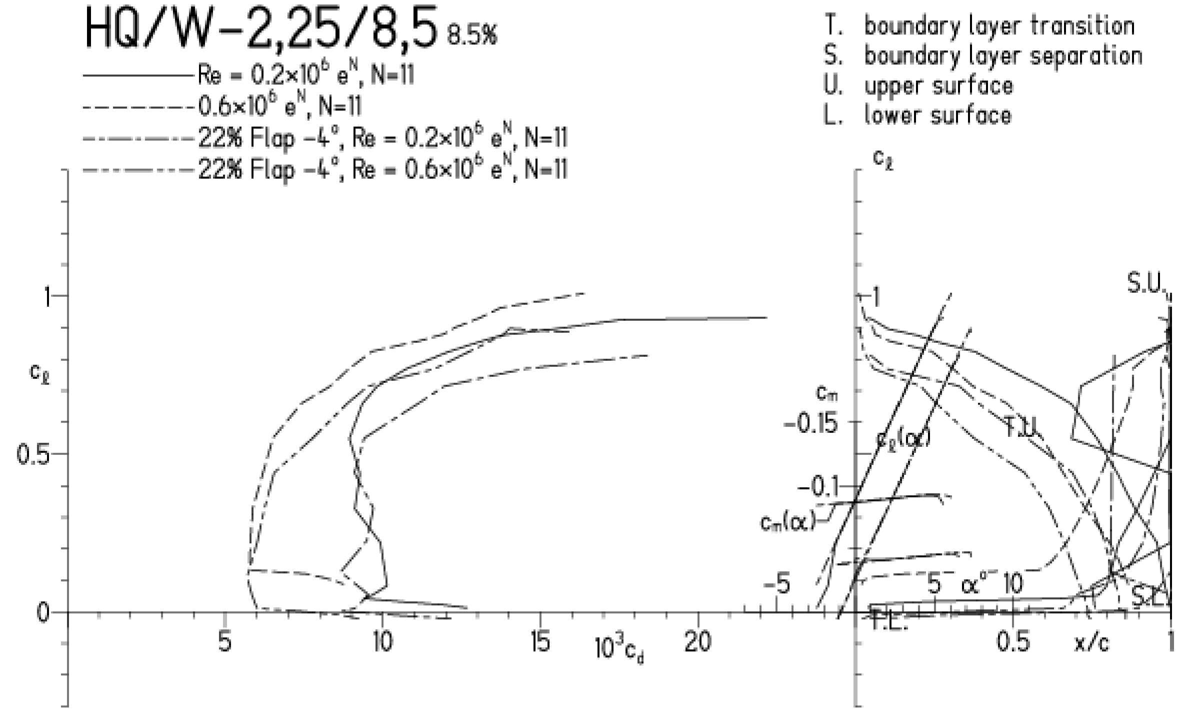


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

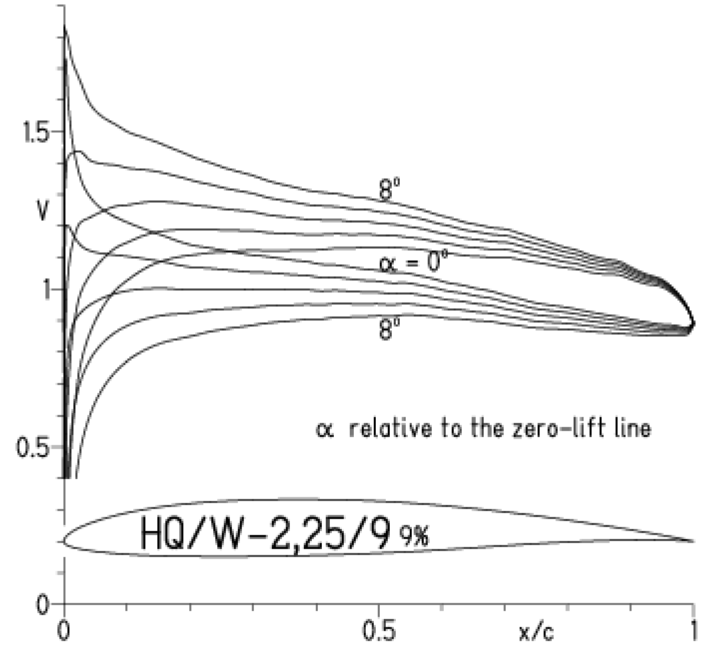


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

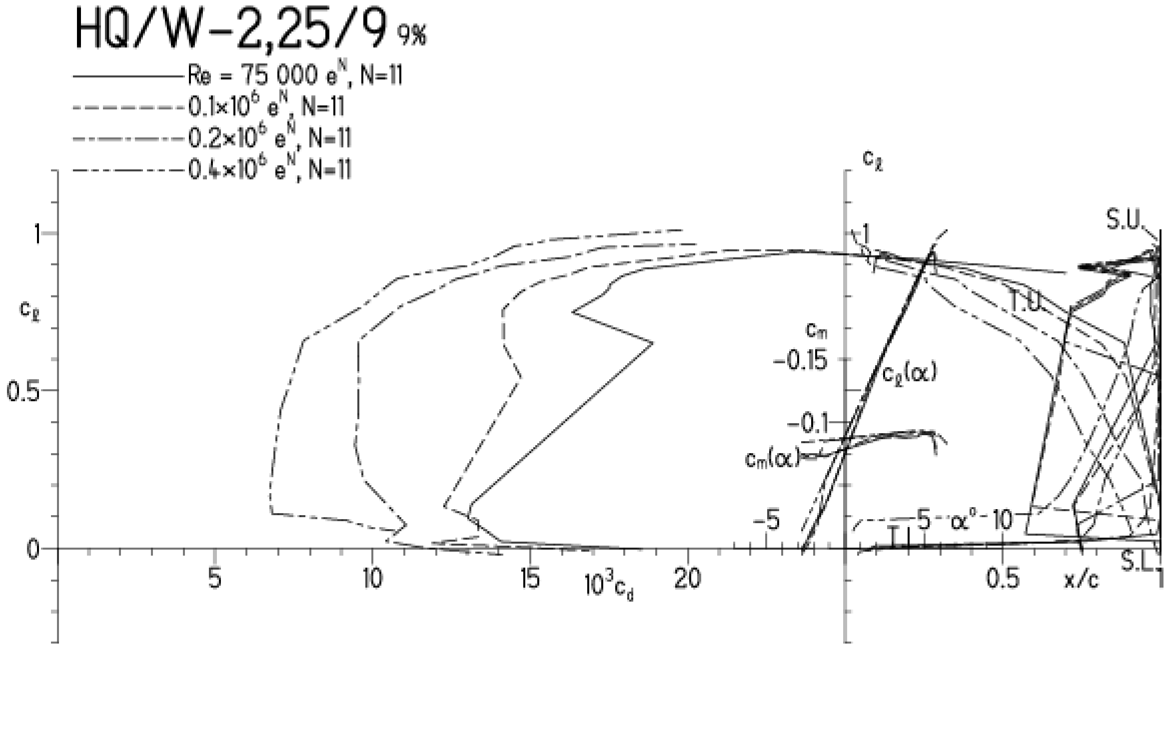


HQ/W-2,25/9, N=11

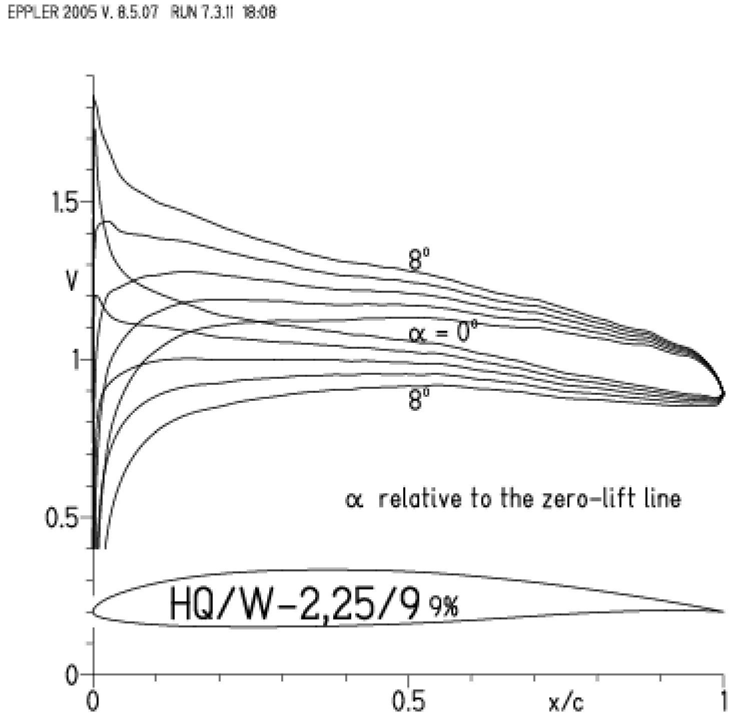
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

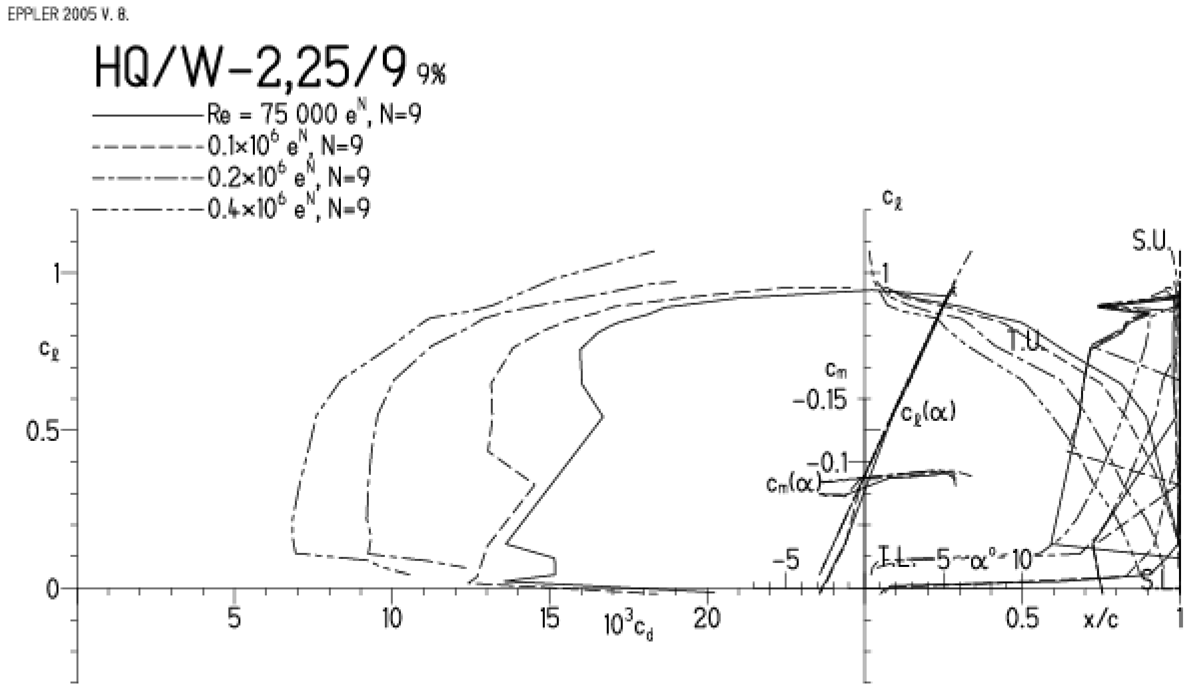


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

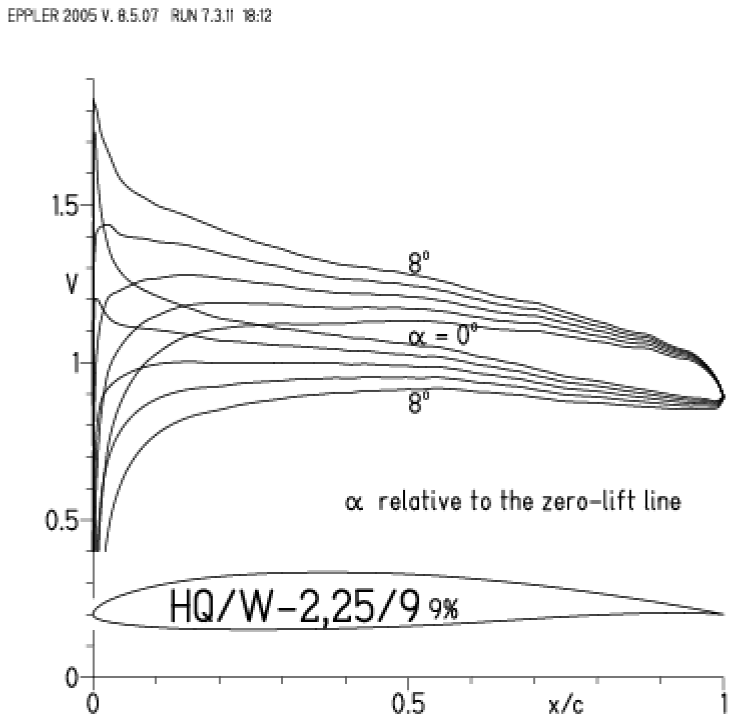


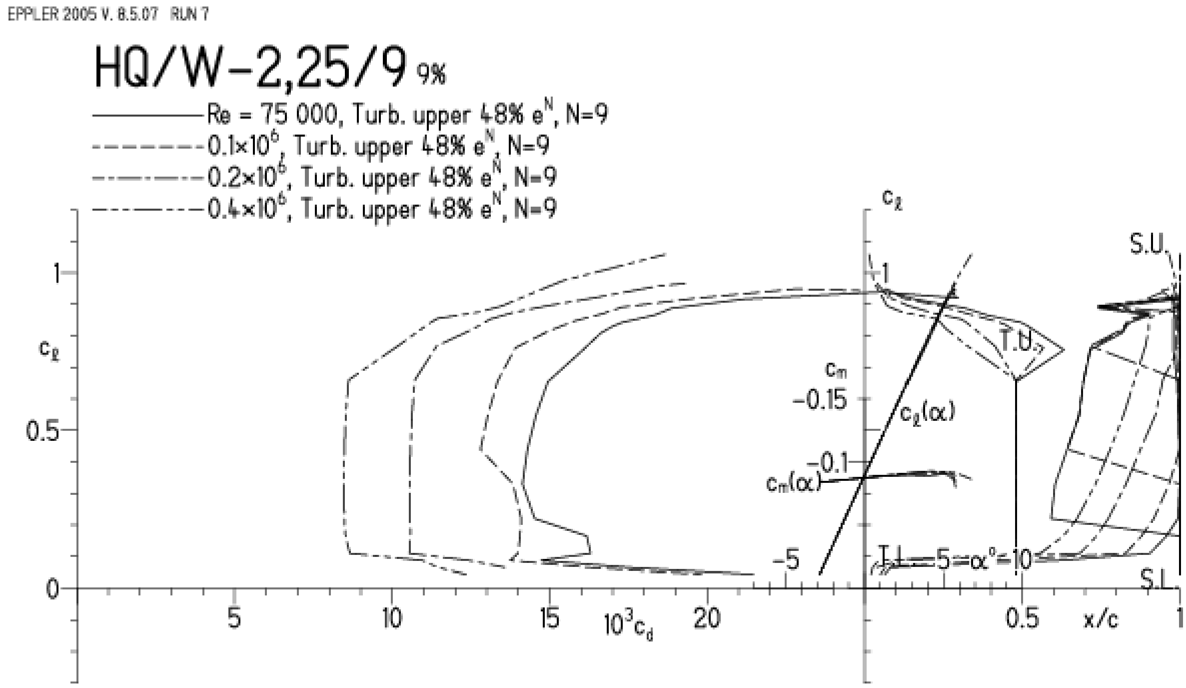
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

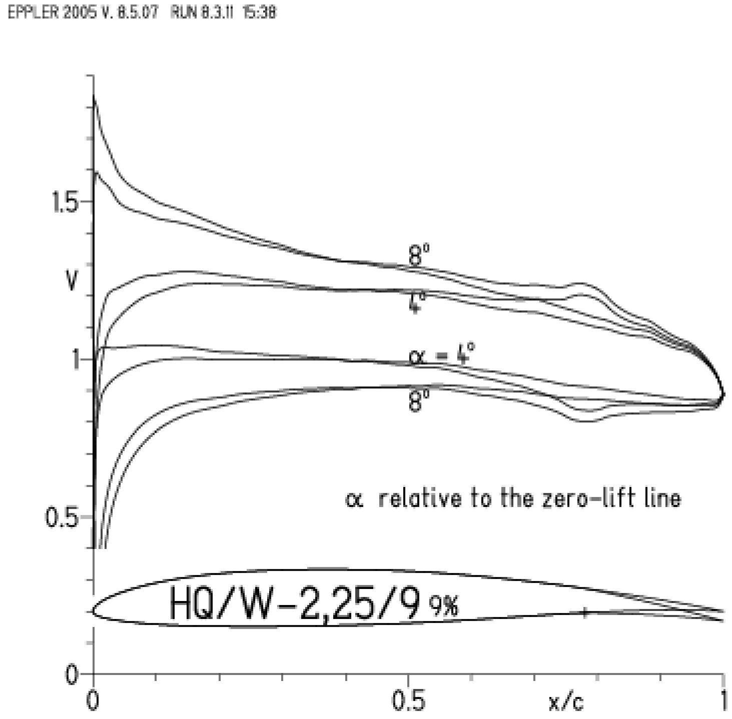

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10³c_d
20
c_l
S.U.
1
T.U.
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.L.
0.5
x/c
1

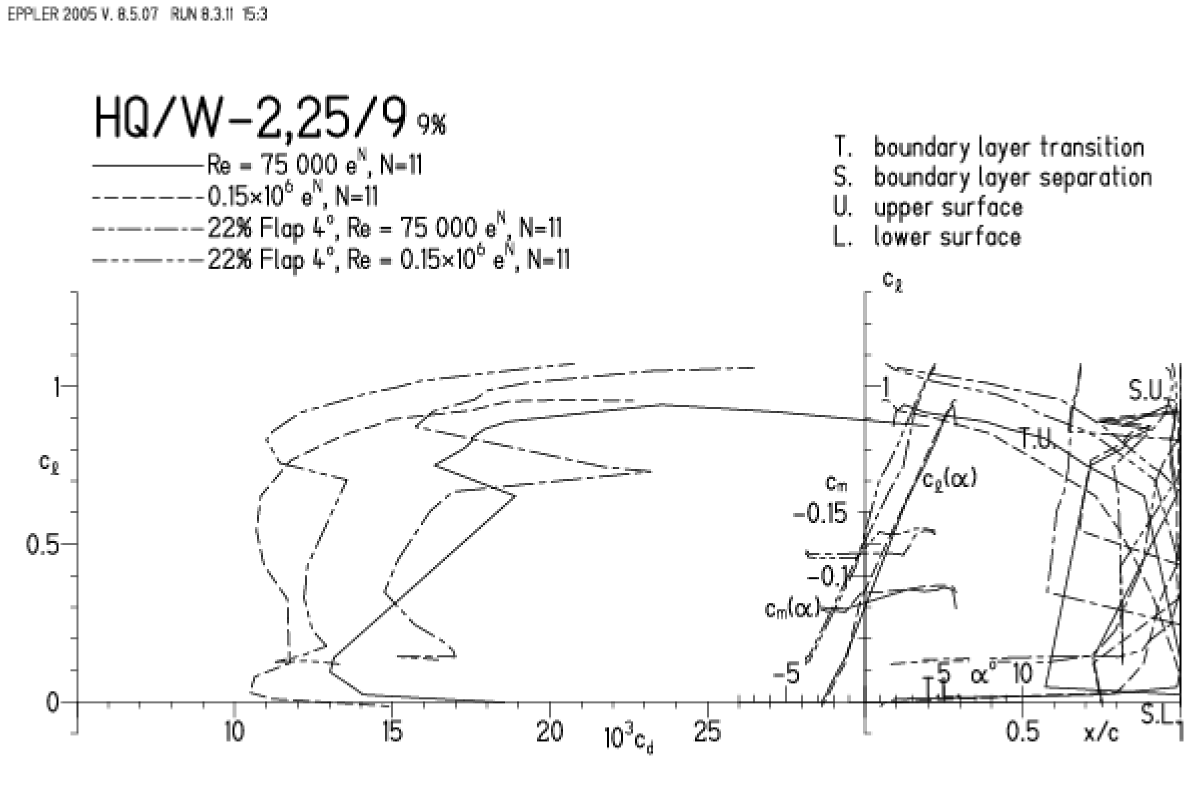
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





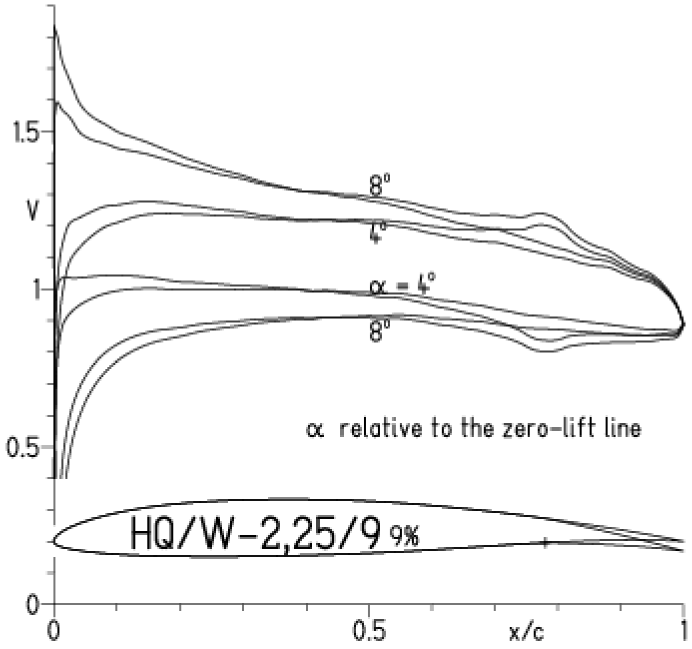
<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag



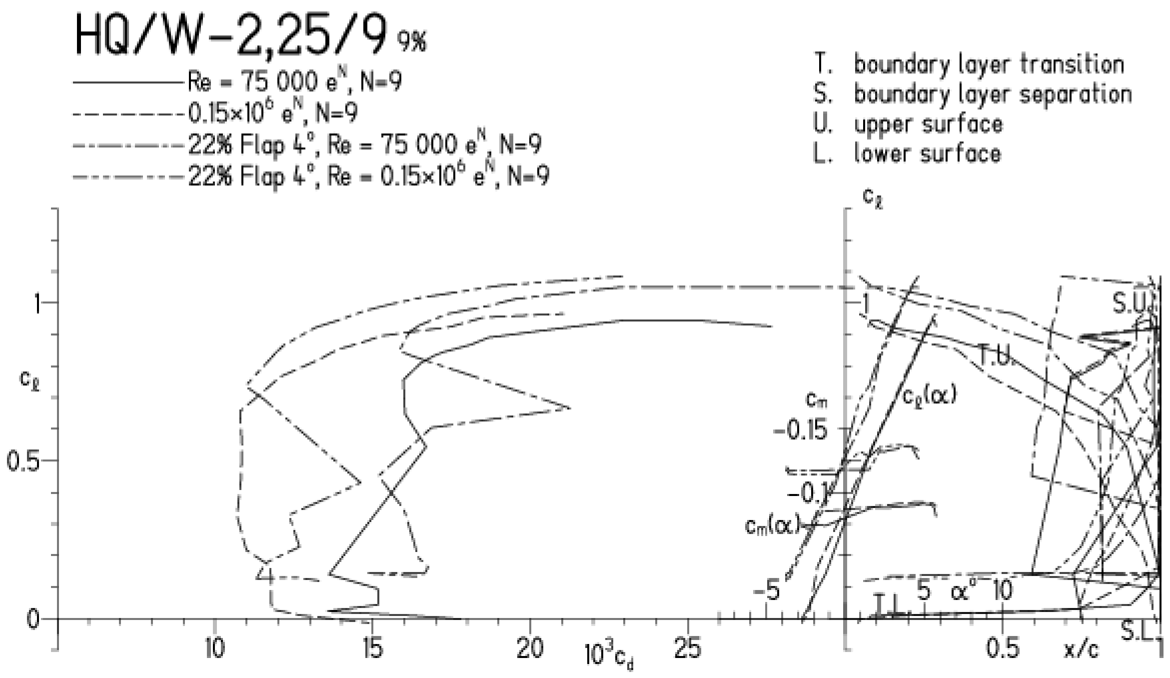


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

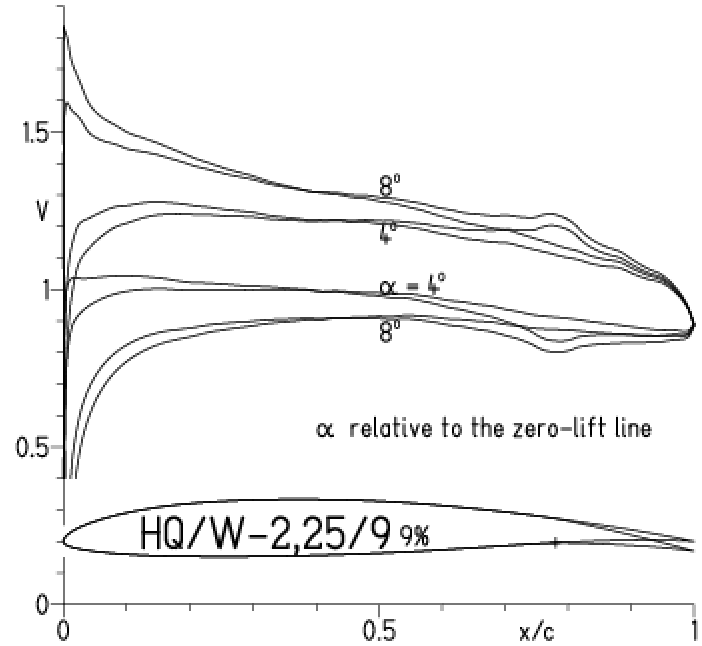


EPPLER 2005 V. 8.5.07 RUN 8.3.1

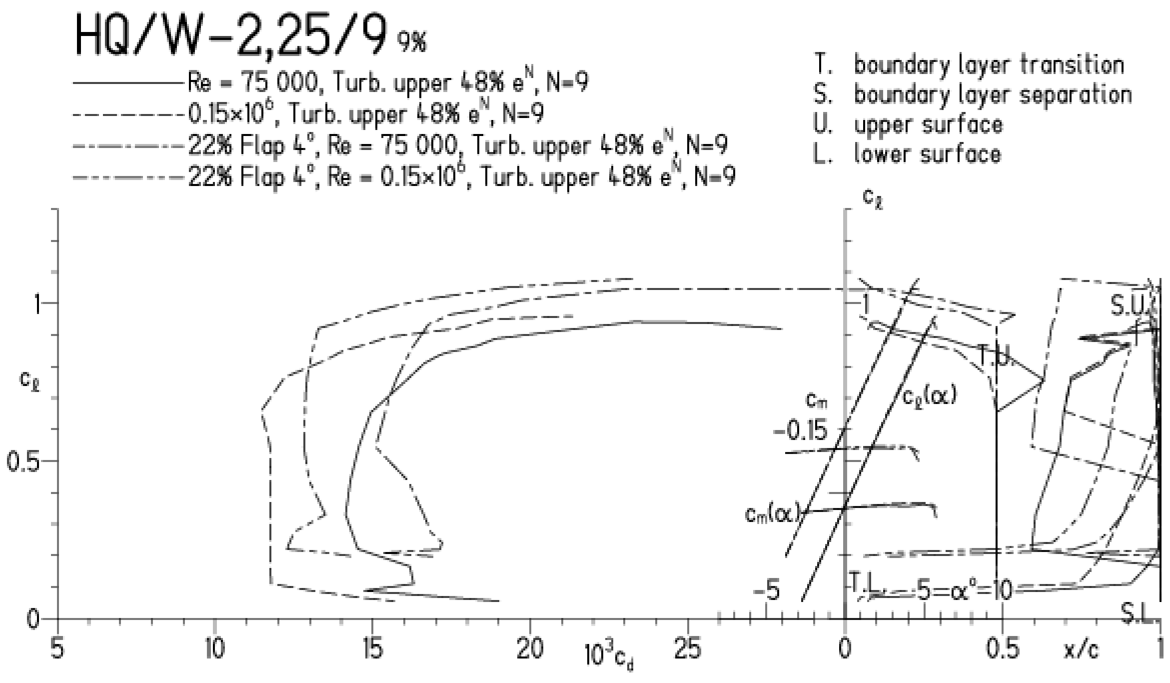


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

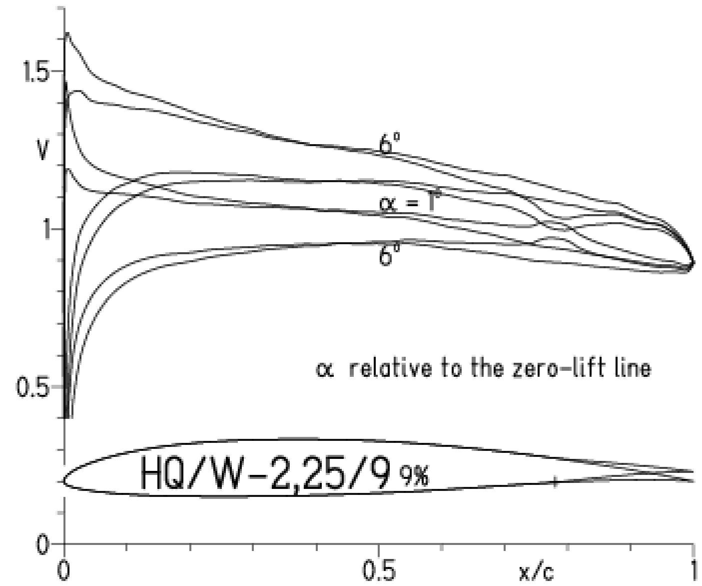


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

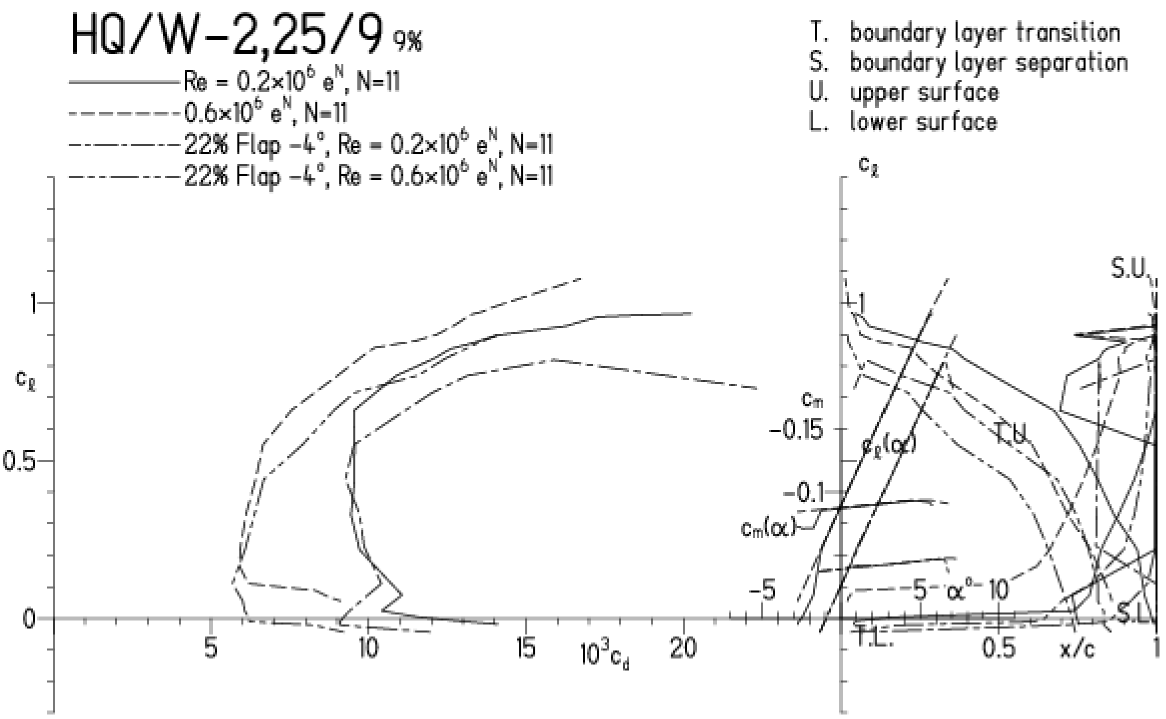


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

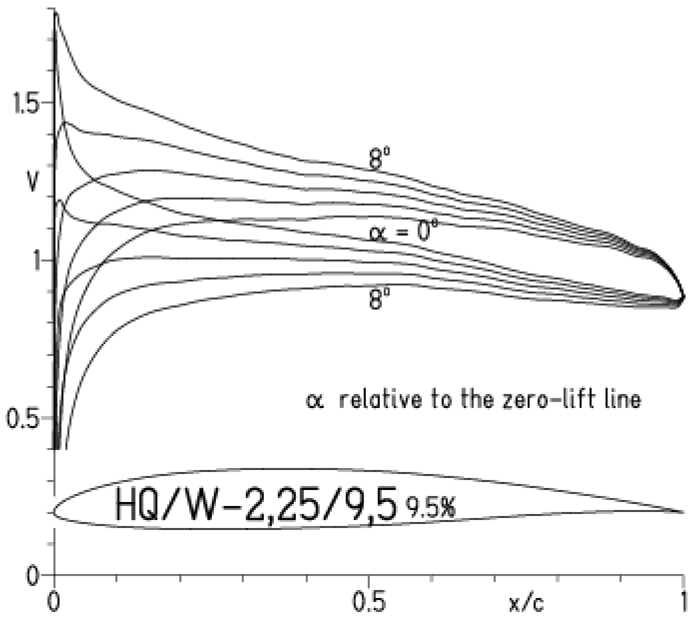


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

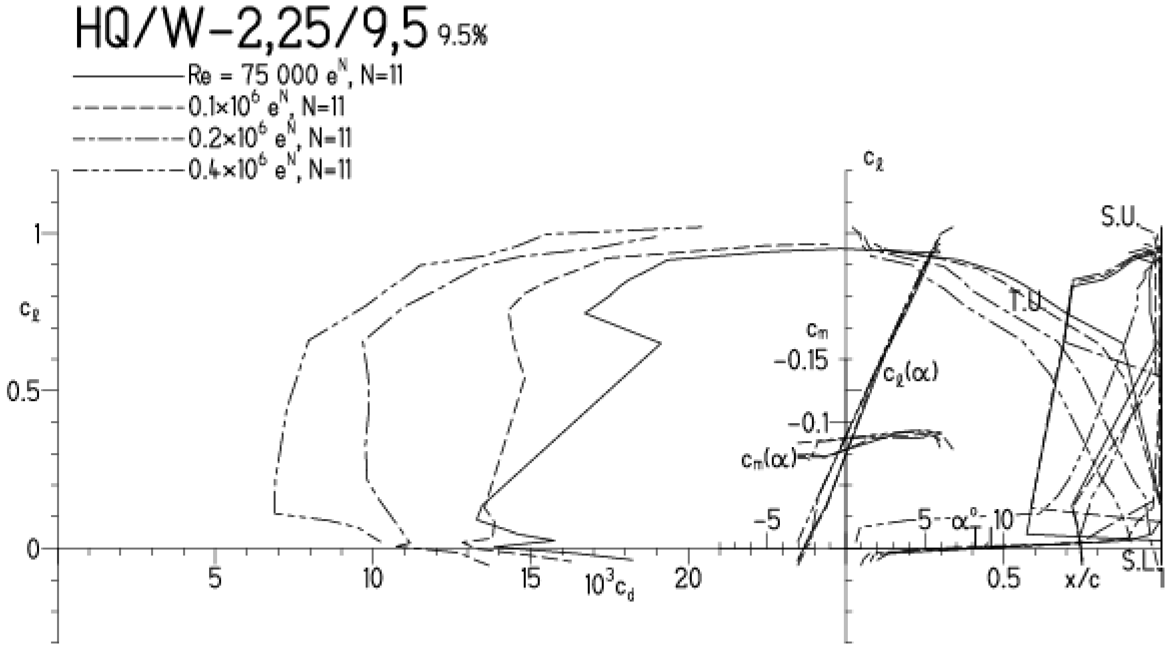


HQ/W-2,25/9,5, N=11

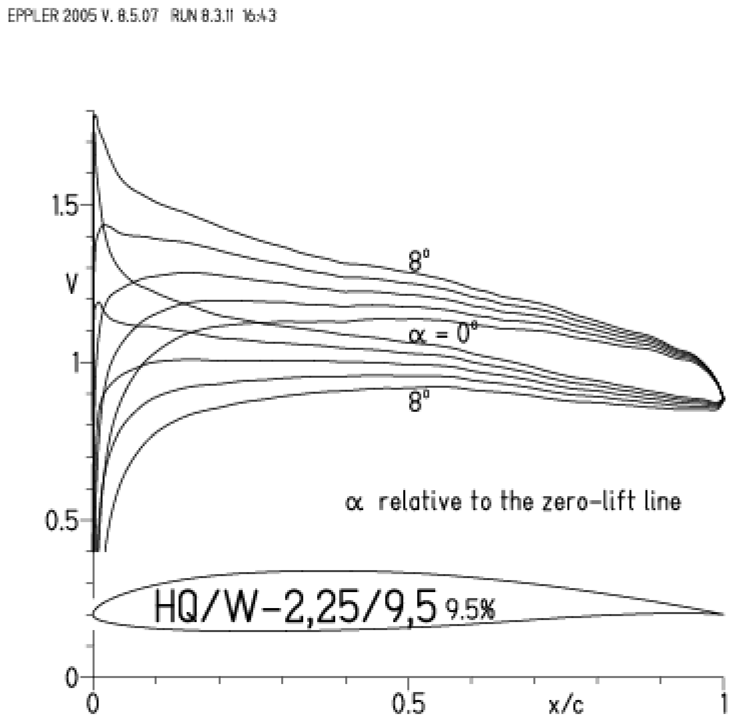
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

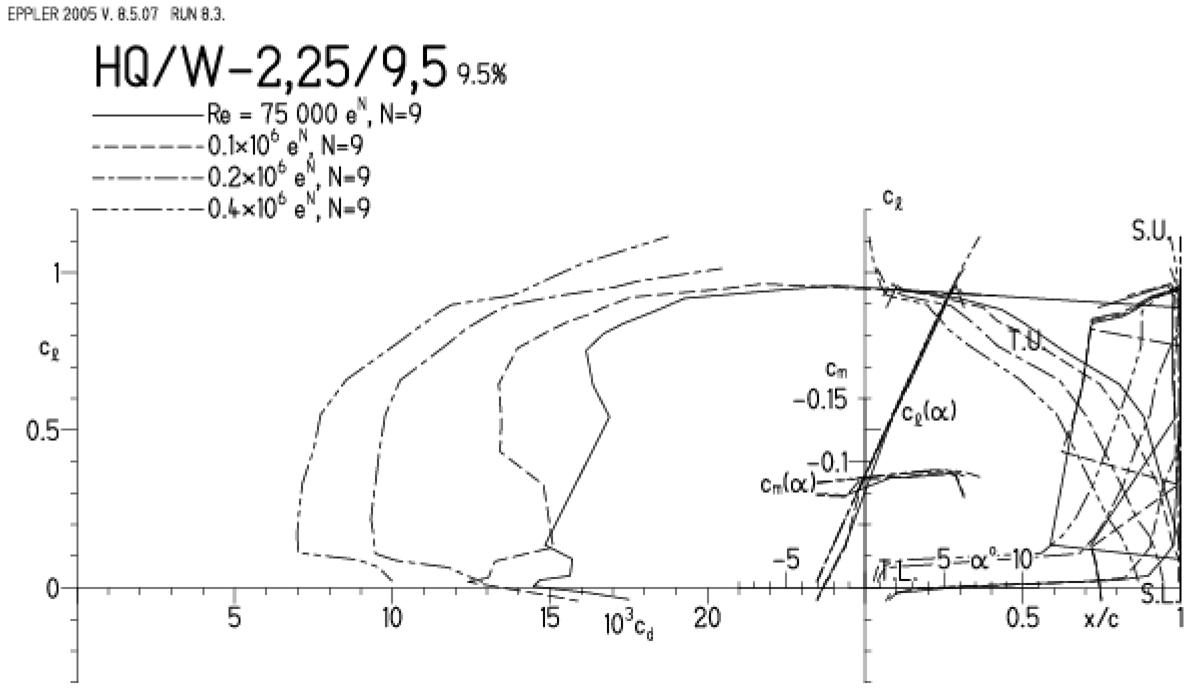


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

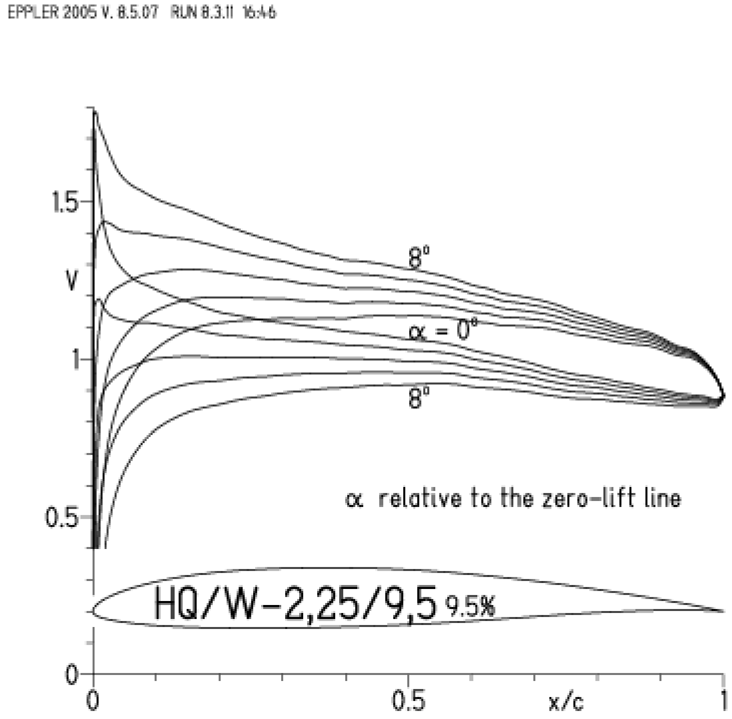


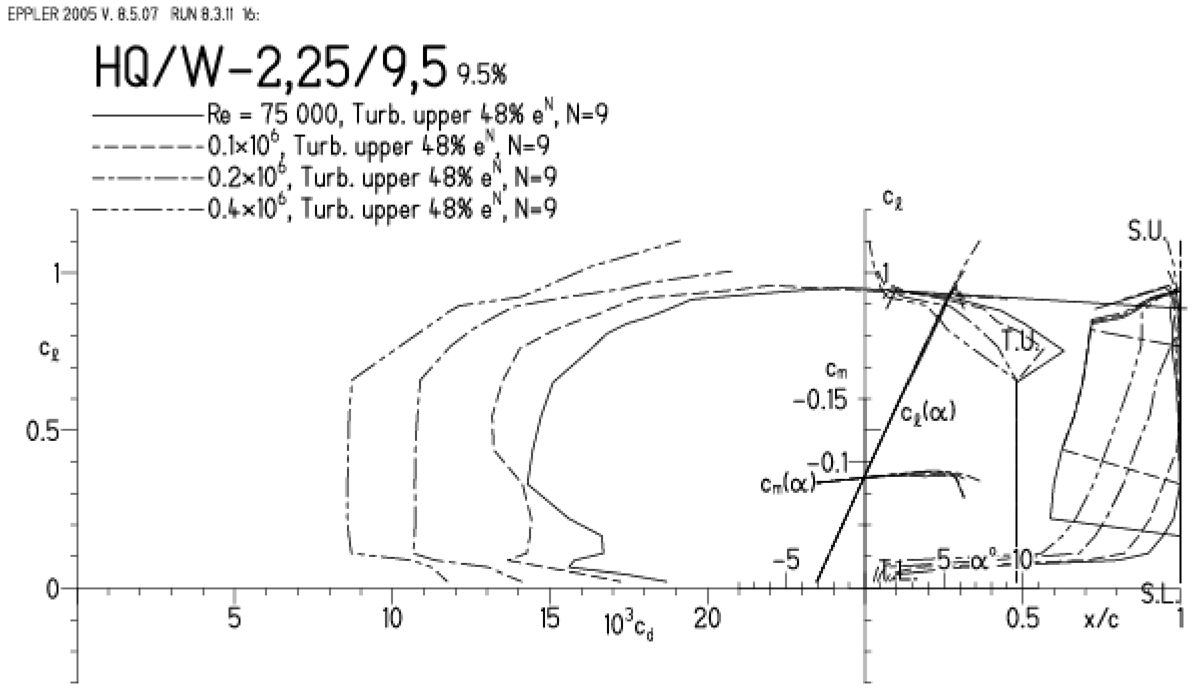
<u>HQ/W-2,25/9,5</u>, N=9





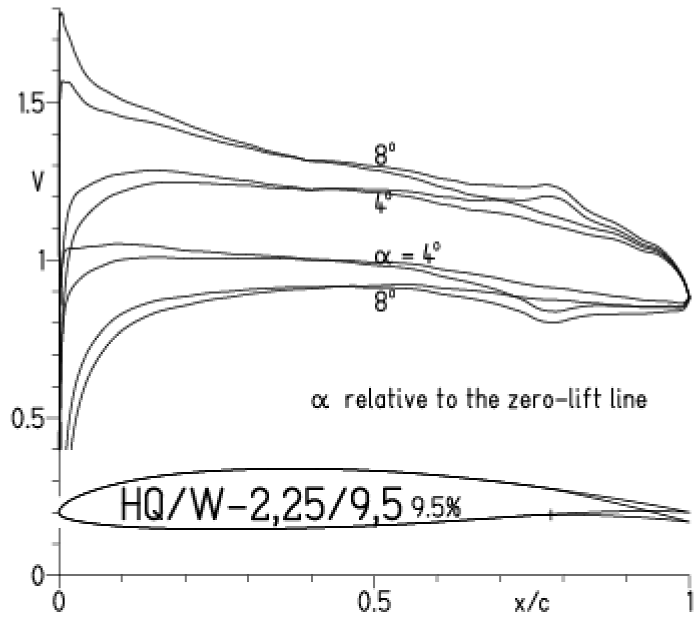
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



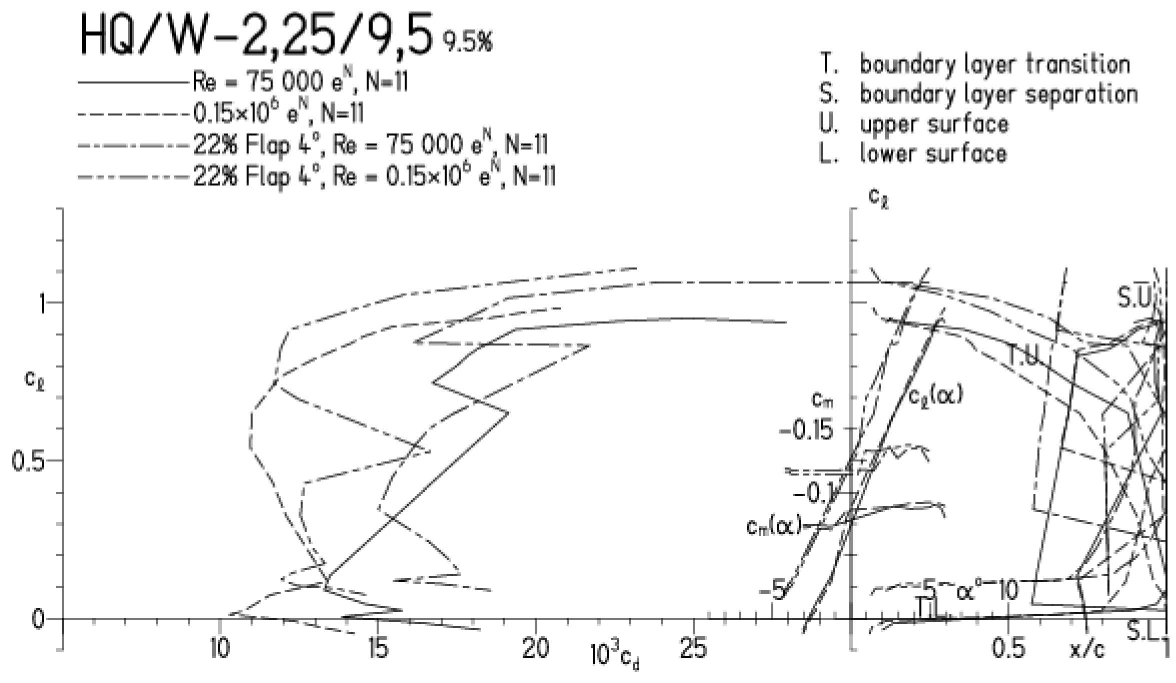


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

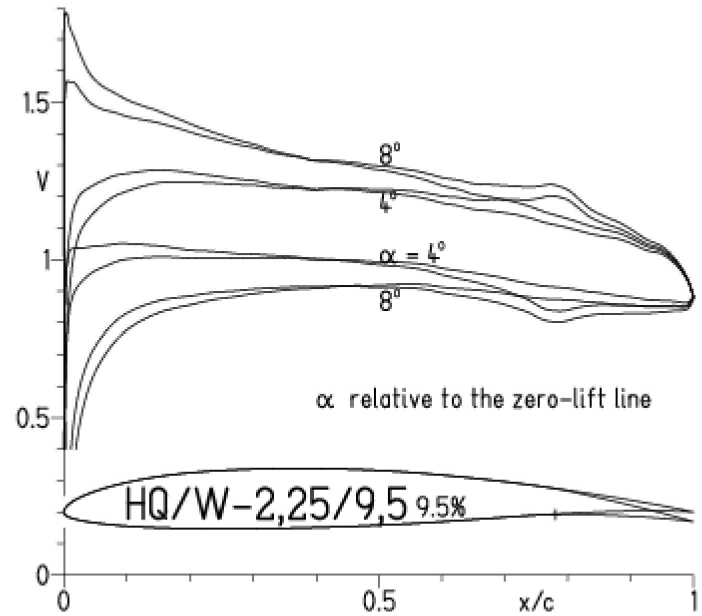


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

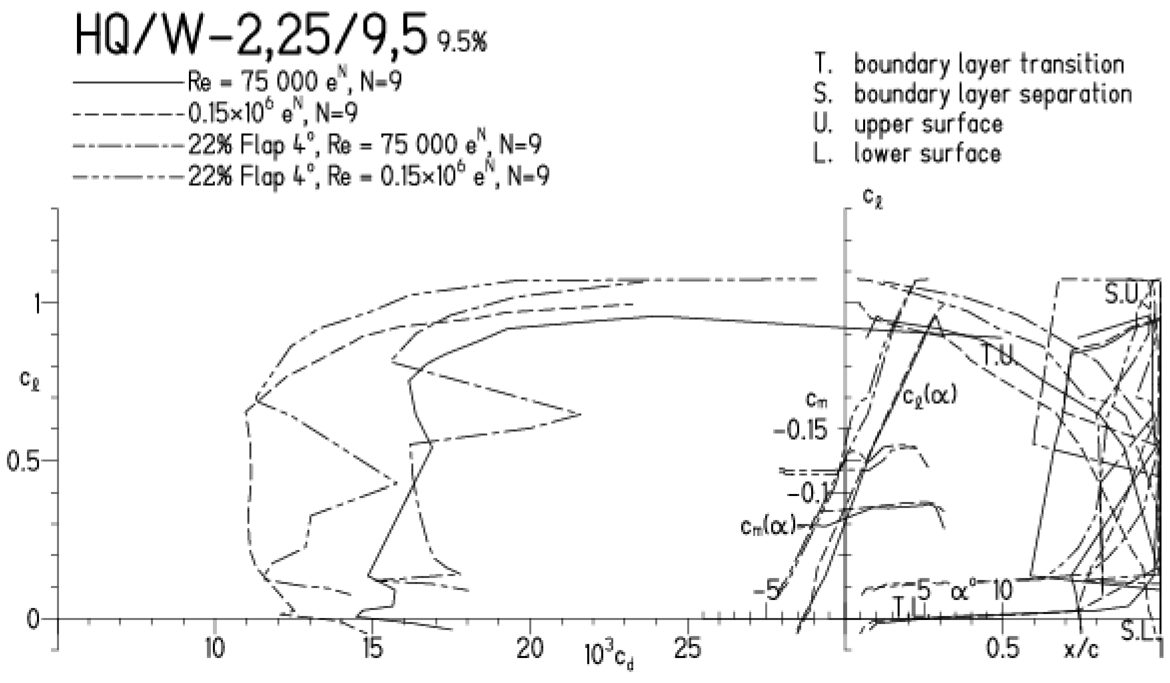


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

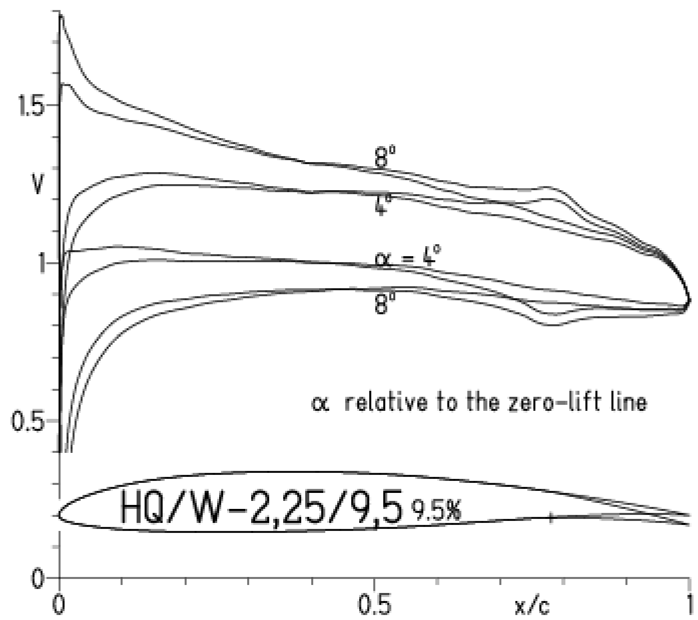


EPPLER 2005 V. 8.5.07 R

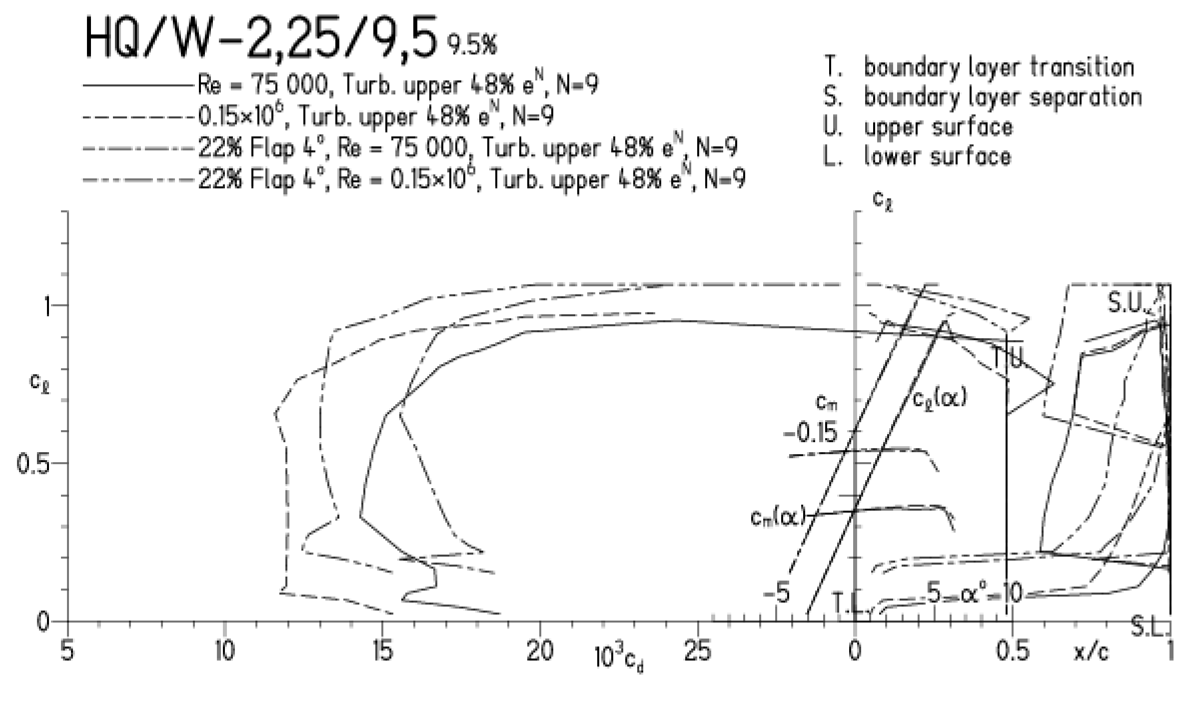


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

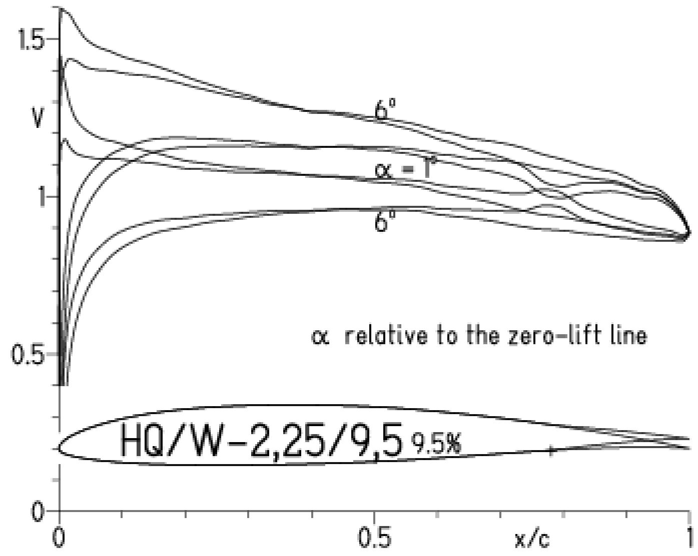


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

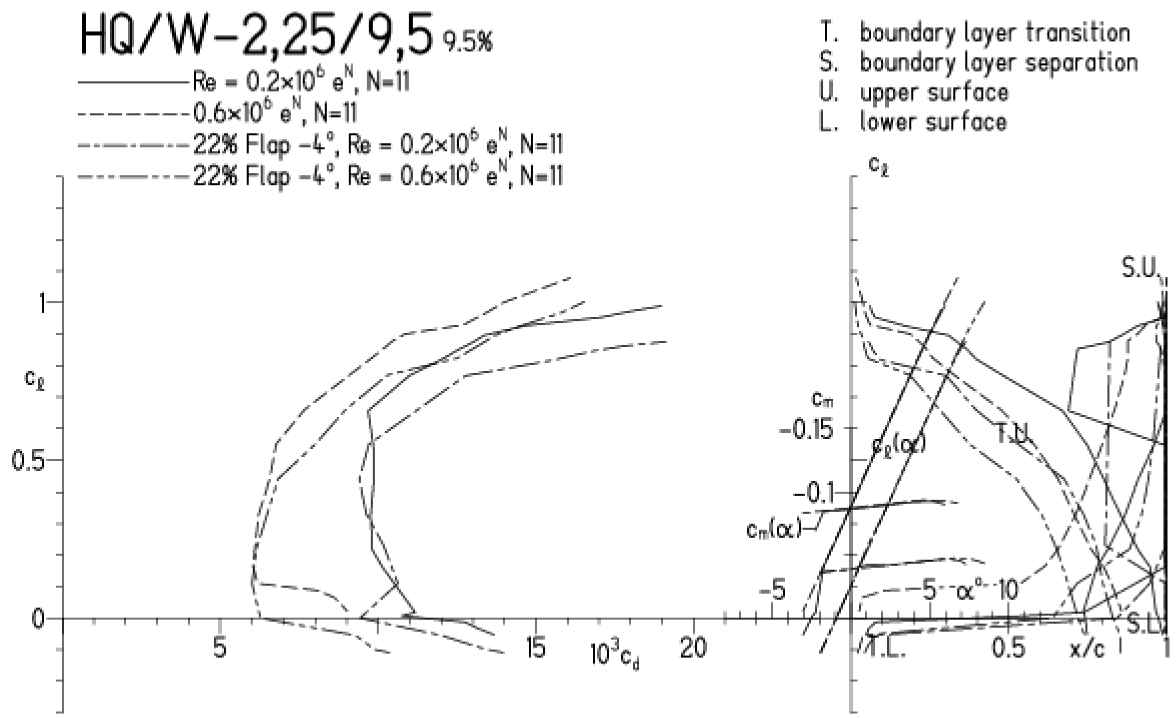


<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

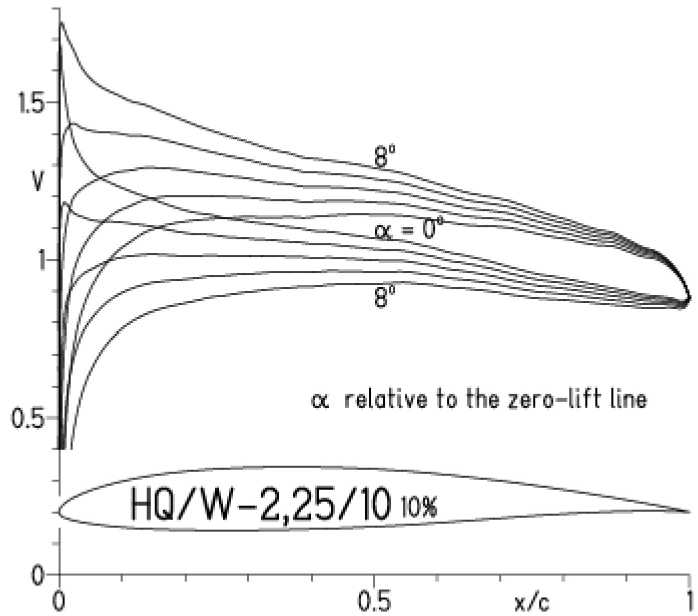


EPPLER 2005 V.

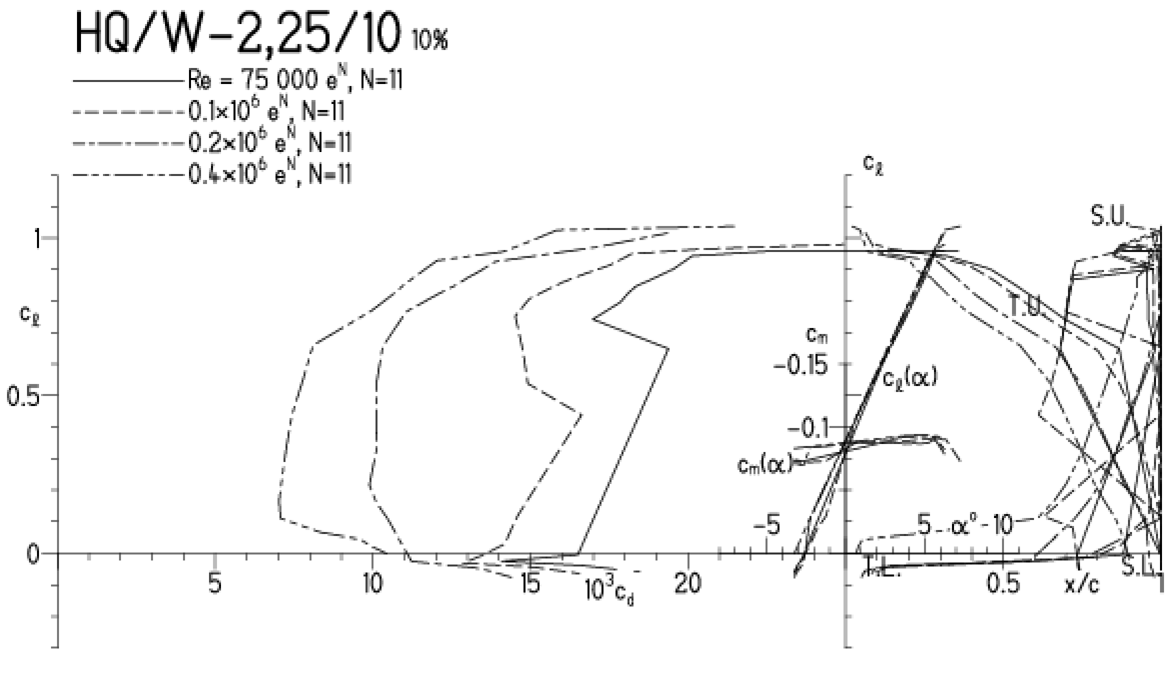


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

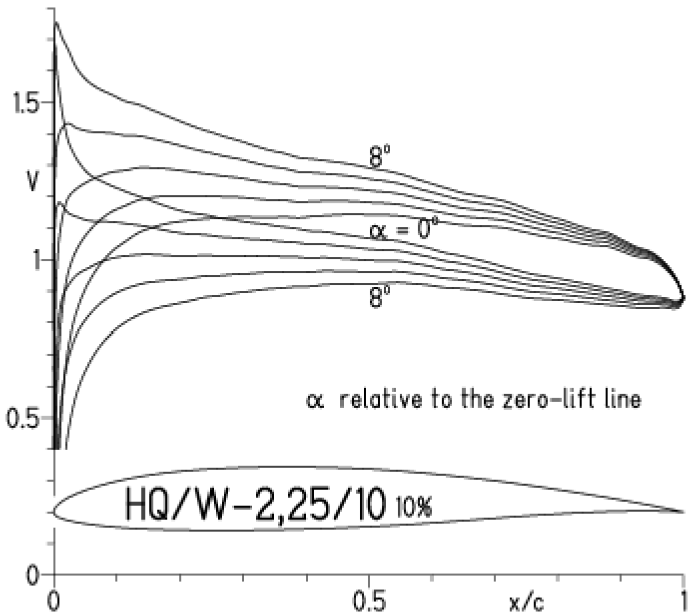


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

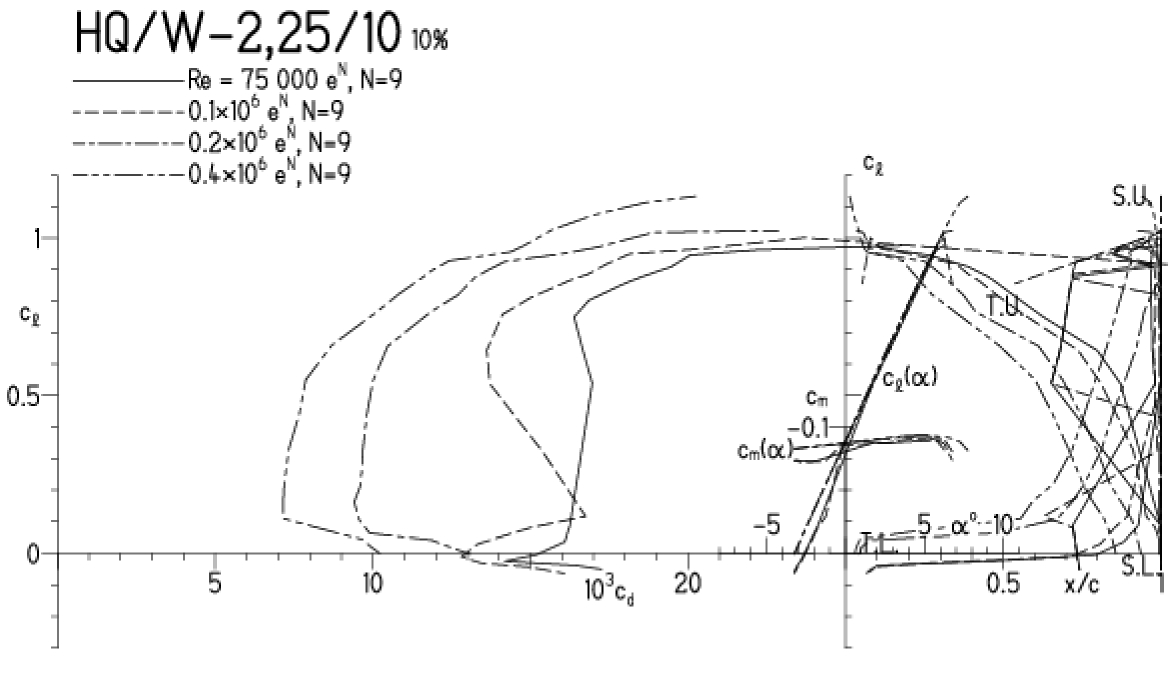


HQ/W-2,25/10, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

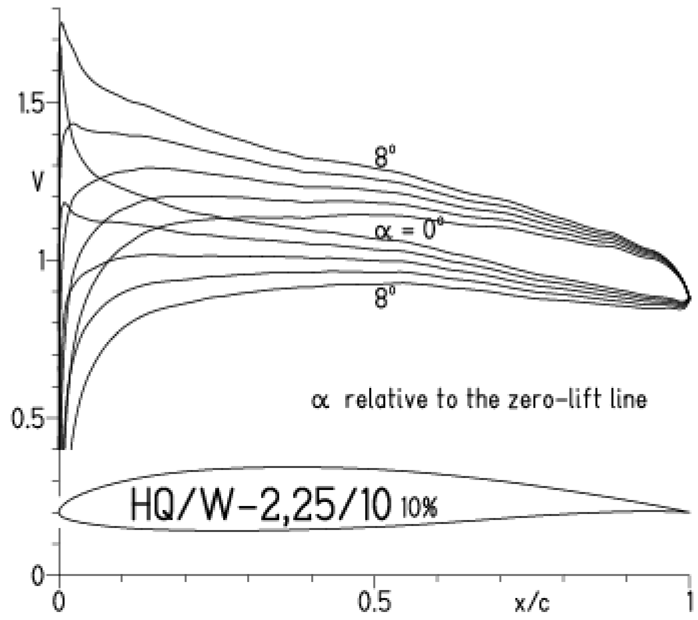


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

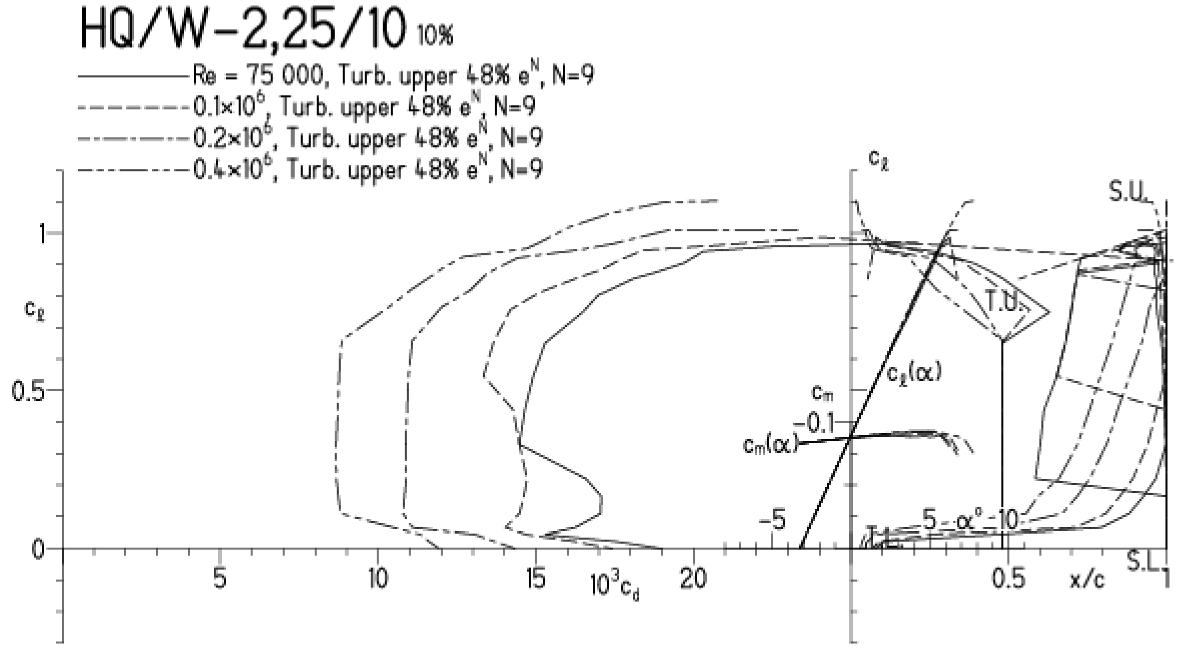


HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

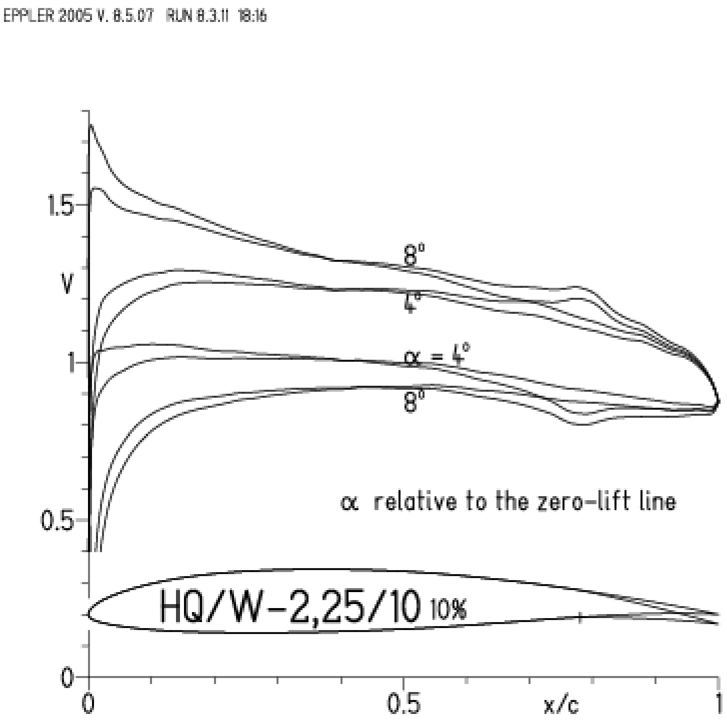
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

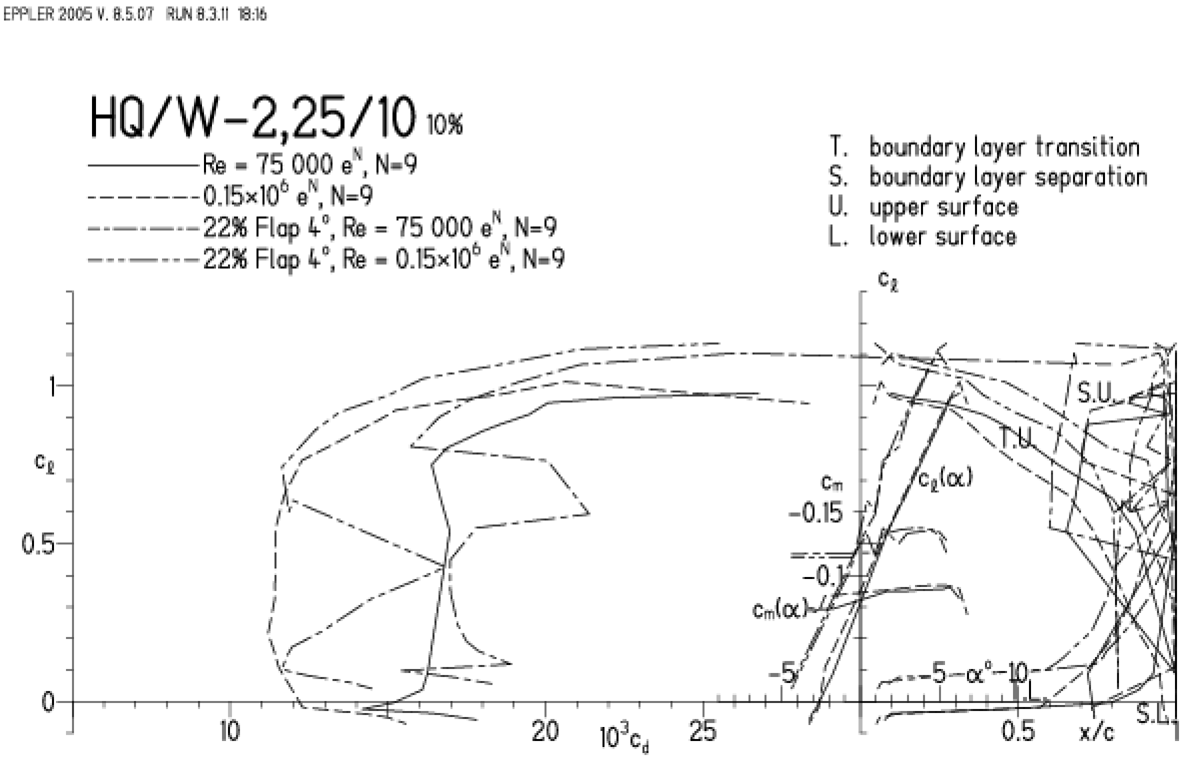


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:56

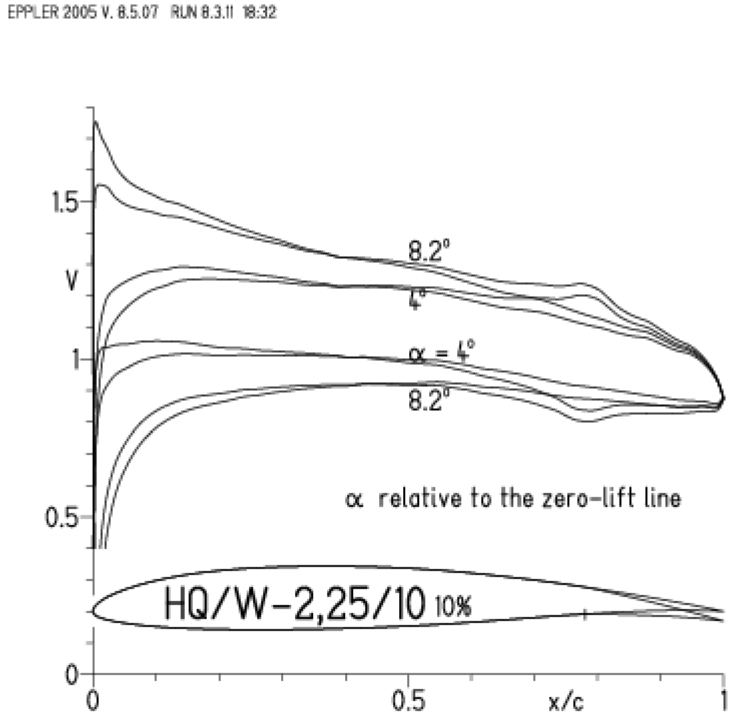


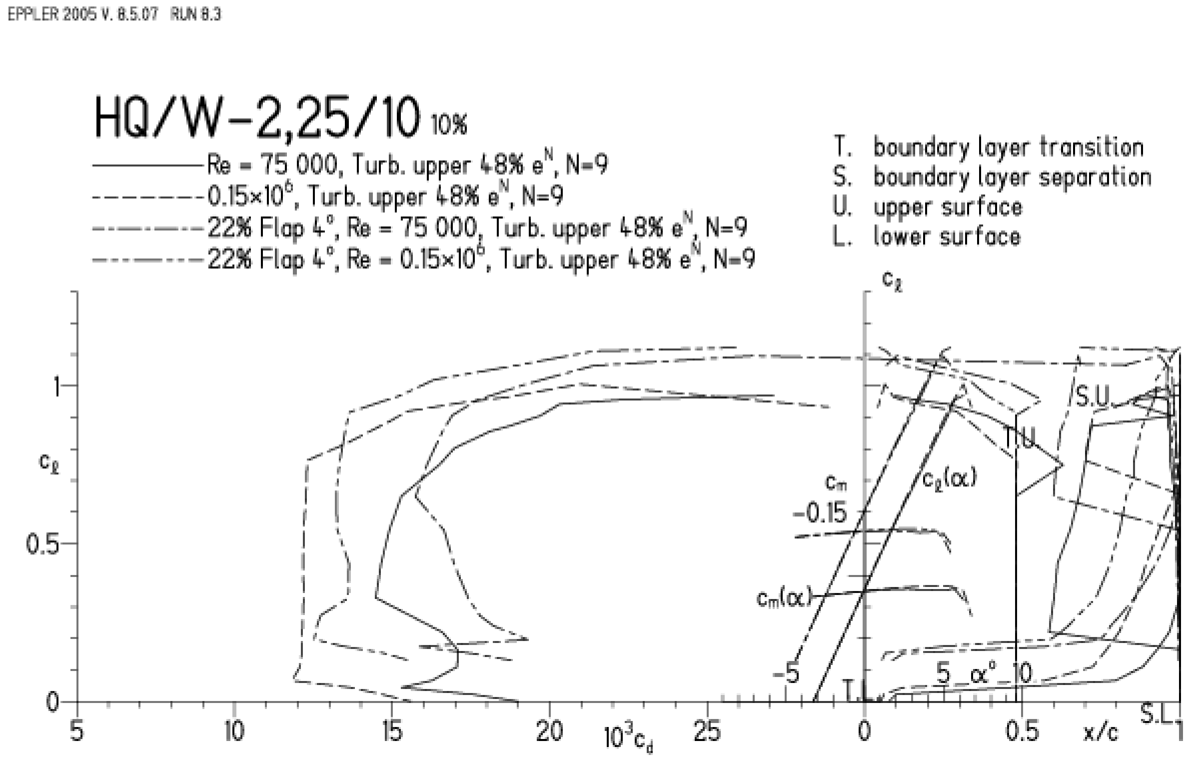
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag





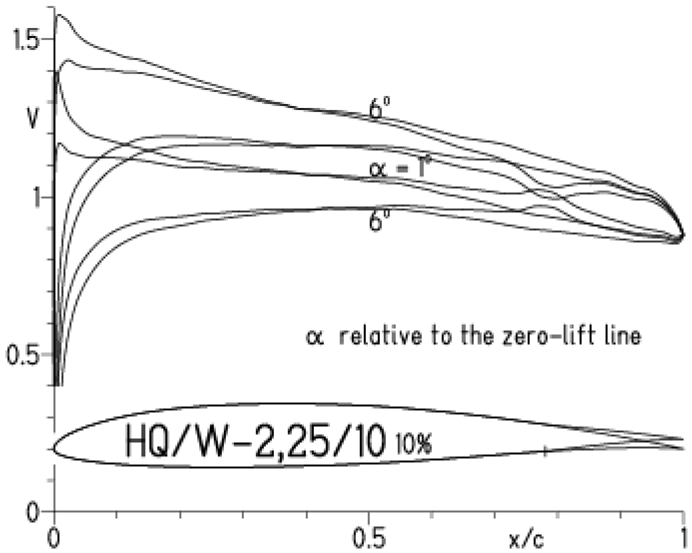
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



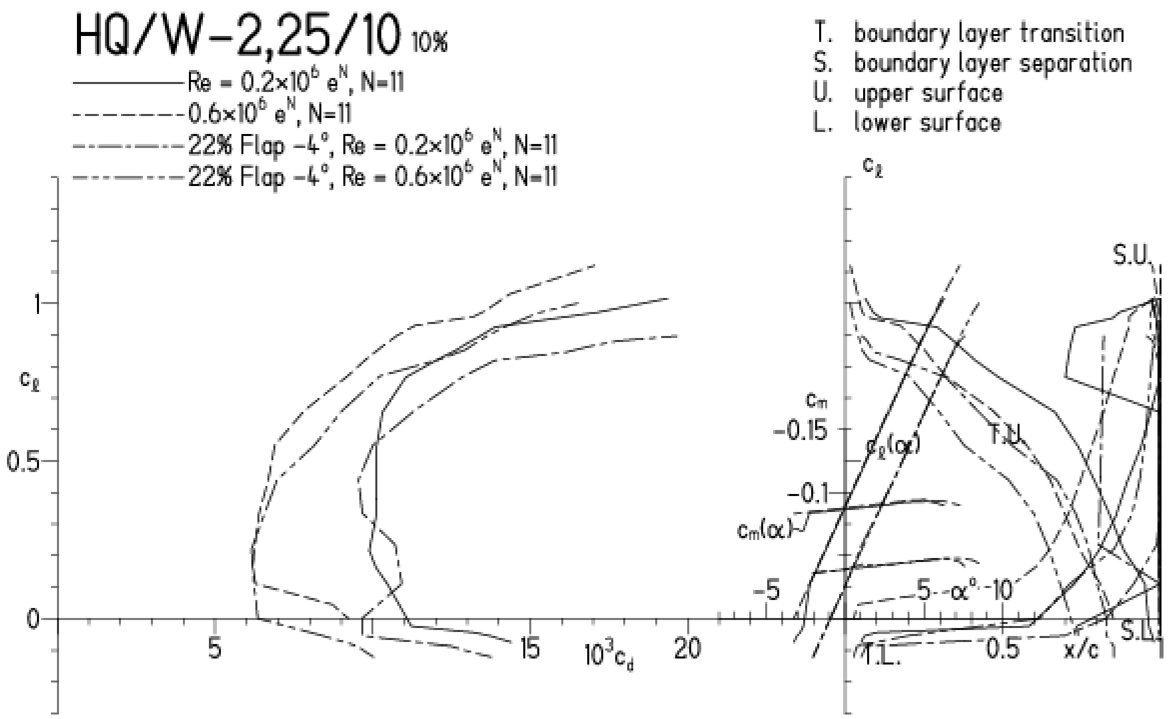


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

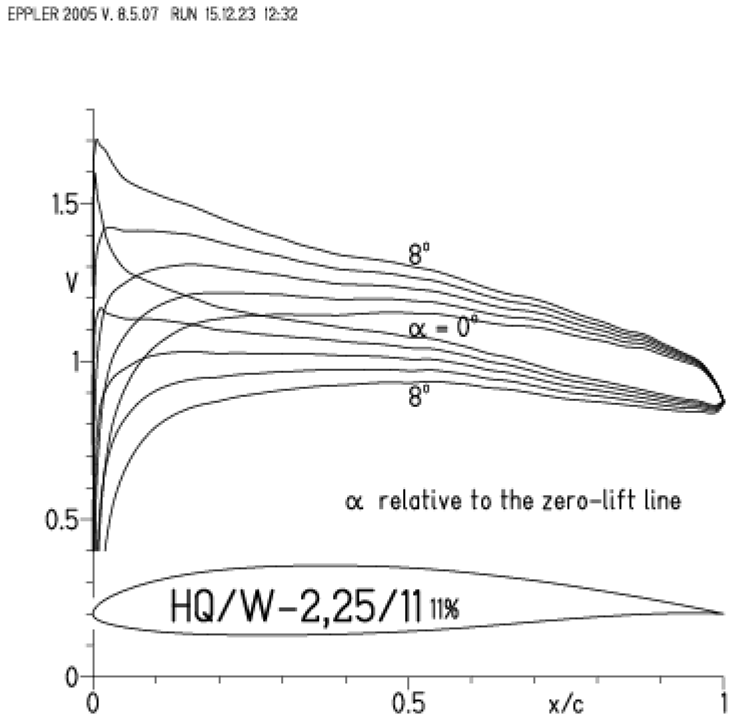
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

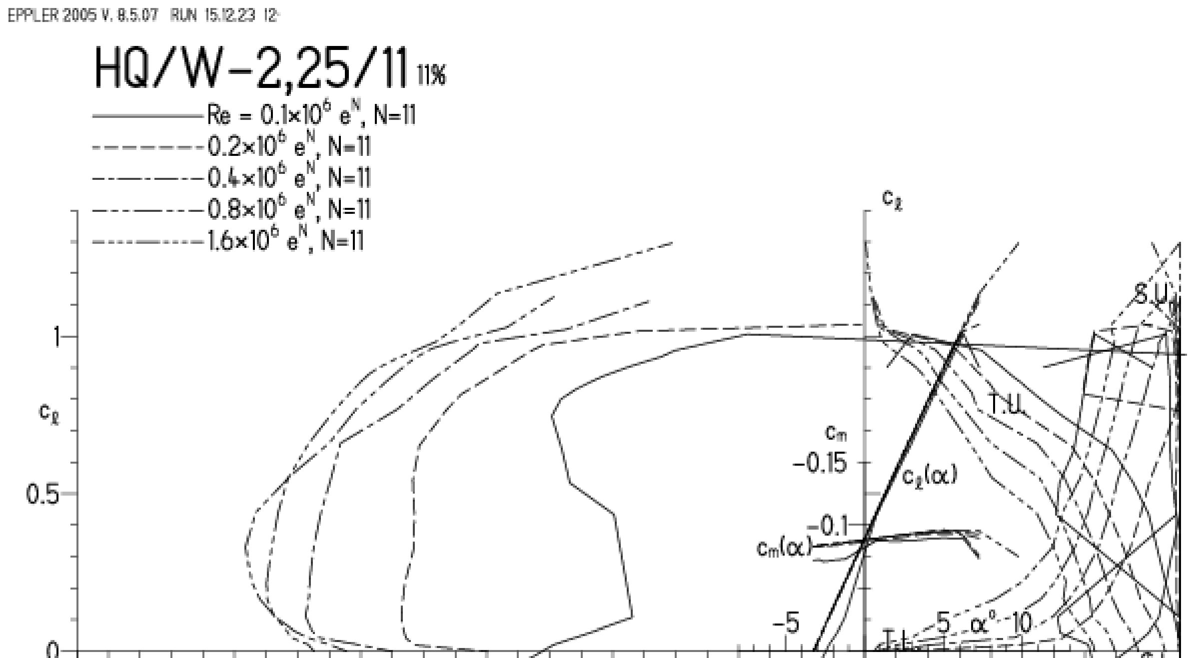


EPPLER 2005 V. 8.5.07 RUN



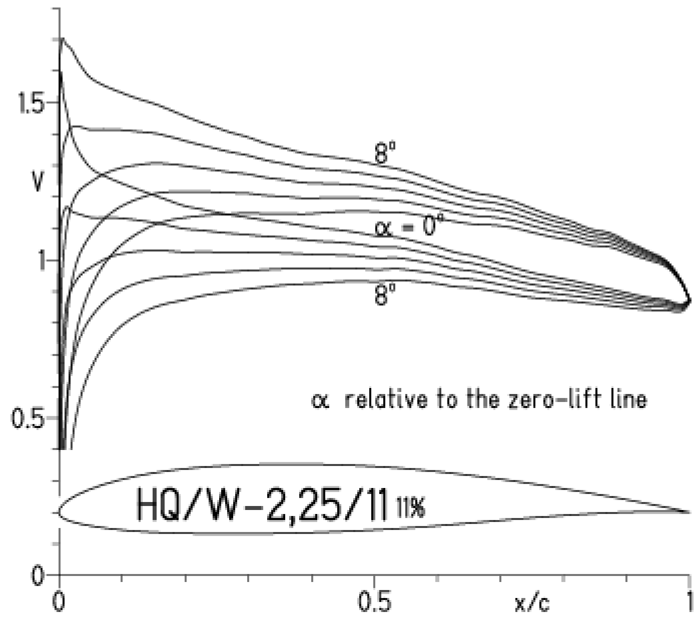
HQ/W-2,25/11, N=11



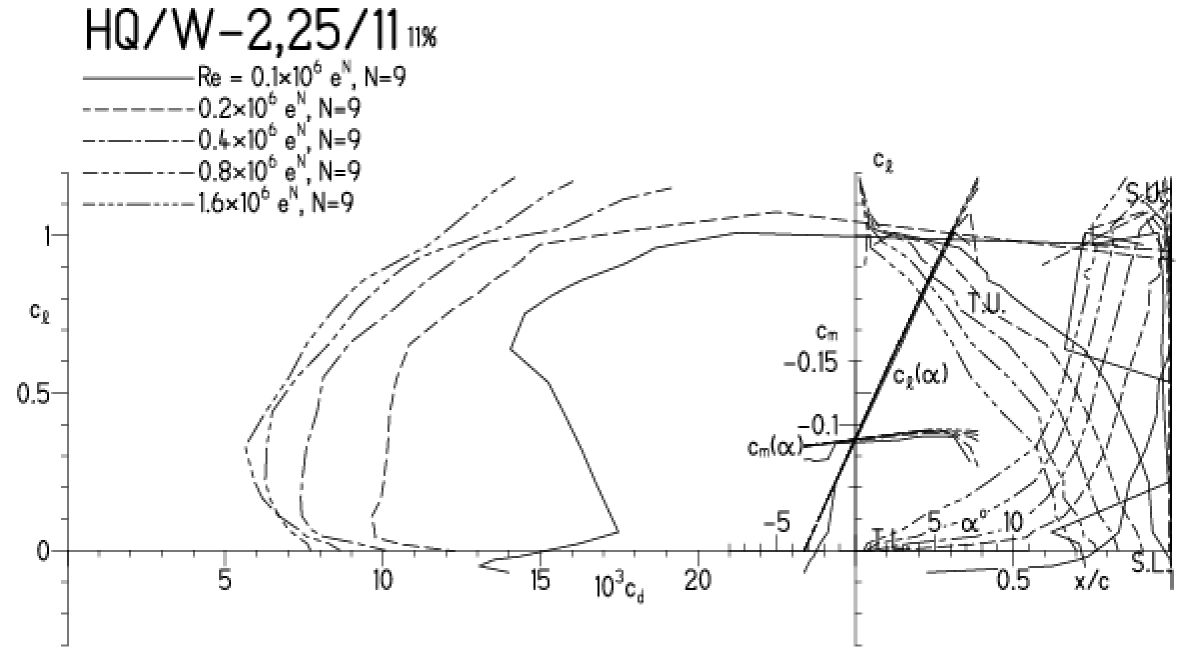


<u>HQQ/W-2,25/11</u>, N=9

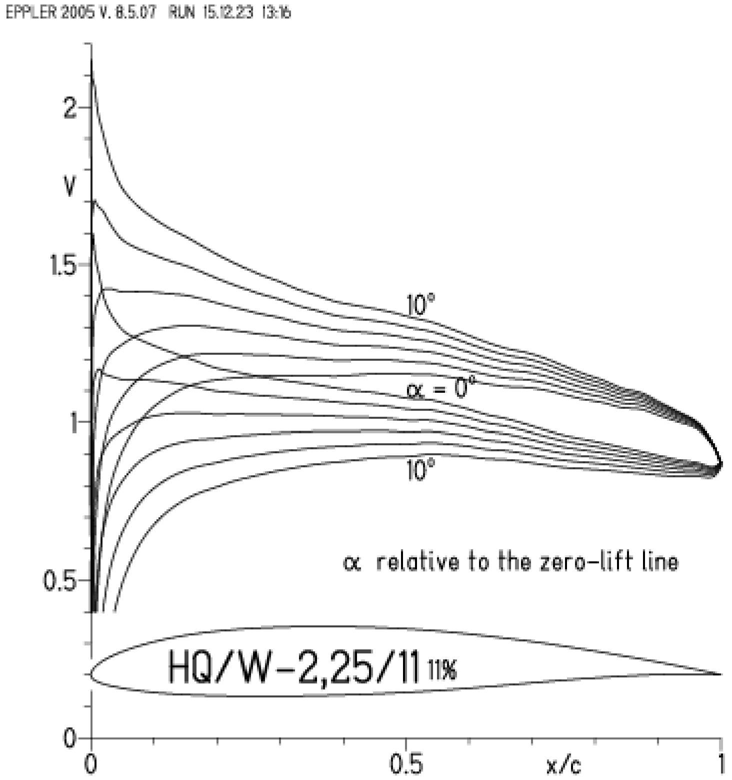
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

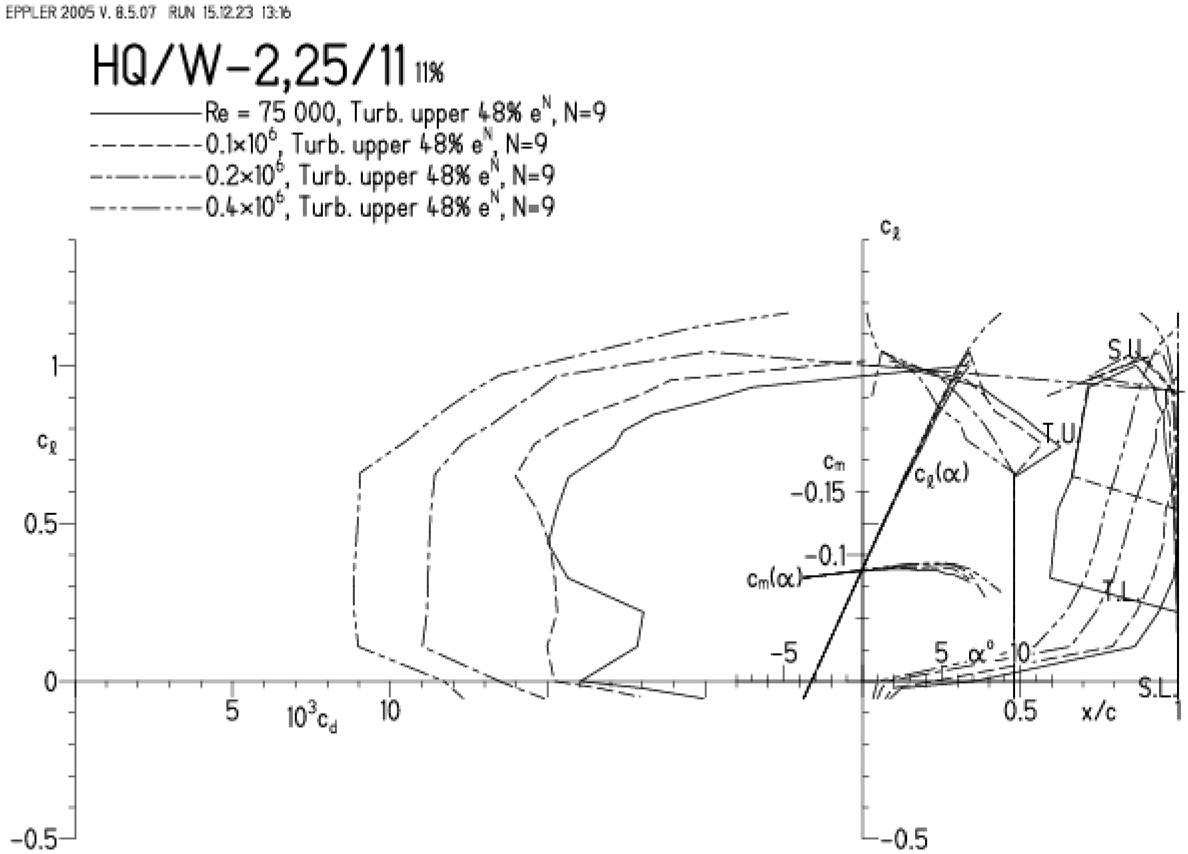


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



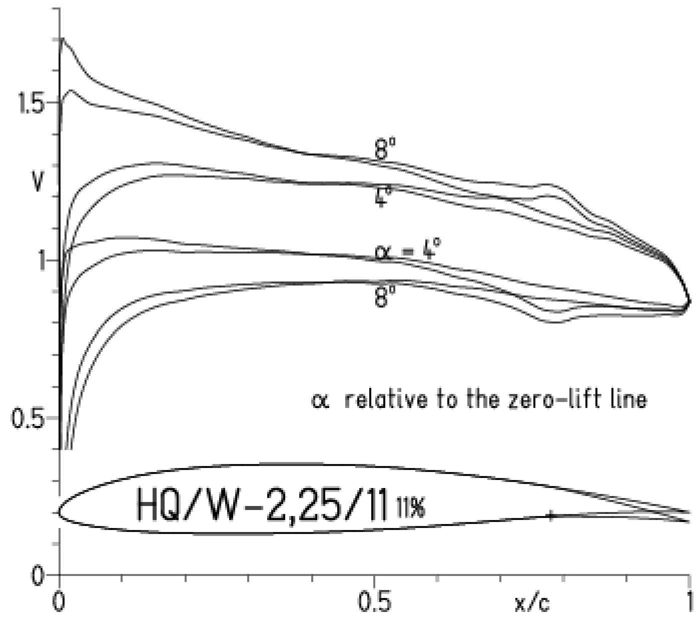
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



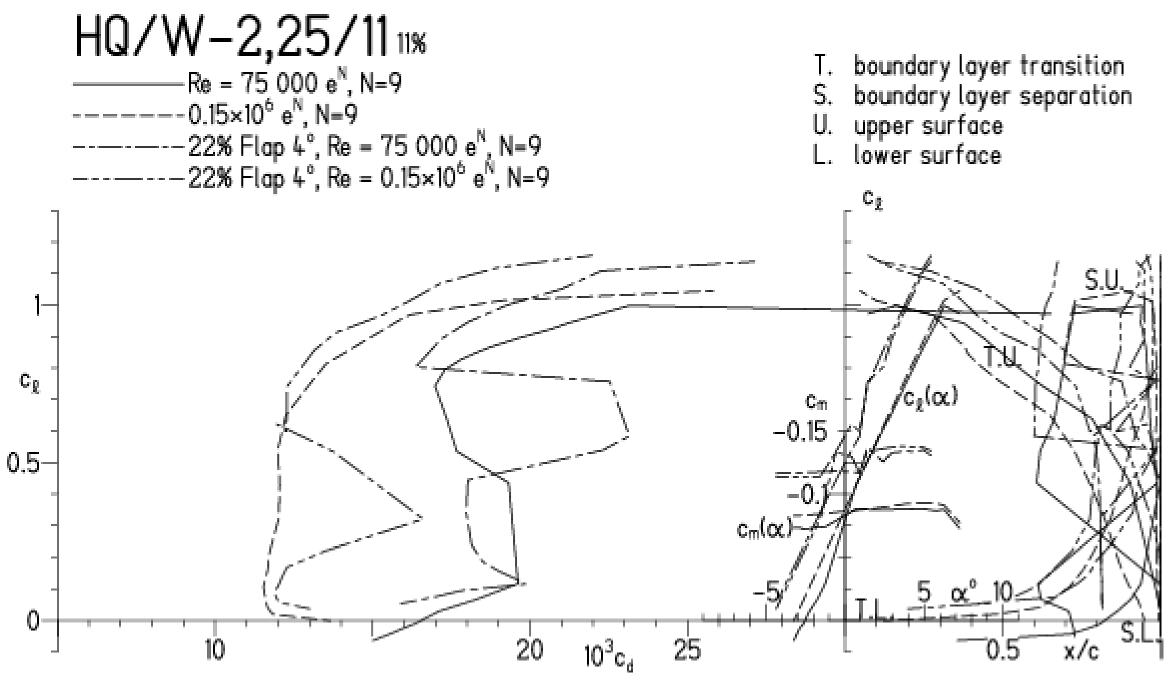


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

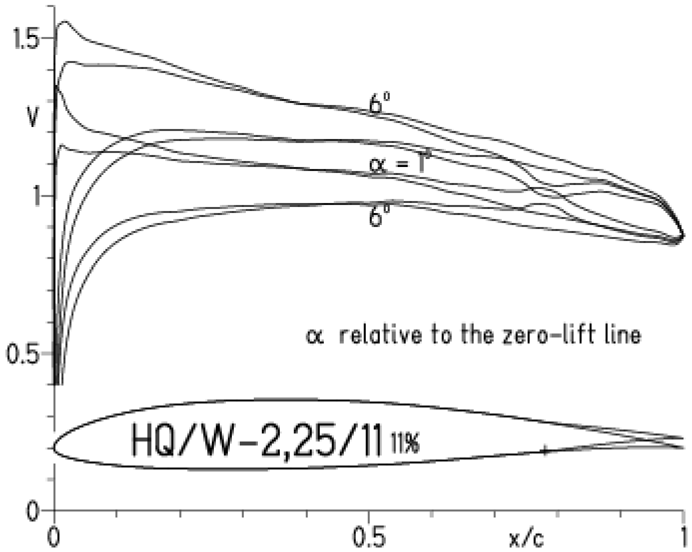


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

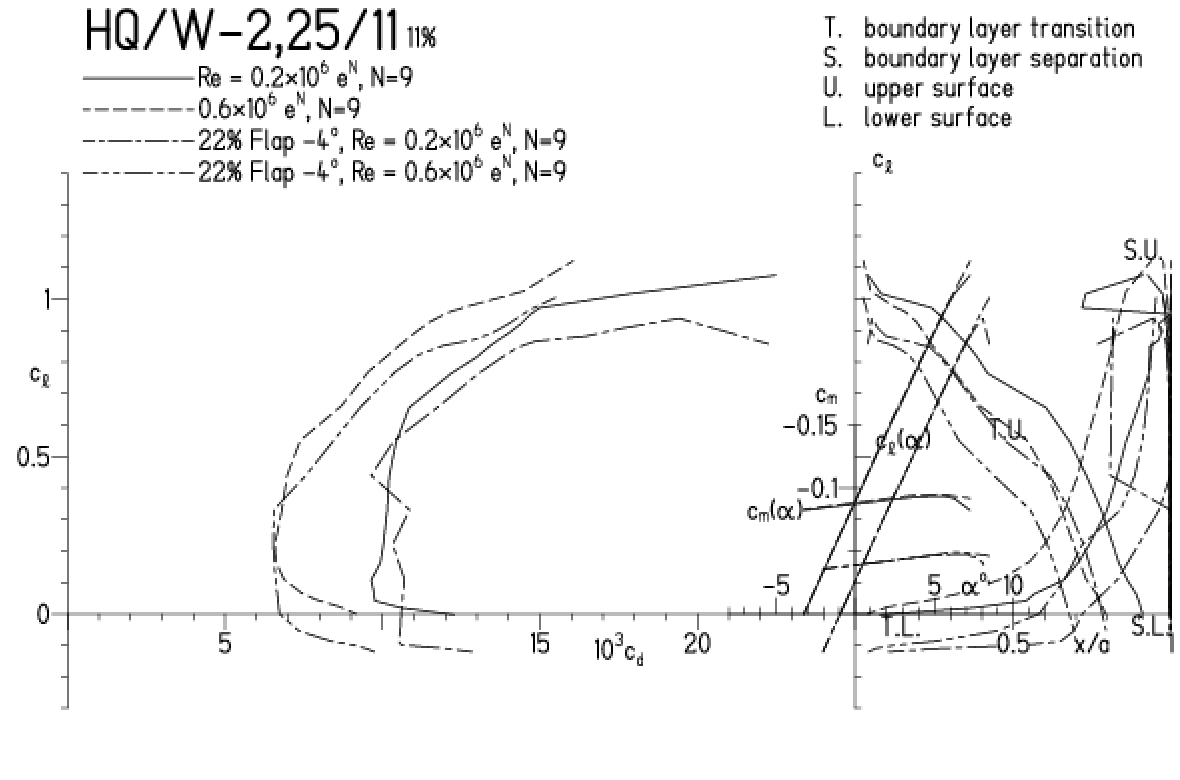


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

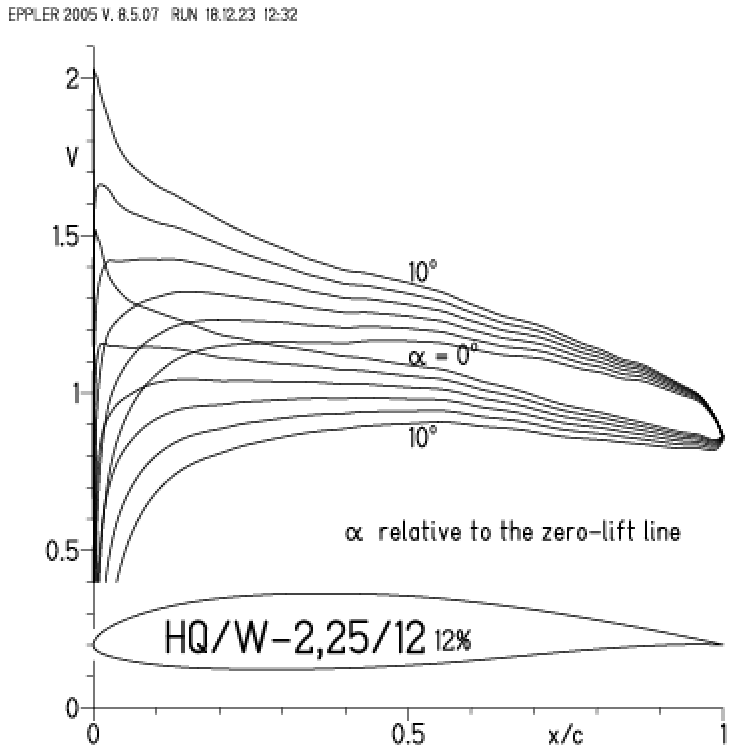
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

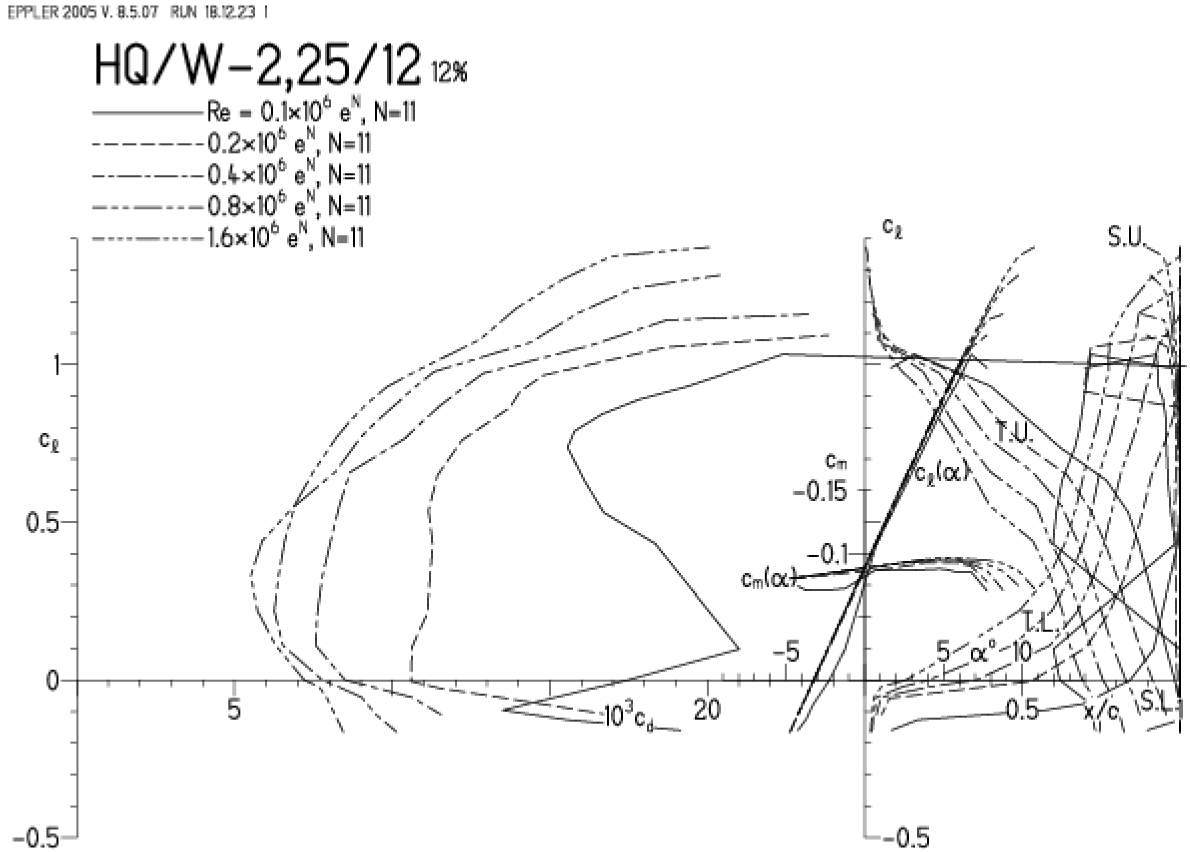


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

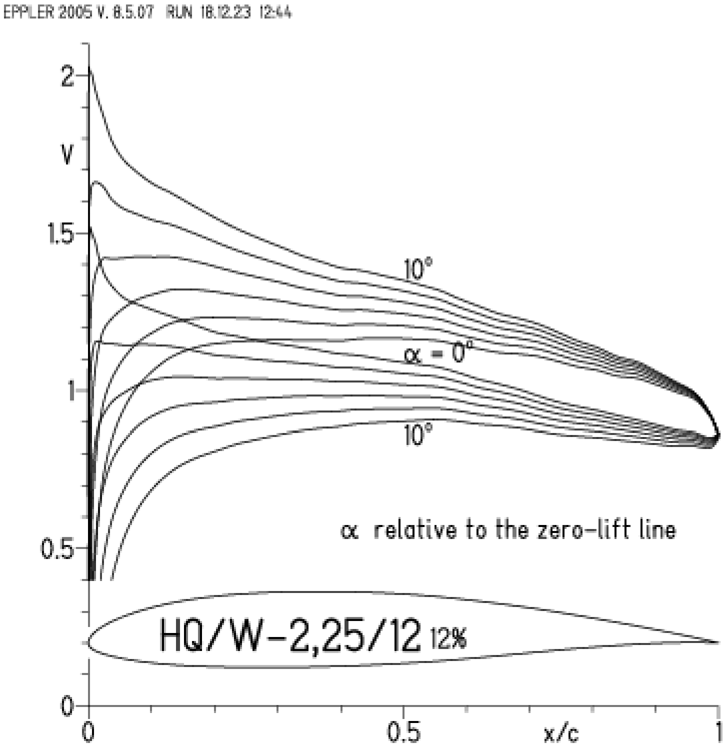


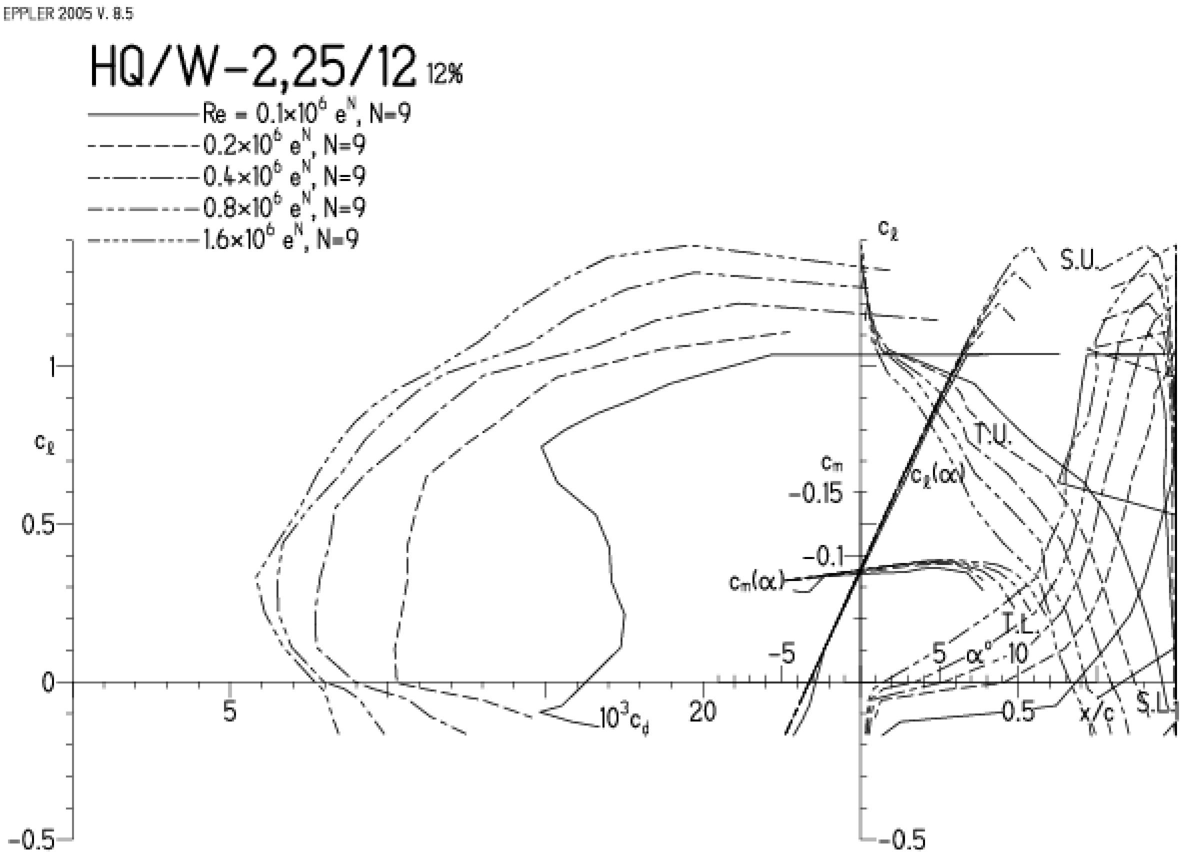
HQ/W-2,25/12, N=11



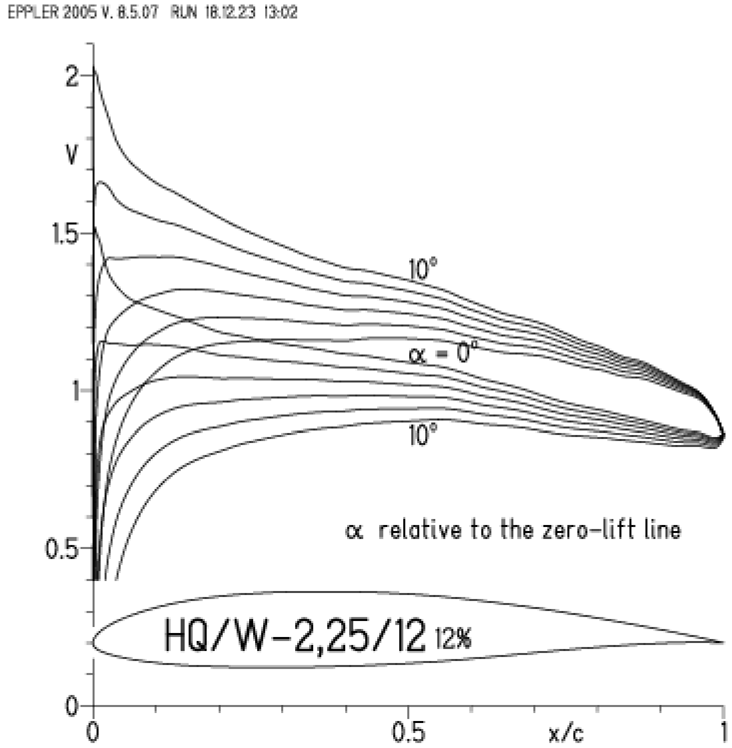


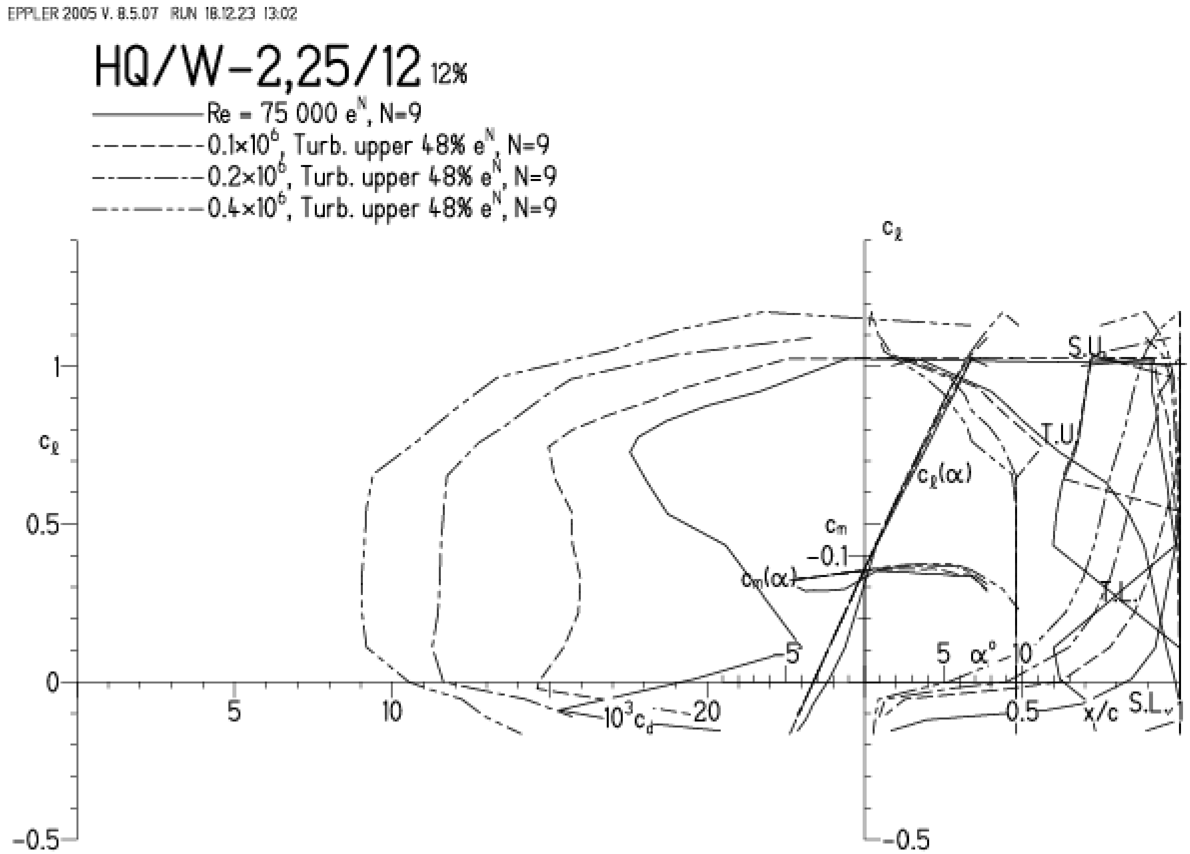
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
10^3 c_d
x/c

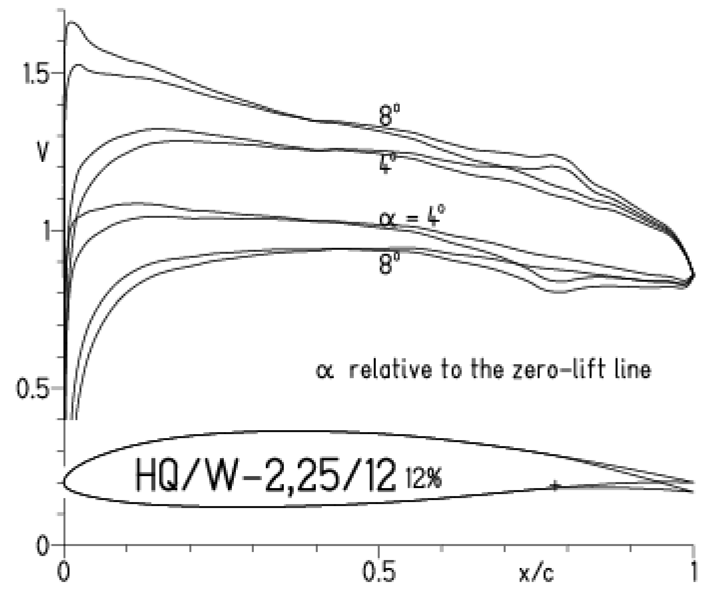
HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



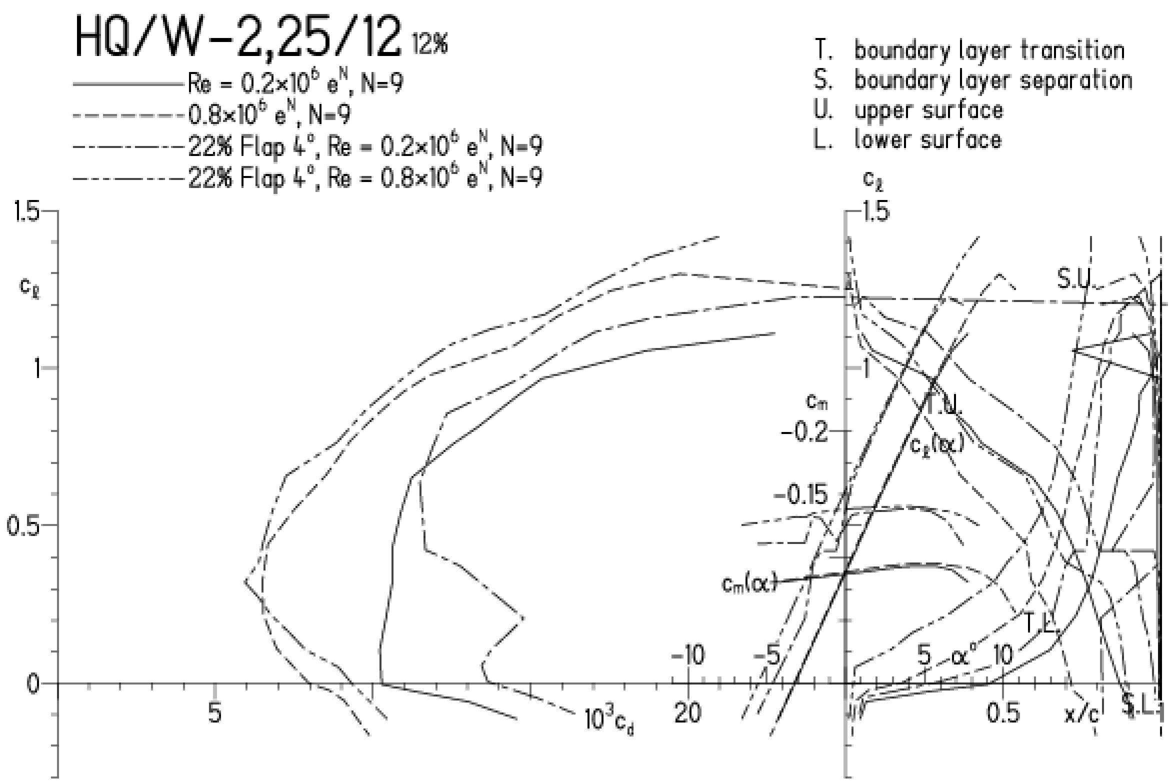


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

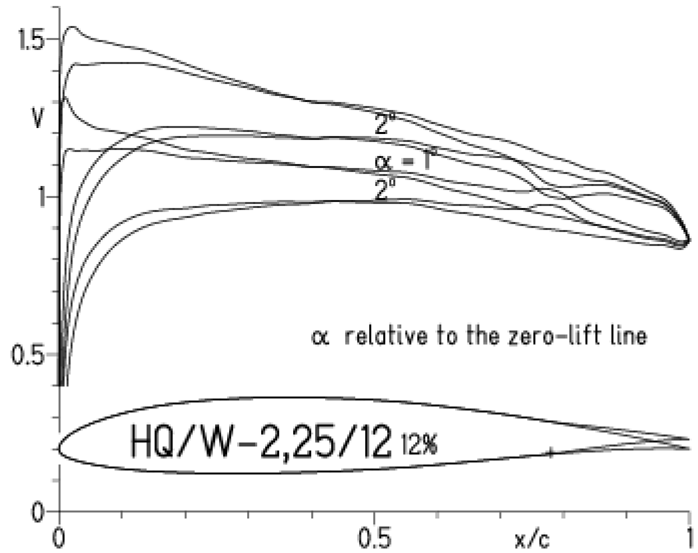


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

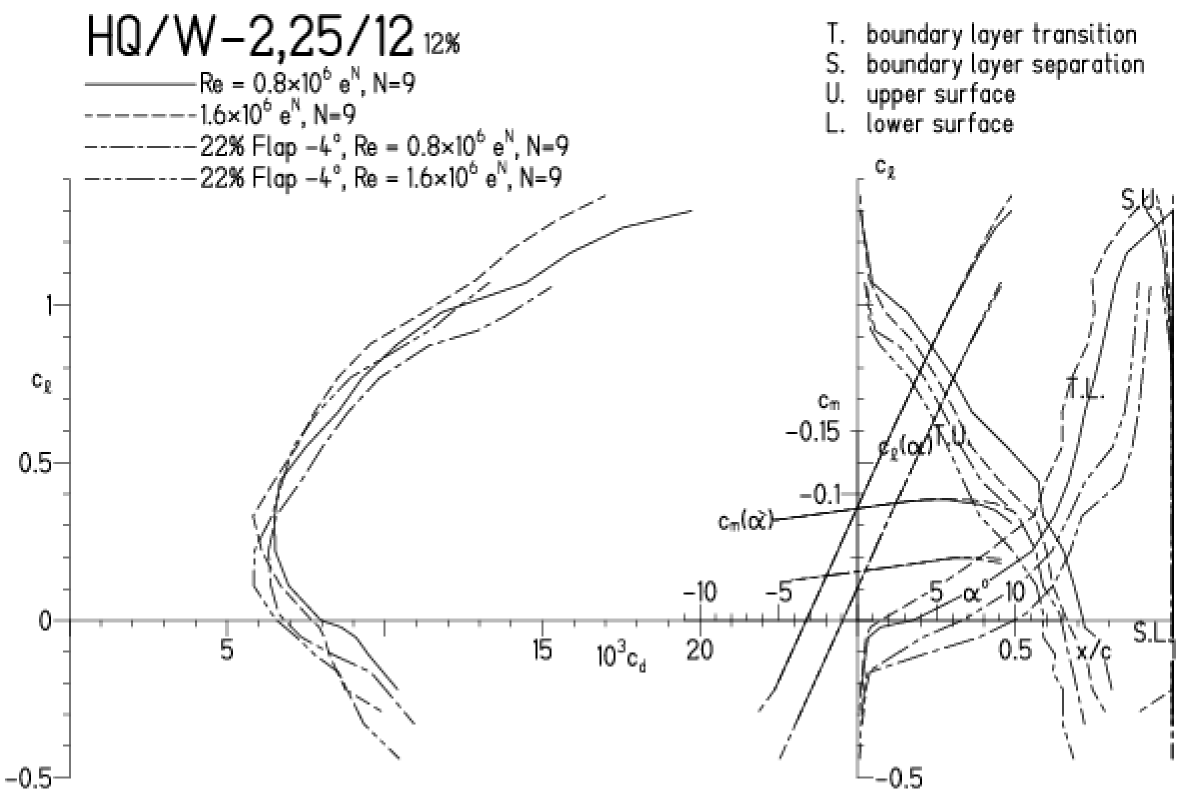


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

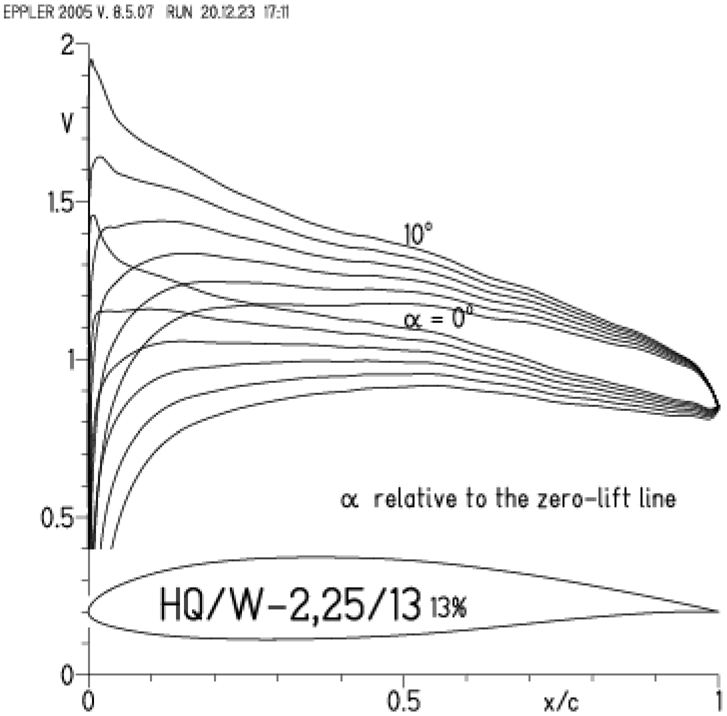
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

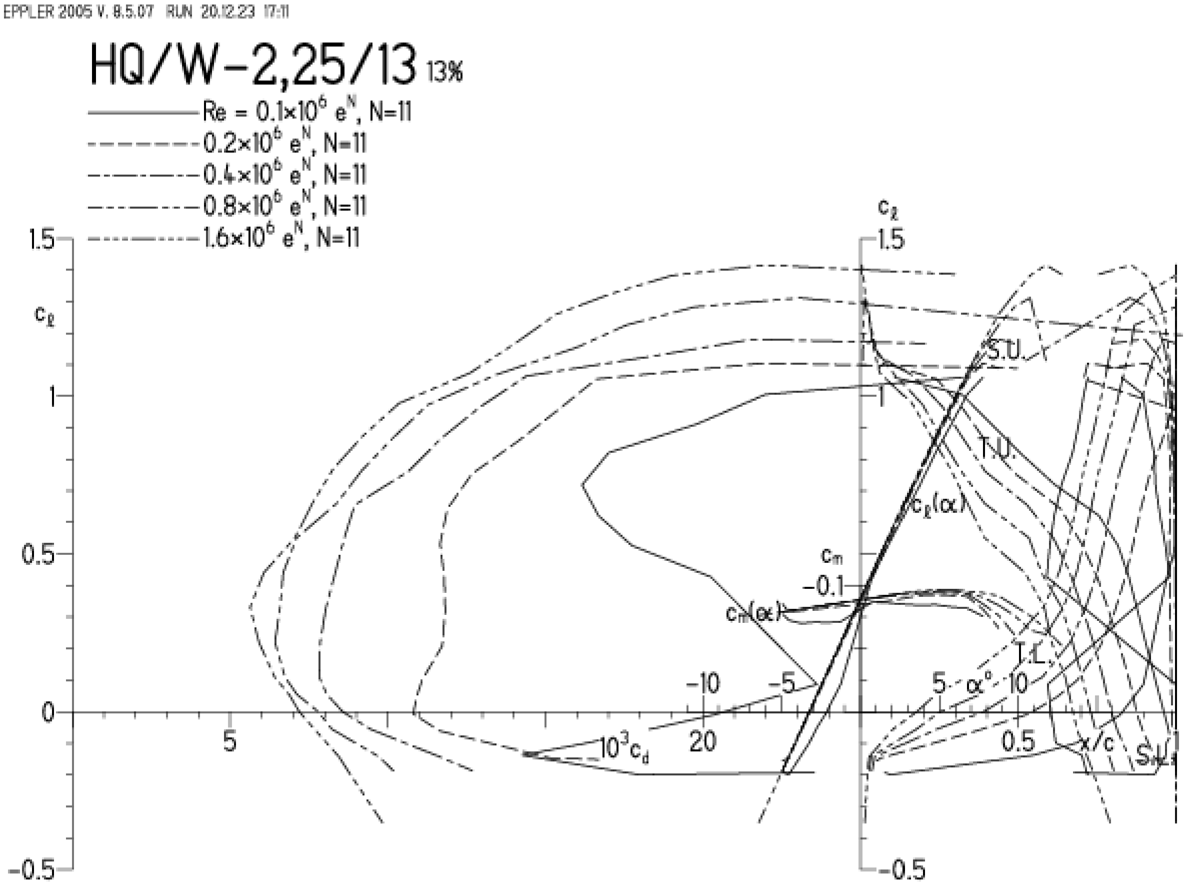


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24



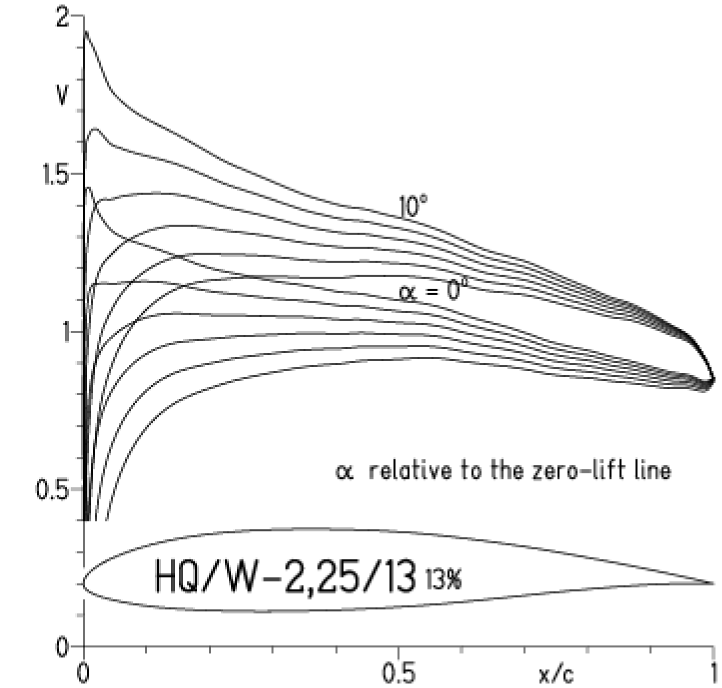
<u>HQ/W-2,25/13</u>, N=11



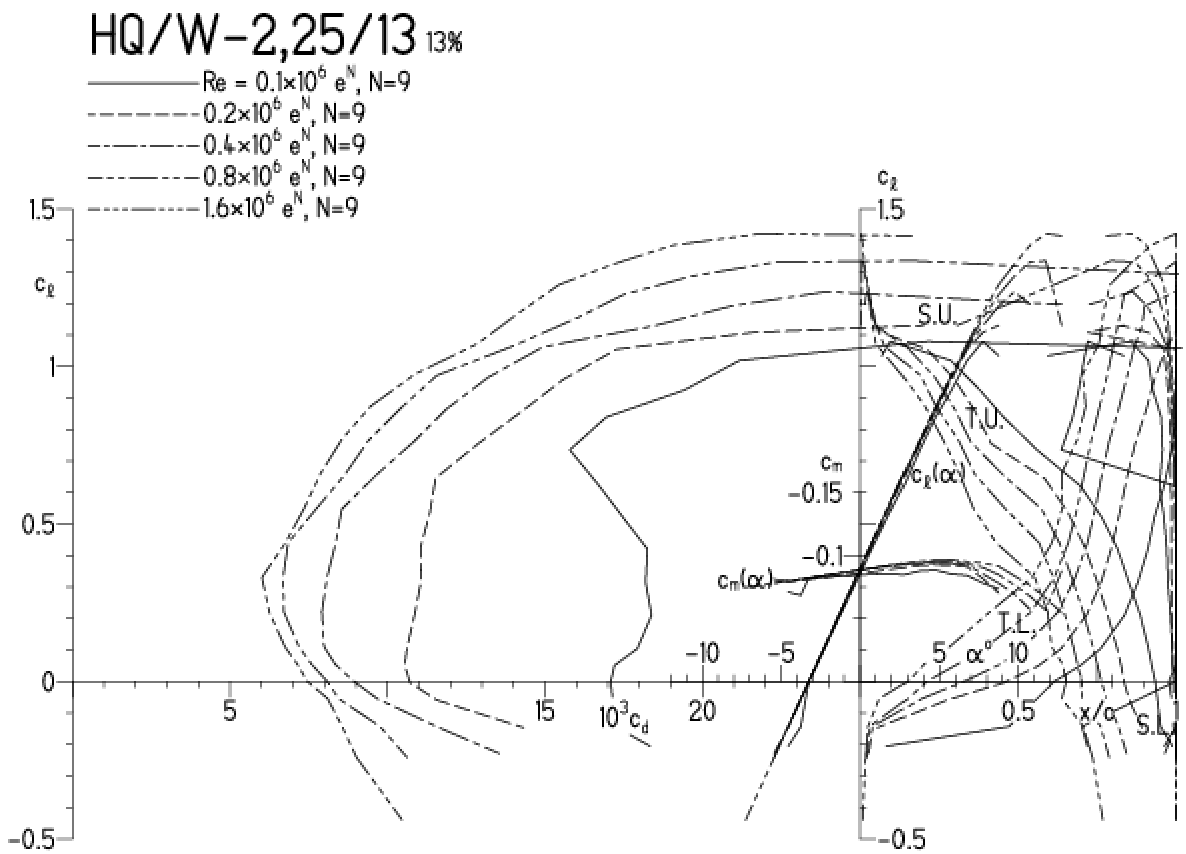


<u>HQ/W-2,25/13</u>, N=9

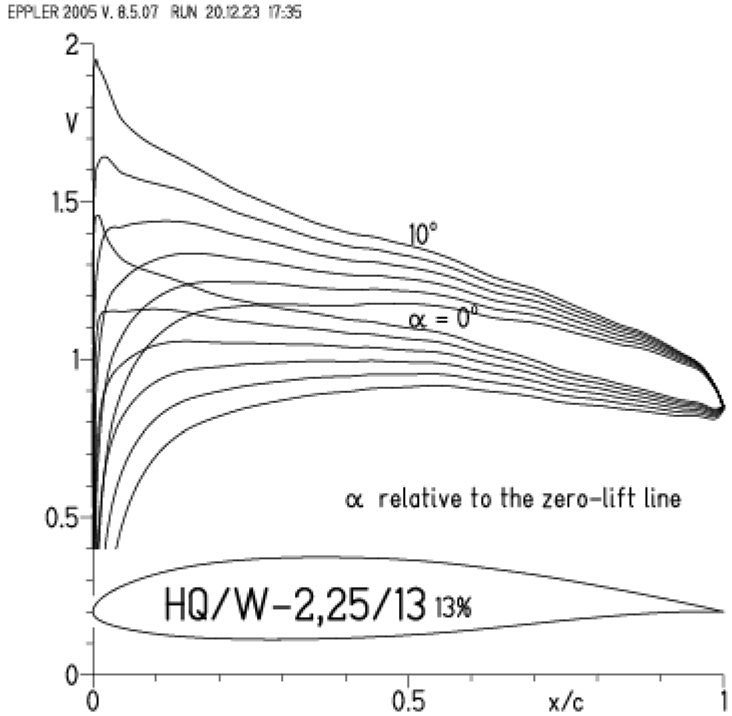
EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26

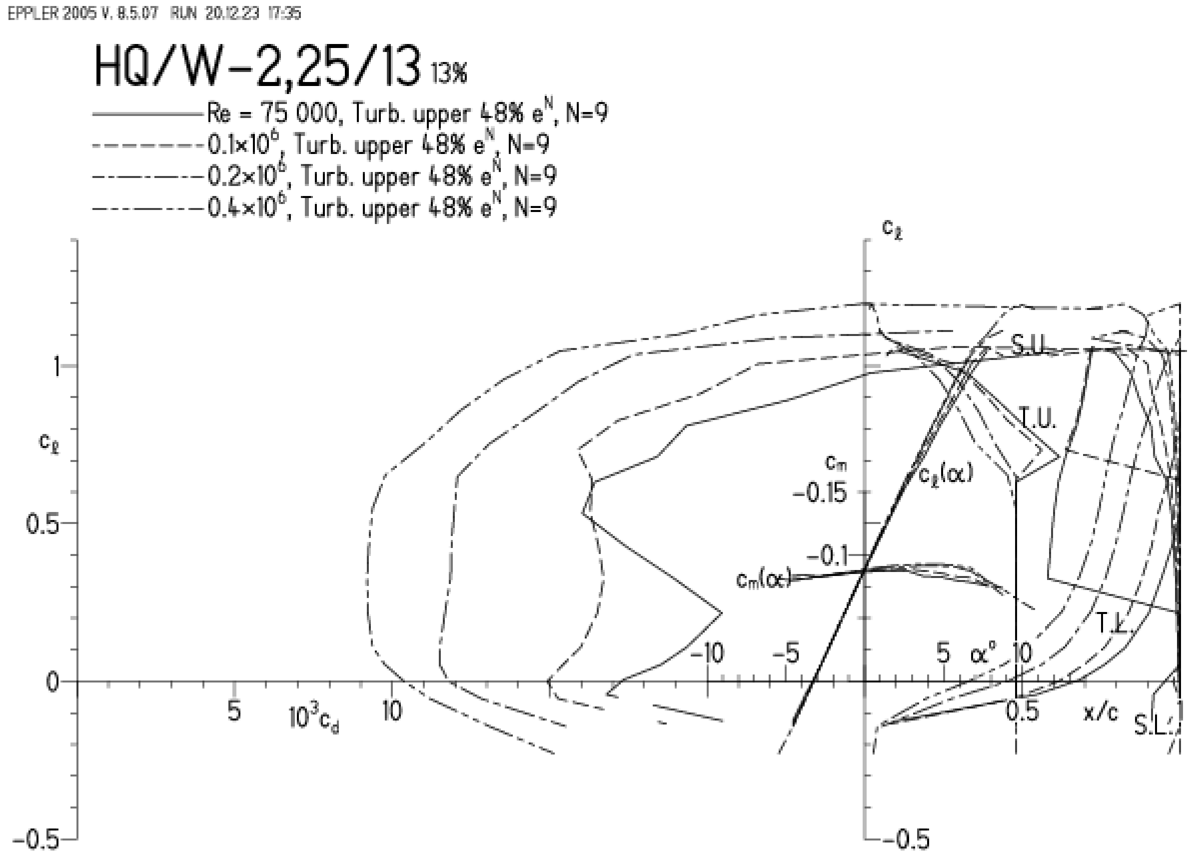


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26



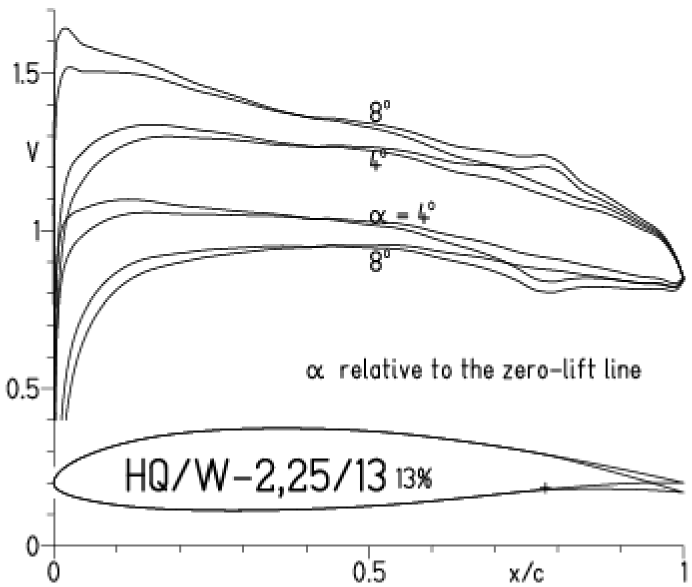
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



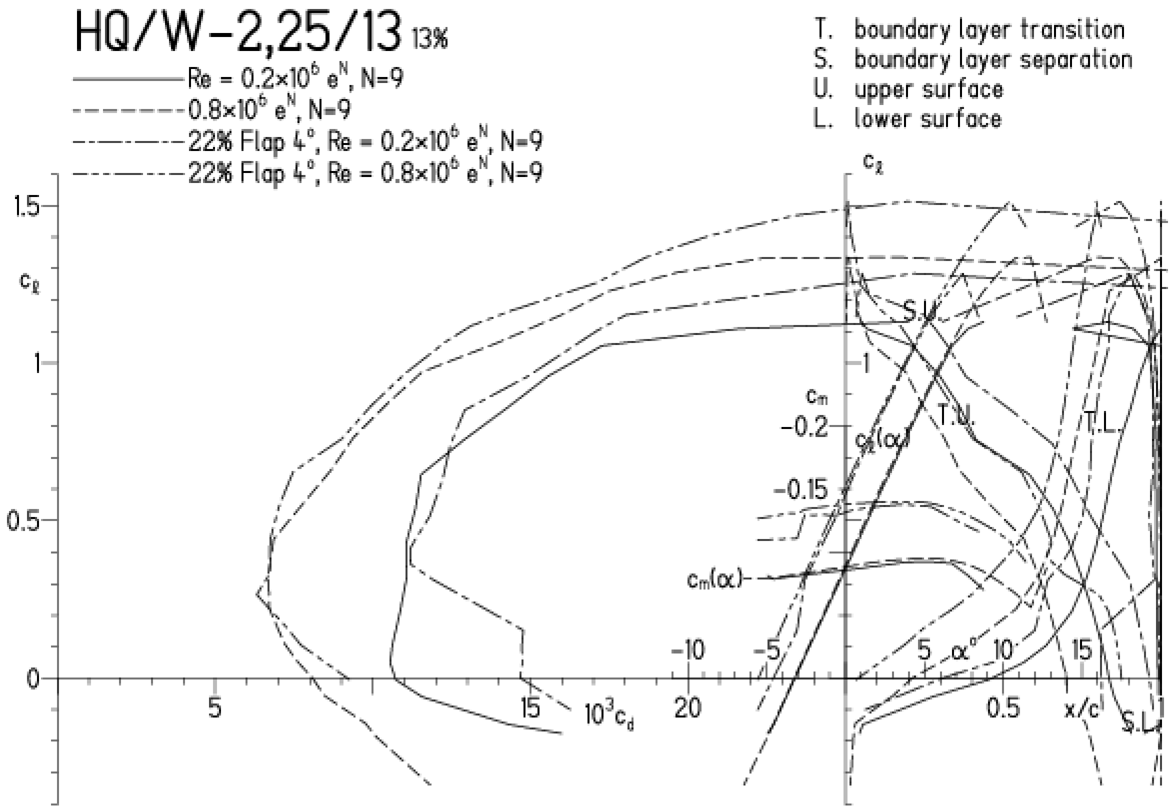


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

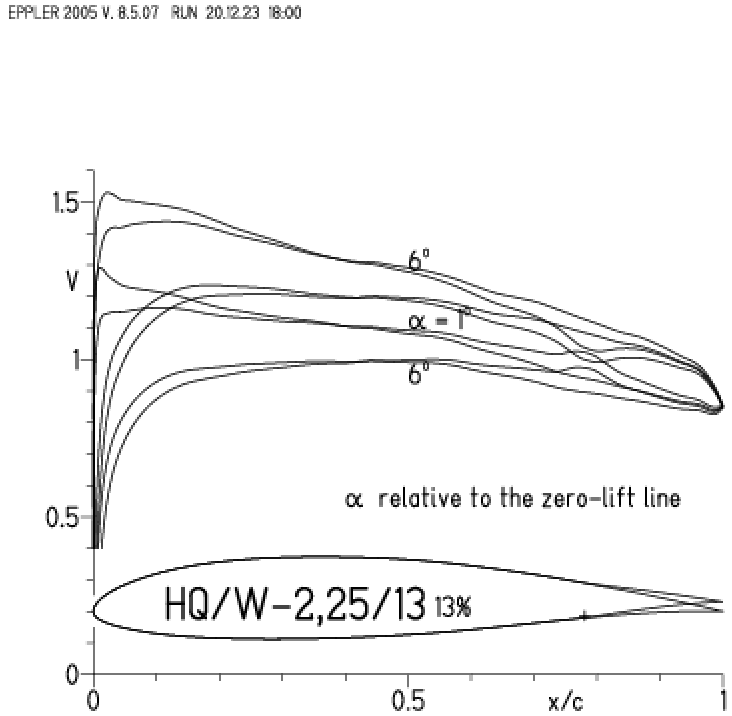
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

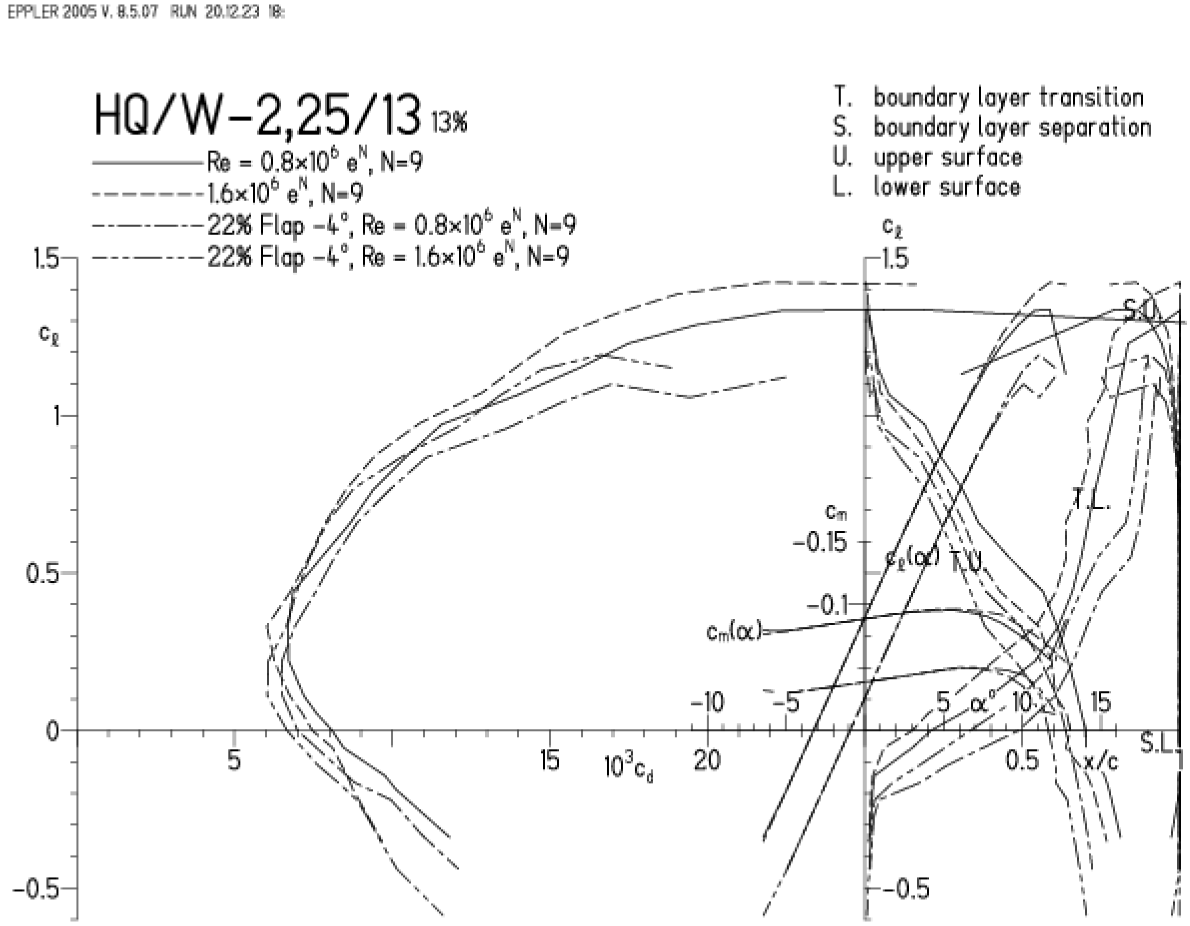


EPPLER 2005 V.

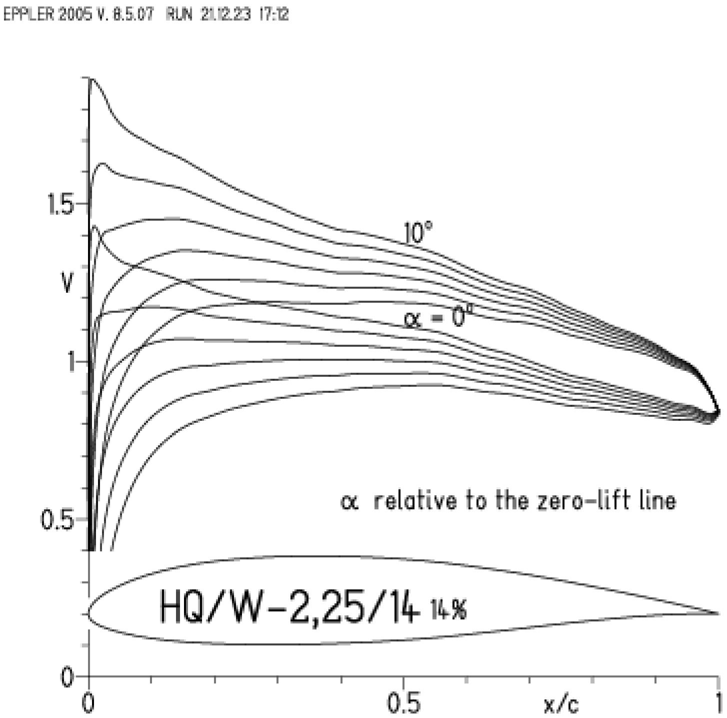


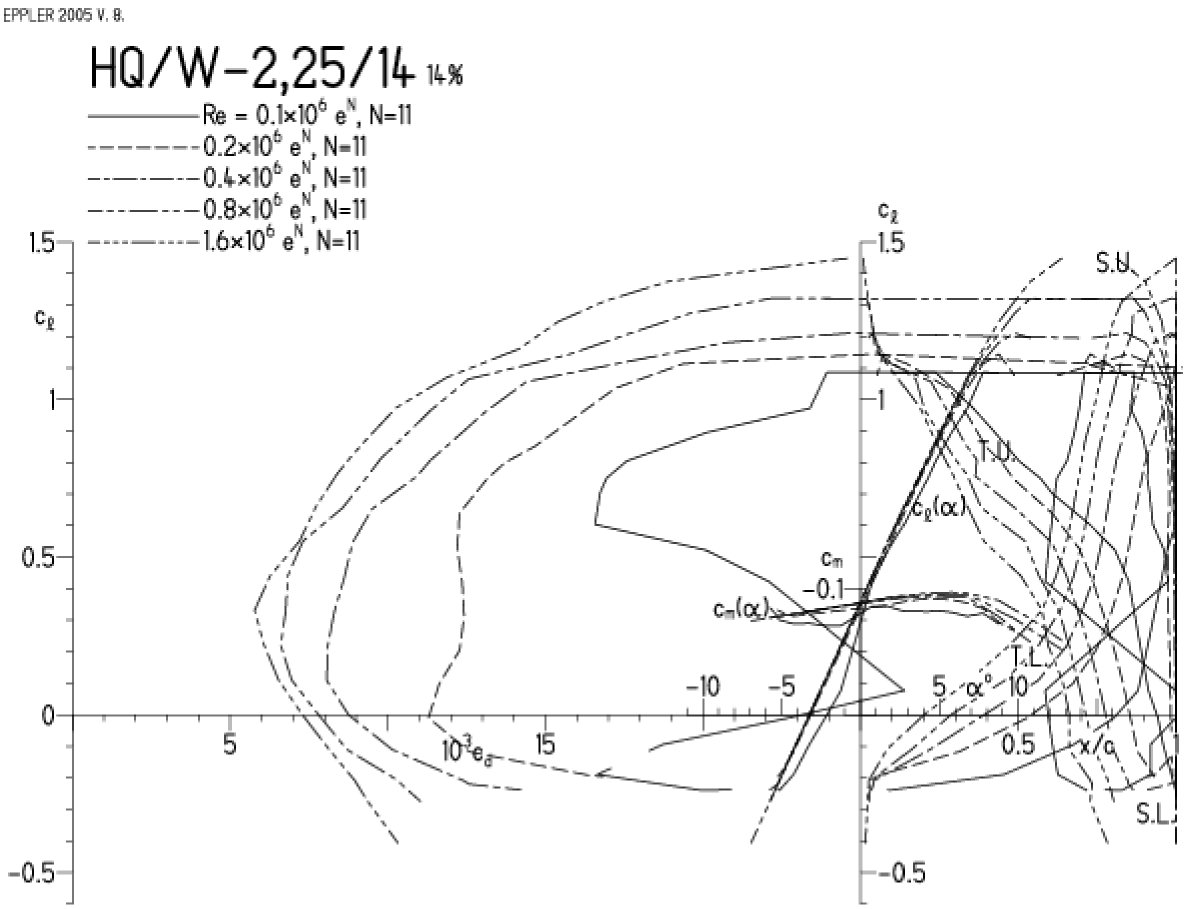
HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag



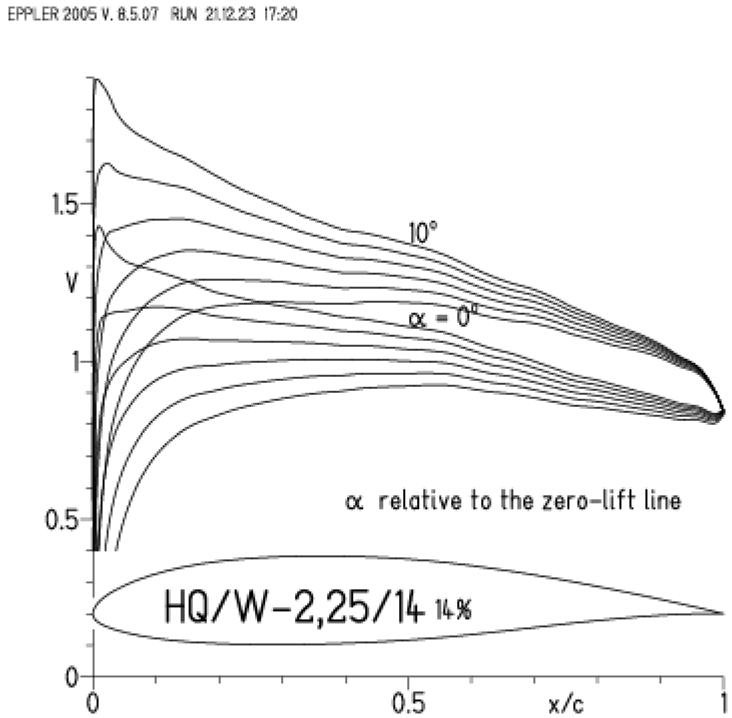


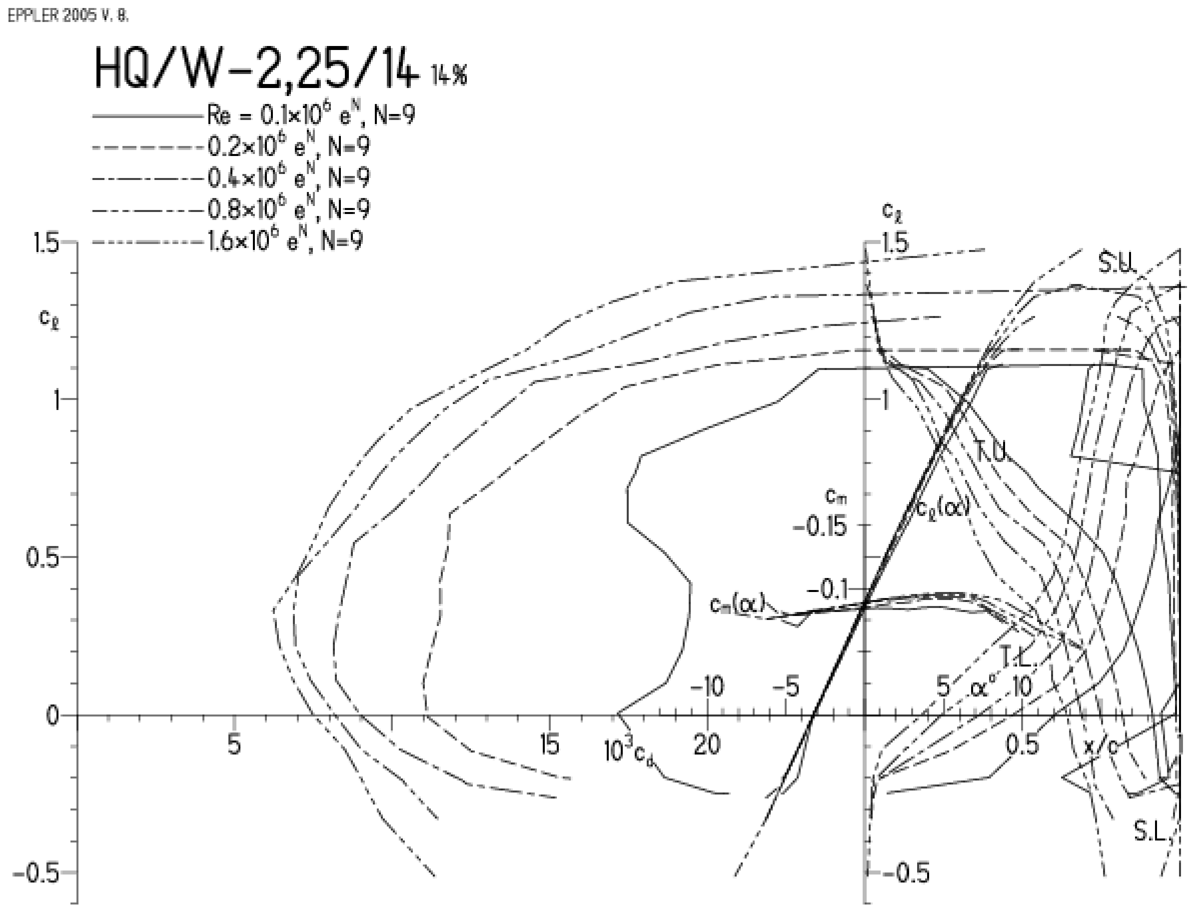
HQ/W-2,25/14, N=11





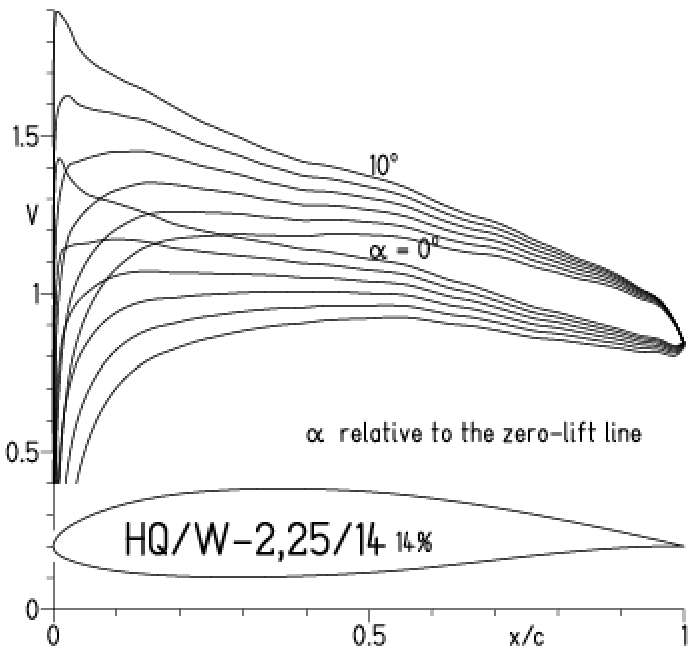
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
V
1.5
1
0.5
0
0
0.5
x/c
1

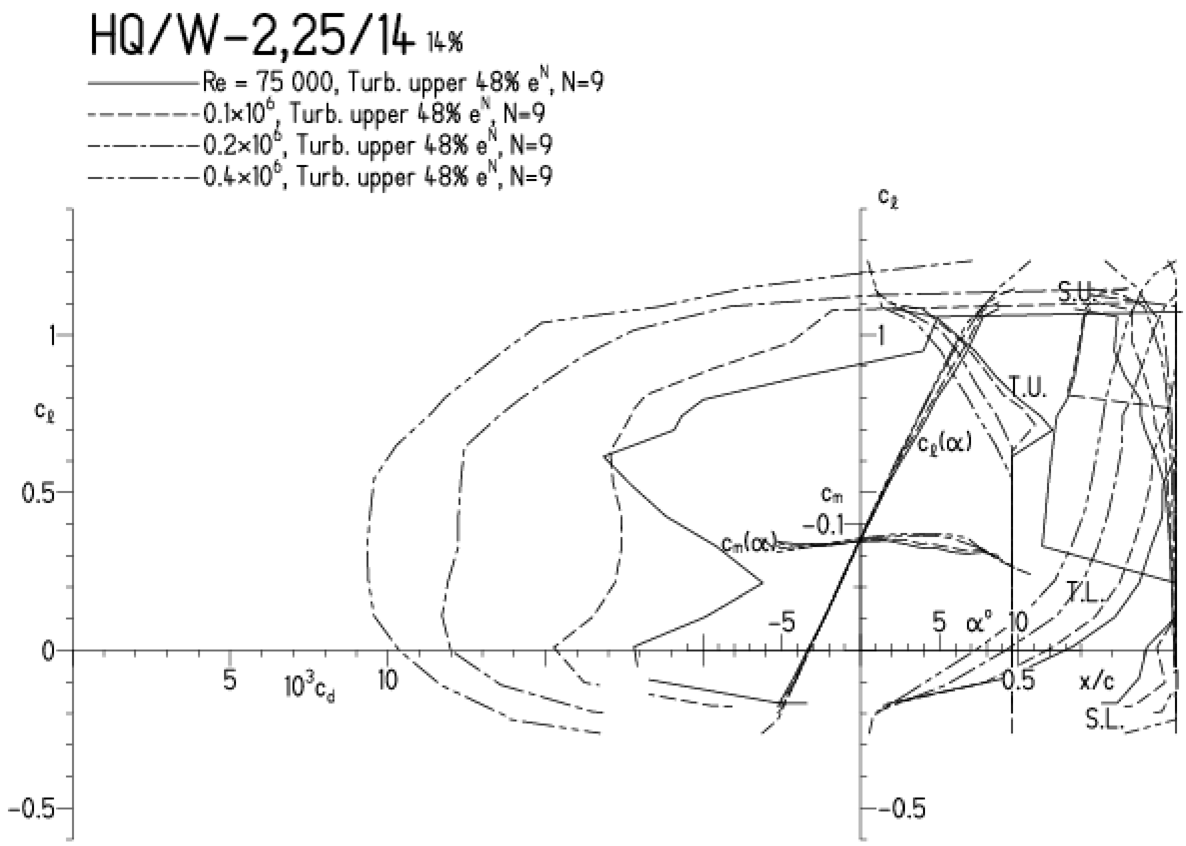

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
cm
α°
10^3 cd
x/c

<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

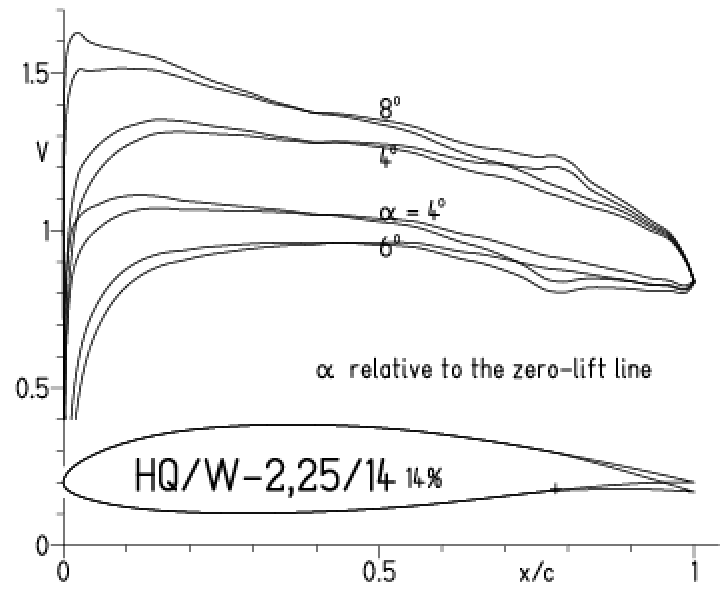


EPPLER 2005 V. 8.5.07 RU

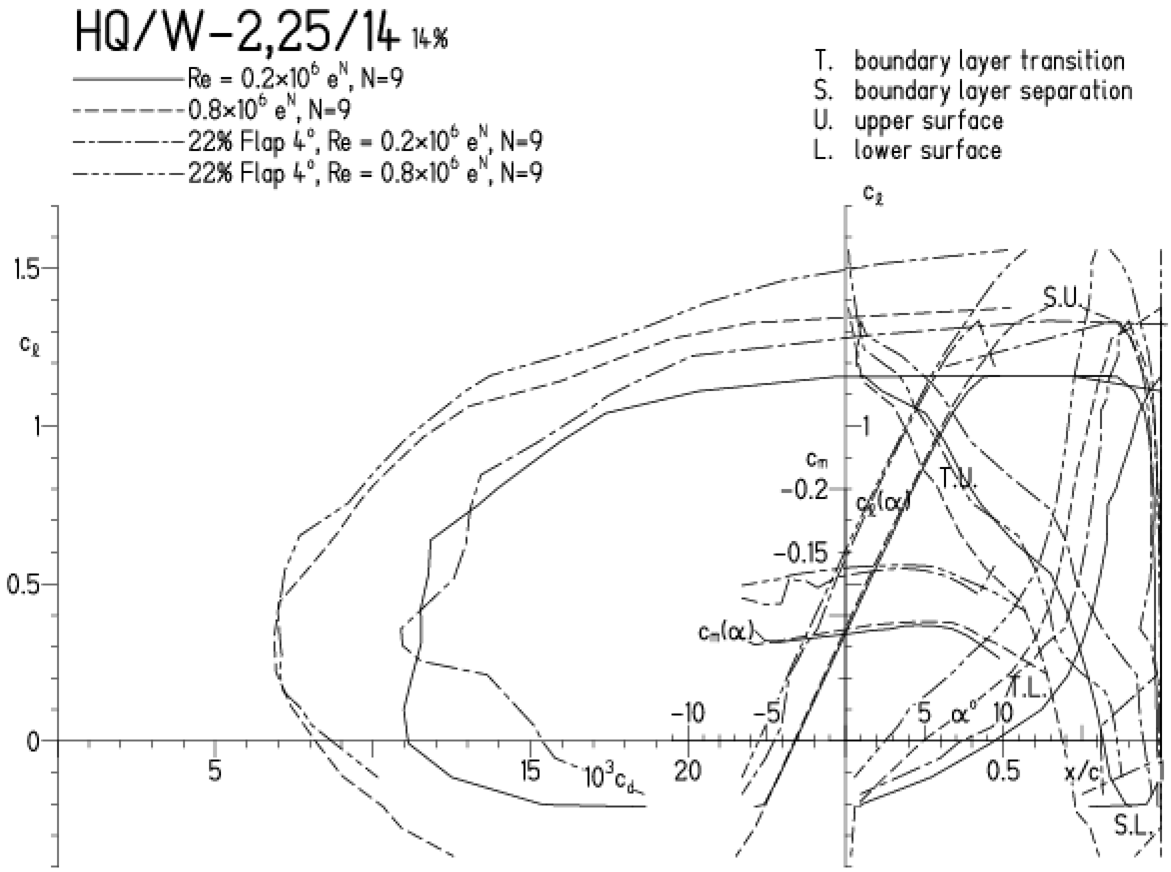


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

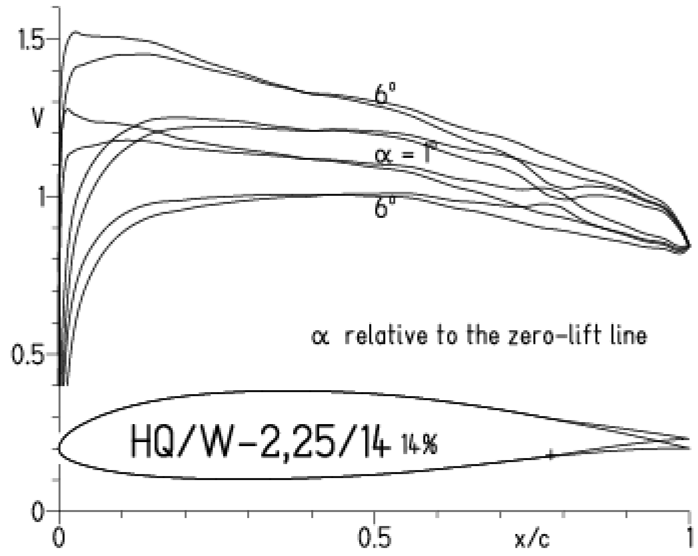


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

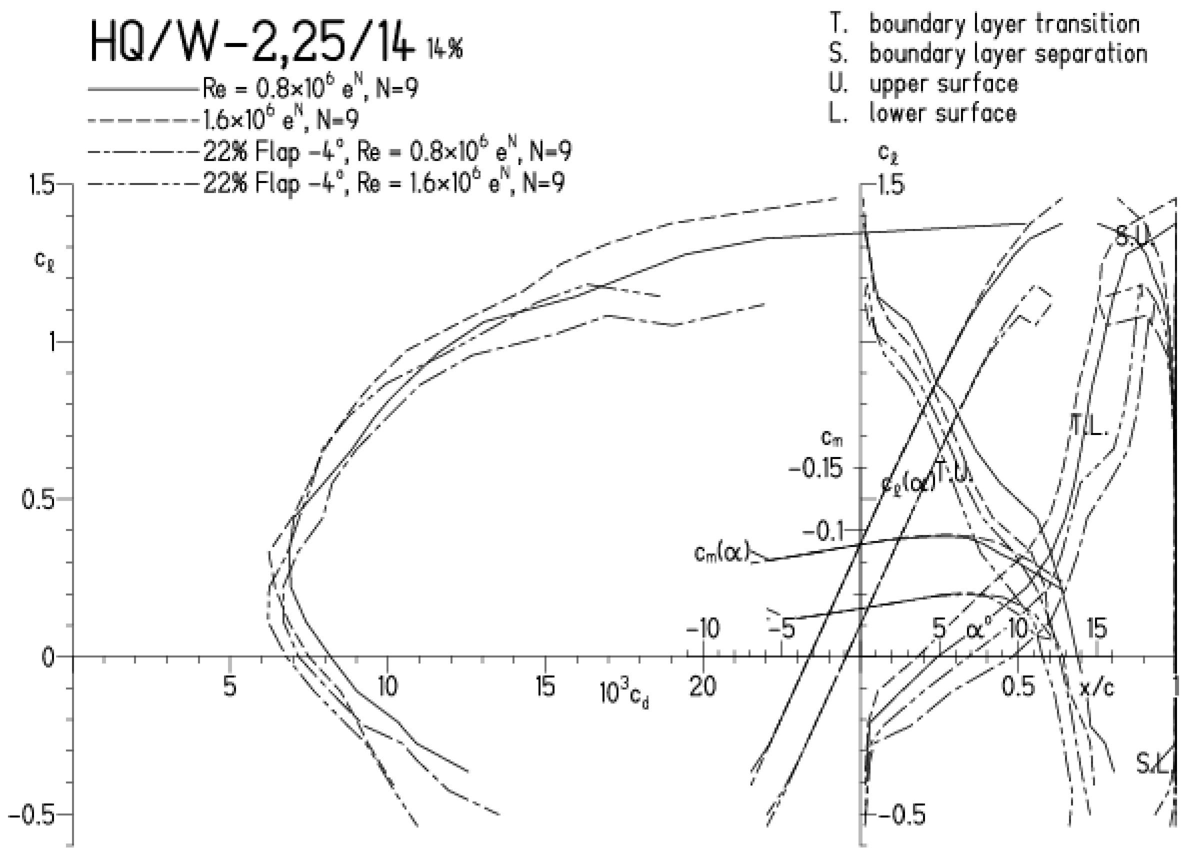


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

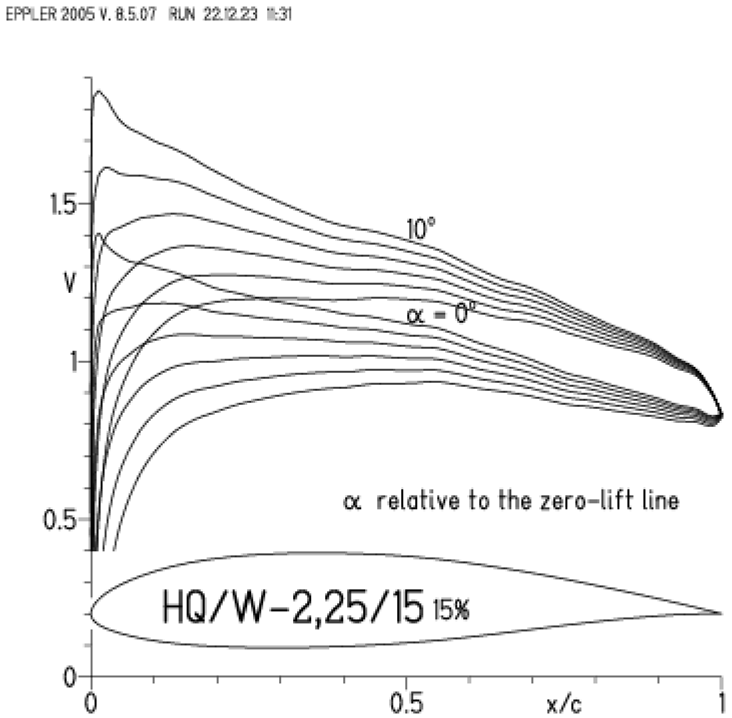
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

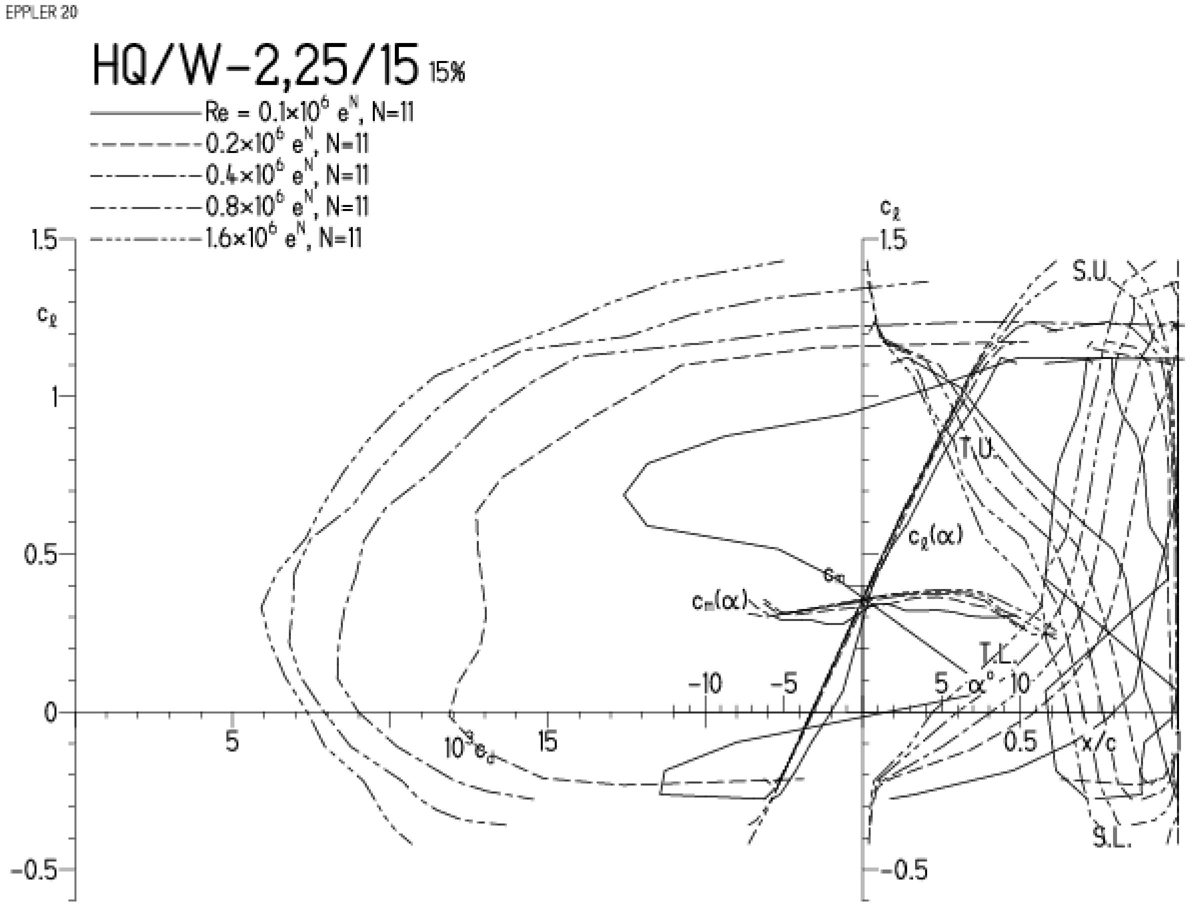


EPPLER 2005 V. 8.5.07



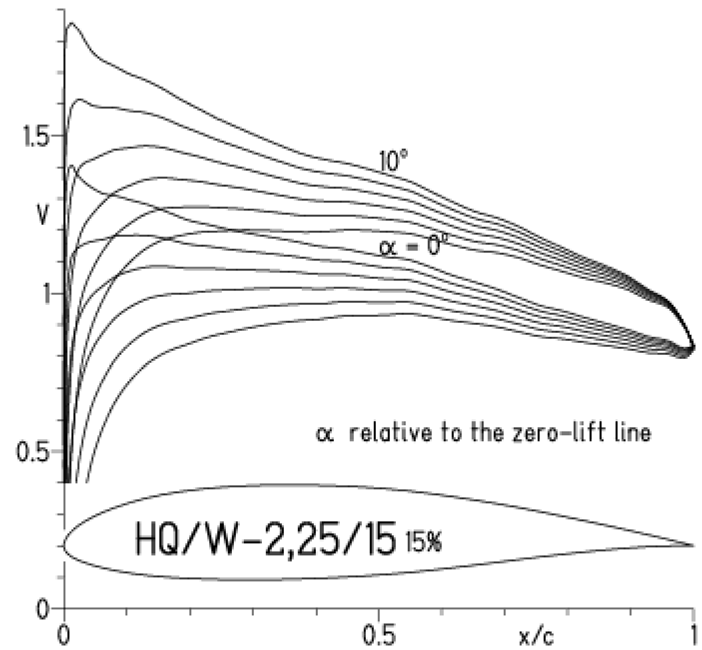
<u>HQ/W-2,25/15</u>, N=11



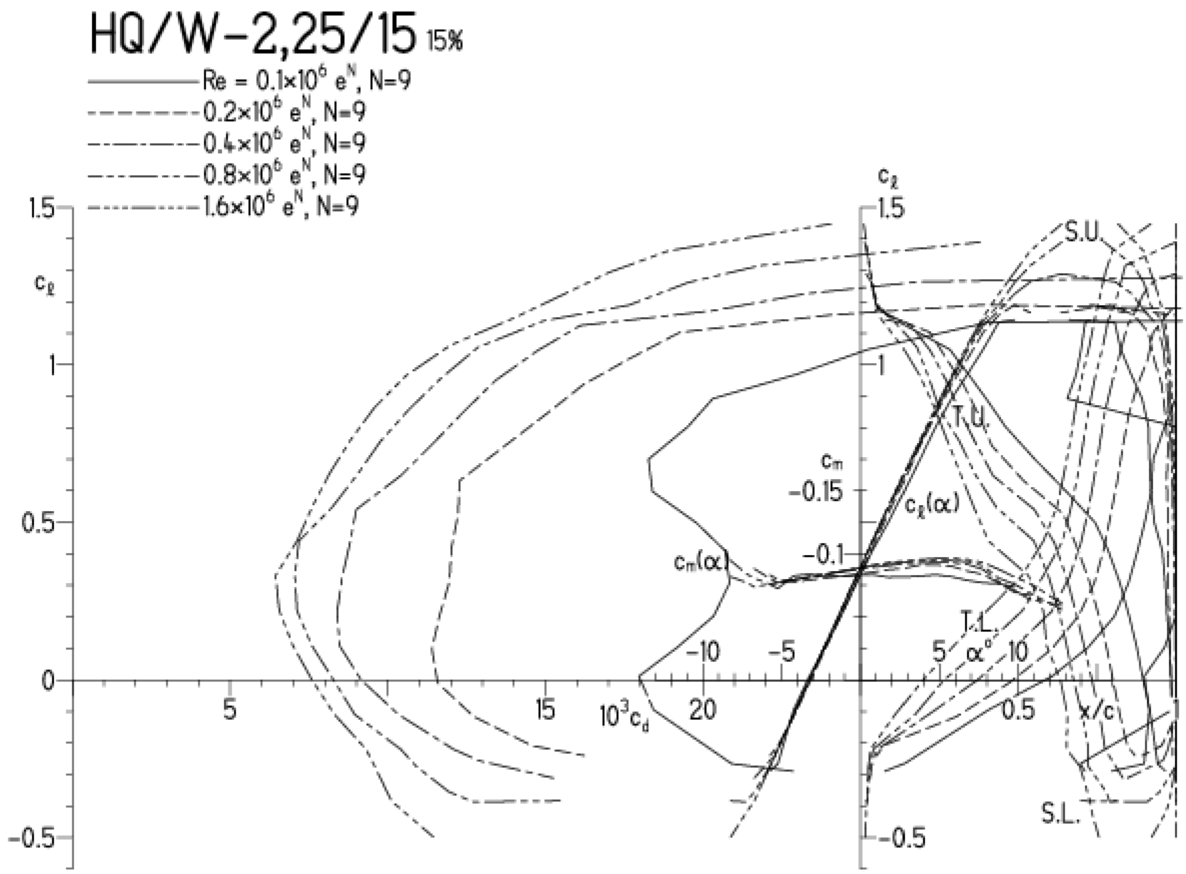


HQ/W-2,25/15, N=9

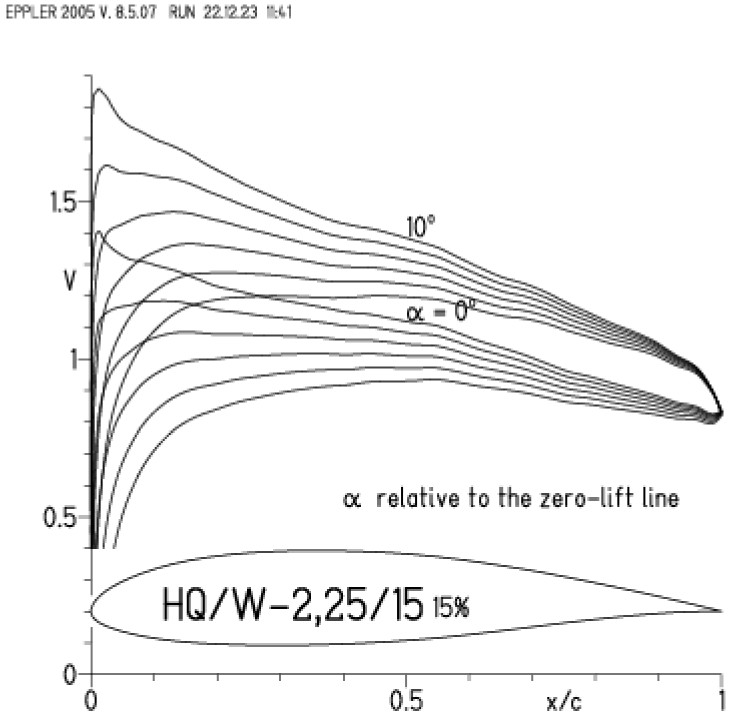
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

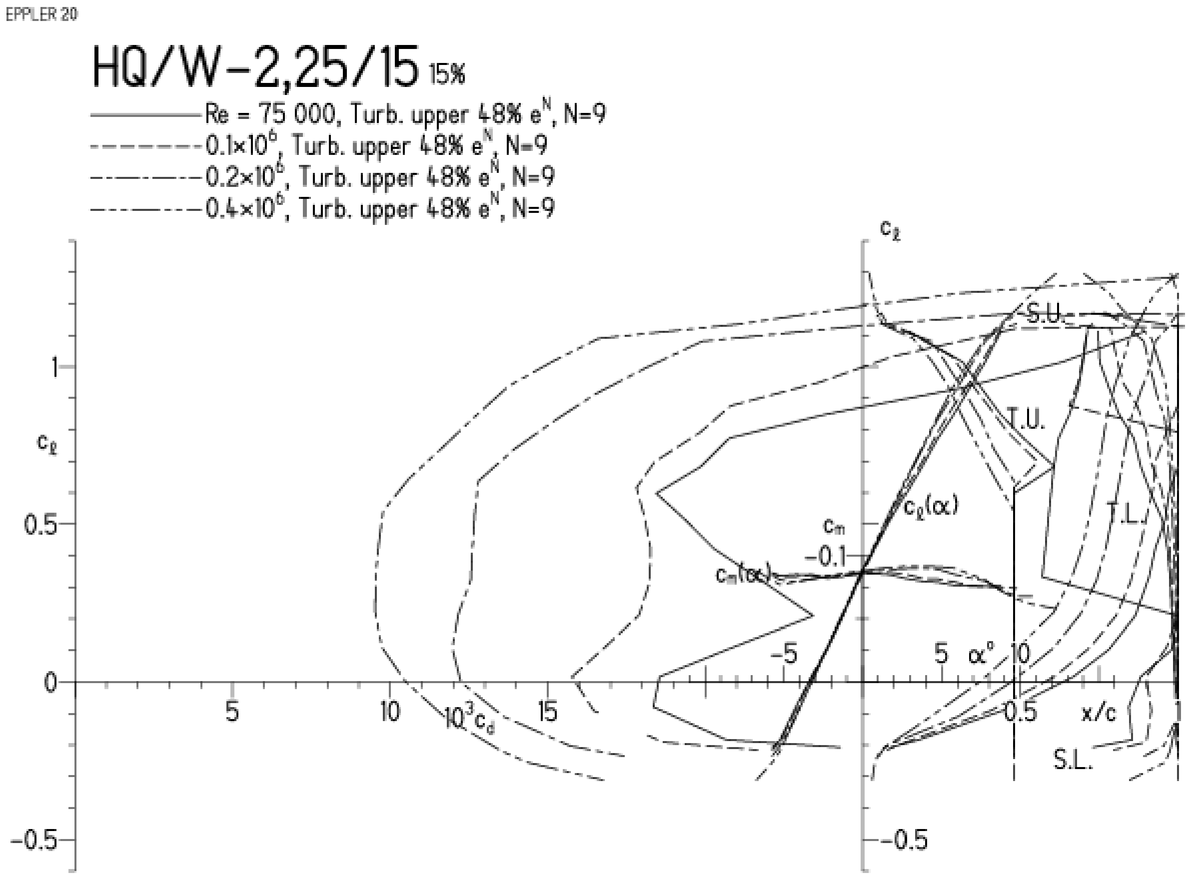


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



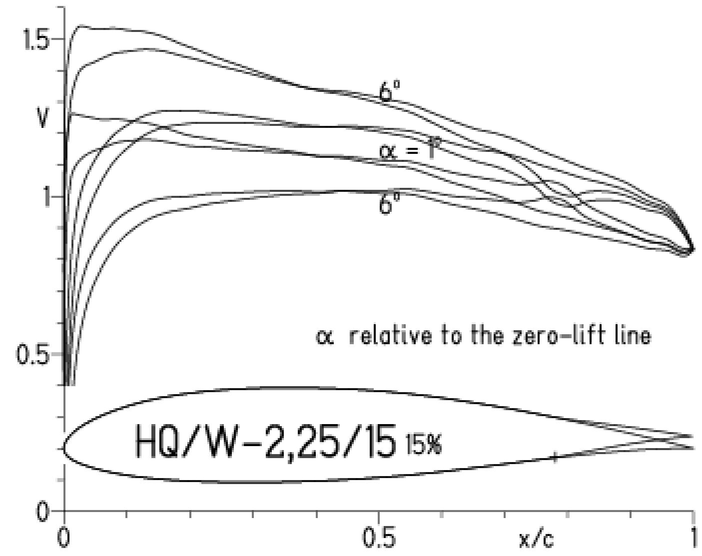


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

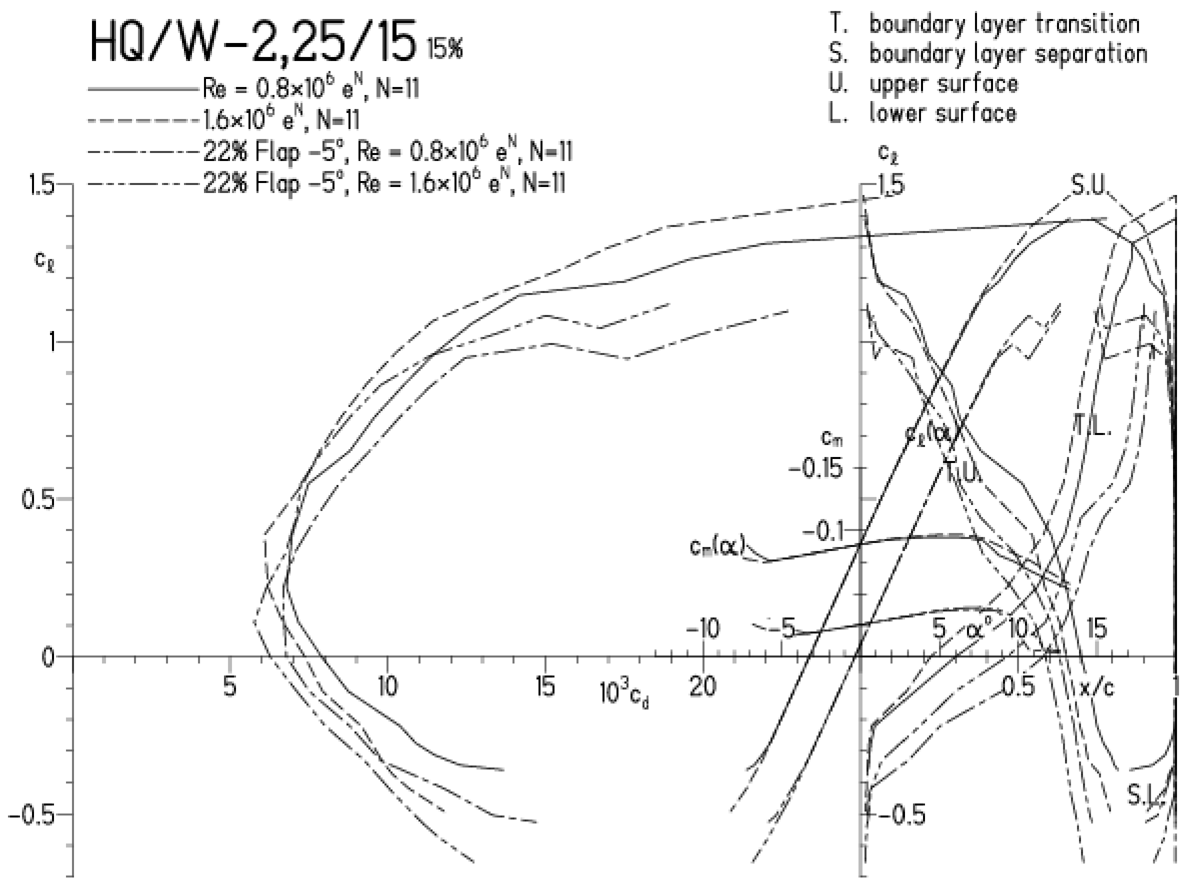
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

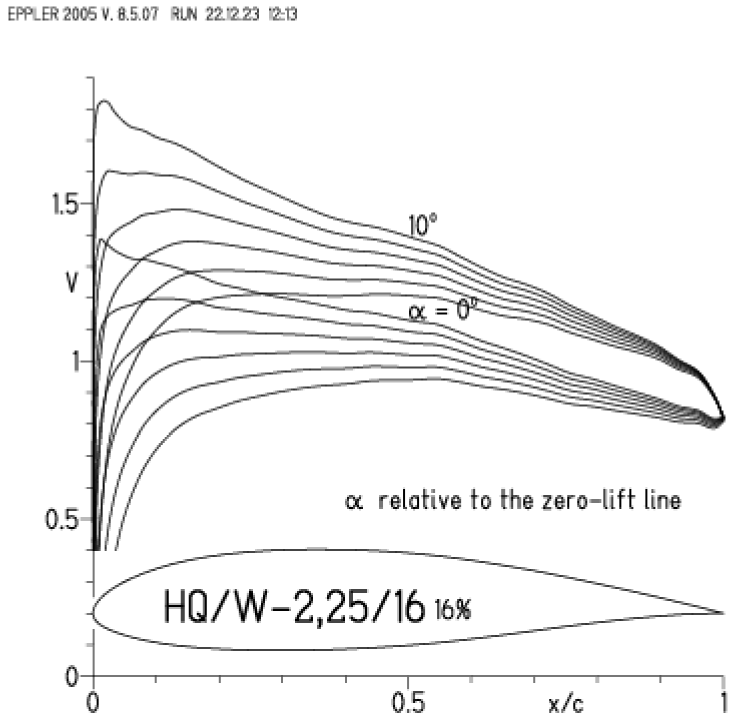
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

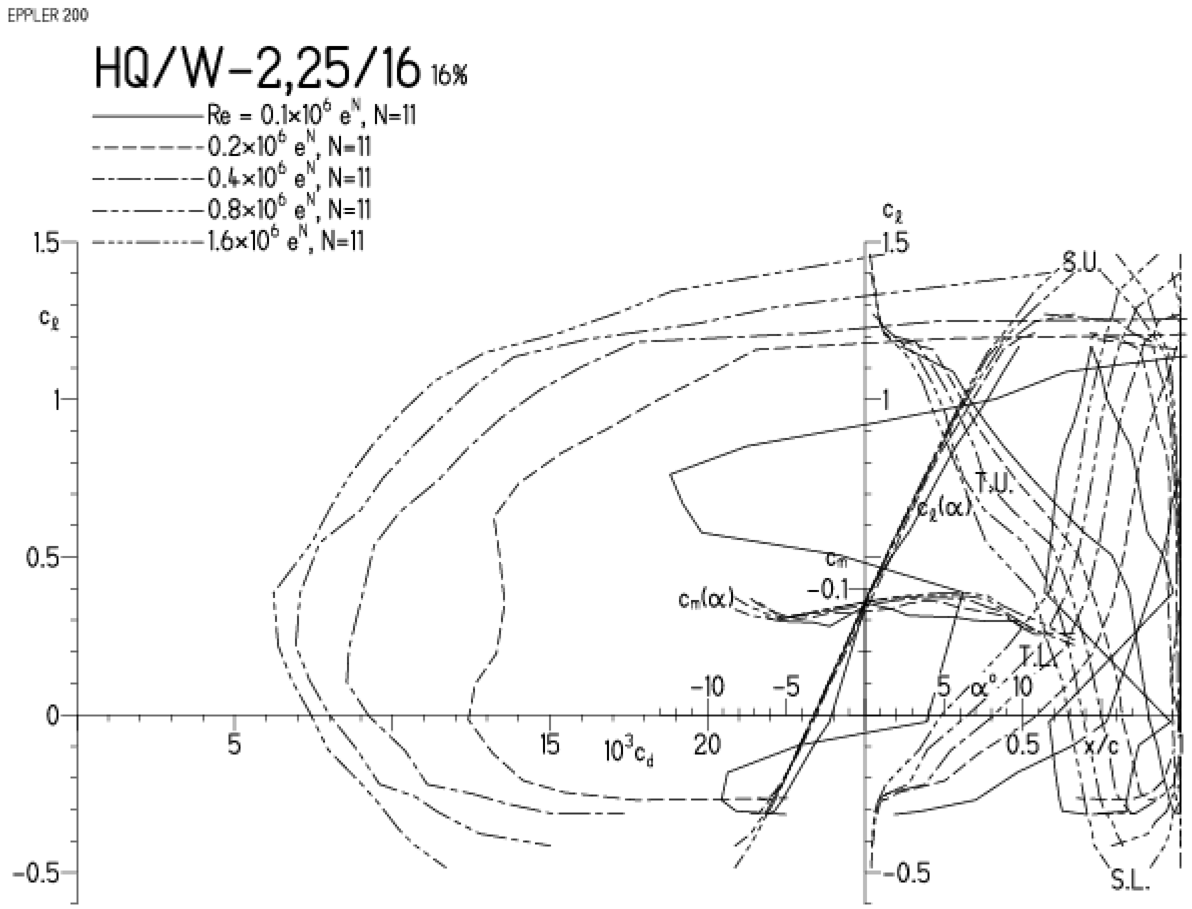


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

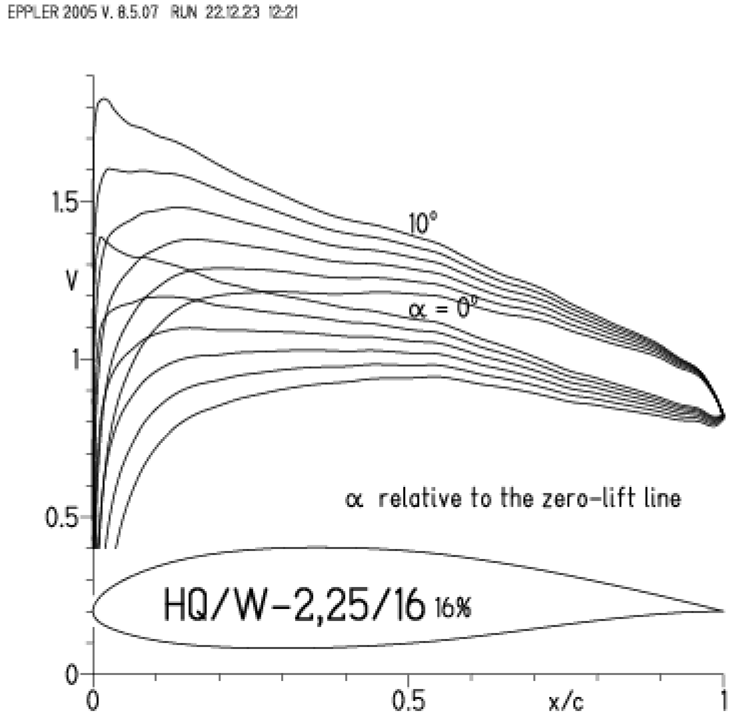


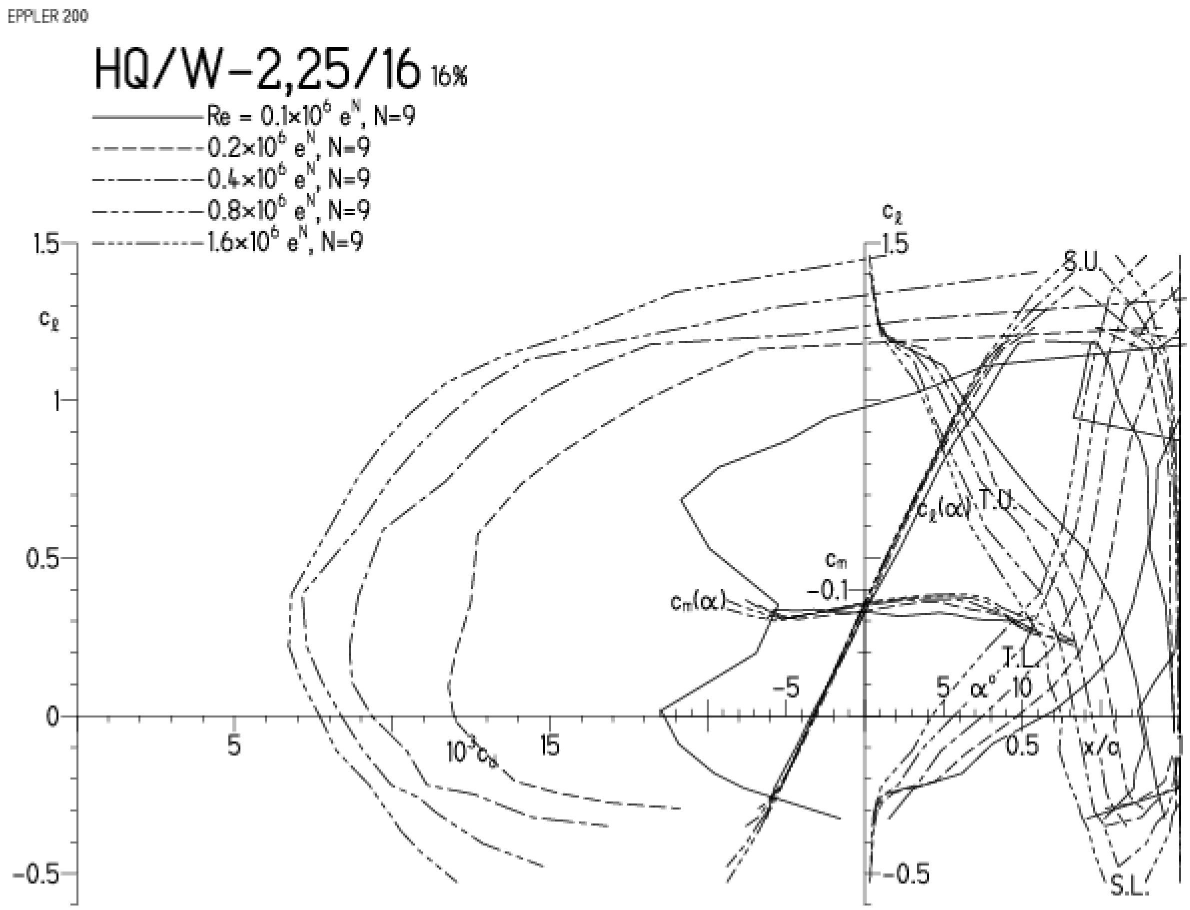
HQ/W-2,25/16, N=11



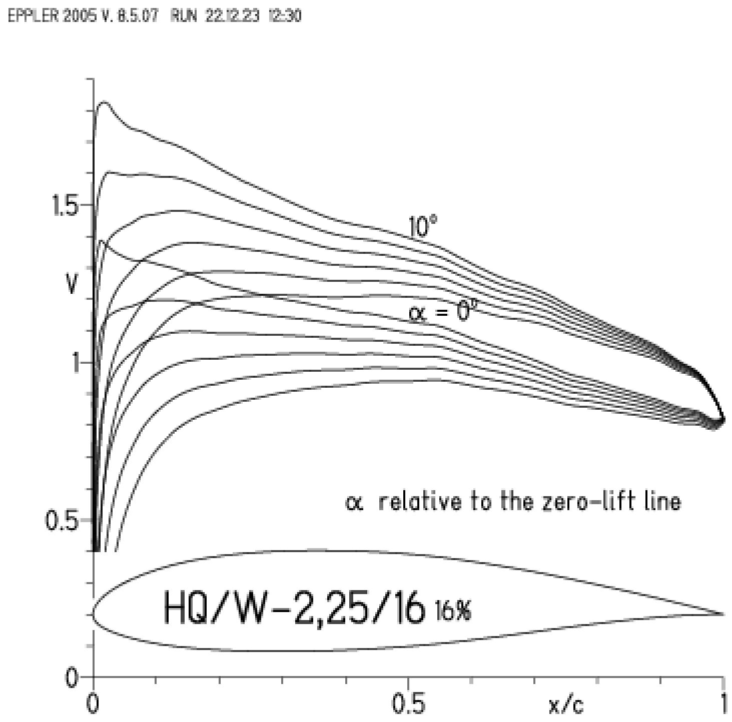


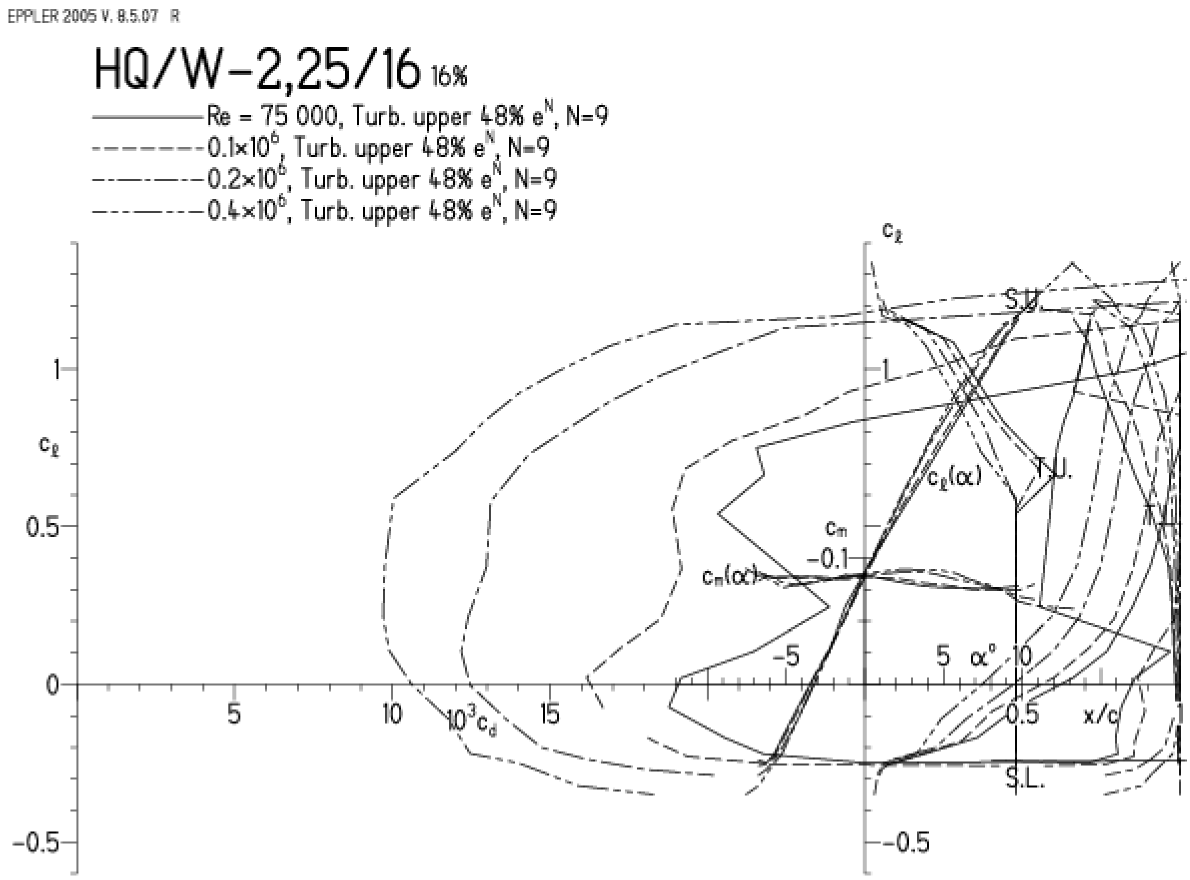
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_l(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1.5
-0.5

<u>HQ/W-2,25/16</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



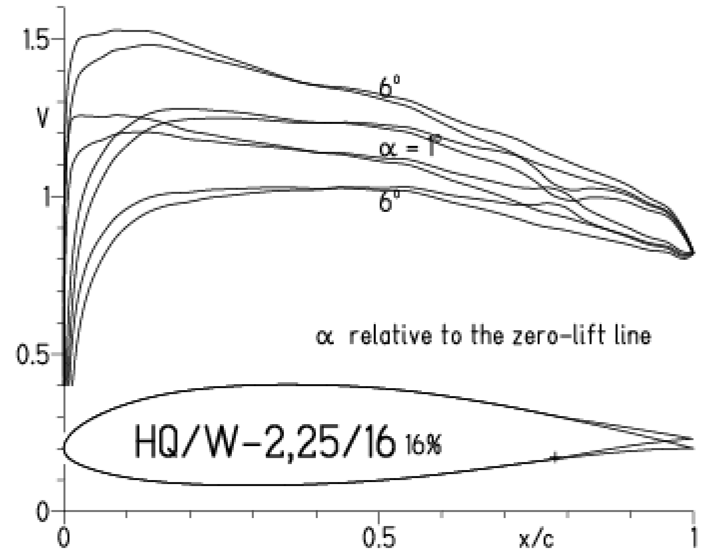


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

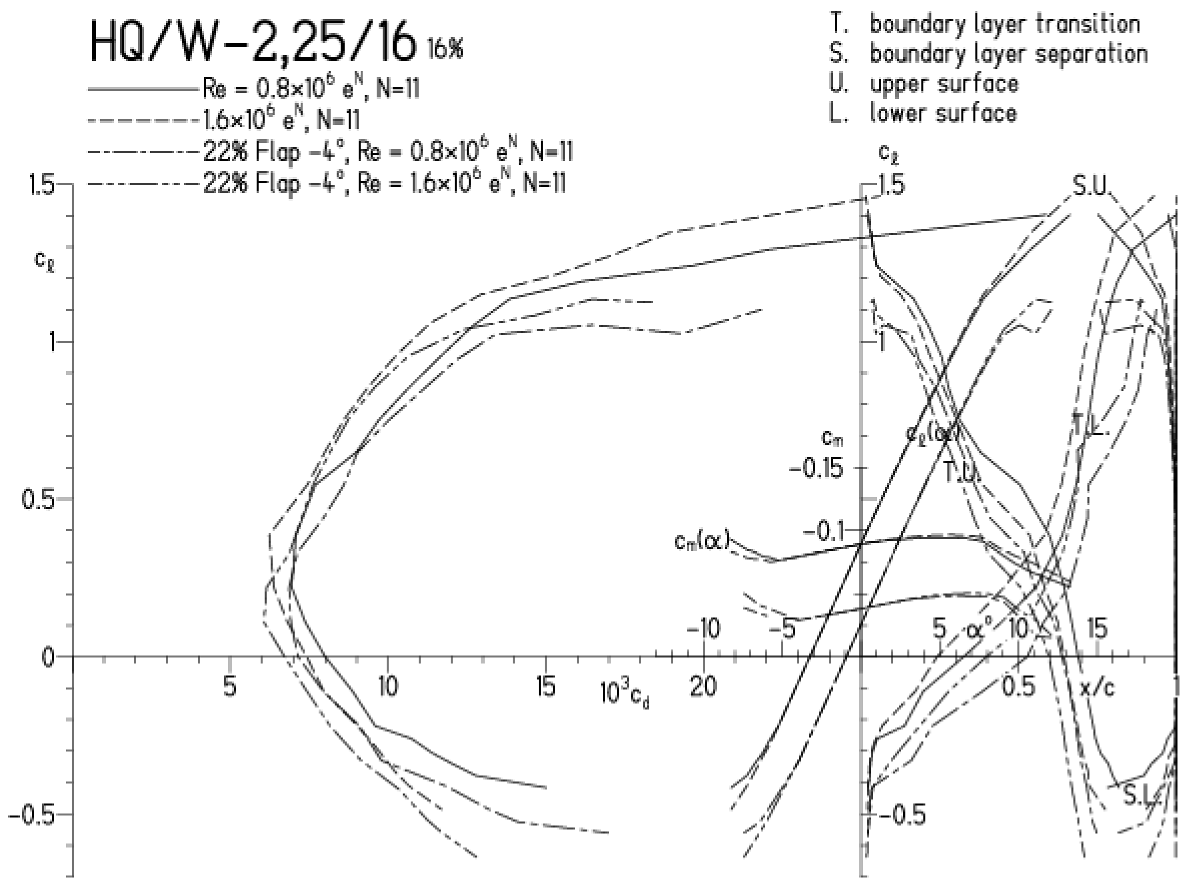
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

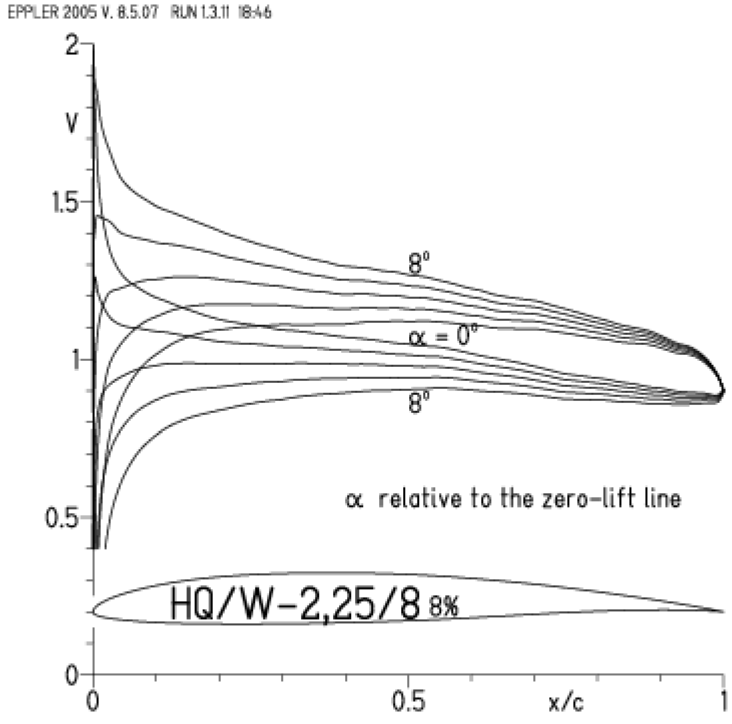
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

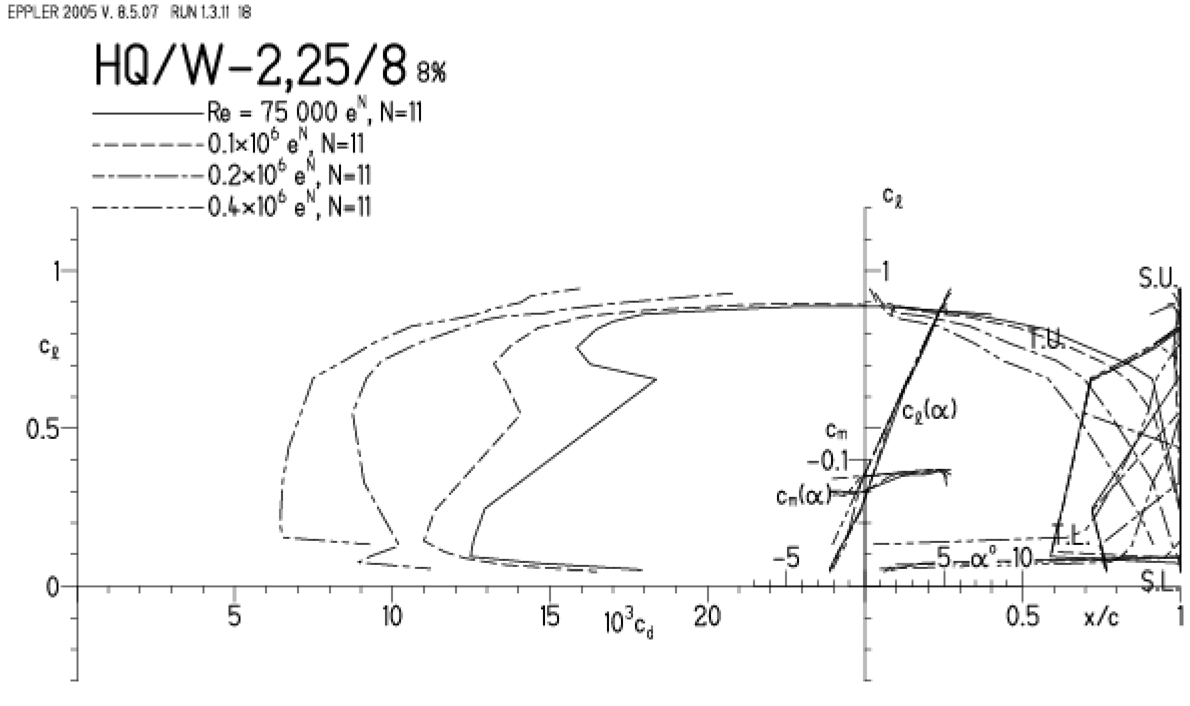


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

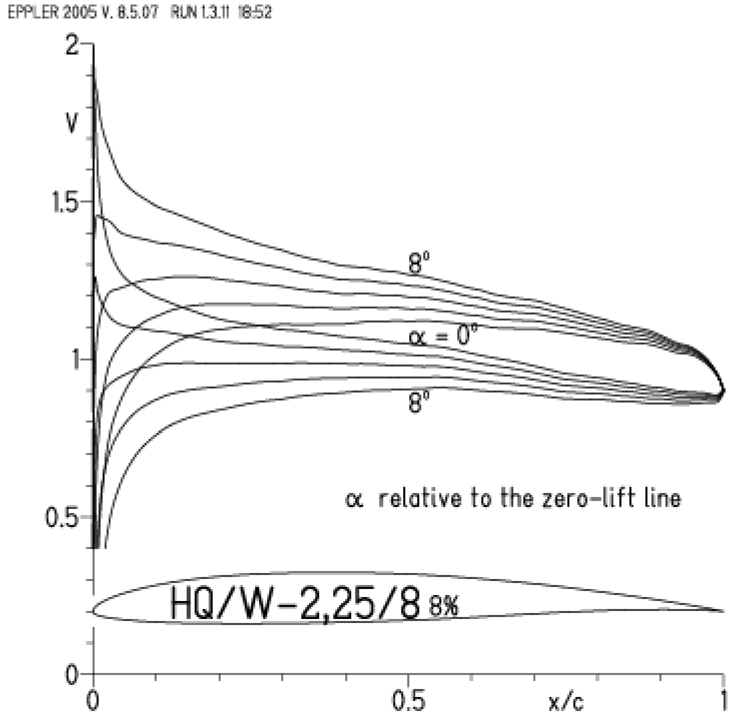


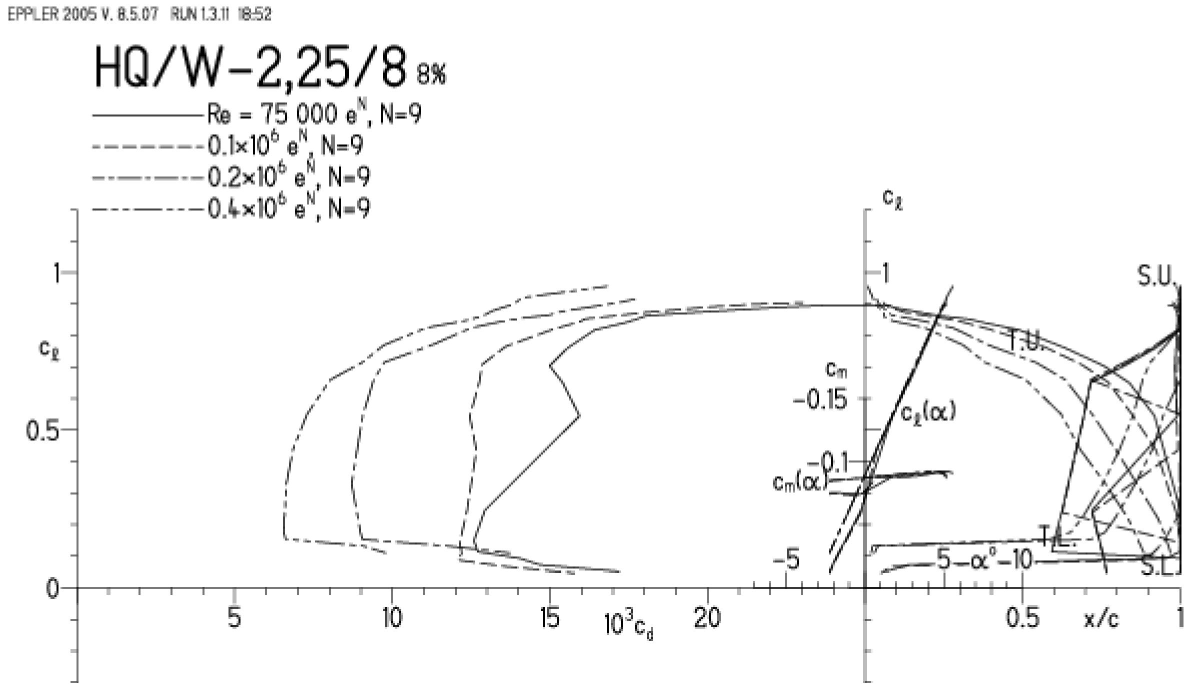
<u>HQ/W-2,25/8</u>, N=11



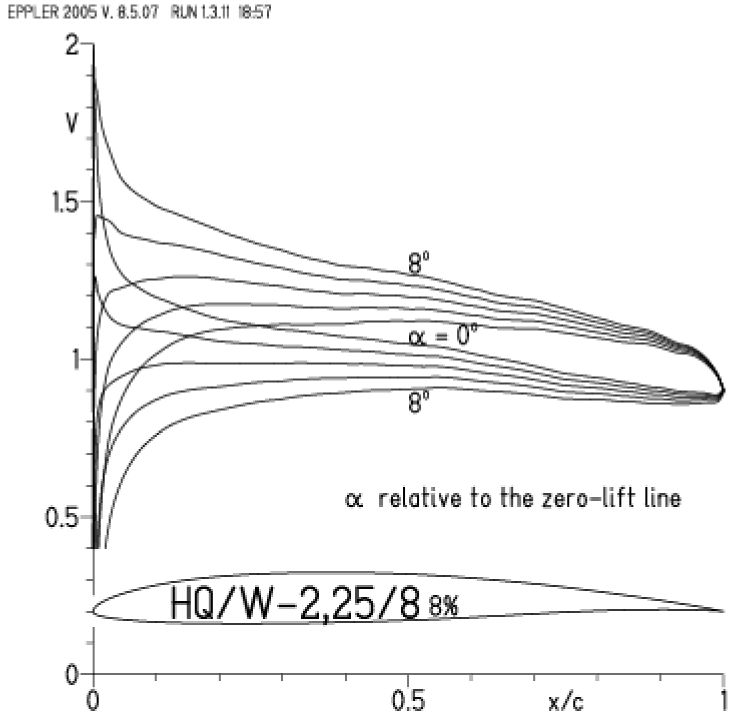


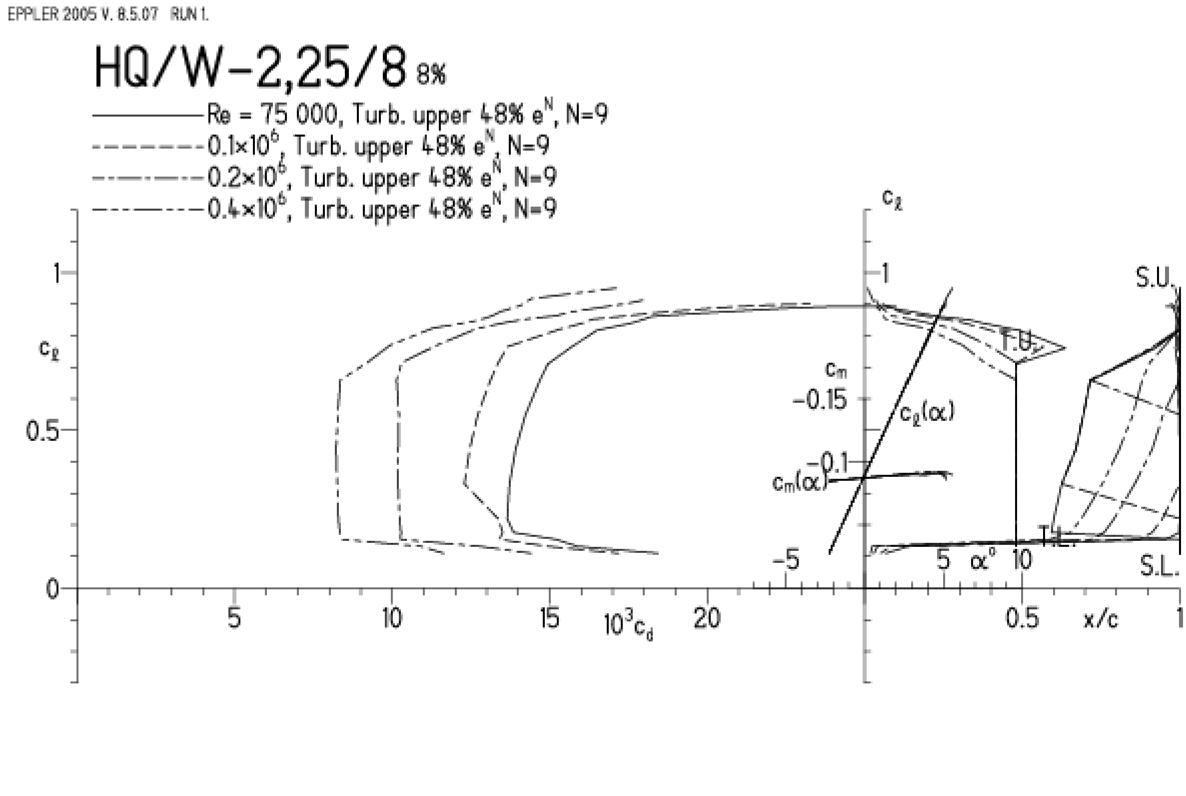
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5 -α°- 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

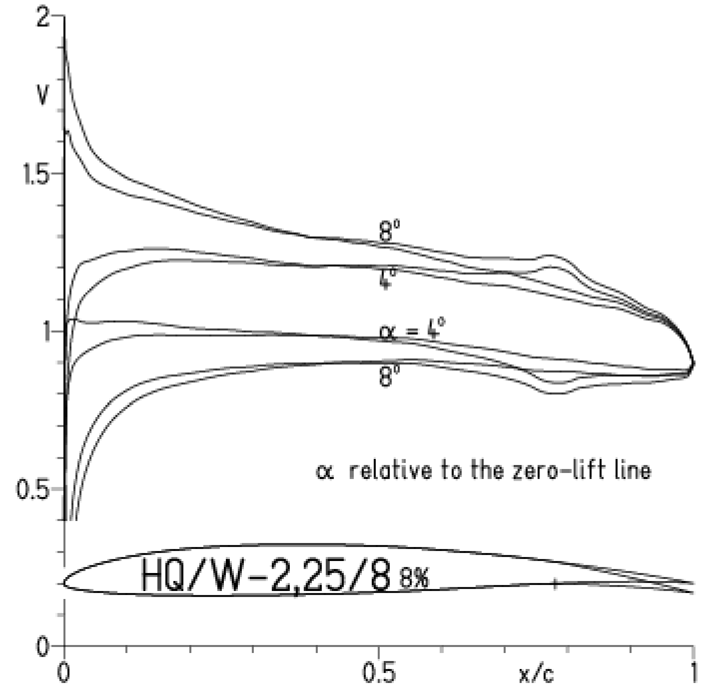
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



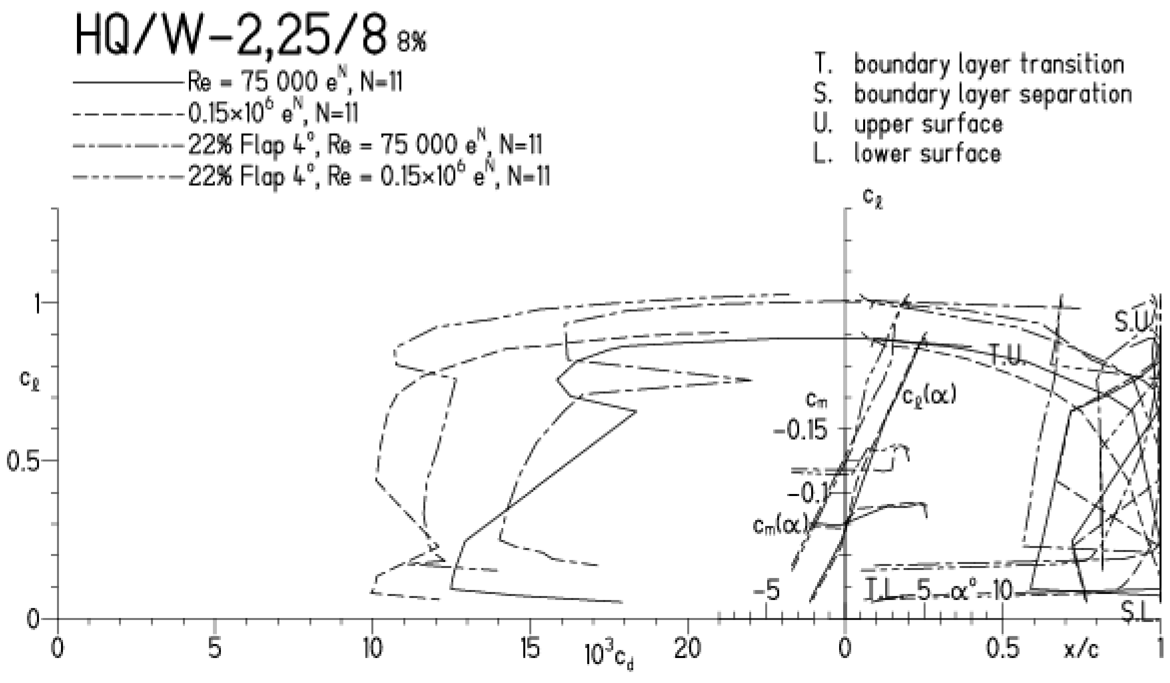


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

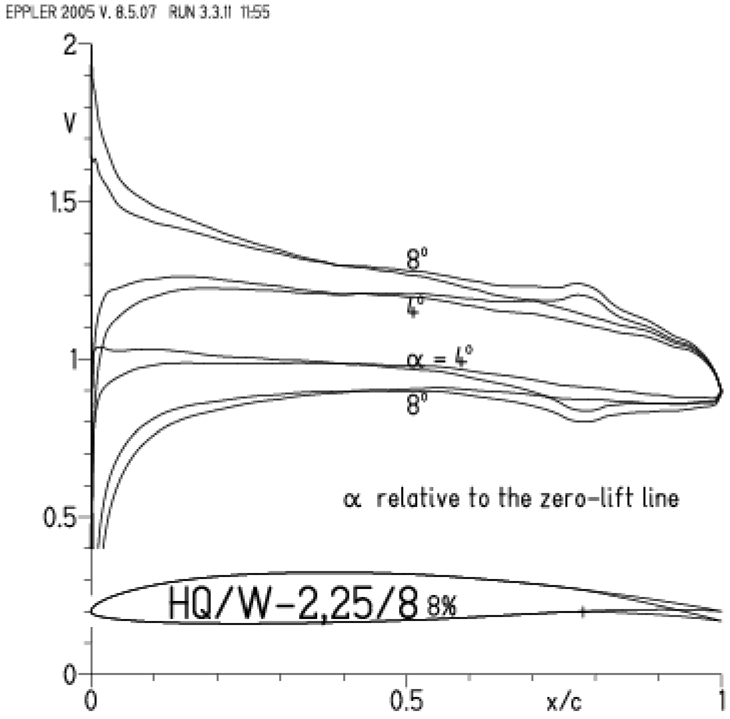
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

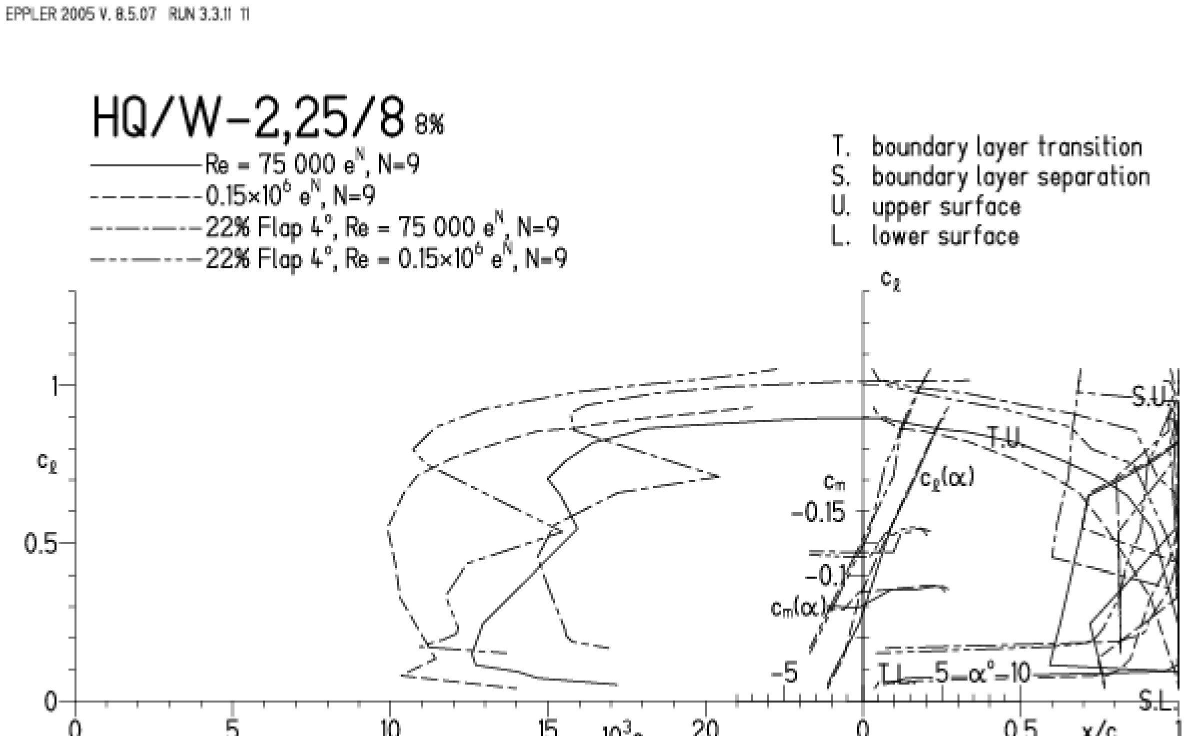


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

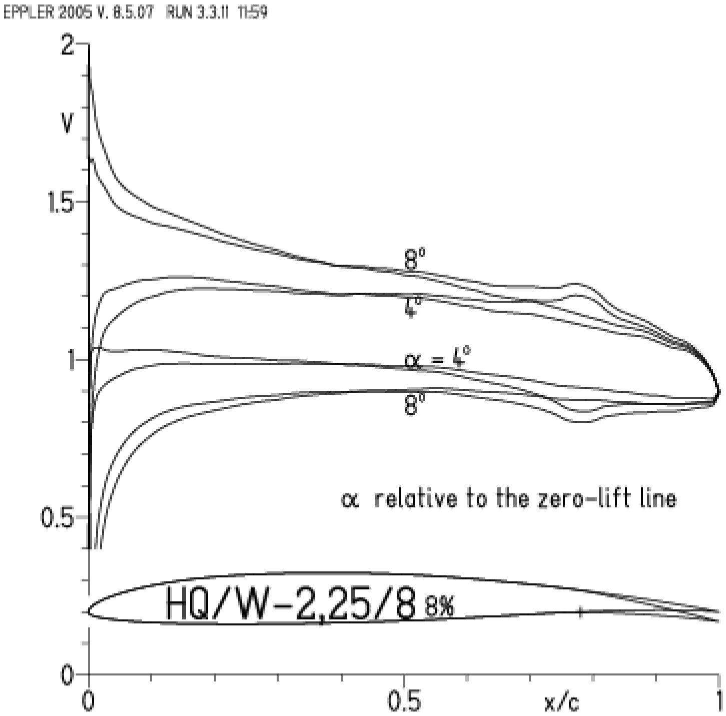


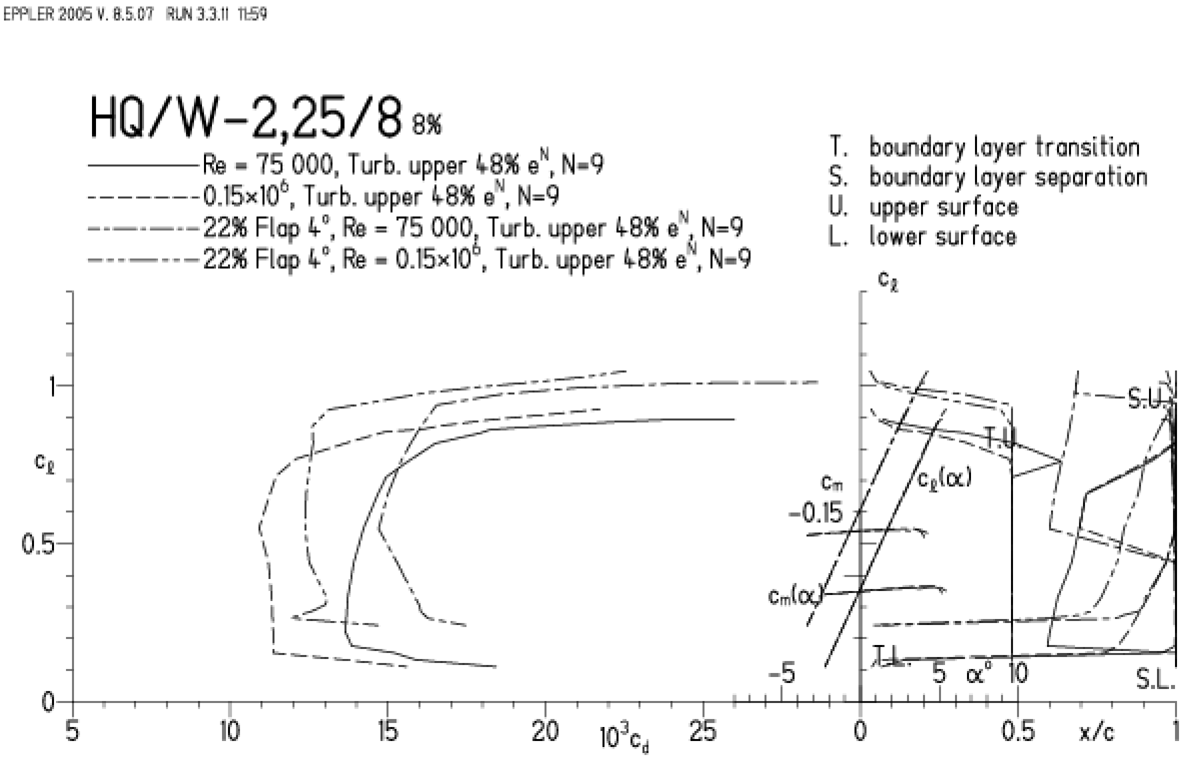
HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag





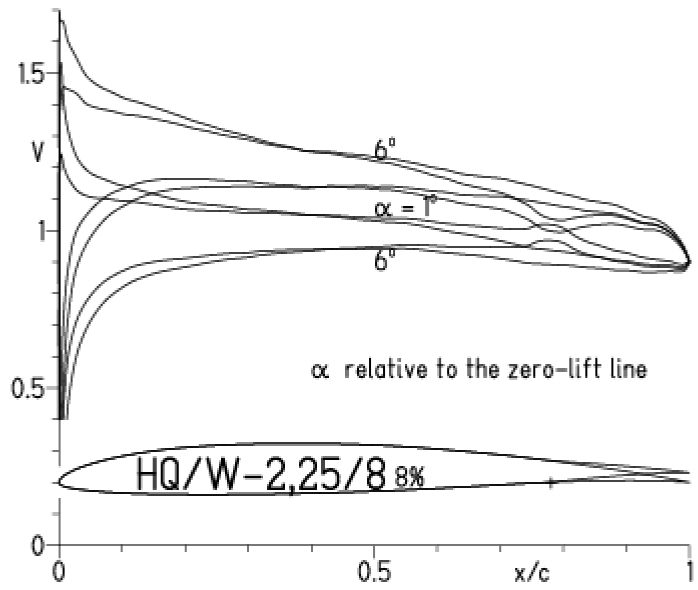
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



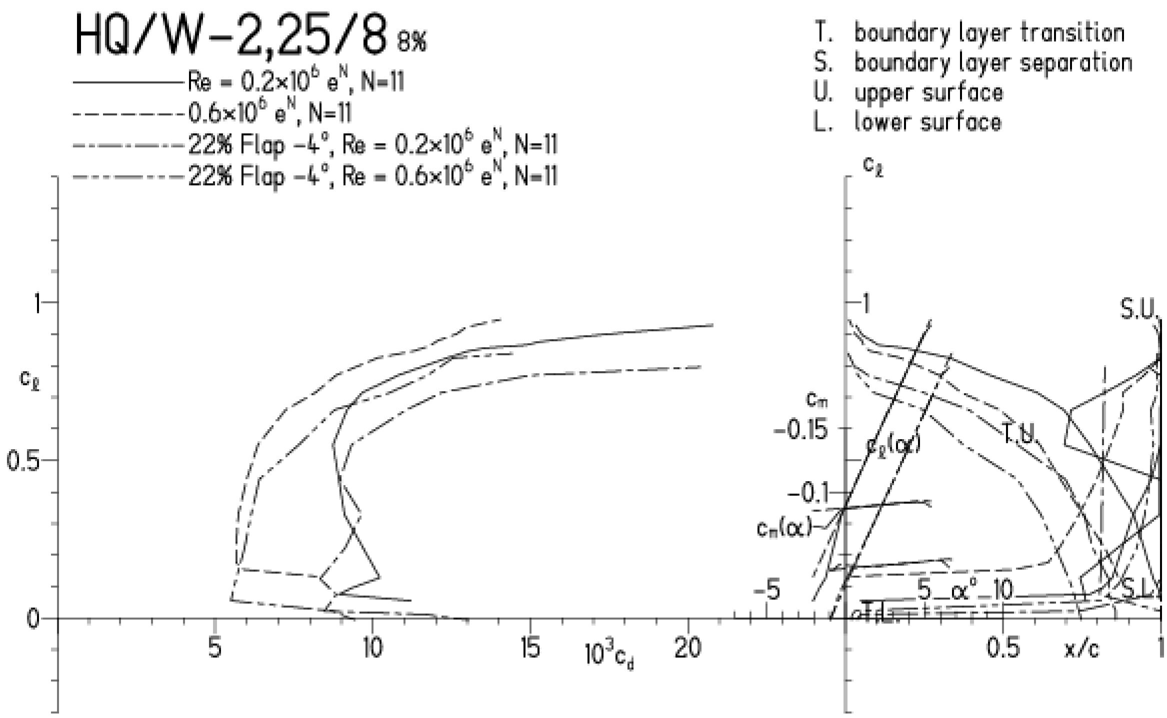


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

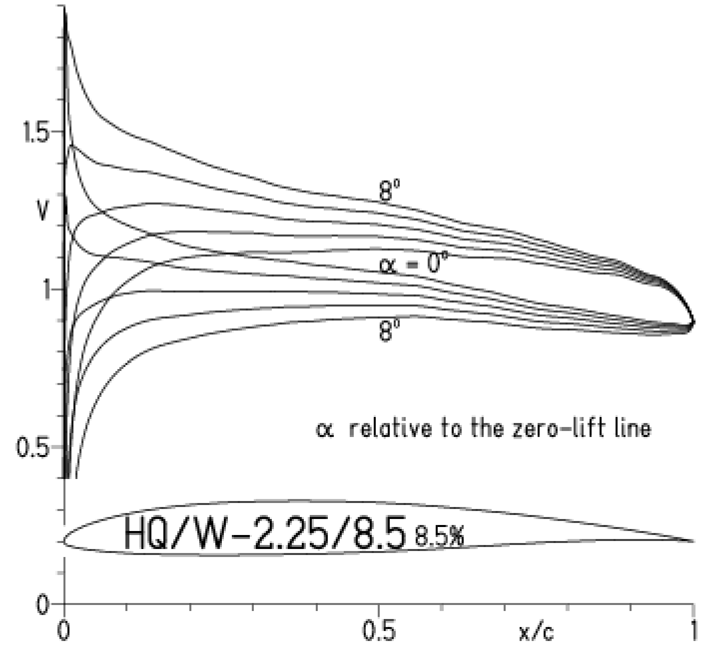


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

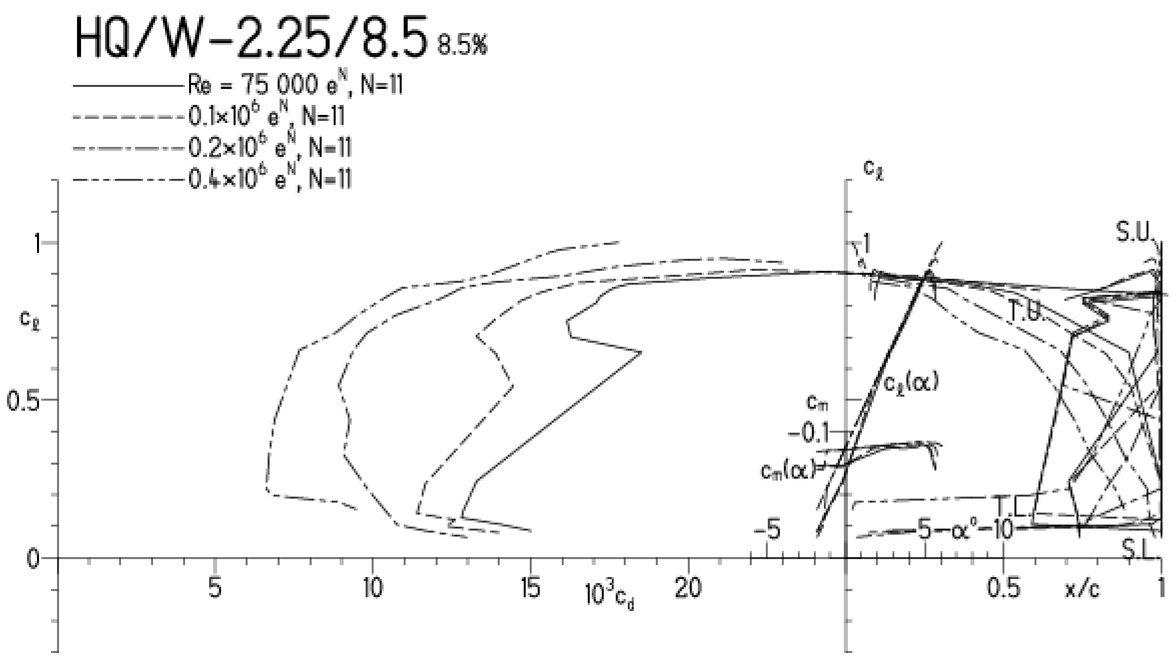


HQ/W-2,25/8,5, N=11

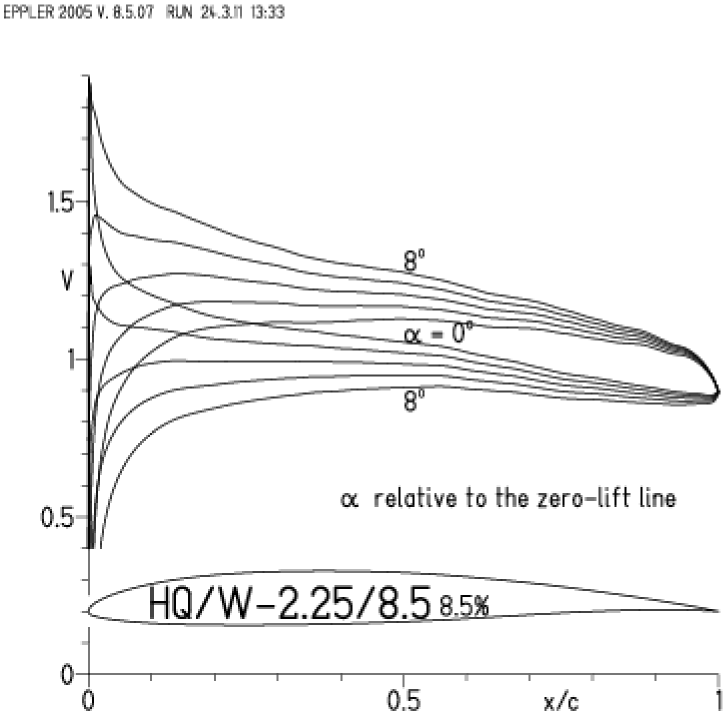
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

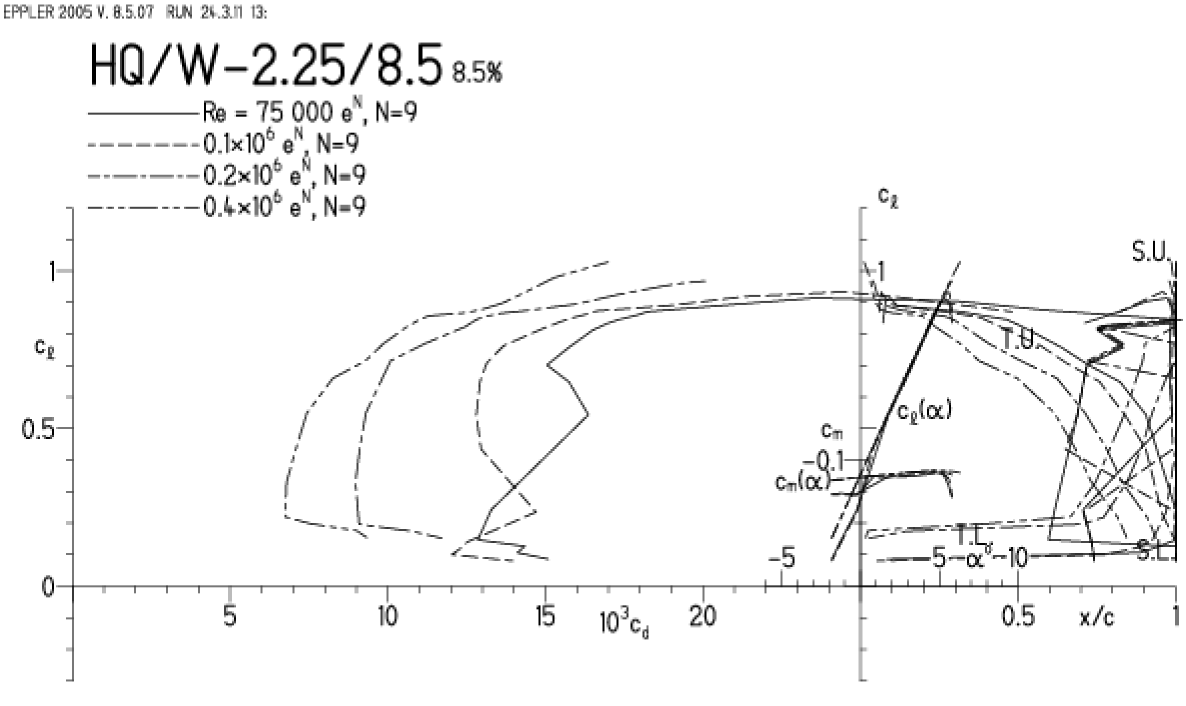


EPPLER 2005 V



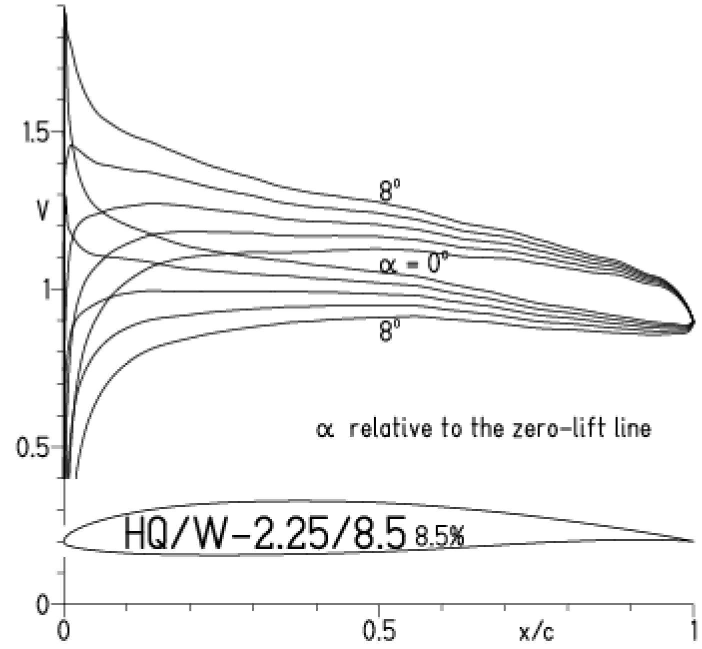
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1

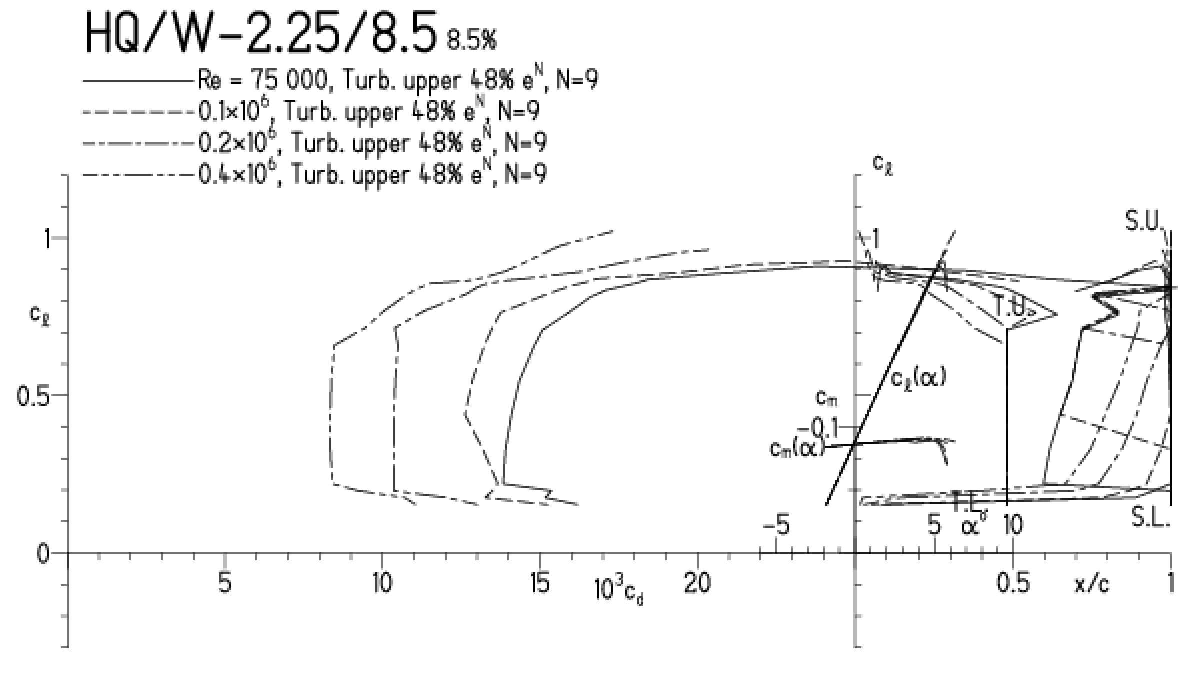

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
$10^3 c_d$
20
c_ℓ
1
$c_\ell(\alpha)$
c_m
−0.1
$c_m(\alpha)$
−5
S.U.
T.U.
T.L.
−5 − α° − 10
S.L.
0.5
x/c
1

HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 17:31

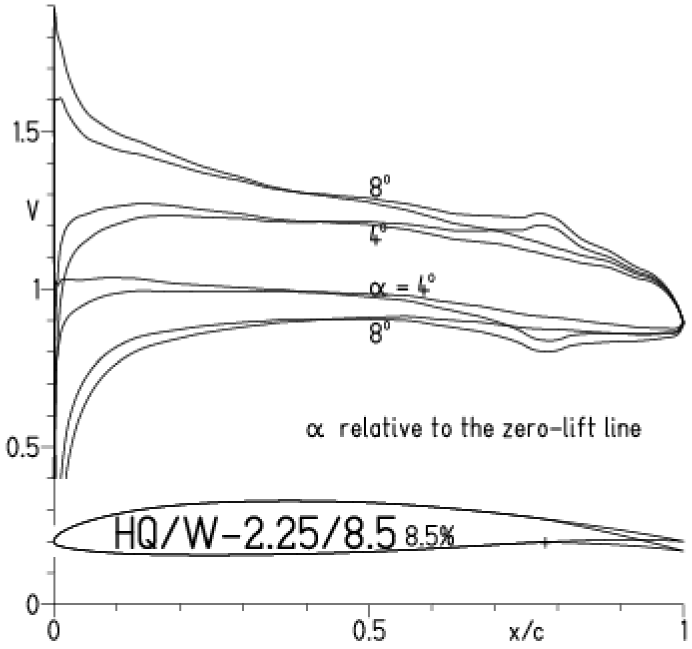


EPPLER 2005 V.

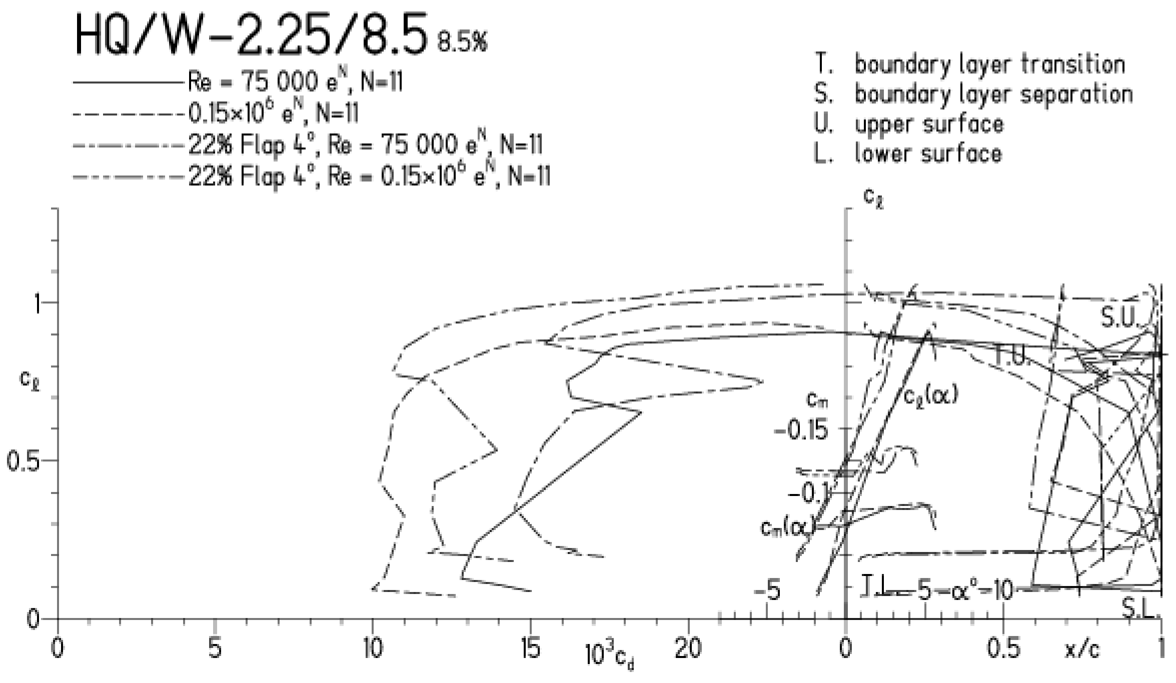


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

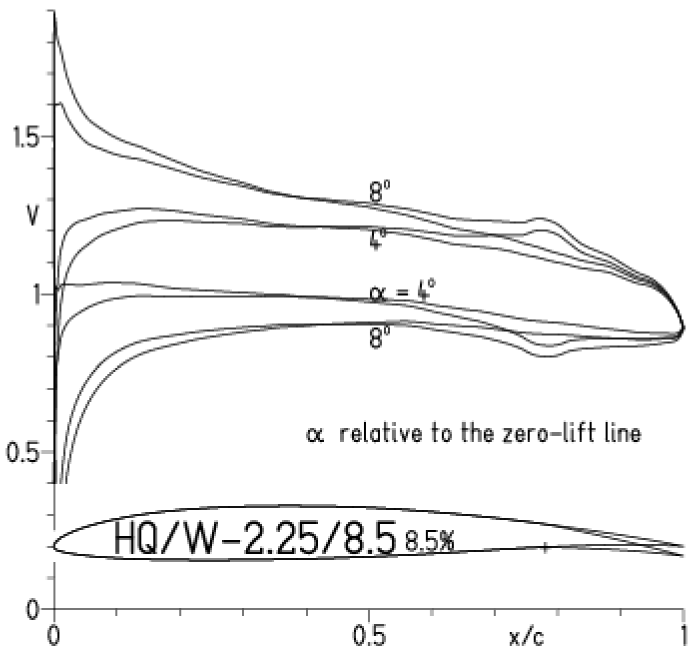


EPPLER 2005 V. 8.5.

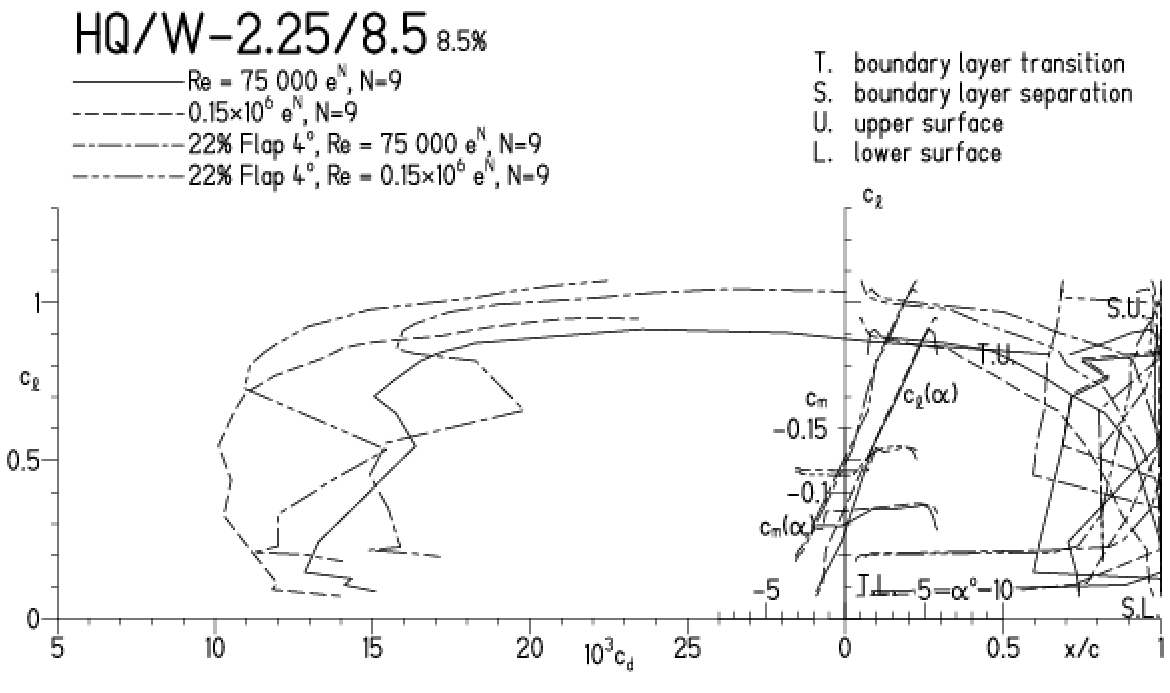


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

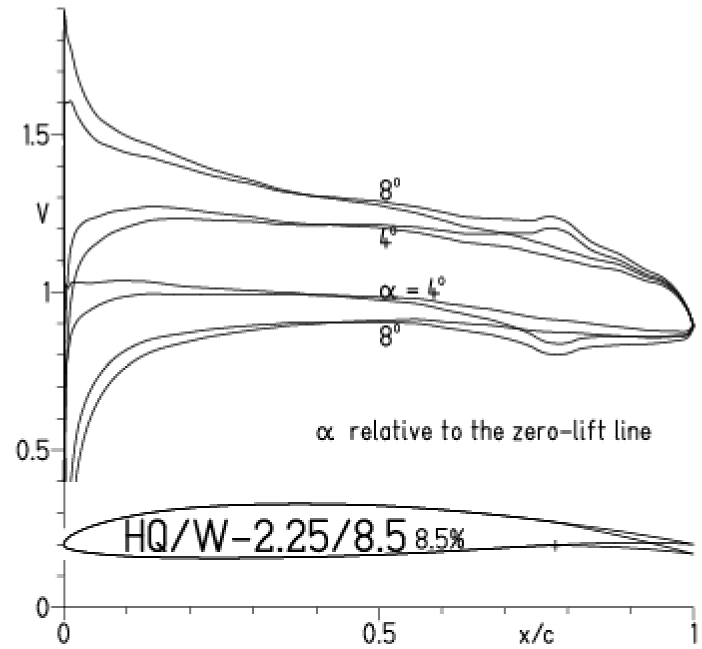


EPPLER 2005 V.

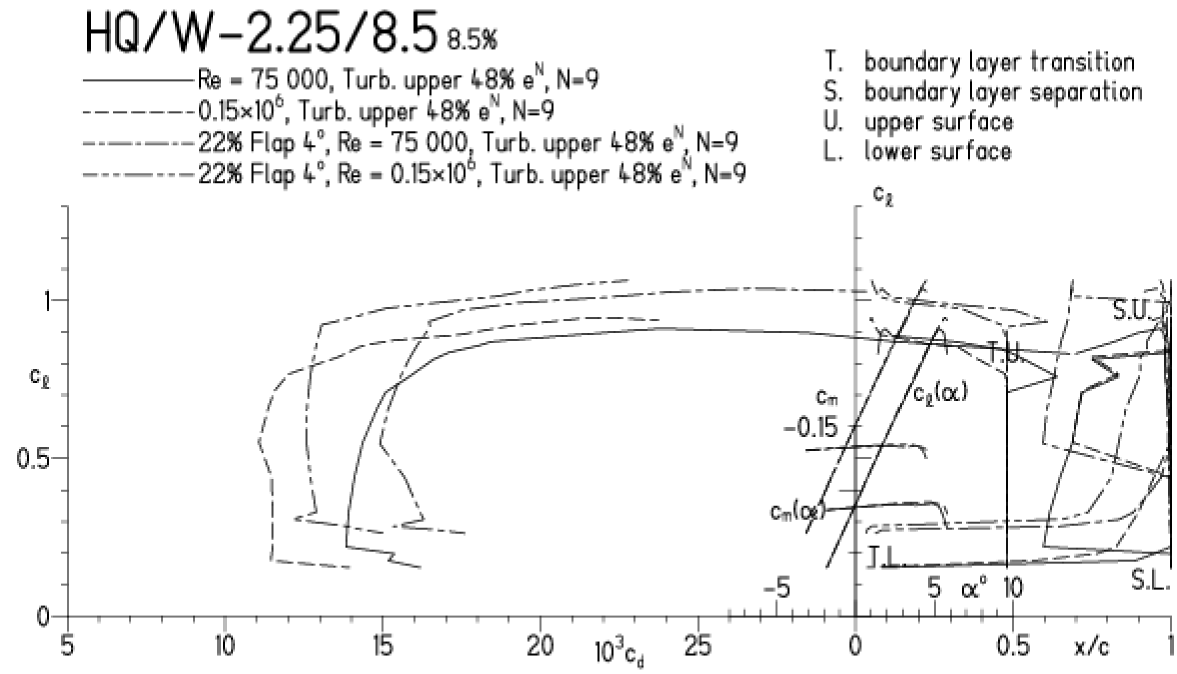


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

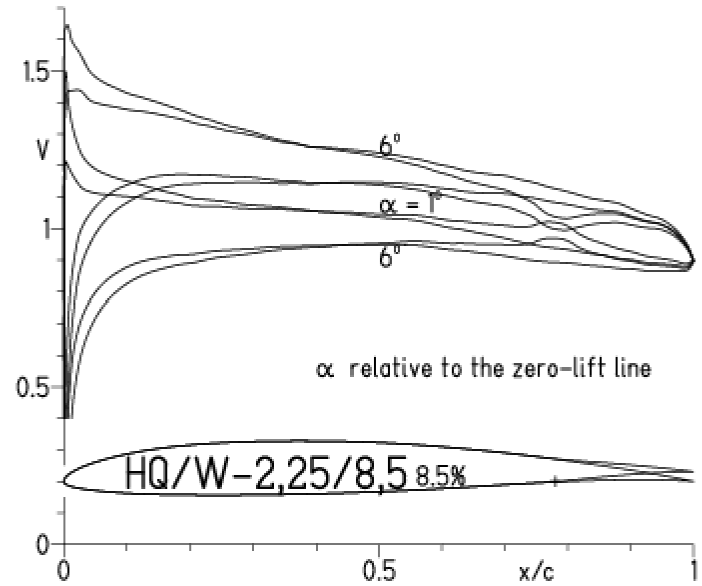


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

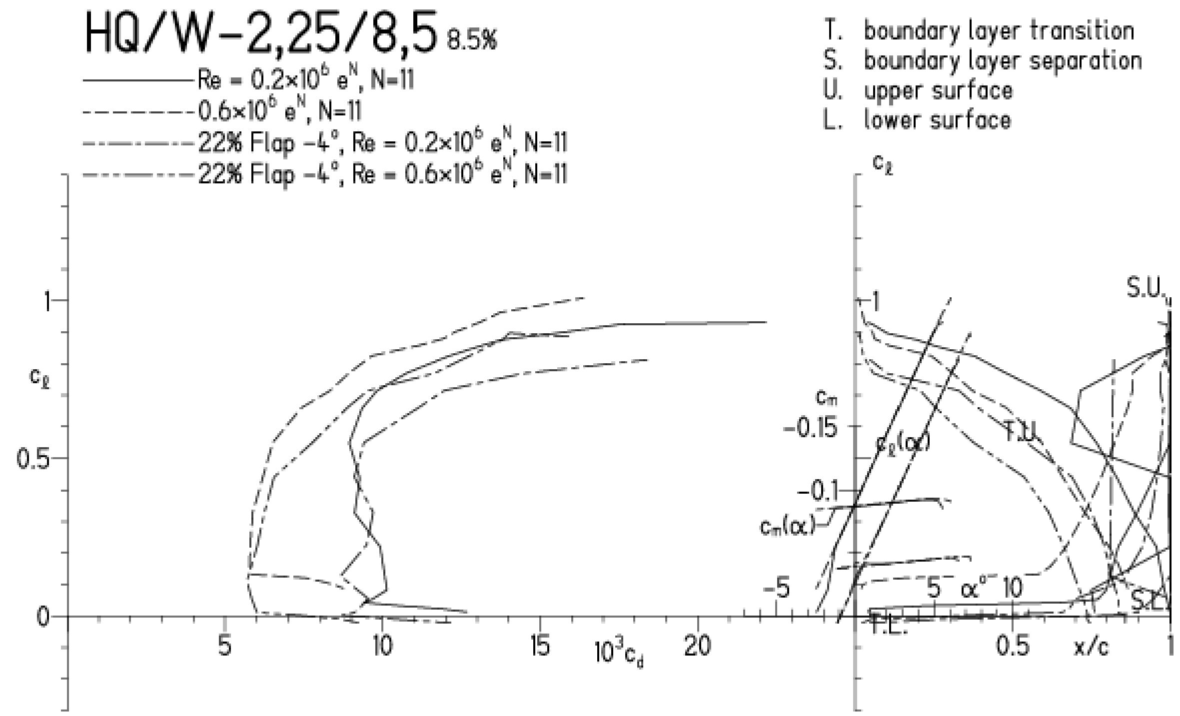


<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

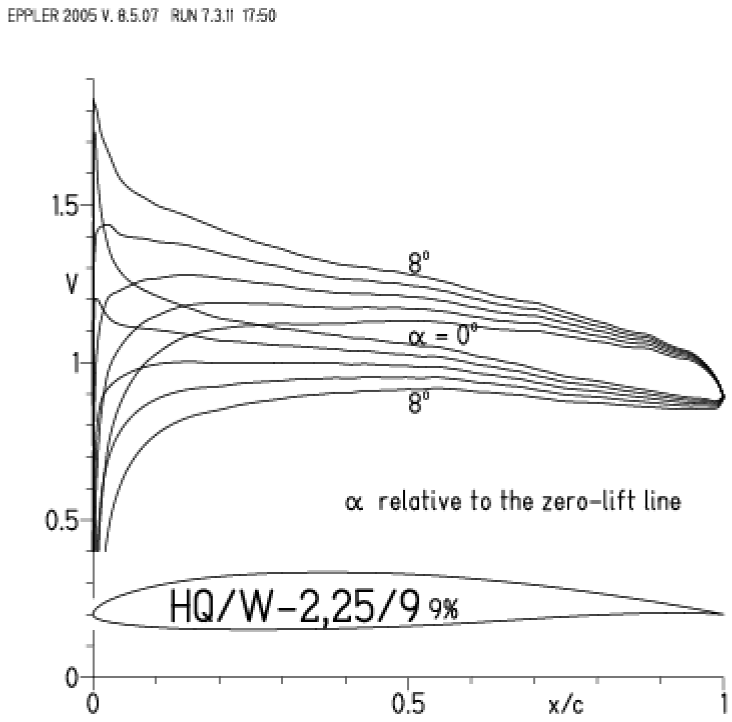
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

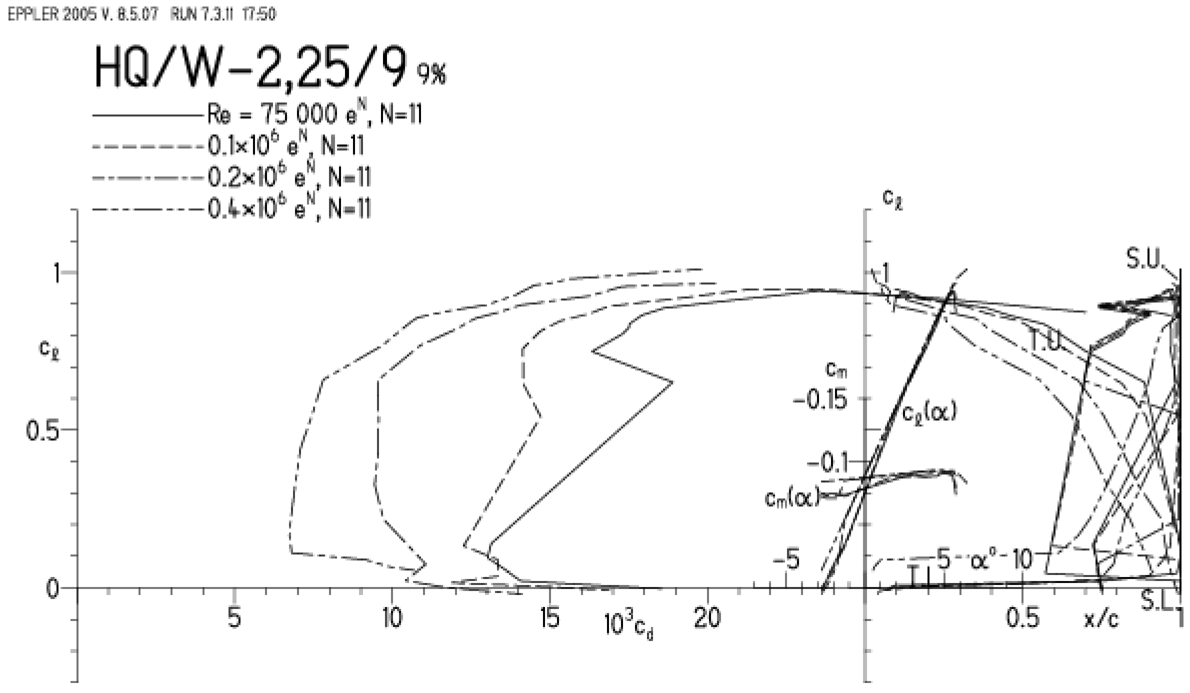


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

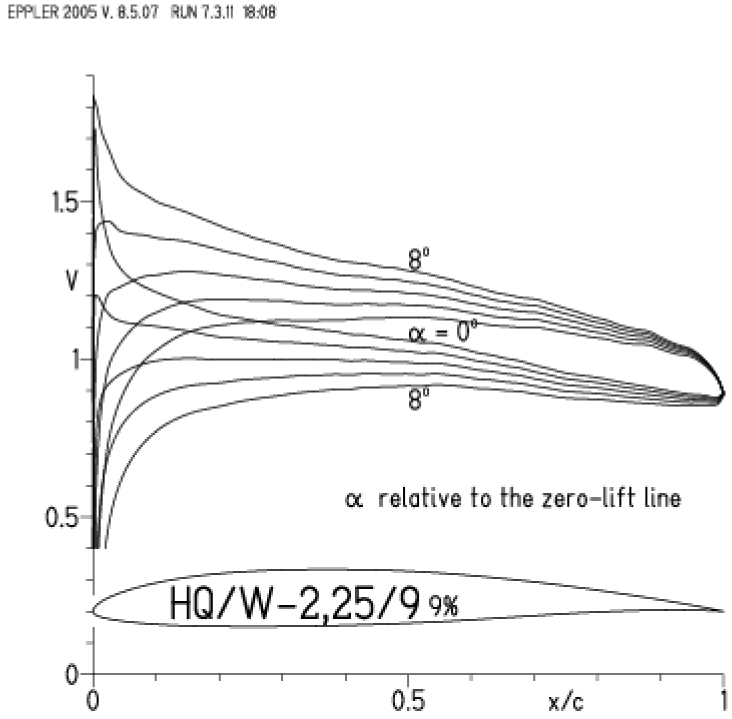


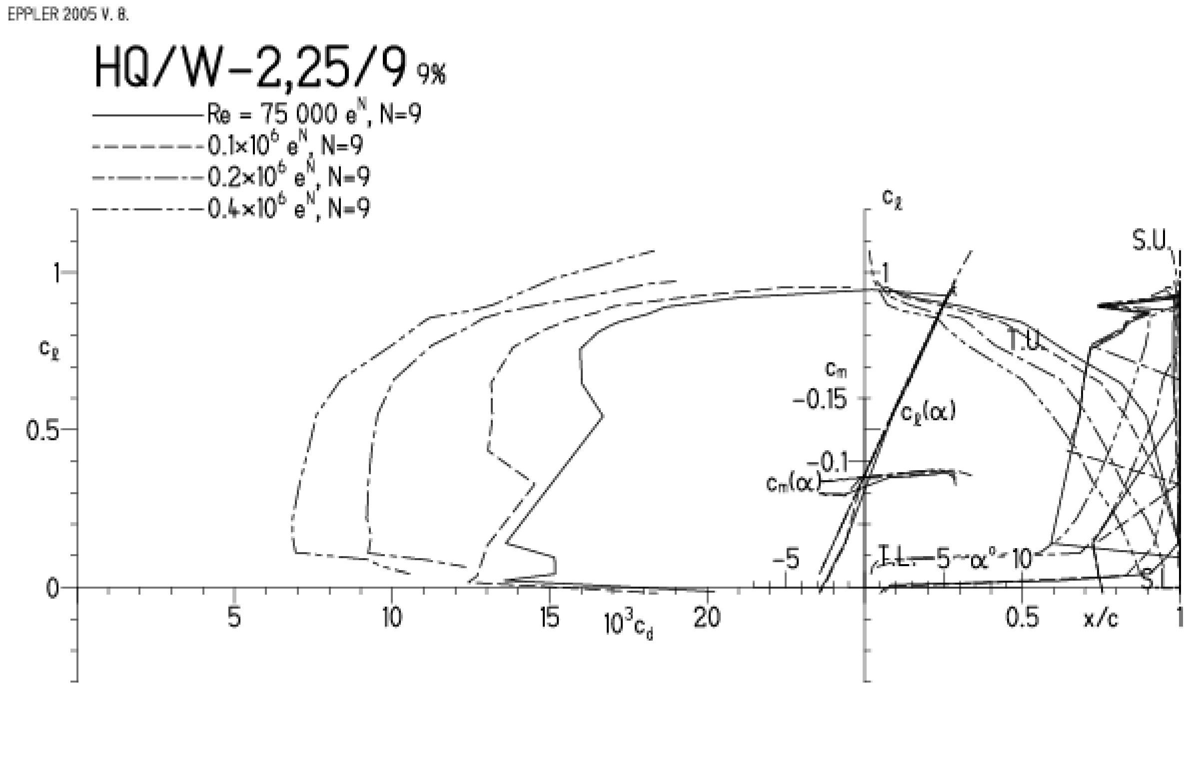
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

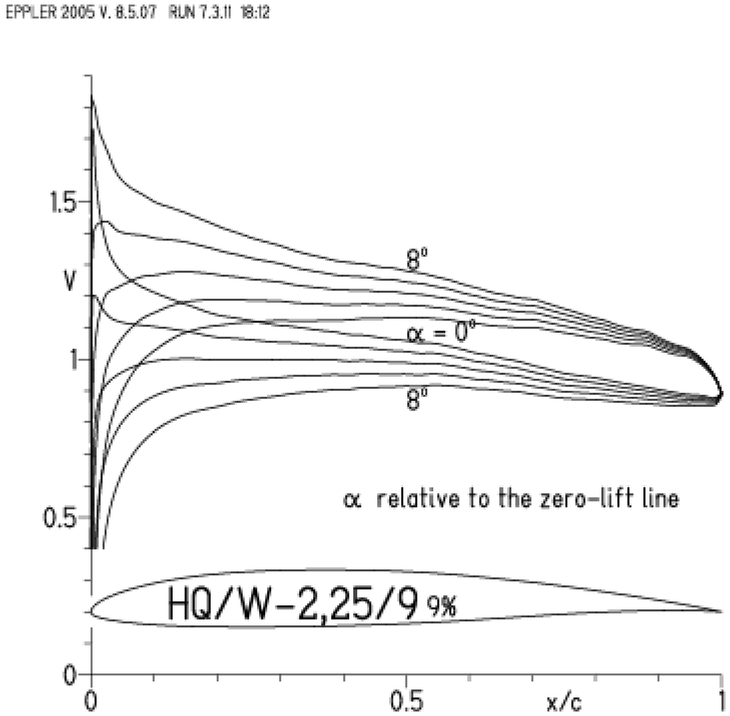

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

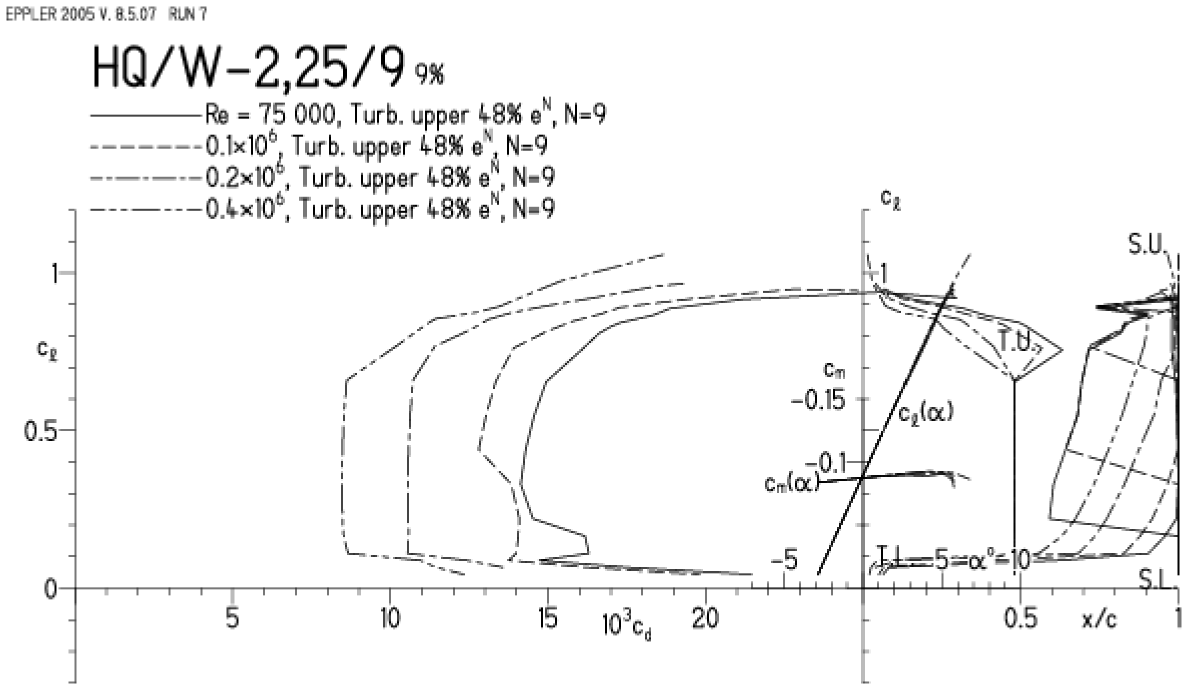
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
S.L.
0.5
x/c
1

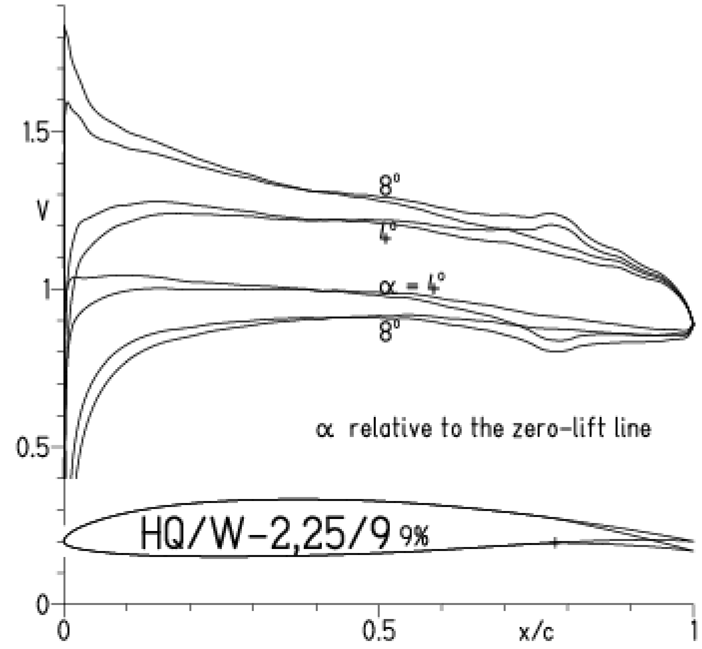
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



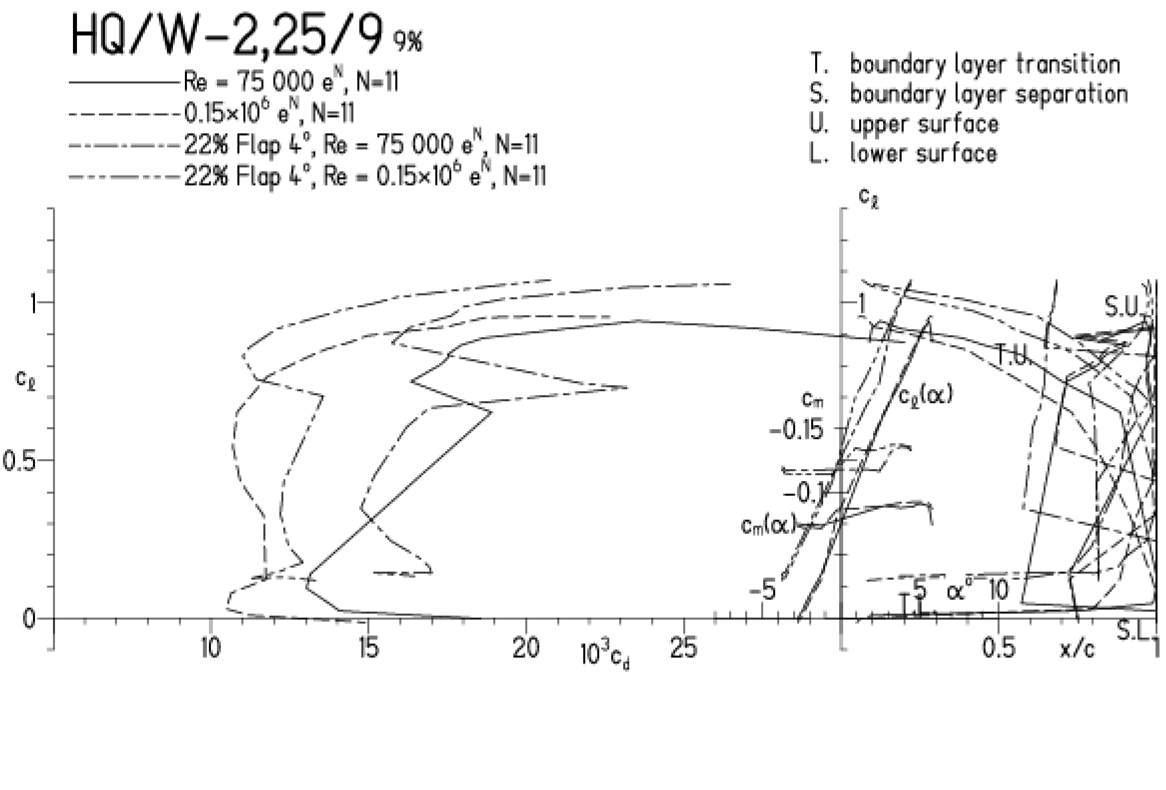


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

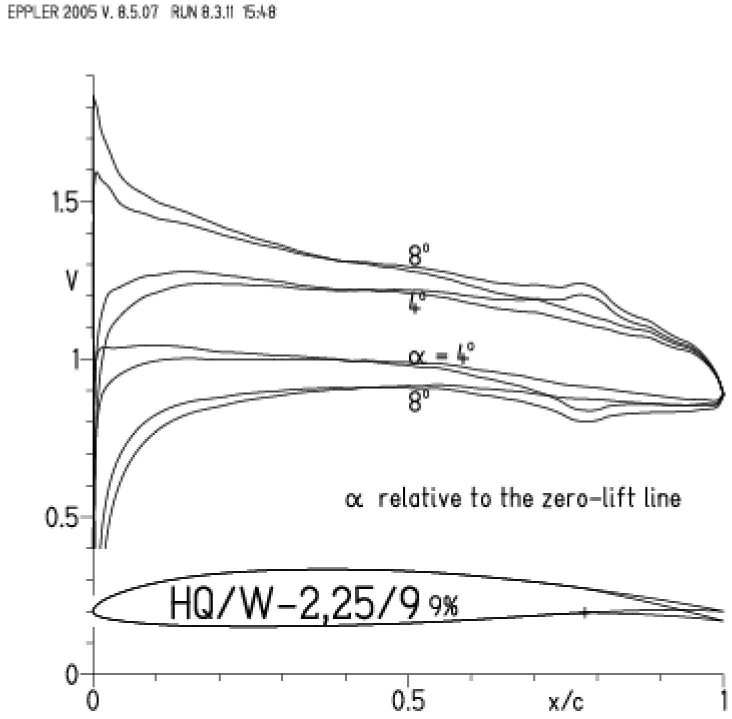
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

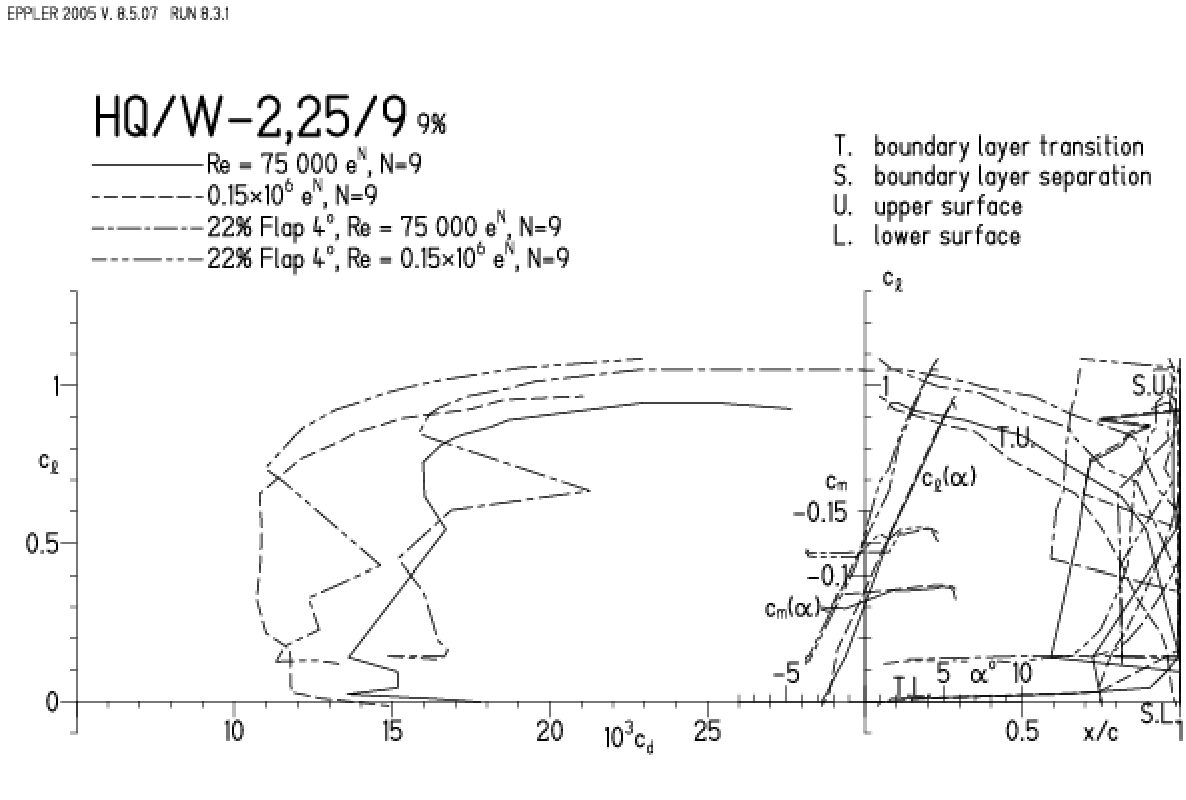


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



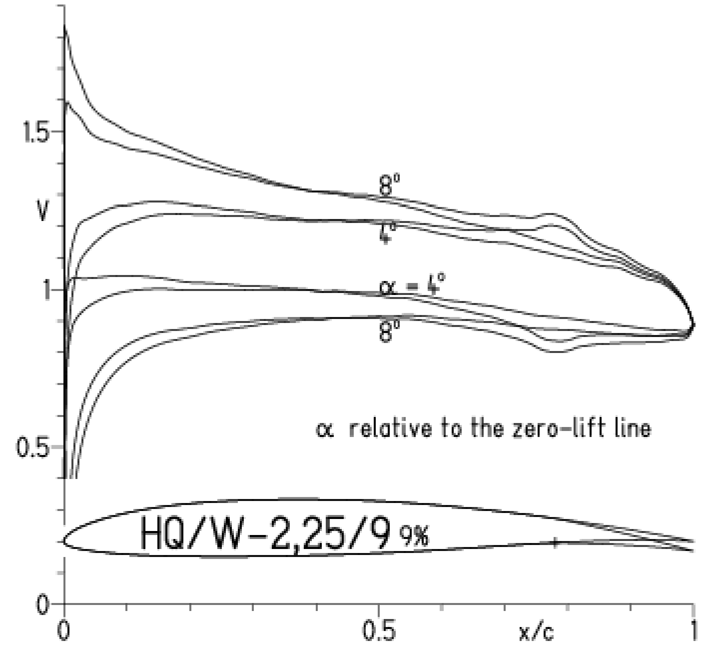
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag



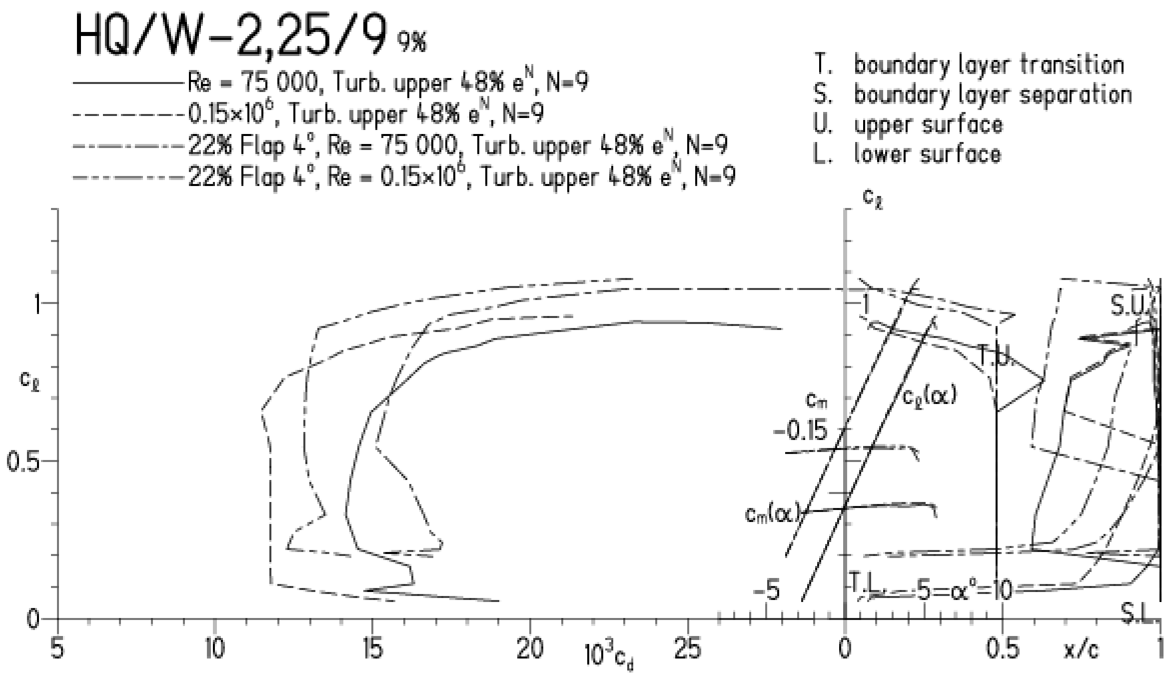


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

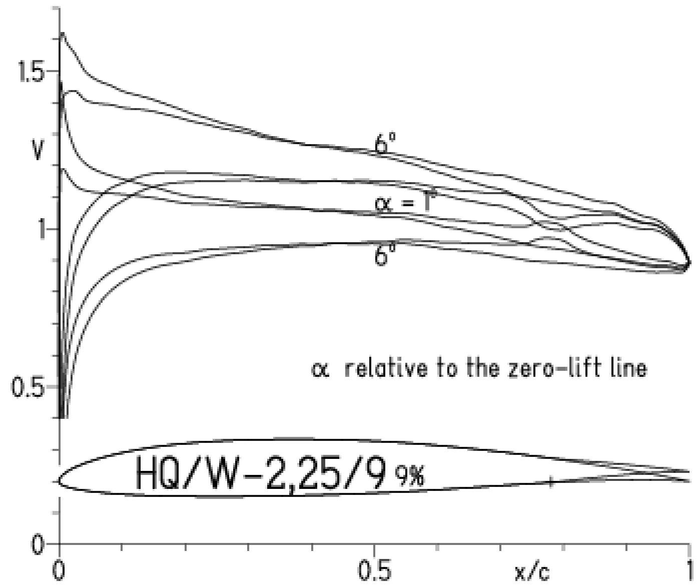


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

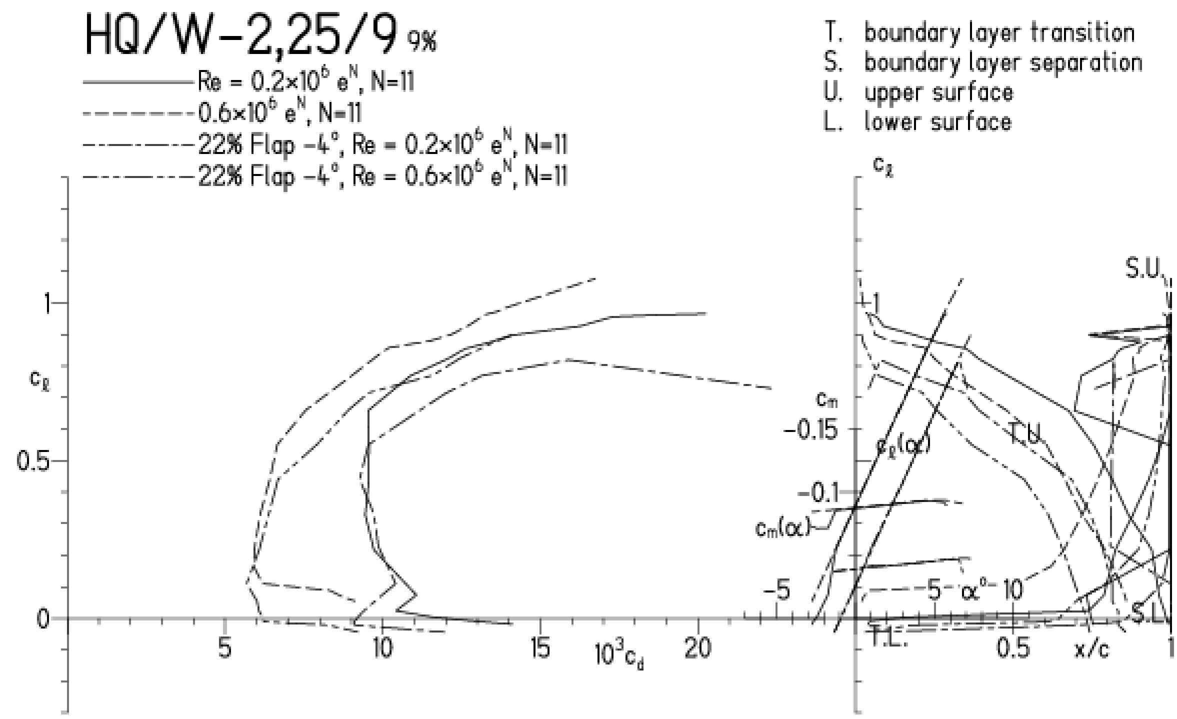


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

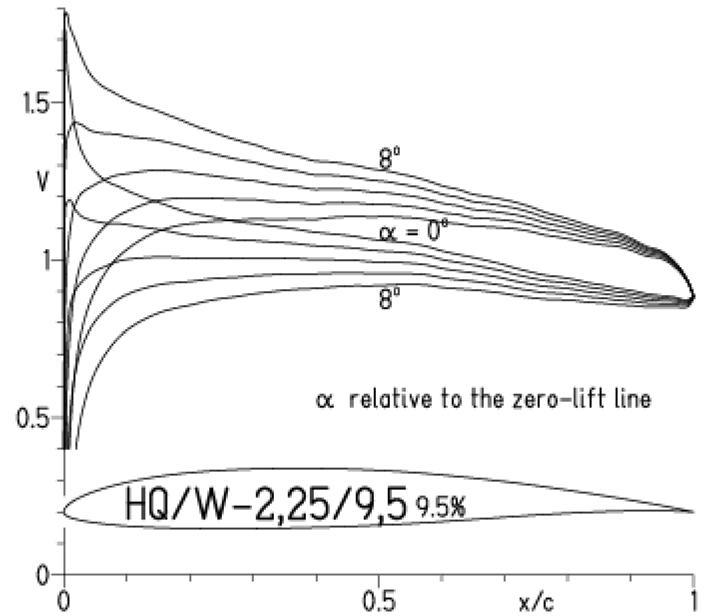


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

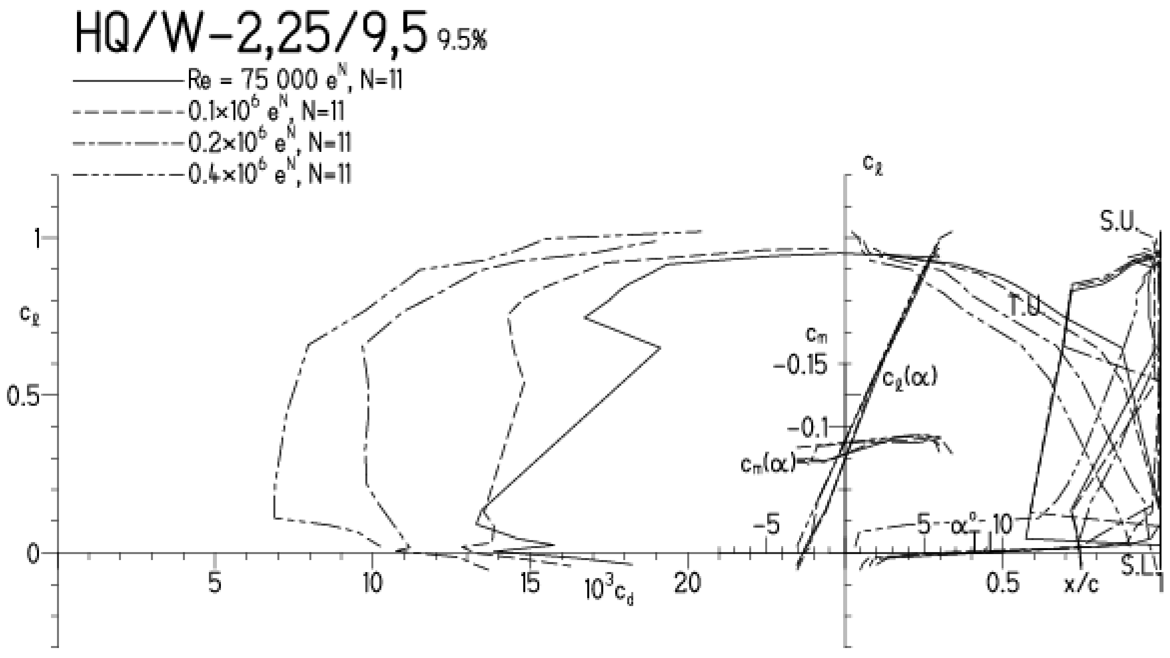


HQ/W-2,25/9,5, N=11

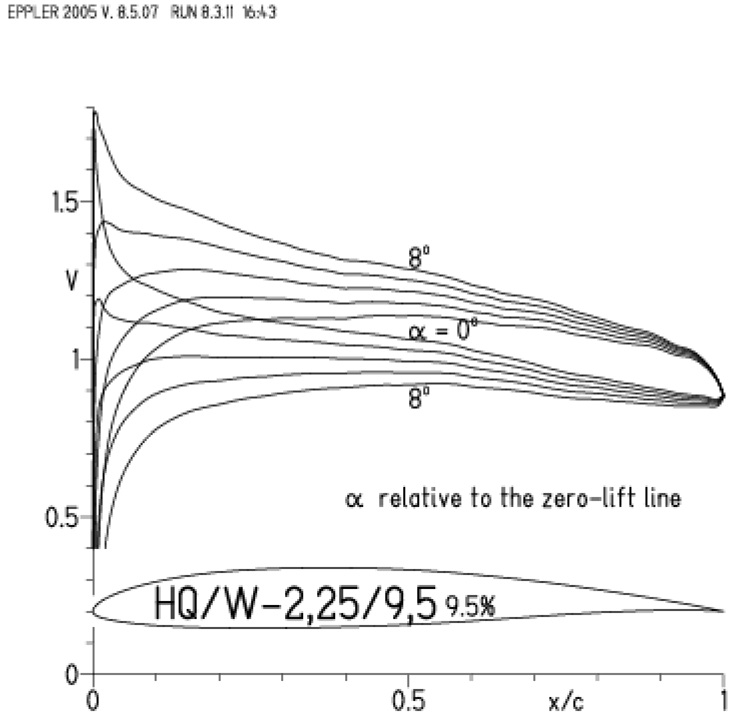
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

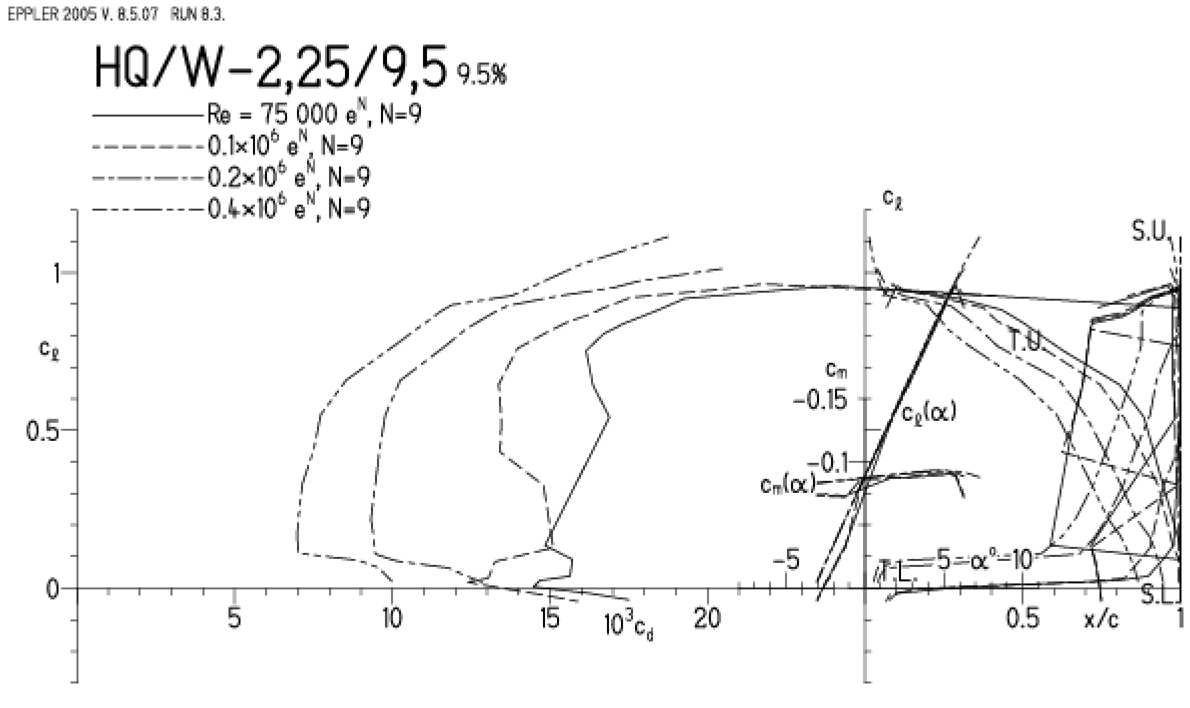


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

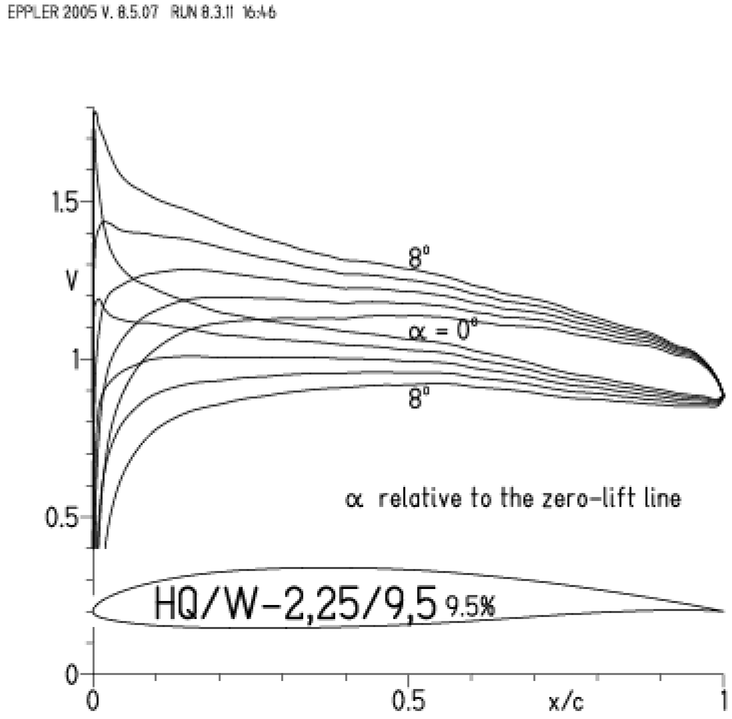


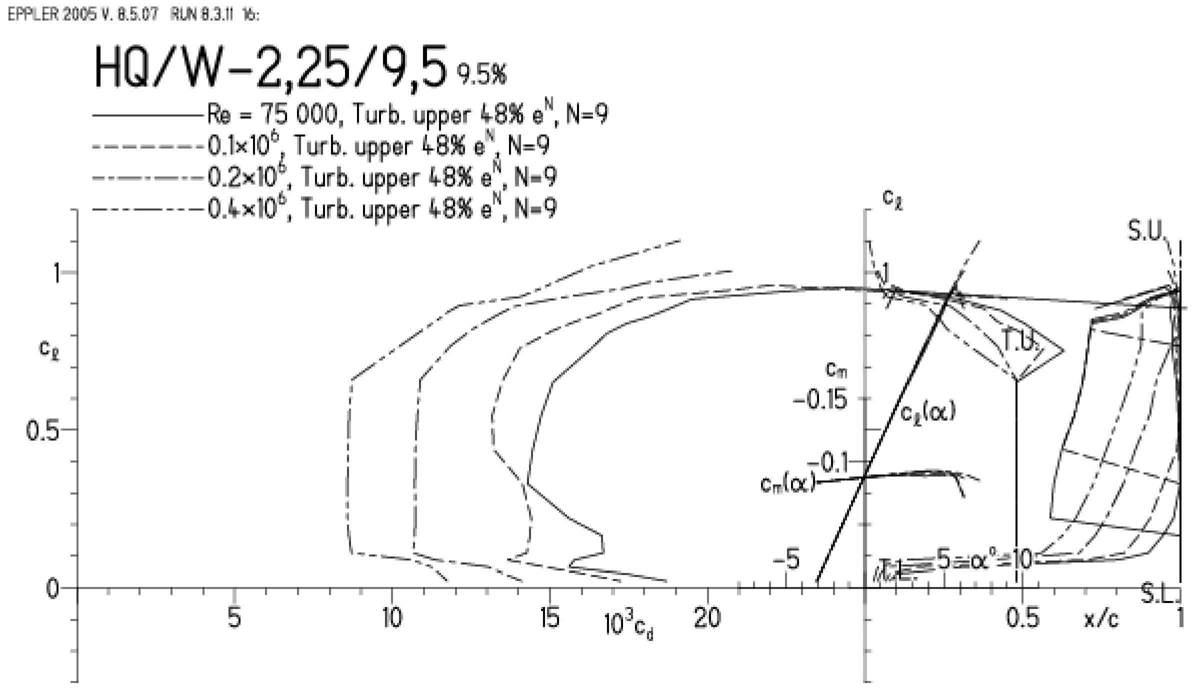
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

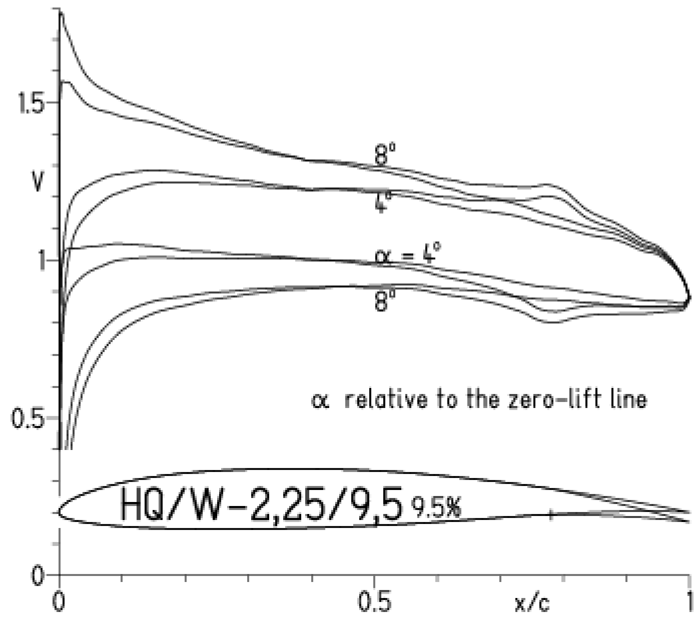
<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



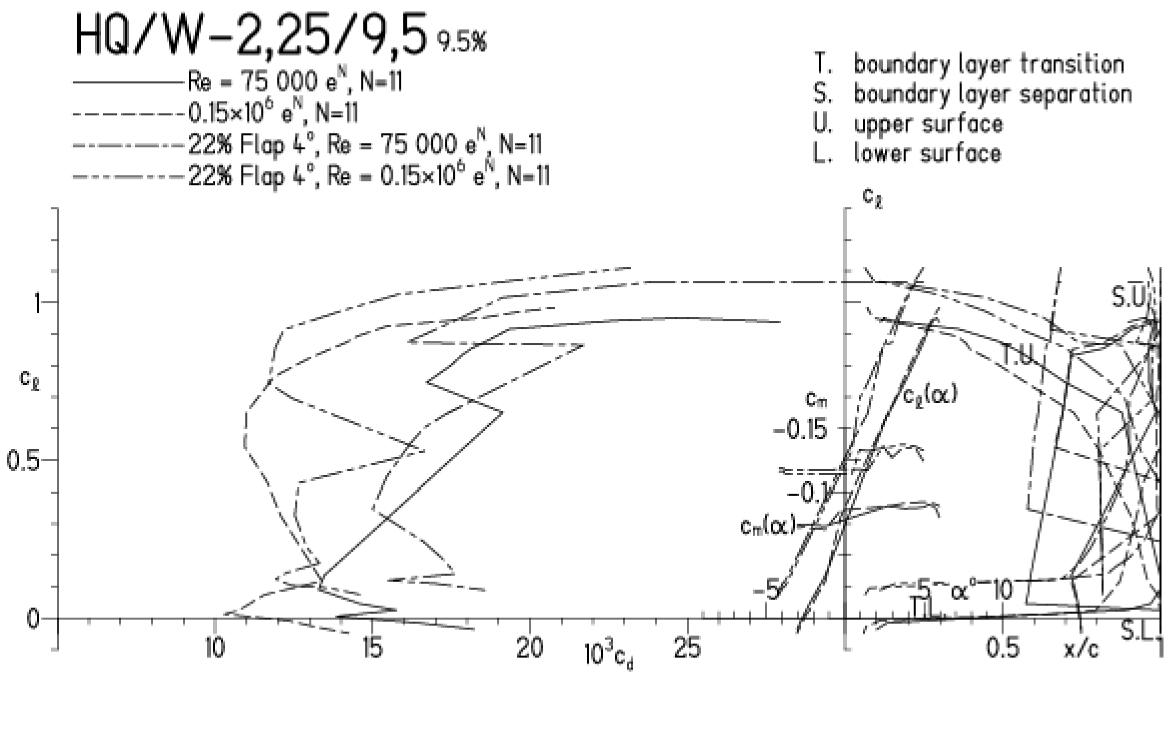


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

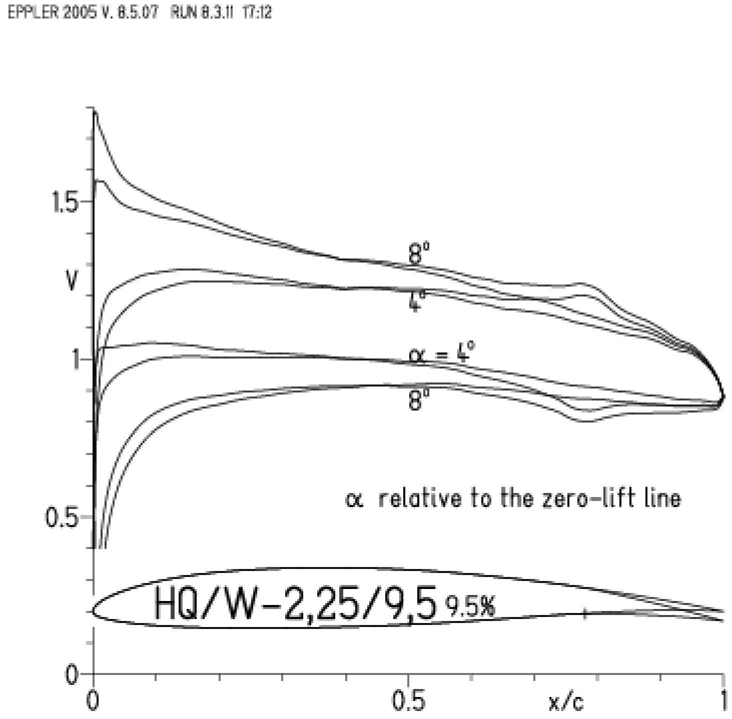
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

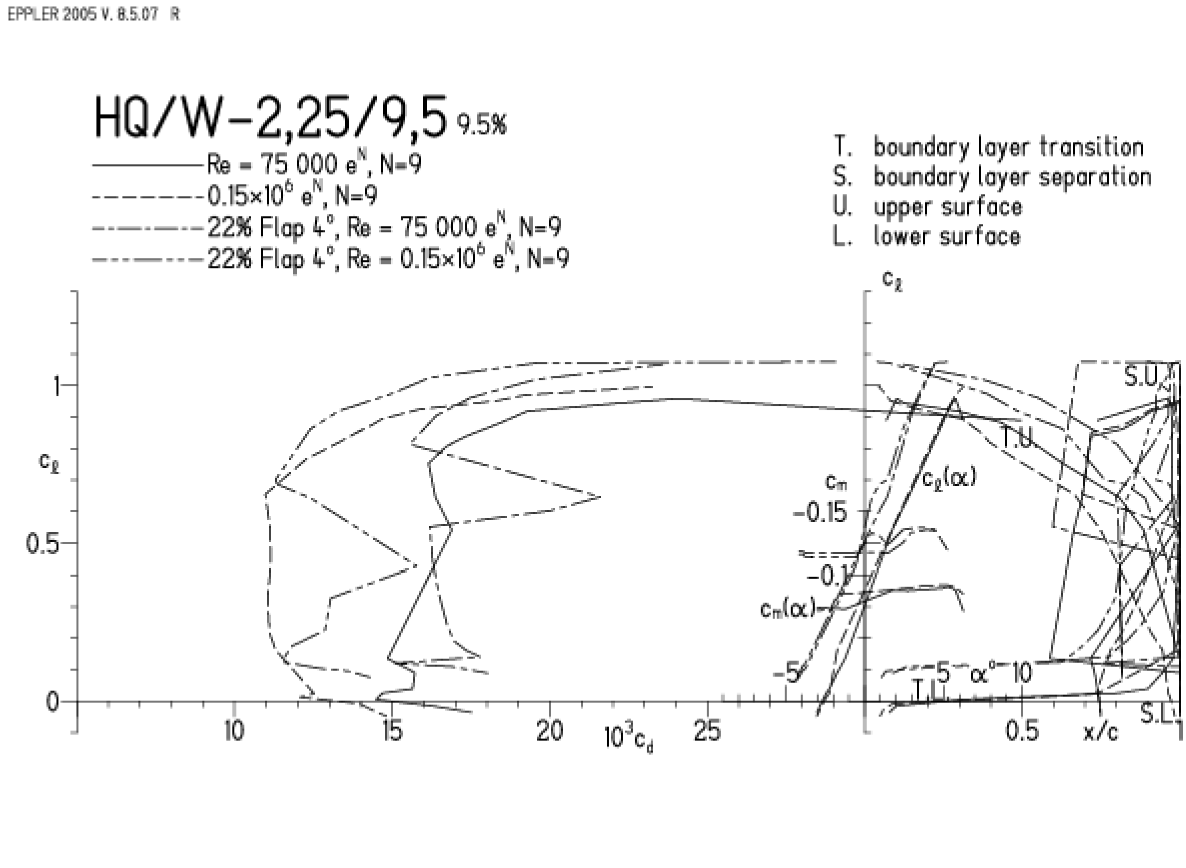


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07



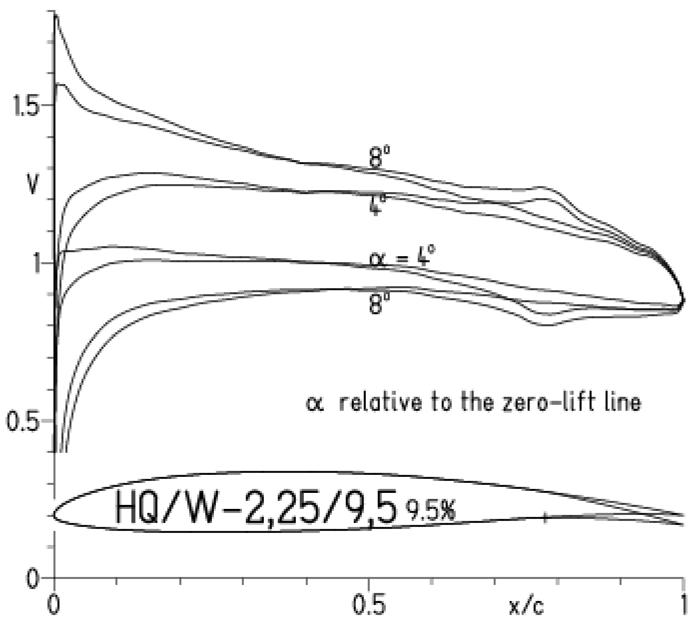
<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag



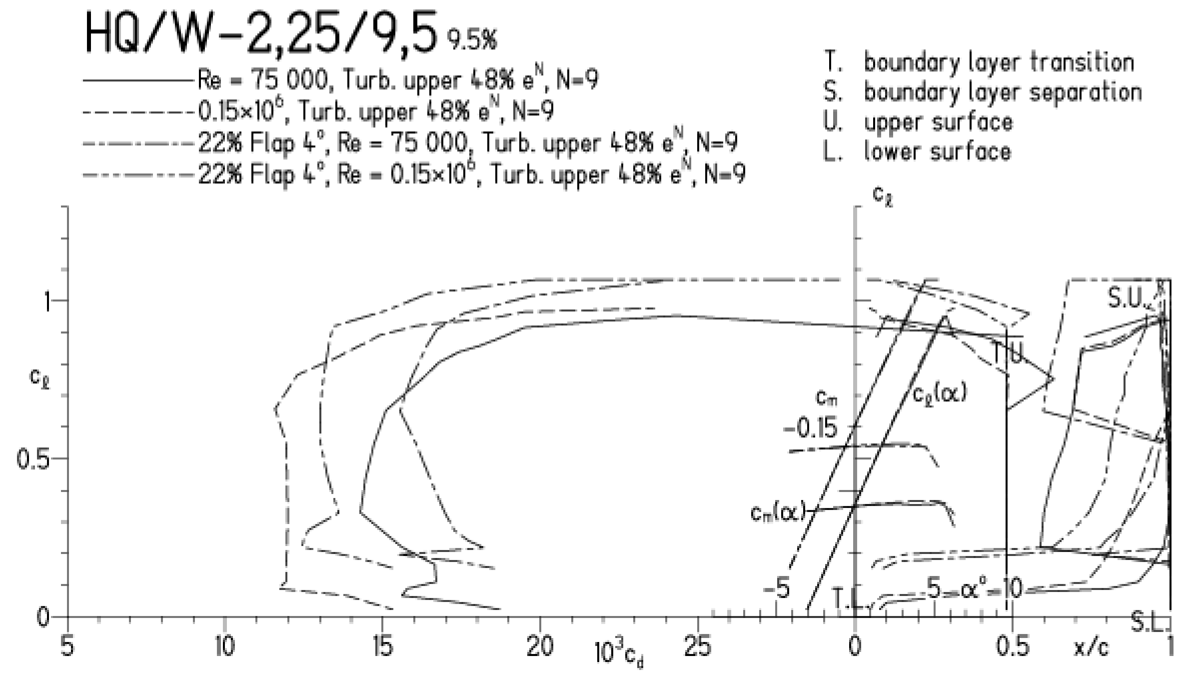


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

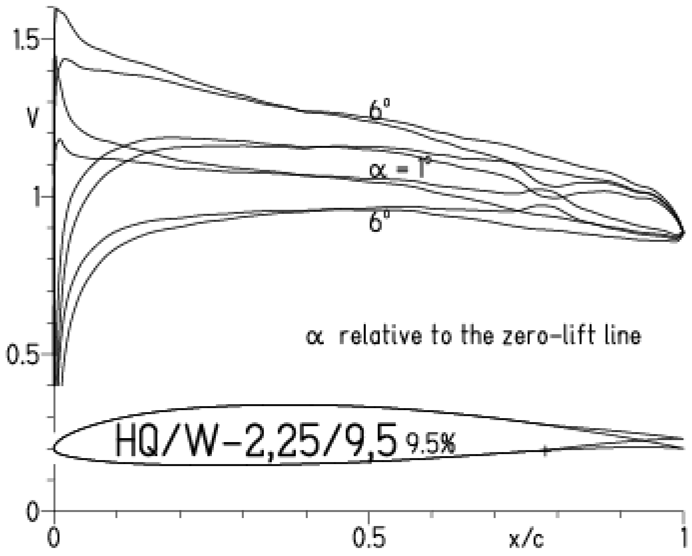


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

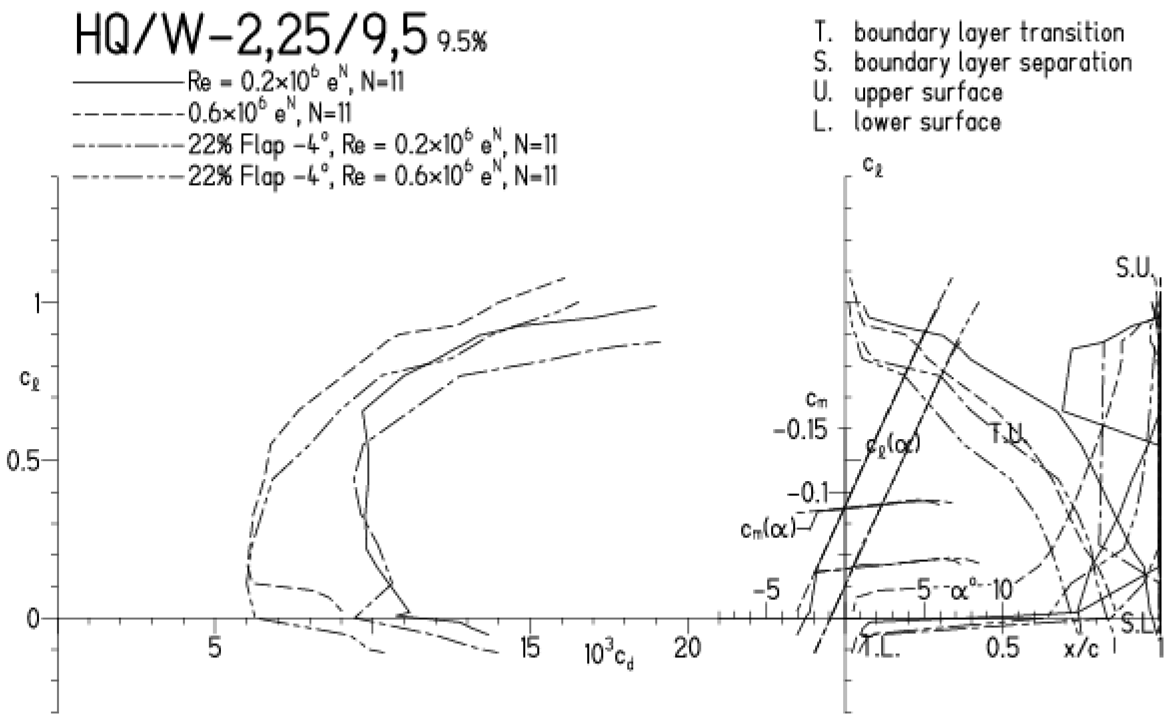


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

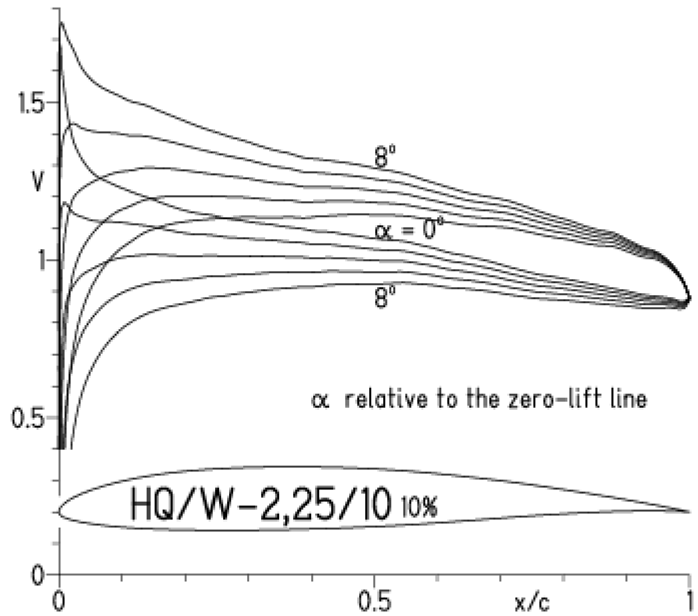


EPPLER 2005 V.

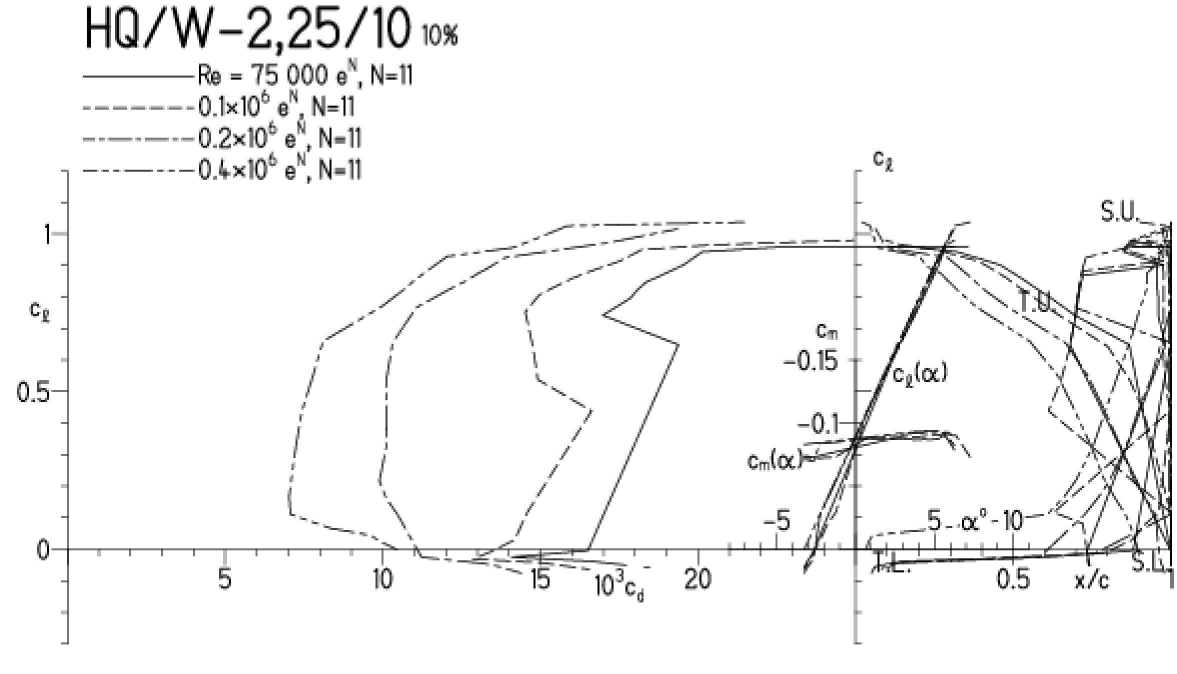


HQ/W-2,25/10, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

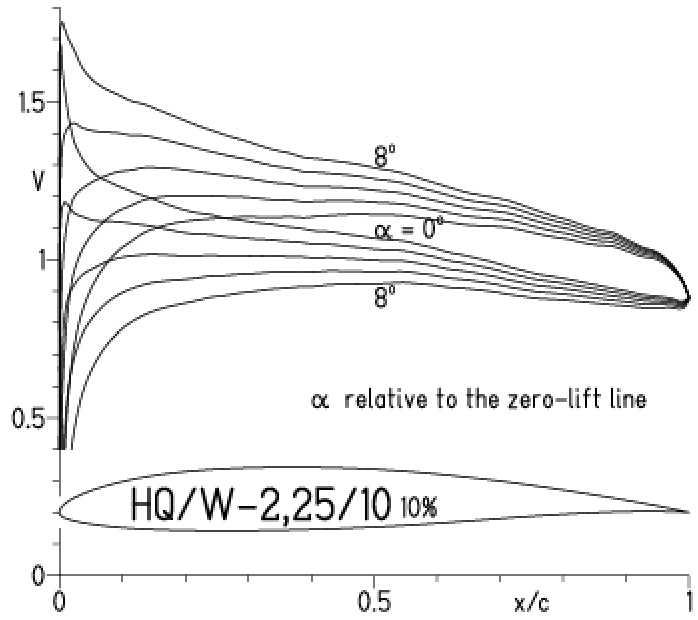


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

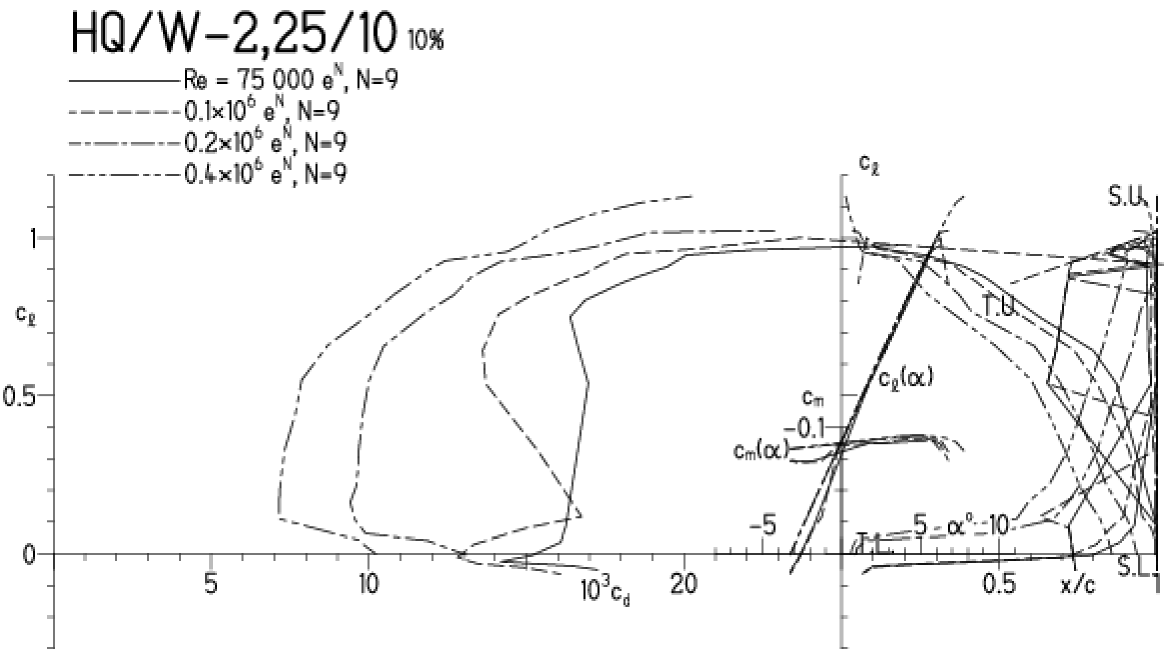


HQ/W-2,25/10, N=9

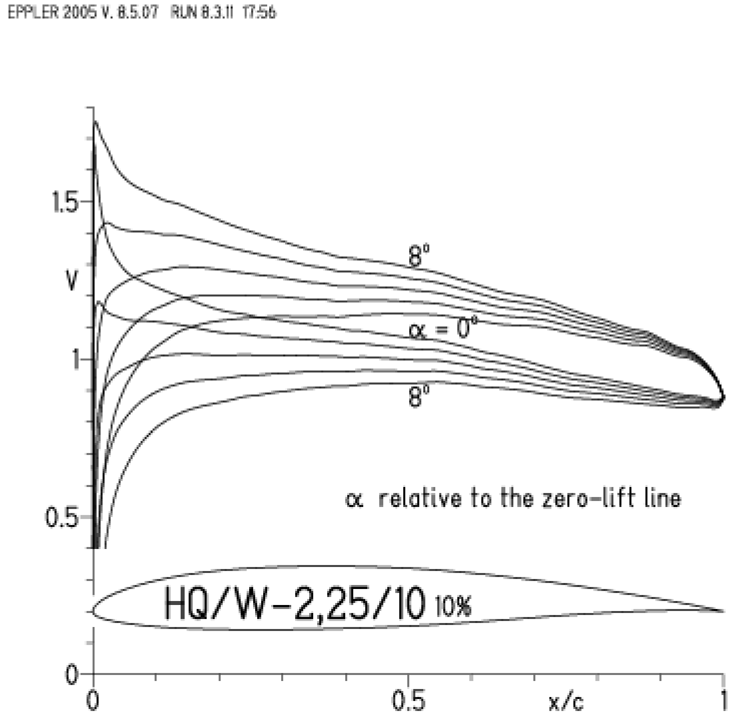
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

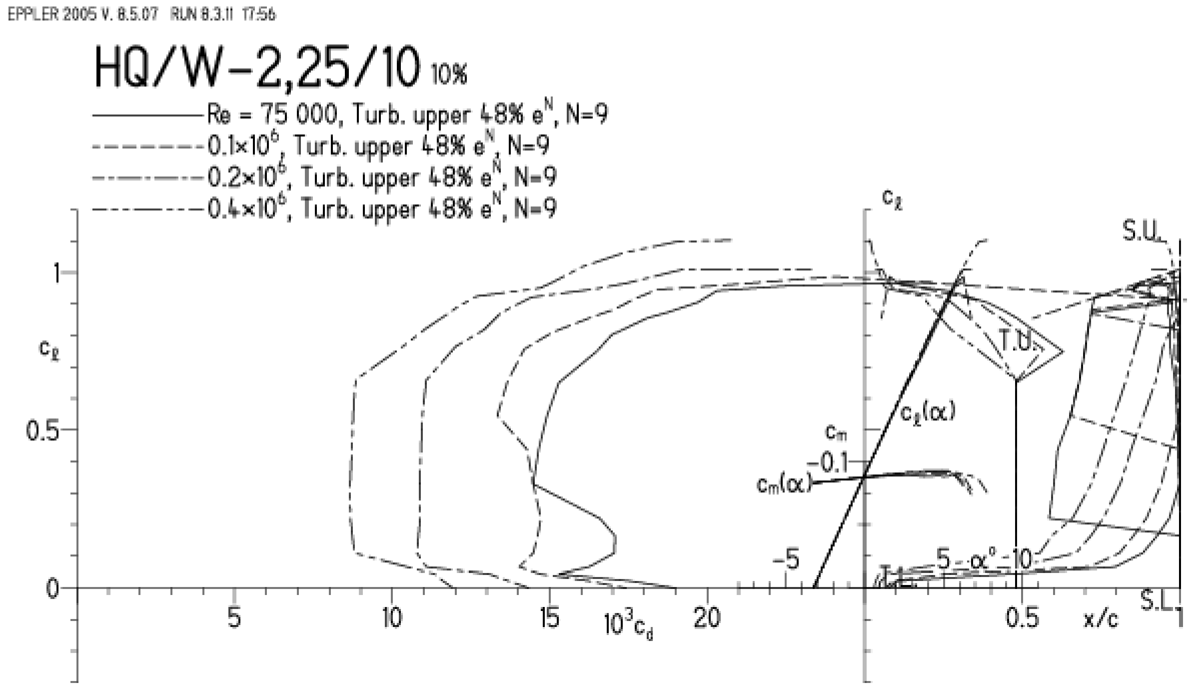


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



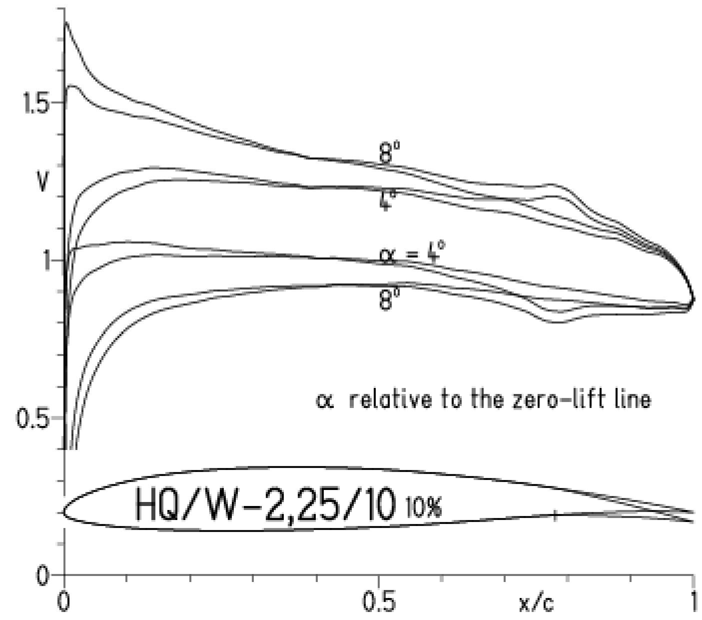
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



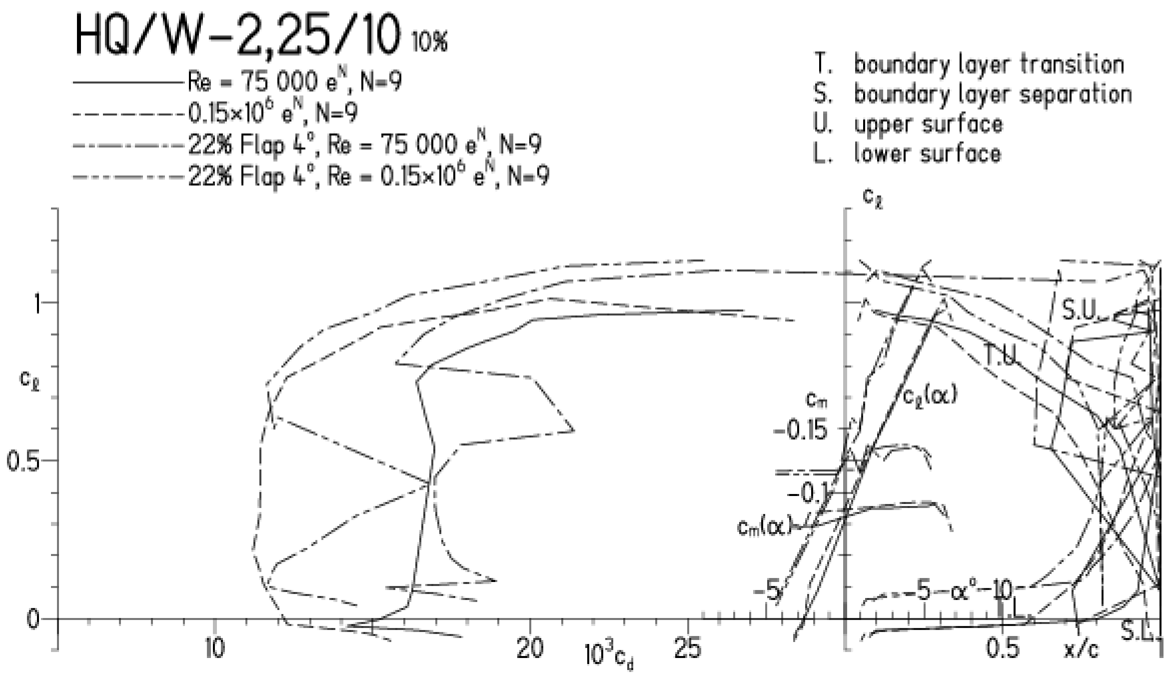


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

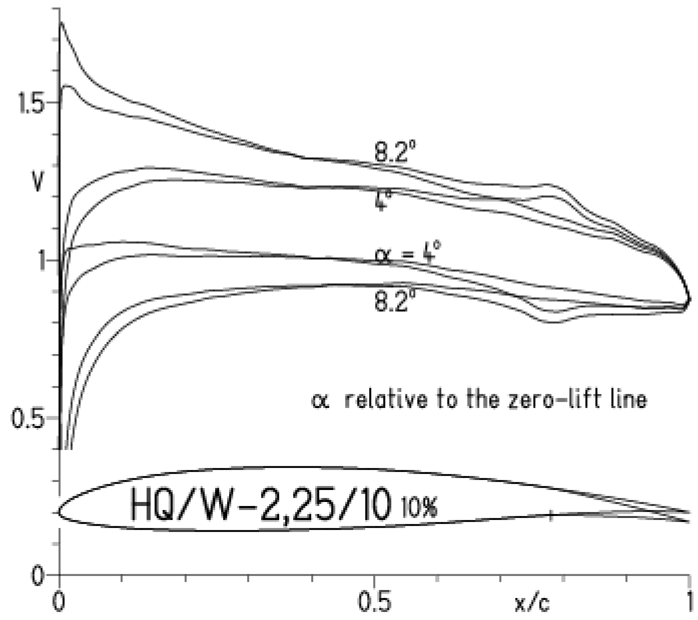


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

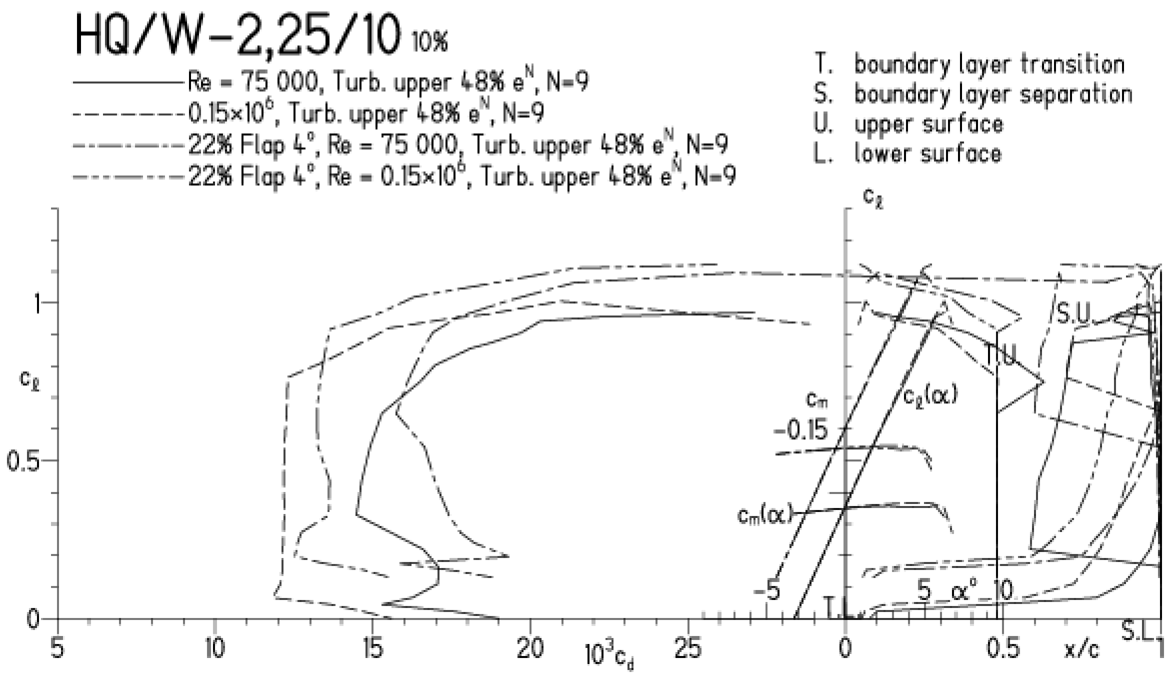


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

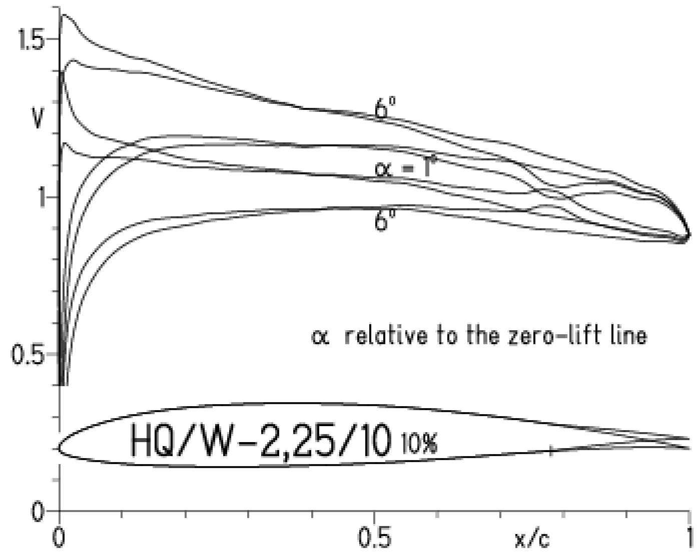


EPPLER 2005 V. 8.5.07 RUN 8.3

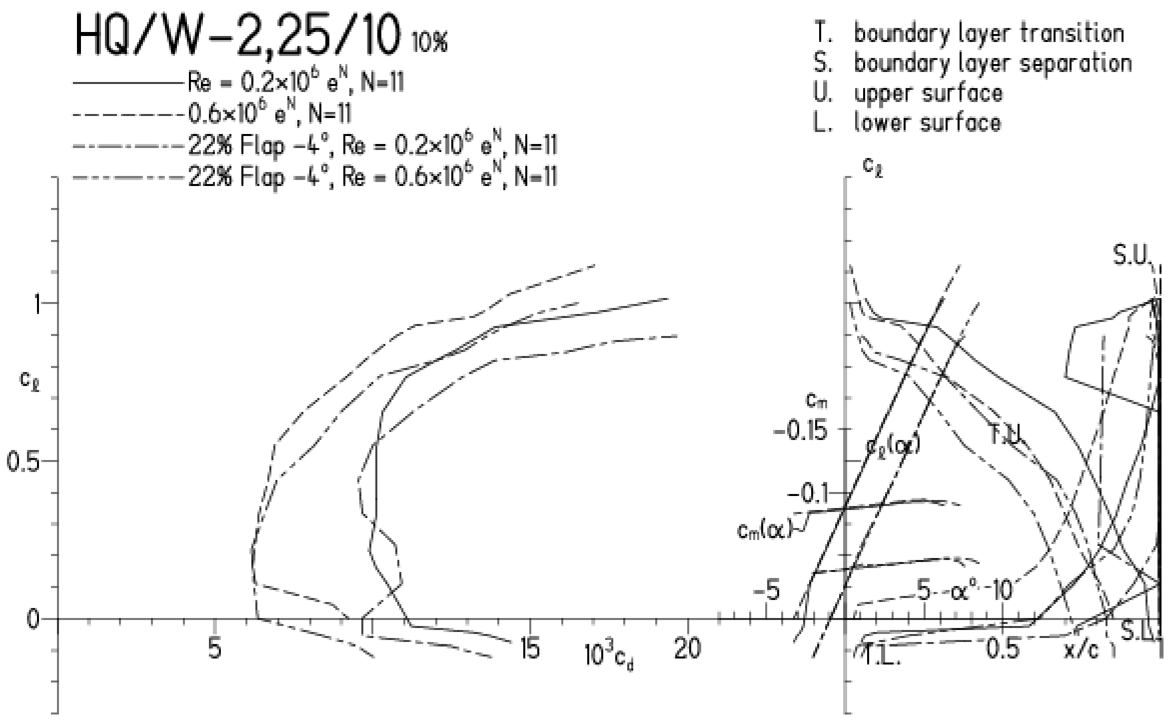


HQ/W-2,25/10, N=11 mit -4° Wölbklappenausschlag

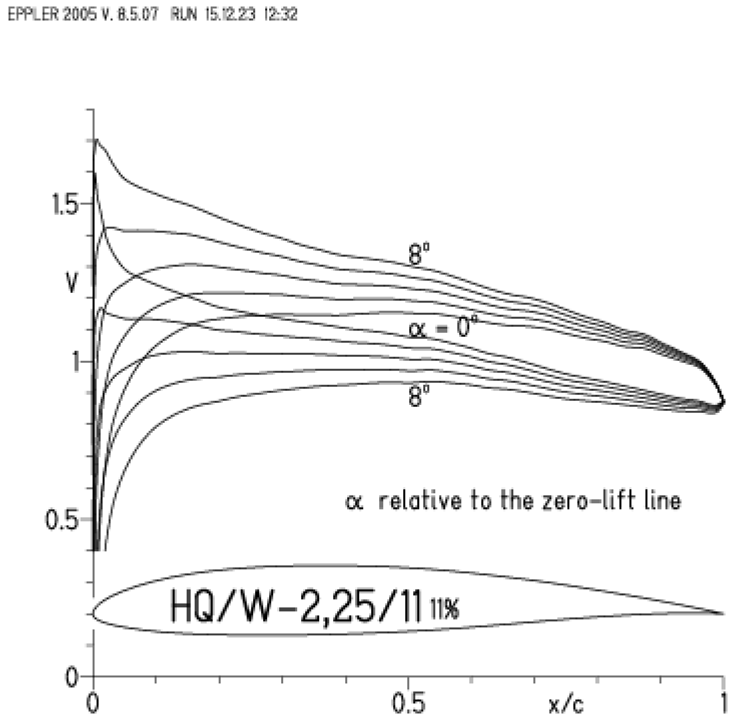
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

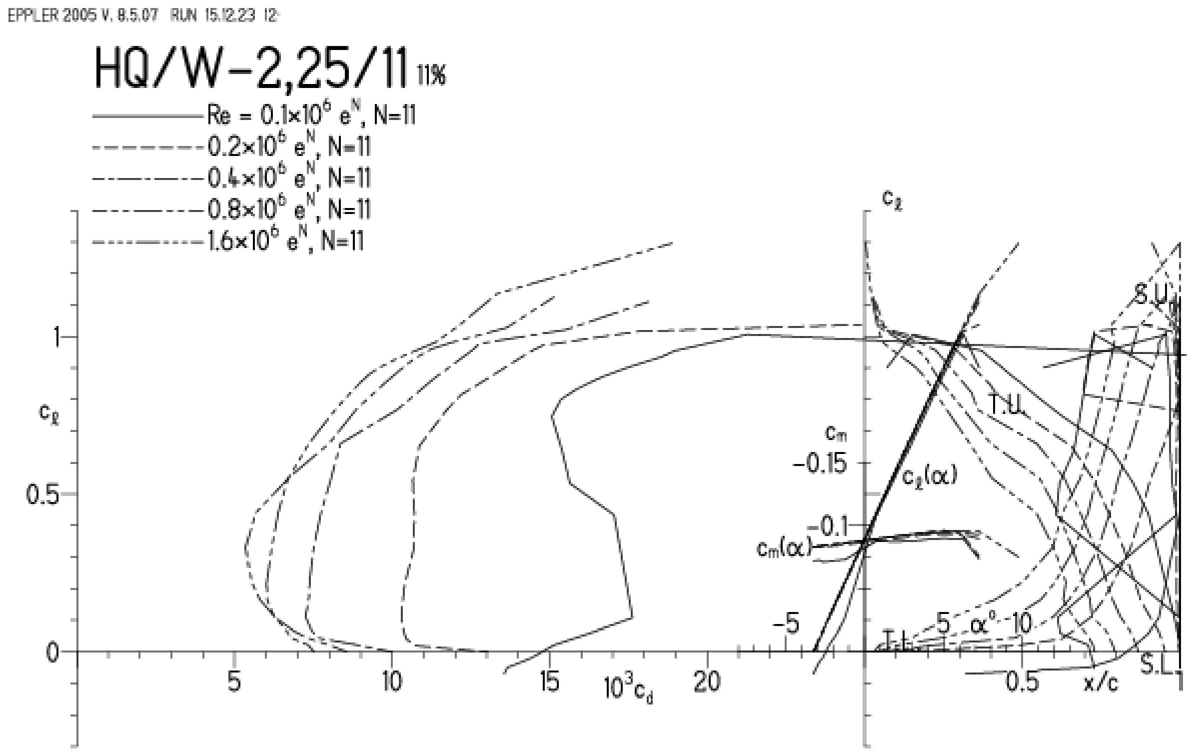


EPPLER 2005 V. 8.5.07 RUN



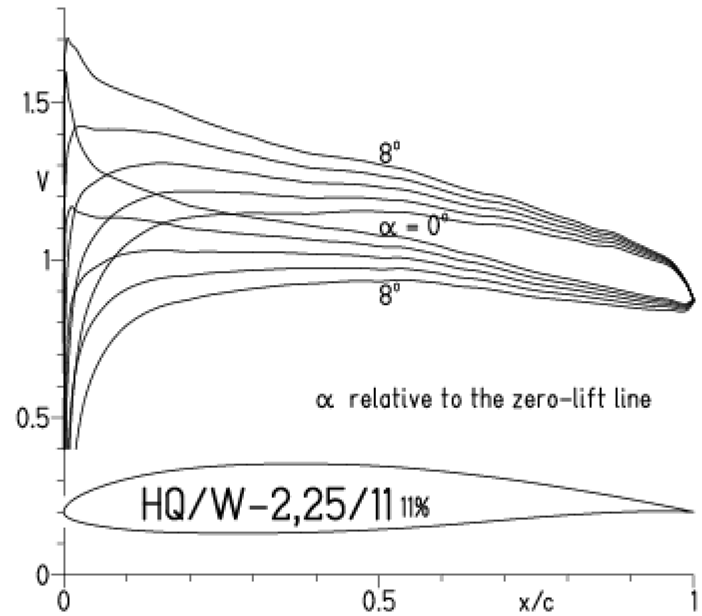
HQ/W-2,25/11, N=11



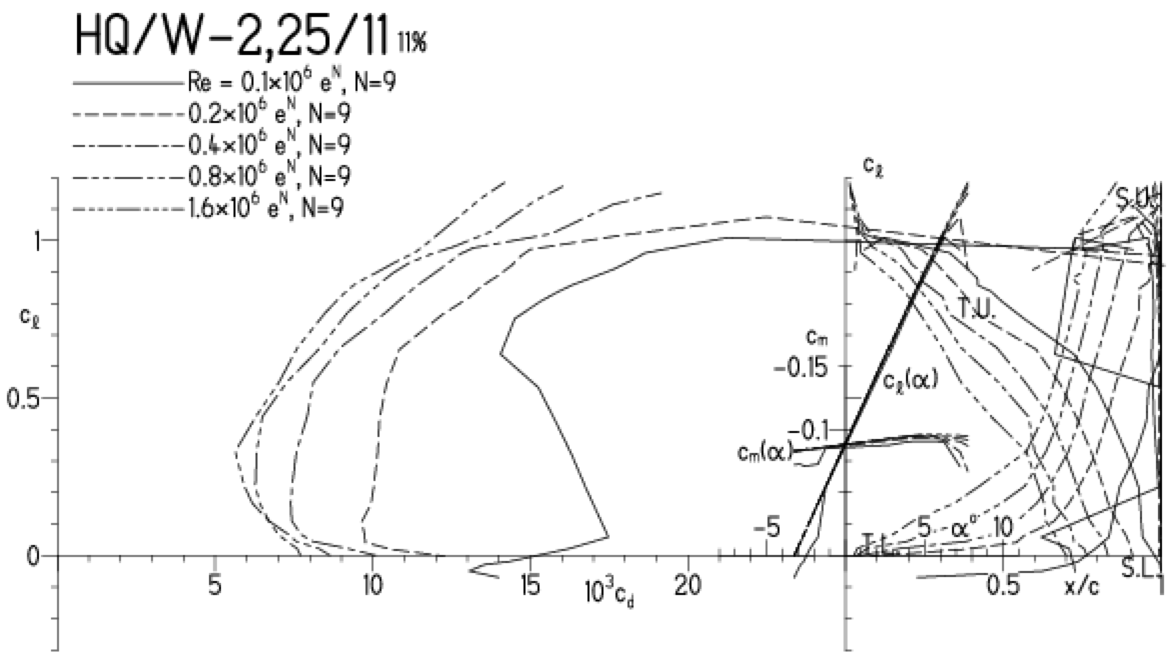


HQQ/W-2,25/11, N=9

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

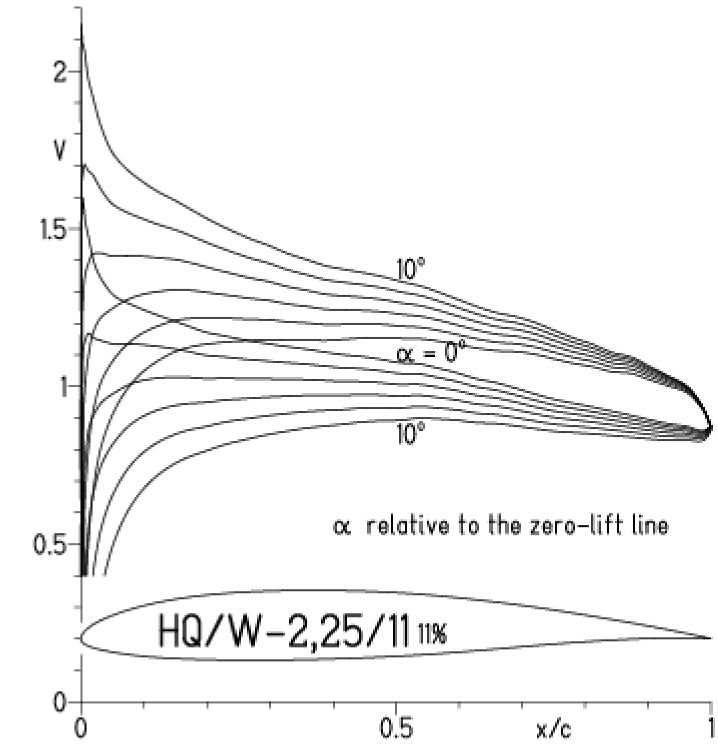


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

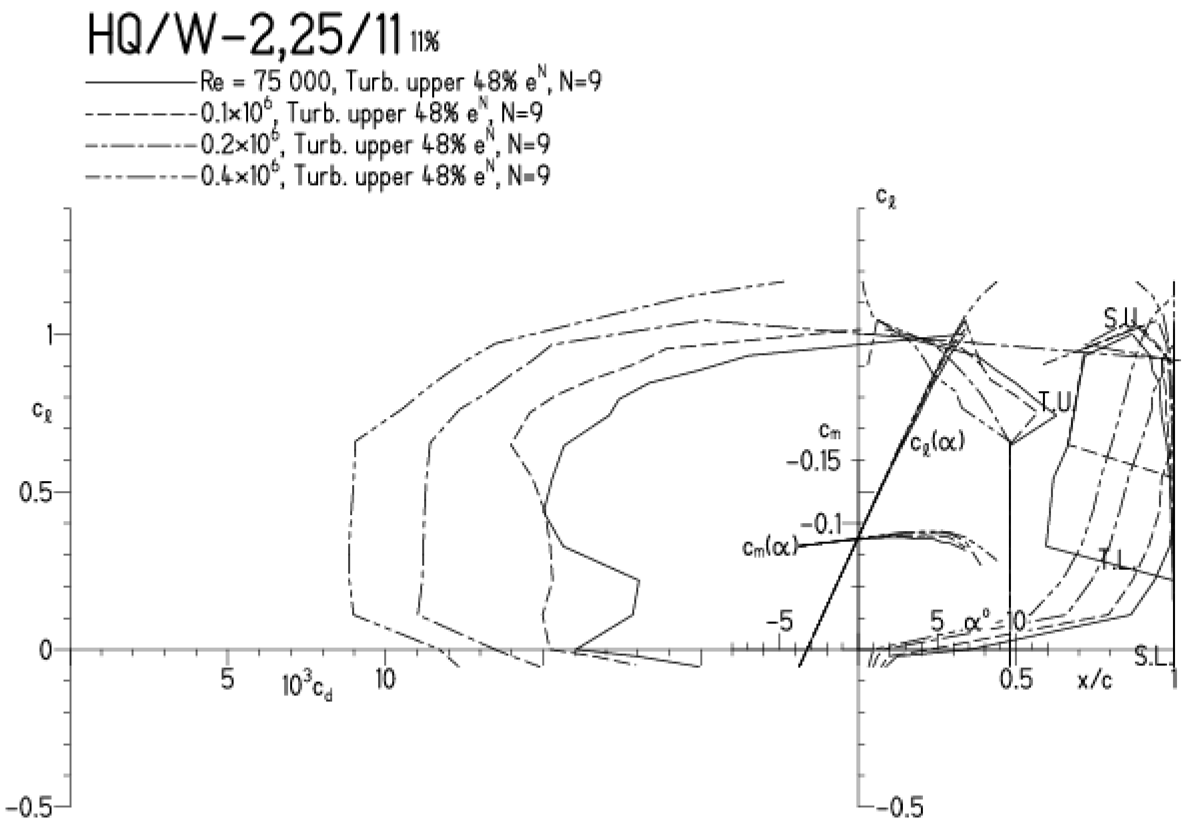


<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

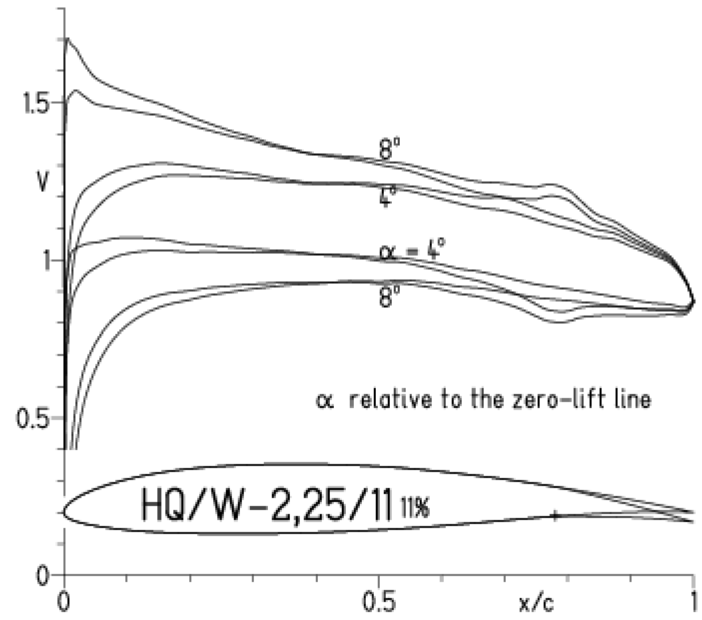


EPPLER 2005 V. 8.5.07 RUN 15.12.23 13:16

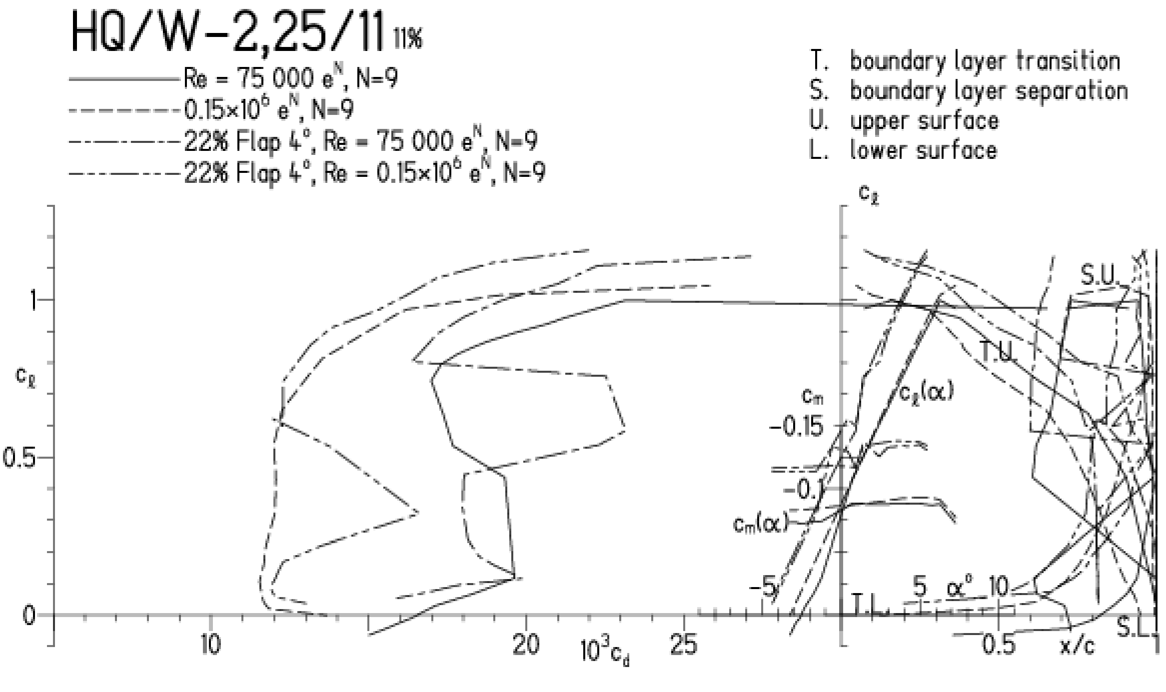


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

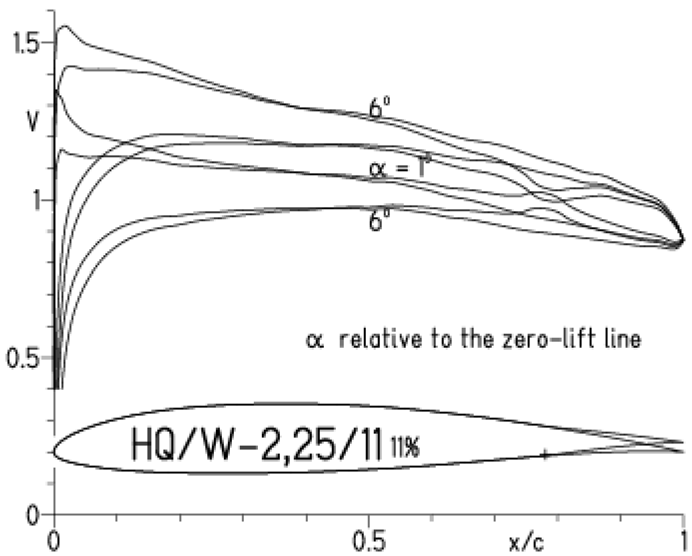


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

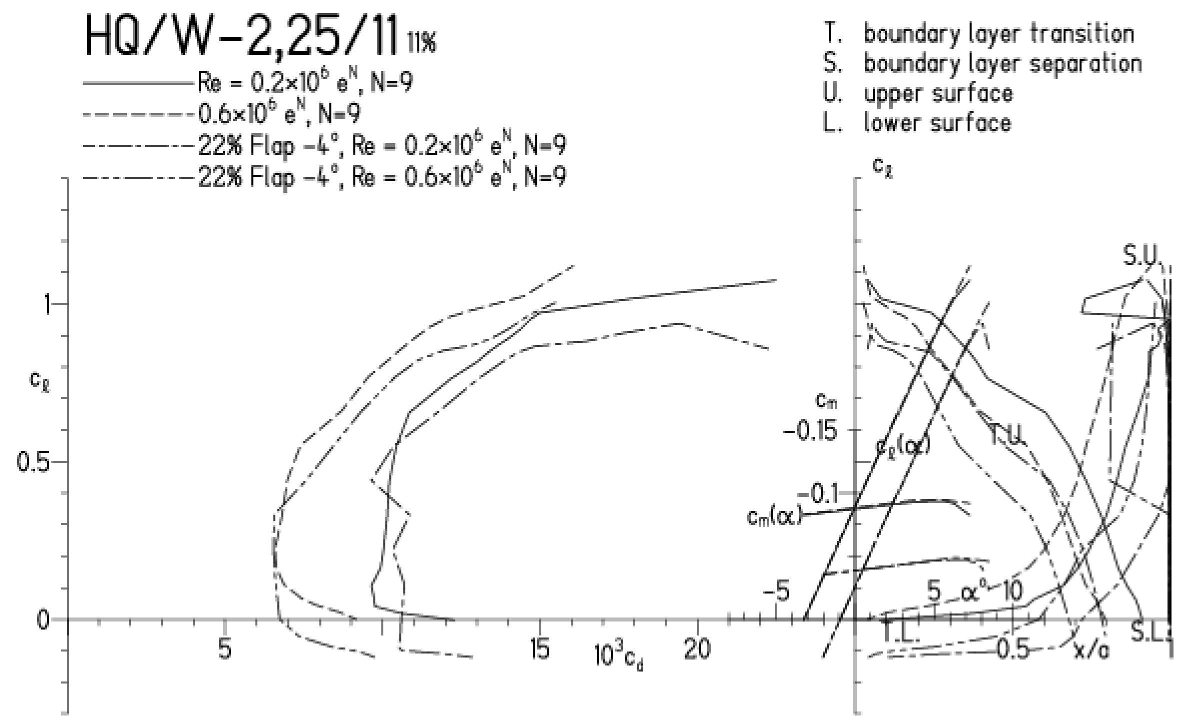


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

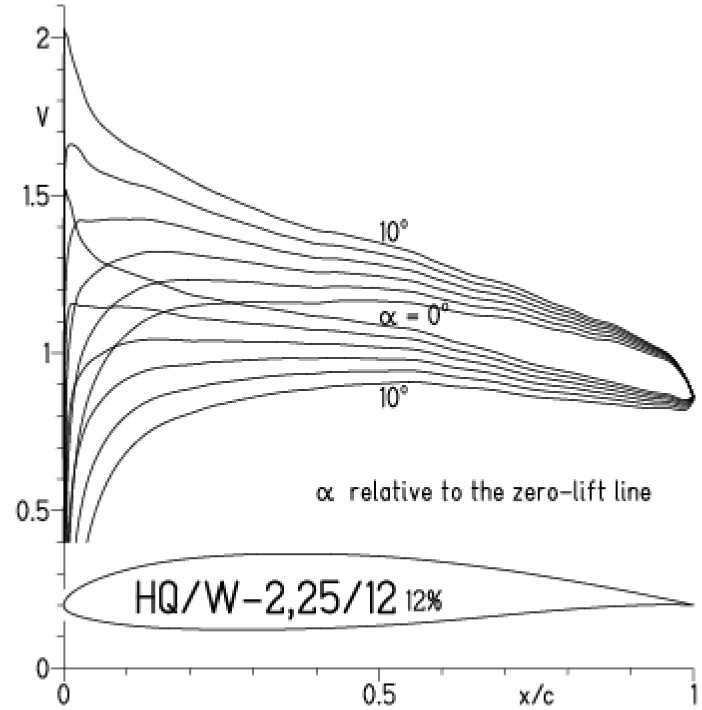


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

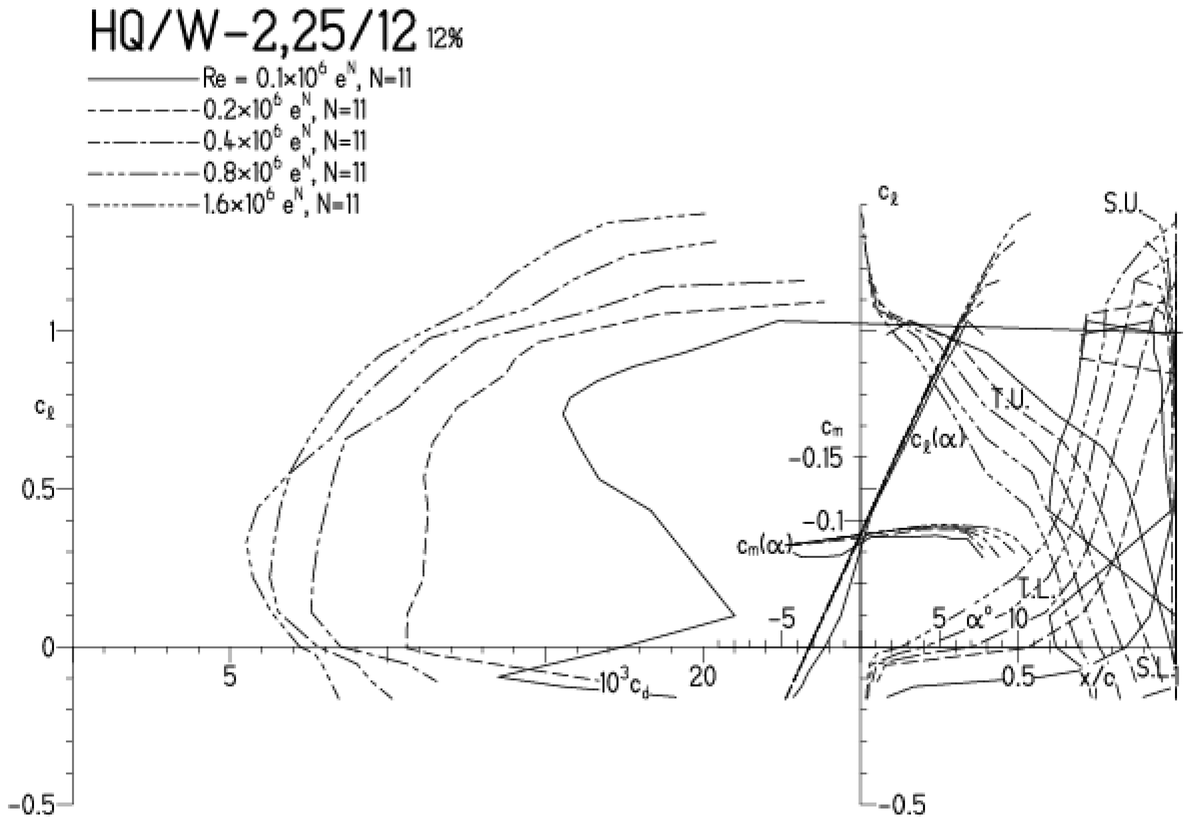


HQ/W-2,25/12, N=11

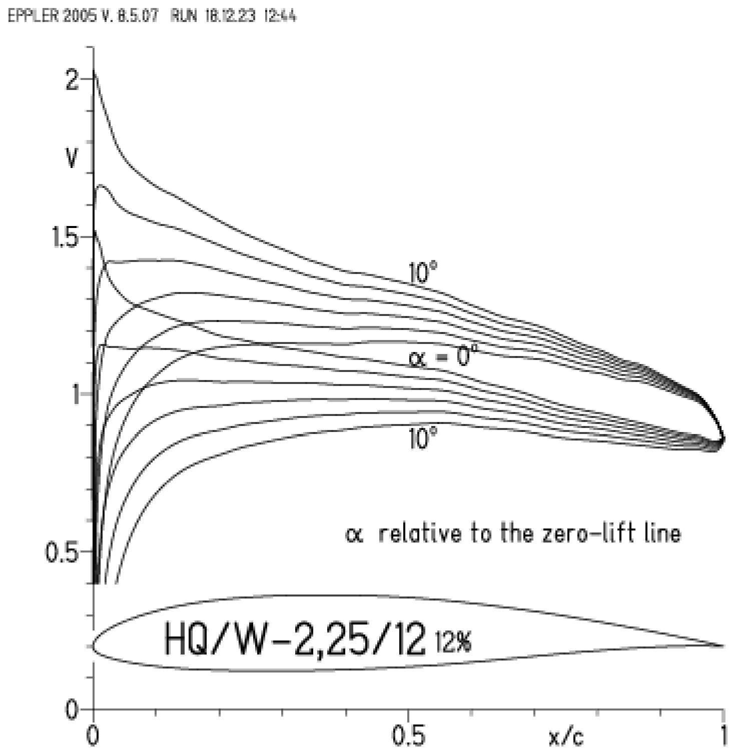
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

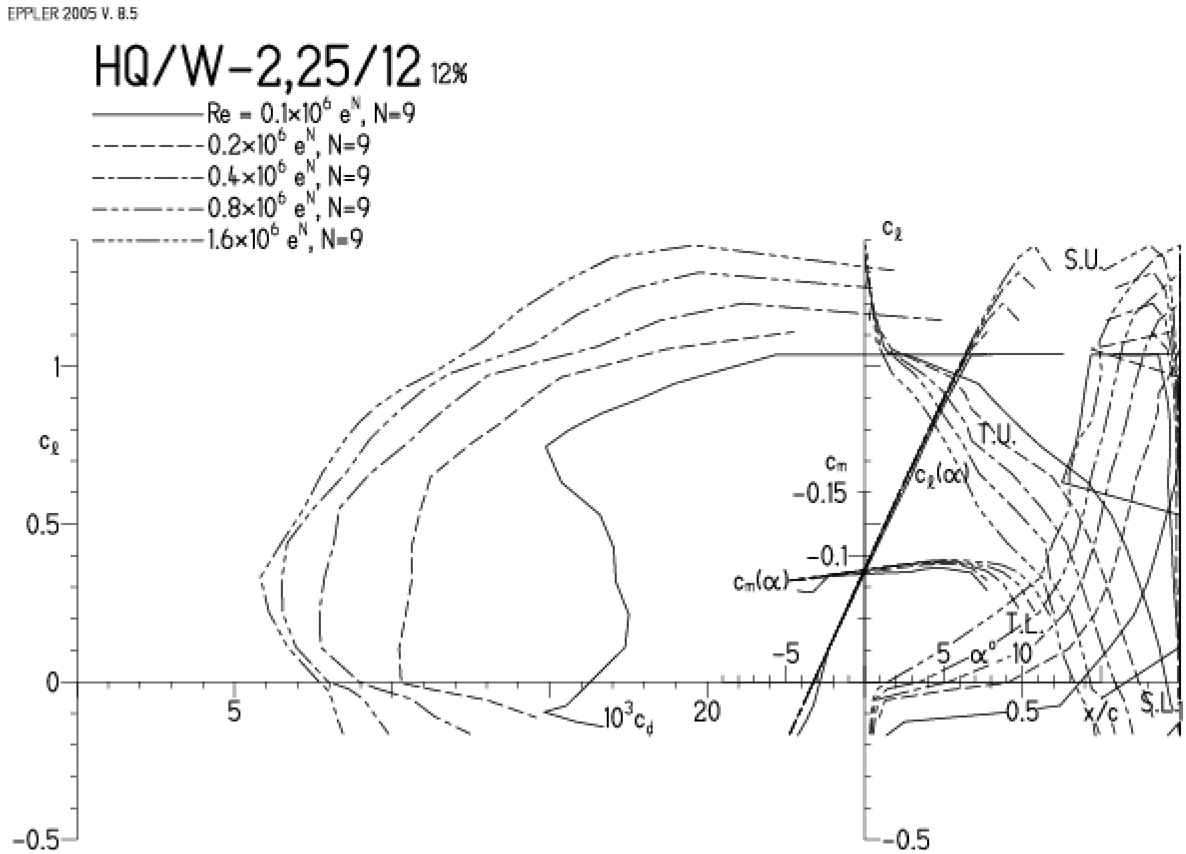


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

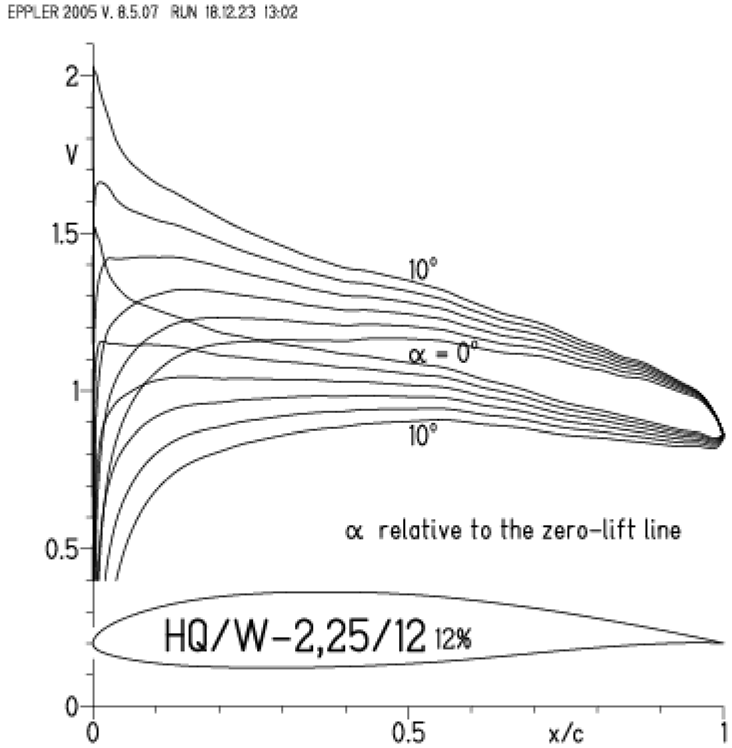


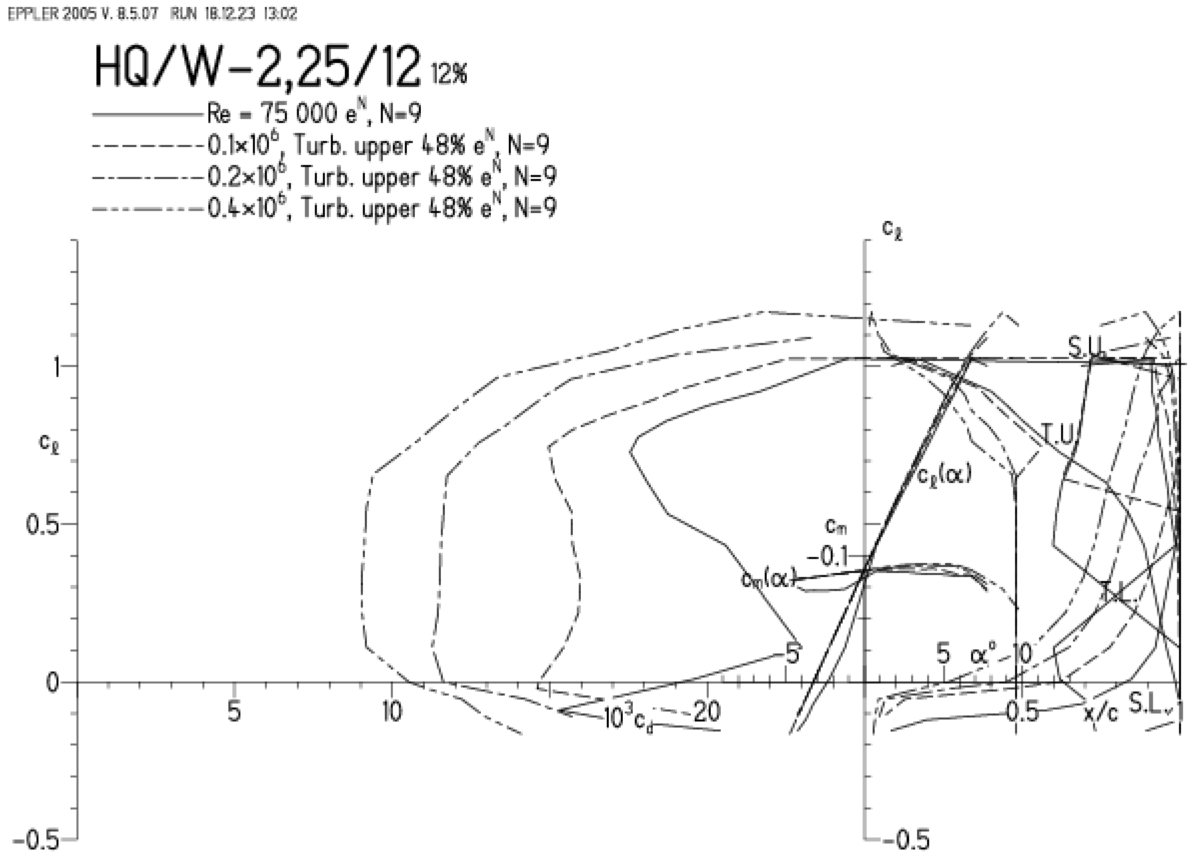
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cm(α)
cl(α)
10^3 cd
α°
x/c

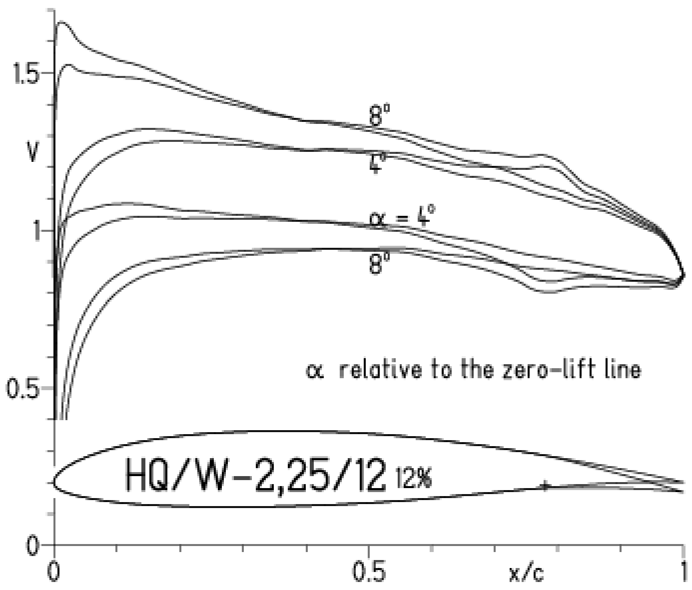
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



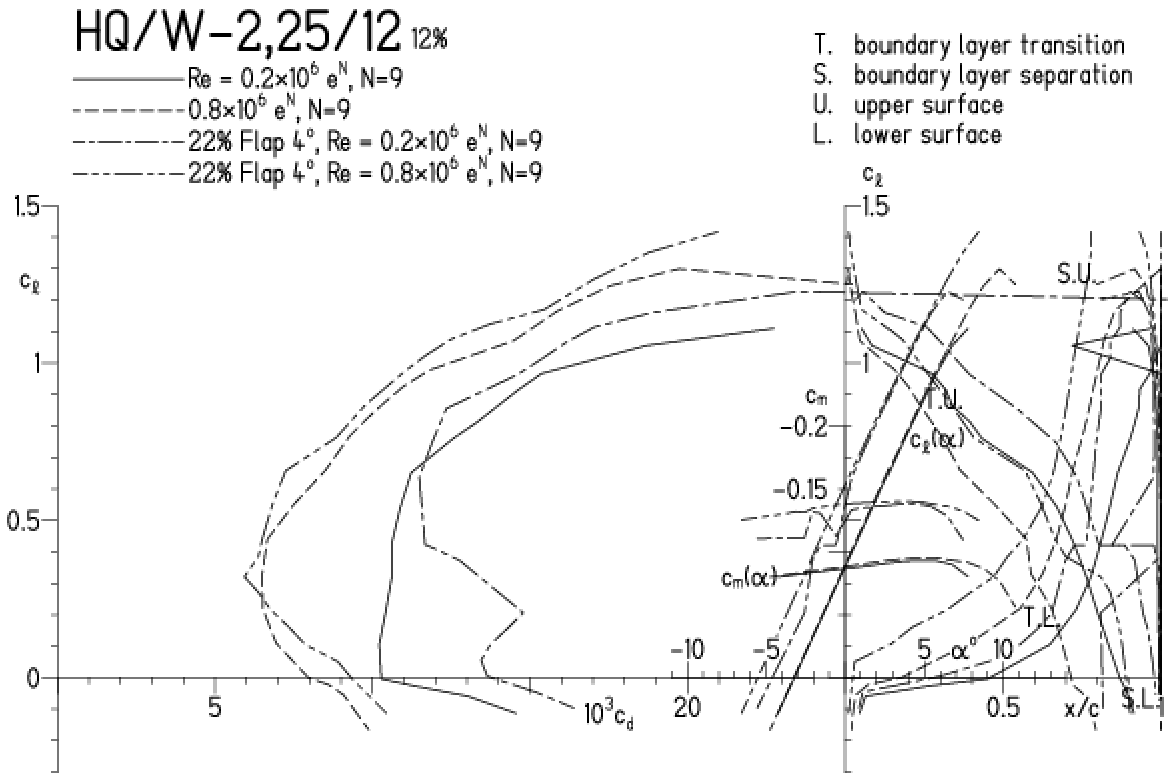


HQW-2,25/12, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

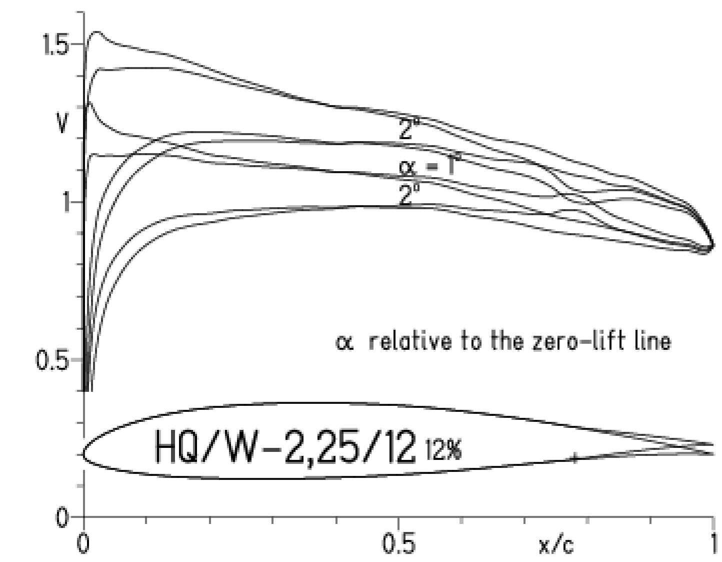


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

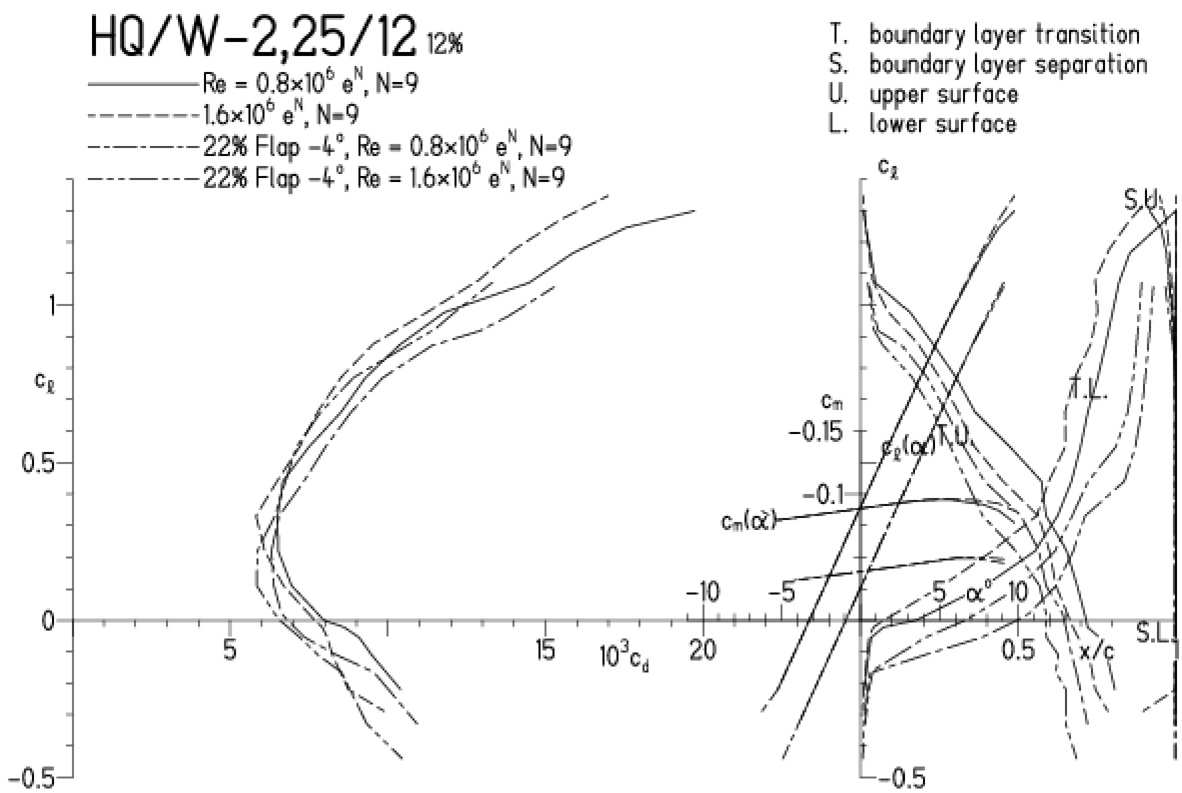


<u>HQW-2,25/12</u>, N=9 mit -4° Wölbklappenausschlag

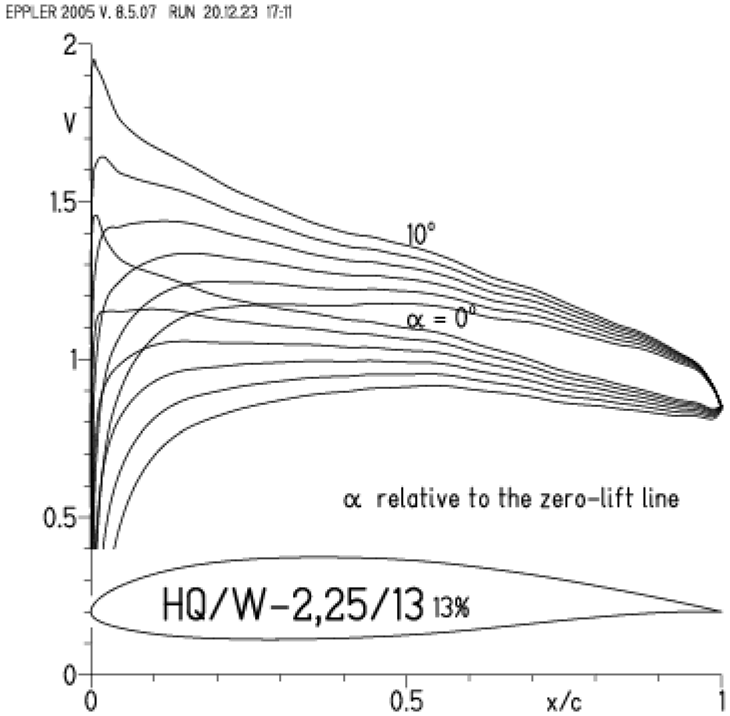
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

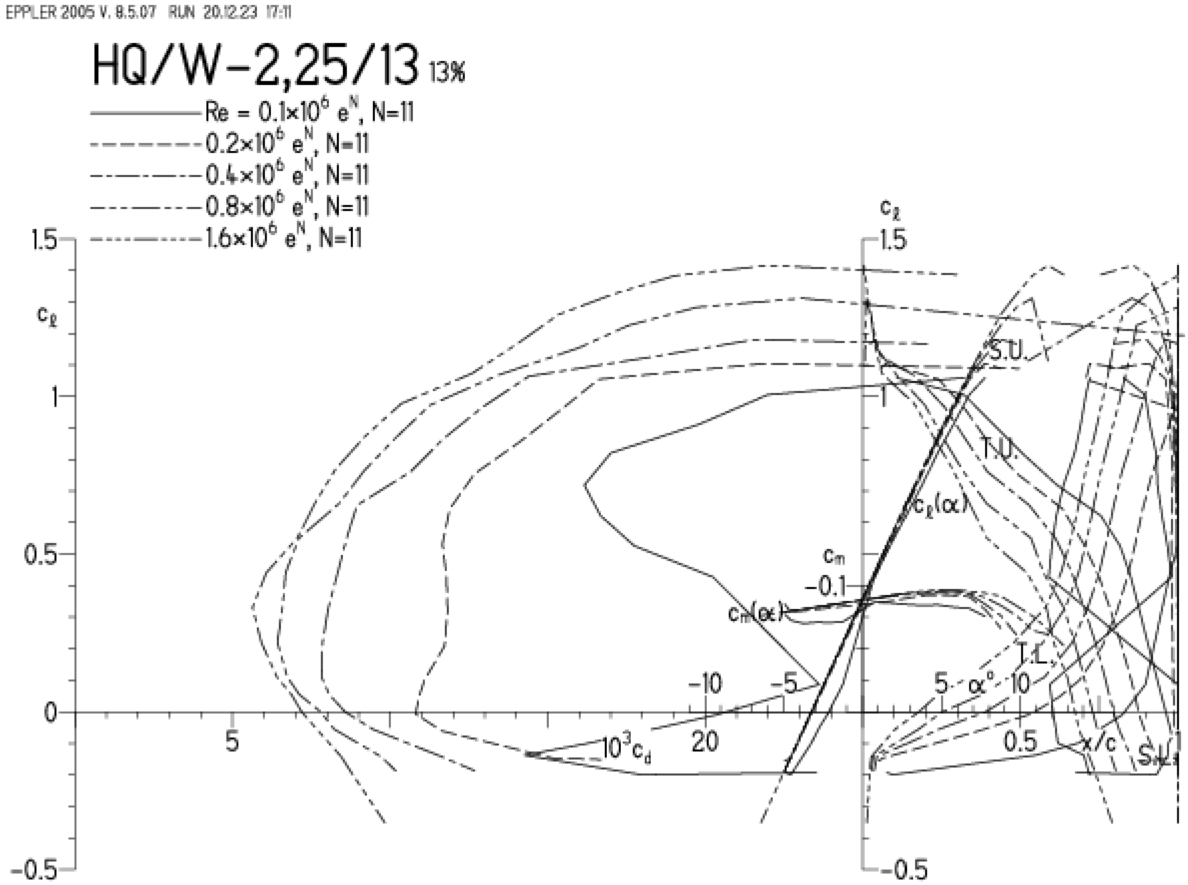


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

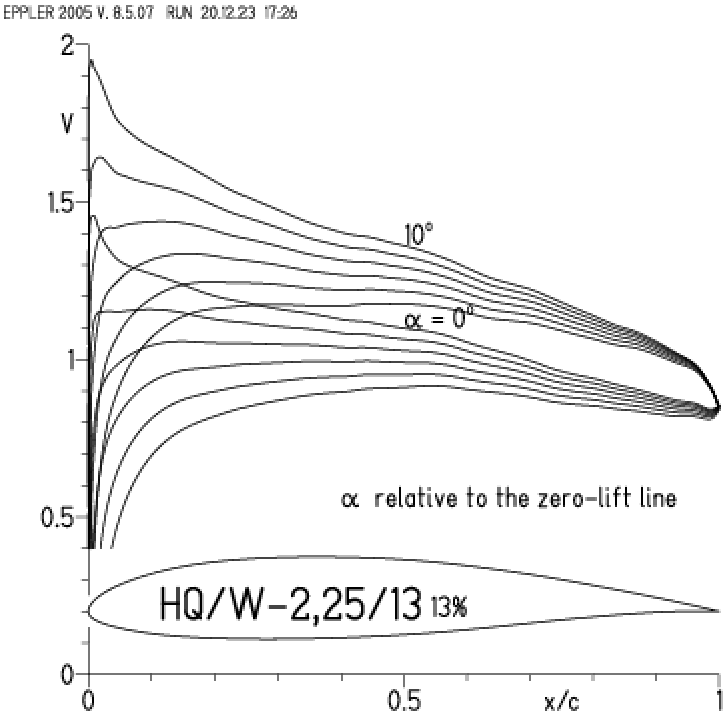


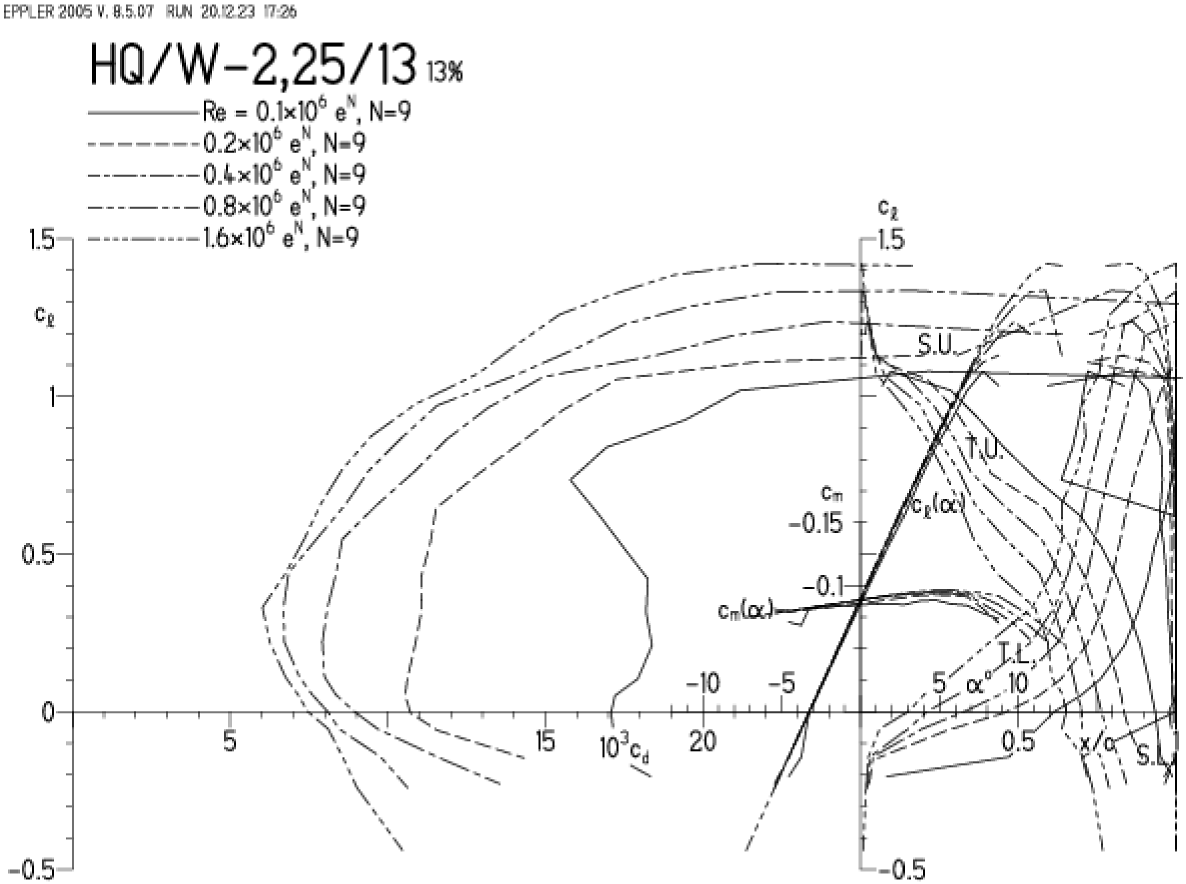
<u>HQ/W-2,25/13</u>, N=11



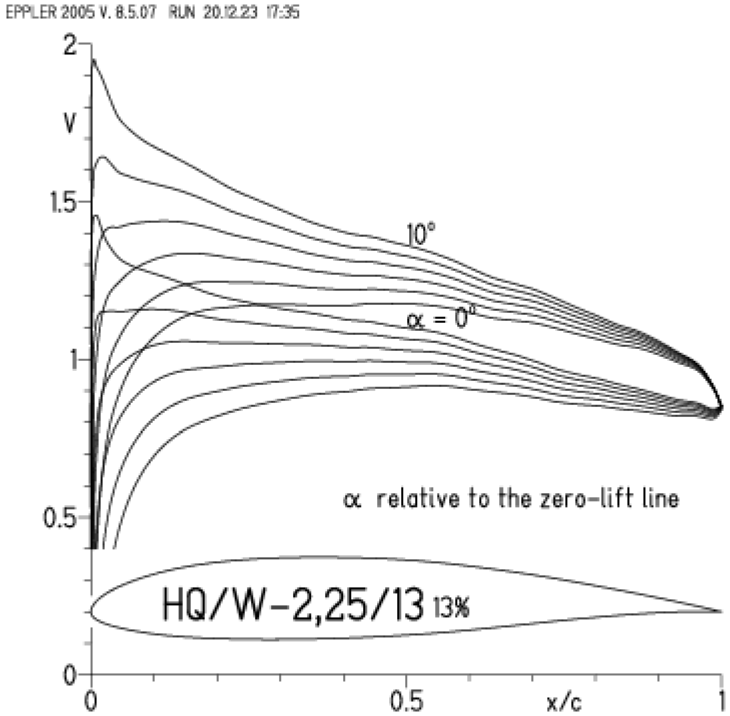


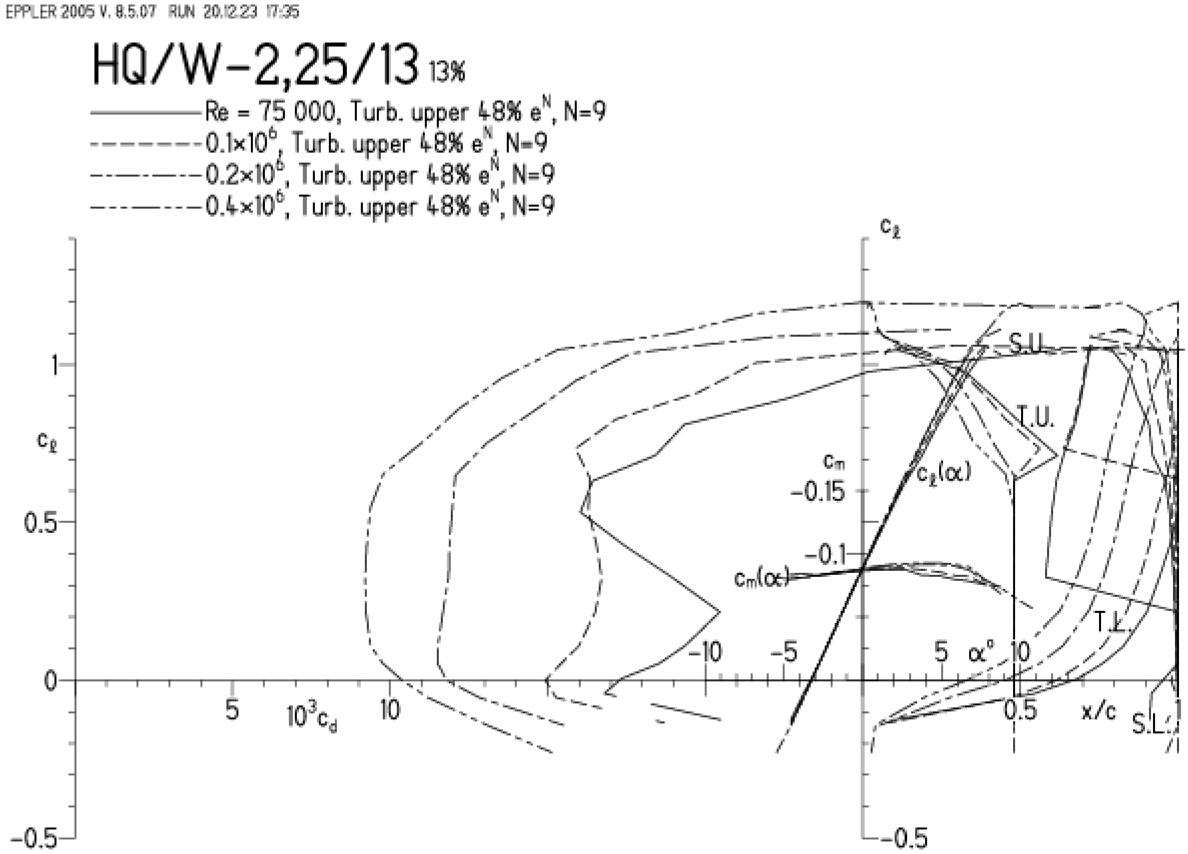
<u>HQ/W-2,25/13</u>, N=9





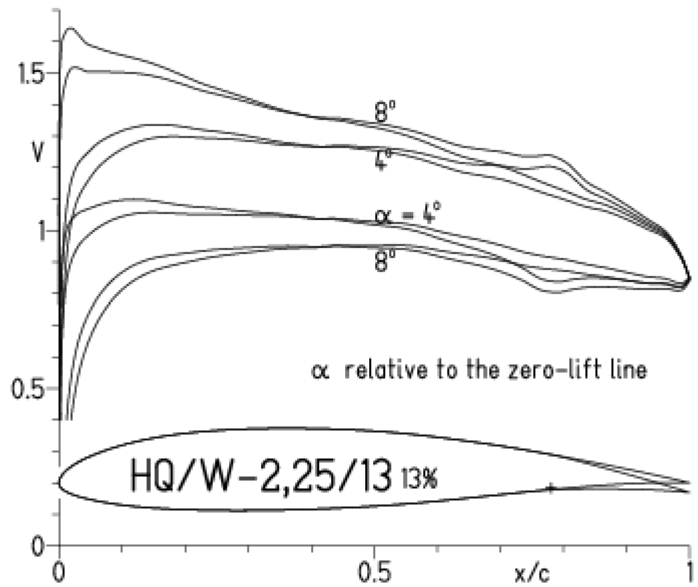
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



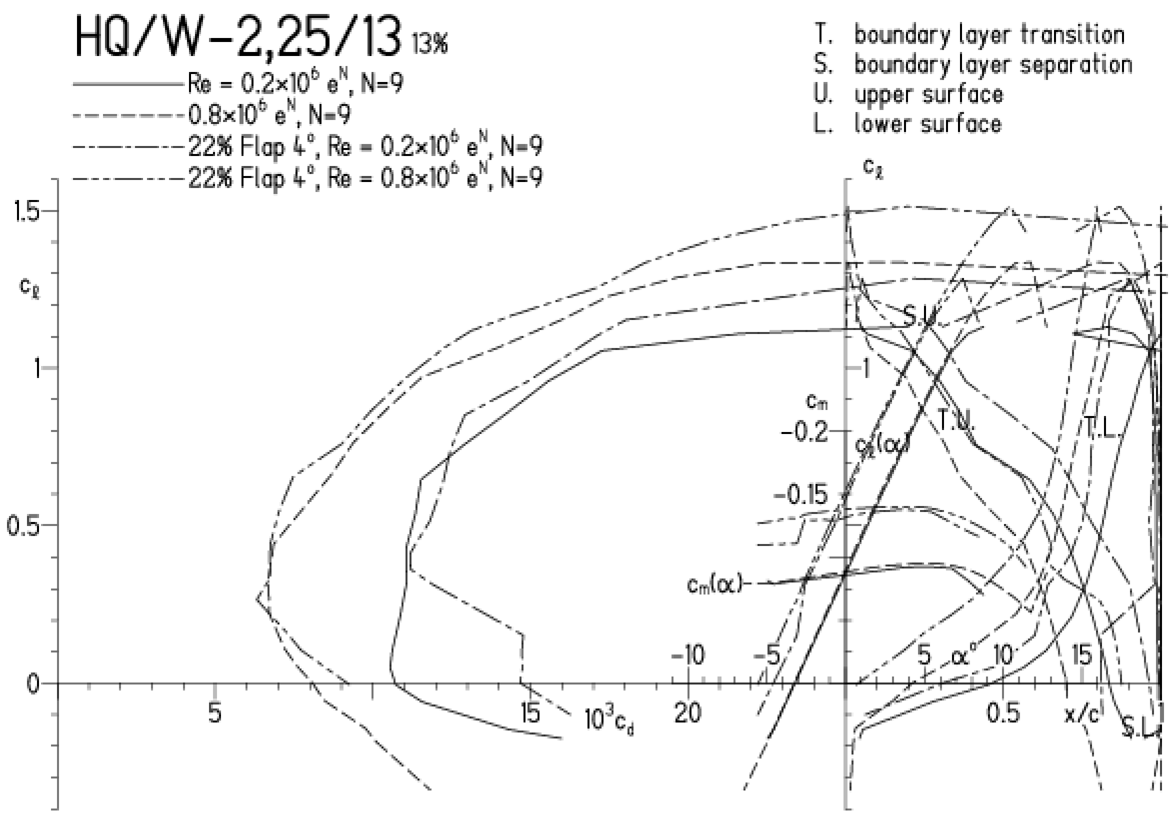


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

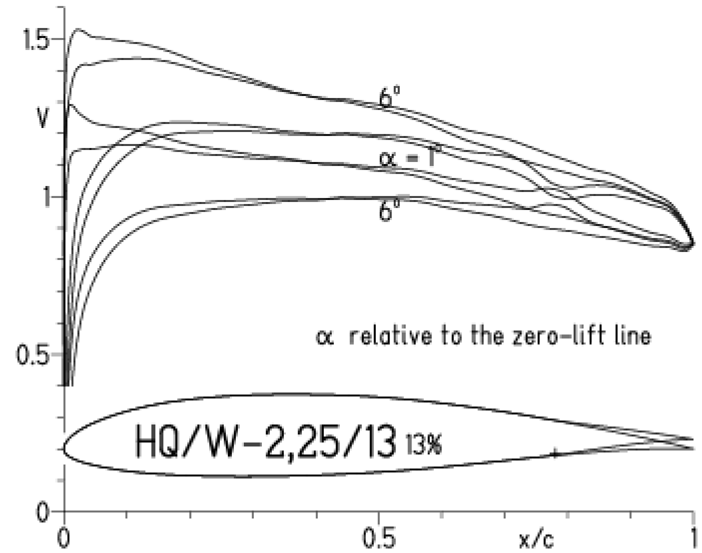


EPPLER 2005 V.

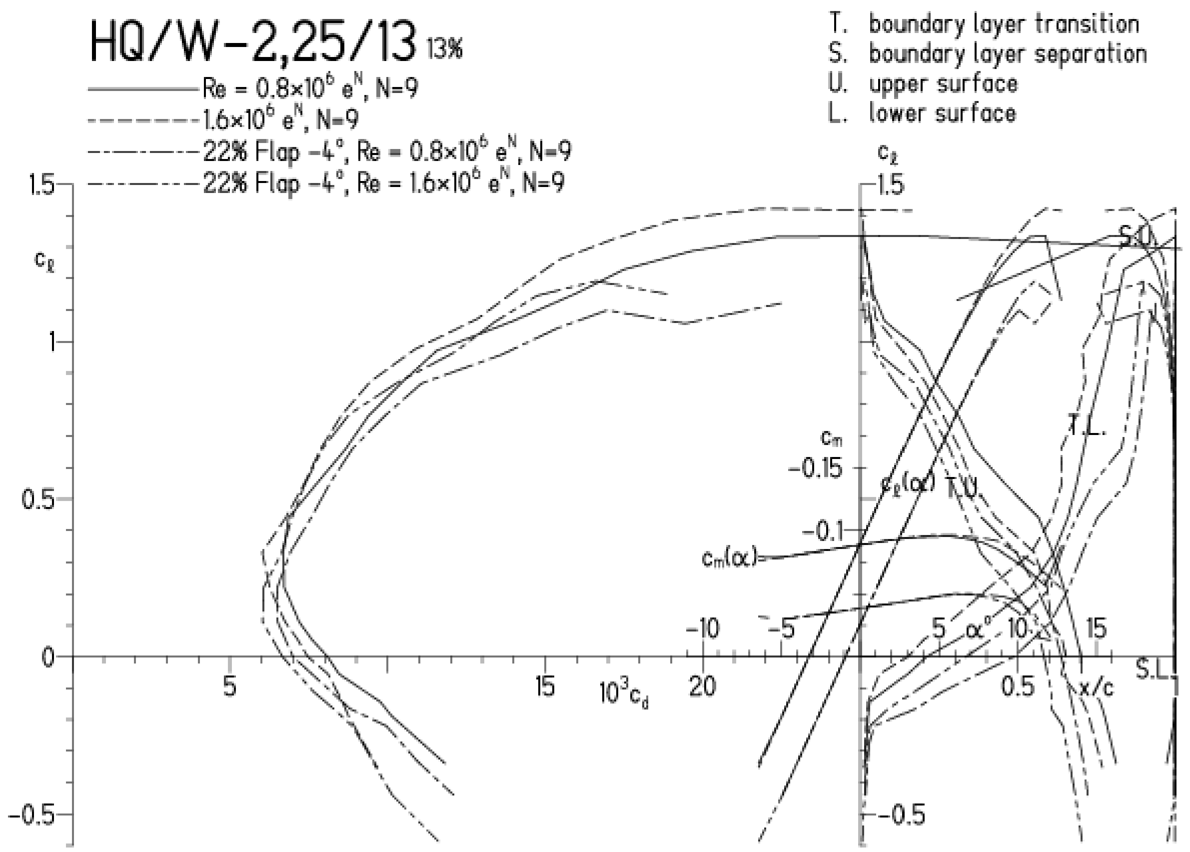


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

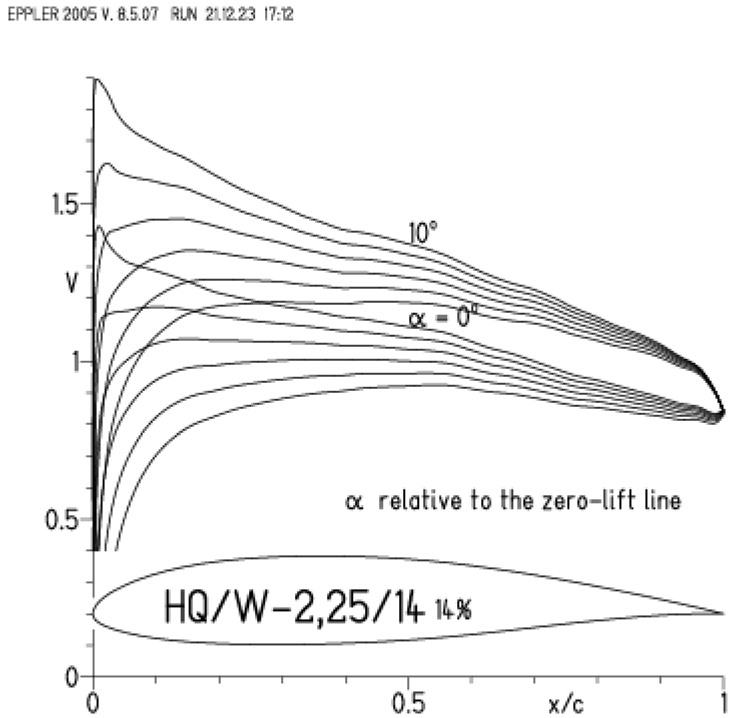
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

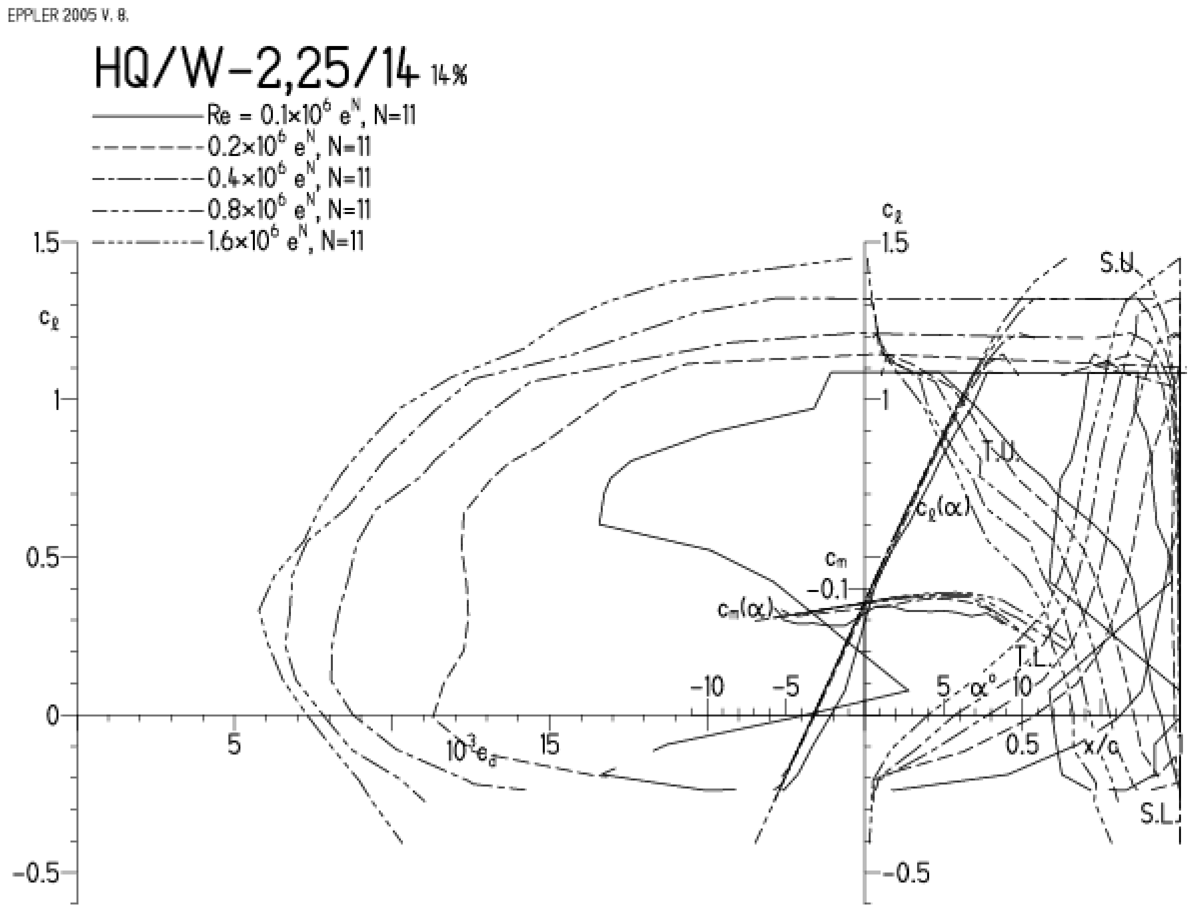


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

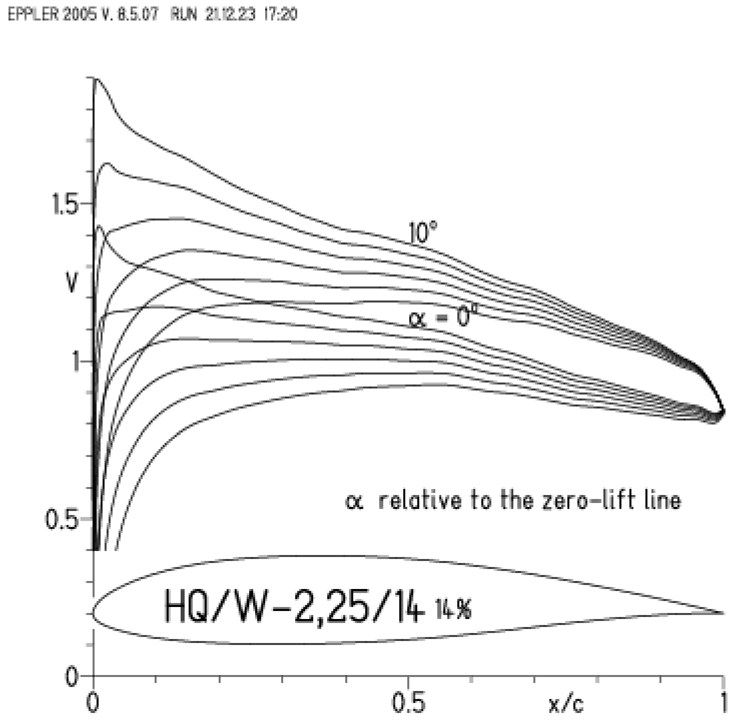


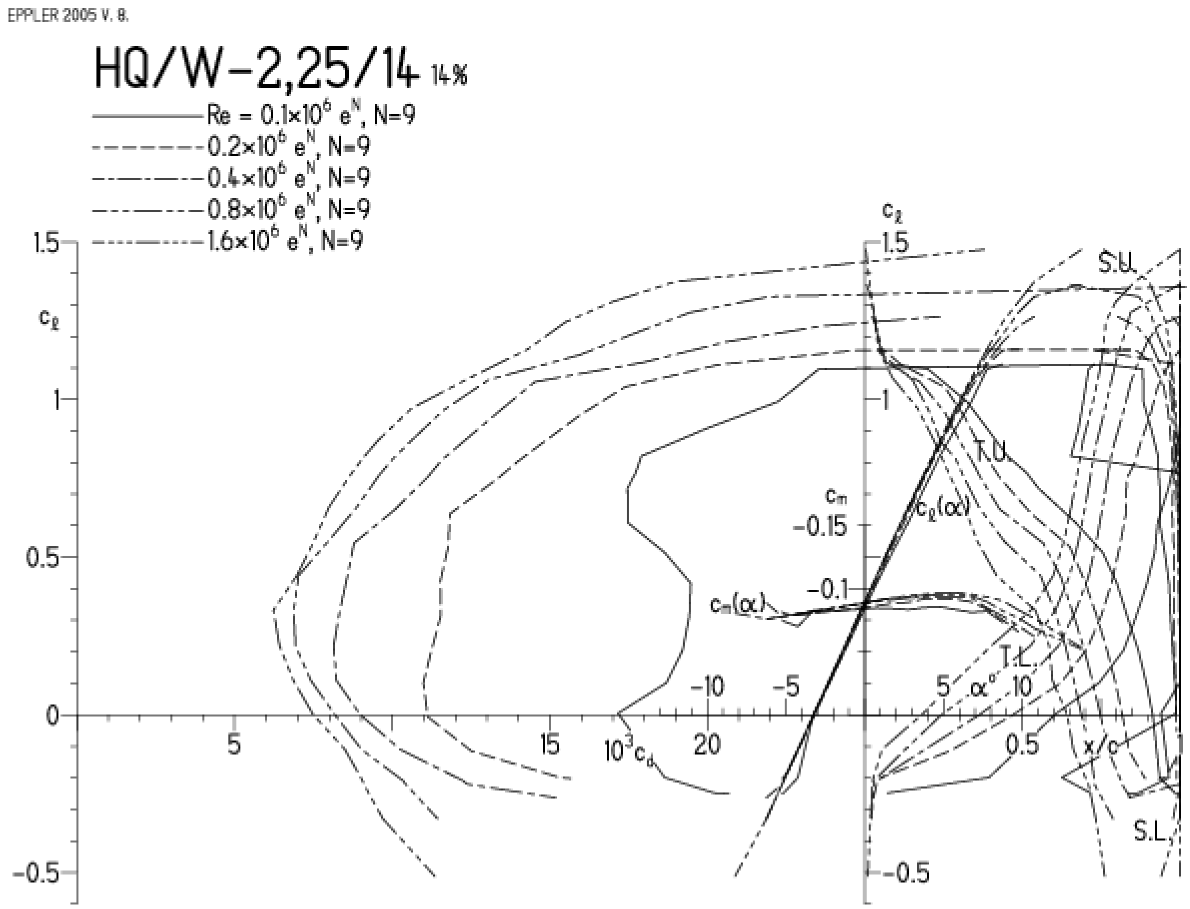
<u>HQ/W-2,25/14</u>, N=11



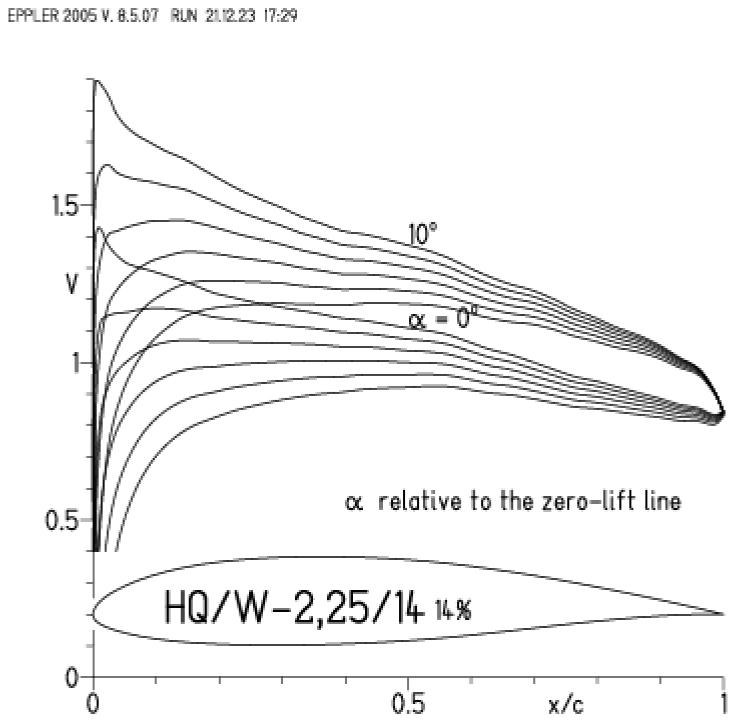


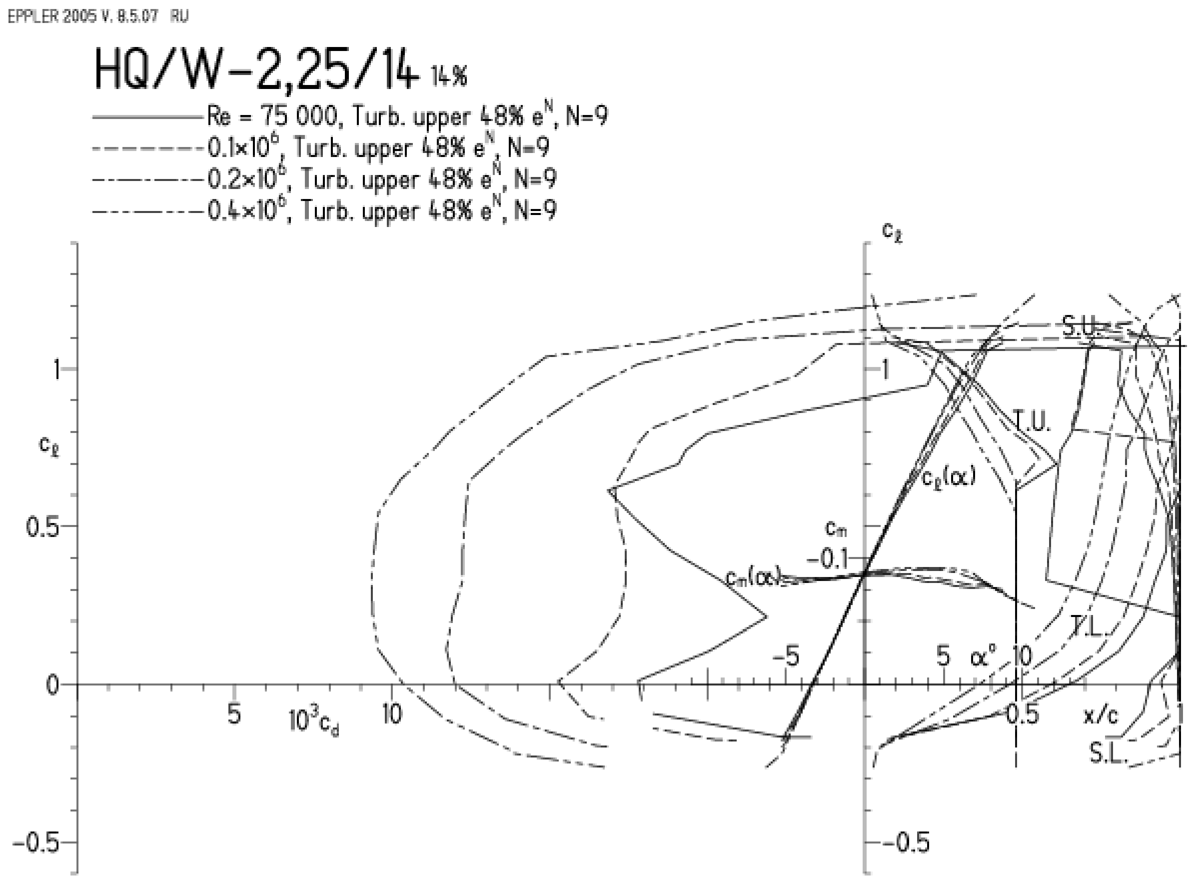
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
V
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
1.5
1
0.5
0
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
S.U.
T.U.
T.L.
S.L.
cₗ(α)
cₘ(α)
cₘ
−0.15
−0.1
α°
x/c
10³c_d

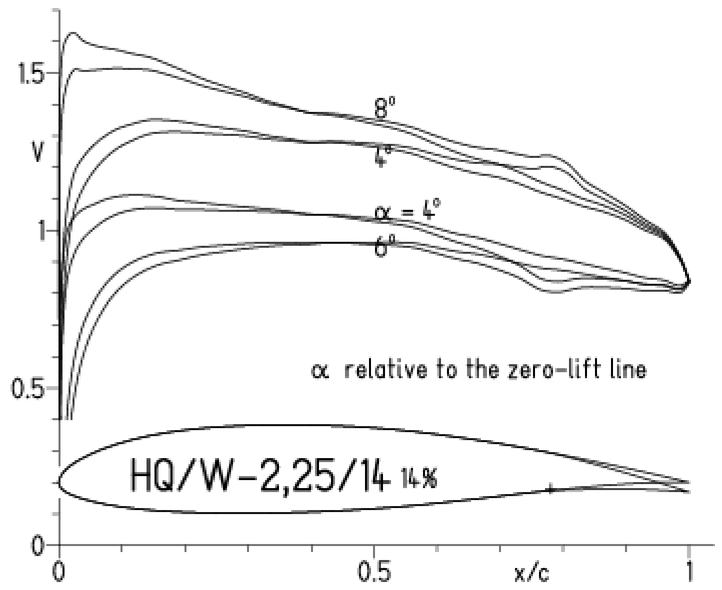
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



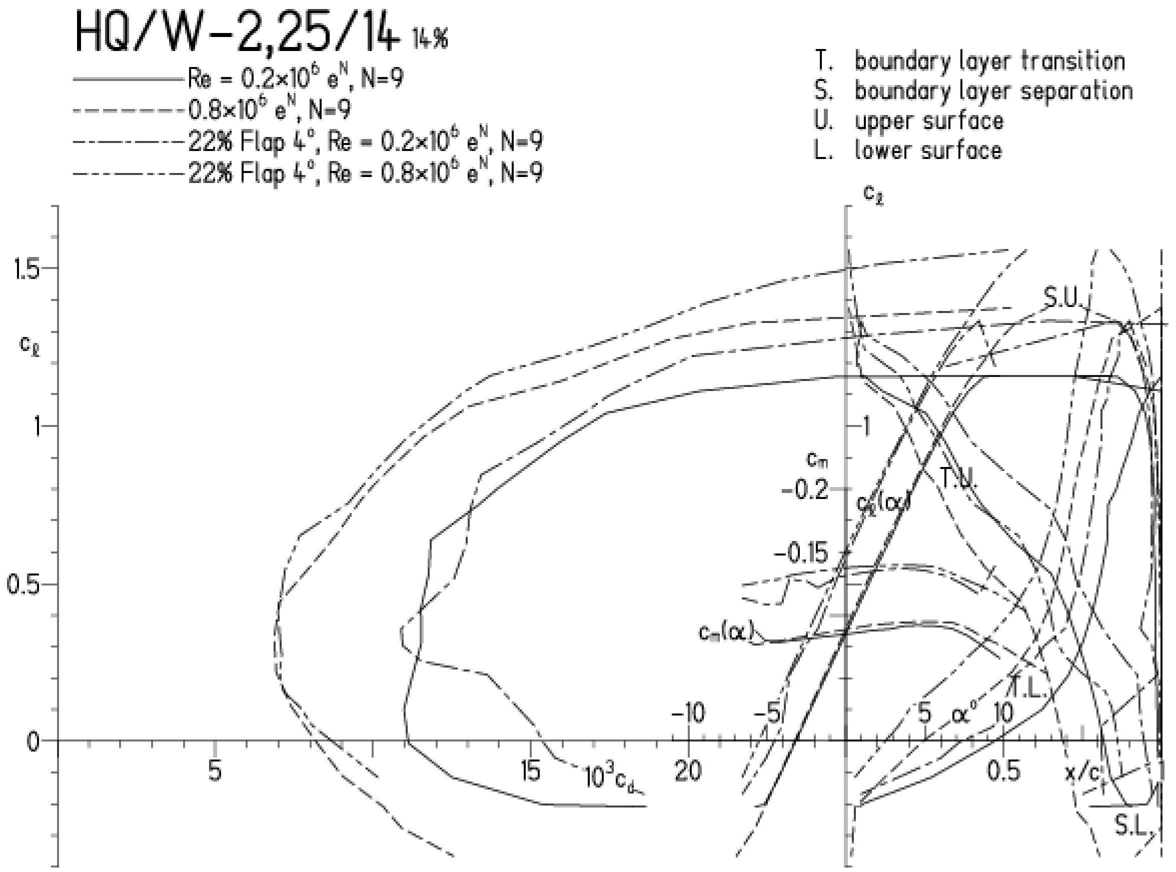


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

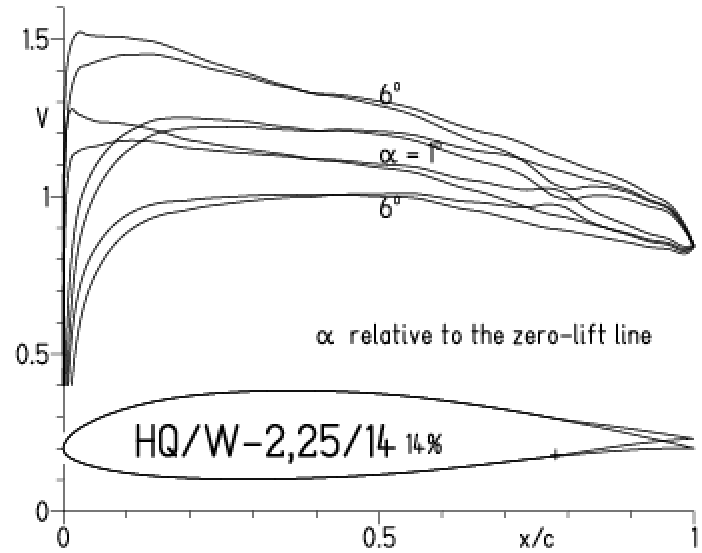


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

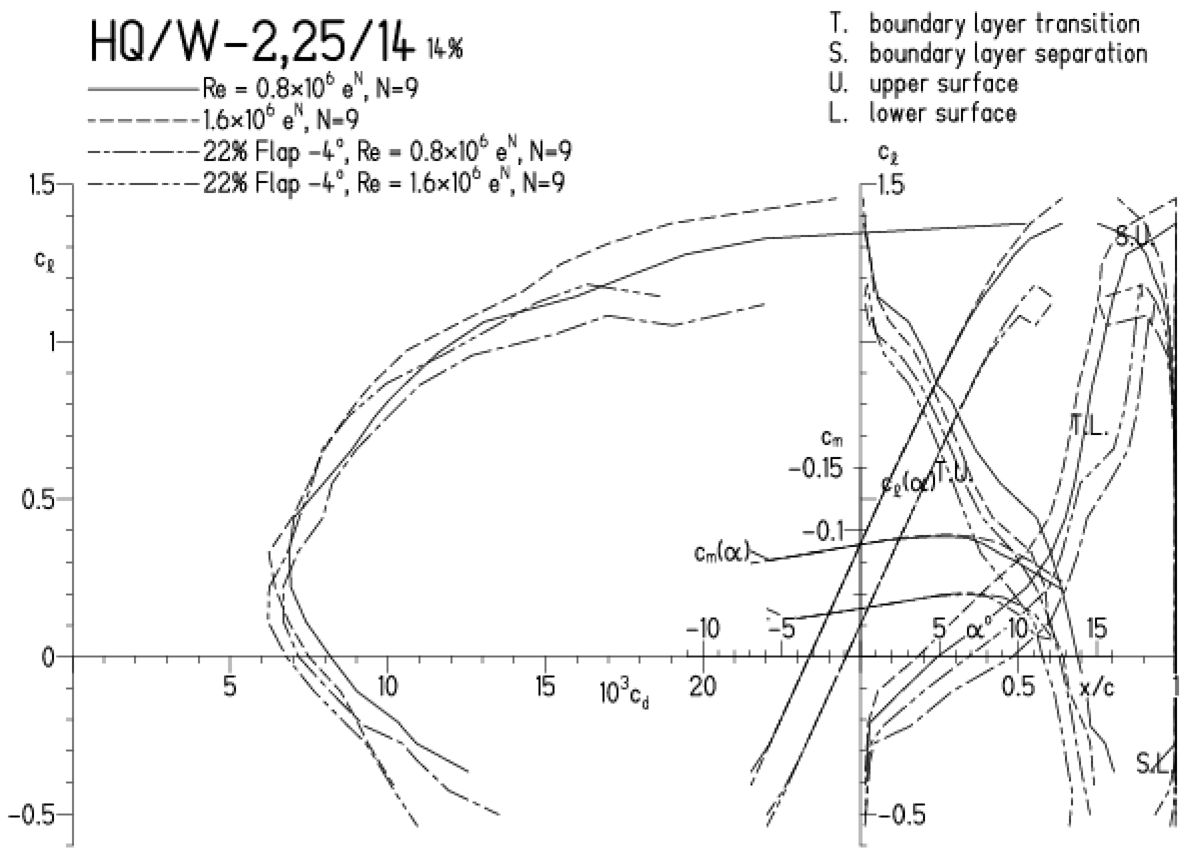


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

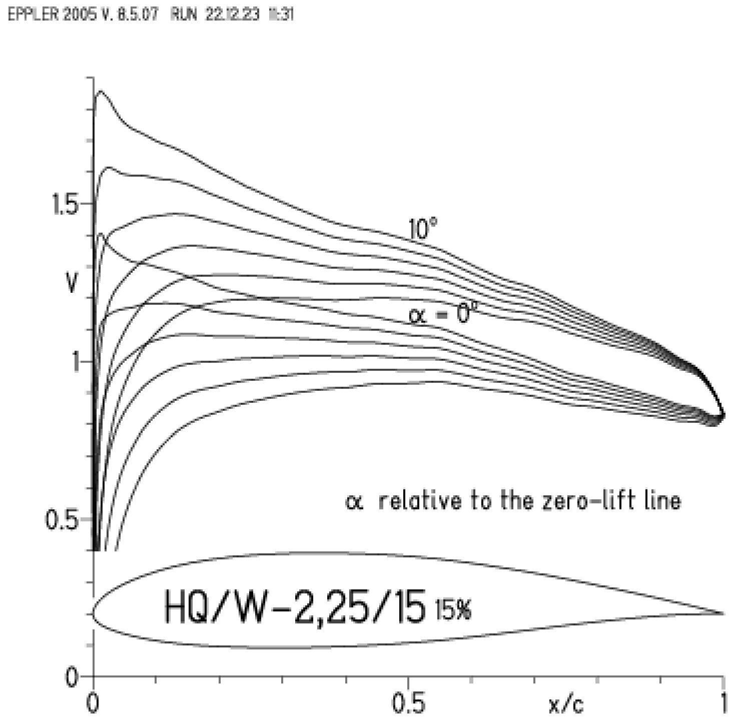
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

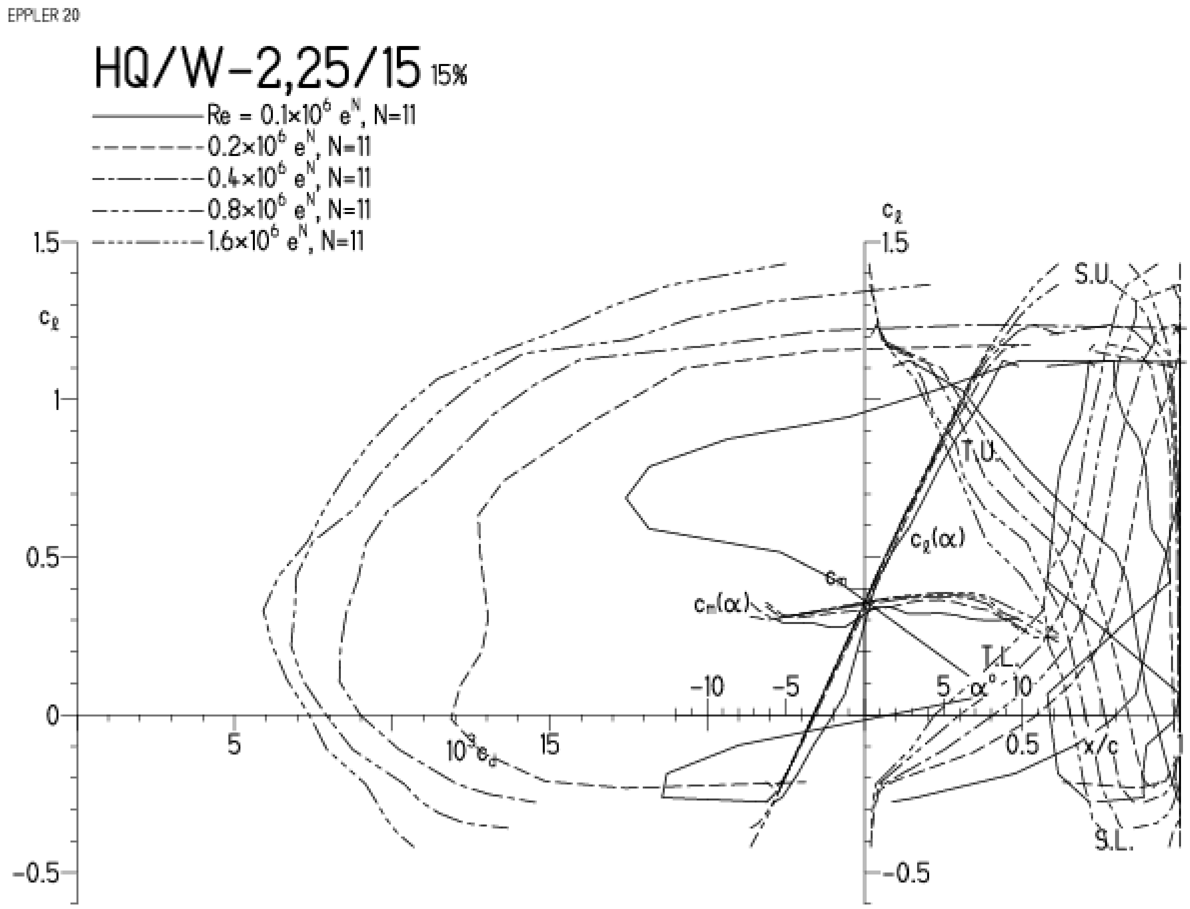


EPPLER 2005 V. 8.5.07



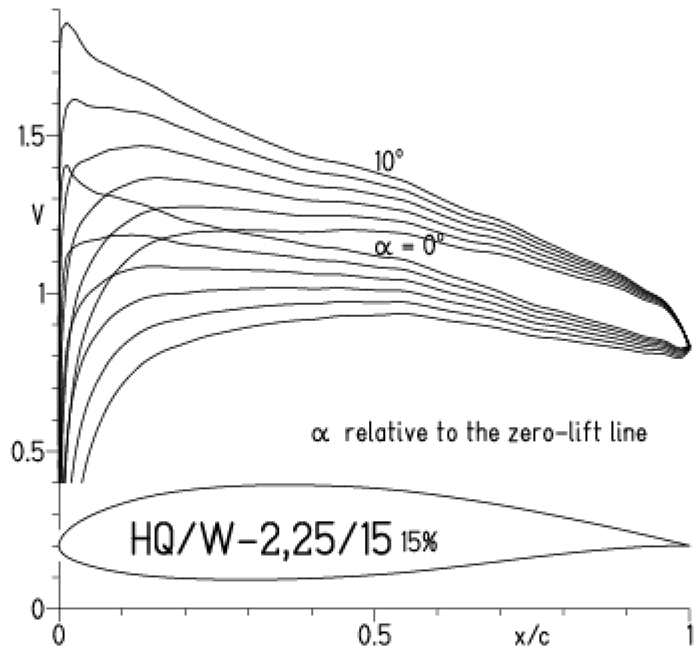
<u>HQ/W-2,25/15</u>, N=11



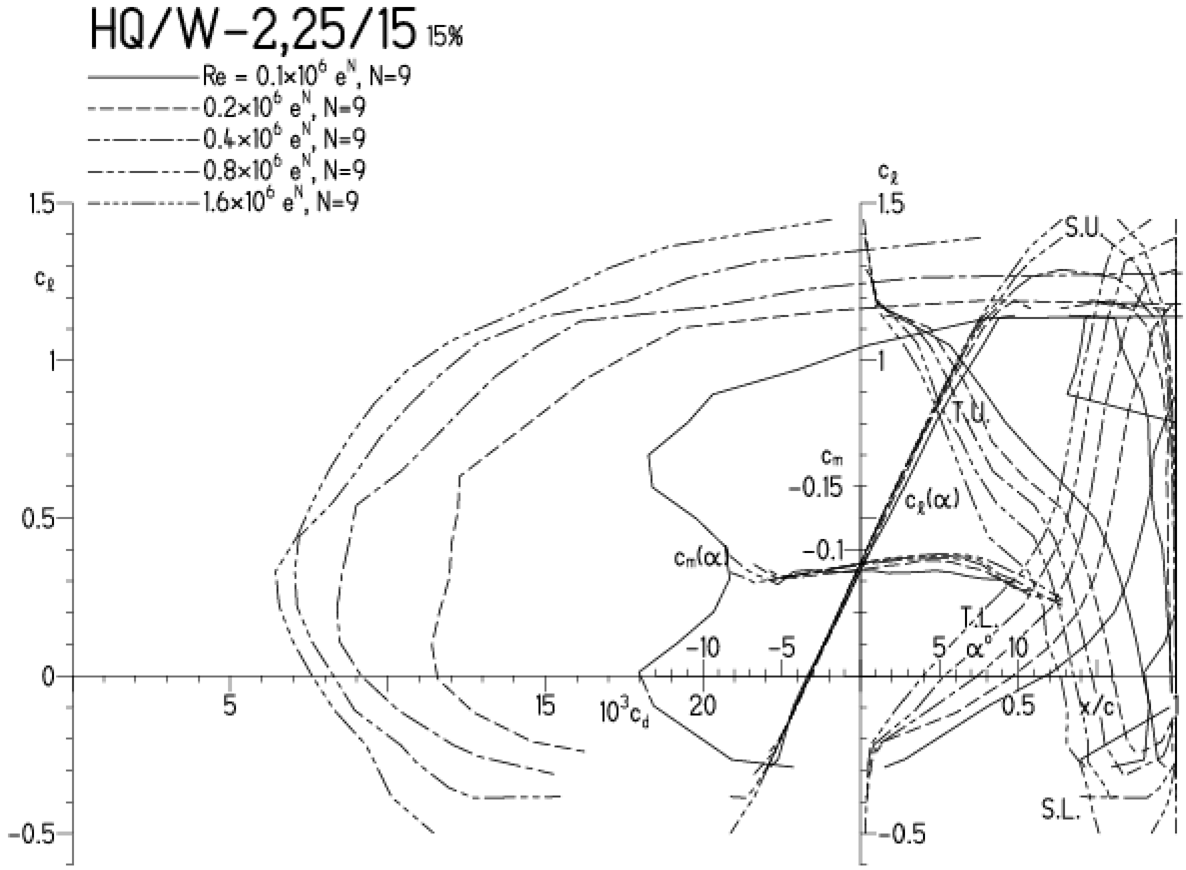


HQ/W-2,25/15, N=9

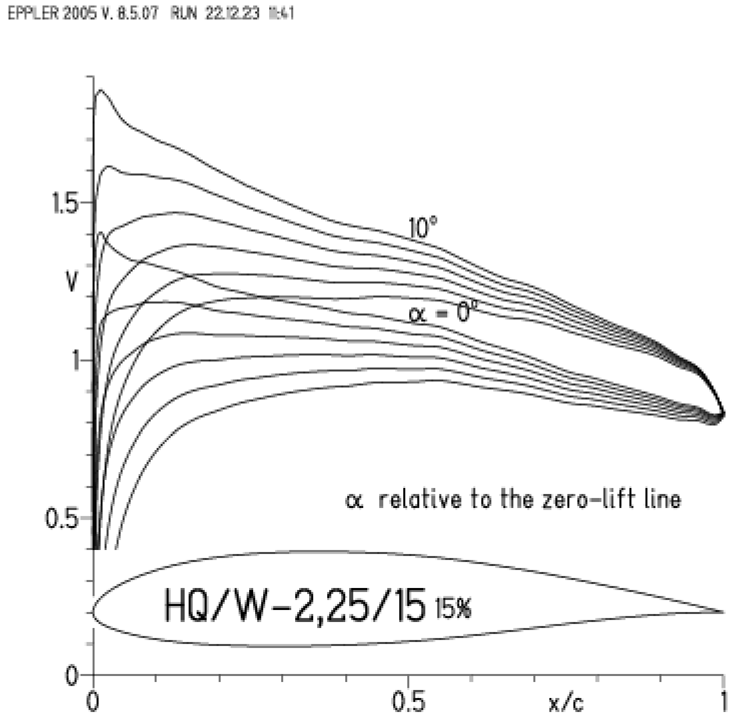
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

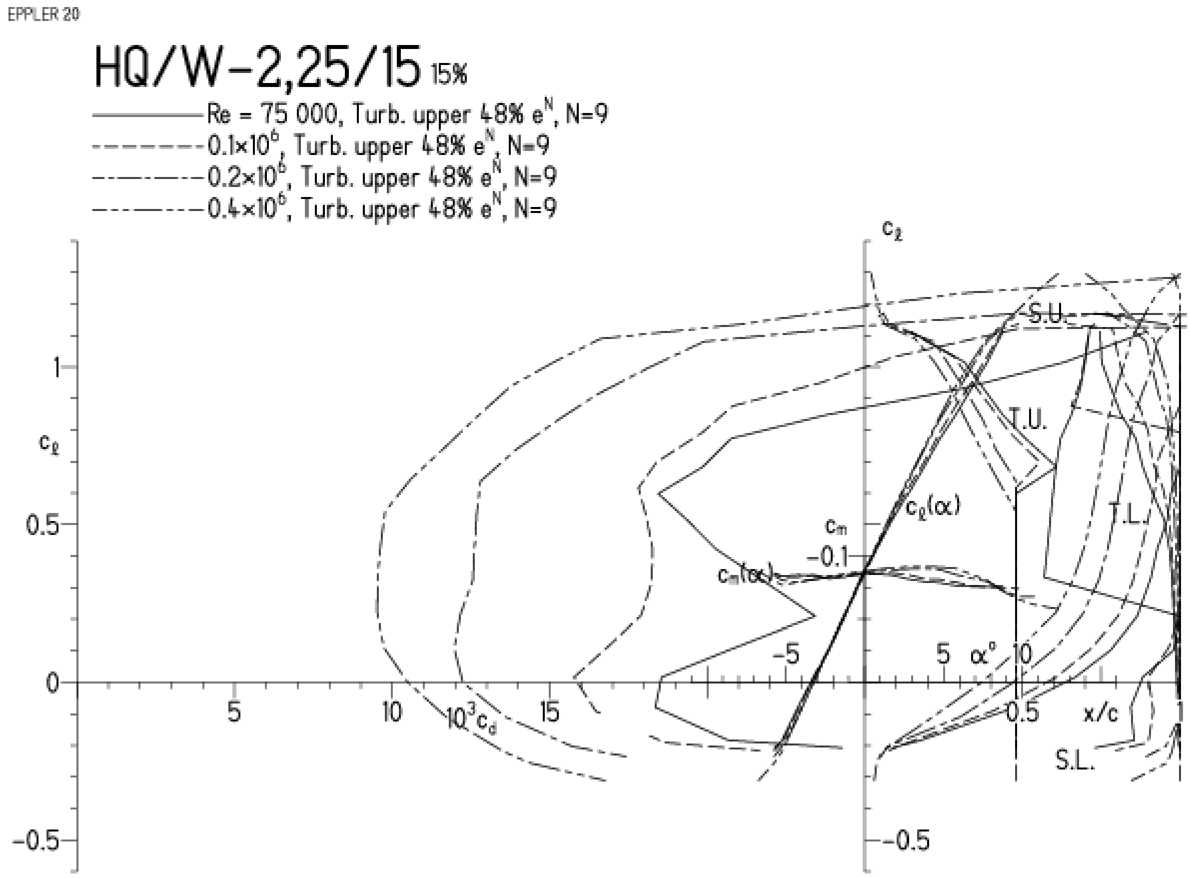


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



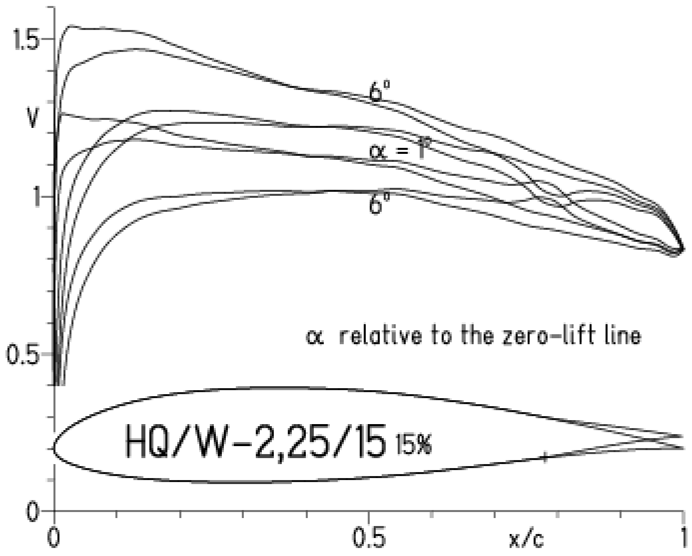


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

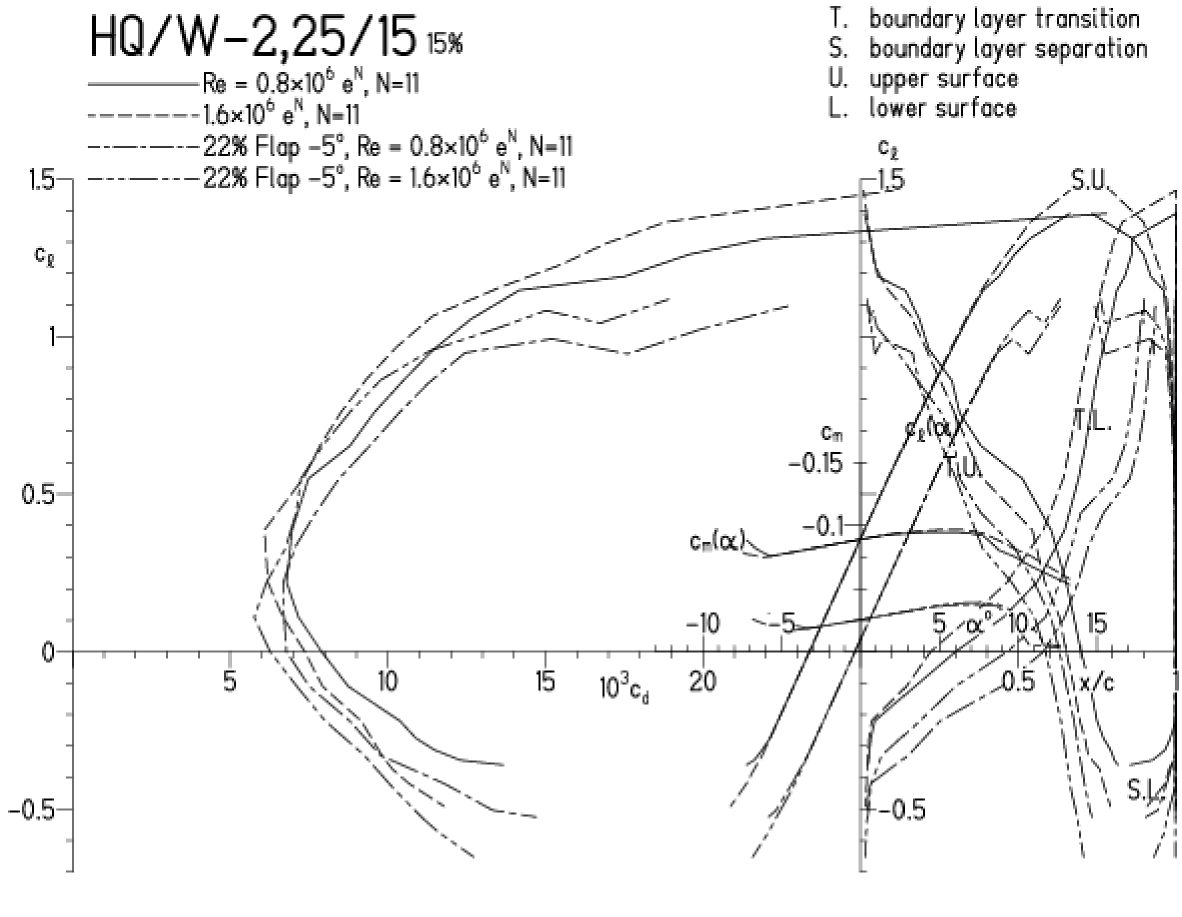
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

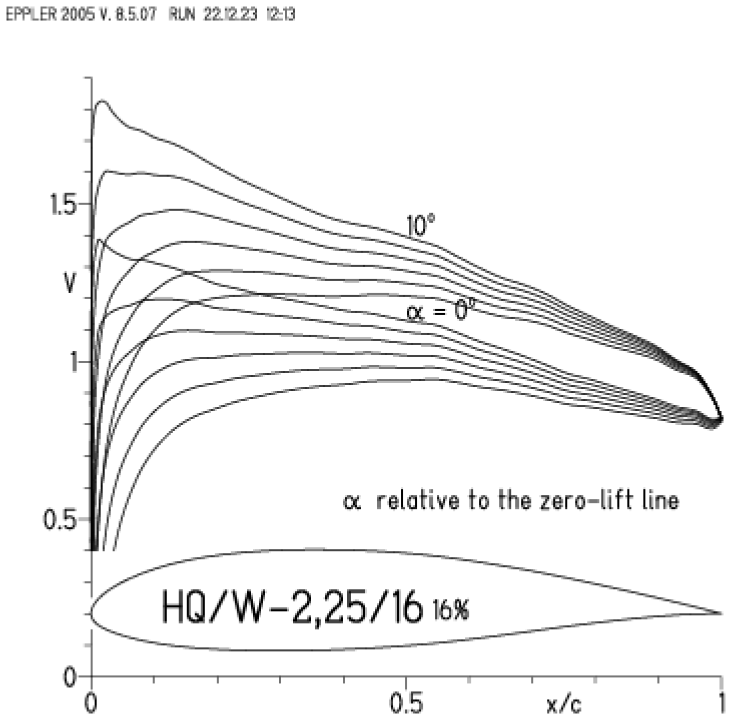
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

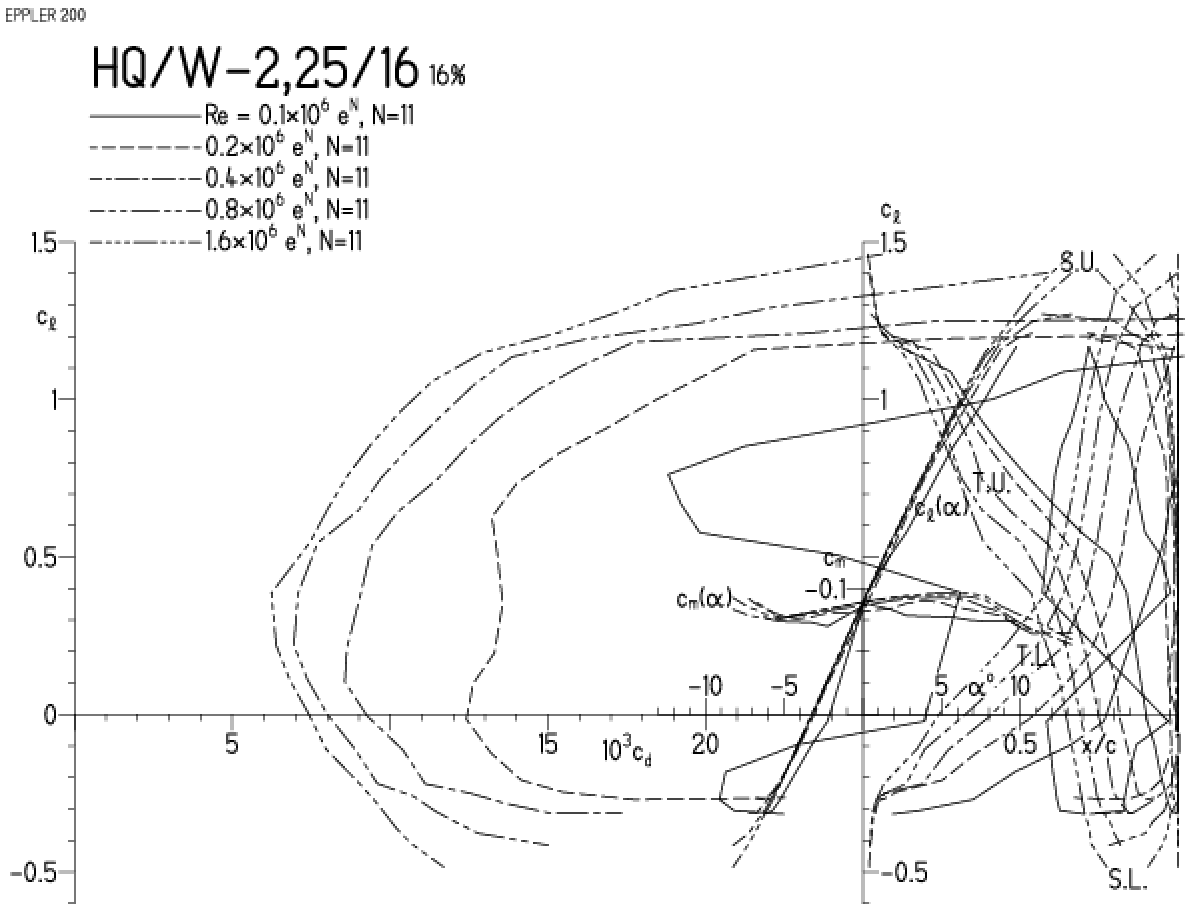


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

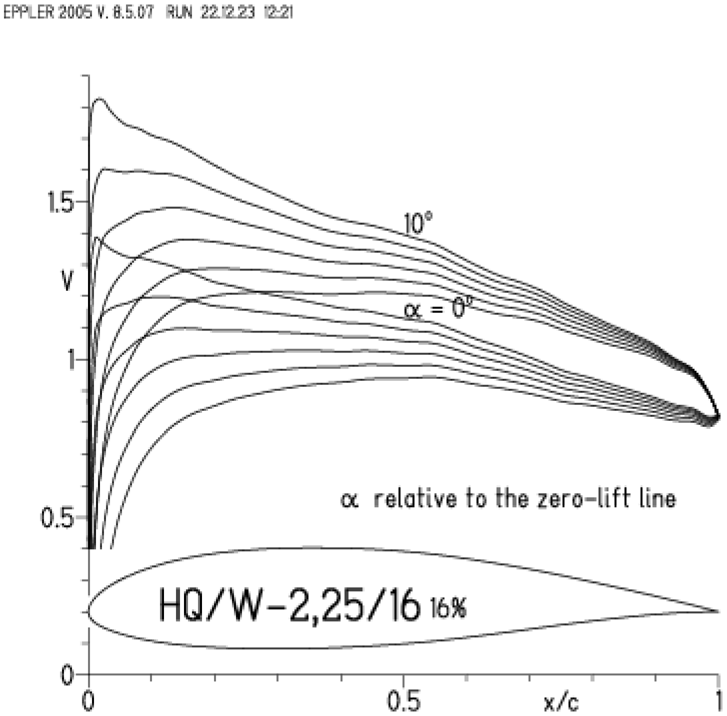


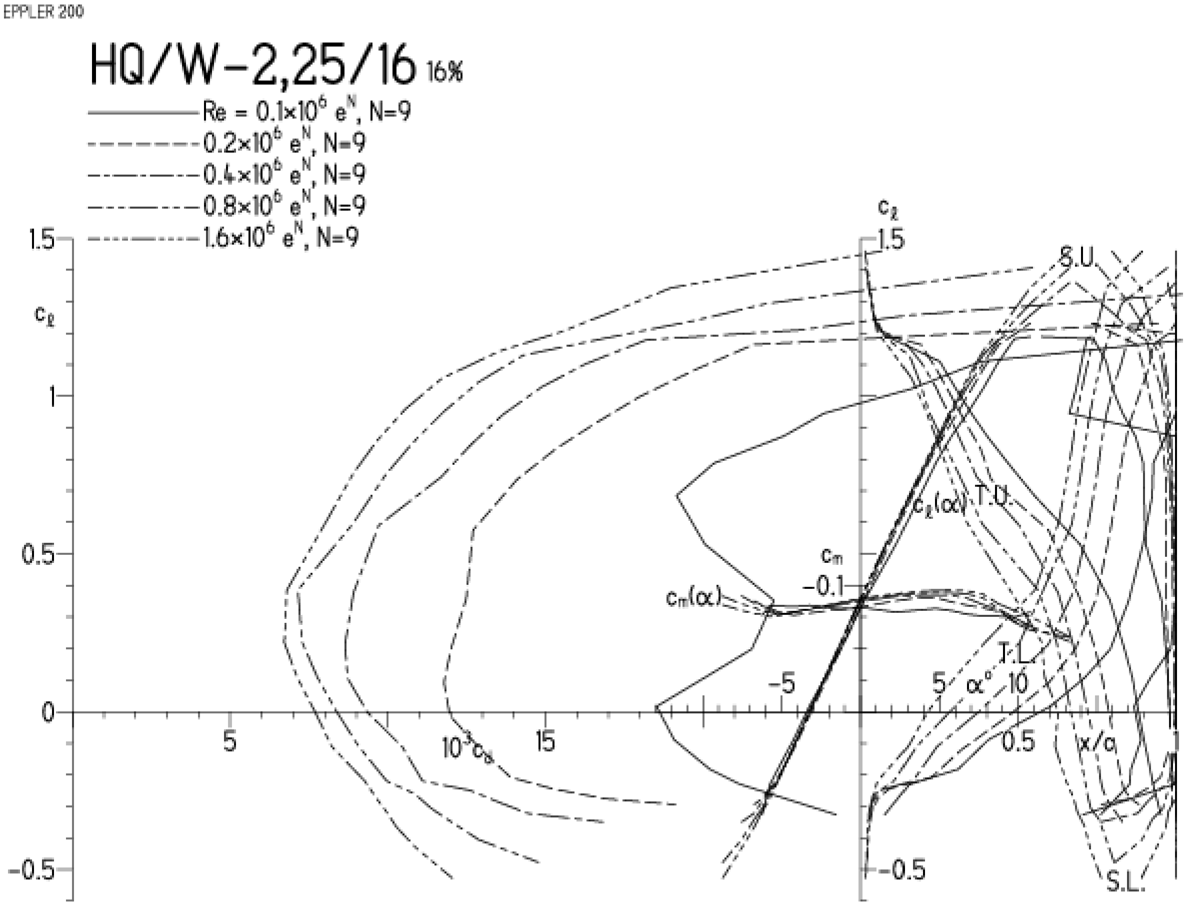
<u>HQ/W-2,25/16</u>, N=11



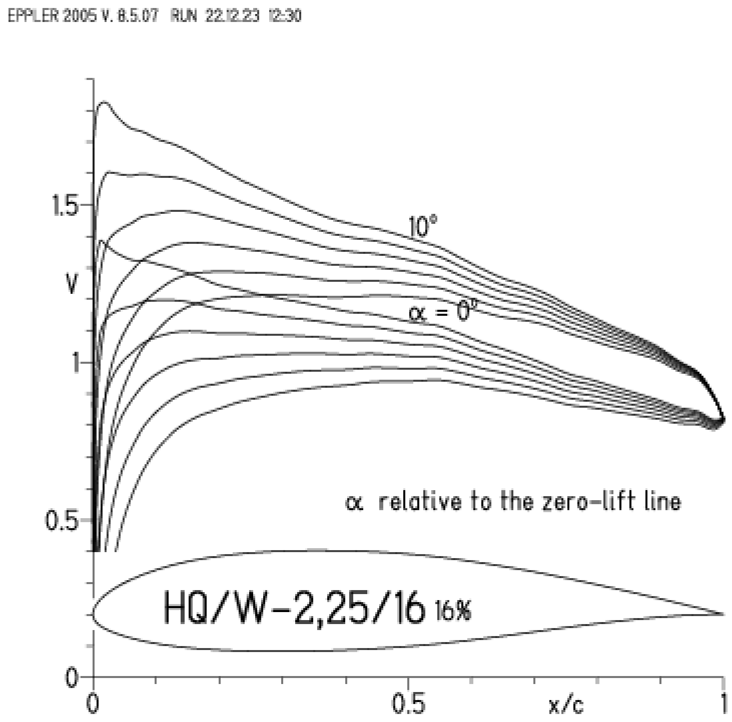


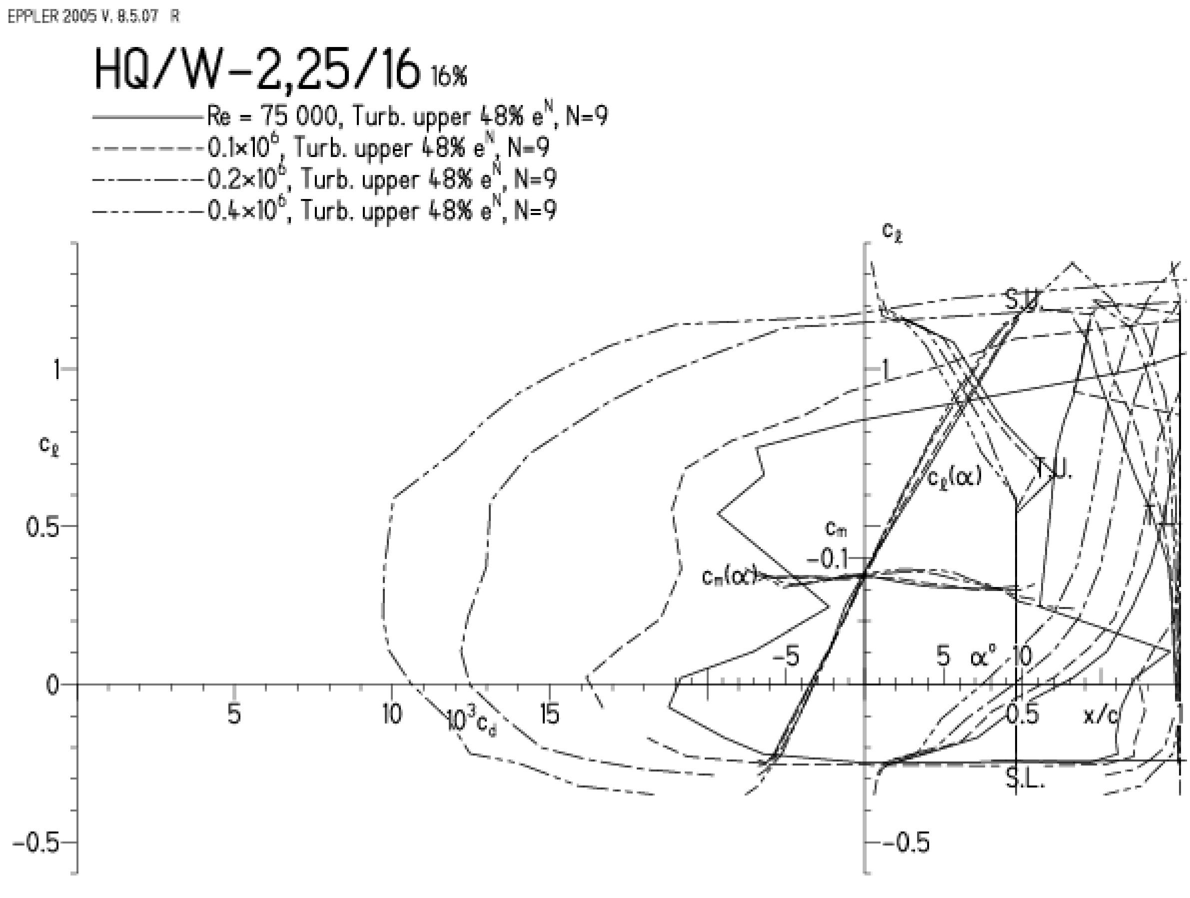
<u>HQ/W-2,25/16</u>, N=9





HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



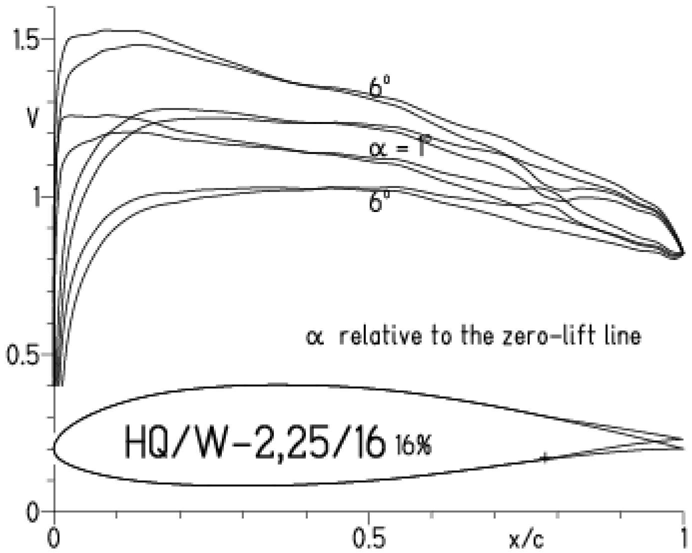


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

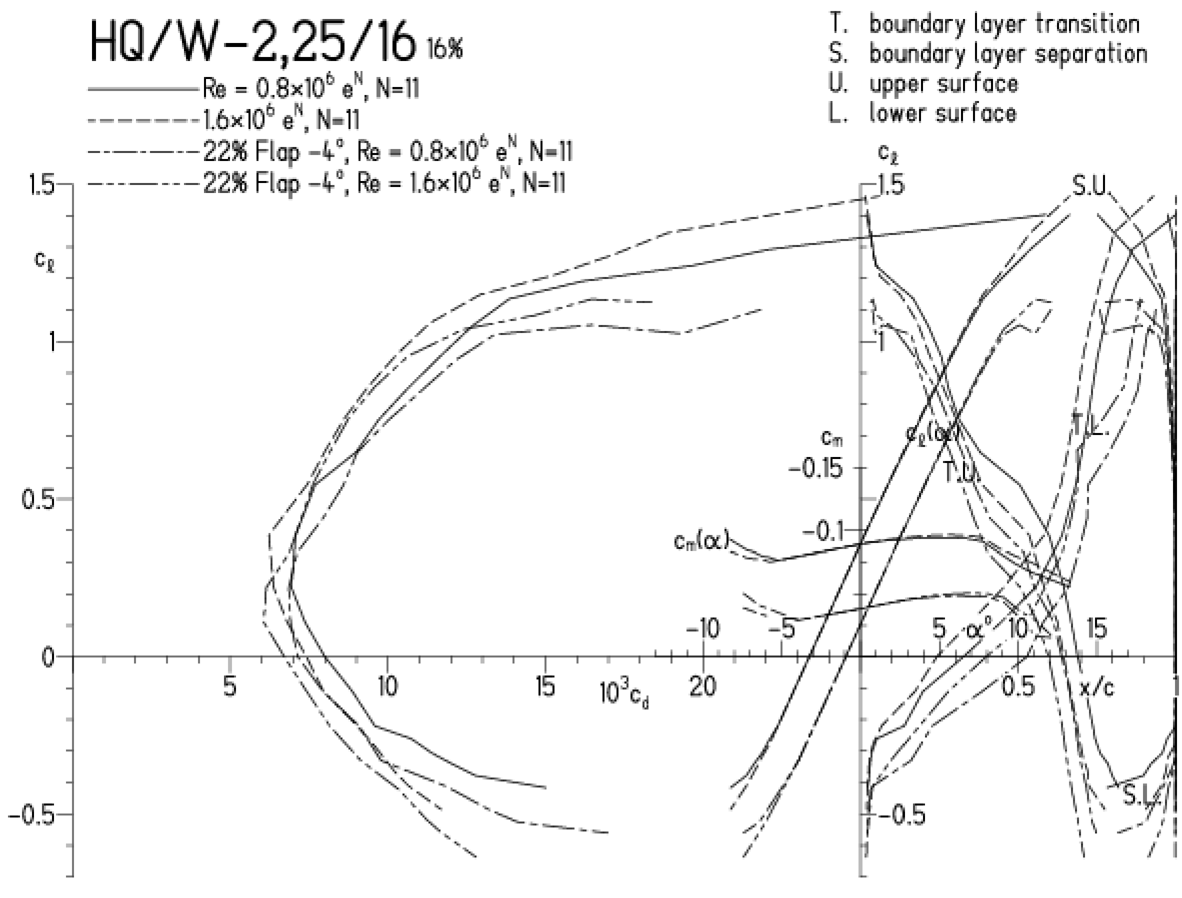
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

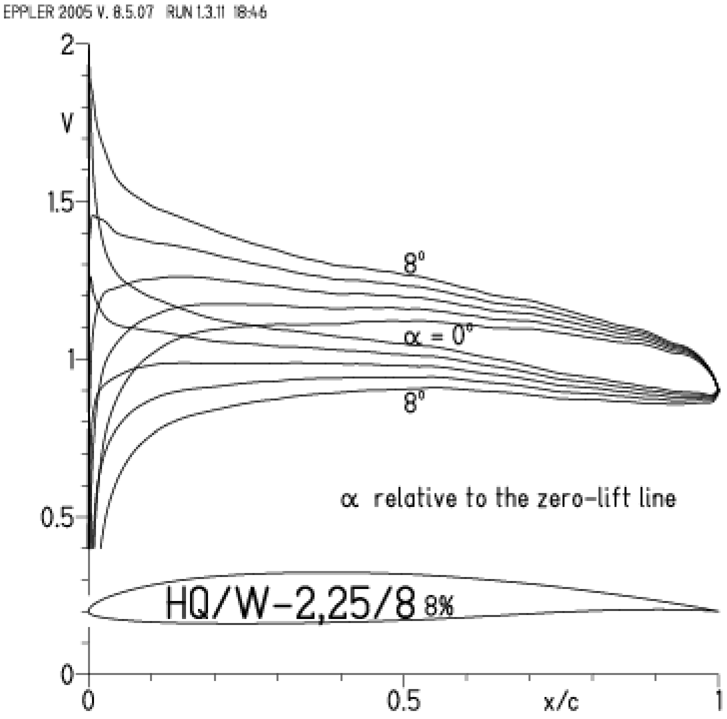
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

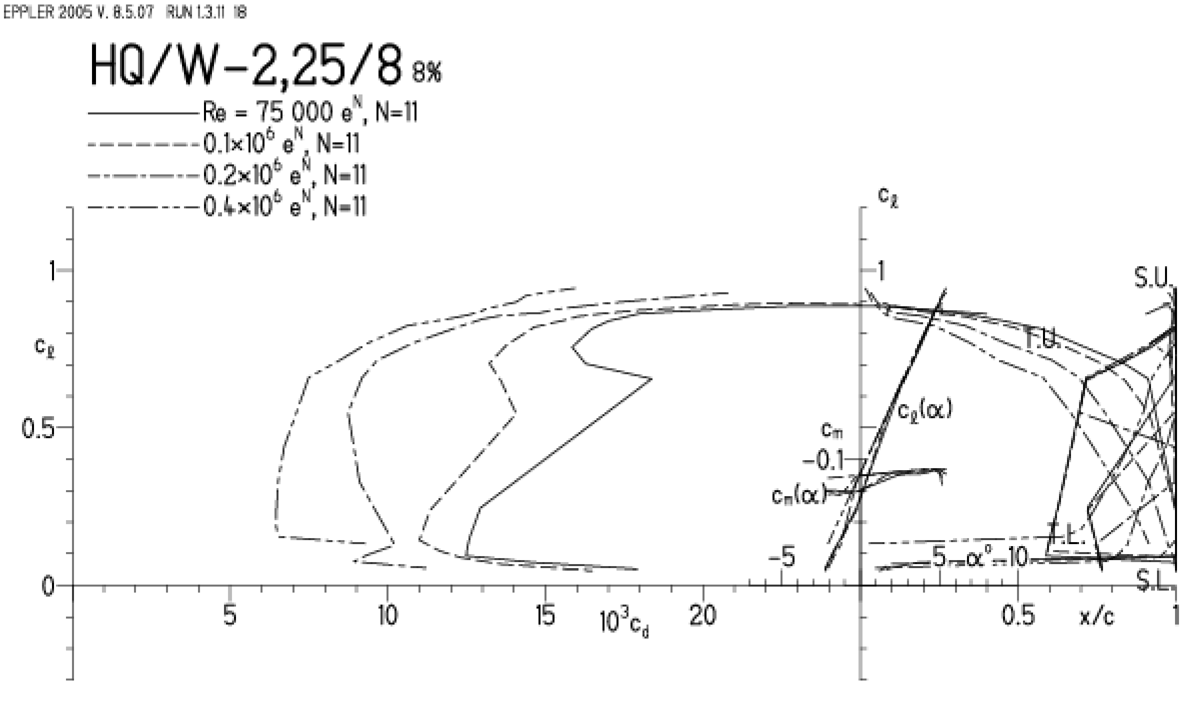


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

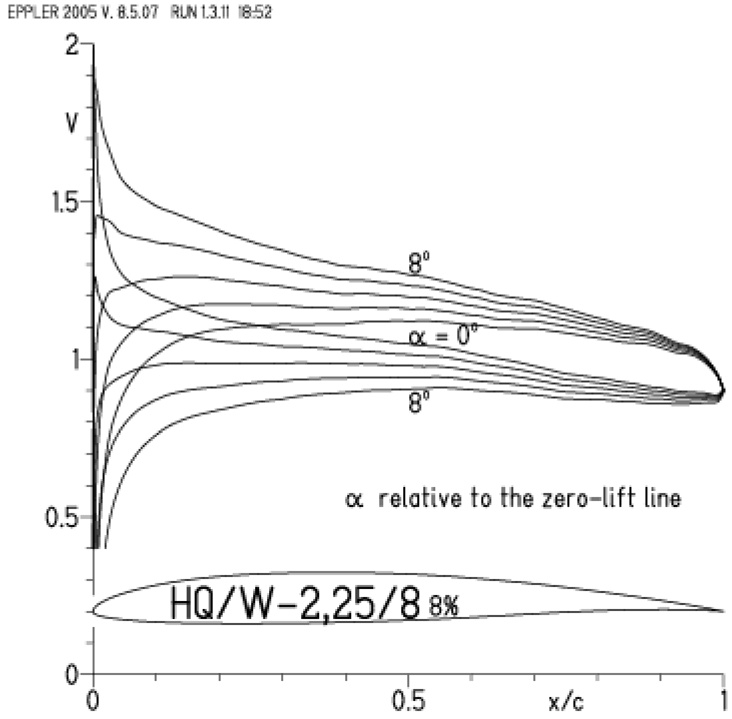


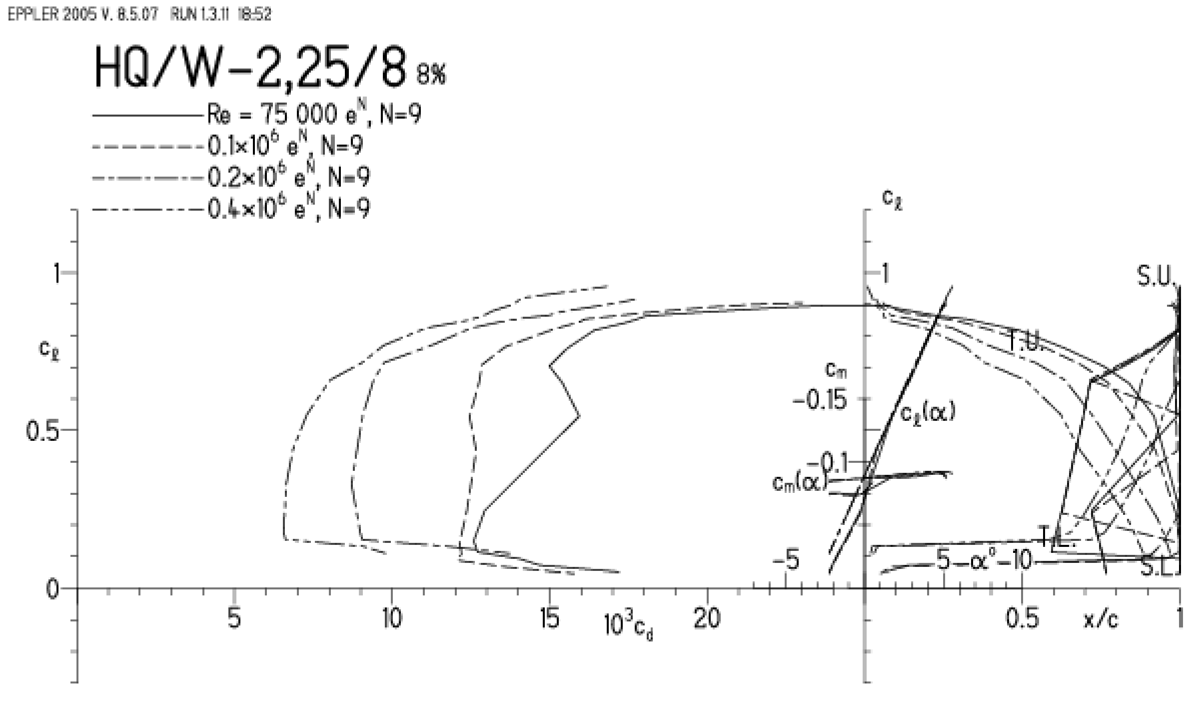
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

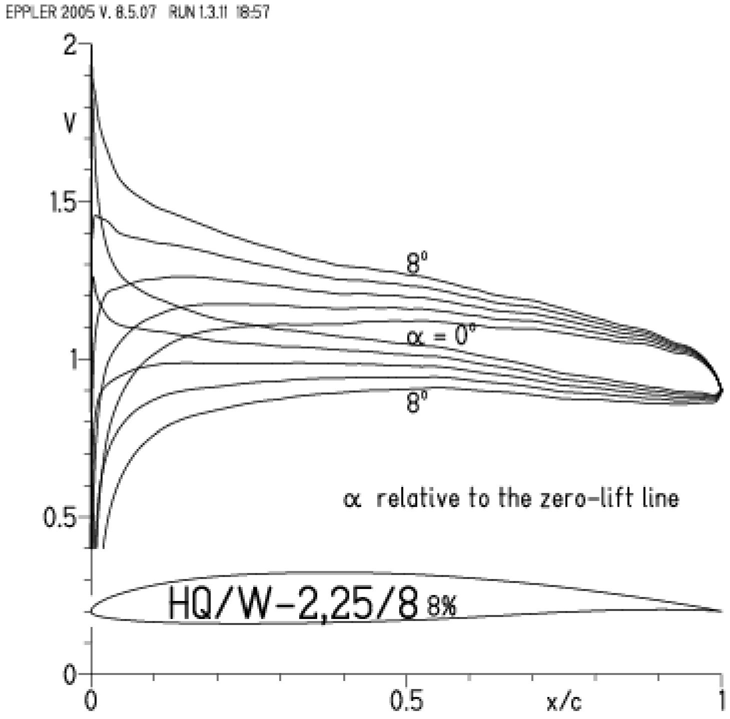

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
c_m
c_l(α)
c_m(α)
10^3 c_d
S.U.
T.U.
T.L.
S.L.
x/c

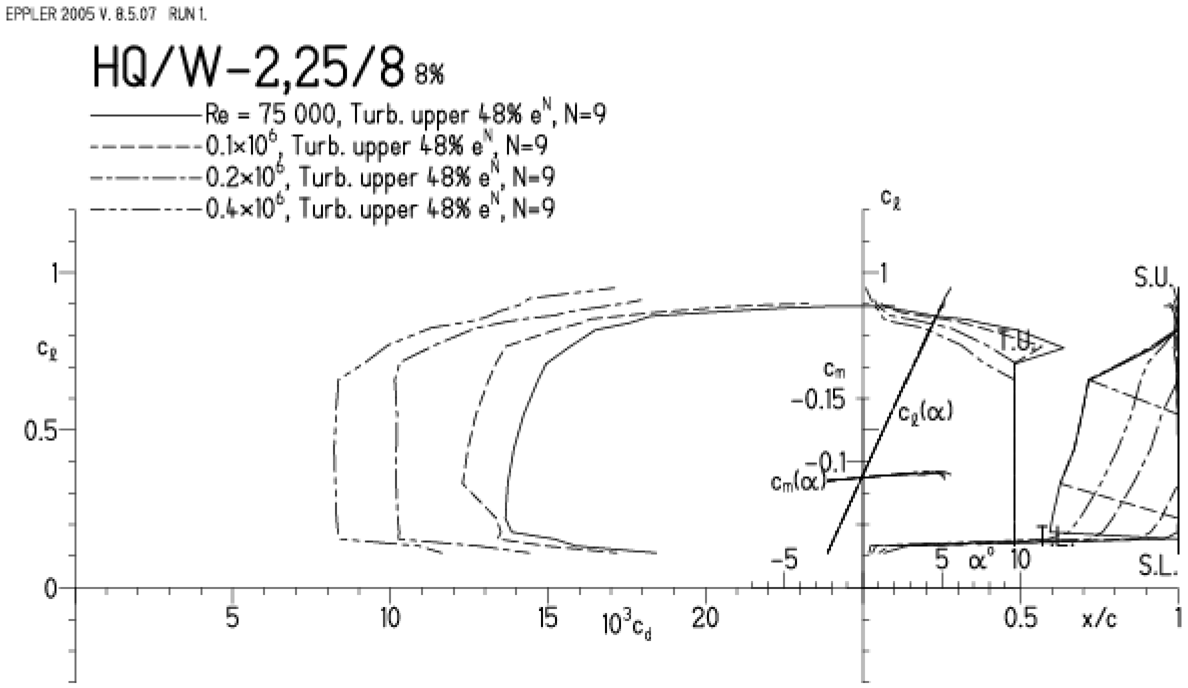
<u>HQ/W-2,25/8</u>, N=9





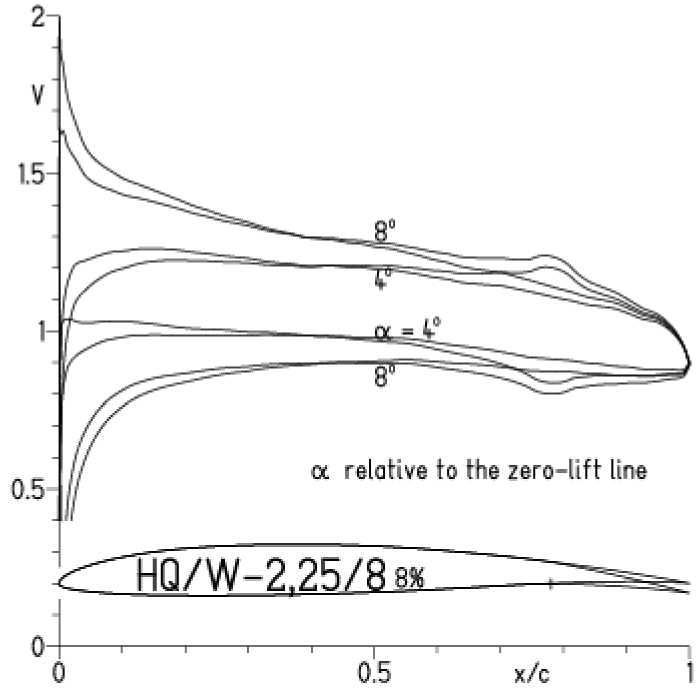
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



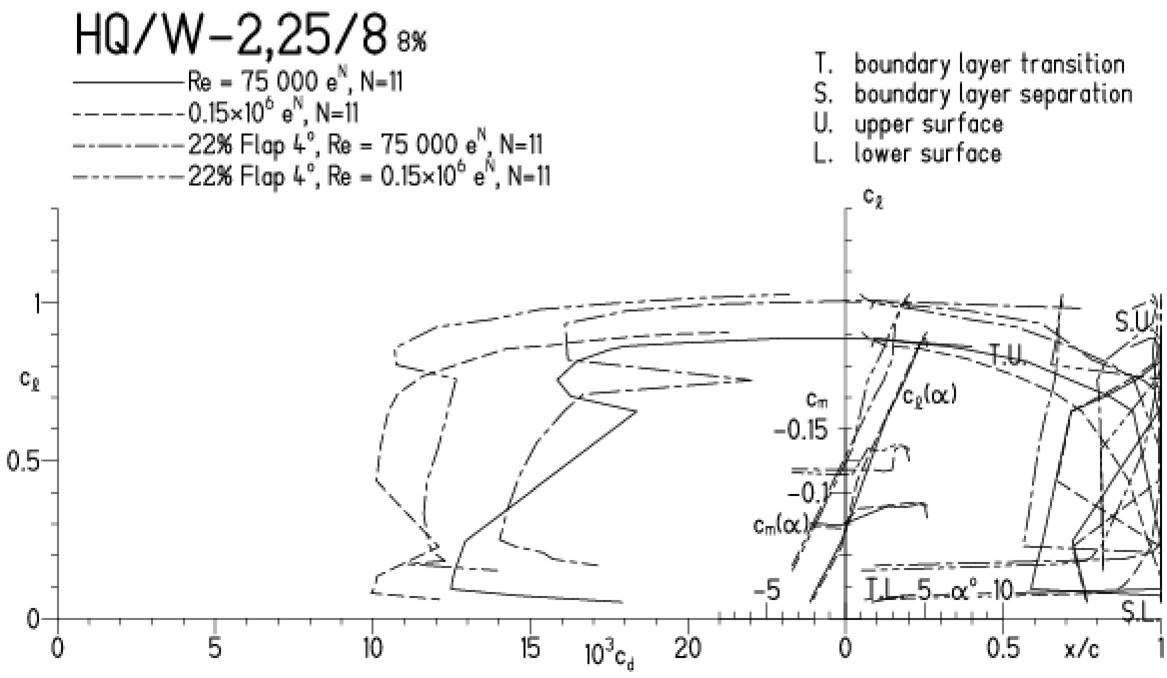


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

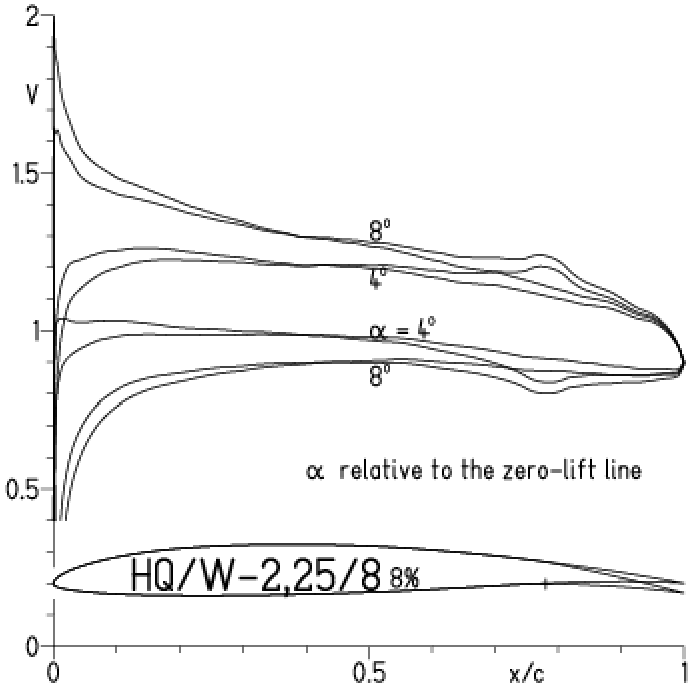


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

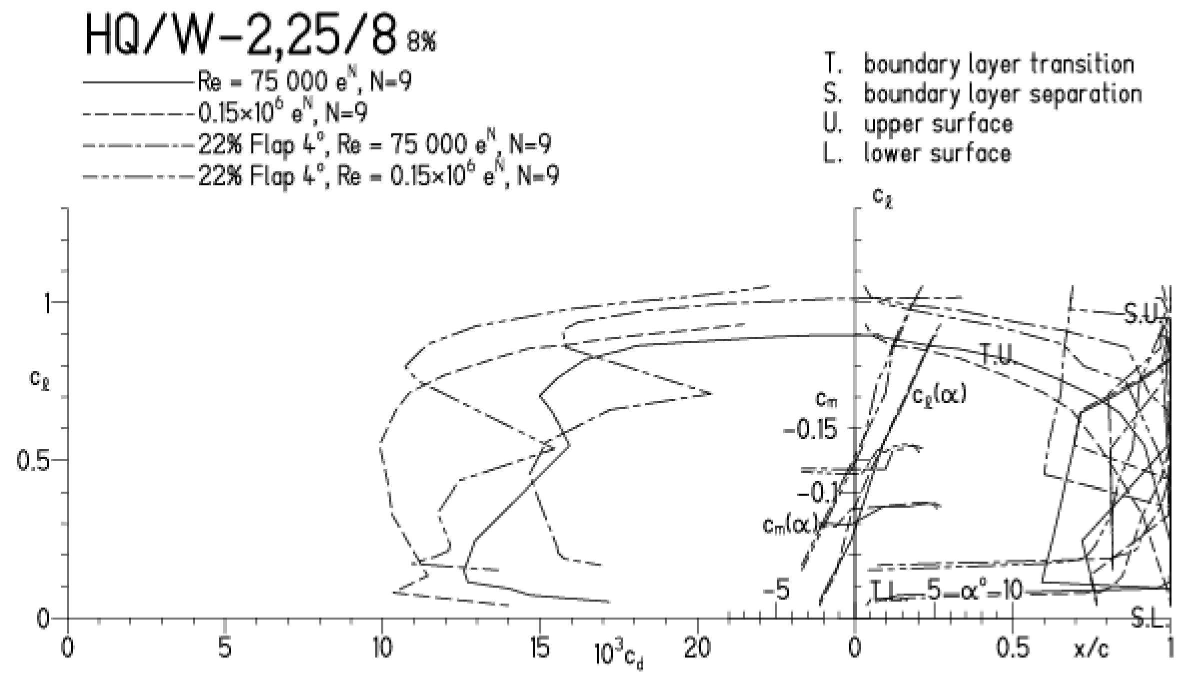


HQ/W-2,25/8, N=9, mit +4° Wölbklappenausschlag

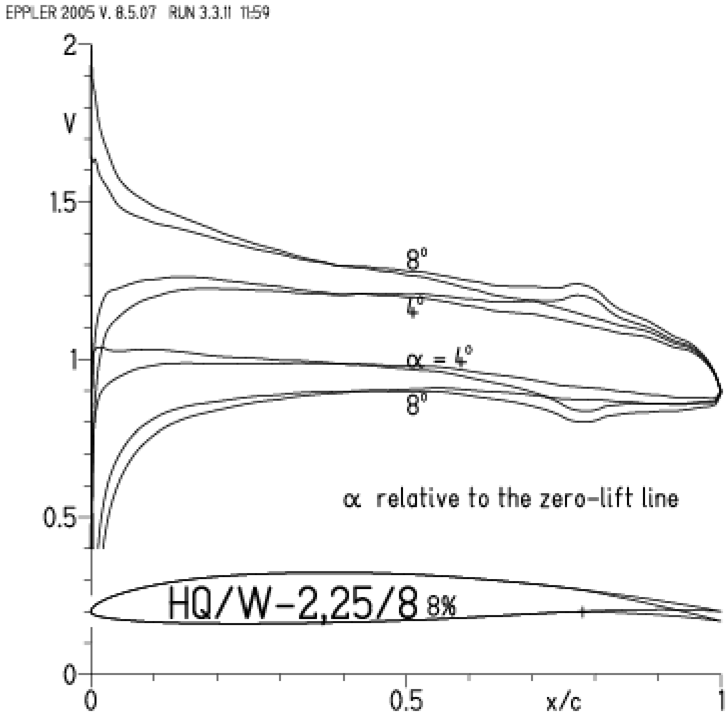
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:55

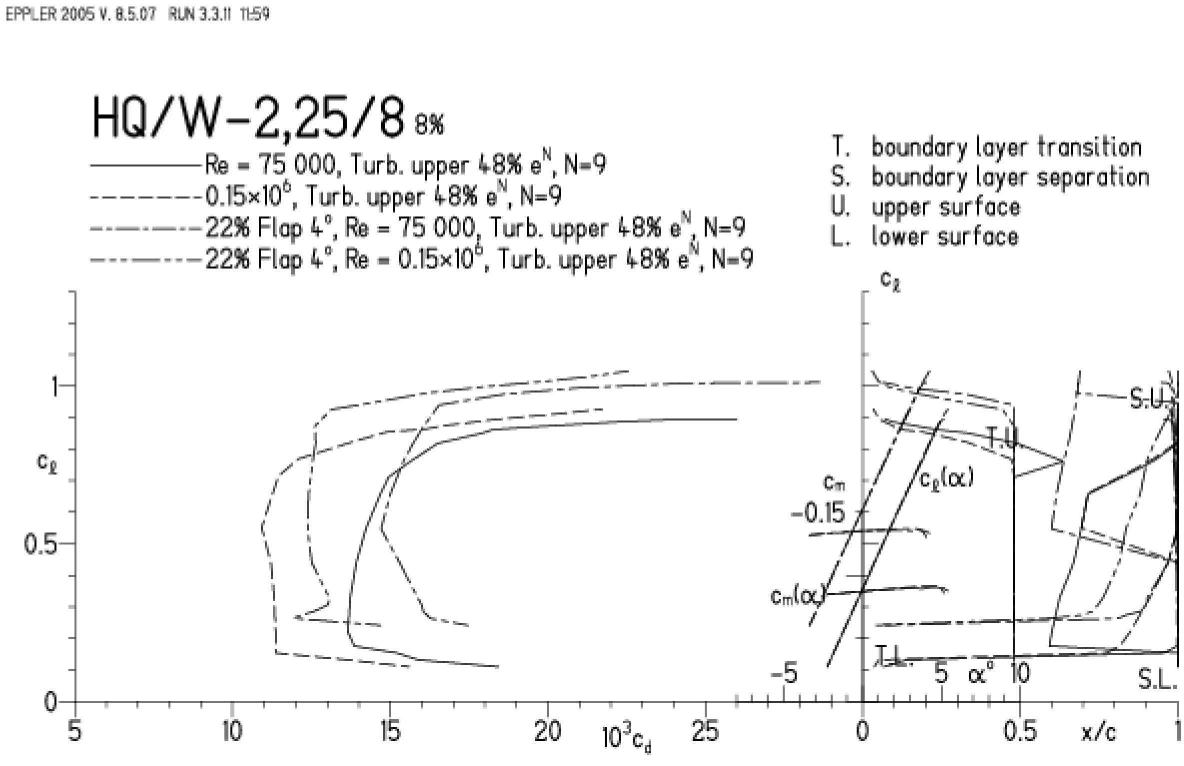


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11



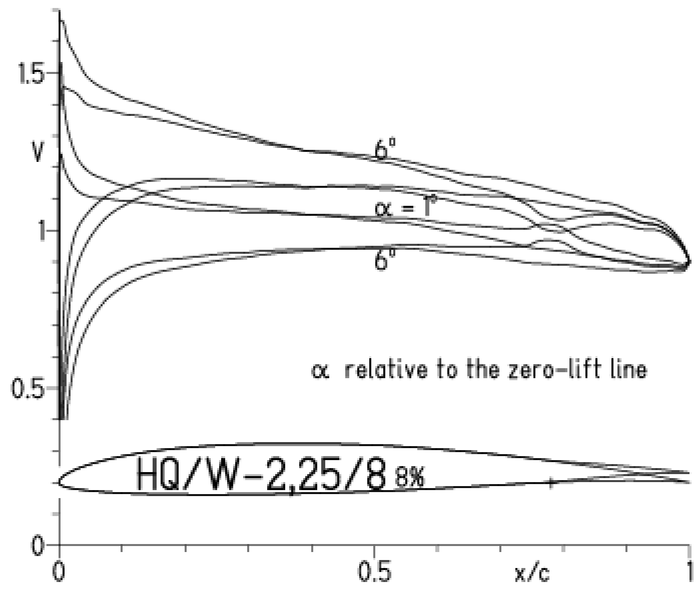
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



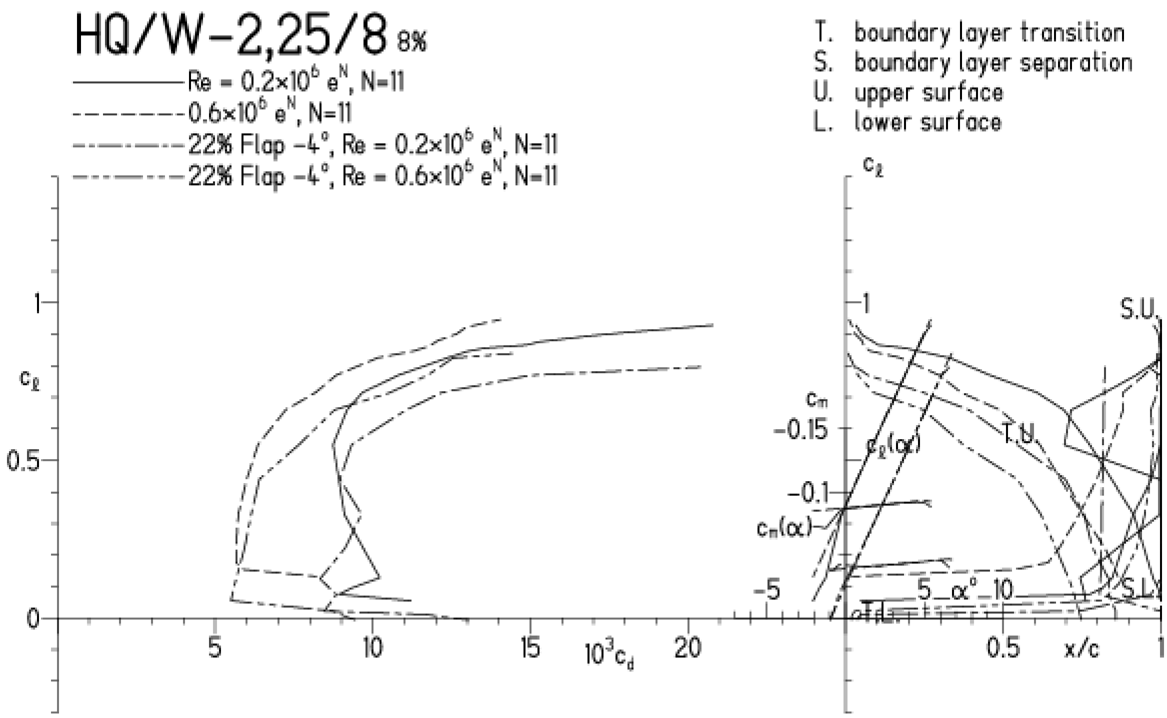


HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

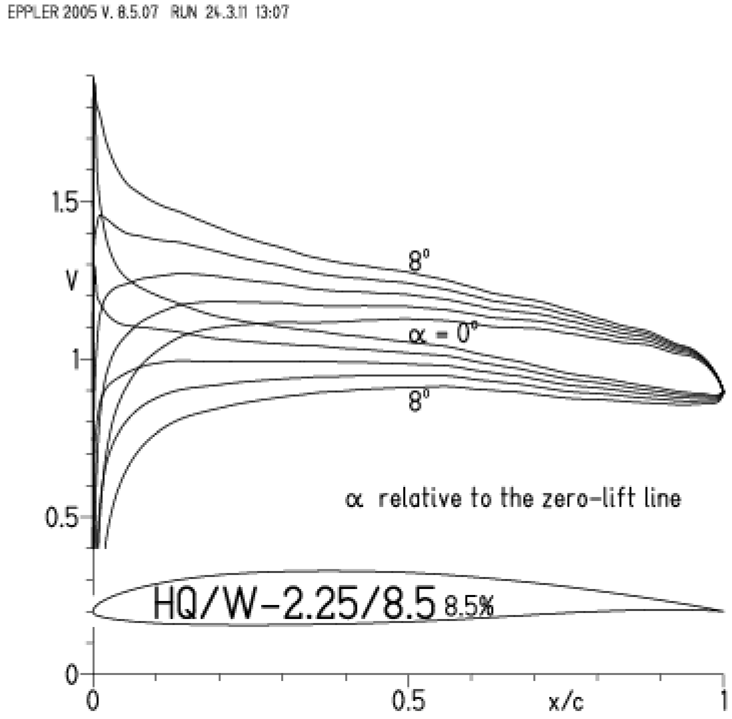
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

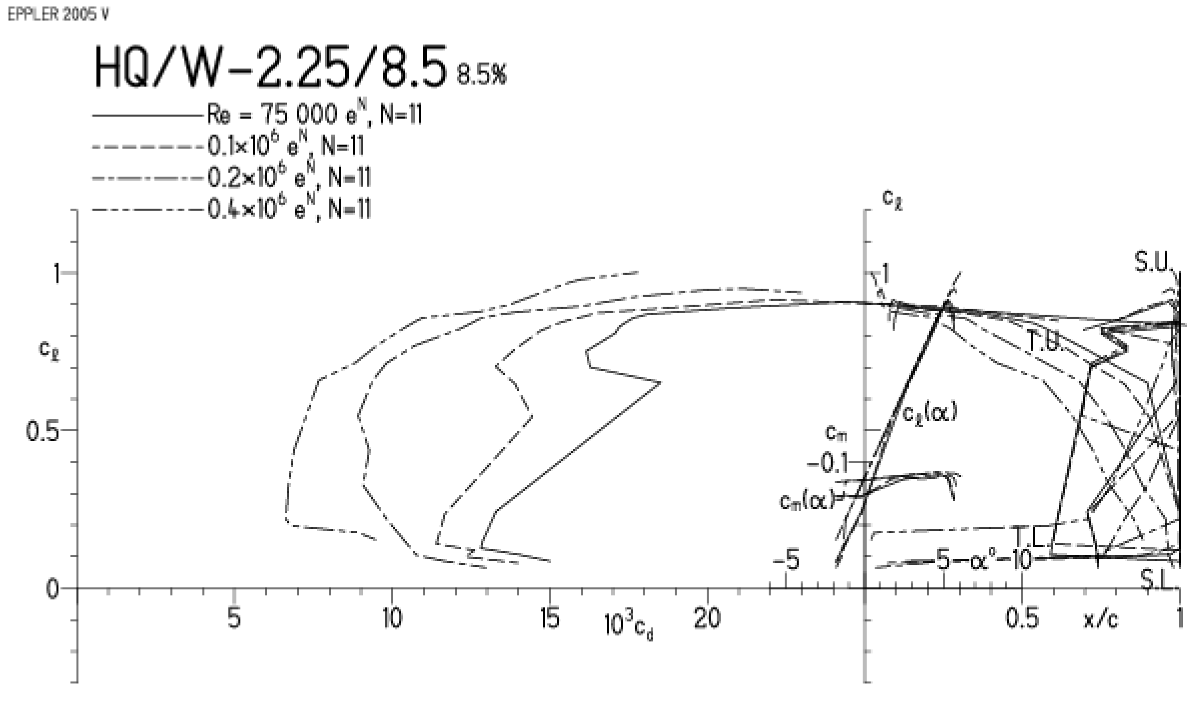


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1



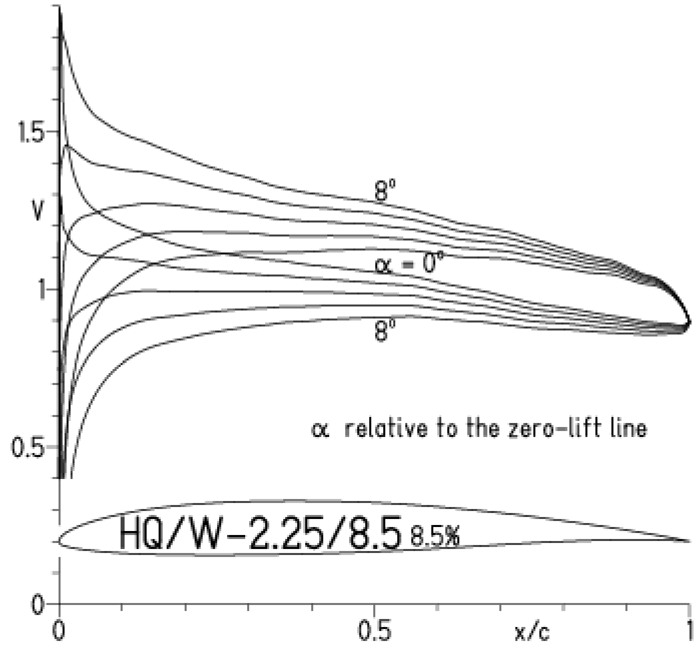
HQ/W-2,25/8,5, N=11



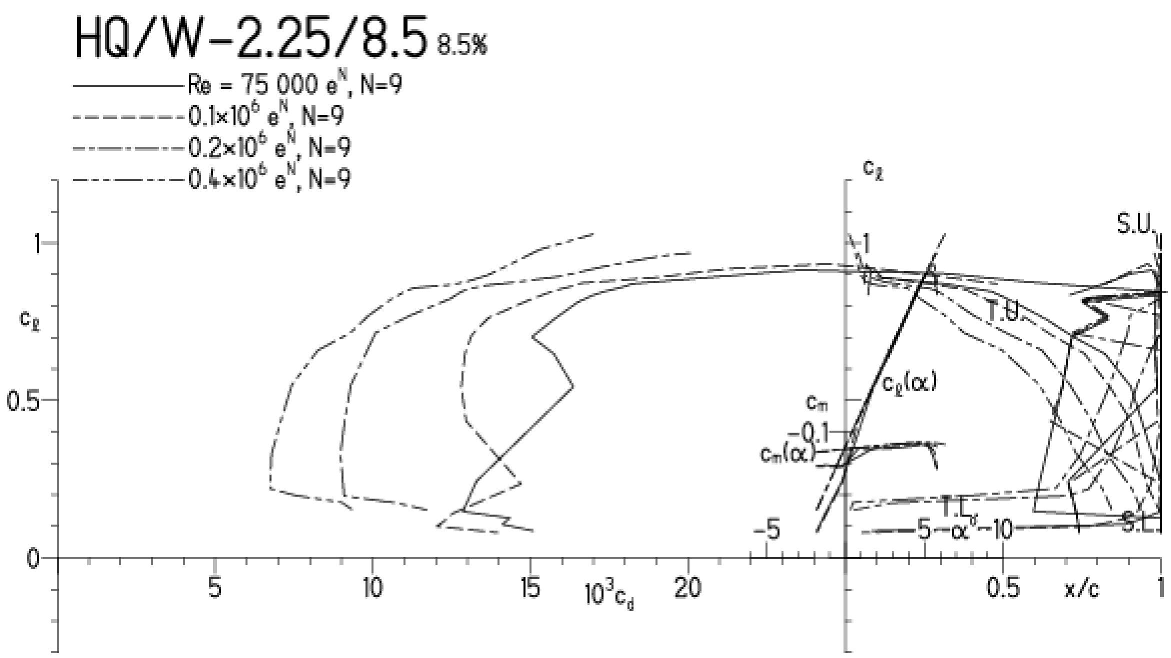


HQ/W-2,25/8,5, N=9

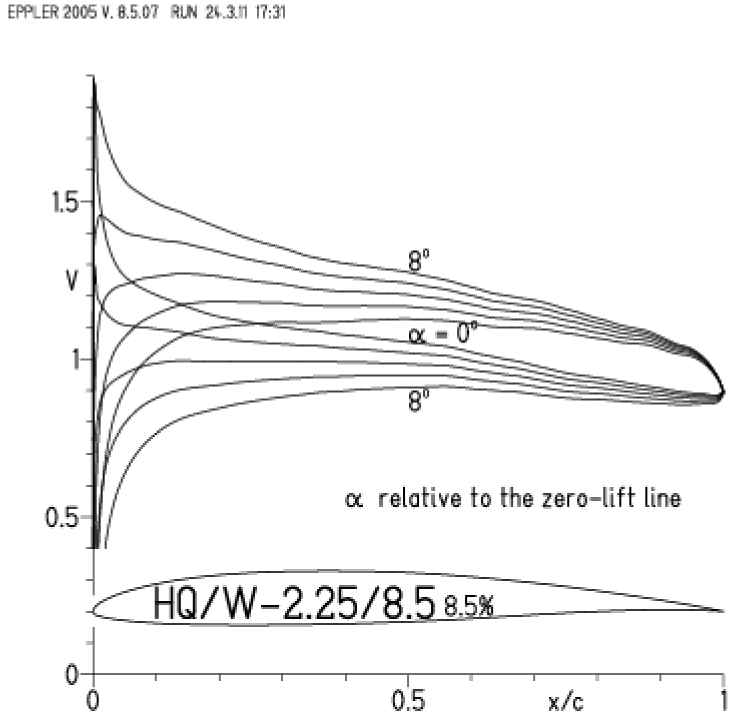
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

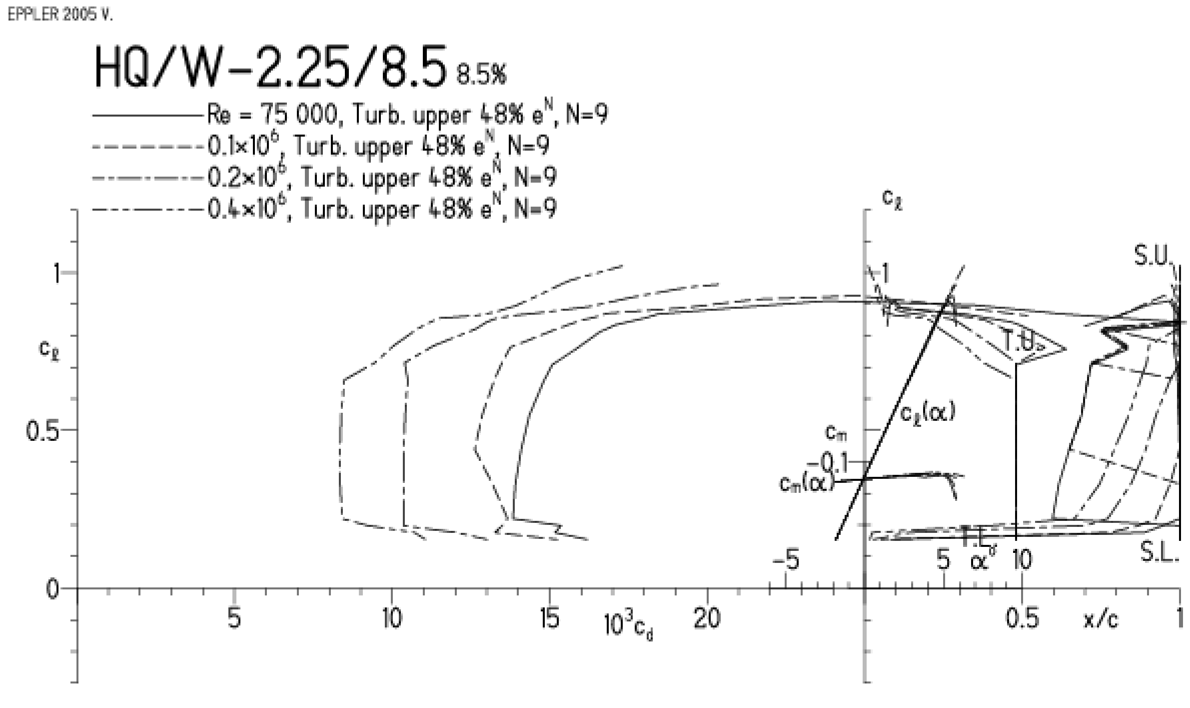


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



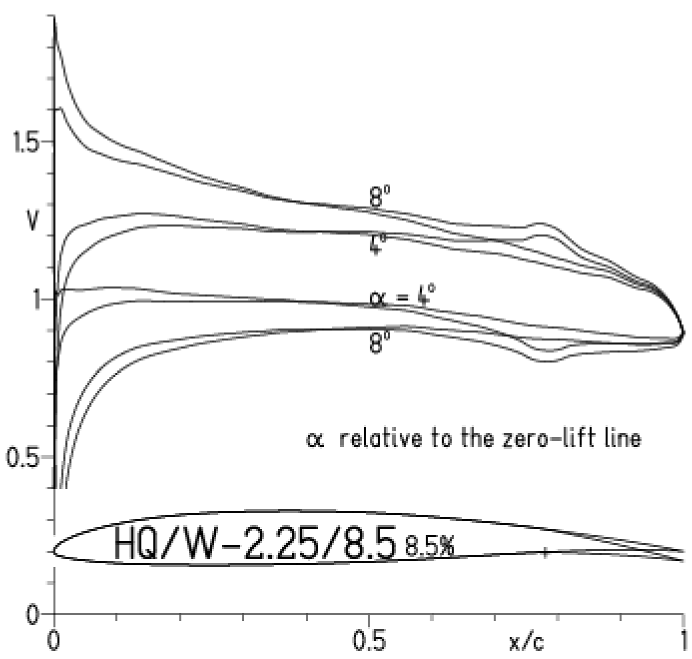
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



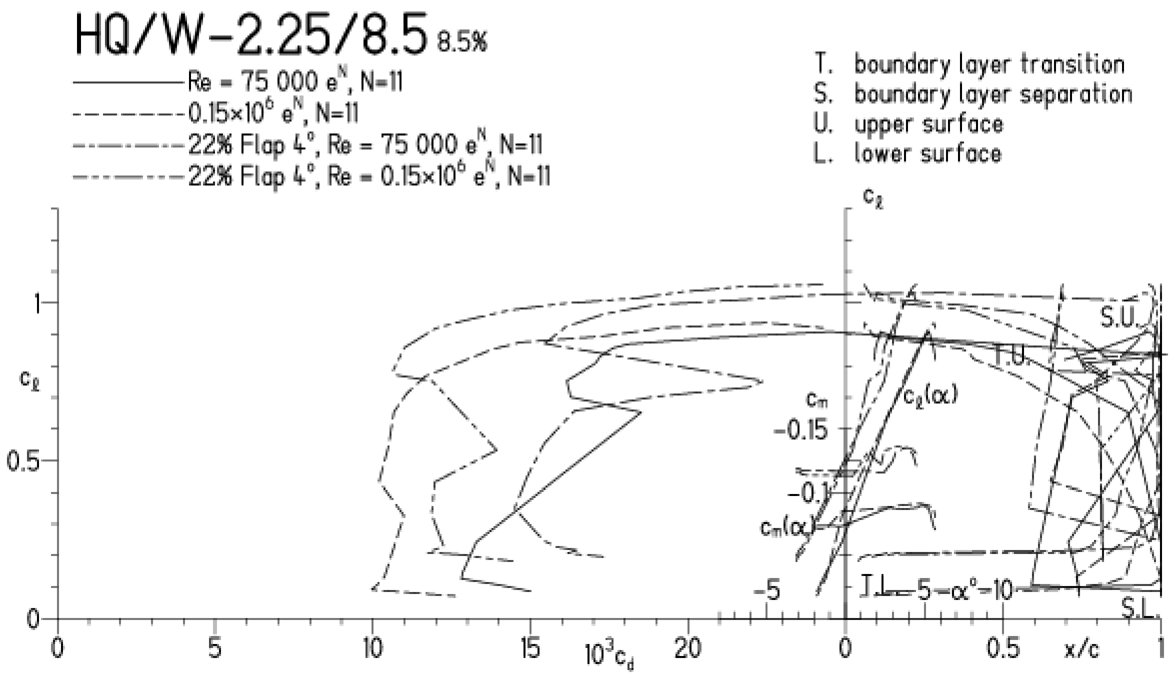


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

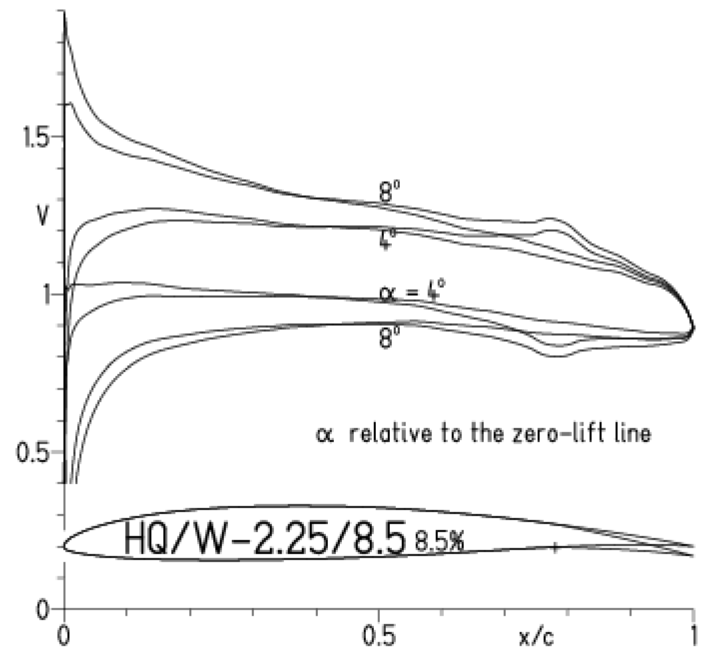


EPPLER 2005 V. 8.5.

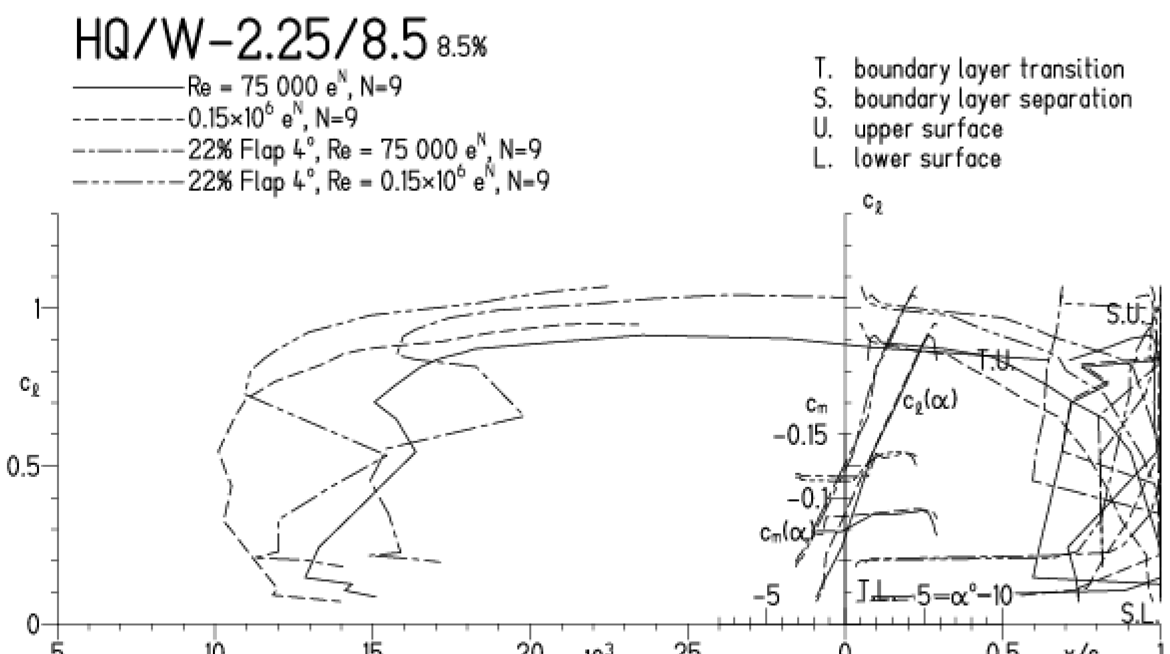


<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag

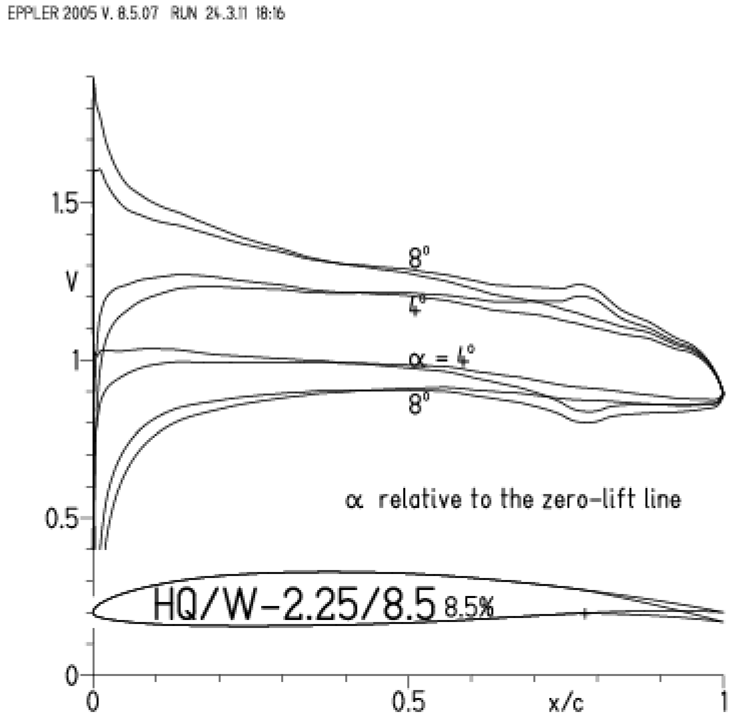
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

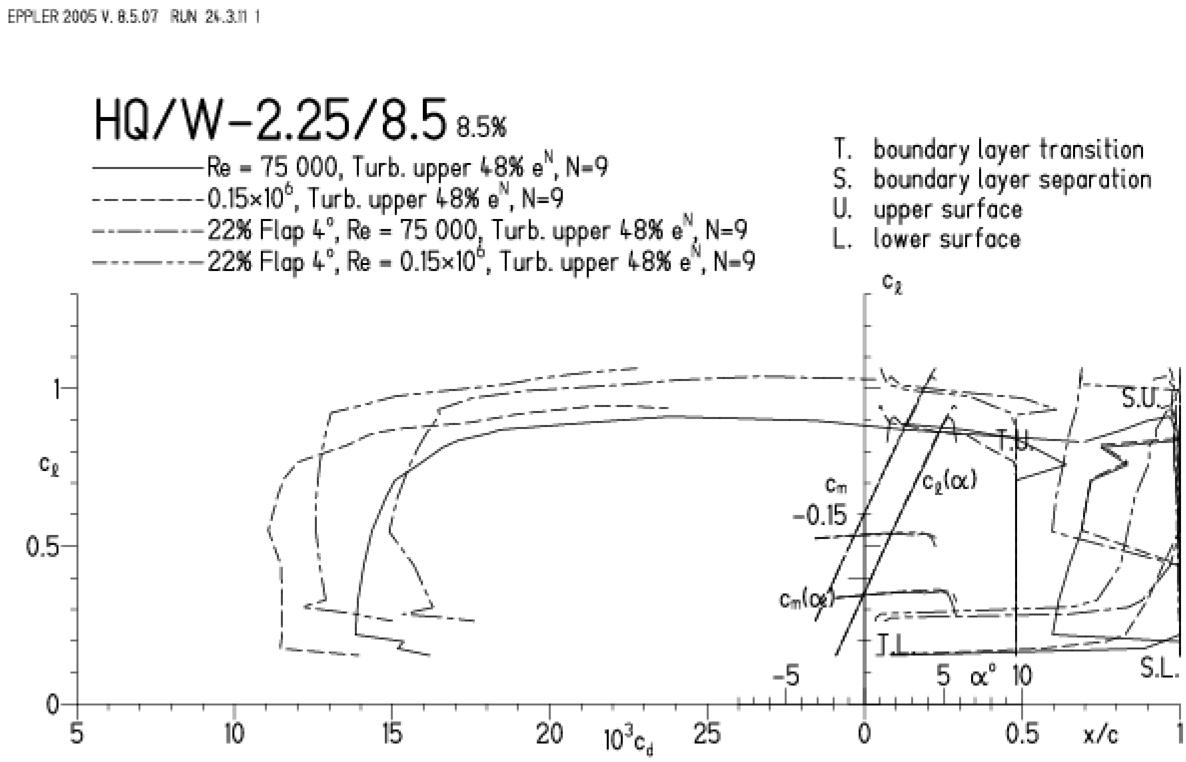


EPPLER 2005 V.

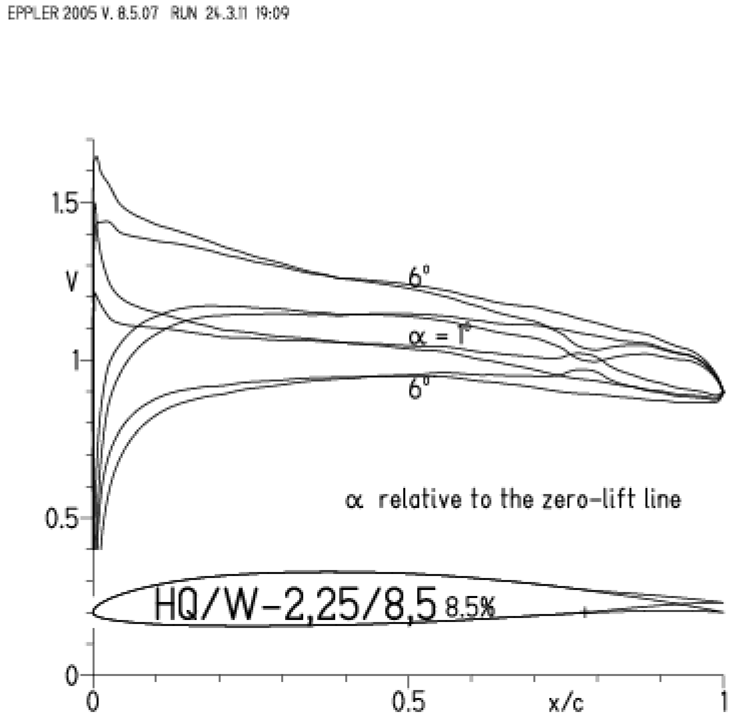


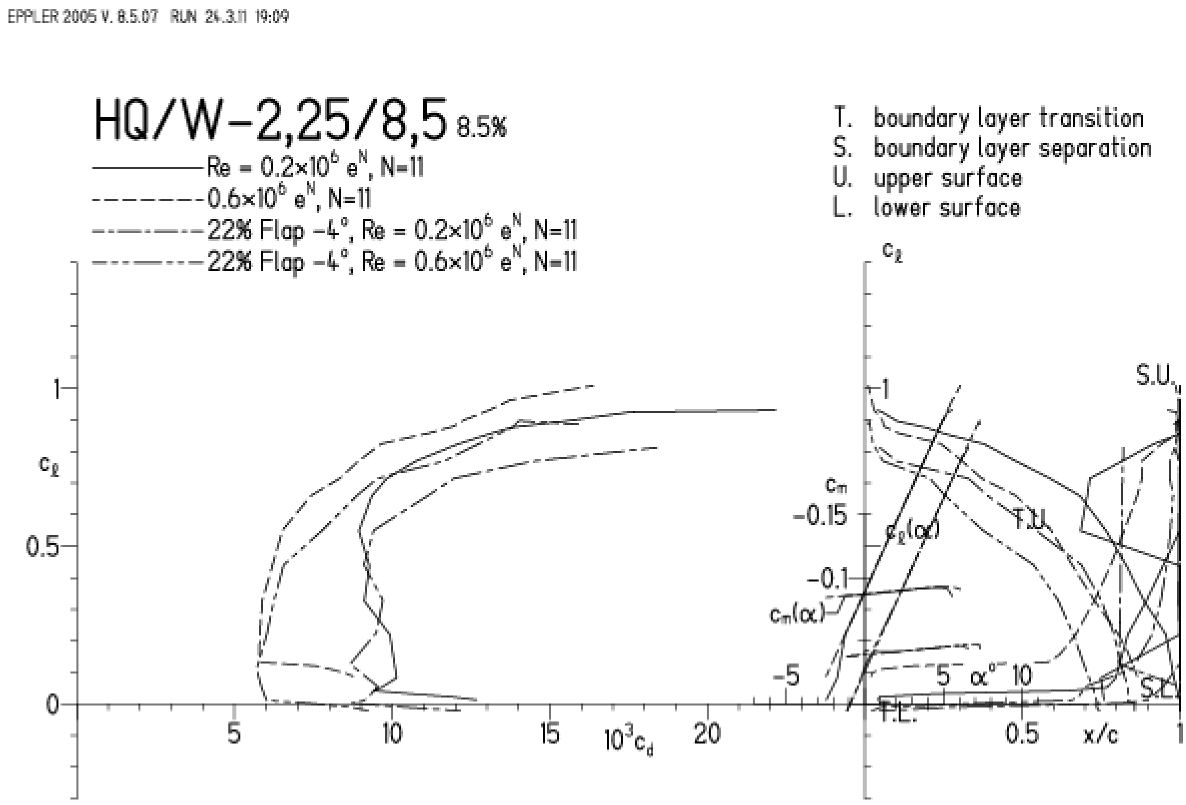
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



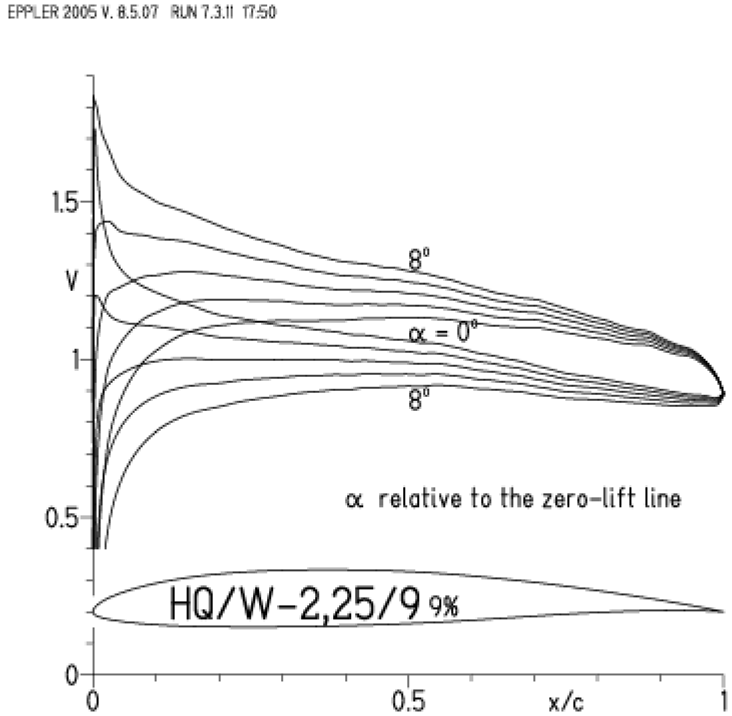


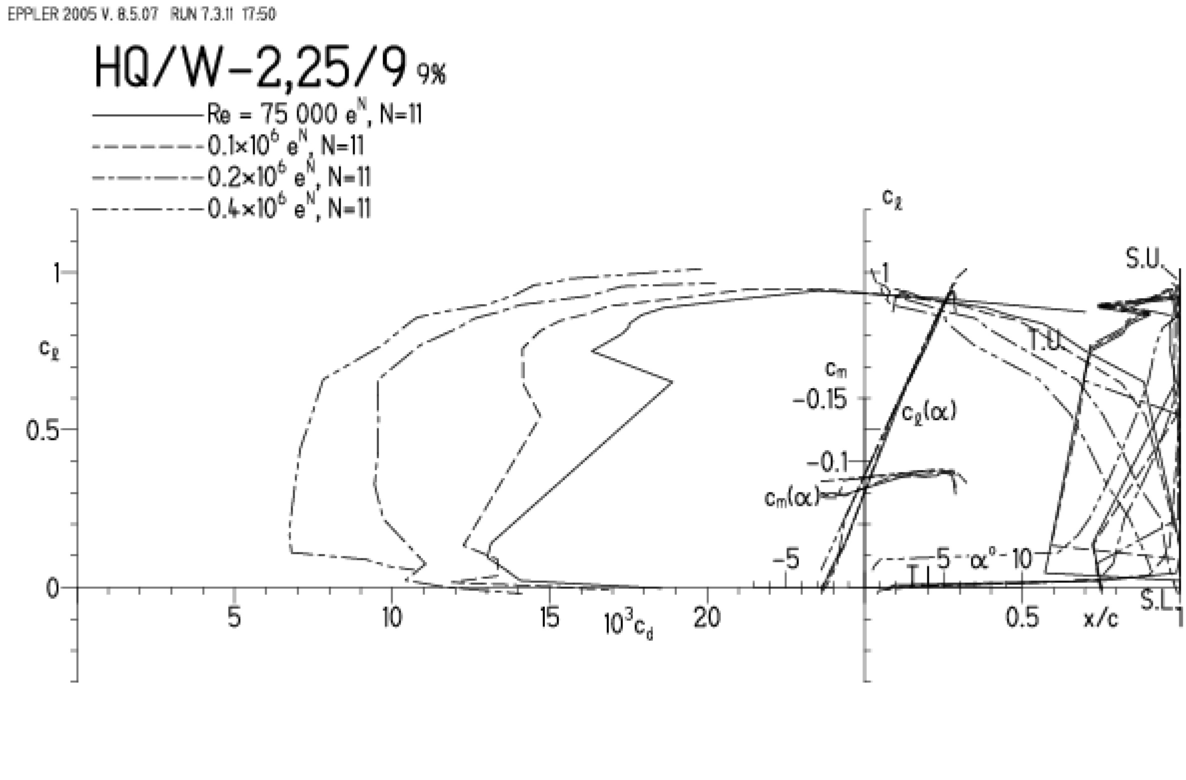
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



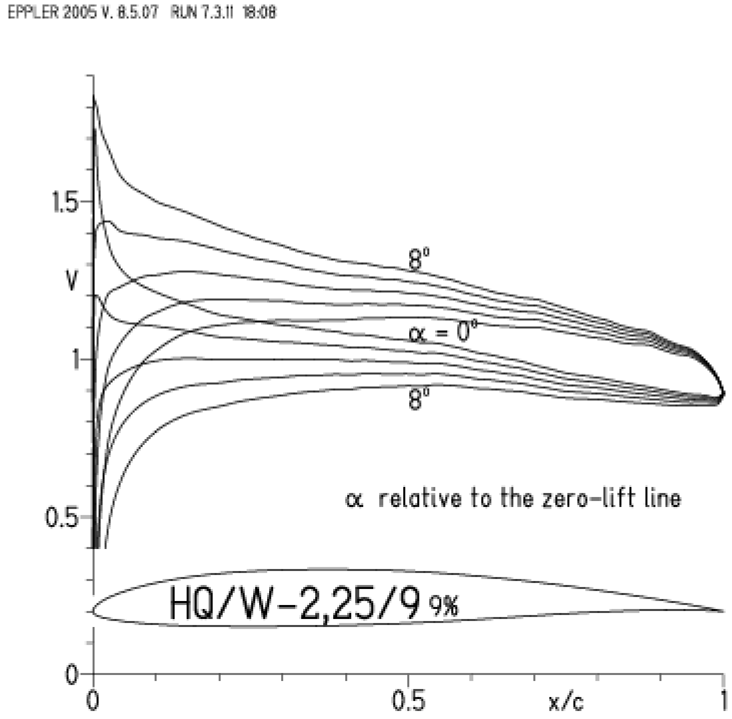


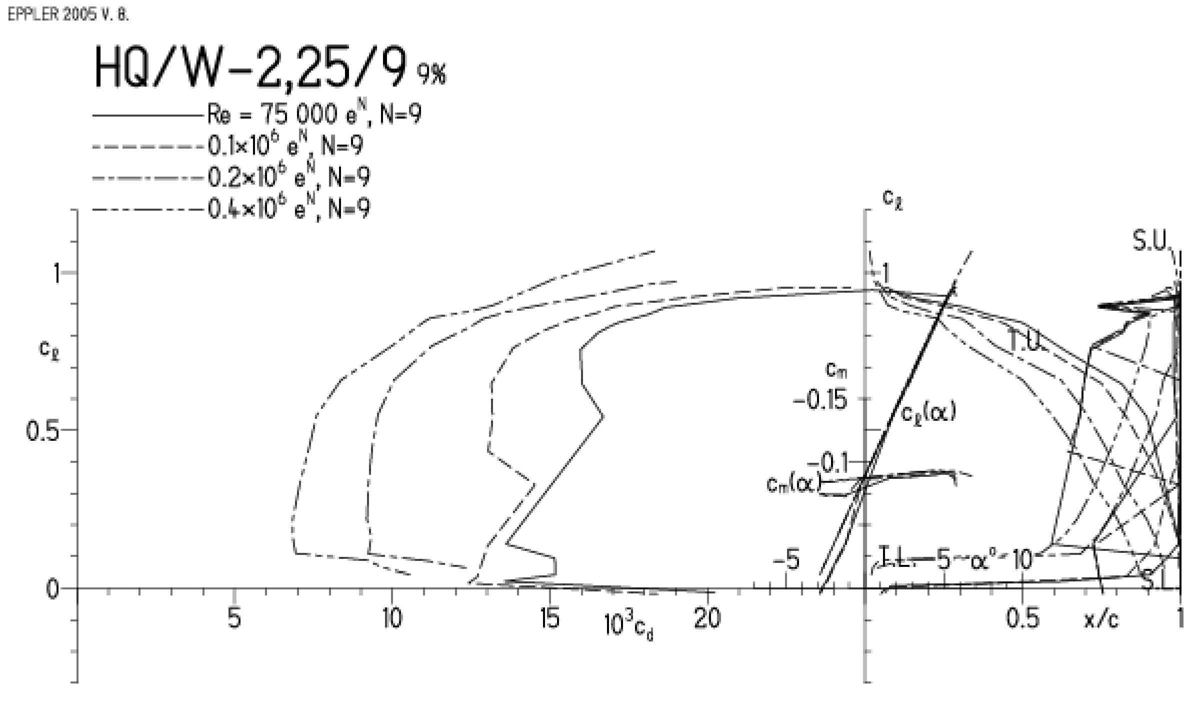
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

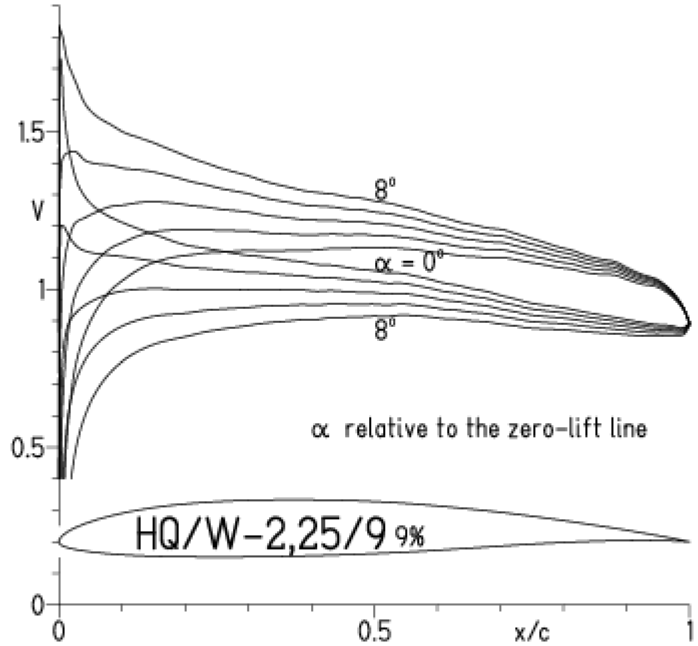
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

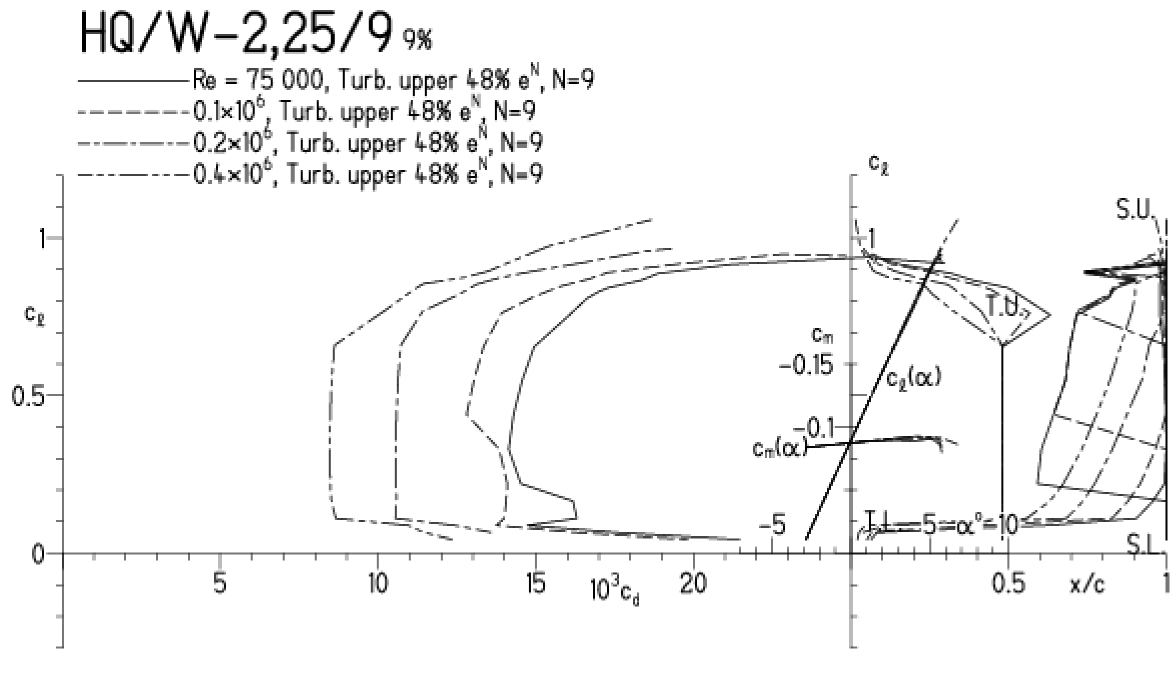

EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
S.U.
T.U.
c_m
−0.15
c_ℓ(α)
−0.1
c_m(α)
−5
T.L.
5
α°
10
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:12

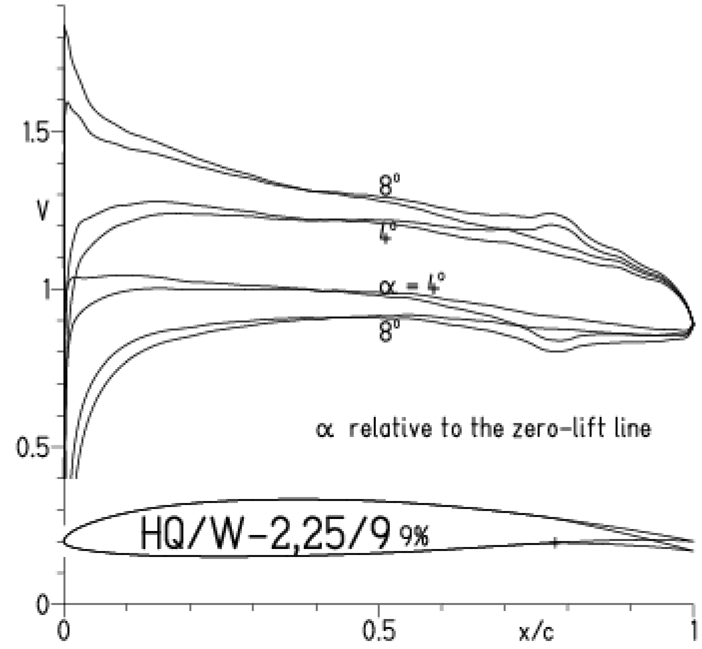


EPPLER 2005 V. 8.5.07 RUN 7

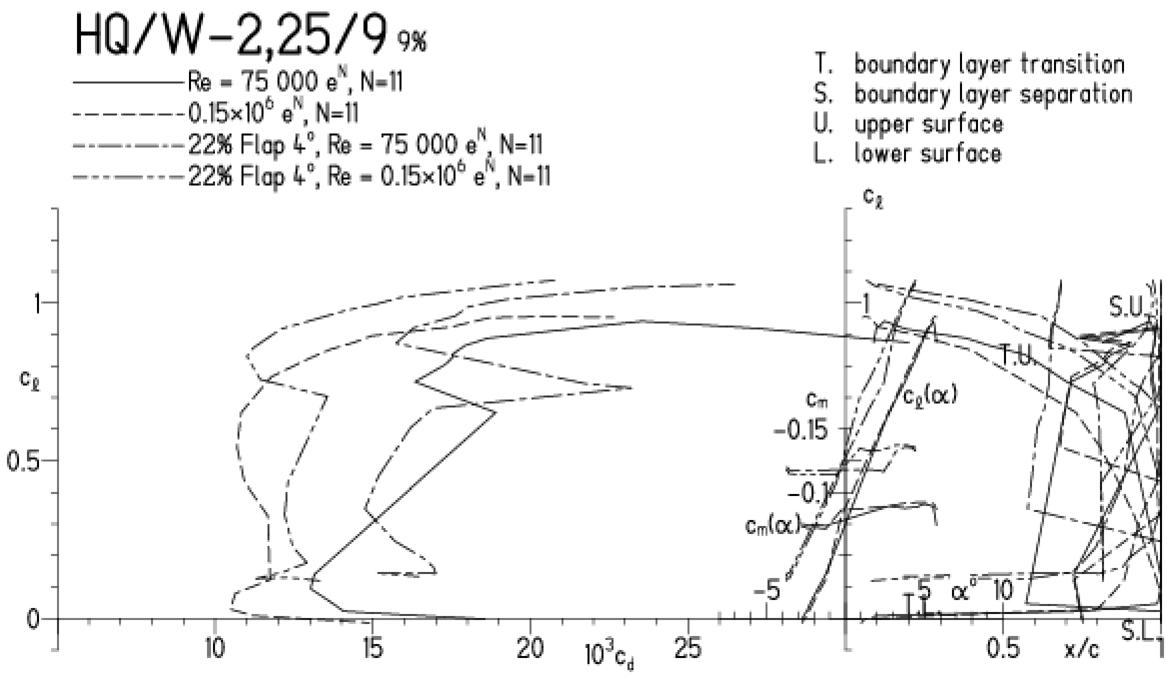


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

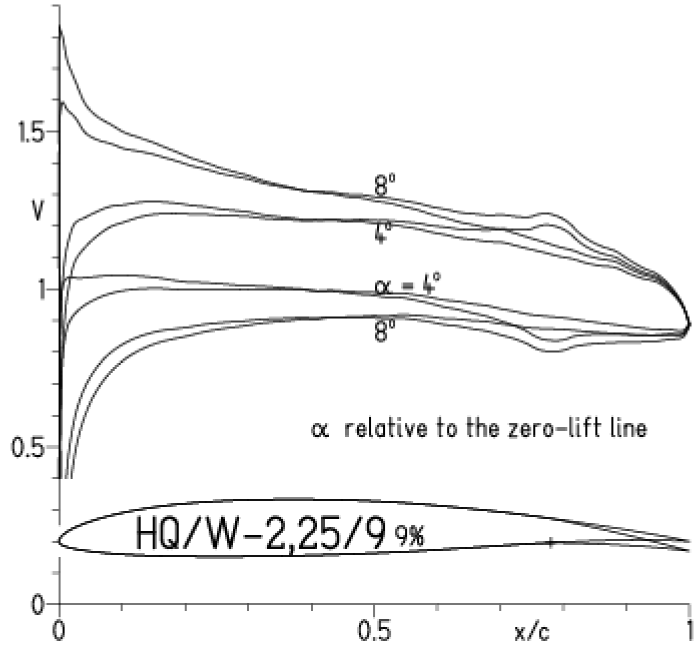


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

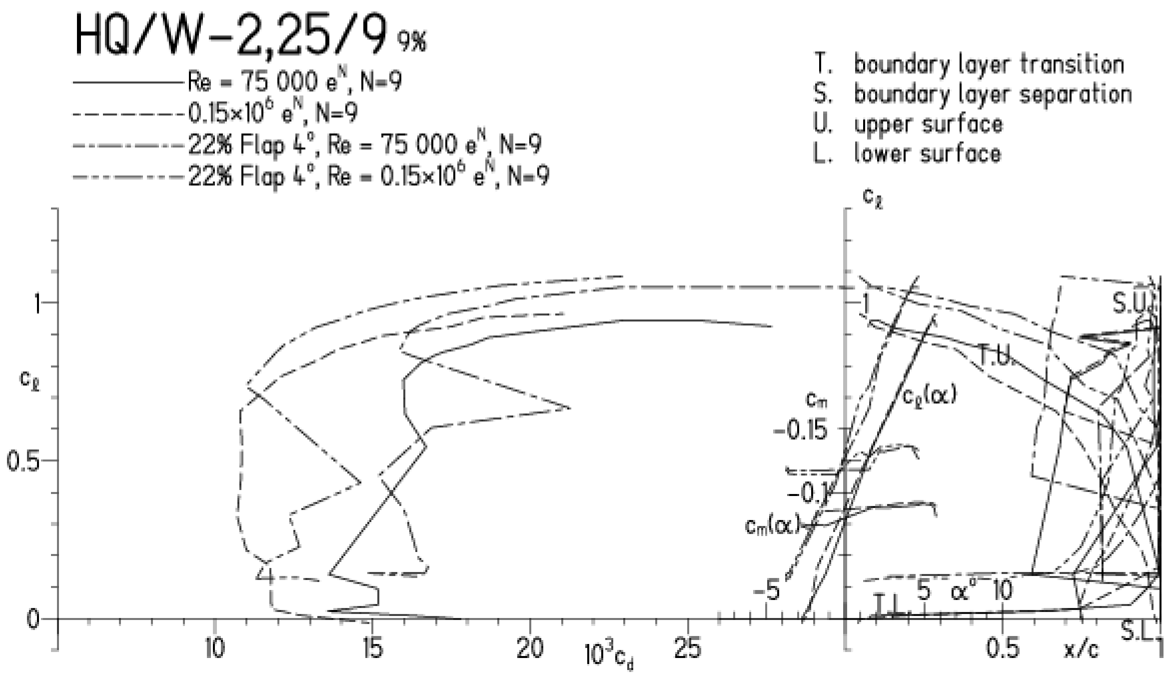


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

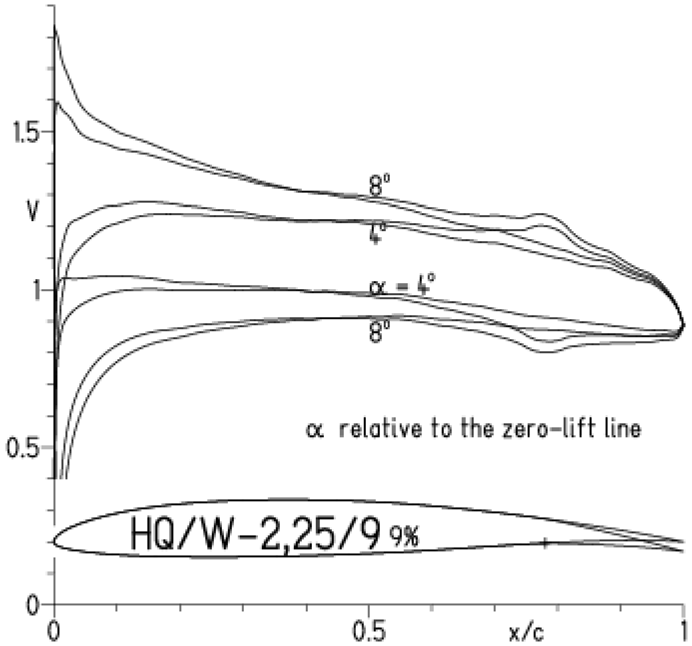


EPPLER 2005 V. 8.5.07 RUN 8.3.1

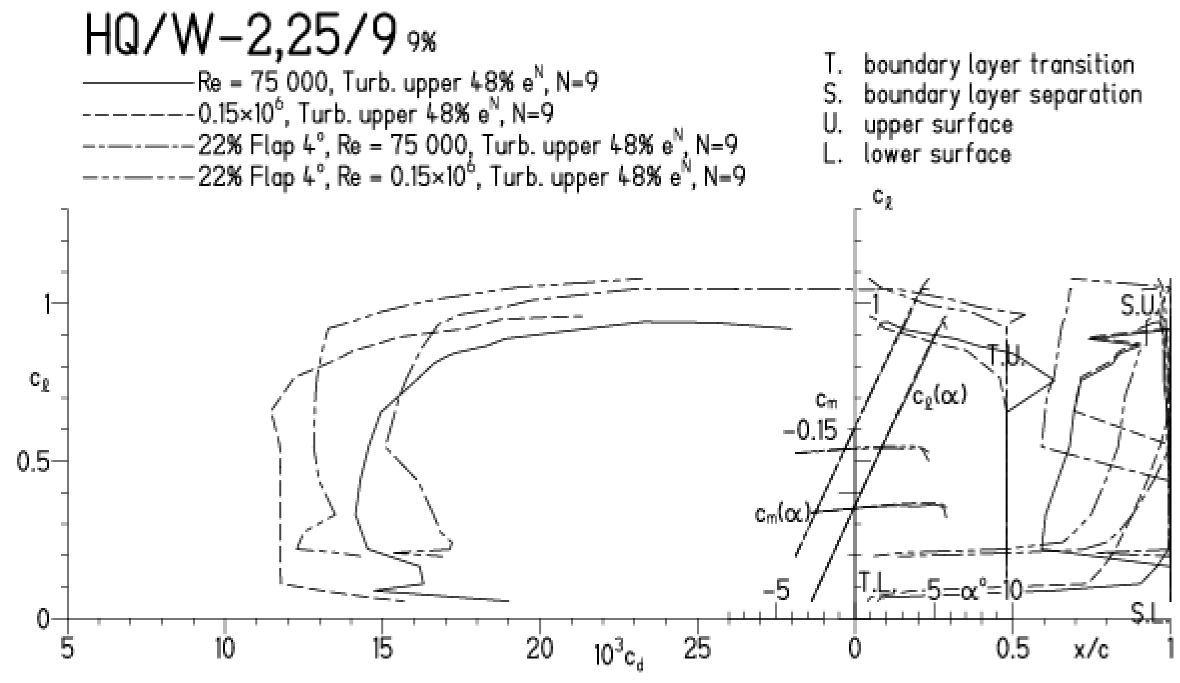


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

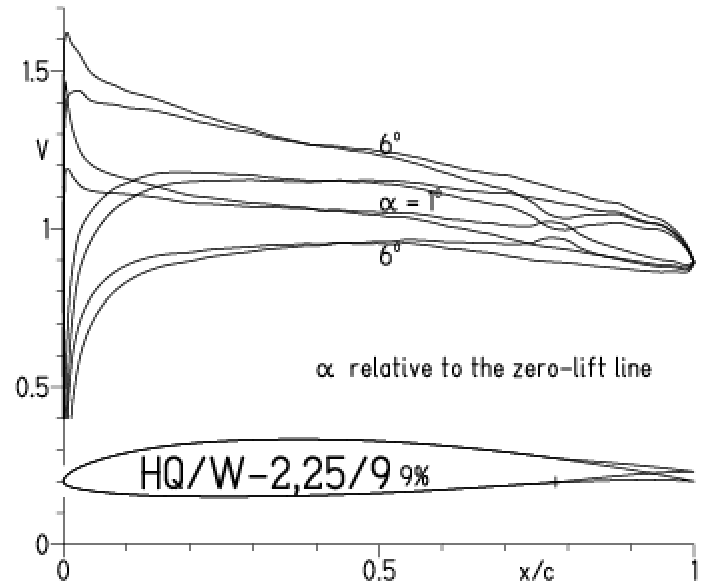


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

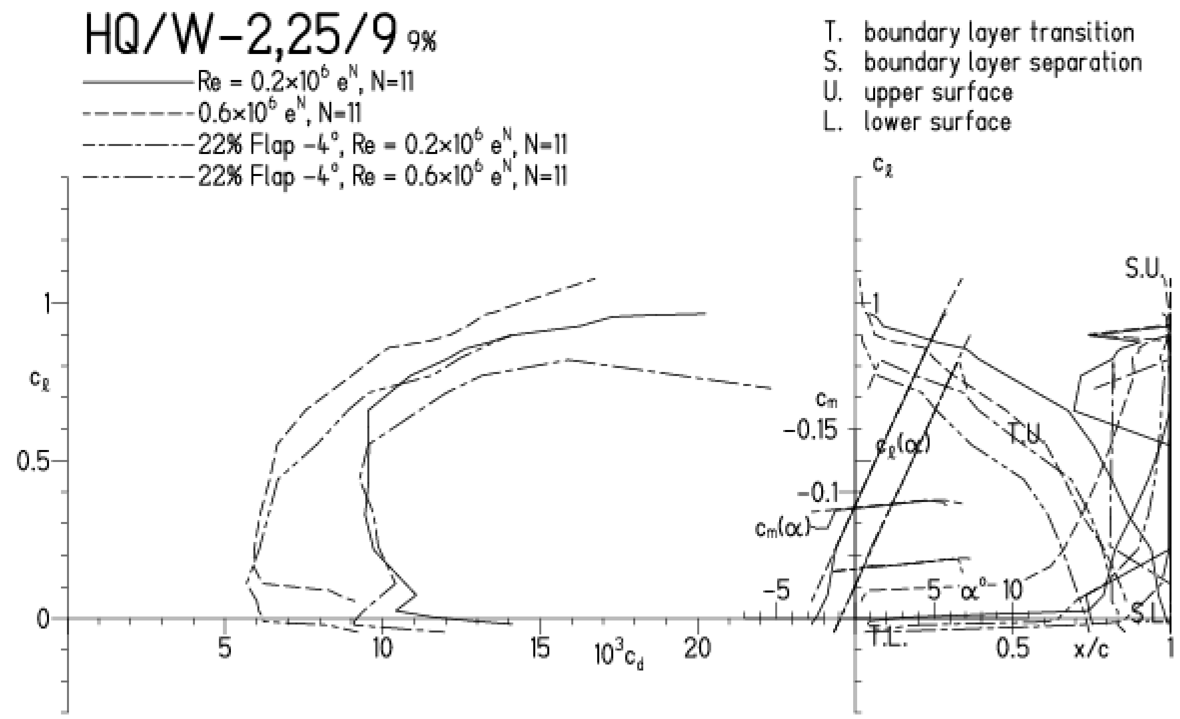


<u>HQ/W-2,25/9</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

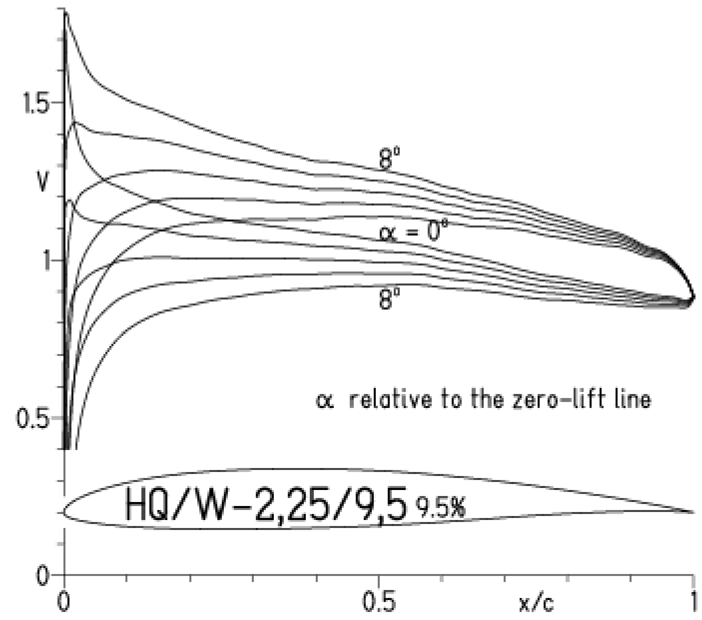


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

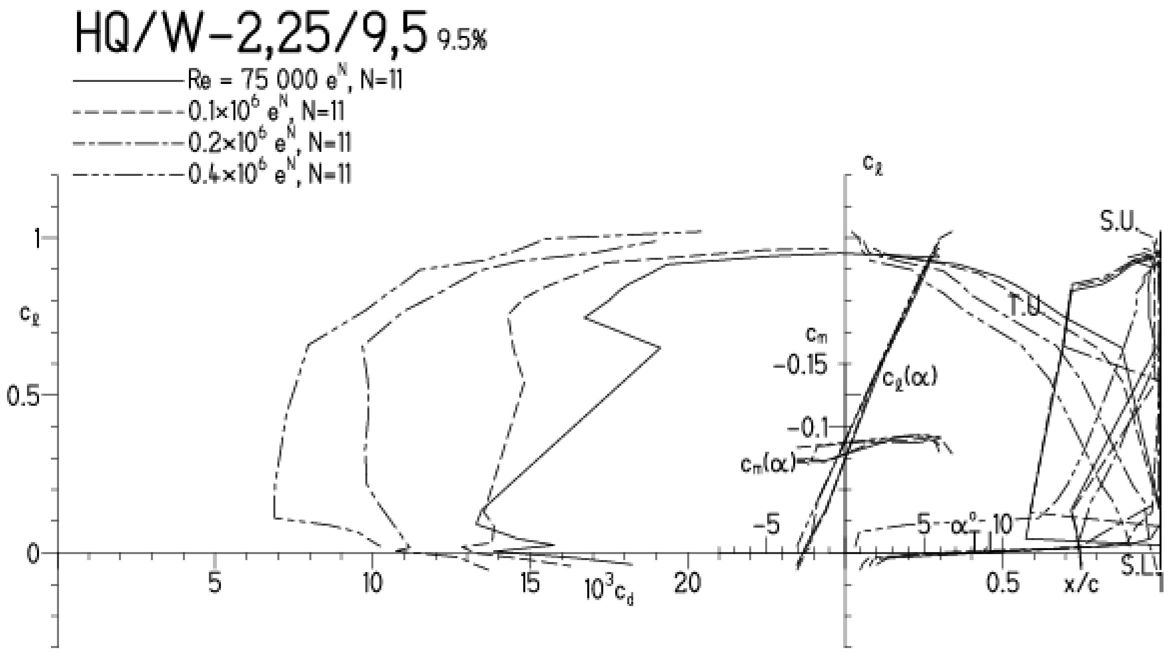


HQ/W-2,25/9,5, N=11

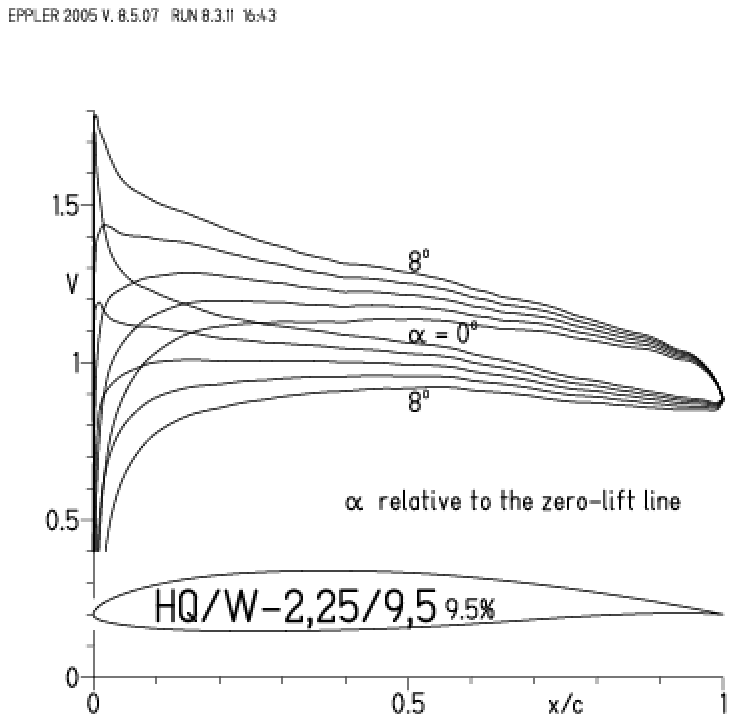
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

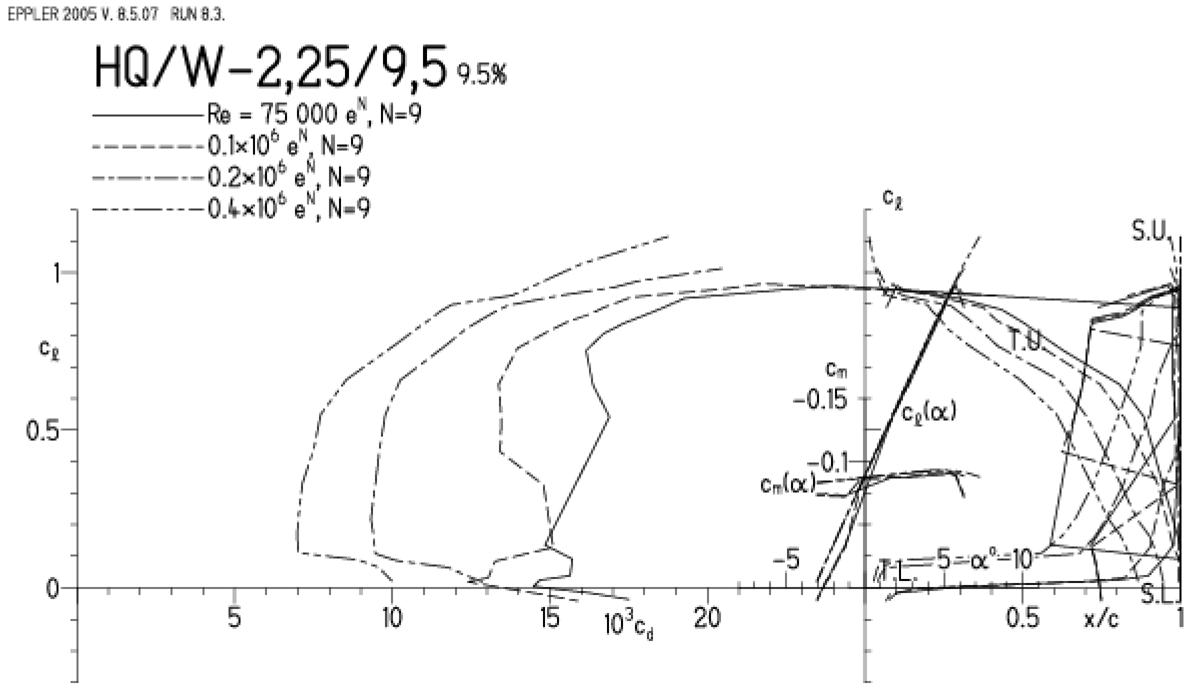


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33



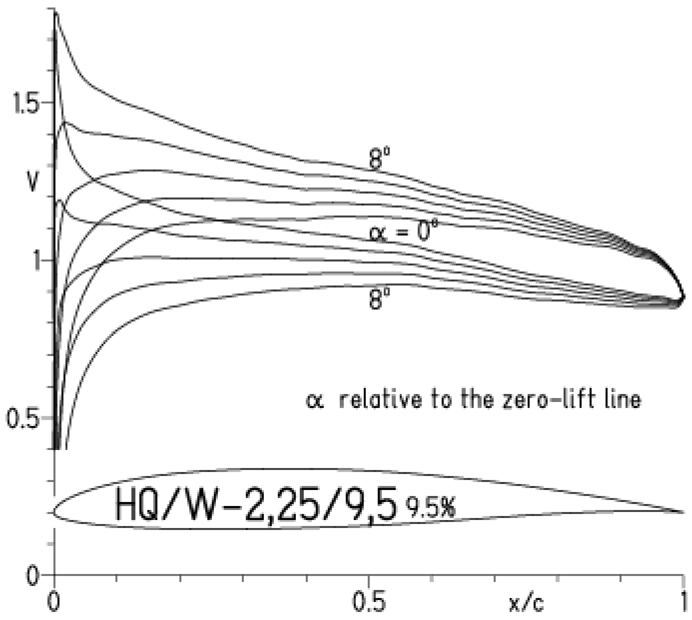
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
8°
α = 0°
8°
V
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
x/c

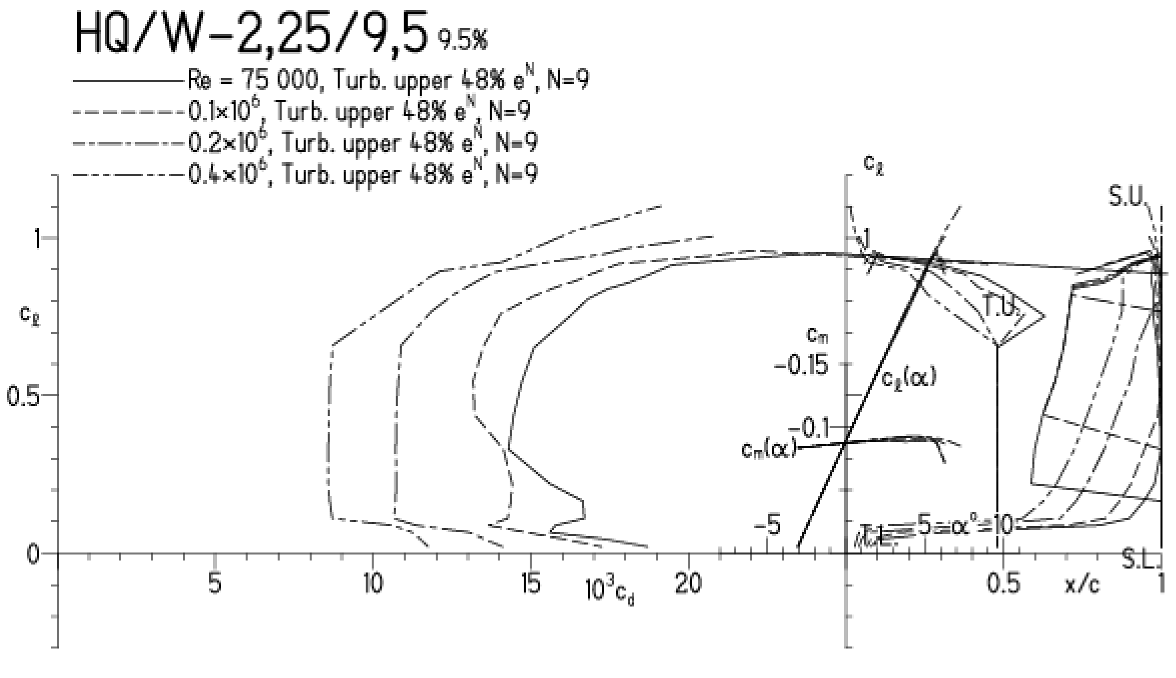

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_ℓ
10^3 c_d
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
x/c

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

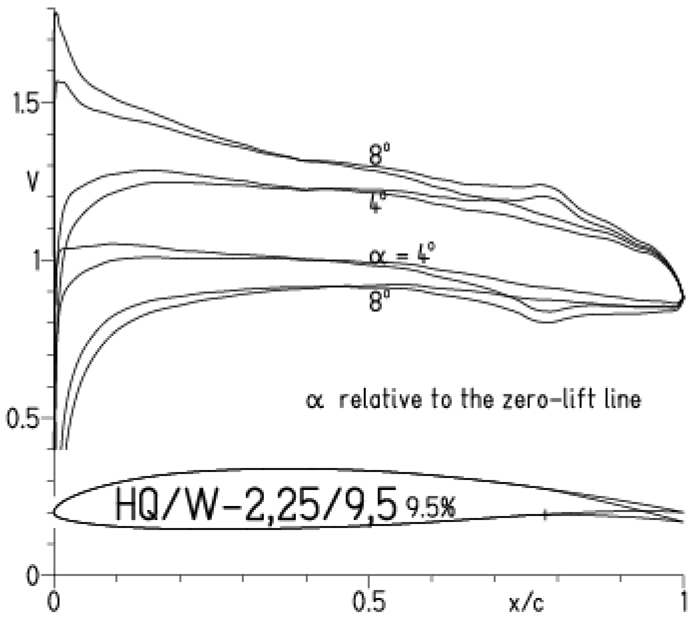


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

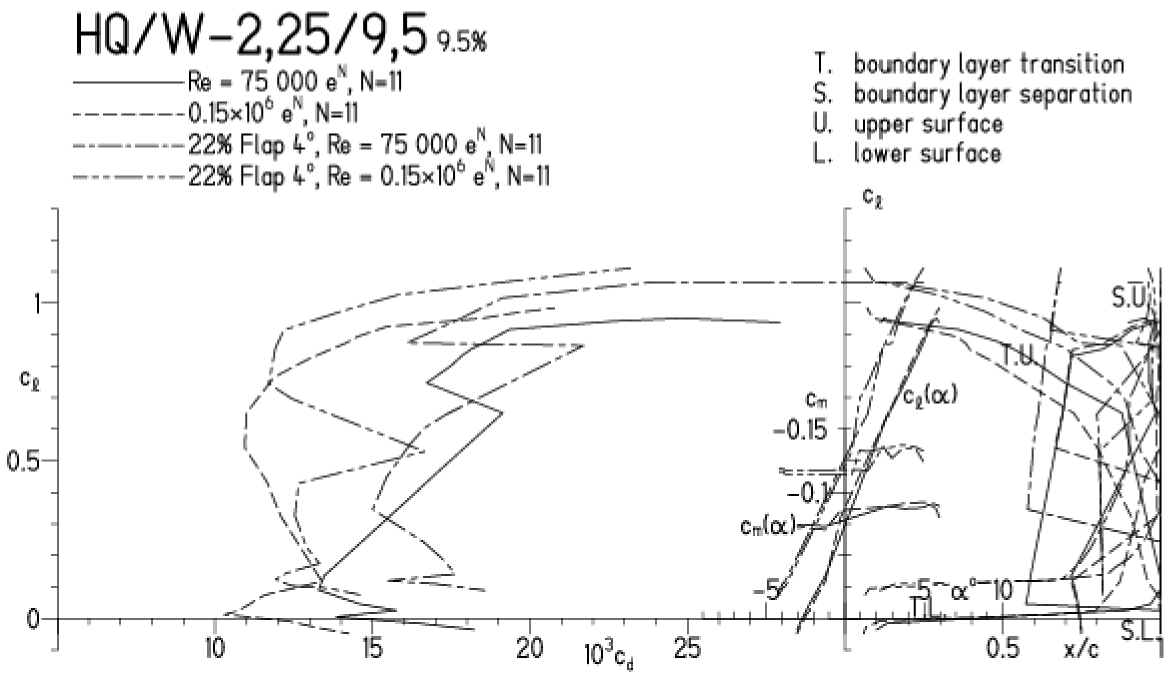


HQ/W-2,25/9,5, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

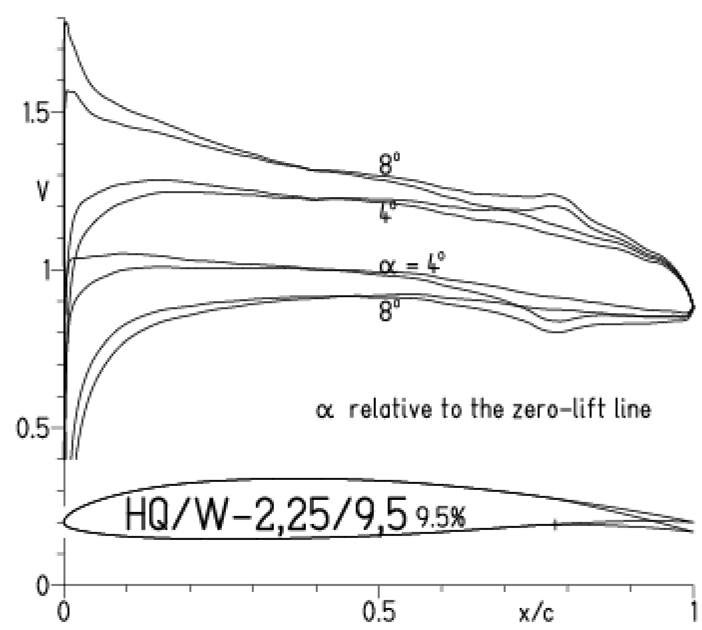


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

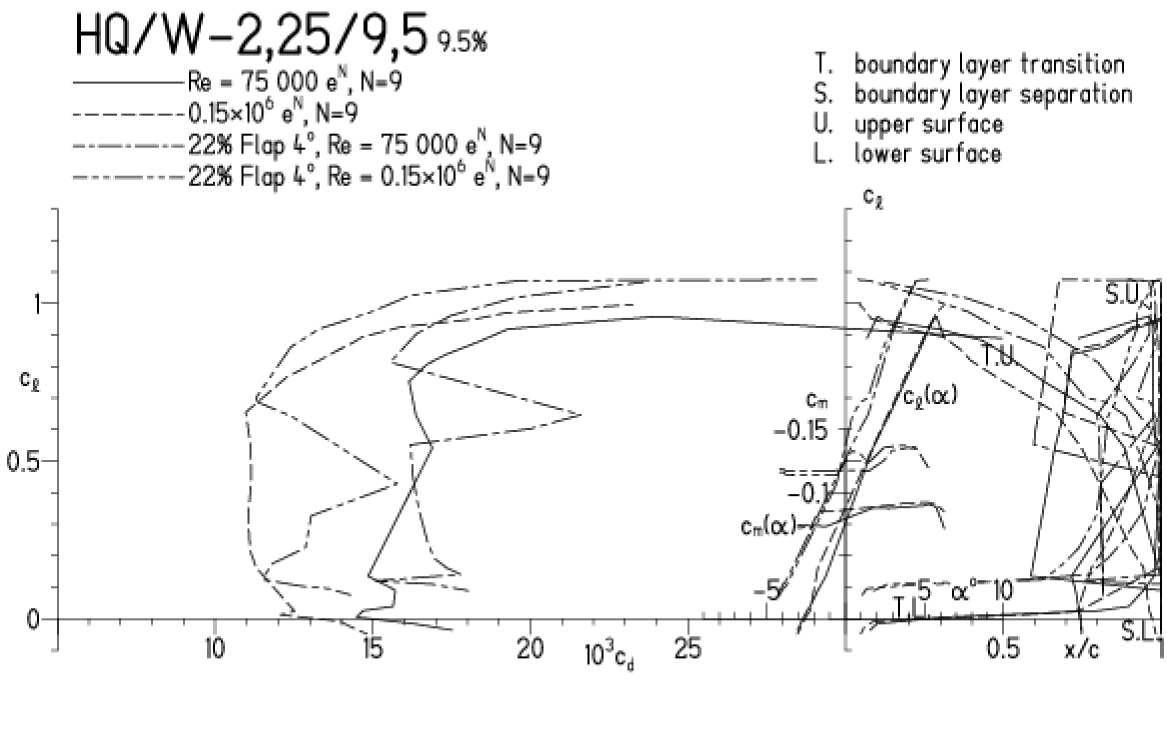


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

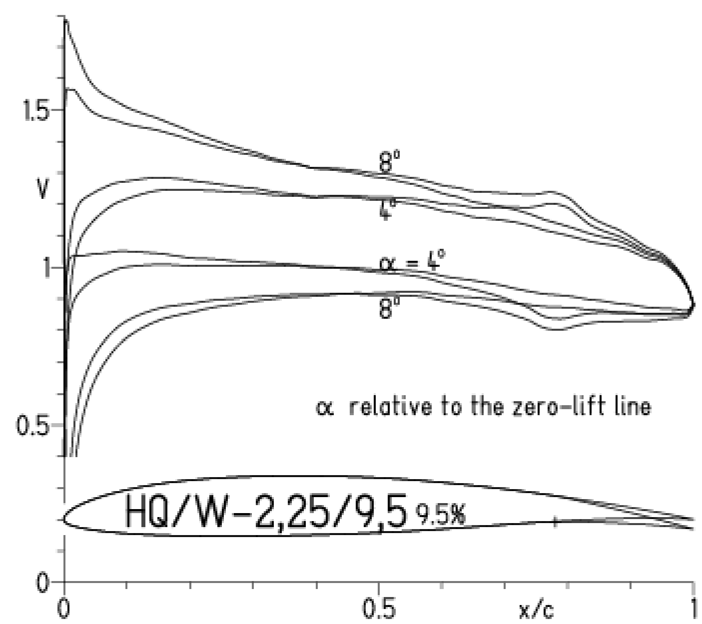


EPPLER 2005 V. 8.5.07 R

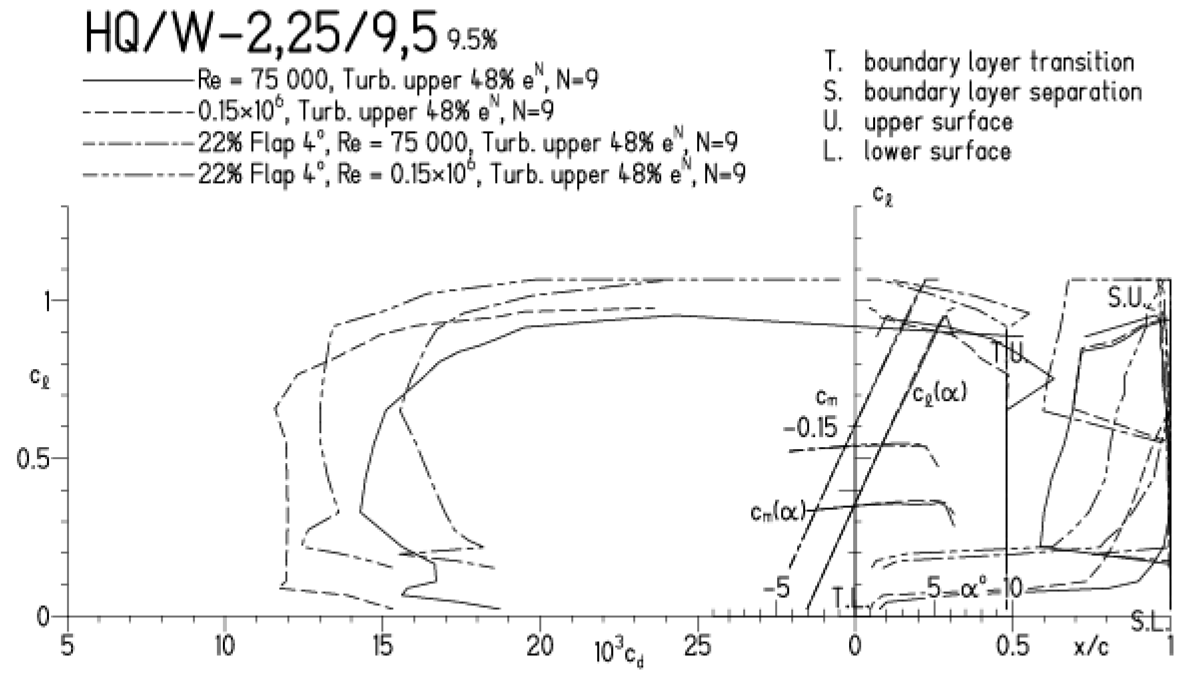


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

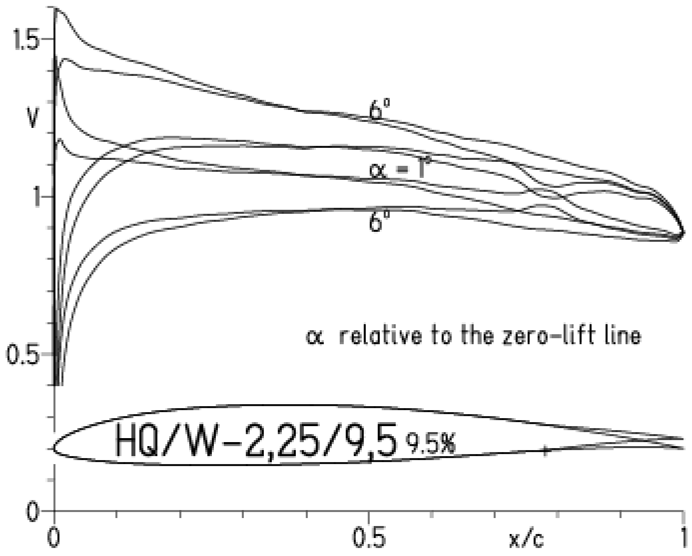


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

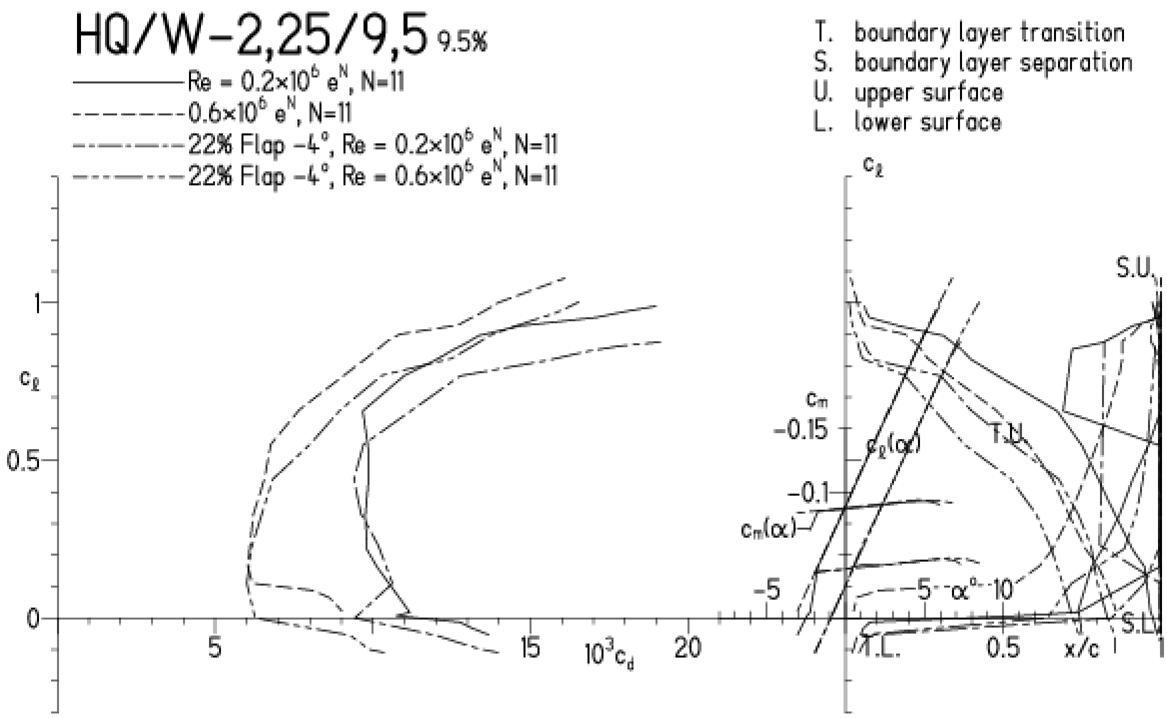


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

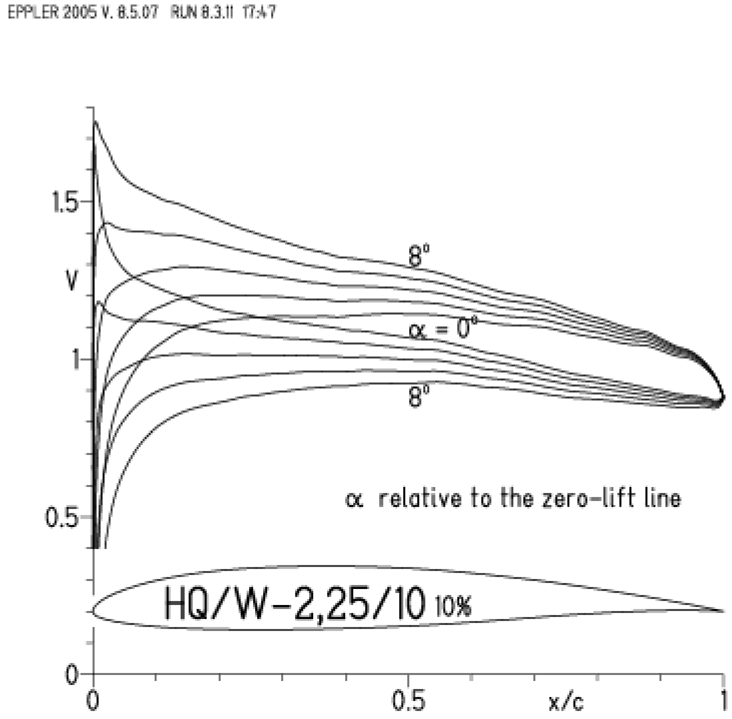
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

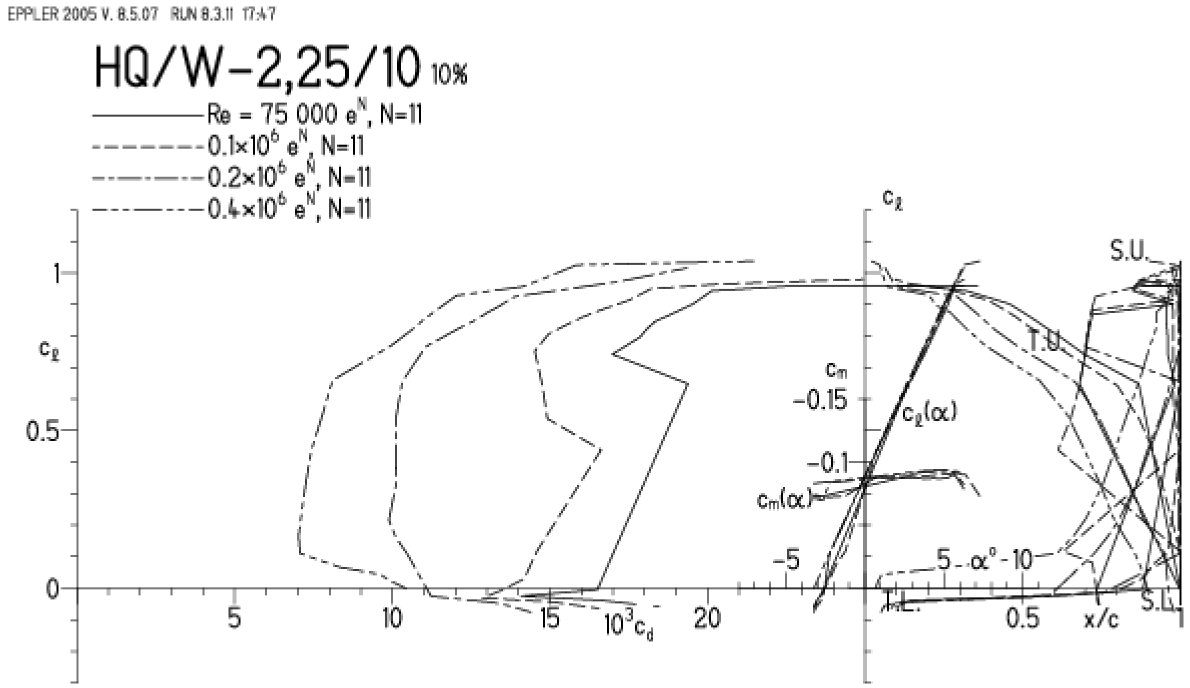


EPPLER 2005 V.



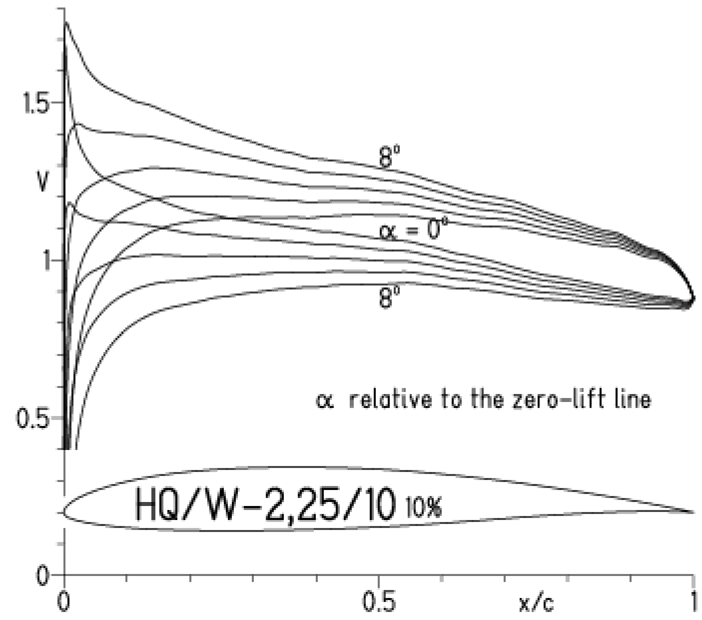
HQ/W-2,25/10, N=11



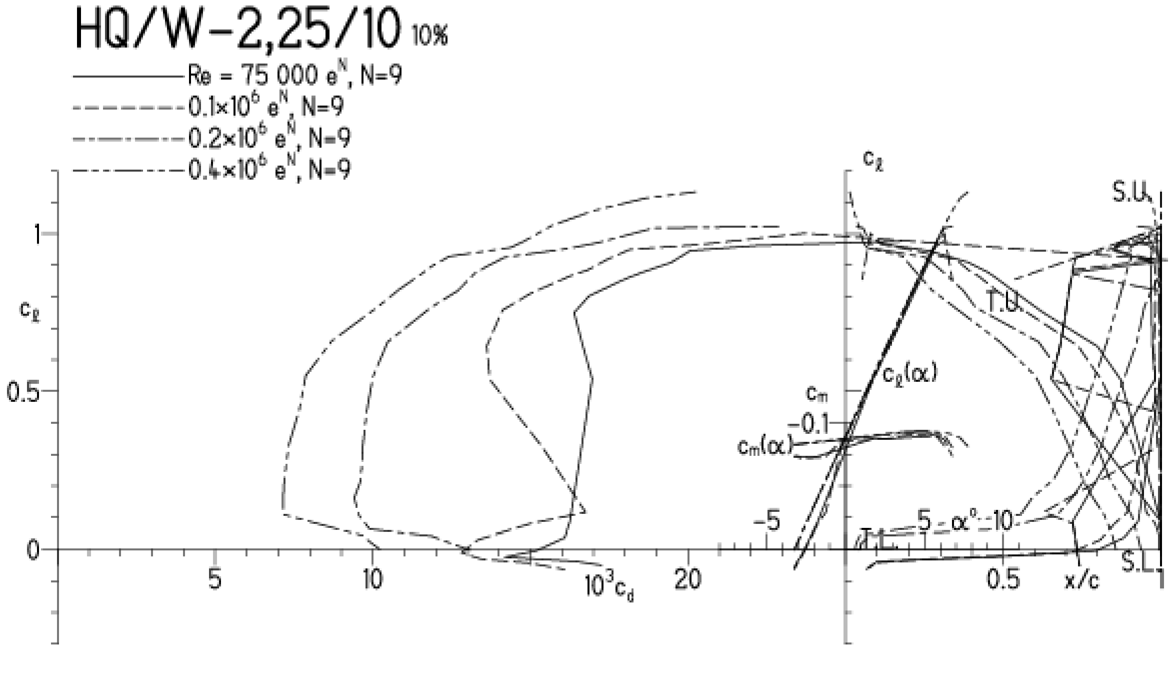


<u>HQ/W-2,25/10</u>, N=9

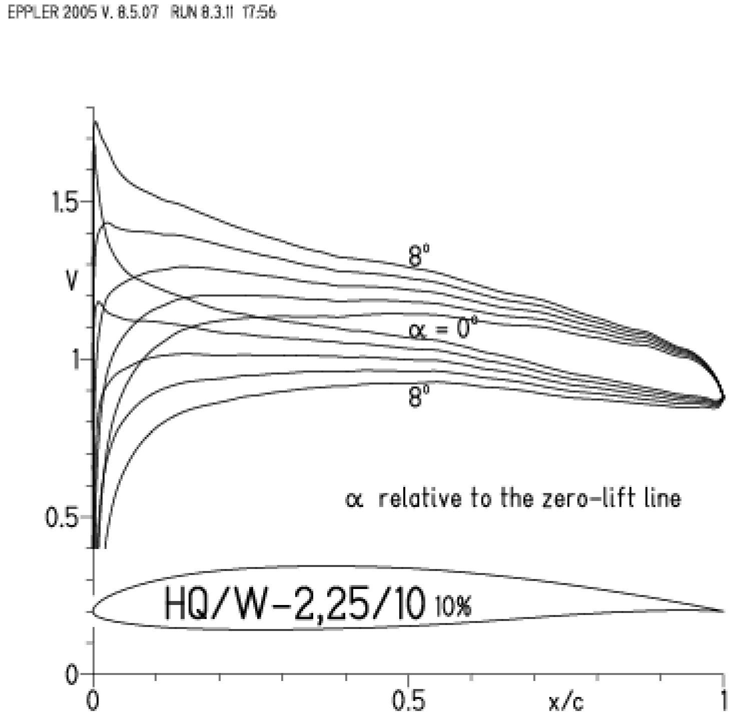
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

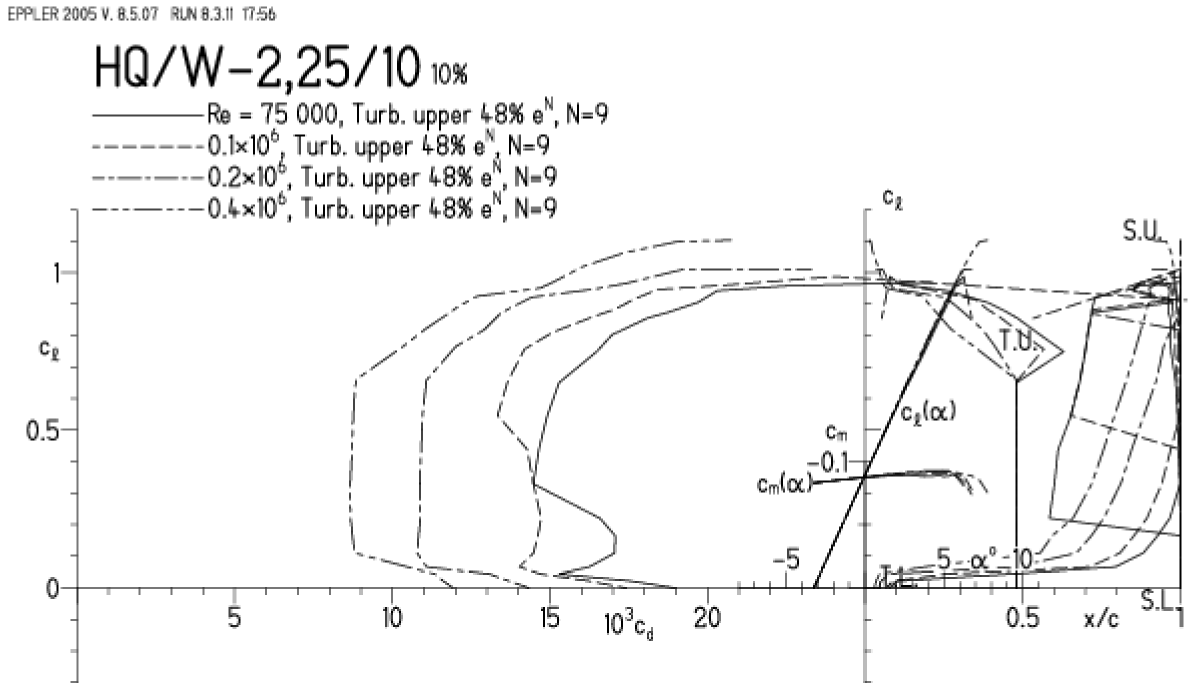


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



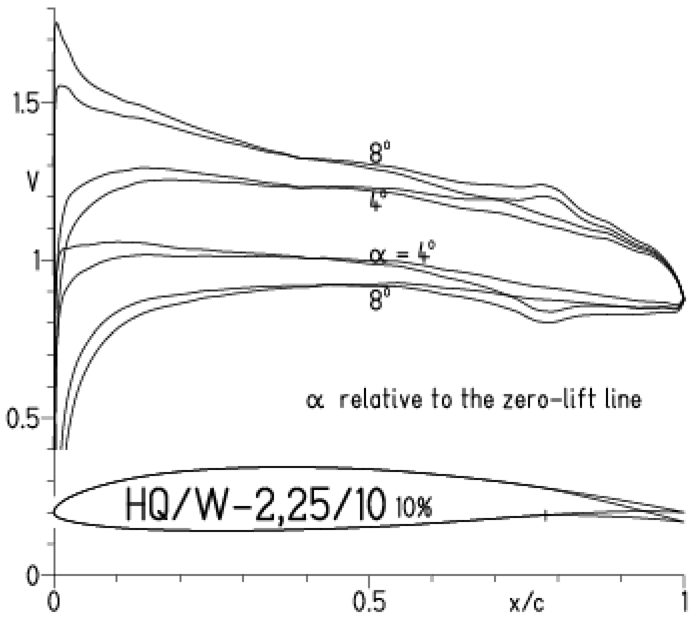
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



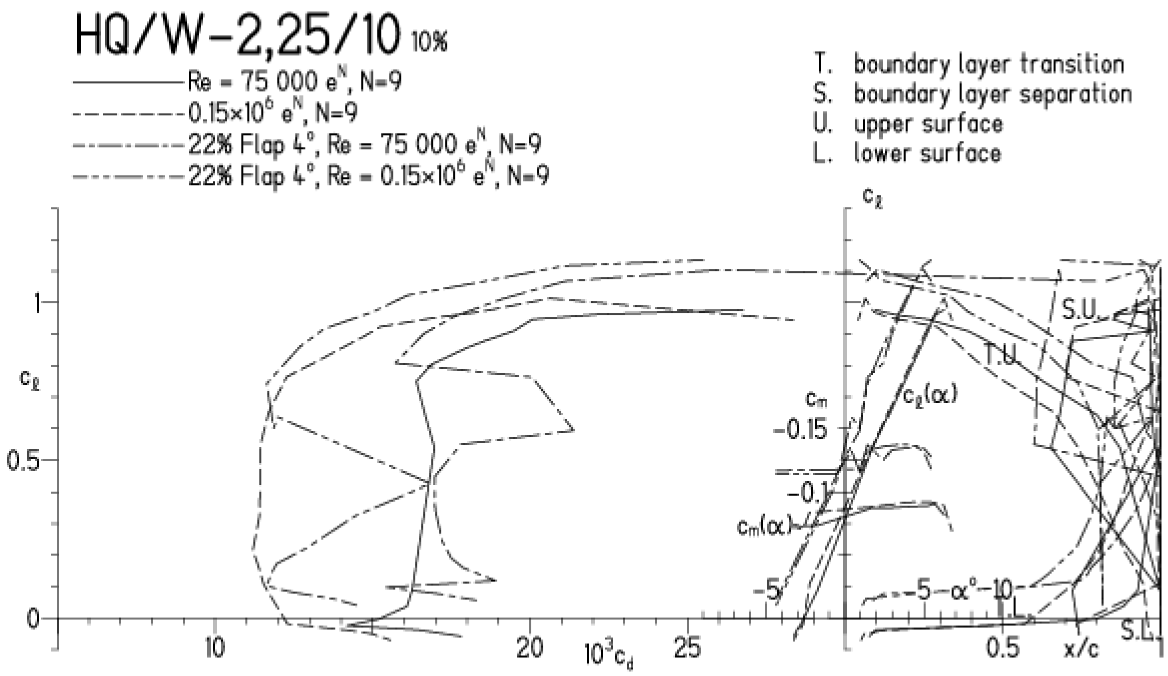


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

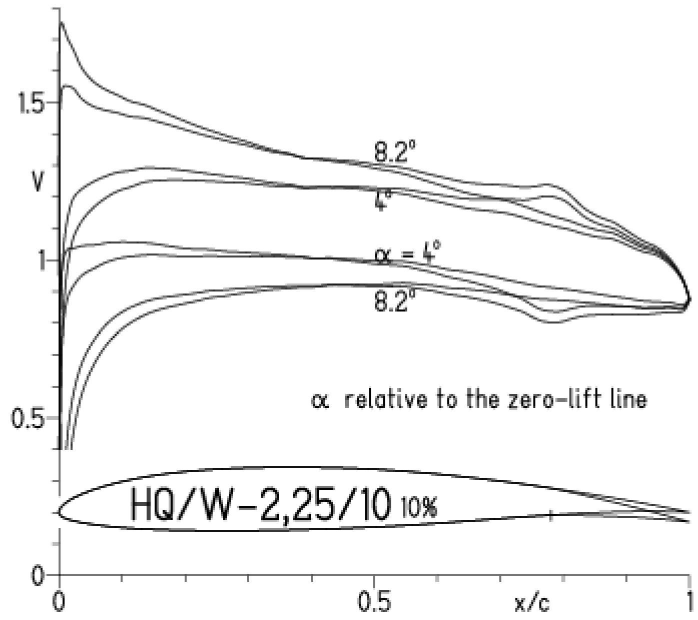


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

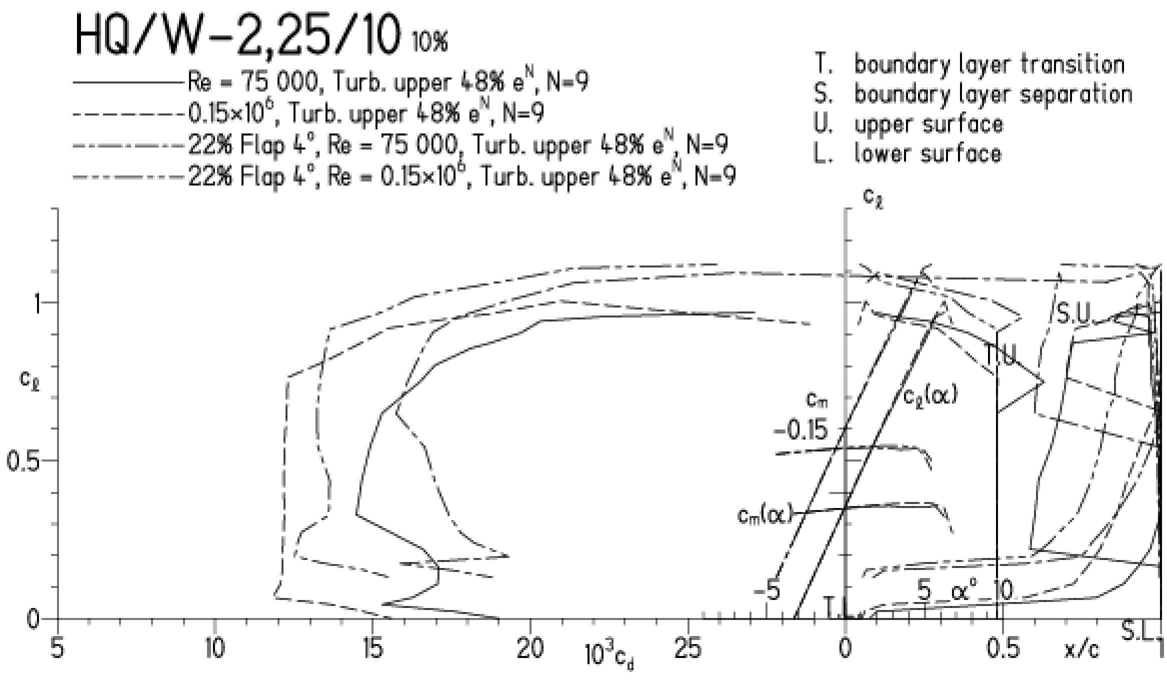


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

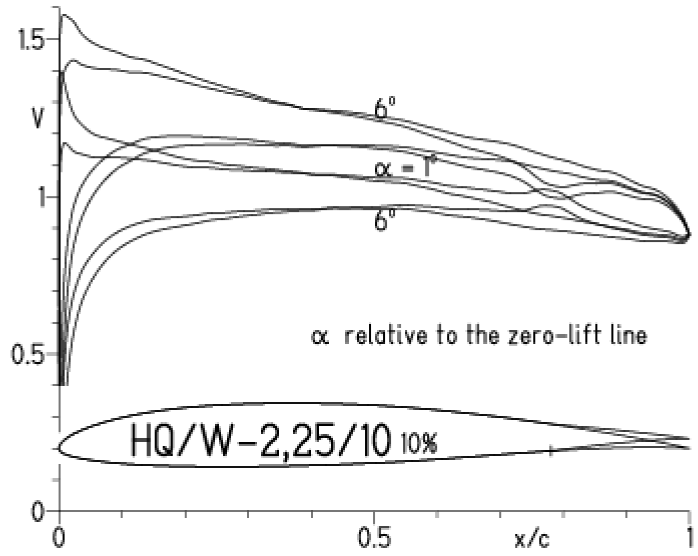


EPPLER 2005 V. 8.5.07 RUN 8.3

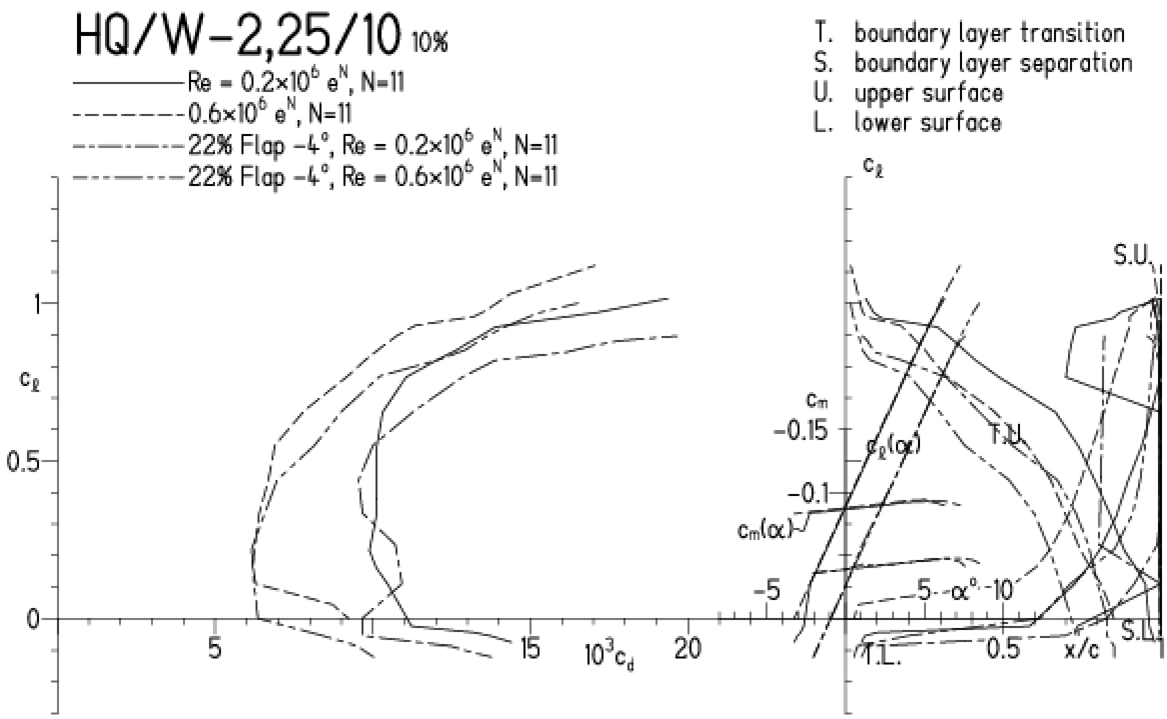


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

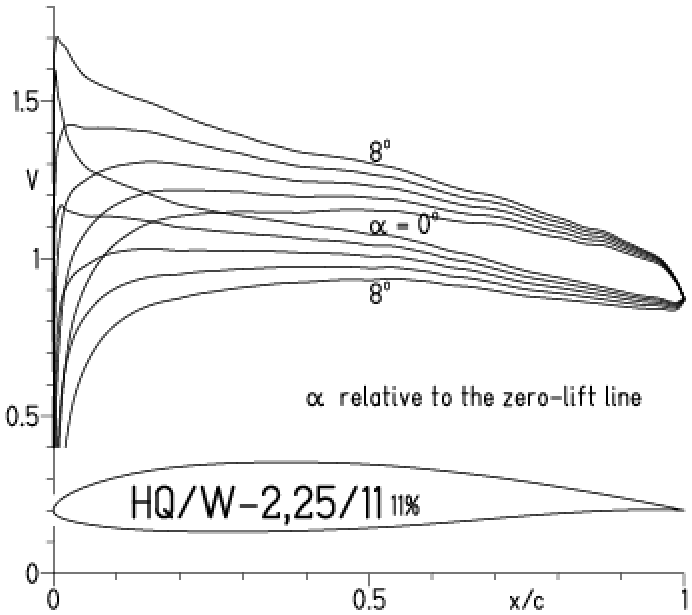


EPPLER 2005 V. 8.5.07 RUN

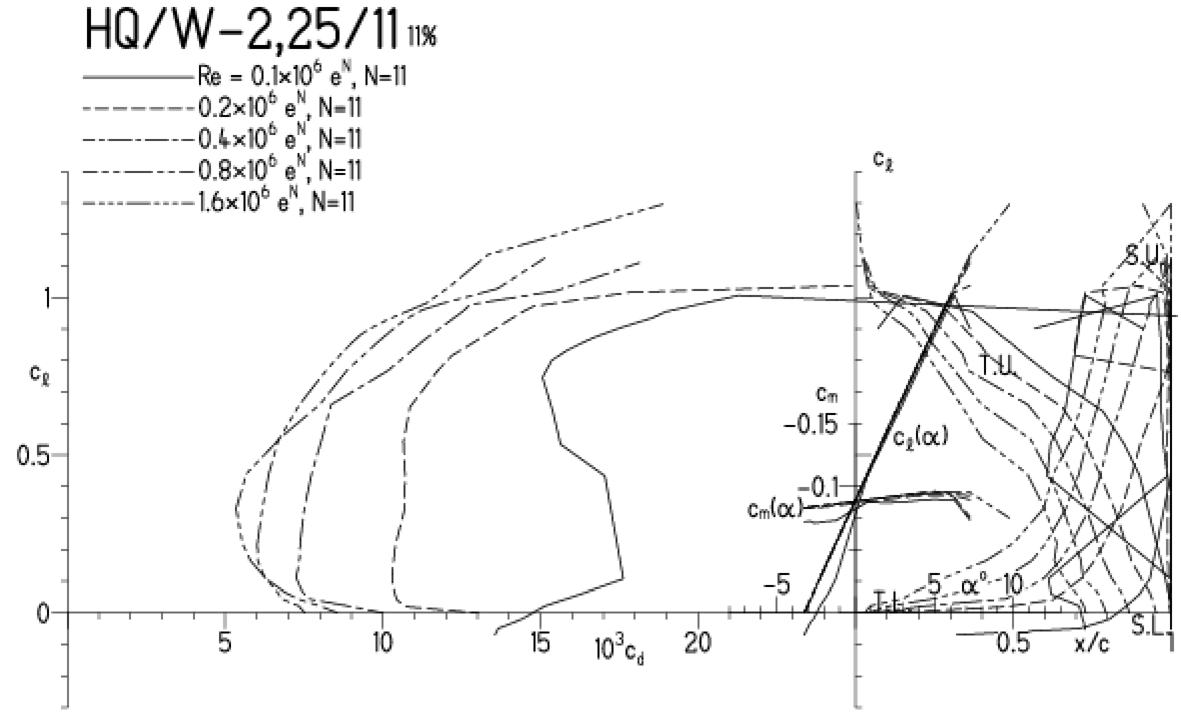


<u>HQ/W-2,25/11</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

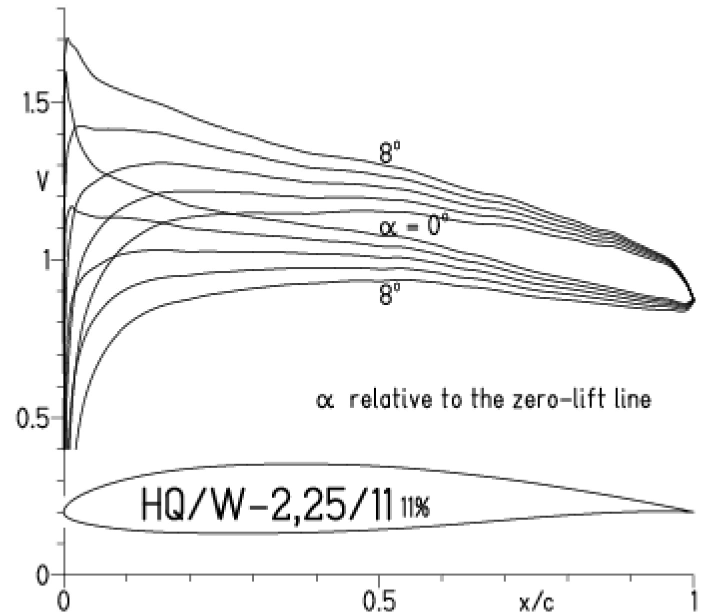


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12

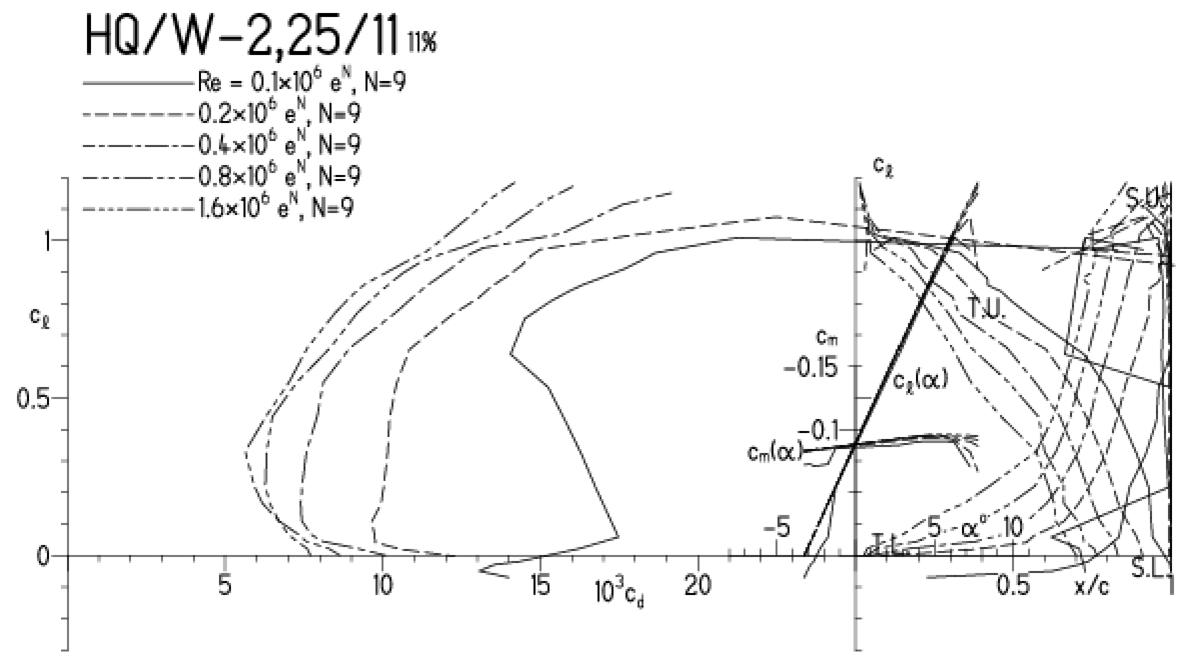


HQQ/W-2,25/11, N=9

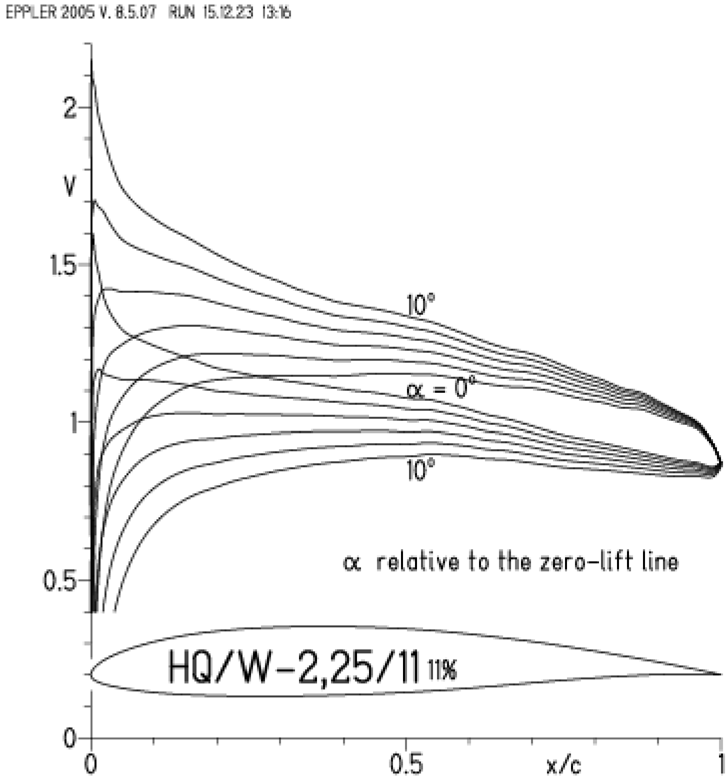
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42

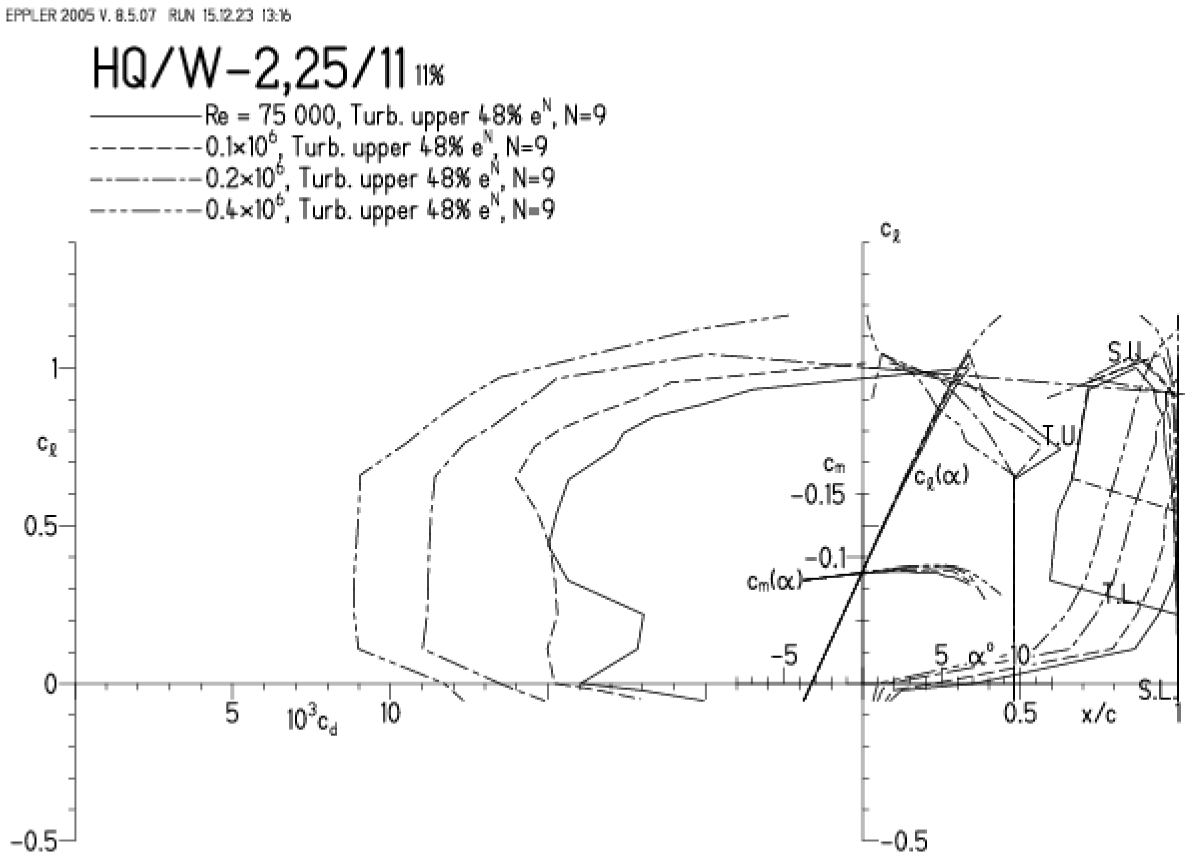


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:42



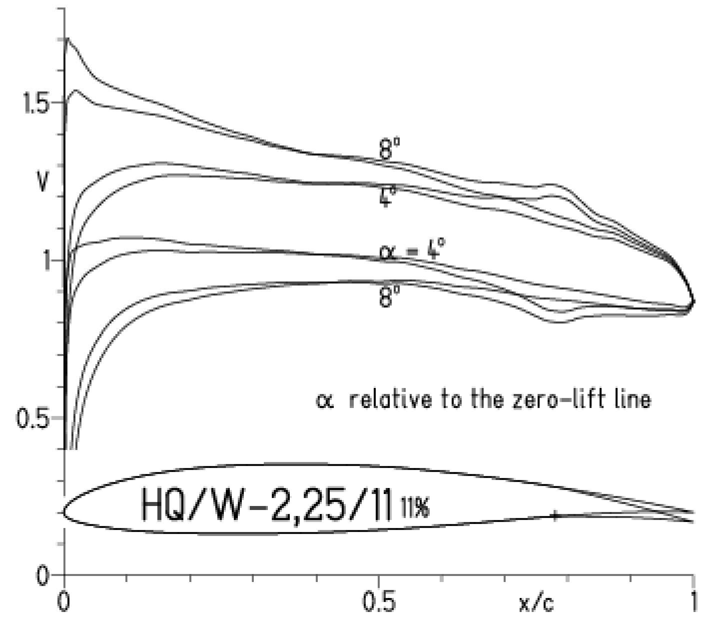
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



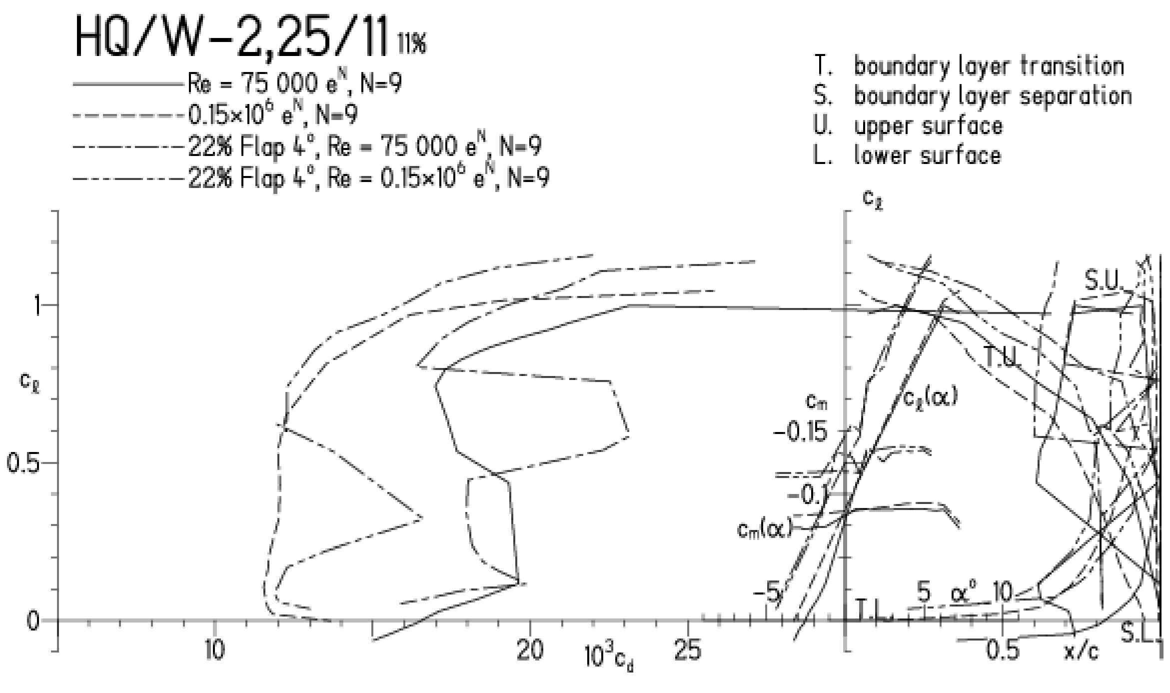


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

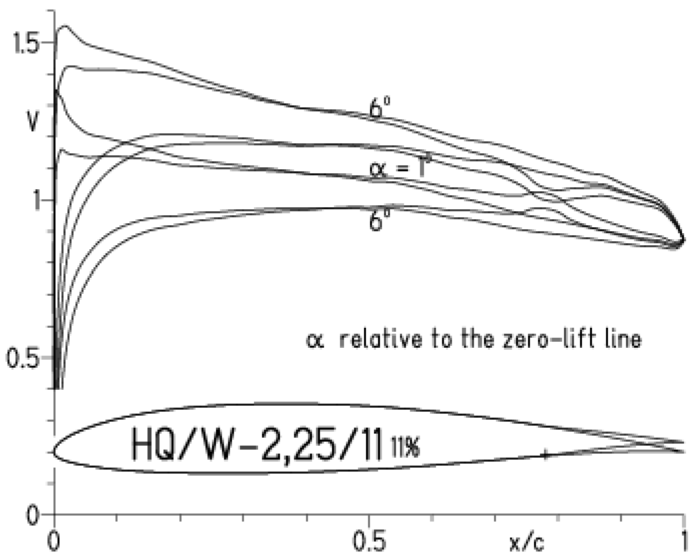


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

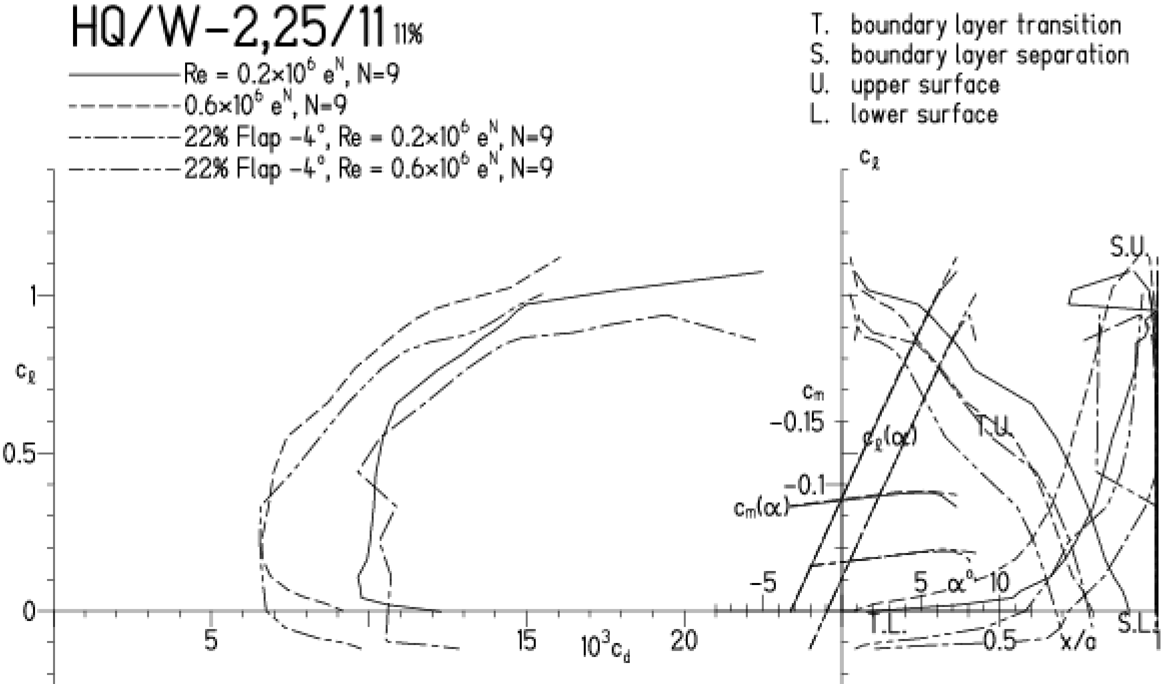


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

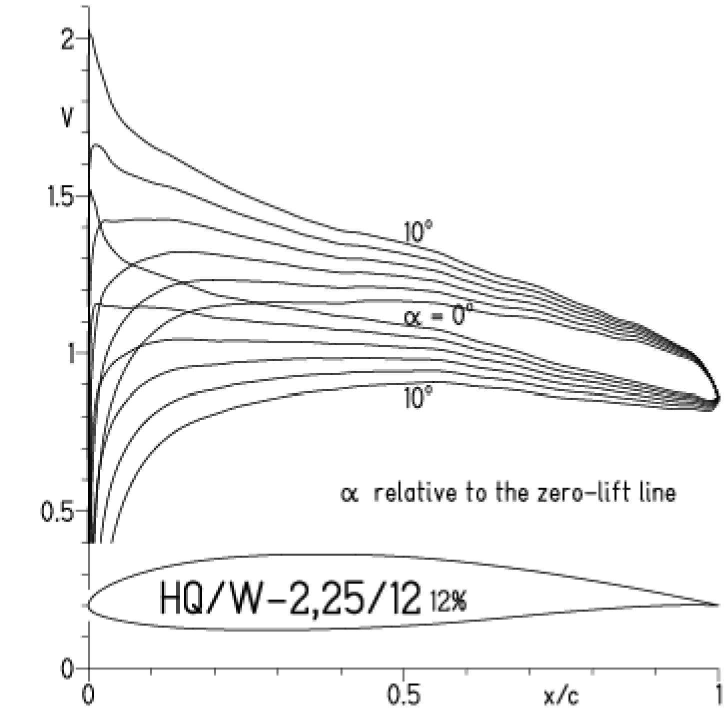


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

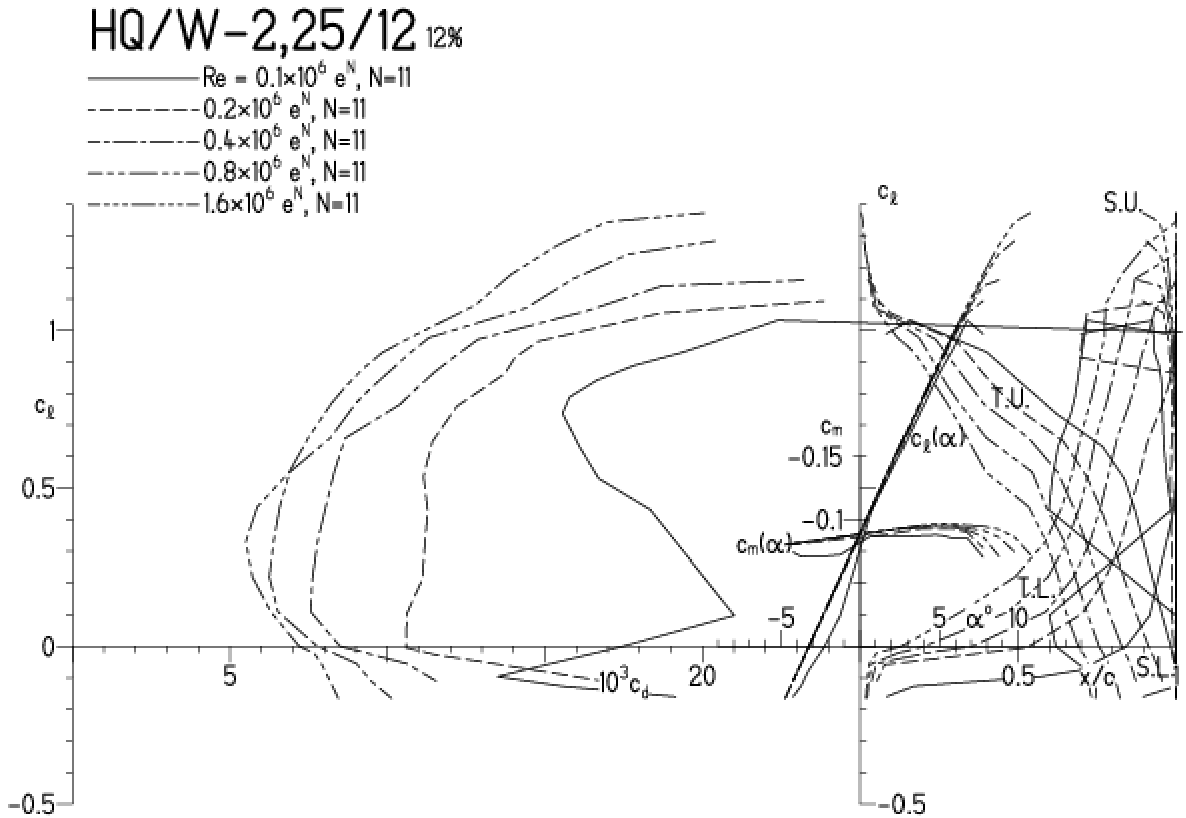


<u>HQ/W-2,25/12</u>, N=11

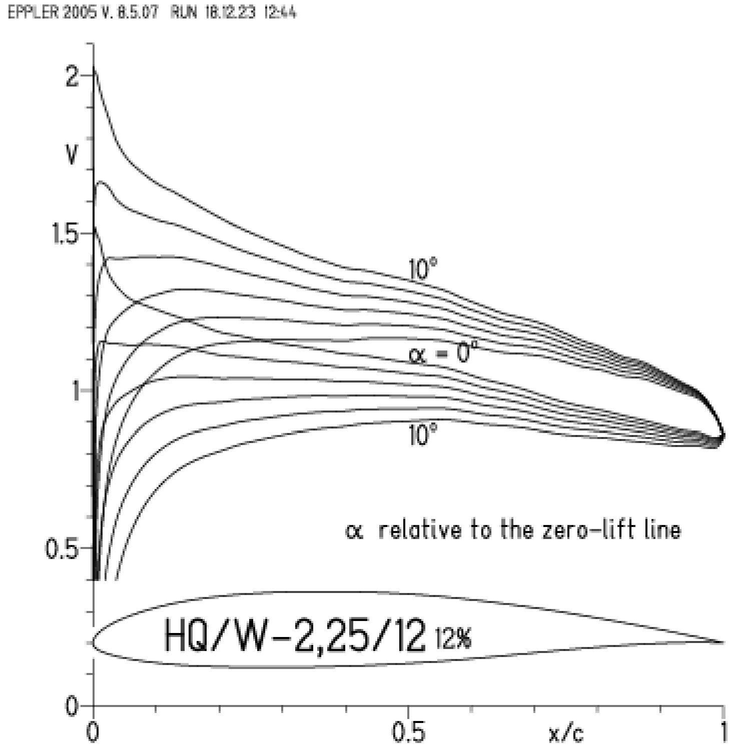
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

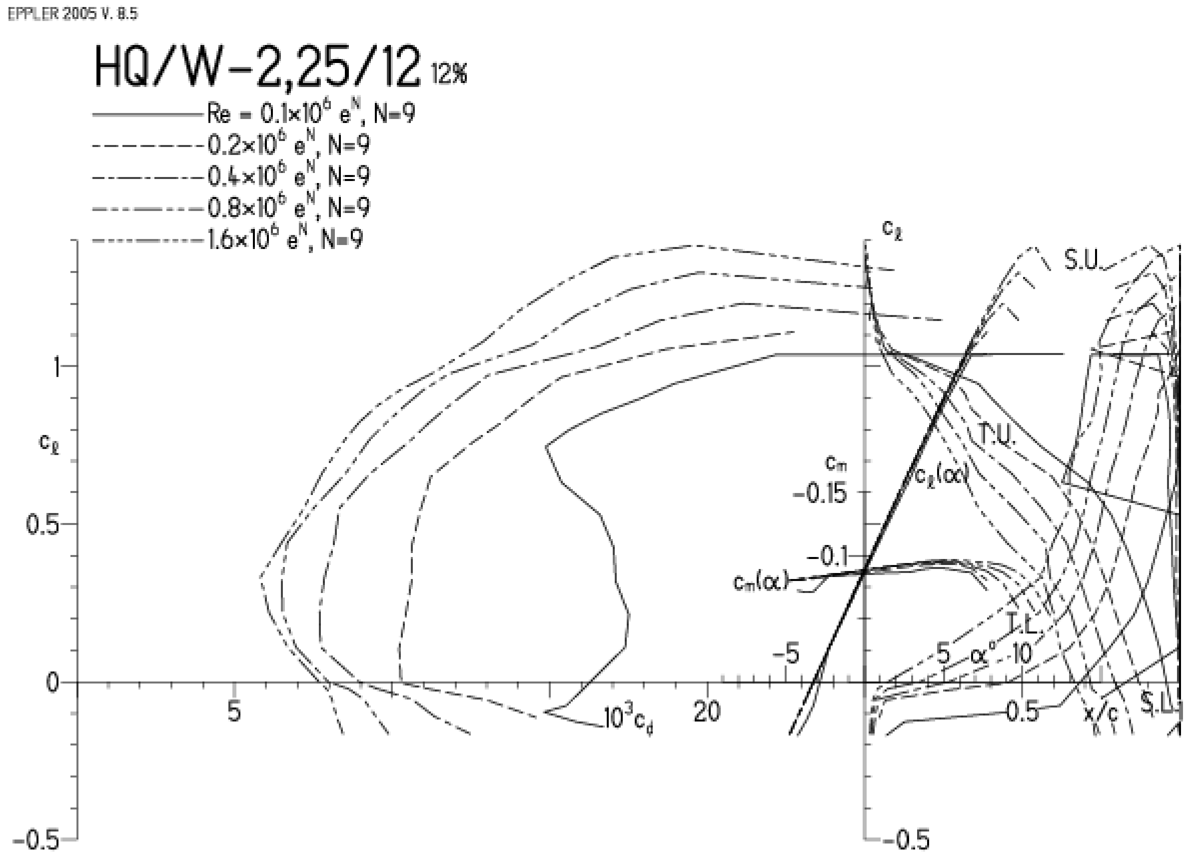


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

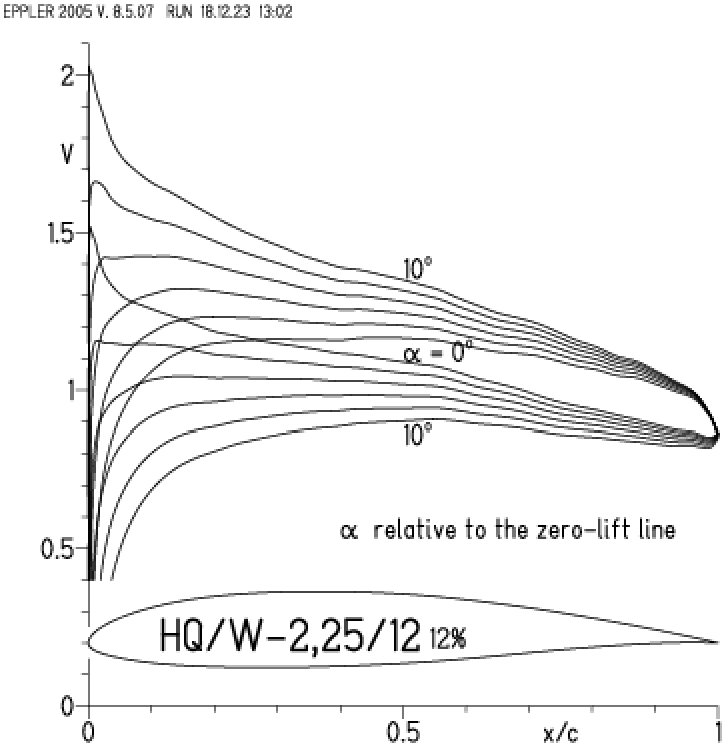


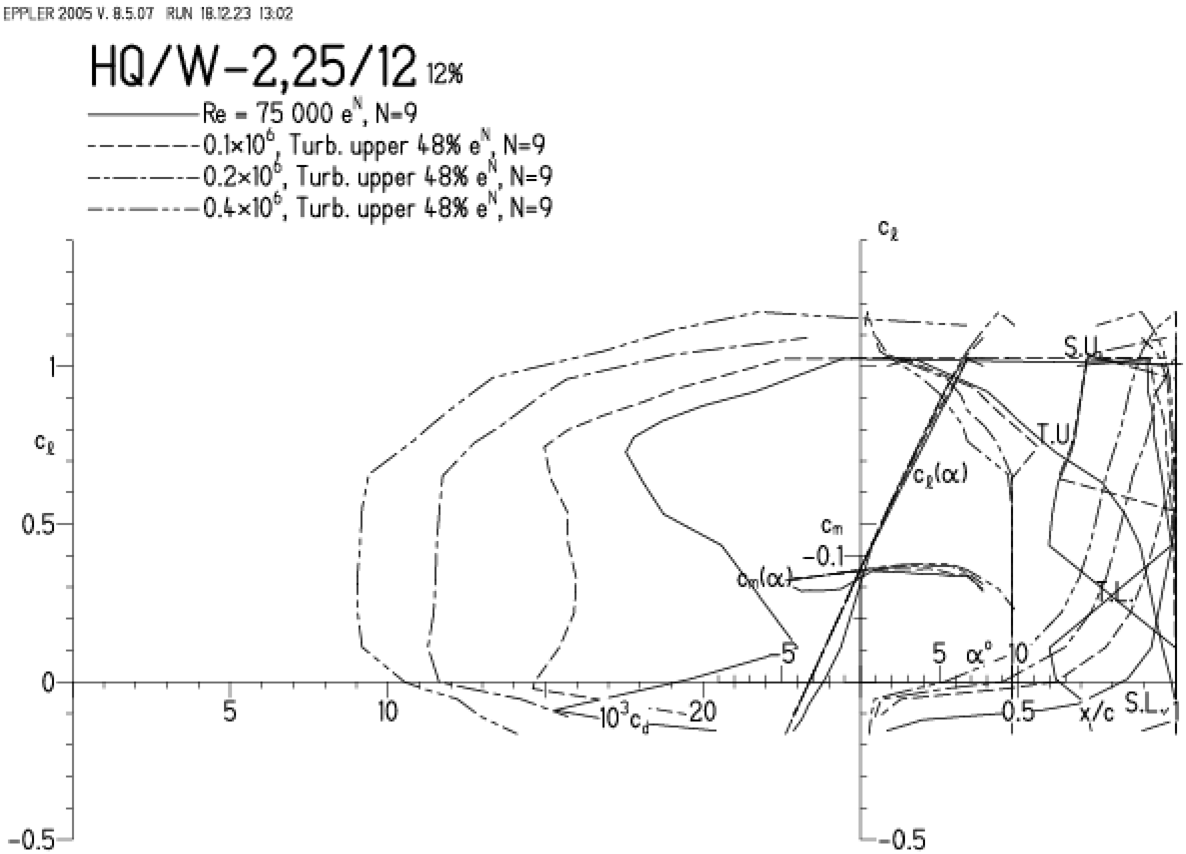
<u>HQ/W-2,25/12</u>, N=9





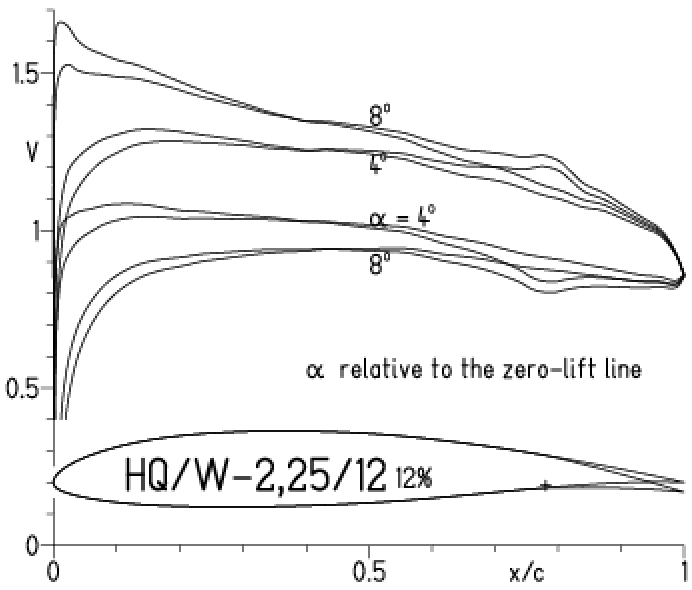
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



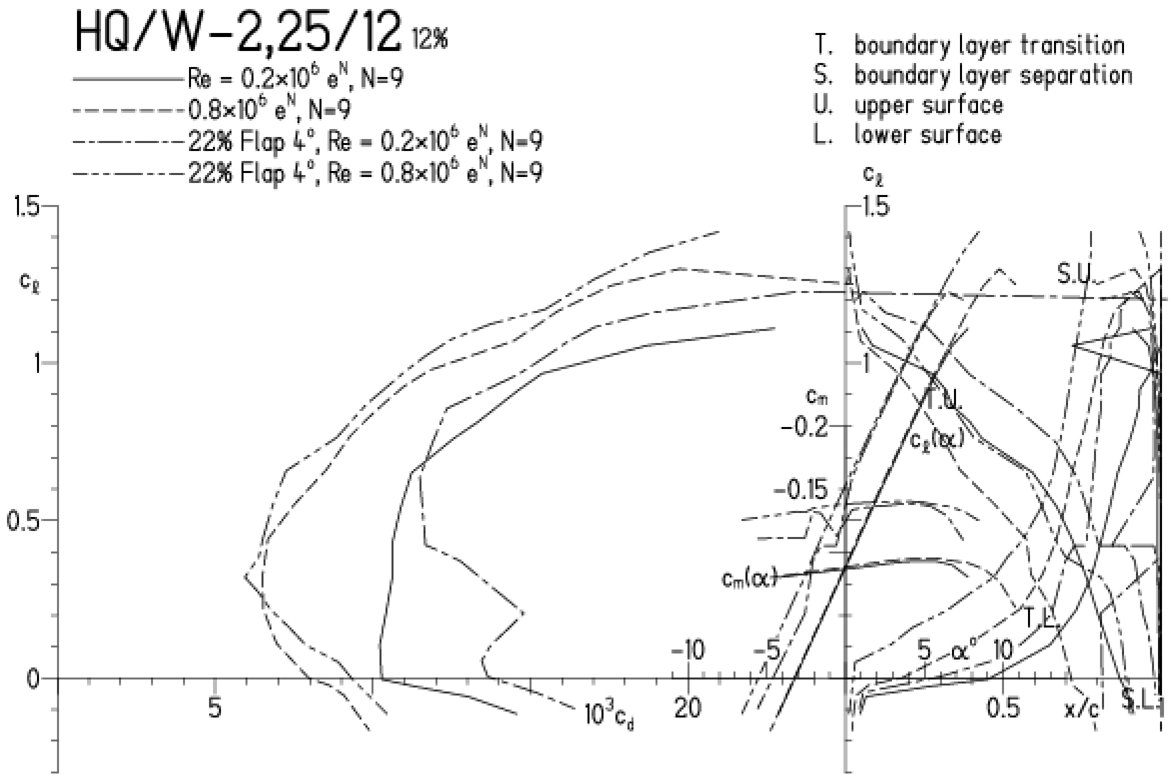


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

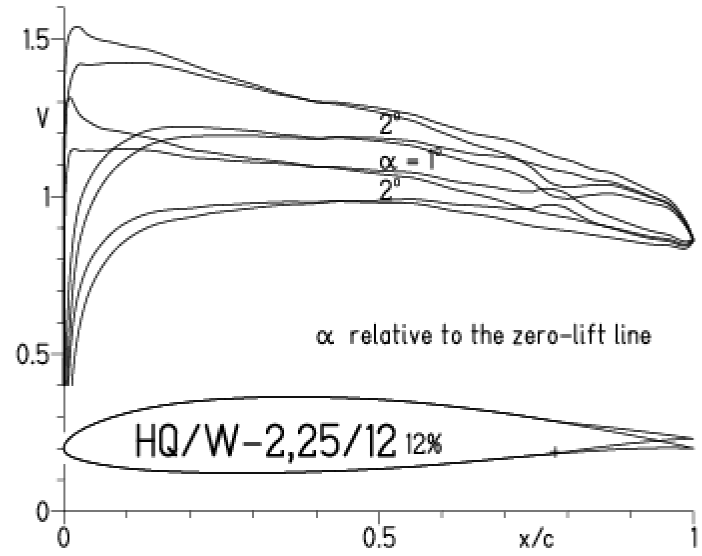


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

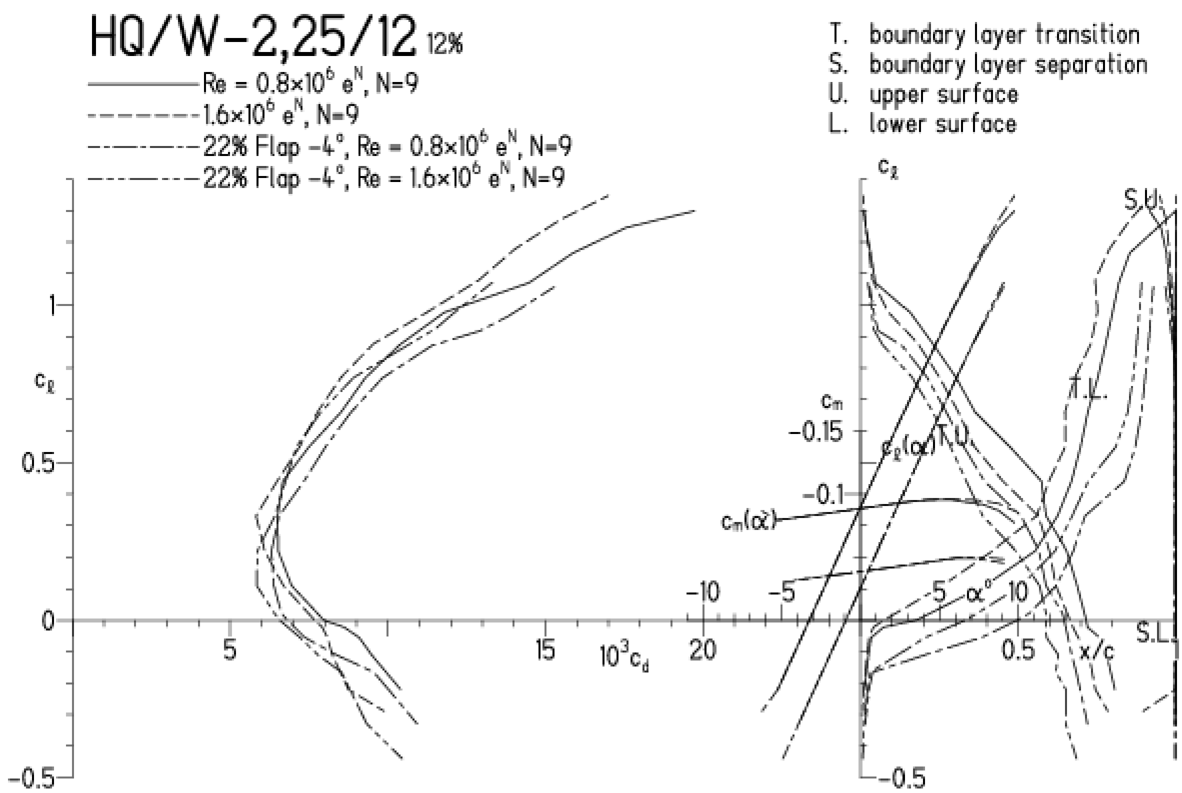


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

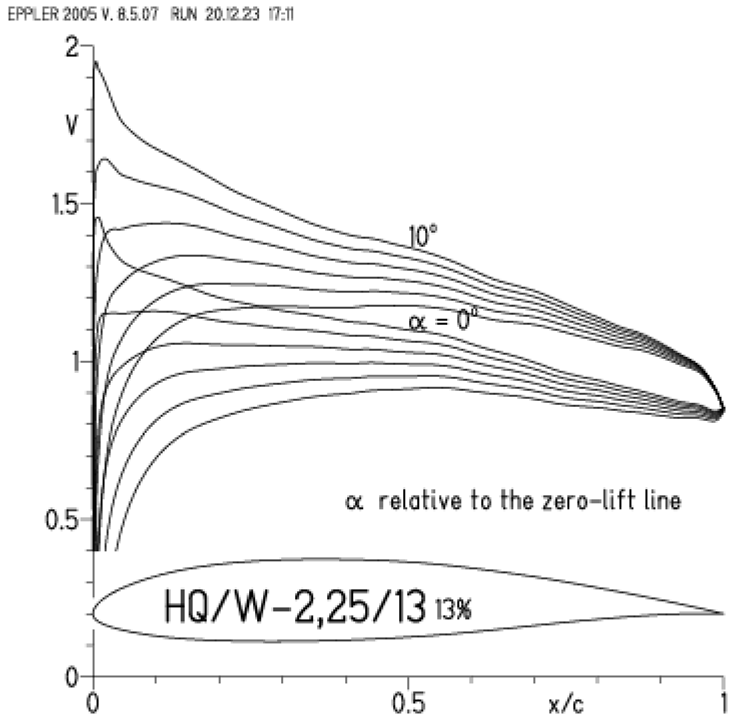
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

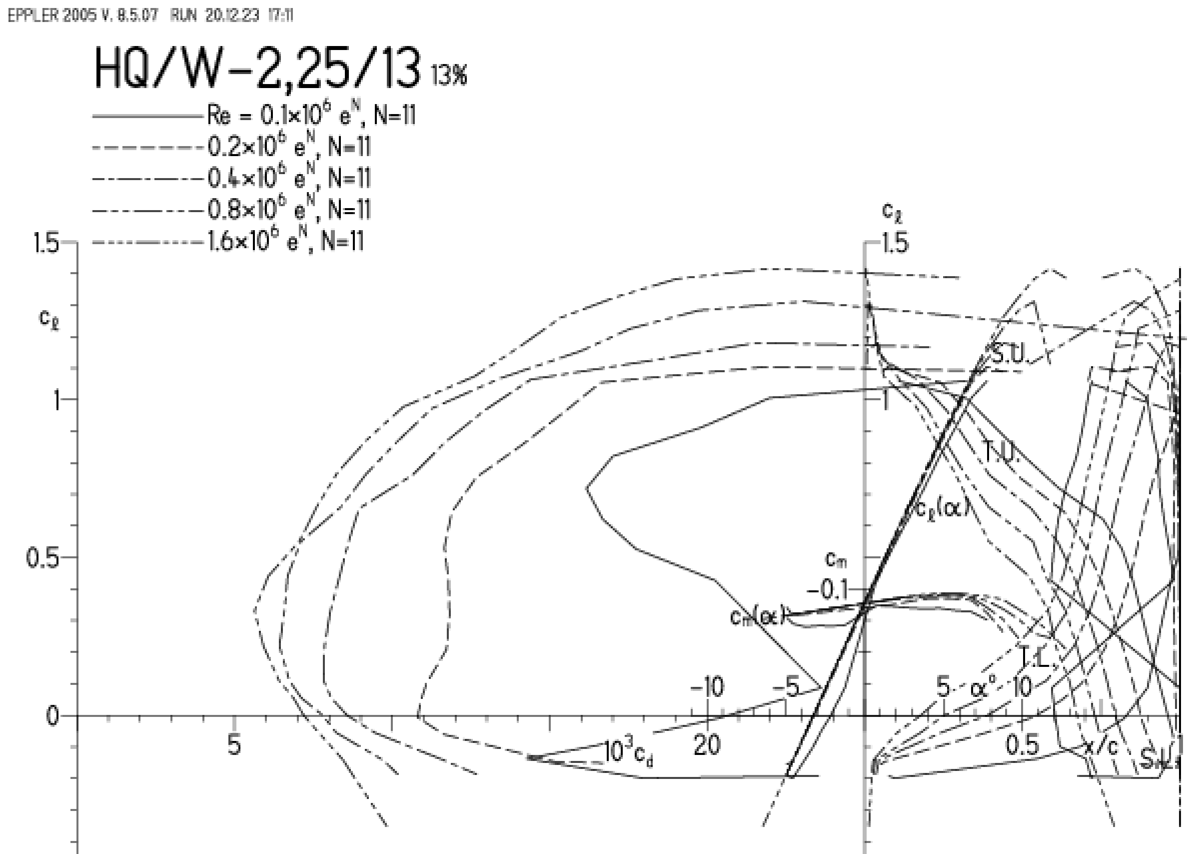


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

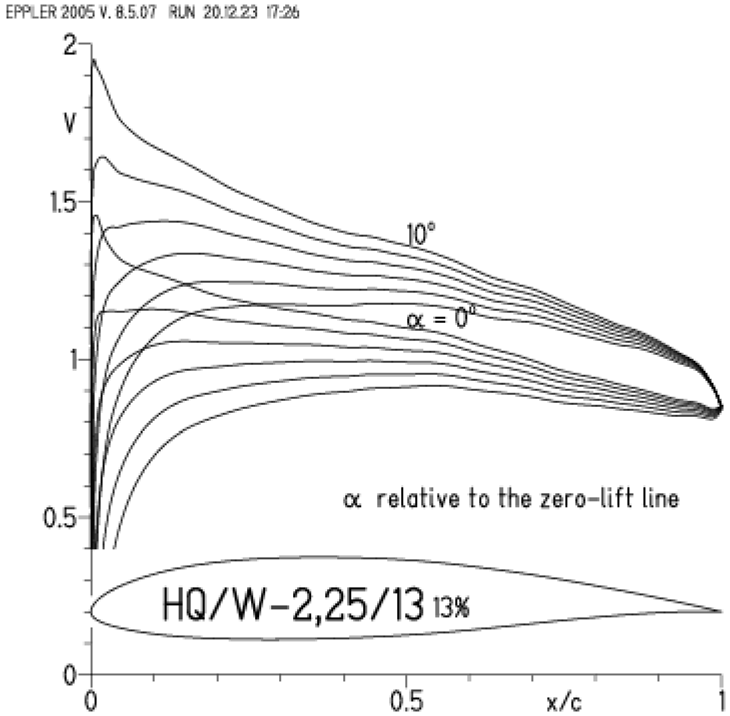


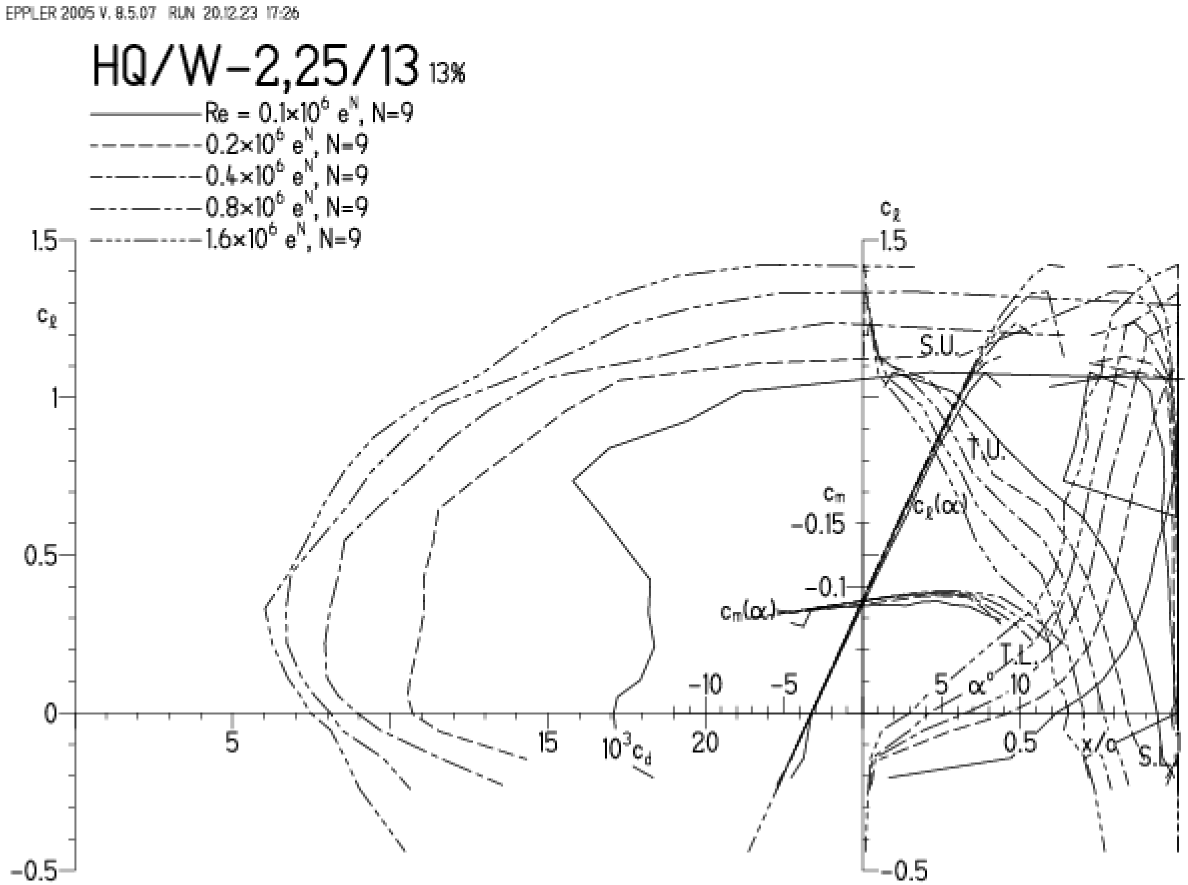
<u>HQ/W-2,25/13</u>, N=11



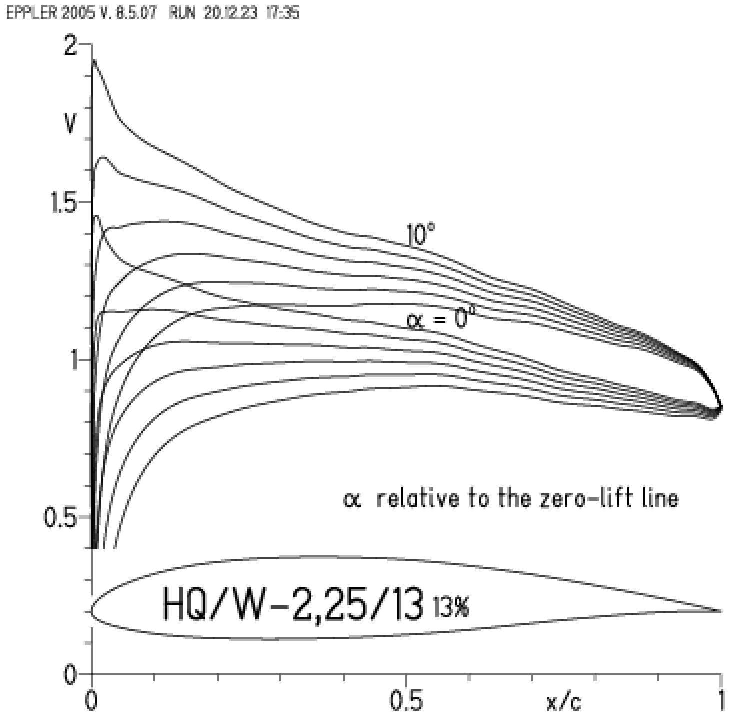


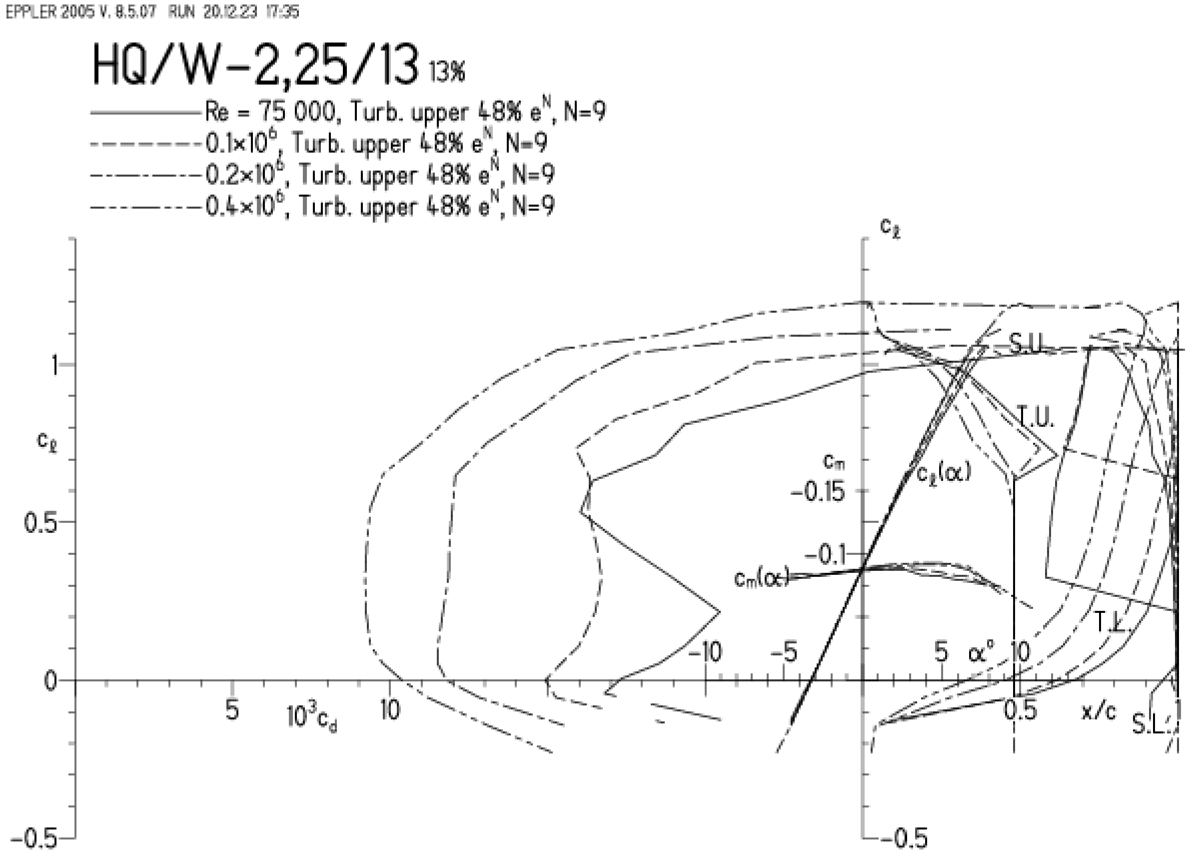
<u>HQ/W-2,25/13</u>, N=9





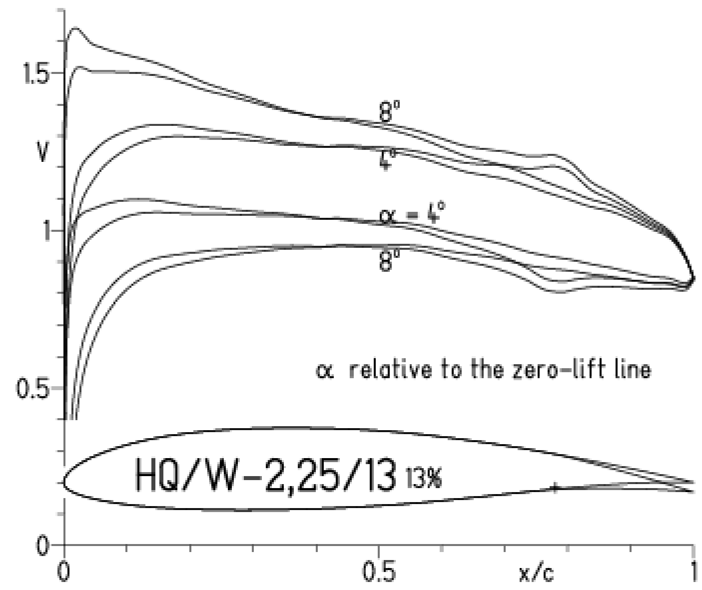
<u>HQ/W-2,25/13</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



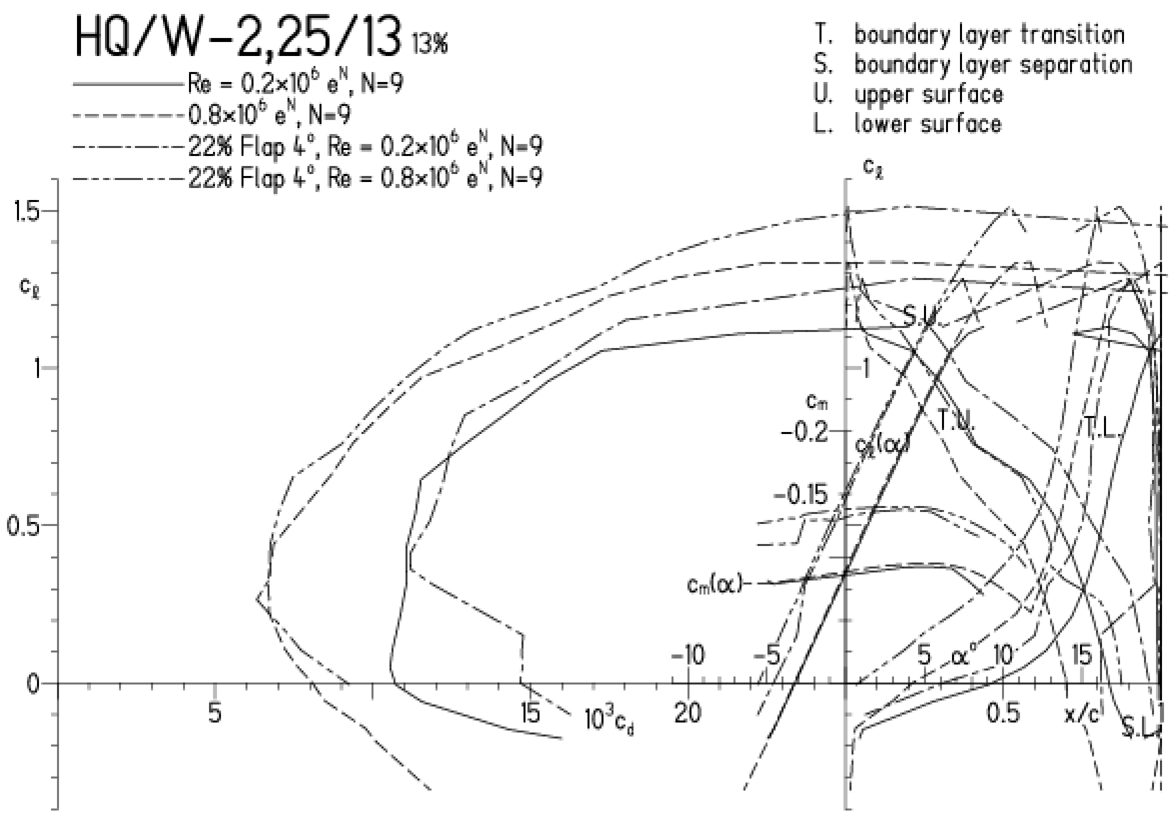


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

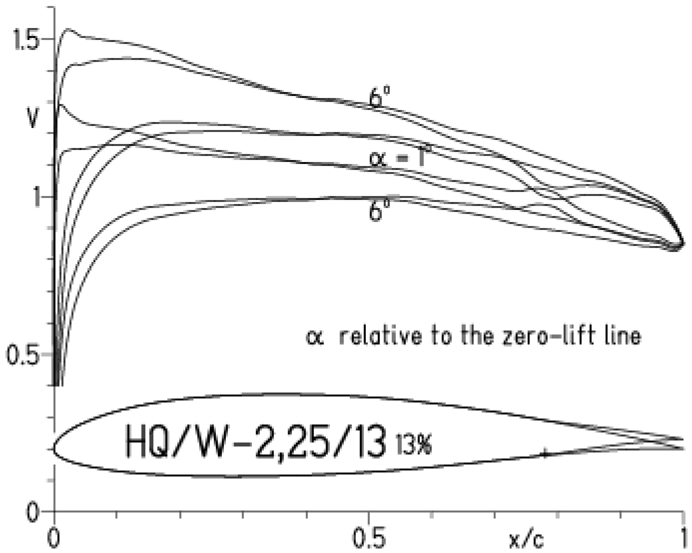


EPPLER 2005 V.

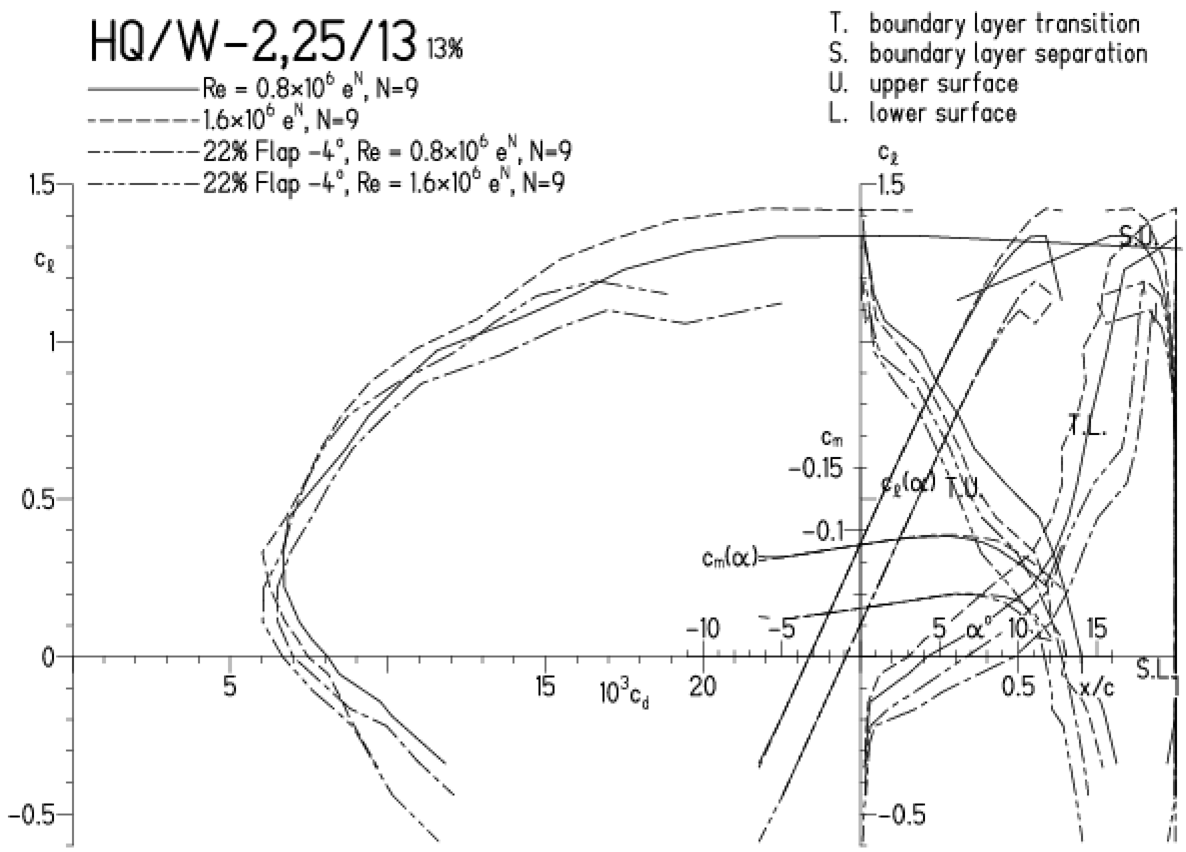


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

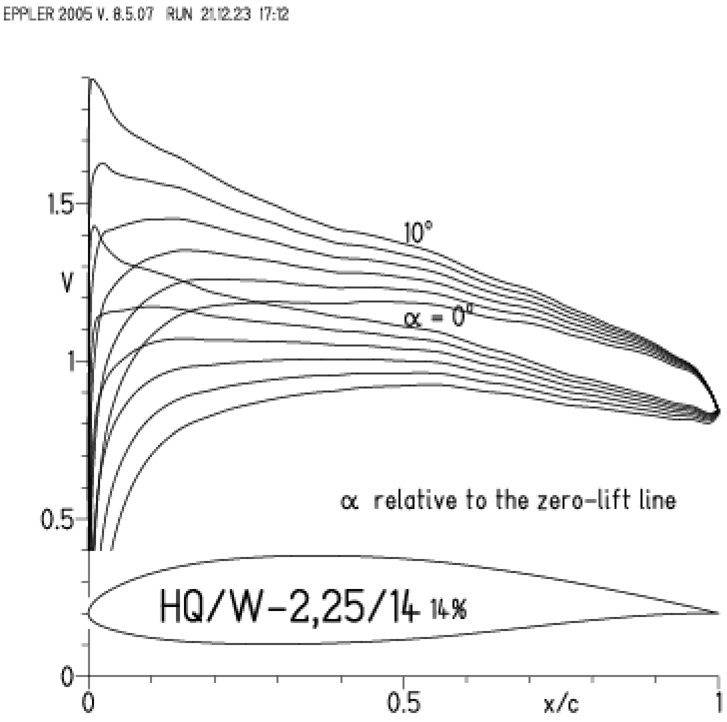
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

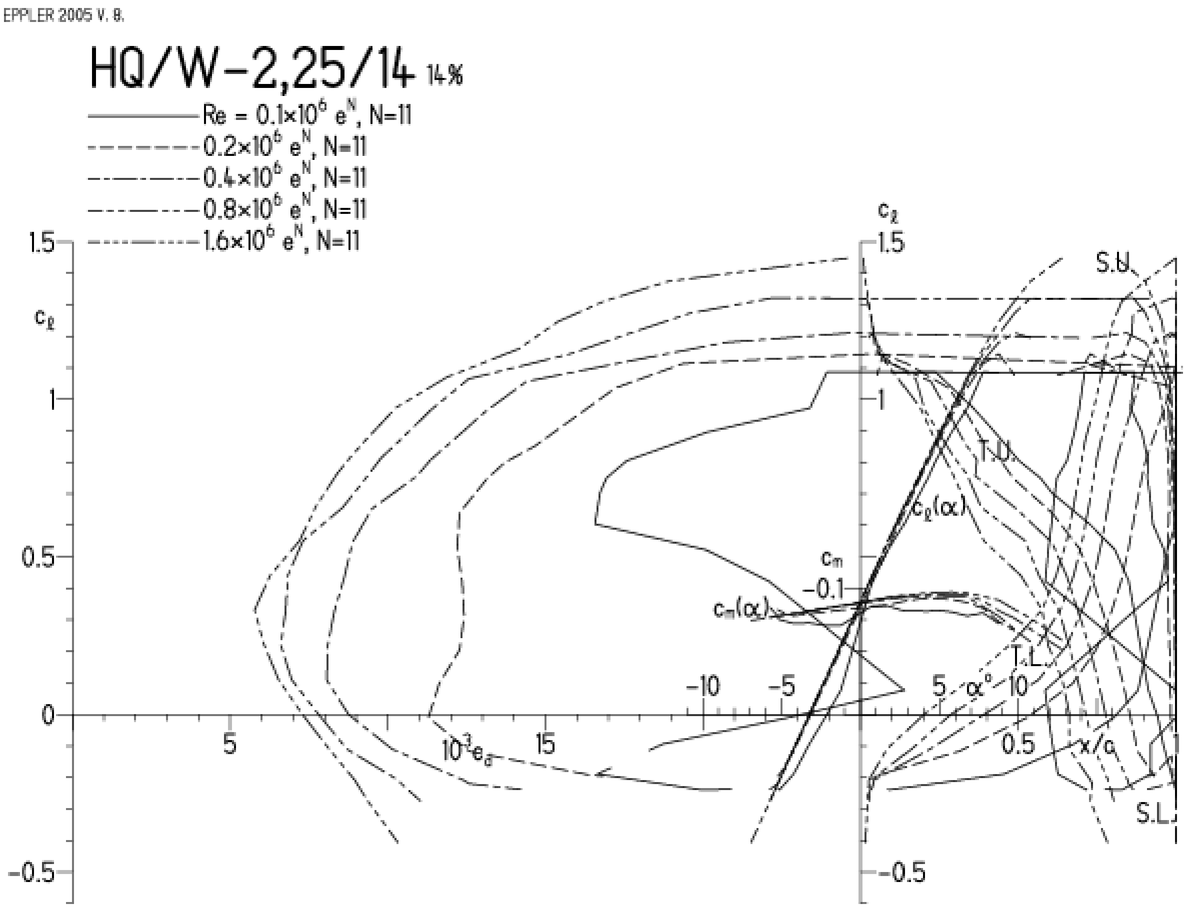


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

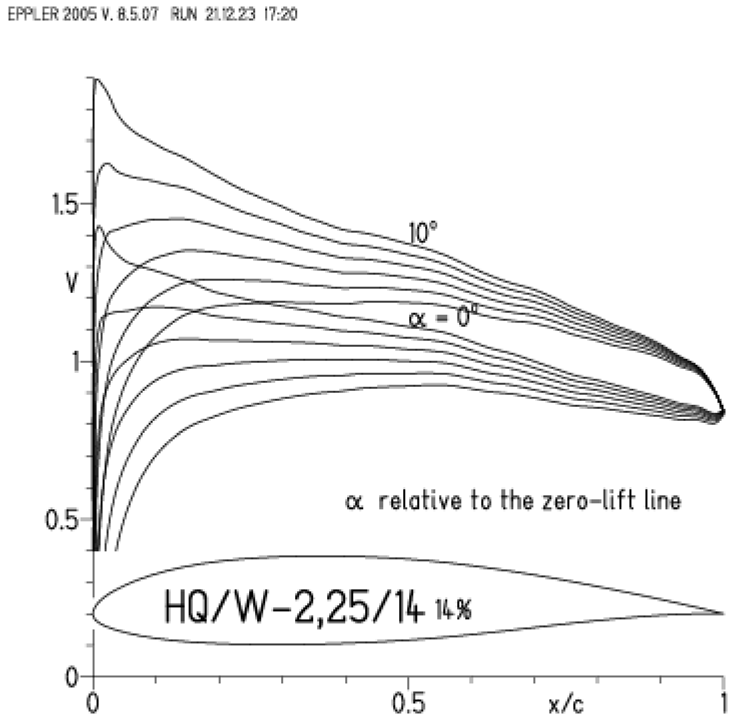


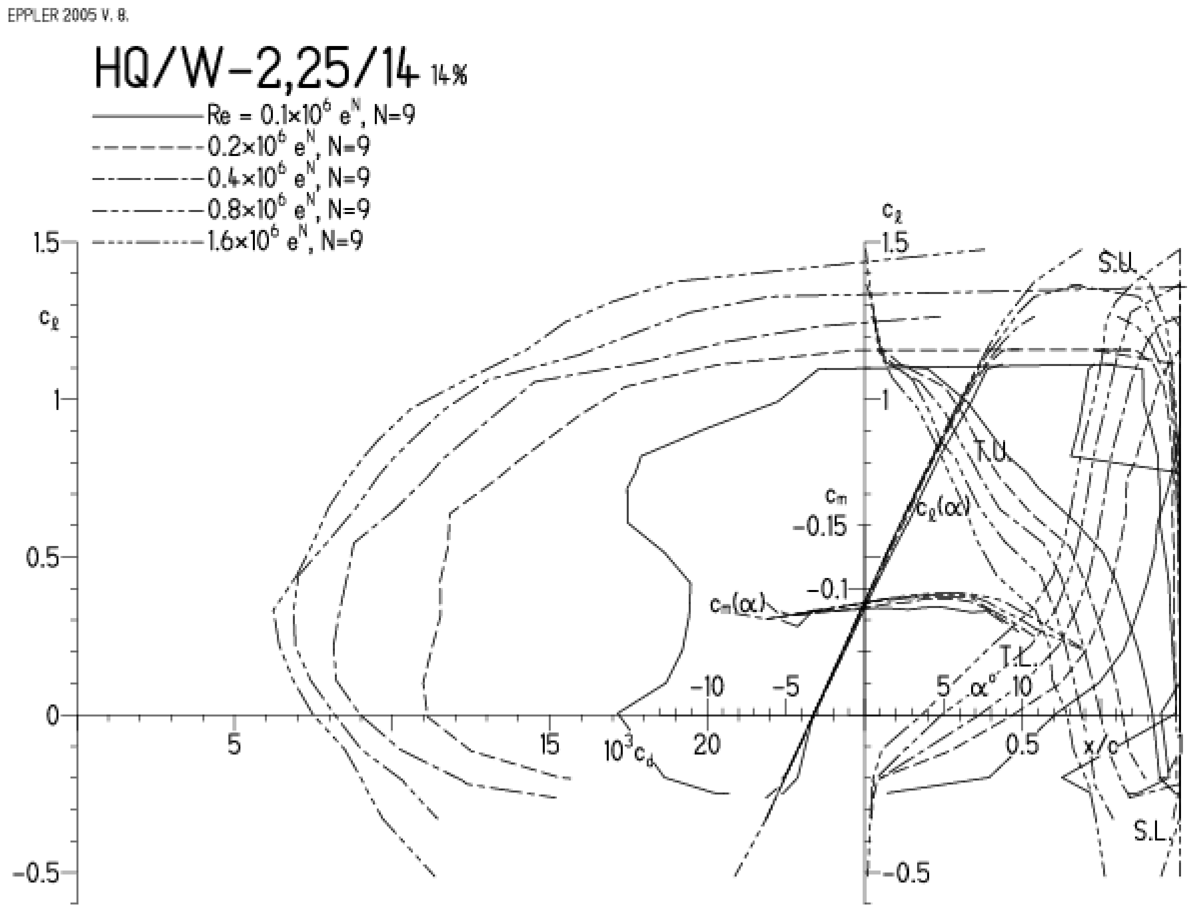
HQ/W-2,25/14, N=11



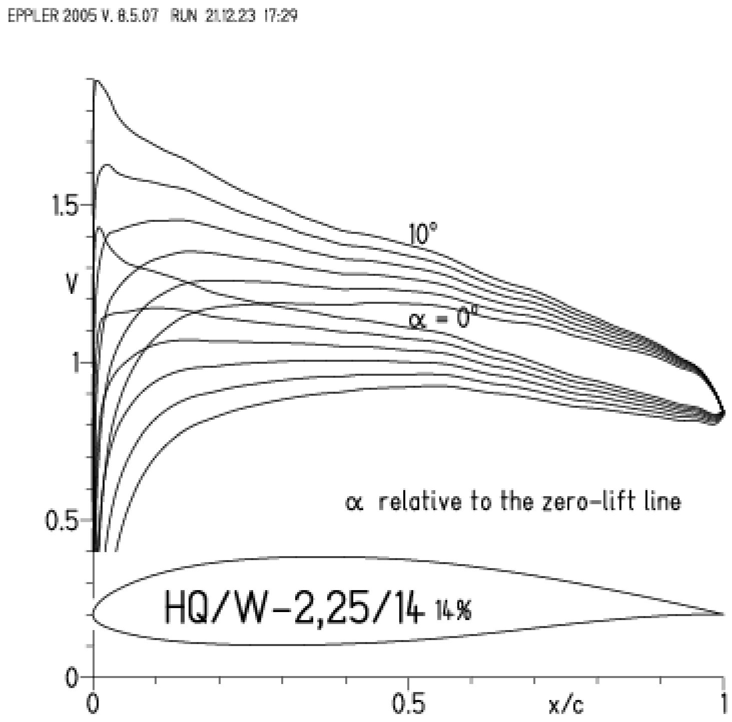


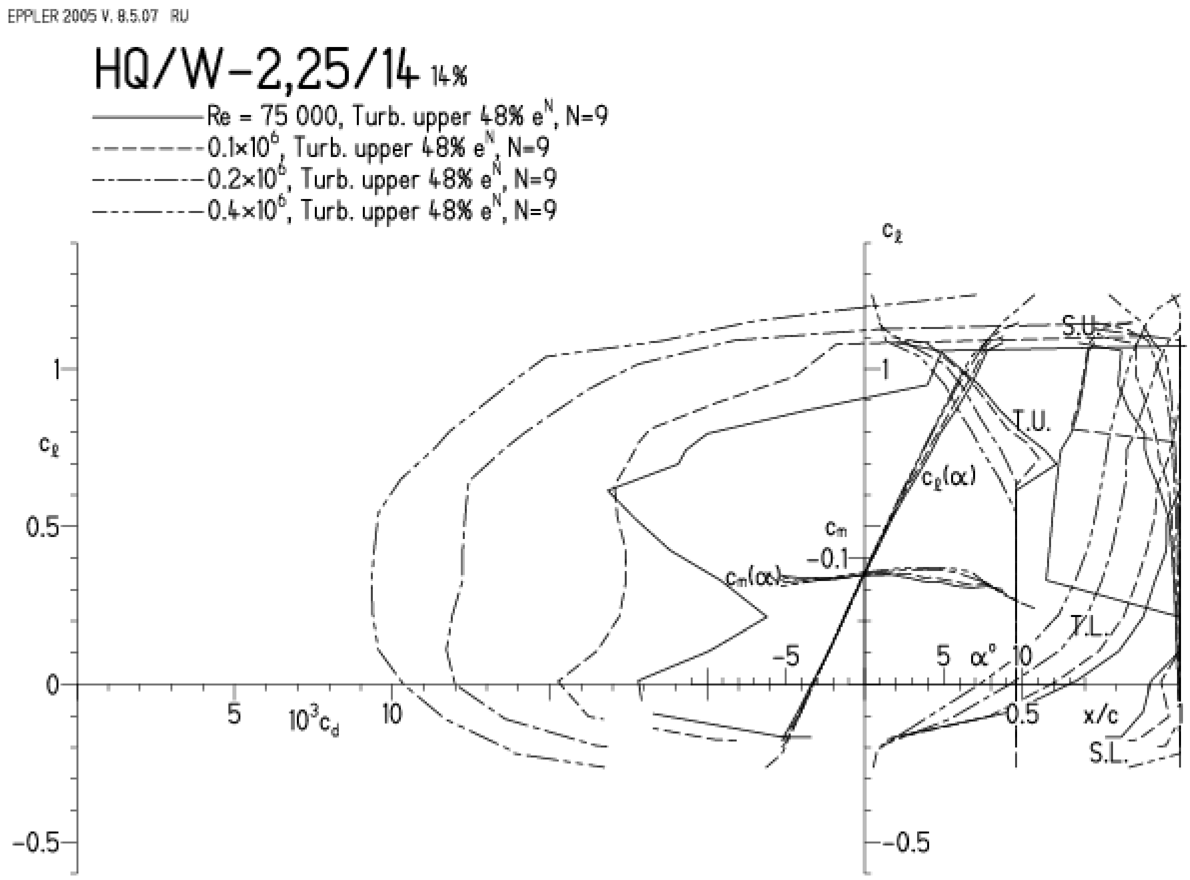
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10⁶ eᴺ, N=9
0.2×10⁶ eᴺ, N=9
0.4×10⁶ eᴺ, N=9
0.8×10⁶ eᴺ, N=9
1.6×10⁶ eᴺ, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10³c_d
20
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−10
−5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1
−0.5

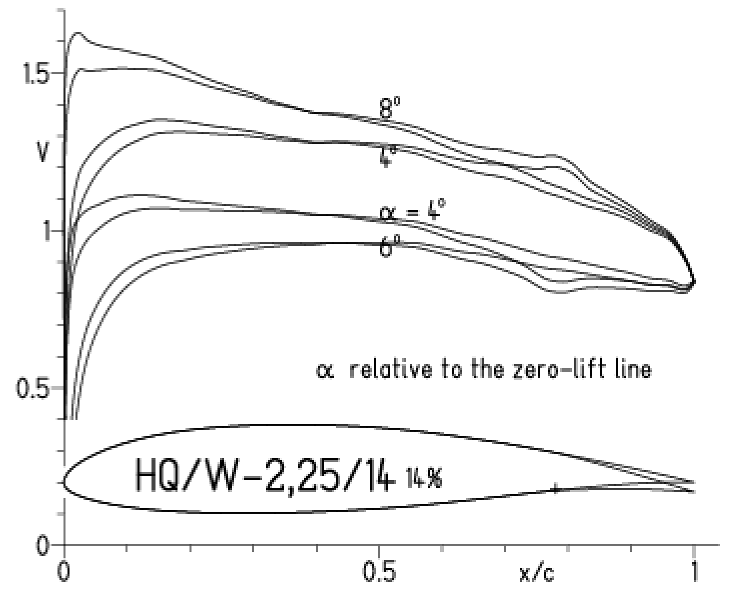
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



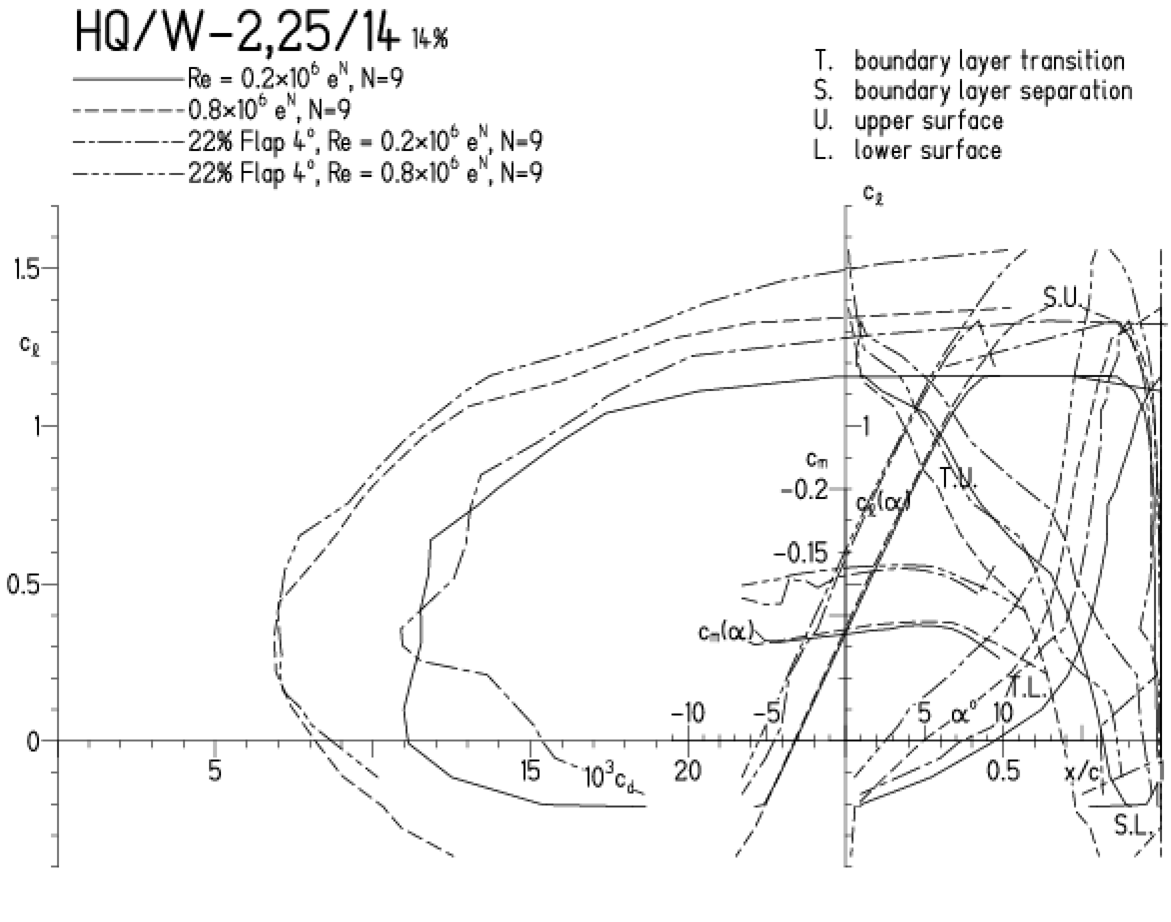


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

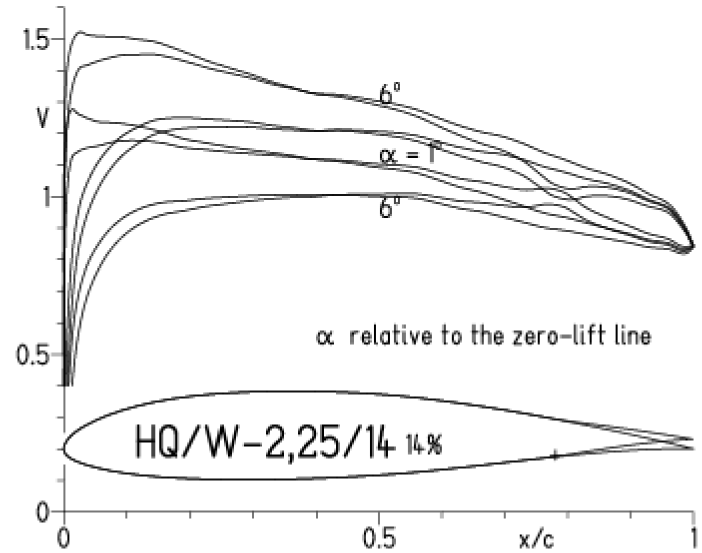


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

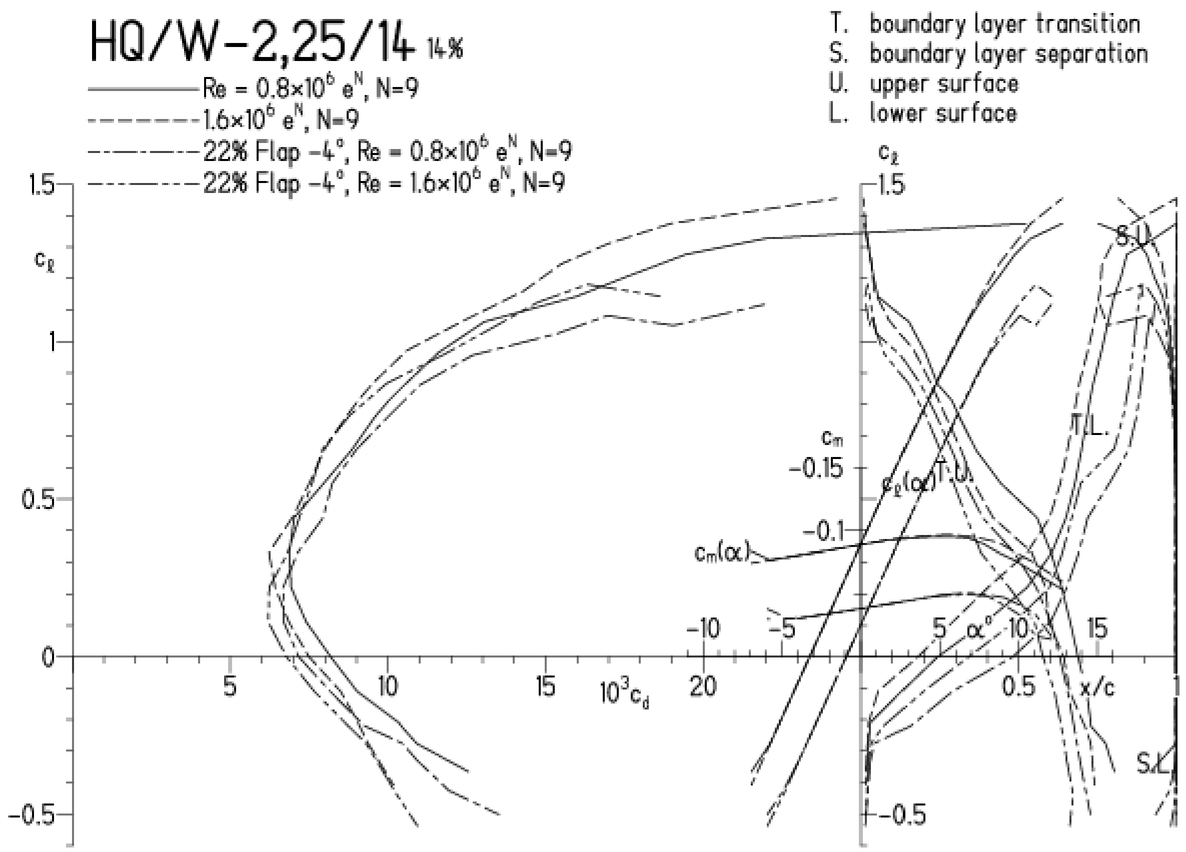


HQW-2,25/14, N=9 mit -4° Wölbklappenausschlag

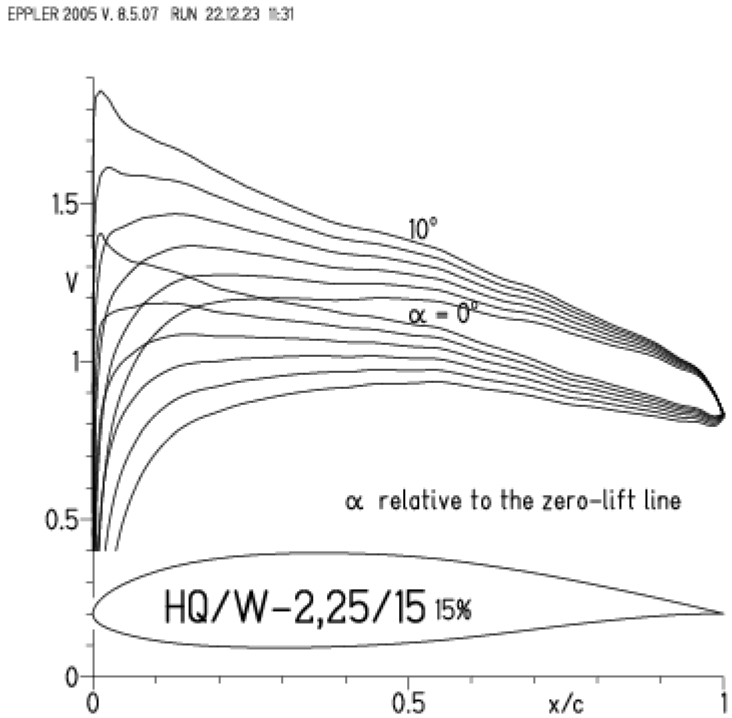
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

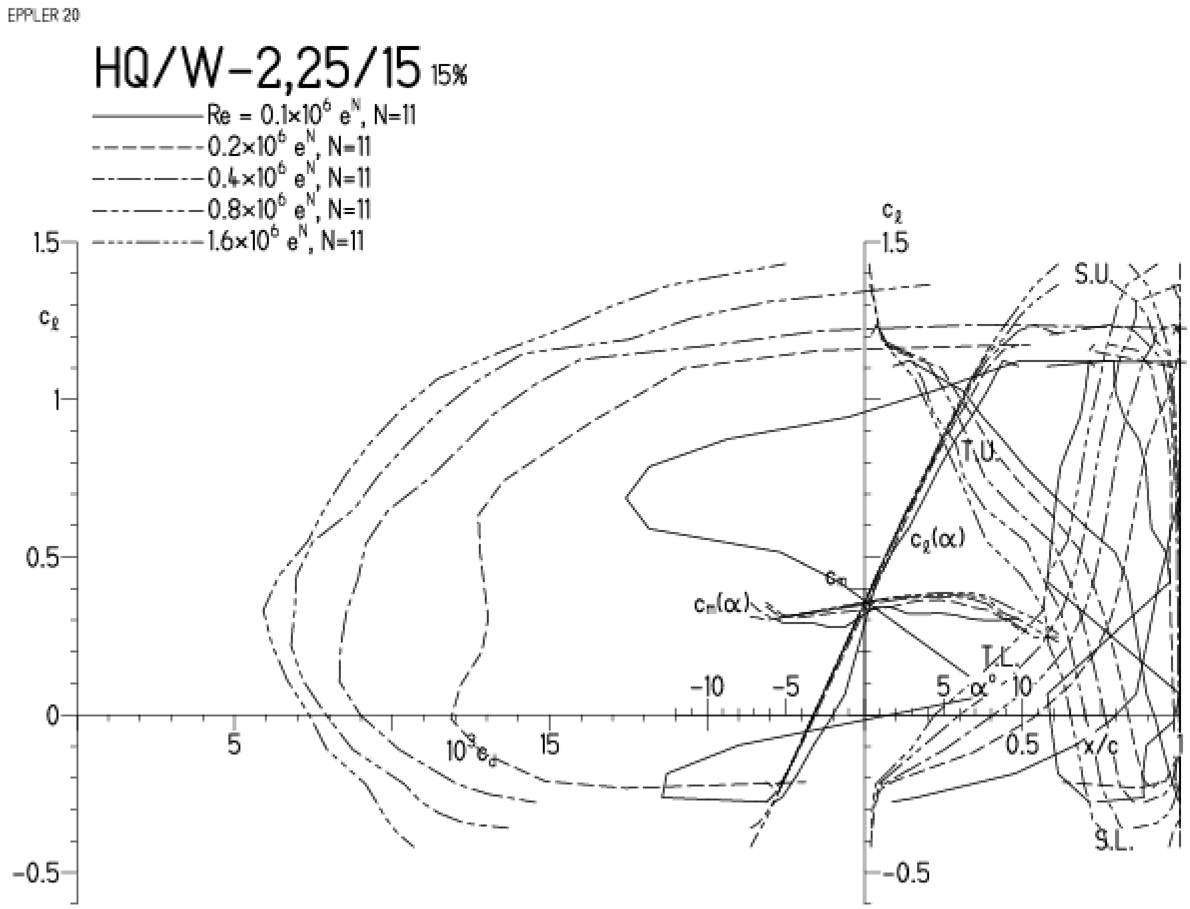


EPPLER 2005 V. 8.5.07

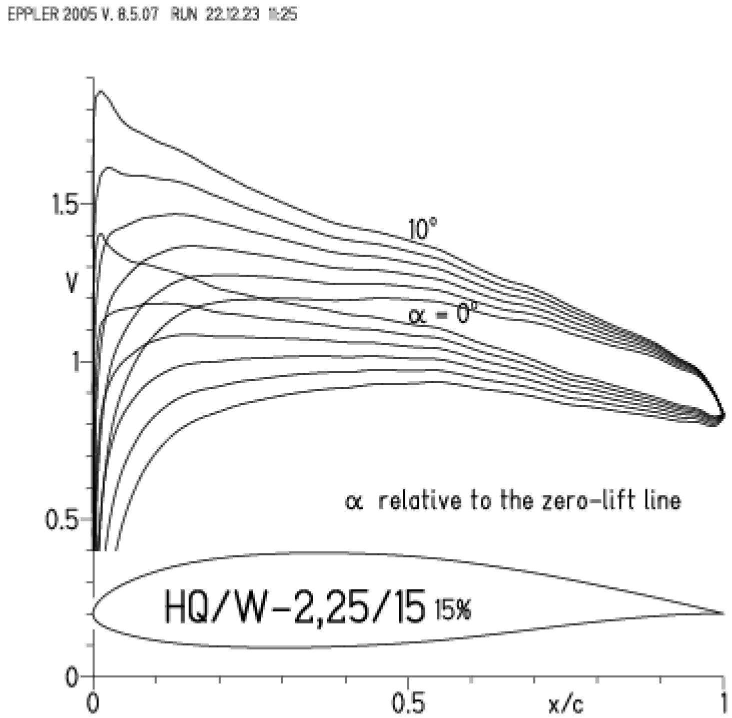


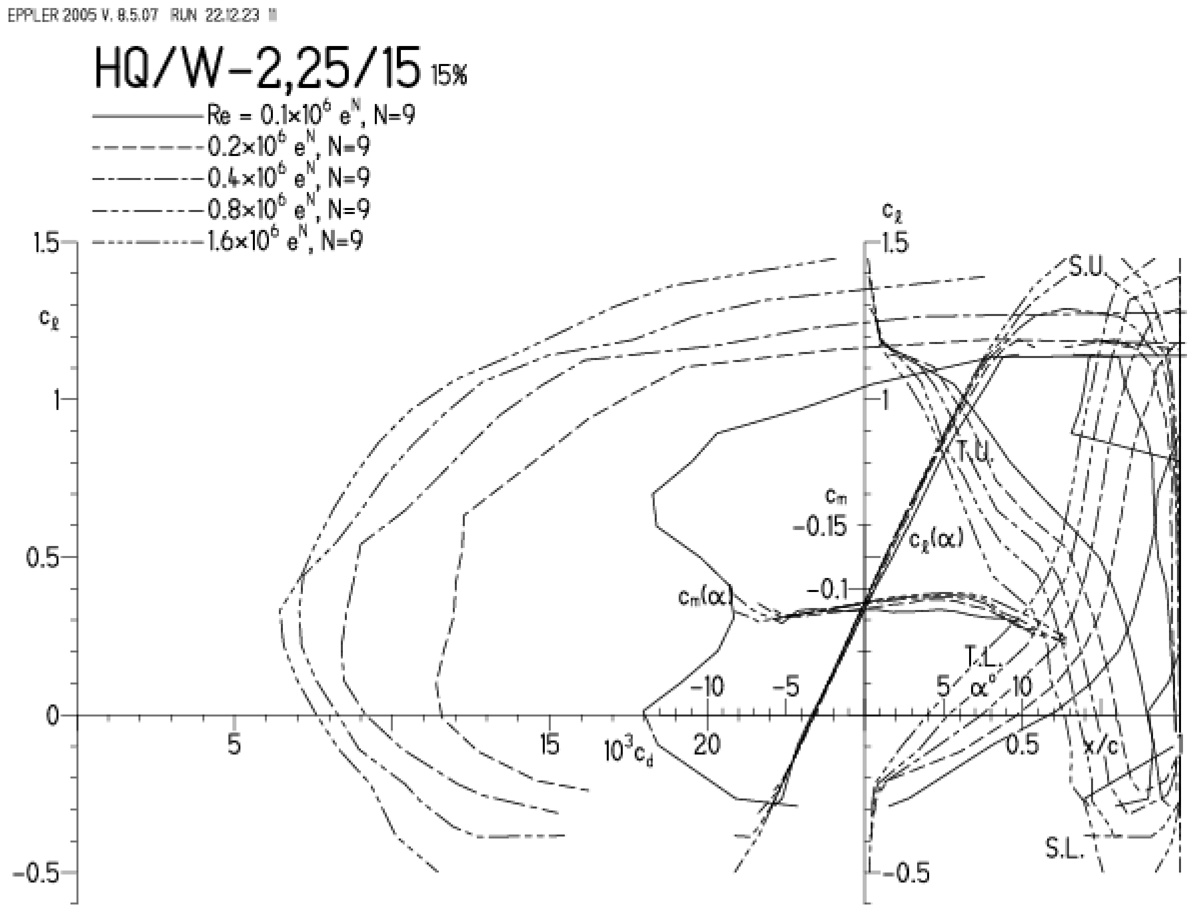
<u>HQ/W-2,25/15</u>, N=11



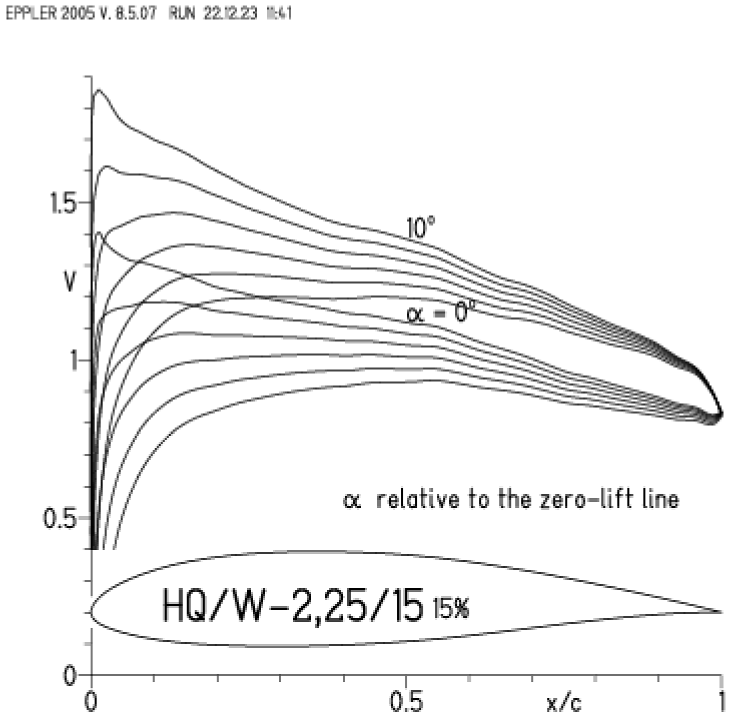


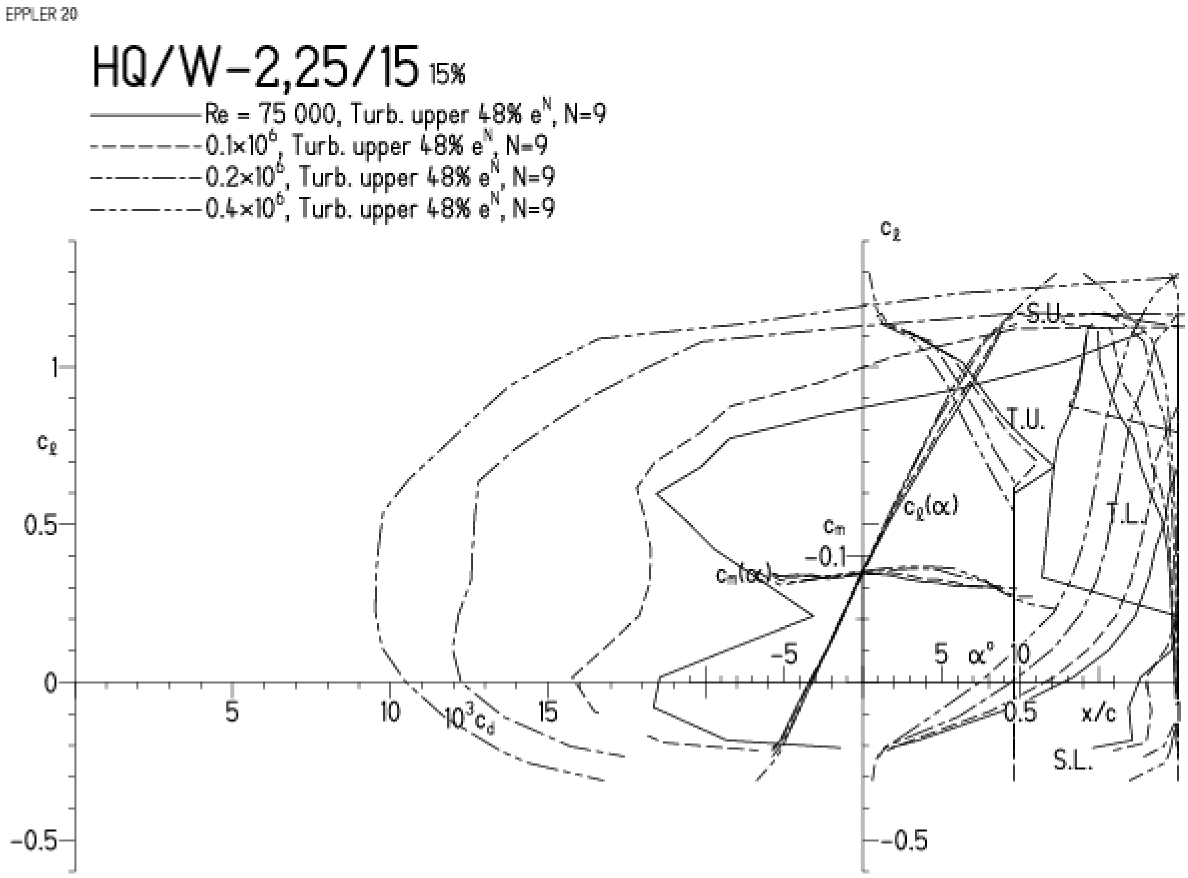
HQ/W-2,25/15, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/15 15%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11
HQ/W-2,25/15 15%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_l
1
0.5
0
-0.5
5
15
10^3 c_d
20
c_m
-0.15
-0.1
c_m(α)
c_l(α)
-10
-5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/15, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



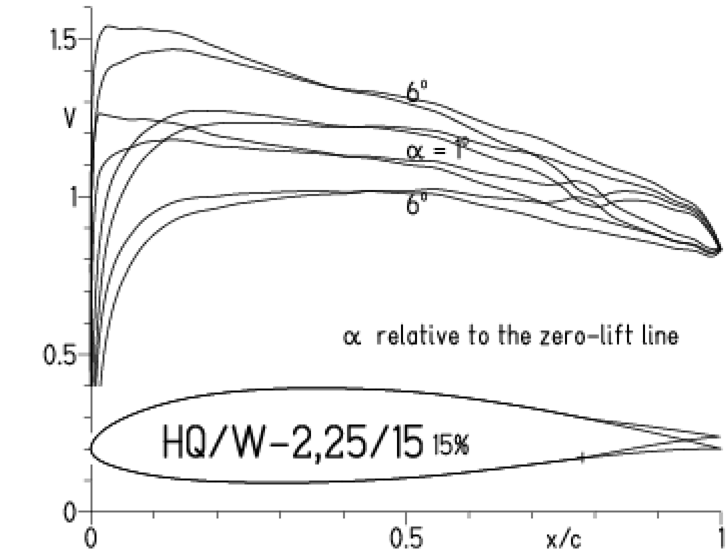


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

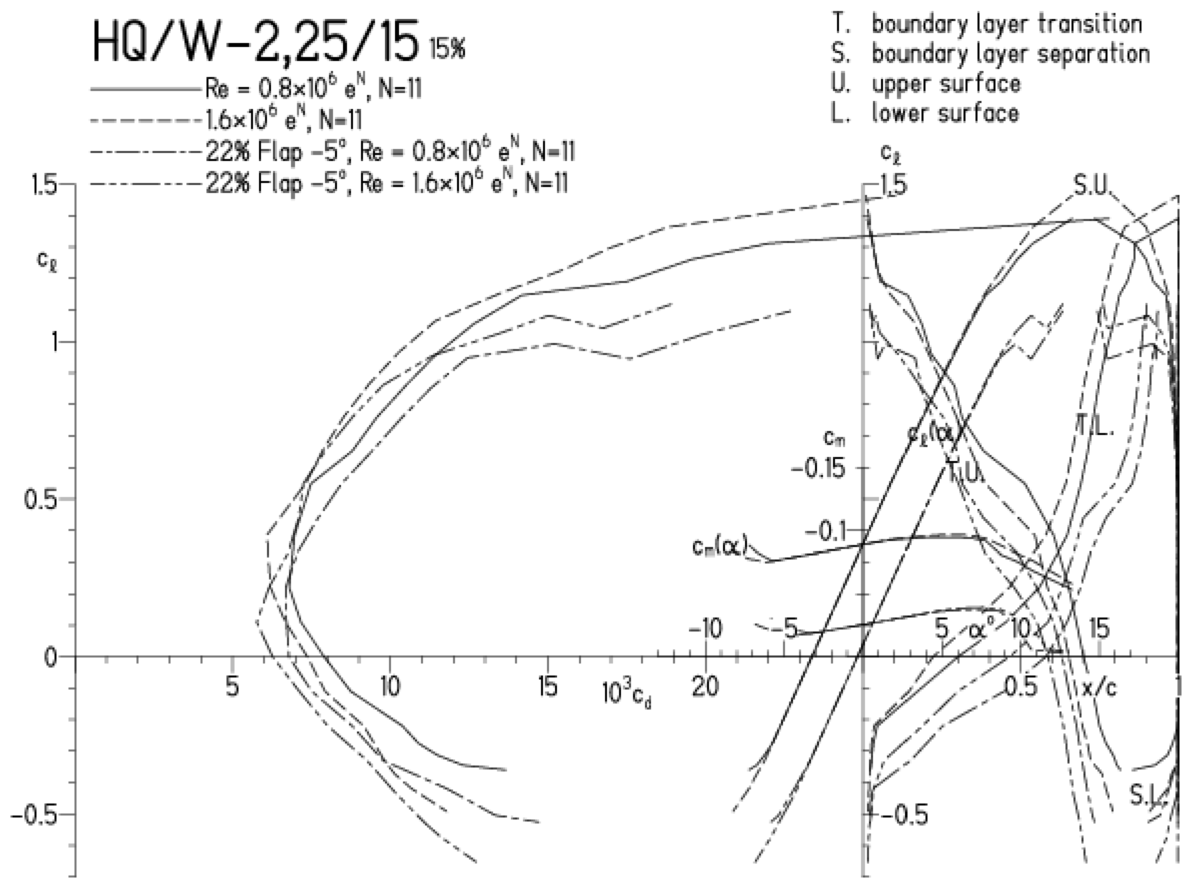
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

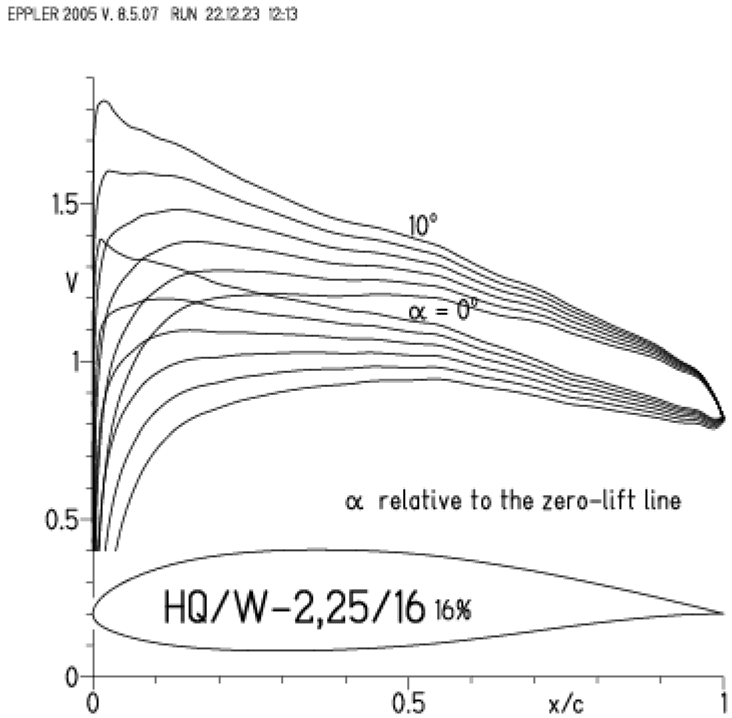
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

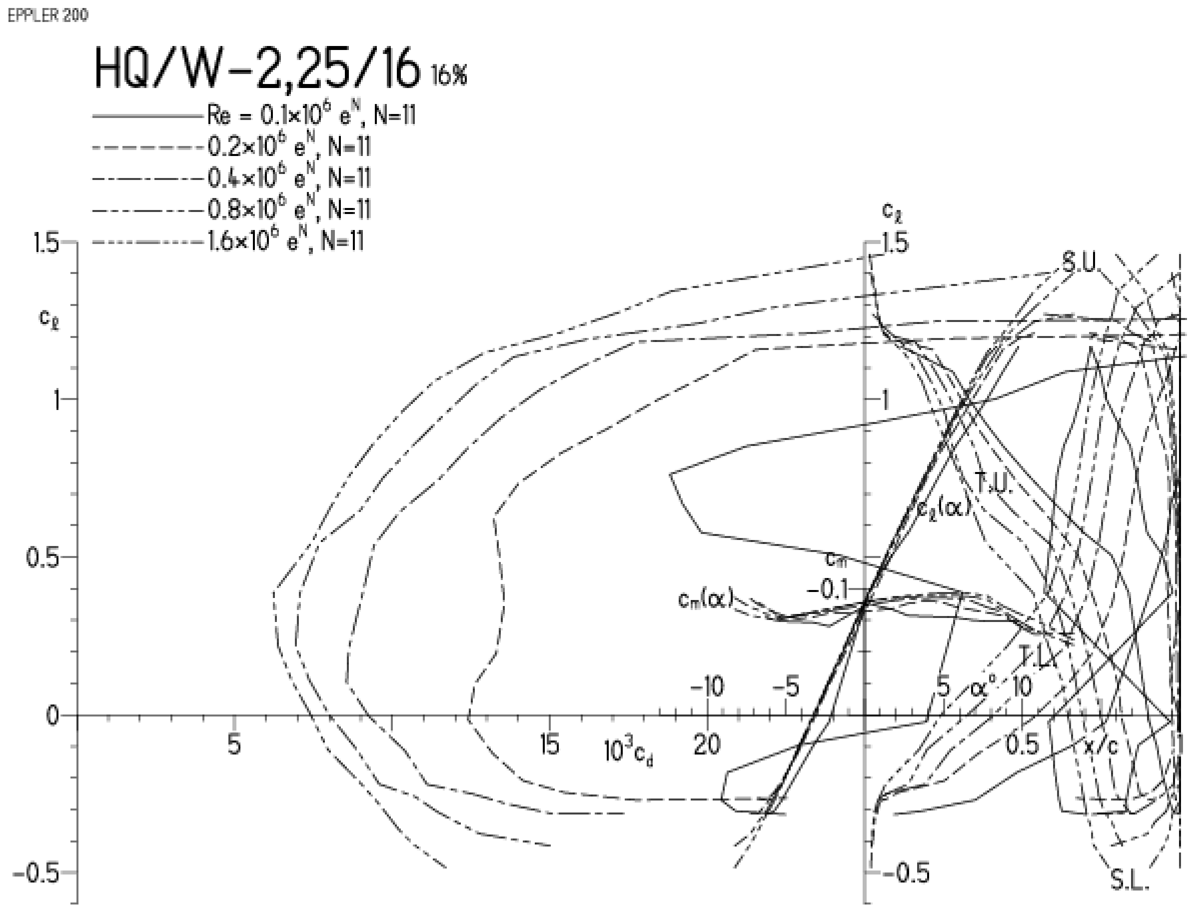


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

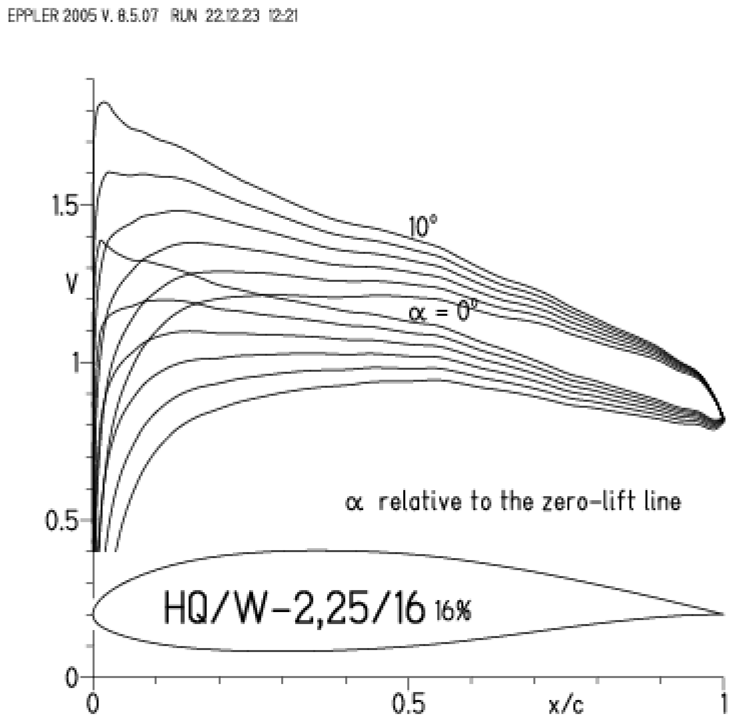


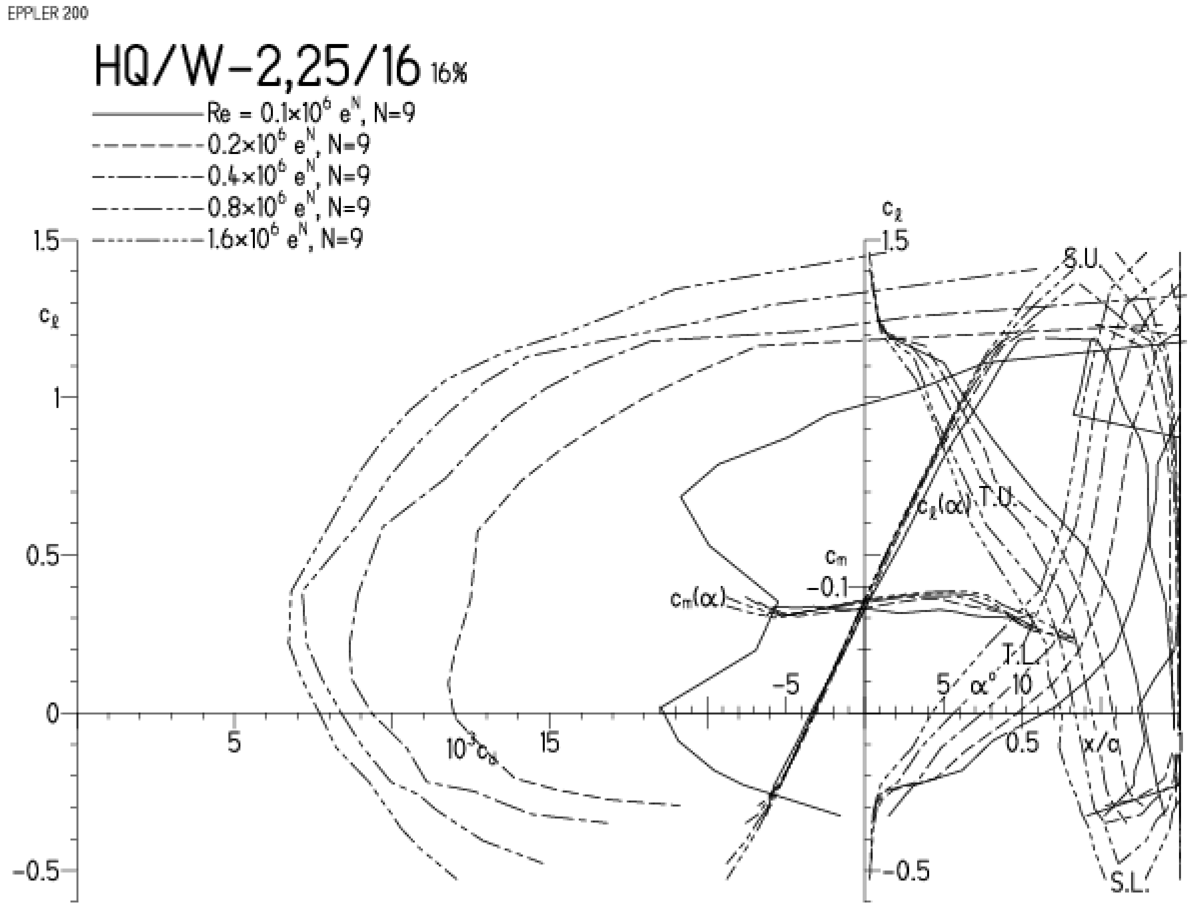
HQ/W-2,25/16, N=11



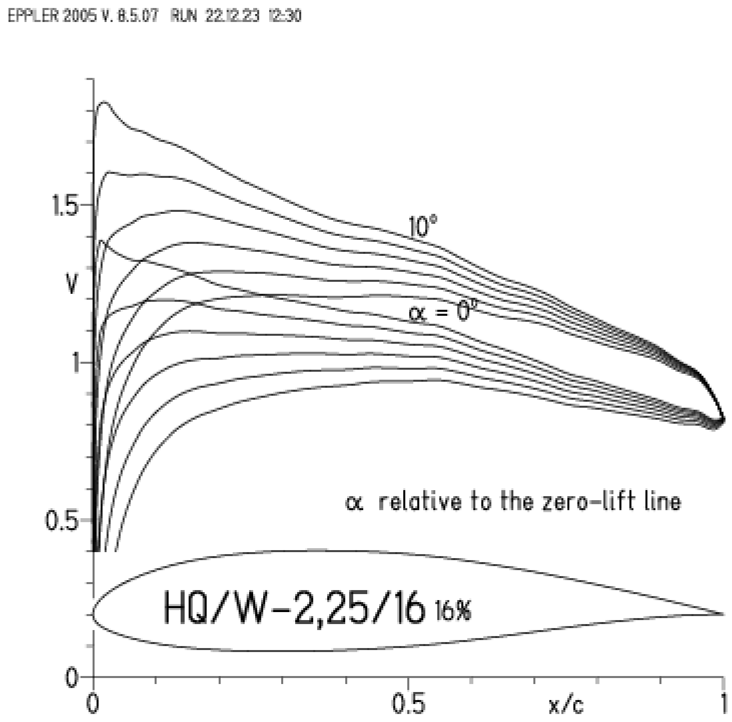


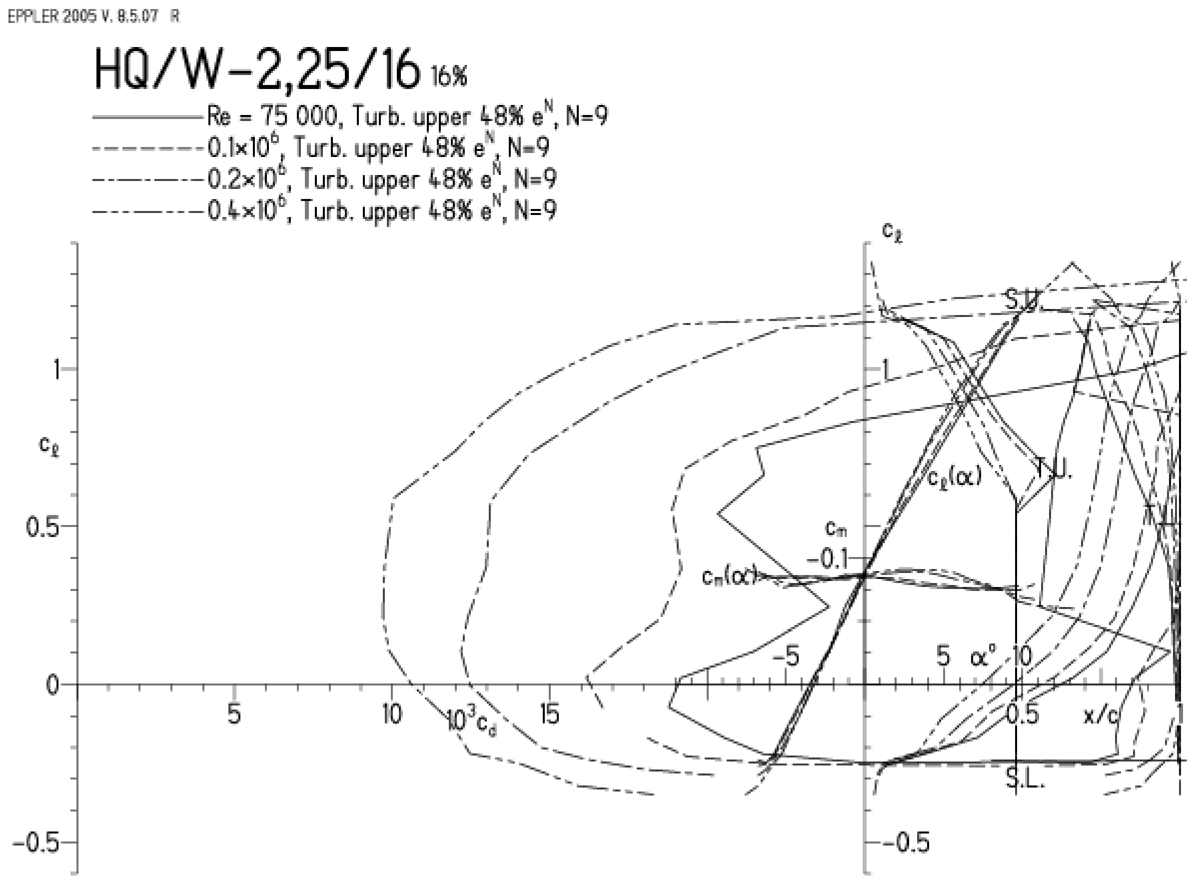
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1


EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^-3 c_d
15
c_ℓ
1.5
S.U.
c_ℓ(α) T.U.
c_m
-0.1
c_m(α)
-5
5
α°
10
T.L.
0.5
x/c
1
-0.5
S.L.

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



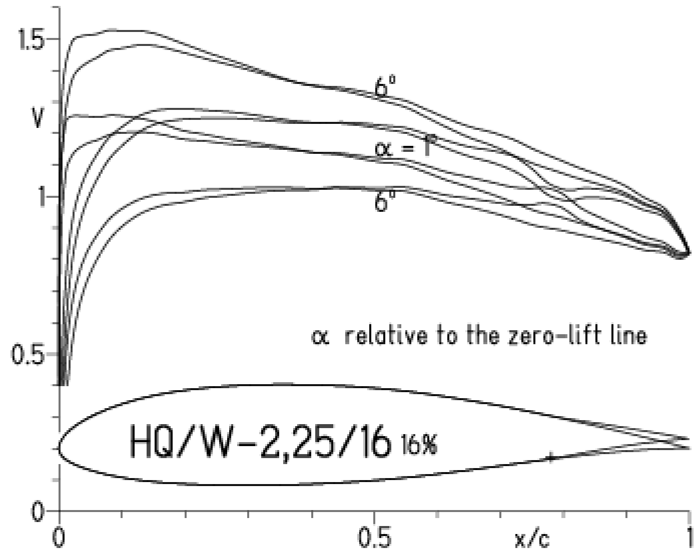


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

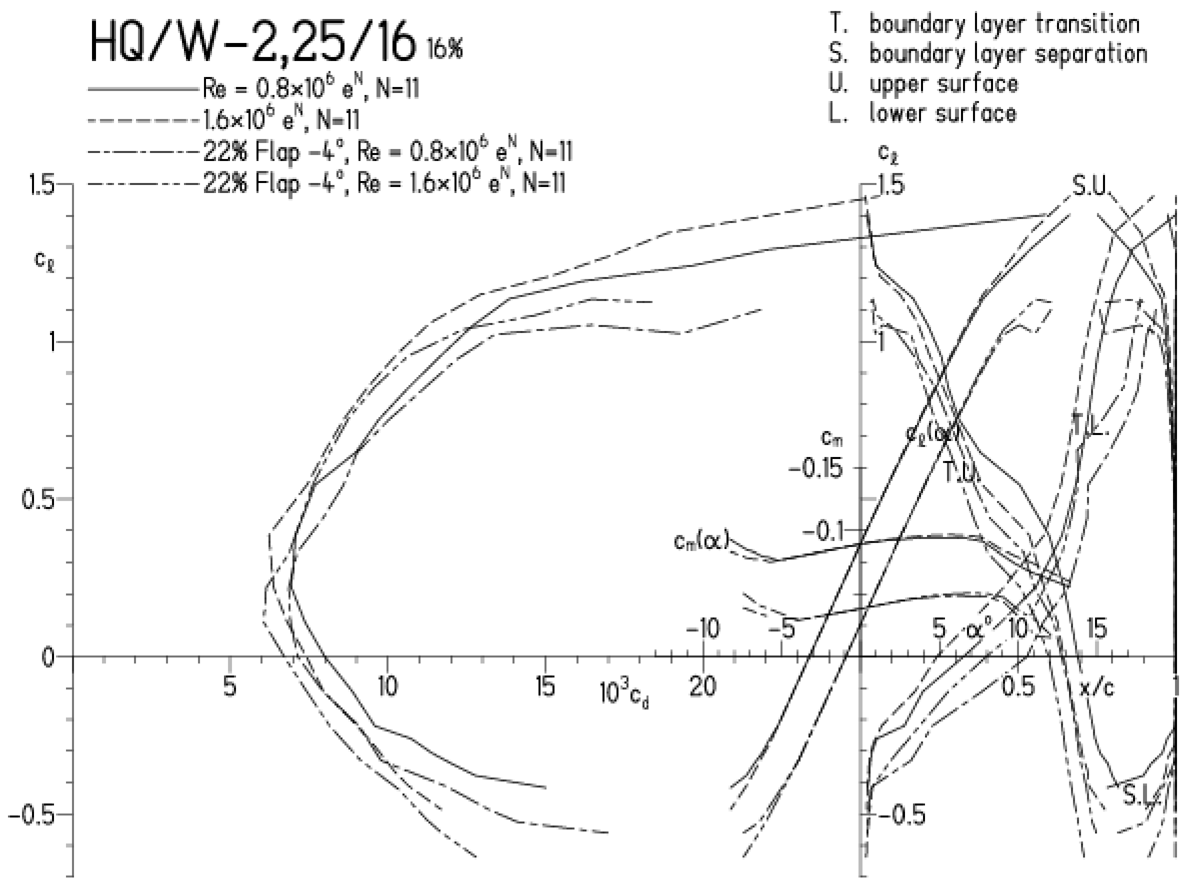
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/16</u>, N=11 mit -4° Wölbklappenausschlag

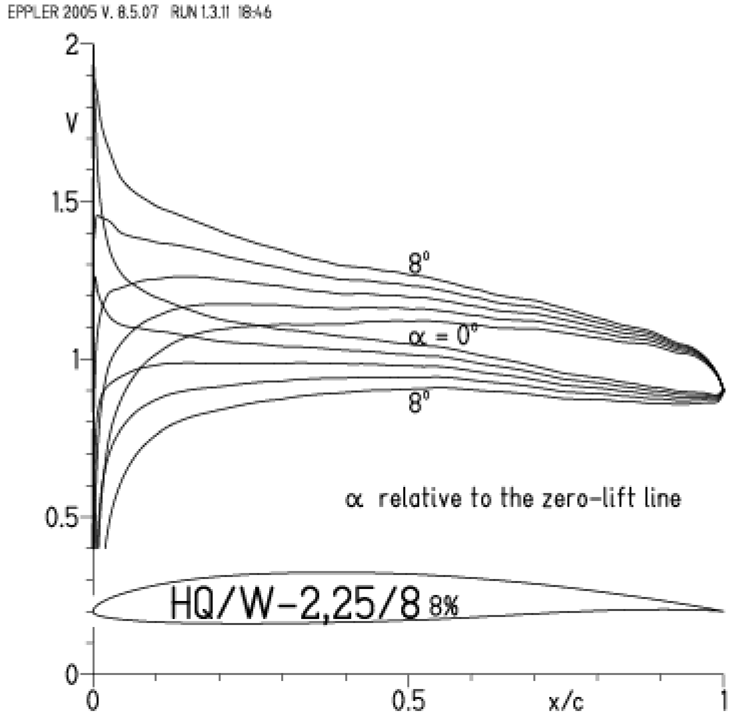
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

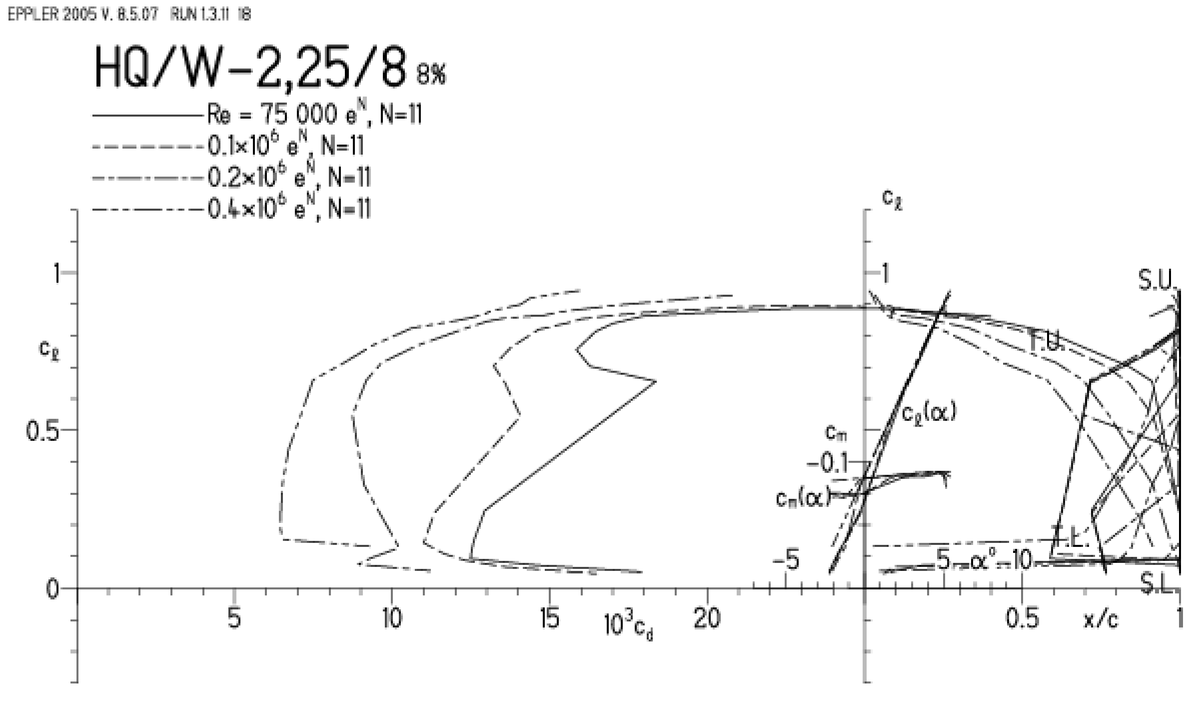


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

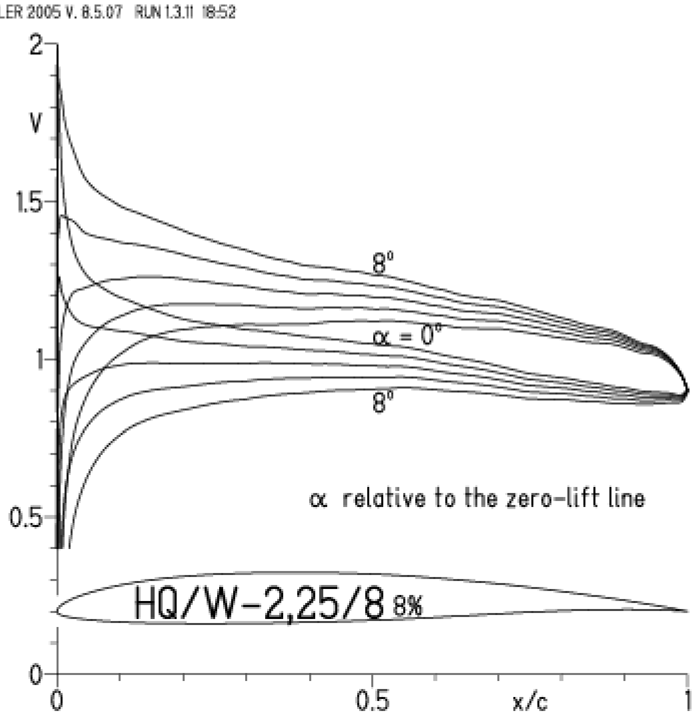


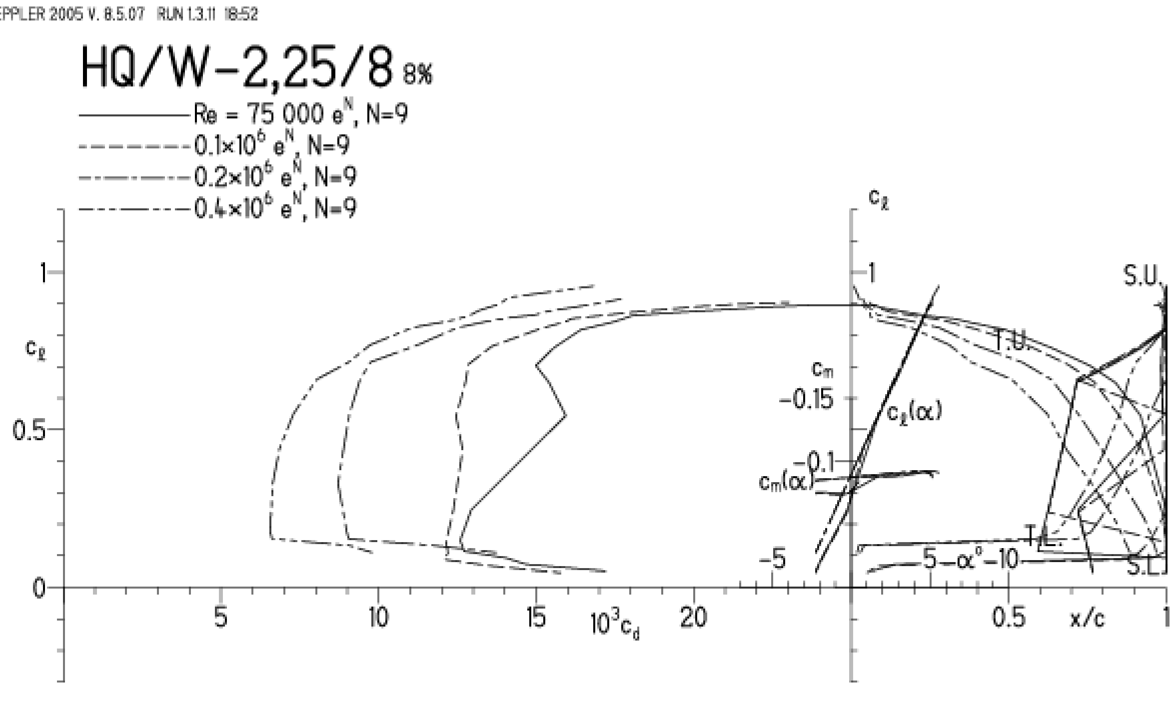
<u>HQ/W-2,25/8</u>, N=11



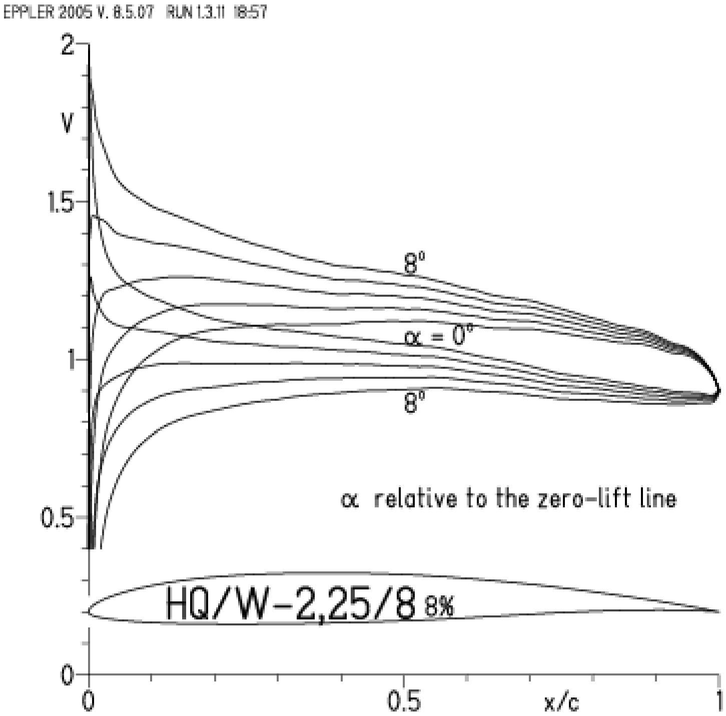


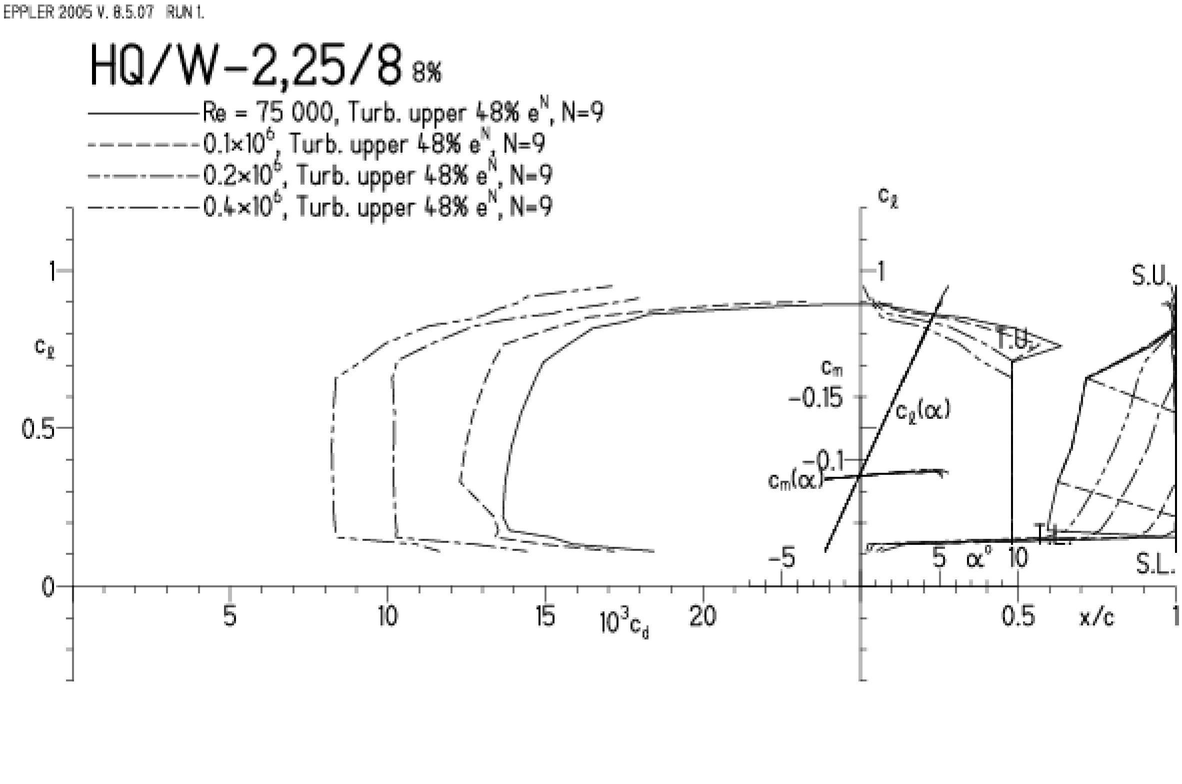
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

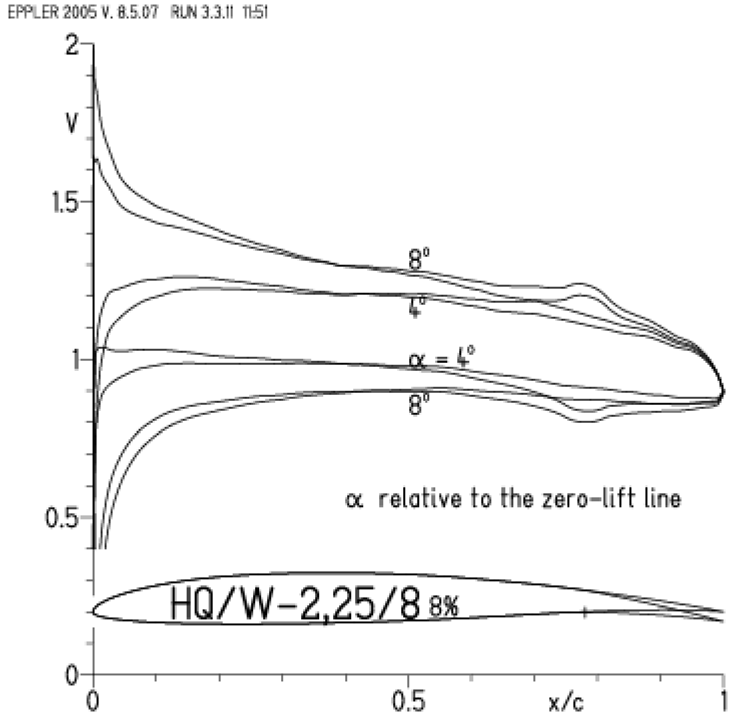

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
c_l(α)
-0.1
c_m(α)
-5
5 -α°- 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

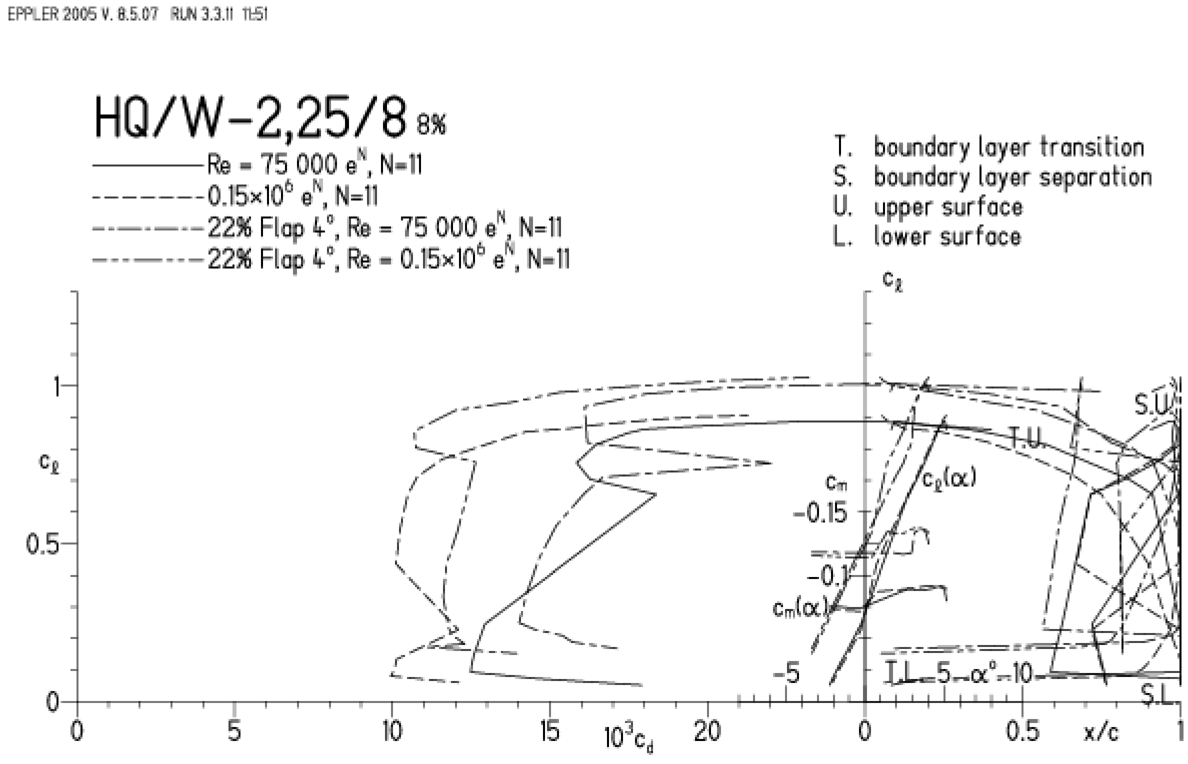
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



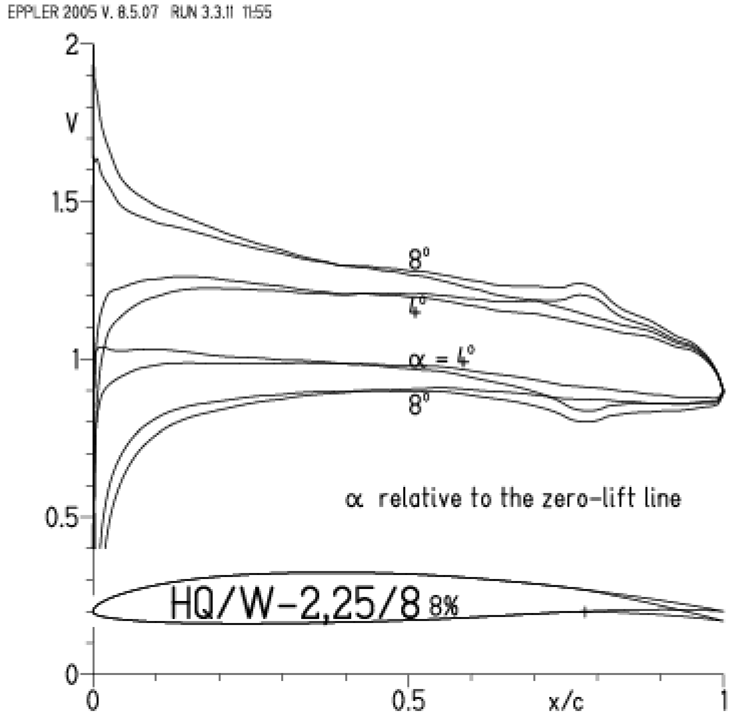


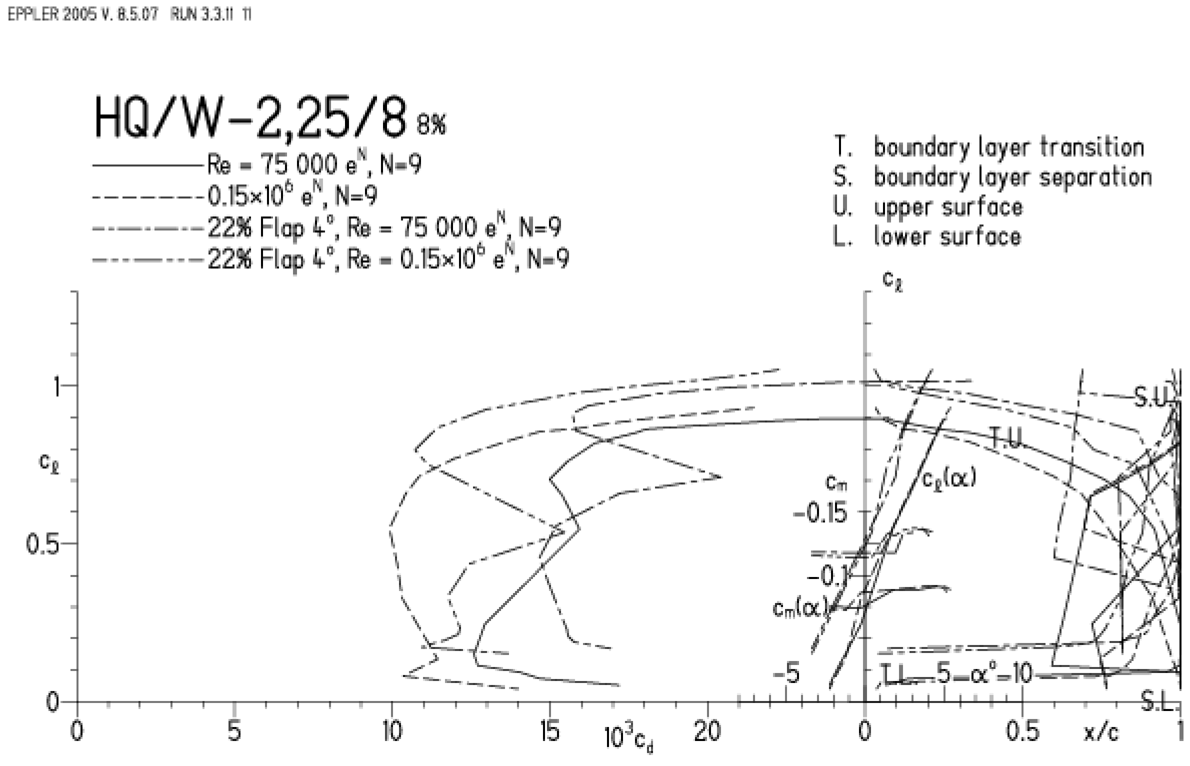
<u>HQ/W-2,25/8</u>, N=11, mit +4° Wölbklappenausschlag



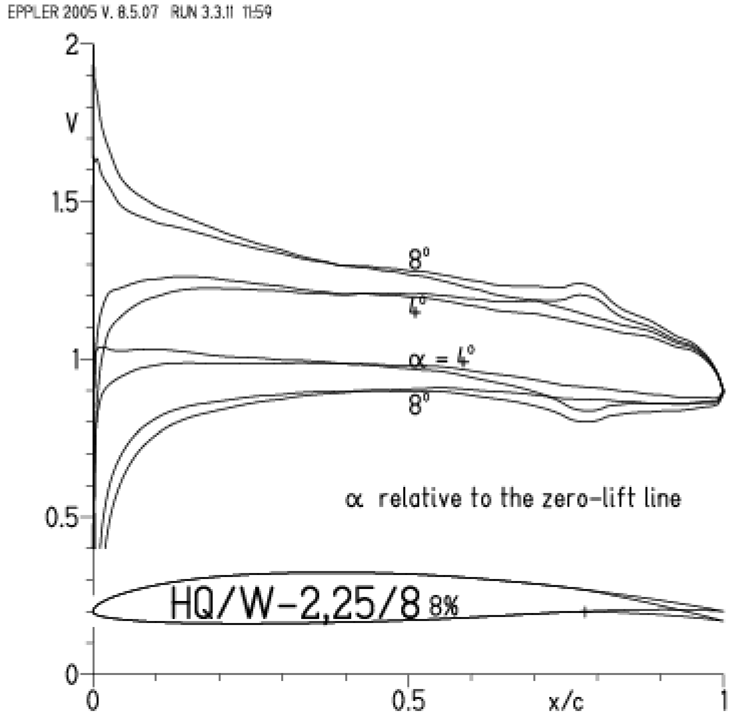


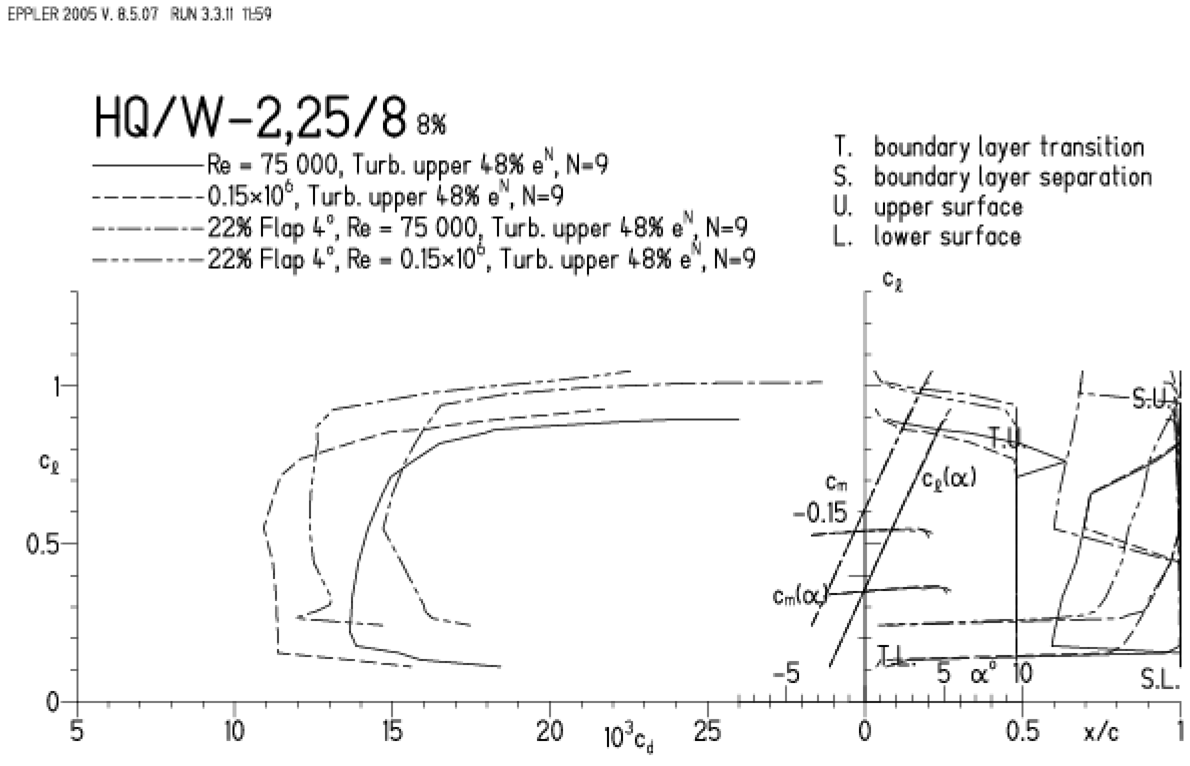
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag



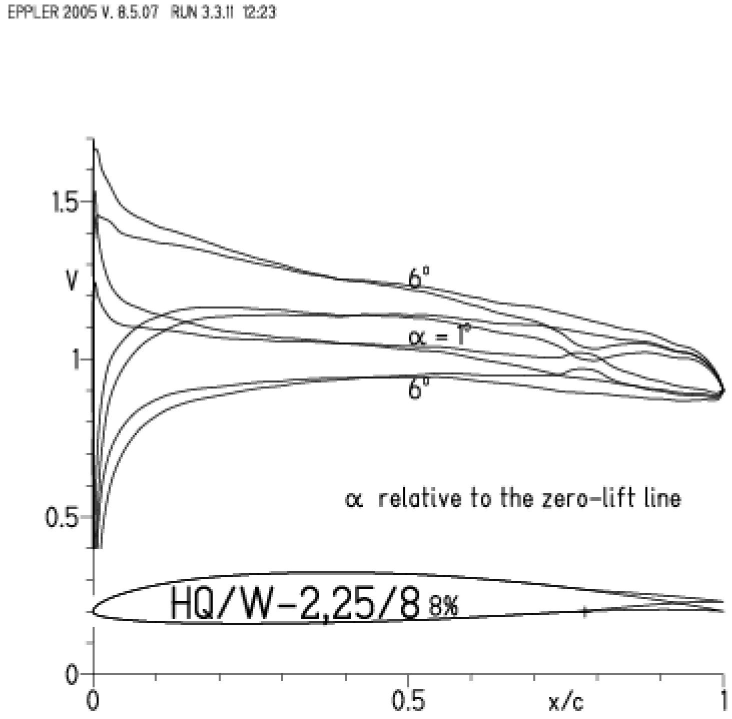


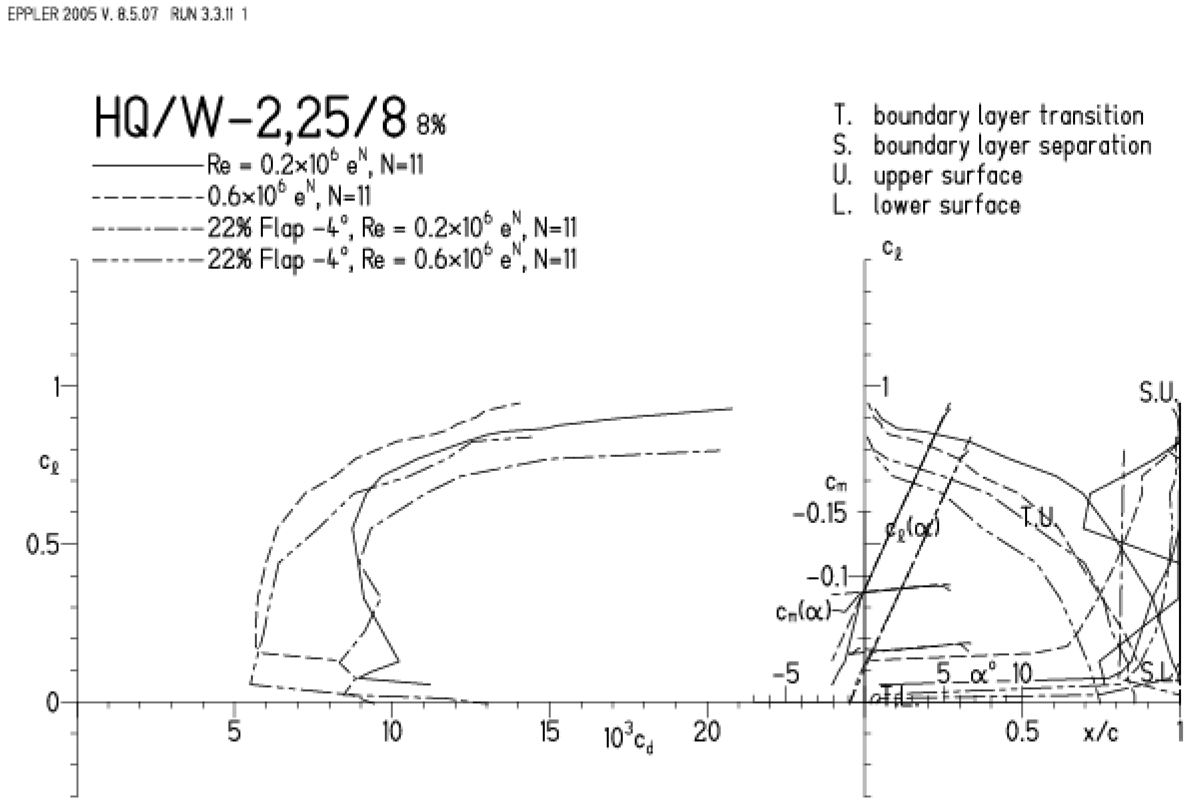
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



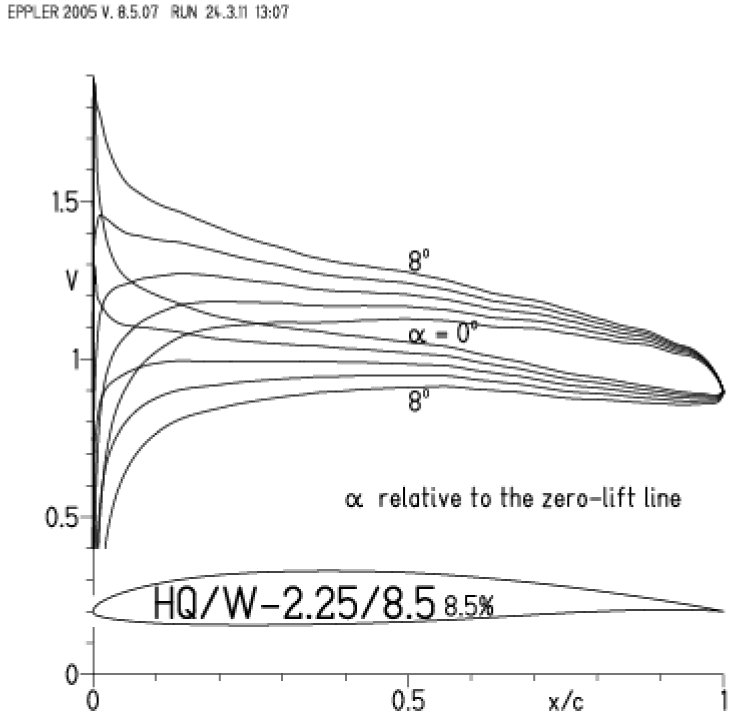


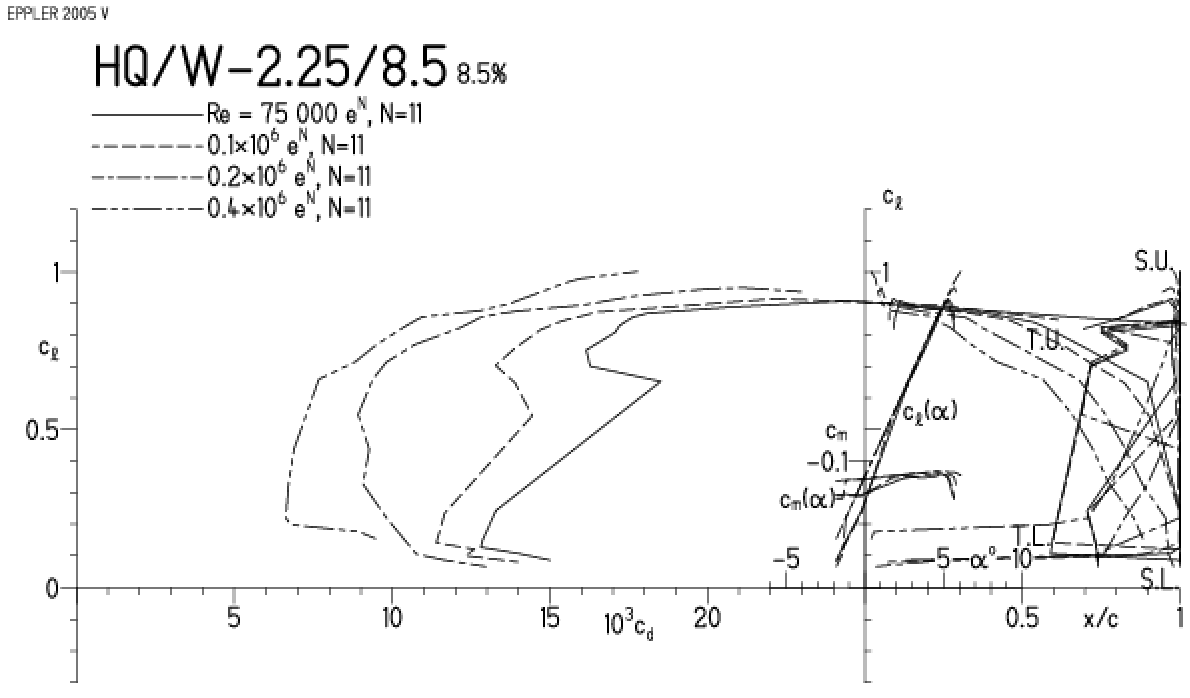
HQ/W-2,25/8, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)





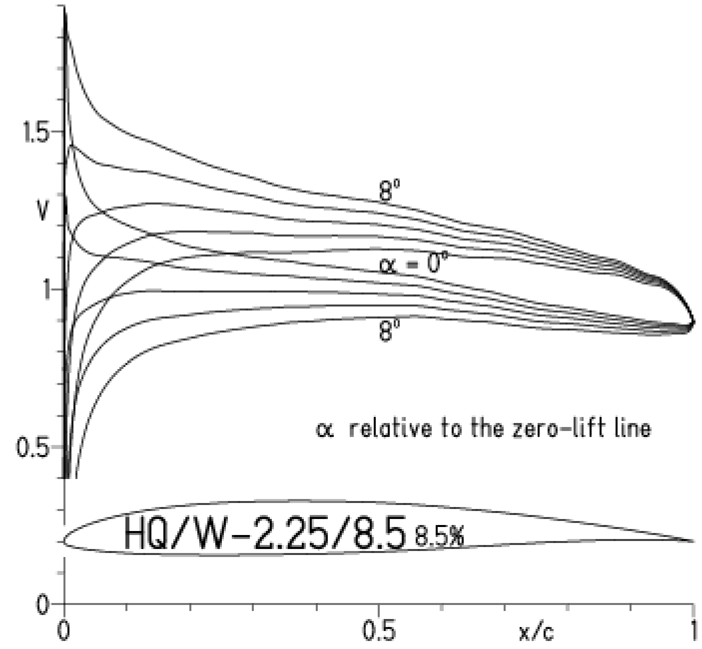
HQ/W-2,25/8,5, N=11



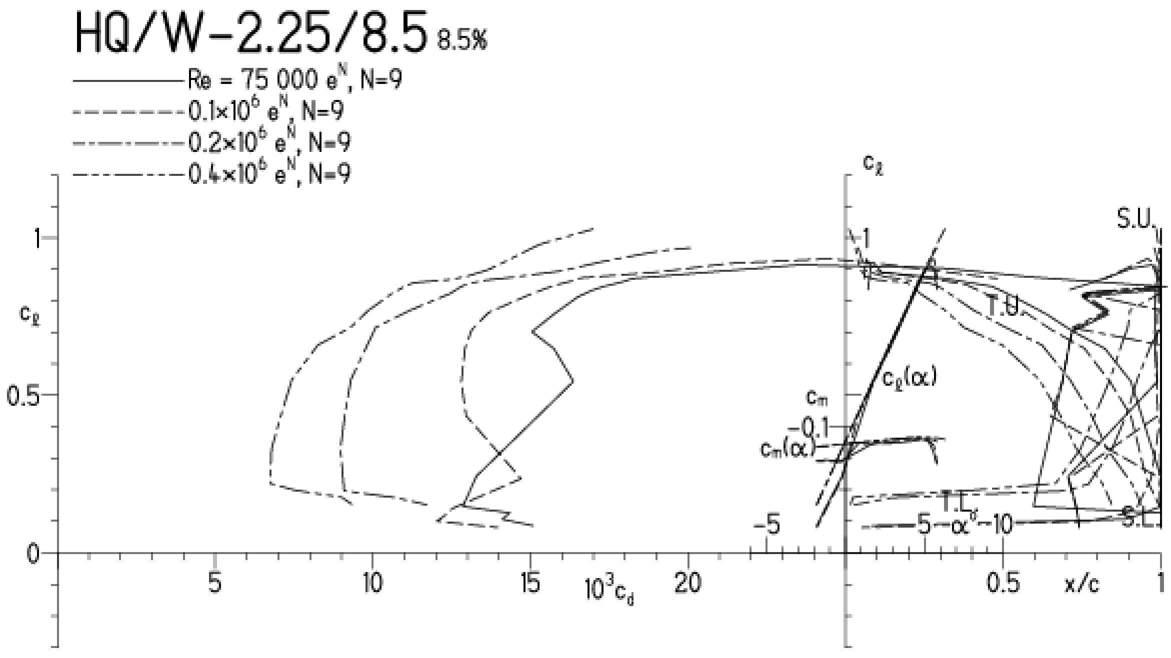


HQ/W-2,25/8,5, N=9

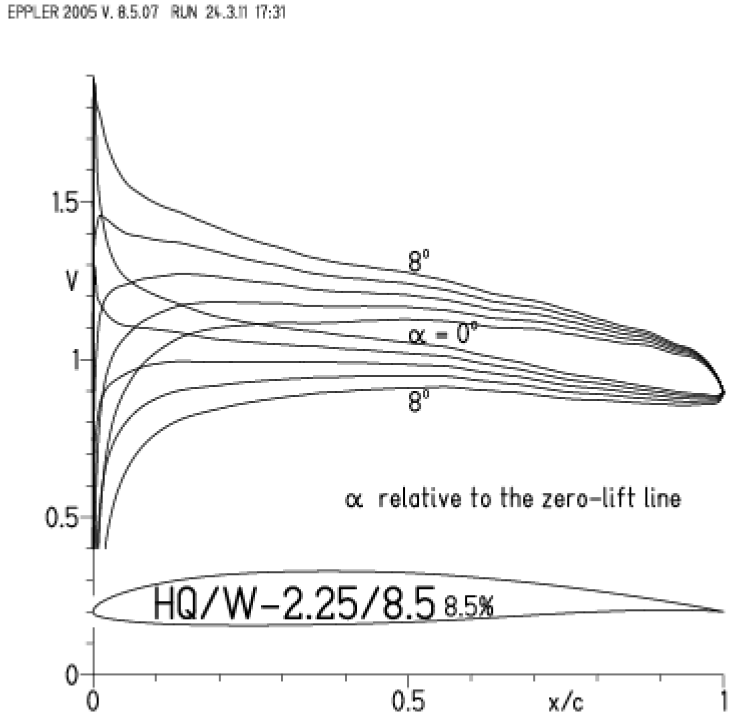
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

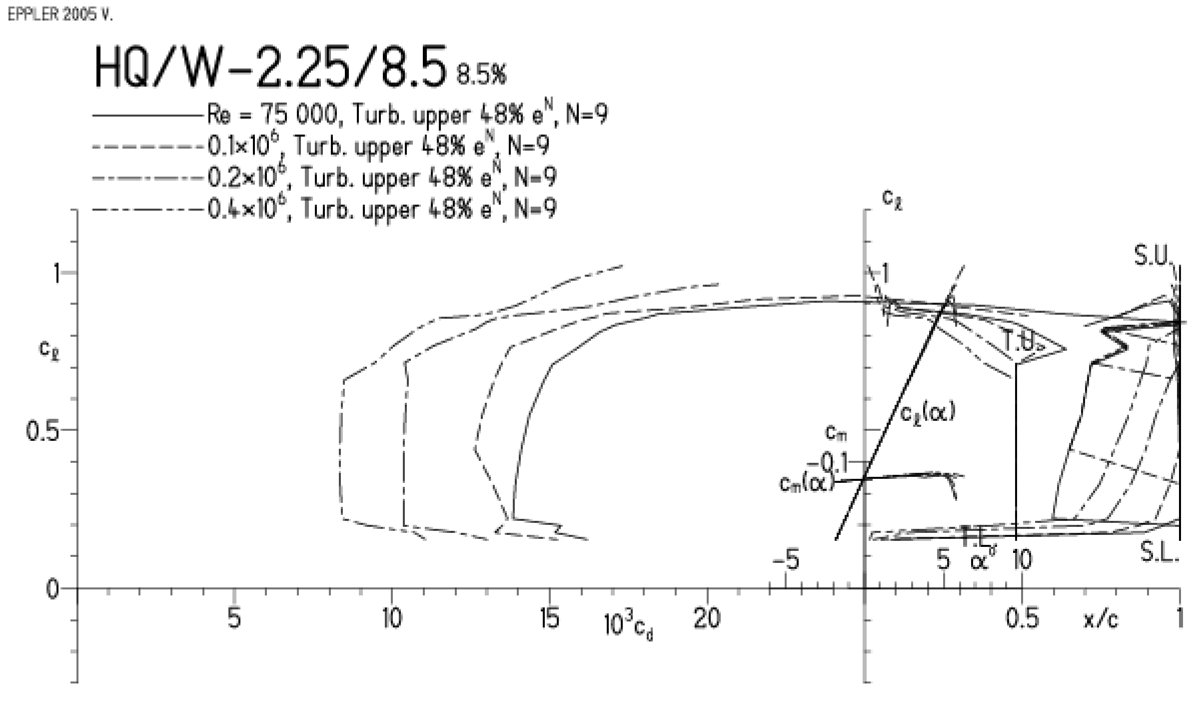


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:



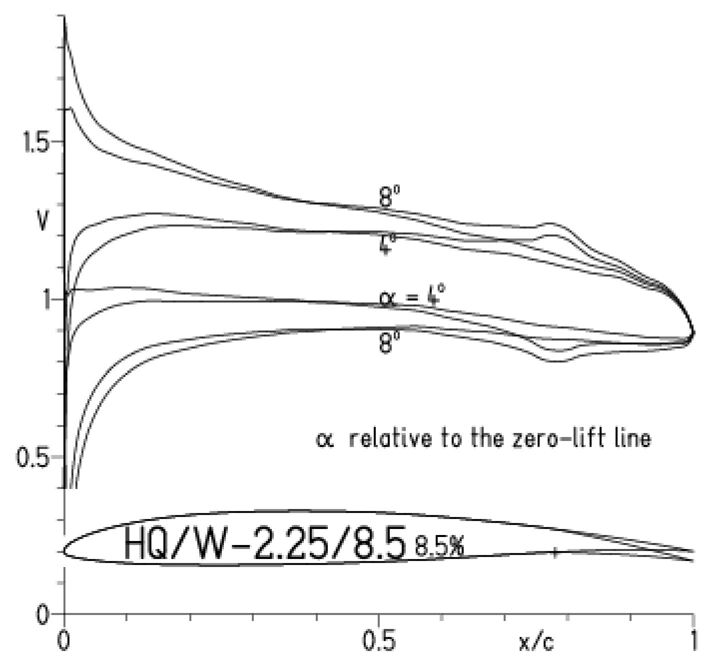
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



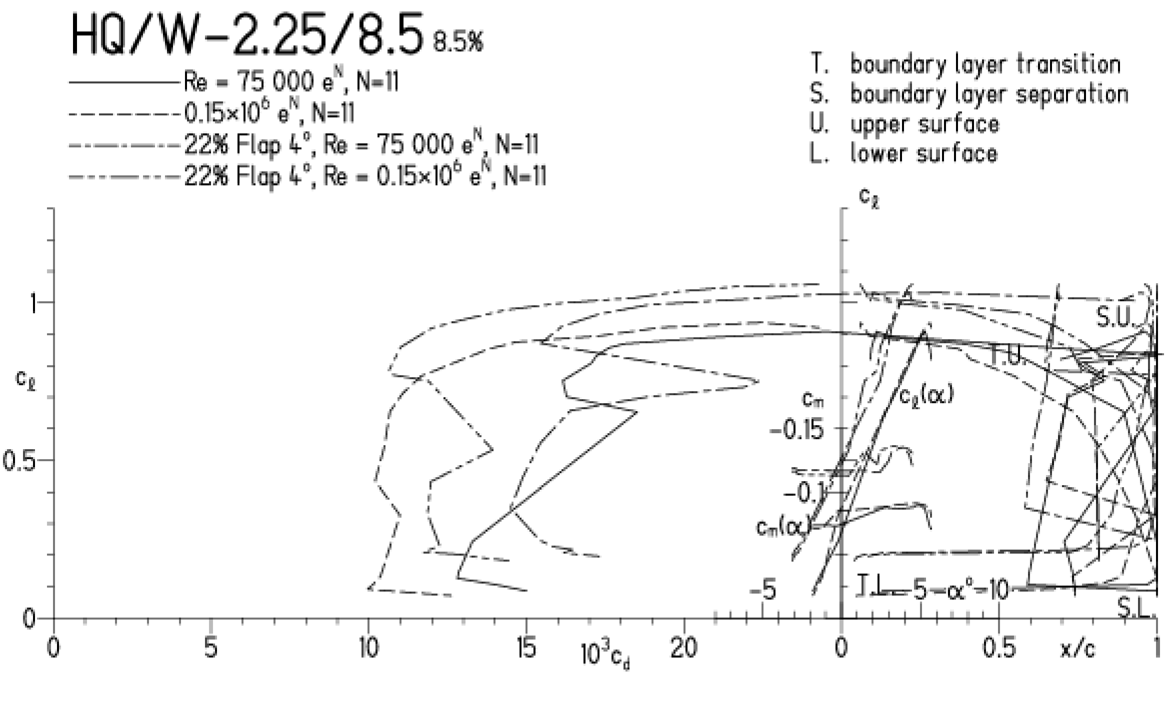


HQ/W-2,25/8,5, N=11, mit +4° Wölbklappenausschlag

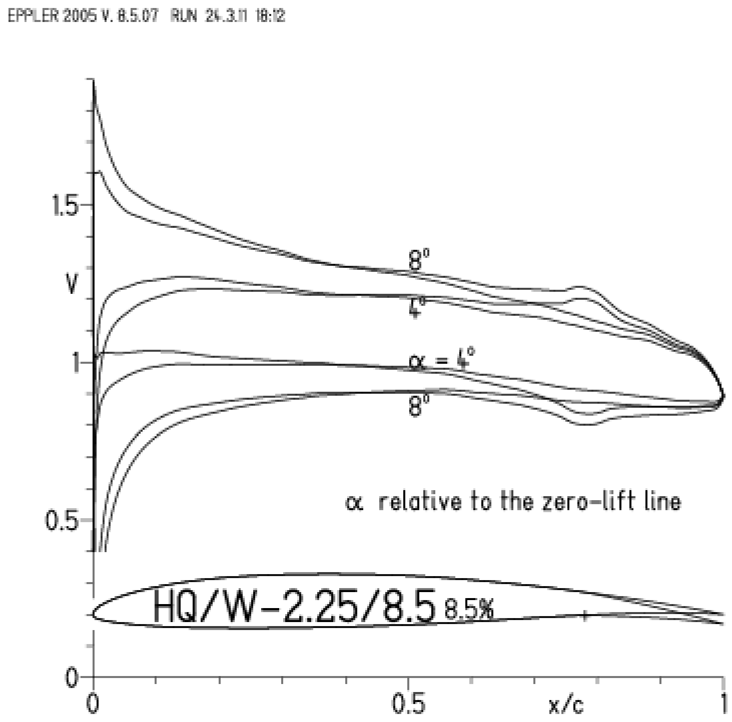
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

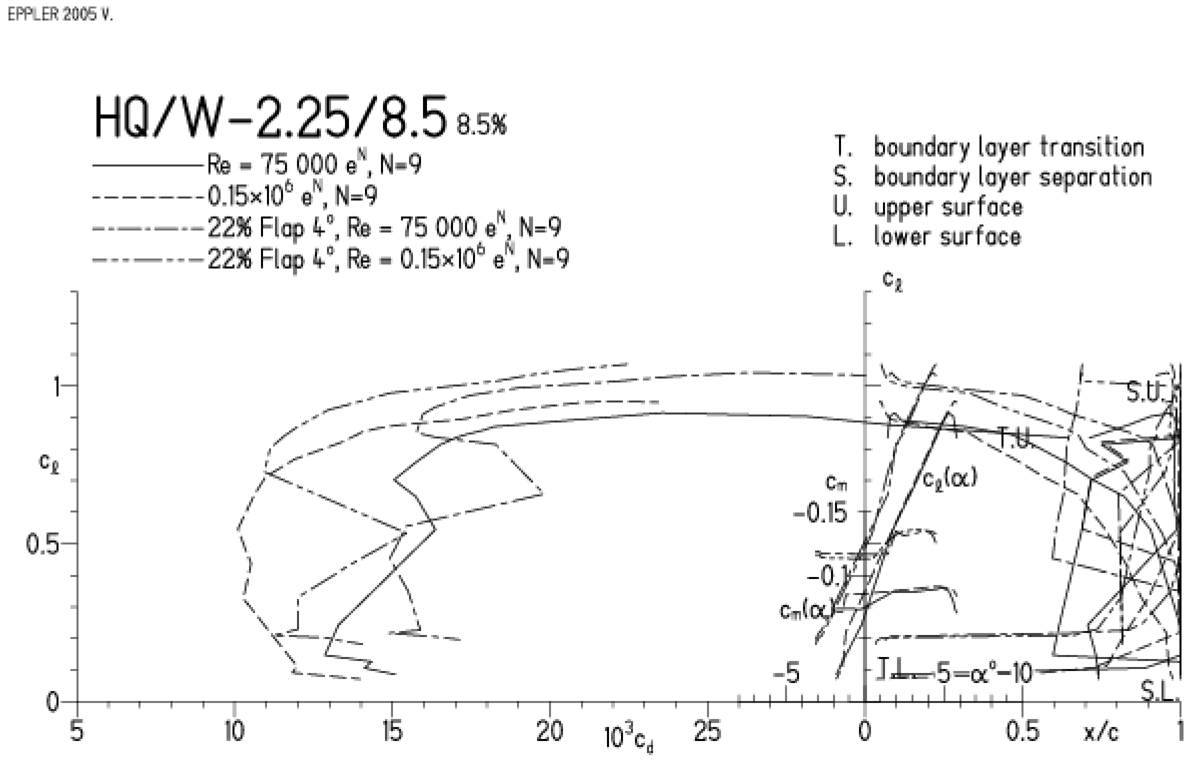


EPPLER 2005 V. 8.5.



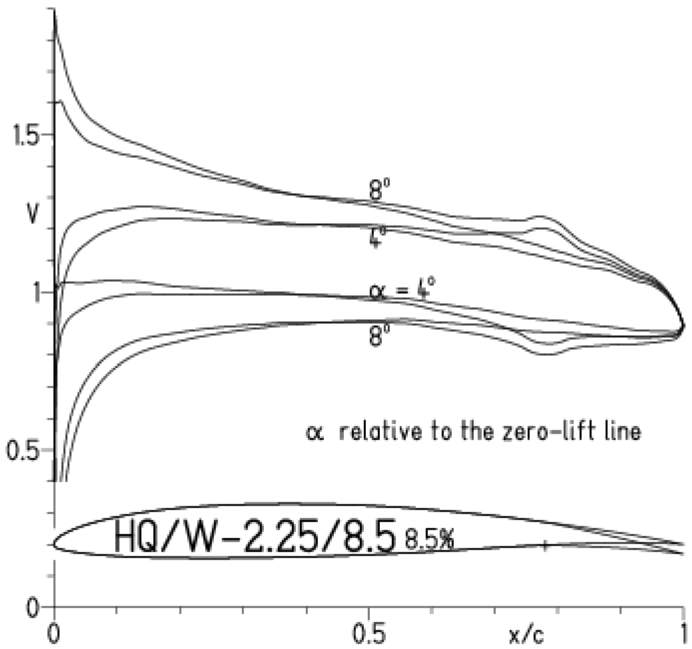
<u>HQ/W-2,25/8,5</u>, N=9, mit +4° Wölbklappenausschlag



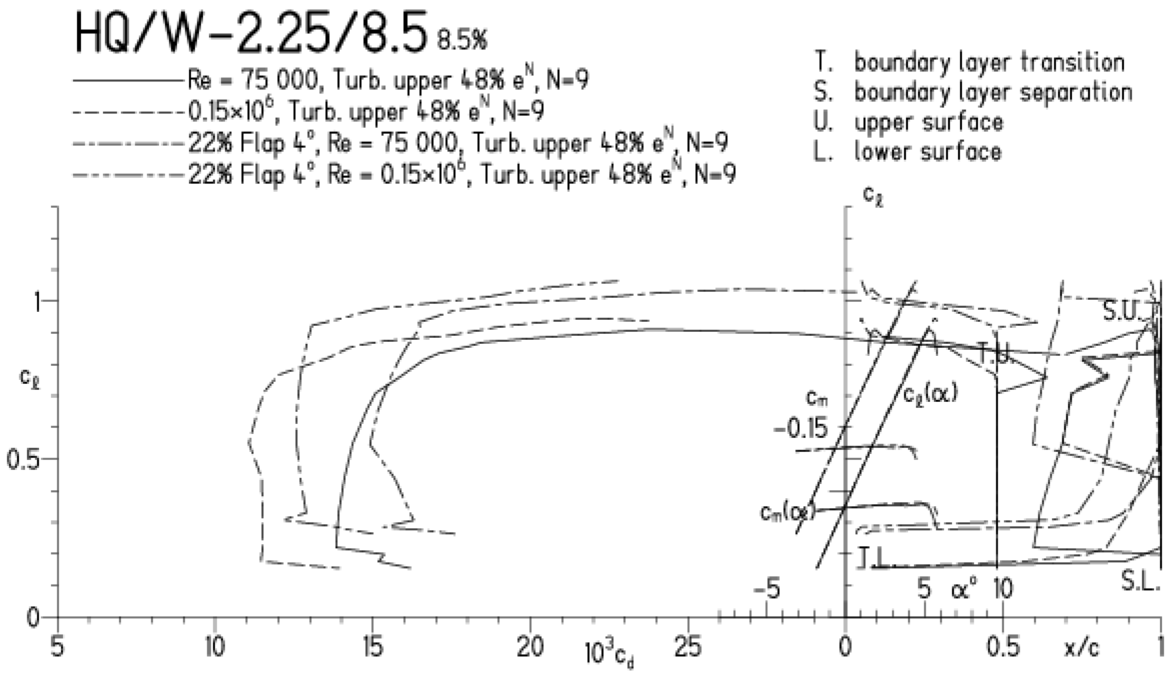


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

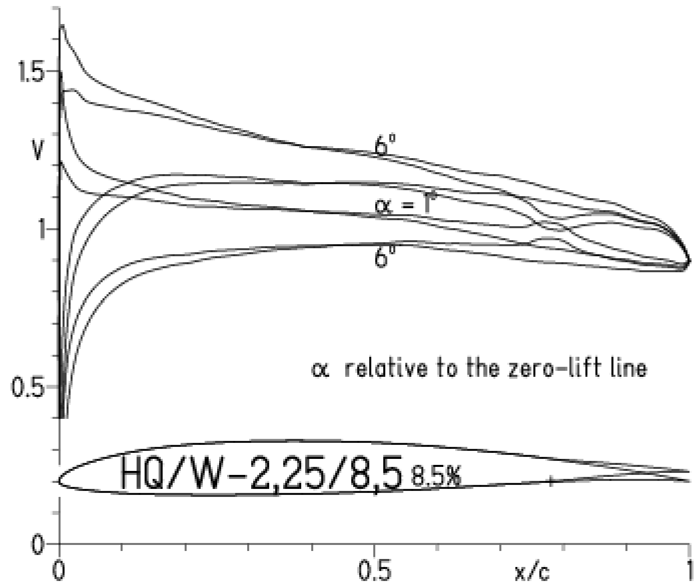


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

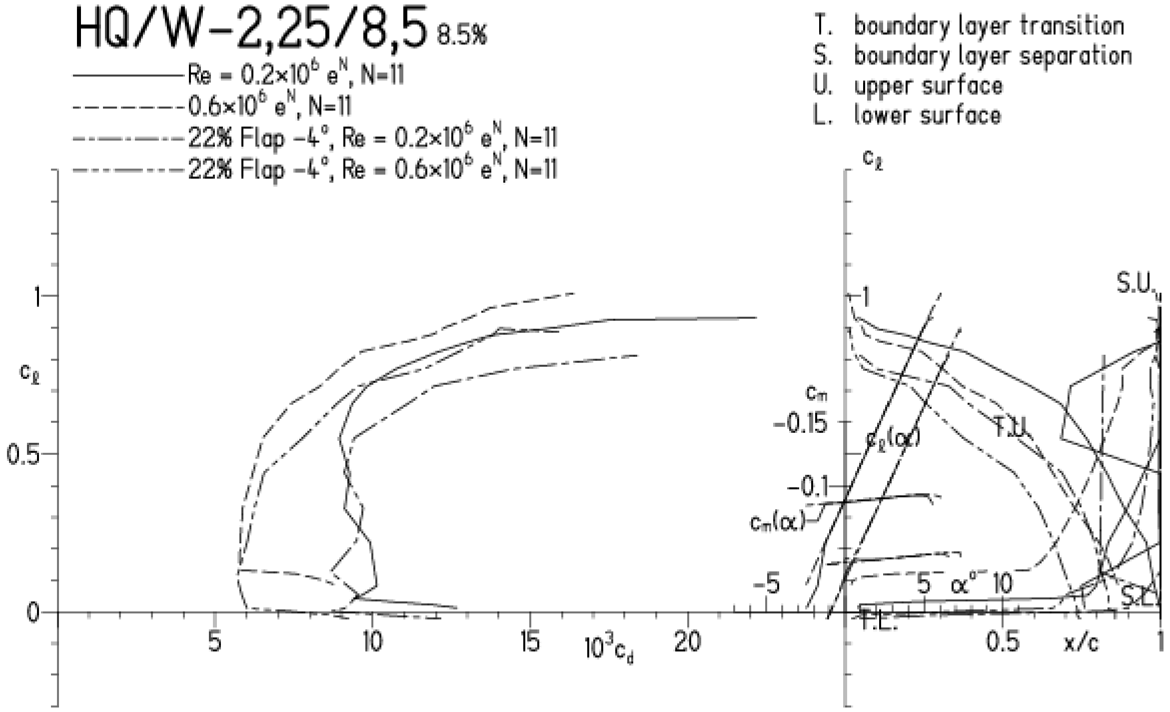


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

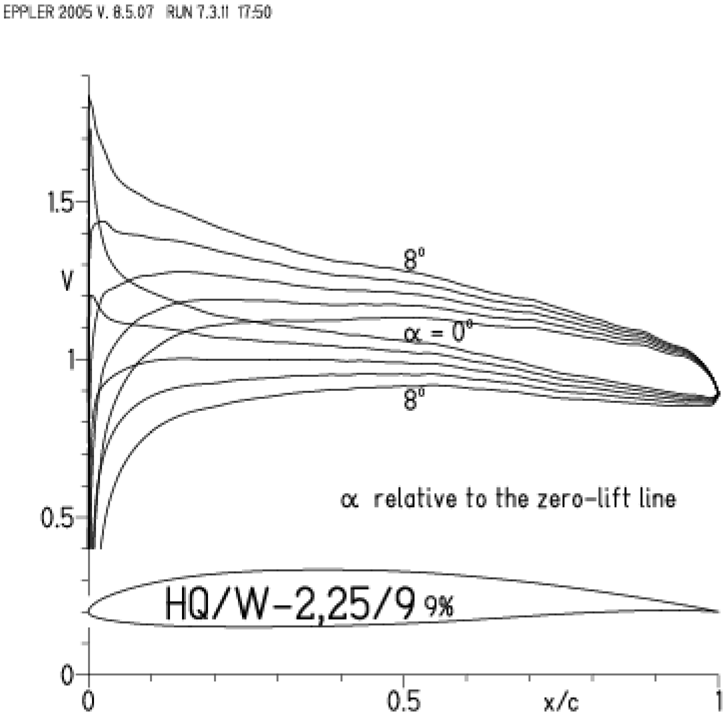
EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

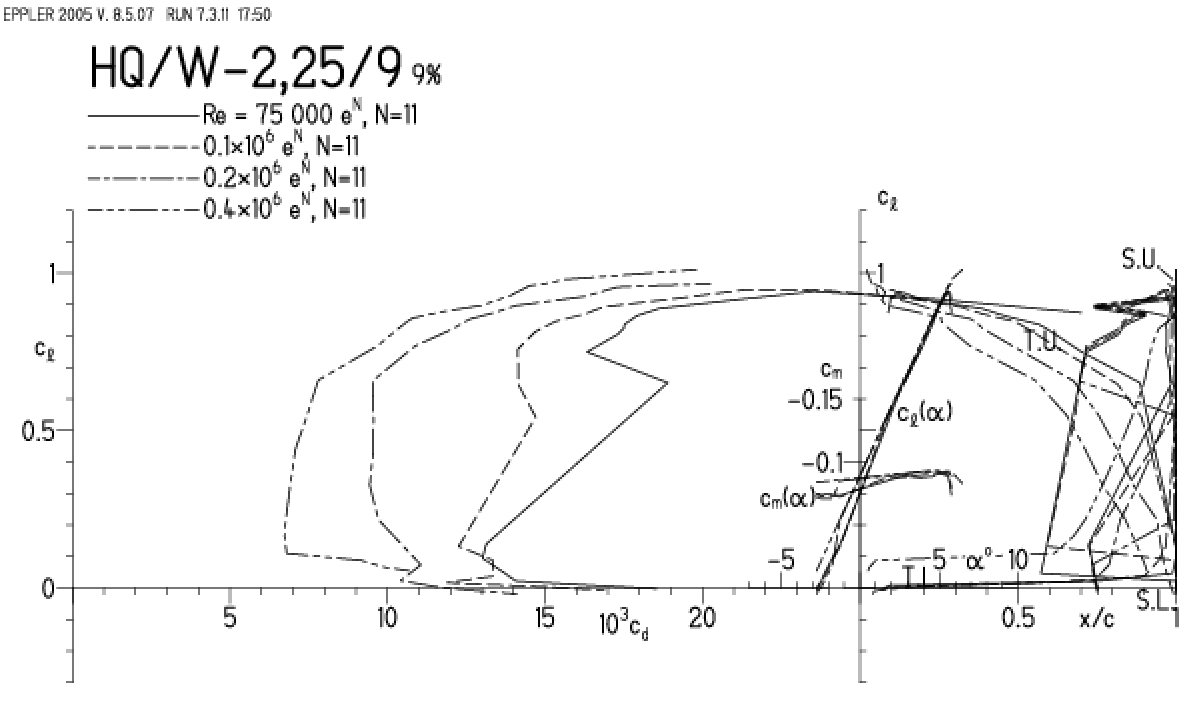


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09



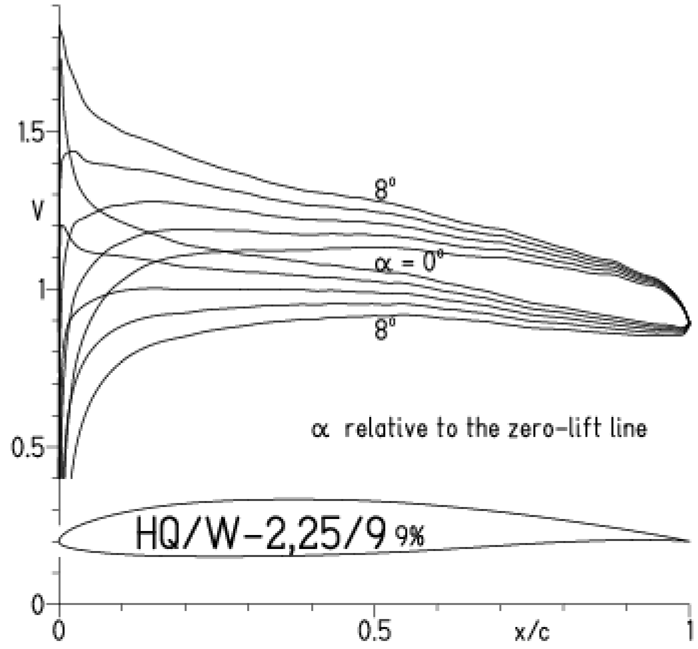
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

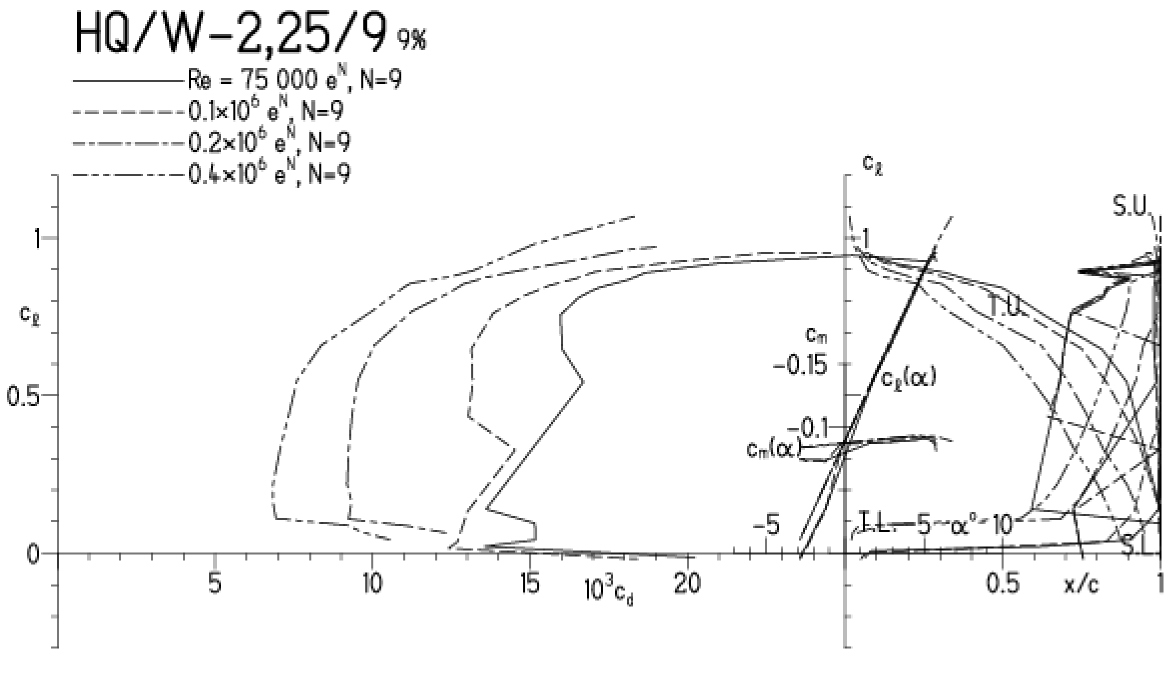

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
-5
c_l(α)
c_m(α)
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

HQ/W-2,25/9, N=9

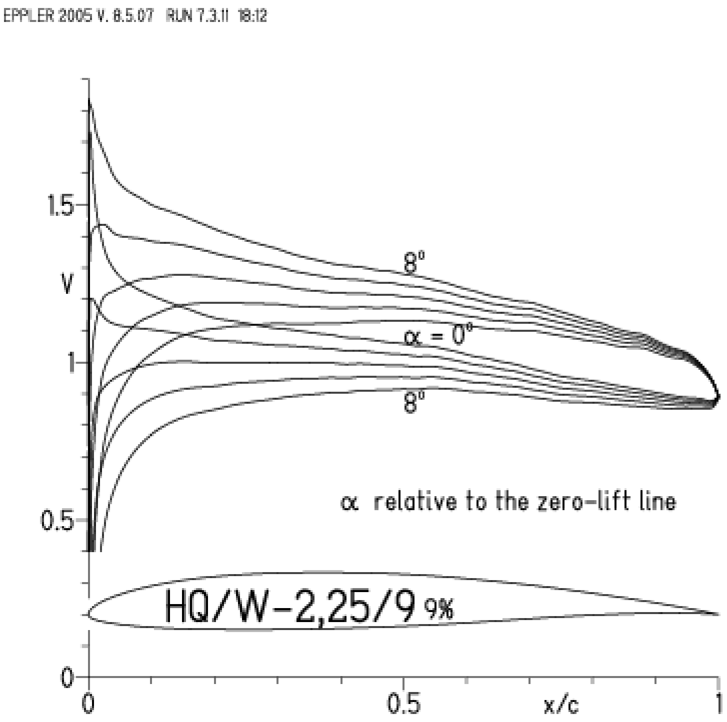
EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08

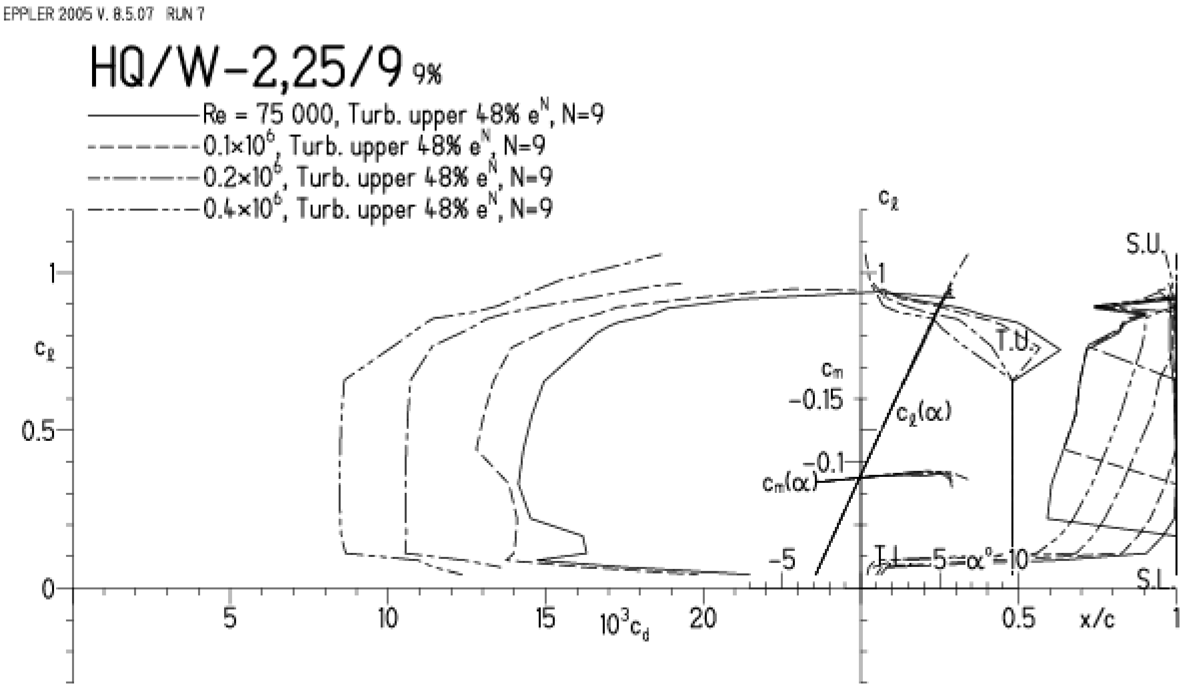


EPPLER 2005 V. 8.



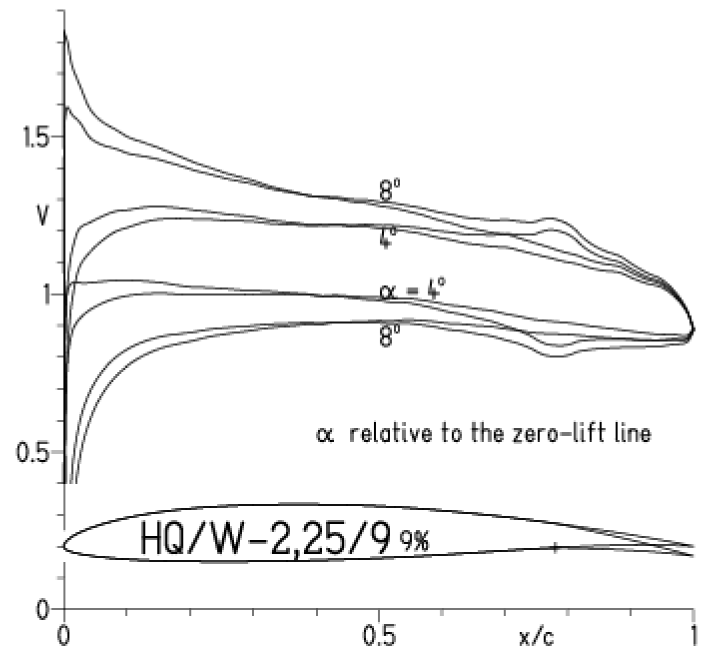
<u>HQ/W-2,25/9</u>, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



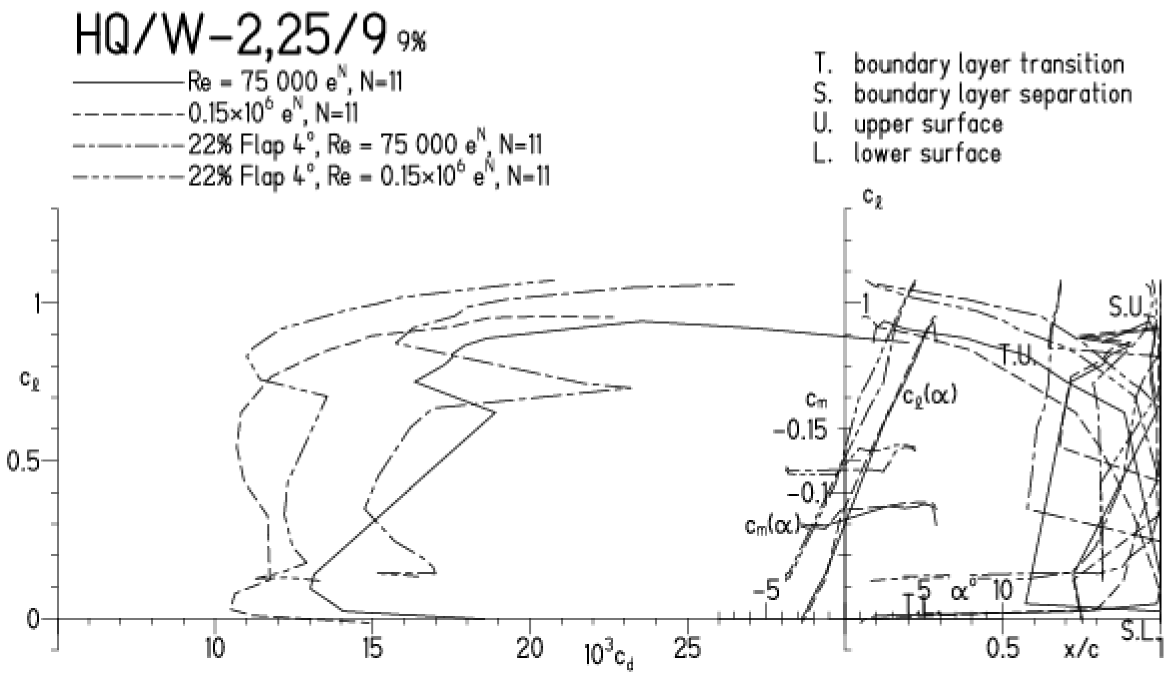


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

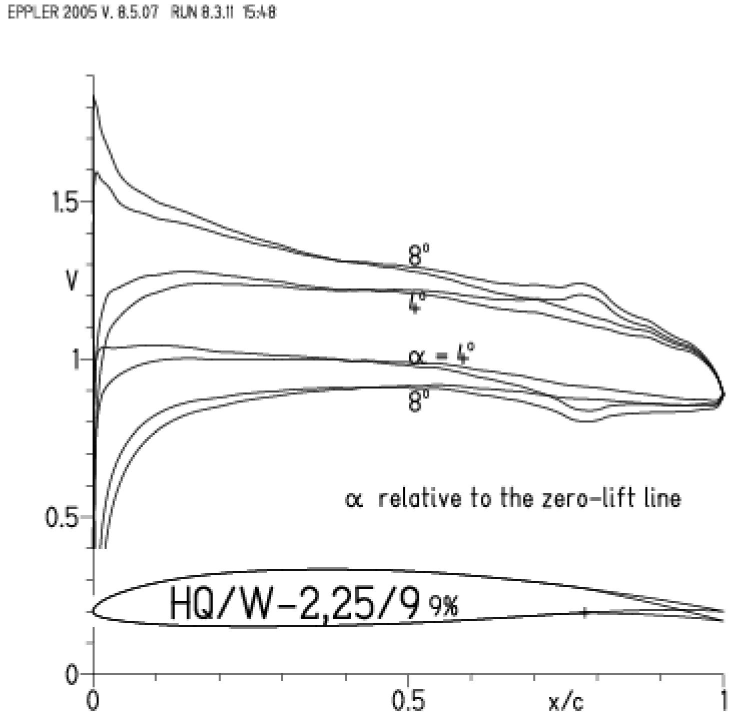
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

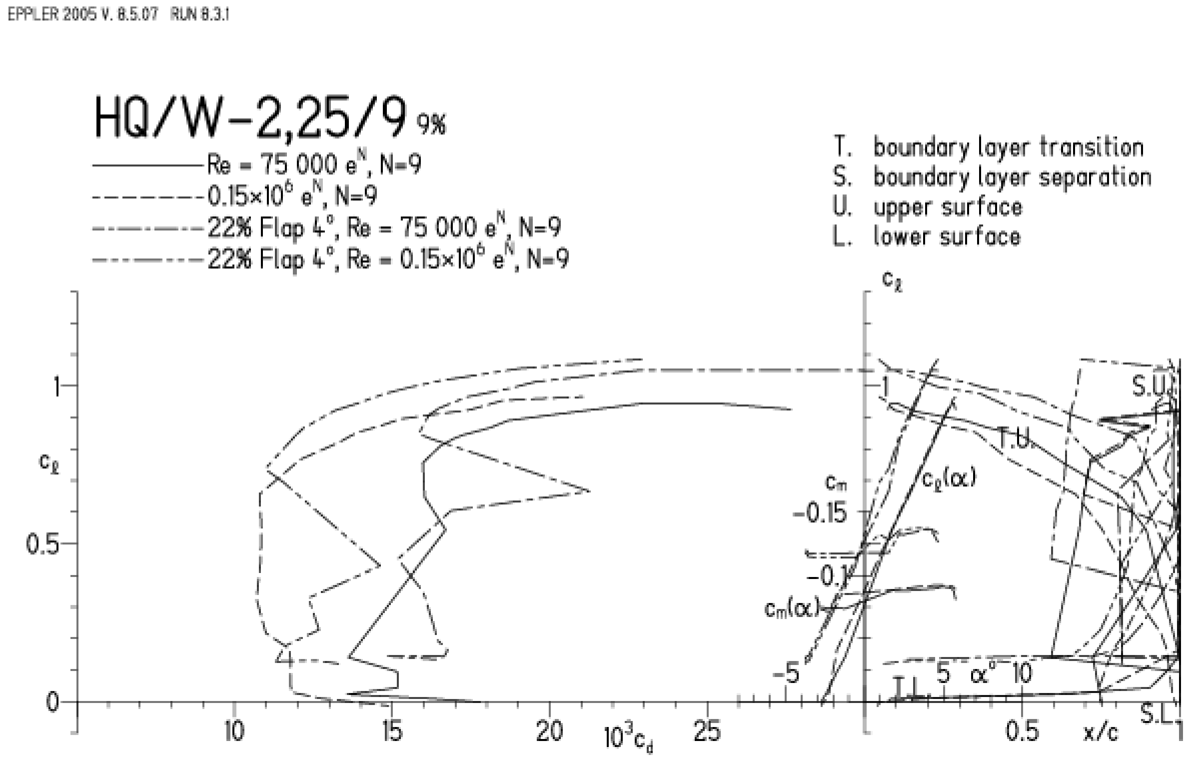


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

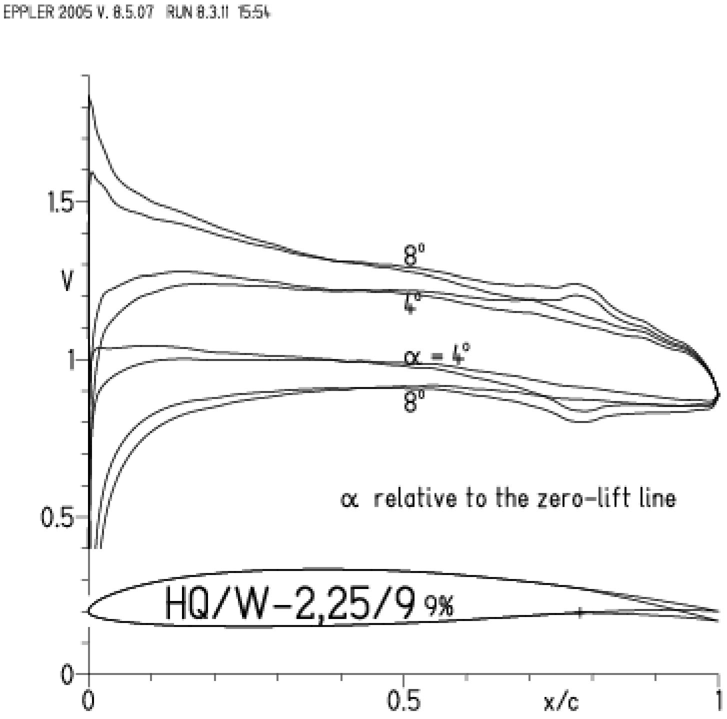


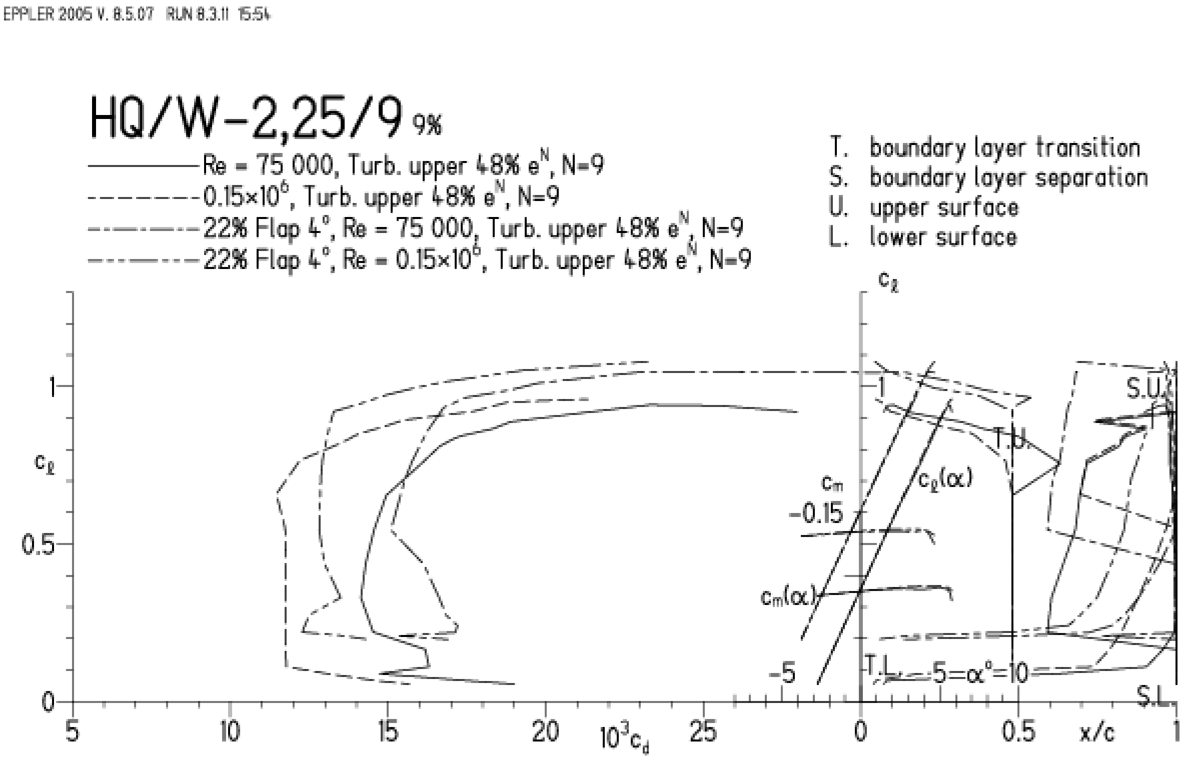
HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag





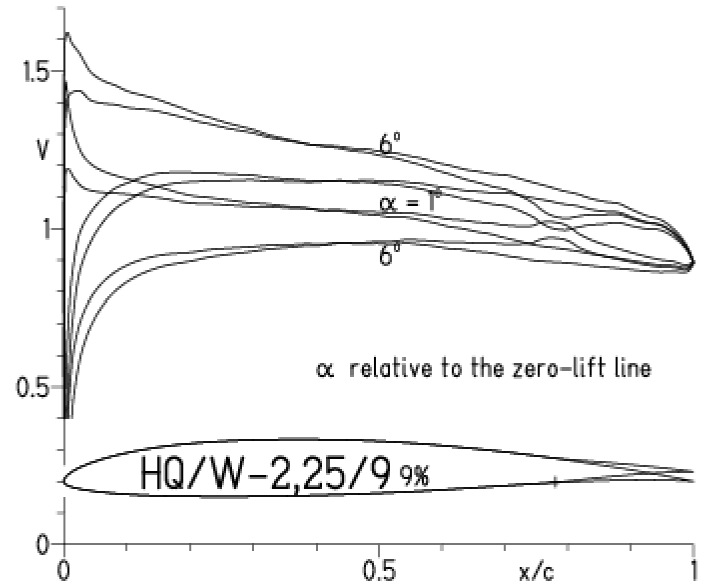
HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



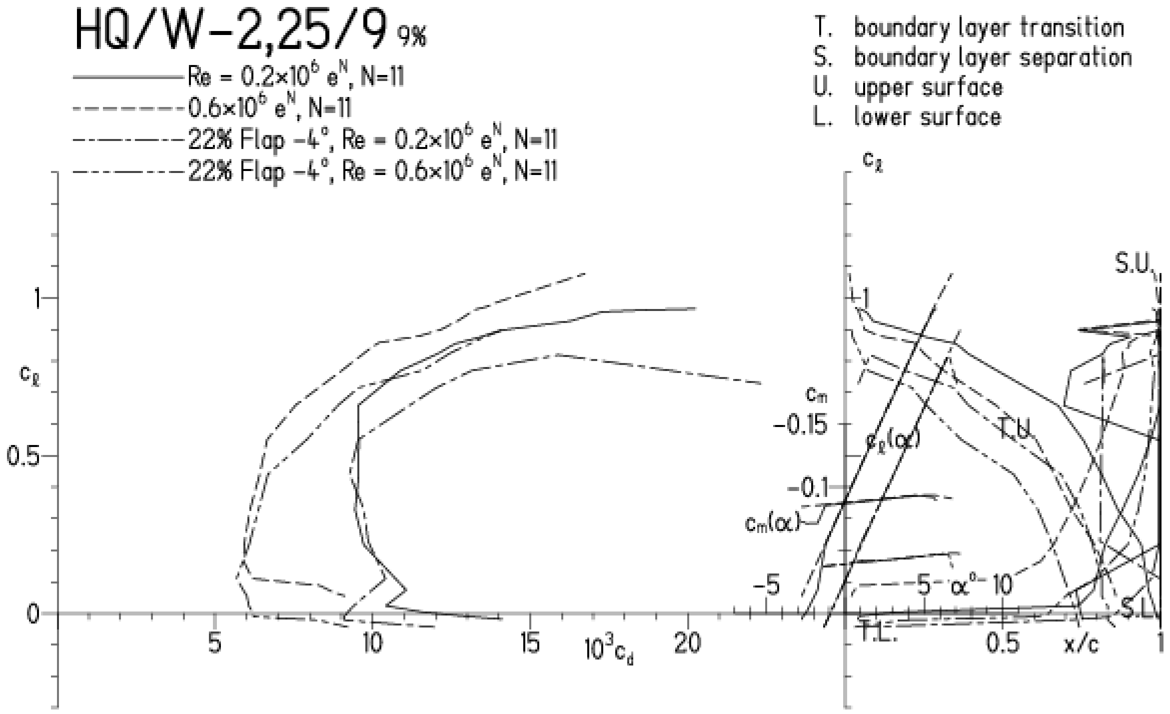


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm^2 erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

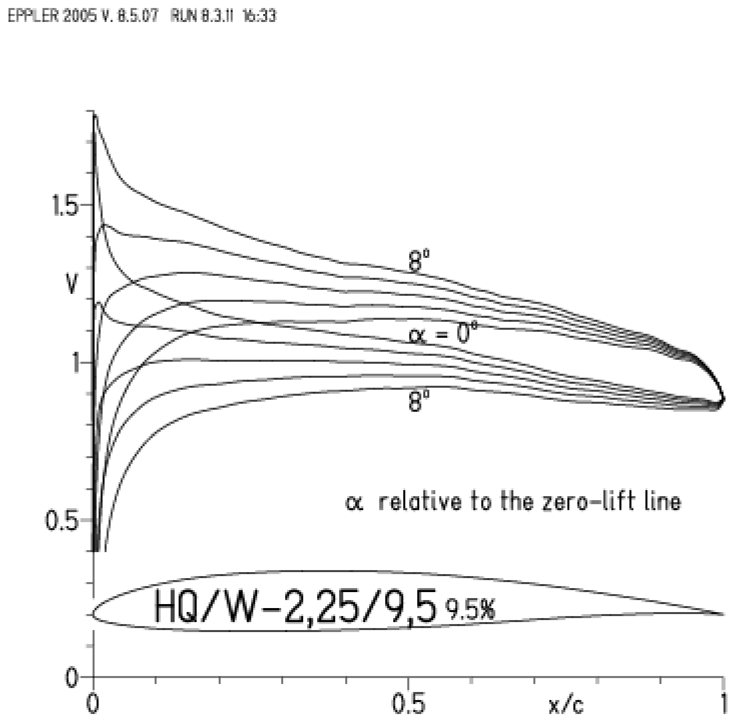
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

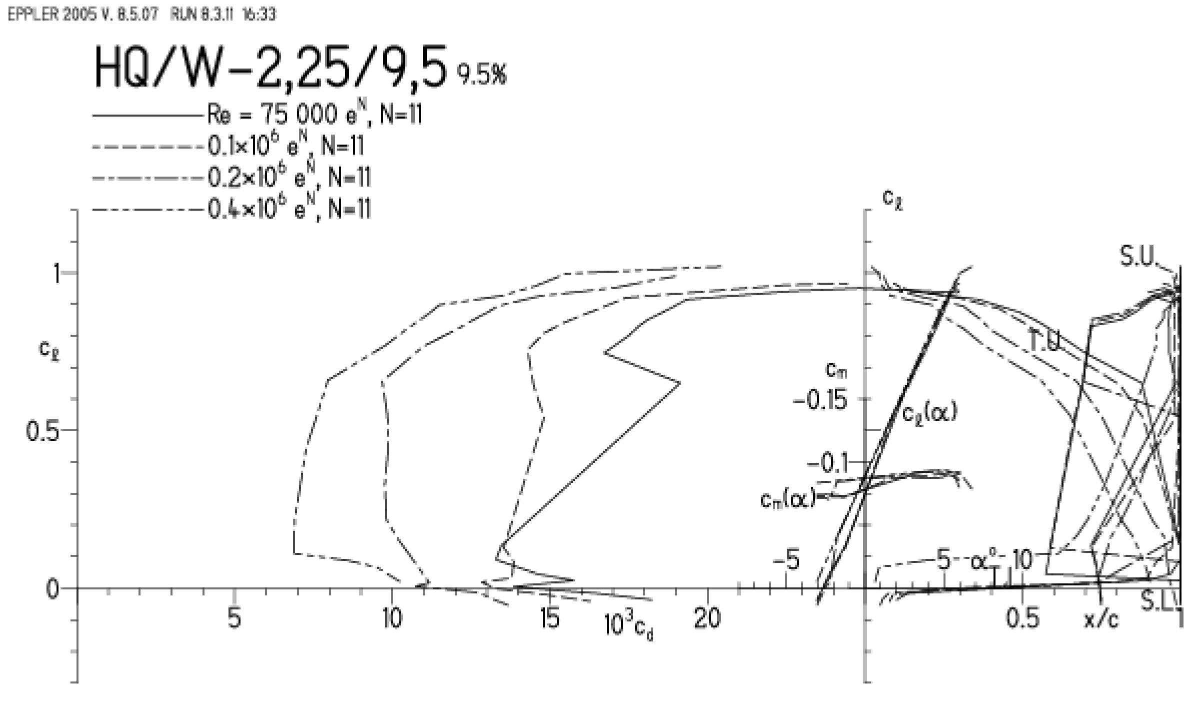


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02



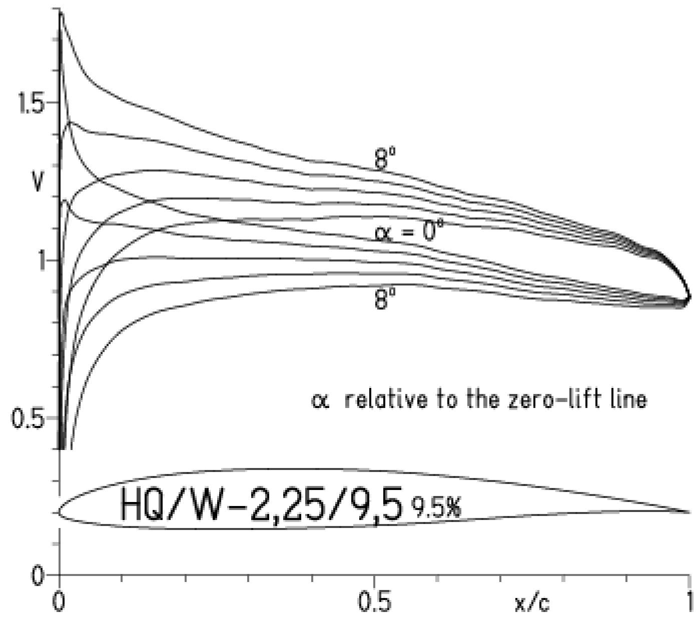
HQ/W-2,25/9,5, N=11



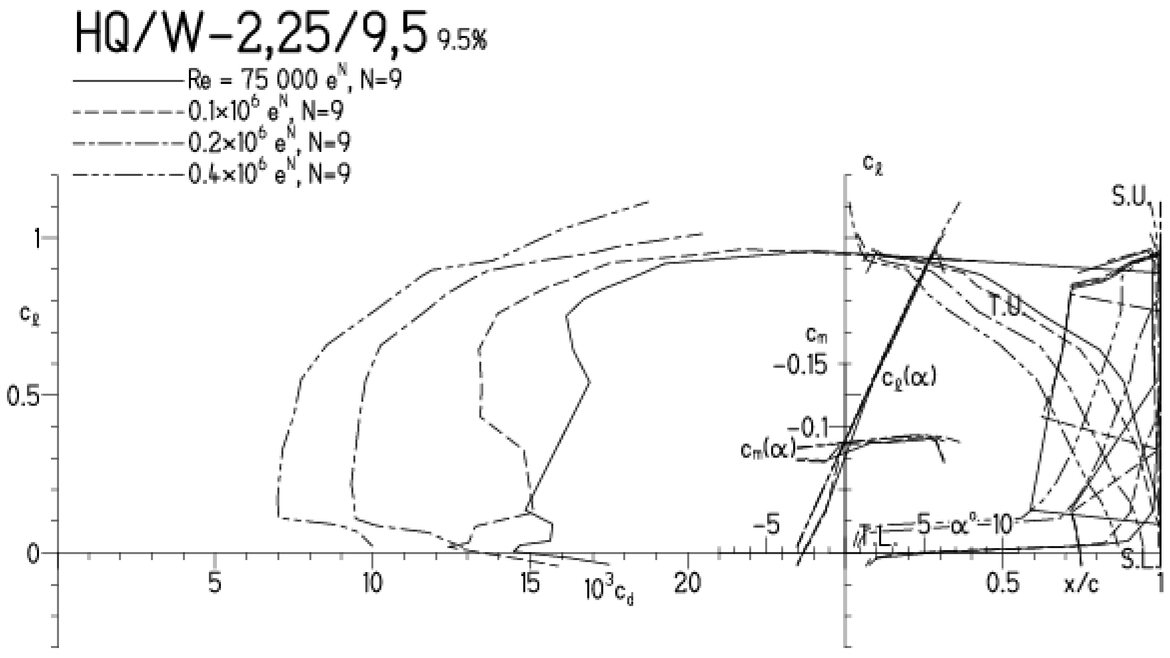


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

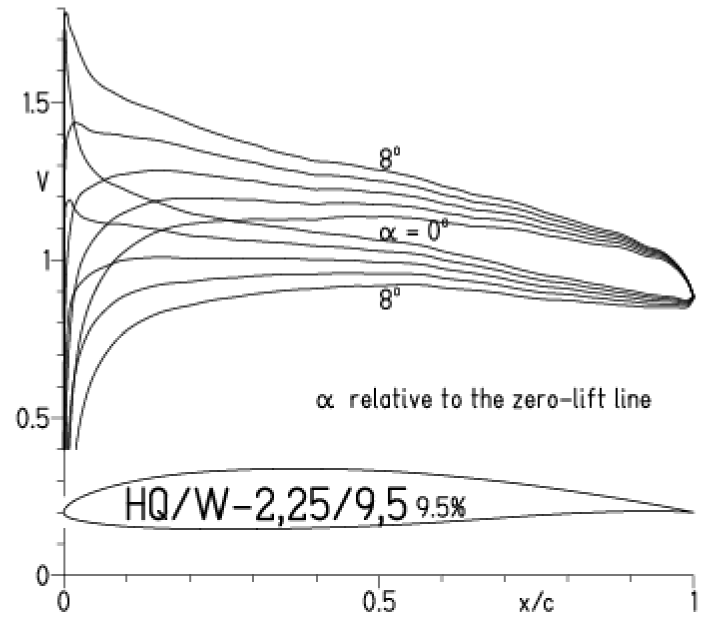


EPPLER 2005 V. 8.5.07 RUN 8.3.

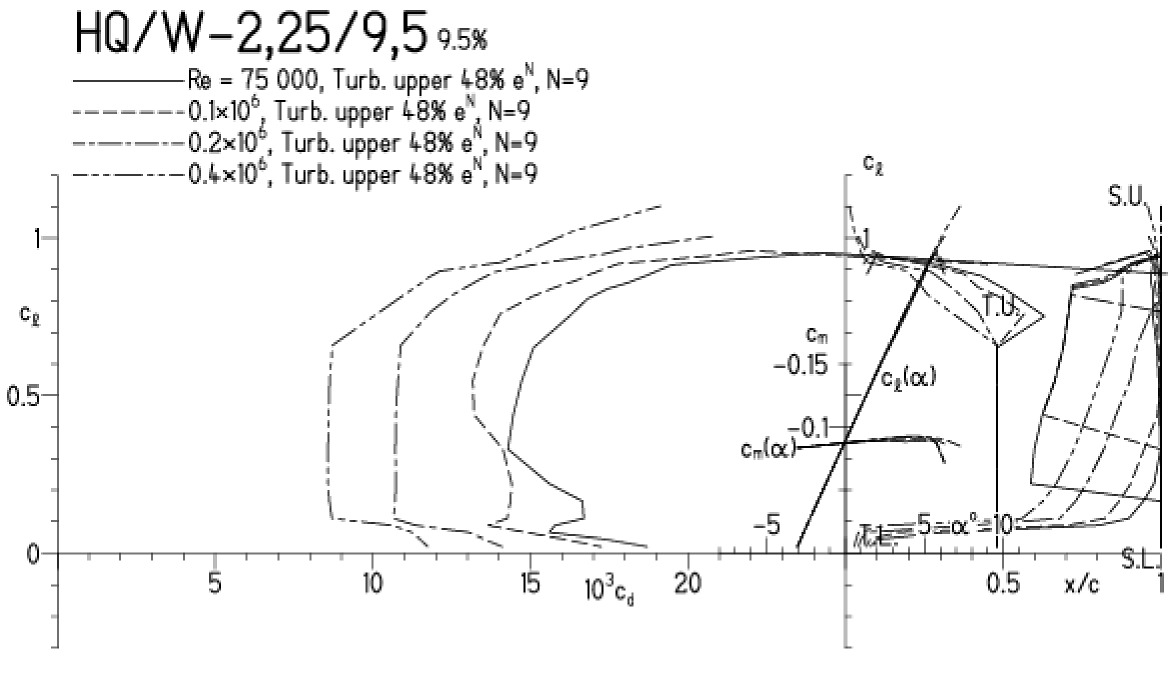


HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

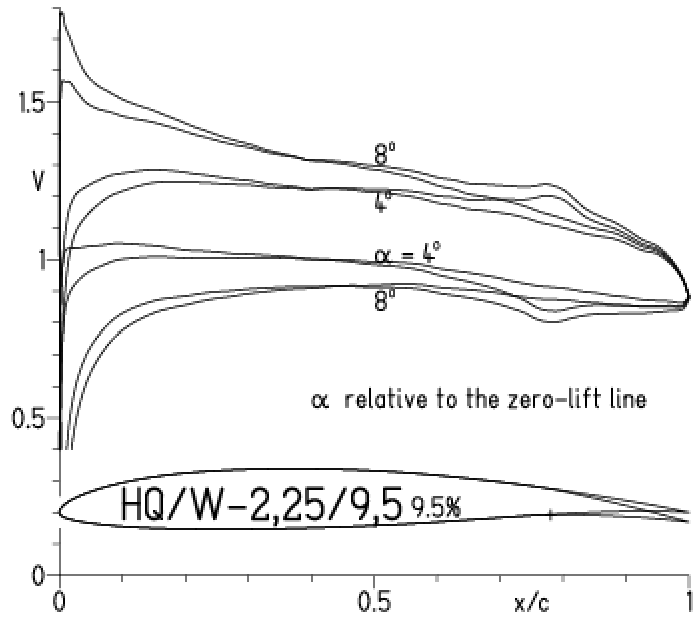


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

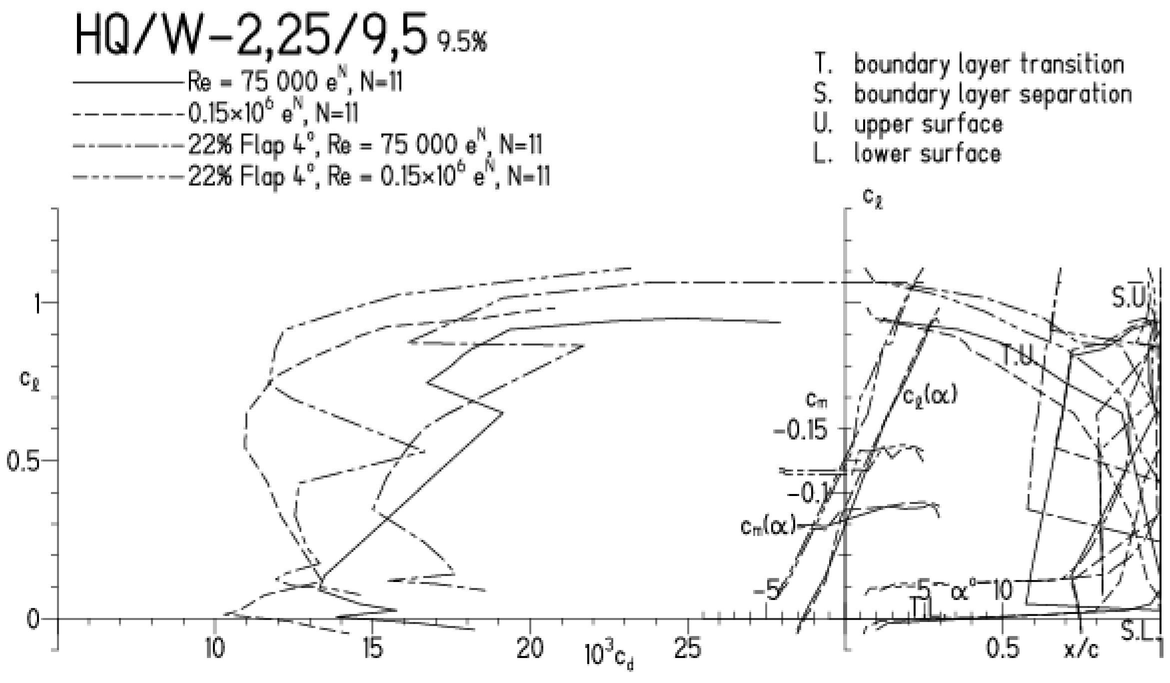


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

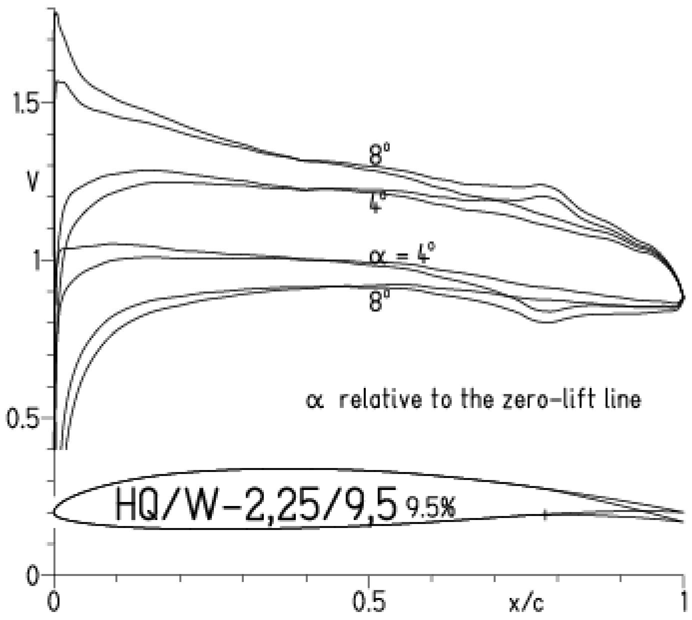


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

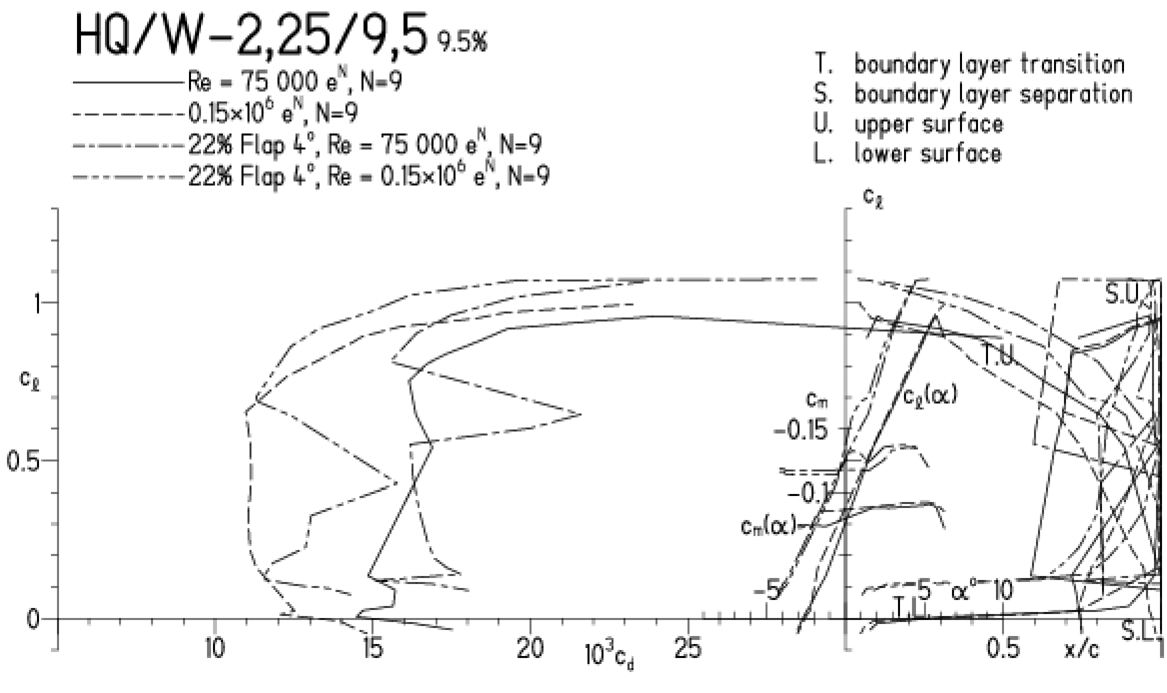


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

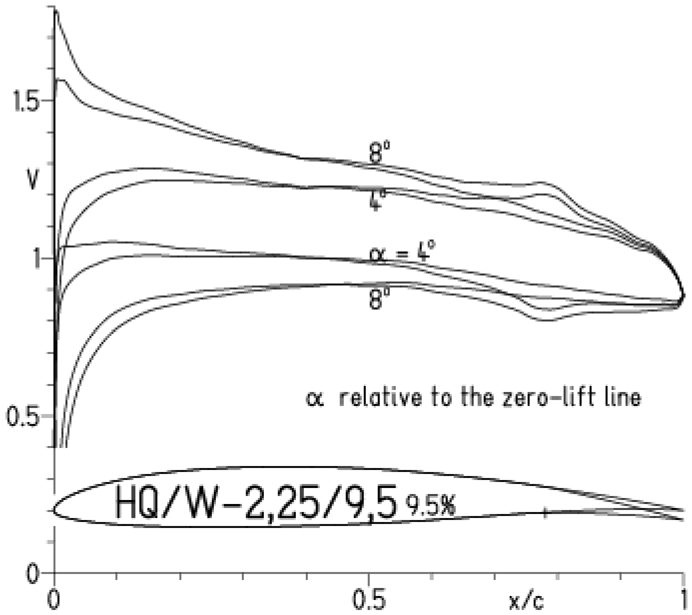


EPPLER 2005 V. 8.5.07 R

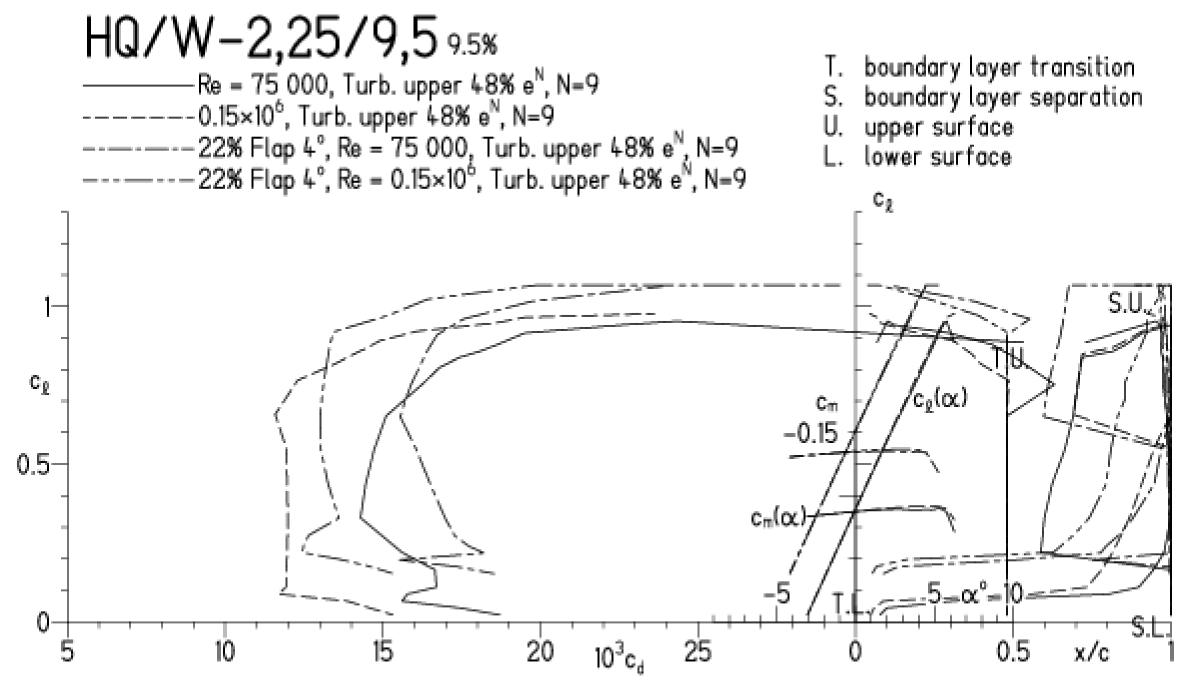


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

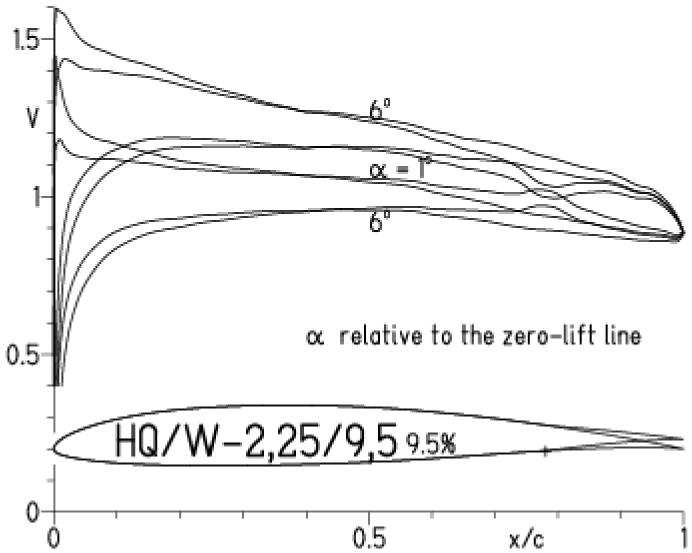


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

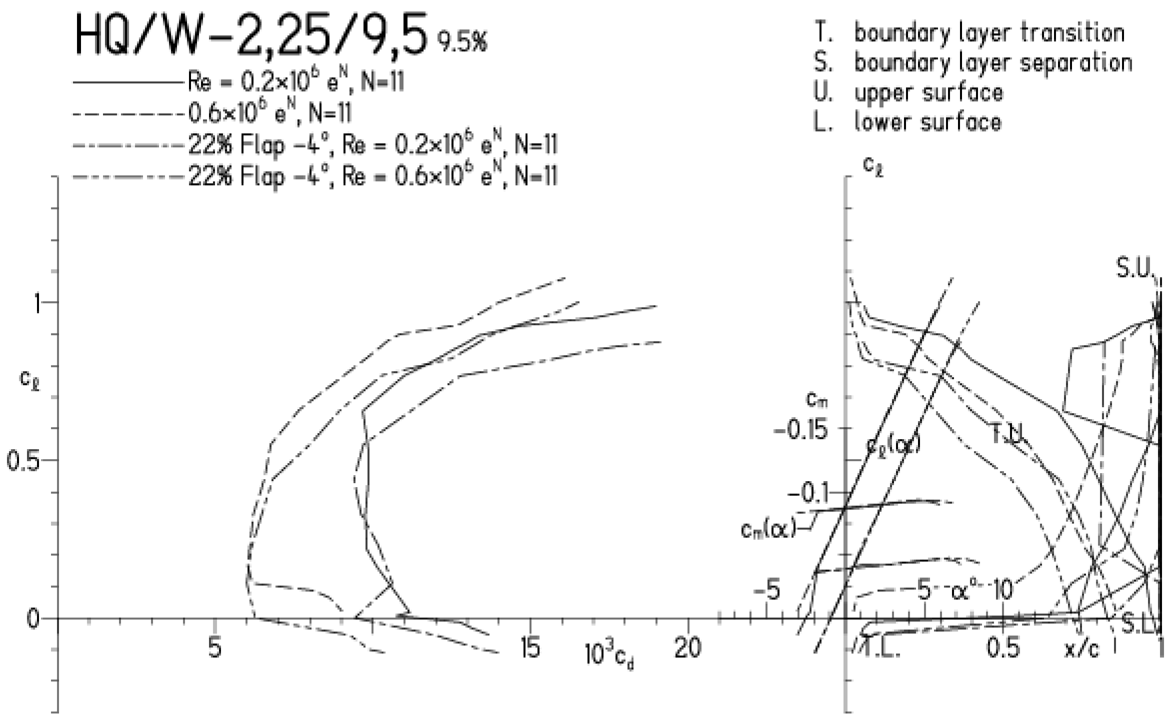


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

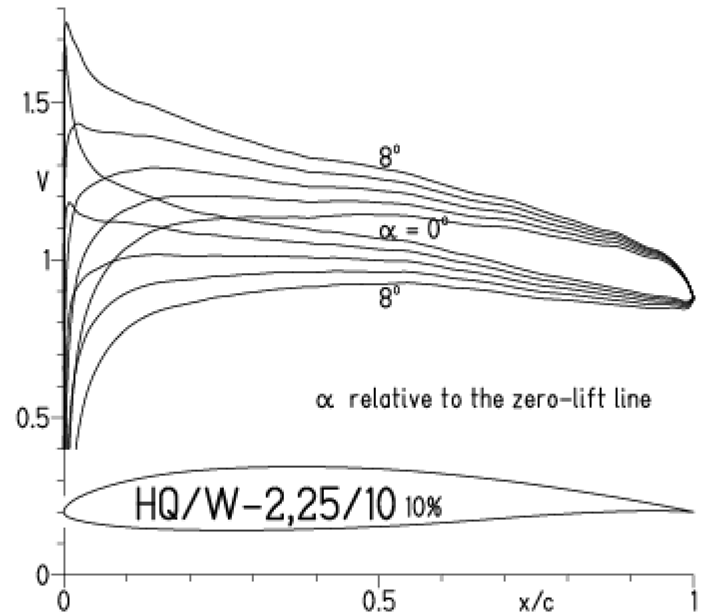


EPPLER 2005 V.

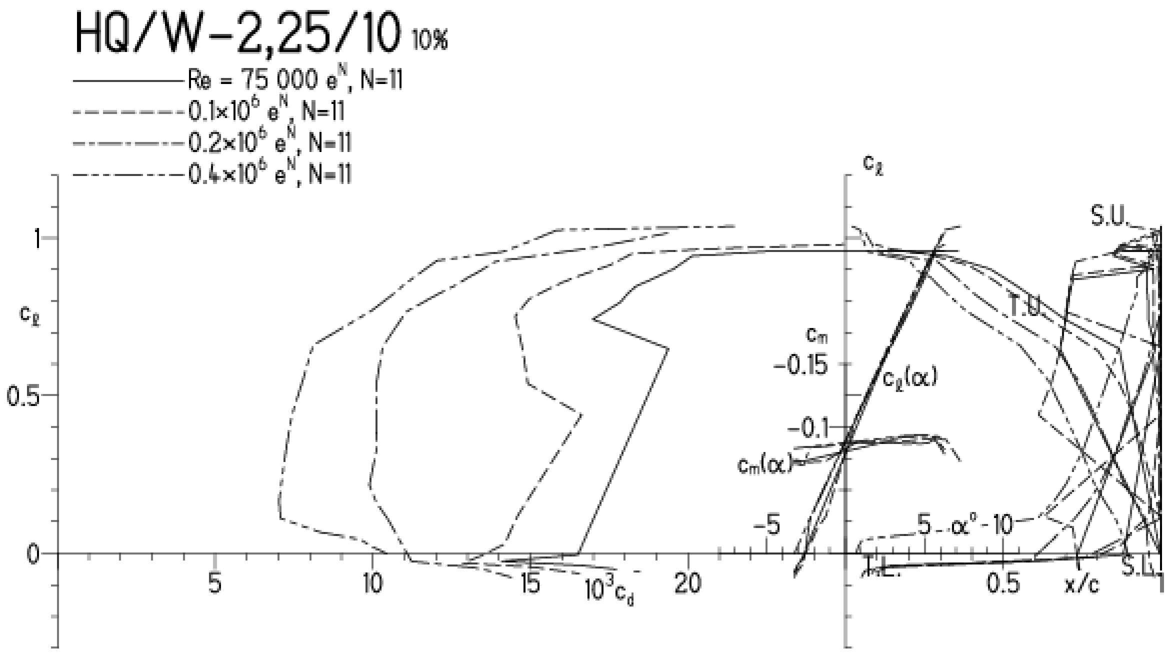


<u>HQ/W-2,25/10</u>, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

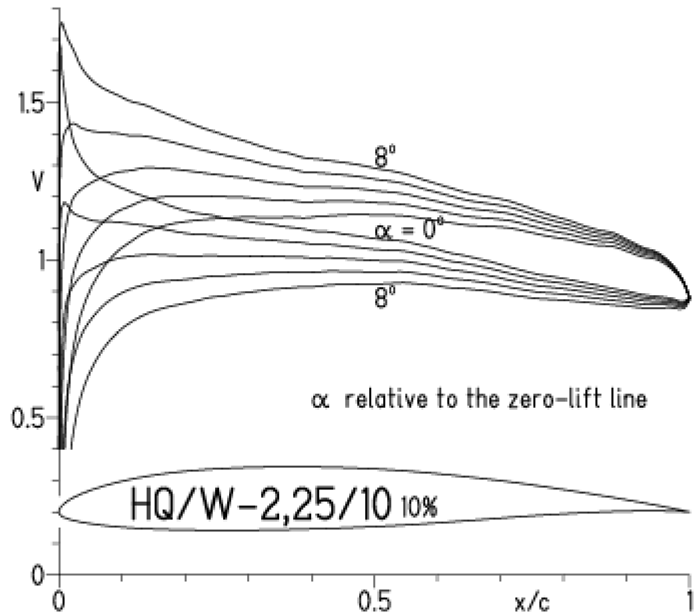


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:47

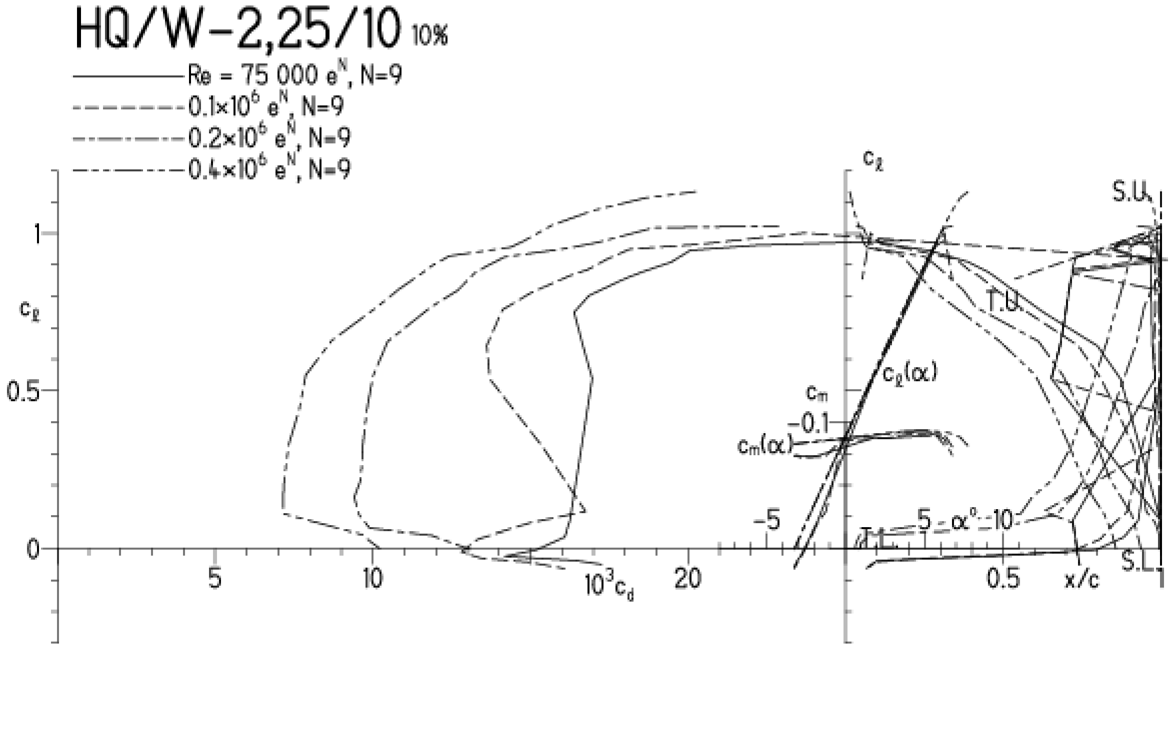


<u>HQ/W-2,25/10</u>, N=9

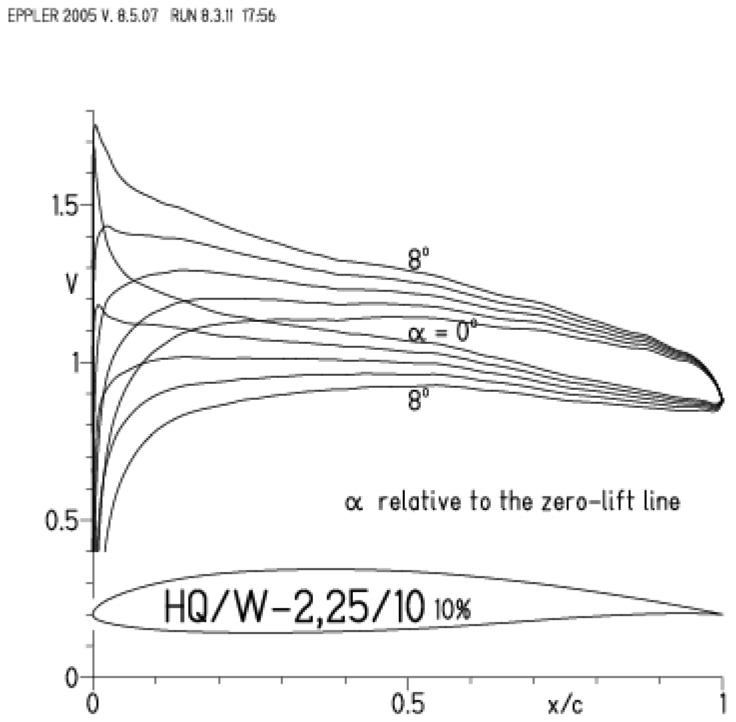
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

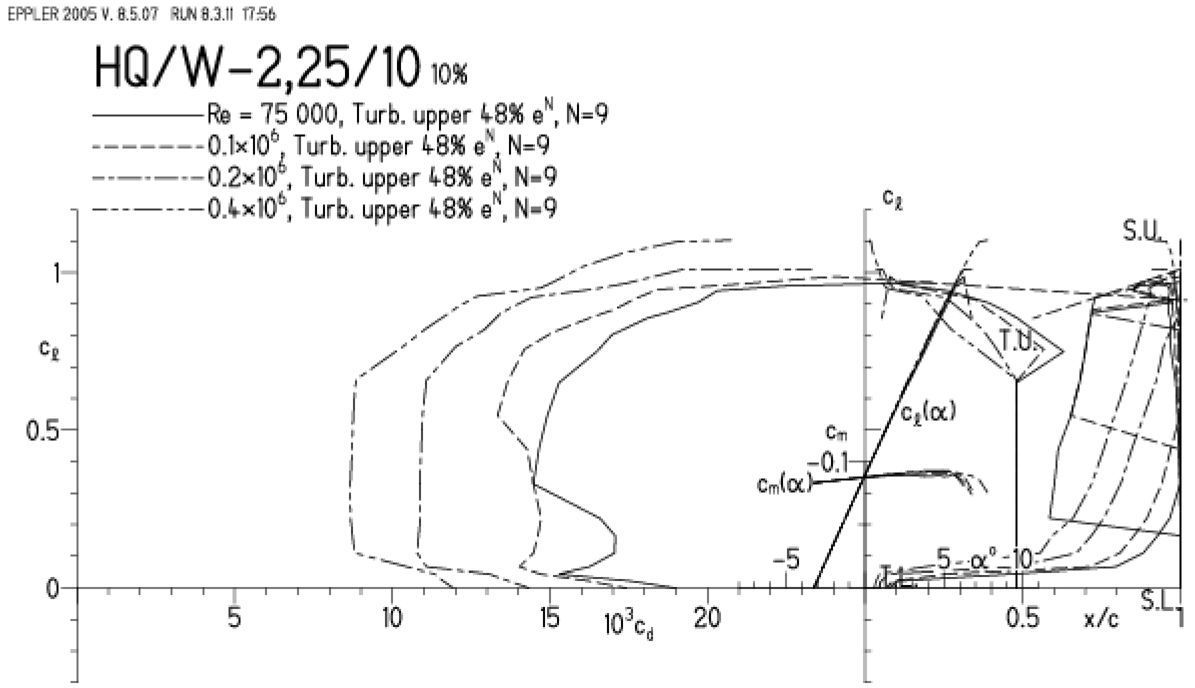


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



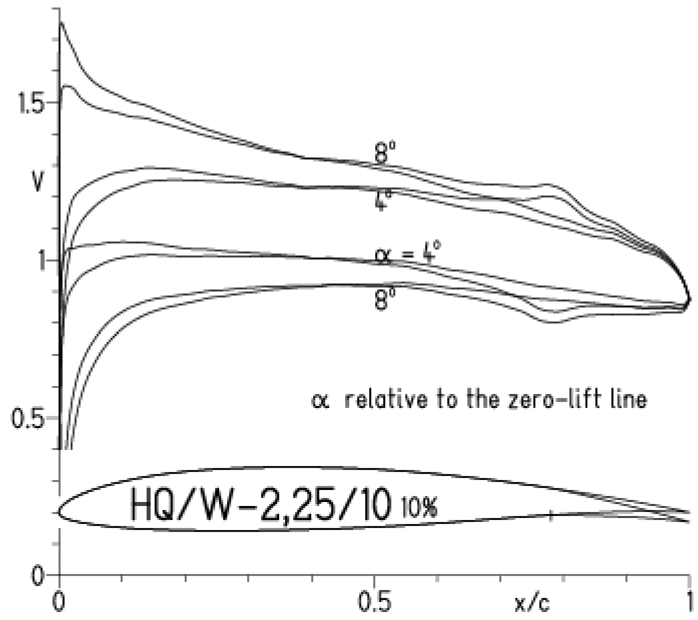
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



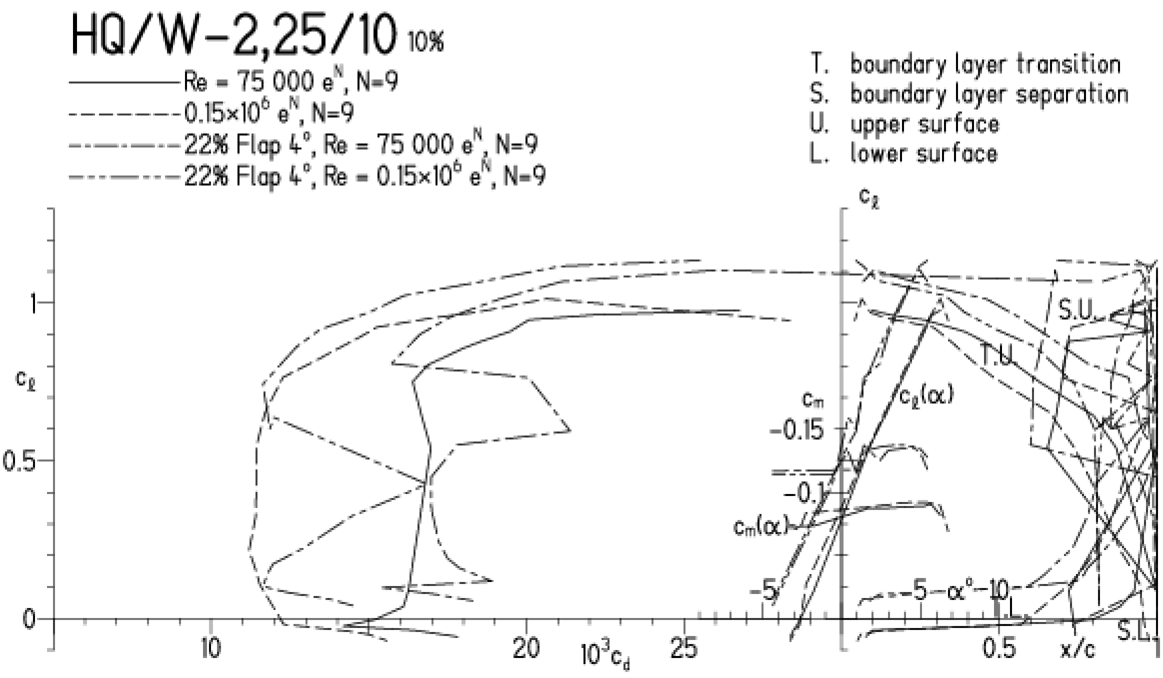


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

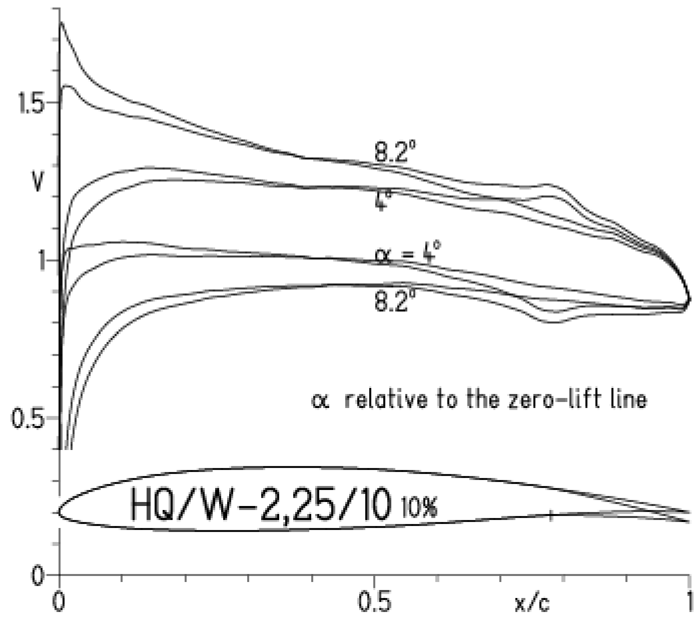


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

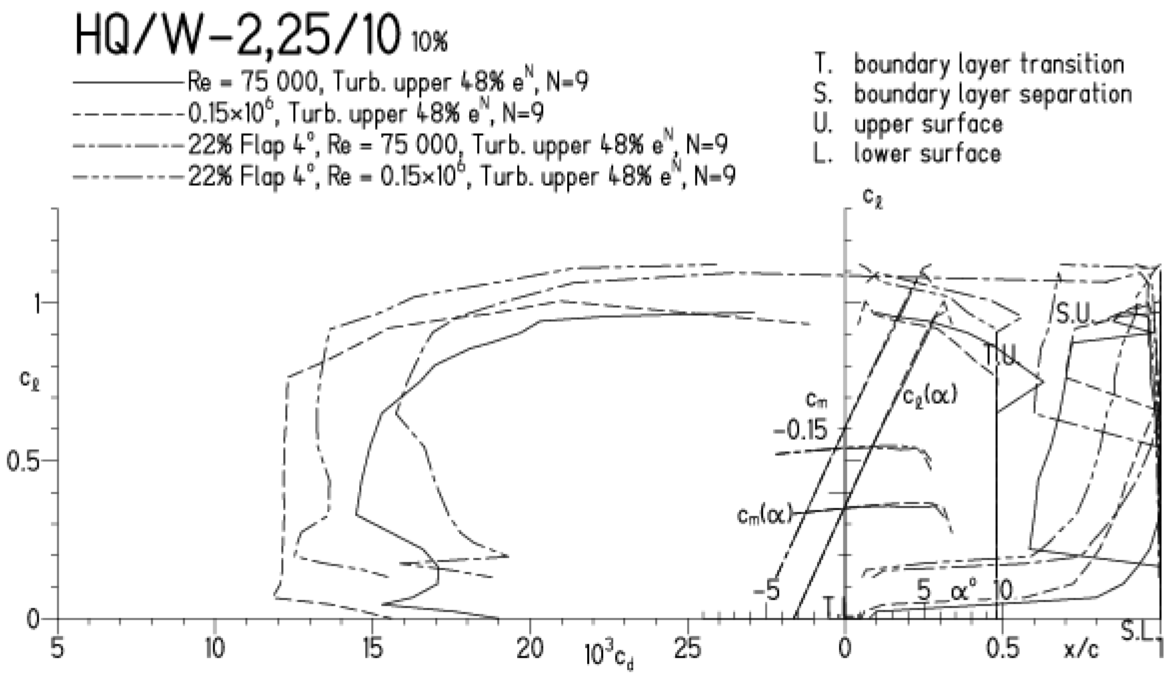


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

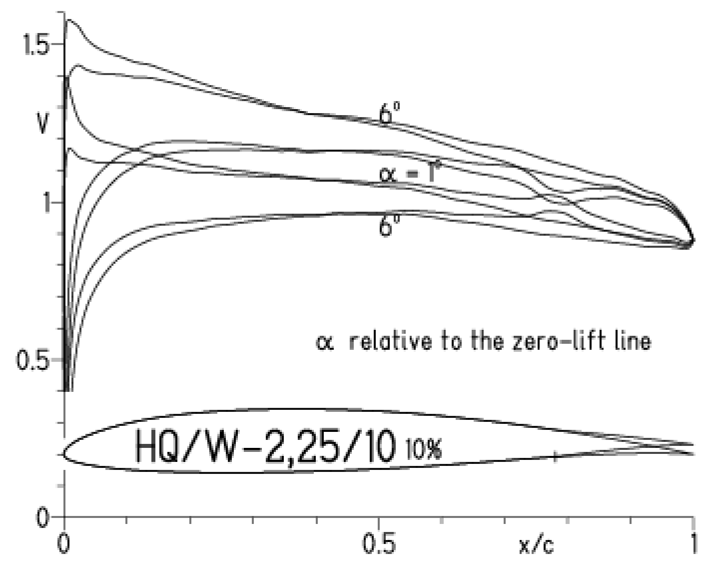


EPPLER 2005 V. 8.5.07 RUN 8.3

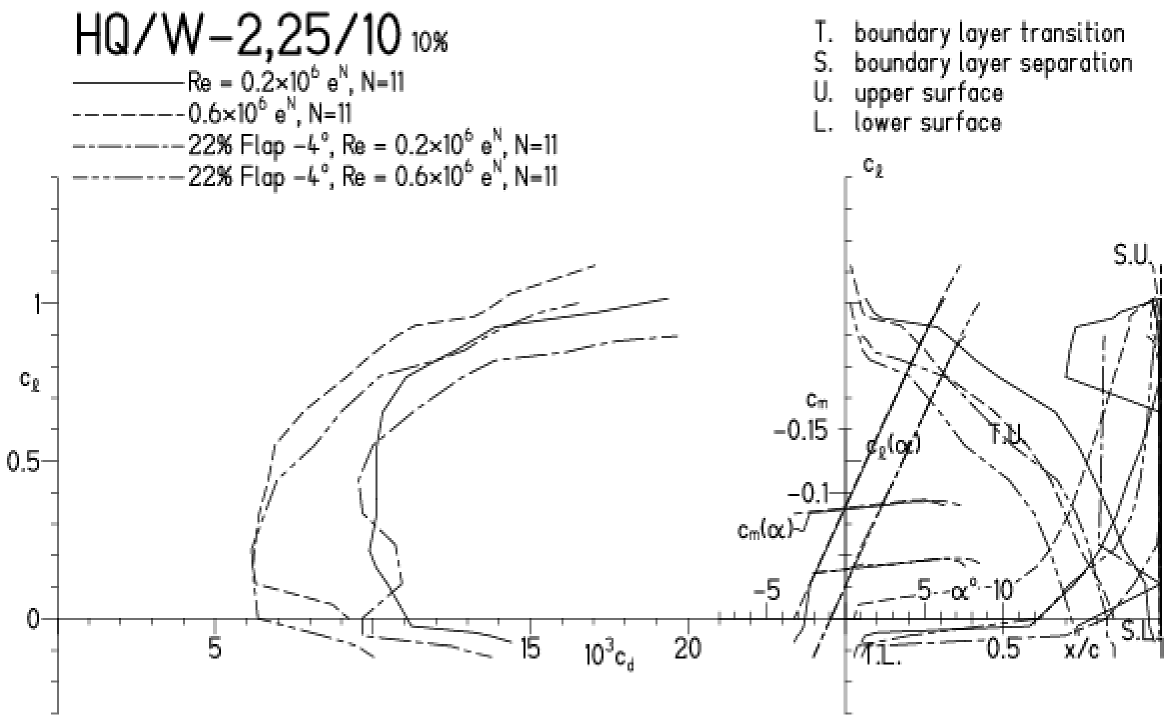


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

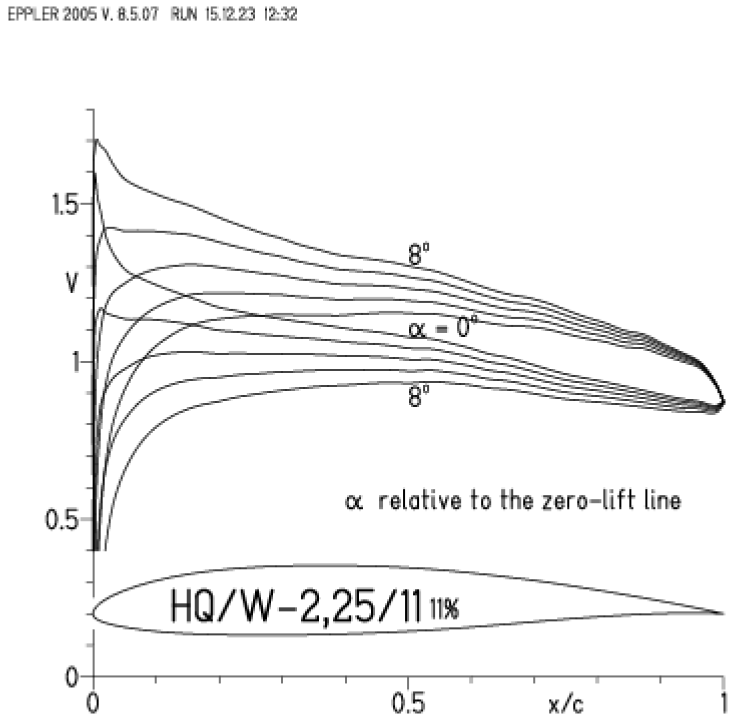
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

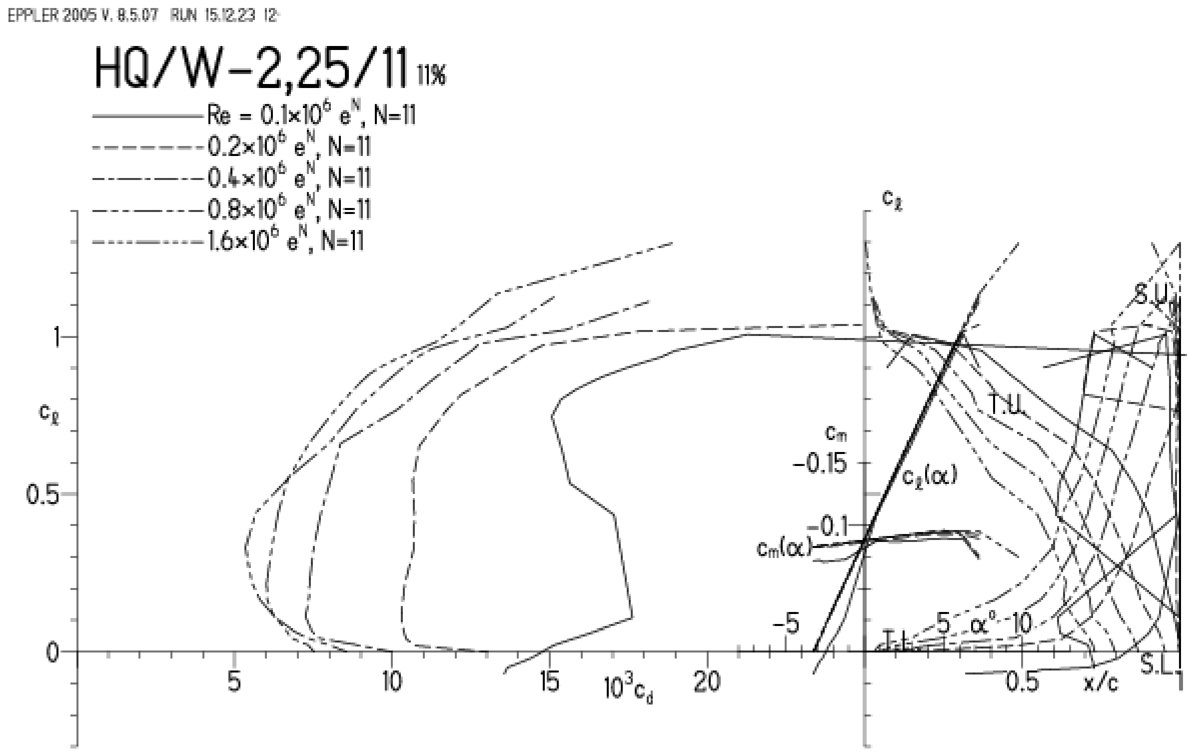


EPPLER 2005 V. 8.5.07 RUN

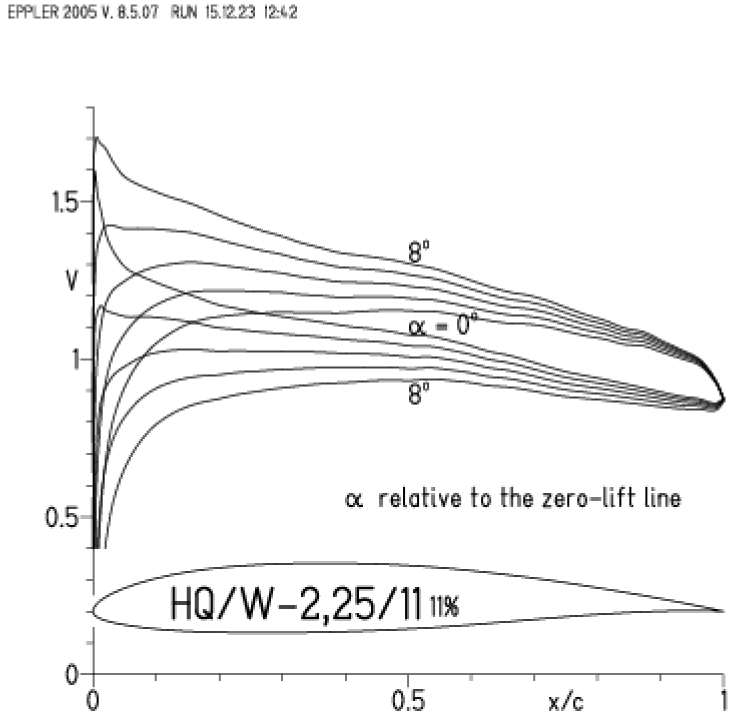


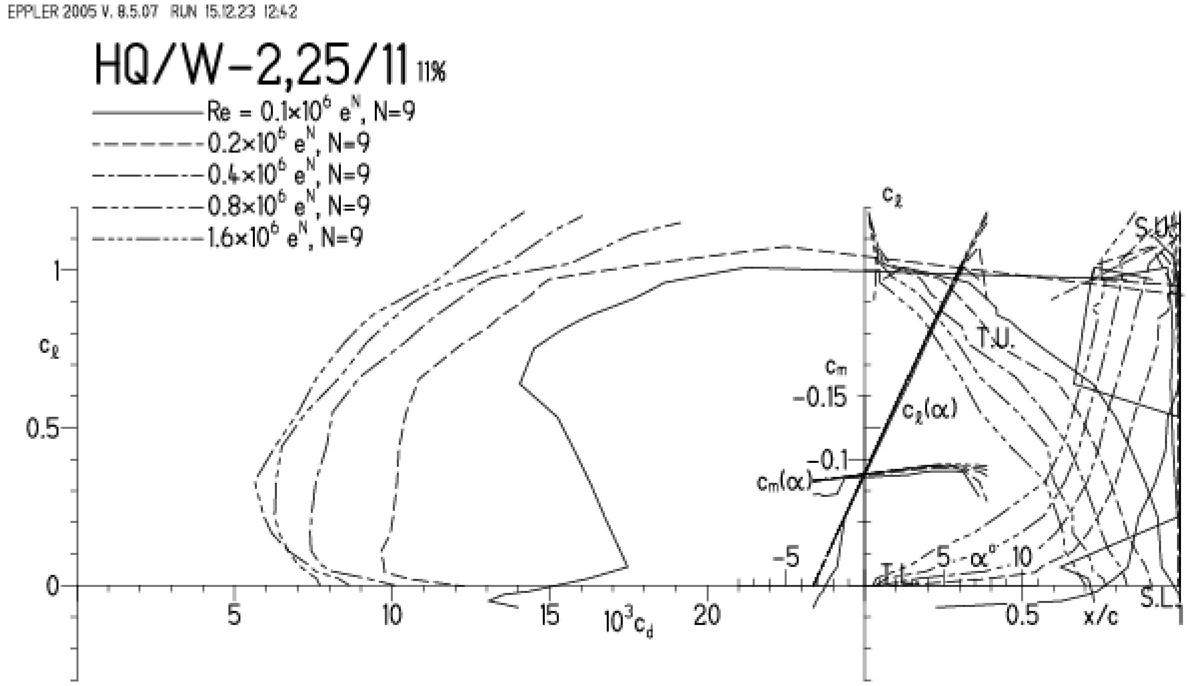
<u>HQ/W-2,25/11</u>, N=11



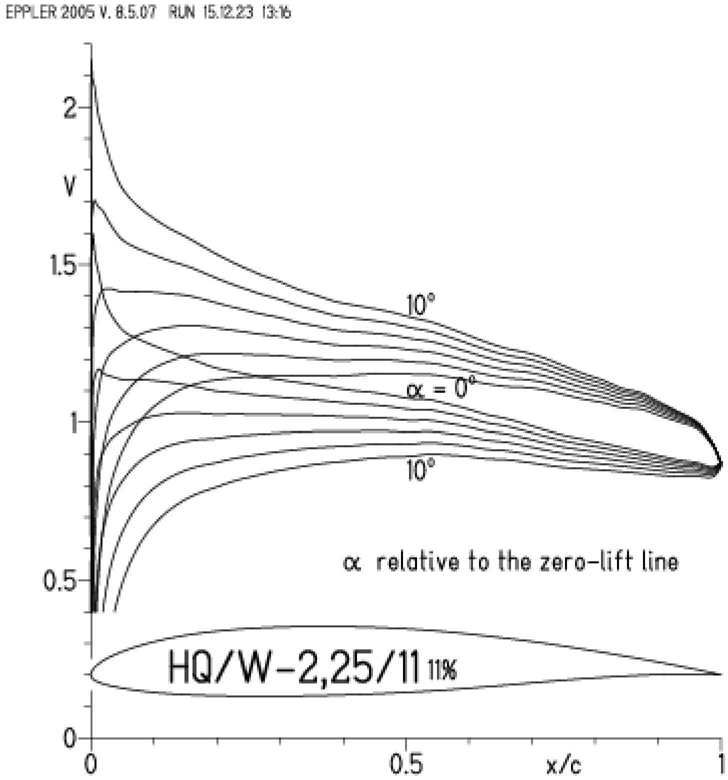


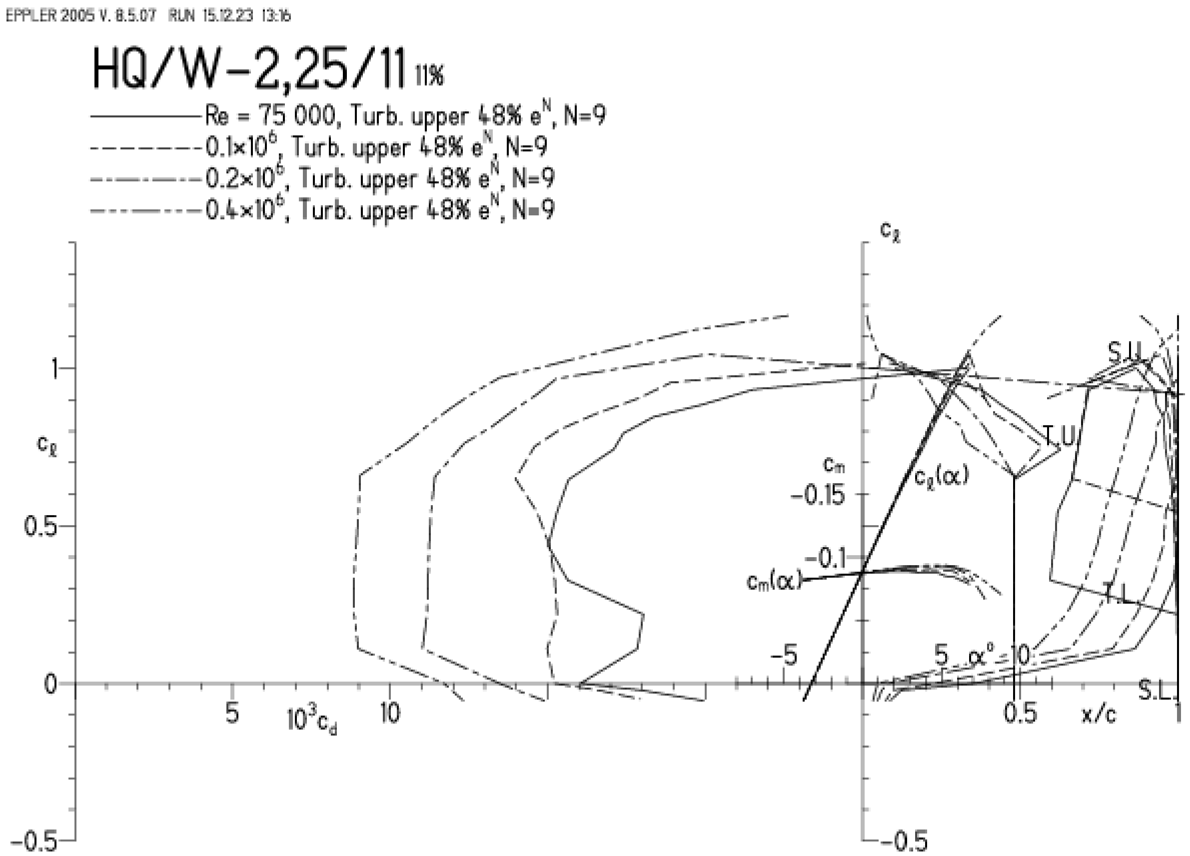
HQQ/W-2,25/11, N=9



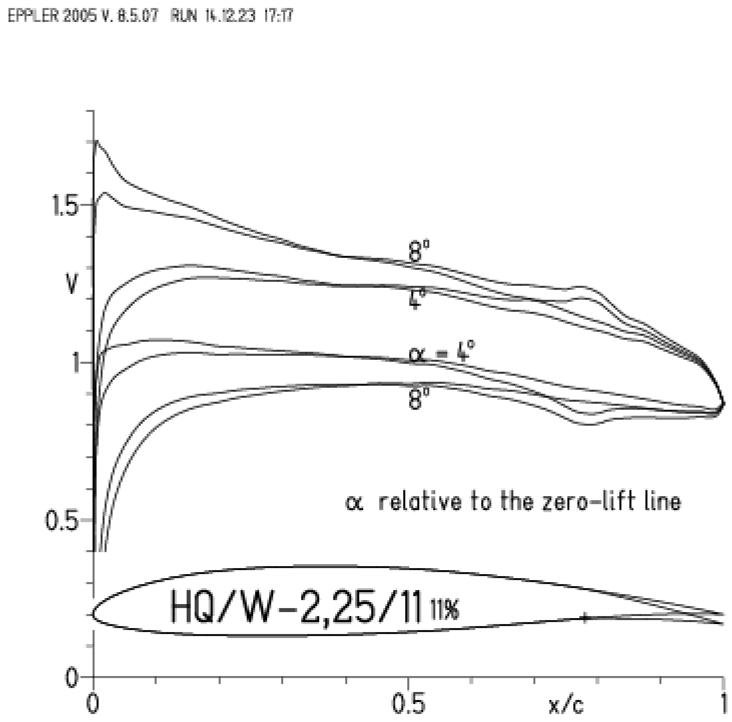


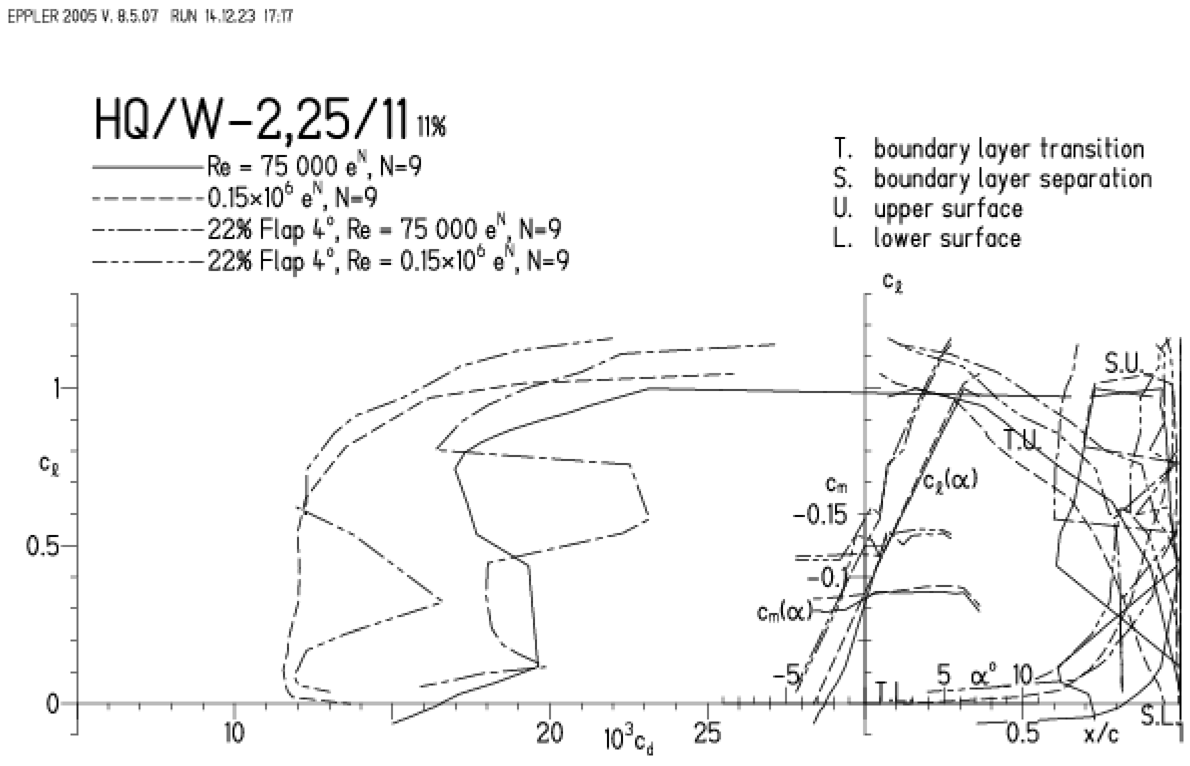
HQ/W-2,25/11, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





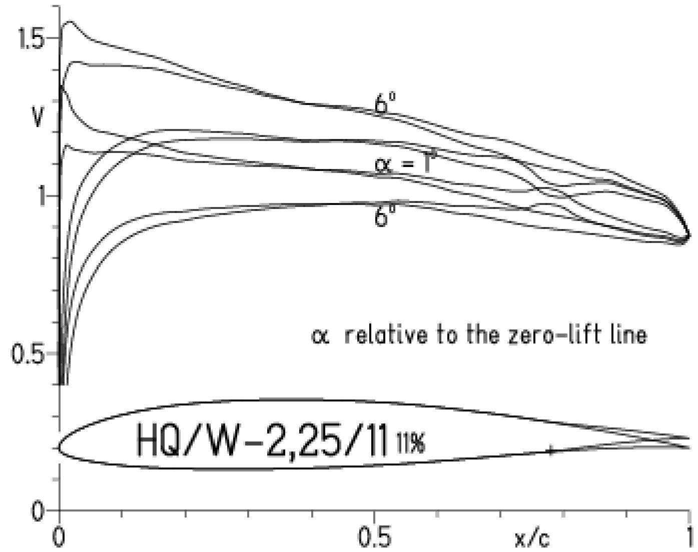
HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag



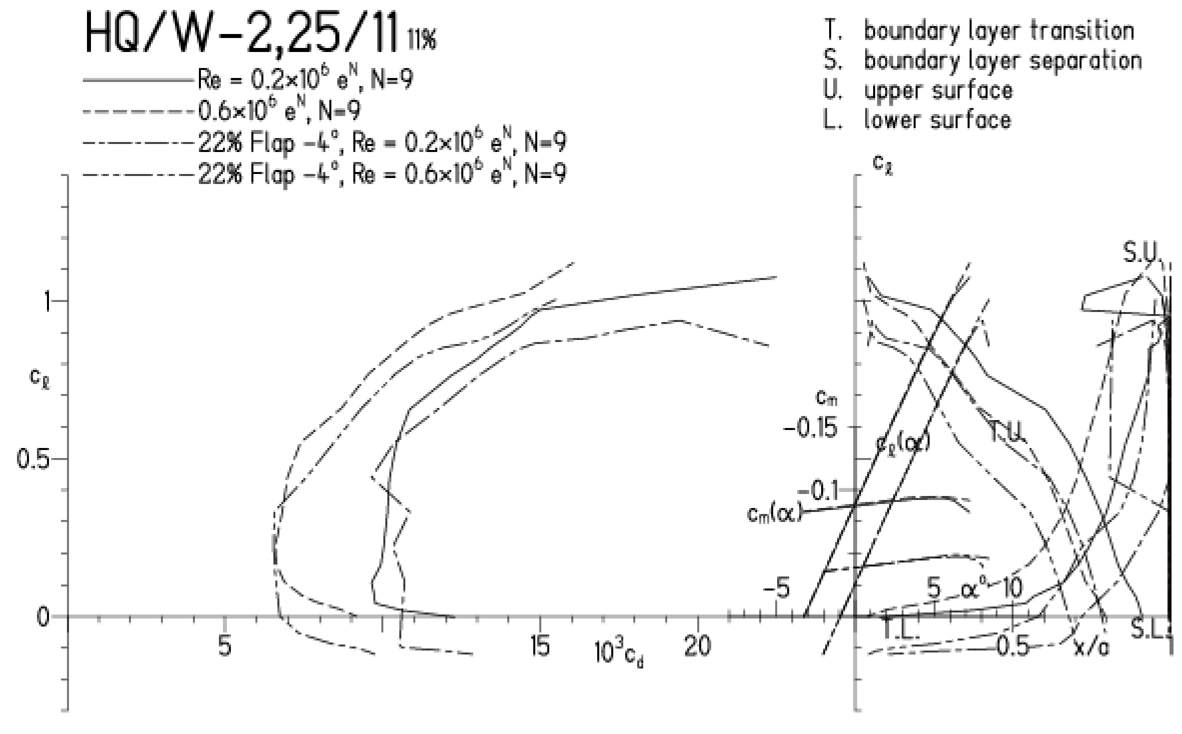


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

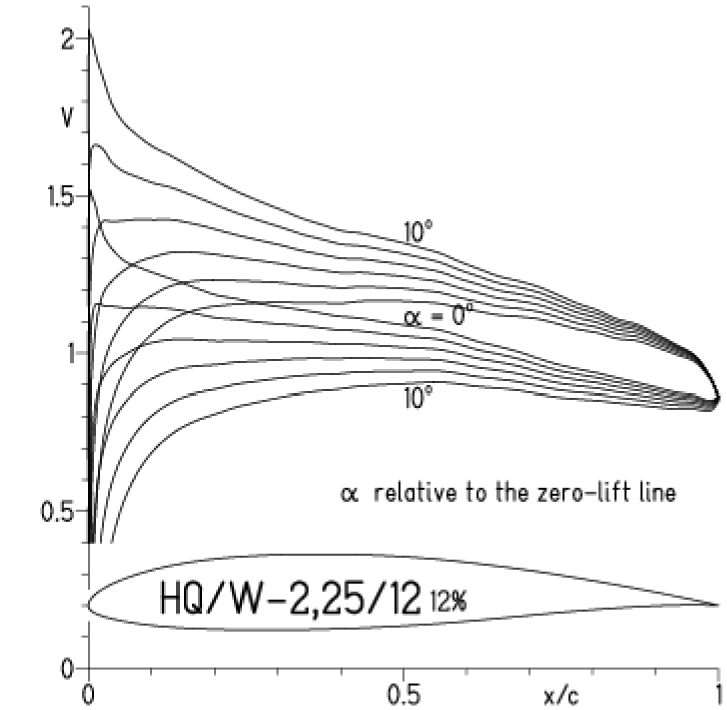


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

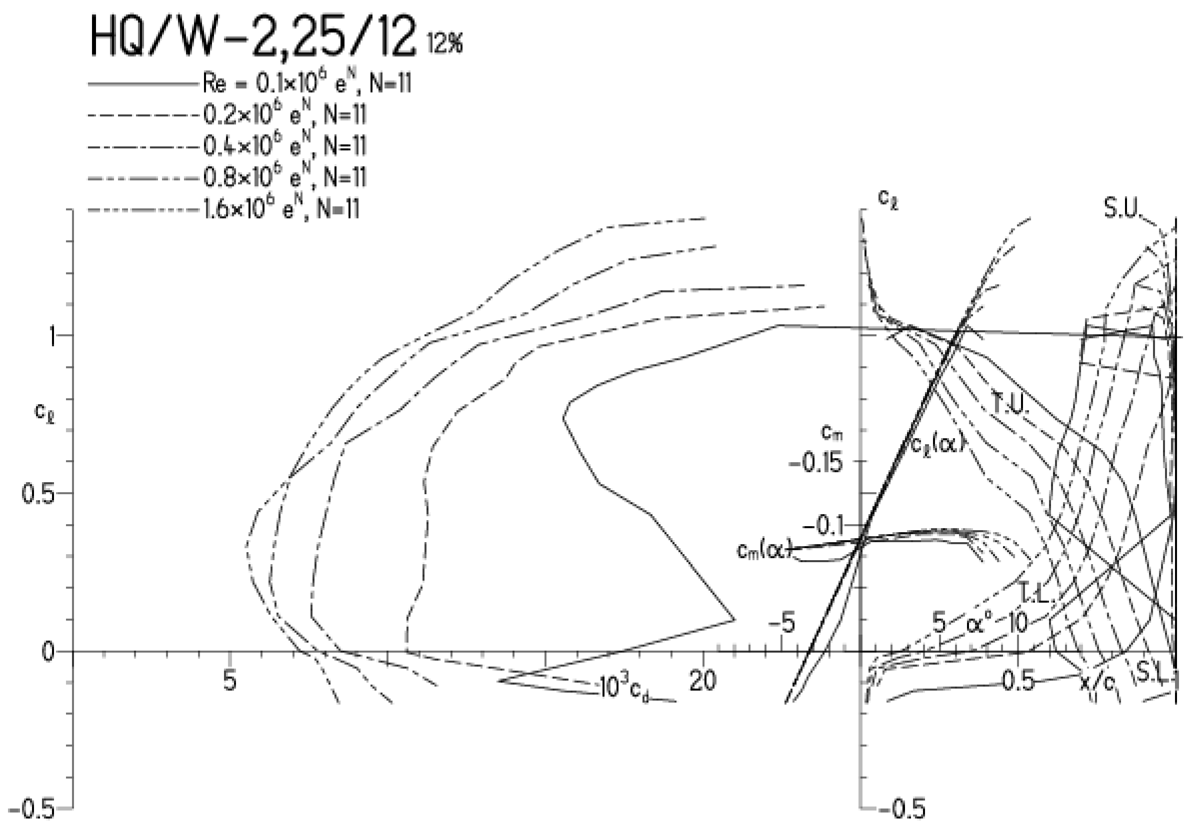


HQ/W-2,25/12, N=11

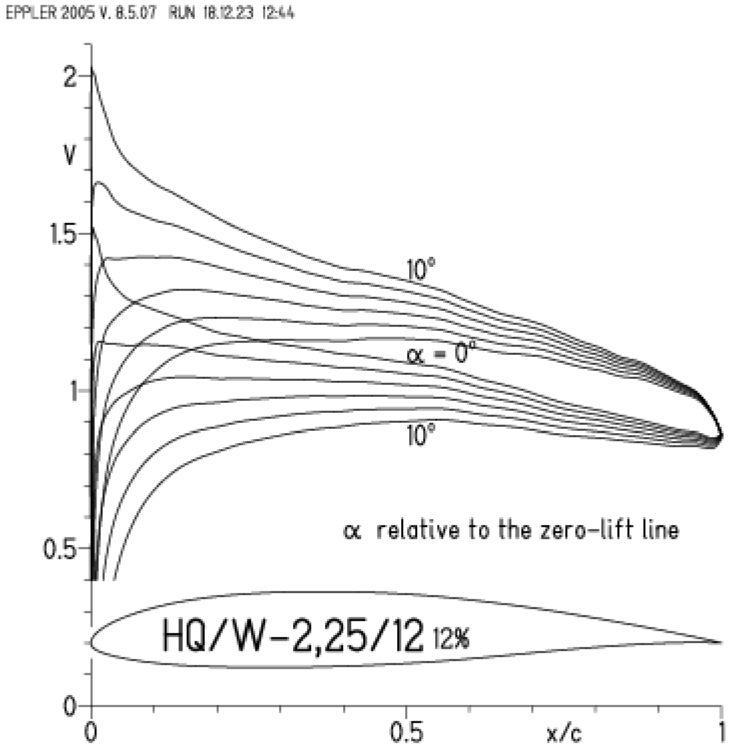
EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:32

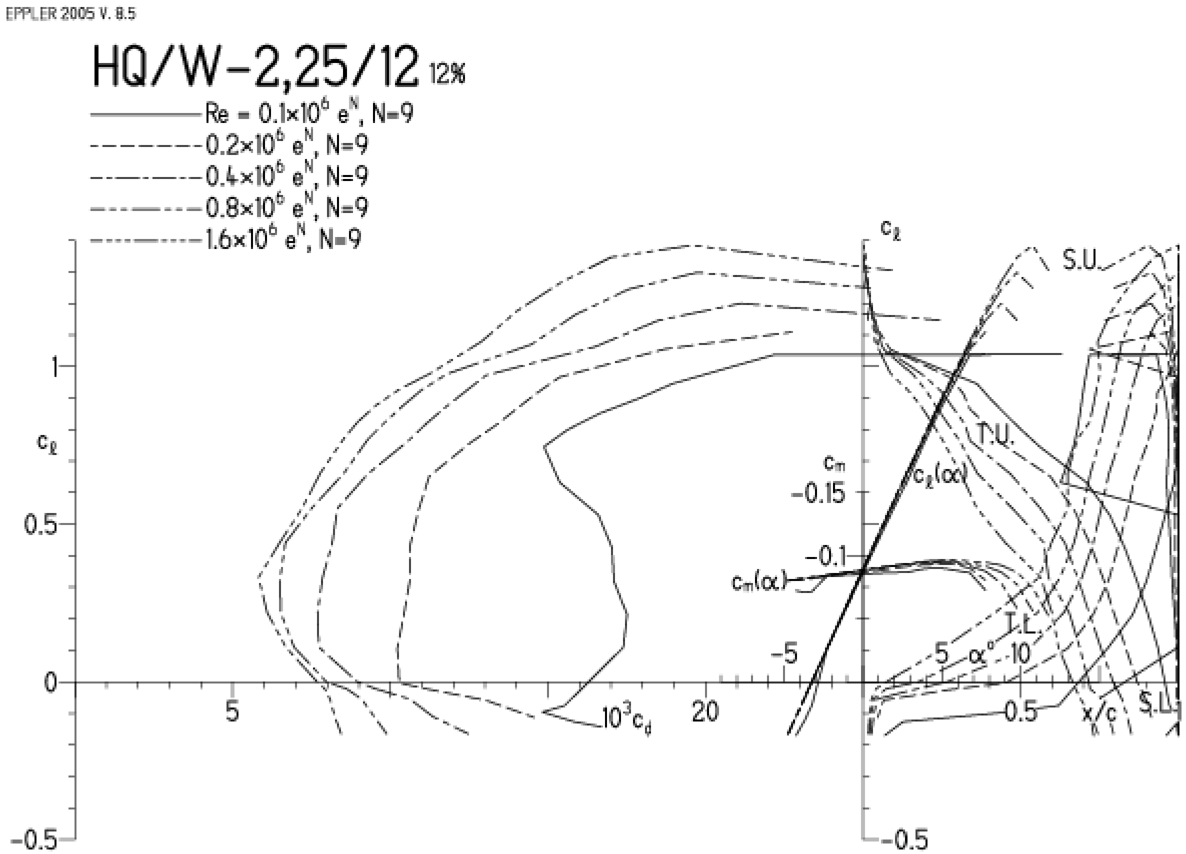


EPPLER 2005 V. 8.5.07 RUN 18.12.23 1

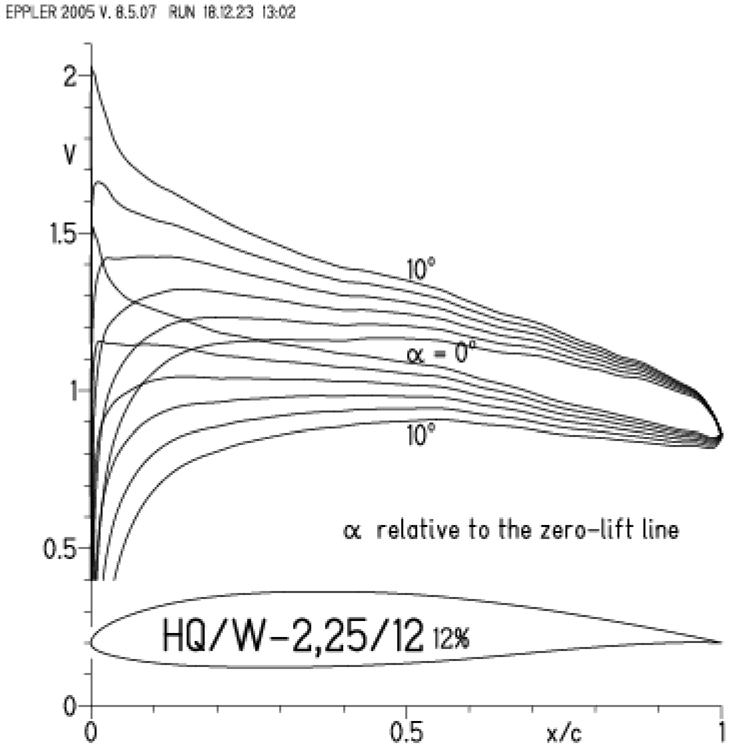


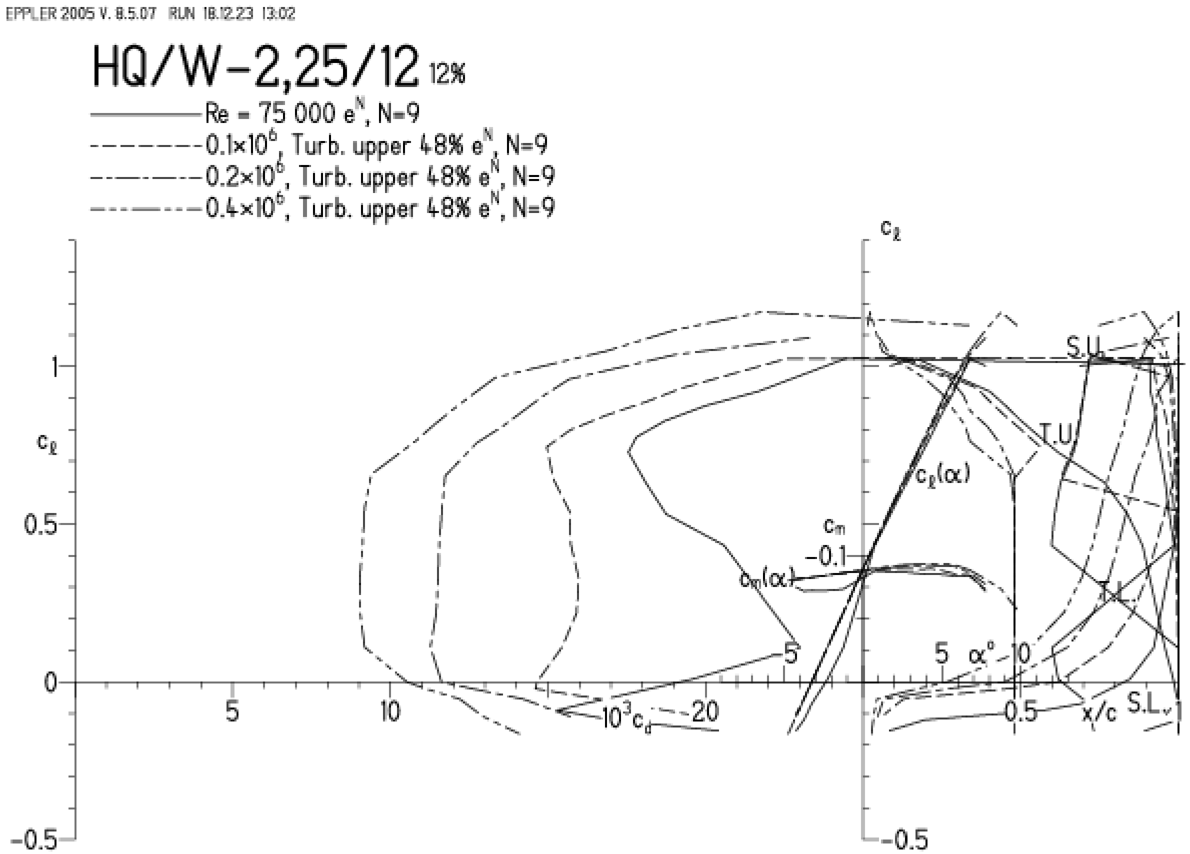
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
c_m
c_ℓ(α)
c_m(α)
S.U.
T.U.
T.L.
S.L.
α°
10^3 c_d
x/c

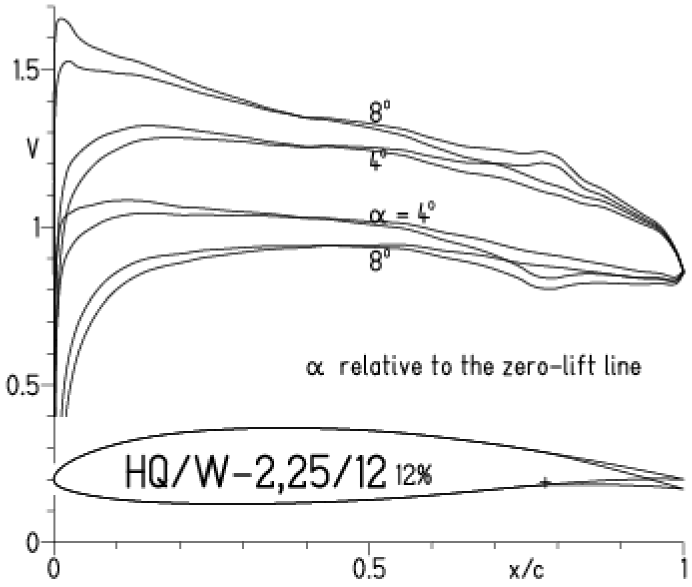
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



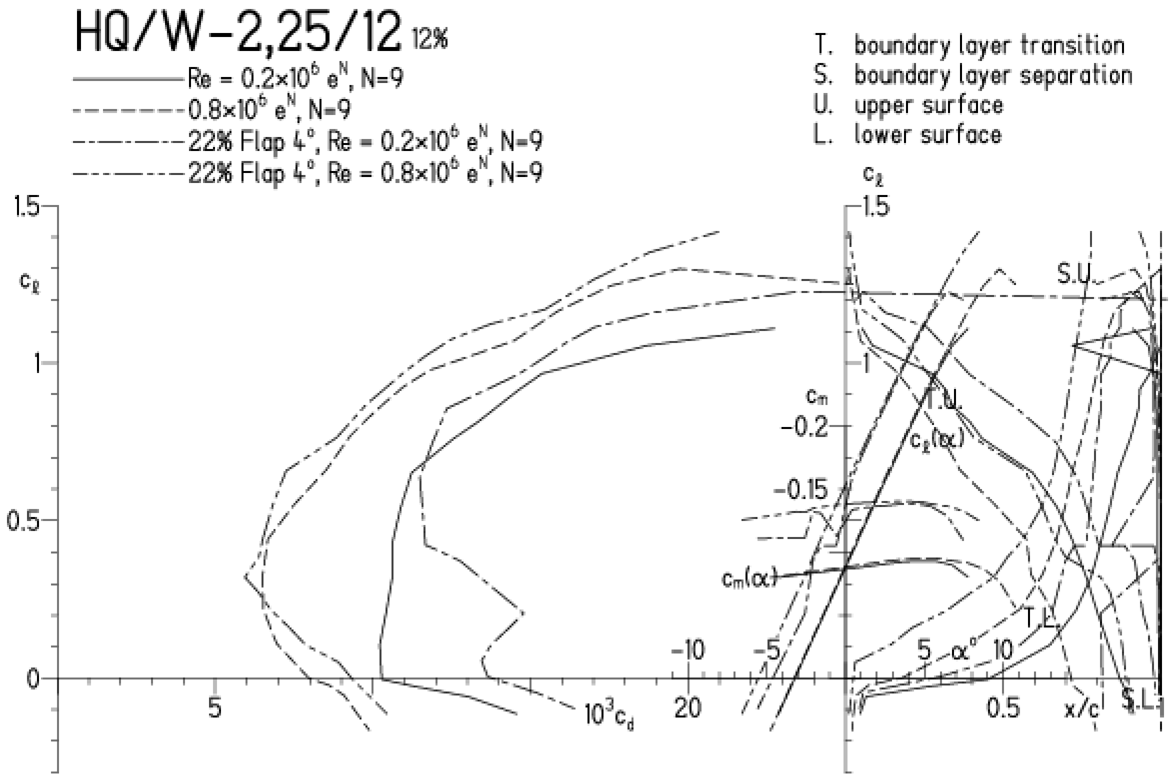


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

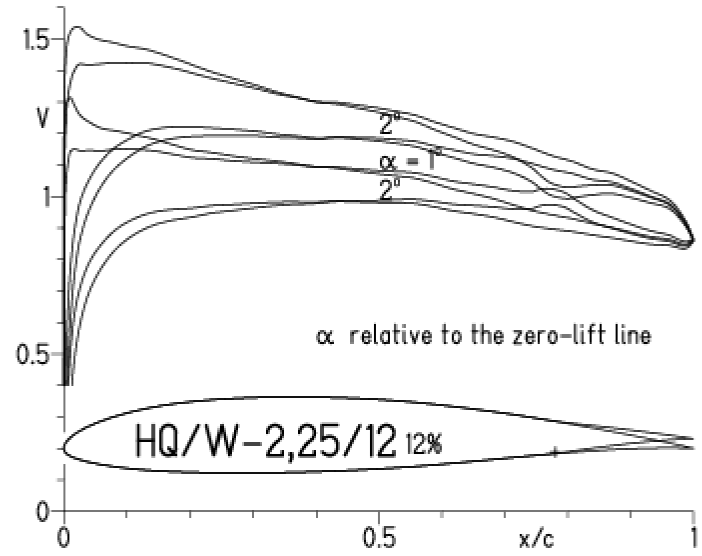


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

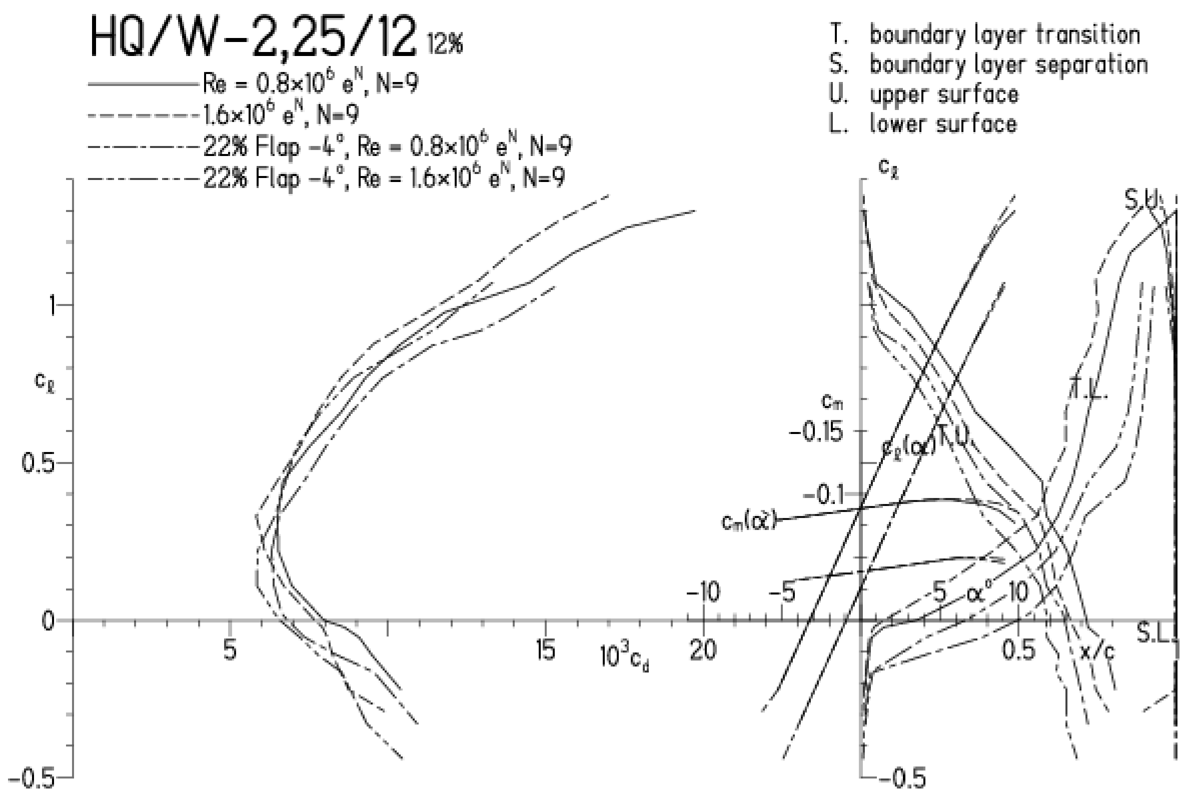


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

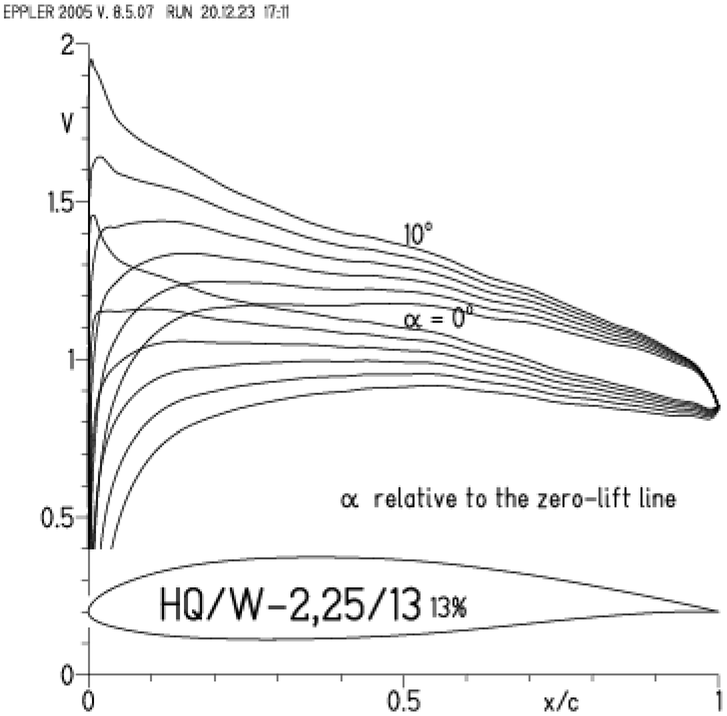
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

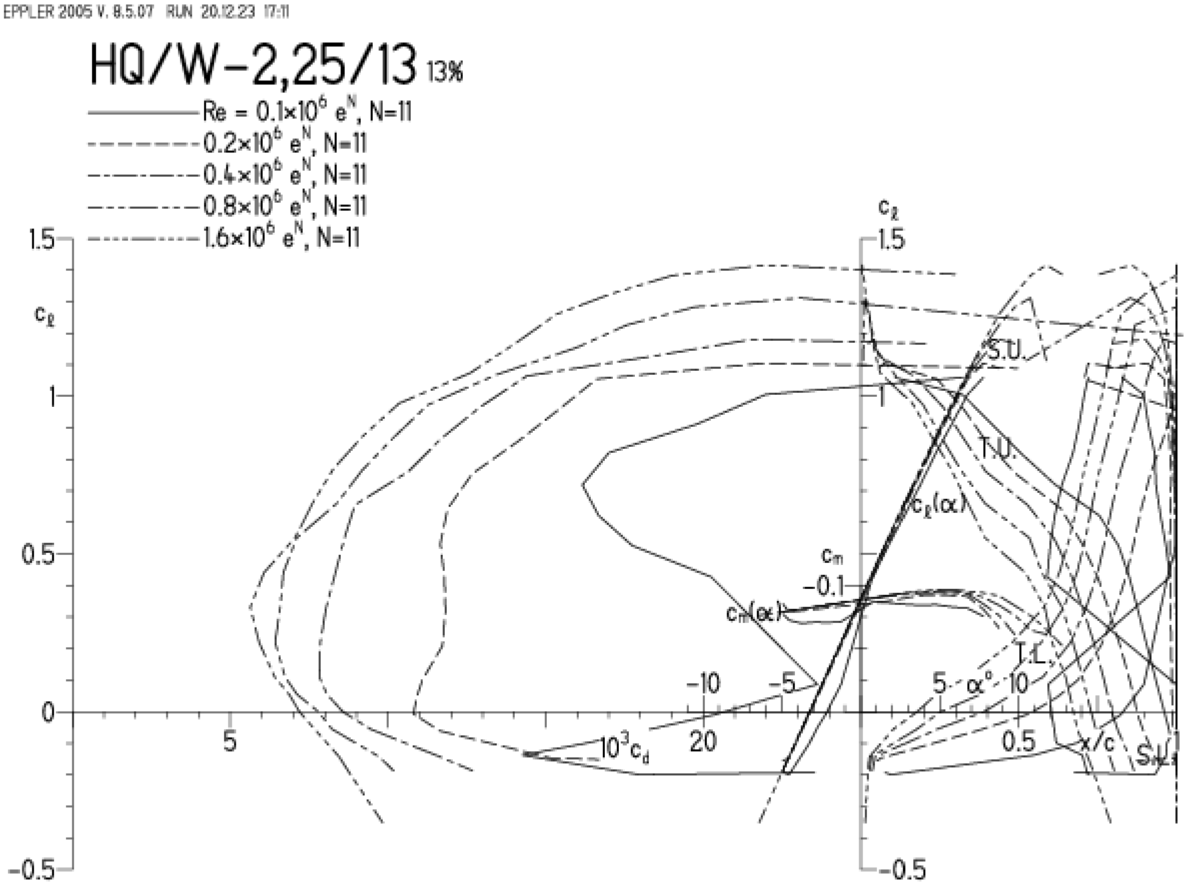


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

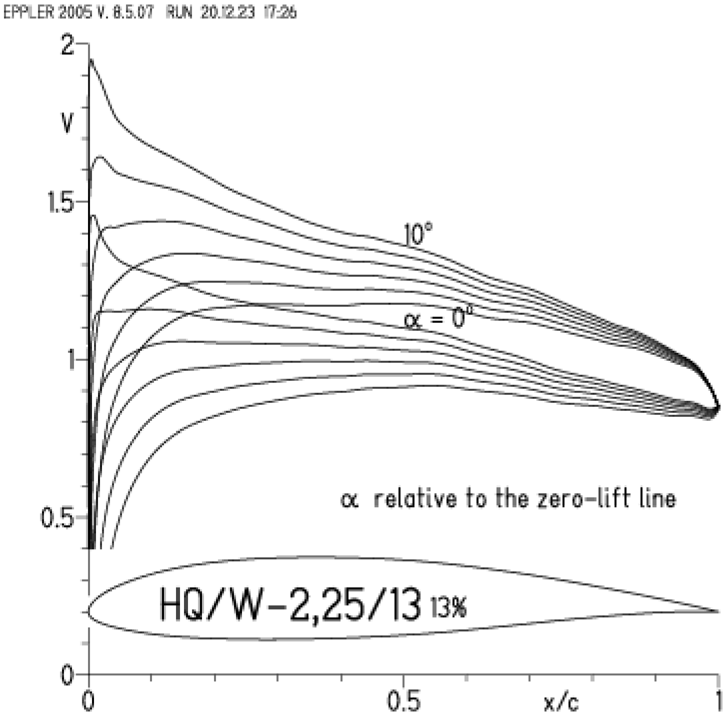


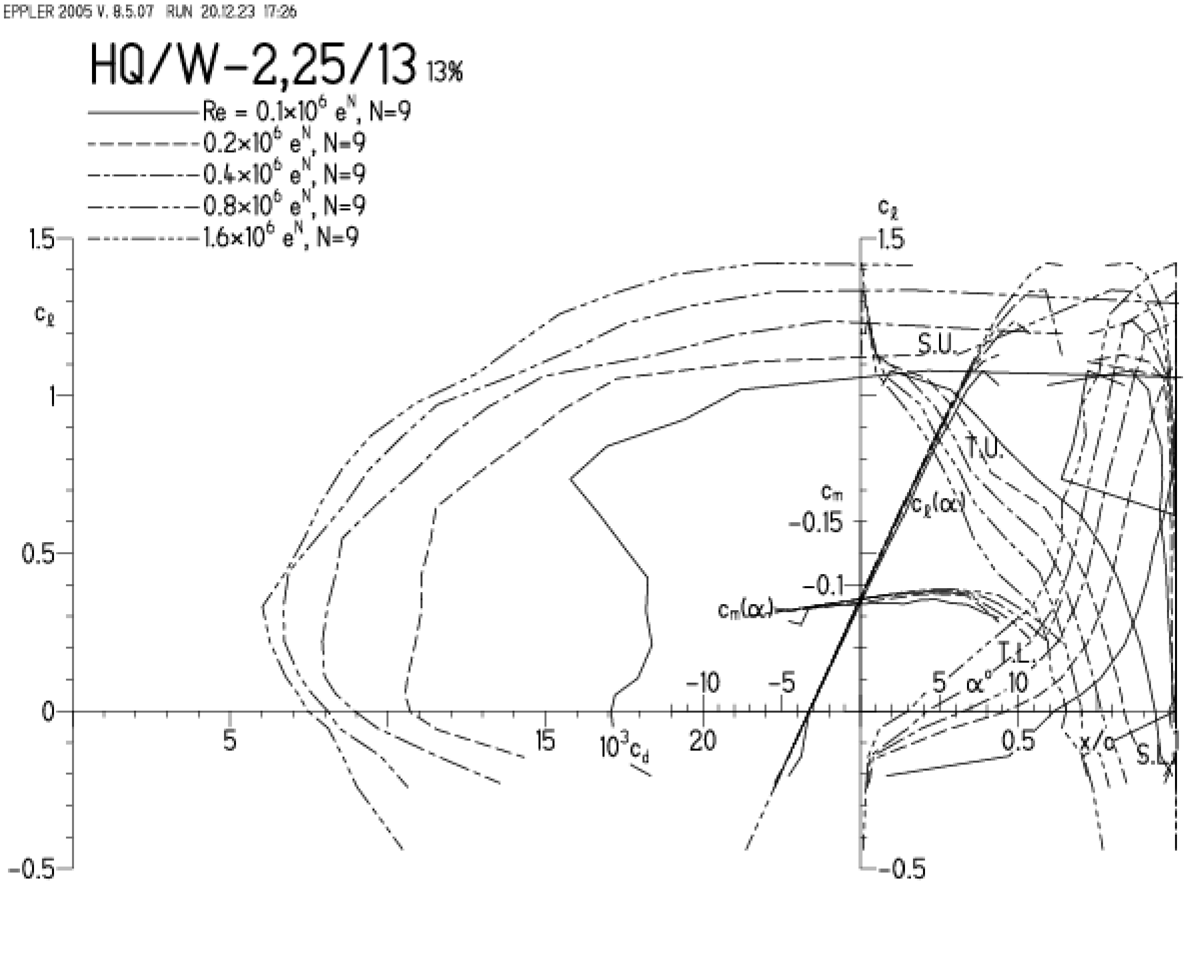
<u>HQ/W-2,25/13</u>, N=11



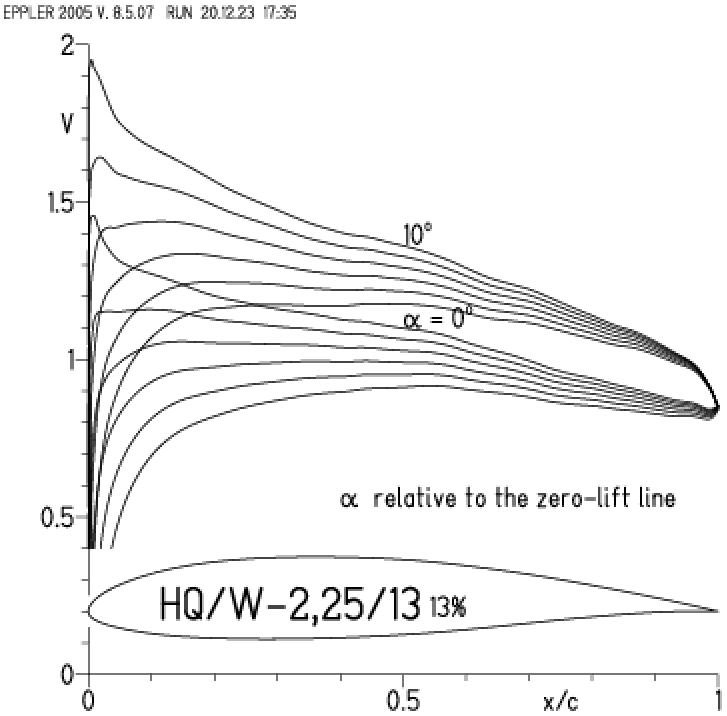


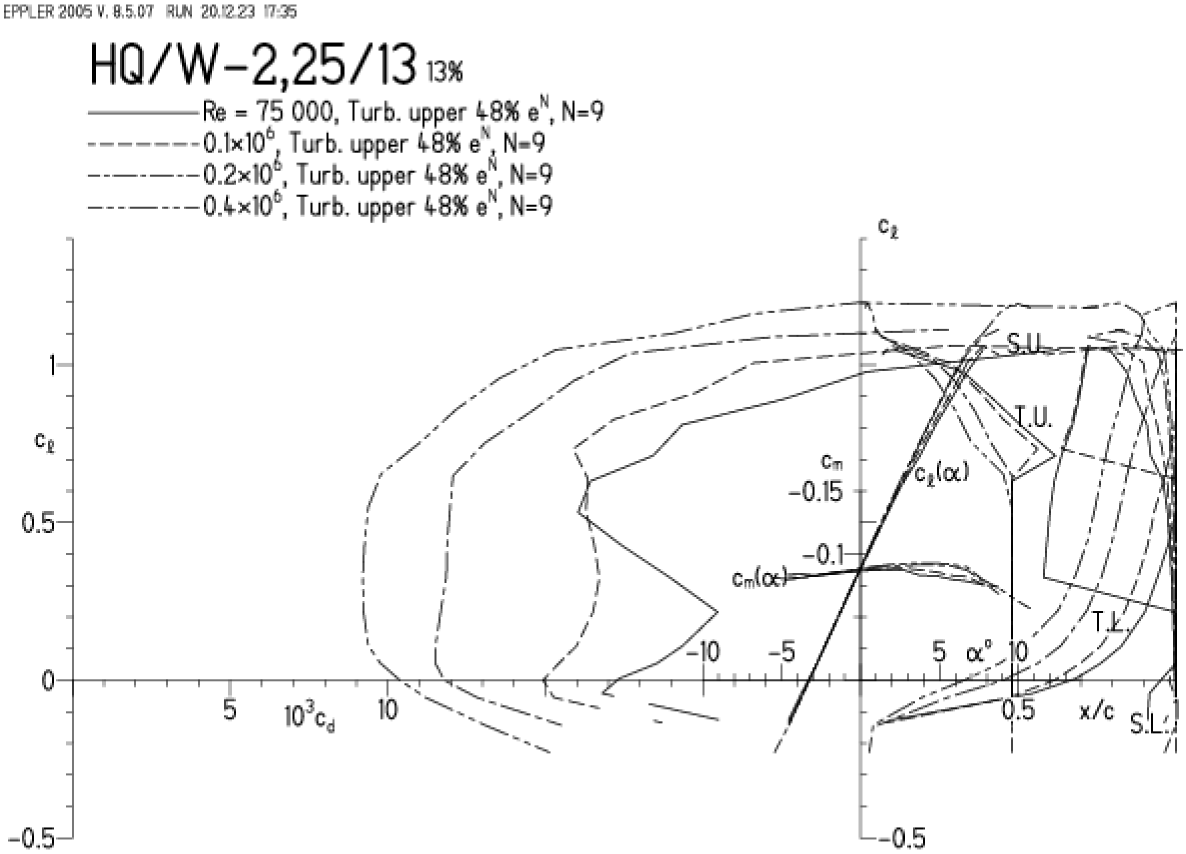
<u>HQ/W-2,25/13</u>, N=9





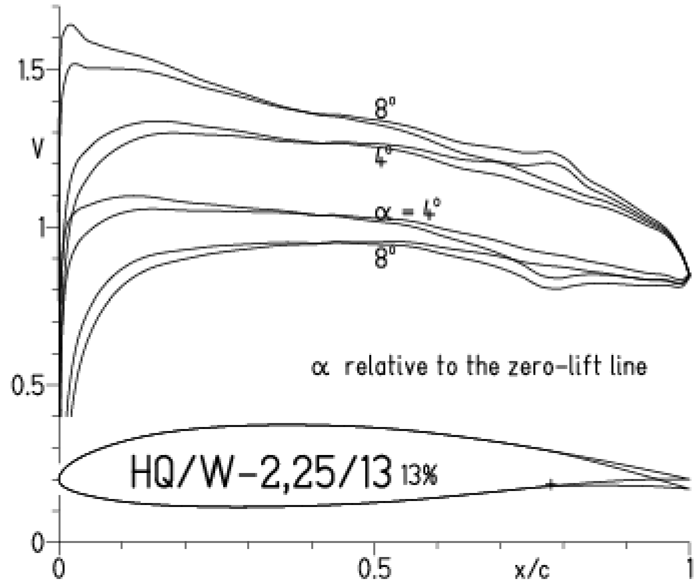
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



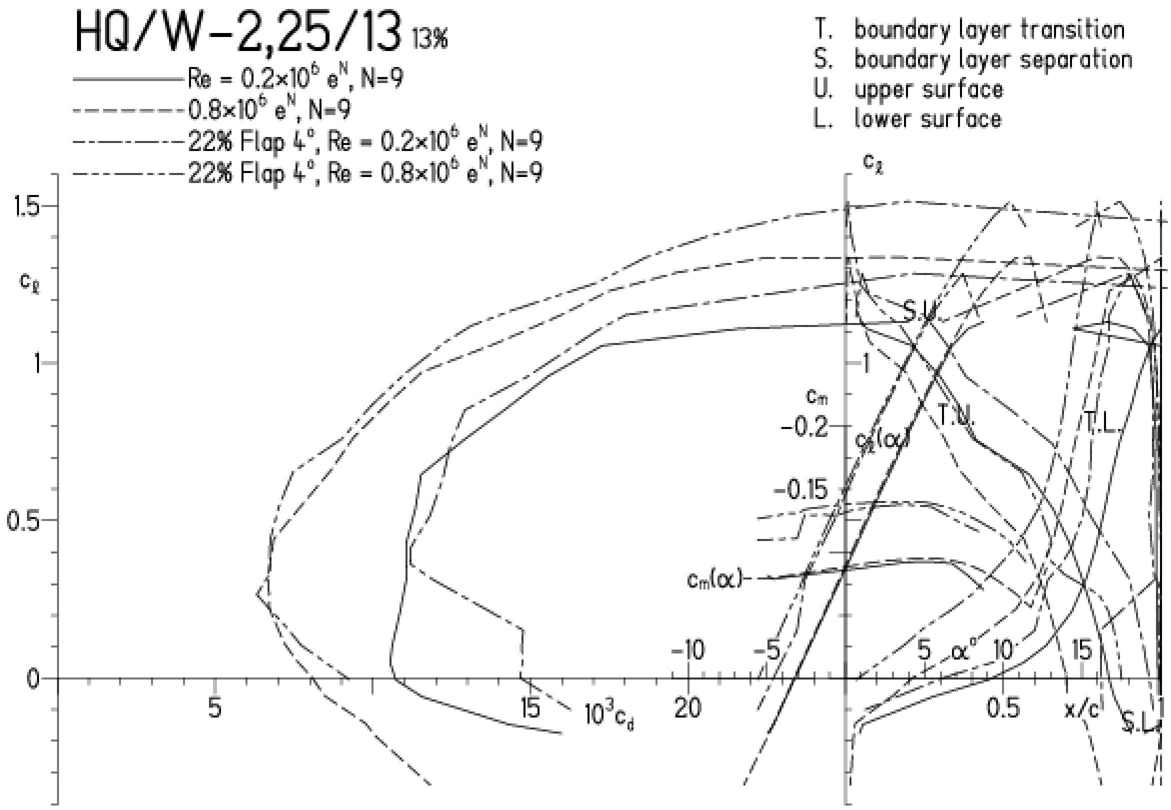


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

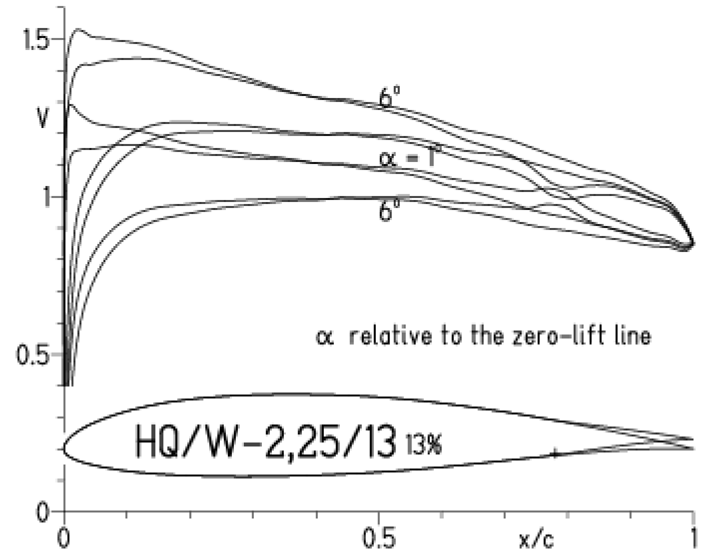


EPPLER 2005 V.

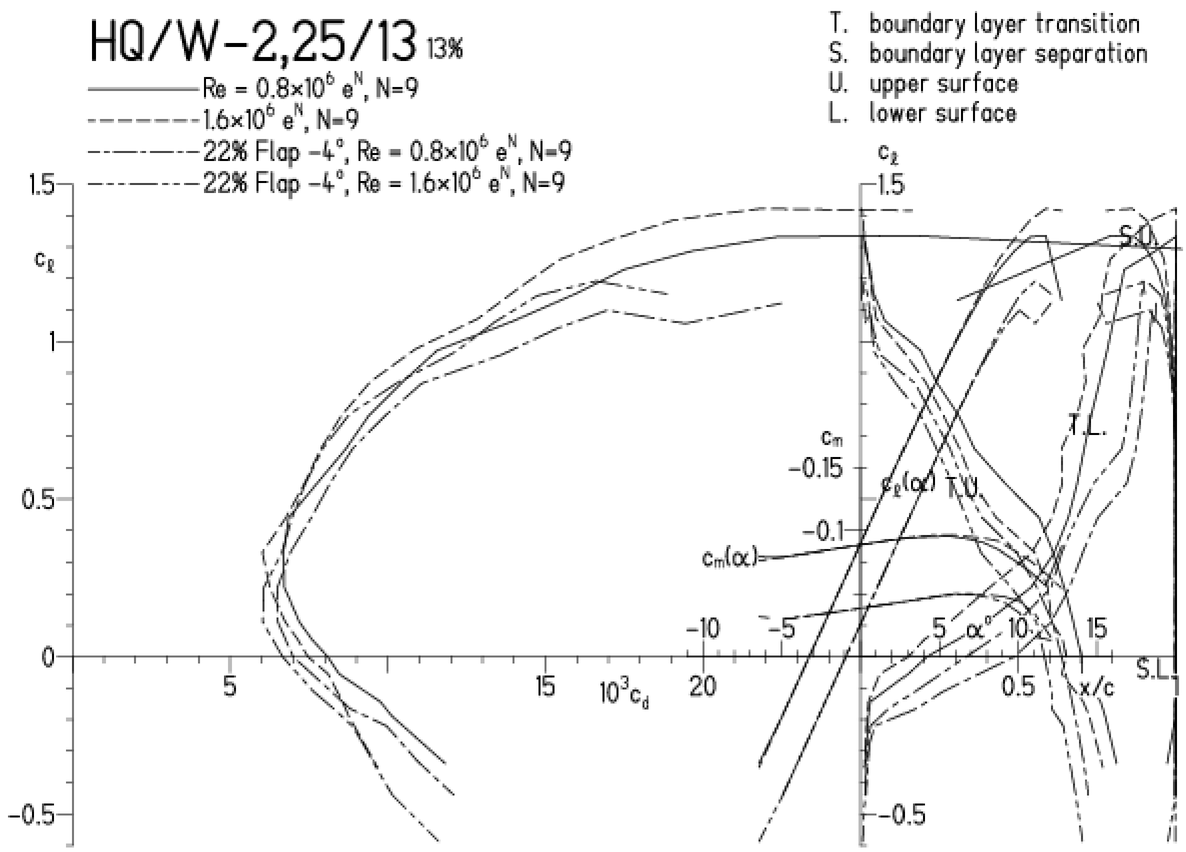


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

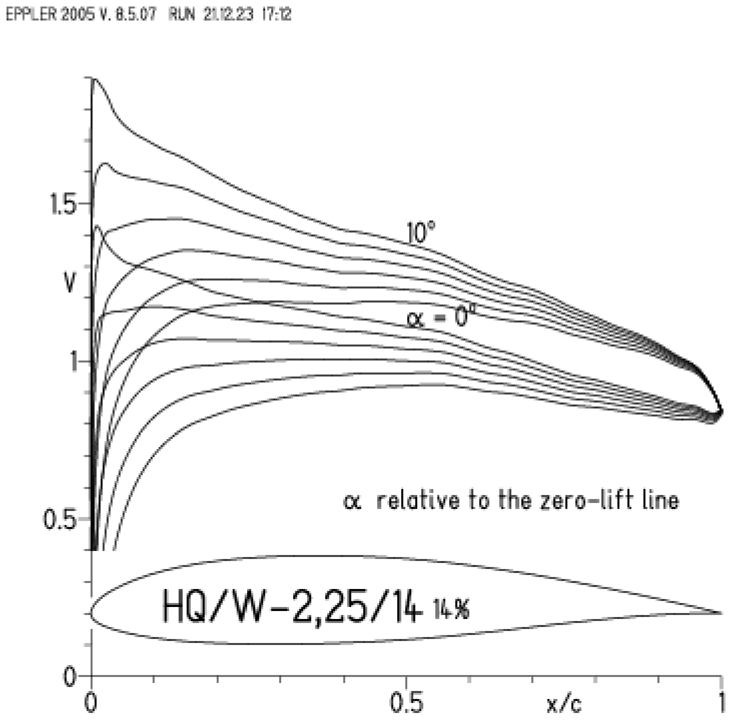
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

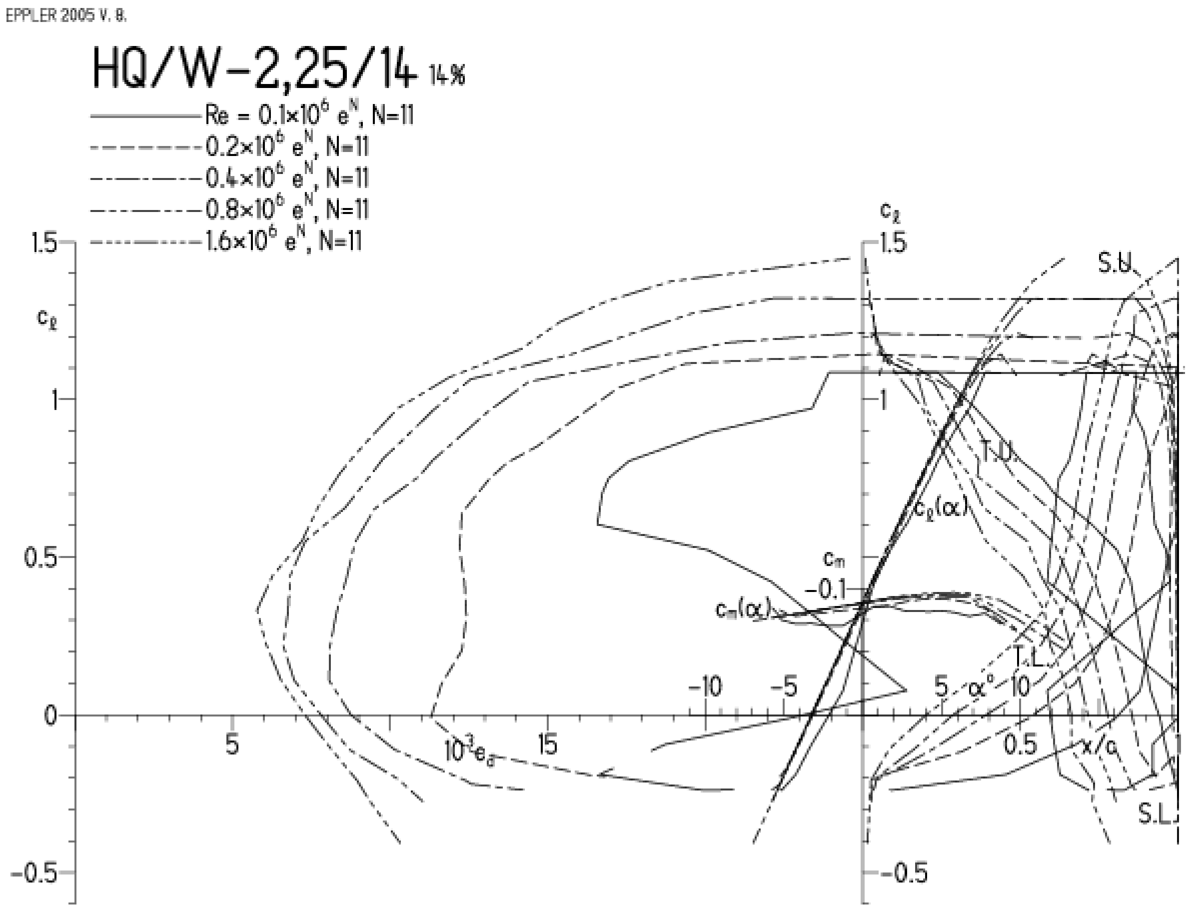


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

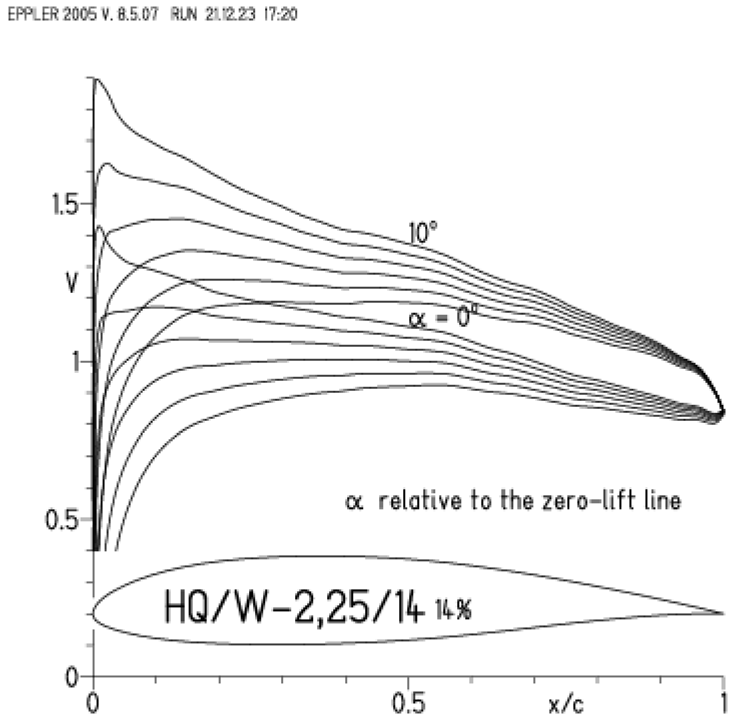


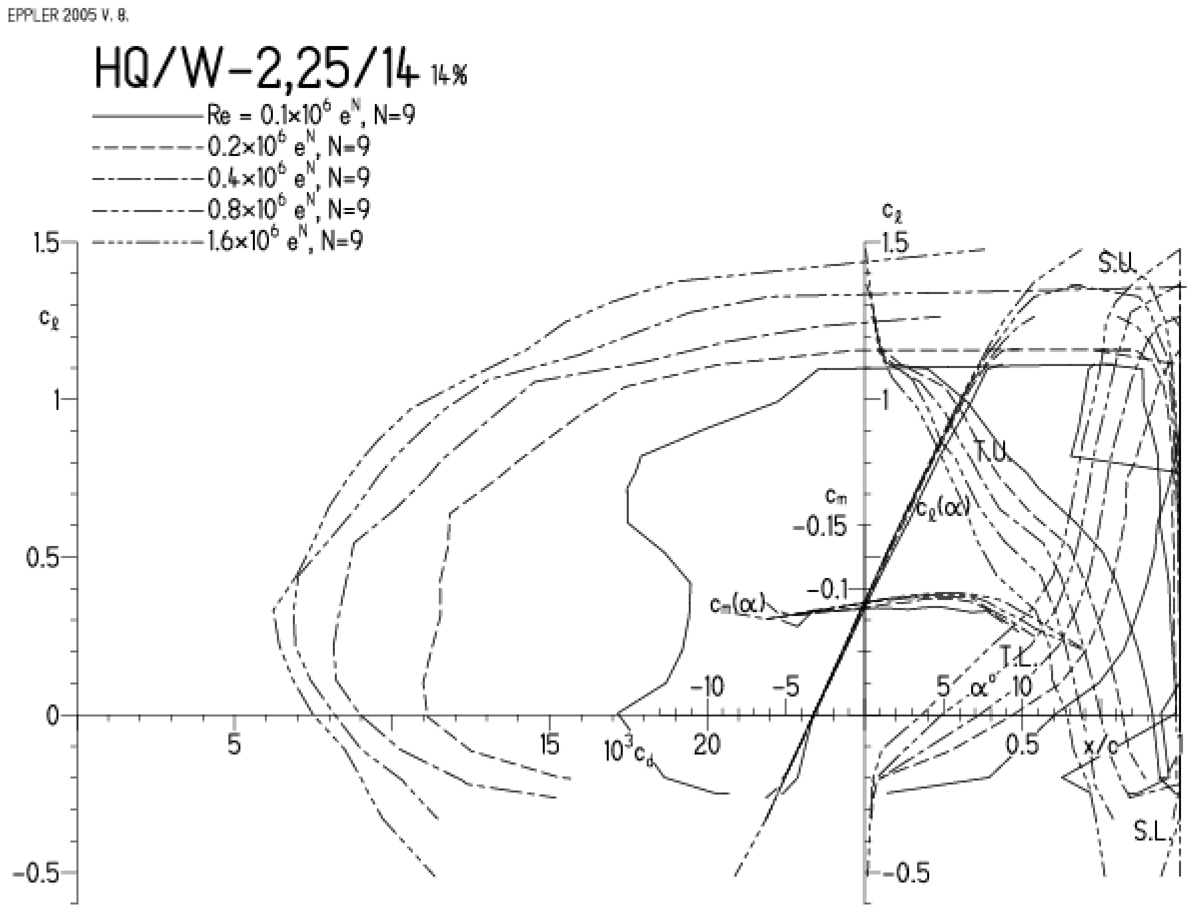
HQ/W-2,25/14, N=11



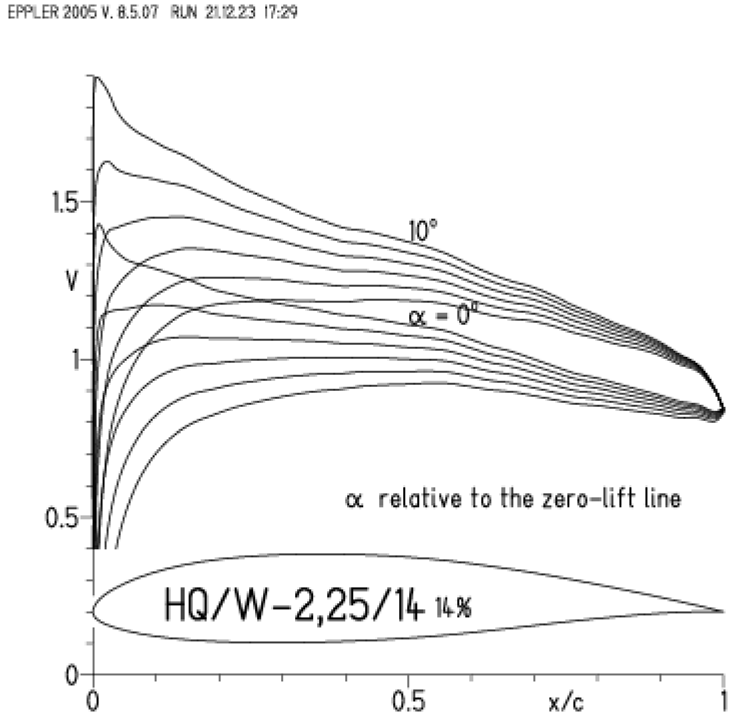


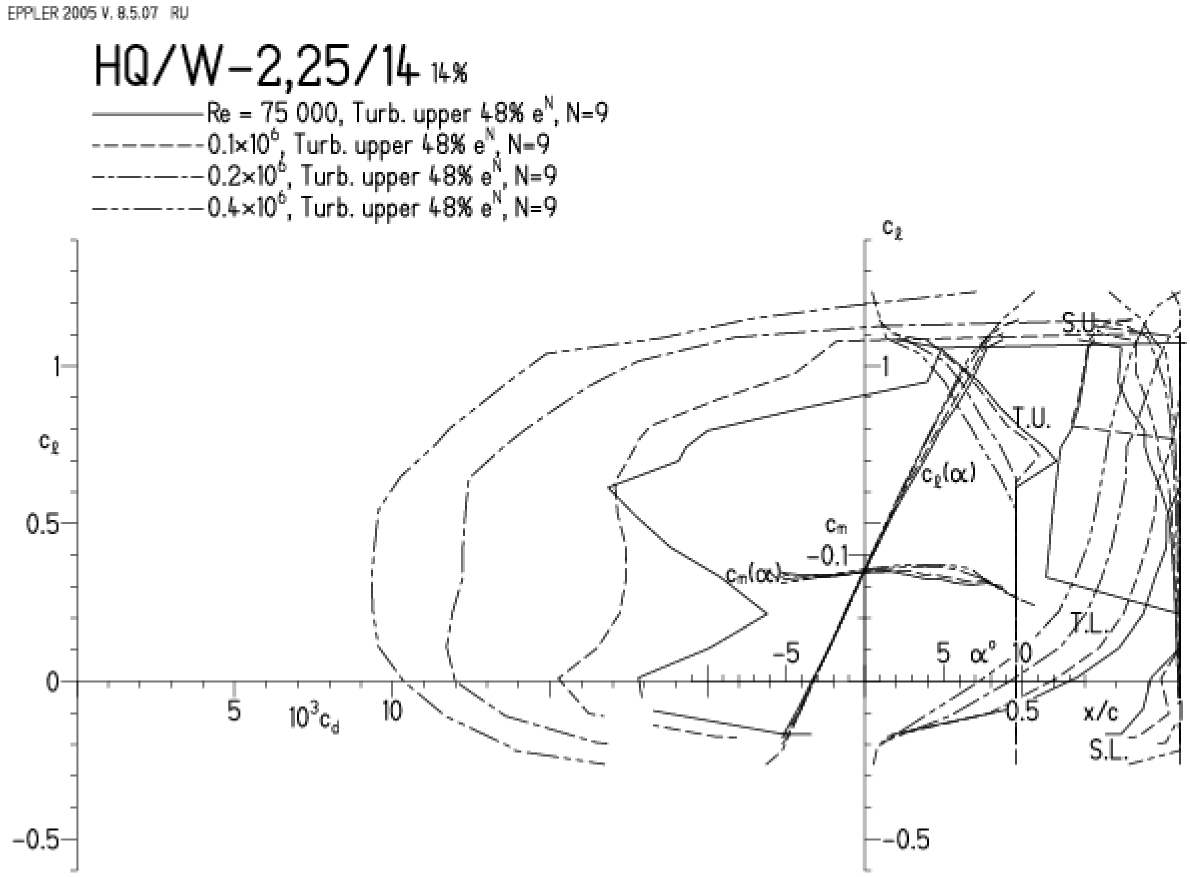
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
V
1.5
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
1.5
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

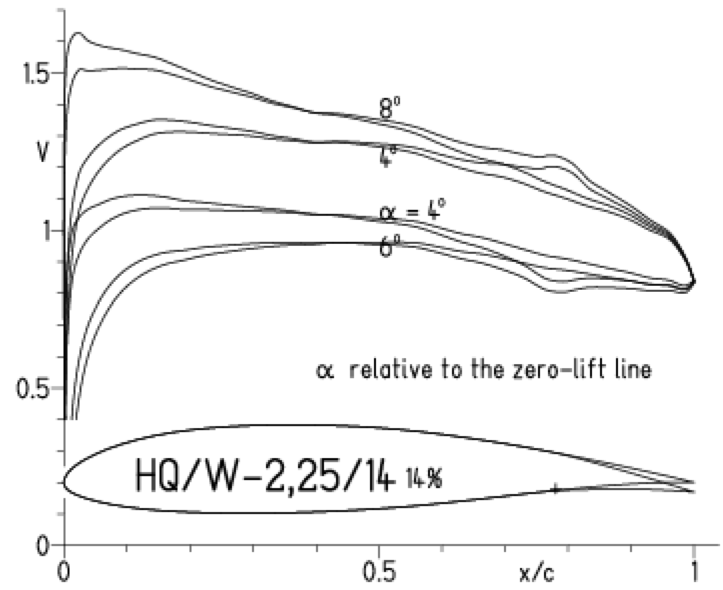
HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



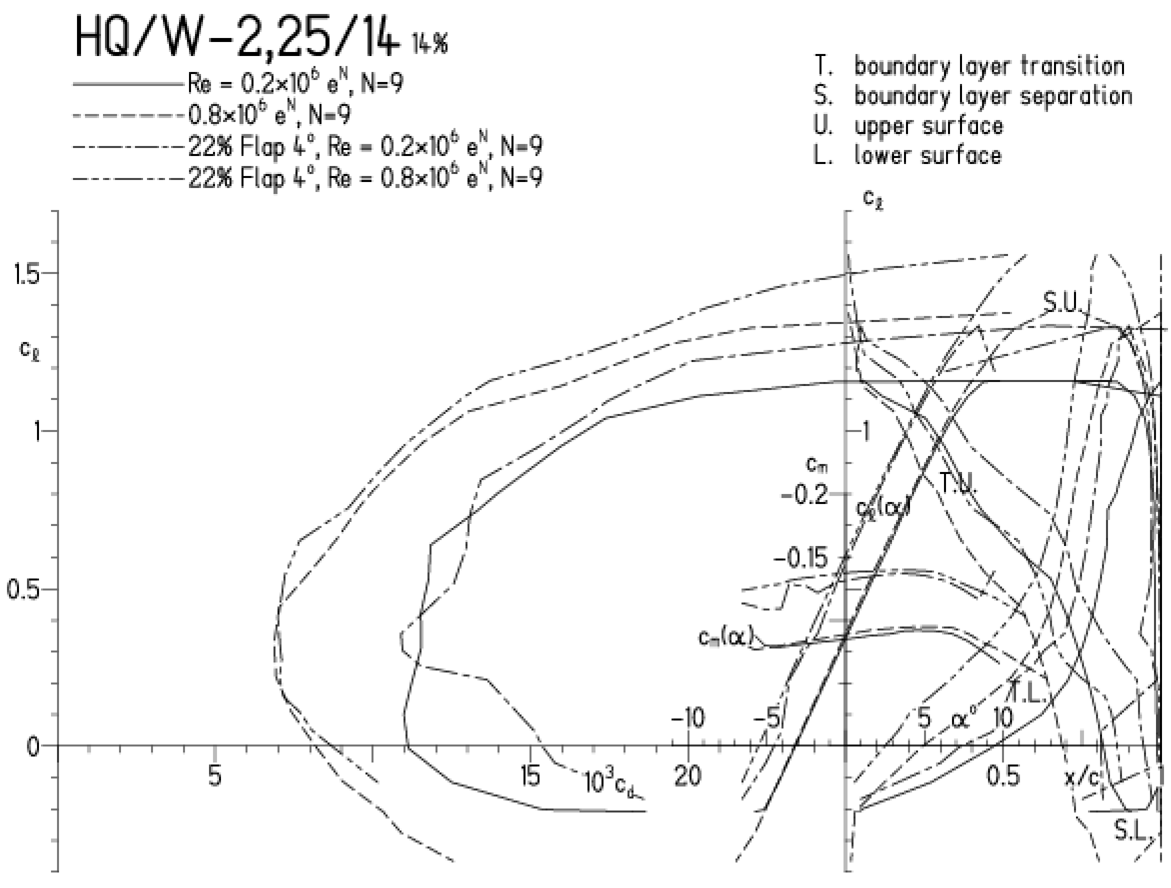


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

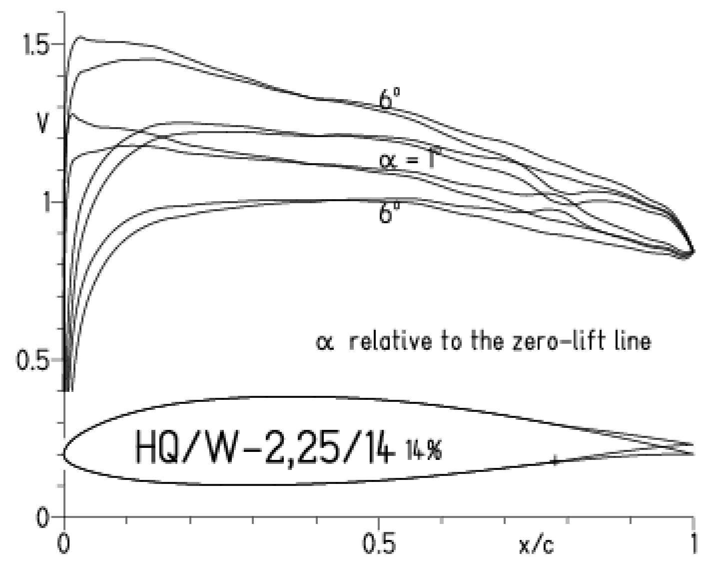


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

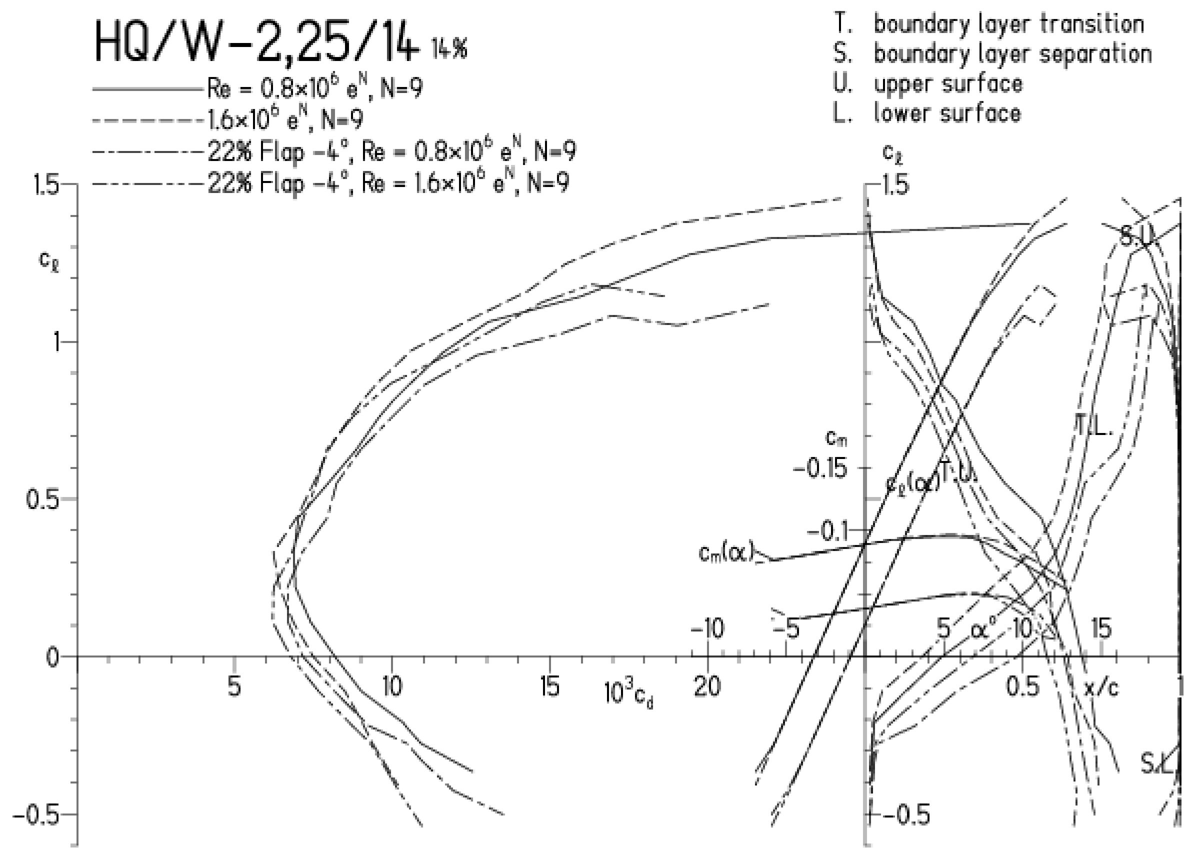


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

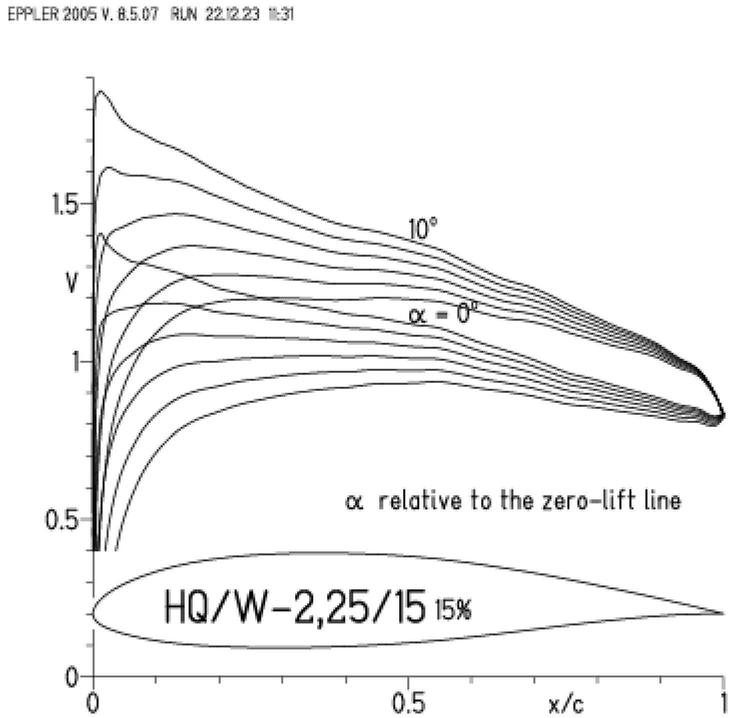
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

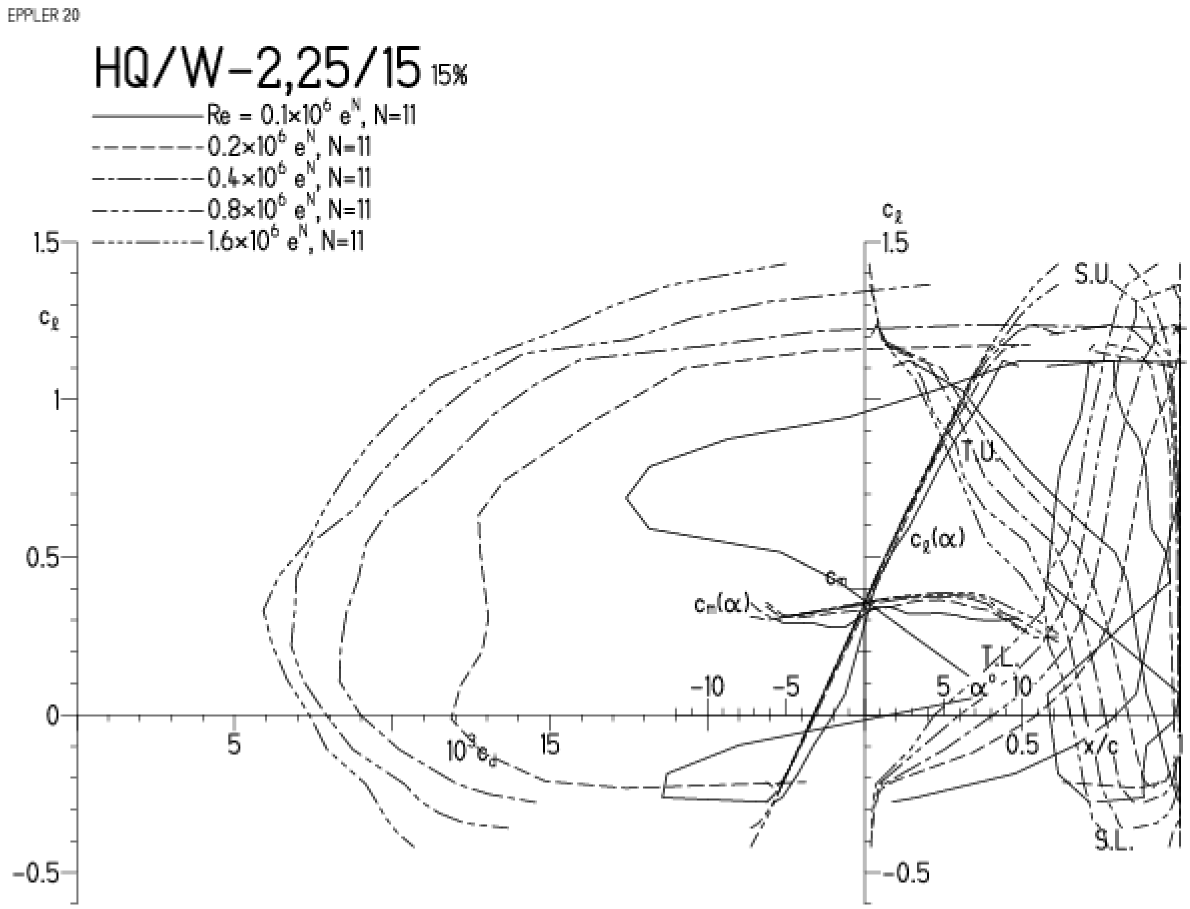


EPPLER 2005 V. 8.5.07

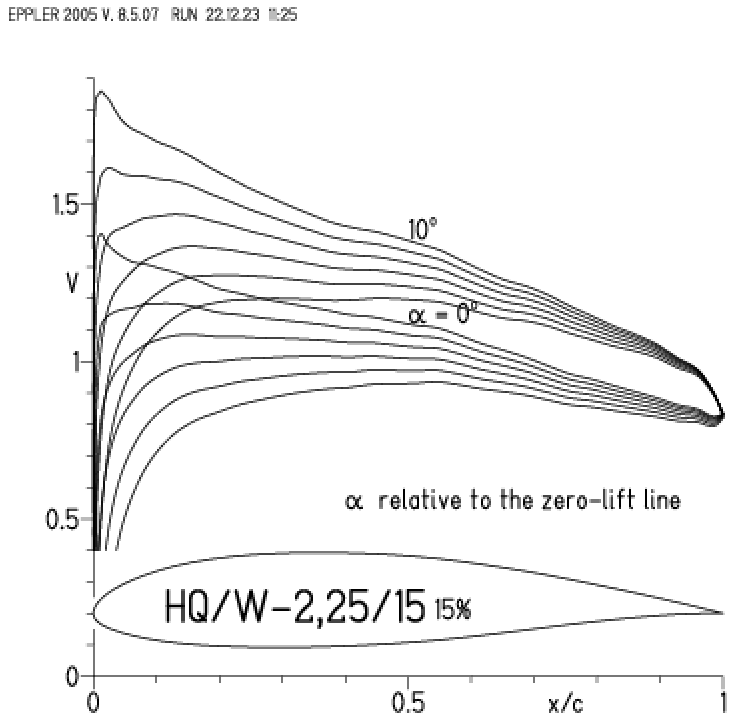


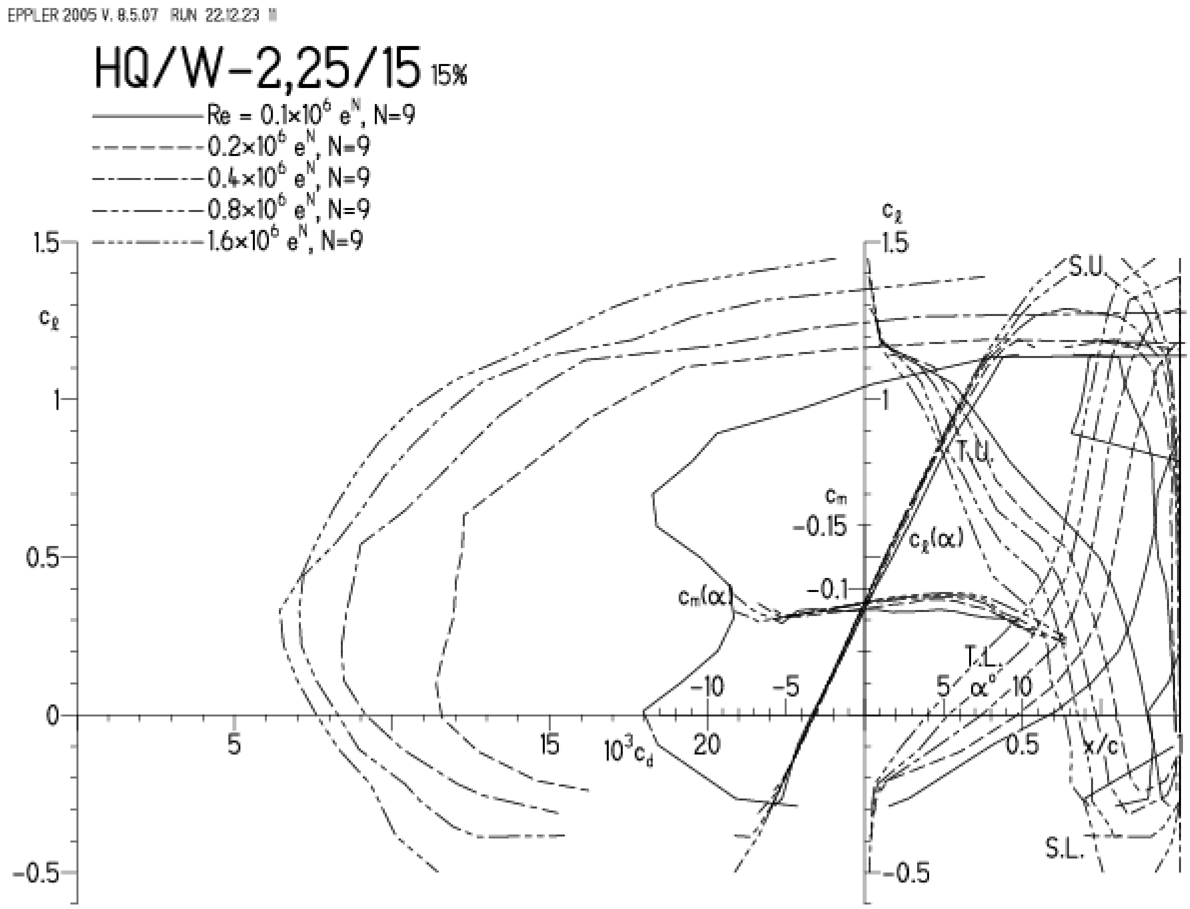
HQ/W-2,25/15, N=11



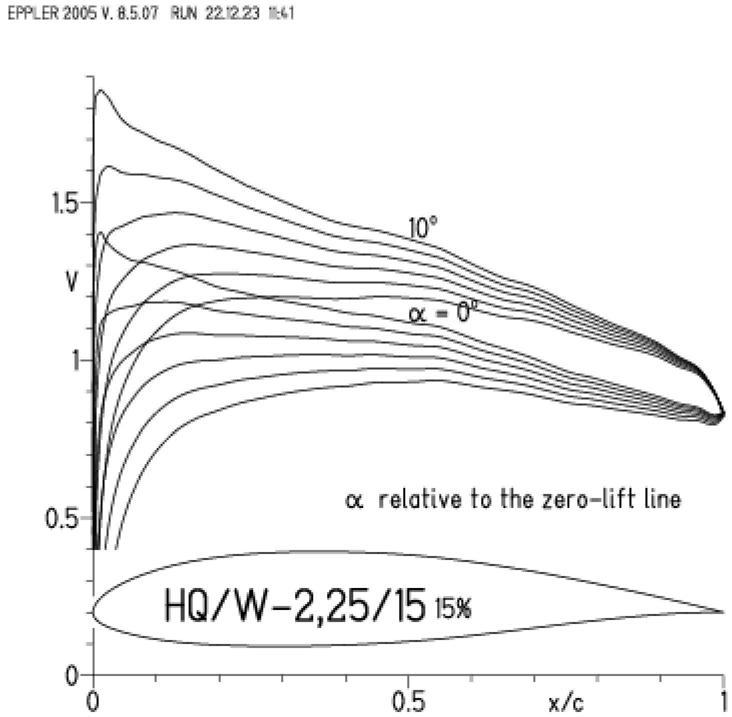


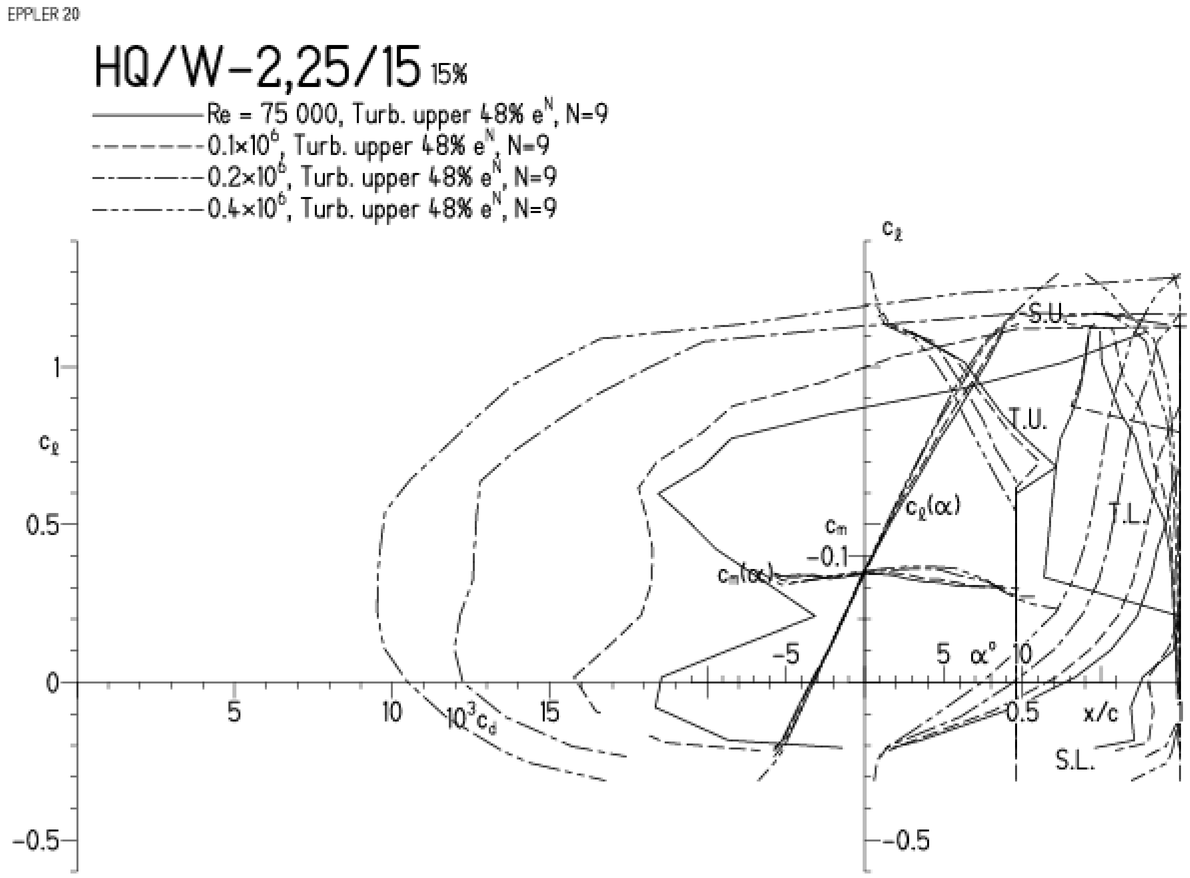
<u>HQ/W-2,25/15</u>, N=9





<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



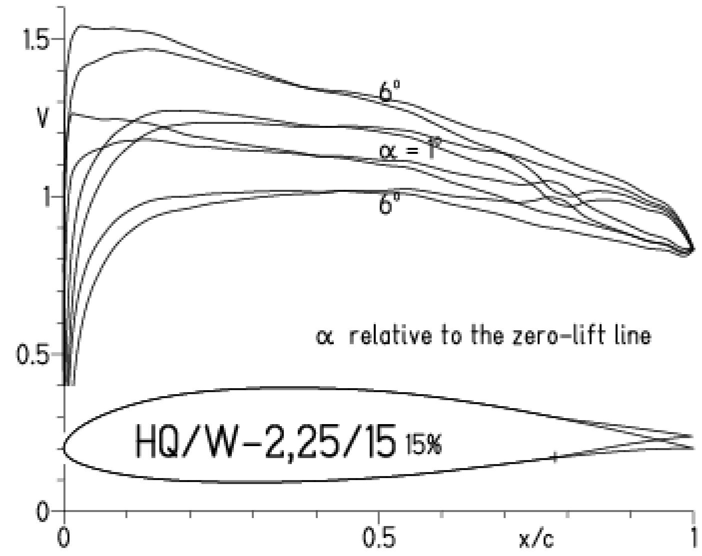


HQW-2,25/15, N=9 mit +4° Wölbklappenausschlag

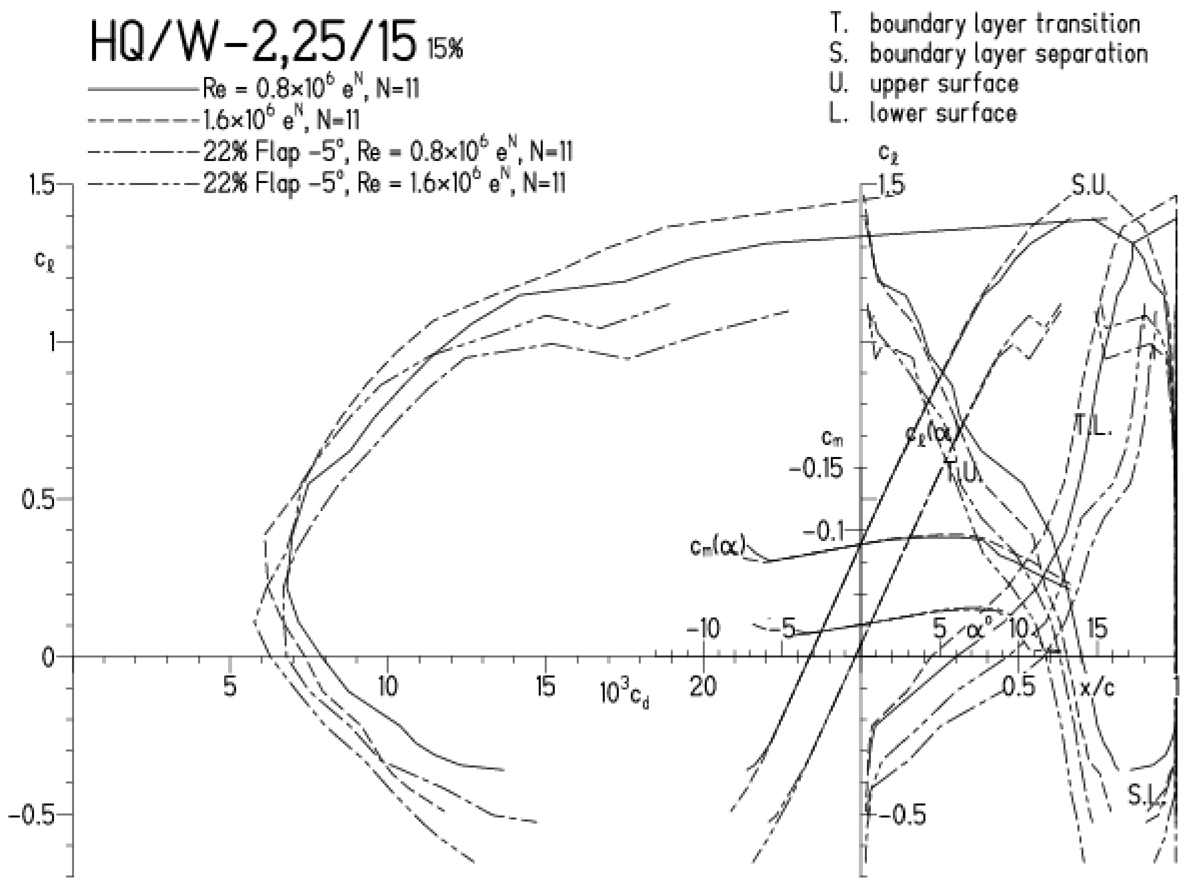
Bringt keine merkliche Verbesserung im Langsamflug.

<u>HQW-2,25/15</u>, N=11 mit -4° Wölbklappenausschlag

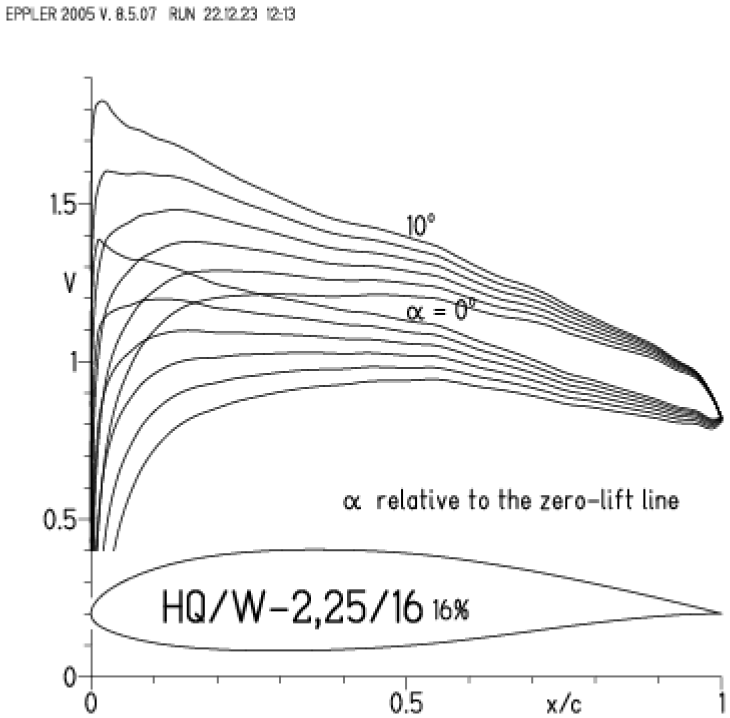
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

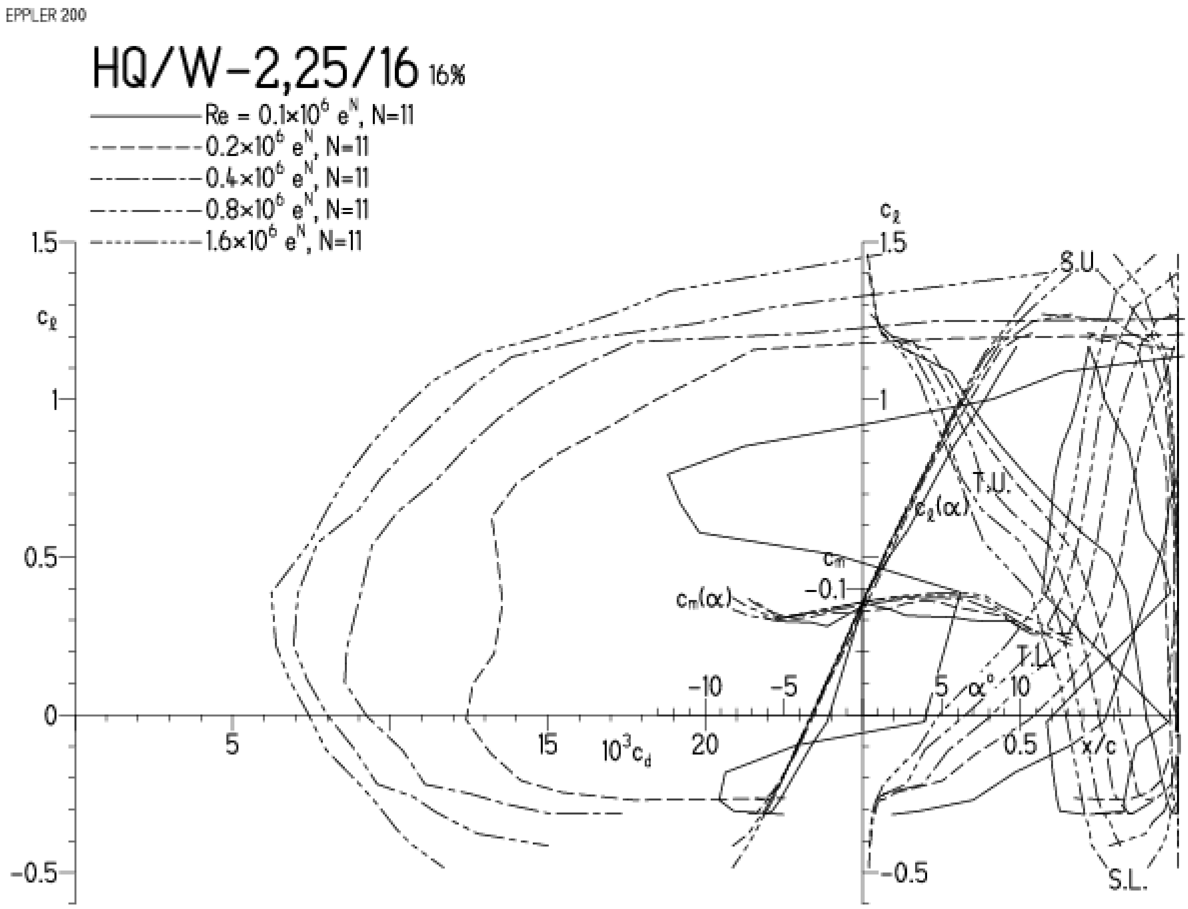


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

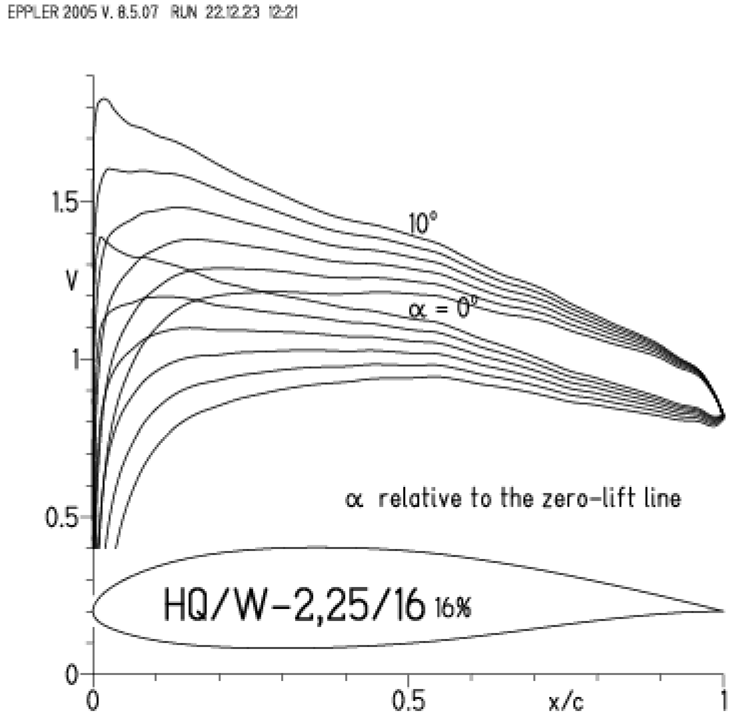


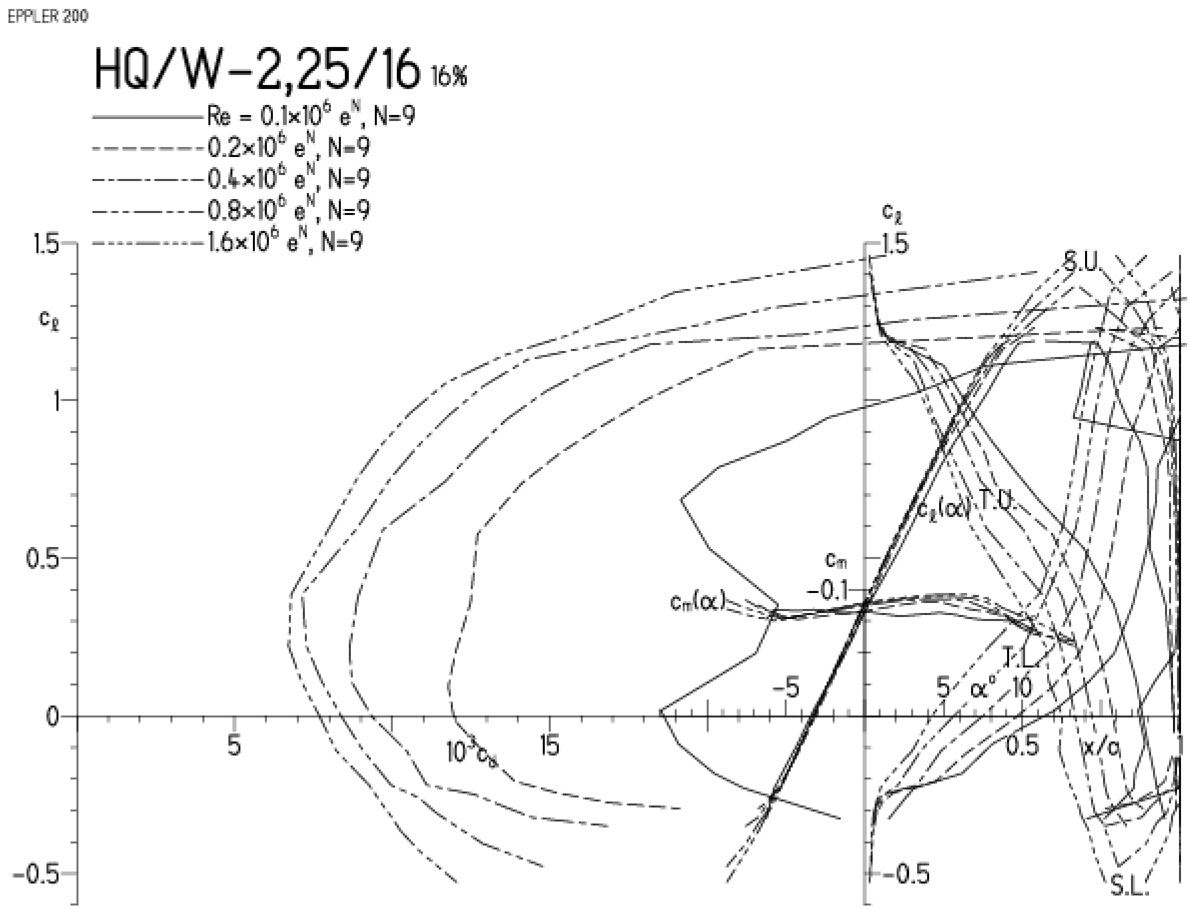
<u>HQ/W-2,25/16</u>, N=11





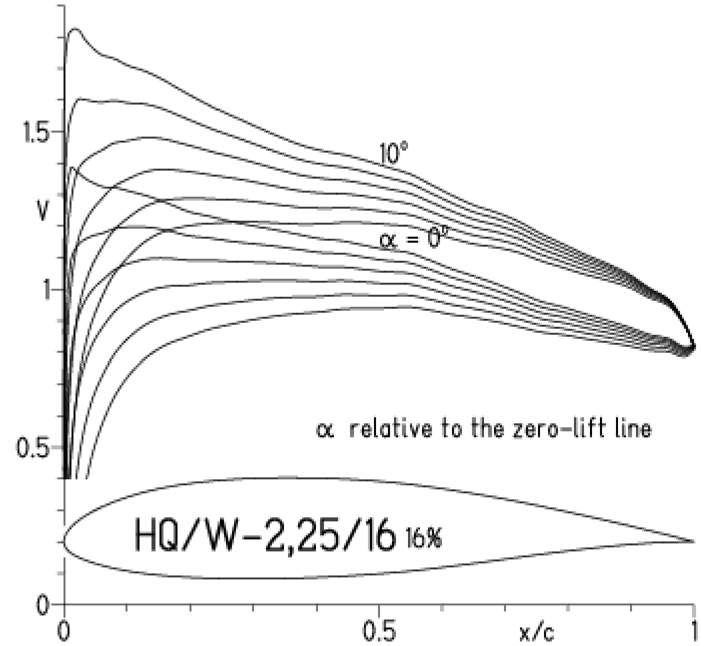
HQ/W-2,25/16, N=9


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/16 16%
0
0.5
x/c
1

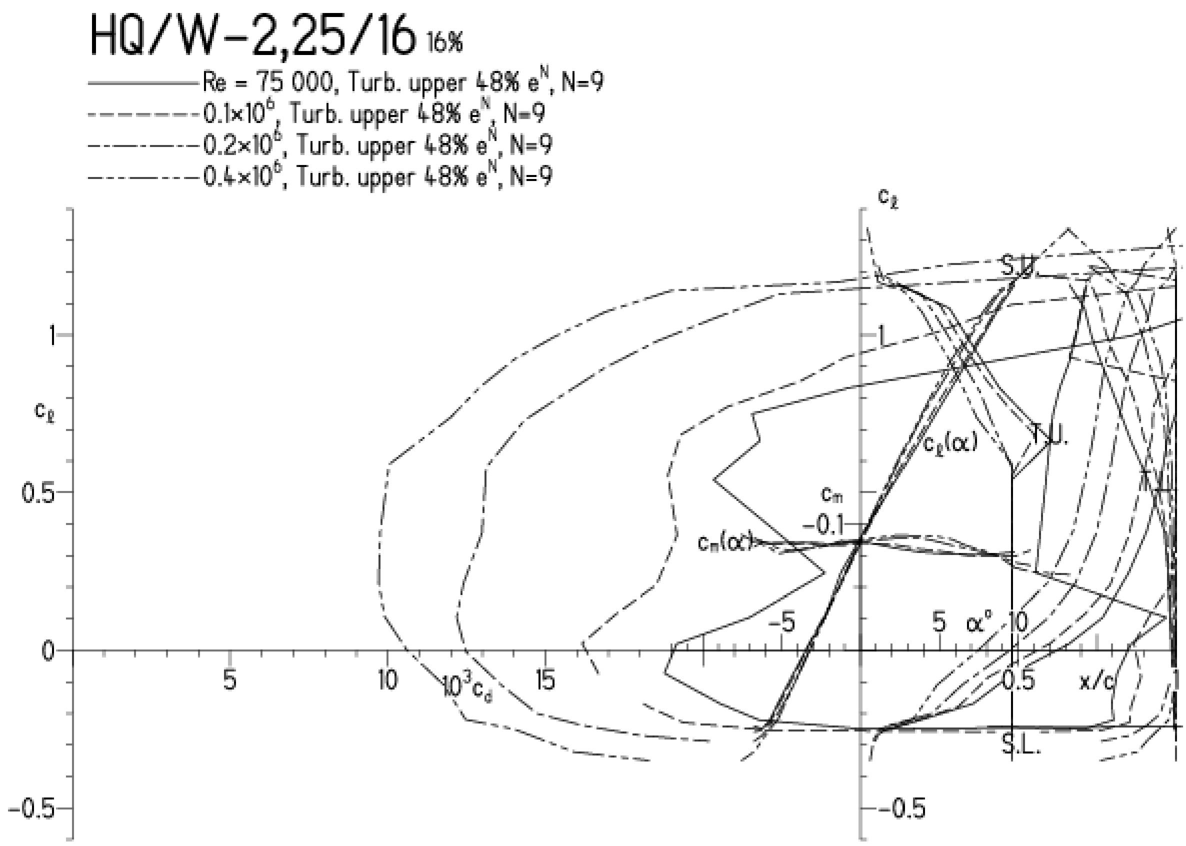

EPPLER 200
HQ/W-2,25/16 16%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
-0.5
5
10^-3 c_d
15
c_m(α)
c_m
-0.1
-5
5
α°
10
c_ℓ(α)
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1
-0.5

HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:30



EPPLER 2005 V. 8.5.07 R

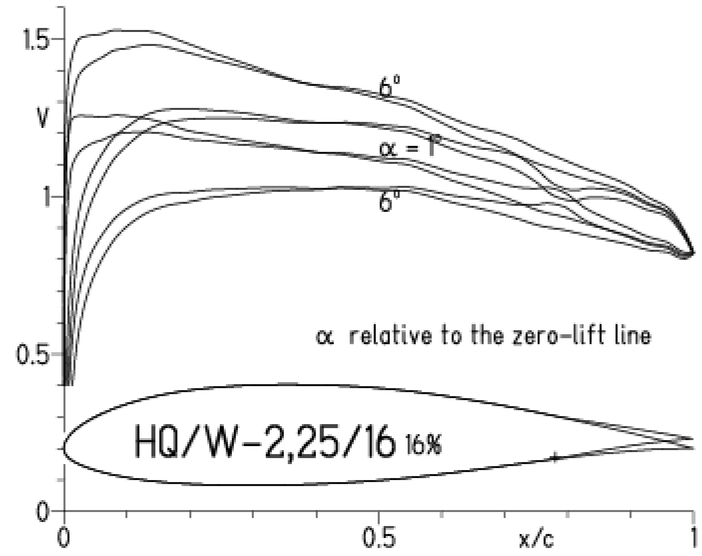


<u>HQW-2,25/16</u>, N=9 mit +4° Wölbklappenausschlag

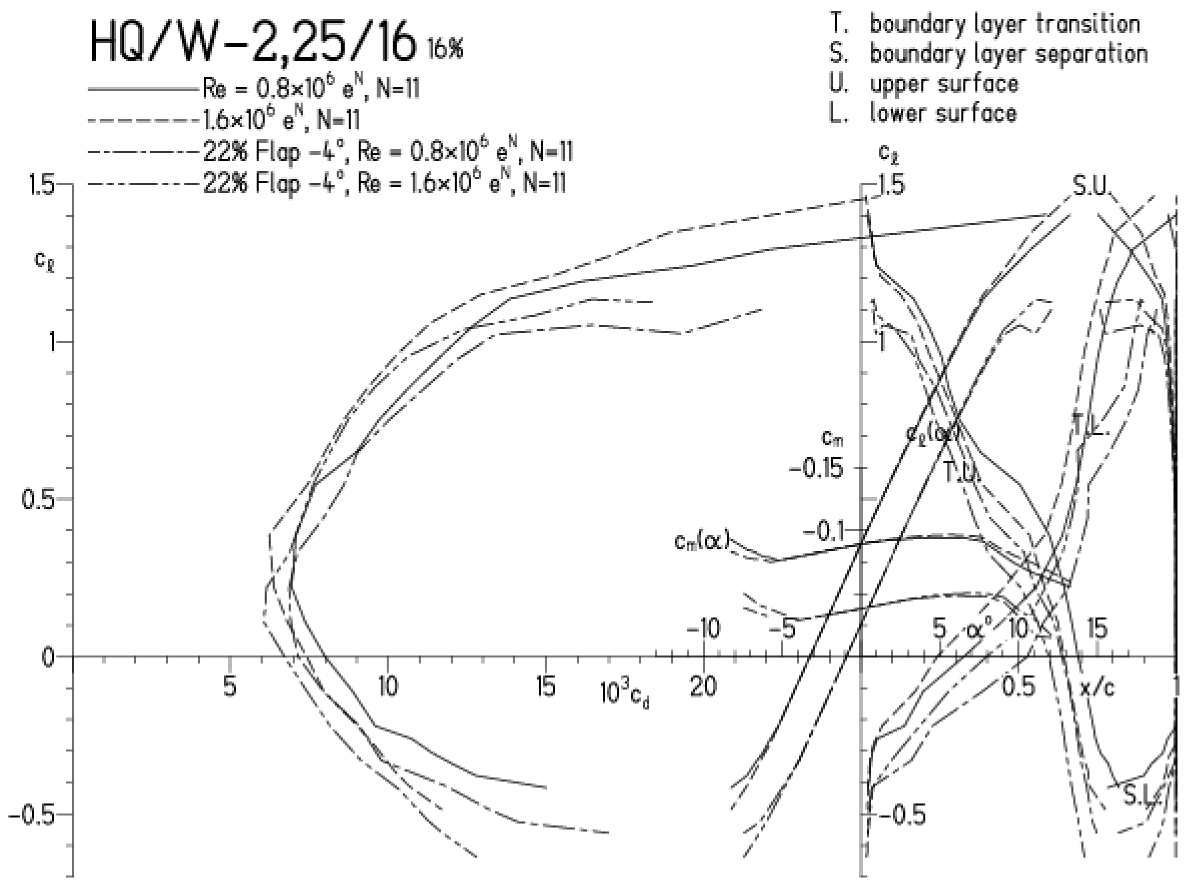
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

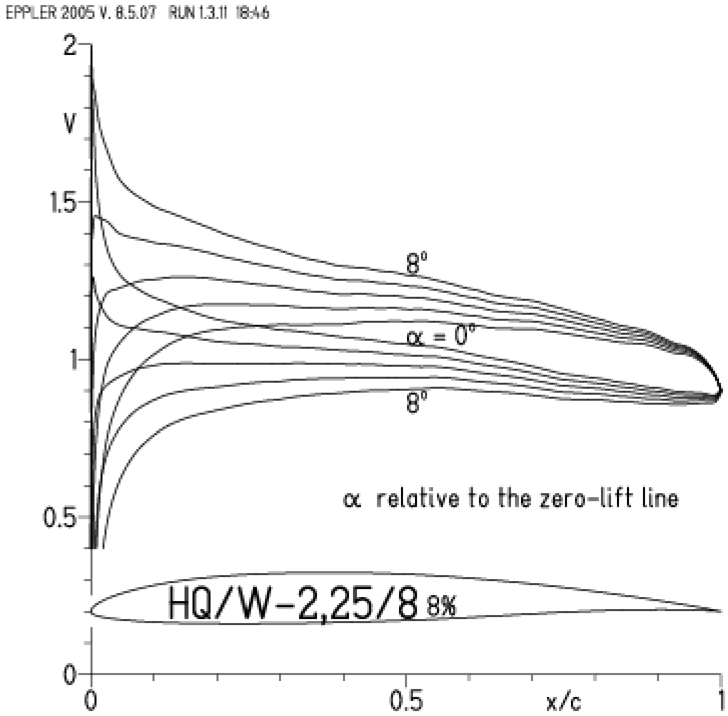
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

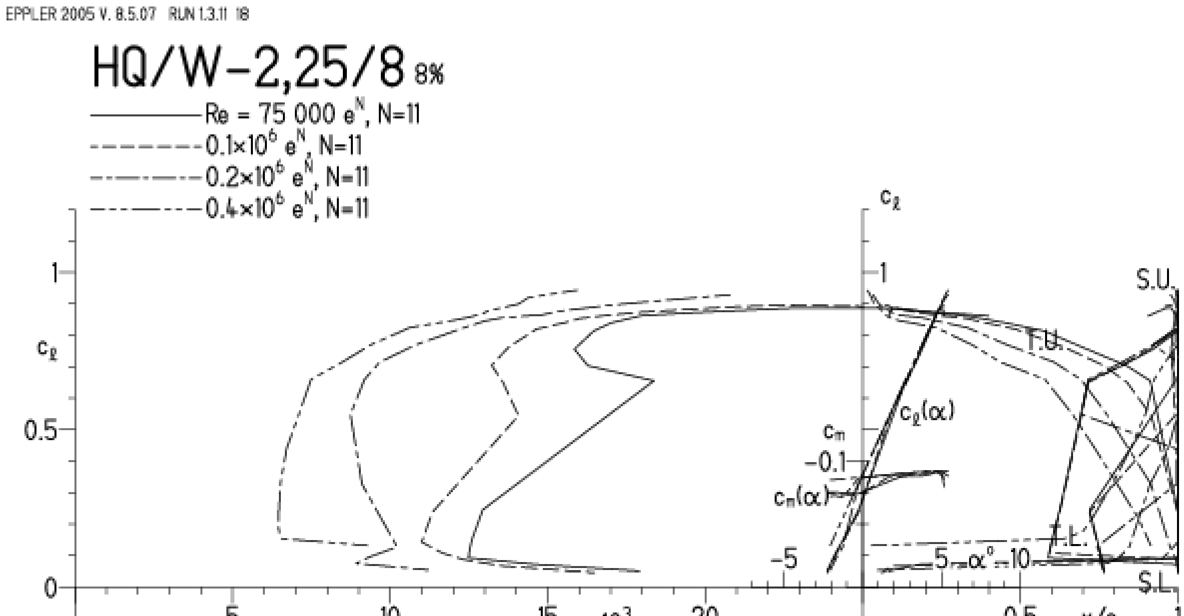


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

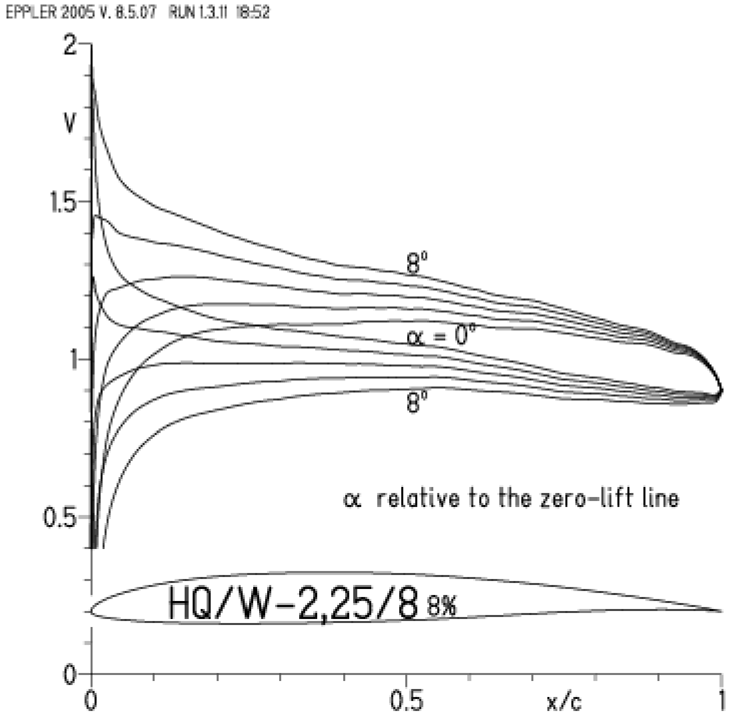


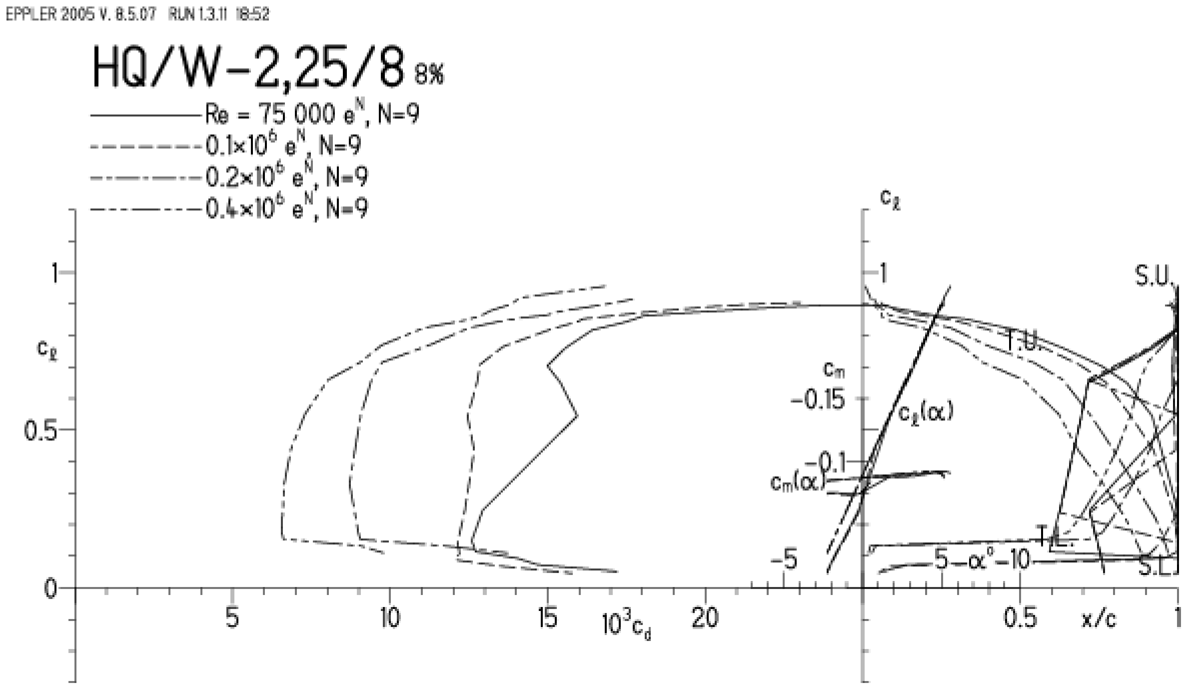
<u>HQ/W-2,25/8</u>, N=11





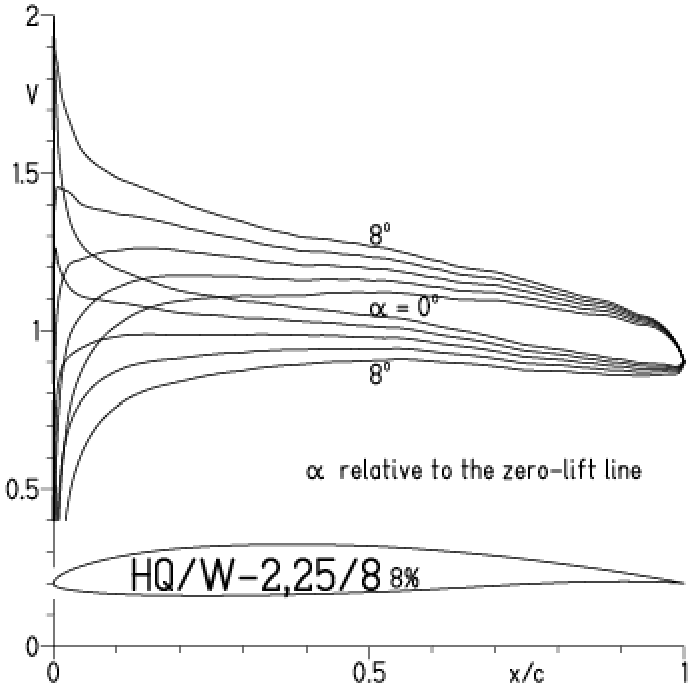
<u>HQ/W-2,25/8</u>, N=9



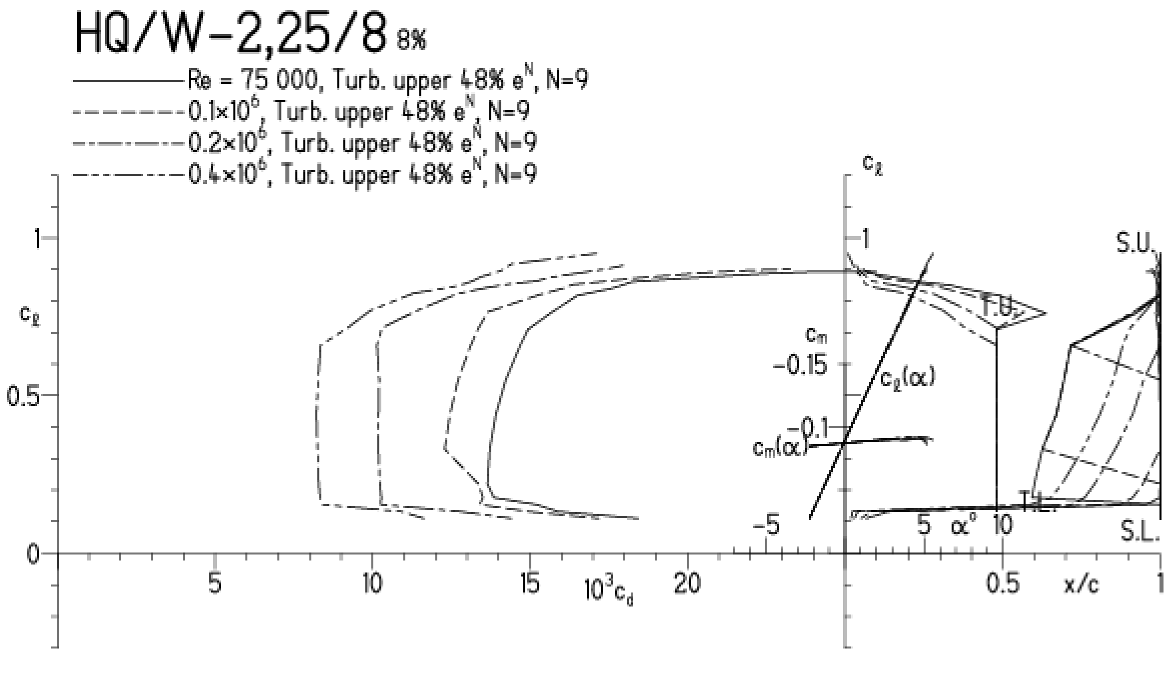


HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:57

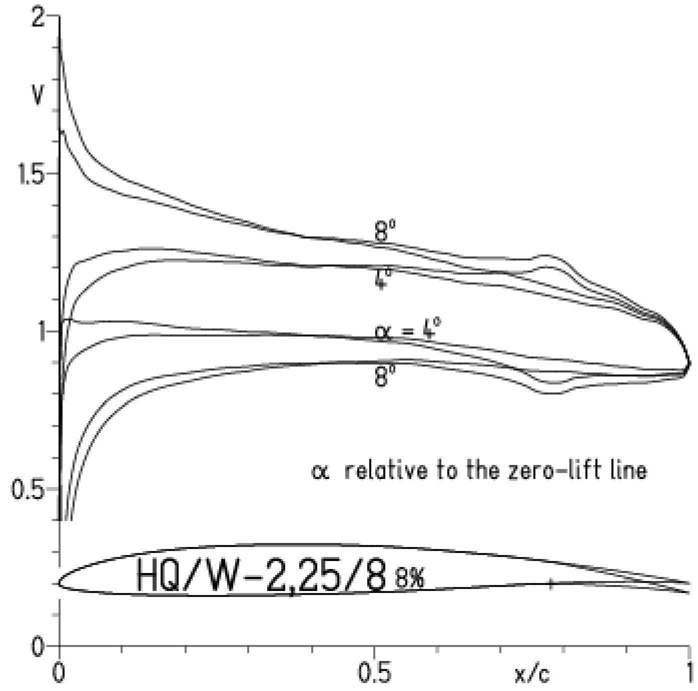


EPPLER 2005 V. 8.5.07 RUN 1.

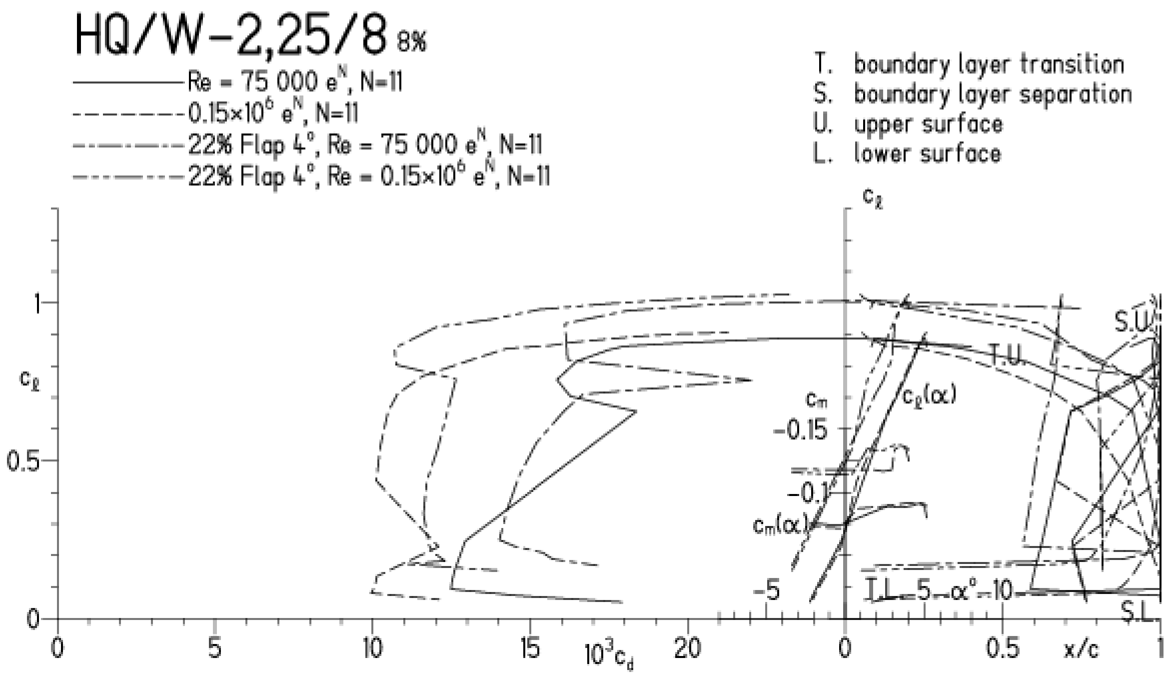


HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag

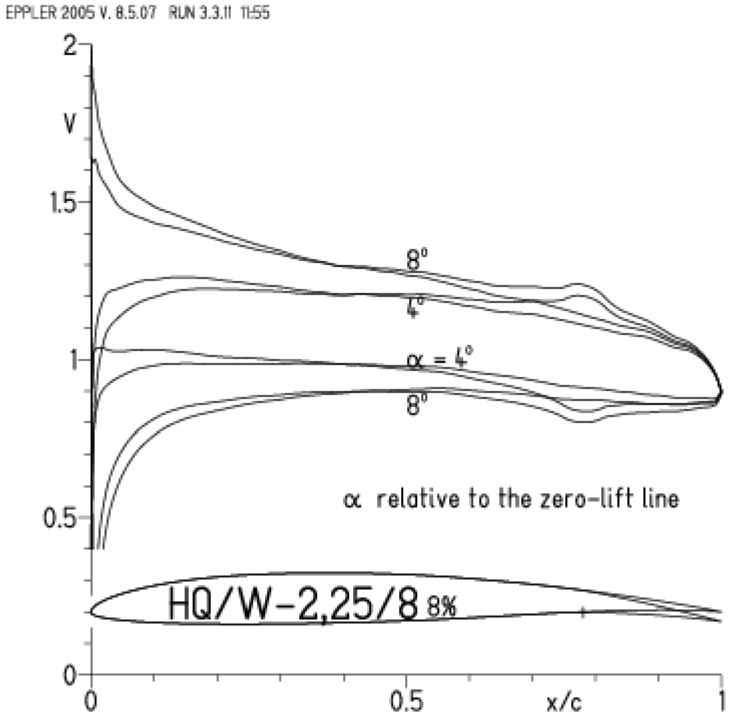
EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

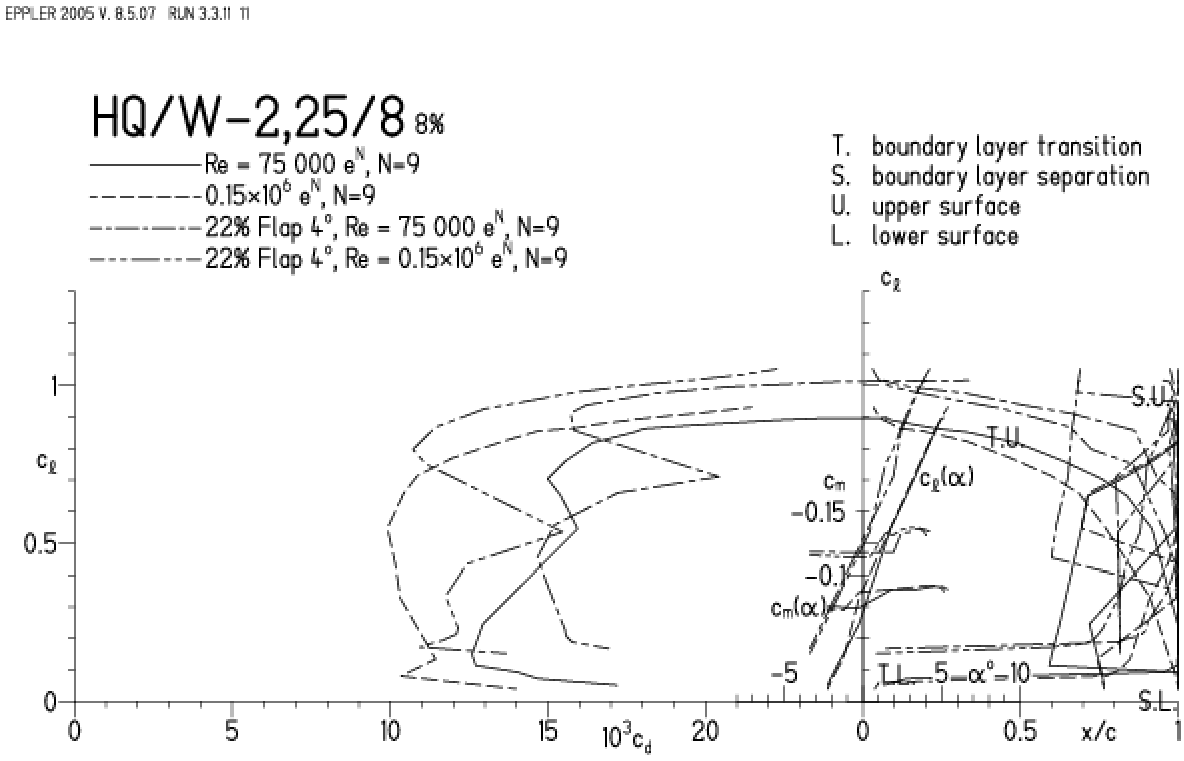


EPPLER 2005 V. 8.5.07 RUN 3.3.11 11:51

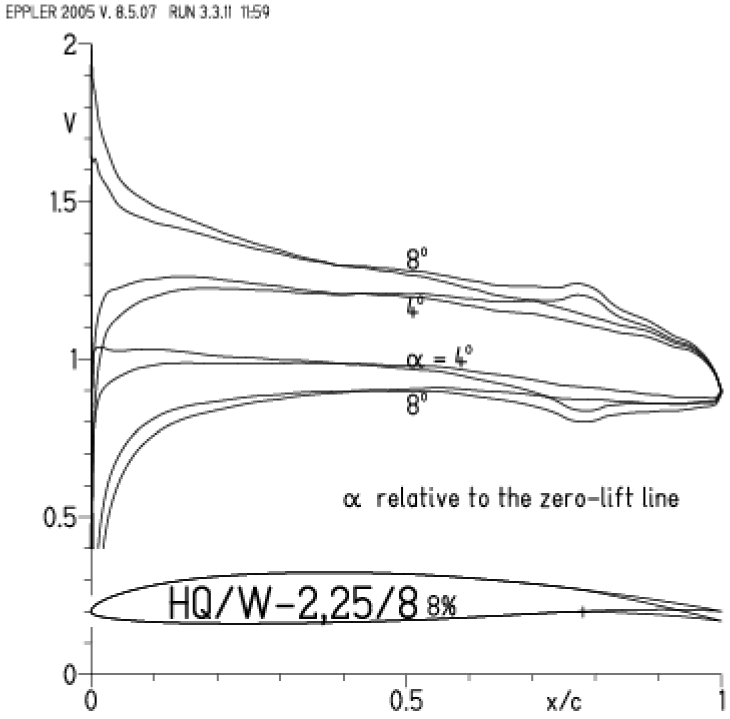


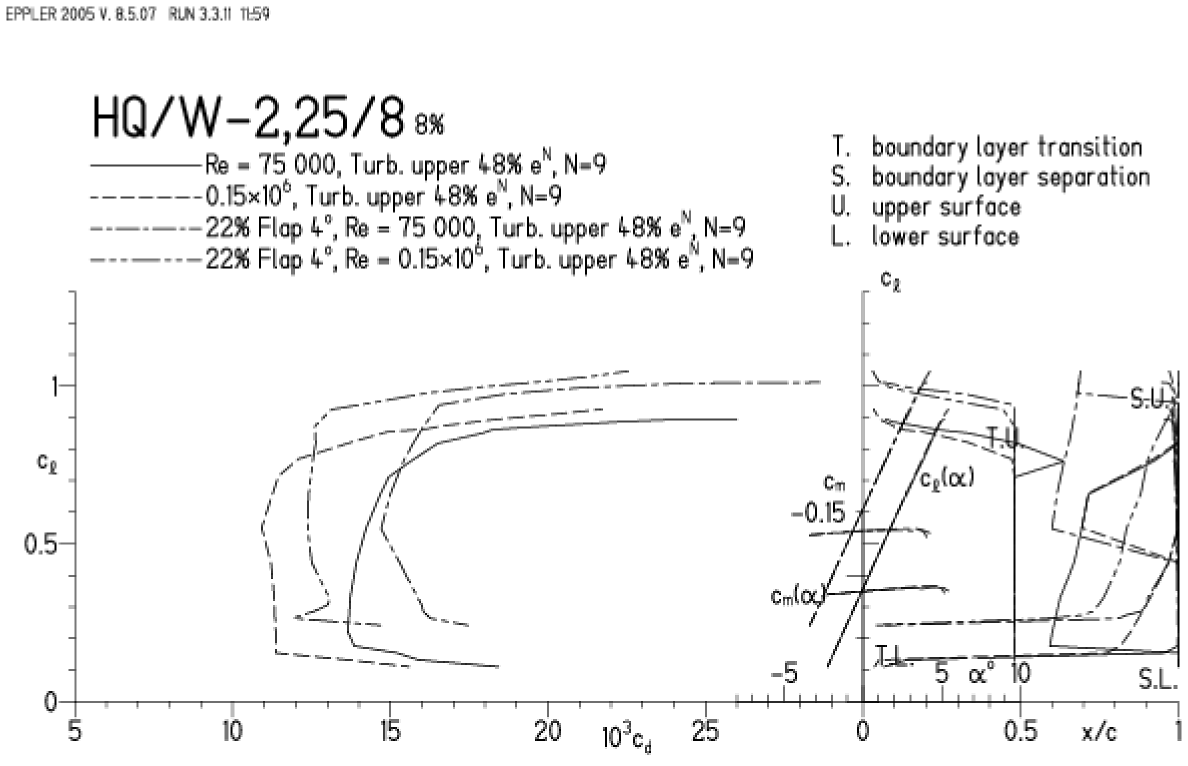
<u>HQ/W-2,25/8</u>, N=9, mit +4° Wölbklappenausschlag





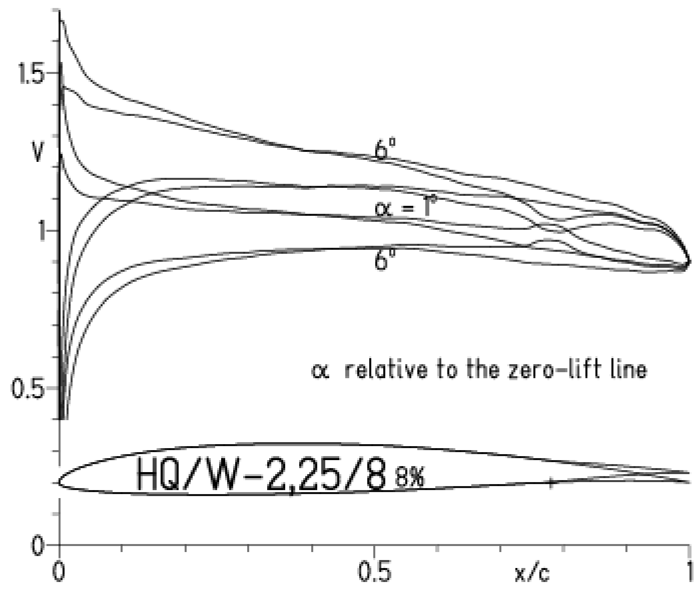
<u>HQ/W-2,25/8</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



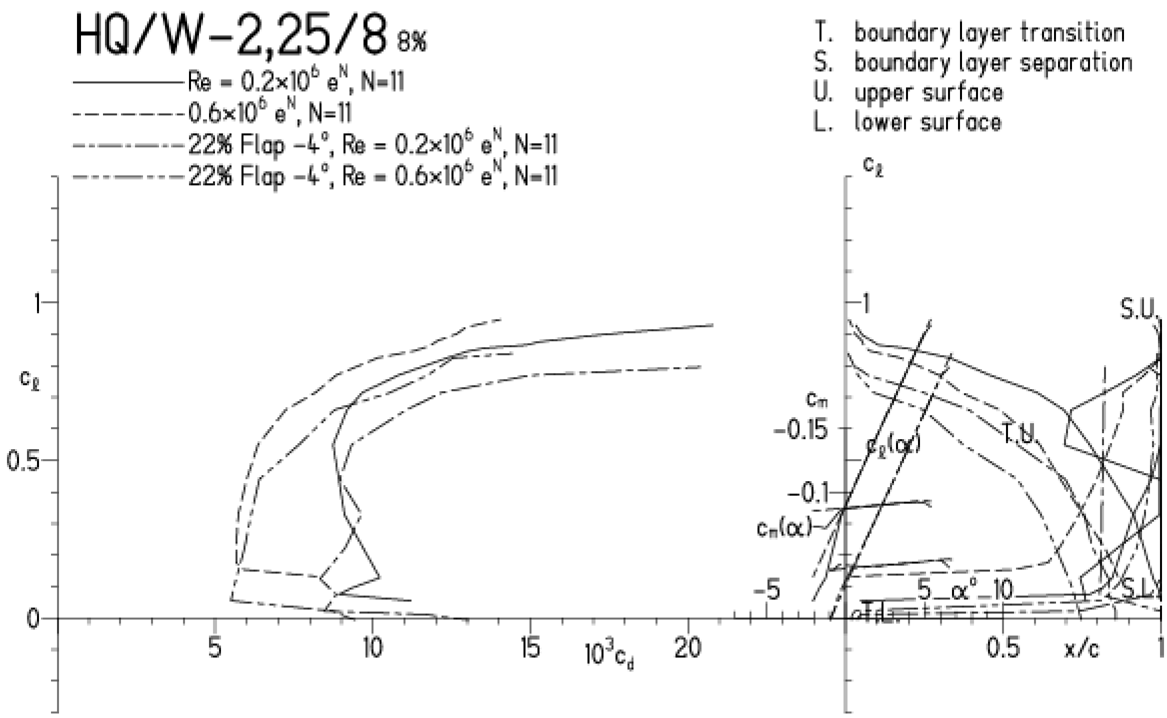


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

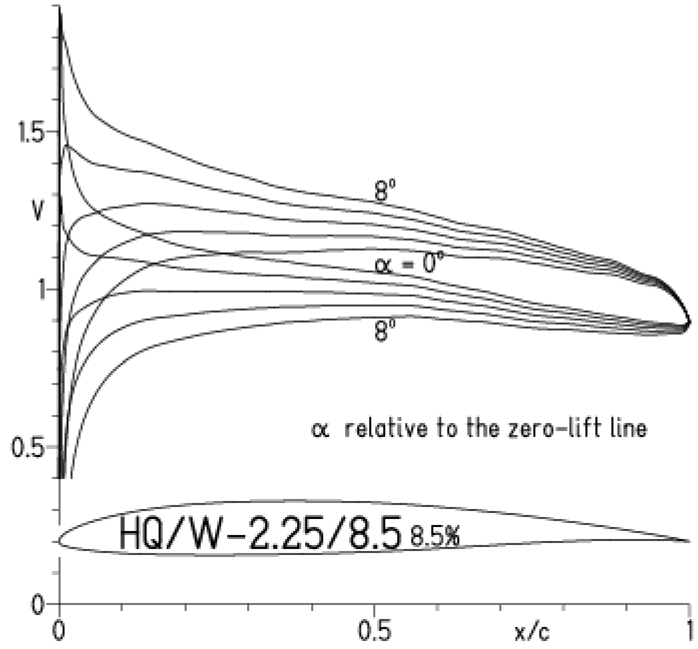


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

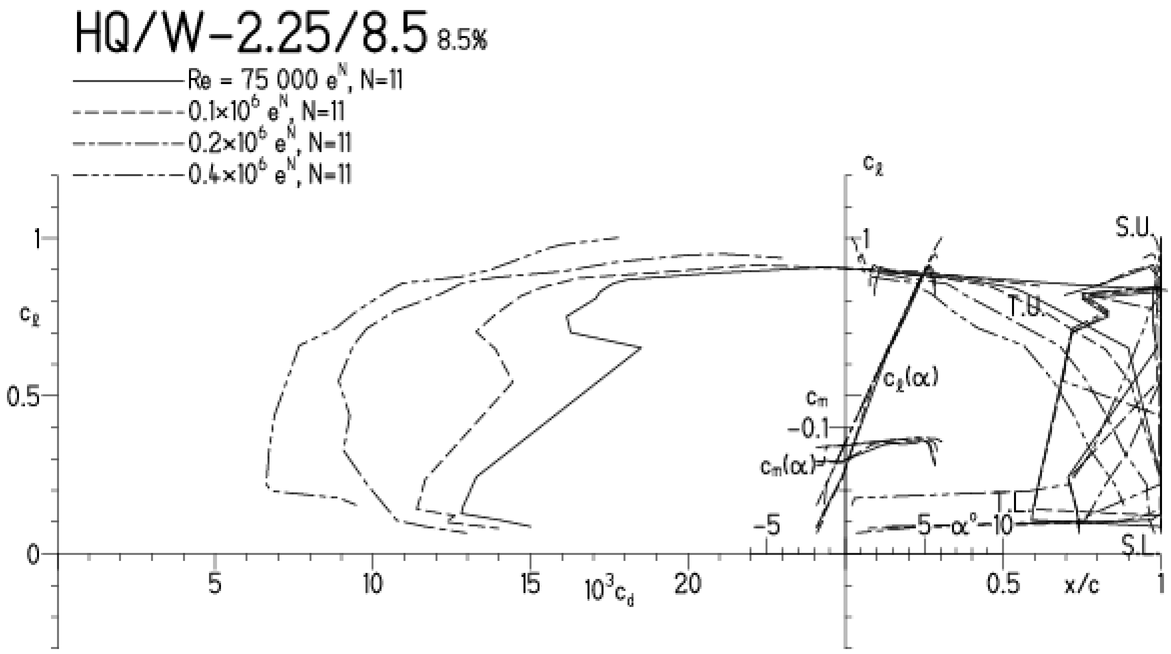


HQ/W-2,25/8,5, N=11

EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:07

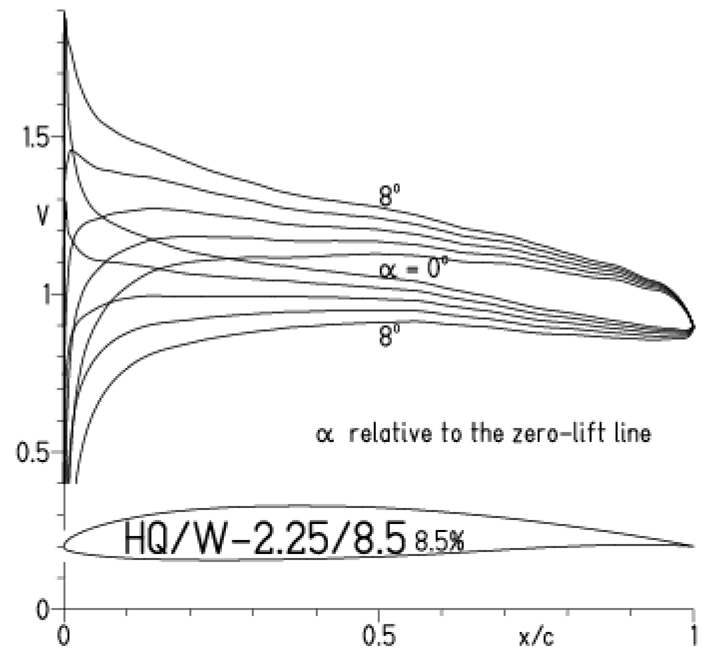


EPPLER 2005 V

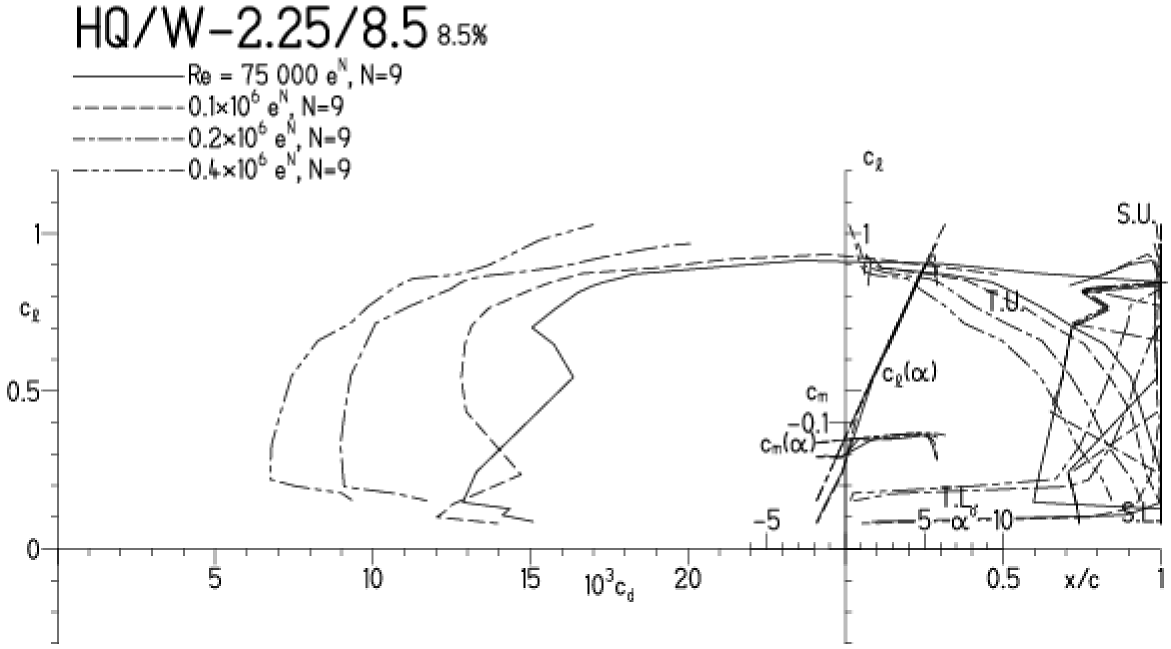


HQ/W-2,25/8,5, N=9

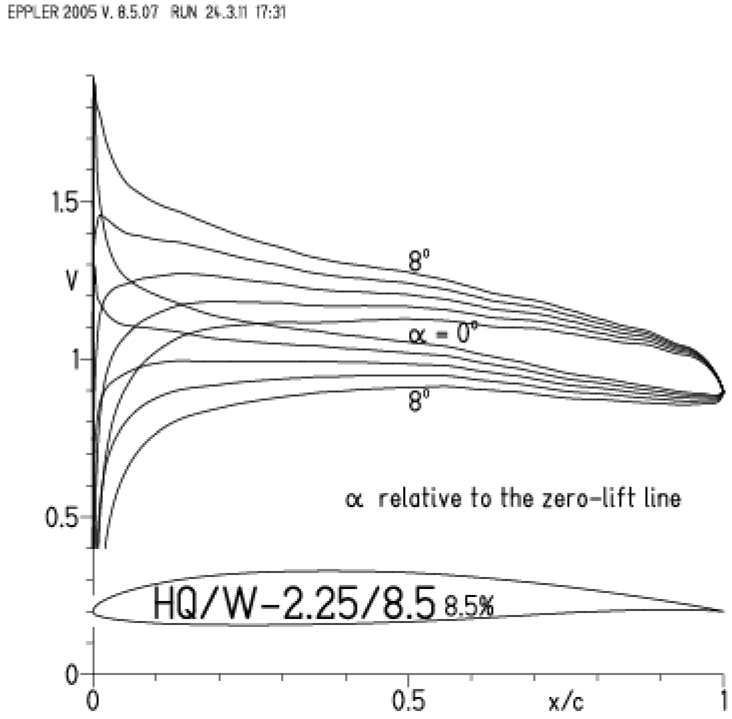
EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33

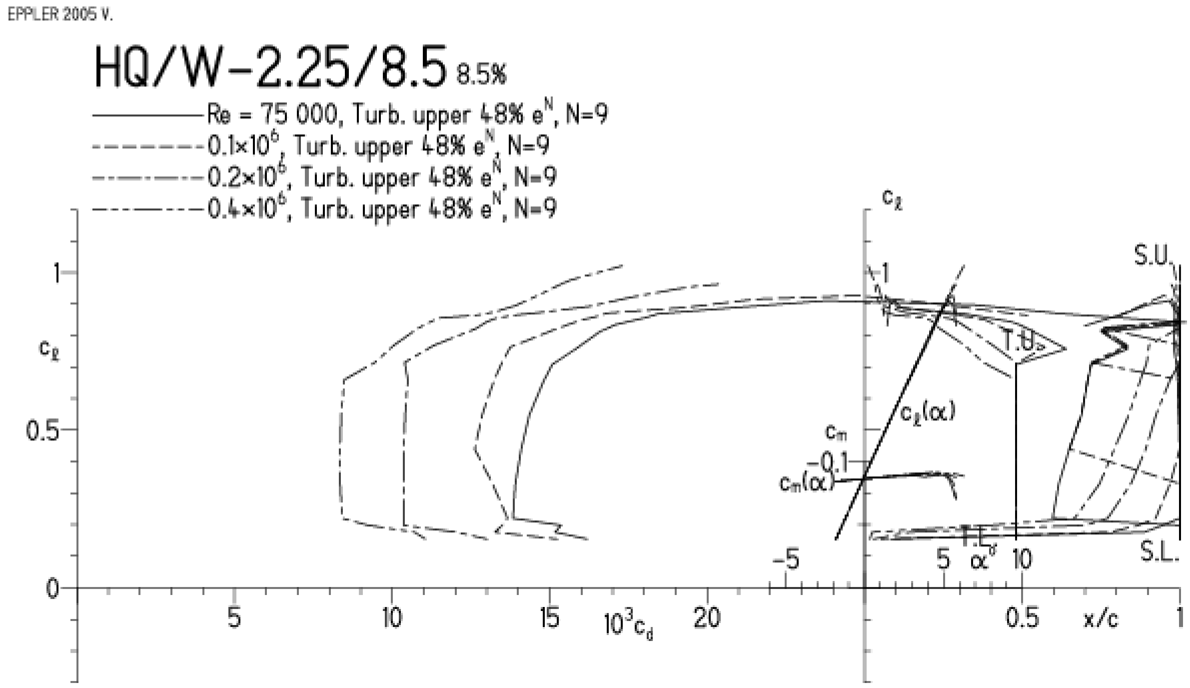


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:

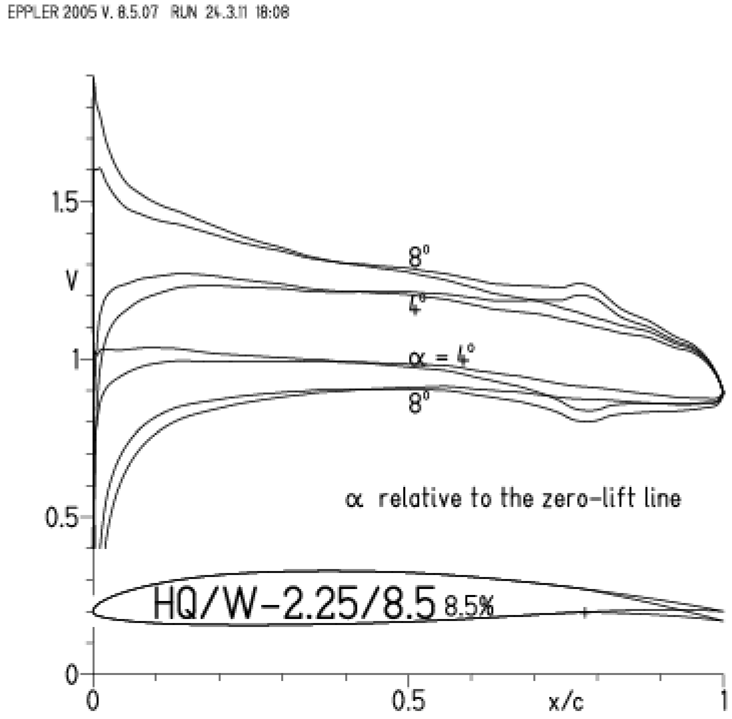


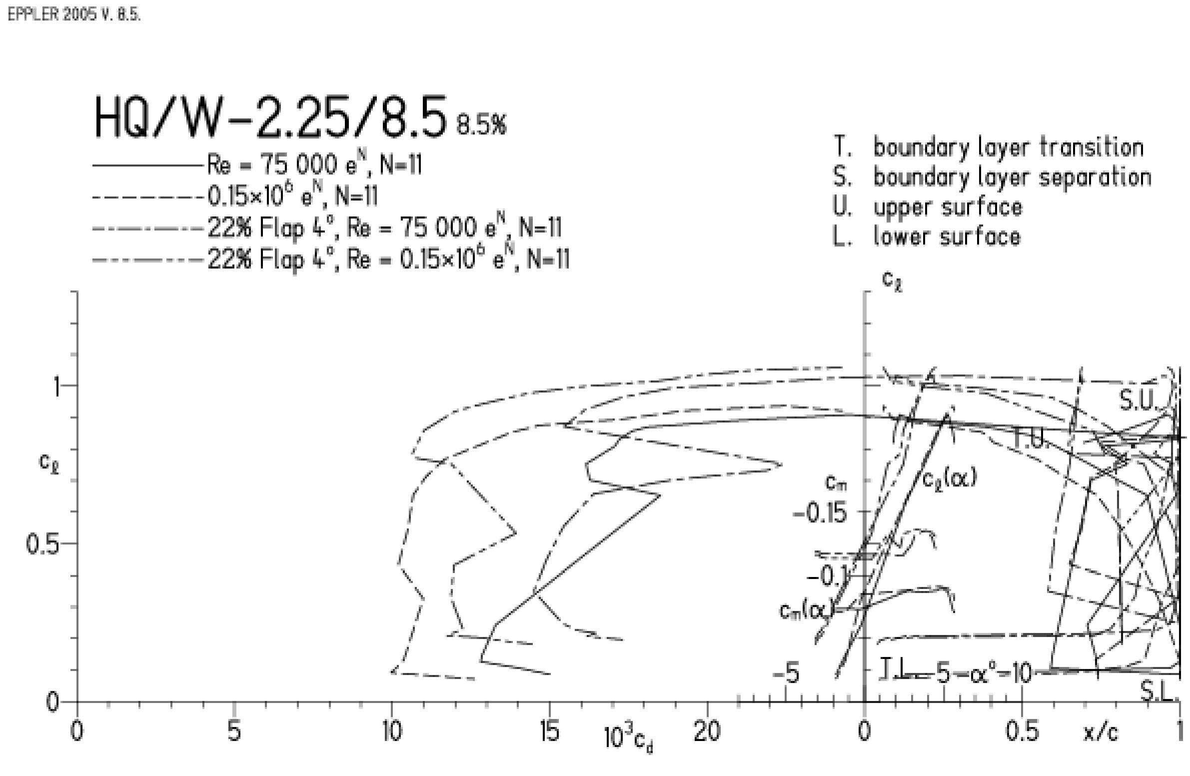
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)





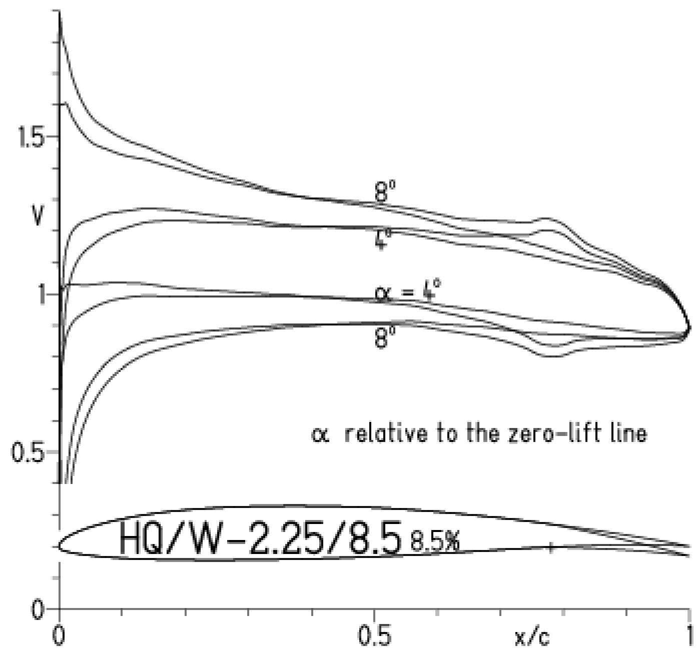
<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag



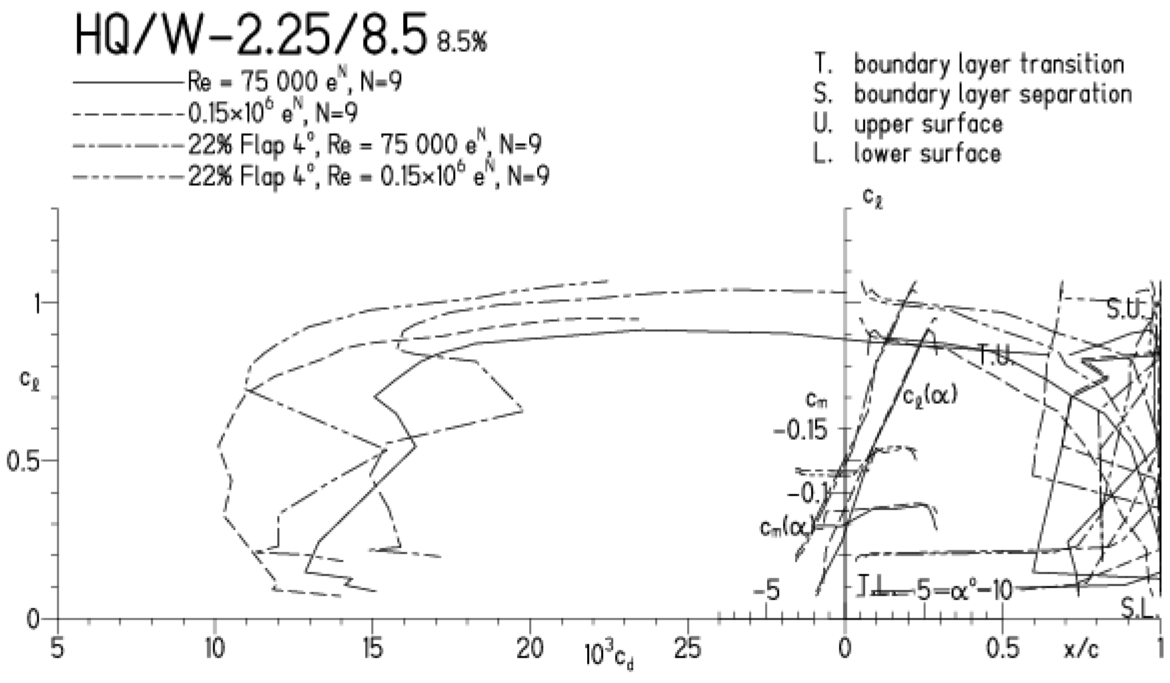


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

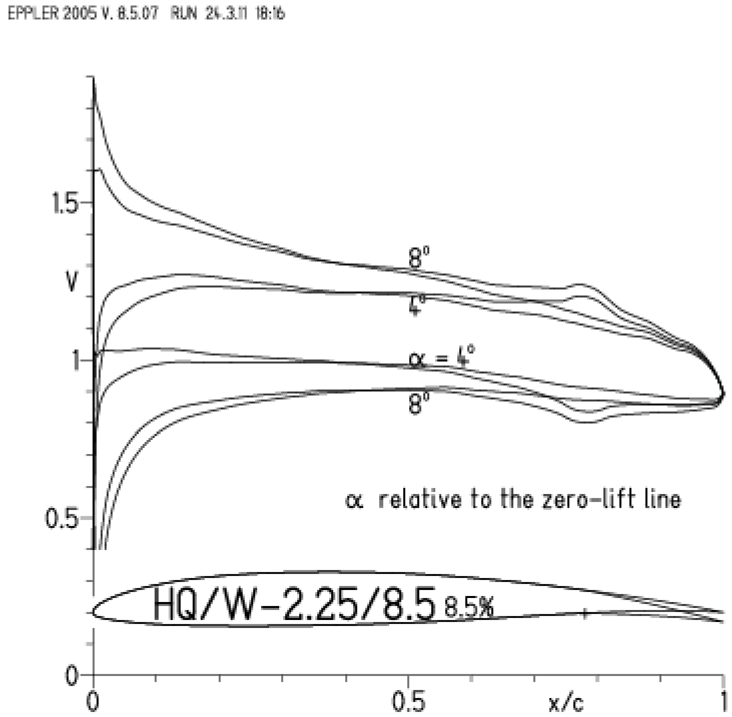
EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

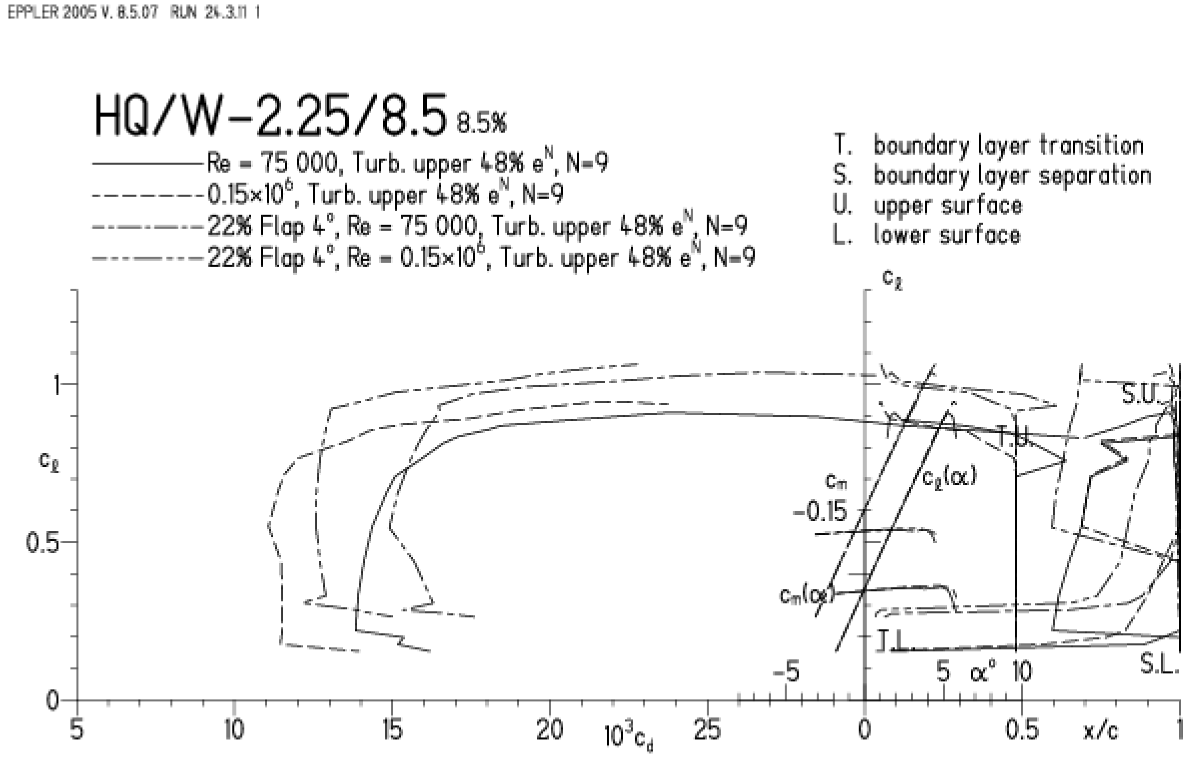


EPPLER 2005 V.

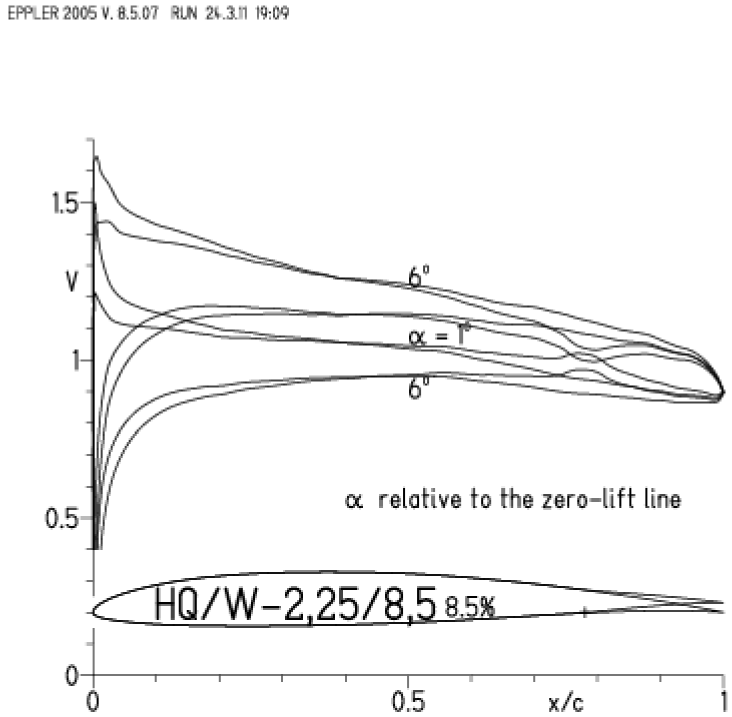


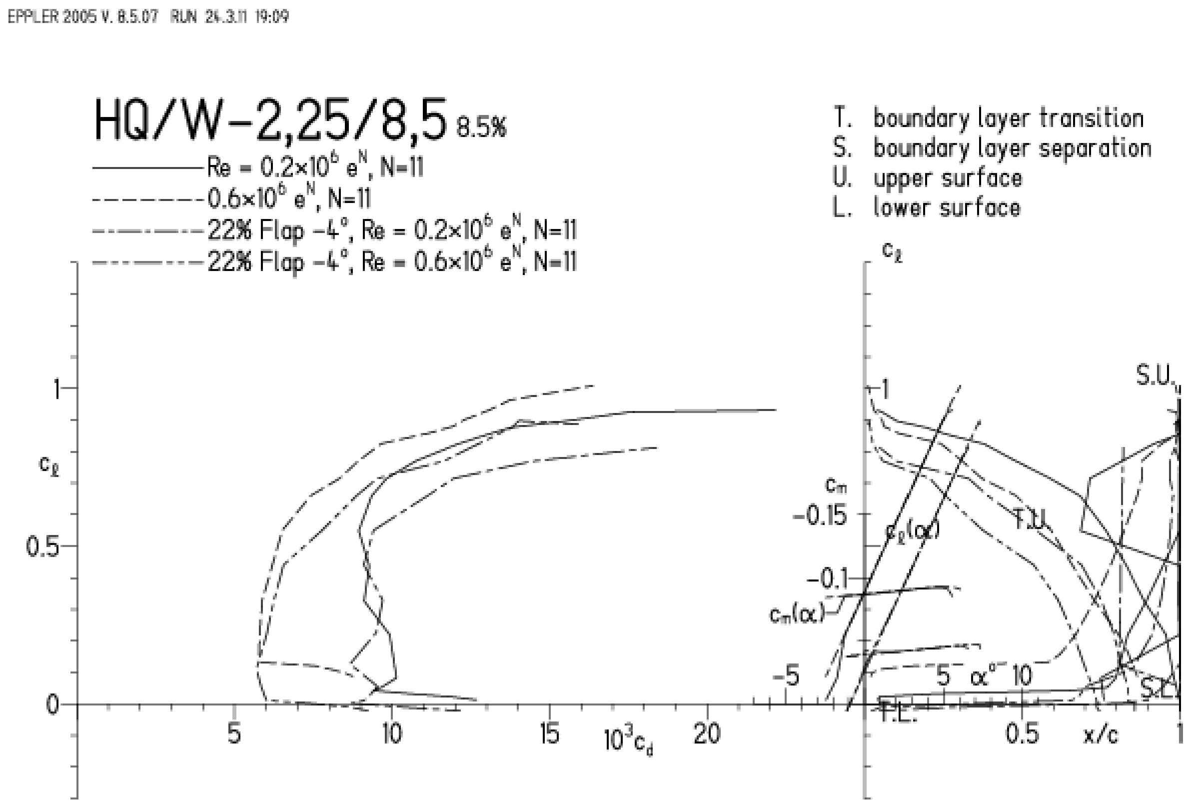
<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



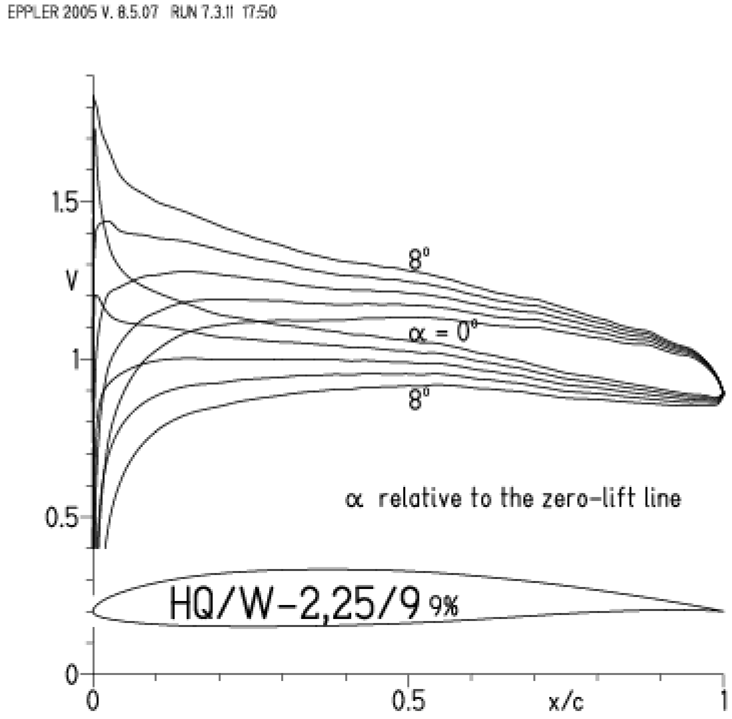


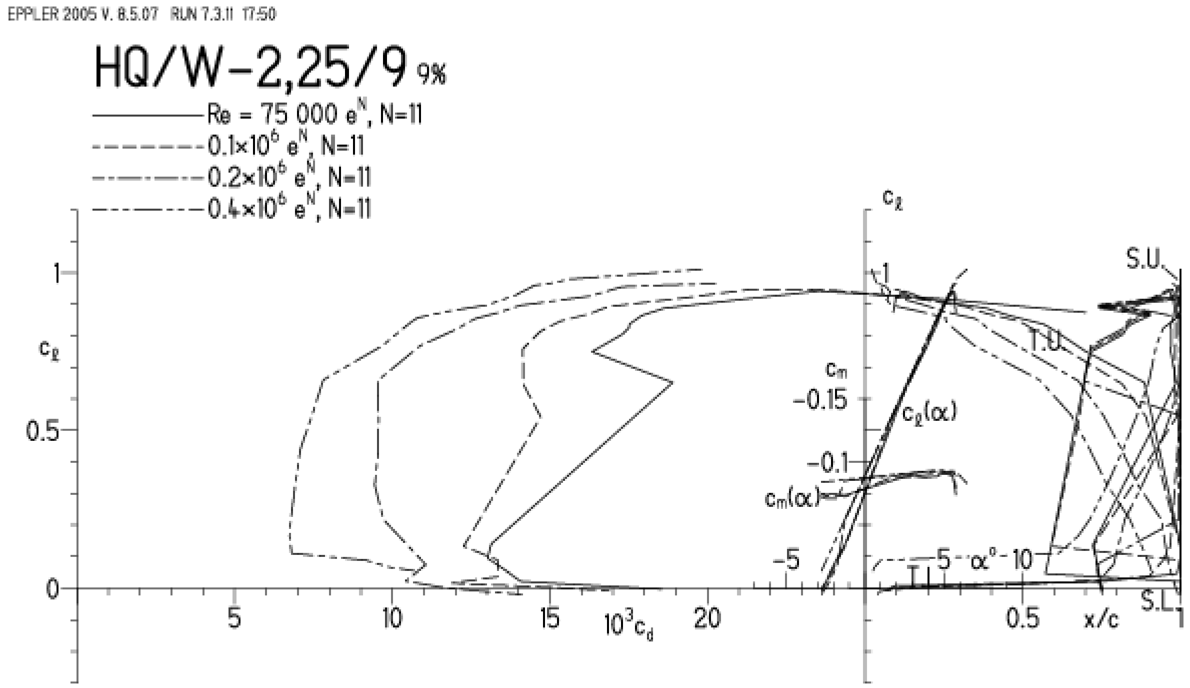
<u>HQ/W-2,25/8,5</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)



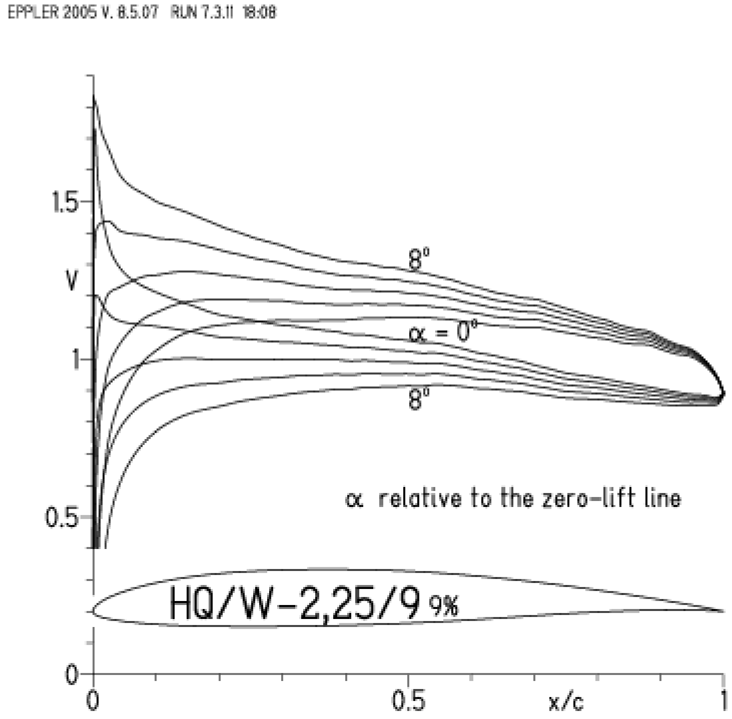


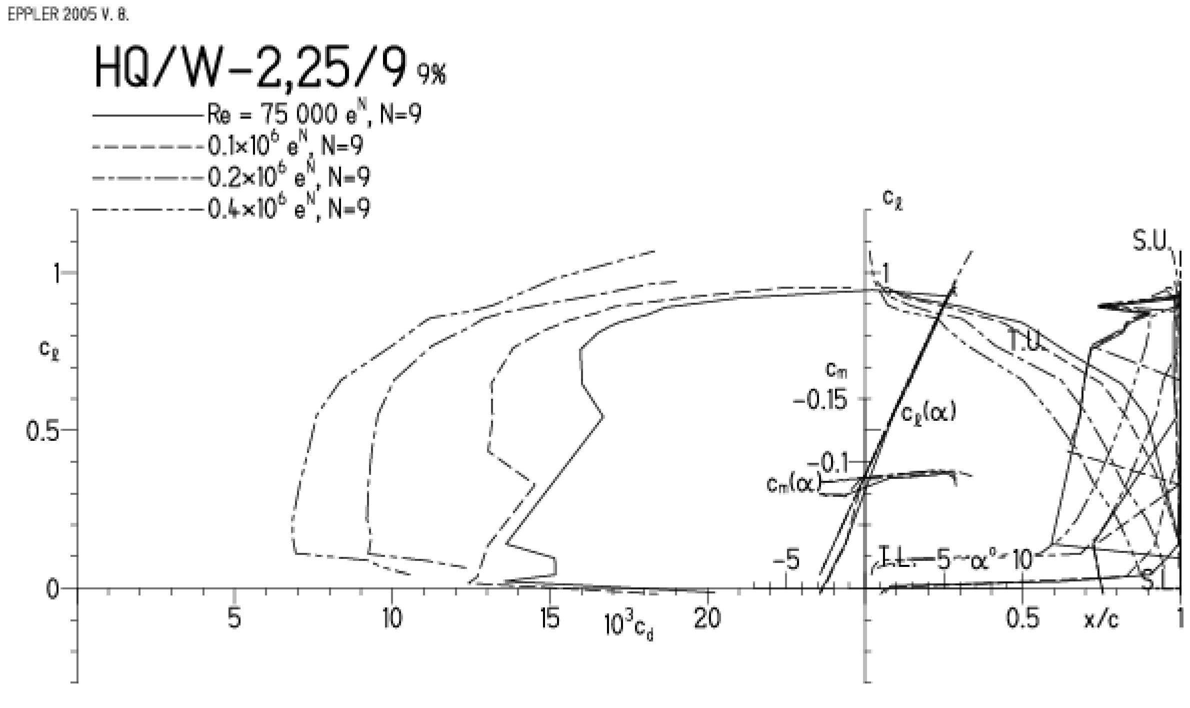
HQ/W-2,25/9, N=11


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1

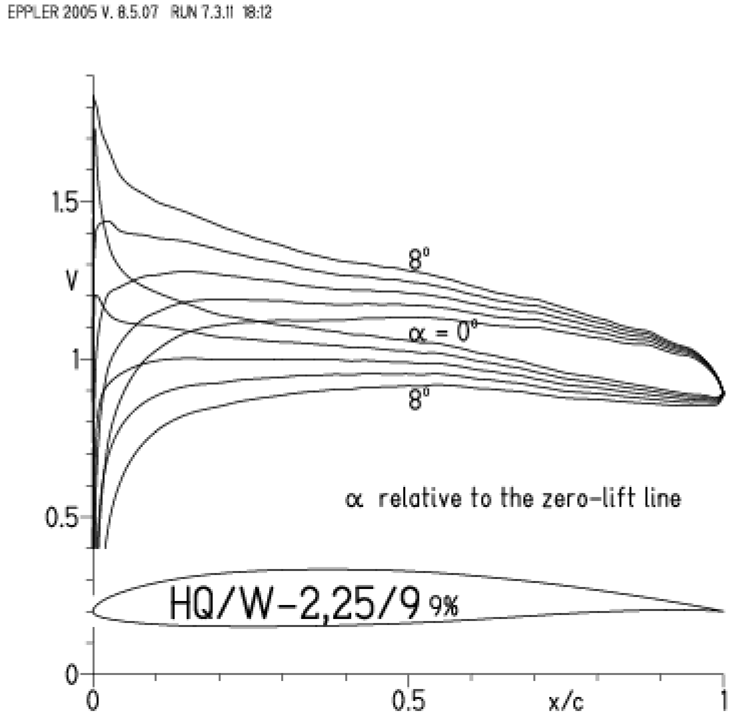

EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_l
1
0.5
0
5
10
15
10^3 c_d
20
c_m
-0.15
-0.1
c_l(α)
c_m(α)
-5
5
α°
10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

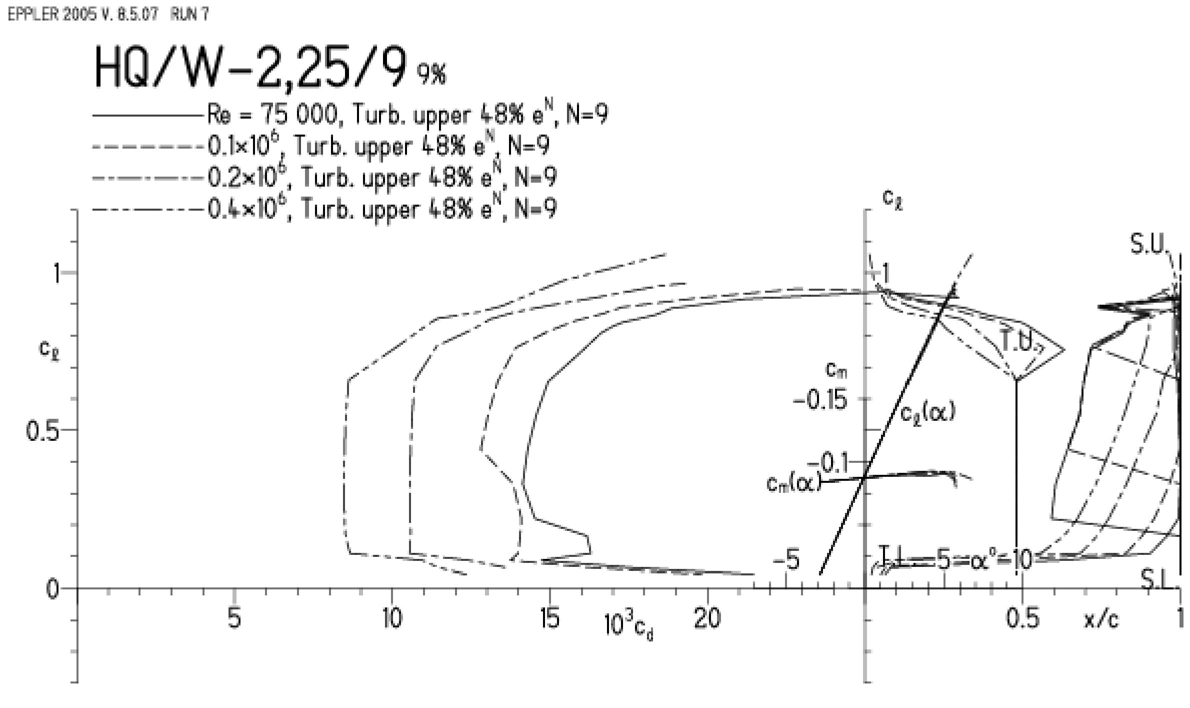
HQ/W-2,25/9, N=9


EPPLER 2005 V. 8.5.07 RUN 7.3.11 18:08
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9 9%
0
0.5
x/c
1


EPPLER 2005 V. 8.
HQ/W-2,25/9 9%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
c_m
−0.15
−0.1
c_l(α)
c_m(α)
−5
T.L.
5
α°
10
S.U.
T.U.
0.5
x/c
1

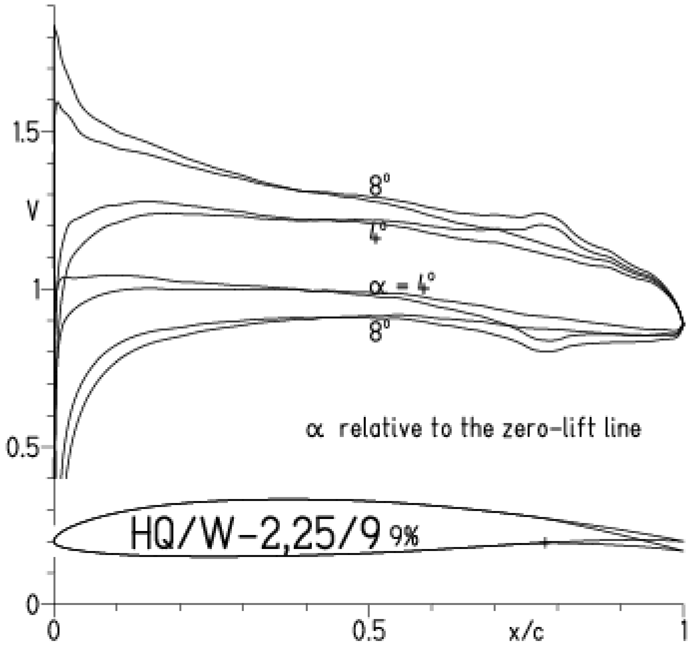
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



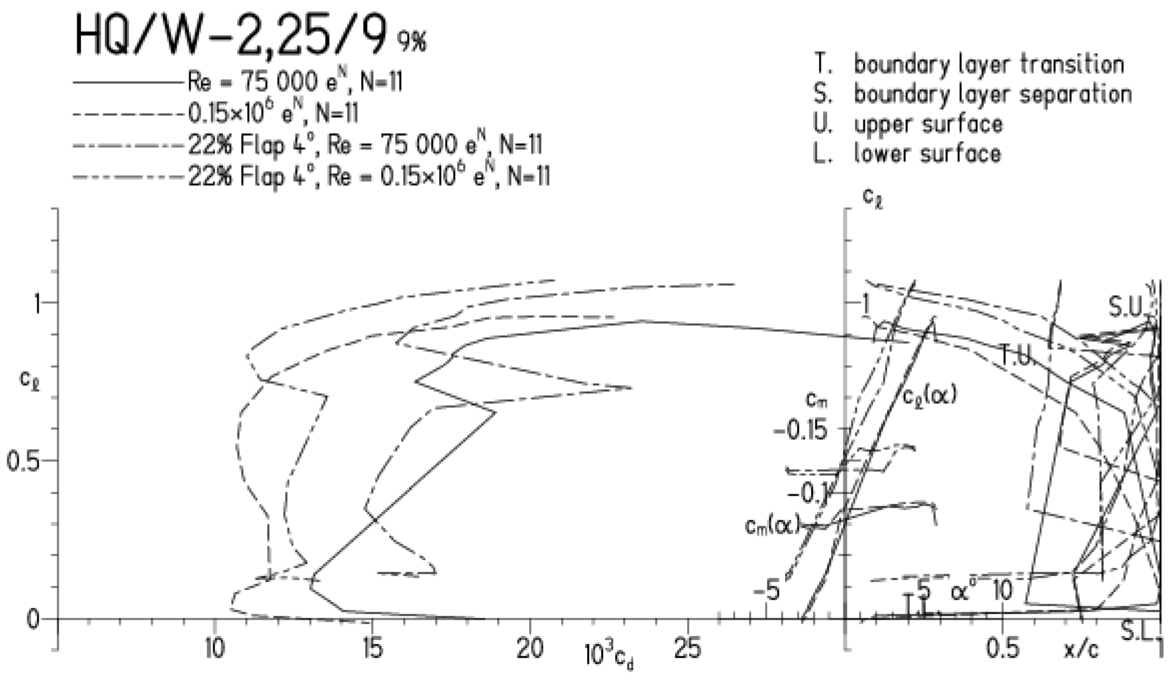


HQ/W-2,25/9, N=11, mit +4° Wölbklappenausschlag

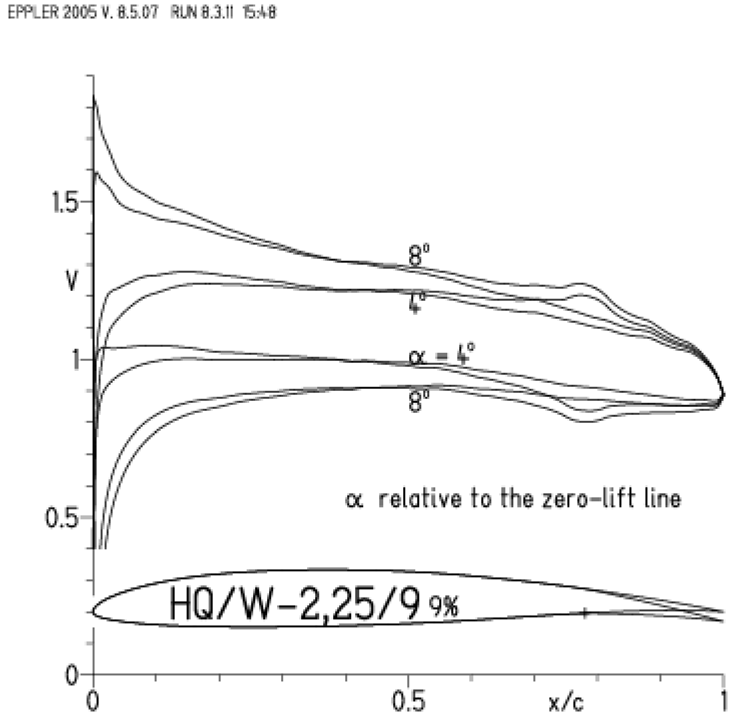
EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

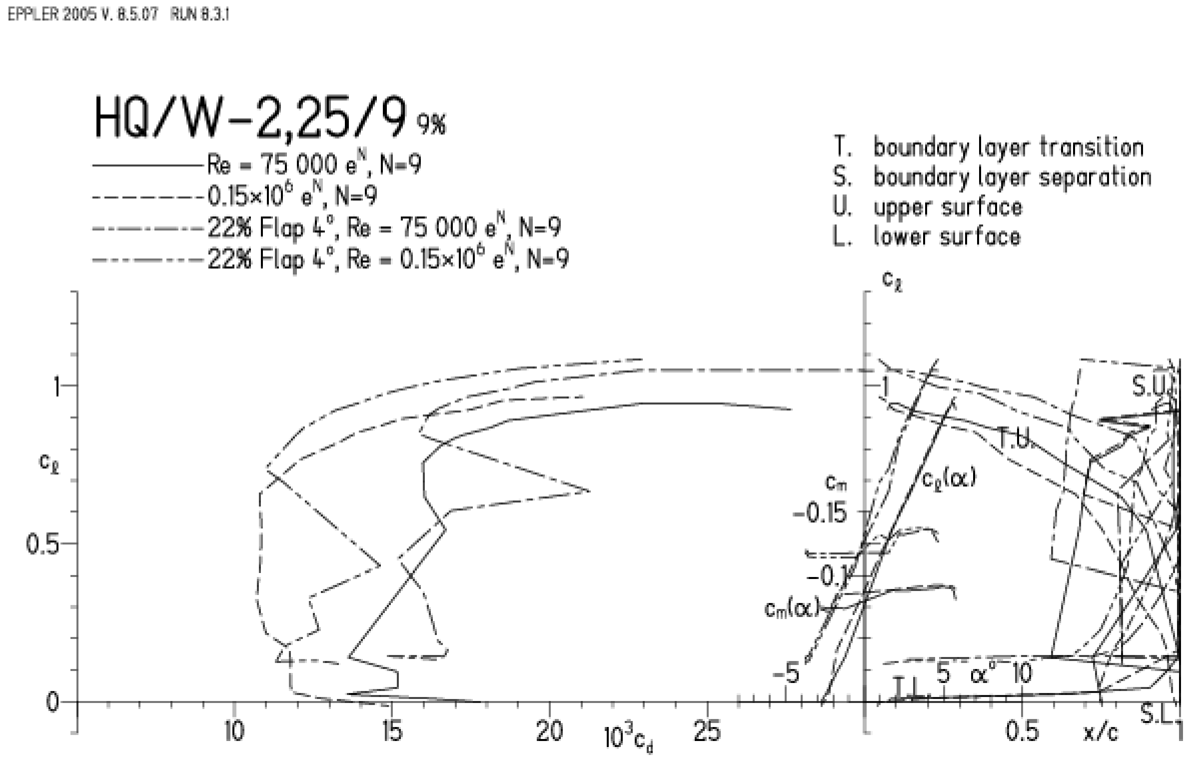


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3



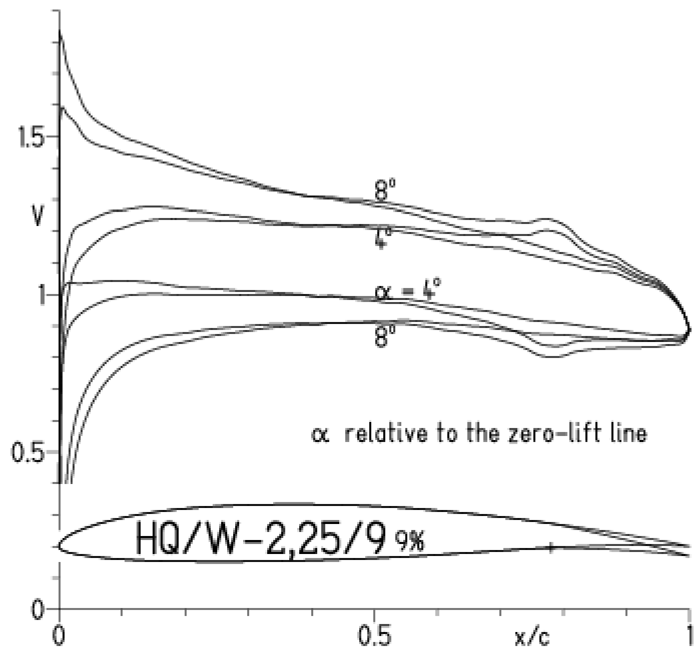
<u>HQ/W-2,25/9</u>, N=9, mit +4° Wölbklappenausschlag



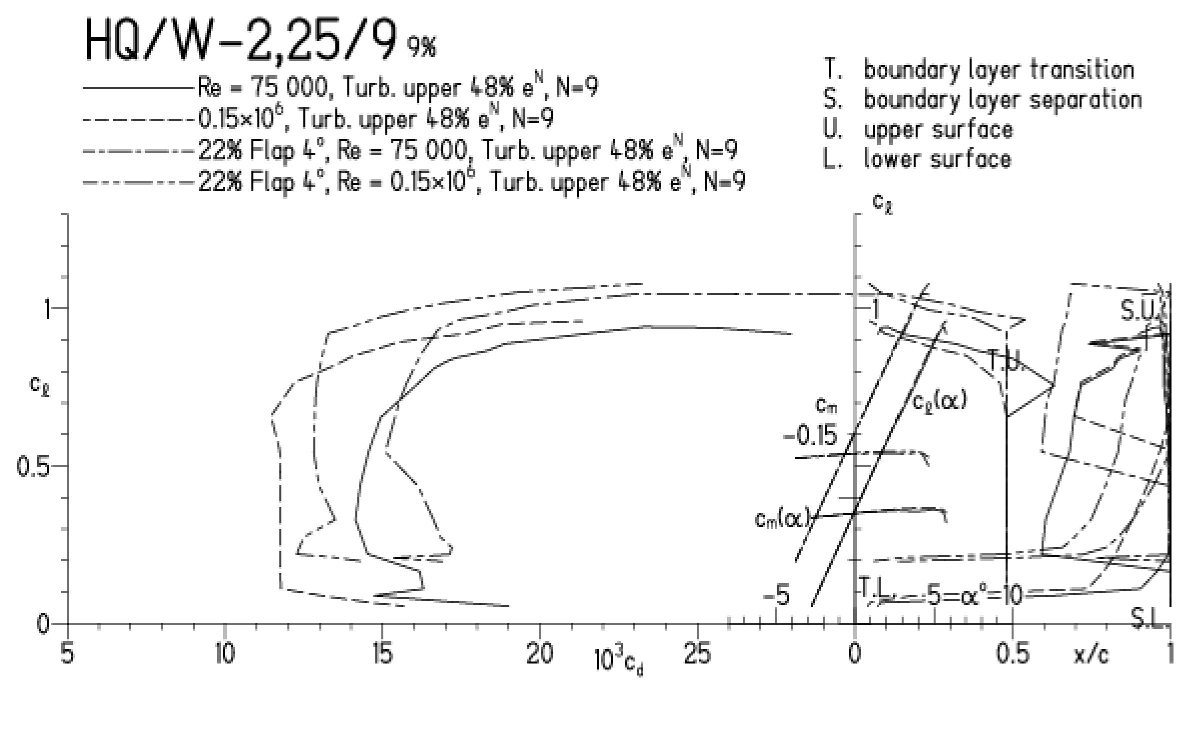


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

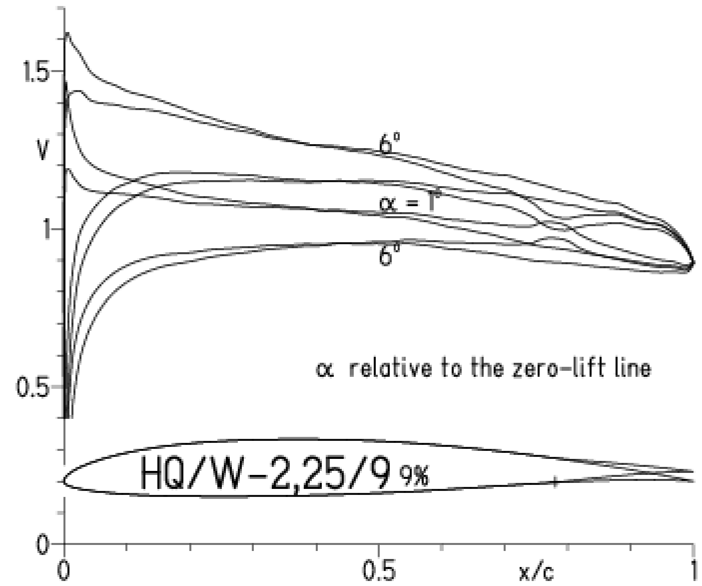


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

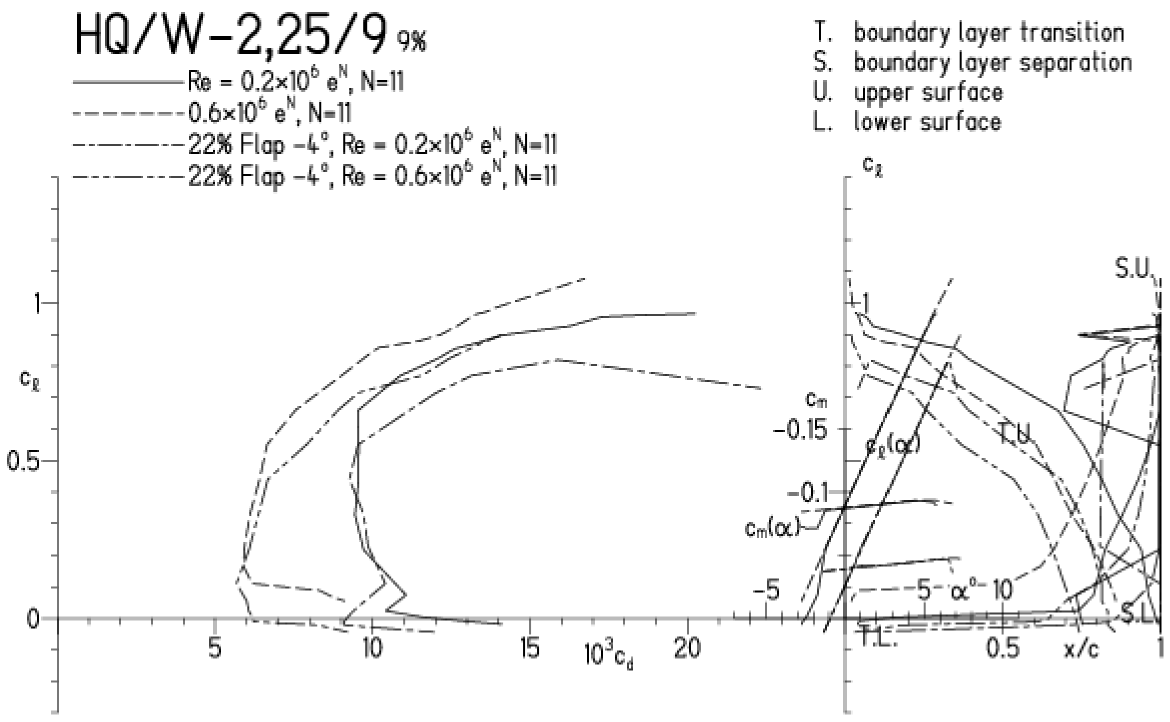


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

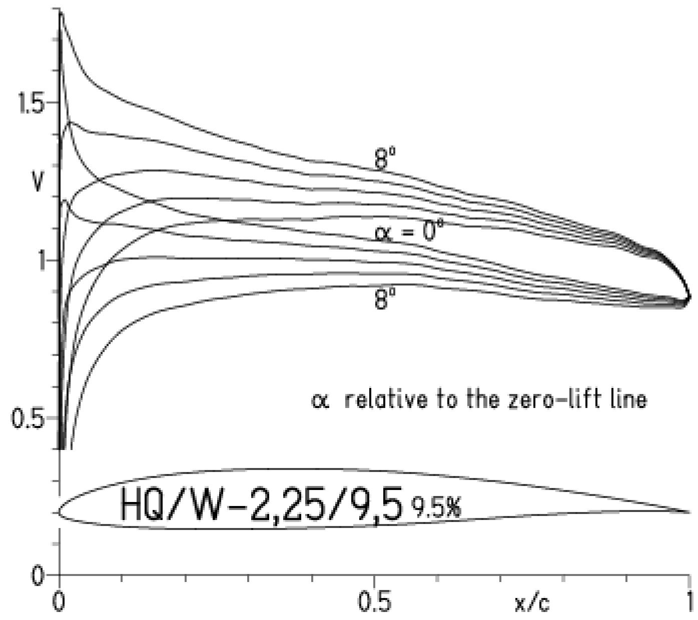


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

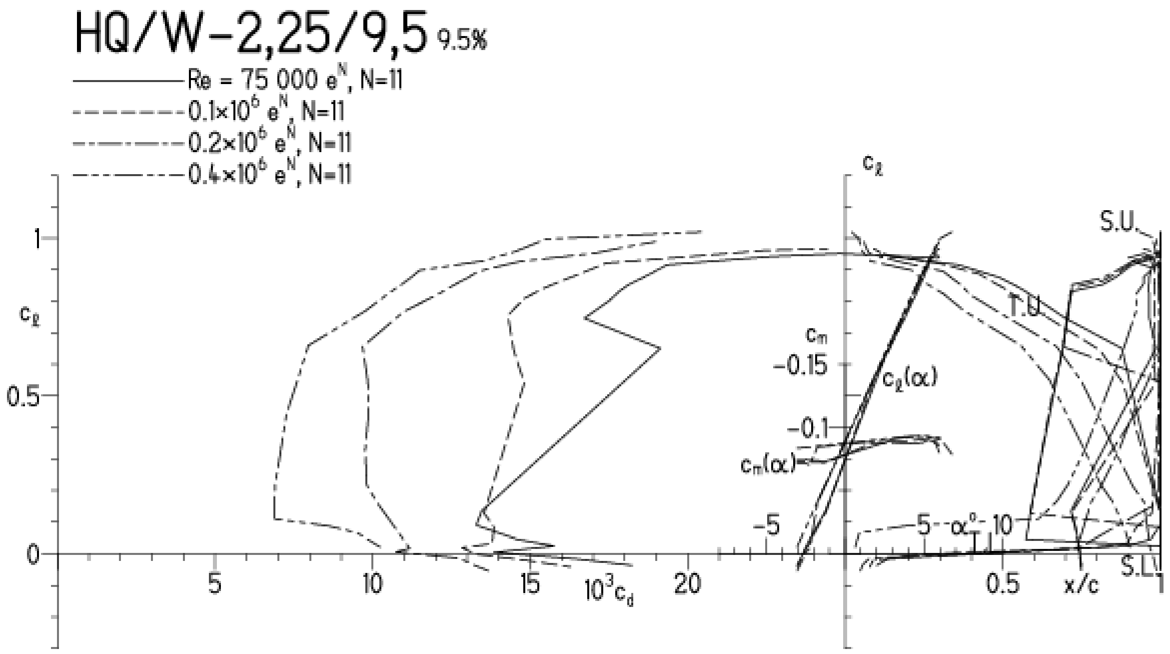


HQ/W-2,25/9,5, N=11

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

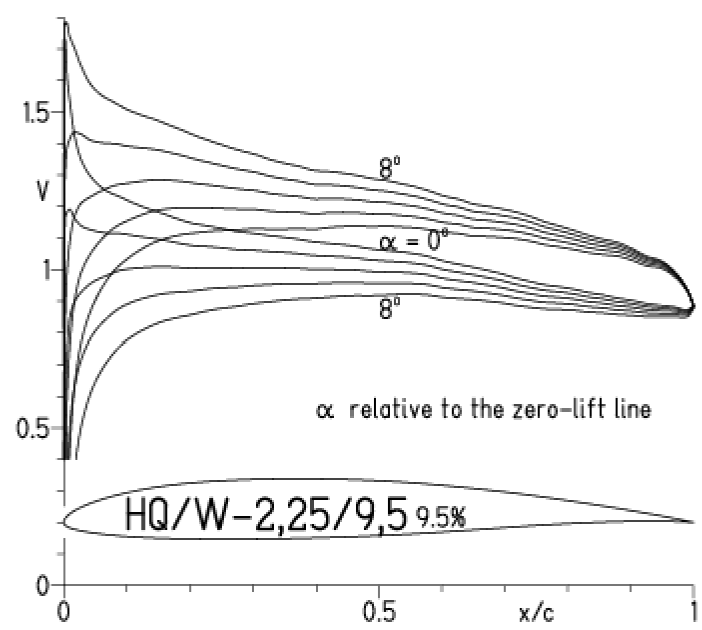


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:33

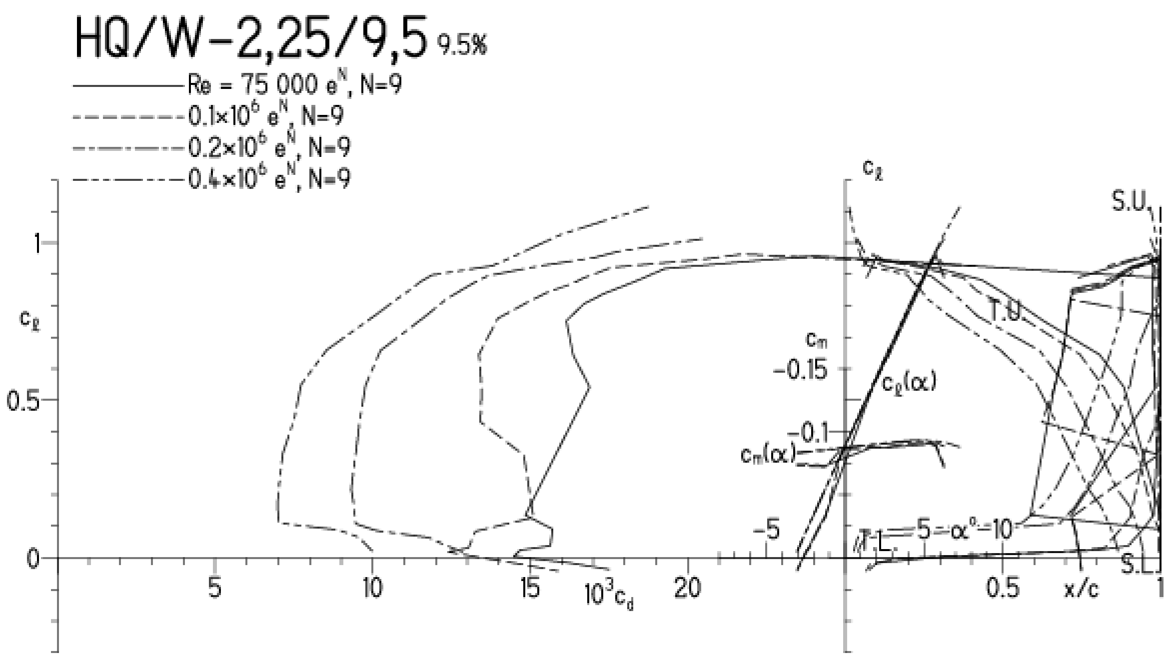


HQ/W-2,25/9,5, N=9

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43

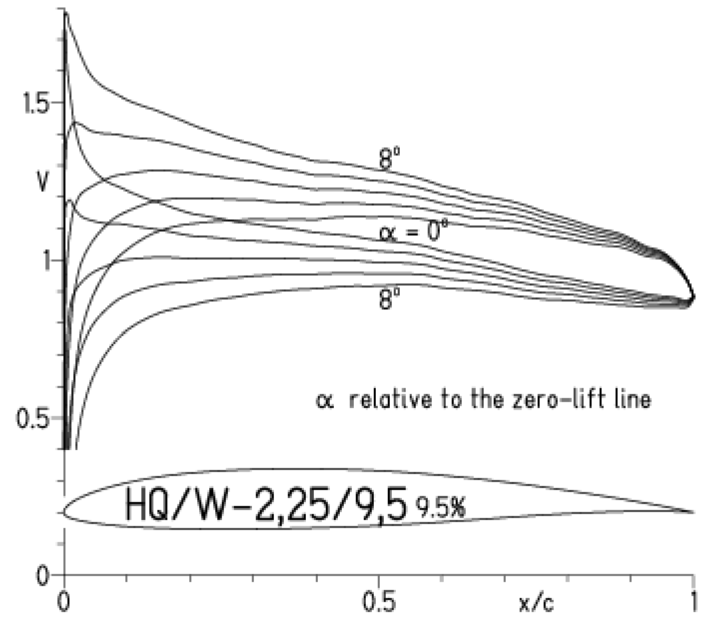


EPPLER 2005 V. 8.5.07 RUN 8.3.

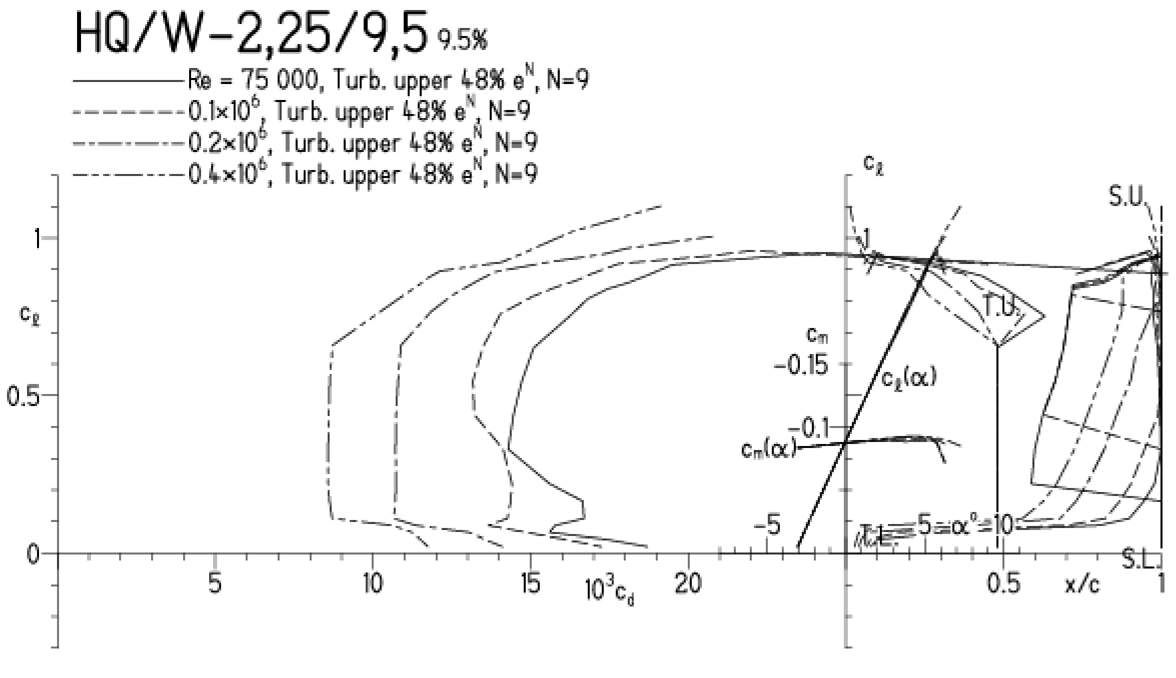


<u>HQ/W-2,25/9,5</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

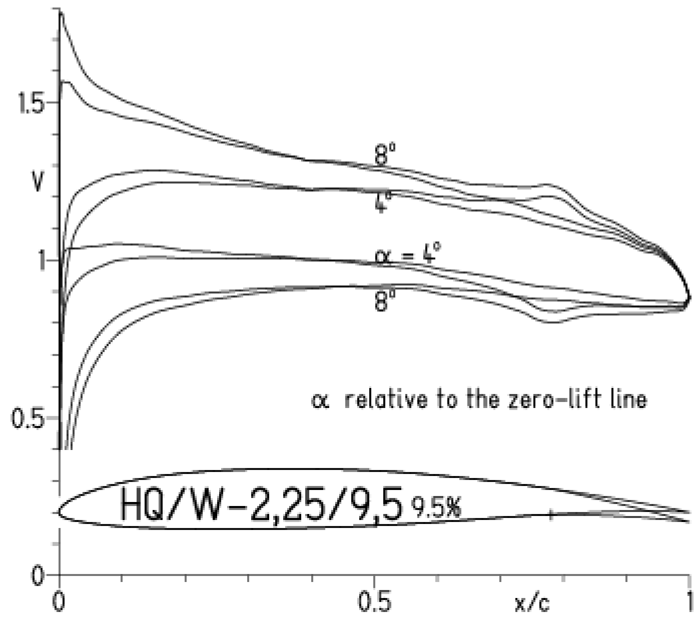


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

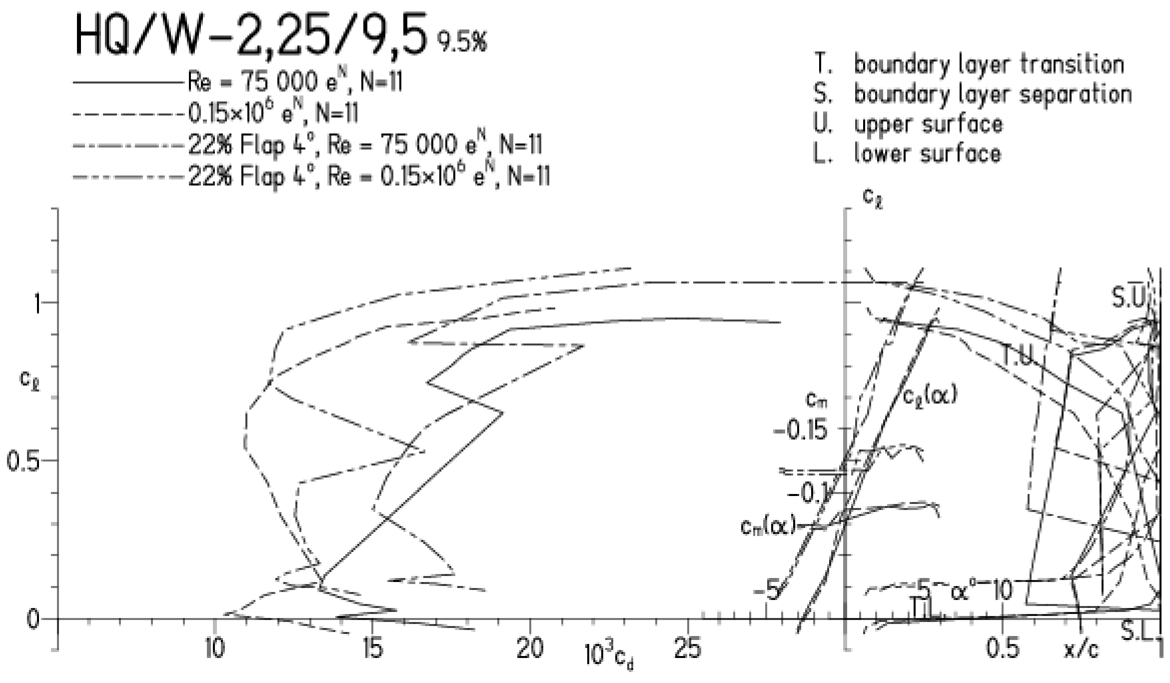


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

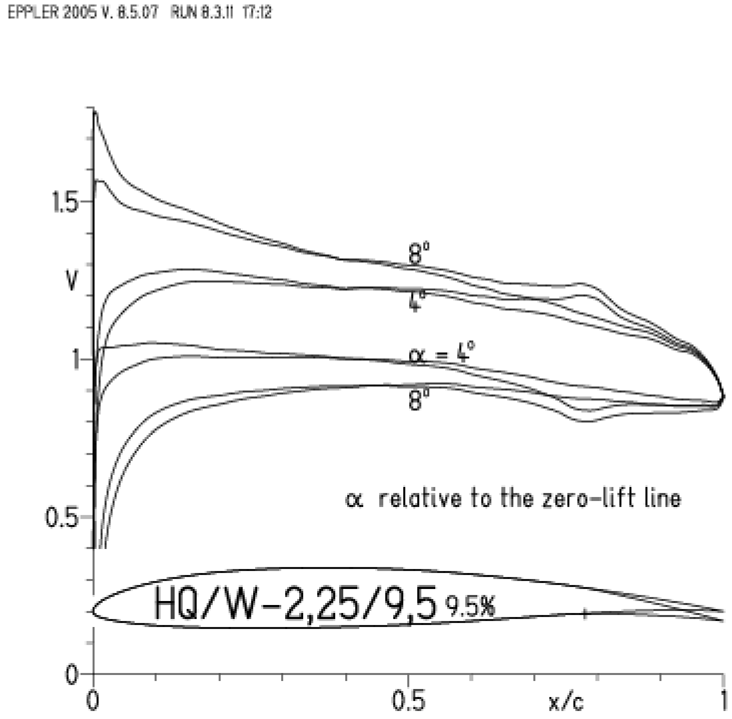
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

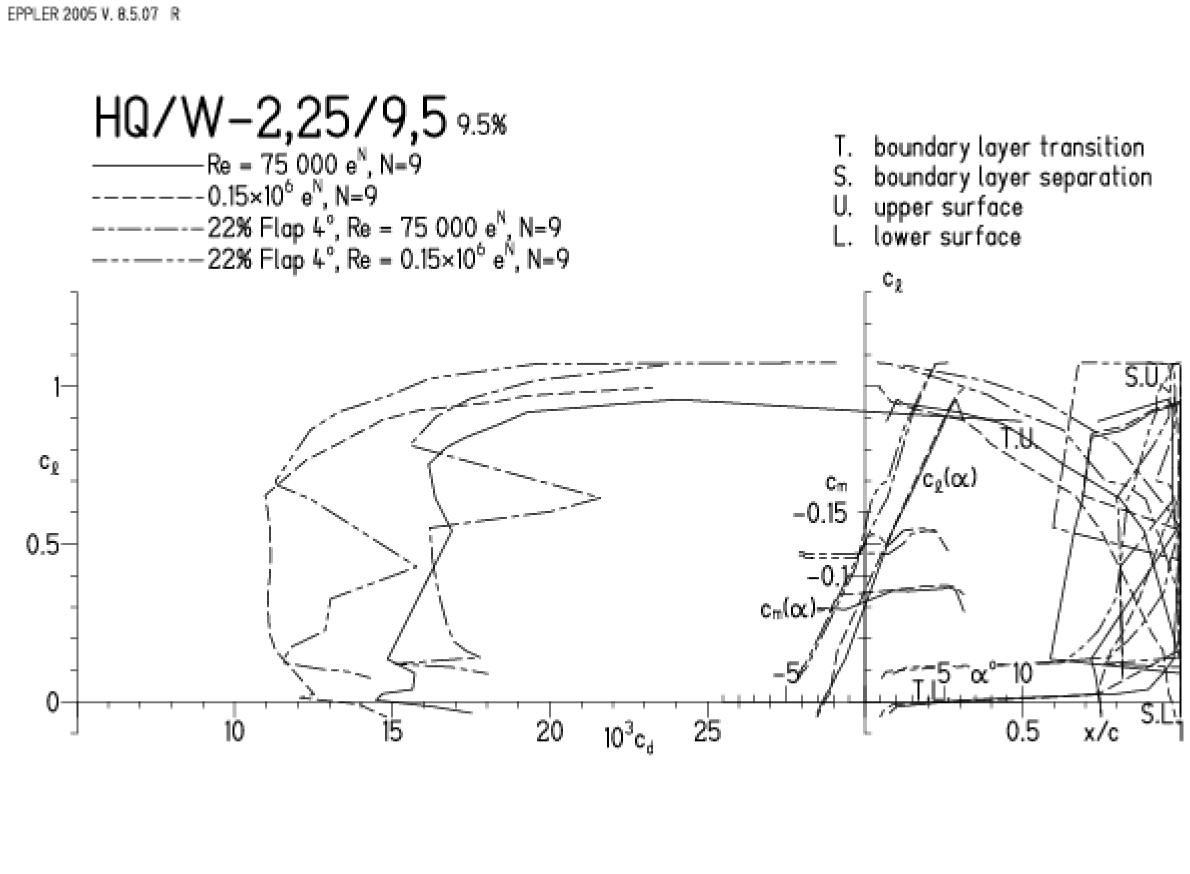


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

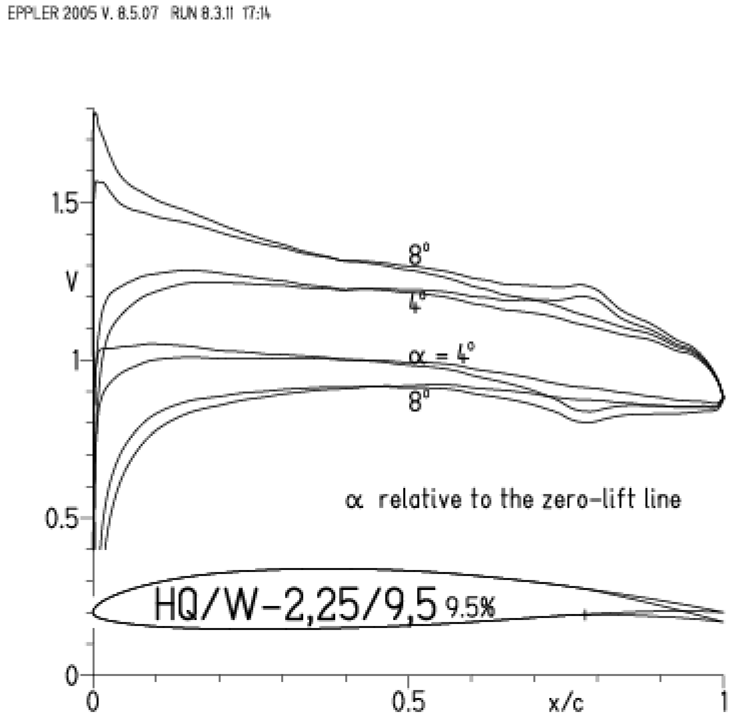


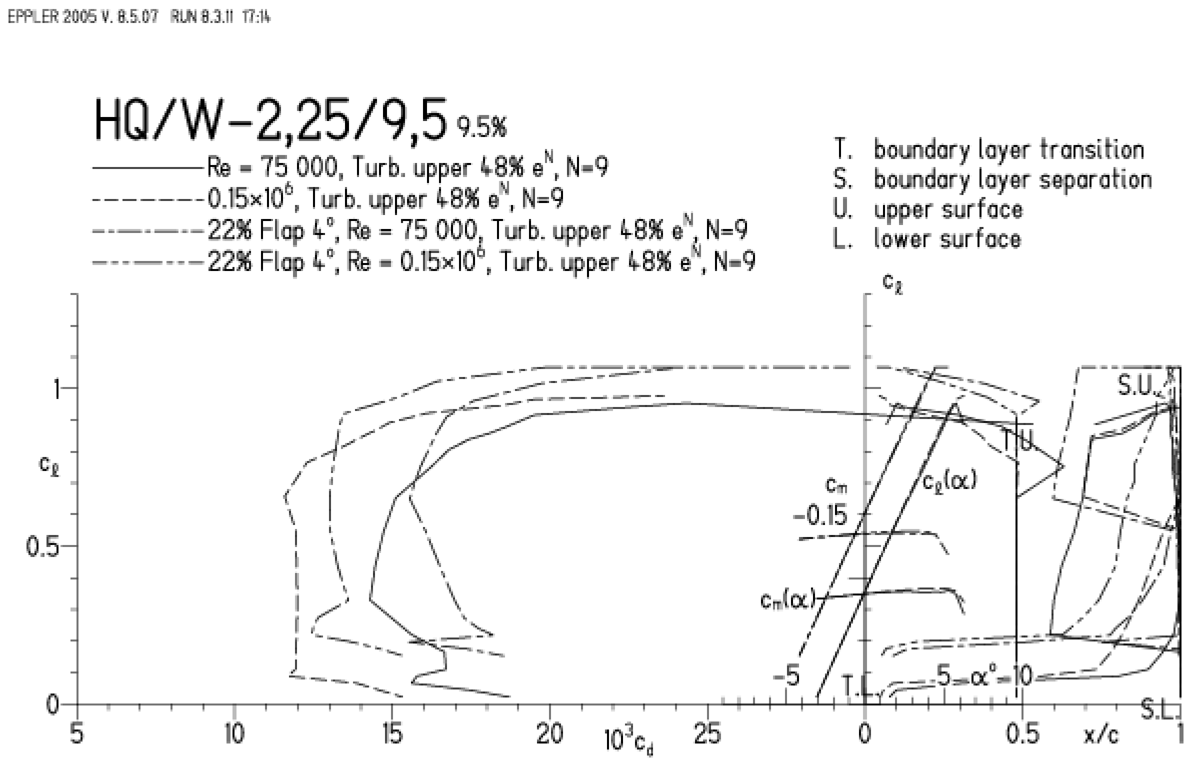
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag



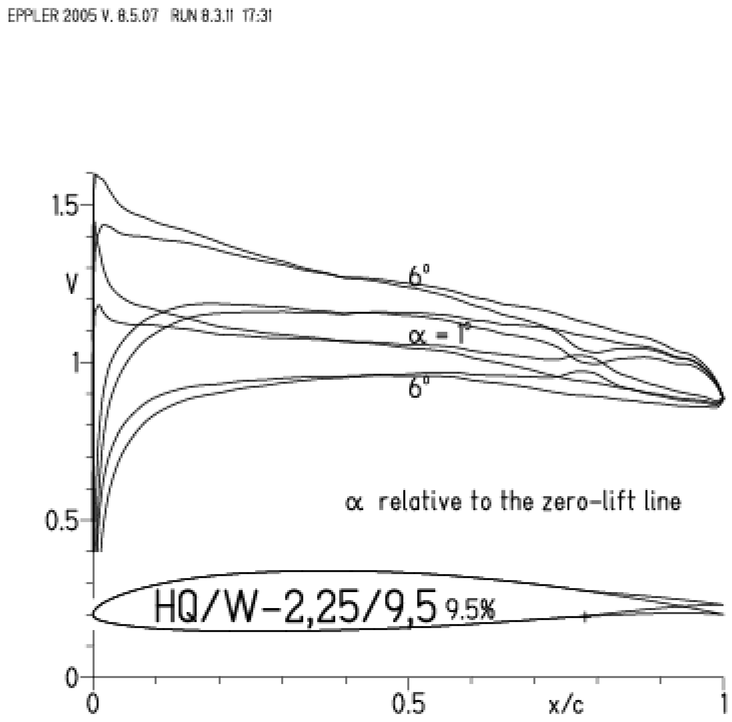


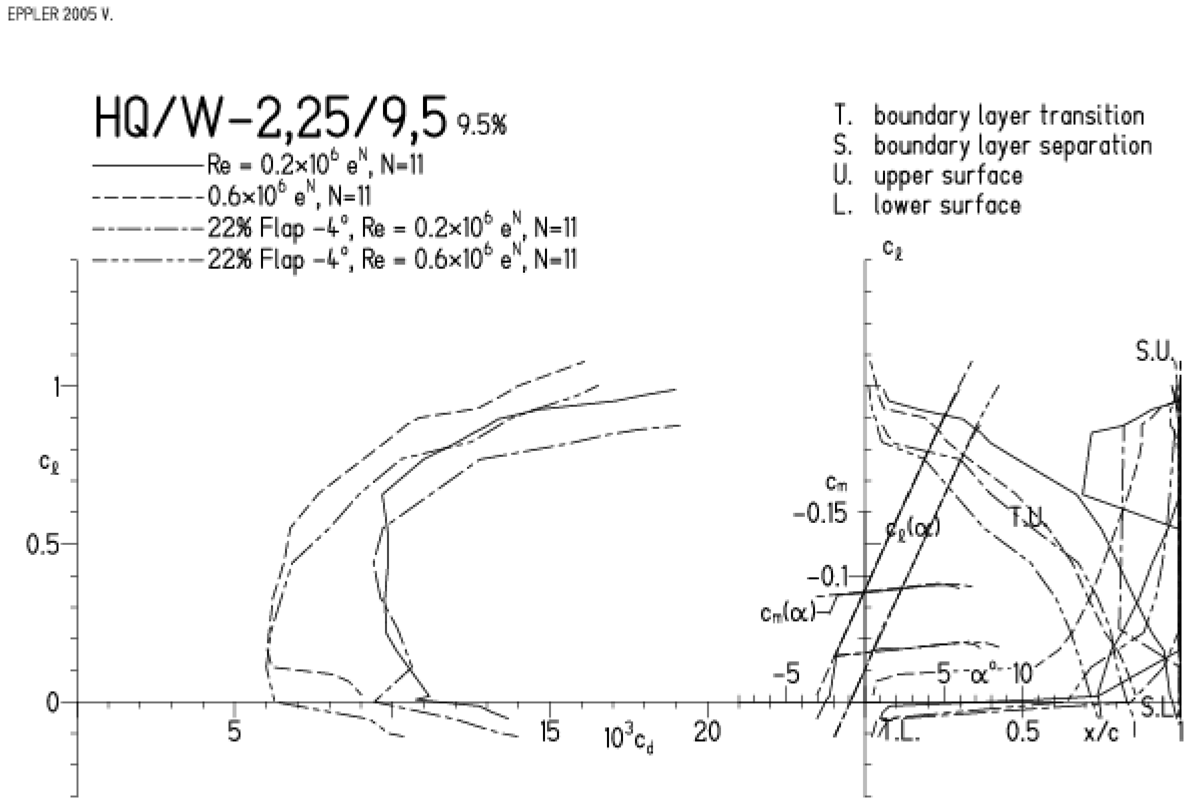
HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



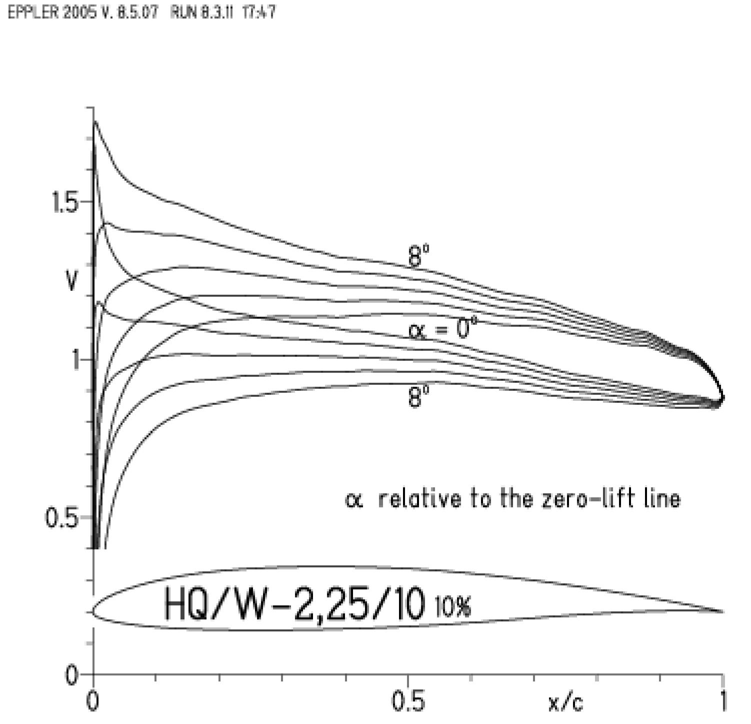


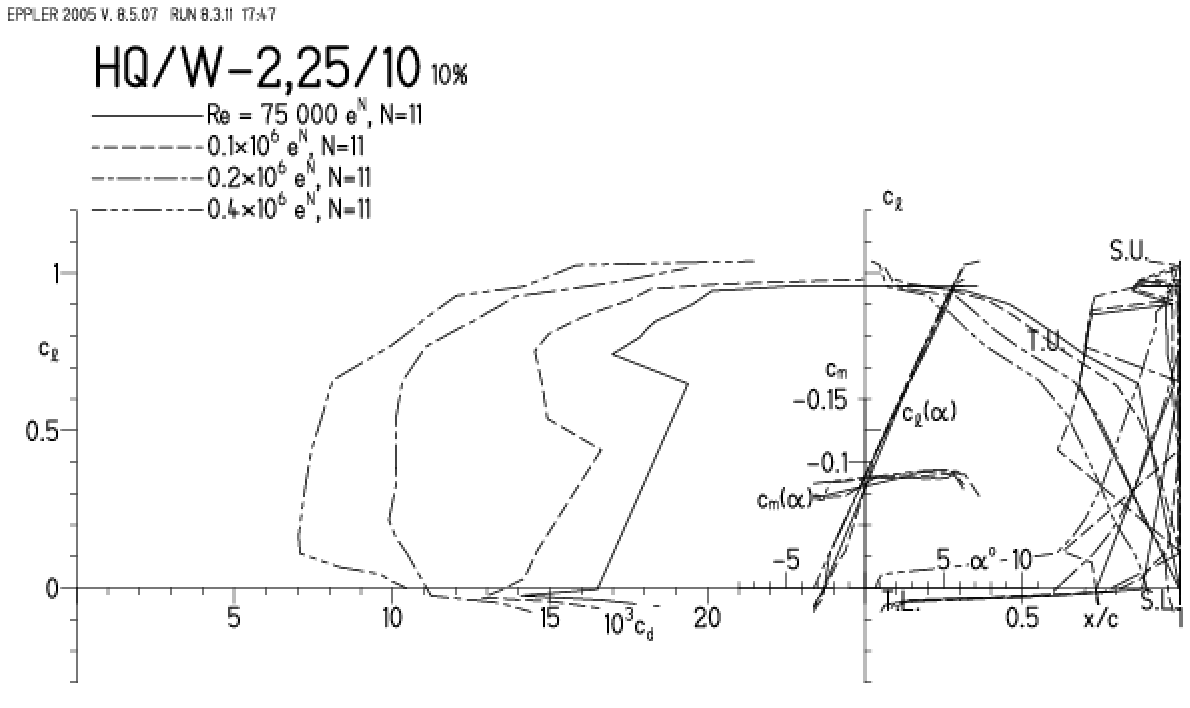
<u>HQ/W-2,25/9,5</u>, N=11 mit -4° Wölbklappenausschlag





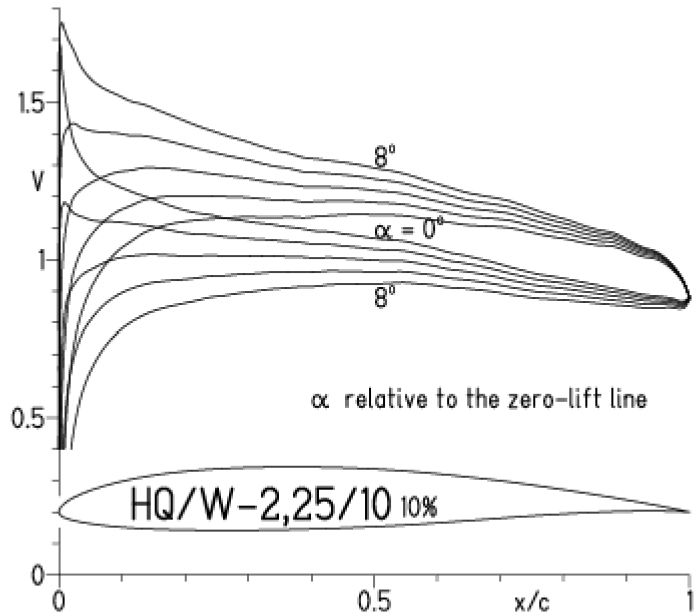
HQ/W-2,25/10, N=11



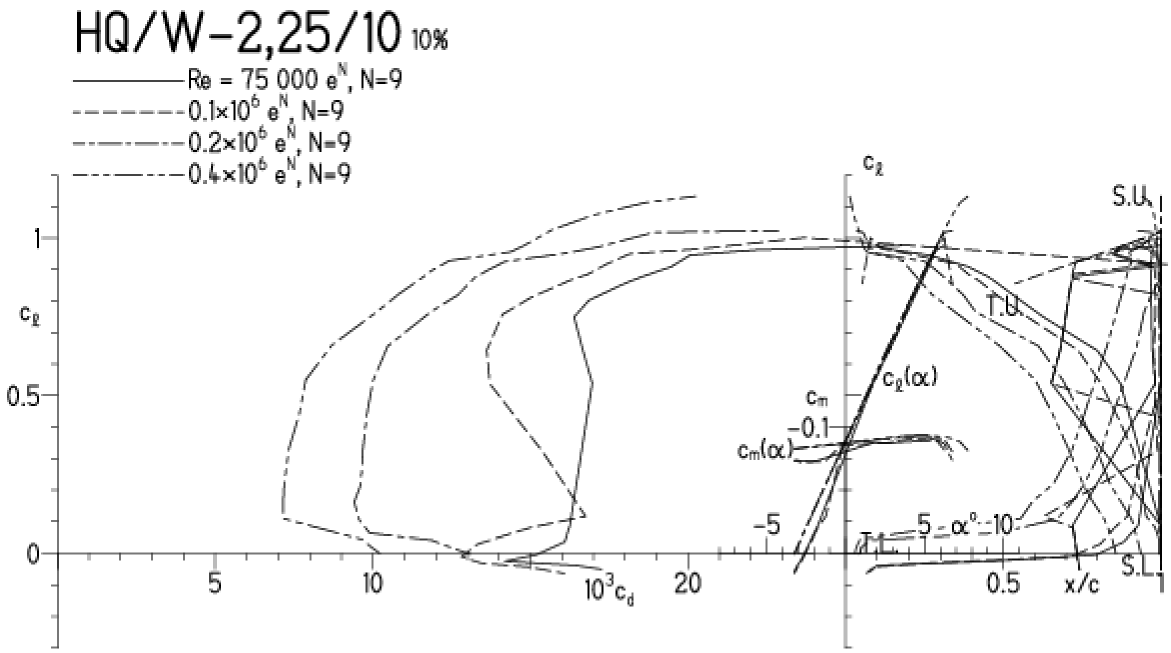


HQ/W-2,25/10, N=9

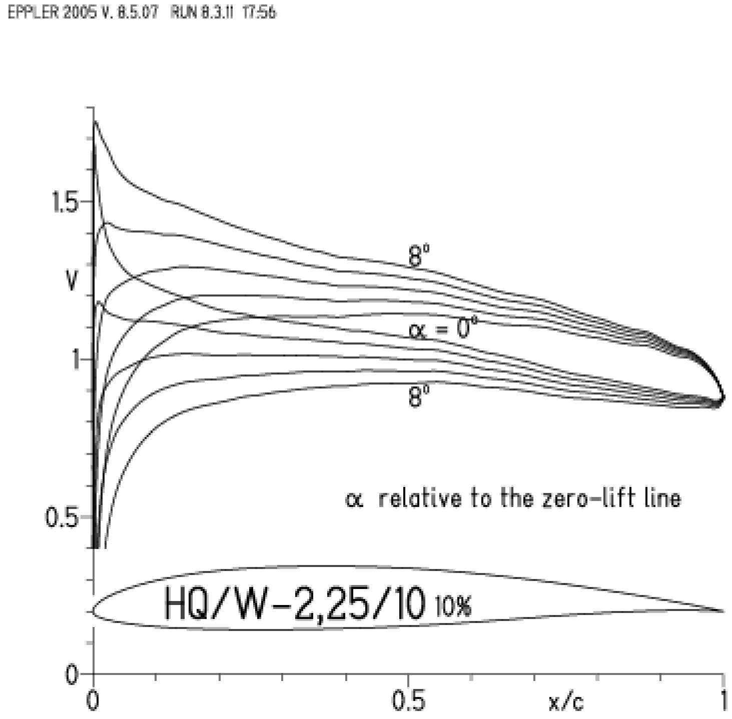
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

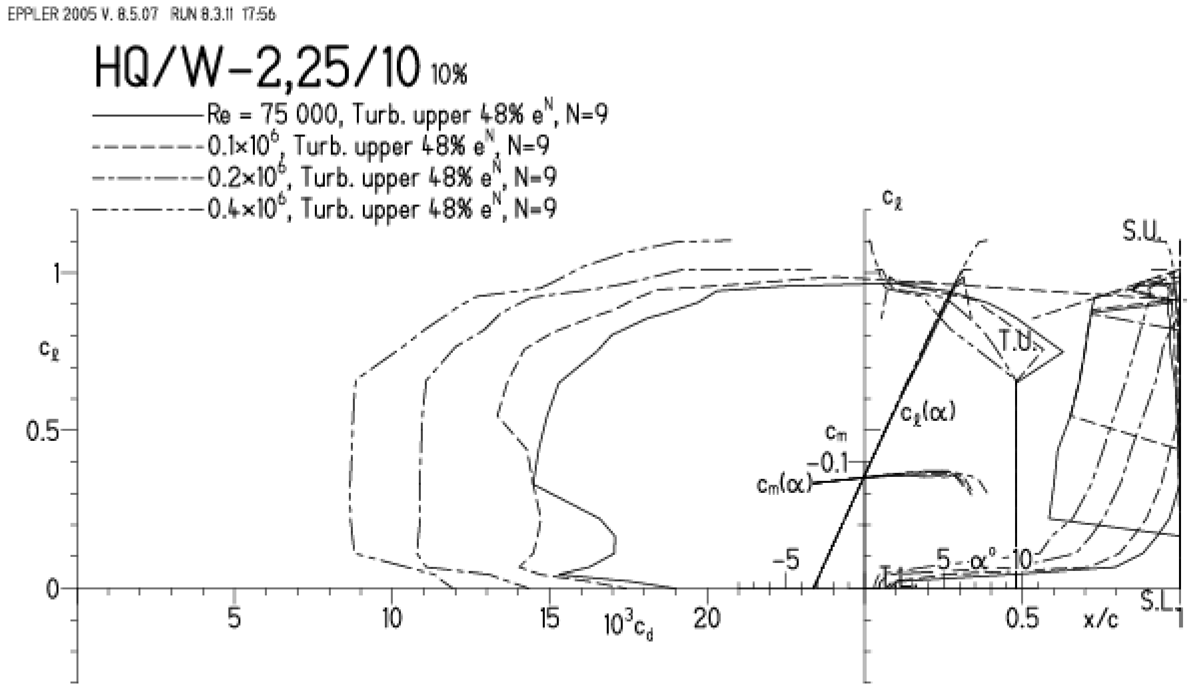


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

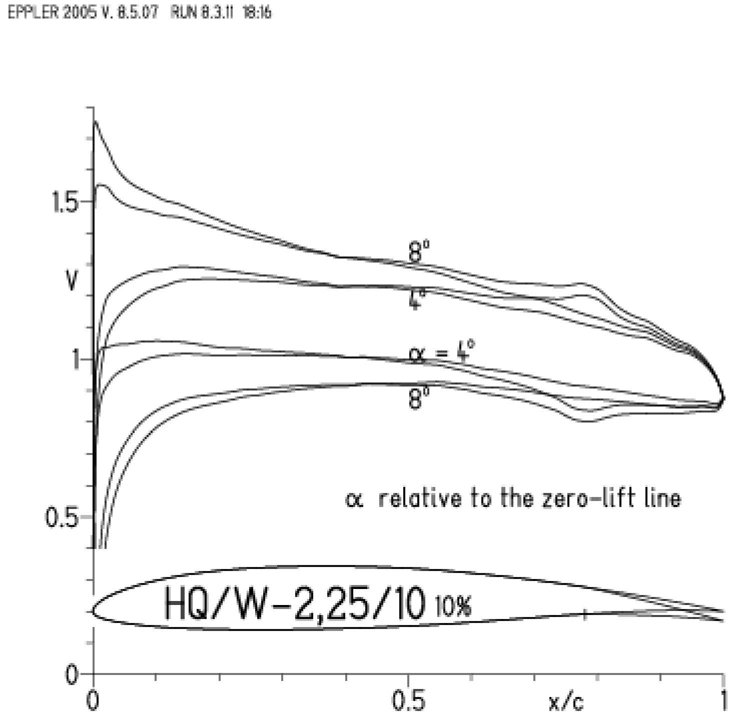


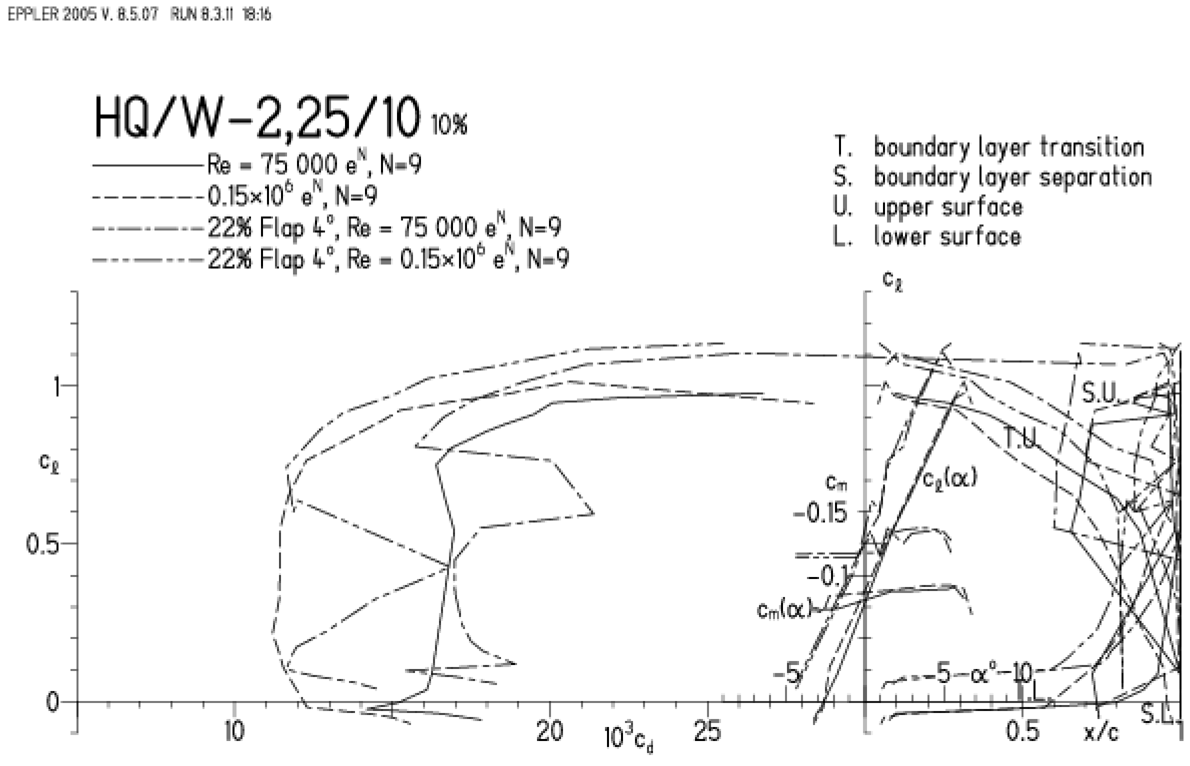
<u>HQ/W-2,25/10</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)





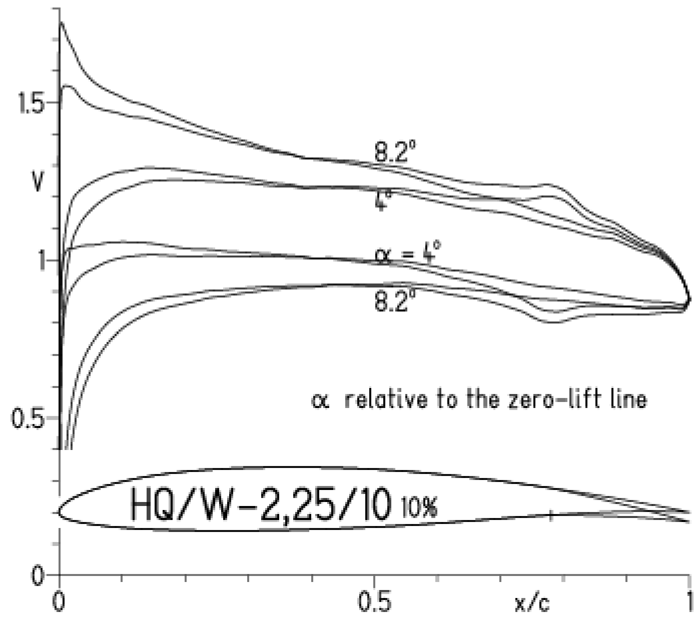
HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag



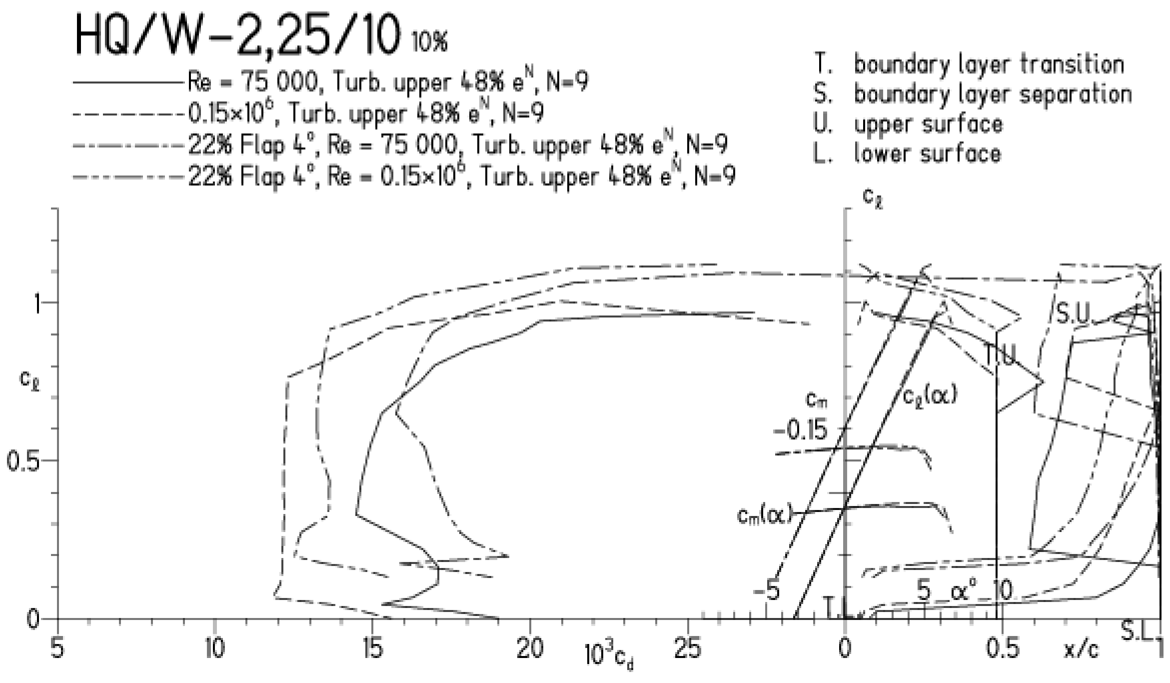


<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:32

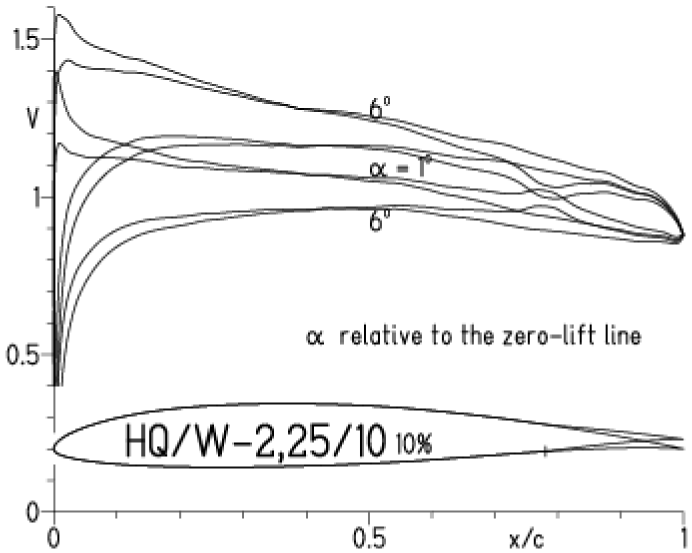


EPPLER 2005 V. 8.5.07 RUN 8.3

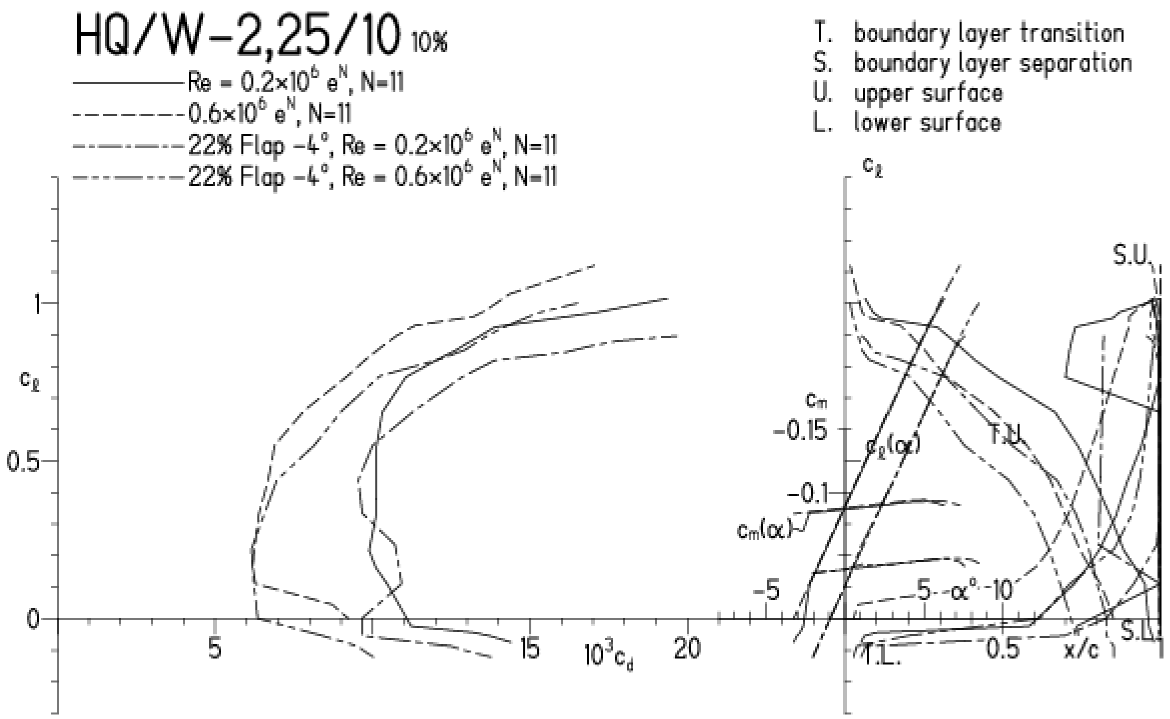


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

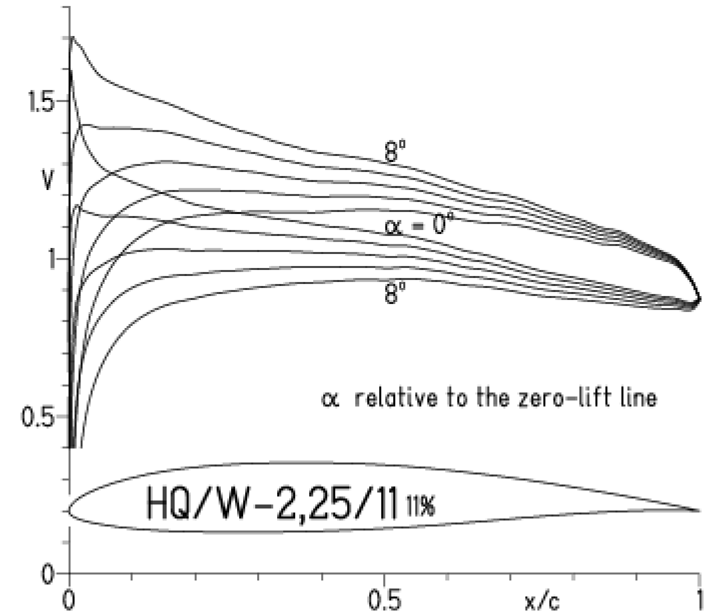


EPPLER 2005 V. 8.5.07 RUN

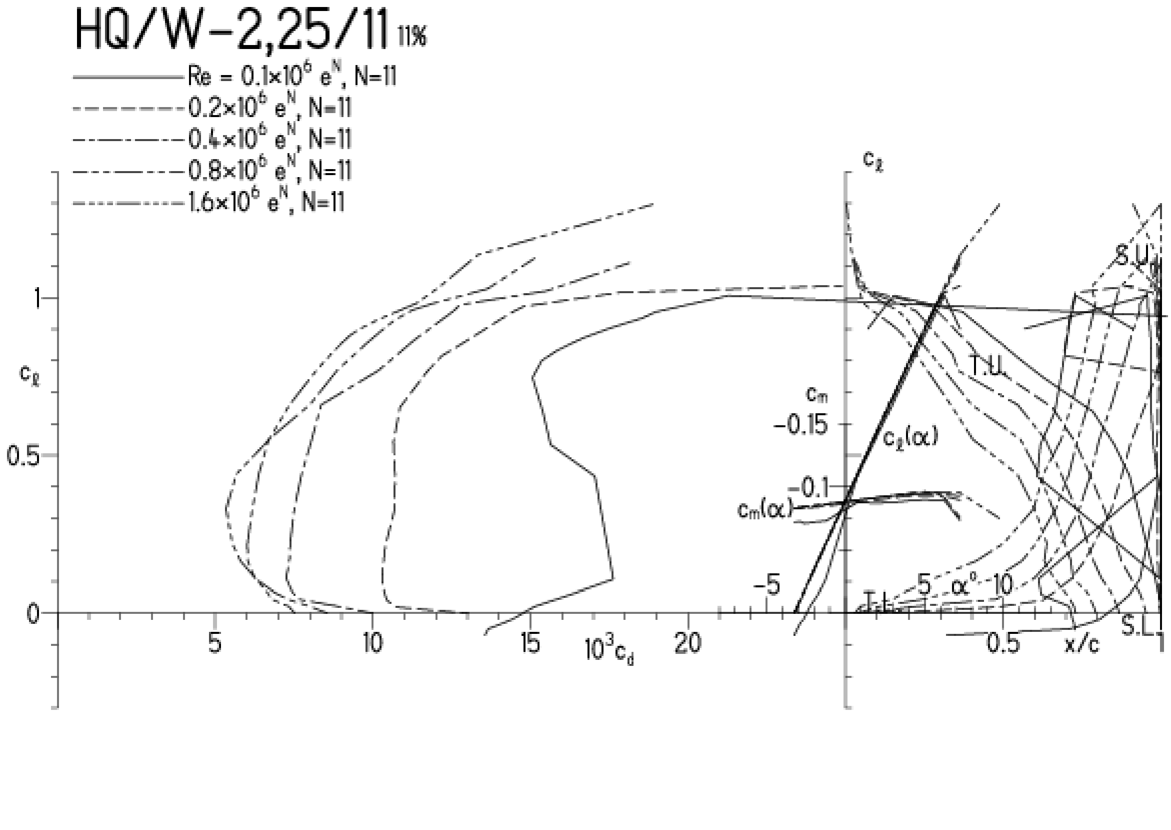


<u>HQ/W-2,25/11</u>, N=11

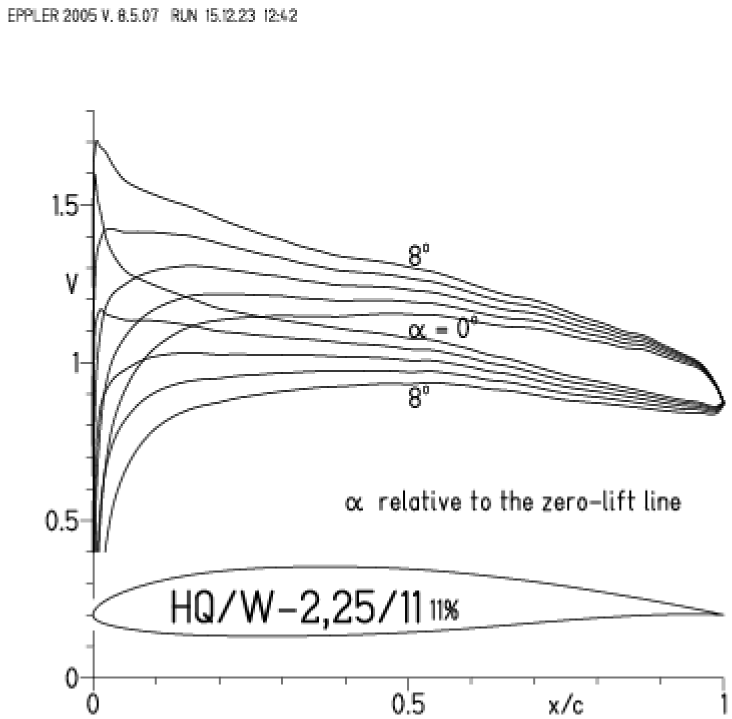
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

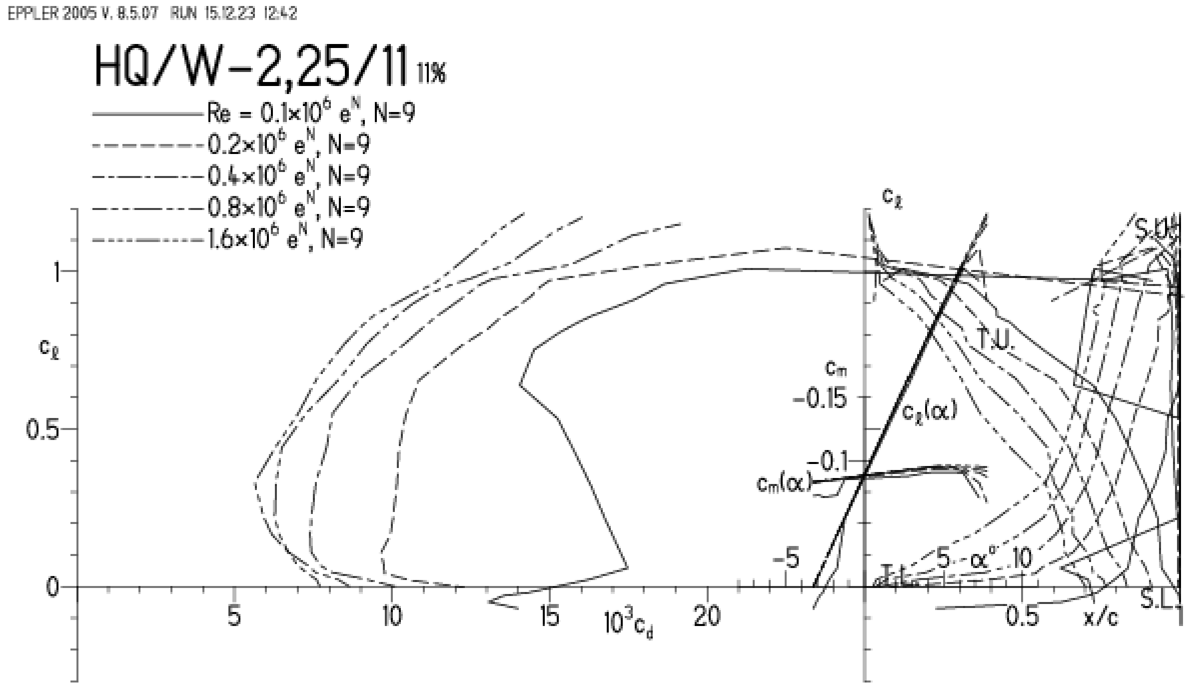


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

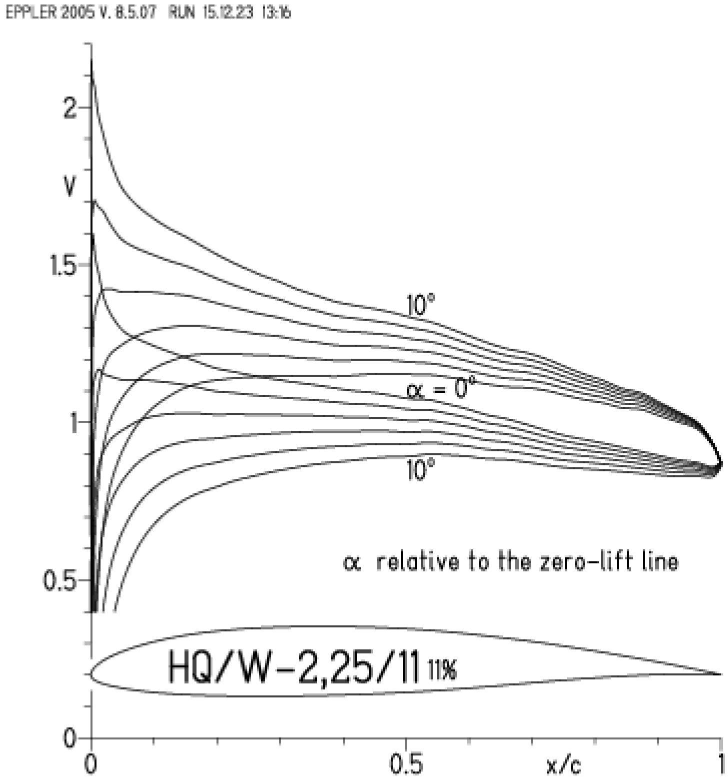


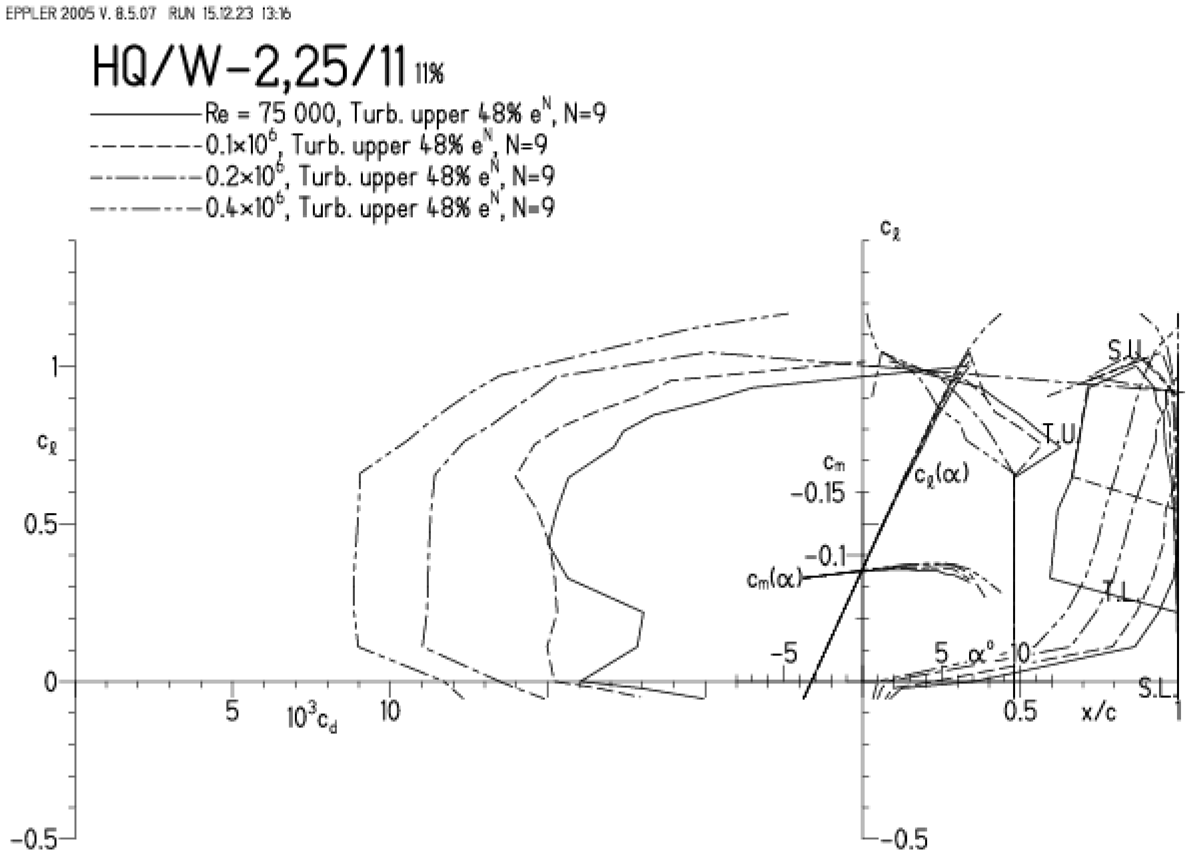
HQQ/W-2,25/11, N=9





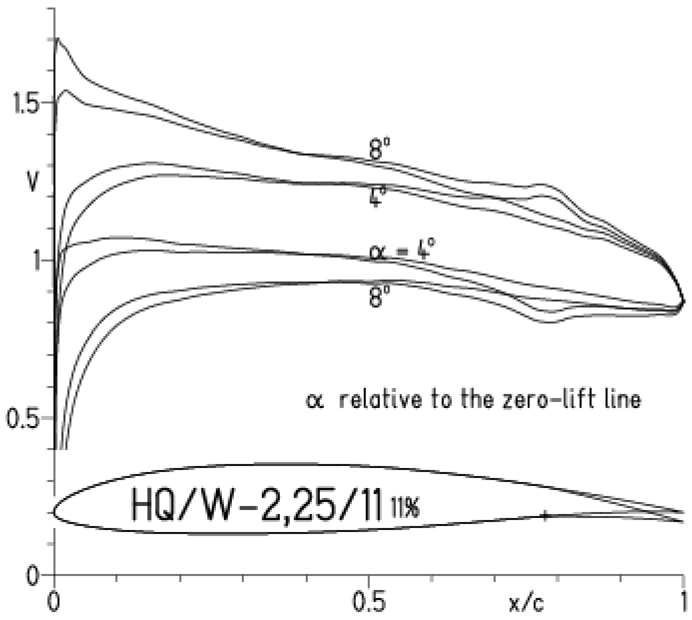
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



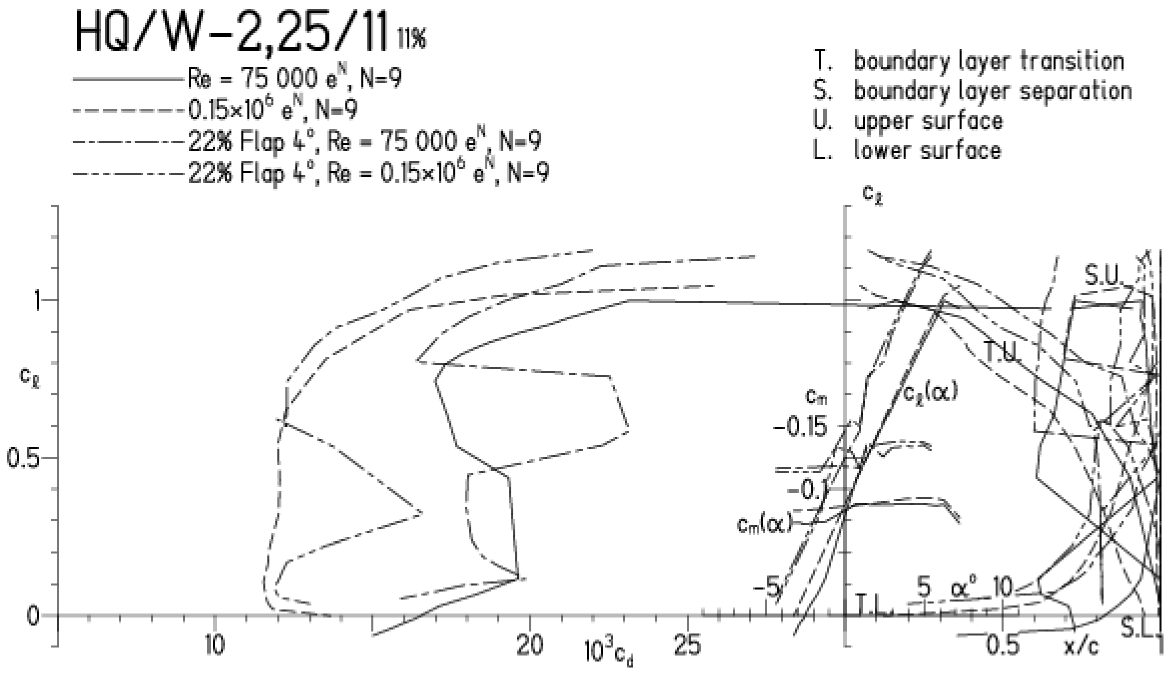


<u>HQW-2,25/11</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

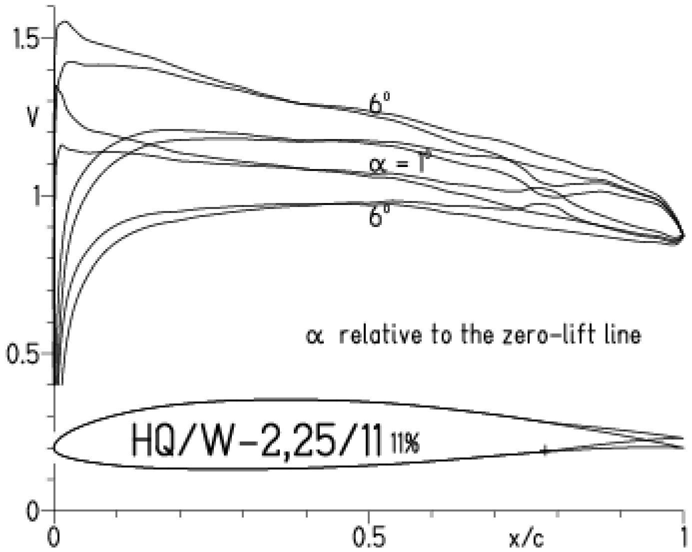


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

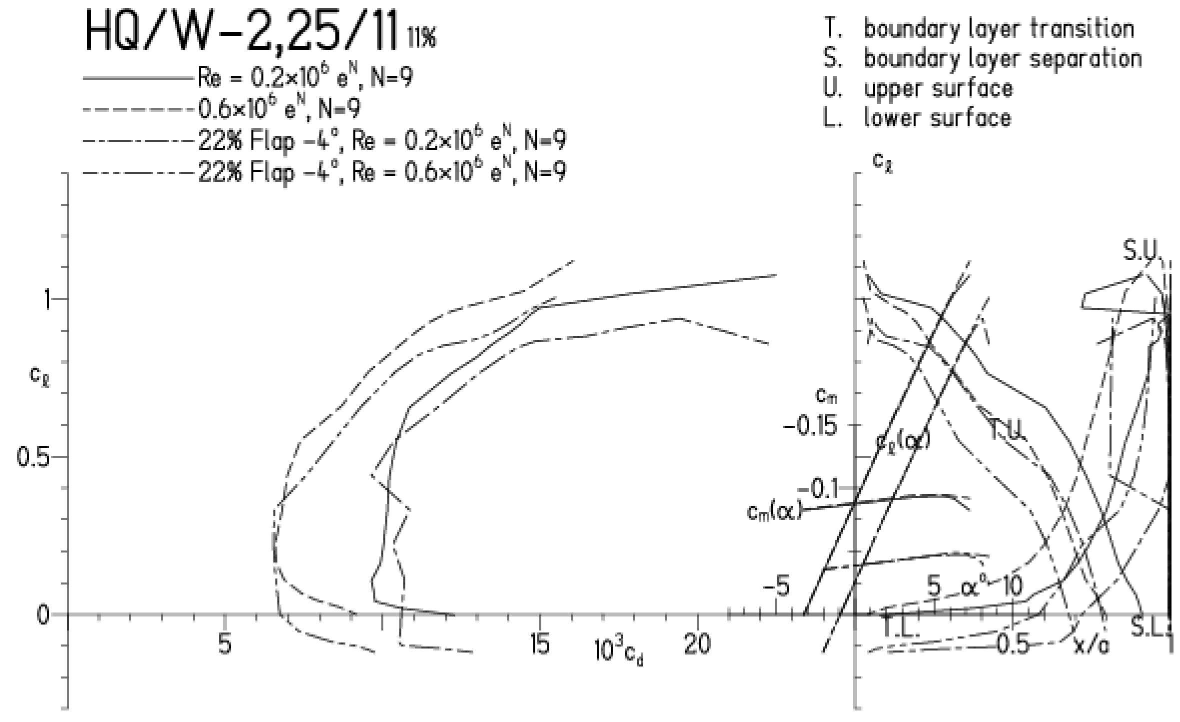


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

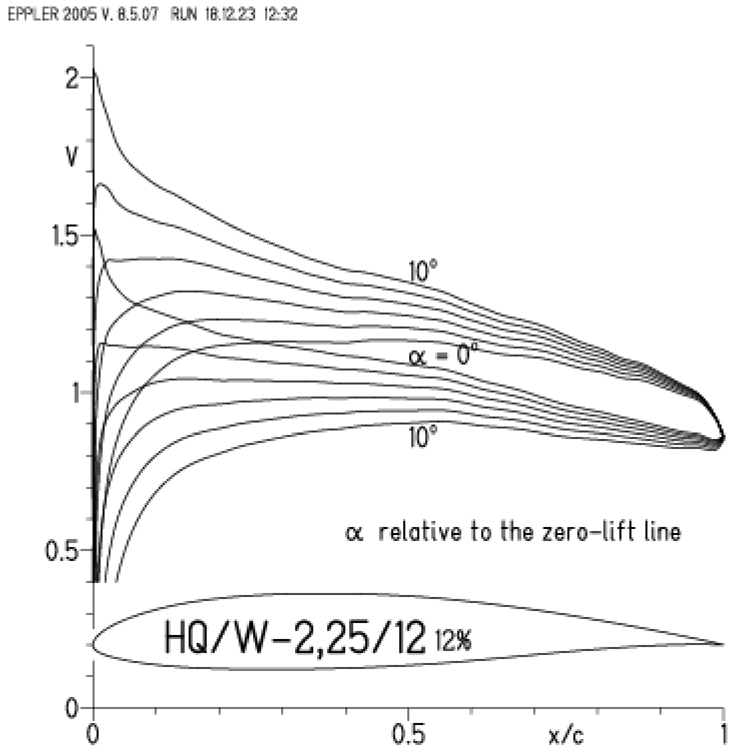
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

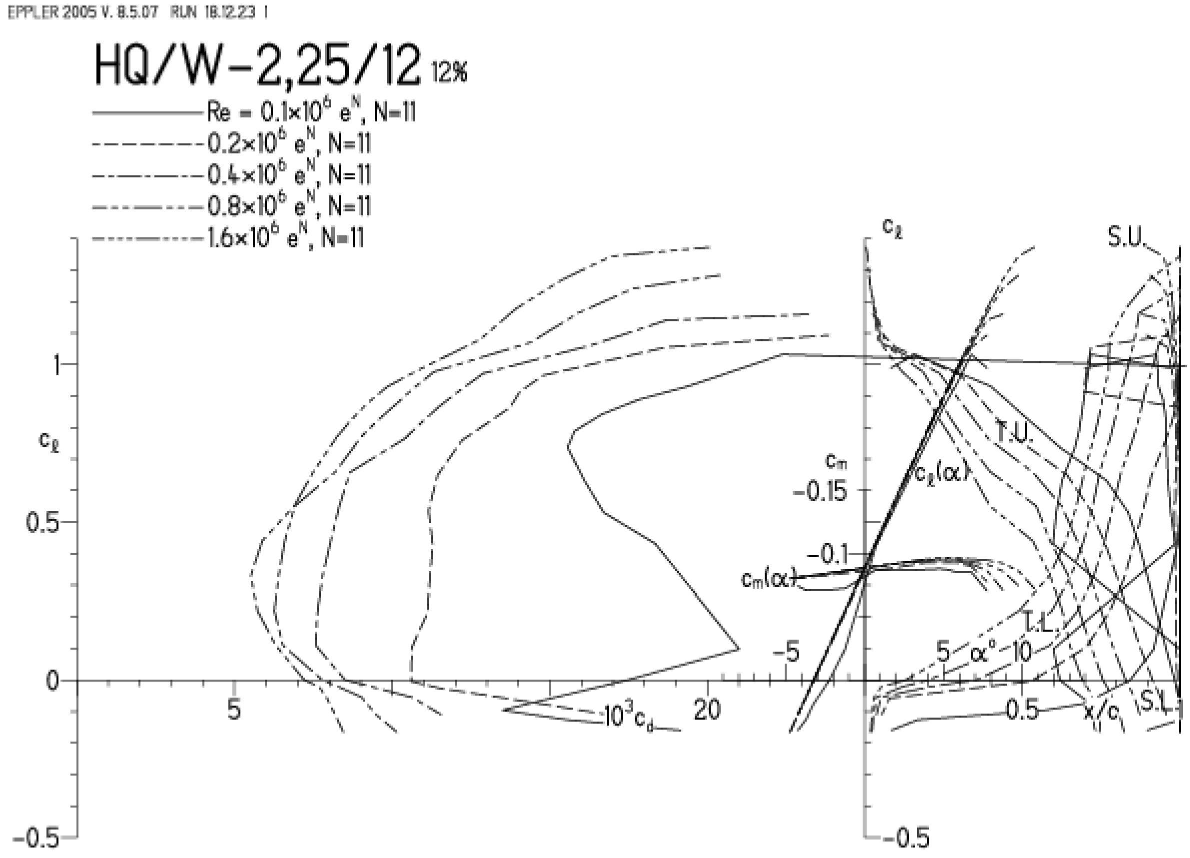


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52



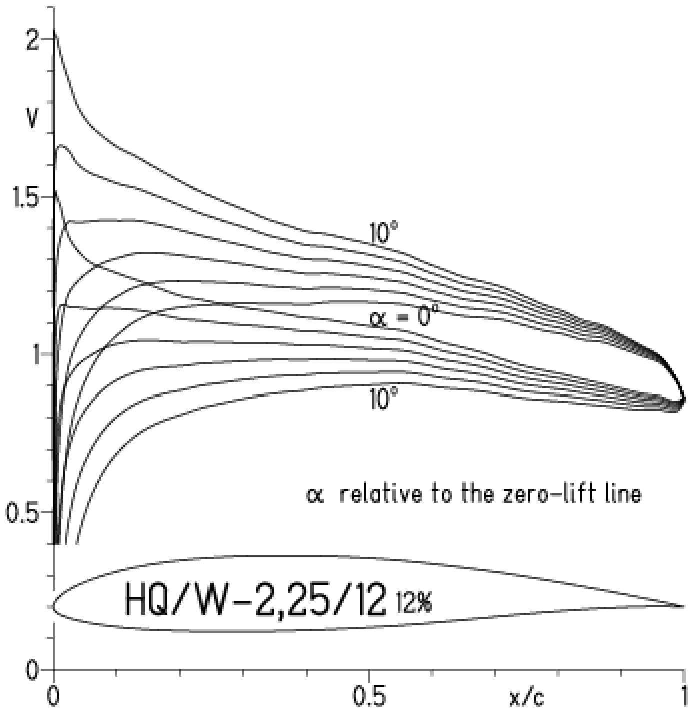
HQ/W-2,25/12, N=11



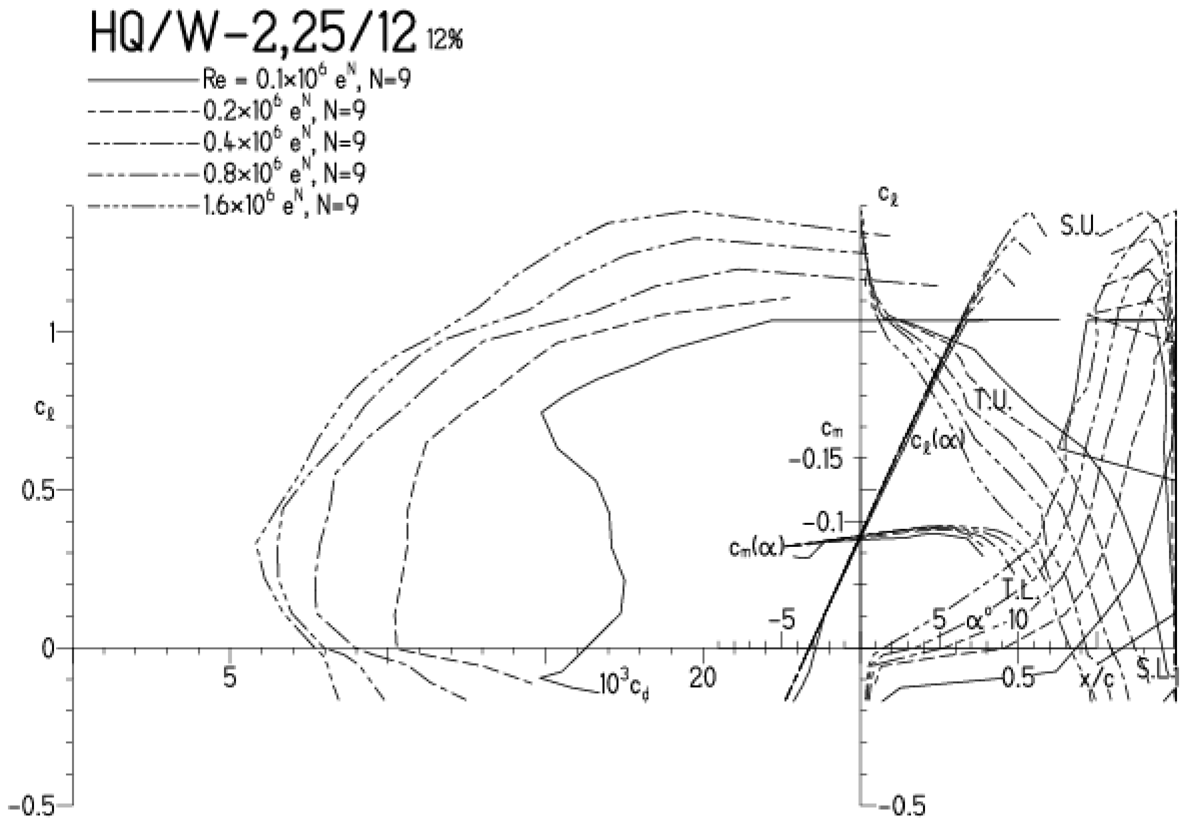


<u>HQ/W-2,25/12</u>, N=9

EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44

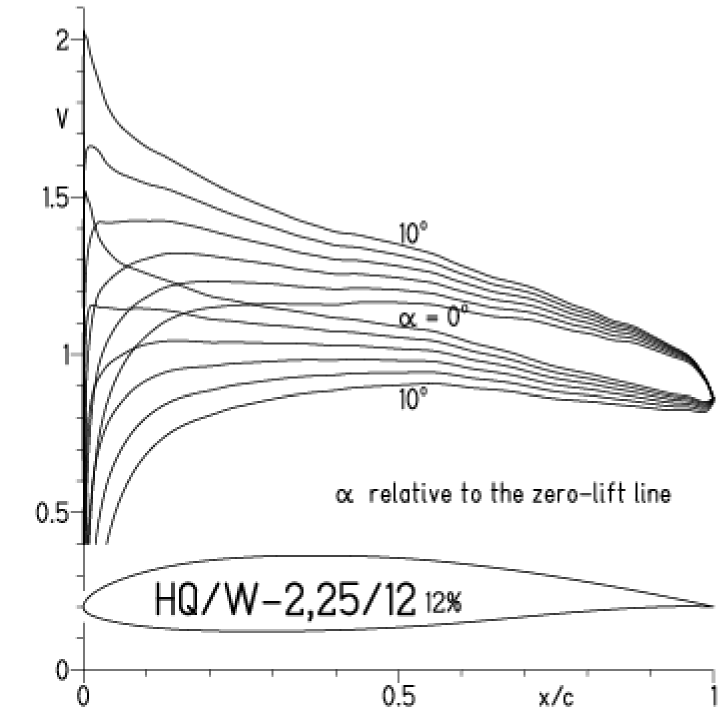


EPPLER 2005 V. 8.5

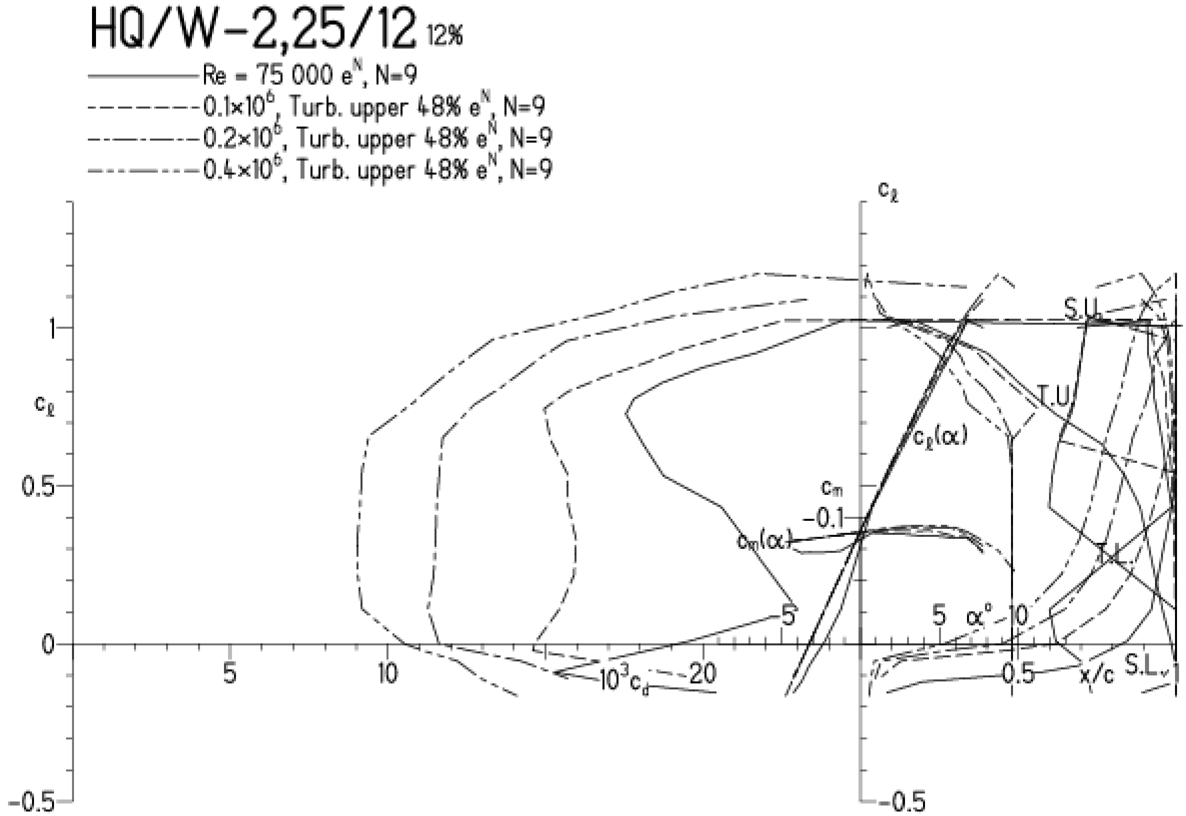


HQ/W-2,25/12, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 18.12.23 13:02

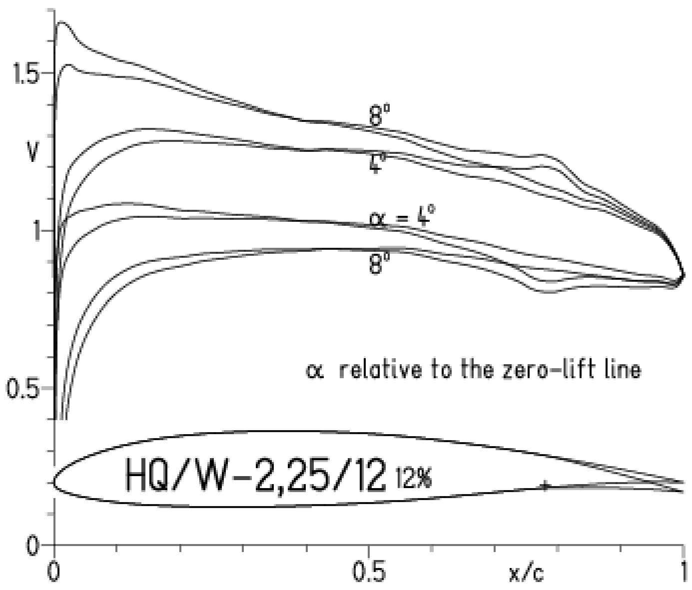


EPPLER 2005 V. 8.5.07 RUN 18.12.23 13:02

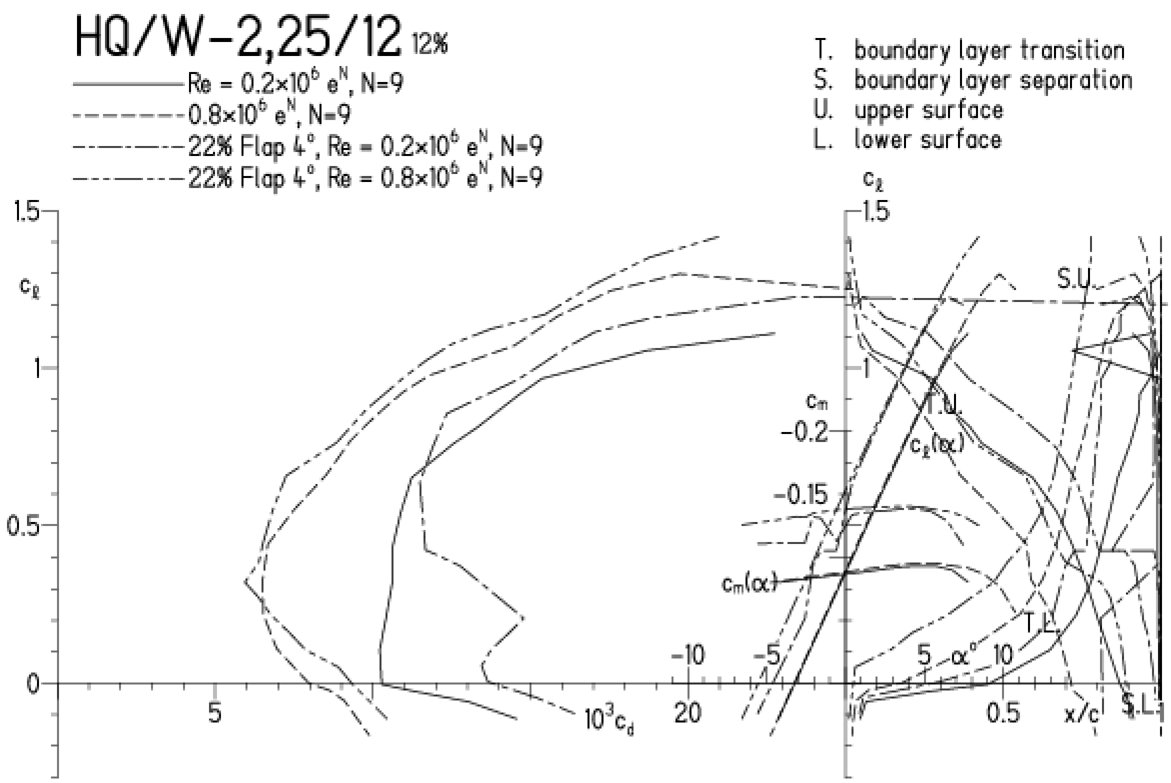


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

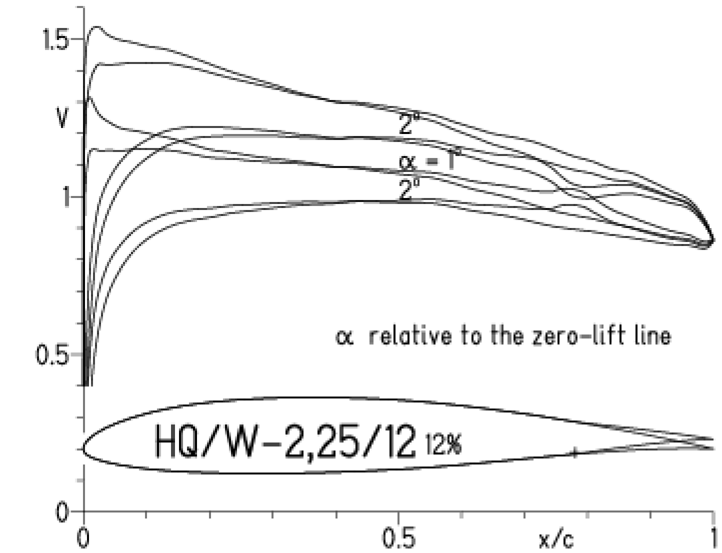


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

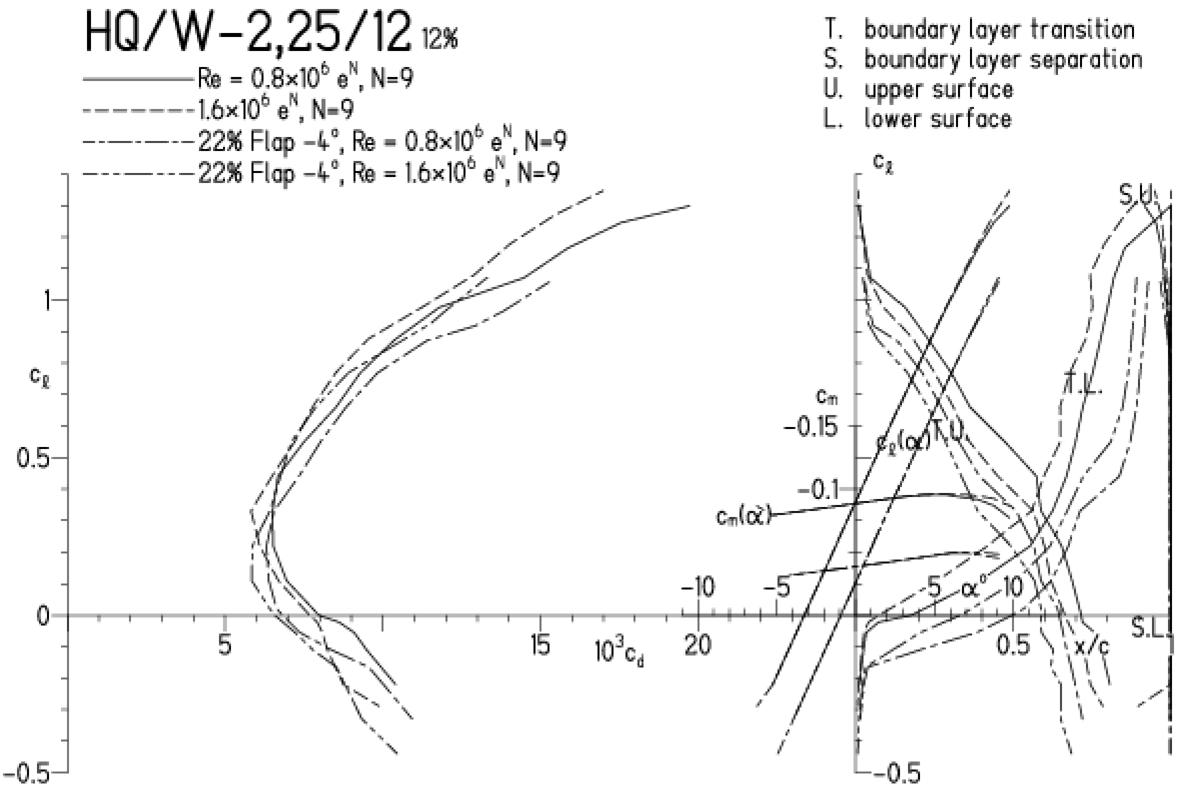


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

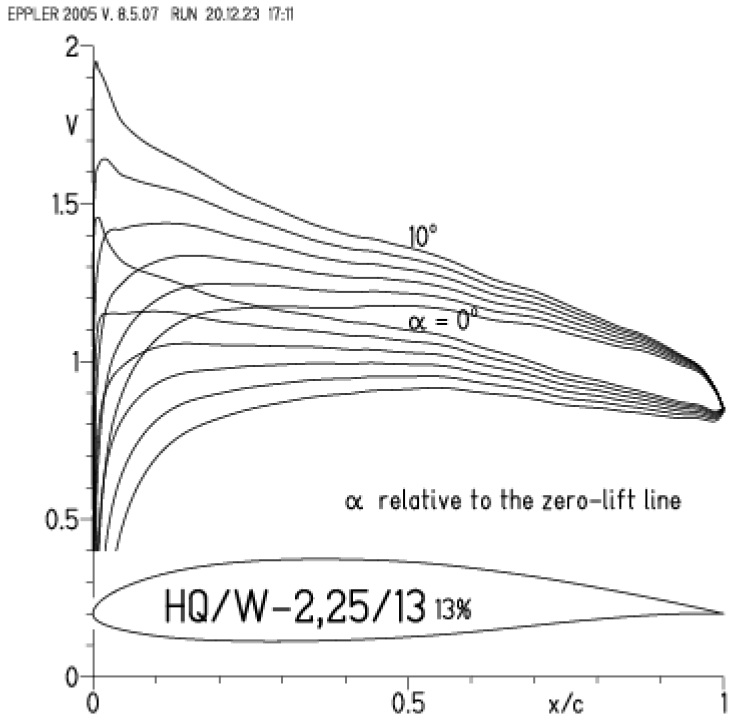
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

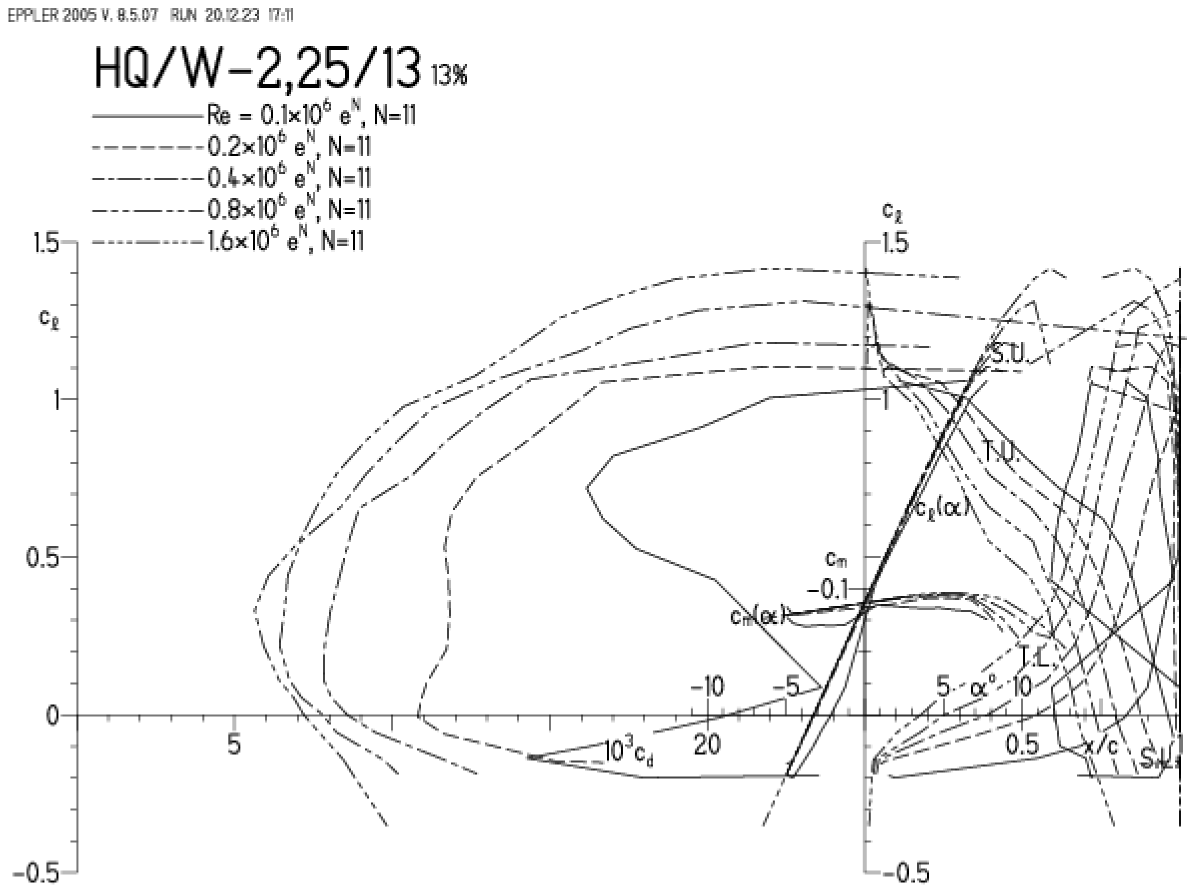


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

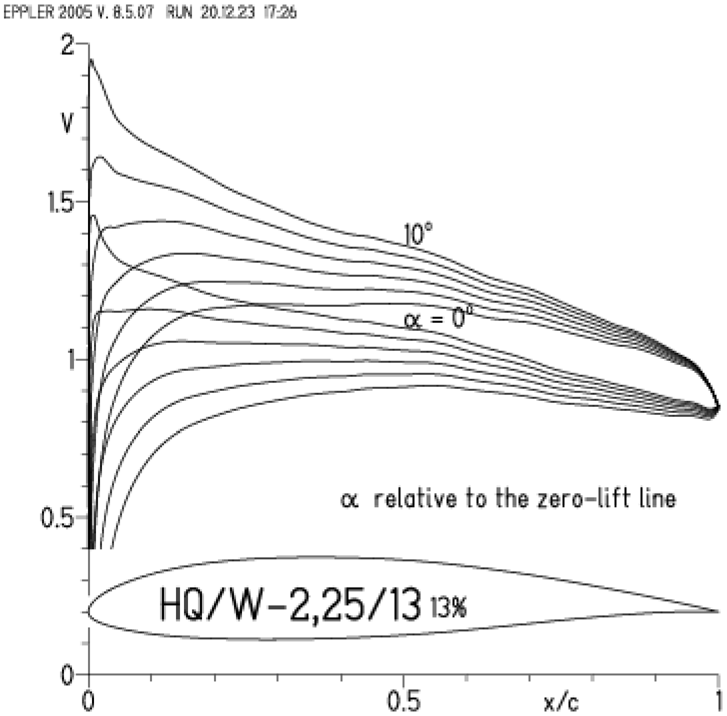


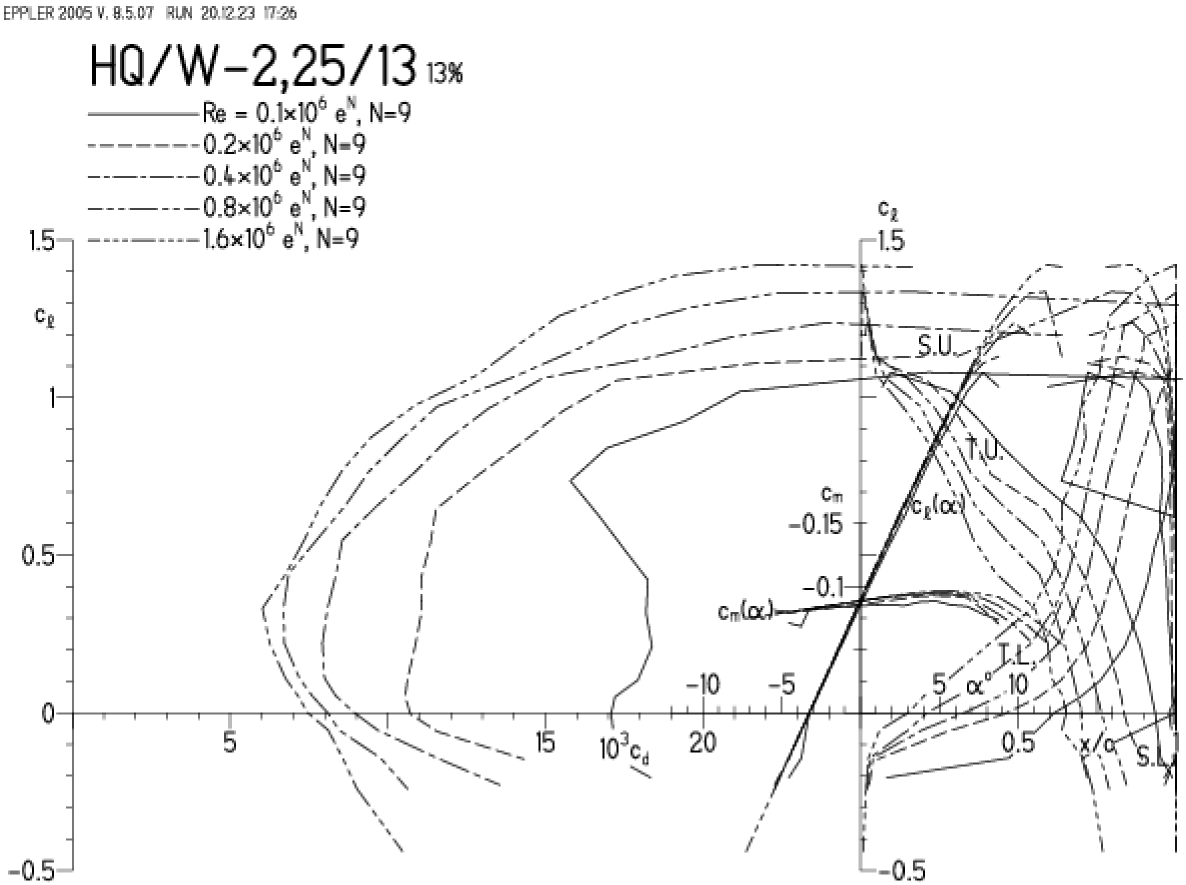
HQ/W-2,25/13, N=11



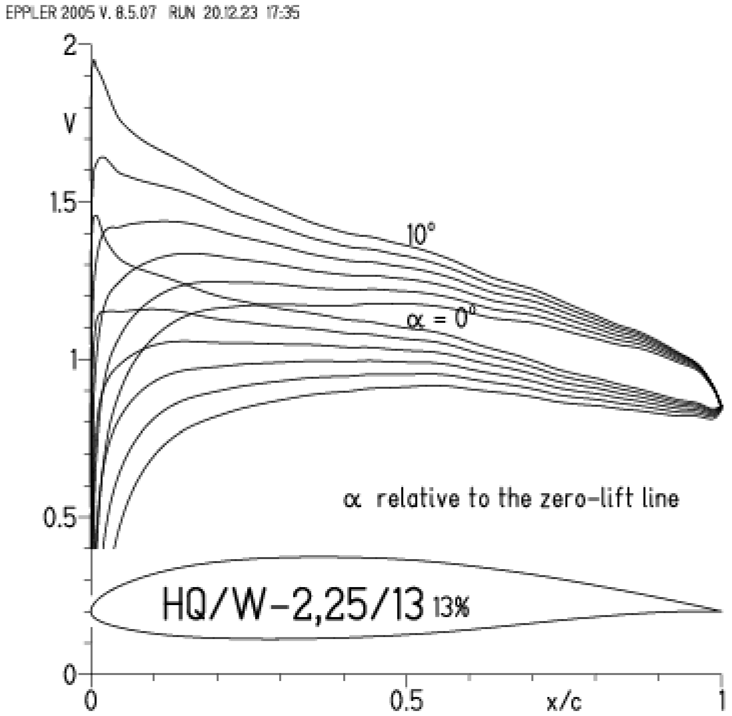


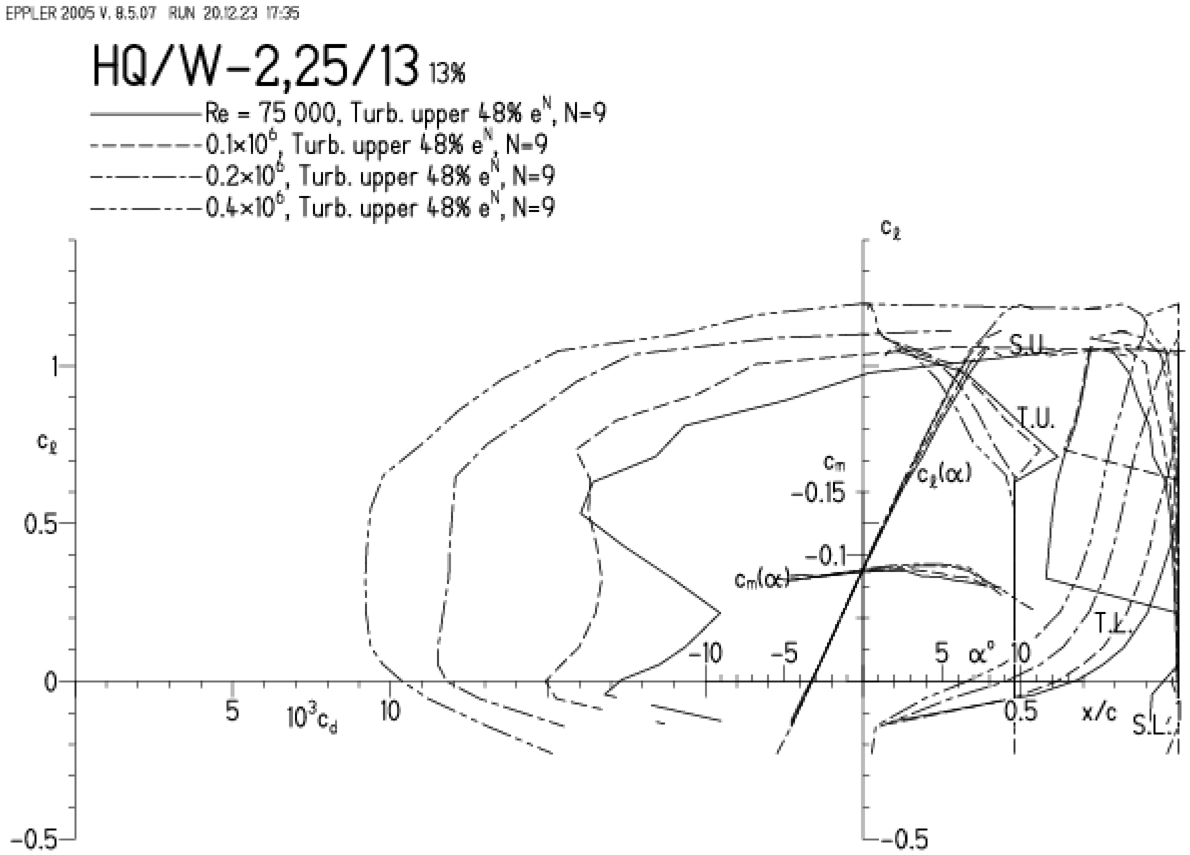
HQ/W-2,25/13, N=9


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
V
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/13 13%
x/c


EPPLER 2005 V. 8.5.07 RUN 20.12.23 17:26
HQ/W-2,25/13 13%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
cℓ(α)
cm(α)
T.L.
S.L.
α°
x/c
10³cd

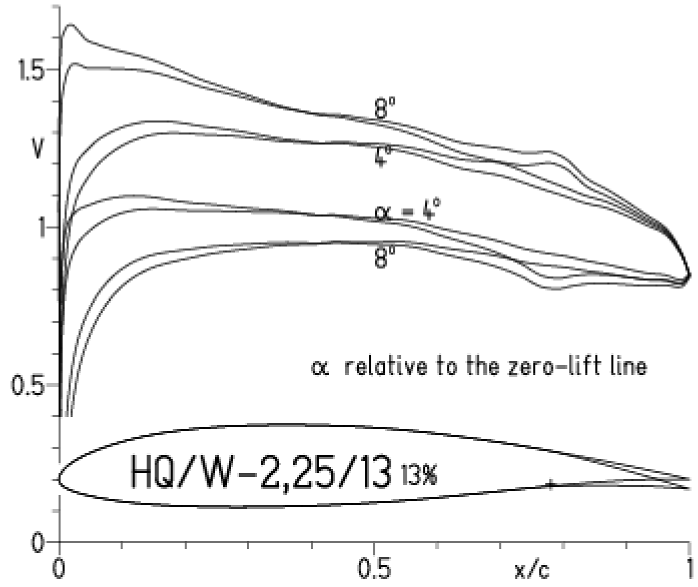
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



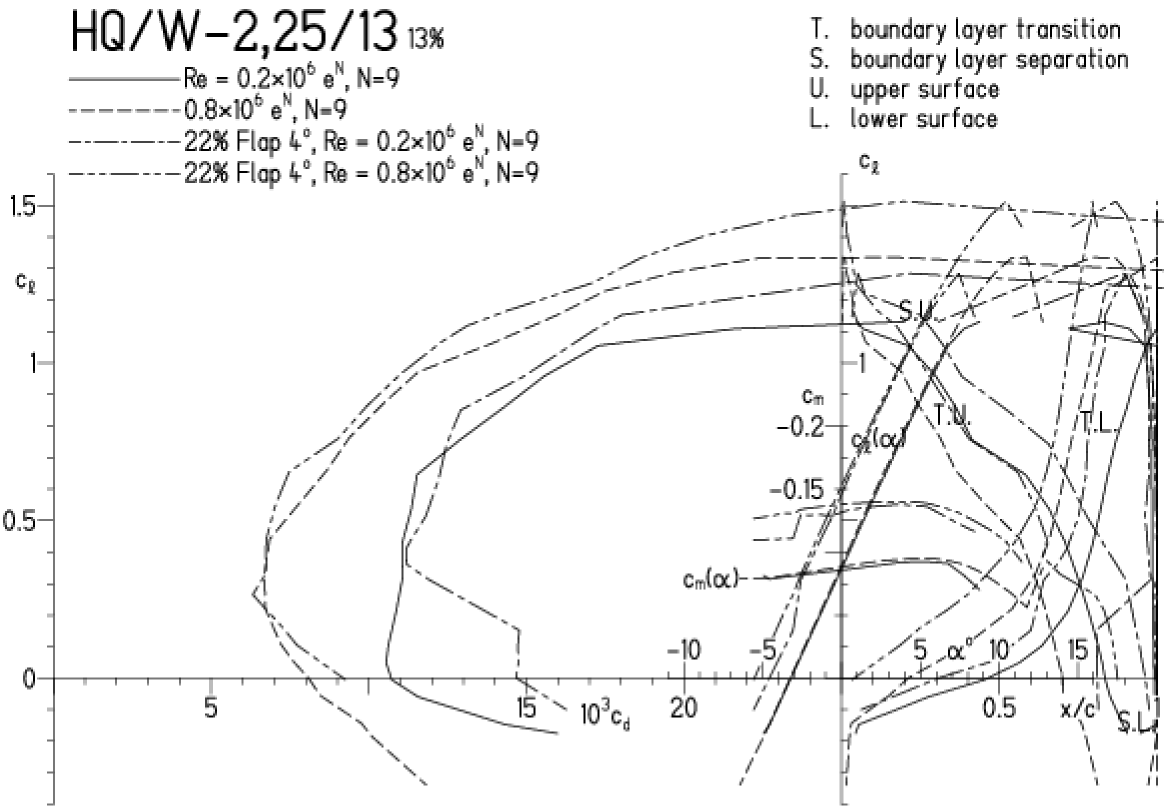


<u>HQW-2,25/13</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

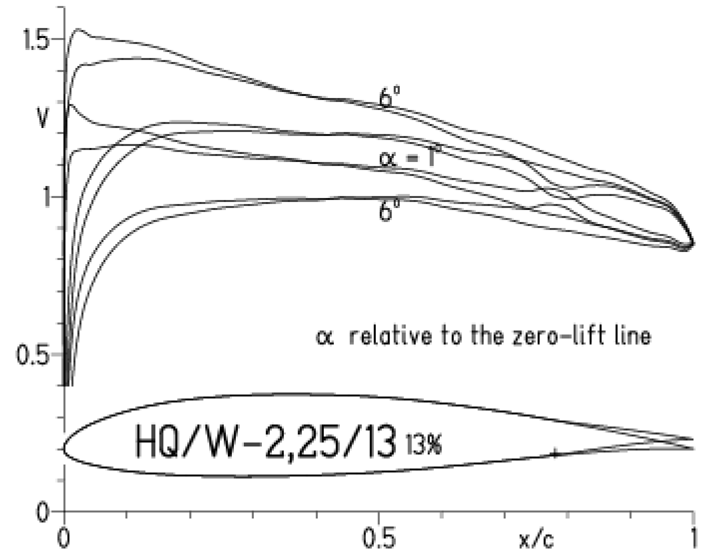


EPPLER 2005 V.

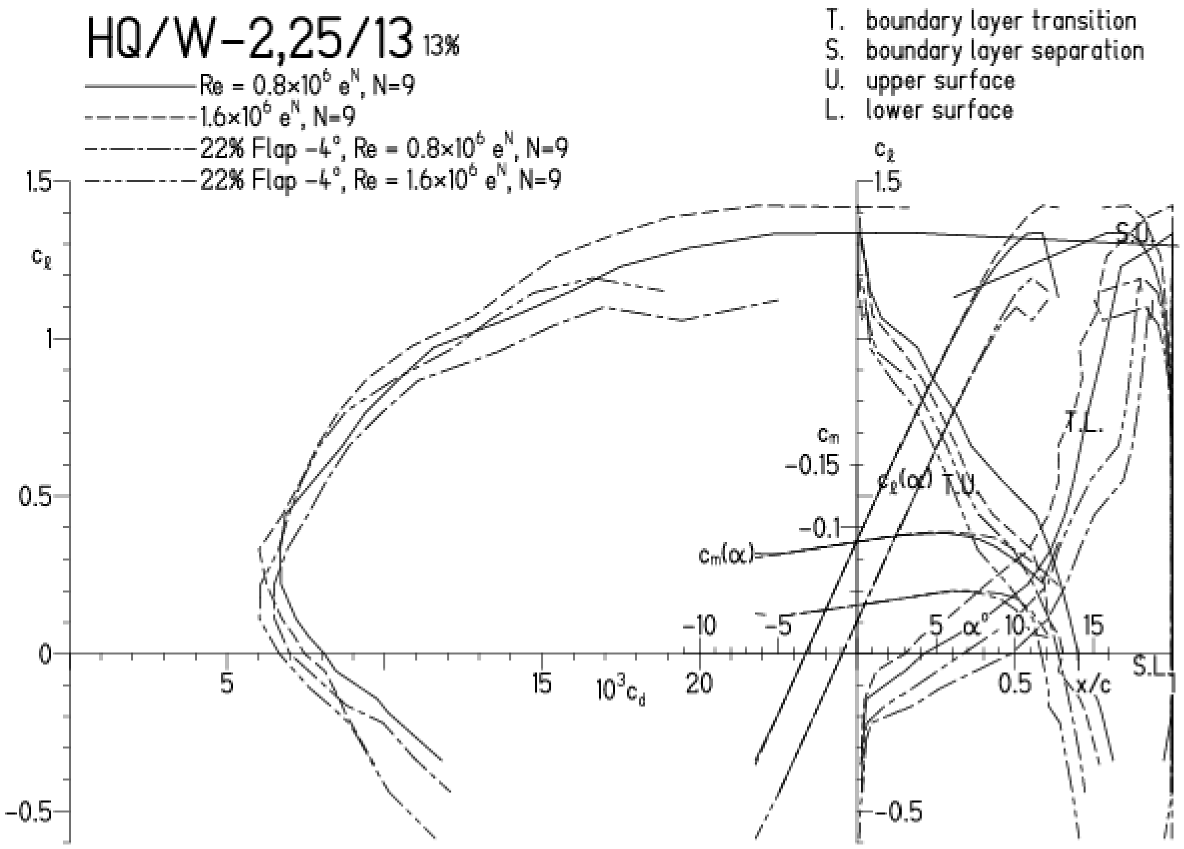


HQW-2,25/13, N=9 mit -4° Wölbklappenausschlag

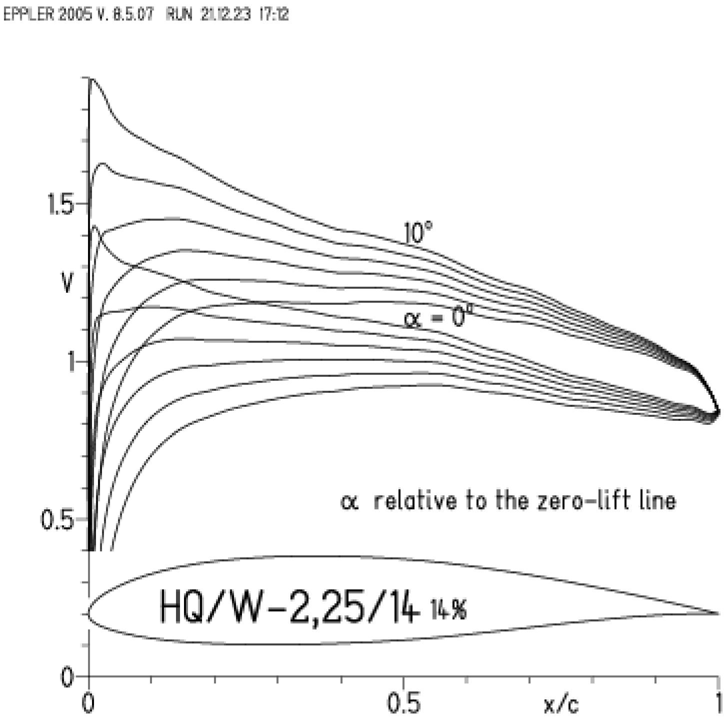
EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

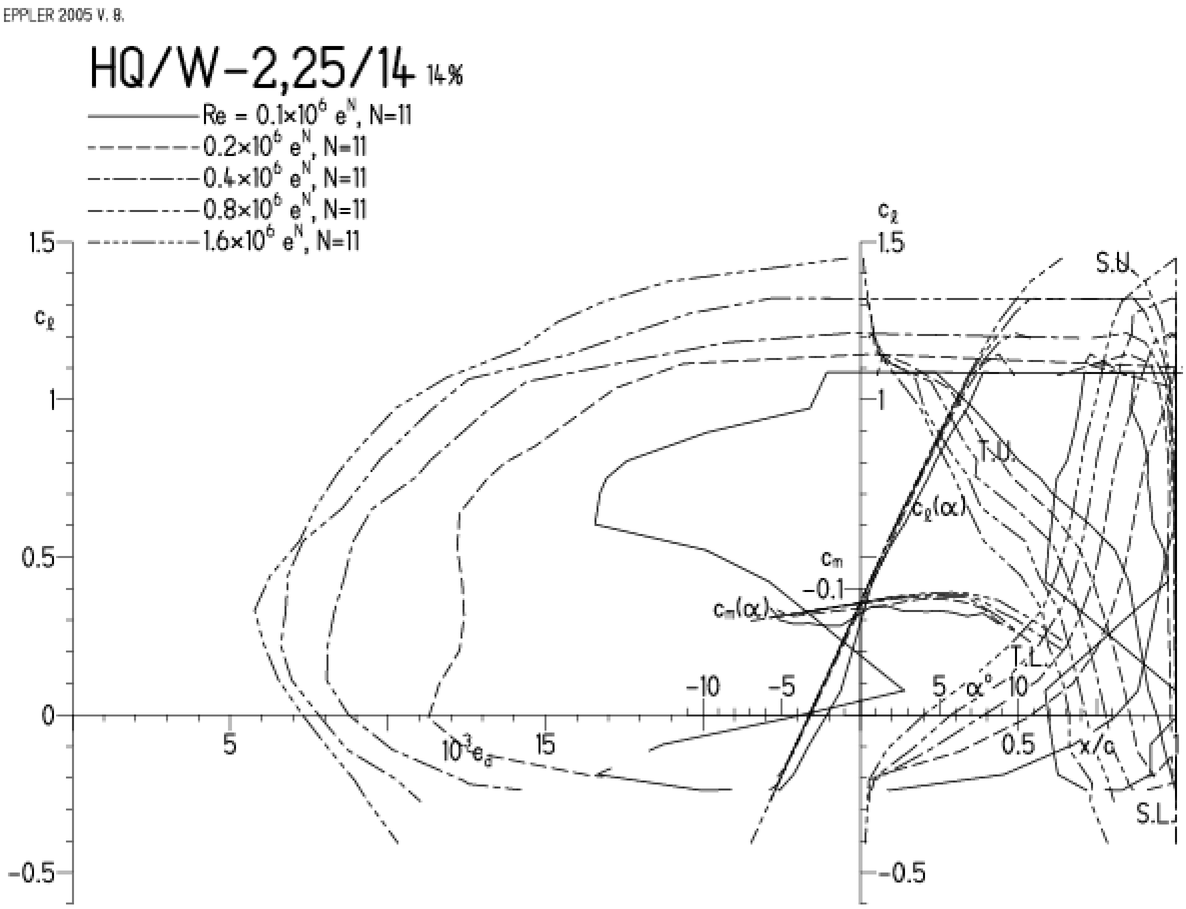


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

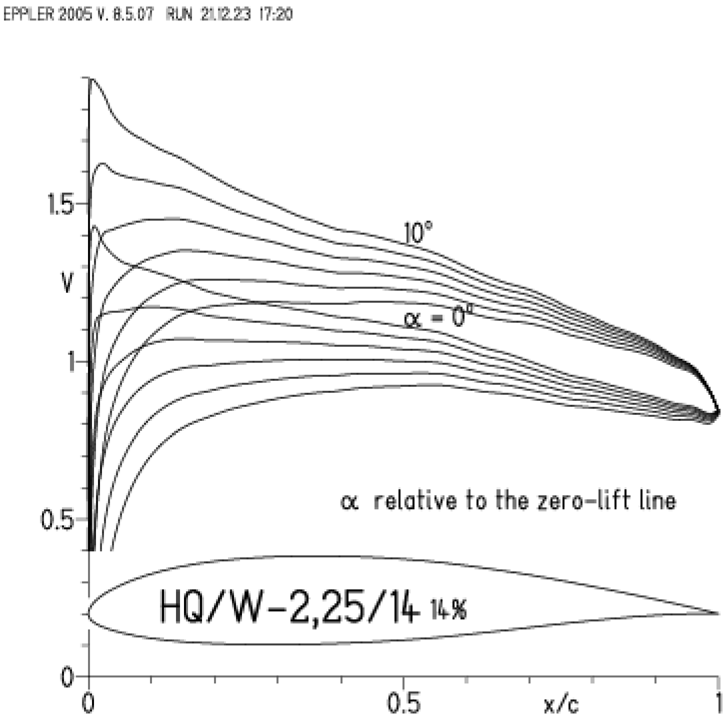


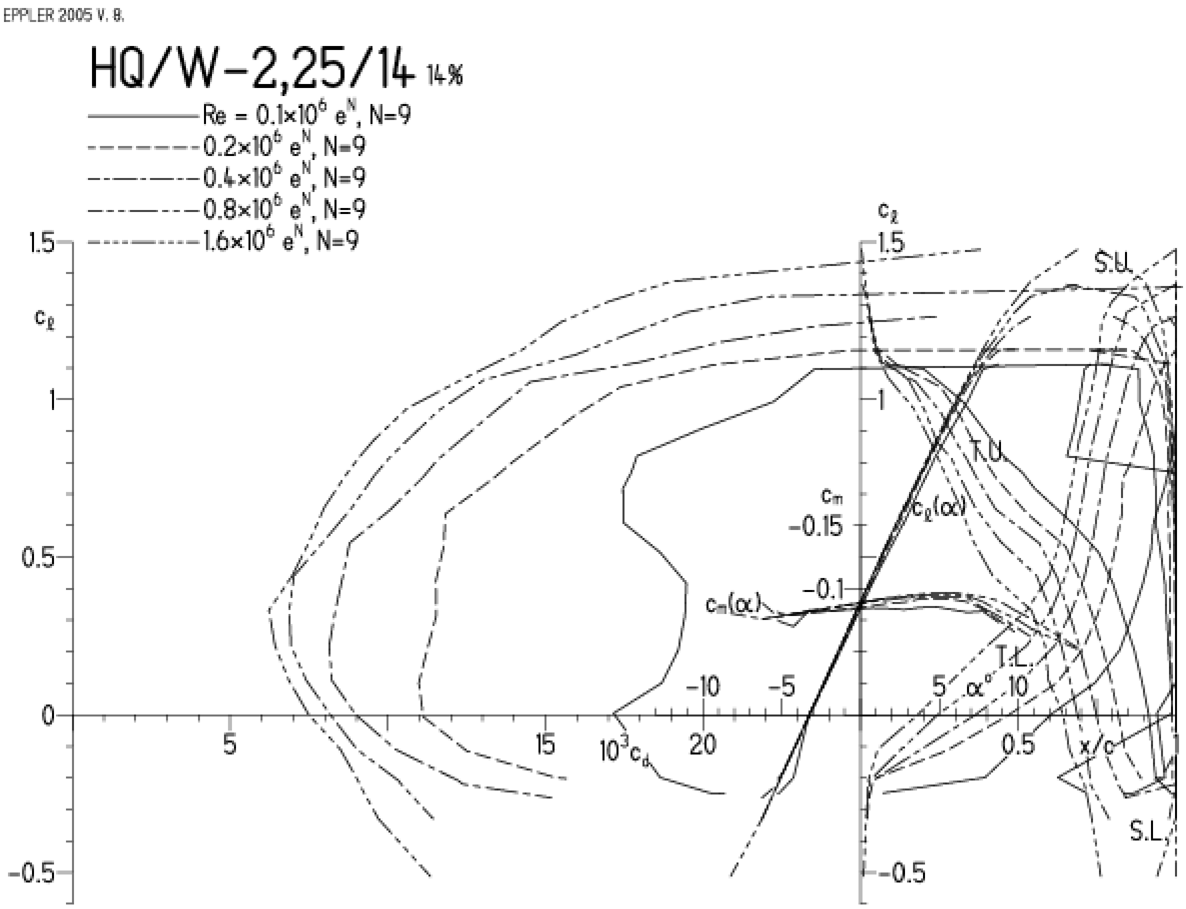
HQ/W-2,25/14, N=11



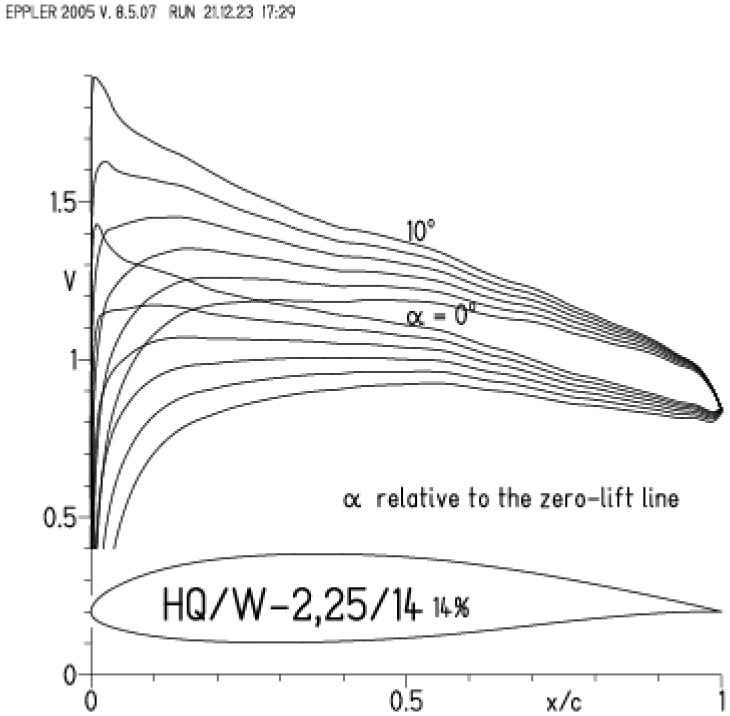


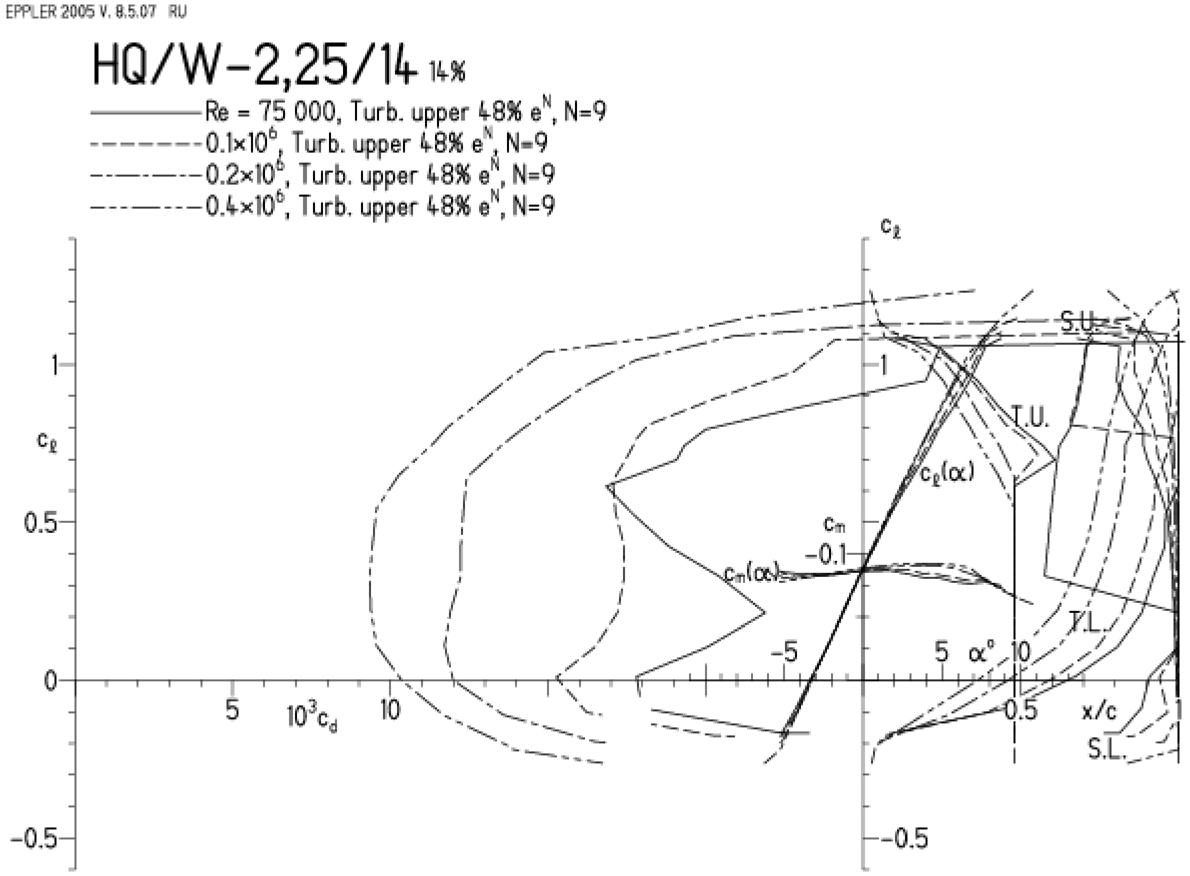
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
10°
V
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
x/c


EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
S.U.
T.U.
T.L.
S.L.
cℓ(α)
cm(α)
10^3 cd
α°
x/c

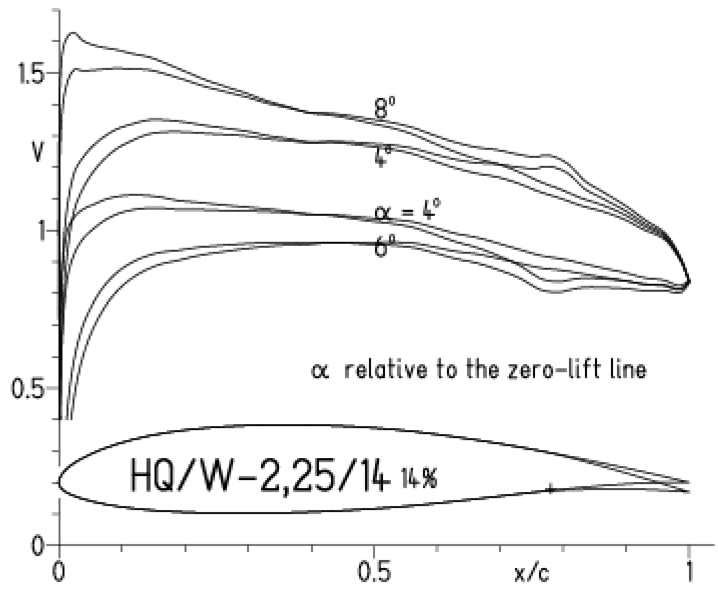
<u>HQ/W-2,25/14</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



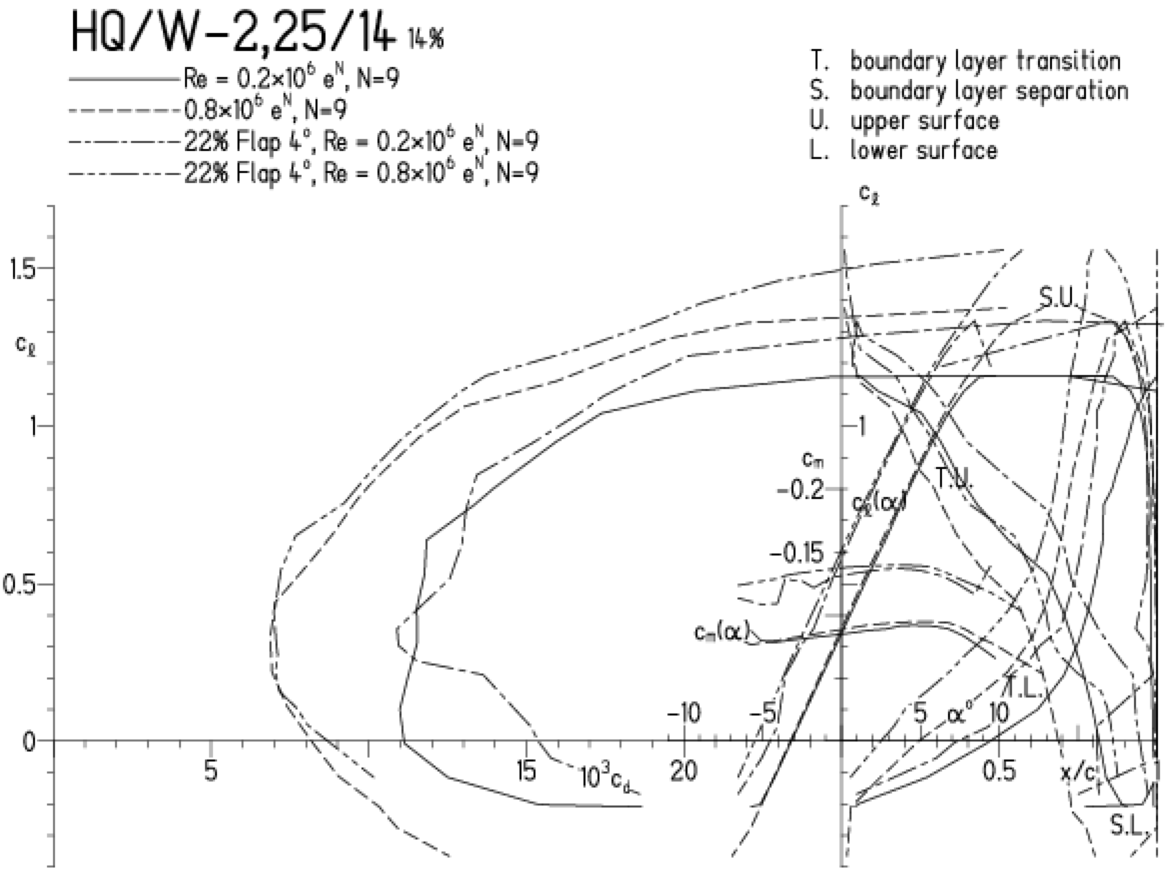


HQW-2,25/14, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

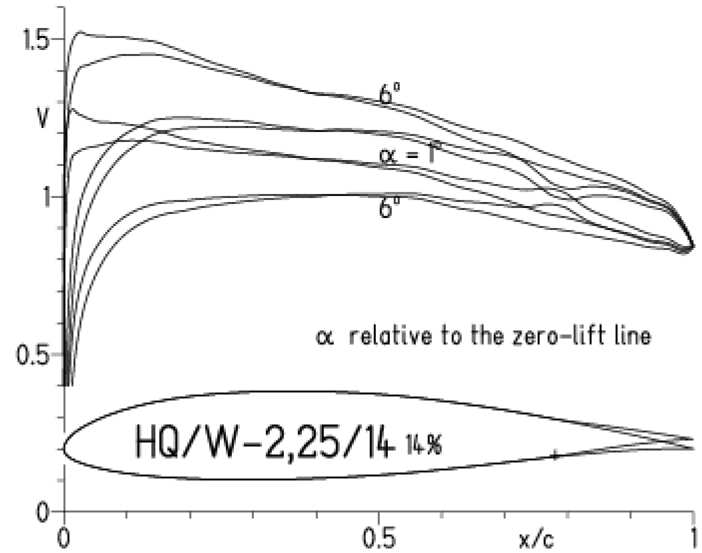


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

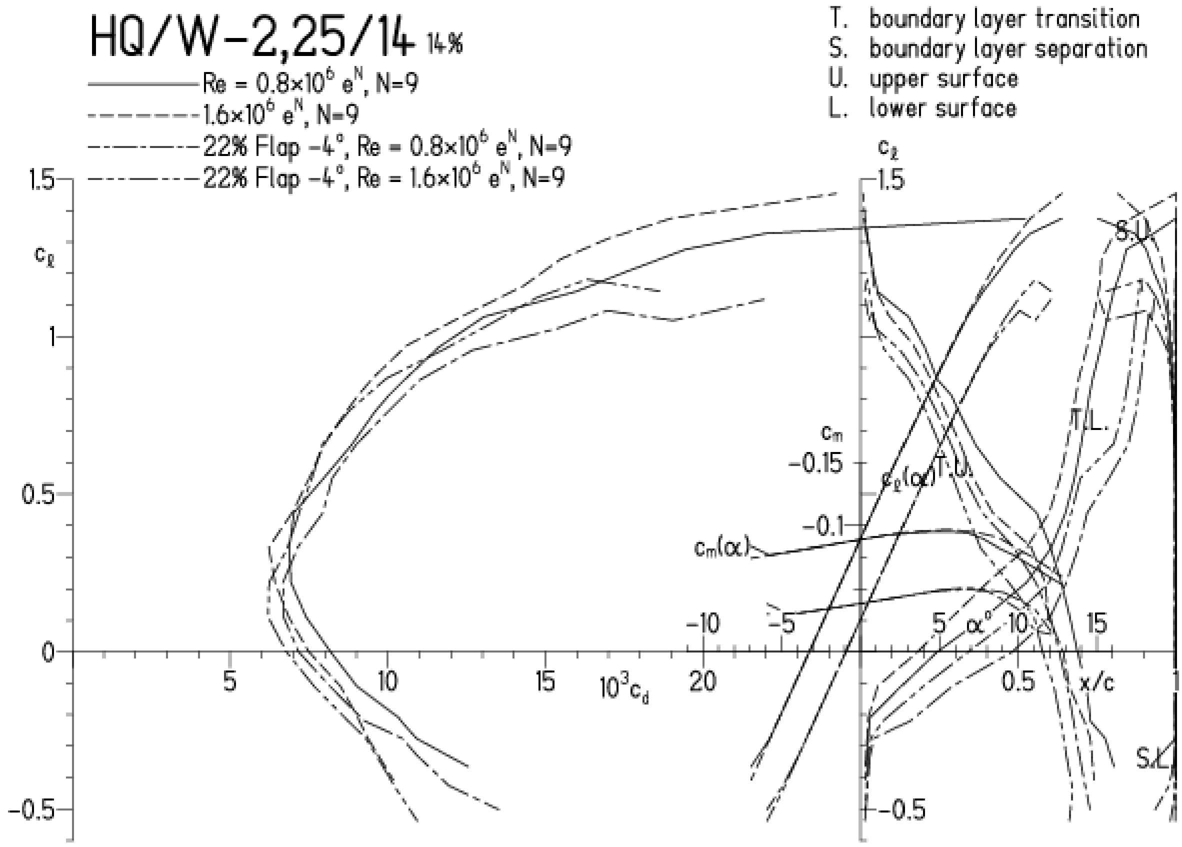


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

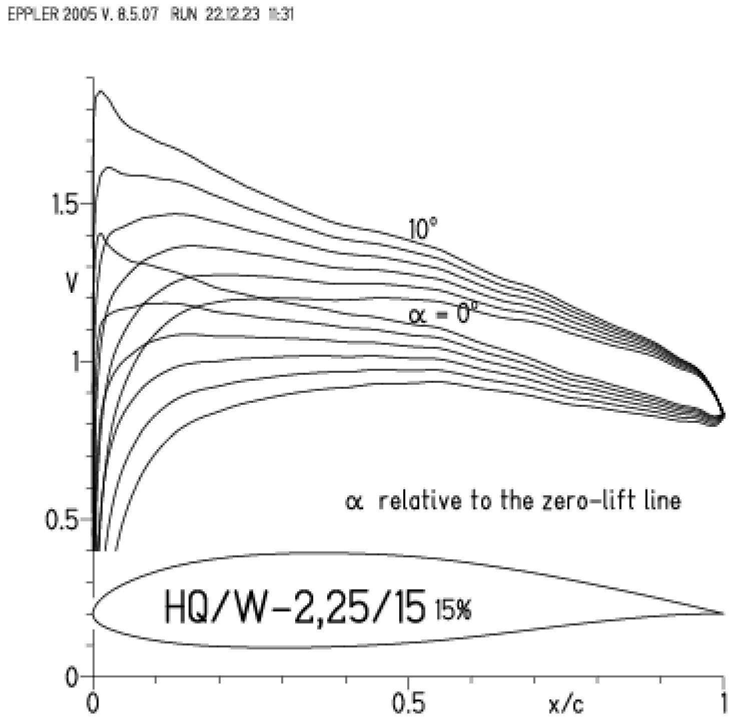
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

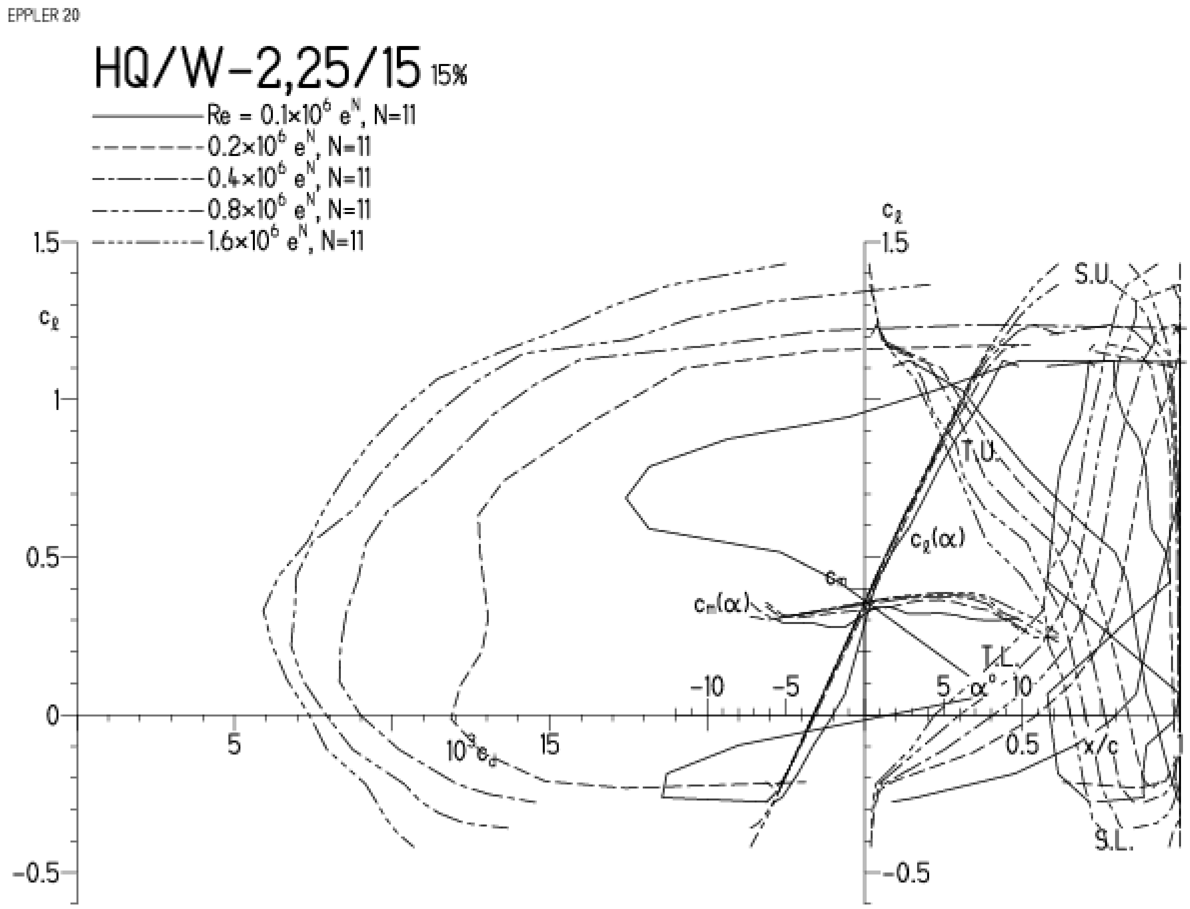


EPPLER 2005 V. 8.5.07



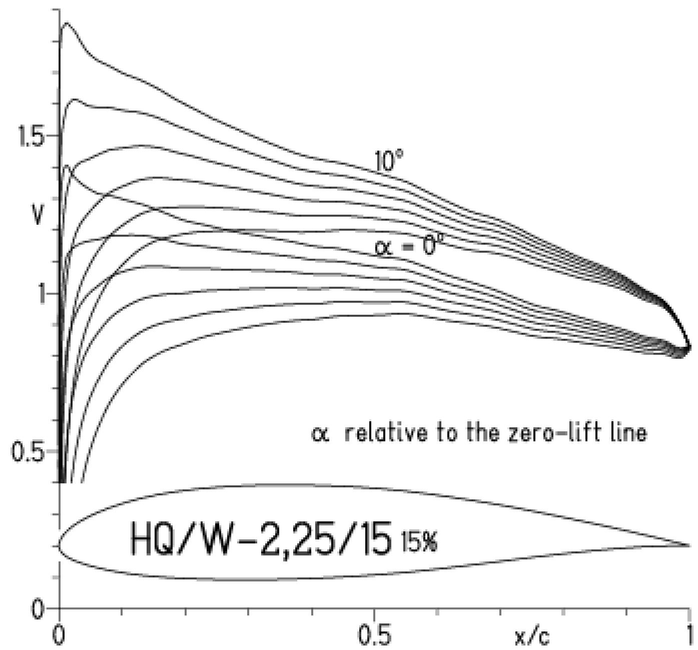
HQ/W-2,25/15, N=11



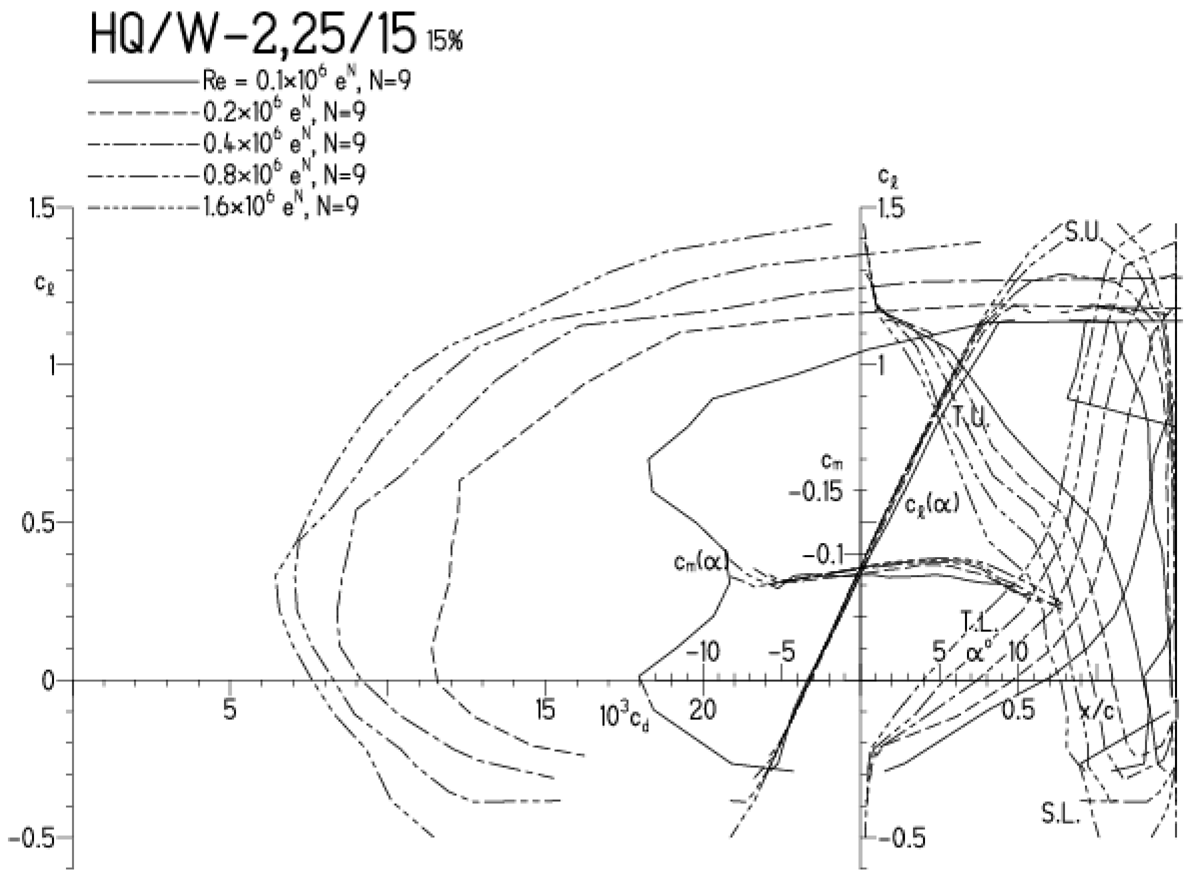


HQ/W-2,25/15, N=9

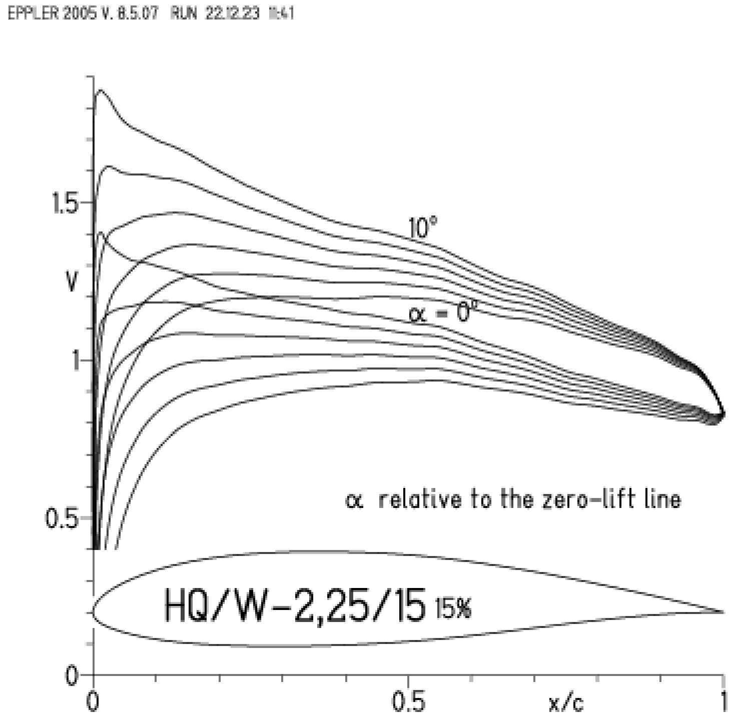
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

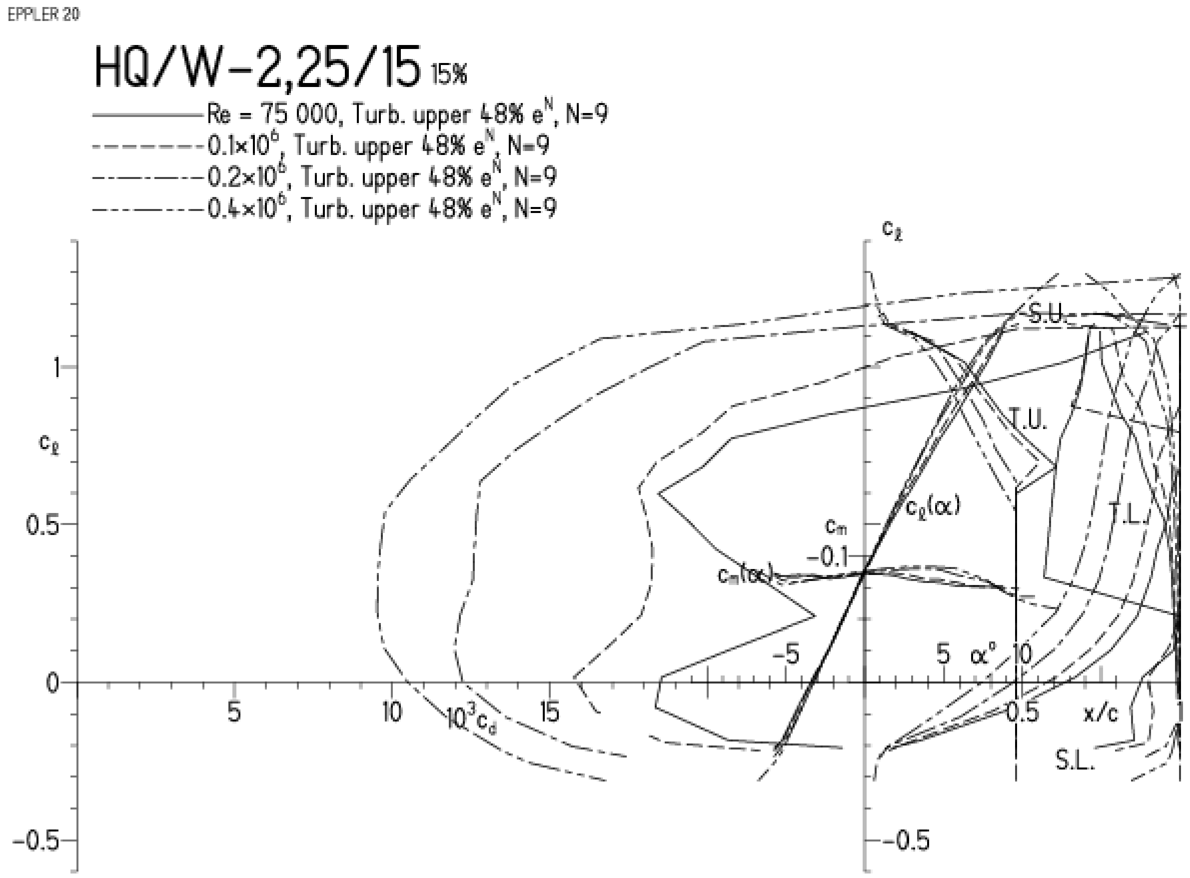


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

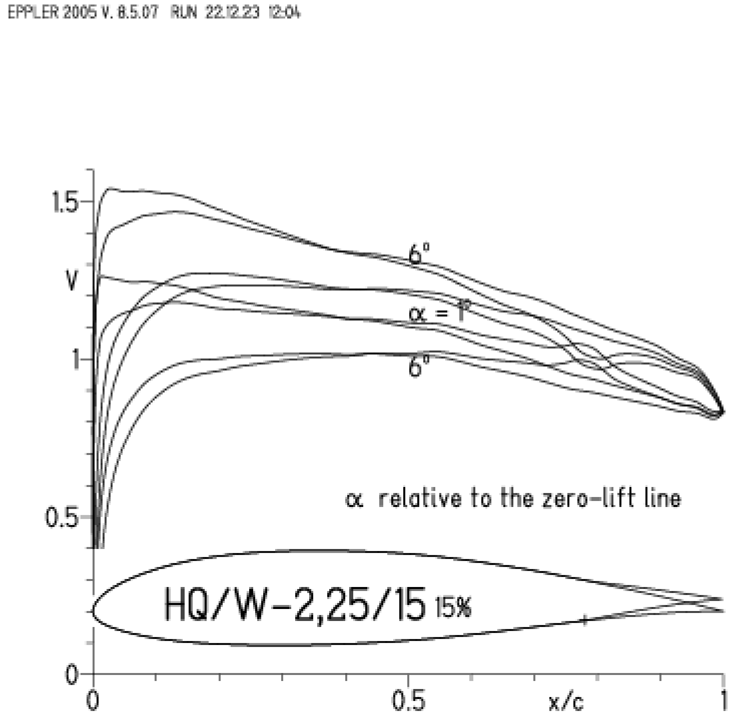


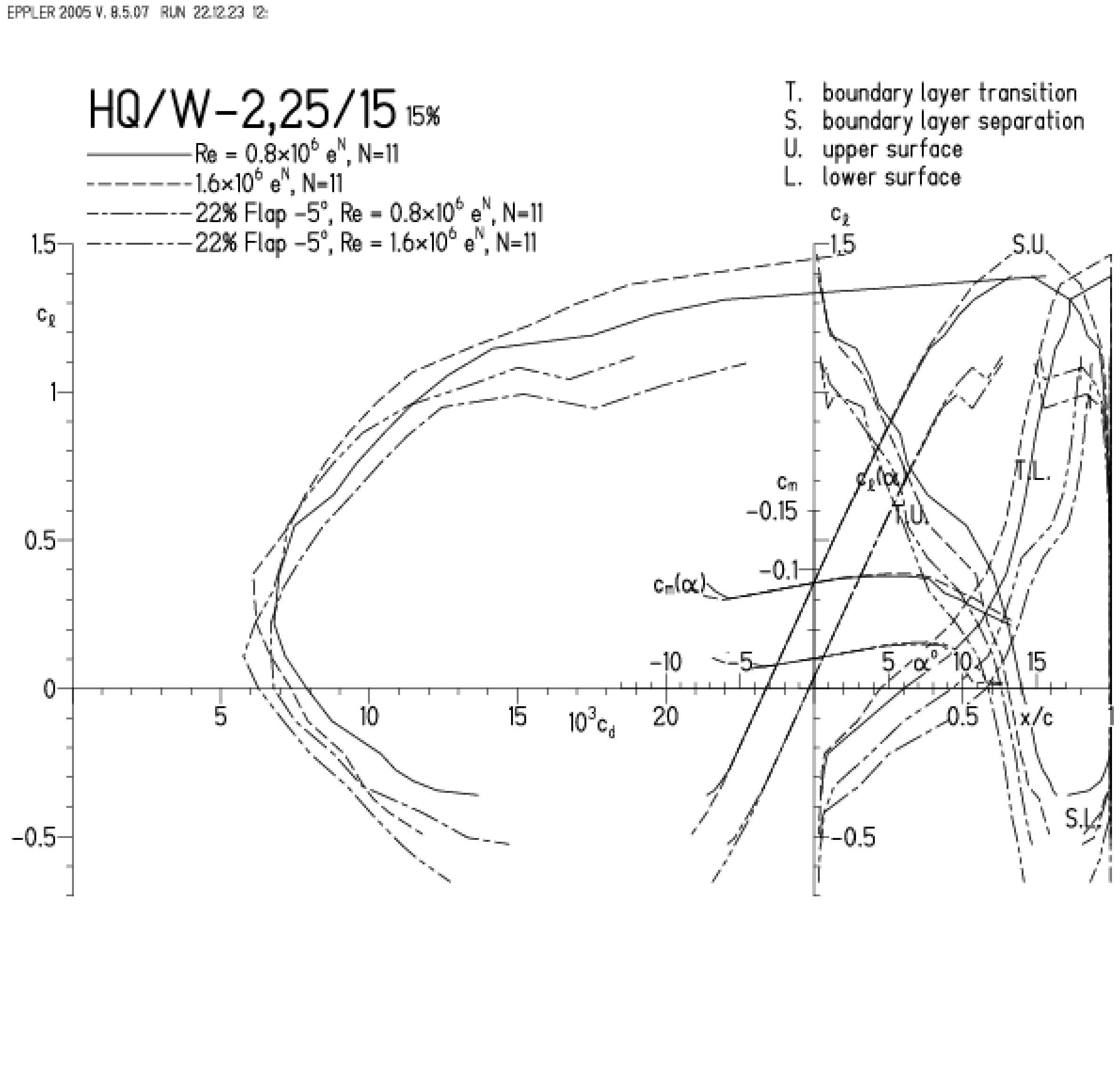


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

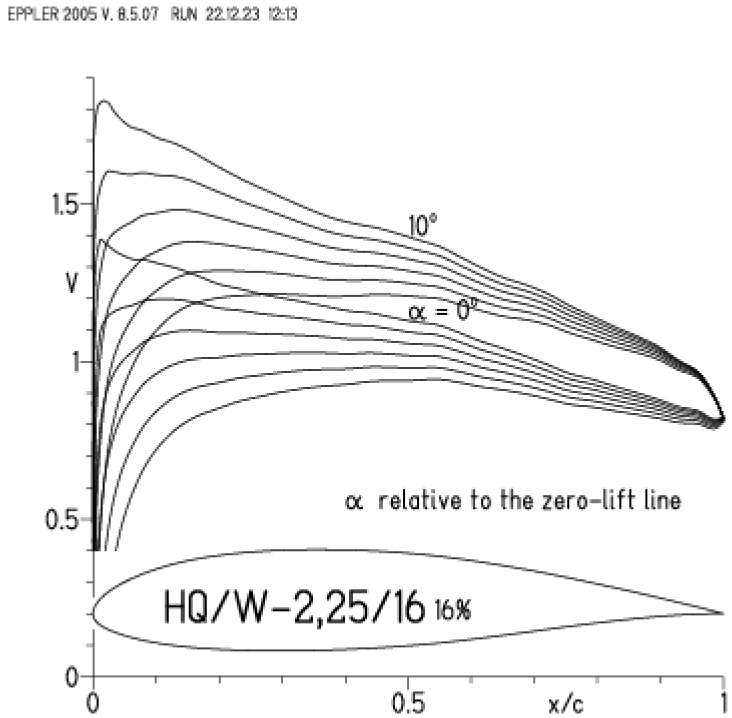
Bringt keine merkliche Verbesserung im Langsamflug.

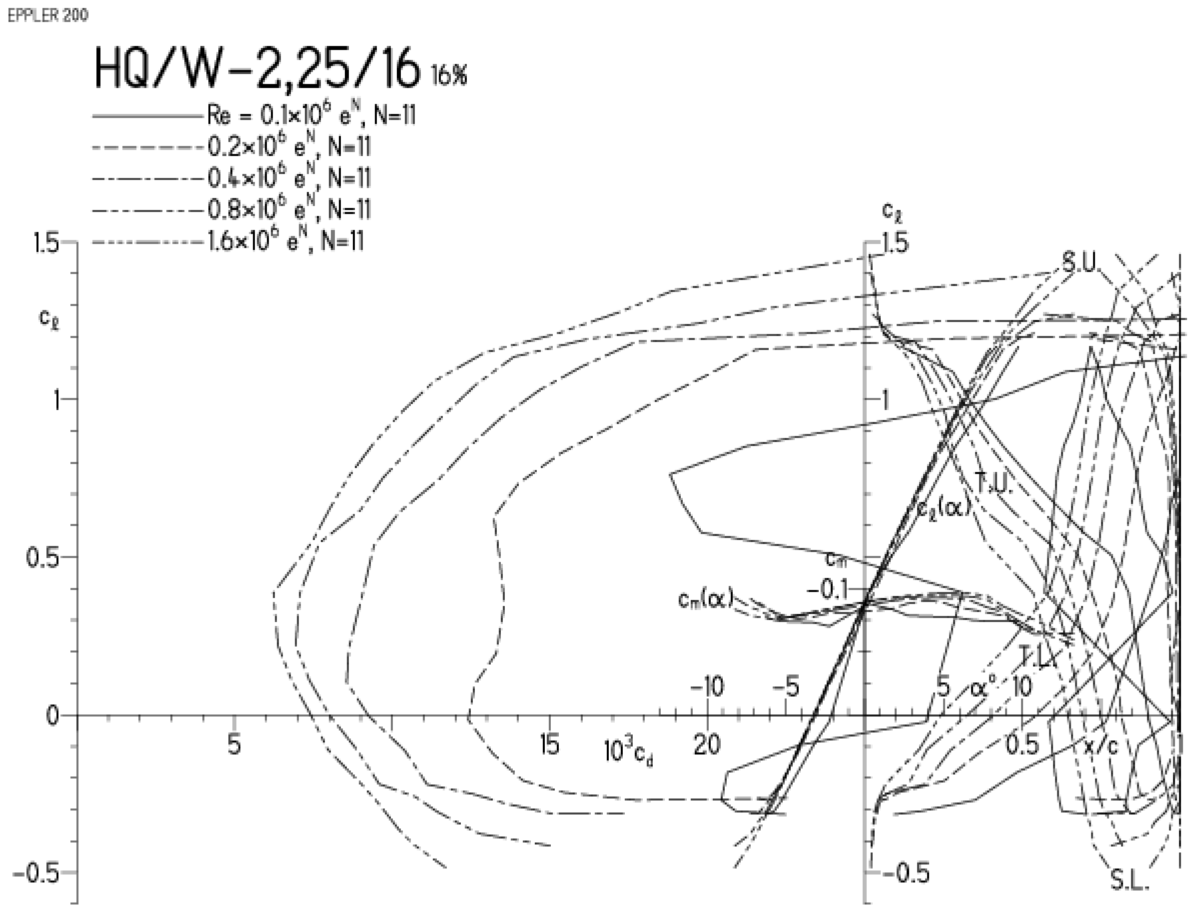
HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag





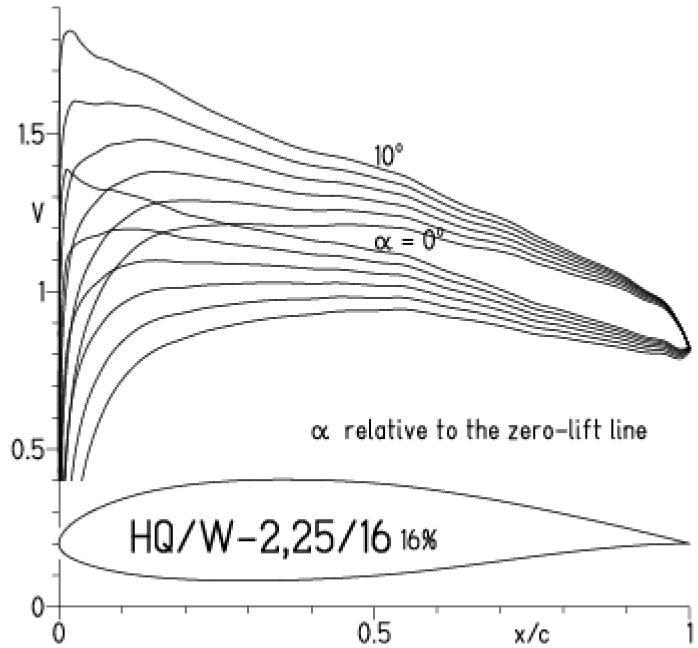
HQ/W-2,25/16, N=11



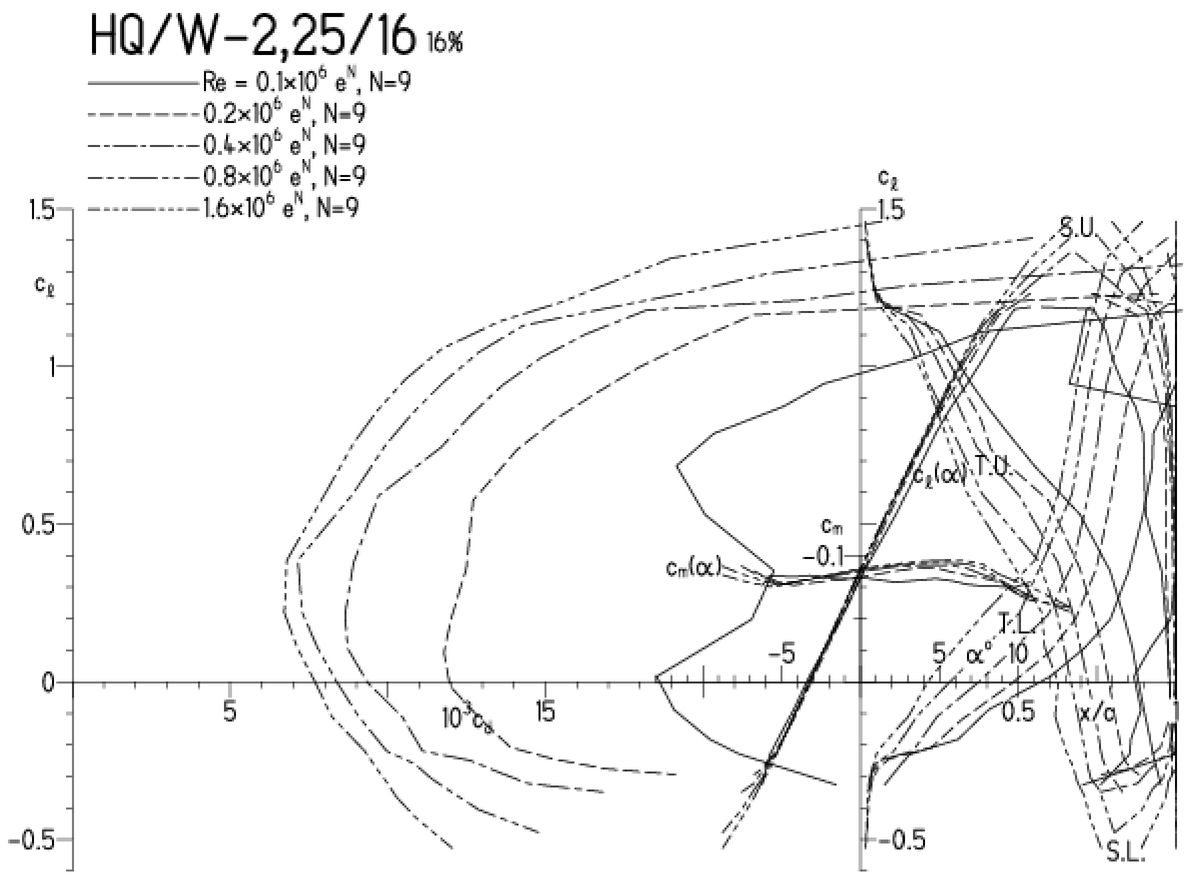


HQ/W-2,25/16, N=9

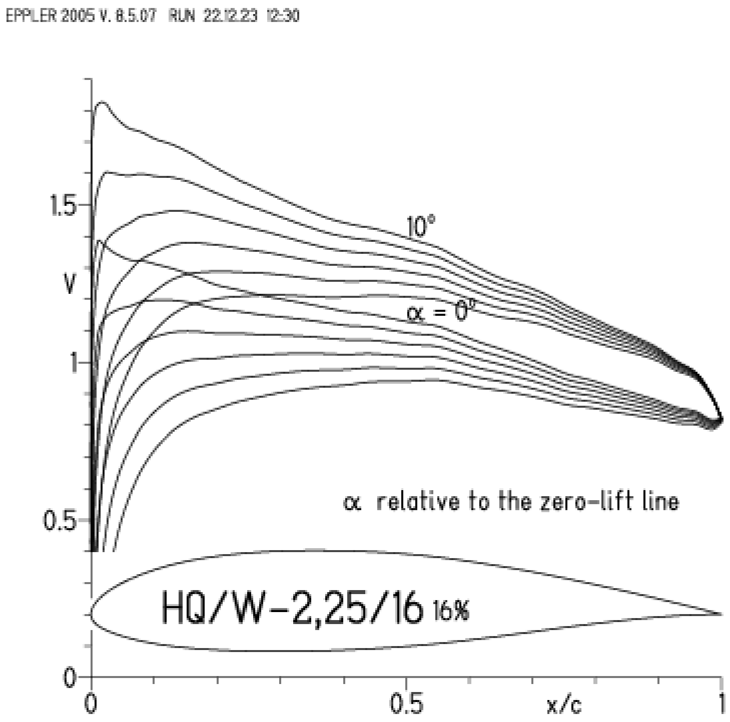
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

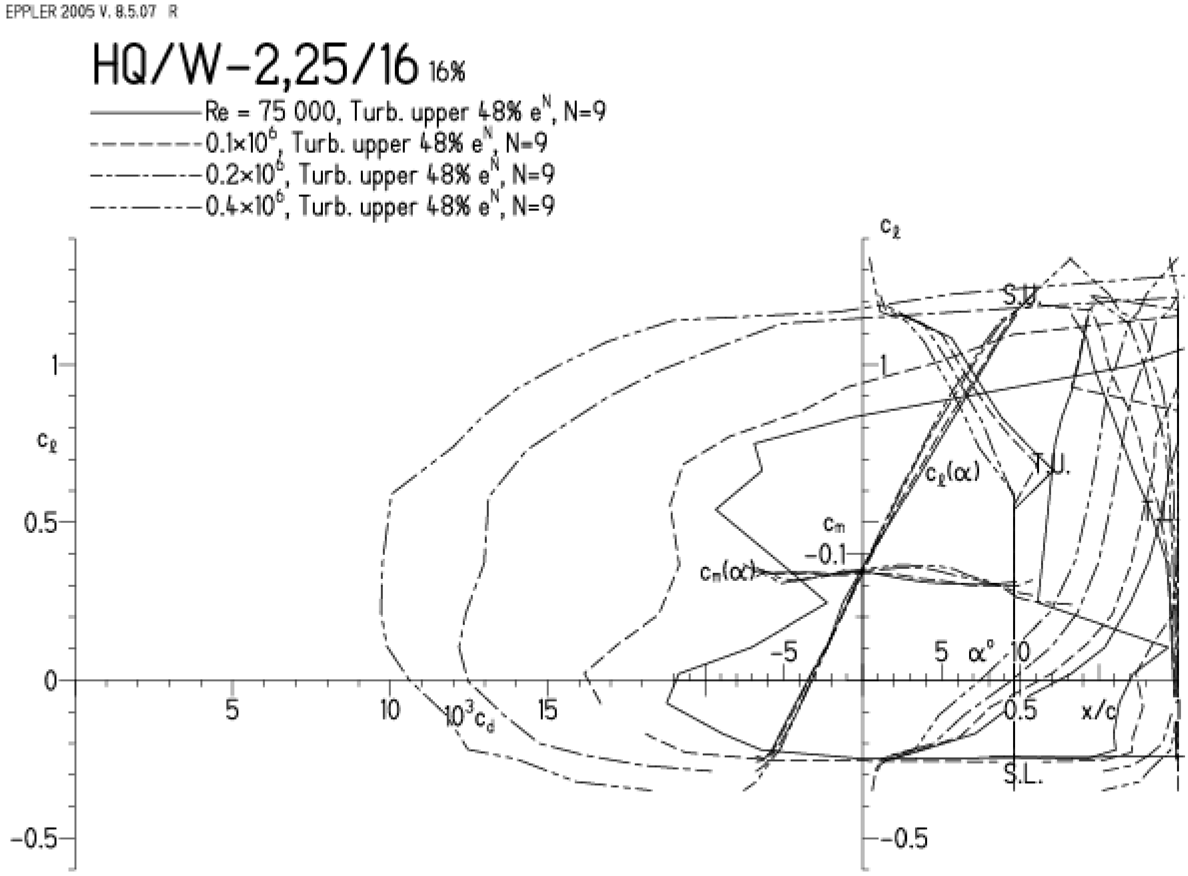


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



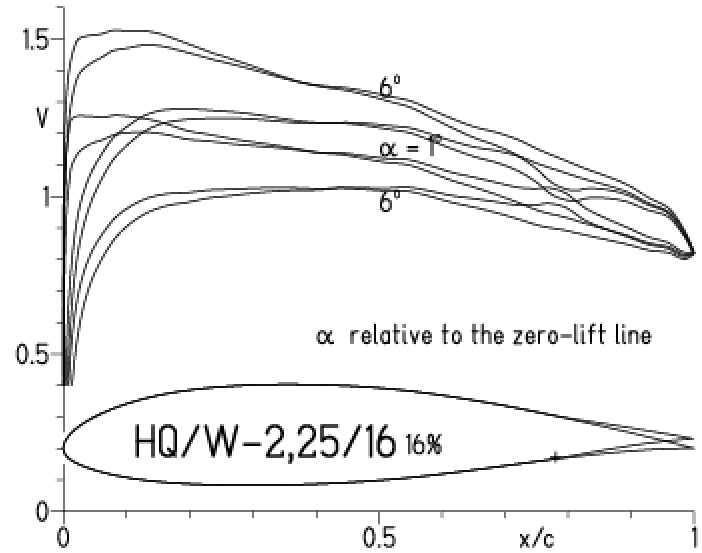


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

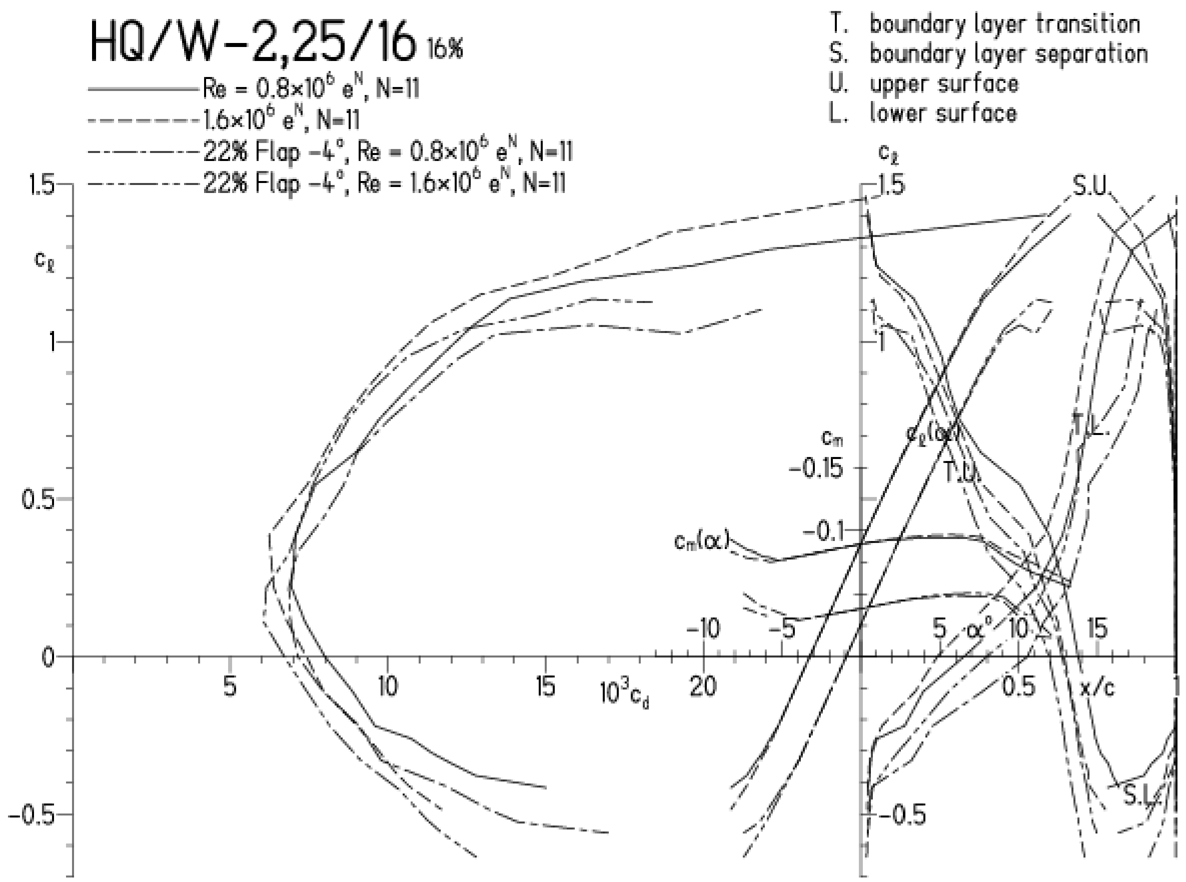
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

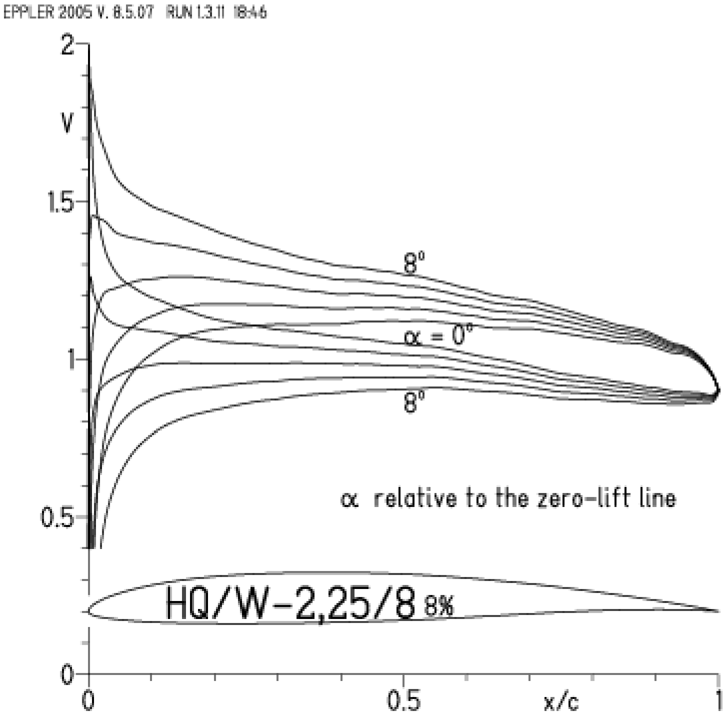
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

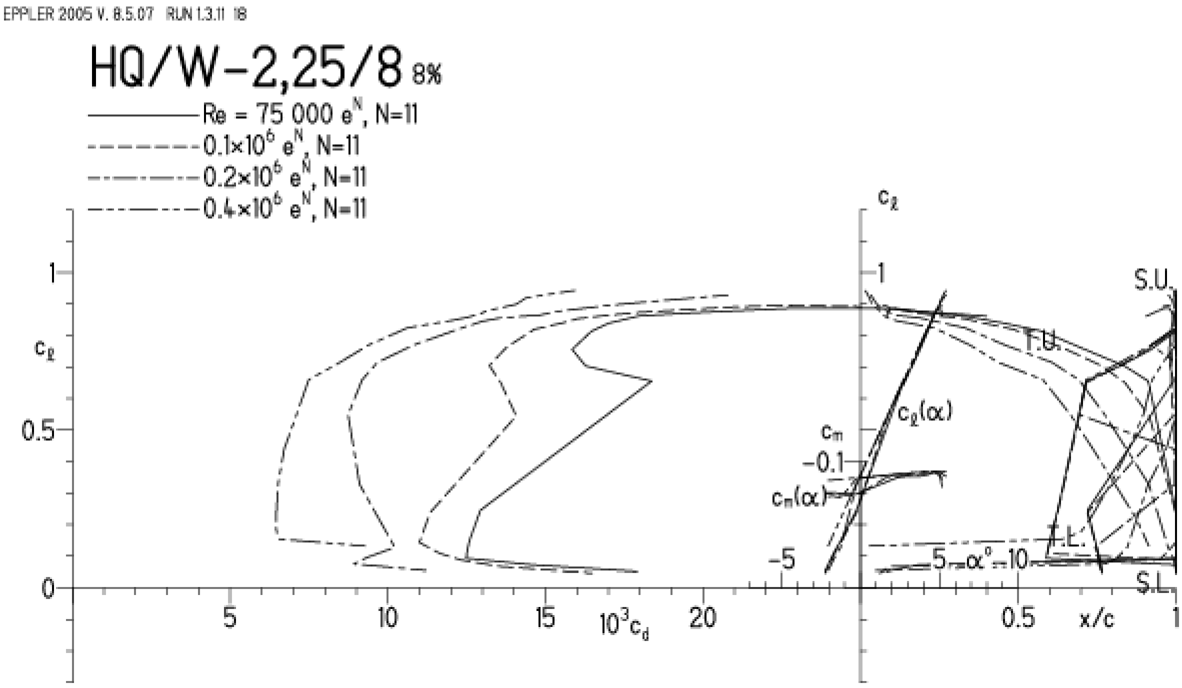


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41

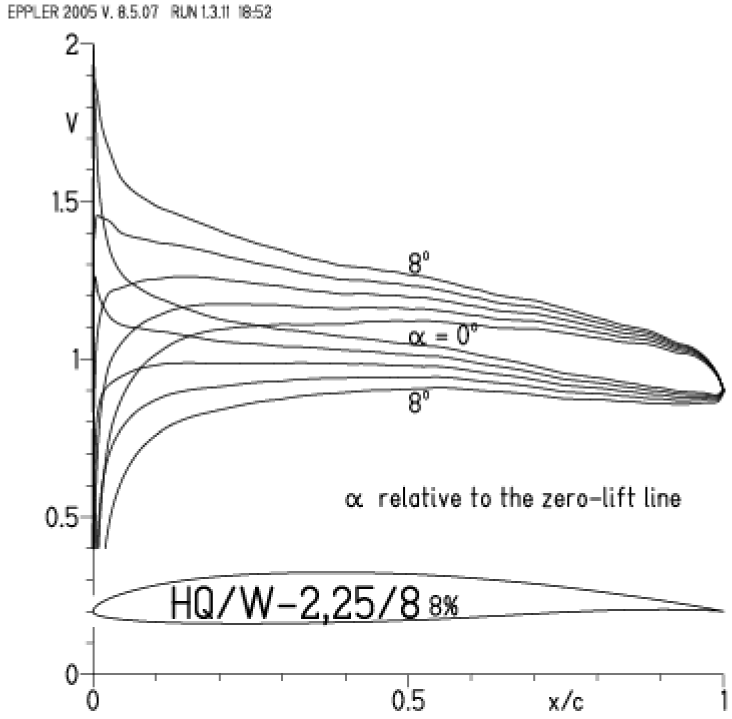


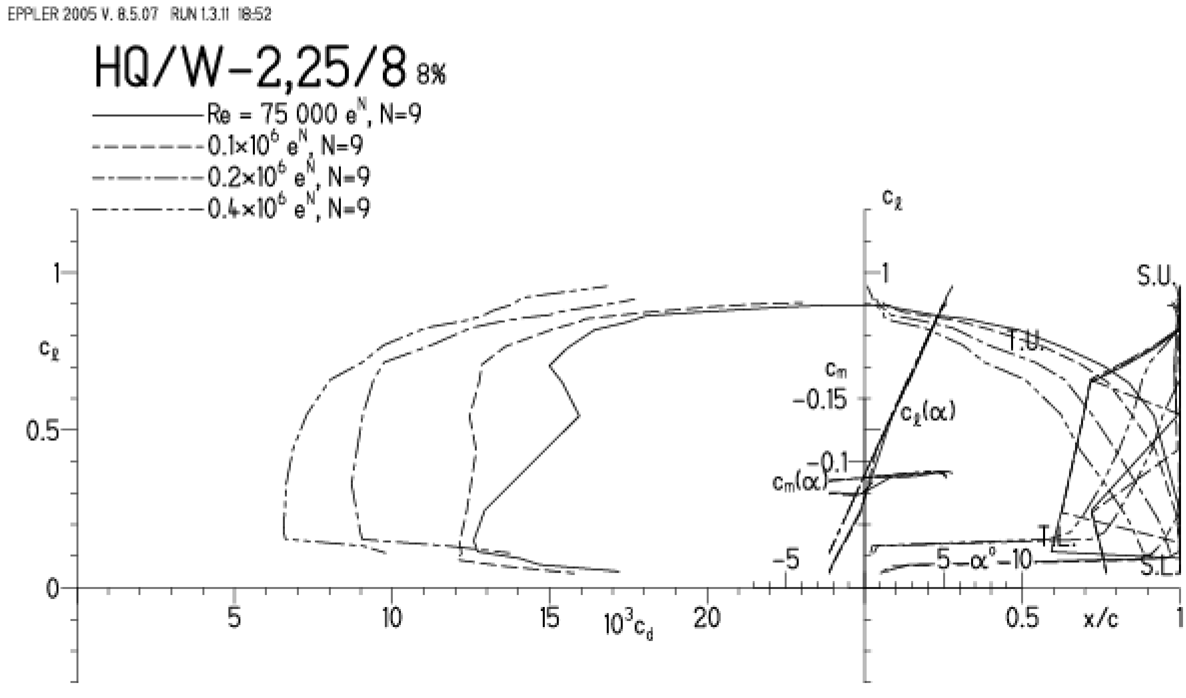
HQ/W-2,25/8, N=11


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:46
V
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/8 8%
x/c

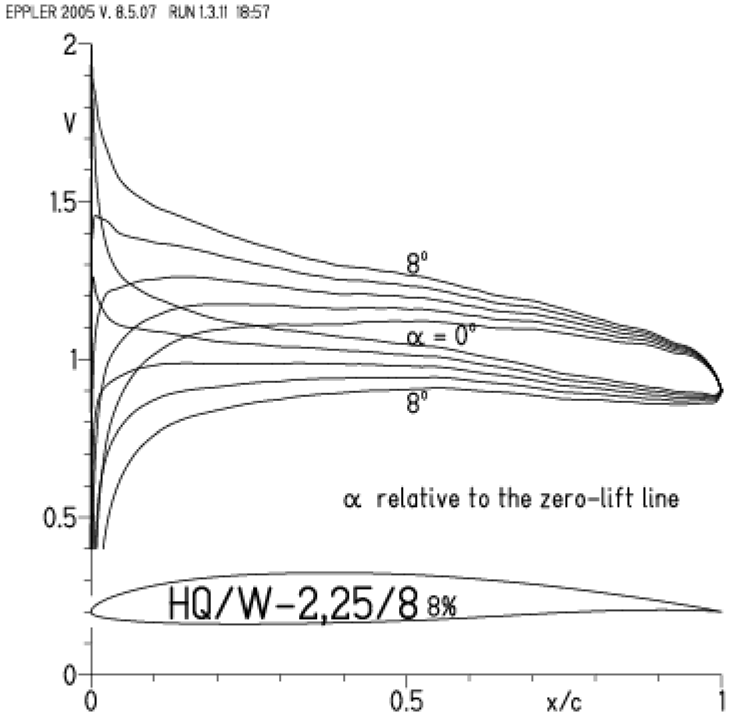

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=11
0.1×10^6 e^N, N=11
0.2×10^6 e^N, N=11
0.4×10^6 e^N, N=11
c_ℓ
c_ℓ(α)
c_m
c_m(α)
T.U.
S.U.
T.L.
S.L.
5 α° 10
10^3 c_d
x/c

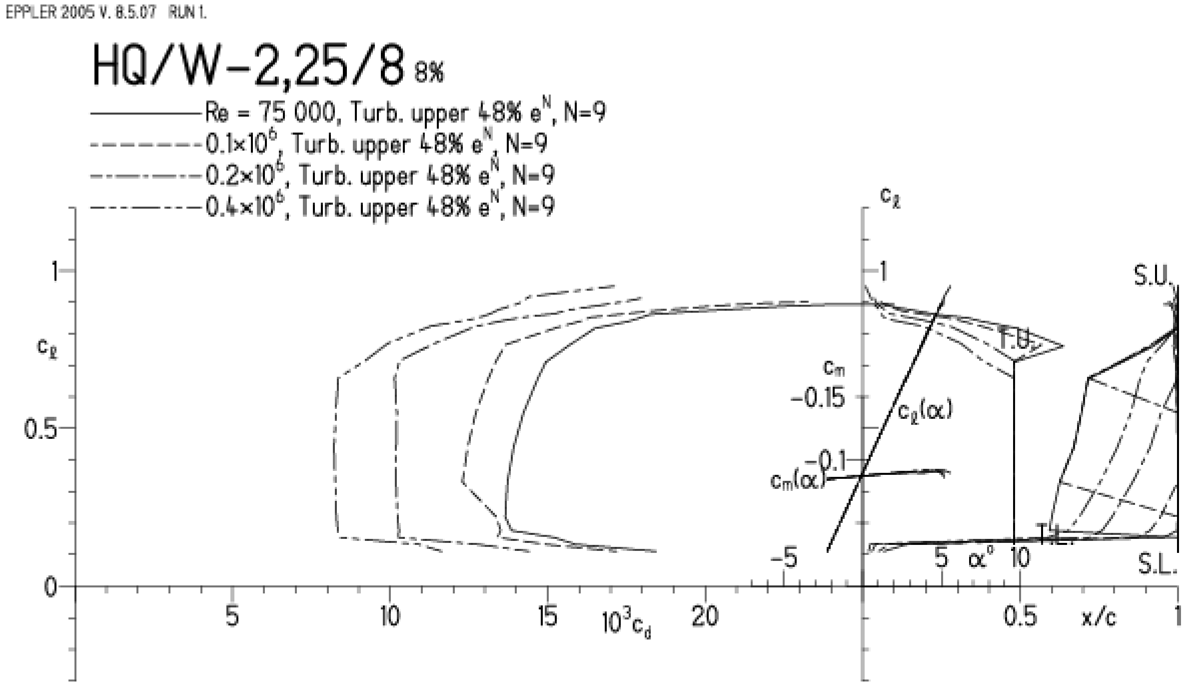
HQ/W-2,25/8, N=9


EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
2
V
1.5
8°
α = 0°
1
8°
α relative to the zero-lift line
0.5
HQ/W-2,25/8 8%
0
0
0.5
x/c
1

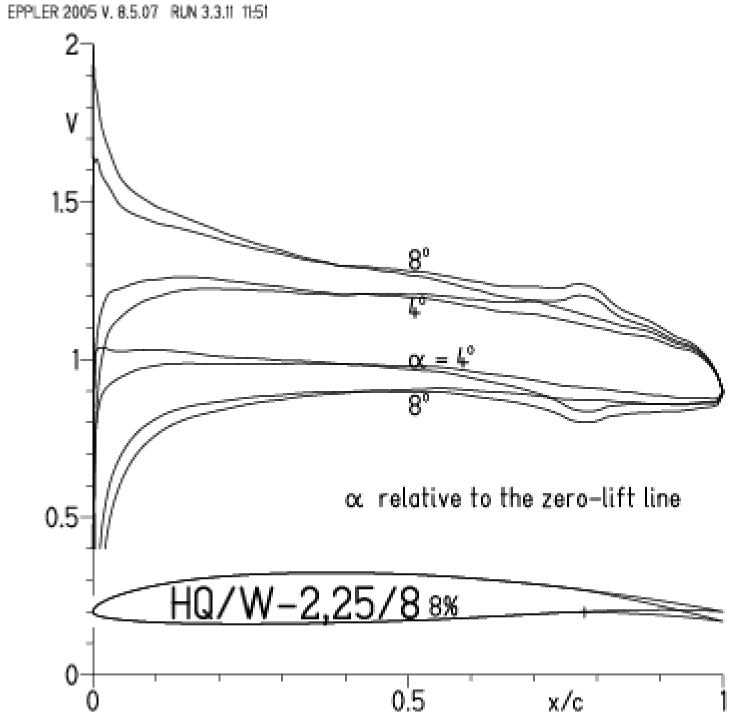

EPPLER 2005 V. 8.5.07 RUN 1.3.11 18:52
HQ/W-2,25/8 8%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_l
0.5
0
5
10
15
10^3 c_d
20
c_l
1
c_m
−0.15
c_l(α)
−0.1
c_m(α)
−5
5 −α°− 10
S.U.
T.U.
T.L.
S.L.
0.5
x/c
1

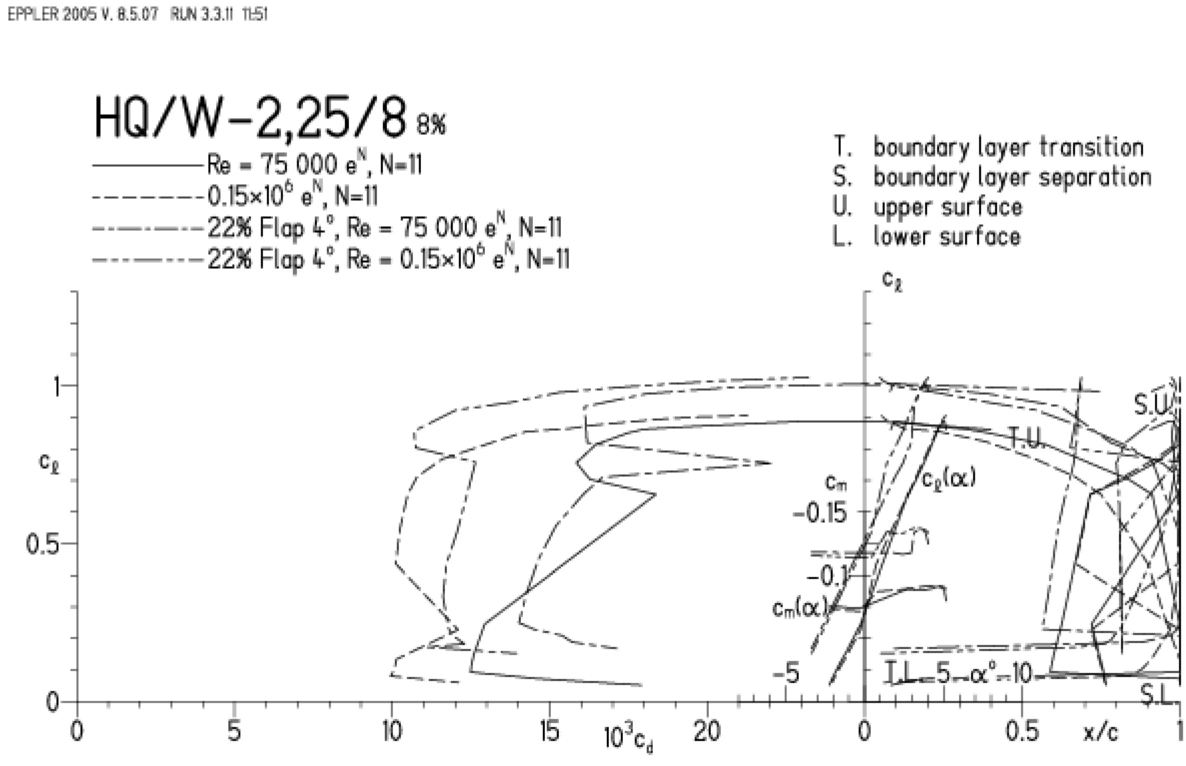
HQ/W-2,25/8, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



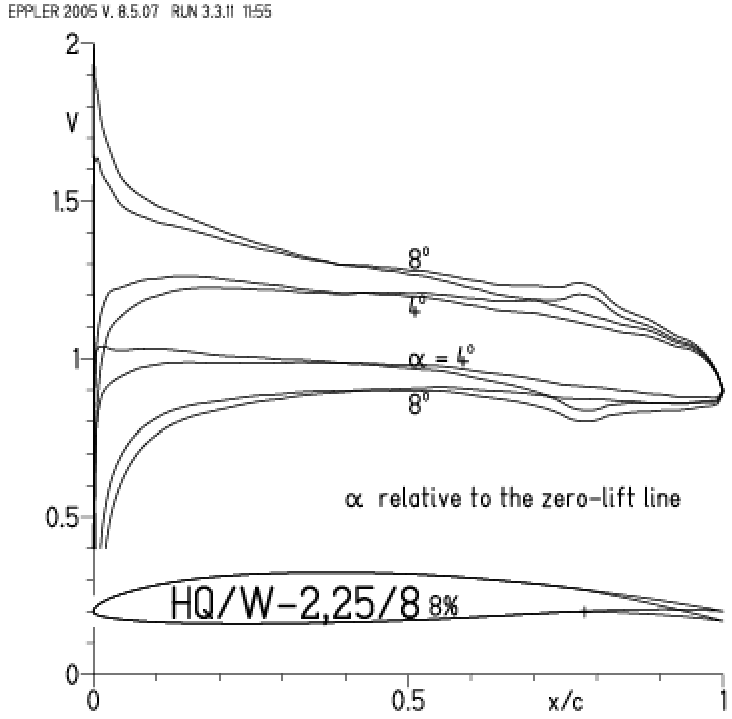


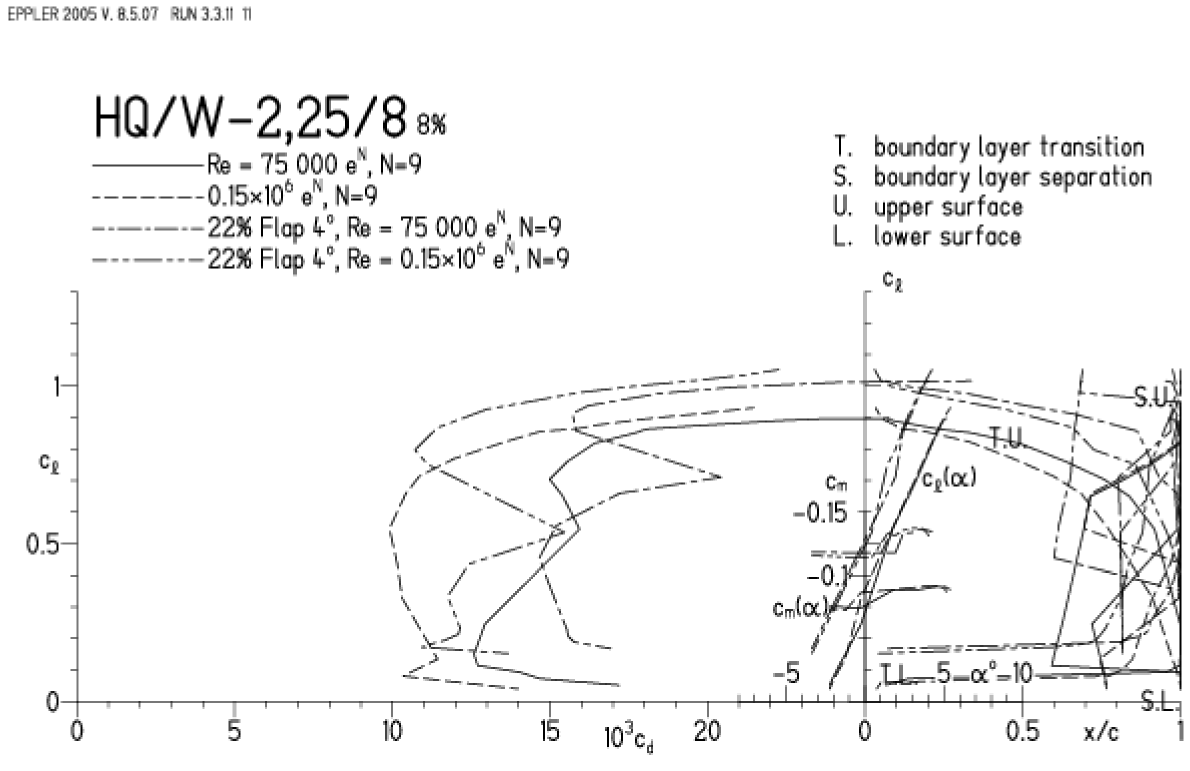
HQ/W-2,25/8, N=11, mit +4° Wölbklappenausschlag



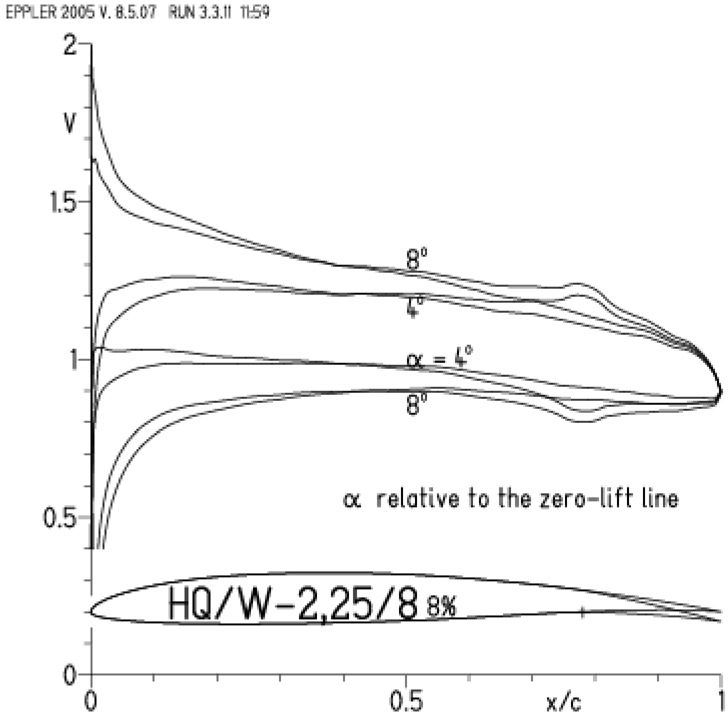


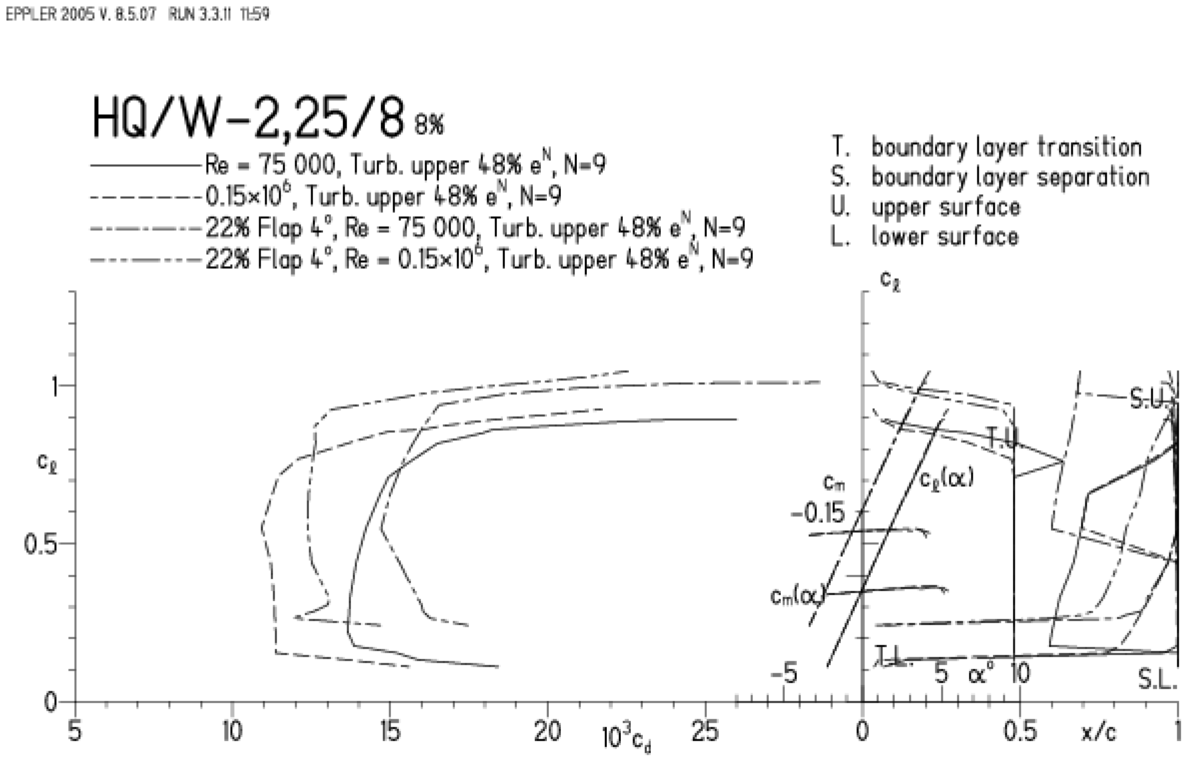
<u>HQ/W-2,25/8,</u> N=9, mit +4° Wölbklappenausschlag





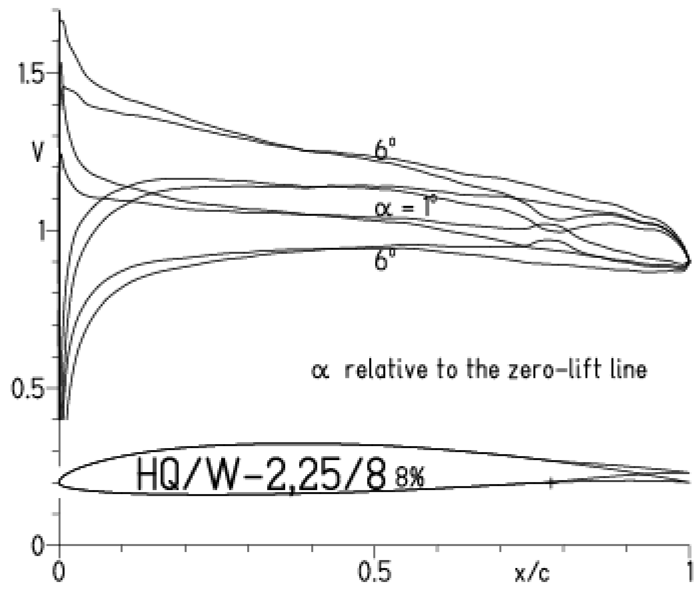
HQ/W-2,25/8, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)



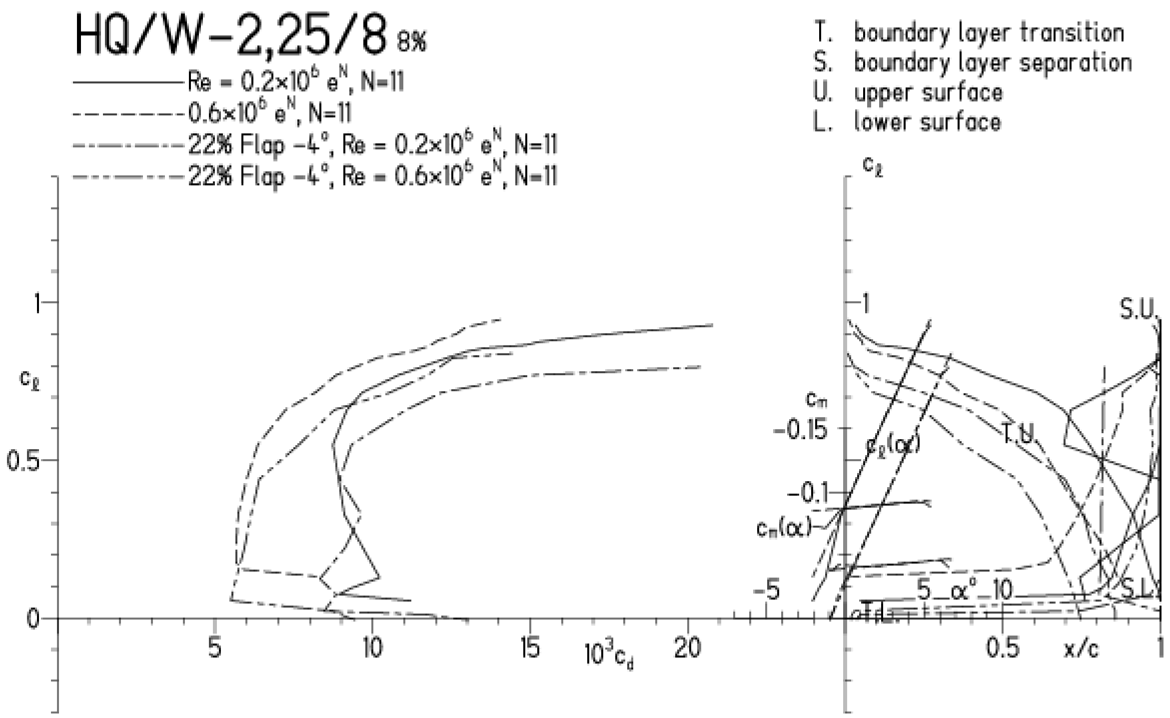


<u>HQ/W-2,25/8</u>, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit nur ca. 30 – 35 m/s Höchstgeschwindigkeit)

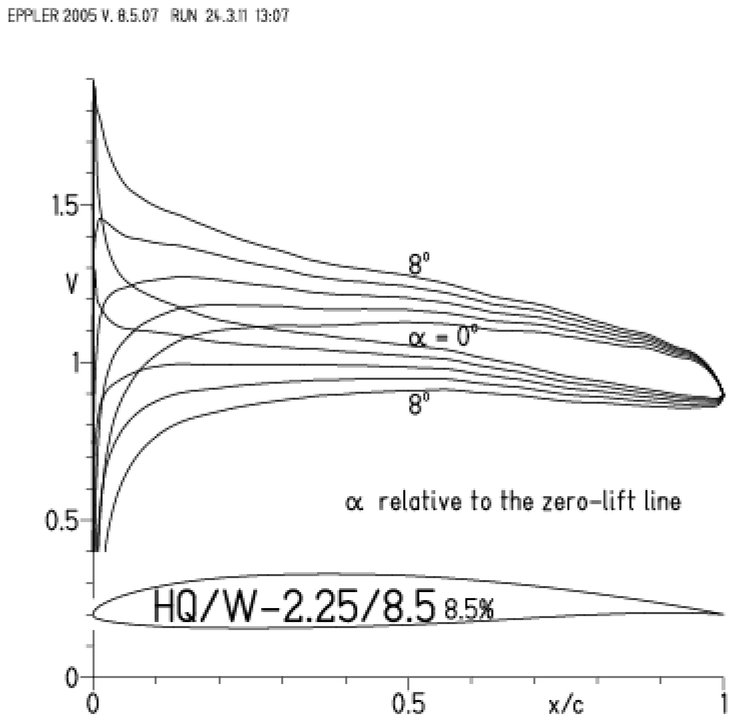
EPPLER 2005 V. 8.5.07 RUN 3.3.11 12:23

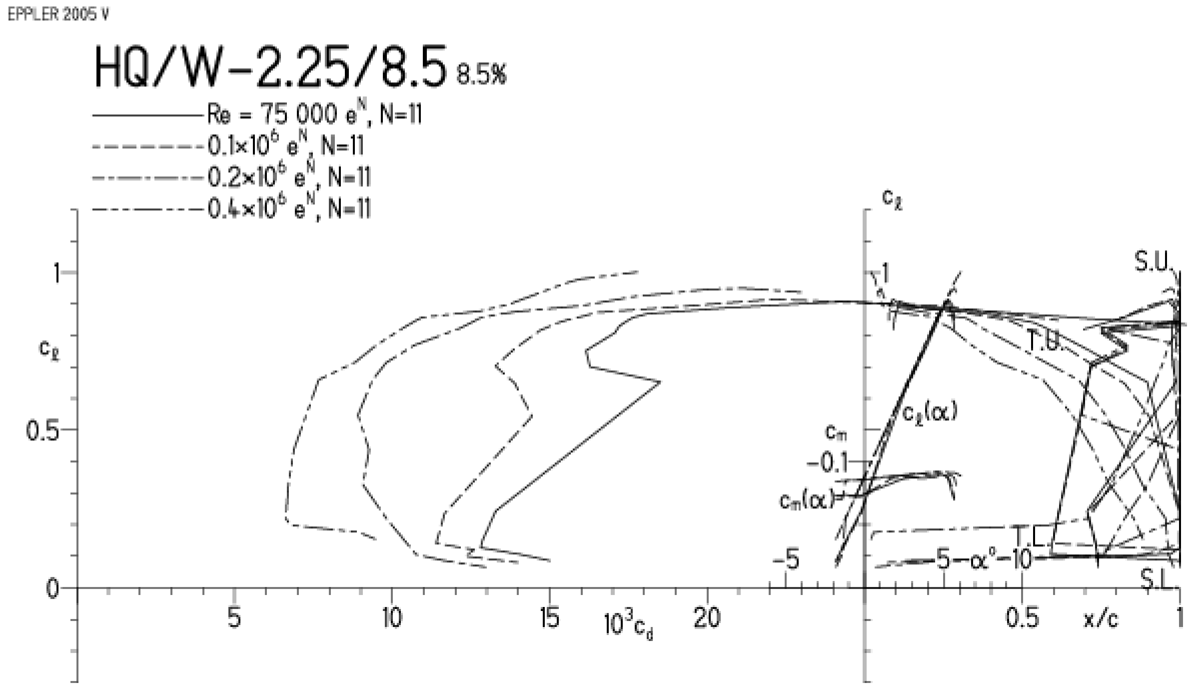


EPPLER 2005 V. 8.5.07 RUN 3.3.11 1

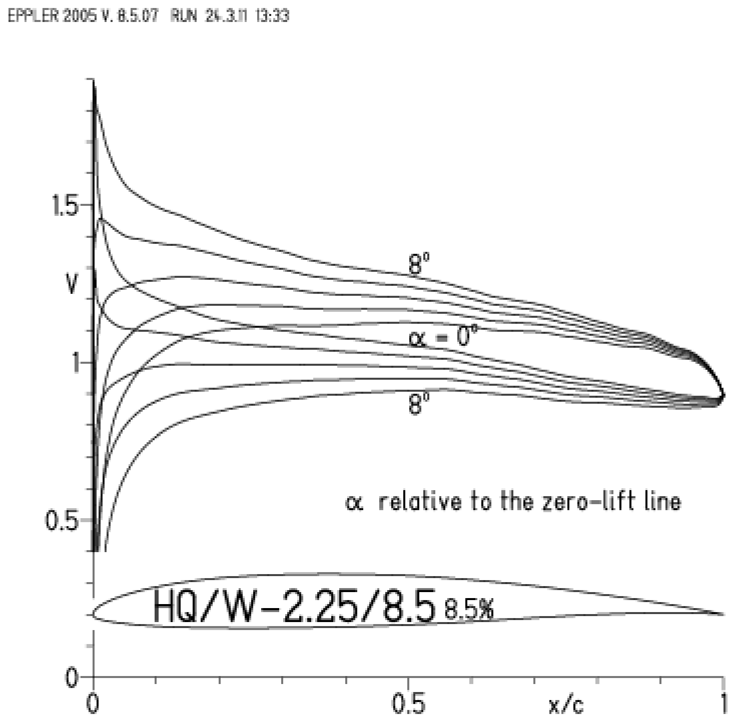


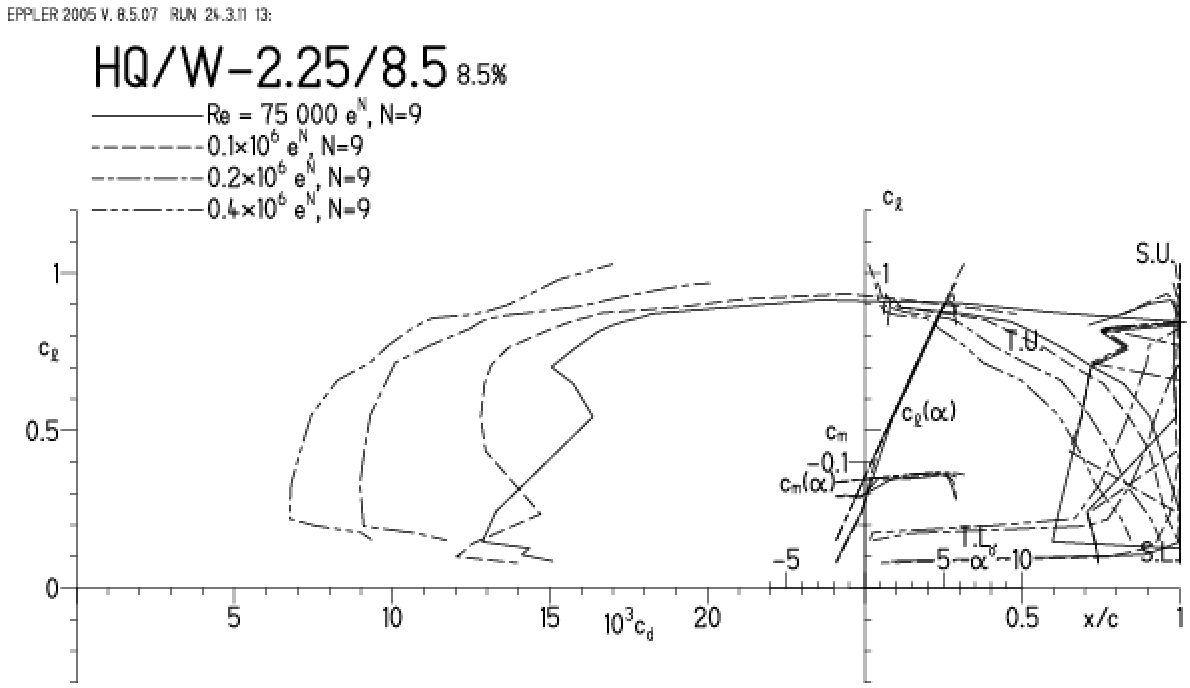
HQ/W-2,25/8,5, N=11



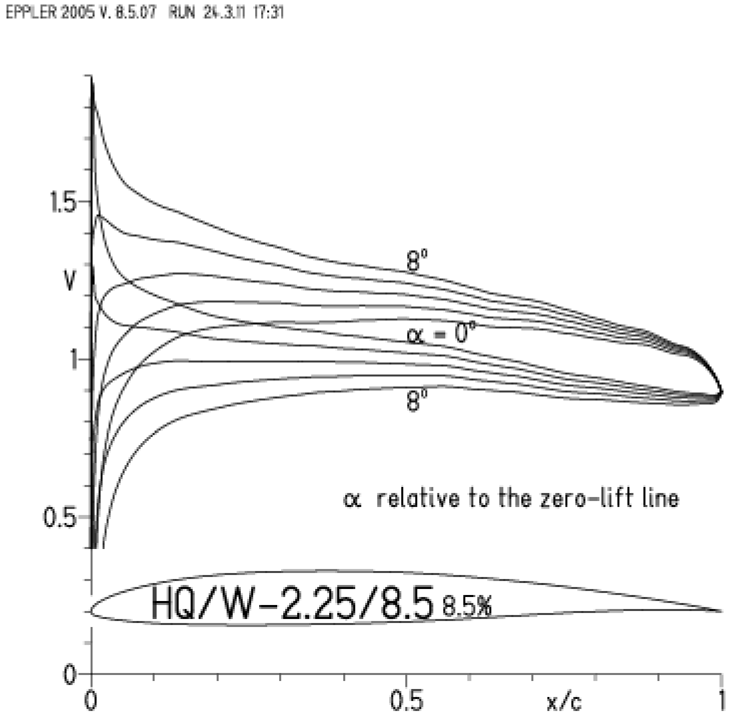


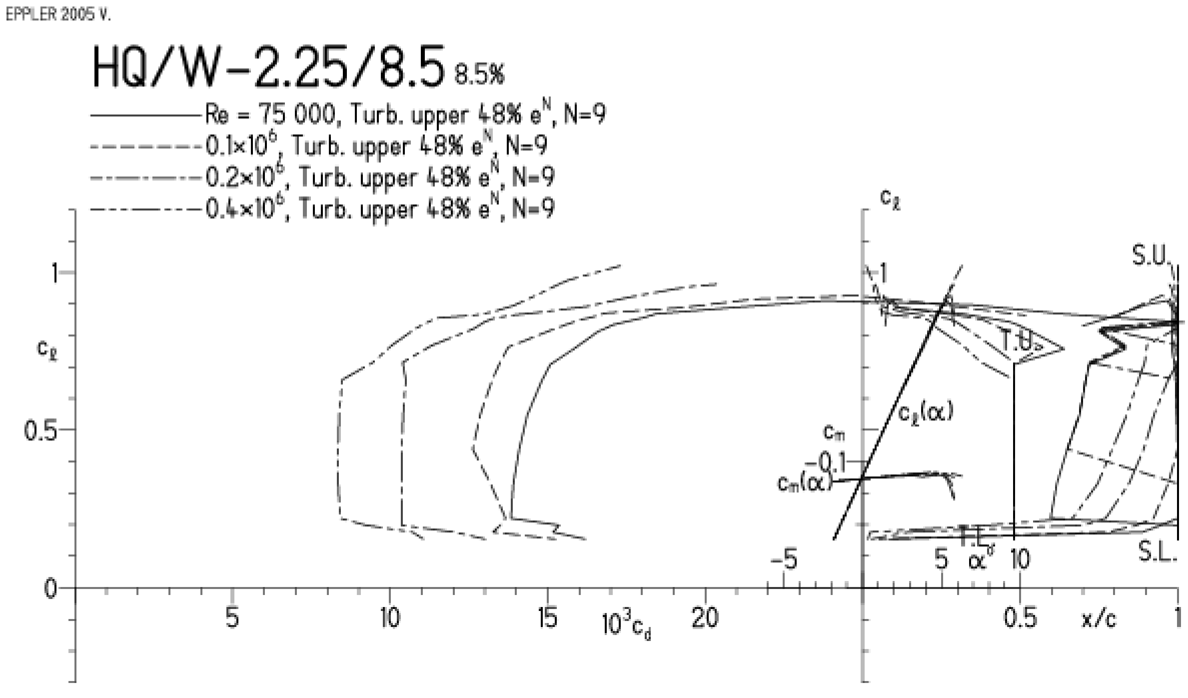
HQ/W-2,25/8,5, N=9


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:33
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2.25/8.5 8.5%
0
0.5
x/c
1


EPPLER 2005 V. 8.5.07 RUN 24.3.11 13:
HQ/W-2.25/8.5 8.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_ℓ(α)
c_m
−0.1
c_m(α)
−5
T.U.
S.U.
T.L.
S.L.
−5 − α° − 10
0.5
x/c
1

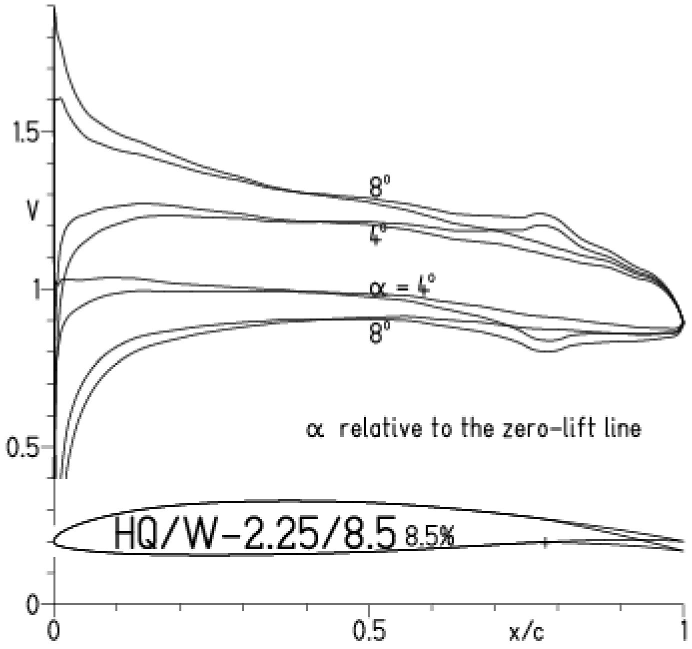
HQ/W-2,25/8,5, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



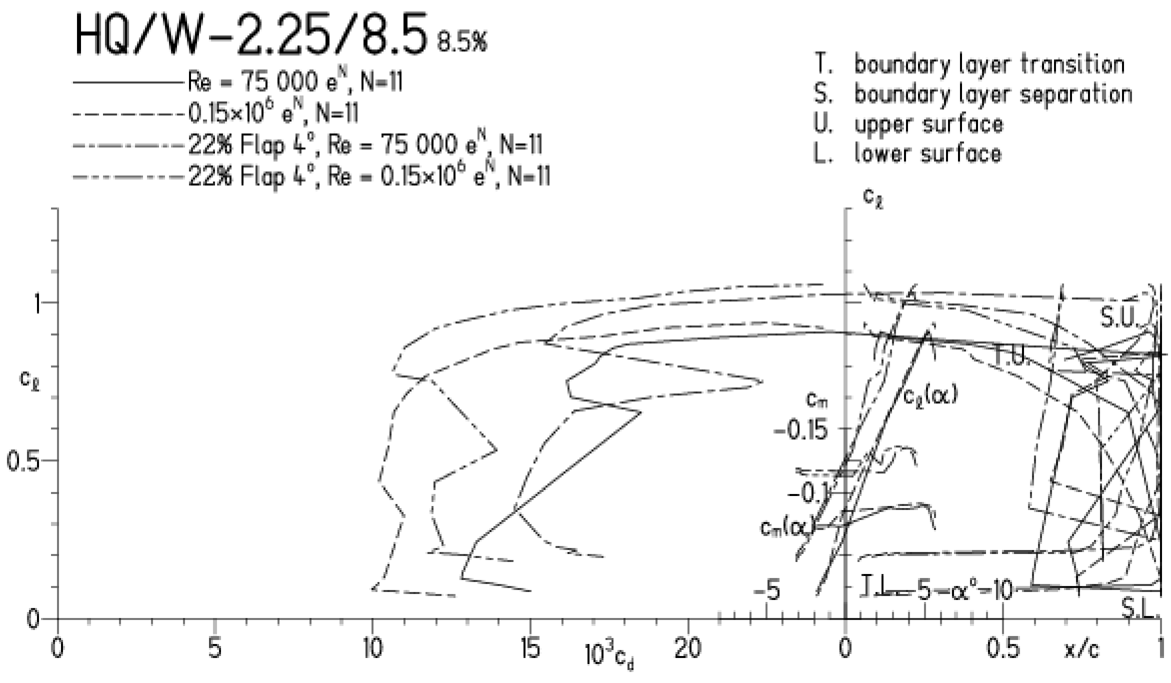


<u>HQ/W-2,25/8,5</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:08

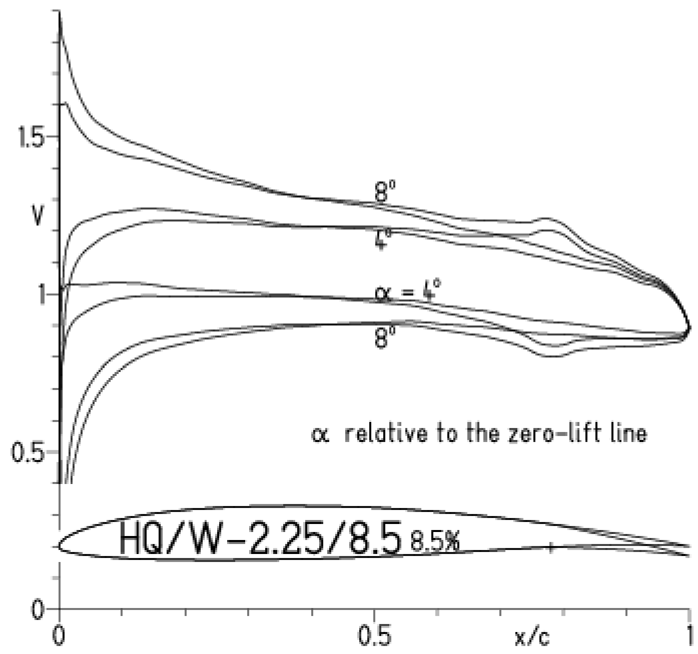


EPPLER 2005 V. 8.5.

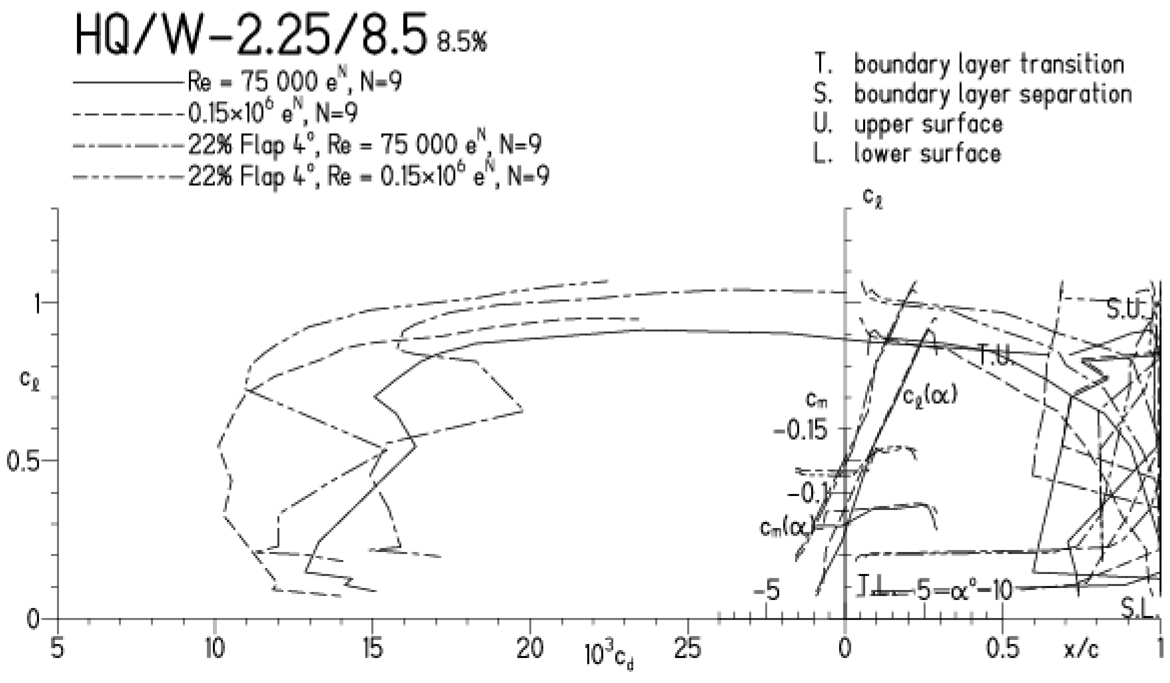


HQ/W-2,25/8,5, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:12

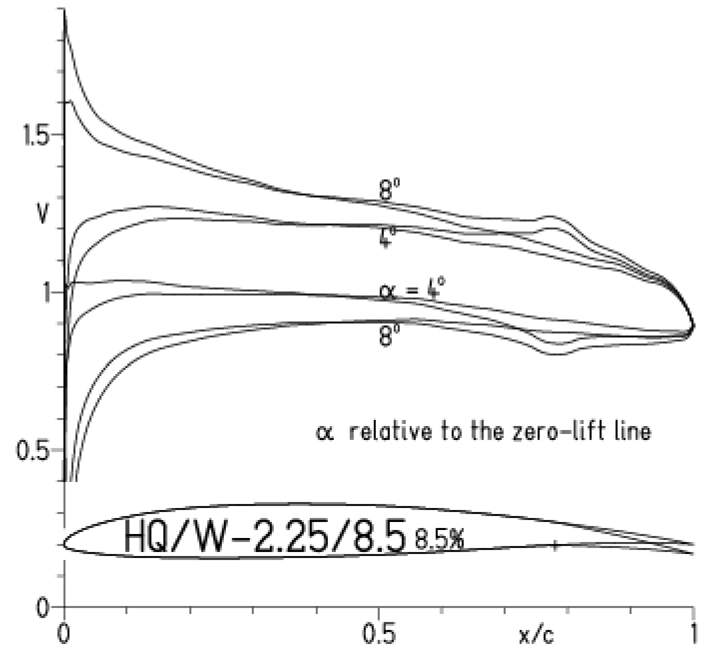


EPPLER 2005 V.

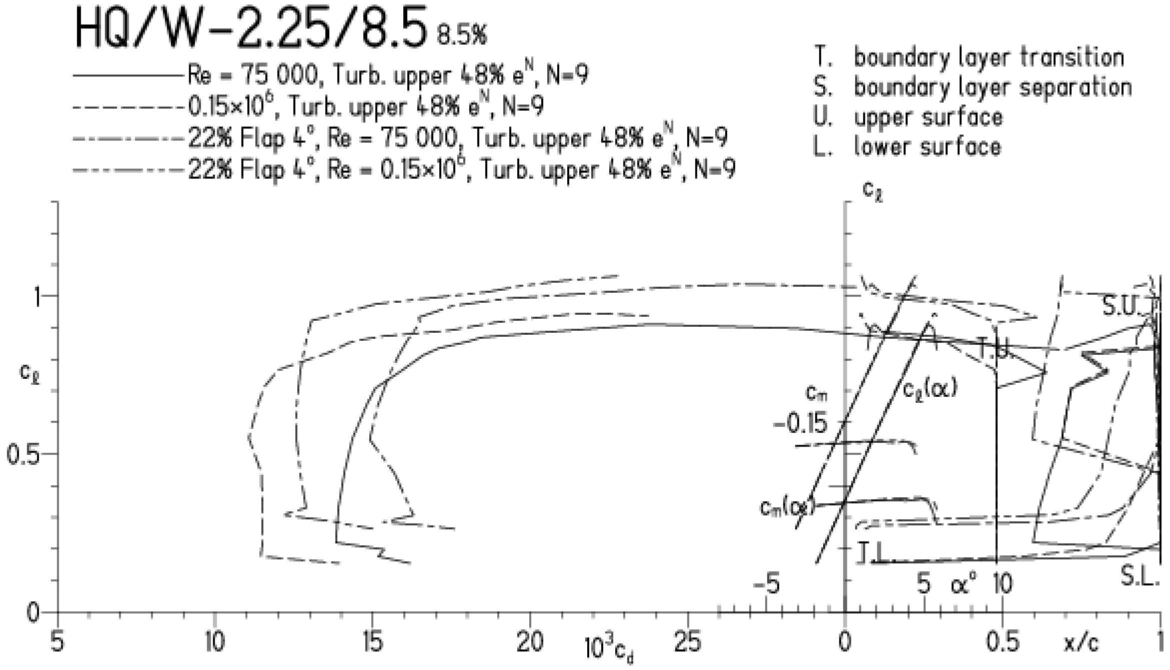


<u>HQ/W-2,25/8,5</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 18:16

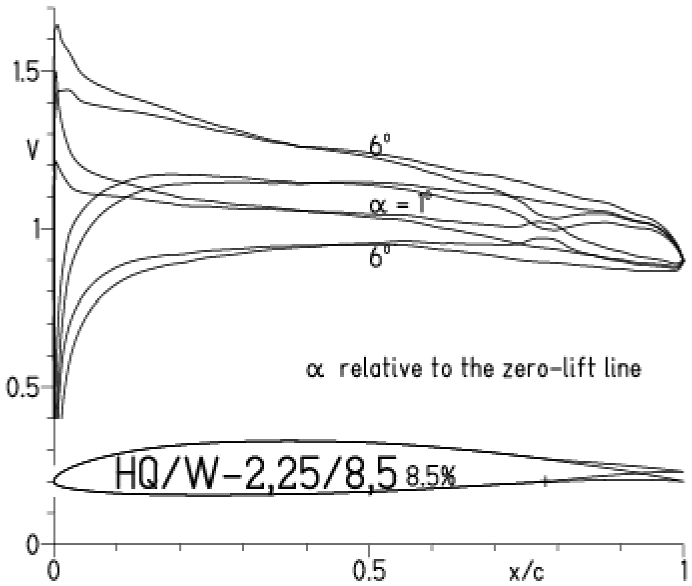


EPPLER 2005 V. 8.5.07 RUN 24.3.11 1

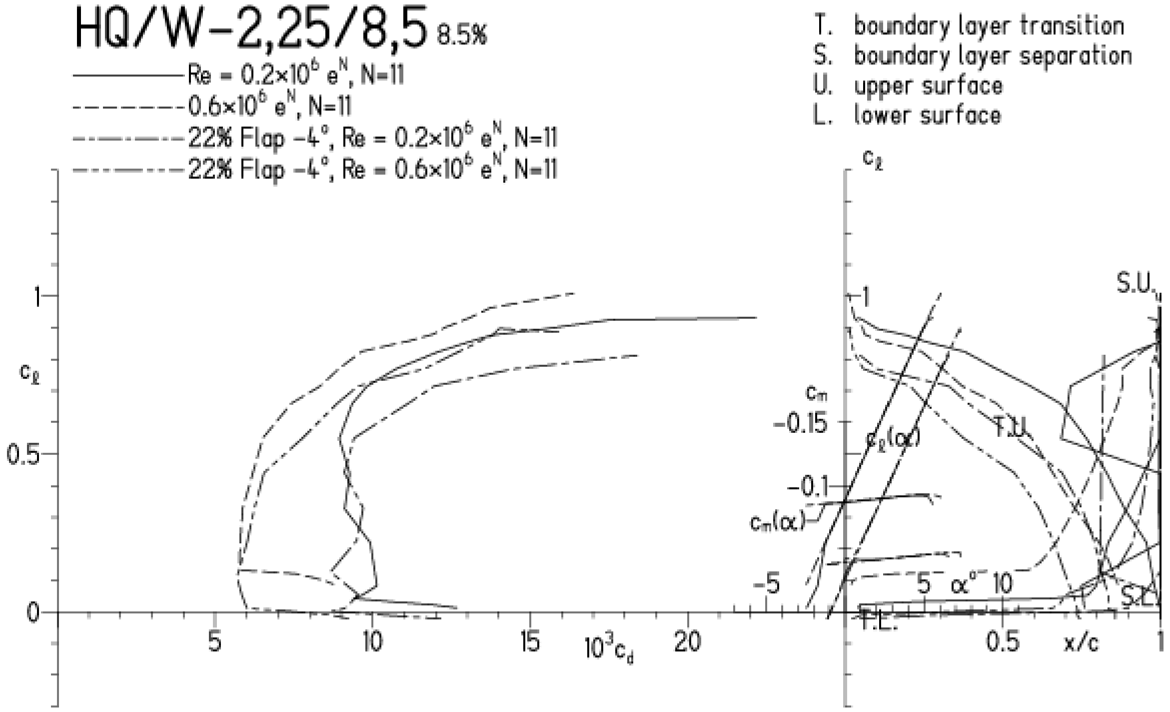


HQ/W-2,25/8,5, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

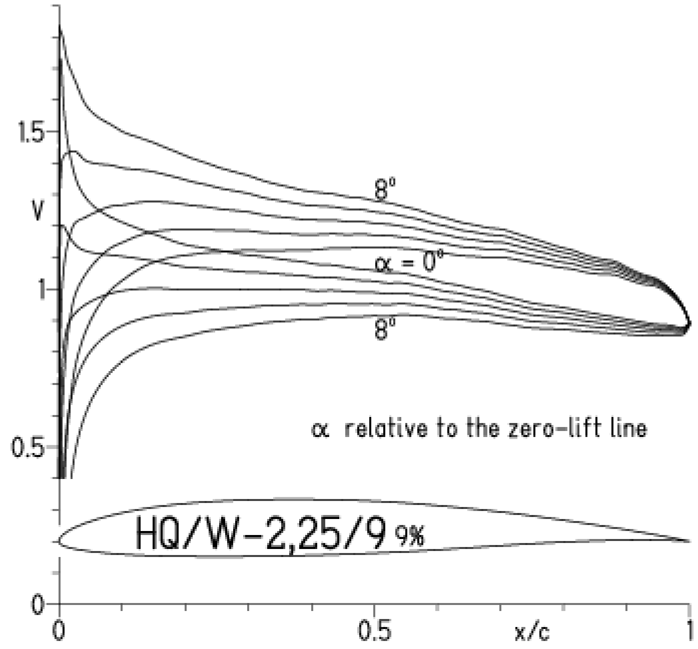


EPPLER 2005 V. 8.5.07 RUN 24.3.11 19:09

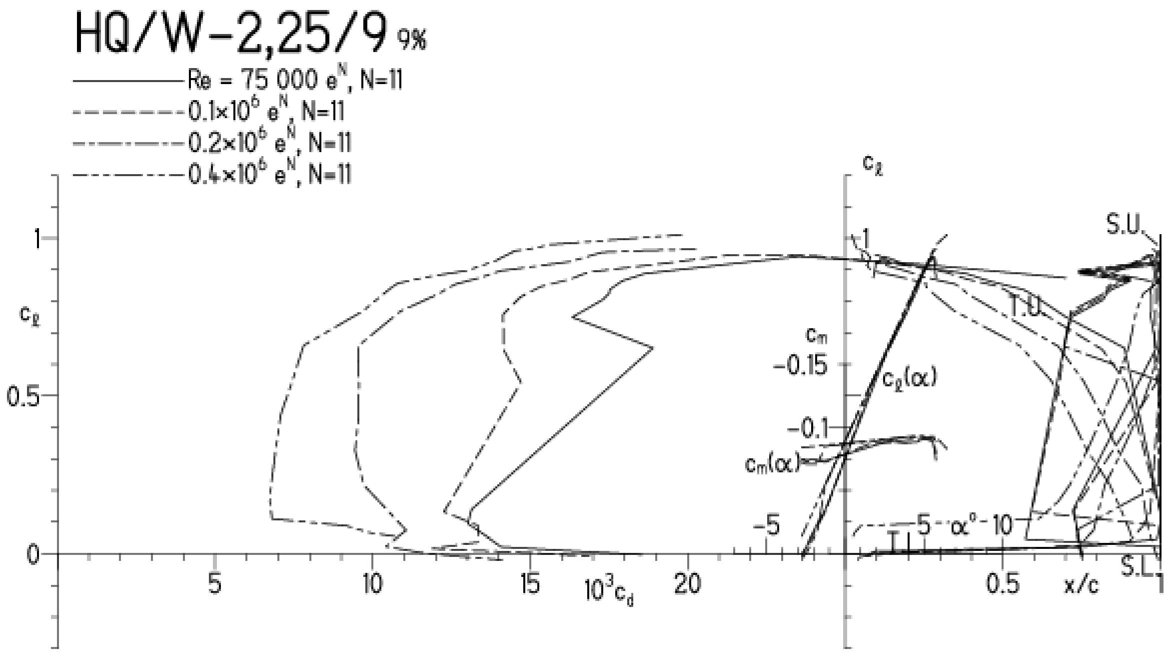


<u>HQ/W-2,25/9</u>, N=11

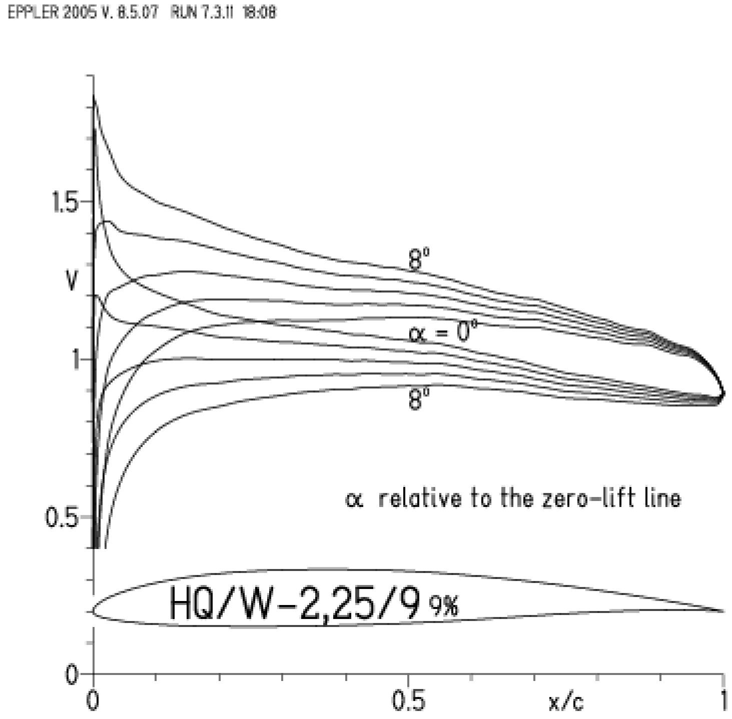
EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

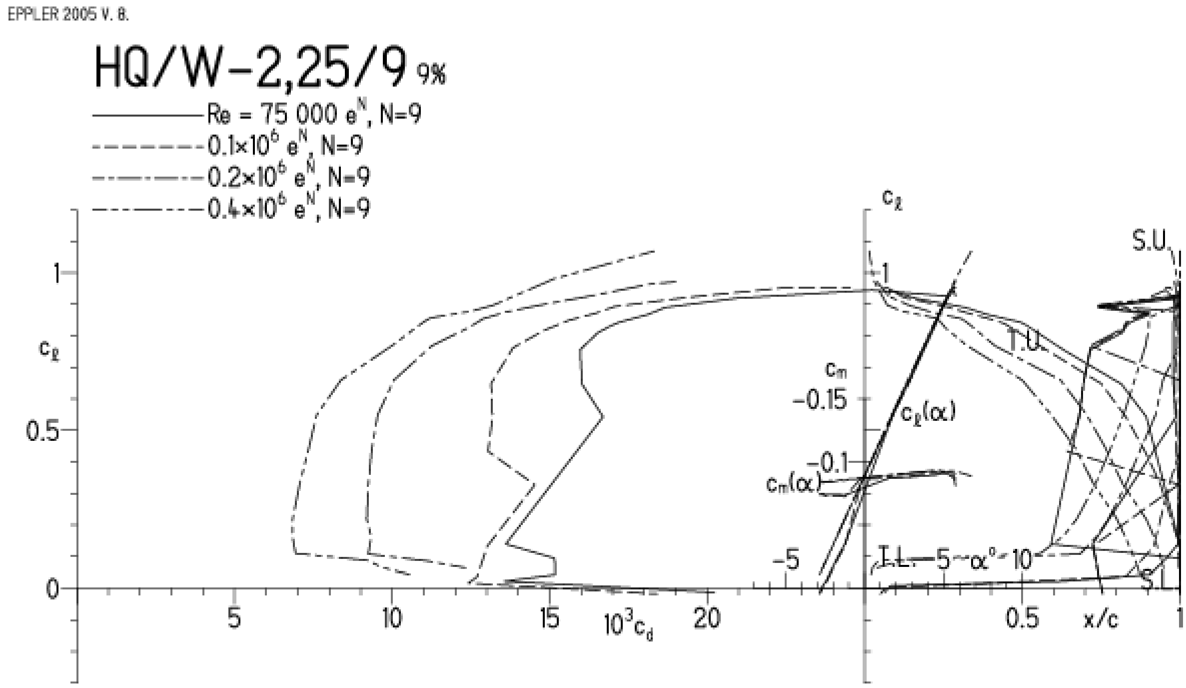


EPPLER 2005 V. 8.5.07 RUN 7.3.11 17:50

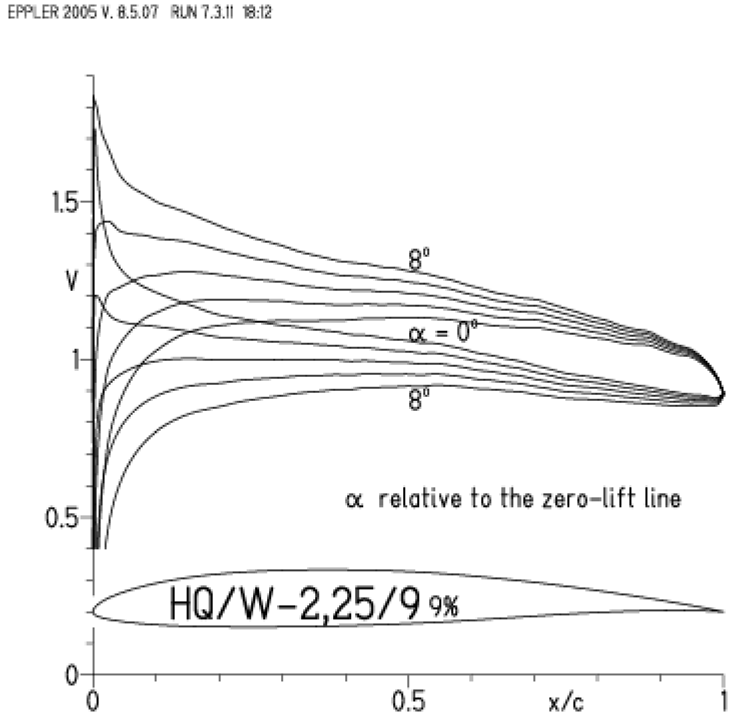


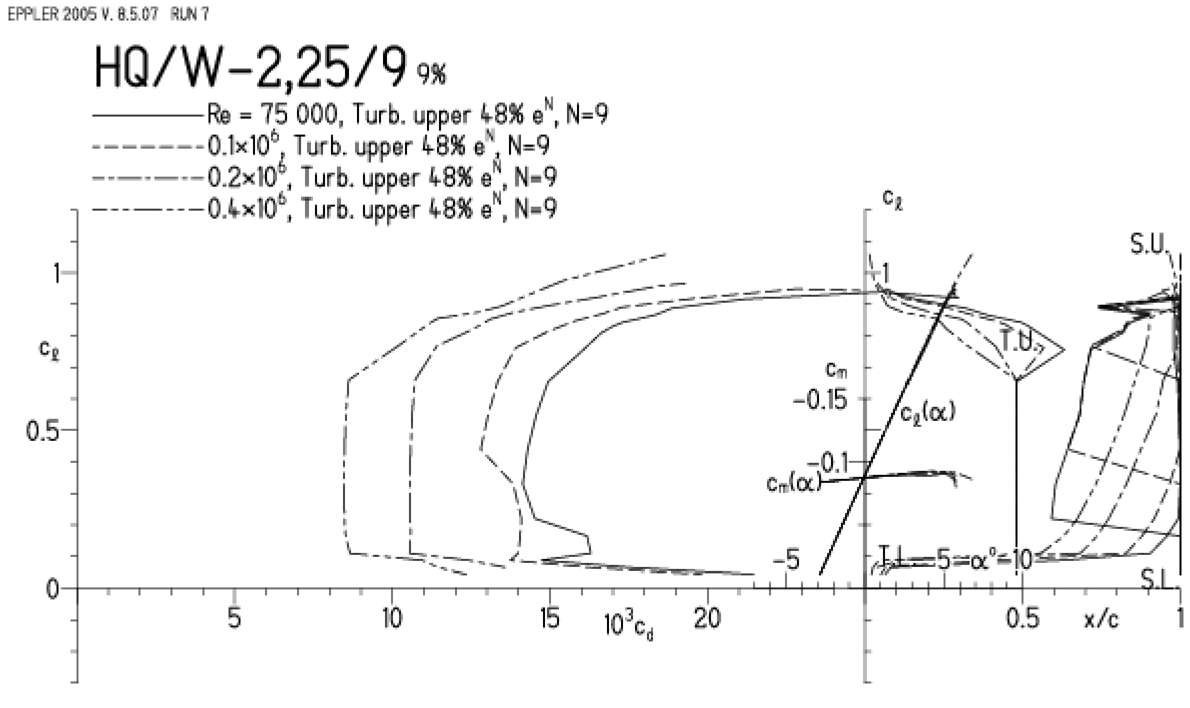
<u>HQ/W-2,25/9</u>, N=9





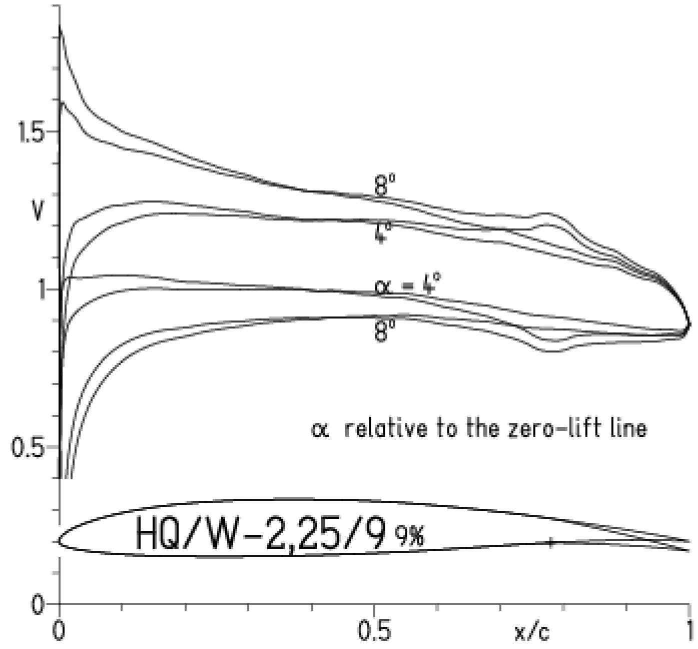
HQ/W-2,25/9, N=9, Turbulatoreffekt (optimal beim Maximum der Wölbung)



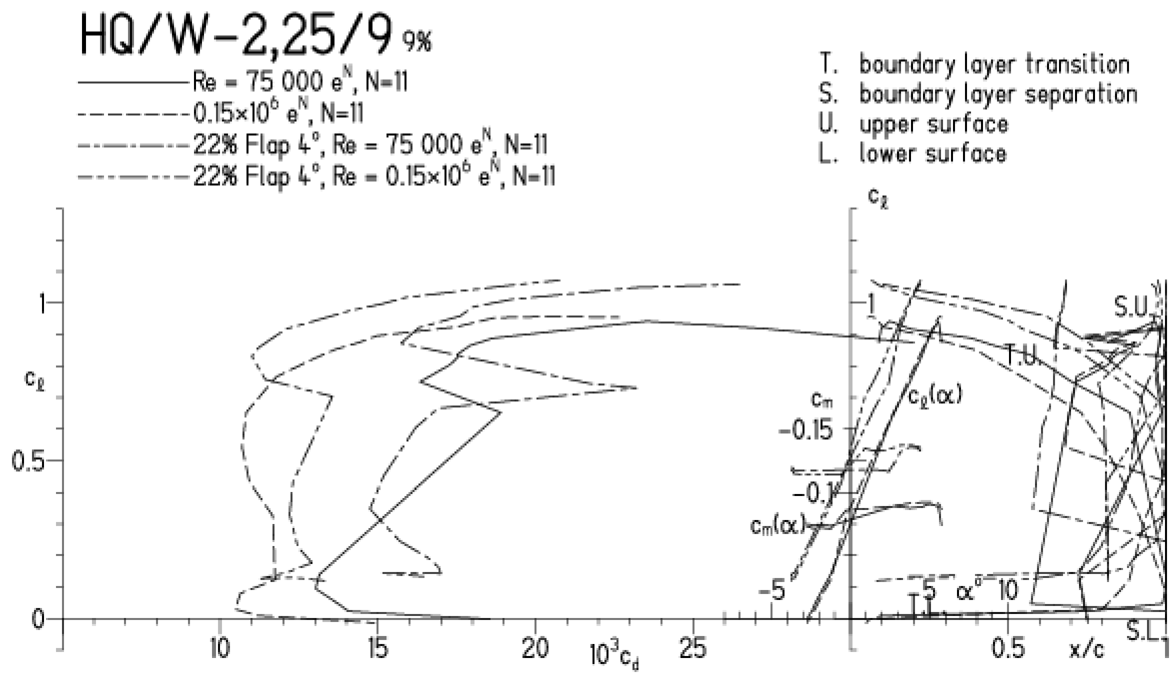


<u>HQ/W-2,25/9</u>, N=11, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:38

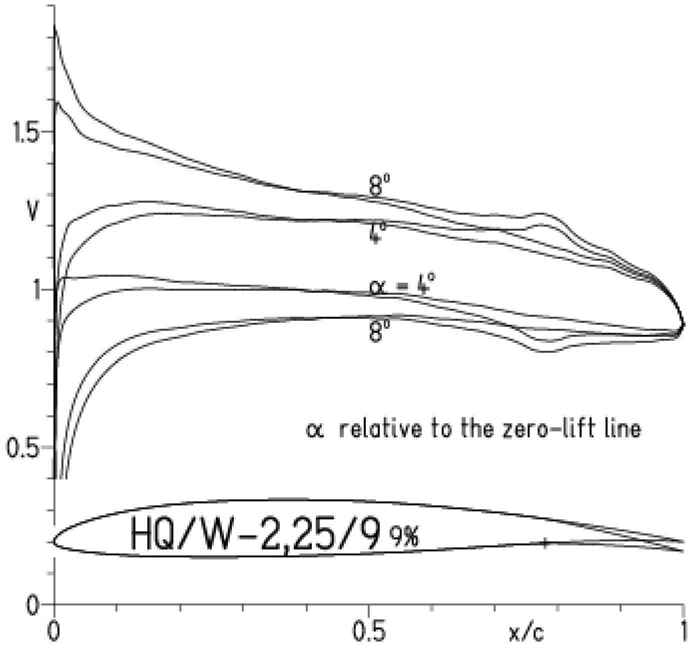


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:3

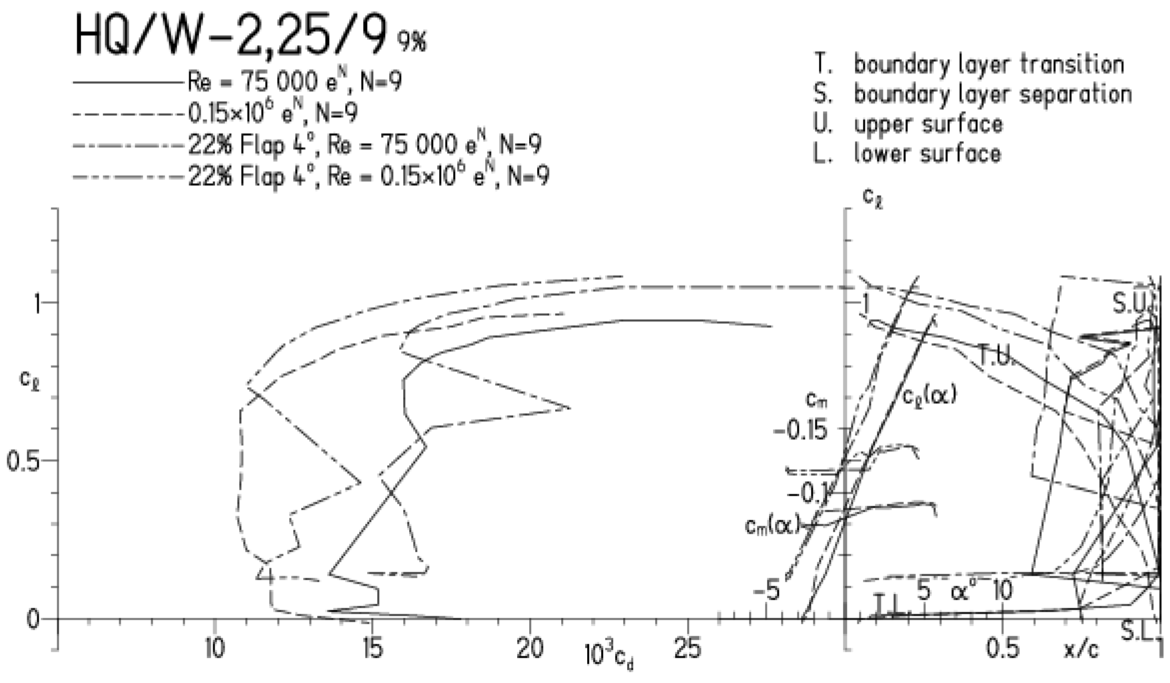


HQ/W-2,25/9, N=9, mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:48

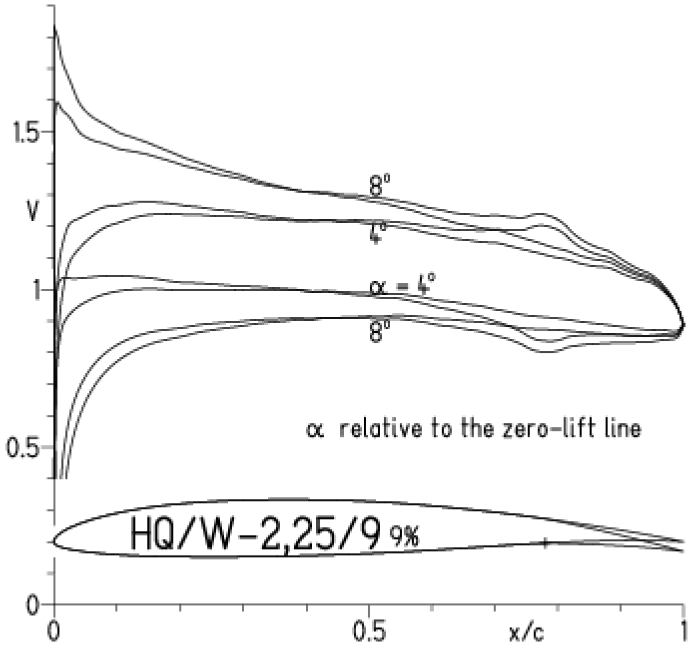


EPPLER 2005 V. 8.5.07 RUN 8.3.1

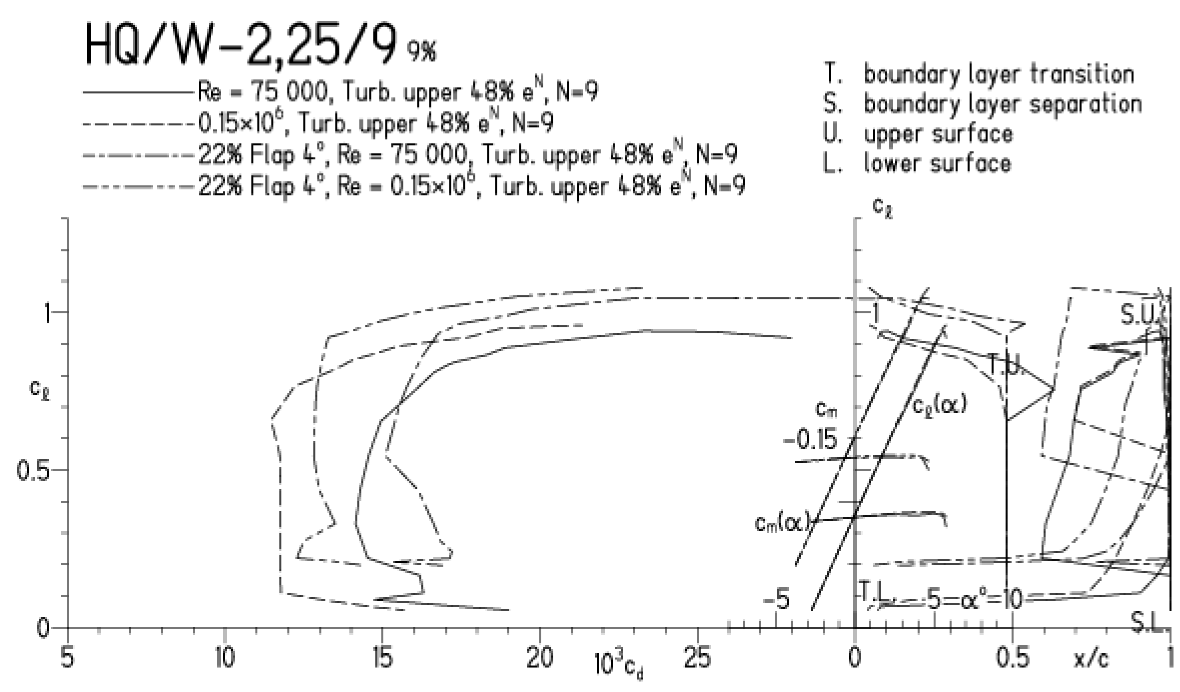


HQ/W-2,25/, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

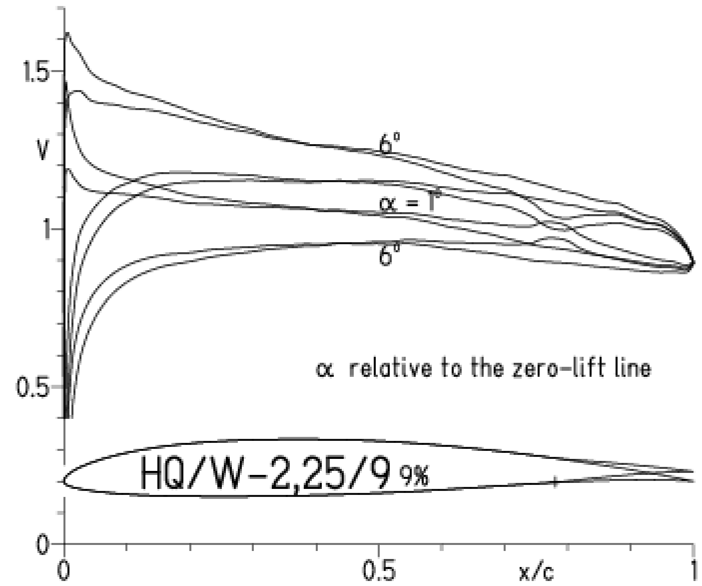


EPPLER 2005 V. 8.5.07 RUN 8.3.11 15:54

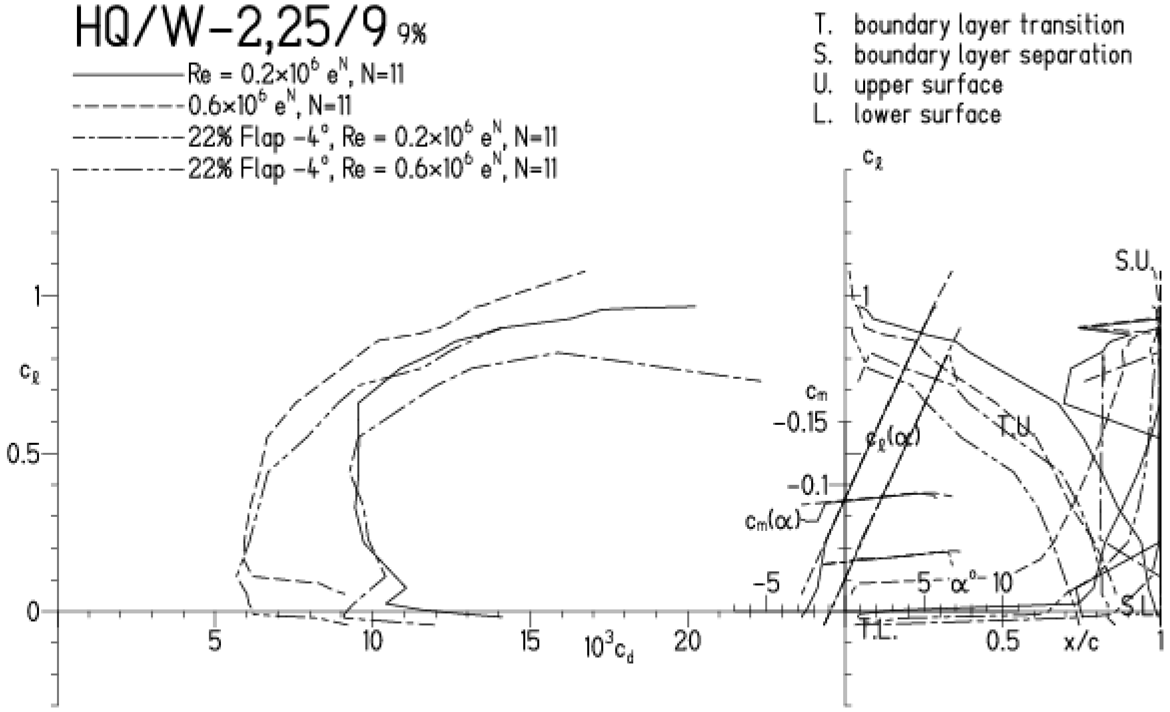


HQ/W-2,25/9, N=11 mit -4° Wölbklappenausschlag
(F3J-Modelle mit 30 g/dm² erreichen damit ca. 50 m/s Höchstgeschwindigkeit)

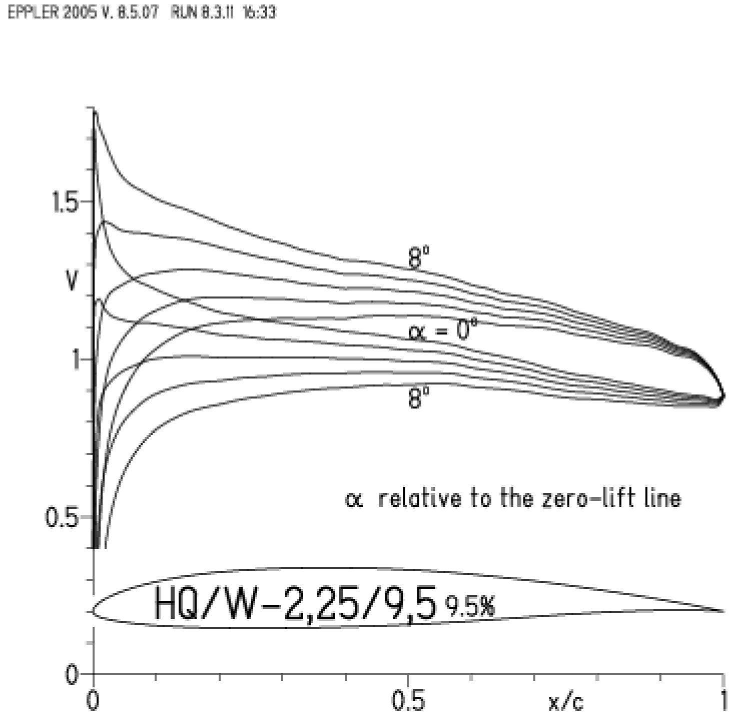
EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:17

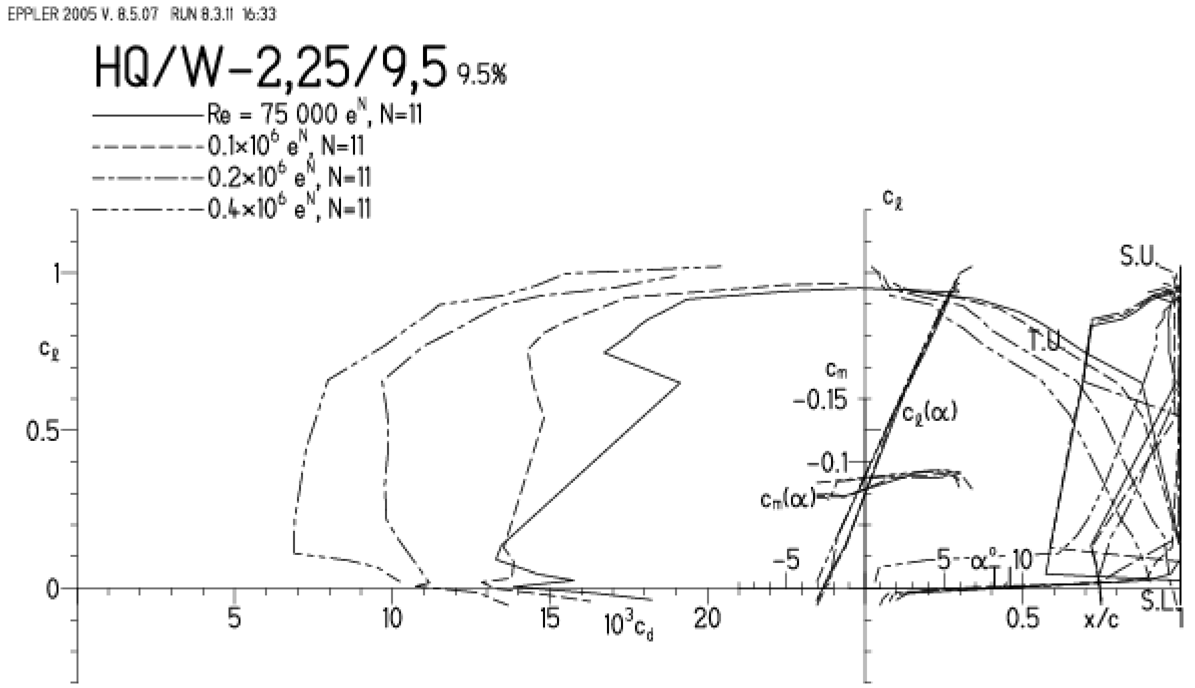


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:02

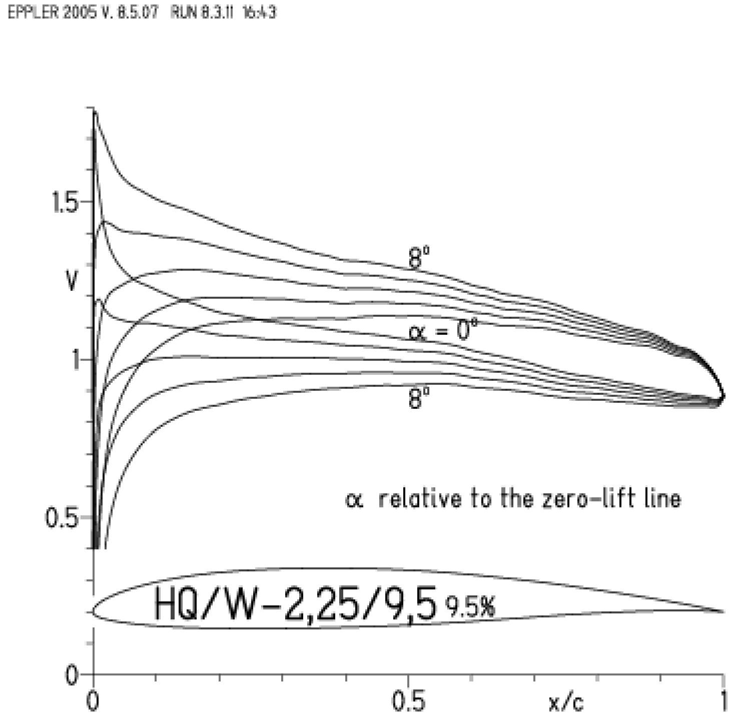


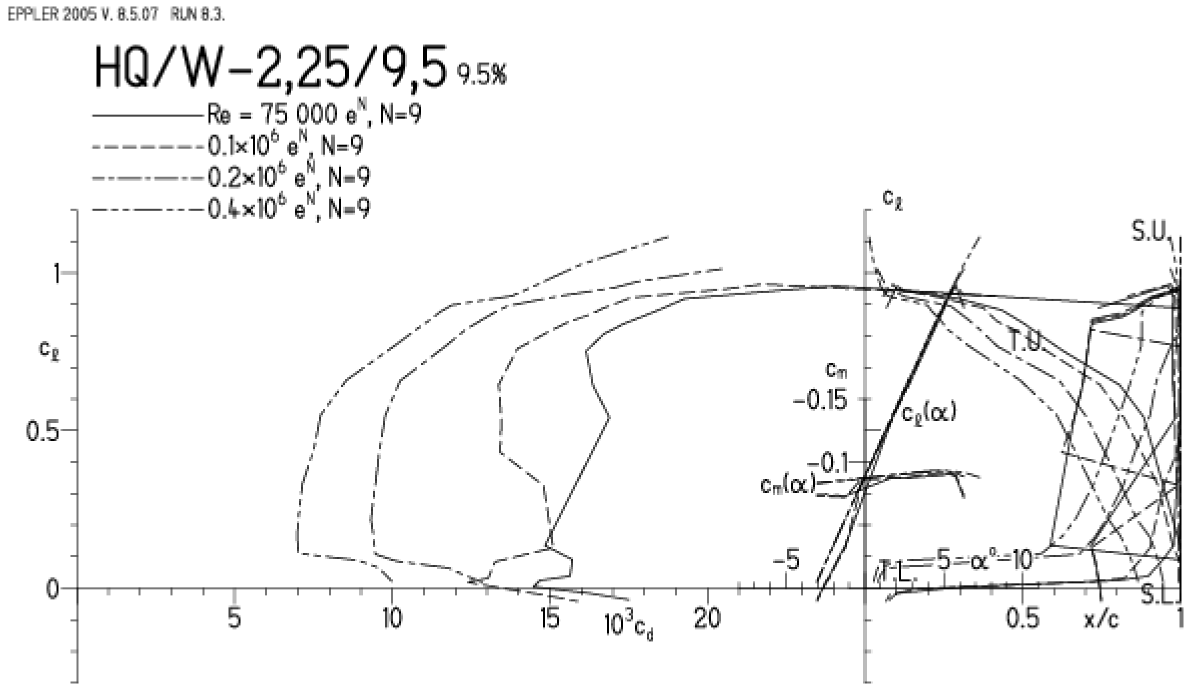
<u>HQ/W-2,25/9,5</u>, N=11





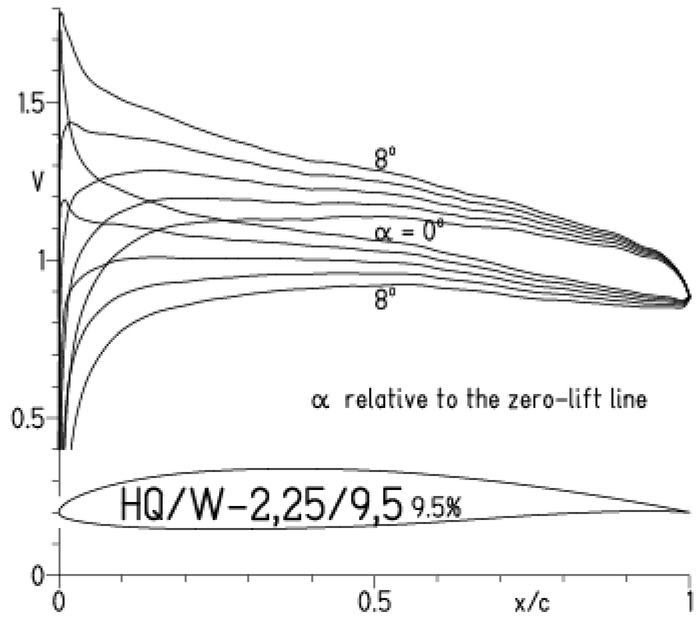
HQ/W-2,25/9,5, N=9


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:43
1.5
V
1
0.5
0
8°
α = 0°
8°
α relative to the zero-lift line
HQ/W-2,25/9,5 9.5%
0
0.5
x/c
1

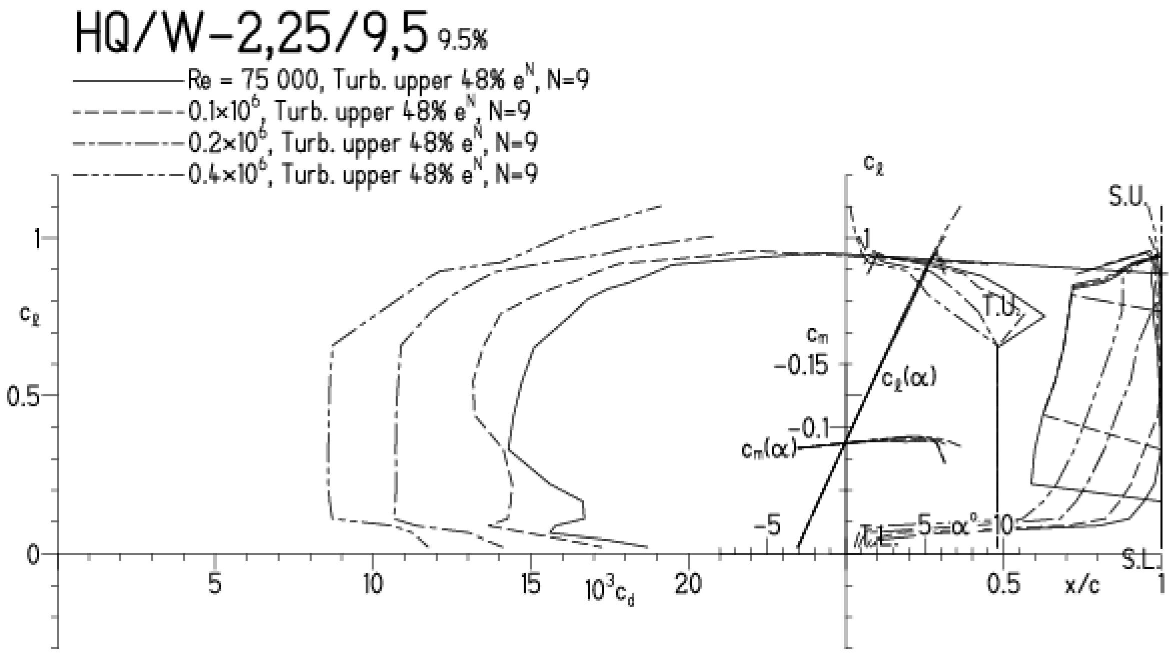

EPPLER 2005 V. 8.5.07 RUN 8.3.
HQ/W-2,25/9,5 9.5%
Re = 75 000 e^N, N=9
0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
1
c_ℓ
0.5
0
5
10
15
10^3 c_d
20
c_ℓ
c_m
−0.15
−0.1
c_ℓ(α)
c_m(α)
−5
T.L.
5
α°
10
T.U.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/9,5, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:46

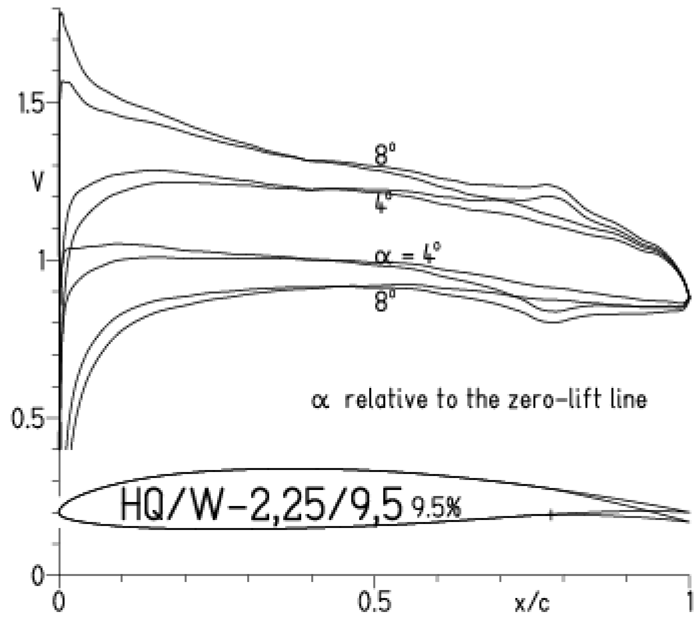


EPPLER 2005 V. 8.5.07 RUN 8.3.11 16:

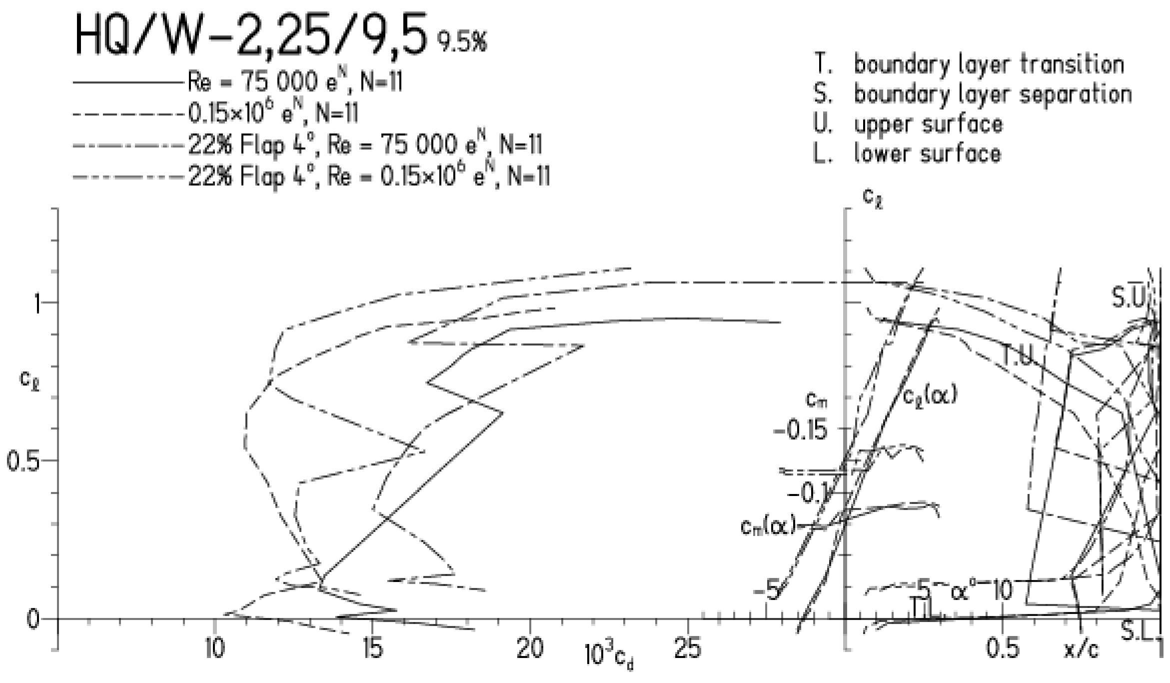


<u>HQ/W-2,25/9,5</u>, N=11 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

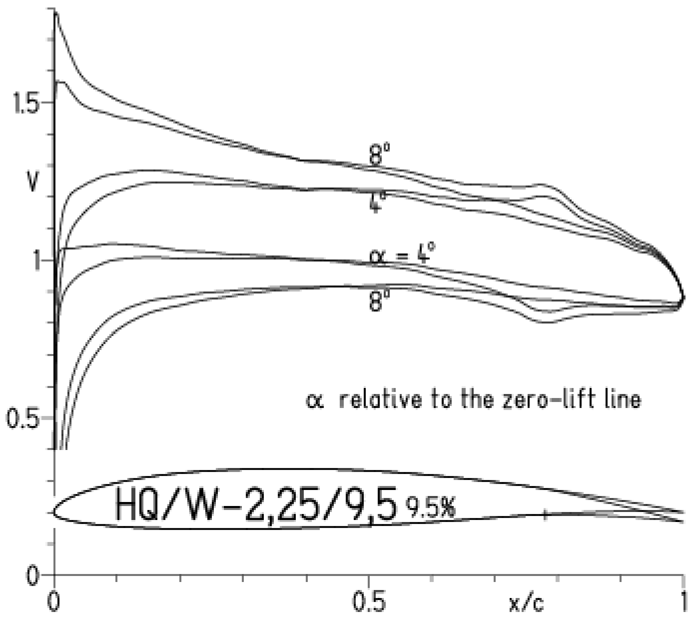


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:07

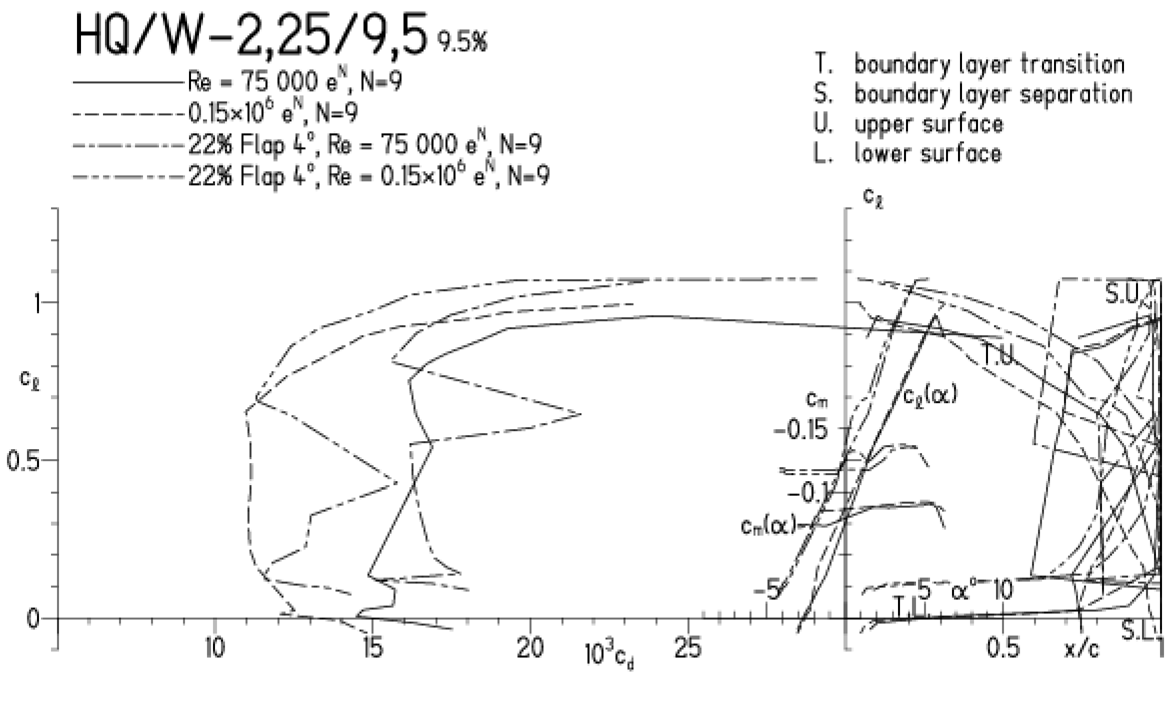


<u>HQ/W-2,25/9,5</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:12

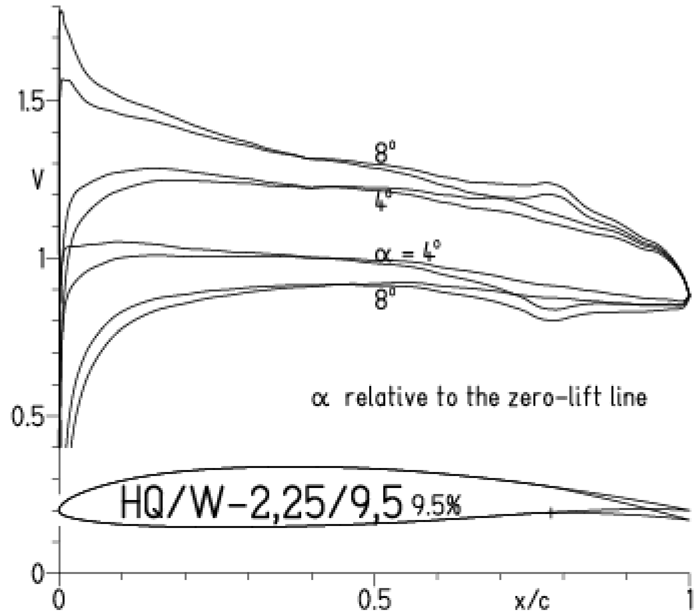


EPPLER 2005 V. 8.5.07 R

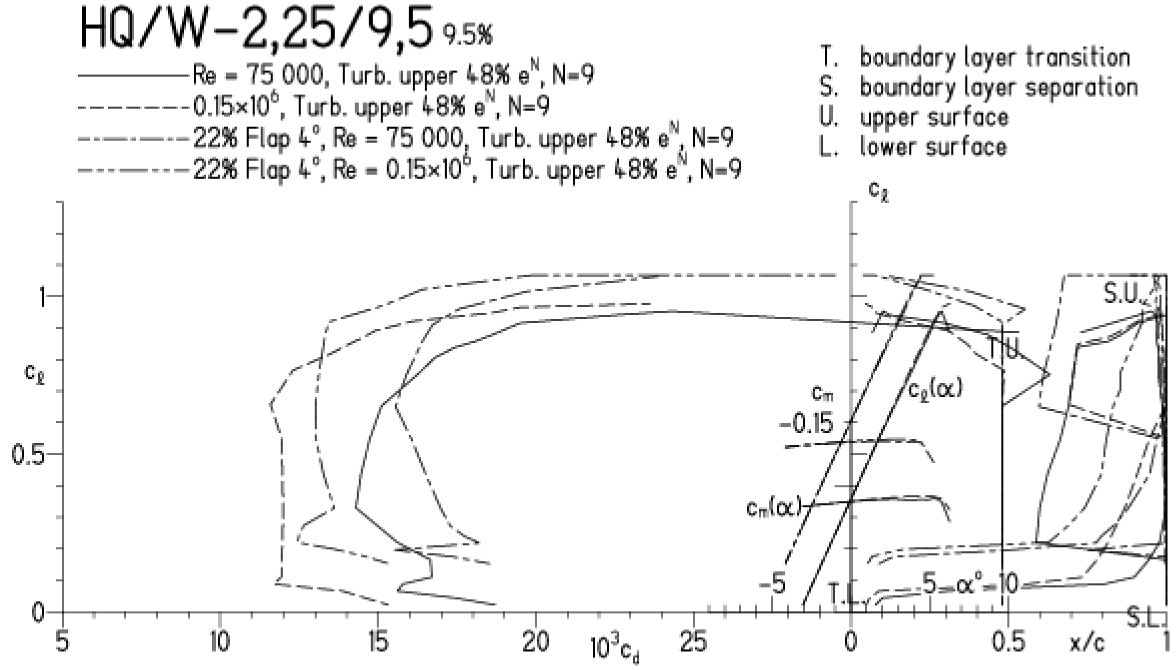


HQ/W-2,25/9,5, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt
(Verbesserungen für niedrige Geschwindigkeiten und Profiltiefen an Flügelenden)

EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

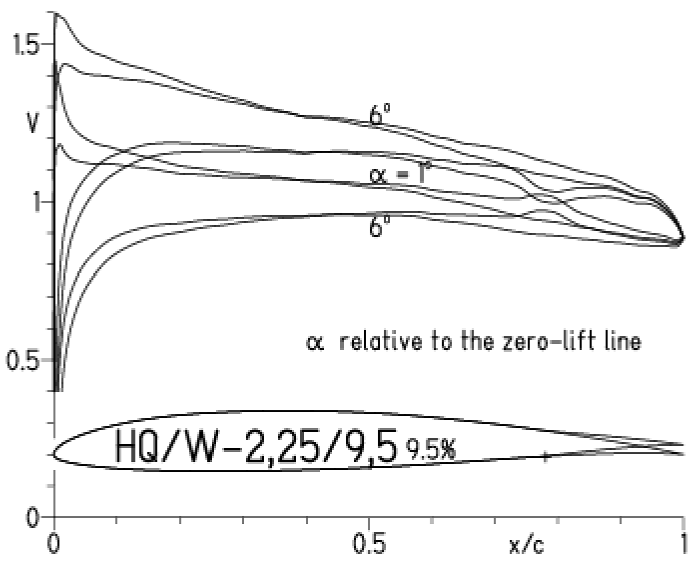


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:14

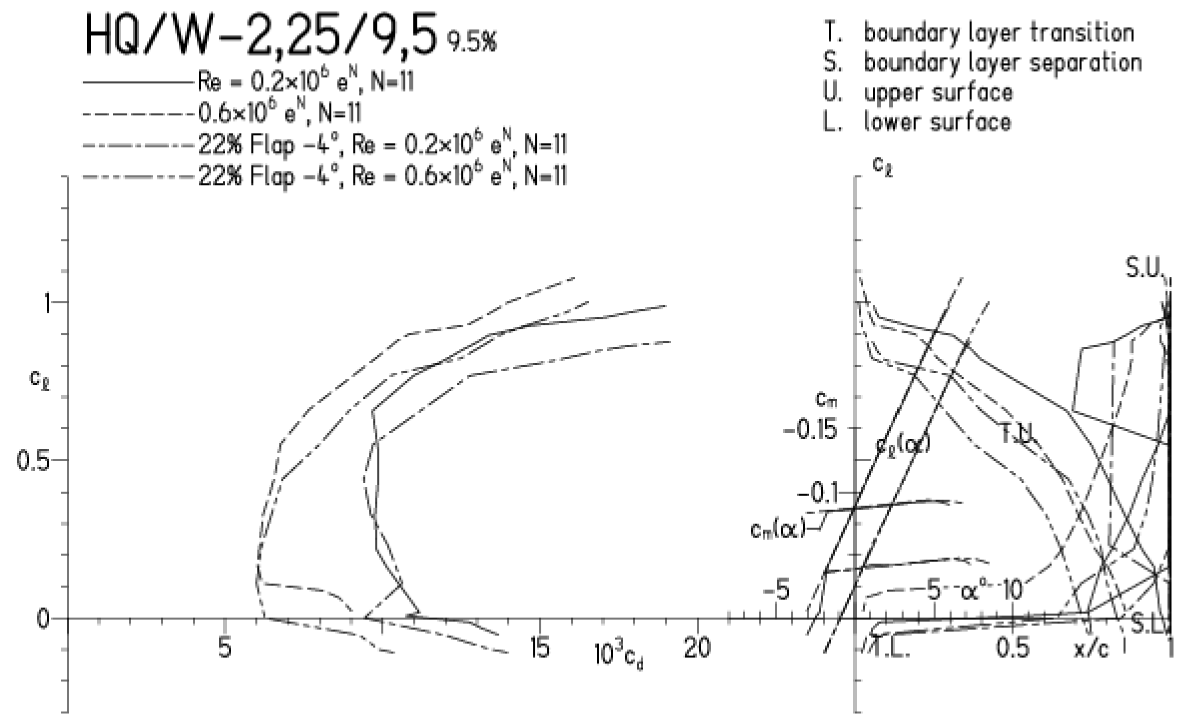


HQ/W-2,25/9,5, N=11 mit -4° Wölbklappenausschlag

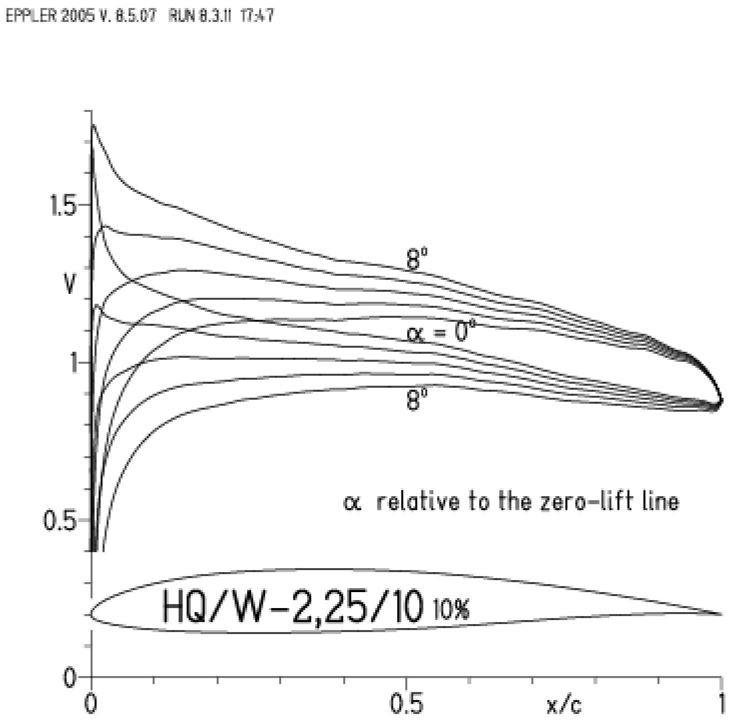
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:31

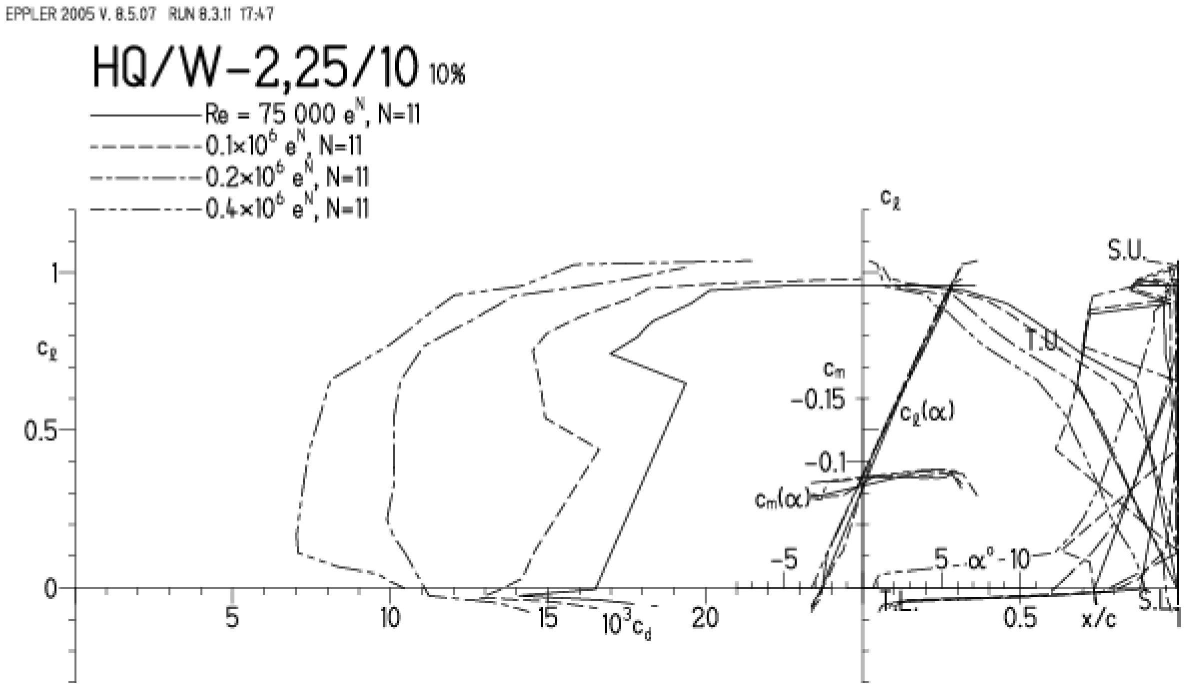


EPPLER 2005 V.



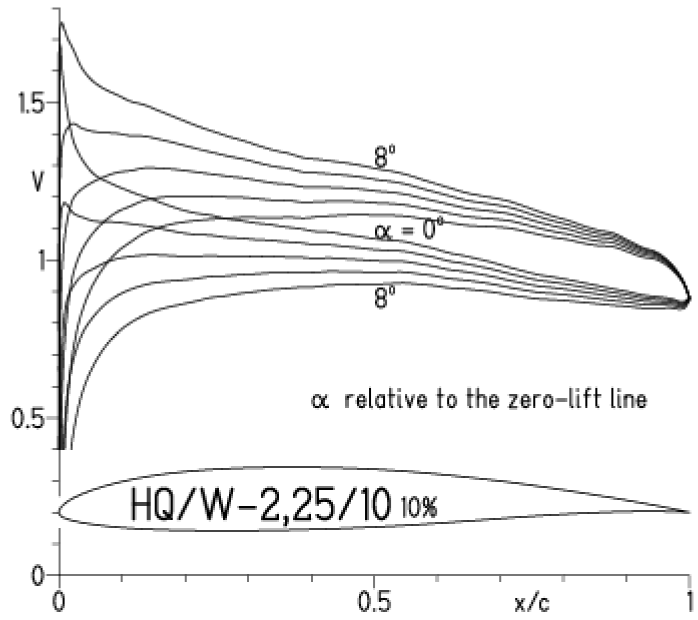
HQ/W-2,25/10, N=11



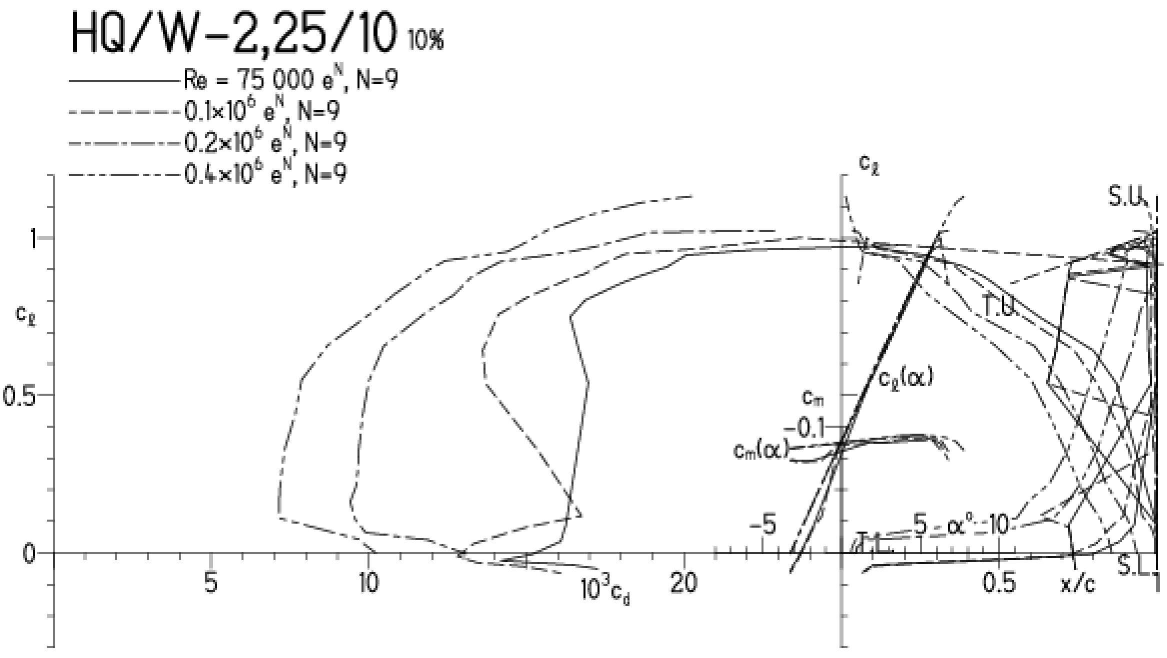


HQ/W-2,25/10, N=9

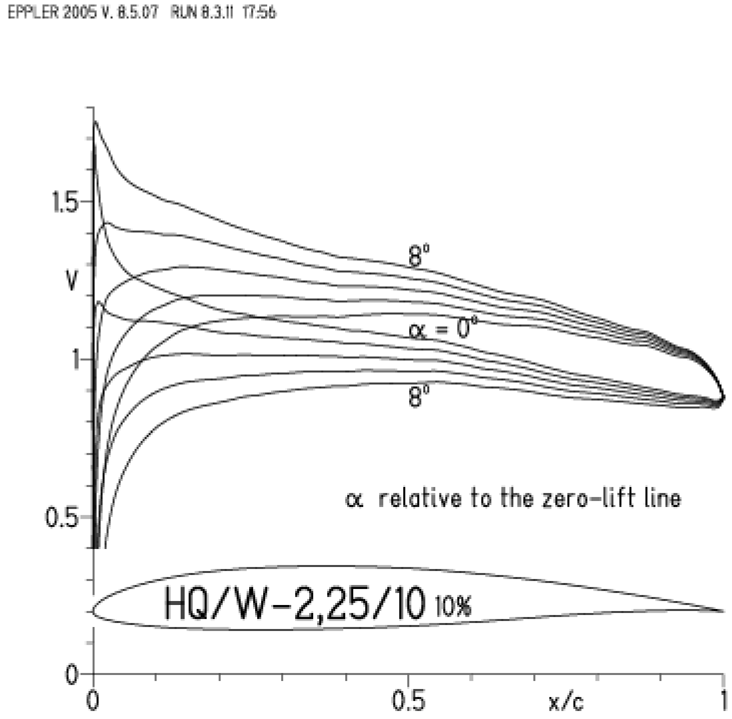
EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53

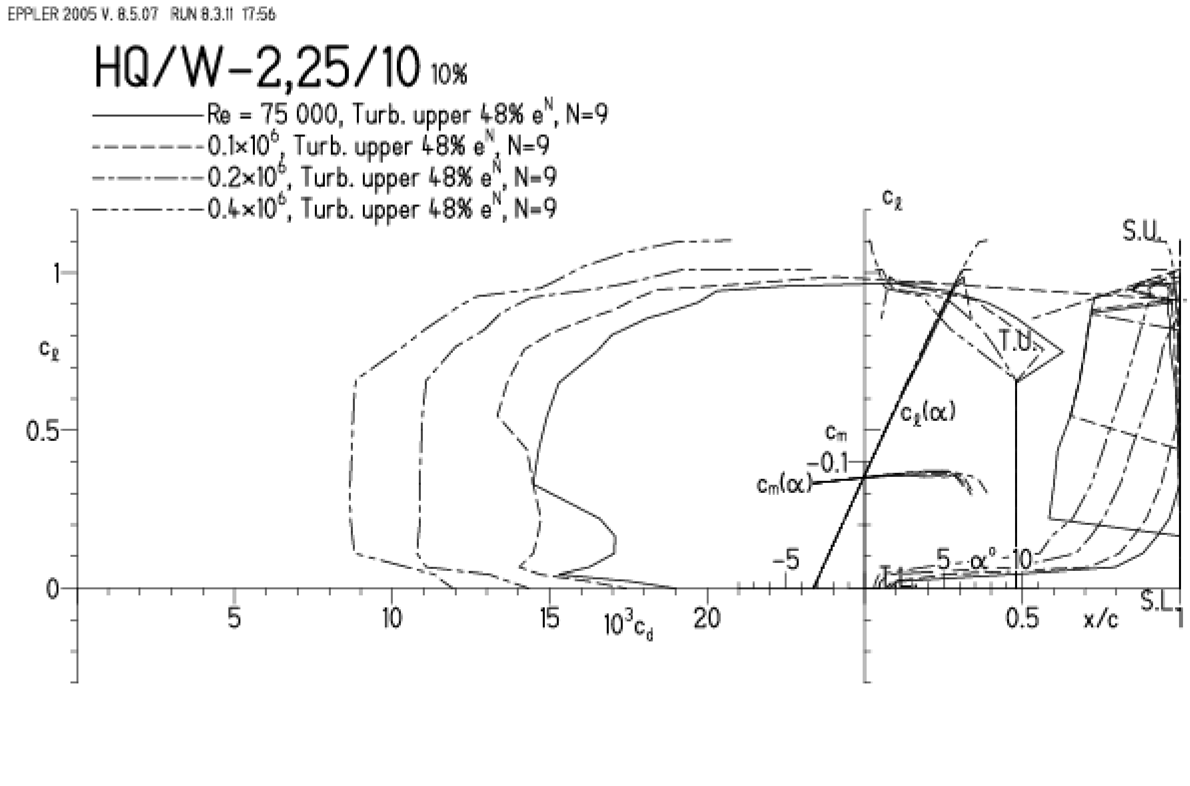


EPPLER 2005 V. 8.5.07 RUN 8.3.11 17:53



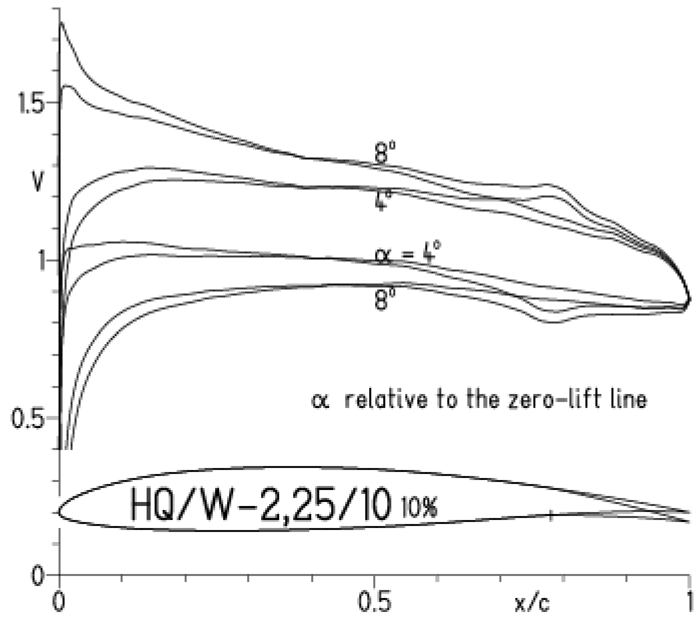
HQ/W-2,25/10, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



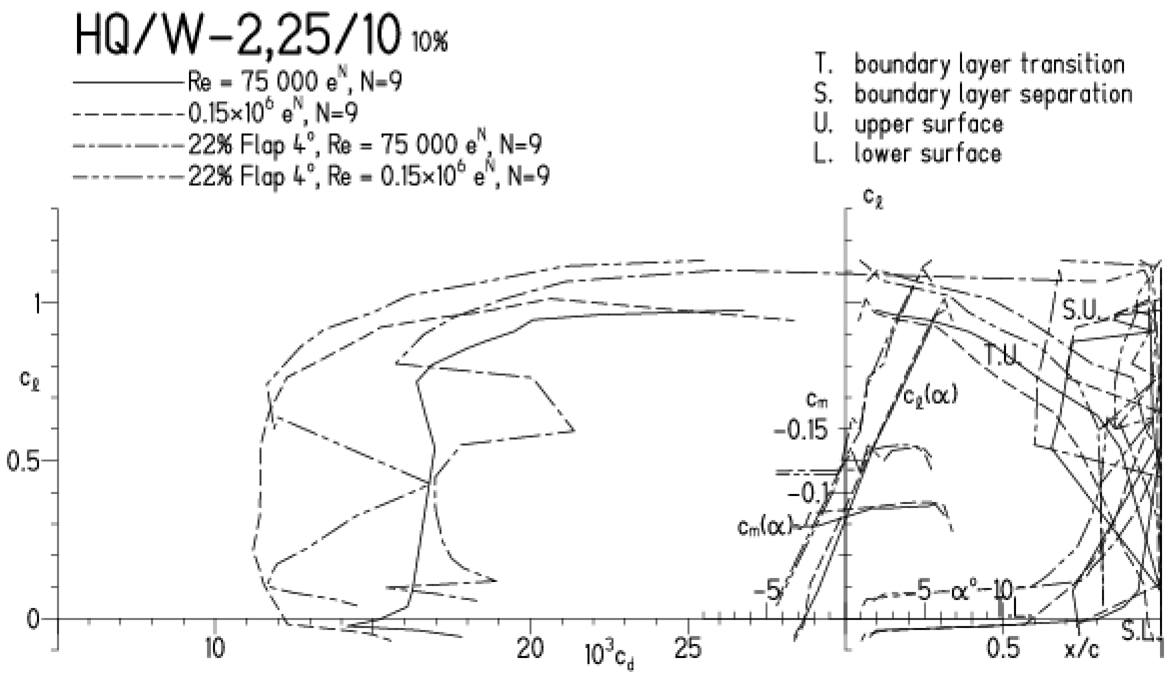


HQ/W-2,25/10, N=9 mit +4° Wölbklappenausschlag

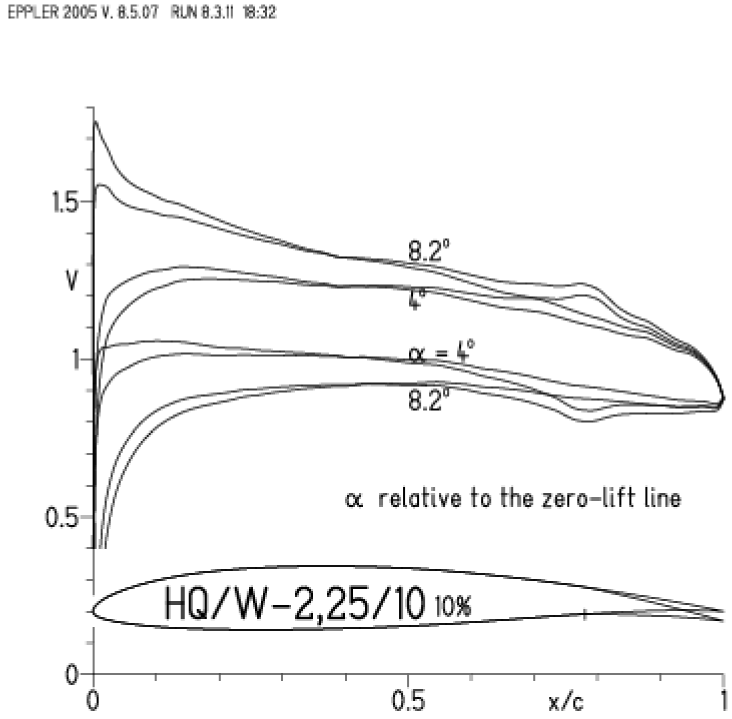
EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16

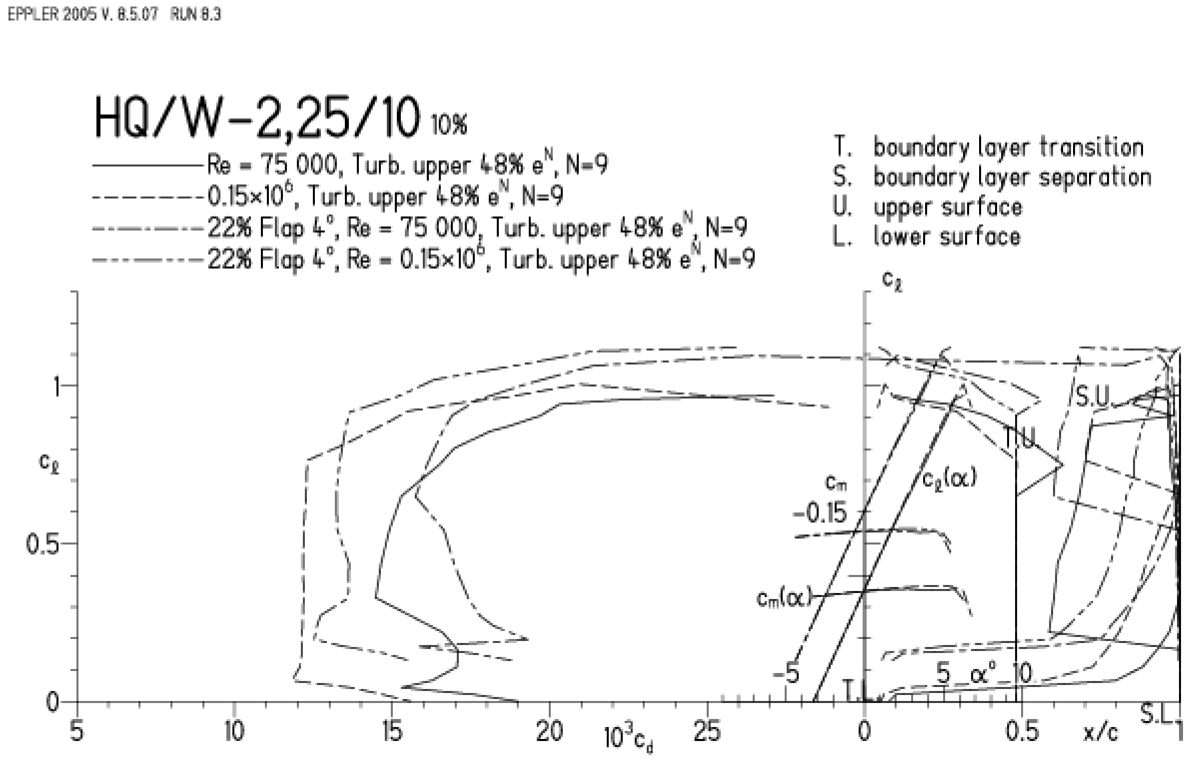


EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:16



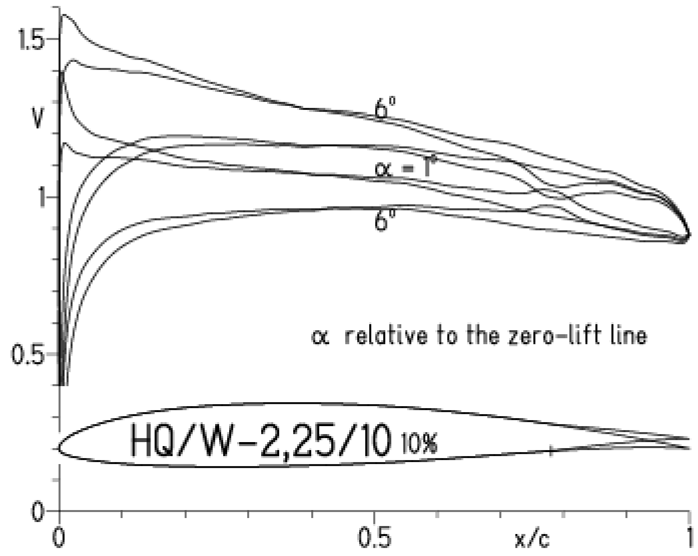
<u>HQ/W-2,25/10</u>, N=9 mit +4° Wölbklappenausschlag, Turbulatoreffekt



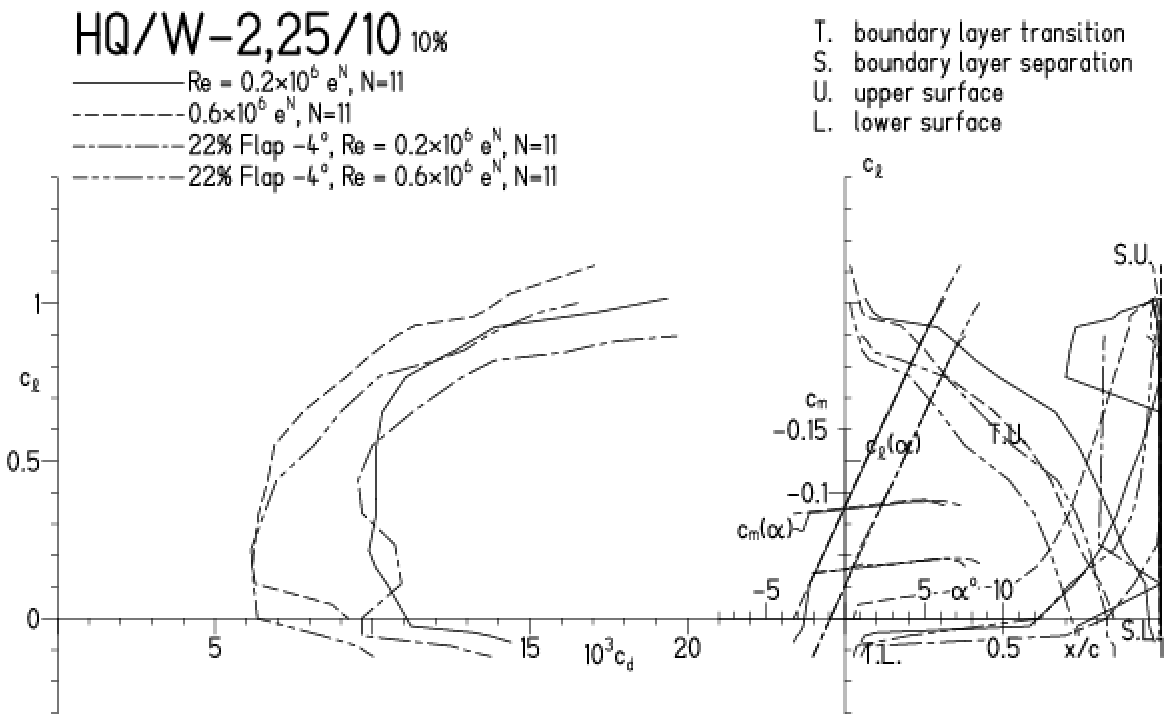


<u>HQ/W-2,25/10</u>, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 8.3.11 18:23

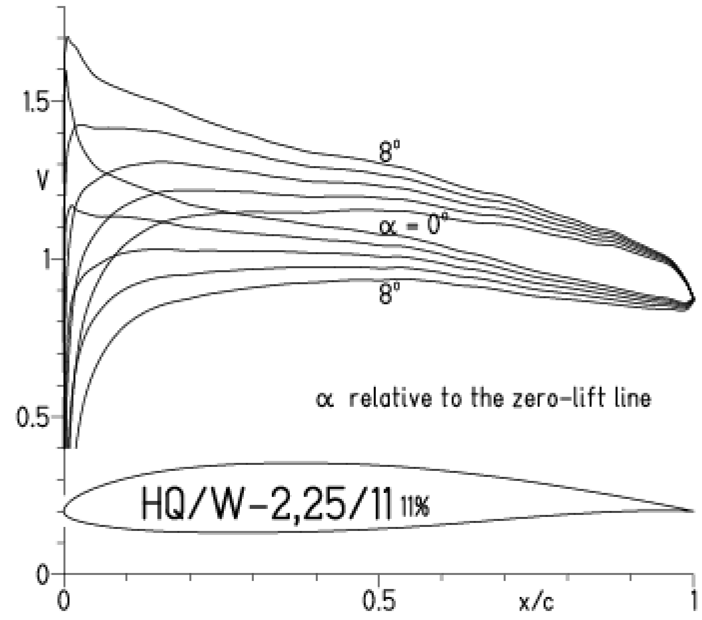


EPPLER 2005 V. 8.5.07 RUN

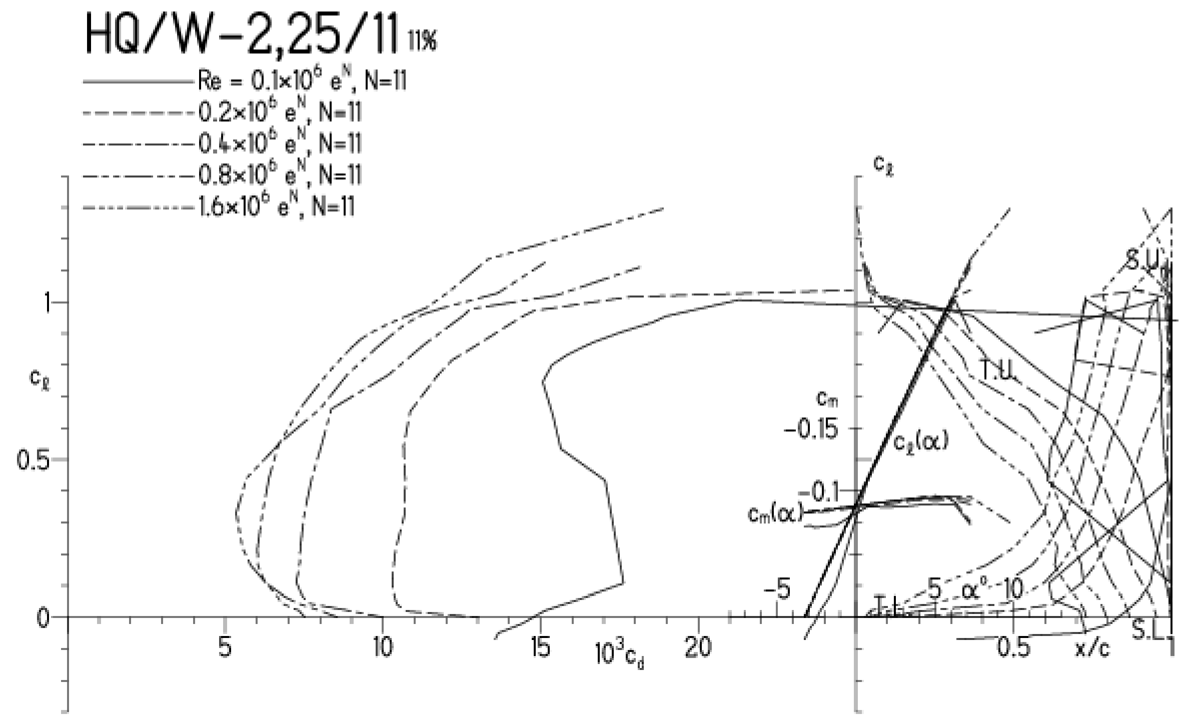


HQ/W-2,25/11, N=11

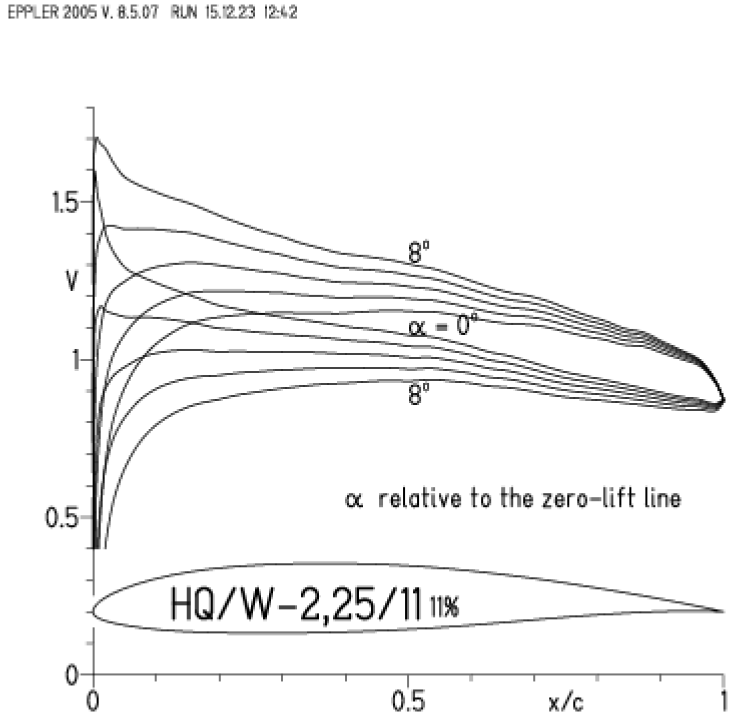
EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:32

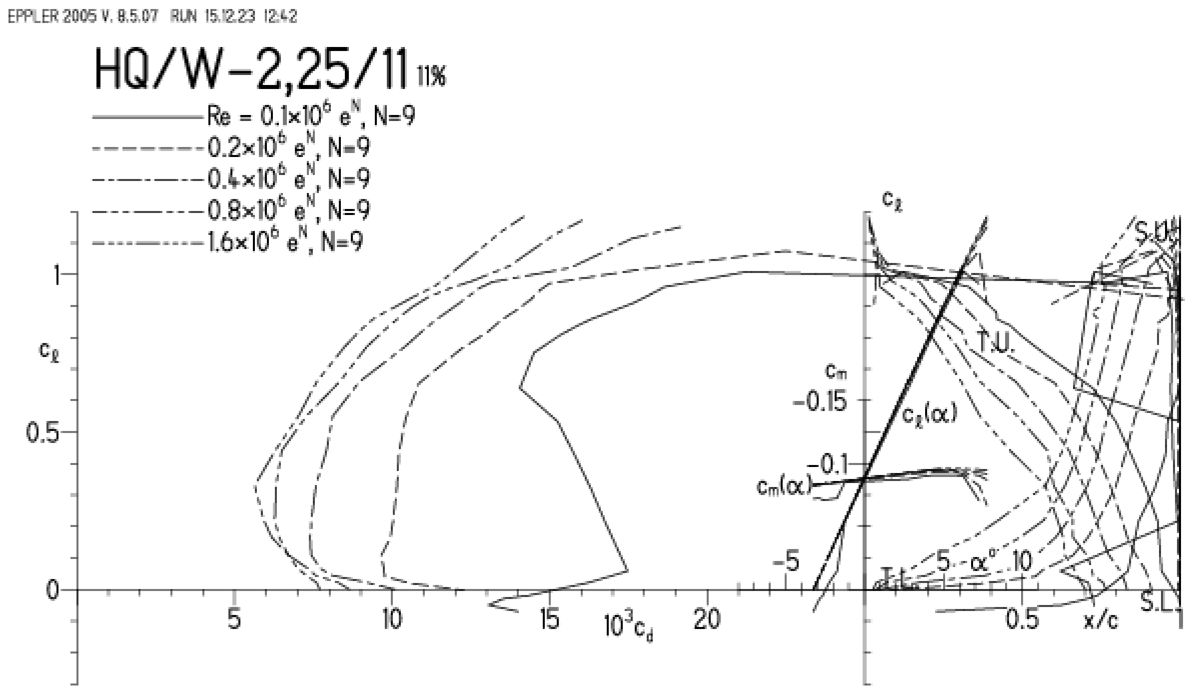


EPPLER 2005 V. 8.5.07 RUN 15.12.23 12:

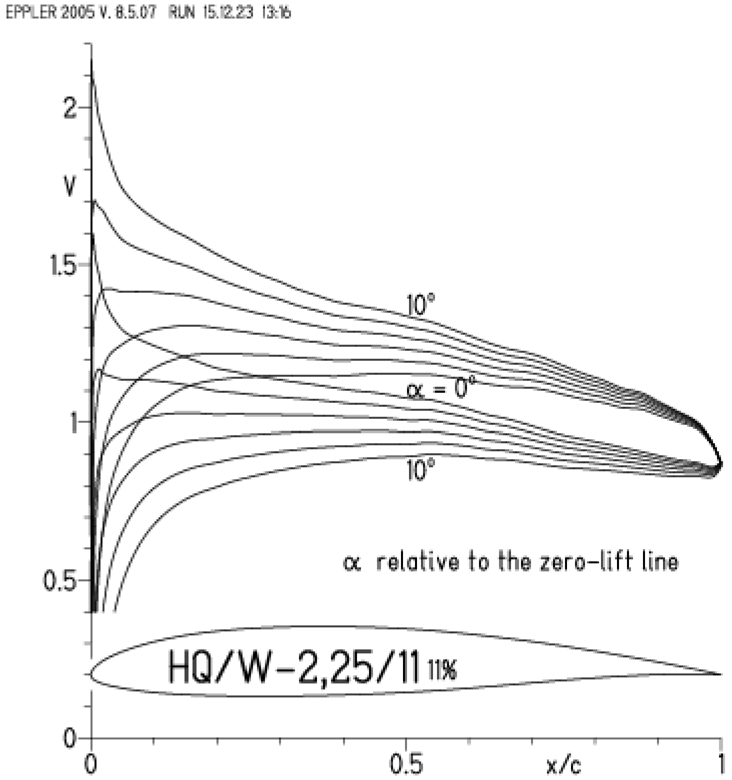


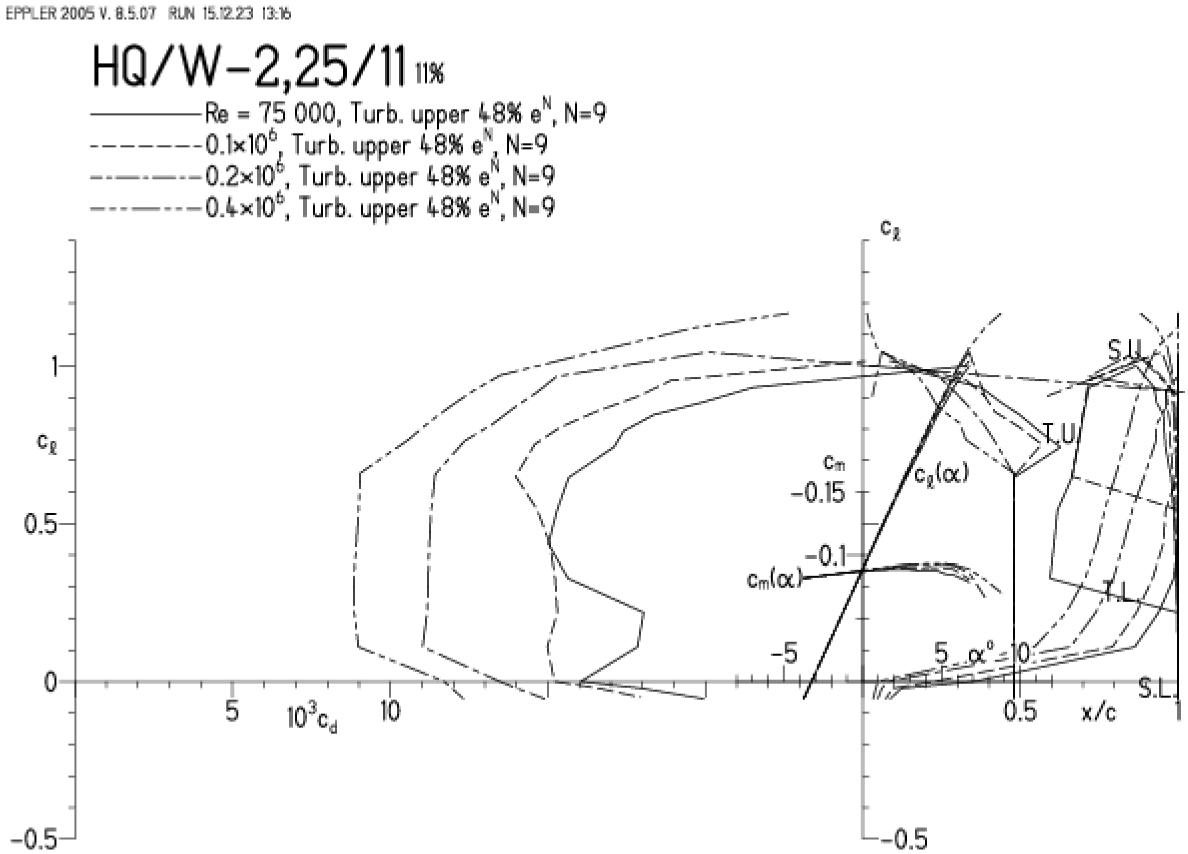
HQQ/W-2,25/11, N=9





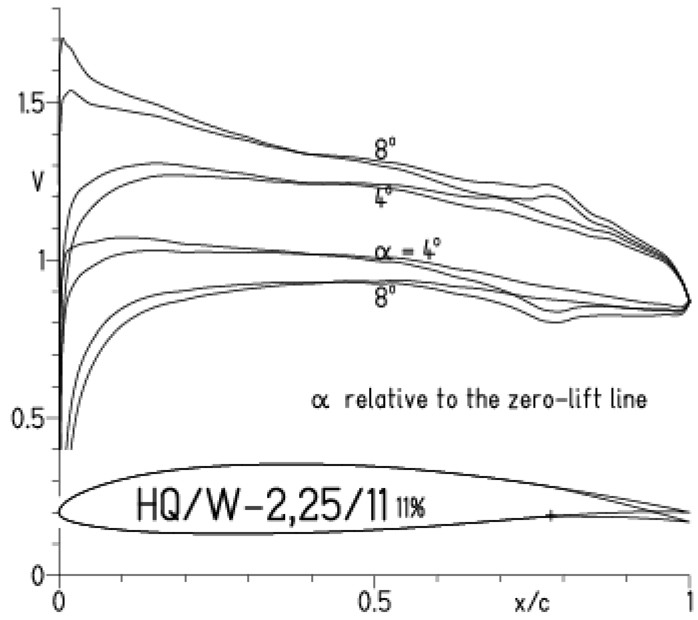
<u>HQ/W-2,25/11</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



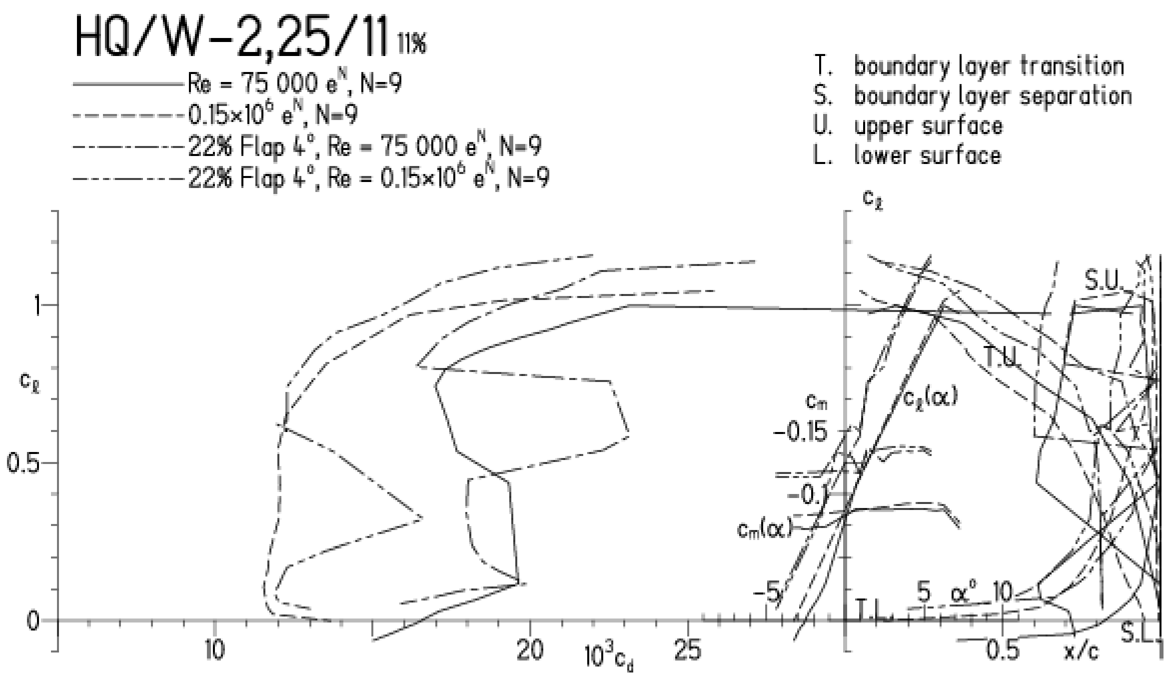


HQW-2,25/11, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

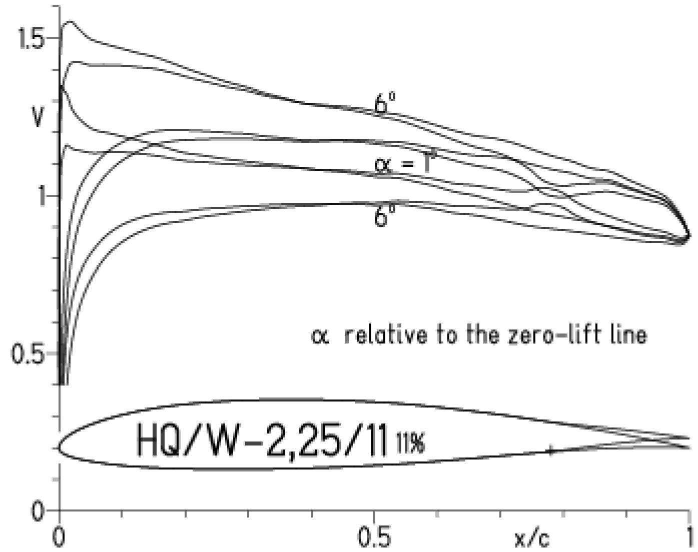


EPPLER 2005 V. 8.5.07 RUN 14.12.23 17:17

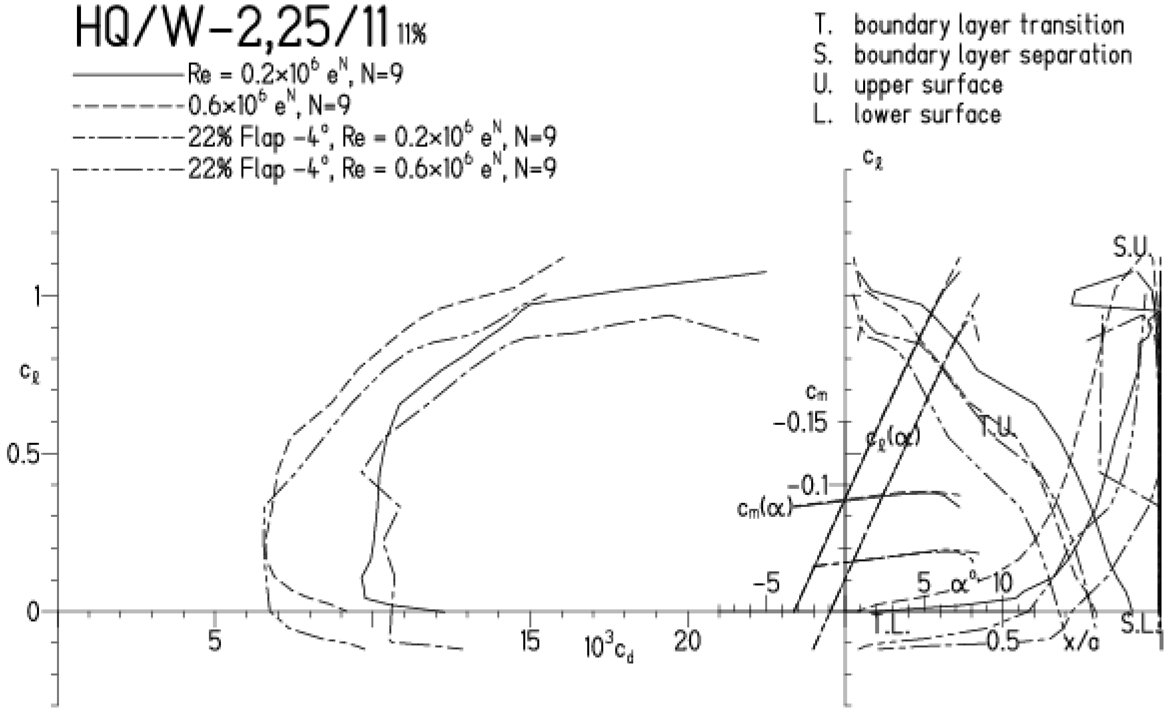


HQ/W-2,25/10, N=9 mit -4° Wölbklappenausschlag

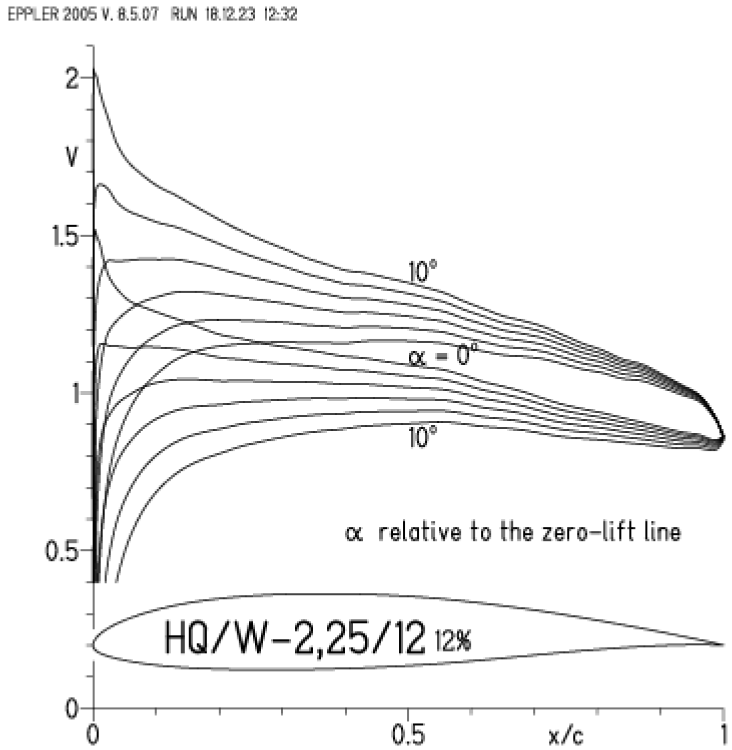
EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

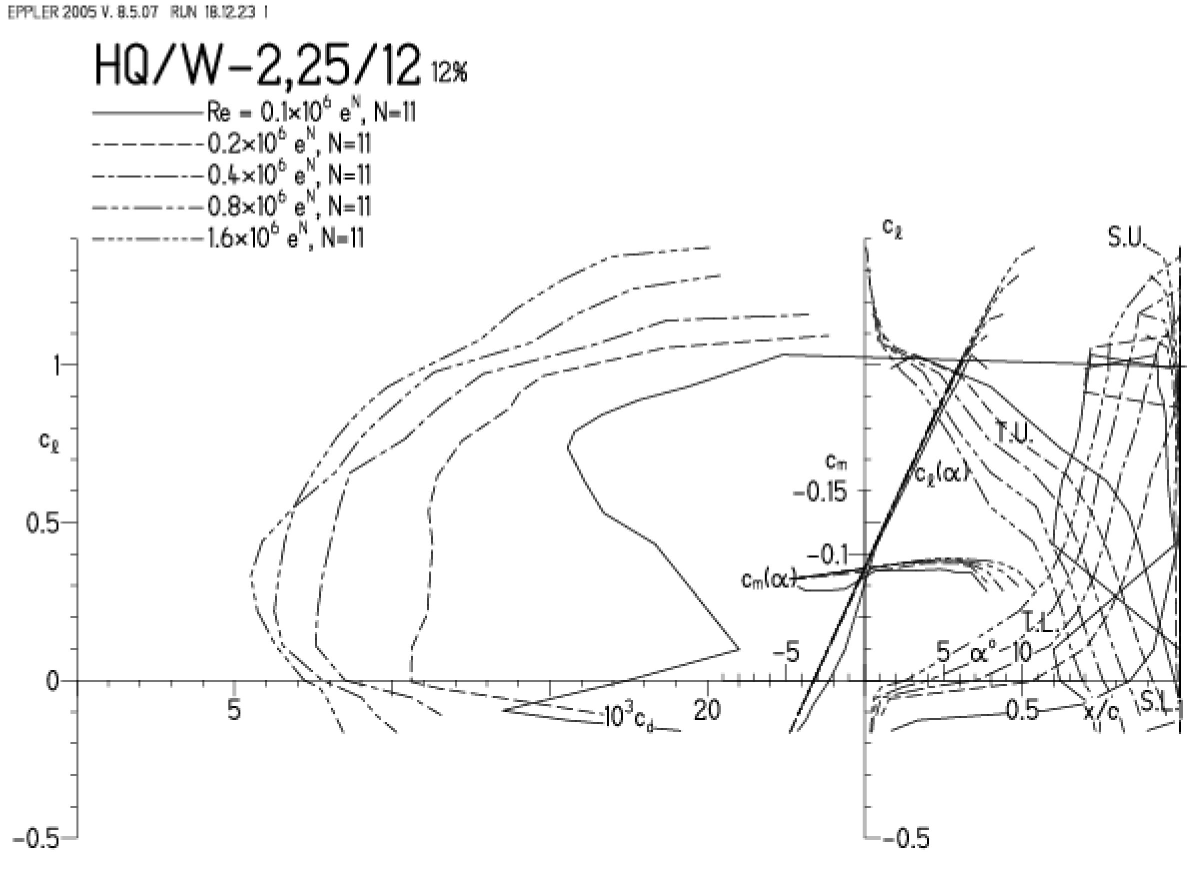


EPPLER 2005 V. 8.5.07 RUN 14.12.23 16:52

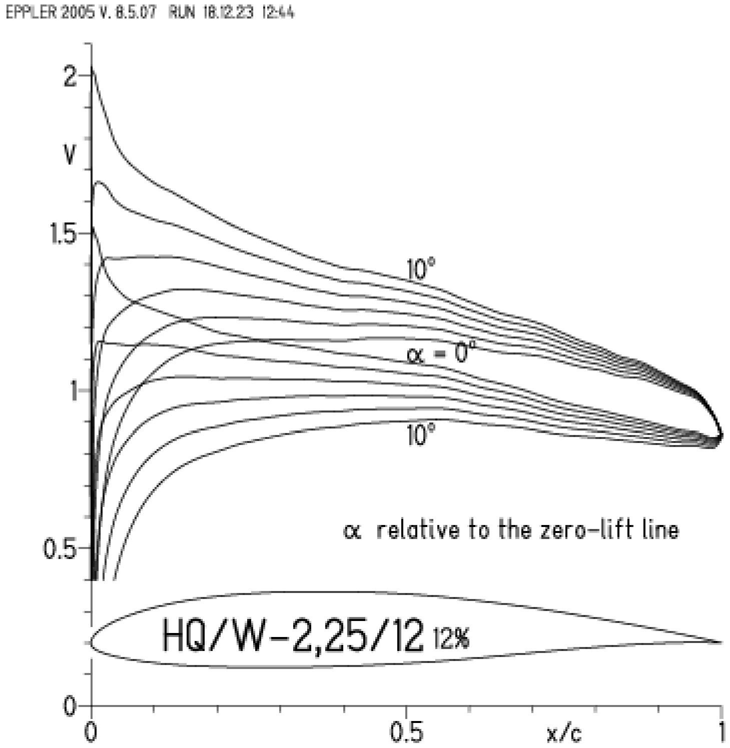


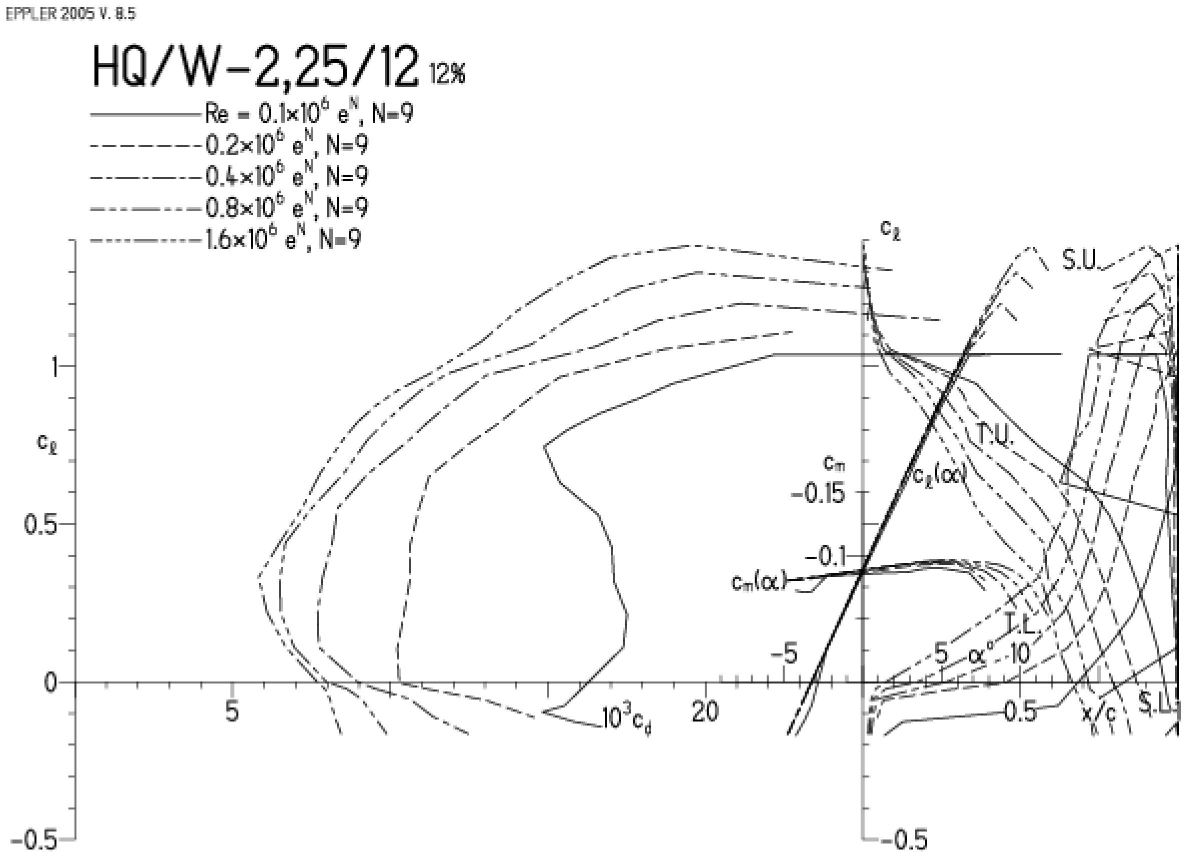
HQ/W-2,25/12, N=11



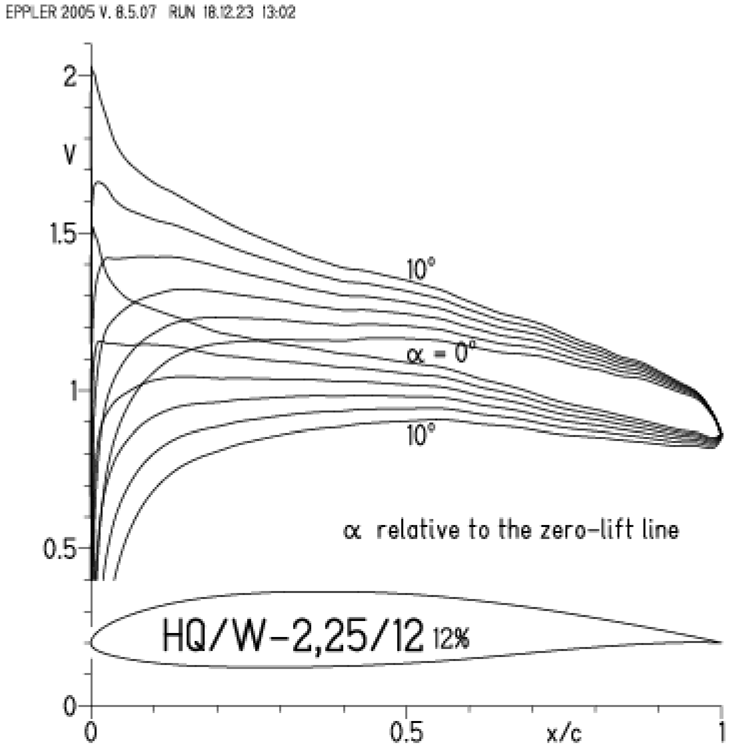


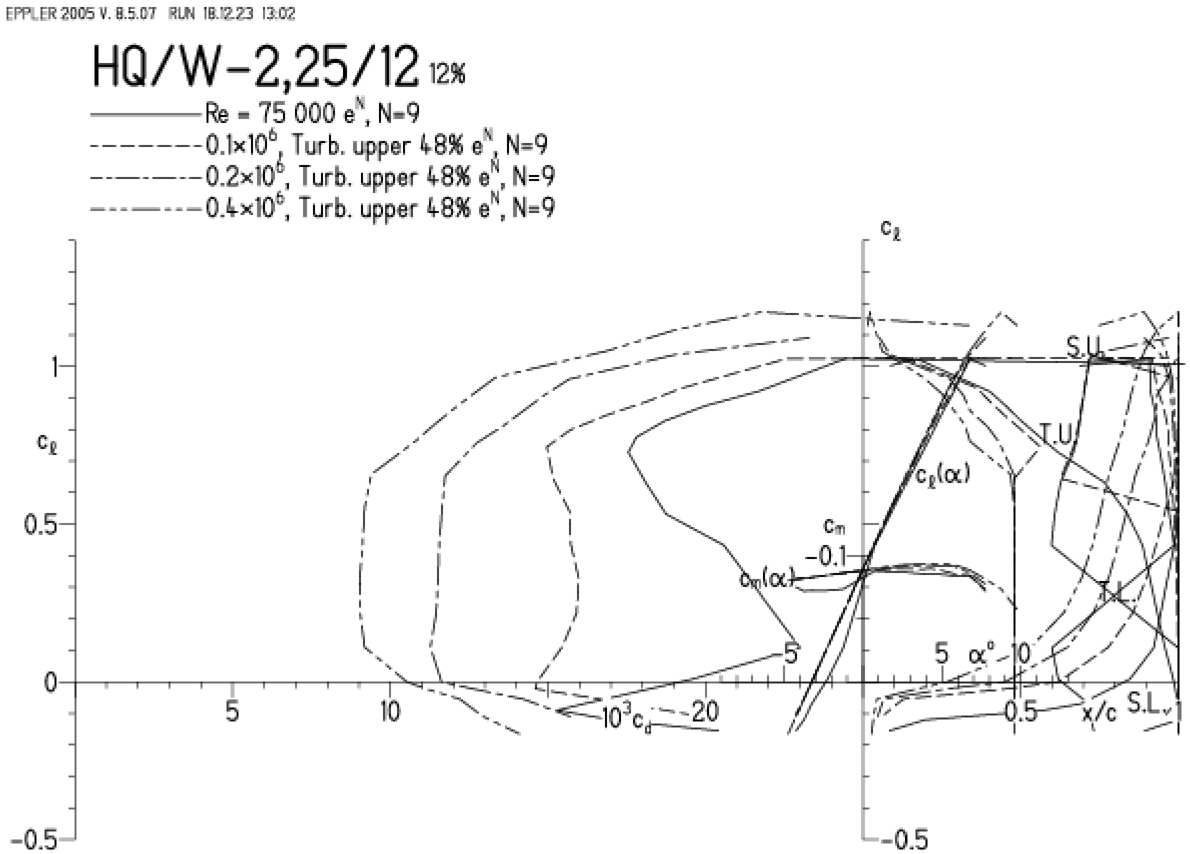
HQ/W-2,25/12, N=9


EPPLER 2005 V. 8.5.07 RUN 18.12.23 12:44
V
10°
α = 0°
10°
α relative to the zero-lift line
HQ/W-2,25/12 12%
x/c


EPPLER 2005 V. 8.5
HQ/W-2,25/12 12%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
c_ℓ
$10^3 c_d$
c_m
c_ℓ(α)
c_m(α)
α°
S.U.
T.U.
T.L.
S.L.
x/c

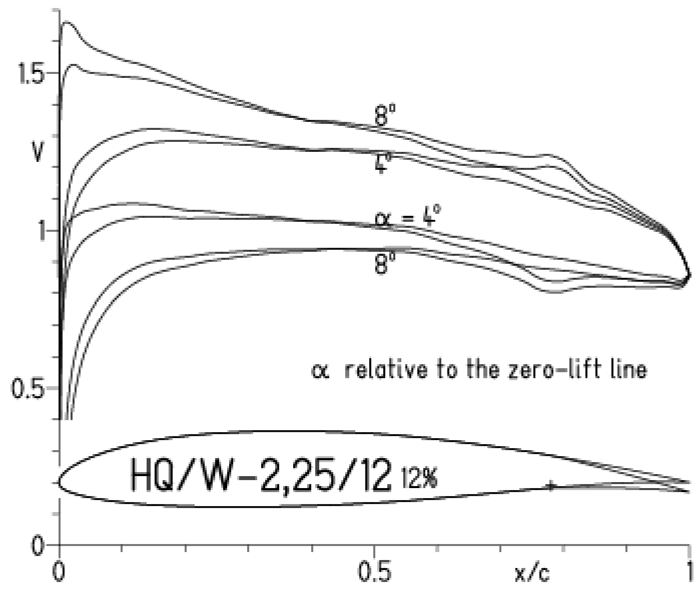
<u>HQ/W-2,25/12</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



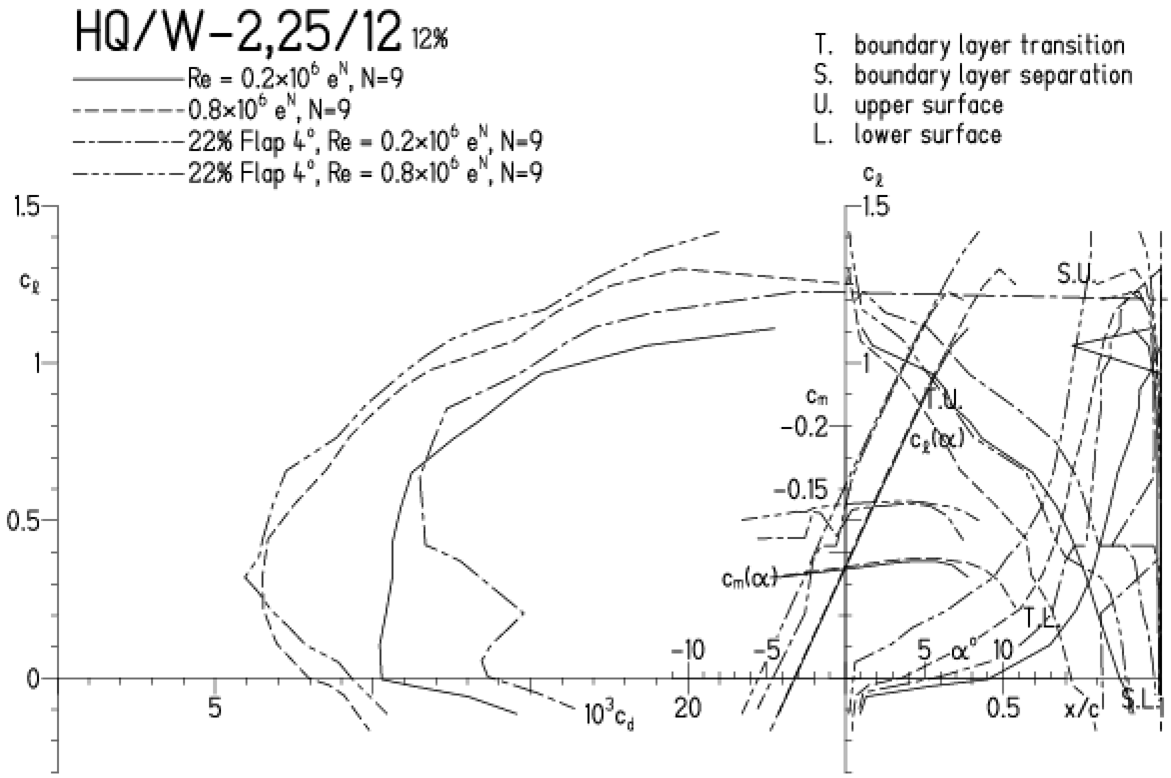


<u>HQW-2,25/12</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

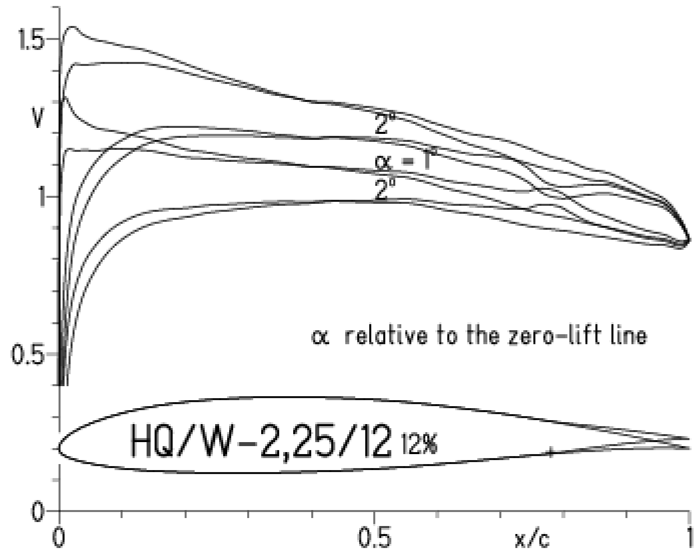


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:47

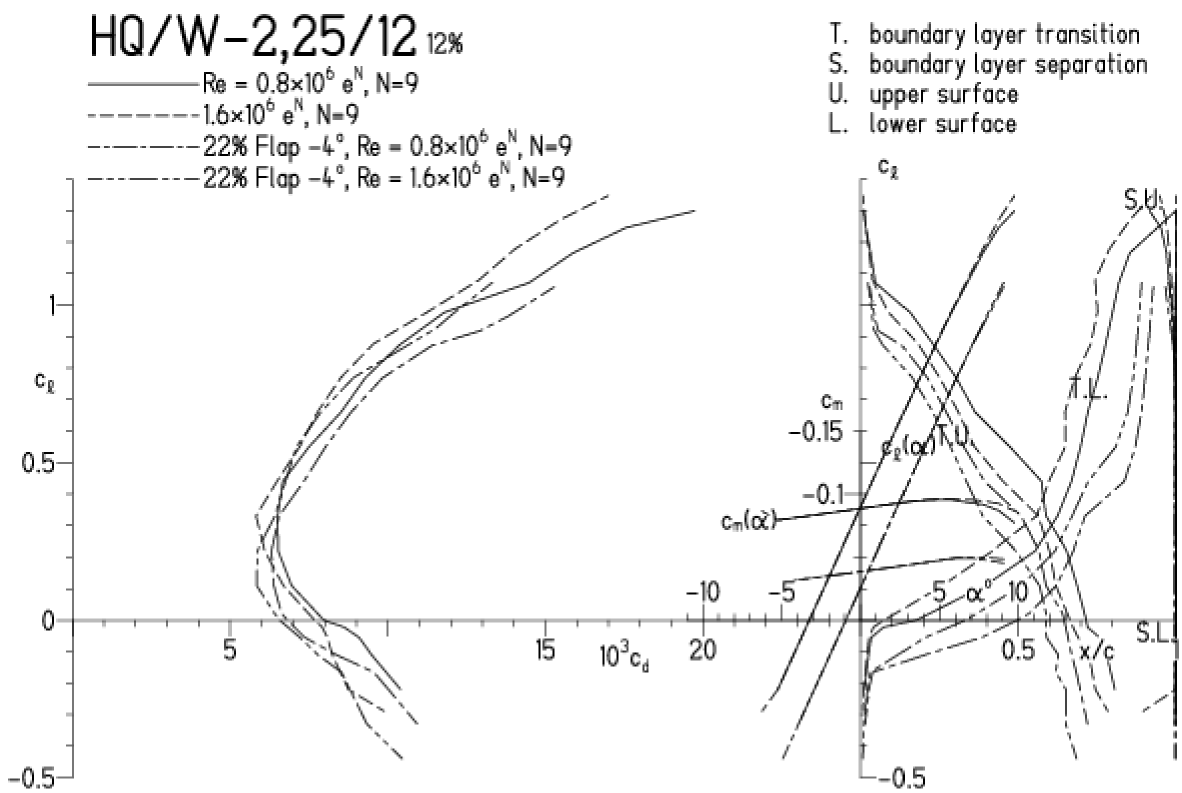


HQW-2,25/12, N=9 mit -4° Wölbklappenausschlag

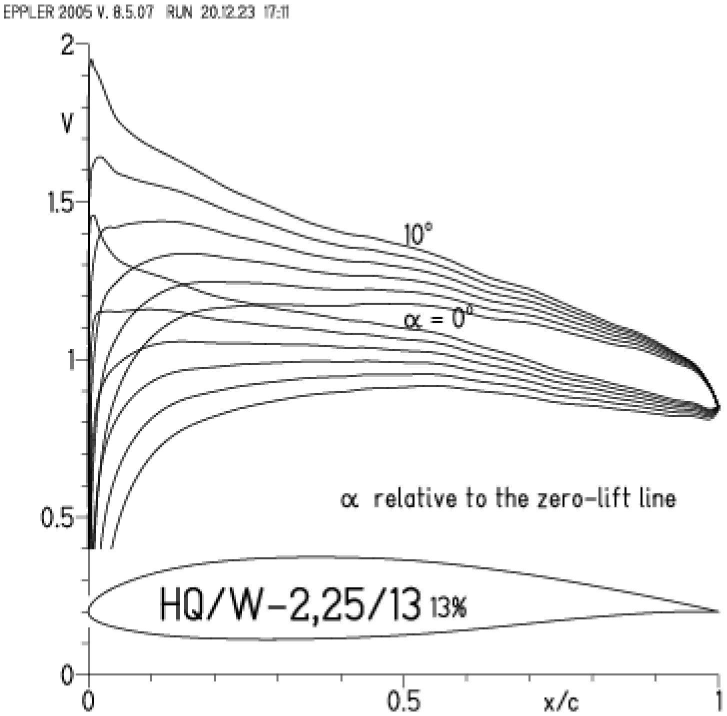
EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

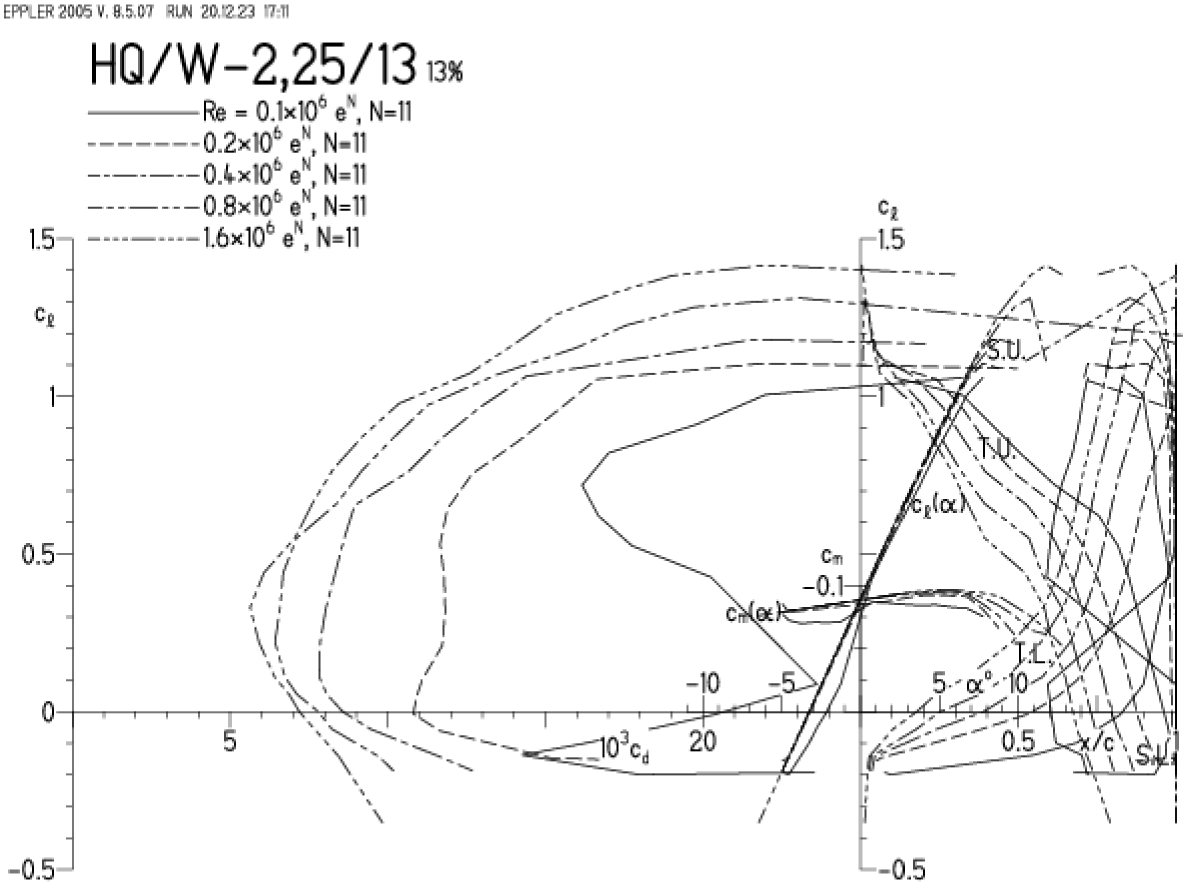


EPPLER 2005 V. 8.5.07 RUN 19.12.23 17:24

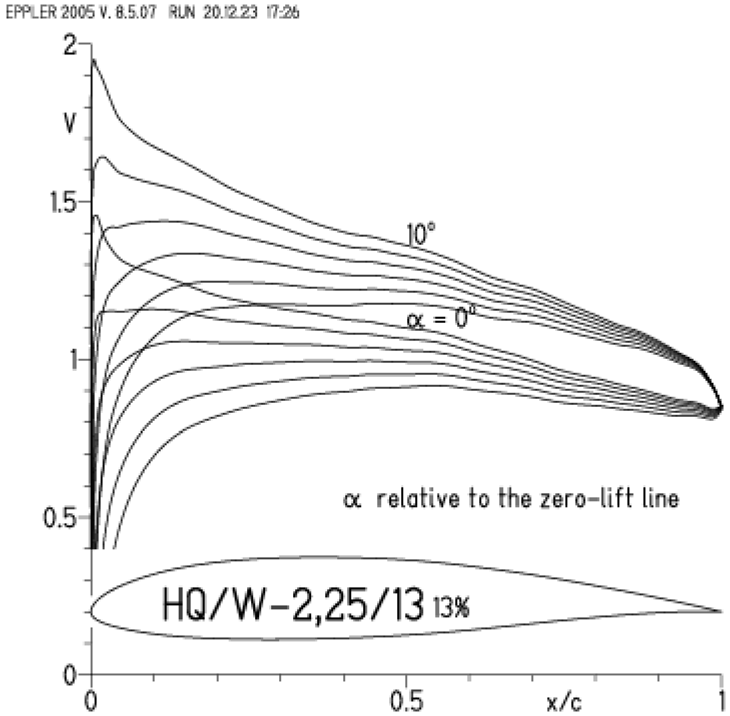


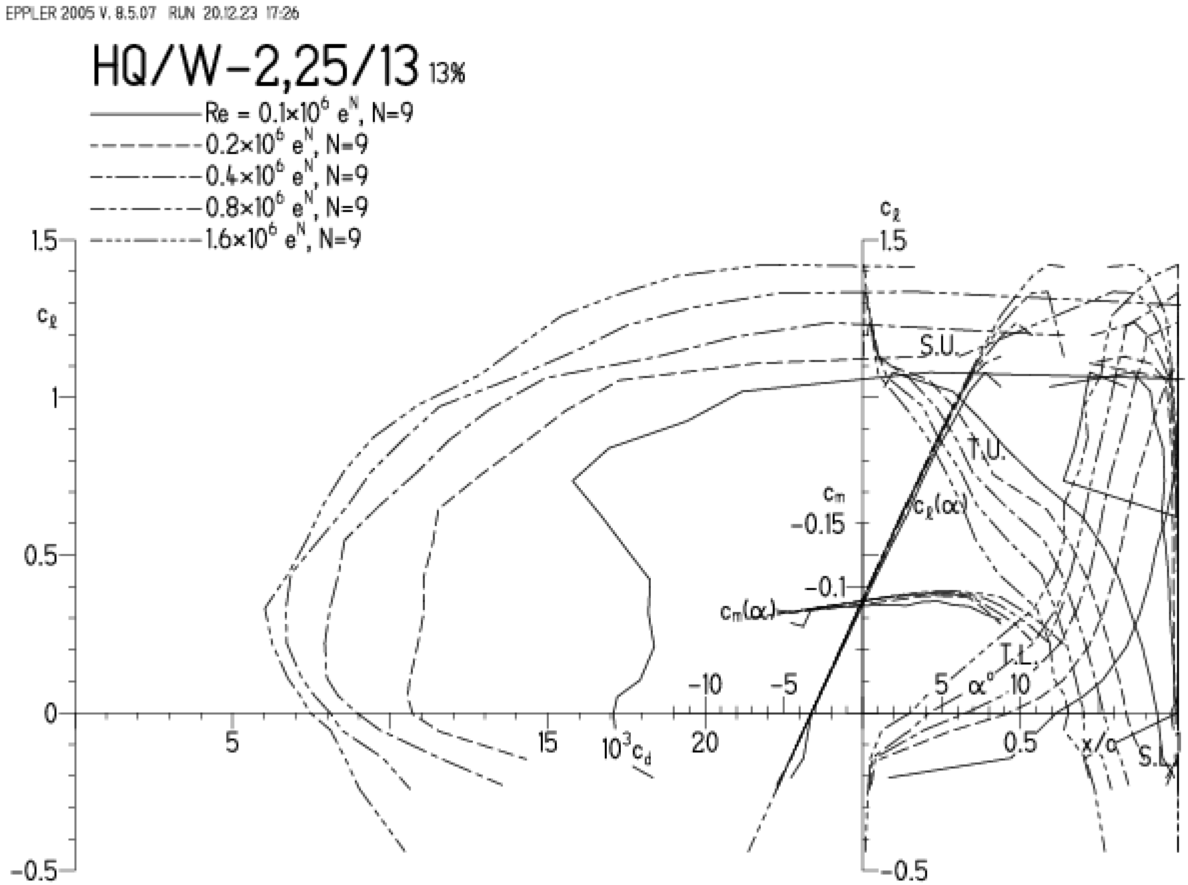
<u>HQ/W-2,25/13</u>, N=11



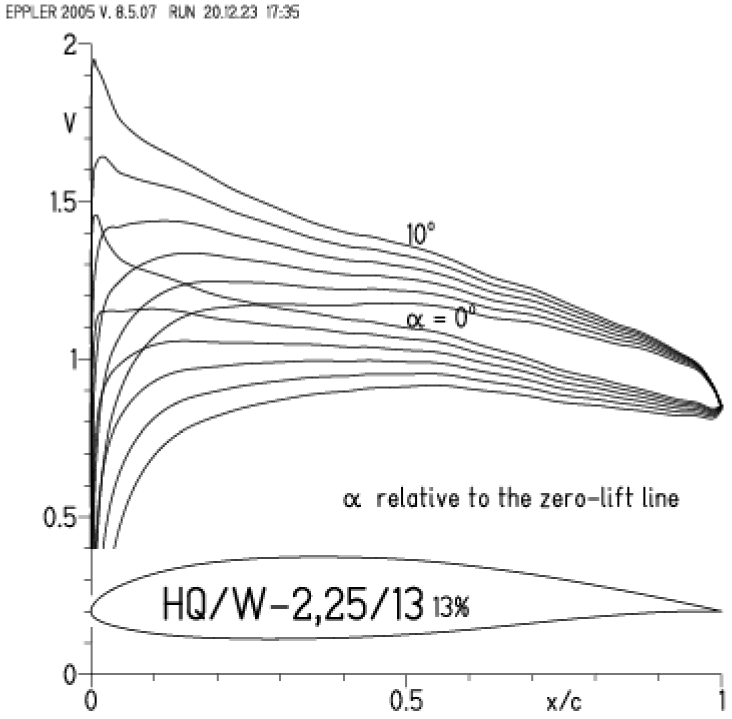


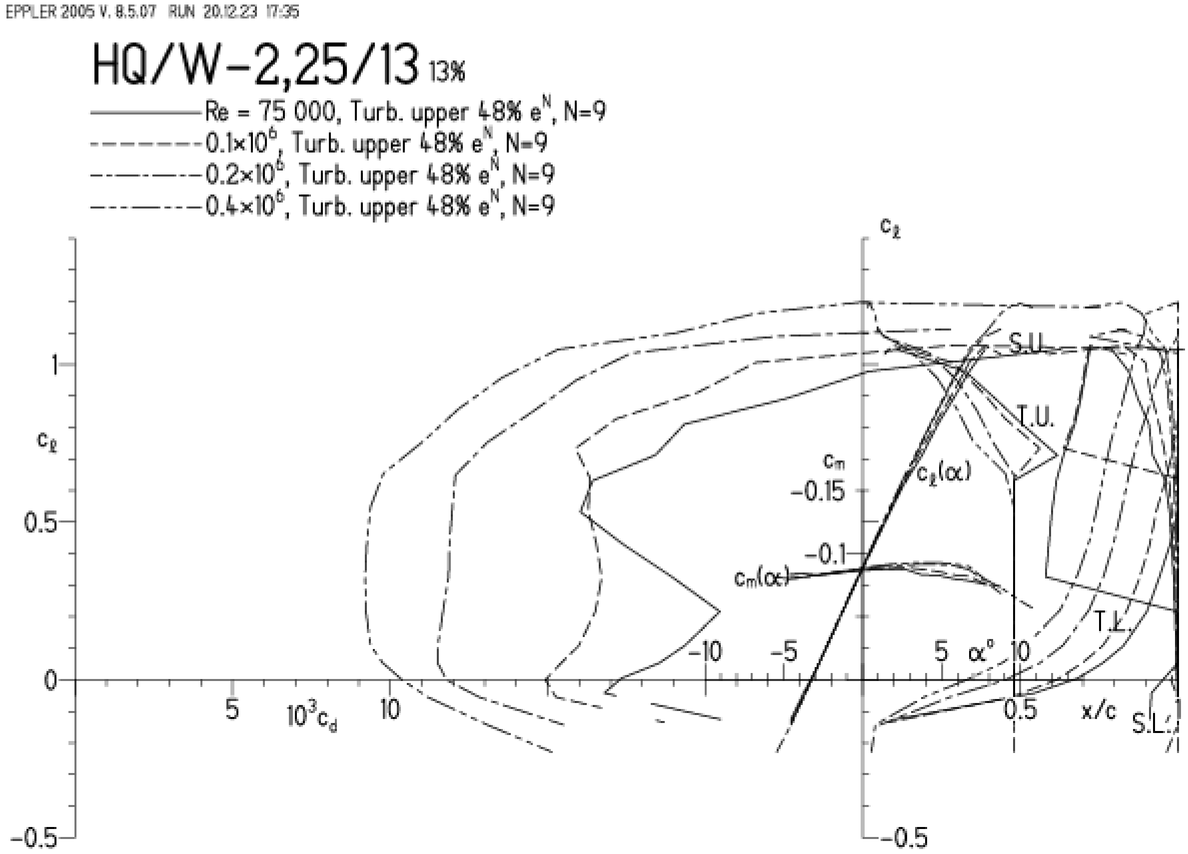
<u>HQ/W-2,25/13</u>, N=9





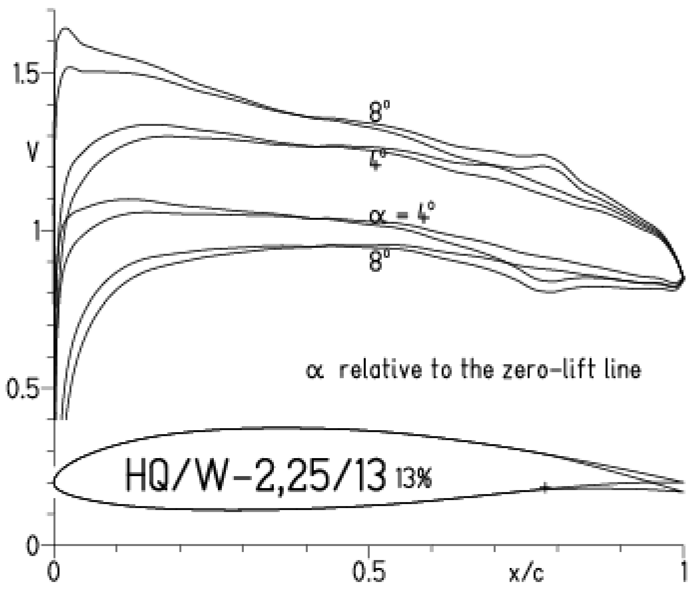
HQ/W-2,25/13, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



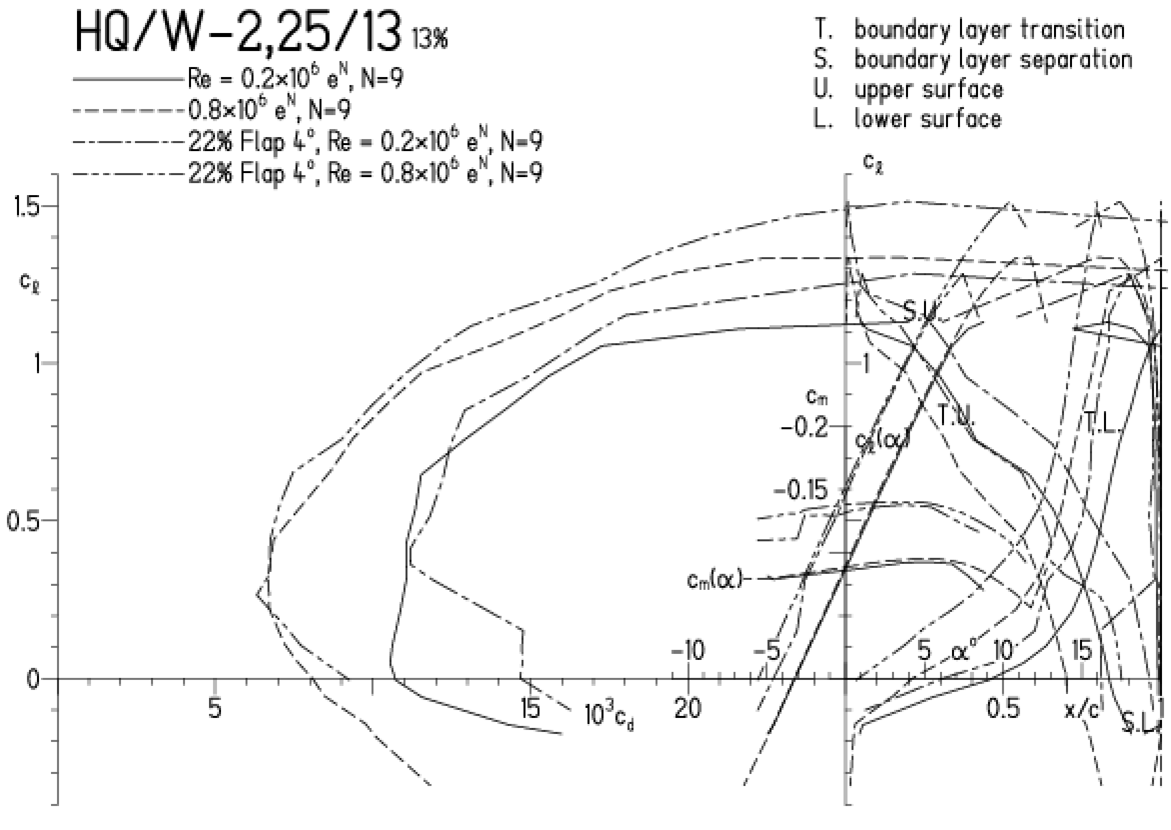


HQW-2,25/13, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:11

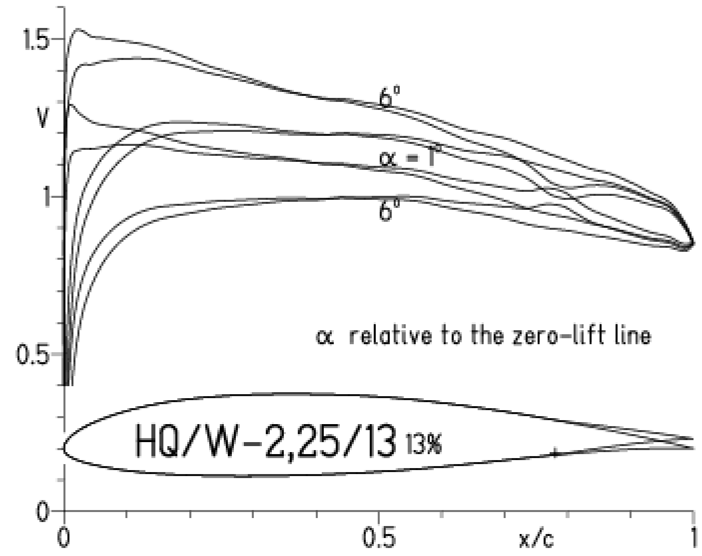


EPPLER 2005 V.

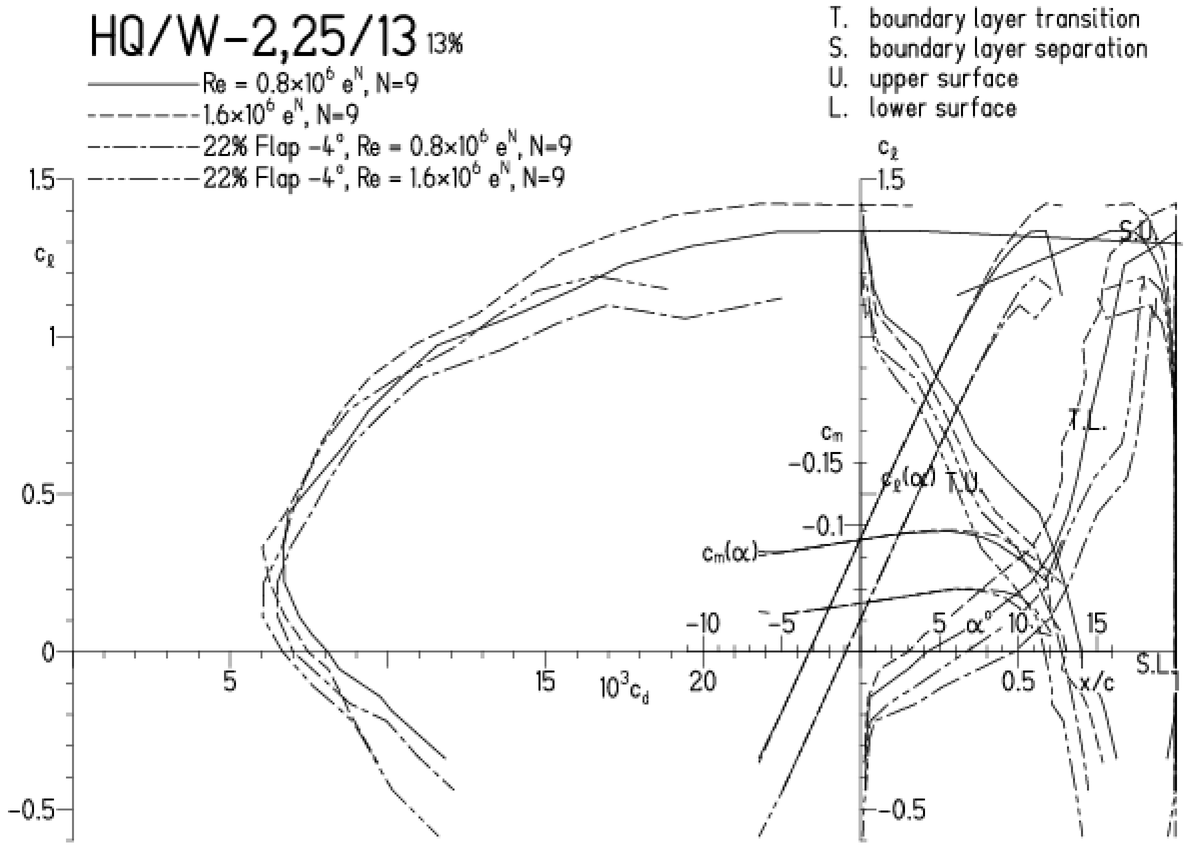


<u>HQW-2,25/13</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:00

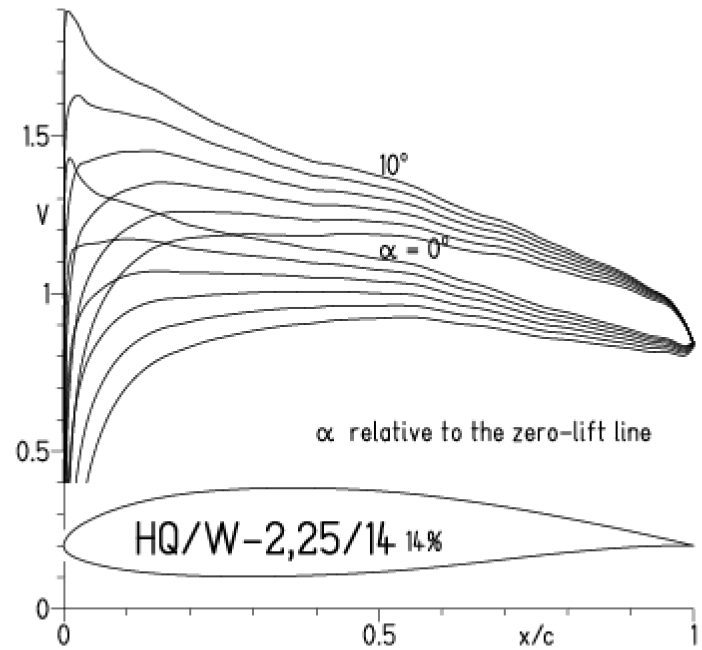


EPPLER 2005 V. 8.5.07 RUN 20.12.23 18:

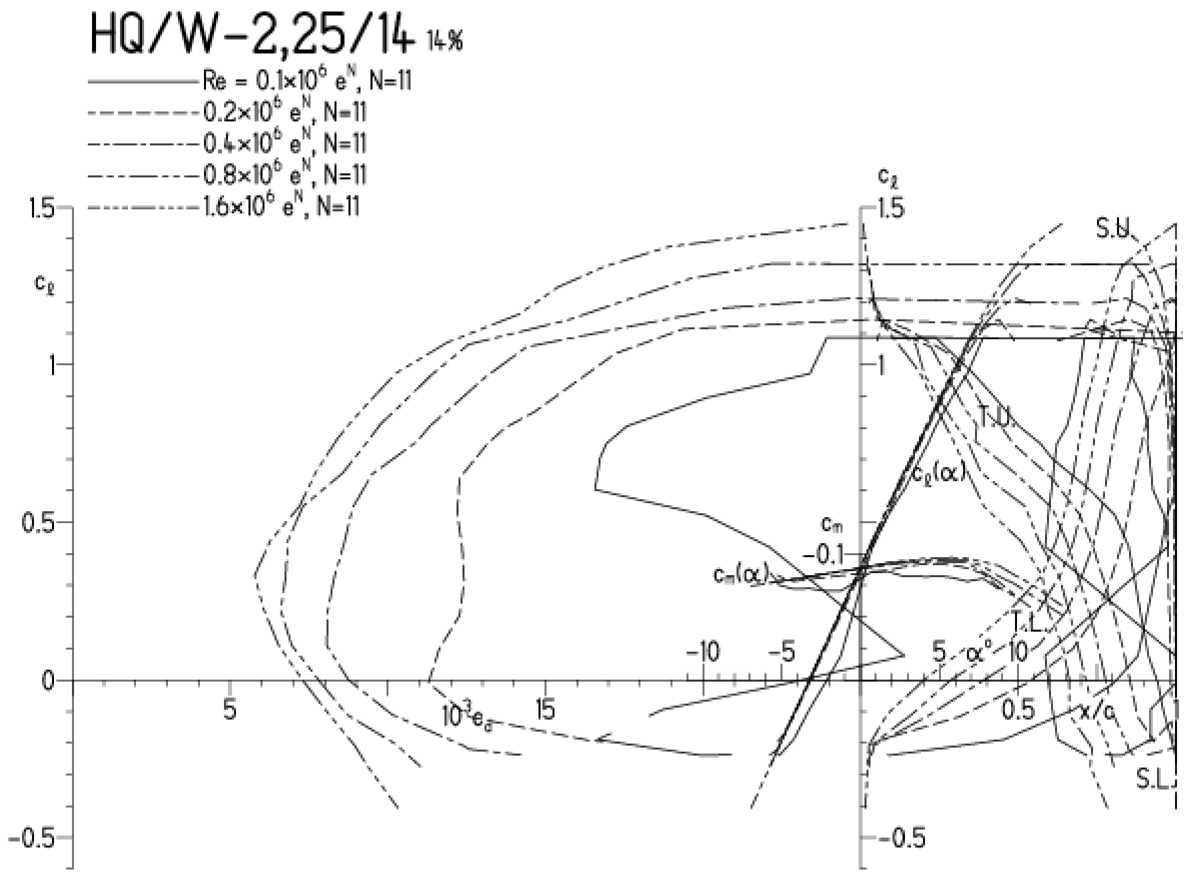


<u>HQ/W-2,25/14</u>, N=11

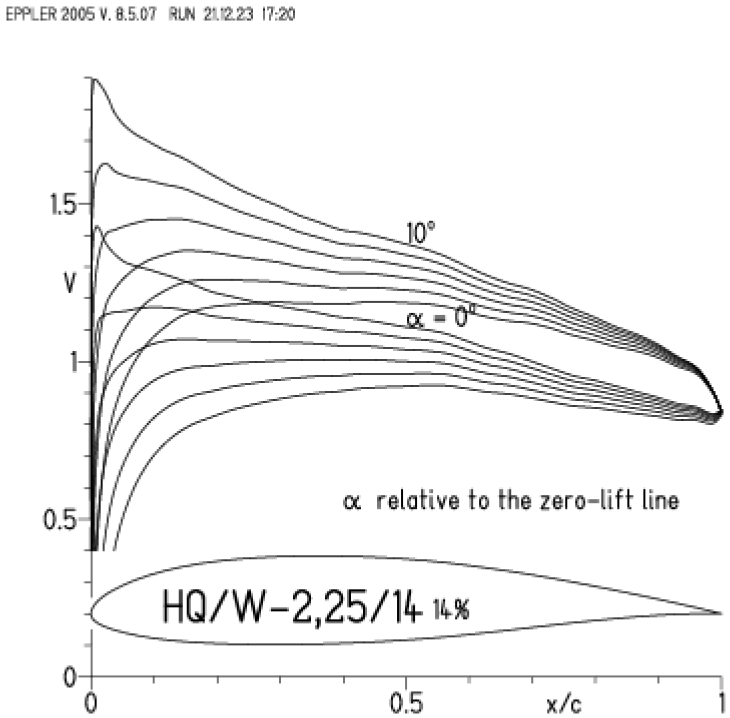
EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:12

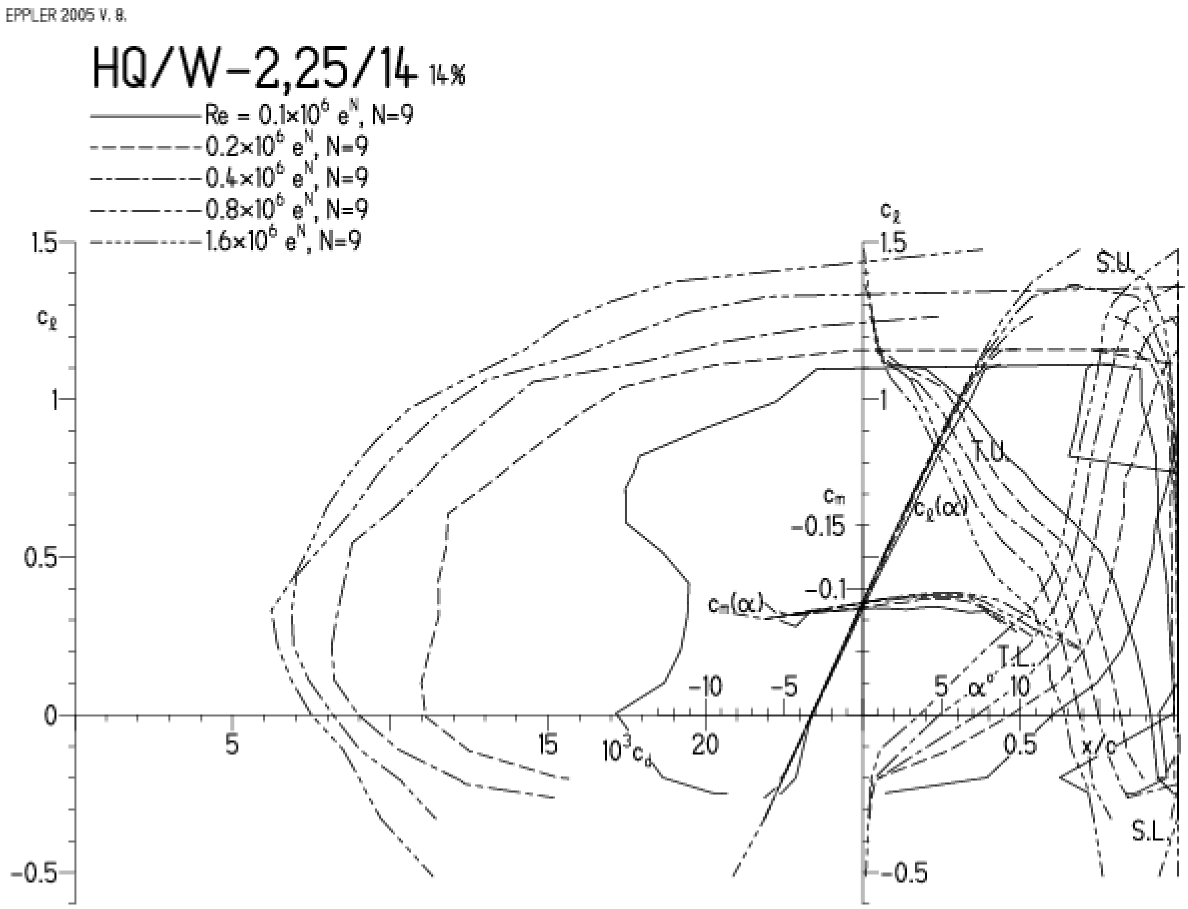


EPPLER 2005 V. 8.



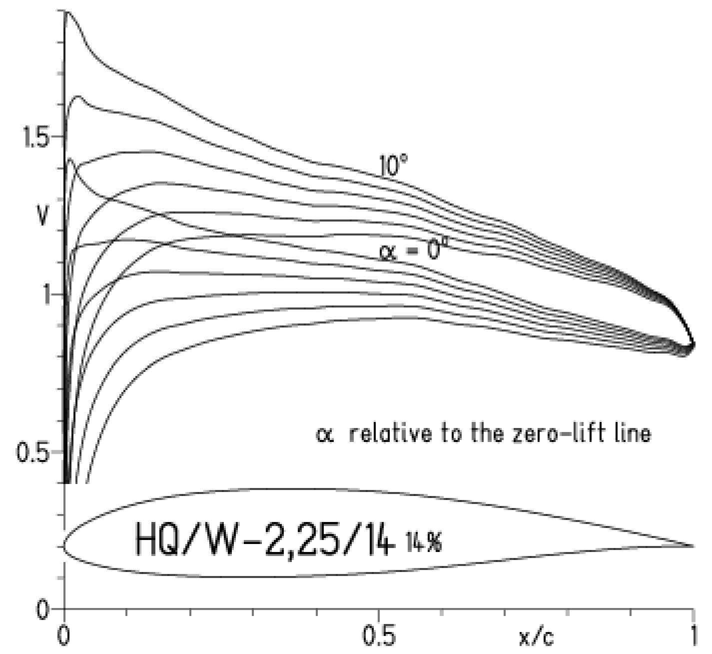
HQ/W-2,25/14, N=9


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:20
1.5
V
1
0.5
0
10°
α = 0°
α relative to the zero-lift line
HQ/W-2,25/14 14%
0
0.5
x/c
1

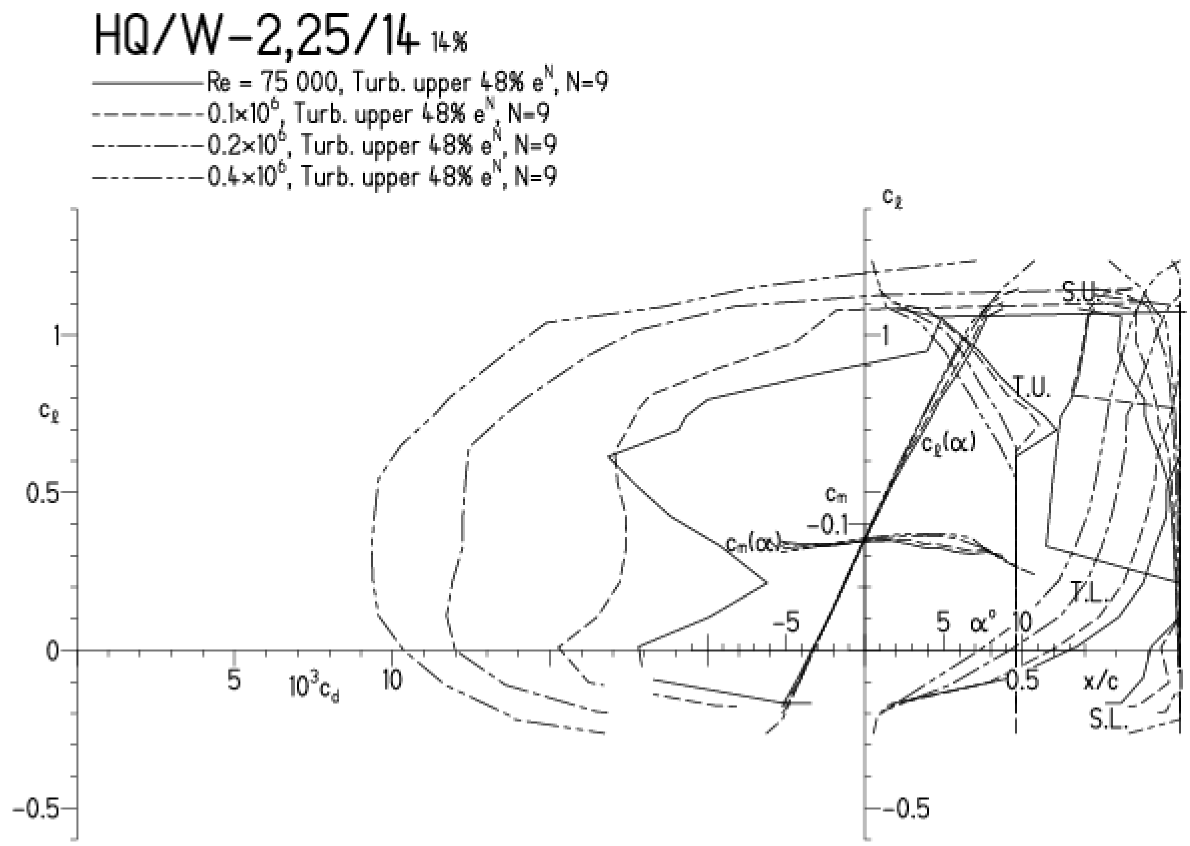

EPPLER 2005 V. 8.
HQ/W-2,25/14 14%
Re = 0.1×10^6 e^N, N=9
0.2×10^6 e^N, N=9
0.4×10^6 e^N, N=9
0.8×10^6 e^N, N=9
1.6×10^6 e^N, N=9
1.5
c_ℓ
1
0.5
0
−0.5
5
15
10^3 c_d
20
c_ℓ
1.5
1
c_m
−0.15
−0.1
c_m(α)
c_ℓ(α)
−10
−5
5
α°
10
−0.5
T.U.
T.L.
S.U.
S.L.
0.5
x/c
1

HQ/W-2,25/14, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:29

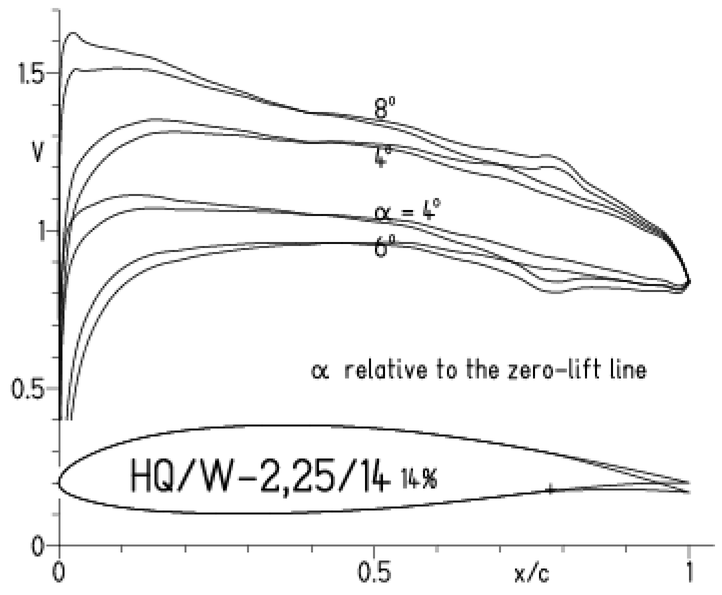


EPPLER 2005 V. 8.5.07 RU

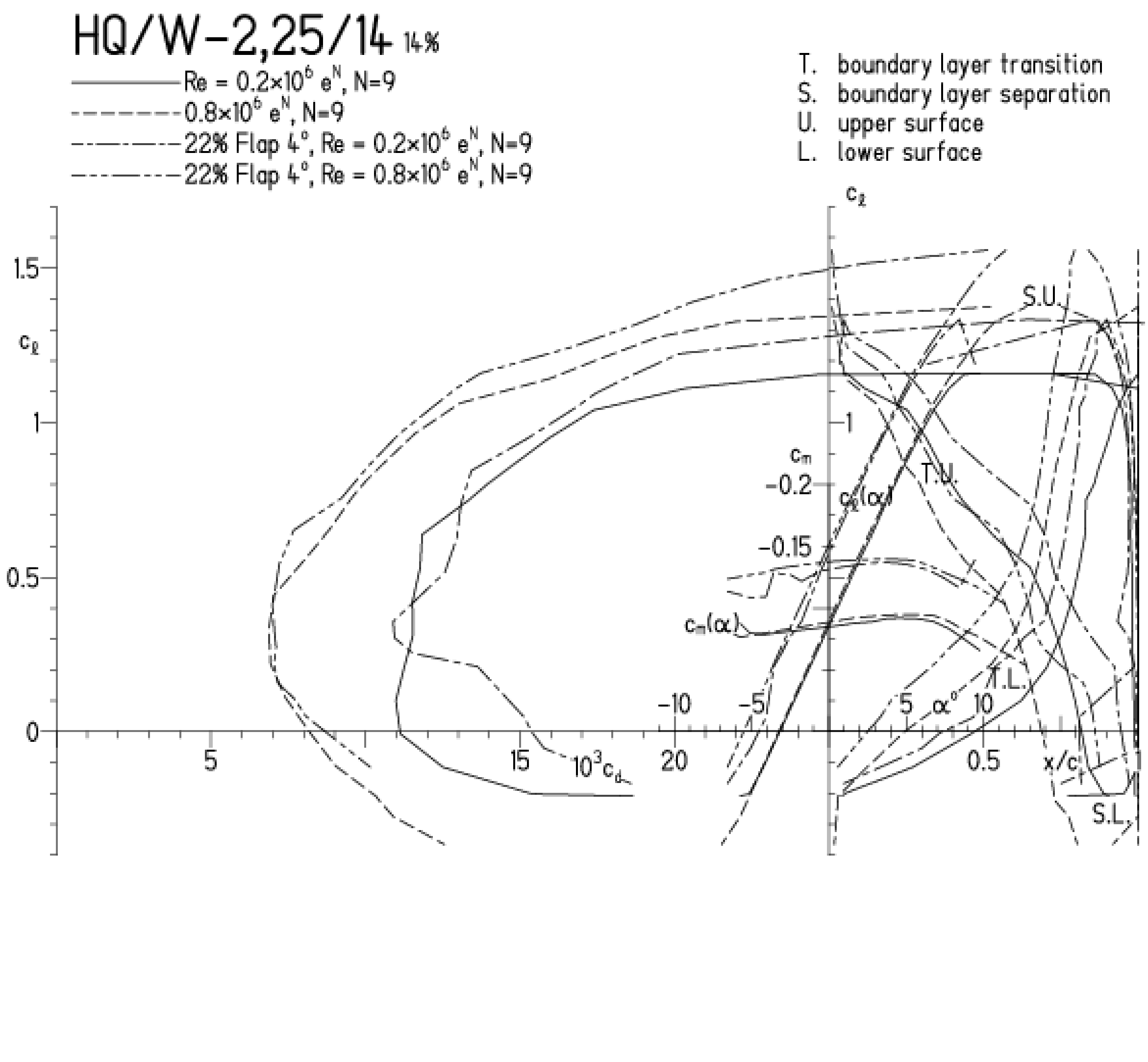


<u>HQW-2,25/14</u>, N=9 mit +4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

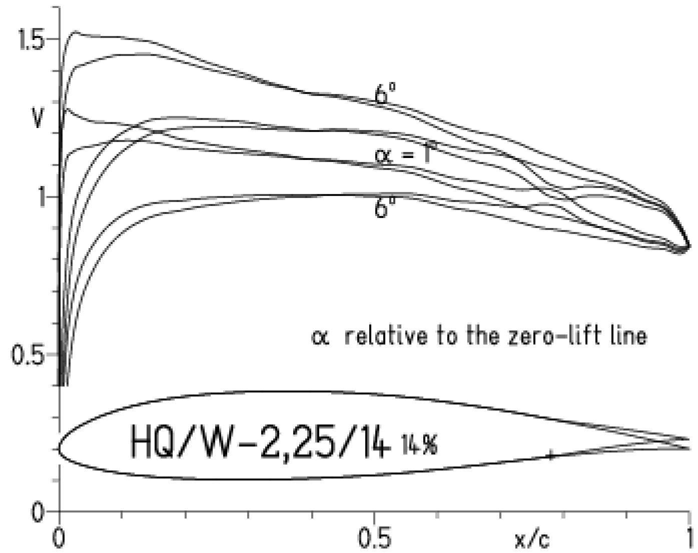


EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:56

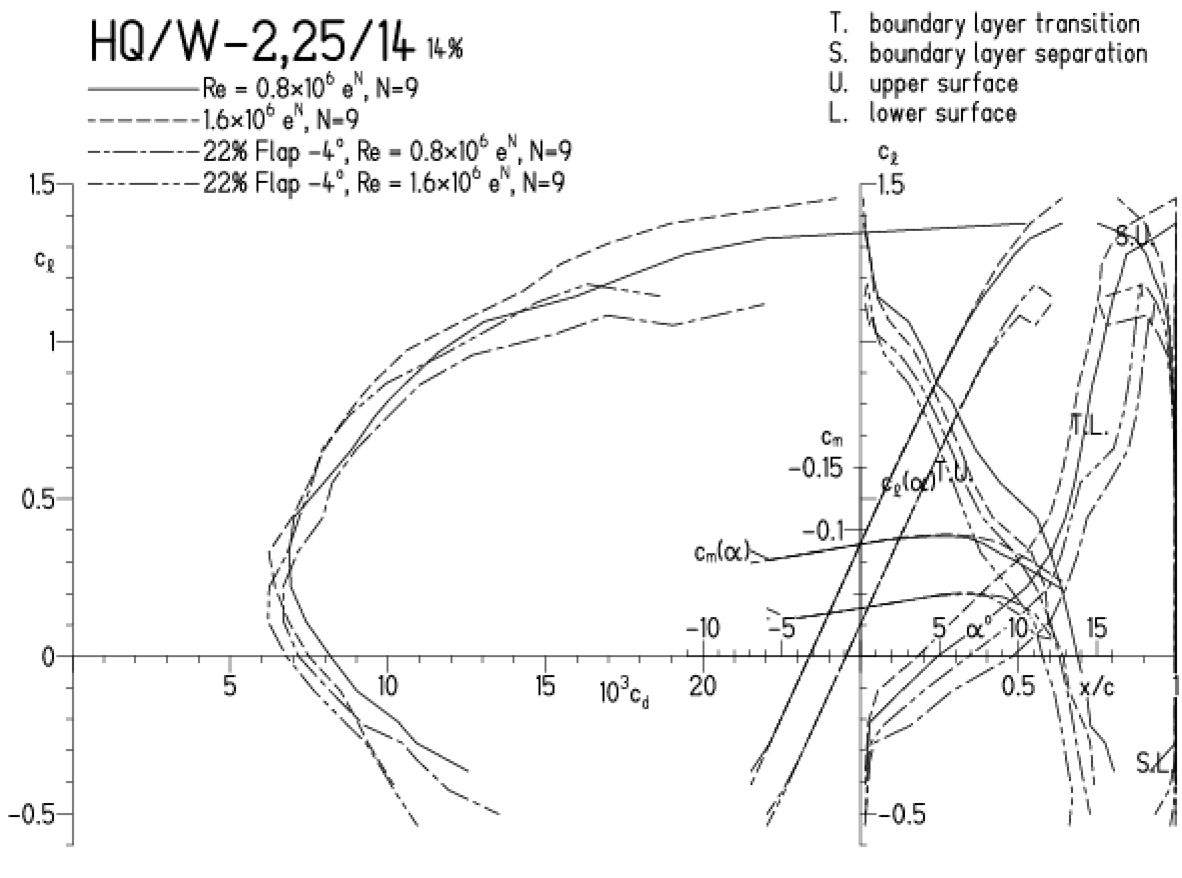


<u>HQW-2,25/14</u>, N=9 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 21.12.23 17:51

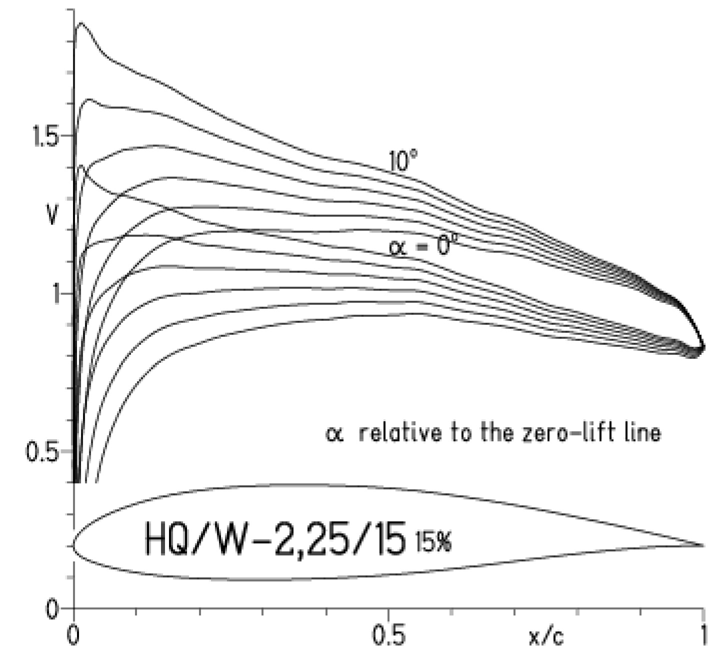


EPPLER 2005 V. 8.5.07

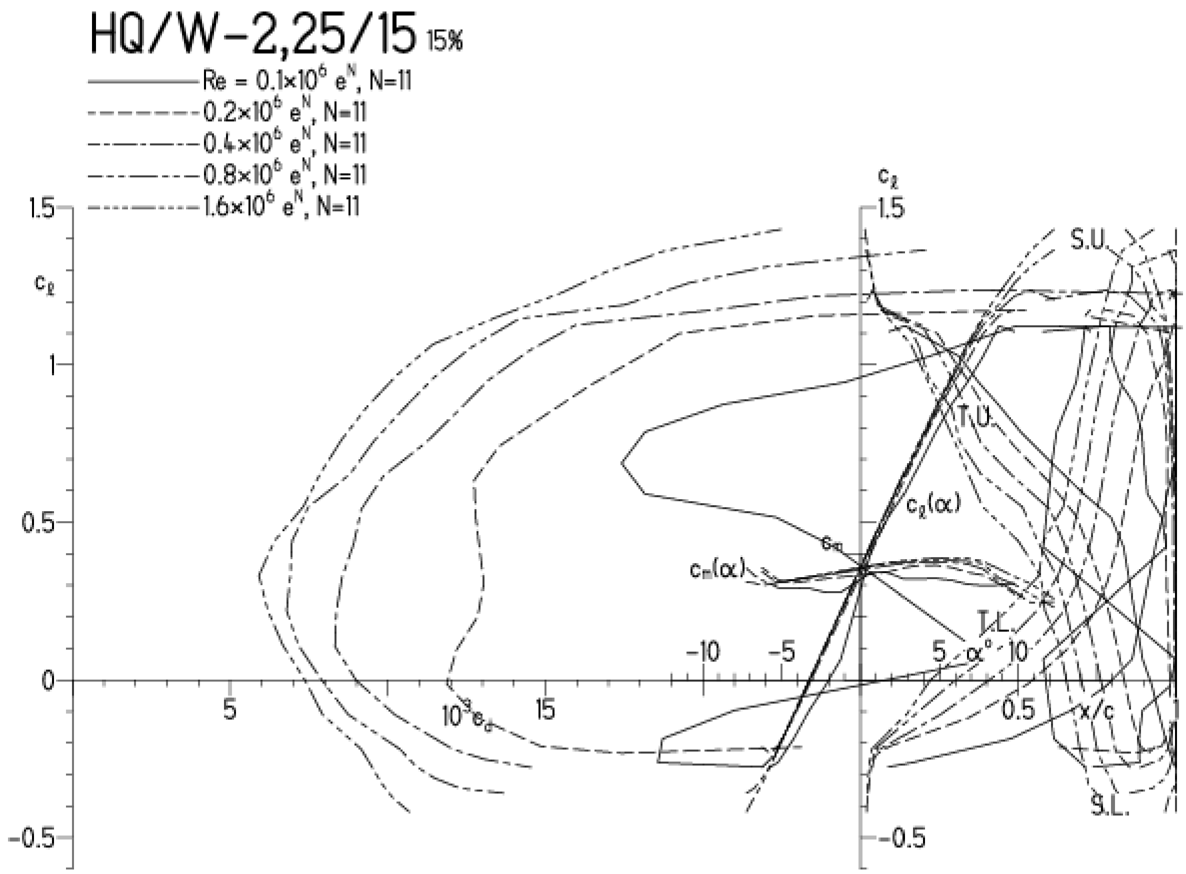


HQ/W-2,25/15, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:31

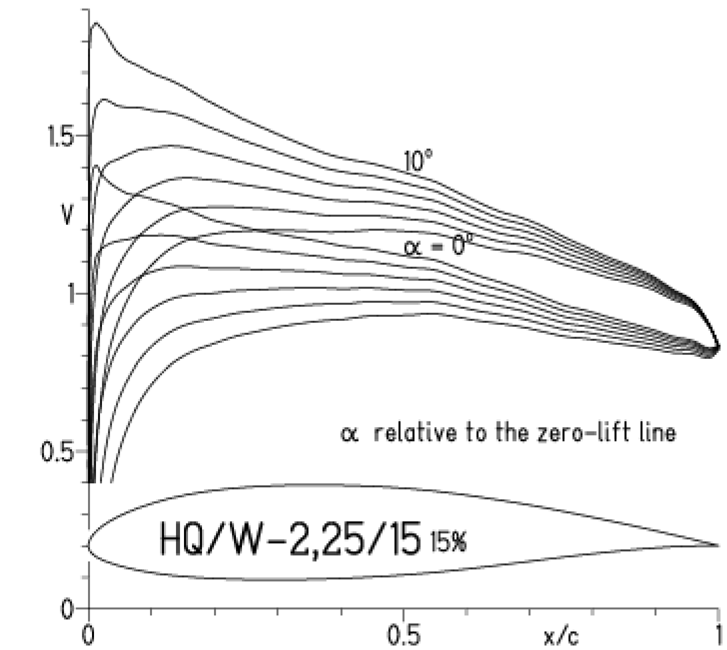


EPPLER 20

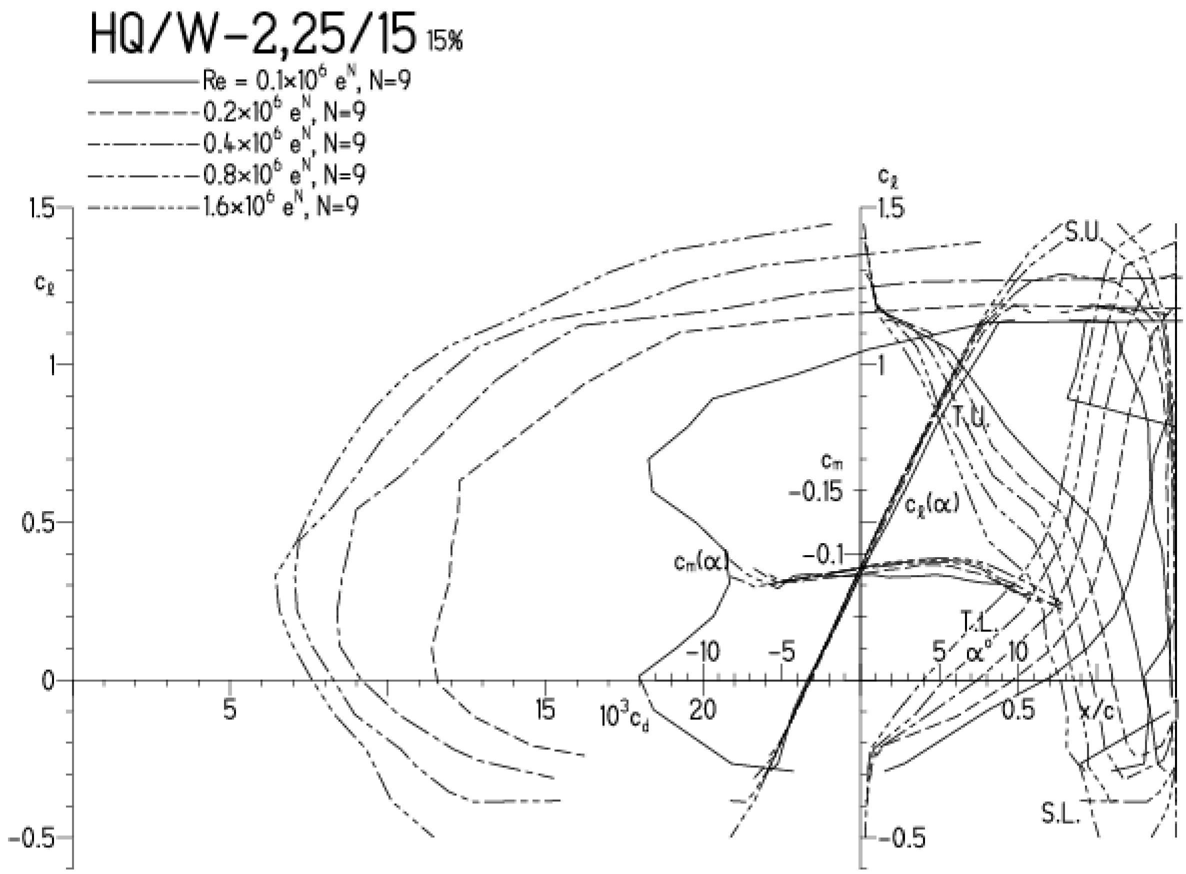


<u>HQ/W-2,25/15</u>, N=9

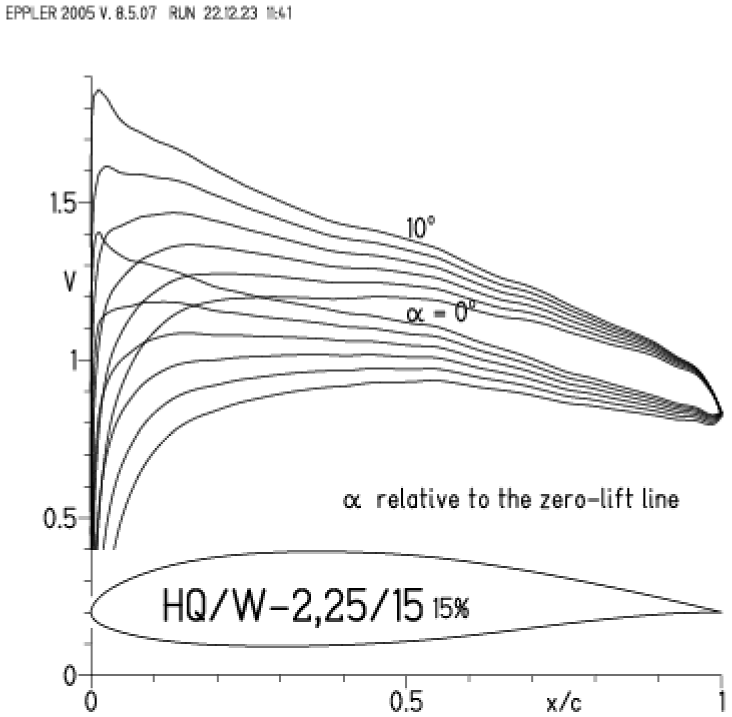
EPPLER 2005 V. 8.5.07 RUN 22.12.23 11:25

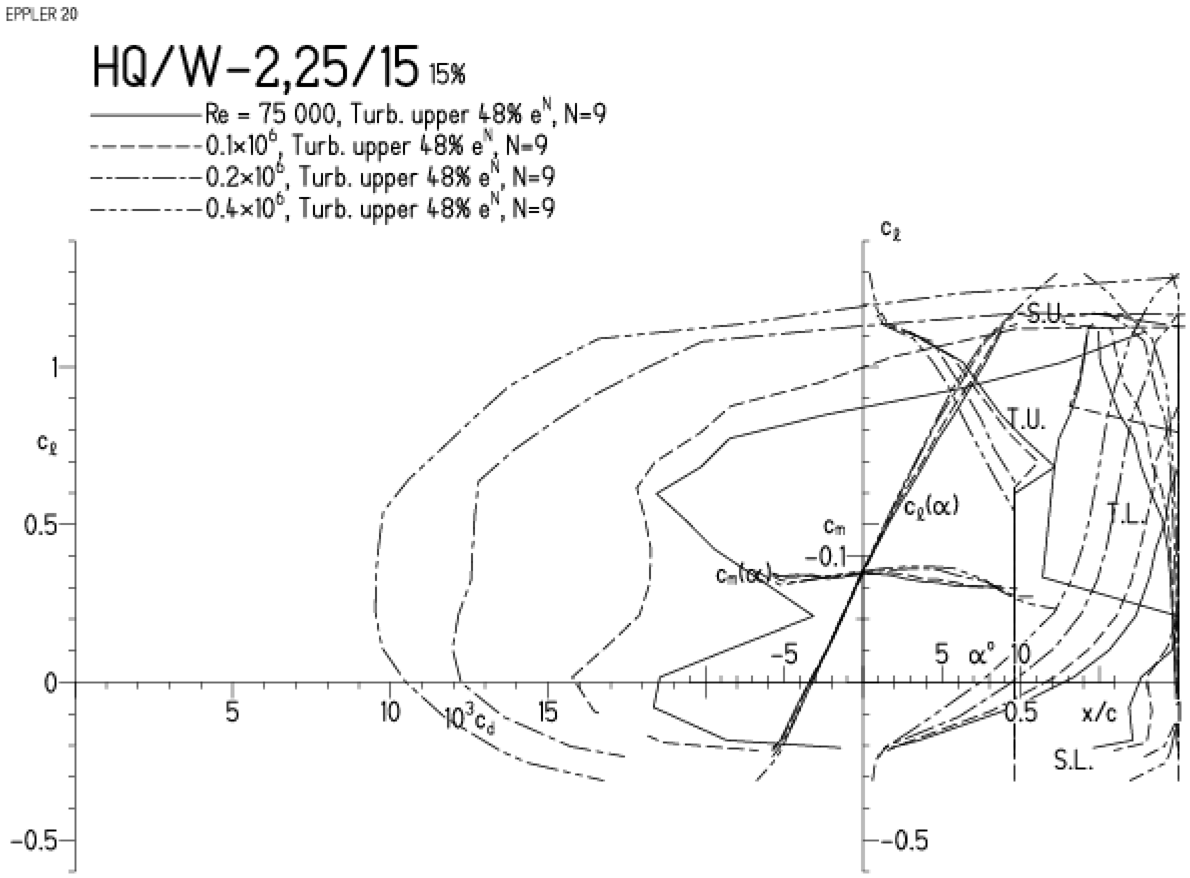


EPPLER 2005 V. 8.5.07 RUN 22.12.23 11



<u>HQ/W-2,25/15</u>, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



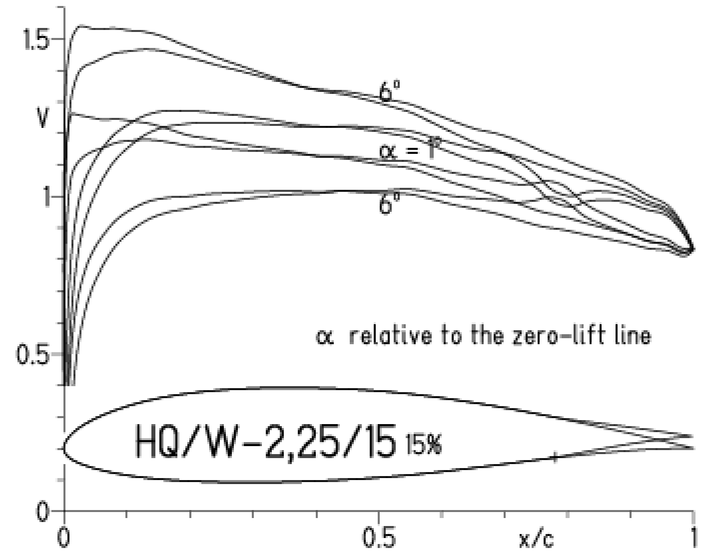


<u>HQW-2,25/15</u>, N=9 mit +4° Wölbklappenausschlag

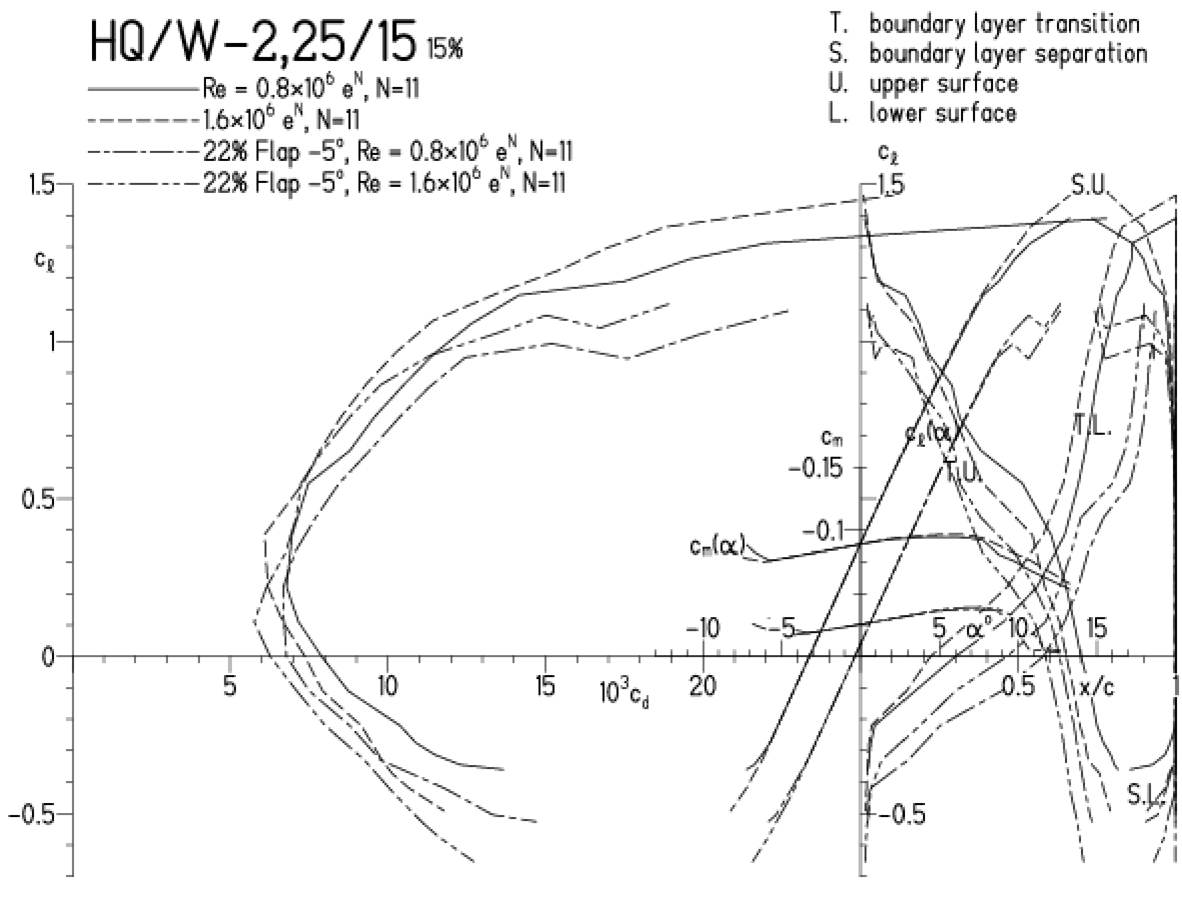
Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/15, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:04

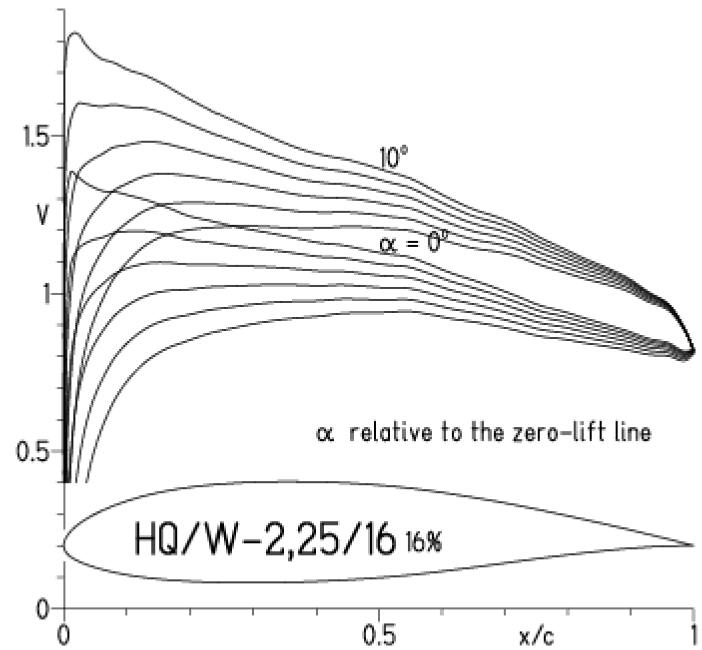


EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:

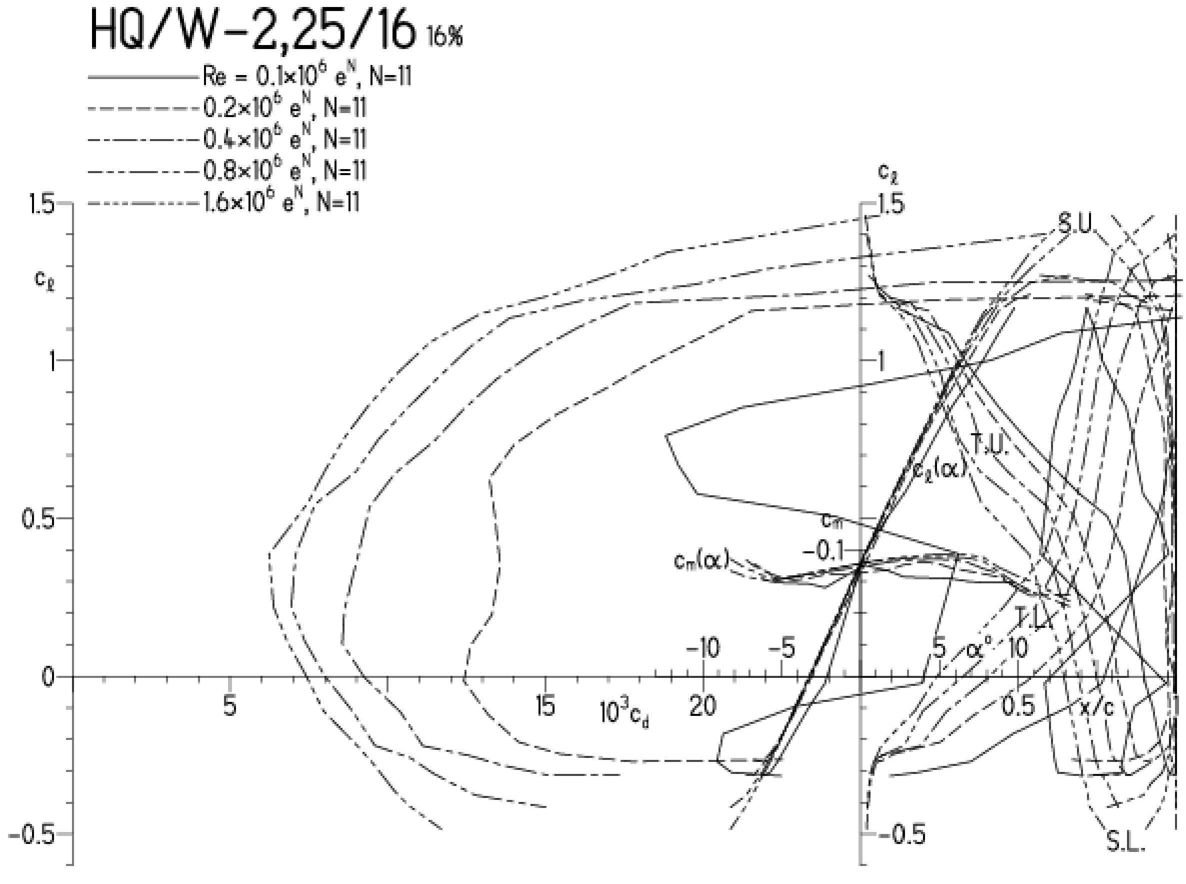


HQ/W-2,25/16, N=11

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:13

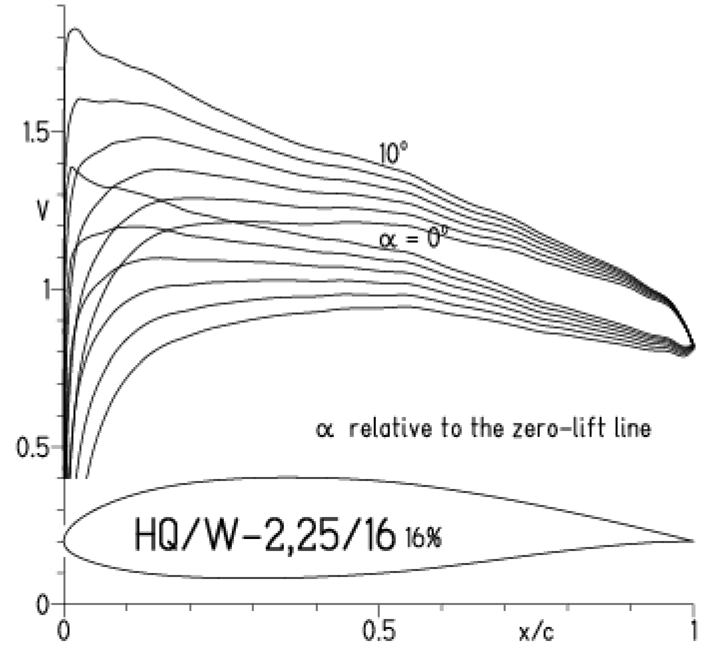


EPPLER 200

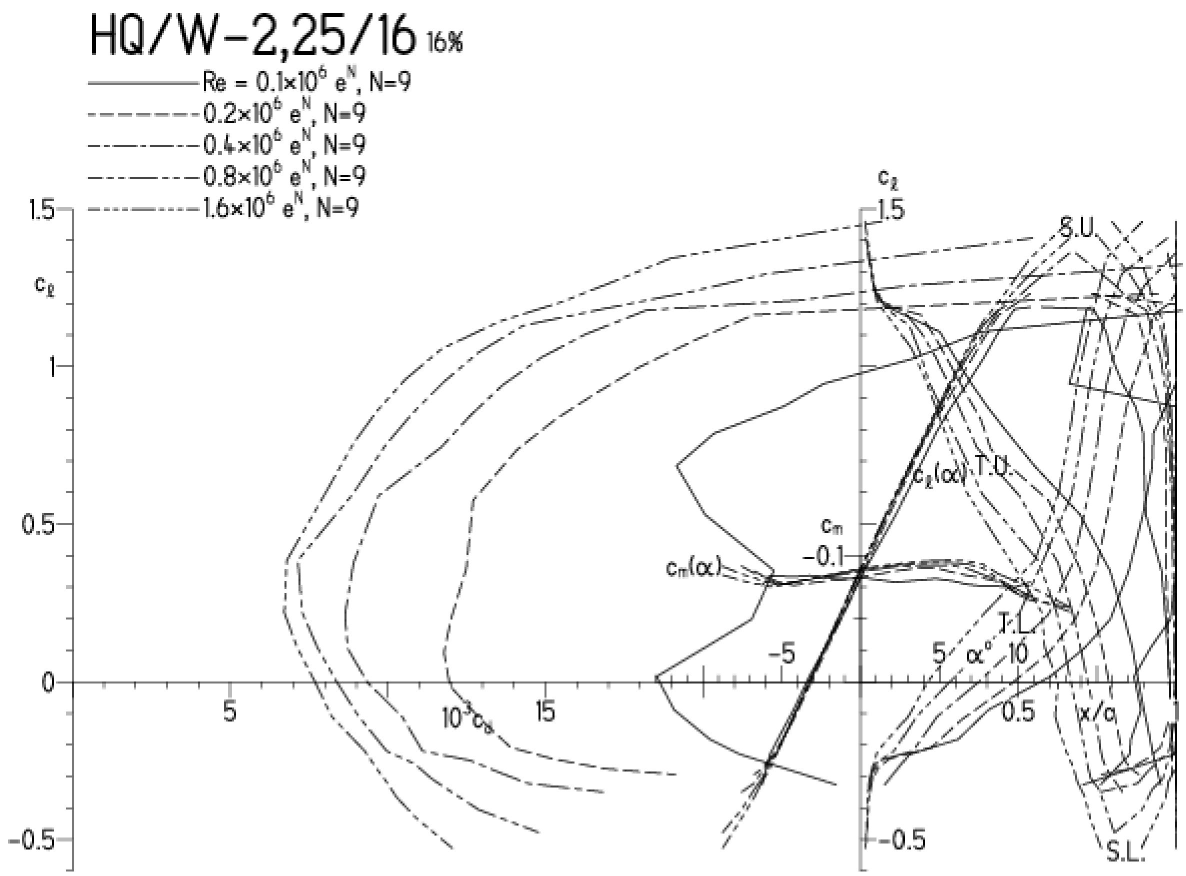


<u>HQ/W-2,25/16</u>, N=9

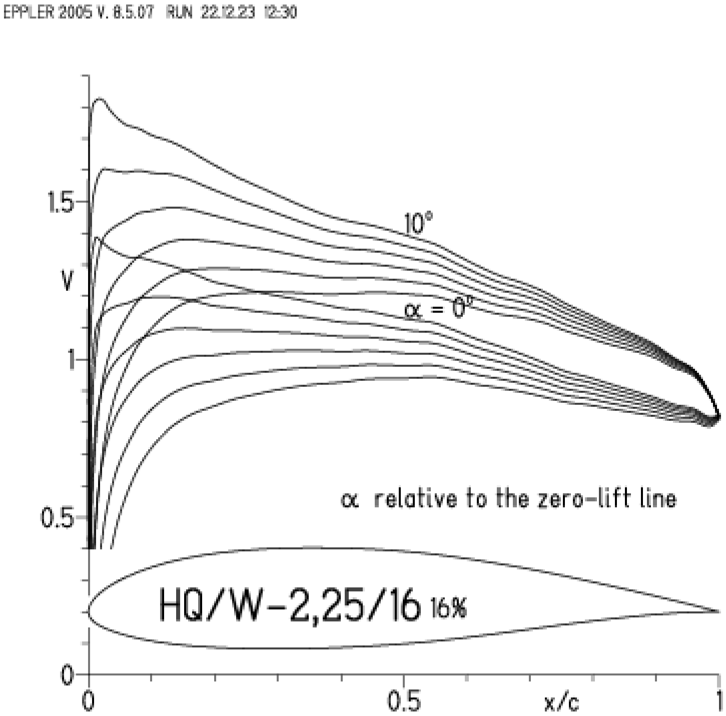
EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:21

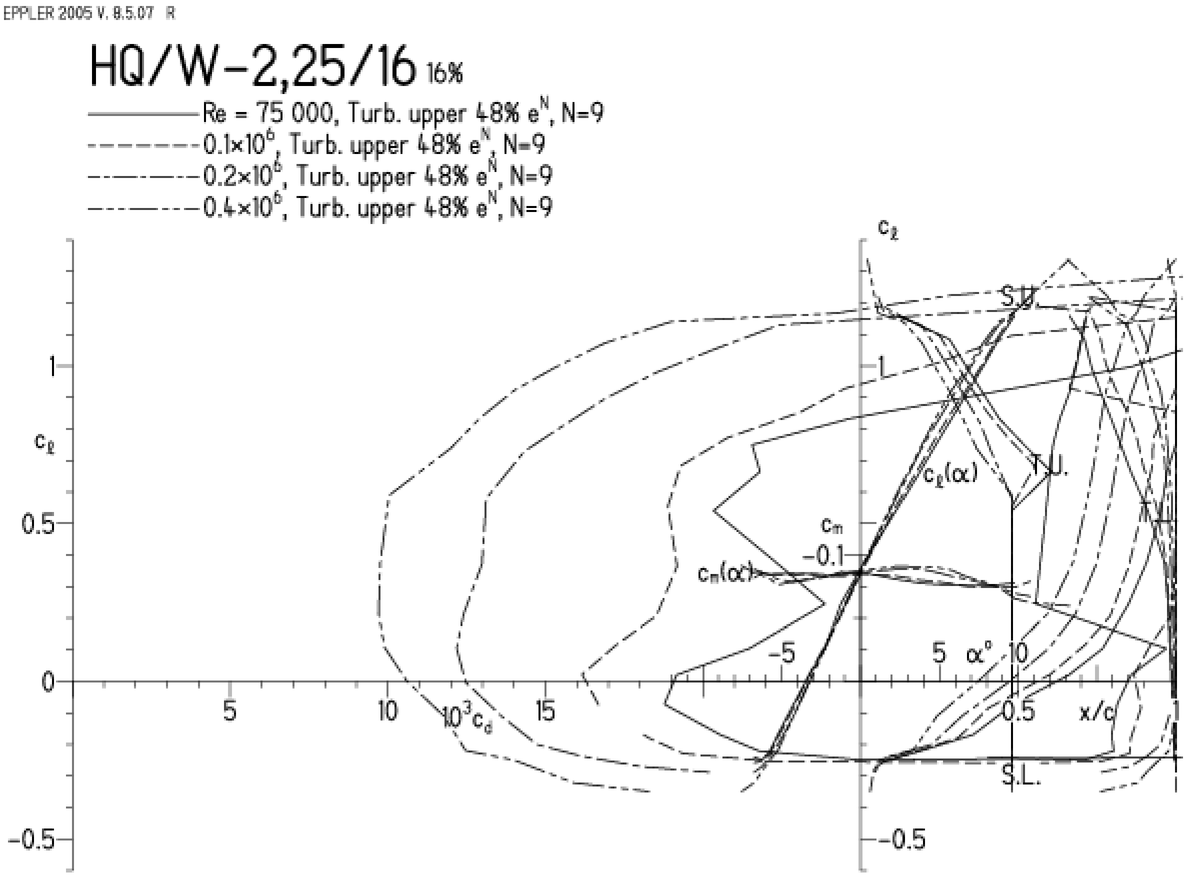


EPPLER 200



HQ/W-2,25/16, N=9, (Turbulatoreffekt (optimal beim Maximum der Wölbung)



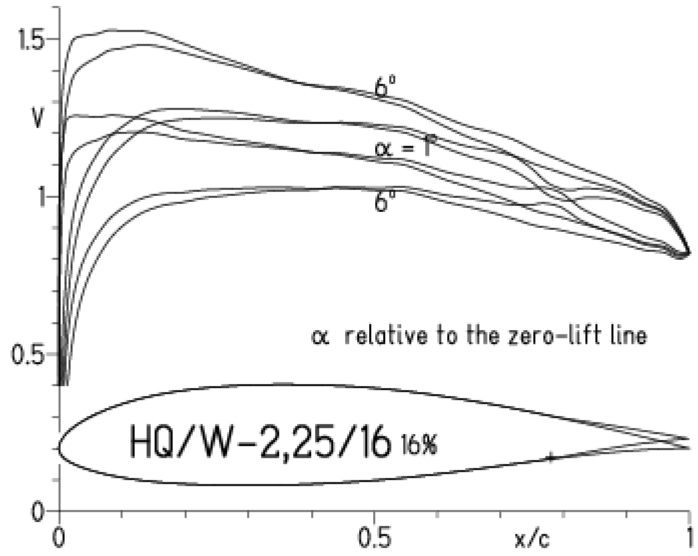


HQW-2,25/16, N=9 mit +4° Wölbklappenausschlag

Bringt keine merkliche Verbesserung im Langsamflug.

HQW-2,25/16, N=11 mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41



EPPLER 2005 V. 8.5.07 RUN 22.12.23 12:41