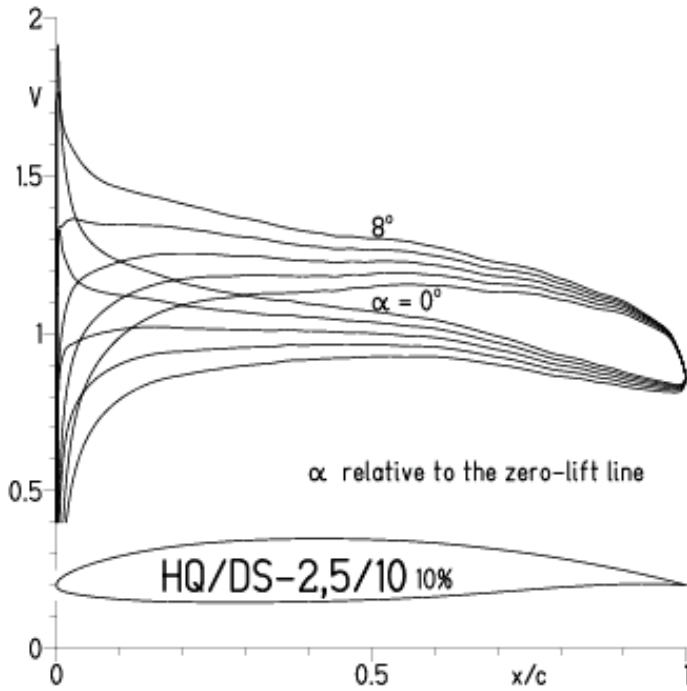
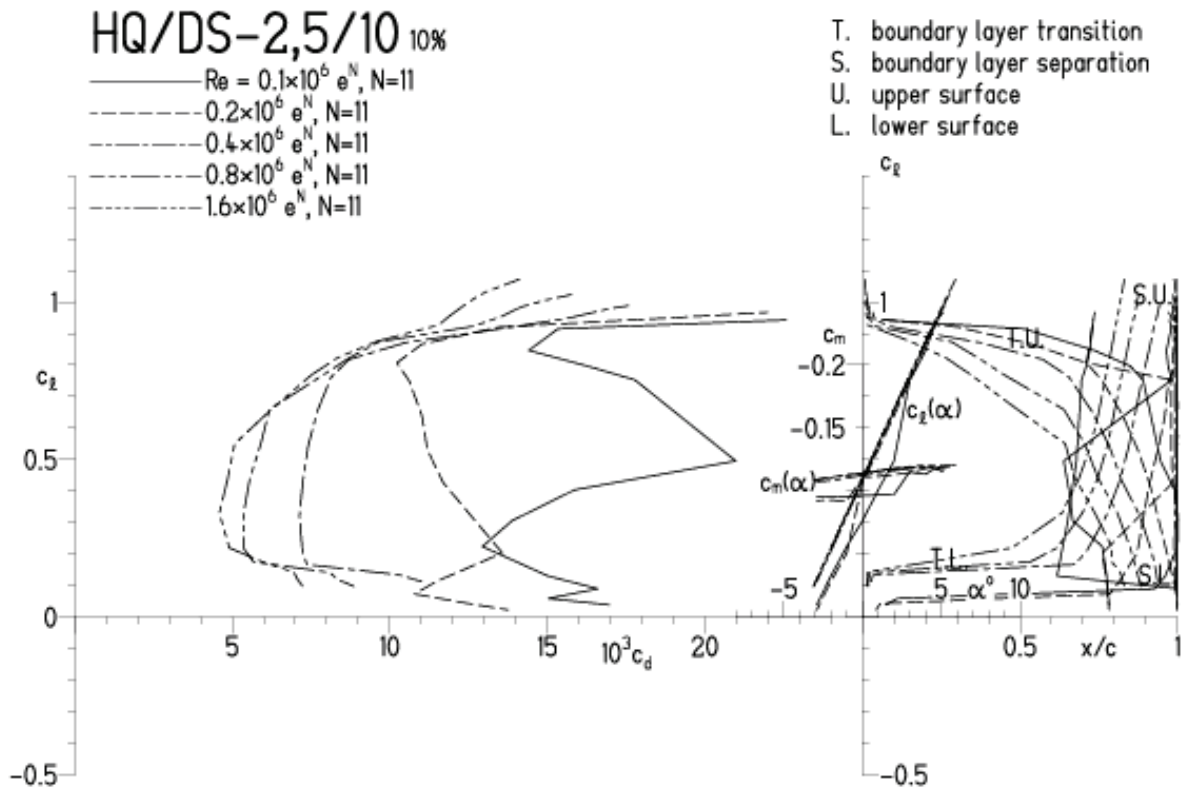


HQ/DS-2,5/10, N=11

EPPLER 2005 V. 8.5.07 RUN 15.6.11 17:27

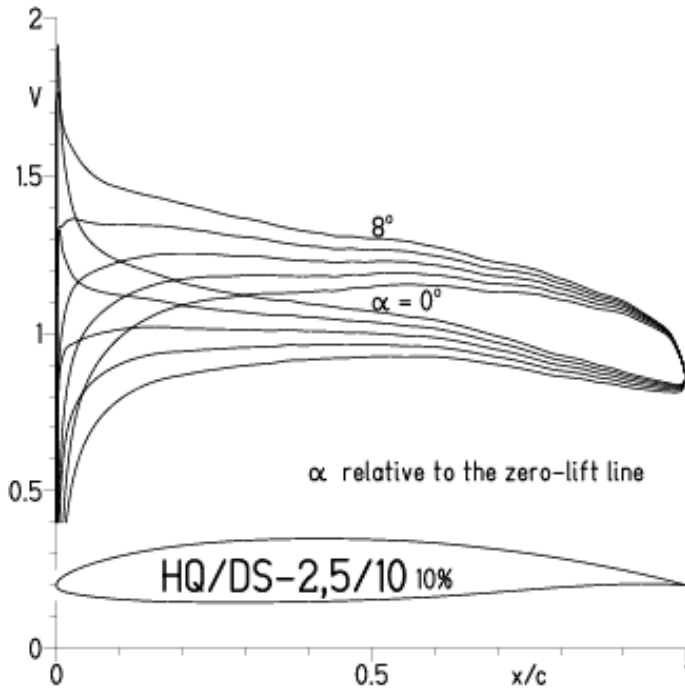


EPPLER 2005 V. 8.5.07 RUN 15.6.11 17:27

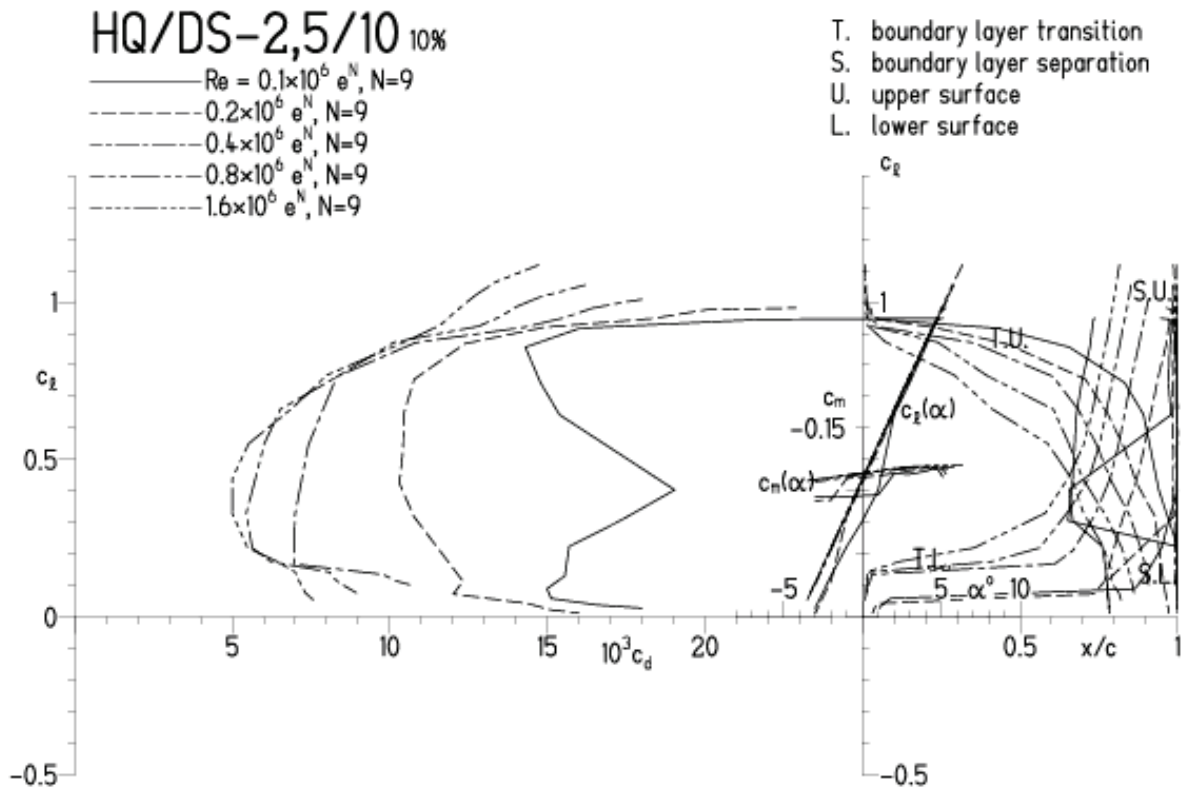


HQ/DS-2,5/10, N=9

EPPLER 2005 V. 8.5.07 RUN 15.6.11 17:57

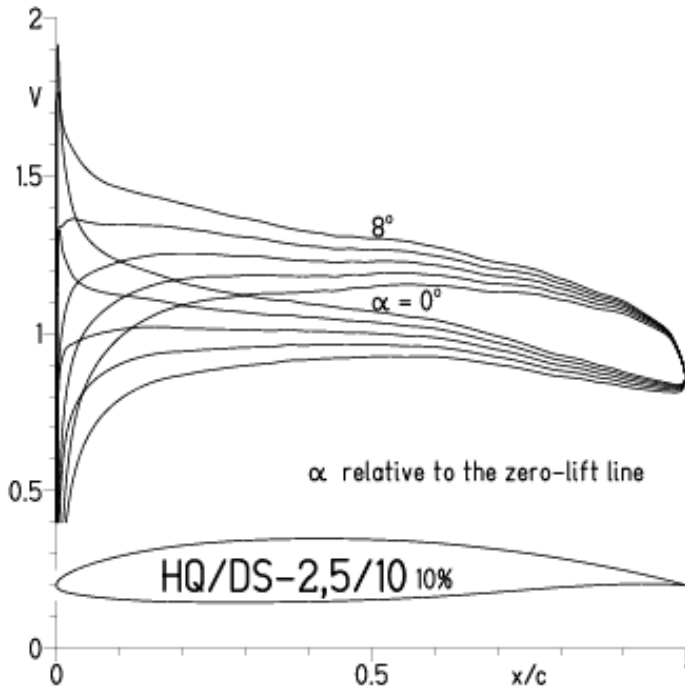


EPPLER 2005 V. 8.5.07 RUN 15.6.11 17:57



HQ/DS-2,5/10, N=9, Turbulatoreffekt bei niedrigen Re-Zahlen
 (Optimale Turbulatorposition bei 45 – 55 % der Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:51

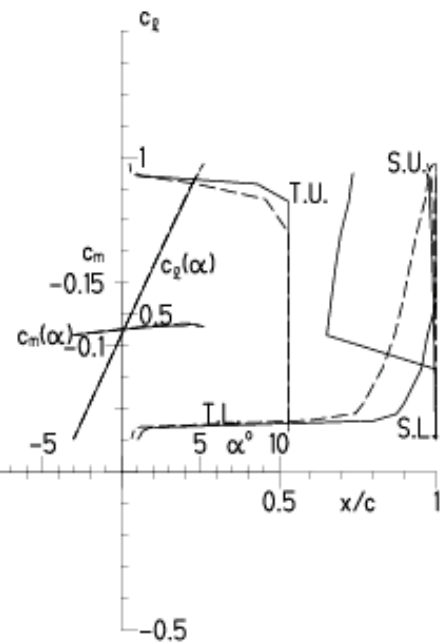
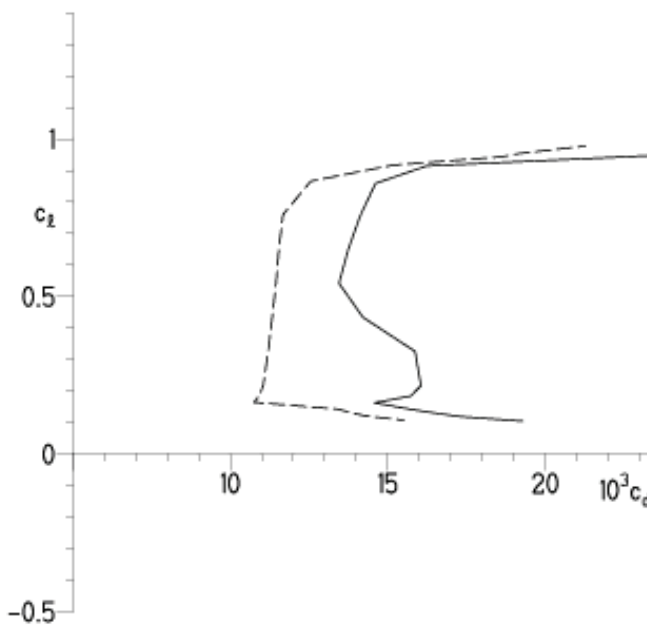


EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:51

HQ/DS-2,5/10 10%

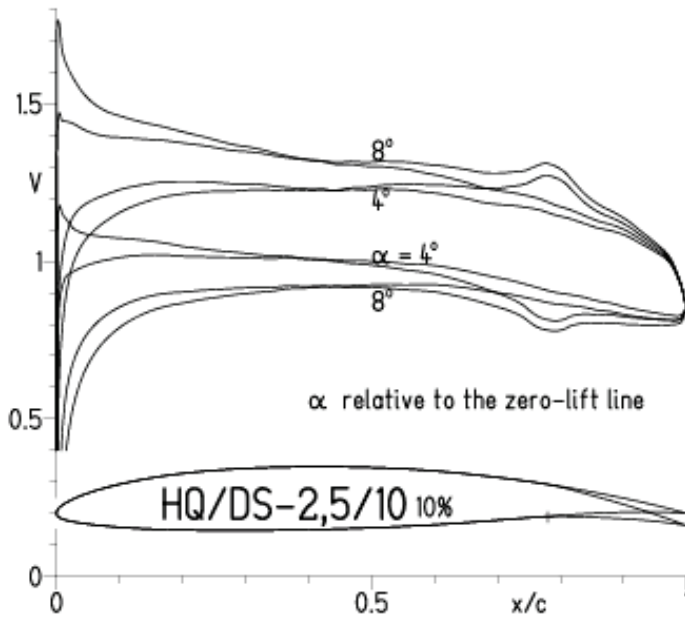
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

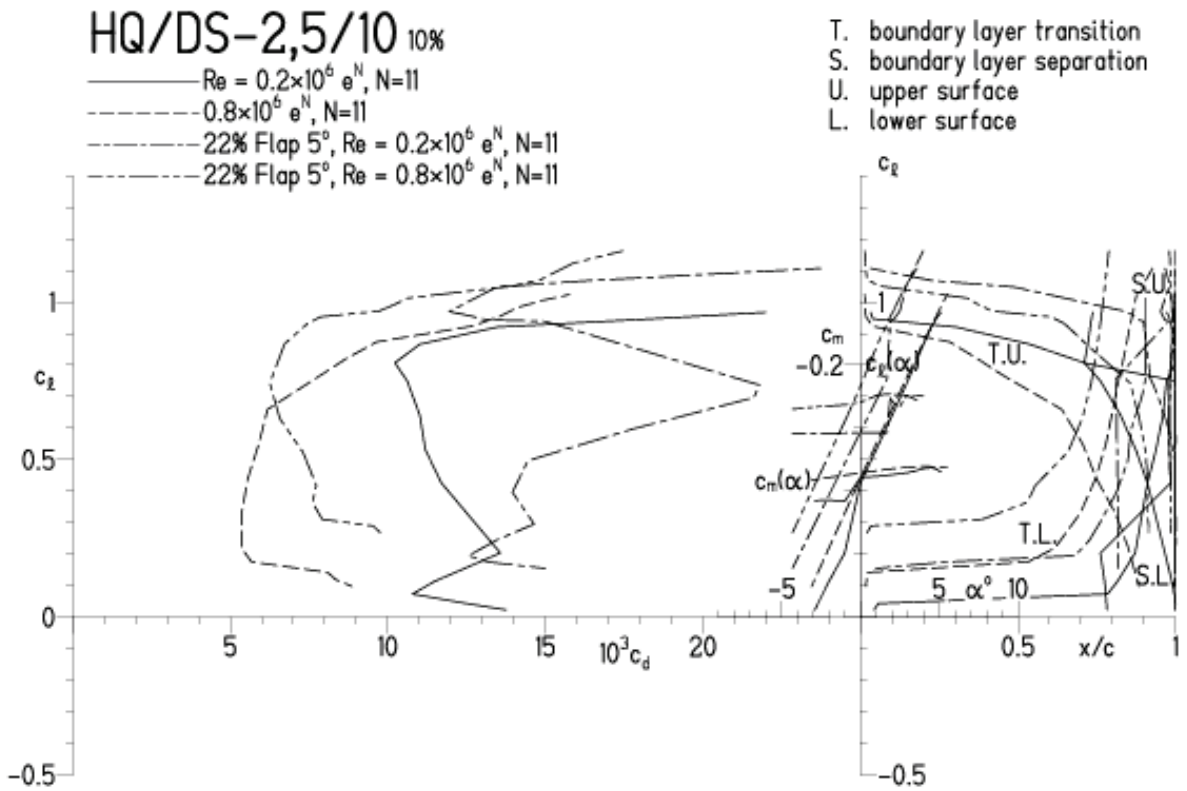


HQ/DS-2,5/10, N=11, mit 5° Wöbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 11:17

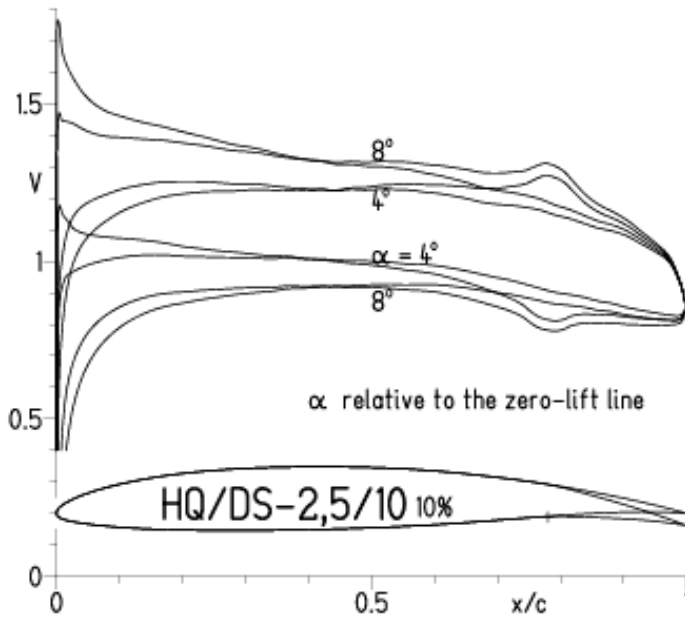


EPPLER 2005 V. 8.5.07 RUN 16.6.11 11:17

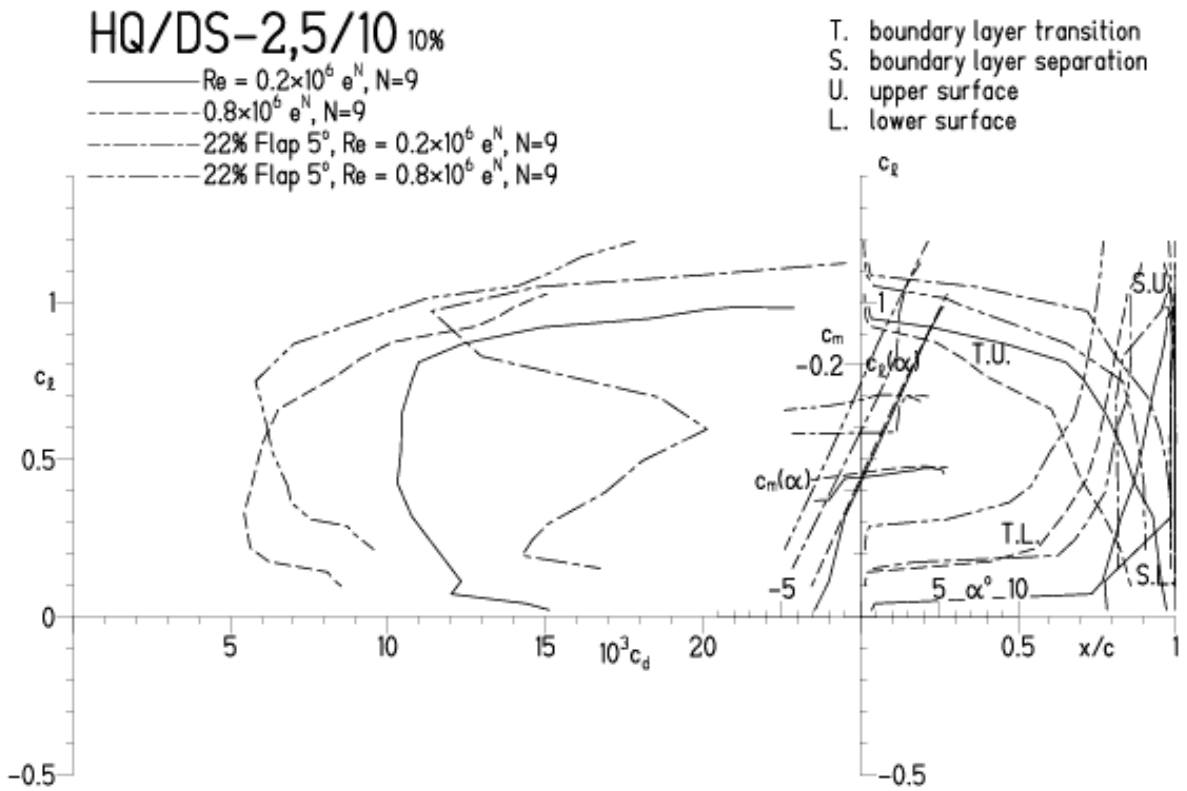


HQ/DS-2,5/10, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 11:31

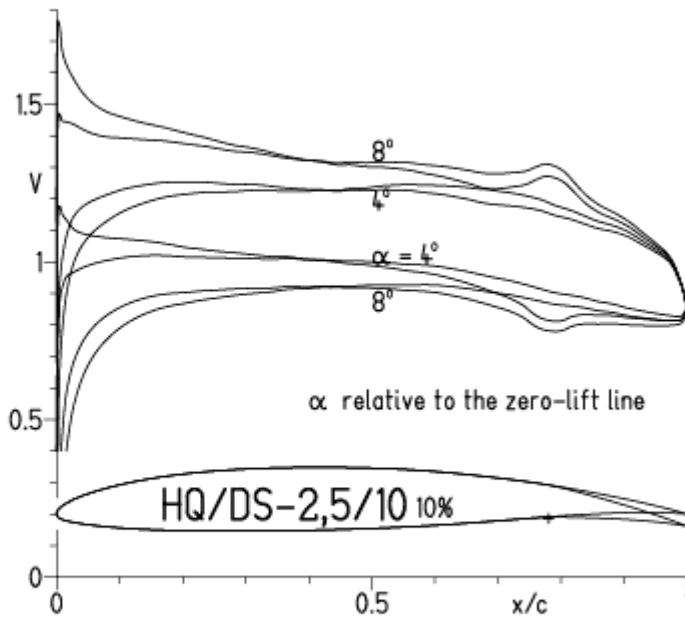


EPPLER 2005 V. 8.5.07 RUN 16.6.11 11:31



HQ/DS-2,5/10, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

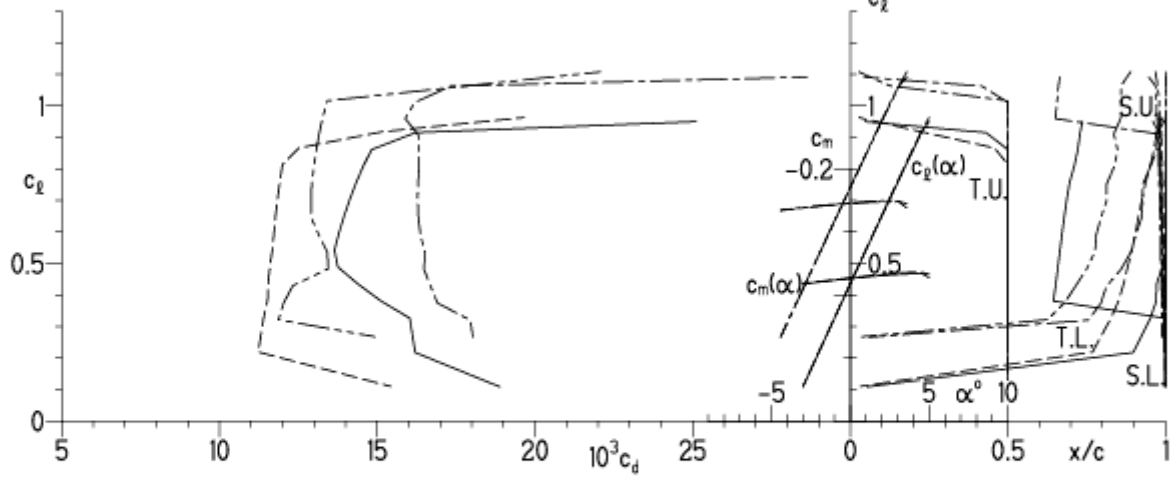
EPPLER 2005 V. 8.5.07 RUN 10.4.12 16:23



EPPLER 2005 V. 8.5.07 RUN 10.4.12 16:23

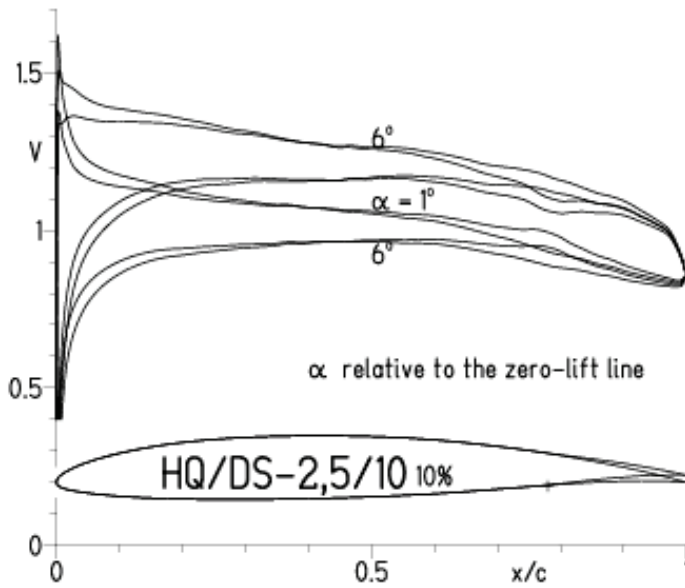
HQ/DS-2,5/10 10%

- $Re = 0.1 \times 10^6$, Turb. upper 50% e^N , $N=9$
- - - 0.2×10^6 , Turb. upper 50% e^N , $N=9$
- · - · - 22% Flap 5°, $Re = 0.1 \times 10^6$, Turb. upper 50% e^N , $N=9$
- · - · - 22% Flap 5°, $Re = 0.2 \times 10^6$, Turb. upper 50% e^N , $N=9$

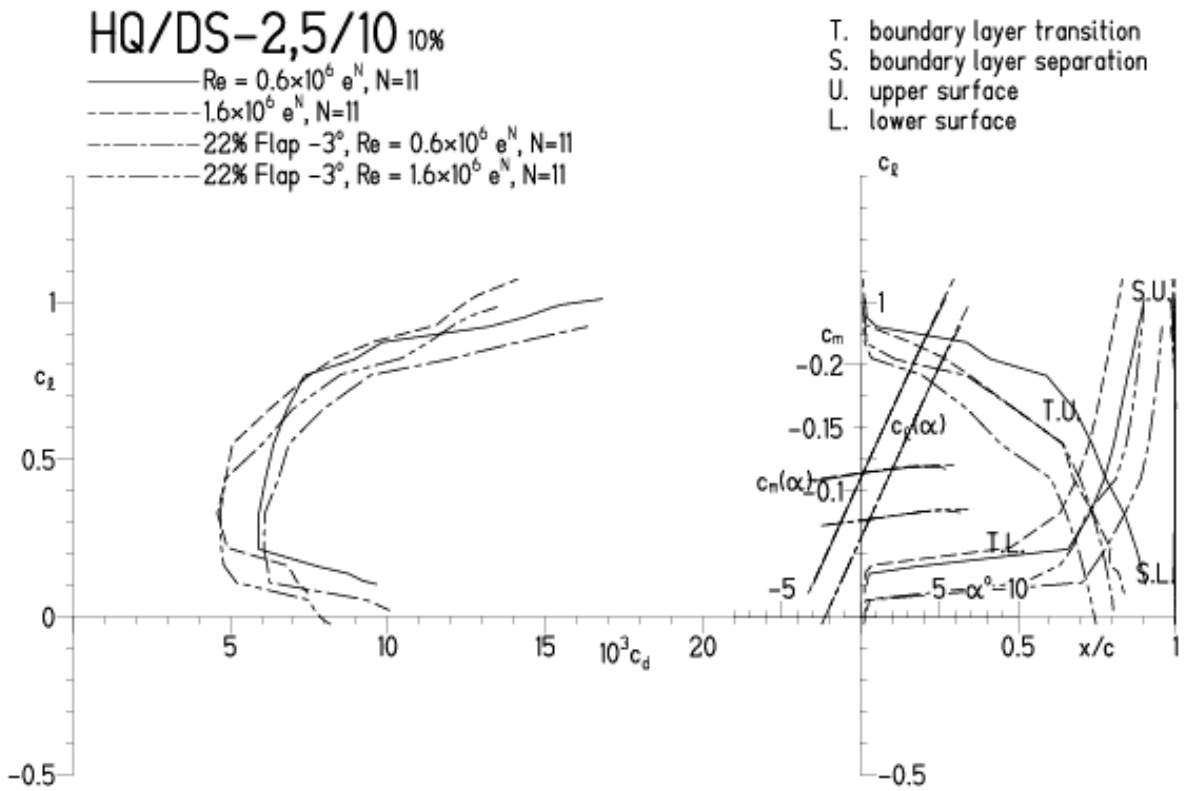


HQ/DS-2,5/10, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:23

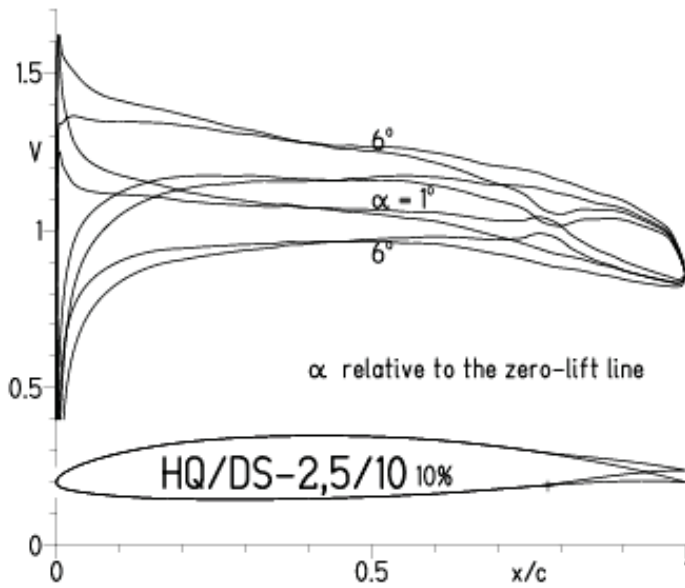


EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:23

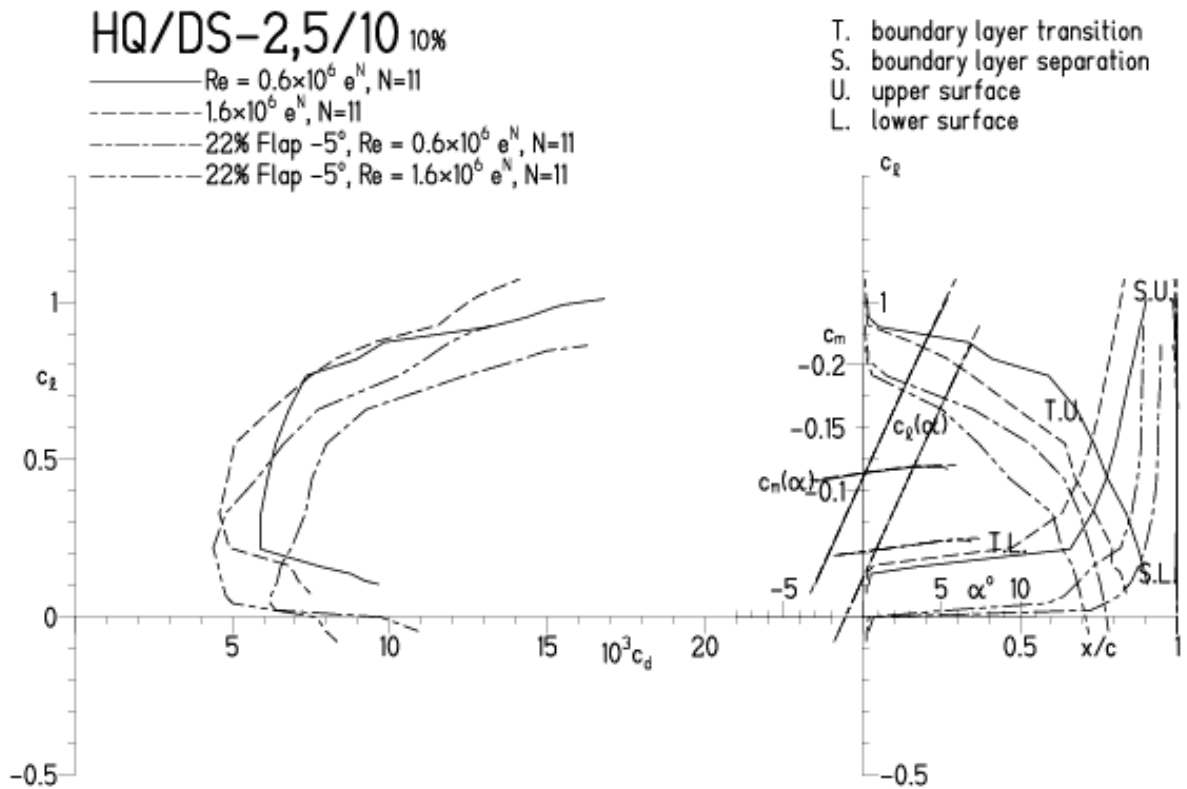


HQ/DS-2,5/10, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:07

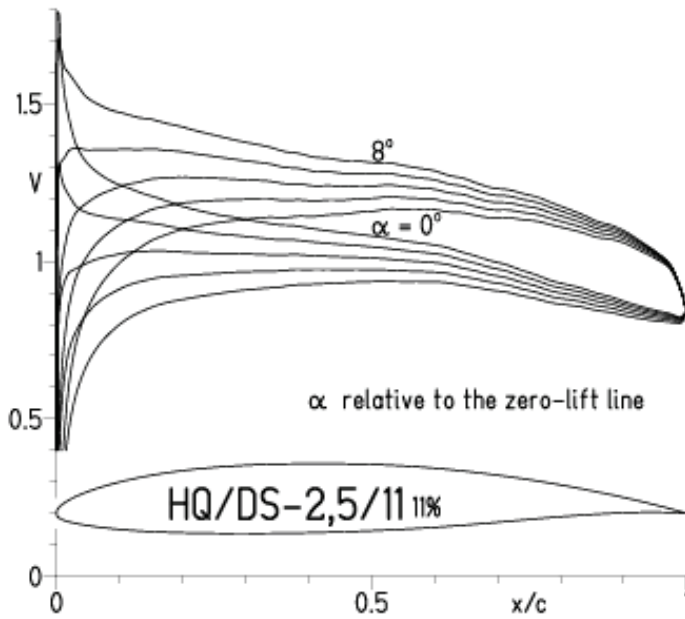


EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:07

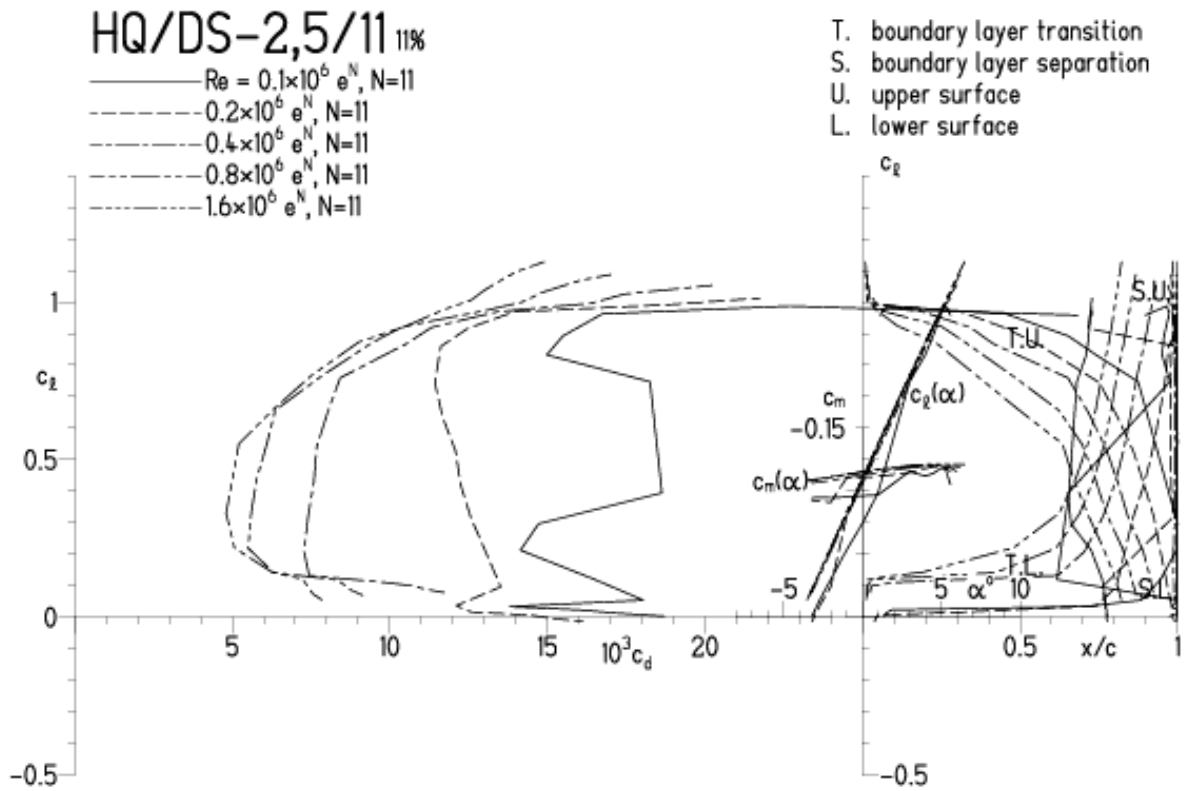


HQ/DS-2,5/11, N=11

EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:56

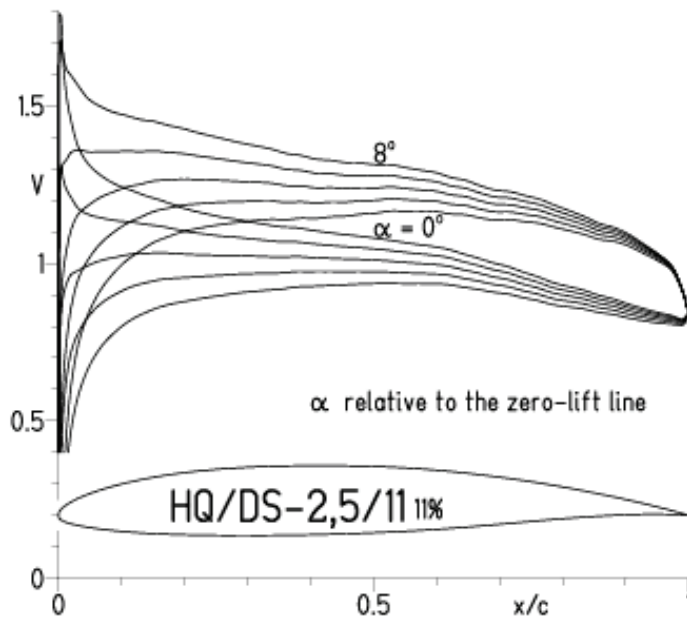


EPPLER 2005 V. 8.5.07 RUN 16.6.11 12:56

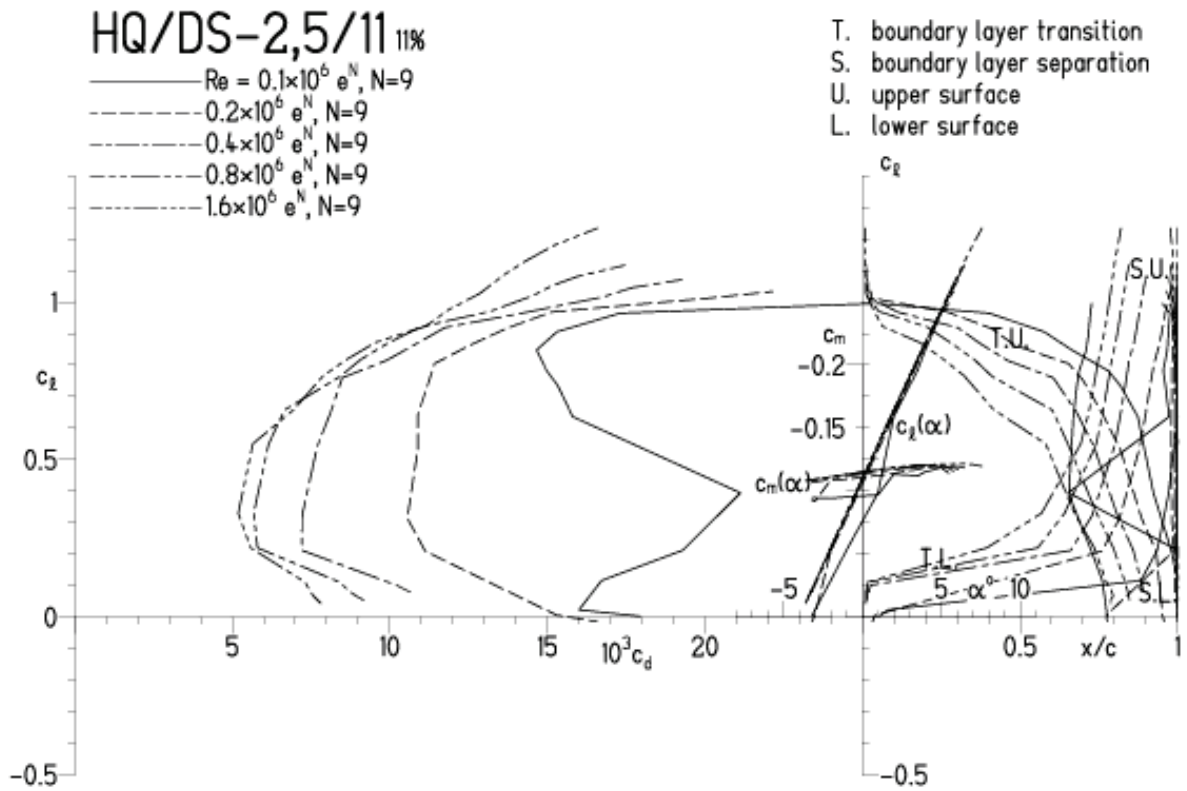


HQ/DS-2,5/11, N=9

EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:24

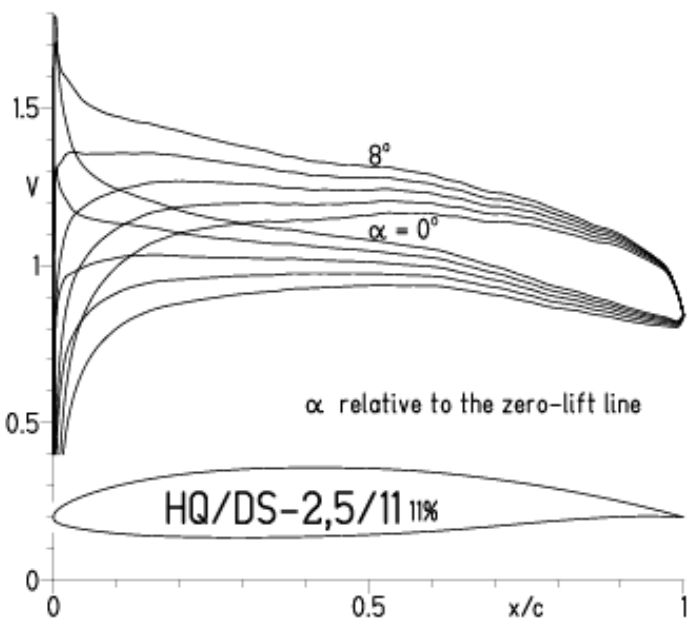


EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:24



HQ/DS-2,5/11, N=9, Turbulatoreffekt bei niedrigen Re-Zahlen
 (Optimale Turbulatorposition bei 45 – 55 % der Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:45

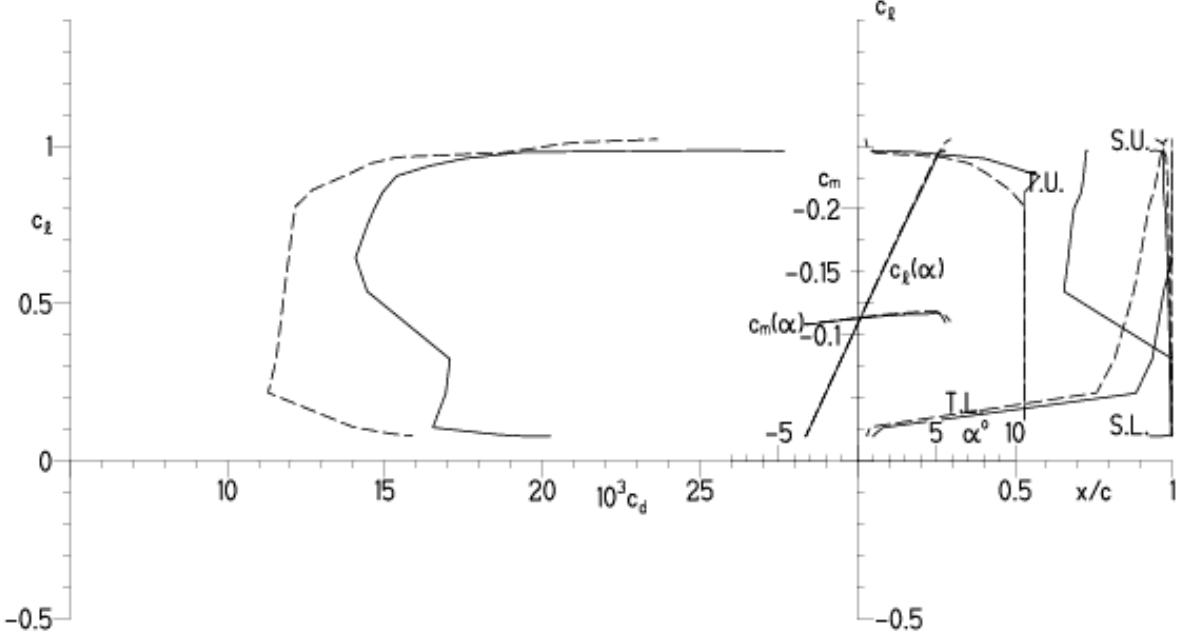


EPPLER 2005 V. 8.5.07 RUN 16.6.11 17:45

HQ/DS-2,5/11 11%

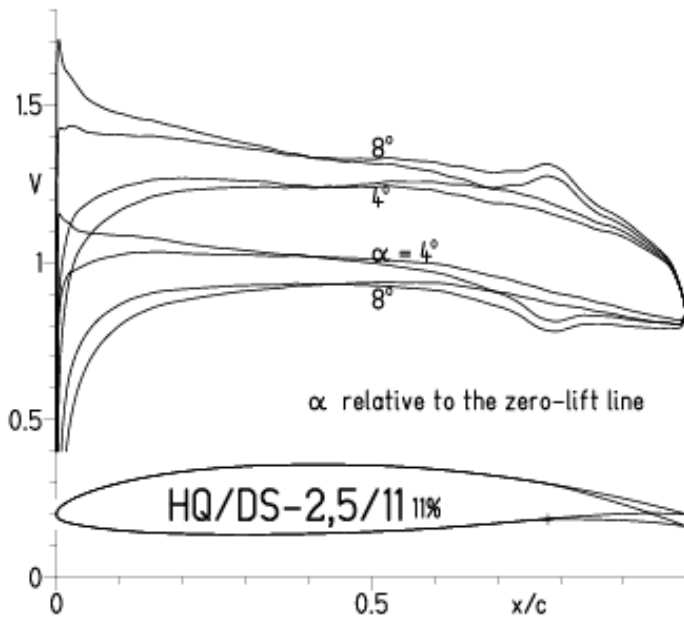
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface



HQ/DS-2,5/11, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 18:32

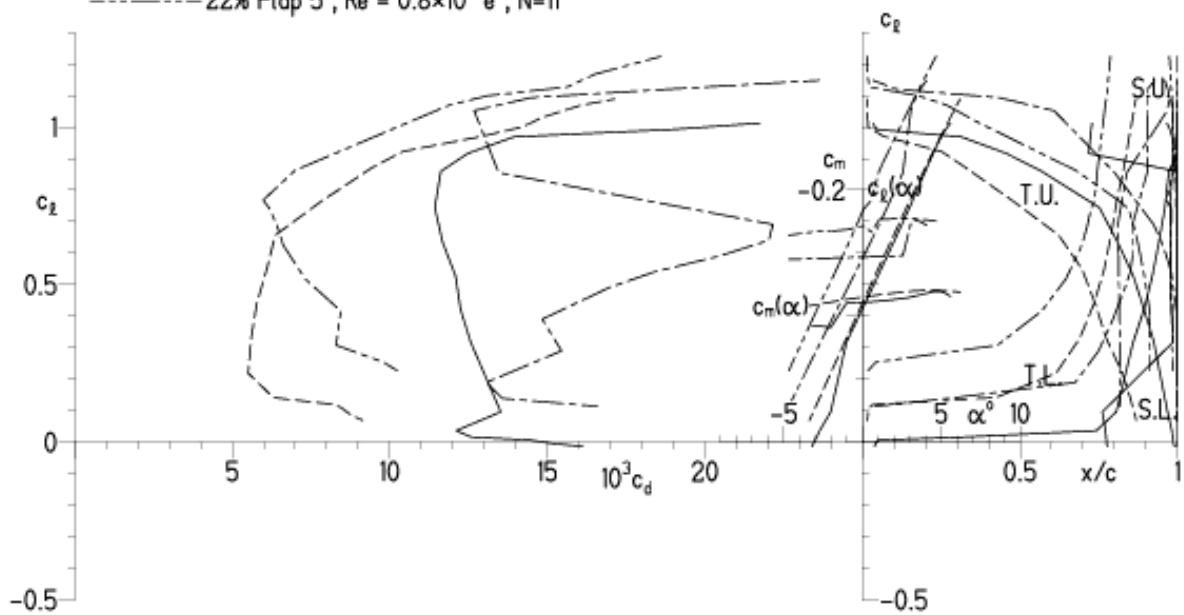


EPPLER 2005 V. 8.5.07 RUN 16.6.11 18:32

HQ/DS-2,5/11 11%

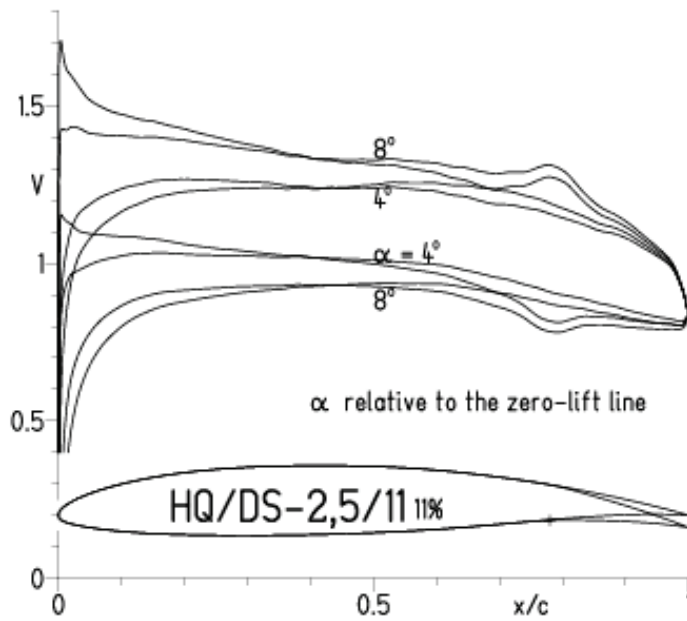
- $Re = 0.2 \times 10^6$ e^N, N=11
- - - 0.8×10^6 e^N, N=11
- · - · 22% Flap 5°, $Re = 0.2 \times 10^6$ e^N, N=11
- · - · 22% Flap 5°, $Re = 0.8 \times 10^6$ e^N, N=11

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

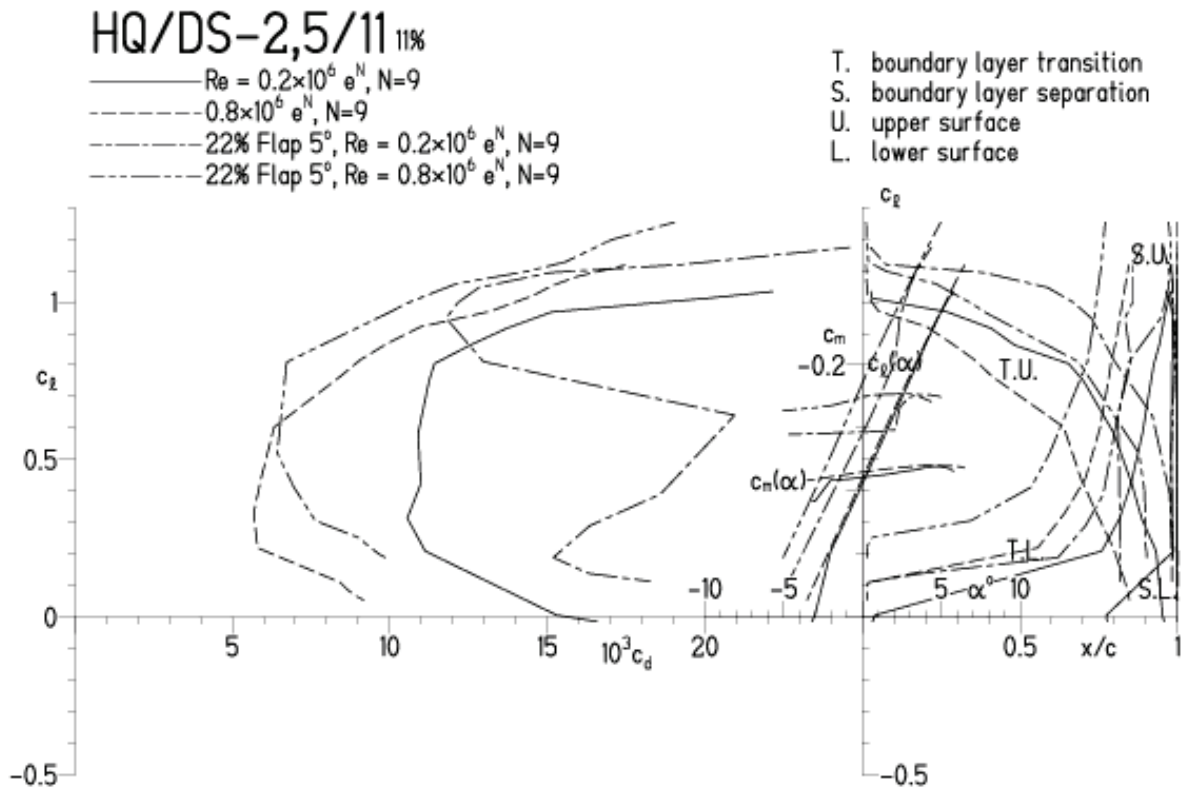


HQ/DS-2,5/11, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 16.6.11 19:02

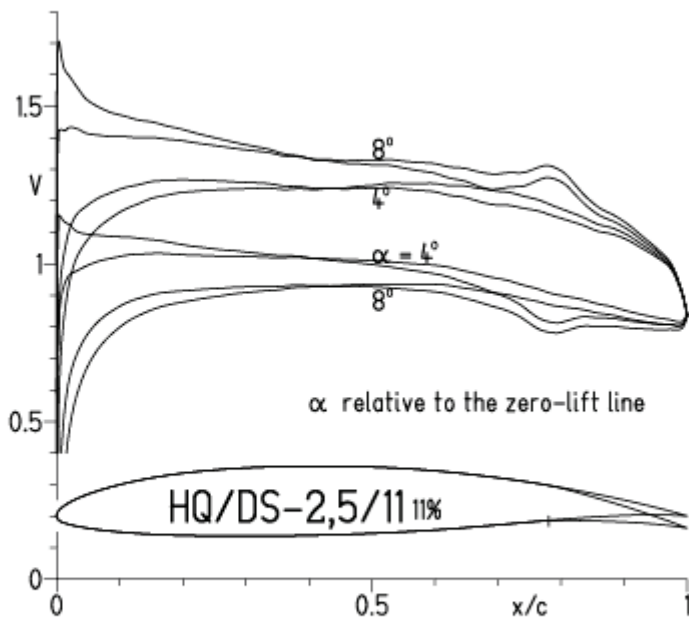


EPPLER 2005 V. 8.5.07 RUN 16.6.11 19:02



HQ/DS-2,5/11, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

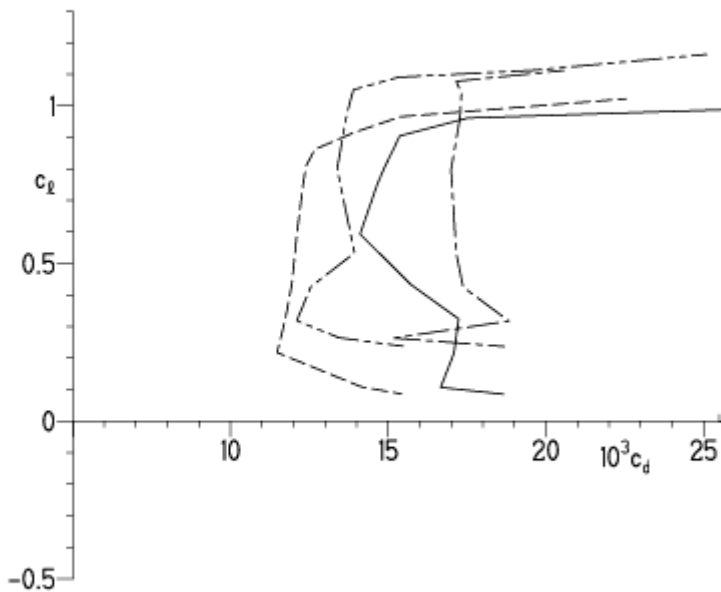
EPPLER 2005 V. 8.5.07 RUN 10.4.12 16:39



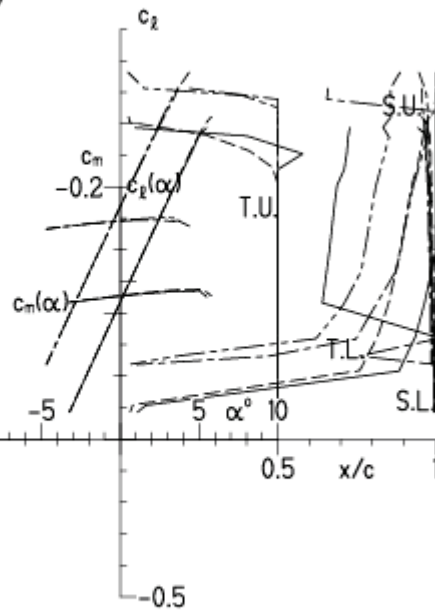
EPPLER 2005 V. 8.5.07 RUN 10.4.12 16:39

HQ/DS-2,5/11 11%

- Re = 0.1×10^6 , Turb. upper 50% e^N, N=9
- - - 0.2×10^6 , Turb. upper 50% e^N, N=9
- · - · 22% Flap 5°, Re = 0.1×10^6 , Turb. upper 50% e^N, N=9
- · - · 22% Flap 5°, Re = 0.2×10^6 , Turb. upper 50% e^N, N=9

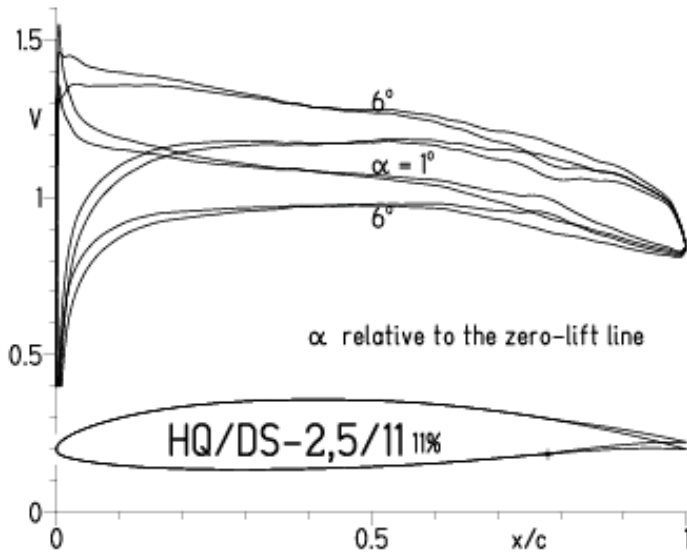


- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

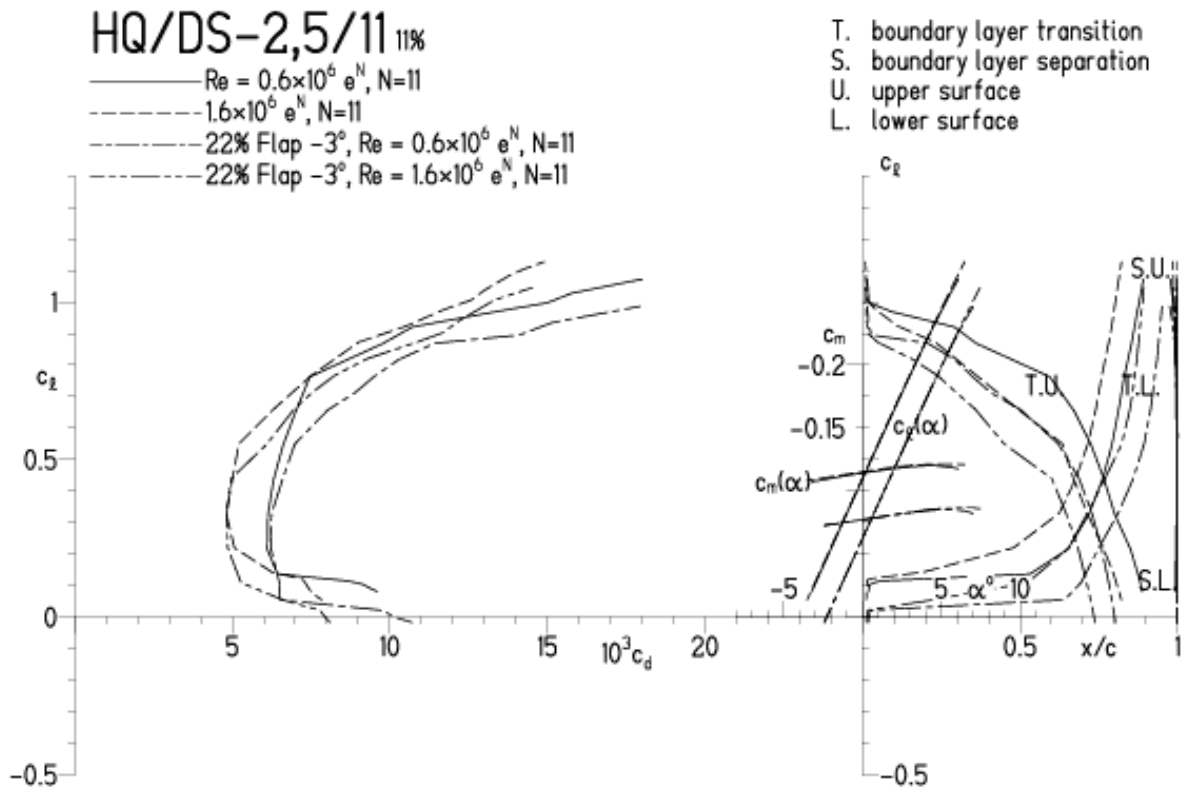


HQ/DS-2,5/11, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 17.6.11 11:06

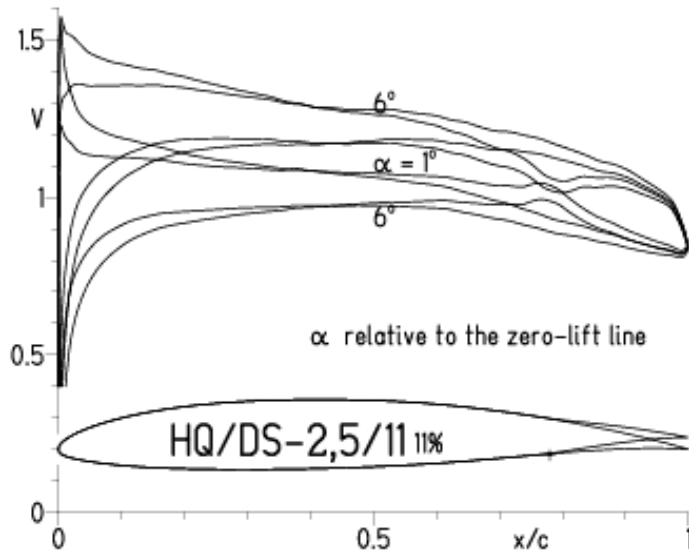


EPPLER 2005 V. 8.5.07 RUN 17.6.11 11:06

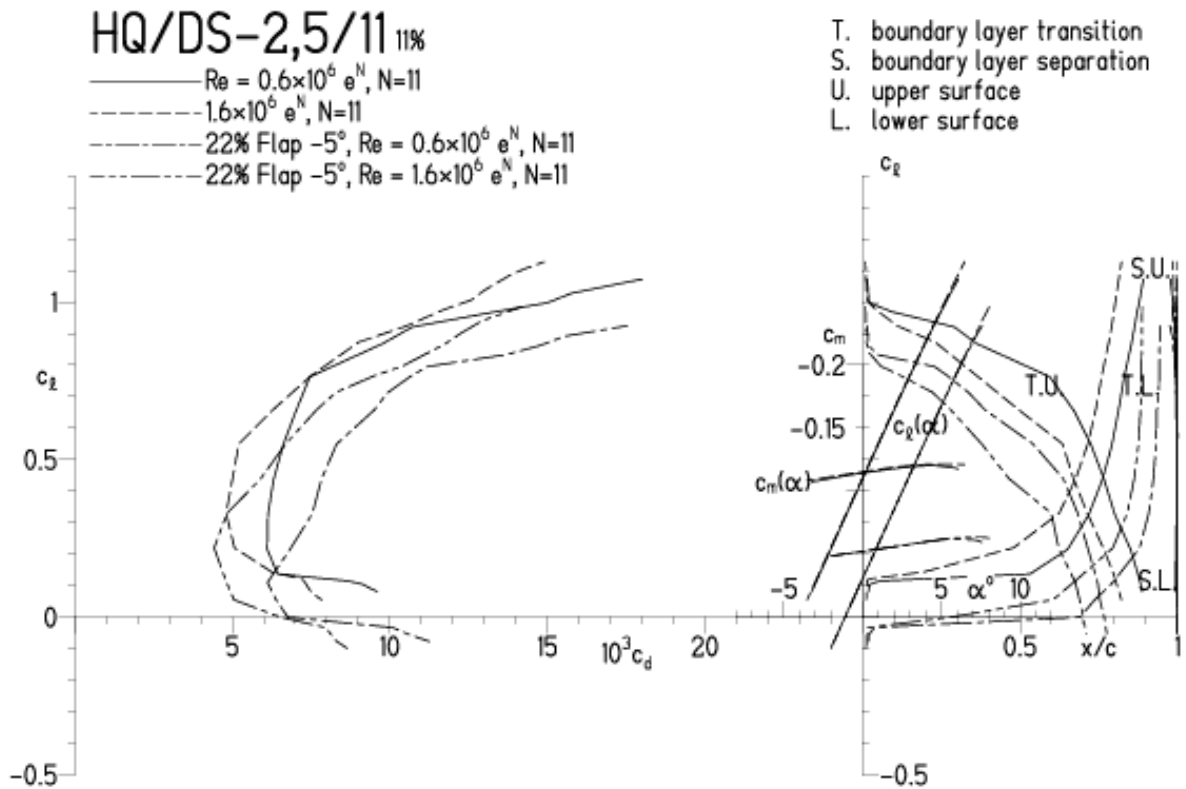


HQ/DS-2,5/11, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 17.6.11 10:48

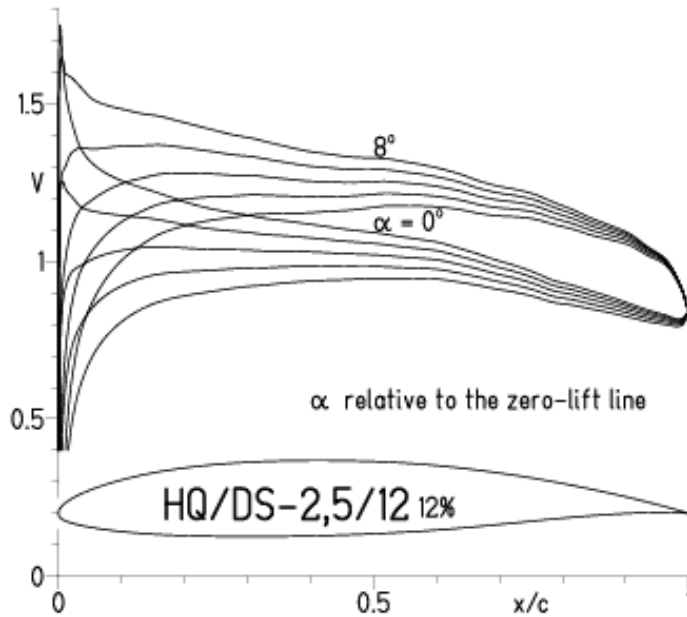


EPPLER 2005 V. 8.5.07 RUN 17.6.11 10:48

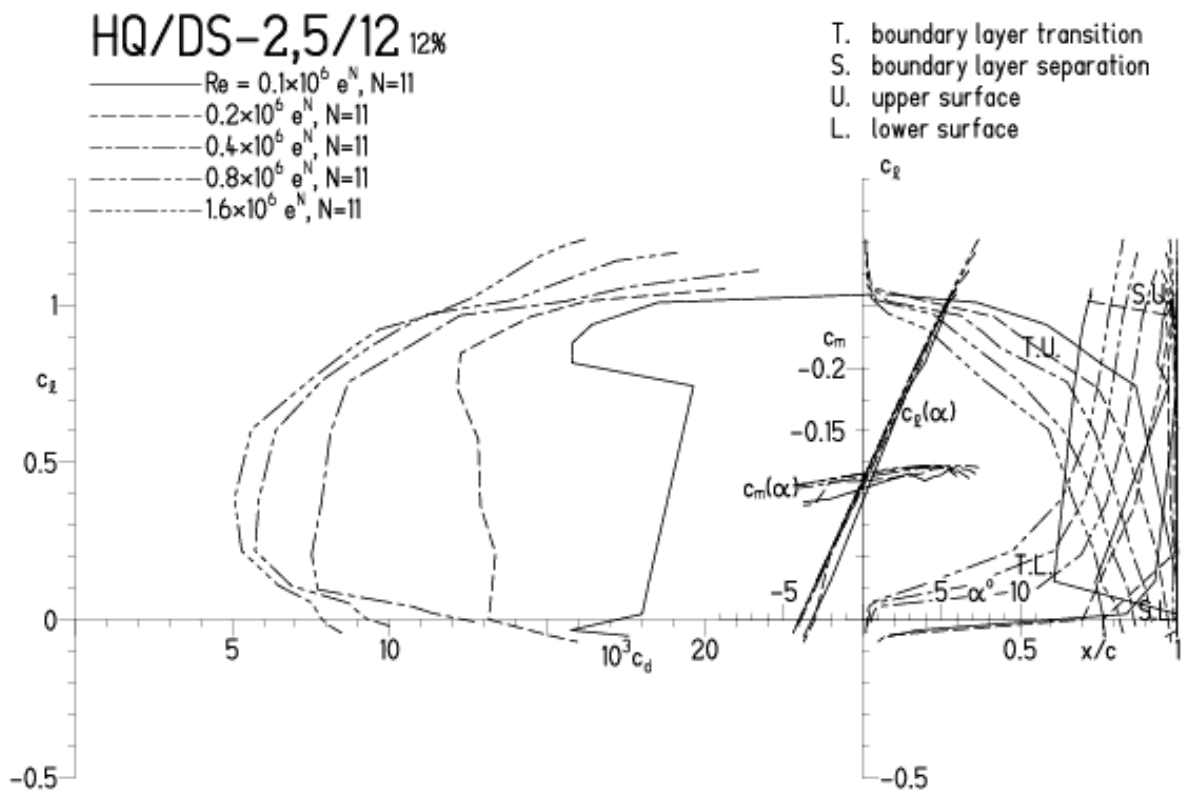


HQ/DS-2,5/12, N=11

EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:17

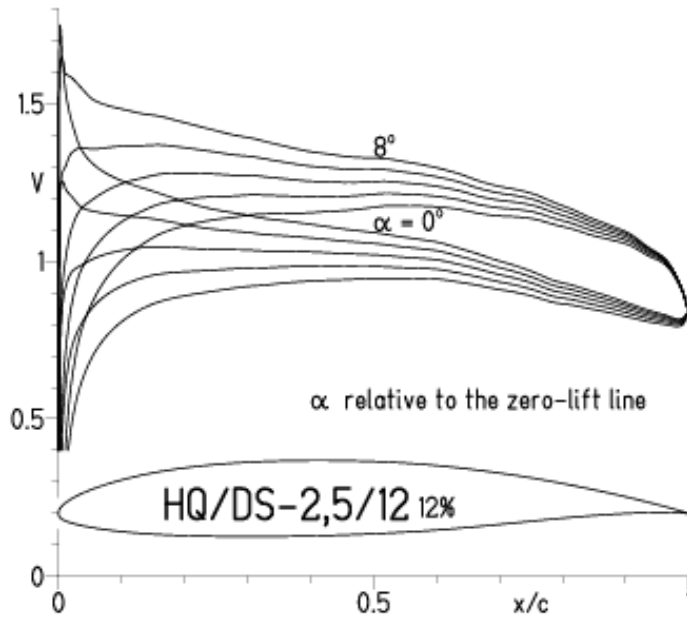


EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:17

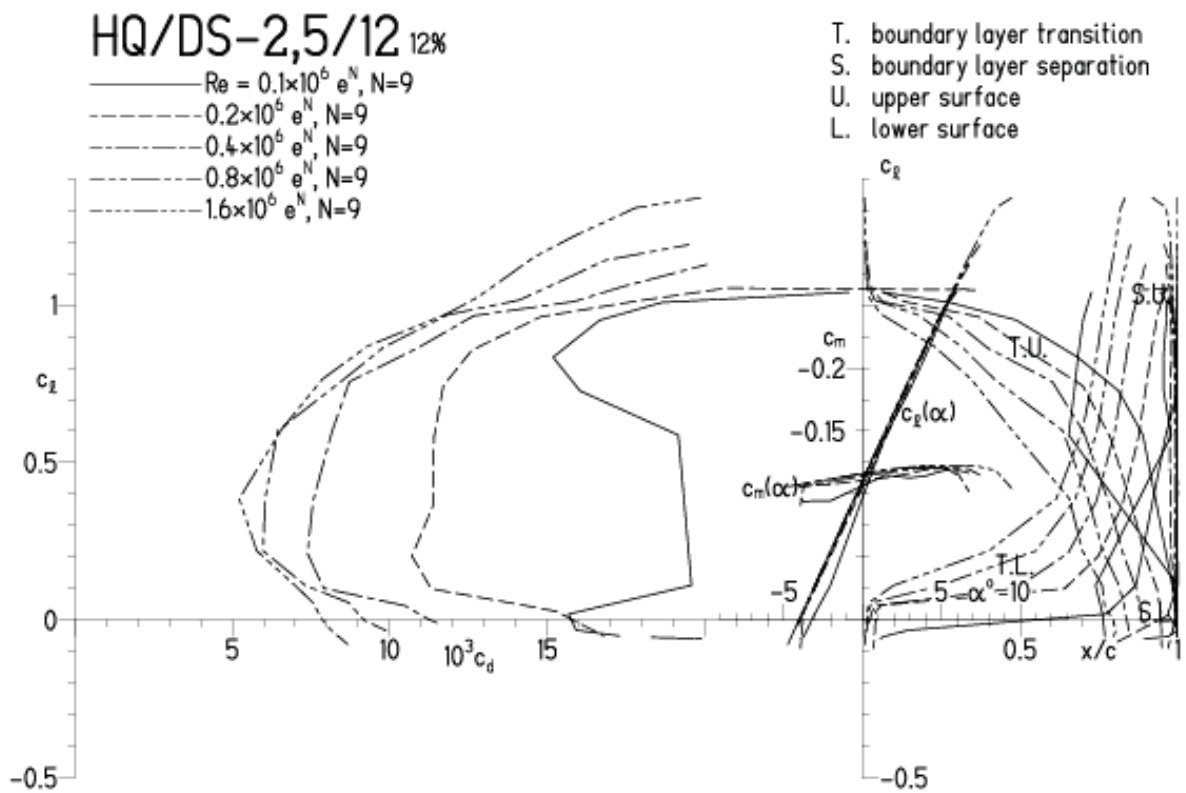


HQ/DS-2,5/12, N=9

EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:04

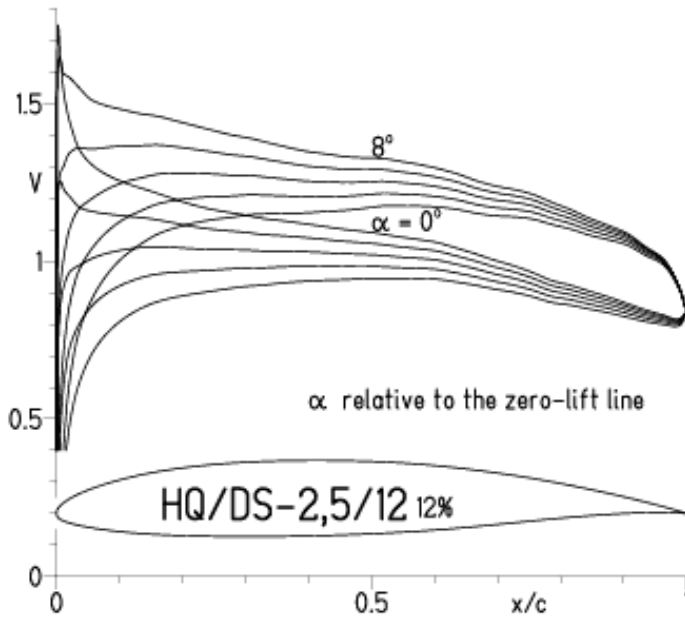


EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:04



HQ/DS-2,5/12, N=9, Turbulatoreffekt, Turbulatoreffekt bei niedrigen Re-Zahlen
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:14

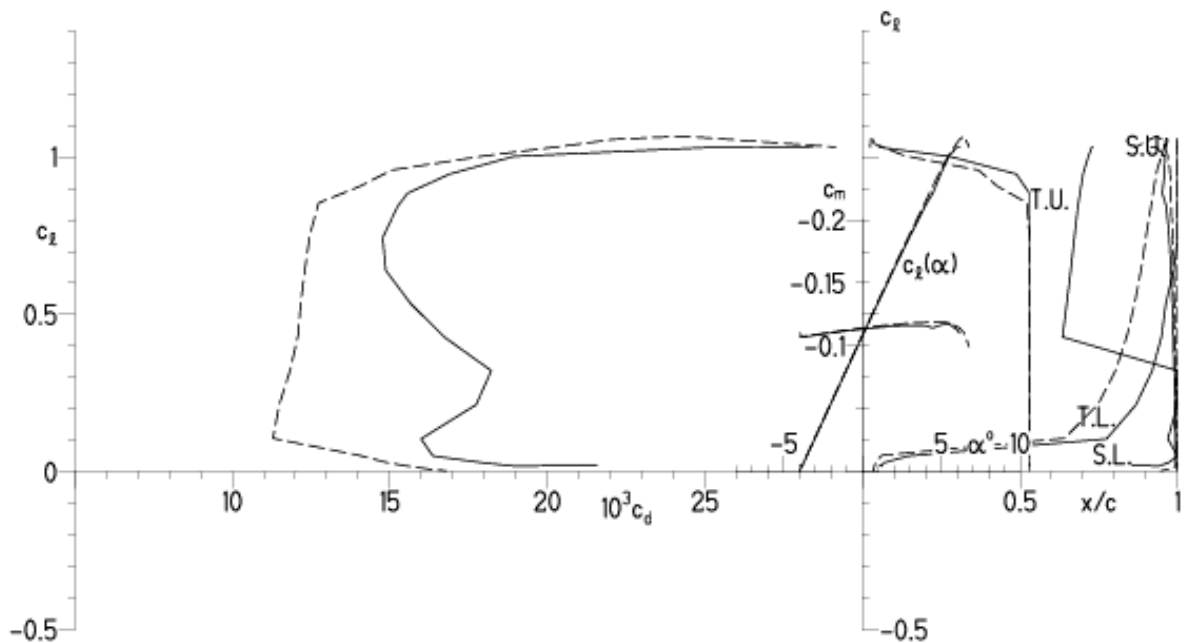


EPPLER 2005 V. 8.5.07 RUN 17.6.11 13:14

HQ/DS-2,5/12 12%

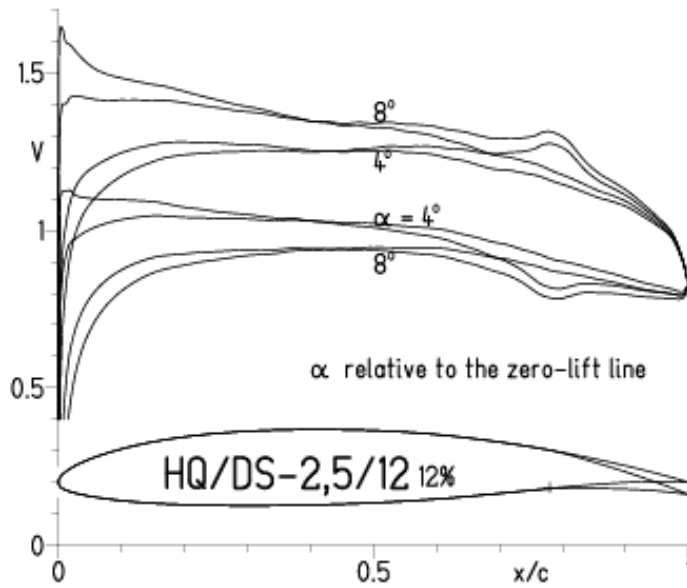
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

T. boundary layer transition
 S. boundary layer separation
 U. upper surface
 L. lower surface



HQ/DS-2,5/12, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.6.11 13:01

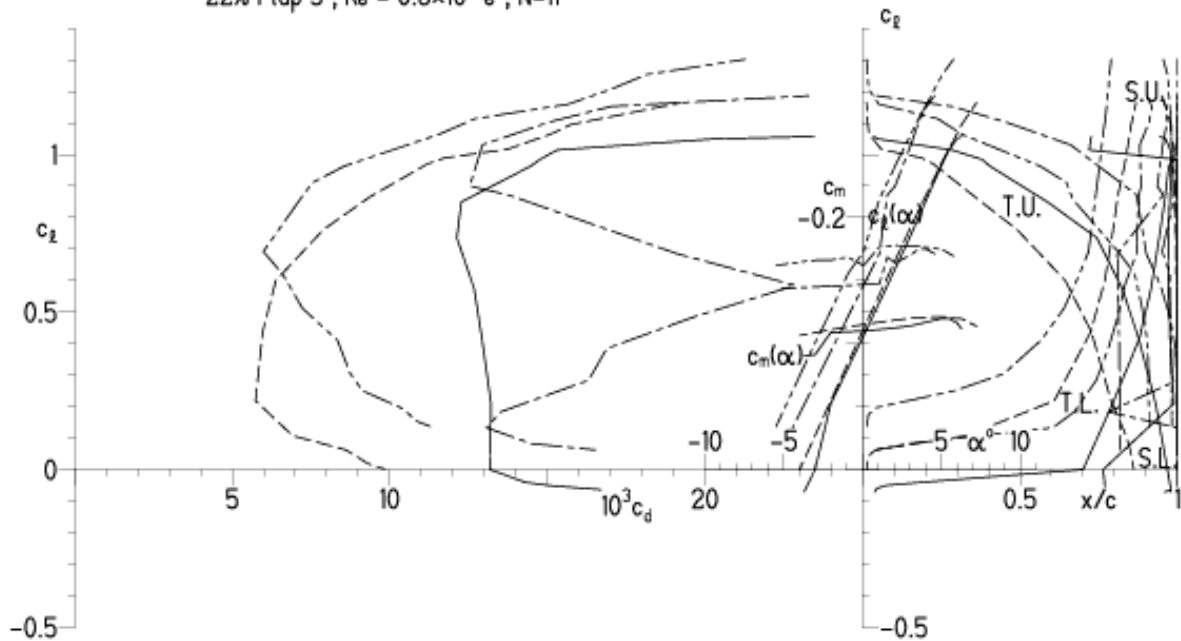


EPPLER 2005 V. 8.5.07 RUN 23.6.11 13:01

HQ/DS-2,5/12 12%

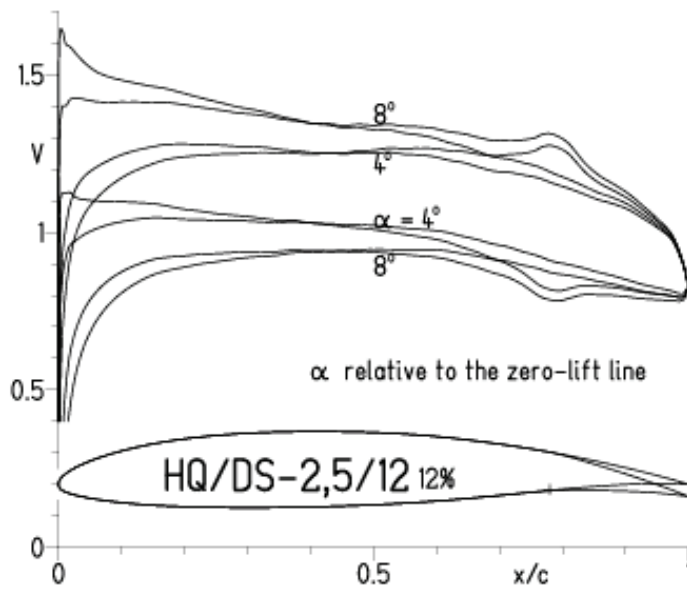
- $Re = 0.2 \times 10^6$, $N=11$
- - - 0.8×10^6 , $N=11$
- · - · 22% Flap 5°, $Re = 0.2 \times 10^6$, $N=11$
- · - · 22% Flap 5°, $Re = 0.8 \times 10^6$, $N=11$

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface



HQ/DS-2,5/12, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.6.11 13:26

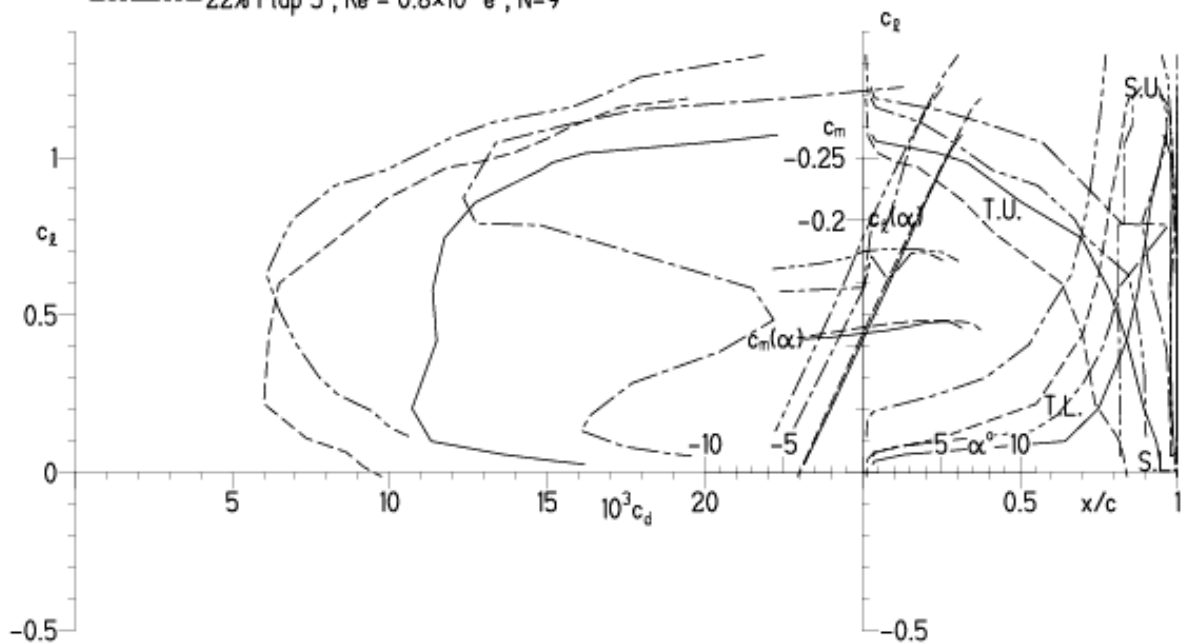


EPPLER 2005 V. 8.5.07 RUN 23.6.11 13:26

HQ/DS-2,5/12 12%

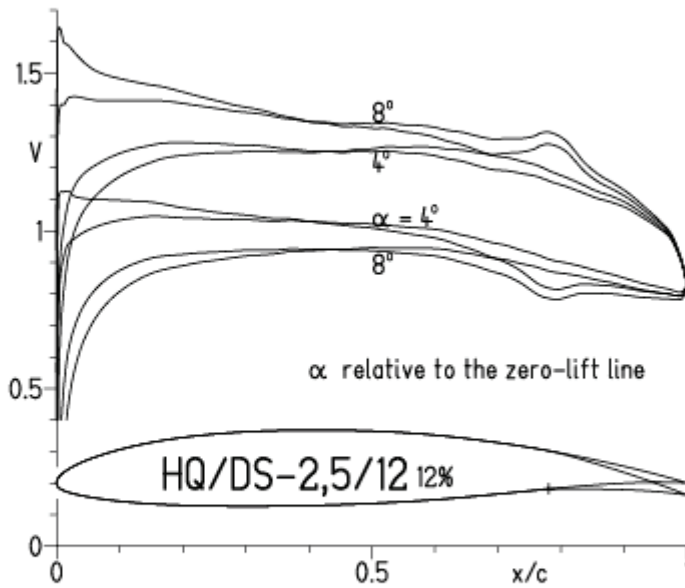
- $Re = 0.2 \times 10^6$ e^N, N=9
- - - 0.8×10^6 e^N, N=9
- · - · 22% Flap 5°, $Re = 0.2 \times 10^6$ e^N, N=9
- · - · 22% Flap 5°, $Re = 0.8 \times 10^6$ e^N, N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

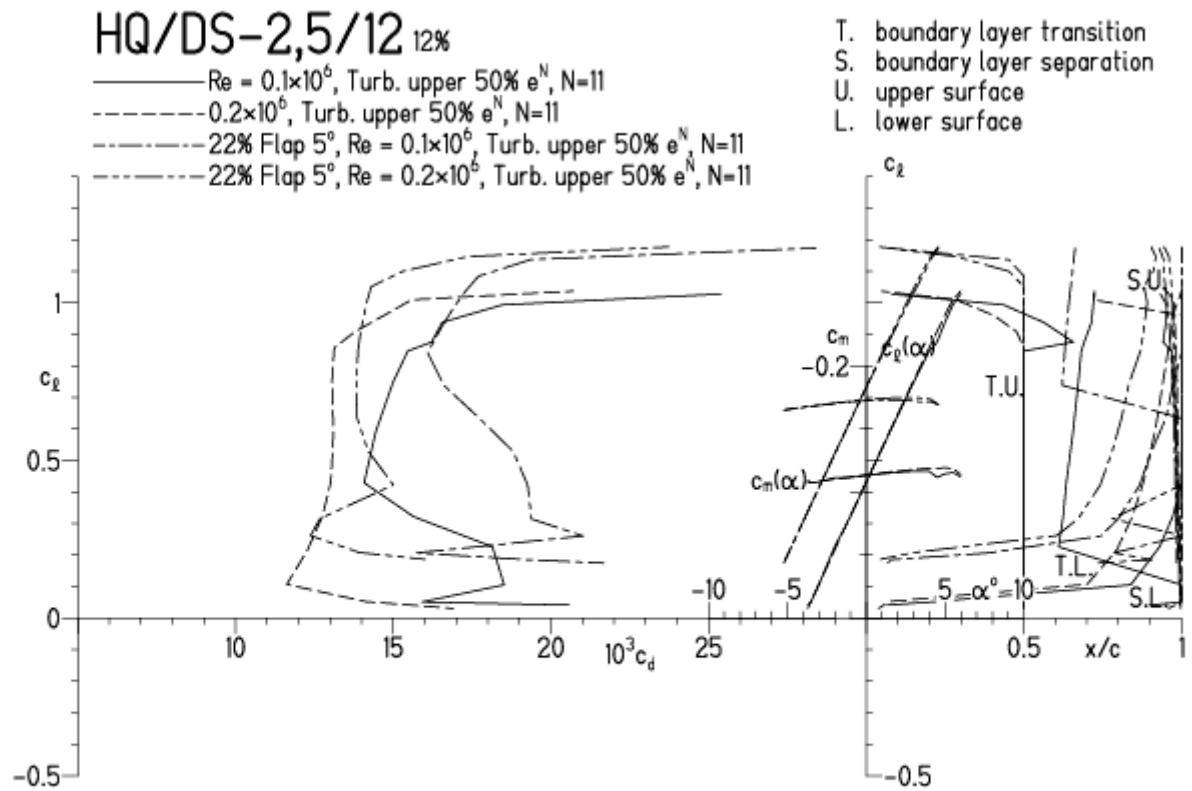


HQ/DS-2,5/12, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

EPPLER 2005 V. 8.5.07 RUN 10.4.12 17:11

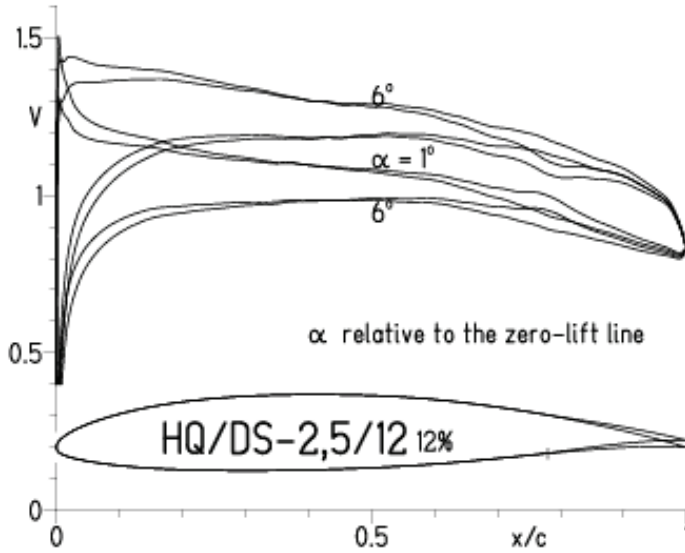


EPPLER 2005 V. 8.5.

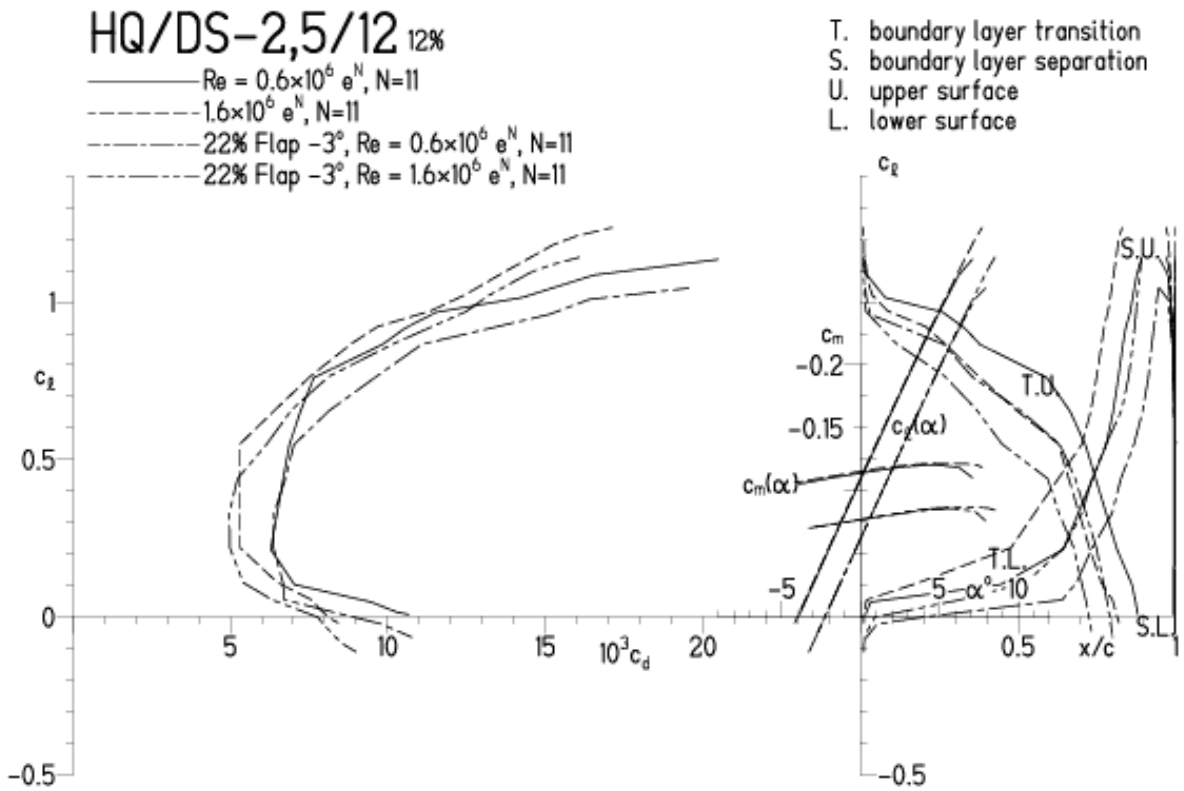


HQ/DS-2,5/12, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.6.11 11:01

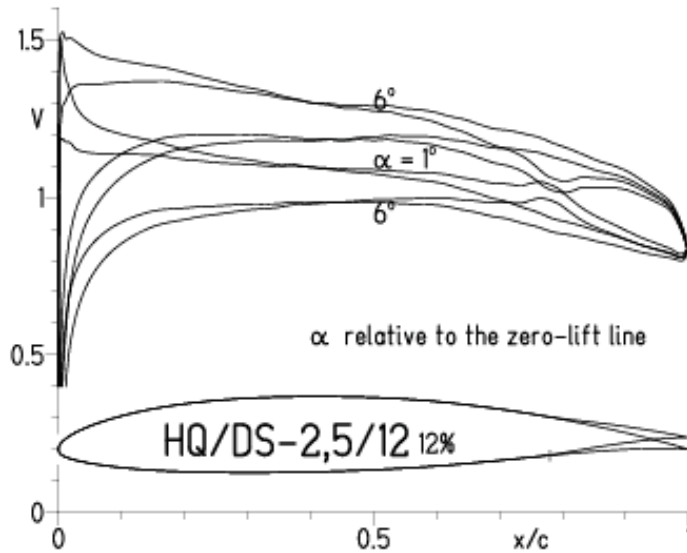


EPPLER 2005 V. 8.5.07 RUN 23.6.11 11:01

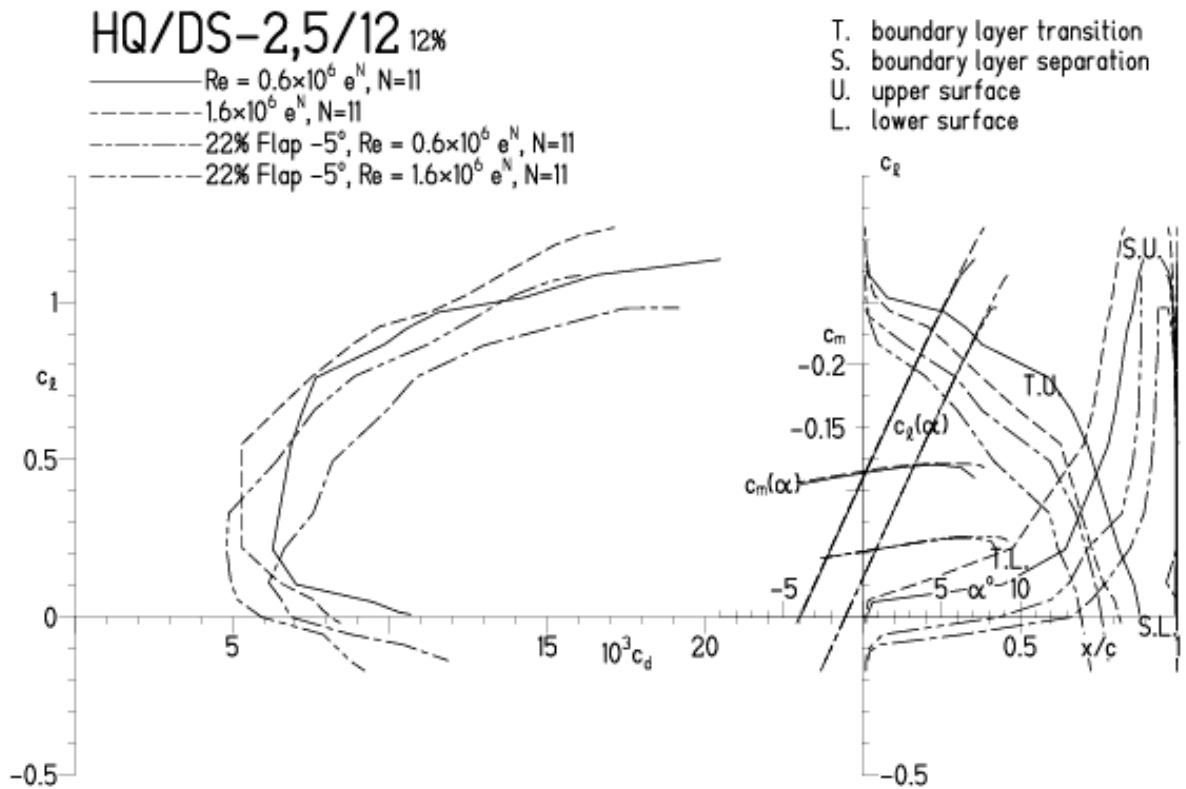


HQ/DS-2,5/12, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.6.11 11:24

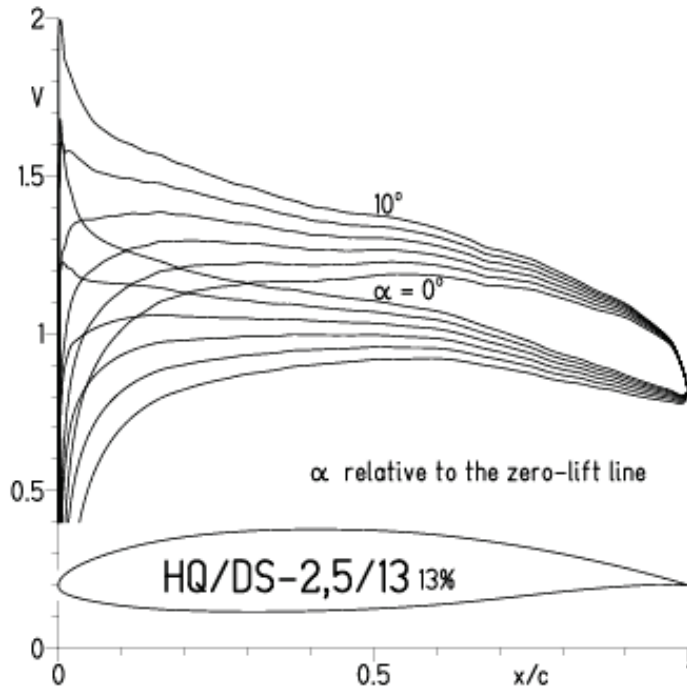


EPPLER 2005 V. 8.5.07 RUN 23.6.11 11:24

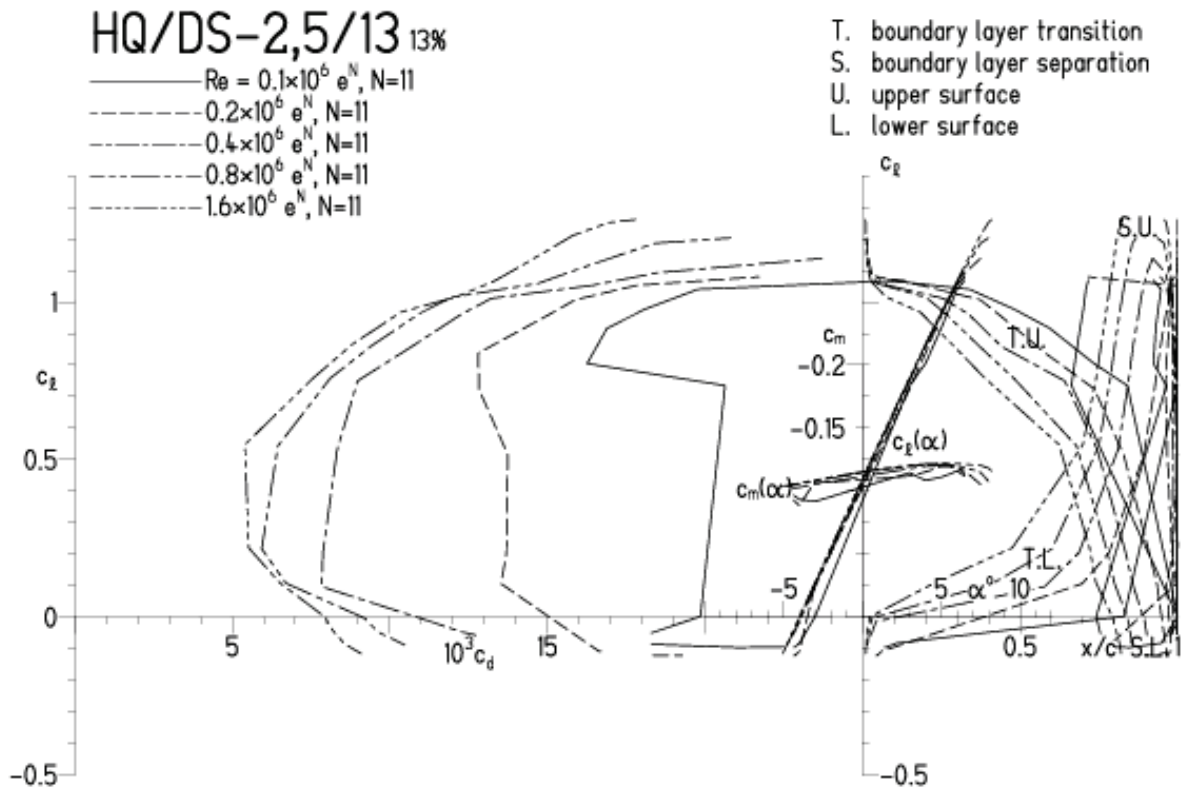


HQ/DS-2,5/13, N=11

EPPLER 2005 V. 8.5.07 RUN 14.6.11 18:13

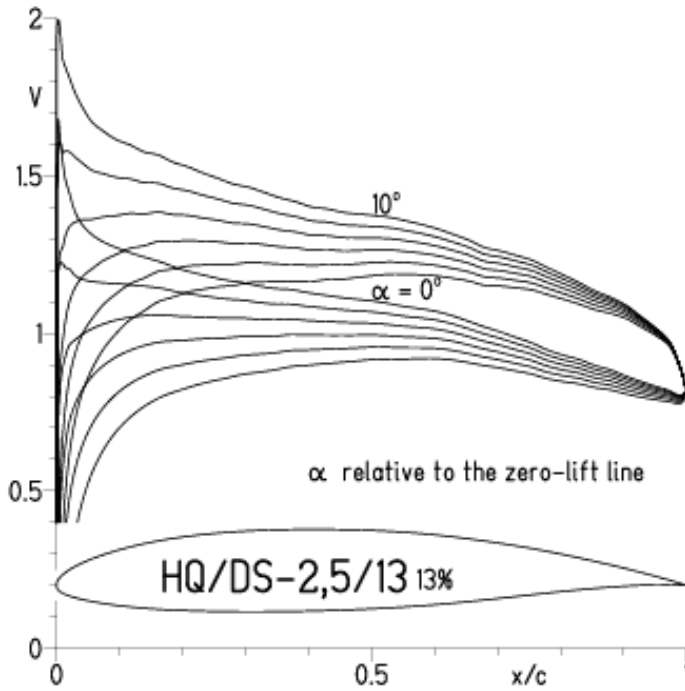


EPPLER 2005 V. 8.5.07 RUN 14.6.11 18:13

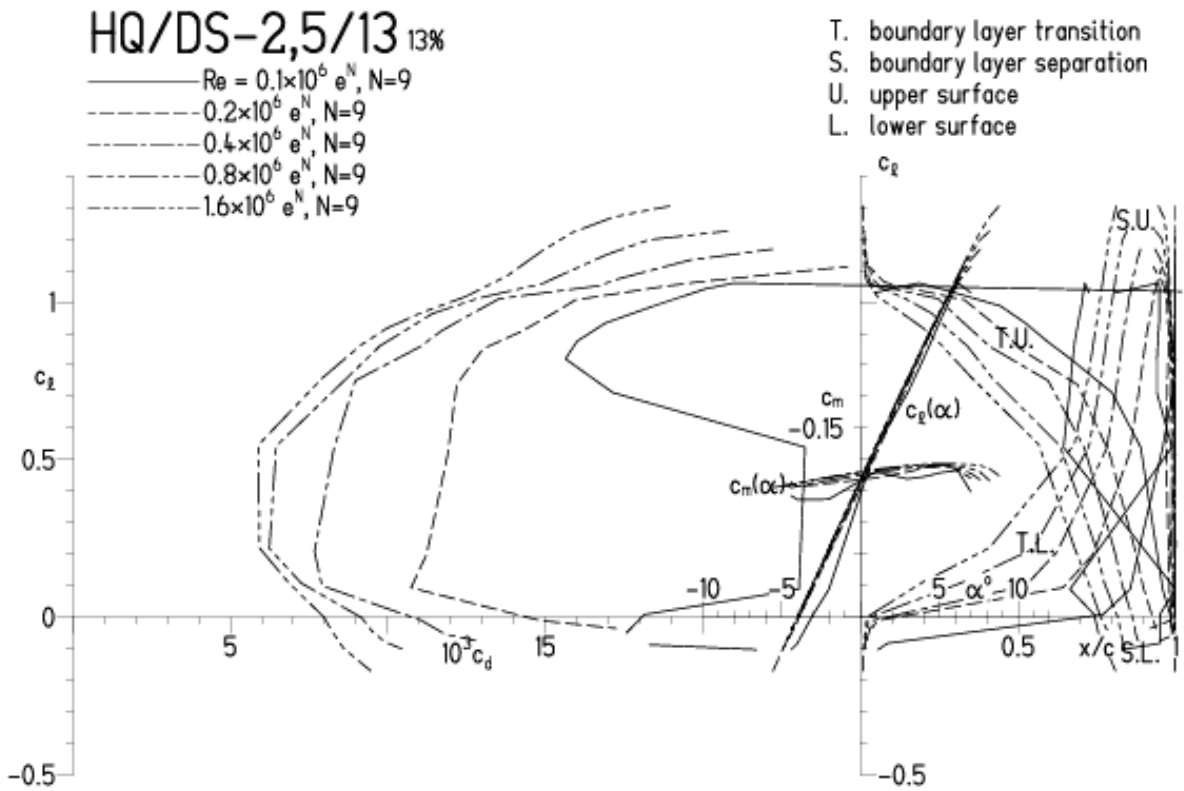


HQ/DS-2,5/13, N=9

EPPLER 2005 V. 8.5.07 RUN 14.6.11 18:34

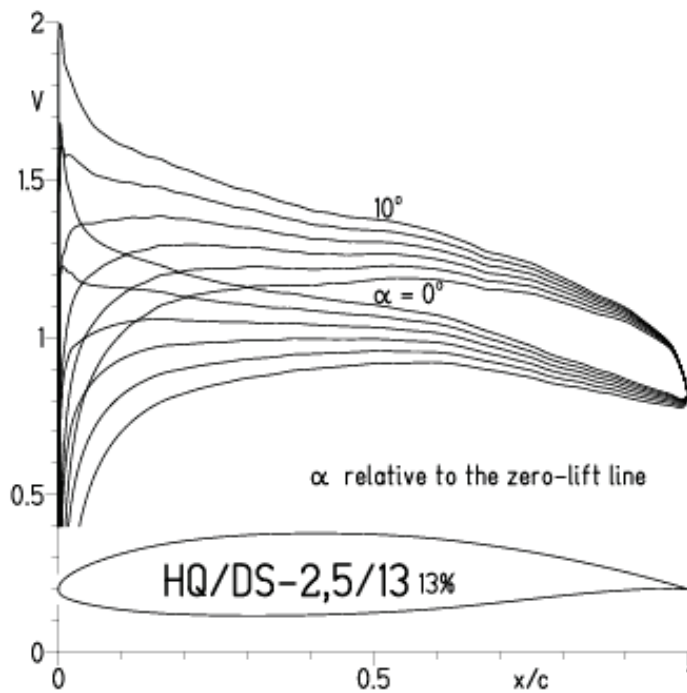


EPPLER 2005 V. 8.5.07 RUN 14.



HQ/DS-2,5/13, N=9, Turbulatoreffekt bei niedrigen Re-Zahlen
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 15.6.11 11:10

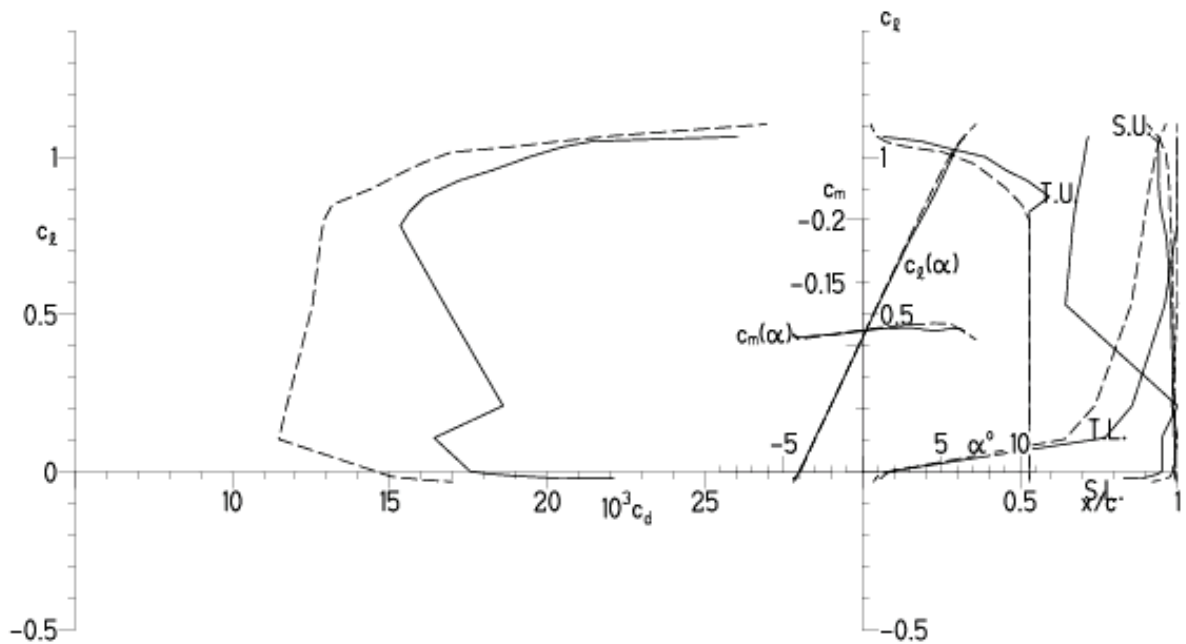


EPPLER 2005 V. 8.5.07 RUN 15.6.11 11:10

HQ/DS-2,5/13 13%

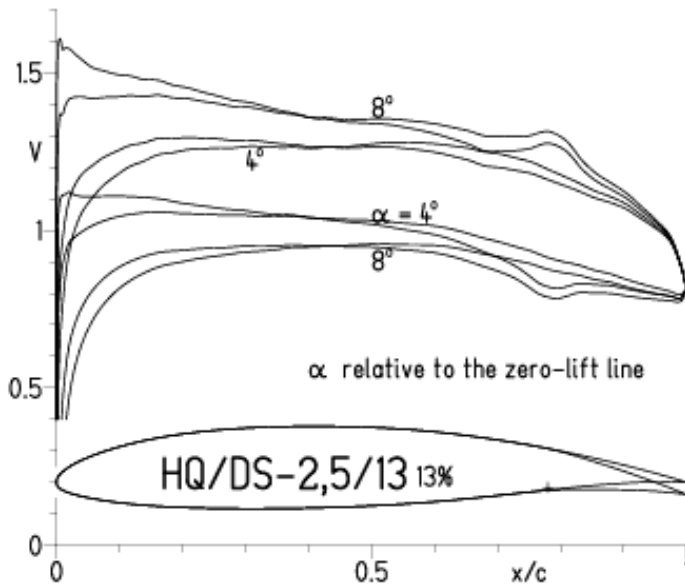
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

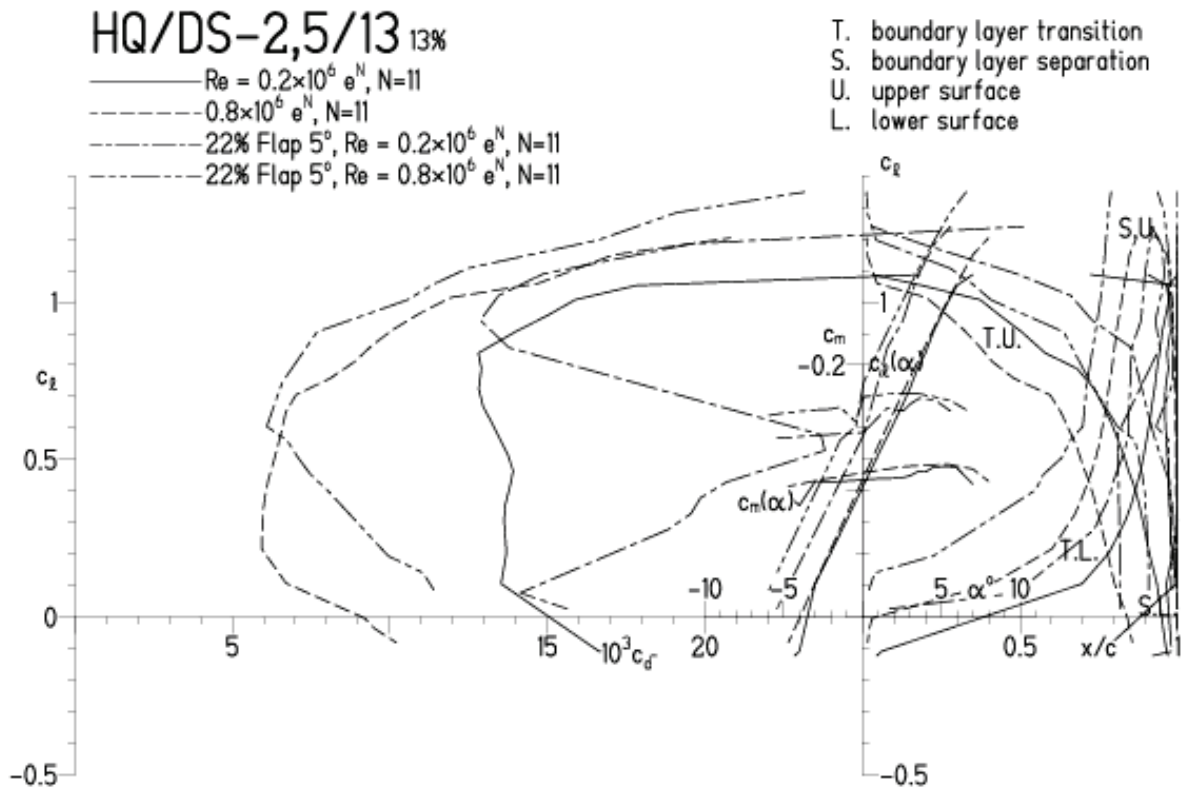


HQ/DS-2,5/13, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 15.6.11 12:38

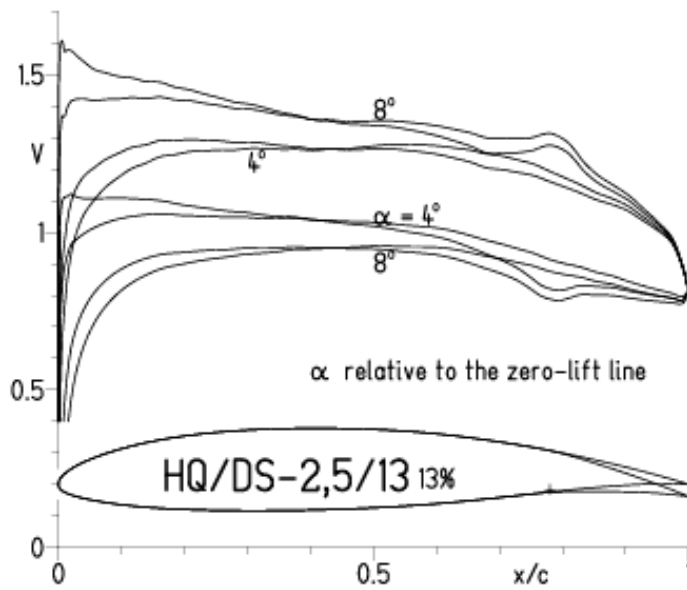


EPPLER 2005 V. 8.5.07 RUN 15.6.11 12:38

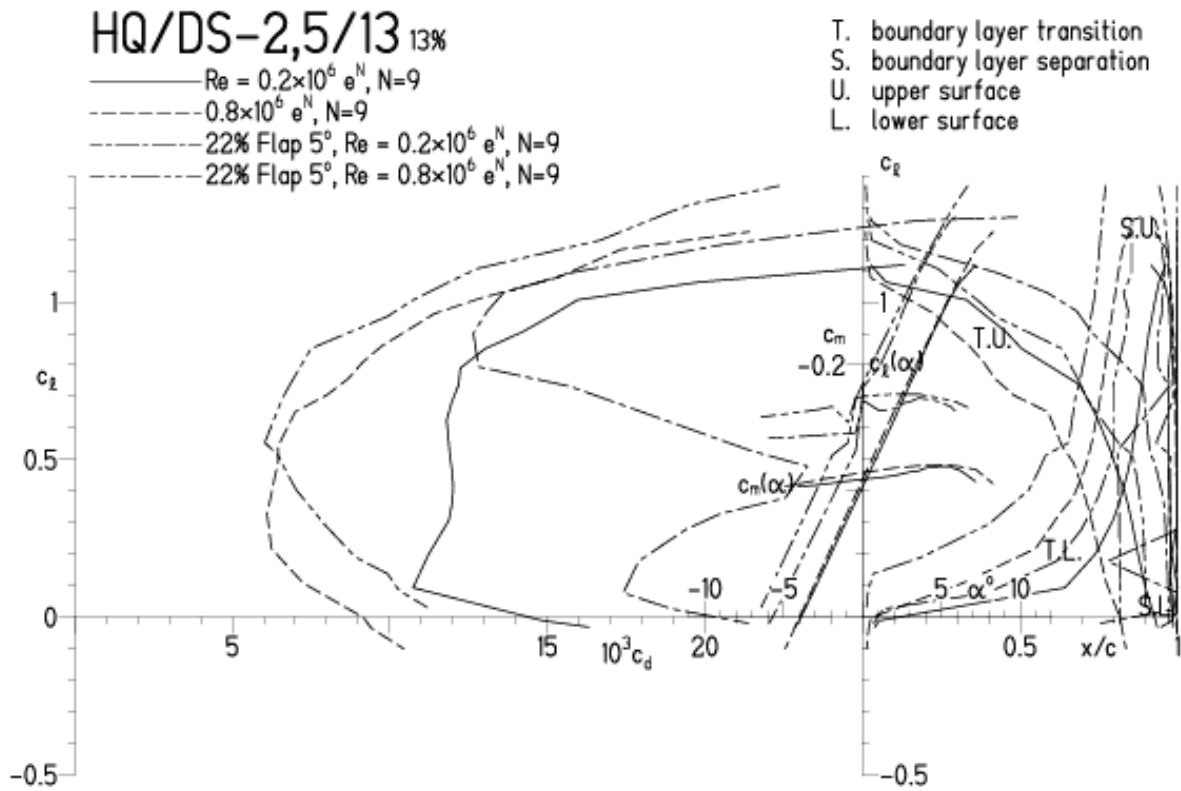


HQ/DS-2,5/13, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 15.6.11 11:58

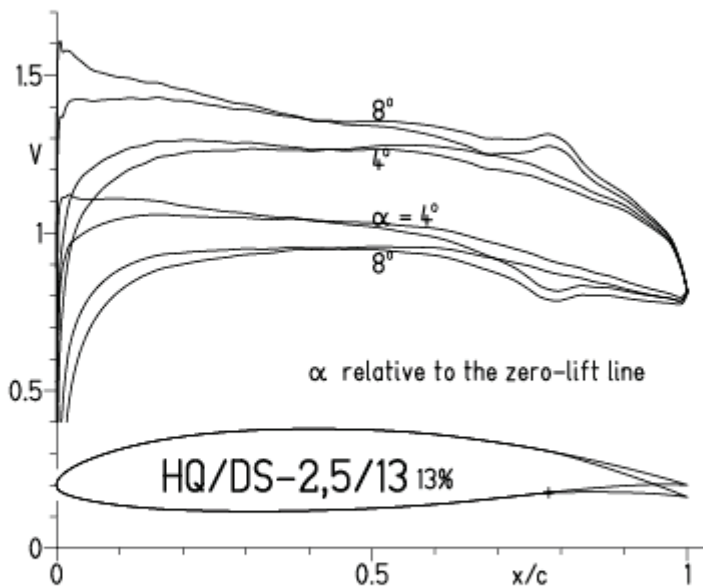


EPPLER 2005 V. 8.5.07 RUN 15.6.11 11:58

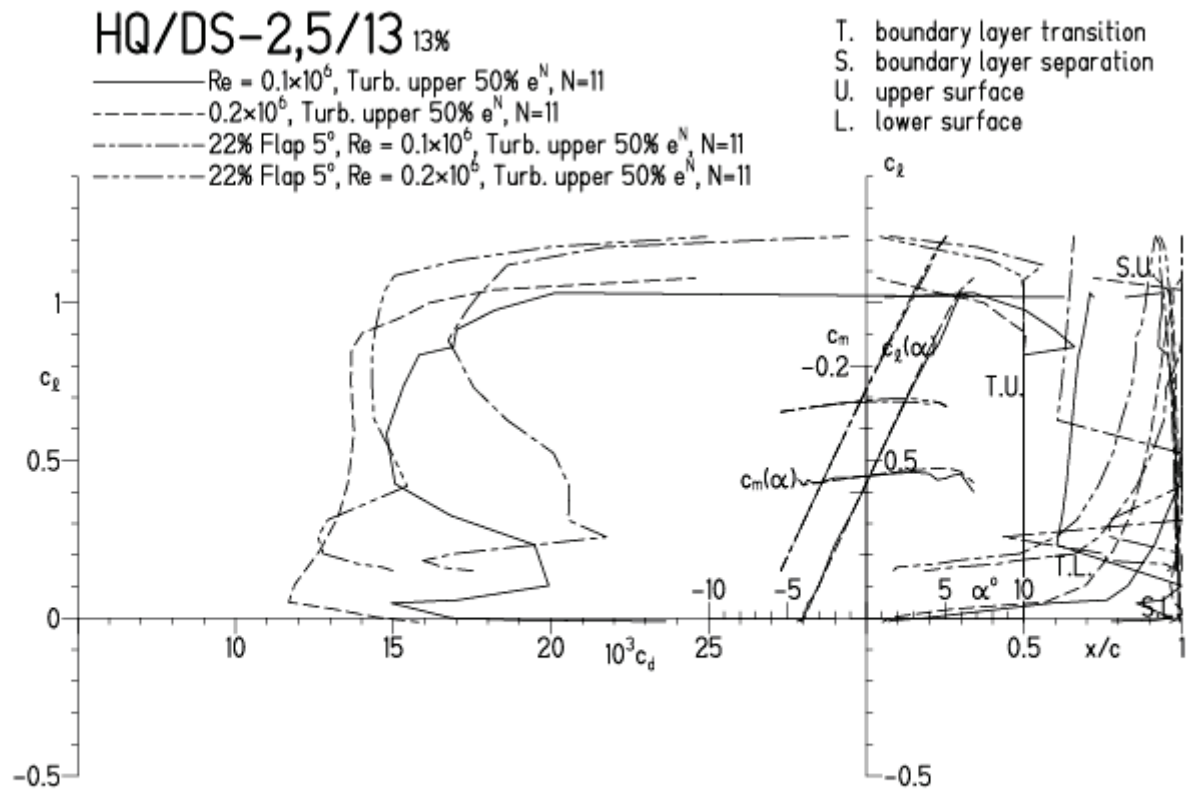


HQ/DS-2,5/13, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

EPPLER 2005 V. 8.5.07 RUN 10.4.12 17:27

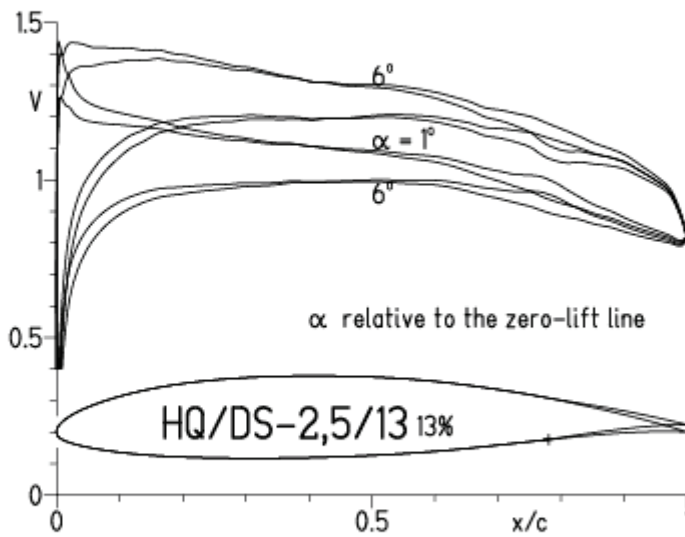


EPPLER 2005 V. 8.5.07 RUN 10.4.12 17:27

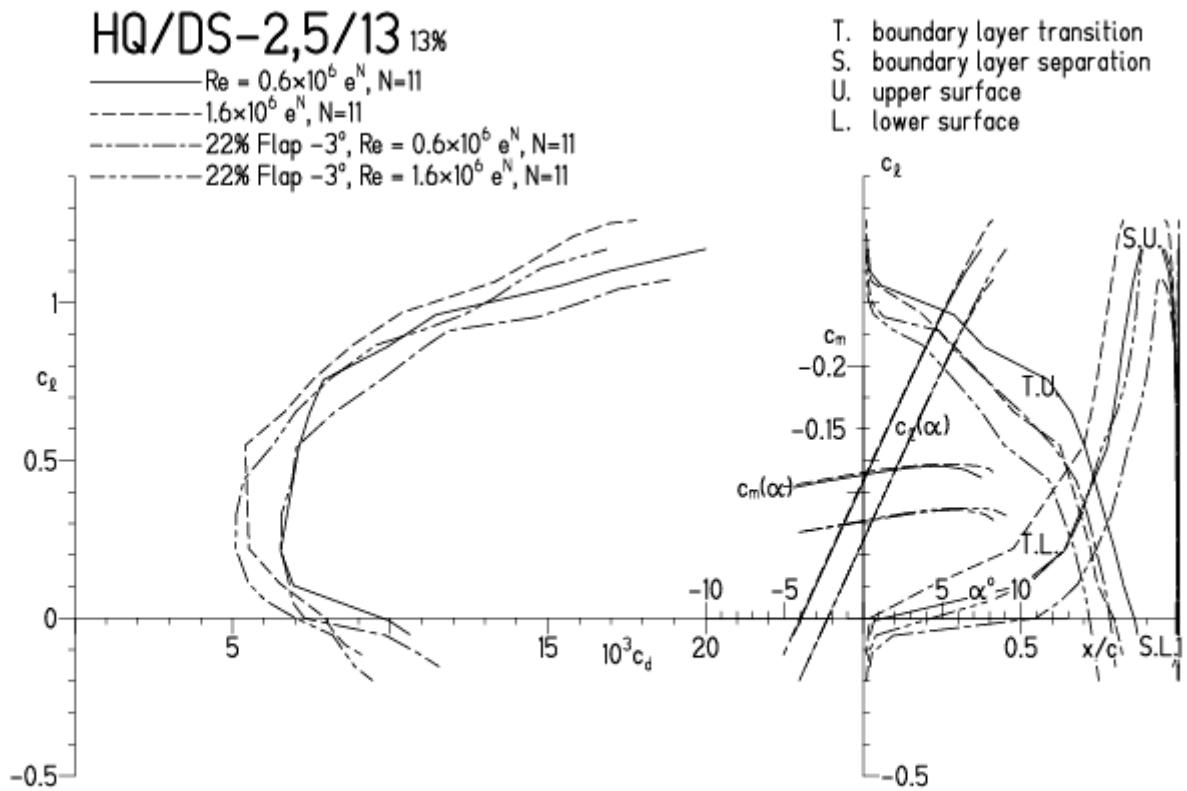


HQ/DS-2,5/13, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 10.4.12 17:48

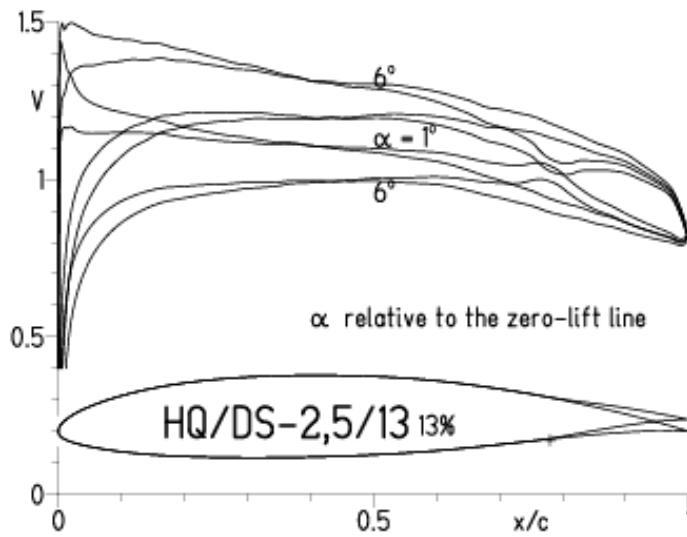


EPPLER 2005 V. 8.5.07 RUN 10.4.12 17:48

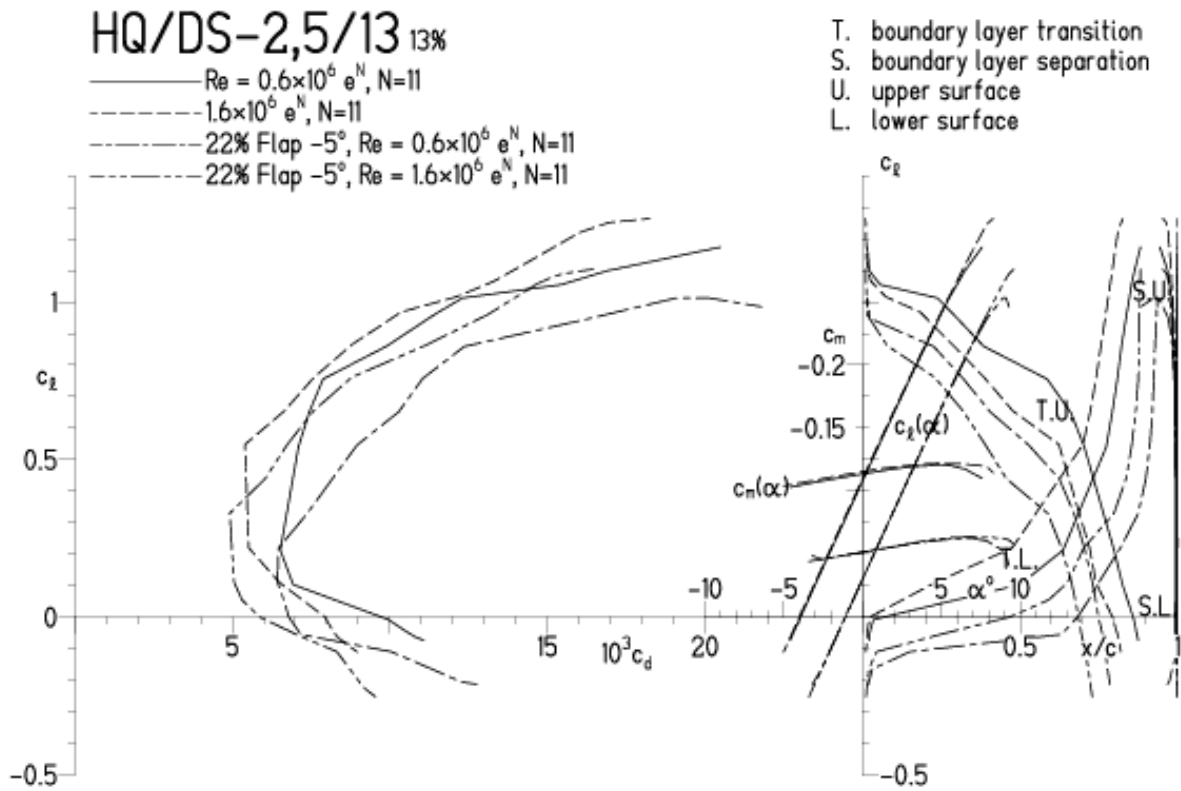


HQ/DS-2,5/13, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 15.6.11 13:16

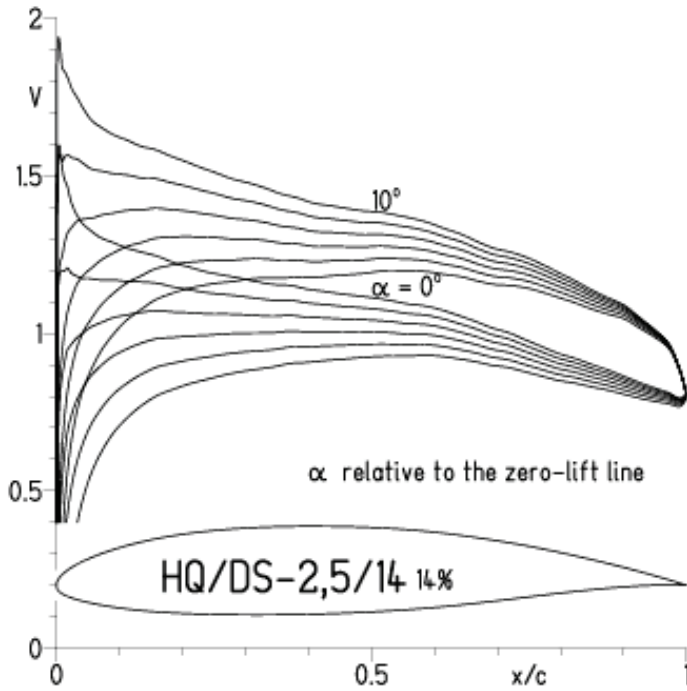


EPPLER 2005 V. 8.5.07 RUN 15.6.11 13:16

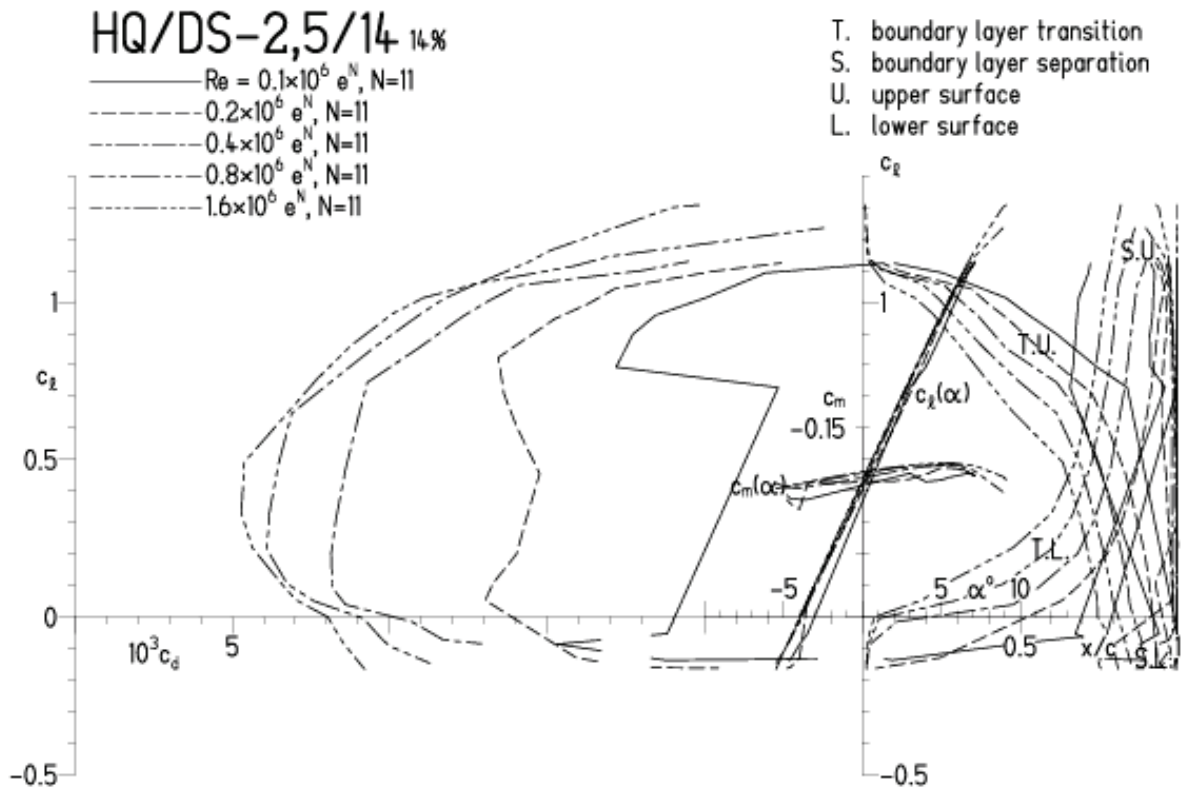


HQ/DS-2,5/14, N=11

EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:06

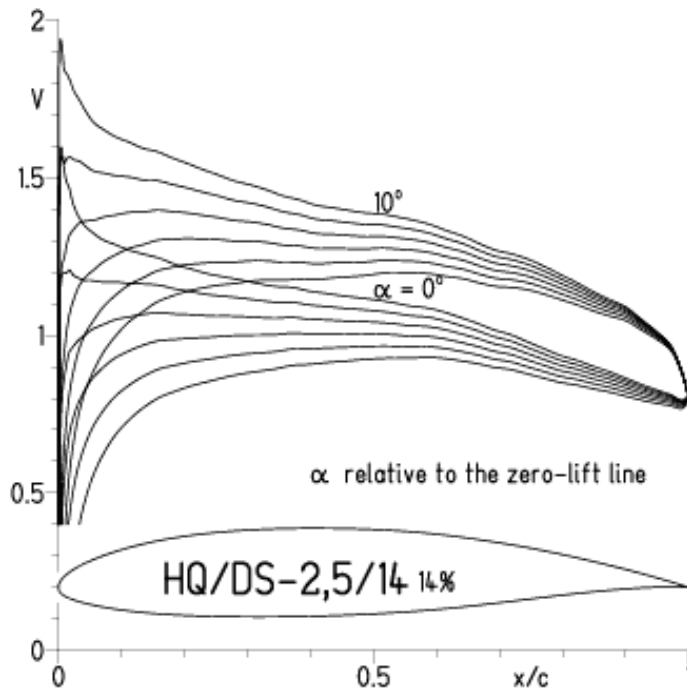


EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:06

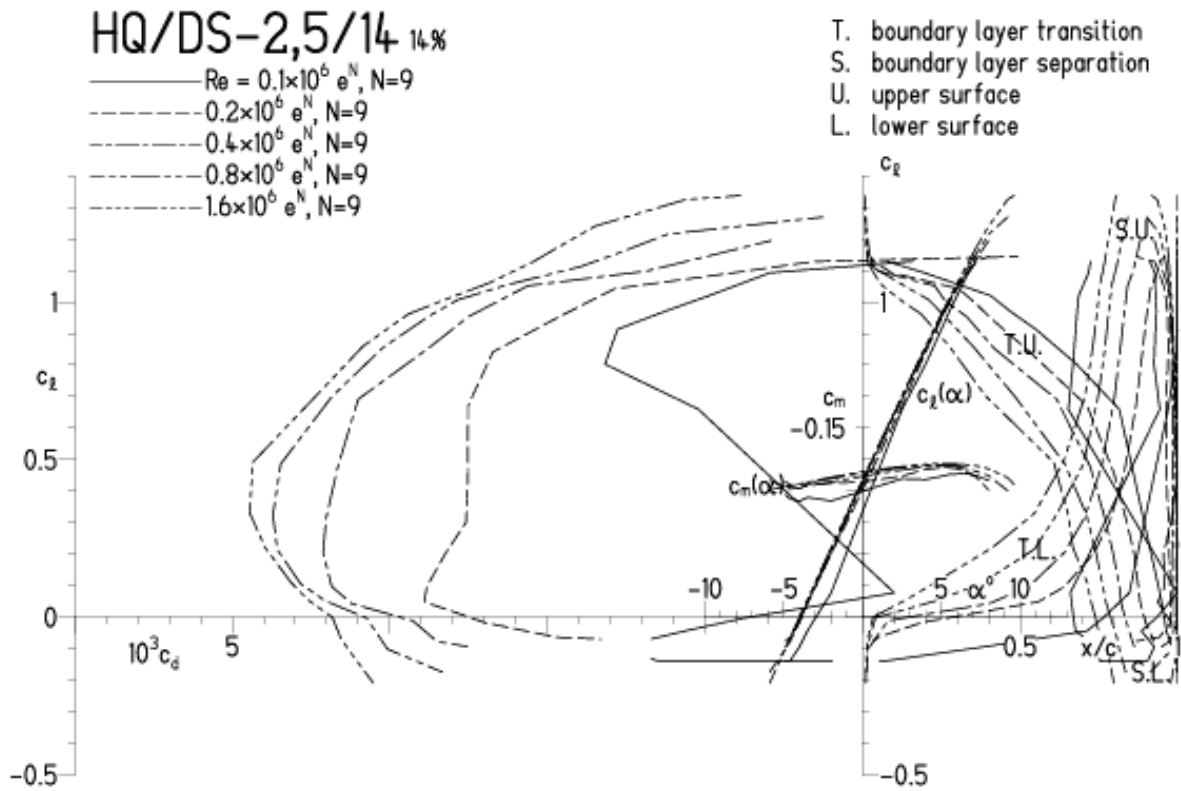


HQ/DS-2,5/14, N=9

EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:22

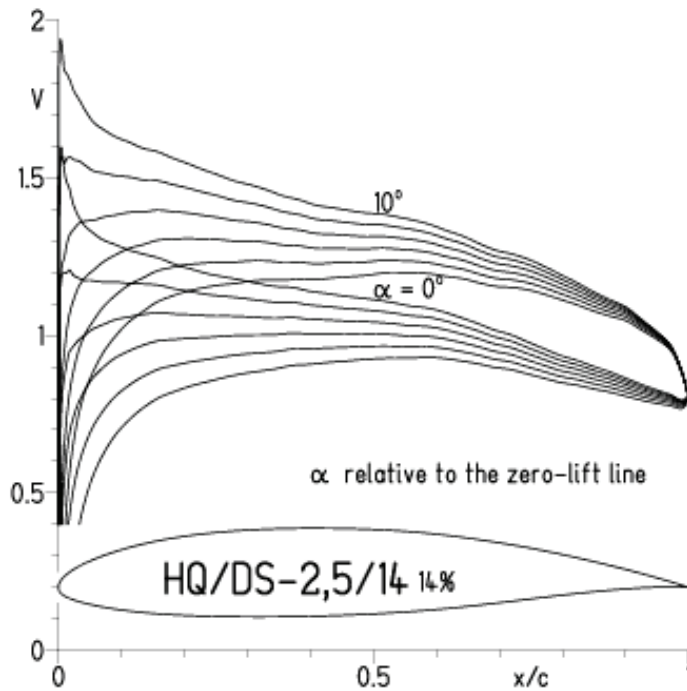


EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:22



HQ/DS-2,5/14, N=9, Turbulatoreffekt, Turbulatoreffekt bei niedrigen Re-Zahlen
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:40

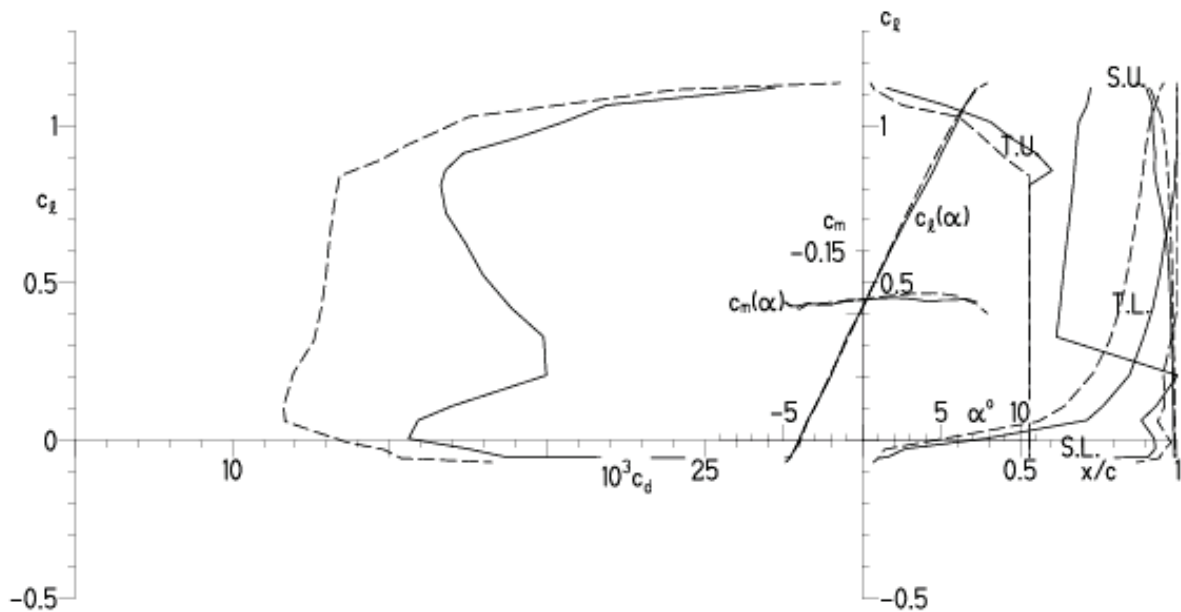


EPPLER 2005 V. 8.5.07 RUN 24.6.11 12:40

HQ/DS-2,5/14 14%

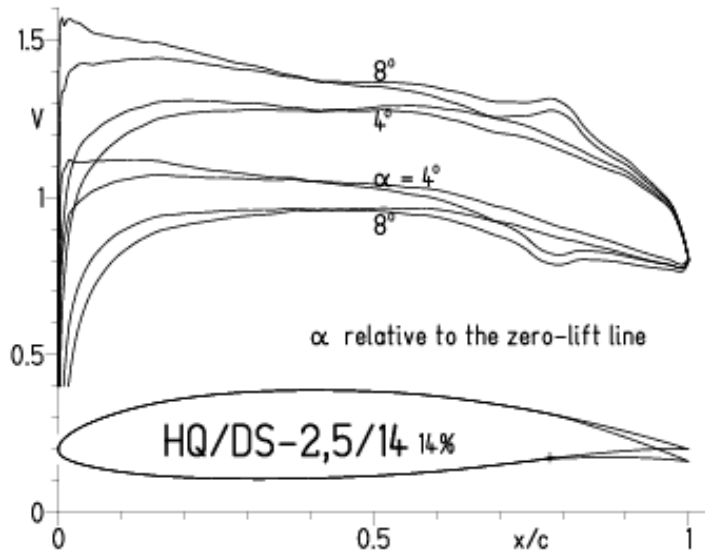
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

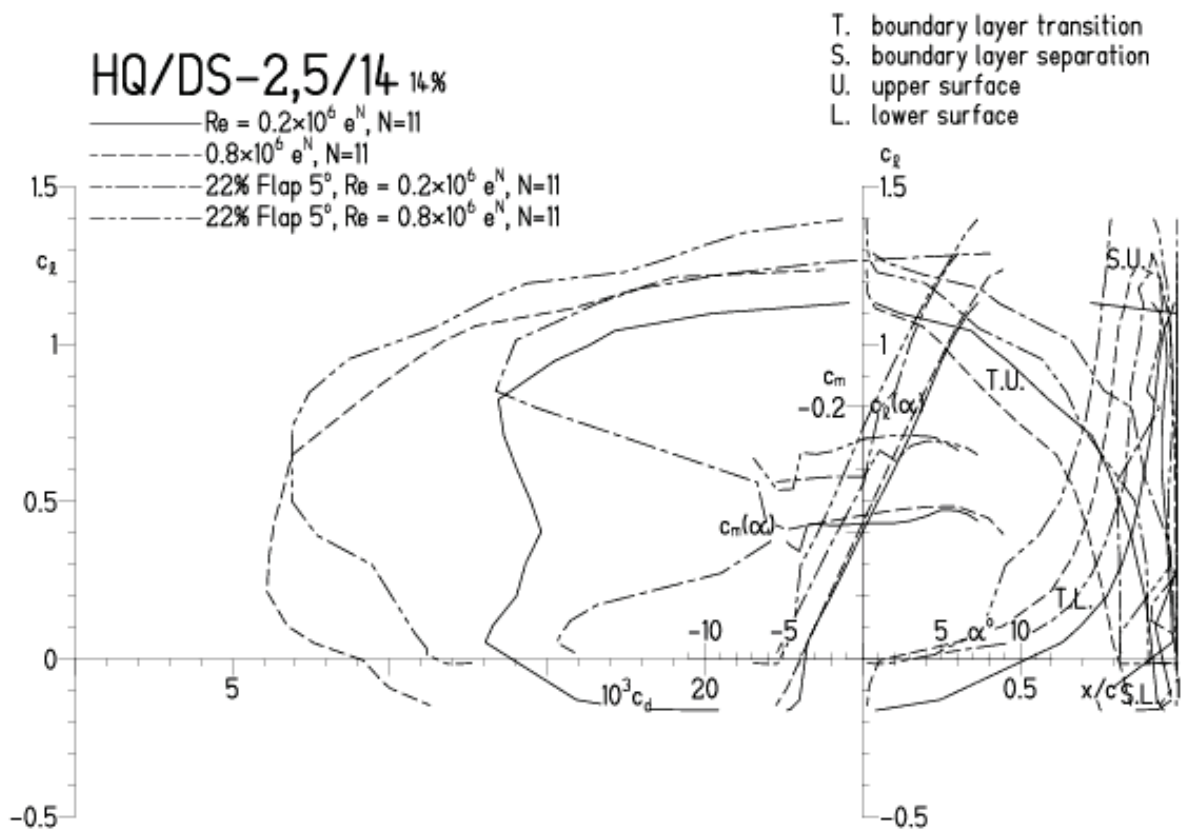


HQ/DS-2,5/14, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:58

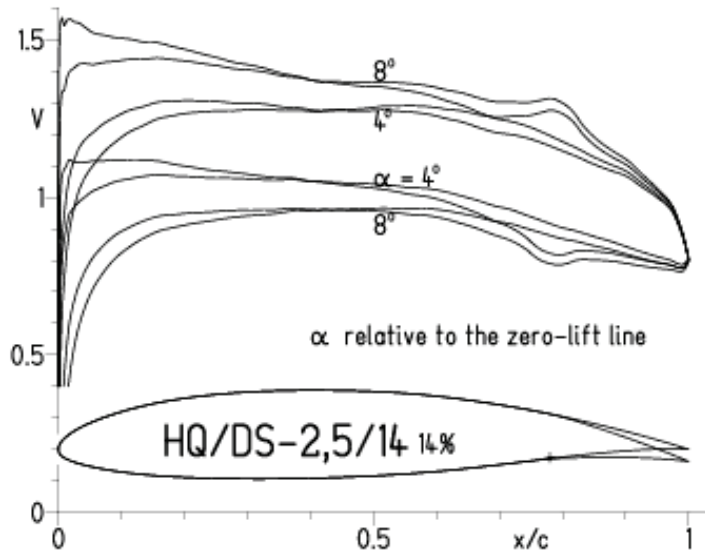


EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:58

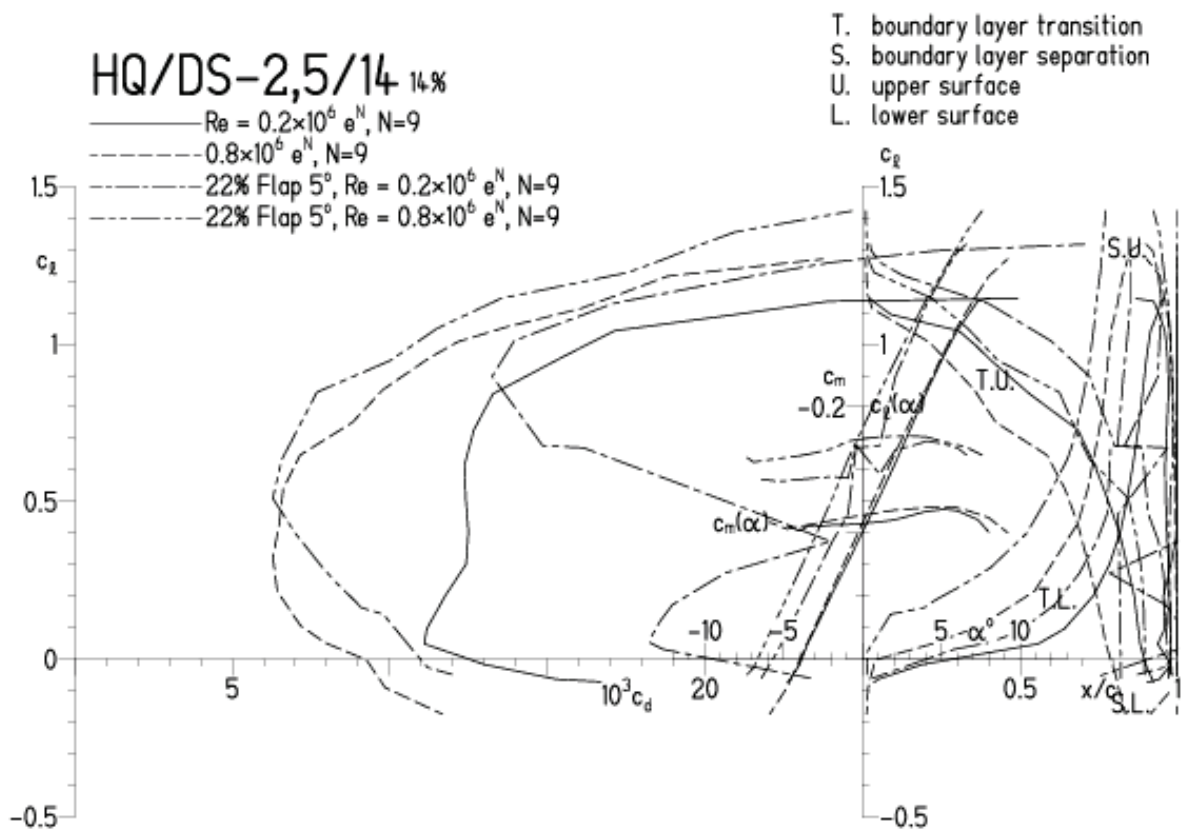


HQ/DS-2,5/14, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.6.11 15:58

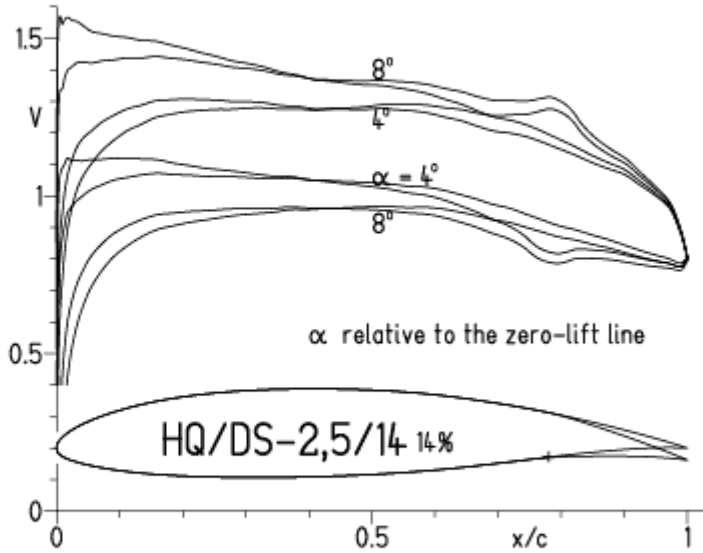


EPPLER 2005 V. 8.5.07 RUN 24.6.11 15:58

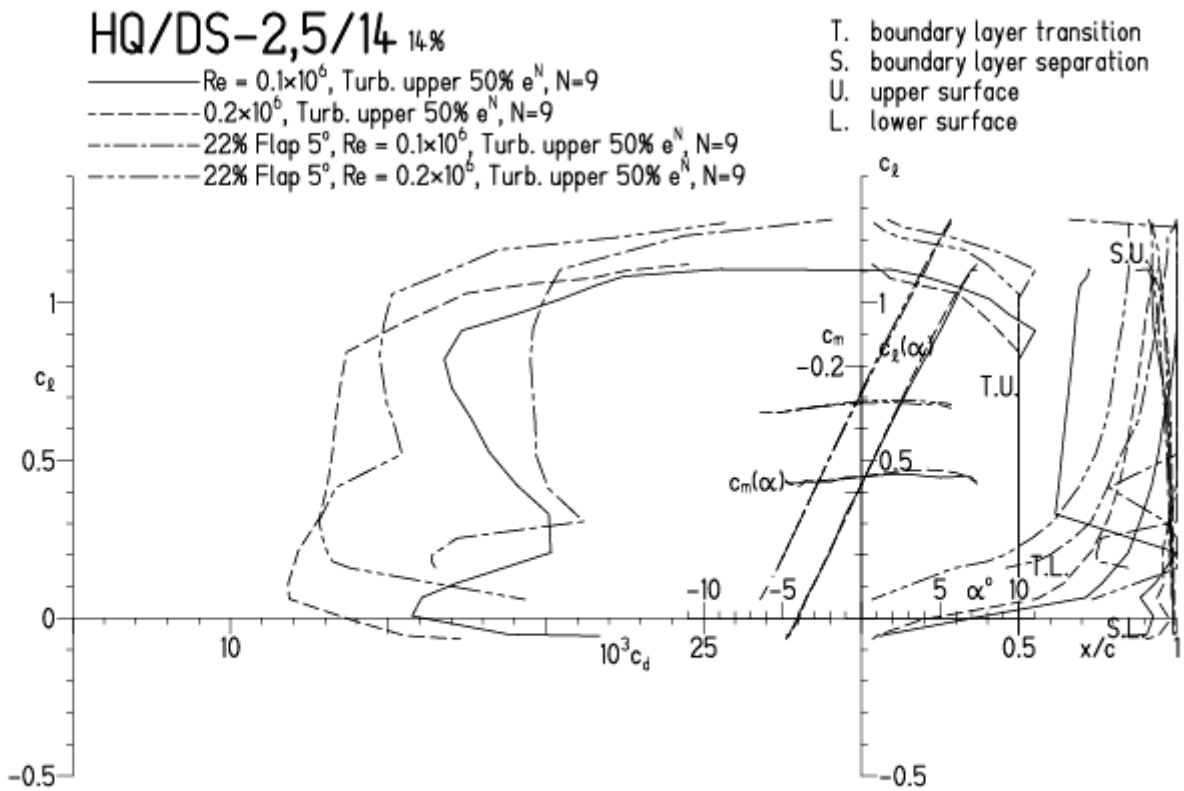


HQ/DS-2,5/14, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:07

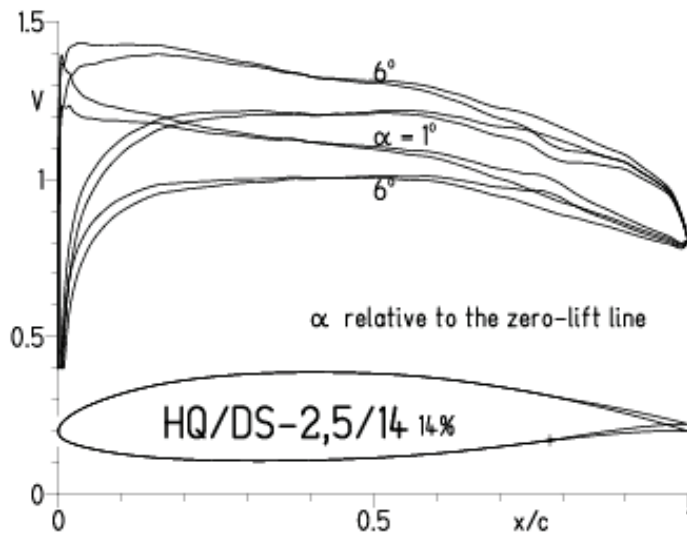


EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:07

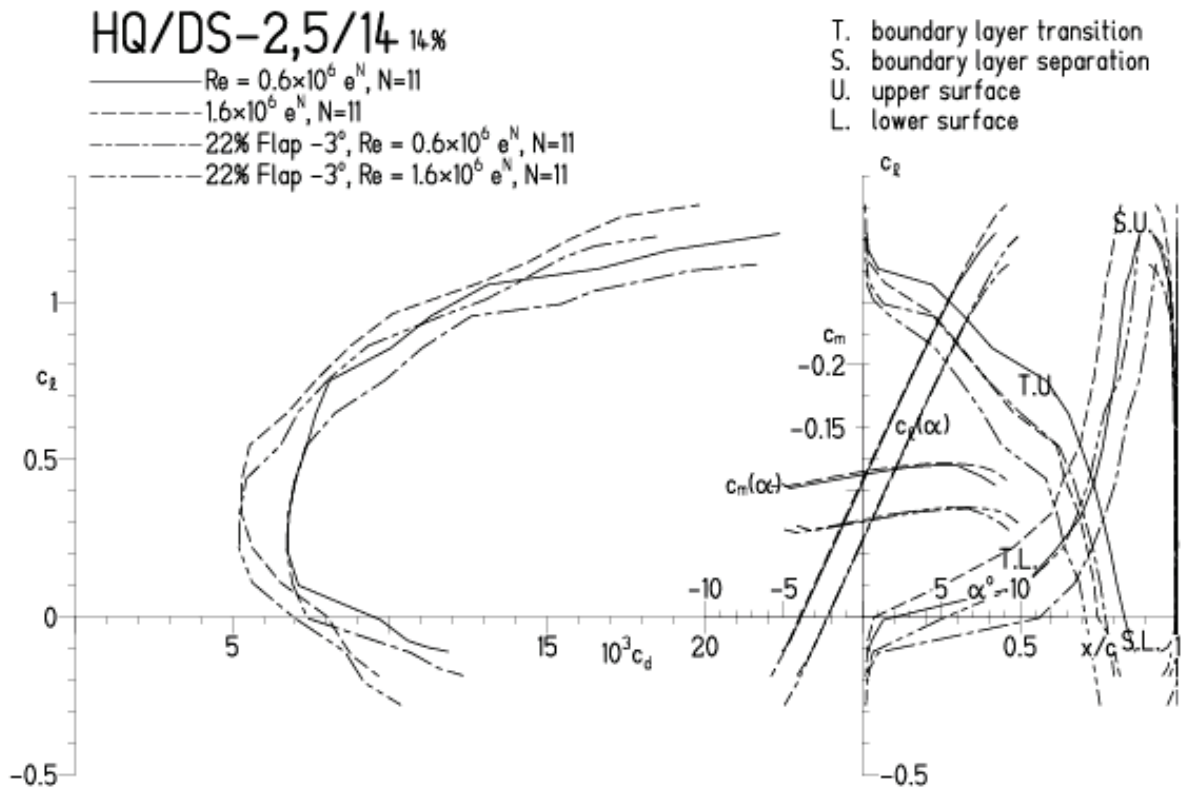


HQ/DS-2,5/14, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.6.11 16:30

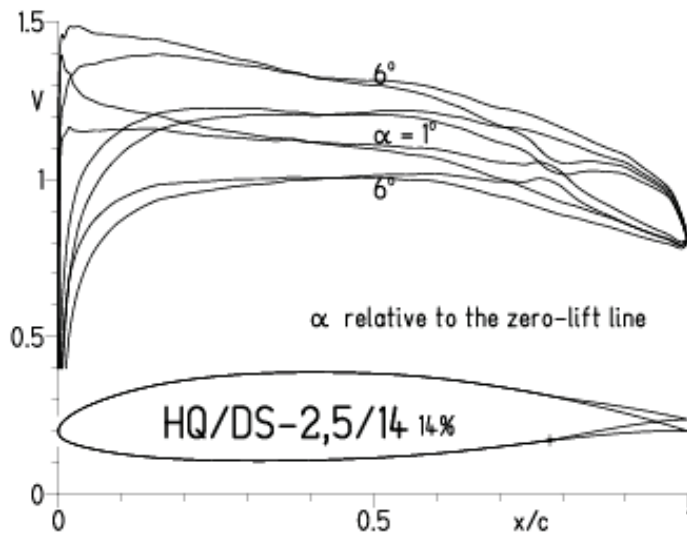


EPPLER 2005 V. 8.5.07 RUN 24.6.11 16:30

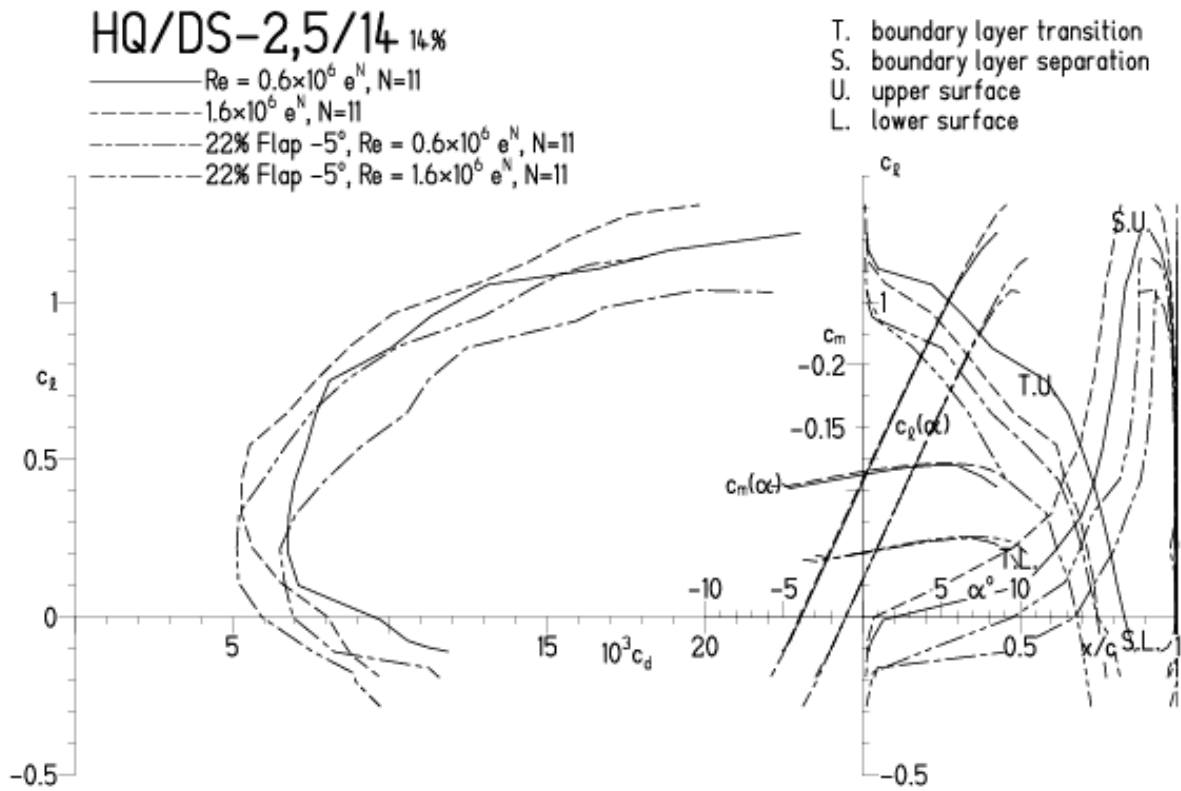


HQ/DS-2,5/14, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 24.6.11 16:39

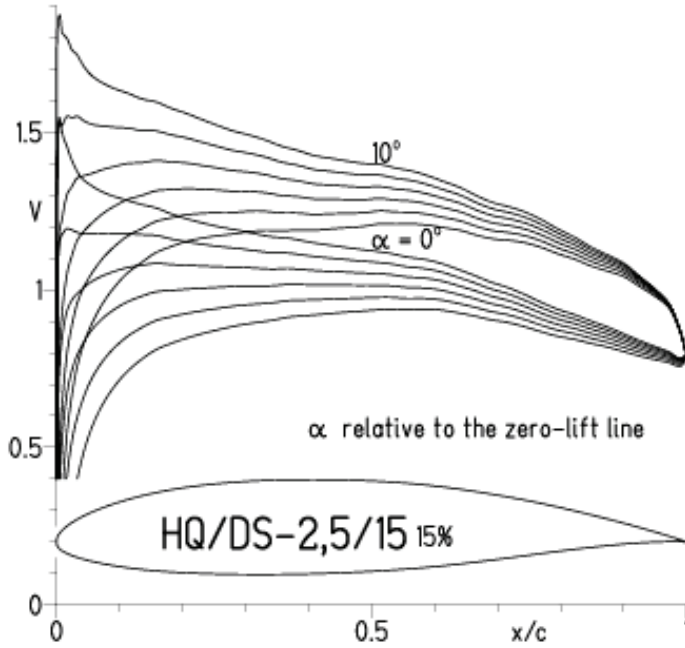


EPPLER 2005 V. 8.5.07 RUN 24.6.11 16:39

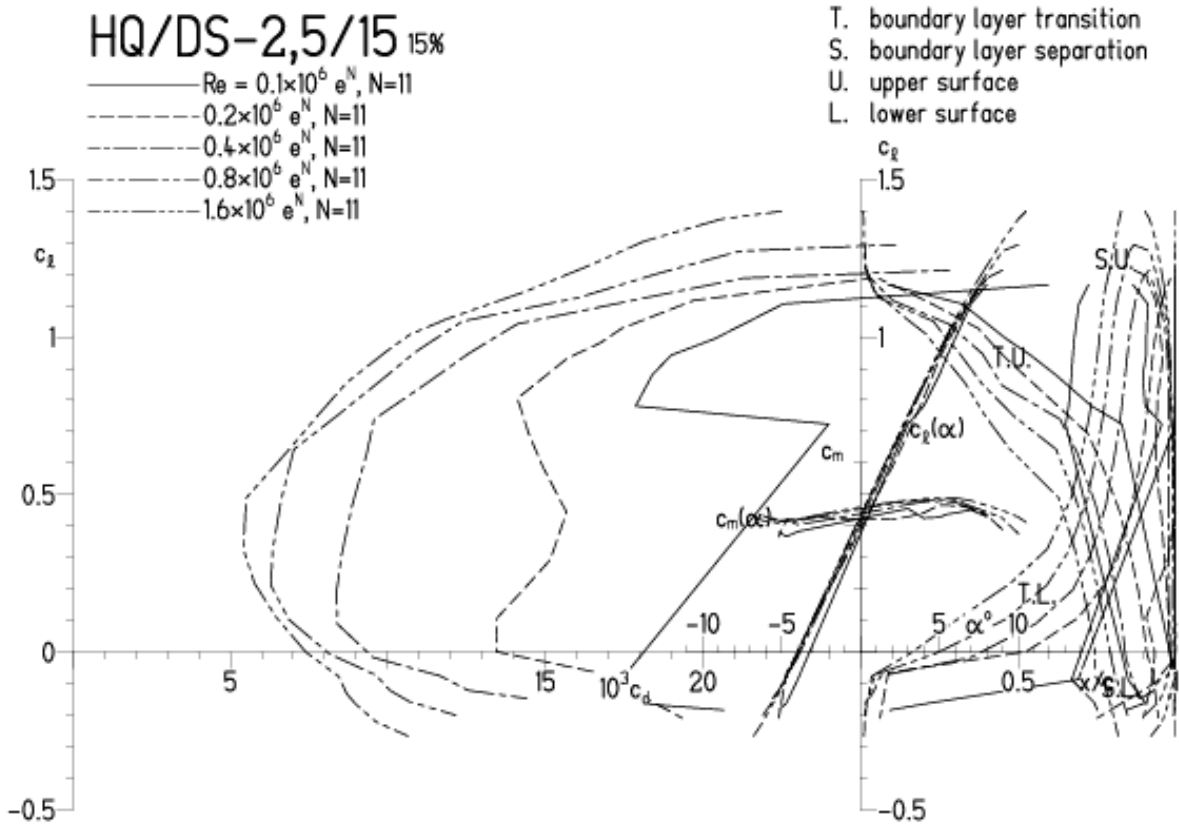


HQ/DS-2,5/15, N=11

EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:07

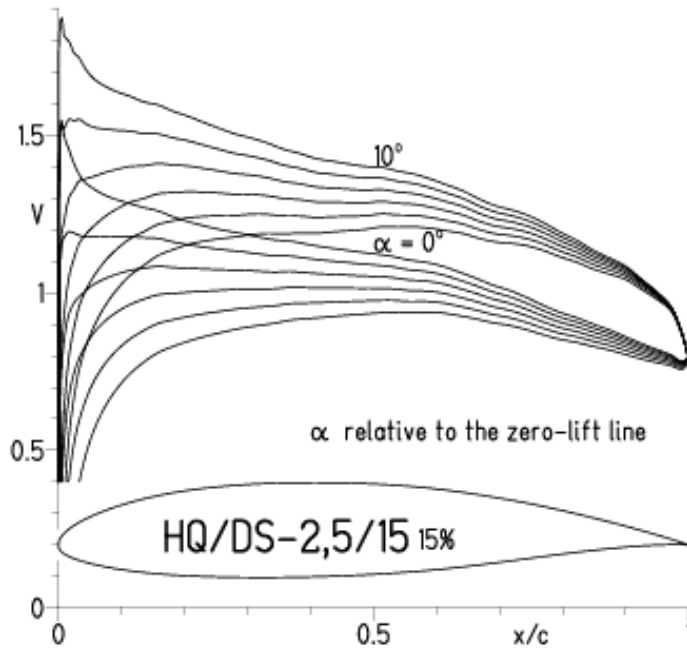


EPPLER 2

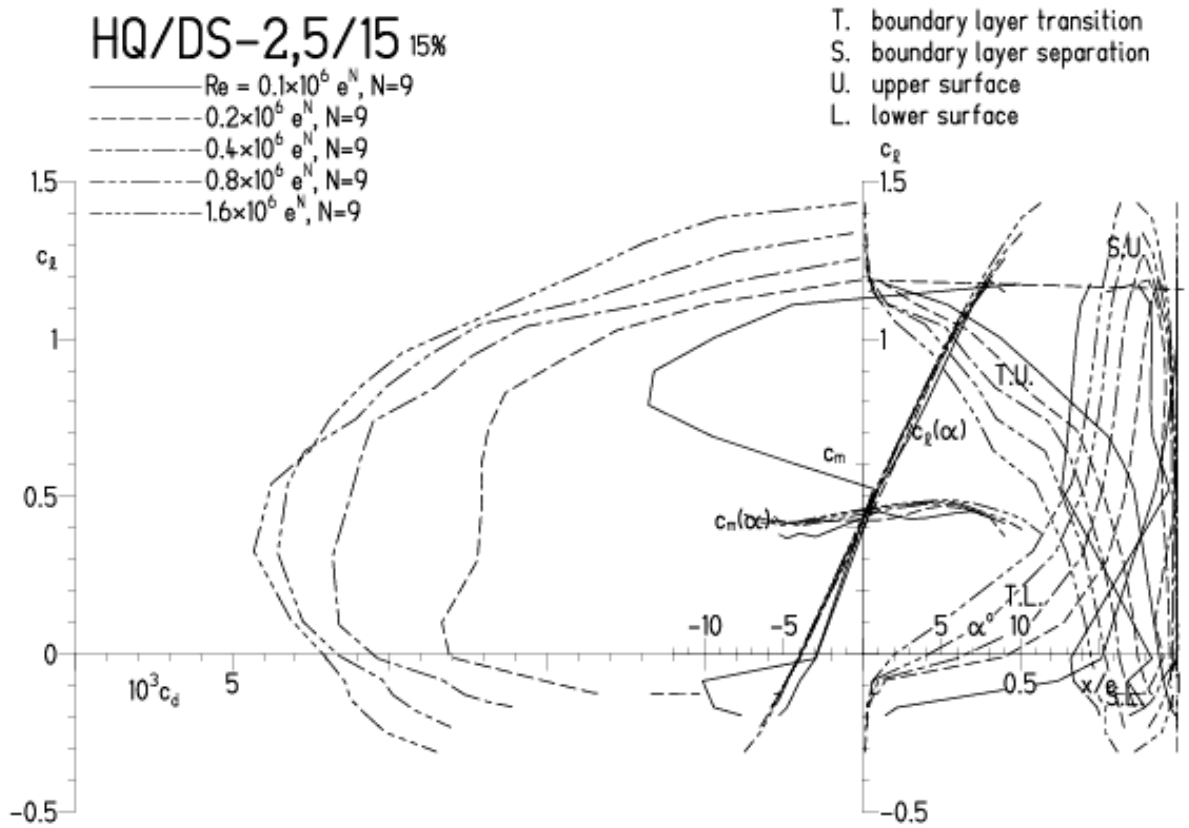


HQ/DS-2,5/15, N=9

EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:38

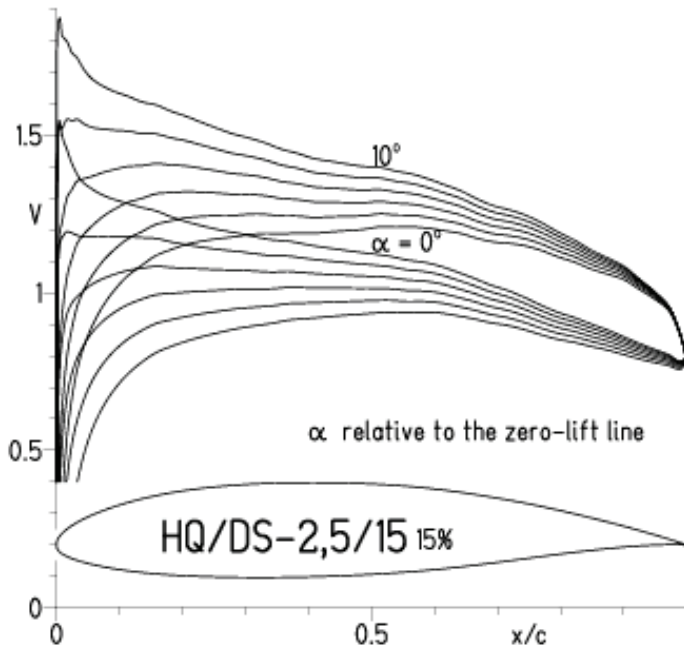


EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:38



HQ/DS-2,5/15, N=9, Turbulatoreffekt, Turbulatoreffekt bei niedrigen Re-Zahlen
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:52

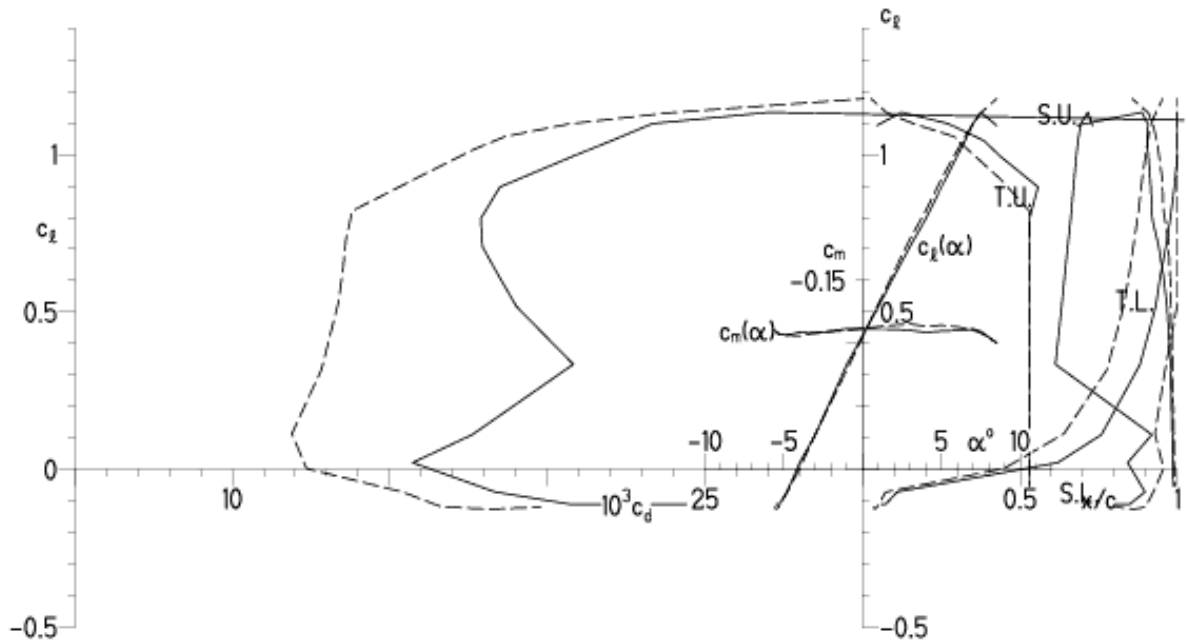


EPPLER 2005 V. 8.5.07 RUN 24.6.11 18:52

HQ/DS-2,5/15 15%

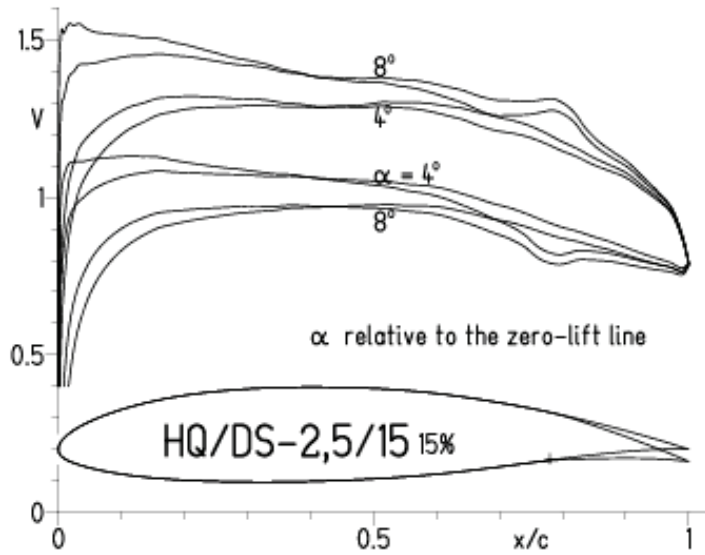
— $Re = 0.1 \times 10^6$, Turb. upper 53% e^N , N=9
 - - - 0.2×10^6 , Turb. upper 53% e^N , N=9

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface

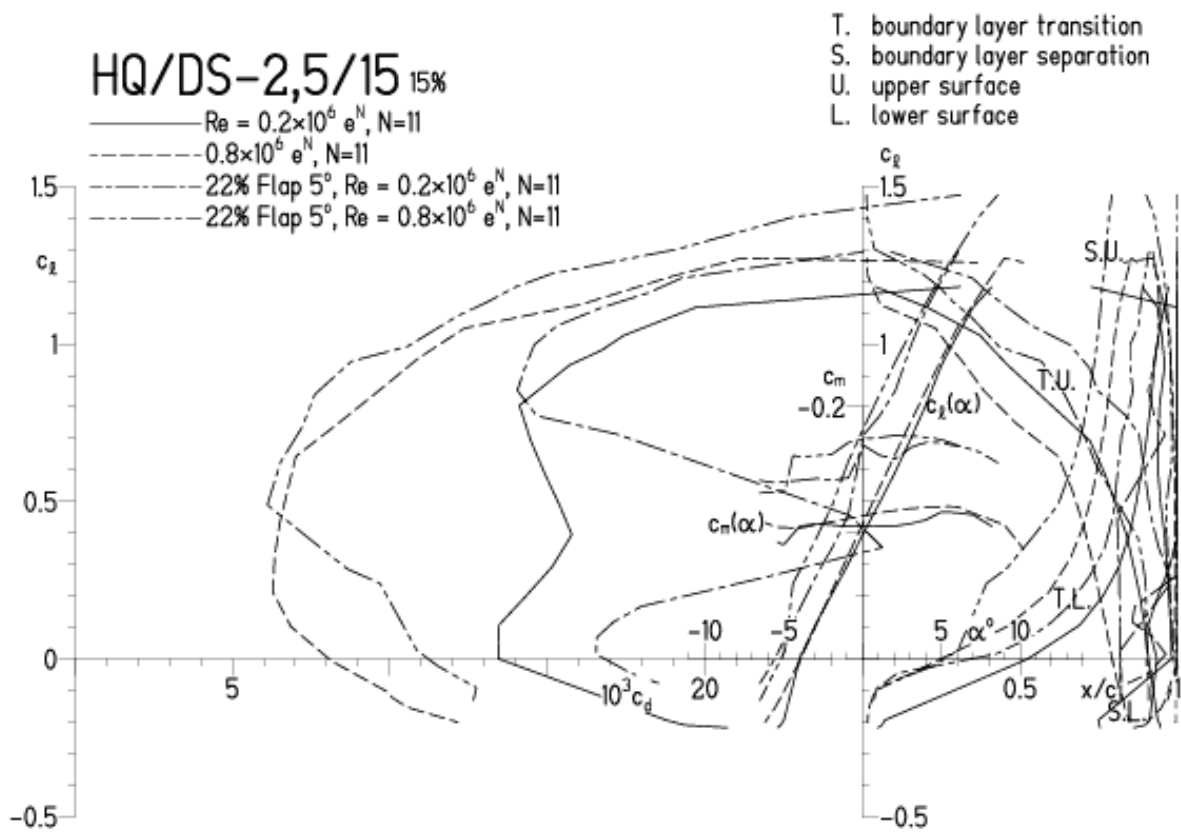


HQ/DS-2,5/15, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 25.6.11 17:36

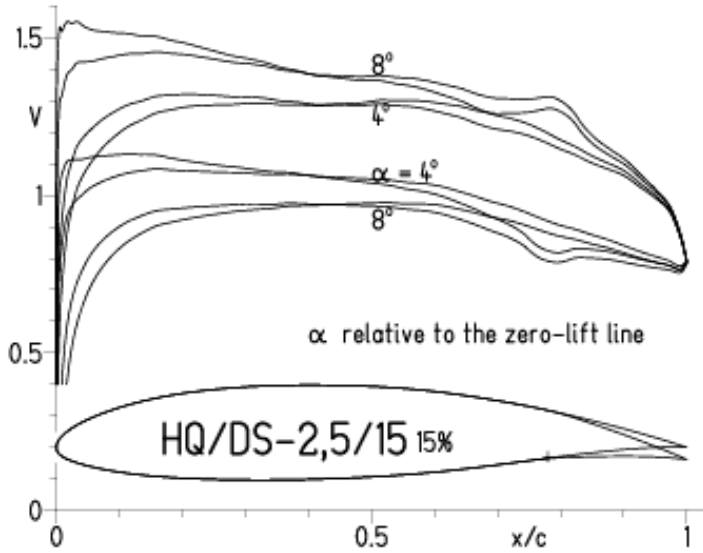


EPPLER 2005 V. 8.5.07 RUN 25.6.11 17:36

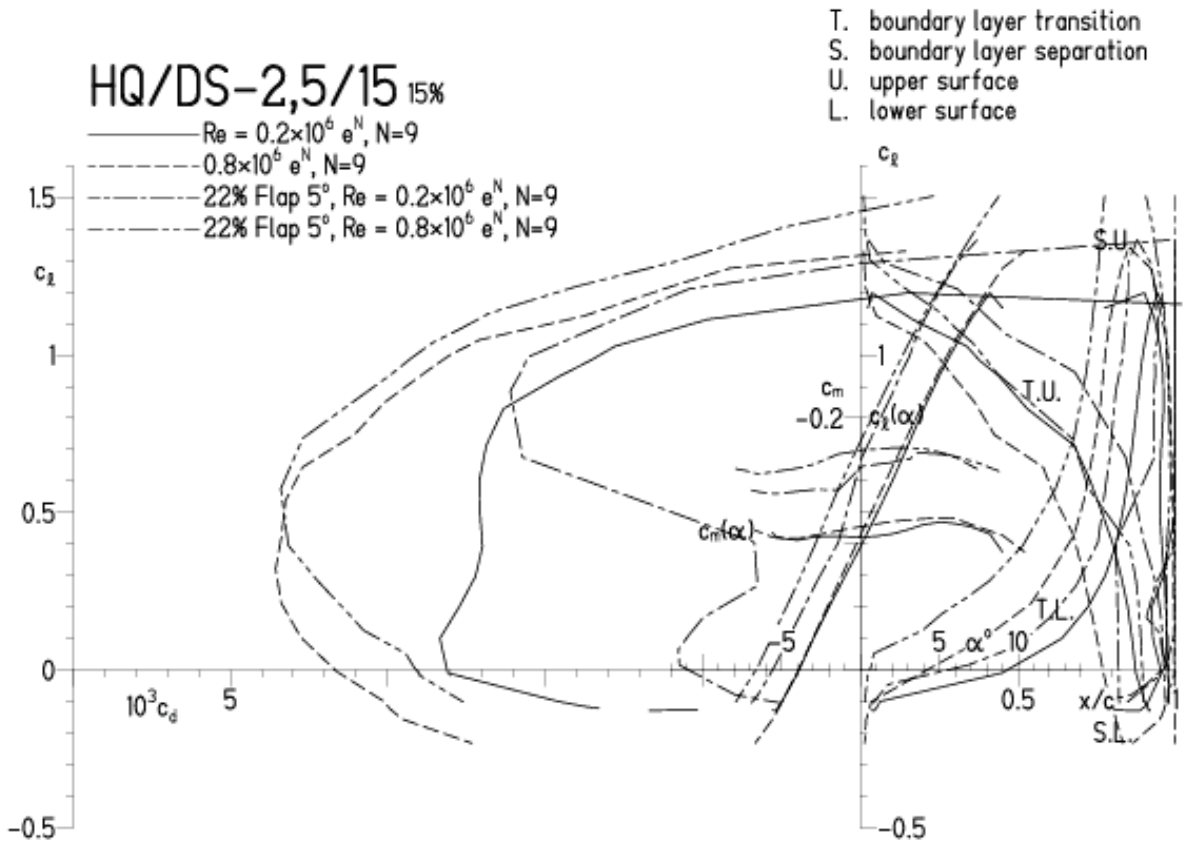


HQ/DS-2,5/15, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 25.6.11 17:48

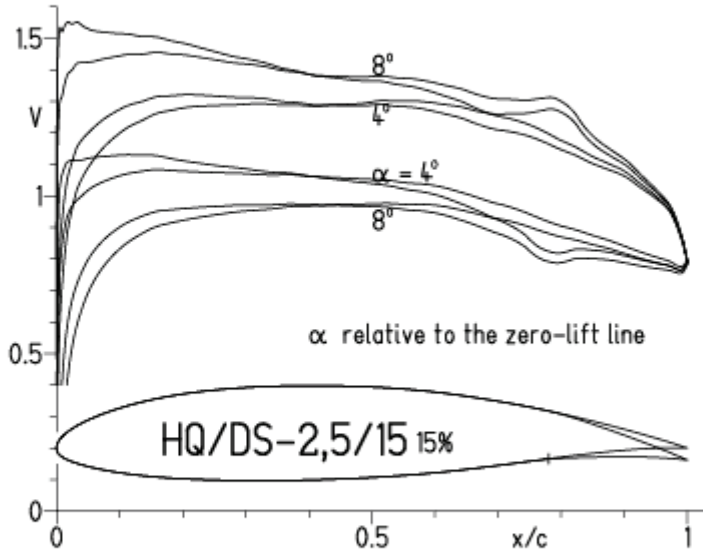


EPPLER 2005 V. 8.5.07 RUN 25.6.11 17:48

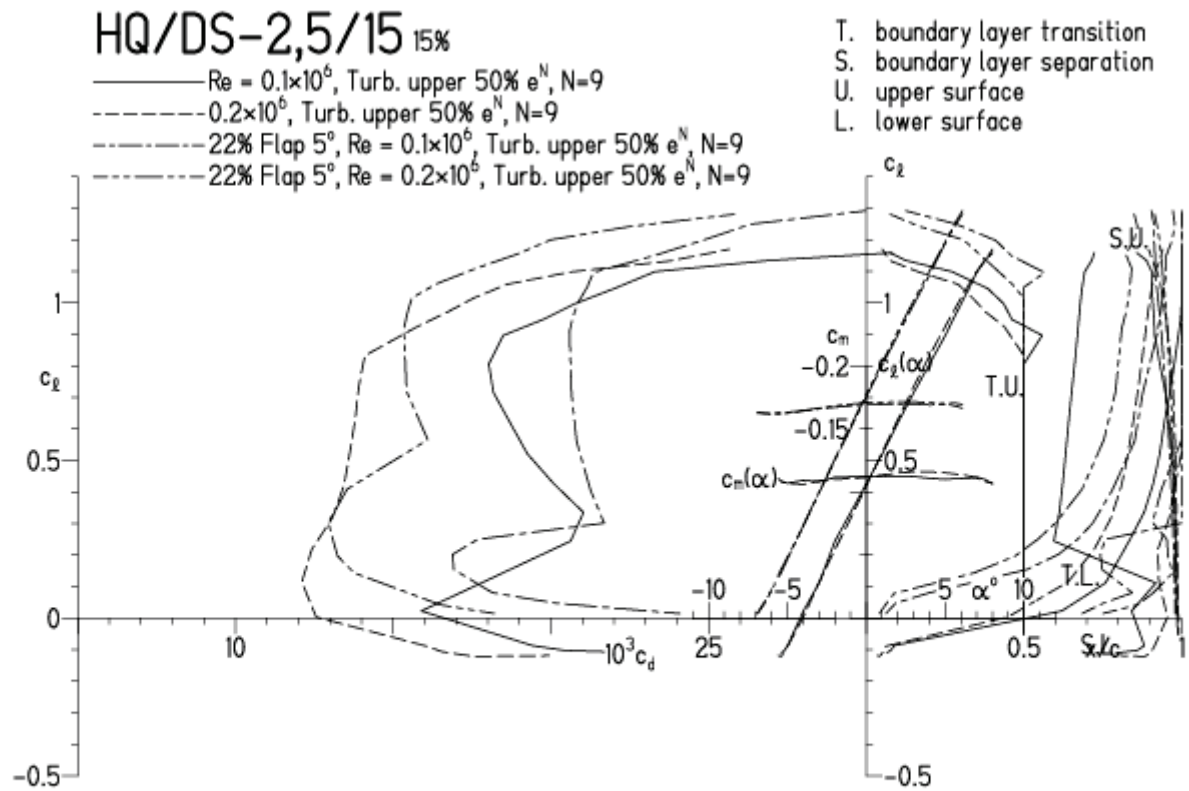


HQ/DS-2,5/15, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:17

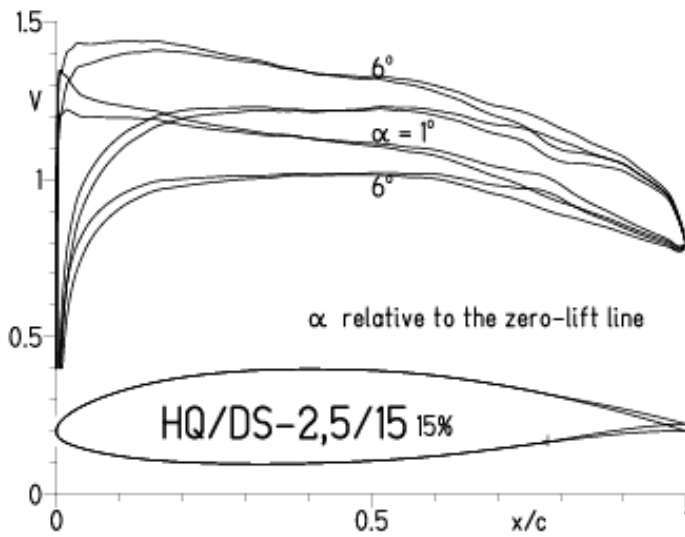


EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:17

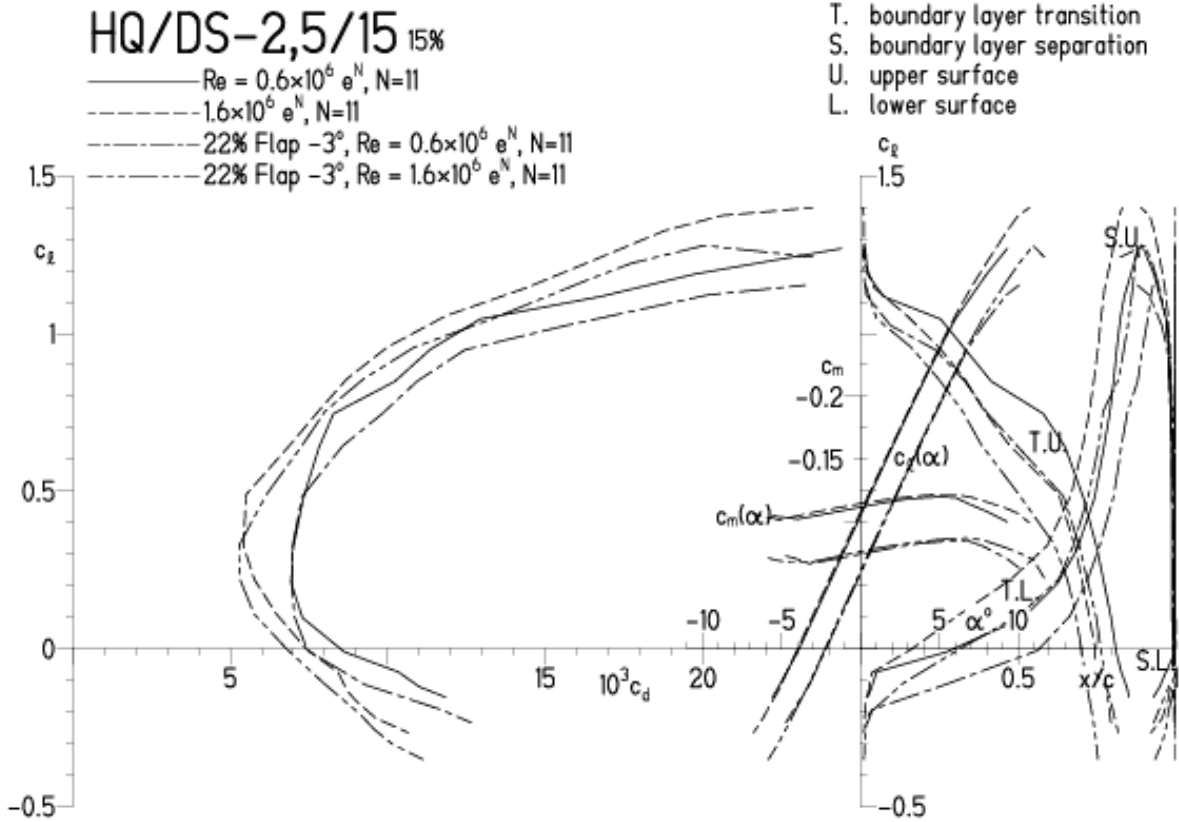


HQ/DS-2,5/15, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 25.6.11 18:24

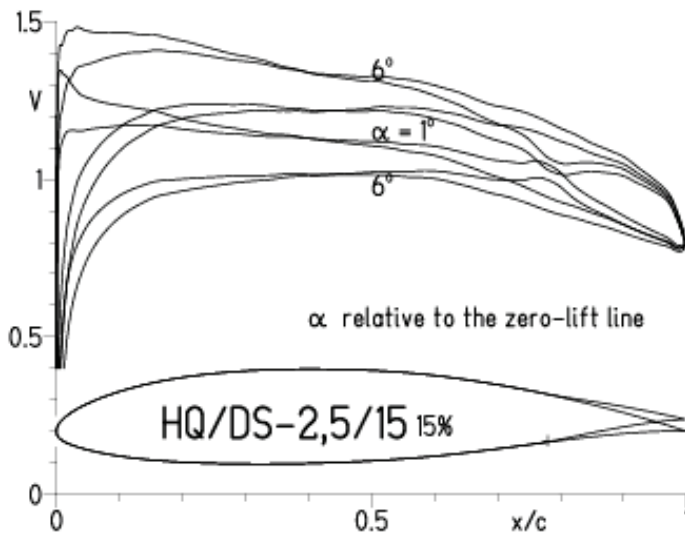


EPPLER 2005 V. 8.5.07 RUN 25.

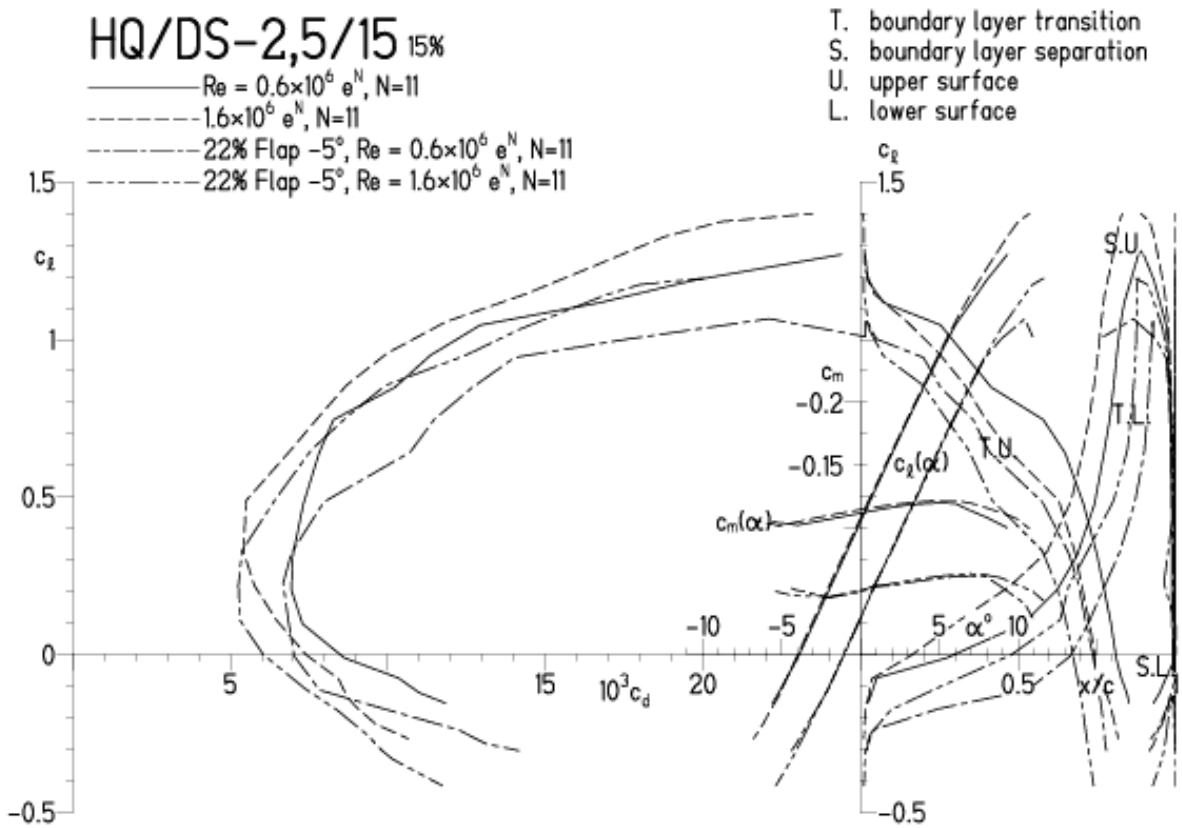


HQ/DS-2,5/15, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 25.6.11 18:38

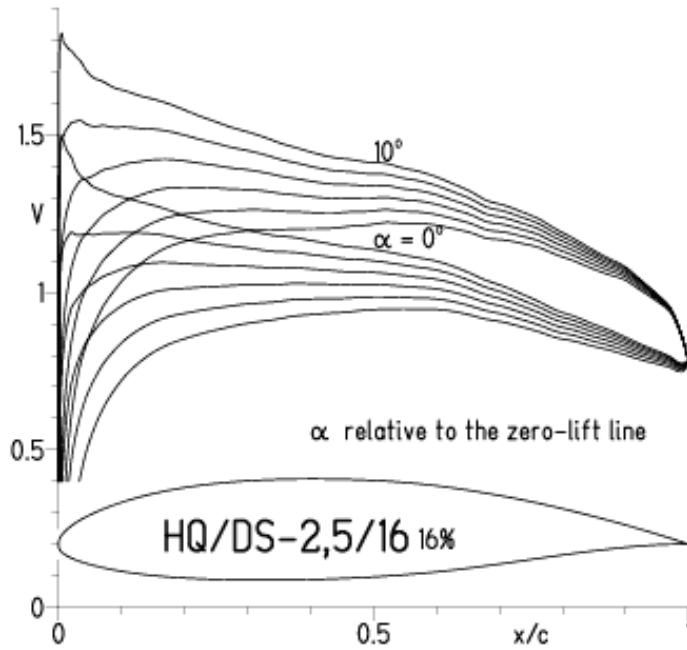


EPPLER 2005 V. 8.5.07 RUN 25.6.11 18:38

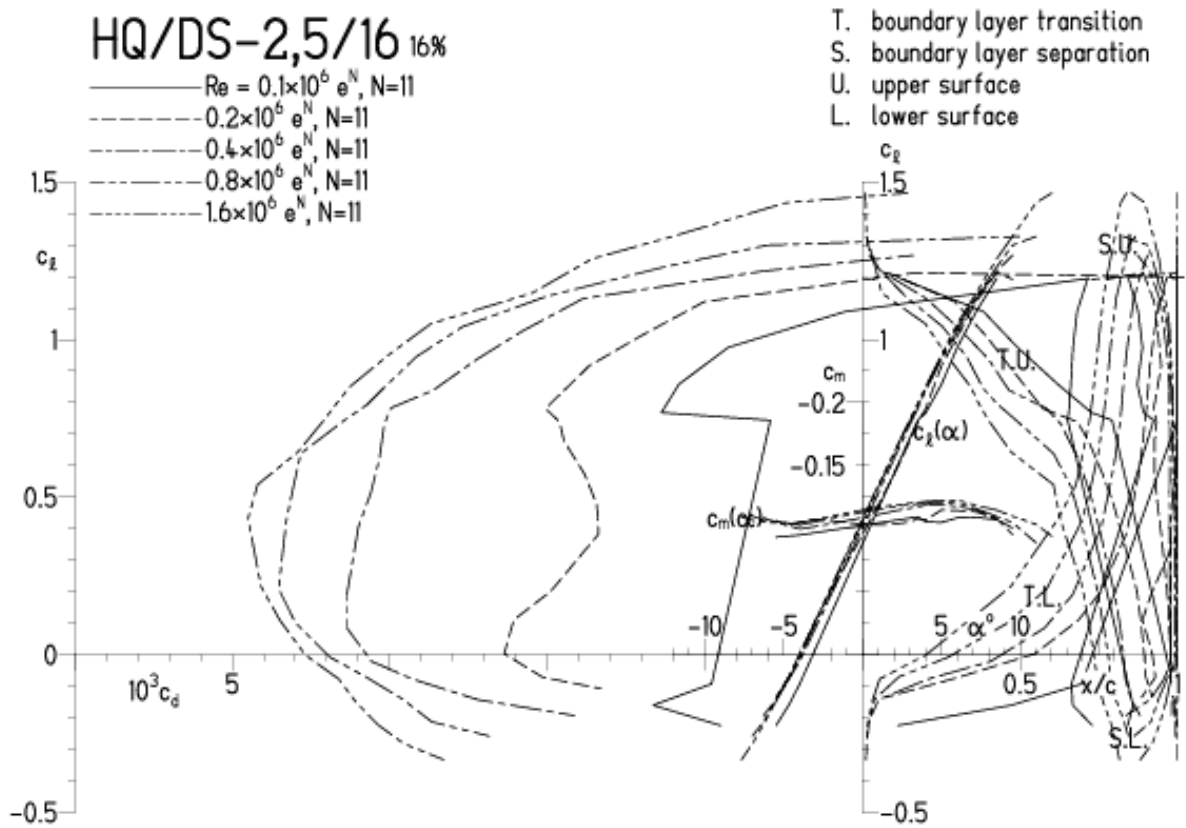


HQ/DS-2,5/16, N=11

EPPLER 2005 V. 8.5.07 RUN 26.6.11 10:34

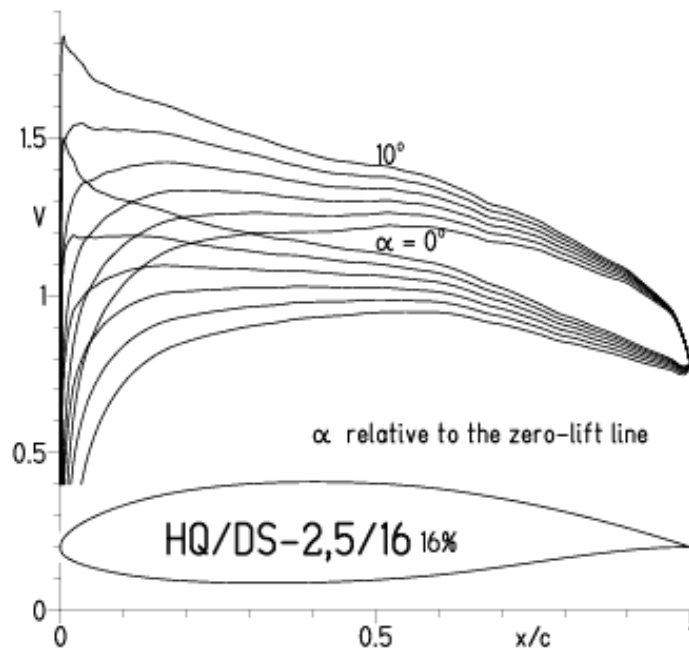


EPPLER 2005 V. 8.5.07 RUN 26.6.11 10:34

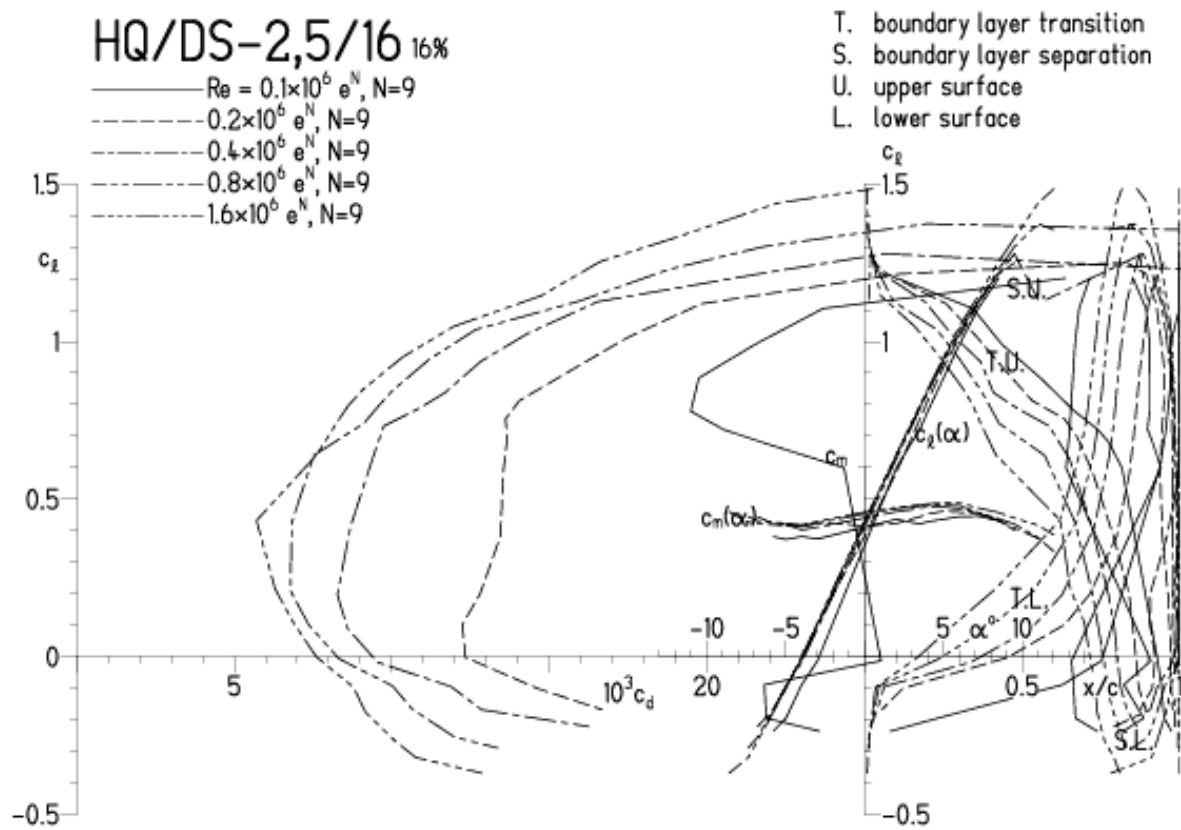


HQ/DS-2,5/16, N=9

EPPLER 2005 V. 8.5.07 RUN 26.6.11 10:51

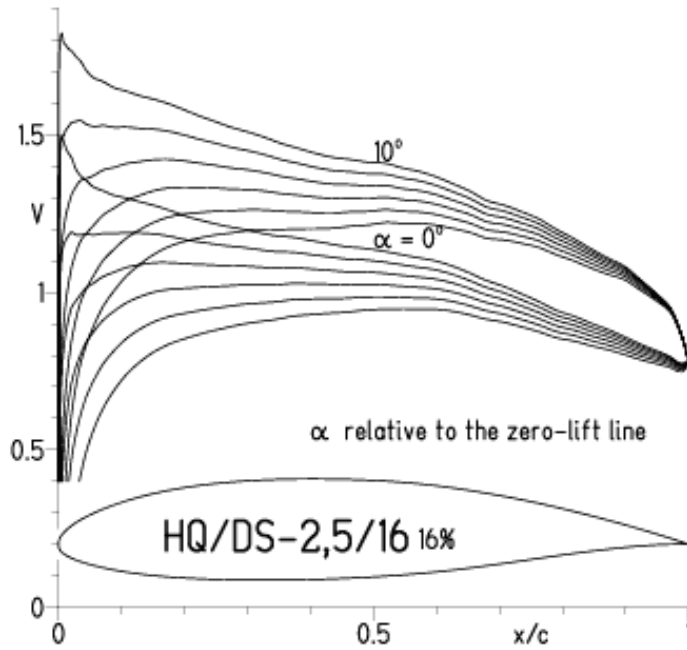


EPPLER 2005 V. 8.5.07 RUN 26.6.11 10:51

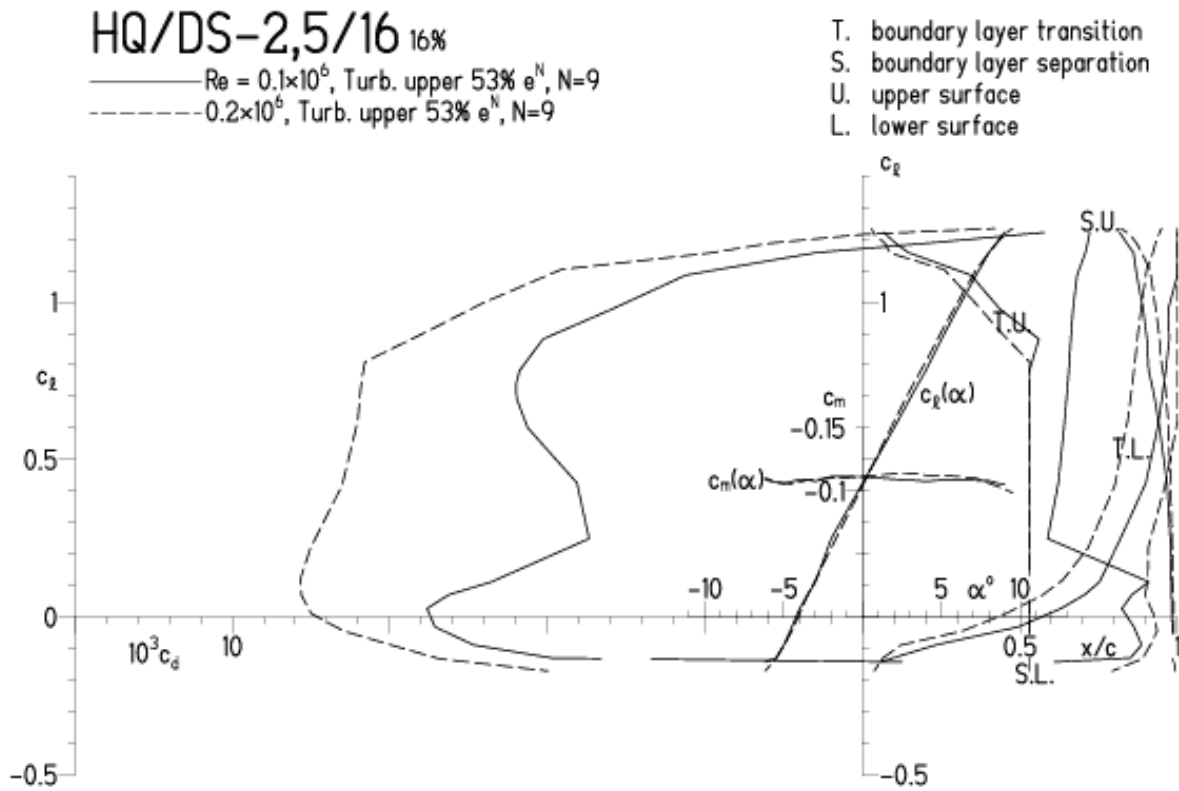


HQ/DS-2,5/16, N=9, Turbulatoreffekt, Turbulatoreffekt bei niedrigen Re-Zahlen
(optimale Turbulatorposition bei 45 – 55 % Profiltiefe)

EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:03

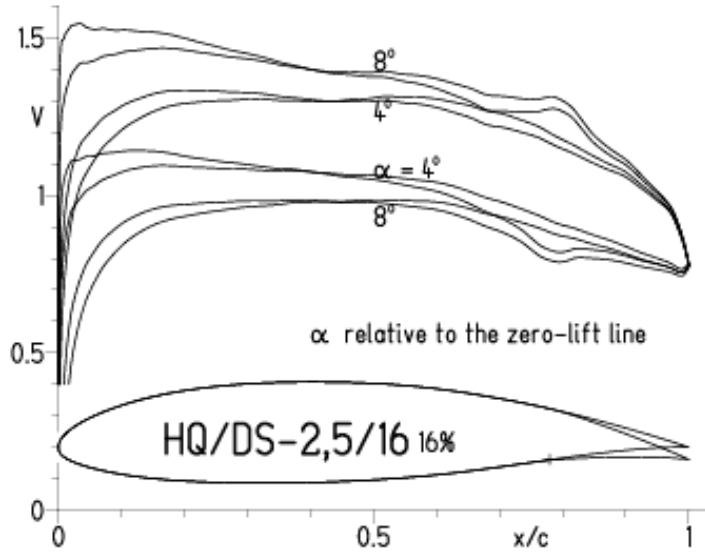


EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:03

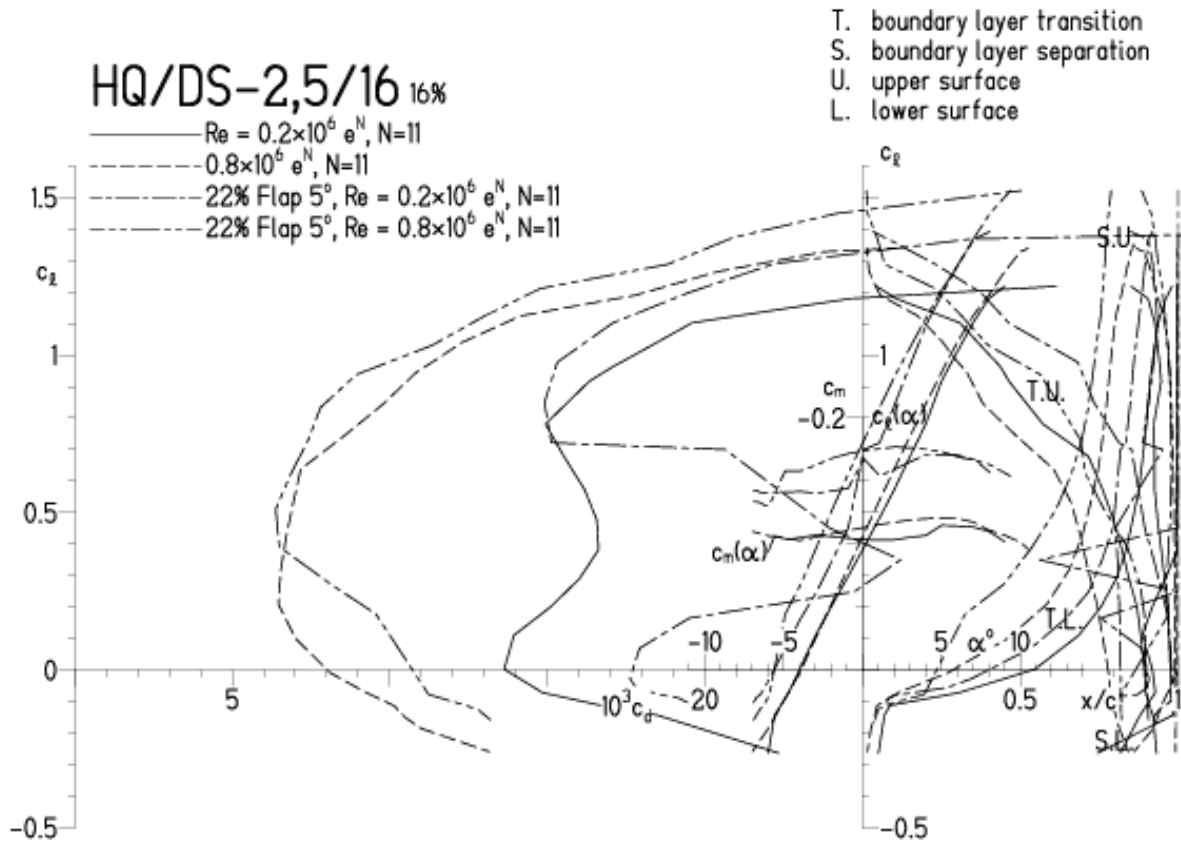


HQ/DS-2,5/16, N=11, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:34

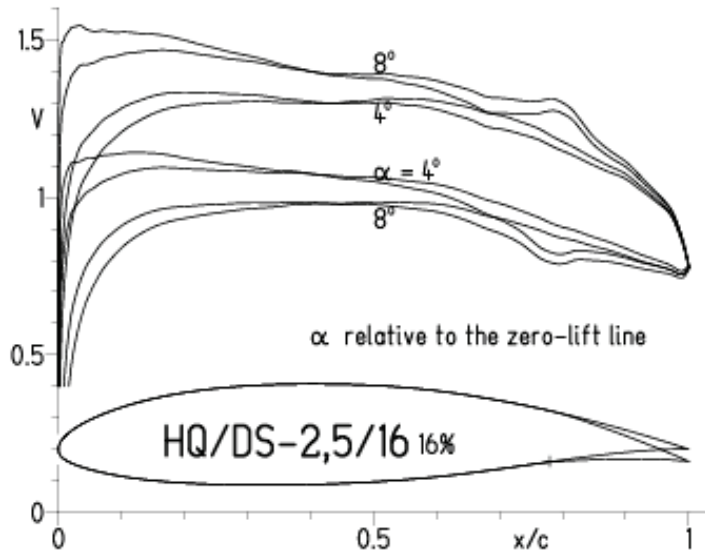


EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:34

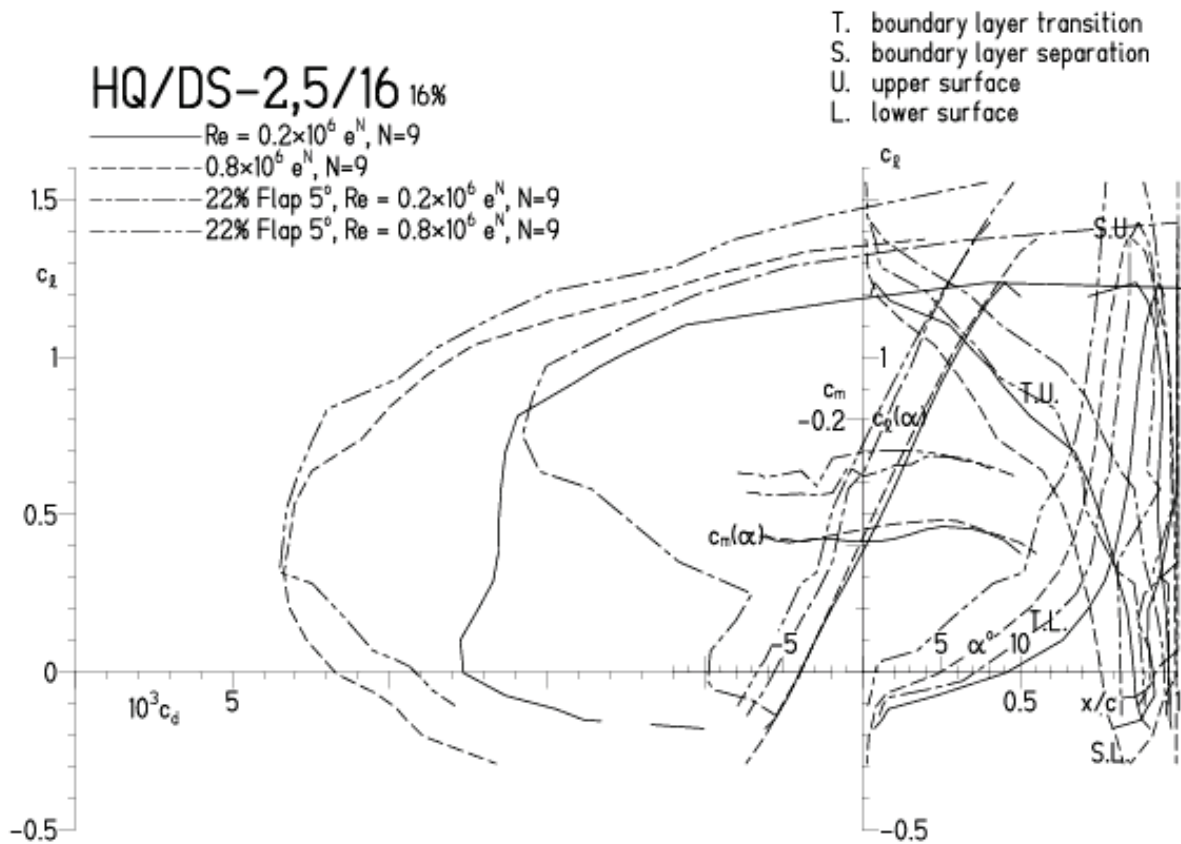


HQ/DS-2,5/16, N=9, mit 5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:46

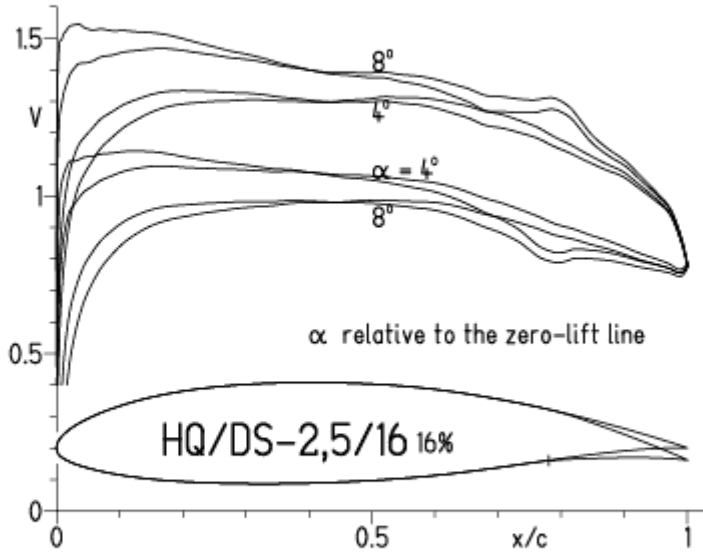


EPPLER 2005 V. 8.5.07 RUN 26.6.11 11:46

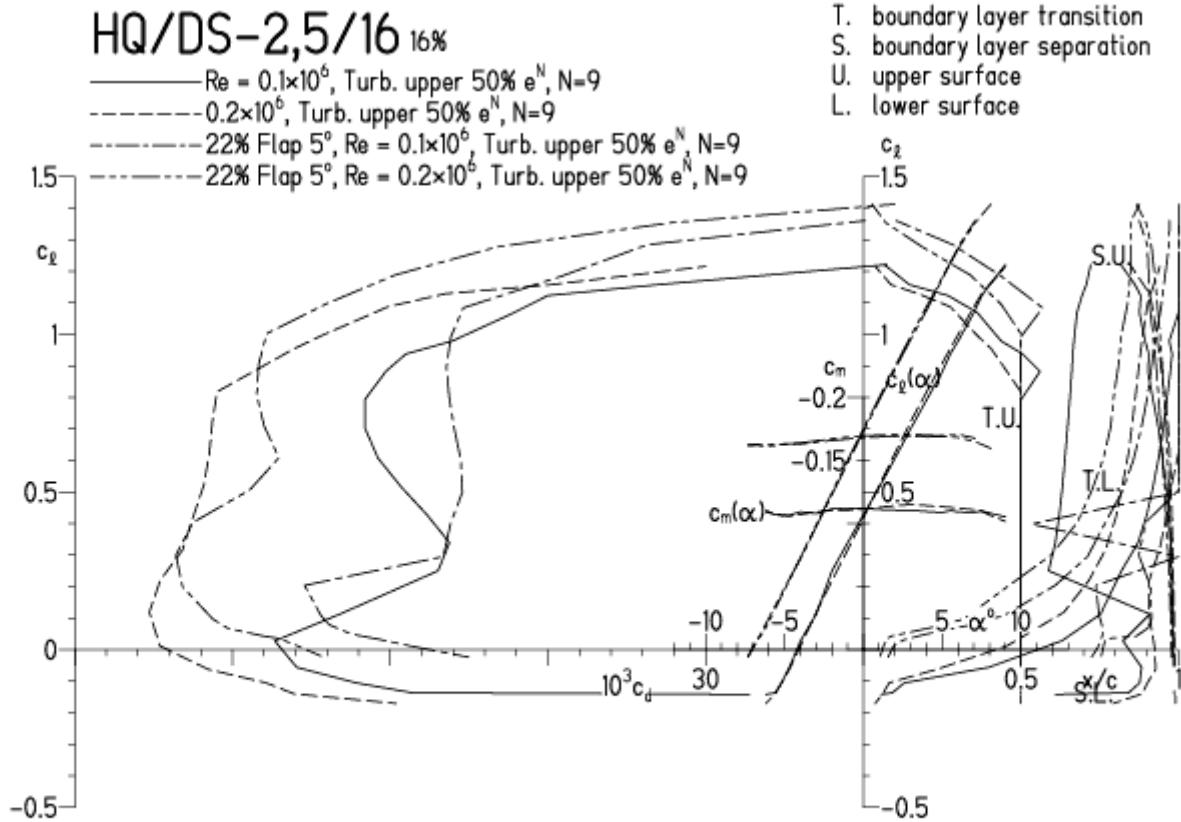


HQ/DS-2,5/16, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für niedrige Re-Zahlen)

EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:29

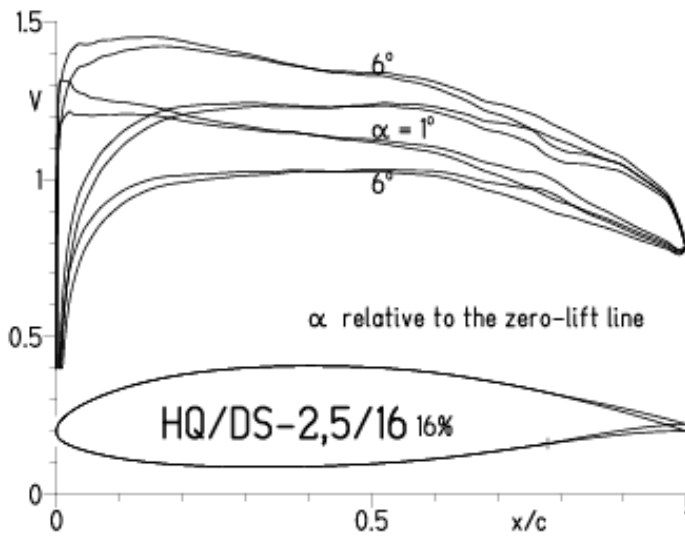


EPPLER 2005 V. 8.5.07 RUN 10.4.12 18:29

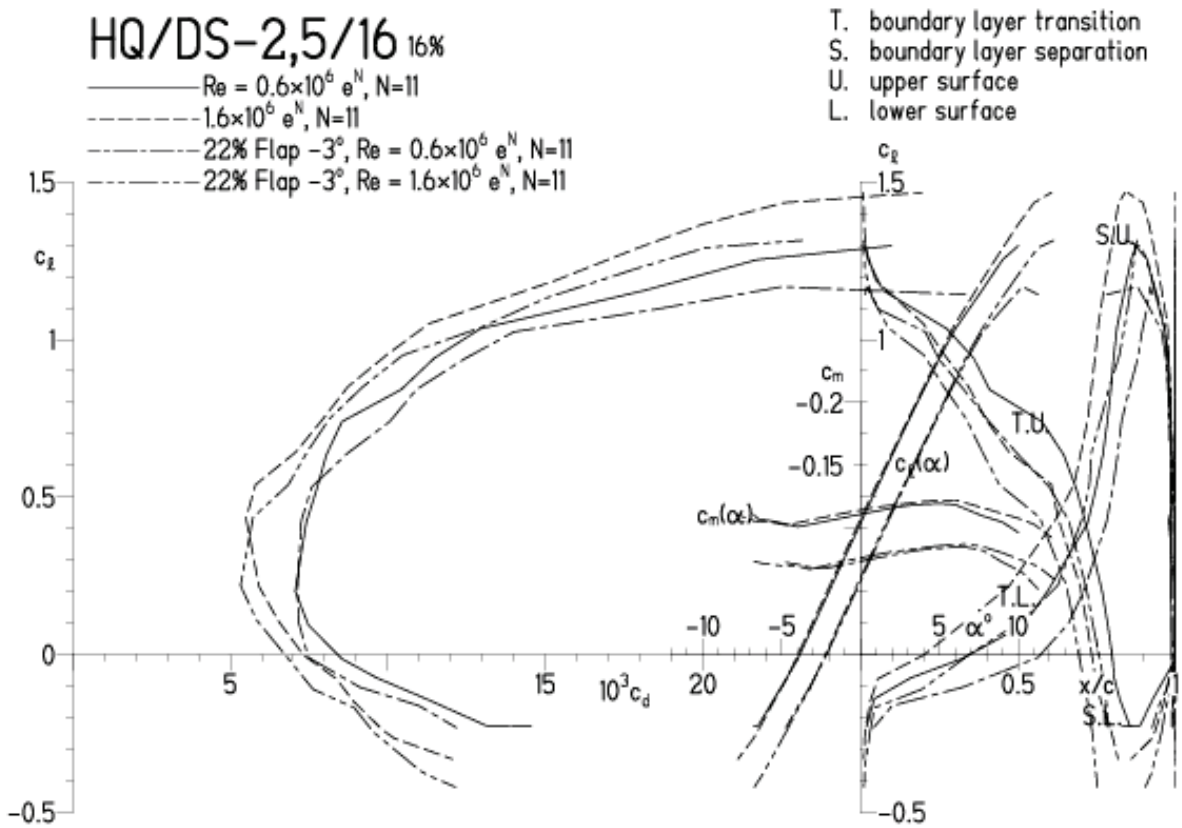


HQ/DS-2,5/16, N=11, mit -3° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.6.11 12:20

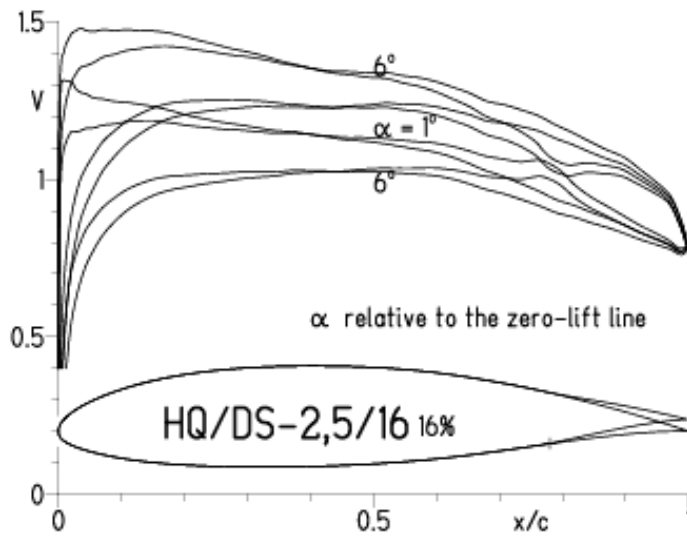


EPPLER 2005 V. 8.5.07 RUN 26.6.11 12:20

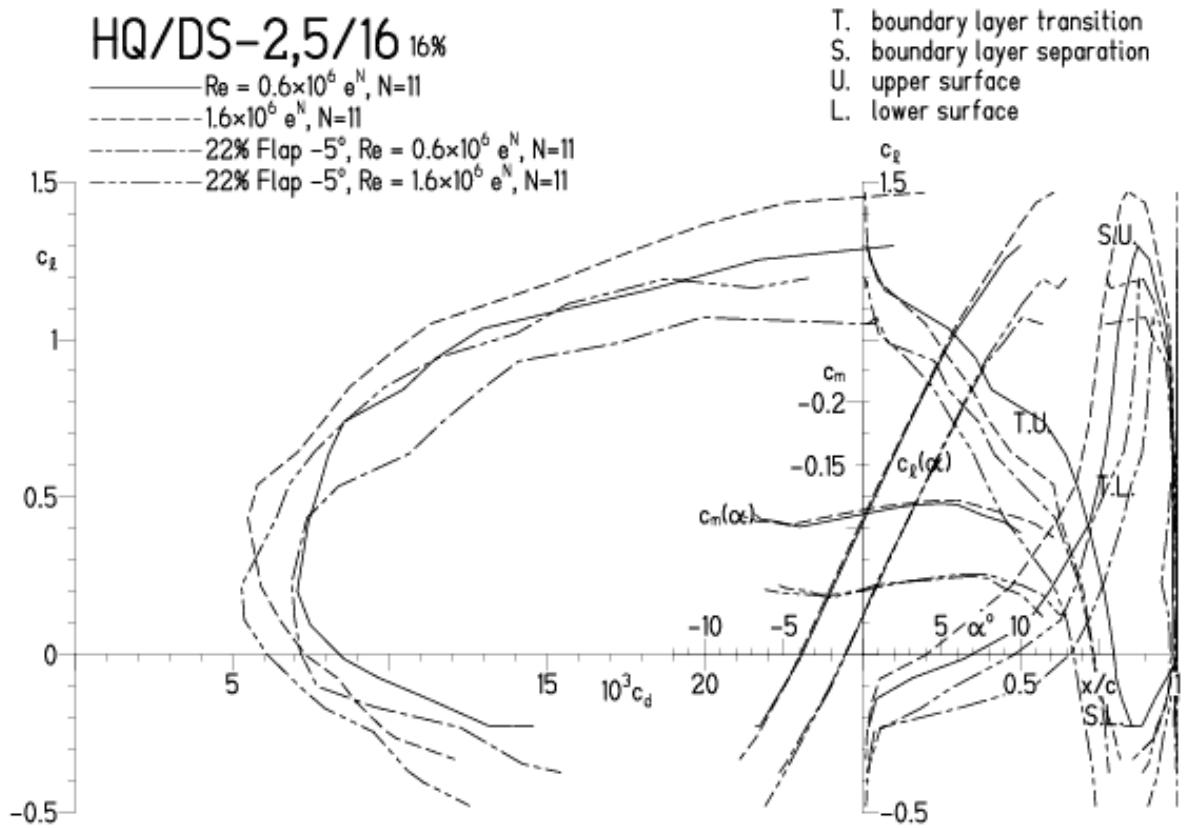


HQ/DS-2,5/16, N=11, mit -5° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.6.11 12:35

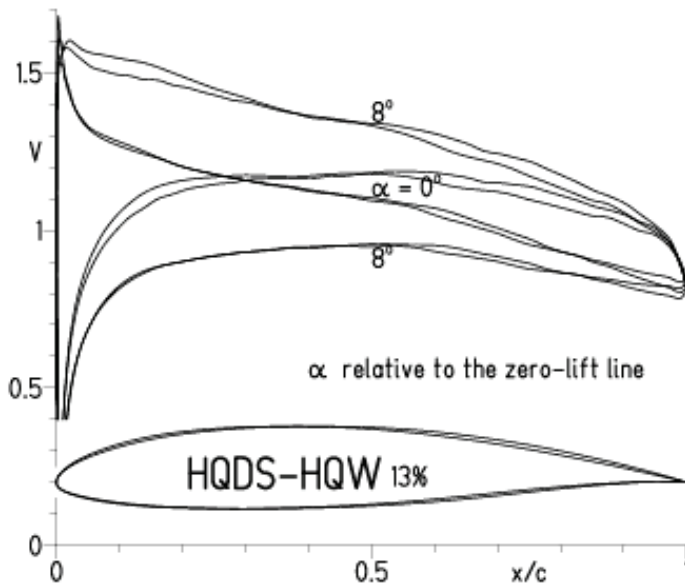


EPPLER 2005 V. 8.5.07 RUN 26.6.11 12:35



HQ/DS-2,5/13 vs. HQ/W-2,5/13, N=11, mittlerer Geschwindigkeitsbereich

EPPLER 2005 V. 8.5.07 RUN 15.6.11 15:49

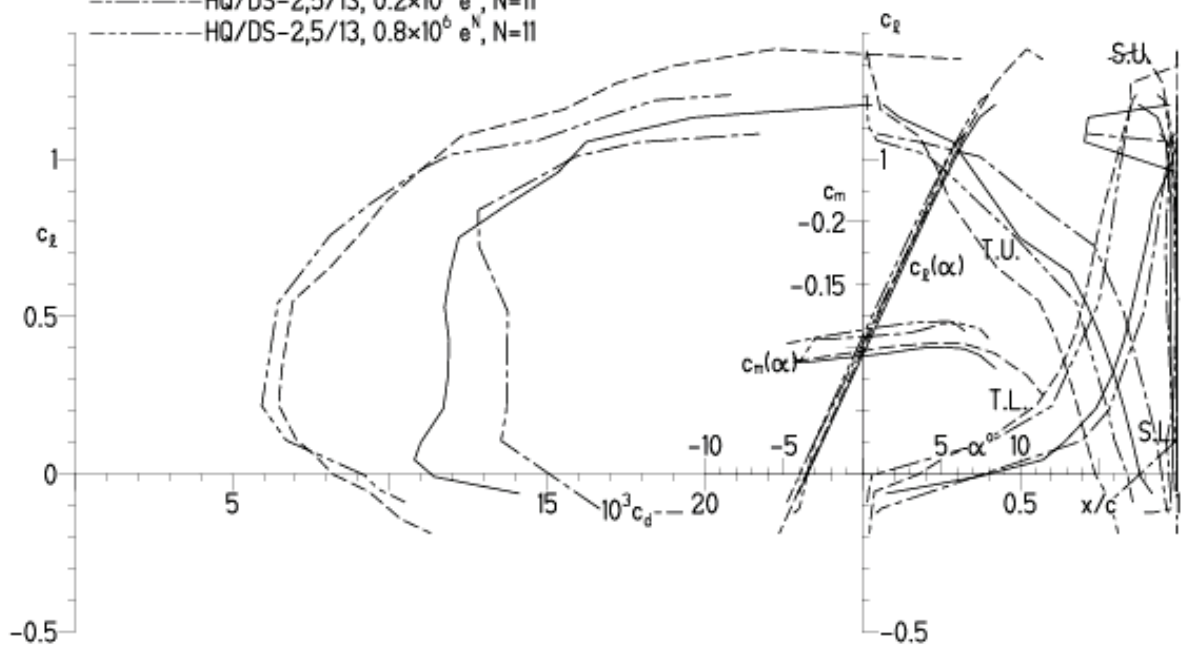


EPPLER 2005 V. 8.5.07 RUN 15.6.11 15:49

HQ/DS-HQ/W-Vergleich 13% , 13%

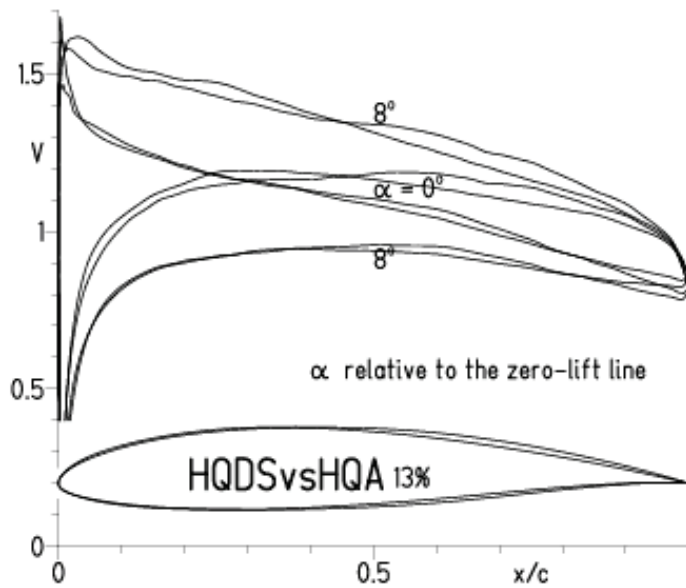
- HQ/W-2,5/13, $Re = 0.2 \times 10^6 e^N$, $N=11$
- - HQ/W-2,5/13, $0.8 \times 10^6 e^N$, $N=11$
- - HQ/DS-2,5/13, $0.2 \times 10^6 e^N$, $N=11$
- - HQ/DS-2,5/13, $0.8 \times 10^6 e^N$, $N=11$

- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface



HQ/DS-2,5/13 vs. HQ/ACRO-2,5/13, N=9, niedriger Geschwindigkeitsbereich

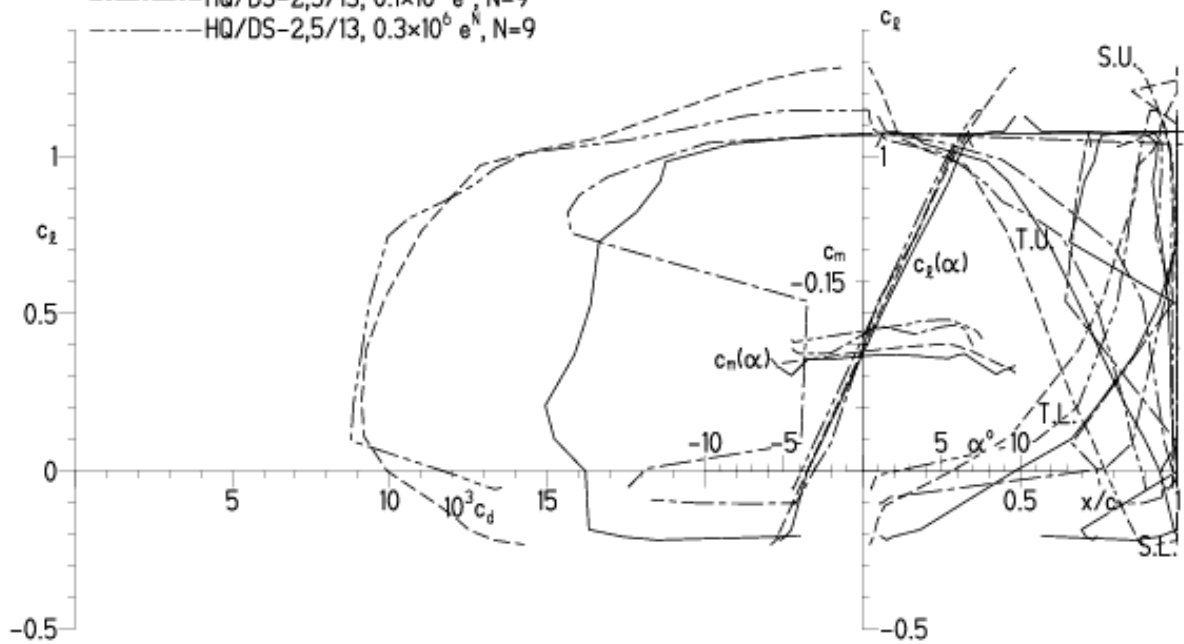
EPPLER 2005 V. 8.5.07 RUN 15.6.11 16:23



EPPLER 2005 V. 8.5.07 RUN 15.6.11 16:23

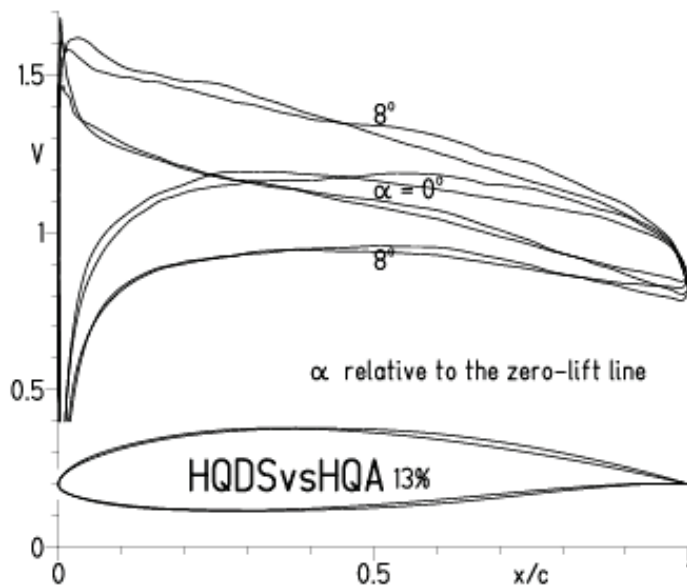
HQ/DS-HQ/A-Vergleich 13%, 13%

- HQ/A-2,5/13, $Re = 0.1 \times 10^6 e^N$, $N=9$
- - - HQ/A-2,5/13, $0.3 \times 10^6 e^N$, $N=9$
- · - HQ/DS-2,5/13, $0.1 \times 10^6 e^N$, $N=9$
- · - HQ/DS-2,5/13, $0.3 \times 10^6 e^N$, $N=9$



HQ/DS-2,5/13 vs. HQ/ACRO-2,5/13, N=9, Turbulatoreffekt bei niedrigen Re-Zahlen (Optimale T-Position beim höchsten Wölbungspunkt)

EPPLER 2005 V. 8.5.07 RUN 15.6.11 16:28



EPPLER 2005 V. 8.5.07 RUN 15.6.11 16:28

