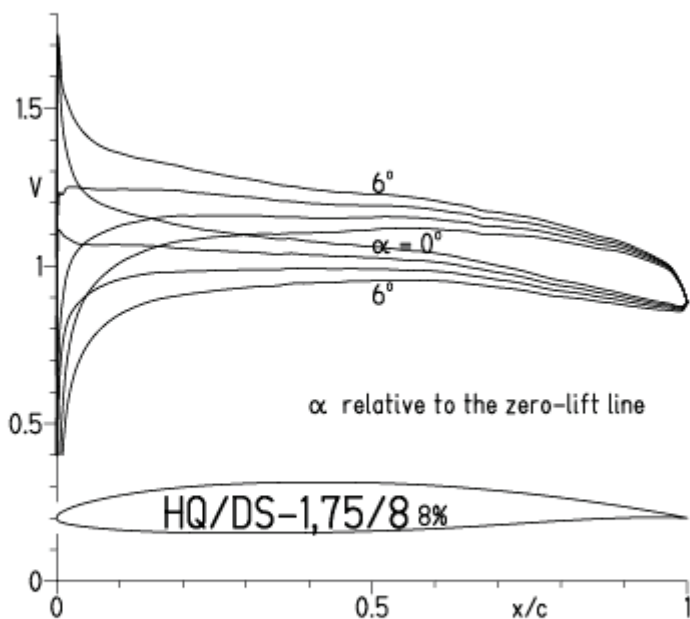
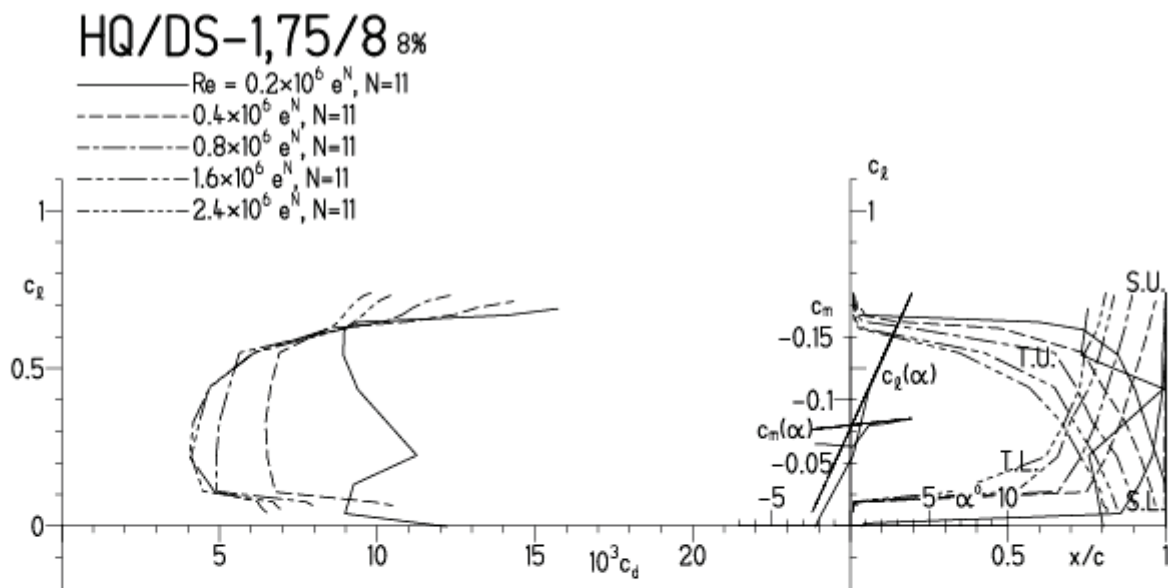


# HQ/DS-1,75/8-Polaren, N=11

EPPLER 2005 V. 8.5.07 RUN 23.3.12 12:59

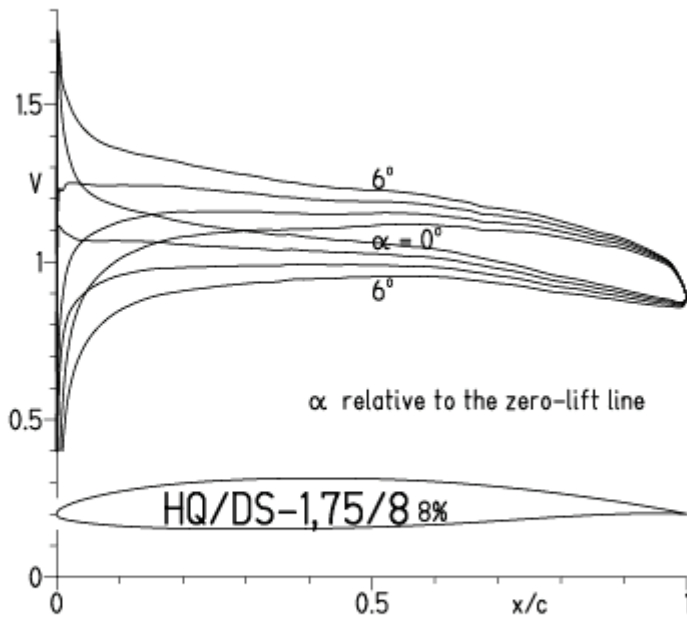


EPPLER 2005 V. 8.5.07 RUN 23.3.12 12:59



# HQ/DS-1,75/8-Polaren, N=9

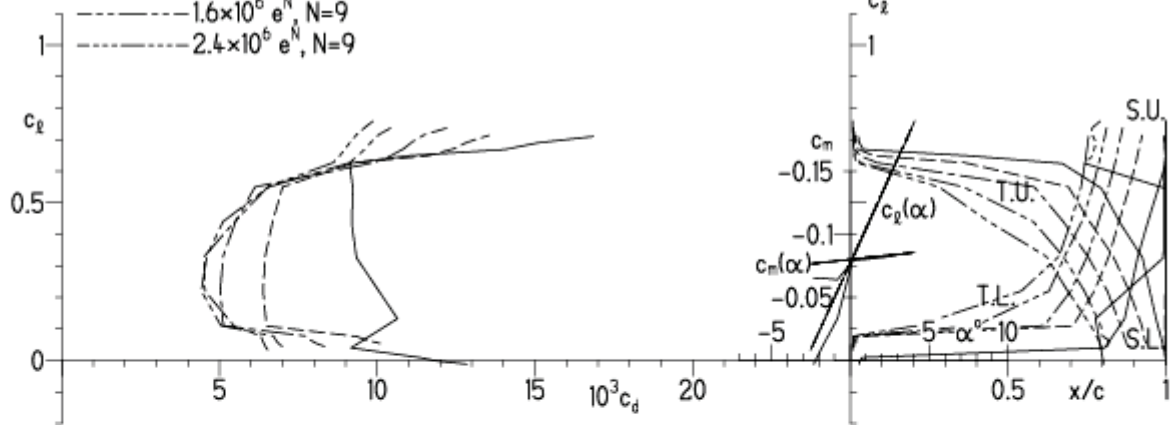
EPPLER 2005 V. 8.5.07 RUN 23.3.12 13:05



EPPLER 2005 V. 8.5.07 RUN 23.3.12 13:05

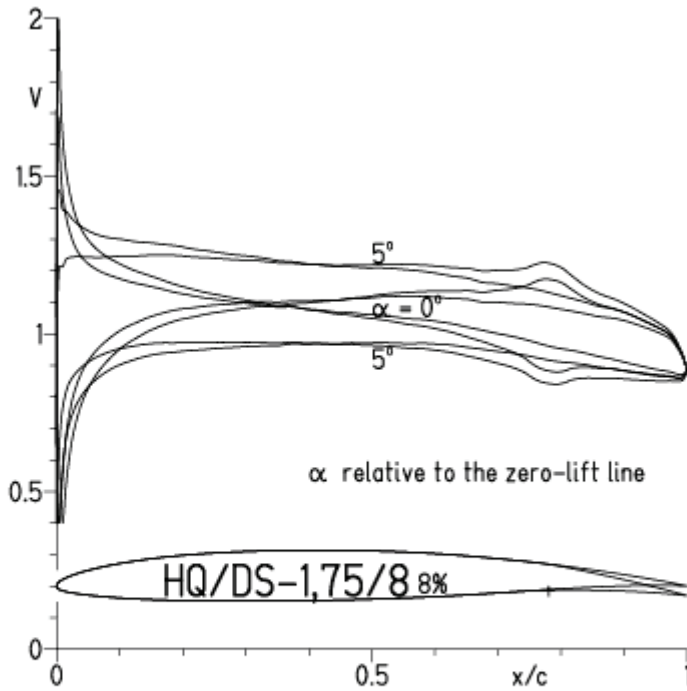
## HQ/DS-1,75/8 8%

- $Re = 0.2 \times 10^6 e^N, N=9$
- - -  $0.4 \times 10^6 e^N, N=9$
- · -  $0.8 \times 10^6 e^N, N=9$
- · · -  $1.6 \times 10^6 e^N, N=9$
- · · · -  $2.4 \times 10^6 e^N, N=9$



HQ/DS-1,75/8-Polaren, N=11, mit 4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.3.12 16:15

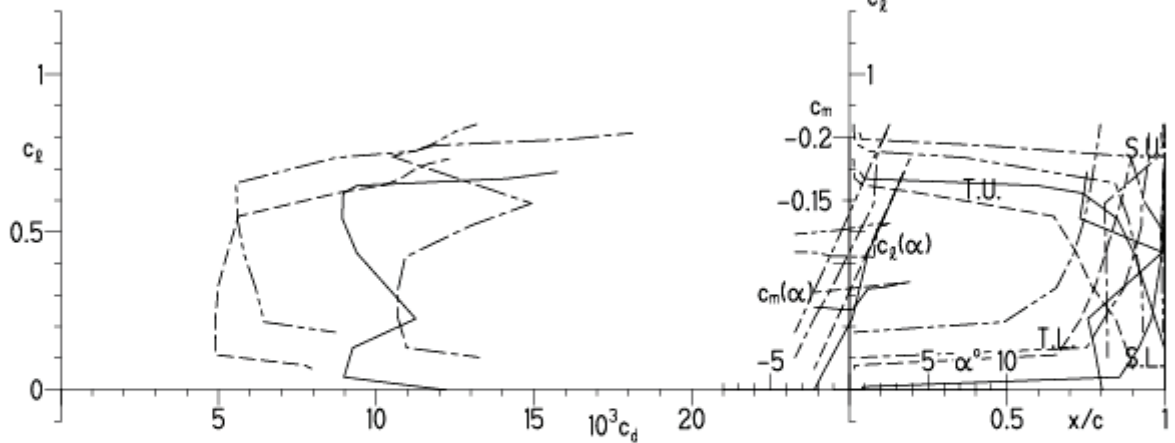


EPPLER 2005 V. 8.5.07 RUN 23.3.12 16:15

**HQ/DS-1,75/8 8%**

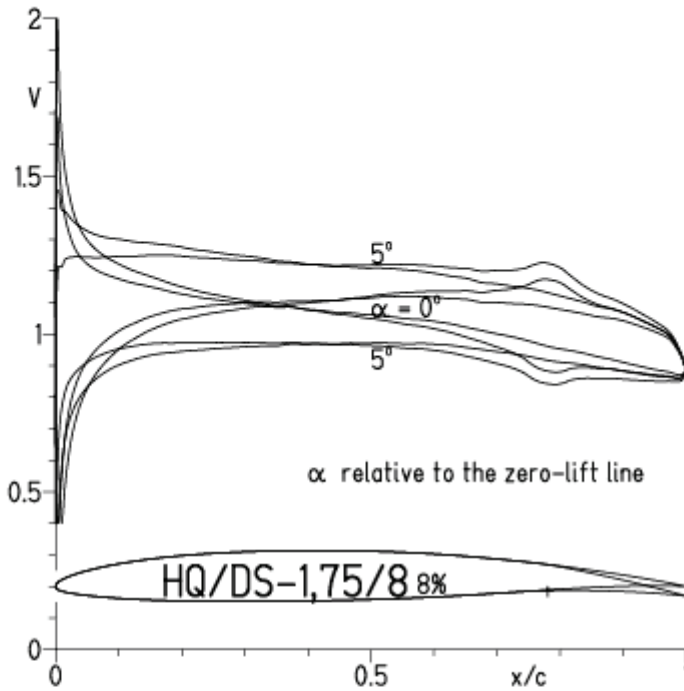
- $Re = 0.2 \times 10^6 e^N, N=11$
- - -  $0.8 \times 10^6 e^N, N=11$
- · - · 22% Flap  $4^\circ, Re = 0.2 \times 10^6 e^N, N=11$
- · - · 22% Flap  $4^\circ, Re = 0.8 \times 10^6 e^N, N=11$

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



HQ/DS-1,75/8-Polaren, N=9, mit 4° Wölbklappenausschlag, Turbulatoreffekt  
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für schmale Aussenflügel)

EPPLER 2005 V. 8.5.07 RUN 23.3.12 16:20

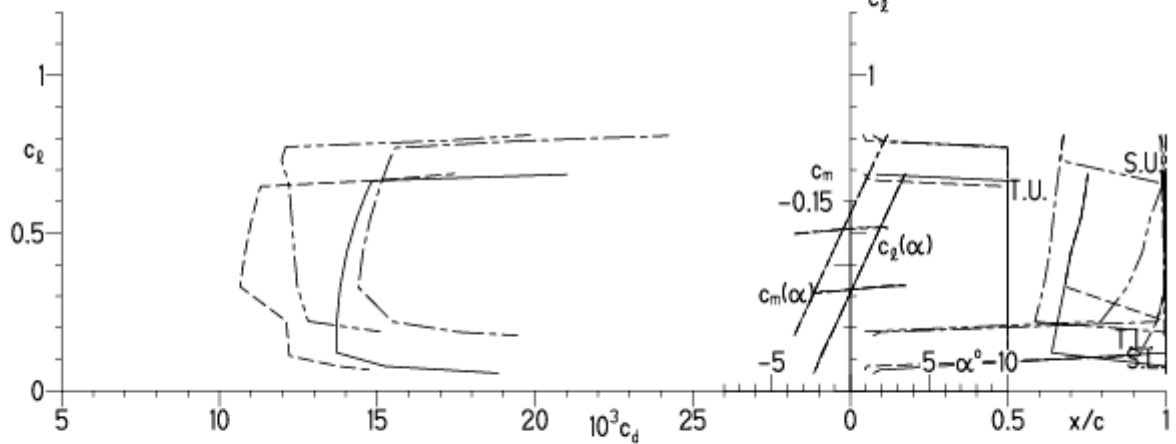


EPPLER 2005 V. 8.5.07 RUN 23.3.12 16:20

HQ/DS-1,75/8 8%

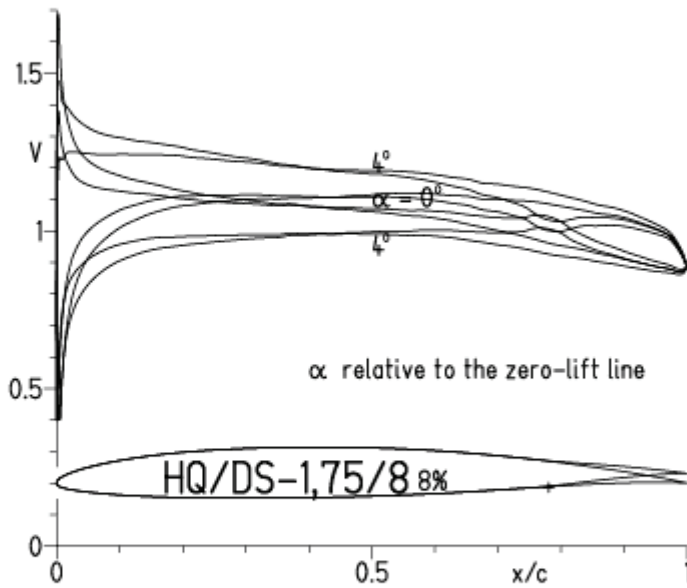
- Re = 75 000, Turb. upper 50% e<sup>N</sup>, N=11
- - - 0.15×10<sup>6</sup>, Turb. upper 50% e<sup>N</sup>, N=11
- · - 22% Flap 4°, Re = 75 000, Turb. upper 50% e<sup>N</sup>, N=11
- · - 22% Flap 4°, Re = 0.15×10<sup>6</sup>, Turb. upper 50% e<sup>N</sup>, N=11

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



HQ/DS-1,75/8-Polaren, N=11, mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.3.12 16:30

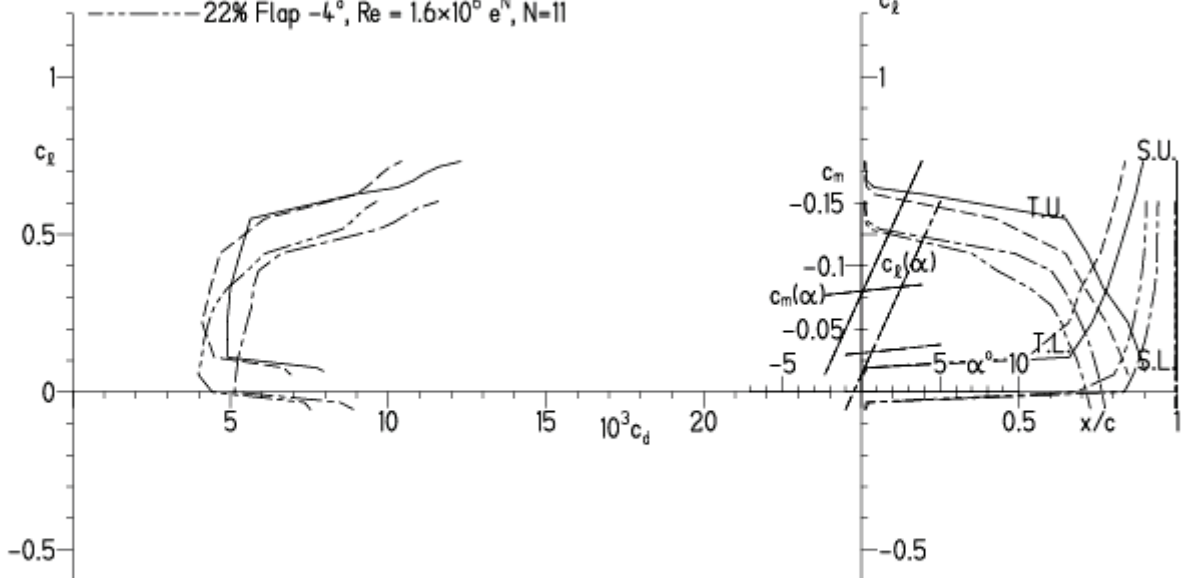


EPPLER 2005 V. 8.5.07 RUN 23.

**HQ/DS-1,75/8 8%**

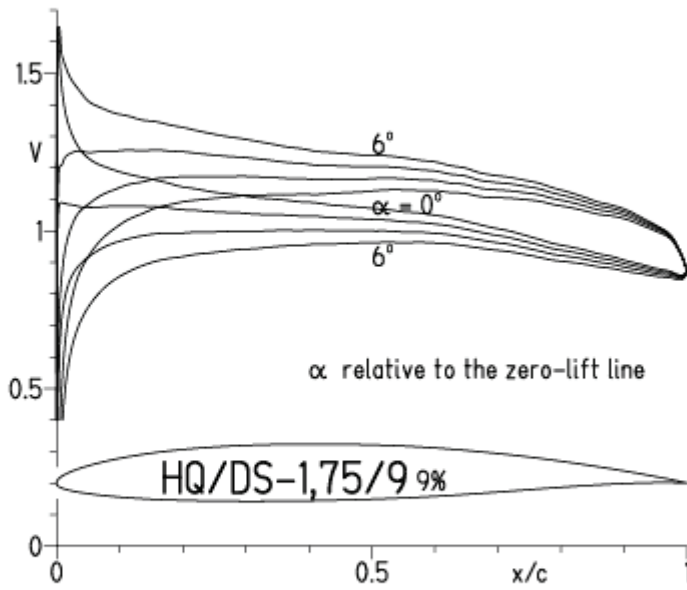
- $Re = 0.8 \times 10^6 e^N, N=11$
- - -  $1.6 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $-4^\circ, Re = 0.8 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $-4^\circ, Re = 1.6 \times 10^6 e^N, N=11$

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



# HQ/DS-1,75/9-Polaren, N=11

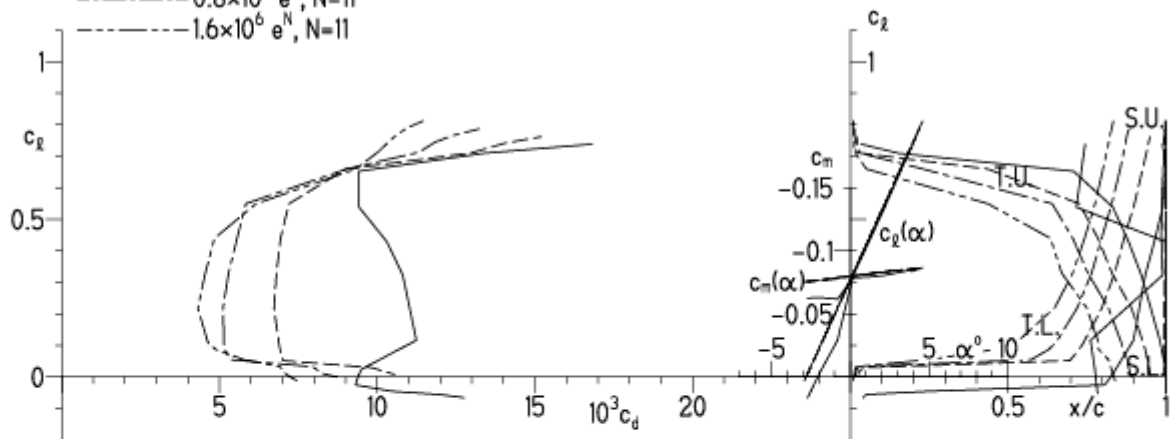
EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:07



EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:07

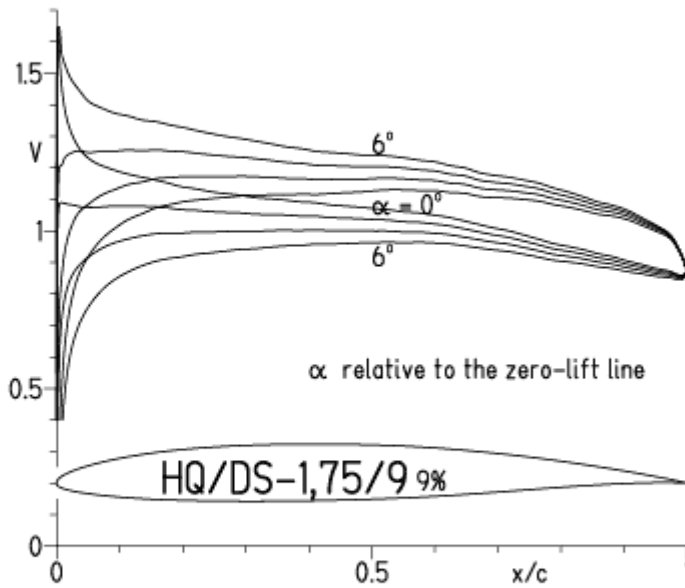
## HQ/DS-1,75/9 9%

- $Re = 0.2 \times 10^6$   $e^N$ ,  $N=11$
- - -  $0.4 \times 10^6$   $e^N$ ,  $N=11$
- · -  $0.8 \times 10^6$   $e^N$ ,  $N=11$
- - -  $1.6 \times 10^6$   $e^N$ ,  $N=11$

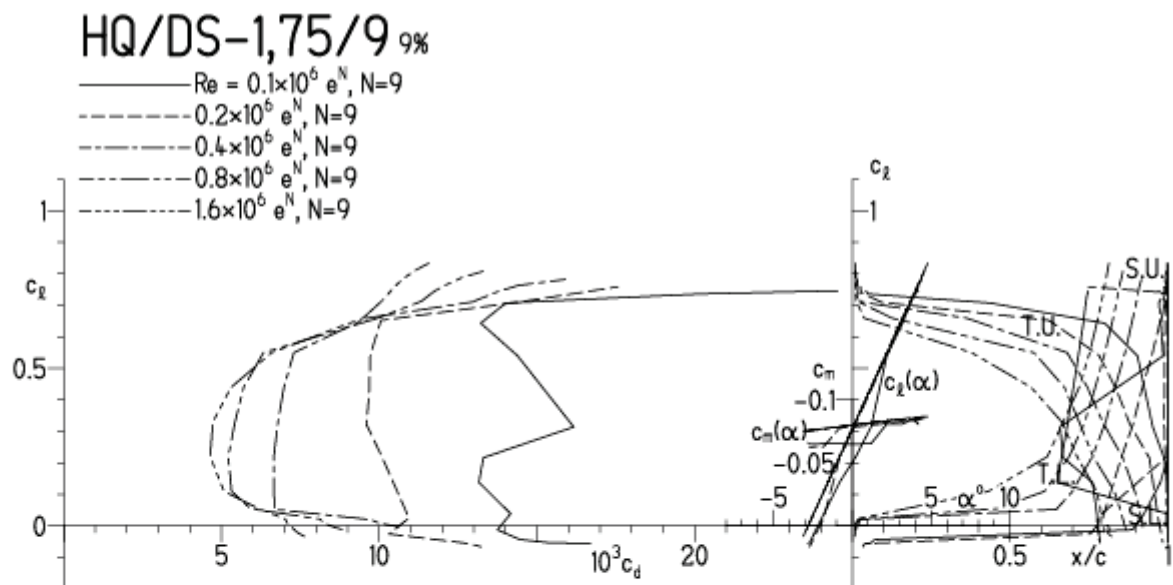


# HQ/DS-1,75/9-Polaren, N=9

EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:16

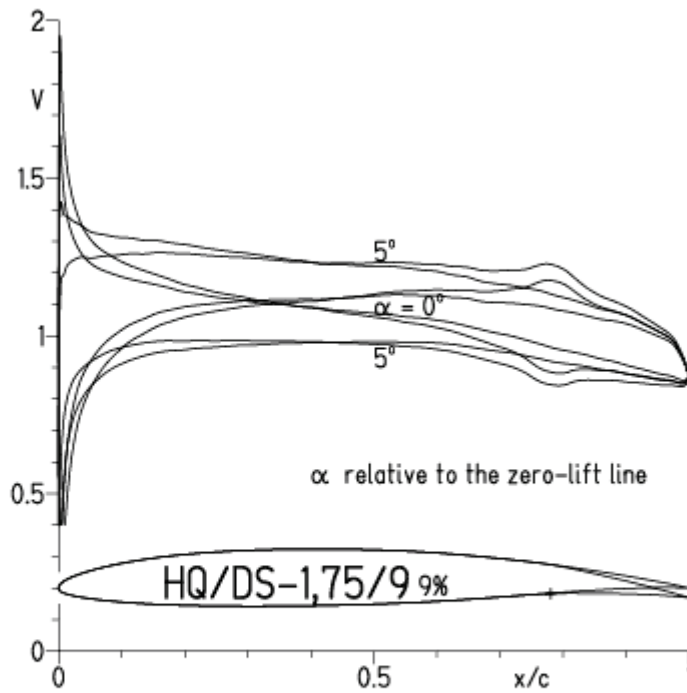


EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:16



# HQ/DS-1,75/9-Polaren, N=11, mit 4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:50

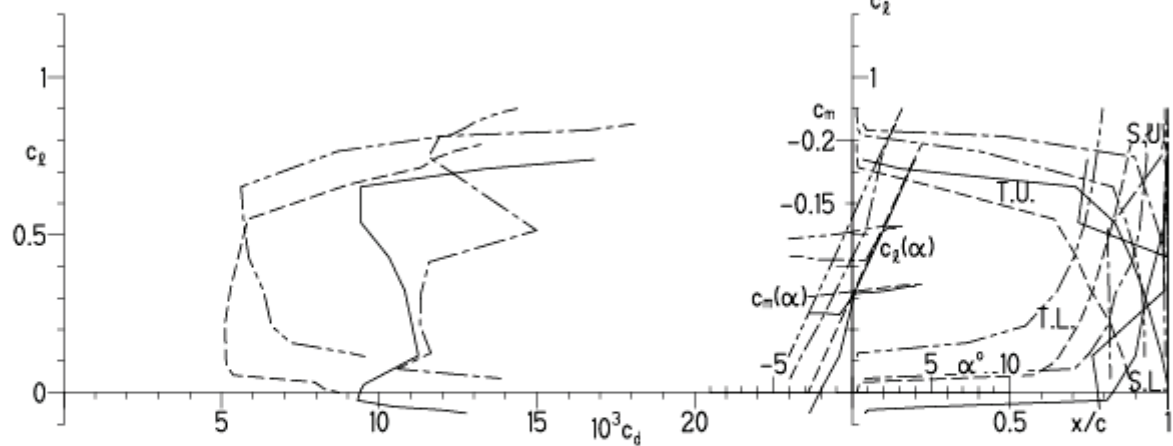


EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:50

## HQ/DS-1,75/9 9%

- $Re = 0.2 \times 10^6$  e<sup>N</sup>, N=11
- - -  $0.8 \times 10^6$  e<sup>N</sup>, N=11
- · - · 22% Flap 4°,  $Re = 0.2 \times 10^6$  e<sup>N</sup>, N=11
- · - · 22% Flap 4°,  $Re = 0.8 \times 10^6$  e<sup>N</sup>, N=11

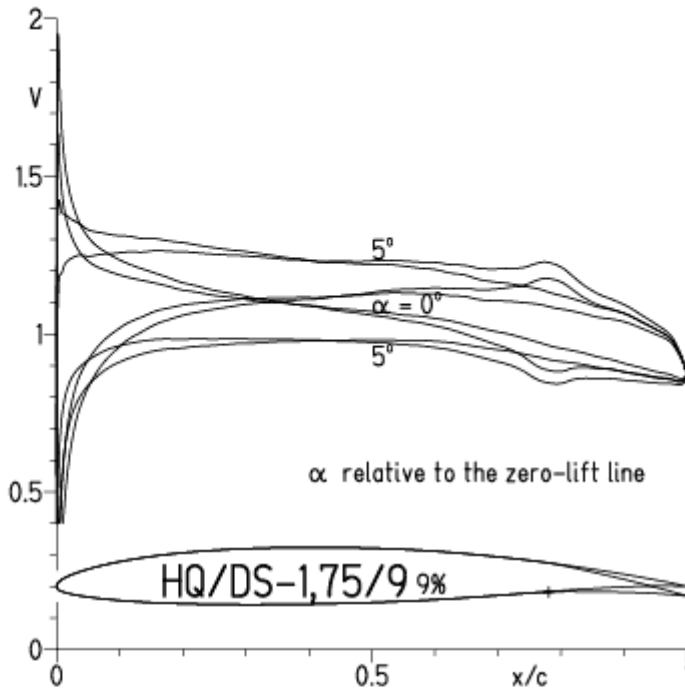
- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface





HQ/DS-1,75/9-Polaren, N=9, mit 4° Wölbklappenausschlag, Turbulatoreffekt  
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für schmale Aussenflügel)

EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:57

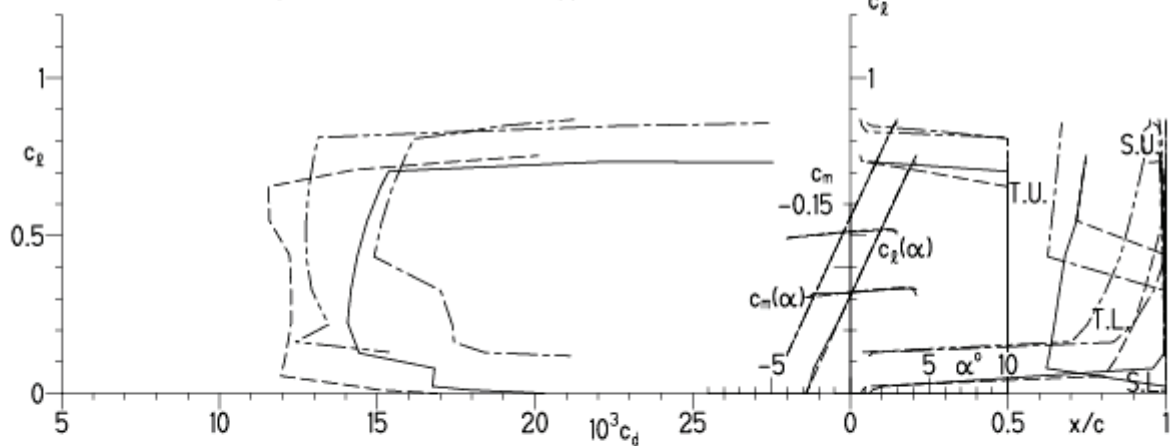


EPPLER 2005 V. 8.5.07 RUN 23.3.12 17:57

HQ/DS-1,75/9 9%

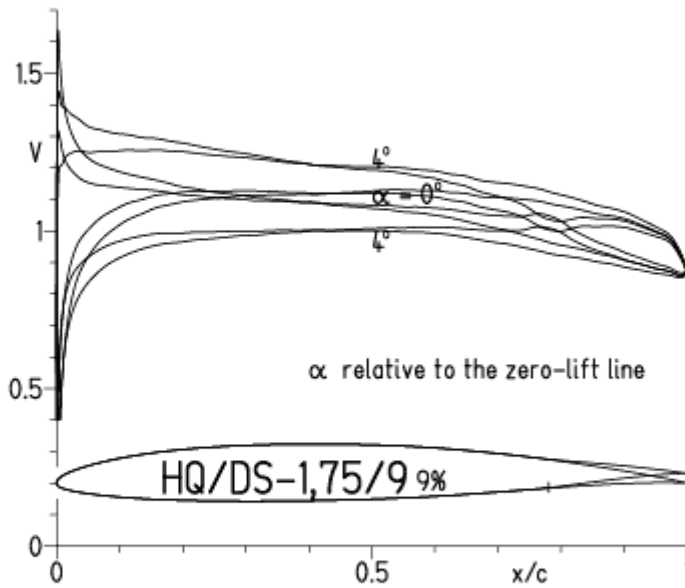
- Re = 75 000, Turb. upper 50% e<sup>N</sup>, N=9
- - - 0.15×10<sup>6</sup>, Turb. upper 50% e<sup>N</sup>, N=9
- · - 22% Flap 4°, Re = 75 000, Turb. upper 50% e<sup>N</sup>, N=9
- · - 22% Flap 4°, Re = 0.15×10<sup>6</sup>, Turb. upper 50% e<sup>N</sup>, N=9

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

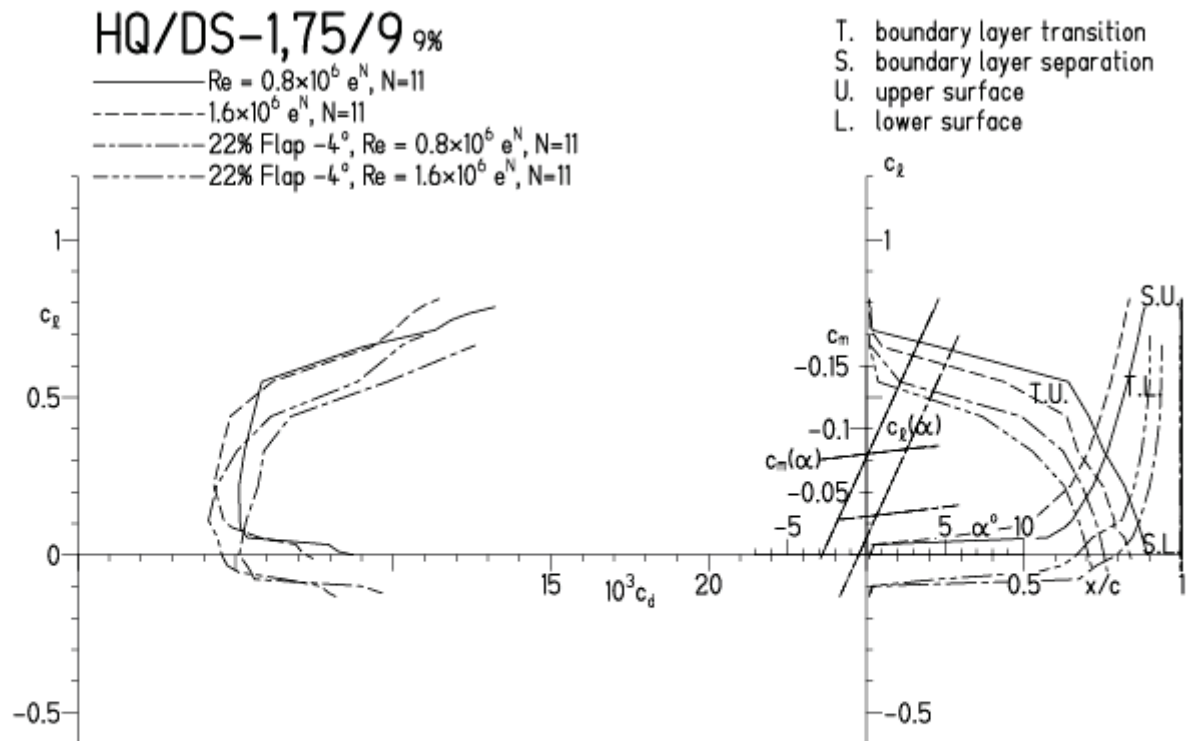


HQ/DS-1,75/9-Polaren, N=11, mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 23.3.12 18:14

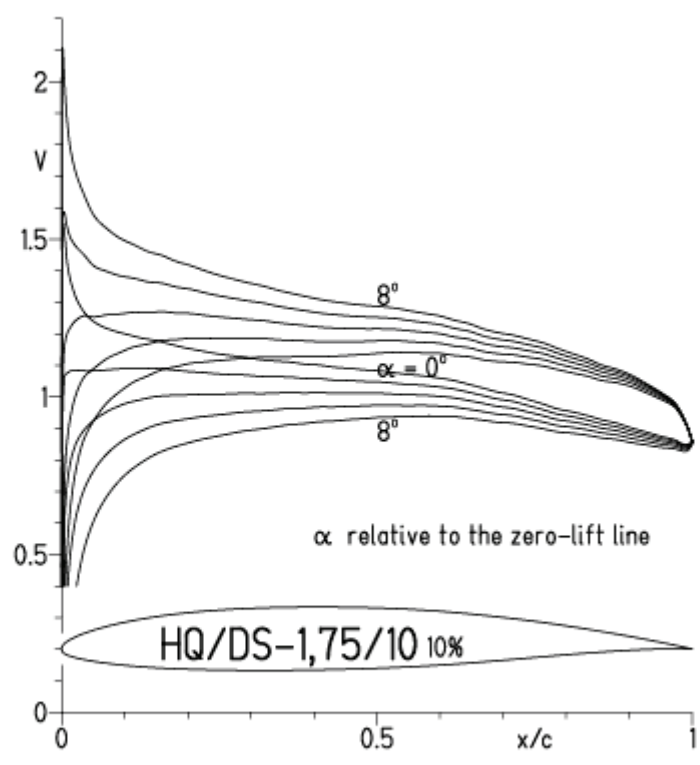


EPPLER 2005 V. 8.5.07 RUN 23.3.12 18:14

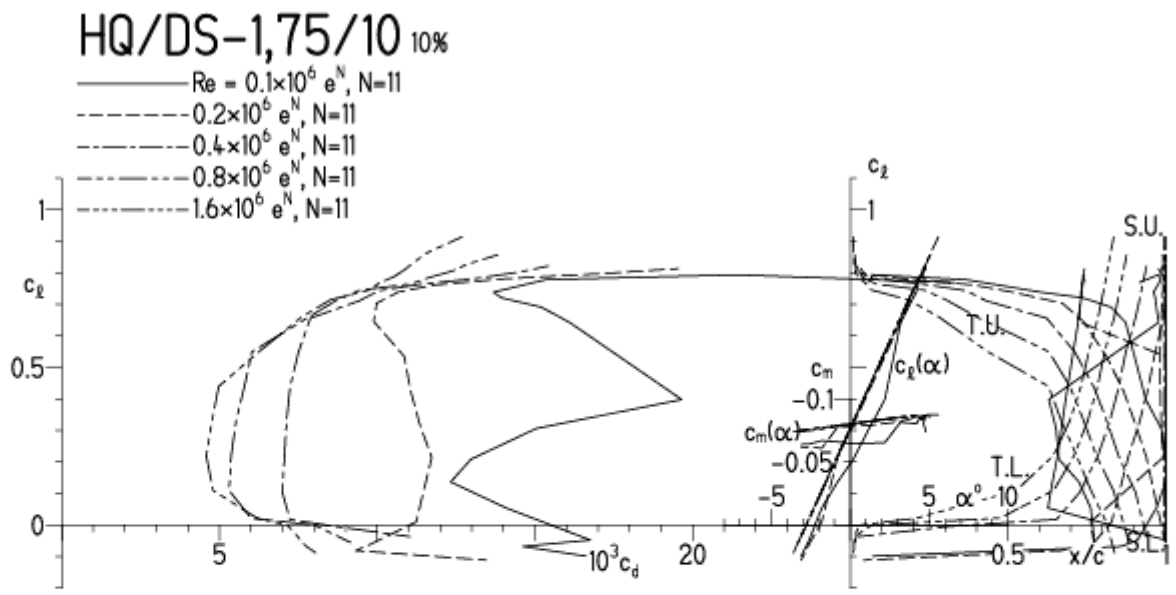


# HQ/DS-1,75/10-Polaren, N=11

EPPLER 2005 V. 8.5.07 RUN 25.3.02 18:42

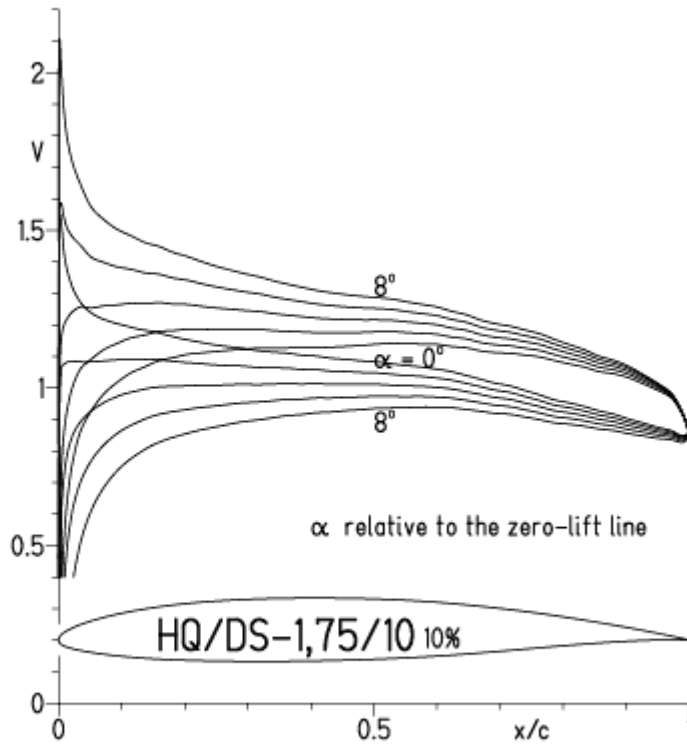


EPPLER 2005 V. 8.5.07 RUN 25.3.02 18:42

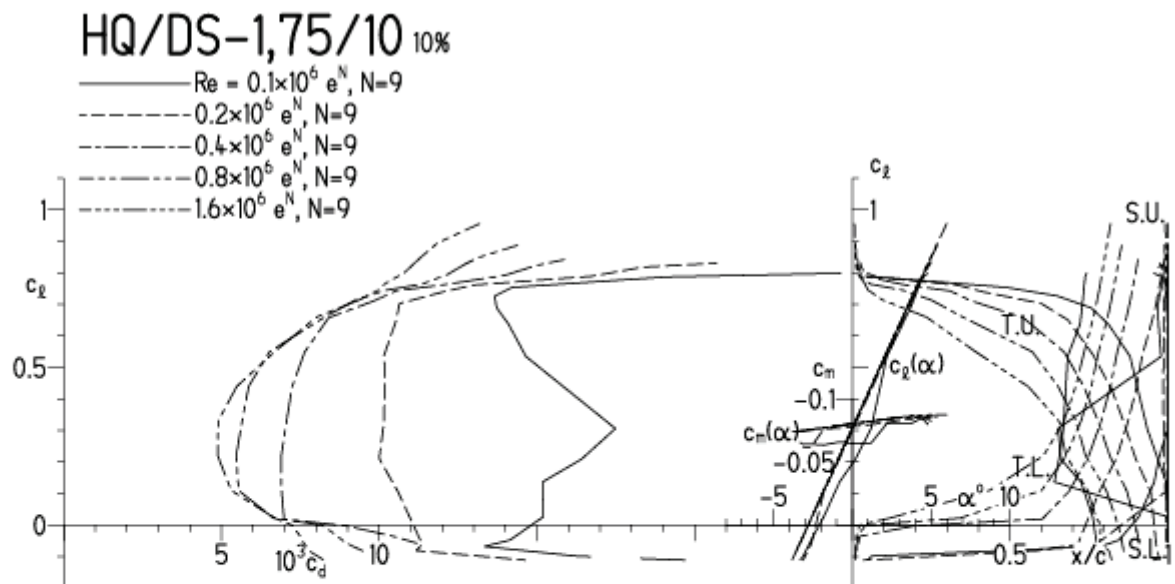


# HQ/DS-1,75/10-Polaren, N=9

EPPLER 2005 V. 8.5.07 RUN 25.3.12 18:56

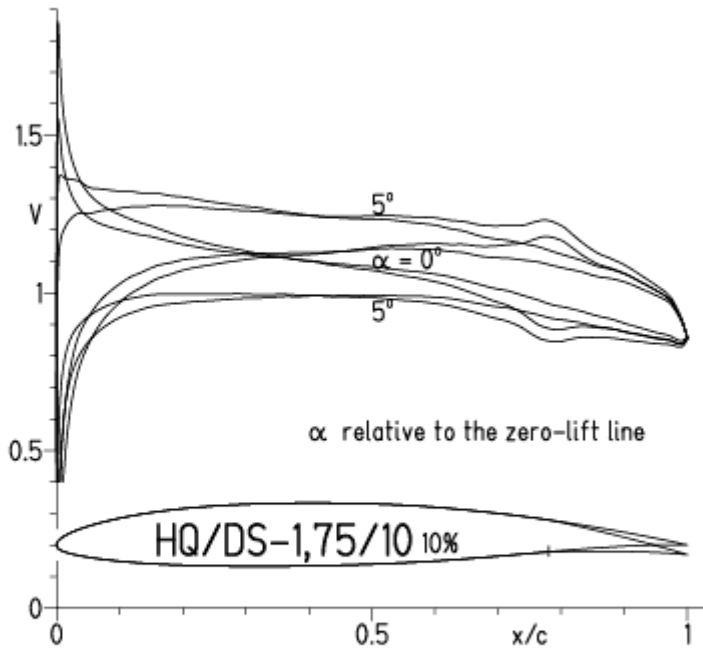


EPPLER 2005 V. 8.5.07 RUN 25.3.12 18:56



HQ/DS-1,75/10-Polaren, N=11, mit 4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 12:26

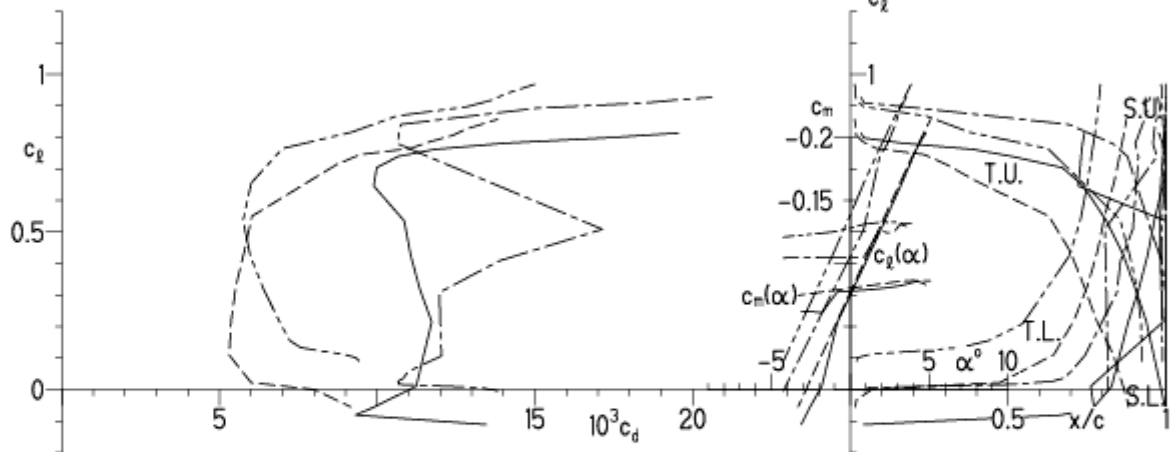


EPPLER 2005 V. 8.5.07 RUN 26.3.12 12:26

**HQ/DS-1,75/10 10%**

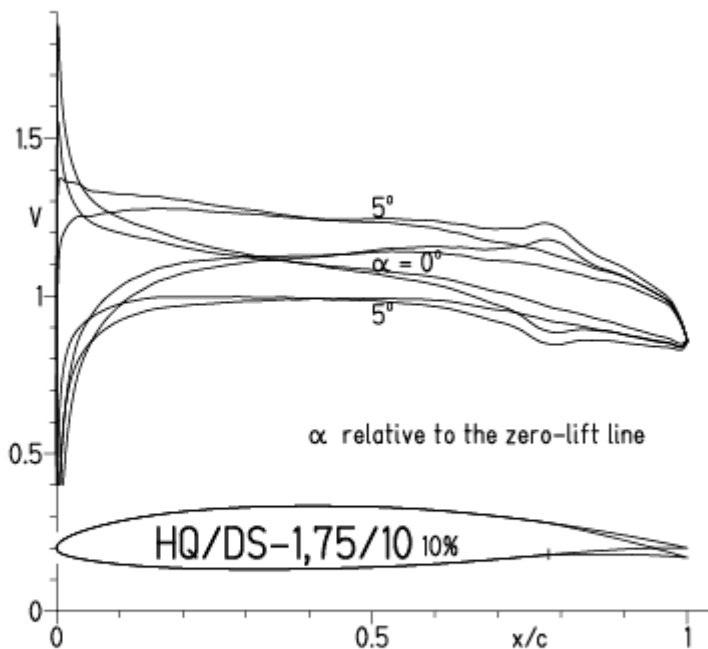
- $Re = 0.2 \times 10^6 e^N, N=11$
- - -  $0.8 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $4^\circ, Re = 0.2 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $4^\circ, Re = 0.8 \times 10^6 e^N, N=11$

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



**HQ/DS-1,75/10-Polaren, N=9, mit 4° Wölbklappenausschlag, Turbulatoreffekt**  
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für schmale Aussenflügel)

EPPLER 2005 V. 8.5.07 RUN 26.3.12 12:36

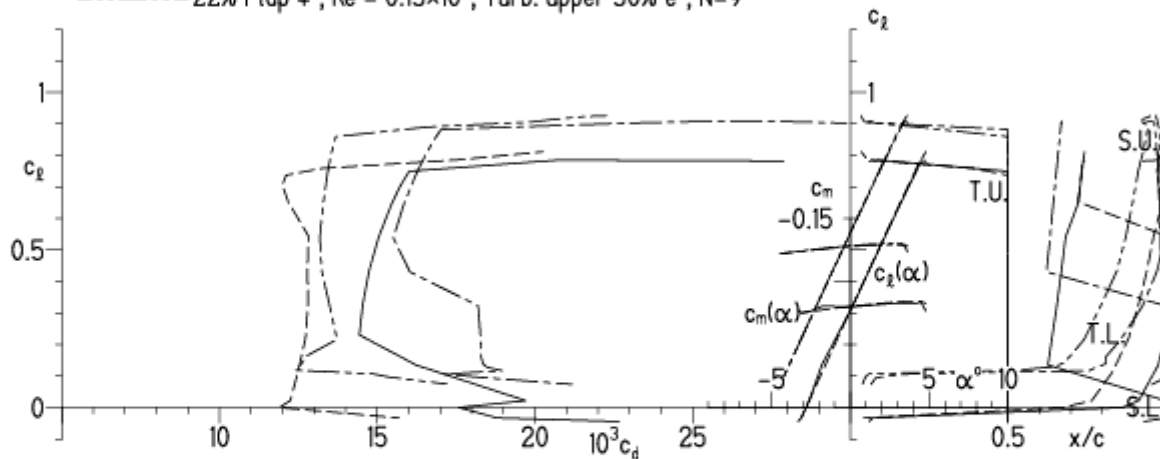


EPPLER 2005 V. 8.5.07 RUN 26.3.1

**HQ/DS-1,75/10 10%**

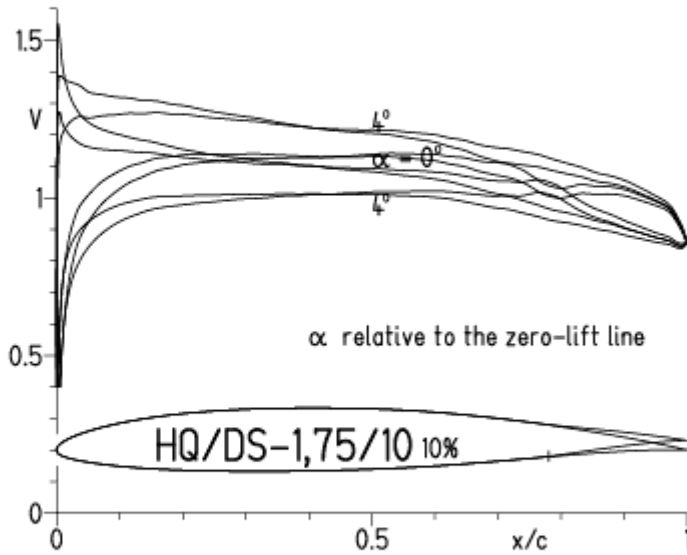
- $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- - -  $0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - · 22% Flap  $4^\circ$ ,  $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - · 22% Flap  $4^\circ$ ,  $Re = 0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$

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

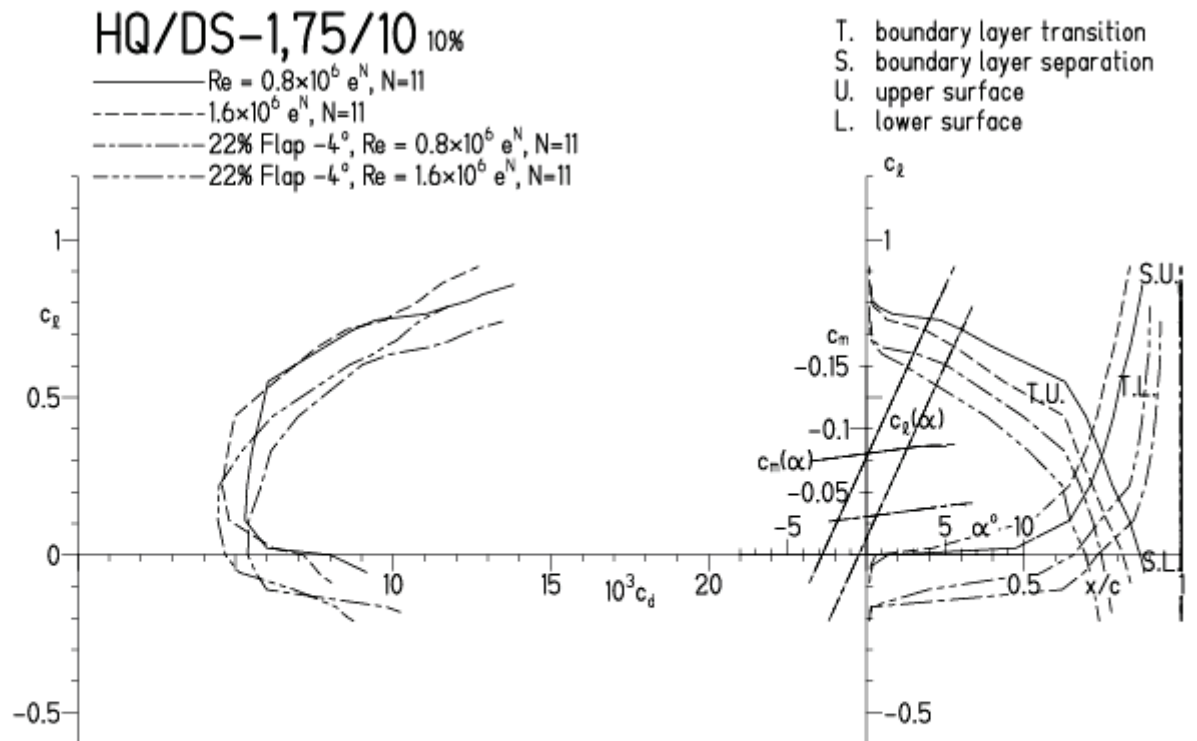


HQ/DS-1,75/10-Polaren, N=11, mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 12:53

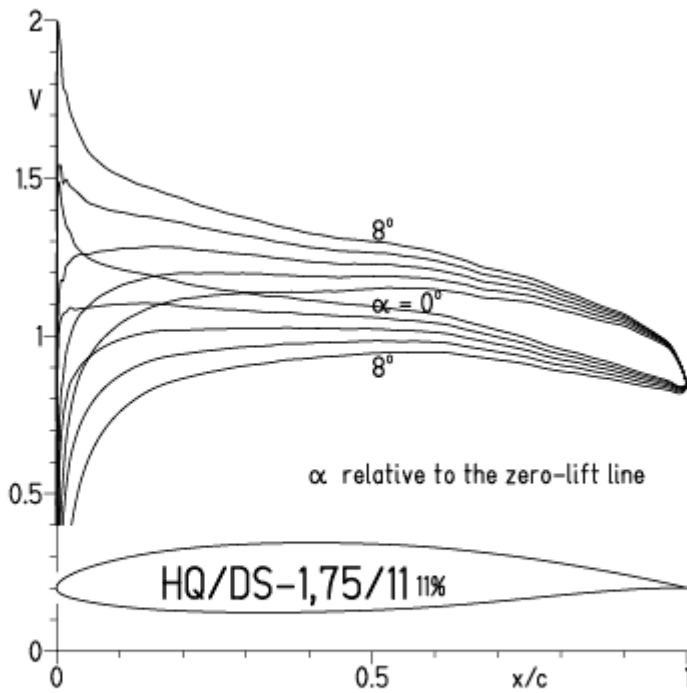


EPPLER 2005 V. 8.5.07 RUN 26.3.12 12:53

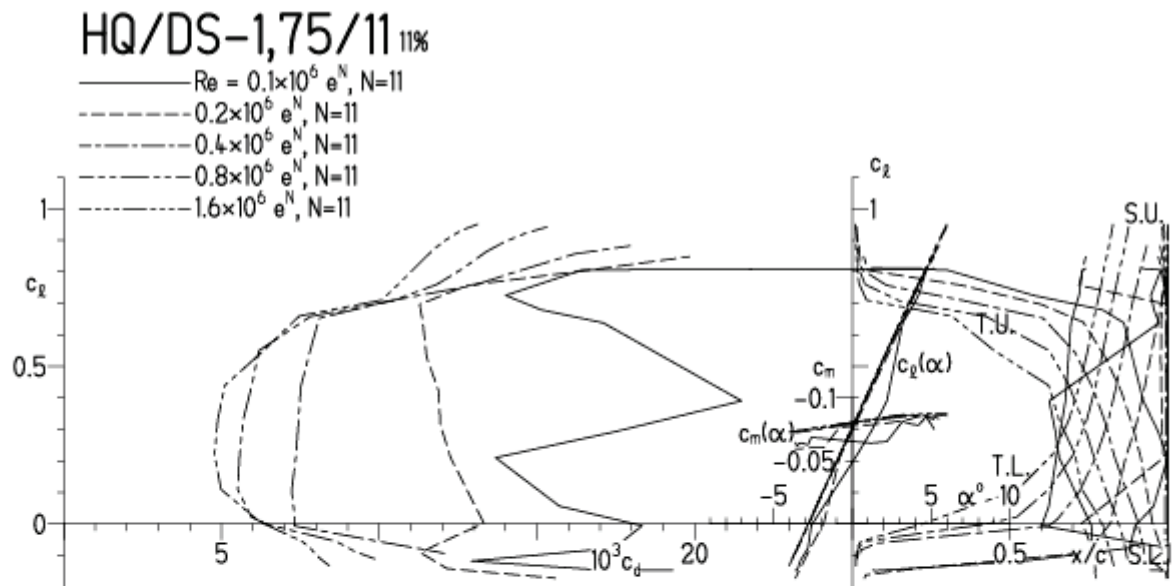


HQ/DS-1,75/11-Polaren, N=11

EPPLER 2005 V. 8.5.07 RUN 26.3.12 13:12



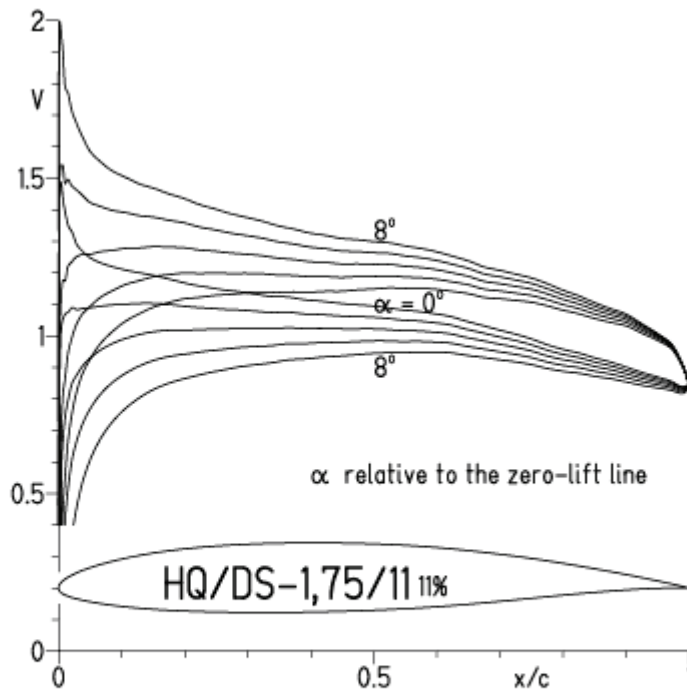
EPPLER 2005 V. 8.5.07 RUN 26.3.12 13:12



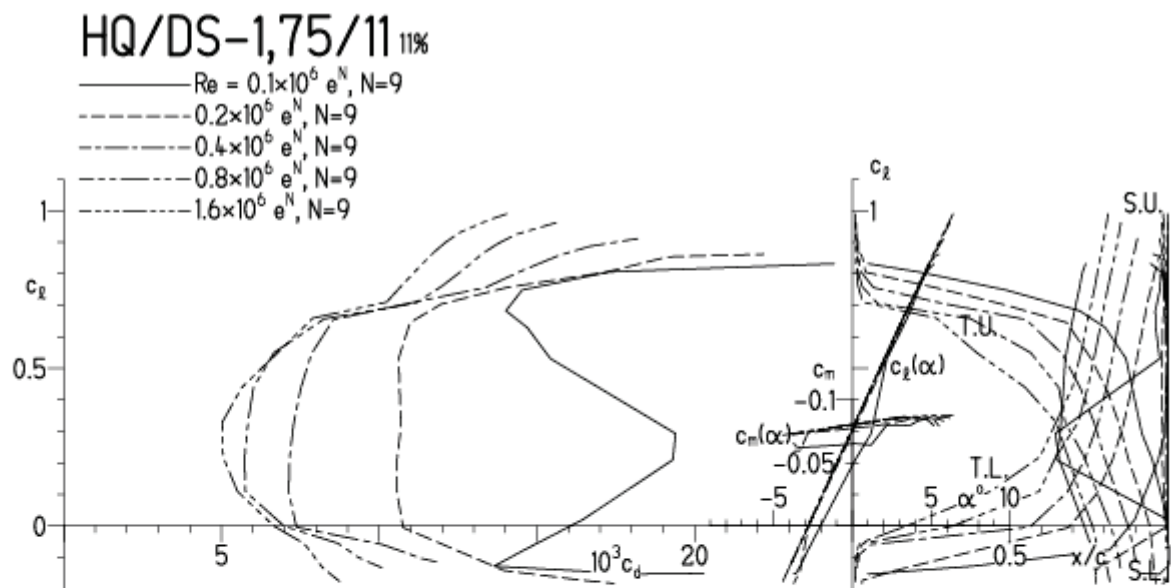


# HQ/DS-1,75/11-Polaren, N=9

EPPLER 2005 V. 8.5.07 RUN 26.3.12 13:25

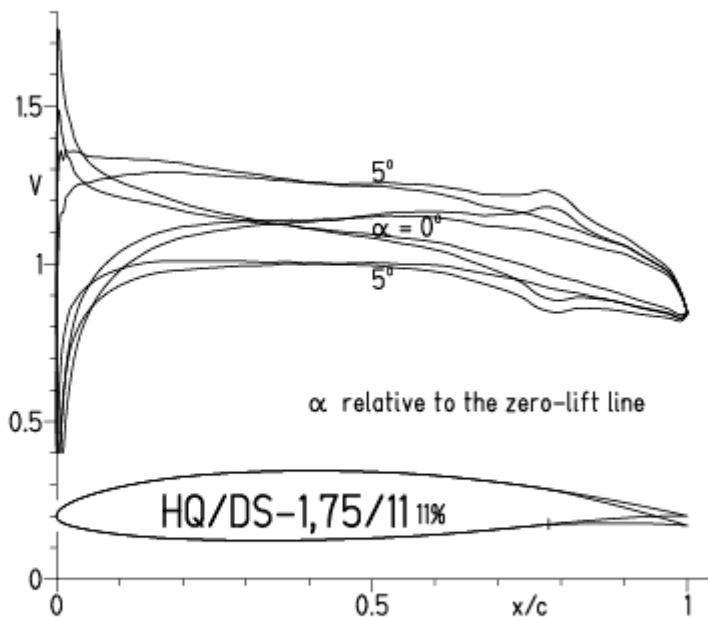


EPPLER 2005 V. 8.5.07 RUN 26.3.12 13:25



HQ/DS-1,75/11-Polaren, N=11, mit 4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 15:53

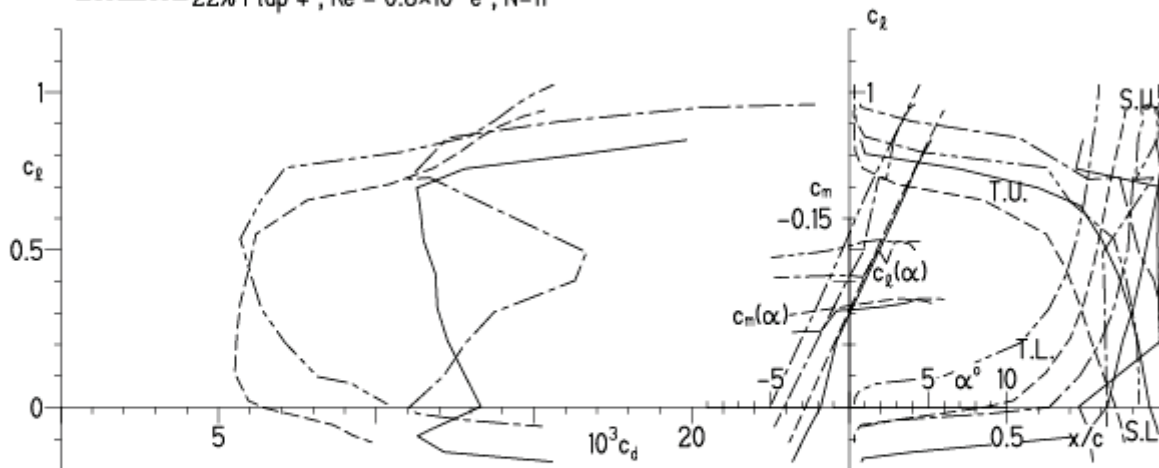


EPPLER 2005 V. 8.5.07 RUN 26.3.12 15:53

HQ/DS-1,75/11 11%

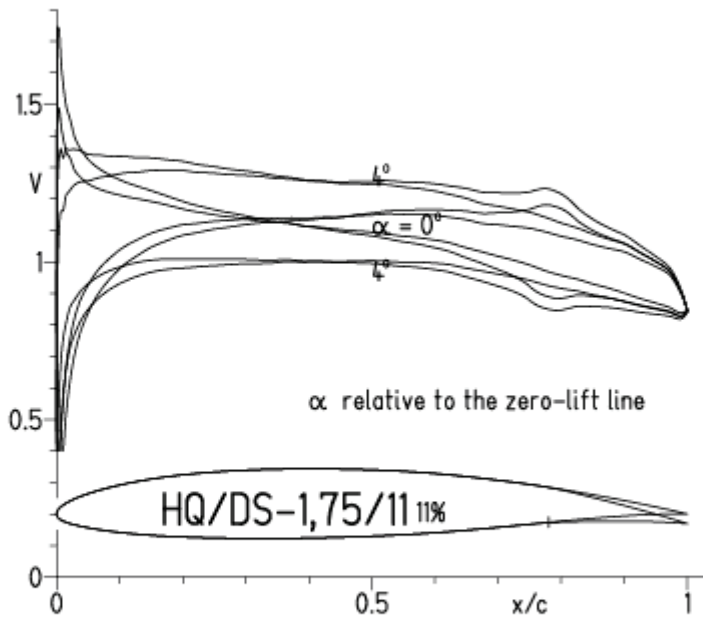
- $Re = 0.2 \times 10^6$ ,  $N=11$
- - -  $0.8 \times 10^6$ ,  $N=11$
- · -  $22\%$  Flap  $4^\circ$ ,  $Re = 0.2 \times 10^6$ ,  $N=11$
- · -  $22\%$  Flap  $4^\circ$ ,  $Re = 0.8 \times 10^6$ ,  $N=11$

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



**HQ/DS-1,75/11-Polaren, N=9, mit 5° Wölbklappenausschlag, Turbulatoreffekt**  
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für schmale Aussenflügel)

EPPLER 2005 V. 8.5.07 RUN 26.3.12 16:05

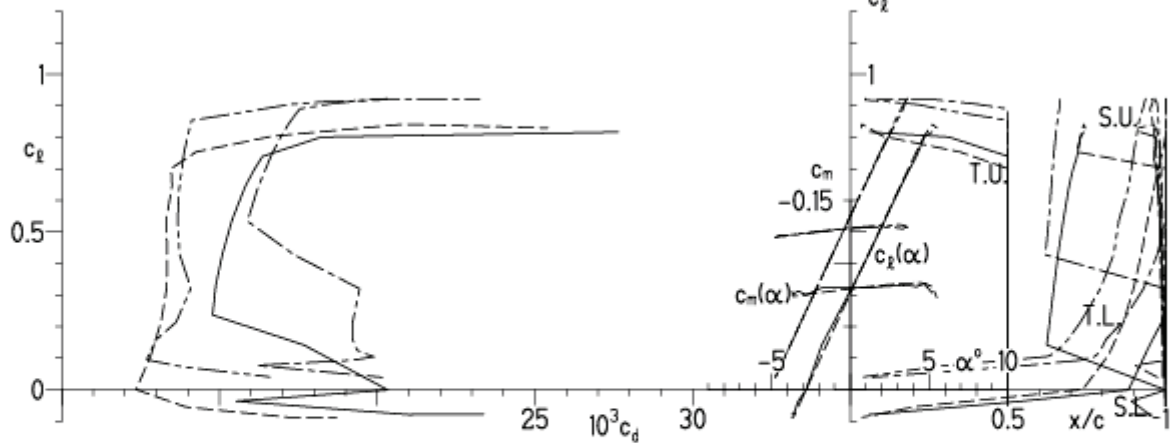


EPPLER 2005 V. 8.5.07 RUN 26.3.12 16:05

**HQ/DS-1,75/11 11%**

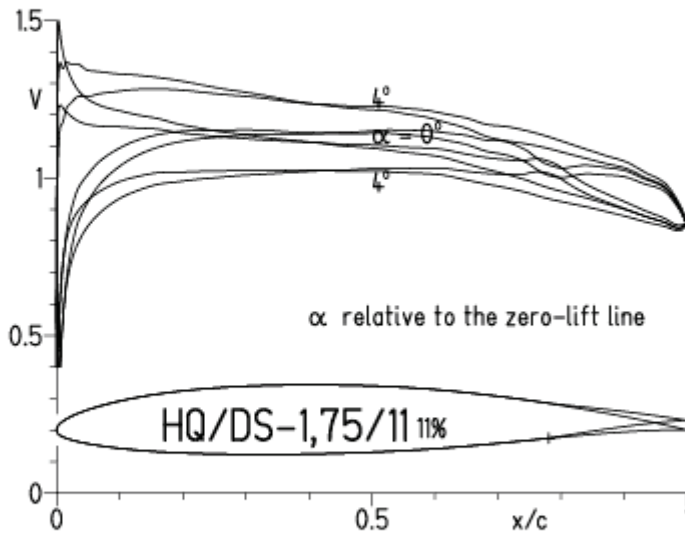
- $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- - -  $0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - 22% Flap  $4^\circ$ ,  $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - 22% Flap  $4^\circ$ ,  $Re = 0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$

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

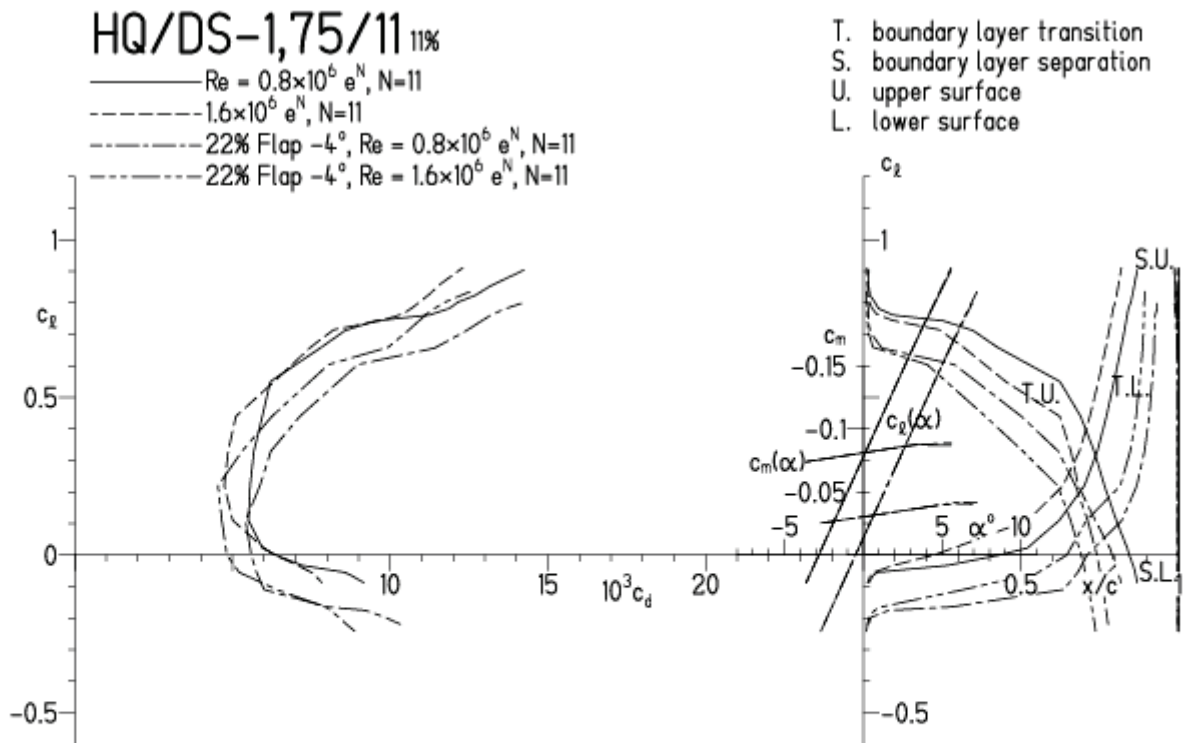


HQ/DS-1,75/11-Polaren, N=11, mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 17:28

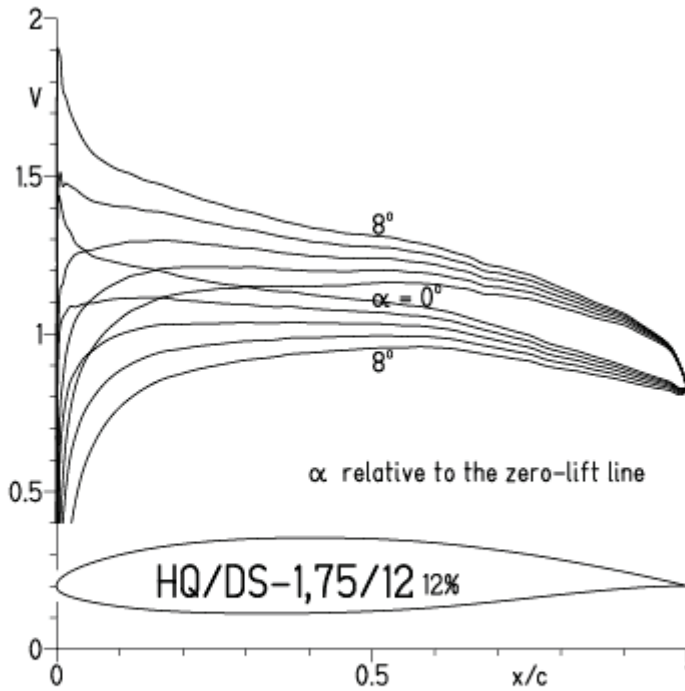


EPPLER 2005 V. 8.5.07 RUN 26.3.12 17:28

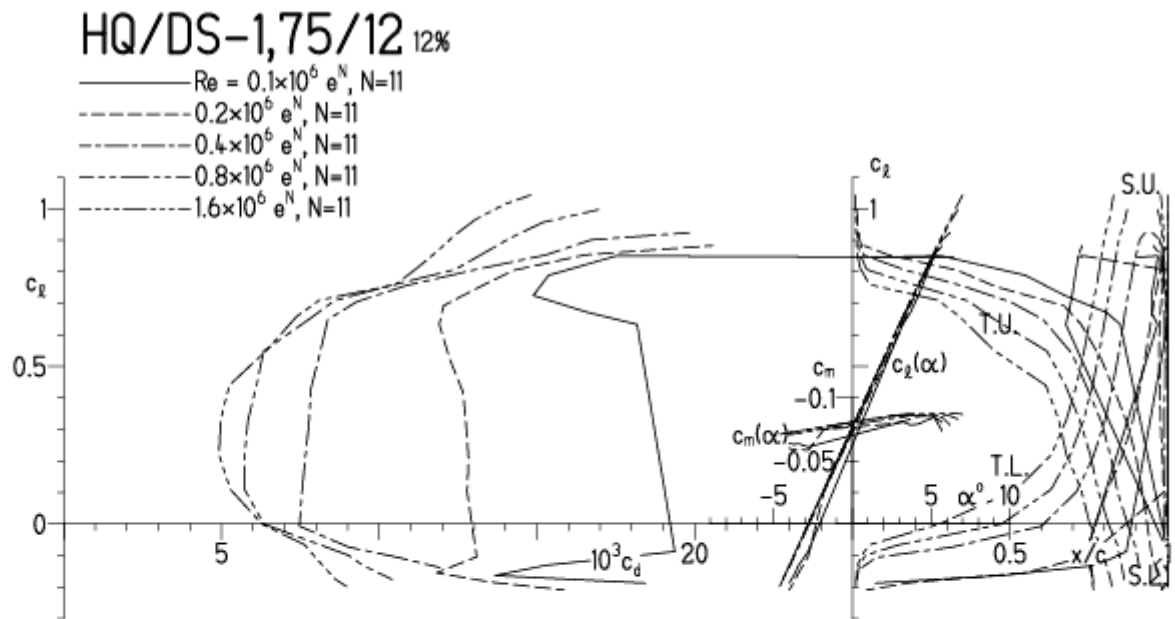


HQ/DS-1,75/12-Polaren, N=11

EPPLER 2005 V. 8.5.07 RUN 26.3.12 17:47

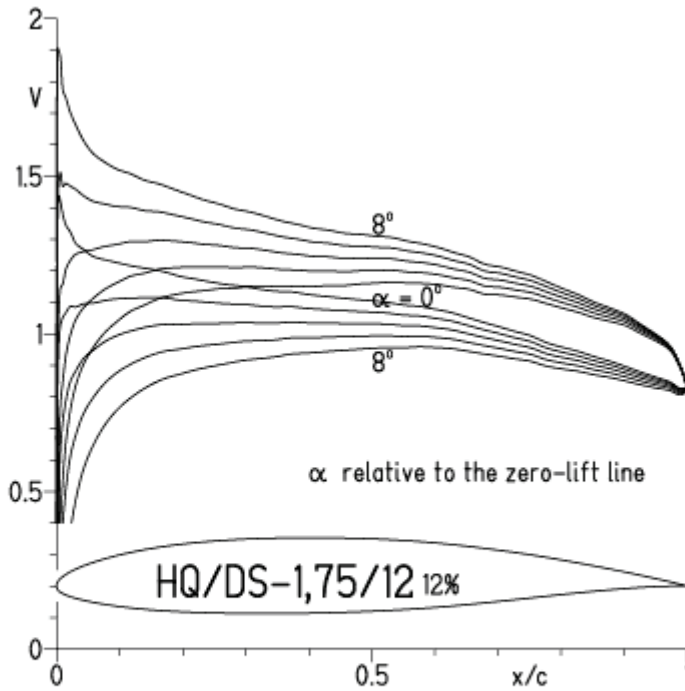


EPPLER 2005 V. 8.5.07 RUN 26.3.12 17:47

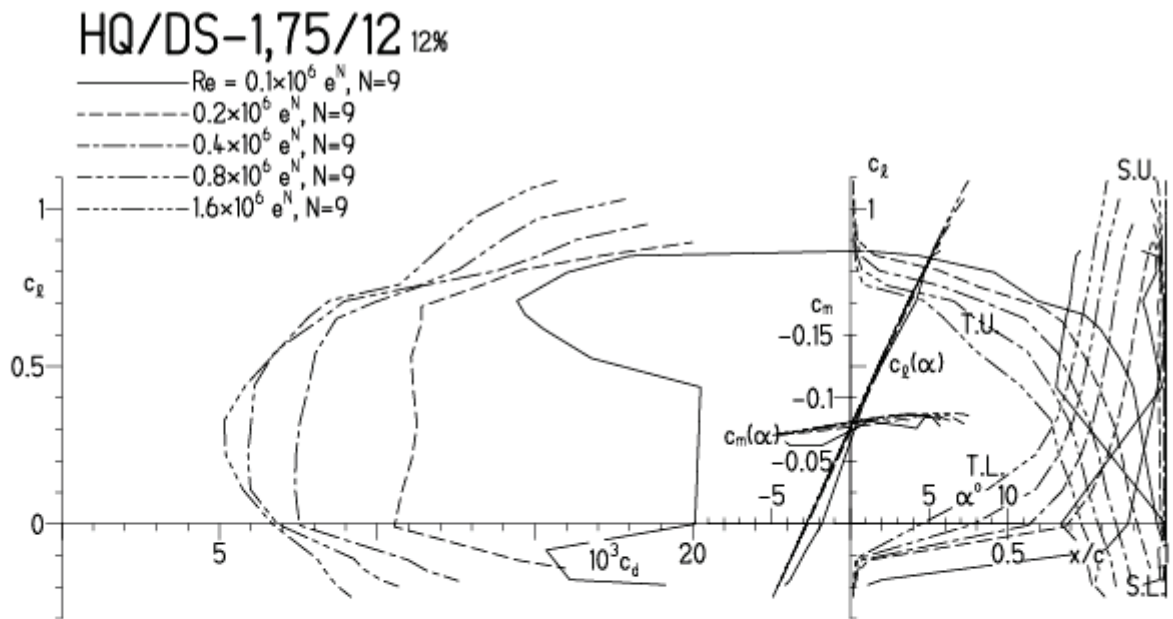


HQ/DS-1,75/12-Polaren, N=9

EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:09

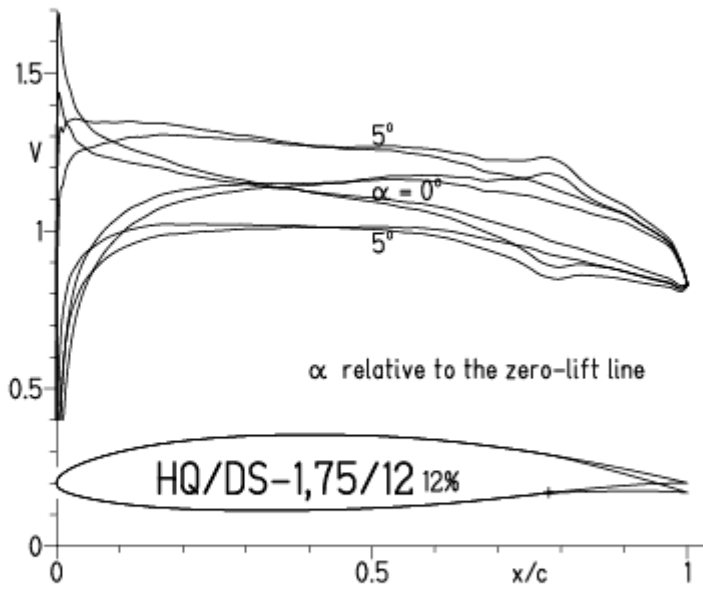


EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:09



HQ/DS-1,75/12-Polaren, N=11, mit 4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:22

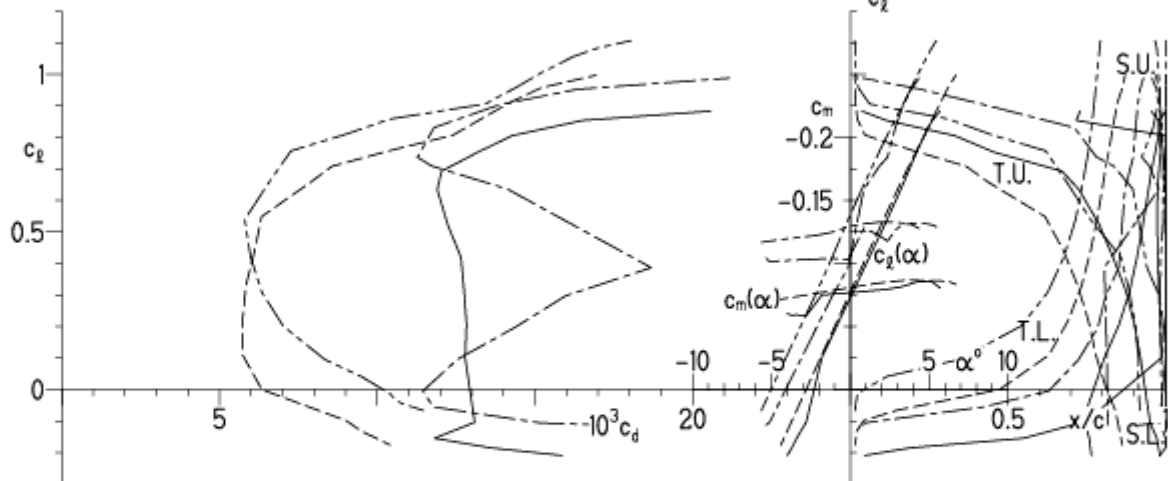


EPPLER 2005 V. 8.

**HQ/DS-1,75/12 12%**

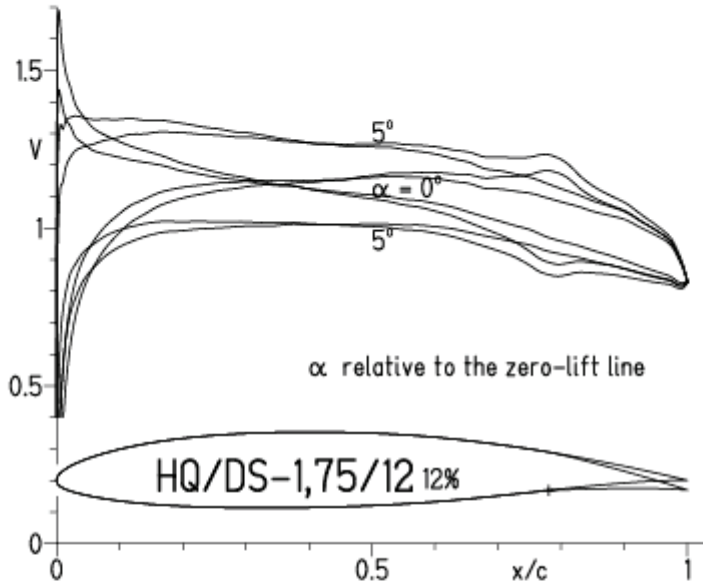
- $Re = 0.2 \times 10^6 e^N, N=11$
- - -  $0.8 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $4^\circ, Re = 0.2 \times 10^6 e^N, N=11$
- · - · - 22% Flap  $4^\circ, Re = 0.8 \times 10^6 e^N, N=11$

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



**HQ/DS-1,75/12-Polaren, N=9, mit 4° Wölbklappenausschlag, Turbulatoreffekt**  
 (optimale Turbulatorposition bei 45 – 55 % Profiltiefe, für schmale Aussenflügel)

EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:37

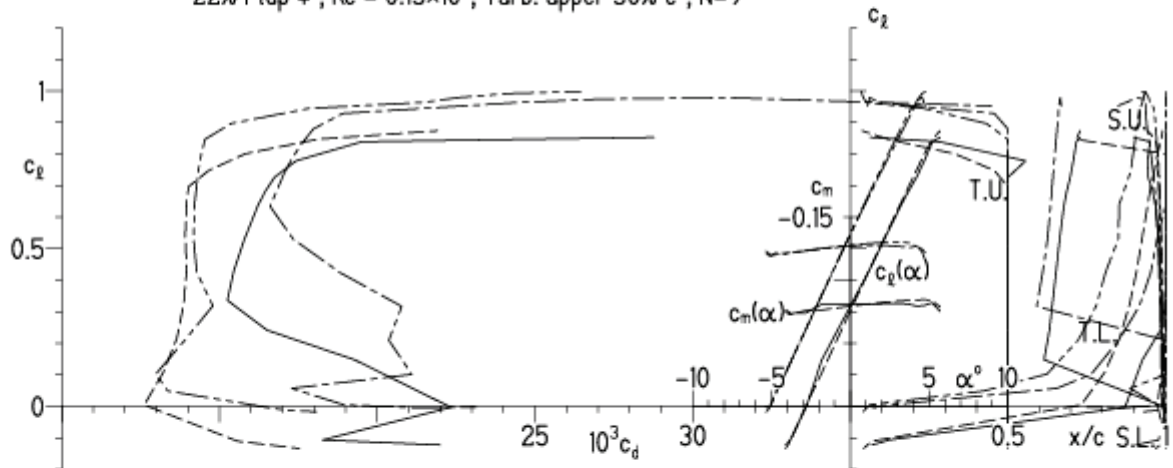


EPPLER 2005 V. 8.5.0

**HQ/DS-1,75/12 12%**

- $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- - -  $0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - 22% Flap  $4^\circ$ ,  $Re = 75\,000$ , Turb. upper 50%  $e^N$ ,  $N=9$
- · - 22% Flap  $4^\circ$ ,  $Re = 0.15 \times 10^6$ , Turb. upper 50%  $e^N$ ,  $N=9$

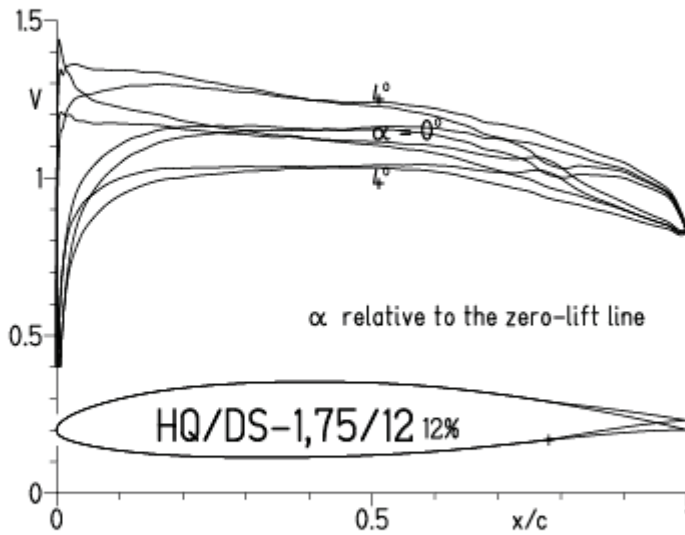
- T. boundary layer transition
- S. boundary layer separation
- U. upper surface
- L. lower surface





HQ/DS-1,75/12-Polaren, N=11, mit -4° Wölbklappenausschlag

EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:51



EPPLER 2005 V. 8.5.07 RUN 26.3.12 18:51

