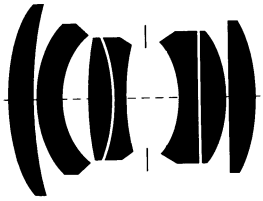
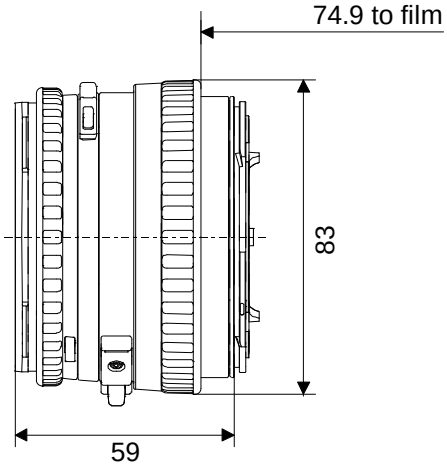
Planar® T***** 2.8/80 CFE





HASSELBLAD

The **Planar**® lens is the most successful camera lens design ever created. This nearly symmetrical layout provides the lens designer with numerous means to correct aberrations extraordinarily well, even for wide open apertures. The ideal basis for high-performance lenses with great color correction, high speed, flat image plane (this is where the name comes from) and low distortion. The **Planar**® lens design is the basis for nearly all professional 'workhorse' lenses on earth and in space today, with the **Planar**® T* 2.8/80 CFE lens being the most popular in medium format SLR photography.

With its focal length of 80 mm, which equals the diagonal of the film frame, the **Planar**® T* 2.8/80 CFE lens records an image with a perspective (size relationship between foreground and background) that is pretty much the way we see the scene with our eyes. So it is suited for almost any task in general photography, which makes it the standard lens in the Hasselblad system. It comes with the electronics (that's what the E stands for) to communicate with Hasselblad cameras featuring built-in exposure measuring systems
Preferred use: all-purpose, aerials, aerospace, digital photography

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Cat. No. of lens	**10 22 11**
Number of elements	7
Number of groups	5
Max. aperture	f/2.8
Focal length	81.2 mm
Negative size	55 x 55 mm
Angular field	width 38°, height 38°, diagonal 52°
Min. aperture	22
Camera mount	CFE
Shutter	Prontor CFE
Filter connection	Hasselblad series 60
Focusing range	infinity to 0.9 m
Working distance (between mechanical front end of lens and subject)	0.8 m
Close limit field size	504 mm x 504 mm
Max. scale	1 : 9.0
Entrance pupil	
Position	27.5 mm behind the first lens vertex
Diameter	28.8 mm
Exit pupil	
Position	25.8 mm in front of the last lens vertex
Diameter	34.5 mm
Position of principal planes	
H	39.8 mm behind the first lens vertex
H'	11.2 mm in front of the last lens vertex
Back focal distance	70.0 mm
Distance between first and last lens vertex	47.0 mm
Weight	510 g

ZEISS

Performance data:
Planar® T***** 2.8/80 CFE
Cat. No. 10 22 11

1. MTF Diagrams

The image height u - calculated from the image center - is entered in mm on the horizontal axis of the graph. The modulation transfer T (MTF = M odulation Transfer Factor) is entered on the vertical axis. Parameters of the graph are the spatial frequencies R in cycles (line pairs) per mm given at the top of this page.
The lowest spatial frequency corresponds to the upper pair of curves, the highest spatial frequency to the lower pair. Above each graph, the f-number k is given for which the measurement was made. "White" light means that the measurement was made with a subject illumination having the approximate spectral distribution of daylight.
Unless otherwise indicated, the performance data refer to large object distances, for which normal photographic lenses are primarily used.

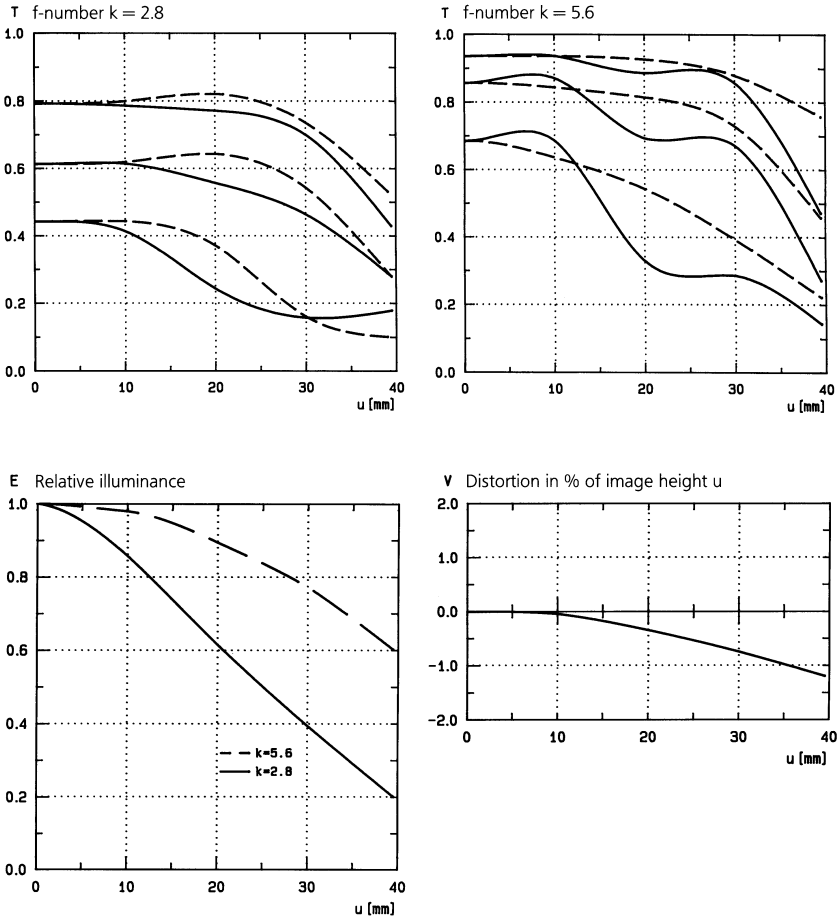
2. Relative illuminance

In this diagram the horizontal axis gives the image height u in mm and the vertical axis the relative illuminance E, both for full aperture and a moderately stopped-down lens. The values for E are determined taking into account vignetting and natural light decrease.

3. Distortion

Here again the image height u is entered on the horizontal axis in mm. The vertical axis gives the distortion V in % of the relevant image height. A positive value for V means that the actual image point is further from the image center than with perfectly distortion-free imaging (pincushion distortion); a negative V indicates barrel distortion.

Modulation transfer T as a function of image height u. Slit orientation: tangential — — — sagittal ———
White light. Spatial frequencies R = 10, 20 and 40 cycles/mm



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