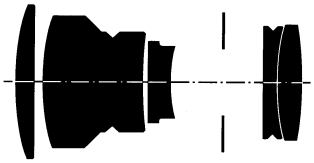
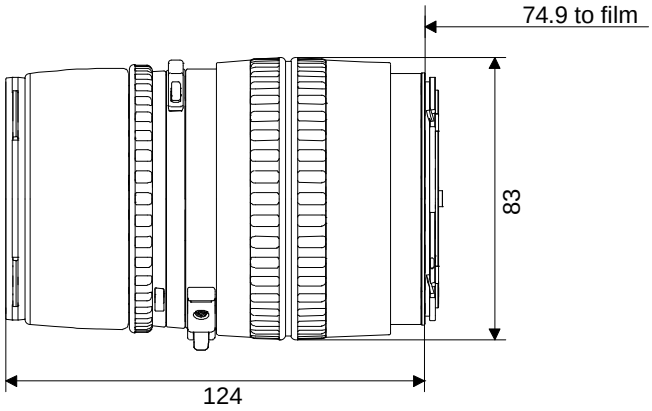
Sonnar® T* 4/180 CFE





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The Sonnar® T* 4/180 CFE lens is often compared with the Sonnar® T* 4/150 CFi lens. It offers 30 mm more focal length, which doesn't seem to be much of a difference at first glance. Who ever experienced both lenses knows, there really is a clear difference in angle of view. There is another significant difference: The optics of the Sonnar® T* 4/180 CFE lens, although optimized for infinity, were designed with special attention to close-up performance. This results in a lens that gained high popularity with demanding fashion- and beauty photographers worldwide.
With this lens the optic designers managed to achieve a correction so high, that it can be used for demanding product shots that need a focal length clearly longer than the Carl Zeiss Makro-Planar® T* 4/120 CFE lens offers. The optical materials chosen make this lens very unsusceptible to thermal fluctuations, so it can safely be used in radiant heat from direct summer sunshine, heavy industry furnaces, jet propulsion test beds, rocket launch sites and the like. In fact, the Sonnar® T* 4/180 CFE lens is a proven general purpose telephoto lens with stunning performance.

Preferred use: beauty, fashion, products, portraits, weddings, industrial

Cat. No. of lens	**10 11 32**
Number of elements	5
Number of groups	4
Max. aperture	f/4
Focal length	179.4 mm
Negative size	55 x 55 mm
Angular field 2w*	width 18°, height 18°, diagonal 24°
Min. aperture	32
Camera mount	CFE
Shutter	Prontor CFE 1s-1/500s, b, f
Filter connection	bayonett series 60
Focussing range	infinity to 1.55 m
Working distance (between mechanical front end of lens and subject)	1.3 m
Close limit field size	361 mm x 361 mm
Max. scale	1 : 6.6
Entrance pupil*	
Position	97.1 mm behind the first lens vertex
Diameter	43.6 mm
Exit pupil*	
Position	40.6 mm in front of the last lens vertex
Diameter	31.5 mm
Position of principal planes	
H	26.7 mm behind the first lens vertex
H'	91.3 mm in front of the last lens vertex
Back focal distance	88.2 mm
Distance between first and last lens vertex	103.8 mm
Weight	1080 g

* at infinity

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Performance data:

Sonnar® **T*** 4/180 CFE

Cat. No. 10 11 32

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 = Modulation 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.

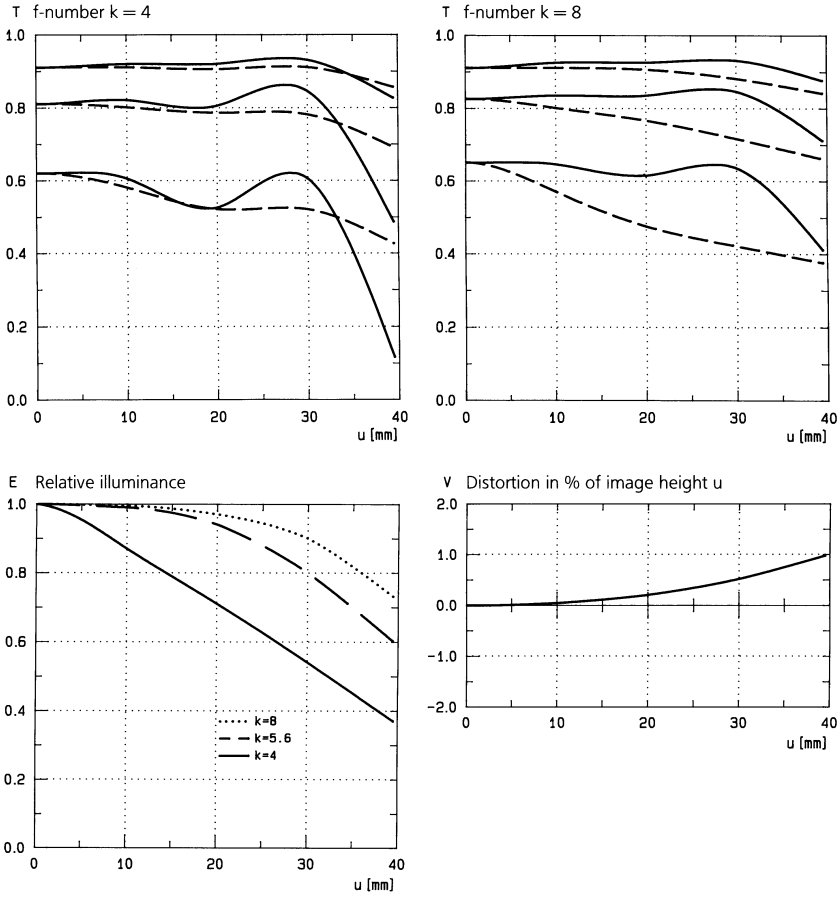
2. Relative illuminance

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



Subject to change.

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