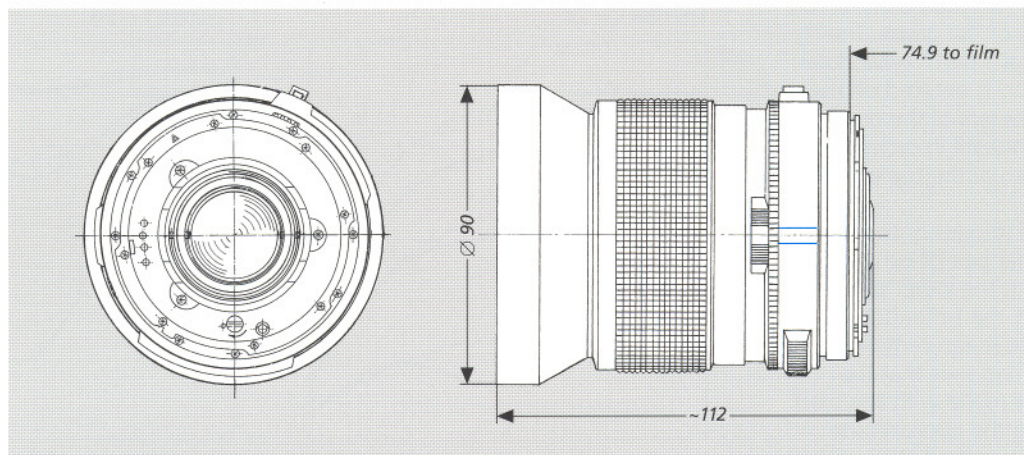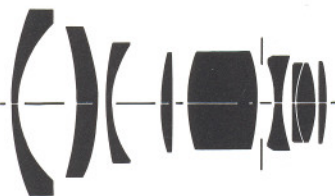# Distagon® T* f/2.8 – 50 mm

~74.9 to film

Ø 90

~112

The 50 mm **Distagon**® T* f/2.8 lens with an angular field of 75° is a top-class ultra wide-angle lens which has been designed for use with the 200-series cameras from Hasselblad. As a built-in leaf shutter is not required for the cameras mentioned, it was possible to increase the relative aperture to 1:2.8, an extremely high value for a wide-angle lens intended for a medium-format camera.

Thanks to the superb correction of distortion and all monochromatic and chromatic aberrations, the image quality of this lens is excellent. Finally, the new design with nine lens elements is extremely compact despite the speed and large angular field. This is a particular achievement in view of the fact that – owing to the mirror motion – the distance of the last lens surface from the film must be about 35 % longer than the focal length.

The optical design is such that, when focusing, the spacing between internal lens elements is changed in accordance with the law of optics (floating element). This considerably improves image quality in close-ups and made it possible to reduce the shortest focusing distance to 0.32 m.

Cat. No. of lens:	**10 49 09**
Number of elements:	9
Number of groups:	8
Max. aperture*:	f/2.8
Focal length*:	51.7 mm
Negative size:	56.5 x 56.5 mm
Angular field 2w*:	diagonal 75.5°, side 57°
Spectral range:	visible spectrum
Aperture scale:	2.8 – 4 – 5.6 – 8 – 11 – 16 – 22
Mount:	focusing mount with bayonet; coupling system for automatic diaphragm function
Shutter:	–
Filter connection:	screw thread M 86 x 1
Weight:	approx. 1,240 g

Focusing range:	∞ to 0.32 m
Reproduction ratio:	0 to 1:2.5
Close-limit field size:	144 x 144 mm
Aberration correction for close range by floating element	
Entrance pupil:	
Position*:	39.2 mm behind the first lens vertex
Diameter:	18.2 mm
Exit pupil:	
Position*:	20.3 mm in front of the last lens vertex
Diameter:	32.1 mm
Position of principal planes:	
H*:	61.2 mm behind the first lens vertex
·H'*:	18.1 mm behind the last lens vertex
Back focal distance:	69.8 mm
Distance between first and last lens vertex:	105.9 mm

* for ∞

Planar
100 Years

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Performance data:
Distagon® T* f/2.8 – 50 mm
No. 104909

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 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.
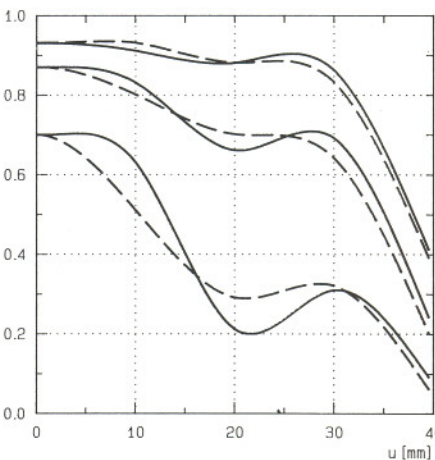
2. Relative illuminance

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.

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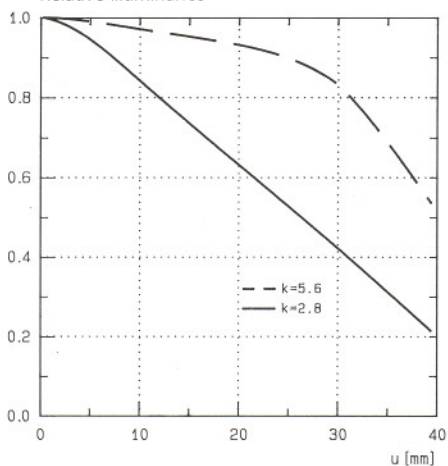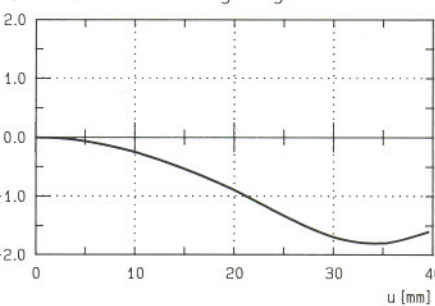White light. Spatial frequencies R = 10, 20 and 40 cycles/mm
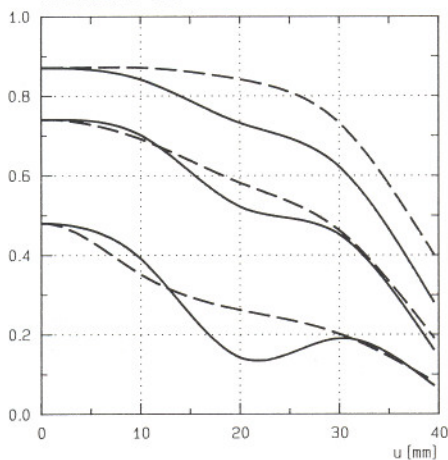
3. Distortion

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.

For advice, please contact

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Subject to change.