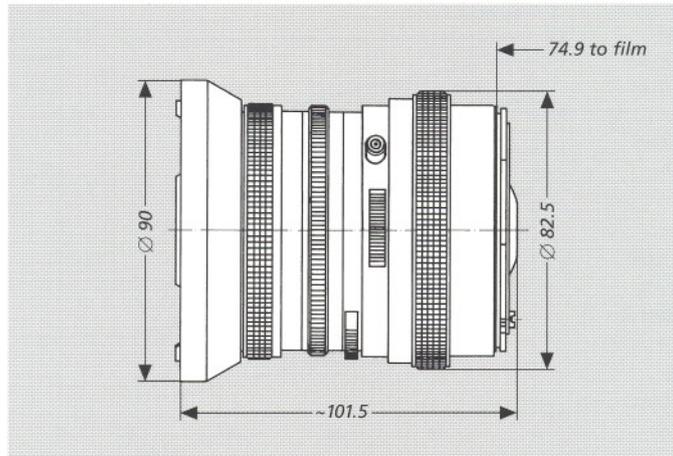
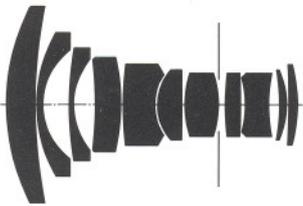


# Distagon® T\* f/4 – 40 mm



H A S S E L B L A D



The hallmark of this 40 mm Distagon® T\* f/4 lens with a Prontor CF shutter is the attractive and compact form of its focusing mount. Compared with its predecessor, the weight has been reduced by one third, the mechanical length by approx. 20% and the diameter of the front mount from 104 mm to 90 mm. Despite the considerably reduced dimensions, the image quality of the time-honoured 40 mm Distagon® f/4 lens (10 4163) has been surpassed, underlining the leading position of Carl Zeiss in the field of optical design. To attain this goal, an additional element has been introduced. This posed no problems due to the extreme anti-reflection effect of the T\* coating.

On closer observation the new Distagon® lens is seen to have two focusing rings. While the one nearest the camera body can be continuously adjusted as usual and features a complete scale from ∞–0.5 m, the focusing ring on the front mount has only the three click stops ∞–2 m, 2 m–0.9 m and 0.9 m–0.5 m. When setting this ring, the spacing between the front group (elements 1 and 2) and the rest of the system is changed. This allows the selection of the air space which affords the best image quality for any of these three ranges. This type of “floating element” substantially improves image quality in the close range. After selecting the range required, the user must focus the lens as usual.

<b>Cat. No. of lens:</b>	<b>10 48 78</b>	Close-limit field size:	473 x 473 mm
Number of elements:	11	Weight:	approx. 915 g
Number of groups:	10	Entrance pupil:	
Max. aperture:	f/4	Position*:	35.4 mm behind the first lens vertex
Focal length*:	40.9 mm	Diameter*:	10.2 mm
Negative size:	56.5 x 56.5 mm	Exit pupil:	
Angular field 2w:	diagonal 88.7°, side 69.3°	Position*:	25.9 mm in front of the last lens vertex
Spectral range:	visible spectrum	Diameter:	24.1 mm
Aperture scale:	4 – 5.6 – 8 – 11 – 16 – 22	Position of principal planes:	
Mount:	Prontor CF mount	H*:	58.7 mm behind the first lens vertex
Filter connection:	Hasselblad series 93	H*:	28.7 mm behind the last lens vertex
Focusing range:	∞ to 0.5 m. Additional setting of the focusing ring on the front mount in 3 click stops.	Back focal distance:	69.4 mm
Reproduction ratio:	0 to 1:6.3	Distance between first and last lens vertex:	99.4 mm

\*for ∞

**Planar**  
100 Years



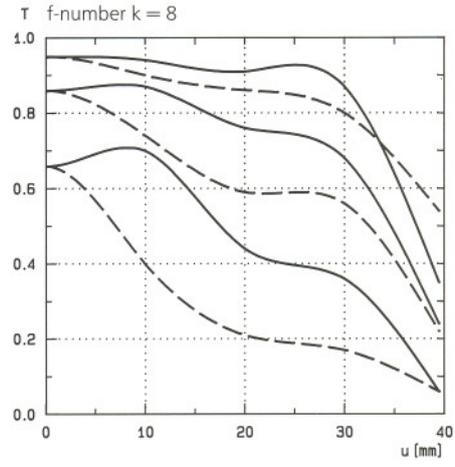
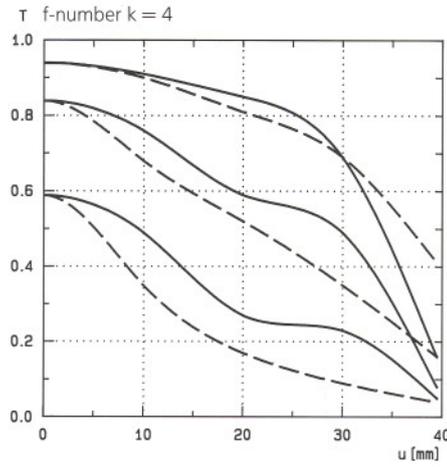
# Performance data: Distagon® T\* f/4 – 40 mm No. 104878

## 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.

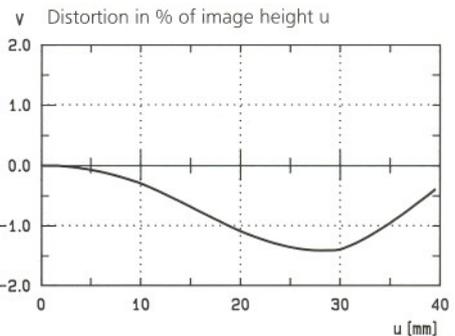
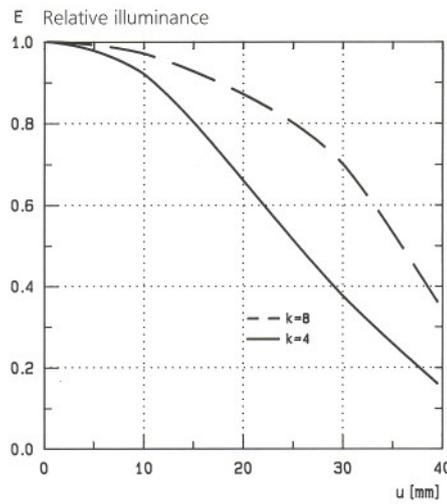
Modulation transfer  $T$  as a function of image height  $u$ . Slit orientation: tangential — — — sagittal ———  
White light. Spatial frequencies  $R = 10, 20$  and  $40$  cycles/mm



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.



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