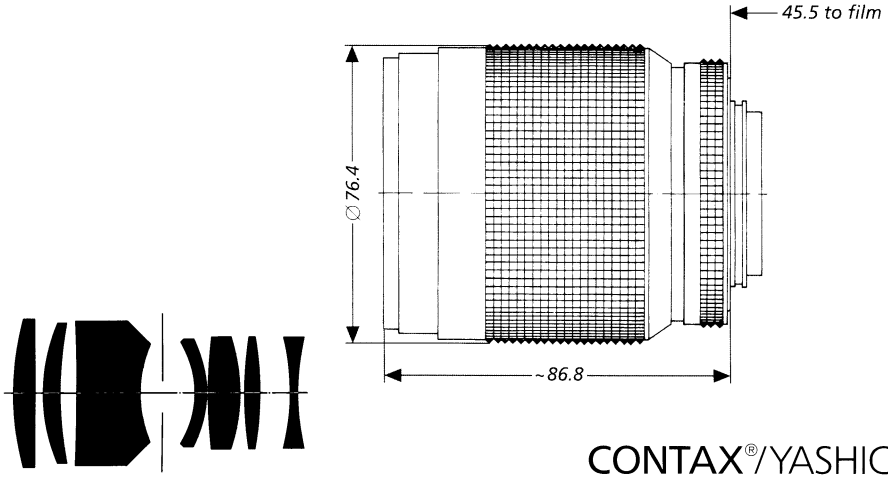
Makro-Planar® T* f/2.8 - 100 mm



CONTAX®/YASHICA® mount

The 100 mm **Makro-Planar**® T* f/2.8 lens is a universal lens which, without further attachments, permits high-quality long-range and macrophotography down to a scale of 1:1. A floating element ensures uniform and high image quality over the whole focusing range. The helical focusing mount permits the image scale to be continuously varied from ∞ to 1:1. The focusing scale goes down to engraving 0.45 m. There is a second scale on the main mount for reading the image scale set.

The free working distance of 160 mm leaves sufficient room for the illumination of macro subjects in 1:1 photography. In insect photography, for example, this enables you to get up close enough to your subject without disturbing it.

The features of the **Makro-Planar**® lens make it suitable for long-range and macrophotography. Among the most popular fields of application are landscape and travel photography, portrait and family photography, photographs of insects and flowers, coins and stamps, and all types of reproduction.

Cat. No. of lens:	**10 78 33**
Number of elements:	7
Number of groups:	7
Max. aperture*:	f/2.8*
Focal length:	100.0* mm
Negative format:	24 x 36 mm
Angular field 2w*:	24°
Spectral region:	visible spectrum
Aperture scale:	2.8 - 4 - 5.6 - 8 - 11 - 16 - 22
Mount:	focusing helicoid with bayonet; coupling system for automatic diaphragm function. TTL metering either at full aperture or in stopped-down position.
Filter connection:	clip-on filter, dia 70 mm thread M 67 x 0.75
Weight:	approx. 740 g
Focusing range:	∞ - 1:1 Aberration correction for close range by floating element
Entrance pupil*:	
Position:	39.9 mm behind the first lens vertex
Diameter:	35.4 mm
Exit pupil*:	
Position:	26.5 mm in front of the last lens vertex
Diameter:	27.3 mm
Position of principal planes*:	
H:	8.6 mm behind the first lens vertex
H':	50.0 mm in front of the last lens vertex
Back focal distance:	48.5 mm
Distance between first and last lens vertex:	71.0 mm

* for ∞

ZEISS

Performance data:

Makro-Planar® T* f/2.8 - 100 mm

Cat. No. 10 78 33

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.

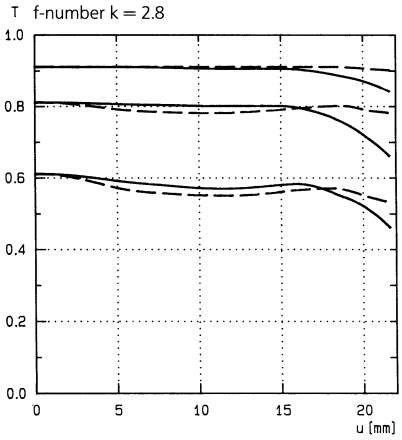
2. Relative illuminance

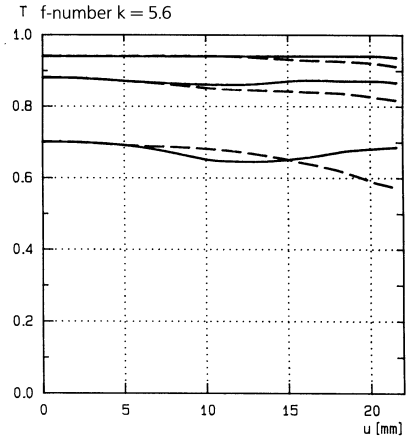
In this diagram the horizontal axis gives the image height u in mm and the vertical axis the relative illuminance E, both for full aperture and a moderately stopped-down lens. The values for E are determined taking into account vignetting and natural light decrease.

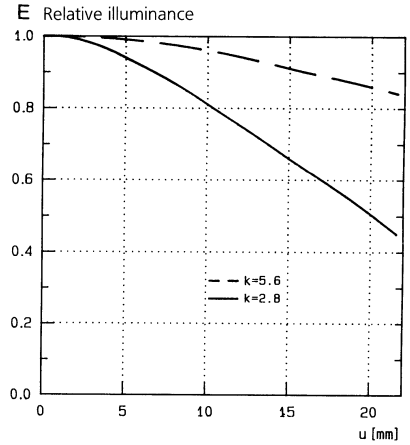
3. Distortion

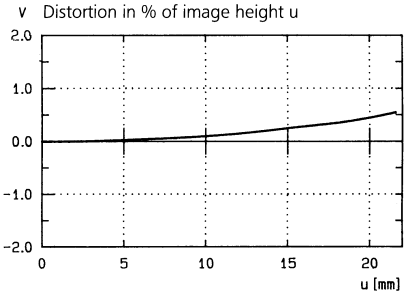
Here again the image height u is entered on the horizontal axis in mm. The vertical axis gives the distortion V in % of the relevant image height. A positive value for V means that the actual image point is further from the image center than with perfectly distortion-free imaging (pincushion distortion);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

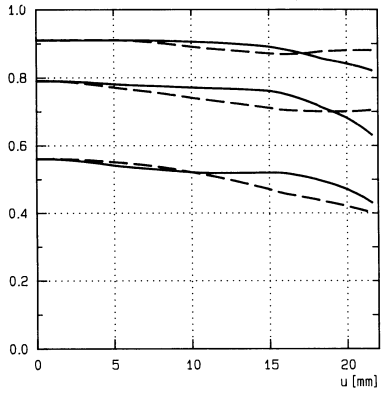




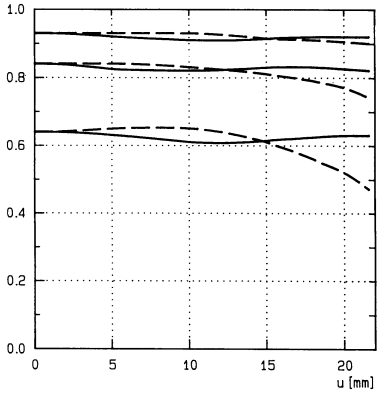




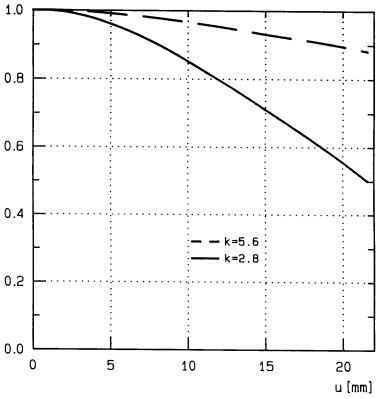
T f-number k = 2.8; i.s. = 1:10



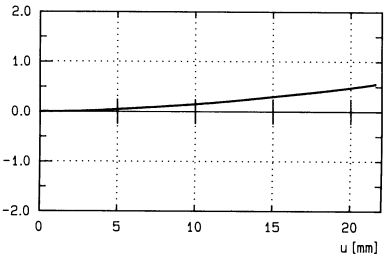
T f-number k = 5.6; i.s. = 1:10



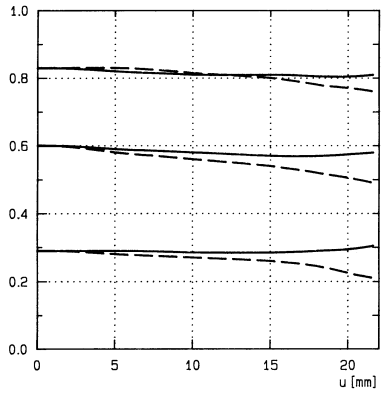
E Relative illuminance; i.s. = 1:10



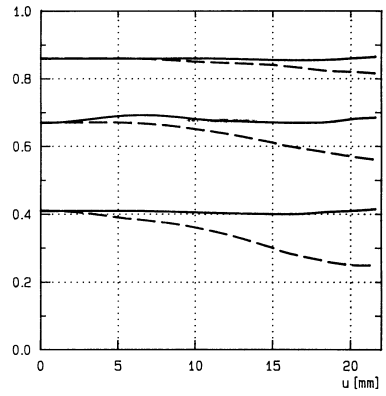
V Distortion in % of image height u; i.s. = 1:10



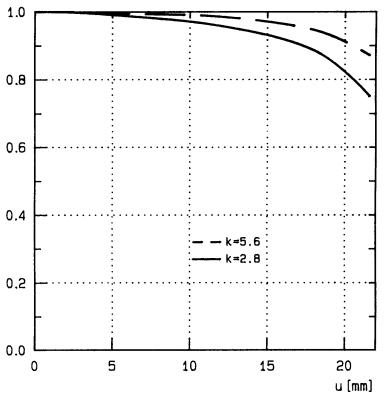
T f-number k = 2.8; i.s. = 1:1



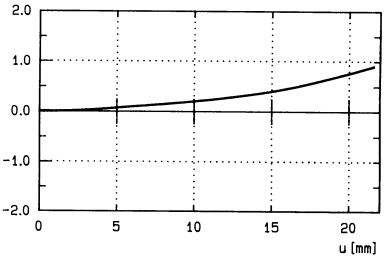
T f-number k = 5.6; i.s. = 1:1



E Relative illuminance; i.s. 1:1



V Distortion in % of image height u; i.s. 1:1



i.s. = image scale

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