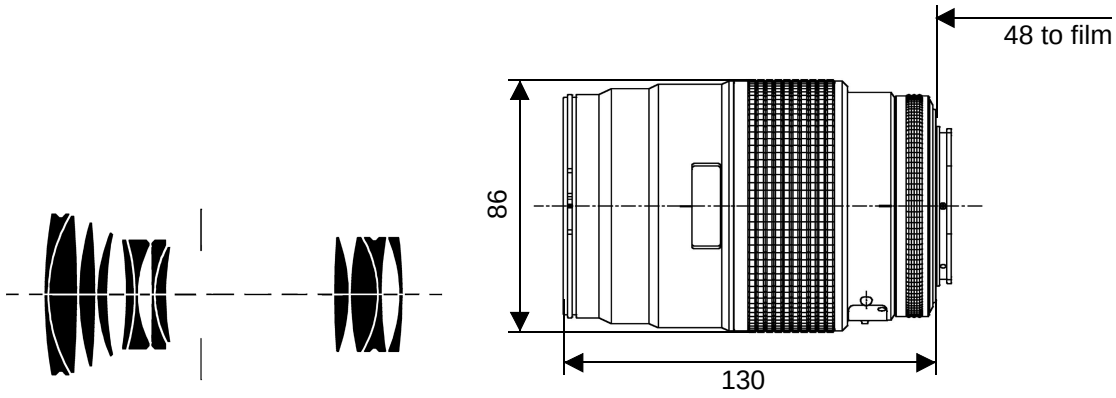
Makro-Sonnar® T* 2.8/100



CONTAX® N

The Carl Zeiss Makro-Sonnar® T* 2.8/100 lens is an all-round, high performance autofocus lens, covering the focussing range from infinity to life-size 1:1. It is the right optic for an unusually wide spectrum of subjects, ranging from landscapes and portraits to life-size photos of small animals.
The applied floating element design, combined with expensive fluor crown glass types with anomalous dispersion used in three lens elements, enables high performance over the entire focussing range.
The sharpness of the Makro-Sonnar® T* 2.8/100 lens challenges the potential of today's best color films to the extreme.
At the close focussing limit the working distance is 15 cm. This favourably large distance expands the creative freedom of the close-up photographer and eases the use of flash, reflectors and other light sources.

In autofocus operation either full range autofocus or zone focus can be selected. Zone focus operation divides the entire range into a macro range and a general range. This feature leads to a faster detection of the correct focus position because of the reduced AF range. In addition, the dual focussing operation enables the photographer to manually override the autofocus quickly and easily with no need of actuating a switch.

Preferred use: demanding product shots, portraits, flowers, animals, documentary photos with high detail content

Cat. No. of lens	**10 78 88**
Number of elements	12
Number of groups	8
Max. aperture	f/2.8
Focal length	98.3 mm
Negative size	24 x 36 mm
Angular field 2w*	width 21°; height 14°; diagonal 25°
Min. aperture	22
Camera mount	Contax N
Filter connection	M 72 x 0.75
Focussing range	infinity to 0.32 m
Working distance (between mechanical front end of lens and subject)	0.15 m

Close limit field size	24 mm x 36 mm
Max. scale	1 : 1.0
Entrance pupil*	
Position	44.4 mm behind the first lens vertex
Diameter	34.8 mm
Exit pupil*	
Position	72.2 mm in front of the last lens vertex
Diameter	43.7 mm
Position of principal planes*	
H	64.5 mm behind the first lens vertex
H'	52.0 mm in front of the last lens vertex
Back focal distance	45.2 mm
Distance between first and last lens vertex*	103.5 mm
Weight	960 g

*at infinity

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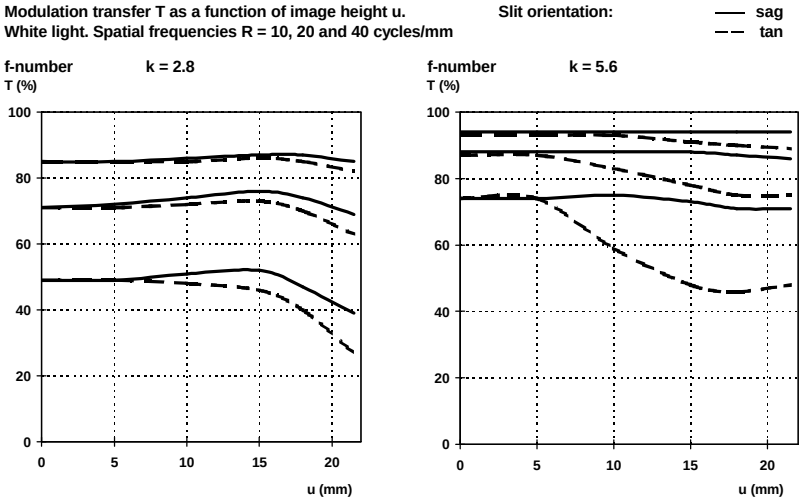
Performance data:
Makro-Sonnar® T* 2.8/100
Cat. No. 10 78 88

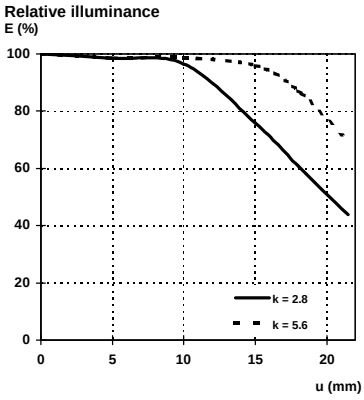
1. MTF Diagrams

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.

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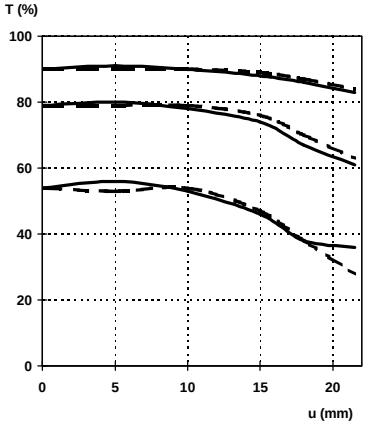
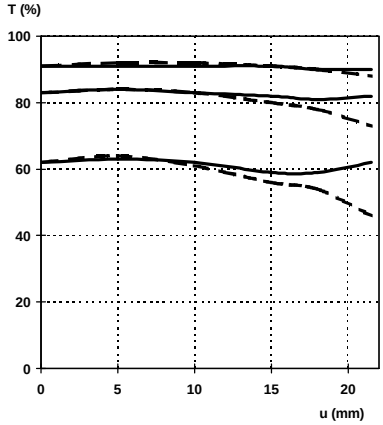
Modulation transfer T as a function of image height u. **Slit orientation:** —— **sag** – – **tan**

White light. Spatial frequencies R = 10, 20 and 40 cycles/mm

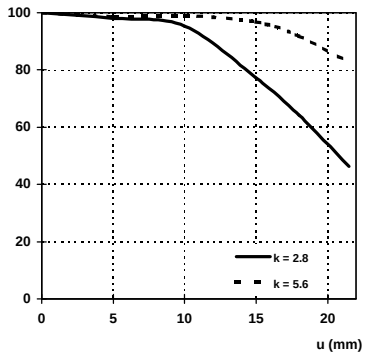
f-number **k = 2.8** **M 1:10**



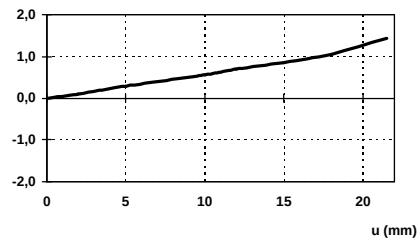
f-number **k = 5.6** **M 1:10**



Relative illuminance **M 1:10**



Distortion in % of image height u **M 1:10**



Performance data:

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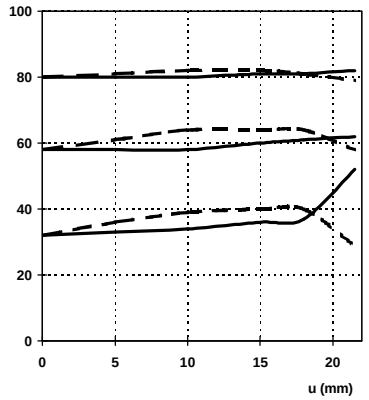
Cat. No. 10 78 88

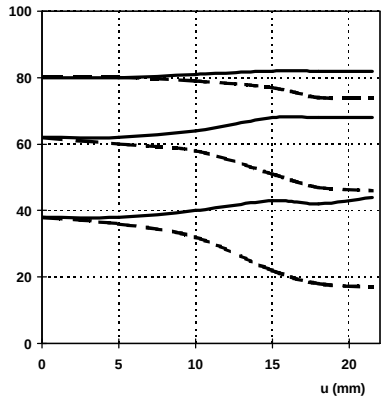
Modulation transfer T as a function of image height u. **Slit orientation:** —— **sag** – – **tan**

White light. Spatial frequencies R = 10, 20 and 40 cycles/mm

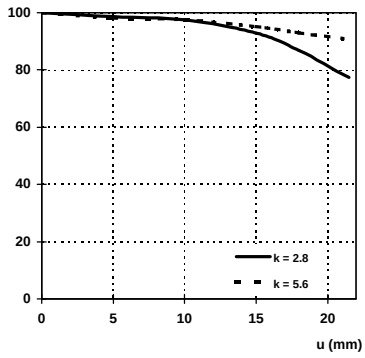
f-number k = 2.8 M 1:1



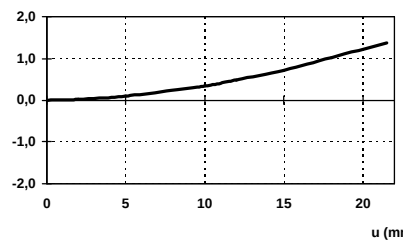
f-number k = 5.6 M 1:1



Relative illuminance M 1:1



Distortion in % of image height u M 1:1



Subject to change.

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