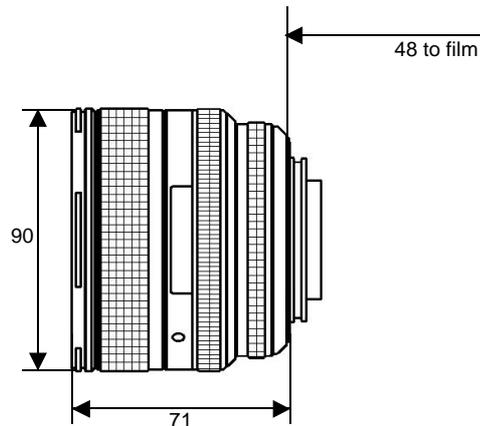
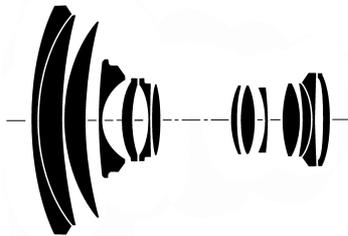


# Vario-Sonnar® T\* 3.5-4.5/24-85



CONTAX® N1

The **Vario-Sonnar® T\* 3.5-4.5/24-85** lens is a compact, all-purpose lens with autofocus and high image quality for the Contax® N1 SLR system. The zoom range of the **Vario-Sonnar® T\* 3.5-4.5/24-85** lens covers the most popular focal lengths in 35 mm photography, including extremely wide angles up to 84 degrees which are often necessary for the photography of interiors. The smallest object field which can be covered without accessories is 24 cm wide, with a minimum object distance of 35,3 cm.

This makes the **Vario-Sonnar® T\* 3.5-4.5/24-85** lens the ideal lens when you are out and about and especially when you want a versatile zoom lens as your standard optics, but expect it to deliver the same high image quality as fixed focal length lenses.

To achieve this high image quality along with relative compactness, this lens uses elements made of special fluor-crown glass with anomalous partial dispersion, and additional aspheric surfaces. With M82, the filter thread has deliberately been given ample dimensions to allow the combination of high-quality filters with this lens without vignetting of the corners – even when wide-angle settings are used. In addition, a lens hood can be mounted using a quick-change bayonet.

#### Preferred applications:

All-purpose lens, travelling, landscapes, snapshots, editorials

<b>Cat. No. of lens</b>	<b>10 47 66</b>	<b>Entrance pupil*</b>	
Number of elements	14	Position	W = 30.4 mm behind the first lens vertex T = 99.7 mm behind the first lens vertex
Number of groups	12	Diameter	W = 7.2 mm T = 17.6 mm
Max. aperture	f/3.5 - 4.5	<b>Exit pupil*</b>	
Focal length	W = 24.7 mm, T = 82,4 mm	Position	W = 22.4 mm in front of the last lens vertex T = 18.1 mm in front of the last lens vertex
Negative size	24 x 36 mm	Diameter	W = 19.1 mm T = 17.7 mm
Angular field*	W = width 73°, height 53°, diagonal 2w 84° T = width 24°, height 17°, diagonal 2w 29°	<b>Position of principal planes*</b>	
Min. aperture	22	H	W = 45.7 mm behind the first lens vertex T = 99.5 mm behind the first lens vertex
Camera mount	Contax N1	H'	W = 18.0 mm behind the last lens vertex T = 18.3 mm in front of the last lens vertex
Filter connection	M 82 x 0.75	<b>Back focal distance</b>	W = 42.7 mm, T = 64.1 mm
Focusing range	infinity to 0.5 m	Distance between first and last lens vertex*	W = 73.9 mm, T = 80.9 mm
Working distance (between mechanical front end of lens and subject)	0.35 m	Weight	570 g
Close limit field size	W = 430 x 662 mm T = 161 x 241 mm		
Max. scale	W = 1 : 17.5 T = 1 : 6.7		

\* at infinity



Performance data:

**Vario-Sonnar**® T\* 3.5-4.5/24-85

Cat. No. 10 47 66

### 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.

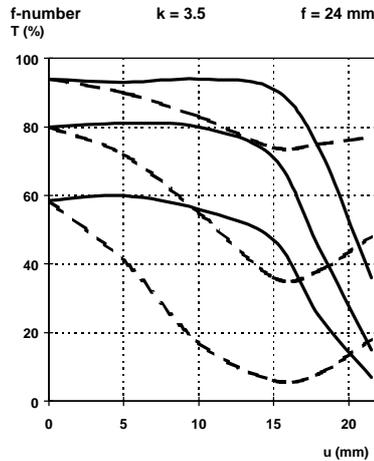
### 2. Relative illuminance

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

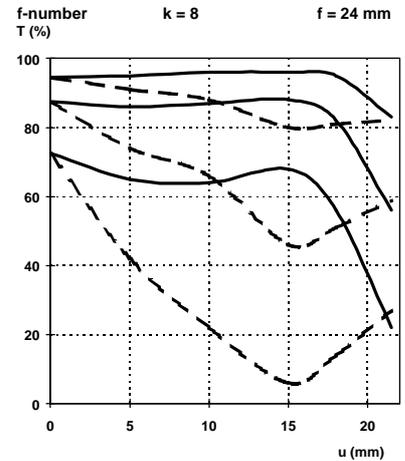
Here again the image height  $u$  is entered on the horizontal axis in mm. The vertical axis gives the distortion  $V$  in % of the relevant image height. A positive value for  $V$  means that the actual image point is further from the image center than with perfectly distortion-free imaging (pincushion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

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

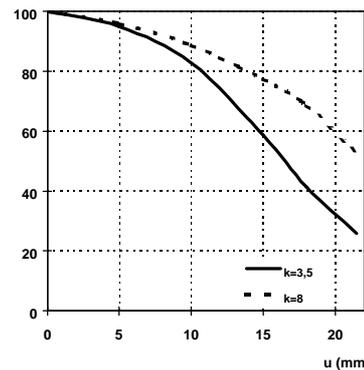


Slit orientation:

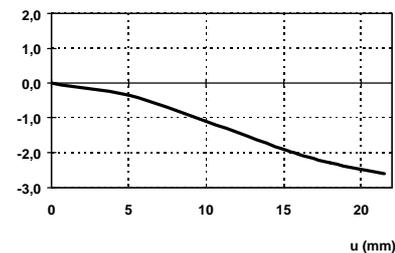
— sag  
- - - tan



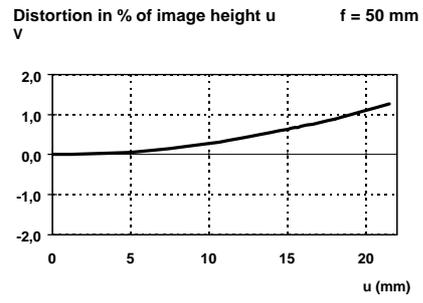
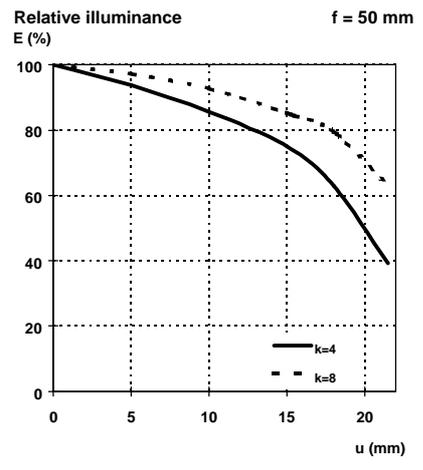
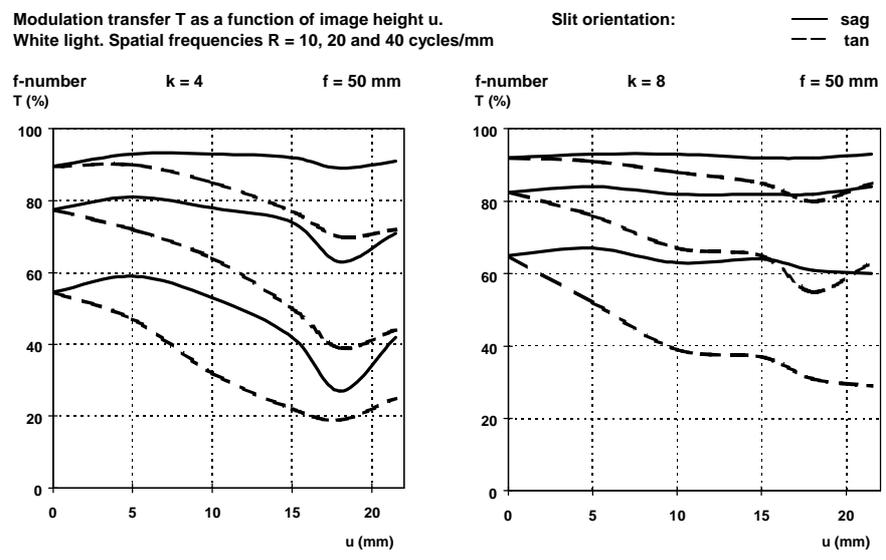
Relative illuminance  $E$  (%)  $f = 24$  mm



Distortion in % of image height  $u$   $f = 24$  mm



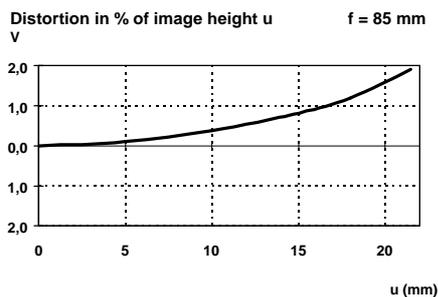
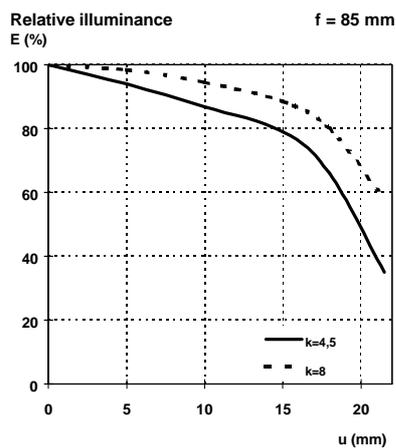
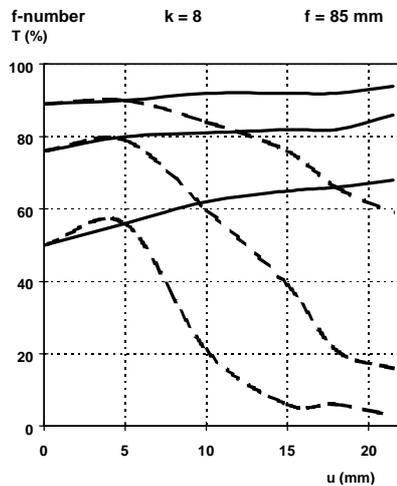
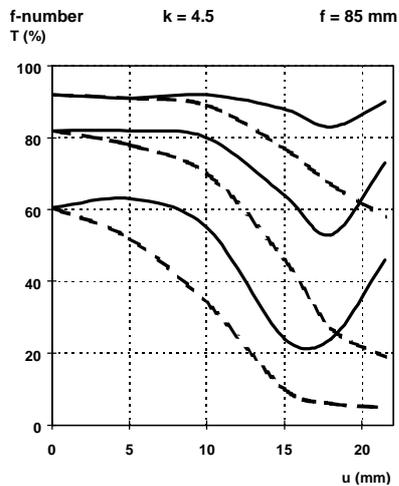
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Modulation transfer T as a function of image height u.  
 White light. Spatial frequencies R = 10, 20 and 40 cycles/mm

Slit orientation: — sag — tan



Subject to change.  
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