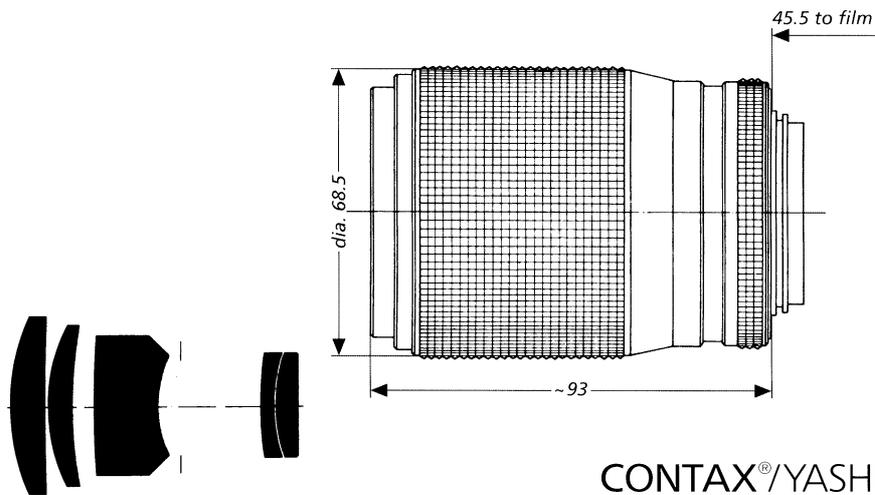


# Sonnar® T\* f/2.8 - 135 mm



CONTAX®/YASHICA® mount

The 135 mm **Sonnar**® f/2.8 lens comprises 5 elements arranged in 4 groups. Like all Zeiss designs, this one was also developed in accordance with the established Zeiss practice of combining professional experience with a high-performance computer program devised by the company itself. The lens provides outstanding image quality and remarkably good image field illumination, both achievable when the diaphragm is fully open. Alongside a wide-angle lens, this **Sonnar**® lens, with a focal length approximately three times as large as the diagonals of the 35 mm format, is perhaps the most widely required interchangeable lens.

Regardless of whether it is landscape photography, fauna and flora studies, family shots or portraiture work, there will never be any shortage of subjects for which the 135mm focal length is particularly well-suited. With its help the photographer can bring up close fairly distant subjects without creating the flat perspective that sometimes mars a picture. On the other hand, picture-filling details can be selected without having to approach all that close. And finally, thanks to its moderate tele-perspective effect it is admirably suitable for portraits, either with the diaphragm fully open or slightly stopped down.

|                          |   |   |                                      |
|--------------------------|---|---|--------------------------------------|
| <b>Cat. No. of lens:</b> | <b>10 10 83</b>   | <b>Weight:</b>                                  | approx. 585 g                        |
| Number of elements:      | 5   | Focusing range:                                 | ∞ to 1.6 m                           |
| Number of groups:        | 4   | Entrance pupil:                                 |                                      |
| Max. aperture:           | f/2.8   | Position:                                       | 64.5 mm behind first lens vertex     |
| Focal length:            | 134.1 mm  | Diameter:                                       | 47.8 mm                              |
| Negative size:           | 24 x 36 mm  | Exit pupil:                                     |                                      |
| Angular field 2w:        | 18° diagonal  | Position:                                       | 32.4 mm in front of last lens vertex |
| Mount:                   | focusing mount with bayonet;<br>TTL metering either at full aperture<br>or in stopped-down position.<br>Aperture priority/Shutter priority/<br>Automatic programs<br>(Multi-Mode Operation).<br>Built-in lens hood. | Diameter:                                       | 31.5 mm                              |
|                          |   | Position of principal planes:                   |                                      |
|                          |   | H:  | 8.7 mm in front of first lens vertex |
|                          |   | H':   | 1.5 mm in front of first lens vertex |
| Aperture scale:          | 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22  | Back focal distance:                            | 54.3 mm                              |
| Filter connection:       | clip-on filter, diameter 85 mm<br>screw-in type, thread M 55 x 0.75   | Distance between first and<br>last lens vertex: | 78.1 mm                              |



Performance data:

**Sonnar**<sup>®</sup> T\* f/2.8 - 135 mm  
Cat. No. 10 10 83

### 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.

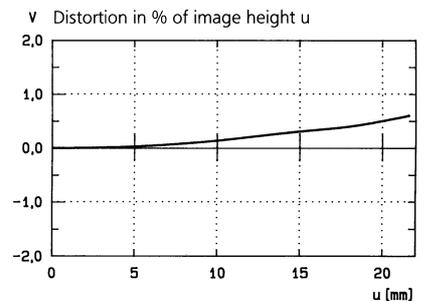
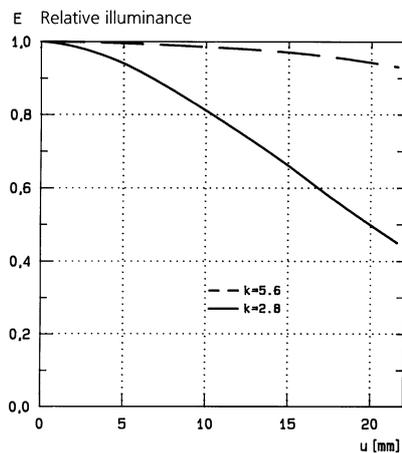
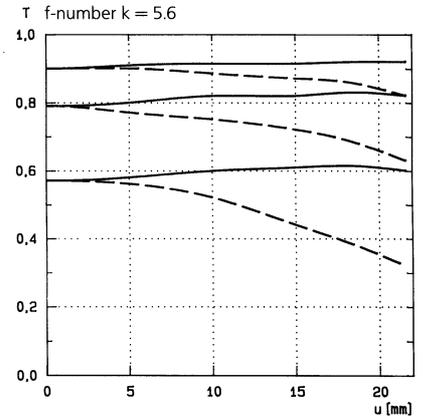
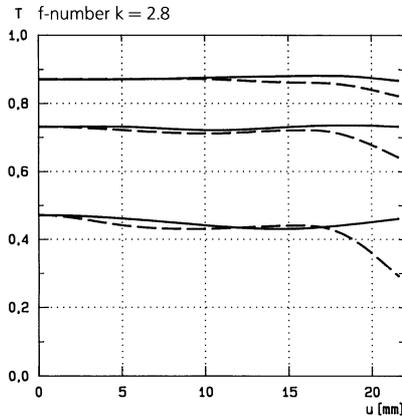
### 2. Relative illuminance

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



**Carl Zeiss**  
Photoobjektive  
D-73446 Oberkochen  
Telephone (07364) 20-6175  
Fax (07364) 20-4045  
eMail: photo@zeiss.de  
<http://www.zeiss.de>

Subject to change.