# Sonnar T*
f/2.8 – 180 mm
Cat. No. 101086

CONTAX
## YASHICA mount
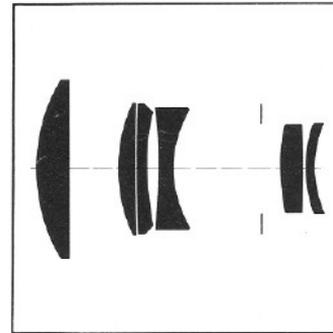
ZEISS

Carl Zeiss
7082 Oberkochen
West Germany

This Sonnar is the "speed giant" among the tele lenses for Contax RTS .The combination of its speed and the tele angular field of 14° has proved particularly useful in press and sports photography. Delightful photographs of children can be taken, as the playing child does not take notice of the camera in a 3 - 4 m distance. With the diaphragm fully open, the depth of field range is relatively narrow, so that the principal subject stands out distinctly from a disturbing fore- or background. Landscapes are appreciably compressed by the tele perspective.

The optical design is based on a new calculation which guarantees excellent imaging performance and a remarkable image field illumination. The short and handy design makes this Sonnar type ideal for freehand shots. The distance beween the exit pupil and the image plane is only about half the focal length, an essential prerequisite of good illumination of the finder image field with any Fresnel-type focusing screen. A further novelty is the automatic correction when setting the distance. The useful range was thus extended up to a short-range limit of 1.4 m, where an object field of only 145 x 220 mm fully covers the 35 mm format.
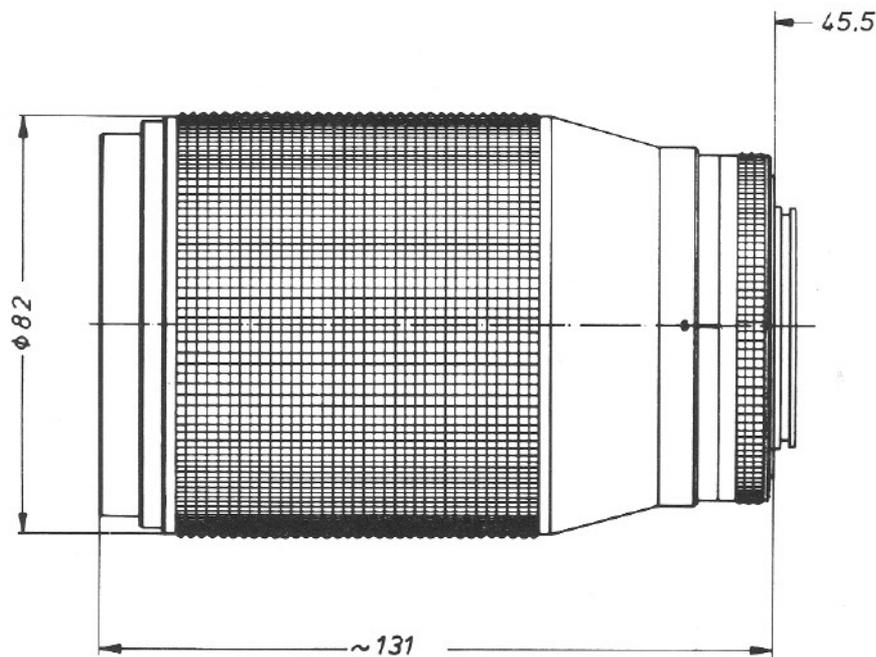
Number of lens elements:	6	
Number of components:	5	
f-number:	2.8	
Focal length:	178.1 mm	
Negative size:	24 x 36 mm	
Angular field 2w:	14° diagonal	
Mount:	focusing mount with bayonet; coupling system for automatic diaphragm function; through-the-lens measurement either at full aperture or in stop-down position; built-in lens hood	
f-stop scale:	2.8 - 4 - 5.6 - 8 - 11 - 16 - 22	
Filter mounting:	slip-on filter diameter 75 mm screw thread M 72 x 0.75	
Weight:	approx. 985 g	

Distance range:	∞ to 1.4 m (5 ft); aberration correction for close range by floating element
Position of entrance pupil:	74.0 mm behind last lens vertex
Diameter of entrance pupil:	61.8 mm
Position of exit pupil:	13.4 m in front of last lens vertex
Diameter of exit pupil:	31.1 mm
Position of principal plane H:	9.6 mm in front of first lens vertex
Position of principal plane H':	5.8 mm in front of first lens vertex
Distance between first and last lens vertex:	97.4 mm

Modulation transfer T as a function of image height u
Slit orientation tangential — — — —
sagittal ———————

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

T   f-number k = 2.8

T   f-number k = 5.6

E   Relative illuminance

V   Distortion in % of image height u
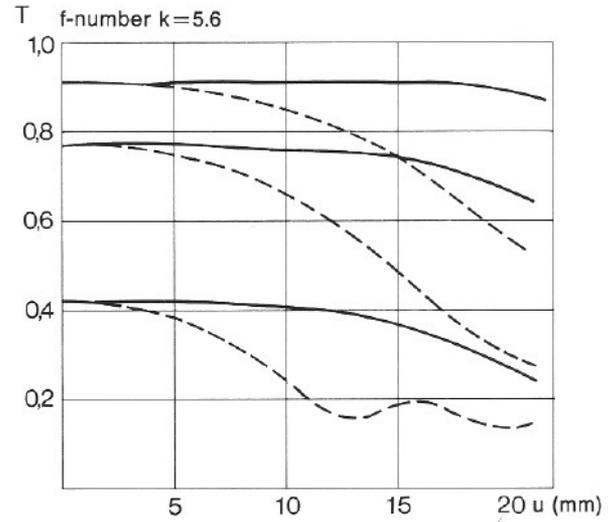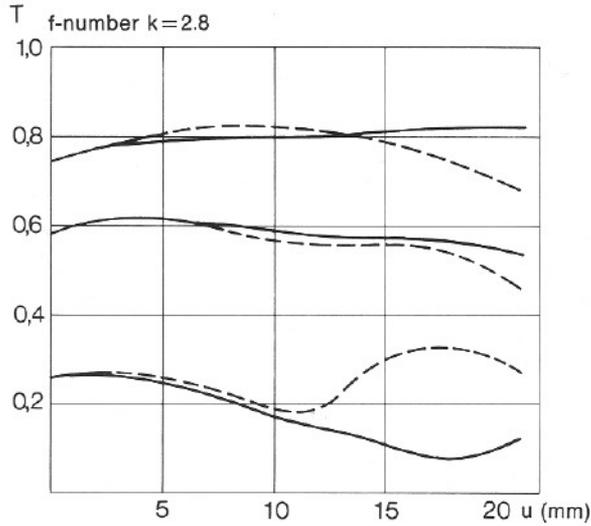
1. MTF Diagrams

The image height u — reckoned from the image center —
is entered in mm on the horizontal axis of the graph. The
modulation transfer T (MTF = **M**odulation **T**ransfer **F**actor) is
entered on the vertical axis. Parameters of the graph are the
spatial frequencies R in periods (line pairs) per mm given at the
top right hand above the diagrams. 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.
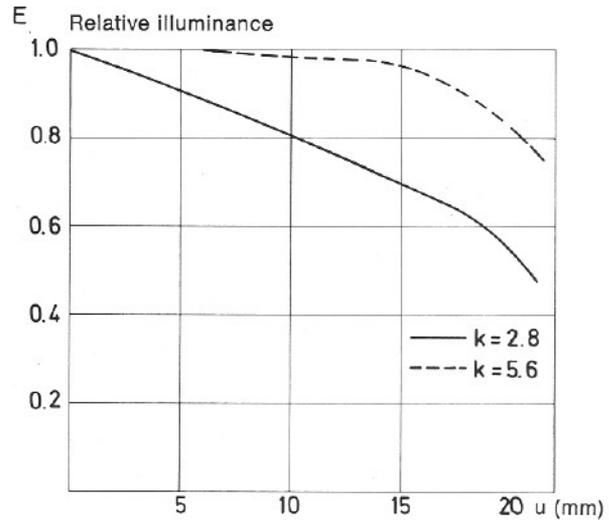
Unless otherwise indicated, the performance data refer to large
object distances, for which normal photographic lenses are
primarily used.

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.

k = 2.8
k = 5.6
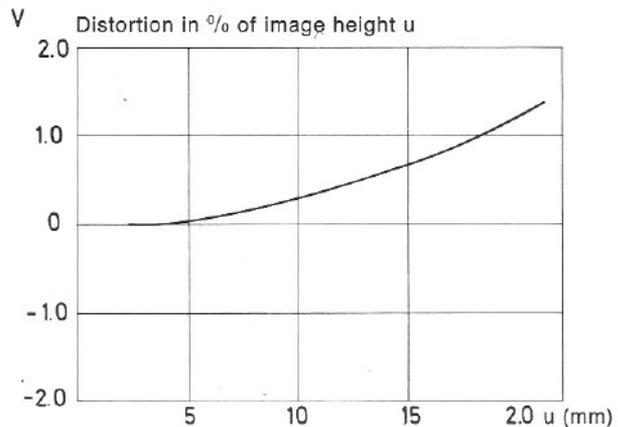
Subject to technical amendment