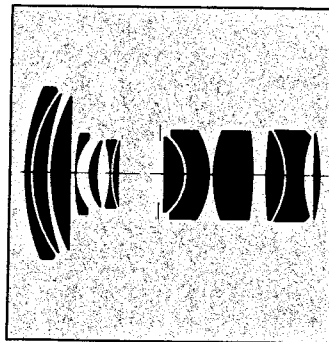


Vario-Sonnar T*
f/3.5-40-80 mm
Cat. No. 104727

CONTAX
YASHICA mount



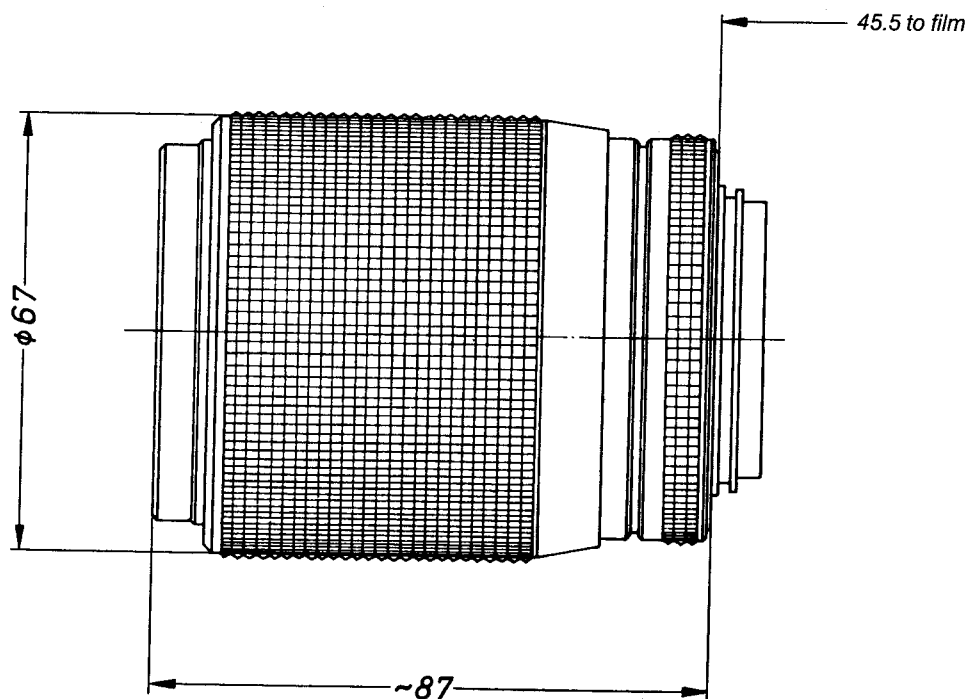
ZEISS

Carl Zeiss
D-7082 Oberkochen
West Germany

This lens with continuously adjustable focal length covers the range from 40 to 80 mm which is of special interest to the photographer. The lens is characterized by exterior dimensions which are even smaller than those of a medium telephoto lens.

The correction of the lens is such that – at medium focal lengths – its image quality is equal to that of the best fixed-focus lenses. Needless to say, image quality over the rest of the range meets all normal requirements. The plane of sharpness is maintained exactly during focal length change.

The Vario-Sonnar lens permits the desired angular field to be selected without time-consuming change of lens or viewpoint. Thus this lens has a photographic potential otherwise afforded only by several lenses with different focal lengths.



Number of lens elements:	13	Distance range:	∞ to 1.2 m (4 ft)
Number of components:	9	Position of entrance pupil:	a) 29.2 mm behind first lens vertex b) 60.4 mm
f-number:	3.5	Diameter:	a) 11.6 mm b) 21.6 mm
Focal length:	41.1 - 77.7 mm	Position of exit pupil:	33.8 mm in front of last lens vertex
Negative size:	24 x 36 mm	Diameter:	a) 22.7 mm b) 25.3 mm
Angular field 2w:	55° - 31° diagonal	Position of principal planes:	
Mount:	focusing mount with bayonet; coupling system for automatic diaphragm function; through-the-lens measurement either at full aperture or in stop-down position	H:	a) 49.0 mm behind first lens vertex b) 70.6 mm
f-stop scale:	3.5 - 5.6 - 8 - 11 - 16 - 22	H':	a) 4.8 mm behind last lens vertex b) 22.3 mm in front of last lens vertex
Filter mount:	slip-on filter diameter 59 mm screw thread M 55 x 0.75	Distance between first and last lens vertex:	a) 84.8 mm b) 93.8 mm
Weight:	approx. 660 g		
	a) for f = 40 mm b) for f = 80 mm		

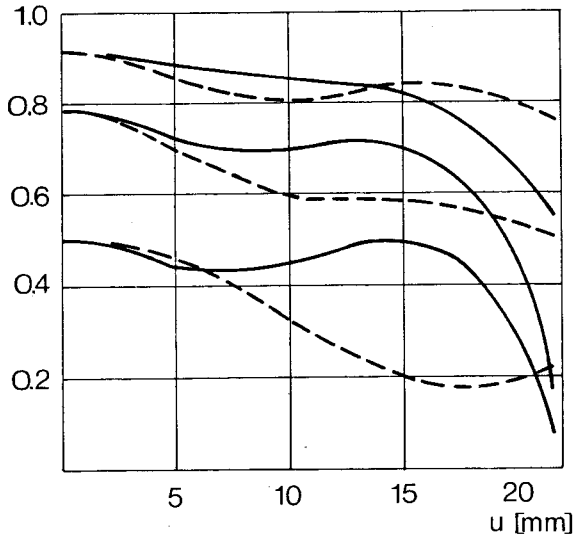
Modulation transfer T as a function of image height u

Slit orientation tangential ————
sagittal ————

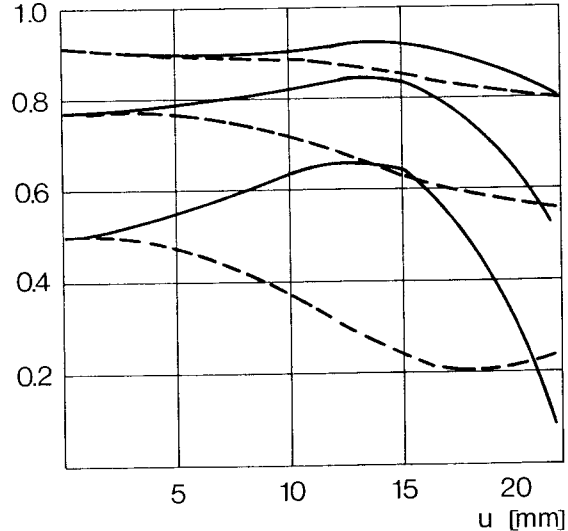
White light

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

T f-number k=3.5, f=40 mm

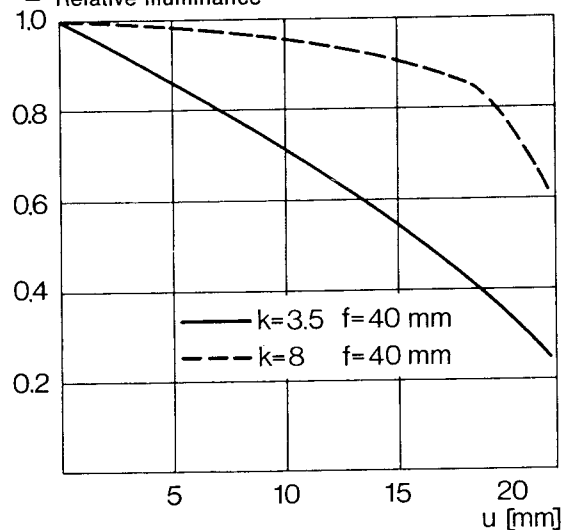


T f-number k=8, f=40 mm

**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 = 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 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.

E Relative illuminance



Unless otherwise indicated, the performance data refer to large object distances, for which normal photographic lenses are primarily used.

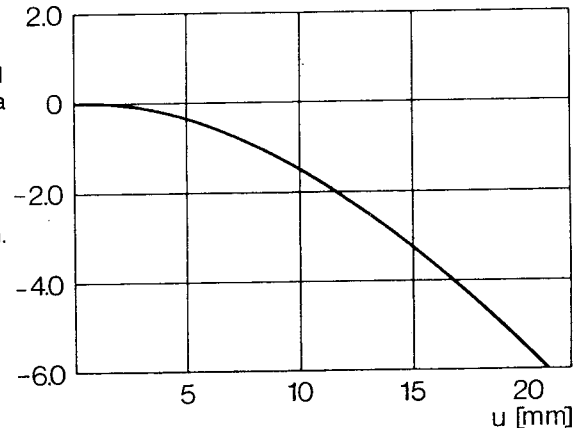
2. Relative illuminance

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.

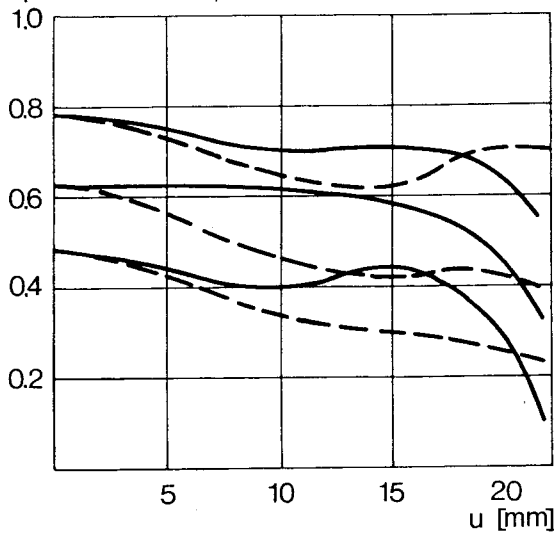
3. Distortion

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.

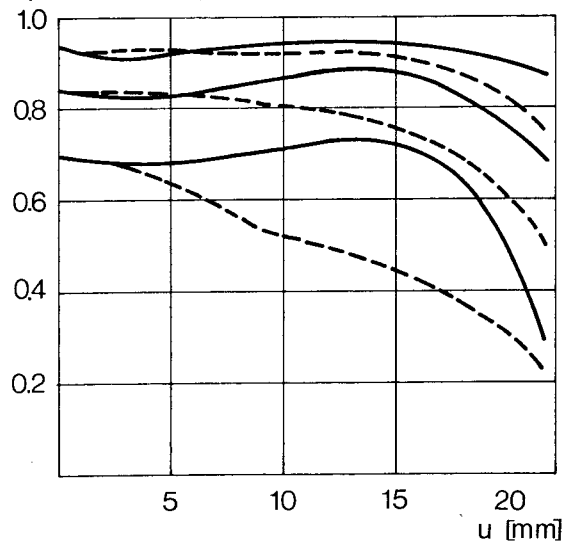
V Distortion in % of image height u



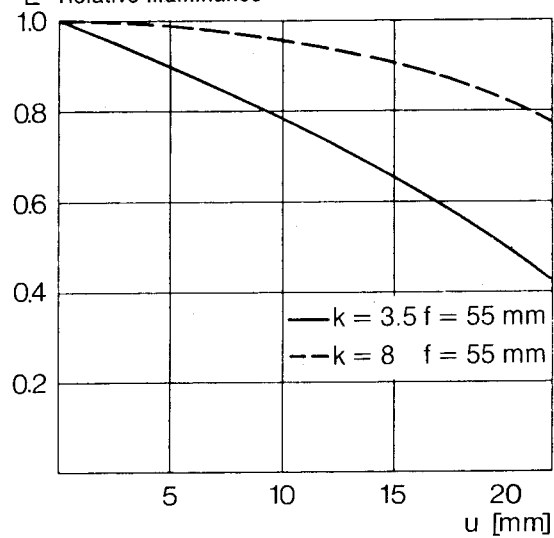
T f-number $k=3.5$, $f=55$ mm



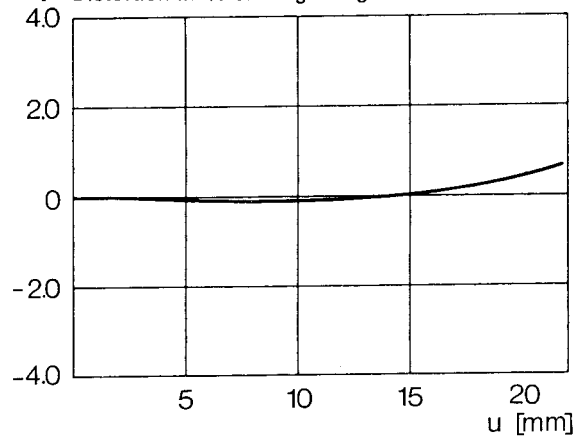
T f-number $k=8$, $f=55$ mm

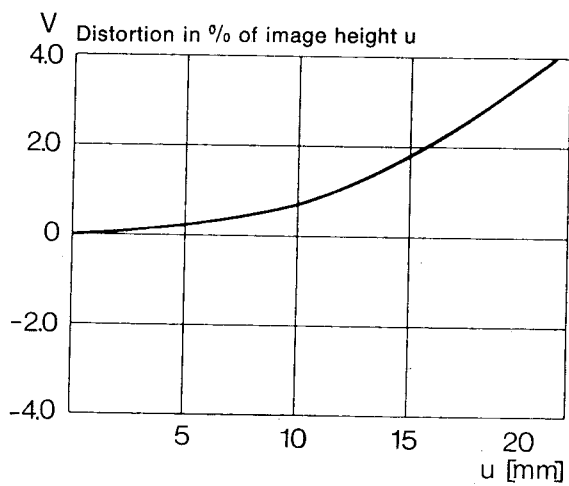
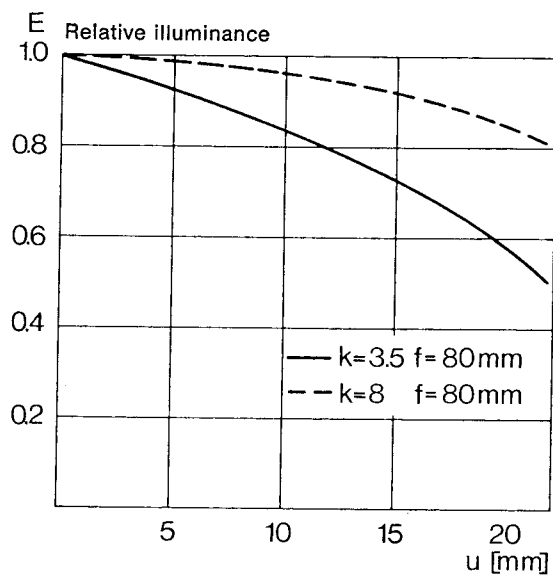
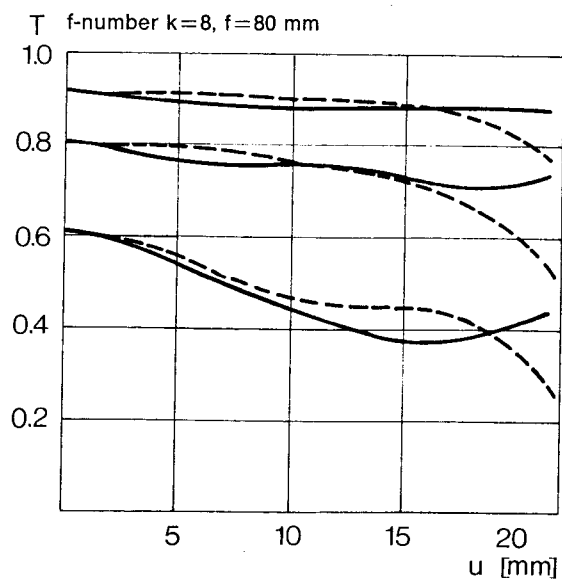
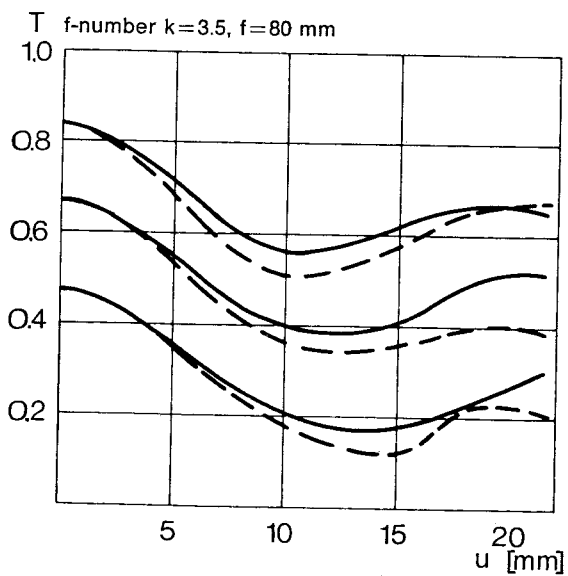


E Relative illuminance



V Distortion in % of image height u





Subject to technical amendment