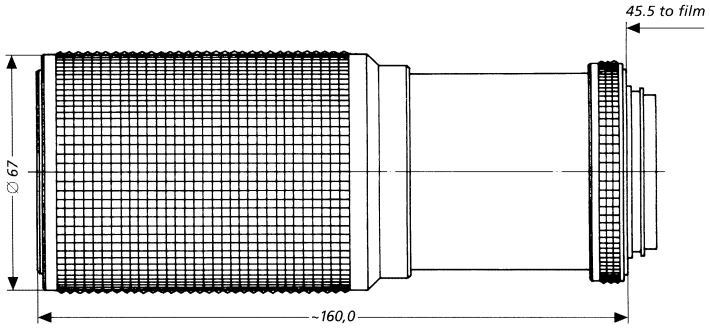
Vario-**Sonnar**® T* f/4 80 - 200 mm



CONTAX®/YASHICA® mount

The 80-200 mm Vario-**Sonnar**® T* f/4 lens from Carl Zeiss is a light, one-touch zoom lens which provides very good image quality over the entire focal length range. As with the 35-70 mm Vario-**Sonnar**® T* f/3.4 lens, the same ring is used for zooming and focusing.

The relative aperture set and the image position remain constant over the entire focal length range. The lens displays very low distortion over the entire focal length range.

The 80-200 mm Vario-**Sonnar**® T* f/4 lens is suited for a wide variety of work in the close and medium telephoto ranges.

Cat. No. of lens:	**10 47 35**
Number of elements:	13
Number of groups:	10
Max. aperture*:	f/4
Focal length*:	81.5-198.0 mm
Negative format:	24 x 36 mm
Angular field 2w*:	30°-12°
Spectral region:	visible spectrum
Aperture scale:	4 - 5.6 - 8 - 11 - 16 - 22
Mount:	focusing helicoid with bayonet; Aperture priority/Shutter priority/ Automatic programs (Multi-Mode Operation).
Filter connection:	thread M 55 x 0.75 mm, screw-in type clip-on type, diameter 58 mm
Weight:	approx. 680 g
Focusing range:	∞ to 1 m

Entrance pupil*:		
Position:	a)	56.5 mm behind first lens vertex
	b)	148.2 mm behind first lens vertex
Diameter:	a)	19.9 mm
	b)	48.2 mm
Exit pupil*:		
Position:	a)	46.5 mm in front of last lens vertex
	b)	46.5 mm in front of last lens vertex
Diameter:	a)	23.4 mm
	b)	23.4 mm
Position of principal planes*:		
H:	a)	68.2 mm behind first lens vertex
	b)	65.9 mm behind first lens vertex
H':	a)	32.9 mm in front of last lens vertex
	b)	149.4 mm behind last lens vertex
Back focal distance:		48.6 mm
Distance between first and last lens vertex*:		153.4 mm

a) f = 80 mm b) f = 200 mm, * at ∞

ZEISS

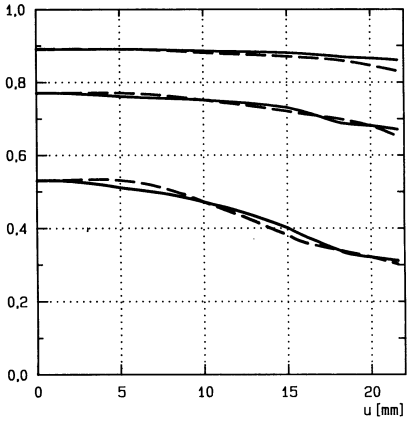
Performance data:
Vario-**Sonnar**® T* f/4 80 - 200 mm
Cat. No. 10 47 35

1. MTF Diagrams

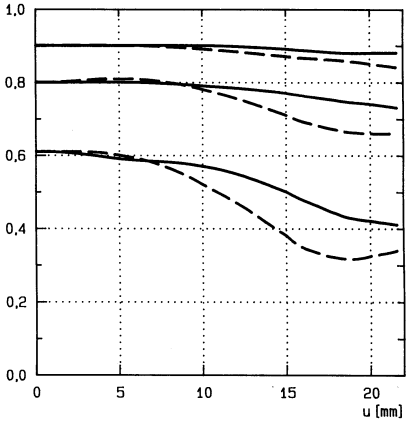
The image height u - calculated from the image center - is entered in mm on the horizontal axis of the graph. The modulation transfer T (MTF = Modulation Transfer Factor) is entered on the vertical axis. Parameters of the graph are the spatial frequencies R in cycles (line pairs) per mm given at the 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.

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 = 4; f = 80 mm



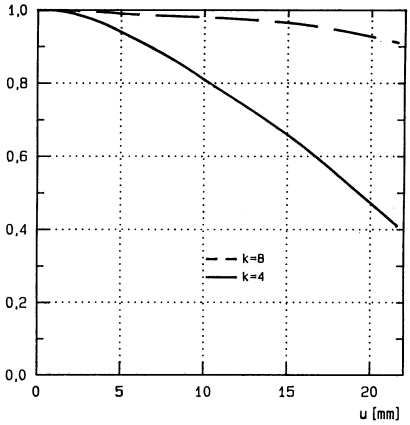
T f-number k = 8; f = 80 mm



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.

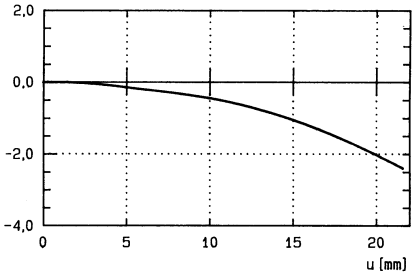
E Relative illuminance; f = 80 mm



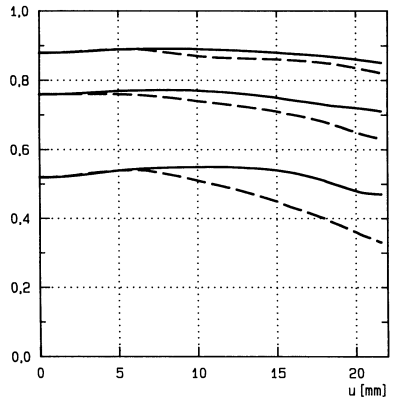
3. Distortion

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.

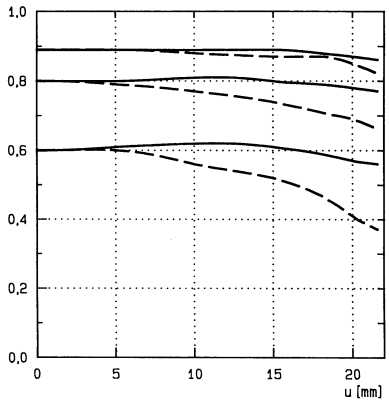
V Distortion in % of image height u; f = 80 mm



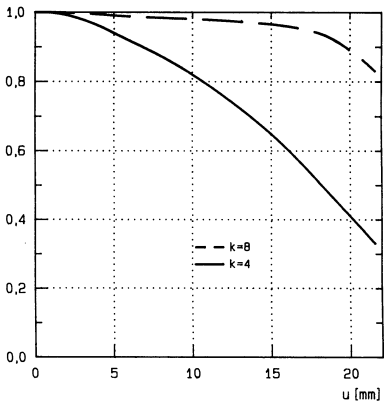
T f-number k = 4; f = 140 mm



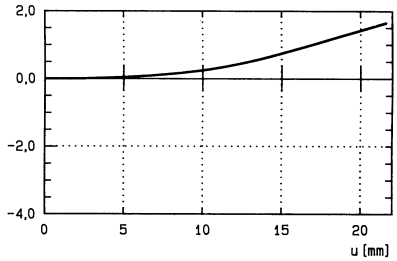
T f-number k = 8; f = 140 mm



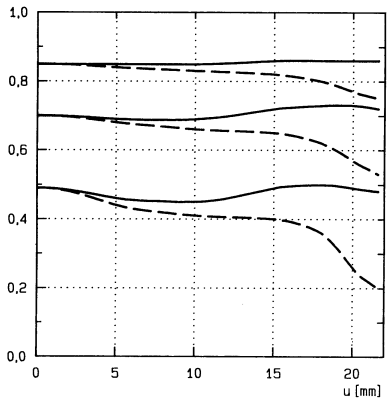
E Relative illuminance; f = 140 mm



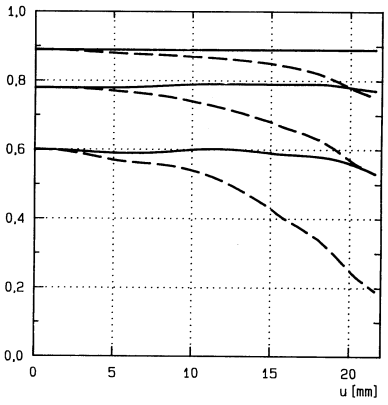
V Distortion in % of image height u; f = 140 mm



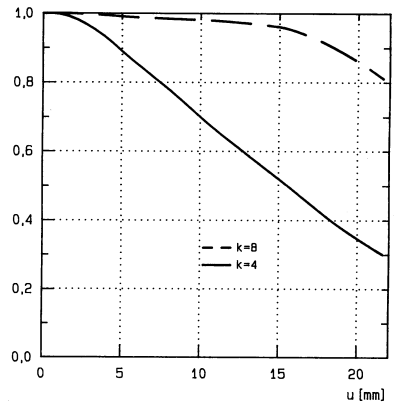
T f-number k = 4; f = 200 mm



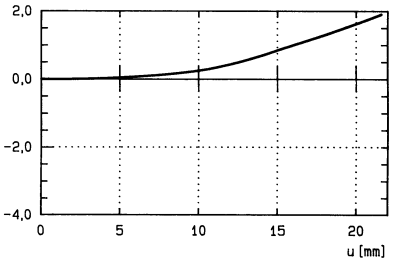
T f-number k = 8; f = 200 mm



E Relative illuminance; f = 200 mm



V Distortion in % of image height u; f = 200 mm



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Subject to change.