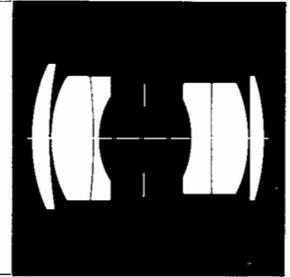


ZEISS

S-Planar T* f/4 — 100 mm Cat. No. 10 78 03

CONTAX / YASHICA mount



CARL ZEISS
Abteilung für Photographie

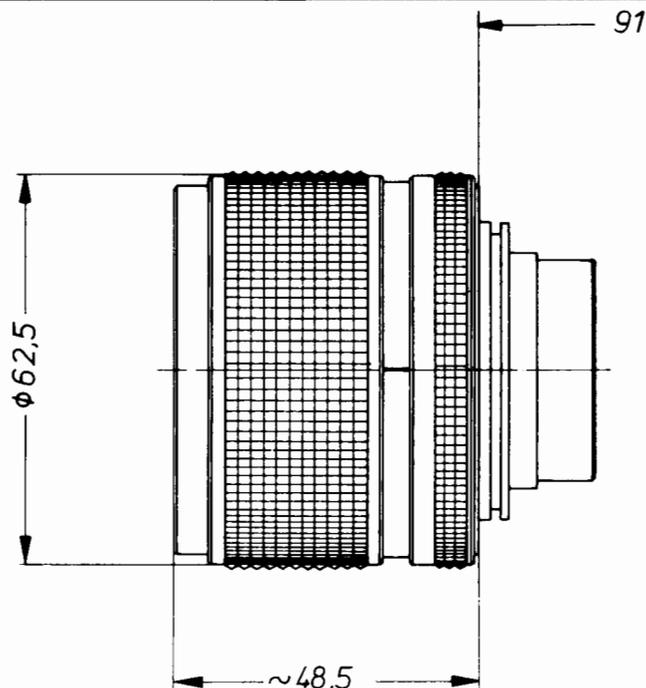
7082 Oberkochen
West Germany

The S-Planar f/4 — 100 mm has been developed especially for the bellows attachment of the Contax RTS. Thanks to its special design it covers, together with the bellows attachment, a focusing range from ∞ via natural-size imaging up to 1.4 : 1 enlargement. The correction is optimally designed for moderate reductions, the preferred field of bellows attachment photography.

However, this specific design is relatively insensitive to scale alterations, so that the lens is suited for a wide range of image scales and, when slightly stopped down, it can readily be used for large distances. When approaching natural-size imaging, the depth of field becomes very small, i. e. only some $\frac{1}{100}$ inch at 1 : 1. Therefore, as a rule, stopping down further is indispensable for increasing the depth of field.

The lens standard of the bellows attachment is laterally displaceable by ± 10 mm, and the camera can be rotated by 90° relative to the instrument, so as to utilize the displacement parallel to the long side of the format. The correction of the lens has therefore been designed for a larger image field.

The S-Planar is unsurpassed when it comes to taking in quick succession large and small objects so that they cover the format. In nature photography for instance, one aims at showing small plants and animals in their natural surroundings and emphasizing important details immediately afterwards by a large-scale picture in close-up focusing. Industrial and advertising photography are confronted with similar tasks.



Number of lens elements:	6	Distance range:	∞ to 1.4 : 1
Number of components:	4	Position of entrance pupil:*	37.5 mm behind first lens vertex
f-number:	4*	Diameter of entrance pupil:*	25.0 mm
Focal length:	100.0 mm	Position of exit pupil:*	42.7 mm in front of last lens vertex
Negative size:	24 x 36 mm	Diameter of exit pupil:*	29.2 mm
Angular field 2w:	24,5°/33°	Position of principal plane H:	50.9 mm behind first lens vertex
Mount:	bayonet for connection to the Contax bellows attachment; coupling system for automatic diaphragm function; through-the-lens measurement in stop-down position	Position of principal plane H':	27.1 mm in front of last lens vertex
f-stop scale:	4 - 5.6 - 8 - 11 - 16 - 22 - 32	Distance between first and last lens vertex:	60.7 mm
Filter mounting:	slip-on filter diameter 59 mm screw thread M 55 x 0.75		
Weight:	approx. 280 g		

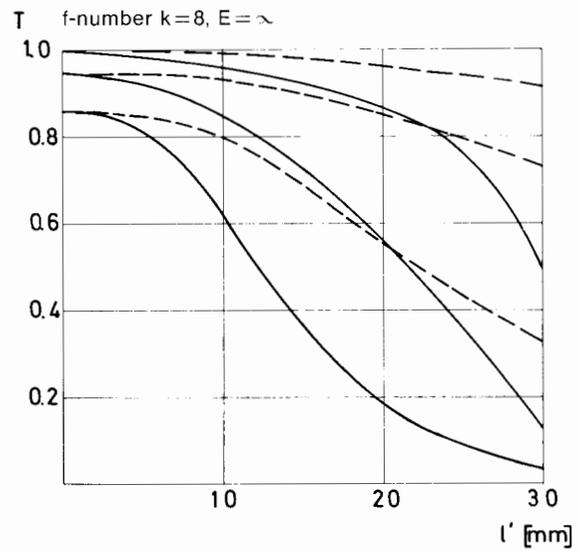
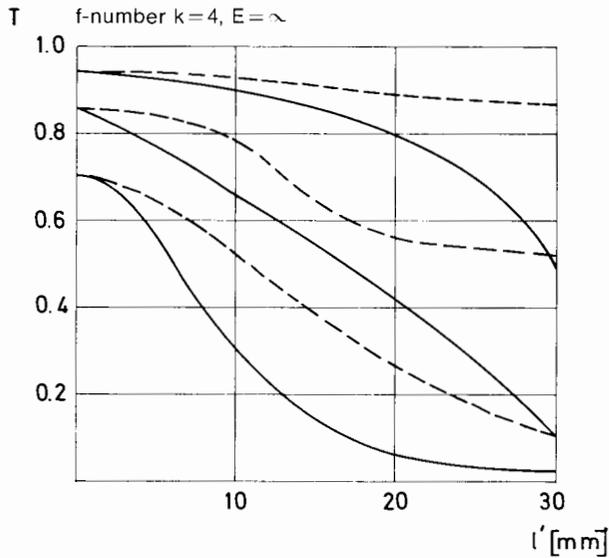
* data for ∞

Performance data:

S-Planar T* f/4 – 100 mm Cat. No. 107803

Modulation transfer T as a function of image height l'
 Slit orientation tangential ———
 sagittal - - - - -

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



1. MTF Diagrams

The image height l' — 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.

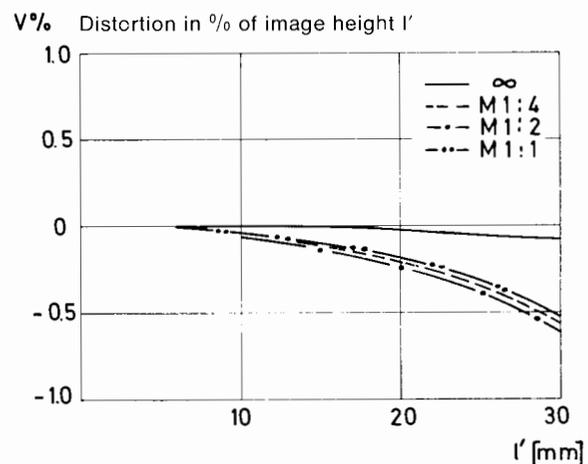
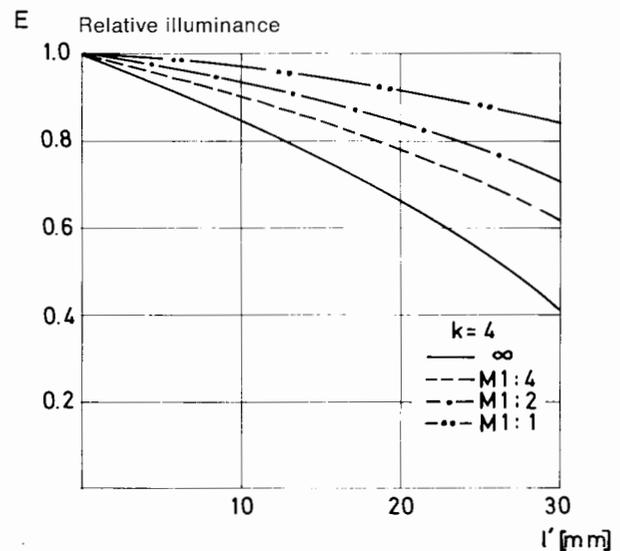
Unless otherwise indicated, the performance data refer to large object distances, for which normal photographic lenses are primarily used.

2. Relative illuminance

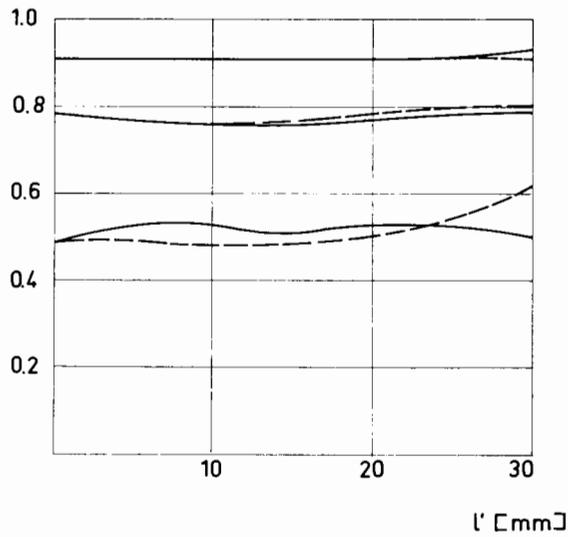
In this diagram the horizontal axis gives the image height l' in mm and the vertical axis the relative illuminance E, both for full aperture and a moderately stopped-down lens. The values for E are determined taking into account vignetting and natural light decrease. With virtually distortion-free imaging the latter is independent of the design and degree of correction of the lens.

3. Distortion

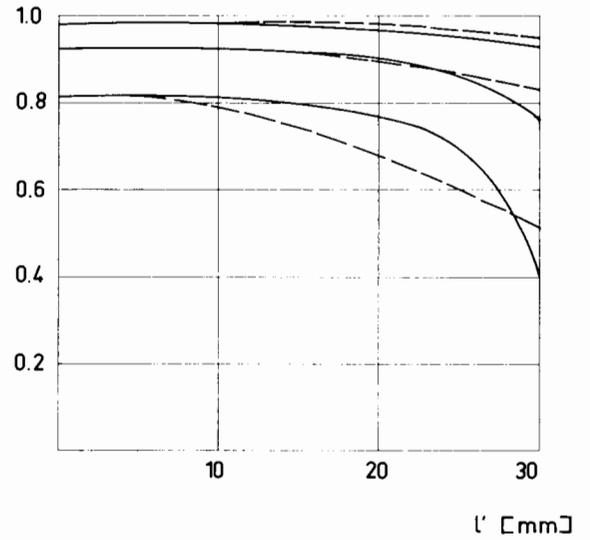
Here again the image height l' is entered on the horizontal axis in mm. The vertical axis gives the distortion V in % of the relevant image height. A positive value for V means that the actual image point is further from the image center than with perfectly distortion-free imaging (pincushion distortion);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



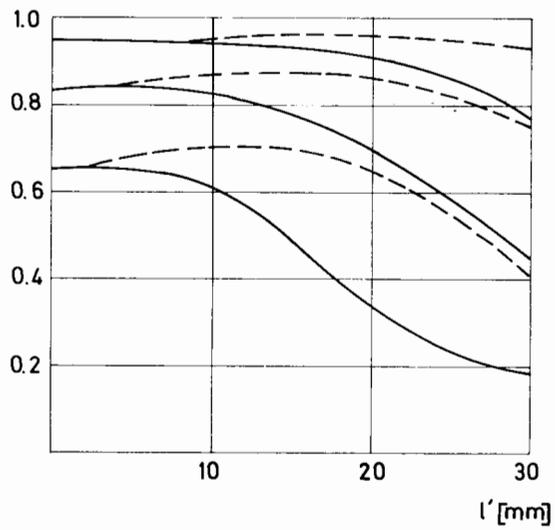
T f-number k=4, i.s. 1:4



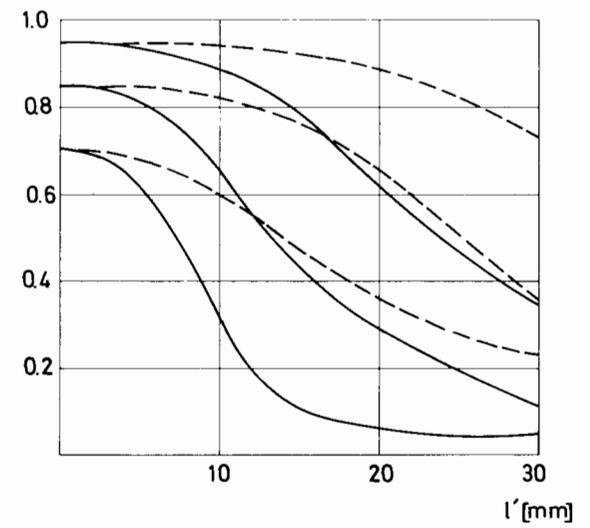
T f-number k=8, i.s. 1:4



T f-number k=8, i.s. 1:2



T f-number k=8, i.s. 1:1



Optical microscopes

Ophthalmological
and microsurgical
instruments

Electron microscopes

Analytical instruments

Precision measuring
instruments for
metrology and
quality control

Surveying instruments

Photogrammetric
equipment

Astronomical
instruments and
Planetarium projectors

Photographic lenses

Spectacle lenses

Binoculars

