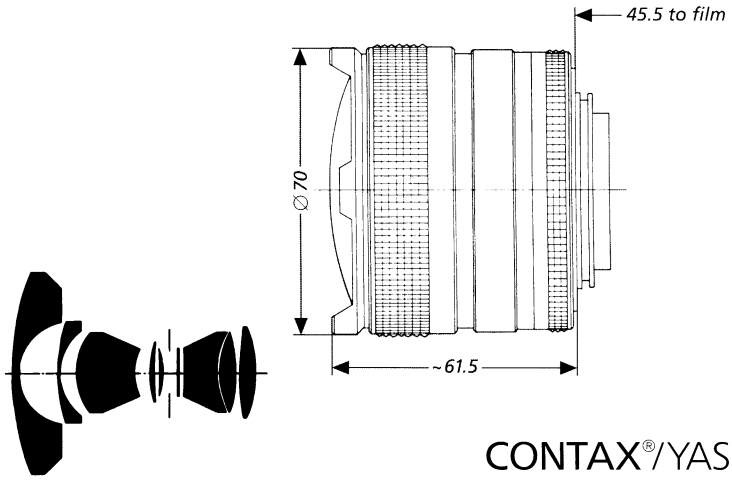
F-**Distagon**® T* f/2.8 - 16 mm



CONTAX®/YASHICA® mount

The 16 mm F-**Distagon**® f/2.8 lens is a super wide-angle lens of the so-called fisheye type with high speed and excellent image quality. With regard to its use in general photography, the focal length was chosen in such a way that the 35 mm format is fully utilized.
The relation between image height u and angular field w is given by u = 2 f x sin w/2 (equivalent projection). Most important for general photography are, above all, the excellent image quality and the remarkable image field illumination at full aperture, i.e. when the incredibly high speed of this lens is fully utilized.

This super wide-angle lens is well suited for panorama photography where distortion phenomena can be avoided by skilful camera work, for detail photography where space is extremely limited and for photographs for which the extreme wide-angle perspective or distortion are essential elements of the picture.

Cat. No. of lens:	**10 48 39**
Number of elements:	8
Number of groups:	7
Max. aperture:	f/2.8
Focal length:	15.8 mm
Negative size:	24 x 36 mm
Angular field 2w*:	180º diagonal
Mount:	focusing mount with bayonet; TTL metering either at full aperture or in stopped-down position.
Aperture scale:	2.8 - 4 - 5.6 - 8 - 11 - 16 - 22
Filter connection:	built-in filter turret (UV; Or 57; Y 50; B 11)
Weight:	approx. 460 g

Focusing range:	∞ to 0.3 m
Entrance pupil:	
Position:	15.6 mm behind the first lens vertex
Diameter:	5.5 mm
Exit pupil:	
Position:	30.5 mm in front of the last lens vertex
Diameter:	23.9 mm
Position of principal planes:	
H:	27.8 mm behind the first lens vertex
H':	21.8 mm behind the last lens vertex
Back focal distance*:	37.6 mm
Distance between first and last lens vertex:	66.5 mm

* at ∞

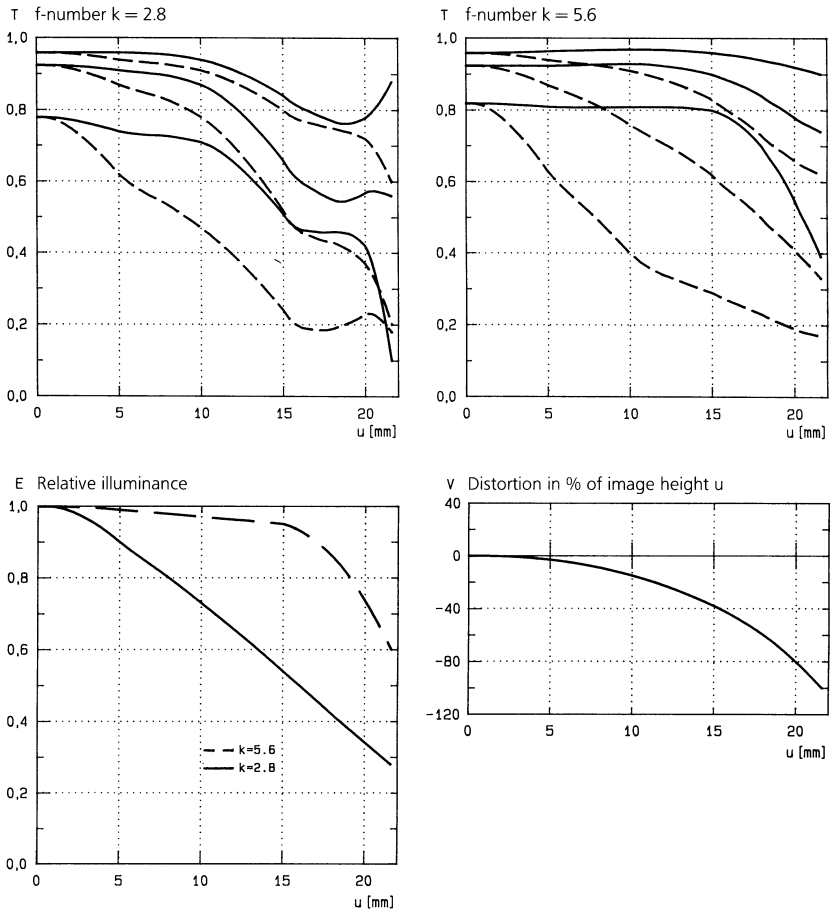
ZEISS

Performance data:
F-**Distagon**® T* f/2.8 - 16 mm
Cat. No. 10 48 39

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



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.

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