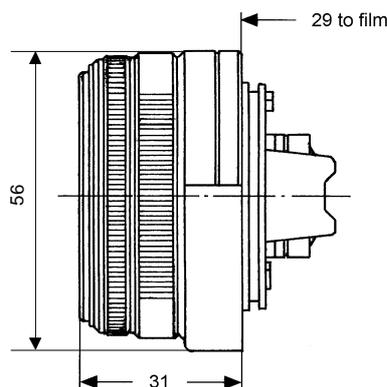
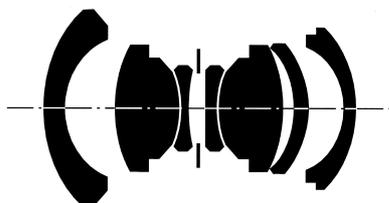


# Biogon® T\* 2.8/28



## CONTAX® G mount

The hallmark of **Biogon® T\*** wide-angle lenses is excellent image quality combined with a wide initial aperture and a wide field angle. This type of lens is not suitable for use with SLR cameras, as its design requires a short back focal distance (distance from the last lens vertex to the film plane). An outstanding **Biogon® T\*** lens has been developed for the Contax G compact cameras, incorporating the knowledge gained so far in the design of this type of lens.

The focal length  $f = 28$  mm of this lens makes it ideal for photography where a dynamic perspective is required. The lens is also suitable for the close-range photography of interiors, as its constantly high image quality and excellent distortion correction extend up to the close range. The **Biogon® T\*** 2.8/21 lens has been designed for use with the autofocus connection of the Contax G compact cameras.

<b>Cat. No. of lens</b>	<b>10 49 29</b>	Close limit field size	361 mm x 541 mm
Number of elements	7	Max. scale	1 : 15.0
Number of groups	5	Entrance pupil*	
Max. aperture	f/2.8	Position	15.4 mm behind the first lens vertex
Focal length	28.5 mm	Diameter	10.0 mm
Negative size	24 x 36 mm	Exit pupil*	
Angular field*	width 65°, height 46°, diagonal 2w 74°	Position	13.5 mm in front of the last lens vertex
Min. aperture	22	Diameter	9.5 mm
Camera mount	Contax G	Position of principal planes*	
Filter connection	M 46 x 0.75	H	13.5 mm behind the first lens vertex
Focusing range	infinity to 0.5 mm	H'	15.4 mm in front of the last lens vertex
Working distance (between mechanical front end of lens and subject)	0.44 m	Back focal distance	13.1 mm
		Distance between first and last lens vertex	41.7 mm
		Weight	150 g

\* at infinity



Performance data:

**Biogon® T\* 2.8/28**

Cat. No. 10 49 29

### 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.

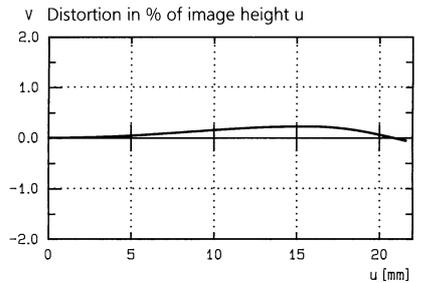
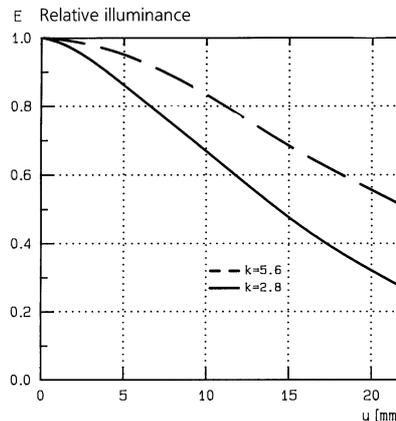
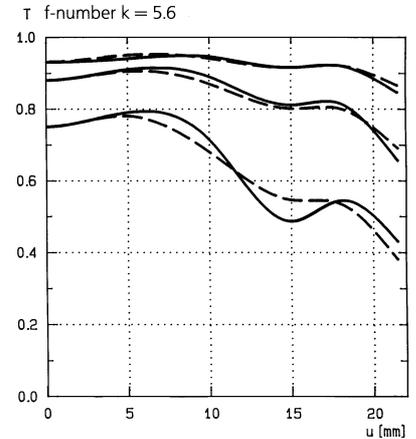
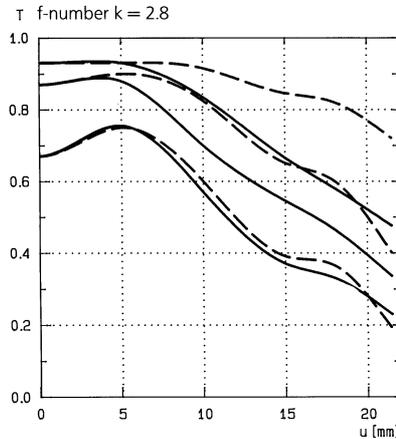
### 2. Relative illuminance

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.

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



Subject to change.

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