



Makro-Planar T* 2/100 ZF



Features

- A fast f/2 aperture is useful under low-light conditions
- Outstanding image definition enables you to clearly recognize even the edges of the object
- Precision mechanics and a very large angle of rotation enables to focus very precisely on image details
- Robust full-metal construction
- Identical color reproduction of all models assures the quality of products measured by hue difference
- Mounts and optical coatings can be modified on request

ZF-I: Industrial Edition

Features special screws to fix focus and aperture settings also in rough situations.

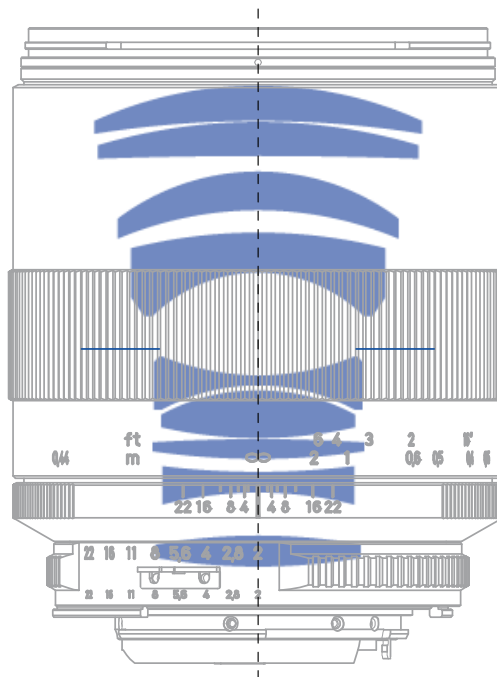
Camera Mounts

Available for other camera mounts such as EF or K bayonet mount.



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Technical Specifications



Focal length	100 mm
Aperture range	f/2 – f/22 (1/ 2 stop intervals)
Number of elements / groups	9 / 8
Working distance (object to sensor)	25.0 cm (0.92 ft) – ∞
Angular field* (diag. / horiz. / vert.)	25 / 21 / 14 °
Max. diameter of image field	43 mm (1.7")
Flange focal length	46.5 mm (1.8")
Coverage at close range	48 x 72 mm (1.9 x 2.8")
Image ratio at close range	1: 2
Filter-thread	M 67 x 0.75
Length (without caps)**	88.5 mm (3.5")
Diameter	76 mm (3")
Weight	680 g (24 oz.)
Camera mount***	ZF (F bayonet)

* referring to 35 mm format

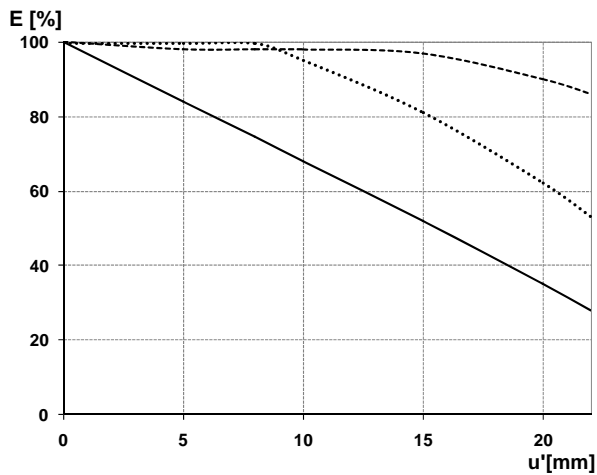
** from bayonet mount to filter thread when lens focused to infinity

*** other mounts available on request



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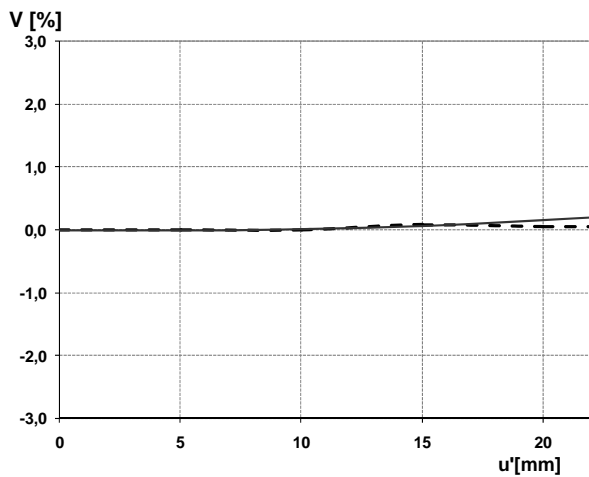
Relative Illuminance



The relative illuminance shows in percent the decrease in image brightness from the image center to edge.

- f-number 2
- ... f-number 2 M=1:2
- f-number 4

Relative Distortion

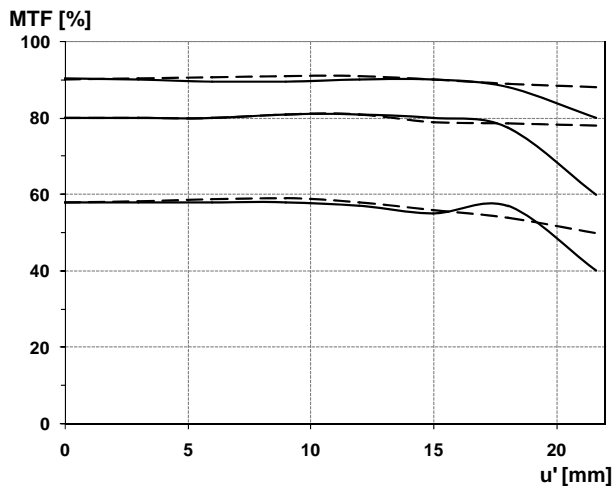


The relative distortion shows in percent the deviation of the actual from the ideal image height.



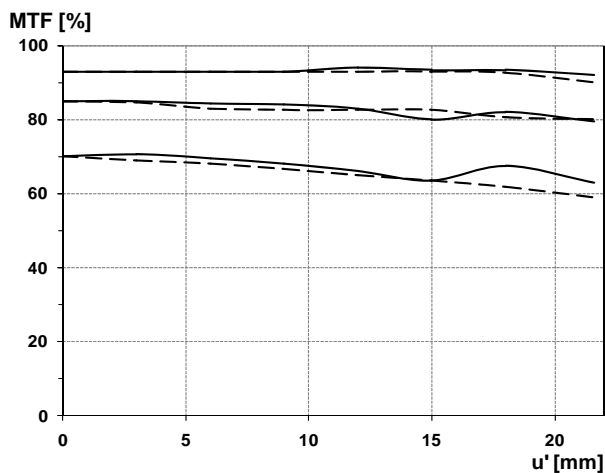
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MTF Charts



The Modulation Transfer (MTF) as a function of image height (u) and slit orientation (sagittal, tangential) has been measured with white light at spatial frequencies of $R = 10, 20$ and 40 cycles/mm.

f-number 2
— Saggital
... Tangential



f-number 8
— Saggital
... Tangential



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Depth of Field

Aperture	Field range		
	Object distance 2.00 m (6.56 ft)	Object distance 1.00m (3.28 ft)	Object distance 0.436 m (1.43 ft)
f / 2	1.98 – 2.02 m (6.50 – 6.63 ft)	1.00 – 1.00 m (3.28 – 3.28 ft)	0.436 – 0.436 m (1.43 – 1.43 ft)
f / 2.8	1.97 – 2.03 m (6.46 – 6.66 ft)	0.99 – 1.01 m (3.25 – 3.31 ft)	0.435 – 0.437 m (1.42 – 1.43 ft)
f / 4	1.96 – 2.05 m (6.43 – 6.72 ft)	0.99 – 1.01 m (3.25 – 3.31 ft)	0.435 – 0.437 m (1.42 – 1.43 ft)
f / 5.6	1.94 – 2.07 m (6.36 – 6.79 ft)	0.99 – 1.01 m (3.25 – 3.31 ft)	0.435 – 0.437 m (1.42 – 1.43 ft)
f / 8	1.91 – 2.09 m (6.27 – 6.86 ft)	0.98 – 1.02 m (3.22 – 3.35 ft)	0.435 – 0.437 m (1.42 – 1.43 ft)
f / 11	1.88 – 2.13 m (6.17 – 6.99 ft)	0.97 – 1.03 m (3.18 – 3.38 ft)	0.434 – 0.438 m (1.42 – 1.44 ft)
f / 16	1.84 – 2.20 m (6.04 – 7.22 ft)	0.96 – 1.04 m (3.15 – 3.41 ft)	0.433 – 0.439 m (1.42 – 1.44 ft)
f / 22	1.78 – 2.29 m (5.84 – 7.51 ft)	0.95 – 1.06 m (3.12 – 3.48 ft)	0.432 – 0.440 m (1.42 – 1.44 ft)

Defined circle of confusion: 0.03 mm (0.0012")