
vicotar® TL380/25.6-400-V-WN-LW

Short description: Telecentric large field lens, M42x1, sensor opt. type DX, aperture F8 – F22, VIS/NIR

Order number: 2-06-233

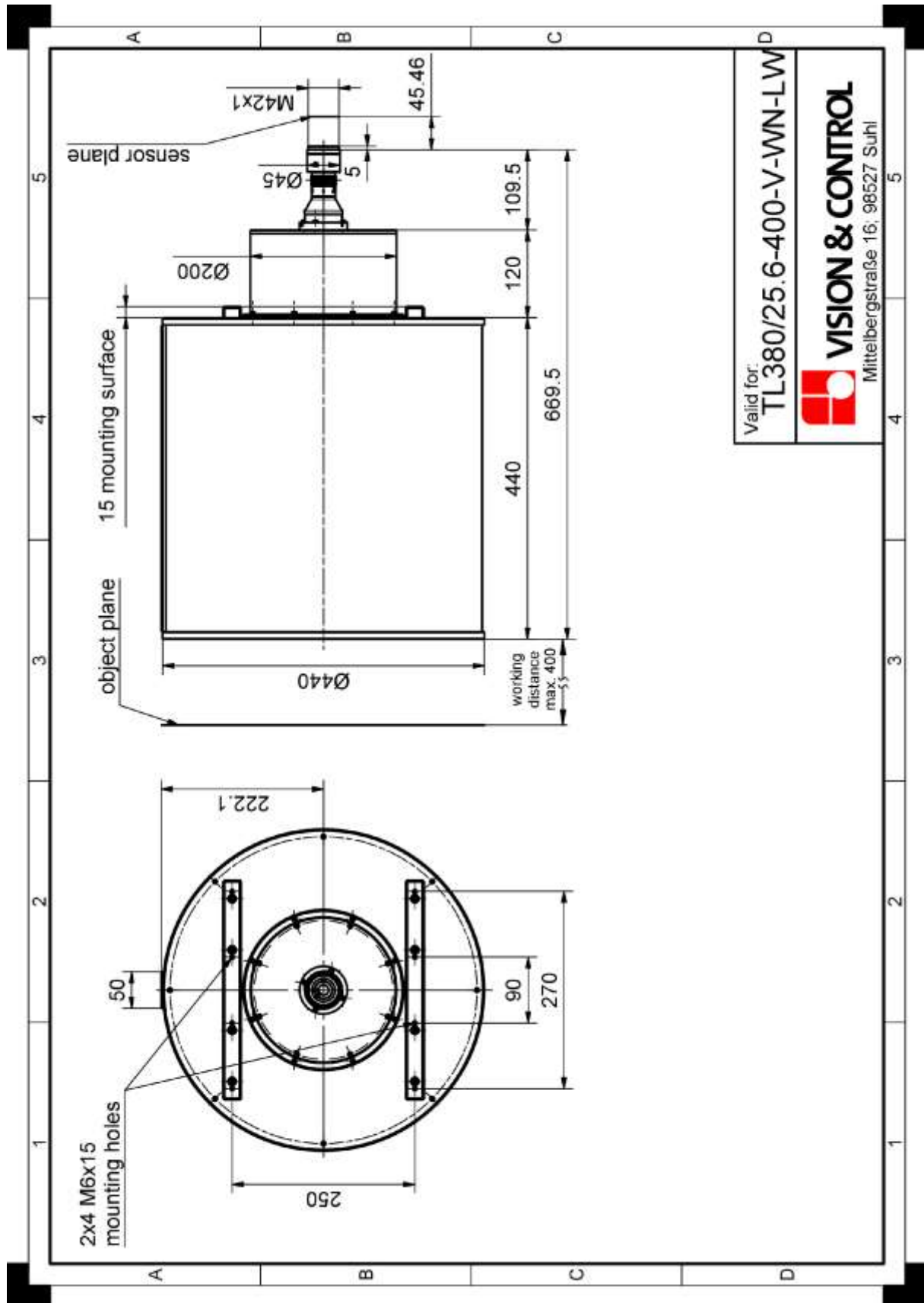
1 CHARACTERISTICS

- Object-sided telecentric lens with extremely large object field
 - for cameras with M42x1
 - lightweight thanks to Fresnel technology
 - designed for monochromatic applications
 - working distance adjustable in the range from 100 mm to 400 mm
 - high resolution, low distortion, low telecentric error
 - adjustable aperture, lockable
 - robust industrial design
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2 TECHNICAL DATA

Image scale:	0.069 ± 2%
Depth image scale ($\Delta z' / \Delta z$)	0.0048
Spectral range:	400 nm – 950 nm (monochromatic)
Working distance:	100 – 400 mm (adjustable)
Camera distance (object-camera flange):	1100 mm (for 400 mm working distance)
Imaging length:	1145.5 mm (for 400 mm working distance)
Object field diagonal (max.):	380 mm
Sensor format (optimal):	1"
Image field diagonal (max.):	25.6 mm
Suitable for camera resolution:	92.4 MPixel
Recommended pixel size:	2 µm
Minimal object-side resolvable structure detail:	100 (@ 470nm, F8)
Aperture:	F8 – F22
Depth of field:	235 mm (F11, 470 nm, MTF = 20% @ 20 LP/mm)
Lens length:	700 mm
Lens diameter (max.):	446 mm
Lens mount:	M42 x 1 (flange focal distance 45.46 mm)
Filter thread, object-side:	none
Filter thread, camera-side:	none
Weight:	5000 g
Usable object field with	
• sensor type DX (23.7 mm x 15.6 mm):	309.5 mm x 203.7 mm
• sensor type 4/3 (17.3 mm x 13.0 mm):	250.7 mm x 188.4 mm
• 1" sensor (12.8 mm x 9.6 mm):	185.5 mm x 139.1 mm

3 CUSTOMER DRAWING



4 EXTENSION RINGS

Extension rings mainly shorten the working distance. The magnification also changes, but only very slightly.

The working distance is reduced by approximately the thickness of the extension ring divided by the depth magnification.

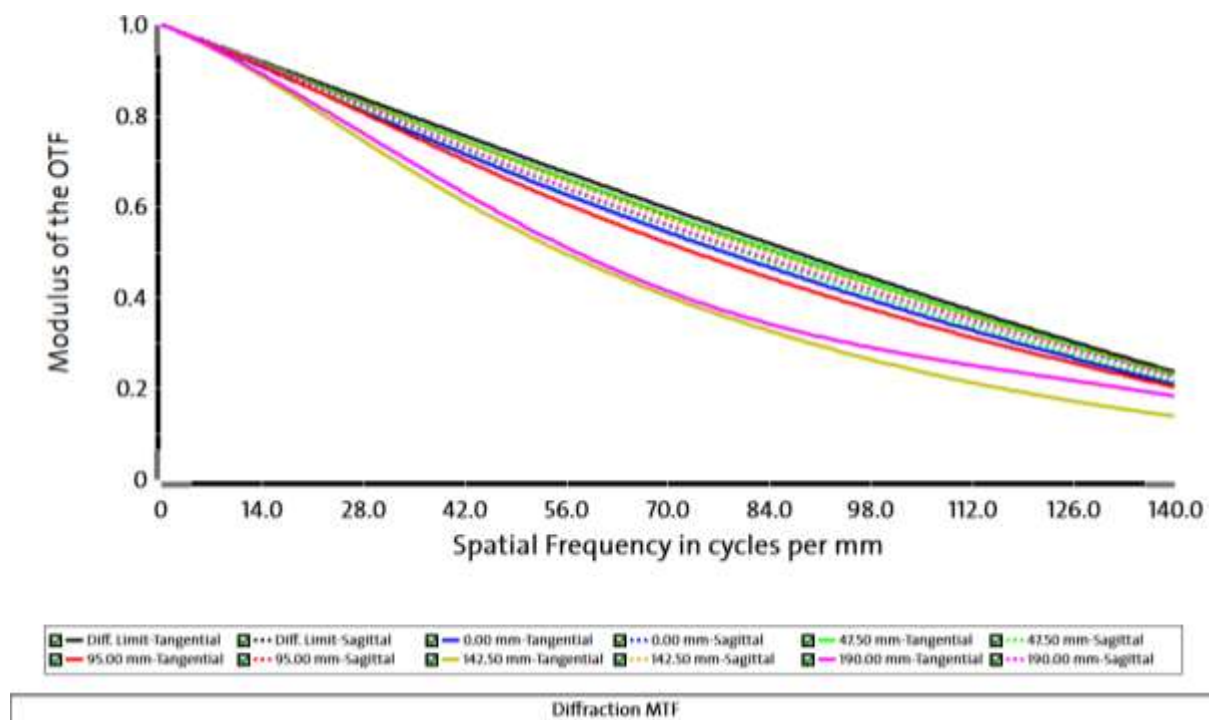
Extension rings can reduce the ideal imaging performance specified in the data sheet.

Parameter	Value
Working distance	400
Working distance with extension ring 0.1 mm	379
Working distance with extension ring 0.2 mm	358
Working distance with extension ring 0.5 mm	295
Working distance with extension ring 1 mm	190

5 OPTICAL CHARACTERISTICS (DESIGN DATA)

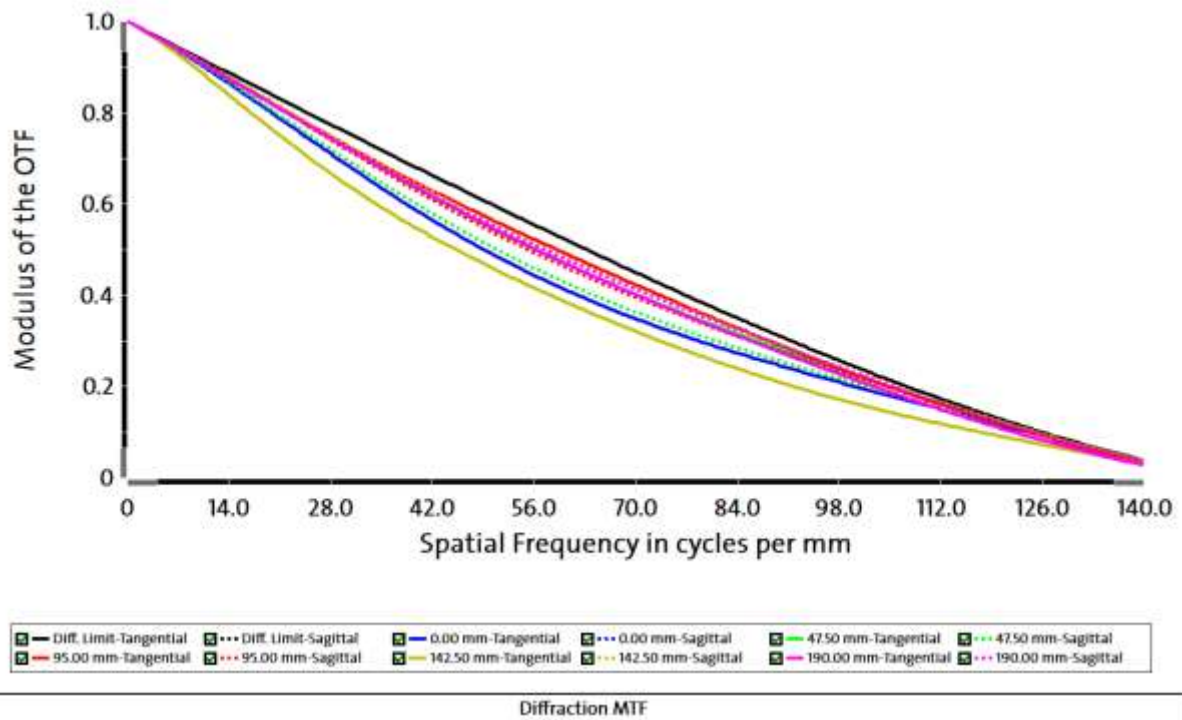
5.1 MONOCHROMATIC MTF IN THE IMAGE SPACE DEPENDING ON THE OBJECT FIELD HEIGHT

Wavelength: 470 nm



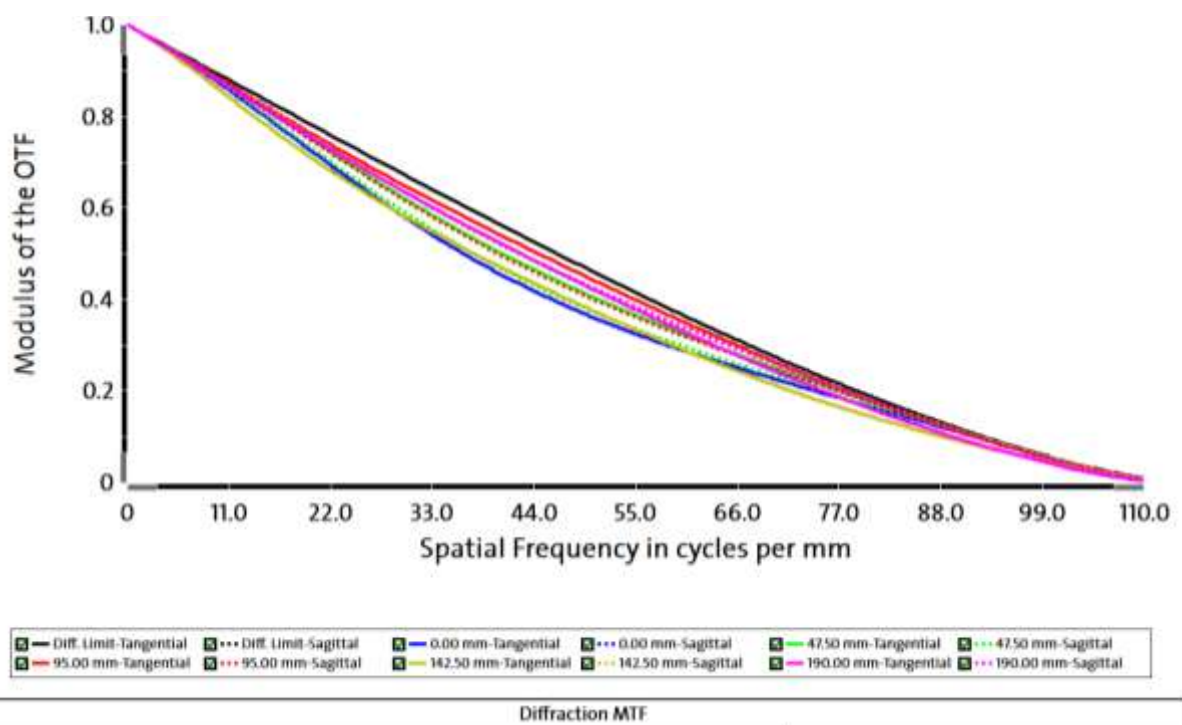
F-number: F10

Wavelength: 635 nm



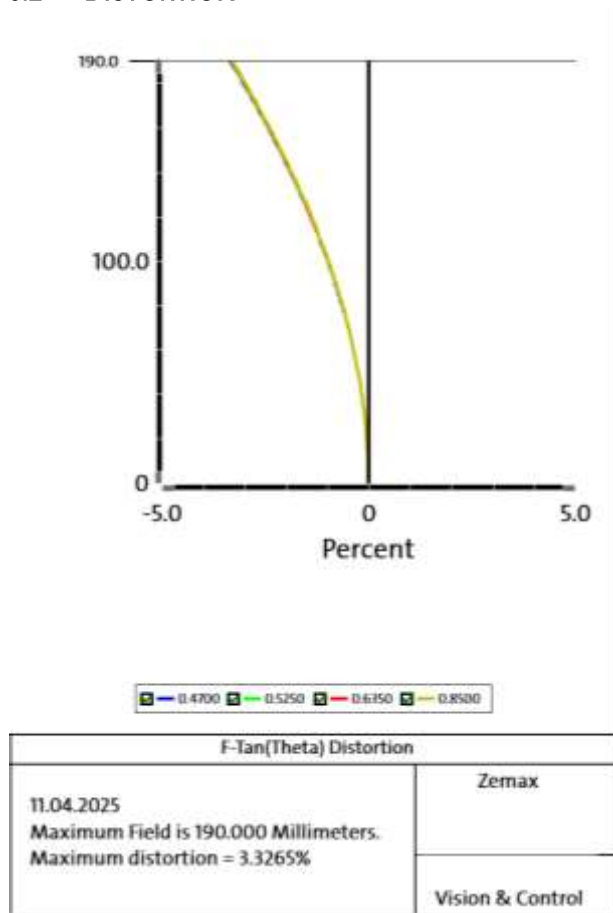
F-number: F10

Wavelength: 850 nm



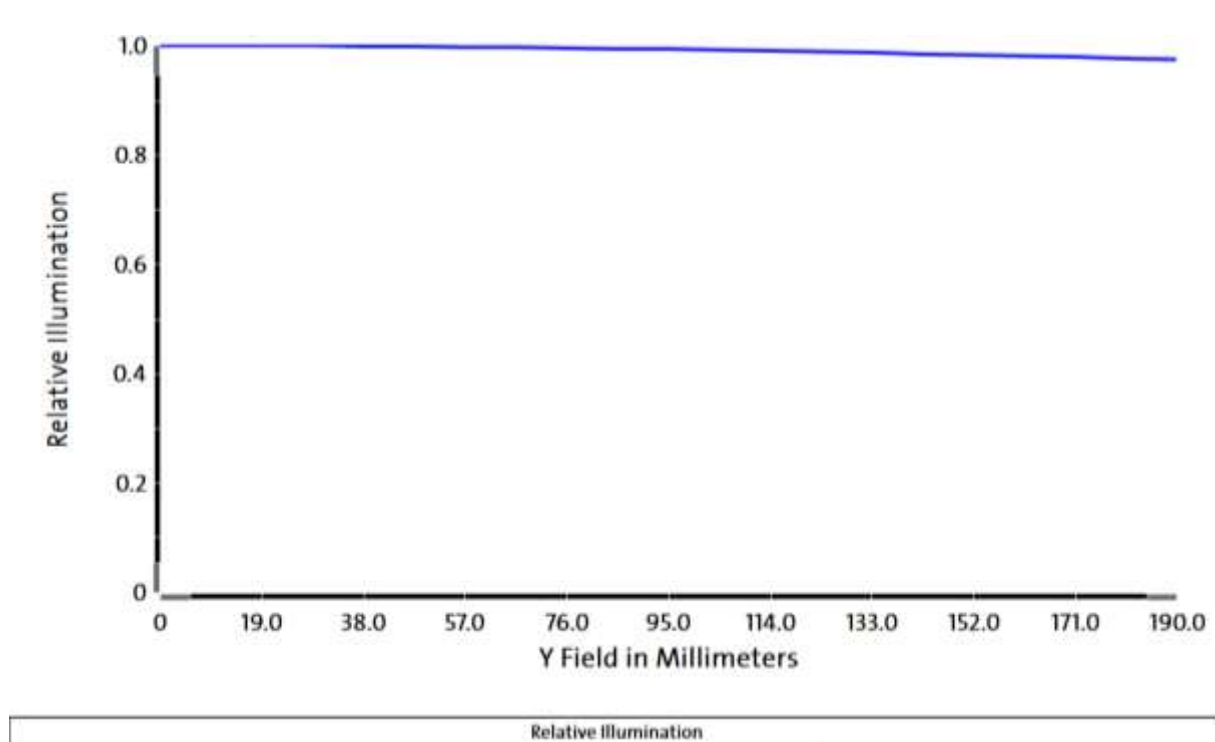
F-number: F10

5.2 DISTORTION



Distortion

5.3 RELATIVE ILLUMINATION



Vignetting (marginal decrease of illuminance in the image)