

Line Scan Lens

XENON-ZIRCONIA 3.1/91, beta' = -0.7x

This lens is optimized for the use with 12k pixel line scan sensors and can also be used with 16k. It is broadband coated and can be used in the spectral range of 400 – 1000 nm. The V-mount makes it easy to install and rotate into the desired azimuth position for a wide range of line scan applications.

- F#5.1 shows optimum performance and a homogenous MTF @ 72 lp/mm as well. Performance is close to diffraction limited over the whole field. At f#4.8 the lens is free of artificial vignetting.
- A resolution of 100 lp/mm is achievable for magnification -0.7 at F#4.2 and F#5.1.
- F#3.1 allows maximum light throughput (about 3 times more than at F#5.1 on axis) and still shows good MTF over the field. The light fall-off at F#3.1 towards the edge still grants appr. 1.5 times more light compared to F#5.1.



XENON-Zirconia

Key Features

- for 12k line scan cameras (62.5mm length / pixel sizes appr. 5µm) and 16k (82mm length / pixel size appr. 5µm)
- Very high optical image quality in the large sensor range
- Vibration-insensitive for stable optical performance
- Lockable distance and aperture settings
- Industry-compatible V-mount interface
- Reliability and constant quality due to 100% quality control

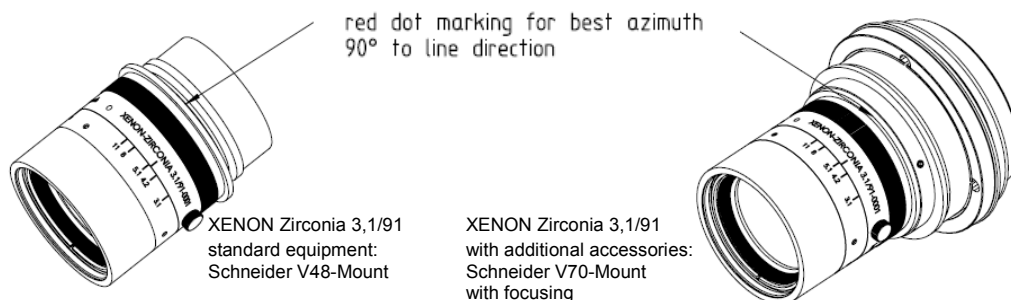
Applications

- Web and surface inspections
- Quality control
- FPD inspection
- PCB inspection
- OLED inspection
- Line scan applications

Technical Specifications	XENON-ZIRCONIA 3.1/91
F# range	optimum 5.1 (3.1 – 11)
Focal length	91.2 mm
Image circle	62.5 / 82 mm
Beta'	-0.7 (-0.77 ... 0.63)
Object to image distance	355 (350 ... 363) mm
Transmission	400 - 1000 nm
Interface	V48-Mount
Weight	250 gr.
Filter thread	M46 x 0.75
Code no.	1078947

Accessories

		Code no.	
Adapter V48-Mount/V70-Mount			# 1075304
incl. focusing ring			
Adapter	V70 / M72x0.75	10 mm	# 1072419
Extension tube	M72x0.75	5 mm	# 1072420
Extension tube	M72x0.75	10 mm	# 1072421
Extension tube	M72x0.75	25 mm	# 26406
Extension tube	M72x0.75	50 mm	# 1054733
Extension tube	M72x0.75	100 mm	# 1079483



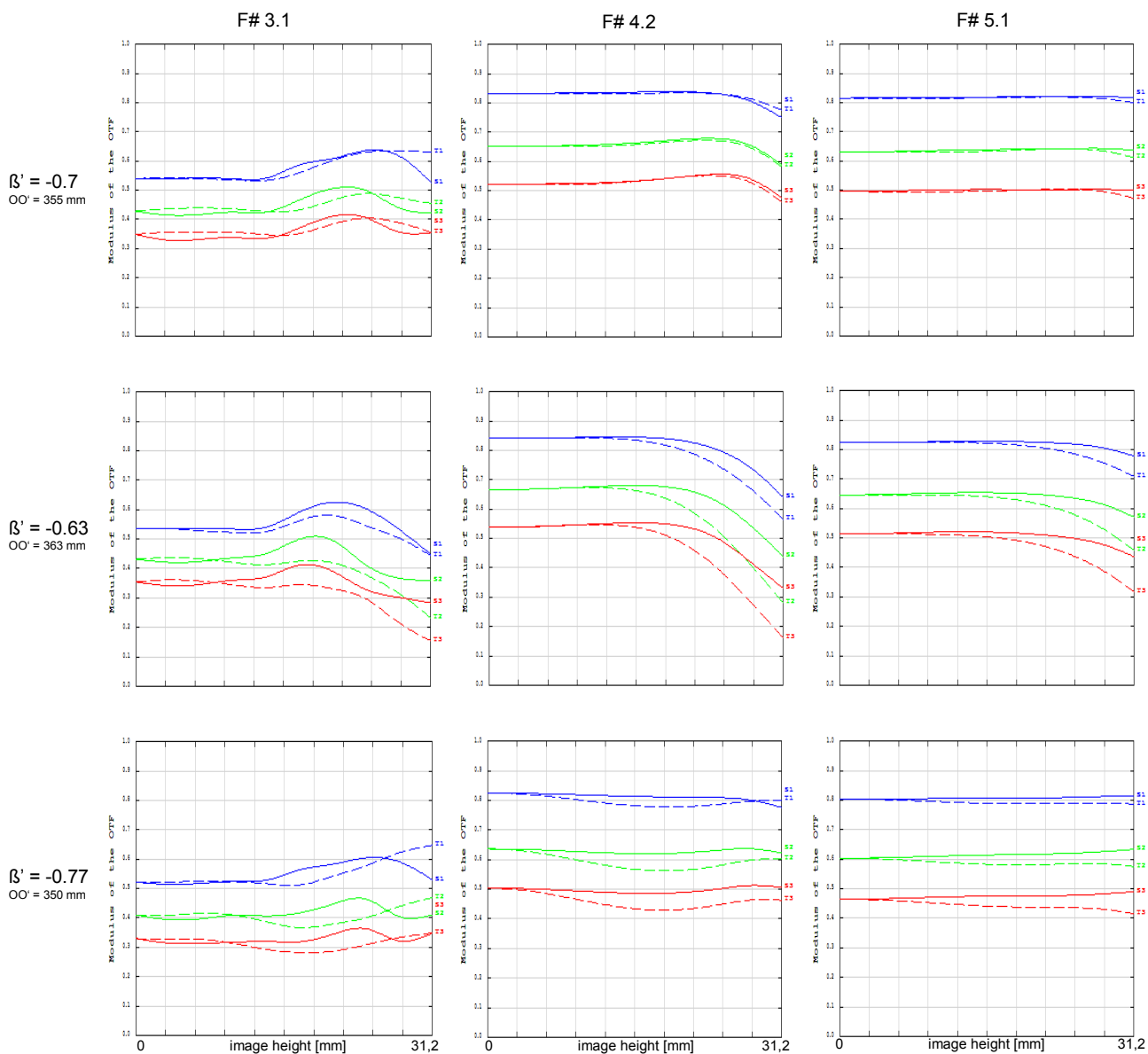
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$f = 91,2 \text{ mm}$ $\beta'_P = 0,95$
 $s_F = -46,6 \text{ mm}$ $s_{EP} = 49,2 \text{ mm}$
 $s'_F = 56,6 \text{ mm}$ $s'_{AP} = -30,2 \text{ mm}$
 $HH' = -21,2 \text{ mm}$ $\Sigma d = 58,00 \text{ mm}$

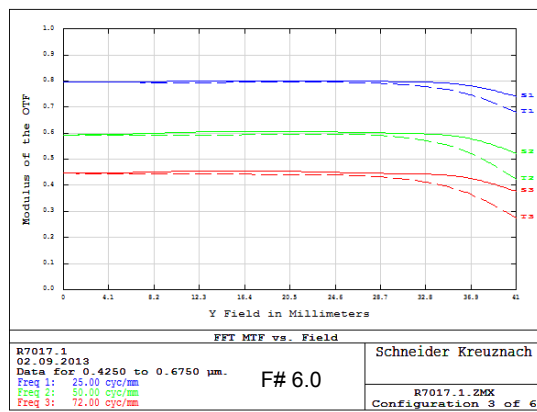
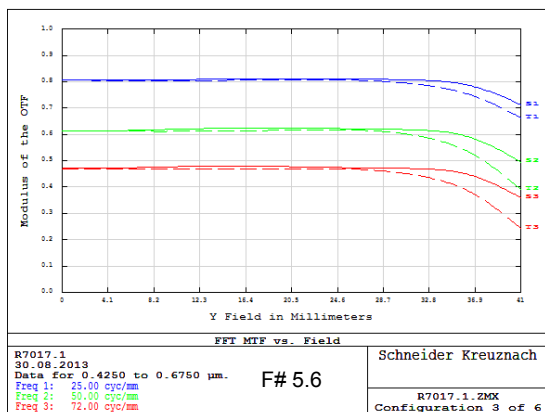
XENON Zirconia 3.1/91 MTF with reference to image height

Wavelength λ	[nm]:	425	475	525	575	625	675	radial	———
Spectral weighting	[%]:	1.5	13.6	26.5	27.8	24.2	6.4	tangential	- - - - -
Spatial frequency R	[1/mm]:	25	50	72 (= 12K sensor)					
Image- \emptyset	[mm]:	62.5							



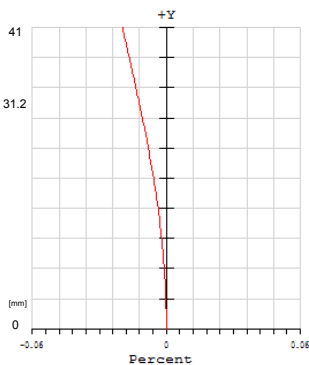
Xenon-Zirconia 3.1/91

Optical quality for 16 K sensor
with 82 mm length and 5 μm pixel size



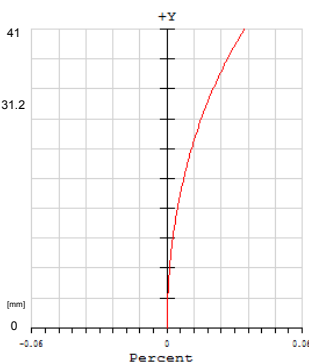
Distortion

$\beta' = -0.7$
OO' = 355 mm

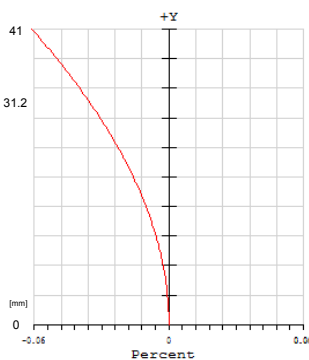


Distortion is shown for different magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

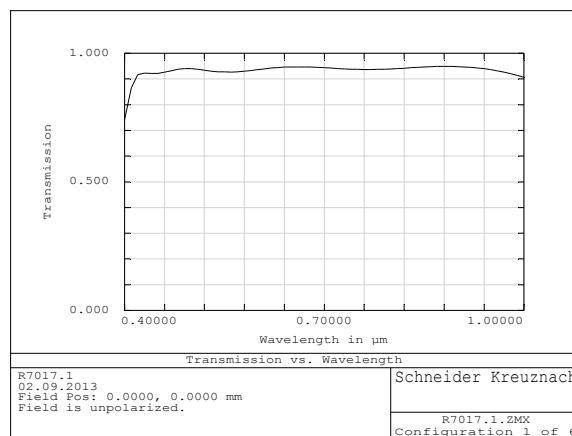
$\beta' = -0,63$
OO' = 363 mm



$\beta' = -0,77$
OO' = 350 mm

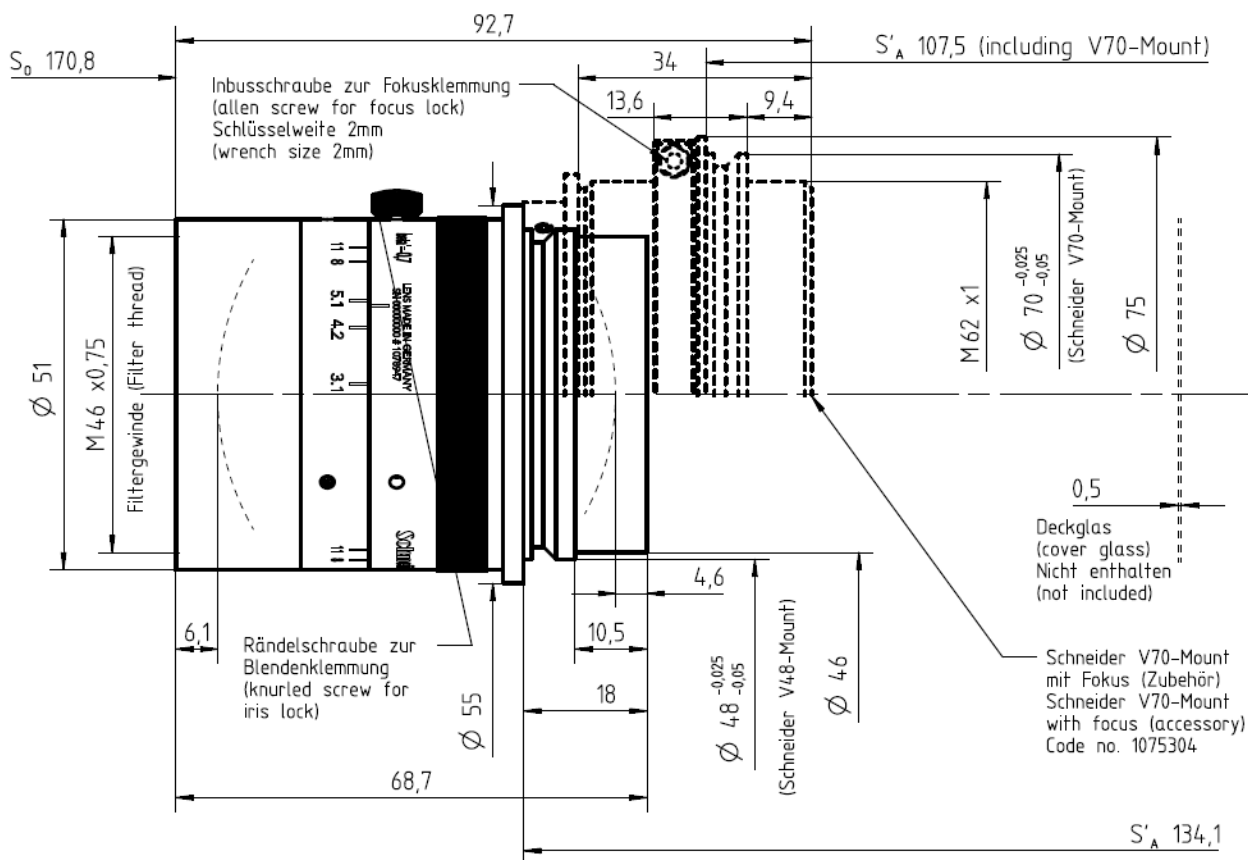
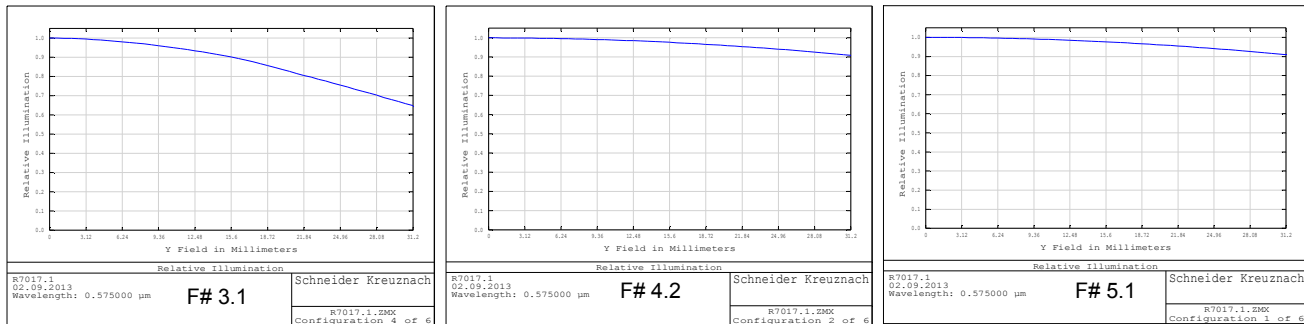


Transmission



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Relative Illumination



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