

Line Scan Lens

XENON-SAPPHIRE 3.2/97, beta' = -1.43 (-0.7 in retro)

This lens is a mechanically adapted version of the XN Sapphire -0.7x lens in order to use it in retro orientation. It is broadband coated and can be used in the 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 high resolution applications.

The XENON Sapphire 3.2/97, beta' = -1.43x can be used for 12K as well as for 16K line sensors.

- F#3.2 is the maximum opening of the stop and provides maximum brightness. It is free of artificial vignetting. The MTF for 100 lp/mm is very high up to the edge of a 58 mm field. Due to the high aperture the lens is more sensitive with respect to change of magnification.
- F#4.0 shows maximum MTF and practically diffraction limited performance over the whole field. Hence the depth of field is bigger.



XENON-SAPPHIRE lens
beta' = -1.43

Key Features

- for 16k line scan cameras (57.3mm length / pixel sizes 3.5µm and 82mm length / pixel size appr. 5µm)
- for 12k line scan cameras (62.5mm length / pixel sizes appr. 5µm)
- High resolution optics 400 - 1000 nm
- Robust mechanics for industrial environment
- Vibration insensitive
- Focus and iris setting lockable

Applications

- 12k TDI inspection
- High-resolution 16k line scan applications
- Machine Vision and other imaging applications with high throughput
- Flat panel inspection
- Digitalization
- Detection of micro defects

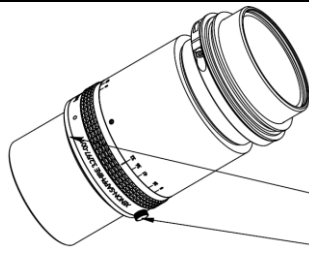
Technical Specifications	XENON-SAPPHIRE 3,2/97-0011
F# range	3.2 – 11,3
Focal length	97 mm
Image circle	62.5 mm also suitable for 82 mm 16K
Beta'	-1.43 (-1.35 ... -1.54)
Object to image distance	388 (384 ... 394mm)
Transmission	400 -1000 nm
Interface	Schneider V-mount 70
Weight	840 gr.
Code no.	1076096

Accessories

		Code no.
Adapter V70 / M72 x 0.75	10 mm	# 1072419
Extension tube	5 mm	# 1072420
Extension tube	10 mm	# 1072421
Extension tube	25 mm	# 26406
Extension tube	50 mm	# 1054733
Extension tube	100 mm	# 1079483
Extension tube	200 mm	# 1079484

For use with 82 mm line sensor further accessories with larger diameter are available on request.

XENON-SAPPHIRE 3.2/97 (in retro)



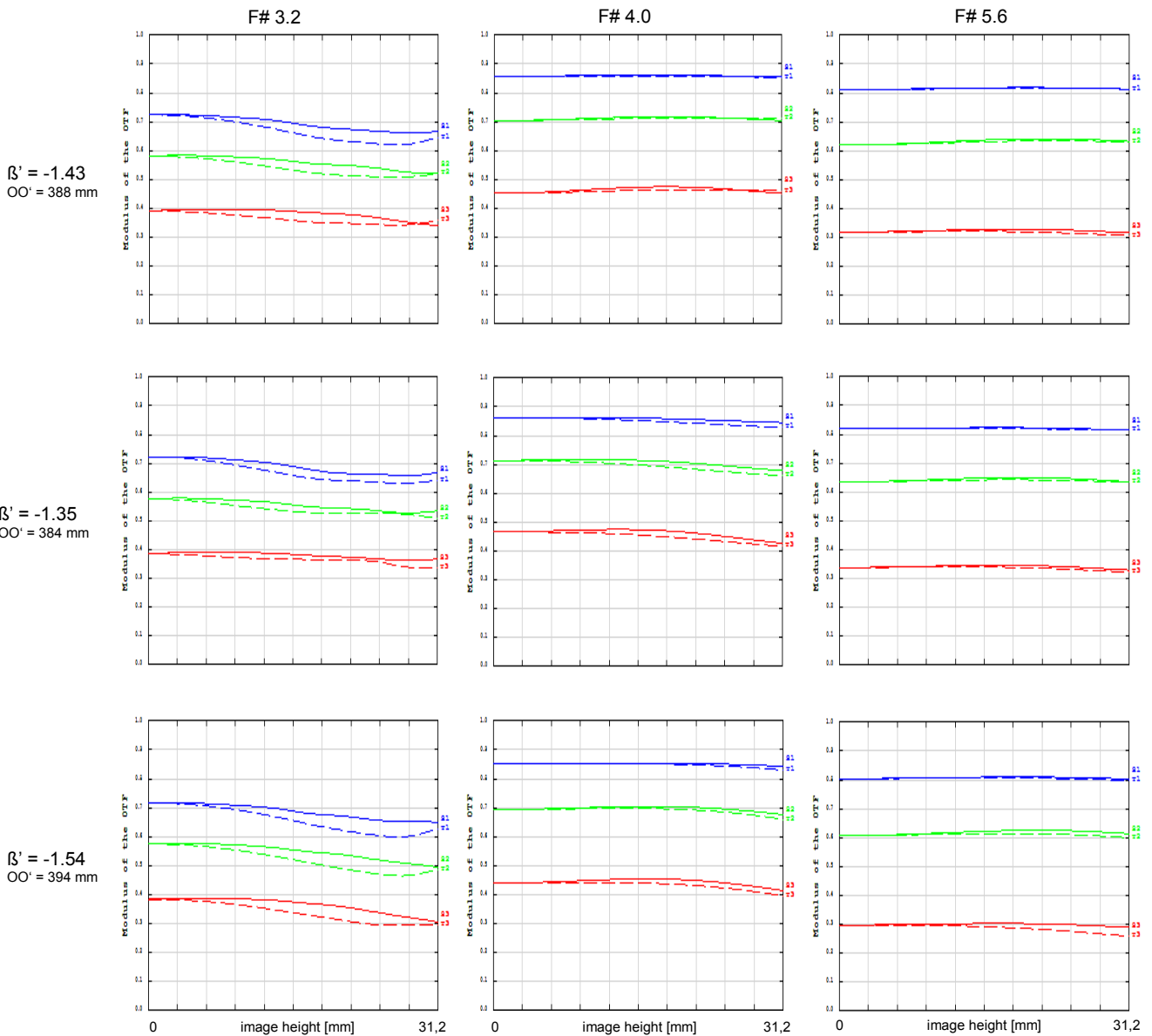
roter Punkt, Kennzeichnung
bester vermittelter Azimut,
90° versetzt zu Zeilenrichtung
red dot marking for best azimuth
90° to line direction
Rändelschraube zur Blendenklemmung
(knurled screw for iris lock)

XENON SAPHIRE 3.2/97

f= 97,0 mm $\beta'_p = 1,03$
 $s_F = -52,8$ mm $s_{EP} = 46,8$ mm
 $s'_F = 49,6$ mm $s'_{AP} = -44,9$ mm
 HH' = -12,25 mm $\square d = 79,3$ mm

XENON Sapphire 3.2/97 (in retro) MTF with reference to image height for 12K line sensor with 5 μ m pixel or 16K with 3.5 μ m pixel

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]:	18	36	72 (= 12K sensor)					
Image- \emptyset	[mm]:	62.5							

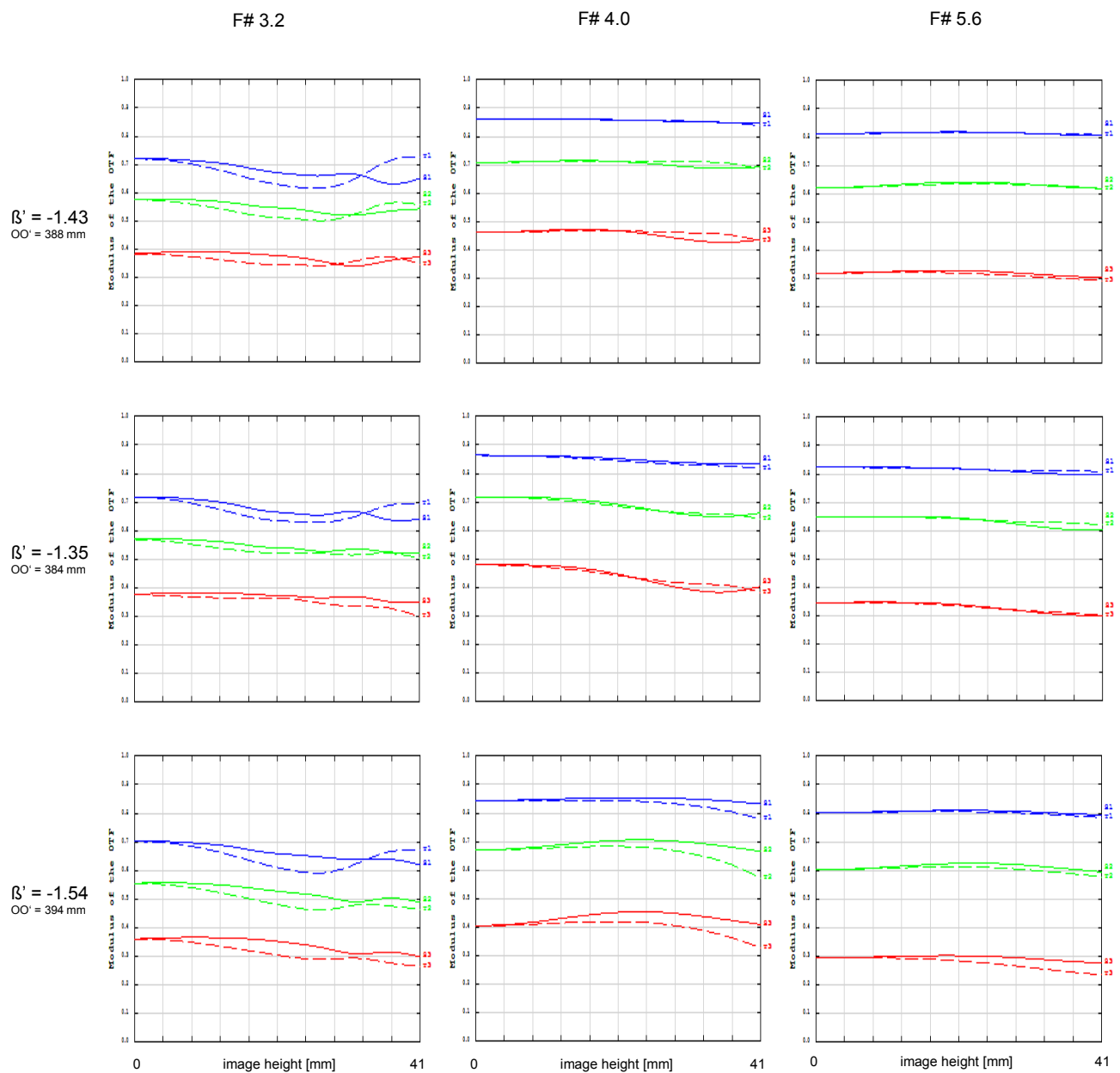


XENON-SAPPHIRE 3.2/97 (in retro)

XENON Sapphire 3.2/97 (in retro)
 MTF with reference to image height
 for 82 mm 16K line sensor with 5 μ m pixel size

Wavelength λ	[nm]:	425	475	525	575	625	675	
Spectral weighting	[%]:	1.5	13.6	26.5	27.8	24.2	6.4	
Spatial frequency R	[1/mm]:	18	36	72	(= 16K sensor)			
Image- \emptyset	[mm]:	82						

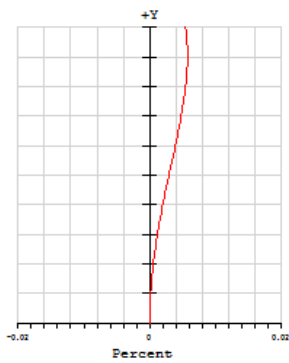
radial ———
 tangential - - - - -



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XENON-SAPPHIRE 3.2/97 (in retro)

Distortion
for 12K line sensor

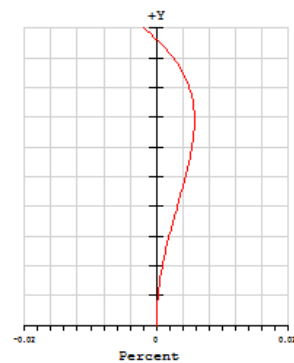


Distortion is shown for different magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

$$\beta' = -1.43$$

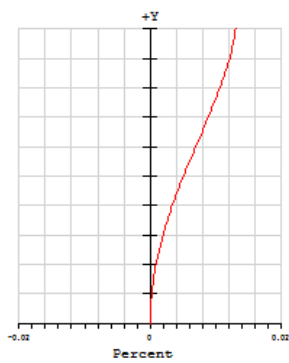
$$OO' = 388$$

Distortion
for 82 mm 16K line sensor



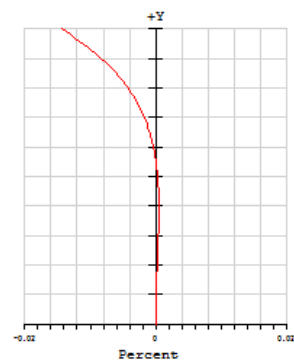
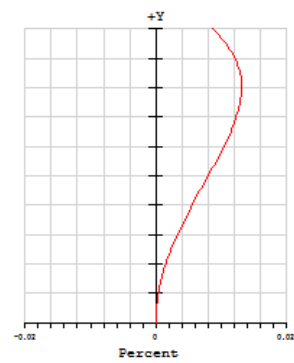
$$\beta' = -1.35$$

$$OO' = 384$$



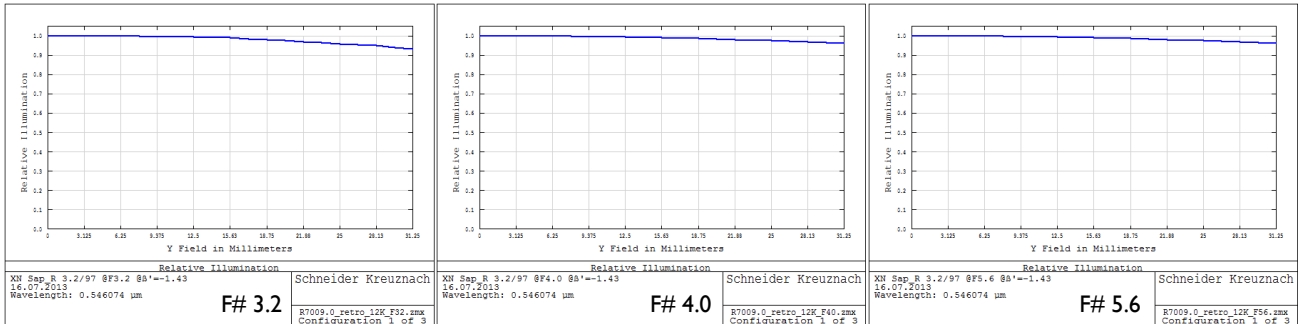
$$\beta' = -1.54$$

$$OO' = 394$$

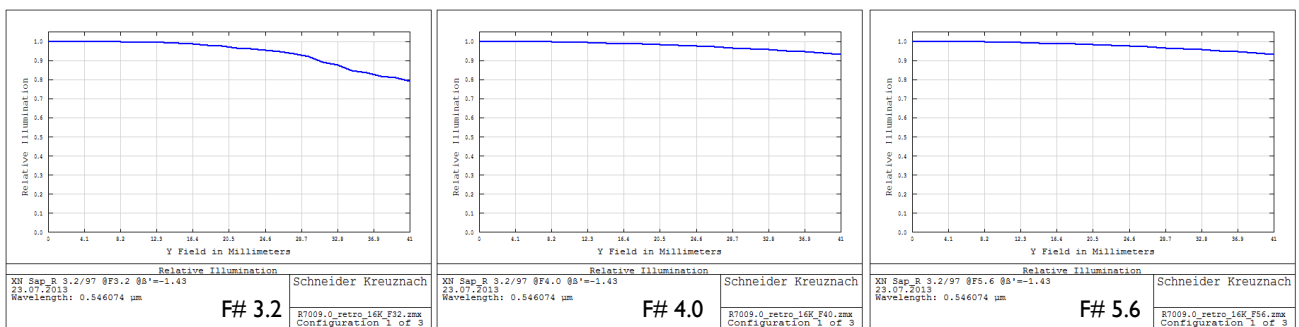


XENON-SAPPHIRE 3.2/97 (in retro)

Relative Illumination for 12K line sensor

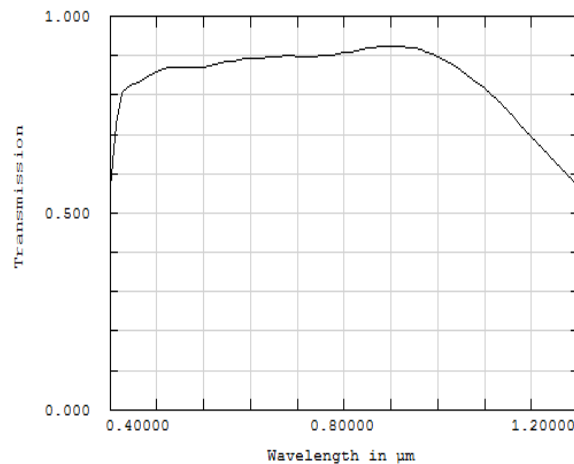


Relative Illumination for 82 mm 16K line sensor



Transmission

Relative spectral transmission is shown with reference to wavelength.



XENON-SAPPHIRE 3.2/97 (in retro)

