

# Line Scan Lens

## XENON-DIAMOND 2.2/117, beta' = -3.5x

This lens is optimized for the use with 12k pixel line scan sensors but can also be used for 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.

- Extremely high resolution of 1.5  $\mu\text{m}$  in object space
- Highest light throughput with maximum opening at F# 2.2
- High and homogeneous MTF @72 lp/mm over entire field
- Distortion for 12K line sensor smaller than 0.04%



XENON-Diamond

### Key Features

- for line scan cameras
  - 12K (62.5 mm length / pixel sizes appr. 5  $\mu\text{m}$ )
  - 16K (82 mm length / pixel sizes appr. 5  $\mu\text{m}$ )
- Very high optical image quality for large sensors
- 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

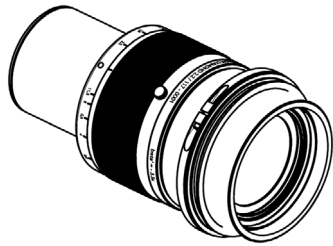
- Web and surface inspections
- Quality control
- FPD inspection
- PCB inspection
- OLED inspection
- Line scan applications

Technical Specifications	XENON-DIAMOND 2.2/117
F# range	2.2 – 11.3
Focal length	116.9 mm
Image circle	62.5 / 82 mm
Beta'	-3.5 (-3.35 ... -3.65)
Object to image distance	668 (652 ... 684) mm
Transmission	400 - 1000 nm
Interface	Schneider V-mount 90
Weight	1920 gr.
Filter thread	M40.5 x 0.5
Code no. of lens	1076963

### Accessories

		Code no.
Adapter V90 / M95 x 1	10 mm	1077293
Extension tube M95	10 mm	1077290
Extension tube M95	25 mm	1062892
Extension tube M95	50 mm	1062893
Extension tube M95	100 mm	1062894
Extension tube M95	200 mm	1077291
Adapter M95 x 1 / M72 x 0.75		1077295
Extension tube M72	5 mm	1072420
Extension tube M72	10 mm	1072421
Extension tube M72	25 mm	26406
Extension tube M72	50 mm	1054733
Extension tube M72	100 mm	1079483
Extension tube M72	200 mm	1079484

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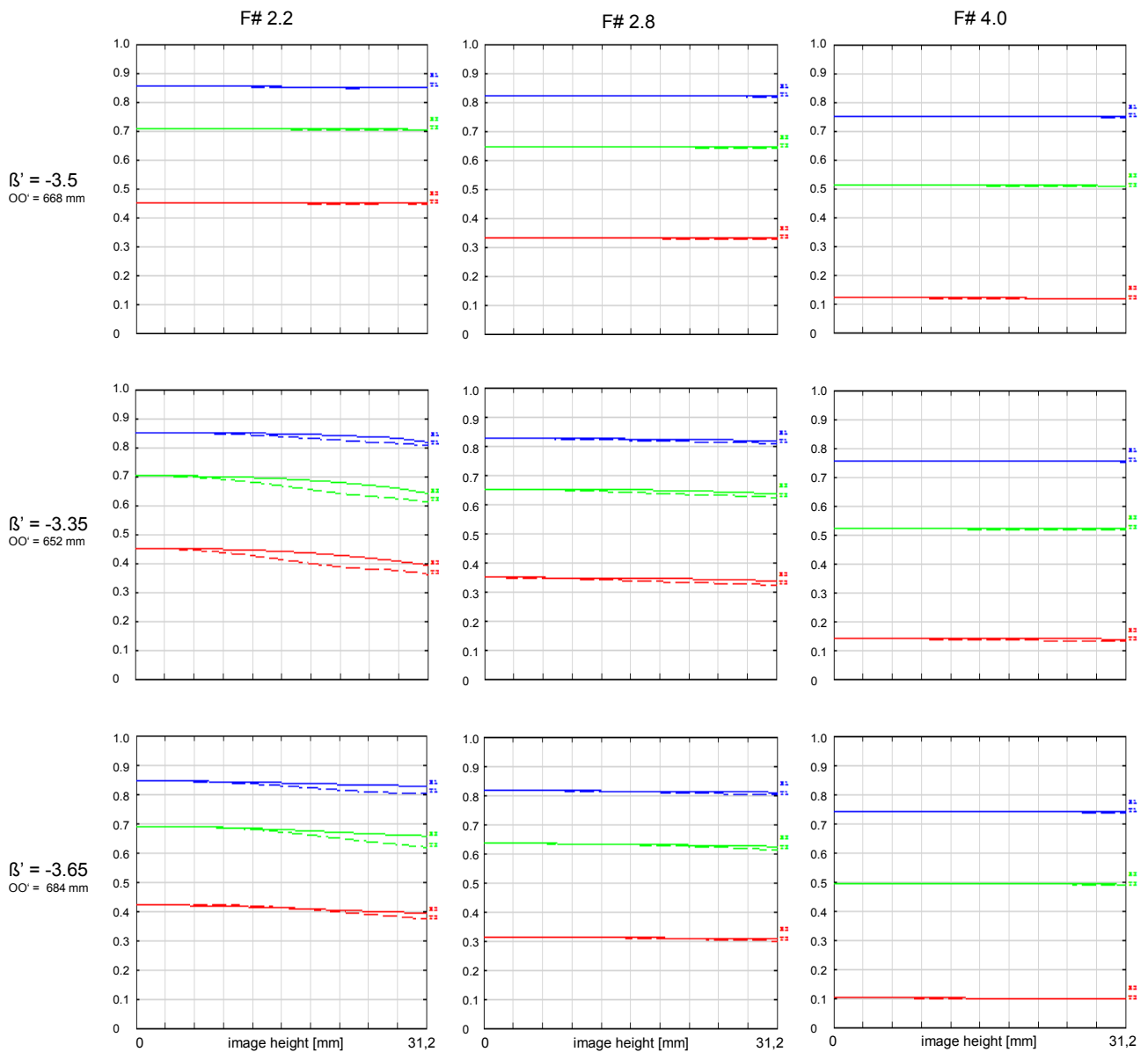


## XENON DIAMOND 2.2/117

$f' =$	116.9 mm	$\beta'_P =$	0.95
$s_F =$	-43.8 mm	$s_{EP} =$	79.5 mm
$s'_F =$	30.7 mm	$s'_{AP} =$	-80.3 mm
$HH' =$	-8.3 mm	$\Sigma d =$	151.1 mm

### XENON Diamond 2.2/117 MTF with reference to image height for a 12K (5 $\mu$ m pixel) sensor

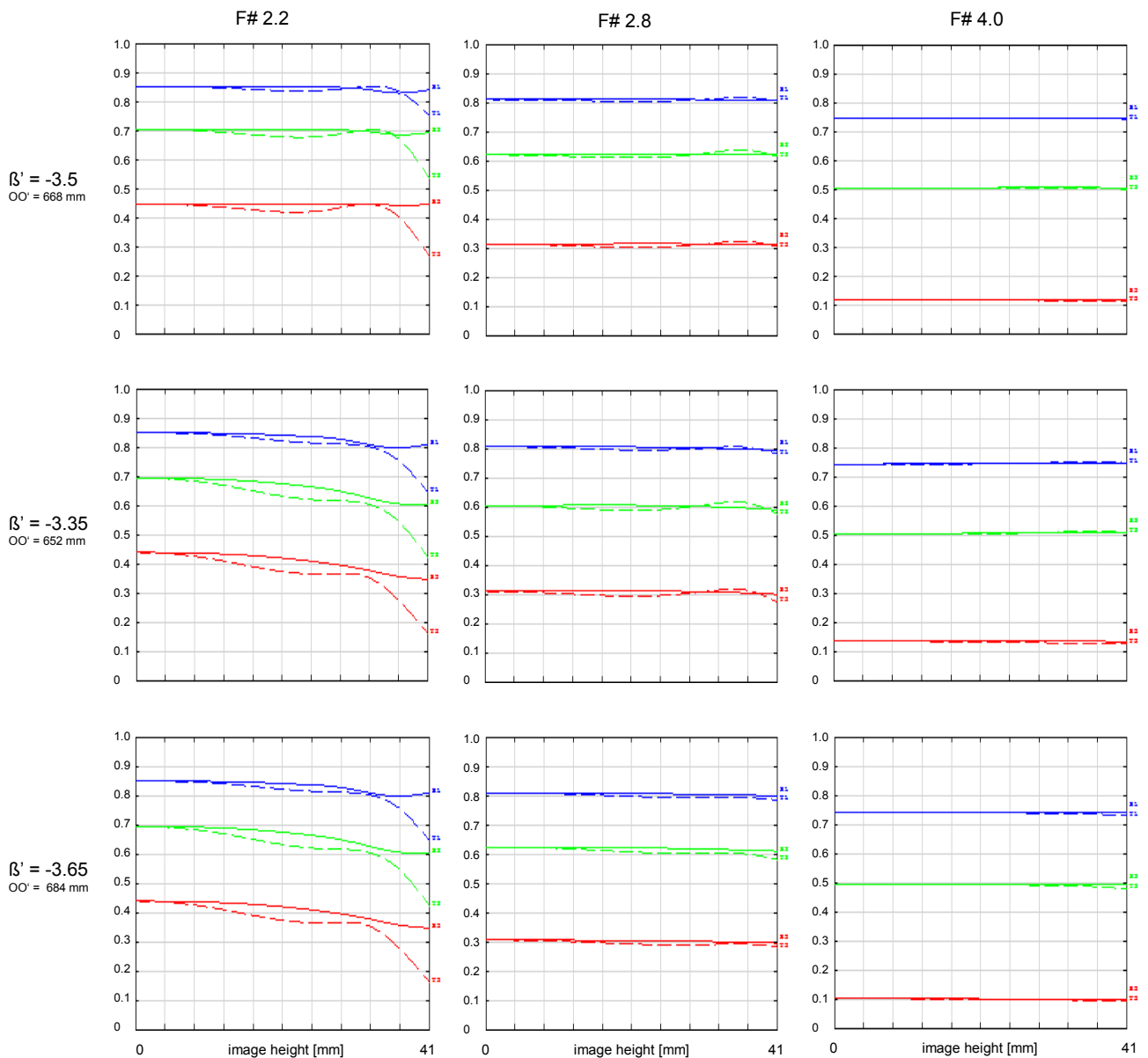
Wavelength $\lambda$	[nm]:	425	475	525	575	625	675	radial	—————
Spectral weighting	[%]:	1.5	13.6	26.5	27.8	24.2	6.4	tangential	- - - - -
Spatial frequency R	[1/mm]:	18	36	72					
Image- $\emptyset$	[mm]:	62.5							



# Xenon-Diamond 2.2/117

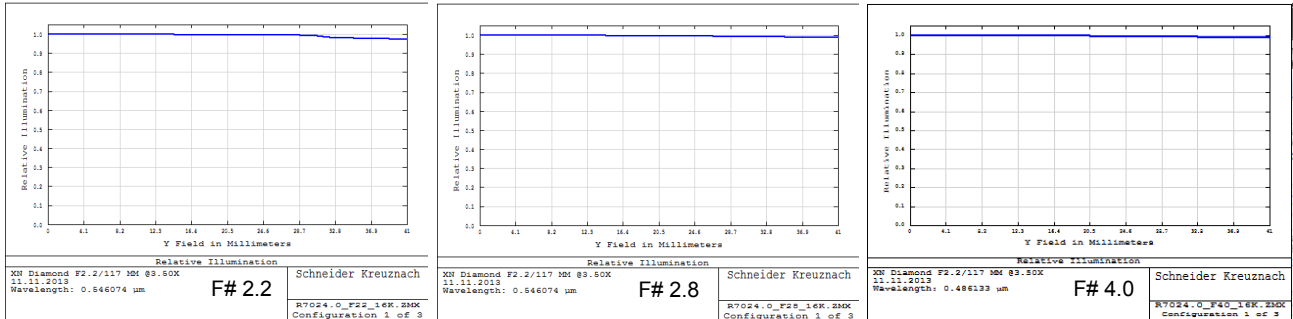
XENON Diamond 2.2/117  
MTF with reference to image height for a 16K (5µm pixel) sensor

Wavelength $\lambda$	[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					
Image-Ø	[mm]:	82							

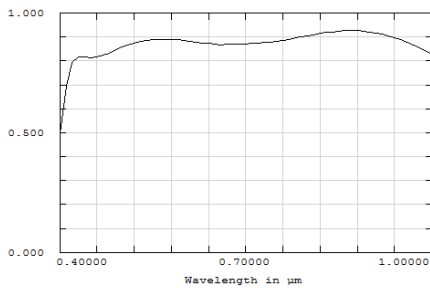


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## Relative Illumination for sensor length up to 82 mm

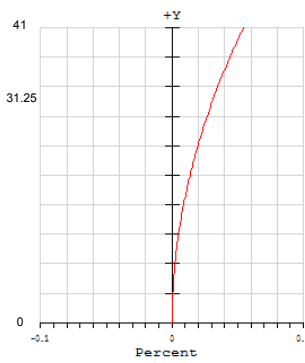


## Transmission



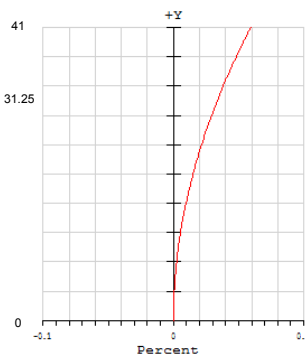
## Distortion for sensor length up to 82

$\beta' = -3.5$   
OO' = 668 mm

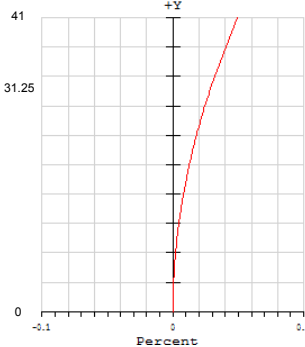


Distortion is shown for different magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

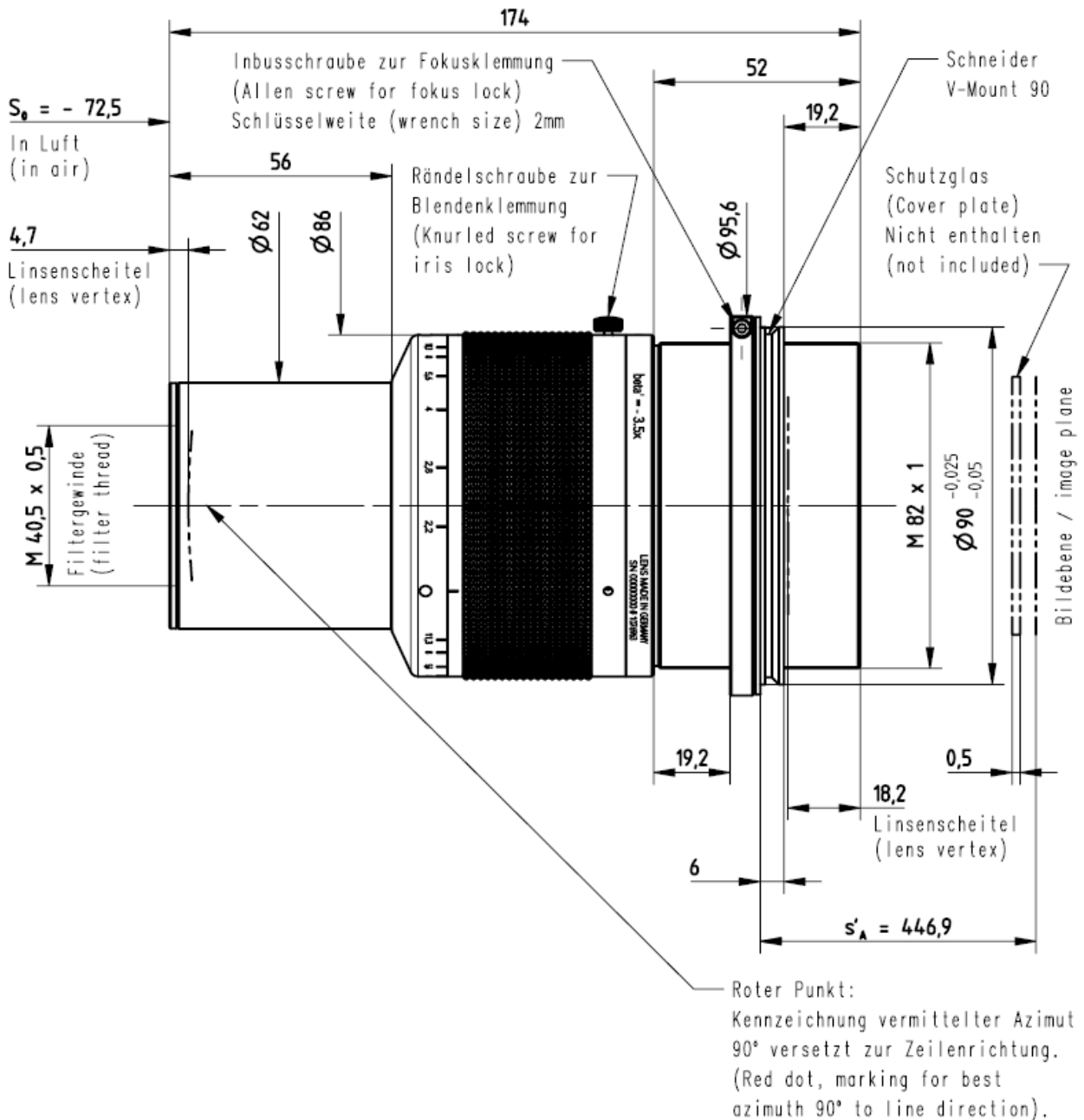
$\beta' = -3.35$   
OO' = 652 mm



$\beta' = -3.65$   
OO' = 684 mm



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