

Line Scan Lens

XENON-DIAMOND 2.3/116, beta' = -3.5x for use with Beam Splitter Prism (BSP)

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

- Extremely high resolution of 1.5 µm in object space
- Highest light throughput with maximum opening at F# 2.3
- High and homogeneous MTF @72 lp/mm over entire field
- Distortion for 12K line sensor smaller than 0.04%



XENON-Diamond
for use with BSP

Key Features

- for line scan cameras
 - 12K (62.5 mm length / pixel sizes appr. 5 µm)
 - 16K (82 mm length / pixel sizes appr. 5 µm)
- 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 2.3/116
F# range	2.3 – 11.3
Focal length	116.0 mm
Image circle	62.5 / 82 mm
Beta'	-3.5 (-3.35 ... -3.65)
Object to image distance	672 (656 ... 688) mm
Transmission	400 - 1000 nm
Interface	Schneider V-mount 90
Weight	1910 gr.
Filter thread	M40.5 x 0.5
Code no. of lens itself	1076964
Code no. of combination lens + mounted BSP	1079718

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

See picture upper right corner



Please note that this lens works only properly with a 25 mm (BK7) Beam Splitter Prism at the object side.

If a pellicle is used instead of a BSP a different lens (designed without 25 mm BK7) has to be used.

Xenon-Diamond 2.3/116 for use with BSP

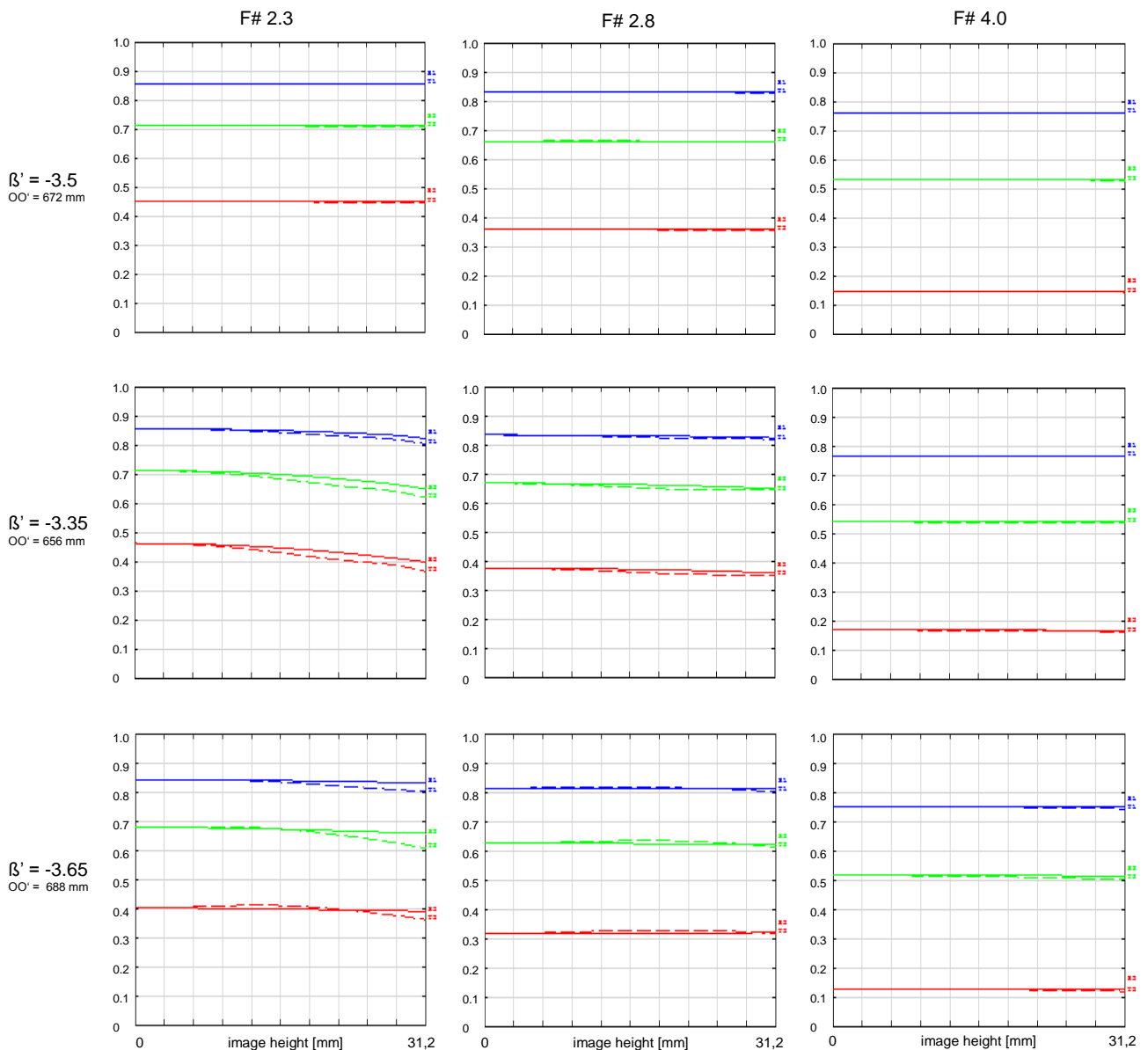


XENON DIAMOND 2.3/116

f=	116.0 mm	s _{EP} =	62.3 mm
sH=	60.1 mm	ØEP =	51.6 mm
s'H'=	-89.7 mm	s' _{AP} =	-87.6 mm
HH'=	0.83 mm	ØAP =	50.6 mm

XENON Diamond 2.3/116 for use with BSP MTF with reference to image height for a 12K (5µm pixel) sensor

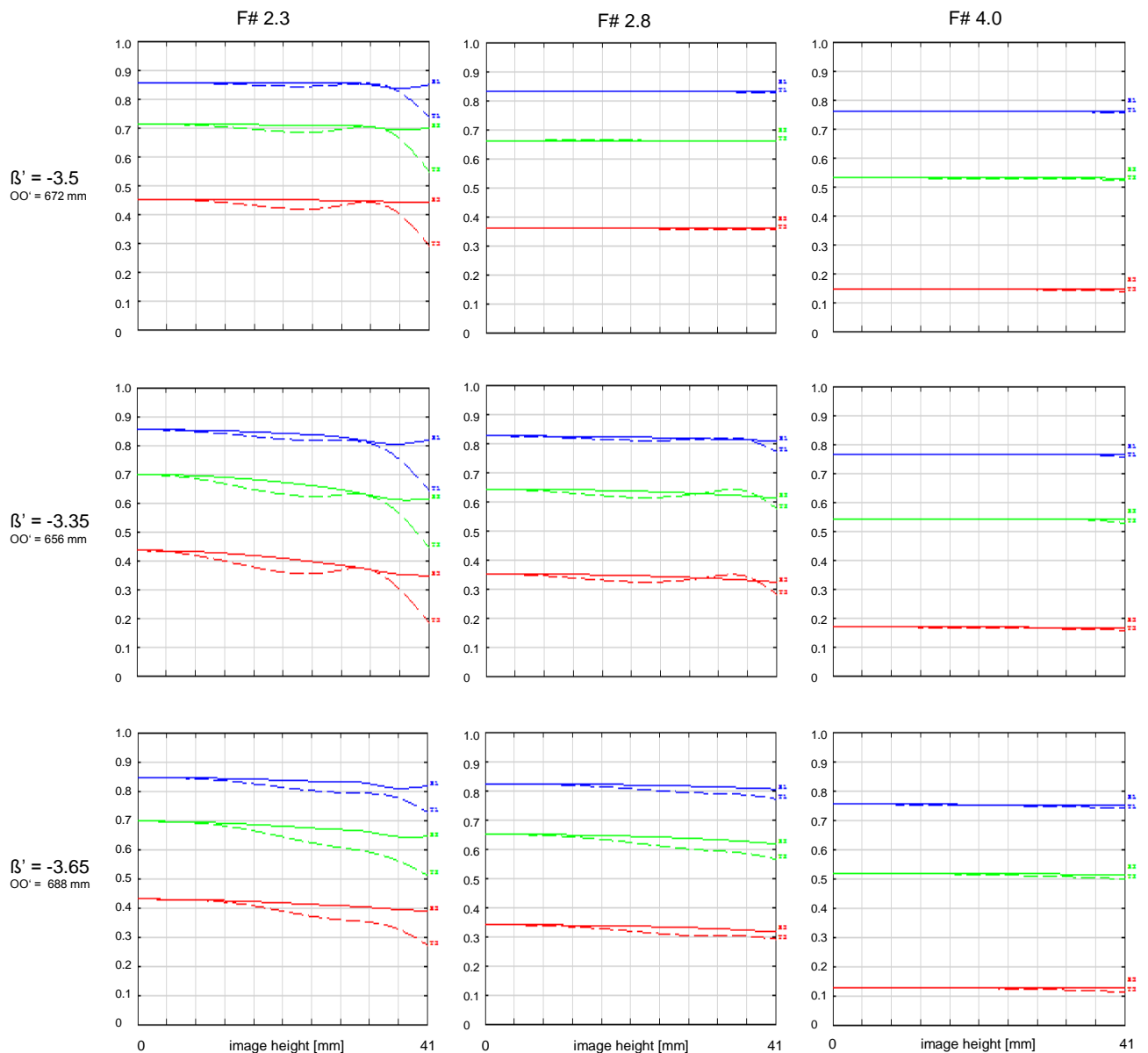
Wavelength λ	[nm]:	425	475	525	575	625	675	radial	_____
Spectral weighting	[%]:	1.5	13.6	26.5	27.8	24.2	6.4	tangential	- - - - -
Spatial frequency R	[1/mm]:	18	36	72					
Image-Ø	[mm]:	62.5							



Xenon-Diamond 2.3/116 for use with BSP

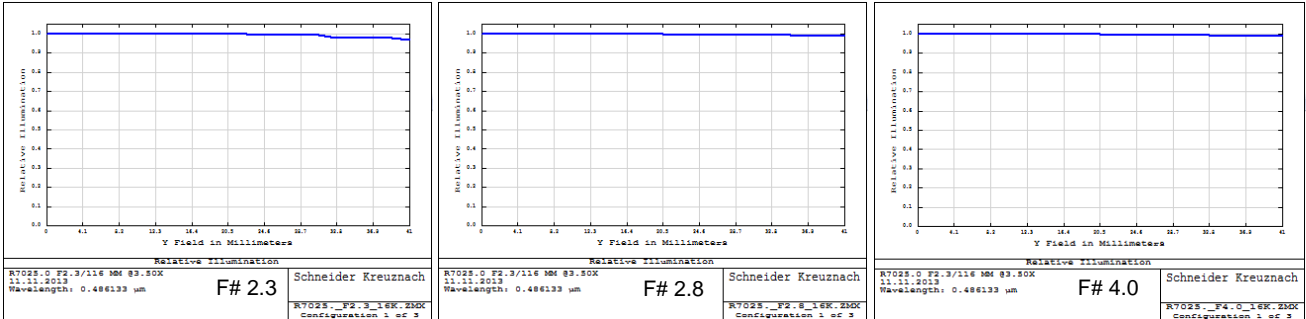
XENON Diamond 2.3/116 for use with BSP
 MTF with reference to image height for a 16K (5µm pixel) sensor

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					
Image- \emptyset	[mm]:	82							

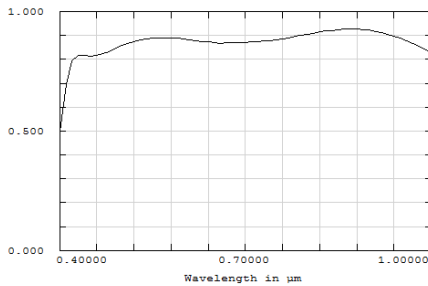


Xenon-Diamond 2.3/116 for use with BSP

Relative Illumination for sensor length up to 82 mm

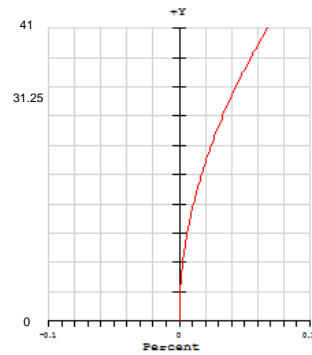


Transmission



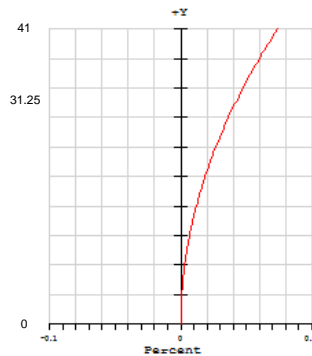
$\beta' = -3.5$
OO' = 672 mm

Distortion for sensor length up to 82

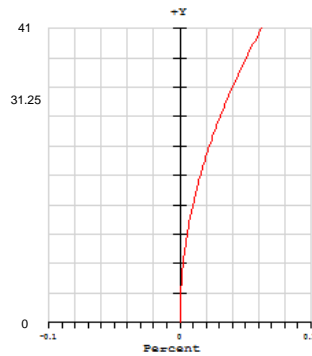


Distortion is shown for different magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

$\beta' = -3.35$
OO' = 656 mm

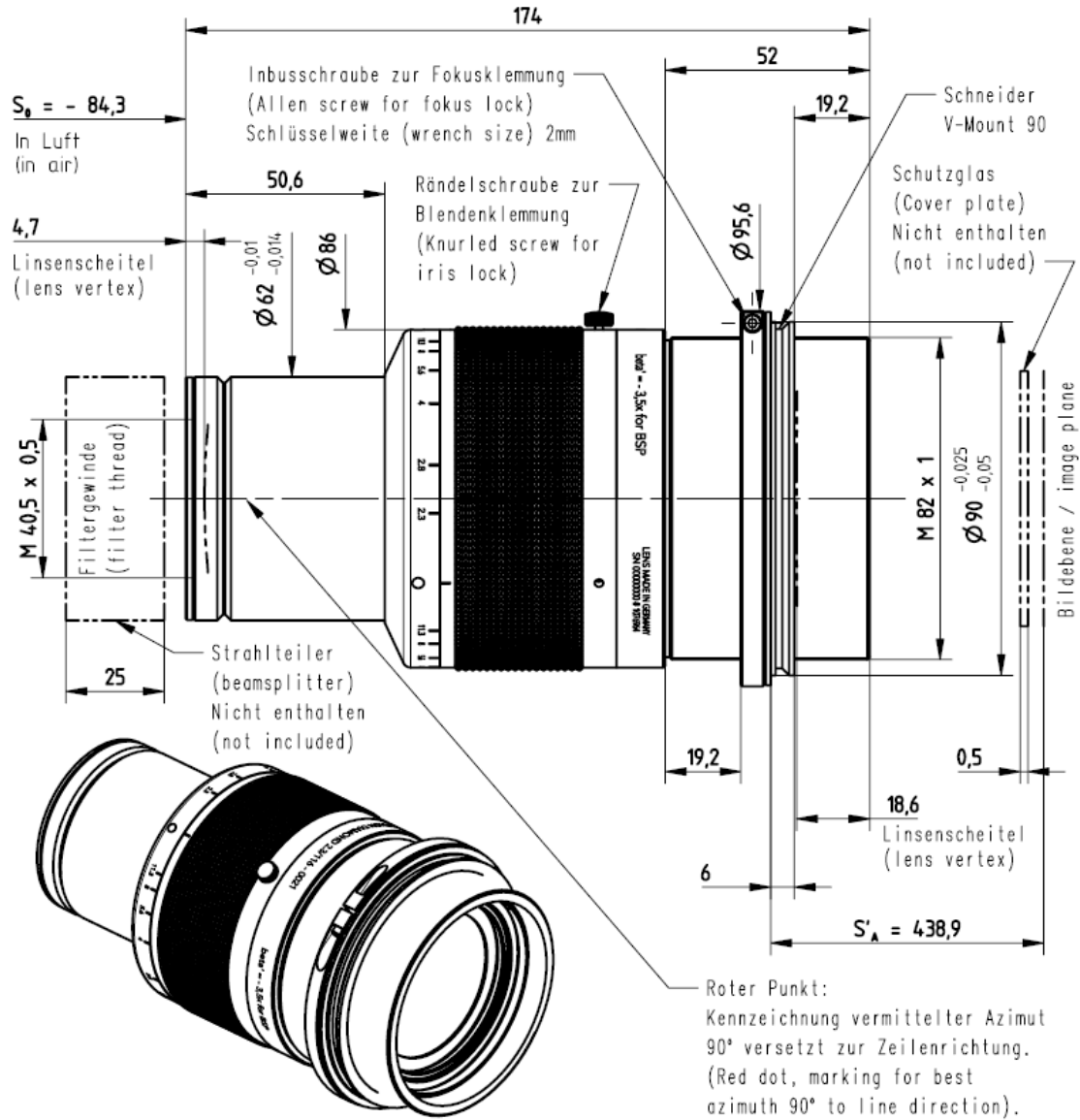


$\beta' = -3.65$
OO' = 688 mm



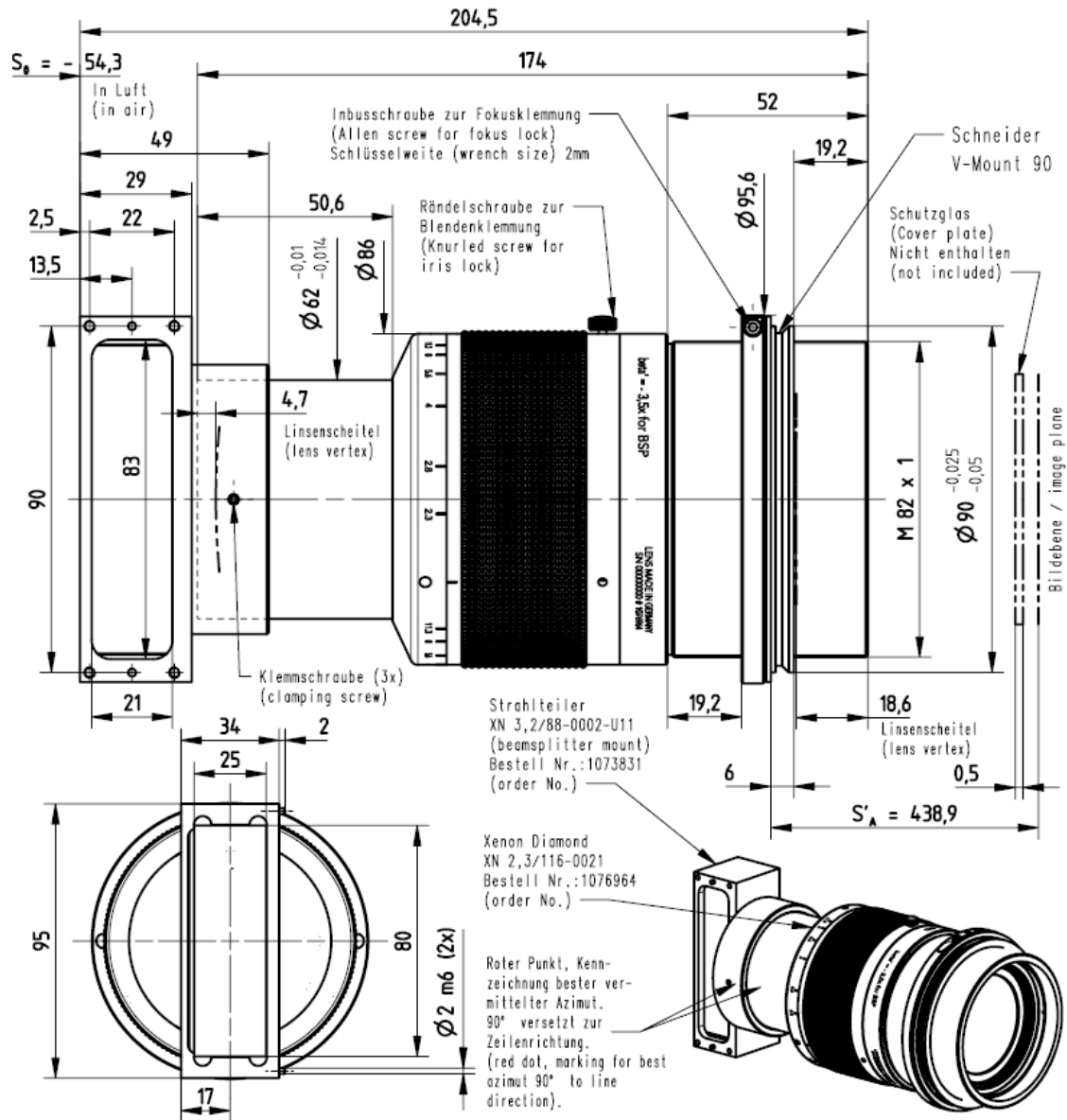
Xenon-Diamond 2.3/116 for use with BSP

Lens XENON-DIAMOND 2.3/116 for use with BSP
 code no. 1076964
 -> no beam splitter prism mounted



Xenon-Diamond 2.3/116 for use with BSP

Lens XENON-DIAMOND 2.3/116 for use with BSP
 -> with mounted beam splitter prism
 code no. 1079718



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