Xenon-Diamond 2.3/116 | -3.5x | BS

This lens with beam splitter for axial illumination is optimized for 12k / 5µm (62.5 mm) line scan sensors. The lens provides high performance at >72 LP/mm with low color shift and detects the smallest targets to solve the most challenging applications. The V-Mount interface makes it easy to install mounts and to rotate the lens into the highest performance.

Key features

- Broadband AR 400-700nm
- Low chromatic focal shift
- Resolves 3.5µm
- Axial In-line Illumination

Applications

- PCB inspection
- Flat Panel inspection
- LCD inspection
- Alignment tasks

Technical specifications

Type	-0003
ID	1079718
Interface	V90-Mount
Focal length [mm]	116
F/# range	F/2.3 ... F/11.3
Numerical aperture	0.16
Max. sensor size [mm]	62.5
Max. angle of view [°]	7
Rec. magnification range	-3.5 (-3.65 ... -3.35)
Rec. working distance range [mm]	52 ... 55
Max. mechanical focus travel [mm]	38.4
Filter thread [mm]	-
Storage temperature [°C]	0 … +50
Net. weight [g]	2260
Additional info	Max. chief ray angle in object space = 3.3°
f'eff [mm]	116.21
SF [mm]	-21.60
S'F' [mm]	33.29
HH' [mm]	-0.62
ß'P	0.97
SEP [mm]	98.22
S'AP [mm]	-79.42
Σd [mm]	176.90

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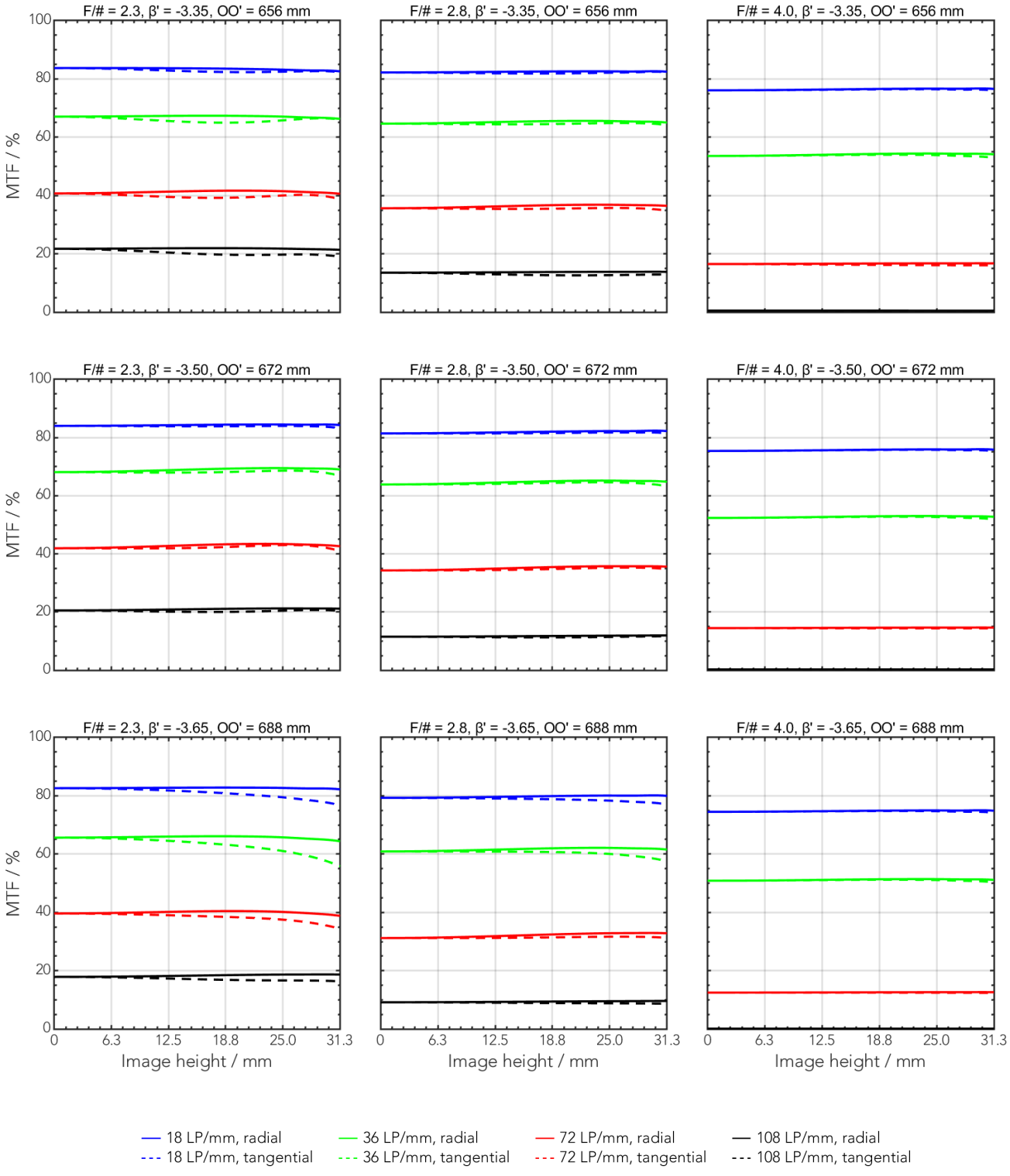
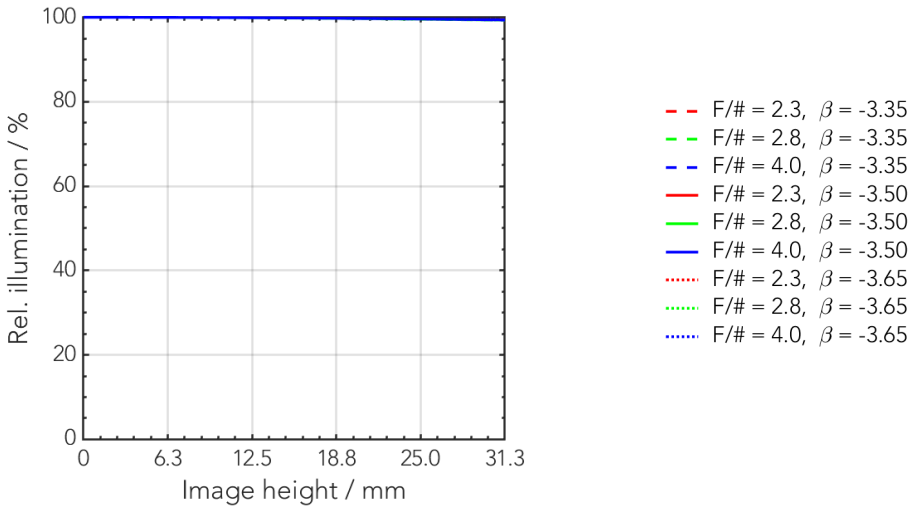
MTF charts

Spectrum name	VIS LED					
Wavelengths [nm]	425	475	525	575	625	675
Rel. weights [%]	1.5	13.6	26.5	27.8	24.2	6.4

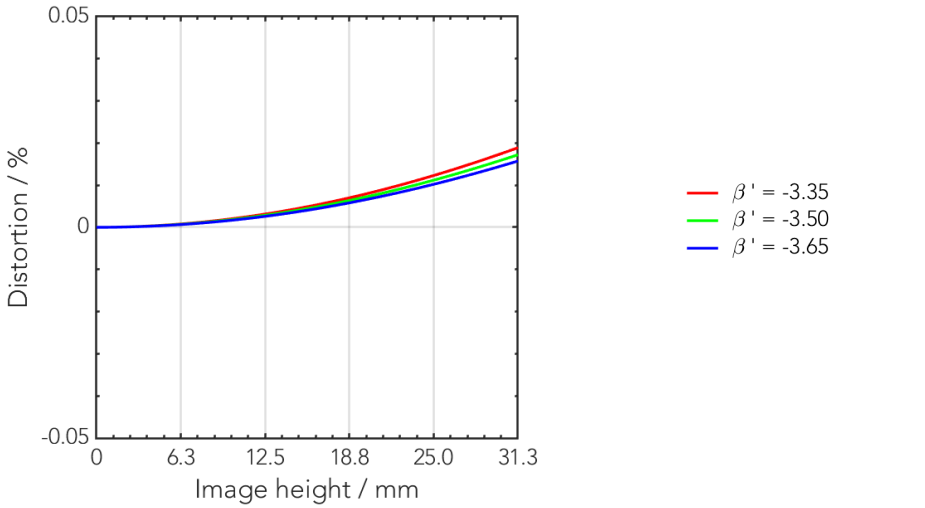


Xenon-Diamond 2.3/116 | -3.5x | BS

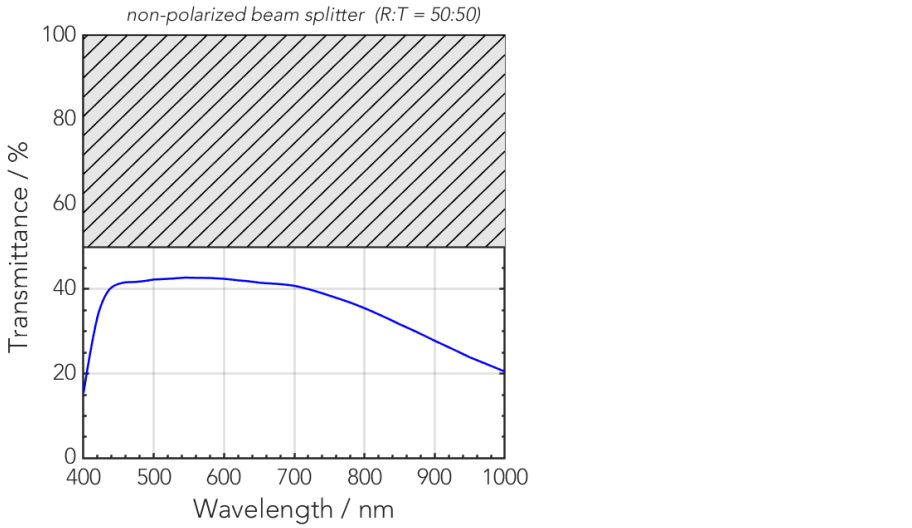
Rel. illumination vs. image height



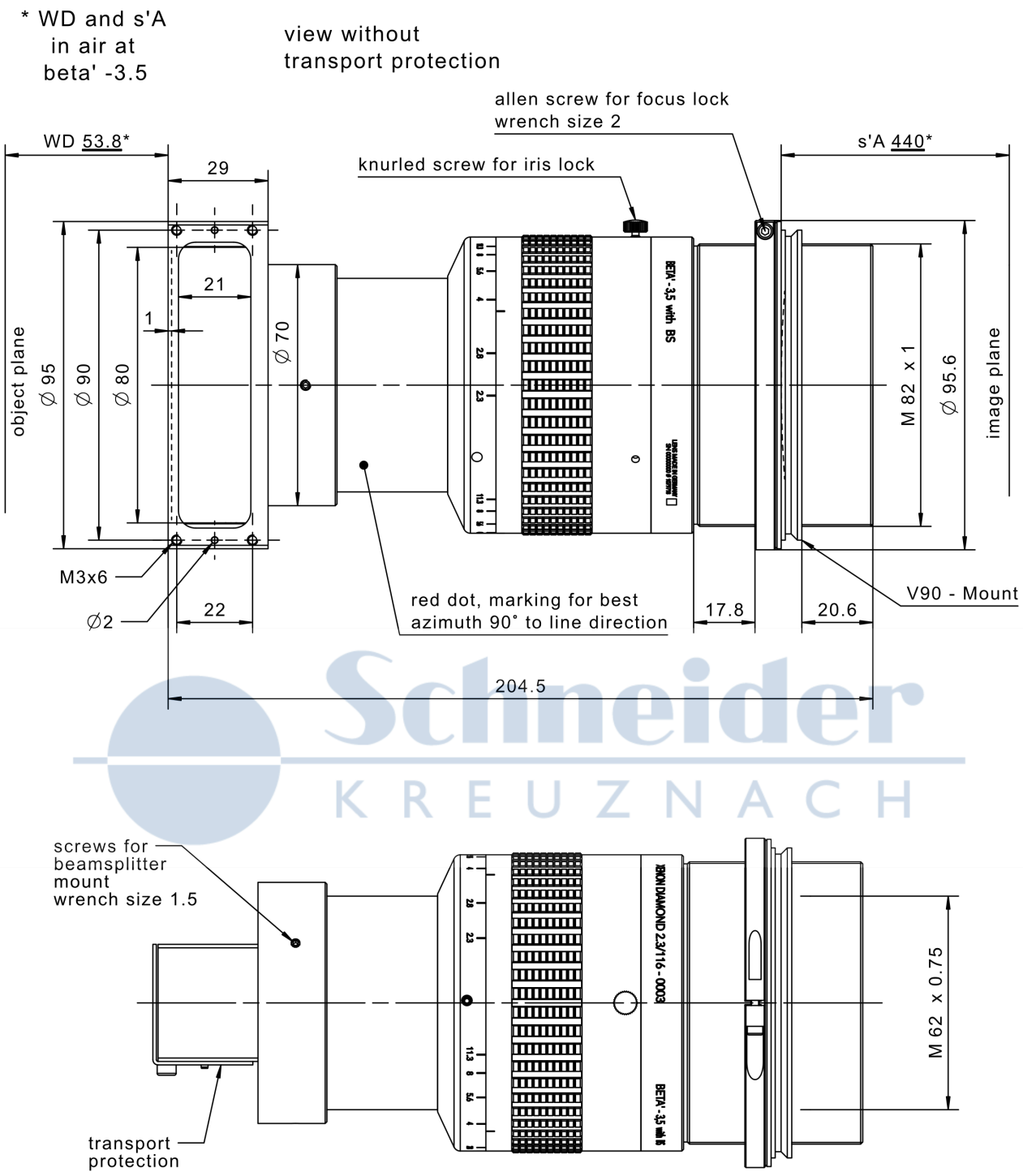
Distortion vs. image height



Transmittance vs. wavelength



Technical drawings



standard

Xenon-Diamond 2.3/116 | -3.5x | BS

Accessories	Mount	Eff. length	ID
Adapter	V90 / M95 x 1	10 mm	1077293
Extension tube	M95 x 1 / M95 x 1	10 mm	1077290
	M95 x 1 / M95 x 1	25 mm	1062892
	M95 x 1 / M95 x 1	50 mm	1062893

Annotation	
Focal length	Nominal focal length
F/# range	Image space F-number range for infinity focus position
Numerical aperture	Maximum real numerical aperture (depending on recommended magnification range either for infinity or respective fixed magnification)
Max. sensor size	Image circle diameter
Max. angle of view	Angle of view associated with maximum sensor size (depending on recommended magnification range either for infinity or respective fixed magnification)
Rec. magnification range	Magnification range as recommended by Schneider-Kreuznach
Rec. working distance range	Working distance, i.e. distance between object and first mechanical element, associated with recommended magnification range
Max. mechanical focus travel	Maximum possible movement of the lens from infinity position (depending on recommended magnification range either for infinity or respective fixed magnification)
Net weight	weight of unpacked lens without lens cap
f'eff	Effective focal length
SF	Distance between vertex of first lens surface and object space focal point
S'F'	Distance between vertex of last lens surface and image space focal point (back focal distance at infinity)
HH'	Distance between principal planes
ß'P	Pupil magnification (= exit pupil diameter / entrance pupil diameter)
SEP	Distance between vertex of first lens surface and entrance pupil
S'AP	Distance between vertex of last lens surface and exit pupil
Σ d	Distance between vertices of first and last lens surface
s'A	Flange focal distance (in air) for infinite object distance (depending on recommended magnification range either for infinity or respective fixed magnification)
ß'	Magnification (= image size / object size), negative value because image is inverted
OO'	Distance between object and image

Unless otherwise stated all dimensions in this data sheet are in mm.

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