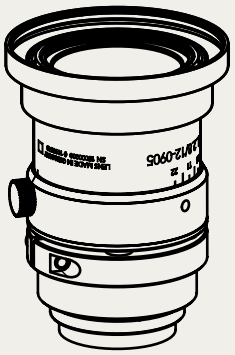
Xenon-Opal 2.8/12

The Xenon-Opal 2.8/12 is a robust C-mount lens for 1.1" sensor down to 3 µm pixel size. With a max. chief ray angle of 6°, this lens can be used with 12-megapixel cameras using sensors with microlenses. The Xenon-Opal lens fits all kinds of industrial applications up to ∞ (with the best performance at a working distance from 0.3 to 1.5 m). Therefore this lens is the first choice for demanding factory automation systems, such as 3D measurement. The robust mechanics provide a highly stable image in harsh environments, even mounted on an arm of a robot system. Equipped with 400 - 1000 nm broadband AR-coating makes this lens even more flexible regarding used illumination.



Key features

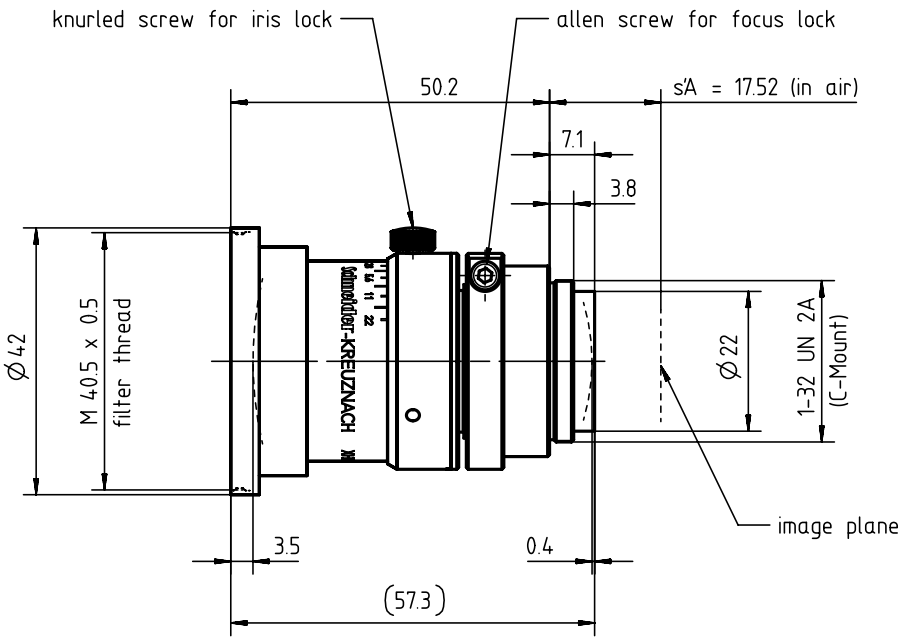
- 12 mm C-mount lens for up to 12 megapixels, 1.1" sensors, 3 µm pixel size
- Max. chief ray angle of 6°
- Vibration insensitivity for stable imaging performance all over the sensor
- Optimized for 0.3 to 1.5 m working distance
- 400 to 1000 nm broadband AR-coating

Applications

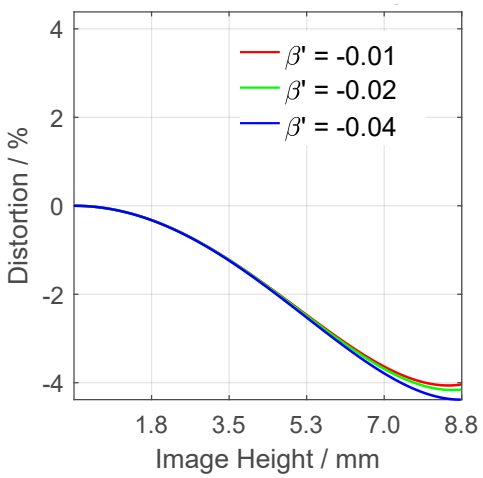
- 3D measurement
- Robotics
- Automation
- Inspection systems
- Medical
- Food & beverage

Name	Xenon-Opal 2.8/12
Type	-0905
ID	1093543
Interface	C-mount
Net weigth [g]	145
Focal length [mm]	12
F/# range	F/2.8 ... F/22
Numerical aperture	0.18
Max. sensor size [mm]	17.6
Max. angle of view for ∞ [°]	75
Rec. magnification range	-0.038 ... 0
Rec. working distance range [mm]	297 ... ∞
Max. mechanical focus travel [mm]	7.7
Filter thread	M40.5 x 0.5
Storage temperature [°C]	-25 … +70
f'eff [mm]	11.85
SF [mm]	11.38
S'F' [mm]	10.79
HH' [mm]	29.10
ß'P	5.78
SEP [mm]	13.43
S'AP [mm]	-57.73
∑d [mm]	53.38

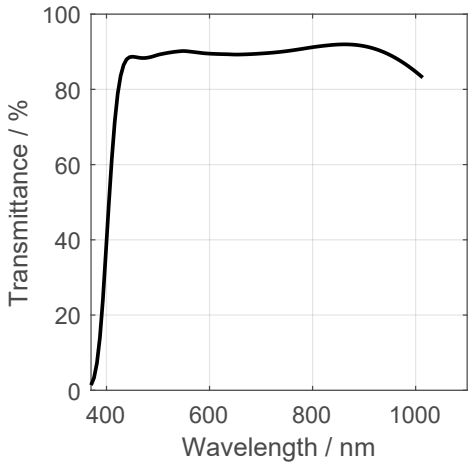
Xenon-Opal 2.8/12



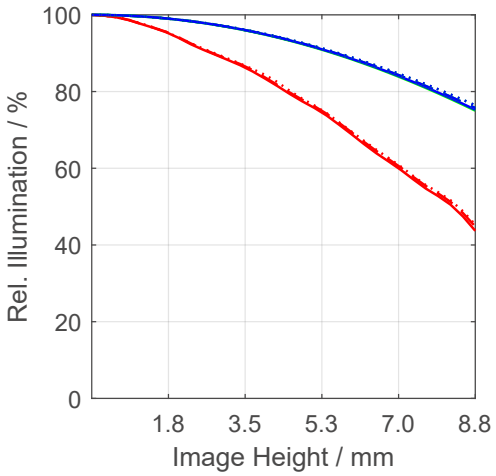
Distortion vs. image height



Transmittance vs. wavelength



Relative illumination vs. image height



F# = 2.80, β' = -0.01
F# = 5.60, β' = -0.01
F# = 8.00, β' = -0.01
F# = 2.80, β' = -0.02
F# = 5.60, β' = -0.02
F# = 8.00, β' = -0.02
F# = 2.80, β' = -0.04
F# = 5.60, β' = -0.04
F# = 8.00, β' = -0.04

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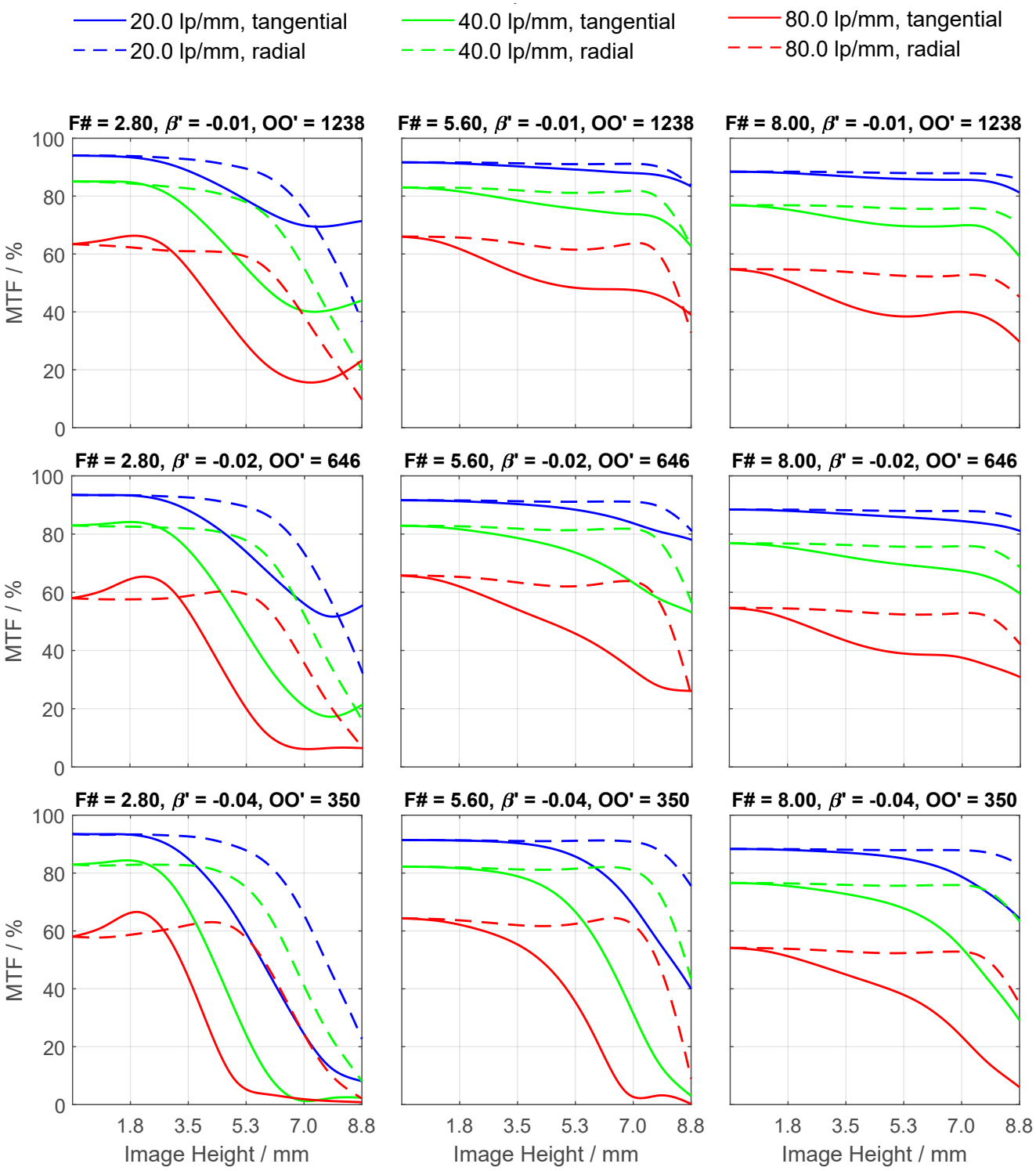
Spectrum name	VIS					
Wavelenghts [nm]	425	475	525	575	625	675
Rel. weights	8	16	23	22	19	13



Accessories	Mount	Eff. length	ID
Adapter	CS-mount adapter	5 mm	25081
	C-mount / M42 x 1 adapter	5.5 mm	1075817
Ext. tube	C-mount	5 mm	39316
	C-mount	8 mm	39315
	C-mount	10 mm	39312

Annotation	
Focal length	Nominal focal length
F/# range	Image space F-number range for infinity
Numerical aperture	Maximum image space numerical aperture for infinity
Max. sensor size	Image circle diameter
Max. angle of view	Angle of view associated with max. sensor size (Depending on rec. magnification range either for 1) infinity or 2) 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
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
∑ d	Distance between vertices of first and last lens surface
s'A	Flange focal distance (in air) for infinite object distance
ß'	Magnification (= image height / object height)
OO'	Distance between object and image

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

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