CRYOLITE 2.8/40 V38

This compact SWIR lens with 43.2mm image circle is designed for the 800 - 1800 nm spectral range. With its robust mechanical design and a locking screw for the iris setting it maintains its high optical imaging performance even in harsh environment. A special SWIR coating and internal lacquering reduces stray light, resulting in a high contrast images. The V38-Mount fits to the modular Unifoc system with its large variety of accessories, including focusing mounts, extension tubes and camera adapters.

Key features

- Optimized for 800 - 1800 nm
- For sensor sizes up to 43.2mm
- Compact and robust mechanics
- V38-Mount for flexible system integration

Applications

- Solar cell inspection
- Food sorting
- Agriculture observation
- Geology analysis

Technical specifications

Type [standard]	V38
ID [standard]	1063164
Interface	V38-Mount
Focal length [mm]	40
F/# range	F/2.8 ... F/16
Numerical aperture [object | image]	- | 0.17
Max. sensor size [mm]	43.2
Max. angle of view [°]	55
Rec. magnification range	-0.2 ... 0
Rec. working distance range [mm]	225 ... ∞
Max. mechanical focus travel [mm]	-
Filter thread [mm]	M37 x 0.75
Storage temperature [°C]	-25 … +70
Net. weight [g]	108
Additional info	-
f'eff [mm]	42.03
SF [mm]	-25.04
S'F' [mm]	28.38
HH' [mm]	-2.17
ß'P	1.05
SEP [mm]	15.02
S'AP [mm]	-15.72
Σd [mm]	28.47

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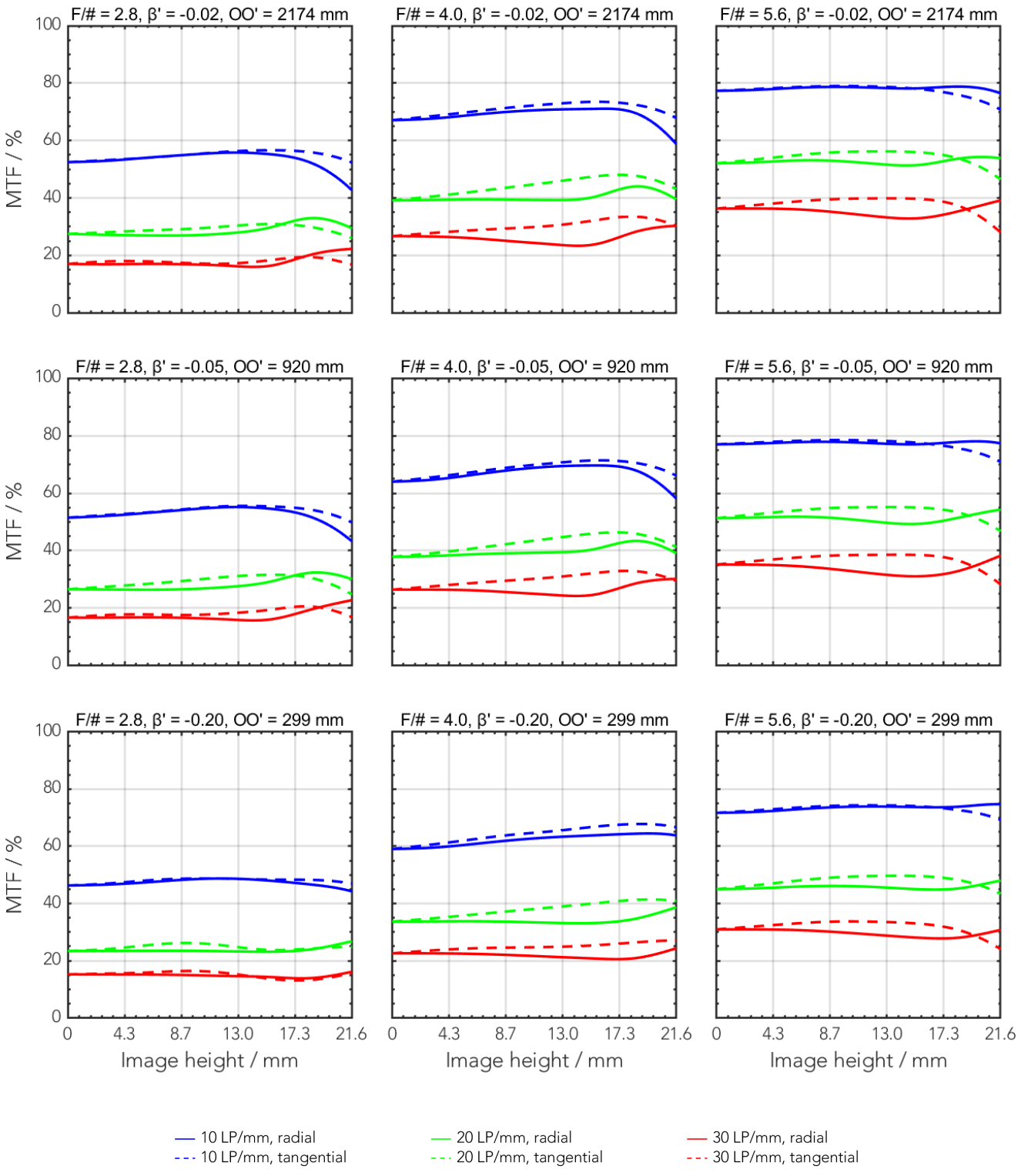
MTF charts

Spectrum name	SWIR					
Wavelengths [nm]	920	1070	1220	1370	1520	1670
Rel. weights [%]	16.9	18.2	17.7	17.1	15.9	14.2



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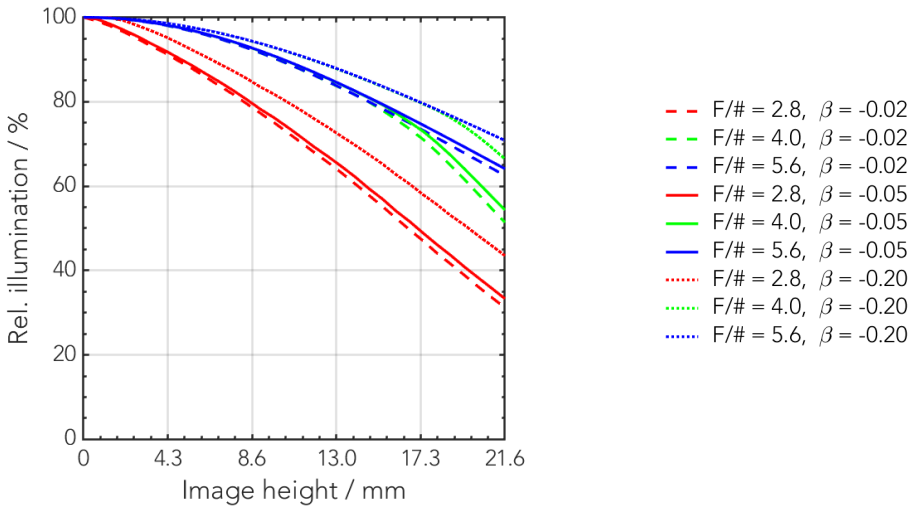
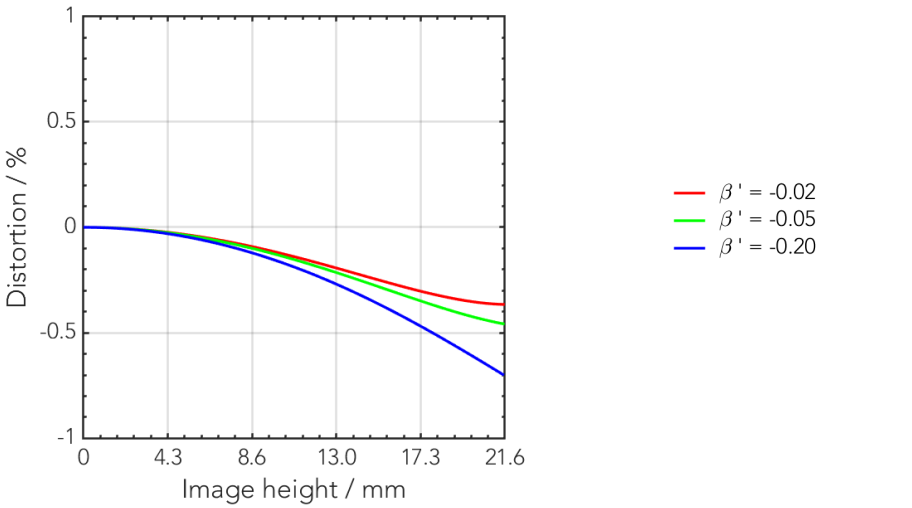
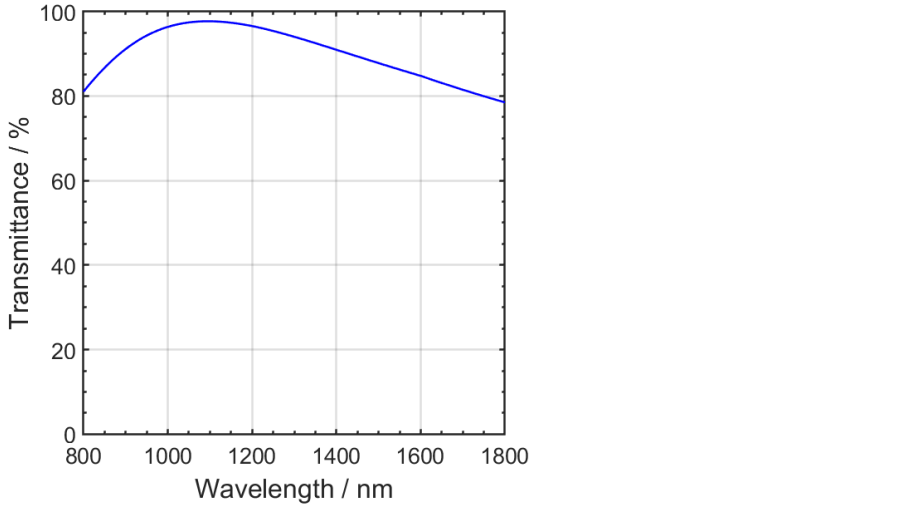
Rel. illumination vs. image height



Distortion vs. image height



Transmittance vs. wavelength



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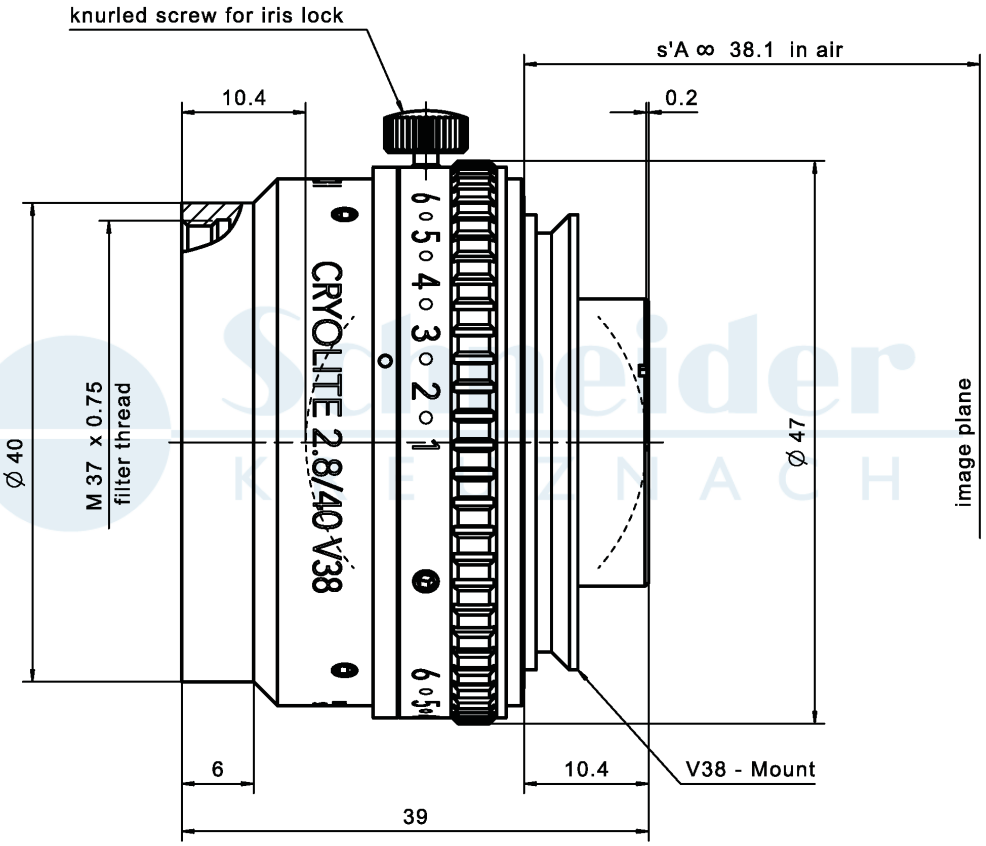
Technical drawings



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CRYOLITE 2.8/40 V38

Accessories	Mount	Eff. length	ID
UNIFOC 12	V38 / V38	17.4 – 29.4 mm	11726
UNIFOC 7	V38 / V38	20 – 27 mm	1001041
UNIFOC 7	V38 / M58 x 0.75	20 – 27 mm	1054532
UNIFOC 5	V38 / C-Mount	19.2 – 24.2 mm	1011634
Adapter	V38 / C-Mount	6.5 mm	20052
	V38 / TFL-Mount	6.5 mm	1098491
	V38 / Leica	6.5mm	20054
	V38 / M42 x 0.75	6.5 mm	20053
	V38 / M42 x 1	6.5 mm	20059
	V38 / M42 x 1	35 mm	1001692
	V38 / M58 x 0.75	10mm	1018385
	V38 / F-Mount	9.3 mm	21610
Extension tube	V38 / V38	6 mm	20176
	V38 / V38	8 mm	20177
	V38 / V38	10 mm	20178
	V38 / V38	25 mm	20179
	V38 / V38	50 mm	20154
	V38 / V38	75 mm	20155

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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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