

LENS OB-SWIR1000/10 – P/N C0912

General Description

This family of high resolution SWIR lenses image from 0.9 – 2.3 μm making them especially well-suited for PCB inspection, special laser applications, surveillance and alignment and tracking. A high F/N and excellent transmission characteristics allow superior imaging in these wavelengths of interest.



Optical and mechanical parameters

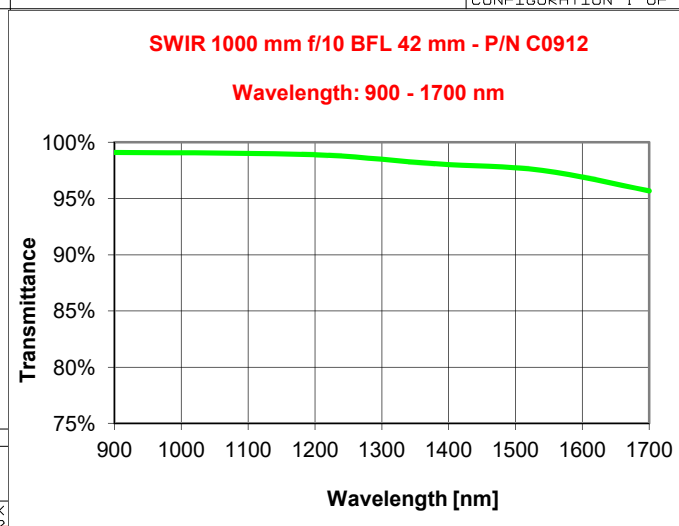
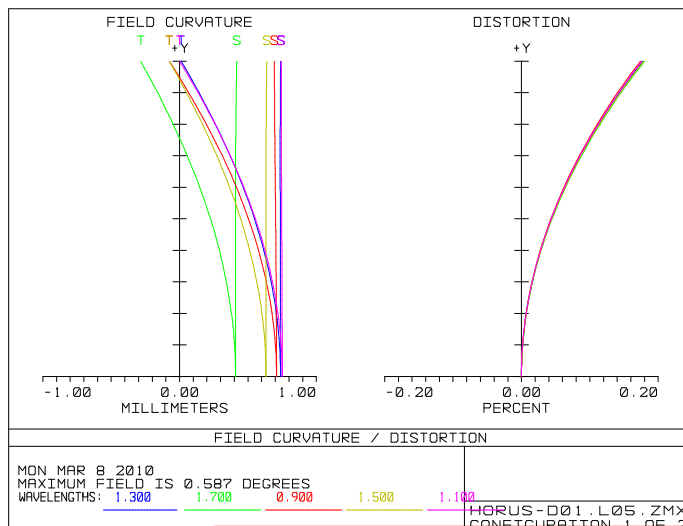
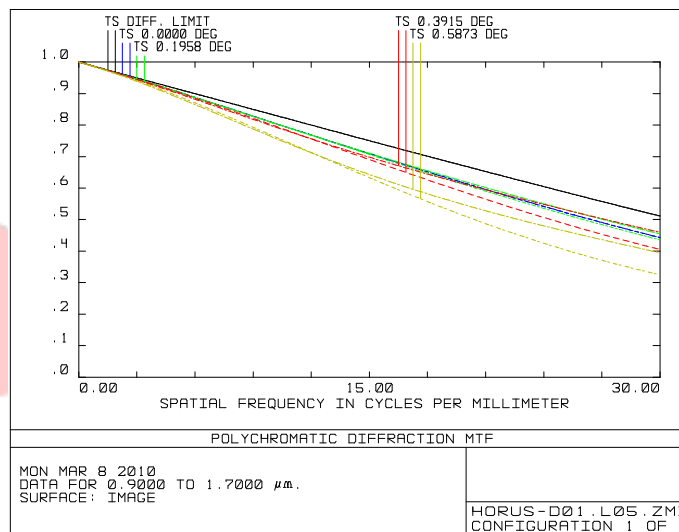
Focal length	1000 mm
Image format (diagonal)	20.5 mm
F.O.V. (diagonal)	1.18 degrees
Max aperture	F/N = 10
Object format	N.A.
Min working distance	20 m
Zoom value	N.A.
Focus	Manual
Iris	Max F/N = 10 Min F/N = 32

N. of elements	6
Dimensions	Dia 120x 562 mm
Weight	5 Kg
Options	
Motorized focus	Upon request
Motorized iris	Upon request
Motorized zoom	N.A.
Other mount type	Upon request
Customization	Upon request

P/N	wavelength range	mount type	note
C0912.001	900-1700 nm	Canon FD	Without iris diaphragm
C0912.051		Canon FD	With iris diaphragm
C0912.002		Nikon	Without iris diaphragm
C0912.052		Nikon	With iris diaphragm
C0912.003		M42 Screw	Without iris diaphragm
C0912.053		M42 Screw	With iris diaphragm
C0912.005	1700-2300 nm	Canon FD	Without iris diaphragm
C0912.055		Canon FD	With iris diaphragm
C0912.006		Nikon	Without iris diaphragm
C0912.056		Nikon	With iris diaphragm
C0912.007		M42 Screw	Without iris diaphragm
C0912.057		M42 Screw	With iris diaphragm
C0912.010	900-2300 nm	Canon FD	Without iris diaphragm
C0912.060		Canon FD	With iris diaphragm
C0912.011		Nikon	Without iris diaphragm
C0912.061		Nikon	With iris diaphragm
C0912.012		M42 Screw	Without iris diaphragm
C0912.062		M42 Screw	With iris diaphragm

MTF, Field Curvature, Distortion and Transmission from 900 to 1700 nm

The calculated MTF values are displayed below and are verified at the maximum F/N and the best focus plane. The colored lines represent the F.O.V. starting from the center (0%) to the corner (100%).



Optical parameters for wavelength range 0.9 – 1.7 μm

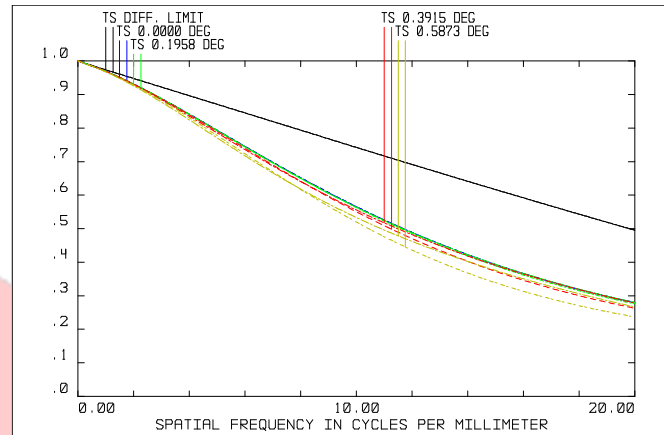
Resolution	MTF > 30%@30lp/mm
Distortion	< 0.2%
Average axial chromatic aberration	

Glass Transmission without coating	> 95%
Antireflection Coating	R ≤ 1%
Vignetting	< 1%

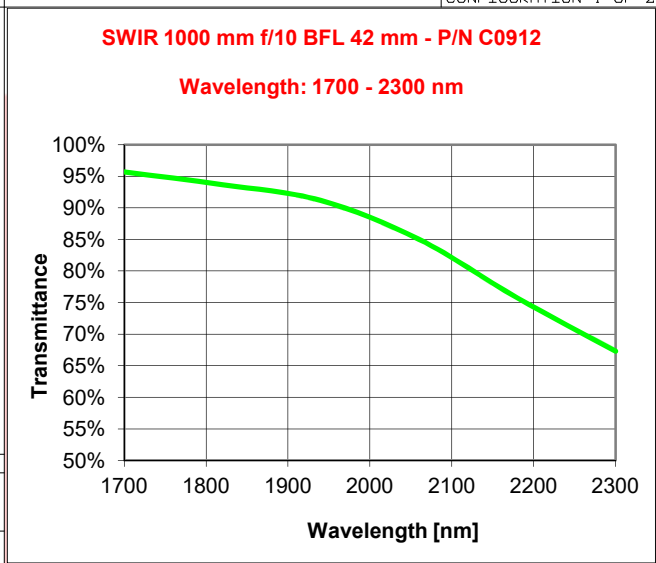
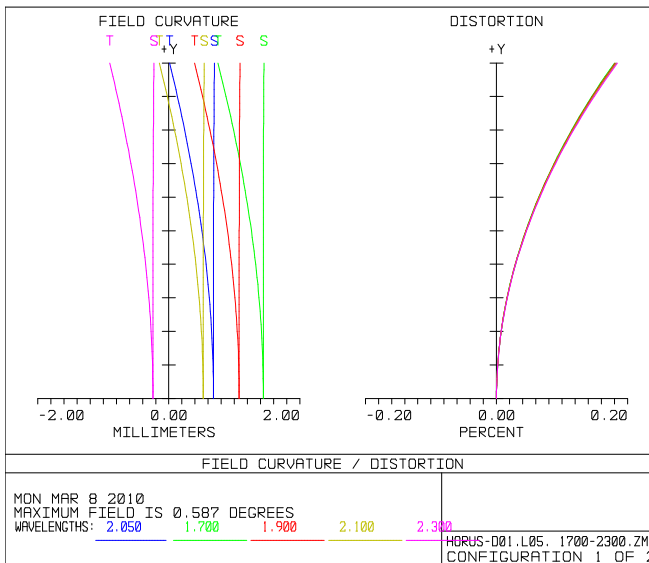
Specification are subject to change without notice

MTF, Field Curvature, Distortion and Transmission from 1700 to 2300 nm

The calculated MTF values are displayed Below and are verified at the maximum F/N and the best focus plane. The colored lines represent the F.O.V. starting from the center (0%) to the corner (100%).



POLYCHROMATIC DIFFRACTION MTF
 MON MAR 8 2010
 DATA FOR 1.7000 TO 2.3000 μm.
 SURFACE: IMAGE
 HORUS-D01.L05. 1700-2300.ZMX
 CONFIGURATION 1 OF 2



Optical parameters for wavelength range 1.7 – 2.3 μm

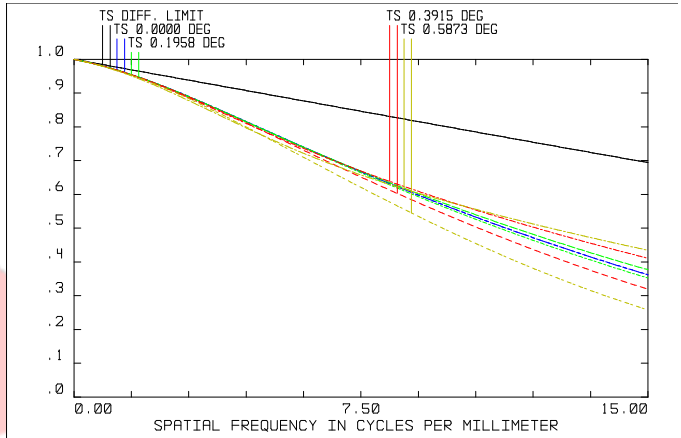
Resolution	MTF > 25% @ 20lp/mm
Distortion	< 0.2%

Glass Transmission without coating	> 67%
Antireflection Coating	R ≤ 1%

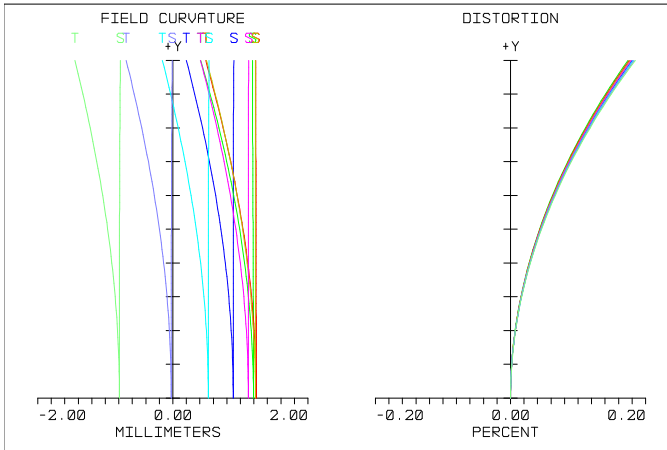
Specification are subject to change without notice

MTF, Field Curvature, Distortion and Transmission from 900 to 2300 nm

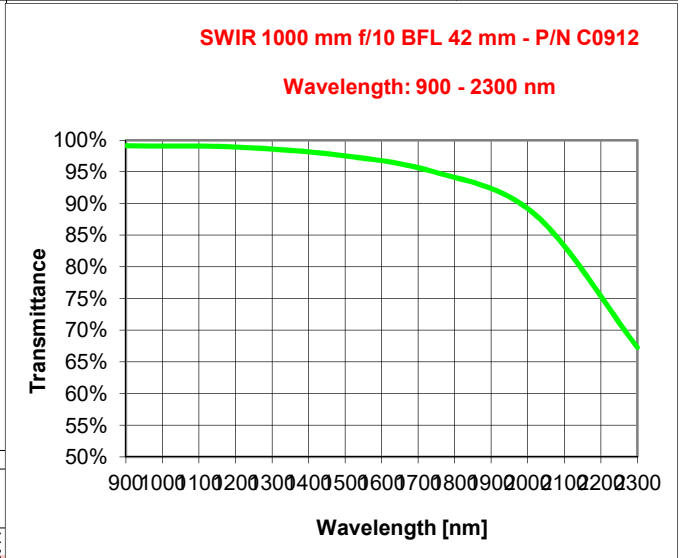
The calculated MTF values are displayed Below and are verified at the maximum F/N and the best focus plane. The colored lines represent the F.O.V. starting from the center (0%) to the corner (100%).



POLYCHROMATIC DIFFRACTION MTF
 MON MAR 8 2010
 DATA FOR 0.9000 TO 2.3000 μm.
 SURFACE: IMAGE
 HORUS-D01.L05. 900-2300.ZMX
 CONFIGURATION 1 OF 2



FIELD CURVATURE / DISTORTION
 MON MAR 8 2010
 MAXIMUM FIELD IS 0.587 DEGREES
 WAVELENGTHS: 1.700 0.900 1.100 1.300 1.500 1.900 2.100 2.300
 HORUS-D01.L05. 900-2300.ZMX
 CONFIGURATION 1 OF 2



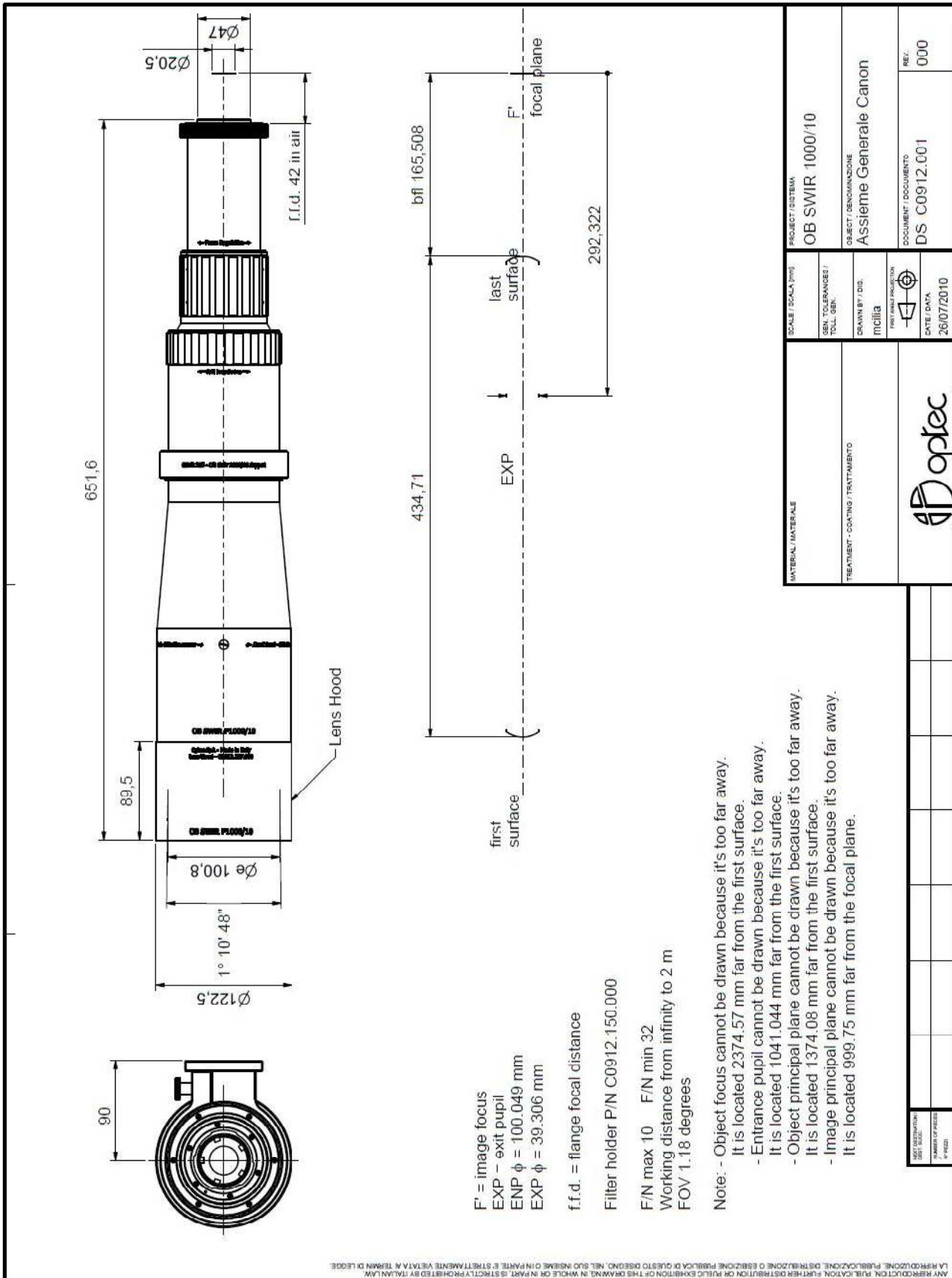
Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 25% @ 15lp/mm
Distortion	< 0.2%

Glass Transmission without coating	> 67%
Antireflection Coating	R ≤ 1%

More details are available upon request and technical drawings are open for the customers and their needs.

Specification are subject to change without notice



F' = image focus
 EXP = exit pupil
 ENP $\phi = 100.049$ mm
 EXP $\phi = 39.306$ mm

f.f.d. = flange focal distance
 Filter holder P/N C0912.150.000
 F/N max 10 F/N min 32
 Working distance from infinity to 2 m
 FOV 1.18 degrees

Note: - Object focus cannot be drawn because it's too far away.
 It is located 2374.57 mm far from the first surface.
 - Entrance pupil cannot be drawn because it's too far away.
 It is located 1041.044 mm far from the first surface.
 - Object principal plane cannot be drawn because it's too far away.
 It is located 1374.08 mm far from the first surface.
 - Image principal plane cannot be drawn because it's too far away.
 It is located 999.75 mm far from the focal plane.

MATERIAL / MATERIALE		SCALE (SCALA) (MM)		PROJECT / SISTEMA	
TREATMENT - COATING / TRATTAMENTO		GEN. TOLERANCES / TOLL. GEN.		OB SWIR 1000/10	
		DRAWN BY / DIS. mclilla		OBJECT / DENOMINAZIONE	
		DATE / DATA 26/07/2010		Assemble Generale Canon	
SER. DESIGNATION / IDENTIFICAZIONE NUMBER OF PAGES / NUMERO DI PAGINE 1 / 1		PROJECT / DOCUMENTO DS C0912.001		REV. / 000	

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