

LENS OB-SWIR50/2 – P/N C0840

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	50 mm
Image format (diagonal)	20.5 mm
F.O.V. (diagonal)	23 degrees
Max aperture	F/N = 2
Object format	N.A.
Min working distance	7 m
Zoom value	N.A.
Focus	Manual
Iris	Max F/N = 2 Min F/N = 11

N. of elements	8
Dimensions	Dia 107 x 122 mm
Weight	2 Kg
Options	
Motorized focus	Upon request
Motorized iris	Upon request
Motorized zoom	N.A.
Other mount type	Upon request
Customization	Upon request

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P/N	wavelength range	mount type	note
C0840.001	900-1700 nm	Canon FD	With iris diaphragm
C0840.002		Nikon	
C0840.003		M42 Screw	
C0840.005	1700-2300 nm	Canon FD	
C0840.006		Nikon	
C0840.007		M42 Screw	
C0840.010	900-2300 nm	Canon FD	
C0840.011		Nikon	
C0840.012		M42 Screw	

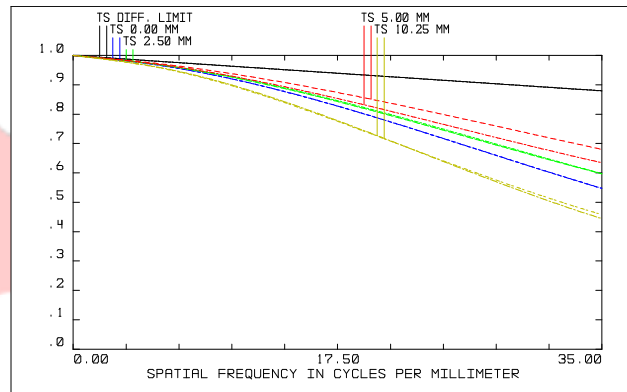
Specification are subject to change without notice

P/N	wavelength range	mount type	note
C0840.071	900-1700 nm	Canon FD	With motorized iris
C0840.072		Nikon	
C0840.073		M42 Screw	
C0840.081	1700-2300 nm	Canon FD	
C0840.082		Nikon	
C0840.083		M42 Screw	
C0840.091	900-2300 nm	Canon FD	
C0840.092		Nikon	
C0840.093		M42 Screw	
C0840.074	900-1700 nm	Canon FD	With motorized focus
C0840.075		Nikon	
C0840.076		M42 Screw	
C0840.084	1700-2300 nm	Canon FD	
C0840.085		Nikon	
C0840.086		M42 Screw	
C0840.094	900-2300 nm	Canon FD	
C0840.095		Nikon	
C0840.096		M42 Screw	
C0840.077	900-1700 nm	Canon FD	With motorized iris and focus
C0840.078		Nikon	
C0840.079		M42 Screw	
C0840.087	1700-2300 nm	Canon FD	
C0840.088		Nikon	
C0840.089		M42 Screw	
C0840.097	900-2300 nm	Canon FD	
C0840.098		Nikon	
C0840.099		M42 Screw	

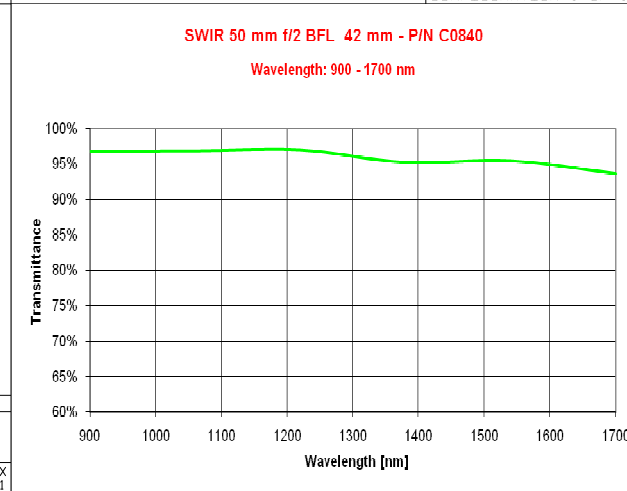
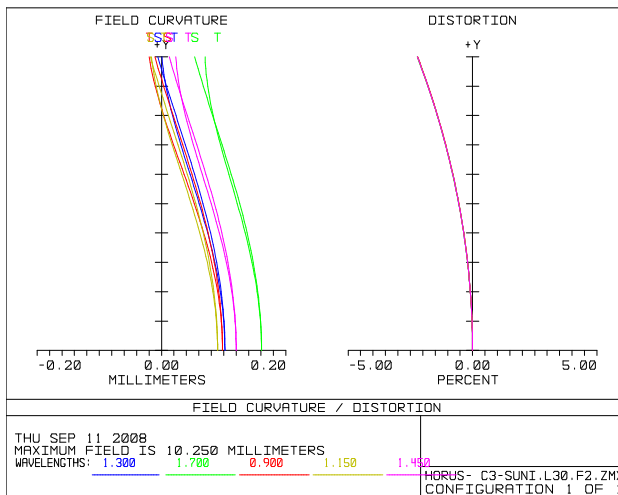
More details are available upon request and technical drawings are open for the customers and their needs.

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%).



POLYCHROMATIC DIFFRACTION MTF
THU SEP 11 2008
DATA FOR Ø 9000 TO 1.7000 µm.
SURFACE: IMAGE
HORUS- C3-SUNI.L30.F2.ZMX
CONFIGURATION 1 OF 1



Optical parameters for wavelength range 0.9 – 1.7 µm

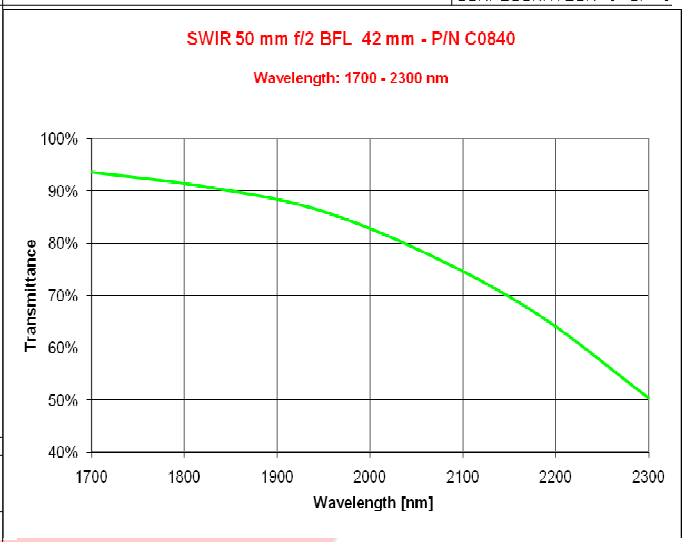
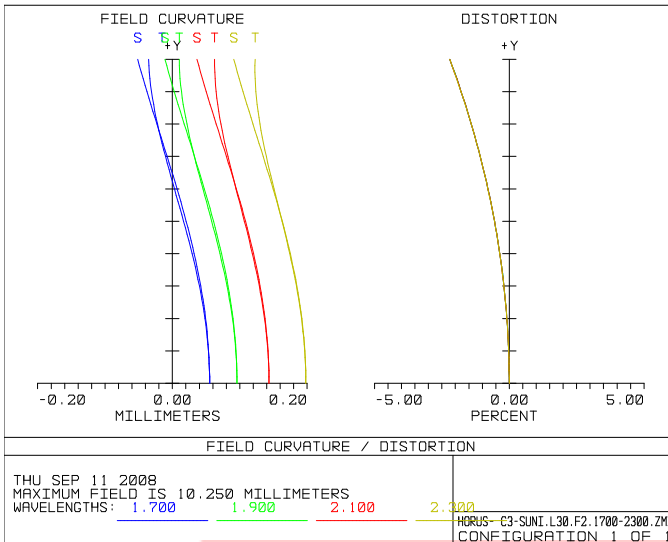
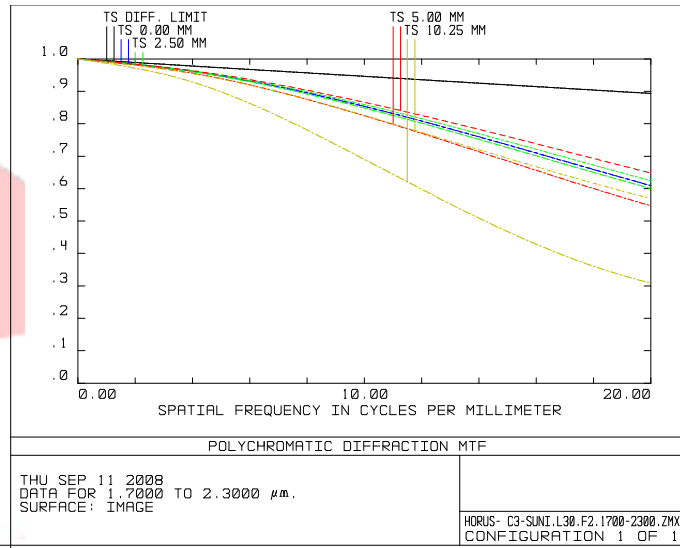
Resolution	MTF > 45%@35lp/mm
Distortion	< 2.5%
Average axial chromatic aberration	<0.0163 mm

Lens Transmission without coating	> 93%
Antireflection Coating	R ≤ 1%
Vignetting	<2%

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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%).



Optical parameters for wavelength range 1.7 – 2.3 μm

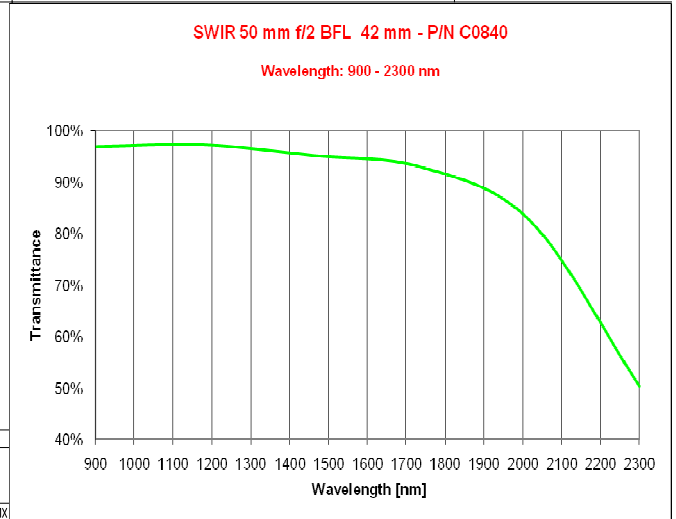
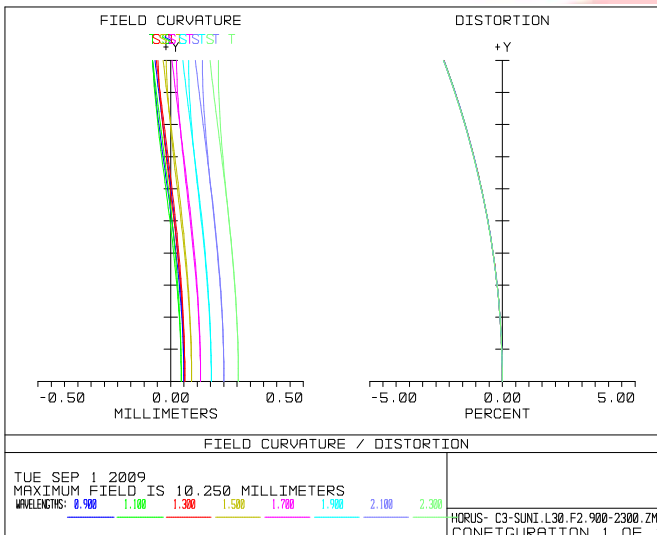
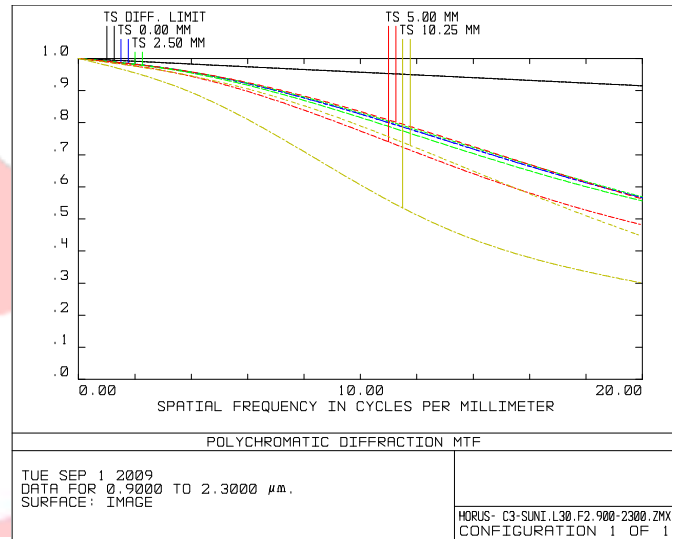
Resolution	MTF > 30%@20lp/mm
Distortion	< 2.5%

Lens Transmission without coating	> 50%
Antireflection Coating	R ≤ 1%

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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%).



Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 30%@20lp/mm
Distortion	< 2.5%

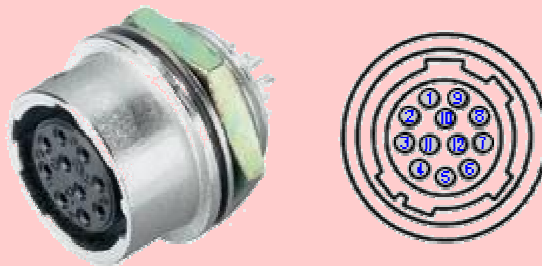
Lens Transmission without coating	> 50%
Antireflection Coating	R ≤ 1%

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Electrical data & Interfaces

IRIS FUNCTION	
Motor model	Faulhaber 1516T009SR
Motor nominal voltage	9 VDC
Motor maximum power	0.54 W
Current limit	0.19 A
Feedback	10 kOhm multi-turn potentiometer
Potentiometer model	Spectrol 533-10K ±5%
Gearhead reduction ratio	592:1

FOCUS FUNCTION	
Motor model	Faulhaber 1516T009SR
Motor nominal voltage	9 VDC
Motor maximum power	0.54 W
Current limit	0.19 A
Feedback	10 kOhm multi-turn potentiometer
Potentiometer model	Spectrol 533-10K ±5%
Gearhead reduction ratio	592:1

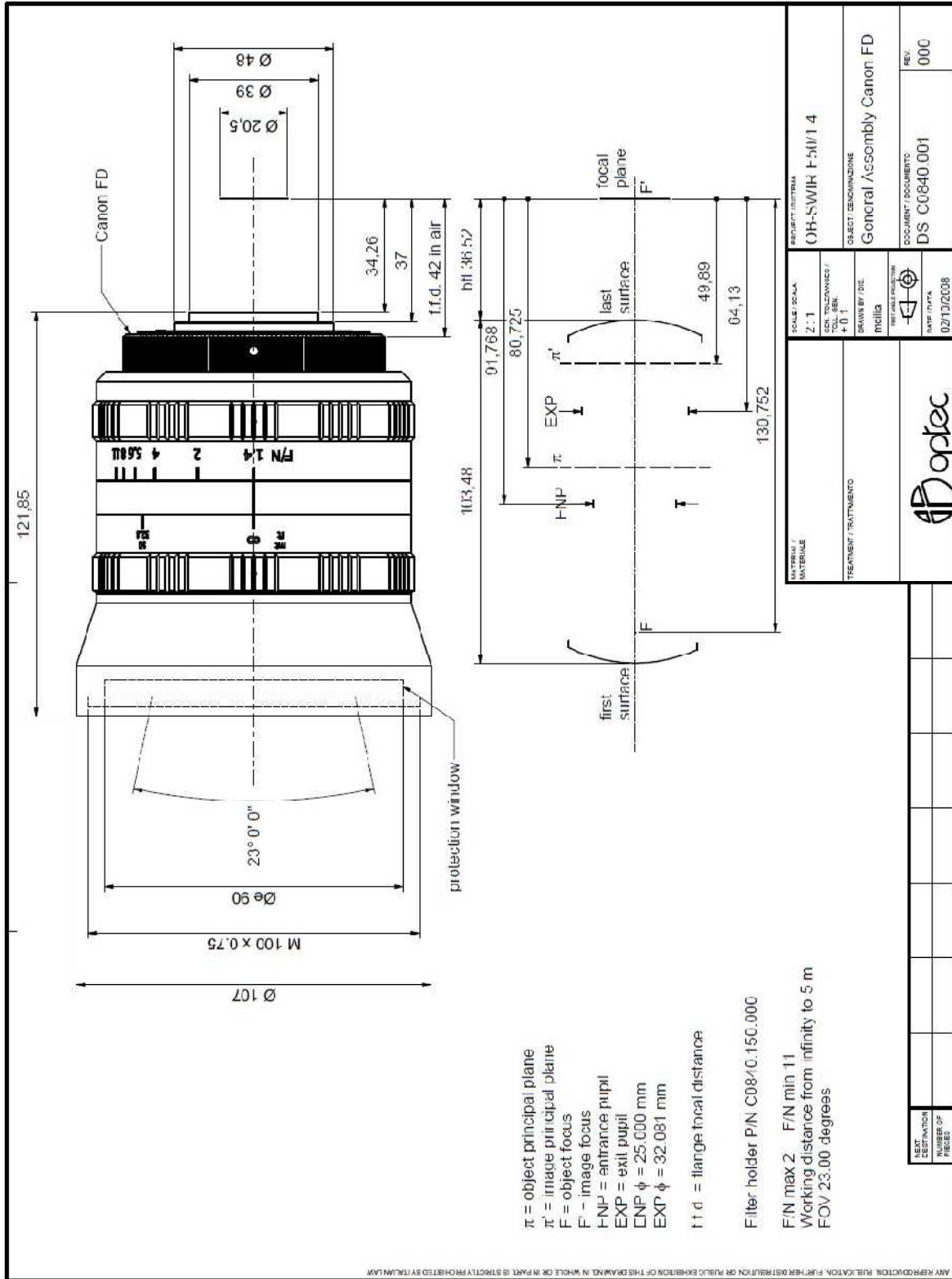
Hirose HR10A-10P-12P connector Pin list

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PIN	MOTORIZED IRIS	MOTORIZED FOCUS	MOTORIZED IRIS & FOCUS
1	Vcc	Vcc	Vcc
2	Gnd	Gnd	Gnd
3	NA	Analog Focus position	Analog Focus position
4	Analog Iris position	NA	Analog Iris position
5	Identification resistor #1	Identification resistor #1	Identification resistor #1
6	Identification resistor #2	Identification resistor #2	Identification resistor #2
7	NA	Focus Motor +	Focus Motor +
8	NA	Focus Motor –	Focus Motor –
9	Iris Motor +	NA	Iris Motor +
10	Iris Motor –	NA	Iris Motor –

Every shipped motorized lens will be provided with potentiometers values of end positions for both focus and iris motor

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