

LENS OB-SWIR35/1.4 – P/N C0809

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	35 mm
Image format (diagonal)	20.5 mm
F.O.V. (diagonal)	32.6 degrees
Max aperture	F/N = 1.4
Object format	N.A.
Min working distance	2000 mm
Zoom value	N.A.
Focus	Manual
Iris	Max F/N = 1.4 Min F/N = 8

N. of elements	9
Dimensions	Dia 107 x 123 mm
Weight	1.64 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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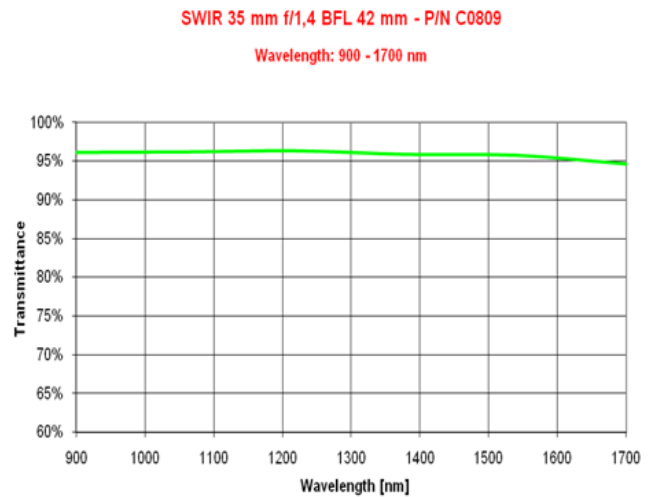
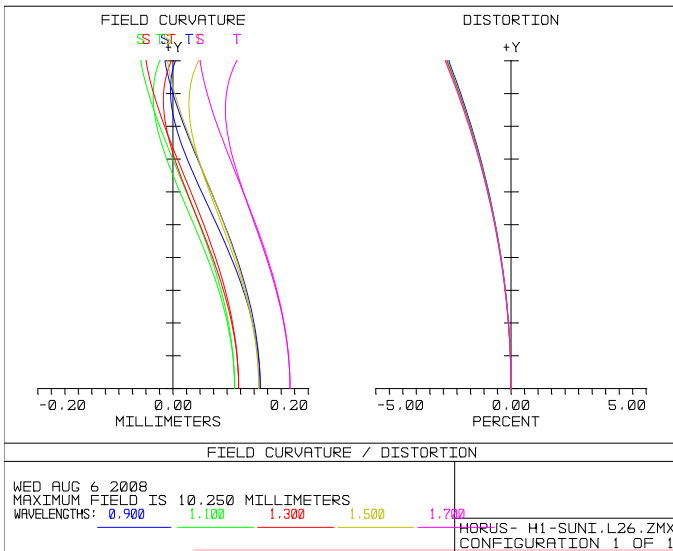
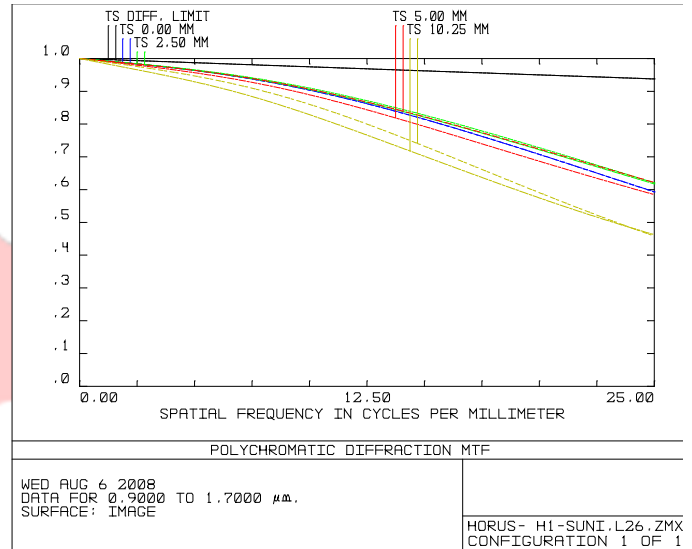
P/N	wavelength range	mount type	note
C0809.001	900-1700 nm	Canon FD	With iris diaphragm
C0809.002		Nikon	
C0809.003		M42 Screw	
C0809.005	1700-2300 nm	Canon FD	
C0809.006		Nikon	
C0809.007		M42 Screw	
C0809.010	900-2300 nm	Canon FD	
C0809.011		Nikon	
C0809.012		M42 Screw	

P/N	wavelength range	mount type	note
C0809.071	900-1700 nm	Canon FD	With motorized iris
C0809.072		Nikon	
C0809.073		M42 Screw	
C0809.081	1700-2300 nm	Canon FD	
C0809.082		Nikon	
C0809.083		M42 Screw	
C0809.091	900-2300 nm	Canon FD	
C0809.092		Nikon	
C0809.093		M42 Screw	
C0809.074	900-1700 nm	Canon FD	With motorized focus
C0809.075		Nikon	
C0809.076		M42 Screw	
C0809.084	1700-2300 nm	Canon FD	
C0809.085		Nikon	
C0809.086		M42 Screw	
C0809.094	900-2300 nm	Canon FD	
C0809.095		Nikon	
C0809.096		M42 Screw	
C0809.077	900-1700 nm	Canon FD	With motorized iris and focus
C0809.078		Nikon	
C0809.079		M42 Screw	
C0809.087	1700-2300 nm	Canon FD	
C0809.088		Nikon	
C0809.089		M42 Screw	
C0809.097	900-2300 nm	Canon FD	
C0809.098		Nikon	
C0809.099		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%).



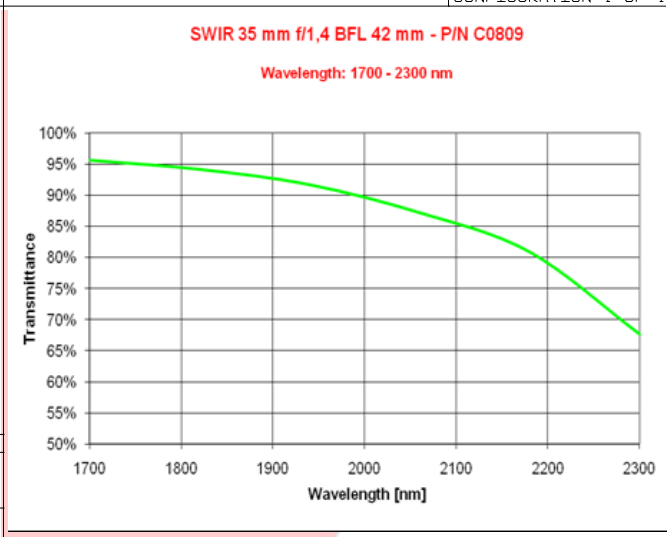
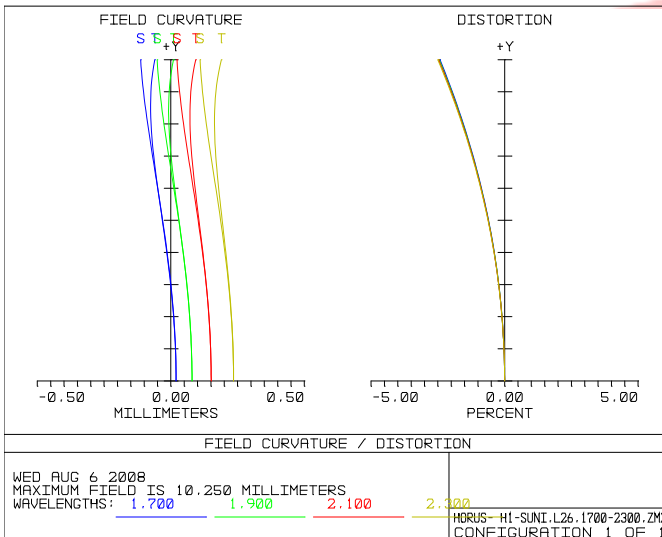
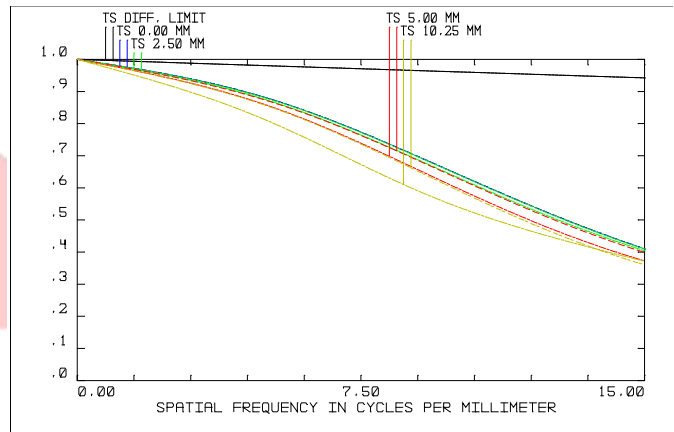
Optical parameters for wavelength range 0.9 – 1.7 μm

Resolution	MTF > 45% @25lp/mm
Distortion	< 3.5%
Average axial chromatic aberration	<0.0278 mm

Glass Transmission without coating	> 95%
Antireflection Coating	R ≤ 1%
Vignetting	0%

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%).



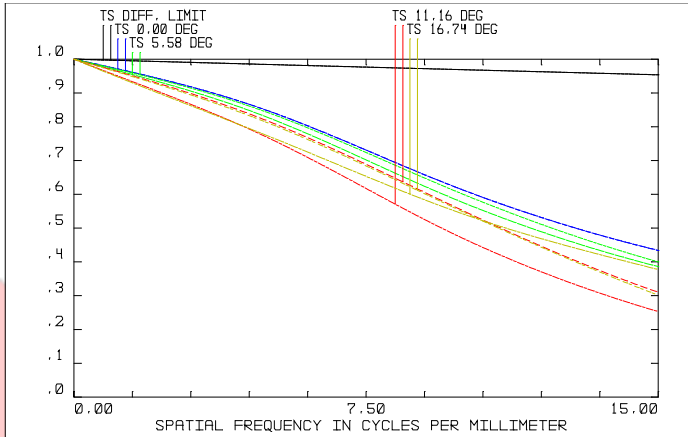
Optical parameters for wavelength range 1.7 – 2.3 μm

Resolution	MTF > 35% @ 15lp/mm
Distortion	< 3.5%

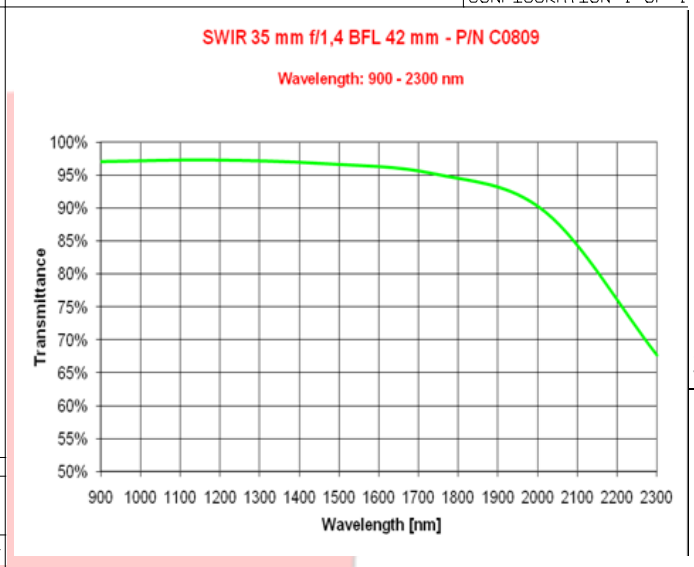
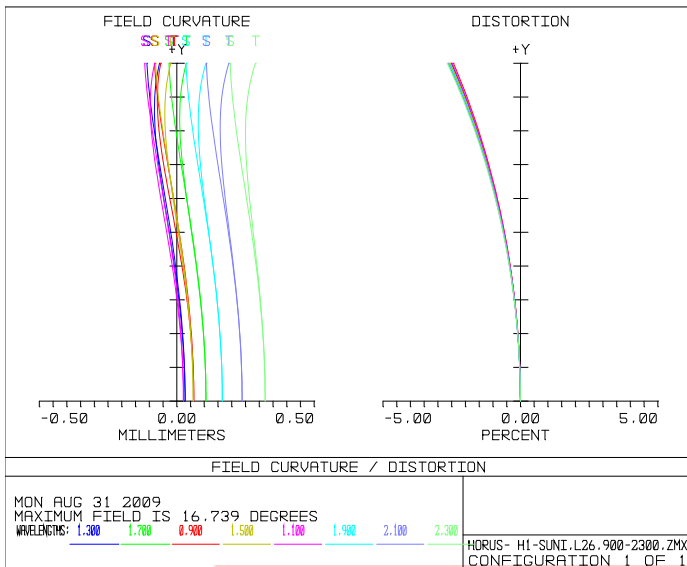
Glass Transmission without coating	> 68%
Antireflection Coating	R ≤ 1%

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 AUG 31 2009
DATA FOR 0.9000 TO 2.3000 μm.
SURFACE: IMAGE
HORUS- H1-SUNI.L26.900-2300.ZMX
CONFIGURATION 1 OF 1



Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 25% @ 15lp/mm
Distortion	< 3.5%

Glass Transmission without coating	> 68%
Antireflection Coating	R ≤ 1%

Electrical data & Interfaces

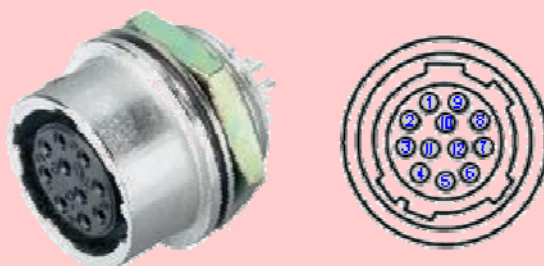
IRIS FUNCTION

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 $\pm 5\%$
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 $\pm 5\%$
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

