



# LENS OB-SWIR50/1.4 – P/N C0810

## *General Description*

The new range for imaging inspection is the Short Wave Infrared Region, starting from 0.9  $\mu\text{m}$  to 3  $\mu\text{m}$ . This lens wants to cover the first range from 0.9  $\mu\text{m}$  to 2.3  $\mu\text{m}$  with a very high quality image. The high F/N and a very good transmission obtained using special optical glasses, are the main characteristics of this lens. The good transmission in the visible range is also helpful for alignment and tracking application.



### **Optical and mechanical parameters**

Focal length	50 mm	N. of elements	8
Image format (diagonal)	20.5 mm	Dimensions	Dia 107 x 122 mm
F.O.V. (diagonal)	23 degrees	Weight	2 Kg
Max aperture	F/N = 1.4	<b>Options</b>	
Object format	N.A.	Focus motorized	Upon request
Min working distance	1500 mm	Iris motorized	Upon request
Zoom value	N.A.	Zoom motorized	N.A.
Focus	Manual	Other mount type	Upon request
Iris	Max F/N = 1.4 Min F/N = 11	Customization	Upon request

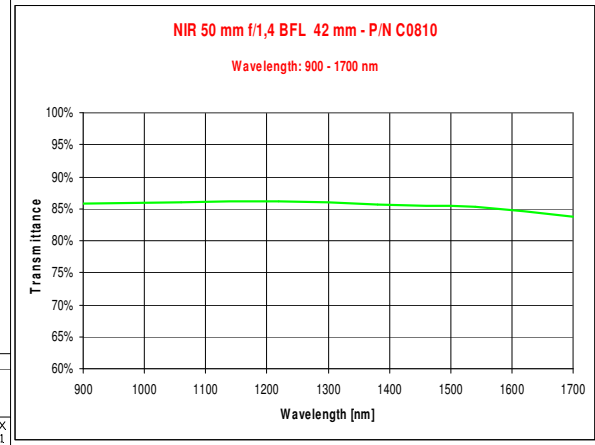
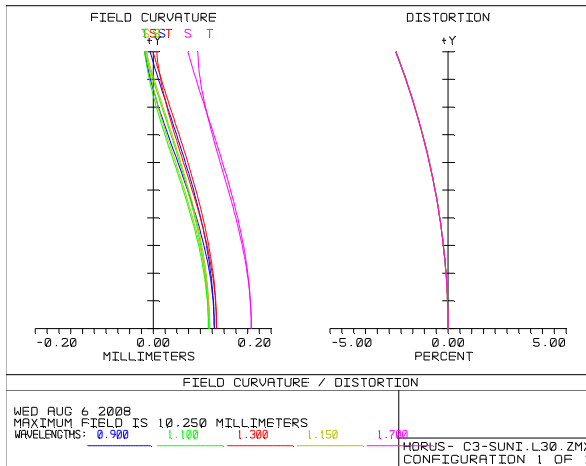
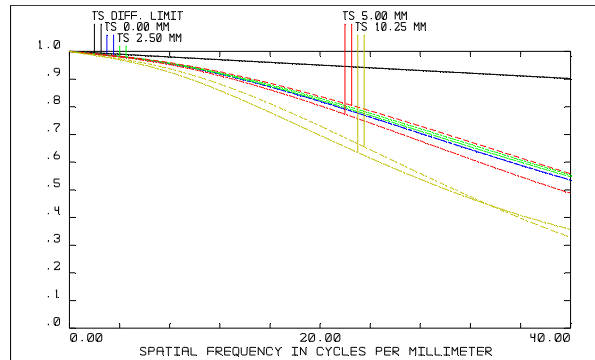
<b>P/N</b>	<b>wavelength range</b>	<b>mount type</b>	<b>note</b>
C0810.001	900-1700 nm	Canon	
C0810.002	900-1700 nm	Nikon	
C0810.003	900-1700 nm	M42 Screw	
C0810.005	1700-2300 nm	Canon	
C0810.006	1700-2300 nm	Nikon	
C0810.007	1700-2300 nm	M42 Screw	
C0810.010	900-2300 nm	Canon	
C0810.011	900-2300 nm	Nikon	
C0810.012	900-2300 nm	M42 Screw	

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

The MTF curves in terms of contrast and spatial resolution are shown. These curves are verified at the max F/N, best focus plane and in the infrared region controlling the chromatic aberrations. The different line colour seems different part of the field of view, starting from the center (0%) to the corner (100%).



### Optical parameters for wavelength range 0.9 – 1.7 μm

Resolution	MTF > 35%@40lp/mm
Distortion	< 2.5%
Average axial chromatic aberration	< 0.0163 mm

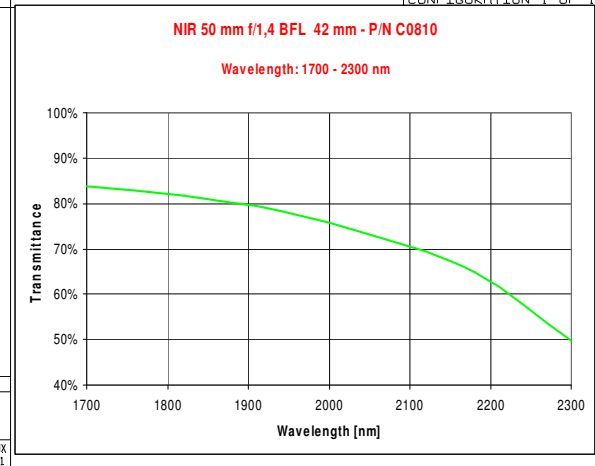
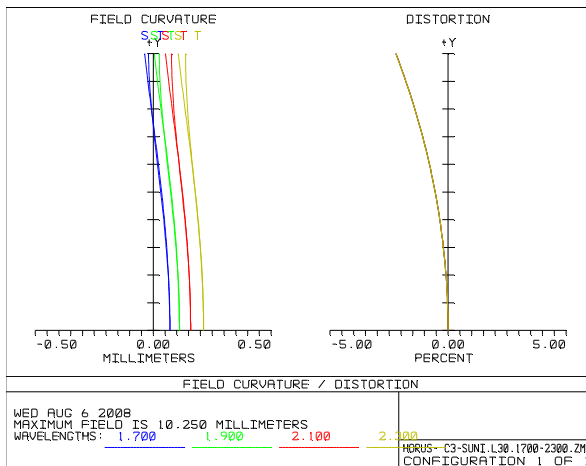
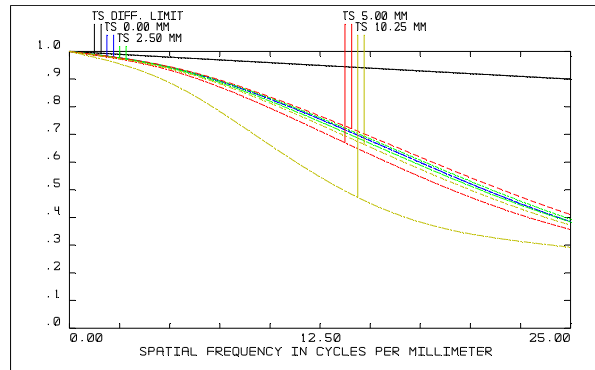
Transmission	> 84%
Antireflection Coating	$R \leq 1\%$
Vignetting	< 2%

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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 in the center (0%) to the corner (100%)



### Optical parameters for wavelength range 1.7 – 2.3 μm

Resolution	MTF > 30% @ 25lp/mm
Distortion	< 2.5%

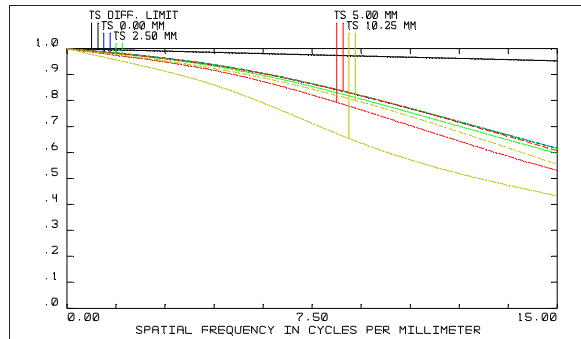
Transmission	> 50%
Antireflection Coating	R ≤ 1%

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

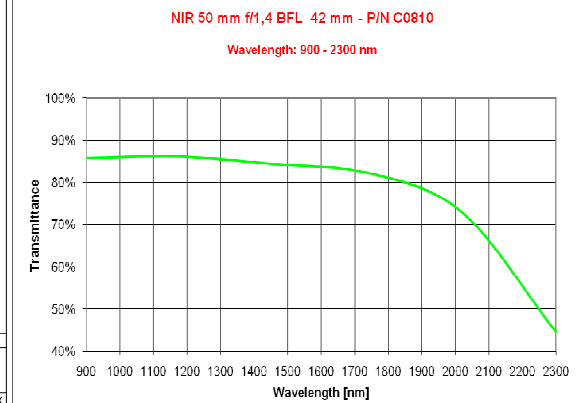
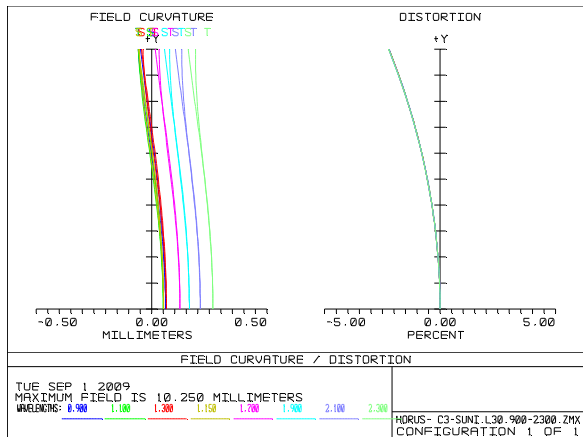
The calculated MTF values are displayed below and are verified at the maximum F/N and the best focus plane. The colored lines represent the F.O.V. starting in the center (0%) to the corner (100%)



POLYCHROMATIC DIFFRACTION MTF

TUE SEP 1 2009  
DATA FOR 0.9000 TO 2.3000 μm.  
SURFACE: IMAGE

HORUS- C3-SUNIL30-900-2300.ZMX  
CONFIGURATION 1 OF 1



### Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 45%@15lp/mm
Distortion	< 2.5%

Transmission	> 45%
Antireflection Coating	R ≤ 1%