LENS OB-SWIR100/4 – P/N C0416

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	100 mm
Image format (diagonal)	20.5 mm
F.O.V. (diagonal)	11.7 degrees
Max aperture	F/N = 4 (fixed)
Object format	N.A.
Min working distance	3 m
Zoom value	N.A.
Focus	Manual
Iris	Optional / If iris Min F/N = 22

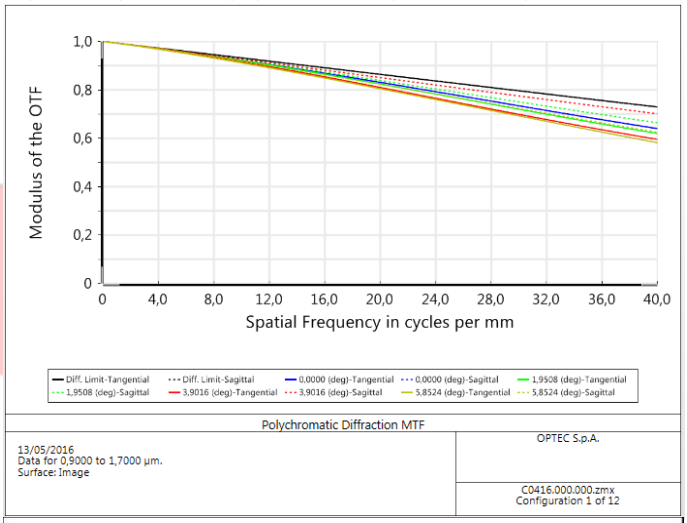
N. of elements	5
Dimensions	Dia 80 x 100 mm
Weight	0.9 Kg
Options	
Motorized focus	Upon request
Motorized iris	Upon request
Motorized zoom	N.A.
Other mount type	Upon request
Customization	Upon request

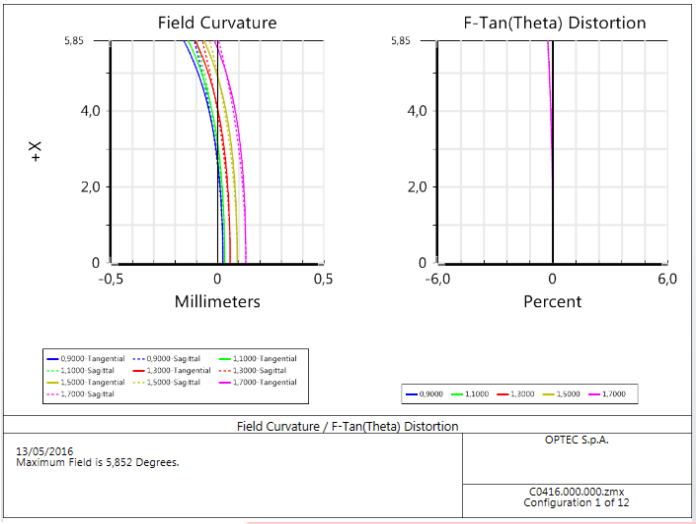
P/N	wavelength range	mount type	note
C0416.001	900-1700 nm	Canon FD	Without iris diaphragm
C0416.002		Nikon	
C0416.003		M42 Screw	
C0416.051		Canon FD	With iris diaphragm
C0416.052		Nikon	
C0416.053		M42 Screw	
C0416.005	1700-2300 nm	Canon FD	Without iris diaphragm
C0416.006		Nikon	
C0416.007		M42 Screw	
C0416.055		Canon FD	With iris diaphragm
C0416.056		M42 Screw	
C0416.057		Nikon	
C0416.010	900-2300 nm	Canon FD	Without iris diaphragm
C0416.011		Nikon	
C0416.012		M42 Screw	
C0416.060		Canon FD	With iris diaphragm
C0416.061		Nikon	
C0416.062		M42 Screw	

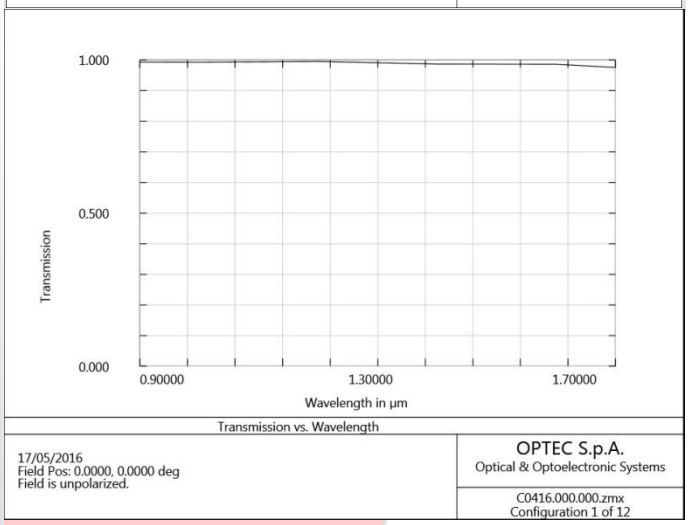
More details are available upon request and technical drawings are open for the customers and their needs.

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%).







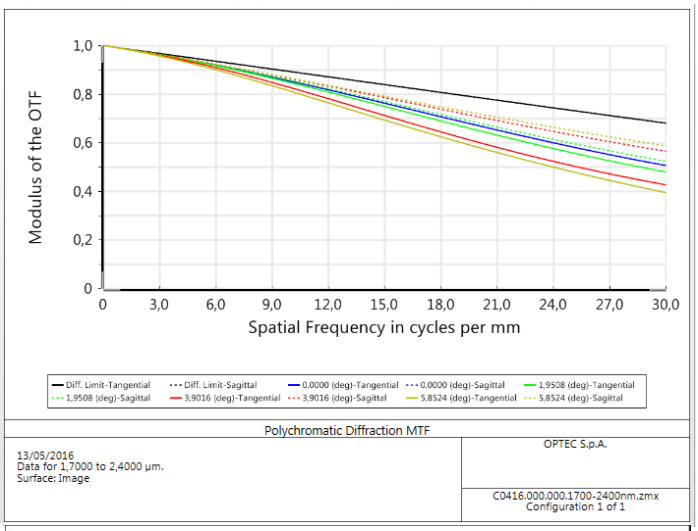
Optical parameters for wavelength range 0.9 – 1.7 µm

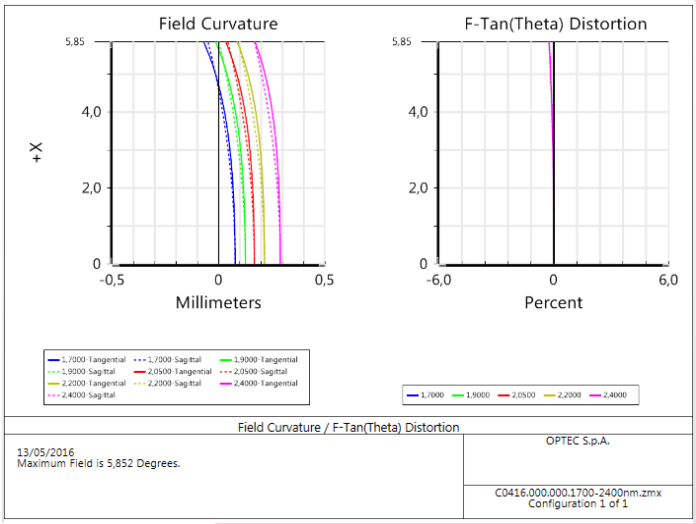
Resolution	MTF >60%@40lp/mm
Distortion	< 0.3%
Average axial chromatic aberration	<0.0102 mm

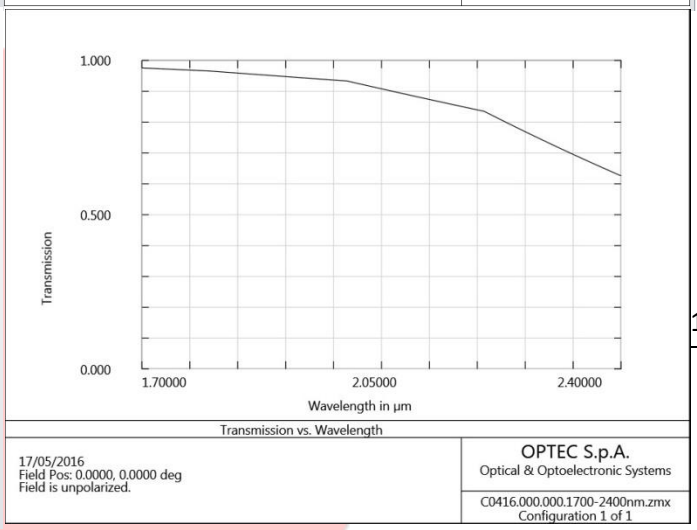
Lens Transmission without coating	> 97%
Antireflection Coating	R ≤ 1%
Vignetting	< 6%

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%).







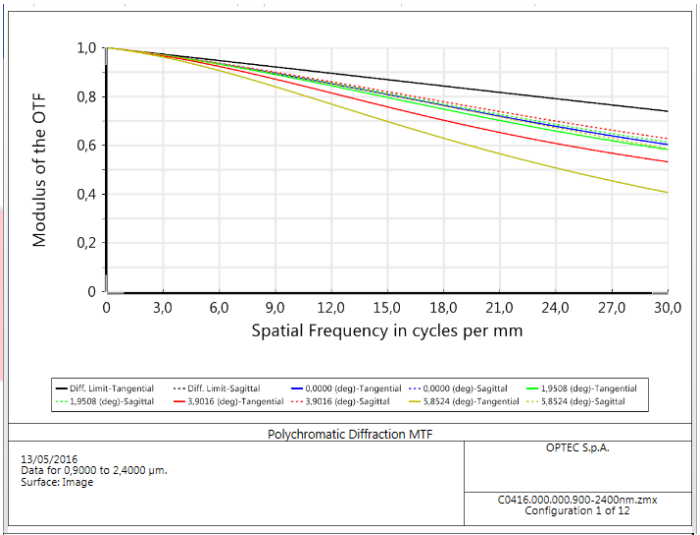
Optical parameters for wavelength range 1.7 – 2.3 µm

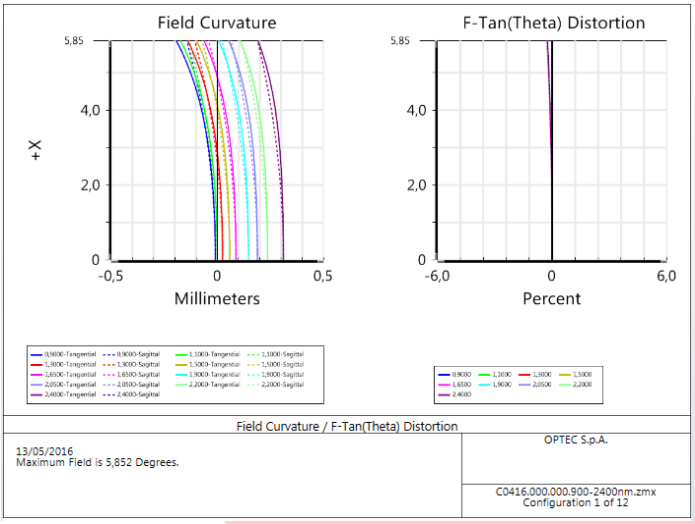
Resolution	MTF > 40%@30lp/mm
Distortion	< 0.3%

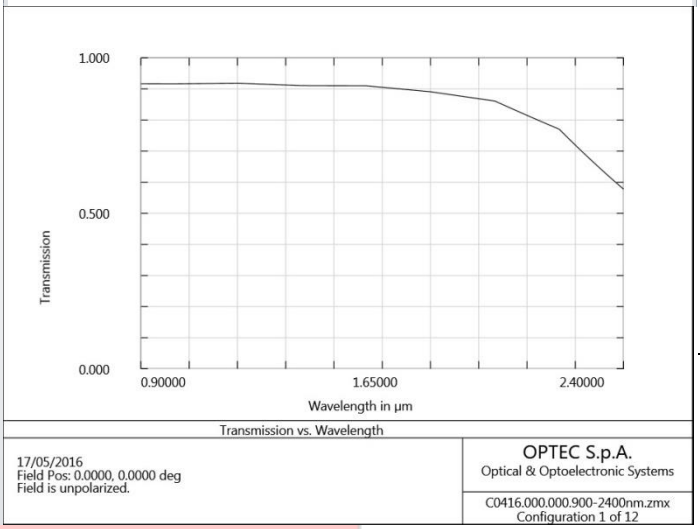
Lens Transmission without coating	> 75%
Antireflection Coating	R ≤ 1%

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%).





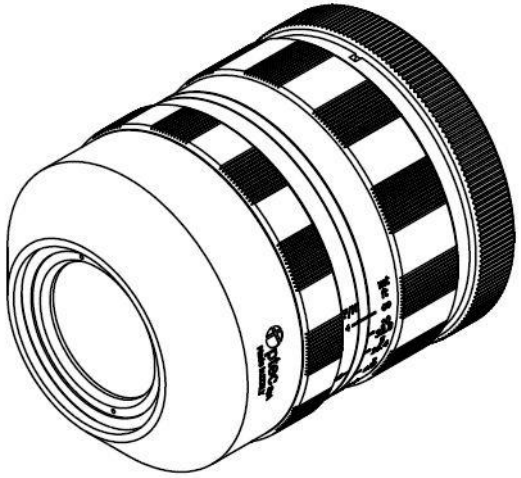


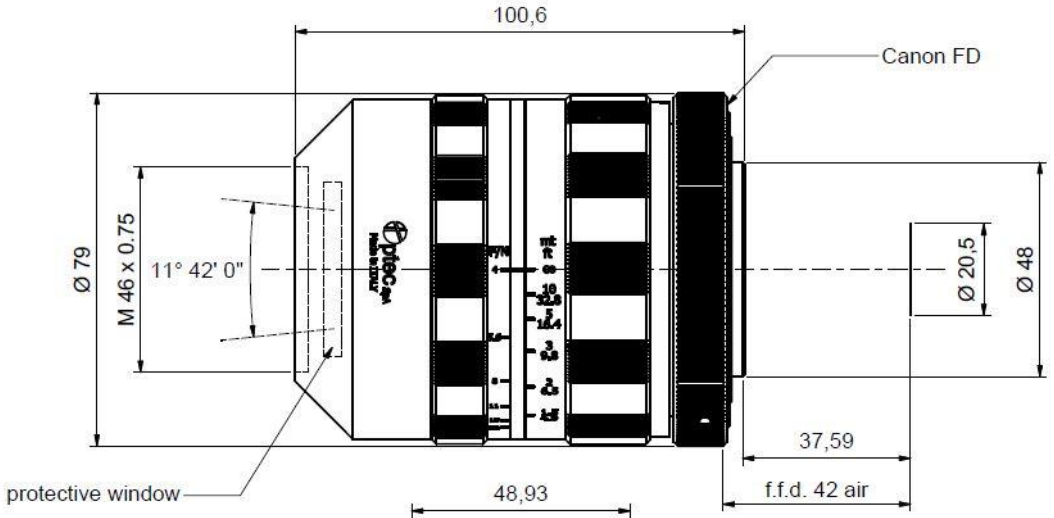
Optical parameters for wavelength range 0.9 – 2.3 µm

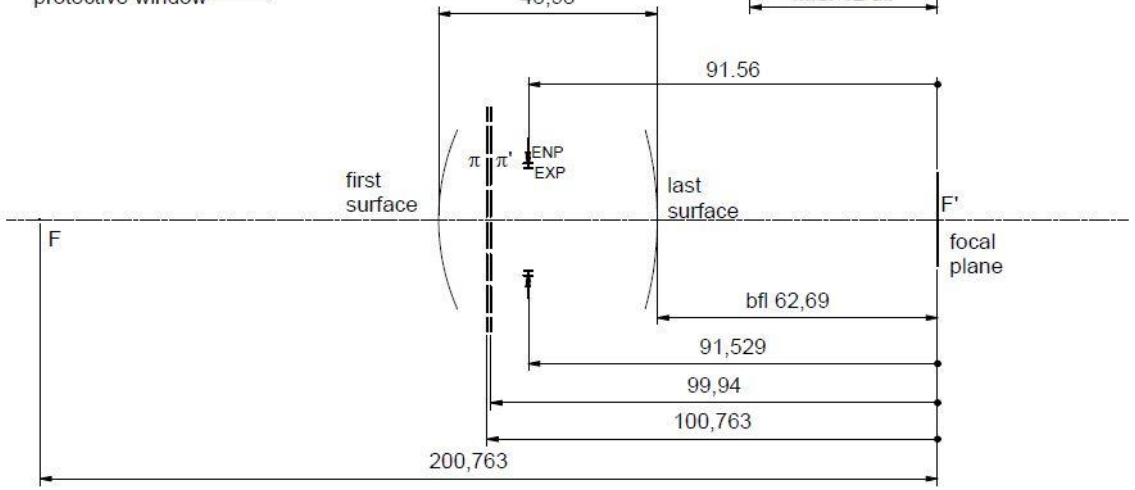
Resolution	MTF > 40%@30lp/mm
Distortion	< 0.3%

Lens Transmission without coating	> 70%
Antireflection Coating	R ≤ 1%

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







π = object principal plane
π' = image principal plane
F = object focus
F' = image focus
ffl = front focal length
bfl = back focal length
ENP = entrance pupil
EXP = exit pupil
ENP ϕ = 25.00 mm
EXP ϕ = 22.90 mm

f.f.d. = flange focal lenght

Reference P/N C0416.051.000

F/N max 4 F/N min 22
Working distance from infinity to 1.5 m
FFOV 11.70 degrees

MATERIAL / MATERIALE	SCALE / SCALA [mm] 1 : 1
TREATMENT - COATING / TRATTAMENTO	GEN. TOLERANCES / TOLL. GEN.
	DRAWN BY / DIS. mcilia
	FIRST ANGLE PROJECTION
	DATE / DATA 09/04/2008
PROJECT / SISTEMA: OB NIR F100/4	
OBJECT / DENOMINAZIONE: Layout C0416 Canon FD	
DOCUMENT / DOCUMENTO: DS C0416.051	REV.: 000

ANY REPRODUCTION, PUBLICATION, FURTHER DISTRIBUTION OR PUBLIC EXHIBITION OF THIS DRAWING, IN WHOLE OR IN PART, IS STRICTLY PROHIBITED BY ITALIAN LAW.
LA RIPRODUZIONE, PUBBLICAZIONE, DISTRIBUZIONE O ESIBIZIONE PUBBLICA DI QUESTO DISEGNO, NEL SUO INSIEME O IN PARTE, E' STRETTAMENTE VIETATA A TERMINI DI LEGGE.