

LENS OB-SWIR75/1.4 – P/N C0811

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	75 mm
Image format (diagonal)	20.5 mm
F.O.V. (diagonal)	15.5 degrees
Max aperture	F/N = 1.4
Object format	N.A.
Min working distance	5000 mm
Zoom value	N.A.
Focus	Manual
Iris	Max F/N = 1.4 Min F/N = N.A

N. of elements	6
Dimensions	Dia 100 x 112 mm
Weight	1.16 Kg
Options	
Motorized focus	Upon request
Motorized iris	Upon request
Motorized zoom	N.A.
Other mount type	Upon request
Customization	Upon request

73

P/N	wavelength range	mount type	note
C0811.001	900-1700 nm	Canon FD	With iris diaphragm
C0811.002		Nikon	
C0811.003		M42 Screw	
C0811.005	1700-2300 nm	Canon FD	
C0811.006		Nikon	
C0811.007		M42 Screw	
C0811.010	900-2300 nm	Canon FD	
C0811.011		Nikon	
C0811.012		M42 Screw	

Specification are subject to change without notice

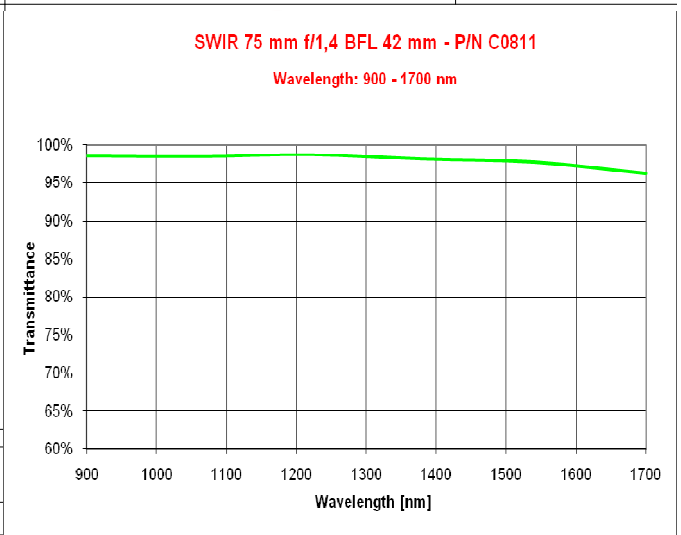
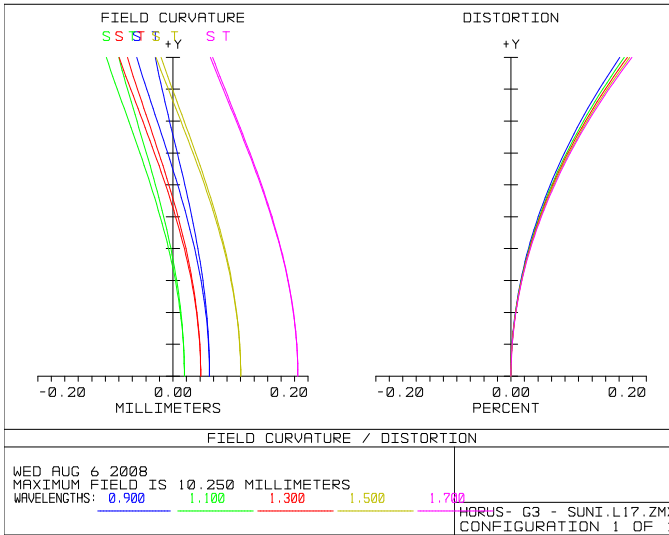
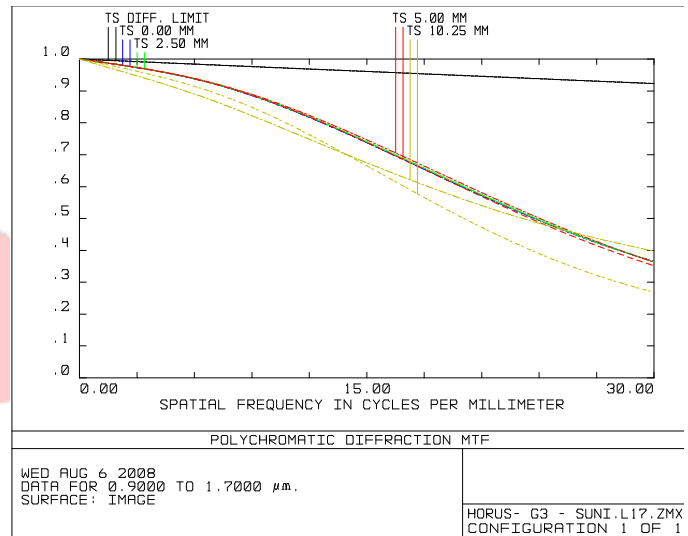
P/N	wavelength range	mount type	note
C0811.071	900-1700 nm	Canon FD	With motorized iris
C0811.072		Nikon	
C0811.073		M42 Screw	
C0811.081	1700-2300 nm	Canon FD	
C0811.082		Nikon	
C0811.083		M42 Screw	
C0811.091	900-2300 nm	Canon FD	
C0811.092		Nikon	
C0811.093		M42 Screw	
C0811.074	900-1700 nm	Canon FD	With motorized focus
C0811.075		Nikon	
C0811.076		M42 Screw	
C0811.084	1700-2300 nm	Canon FD	
C0811.085		Nikon	
C0811.086		M42 Screw	
C0811.094	900-2300 nm	Canon FD	
C0811.095		Nikon	
C0811.096		M42 Screw	
C0811.077	900-1700 nm	Canon FD	With motorized iris and focus
C0811.078		Nikon	
C0811.079		M42 Screw	
C0811.087	1700-2300 nm	Canon FD	
C0811.088		Nikon	
C0811.089		M42 Screw	
C0811.097	900-2300 nm	Canon FD	
C0811.098		Nikon	
C0811.099		M42 Screw	

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

Specification are subject to change without notice

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

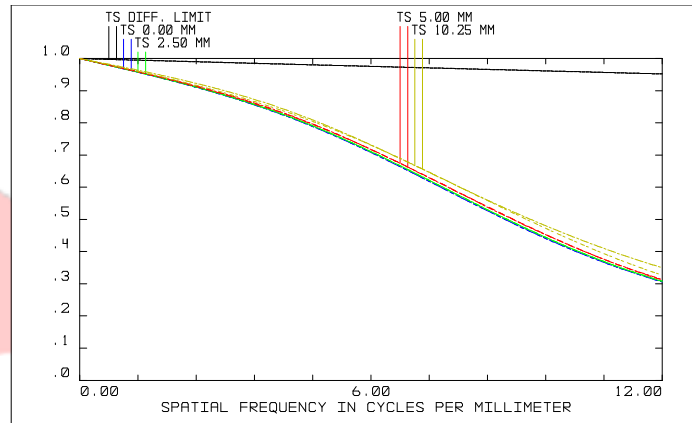
Resolution	MTF > 25% @ 30lp/mm
Distortion	< 0.2%
Average axial chromatic aberration	< 0.0392 mm

Lens Transmission without coating	> 96%
Antireflection Coating	R ≤ 1%
Vignetting	< 1%

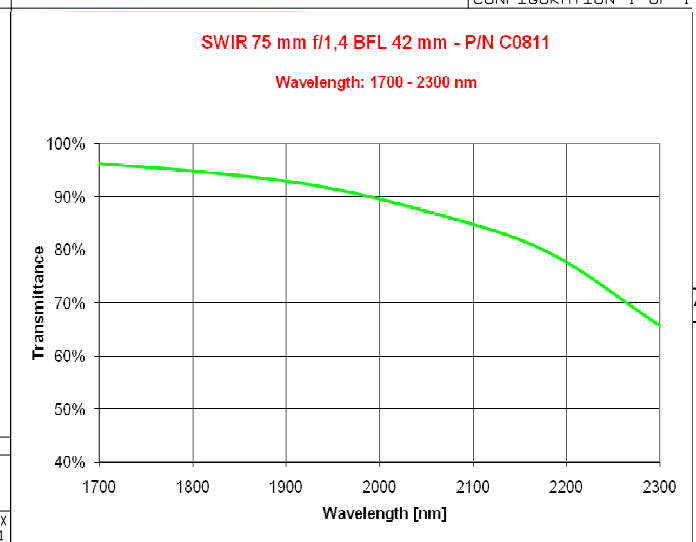
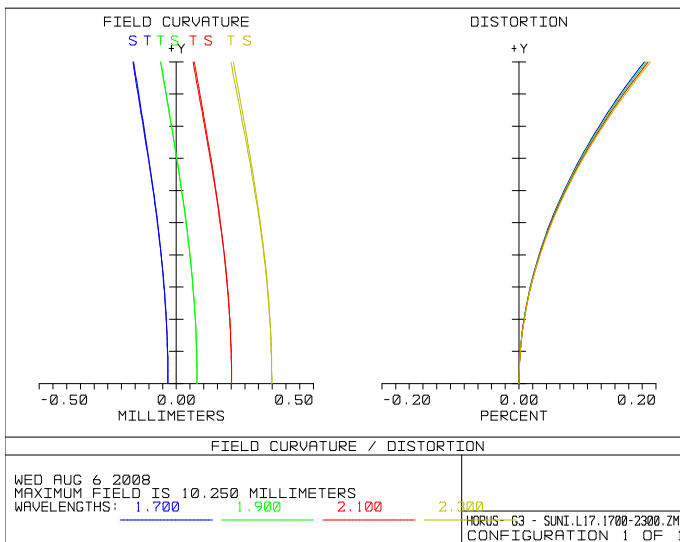
Specification are subject to change without notice

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
WED AUG 6 2008
DATA FOR 1.7000 TO 2.3000 μm.
SURFACE: IMAGE
HORUS-G3 - SUNI.L17.1700-2300.ZMX
CONFIGURATION 1 OF 1



76

Optical parameters for wavelength range 1.7 – 2.3 μm

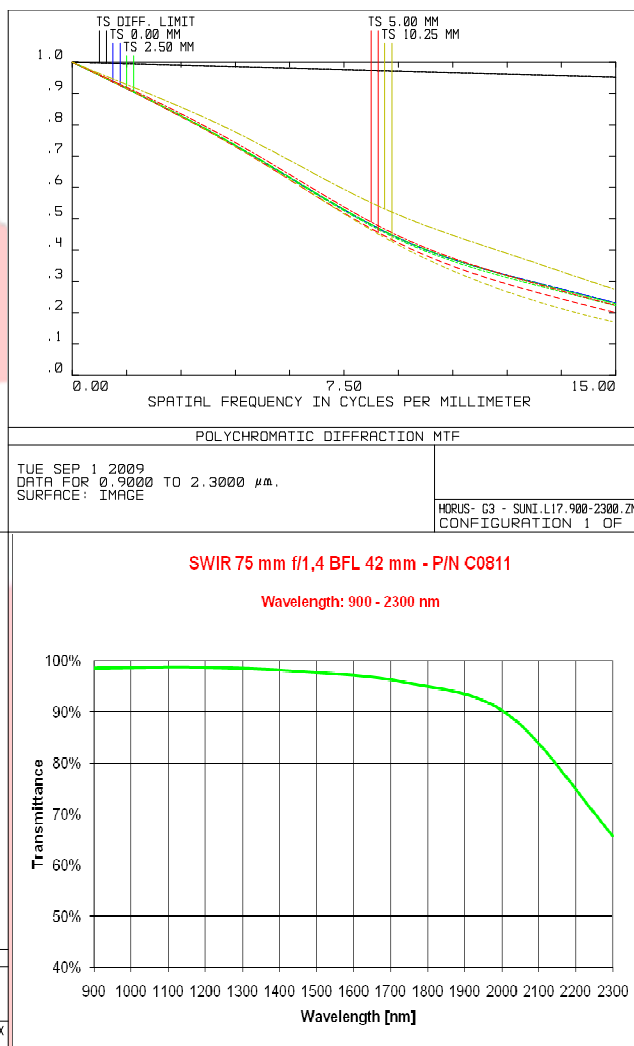
Resolution	MTF > 30%@12lp/mm
Distortion	< 0.2%

Lens Transmission without coating	> 65%
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%).



Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 20% @ 15lp/mm
Distortion	< 0.2%

Lens Transmission without coating	> 65%
Antireflection Coating	R ≤ 1%

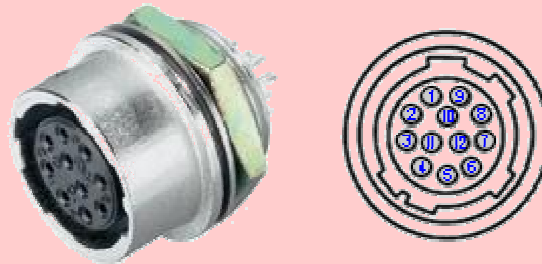
Specification are subject to change without notice

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

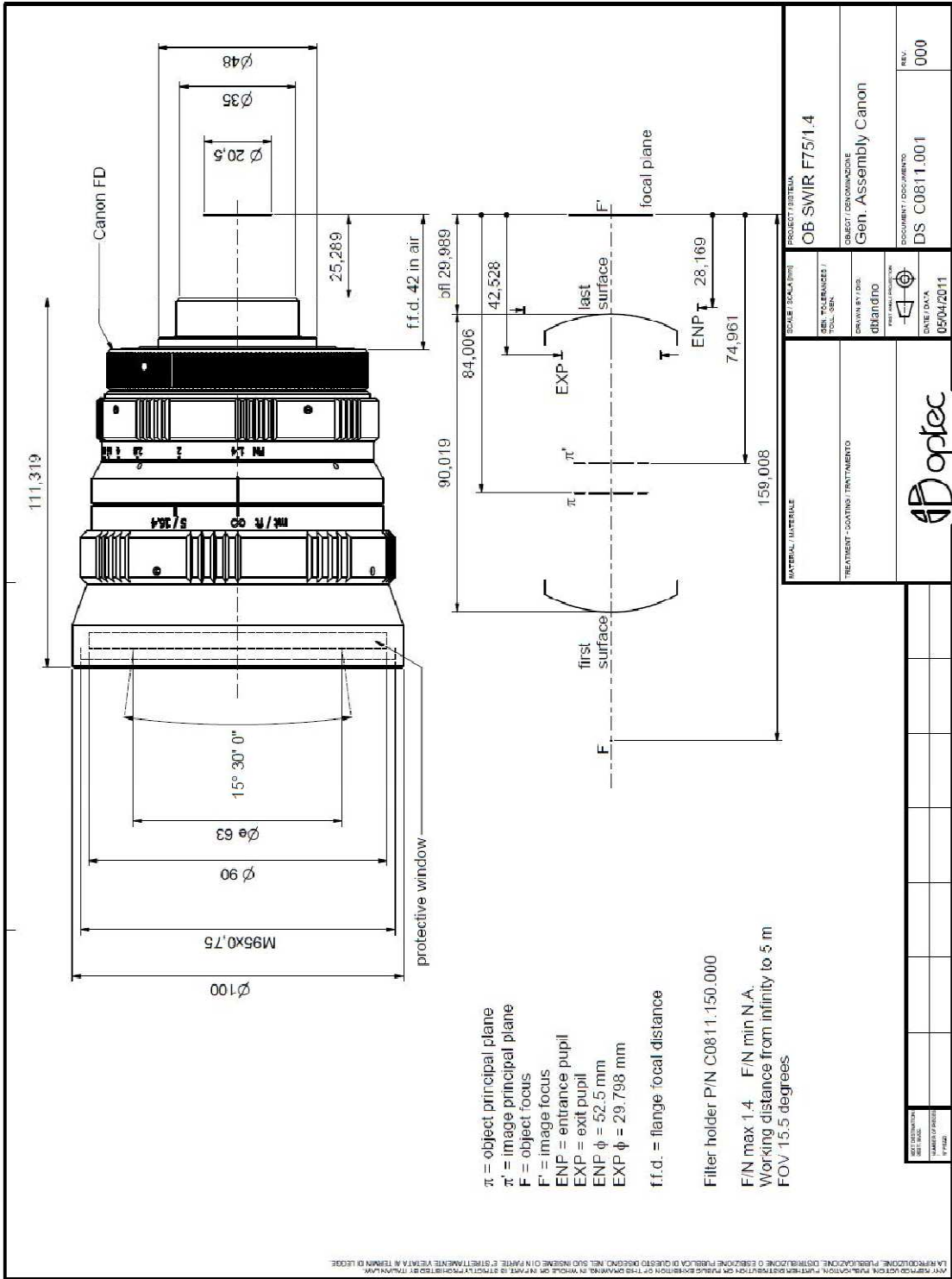


78

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

Specification are subject to change without notice



Specification are subject to change without notice

1/4-20 UNC - 1B
3/8-16 UNC - 2B
111.3
110
131
72
48
20.5
27.381
11.0 d. 42 in air

Connector for motion control
Potentiometer Gear
Motor Gear

Le tolleranze si intendono applicate a trattamento eseguito
Tolerances must be applicable after coating

PROGETTORE		DESIGNER	
G. SERRAVALLE		G. SERRAVALLE	
REVISIONE		REVISION	
REV. 01		REV. 01	
DATA		DATE	
16/04/2015		16/04/2015	
PRODOTTORE		PRODUCER	
AD Optec		AD Optec	
MATERIALE		MATERIAL	
09 SWIR F501.4		09 SWIR F501.4	
DESCRIZIONE		DESCRIPTION	
CM811 - Canon iris Motorized		CM811 - Canon iris Motorized	
CANTIERE		WORKING PLANT	
D8 C/0311_073		D8 C/0311_073	
DATA		DATE	
30/09/2011		30/09/2011	
AUTORE		AUTHOR	
G. SERRAVALLE		G. SERRAVALLE	
VERIFICATORE		CHECKER	
G. SERRAVALLE		G. SERRAVALLE	

Specification are subject to change without notice

1/4-20 UNC - 1B

3/8-16 UNC - 2E

ø79

ø37

ø100

27.381

T.fid. 42 in air

ø48

ø20.5

131

ø110

T2

Connector for motion control

Fidertometer Gear

Mirror Gears

LEADER OPTICS S.p.A. - Via S. Felice 10 - 37060 Sommacampagna (PD) - Italy

UNIVERSAL PART	PROJECT NUMBER	03 SWIR F75M1 4
DATE	REVISION	DESCRIPTION
1	1	03 SWIR F75M1 4
2	2	03 SWIR F75M1 4
3	3	03 SWIR F75M1 4
4	4	03 SWIR F75M1 4
5	5	03 SWIR F75M1 4
6	6	03 SWIR F75M1 4
7	7	03 SWIR F75M1 4
8	8	03 SWIR F75M1 4
9	9	03 SWIR F75M1 4
10	10	03 SWIR F75M1 4
11	11	03 SWIR F75M1 4
12	12	03 SWIR F75M1 4
13	13	03 SWIR F75M1 4
14	14	03 SWIR F75M1 4
15	15	03 SWIR F75M1 4
16	16	03 SWIR F75M1 4
17	17	03 SWIR F75M1 4
18	18	03 SWIR F75M1 4
19	19	03 SWIR F75M1 4
20	20	03 SWIR F75M1 4
21	21	03 SWIR F75M1 4
22	22	03 SWIR F75M1 4
23	23	03 SWIR F75M1 4
24	24	03 SWIR F75M1 4
25	25	03 SWIR F75M1 4
26	26	03 SWIR F75M1 4
27	27	03 SWIR F75M1 4
28	28	03 SWIR F75M1 4
29	29	03 SWIR F75M1 4
30	30	03 SWIR F75M1 4
31	31	03 SWIR F75M1 4
32	32	03 SWIR F75M1 4
33	33	03 SWIR F75M1 4
34	34	03 SWIR F75M1 4
35	35	03 SWIR F75M1 4
36	36	03 SWIR F75M1 4
37	37	03 SWIR F75M1 4
38	38	03 SWIR F75M1 4
39	39	03 SWIR F75M1 4
40	40	03 SWIR F75M1 4
41	41	03 SWIR F75M1 4
42	42	03 SWIR F75M1 4
43	43	03 SWIR F75M1 4
44	44	03 SWIR F75M1 4
45	45	03 SWIR F75M1 4
46	46	03 SWIR F75M1 4
47	47	03 SWIR F75M1 4
48	48	03 SWIR F75M1 4
49	49	03 SWIR F75M1 4
50	50	03 SWIR F75M1 4
51	51	03 SWIR F75M1 4
52	52	03 SWIR F75M1 4
53	53	03 SWIR F75M1 4
54	54	03 SWIR F75M1 4
55	55	03 SWIR F75M1 4
56	56	03 SWIR F75M1 4
57	57	03 SWIR F75M1 4
58	58	03 SWIR F75M1 4
59	59	03 SWIR F75M1 4
60	60	03 SWIR F75M1 4
61	61	03 SWIR F75M1 4
62	62	03 SWIR F75M1 4
63	63	03 SWIR F75M1 4
64	64	03 SWIR F75M1 4
65	65	03 SWIR F75M1 4
66	66	03 SWIR F75M1 4
67	67	03 SWIR F75M1 4
68	68	03 SWIR F75M1 4
69	69	03 SWIR F75M1 4
70	70	03 SWIR F75M1 4
71	71	03 SWIR F75M1 4
72	72	03 SWIR F75M1 4
73	73	03 SWIR F75M1 4
74	74	03 SWIR F75M1 4
75	75	03 SWIR F75M1 4
76	76	03 SWIR F75M1 4
77	77	03 SWIR F75M1 4
78	78	03 SWIR F75M1 4
79	79	03 SWIR F75M1 4
80	80	03 SWIR F75M1 4
81	81	03 SWIR F75M1 4
82	82	03 SWIR F75M1 4
83	83	03 SWIR F75M1 4
84	84	03 SWIR F75M1 4
85	85	03 SWIR F75M1 4
86	86	03 SWIR F75M1 4
87	87	03 SWIR F75M1 4
88	88	03 SWIR F75M1 4
89	89	03 SWIR F75M1 4
90	90	03 SWIR F75M1 4
91	91	03 SWIR F75M1 4
92	92	03 SWIR F75M1 4
93	93	03 SWIR F75M1 4
94	94	03 SWIR F75M1 4
95	95	03 SWIR F75M1 4
96	96	03 SWIR F75M1 4
97	97	03 SWIR F75M1 4
98	98	03 SWIR F75M1 4
99	99	03 SWIR F75M1 4
100	100	03 SWIR F75M1 4

Le tolleranze si intendono applicate a trattamento e seguito
Tolerances must be applicable after coating

OPTEC S.p.A. - Via S. Felice 10 - 37060 Sommacampagna (PD) - Italy

Specification are subject to change without notice