

LENS OB-SWIR300/3.5 – P/N C0245

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	300 mm	N. of elements	7
Image format (diagonal)	20.5 mm	Dimensions	Dia 99 x 293 mm
F.O.V. (diagonal)	3.9 degrees	Weight	2 Kg
Max aperture	F/N = 3.5	Options	
Object format	N.A.	Motorized focus	Upon request
Min working distance	7000 mm	Motorized iris	Upon request
Zoom value	N.A.	Motorized zoom	N.A
Focus	Manual	Other mount type	Upon request
Iris	Max F/N = 3.5 Min F/N = 22	Customization	Upon request

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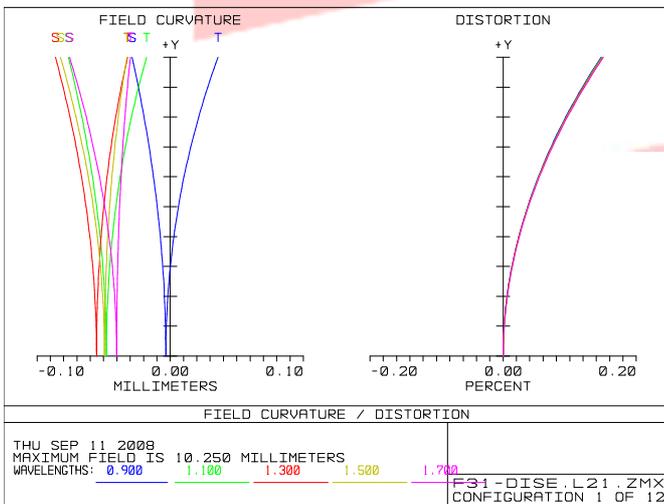
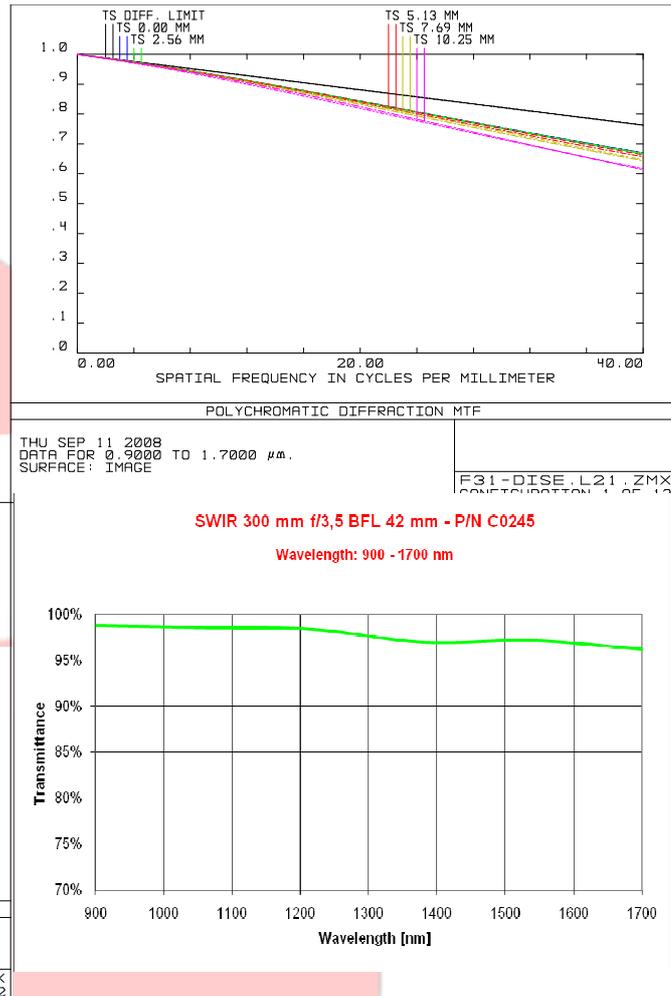
P/N	wavelength range	mount type	note
C0245.001	900-1700 nm	Canon FD	Without iris diaphragm
C0245.002			With manual iris diaphragm
C0245.003			Without iris with motorized focus
C0245.077			With motorized iris and focus
C0245.004		C-mount	Without iris diaphragm
C0245.005			With manual iris diaphragm
C0245.006			Without iris with motorized focus
C0245.076			With motorized iris and focus
C0245.031		Nikon	Without iris diaphragm
C0245.032			With manual iris diaphragm
C0245.033			Without iris with motorized focus
C0245.078			With motorized iris and focus
C0245.007		M42	Without iris diaphragm
C0245.008			With manual iris diaphragm
C0245.009			Without iris with motorized focus
C0245.079			With motorized iris and focus

Specification are subject to change without notice

P/N	wavelength range	mount type	note
C0245.011	1700-2300 nm	Canon FD	Without iris diaphragm
C0245.012			With manual iris diaphragm
C0245.013			Without iris with motorized focus
C0245.087			With motorized iris and focus
C0245.014		C-mount	Without iris diaphragm
C0245.015			With manual iris diaphragm
C0245.016			Without iris with motorized focus
C0245.086			With motorized iris and focus
C0245.034		Nikon	Without iris diaphragm
C0245.035			With manual iris diaphragm
C0245.036			Without iris with motorized focus
C0245.088			With motorized iris and focus
C0245.017		M42	Without iris diaphragm
C0245.018			With manual iris diaphragm
C0245.019			Without iris with motorized focus
C0245.089			With motorized iris and focus
C0245.021	900-2300 nm	Canon FD	Without iris diaphragm
C0245.022			With manual iris diaphragm
C0245.023			Without iris with motorized focus
C0245.097			With motorized iris and focus
C0245.024		C-mount	Without iris diaphragm
C0245.025			With manual iris diaphragm
C0245.026			Without iris with motorized focus
C0245.096			With motorized iris and focus
C0245.037		Nikon	Without iris diaphragm
C0245.038			With manual iris diaphragm
C0245.039			Without iris with motorized focus
C0245.098			With motorized iris and focus
C0245.027		M42	Without iris diaphragm
C0245.028			With manual iris diaphragm
C0245.029			Without iris with motorized focus
C0245.099			With motorized iris and focus
C0245.050	<u>ONLY FOR LASER</u> 1545-1555 nm	Canon FD	Without iris diaphragm.

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

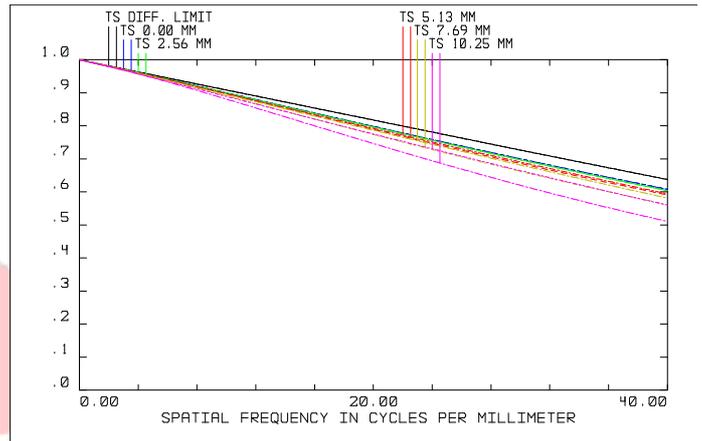
Resolution	MTF > 60%@40lp/mm
Distortion	< 0.2%
Average axial chromatic aberration	< 0.0477 mm

Lens Transmission without coating	> 96%
Antireflection Coating	R ≤ 1%
Vignetting	< 12%

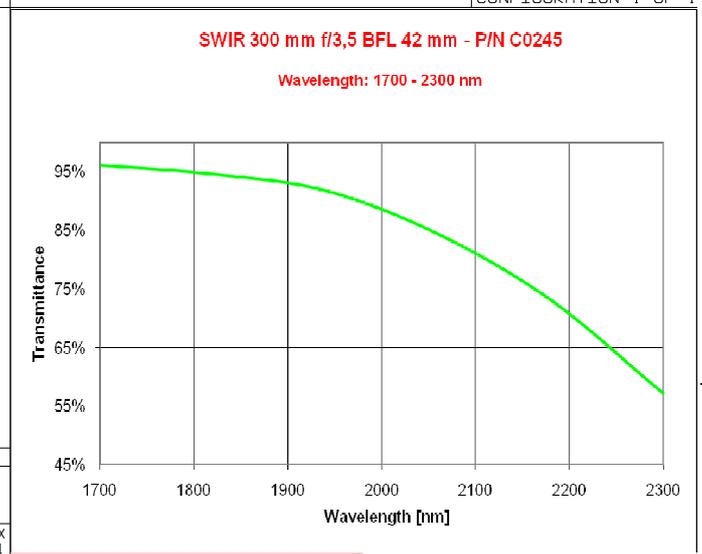
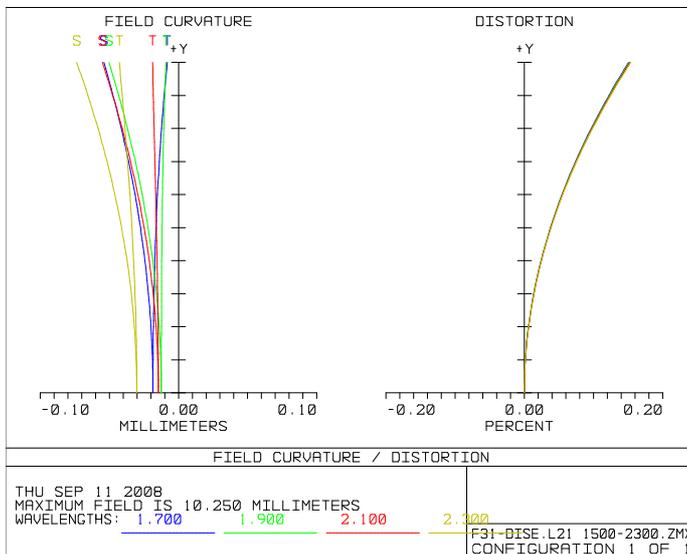
Specification are subject to change without notice

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
THU SEP 11 2008
DATA FOR 1.7000 TO 2.3000 μm.
SURFACE: IMAGE
F31-DISE.L21 1500-2300.ZMX
CONFIGURATION 1 OF 1



Optical parameters for wavelength range 1.7 – 2.3 μm

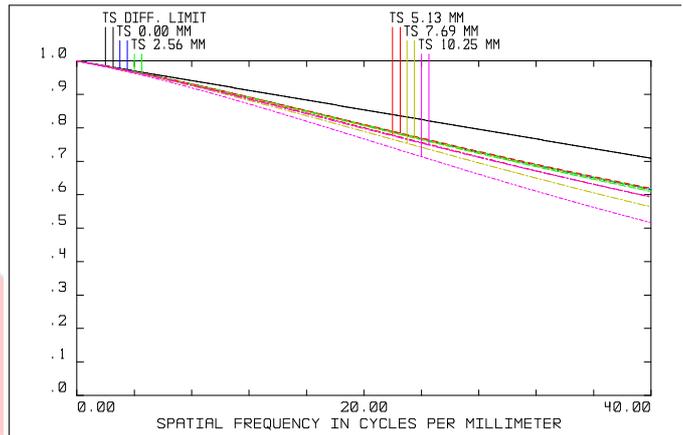
Resolution	MTF > 50%@40lp/mm
Distortion	< 0.2%

Lens Transmission without coating	> 56%
Antireflection Coating	R ≤ 0.5%

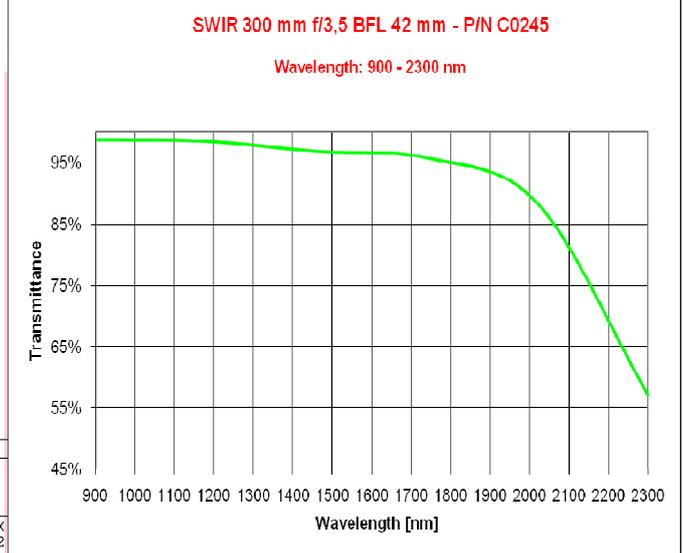
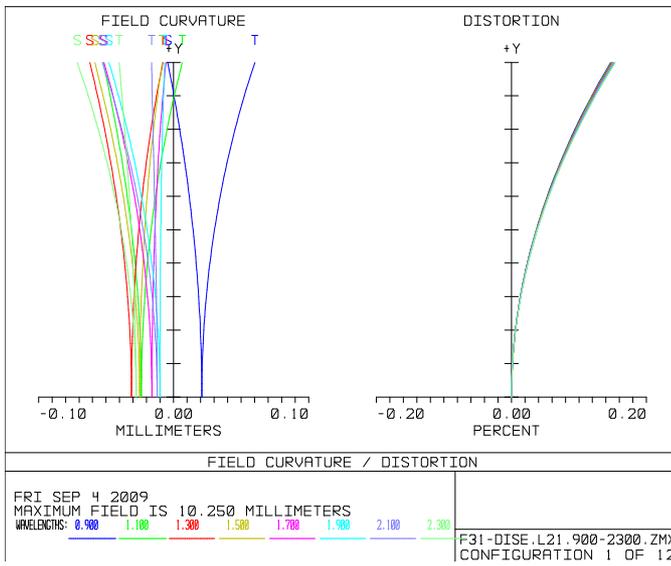
Specification are subject to change without notice

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%).



POLYCHROMATIC DIFFRACTION MTF
 FRI SEP 4 2009
 DATA FOR 0.9000 TO 2.3000 μm.
 SURFACE: IMAGE
 F31-DISE.L21.900-2300.ZMX
 CONFIGURATION 1 OF 12



Optical parameters for wavelength range 0.9 – 2.3 μm

Resolution	MTF > 50%@40lp/mm
Distortion	< 0.2%

Lens Transmission without coating	> 56%
Antireflection Coating	R ≤ 1%

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

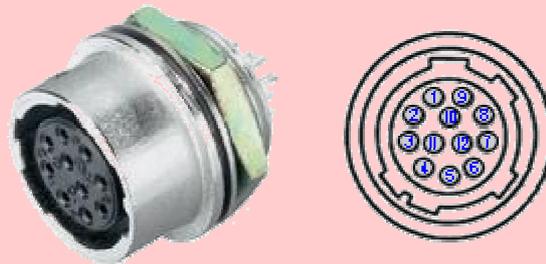
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Electrical data & Interfaces

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 $\pm 5\%$
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

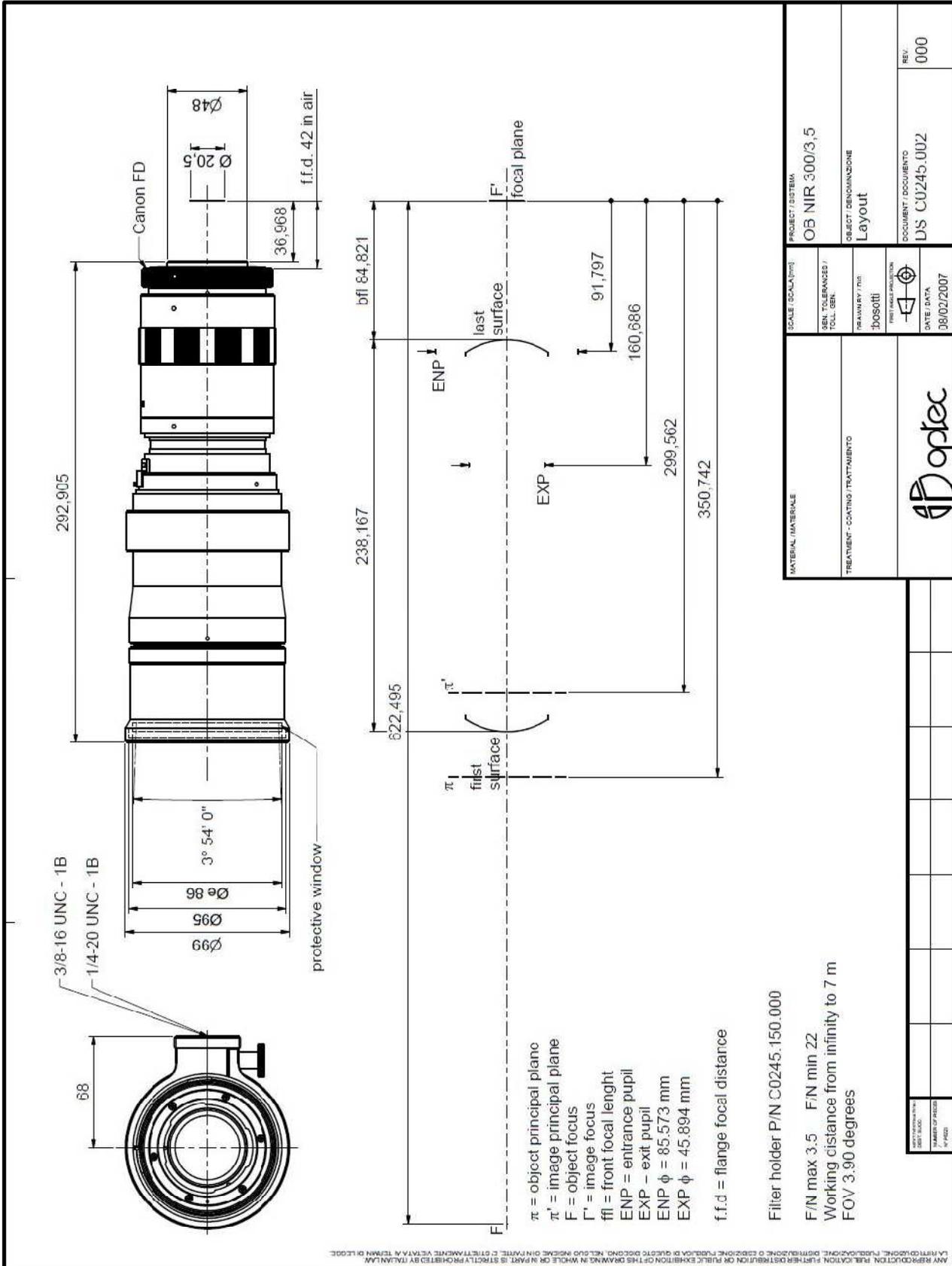


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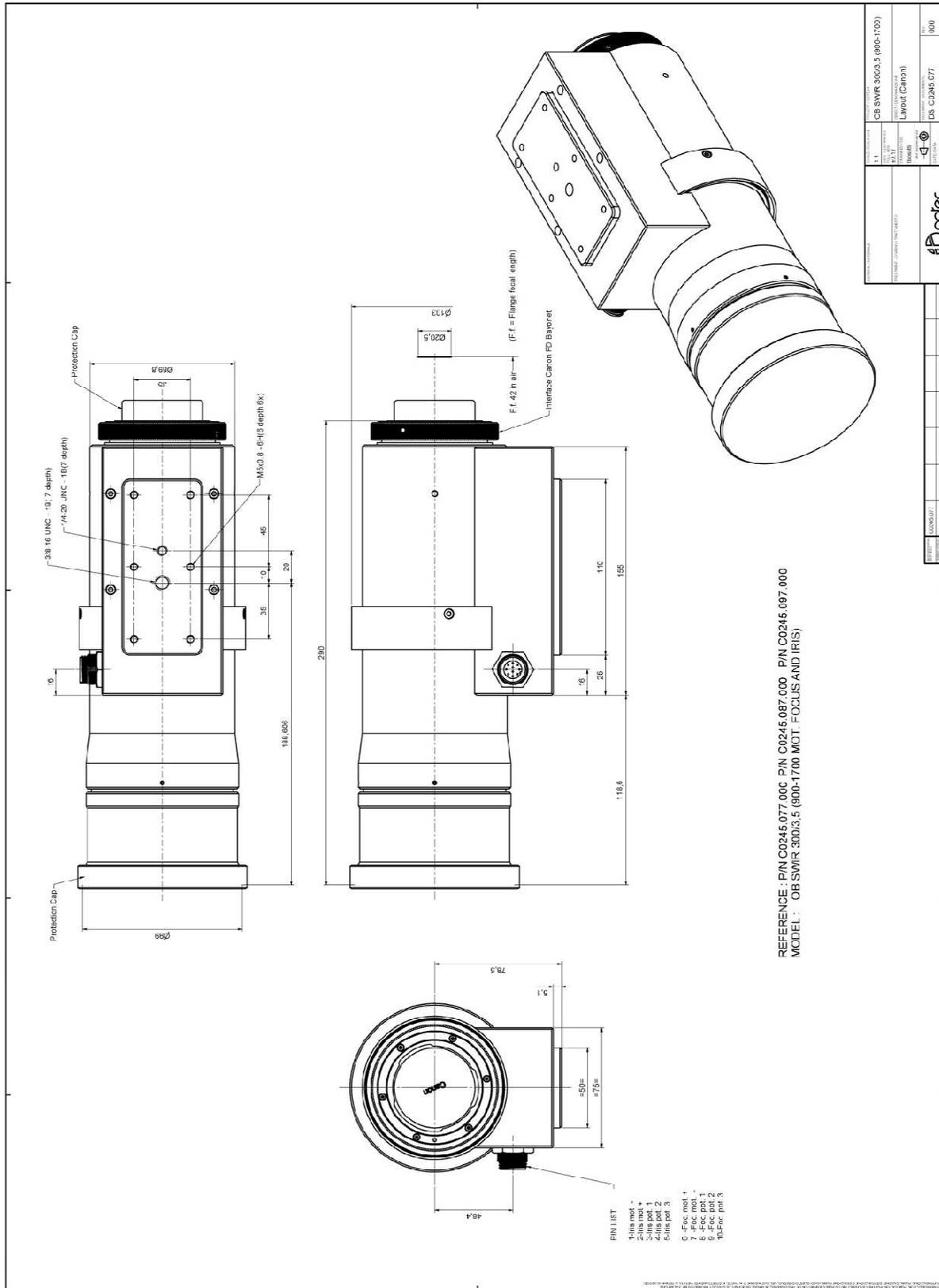
PIN	MOTORIZED IRIS & FOCUS
1	Vcc
2	Gnd
3	Analog Focus position
4	Analog Iris position
5	Identification resistor #1
6	Identification resistor #2
7	Focus Motor +
8	Focus Motor -
9	Iris Motor +
10	Iris Motor -

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



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REV	DATE	DESCRIPTION
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2.00	2015.07.01	Layout (Canon)



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