

SWIR – ENHANCED SERIES

The Enhanced Series SWIR objective fore lenses are optimized for the short-wave infrared wavelength region, 900 – 2500 nm. They have a telecentric output and are optimized for the optics of the Enhanced Series spectrograph, ImSpector N25E.

Optical Characteristics	OLES 15	OLES 22	OLES 30	OLES 56	OLES MACRO
Focal Length	15 mm	22.5 mm	30.7 mm	56 mm	73.3 mm
F-number	2.1	2	2	2	4
Spatial Image Size (max)	9.6 mm	12.8 mm	12.8 mm	9.6 mm	10.0 mm
RMS Spot Diameter	10.0 μm	17.6 μm	16.8 μm	12.9 μm	25.4 μm
Transmission	> 82%	> 82%	> 82%	> 82%	> 82%
Minimum Working Distance *	30 cm	30 cm	30 cm	30 cm	N/A

Mechanical Characteristics

Dimensions	60 mm x \varnothing 45 mm	48.5 mm x \varnothing 47 mm	41.6 mm x \varnothing 53 mm	84 mm x \varnothing 53 mm	173 mm x \varnothing 46 mm
Body Material	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum
Mount	C-mount	C-mount	C-mount	C-mount	C-mount

Dimensions of Imaged Line (LxW) at Select Working Distances (D)

Field of View angle (degrees) **	35.5	24.1	17.8	9.8	7.5
D = 100 mm [3.94 in] *	L= --	--	--	--	13.10
	W= --	--	--	--	0.04
D = 300 mm [11.81 in]	L= 192.00	128.00	93.81	51.43	--
	W= 0.60	0.40	0.29	0.16	--
D = 500 mm [19.69 in]	L= 320.00	213.33	156.35	85.71	--
	W= 1.00	0.67	0.49	0.27	--
D = 750 mm [29.53]	L= 480.00	320.00	234.53	128.57	--
	W= 1.50	1.00	0.73	0.40	--
D = 1000 mm [39.37]	L= 640.00	426.67	312.70	171.43	--
	W= 2.00	1.33	0.98	0.54	--
D = 1500 mm [59.06]	L= 960.00	640.00	469.06	257.14	--
	W= 3.00	2.00	1.47	0.80	--
D = 2000 mm [78.74 in]	L= 1280.00	853.33	625.41	342.86	--
	W= 4.00	2.67	1.95	1.07	--
D = 3000 mm [118.11 in]	L= 1920.00	1280.00	938.11	514.29	--
	W= 6.00	4.00	2.93	1.61	--
D = 1 km [3280 ft] ***	L= 640.00	426.67	312.70	171.43	--
	W= 2.00	1.33	0.98	0.54	--

* Full field of view angle and sharp focus may not be achieved if distance is shorter than the given minimum working distance.

** Default slit width (30 μm) and standard SWIR detector effective slit length of 9.6 mm used for calculations.

*** Length and width at 1 km calculated in meters [m].



When choosing between the SWIR Enhanced Series lenses, consider the size of the samples and the desired magnification. The SWIR Enhanced Series offers a range of focal lengths (15 – 56 mm) and field of view angles (9 – 33°). For process applications, a larger field of view angle is generally better because it collects more light and the camera can be placed closer to the sample.

The Enhanced Series SWIR lens OLES MACRO is ideal for imaging very small samples at high resolution. For example, from a working distance of 10 cm, one can view an object that is only 1.2 cm in length.

OLES 15



OLES 56



OLES MACRO



OLES 22



OLES 31



SWIR - Enhanced Series Lenses Ordering Information		
Part Number	Description	Product Name
MRC-308-003-01	SWIR Enhanced, C-Mount Lens. 15 mm f/2, C-mount, E-series, 900-2500nm	OLES15
MRC-308-003-02	SWIR Enhanced, C-Mount Lens. 22.5 mm f/2, C-mount, E-series, 900-2500nm	OLES22
MRC-308-003-03	SWIR Enhanced, C-Mount Lens. 30.7 mm f/2, C-mount, E-series, 900-2500nm	OLES30
MRC-308-003-04	SWIR Enhanced, C-Mount Lens. 56 mm f/2, C-mount, E-series, 900-2500nm	OLES56
MRC-308-003-05	SWIR Enhanced, C-Mount Lens. 1:1 imaging, f/4, C-mount, E-series, 900-2500nm	OLESMACRO