

VNIR – ENHANCED SERIES

The Enhanced Series VNIR objective fore lenses are optimized for the visible to near-infrared wavelength region, 400 – 1000 nm. They have a telecentric output and are optimized for the optics of the Enhanced Series spectrograph, ImSpector V10E. The Enhanced Series also includes lenses for large sensors.

Optical Characteristics	OLE18.5	OLE23	OLE140
Focal Length	18.5 mm	23 mm	140 mm
F-number	2.4	2.4	2.4
Spatial Image Size (max)	12.4 mm	14.4 mm	12.4 mm
RMS Spot Diameter	17.4 μ m	15.4 μ m	10 μ m
Transmission	> 85%	> 85%	> 85%
Minimum Working Distance *	30 cm	30 cm	10 cm

Mechanical Characteristics			
Dimensions	48 mm x ϕ 53 mm	43 mm x ϕ 41 mm	162 mm x ϕ 65 mm
Body Material	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum
Mount	C-mount	C-mount	C-mount

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

Field of View angle (degrees) **		26.8	21.7	3.6
D = 100 mm [3.94 in] *	L=	--	--	6.29
	W=	--	--	0.02
D = 300 mm [11.81 in]	L=	142.70	114.78	18.86
	W=	0.49	0.39	0.06
D = 500 mm [19.69 in]	L=	237.84	191.30	31.43
	W=	0.81	0.65	0.11
D = 750 mm [29.53]	L=	356.76	286.96	47.14
	W=	1.22	0.98	0.16
D = 1000 mm [39.37]	L=	475.68	382.61	62.86
	W=	1.62	1.30	0.21
D = 1500 mm [59.06]	L=	713.51	573.91	94.29
	W=	2.43	1.96	0.32
D = 2000 mm [78.74 in]	L=	951.35	765.22	125.71
	W=	3.24	2.61	0.43
D = 3000 mm [118.11 in]	L=	1427.03	1147.83	188.57
	W=	4.86	3.91	0.64
D = 1 km [3280 ft] ***	L=	475.68	382.61	62.86
	W=	1.62	1.30	0.21

* 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 μ m) chosen for calculations. Standard 2/3" detector limits effective slit length to 8.8 mm.

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



When choosing between the VNIR Enhanced Series lenses, consider the size of the samples and the desired magnification. The VNIR Enhanced Series lenses offer a range of focal lengths (9 – 140 mm) and field of view angles (4 – 52°).



OLE 18.5



OLE 23



OLE 140

VNIR - Enhanced Series Lenses Ordering Information		
Part Number	Description	Product Name
MRC-308-002-03	VNIR Enhanced, C-Mount Lens. 18.5 mm, f/2.4, C-mount, E-series, 400-1000nm	OLE18.5
MRC-308-002-04	VNIR Enhanced, C-Mount Lens. 23 mm, f/2.4, C-mount, E-series, 400-1000nm	OLE23
MRC-308-002-05	VNIR Enhanced, C-Mount Lens. 140 mm, f/2.4, C-mount, E-series, 400-1000nm	OLE140

VNIR – STANDARD SERIES

The Standard Series VNIR objective fore lenses are optimized for the visible to near-infrared wavelength region, 400 – 1000 nm. They were developed for 1", 2/3" or smaller sensors, thus are a good match for most of the visible and VNIR spectrographs in this catalog. The M-Series spectrograph allows larger sensors and requires a larger, non-C-Mount lens.

Optical Characteristics	OL8	OL12	OL17	OL23	OL35	OL50
Focal Length	8.3 mm	12.7 mm	17.6 mm	22.5 mm	34.9 mm	50 mm
F-number	1.4	1.4	1.4	1.4	1.9	1.4
Spatial Image Size (max)	12 mm	12 mm	12 mm	12 mm	12 mm	22 mm
Transmission	> 80%	> 80%	> 80%	> 80%	> 80%	--
Minimum Working Distance *	5 mm	20 mm	70 mm	115 mm	310 mm	--

Mechanical Characteristics

Dimensions	ø 52 x 36.2 mm	ø 52 x 43.8 mm	ø 52 x 36.8 mm	ø 52 x 40.5 mm	ø 52 x 38.5 mm	ø 52 x 74.2 mm
Body Material	Anodized Al	Anodized Al	Anodized Al	Anodized Al	Anodized Al	Anodized Al
Mount	C-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) **	55.9	38.2	28.1	22.1	14.4	10.1
D = 100 mm [3.94 in] *	L= 106.02 W= 0.36	69.29 0.24	50.00 0.17	39.11 ** 0.13 **	-- --	-- --
D = 300 mm [11.81 in]	L= 318.07 W= 1.08	207.87 0.71	150.00 0.51	117.33 0.40	75.64 0.26	52.80 0.18
D = 500 mm [19.69 in]	L= 530.12 W= 1.81	346.46 1.18	250.00 0.85	195.56 0.67	126.07 0.43	88.00 0.30
D = 750 mm [29.53]	L= 795.18 W= 2.71	519.69 1.77	375.00 1.28	293.33 1.00	189.11 0.64	132.00 0.45
D = 1000 mm [39.37]	L= 1060.24 W= 3.61	692.91 2.36	500.00 1.70	391.11 1.33	252.15 0.86	176.00 0.60
D = 1500 mm [59.06]	L= 1590.36 W= 5.42	1039.37 3.54	750.00 2.56	586.67 2.00	378.22 1.29	264.00 0.90
D = 2000 mm [78.74 in]	L= 2120.48 W= 7.23	1385.83 4.72	1000.00 3.41	782.22 2.67	504.30 1.72	352.00 1.20
D = 3000 mm [118.11 in]	L= 3180.72 W= 10.84	2078.74 7.09	1500.00 5.11	1173.33 4.00	756.45 2.58	528.00 1.80
D = 1 km [3280 ft] ***	L= 1060.24 W= 3.61	692.91 2.36	500.00 1.70	391.11 1.33	252.15 0.86	176.00 0.60

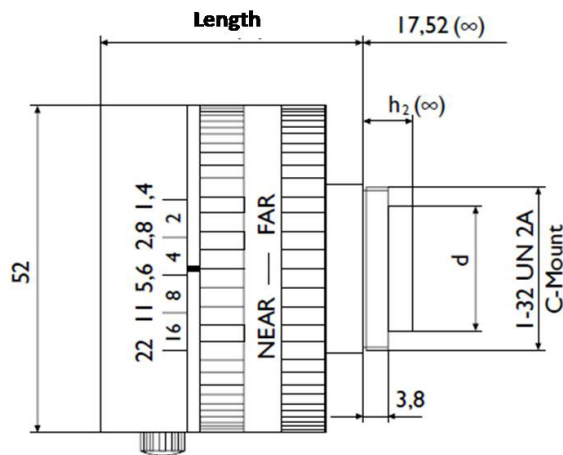
* Full field of view angle and sharp focus may not be achieved if distance is shorter than the given minimum working distance.

** Default slit width (30 µm) chosen for calculations. Standard 2/3" detector limits effective slit length to 8.8 mm.

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



When choosing between the VNIR Standard Series lenses, consider the size of the samples and the desired magnification. The VNIR Standard Series offers a range of focal lengths (8 – 50 mm) and field of view angles (10° – 58°). For remote sensing or field applications, a larger field of view angle is usually preferable.



Typical VNIR Standard Series lens mounting and dimensions

VNIR - Standard Series Lenses Ordering Information		
Part Number	Description	Product Name
MRC-308-001-01	VNIR Standard, C-Mount Lens. 8 mm, f/1.4, C-mount, 400-1000nm, 12 mm image	OL8
MRC-308-001-02	VNIR Standard, C-Mount Lens. 12 mm, f/1.4, C-mount, 400-1000nm, 12 mm image	OL12
MRC-308-001-03	VNIR Standard, C-Mount Lens. 17 mm, f/1.4, C-mount, 400-1000nm, 12 mm image	OL17
MRC-308-001-04	VNIR Standard, C-Mount Lens. 23 mm, f/1.4, C-mount, 400-1000nm, 12 mm image	OL23
MRC-308-001-05	VNIR Standard, C-Mount Lens. 35 mm, f/1.9, C-mount, 400-1000nm, 12 mm image	OL35
MRC-308-001-06	VNIR Standard, C-Mount Lens. 50 mm, f/1.4, C-mount, 400-1000nm, 22 mm image	OL50