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Optical Elements

Polarization Optics

Optical Isolators

Optical Systems

Optics Kits

▼ SECTIONS

Beam Expanders

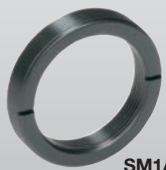
Objective/Scan
Lenses

Camera Lenses

Interferometers

Scanning Galvo
Mirror SystemFree-Space
EO Modulators

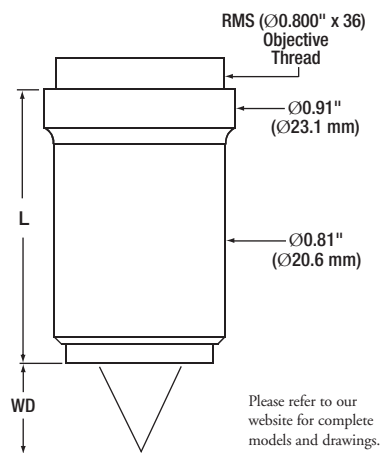
Reference Cells

Have you
seen our...RMS-
Threaded
Adapters

SM1A3

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UV Focusing Objectives, MicroSpot Series (Page 1 of 2)



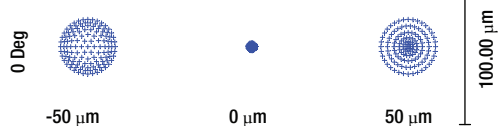
The all-refractive UV Achromatic MicroSpot Focusing Objectives are designed for use with UV excimer lasers and other ultraviolet sources. The lens elements in these objectives are made from the highest quality, lowest absorption, excimer-grade fused silica and CaF_2 available. These lenses have narrowband or broadband AR coatings. The narrowband AR-coated objectives are specifically designed for high-power industrial applications such as micromachining, microlithography, laser scribing, and photoablation. The broadband AR-coated objectives are ideal for use in multi-wavelength applications like UV fluorescence spectroscopy or confocal microscopy.

COATING DESIGNATION	SPECTRAL RANGE	DAMAGE THRESHOLD (20 ns PULSES @ 20 Hz)	MAX REFLECTIVITY PER SURFACE
193	192 - 194 nm	100 MW/cm ²	1.5%
266	255 - 280 nm	500 MW/cm ²	0.35%
351	340 - 370 nm	500 MW/cm ²	0.25%
UVB	240 - 360 nm	50 MW/cm ²	1.5%
NUV	325 - 500 nm	50 MW/cm ²	1.0%

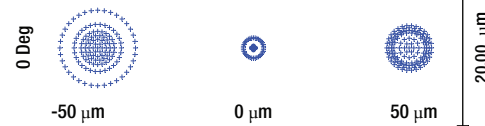
M	Magnification
WD	Working Distance
EFL	Effective Focal Length

NA	Numerical Aperture
TFS	Theoretical Focal Spot Size
EA	Entrance Aperture

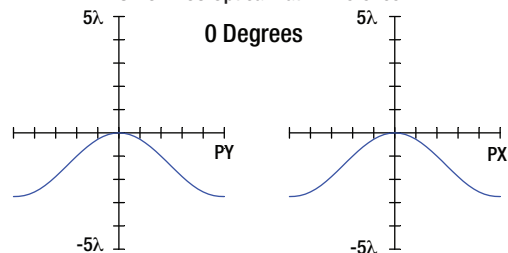
LMU-15X-193 Through Focus



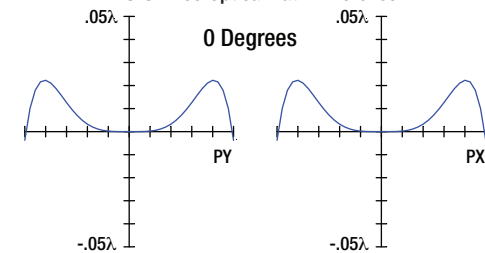
LMU-3X-266 Through Focus



LMU-15X-193 Optical Path Difference



LMU-3X-266 Optical Path Difference



Narrowband Focusing Objectives

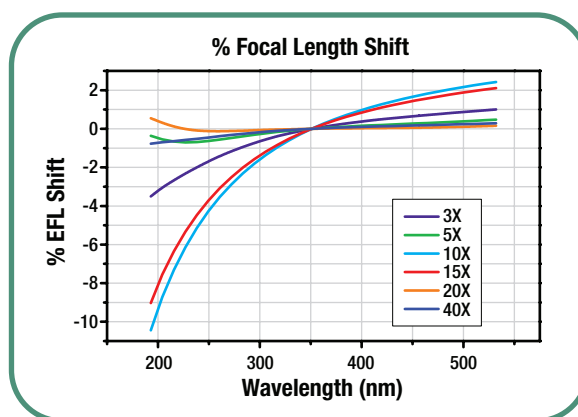
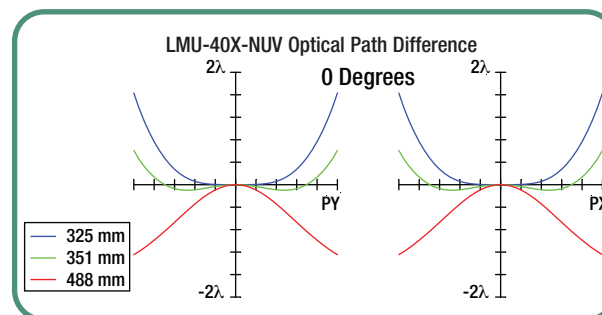
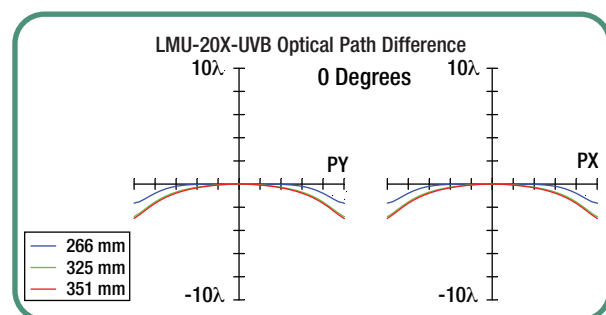
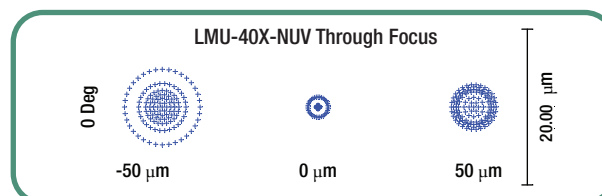
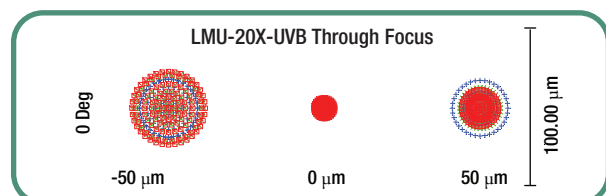
ITEM #	COATING	\$	£	€	RMB	M ^a	WD	EFL	NA	TFS ^b	EA	L	SPOT SIZE ^c
LMU-3X-266	266	\$ 1,116.90	£ 804.17	€ 971.70	¥ 8,901.69	3X	49 mm	60 mm	0.08	5 μm	10 mm	25.4 mm	5 μm
LMU-3X-351	351	\$ 1,116.90	£ 804.17	€ 971.70	¥ 8,901.69	3X	49 mm	60 mm	0.08	5 μm	10 mm	25.4 mm	5 μm
LMU-10X-193	193	\$ 1,810.50	£ 1,303.56	€ 1,575.14	¥ 14,429.69	10X	15 mm	20 mm	0.25	2 μm	10 mm	31.5 mm	2 μm
LMU-10X-266	266	\$ 1,708.50	£ 1,230.12	€ 1,486.40	¥ 13,616.75	10X	15 mm	20 mm	0.25	2 μm	10 mm	31.5 mm	2 μm
LMU-10X-351	351	\$ 1,708.50	£ 1,230.12	€ 1,486.40	¥ 13,616.75	10X	15 mm	20 mm	0.25	2 μm	10 mm	31.5 mm	2 μm
LMU-15X-193	193	\$ 1,963.50	£ 1,413.72	€ 1,708.25	¥ 15,649.10	15X	8.5 mm	13 mm	0.32	1 μm	8.5 mm	36.1 mm	1 μm
LMU-15X-266	266	\$ 1,861.50	£ 1,340.28	€ 1,619.51	¥ 14,836.16	15X	8.5 mm	13 mm	0.32	1 μm	8.5 mm	36.1 mm	1 μm
LMU-15X-351	351	\$ 1,861.50	£ 1,340.28	€ 1,619.51	¥ 14,836.16	15X	8.5 mm	13 mm	0.32	1 μm	8.5 mm	36.1 mm	1 μm

^aMagnification ^bThe theoretical focal spot size is calculated assuming that the entrance aperture is filled and the beam profile is Gaussian.^cGaussian Beam Profile and Filled Aperture

UV Focusing Objectives, MicroSpot Series (Page 2 of 2)

While our MicroSpot Series of objectives are available with a narrowband or broadband AR coating, they also belong to one of two design families. The 10X and 15X objectives have a narrowband optical design, which is best for deep UV applications and micromachining. These are available with either our narrowband coatings or our broadband coatings. When narrowband coated, they have a significantly higher damage threshold than their broadband-coated counterparts. The broadband-coated versions of these

objectives are ideal for sharply focusing one wavelength, while allowing other wavelengths to be transmitted slightly out of focus. The 5X, 20X, and 40X objectives are based on a second optical design for broadband use that minimizes the focal shift as wavelength changes. Due to their design, they are ideal for focusing or collecting polychromatic light, making them better suited for use in spectrometry, wafer inspection, medical applications, or any other application where a broadband source must be focused.



Mechanical
Drawings Available on the
WEB

Broadband Focusing Objectives

ITEM #	COATING	\$	£	€	RMB	M ^a	WD	EFL	NA	TFS ^b	EA	L	SPOT SIZE ^c
LMU-5X-UVB	UVB	\$ 1,116.90	£ 804.17	€ 971.70	¥ 8,901.69	5X	35 mm	40 mm	0.13	3 µm	10 mm	23.1 mm	3 µm
LMU-5X-NUV	NUV	\$ 1,116.90	£ 804.17	€ 971.70	¥ 8,901.69	5X	35 mm	40 mm	0.13	3 µm	10 mm	23.1 mm	3 µm
LMU-10X-UVB	UVB	\$ 1,708.50	£ 1,230.12	€ 1,486.40	¥ 13,616.75	10X	15 mm	20 mm	0.25	2 µm	10 mm	31.5 mm	2 µm
LMU-10X-NUV	NUV	\$ 1,708.50	£ 1,230.12	€ 1,486.40	¥ 13,616.75	10X	15 mm	20 mm	0.25	2 µm	10 mm	31.5 mm	2 µm
LMU-15X-UVB	UVB	\$ 1,861.50	£ 1,340.28	€ 1,619.51	¥ 14,836.16	15X	8.5 mm	13 mm	0.32	1 µm	8.5 mm	36.1 mm	1 µm
LMU-15X-NUV	NUV	\$ 1,861.50	£ 1,340.28	€ 1,619.51	¥ 14,836.16	15X	8.5 mm	13 mm	0.32	1 µm	8.5 mm	36.1 mm	1 µm
LMU-20X-UVB	UVB	\$ 2,136.90	£ 1,538.57	€ 1,859.10	¥ 17,031.09	20X	4 mm	10 mm	0.40	1 µm	8 mm	34.6 mm	1 µm
LMU-20X-NUV	NUV	\$ 2,136.90	£ 1,538.57	€ 1,859.10	¥ 17,031.09	20X	4 mm	10 mm	0.40	1 µm	8 mm	34.6 mm	1 µm
LMU-40X-UVB	UVB	\$ 2,244.00	£ 1,615.68	€ 1,952.28	¥ 17,884.68	40X	1 mm	5 mm	0.50	1 µm	5 mm	33.2 mm	1 µm
LMU-40X-NUV	NUV	\$ 2,244.00	£ 1,615.68	€ 1,952.28	¥ 17,884.68	40X	1 mm	5 mm	0.50	1 µm	5 mm	33.2 mm	1 µm

^aMagnification ^bThe theoretical focal spot size is calculated assuming that the entrance aperture is filled and the beam profile is Gaussian.

^cGaussian Beam Profile and Filled Aperture