For current pricing, please see our website.

File Reviewed UPDATED to New Specs

Updated LF 11/30/12

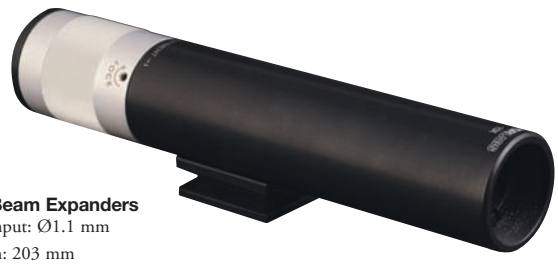
Beam Expanders, Non-Rotating Optics (Page 1 of 2)

■ Sliding Collimation Adjustment ■ High Power Coatings ■ UV Coatings ■ Broadband or Narrowband Coatings

NEW versions

2.5X Beam Expanders
$1/e^2$ Input: Ø4.4 mm
Length: 126 mm
Diameter: Ø38 mm

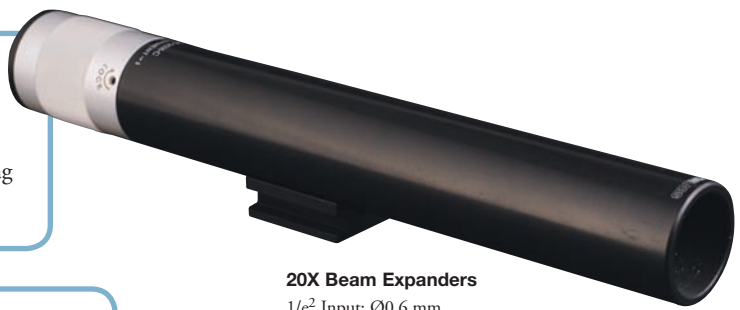
5X Beam Expanders
$1/e^2$ Input: Ø2.2 mm
Length: 152 mm
Diameter: Ø38 mm



10X Beam Expanders
$1/e^2$ Input: Ø1.1 mm
Length: 203 mm
Diameter: Ø38 mm

Features

- Diverge, Collimate, or Focus the Output Beam
- Collimation Adjustment Does Not Rotate Lens
- Removable Endcap Protects C-Mount Threading
- Best Form AR-Coated Lenses



20X Beam Expanders
$1/e^2$ Input: Ø0.6 mm
Length: 279 mm
Diameter: Ø38 mm

Specifications

- **Wavefront Error:** <λ/4 (Diffraction Limited)
- **Transmittance:** >96% (>90% for E Coating)
- **Surface Quality**
  - 10-5 Scratch-Dig (A, B, UV, and 1064 nm Coatings)
  - 20-10 Scratch-Dig (E Coating)

Mechanical Drawings Available on the WEB

The ELU, EL, and ELQ series of Galilean Beam Expanders can expand or reduce the diameter of a collimated beam with an introduced wavefront error of less than λ/4 (i.e., diffraction-limited performance). A beam is often expanded so that it can be subsequently focused to a smaller diffraction-limited spot than was possible with the non-expanded beam. A reduced beam is sometimes necessary for use with optics or instruments with smaller input apertures, like the SA200 family of scanning Fabry-Perot interferometers (see page XXX).

The housing contains two lenses that are designed to minimize aberrations in the recollimated beam. Both optics have broadband AR coatings to minimize surface reflections. The input lens is mounted in a precision-milled tube that can slide in and out of the main body containing the output lens. The sliding design allows for the adjustment of the collimating lens and minimizes the beam walk-off effect that is inherent to lens adjustments. The beam expander can be mounted via either the 1/4"-20 or the M6 threaded hole in the base. In addition, the groove milled in the base can be used to clamp the beam expander to an optical table using CL6 Mounting Cleats (not included, see page XXX). The beam expanders have C-Mount-threaded input apertures, which allow additional lenses and filters to be installed easily along the optical axis of the beam expander. The SM1A9 external C-Mount to internal SM1 threading adapter is on page XXX.

Beam Expanders, Non-Rotating Optics (Page 2 of 2)

UV Fused Silica Beam Expanders

- **Narrowband AR Coatings** 248 or 351 nm
- **AR Coating:** R_{avg} < 0.2%
- **Damage Threshold (20 ns Pulses @20 Hz):** 500 MW/cm^2

ITEM #	EXPANSION	MAX INPUT 1/e^2 BEAM DIAMETER*	INPUT APERTURE	AR COATING	$	£	€	RMB
ELU-25-2.5X-248	2.5X	4.4 mm	Ø9 mm	248 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-2.5X-351	2.5X	4.4 mm	Ø9 mm	351 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-5X-248	5X	2.2 mm	Ø9 mm	248 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-5X-351	5X	2.2 mm	Ø9 mm	351 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-10X-248	10X	1.1 mm	Ø9 mm	248 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-10X-351	10X	1.1 mm	Ø9 mm	351 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELU-25-20X-248	20X	0.6 mm	Ø3.5 mm	248 nm	$ 1,252.40	£ 901.73	€1.089,59	¥ 9,981.63
ELU-25-20X-351	20X	0.6 mm	Ø3.5 mm	351 nm	$ 1,252.40	£ 901.73	€1.089,59	¥ 9,981.63

*For Diffraction-Limited Performance

Broadband Beam Expanders

- **Broadband AR Coatings**
  - A (400 – 650 nm)
  - B (650 – 1050 nm)
  - E (3 – 5 µm)
- **AR Coating**
  - R_{avg} < 0.5% for A and B Coatings
  - R_{avg} < 2% for E Coating
- **Damage Threshold CW**
  - 100 W/cm^2 for A and B Coatings
  - 50 W/cm^2 for E Coating

ITEM #	EXPANSION	MAX INPUT 1/e^2 BEAM DIAMETER*	INPUT APERTURE	AR COATING RANGE	$	£	€	RMB	
EL-25-2.5X-A	2.5X	4.4 mm	Ø9 mm	400 - 650 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	
EL-25-2.5X-B	2.5X	4.4 mm	Ø9 mm	650 - 1050 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	
EL-25-3X-E	3X	4.0 mm	Ø9 mm	3 - 5 µm	$ 1,015.00	£ 730.80	€ 883,05	¥ 8,089.55	NEW
EL-25-5X-A	5X	2.2 mm	Ø9 mm	350 - 650 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	
EL-25-5X-E	5X	2.2 mm	Ø9 mm	3 - 5 µm	$ 1,015.00	£ 730.80	€ 883,05	¥ 8,089.55	
EL-25-5X-B	5X	2.2 mm	Ø9 mm	650 - 1050 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	NEW
EL-25-10X-A	10X	1.1 mm	Ø9 mm	350 - 650 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	
EL-25-10X-B	10X	1.1 mm	Ø9 mm	650 - 1050 nm	$ 999.90	£ 719.93	€ 869,91	¥ 7,969.20	
EL-25-20X-A	20X	0.6 mm	Ø3.5 mm	350 - 650 nm	$ 1,206.95	£ 869.00	€1.050,05	¥ 9,619.39	
EL-25-20X-B	20X	0.6 mm	Ø3.5 mm	650 - 1050 nm	$ 1,206.95	£ 869.00	€1.050,05	¥ 9,619.39	

*For Diffraction-Limited Performance

1064 nm Beam Expanders

- **Narrowband AR Coatings** 1064 nm
- **AR Coating:** R_{avg} < 0.2%
- **Damage Threshold (20 ns Pulses @20 Hz):** 2 GW/cm^2

ITEM #	EXPANSION	MAX INPUT 1/e^2 BEAM DIAMETER*	INPUT APERTURE	AR COATING RANGE	$	£	€	RMB
ELQ-25-2.5X-1064	2.5X	4.4 mm	Ø9 mm	1064 nm ± 40 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELQ-25-5X-1064	5X	2.2 mm	Ø9 mm	1064 nm ± 40 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELQ-25-10X-1064	10X	1.1 mm	Ø9 mm	1064 nm ± 40 nm	$ 1,040.30	£ 749.02	€ 905,06	¥ 8,291.19
ELQ-25-20X-1064	20X	0.6 mm	Ø3.5 mm	1064 nm ± 40 nm	$ 1,252.40	£ 901.73	€ 1.089,59	¥ 9,981.63

*For Diffraction-Limited Performance