

Fixed Ratio Beam Expanders



Description

Fixed ratio beam expander is a device dedicated to increase the diameter of a laser beam.

Altechna's beam expanders are assembled using one diverging and one converging lens. As there is no focal point inside of the beam expander, it can be used with high power laser sources. Special treatment of lenses and mechanics is performed for UV application to improve lifetime and LIDT of the expander. Standard magnifications are from 1.1x to 5x. Beam expanders for any wavelengths between 266 – 1064 nm are available upon request.

Features

- Custom magnification and design on request
- Extended lifetime and LIDT for UV applications
- Individual reports of beam ellipticity, M^2 and pointing stability parameters
- Custom wavelengths are available in the range of 266-1064 nm

Standard specifications

Lens material	UVFS
Transmitted wavefront distortion	$<\lambda/4$ @ 632.8 nm
Overall transmission	$>98\%$
LIDT	$>10 \text{ J/cm}^2$ @ 1064 nm, 10 ns, 10 Hz
Housing material	Clear anodized
Mounting thread	SM1

Typical Items

Wavelength, nm	Expansion	Max input beam diameter*, mm	Housing dimensions, mm	Product ID
343-355	1.2x	10	Ø30 x 56.6	FBE-1.2X-0343-0355
	1.5x	8.5	Ø30 x 55.7	FBE-1.5X-0343-0355
	2x	5	Ø30 x 58.1	FBE-2X-0343-0355
	2.5x	5	Ø30 x 79.4	FBE-2.5X-0343-0355
	3x	5	Ø30 x 56.6	FBE-3X-0343-0355
	4x	4	Ø30 x 80.1	FBE-4X-0343-0355
	5x	3	Ø30 x 85.1	FBE-5X-0343-0355
515-532	1.2x	10	Ø30 x 58.2	FBE-1.2X-0515-0532
	1.5x	9	Ø30 x 57.3	FBE-1.5X-0515-0532
	2x	6	Ø30 x 59.6	FBE-2X-0515-0532
	2.5x	6	Ø30 x 78.8	FBE-2.5X-0515-0532
	3x	4.5	Ø30 x 58.2	FBE-3X-0515-0532
	4x	4	Ø30 x 81.7	FBE-4X-0515-0532
	5x	3	Ø30 x 87.6	FBE-5-0515-0532
1020-1070	1.2x	10	Ø30 x 59.4	FBE-1.2X-1030-1064
	1.5x	10	Ø30 x 58.4	FBE-1.5X-1030-1064
	2x	6	Ø30 x 60.8	FBE-2X-1030-1064
	2.5x	6	Ø30 x 80.6	FBE-2.5X-1030-1064
	3x	5	Ø30 x 59.4	FBE-3X-1030-1064
	4x	4.5	Ø30 x 82.9	FBE-4X-1030-1064
	5x	3.5	Ø30 x 87.5	FBE-5X-1030-1064

* Max input beam diameter at $1/e^2$ ensuring diffraction limited performance.