

Beam Expanders

Beam expander is an optical component built to enlarge the diameter of collimated input beam and reduce beam divergence. It is primarily applied in laser scanning, laser processing, interferometry and remote sensing. A typical Galilean type beam expander consists of one negative lens and one positive lens. CASTECH offers two types of beam expanders, fixed magnification and variable magnification. The fixed magnification beam expander is with compact design, while the magnification and divergence of variable type are adjustable. Our product covers diverse magnifications and output diameters to meet various application requirements. Advanced polishing and coating technology have been used to ensure high beam quality and low insertion loss.



Applications

- Laser Scanning
- Short Pulsed Laser
- Ultra-Short Pulsed Laser

	Fixed Magnification Beam Expander	Variable Magnification Beam Expander
Advantage	<ul style="list-style-type: none"> • Compact structure • Lower cost 	<ul style="list-style-type: none"> • Variable magnification
Disadvantage	<ul style="list-style-type: none"> • Invariable magnification 	<ul style="list-style-type: none"> • Complex structure • Higher cost

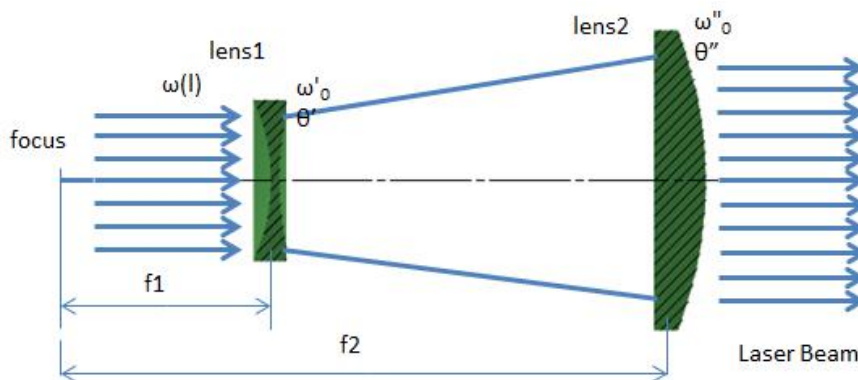


Figure: Common beam expander is derived from the Galilean telescopes which consists of a negative lens and a positive lens that are also separated by the sum of their focal lengths.

Beam Expanders

Beam Expander Model Number: tBE-a-b-c-d-h

Type(t)	Wavelength(a)	Expansion(b)	Thread(c)	Divergence Adjustable(d)	Package(h)
F (fixed magnification)	355 nm	2 (2X) 3 (3X)	22 (M22*0.75)	A (Yes)	G01 G02 G03
V (variable magnification)	532 nm 1064 nm ...	103 (1X-3X)* 104 (1X-4X)* 208 (2X-8X)* ...	30 (M30*1) ...	B (No)	G04 G05 G06 ...

*Only suitable for V (variable magnification beam expander) type products.

Typical Specifications

Expansion	Material	Input Aperture	Exit Aperture	Max Outside Diameter
2	UVFS	12 mm	26 mm	42 mm
10	UVFS	6 mm	31 mm	46 mm
2X~8X*	UVFS	3 mm	26 mm	48 mm

*Only suitable for V (variable magnification beam expander) type products.

Housing dimensions(mm):

