

Fiber-Related Precision Optics

Beam Expanders

Focusing Objective Lens

CO<sub>2</sub> F-Theta Scanning Lens

Custom Design and Prototypes

## Precision Optics for High-Power Lasers

### Beam Expanders

Photonic Devices' precision Galilean beam expanders have been sold globally for over 20 years and include an extensive number of standard models. These multi-element beam expanders have been computer-designed to provide excellent wavefront quality with minimum beam deformation. All lens elements are air spaced and the majority of models have variable air spacing for collimation adjustment. All lens surfaces have multilayer antireflection coatings, with power handling capabilities over 1kW (> 200W for beam expanders operating at 10.6 microns).



#### New product below!

The [18x Expander \(1064 nm\)](#) is a new product offered as of January 2011. The 16-GBE18-18x-1064 is specifically designed to expand small diameter collimated-output beams (1 mm or less) from isolator-coupled fiber lasers.

#### Features

- Standard wavelengths range from 266 nm to 10600 nm
- Multiple element designs for minimum wavefront distortion
- High power handling
- Variable magnification capability on Zoom Expanders
- A miniature 1.5X pre-expander (0.67X if attached in the reverse direction) may be added to most models to extend the range of magnification.
- All models are compatible with the MG001 Series of Alignment Gimbal Mounts

#### Applications

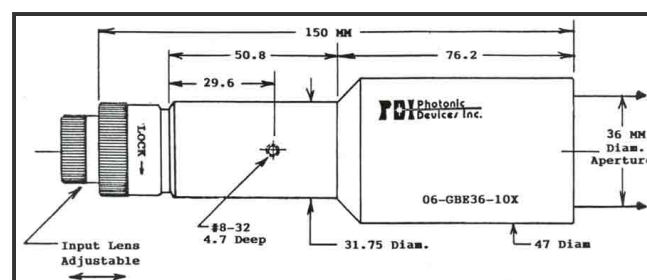
- Materials Processing
- Marking
- Cutting
- Welding

Click the column headers to sort.

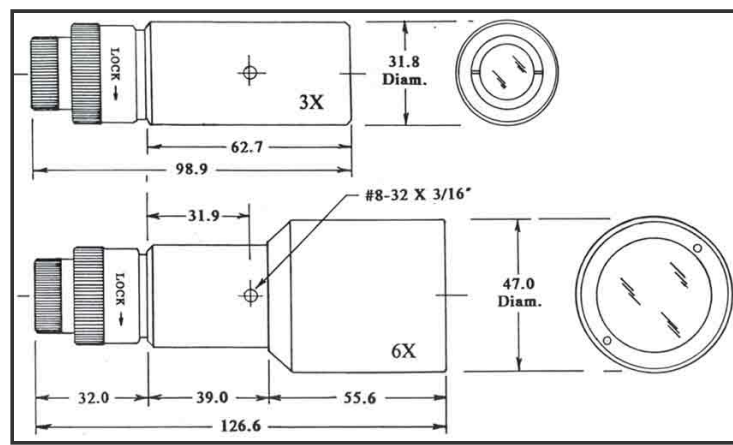
Model No.	Wavelength (nm)	Magnification	Clear Aperture Input/Output (mm)	Overall Length (mm)
<a href="#">PRE1.5X-266</a>	266	1.5	5.6/5.6	23.9
<a href="#">46-GBE23-1.5X-266</a>	266	1.5	17/23	57.7
<a href="#">06-GBE23-3X-266</a>	266	3	8.8/23	112.4
<a href="#">06-GBE23-5X-266</a>	266	5	8.8/23	111.8
<a href="#">06-GBE23-6X-266</a>	266	6	8.8/23	133.8
<a href="#">06-GBE23-8X-266</a>	266	8	8.8/23	125
<a href="#">06-GBE23-10X-266</a>	266	10	8.8/23	128.3
<a href="#">ZBE1X5-266</a>	266	1-5 Zoom	8/20	117.9-138.3
<a href="#">PRE1.5X-355</a>	355	1.5	5.6/5.6	23.9
<a href="#">46-GBE23-1.5X-355</a>	355	1.5	17/23	59.8
<a href="#">06-GBE23-3X-355</a>	355	3	8.8/23	116.6
<a href="#">06-GBE23-5X-355</a>	355	5	8.8/23	116
<a href="#">06-GBE23-6X-355</a>	355	6	8.8/23	139.4
<a href="#">06-GBE23-8X-355</a>	355	8	8.8/23	130
<a href="#">06-GBE23-10X-355</a>	355	10	8.8/23	133.1
<a href="#">ZBE1X5-355</a>	355	1-5 Zoom	8/20	117.9-138.2
<a href="#">PRE1.5X-532</a>	532	1.5	4.7/4.7	23.9
<a href="#">46-GBE23-1.5X-532</a>	532	1.5	17/23	61.8
<a href="#">06-GBE23-2X-532</a>	532	2	8.8/23	92.4
<a href="#">06-GBE23-2.5X-532</a>	532	2.5	8.8/23	93.5

<a href="#">06-GBE23-3X-532</a>	532	3	8.8/23	119.2
<a href="#">06-GBE23-4X-532</a>	532	4	8.8/23	112.5
<a href="#">06-GBE23-5X-532</a>	532	5	8.8/23	119.1
<a href="#">06-GBE23-6X-532</a>	532	6	8.8/23	143.3
<a href="#">06-GBE23-8X-532</a>	532	8	8.8/23	127.7
<a href="#">06-GBE36-8X-532</a>	532	8	8.8/36	156.5
<a href="#">06-GBE36-10X-532</a>	532	10	8.8/36	161
<a href="#">06-GBE36-12X-532</a>	532	12	8.8/36	162.9
<a href="#">46-GBE23-1.25X-1064</a>	1064	1.25	17/23	35.1
<a href="#">PRE1.5X-1064</a>	1064	1.5	4.7/4.7	23.9
<a href="#">46-GBE23-1.5X-1064</a>	1064	1.5	15/23	62.6
<a href="#">06-GBE23-2X-1064</a>	1064	2	8.8/23	94.1
<a href="#">06-GBE23-2.5X-1064</a>	1064	2.5	8.8/23	95.3
<a href="#">06-GBE23-3X-1064</a>	1064	3	8.8/23	122.2
<a href="#">46-GBE23-3X-1064</a>	1064	3	17/23	112.2
<a href="#">06-GBE23-4X-1064</a>	1064	4	8.8/23	114.8
<a href="#">06-GBE23-5X-1064</a>	1064	5	8.8/23	121.5
<a href="#">06-GBE23-6X-1064</a>	1064	6	8.8/23	146.3
<a href="#">06-GBE23-8X-1064</a>	1064	8	8.8/23	130.3
<a href="#">06-GBE36-8X-1064</a>	1064	8	8.8/36	159.8
<a href="#">06-GBE36-10X-1064</a>	1064	10	8.8/36	164.5
<a href="#">06-GBE36-12X-1064</a>	1064	12	8.8/36	166.3
<a href="#">16-GBE18-18x-1064</a>	1064	18	5/18	167.7
<a href="#">46-GBE23-1.5X-10.6</a>	10600	1.5	16/23	39.4
<a href="#">06-GBE20-2X-10.6</a>	10600	2	8.8/20	71.9
<a href="#">16-GBE23-2X-10.6</a>	10600	2	17/23	69.6
<a href="#">06-GBE17-2.5X-10.6</a>	10600	2.5	8.8/17	91.8
<a href="#">06-GBE20-3X-10.6</a>	10600	3	8.8/20	92.6
<a href="#">06-GBE20-3.75X-10.6</a>	10600	3.75	8.8/20	93.4
<a href="#">06-GBE36-6X-10.6</a>	10600	6	8.8/36	126.9
<a href="#">06-GBE36-10X-10.6</a>	10600	10	8.8/36	134.5
<a href="#">ZBE1.5X4-10.6</a>	10600	1.5-4 Zoom	8/30	142-156.6

Drawings



Drawing — click to enlarge



Drawing — click to enlarge

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