Laser Beam Expanders | LBE

RoHS Catalog Code W3092

Beam expanders are useful laser accessories when the beam diameter must be increased. However, their main function is to decrease the divergence of the laser beams which are to be projected over long distances. These precision beam expanders have been designed for use with HeNe lasers but they can be used for any laser working in the visible part of the spectrum (400 – 700nm).

- Laser beam expanders designed to use with high powered lasers that are made of lenses attached together without using glue (air-gap).
- These beam expanders are light weight and short bodied and because they are Galileo type design, they have little aberration and correction.
- The visible type can be mounted directly to any He-Ne laser.

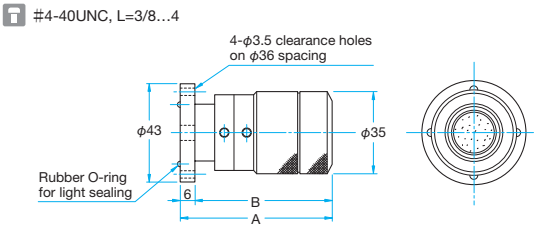
Guide

- For wavelength or magnification which is not shown on-line or in the catalog, please ask our Sales Division.
- We provide the laser beam expander holders (KLH-BE) for optical-axis adjustment of the laser beam expander.
  WEB Reference Catalog Code W4147

Attention

- Make sure that the beam expander is well aligned with the laser light axis. If the beam expander is inclining, the output light will also be inclined.
- It is not possible to obtain a decreased beam diameter by using the beam expander on the opposite side. Use it properly to obtain an adequate optical solution.
- The light may not be collimated when it become divergent or convergent.

Outline Drawing (in mm)



Typical Laser for He-Ne (400 – 700nm)

Primary material: Aluminum
Finish: Black Anodized

Part Number	Expansion ratio	Barrel length A [mm]	B [mm]	Input aperture [mm]	Laser Damage Threshold* [J/cm²]	Weight [kg]
LBE-3	3	62.9	56.9	ϕ3.8	4	0.12
LBE-5	5	61.9	55.9	ϕ2.7	4	0.12
LBE-10	10	127.9	121.9	ϕ1.7	4	0.18

* Laser pulse width 10ns, repetition frequency 20Hz

Typical Laser for LD (780 – 830nm)

Primary material: Aluminum
Finish: Black Anodized

Part Number	Expansion ratio	Barrel length A [mm]	B [mm]	Input aperture [mm]	Laser Damage Threshold* [J/cm²]	Weight [kg]
LBE-3L	3	63.3	57.3	ϕ3.8	4	0.12
LBE-5L	5	62.3	56.3	ϕ2.7	4	0.12
LBE-10L	10	127.9	122.8	ϕ1.7	4	0.18

* Laser pulse width 10ns, repetition frequency 20Hz

Typical Laser for YAG (1064nm)

Primary material: Aluminum
Finish: Black Anodized

Part Number	Expansion ratio	Barrel length A [mm]	B [mm]	Input aperture [mm]	Laser Damage Threshold* [J/cm²]	Weight [kg]
LBE-3Y	3	63.73	57.8	ϕ3.8	4	0.12
LBE-5Y	5	62.7	57.8	ϕ2.7	4	0.12
LBE-10Y	10	128.9	123.8	ϕ1.7	4	0.18

* Laser pulse width 10ns, repetition frequency 20Hz

Compatible Optic Mounts

KLH-BE-M22H

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Expanders
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