

LC SERIES FIBER-OPTIC LASER COUPLERS

The LC-1 Fiber-Optic Input Coupler is a convenient way to launch a free-space laser beam into an optical fiber. A laser beam in fiber can be used with instruments that employ fiber-optic input, such as the laser wavelength meters provided by Bristol Instruments. Instruments with pre-aligned fiber-optic input are easier to operate since alignment by the user is not required. In addition, a fiber-coupled instrument can be placed in an out-of-the-way location in order to conserve valuable “optical real estate.”

A laser beam in fiber also allows for greater flexibility in experimental design since it is easier to manipulate the beam around a laboratory. There is no need to adjust, align, and clean the mirrors required to get a laser beam from point A to point B. It is simply a matter of stringing the fiber cable. When a free-space laser beam is required, the LC-2 Fiber-Optic Output Coupler is used to return the laser to a collimated free-space beam.

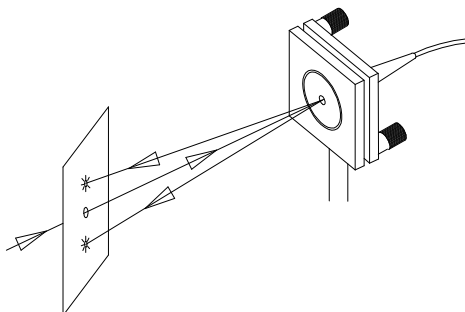


STRAIGHTFORWARD ALIGNMENT

The LC Series Fiber-Optic Laser Coupler is a small assembly with a 1”-diameter mounting disk attached to 3 meters (2 meters for UV version) of 9 μm core-diameter fiber that is terminated with an FC/PC connector.

The LC-1 Input Coupler includes built-in alignment optics that provide two slightly off-axis back reflections to facilitate alignment. With the LC-1 installed in a standard theta-phi optical mount, alignment is achieved by centering the laser beam on the input aperture, and then adjusting the mount so that the two back reflections straddle the input beam symmetrically, as shown. Coupling efficiency is typically 25 percent, with a range of 5 to 35 percent over the entire wavelength range.

The LC-2 Output Coupler is identical to the LC-1, but without the alignment optics.



| MODEL |
|------------------------------|
| Input Beam Couplers |
| LC-1-VIS |
| LC-1-NIR |
| LC-1-UV |
| Output Beam Couplers |
| LC-2-VIS |
| LC-2-NIR |
| LC-2-UV |
| Fiber Accessories |
| 3-m FC/PC to FC/PC Patchcord |
| FC – FC Coupler |

| SPECIFICATIONS | |
|---|---|
| Wavelength Range | VIS: 400 – 1100 nm NIR: 500 – 1700 nm UV: 350 – 1100 nm |
| Aperture | 2.5 mm |
| Mounting Disk Diameter | 1” (25.4 mm) |
| Optical Mount Required | 2-axis (theta-phi) |
| Optical Fiber | 3 meters (2 meters for UV), 9 μm core diameter terminated with FC/PC connector |
| Input Coupling Efficiency (LC-1) | 5 – 35% with TEM ₀₀ collimated beam (wavelength dependent) |
| Output Beam Divergence (LC-2) | 2-3 mrad (wavelength dependent) |