



Endcap Technology

As high-powered fiber lasers have emerged, endcap technology has advanced.

The energy density at the output end of a fiber laser can be extremely high. By using an endcap, high density energy can be allowed to diverge in a controlled manner. As light emerges, it is refocused onto the work surface with free-spaced optics. However, the endcap diameter can be 4 to 8 times larger than the actual fiber output from the laser. This poses a challenge for some heating methods used to fuse the fiber to the endcap.

By using a CO₂ laser as the heat source, the CO₂ laser works through absorption of photons into the silica which heats proportionally based on the surface area and thermal mass of the object being heated. Because the endcap has a much larger thermal mass than the smaller fiber connected to it, the two fibers heat at roughly the same rate when exposed to the energy from the CO₂ laser.

Therefore, CO₂ lasers provide the most reliable splicing technology.



Features

- M² value preserved
- Low pointing error
- With or without AR coatings
- Applicable to large fiber endcap diameters
- Various endcap materials and structures

Applications

- High power fiber lasers
- Output beam control
- Medical applications

