

Optical Fibers: Everything from One Source

Input Coupling – Transmission – Output Coupling

From the input coupling of light using adjustable couplers to transmission via optical fiber assemblies to output coupling using focusable collimators – at LASER COMPONENTS all of this is available from one source.

Input couplers are used to couple collimated light into an optical fiber. For this purpose, the inner optic can be adjusted along three axes to allow laser beams with $\varnothing \leq 10$ mm to be focused on optical fibers with a core diameter between 100 μm and 2000 μm .

The maximum power of the laser beam to be coupled is up to 150 W. For optimal power transmission, the optics are also coated; in fact, three wavelength ranges between 400 nm and 1300 nm are available. The optical connection of the fiber is carried out using an SMA connector.

Optical fibers are used in the transmission of optical power. LASER COMPONENTS assembles optical fibers according to the customers requirements: The product range comprises dual-clad fibers (quartz core/quartz cladding/hard clad/buffer) with fiber core diameters from 400 μm to 1000 μm . Different protective tubes are available for selection, including flexible metal jackets or PVC and PTFE tubes.

An optical connection is also available for selection: for example, SMA connectors with free-standing fibers are available, either with ARCAP or copper ferrules. At <10 μm , the eccentricity of the fiber core to the ferrule's outer diameter is very low. Furthermore, fiber end faces with an AR coating are made in-house.

In output coupling, the collimation of divergent light out of the connected fiber is important. The output coupling collimator, which is connected via an SMA connector, is used for this purpose. The optics used are adjustable along the z-axis and are available in three types of coatings from 350 nm to 1600 nm. To achieve different beam diameters, the output coupling collimators are available in various focal lengths. The efficiency of the collimator is more than 85% when multimode fibers are used.

More Information

<http://www.lasercomponents.com/de-en/news/input-coupling-transmission-output-coupling/>

The Company

LASER COMPONENTS specializes in the development, manufacture, and sale of components and services in the laser and optoelectronics industry. At LASER COMPONENTS, we have been serving customers since 1982 with sales branches in five different countries. We have been producing in house since 1986 with production facilities in Germany, Canada, and the United States. In-house production makes up approximately half of our sales revenue. A family-run business, we have more than 170 employees worldwide.