

Fibers with Shaped End Surfaces (Fiber Tips)

The properties and characteristics of an optical fiber can be modified by a special manufacturing process resulting in so-called shaped fibers.

The following core products are currently available:

Spherical Lenses

This product is primarily used in medical technology. Here the fiber end is formed into a ball by heating. The sphere acts as a focusing lens within the application.

In addition, the roundness reduces the risk of injury during medical application. The spherical lens can achieve up to 2.5 times the diameter of the fiber. The focal length is several hundred μm .

It is important to note that the focal length always depends on the respective sphere diameter.



Specifications Spherical Lenses

Fiber core diameter	200 μm / 365 μm / 400 μm / 550 μm and 600 μm (other fiber core diameters available upon request)
Ellipticity	> 0.9
Wavelength range	190 – 1900 nm
Numerical aperture of fiber raw material	0.22
Production standard	ISO9001 and ISO134585
Connectorization page 2	SMA905 Standard, SMA905 free-standing with copper or arcap ferrule, ST, FC
Jackets	available as a bare fiber or with PVC, PEEK, PTFE or a silicon jacket
Temperature range	-65 °C – 140 °C

Endcaps

Fiber optic endcaps are a type of fused silica lens that is fused to the fiber.

An end cap on the fiber end surface increases the damage threshold of the laser fiber because the power density that affects the fiber is distributed over a larger area. This makes it much easier for the user to couple the laser power into the fibers. Fibers with a small core diameter, in particular, can be optimized or standardized for high power applications since significantly higher outputs can be coupled into the fiber.



Specifications End Caps

Fiber diameter	100 µm / 200 µm / 400 µm / 600 µm / 800 µm / 1000 µm => special fibers available upon request
Endcap diameter	0.1 – 2.5 mm (Fused silica)
Endcap length	0.6 mm to several millimeters
Numerical aperture of fiber raw material	0.22
Production standard	ISO9001 and ISO13485
Connectorization options	SMA free-standing copper or arcap ferrule; D80 connector with copper ferrule
Jackets	available as a bare fiber with PVC, PTFE, or metal jacket
Temperature range	–65 °C – 140 °C