

Medical Assemblies

Medical Assemblies Made in Germany

In medical technology, fibers are often used for the transmission of high laser power. They serve as delivery fibers for various laser systems. Well-known applications include tattoo and hair removal, prostate treatment, lithotripsy, and varicose vein sclerotherapy.

As a DIN ISO 13485 certified manufacturer, we look forward to helping you put your product on the right track. At LASER COMPONENTS production under cleanroom conditions guarantees low germ contamination. All products in this segment can, therefore, also be delivered in sterile packaging.

In medical technology, special demands are placed on optical fibers: for example, it is often required that they be biocompatible. Our partner Polymicro Technologies provides us with optical fibers that meet this criterion completely.

LASER COMPONENTS guarantees the traceability of all materials used! However, LASER COMPONENTS is not responsible for introducing the product to the market.



Specifications

Fiber	Step Index Fiber
Core diameter	200 – 1000 µm
Connectors	SMA, free-standing SMA; customized connectors can be assembled upon request
Standard lengths	1 – 10 m
Buffer	PTEE tube, silicone tube, bare fiber with Tefzel® buffer
Optional	sterile packed
Accessories	sterilizable MediStrip fiber stripper

Invasive Fibers (bare fibers)

Invasive fibers are products that are used internally as part of a medical application. As a rule, these include bare fiber pigtailed that are fitted with an SMA connector on one side. The opposite side is usually cleaved or equipped with a so-called fiber tip, such as a spherical lens. Different versions of such fibers can be manufactured depending on the application requirements. Optionally, these are also coded (i.e., available with RFID). Typical fields of application include lithotripsy, respiratory medicine, and tissue ablation.



Specifications Invasive Fibers (bare fibers)

Fiber diameter	200 / 272 / 365 / 400 / 550 / 600 / 800 μ m
Jacket	bare fiber
Connector	SMA 905 standard or customized; SMA free-standing
Fiber length	1 – 10 m
Sterilizable	yes
Fiber material	biocompatible (not valid for complete assembly)
Ferrule material	ARCAP
End faces	polished, cleaved, ball lens
Marking	individual marking possible with laser-marked heat-shrink tubing

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Acupuncture Fibers

Laser acupuncture is an alternative procedure to conventional needle acupuncture. In contrast to conventional acupuncture, laser acupuncture does not involve puncturing and is therefore painless. Corresponding acupuncture points are treated with precisely defined laser radiation at a certain power or wavelength. For this type of treatment, specialized optical fibers are available that are manufactured under cleanroom conditions; we also refer to them as acupuncture tips. We offer our customers customized assemblies in which the fiber type and diameter can be freely selected. Alternatively, one of our existing designs can be used.



Specifications Acupuncture Fibers

Fiber type	Quartz fiber (biocompatible) or POF fiber
Fiber diameter	200 / 400 / 500 / 600 µm
Jacket	silicone jacket
Connector	SMA905 / acupuncture tube
Fiber length	1 – 10 m
Ferrule material	ARCAP
Marking	individual marking possible with laser-marked heat-shrink tubing

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Data Cables for Medical Technology

Data cables are also necessary in the medical field; fiber optic cables are increasingly being used.

All cables used in the OR must be manufactured under special conditions. LASER COMPONENTS' production facility complies with the management system required for the design and production of medical devices and is certified according to DIN ISO 9001 and EN ISO 13485.



Specifications Data Cables for Medical Technology

Fiber type	single mode; gradient index: GI50 and GI62.5; HCS 200 µm
Jacket	SZ jacket, PU, PE, or customized
Connector	SMA905, ST, SC, FC, E-2000, V-PIN, F07, or customized
Lengths	customized

Custom Solutions for Medical Technology

LASER COMPONENTS covers all requirements for the development of individual solutions according to customer specifications under one roof: from special fiber-optic assemblies to optical components, specific products are developed and manufactured based on a customer's order. The trend towards miniaturization has also reached classic optics and opens up promising application areas for fiber optics: Today, medical probes for examinations and operations are already being manufactured on a fiber basis, as are metal-free on/off switches for optical coherence tomography (OCT) applications or laser acupuncture solutions.

Our experienced production and development teams will find the right solution for you!

