

Multicore Fibers

Optical Fibers for 3D Shape Sensing

Thanks to its new partner, Fibercore, the fiber optics department at LASER COMPONENTS is able to extend its portfolio by specialty products such as multicore fibers that allow simultaneous transmission of multiple signals with different cores. The standard configuration comprises seven cores in a 125 µm cladding.

High-speed data transmission is not the only advantage of multicore fibers. They can also be used as fiber optic sensors, if their cores are equipped with so-called fiber Bragg gratings (FBGs) – reflective gratings that filter specific wavelengths. Changes in the fiber's form or position result in changes of the filtered wavelength. For 3D shape sensing, several bragged cores are drilled around a central core that serves as a reference channel. Comparing the drilled cores with the reference value, these spun multicore FBG fibers can be used as three-dimensional sensors, even detecting slight rotations to the left or right.

In the biomedical sector, bragged spun multicore FBG fibers are employed for catheters and other tools in minimally invasive procedures, allowing doctors a 3D view of structures inside the patient's body. But these optical fibers are also used on a much larger scale, as they are incorporated into bridges or dams to monitor their structural health and prevent disasters.

More Information

www.lasercomponents.com/de-en/product/specialty-fibers/

Trade Shows

Photonex Coventry, October 11 - 12, 2017, Ricoh Arena, Coventry, Great Britain, **Booth D15**

SPIE Photonics West, January 30 - February 01, 2018, San Francisco, CA, USA, **Booth 1931**

MD&M West, February 06 - 08, 2018, Anaheim, CA, USA, **Booth 3593**

Breko Glasfasermesse, March 13 - 14, 2018, Messe Frankfurt, Germany

analytica, April 10 - 13, 2018, Messe München, Germany, **Booth A2.500**

The Vision Show, April 10 - 12, 2018, Boston, MA, USA

SPIE Defense & Commercial Sensing, April 17 - 19, 2018, Orlando, FL, USA, **Booth 1029**

SPIE PHOTONICS Europe, 24. - 25. April, 2018, Strasbourg, France

LaSys, June 05 - 07, 2018, Messe Stuttgart, Germany

ANGACOM, June 12 - 14, 2018, Messe Köln, Germany

automatica, June 19 - 22, 2018, Messe München, Germany, **Booth B5.501**

Sensor+Test, June 26 - 28, 2018, Messe Nürnberg, Germany

Sensors Expo & Conference, June 27 - 28, 2018, San Jose, CA, USA, **Booth 225**

Vision, November 06 - 08, 2018, Messe Stuttgart, Germany, **Booth 1G31**

electronica, November 13 - 16, 2018, Messe München, Germany

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 220 employees worldwide.