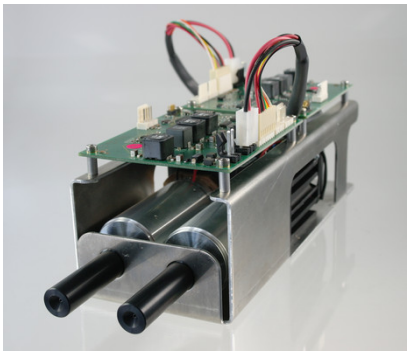
Light is Vision

More Light for Technologies of the Future

LED and laser light for small cross sections

In the last few years, LEDs have become increasingly popular due to their long service life and energy efficiency with simultaneous color fidelity, often displacing incandescent bulbs and discharge lamps in traditional applications. But the standard semiconductor-based solutions were usually not an equivalent replacement for coupling into small fiber cross sections. However, that has changed in the meantime. Today high-power laser diodes are advancing in areas that were previously reserved for xenon discharge lamps. Medical technology, life science and endoscopy will profit from this.

Since Volpi AG put the first white LED light sources on the market about 15 years ago, the Swiss company has continuously furthered development work, and with considerable success. Now the light specialists have set another milestone: in close cooperation with users, they have developed new LEDs and high-power laser-based light modules for coupling into fiber cross sections of 125 to 700 µm. With its high light output, the new solution provides a maintenance-free, energy-saving, durable and true-in-color alternative to xenon lamps. Thus compared to xenon models, the light output of the very compact modules at the end of a fiber that is 0.7 m long and 200 µm wide, for example, is a respectable 30 lm.
Along with LEDs that have high power density and inexpensive lasers, the foundations for the new development are above all the many years of experience in designing optical coupling systems and a sophisticated thermo-management system. The new fiber lighting thus creates favorable preconditions for numerous new standard products and customized solutions. For example, they include endoscopes for minimally invasive surgery, systems for ophthalmology, wave front measurement technology and the broad fields of life science and diagnostics. Further increases in output are foreseeable, making new developments an exciting prospect for the future.



Volpi has developed new LED- and laser-based high-output light modules for coupling into fiber cross sections of 125 to 700 µm. With its high light outputs, this technology offers a genuine alternative to xenon lamps. (Photo: Volpi)

About Volpi

Volpi develops and produces fiber-optic and optoelectronic systems and devices. With locations in Schlieren (Switzerland) and Auburn (NY, USA) the company is centrally represented in the European and American economic regions. Its employees are constantly innovating in the area of photonics and thus meeting the high requirements of customers in the target markets of image processing (machine vision), medical technology, life science and industrial endoscopy. An important focus is on customized solutions that can be well-integrated in the most varied applications and are coordinated with the respective application requirements.

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