Armadillo SIA Safety Fiber:

More safety for users of fiber-coupled high-performance lasers

Copper wire conductors with a jacket facilitate the design of active protective devices

The new fiber design increases user safety in connection with fiber-coupled high-performance lasers. Copper wire conductors in a polyamide jacket support the configuration of active protective devices that interrupt the laser circuit in the event of fiber breakage or connection problems and protect the user from leaking radiation. The concept can be applied to all standardized Armadillo SIA glass fibers.

Riga, Latvia – March 8, 2019 – Armadillo SIA, a leading global provider of multi-mode optical waveguides made of quartz glass, enhances the safety for users of fiber-coupled high-performance lasers. Safety glass fibers with electrical contacting now facilitate the creation of active protective devices that automatically switch off the laser in the event of fiber breakage or connection failures. To this end, the polyamide jacket of the safety fibers contains two extremely thin copper wire conductors that are integrated into the circuit of the laser system via the usual fiber couplings. In case of a fiber breakage these conductors are destroyed and the circuit is thereby interrupted; contact interruption also happens in the event of malfunction in the interface area between the fiber and the beam source. Users of medical or industrial lasers are thus reliably protected against the emission of harmful laser radiation.

Since the two copper wires are applied together with the polyamide sheathing after the fiber drawing process, the new fiber concept can be implemented for all standardized Armadillo SIA glass fibers. All-rounders such as the standard Optran® UV/WF fibers are also available as safety fibers, as are the solarization-free Optran® UVNSS special fibers or the homogenizing Optran® NCC fibers with polygonal core geometry. For optimum coverage of all bending radii and temperature zones, safety fibers are available with copper wire conductors of 50, 100 and 150 micrometers. Custom configurations are also available on request.

For more information on the different Armadillo SIA fiber types and contact details for individual inquiries, please visit https://armadillosia.com/.

Armadillo SIA (Riga, Latvia - www.armadillosia.com) is a global leader in specialty fiber optic solutions, including fibers, bundles, cables, and customized hybrid photonics sub-assemblies. The company offers a wide range of expertise from needs evaluation to prototype and mass production.

Armadillo SIA’s vertically integrated manufacturing with outstanding quality control protocols, begins with preform fabrication, utilizing two types of deposition processes. Cables and assemblies are made in-house using their top-quality fibers and your choice of a broad range of
sheathing, cabling, or jacketing. In addition, they offer all standard connectors or custom designed ferrules to suit applications from the deep UV to MIR. This provides Armadillo SIA the opportunity to support customers with challenging, specialized custom projects while offering competitive pricing and quick delivery.

Armadillo’s specialty optical fibers and assemblies are employed in lasers, spectrometers, spacecraft sensing and controls, precision devices for medical diagnostics, particle detection, mission-critical fields like nuclear physics, semiconductor manufacturing, life sciences, forensics, avionics, industrial applications, and more.