Leoni laser cables used in measuring gravitational waves

Special optical fiber cables are part of the LIGO detectors

Nuremberg, 18 February 2016 – Leoni, the leading European provider of cables and cable systems to the automotive sector and other industries, supported finding the evidence for gravitational waves with special optical fiber cables in a joint project with Laser Zentrum Hannover.

An international team of researchers succeeded in showing the collision of two black holes on the basis of gravitational waves, thereby providing the first metrological evidence. The Max-Planck-Institute for Gravitational Physics Hannover (Albert Einstein Institute), the Laser Zentrum Hannover (LZH) and the neoLASE GmbH were significantly involved. The laser head used in the measuring equipment was developed and built by Laser Zentrum Hannover and fitted with assembled special cables from Leoni’s Business Unit Fiber Optics.

The two LIGO observatories (Laser Interferometer Gravitation Wave Observatory) in Hanford, Washington, and Livingston, Louisiana, measure, using their two arms that are each 4,000 metres in length, the smallest wavelength differences with an interferometer and make it possible to detect gravitational waves in a specially developed process.

Exceptional measuring requirements call for laser systems with maximum durability and beam quality

“We are delighted about these trailblazing findings as well as the metrological achievement of all the researchers and institutes involved – and we are proud that Leoni is part of it,” Dr Michael Gawronski, Vice President Business Unit Fiber Optics emphasized.

In collaboration with Laser Zentrum Hannover, Leoni supported the development of laser systems for the LIGO gravitational wave detectors with special optical fiber cables that transmit the pumped radiation of the laser diodes onto the crystal. They consist of 70 to 100 metre long, assembled bundles of seven LargeCore fibers each with a core diameter of 400µm and seven single arms, the bundle ends combine all the fiber ends in a cuff.

*(2,064 characters incl. blanks)*

☞ *Related illustration material can be downloaded next to this release at* [*www.leoni.com/de/presse/mitteilungen/details/leoni-laser-cables-used-in-measuring-gravitational-waves/*](http://www.leoni.com/de/presse/mitteilungen/details/leoni-laser-cables-used-in-measuring-gravitational-waves/)

About the Business Unit Fiber Optics

The Business Unit Fiber Optics of the LEONI group is one of the leading manufacturers of fiber optics for special applications in the industrial sector, in sensory and analysis, science, communication as well as laser surgery. LEONI Fiber Optics offers a unique product portfolio at every stage of the value-added chain: from the fused silica to preforms and drawn fibers up to fiber optic cables and complete fiber optic systems with in-house developed optical components such as optical switches, splitters and couplers. Having sites in Europe, the USA and Asia, production and services are within easy reach of clients and markets.

About the Leoni Group

Leoni is a global supplier of wires, optical fibers, cables and cable systems as well as related services for the automotive sector and further industries. Leoni develops and produces technically sophisticated products from single-core automotive cables through to complete wiring systems. Leoni’s product range also comprises wires and strands, standardised cables, special cables and cable system assemblies for various industrial markets. The group of companies, which is listed on the German MDAX, employs about 70,000 people in 31 countries and generated consolidated sales of EUR 4.1 billion in 2014.

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