CASE STUDY

DATWYLER MICRO CABLES FOR INTERNATIONAL RESEARCH PROJECT

A unique research facility is currently taking shape in northern Germany: the European XFEL, a 3.4 kilometre-long X-ray laser. Datwyler supplied the facility with special blown cables which will be used to transmit data at the speed of light.

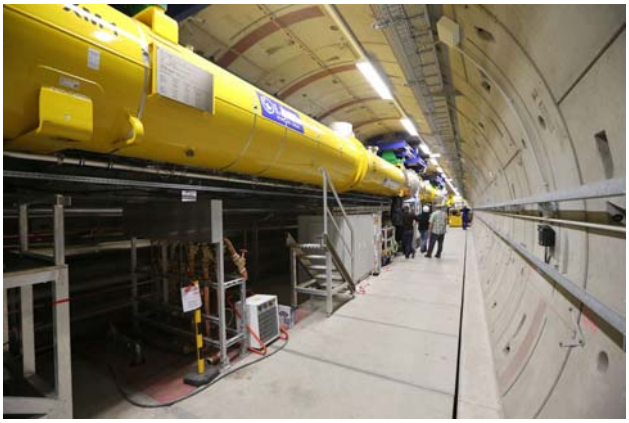
DESY, the German Electron Synchrotron, is one of the research centres run by the Helmholtz Association for pure research into the natural sciences, based in Hamburg and Zeuthen. Its main focus is on the development, construction and operation of particle accelerators, particle physics, and research using the high-intensity X-ray light provided by the accelerators. Various national and international institutes and universities make use of the accelerator facilities.

A kilometre-long particle accelerator

One of the most important current DESY projects is the European XFEL, involving 12 European countries. The facility, which extends for 3.4 kilometres between Hamburg and Schenefeld, is designed to generate extremely intense laser light with wavelengths of between 0.05 and 6 nanometres, i.e. X-ray radiation. The facility has been under construction by European XFEL GmbH since 2009, and will employ a workforce of around 250 from 2017 onwards. For the facility DESY is building, and will also operate, a superconducting particle accelerator approximately two kilometres in length.

Since the summer of 2013 Datwyler type S-Micro fibre optic micro cables have been helping to make this project a success. These cables connect the measuring devices in the accelerator tunnel to the fibre optic racks in the server room. Once the facility comes on stream they will be used to detect and read the data from the tunnel at the speed of light.

S-Micro cables were selected because the research centre insists that its fibres and cables meet the most stringent quality standards. The factors which convinced the decision makers at the end customer and the installation company, Kellner Telecom GmbH, were the samples and quality certificates submitted by Datwyler.



Optimised for long distances

The cables were blown through microducts of up to 2.3 kilometres in length. This called for a very thin product, optimised not only for this type of installation but also for very long distances.

For the European XFEL Datwyler is supplying four different cable assemblies with between 1x12 and 8x24 single-mode fibres (G657A1) with external diameters of 4 to 8.4 millimetres.

The space which would be required for cable routing in traditional installations is reduced significantly by using micro cables blown into microducts. This kind of installation also saves time and money.

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