

Good for your health and your budget – a new lighting technology brings daylight to dark rooms

Bonn, February 09, 2017 – Bonn based CeramOptec GmbH, a specialist for fiberoptic applications, has developed the “Natural Light Fiber Optics” lighting technology together with its French partner Echy. The innovative technology is designed to transmit daylight across long distances via optical fibers and thus create biorhythm-friendly space lighting with daylight quality.

This technology bundles sunlight using a Suntracker, a technique similar to photovoltaics, on the roof of a building and transmits it through optical fibers from CeramOptec to designated interior rooms. There, the daylight is dispersed by specialized ceiling lights throughout the room. On days with low amounts of sunlight, a combination of natural daylight and light from the LEDs, integrated into the ceiling lights, is also possible. These LEDs are designed to imitate daylight, to avoid creating two different kinds of light modes.

That opens the door for new lighting methods for many types of internal spaces, e.g. office buildings, hospitals, schools and universities, with a positive effect on both health and performance. Daylight causes the healthy and regular production of the hormone Melatonin in the human organism, which controls our active phases. Under daylight conditions, an improvement of general well-being and lower susceptibility to fatigue can be observed, since no unnatural light condition interfere with our biorhythm.

This can also have positive effects for customers and associates in shopping centers. In addition, museums can take advantage of this technology, since valuable paintings can be exhibited under daylight conditions, without the risk of damages from harmful UV radiation. Optical fibers only transmit light, not UV radiation or heat. Lower costs, resulting from savings in artificial lighting and climate control, are also among the positive aspects of the technology. That can be particularly relevant for production and storage locations.

The advantages of this technology can be found particularly in the flexibility of the optical fibers, since they can easily be placed around corners like regular cables and therefore require a lot less space than other daylight technologies. In addition, daylight may be transmitted across much longer distances than previously feasible. It is possible to illuminate internal rooms at a distance of 160 meters from the solar collector, which represents the current world record. Previous technologies allowed for distances of 10 meters under realistic conditions.

About CeramOptec

Bonn based CeramOptec GmbH specializes in manufacturing quartz glass multimode lightwave conductors. The mid-size company has been established in 1988 and is nowadays part of the biolitec AG, one of the leading medical technology companies in the world, with a focus on laser technology. CeramOptec maintains a strong presence, not only in Europe, but also on Asian and North American markets with its subsidiaries in China and distribution partners in the USA, India, Japan and Korea. Its



range of products includes fibers, fiber bundles, assemblies and cables for numerous application areas, among them industrial and medicinal laser applications, sensor systems for the aerospace sector, as well as spectroscopic applications for astronomy and the chemical industry. Another specialty is the production of optical fiber cores with rectangular or octagonal geometries (Non Circular Core Fibers/NCC), which are mainly used in astrophysics. CeramOptec has a total staff of 245 associates and currently maintains production facilities in Bonn and Livani (Latvia).

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