



Press release: 30 September 2020

Lumenisity® Limited announces world's first deployable hollowcore fibre optic cables for 10Gbit DWDM transmission over 10km links

30 September 2020 Romsey, UK: Lumenisity® Limited, which has developed ground-breaking fibre optic and cabling technology, today announced the introduction of its hollowcore CoreSmart™ fibre cable solutions for DWDM operation over links in excess of 10km.

Lumenisity develops and manufactures advanced cable solutions to address the need for high speed transactions and bandwidth increases in advanced communications systems.

Hollowcore fibres, where light propagates in an air containing core formed by microscopic capillaries, are long recognised as the next stage of advancement in fibre optic cable technology. They have many advantages over conventional solid glass fibres. Data travels 50% faster in hollowcore fibre as the light propagates in air and offers the potential for higher data capacity and extended reach due to the 1000x reduction in power induced non-linear effects. A key challenge has been both the design and manufacturing processes. In particular, for making fibres and to develop the cable and processes for seamless in-field installation in existing and green field networks. Lumenisity has solved many of these challenges in collaboration with the University of Southampton, to create rugged cables designed for deployment in meaningful lengths for the metro network.

Lumenisity's CoreSmart hollowcore cable uses a unique nested anti-resonant nodeless fibre (NANF™) patented technology. The previous generation of hollowcore design, photonic bandgap fibre (PBGF), is inherently multi-moded and requires complex solutions to reduce the impact of parasitic modes on the hollowcore performance. Lumenisity's CoreSmart NANF is robustly single moded which provides continuous uninterrupted simultaneous single mode transmission at 1310nm, as well as over the full C and L bands and beyond. The advanced NANF technology offers the promise of realising loss values at, or better than, conventional solid silica core fibres.

CoreSmart hollowcore cable that is being deployed today has losses of ~2dB/km over a wide temperature range – the lowest loss deployable hollowcore cable commercially available to date.

Lumenisity's CoreSmart cable technology is designed to be backward compatible with existing networks and systems equipment. It can be spliced directly in the field by accredited installers with commercially available splicers, using Lumenisity's proprietary patent pending hollowcore to conventional fibre adapter technology.

The cable technology has been ruggedly tested and proven in challenging environments. The company with its customers and partners has deployed multiple cables globally, which are carrying live production traffic in the field, with some carrying traffic for over three years. Today sees this capability extended to 10km links with full broadband DWDM capability at 10Gbit per channel. Segment lengths vary with application, but due to Lumenisity's cable design and proprietary field splice technology, the product has been proven to meet carrier grade telecommunication error rate requirements with

resilience, even with 10 concatenated segments. Cables are being evaluated for much higher data rates over the coming months.

With more emphasis on the digital economy, autonomy and virtual working than ever, customers are searching for low latency, high capacity solutions, which Lumenisity's innovative cabling solutions are able to offer. Customers will be able to extend their network over a broader area with increased speed and capacity, driving network efficiency and enabling access to affordable real estate and utilities.

Mike Fake, the company's Director responsible for Product Management said: "This is the first of several announcements where we will be exploiting our patented and ground breaking NANF technology to extend reach and bandwidth for our customers. We are proud to be leading the field in bringing deployable hollowcore fibre technology to market with performance that can lead to real advantages for our customers in a variety of network applications."

Marcus Washco, Global Head of Networks for Jump Trading, an early user of the technology commented: "The cables we have deployed from Lumenisity have exceeded our performance expectations. We selected Lumenisity as the best in class performing cable we are aware of and an impressive near term roadmap that will allow us to have much longer path lengths in our network".

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About Lumenisity Limited

Lumenisity® Limited was formed in early 2017 as a spin out from the University of Southampton to commercialise breakthroughs in the development of hollowcore optical fibre. The company has built a team of industry leaders and experts to realise their goal to be the world's premier high-performance hollowcore fibre optic cable solutions provider offering their customers reliable, deployable, low latency and high bandwidth connections that unlock new capabilities in communication networks. Lumenisity® is a registered trademark of Lumenisity Limited. Visit their website at: www.lumenisity.com

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