

Nominee: Corning Optical Communications

Nomination title: Plug and Play™ High Fibre Count Trunks for Hyperscale Data Centre

The largest data centres now support tens of thousands of fibre links. To efficiently manage the deployment of large numbers of trunks between equipment racks, zones and data halls, Corning has provided a new generation of Plug and Play pre-terminated MTP® to MTP high fibre count trunk cables.

This high-density modular approach manages the increased scalability of high fibre counts in these supersized data centres, enabling faster deployment and reduced costs while minimising the number of cables. The high fibre count trunks are available with 288, 432, 576, and 864 fibres.

- What are your product's/solution's key distinguishing features and/or USP?
 1. Factory-terminated Plug & Play™ solution: Provides consistent quality, ensures system performance and reduces installation time.
 2. Significant space saving: Ensures available pathways and spaces don't become congested and choked, don't prohibit further expansion or cause any impediment to airflow for cooling.
 3. Faster project delivery: Reduces the number of trunk cables that have to be run to between zones or functional areas in the data centre, saving time and installation cost.
 4. Protective pulling grips: During installation, all legs and connectors are protected with a waterproofed pulling grip on one or both ends of the cable.
 5. Corning® ClearCurve® optical fibre: Offers enhanced bend performance, allowing tighter cable routing without negatively impacting system performance.
 6. Low insertion loss performance: Allows for more connections in a link when deploying a TIA-942-compliant system

7. 100G ready performance and beyond: Ensures product meets the requirements of 100G Ethernet applications. Product is assured to work in Parallel Optic applications for Ethernet, Fibre Channel and InfiniBand.

- What tangible impact has your product/solution had on the market and your customers?

Data centre developments are reaching unprecedented scale to meet the growing demand for cloud and outsourcing services. Technology companies, facility operators and colocation providers are building larger and larger data centres. These so-called mega, hyperscale or supersized data centres are built to realise economies of scale that can significantly reduce costs.

At the same time enterprise IT departments are increasingly under pressure to execute faster projects delivery while suffering increased need for storage capacity, more big data initiatives and a greater number of connected devices. All of these factors reinforce the need for economies of scale, and density.

The beauty of optical fibre connectivity is that individual fibres can be very thin and provide high bandwidth capacity. With massive data centre projects, it's a natural process that new technology progresses to support less risk, faster execution and repeatability of quality. As such, structured cabling innovations are needed to provide easy access with high-density cable housings for more efficient and reliable network deployment. The use of MTP connectorised multi-fibre trunks for structured cabling provides for the highest flexibility, based on data centre standards TIA 942-A and ISO/IEC 50173-5.

In addition, the evolution of 'pre-terminated' plug-and-play cabling solutions has enabled many large data centres to enjoy the benefits of faster installs and smoother on-going MACs. The provision of high quality, factory-terminated and tested cables is a pre-requisite for high-quality connections and high-availability. This also means less onus on highly advanced installation skills, now that pre-terminated systems enable fast, clean and simple connections, even with fibre. Fears about network outages caused by cabling problems are also largely banished, with bend insensitive fibre technology that enables low-loss for bend radii that tighten unexpectedly.

Traditionally MTP based trunks have been low fibre count cables supporting typically 12 fibres. As data centres have grown in size, the cable industry has managed to provide trunk cables supporting a maximum of 144 fibres but this is insufficient to the needs of supersized data centres and their scale challenges. Corning has therefore worked with the global operators to determine the best solution for their needs. The result is high fibre count trunk cables that support 288, 432, 576, and 864 fibres. This new generation of high fibre counts, together with the low profile of Corning optical cable, provide a significant reduction in physical cable bulk, fewer cable runs and fewer furcation points within cabinets. This also keeps rack and void space clear of the congestion and impediments that can cause cooling energy losses.

It's clear that data centre connectivity provisions need to remain ahead of the rising demand for applications, networking, server and storage equipment. Moreover, cost-effective, flexible capacity is needed to accommodate rapid and efficient scalability demands. As such we find today that over 10% of the global data centre market for structured cabling deploy our high fibre count trunks.

What are the major differentiators between your product/solution and those of your primary competitors?

- Provides the widest range of high fibre count data centre trunk cables that are available on the market today, using 288, 432, 576, and 864 fibres. Primary competitors provide only much lower density trunk cables.
- Provides unequalled rack density and ease of access. The highest density fibre termination solution for the data centre where over 3,400 fibres can be terminated in just a 4U housing. That equates to over 34,000 fibre terminations in a single cabinet.
- Reduces the risk of data centre 'entropy', preventing cable overcrowding and mitigating the impact of tight bends, pulled connectors and trapped cables which degrade optical performance, or cause system downtime.

Why nominee should win

- Provides the highest density fibre termination with efficient cable management to meet the need for hyper-scalability and reduced costs in larger data centres

- Plug and play high fibre count trunks reduce cable runs sixfold, significantly improving speed of deployment with associated savings in cost.
- 10% of the global data centre market for structured cabling deploy high fibre count trunks
- Corning high fibre count trunks are deployed in hyperscale data centres across NA, EMEA and APAC, including two of the largest global data centre operators
- Provides consistent quality, high system performance, supporting future expansion and migration to higher speeds.