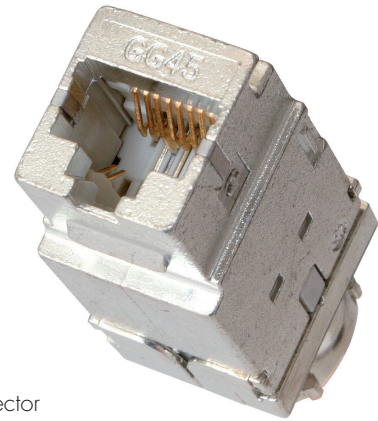


Global industrial firm selects future-ready cabling for laser products plant



Nexans
CAT7 GG45
snap-in connector

North American headquarters of German technology giant TRUMPF Group selects Nexans LANmark-7 cabling with GG45 connectors for new manufacturing building

Flexibility to expand and relocate desktop devices and new production technologies within a stable network infrastructure solidified TRUMPF Inc's. decision to deploy the LANmark-7 GG45 cable/connector system in its new LITE (Laser Innovation and Technical Excellence) building.

New home for laser leader

The town of Farmington in the U.S. State of Connecticut is headquarters to many world class American and overseas corporations. One of them is the North American headquarters of Ditzingen, Germany-based TRUMPF Group. The firm has both corporate offices and manufacturing sites located on its huge suburban campus here.

TRUMPF is one of the largest manufacturers of fabricating equipment in the world producing a wide range of machine and power tools for sheet metal and materials processing. It is also a world market leader for lasers used in industrial production, such as laser cutting, welding and marking. It was for this product group that a new laser manufacturing facility, the Laser Innovation and Technical Excellence or the LITE building,

was begun in 2006 with many unique data and communications requirements.

A world-class German architect was contracted by TRUMPF with support from a well established local firm to design the facility. Needed was a reliable, proven, local construction management firm to make the architect's vision a reality whilst complying with federal and Connecticut building codes, safety and environmental standards. TRUMPF awarded that honor to Bartlett Brainerd Eacott Incorporated (BBE), a prominent management firm in nearby Bloomfield that has served the region since 1921. BBE specializes in pre-construction planning and on-site construction execution covering all disciplines, from concrete and carpentry to advanced information technology (IT).



Executive Summary

CUSTOMER • TRUMPF Inc

LOCATION • Farmington, Connecticut USA

REQUIREMENTS • A future-ready cabling for laser products plant

EQUIPMENT • LANmark-7 cabling with GG45 connectors

Challenges

- New, laser manufacturing site demands sophisticated IT support.
- Ability to integrate new IT backbone in the LITE building with previous systems in older structures.
- Ability to easily and cost-effectively handle on-going moves, changes and additions.
- Extra bandwidth and capacity needed to accommodate future equipment, systems and technologies as they become available.

"We operate exclusively in Connecticut employing approximately 100 skilled tradesmen," says Tom Andersen, BBE's Director of Engineering. "These professionals keep us in touch with all construction details, providing a highly controlled, hands-on approach to construction management." BBE has a long list of major corporate clients in the region including global insurance giants Aetna, Cigna, The Hartford, and Travelers, and industrial firms like Stanley, and United Technologies Corporation.

Digital growth advances IT's importance

Amongst the multitude of construction elements managed by BBE is the selection of network infrastructure to support all IT including telecommunications, data, and the massive computer-controlled machinery and instrumentation required for laser products production.

Future-ready cable/connector system supports superior IT flexibility and growth at major manufacturing plant.

For the LITE building, Andersen says a maximum bandwidth up to 40 gigabit per second (Gbps) for the network backbone to support 10 Gbps to the desktop was a major criteria set by TRUMPF, along with backward compatibility to accommodate its current cabling systems. "Construction projects today focus heavily on IT, versus 20 years ago when interest centered on conventional mechanical and electrical systems," Andersen says. "Most of this change is driven by advances at the workstation, from a black rotary phone and mechanical adding machine in the 1960s to today's multitude of digital devices including full featured Internet protocol (IP) telephony, workstations, printers, wireless and mobile devices. All these gobble up bandwidth."

Many of BBE's renovation projects are now driven by IT changes, he adds. "In the 1980s, we were installing coax, twinax or large bundles of twisted pairs to the workstations with complicated combinations of cable as backbone. In addition to the cost of cable and hardware, the wiring routes created to support installations were major investments for our clientele."

Andersen says not long after these investments were made, they were obsolete and his firm was again asked to handle major upgrades to then-new Category 5 cabling solutions and support. As bandwidth needs increased even further, infrastructure again had to be replaced.

He credits Nexans LANmark-7 solution to counteract the historic need to recable and retrofit networks every five-to-ten years as new technologies requiring greater bandwidth emerge.

"One of the great things about the LANmark-7 solution is the GG45 connector. It handles today's hardware that uses the standard RJ45 connector, and then easily upgrades to 40G by simply changing a patch cord," says Andersen. "Also, LANmark-7 and the GG45 allows for application sharing. By using a splitter-cord, a single LANmark-7 link can be split into multiple applications – providing even greater flexibility for combinations of voice and low-bandwidth applications. The GG45 is awesome!"

The installed cabling infrastructure was designed with expandability, drastically reducing the future installation costs of "future drops" without sacrificing flexibility.

Adds Andersen, "TRUMPF had used competitive Category 7 cables with standard RJ45 connectors in its other buildings." TRUMPF's existing infrastructure is not equipped for the faster connections, and the previous

Solutions

- Nexans LANmark-7 S/FTP copper cable.
- Nexans LANmark-7 GG45 Snap-In connector.

Benefits

- Single connector system (GG45) provides full backwards compatibility with older cords with RJ45 connectors.
- Also offers forward compatibility to handle 40G speeds and up.
- Accommodation of new devices and higher bandwidths ensured.
- Advanced shielding on LANmark-7 significantly reduces crosstalk, noise and EMI issues.
- Facilitates more cables in single tray for improved installation and cost efficiencies.

solution provider's solution required a connector that was not backwards compatible. "Based on our research and experience with other corporate clients, we recommended TRUMPF install a system relatively new in the States – Nexans Cabling Solutions' LANmark-7 with novel, GG45 two in-one snap-in connectors."

Andersen says a key reason for supporting the GG45 is its backward compatibility to existing RJ45 formatted technologies. Unlike other connectors, the GG45 supports the current RJ45 based applications for 10M/100M/1G/10G, and is forward-ready to accept 40G challenges and beyond by simply replacing the patch cord, hence its two-in-one name.

BBE conducted a cost comparison between the current Category 7 cable and Category 6 connectivity (RJ45) combination deployed at TRUMPF's existing buildings at Farmington, and the highly backwards compatible Category 7 GG45 connector used with LANmark-7. "Moves, additions and deletions of devices within a network are especially common in large office and manufacturing sites like this," he said. "Not only were there documented savings in flexibility owing to GG45's ability to easily integrate new and older connectors and cables, but also from LANmark-7's highly advanced S/FTP construction with 4 individually shielded pairs."

"GG45's ability to accept existing RJ45 connectors allows us to expand our infrastructure's speed and performance without costly replacement of various network components, such as cabling."

**Katherine Mahoney,
Manager of Information Technologies, TRUMPF Inc.**

By using LANmark-7, more cabling could be run in a single tray without concern for alien cross talk (AXT) and other interferences, a major concern in a high technology, laser production building with sophisticated production machinery. The shielding incorporated in the LANmark-7 solution provides protection from problems associated with interference whilst guaranteeing superior bandwidth.

"The shielded LANmark-7 cable has a larger diameter than unshielded twisted pair (U/UTP) cable so the physical space requirements require consideration in each installation. However, since it's shielded, there is no concern for cross talk which allows the designer the ability to maximize the amount of cable that can be installed in the cable tray. Adding more cables to each tray contributes to numerous design and installation savings," he says.

GG45 an economical triumph

TRUMPF's Manager of Information Technologies, Katherine Mahoney, concurs. "It was important to maintain the high quality and reliability of the overall network infrastructure as we expanded it into the new LITE building," she said. "Our engineers seriously considered the existing and potential bandwidth needs of this network knowing we'd be running 10G to the desktops. Understanding that cabling infrastructure is often the most expensive component of a network, the GG45 connector proved the most economical solution for TRUMPF."

Mahoney cites backwards compatibility as its most valuable benefit. "GG45's ability to accept existing RJ45 connectors allows us to expand our infrastructure's speed and performance without the costly replacement of various network components, such as cabling. This gave us the flexibility to simply upgrade hardware or ramp up linespeed without a second thought about costly deployment of new cabling," she said.



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With an industrial presence in more than 30 countries and commercial activities worldwide, Nexans employs 22,800 people and had sales in 2007 of 7.4 billion euros. Nexans is listed on NYSE Euronext Paris, compartment A. More information on <http://www.nexans.com/>



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