

**NP 308E**

**FiberExpress® Brilliance®  
Field-Installable Connectors**

Brilliant in design and implementation, FiberExpress Brilliance Field-installable Connectors make fiber termination simple and fast with our industry-leading, tool-less design.



**Belden's FiberExpress  
Brilliance Field-Installable  
Connectors Are Quick and  
Simple to Use, Allow Fiber  
Termination in Only 5 Seconds  
and Require No Specialized  
Tools**

Optical fiber networks are used for some of our most mission-critical data transmissions which necessitates the use of components that are of the highest quality possible. Belden®, a well-established leader in signal transmission technologies, has been involved in the fiber market for over a quarter of a century, plus it has been providing high precision, sophisticated connector technology since the early 1990s. Belden's FiberExpress Optical Fiber Solutions, which consist of a full range of cables, connectivity hardware, patch cords, cable assemblies, connectors and work area outlets, are part of Belden's Total Enterprise Networks™ (TENs) networking approach. TENs components and systems are designed to ensure superior, high performance networks, while also helping the contractor with the need for faster, less complex installations.

The FiberExpress Brilliance Connector joins the TENs line-up of flagship products since it meets all TENs criteria: offering installers and end-users

alike the fastest, simplest, most cost-effective and reliable field-installable connector in the industry. This connector can be used as a backbone, horizontal, or fiber-to-the-desk component in any commercial building or Data Center.

The connector's features position it as the industry's best solution for the challenges of field connectorization of optical fiber networks. It is also the connector of choice for high-speed optical networks such as 10G Ethernet and the more challenging 40G/100G networks of the future. Its use with Belden's FiberExpress Ultra Patch Panel – an ultra high density, easy-to-install and flexible patch panel system – guarantees improved performance and reliability, along with ease of use and distinct labor savings.

To make the fiber preparation step even easier, Belden has also developed a number of fiber preparation Installation Kits which range from a very Basic connectorization kit to a Precision-fiber preparation and cleaving kit.

FiberExpress Brilliance is the industry's leading connector: saving time, labor and material costs.

## Belden FiberExpress Brilliance Field-Installable Connectors

### The Simplest, Brightest and Best Connector

The FiberExpress Brilliance Field-installable Connectors ensure reliable network performance by virtue of their superior design and manufacture, which includes use of the best materials available, expert polishing processes, and a 100% connector reliability test methodology. Quality of this kind enables Belden to provide a 100% installation yield guarantee – even when the connectors are used in environments with temperatures ranging from -40°C to +75°C.

The patent-pending FiberExpress Brilliance Connector is the *only* fiber optic connector in the marketplace to overcome the key challenges of connector installation in the field, that is, it provides a quick and greatly simplified tool-less fiber termination process and the ability to quickly and reliably verify the termination once it's made.

### Save Time and Labor

To simplify the termination process, Belden has built a connector that successfully installs the prepared fiber within the connector in as little as five (5) seconds! And because the process is so simple, these unique time and labor-saving benefits apply:

- Unlike all other field-installable connectors, no tools are required to terminate the fiber. With basic fiber preparation tools, you're ready to go!
- A fiber termination can be achieved in as little as five (5) seconds
  - Installation planning and set-up times are greatly reduced
  - Training is especially easy and straightforward
  - A simple product and installation process removes installation inconsistencies

### Save Money

The connector saves not only on time and labor, it also reduces out-of-pocket costs:

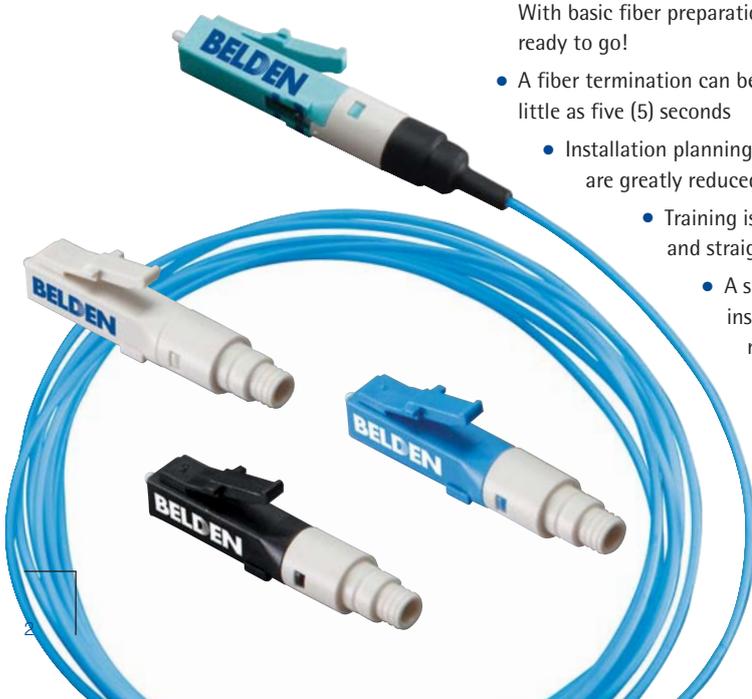
- 'No tools needed' means that there are no special/proprietary tools to purchase
- Since the connector can be re-terminated up to five (5) times, the installer can experience improved connector termination yields, which means lower material costs and no connector waste
- Installation kits are less complex and less expensive
- Training expense is significantly reduced
- Belden provides a 100% installation yield guarantee

### Experience Environmental Benefits

To meet global initiatives and reduce our impact on the environment, Belden eliminates, or appropriately reduces, the use of hazardous materials and implements efficient, environmentally-sound manufacturing processes and practices in all our facilities. At the same time, Belden designs and develops technologies, products and systems that enhance energy efficiency, support sustainability and minimize waste.

The use of this connector contributes to multiple environmental benefits:

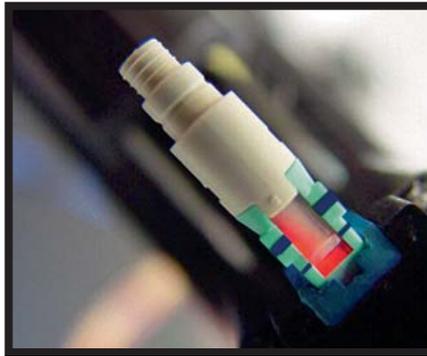
- No tools means less parts
  - Less waste in the development process
  - Less waste in the manufacturing process
- Reduced, or virtually no disposable waste on the site
- Product has a long life-cycle
- Labor and materials efficiency



## VFL Termination Verification

On-site installation assurance is easy with the use of an external laser light source, typically an accessory called a Visual Fault Locator (VFL). To check the fiber installation, inject the VFL light into the connector, at which point the light can be seen through the clear window on the connector's body. Then, insert the prepared fiber into the connector, and slide the connector's switch-like activator to terminate the fiber. With the prepared fiber butting against the fiber stub inside the FiberExpress Brilliance connector, a guiding light path is created and the light is no longer seen through the window. This absence of light indicates that the connector is properly terminated onto the fiber cable. Because the light coming through the unterminated

connector is clearly visible through the connector window, there's a very pronounced difference between the unterminated and terminated state.



A light can be seen through the clear window on the connector body until a fiber has been properly terminated.

## Product Specifications

Belden's FiberExpress Brilliance Field-installable Connectors are for 900  $\mu\text{m}$  tight buffered single-mode and multimode (OM1, OM2, OM3/OM4) LC Connectors, as well as 900  $\mu\text{m}$  tight buffered single-mode and multimode (OM1, OM2, OM3/OM4) SC Connectors.

The connectors are available individually, or in a bulk recyclable package where the 25 connectors are separated from the boots within the package.

The 900  $\mu\text{m}$  tight buffered SC and ST versions, as well as 2 and 3 mm jacketed options and APC versions will be available soon. Please contact a Belden representative for additional details.

## Ordering Information – FiberExpress Brilliance Connectors

Description	Belden Part Number					
	Multimode, OM1, 62.5 $\mu\text{m}$		Multimode, OM2, 50 $\mu\text{m}$		Multimode, OM3/OM4, 50 $\mu\text{m}$	
	1 per package	25 per package	1 per package	25 per package	1 per package	25 per package
LC 900 $\mu\text{m}$ Tight Buffer	AX104240-S1	AX104240-B25	AX104241-S1	AX104241-B25	AX104242-S1	AX104242-B25
SC 900 $\mu\text{m}$ Tight Buffer	AX104244-S1	AX104244-B25	AX104245-S1	AX104245-B25	AX104246-S1	AX104246-B25
ST 900 $\mu\text{m}$ Tight Buffer	AX104248-S1	AX104248-B25	AX104249-S1	AX104249-B25	AX104250-S1	AX104250-B25
LC jacketed 2.0 mm*	AX104254-S1	AX104254-B25	AX104255-S1	AX104255-B25	AX104256-S1	AX104256-B25
SC jacketed 2.0 mm*	AX104258-S1	AX104258-B25	AX104259-S1	AX104259-B25	AX104260-S1	AX104260-B25
ST jacketed 2.0 mm*	AX104262-S1	AX104262-B25	AX104263-S1	AX104263-B25	AX104264-S1	AX104264-B25

Description	Belden Part Number			
	Single-mode, OS2		Single-mode, OS2 - APC	
	1 per package	25 per package	1 per package	25 per package
LC 900 $\mu\text{m}$ Tight Buffer	AX104243-S1	AX104243-B25	–	–
SC 900 $\mu\text{m}$ Tight Buffer	AX104247-S1	AX104247-B25	AX104253-S1	AX104253-B25
ST 900 $\mu\text{m}$ Tight Buffer	AX104251-S1	AX104251-B25	–	–
LC jacketed 2.0 mm*	AX104257-S1	AX104257-B25	–	–
SC jacketed 2.0 mm*	AX104261-S1	AX104261-B25	AX104467-S1	AX104467-B25
ST jacketed 2.0 mm*	AX104265-S1	AX104265-B25	–	–

Description	Belden Part Number
3 mm jacketed boot, bag of 25	AX104577

\* The jacketed version includes a 2 mm boot.  
A separate part number is available for the 3 mm boot.



## Belden FiberExpress Brilliance Installation Kits

### FiberExpress Brilliance Installation Kits

Although the termination of this connector requires no specialized or proprietary tools, Belden has developed three (3) Installation Kits to allow installers to easily and cost-effectively acquire or transition to FiberExpress Brilliance connector technology.



Available Accessories include: Support Handle, VFL, Precision Cleaver, Field Cleaver, Installation Guide, Card, Video, and fiber preparation tools.

### Basic Installation Kit

The rugged **Installation Pouch** is versatile and includes extra pockets for additional flexibility. It can be carried three different ways: shoulder strap, belt and handle. The **Installation Guide** provides all installation instructions necessary to ensure a successful fiber termination and includes troubleshooting and cleaning tips, and a laminated measuring card. The **Video** serves as visual aid to demonstrate the features and benefits and the simplicity, speed and ease of the fiber termination process. The **Brilliance Cleaver Marker** is for FiberExpress Optimax® connector users. It is provided free of charge as an accessory to adapt the existing Optimax Cleaver for both the Brilliance and the Optimax connectors. The new Brilliance Cleaver Marker will effectively eliminate the fiber cleave length risk.

The **Support Handle** helps to maintain high installer yield by enabling a large volume of

connector installations in a short period of time. It helps to facilitate the handling of the fiber connector, and to maintain a bow in the fiber prior to termination. It easily integrates the VFL and adapter cords, and is designed to accommodate varying installation positions beyond the workbench.



Support Handle

### Field Installation Kit

Contains all accessories in the Basic Kit, and also includes a **Field Cleaver**, **VFL** and **Microscope**. The Cleaver is a generic field cleaver commonly called a "score and snap" cleaver. The VFL with adapter cords enables on-site installation assurance.



Field Cleaver

A **Cleave Inspection Microscope** is included to inspect the fiber cleave prior to connector

installation. The **Field Cleaver** and **Microscope** provide a cost-effective cleaving solution which meets TIA requirements.

### Precision Installation Kit

Contains all the accessories of the **Field Installation Kit**, however the **Field Cleaver** and **Microscope** are replaced by the **Precision Cleaver**. The Brilliance Precision Cleaver can achieve superior quality cleaves at a much higher volume (up to 10 times more) than the field cleaver. Optical performance achieved with this kit exceeds TIA requirements, representing a cost-effective, high quality cleaving solution for high volume users without having to use a microscope to verify the cleave.



Precision Cleaver



Installation Pouch



## Fool-Proof Termination in Three Simple Steps... Now That's Brilliance



### All it Takes is Three Simple Steps to Field Terminate a Fiber

Once you have prepared the tight buffered fiber for installation into the connector, you simply perform the following three steps to terminate the fiber:

1. Insert the fiber into the connector
2. Using your index finger, slide the connector's switch-like activator tab toward the fiber to be terminated to bring about the splice/crimp
3. Slide the boot on the connector body

That's it! You have effectively accomplished the splicing and crimping of the fiber in about five (5) seconds.

The activator performs the fiber splicing and crimping action within the connector, reducing the number of steps involved by 50% (in comparison to most field-installable connectors in the market today). Additionally, the connector can be re-terminated up to five (5) times – which means that the installer can re-open the activator mechanism, remove the unterminated fiber from the connector and repeat the installation procedure up to five (5) times – making the installer's success ratio virtually 100%.

You can also perform loose tube fiber installations, with the addition of a break-out kit, and achieve the same reliability and improved fiber yields as you would experience with a tight buffered termination.

The fiber installation procedure is also accomplished without any specific/propriety installation tools, making the transition from any connector brand to the FiberExpress Brilliance Connector hassle-free. The FiberExpress Brilliance solution is more intuitive and the set-up less complex than any connector technology available.

### FiberExpress Brilliance Connector Details



The FiberExpress Brilliance Connector is a flagship optical fiber product, offering installers and end-users alike the fastest, simplest, most cost-effective and reliable field-installable connector in the industry.

## Ordering Information – Installation Toolkits

Description	Basic Installation Kit		
	Individual Option PN	Basic Installation Kit AX104268	Precision Installation Kit (recommended) AX104271
Belden Installation Pouch	AX104272	•	•
Installation Guide	AX104273	•	•
USB Key with Demo Video	AX104274	•	•
Visual Fault Locator (VFL) with Adapter Cords	AX104283		•
FX Brilliance Support Handle	AX104276	•	•
FX Brilliance Support Handle SC Adapter	AX104290	•	•
FX Brilliance Support Handle LC Adapter	AX104289	•	•
FX Brilliance Support Handle ST Adapter	AX104291	•	•
VFL Adapter Cord LC-LC	AX203567	•	•
VFL Adapter Cord LC-SC (suitable for ST)	AX203568	•	•
Belden Optimax-to-Brilliance Transition Cleaver Marker		•	
Cleave Inspection Microscope	AX100910		•
Belden Precision Cleaver	AX104286		•
Alcohol Wipes and Ink Marker	AX100951		•
Waste Bottle	AX104281		•
Safety Glasses	AX104282		•
Fiber / Cable Strippers	AX103151		•
Scissors	AX104280		•
Tweezers	AX104278		
<b>Optional Accessories</b>			
FX Brilliance Support Handle SC/APC Adapter and VFL Adapter Cord LC-SC/APC	AX203895		
FX Brilliance Support Handle LC Universal Secure/Keyed Adapter	AX104604		
Belden Precision Cleaver Replacement Blade	AX104293		