

**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:

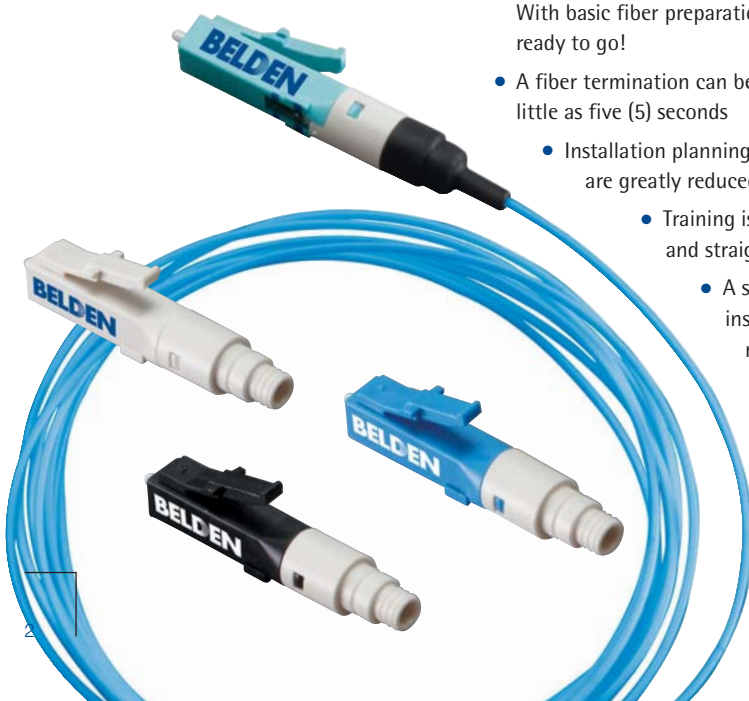
- 'No tools needed' means that there are no special/proprietary tools to purchase
- Since the connector can be re-terminated up to five (5) times, the installer can experience improved connector termination yields, which means lower material costs and no connector waste
- Installation kits are less complex 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:

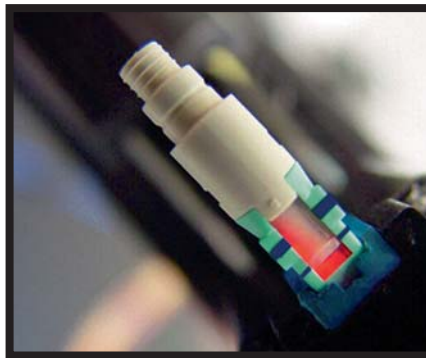
- No tools means less parts
  - Less waste in the development process
  - Less waste in the manufacturing process
- Reduced, or virtually no disposable waste on the site
- Product has a long life-cycle
- Labor and materials efficiency



## 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. They exhibit a typical insertion loss of 0.2 dB.

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.

## Belden FiberExpress Brilliance Field-Installable Connectors

Description	Belden Part Number (1 per package)	Belden Part Number (25 per package)
LC, 900 $\mu\text{m}$ , Multimode 62.5 $\mu\text{m}$ , OM1, Beige	AX104240-S1	AX104240-B25
LC, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM2, Black	AX104241-S1	AX104241-B25
LC, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	AX104242-S1	AX104242-B25
LC, 900 $\mu\text{m}$ , Single-mode, OS2, Blue	AX104243-S1	AX104243-B25
SC, 900 $\mu\text{m}$ , Multimode 62.5 $\mu\text{m}$ , OM1, Beige	AX104244-S1	AX104244-B25
SC, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM2, Black	AX104245-S1	AX104245-B25
SC, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	AX104246-S1	AX104246-B25
SC, 900 $\mu\text{m}$ , Single-mode, OS2, Blue	TBD	TBD
ST, 900 $\mu\text{m}$ , Multimode 62.5 $\mu\text{m}$ , OM1, Beige	TBD	TBD
ST, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM2, Black	TBD	TBD
ST, 900 $\mu\text{m}$ , Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	TBD	TBD
ST, 900 $\mu\text{m}$ , Single-mode, OS2, Blue	TBD	TBD
LC, 2-3 mm Jacketed, Multimode, 62.5 $\mu\text{m}$ , OM1, Beige	TBD	TBD
LC, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM2, Black	TBD	TBD
LC, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	TBD	TBD
LC, 2-3 mm Jacketed, Single-mode, OS2, Blue	TBD	TBD
SC, 2-3 mm Jacketed, Multimode, 62.5 $\mu\text{m}$ , OM1, Beige	TBD	TBD
SC, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM2, Black	TBD	TBD
SC, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	TBD	TBD
SC, 2-3 mm Jacketed, Single-mode, OS2, Blue	TBD	TBD
ST, 2-3 mm Jacketed, Multimode, 62.5 $\mu\text{m}$ , OM1, Beige	TBD	TBD
ST, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM2, Black	TBD	TBD
ST, 2-3 mm Jacketed, Multimode 50 $\mu\text{m}$ , OM3/OM4, Aqua	TBD	TBD
ST, 2-3 mm Jacketed, Single-mode, OS2, Blue	TBD	TBD
LC, 900 $\mu\text{m}$ , Single-mode, OS2, APC, Green	TBD	TBD
LC, 2-3 mm Jacketed, Single-mode, OS2, APC, Green	TBD	TBD
SC, 900 $\mu\text{m}$ , Single-mode, OS2, APC, Green	TBD	TBD
SC, 2-3 mm Jacketed, Single-mode, OS2, APC, Green	TBD	TBD



## 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.



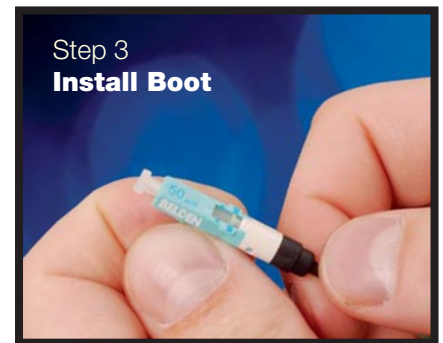
Precision Cleaver



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

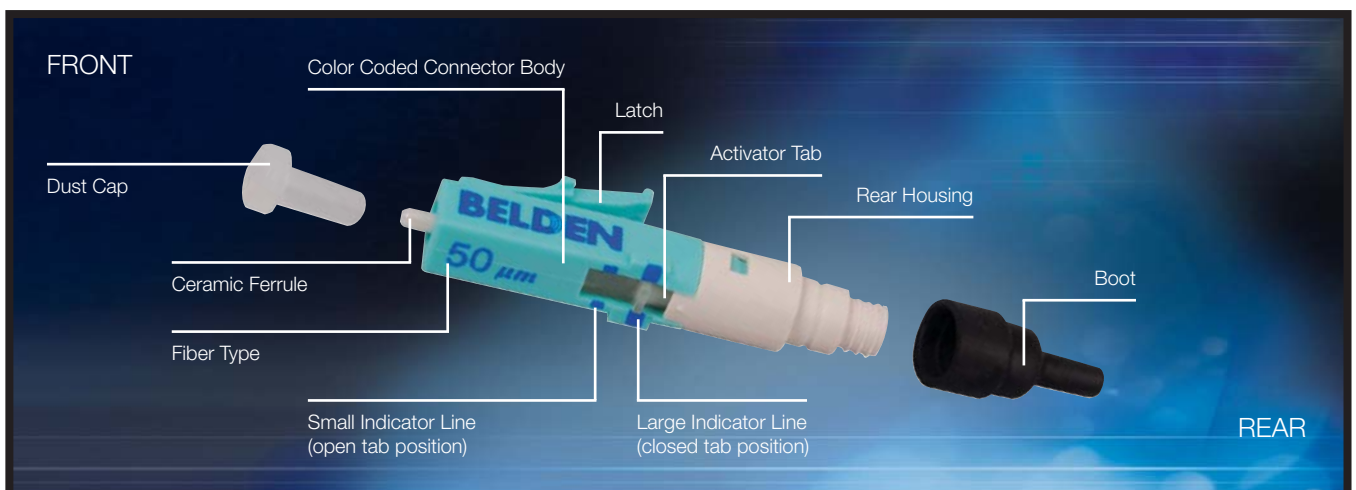
That's it! You have effectively accomplished the splicing and crimping of the fiber in about five (5) seconds.

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.

**Belden® FiberExpress® Brilliance® Installation Kits**

FiberExpress Brilliance	Basic Installation Kit	Field Installation Kit	Precision Installation Kit
Installation Pouch	•	•	•
Installation Guide and Laminated Measuring Card	•	•	•
Demonstration Video	•	•	•
Optimax-to-Brilliance Transition Cleaver Marker	•		
Brilliance Support Handle with Adapters	•	•	•
Fiber/Cable Stripper		•	•
Tweezers		•	•
Pen Marker		•	•
Alcohol Wipes (10)		•	•
Scissors		•	•
Waste Bottle		•	•
Safety Glasses		•	•
Brilliance Pocket Visual Fault Locator (VFL) with Adapter Cords		•	•
Cleave Inspection Microscope		•	
Brilliance Field Cleaver		•	
Brilliance Precision Cleaver			•

Description	Belden Part Number
<b>Belden FiberExpress Brilliance Installation Kits</b>	
Basic Installation Kit	AX104268
Field Installation Kit	AX104270
Precision Installation Kit	AX104271
<b>Belden FiberExpress Brilliance Individual Components</b>	
Installation Pouch	AX104272
Installation Guide	AX104273
Demonstration Video	AX104274
Brilliance Support Handle with Adapters	AX104276
Fiber/Cable Stripper	AX103151
Tweezers	AX104278
Pen Marker	AX104279
Scissors	AX104280
Waste Bottle	AX104281
Safety Glasses	AX104282
Brilliance Pocket Visual Fault Locator (VFL) with Adapter Cords	AX104283
Cleave Inspection Microscope	AX100910
Brilliance Field Cleaver	AX104285
Brilliance Precision Cleaver	AX104286
Visual Fault Locator (VFL) LC-LC Adapter Cord	AX203567
Visual Fault Locator (VFL) LC-SC Adapter Cord (valid for ST also)	AX203568
Support Handle LC Adapter	AX104289
Support Handle SC Adapter	AX104290
Support Handle ST Adapter	AX104291
Field Cleaver Replacement Blade	AX103149
Precision Cleaver Replacement Blade	AX104293
Replacement Leaf Spring Base Plate	AX104294
Refurbishing Materials (80 alcohol wipes and a black felt tip marker)	AX100951