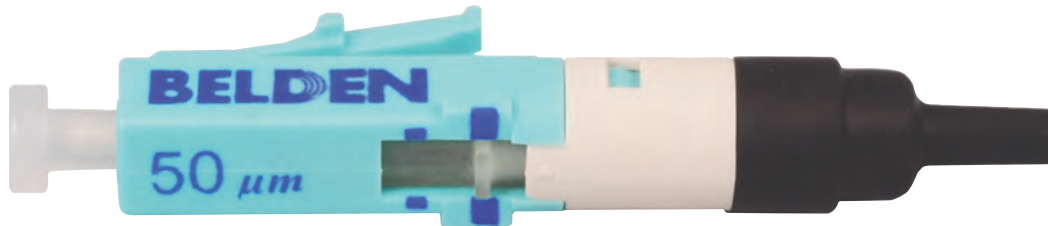


# FiberExpress Brilliance<sup>®</sup> Connectors

## Installation Guide



## Table of Contents

<b>Section A - What's New and What You Need to Know</b>	<b>02</b>
<b>Section B - Components and Features</b>	<b>04</b>
<b>Section C - Fiber Preparation</b>	<b>07</b>
<b>Section D - Installation on 900 <math>\mu\text{m}</math> Fiber</b>	<b>09</b>
<b>Section E - Installation on 900 <math>\mu\text{m}</math> Fiber Using Accessories</b>	<b>11</b>
<b>Section F - Installation on 250 <math>\mu\text{m}</math> Fiber Using 900 <math>\mu\text{m}</math> Breakout Kit</b>	<b>15</b>
<b>Section G - Cleaning Procedures</b>	<b>17</b>
<b>Section H - Troubleshooting Guide and Tips</b>	<b>18</b>

Information subject to change without notice. Belden reserves the right to make changes in product design or components as progress in engineering or manufacturing may warrant.

FiberExpress Brilliance is a trademark of Belden, Inc.

©2009-2010 Belden, Inc.

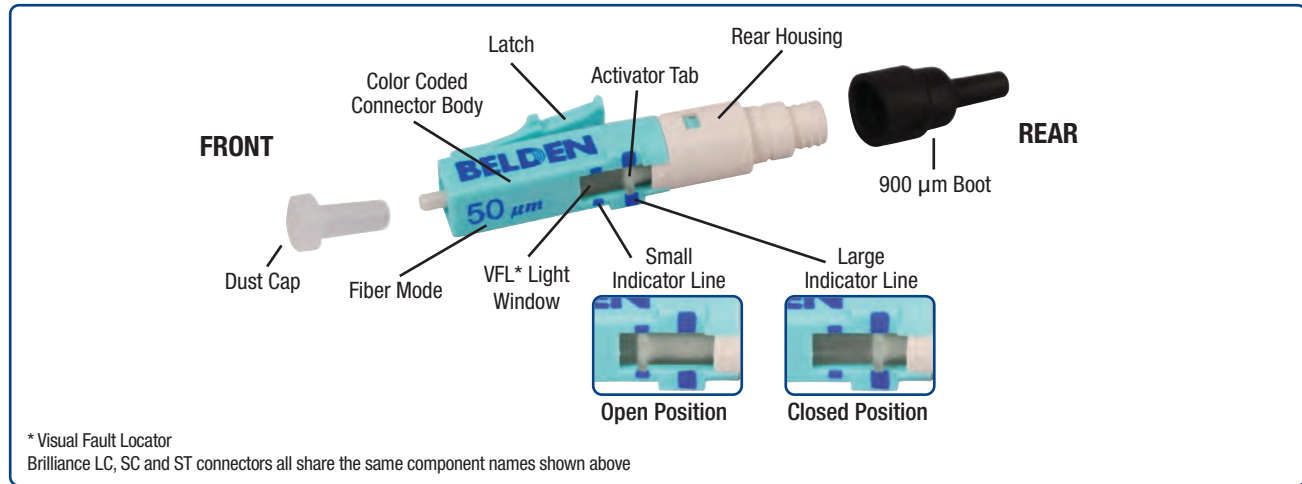
All Rights Reserved.

Printed in Canada

## Section A - What's New and What You Need to Know

### FiberExpress Brilliance Connectors

Include: Brilliance OM1 62.5  $\mu\text{m}$ , OM2 and OM3/OM4 50  $\mu\text{m}$  Multimode & OS2 Singlemode Connectors.



## Section A - What's New and What You Need to Know



### This Guide Includes:

- Installation procedures for Brilliance connectors.
- A section describing components, features and accessories.
- Cleaning procedures.
- A troubleshooting guide and tips.

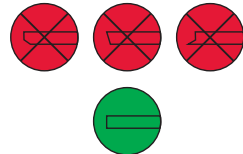


### CAUTION:

- When installed on a live system, invisible laser radiation may be present.
- Do not stare into connector endface or view directly with optical instruments.
- Wear safety glasses when working with optical fiber.
- Dispose of all scrap fiber in the waste bottle to avoid getting fiber slivers.
- Do not touch cleaver blade.

### Key Success Parameters

- Cleanliness:
  - Keep fiber exposed components clean as well as your environment.
  - Keep dust caps on and avoid dust creating activities.
  - Clean endface with alcohol wipes and then wipe as per cleaning procedures
- Cleave Quality:
  - Field cleaver can produce inconsistent results, verify cleave quality with microscope after each cleave.
  - Precision cleavers are recommended and will improve cleave quality.
- Installation Quality:
  - Test performance at every 100 connector installations or less.



## Section B - Components and Features



## Section B - Components and Features



1. Support Handle
2. Protective Adapter
3. SC Adapter
4. LC Adapter
5. ST Adapter
6. Patch Cords
7. Field Cleaver
8. Precision Cleaver
9. Alcohol Wipes
10. Waste Bottle
11. Safety Glasses
12. Multipurpose Strippers
13. Scissors
14. Tweezers
15. USB Key with Demo Video & Files
16. Ink Marker
17. Visual Fault Locator (VFL)
18. Microscope
19. Installation Guide
20. Installation Card

## Section B - Components and Features

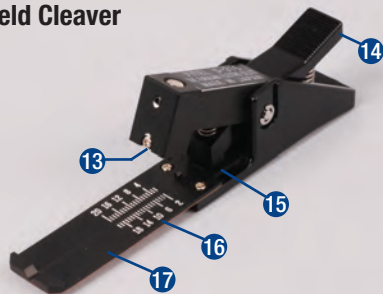
### Precision Cleaver



### Precision Cleaver

1. Cleaver Lock
2. Cleave Arming Button
3. Fiber Guide
4. Stopper
5. Graduated Scale
6. Blade

### Field Cleaver



### Field Cleaver

13. Blade
14. Grip Lever
15. Fiber Tip Grip
16. Graduated Scale
17. Flexible Fiber Guide

### Support Handle



### Support Handle

7. VFL Push-out Pocket
8. Handle Grip
9. Fiber Groove Guide
10. Stylus Pocket
11. Stylus
12. Support Handle Adapter Clips

### Microscope



### Microscope

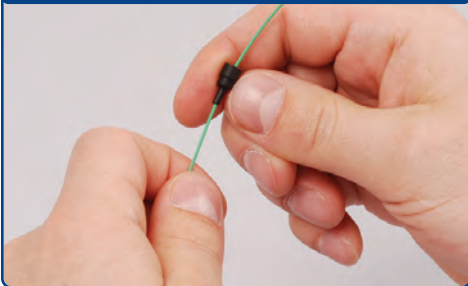
18. Fiber Cover
19. Fiber Buffer Guide
20. Fiber Target
21. Light Window
22. Light On/Off Toggle
23. Focus Adjustment Wheel
24. Viewer
25. Pull-out Magnifier

## Section C - Fiber Preparation

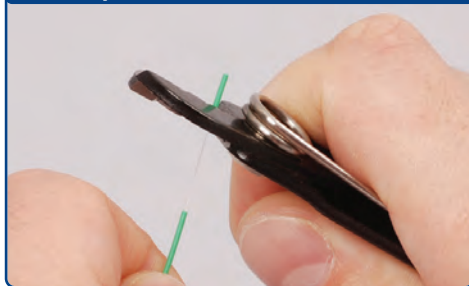
### Fiber Preparation on 900 $\mu\text{m}$ Tight Buffered Fiber

- 1 Slide the boot on the fiber as shown.
- 2 Strip off the buffer at the length specified below:
  - a. Field cleaver: 40 mm
  - b. Precision cleaver:  $24 \pm 2$  mm.If unfamiliar with stripping optical fiber, it is advised to practice using a spare piece of fiber. Be sure to remove the buffer in small sections (5 mm) to avoid breaking it.
- 3 Align the buffer on the Installation Card's graduated scale and mark with an ink marker at 13 mm.

1 Install Boot on Fiber



2 Strip Buffer from Fiber



3 Mark Buffer at 13 mm



## Section C - Fiber Preparation

### Fiber Preparation on 900 $\mu\text{m}$ Tight Buffered Fiber (Continued)

- 4 Clean the bare fiber with alcohol wipes. Use at least two or three passes while protecting the buffer mark with your fingers. Avoid contaminating the bare fiber once it has been cleaned.
- 5 Cleave the fiber at  $8^{+0.5}_{-0.0}$  mm from buffer. When using our precision cleaver, bring the buffer in contact with the cleaver stop. Be sure to read and understand the cleaver instructions before use.

Note: Do not clean the fiber after it has been cleaved.

- 6 If you are not using a precision cleaver\*, it is strongly recommended to verify cleave angle and cleanliness with a microscope. Cleave quality depends on the skill of the operator.

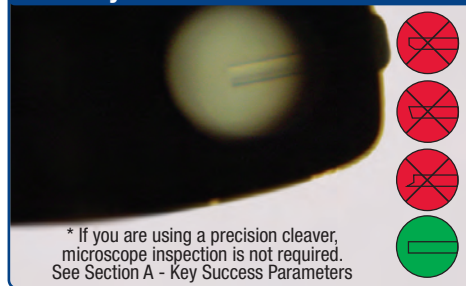
#### 4 Clean Fiber



#### 5 Cleave at 8 mm



#### 6 Verify Cleave \*



## Section D - Installation on 900 $\mu\text{m}$ Fiber

### Basic Installation

- 1 Push the activator tab towards the front using the small line indicator as a locating reference. A stylus is available if needed to provide assistance in opening and closing the activator tab.
- 2 Align the fiber tip with the rear housing by bringing both hands together for stability, as shown. Guide the fiber into the connector until you reach the buffer mark.

Note: If needed, an adapter is available with the Installation Kit to help grip the connector (see Section B).

#### 1 Open Activator Tab



#### Alternative: Using Stylus



#### 2 Insert Fiber into Connector

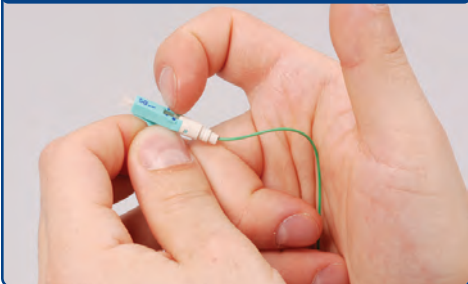


## Section D - Installation on 900 $\mu\text{m}$ Fiber

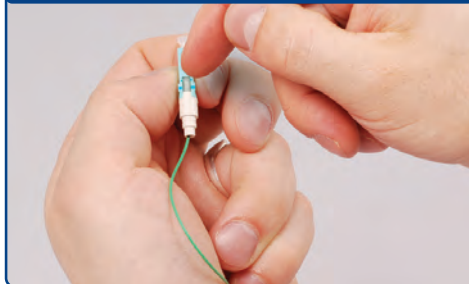
### Basic Installation (Continued)

- 3a Use your dominant hand to produce a bow in the fiber. Hold the bow in place with the fingers from your dominant hand while leaving your index free, as shown. Pull the activator tab towards the rear, using the large line indicator as a locating reference.
- 3b Use your dominant hand to produce a bow in the fiber. Secure the bow with your passive hand while holding the connector as shown. Use your free hand to pull the activator tab towards the rear, using the large indicator line as a locating reference.
- 4 Install the connector boot by sliding it onto the rear of the connector until it reaches the body. The installation is now complete.

3a Activation Method 1



3b Activation Method 2



4 Install Boot



## Section E - Installation on 900 $\mu\text{m}$ Fiber Using Accessories

### 1 Support Handle Preparation

- 1.1 Remove the clip protector and insert the appropriate adapter into the Support Handle as shown.
- 1.2 If you are using a Visual Fault Locator (VFL), first remove the VFL's protective cap then snap the VFL into the Support Handle as shown. Using a VFL is optional.
- 1.3 Connect the VFL to the adapter using the appropriate supplied patch cord.

1.1 Snap in Adapter



1.2 Snap in VFL



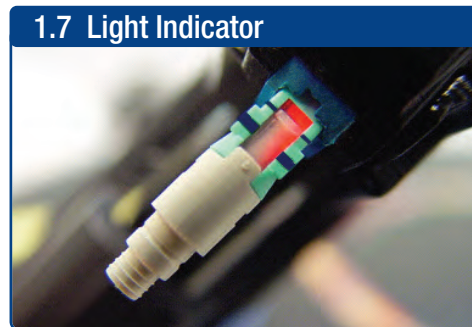
1.3 Connect Patch Cord



## Section E - Installation on 900 $\mu\text{m}$ Fiber Using Accessories

### 1 Support Handle Preparation (Continued)

- 1.4 Insert the Brilliance connector into the Support Handle's adapter as shown.
- 1.5 Arm the VFL, then choose a pulse or continuous laser mode by repeatedly pressing the mode toggle button. A green light will appear to indicate that the VFL is active, if a red light appears, the batteries need to be replaced. Using a VFL is optional.
- 1.6 Push connector activator tab towards the front using the small line indicator as locating reference. A stylus is available in the Support Handle, if needed, to provide assistance in opening and closing the activator tab.
- 1.7 When using a VFL in the connection process, a red light will appear in the connector window.



## Section E - Installation on 900 $\mu\text{m}$ Fiber Using Accessories

### 2 Fiber Preparation (See Section C for steps)

The support handle can be placed in the pouch's exterior holster or on a work surface for ready usage while preparing the fiber .

### 3 Insert Fiber

- 3.1 After preparing the fiber, grip the Support Handle with your passive hand.
- 3.2 Using your dominant hand, guide the fiber into the Support Handle groove. Allow the fiber to follow the curve in the handle and secure it with your thumb.
- 3.3 Guide the fiber into the connector and stop when you feel contact. When fully inserted, the buffer mark should be near the edge of the rear housing of the Brilliance connector. If not, gently back off and reseal the fiber.

#### 3.1 Grip Support Handle



#### 3.2 Place Fiber in Groove



#### 3.3 Insert Fiber



## Section E - Installation on 900 $\mu\text{m}$ Fiber Using Accessories

### 4 Finalize Connector Installation

- 4.1 Produce a bow by sliding your thumb along the Support Handle's graduated scale. Slide between 5 and 8 mm to produce a slight bow as shown. Hold your thumb in position.
- 4.2 Use your other hand to pull the connector activator tab towards the rear using the large indicator line as a locating reference. When using a VFL, the red light in the VFL window should go out or dim substantially. If not repeat fiber preparation steps and try again.
- 4.3 Install the connector boot, slide it onto the rear of the connector until it reaches the body. Remove the connector from support handle. The installation is now complete.

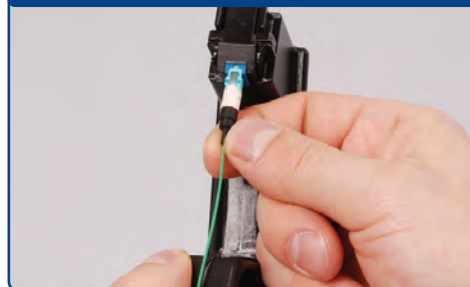
4.1 Produce Bow



4.2 Close Activator



4.3 Install Boot



## Section F - Installation on 250 $\mu\text{m}$ Fiber Using 900 $\mu\text{m}$ Breakout Kit

### Breakout Kit Preparation

Refer to Breakout Kit Installation Guide provided with each AX101100 or AX101101 for breakout kit installation on loose tube or mini distribution cables.

### Breakout Kit Preparation

- 1 Slide the boot on the fiber as shown.
- 2 Using the 250  $\mu\text{m}$  region of the stripper, strip off the buffer at the length specified below:
  - a. Field cleaver: 40 mm
  - b. Precision cleaver:  $24 \pm 2$  mm.If unfamiliar with stripping optical fiber, it is advised to practice using a spare piece of fiber.
- 3 Gently push the fiber back into the tube.

#### 1 Install Boot on Fiber



#### 2 Strip Off Tube



#### 3 Push Fiber Back In



## Section F - Installation on 250 $\mu\text{m}$ Fiber Using 900 $\mu\text{m}$ Breakout Kit

### 1 Breakout Kit Preparation (Continued)

- 1.4 Using the 125  $\mu\text{m}$  region of the stripper, remove 250  $\mu\text{m}$  coating from the tube to the fiber's end.
- 1.5 Align the tube on the Installation Card's graduated scale and mark with the ink marker at 13 mm.
- 1.6 Thoroughly clean the bare fiber with an alcohol wipe and gently push the fiber back into the tube.
- 1.7 Refer to Section C: Step 5 for cleaving instructions and Section D to complete the installation.

1.4 Strip Off Coating



1.5 Make Mark at 13 mm



1.6 Clean Bare Fiber



## Section G - Cleaning Procedures

### Connector Cleaning Procedure and Precautions

1. Wipe completely around the connector ferrule a few times with a lint-free alcohol soaked wipe. Then wipe across the end of the ferrule and twist off.
2. Blow compressed air across the end of the ferrule (optional but recommended).
  - \* Do not allow ferrule to touch anything before inserting into adapter.
  - \* Preferred alcohol is ethanol but isopropyl alcohol may be used.

### VFL Components Cleaning Procedure and Precautions

1. Remove the patch cord and clean the connector ferrule as described above.
2. Ensure the interior of the VFL adapters are free of contaminants.
3. Ensure the interior of VFL ferrule sleeve is free of contaminants.
4. Reapply dust caps to patch cord and adapters immediately after use.

### Tips

1. When cleaning the bare fiber with alcohol wipes, a squeak is a good indication that the fiber is free of impurities.
2. Clean the patch cords and adapters regularly by following the recommended procedure. If a contaminant adheres to the ferrule tip or adapter ferrule guide, each connector installed could be damaged or contaminated.
3. It is strongly recommended to store unused adapters in a clean package such as the original packaging to avoid adapter contamination.

## Section H - Troubleshooting Guide and Tips

### Connector Troubleshooting

1. If the VFL is still visible in the connector window after terminating or test results are marginal:
  - The cleave may not be good. Ensure the cleaver is in good working order (see cleaver instructions), then repeat the cleave and termination procedure.
  - The cleaved fiber tip may be dirty. Ensure work area is clean and repeat cleave and termination procedure. If the problem persists contaminants may have been introduced into the connector.
2. If you cannot insert the fiber up to the buffer mark, make sure your mark and cleave are accurate and that the connector activator tab is in the open position, then repeat the termination procedure.
3. If the fiber brakes inside the connector, discard the unusable connector and repeat the procedure.

### Tips

- A - When removing the buffer from the fiber, cut perpendicular to the fiber and then tilt the stripper slightly to facilitate removal.
- B - When a field cleaver is used, it is strongly recommended to verify the cleave quality with a microscope.
- C - If a VFL and patch cord are attached to the Support Handle be sure not to crush the patch cord in the interior pocket of the pouch. Instead, use the exterior holsters while working. After use, it is recommended to remove the patch cord and adapter then reinstall the appropriate dust caps.
- D - A stylus included in the Support Handle can be used instead of your nail to push the activator tab.
- E - Turn off the VFL after every use to extend the life of the batteries.
- F - Make sure the dust caps are not installed when removing the adapter from the support handle.
- G - To ensure the VFL is properly fastened to the Support Handle make sure a snap is heard while attaching it to the Support Handle.
- H - If the light from the VFL is not apparent in the Brilliance connector window, try closing and reopening the activator tab.
- I - To remove the VFL from the Support Handle press on the VFL through the Support Handle Push-out Pocket located in front of the adapter clipping location.

**For more information on Belden products, please call:**

**U.S.A. & Canada 1 800 BELDEN1  
(1 800 235 3361)**

**For a list of regional sales offices  
visit our WEB SITE:  
[www.belden.com](http://www.belden.com)**

©2009-2010 Belden, Inc.  
All rights reserved.  
Printed in Canada

Document release: B  
Date: February 2010  
Order Number: AX104273

**BELDEN**