



Fiber Adaptor Kit Installation

This document explains how to install the following fiber adaptor kits:

- P/N 91611035, for 75-350 x Ø1mm fibers. This ferrule has a diameter of 30mm and is supplied with an adaptor ring that increases the adaptor diameter to 38mm so that it will fit in the port of the FiberSource CMY150 fixture.
- P/N 91611034, for 350-800 x Ø1mm fibers. This ferrule has a diameter of 38mm.

The fiber adaptor ferrules are tapered to fit a varying number of fiber optic cables. The adaptor ferrule often needs to be cut for proper fit and maximum light output. Follow these instructions for the best cable fit and maximum brightness.

The kit includes:

- 1 x fiber adaptor ferrule
- 2 x cable ties
- 1 x roll of tape
- 1 x tube Loctite 401 glue
- 2 x files (fine and coarse)
- 1 x emery cloth

Recommended cable length

The following guidelines provide a starting point for estimating your needs. Light transmission through fiber-optic cable depends on its quality and results will vary depending on the type of cable used.

Side-emitting cable

With a single fixture, best results are achieved when the fiber optic cable is 10 m (33 ft.) or shorter. The length may be increased to 15 m (50 ft.) by looping the cable and illuminating both ends. With two fixtures, one at each end of the cable, lengths up to 30 m (100 ft.) can be achieved.

- Avoid sharp bend of the fiber
- Make fiber run loop to illuminator when possible
- Use maximum diameter of optical cable.
- Do not apply pressure to the surface of the fiber
- Secure easy access to luminaire.

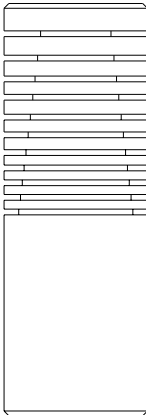
End-emitting cable

Light output decreases with length: keep the cable as short as possible. The maximum recommended length is 25 meters. Cut the light emitting end of the fibers with a sharp knife for maximum output.

Cut the adaptor ferrule to size

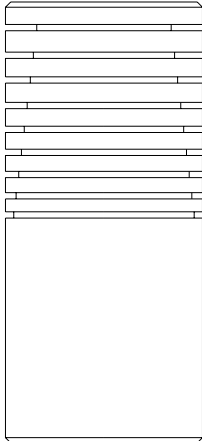
- The adaptor is cone-shaped internally so that it can accommodate a variety of cable quantities and sizes. It is likely that it will have to be cut to fit the cable that you use. Use one of the following illustrations (whichever is relevant for the adaptor you have) to find the position where your adaptor should be cut.

Ø mm	fibers
10.1	75
11.7	100
13.0	125
14.0	150
15.0	175
16.0	200
16.9	225
17.8	250
18.6	275
19.4	300
20.1	325
20.9	350



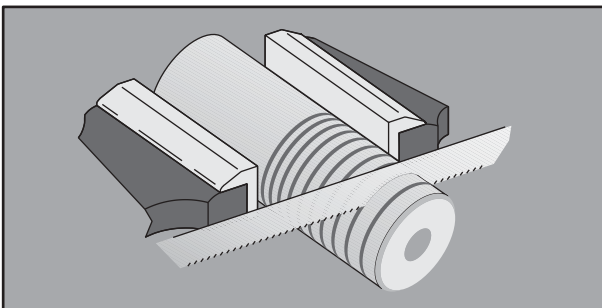
Fiber adaptor, ferrule 75-350 pcs.
Ø1mm fiber, D=30mm
P/N 91611035

Ø mm	fibers
20.9	350
22.2	400
23.5	450
24.7	500
25.9	550
27.0	600
28.1	650
29.1	700
30.1	750
31.0	800



Fiber adaptor ferrule, 350-800 pcs.
Ø1mm fiber, D=38mm
P/N 91611034

- Cut the adaptor with a hacksaw at that position.

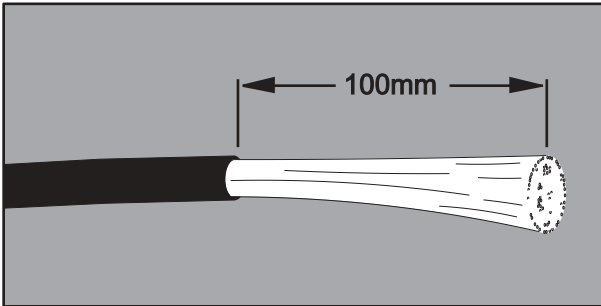


- Using the emery cloth, wipe the inside of the adaptor to remove any burrs that could damage the fibers.

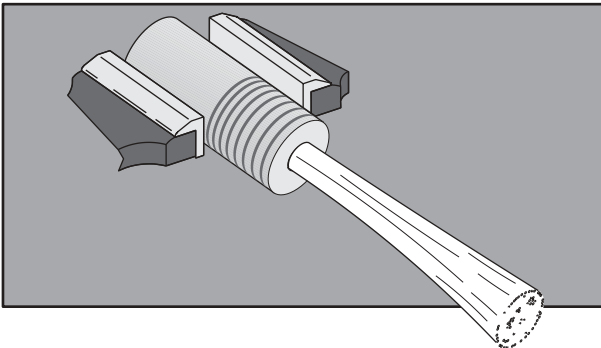
Install cable in adaptor ferrule

Prepare the cable

1. Prepare the fiber optic cable. Cut the cable to the desired length and carefully remove 100 mm (4 in) of the outer casing using a cable stripper or a sharp knife.



2. Insert the fibers fully into the adaptor. The fibers must fit snugly for the glue to hold. Pack the adaptor with a few extra fibers if necessary to achieve a snug fit.



3. Install the fiber into the adaptor ferrule using one of the following methods:
 - “Standard (cold) method” on page 3
 - “Hot fusion method” on page 6 (recommended)

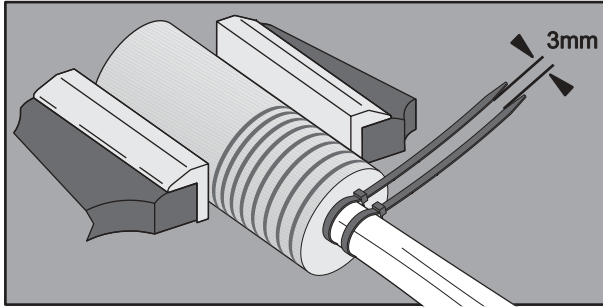
Standard (cold) method

In addition to those supplied with the kit, the following tools are required:

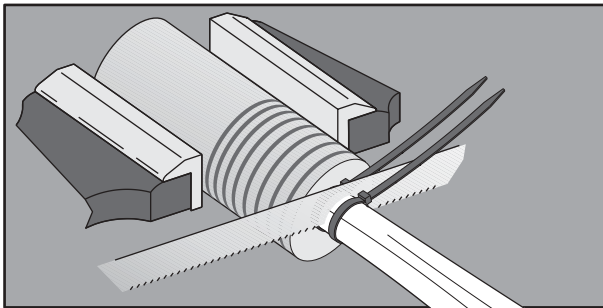
- Hacksaw
- Hempel marine polish (or similar product)

1. Wrap two cable ties (included) around the fibers about 3 mm apart at the end of

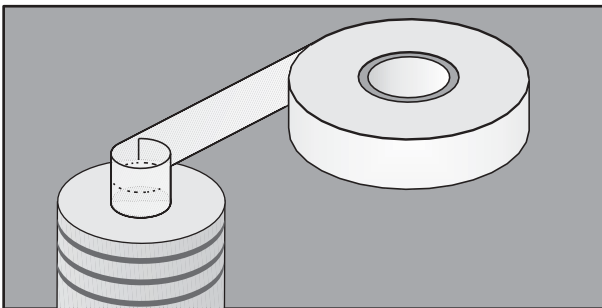
the adaptor.



2. Cut the fibers between the ties.



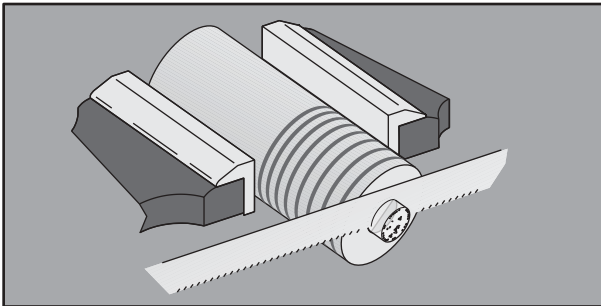
3. Remove the remaining cable tie. Using the tape that is included with the kit, form a tape funnel around the fibers.



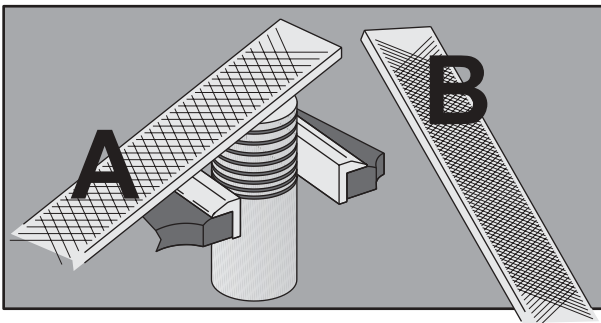
4. Pour Loctite 401 (included in the kit) into the funnel to fill approximately 3 mm (1/8") above the fibers. Allow the glue to soak in, remove the tape, and allow to harden for 20 minutes.



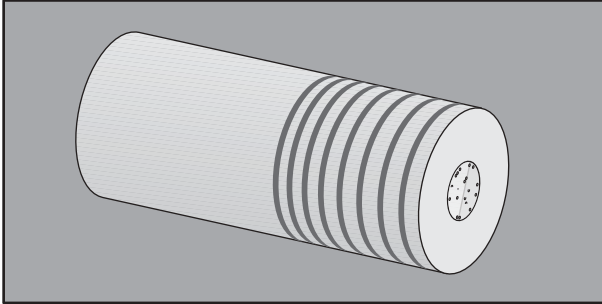
5. Turn the adaptor over and apply the remaining glue to the other end of the adaptor, so that it runs down between the fibers and the inside metal wall. This is to ensure that the fibers sit securely. With the adaptor in this upright position, allow the glue to harden for 20 minutes.
6. Saw off excess cable about 1 mm (1/32") from the end of the adaptor.



7. File the fibers smooth using the coarse and then the fine file (included). It is very important that the edges of the fibers are polished to a smooth surface to ensure that light is passed to them effectively.



8. The adaptor is ready to be inserted into the FiberSource fixture.

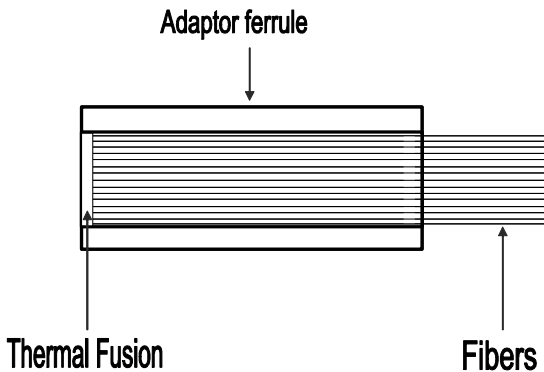


9. Apply Hempel marine polish (or a similar product) to the end of the fiber. The surface of the fiber must be totally smooth with no scratches.
10. See “Insert adaptor in fixture” on page 8.

Hot fusion method

The hot fusion method is highly recommended, because it:

- Focuses the light
- Minimizes the light reflected back into the fiber
- Makes a smooth water-proof surface



The following tools are required to install the fiber into the adaptor ferrule using the hot fusion method:

- Hot knife
- Warm air gun
- Electric sander (with Grit 240 sandpaper)
- Grit 800/1200 3M sandpaper
- Hempel marine polish (or similar product)

1. Using the hot knife, cut the fiber 2 mm from the adaptor ferrule.



2. Fuse the fibers using the warm-air gun on a low setting.



3. Heat the fibers until they “mushroom”, and swell over the end of the adaptor. Be careful not to over-heat the fiber. Cool the adaptor in water occasionally.
4. Using sandpaper, or an electric sander, grind down the swollen fiber to a plane surface. Be careful not to remove all excess fiber; leave approximately 1 mm beyond the tip of the adaptor ferrule.



5. Polish the fiber, with 3M P800 wet sand paper and then with P1200 wet sand paper.



6. Apply the marine polish to the end of the fiber. The surface of the fiber must be totally smooth with no scratches.



Insert adaptor in fixture

If your adaptor ferrule is the smaller 30 mm diameter adaptor (P/N 91611035), then you need to insert it into an adaptor ring to increase the diameter to 38 mm. Place the adaptor ring onto the adaptor ferrule so that the ends are flush. Screw the adaptor ring fast using a 2mm Allen wrench. Do not push the adaptor ferrule past the end of the adaptor ring as the fiber will be too close to the light source and will be damaged.

1. Slide the adaptor ferrule into the port of the FiberSource CMY150.
2. Tighten the locking screw in the fixture port using a 2 mm Allen wrench to lock the adaptor into place.