

Amphenol Spectra-Strip Operations
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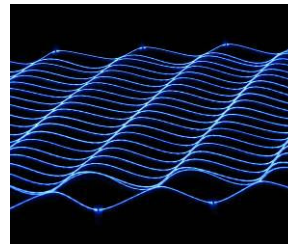
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XpandoLite[®] Termination Instruction Sheet

XpandoLite[®] represents a whole new dimension in lighting from Amphenol Spectra-Strip.

XpandoLite[®] consists of 44 fibers, made up into 22 twisted pairs, each fiber being 1mm diameter PMMA (Polymethyl methacrylate) POF (plastic optical fiber). We then laminate all 22 pairs with a translucent PVC film so that they are encapsulated between these films. The lamination is performed in a proprietary “transverse slit” fashion, which accounts for the “expansion” between fibers as shown in the above photos.



Spectra-Strip's **XpandoLite[®]** achieves the side light emitting capabilities by taking a very unique approach. XpandoLite intentionally violates the fiber's maximum acceptance angle by simultaneously twisting all the optical fibers, thus causing most of the light to escape through the fiber's outside cladding. This produces the side light emitting effect.

These detailed instructions provide information on the different methods to terminate **XpandoLite[®]**. These guidelines include our recommended techniques learned after many projects requiring various forms of termination.

XpandoLite[®] is designed to accept a wide range of illuminators including quartz halogen, metal halide and RGB LED. The different style and size of ferrules (port assemblies) supplied by these various illuminator companies are easily accommodated and work with **XpandoLite[®]**.

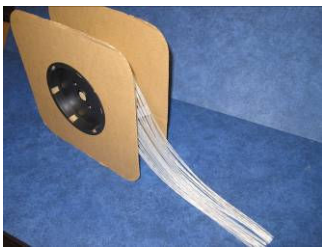
We have provided these guidelines specifically for those who purchase **XpandoLite[®]** in bulk. **XpandoLite[®]** is available on bulk rolls of 50, 100, 150, 200 and 300 feet.

Major Steps in Termination Process:

- Cut XpandoLite® to length
- Strip the translucent PVC film
- Install the heat shrink tubing
- Attach the “Compression” ferrule & Polish

Step by Step Procedures:

1. Unroll and cut to required length



XpandoLite® is ordered, shipped and received on roll. Pull the cable from the roll and cut to the required length using a commercial scissors. Include the necessary length for the tails (covered non illuminated section), the end terminations, and the illuminated section. Remember that when you expand the width from the non expanded width of 2.5 inches, the length condenses based on how far and often you expand the width. Keep this in mind when you are determining

the length requirements.

2. Strip the translucent PVC film from the plastic optical fiber



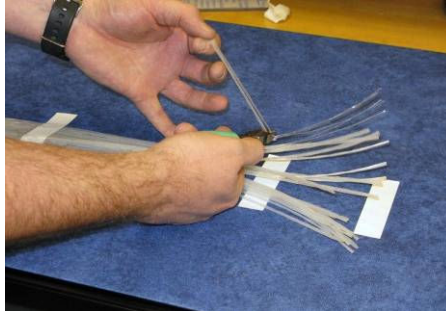
Tape XpandoLite down to work bench to hold in place while stripping and to achieve straight even cuts.

2. Strip the translucent PVC film from the plastic optical fiber (continued)



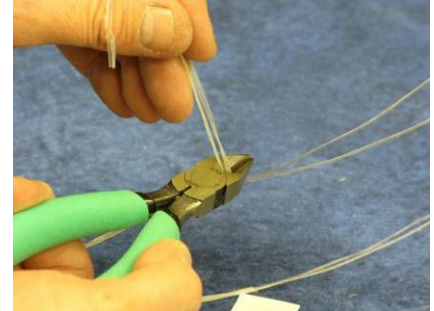
Use razor type scalpel / craft knife to separate the fibers from the PVC film.

Be careful not to cut into the cladding on the fiber.



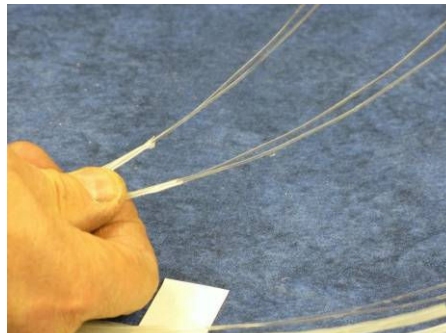
Strip off the PVC film from the fiber.

Untwist the each pair of fibers.



Use wire cutters to cut PVC film that has been stripped. Cut PVC film at same length (4-5 inches).

Tape together for insertion into heat shrink tubing.



3. Install the heat shrink tubing



We use 3M™ ½ inch Heat Shrink Tubing, FP 301, for the length of the “tail”. This comes in black, white, red, blue, and green colors.

3. Install the heat shrink tubing (continued)



Insert the taped and stripped fibers into the shrink wrap tubing.



Use the correct length of tubing for the "tail". Fibers are stripped and organized into straight / parallel order for eventual insertion into the ferrule.

Remember, only need to cut / strip PVC film to 4-5 inches. The shrink wrap tubing is used to cover the tail.

4. Attach the "Compression" ferrule & polish

Select the "field termination" **Compression Ferrule**. This can be used with either *DiCon* LED type illuminator or the *Fiberstars* metal halide illuminator (use the metal halide adapter).

P/N # 580-2302-001, 580-2302-002



4. Attach the “Compression” ferrule & polish (continued)



Carefully bundle the fibers.



Push fibers through.



Tighten the compression nut around the fibers. The shrink wrap tubing will be brought up to nut and heated.



Zeta-9 Thermocutter (hot knife)



Cut the fibers with the hot knife. Apply even downward pressure of the knife across the face of the ferrule. Practice a few times first before working on the real assembly. Do not saw back and forth, as this will cause serrations which will affect the light output.



Polish for maximum light launch into the fibers.

Use 1,200 Grit paper.

Dual action Sander (vibrates & rotates)



Finish polish using polishing compound.

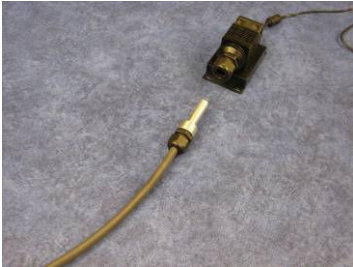
Shown is Buffing Compound McMaster Carr P/N A801A2 (2 lb. bar).



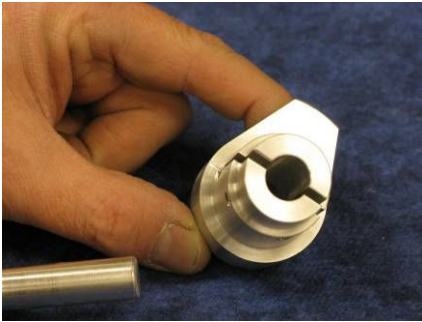
Apply heat to the heat shrink tubing. Steinel Electric Heat Gun HG 2310 LCD. Type 3483.



Finished Ferrule attached to XpandoLite



Ferrule with DiCon LED illuminator



Fiberstars 404 / 405 series metal halide Illuminator Adapter



Ferrule with adapter mounted into Fiberstars 404 / 405 series metal halide illuminator

We can provide custom ferrule for any type of illuminator.

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