

# UVC OPTICAL SPLICE

## Instructions for Use

The Norland UVC Optical Splice provides the easiest to use method for making high performance fiber optic connections with either single mode or multimode fiber. Fibers inserted into the splice automatically align when they contact in the center. U.V. curing Norland Optical Adhesive is used to form a permanent, index matching bond between fiber faces and, at the same time, encapsulates the entire fiber for immediate protection and strength. For temporary connections, index matching liquid can be used, allowing fibers to be inserted over and over again.

The high performance built into the splice is dependent on three major factors in assembling:

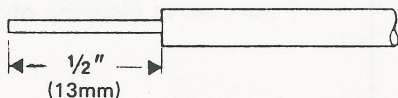
**A. Square fiber ends.** Fibers should be cleaved with a high performance cleaving tool to assure squareness of fiber ends. Each fiber should be inspected under magnification to confirm quality of the break.

**B. Centering of fiber ends.** Mechanical splices are designed to allow fibers to meet in perfect alignment only in the center of the splice. The assembly procedure outlines a simple method to accomplish this.

**C. Cleanliness.** Tiny particles of dust and dirt, grease or oils on the fiber or tools can affect the precision and performance of the splice. Take care to keep everything as clean as possible when assembling.

## Assembly Procedure

1. Prepare fibers by removing outer jacket and Kevlar to expose buffer coated fibers. Strip about 2" (50mm) of protective buffer from fibers. Clean fibers with acetone or other appropriate solvent. Cleave fibers to allow 1/2" (13mm) of bare fiber to extend from buffer coating.



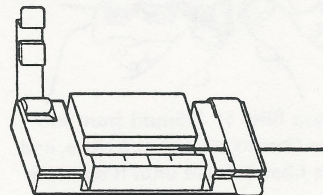
**NOTE:** Since cleanliness is critical to the splice performance, we recommend the following cleaning steps be used before inserting each fiber into the splice.

A. Dip the fiber into a small vial of clean reagent grade acetone. Let it soak for 3 to 5 seconds with slight agitation. Remove from solvent and allow to dry for 5 seconds.

B. Touch fiber face to tacky surface of adhesive tape to remove any last trace of dust or dirt. Use immediately.

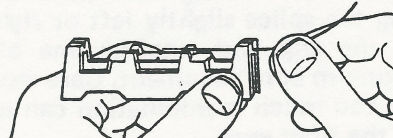
2. Center first fiber in fixture by placing fiber in Norland Splice Holder or SpliceMate as shown. The fiber end should align with center line of splice holder or SpliceMate. Be careful not to allow bare fiber to contact base or sidewalls of fixture where it can pick up dust. Lock fiber in place. Gently push or pull fiber until it is precisely centered.

Norland Splice Holder P/N 21005



Press gently on the clip above fiber to lock fiber in place.

Norland SpliceMate P/N 21010

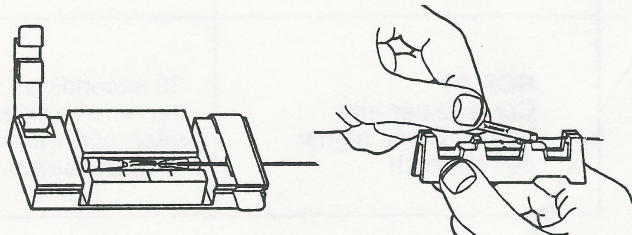


Squeeze base at end to open clip. Release to close.

3. Prepare splice by filling with Norland Optical Adhesive. Insert syringe tip into end of glass sleeve and slowly inject adhesive until it reaches opposite end. Wipe off excess adhesive. Do not expose adhesive to direct sunlight. Always work in shaded area.

**NOTE:** When injecting adhesive, the first drop may contain air bubbles or dust. Dispense the first drop onto a lintless wipe before inserting tip into splice.

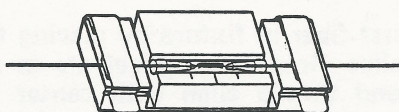
4. Slide splice onto first fiber and center on fixture. Fiber is now centered in splice.



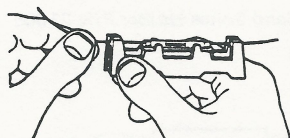
Snap splice into locking tabs after insertion.

5. Insert second fiber into splice until it contacts first fiber. This can be seen by slight fiber movement or bowing between the clip and UVC Splice when contact is made. Allow bowing fiber to relax without separating fibers and lock in place.

*NOTE: 250 micron buffered fiber is very flexible. Hold it close to fiber end (about 1½" or 40mm) to keep it stiff when inserting.*



Hold splice in place with index finger of free hand while inserting fiber.



Grasp fiber 1" (25mm) from end. Place fiber in clip, let clip close, and ease fiber forward until it contacts first fiber.

6. (Optional) If attenuation is being measured, the splice is adjusted for lower loss. This can be accomplished by rotating the splice in the holder, moving the splice slightly left or right, or by loosening the clip and rotating one of the fibers for maximum core alignment. Care must be taken because too much manipulation can affect the quality of the fiber ends.

*NOTE: Do not separate the fibers once they are inserted. This can cause a bubble to form between the ends. If this occurs, remove fibers and inject additional adhesive until bubble flows out end. Reinsert according to procedures.*

7. Cure adhesive with U.V. light following exposure times in Table 1.

8. Remove splice from fixture.

**Splice Holder:** Lift front edge of clips to unlock fibers and remove splice.

**SpliceMate:** Squeeze center base section to release splice and fibers.

### How It Works

The Norland UVC Optical Splice is composed of a precision alignment guide centered in a larger protective glass sleeve. The central glass alignment guide is actually composed of four tiny glass rods which have been fused together to form a diamond shaped core. The ends of the guide are angled slightly so that when the fibers are inserted, their natural resiliency forces them into the uppermost v-groove. When the fibers meet in the center they are both running parallel with the guide so that they butt, end to end, in the maximum possible alignment.

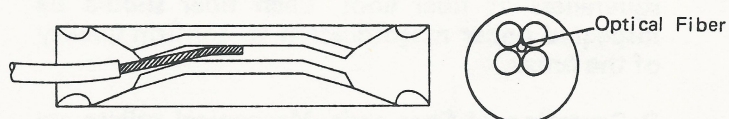


Table 1 — Exposure Time

Adhesive Type	LIGHT SOURCES	
	NORLAND OPTICURE LIGHT GUN	NORLAND UVC SPLICE LAMP
<b>NOA 61</b> Gives lowest light loss.	30 seconds at a distance of ½" over center of splice. Then 1 minute at each end with light at close distance to glass sleeve.	5 minutes at distance of 1"
<b>NOA 81</b> Cures faster and harder. Gives higher pull strength.	30 seconds at a distance of ½" over center of splice. Then 30 seconds at each end with light at close distance to glass sleeve.	3 minutes at distance of 1"