AFL

INSTALLATION INSTRUCTIONS

LIGHTLINK LL-580 OPTICAL SPLICING AND DISTRIBUTION ENCLOSURE

TABLE OF CONTENTS:

GENERAL

The LightLink (LL) 580 Optical Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband, distribution and building entrance applications. The splice tray panel is equipped with LGX® 118 footprint so various types of connectors may be installed. The enclosure features a scratch resistant powder coated base and a fully gasketed hinged cover. The cover was designed so that it may be installed on either side of the enclosure where there are space restrictions. The internal interconnect tray and back-plate may be removed from the enclosure and brought to a splicing table to complete splicing, fiber routing and fiber management. The cable entry base has four interchangeable configurations to allow the installation of cable through a grommet system, or through pre-installed conduit couplings.

SPECIFICATIONS

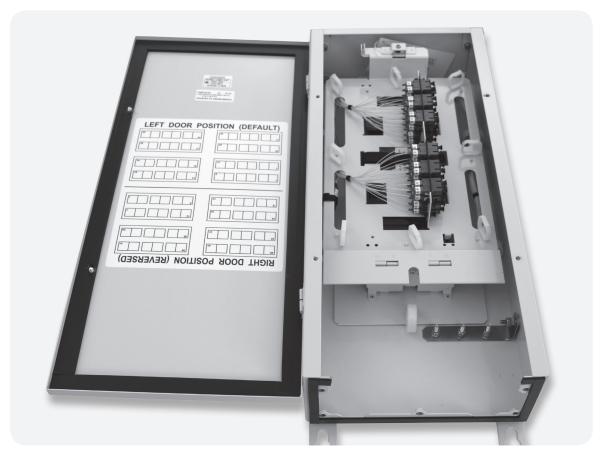| Parameter	Value
Material – Housing	16 Gauge Aluminum
Coating	Electrostatically applied powder paint
Color	Beige
Enclosure Size (H x W x D in.)	27.5" x 13.0" x 5.625" (total length: 33.5" L x 13")
Skirt Size (H x W x D in.)	15.263" x 12.296" x 5.555" (total width: 15.263" x 17.756" W)
Weight (lbs)	15.2 lbs.
Adapters	(72) SC or (72) LC Duplex
Splice	(2) LL-7644 up to 120 single fused fibers or 24 mass fusion sleeves
	(2) LL-4808 L-R up to 72 single fused fibers or 24 mass fusion sleeves

PACKAGE CONTENT

A. LL-580 Enclosure Base

B. LGX Interconnect Tray with Splice Trays (Optional)

REQUIRED TOOLS

216 style Socket Tool

Wire Cutter for Strength Member

Splicers Scissors

Splice Equipment and Sleeves

Cable Stripper

Cable Splicer Knife

9" Lineman's Pliers
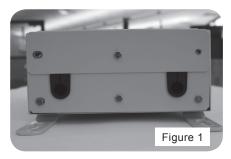
ADD-ON KITS

Interconnect Tray with Splice Trays

Splice Trays

Grommet Base Plate Kits

NPT Base Plate Kits

Grommet and NPT Accessory Kits
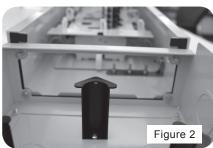
Conduit Skirt

Telescoping Skirt

BASE PLATE OR SKIRT INSTALLATION

The LL-580 enclosure allows for multiple cable entry configurations which are determined by the base plate.

1. Using local engineering practices, determine which base plate configuration will meet the application requirements.

2. Using the hex-head screw kit provided with the base plate or skirt, attach the base plate to the enclosure starting with the center screw. Do not completely tighten the center screw.

3. Install the remaining hex-head screws loosely until all of the screws have engaged the threads.

4. Secure the base plate or skirt to the enclosure by completely tightening all screws. **(Figure 2)**

Figure 1

Figure 2

ENCLOSURE MOUNTING – WALL

1. Determine the mounting position of the enclosure on the wall.

2. Mark the three mounting points to be pre-drilled for enclosure placement. **(Figure 3)**

※ **Note: If the application requires the enclosure skirt be utilized, first install the skirt onto the enclosure and then mark the three mounting points. (Figure 4)**

3. Using local accepted practices and approved hardware, insert a lag screw into each of the three pre-drilled mounting holes. Screw the lag screws half-way into the wall.

※ **Note: For best practice, it is recommended that the lag screws hex head is wider than the key slots of the enclosure mounts. Also, ensure that the shaft of the screws is smaller than the actual mounting slots for ease of installation.**

4. Mount the enclosure over the pre-installed lag screws.

5. Secure the enclosure to the wall by tightening the three lag screws. Before the lag screws are completely tightened a level may be used to ensure that the enclosure is in the desired position.
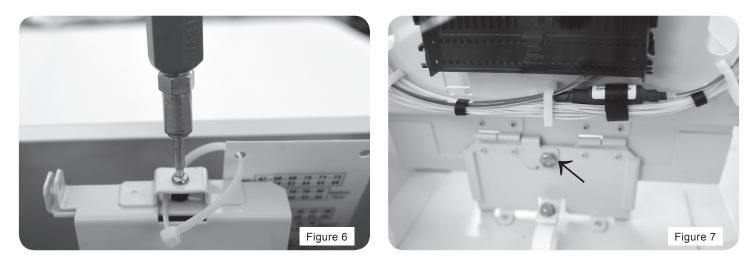

Figure 3

Figure 4

ENCLOSURE PREPARATION – DOOR REMOVAL

The LL-580 enclosure was designed so that the door may be installed on either side of the enclosure for applications where there are space restrictions.

1. Using a standard 216 style tool, or similar, loosen both the top and bottom locking screws. Do not remove these screws from the door assembly.

2. Lift up on the enclosure door to release it from the hinge pins.

ENCLOSURE PREPARATION – INTERCONNECT TRAY REMOVAL

1. Loosen the pin-in-hex tamper resistant screw located at the top of the interconnect tray. **(Figure 6)** Do not remove this screw from the interconnect tray.

2. With the interconnect tray in the down position, using a 216 style socket tool, loosen the stop bracket. **(Figure 7)**

3. To remove the interconnect tray, place the tray back in the upright position and gently slide the interconnect tray to the left releasing the tray from the hinge pins.

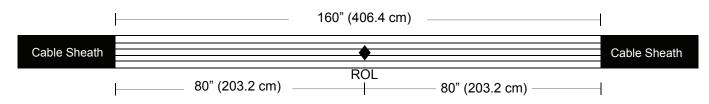4. Splice trays may be removed from the interconnect tray by unstrapping the hook and loop band.

Figure 6

Figure 7
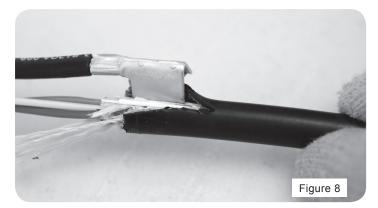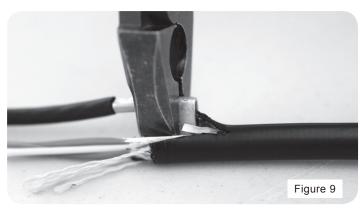
CABLE PREPARATION

⚠ **Caution: Fiber optic cable is susceptible to damage from excessive bending, pulling or crushing forces. At every stage of the installation process ensure that the loose buffer tubes or ribbon fibers are free from unintentional cuts, knick or bends to avoid potential fiber damage.**

1. Mark the cable to have a 160" (406.4 cm) opening.

2. Use accepted local practice to remove the cable sheath.

3. Using wire cutters cut the central strength member to 2" (50.8 mm) from the cable sheath.

160" (406.4 cm)

| Cable Sheath | ROL | Cable Sheath |

80" (203.2 cm)   80" (203.2 cm)

✳ **Recommendation: When opening loose tube cable, center the sheath opening on the cables reverse (ROL) or switchback oscillation point. This will eliminate loose tube crossovers and help with separating the individual loose buffer tubes. For best practice, mark the cable so that the opening is centered on the ROL with 80" (203.2 cm) in each direction.**

4. If grounding is required, use the rip cord to create a tab 1.5" (38.1 mm) past the edge of the cable sheath.

5. Using 9" Lineman's pliers attach the ground clamp to the tab ensuring that the bond strap is positioned with the spurs against the cable armor. **(Figure 9)**

Figure 8

Figure 9

CABLE INSTALLATION

1. Using the hose clamp provided with the base plate, attach the cable to the cable mounting bracket. Place the central strength member stop between the hose clamp and the cable sheath. The cable's central strength member must be positioned into the housing of the central strength member stop. Ensure that the spurs of the central strength member stop are pointed into the cable sheath and tighten the hose clamp completely. **(Figure 10)**

2. Use accepted local practice to ground each armored cable to the grounding bracket located at the bottom right side of the enclosure. A common ground will be established.
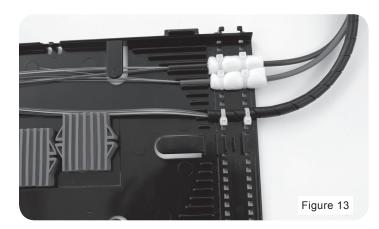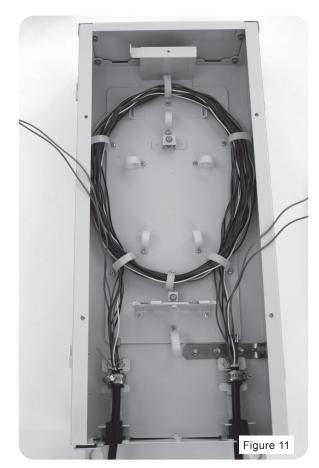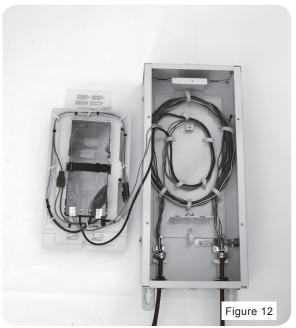

Figure 10

ENCLOSURE PREPARATION – FIBER ROUTING

⚠ Caution: In order to avoid micro bends or fiber damage do not over-tighten the tie wraps around the fiber bundles

1. Using local engineering practices determine which fibers will be expressed and separate the bundles from the fibers that will be routed to the splice tray.

2. Route the expressed buffer tubes through the outer fiber management rings with two loops. **(Figure 11)**

3. When working with ribbon cable, route the expressed ribbon fibers through the outer fiber management rings with two loops. A protective spiral wrap, not required, may be placed around the expressed ribbon bundle.

4. Cut the remaining, non-express, buffer tubes or ribbon fiber from the customer.

5. From the signal side, cut the buffer tubes or ribbon fiber to be spliced to approximately 146" (370.8cm).

6. Route the cut buffer tubes through the inner fiber management rings with two loops before entering the splice tray.

7. When working with ribbon cable, install transportation tubing over any bare or ribbon fibers to be spliced and route the cut ribbon fiber through the inner fiber management rings before entering the splice tray. **(Figure 12)**

8. Mark the buffer tubes 1.0" (25.4 mm) past the splice tray retention point.

9. Use local accepted practice to expose and clean the 250 μm fibers.

10. Place one wrap of foam spacer around the buffer tube at the 1.0" (25.4 mm) mark. Use two tie wraps to secure the buffer tube to the splice tray retention point. The foam spacer is not necessary when securing transportation spiral wrap to the splice tray. **(Figure 13)**

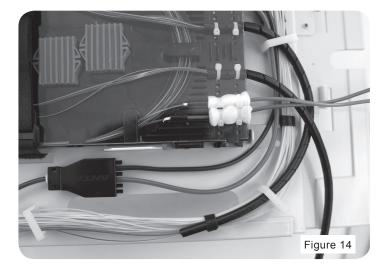Figure 11

Figure 12

Figure 13

ENCLOSURE PREPARATION
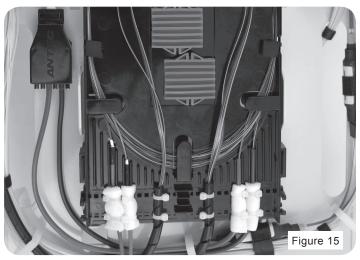
FIBER ROUTING (CONT.)

11. Route the ribbon from the factory installed pigtail break-out to the splice tray.

12. Using the same technique as Step 9 secure the   pigtail break out to the splice tray.

Recommendation: Application dependent, either a protective spiral wrap may be used to route the ribbon fiber to the splice tray for mass fusion splicing or a router kit may be installed for single fiber splicing. **(Figure 14)**

✲ **Note: For best practice it is recommended that all ribbon fiber to be spliced is mounted towards the center of the splice tray. Also by placing the mass fusion splice chip in the center of the tray it will allow the loose tube bare fibers to be routed around the outside of the splice tray with minimal interference from the ribbon fiber. (Figure 15)**
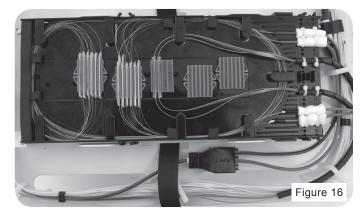

Figure 14

Figure 15

SPLICING

1. Prior to splicing, ensure that adequate slack for both the expressed fiber and the pigtail fiber is stored within the splice tray. Mark fibers for splicing.

2. Clean the individual fiber per accepted local practice using an approved fiber cleaner.

3. Follow accepted local practice for preparing and splicing express fibers and pigtail fibers.

4. Once all splicing is complete, route the exposed fibers inside the splice tray. **(Figure 16)**

✲ **Note: Thick foam pads may be used to help organize loose tube bare fibers within the splice tray.**

5. Replace the splice tray cover.

6. Secure the splice tray to the interconnect tray with the hook and loop band.

Figure 16

DROP CABLE INSTALLATION

1. Using a standard 216 style tool, or similar, remove the three screws from the upper flash-plate of the enclosure base plate assembly.

2. Remove the multi-port drop grommet from the base plate.

3. Mark the drop cable to have a 120" (304.8 cm) opening.

4. Use accepted local practice to remove the drop cable sheath to expose the buffer tube.

5. Slit the bottom port of the multi-port drop grommet to the conical in the rear of the grommet.

✳ **Note: For best practice it is recommended, that the drop cable be added to the bottom port of the multi-port drop grommet first working up with each additional drop cable. (Figure 18)**

6. Slide the drop cable through the slit in the multi-port grommet approximately 5" (12.7 cm) back from the sheath opening. Once the drop cable is seated in the grommet give the cable a slight twist to ensure that the grommet webbing completely overlaps the drop cable.

7. After the cable is properly positioned within the grommet, slide the grommet assembly into the enclosure housing, ensuring that the grommet is fully seated.

8. Using two tie wraps secure the drop cable to the retention bracket.

✳ **Note: The retention bracket all ows for up to three drop cable to be secured on each side.**

9. Route the drop cable buffer tubes through the inner fiber management before entering the splice tray.

10. Mark the buffer tubes 1.0" (25.4 mm) past the splice tray retention point.

11. Use local accepted practice to expose and clean the 250 μm fibers.

12. Place one wrap of foam spacer around the buffer tube at the 1.0" (25.4 mm) mark. Use two tie wraps to secure the buffer tube to the splice tray retention point. The foam spacer is not necessary when securing transportation spiral wrap the splice tray.

Figure 17

Figure 18

SECURE ENCLOSURE – RE-INSTALL INTERCONNECT TRAY

1. Install the interconnect tray into the enclosure by sliding it onto the hinge pins located near the bottom of the enclosure.

2. With the interconnect tray in place tighten the stop bracket to ensure that the interconnect tray does not come off of the hinge pins.

3. With the interconnect tray installed and in the down position finish routing any fiber slack, that may have been required to complete the splicing process, through the fiber management rings for storage. **(Figure 19)**

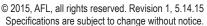4. Place the interconnect tray to the upright position and secure the pin-in-hex tamper resistant screw.

Figure 19

DISTRIBUTION CABLE ROUTING

1. Route the distribution cable with one turn around the adapter side of the interconnect tray. Use the routing rings located on the outer edge of the tray to help manage the cable.

⚠ **Caution: Do not exceed the minimum bend radius while routing the flat drop cables into the terminal.**

2. Use locally-accepted practices to clean the connector end face.

3. Plug the connector into the appropriate adapter as specified by the local engineering practice.

4. Repeat steps 1 - 3 for all remaining distribution cables.

SECURE ENCLOSURE – RE-INSTALL DOOR

1. Using local engineering practices determine which side of the enclosure the door is to be placed. Install the enclosure door over the appropriate hinge pins.

2. Using a standard 216 style socket tool, or similar, tighten both the top and bottom locking screws.

✳ **Note: A pad lock, not provided, may be utilized if additional security is desired**