LOC-DROP® Splice Enclosure
Model LOCDROP-EN
Patent Pending

1. OVERVIEW

Enginuity's LOC-DROP Model LOCDROP-EN enclosure (Figures 1 and 2) is a rugged plastic enclosure optimized for splicing or demarcation of fiber optic subscriber services. Inside, there are slots to hold a splice chip and an area to hold a fiber coupler, internal fiber management with bend control, and two strength member clamps. A trace wire tie-down is provided on the exterior of the enclosure. This compact enclosure may be directly buried or mounted to a pole or wall. With optional brackets, it may also be hung from a strand.

Document Status

This document has been reissued to provide additional clarity.

Product Features

- Weather-tight
- Compact, rugged design
- Integrated fiber management features
- Integrated splice chip holder
- SC/APC coupler
- Optional strand mount brackets

2. APPLICATIONS

The LOC-DROP enclosure is ideal for fiber drop cable repair by protecting spliced fibers. The housing is designed for direct burial, aerial installations and also provides integral ears for wall or pole mounting.

The LOC-DROP housing is engineered with a robust strength member clamp assembly to capture and retain the fiber drop cable's two strength members. It is **IMPORTANT** for the cable's strength members to be inserted in the grooves between the UPPER CLAMP and BASE CLAMP (Figure 2A). DO NOT place strength members directly under the washer. This will ensure the maximum cable retention performance for the clamp under environmental and handling stresses.
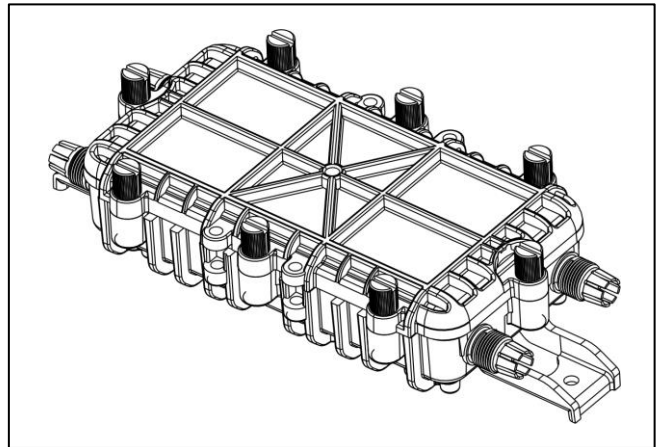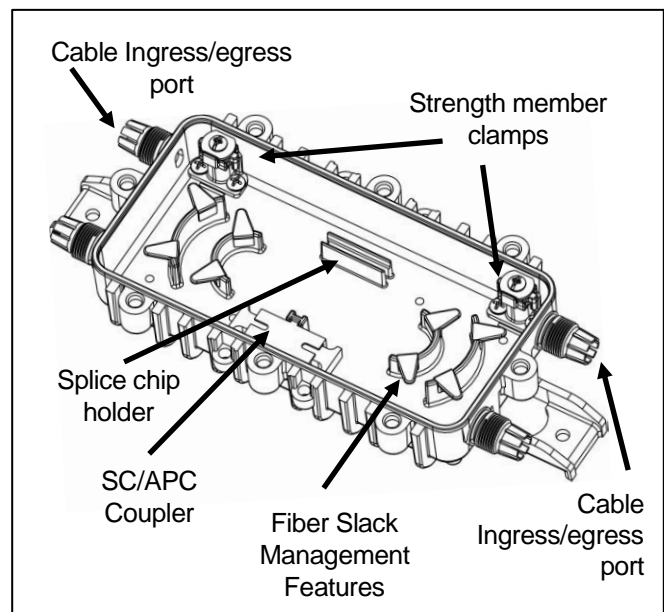

Figure 1. LOCDROP-EN exterior

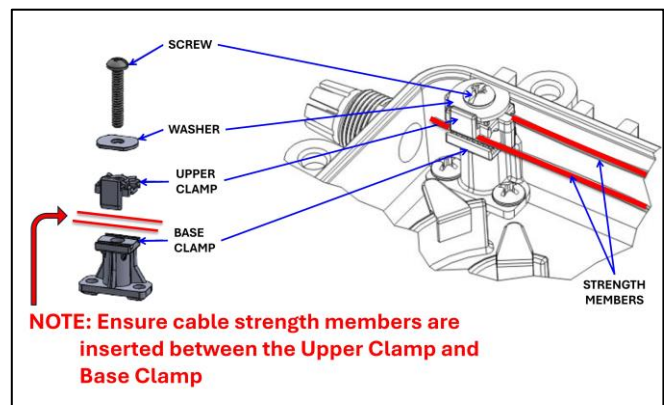**Figure 2. LOCDROP-EN interior**

Figure 2A. LOCDROP-EN interior

3. DESCRIPTION

The LOCDROP-EN enclosure features two cable ingress/egress ports. The associated strength member clamps are located at opposite ends from the ingress/egress ports to allow for easier access. There are internal fiber management features to assist with fiber slack storage and to support and protect 900-micron fiber. An integrated splice chip holder and an SC/APC fiber coupler provide flexibility for splicing or connection. A trace wire tie-down is located on the exterior of the enclosure to assist with maintaining tracing continuity during locating operations. The LOCDROP-EN is held tightly closed with captive thumb screws.

Each LOCDROP-EN includes the following:

- One enclosure
- Two packs of nuts and grommets for use with FastAccess® /figure 8 style fiber optic cable
- Two packs of nuts and grommets for use with flat drop/oval style fiber optic cable.
- One SC/APC coupler, installed

The LOC-DROP family of products includes:

- LOCDROP- EN – the basic enclosure described in this practice.
- LOCDROP-2SCAPC – a pair of LOC-DROP enclosures connected by pre-installed micro-armored cable on a fiber spool (51.5 ft). The strength members come tied in place, and each end of the fiber is terminated with an SC/APC connector inserted into an SC/APC coupler.
- LOCDROP-SM – a pair of strand mount brackets and associated hardware for strand mounting a LOC-DROP enclosure.

4. INSTALLATION

The key to delivering a watertight and robust installation, the LOC-DROP enclosure relies on the following:

- proper combination of cable grommets and enclosure port nuts based upon the user's selected fiber drop cable. The LOC-DROP enclosure supports two styles of cable grommets paired with appropriate port nuts to support common subscriber drop cables used in FTTH / FTTP installations. Table 1 outlines the correct selection and combination of grommets and nuts based upon common drop cable constructions.
- proper attachment of the drop cables strength members to the LOC-DROP's strength member attachment clamps, outlined in Figure 6.

Fiber Cable Preparation

Figure 3 provides the guidelines for preparing the fiber drop cable.
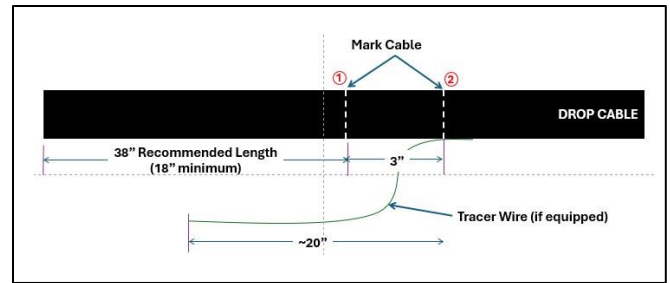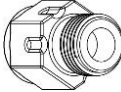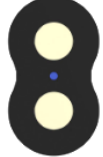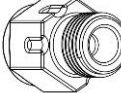

Figure 3. Fiber length requirements

① Mark cable according to Figure 3 bubble 1.

② If the cable has a tracer wire, mark cable to Figure 3 bubble 2. Peel tracer wire back to mark and trim its length to 20".

③ For Flat Drop cable, use a fiber slitter tool (Jonard FOD-2000 or company approved tool) to score the cable jacket to mark shown in Figure 3 bubble 1 (do not remove jacket at this time to protect fiber during installation).

④ For FastAccess® cable, strength members can be split after cable has been inserted into housing (to protect fiber during cable installation).

Nut and Grommet Installation

① Referring to Table 1, select the proper grommet and port nut from the parts bag(s) that closely matches the fiber cable shape.

NOTE: Use of the wrong grommet/nut combination will significantly reduce weathertightness of the enclosure.

Table 1. Grommet and port nut combinations

Drop Cable Type	Cable Profile	Grommet	Nut
Flat Drop – oval style			 large opening
FastAccess® – figure 8 style			 small opening

② After selecting the nut/grommet kit from the previous step, first slide the nut onto the cable past the mark, followed by the grommet up to the mark (dampening the cable with water can assist with sliding the grommet onto the cable).

NOTE: Be sure the port nuts and grommets are facing in the correct direction, as outlined in Figure 4.

NOTE: When adding the grommet to the cable, ensure the cable is cut clean to prevent possible damage of the grommet.

NOTE: If strand mounting the housing, add the strain relief boot provided in LOCDROP-SM strand mount kit to the cable before the nut.

③ Feed the drop cable into a housing port until the grommet reaches the entry port. Grip the grommet and cable. Using a push/twist motion, insert the grommet into the port until the grommet's flange is seated against the end of the port (dampening the grommet with water will assist with insertion).

④ Thread the nut onto the end of the port. As the nut begins to tighten against the grommet, push the cable until the mark is ½-inch inside the housing (Figure 5). Then, finish threading the nut until it the nut just touches the housing's exterior.

⑤ Repeat installation procedure for the second drop cable.
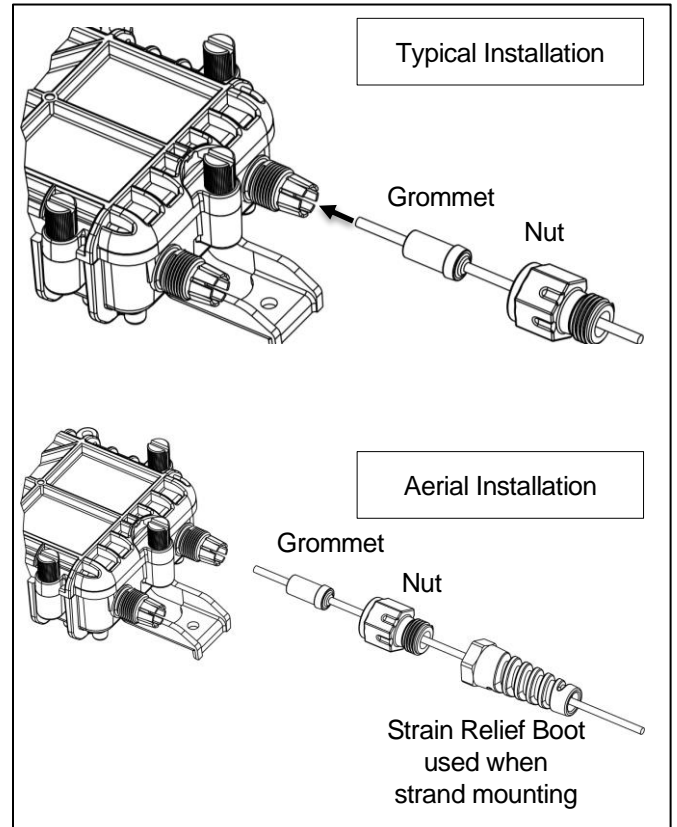
Figure 4. Fiber installation at ingress/egress port
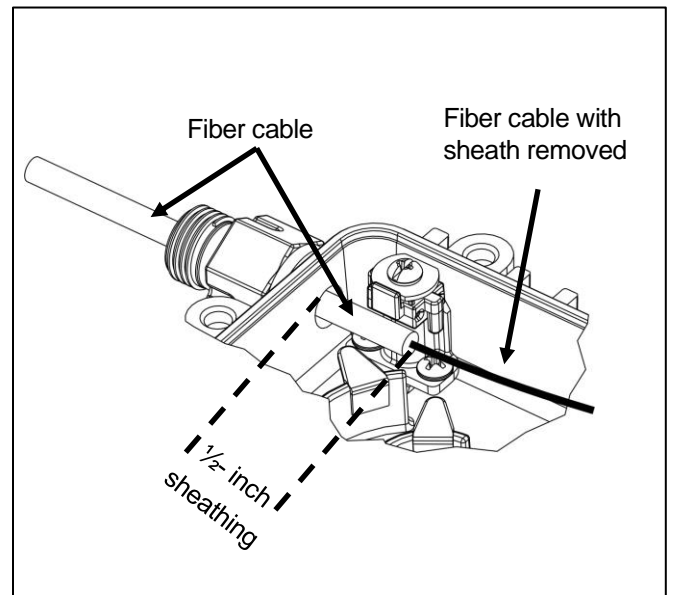
Figure 5. Proper placement of fiber cable

Preparing Cable Installed Inside Housing

① Depending on the drop cable construction, follow the following:

FOR Flat Drop Cable (Figure 6)

- remove the previously slit cable jacket, trimming off at the mark on cable, exposing the strength members and central fiber tube.

FOR FastAccess® Drop Cable (Figure 7)

- split the strength members to the mark on the cable, separating the plastic covered strength members from the central fiber.
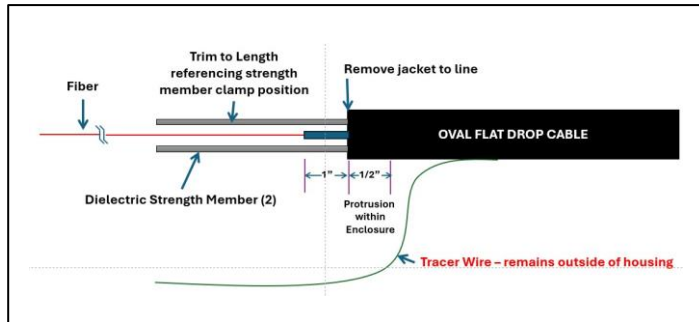
**Figure 6. FLAT DROP Cable / Strength Member Preparation**
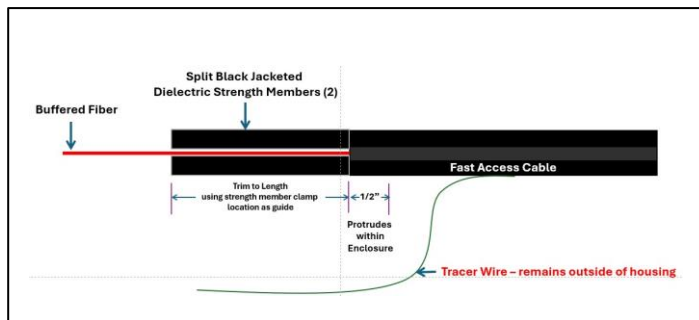
Figure 7. FastAccess® Drop Cable / Strength Member Preparation

Prepping and Securing Strength Members

The drop cables strength members are secured to the LOC-DROP's strength member clamp located on the opposite side as the cable's entry port.

NOTE: The LOCDROP strength member clamp assembly (Figure 8) is constructed of 4 components; Base Clamp, Upper Clamp, Washer, and Screw. It is important to insert the fiber cable's strength members between the Upper Clamp and the Base Clamp (not directly underneath the washer).

① Using the LOC-DROP's strength member clamp as reference, trim the cables strength members length so it is between the strength member clamp and the housing wall.

② Loosen the screw on the top of the strength member clamp, so it protrudes approx. ¼-inch. Lift-up on the Upper clamp to open a gap from the Base clamp.

③ Referencing Figure 8, insert the cable's two strength members between the strength member clamp's Upper clamp and Base clamp, ensuring the two strength members are positioned in the toothed grooves. Tighten down the screw (10 to 12 in-lbs).

③ Repeat with the second drop cable.
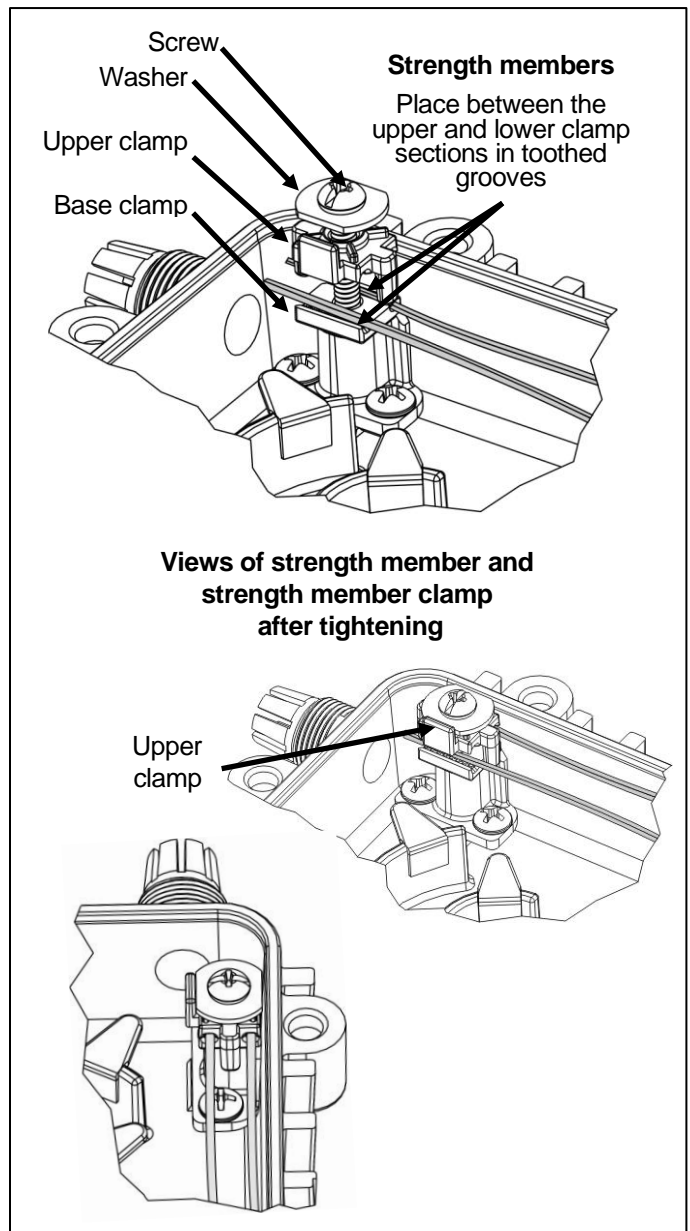
Figure 8. Strength member clamp

Routing and Storing Fibers

The LOCDROP-EN enclosure provides storage for up to 2 single fusion splices or a single SC bulkhead adapter for use with field installable connectors: depending on the company's approved termination method. The integrated bend radius control and storage features are designed for both 250 and 900 micro buffered fibers.

① When using FLAT drop cable with central fiber tube, remove the central fiber tube, exposing the inner fiber before routing and storing in the housing. Leave approximately 1" of exposed tubing (Figure 6).

② Remove and set-aside the SC bulkhead adapter.

③ Temporarily route each fiber around the bend radius controls, ~3 revolutions, until they reach a position to allow either fusion splicing or terminating using field installable connectors. Mark and trim the fiber to length.

④ Prep the fiber for splicing or for terminating to a connector using approved company practices.

⑤ Route the fibers around the fiber management features and store the fusion splice protection sleeve in the holder or re-install the SC bulkhead adapter into its holder, then clean and insert the fiber connectors into the adapter.

> When necessary, use both the inner and outer bend control features to take up fiber slack and keep fibers below tabs and retained in the housing.

Closing the LOC-DROP Housing

① Ensuring there are no loose fibers, place the LOC-DROP cover onto the base.

② Start by finger tightening all the screws. Then, using a flat head screwdriver, starting at one of the long-side center screws, begin tightening down the screws using a star tightening pattern. Tighten screws 2-3 times until screws no longer tighten (min. 20 in-lbs).

Trace Wire Attachment (if applicable)

① Loosen the screw for the trace wire located on the bottom side of the LOC-DROP enclosure (Figure 9).

② Cut each trace wire to length so that it reaches the screw + 2 inches. Strip the insulation so that approximately 0.75 inches of copper is exposed. Loop the wires around the screw as shown in Figure 7.

③ Tighten the screw.
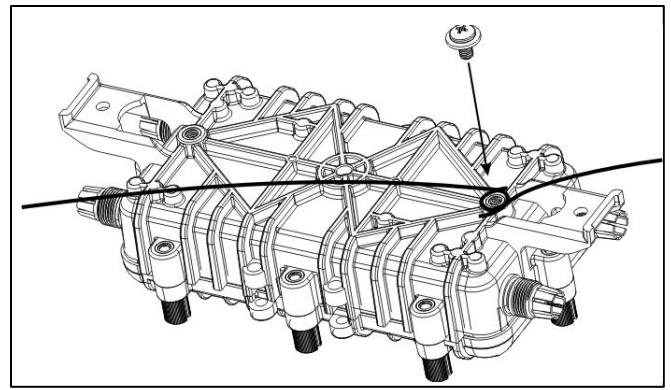
Figure 9. Trace wire attachment

Strand Mounting Brackets Installation

The optional LOCDROP-SM kit includes two brackets, two strain relief boots, and the hardware needed to hang the enclosure from a strand.

① Attach the brackets to the enclosure as shown in Figure 10.

② Place brackets over the strand and tighten bolts using a 216 tool or wrench as shown in Figure 11.

③ Be sure to place the strain relief boots on the fiber optic cable as shown in Figure 4 before feeding cable into the LOCDROP enclosure.
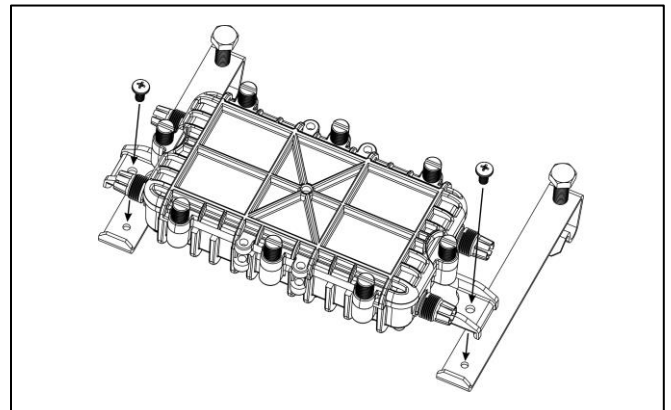
Figure 10. Strand mount kit installation
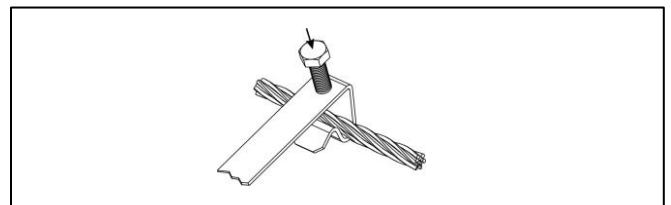
Figure 11. Securing bracket to a strand

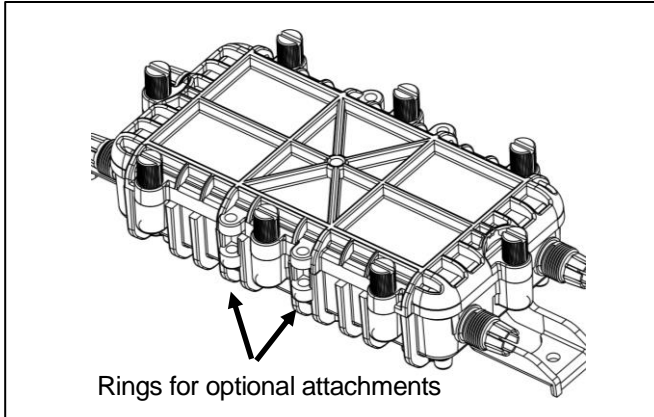### Adding a Tag and Other Options

The LOCDROP enclosure provides two sets of rings (Figure 12). These rings may be used to attach a locator tag or ID label.

For aerial applications, it is recommended that one or two cable ties (user provided) be used in these rings to tether the top of the enclosure to the base when opening.

Rings for optional attachments

Figure 12. Rings for optional attachments

5. CUSTOMER SERVICE

Customer Sales and General Support

Monday through Friday, 8:00 a.m. – 5:00 p.m. CST

Toll Free: 800-980-ECOM (3266), Local: 630-444-0778

Sales Support: sales@enginuitycom.com

Technical Support:

Monday through Friday, 8:00 a.m. – 4:00 p.m. CST

Toll Free: 800-841-1005

E-mail: support@enginuitycom.com

Enginuity Communications

3545 Stern Avenue

St. Charles, IL 60174

6. WARRANTY & REPAIRS

Warranty

Enginuity warrants this product for one (1) year from date of purchase. Any attempt to repair or modify the equipment by anyone other than an authorized Enginuity representative will void the warranty.

This limited warranty does not cover any losses or damages resulting from shipment to or from the customer, or from improper installation, abuse, modifications, or unauthorized repair by other than Enginuity personnel.

Repair and Return

Enginuity equipment will be repaired or replaced without cost during the warranty period if the product is defective for any reason other than abuse, improper use, or improper installation. Before returning defective equipment, first request a Return Material Authorization (RMA) number from Enginuity. Once an RMA number is obtained, return the unit, freight prepaid, along with a brief description of the problem, to:

> Enginuity Communications
> 3545 Stern Avenue
> St. Charles, Illinois 60174
> ATTN: Repair & Return Dept.

Replacements will be shipped in the fastest manner consistent with the urgency of the situation. Repair or replacement of faulty equipment beyond the warranty period is available for a nominal charge.

7. SPECIFICATIONS

Enclosure

Part Number	LOCDROP-EN
Description	Enclosure
Dimensions	9 x 4 x 2.4 inches (L x W x H)
Weight	0.84 pounds
Operating Temperature	-40 to 85°C

Spare Parts Kits

Part Number	LD-RNGK2-20
Description	20 sets of replacement nut/grommet kits. Each kit includes:
	2 each small hole port nut and round grommet
	2 each large hole port nut and oval grommet

Optional Strand Mount Kit

Part Number	LOCDROP-SM-10 (10 pack each containing two brackets, two strain relief boots, and mounting hardware)
Description	Strand mounting kit for the LOC-DROP enclosure
Dimensions	5.9 x 0.55 x 1.6 inches (L x W x D)
	When installed the LOC-DROP enclosure sits approximately 4 inches below the strand.
Weight (2 brackets plus hardware)	0.32 pounds