

FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



CLEARFIELD



FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



Table of Contents

Application	3
Description	3
Technical Specifications	3
FEC Overview	4
Cable Routing	5
Splicing	7
Grounding	10
Standard Warranty	11
Proprietary Notice	12
Technical Support	12



FieldSmart[®] Fiber Entrance Cabinet (FEC)

Installation Manual

Application

The FieldSmart Fiber Entrance Cabinet (FEC) provides off-frame splicing for the central office, headend or remote hut. Fiber Entrance Cabinets are typically placed in the fiber entrance room and used to transition OSP fiber sheaths to IFC cabling

Description

The FieldSmart FEC is built on a modular platform, scaling 288 heat shrink fusion (HSF) or 864 mass fusion (ribbon) fiber splices at a time. Multiple entry/exit points allow for multiple distribution and OSP fiber sheaths to enter into the FEC from top, bottom, or sidewalls and transition from conduit, overhead fiber tray, or raised flooring. A removable splice block, holding twelve 24-fiber splice trays, gives the user the ability to prep away from the cabinet. Intuitive buffer tube and sub-unit slack routing prevents cable tie-in with a clockwise routing scheme to allow quick and easy re-entry after initial deployment or to add additional capacity. If vertical real estate is available, the FEC can be ganged together, in modular fashion, allowing scalability up to 864-fiber splices and beyond.

Each cable entrance plate will support cable diameters up to one inch. Lockable cupboard style doors allow for easy access with minimal swing clearance needed for tight aisle clearances.



Technical Specifications

FieldSmart FxDS Fiber Entrance Cabinet	
Dimensions	17.5" H x 34.5" W x 8.25" D
Ratings	Compliant to Telcordia GR-449
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield [®]
Splice Capacity	288 heat shrink fusion (HSF) loose tube or 864 mass fusion (MF) ribbon splices
Storage Capacity	One meter of 900 μ m fiber and five meters of exposed buffer tube
Material	16 gauge cold rolled steel with almond powder coating

FieldSmart® Fiber Entrance Cabinet (FEC)

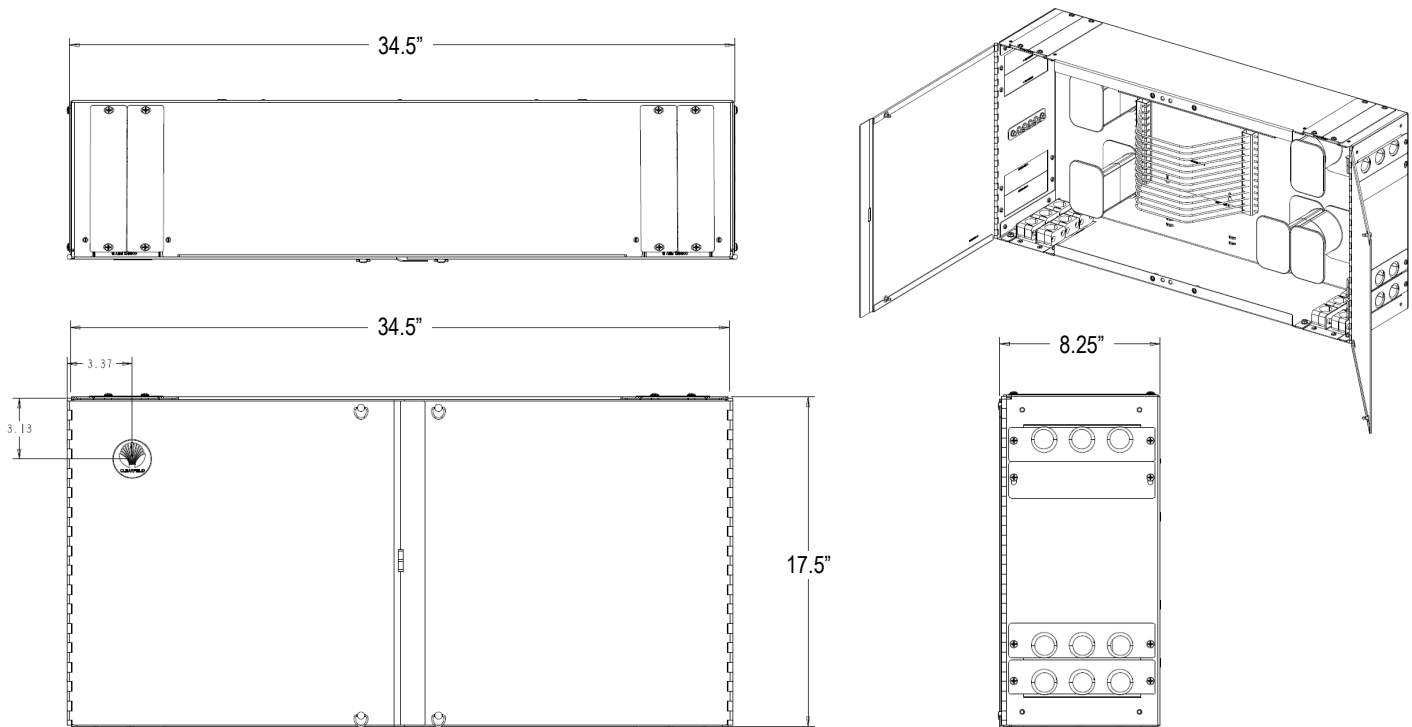
Installation Manual



FEC Overview

The FieldSmart FEC is built on a modular platform scaling 288 fiber splices at a time. Lockable cupboard style doors allow for easy access with minimal swing clearance required for tight aisle clearances. The fiber entrance cabinet comes with a clamp kit.

Note: The FEC does NOT come with hardware to mount to the wall. Depending on the type or style of the wall the end user should obtain the appropriate hardware from their local hardware store. There are four (4) mounting holes. The mounting holes are .350" in diameter. The FEC Cabinet is 17.5" high x 34.5" wide and 8.25" deep.



The parts below are shipped along with the FEC. The parts include the clamp kit and the plates to cover the numerous cable entry/exit points. Splice trays sold separately.

Item Number	Item Description	Quantity
001527	SCREW, ROUND HEAD, PHILLIPS, 1/4-20 X 1 1/2"	8
002127	PLUG, BUTTON, BLACK POLYETHYLENE, FITS 1-5/16in HOLE X .01in-.10in THICK PANEL	14
003042	TAPE, GROMMETING, 1", STRIPPING=1/8" X 1", FEET	5
003083	STRAP, VELCRO, BLACK, 1/2" WIDE, FEET	2
003711	SADDLE, CLAMPING, 1/2" DIAMETER, GREEN POLYPROPYLENE, GRP3	4
003716	SADDLE, CLAMPING, 1" DIAMETER, GREEN POLYPROPYLENE, GRP3	4
009217	SCREW, PAN HEAD, PHILLIPS, 10-32 X 1/4", 18-8 SST	32
009902	BRACKET, FEC ENCLOSURE	4
009909	PLATE, COVER, FEC, ENCLOSURE	15

An optional locking kit is available (P/N 010503) and is installed by two screws each at the top and bottom of the FEC. Lock is not provided. Locking tab should be positioned to the right when installed.



FieldSmart[®] Fiber Entrance Cabinet (FEC) *Installation Manual*

Cable Routing

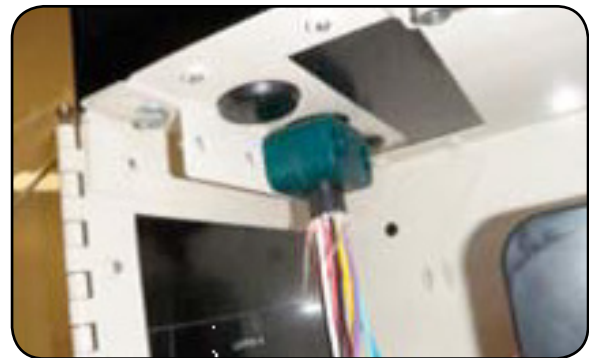
Once the FEC is mounted to the wall, you are now ready to route fiber into the cabinet.

Multiple entry/exit points allow for multiple distribution and OSP fiber sheaths to enter the FEC from the top, bottom, or sidewalls, transitioning from conduit, overhead fiber tray or raised flooring. Cable entry/exit points are located around the perimeter of the cabinet. See pictures below.

Note: Each cable entrance plate will support cable diameters up to 1 inch.

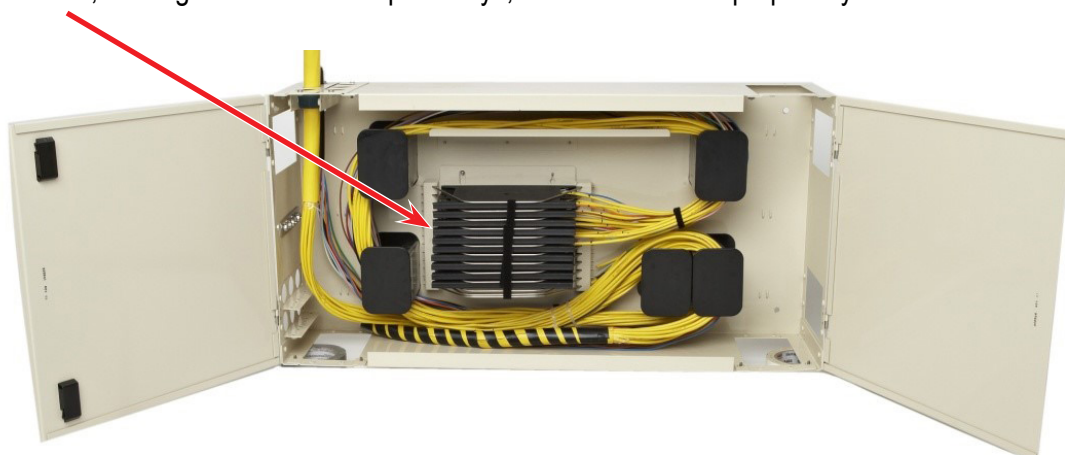
The cabinet comes with 4 sheet metal brackets for cable mounting and 16 blank plastic plates. The cables can be installed with either the clamps on the outside of the cabinet or with the clamps on the inside of the cabinet for extra security. Plugs are also included in the kit to fill the unused holes.

Choose the appropriate sized cable clamp for the cable entering the FEC. Always use a clamp large enough to close around the cable, and utilize grommet tape to make up for the size difference by laying a small strip of grommet tape inside the cable clamp shell. **DO NOT** use a clamp that “pinches” the cable.



Note: Grommet tape included in the kit may be used to build up the cable size to get a better grip with the provided clamps.

A removable splice block, holding twelve 24-fiber splice trays, allows the user to prep away from the cabinet.



Note: Splice trays are sold separately (P/N 019339).

FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



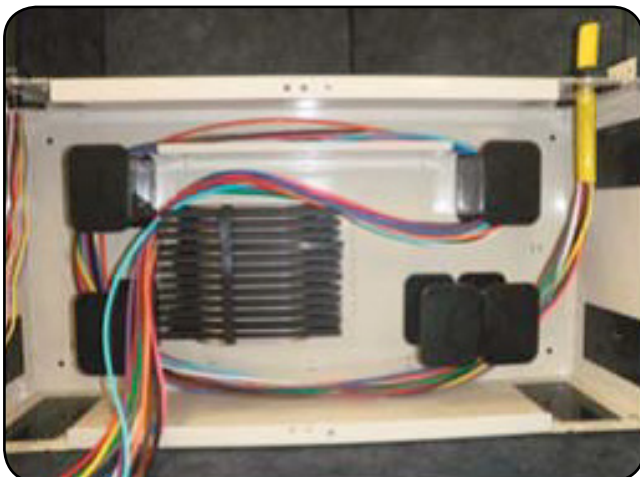
Intuitive buffer tube and subunit slack routing prevents cable tie-in's, utilizing a clockwise routing scheme to allow quick and easy re-entry after initial deployment or to add additional capacity.



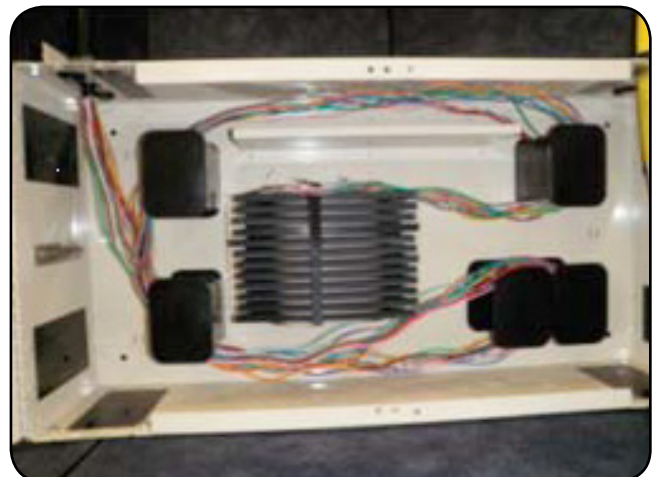
If the cables are to be carried from one cabinet into the next, then the blank plates and bracket plates will not need to be used between the two cabinets. There is a removable bracket on the top and bottom entrances that will allow you to lay cables in without having to cut them.



After choosing the entrance that will be used for your cables you will need to plan your cable route within the cabinet. All cables should eventually route in a clockwise direction. Depending on where you enter the box you may have to use the redirect spool in order to achieve a clockwise rotation.



No Redirect Used



Redirect Used



FieldSmart® Fiber Entrance Cabinet (FEC)

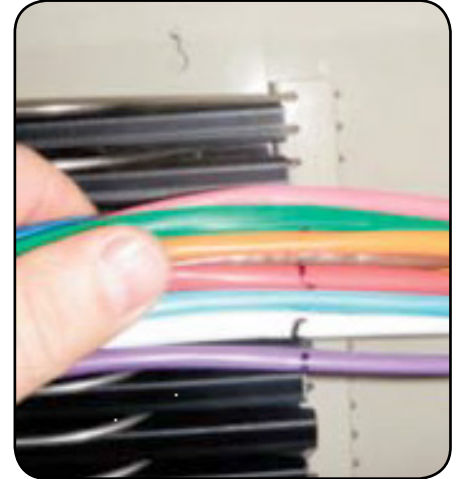
Installation Manual

Splicing

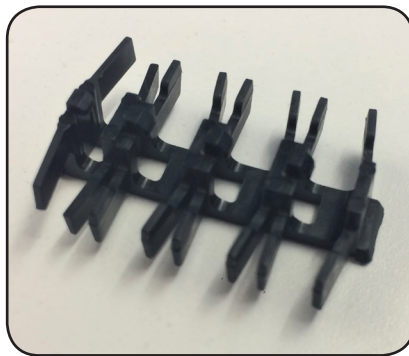
After all cables are routed in the correct direction and there is an adequate amount of slack in the cabinet, the cable tie down locations can be marked with a permanent marker.

Splice trays (P/N 019339) will be shipped with 2 standard splice chips and 2 ribbon splice chips, allowing for a total of 24 loose tube splices or 6 ribbon mass fusion splices (72 fibers). Splice chips will need to be bent into place in the empty slots in the center of the splice tray.

Note: Each standard splice chip features 6x2 splice sleeve slots, allowing for 12 splice sleeves to be stacked 2 high in the 6 slots. Each ribbon splice chip features 3 ribbons splice sleeve slots, as well as one 2 high loose tube splice sleeve slot for use in special applications or repairs.



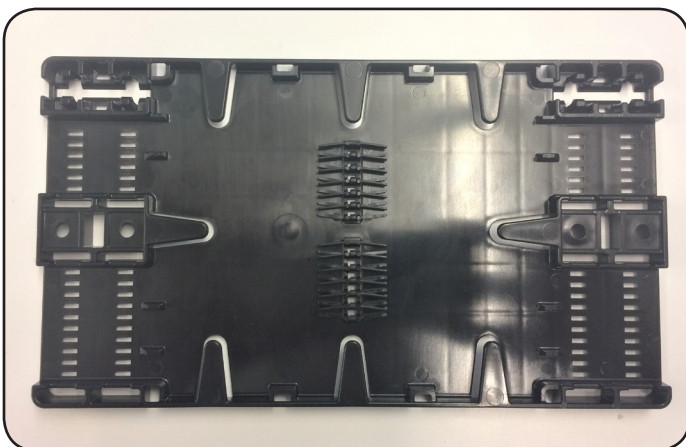
Splice Chip



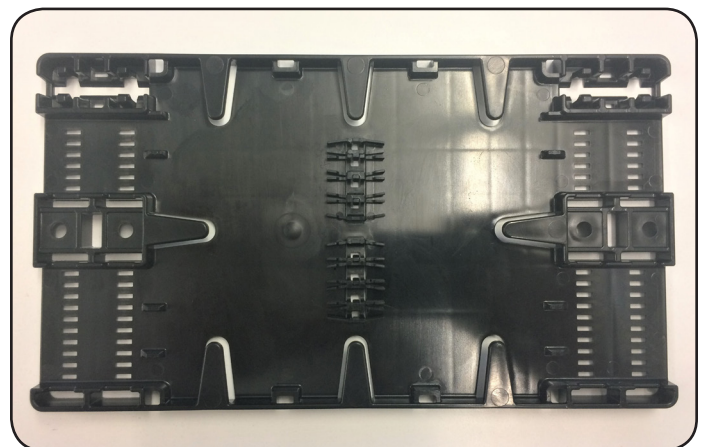
Ribbon Splice Chip



Bending the Splice Chip



Splice Tray Loaded with
2 Splice Chips



Splice Tray Loaded with
2 Ribbon Splice Chips

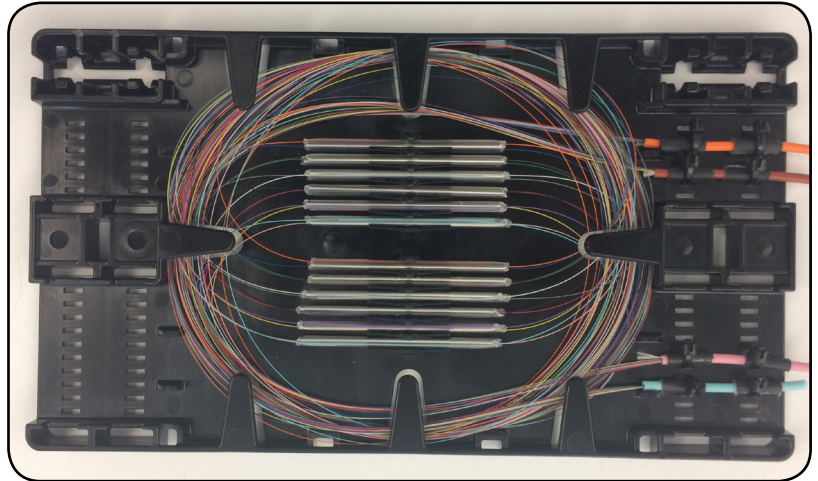
FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



An example of a splice tray utilizing the splice chips to secure 24 loose tube splice sleeves is shown here.

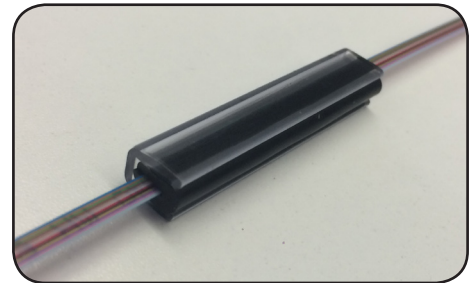
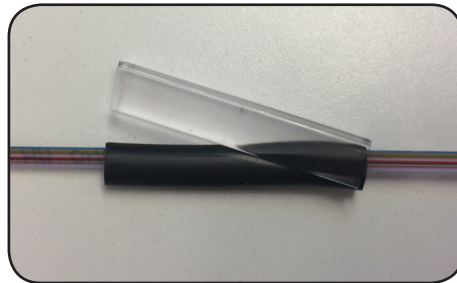
Wrap a layer of grommet tape around the buffer tubes and secure into place in the splice tray using the tie-down holes and cable ties.



Provided with the splice tray are 3 ribbon tie-downs which utilize a split grommet and retention cover which will allow the ribbon to be secured into the tray even in mid-span/ring cut applications.

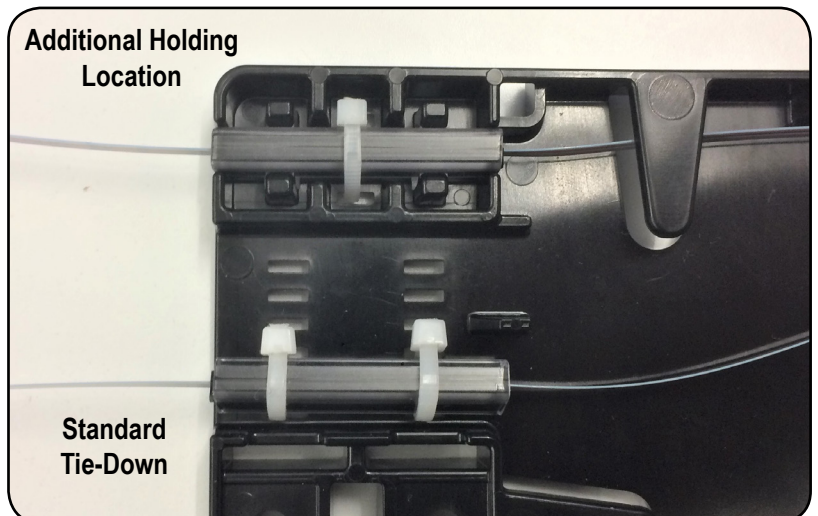
Slip the split rubber grommet onto the ribbon, followed by the plastic retention cover over the opposite side.

Note: Extra ribbon tie-downs are available in a kit, which can be ordered separately (P/N 019501).



After protecting the ribbon fiber with the ribbon tie-down, secure it into the tray.

The splice tray features tie-down holes on each side of the tray, which will allow for 5 ribbon tie-downs per side, as well as one ribbon tie down on each side in the additional holding location.

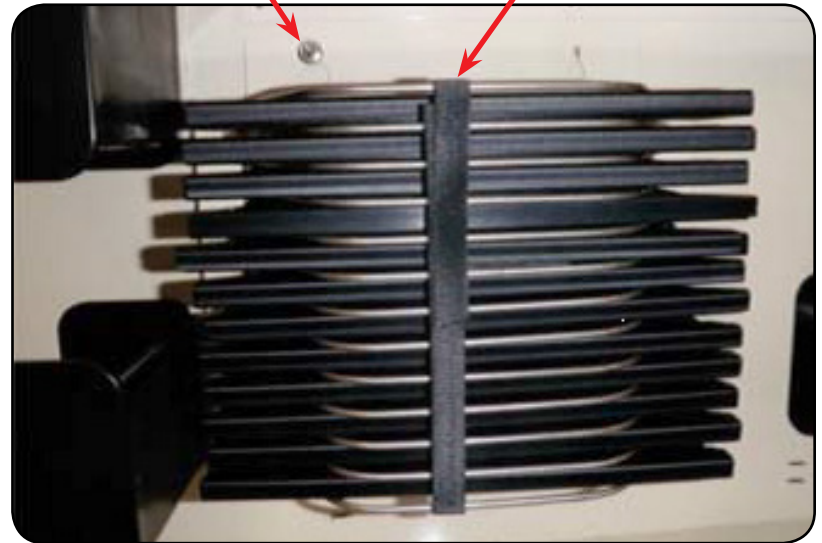




FieldSmart® Fiber Entrance Cabinet (FEC) *Installation Manual*

Thumb Screw

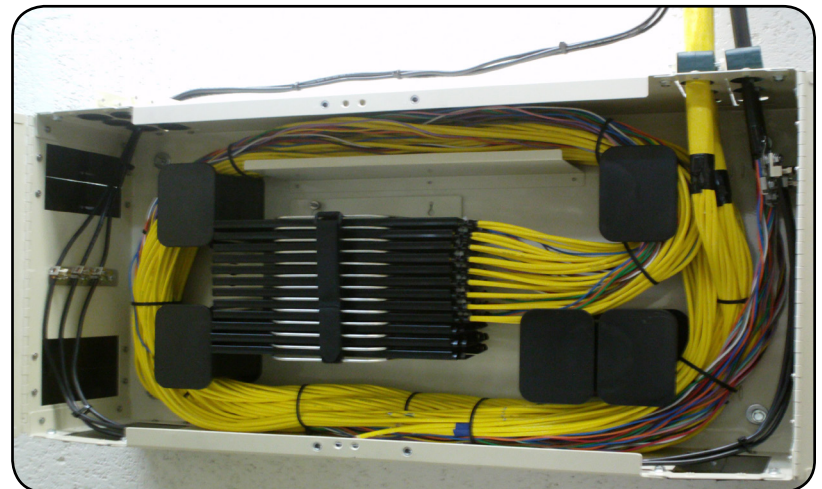
Velcro



The entire block of splice trays can be removed for splicing by loosening the thumb screw in the top left corner and lifting the block of splice trays.

After splicing, the splice trays can be secured into place using the included velcro strap.

An example of a spliced up FEC, transitioning from outside to inside plant cable, is shown here.



FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



FECs can be ganged together, in modular fashion, allowing scalability up to 864 fiber splices and beyond if vertical real estate is available. Below is an example of multiple FEC's ganged together.



Grounding

FEC Cabinets are easily grounded using the integrated ground bar. Ground per your local rules and practices.





FieldSmart[®] Fiber Entrance Cabinet (FEC)

Installation Manual

Standard Warranty

Clearfield warrants to the original purchaser of the Product sold hereunder is free from defects in material and workmanship under normal use and service, subject to exceptions stated herein. Product purchased is warranted as follows: Clearfield designed and branded Products are warranted for three (3) years; Products manufactured by Clearfield to customer prints and/or specifications are warranted for one (1) year; and any Product Clearfield acquires from or through a third-party manufacturer or distributor and resells to Customer as the original customer will carry the manufacturer's pass-through warranty, if any. In all cases, the warranty period commences on the date of shipment to the original purchaser.

Warranty Claim Procedure

If any Product purchased from Clearfield is found defective under the above warranty, the following basic procedure must be followed:

1. Customer must contact Clearfield and obtain a Return Materials Authorization
2. Following authorization, the Customer ships the product-freight collect-to Clearfield's manufacturing facility
3. Clearfield shall repair or replace the defective Product at its sole option and discretion, and return the repaired or replacement Product to Customer's site, freight prepaid

Note: If the Product is not found to be defective by Clearfield, the product will be returned to the Customer and the customer billed for freight in both directions.

View our warranty policy here: <https://www.seeclearfield.com/warranty.html>

Limitations of Warranty

Correction of defects by repair or replacement, at the option of Clearfield Inc, shall constitute the exclusive sole remedy for a breach of this limited warranty. Clearfield shall not be liable under any circumstances for any special, consequential, incidental, punitive, or exemplary damages arising out of or in any way connected with the product or with agreement to sell product to buyer, including, but not limited to damages for lost profits, loss of use, or for any damages or sums paid by buyer to third parties. The foregoing limitation of liability shall apply whether the claim is based upon principles of contract, warranty, negligence or other tort, breach of statutory duty, principles of indemnity or contribution, the failure of any limited or exclusive remedy to achieve its essential purpose, or otherwise.

Clearfield will not be responsible for any labor or materials costs associated with installation or incorporation of Clearfield products at customer sites, including any costs of alteration, replacement or defective product, or any field repairs.

Other Limitations

Clearfield assumes no warranty liability regarding defects caused by:

1. Customer's modification of Product, excepting installation activities described in Clearfield documentation
2. Customer re-packaging of Product for shipment to third parties or destinations other than those originally shipped to by Clearfield, or any defects suffered during shipping where the Product has been re-packaged
3. Customer's installation or maintenance, excepting activities described in and performed in accordance with Clearfield documentation
4. Customer's improper or negligent use or application of Product
5. Other causes external to the Product, including but not limited to accidents, catastrophe, acts of God, government action, war, riot, strikes, civil commotion, sovereign conduct, or the acts or conduct of any person or persons not party to or associated with Clearfield
6. Environmental factors and weathering resulting in aging and damage not necessary or applicable to the function of the product

FieldSmart® Fiber Entrance Cabinet (FEC)

Installation Manual



Proprietary Notice

Information contained in this document is copyrighted by Clearfield, Inc. and may not be duplicated in full or part by any person without prior written approval of Clearfield, Inc.

Its purpose is to provide the user with adequately detailed documentation to efficiently install the equipment supplied. Every effort has been made to keep the information contained in this document current and accurate as of the date of publication or revision.

However, no guarantee is given or implied that the document is error free or that it is accurate with regard to any specification.

Technical Support

Clearfield, Inc. can be contacted for any issues that arise with the supplied product.

If you need to return the supplied product, you must contact the Clearfield, Inc. Customer Service Department to request a Returned Materials Authorization (RMA) number.

Clearfield, Inc.
7050 Winnetka Ave N
Minneapolis, MN 55428

Toll Free: 800.422.2537
Phone: 763.476.6866
Fax: 763.475.8457

Customer Support: sales@clfd.net
Technical Support: techsupport@clfd.net