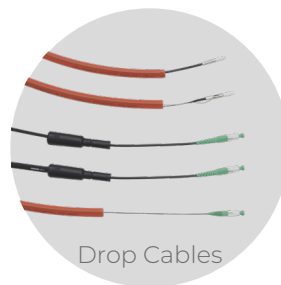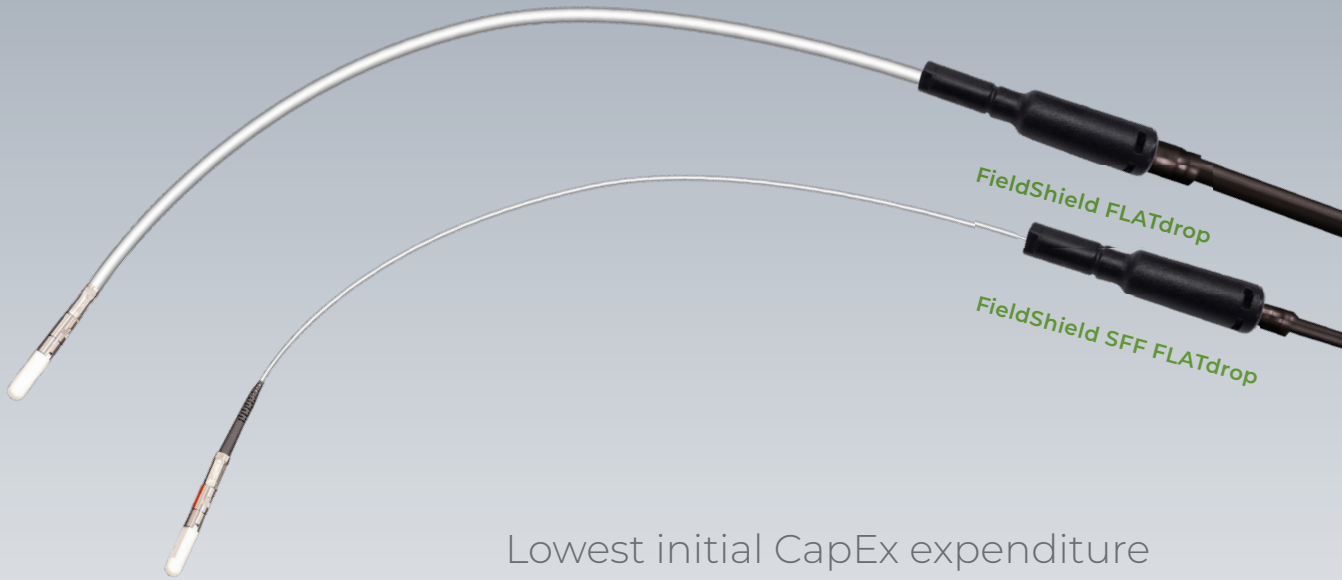# Solving Homes Connected for Rural Environments

Making rural broadband fiber connections is in Clearfield's DNA. It's the market we've been serving since 2008. With the urgency to quickly bring fiber connections to the rural and underserved markets, service providers are looking for the most efficient technologies and products that will remove high labor and time components. Clearfield is uniquely prepared to help service providers remove the obstacles they face to connect homes in the unique and varied rural network scenarios.

Terminals

Home Access Point

Drop Cables

CLEARFIELD

Serving Rural Broadband Since 2008

FieldShield FLATdrop

FieldShield SFF FLATdrop

Lowest initial CapEx expenditure
with universal plug-and-play and
interconnect connectivity.

DROP CABLE ASSEMBLIES

FieldShield FLATdrop

FieldShield® FLATdrop matches the hardened
connector performance of legacy connectors,
yet carries a significant reduction to upfront
cost. Leveraging legacy assets as you move to
universal deployment, Clearfield offers the choice
of the industry's legacy hardened connector as
well as our next generation connector design.
An optional snap-on FlexConnector™ accessory
to this next generation design simplifies flat
drop slack storage to the field labor and space
requirements of a 3mm or 900µm (small form
factor) pre-connectorized cable assembly.
FieldShield FLATdrop is the first hardened
drop cable assembly to provide this freedom of
configuration.

Pushable SC   HFOC

Pushable SC   Next-Gen Connector

Comparable CapEx to a flat
drop cable with the added
advantage of full fiber
protection and restorability.
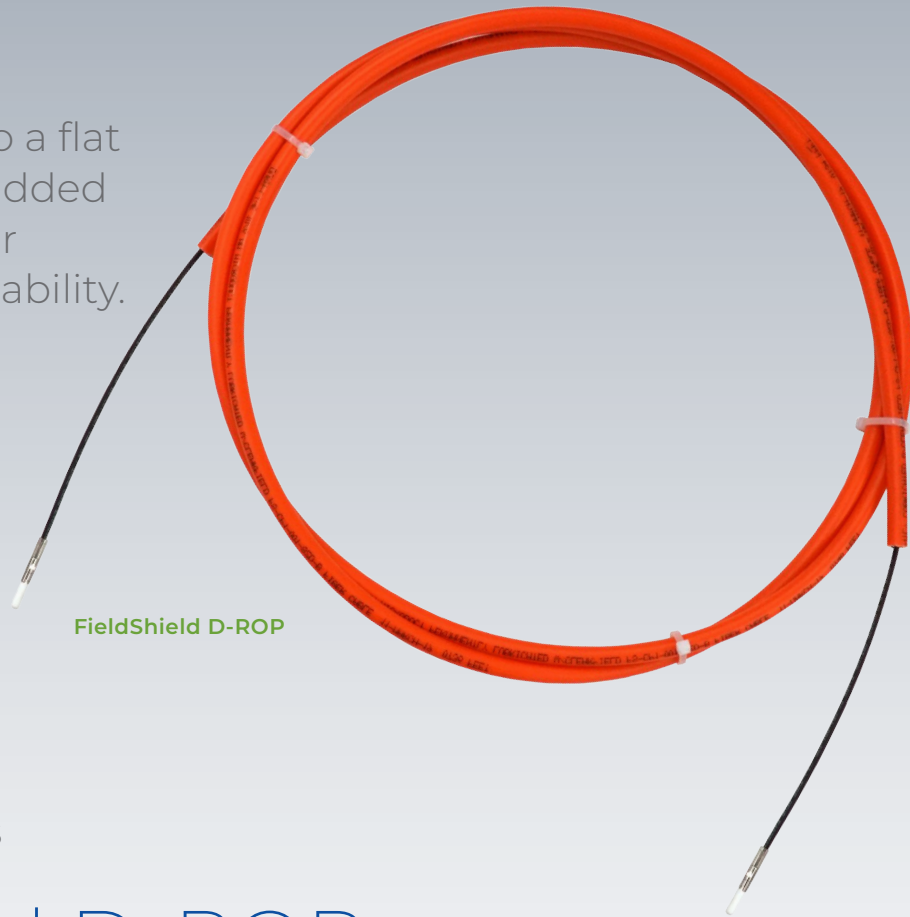
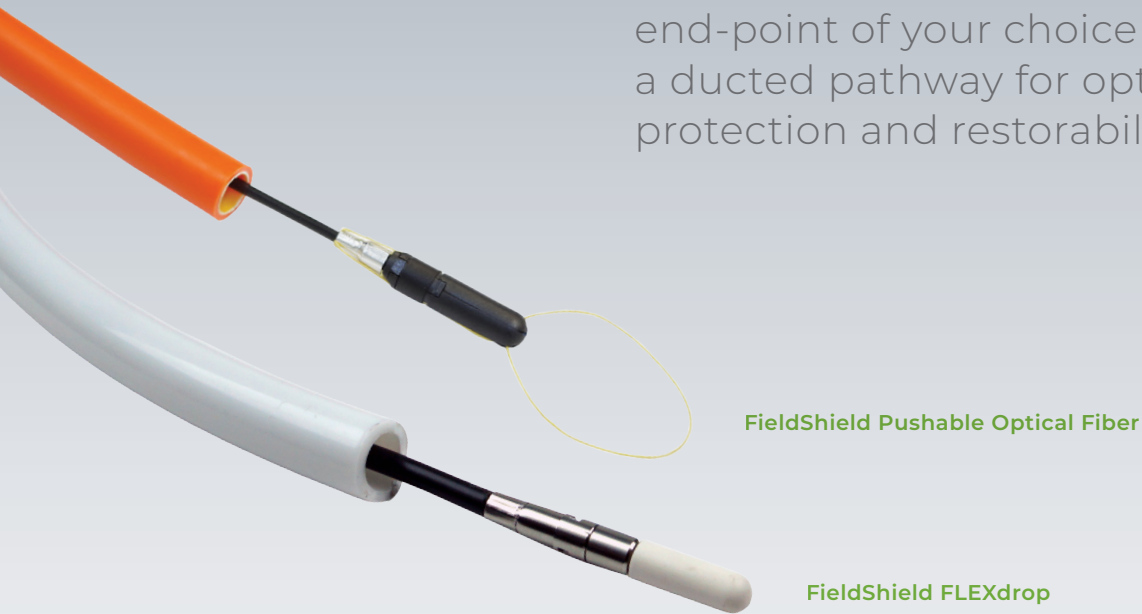FieldShield D-ROP

DROP CABLE ASSEMBLIES

FieldShield D-ROP
[Restorable One Pass]

FieldShield D-ROP has a comparable cost to a flat drop cable assembly with the added advantage of full fiber protection and restorability. FieldShield D-ROP features a cable-in-conduit design. A factory terminated, connectorized fiber assembly is factory-installed in 8.5mm OD/6mm ID indoor duct and 10mm OD/6mm ID outdoor microduct with the upfront installation labor time similar to a direct-bury flat drop solution. In the event of a future fiber cut, the link can easily be restored by the fiber placement method of choice within the repaired duct.

Slack storage isn't a concern as the duct is easily peeled away at the demarc, leaving a 2mm indoor or 3mm outdoor pre-terminated fiber assembly for small footprint slack storage. FieldShield D-ROP provides an air and water-tight connection.

Push (or pull) a small footprint, pre-connectorized fiber assembly to the end-point of your choice through a ducted pathway for optimal protection and restorability.

FieldShield Pushable Optical Fiber

FieldShield FLEXdrop

DROP CABLE ASSEMBLIES

FieldShield FLEXdrop & Pushable Optical Fiber

FieldShield FLEXdrop® and FieldShield Pushable Optical Fiber are factory-terminated drop cable assemblies that can be pushed (or pulled) through ducted pathways to your desired location. Once the ducted pathway is laid, the installation is as simple as pushing the fiber and snapping on a connector housing. Recommended for use in conjunction with FieldShield Microduct. Clearfield designed pushable connectors are available in SC, LC or MPO formats.

Solving for the variability of environments, FieldShield FLEXdrop is highly flexible making it optimal for environments with frequent turns and bends up to 200 feet. It also offers UV protection making it a great building wrap. FieldShield Pushable Optical Fiber offers strengthened rigidity, making it ideal for distances of longer than 200 feet. These two drop cable assemblies interface with all of the YOURx® family interconnect solutions, providing an air and water-tight connection.

Minimal footprint and innovative spool-based technology make StrongFiber the most craft-friendly drop cable option available from Clearfield.

FieldShield StrongFiber on Deploy Reel

DROP CABLE ASSEMBLIES

FieldShield StrongFiber

FieldShield StrongFiber is a durable, high tensile strength 900μm factory-terminated fiber cable assembly. FieldShield StrongFiber is designed to be deployed in conjunction with FieldShield Microduct for additional protection and restorability. Due to its minimal footprint, the pain points of slack storage are all but eliminated. Innovative spool-based concepts bring simplicity and speed of deployment. Exceptional pull strength makes it craft-friendly and easy for the technician to handle without fear of fiber damage.

StrongFiber is available on a deploy reel that allows the fiber slack to be stored at the customer premises and pulled back to the terminal in an SFU or MDU deployment. It is also available on a drop wheel for multi-fiber deployments in the MDU with the fiber pulled to the customer premises.

FieldShield Drop Wheel
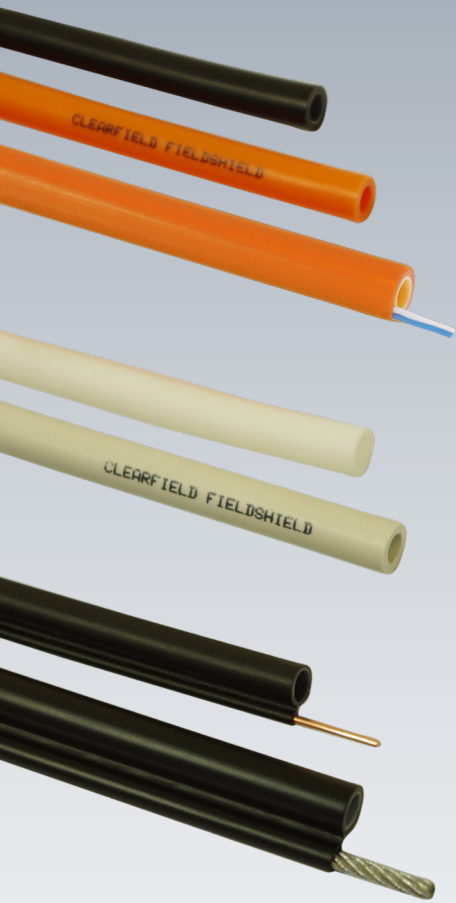
Outside Plant

Inside Plant

Aerial

Aerial, buried, riser and plenum options provide the pathway for FieldShield FLEXdrop, Pushable Optical Fiber and StrongFiber for fiber to anywhere connectivity.

MICRODUCTS

FieldShield Microduct

FieldShield Microducts provide a fiber delivery pathway to quickly deliver pre-terminated, factory-tested pushable (and pullable) FieldShield FLEXdrop, FieldShield Pushable Fiber and FieldShield StrongFiber. Duct options address aerial and buried environments in the outside plant, while plenum and riser configurations provide solutions for the inside plant.

Within an in-building environment, due to high column strength, microduct can be deployed directly within a larger, fully occupied duct. This makes room for the pushable fiber and maximizes the use of existing infrastructure,

therefore reducing overall project costs. In the outside plant, due to its small size, FieldShield microducts are ideal for installations requiring less intrusive methods such as micro trenching.

All FieldShield Microducts enable non-intrusive fiber restoration. Limiting construction activity to the point of failure, FieldShield Microducts minimize time to a full link restoration.

Multi-Purpose Terminal

FieldShield FLATdrop

FieldShield Pushable Fiber

Feeder Cable

Feeder Cable

Access terminal designed to offer cable mid-span and internal splicing capabilities. Includes up to 8 drops, daisy chain MPO input/output ports and is optical component enabled.

INTERCONNECTS: OSP

Multi-Purpose Terminal

The Multi-Purpose Terminal (MPT) offers, as its name suggests, broad flexibility for a variety of outside plant applications. Taking advantage of the air and water-tight FlexPort connections, this re-enterable sealed housing configures to meet the network goals for any fiber distribution and drop cable network; splice only, patch and splice and PON splitter. The MPT also allows the operator to manage a fiber cable mid-span, to express fibers to the next location, or to terminate all fibers in the MPT. This ultimate flexibility allows network designers to balance labor and capital expense cost-effectively.

The MPT is cable agnostic, accepting any industry cable with a diameter of up to 0.70". The terminal can be installed on a strand, attached to a pole, attached to a wall or contained within a pedestal. The adapter plate inside the MPT can be configured to accept either 8-SC, 16-LC or 8-MPO connectors with the ability to mix and match connectors within the same terminal - a valuable feature for network design.
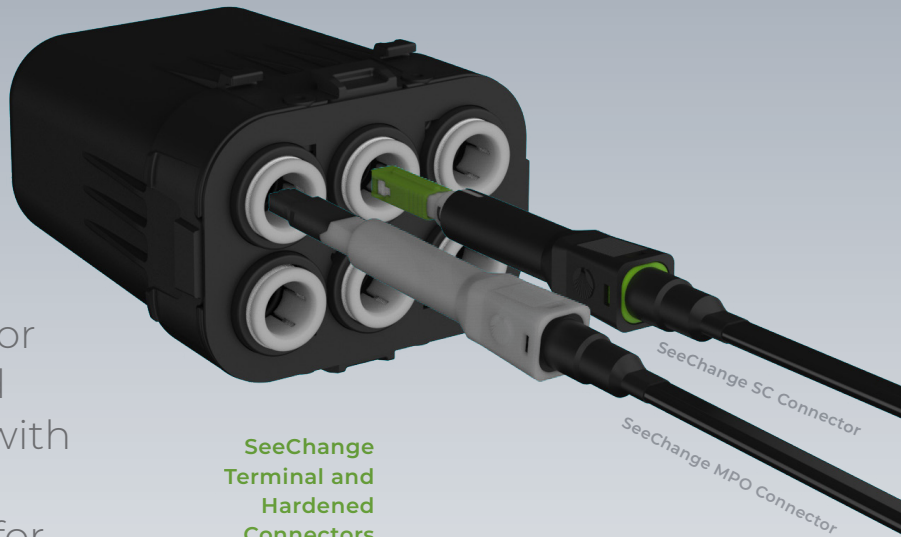
Access terminal ideal for less densely populated areas. Small footprint with up to 4 drop ports and hardened connectors for daisy chain MPO input/output ports. Optical component enabled.

SeeChange Terminal and Hardened Connectors

SeeChange SC Connector

SeeChange MPO Connector

INTERCONNECTS: OSP

SeeChange Terminal and Hardened Connector Platform

SeeChange® is Clearfield's small, carrier grade, 100% plug-and-play access terminal and hardened connector platform for use in FTTx applications - connecting people and places previously unreachable based on economics and technology. Designed for ease of network engineering and installation, the sealed design performs in the most extreme environments.

The SeeChange Terminal is a fully-sealed 4-port drop terminal that includes a multifiber MPO input port, 4 single fiber drop ports and a multifiber MPO express output port. Both centralized split and distributed split configurations are supported by the SeeChange and deployed above or below grade and in aerial applications.
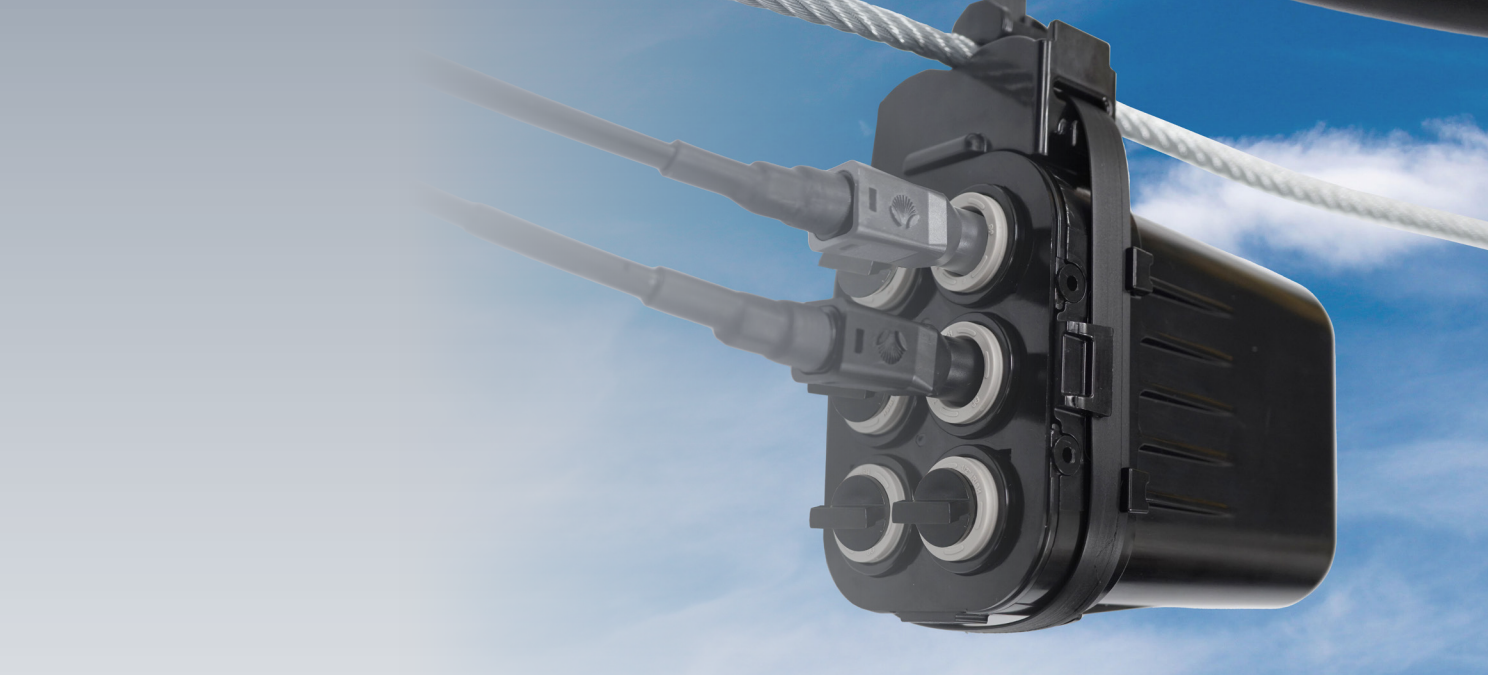
All connections to the terminal are made using factory-terminated SeeChange connectors that can be installed with entry level technicians for quick deployment. SeeChange hardened connectors are ruggedized for OSP applications and meet Clearfield's FiberDeep® performance levels for low insertion loss (0.2dB max IL for single fiber and 0.35dB max IL for MPO assemblies).
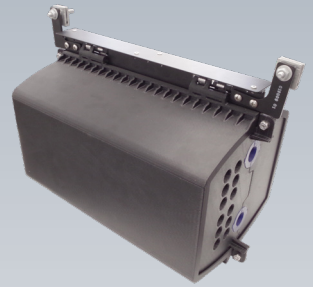
SeeChange SC Connector

SeeChange MPO Connector

Access network terminal delivering a fully protected fiber pathway for any configuration: drop only, distributed split and daisy chain deployments.

YOURx-Aerial Terminal

YOURx-Terminal

FieldShield Pushable Optical Fiber

FieldShield StrongFiber

FieldShield FLEXdrop

FieldShield D-ROP

FieldShield FLATdrop

INTERCONNECTS: OSP

YOURx-Terminals

The YOURx-Terminal is a compact, environmentally sealed interconnect that provides an air and water-tight connection for all FieldShield drop cables and microduct. This universal plug-and-play design means multiple fiber media, same port connectivity.

With two feeder ports and 16 distribution (drop) ports, the YOURx-Terminal is designed for maximum scalability across multiple service classes. It also allows for integration of optical components. Below-grade, pedestal and pole-mount deployment options provide for a single product use approach in a variety of network access architectures.

The YOURx-Aerial Terminal is a breathable terminal that allows for aerial or strand-mount fiber deployment. It accepts the fiber feed and distributes up to 24 individual service drops. It offers the capability to mid-span a larger count fiber cable so multiple terminal/access points can be deployed along the same cable run.

YOURx-Terminal

YOURx Flex Box

FieldShield
Pushable Optical Fiber

FieldShield StrongFiber

FieldShield FLEXdrop

FieldShield D-ROP

FieldShield FLATdrop
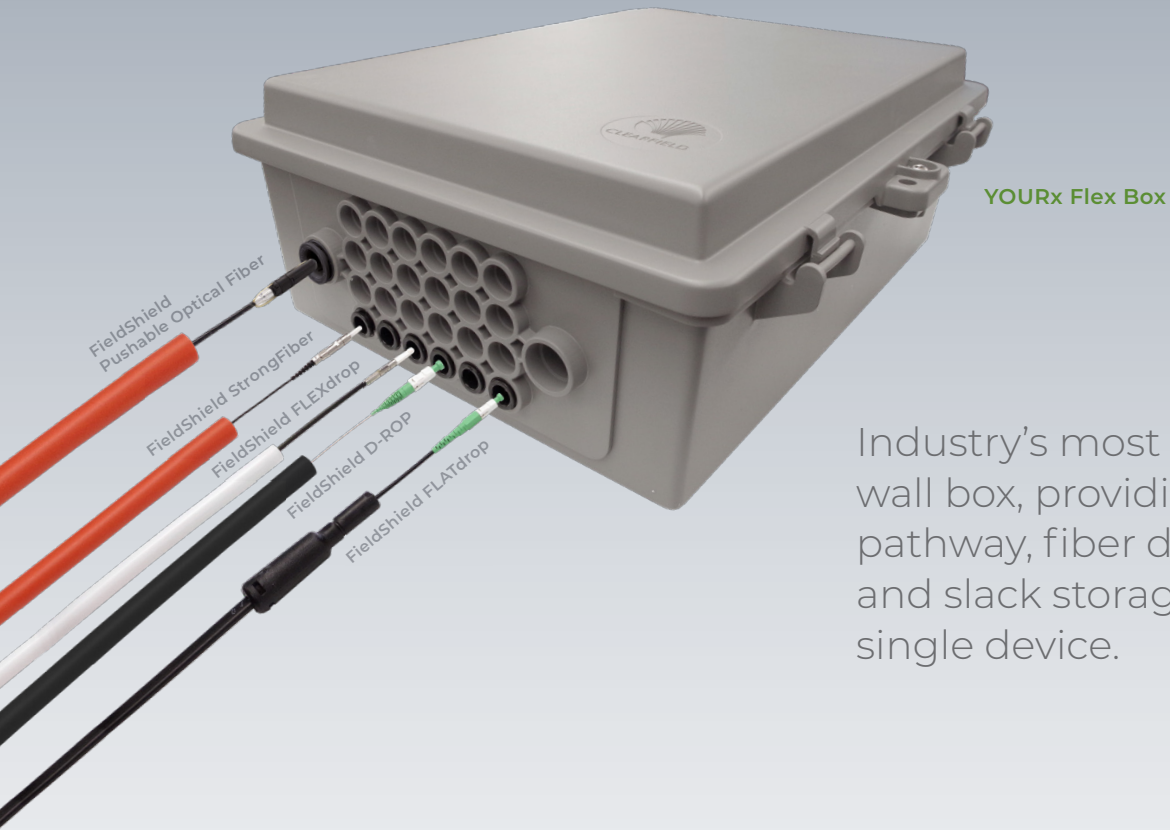
Industry's most flexible wall box, providing fiber pathway, fiber distribution and slack storage in a single device.
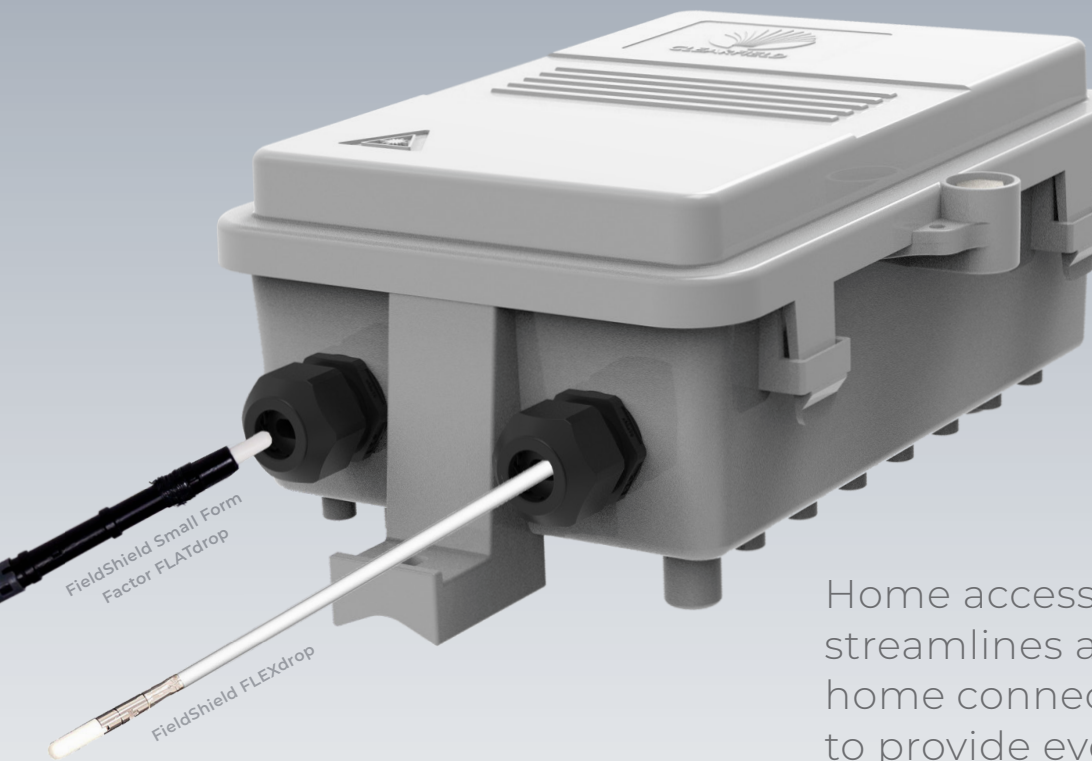
INTERCONNECTS: MDU

YOURx Flex Box

The YOURx Flex Box is a secure, flexible and modular wall box that allows the service provider to create a state-of-the-art, plug-and-play fiber optic network by interconnecting all types of media and pathways into a single fiber distribution and aggregation point in access networks.

The YOURx Flex Box addresses the challenges of supporting varying number of subscribers in different configurations, managing slack storage and reducing fiber installation time — all within a single wall box. Configured with the Clearview® Cassette, drop wheel assembly or SmartRoute Plate inserts, the YOURx Flex Box supports multiple connectivity architectures such as drop or split.

Six slide-in aggregator plate options support multiple cable entries like such as individual fiber cables, conduit and microduct in an organized manner.

FieldShield Small Form Factor FLATdrop

FieldShield FLEXdrop

Home access point streamlines and eases home connectivity – kitted to provide everything needed to connect a home to fiber, all in one box and no matter the scenario.

INTERCONNECTS: HOME

Home Deployment Kits

Clearfield Home Deployment Kits are engineered to streamline FTTH connections, giving service providers an accessible way to test fiber integrity before fiber enters the customer premises. Homes vary greatly in size, shape, and building material. Technicians previously needed a larger number of products sku's to satisfy the variety of home connection requirements.

Clearfield simplifies this by packaging all the necessary materials in convenient kits. The designer or installer can choose from options that best suit their needs whether splicing at the side of the home or utilizing Clearfield's fully connectorized option.

Each of the three kit options provides a complete solution (in one part number) that includes a test access point, jumpers and a plug-and-play fiber outlet box.

CraftSmart® Splice TAP — splice only, limited slack storage, NEMA 4.
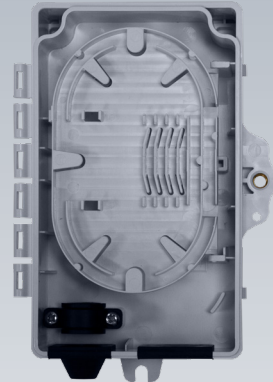
CraftSmart Splice TAP

FieldSmart® Mini TAP — plug-and-play, 50' incoming slack storage and max 100' outgoing pre-connectorized fiber deploy reel, NEMA 4.
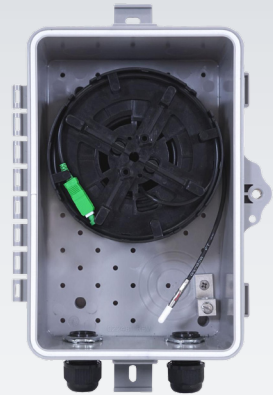
FieldSmart SCD TAP — plug-and-play, 100' incoming slack storage and max 200' outgoing, pre-connectorized fiber deploy reel, NEMA 4.

FieldSmart Mini TAP

Utilizing the slack reel's storage of incoming and outgoing fiber slack is simple and fast. Most importantly, the use of the deploy and slack reels have been shown to reduce installation time by 30 minutes per install.

FieldSmart SCD TAP

Network Application

FieldShield fiber assemblies and access interconnects bring a comprehensive portfolio of field tested solutions designed to reduce the high costs associated with fiber deployment, management, protection, and scaling a fiber optic network to the demands of residential and business customers.

Characterized by flexibility, scalability and a low labor requirement, Clearfield products reduce the time necessary to install the network. Speed of installation is maximized by the use of existing infrastructure, implementing end-to-end, plug-and-play functionality, as well as the ability to interconnect multiple types of pathway and media (conduit, microduct, flat fiber, microfiber). The design will also offer complete restoration — lowering the maintenance and repair costs while maintaining the ease of network reconfiguration.

FieldShield fiber assemblies and access interconnects accommodate various fiber network architectures, such as Active Ethernet or XGS-PON in point-to-point or split architectures in the SFU and MDU/MTU.

CABINET

B

A

TERMINAL
INTERCONNECT

C

D

D

D

SFU

E

F

G

MDU/MTU
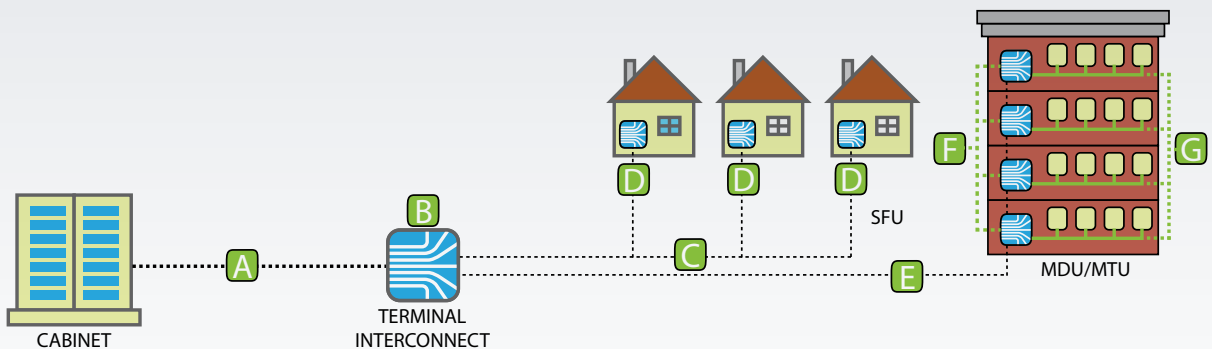
FieldShield
Product Portfolio

FIBER MEDIA

APPLICATION	PART NUMBER	DESCRIPTION	
A C E	FSH-xxx Hx1-xxx	FieldShield FLATdrop, configurable single strand, singlemode FieldShield FLATdrop, configurable multi-strand, MPO, singlemode FieldShield FLATdrop, peelable with 900μm SFF or 3mm subunit	
C E	FSD-xxx	FieldShield D-ROP, configurable single strand, singlemode	
A C E	FS-AA1-xxx	FieldShield Pushable Fiber configurable family	
C E F	FS-AP2-xxx FS-AR1-xxx	FieldShield FLEXdrop, plenum FieldShield FLEXdrop, riser	
D	FDR-xxx	FieldShield FLEXdrop, configurable on deploy reel	
C E F G	SRD-x1SA-xxx	FieldShield StrongFiber, configurable on deploy reel	
F	DW-SCX-xxx	FieldShield StrongFiber, configurable on drop wheel	

INTERCONNECTS

APPLICATION	PART NUMBER	DESCRIPTION	
B	SCT-xxx	SeeChange Terminal	
B	MPT-xxx	Multi-Purpose Terminal	
B	FSTX-xxx	YOURx-Terminal	
F	WQx-xxx	YOURx Flex Box	
B	HDK-xxx	Home Deployment Kits	

DUCTED PATHWAYS

APPLICATION	PART NUMBER	DESCRIPTION	
A E	FS-MEA-xxx	FieldShield Aerial Microducts	
A C E	FS-DEx-xxx FS-MEx-xxx	FieldShield Direct Bury Microducts	
F G	FS-MCP-NT-xxx	FieldShield Plenum Microduct	
F	FS-DCR-NT-xxx	FieldShield Riser Microduct	

CLEARFIELD

SEECLEARFIELD.COM

BILT.®

Interactive 3D Instructions for easy Clearfield product assembly and installation is just a QR code away.