ofs

A Furukawa Company

1

FTTx SOLUTION ORDERING GUIDE

Chapter One: Fiber in the Building Solutions

OFS FTTx SOLUTIONS

CHAPTER ONE:

Fiber in the Building Solutions

Fiber to the Home and Business deployment is accelerating globally to support increasing internet speeds of up to 1 Gigabit per second, and 10 Gigabit speeds are already available in some regions. Service providers are responding by installing optical fiber both to and deep inside buildings to the living unit. The Solutions in this guide can help reduce both first cost and life cycle cost of fiber deployments to residential and business customers inside homes and buildings.

Solutions for both Greenfield installation during building construction and Brownfield installation in existing buildings are included. Scalable and optimized to fit a broad range of building structures, these solutions offer faster, reliable installation through innovative labor saving technologies, using less space than conventional approaches.

Solutions for both indoor and outdoor deployment offer flexibility to use the best available pathways for each building. The solution building blocks include a wide range of terminals, splitters, point-of-entry modules, riser cables, attic and wall fish fiber, hallway fiber and complete indoor living unit fiber kits. This portfolio allows service providers to select the best solution for each building, and OFS can help design building specific solutions and bills of material as a value added service.

BENEFITS

OFS FTTx solutions help to revolutionize the speed of installing fibers; enhance the customer experience; minimize disruption; reduce labor costs; increase subscriber take rates; enable faster time to revenue for service providers; and get Gigabit and higher speeds faster to subscribers.

Building Pain Points and Solutions

CHALLENGES AND SOLUTIONS

- **Time to revenue:** Fast and easy to install pre-terminated solutions can speed installation and reduce labor costs.

- **No pathways, requiring labor intensive cut and patch:** Compact surface mounted fiber solutions.

- **Limited closet space:** Smaller enclosures can enable installation of multiple operator connections in a small telecommunications closet.

- **Multiple boxes for splicing and splitter connections:** Single box pre-terminated solutions can require less space and enable faster provisioning.

- **No duct space:** Compact surface mounted fiber solutions either inside or on the outside of the building do not require duct.

- **Shared infrastructure:** Compact cables can support multiple service providers in telecommunication pathways.

- **Fiber bends around many corners:** Bend insensitive fiber specified to support bend radius as low as 2.5 mm.

- **Disruptive/noisy to tenants:** Optical solutions that are virtually invisible can be installed quickly and quietly, and preserve the building decor.

- **Service disruptions and lost subscribers:** Full solution of fiber, cable and connections from one company, designed to work together. Factory tested to Tier 1 standards.

- **Multiple building types:** Solutions to fit each building type.

PRE-TERMINATED vs. FIELD TERMINATED

Pre-terminated solutions are increasingly used to install fiber in MDU buildings to save time and money in higher labor cost regions. Pre-terminated products with built-in slack management are preferred so installers can neatly manage excess slack, and use a single component to support multiple deployment lengths. Nevertheless, field terminated solutions can complement pre-terminated parts of the indoor or outdoor network and, for low labor cost markets, field terminated solutions may be preferred. OFS offers both pre-terminated and field terminated solutions to fit the needs of each service provider.

Fiber Specifications Optimized to the Application

Installing fiber in buildings and homes often requires conforming the fiber around sharp corners. EZ-Bend® Single-mode Fiber offers outstanding bend performance down to a 2.5 mm radius for the most challenging in-residence and MDU applications. Compatible with the installed base of conventional G.652.D single-mode fibers, the fiber meets and exceeds ITU-T G.657.B3 recommendations. EZ-Bend fiber uses OFS' patented groundbreaking EZ-Bend Optical Technology to provide three times' lower loss at tight bends than competing G.657.B3 products.

ACCESS (OUTSIDE PLANT)

AllWave®+ Optical Fiber
AllWave *FLEX*+ Optical Fiber
EZ-Bend Optical Fiber
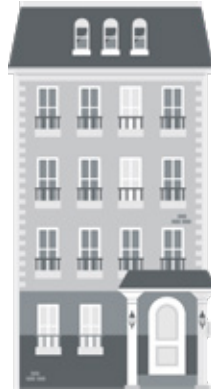
ACCESS (DROP AND IN BUILDING)

AllWave+ Optical Fiber
AllWave *FLEX*+ Enhanced Optical Fiber
EZ-Bend Optical Fiber

WHY CHOOSE EZ-BEND FIBER?

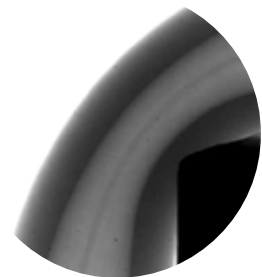Because you can staple, coil, tie and corner it.

STAPLE　　　　**COIL**　　　　**TIE**　　　　**CORNER**

In Building Architecture:
Centralized, Distributed and Distributed Cascaded Splitting

Infrastructure Optimized
to Fit the Building.

GARDEN STYLE

LOW RISE

HIGH RISE

As FTTx deployment accelerates globally to meet increasing bandwidth needs, service providers must install optical fiber both to and inside the building for business and residential subscribers. To provide Gigabit services, providers must place optical cables in building risers and ducts, install optical fiber in hallways, and then take this fiber deep into the units, connecting to an indoor Optical Network Terminal (ONT). How can providers accomplish this in buildings that can vary widely in design, materials and available pathways?
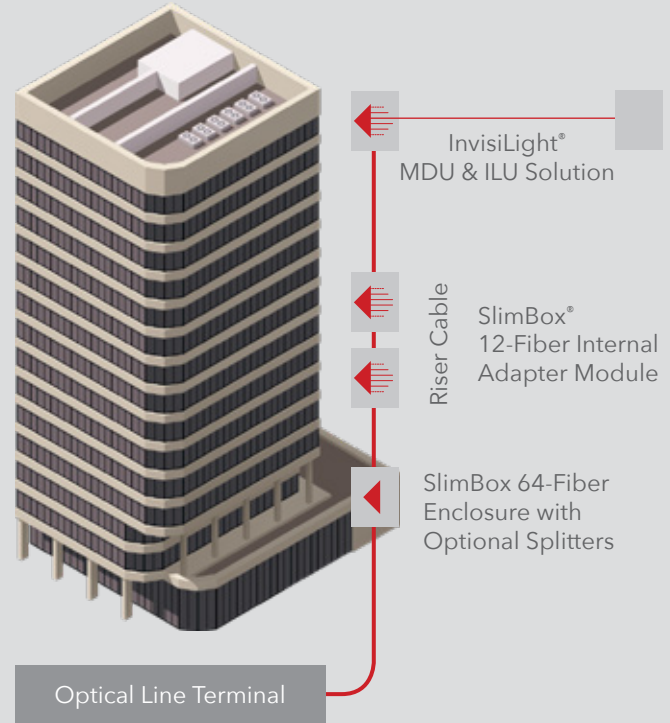
Building types include duplexes, garden style, low rise (less than 10 floors), mid rise (10 to 15 floors), high rise (16 to 40 floors) and skyscrapers (40 floors and above). However, while structures vary, building owners, residents and service providers inevitably have common demands: quick service turn-up and the fast, non-disruptive installation of solutions that blend into the existing decor.

PON Overview and Splitter Architectures

A typical PON network consists of the Optical Line Terminal (OLT) in a central office, MDF or cabinet, connected by a feeder cable to passive optical splitters, and then to distribution and drop cables downstream in the network that connect to an Optical Network Terminal (ONT). The splitters typically have a single fiber from the OLT that is optically split to produce 4, 8, 16, or 32 output fibers, each connected to an ONT downstream. The bandwidth of the single OLT fiber is shared by the multiple output fibers in a similar fashion as the bandwidth of Ethernet switch users is shared by the uplink from the switch to the network.

PON systems are available supporting up to 10 Gigabits per second (Gbps) today, and systems supporting 25, 50, 100, and 200 Gbps are in development. Current PON systems and those in development use wavelengths that are sensitive to fiber bending. OFS recommends EZ-Bend(r) cables to avoid network downtime resulting from fiber bending that may in building installations

OFS Fiber in the Building Solutions can be configured to support current and future PON systems, using the splitter architecture optimized for each customer's needs.
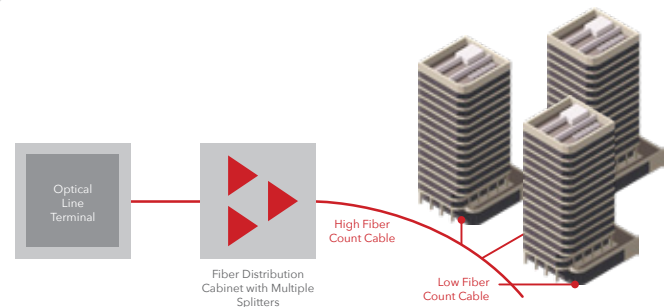

InvisiLight® MDU & ILU Solution

Riser Cable

SlimBox® 12-Fiber Internal Adapter Module

SlimBox 64-Fiber Enclosure with Optional Splitters

Optical Line Terminal

Example: Cascaded Splitter Architecture

Centralized Splitting Architectures

Centralized architectures help lower total costs when relatively low take rates are expected. They can help defer capital cost by allowing for incremental OLT and splitter additions as subscriber counts increase. Centralized architectures co-locate a number of splitters in a central location such as a cabinet, MDF, or CO.

In a centralized architecture, there is typically no splitter inside the small to medium sized buildings. An outdoor or indoor box is used to receive the outside plant cable from the central office or the Fiber Distribution Hub (FDH) which contains the splitters. The basement box is used as a transition point between outdoor and indoor or indoor/outdoor cables. For larger buildings the FDH may be placed inside the building.

Optical Line Terminal

High Fiber Count Cable

Fiber Distribution Cabinet with Multiple Splitters

Low Fiber Count Cable

ADVANTAGES
- Electronics costs scale with take rate due to efficient utilization of OLT ports
- Centralized management of customer connections
- Easier transition to higher speeds with some types of PON systems

DISADVANTAGES
- Higher cost in cable and cabling infrastructure
- Larger network elements in the outside plant

Distributed Splitting

A distributed splitting architecture is cost optimized when subscription rates are expected to be medium to high, and has the added benefit of eliminating the need to find space for placing cabinets.

Splitters are "distributed" throughout the network and placed in closures or pedestals in the field or in buildings. At each splitter location, there will typically be one or at most two splitters.

This type of architecture typically uses lower fiber count cables, requires less splicing, and results in lower plant costs, but higher electronics costs.

This architecture may use splitters in the basement of a building. Customers can be easily connected in the basement box using the customer connection ports.

ADVANTAGES
- Less fiber, cables and splicing than the centralized option; no cabinets required
- Quicker to deploy

DISADVANTAGES
- Less network flexibility for upgrades
- More challenging to monitor and trouble-shoot the network
- Less efficient OLT port utilization than centralized splitting

Distributed Cascaded Splitting

Distributed cascaded splitting, also called double star, is a form of distributed splitting with the splitters "cascaded" in the network. For example, a typical distributed split architecture may use a 1X32 splitter in a closure. The cascaded version may consist of a 1X8 splitter at one location feeding four 1X4 splitters downstream at different locations, to achieve a 1X32 split.
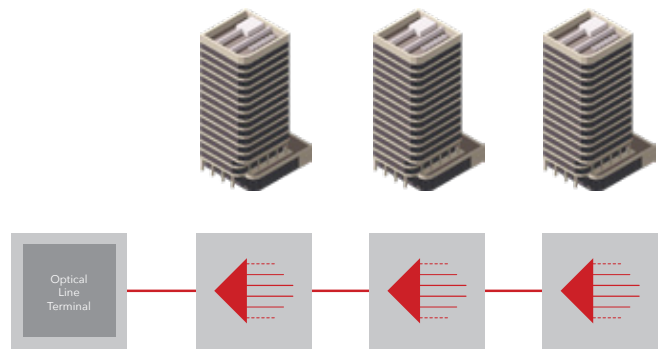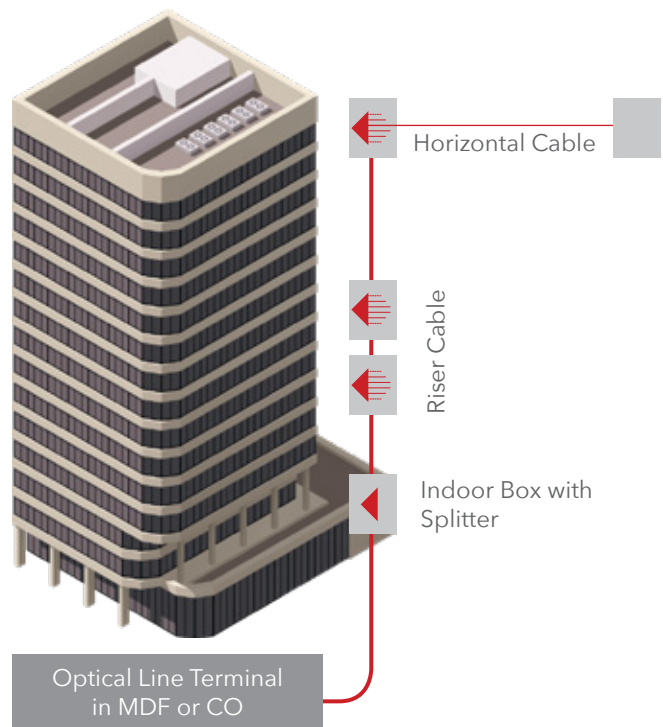
With this architecture the upstream splitter may be located in the building basement and the downstream splitter on each floor.

ADVANTAGES
- Reduced cable size, lower fiber counts, and less splicing
- Lowest cost in outside plant vs. Centralized or Distributed

DISADVANTAGES
- Difficult to trouble shoot
- Most complex network management
- Higher loss and shorter reach than single stage splitting

Outdoor Facade Solutions are used when property owners want to preserve the decor of the building exterior when: a) installing cables on the facade and then transitioning to an indoor solution, b) pursuing an all outdoor solution on the façade to connect each living unit when it is not possible to install fiber solutions indoors, or c) using a combination of indoor and outdoor solutions for hallways that are exposed to the outdoor elements (breezeways). Therefore, several solutions are required to address these different approaches.

| InvisiLight Facade Solution **for Exposed Hallways or Breezeways**	
Basement Terminal	SlimBox® Indoor/Outdoor 12F, 24F, or SlimBox Indoor 64F
Floor Terminal	SlimBox Indoor/Outdoor 12F or 24F
Hallway	Indoor/Outdoor Compact Outdoor Point of Entry (POE) Module
	EZ-Bend® Indoor/Outdoor 12F or 24F Cable
	900 µm Pigtails for Splicing (Optional)
InvisiLight Facade Solution **for Outdoor Installations**	
Facade Terminals	SlimBox 24F and 2F or 4F (Outdoor)
Facade Cable	EZ-Bend Indoor/Outdoor 12F or 24F Cable
Drop Cable	EZ-Bend 1F 3.0 mm or 4.8 mm Cable

A

### Facade Cabling Transition to Indoor Cabling Solutions

The compact EZ-Bend Indoor/Outdoor 12F or 24F cable is placed vertically on the exterior wall of the building from an outdoor wall mount box to an indoor SlimBox. The indoor SlimBox 24F can be factory configured with SCA adapters or fanouts for a pre-terminated solution, or for fusion splicing. EZ-Bend 3mm or 4.8mm jumpers are used for the path to each living unit. Pre-terminated EZ-Bend Jumpers are recommended for faster installation, or a mechanical connector may be used for field termination in the SlimBox® Wall Plate. The 80x80 or EZ-Connect InvisiLight modules can be used as a "fiber extension" to any location in the living unit. Alternatively, instead of EZ-Bend jumpers, the InvisiLight MDU solution may be placed in the hallway to the living units (not shown).
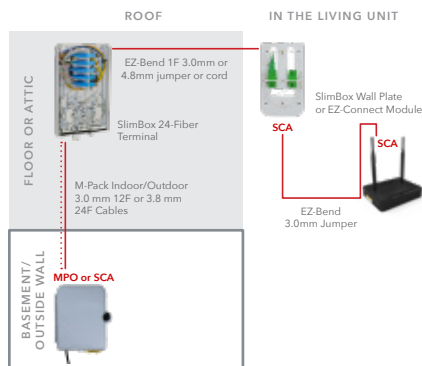
B

### Facade Cabling Transition to Indoor Living Unit

The compact EZ-Bend Indoor/Outdoor 12F or 24F cable is placed horizontally on the exterior wall of the building from an outdoor wall mount box to an outdoor SlimBox 4F or 8F (higher fiber count terminals are available). EZ-Bend® 3mm or 4.8mm jumpers are used for the path to each living unit. Pre-terminated EZ-Bend Jumpers are recommended for faster installation, or a mechanical connector may be used for field termination in the SlimBox® Wall Plate. The 80x80 or EZ-Connect InvisiLight modules can be used as a "fiber extension" to any location in the living unit. The use of 600 µm fiber can make this solution even more "invisible." 600 µm EZ-Bend fiber offers the same bending performance and is as easy to installer as 900 µm fiber in a smaller, harder-to-see form.
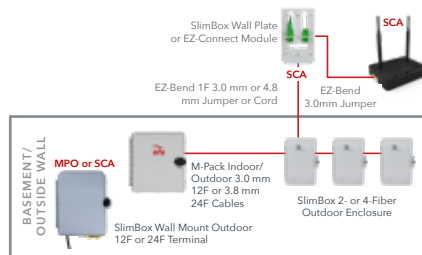
C

Outdoor Cabling for Exposed Hallways (Breezeway)

The compact EZ-Bend Indoor/Outdoor 12F or 24F cable is placed horizontally on the interior wall of exposed building hallways (breezeways) using the same installation technique as the indoor InvisiLight MDU Solution. Similarly, the cable slack is stored in an outdoor UV-rated version of the Compact Point of Entry module. The 80x80 or EZ-Connect InvisiLight modules are used as a "fiber extension" to any location in the living unit.
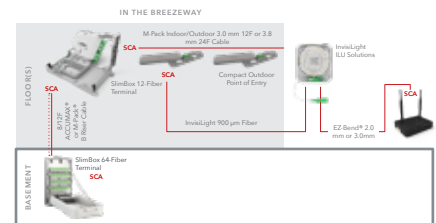
Brownfield Outdoor
EZ-Bend® Bundled Assemblies

See Page 25 for
Product Details

SOLUTION DESIGN

Bundles of 5, 6, or up to 12 indoor/outdoor EZ-Bend® jumpers are fixed against the outside wall. The bundle is connected to an outdoor box on the roof, in the basement, or at ground level of the building. Each cord of the bundle can be passed through the wall to connect to the subscriber's ONT.

FEATURES AND BENEFITS

Optimized for buildings with
no pathway for fiber inside

Maintains outside appearance of the building

Quick installation (~24 units in 2 days)

Good alternative to indoor solutions

Available in black or white to blend with the decor

Often used for heritage or very old buildings
with limited duct space

Greenfield
Pre-Terminated Solution

TELECOMMUNICATION ROOM

- Compact basement box for a progressive customer activation;
- The basement box (SlimBox® 64F Terminal) allows fusion splices for the outside plant cable;
- Ideal for buildings with low penetration rates: One splitter can be installed and the management of the customers is done through the SCA ports. A parking area permits easy connection of new customers;
- Several boxes can be connected for modular expansion. Connections between multiple SlimBoxes are possible through access openings between them.

RISER BACKBONE

- SCA pre-terminated cables for quick plug and play installation:
- EZ-Bend® patch cords directly from the office or living unit may be used for small buildings.

HORIZONTAL DEPLOYMENT

- Direct deployment from the telecommunication closet to the living unit or office;
- Ideal for Greenfield installation
- The EZ-Bend jumper connects the ONT to the SlimBox® Wall Plate;

INSIDE THE LIVING UNIT OR OFFICE

- EZ-Bend Jumper connects the SlimBox Wall Plate to the ONT

IN THE HALLWAY

IN THE LIVING UNIT OR OFFICE

SCA — SCA

EZ-Bend 3.0mm
Patch Cords

SCA

SlimBox
Wall Plate

FLOOR(S)

SCA

8/12F
ACCUMAX®
or M-Pack®
B Riser Cable

SlimBox 12-Fiber
Terminal

SCA

SCA

EZ-Bend
3.0mm Jumper

BASEMENT

SlimBox 64-Fiber
Terminal
SCA

Greenfield
Fusion Spliced or Field-Terminated Solution

TELECOMMUNICATION ROOM
- Compact basement box for a progressive customer activation (parking up to 48 connectors in the SlimBox 64 Terminal);
- The basement box (SlimBox® 64F Terminal) allows fusion splices for the outside plant cable and the internal cables (up to 96 fusion splices - 8 splice trays with 12 splices in each one);
- Ideal for buildings with low penetration rate: One splitter can be installed with management of the customers done through the SCA ports. A parking area permits easy connection of new customers;
- Several boxes can be connected for modular expansion. Connections between SlimBoxes are possible through access openings between them.
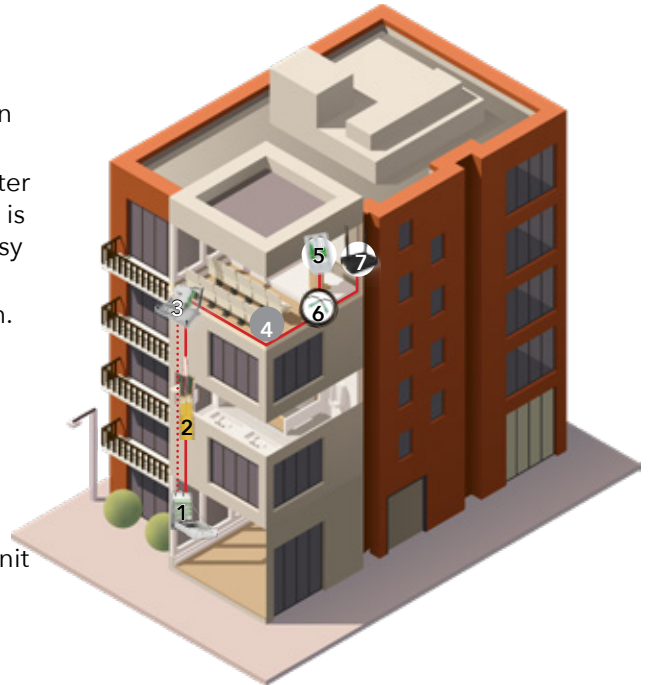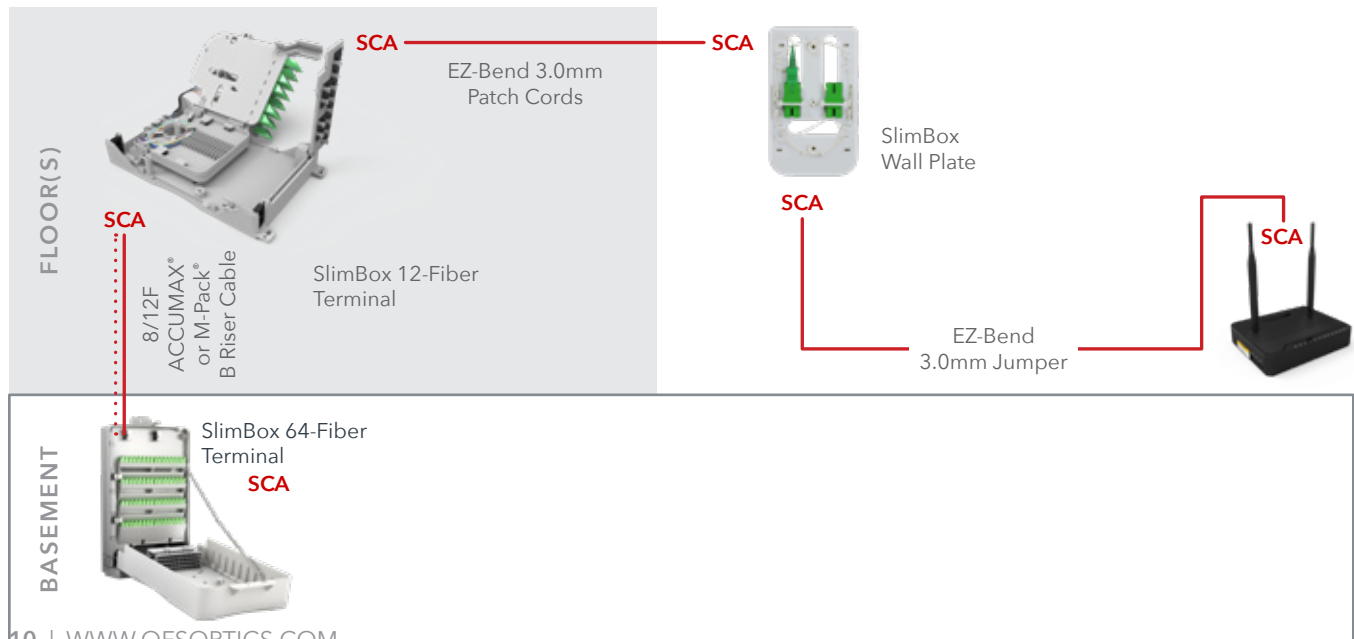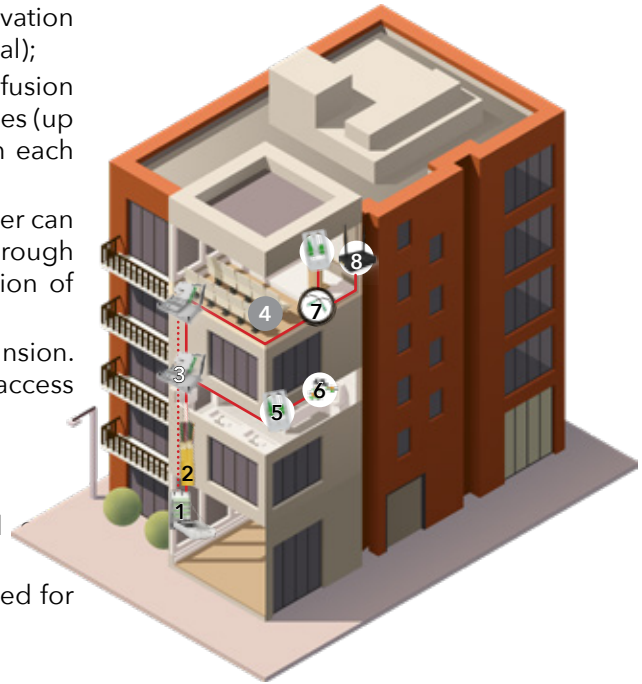
RISER BACKBONE
- ACCUMAX® cables may be used for a quick and easy installation:
- SCA pre-terminated pigtails or EZ!Fuse connectors used for fusion splicing inside the basement and floor boxes;

HORIZONTAL DEPLOYMENT
- Direct deployment from the telecommunication closet to the Apartment unit through EZ-Bend cable (ruggedized 3.0 or 4.8 mm);
- The horizontal cable is fusion spliced or field terminated with an EZ!Fuse connector in the SlimBox 12 Terminal (floor distribution box) and in the SlimBox Wall Plate (inside the living unit);

IN THE HALLWAY

IN THE LIVING UNIT OR OFFICE

SCA — 3.0mm EZ-Bend Cord — SCA

SlimBox Wall Plate

EZ!Fuse™ Splice On Connector

SCA

SCA

FLOOR(S)

SlimBox 12-Fiber Terminal

8/12F ACCUMAX® or M-Pack® B Riser Cable

1F EZ-Bend 3.0mm Jumper

BASEMENT

SlimBox 64-Fiber Terminal

SCA
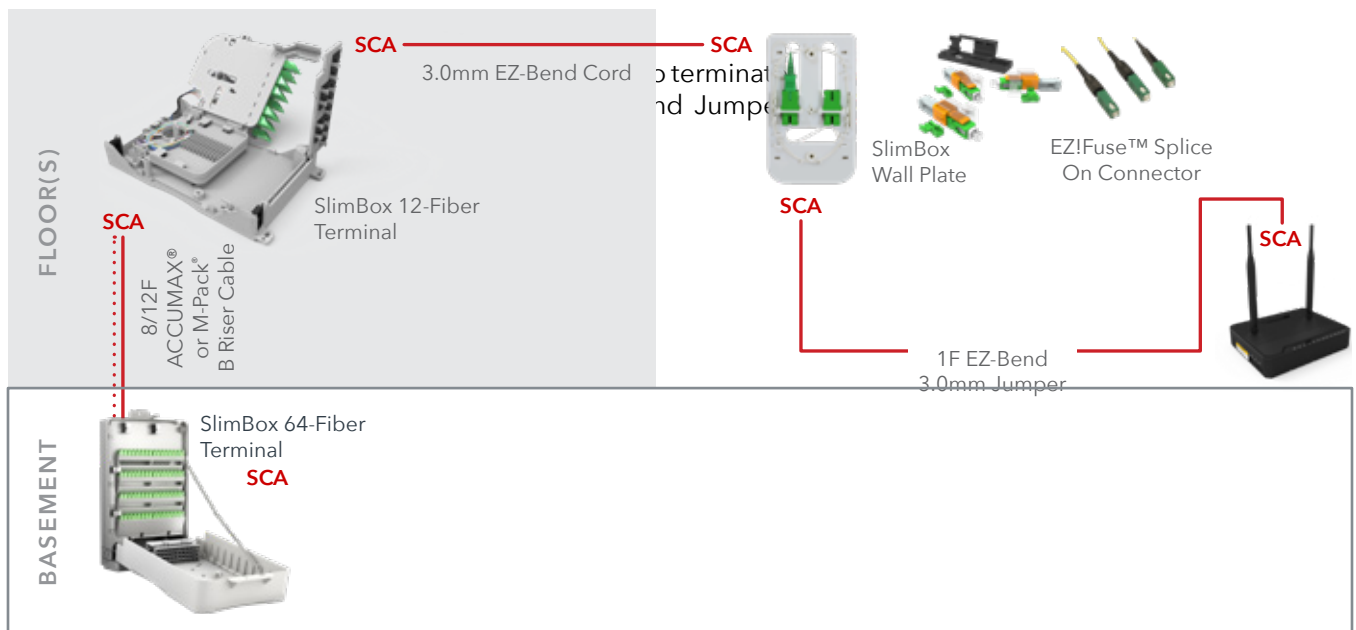
TELECOMMUNICATION ROOM

- Compact basement box for progressive customer activation;
- The basement box (SlimBox® 64F Terminal) allows fusion splices to the outside plant cable;
- Ideal for buildings with low penetration rate: One splitter can be installed with management of the customers done through the SCA ports. A parking area permits easy connection of new customers;
- Boxes can be added for modular expansion.
- Connections between SlimBox units are easy using jumpers through multiple ports designed into the box.

RISER BACKBONE

- SCA pre-terminated cables for quick plug and play installation:
- The InvisiLight® 2.0mm 12 fiber multifiber cord can be pulled up the riser directly from the basement box and down hallways in small or garden style buildings.

HORIZONTAL DEPLOYMENT

- The InvisiLight MDU Point of Entry Module offers a discrete solution using field termination inside the module;
- Virtually invisible installation using the InvisiLight 12F terminated 2.0mm cord

INSIDE THE LIVING UNIT OR OFFICE

- InvisiLight ILU Solution is complementary and connects to the InvisiLight MDU installation;
- InvisiLight ILU Solution is installed with the same tools and procedure as the InvisiLight MDU Solution

IN THE HALLWAY

IN THE LIVING UNIT OR OFFICE

FLOOR(S)

InvisiLight 4F/8F/12F/16F 2.0mm cord

SCA

SlimBox 12-Fiber Terminal

SCA

Point of Entry

SCA

8/12F ACCUMAX® or M-Pack® B Riser Cable

InvisiLight 900 µm Fiber

SlimBox Wall Plate

SCA SCA

SCA

EZ-Bend 3.0mm Jumper

BASEMENT

SlimBox 64-Fiber Terminal

SCA

TELECOMMUNICATION ROOM

- Compact basement box for large scale customer activation
- The basement box (SlimBox® 24F) allows fusion splices for the outside plant cable;
- Ideal for buildings with high penetration rate

RISER BACKBONE

- Built-in slack management with the V-Linx™ solution:
- Reduce inventory and lead time (fewer components);
- Faster installation
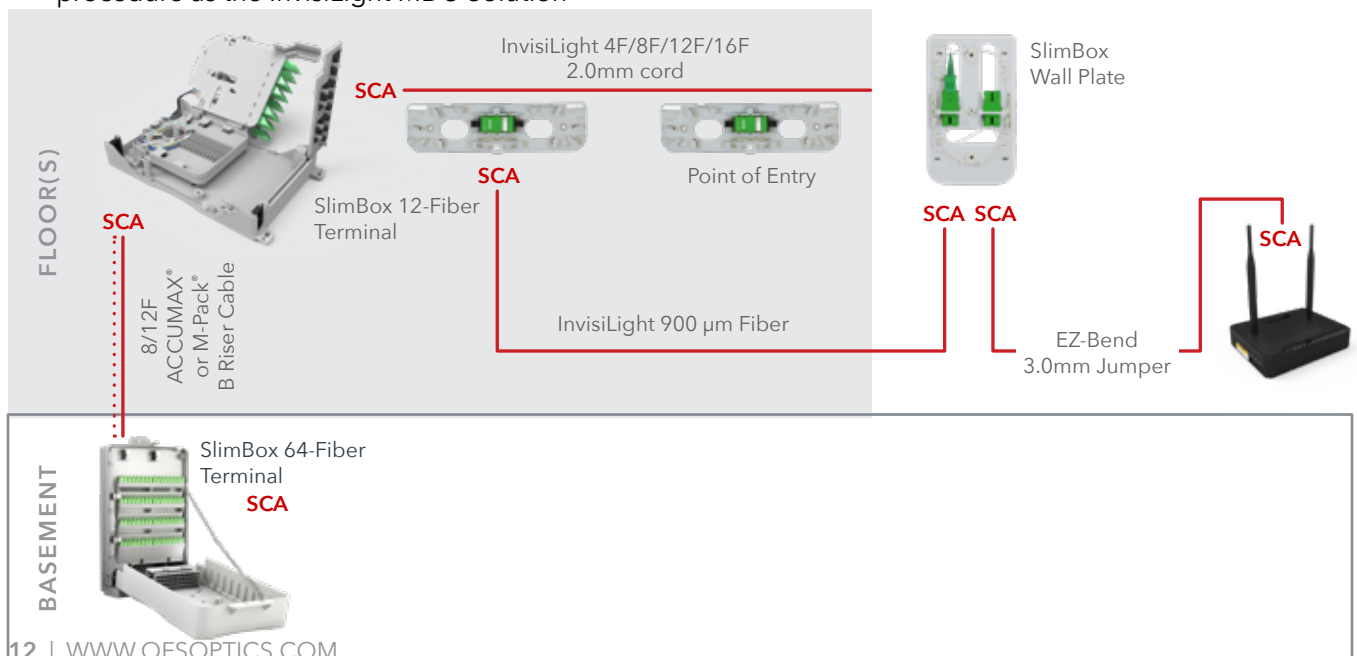- Scalable to multiple building sizes

HORIZONTAL DEPLOYMENT

- The InvisiLight® MDU Point of Entry Module offers a discrete solution using field termination inside the module;
- Virtually invisible installation using the InvisiLight 12F pre-terminated 2.0mm cord

INSIDE THE LIVING UNIT OR OFFICE

- InvisiLight ILU Solution is complementary and connects to the InvisiLight MDU installation;
- InvisiLight ILU Solution is installed with the same tools and procedure as the InvisiLight MDU Solution

IN THE HALLWAY

IN THE LIVING UNIT OR OFFICE

InvisiLight 4F/8F/12F/16F 2.0mm cord

SCA

V-Linx Terminal

MPO

SCA

Point of Entry

InvisiLight ILU Solutions

FLOOR(S)

64F AccuFlex™ Ribbon Cable

V-Linx Combiner

MPO

InvisiLight 900 μm Fiber

SCA

EZ-Bend® 2.0 mm or 3.0mm

MPO

BASEMENT

SlimBox 24-Fiber Terminal
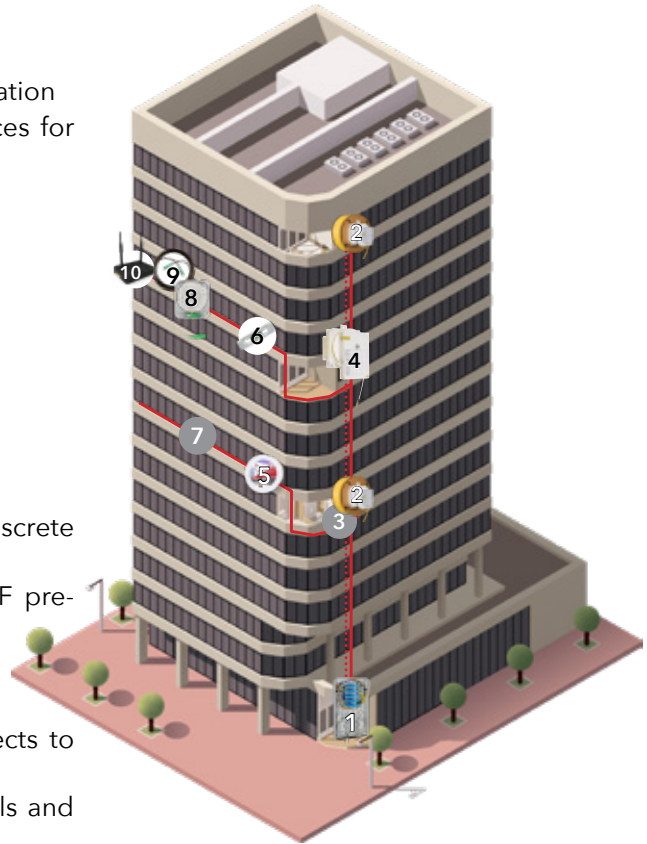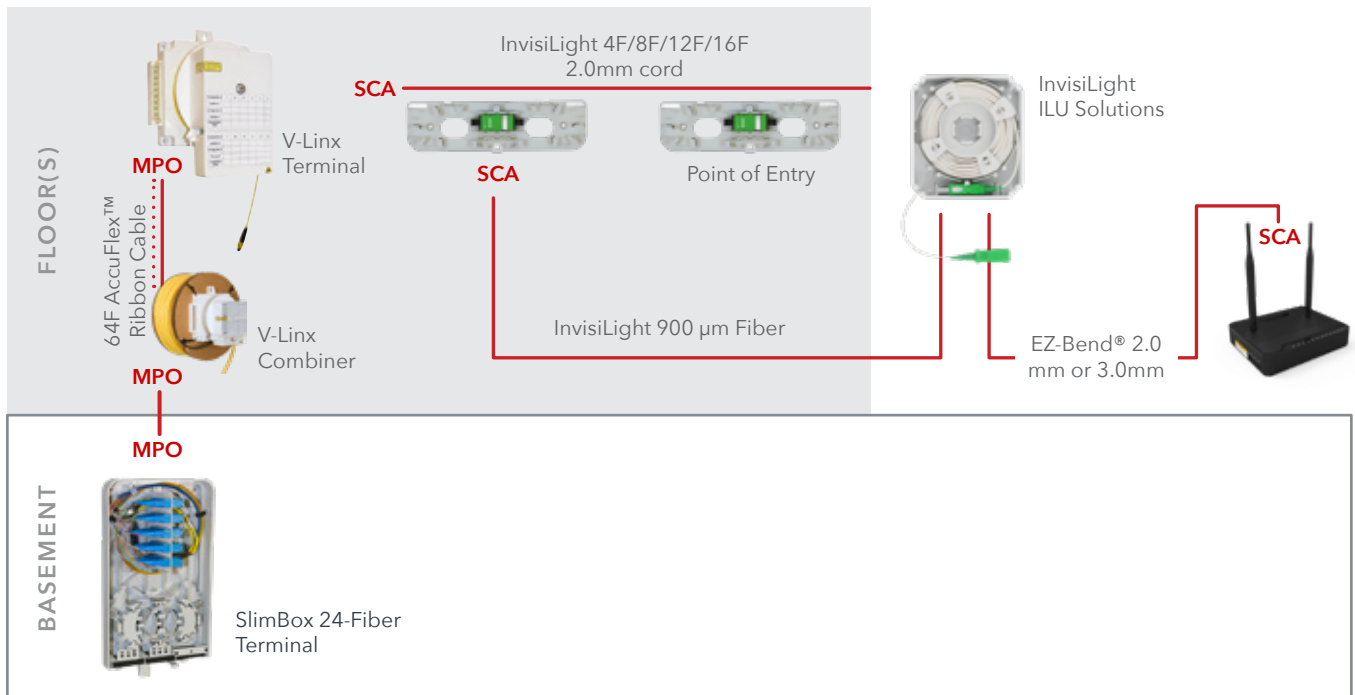
EZ-Bend® Ruggedized Cables and Cable Assemblies

EZ-Bend Jumpers

EZ-Bend Ruggedized Jumpers utilize best in class EZ-Bend 2.5 mm bend radius rated fiber, in a robust cord than can withstand sharp corners and up to 100 lbs (45 KG) of pulling tension. With factory tuned and tested termination, and no bend loss issues, they help save time and money on installation. Their innovative design can be stapled around sharp corners and moldings, and provides an ideal solution for MDU and in-home wiring applications.

FEATURES AND BENEFITS

- Available in 4.8mm diameter cordage as indoor/outdoor, indoor/outdoor toneable riser, plenum, or low-smoke, zero-halogen construction

- Available in 3.0mm diameter cordage as indoor/outdoor, riser construction

- **Faster, easier installation:** no extra steps to install bend limiters, conduits, or raceways. Class leading 2.5mm bend radius SM fiber.

- **Better bending than competing products:** both the EZ-Bend 4.8mm and 3.0mm cable can be stapled around sharp corners

nnn Feet
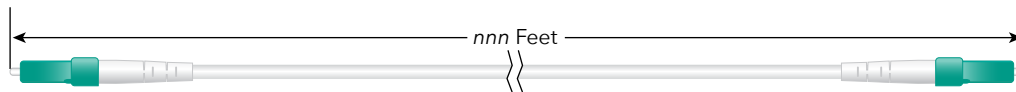
Example Ordering Codes	
Code	**Description**
JR5DK001SCASCA*nnn*F	EZ-Bend 4.8 mm Riser Indoor/Outdoor Single Fiber SCA to SCA
JR5DK001SCAUNC*nnn*F	EZ-Bend 4.8 mm Riser Indoor/Outdoor Single Fiber SCA to Unconnectorized
JH5DK001SCAUNC*nnn*F	EZ-Bend 4.8 mm Low Hallogen Black Indoor/Outdoor Black Single Fiber SCA to Unconnectorized
JR4DW001SCASCA*nnn*F	EZ-Bend 4.8 mm Riser White Single Fiber SCA to SCA
JR4DW001SCAUNC*nnn*F	EZ-Bend 4.8 mm Riser White Single Fiber SCA to Unconnectorized
JP4DW001SCAUNC*nnn*F	EZ-Bend 4.8 mm Plenum White Single Fiber SCA to Unconnectorized
JH4DW001SCAUNC*nnn*F	EZ-Bend 4.8 mm Low Halogen White Single Fiber SCA to Unconnectorized
JRVDW001SCASCA*nnn*F	EZ-Bend 3.0 mm Ruggedized Riser White Single Fiber SCA to SCA
JRVDW001SCAUNC*nnn*F	EZ-Bend 3.0 mm Ruggedized Riser White Single Fiber SCA to Unconnectorized

* NOTES: nnn = footage (Length in boxes up to 1,500 feet)
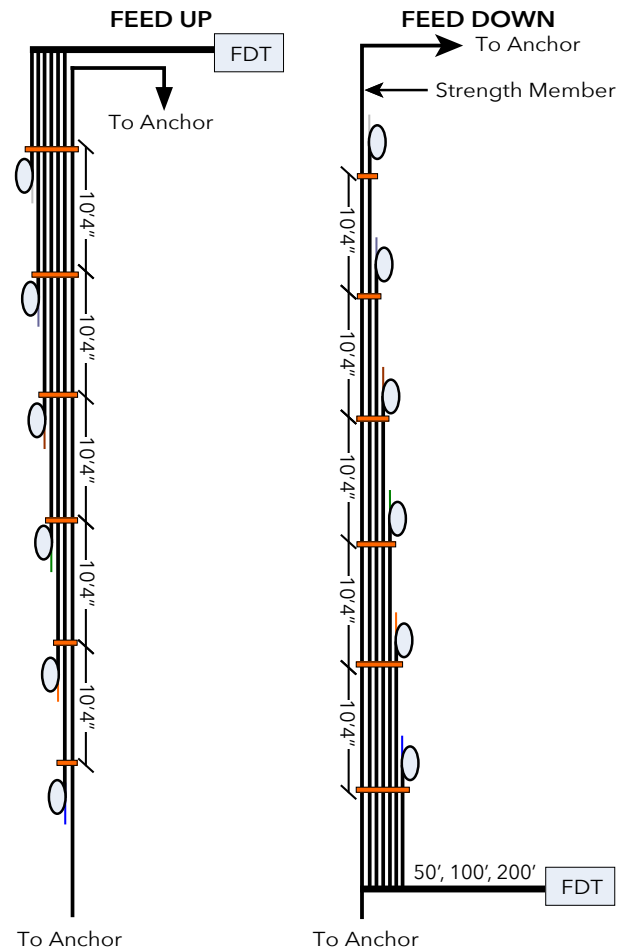Length of jumper specified in feet (F) or meters (M)

Standard Packaging	
Lengths up to 150'	Coiled in bag
Lengths greater than 150'	Compact spool

EZ-Bend® Multifiber Drop Bundles

FEATURES AND BENEFITS

- Same best in class performance and benefits as EZ-Bend Cables and Assemblies

- Additional time savings by pulling 5, 6 or 12 assemblies at one time

- Ruggedized 4.8mm Indoor/Outdoor cable with EZ-Bend Ultra-Bend Insensitive Fiber

- Bundles of up to 12 cables are placed on the outside of the building with coils located at each living unit

- The network end of the bundle is spliced at the Fiber Distribution Terminal (FDT)

- To activate service, the connectorized end is pushed into the living and plugged into the ONT

FEED UP

FDT

To Anchor

10'4"

To Anchor

FEED DOWN

To Anchor

Strength Member

10'4"

50', 100', 200'

FDT

To Anchor

Ordering Information		
Part Number	**Product Code**	**Material Description**
301016762	Drop Bundle 6 Up Blk 4.8 EZ-Bend I/O 100 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 06 cables - Feed up method - 100 ft
301016770	Drop Bundle 6 Up Blk 4.8 EZ-Bend I/O 150 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 06 cables - Feed up method - 150 ft
301016804	Drop Bundle 6 Down Blk 4.8 EZ-Bend I/O 100 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 06 cables - Feed down method - 100 ft
301016812	Drop Bundle 6 Down Blk 4.8 EZ-Bend I/O 150 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 06 cables - Feed down method - 150 ft
301030169	Drop Bundle 12 Up 4.8 Blk 4.8 EZ-Bend I/O 100 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 12 cables - Feed up method - 100 ft
301030177	Drop Bundle 12 Up 4.8 Blk EZ-Bend I/O 150 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 12 cables - Feed up method - 150 ft
301030201	Drop Bundle 12 Down 4.8 Blk EZ-Bend I/O 100 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 12 cables - Feed down method - 100 ft
301030219	Drop Bundle 12 Down 4.8 Blk EZ-Bend I/O 150 ft	EZ-Bend 4.8mm Riser Indoor/Outdoor Cable 12 cables - Feed down method - 150 ft

EZ-Bend® Cable
(Reel-in-a-Box)

FEATURES AND BENEFITS

- EZ-Bend cables can be easily pulled out of the box and placed
- Easier to transport and use than standard fiber reel packages
- Helps save time and money on installation, equipment, setup and storage
- Provides greater cable protection
- Design prevents cable from spinning over the reel flange
- Helps eliminate cable twisting and tangling
- Enables fast cable placement and pulling

- Supports multiple simultaneous cable pulls
- Direct cable access through the box top for easy management of excess cable
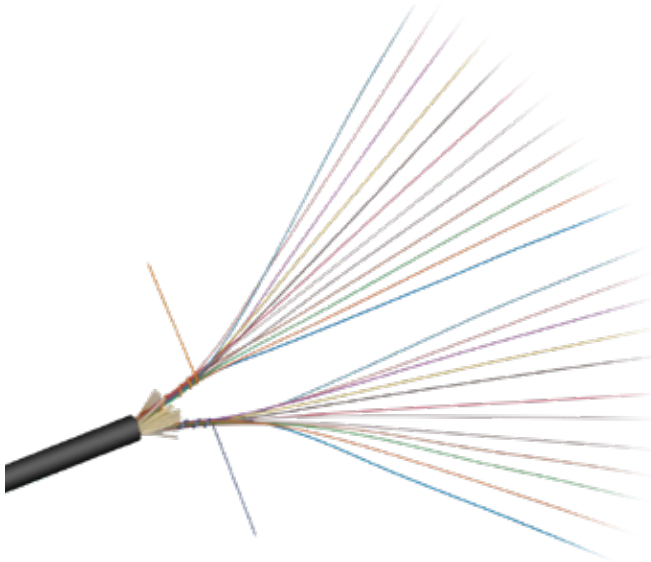- Outdoor version for underground applications

PRODUCT DESCRIPTION

The OFS Reel-in-a-Box Cabling Solution offers installers lightweight, easy-to-use cable packaging for true "out of the box" disbursement of fiber optic cable. This readily recyclable cable package helps save time and money on set up and installation.

Ordering Information		
Part Number	Product Code	Material Description
PR1-001-346-0273	IR30-001C-DRK-4-WPVC-RIB-1500FT	EZ-Bend 3.0mm Riser Cable - Black - RIB - 1500FT
PR1-001-347-0273	IR30-001C-DRW-4-WPVC-RIB-1500FT	EZ-Bend 3.0mm Riser Cable - White - RIB - 1500FT
PR1-001-229-0273	IR30-001C-DRK-4-WPVC-RIB-4500FT	EZ-Bend 3.0mm Riser Cable - Black - RIB - 4500FT
PR1-001-579-0273	IR30-001C-DRW-4-WPVC-RIB-4500FT	EZ-Bend 3.0mm Riser Cable - White - RIB - 4500FT
PR1-001-348-0273	IO48-001D-DRK-4-WPVC-RIB-1500FT	EZ-Bend 4.8mm Riser and Indoor/Outdoor Cable - Black - RIB - 1500FT
PR1-001-349-0273	IO48-001D-DRW-4-WPVC-RIB-1500FT	EZ-Bend 4.8mm Riser and Indoor/Outdoor Cable - White - RIB - 1500FT
PR1-001-225-0273	IT48-001A-DRO-4-WPVC-RIB-1300FT	EZ-Bend 4.8mm Toneable Cable - Black - RIB - 1300FT
PR1-001-227-0273	IT48-001A-DRK-4-WPVC-RIB-1300FT	EZ-Bend 4.8mm Toneable Cable - White - RIB - 1300FT

M-Pack Indoor/Outdoor MDU Drop Cable

Enhanced for Fiber-to-the-Subscriber (FTTx) and Multiple Dwelling Unit (MDU) Applications

PRODUCT DESCRIPTION

The M-Pack Indoor/Outdoor (I/O) MDU Drop Cable's enhanced, plenum-rated design, water-blocking properties and UV-resistant jacket combine to create a cable that allows an outdoor cable route to pass directly into MDU or Individual Living Unit (ILU) plenum spaces to speed routing and installation. This compact, lightweight cable is an excellent choice for FTTx MDU installations and is offered with a black or white jacket to blend with existing decors.

FEATURES

- EZ-Bend® Ultra-Bend Insensitive Fiber for tight bend routing without concern for attenuation loss

- Compact and lightweight with 12 fibers in a 3.0mm cable or 24 fibers in a 3.8mm cable

- Meets the Indoor/Outdoor requirements of MDU FTTx Application (ICEA-S-730 TPR-9424)

- Plenum rated for MDU spaces; rated for indoor/outdoor use

BENEFITS

- Small outer diameter for more efficient duct utilization

- Allows direct routing from building exterior into living areas

- Easy deployment and termination

- "Staple-ready" cable for easier routing and high compressive load resistance

- Versatile cable design for a wide range of applications

Ordering Information

Example: **MO30-012B-DPK-4**[1]

Part Number: **MO**_NN_ - _NNN_ _C_ - _W_ _X_ _Y_ - _Z_

MO =	M-Pack Indoor/Outdoor MDU Drop Cable
NN =	Cable Size **30** = 3.0 mm M-Pack Cable (4-12 Fibers) **38** = 3.8 mm M-Pack Cable (16 and 24 Fibers)
NNN =	Fiber Count 001, 004, 006, 008, 012, 016 & 024
C =	Cable Version **B** = Plenum **A** = LSZH
W =	Fiber Type (see chart to the left) **D** = EZ-Bend® Ultra Bend Insensitive Optical Fiber (G.657.B3)
X =	Jacket Material (Flame Retardant) **P** = Plenum **H** = LSZH
Y =	Jacket Color **K** = Black **W** = White
Z =	Maximum Cable Attenuation (MCA) **4** = 0.4/0.3 dB/km @ 1310/1550 nm

[1] Part Number shown is for an M-Pack Indoor/Outdoor MDU Drop Plenum-Rated Cable with 12 EZ-Bend Ultra-Bend Insensitive Fibers and standard cable print.
OFS M-PACK® EZ-BEND® G.657.B3 OPTICAL CABLE –C- MO30-012B-DPK-4 9/125 OFNP-FT6 C(UL) OFNP {MM/YY} {Lot No} {LENGTH IN FEET}

[2] Contact OFS Order Management for information on other cable variations including additional fiber types, attenuation and custom cable print.

InvisiLight® Solutions

Virtually Invisible within the MDU and ILU

Fiber-to-the-Home (FTTH) and Fiber-to-the-Business (FTTB) deployment is accelerating globally, offering ultra-high speed Gigabit service to consumers. The OFS InvisiLight Optical Solution, launched in 2012, is a revolutionary system that enables fast, easy-to-install and almost invisible fiber drop connection within the indoor living unit (ILU) or businesses for fiber-to-the-desk (FTTD) services. OFS' EZ-Bend® Optical Fiber enables worry-free bending around the many tight corners typically found inside buildings and rooms. These optical fibers surpass the G.657.B3 technical standard, with a 2.5 mm bend radius, helping to ensure reliable, ultra-high-speed Internet and services.

The InvisiLight Optical Solution is available in a multiple fiber version for multi-dwelling unit (MDU) hallway and riser applications. Leveraging this same proven technology, the InvisiLight MDU Solution helps make optical fiber easily available to each building tenant. InvisiLight solutions can help accelerate the adoption of fiber optic services in residential or business premises by differentiating indoor fiber deployment from traditional methods. In this way, the InvisiLight Solutions can help to significantly improve the consumer experience while lowering costs and speeding installation. These benefits result in higher subscriber acceptance and take rates, higher profitability and faster time-to-revenue for service providers.

ADVANTAGES

- Easy, quick install
- Simple and flexible versus traditional methods
- Paintable and blends into decor
- EZ-Bend fiber enables virtually unlimited number of bends
- No nails, staples or sawing
- Attaches to typical indoor surfaces
- Reliable and protected by its proximity
- Easy to reposition or remove

InvisiLight Wall Module

SlimBox 12-Fiber Wall Mount Module

InvisiLight Point of Entry Module

Product Specifications	InvisiLight® ILU Solution	InvisiLight MDU Solution
Size	• One 900 or 600 µm EZ-Bend Optical Fiber • 10X smaller than 2.9 mm cordage • 5 to 20X smaller than tape-based cables	• 2-12 250 µm EZ-Bend Optical Fibers in a 2 mm cord; 16 fibers in 2.3 mm cord • 15X smaller than tape-based cables
Application	Indoor living unit (home or flat)	Building/MDU hallways or risers if in OFNR (or equivalent national standard) duct
Install Process	Quick, simple and low-cost installation process to adhere fiber to wall or ceiling surfaces	
Install Tools	Adhesive applicator tool for quick installation; through-wall application tool; and optical extender tool to apply adhesive without a ladder	
Install Materials	• adhesive (in tubes) with precision pre-cut tip (fits in applicator tool) • Inside and outside corner protectors, wall plugs and caps • Indoor unit surface-mounted wall module	• adhesive (in tubes) with precision pre-cut tip (fits in applicator tool) • Inside and outside corner protectors, wall plugs and caps • Mechanical connector or pigtail • POE wall module outside tenant unit
Connectors	• Plug-and-play, factory-terminated connectors	• Factory-terminated connectors for closet • Mechanical connectors or splice pigtails for point-of-entry
Surface Mounting	Adheres to most common types of painted and unpainted indoor wall, molding and ceiling surfaces	
Aesthetics	• Minimal disruption to owners or tenants • Virtually invisible and blends into the decor • Can be caulked and painted with latex and oil-based indoor paint • Can be repositioned or removed and reapplied if required without damage • Easily installed around corners, obstacles and on textured surfaces • Safe and naturally protected in crevices	
Corners	Supports maximum 30 outside corners and 30 inside corners*	Supports maximum 40 outside corners and no limit on inside corners*
Spool Lengths	Available in various spool lengths	
Slack Management	Built-in auto-slack manager	POE module has storage space for slack
Install Conditions	• Temperature ≥ 50 °F (≥10 °C) for adhesive installation • No humidity restriction or preconditioning required	
Operating Conditions	14 °F to 140 °F (-10 °C to 60 °C)	
Safety	Does not require entry into single-family home attics	Does not require entry into MDU attics
Standards	UL-1651 compliant fiber and adhesive	InvisiLight Multifiber Cord: OFNR/FT4 For in-between floors, in risers or through fire walls, it may be placed inside OFNR-rated conduits or ducts
Environmental	Environmentally friendly, free of heavy metals, RoHS compliant and not hazardous to human touch. Minimal scrap/waste remains after installation process is complete.	

* See InvisiLight Optical Solutions Data Sheet for further guidance

InvisiLight® Solutions
Virtually Invisible and Accepted by Customers

1 Install wall module.

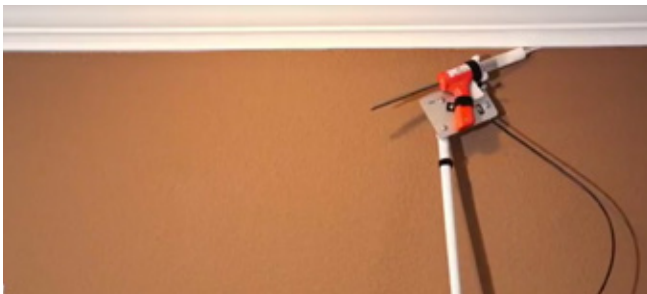**2** Plan installation path.

Room Survey

3 Apply corner protectors.

4 Spool out InvisiLight® Fiber.

5 Apply adhesive.

6 Secure InvisiLight Fiber.
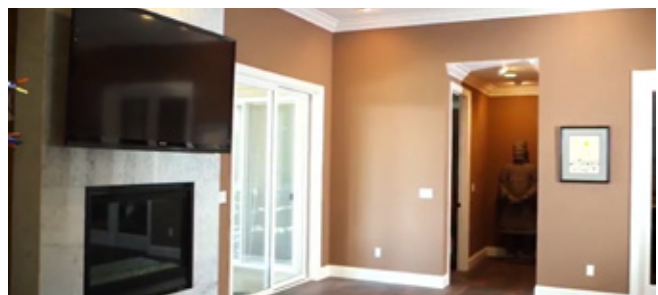
Press InvisiLight Fiber into Adhesive

7 Close cover.

"NOT SEEING IS BELIEVING"

The InvisiLight ILU Solution is offered as a complete kit consisting of:

A wall-mounted interconnection module;

A spool that spins EZ-Bend® Optical Fiber (terminated with SC-APC connectors)
out of the module to the exact length needed and manages slack;

6 corner protectors, 4 wall plugs and caps and one through-wall placement tool

Adhesive (in tubes)

80x80 Module

CHECK OUT OUR INSTALLATION VIDEO
https://youtu.be/bwdfNYm_sPw

Plugs and Caps

Corner Protectors

Adhesive Dispensing Tool and
Adhesive (in tube)

InvisiLight® ILU Solutions
InvisiLight 80x80 Wall Module

PRODUCT DESCRIPTION

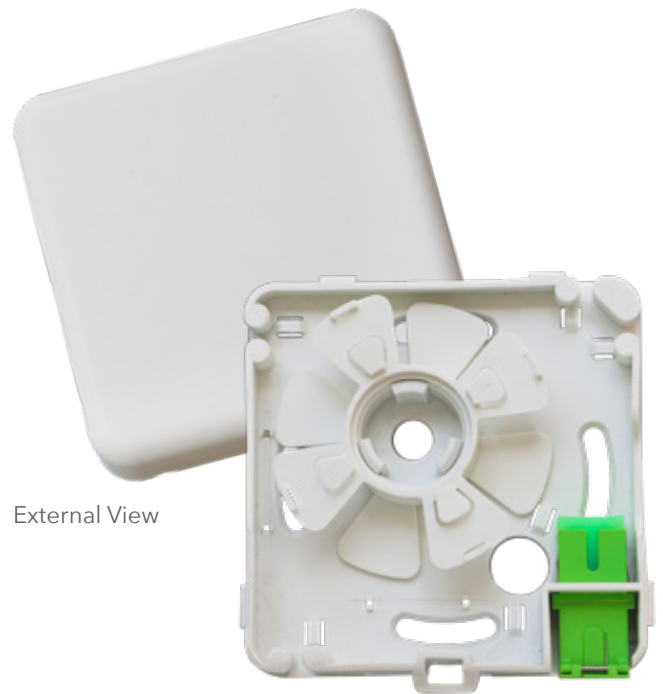The InvisiLight 80x80 Wall Module is provided with an SC APC external shuttered adapter. There are two ports of entry at the bottom of the module. The InvisiLight Fiber exits on the left-hand side and the patch cord is attached to the shuttered adapter on the right-hand side of the module. The SC APC shuttered simplex adapter snaps into the designated adapter port with the shutter on the outside and the hinged shutter to the top of the adapter port. The shutter provides dust protection when the patch cord is not engaged. The removable flanges allow longer lengths on the spool but must be removed prior to inserting the spool into the module.

Dimensions: 3.15" W x 3.15" H x .807" D

External View

FEATURES AND BENEFITS

- Houses the compact InvisiLight spool which holds 900 micron EZ-Bend InvisiLight fiber with SCA connectors factory terminated and tested

- Disposable flanges allows up to 40 m to be dispensed while storing <10 m of fiber

- Standardized spool drum design enhances compatibility with other or larger wall mount modules

- Color-coded adapters provide easy fiber identification: SCA is simplex SC APC (green)

- Patented design in compact package

- RoHS-compliant, free from heavy metals and environmentally friendly

- IEC 60529 IP20, RoHS

Open with Spool

Ordering Information		
Part No.	Product Code	Material Description
301147609	NVSLGHTC-D-SASSAS-80X80 KIT-600UM-20M-EA	InvisiLight 600 µm fiber 80 X 80 20 meter spool, module with SC APC short boot connectors on both ends and an SC APC adapter.
301153250	NVSLGHTC-D-SASSAS-80X80 KIT-600UM-25M-EA	InvisiLight 600 µm fiber 80 X 80 25 meter, module with SC APC short boot connectors on both ends and an SC APC adapter
301147617	NVSLGHTC-D-SASSAS-80X80 KIT-600UM-30M-EA	InvisiLight 600 µm fiber 80 X 80 30 meter spool, module with SC APC short boot connectors on both ends and an SC APC adapter.
301147625	NVSLGHTC-D-SASSAS-80X80 KIT-600UM-40M-EA	InvisiLight 600 µm fiber 80 X 80 40 meter spool, module with SC APC short boot connectors on both ends and an SC APC adapter.
301117271	NVSLGHTC-D-SCASCA-80x80 KIT-20M-EA	Connectorized 20-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301117289	NVSLGHTC-D-SCASCA-80x80 KIT-30M-EA	Connectorized 30-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301117297	NVSLGHTC-D-SCASCA-80x80 KIT-40M-EA	Connectorized 40-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
Other InvisiLight Accessories		
301079117	NVSLGHTC-TUBE, 30ML ADHESIVE 025/PK	25-pack of adhesive (in tubes) and application tips
301079125	NVSLGHTC-TUBE, 30ML ADHESIVE 050/PK	50-pack of adhesive (in tubes) and application tips
301079133	NVSLGHTC-TUBE, 30ML ADHESIVE 100/PK	100-pack of adhesive (in tubes) and application tips
301079109	NVSLGHTC-MINI DISPENSING TOOL	Dispensing tool for adhesive application
301143202	NVSLGHTC-CORDGUIDE TOOL W/ EXTENDER 2 FT	InvisiLight pole extension tool

InvisiLight® Wall Module
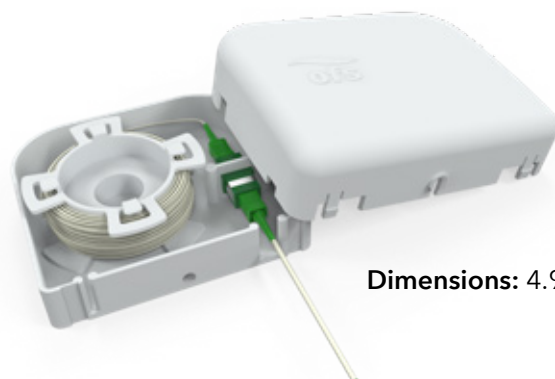
Dimensions: 4.96" W x 4.53" H x 1.41" D

Same Features and Benefits as the InvisiLight 80x80 Wall Module.

Ordering Information		
Part No.	**Product Code**	**Material Description**
301099115	NVSLGHTC-D-SCASCA-MODULE KIT-20M-EA	Connectorized 20-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301099123	NVSLGHTC-D-SCASCA-MODULE KIT-30M-EA	Connectorized 30-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301099131	NVSLGHTC-D-SCASCA-MODULE KIT-40M-EA	Connectorized 40-meter spool, six (6) inside and outside corner protectors, module e/w adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301106654	NVSLGHTC-D-LCULCU-MODULE KIT-30M-EA	Connectorized 30-meter spool, six (6) inside and outside corner protectors, module e/w LC adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
301106662	NVSLGHTC-D-LCULCU-MODULE KIT-40M-EA	Connectorized 40-meter spool, six (6) inside and outside corner protectors, module e/w LC adapter, four (4) wall plugs and caps, one (1) through-wall tool and instructions
Other InvisiLight Accessories		
301079117	NVSLGHTC-TUBE, 30ML ADHESIVE 025/PK	25-pack of adhesive (in tubes) and application tips
301079125	NVSLGHTC-TUBE, 30ML ADHESIVE 050/PK	50-pack of adhesive (in tubes) and application tips
301079133	NVSLGHTC-TUBE, 30ML ADHESIVE 100/PK	100-pack of adhesive (in tubes) and application tips
301079109	NVSLGHTC-MINI DISPENSING TOOL	Dispensing tool for adhesive application
301115671	NVSLGHTC-POLE EXTENSION TOOL	InvisiLight pole extension tool

InvisiLight® EZ-Connect Module

Open with Spool
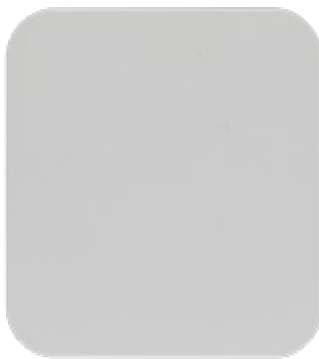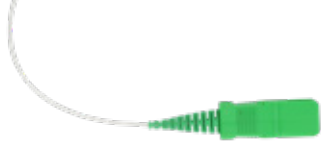
External View

PRODUCT DESCRIPTION

The InvisiLight EZ-Connect Module is provided with an integrated jumper to connect to the ONT. This jumper is available in two versions: 2 mm or 3 mm Outside Diameter with 2.5 and 1.5 meter lengths respectively. The InvisiLight tight buffer optical fiber exits on one of the four module corners. The module has an internal parking space for the inside SC connector end. The internal spool allows slack management of the tight buffer and jumper and may be locked in order to spool out by hand the desired length of jumper. The bottom layer of the spool supports up to 40 meters of InvisiLight tight buffer optical fiber.

FEATURES AND BENEFITS

- Handles 900 µm InvisiLight Optical Fiber and the slack management for tight buffer optical fiber and the ONT jumper

- Wall mounted compact module

- Allows up to 40 meters to be dispensed on the bottom layer and up to 2.5 meters of 2 mm cord on the top spool layer (up to 1.5 meters considering a 3 mm cord)

- Spool locking system to facilitate the jumper spooling out

- RoHS-compliant; free from heavy metals and environmentally friendly

Ordering Information for InvisiLight EZ-Connect Module		
Part No.	Product Code	Material Description
301141818	NVSLGHTD-D-SCASCA-1-NAM-KIT 900-5.0M/40M	EZ-Connect module with 5.0 meters of 900 µm fiber on the top layer and 40 meters of 900 µm fiber on the bottom layer; pre-connectorized both ends with SCA connectors
301141826	NVSLGHTD-D-SCASCA-1-NAM-KIT 2MM-2.5M/40M	EZ-Connect module with 2.5 meters of 2.0 mm fiber on the top layer and 40 meters of 900 µm fiber on the bottom layer; pre-connectorized both eneds with SCA connectors
301141834	NVSLGHTD-D-SCASCA-1-NAM-KIT 3MM-1.5M/40M	EZ-Connect module with 1.5 meters of 3.0 mm fiber on the top layer and 40 meters of 900 µm fiber on the bottom layer; pre-connectorized both ends with SCA connectors
30115092	NVSLGHTD-D-LCSLCS-2-NAM-1.0M/20M	EZ-Connect module with 1.0 meter of 2.0 mm fiber on the top layer and 20 meters of 900 µm fiber on the bottom layer; preconnectorized both ends with LCU connectors

InvisiLight® MDU Solutions

InvisiLight Compact Point-of-Entry (POE) Module

Dimensions: 6.0" W x 1.6" H x 0.625" D

PRODUCT DESCRIPTION

The Compact Point-of-Entry (POE) Module serves as the transition point between the building hallway and the office or living unit. Following an installation survey, the installer mounts this module on the exterior wall of each living unit or office. A fusion-spliced pigtail or mechanical connector connects the InvisiLight Multifiber Cord to the plug-and-play InvisiLight Indoor Living Unit (ILU) Solution. The Compact POE Module is part of the InvisiLight Multiple Dwelling Unit (MDU) Solution.

FEATURES AND BENEFITS

- Allows termination of fiber in the InvisiLight Multifiber Cord through direct connectorization or splicing (fusion or mechanical) to optical extensions (pigtails) of two optical fibers
- Accommodates one internal SC-A optical adapter
- Access points in each side allows cable access from the top of the module
- InvisiLight ILU or jumper output occurs from the base of the module through two access points
- The multi-position adapter support allows the adapter to be housed in three different positions

Ordering Information for Compact POE Module		
Part No.	Product Code	Material Description
301123998	NVSLGHTHI-COMPACT-MODULE W/LCA ADAPTER	Module, with LC APC adapter for use with the InvisiLight Multifiber Cord
301124004	NVSLGHTHI-COMPACT-MODULE W/SCA ADAPTER	Module, with SC APC adapter for use with the InvisiLight Multifiber Cord
Compact POE Module (UV-Rated for Breezeway Applications)		
301145751	NVSLGHTHO-CMODULE-GRAY-W/ SCA ADAPTER	Compact Point-of-Entry (POE) Module, Indoor/outdoor, gray, SCA
301152880	NVSLGHTHO-CMODULE-GRAY-W/ LCA ADAPTER	Compact Point-of-Entry (POE) Module, Indoor/outdoor, gray, LCA

InvisiLight® Standard Point-of-Entry (POE) Module

Dimensions: 5.25" W x 2.5" H x 0.77" D

Ordering Information for Standard POE Module		
301107447	NVSLGHTH-MODULE E/W LCA ADAPTER	Additional point-of-entry (POE) module with LC-APC adapter
301107454	NVSLGHTH-MODULE E/W SCA ADAPTER	Additional point-of-entry (POE) module with SC-APC adapter
301107462	NVSLGHTH-MODULE E/W SPLICE TRAY	Additional point-of-entry (POE) module with splice tray

InvisiLight® MDU Solutions
InvisiLight 4/8/12/16-Fiber

PRODUCT DESCRIPTION

- Four fiber count cords are available:
  - Four (4), eight (8), and twelve (12) color-coded optical fibers, within a 2 mm outer diameter (OD) sheath
  - Sixteen (16) color-coded optical fibers, within a 2.3 mm outer diameter (OD) sheath
- EZ-Bend® Optical Fiber, compliant with G.657. B3; fully splice compatible with outstanding macrobending performance (1 turn at 1550 nm):
  - <0.1 dB loss at 5 mm bend radius
  - <0.2 dB loss at 2.5 mm bend radius
- Capable of supporting a maximum of 40 outside corners with no limit on inside corners
- Field termination required at the living unit (field-installable connector or pigtail splice)
- Must be installed in riser-rated conduit in risers, in-between floors, through firewalls or when not adhered to a supporting surface

STANDARDS AND TESTING

- Meets Telcordia GR-326 and GR-1435 standards
- The InvisiLight Multifiber cord is OFNG-FT4, OFNR-LS, and UL 1666 OFSNR-LS
- RoHS compliant; free from heavy metals and environmentally friendly; nonhazardous to human touch and creates negligible waste
- Fully tested for compatibility with most wall and ceiling materials; easily painted with both latex and oil-based paints

INVISILIGHT ADHESIVE

- Opaque color during application; turns clear after approximately 1 hour
- **Set Time:** 15 minutes
  Tack-Free Time: 45 minutes
  Full Cure Time: 24 hours depending on temperature, humidity, and thickness of adhesive
- Long term storage is best at room temperature. Keep the adhesive tubes from freezing and below at +38 °C
  Operating Temperature Cured: -40 °C to 60+ °C
  Installation Temperature: ≥ +10 °C

Ordering Information for InvisiLight 4/8/12/16-Fiber		
Part Number	Product Code	Description
InvisiLight MDU Solution Kits (4-Fiber)		
301140612	NVSLGHTHI-D-UNCUNC-CMODUL KIT-04-100M EA	Unconnectorized 4-fiber InvisiLight Multifiber Unit, 100 meters, 4 compact point-of-entry (POE) modules and components
301140620	NVSLGHTHI-D-UNCUNC-CMODUL KIT-04-300M EA	Unconnectorized 4-fiber InvisiLight Multifiber Unit, 300 meters, 4 compact point-of-entry (POE) modules and components
301140562	NVSLGHTHI-D-SASUNC-CMODUL KIT-04-100M EA	SC-APC connectorized (one end) 4-fiber InvisiLight Multifiber Unit, 100 meters, 4 compact point-of-entry (POE) modules and components
301140554	NVSLGHTHI-D-SASUNC-CMODUL KIT-04-300M EA	SC-APC connectorized (one end) 4-fiber InvisiLight Multifiber Unit, 300 meters, 4 compact point-of-entry (POE) modules and components

InvisiLight® 4/8/12/16-Fiber *Continued*

Part Number	Product Code	Description
Ordering Information for InvisiLight 4/8/12/16-Fiber *Continued*		
InvisiLight MDU Solution Kits (8-Fiber)		
301140638	NVSLGHTHI-D-UNCUNC-CMODUL KIT-08-100M EA	Unconnectorized 8-fiber InvisiLight Multifiber Unit, 100 meters, 8 compact point-of-entry (POE) modules and components
301140646	NVSLGHTHI-D-UNCUNC-CMODUL KIT-08-300M EA	Unconnectorized 8-fiber InvisiLight Multifiber Unit, 300 meters, 8 compact point-of-entry (POE) modules and components
301140570	NVSLGHTHI-D-SASUNC-CMODUL KIT-08-100M EA	SC-APC connectorized (one end) 8-fiber InvisiLight Multifiber Unit, 100 meters, 8 compact point-of-entry (POE) modules and components
301140588	NVSLGHTHI-D-SASUNC-CMODUL KIT-08-300M EA	SC-APC connectorized (one end) 8-fiber InvisiLight Multifiber Unit, 300 meters, 8 compact point-of-entry (POE) modules and components
InvisiLight MDU Solution Kits (12-Fiber)		
301117149	NVSLGHTHI-D-SCAUNC-Module Kit-12-100M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, 12 point-of-entry (POE) modules and components
301139408	NVSLGHTHI-D-SCAUNC-MODULE KIT-12-200M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 200 meters, 12 point-of-entry (Large POE) modules and components
301117156	NVSLGHTHI-D-SCAUNC-Module Kit-12-300M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point-of-entry (POE) modules and components
301117180	NVSLGHTHI-D-MTFUNC-Module Kit-12-100M-EA	MPO (Ribbon) connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117198	NVSLGHTHI-D-MTFUNC-Module Kit-12-300M-EA	MPO (Ribbon) connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point-of-entry (POE) modules and components
301117164	NVSLGHTHI-D-LCAUNC-Module Kit-12-100M-EA	LC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117172	NVSLGHTHI-D-LCAUNC-Module Kit-12-300M-EA	LC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point-of-entry (POE) modules and components
301117123	NVSLGHTHI-D-UNCUNC-Module Kit-12-100M-EA	Unconnectorized 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117131	NVSLGHTHI-D-UNCUNC-Module Kit-12-300M-EA	Unconnectorized 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point of entry (POE) modules and components
301127007	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-100M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, 12 compact point-of-entry (POE) modules and components
301126942	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-200M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 200 meters, 12 compact point-of-entry (POE) modules and components
301133617	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-300M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, 12 compact point-of-entry (POE) modules and components
InvisiLight MDU Solution Kits (16-Fiber)		
301140653	NVSLGHTHI-D-UNCUNC-CMODUL KIT-16-100M EA	Unconnectorized 16-fiber InvisiLight Multifiber Unit, 100 meters, 16 compact point-of-entry (POE) modules and components
301140661	NVSLGHTHI-D-UNCUNC-CMODUL KIT-16-300M EA	Unconnectorized 16-fiber InvisiLight Multifiber Unit, 300 meters, 16 compact point-of-entry (POE) modules and components
301140596	NVSLGHTHI-D-SASUNC-CMODUL KIT-16-100M EA	SC-APC connectorized (one end) 16-fiber InvisiLight Multifiber Unit, 100 meters, 16 compact point-of-entry (POE) modules and components
301140604	NVSLGHTHI-D-SASUNC-CMODUL KIT-16-300M EA	SC-APC connectorized (one end) 16-fiber InvisiLight Multifiber Unit, 300 meters, 16 compact point-of-entry (POE) modules and components

InvisiLight® MDU Solutions
InvisiLight 12 Fiber Assembly and Complete Kits

The InvisiLight MDU Solution can be surface mounted in hallways and is virtually invisible. A compact cord housing up to sixteen 250 μm EZ-Bend® optical fibers is installed with the same process and tools used for the field-proven InvisiLight ILU Solution. This helps to ensure necessary bend radius performance needed for the many corners that can exist in MDU hallways, eases installer training, and simplifies inventory management of common tools.

FEATURES AND BENEFITS

- Compact OFNR/FT4 rated cord can be installed in riser spaces between floors and in hallways

- Pre-connectorized with MTP, SCA or LCA connectors

- Same installation tool, adhesive, and process as InvisiLight ILU Solution

- Supports fusion splicing or mechanical connector in the Point-of-Entry Module

InvisiLight® 12 Fiber Assembly and Complete Kits *Continued*

Ordering Information for Compact POE Module Kits		
Part No.	**Product Code**	**Material Description**
301127007	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-100M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, 12 compact point-of-entry (POE) modules and components
301126942	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-200M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 200 meters, 12 compact point-of-entry (POE) modules and components
301133617	NVSLGHTHI-D-SCAUNC-CMODUL KIT-12-300M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, 12 compact point-of-entry (POE) modules and components
PR1-001-506-0273	MPHW-012A-DRW-4-2.0MM-RIB-2000FT	EZ-Bend 2.0mm 12 Fiber Cord White - RIB - 2000FT

NOTE: Custom lengths available upon request.

Ordering Information for Standard POE Module Kits		
Part No.	**Product Code**	**Material Description**
301117149	NVSLGHTHI-D-SCAUNC-MODULE KIT-12-100M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, 12 point-of-entry (POE) modules and components
301117156	NVSLGHTHI-D-SCAUNC-MODULE KIT-12-300M-EA	SC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, 12 point-of-entry (POE) modules and components
301117180	NVSLGHTHI-D-MTFUNC-MODULE KIT-12-100M-EA	MPO (Ribbon) connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117198	NVSLGHTHI-D-MTFUNC-MODULE KIT-12-300M-EA	MPO (Ribbon) connectorized (one end) 12-fiber InvisiLight multifiber unit, 300 meters, includes 12 point-of-entry (POE) modules and components
301117164	NVSLGHTHI-D-LCAUNC-MODULE KIT-12-100M-EA	LC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117172	NVSLGHTHI-D-LCAUNC-MODULE KIT-12-300M-EA	LC-APC connectorized (one end) 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point-of-entry (POE) modules and components
301117123	NVSLGHTHI-D-UNCUNC-MODULE KIT-12-100M-EA	Unconnectorized 12-fiber InvisiLight Multifiber Unit, 100 meters, includes 12 point-of-entry (POE) modules and components
301117131	NVSLGHTHI-D-UNCUNC-MODULE KIT-12-300M-EA	Unconnectorized 12-fiber InvisiLight Multifiber Unit, 300 meters, includes 12 point-of-entry (POE) modules and components

NOTE: Custom kits available with various fiber counts and spool lengths.

V-Linx™ Solution
Solution Overview

The V-Linx Solution is a simple, reliable and cost-effective optical cabling system for FTTH or FTTB deployment in buildings.

FEATURES AND BENEFITS

- **Fast installation:** Fully plug-and-play system with no field termination helps to reduce required labor. Up to 50% shorter riser cable pull length for 10-story buildings, and 72% less riser cable for 30-story buildings when compared to other conventional approaches

- **Flexibility:** Solution can be easily adapted to a vatiety of building structures to meet business subscriber needs

- **Compact:** Innovative component, fiber and cable designs to optimize available space usage in various building types

- **Capital cost reduction:** No need to equip all technicians with field termination equipment or extensive training or certification

- **Reliable optical performance:** AllWave FLEX+ ZWP Bend Insensitive Fiber. Factory terminated and tested connectors. Robust cable design and materials.

The V-Linx components can be configured to support a variety of building types and applications.

Interconnects are typically used for FTTB via Ethernet, while FDHs housing splitters are commonly used for FTTH via xPON systems. The Interconnect or FDH is installed and connected to the cable(s) directly from a switch or an OSP terminal, and then to a V-Linx Terminal, Rack Mount Terminal or V-Linx Combiner. For low-to-mid-rise buildings, only V-Linx Terminals may be required and the MTP/MPO terminated riser cordage would be pulled and directly plugged into the Interconnect. To connect customers, the customer drop assemblies are pulled into place and plugged in to connect the V-Linx Terminal to the customer premise equipment (CPE).

For mid-to-high-rise buildings, V-Linx Combiners may be placed beginning on the third floor and then on every six floors thereafter. The AccuFlex™ MTP/MPO terminated cable is then unspooled from the Combiner and plugged into the Interconnect. The Combiner location should be based upon duct space availability, customer density per floor and terminal requirements. Under that scenario, a V-Linx Terminal could be placed on either each or on every other floor and MTP/MPO terminated AccuPack® Cable would be unspooled and plugged into the Combiner.
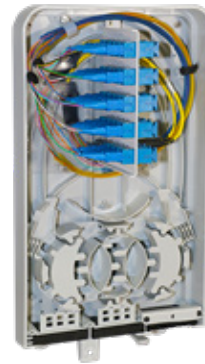

Terminal

Combiner

SlimBox 24-Fiber
Wall Mount Module

1RU Rack Mount Unit
Interconnect or Floor Terminal Option

4RU Rack Mount Unit - Interconnect Option

V-Linx™ Solution

V-Linx Combiner

The V-Linx Combiner accepts six MTP/MPO connectorized 12-fiber ends from a V-Linx Terminal and can support up to 36 duplex subscriber connections. The distribution cable is a 72-fiber AccuFlex™ + IFC Ribbon Cable that is factory connectorized and available in lengths up to 500 ft. If longer lengths are required, contact your local OFS Representative. The cable stub end will be factory terminated with six low loss MTP/MPO Connectors that will be plugged into the Interconnect.

NOTE: Products with other lengths may be ordered but are subject to availability, pricing differential and lead time.

FEATURES AND BENEFITS

- Capacity of 72-fiber terminations supporting up to 36 duplex business subscriber connections or 72 xPON connections

- AllWave *FLEX*+ ITU-T G.657.A2 Single-Mode Fiber with 7.5 mm bend radius; fully splice-compatible with existing G.652.D installed base of fibers

- Assemblies 100% factory connectorized and tested

- Male end on cable stub ends

- RoHS compliant

Performance Specifications	
Insertion Loss (maximum)	0.3 dB
Return Loss (minimum)	-65 dB for APC and -55 dB for UPC
Return Loss (nominal)	-55 dB
Mating Durability	100 reconnects
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C

Ordering Information		
Part Number	**Product Code**	**Material Description**
301105995	VLINX-COMB-W-MTFMTM-RRCP-72-050F-PE	Combiner, V-Linx 50 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end
301088761	VLINX-COMB-W-MTFMTM-RRCP-72-100F-PE	Combiner, V-Linx 100 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end
301088779	VLINX-COMB-W-MTFMTM-RRCP-72-200F-PE	Combiner, V-Linx 200 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end
301088795	VLINX-COMB-W-MTFMTM-RRCP-72-300F-PE	Combiner, V-Linx 300 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end
301106001	VLINX-COMB-W-MTFMTM-RRCP-72-400F-PE	Combiner, V-Linx 400 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end
301106019	VLINX-COMB-W-MTFMTM-RRCP-72-500F-PE	Combiner, V-Linx 500 ft of AccuFlex Plus terminated with 06 female MTP connectors on the panel and 06 male MPO connectors for the cable end

V-Linx™ Solution
V-Linx Wall Mounted Terminal

The V-Linx Terminal integrates plenum cable, slack storage and drop terminal functionality into one compact package. Typically wall-mounted in a telecom closet, the V-Linx Terminal accepts 12 or 24 simplex connectors from the customer drop assemblies to support 6 or 12 duplex connections to businesses or 12 or 24 xPON subscribers. The terminal is shipped with up to 500 ft. of M-Pack® Backbone Cable stored on the hub of the terminal, and is terminated with 12-fiber MTP/MPO low-loss connectors on the outside end. It is available with SC or LC factory terminated and tested connectors on the back side of the subscriber-facing patch panel. The outside end of the cable can be connected to a V-Linx Combiner or EMUX Interconnect.

NOTE: Products with other lengths may be ordered, but are subject to availability, pricing differential and lead time.

V-Linx Wall Mounted Terminal
12-Count LC or SC
24-Count LC Only

Performance Specifications	
Insertion Loss (maximum)	0.3 dB
Return Loss (maximum)	-65 dB for APC and -55 dB for UPC
Mating Durability	100 reconnects
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C

FEATURES AND BENEFITS

- Capacity of 12- or 24-fiber terminations supporting up to 6 or 12 duplex business subscriber connections

- AllWave® *FLEX+* ITU-T G.657.A2 Single-Mode Fiber with 7.5 mm bend radius; fully splice-compatible with existing G.652.D installed base of fibers

- Assemblies 100% factory connectorized and tested

- Choice of SC-UPC or LC-UPC connectors

- RoHS compliant

- Available as 12- or 24-fiber terminals that are terminated with 1 or 2 low loss 12-fiber MTP/MPO connectors

| Ordering Information		
Part No.	**Product Code**	**Material Description**
301133849	VLINX-TERM-LRG-B-SCAMTM-MBIP-12-100F-PE	Terminal, V-Linx 100 ft of 12 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301133856	VLINX-TERM-LRG-B-SCAMTM-MBIP-12-200F-PE	Terminal, V-Linx 200 ft of 12 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301133864	VLINX-TERM-LRG-B-SCAMTM-MBIP-12-300F-PE	Terminal, V-Linx 300 ft of 12 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134086	VLINX-TERM-LRG-B-SCAMTM-MBIP-24-100F-PE	Terminal, V-Linx 100 ft of 24 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134094	VLINX-TERM-LRG-B-SCAMTM-MBIP-24-200F-PE	Terminal, V-Linx 200 ft of 24 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134102	VLINX-TERM-LRG-B-SCAMTM-MBIP-24-300F-PE	Terminal, V-Linx 300 ft of 24 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134326	VLINX-TERM-LRG-B-SCAMTM-MBIP-8-100F-PE	Terminal, V-Linx 100 ft of 8 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134334	VLINX-TERM-LRG-B-SCAMTM-MBIP-8-200F-PE	Terminal, V-Linx 200 ft of 8 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end
301134342	VLINX-TERM-LRG-B-SCAMTM-MBIP-8-300F-PE	Terminal, V-Linx 300 ft of 8 fiber cordage terminated with SC APC at the patch panel, male MTP on cable end

V-Linx™ Solution
V-Linx Combiner and Installation Tool
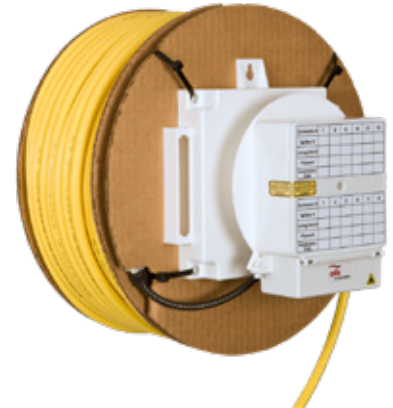
Specifications	
Number of Terminations (common)	6 MTP/MPO connectors (12 fibers per connector)
Wall Mountable	All surfaces
Color	Central Office White
Fire Rating of Plastics	UL-94, rated V-0
In-Use Temperature Rating	-5 °C to +50 °C (23 °F to 122 °F)
Storage Temperature Rating	-20 °C to +70 °C (-4 °F to +158 °F)

Standard Form Factor Sizing							
	Max Cable Length on Combiner Spool	**Spool Type**	**X** (width)	**Y** (height)	**Z** (depth)	**A** (depth)	**B** (height)
Combiner	50 ft	Sheet metal (not disposable)	7.5″	7.5″	7.0″		
Combiner Spool	300 ft	Plastic corrugated (disposable)				5.5″	16″
Combiner Pre-Terminated Reel	> 300 ≤ 500 ft	Wood (disposable)				18″	30″

The **V-Linx Installation Tool** (also known as V-Linx Spool Tool) helps enable fast and easy installation of the V-Linx Wall Mounted Terminal and the V-Linx Combiner.

Standard Form Factor Sizing		
	Material Type	**X (width)**
V-Linx Installation Tool	Sheet metal	10″

Ordering Information		
Part Number	**Product Code**	**Material Description**
301001244	VLINX-SPOOL-TOOL	V-Linx Spooling Tool

NOTE: The V-Linx Installation Tool is compatible with all versions of the V-Linx Terminal. The V-Linx Installation Tool may require a locking pin with variable length depending upon the size of the spool.

Interconnect Options
1RU Shelf

The interconnect provides an optical interconnect between the ethernet switch, router, or OSP cable and the building cabling system. It is compatible and plug-and-play ready with all V-Linx™ terminals or combiners, and requires no field termination.

The 1RU Rack Mount Interconnect Shelf is a rack mounted shelf that accepts 24 fibers from the V-Linx Terminal(s). The shelf can be mounted in a 19" or 23" frame. The patch panel on the front is equipped with SC-UPC adapters.

NOTE: The 1RU Shelf can support 2x12 or 1x24 count Terminals. Picture shown does not include pre-connectorized MTP/MPO AccuPack™ Cable.

FEATURES AND BENEFITS

- Capacity of 24 fiber terminations supporting up to 12 duplex business subscribers or 24 simplex xPON subscribers

- AllWave *FLEX*+ ITU-T G.657.A2 Single-Mode Fiber with 7.5 mm bend radius; fully splice-compatible with existing G.652.D installed base of fibers

- Assemblies 100% factory connectorized and tested

- Panel is equipped with two 12-fiber MTP/MPO to SC adapter low loss fanouts

- 4 cable entry ports with grommets in the rear of the unit

- Dimensions: 1.72" Height x 17" Width x 8" Depth

- Compact and mountable on standard 19" or 23" racks

- RoHs compliant

Optical Performance	
Insertion Loss (maximum)	0.3 dB
Return Loss (minimum)	-65 dB for APC and -55 dB for UPC
Mating Durability	100 reconnects
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C

Ordering Information		
Part Number	**Product Code**	**Material Description**
301088506	VLINX-1U S-LIU 24-MTFSCU-FO	Rack Mount, 1RU SCU Sheld for 2x12 or 1x24 V-Linx count Terminal
301119921	VLINX-1U S-LIU 24-MTFSCA-FO	Rack Mount, 1RU SCA Sheld for 2x12 or 1x24 V-Linx count Terminals

Interconnect Options
1RU Rack Mounted Shelf with Factory Terminated Cable

The Rack Mounted Pre-terminated Shelf may be used in a high rise building instead of a wall mount terminal when relay rack frameworks are available on multiple floors serivng a variety of subscribers. It is available with SC or LC Adapters (24-fiber count only), and the enclosure can be mounted in a 19" or 23" framework.

The Panel is pre-terminated with a 24-Fiber M-Pack® Backbone Cable which is held in place with grommets. The far end of the cable is terminated with two 12-fiber MTP/MPO low loss connectors and will be pulled and connected to the Interconnect.

FEATURES AND BENEFITS

- Capacity of 24 fiber terminations with 12 duplex business subscribers or 24 xPON subscribers

- AllWave® *FLEX+* ITU-T G.657.A2 Single-Mode Fiber with 7.5 mm bend radius; fully splice-compatible with existing G.652.D installed base of fibers

- Assemblies 100% factory connectorized and tested

- Can be equipped with SC-UPC, SC-APC, or LC-UPC adapters on faceplate

- 4 Cable entry ports with grommets in the rear of the unit

- Dimensions: 1.72" Height x 17" Width x 8" Depth

- RoHs compliant

OPTICAL PERFORMANCE

Insertion Loss (max): 0.7 dB
Return Loss (nominal): -55dB

Ordering Information		
Part Number	**Product Code**	**Material Description**
301134508	LPS5-B-SCUMM1-MBIP-024-1S-100F-36N/39UPE	Rack mount, pre-term 1RU panel 100 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC UPC patch end and a male MTP on cable end
301134516	LPS5-B-SCUMM1-MBIP-024-1S-200F-36N/39UPE	Rack mount, pre-term 1RU panel 200 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC UPC patch end and a male MTP on cable end
301134524	LPS5-B-SCUMM1-MBIP-024-1S-300F-36N/39UPE	Rack mount, pre-term 1RU panel 300 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC UPC patch end and a male MTP on cable end
301134565	LPS5-B-SCAMM1-MBIP-024-1S-100F-36N/39UPE	Rack mount, pre-term 1RU panel 100 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC APC patch end and a male MTP on cable end
301134573	LPS5-B-SCAMM1-MBIP-024-1S-200F-36N/39UPE	Rack mount, pre-term 1RU panel 200 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC APC patch end and a male MTP on cable end
301134581	LPS5-B-SCAMM1-MBIP-024-1S-300F-36N/39UPE	Rack mount, pre-term 1RU panel 300 ft. of 24 fiber M Pack Backbone Plenum Cable terminated with SC APC patch end and a male MTP on cable end

V-Linx™ Solution
V-Linx Fiber Distribution Hub

The V-Linx Fiber Distribution Hub (FDH) can support up to 128 living units and is designed for NEMA 12 performance. The FDH is size optimized by leveraging the very compact Direct Connect Splitter. Its flexible design supports either mass fusion splicing or rapid connection through multi-fiber push-on (MPO) terminations.

The mounting hardware is re-configurable to support a variety of wall mounting scenarios in both Greenfield and Brownfield deployments. The FDH is also designed to be installed by a single technician.

FEATURES AND BENEFITS

- Uses compact Direct Connect Splitters
- Quick provisioning of circuits with SCA connectors
- Minimal cable management from use of optimized splitter cable lengths

Specifications	
Dimensions	20" H x 18" W x 10" D
Weight (lb)	46
Terminations (OUT)	128
Color	Light Beige
Performance	
Fire Rating of Plastics	UL-94, Rated V-O
Temperature	Operation: 23 to 122 °F Storage: -4 to 158 °F
Water Rating	NEMA 12 - IP 52

Ordering Information		
Part Number	**Product Code**	**Material Description**
301134631	VLINX-FDH-W-SCSUNC-128-12YT-048-100F	Wall Mount, V-Linx FDH 128 fiber, 12-12 fiber fanouts
301134649	VLINX-FDH-W-SASUNC-128-12YT-048-100F	Wall Mount, V-Linx FDH 128 fiber, 12-12 fiber fanouts

NOTE: MTP product configuration upon request for use with the V-Linx combiner.

Interconnect Options

72-Fiber Rack Mounted Interconnect Enclosure
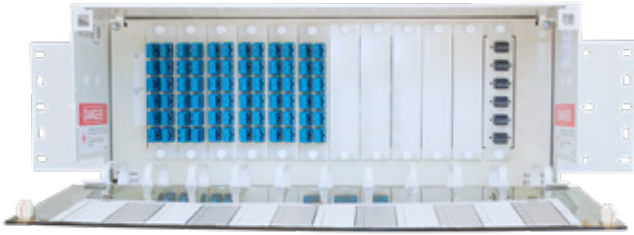
12-Position Fiber Panel (front)

The 72-fiber enclosure is a rack mounted panel which can be mounted in a 19" or 23" relay rack framework. It is equipped with six MTP/MPO fan-out connectors with SC adapters. This enclosure can accept terminated cable with MTP/MPO connectors from the V-Linx Combiner, Terminal or 1RU Rack Mounted Panel, which would terminate on the panel front to the pre-cabled MTP/MPO connectors. The SC adapters are used to run patch cords from panel front to the electronics or another fiber panel.

This enclosure supports a combination of 6 x 12, 3 x 24 or 1 x 72 count Terminals. Alternatively, it can support a 1 x 72 count V-Linx Combiner.

FEATURES AND BENEFITS

- Capacity of 72-fiber connections translating to 36 duplex customer connections

- AllWave *FLEX+* ITU-T G.657.A2 Single-Mode Fiber with 7.5 mm bend radius; fully splice-compatible with existing G.652.D installed base of fibers

- Assemblies 100% factory connectorized and tested

- Equipped with six 12-Fiber multifiber MTP/MPOs low loss fanouts with SC adapters

- Dimensions: 7" Height x 17" Width x 11.5" Depth

- RoHS compliant

OPTICAL PERFORMANCE

Insertion Loss (max): 0.7 dB

Return Loss (nominal): -55dB

Ordering Information		
Part Number	Product Code	Material Description
301085270	LST1U-072-07-WHT-SCU/MTF(SM)	Rack Mount, 72 SC UPC panel for 6x12, 3x24 count Terminals or 1x72 V-Linx Combiner
301119905	LST1U-072-07-WHT-SCA/MTF(SM)	Rack Mount, 72 SC APC panel for 6x12, 3x24 count Terminals or 1x72 V-Linx Combiner

V-Linx™ Solution
Product Image Examples

V-Linx 12-Fiber SC Terminal Front
(with clip)
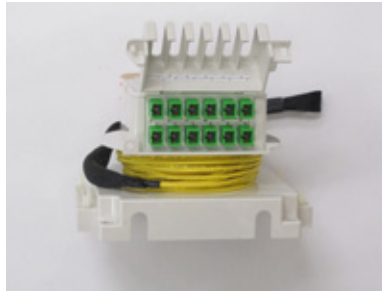
V-Linx 12-Fiber
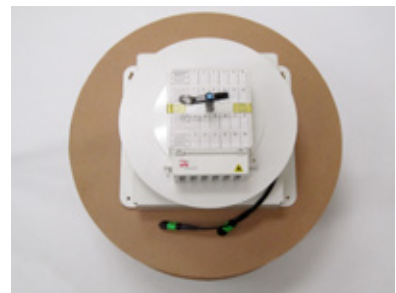SC Terminal Side

V-Linx 24-Fiber
LC Terminal Side

V-Linx 24-Fiber
LC Terminal Front

V-Linx Installation Tool
(with clip on side)

V-Linx 24-Fiber Combiner
on Spool Front

V-Linx Combiner Side
(50 meter version)

Plastic Corrugated Spool
Front

Plastic Corrugated Spool
Side

V-Linx Combiner Front
(50 meter version)

SlimBox™ Solutions
Plug and Play Solution

The SlimBox 64-Fiber Wall Mount Module is installed at the basement of the building. The splitter inputs are connected to the outside Plant cable(s). For low to midrise buildings, ony InvisiLight MDU assemblies may be required and the SCA connectors would be directly plugged into the SlimBox ports. Customers are connected by doing the connection between the splitters output and the pre-terminated cables.

For mid to high rise buildings, as an option, SlimBox 12-Fiber Wall Mount Module may be located at each floor or at every three floors, and the M-Pack riser terminated cables will be installed between the SlimBox 64-Fiber Wall Mount Module and the SlimBox 12-Fiber Wall Mount Module. The location of the SlimBox 12-Fiber Wall Mount Module should be based upon duct space availability and customer density requirements per floor. In that scenario, a SlimBox 12-Fiber Wall Mount Module could be placed on every floor or every other floor.
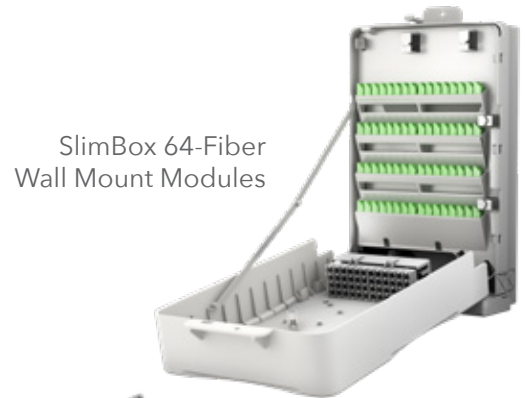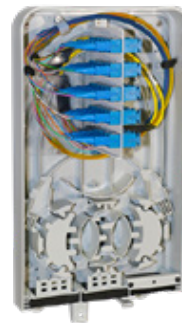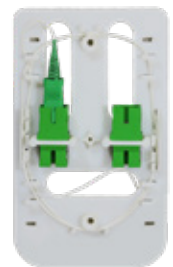
SlimBox 64-Fiber
Wall Mount Modules

SlimBox 12-Fiber
Wall Mount Modules
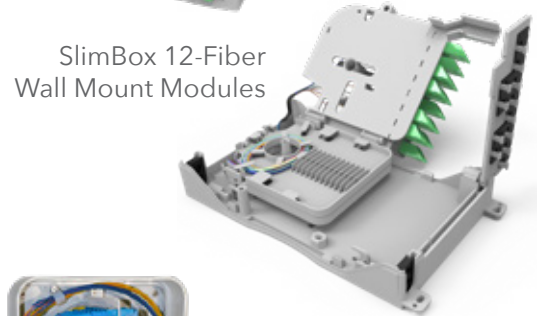
SlimBox 12-Fiber
Wall Mount Modules

SlimBox 24-Fiber
Wall Mount Modules

SlimBox
Wall Plate

SlimBox™ Solutions
SlimBox 64-Fiber Wall Mount Module

The SlimBox 64-Fiber Wall Mount Module provides the capability of splicing, splitting, and patching between the building entrance facility and the floor boxes or the customers' points of entry. The assembly is equipped to hold 3 mm, 2 mm and 1.6 mm cordages. The compact dimensions are 8.74 x 14.37 x 3.93 in. The module can be ordered with or without adapters. There are 4 cable entry/exit points and eight patch cord entry/exit ports capable of accommodating Outside Plant and Building Cables. The SC simplex adapter snaps into the designated adapter port.

FEATURES AND BENEFITS

• Up to 64 internal ports (SC type)

• Handles 2.0 mm and 1.6 mm slack storage of assemblies

• Color-coded adapters provided easy fiber identification

• SCA is simplex SC APC (green)

• SCU is simplex SC UPC (blue)

• Compact package with internal adapters

• Providing parking capability, splitter capability and splicing

• RoHS compliant; free from heavy metals and environmentally friendly

• Parking capacity available: 48 connectors

• Can house 8 splice trays: (12 splices each)

Ordering Information		
Part Number	**Product Code**	**Material Description**
301112967	SLIMBOX-V, INDOOR MDU-64 FIBER-INSIDE ADP	SlimBox 64 without adapters and with 8 splice trays
301121554	WSC1S-064-SM61-GRY-SCAUNC-X	SlimBox 64 with 64 SCA adapters and 8 splice trays
301133633	WSC1W-064-SM61-GRY-SCAUNC-F-PT	SlimBox 64 with 64 SCA adapters, 8 splice trays and 64 pigtails

SlimBox™ Solutions
SlimBox 12-Fiber Wall Mount Module

EXTERNAL ADAPTERS

The SlimBox 12-Fiber Wall Mount Module provides the capability of splicing, splitting, and patching between the building entrance facility and the floor boxes or the customers' points of entry. The assembly is equipped to hold 3 mm, 2 mm and 1.6 mm cordages. The ultra-compact dimensions are 4.84 x 5.88 x 1.79 in. The module can be ordered with or without adapters. There are 4 cable entry/exit points and eight patch cord entry/exit ports capable of accomodating Outside Plant and Building Cables. The SC simplex adapter snaps into the designated adapter port.

FEATURES AND BENEFITS

- Splice tray holds either 40 mm single fusion splice sleeves or bare planar splitters
- Cable entries at the bottom of the enclosure
- Multiple panels for housing adapters
- Small size requires minimal wall space
- Formed in plastic with high mechanical resistance providing protection for splices and terminations
- Can be installed on any vertical surface to reduce installation time

4.85"

5.88"

1.79"

Ordering Information		
Part Number	**Product Code**	**Material Description**
301039228	SLIMBOX-V, INDOOR MDU-12 FIBER BEIGE	SlimBox 12 (External) without Adapters
301090171	WSC1S-012-SBM0-BGE-SCUUNC-F	SlimBox 12 (External) with SC UPC Adapters
301060349	WSC1S-012-SBM0-BGE-SCAUNC-F	SlimBox 12 (External) with SC APC Adapters

SlimBox™ Solutions
SlimBox 12-Fiber Wall Mount Module with Internal Adapters

INTERNAL ADAPTERS

The SlimBox 12-Fiber Wall Mount Module is both a termination and splice point for optical fiber in an indoor wall mounted environment. Cable enters from the bottom and the grommets allow for pass through of the fiber without splicing. The additional splice tray provides pigtail and fanout splicing (single fusion splicing). Various Panels come with the module for termination of SC, FC, ST and LC (duplex) connectors.

FEATURES AND BENEFITS

- Greater protection for connections

- Formed in plastic with high mechanical resistance providing protection for splices and terminations

- Color-coded adapters provide easy fiber identification
    - SCA is simplex SC APC (green)
    - SCU is simplex SC UPC (blue)

- Compact package

- RoHS compliant

- Small size taking up minimal wall space

- Dedicated tray for pre-connectorized splitter

- Ideal for a pre-terminated FTTx network as floor distribution box or main distribution box for small building applications

Internal View

External View

Physical Characteristics	
Dimensions	8.5" H x 5.0" W x 2.8" D
Material	ABS Plastic
Color	Gray (RAL 7035)

Ordering Information		
Part Number	**Product Code**	**Material Description**
301112959	SLIMBOX-V, INDOOR MDU-12F-INSIDE ADP GRAY	SlimBox 12 (Internal) without Adapters
301122404	WSC1S-012-SM11-GRY-SCAUNC-F	SlimBox 12 (Internal) with SC APC Adapters
301127031	WSC1W-012-SM11-GRY-SCAUNC-F-PT	SlimBox 12 (Internal) with SC APC Adapters and pigtails
301122412	WSC1S-012-SM11-GRY-SCUUNC-F	SlimBox 12 (Internal) with SC UPC Adapters

SlimBox™ Solutions

SlimBox 12-Fiber Indoor/Outdoor Enclosure

The SlimBox Indoor/Outdoor 12-Fiber Enclosure is a termination box used to connect distribution cables in the outside plant network to FTTx network drop cables. The applications include Fiber to the Home, From Building to MDU or Cell site. It enables quick and easy connections of the drop cable through plug-and-play connectorized drops into the box or using fusion splicing. The internal connection is made through pre-terminated splitters or pre-connectorized pigtails.

External View

FEATURES AND BENEFITS

• Internal adapters allow the use of preterminated drop cable; the SlimBox Indoor/Outdoor Enclosure supports termination, splicing and storage functions

• Compact design and loop through capability
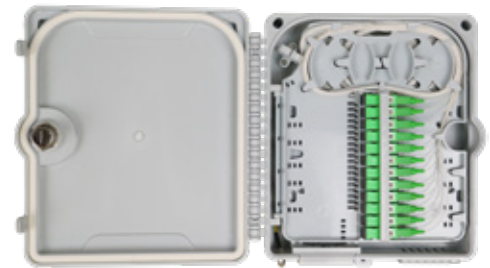
Internal View

Physical Characteristics	
Terminal Dimensions (W x H x D)	7.88 x 8.86 x 2.56 inches 200 x 225 x 65 mm
Drop Cable Dimensions	3 mm round type
Body Material	Plastic (PC + ABS)
Color	Light Grey
Operation Temperature	-40 °C to 60 °C
Sealing System for Drop Cables	Mechanical

Internal Side View

SlimBox 12-Fiber Adapter Indoor/Outdoor Enclosure Ordering Information		
Part No.	Product Code	Material Description
301139788	SLIMBOX-V, OUTDOORSVI-12FIBER-INSIDEADP	SlimBox Indoor/Outdoor Wall Mount Unit for 12 Internal SC Adapters (No Adapters)
301139796	WSE1S-012-SV11-GRY-SCAUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 12 Internal SCA Adapters
301139804	WSE1W-012-SV11-GRY-SCAUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 12 Internal SCA Adapters and 12 SM Pigtails
301139812	WSE1S-012-SV11-GRY-SCUUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 12 Internal SCU Adapters
301139820	WSE1W-012-SV11-GRY-SCUUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 12 Internal SCU Adapters and 12 SM Pigtails
301135885	WSE4S-024-SV21-GRY-LCUUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 12 Internal LC duplex adapters

SlimBox™ Solutions
SlimBox 24-Fiber Outdoor Enclosure

PRODUCT DESCRIPTION

The SlimBox Outdoor 24-Fiber is a termination box used to connect distribution cables in the outside plant FTTx drop cables. The applications include Fiber to the Home, Building or Cell site. It enables quick and easy connections of the drop cable through plug-and-play connectorized drops into the box or fusion splicing method. The internal connection is made through pre-terminated splitters or pre-connectorized pigtails.

The drop cable connections and disconnections are performed exclusively inside the box without affecting any previously connected cable. The enclosure allows the installation of up to 24 assemblies using 3mm or 16 assemblies using 4.8mm round drop cables (available on request).

The termination box has one area for storage and splicing, and a separate area for the management and the connection of the pigtails to the internal adapters. It can be opened and closed without disturbing service to customers. It supports up to 24 fusion splices.

The aerial terminal is designed for both poles and wall installations.

FEATURES AND BENEFITS

- Versatile multifunction enclosure: Internal adapters allow the use of pre-terminated drop cable

- Supports termination, splicing and storage functions

- Compact design with loop through capability

Ordering Information		
Part Number	**Product Code**	**Material Description**
301135851	SLIMBOX-V, OUTDOORMDU-24 FIBER-INSIDEADP	SlimBox outdoor wall mount unit for 24 internal SC adapters (no adapters)
301135869	WSE1W-024-SV21-GRY-SCUUNC-F	SlimBox outdoor wall mount unit with 24 internal SCU adapters
301135877	WSE1W-024-SV21-GRY-SCAUNC-F	SlimBox outdoor wall mount unit with 24 internal SCA adapters
301135885	WSE1W-024-SV21-GRY-LCUUNC-F	SlimBox outdoor wall mount unit with 24 internal LCU adapters
301135893	WSE1W-024-SV21-GRY-LCAUNC-F	SlimBox outdoor wall mount unit with 24 internal LCA adapters
301135901	WSE1W-024-SV21-GRY-SCUUNC-F-PT	SlimBox outdoor wall mount unit with 24 internal SCU adapters and 24 SM pigtails
301135919	WSE1W-024-SV21-GRY-SCAUNC-F-PT	SlimBox outdoor wall mount unit with 24 internal SCA adapters and 24 SM pigtails
301135927	WSE1W-024-SV21-GRY-LCUUNC-F-PT	SlimBox outdoor wall mount unit with 24 internal LCU adapters and 24 SM pigtails

SlimBox™ Solutions
SlimBox 24-Fiber Wall Mount Module

The SlimBox 24-Fiber Wall Mount Module is specifically designed for indoor FTTx networks. This enclosure accommodates and protects optical splices between input cables and internal, indoor distribution cables for both blown fiber and cable connections. The module is held in place with cable ties from three locations on the side and two locations from the base of the enclosure. While the entry points on the enclosure base fit standard electrical outlets, the SC simplex or duplex LC adapters snap easily into the designated adapter ports. Available in two versions (with or without adapters), the SlimBox Module's dimensions are 12" x 7.28" x 3.54".

Wall Enclosure with 24 SC UPC ports, two MTP ports, and two 12-fiber MTP/SCU fanouts

FEATURES AND BENEFITS

• Six ports of entry into the enclosure

• Handles 3.0 mm, 2.0 mm and 1.6 mm cordage and slack storage of assemblies

• Color-coded adapters provide easy fiber identification

• SCA is simplex SC APC (green)

• SCU is simplex SC UPC (blue)

• Compact package

• RoHS compliant; free from heavy metals and environmentally friendly

Ordering Information		
Part Number	Product Code	Material Description
301121612	WSC1W-024-SM21-GRY-SCUMTF-FO	Wall enclosure with 24 SC UPC ports, two MTP ports and two 12-fiber MTP/SCU fanouts
301120788	WSC1W-024-SM21-GRY-SCUUNC-F-PT	Wall enclosure with 24 SC UPC ports, splice trays and 24 SM SC UPC pigtails
301120796	WSC1W-024-SM21-GRY-LCUUNC-F-PT	Wall enclosure with 24 LC UPC ports, splice trays and 24 SM LC UPC pigtails
301102804	WSC1W-024-SM21-GRY-SCAUNC-F-PT	Wall enclosure with 24 SC APC ports, splice trays and 24 SM SC APC pigtails
301120812	WSC1W-024-SM21-GRY-LCAUNC-F-PT	Wall enclosure with 24 LC APC ports, splice trays and 24 SM LC APC pigtails
301123741	SLIMBOX-V, INDOOR MDU-24 W/10 SPLICE TRAY	Wall enclosure with ten of the 12 fiber splice tray for fusion splicing

SlimBox™ Solutions
SlimBox Wall Plate

FEATURES AND BENEFITS

- Supports factory terminated assemblies, field installed mechanical connectors, or fusion spliced pigtails

- Accommodates up to two internal optical adapters (SC footprint)

- Flexible deployment with two access ports on the top, two on the bottom and three through the back of the module

- Compatible with electrical boxes

- Compact dimensions

- Discreet appearance

- Hidden cover screw for fast and secure cover attachment to the base

- Internal fiber guides for easy installation

- Can be installed on any vertical planar surface

- Plastic construction provides high mechanical protection and efficient design

- Accommodates two splice protectors (40 mm)

PRODUCT DESCRIPTION

The SlimBox Wall Plate serves as a termination point or a demarcation point for optical fiber in an indoor environment. An EZ-Bend® jumper would connect the SlimBox Wall Plate to a desktop ONT and the InvisiLight® ILU Solution or an EZ-Bend cable may be used to reach the wall plate.

Ordering Information		
Part Number	**Product Code**	**Material Description**
301122826	SLIMBOX-V, INDOOR WALL PLATE-SC	SlimBox Wall Plate SC
301122834	SLIMBOX-V, INDOOR WALL PLATE-1F-SM-SCA	SlimBox Wall Plate with one SC APC Adapter
301122842	SLIMBOX-V, INDOOR WALL PLATE-2F-SM-SCA	SlimBox Wall Plate with two SC APC Adapters

SlimBox™ Solutions
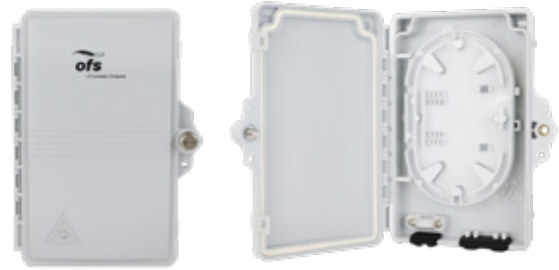## SlimBox 2- and 4-Fiber Indoor/Outdoor Enclosure

PRODUCT DESCRIPTION

The SlimBox 2- and 4-Fiber Indoor/Outdoor Enclosures is an excellent choice as an external demarcation closure, featuring dual functionality as either a splice or connector housing.

Designing to resemble other typical wall outlets in a home, it is compact and inconspicuous enough to satisfy the most discriminatnig homeowner, while protecting the valuable network splice sleeves and/or connectors inside. The SlimBox 2- and 4-Fiber Indoor/Outdoor Enclosure can be used tfor a wide variety of applications including Fiber-to-the-Home (FTTH) and Fiber-to-the-Business (FTTB) applications.

SlimBox 2-Fiber Indoor/Outdoor Enclosure

FEATURES AND BENEFITS

- Protection level up to IP65

- Splicing and adapter connections inside the module

- Can be wall mounted or pole mounted

SlimBox 4-Fiber Indoor/Outdoor Enclosure

Ordering Information for SlimBox 2-Fiber Indoor/Outdoor Enclosure		
Part Number	Product Code	Material Description
301139630 (no adapters)	SLIMBOX-H, OUTDOOR SVI-2-FIBER-INSIDEADP	SlimBox Indoor/Outdoor Wall Mount Unit for 2 Internal SC Adapters
301139648	WSE1S-002-SS21-GRY-SCAUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 2 Internal SCA Adapters
301139655	WSE1W-002-SS21-GRY-SCAUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 2 Internal SCA Adapters and 2 SM Pigtails
301139663	WSE1S-002-SS21-GRY-SCUUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 2 Internal SCU Adapters
301139671	WSE1W-002-SS21-GRY-SCUUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 2 Internal SCU Adapters and 2 SM Pigtails
Ordering Information for SlimBox 4-Fiber Indoor/Outdoor Enclosure		
301139689	SLIMBOX-H, OUTDOOR SVI-4-FIBER-INSIDEADP	SlimBox Indoor/Outdoor Wall Mount Unit with 4 Internal SCA Adapters
301139697	WSE1S-004-SS41-GRY-SCAUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 4 Internal SCA Adapters
301139705	WSE1W-004-SS41-GRY-SCAUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 4 Internal SCA Adapters and 4 SM Pigtails
301139713	WSE1S-004-SS41-GRY-SCUUNC-F	SlimBox Indoor/Outdoor Wall Mount Unit with 4 Internal SCU Adapters
301139721	WSE1W-004-SS41-GRY-SCUUNC-F-PT	SlimBox Indoor/Outdoor Wall Mount Unit with 4 Internal SCU Adapters and 4 SM Pigtails

SlimBox™ Solutions Complementary Products

Pre-Connectorized ACCUMAX® Fiber Optic Cables

PRODUCT DESCRIPTION

Factory connectorized ACCUMAX cables save time and money by avoiding the need for field termination or splicing. Factory-tuned and tested connectors offer superior and more consistent optical performance compared to field termination. Specially trained factory technicians cut the cable to customer specified lengths, and carefully connectorize one or both ends to meet the exact customer requirements.

FEATURES AND BENEFITS

- Based on ACCUMAX cable with flexible and robust cabling solution for vertical or horizontal applications

- Cable fiber counts of 2 to 144

- SCA or LCA terminations

- OFS AllWave *FLEX+* Zero Water Peak (ZWP) G.657.A2 fiber

- ACCUMAX fiber optic cables offer flexible and robust cabling solutions for virtually any indoor premises application in both the horizontal and vertical distribution environments. Can eliminate the cost of installing any other inside cable and is especially suitable for installation in riser shafts, above drop ceilings, under raised floors or in conduits.

Ordering Information		
Part No.	Product Code	Material Description
301135414	LPC2-7-SCASCA-BR09-08-025F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 25'
301135422	LPC2-7-SCASCA-BR09-08-050F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 50'
301135430	LPC2-7-SCASCA-BR09-08-075F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 75'
301135448	LPC2-7-SCASCA-BR09-08-100F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 100'
301135455	LPC2-7-SCASCA-BR09-08-125F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 125'
301135463	LPC2-7-SCASCA-BR09-08-150F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 150'
301135471	LPC2-7-SCASCA-BR09-08-175F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 175'
301135489	LPC2-7-SCASCA-BR09-08-200F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 200'
301135497	LPC2-7-SCASCA-BR09-08-300F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 300'
301135505	LPC2-7-SCASCA-BR09-08-400F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 400'
301135513	LPC2-7-SCASCA-BR09-08-500F-39U/18U	Assembly, Cable 8 Fiber SC APC to SC APC Indoor Riser 500'
NOTE: Other fiber counts are available upon request.		

SlimBox™ Solutions Complementary Products
Mechanical SCA Connector for 3.0mm Round Cable

PRODUCT DESCRIPTION

OFS offers a mechanical SCA connector that provides quick and easy assembly in the field. The connector is similar to factory installed SC APC connectors. It has the familiar push-pull insertion and release that is known by most craft personnel. Minimum amount of tools required and has an easy to follow installation method. The offering is for single-mode connectors that can mount on 3.0mm round cable.

There are no special tools, epoxy or polishing in the field.

FEATURES AND BENEFITS

- Fully compatible with other SC adapters and connectors
- Reduces the need for slack storage
- Reduces assembly time
- No polishing or epoxy required
- Easy instructions
- Useful in multiple applications

APPLICATIONS

- Fiber to the Home
- MSO/Broadband/CATV
- Municipal networks

Ordering Information		
Part Number	**Product Code**	**Material Description**
301126967	MOCSA-SC-3.0MM-W/TOOL-010 PACK	Package of 10 mechanical connectors with tool for 3.0mm round cable

SlimBox™ Solutions Complementary Products
EZ!Fuse™ SCA Splice On Connector for 0.9 mm Fiber and 2.0/3.0 mm Cord

PRODUCT DESCRIPTION

OFS' new Splice On Connector termination system allows for easy termination and flexibility in the field. This new "splice-on" connector (SOC) eliminates the need for field polishing and significantly improves the quality of the termination and installation time required. The connector is easily assembled by using a process that requires minimal skill or training. These connectors are optimal for use in FTTx application. Both UPC and APC polishing are available for single-mode optical fiber.

EZ!Fuse Splice On Connector is compatible with the FITEL Fusion Splicer models Ninja, S179 and S178.

FEATURES AND BENEFITS

- **Simple, Fast, and Consistent Field Termination:** Allows for easy field installation of EZ-Bend® cables, pre-terminated splitters, fan outs, and drop terminals

- **No Polishing or Epoxy:** OFS' connector termination process requires no polishing or epoxy increasing the quality and consistency of field connector termination. Total installation time is greatly reduced compared to traditional methods

- **Fiber Management:** The most difficult task for splicer operators has always been managing the fiber upon completion of splicing. The connector termination feature eliminates the need for splice trays resulting in easier fiber management, reduced storage requirements, and faster installation times

Ordering Information		
Product Code	**Description**	**MOQ**
FSOC-SC09-SM-U	SC Connector, SM UPC Polishing for 250/900 µm Fiber	
FSOC-SC23-SM-U	SC Connector, SM UPC Polishing for 2/3 mm Cordage	
FSOC-SC09-SM-A	SC Connector, SM APC Polishing for 250/900 µm Fiber	
FSOC-SC23-SM-A	SC Connector, SM APC Polishing for 2/3 mm Cordage	10 Connectors: One S712C-SGS9C-R is supplied with each MOQ of 10 Connectors
FSOC-SC09-M3-P	SC Connector, OM3 PC Polishing for 250/900 µm Fiber	
FSOC-SC23-M3-P	SC Connector, OM3 PC Polishing for 2/3 mm Cordage	
FSOC-SC09-M1-P	SC Connector, OM1 PC Polishing for 250/900 µm Fiber	
FSOC-SC23-M1-P	SC Connector, OM1 PC Polishing for 2/3 mm Cordage	

For additional information please contact your sales representative.

You can also visit our website at **www.ofsoptics.com**
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