

---

# More Meaningful Connections



## Passive Optical LAN Solution

# Passive Optical LAN

A Passive Optical Network (PON) is a point-to-multi-point architecture that employs a single strand of singlemode fiber and unpowered optical splitters to deliver converged IP voice, video, data and building automation to multiple users (or devices). PONs, widely deployed by service providers in the outside plant for over 20 years, leverage the distance and bandwidth capabilities of singlemode fiber to cost effectively distribute their services. Passive Optical LAN (POL), which is based upon mature PON standards, is an emerging network architecture for the premises environment especially as it relates to hospitality.

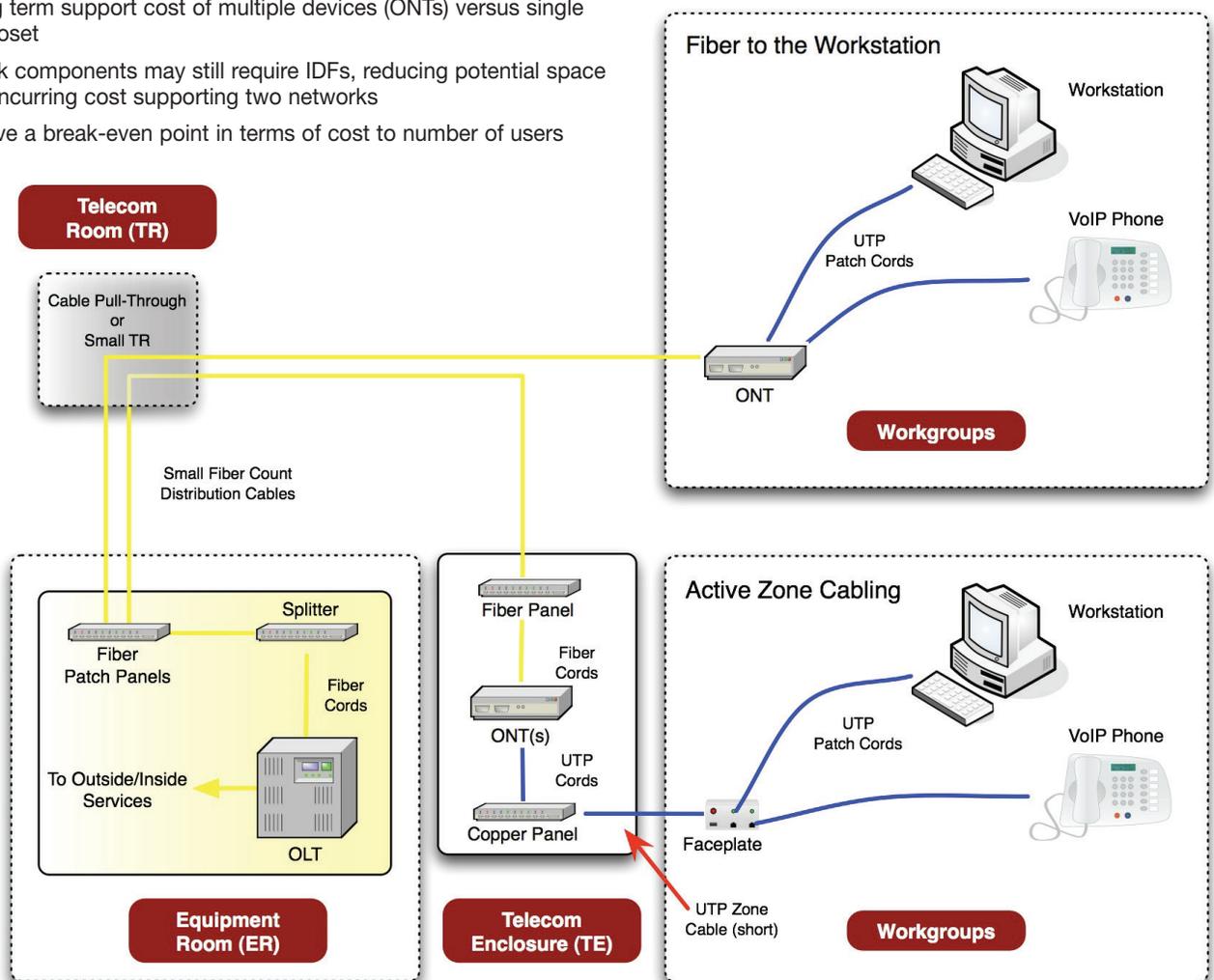
The three main network components of POL (Passive Optical LAN) are the Optical Line Terminal (OLT) at the core layer, the Passive Optical Splitter at what would normally be the distribution layer, and the Optical Network Terminal (ONT) at the access layer. By using passive optical splitters, POL can substitute the distribution switching layer, present in traditional active Ethernet architectures, and reduce the amount of infrastructure required. Optical LANs built with PON technology can deliver voice, data and video at gigabit speeds over secure optical fiber.

The potential benefits of a Passive Optical LAN include:

- Lower cost installation and operation
- Secure communication with a fiber-based infrastructure
- Space savings when compared to traditional architectures

**Key challenges to consider include:**

- Active devices (OLTs and ONTs) are typically proprietary
- Potential long term support cost of multiple devices (ONTs) versus single switch in a closet
- Other network components may still require IDFs, reducing potential space savings and incurring cost supporting two networks
- POLs can have a break-even point in terms of cost to number of users



# Panduit provides a complete line of products for POL installations

Panduit provides a wide range of products for more traditional POL installations, which can be ideal for greenfield installations with proper pre-planning in order to maximize the effectiveness and potential cost savings for this type of architecture. In cases where network owners prefer a structured approach to cabling infrastructure, Panduit also offers active zone cabling components which minimize installation costs while providing a flexible and manageable cabling solution.

The traditional approach to POL installations houses the proprietary OLT at the switch layer, puts an application-specific wall mount enclosure in a telecom closet on each floor to house the inactive splitter device(s), which then break out one singlemode signal to several signals, ending at the access layer where the proprietary ONT resides. From the ONT, often mounted in the wall, runs of copper patch are distributed to the individual devices.

Each splitter device acts as a distribution point for, typically, a whole floor or as a pass-through for the singlemode signal to another distribution point or floor. These splitters can be pre-connectorized for a more plug-and-play solution, or spliced in-line for a more discrete transition. A pre-connectorized version allows for some flexibility, while the in-line splicing model forces a measure of permanence that by necessity calls for pre-planning.

Zone cabling products for open office applications are typically used to deploy wireless access points, Ethernet workgroup switches and connected building gateways. In POL deployments using zone cabling, the ONT(s) are secured from end users in zone enclosures residing close to users in the ceiling, floor or mounted to a wall. Singlemode fiber cabling is terminated in a small patch panel inside the enclosure and patched to the ONT(s) with fiber patch cords. Short runs of copper cabling are terminated in the enclosure in a patch panel and run to end user outlets.

Each zone enclosure serves as a cabling distribution point for a particular zone increasing network flexibility, manageability, accessibility, and efficiency. Utilizing a distributed network and a zone cabling topology for your physical infrastructure can solve telecommunication room congestion. In addition, PON fiber backbone cables to the zone enclosures extend the reach of your network beyond copper limitations.



# Equipment Room POL Product Solutions



**Traditional PON Architecture,  
Wall mounted Enclosures .....page 6**

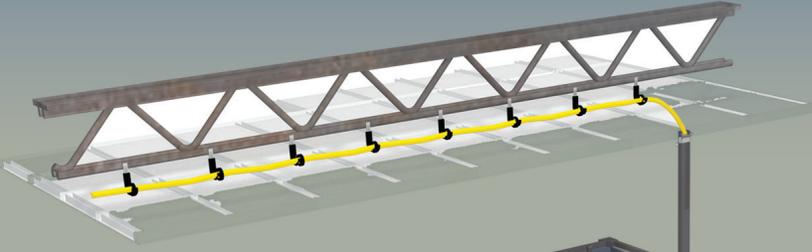
**Splitters.....page 6**

**Fiber Cable ..... page 6**

**Connectivity ..... page 6**

Panduit provides leading-edge cabinets, racks, cable management, pathways and grounding and bonding systems in support of Equipment Rooms (ERs) and Telecom Rooms (TRs) that house ONT chassis and related cabling infrastructure. These products, along with the fiber distribution and cabling elements covered in this guide, comprise end-to-end solutions for managing, protecting and showcasing network cabling infrastructure that support your POL network.

# Work Area POL Product Solutions



**Fiber to the Workstation**

Panduit provides open office cabling elements for delivering fiber to ONTs residing near work spaces. Modular components at the user outlet can support ONT uplinks alongside traditional copper or multimedia outlets.

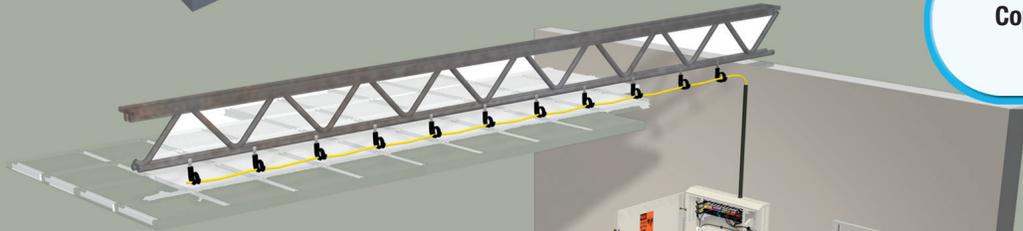


**Passive Optical Network (PON)  
Splitter Trays..... page 7**

**Fiber Components..... page 8**

**Copper Cable..... page 9**

**Copper Components ..... page 9**



**Active Zone**

In situations requiring physical isolation/security of the ONTs, Panduit Zone cabling products accommodate the POL “active zone” cabling model from the ER to the user outlet. Active Zone Cabling enclosures can be used in floor, ceiling and wall mount applications and preclude the need for floor space to house and secure ONTs.



## Traditional PON Architecture

### Wall mounted Enclosures



Part Number	Description
FPONE1	Fiber enclosure for passive optical LAN, small.
FPONE2	Fiber enclosure for passive optical LAN, medium.
FPONE3	Fiber enclosure for passive optical LAN, large.
FPONE4	Fiber enclosure for passive optical LAN, x-large.

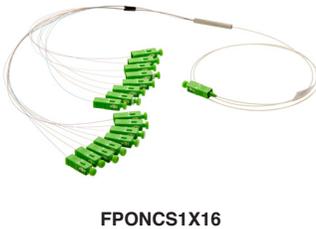
### Adapters



Part Number	Description
FPONEAP12*	Fiber PON enclosure adapter panel with 12 Ports for FASSCZAG adapters.
FASSCZAG-L	SC-APC simplex fiber optic adapter, AG (Zirconia).

\*Note: FPONEAP12 will only work in the FPONE enclosures. It is not compatible with other Panduit adapter panel form factors.

### Splitters



Part Number	Description
FPONCS1X4	Fiber optic PLC splitter, 1x4 ratio, with 1 SC-APC to 4 SC-APC connectors.
FPONCS1X8	Fiber optic PLC splitter, 1x8 ratio, with 1 SC-APC to 8 SC-APC connectors.
FPONCS1X16	Fiber optic PLC splitter, 1x16 ratio, with 1 SC-APC to 16 SC-APC connectors.
FPONCS1X32	Fiber optic PLC splitter, 1x32 ratio, with 1 SC-APC to 32 SC-APC connectors.
FPONSS1X4	Fiber optic PLC splitter, 1x4 ratio, with 1 bare fiber to 4 bare fibers.
FPONSS1X8	Fiber optic PLC splitter, 1x8 ratio, with 1 bare fiber to 8 bare fibers.
FPONSS1X16	Fiber optic PLC splitter, 1x16 ratio, with 1 bare fiber to 16 bare fibers.
FPONSS1X32	Fiber optic PLC splitter, 1x32 ratio, with 1 bare fiber to 32 bare fibers.

### Fiber Cables



Part Number	Description
FSIRA01Y	9µm (G.657.A1) OS2 1 Fiber indoor distribution cable, Riser (OFNR), 900µm buffered fiber.
FSDRA02Y	9µm (G.657.A1) OS2 2 Fiber indoor distribution cable, Riser (OFNR), 900µm buffered fiber.
FSDP912Y	9µm OS2 12 Fiber indoor distribution cable, Plenum (OFNP), 900µm buffered fibers.

### Connectivity



Part Number	Description
FSCS2/9SOCA9AG	Fiber SC-APC splice-on connector for 250/900µm fiber, 9µm singlemode.
F91BNANNSNM***	OS2 1 Fiber 900µm buffered patchcord no jacket SC/APC to pigtail Std IL - *** meter.
F92ERANANSNM***	OS2 2 Fiber 1.6mm riser jacket patchcord SC-APC to SC-APC Std IL - *** meters.

## Passive Optical Network (PON) Splitter Trays

- Cost effective offering for Passive Optical LAN (POL) networks providing fiber-to-user solutions
- Can be combined with existing Panduit solutions to integrate within end-to-end POL infrastructure
- Pre-terminated or splice ready with 1x8, 1x16, 1x32, 2x8, 2x16 and 2x32 configurations (1 or 2 input ports and 8 to 32 output ports)



FCP9PP-1323GG



FCP9PP-1323GG (Close Up)

Part Number	Description
<b>Passive Optical Network (PON) LAN Splitter Tray</b>	
FCP9SP-1083GG	PON splitter tray; 1x8 splitter; single splice input; 8 SC-APC outputs.
FCP9SP-1163GG	PON splitter tray; 1x16 splitter; single splice input; 16 SC-APC outputs.
FCP9SP-1323GG	PON splitter tray; 1x32 splitter; single splice input; 32 SC-APC outputs.
FCP9SP-2083GG	PON splitter tray; 2x8 splitter; dual splice inputs; 8 SC-APC outputs.
FCP9SP-2163GG	PON splitter tray; 2x16 splitter; dual splice inputs; 16 SC-APC outputs.
FCP9SP-2323GG	PON splitter tray; 2x32 splitter; dual splice inputs; 32 SC-APC outputs.
FCP9PP-1083GG	PON splitter tray; 1x8 splitter; single SC-APC input; 8 SC-APC outputs.
FCP9PP-1163GG	PON splitter tray; 1x16 splitter; single SC-APC input; 16 SC-APC outputs.
FCP9PP-1323GG	PON splitter tray; 1x32 splitter; single SC-APC input; 32 SC-APC outputs.
FCP9PP-2083GG	PON splitter tray; 2x8 splitter; dual SC-APC inputs; 8 SC-APC outputs.
FCP9PP-2163GG	PON splitter tray; 2x16 splitter; dual SC-APC inputs; 16 SC-APC outputs.
FCP9PP-2323GG	PON splitter tray; 2x32 splitter; dual SC-APC inputs; 32 SC-APC outputs.

## Fiber Components



FCE1U



FCE4U



FAP12WAGSCZ



FWME2



FOSMF



PZICEA



PZICE



PZAEWM3

Part Number	Description
-------------	-------------

### Opticom® Rack Mount Fiber Cassette Enclosures

FCE1U	Holds up to four QuickNet™ Cassettes, FAP adapter panels, or FOSM splice modules. Dimensions: 1.73"H x 17.60"W x 16.30"D (43.9mm x 447.0mm x 414.0mm).
FCE4U	Holds up to twelve QuickNet™ Cassettes, FAP adapter panels, or FOSM splice modules. Dimensions: 6.98"H x 17.60"W x 16.30"D (177.0mm x 447.0mm x 414.0mm).

### Opticom® Fiber Adapter Panels

FAP12WAGSCZ	SC APC FAP loaded with twelve SC APC simplex singlemode fiber optic adapters (Green) with zirconia ceramic split sleeves.
-------------	---

### Opticom® Wall Mount Enclosures

FWME2	Holds Fiber Adapter Panels (FAPs).
-------	------------------------------------

### Fiber Cable Management Accessories

FOSMF	Fiber optic splice module holds and protects up to 24 fusion splices. For use with FCE*U, FRME*U, and FMT series enclosures.
-------	--

### PanZone® In-Ceiling Enclosures

PZICEA	Fully assembled in-ceiling active enclosure. Accepts up to 2 RU of active network equipment and up to 6 RU of passive product. Includes mounting brackets, integrated horizontal slack manager, AC power provisions, fan assembly, air dam, and electrical junction box. External dimensions: 13.50"H x 25.50"W x 27.50"D (342.9mm x 647.7mm x 698.5mm). Internal dimensions: 11.49"H x 22.31"W x 22.46"D (291.8mm x 566.7mm x 570.5mm).
PZICE	Fully assembled in-ceiling enclosure. Accepts up to 8 RU of standard 19" patch panels. Includes mounting brackets and integrated horizontal slack manager. Dimensions: 23.50"H x 23.50"W x 13.43"D (596.9mm x 596.9mm x 341.1mm).
PZWMC12W	PanZone® Wall Mount Cabinet with Windowed Front Door, 12 RU, Black.

### PanZone® Active Wall Mount Enclosures

PZAEWM3	Active wall mount enclosure includes mounting template for quick installation. Dimensions: 38.50"H x 27.92"W x 8.61"D (977.9mm x 709.2mm x 218.7mm).
---------	--

## Copper Cables



Part Number	Description
<b>Category 6 and Category 6A Copper Cable</b>	
PUL6AV04WH-EG	Copper cable, Cat 6A, Vari-MaTriX, 4-pair, 23 AWG, UTP, LSZH, Euroclass Eca, White, 1000 ft./305m.
PUL6004BU-FE	Enhanced Category 6 UTP copper cable, low smoke zero halogen (LSZH), 4-pair, conductors are 23 AWG construction with HDPE insulation, twisted in pairs, separated by an integrated pair divider, and all four pairs are protected by an LSZH (IEC 60332-1) jacket, Blue.
PUC6004BU-FE	Copper cable, enhanced category 6 UTP, CM, 4-pair, conductors are 23 AWG construction with HDPE insulation, twisted in pairs, separated by an integrated pair divider, and protected by a flame-retardant PVC jacket, Blue.

## Copper Components



Part Number	Description
<b>Category 6A SD Patch Cords</b>	
UTP6ASD**	Category 6A patch cord, SD, Off White UTP cable; ** = available in 3, 5, 7, 10, 14 and 20 feet.
UTP6ASD*BU	Category 6A patch cord, SD, Blue UTP cable; * = available in 3, 5, 7, 10, 14 and 20 feet.

### Mini-Com® Cat 6A UTP Jack Module

CJ6X88TG**	Cat 6A jack module, UTP 8 pos, 8 wire, TG style; ** = available in BU (Blue) and WH (White).
------------	--

### Mini-Com® Classic Series Faceplates

CFPL2**Y	2 position classic faceplate with label; ** = available in IW (Off White) and WH (White).
CFPL4**Y	4 position classic faceplate with label; ** = available in IW (Off White) and WH (White).
CFPSL2**Y	2 position classic sloped faceplate with label; ** = available in IW (Off White) and WH (White).
CFPSL4**Y	4 position classic sloped faceplate with label; ** = available in IW (Off White) and WH (White).

### Mini-Com® Surface Mount Boxes

CBX2**-AY	2 position surface mount box; ** = available in IW (Off White) and WH (White).
CBX4**-AY	4 position surface mount box; ** = available in IW (Off White) and WH (White).

### Mini-Com® Patch Panels

CPP24FMWBL	24-port Flush mount flat modular patch panel.
CPP48FMWBL	48-port Flush mount flat modular patch panel.
CPP48HDEWBL	48-port High density flat modular patch panel.





**PANDUIT®**

Panduit Corp.  
World Headquarters  
Tinley Park, IL 60487

800.777.3300

[www.panduit.com](http://www.panduit.com)

[< Previous Page](#) | [Table of Contents](#)

©2021 Panduit Corp. ALL RIGHTS RESERVED. FBLC02--SA-ENG 7/2021