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Fiberoptics

www.lanpro.com

LANPRO

Connect-and-Forget

Fiber Solutions Catalog

2021 Edition

LANPRO

Fiber Solutions Catalog

• CONTENT

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LanPro has consolidated itself with a broad Portfolio of products under the concept of ONE STOP SOURCE (OSS) philosophy, and is becoming one of the most demanded brands by System Integrators.

LanPro produces and distributes a broad line of Fiber Optic Products that as a whole constitute the LanPro Fiber Solution.

It has been split in two major areas: First, our Optical Cables per se, and second our line of Fiber Optic System, which includes the paraphernalia of Connectors, Patch Cords and Pigtails, Adaptors, Termination / Patch Panels and Accessories.

LanPro is committed to continue improving and enhancing its broad line of products in its LanPro Fiber Solution so that our clients can enjoy the benefits of the application of proven technologies in the Optical Fiber systems of today and Tomorrow.

LANPRO

Cabling infrastructure: Copper vs Fiber?

There is a variety of criteria to make choices.

About Fiber:

- Fiber systems support greater bandwidth and error-free transmission over longer distances.
- Fiber systems are easier to test, saving time and money.
- Fiber is immune to EMI/RFI.
- Fiber system maximizes valuable space and its small size and weight require less space in cable trays, raised floors and equipment racks.
- IEE proposed Ethernet speed will be for 40Gbps and 100Gbps only over fiber.

About Copper:

- Low initial cost: The enterprise 10 Gigabit fiber electronics still remain costly compared to copper. The initial cost of 10 Gigabit copper systems, is projected at 40 percent of 10 Gigabit fiber products.
- 10 Gigabit Ethernet technology continues to evolve and improve. The networked enterprise switches, video servers, blade servers and other applications can benefit from 10 Gigabit speeds in storage, system backup, surveillance and teleconferencing. Is this case, copper is still able to deliver high data rate.
- Copper cabling remains the preferred choice for the final link to desktop, and other short links such as those found in data centers.

LanPro has partnered with several fiber manufacturers in the development of Optical Cables that are suited for the myriad of applications in the field. Optical Cables are composed of two main parts: the Optical Fiber cores, bought from widely recognized manufacturers and the Jackets that are designed to protect those cores and suit them for the application.

We have selected the best fiber cores for our Optical Cables. We have included Corning® optical fiber as a first option. LanPro can use other brands as the core fibers as per our client specifications when production quantities meet the business objectives.

Indoor Cables

Tight Buffer

LP-OC31XX

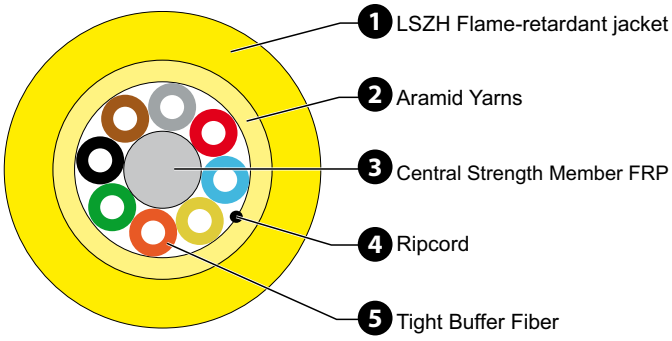
Tight Buffer Distribution Fiber Optical Cable, LSZH rated jacket with FRP Central Strength Member and peripheral Aramid® strength fibers, Dry water block and Ripcord.

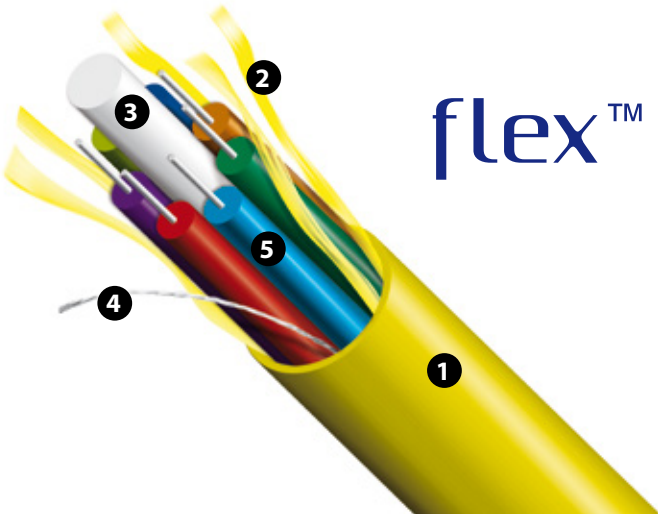
Performance:
- High quality Corning® Cores for World Class Performance.
- **LANPROFLEX™** Outstanding flexibility and handling.
- Zero Halogen LSZH jacket, flame retardant for protection of people when taking fire.
- Lightweight, all dielectric self supporting (ADSS) construction is ideal for use near electrical power lines.

Convenience:
- Usable in indoor cabling or for Inter-building voice or data communication backbones.
- Installable in ducts, underground conduit or aerial/lashed and as connecting soft cable along walls, ceiling, layers and tubes.
- High visibility bright yellow jacket for easier identification in bundles.

Mechanical:
- The strength members, made of Fiber Reinforced plastic (FRP) and Aramid® yarn, ensures tension resistance and long-term stability in transmission and superior fiber protection.
- Good mechanical and temperature performance.
- Good crush resistance and dry water blocking.
- Tight buffer provides individual fiber protection

Ease of termination:
- Very easy to strip and terminate.
- Aramid strength members reinforce and protect the fibers and reduce weight for longer span lengths.
- Tight buffered fibers are easy to handle and strip for field termination.



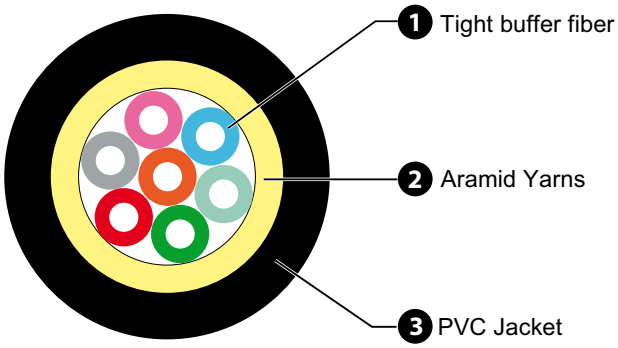


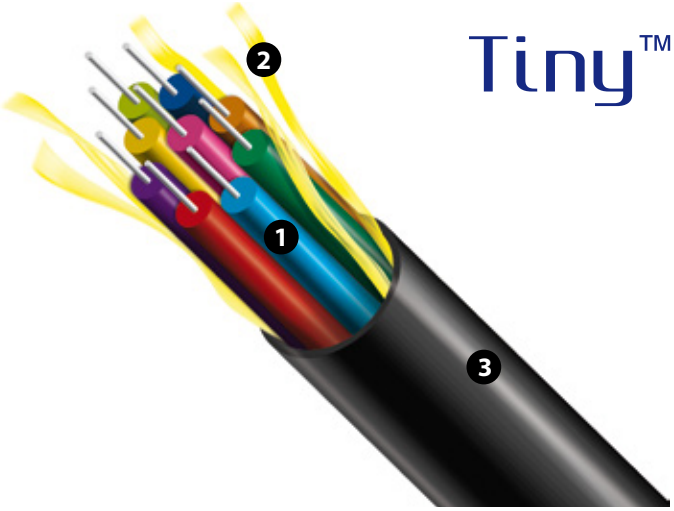
Tight Buffer

LP-OC25XX

Tight Buffer Distribution Fiber Optical Cable, PVC jacket, Dry Water Block Cable Core, Multi-Fiber Aramid® yarns for strength.

- Aramid Yarn-filled construction for superior fiber protection.
- Lightweight, flexible design simplifies installation.
- Tight buffer provides individual fiber protection.
- Tight buffered fibers are easy to handle and strip for field connectorization.
- Good mechanical and temperature performance.
- Good crush resistance water blocking and flexibility.
- Aramid strength members reduce weight for longer span lengths.
- Lightweight, all dielectric self supporting (ADSS) construction is ideal for use near electrical power lines.

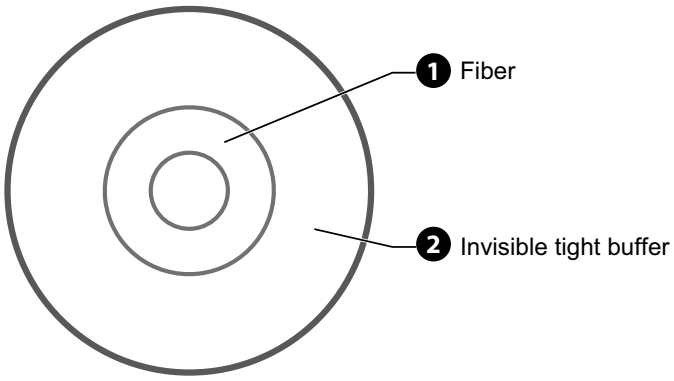


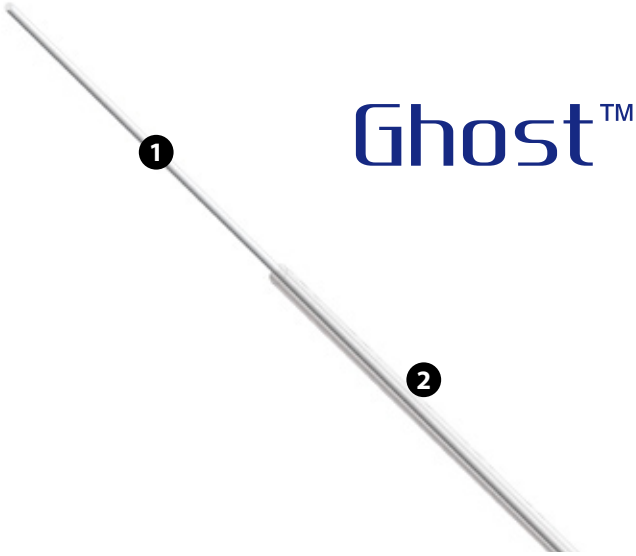


LP-OC35160011ZA

Tight Buffer Distribution Fiber Optical Cable with 1 singlemode G.657.B3 fiber core and UV resistance transparent color jacket.

- Fiber to the home (FTTH).
- Indoor.
- Internal wiring.
- Ready to install, you do not need to remove the fiber jacket.
- 900µm flame retardant, invisible and UV protected jacket.
- Super flexible with low loss.
- Minimum radius of curvature. Insensitive to curves.



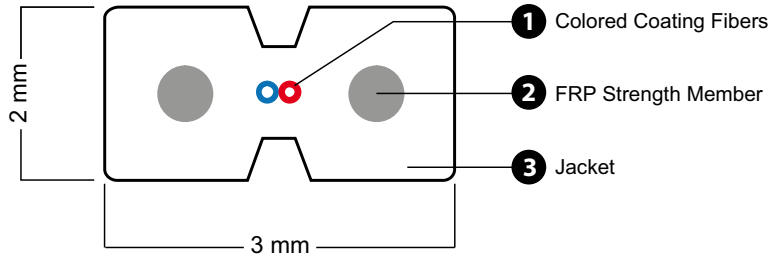


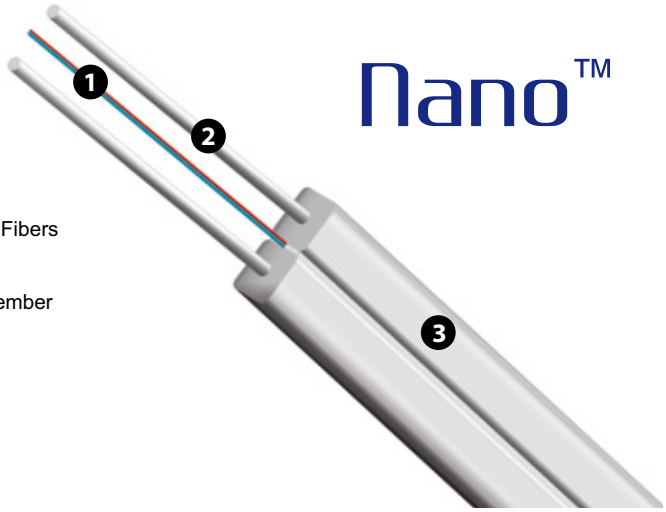
Indoor FTTH (Fiber to the home)

LP-OC32XX

All dielectric Drop Fiber Optical Cable with Colored Coating Fibers, LSZH Jacket, Two Strength members FRP, Bow Type, FTTH (Fiber to the home) and 1, 2, 4, or 6 singlemode or multimode fiber cores.

- Special low-bend-sensitivity fiber provides high bandwidth and excellent communication transmission property.
- Two parallel FRP strength members ensure good performance of crush resistance to protect the fiber.
- Simple structure, lightweight, high tensile strength and Novel groove design, easily strip and splice for simplified installation and maintenance.
- Low smoke, zero halogen and flame retardant sheath, environmental-friendly, and with excellent safety characteristics for Indoor use.
- Colored coated cores.





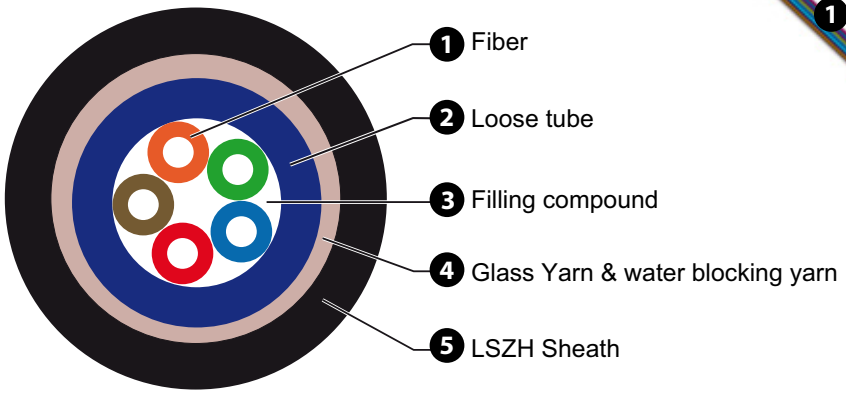
LP-OC26XX

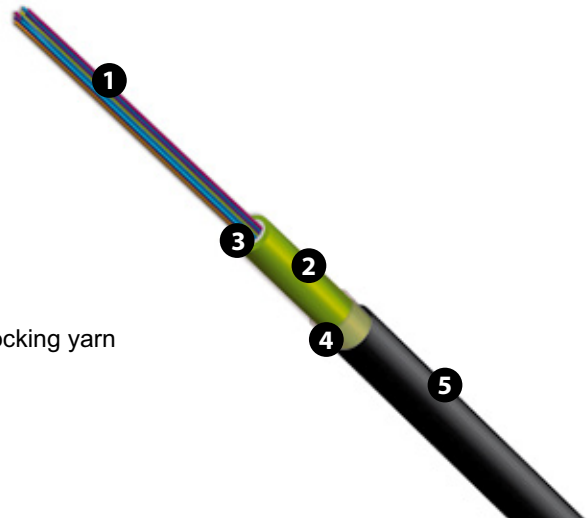
Distribution Fiber Optical Cable with Loose Tubes, LSZH rated jacket, Glass yarns, Dry Water Block Cable Core

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture resistant design.
- Rodent-resistant construction.
- Anti-rodent glass yarns.

Applications:

- Backbone in LAN's.
- Indoor and outdoor.
- Access and campus networks.



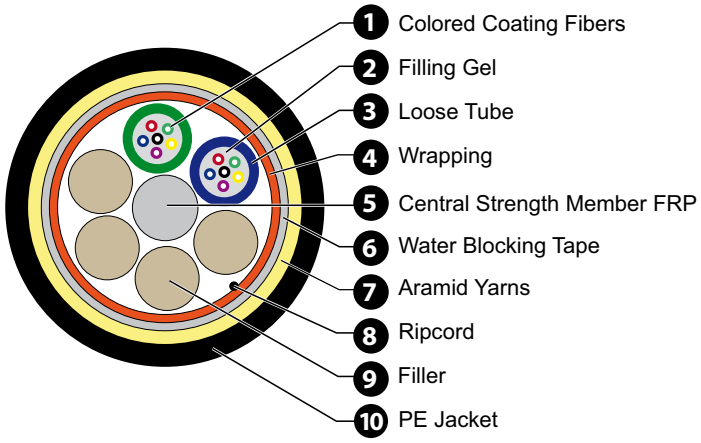


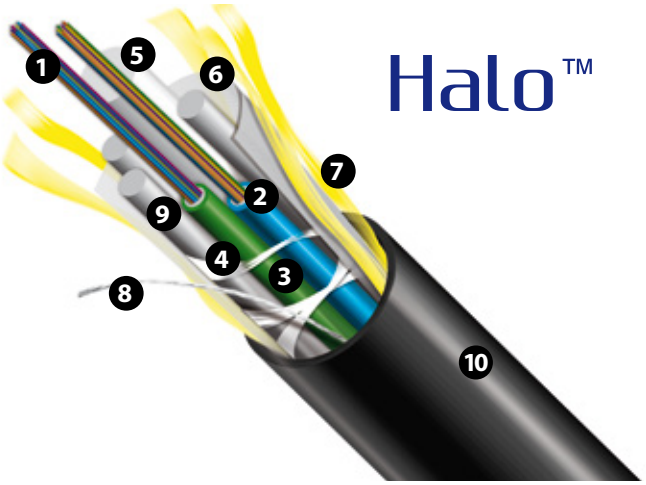
ADSS Light ADSS (Short span, up to 75m)

LP-OC51XX

All dielectric self supporting Fiber Optical Cable for up to 75m span with Loose Tubes and Single PE Jacket, with Central Strength Member FRP, Peripheral Aramid® Yarns, Dry Water Blocking Tape and Ripcord.

- 4-144 Fibers.
- Dielectric Construction.
- Outdoor usage.
- Single PE Jacket.
- Aramid® Yarns for Protection.
- FRP Strength Member.
- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Dry Water Block tape with ripcord.
- Up to 75 m free span.

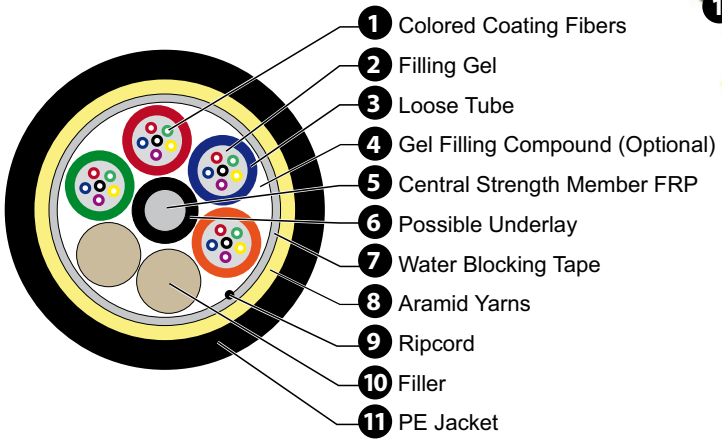


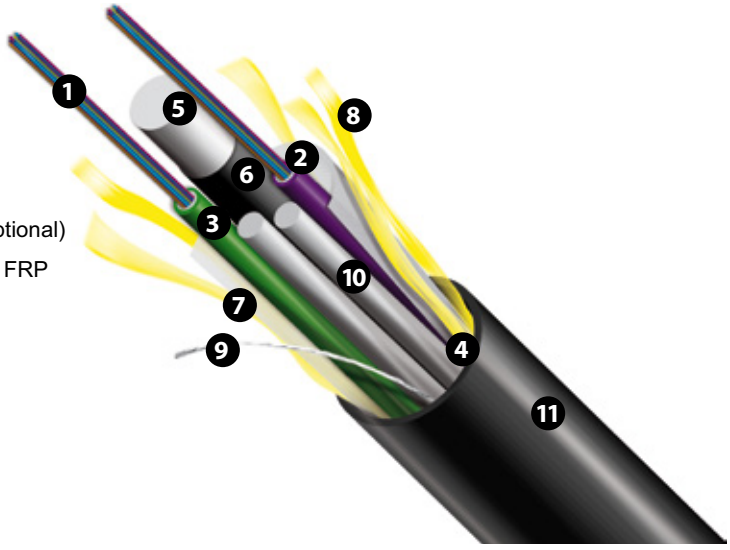


LP-OC05XX

All dielectric self supporting Fiber Optical Cable for up to 75m span with Loose Tubes and single PE jacket, central strength member FRP, Peripheral Aramid® yarns, Gel Water Blocking Cable core and ripcord.

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Gel Water Block cable core for better water blocking.
- Central strength member made of fiber reinforced plastic (FRP).
- Fully dielectric construction for use in high voltage installations.
- With Aramid® fiber peripheral reinforcement.



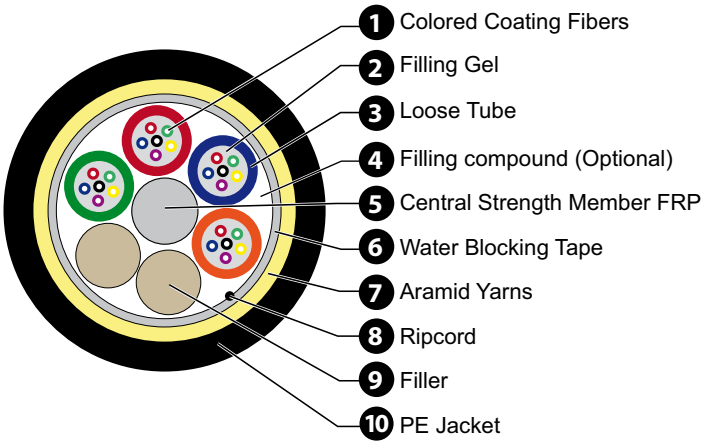


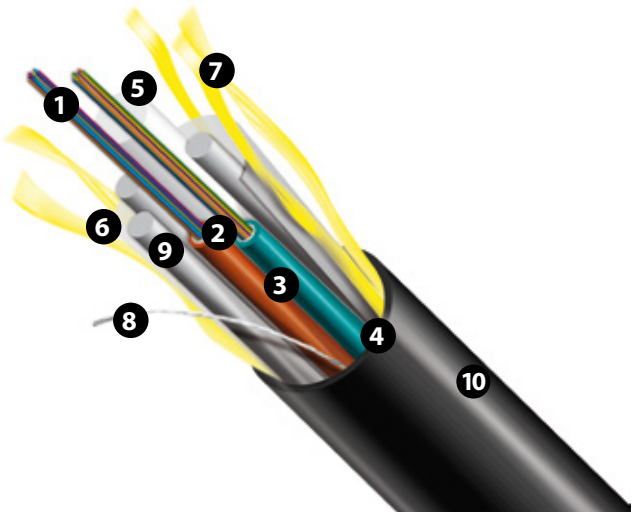
ADSS Medium ADSS (Medium span, from 75m to 150m span)

LP-OC62XX

All dielectric self supporting Fiber Optical Cable for selectable spans from 75m to 150m, with Loose Tubes, Single PE Jacket, Central Strength member FRP, Peripheral Aramid® Yarns, Water Blocking Yarns, Tape, Gel and Ripcord.

- All Dielectric Self Supporting Optical Cable for selectable Spans from 75m to 150m.
- Subscriber Network Systems.
- Local Area Network Systems.



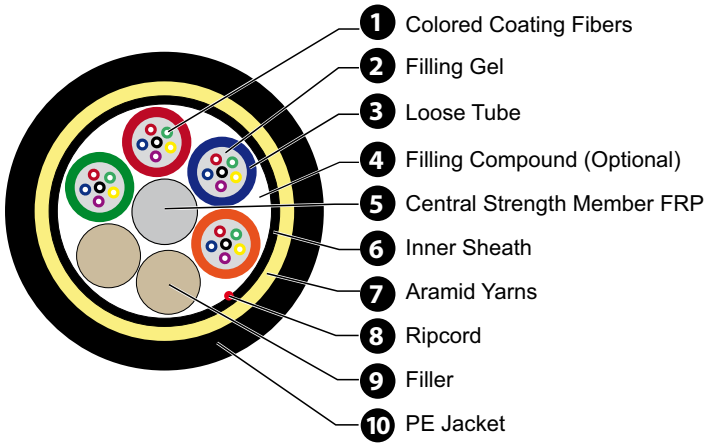


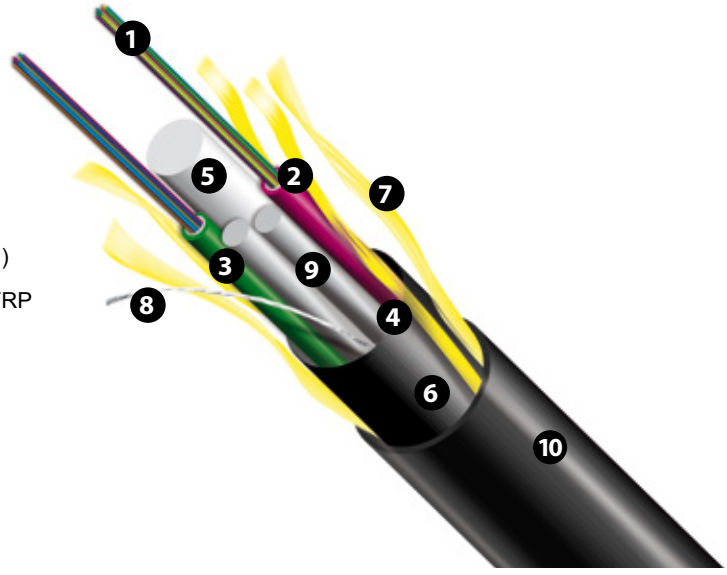
ADSS Heavy Duty ADSS (Long span, greather than 150m)

LP-OC10XX

All dielectric self supporting Fiber Optical Cable for long span greather than 150m, with Loose Tubes, Double PE Jacket, Central Strength member FRP, peripheral Aramid® Yarns and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.
- Over 150 m span.
- For distances greather than 150m.



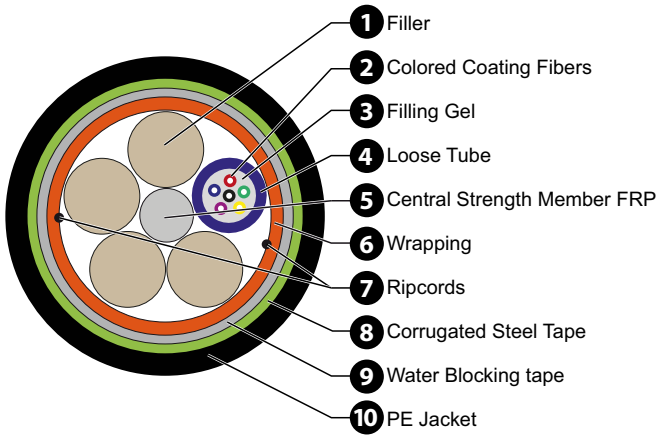


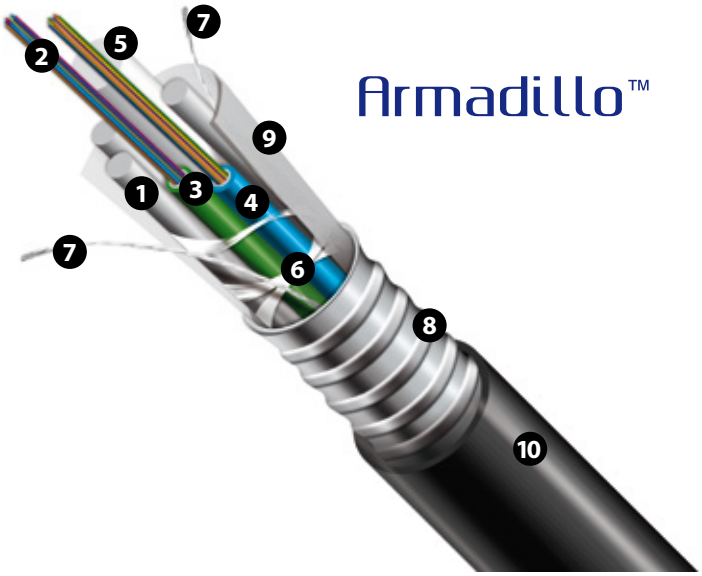
Armored Cables | Light Armored

LP-OC52XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Corrugated steel tape, Central Strength Member FRP, Dry Water Blocking tape and Ripcord.

- Interbuilding voice or data communication backbones.
- Campus Lan, (CAN). Designed for rough conditions.
- Outdoor applications.
- Usable lashed Aerial, ducted or direct burial.
- Junction type Communicaction Systems.
- Subscriber network systems.
- Local area network systems.
- Usable on long-haul applications.

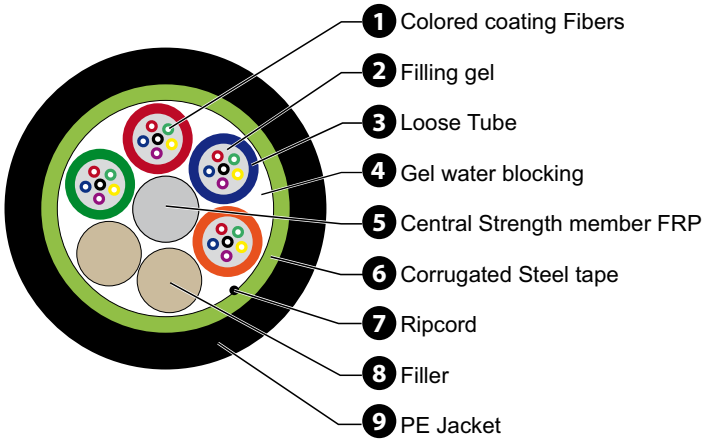


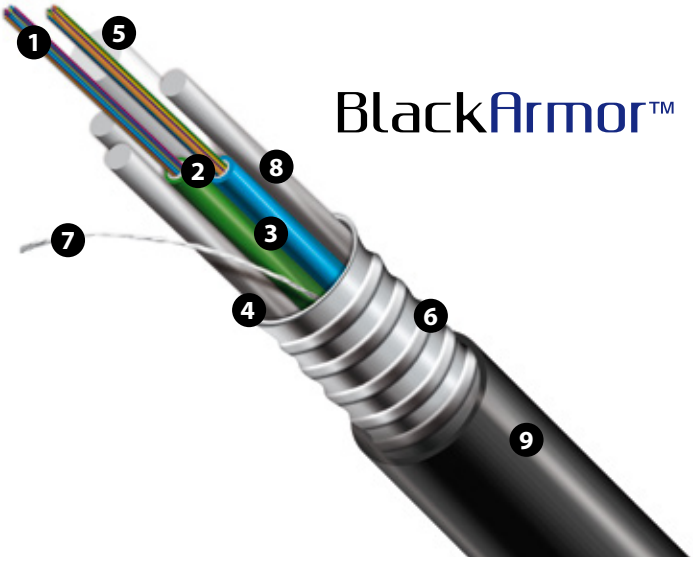


LP-OC53XX

Fiber Optical Cable with Loose tubes, Single PE Jacket corrugated Steel tape, central strength member FRP, Gel water block and Ripcord.

- Interbuilding voice or data communication backbones.
- Campus Lan, (CAN). Designed for rough conditions.
- Outdoor applications.
- Usable lashed Aerial, ducted or direct burial.
- Junction type Communicaction Systems.
- Subscriber network systems.
- Local area network systems.
- Usable on long-haul applications.



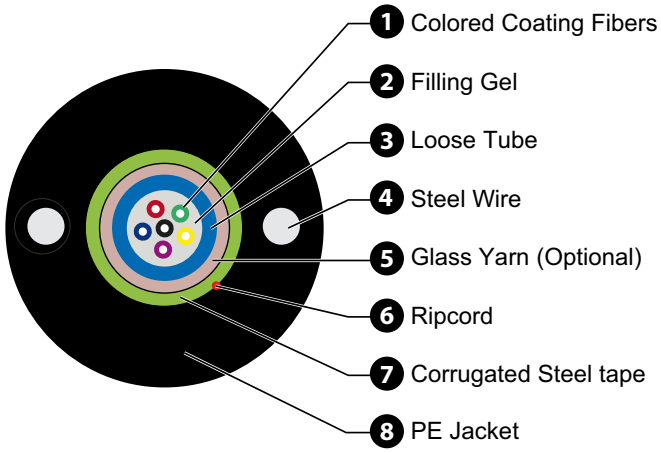


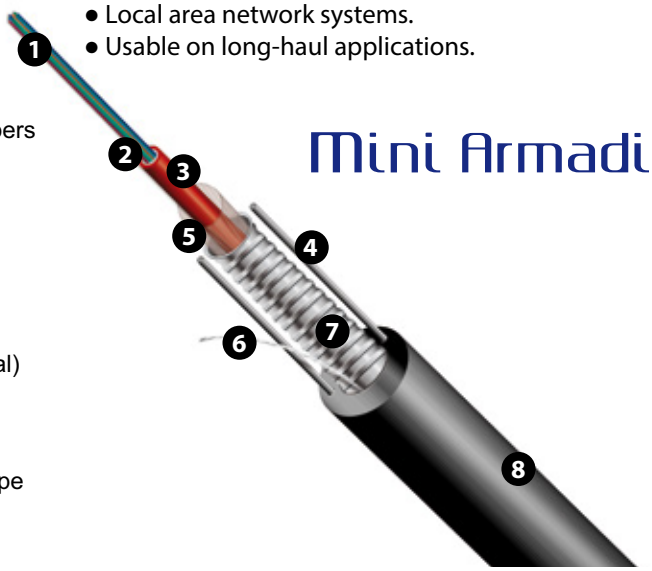
Armored Cables | Light Armored

LP-OC54XX

Miniature Armored Outdoor Fiber Optical Cable with one Central Loose Tubes, Single PE Jacket, Corrugated steel tape, with Two steel wires as strength member, Gel Water Block Cable Core with ripcord.

- Interbuilding voice or data communication backbones.
- Campus Lan, (CAN).
- Designed for rough conditions.
- Outdoor applications.
- Usable lashed Aerial, ducted or direct burial.
- Junction type Communication Systems.
- Subscriber network systems.
- Local area network systems.
- Usable on long-haul applications.
- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture resistant design.
- Termite and rodent resistant construction.
- Junction type Communicaction Systems.
- Subscriber network systems.
- Local area network systems.
- Usable on long-haul applications.

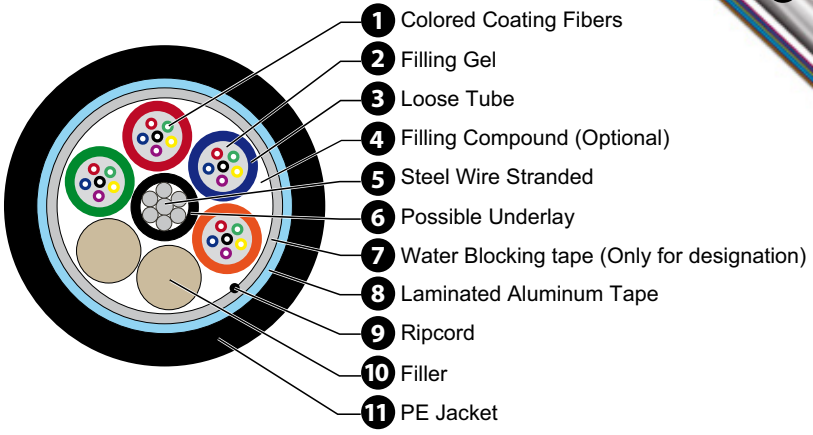


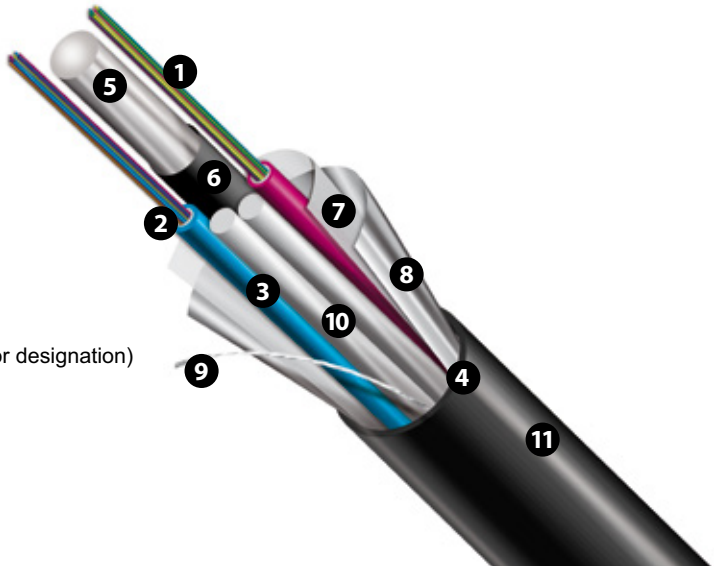


LP-OC15XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Steel wire Stranded Core central strength member, Dry Water Block Cable Core and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Dry Water Block cable core for ease of handling.
- Peripheral strenght is provided by the aluminium tape.
- Strenght member of stranded steel wires.



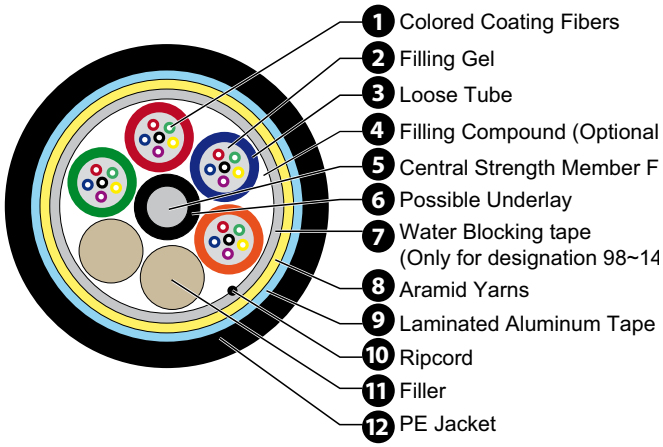


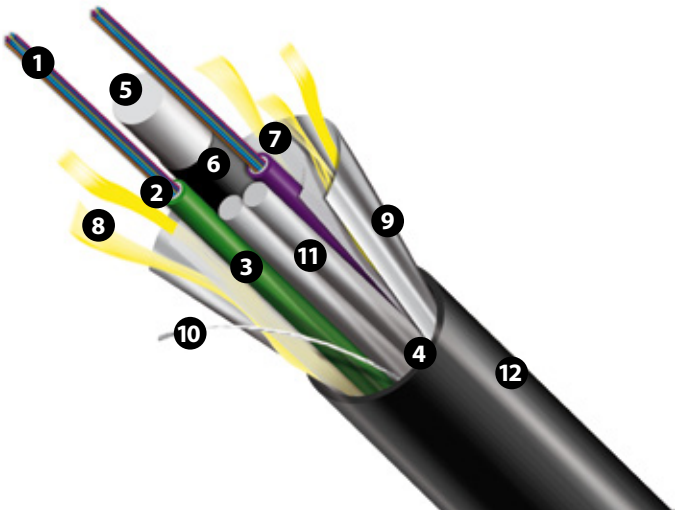
Armored Cables | Light Armored

LP-OC47XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Laminated Aluminum tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Laminated Aluminum Tape.
- Dry Water Block cable core for ease of handling.

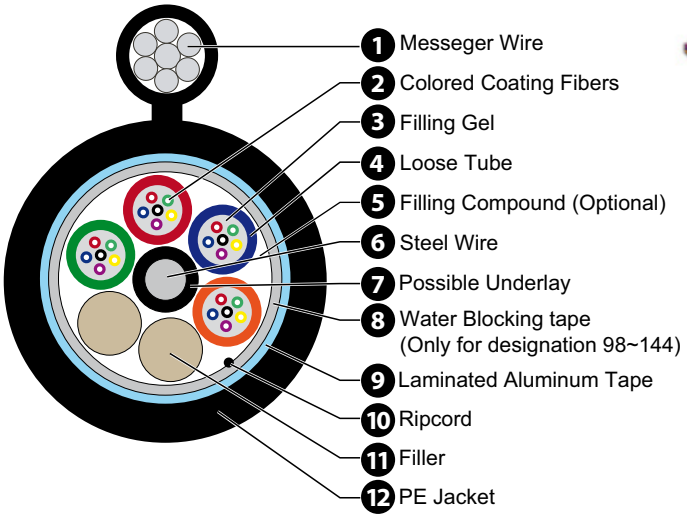


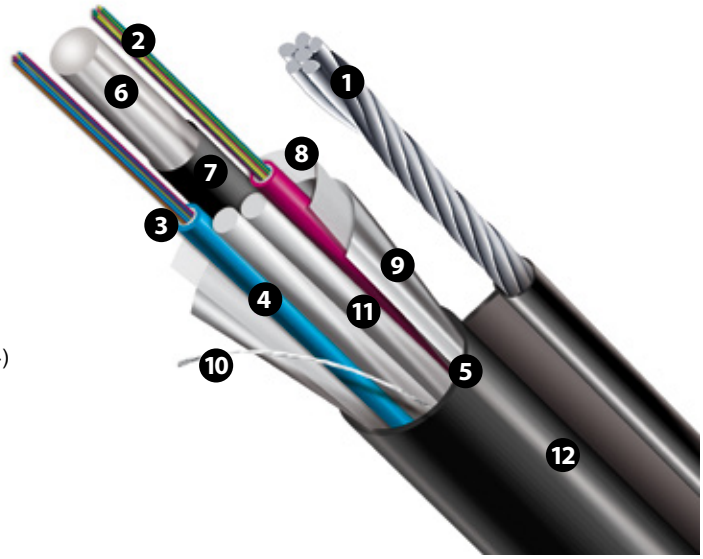


LP-OC08XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, self supporting, Figure 8, Central steel wire, messenger wire, Laminated Aluminum tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.



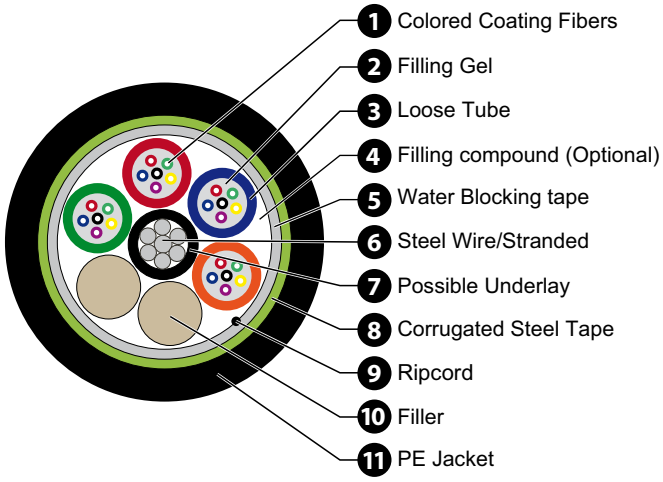


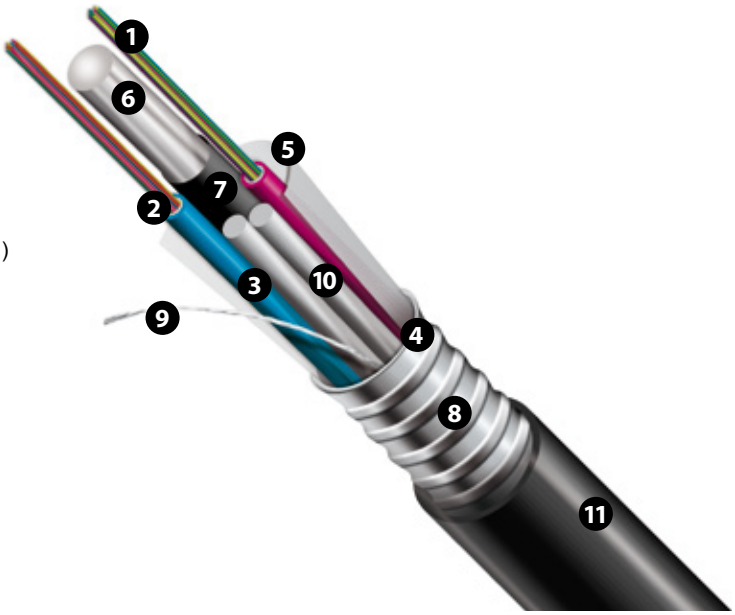
Armored Cables Light Armored

LP-OC16XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Steel wire/Stranded Core Strength Member, Dry Water Block Cable Core, Corrugated Steel Tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Dry Water Block cable core for ease of handling.
- Heavy Duty corrugated steel tape.

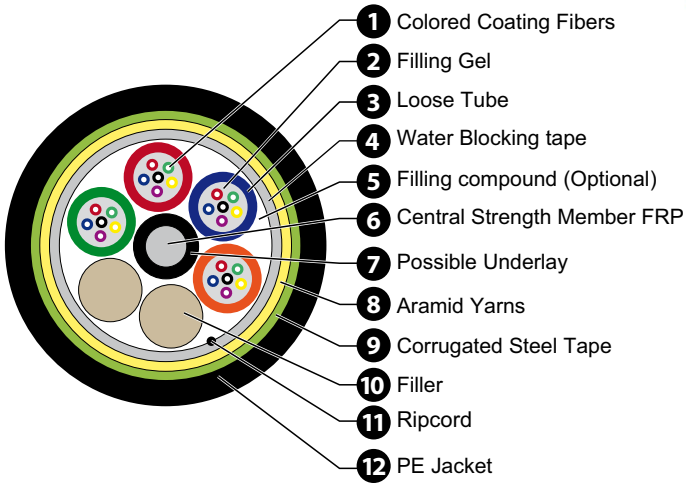


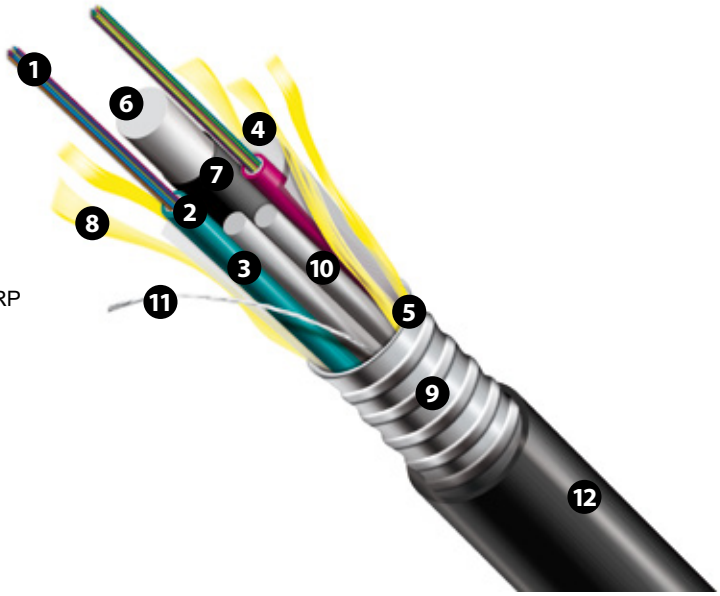


LP-OC17XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Dry Water Block Cable Core, with corrugated steel tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Corrugated Steel Tape.
- Dry Water Block cable core for ease of handling.



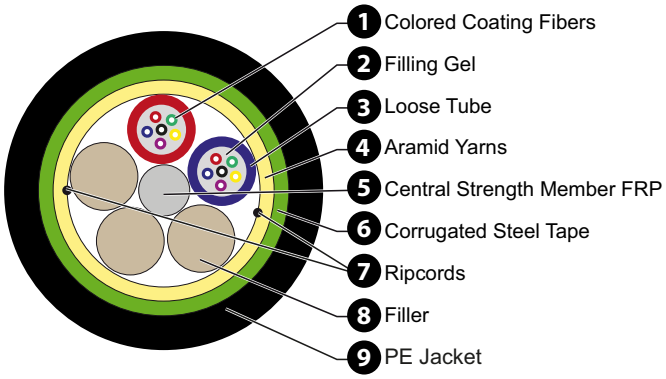


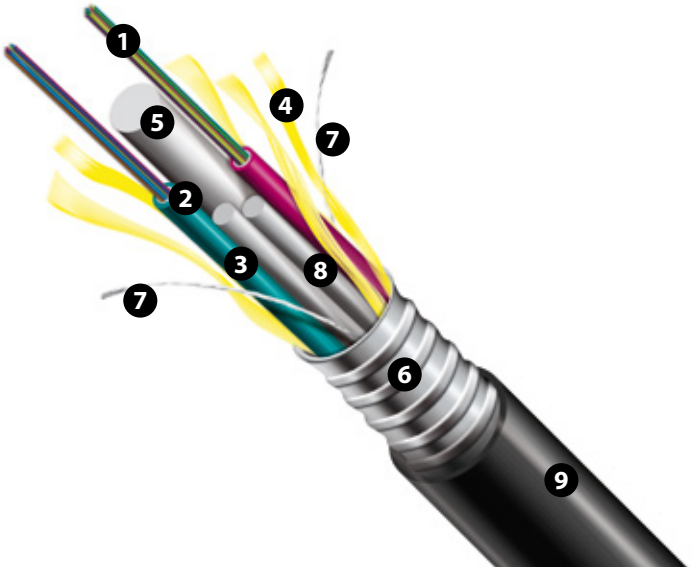
Armored Cables | Light Armored

LP-OC50XX

Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Corrugated steel tape, Peripheral Aramid® yarns, Dry Water Blocking tape and Ripcord.

- Interbuilding voice or data communication backbones.
- Campus Lan, (CAN).
- Designed for rough conditions.
- Outdoor applications.
- Usable lashed Aerial, ducted or direct burial.
- Junction type Communicaction Systems.
- Subscriber network systems.
- Local area network systems.
- Usable on long-haul applications.

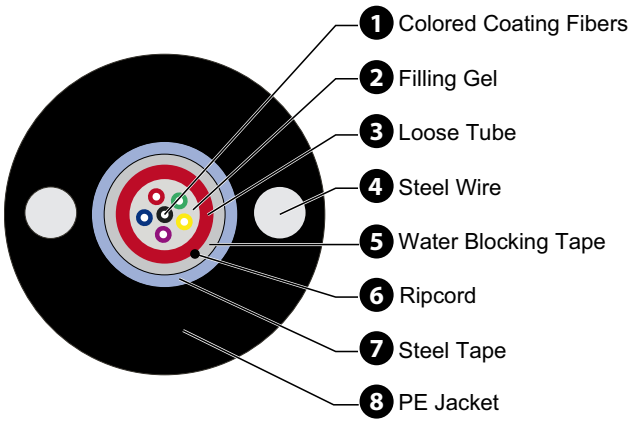


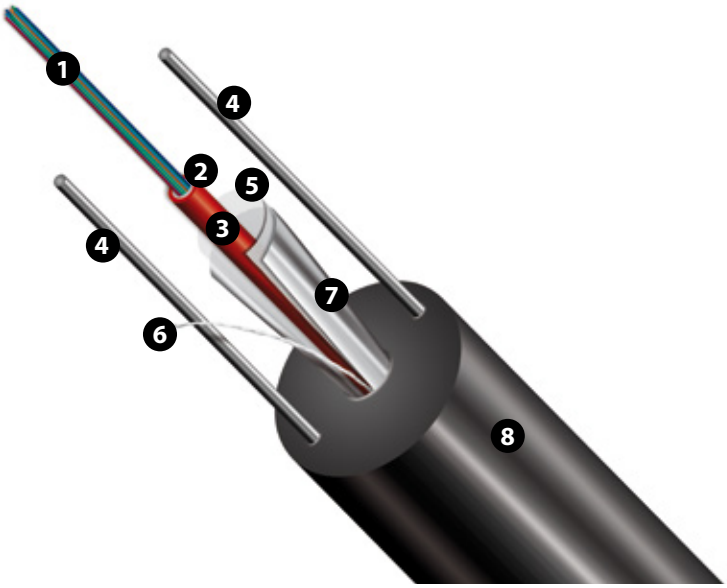


LP-OC20XX

Fiber Optical Cable with Loose tube, Single PE Jacket, armored with two steel wires strength members, laminated steel tape, Dry Water Blocking tape and Ripcord.

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.



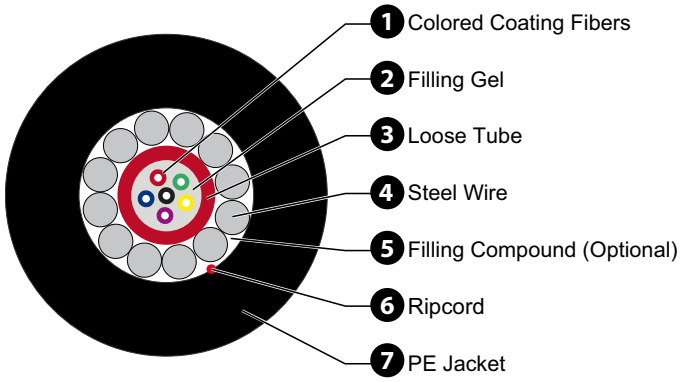


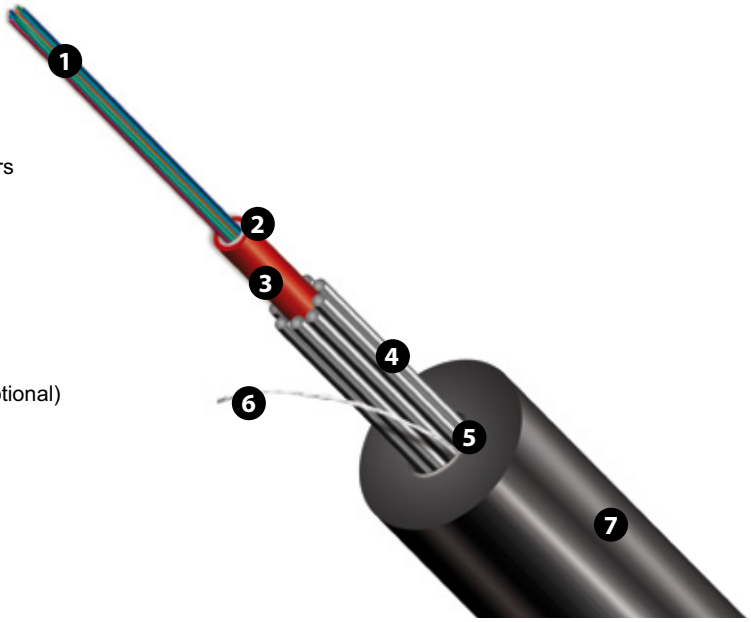
Armored Cables | Light Armored

LP-OC21XX

Fiber Optical Cable with central Loose Tube, Single PE Jacket, layer of galvanized steel wires strength member, and Ripcord.

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Dry Water Block cable core for ease of handling.

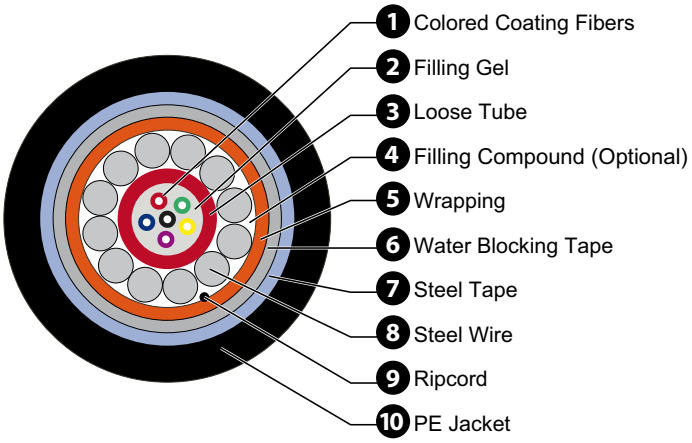


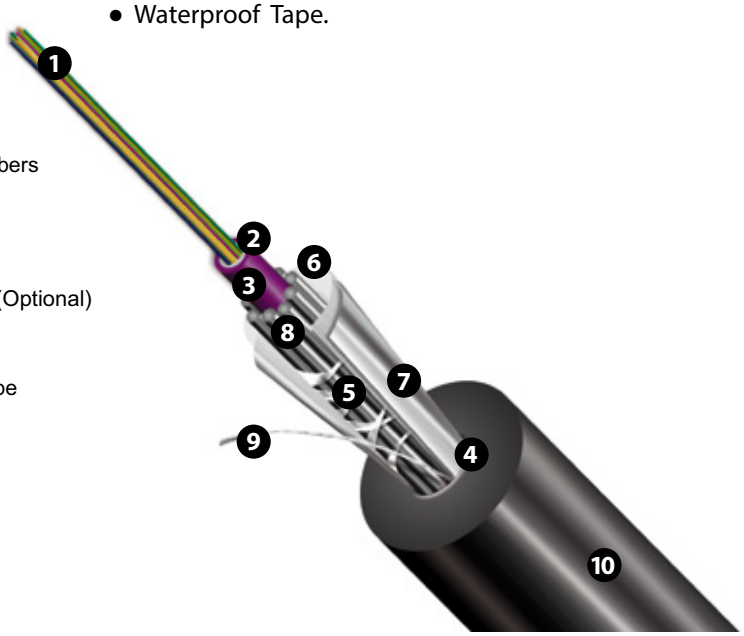


LP-OC22XX

Fiber Optical Cable with central Loose Tube, Single PE Jacket, layer of galvanized steel wires strength member, bonded steel tape, water blocking tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Dry Water Block cable core for ease of handling.
- Waterproof Tape.



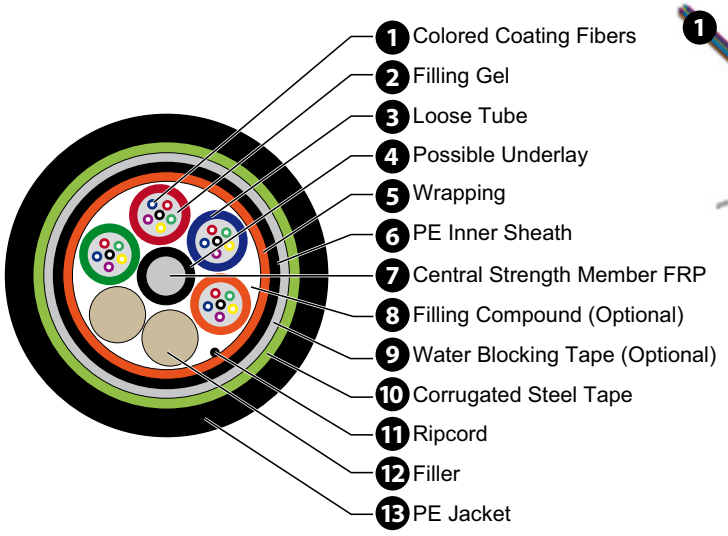


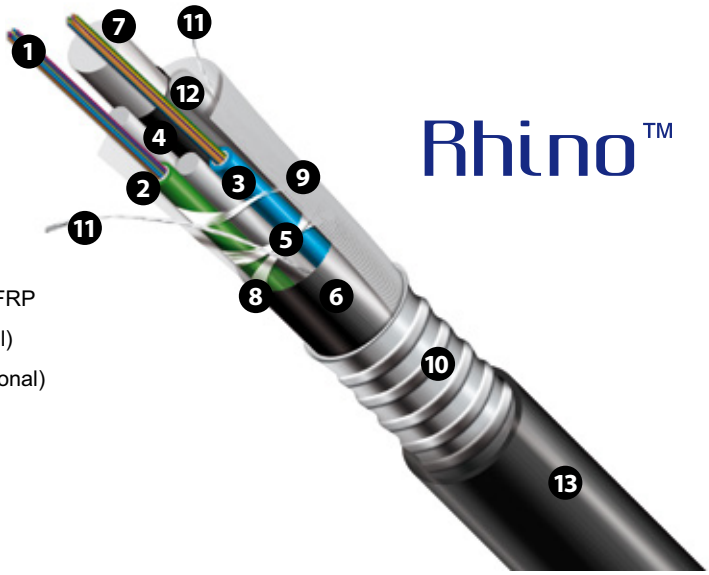
Armored Cables | Medium Armored

LP-OC03XX

Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, Corrugated Steel Tape, Dry Water Block Cable Core and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Gel Water Block cable core for protection against moisture filling cavity between FRP strength member and inner PE sheath.

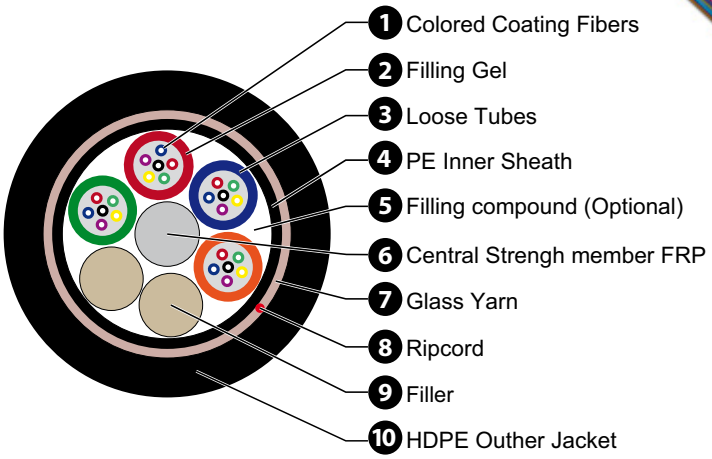


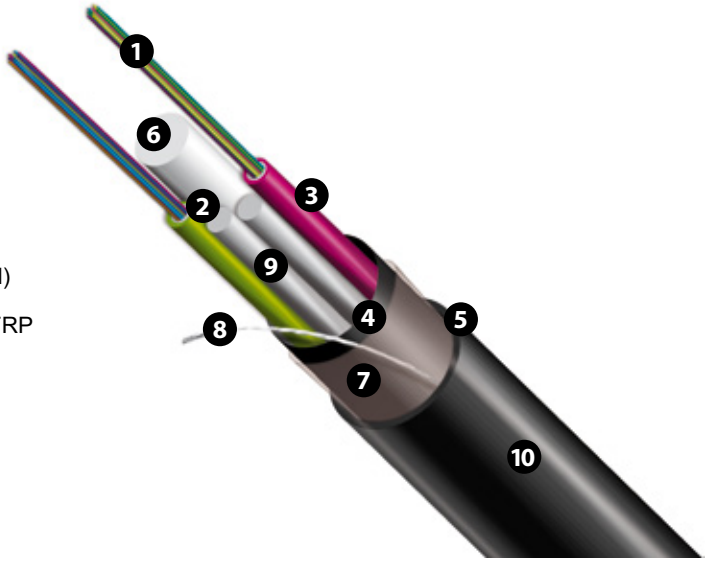


LP-OC04XX

Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, Glass yarns, Dry Water Block Cable Core and Ripcord.

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Anti-rodent glass yarns.

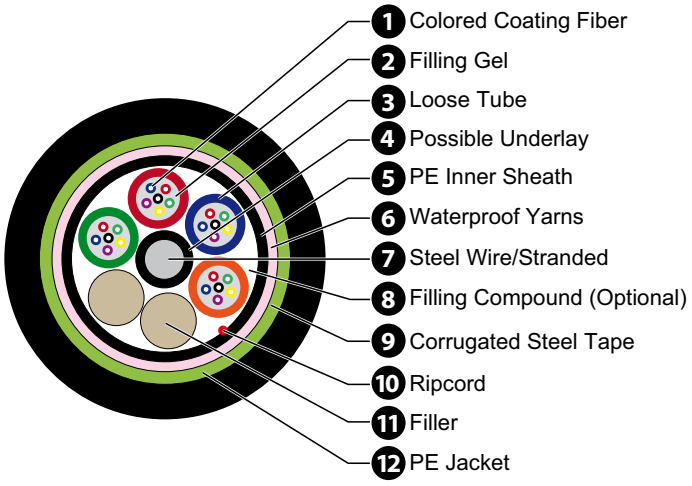


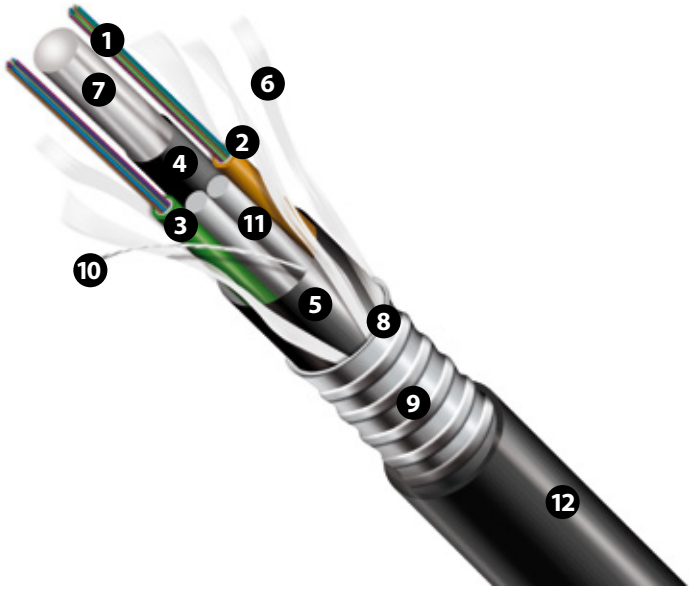


Armored Cables Medium Armored

LP-OC02XX **Fiber Optical Cable with Loose Tubes, Double PE jacket, Central Steel wire/Stranded Core, Corrugated Steel Tape, Dry Water Block Cable Core and Ripcord.**

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.

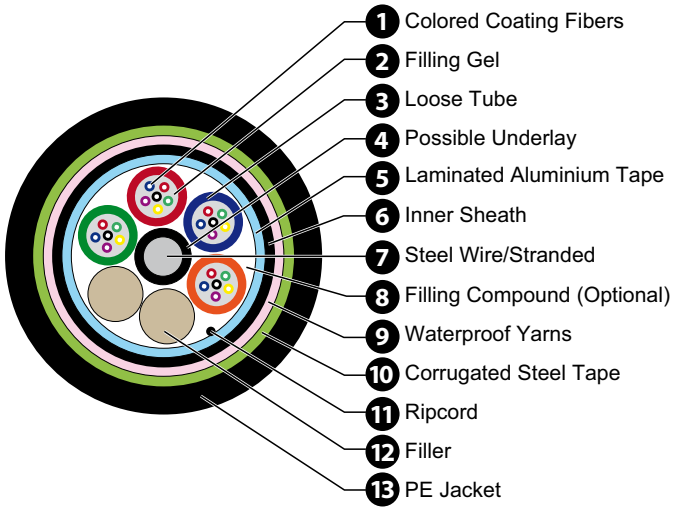


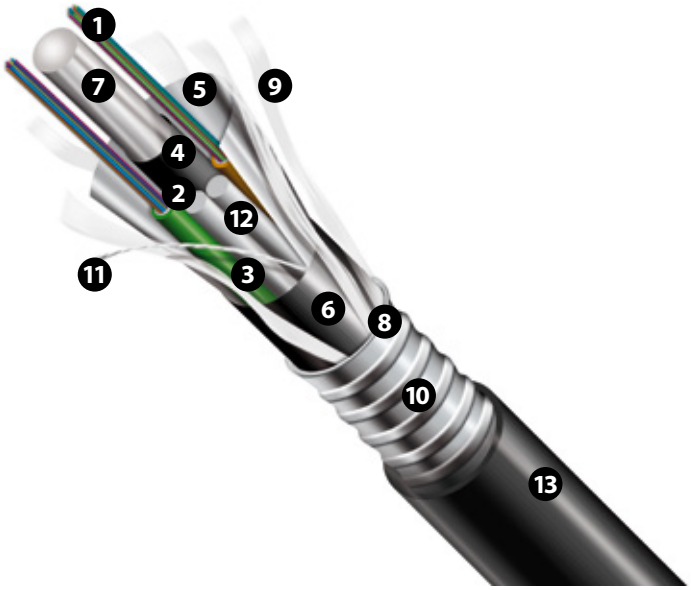


Armored Cables Heavy Armored

LP-OC18XX **Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Steel wire/Stranded Core, Laminated Aluminum Tape, and Ripcord.**

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.



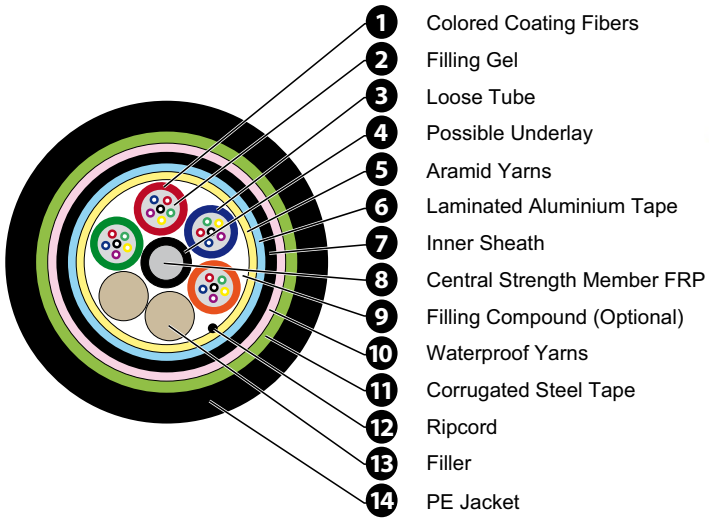


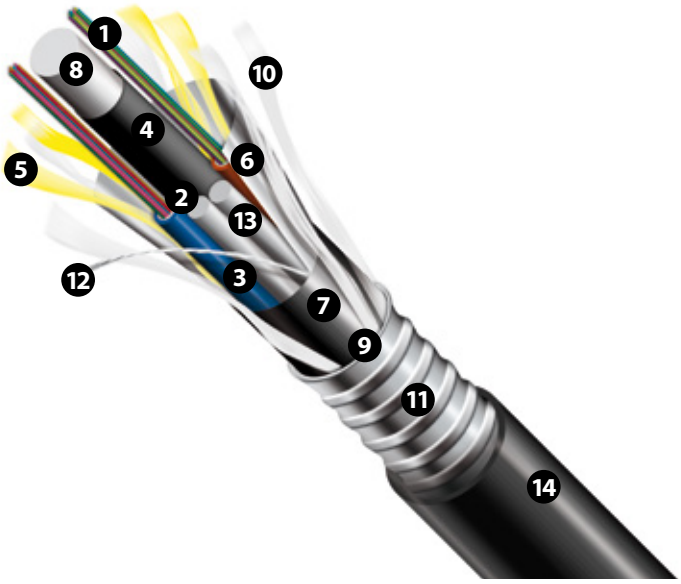
Armored Cables | Heavy Armored

LP-OC19XX

Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, laminated aluminum tape, corrugated steel tape and Ripcord.

- Loose tube gel filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.

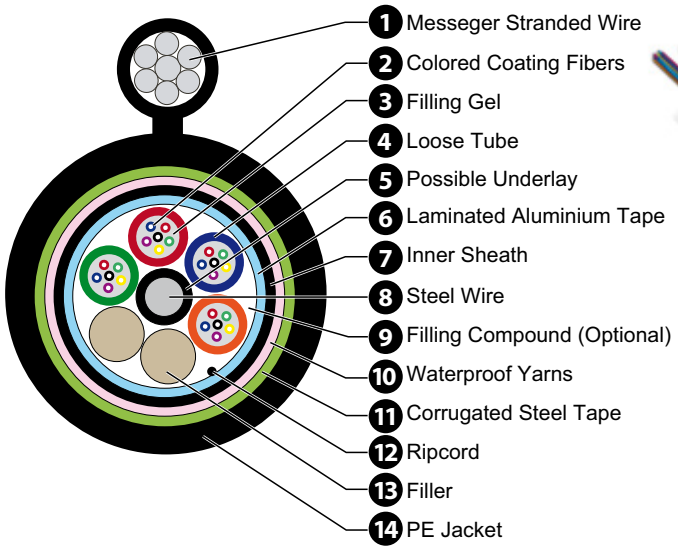


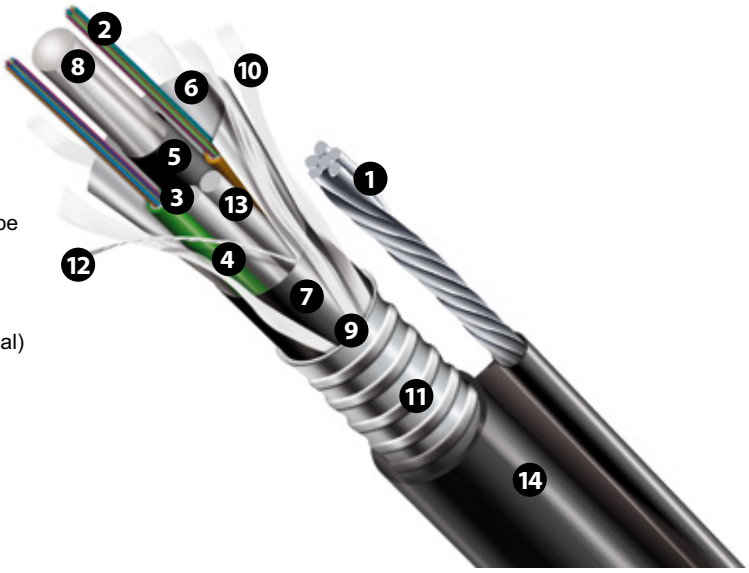


LP-OC07XX

Fiber Optical Cable with Loose Tubes, Double PE Jacket, self supporting, Figure 8, central steel wire, messenger wire, laminated aluminum tape for strength, Dry Water Block Cable Core and Ripcord.

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.





Armored Cables | Heavy Armored

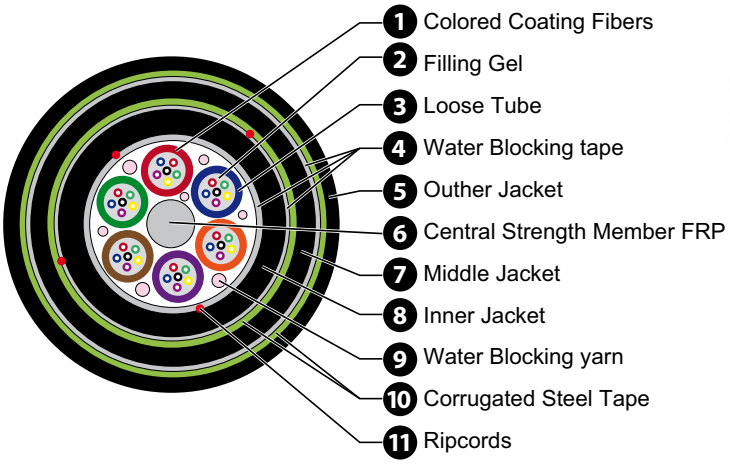
LP-OC09XX

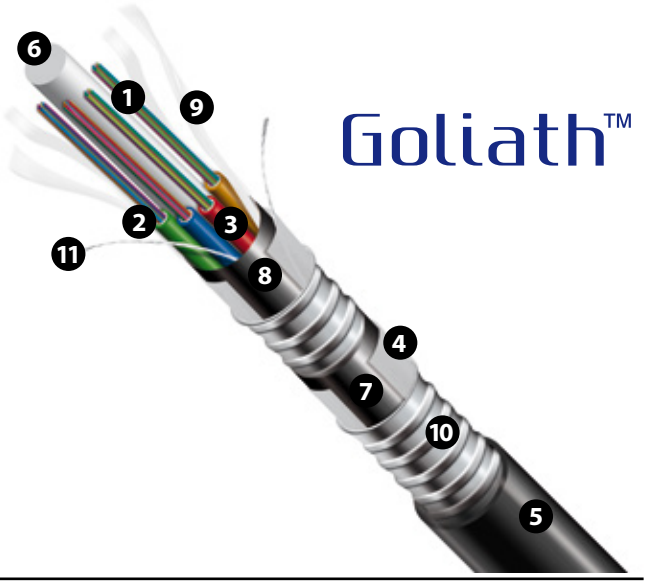
Fiber Optical Cable with Loose Tubes, Triple PE Jacket, Central Strength member FRP, 2 corrugated steel tape layers, Water Blocking tape and water blocking yarns and Ripcord

- Loose tube gel-filled construction for superior fiber protection.
- UV- and moisture-resistant design.
- Rodent-resistant construction.
- Dry Water Block cable core for ease of handling.

Applications:

- Usable in Direct burial.
- Long-haul communication systems.
- Junction communication systems.
- Subscriber network systems.
- Local area network systems.



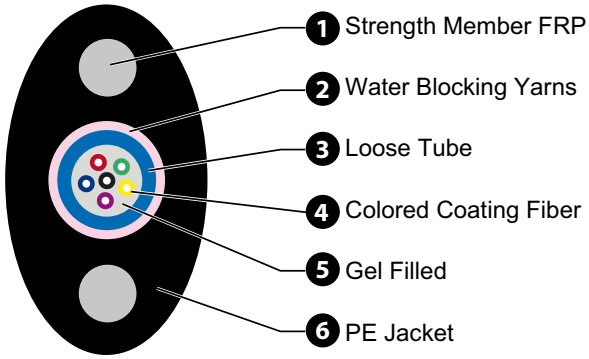


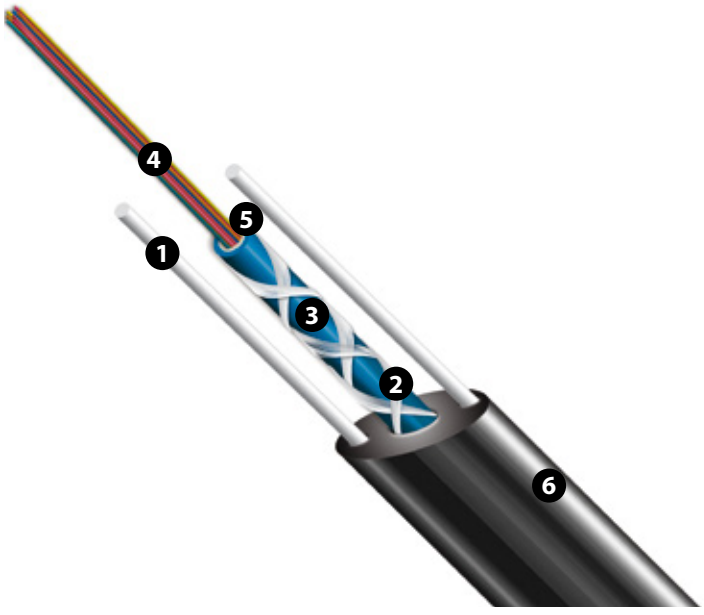
Outdoor FTTH | (Fiber to the home)

LP-OC34XX

All dielectric Flat Drop Mini LT Fiber Optical Cable with Loose tube, Single PE Jacket, self supporting, Two Strength members FRP, and 4, 8 or 12 singlemode or multimode fiber cores.

- Special low-bend-sensitivity fiber provides high bandwidth and excellent communication transmission properties.
- Simple structure, light weight, high tensile strength.



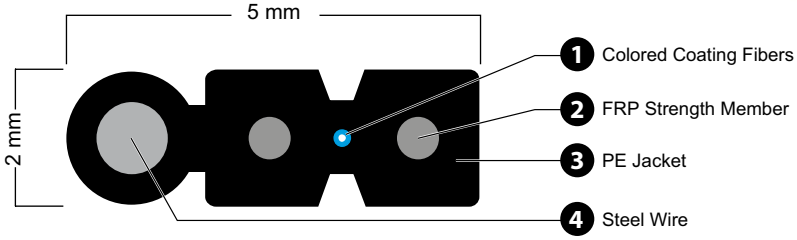


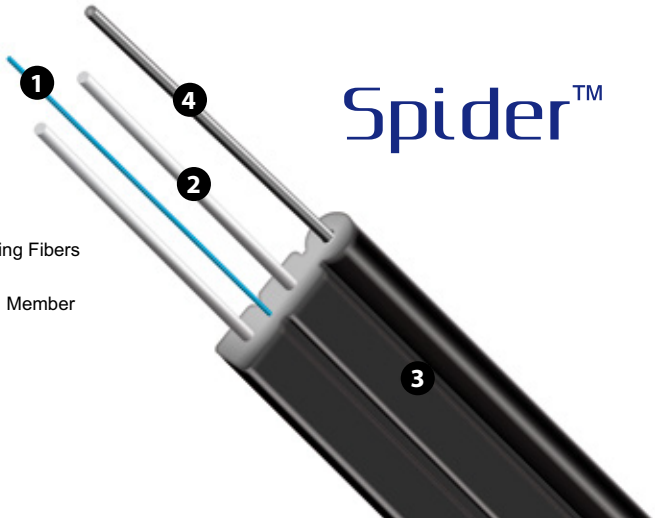
Outdoor FTTH (Fiber to the home)

LP-OC33XX

Drop Fiber Optical Cable with Colored coating fibers, LSZH-rated Jacket, self supporting, central steel wire, Bow type, Two Strength members FRP and 1,2,4,6 singlemode or multimode fiber cores.

- Special low-bend-sensitivity fiber provides high bandwidth and excellent communication transmission properties.
- Simple structure, light weight, high tensile strength.
- One (1), Two (2), Four (4) or Six (6) fiber cores.
- Two parallel FRP strength members ensure good performance of crush resistance to protect the fiber.
- A steel wire is added for self support enabling it to be used in outdoor aerial Fiber To The Home (FTTH) applications.
- Novel groove design, easily strip and splice, simplified installation and maintenance.



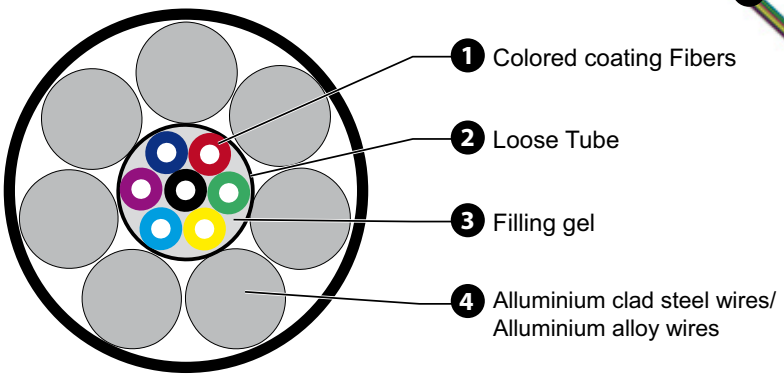


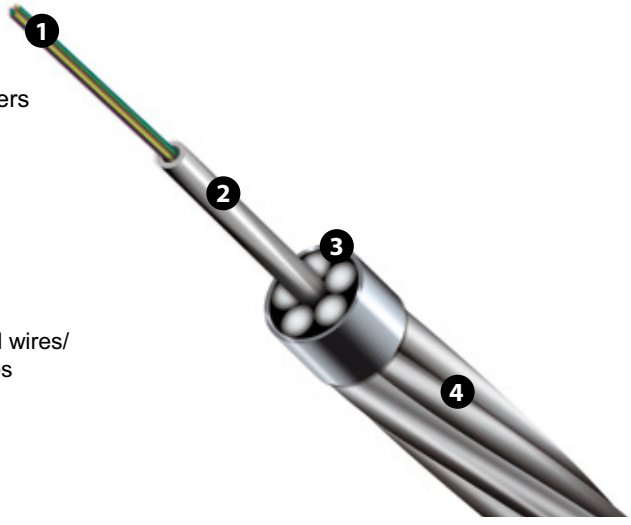
OPGW

LP-OC71XX

The Fiber Optical Grounded Wire Cable by LanPro, is a type of cable that is used in overhead power lines. Such cable combines the functions of grounding and communications. The OPGW cables contains a tubular structure with one or more multimode or singlemode optical fibers in it, surrounded by layers of steel and aluminum wire.

- Small cable diameter and short circuit current capacity.
- Light weight.
- The stainless steel tube can form a suitable primary fiber excess length.
- The OPGW cables has slightly worse tensile, torsion and crush resistance performance.
- Apply to the transformation of old lines.



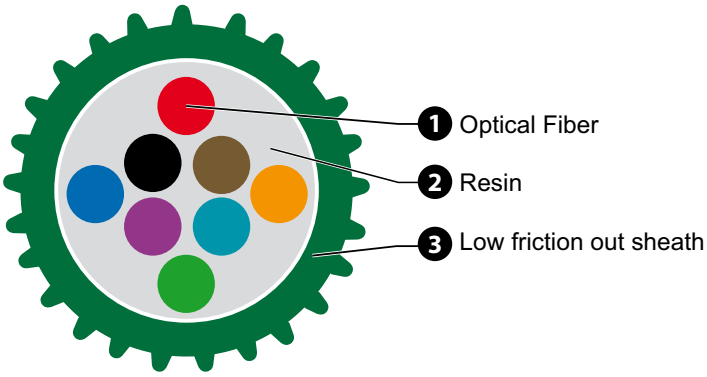


Blown Fiber Cables

LP-OC80XX

Miniature Blown Fiber optical cables with Loose Tubes Single PE Jacket, Dry water block cable core (1-12 cores).

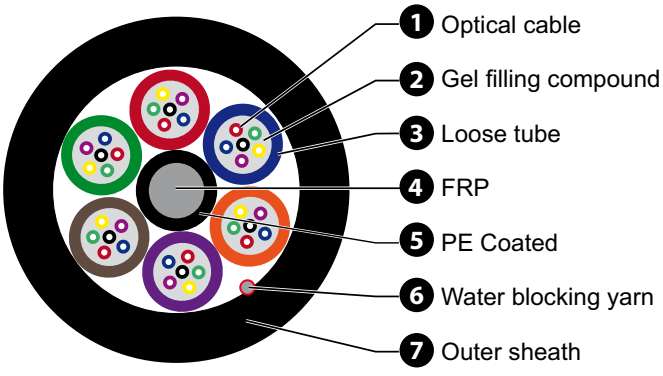
- 1, 2, 4, 6, 8 and 12 fibers options. Only one fiber is optional.
- Stable structure, good mechanical and temperature performance.
- Designed with special grooves to advance blowing distance.
- Lightweight and proper stiffness, repeat installation.
- Designed with no gel, easy stripping and handling.
- Better costs advantage compared to traditional product.
- Complete accessories, less manpower, lower installation time.

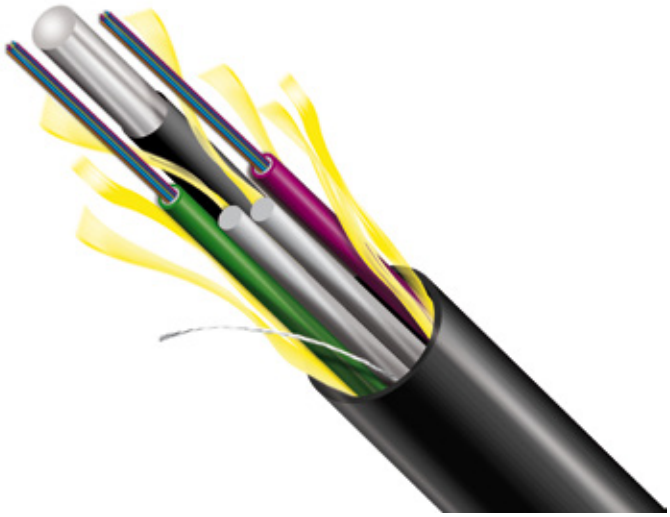


LP-OC81XX

Ferret™ Series, Blown Fiber Optical Micro Cables with Loose Tubes Single PE Jacket, central strength member of FRP, Peripheral water blocking yarns, Dry water block cable core (12-288 cores).

- Feeder for FTTH Systems
- LAN and MAN Backbone
- Use just what you need
- 5G Structure development
- High flexibility and speed on deployment



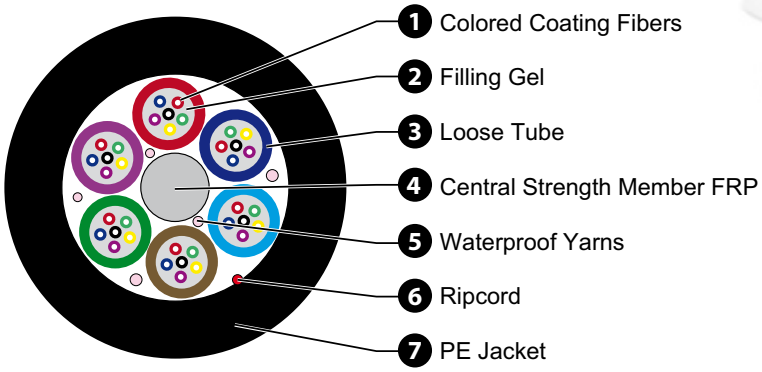


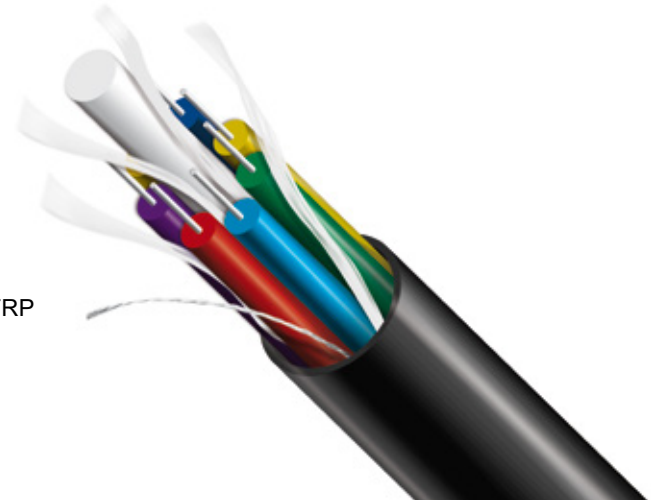
Blown Fiber Cables

LP-OC82XX

Fiber Optical Air blowing Micro Cables with Loose tubes Single PE acket, central strength member of FRP, water blocking yarns and Ripcord

- Backbone in LAN's
- Access Network
- Fiber to the home (FTTH)





Note:
All our fiber optical cables can be designed and supplied under customer request

Order Information

LP-OC 03 01 008 4 QL 75

LANPRO FIBER OPTICAL CABLE	
TT	Cable type
JJ	Jacket Suffix
CCC	Fiber Count
B	Buffer Construction
FF	Fiber Type
SSS	Span only for ADSS Cable

CABLE TYPE

Indoor Cables

31	**Flex™ Series,** Tight Buffer Distribution Fiber Optical Cable, LSZH rated jacket with FRP Central Strength Member and peripheral Aramid® strength fibers, Dry water block and Ripcord.	Indoor Distribution Cables
25	**Tiny™ Series,**Tight Buffer Distribution Fiber Optical Cable, PVC jacket, Dry Water Block Cable Core, Multi-Fiber Aramid® yarns for strength.	
32	**Nano™ Series,** All dielectric Drop Fiber Optical Cable with Colored Coating Fibers, LSZH Jacket, Two Strength members FRP, Bow Type, FTTH (Fiber to the home).	FTTH
35	**Ghost™ Series,** Tight Buffer Distribution Fiber Optical Cable with UV resistance transparent color jacket.	

Outdoor Cables

ADSS Cables

51	Halo™ Series, All dielectric self supporting Fiber Optical Cable for up to 75m span with Loose Tubes and Single PE Jacket, with Central Strength Member FRP, Peripheral Aramid® Yarns, Dry Water Blocking Tape and Ripcord.	Light ADSS (up to 75m span)
05	All dielectric self supporting Fiber Optical Cable for up to 75m span with Loose Tubes and single PE jacket, central strength member FRP, Peripheral Aramid® yarns, Gel Water Blocking Cable core and ripcord.	
62	All dielectric self supporting Fiber Optical Cable for selectable spans from 75m to 150m, with Loose Tubes, Single PE Jacket, Central Strength member FRP, Peripheral Aramid® Yarns, Water Blocking Yarns, Tape, Gel and Ripcord.	Medium ADSS (from 75m to 150m span)
61	All dielectric self supporting Fiber Optical Cable for selectable spans from 75m to 150m, with Loose Tubes, Double PE Jacket, Central Strength member FRP, Peripheral Aramid® Yarns, Water Blocking Yarns, Tape, Gel and Ripcord.	
10	All dielectric self supporting Fiber Optical Cable for long span greatherthan 150m, with Loose Tubes, Double PE Jacket, Central Strength member FRP, peripheral Aramid® Yarns and Ripcord.	Heavy Duty ADSS (greather than 150m span)

Armored

15	Fiber Optical Cable with Loose Tubes, Single PE Jacket, Steel wire Stranded Core central strength member, Dry Water Block Cable Core and Ripcord.	Light Armored
47	Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Laminated Aluminum tape and Ripcord.	
08	Fiber Optical Cable with Loose Tubes, Single PE Jacket, self supporting, Figure 8, Central steel wire, messenger wire, Laminated Aluminum tape and Ripcord.	
09	Fiber Optical Cable with Loose Tubes, Single PE Jacket, self supporting, Figure 8, Central steel wire, messenger wire and Ripcord.	
16	Fiber Optical Cable with Loose Tubes, Single PE Jacket, and Central Steel wire/Stranded Core Strength Member, Dry Water Block Cable Core, Corrugated Steel Tape and Ripcord.	
17	Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Dry Water Block Cable Core, with corrugated steel tape and Ripcord.	
50	Fiber Optical Cable with Loose Tubes, Single PE Jacket, Central Strength member FRP, Corrugated steel tape, Peripheral Aramid® yarns, Dry Water Blocking tape and Ripcord.	
52	**Armadillo™ Series,** Fiber Optical Cable with Loose Tubes, Single PE Jacket, Corrugated steel tape, Central Strength Member FRP, Dry Water Blocking tape and Ripcord.	

53	**BlackArmor™ Series,** Fiber Optical Cable with Loose Tubes, Single PE Jacket, Corrugated steel tape, Central Strength Member FRP, Gel Water Block and Ripcord.	Light Armored
20	Fiber Optical Cable with Loose tube, Single PE Jacket, armored with two steel wires strength members, laminated steel tape, Dry Water Blocking tape and Ripcord.	
21	Fiber Optical Cable with central Loose Tube, Single PE Jacket, layer of galvanized steel wires strength member, and Ripcord.	
22	Fiber Optical Cable with central Loose Tube, Single PE Jacket, layer of galvanized steel wires strength member, bonded steel tape, water blocking tape and Ripcord.	
02	Fiber Optical Cable with Loose Tubes, Double PE jacket, Central Steel wire/Stranded Core, Corrugated Steel Tape, Dry Water Block Cable Core and Ripcord.	Medium Armored
03	**Rhino™ Series**, Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, Corrugated Steel Tape, Dry Water Block Cable Core and Ripcord.	
04	Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, Glass yarns, Dry Water Block Cable Core and Ripcord.	
18	Fiber Optical Cable with Loose Tubes, Double PE Jacket, and Central Steel wire/Stranded Core, Laminated Aluminum Tape, and Ripcord.	Heavy Armored
19	Fiber Optical Cable with Loose Tubes, Double PE Jacket, Central Strength member FRP, laminated aluminum tape, corrugated steel tape and Ripcord.	
07	Fiber Optical Cable with Loose Tubes, Double PE Jacket, self supporting, Figure 8, central steel wire, messenger wire, laminated aluminum tape for strength, Dry Water Block Cable Core and Ripcord.	
09	**Goliath™ Series**, Fiber Optical Cable with Loose Tubes, Triple PE Jacket, Central Strength member FRP, 2 corrugated steel tape layers, Water Blocking tape and water blocking yarns and Ripcord	
71	Fiber Optical Grounded Wire Cable with Central Steel stainless Tube, surrounded by single layer of aluminum clad steel wires	OPGW
72	Fiber Optical Grounded Wire Cable with Central Steel stainless Tube, surrounded by double layer of aluminum clad steel wires	

Blown Fiber Cables

80	Miniature Blown Fiber optical cables with Loose Tubes Single PE Jacket, Dry water block cable core
81	**Ferret™ Series** Blown Fiber Optical Micro Cables with Loose Tubes Single PE Jacket, central strength member of FRP, Peripheral water blocking yarns, Dry water block cable core
82	Fiber Optical Air blowing Micro Cables with Loose tubes Single PE jacket, central strength member of FRP, water blocking yarns and Ripcord

FTTH (Fiber to the Home)

34	All dielectric Flat Drop Mini LT Fiber Optical Cable with Loose tube, Single PE Jacket, self supporting, Two Strength members FRP
33	**Spider™ Series**, Dielectric Drop Fiber Optical Cable, Aerial steel wire self supporting, with Colored coating fibers, PE Jacket, Bow type, Two Strength members FRP

Order Information

LP-OC 03 01 008 4 QL 75

JACKET SUFFIX		FIBER COUNT	BUFFER CONSTRUCTION	
00	Black Jacket (UV Resistant) with ripcord	001-144	1	Tight Buffer
01	Gel Water Block Cable Core with ripcord		2	Quick Strip
02	Dry Tubewith ripcord		3	Single Fiber Loose Tube (Gel Filled)
03	Interlock Armor Plenum Steelwith ripcord		4	Multi-fiber Loose Tube (Gel- Filled)
04	Interlock Armor Plenum Aluminum with ripcord		5	Loose Buffer
05	Interlock Armor Plenum Steel w/Sub-Units with ripcord		6	Bare/Ribbon
06	Interlock Armor Plenum Aluminum w/Sub-Units with ripcord		7	Colored Coating Fiber
07	Interlock Armor Riser Steel with ripcord			
08	Interlock Armor Riser Aluminum with ripcord			
09	Interlock Armor Riser Steel w/Sub-Units with ripcord			
10	Interlock Armor Riser Aluminum w/Sub-Units with ripcord			
11	N.U.			
12	Dry Water Block Cable Core with ripcord			
13	Dry Water Block Cable Core			
14	Black Jacket (UV Resistant)			
15	Dry Water Block Cable Core with ripcord LSZH			
16	UV resistance transparent color jacket			

FIBER TYPE				SPAN FOR ADSS CABLES ONLY	
LanPro	Fiber Type	Description	COMMENTS	Blank: up to 75m span	
ZC	Standard Loose Tube SM	Full spectrum, low water peak singlemode, ITU-T G.652.D	B1.3 (G652D) P	075 - 900	Span distance in meters over 75m
ZB	Performance Loose Tube SM	Full spectrum, high performance low water peak singlemode with 0.35/0.25 attenuation, ITU-T G.652. D	-		
ZE	Tight Buffer SM	Full spectrum, low water peak singlemode with 900µm PVC buffer, ITU-T G.652.D	-		
ZG	Long-Haul SM	Large Aeff, low water peak, NZ-DSF singlemode, ITU-T G.655	-		
ZA	Ultra-Bendable SM A3/B3	Full spectrum with best macrobending performance, singlemode ITU-T G.657.A3/B3	Full spectrum bend-insensitive singlemode fiber with virtually zero bend loss in most indoor applications		
ZD	Ultra-BendableSM A2/B2	Full spectrum with best macrobending performance, singlemode ITU-T G.657.A2/B2	Full spectrum bend-insensitive singlemode fiber with low bend loss		
ZF	Ultra-Bendable SM A1/B1	Full spectrum with best macrobending performance, singlemodeITU-T G.657.A1/B1	Full spectrum singlemode fiber with enhanced bend capability		
QG	62.5 µm MM	1 Gb/s ≤ 300 m at 850 nm, OM1* 1 Gb/s ≤ 550 m at 1300 nm	-		
QL	62.5 µm MM	1 Gb/s ≤ 500 m at 850 nm, OM1* 1 Gb/s ≤ 1000 m at 1300 nm	**IEC 60793-2-10 Type A1b**		
BI	Ultra-bendable 50 µm MM	10 Gb/s ≤ 150 m at 850 nm, OM2* 1 Gb/s ≤ 750 m at 850 nm	**IEC 60793-2-10 Type A1a**		
TP	Ultra-bendable 50 µm MM	10 Gb/s ≤ 300 m at 850 nm, OM3* 1 Gb/s ≤ 1000 m at 850 nm	-		
TG	Ultra-bendable 50 µm MM	10 Gb/s ≤ 550 m at 850 nm, OM4* 1 Gb/s ≤ 1100 m at 850 nm	-		
TI	Ultra-bendable 50 µm MM	10 Gb/s ≤ 600 m at 850 nm, OM4+* 1 Gb/s ≤ 1100 m at 850 nm	-		
FT	50/125 µm MM	10 Gb/s ≤ 550 m at 953 nm, OM5* 1 Gb/s ≤ 1100 m at 953 nm	-		

SMF-28e+ is a trademark and Corning, LEAF, InfiniCor and Plus Corning OpticalFiber are registered trademarks of Corning Incorporated, Corning, NY, U.S.A.

Examples:

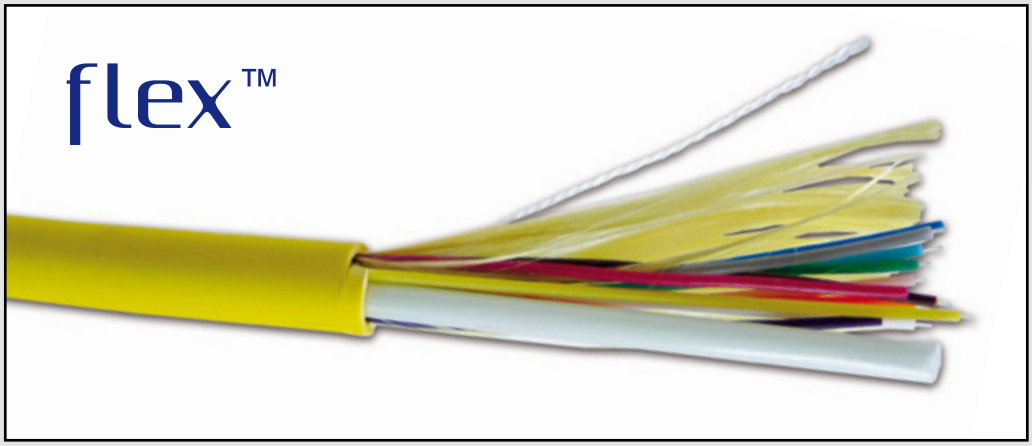
LP-OC62010124ZC120 - All Dielectric Self Supporting Optical Cable for 120 m Span with 12 singlemode Corning® SMF-28+ ITU-T G.652.D B1.3 fibers in gel filled Loose Tubes, Single PE Jacket, Peripheral Aramid Yarns, FRP Central Strength member, Ripcord, Water Blocking Yarns, Tape and Gel.

LP-OC52120124TP - Fiber Optical Cable with Loose Tubes, Single PE Jacket, FRP Central strength member, corrugated steel tape, dry water block tape and ripcord, with 12 multimode fibers OM3 ClearCurve™ Ultra-flexible 50 µm.

Tight Buffer Cable Types

There are two basic types of cables, generally defined as tight buffer and loose tube. Tight buffer cables (simplex, zipcord, distribution and breakout) are used in premises applications where cable flexibility and ease of termination are important, more so than ruggedness and pulling strength which characterize loose tube and ribbon types of cable. Generally, tight buffer cables are used indoors and loose tube/ribbon cables outdoors.

Distribution Cable



Distribution cable is the most popular indoor cable, as it is small in size and light in weight. They contain several tight-buffered fibers bundled under the same jacket with Kevlar strength members and sometimes fiberglass rod reinforcement to stiffen the cable and prevent kinking. These cables are small in size, and used for short, dry conduit runs, riser and plenum applications.

The fibers are double buffered and can be directly terminated but because their fibers are not individually reinforced, these cables need to be broken out with a "breakout box" or terminated inside a patch panel or junction box to protect individual fibers.

Breakout Cable

Breakout cable is a favorite where rugged cables are desirable or direct termination without junction boxes, patch panels or other hardware is needed. They are made of several simplex cables bundled together inside a common jacket. This is a strong, rugged design, but is larger and more expensive than the distribution cables. It is suitable for conduit runs, riser and plenum applications. It's perfect for industrial applications where ruggedness is needed. Because each fiber is individually reinforced, this design allows for quick termination to connectors and does not require patch panels or boxes.

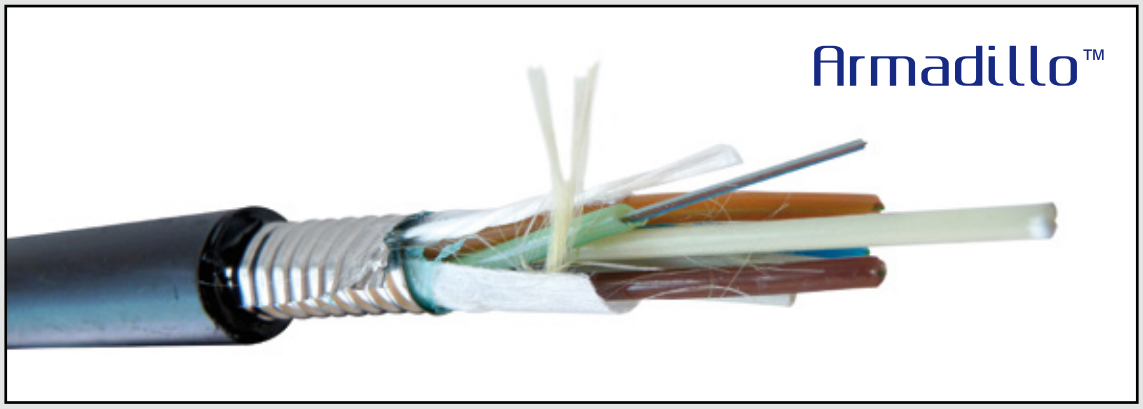
Breakout cable can be more economic where fiber count isn't too large and distances too long, because it requires so much less labor to terminate.

Loose Tube Cable Types

Loose tube cables are the most widely used cables for outside plant trunks because it offers the best protection for the fibers under high pulling tensions and can be easily protected from moisture with water-blocking gel or tapes.

These cables are composed of several fibers together inside a small plastic tube, which are in turn wound around a central strength member, surrounded by aramid strength members and jacketed, providing a small, high fiber count cable. This type of cable is ideal for outside plant trunking applications, as it can be made with the loose tubes filled with gel or water absorbent powder to prevent harm to the fibers from water. It can be used in conduits, strung overhead or buried directly into the ground. Some outdoor cables may have double jackets with a metallic armor between them to protect from chewing by rodents or Kevlar for strength to allow pulling by the jackets. Since the fibers have only a thin buffer coating, they must be carefully handled and protected to prevent damage. Loose tube cables with singlemode fibers are generally terminated by spicing pigtails onto the fibers and protecting them in a splice closure. Multimode loose tube cables can be terminated directly by installing a breakout kit, also called a furcation or fan-out kit, which sleeves each fiber for protection.

Armored Cable

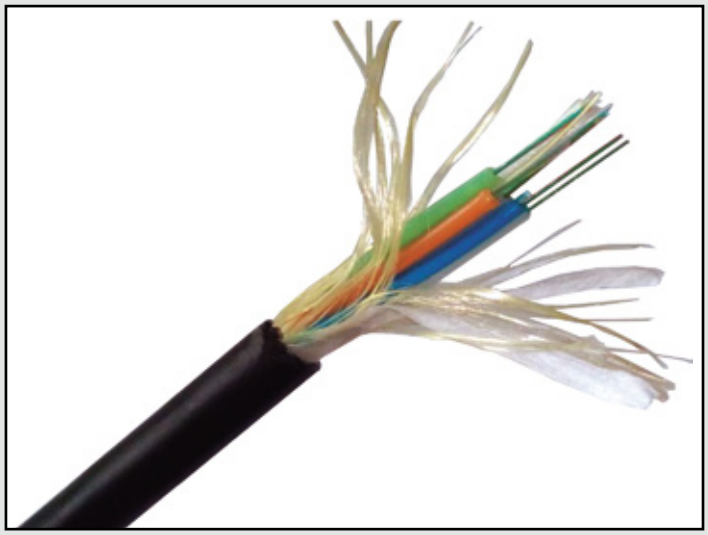


Armored cable is used in direct buried outside plant applications where a rugged cable is needed and/or for rodent resistance. Armored cable withstands crush loads well, needed for direct burial applications. Cable installed by direct burial in areas where rodents are a problem usually has metal armoring between two jackets to prevent rodent penetration. Another application for armored cable is in data centers, where cables are installed under the floor and one worries about the fiber cable being crushed. Indoor armored cables may have nonmetallic armor. Metallic armored cable is conductive, so it must be grounded properly.

Aerial Cable

Aerial cables are for outside installation on poles. They can be lashed to a messenger or another cable (common in CATV) has metal or aramid strength members to make them self supporting or strength members capable of supporting the cable (all-dielectric self-supporting or ADSS cable.) The cable known as a figure 8 cable has a cable bonded to an insulated steel messenger for support. It must be grounded properly.

A widely used aerial cable is optical power ground wire (OPGW) which is a high voltage distribution cable with fiber in a metallic tube in the center of the wire. The fiber is not affected by the electrical fields and the utility installing it gets fibers for grid management and communications. This cable is usually installed on the top of high voltage towers but brought to ground level for splicing or termination.



Pigtal, Simplex & Duplex

LanPro are manufactured strictly according to international standard. Pigtail is a fiber assembly that is 3 meters or less in length, having the connector termination on only one end of the fibers, and having the connector at only end of the cable assembly. For simplex or duplex patch cord, it means that a fiber assembly has one or two fibers, and with connectors at both end of each fiber. LanPro Pigtails are available in OS1/OS2, OM1, OM2, OM3 or OM4 and exceed requirements of TIA/EIA-568-C.3.

All LanPro SC and LC duplex fiber patch cords are provided with a flexible clip, which allows each connector to be removed individually and conduces to expedite troubleshooting an individual connector can be removed and re-terminated without perturbing the adjacent connector. All outer housing and connector body are color-coded in accordance with ANSI/TIA/EIA-568-C.3.

Additionally, LanPro supports LC patch cords with mSFP duplex clip (pitch: 5.25mm) and short mini boot (18.5mm), new strain relief boot. These flexible features are to answer the requirements in Storage Area Networks (SAN) inside the data center on Brocades' new 64-port, 8-Gb/s Fiber Channel blade for the DCX switch frame. The 5.25mm reduces the typical pitch of LC and enables mating to the mSFP transceiver.

Specifications:

ST, FC, SC, LC and MTRJ are available. PC, SPC, UPC and APC polish meet standard requirement

Fiber Compatibility:

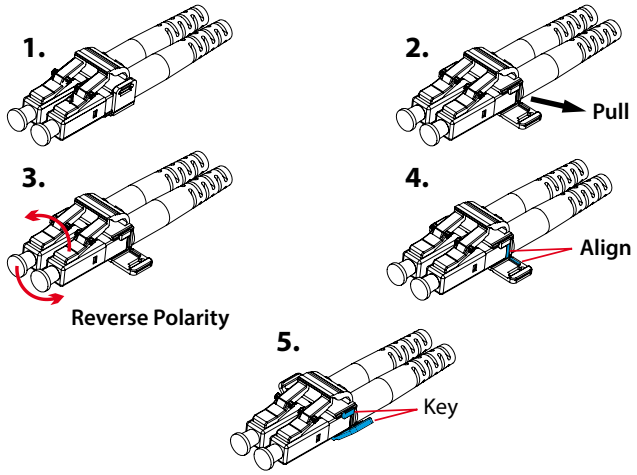
OM1, OM2, OM3, OM4, OS1/OS2

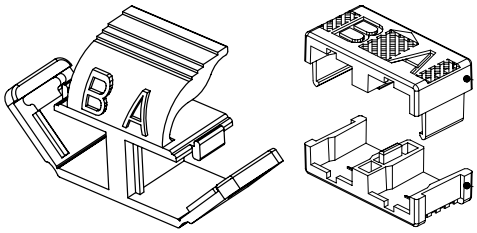
Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at desk.

OM1 (62.5/1256um): for LED-based propagation
OM2 (50/125um): for LED or VCSEL-based propagation
OM3 & OM4 (150/125um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation.

The flexible clip allows each connector to be removed individually (this flexible-clip facility is available only for LC and SC duplex)





LEFT:
Yoke for LC
RIGHT: Yoke for SC

LC Uniboot Patch Cord

LanPro LC uniboot series is integrated reverse-polarity uniboot duplex assembly that completely answers high-density requirements of the MDA and EDA. Compared with traditional duplex LC jumpers, uniboot series provides efficiently a 50-percent reduction in bulk cabling, including the improvement of cable management, air circulation and routing.

Incorporated with 3.0 mm dual an cable (containing 2 x 0.9 mm fiber), uniboot exclusively maximizes valuable space. The user regains control of the infrastructure rather than living with an unmanageable build-up of patch cords.

Specifications:

Uniboot is only for LC, PC, SPC, UPC and APC polish meet standard requirement

Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2

Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at desk.

OM1 (62.5/125um): for LED-based propagation
OM2 (50/125um): for or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1 & OS2 (9/125um): Laser-based propagation.

LanPro´s LC uniboot supports A & B identification on both edges.

Compared with the standard LC duplex patch cord, uniboot version increases high density efficiently

Standard LC Patch Cord + Short Boot

LanPro LC short boot series is particularly for the high-density applications on account of the reduced overall connector length. LC connector is one compact version of optic fiber connectors. With short boot, length by 18.5mm, it absolutely meets the high-density requirements of the MDA and EDA.

Specifications:

Short boot is for LC and 2.0mm cable only. PC, SPC, UPC and APC polish meet standard requirement.

Fiber Compatibility:

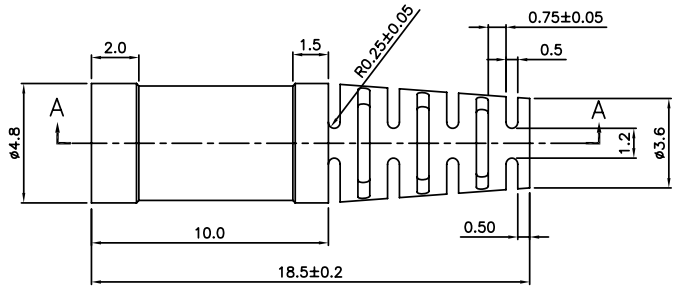
OM1, OM2, OM3, OM4, OS1/OS2

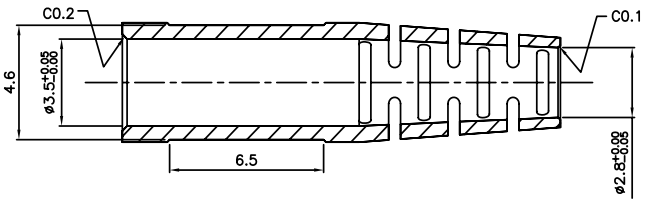
Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at desk.

OM1 (62.5/125um): for LED-based propagation
OM2 (50/125um): for or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1 & OS2 (9/125um): Laser-based propagation.

Right: standard LC boot Left: short LC boot (18.5mm).





Outdoor Duplex Fiber Optic Patch Cords

Armored with corrugated steel tape and LSZH UV Resistant Jacket

LanPro manufactures high quality Fiber Optic Patch Cords in a variety of configurations and lengths to suit our customer requirements.

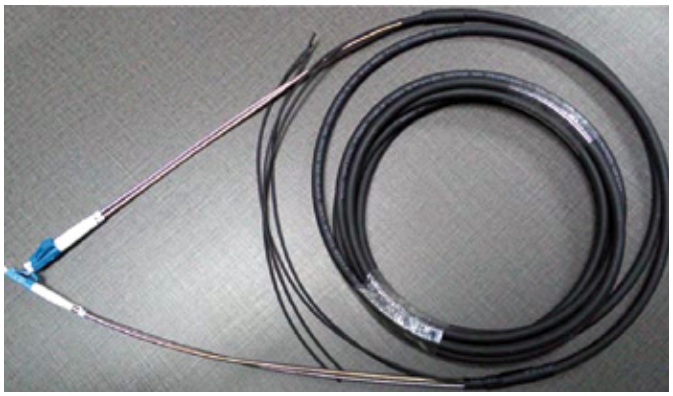
They can be supplied with different types of connectors, fiber cables, Fiber cores and lengths. In this document you can find the Ordering Code which you can use to assemble your order.

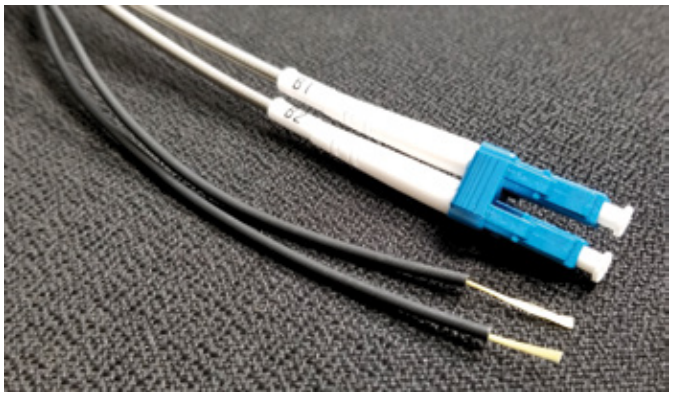
LanPro's stringent quality control with a 100 % testing scheme assures a product that is warranted to work.

Besides this, LanPro's World Wide Warranty covers any faulty Patch Cord due manufacturing defects. They come individually packed and identified in a plastic zip-bag for your convenience.

Applications:

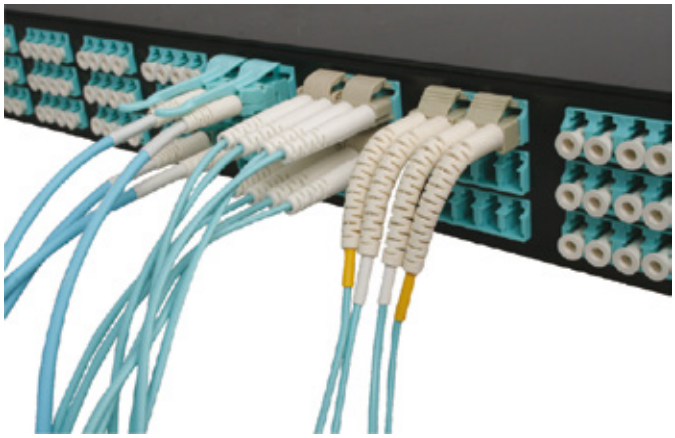
- Telecommunications
- Mainly used in wireless base station horizontal and vertical cabling.





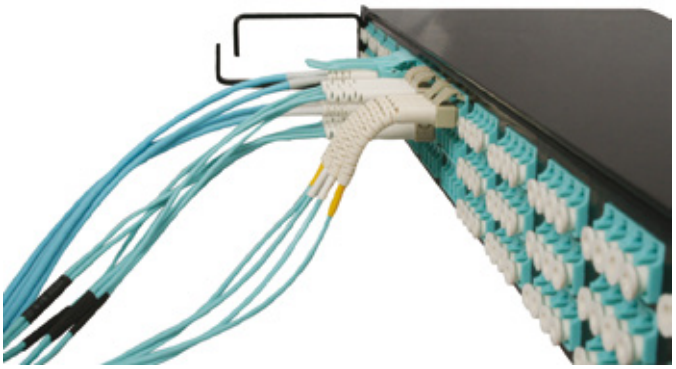
LC + Bendable Boot

LanPro LC bendable boot series is designed to bend and maintain desired angle or direction. With a single stainless steel wire inside the boot, it is easy and convenient to be bended by hand, without any tool. Incorporated with ultra-bendable fiber cable, G657A1 and G657A2, this series maintains the stable performance and supports a minimum bend-radius of 10mm within minimal bend-induced attenuation loss. In data center, the network transmission increases rapidly, available margins tighten greatly and becomes sensitive to loss incorporated with a number factors. Bend is one of them. Attenuation loss, with neglecting bends, may be reduced 50% when using LC bendable series, it protects a system outage from severe bending problems.
All outer housing and connector body are color-coded in accordance with ANSI/TIA/EIA-568-C.3



Specifications:

LC is available. PC, SPC, UPC and APC polish meet standard requirement.



Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2

Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at desk

OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation.

Order Information

LP-F	FO PATCH CORD OR PIGTAILS		CONNECTOR TYPE FOR FIRST END		POLISH GRADE FOR FIRST END		OPTIONAL	CONNECTOR TYPE FOR SECOND END		POLISH GRADE FOR SECOND END		OPTIONAL
LANPRO OPTIC FIBER	12	Simplex Optical Patch Cord/Pig Tail	0	None	0	None (pigtail)	–	0	None	0	None (pigtail)	–
	13	Duplex Optical Patch Cord (zipcord only)	T	ST Simplex	1	UPC polish, RL>50dB Blue Color Connector		T	ST Simplex	1	UPC polish, RL>50dB Blue Color Connector	
	26	Outdoor Duplex Fiber Optic Patch Cords, Armored with corrugated steel tape	G	FC Typical type Simplex disassembled	2	APC polish, RL>60dB Green Color Connector		G	FC Typical type Simplex disassembled	2	APC polish, RL>60dB Green Color Connector	
			D	Free	3	PC Polish , RL > 20dB Blue Color Connector		D	Free	3	PC Polish , RL > 20dB Blue Color Connector	
			E	E2000 Simplex	4	SPC polish, RL>40dB Blue Color Connector		E	E2000 Simplex	4	SPC polish, RL>40dB Blue Color Connector	
			K	E2000 Duplex				K	E2000 Duplex			
			5	Free				5	Free			
			6	Free				6	Free			
			F	FC Simplex				F	FC Simplex			
			S	SC Simplex				S	SC Simplex			
			C	SC Duplex				C	SC Duplex			
			J	Free				J	Free			
			P	LC Simplex				P	LC Simplex			
			L	LC Duplex				L	LC Duplex			
			7	Free				7	Free			
			8	Free				8	Free			
			M	MTRJ Female				M	MTRJ Female			
			N	MTRJ with Guide Pin Male				N	MTRJ with Guide Pin Male			
			Q	Free				Q	Free			

Example:
LP-F13C30T3007P3M1 - Duplex Optical Patch Cord (Zipcord) SC Duplex Beige color connector / PC Polish , RL > 20dB to ST Simplex Beige color connector / PC Polish , RL > 20dB OM1 62.5/125um, 3.0mm, zipcord cable, orange jacket , PVC 3m length, Bendable boot.

Order Information

CABLE TYPE	
01	Multimode OM1 62.5/125um, 3.0mm, simplex cable, orange jacket
03	Multimode OM1 62.5/125um, 0.9mm, simplex cable, orange jacket
04	Singlemode B1.3 9/125um, 3.0mm, simplex cable, Yellow jacket
05	Singlemode B1.3 9/125um, 0.9mm, simplex cable, Yellow jacket
06	Singlemode B1.3 9/125um, 0.9mm, simplex cable, White jacket
07	Multimode OM1 62.5/125um, 3.0mm, zipcord cable, orange jacket
08	Singlemode B1.3 9/125um, 3.0mm, zipcord cable, Yellow jacket
09	Multimode OM2 50/125um, 3.0mm, simplex cable, orange jacket
10	Multimode OM2 50/125um, 0.9mm, simplex cable, orange jacket
11	Multimode OM1 62.5/125um, 0.9mm, simplex cable, White jacket
12	Multimode OM1 62.5/125um, 2.0mm, simplex cable, orange jacket
13	Multimode OM2 50/125um, 2.0mm, simplex cable, orange jacket
14	Singlemode B1.3 9/125um, 2.0mm, simplex cable, Yellow jacket
16	Multimode OM1 62.5/125um, 3.0mm, MTRJ dualan cable, orange jacket
17	Singlemode G657 A1 9/125um, 0.9mm, simplex cable, Yellow jacket
18	Multimode OM2 50/125um, 0.9mm, simplex cable, White jacket
19	Singlemode G657 A1 9/125um, 0.9mm, simplex cable, White jacket
20	Singlemode G657 A1 9/125um, 1.8mm, zipcord cable, Yellow jacket
21	Singlemode G657 A1 9/125um, 3.0mm, zipcord cable, Yellow jacket
22	Singlemode G655 9/125um, 0.9mm, zipcord cable, Yellow jacket
23	Multimode OM1 62.5/125um, 2.0mm, zipcord cable, orange jacket
24	Singlemode B1.3 9/125um, 2.0mm, zipcord cable, Yellow jacket
25	Singlemode G657 A1 9/125um, 2.0mm, zipcord cable, Yellow jacket
26	Multimode OM1 62.5/125um, 1.8mm, zipcord cable, orange jacket
27	Singlemode B1.3 9/125um, 2.0mm, Mini-zipcord cable, Yellow jacket
28	Multimode OM3 50/125um, 0.9mm, simplex cable, White jacket
29	Singlemode G655 9/125um, 0.9mm, simplex cable, White jacket
30	Singlemode G655 9/125um, 1.8mm, simplex cable, Yellow jacket
31	Singlemode G655 9/125um, 2.0mm, zipcord cable, Yellow jacket
32	Singlemode G655 9/125um, 3.0mm, zipcord cable, Yellow jacket
34	Multimode OM2 50/125um, 0.9mm, simplex cable, gray jacket
35	Multimode OM2 50/125um, 3.0mm, zipcord cable, orange jacket
40	Multimode OM4 50/125um, 0.9mm, simplex cable, White jacket
42	Multimode OM3 50/125um, 3.0mm, zipcord cable, gray jacket
43	Free
44	Multimode OM3 50/125um, 3.0mm, MTRJ dualan cable, gray jacket
45	Multimode OM3 50/125um, 2.0mm, zipcord cable, gray jacket
46	Multimode OM3 50/125um, 1.8mm, Mini-zipcord cable, gray jacket
47	Multimode OM3 50/125um, 0.9mm, simplex cable, gray jacket
48	Free
53	Free
54	Free

CABLE JACKET TYPE	
P	PVC Jacket
L	LSZH Jacket
R	OFNR
V	LSZH UV Resistant

LENGTH	
10M	Meter
10F	Feet

BOOT TYPE	
Blank	Standard long boot
1	Bendable boot
2	Short boot

Examples:

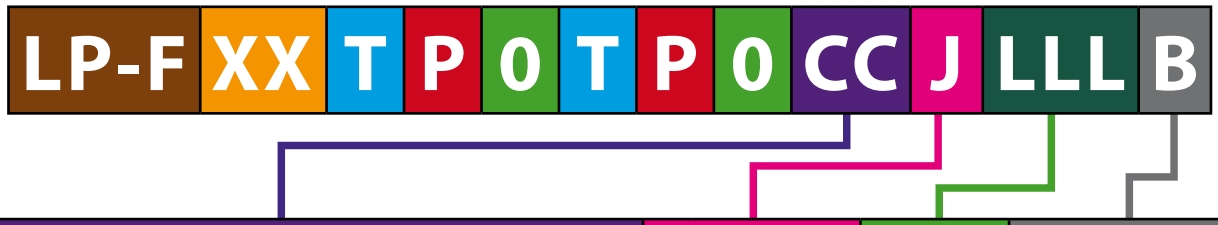
CONNECTOR1/Polish1, CONNECTOR2/Polish2

Patch cord duplex:
LP-F13L30L4007L10M – LanPro Duplex Patch cord LC/UPC to LC/APC Multimode OM1 62.5/125um, 3.0mm, zipcord cable, orange LSZH jacket 10m length.

Patch cord simplex:
LP-F12P30P4001L10M – LanPro Pigtail LC/UPC to LC/APC Multimode OM1 62.5/125um, 3.0mm, simplex cable, orange LSZH jacket 10m length.

Pigtail:
LP-F12P3000001L10M – LanPro Pigtail LC/UPC Multimode OM1 62.5/125um, 3.0mm, simplex cable, orange LSZH jacket 10m length.

Order Information



CABLE TYPE		CABLE JACKET TYPE		LENGTH		BOOT TYPE	
55	Multimode OM4 50/125um, 3.0mm, zipcord cable, gray jacket	P	PVC Jacket	10M	Meter	Blank	Standard long boot
56	Free	L	LSZH Jacket	10F	Feet	1	Bendable boot
57	Free	R	OFNR			2	Short boot
58	Free	V	LSZH UV Resistant				
59	Free						
60	Multimode OM4 50/125um, 0.9mm, simplex cable, gray jacket						
61	Free						
65	Multimode OM3 50/125um, 3.0mm, simplex cable, aqua jacket laser optimized 10 GIG						
66	Multimode OM3 50/125um, 0.9mm, simplex cable, aqua jacket laser optimized 10 GIG						
67	Multimode OM3 50/125um, 3.0mm, zipcord cable, aqua jacket laser optimized 10 GIG						
68	Multimode OM3 50/125um, 2.0mm, simplex cable, aqua jacket laser optimized 10 GIG						
69	Multimode OM3 50/125um, 3.0mm, MTRJ dualan cable, aqua jacket, laser optimized 10 GIG						
70	Multimode OM3 50/125um, 2.0mm, zipcord cable, aqua jacket laser optimized 10 GIG						
71	Multimode OM3 50/125um, 1.8mm, Mini-zipcord cable, aqua jacket laser optimized 10 GIG						
72	Free						
73	Free						
76	Multimode OM4 50/125um, 3.0mm, simplex cable, aqua jacket laser optimized 10 GIG						
77	Multimode OM4 50/125um, 0.9mm, simplex cable, aqua jacket laser optimized 10 GIG						
78	Multimode OM4 50/125um, 3.0mm, zipcord cable, aqua jacket laser optimized 10 GIG						
79	Multimode OM4 50/125um, 2.0mm, simplex cable, aqua jacket laser optimized 10 GIG						
80	Multimode OM4 50/125um, 3.0mm, MTRJ dualan cable, aqua jacket laser optimized 10 GIG						
81	Multimode OM4 50/125um, 2.0mm, zipcord cable, aqua jacket laser optimized 10 GIG						
82	Multimode OM4 50/125um, 1.8mm, Mini-zipcord cable, aqua jacket laser optimized 10 GIG						
83	Free						
84	Free						

Examples:

CONNECTOR1/Polish1, CONNECTOR2/Polish2

Patch cord duplex:
LP-F13L30L4007L10M – LanPro Duplex Patch cord LC/UPC to LC/APC Multimode OM1 62.5/125um, 3.0mm, zipcord cable, orange LSZH jacket 10m length.

Patch cord simplex:
LP-F12P30P4001L10M – LanPro Pigtail LC/UPC to LC/APC Multimode OM1 62.5/125um, 3.0mm, simplex cable, orange LSZH jacket 10m length.

Pigtail:
LP-F12P3000001L10M – LanPro Pigtail LC/UPC Multimode OM1 62.5/125um, 3.0mm, simplex cable, orange LSZH jacket 10m length.

Order Information

Connectors hierarchy	Polish hierarchy
LC Duplex	UPC
LC Simplex	APC
SC Simplex	PC
SC Duplex	SPC
FC Simplex	
FC Typical type simplex disassembled	
ST Simplex	
MTRJ Female	
MTRJ with Guide Pin	
E2000 Simplex	
E2000 Duplex	

Example:
LP-F13C30T3007P3M1 - Duplex Optical Patch Cord (Zipcord) SC Duplex Beige color connector / PC Polish , RL > 20dB to ST Simplex Beige color connector / PC Polish , RL > 20dB OM1 62.5/125um, 3.0mm, zipcord cable, orange jacket , PVC 3m length, Bendable boot.

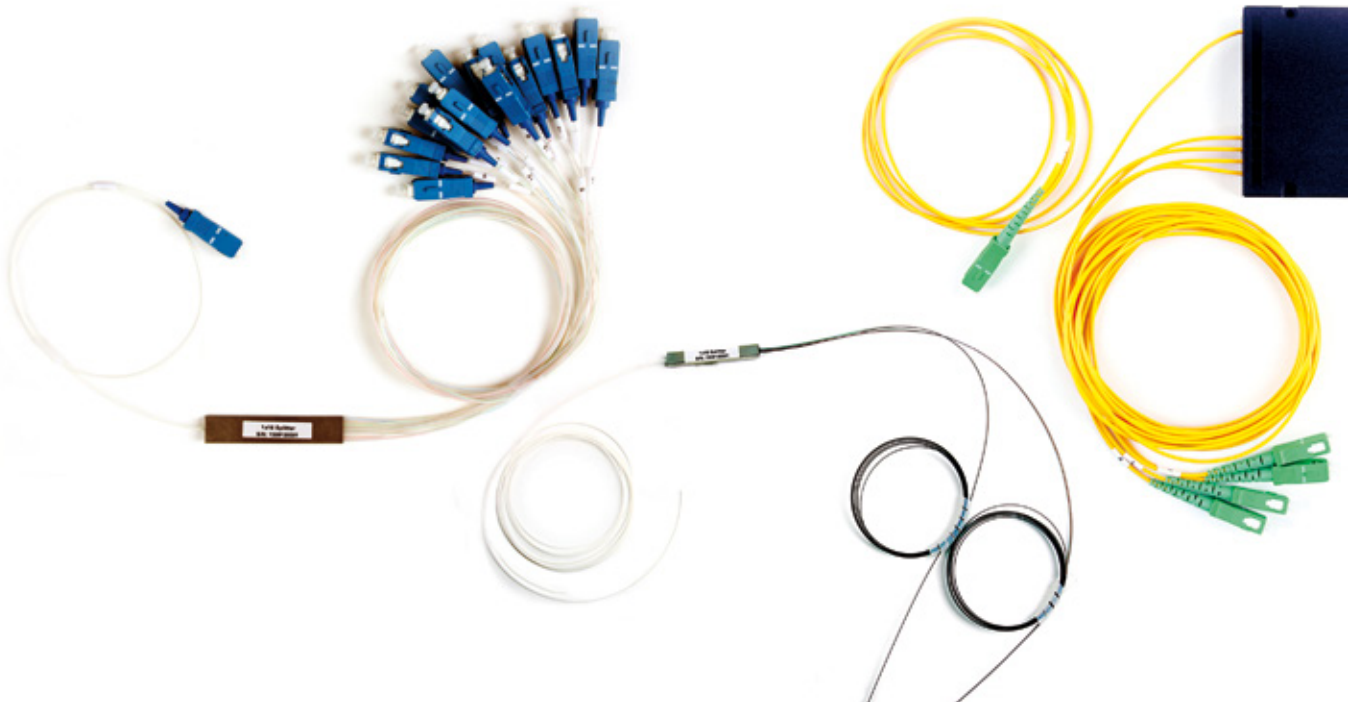
PLC Optical Splitters

LanPro PLC (Planar Lightwave Circuits) splitters are developed using silica glass waveguide circuits and aligned fiber pigtails, integrated inside a miniature package. PLC splitters provide low-cost solution for optical signal distribution, with small form factor and superb reliability.

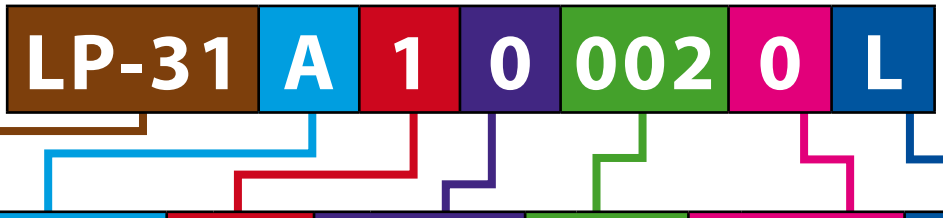
Optical splitters are main FTTH products which can be provided from the chip to the module. Single mode 1xN & 2xN splitter divides uniformly optical signals from input ports to multiple outputs. Splitters can also be operated in the reverse direction to combine multiple wavelengths into one or two fibers.

Specifications:

- Low insertion loss.
- Fan-out type/Non-Fan-out type.
- High return loss and excellent uniformity.
- Low Polarization dependent loss.
- Environmental stable.
- Operation wavelength: 1260nm to 1650nm.
- SC/LC/ST/FC connector types.
- Up to 2x64 splitters available



Order Information

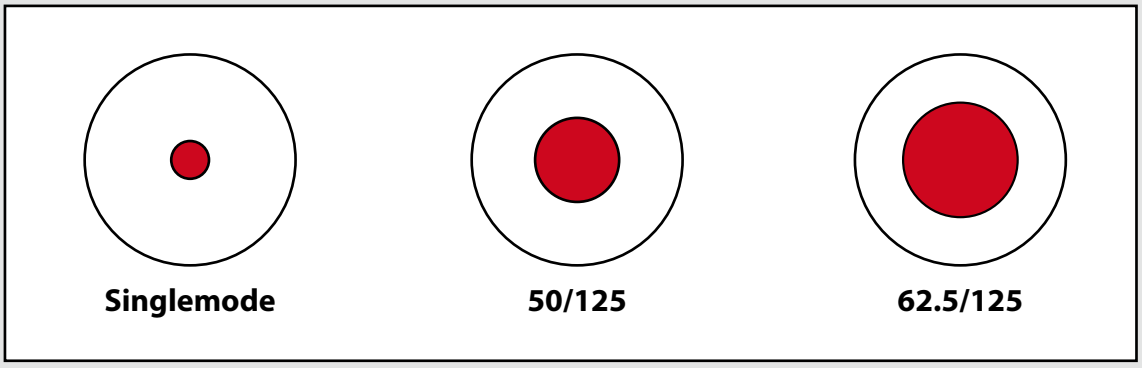


LP-31	SPLITTER TYPE		INPUTS		INPUT CONNECTOR TYPE		OUTPUTS		OUTPUT CONNECTOR TYPE		FIBER TYPE	
PLC OPTICAL SPLITTER	A	PLC Capsule module	1	1 Input	0	No Connector	02	2 Outputs	0	No Connector	R	Ribbon fiber
	B	PLC Box Module	2	2 Inputs	1	SC APC	04	4 Outputs	1	SC APC	L	Loose Fiber
	C	PLC Unifiber Panel Module	3	3 Inputs	2	SC UPC	08	8 Outputs	2	SC UPC	T	Tight Buffer
			4	4 Inputs	3	LC APC	16	16 Outputs	3	LC APC		
					4	LC UPC	32	32 Outputs	4	LC UPC		
					5	FC APC	64	64 Outputs	5	FC APC		
					6	FC UPC			6	FC UPC		

Example:
LP-F31A100020L - LanPro PCL splitter capsule Module 1:2, without connectors, Singlemode G657 Loose Fiber.

Fiber Sizes and Types

Fiber comes in two basic types, singlemode and multimode. Except for fibers used in specialty applications, singlemode fiber can be considered as one size and type. If you deal with long haul telecom or submarine cables, you may have to work with specialty singlemode fibers.



Mini Breakout cable

LanPro's pre-terminated fiber assemblies are used to fanout the MTP®/MPO connectors terminated on ribbon cables into simplex connectors with 900um furcation.

This compact design solution particularly suitable for installation and connection of complex fiber optical infrastructures and also flexible for connections from one cabinet to another or horizontal patch extension from consolidation point to the workstation outlets.

Optional: Pull eye attachment

Specifications:

- ST, FC, SC, and LC are available. PC, SPC, UPC and APC polish meet standard requirement. Available for 4, 6, 8 and 12 cores.
- Suitable for Data Center
- ST, FC, SC, and LC are available. PC, SPC, UPC and APC polish meet standard requirement.
- Pulling eye design to fit for different installation environment
- Standard breakout lengths can be staggered for better cabling routing and management
- High precision factory pre-terminated and factory tested assemblies made according to TIA/EIA and IEC standards

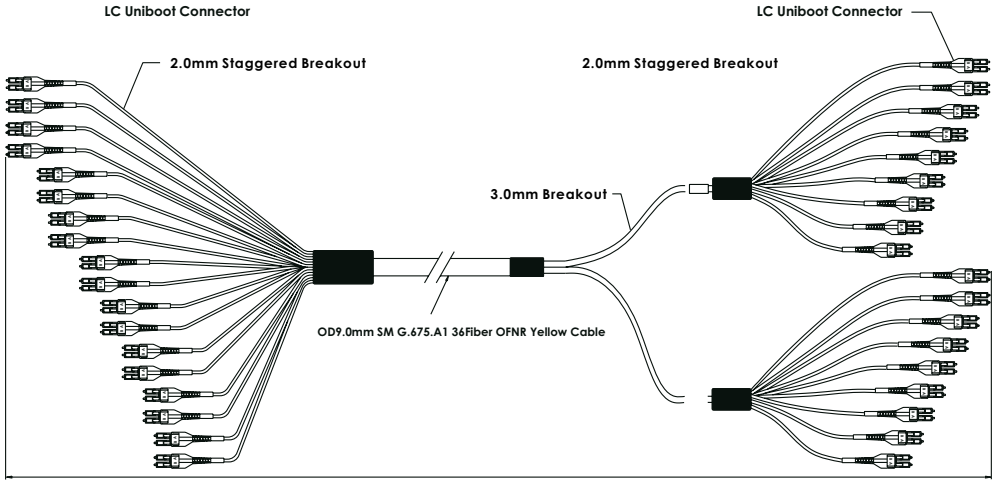
Futher assemblies, fanout length and cable length available on request.

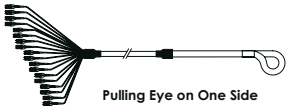
Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2

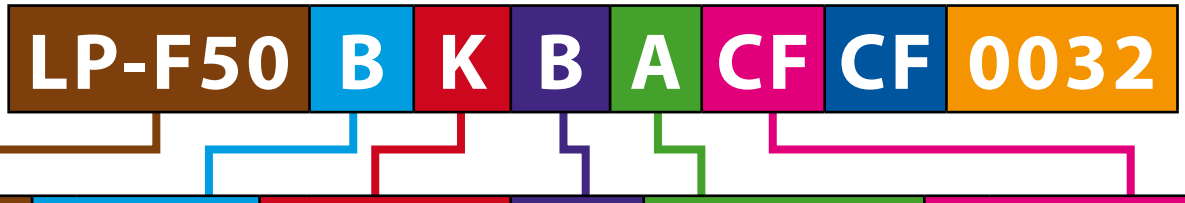
Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms and data center
OM1 (62.5/125um): for LED-based propagation
OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1 & OS2 (9/125um): Laser-based propagation.





Order Information



LP-F50	FIBER TYPE		BREAKOUT CABLE TYPE		COLOR		JACKET MATERIAL		A CONNECTOR	
LANPRO MINI BREAKOUT CABLE	A	MM 62.5/125 um	B	4C 2.0mm Jacket	A	BL	A	PVC	AA	FC One piece (MM)
	B	MM 50/125 um	E	6C 2.0mm Jacket	B	OR	D	PVC Both end pulling eye	AB	FC One piece (MM Low Loss)
	C	10G 50/125um	H	8C 2.0mm Jacket	C	GN	E	PVC OFNP	AC	FC One piece (SM SPC)
	D	OM3 50/125um	K	12C 2.0mm Jacket	D	BR	H	PVC OFNP Both end pulling eye	AD	FC One piece (SM UPC)
	E	OM4 50/125um	L	24C 2.0mm Jacket	E	GY	I	LSZH	AE	FC One piece (SM APC)
	F	SM(G625D) 9/125um			F	WH	L	LSZH Both end pulling eye	BA	ST (MM)
	H	SM(G67A2) 9/125um			G	RD			BB	ST (MM Low Loss)
					H	BK			BC	ST (SM SPC)
					I	YL			BD	ST (SM UPC)
					J	VT(PU)			CF	SC II w/Clip (MM)
					K	RS(PK)			CG	SC II w/Clip (MM Low Loss)
					L	AQ			CH	SC II w/Clip (SM SPC)
									CI	SC II w/Clip (SM UPC)
									CJ	SC II w/Clip (SM APC)
									DF	LC w/Clip (MM)
									DG	LC w/Clip (MM Low Loss)
									DH	LC w/Clip (SM SPC)
									DI	LC w/Clip (SM UPC)
									DJ	LC w/Clip (SM APC)

Example:
LP-F50BKBACFCF0032 Fiber Optic Mini Breakout cable, Multimode 50/125um, 12C 2.0mm PVC Orange color jacket, FC one piece MMto FC one piece MM, 3m length.

Order Information

B CONNECTOR		LENGTH	
AA	FC One piece (MM)	0032	3M
AB	FC One piece (MM Low Loss)	0052	5M
AC	FC One piece (SM SPC)	0102	10M
AD	FC One piece (SM UPC)	0152	15M
AE	FC One piece (SM APC)	0202	20M
BA	ST (MM)	0252	25M
BB	ST (MM Low Loss)		
BC	ST (SM SPC)		
BD	ST (SM UPC)		
CF	SC II w/Clip (MM)		
CG	SC II w/Clip (MM Low Loss)		
CH	SC II w/Clip (SM SPC)		
CI	SC II w/Clip (SM UPC)		
CJ	SC II w/Clip (SM APC)		
DF	LC w/Clip (MM)		
DG	LC w/Clip (MM Low Loss)		
DH	LC w/Clip (SM SPC)		
DI	LC w/Clip (SM UPC)		
DJ	LC w/Clip (SM APC)		

Example:
LP-F50BKBACFCF0032 Fiber Optic Mini Breakout cable, Multimode 50/125um, 12C 2.0mm PVC Orange color jacket, FC one piece MM to FC one piece MM, 3m length.

Breakout cable

LanPro Breakout cables, also called distribution cable or Trunk Cable, provide two possible sizes of tube: 0.9mm (similar to a mini breakout kit) or more robust 2.0mm. The purpose of our Breakout cable is to extended on any given length any indoor interconnection, such as backbones in data centers, from one cabinet/zone to another, such as MDA and HDA. These breakout cables allow an easy deployment of those interconnection needs a better cable routing and management.

Less space inside the conduits, less mess and more effectivity.

Specifications:

- ST, FC, SC, and LC are available. PC, SPC, UPC and APC polish meet standard requirement. Available for 24, 36 and 48 fibers (further assemblies available on request)

Further assemblies, fanout length and cable length available on request.

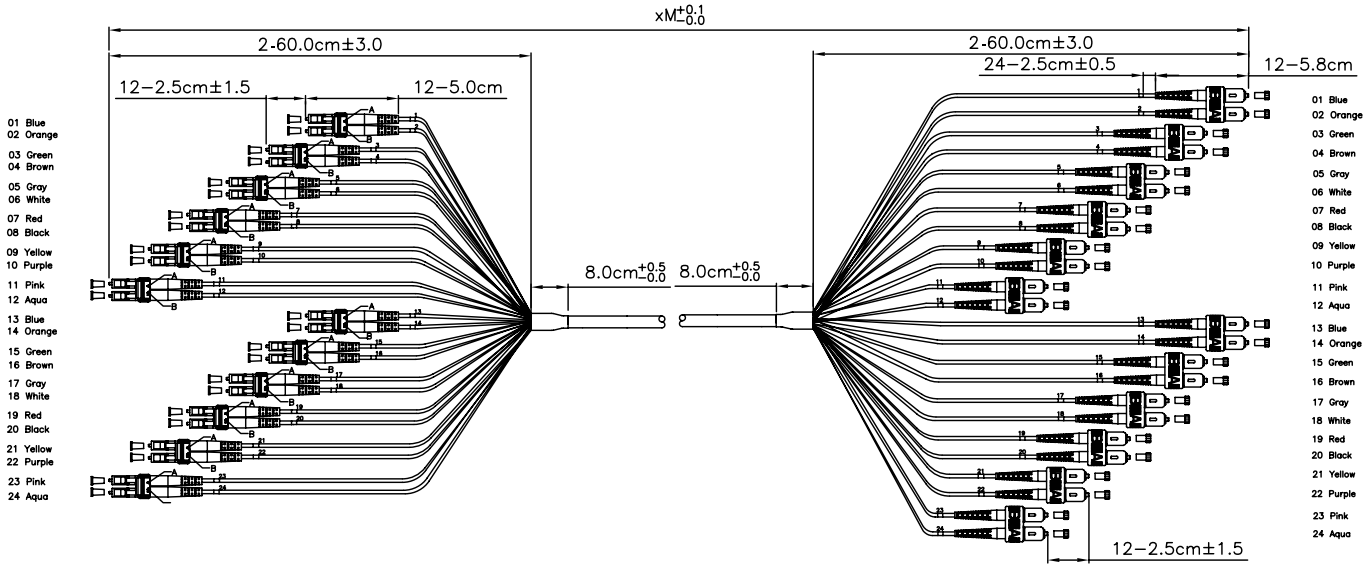
Applications:

Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms and data center.

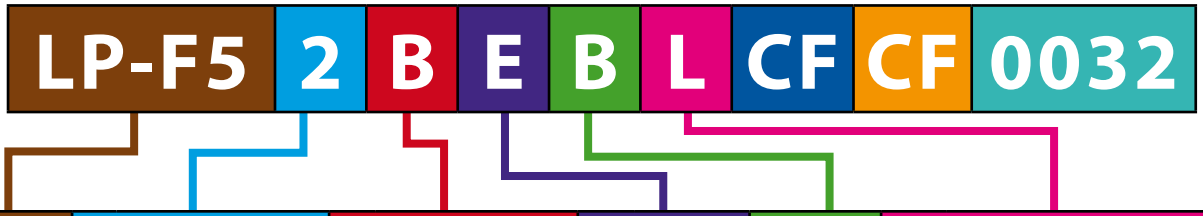
OM1 (62.5/125um): for LED-based propagation
OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1 & OS2 (9/125um): Laser-based propagation.

Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2



Order Information



LP-F5		BREAKOUT CABLE TYPE		FIBER TYPE		FIBER COUNTS		COLOR		JACKET MATERIAL	
LANPRO BREAKOUT CABLE	1	Breakout cable 900um	A	MM 62.5/125 um	A	4C	A	BL	A	Armored with corrugated steel tape
	2	Breakout cable 2.0mm	B	MM 50/125 um	B	6C	B	OR	L	LSZH Both End Pulling eye
			C	10G 50/125um	C	8C	C	GN		
			D	OM3 50/125um	D	12C	D	BR		
			E	OM4 50/125um	E	24C	E	GY		
			F	SM (G625D) 9/125 um	F	36C	F	WH		
			H	SM (G657A2) 9/125 um	G	48C	G	RD		
					H	72C	H	BK		
					I	96C	I	YL		
					J	144C	J	VT(PU)		
							K	RS(PK)		
							L	AQ		

Example:
LP-F52BEBLCFCF0032 Fiber Optic Breakout cable, 2.0mm Multimode 50/125um, 24C LSZH both end pulling eye Orange color jacket, SC II w/Clip MM to SC II w/Clip MM, 3m length.

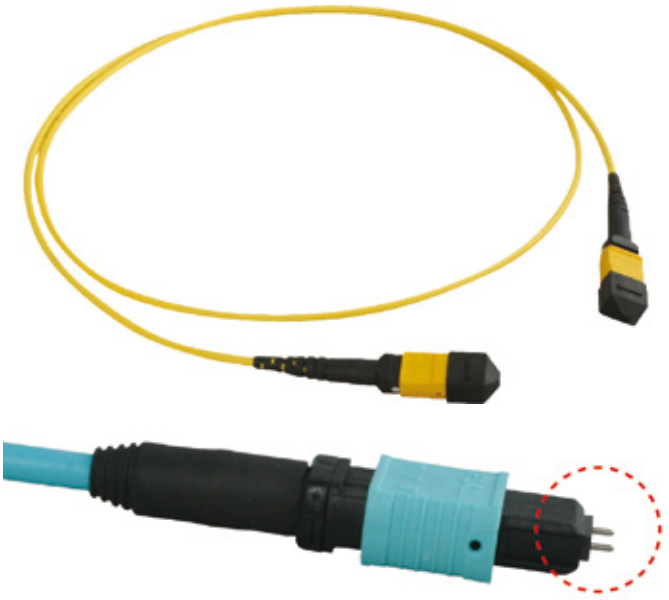
Order Information

A CONNECTOR		B CONNECTOR		LENGTH	
AA	FC One piece (MM)	**AA**	FC One piece (MM)	**0032**	3M
AB	FC One piece (MM Low Loss)	**AB**	FC One piece (MM Low Loss)	**0052**	5M
AC	FC One piece (SM SPC)	**AC**	FC One piece (SM SPC)	**0102**	10M
AD	FC One piece (SM UPC)	**AD**	FC One piece (SM UPC)	**0152**	15M
AE	FC One piece (SM APC)	**AE**	FC One piece (SM APC)	**0202**	20M
BA	ST (MM)	**BA**	ST (MM)	**0252**	25M
BB	ST (MM Low Loss)	**BB**	ST (MM Low Loss)	**0302**	30M
BC	ST (SM SPC)	**BC**	ST (SM SPC)	**0402**	40M
BD	ST (SM UPC)	**BD**	ST (SM UPC)	**0502**	50M
CF	SC II w/Clip (MM)	**CF**	SC II w/Clip (MM)	**0602**	60M
CG	SC II w/Clip (MM Low Loss)	**CG**	SC II w/Clip (MM Low Loss)	**0702**	70M
CH	SC II w/Clip (SM SPC)	**CH**	SC II w/Clip (SM SPC)	**0802**	80M
CI	SC II w/Clip (SM UPC)	**CI**	SC II w/Clip (SM UPC)	**0902**	90M
CJ	SC II w/Clip (SM APC)	**CJ**	SC II w/Clip (SM APC)	**1002**	100M
DF	LC w/Clip (MM)	**DF**	LC w/Clip (MM)		
DG	LC w/Clip (MM Low Loss)	**DG**	LC w/Clip (MM Low Loss)		
DH	LC w/Clip (SM SPC)	**DH**	LC w/Clip (SM SPC)		
DI	LC w/Clip (SM UPC)	**DI**	LC w/Clip (SM UPC)		
DJ	LC w/Clip (SM APC)	**DJ**	LC w/Clip (SM APC)		
NN	Without connectors	**NN**	Without connectors		

Example:
LP-F52BEBLCFCF0032 Fiber Optic Breakout cable, 2.0mm Multimode 50/125um, 24C LSZH both end pulling eye Orange color jacket, SC II w/Clip MM to SC II w/Clip MM, 3m length.

Array Cable

LanPro provides an extensive and complete line of high-density MTP® and MPO multi fiber connectors products, including jumpers, fanouts and pre-terminated solution. The singlemode and Multimode by low loss for MTP® and MPO connectors deliver the performance and reliability to answer today's demanding about high-speed broadband and data networks. MTP® and MPO maximize the capacity in data center, increasing fiber density on fiber shelves and faceplates and also improving and simplifying fiber routing.



With pin, it is male

Specifications:

- MTP® and MPO are available. PC and APC polish meet standard requirement. Available for 8 and 12 fibers (further assemblies, 24 fibers available on request)
- Support Method A, B, C and option for male and female for MTP®/MPO.

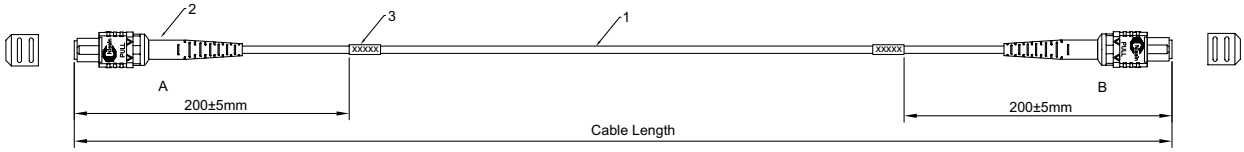
Further assemblies, fanout length and cable length available on request.

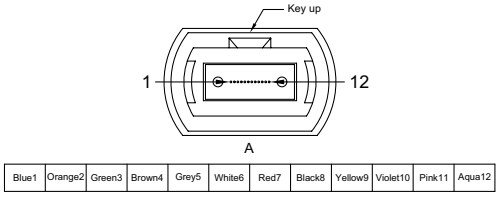
Fiber Compatibility:

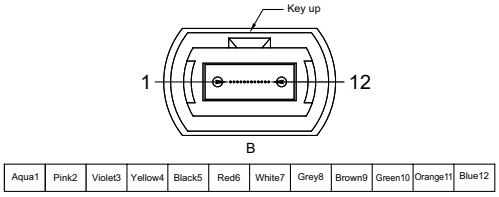
OM1, OM2, OM3, OM4, OS1/OS2

Applications:

Reliable high-density interconnection for: Data communications networks, including high-bandwidth equipment, interconnections for parallel optical transmitters and receivers, telecommunications networks and broadband/CATV networks.





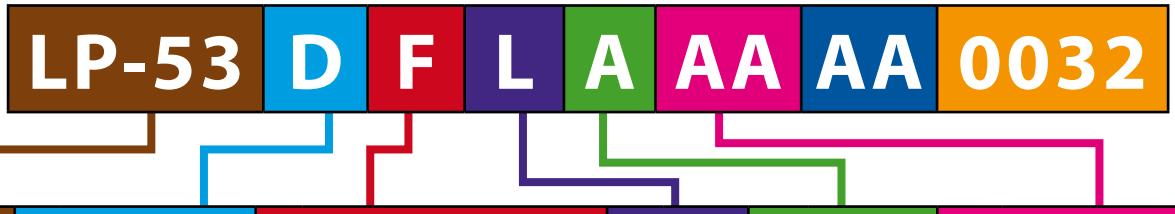


Fiber Optic patch Cord MPO/PC-MPO/PC 12 Fibers Multimode

1	**A/R**	Ø3.0mm, Multimode 50/125 OM3/OM4,12 Fibers Micro Cable, PVC, Color: Aqua
2	**2**	MPO/PC Female MM 3.0mm 12 Fibers Connector (Aqua Housing Black Boot)
3	**2**	Cable Label

NOTES:	
Insertion loss ≤0.5dB / Return loss ≥ 30dB	
Cable Length	**Tolerance**
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%

Order Information



LP-F53	FIBER TYPE		CABLE TYPE		COLOR		JACKET MATERIAL		A CONNECTOR	
LANPRO ARRAY CABLES	C	10G 50/125um	B	8C-5.0x2.5mm-Flat-Simplex Ribbon	A	BL	A	PVC	AA	12 F MTP® (MM)
	D	OM3 50/125um	C	8C-Round Cable	B	OR	E	PVC OFNP	AB	12 F MTP® (MM Low Loss)
	E	OM4 50/125um	E	12C-5.0x2.5mm-Flat-Simplex Ribbon	C	GN	I	LSZH	AC	12 F MTP® (SM APC)
	F	SM(G652D) 9/125um	F	12C-3.0mm Round Cable	D	BR			AD	12 F MTP® (SM APC Low Loss)
	H	SM(G657A2) 9/125um	I	24C-Round Cable	E	GY			BA	12 F MPO (MM)
					F	WH			BB	12 F MPO (MM Low Loss)
					G	RD			BC	12 MPO (SM APC)
					H	BK			BD	12 F MPO (SM APC Low Loss)
					I	YL			CA	24 F MTP® (MM)
					J	VT(PU)			CB	24 F MTP® (MM Low Loss)
					K	RS(PK)			CC	24 F MTP® (SM APC)
					L	AQ			CD	24 F MTP® (SM APC Low Loss)
									DA	24 F MPO (MM)
									DB	24 F MPO (MM Low Loss)
									DC	24 F MPO (SM APC)
									DD	24 F MPO (SM APC Low Loss)

Example:
LP-F53DFLAAAAA0032 Fiber Optic Array Cable, OM3 50/125 um, 12C-3.0mm round cable, PVC aqua color jacket, 12 F MTP® MM to 12 F MTP® MM Method A, 3m length.

Order Information

LP-53 D F L A AA AA 0032

B CONNECTOR				LENGTH	
AA	12 F MTP® (MM) Method A	AA	24 F MTP® (MM) Method A	0012	1M
AB	12 F MTP® (MM Low Loss) Method A	AB	24 F MTP® (MM Low Loss) Method A	0014	1.5M
AC	12 F MTP® (SM APC) Method A	AC	24 F MTP® (SM APC) Method A	0022	2M
AD	12 F MTP® (SM APC Low Loss) Method A	AD	24 F MTP® (SM APC Low Loss) Method A	0032	3M
AE	12 F MTP®+Guide Pin (MM) Method A	AE	24 F MTP®+Guide Pin (MM) Method A	0052	5M
AF	12 F MTP®+Guide Pin (MM Low Loss) Method A	AF	24 F MTP®+Guide Pin (MM Low Loss) Method A	0102	10M
AG	12 F MTP®+ Guide Pin (SM APC) Method A	AG	24 F MTP®+ Guide Pin (SM APC) Method A	0152	15M
AH	12 F MTP®+ Guide Pin (SM APC Low Loss) Method A	AH	24 F MTP®+ Guide Pin (SM APC Low Loss) Method A	0202	20M
BA	12F MTP® (MM) Method B	BA	24 F MTP® (MM) Method B	0252	25M
BB	12 F MTP® (MM Low Loss) Method B	BB	24 F MTP® (MM Low Loss) Method B		
BE	12 F MTP®+Guide Pin (MM) Method B	BE	24 F MTP®+Guide Pin (MM) Method B		
BF	12 F MTP®+Guide Pin (MM Low Loss) Method B	BF	24 F MTP®+Guide Pin (MM Low Loss) Method B		
CA	12 F MTP® (MM) Method C	CA	24 F MTP® (MM) Method C		
CB	12 F MTP® (MM Low Loss) Method C	CB	24 F MTP® (MM Low Loss) Method C		
CC	12 F MTP® (SM APC) Method C	CC	24 F MTP® (SM APC) Method C		
CD	12 F MTP® (SM APC Low Loss) Method C	CD	24 F MTP® (SM APC Low Loss) Method C		
CE	12 F MTP®+ Guide Pin (MM) Method C	CE	24 F MTP®+Guide Pin (MM) Method C		
CF	12 F MTP®+ Guide Pin (MM Low Loss) Method C	CF	24 F MTP®+Guide Pin (MM Low Loss) Method C		
CG	12 F MTP®+ Guide Pin (SM APC) Method C	CG	24 F MTP®+Guide Pin (SM APC) Method C		
CH	12 F MTP®+ Guide Pin (SM APC Low Loss) Method C	CH	24 F MTP®+Guide Pin (SM APC Low Loss) Method C		
AA	12 F MPO (MM) Method A	AA	24 F MPO (MM) Method A		
AB	12 F MPO (MM Low Loss) Method A	AB	24 F MPO (MM Low Loss) Method A		
AC	12 F MPO (SM APC) Method A	AC	24 F MPO (SM APC) Method A		
AD	12 F MPO (SM APC Low Loss) Method A	AD	24 F MPO (SM APC Low Loss) Method A		
AE	12 F MPO+Guide Pin (MM) Method A	AE	24 F MPO+Guide Pin (MM) Method A		
AF	12 F MPO+Guide Pin (MM Low Loss) Method A	AF	24 F MPO+Guide Pin (MM Low Loss) Method A		
AG	12 F MPO+Guide Pin (SM APC) Method A	AG	24 F MPO+Guide Pin (SM APC) Method A		
AH	12 F MPO+Guide Pin (SM APC Low Loss) Method A	AH	24 F MPO+Guide Pin (SM APC Low Loss) Method A		
BA	12 F MPO +Guide Pin (MM) Method B	BA	24 F MPO (MM) Method B		
BB	12 F MPO (MM Low Loss) Method B	BB	24 F MPO (MM Low Loss) Method B		
BE	12 F MPO+Guide Pin (MM) Method B	BE	24 F MPO+Guide Pin (MM) Method B		
BF	12 F MPO+Guide Pin (MM Low Loss) Method B	BF	24 F MPO+Guide Pin (MM Low Loss) Method B		
CA	12 F MPO (MM) Method C	CA	24 F MPO (MM) Method C		
CB	12 F MPO (MM Low Loss) Method C	CB	24 F MPO (MM Low Loss) Method C		
CC	12 F MPO (SM APC) Method C	CC	24 F MPO (SM APC) Method C		
CD	12 F MPO (SM APC Low Loss) Method C	CD	24 F MPO (SM APC Low Loss) Method C		
CE	12 F MPO+Guide Pin (MM) Method C	CE	24 F MPO+Guide Pin (MM) Method C		
CF	12 F MPO+Guide Pin (MM Low Loss) Method C	CF	24 F MPO+Guide Pin (MM Low Loss) Method C		
CG	12 F MPO+Guide Pin (SM APC) Method C	CG	24 F MPO+Guide Pin (SM APC) Method C		
CH	12 F MPO+Guide Pin (SM APC Low Loss) Method C	CH	24 F MPO+Guide Pin (SM APC Low Loss) Method C		

Example:
LP-F53DFLAAAAA0032
Fiber Optic Array Cable, OM3 50/125 um, 12C-3.0mm round cable, PVC aqua color jacket, 12 F MTP® MM to 12 F MTP® MM Method A, 3m length.

Trunk Cable

LanPro Trunk cable assemblies allow for a rapid deployment of high-density permanent links in a single assembly for data center applications demanding quick infrastructure deployment, such as main, horizontal and zone distribution areas. LanPro Trunk series optimizes cable routing to guarantee efficient use of pathway space and significantly reduce installation time and cost. It is built with modular MTP®/ MPO connectivity and supports compatibility, flexibility and system performance in all permanent link applications. LanPro Trunk is factory terminated and tested to deliver verified optical performance and reliability for improved network integrity.

Specifications:

- MTP® and MPO are available. PC and APC polish meet standard requirement. 8 ~144 fibers are available (further assemblies, 24 fibers available on request)
- Support method A, B, C and option for male and female for MTP®/MPO

Fanout length: 24 inch at one end (total: 24 inch x 1 = 60.96 cm) and by asymmetric cascade version, including pulling eyes.

Further assemblies, fanout length and cable length available on request.

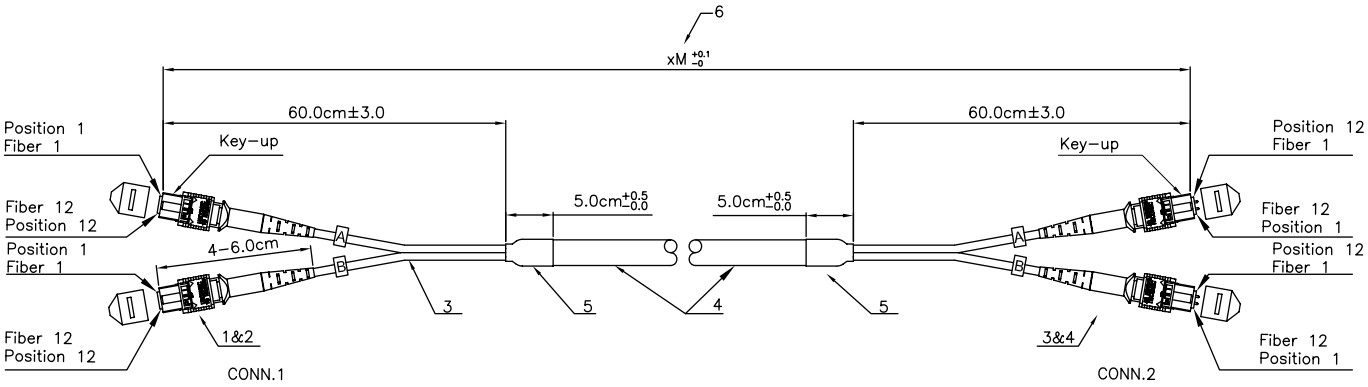
Applications:

Tailor configuration and breakout construction to application requirements to minimize waste, optimize cable management, speed deployment and improve flexibility and manageability for lower installation costs.

Reliable high-density interconnection for: Data communications networks, including high-bandwidth equipment, interconnections for parallel optical transmitter and receivers, telecommunications networks and broadband/ CATV networks.

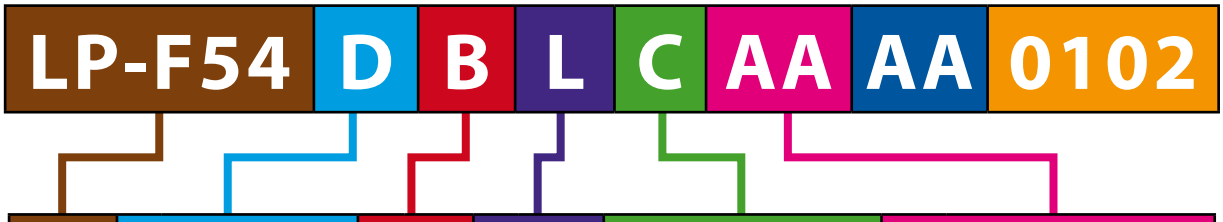
Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2



1. **Connector 1 & 2: MTP® Multimode, female connector**
2. **Connector 3 & 4: MTP® Multimode, male connector**
3. **Cable type: 12C Ø3.0mm round cable, OM3 50/125um multimode, PVC material, aqua color**
4. **Cable type: 24C Ø9.0mm trunk cable, OM3 50/125um multimode, PVC material, aqua color**
5. **Heat shrink tubing length: 5.0cm**
6. **Length: x Meter**

Order Information



LP-F54	FIBER TYPE		FIBER COUNTS		COLOR		JACKET MATERIAL		A CONNECTOR	
LANPRO TRUNK CABLE	C	10G 50/125um	A	82C	A	BL	C	PVC End B Pulling eye	AA	12 F MTP® (MM)
	D	OM3 50/125um	B	12C	B	OR	G	PVC OFNP End Pulling eye	AB	12 F MTP® (MM Low Loss)
	E	OM4 50/125um	C	24C	C	GN	K	LSZH End B Pulling eye	AC	12 F MTP® (SM APC)
	F	SM(G652D) 9/125um	D	36C	D	BR			AD	12 F MTP® (SM APC Low Loss)
	H	SM(G657A2) 9/125um	E	48C	E	GY			BA	12 F MPO (MM)
			F	72C	F	WH			BB	12 F MPO (MM Low Loss)
			G	96C	G	RD			BC	12 F MPO (SM APC)
			H	144C	H	BK			BD	12 F MPO (SM APC Low Loss)
			I	196C	I	YL			CA	24F MTP® (MM)
			J	288C	J	VT (PU)			CB	24F MTP® (MM Low Loss)
					K	RS (PK)			CC	24F MTP® (SM APC)
					L	AQ			CD	24F MTP® (SM APC Low Loss)
									DA	24F MPO (MM)
									DB	24F MPO (MM Low Loss)
									DC	24F MPO (SM APC)
									DD	24F MPO (SM APC Low Loss)

Example:
LP-F54DBLCAAAA0102 Fiber Optic Trunk cable. OM3 50/125um, 12C, PVC end B pulling eye Aqua color jacket, 12 F MTP® MM to 12 F MTP® MM Method A, 10m length.

Order Information

LP-F54 D B L C AA AA 0102

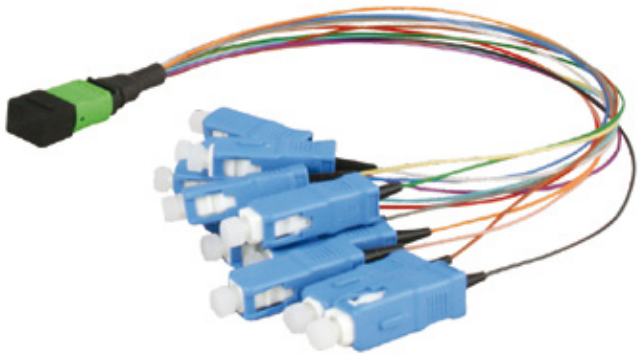
B CONNECTOR				LENGTH	
AA	12 F MTP® (MM) Method A	**AA**	24 F MTP® (MM) Method A	**0032**	3m
AB	12 F MTP® (MM Low Loss) Method A	**AB**	24 F MTP® (MM Low Loss) Method A	**0052**	5m
AC	12 F MTP® (SM APC) Method A	**AC**	24 F MTP® (SM APC) Method A	**0102**	10m
AD	12 F MTP® (SM APC Low Loss) Method A	**AD**	24 F MTP® (SM APC Low Loss) Method A	**0202**	20m
AE	12 F MTP®+Guide Pin (MM) Method A	**AE**	24 F MTP®+Guide Pin (MM) Method A	**0302**	25m
AF	12 F MTP®+Guide Pin (MM Low Loss) Method A	**AF**	24 F MTP®+Guide Pin (MM Low Loss) Method A	**0402**	30m
AG	12 F MTP®+ Guide Pin (SM APC) Method A	**AG**	24 F MTP®+ Guide Pin (SM APC) Method A	**0502**	40m
AH	12 F MTP®+ Guide Pin (SM APC Low Loss) Method A	**AH**	24 F MTP®+ Guide Pin (SM APC Low Loss) Method A	**0602**	50m
BA	12 F MTP® (MM) Method B	**BA**	24 F MTP® (MM) Method B	**0702**	60m
BB	12 F MTP® (MM Low Loss) Method B	**BB**	24 F MTP® (MM Low Loss) Method B	**0802**	80m
BE	12 F MTP®+Guide Pin (MM) Method B	**BE**	24 F MTP®+Guide Pin (MM) Method B	**0902**	90m
BF	12 F MTP®+Guide Pin (MM Low Loss) Method B	**BF**	24 F MTP®+Guide Pin (MM Low Loss) Method B	**1002**	100m
CA	12 F MTP® (MM) Method C	**CA**	24 F MTP® (MM) Method C		
CB	12 F MTP® (MM Low Loss) Method C	**CB**	24 F MTP® (MM Low Loss) Method C		
CC	12 F MTP® (SM APC) Method C	**CC**	24 F MTP® (SM APC) Method C		
CD	12 F MTP® (SM APC Low Loss) Method C	**CD**	24 F MTP® (SM APC Low Loss) Method C		
CE	12 F MTP®+ Guide Pin (MM) Method C	**CE**	24 F MTP®+Guide Pin (MM) Method C		
CF	12 F MTP®+ Guide Pin (MM Low Loss) Method C	**CF**	24 F MTP®+Guide Pin (MM Low Loss) Method C		
CG	12 F MTP®+ Guide Pin (SM APC) Method C	**CG**	24 F MTP®+Guide Pin (SM APC) Method C		
CH	12 F MTP®+ Guide Pin (SM APC Low Loss) Method C	**CH**	24 F MTP®+Guide Pin (SM APC Low Loss) Method C		
AA	12 F MPO (MM) Method A	**AA**	24 F MPO (MM) Method A		
AB	12 F MPO (MM Low Loss) Method A	**AB**	24 F MPO (MM Low Loss) Method A		
AC	12 F MPO (SM APC) Method A	**AC**	24 F MPO (SM APC) Method A		
AD	12 F MPO (SM APC Low Loss) Method A	**AD**	24 F MPO (SM APC Low Loss) Method A		
AE	12 F MPO+Guide Pin (MM) Method A	**AE**	24 F MPO+Guide Pin (MM) Method A		
AF	12 F MPO+Guide Pin (MM Low Loss) Method A	**AF**	24 F MPO+Guide Pin (MM Low Loss) Method A		
AG	12 F MPO+Guide Pin (SM APC) Method A	**AG**	24 F MPO+Guide Pin (SM APC) Method A		
AH	12 F MPO+Guide Pin (SM APC Low Loss) Method A	**AH**	24 F MPO+Guide Pin (SM APC Low Loss) Method A		
BA	12 F MPO +Guide Pin (SM APC Low Loss) (MM) Method B	**BA**	24 F MPO (MM) Method B		
BB	12 F MPO (MM Low Loss) Method B	**BB**	24 F MPO (MM Low Loss) Method B		
BE	12 F MPO+Guide Pin (MM) Method B	**BE**	24 F MPO+Guide Pin (MM) Method B		
BF	12 F MPO+Guide Pin (MM Low Loss) Method B	**BF**	24 F MPO+Guide Pin (MM Low Loss) Method B		
CA	12 F MPO (MM) Method C	**CA**	24 F MPO (MM) Method C		
CB	12 F MPO (MM Low Loss) Method C	**CB**	24 F MPO (MM Low Loss) Method C		
CC	12 F MPO (SM APC) Method C	**CC**	24 F MPO (SM APC) Method C		
CD	12 F MPO (SM APC Low Loss) Method C	**CD**	24 F MPO (SM APC Low Loss) Method C		
CE	12 F MPO+Guide Pin (MM) Method C	**CE**	24 F MPO+Guide Pin (MM) Method C		
CF	12 F MPO+Guide Pin (MM Low Loss) Method C	**CF**	24 F MPO+Guide Pin (MM Low Loss) Method C		
CG	12 F MPO+Guide Pin (SM APC) Method C	**CG**	24 F MPO+Guide Pin (SM APC) Method C		
CH	12 F MPO+Guide Pin (SM APC Low Loss) Method C	**CH**	24 F MPO+Guide Pin (SM APC Low Loss) Method C		

Example:
LP-F54DBLCAAAA0102
Fiber Optic Trunk cable. OM3 50/125um, 12C, PVC end B pulling eye Aqua color jacket, 12 F MTP® MM to 12 F MTP® MM Method A, 10m length.

Direct Harness

LanPro Direct Harness has a pinned (male) MTP®/MPO connector on one end and while the other end is equipped with single or dual fiber connectors. Direct harness converts MTP®/MPO terminations to simplex fiber connectors such as LC or SC.

This series is for installing inside plug-&-play fiber cassette module, assembled with 0.9 mm cable to single-fiber connectors. All types of fiber connector interface are available for choices and allow for maximum fiber density within a limited space. This series is factory tested. Incorporating with cassette solution, LanPro Direct Harness can reduce installation time by up to 75 percent.



Specifications:

Fiber connector interface available in ST, SC, FC, LC, MTP® and MPO in forms of simplex channeling (further assemblies, 24 fibers MTP®/MPO available on request).

Fiber Compatibility:

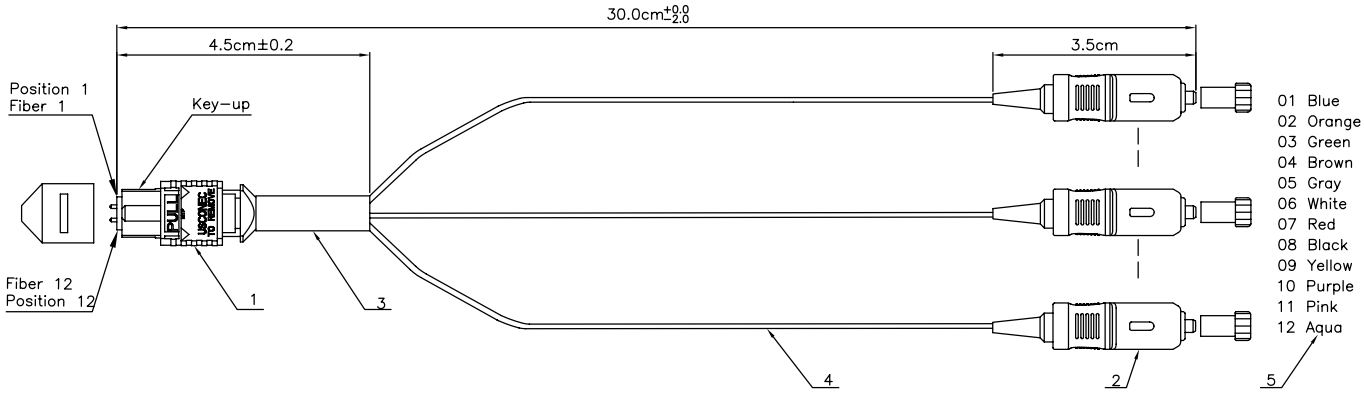
OM1, OM2, OM3, OM4, OS1/OS2

Applications:

Tailor configuration and breakout construction to application requirements to minimize waste, optimize cable management, speed deployment and improve flexibility and manageability for lower installation costs.

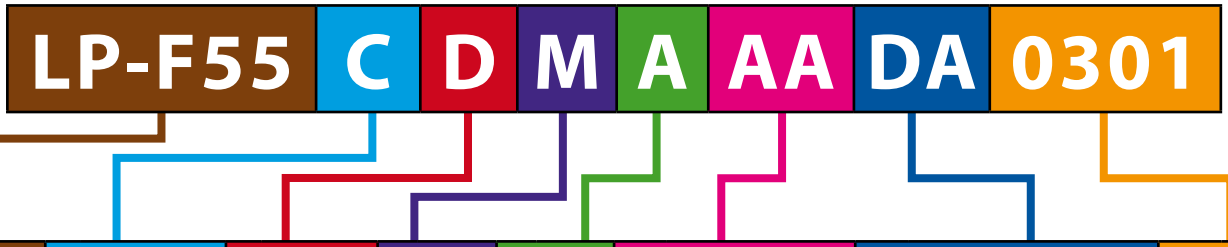
Reliable high-density interconnection for: Data communications networks, including high-bandwidth equipment, interconnection for parallel optical transmitters and receivers, telecommunications networks and broadband/ CATV networks.

OM3 & OM4 (50/125 um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation



1. **Connector type: Guide pin MTP® multimode, male connector, low loss**
2. **Connector type: SC multimode, ivory color, low loss**
3. **Shrink tube: 1.5cm, use black heat shrink tube**
4. **Tube type: Ø0.9mm/hytrel, 12 color**
5. **Fanout MTP® (Male) to SC OM3 12C patch cord 30cm**
   1(blue)/2(orange)/3(green)/4(brown)/5(gray)/6(white)/7(red)/8(black)/9(yellow)/10(purple)/11(pink)/12(aqua)

Order Information



LP-F55	FIBER TYPE		CABLE TYPE		COLOR		JACKET MATERIAL		A CONNECTOR		B CONNECTOR		LENGTH	
LANPRO DIRECT HARNESS	C	10G 50/125um	D	12C, 0.9mm Jacket	M	12 colors	A	PVC	AA	12 F MTP® (MM)	AA	FC One Piece (MM)	0301	30cm
	D	OM3 50/125um							AB	12 F MTP® (MM Low Loss)	AB	FC One Piece (MM Low Loss)	0501	50cm
	E	OM4 50/125um							AC	12 F MTP® (SM APC)	AC	FC One Piece (SM SPC)		
	F	SM(G652D) 9/125um							AD	12 F MTP® (SM APC Low Loss)	AD	FC One Piece (SM UPC)		
	H	SM(G657A2) 9/125um							AE	12 F MTP®+Guide Pin (MM)	AE	FC One Piece (SM APC)		
									AF	12 F MTP®+Guide Pin (MM Low Loss)	BA	ST (MM)		
									AG	12 F MTP®+Guide Pin (SM APC)	BB	ST (MM Low Loss)		
									AH	12 F MTP®+Guide Pin (SM APC Low Loss)	BC	ST (SM SPC)		
									BA	12 F MPO (MM)	BD	ST (SM UPC)		
									BB	12 F MPO (MM Low Loss)	CA	SCII (MM)		
									BC	12 F MPO (SM APC)	CB	SCII (MM Low Loss)		
									BD	12 F MPO (SM APC Low Loss)	CC	SCII (SM SPC)		
									BE	12 F MPO+Guide Pin (MM)	CD	SCII (SM UPC)		
									BF	12 F MPO+Guide Pin (MM Low Loss)	CE	SCII (SM APC)		
									BG	12 F MPO+Guide Pin (SM APC)	DA	LC (MM)		
									BH	12 F MPO+Guide (SM APC Low Loss)	DB	LC (MM Low Loss)		
											DC	LC (SM SPC)		
											DD	LC (SM UPC)		
											DE	LC (SM APC)		

Example:
LP-F55CDMAAADA0301 Fiber Optic Direct Harness, 10G 50/125um, 12C, 0.9mm PCV jacket, 12F MTP® MM to LC MM, 30cm length.

Harness

LanPro Harness series is for transition from trunk backbone assemblies to fiber rack system. MTP®/MPO on one end, with single-fiber connectors on another end. MTP®/MPO in 12 or 24-fiber interface is available for choices. Fiber connector interface available in ST, SC, FC and LC in forms of simplex or duplex channeling.

Specifications:

Fiber connector interface available in ST, SC, FC, LC, MTP® and MPO in forms of simplex or duplex channeling (further assemblies, 24 fibers MTP®/MPO available on request)

Fanout length: 24 inch at one end (total: 24 inch x 1 = 60.96cm) and by asymmetric cascade version

Fiber Compatibility:

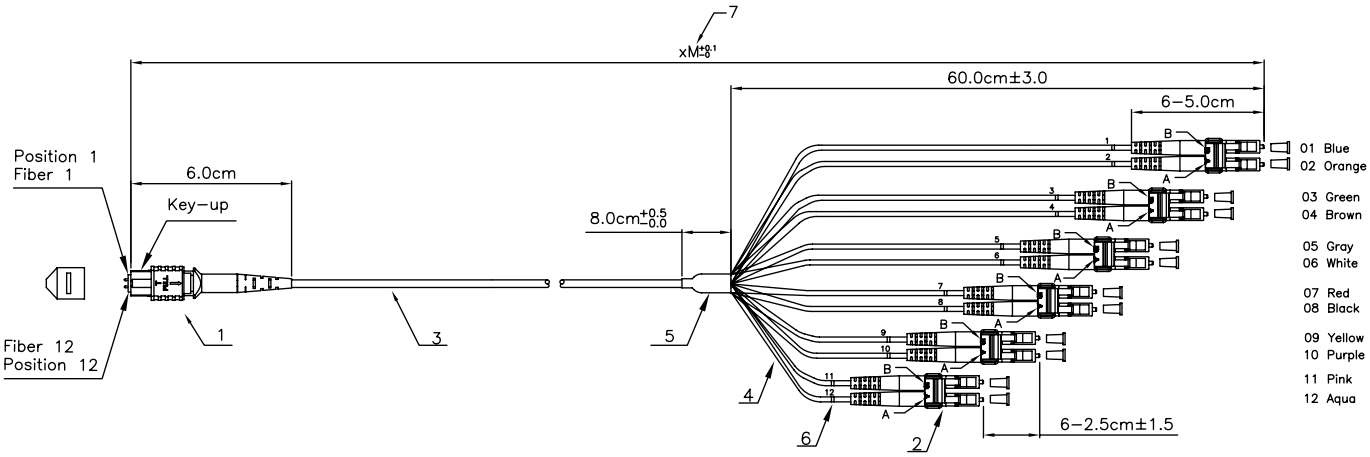
OM1, OM2, OM3, OM4, OS1/OS2

Applications:

Tailor configuration and breakout construction to application requirements to minimize waste, optimize cable management, speed deployment and improve flexibility and manageability for lower installation costs.

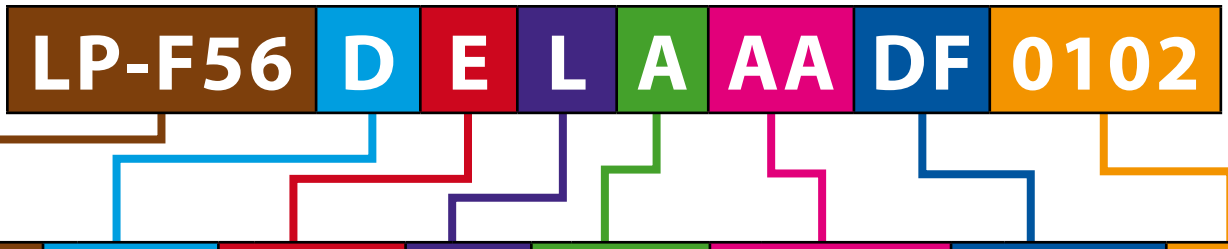
Reliable high-density interconnection for: Data communications networks, including high-bandwidth equipment, interconnections for parallel optical transmitters and receivers, telecommunications networks and broadband/ CATV networks.

OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation.



1. **Connector type: MPO Multimode, male connector**
2. **Connector type: LC multimode, ivory color**
3. **Cable type: 12C Ø3.0mm round cable, OM3 50/125um multimode, LSZH material, aqua color**
4. **Tube type: Ø0.9mm/Hytrel, Ø2.0mm LSZH material, aqua color**
5. **Heat Shrink Tubing length: 8.0cm**
6. **Marking Tubing Length: 1.0cm**
7. **Length: x Meter**

Order Information

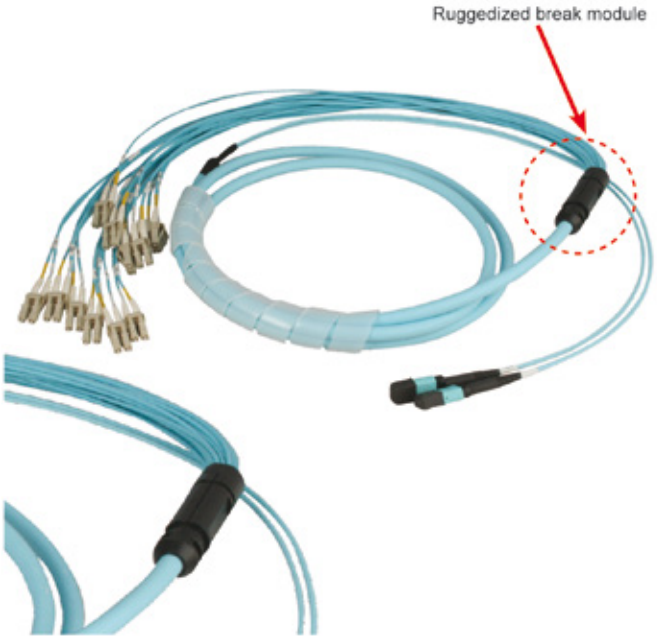


LP-F56		FIBER TYPE		BREAKOUT CABLE TYPE		COLOR		JACKET MATERIAL		A CONNECTOR		B CONNECTOR		LENGTH	
LANPRO HARNESS	C	10G 50/125um	C	8C-Round Cable, 3.0mm Jacket	A	BL	A	PVC	AA	12 F MTP® (MM)	AA	FC One Piece (MM)	0022	2m
	D	OM350/125um	E	12C-Round Cable, 2.0mm Jacket	B	OR	C	PVC End B Pulling Eye	AB	12 F MTP® (MM Low Loss)	AB	FC One Piece (MM Low Loss)	0032	3m
	E	OM450/125um			C	GN	E	PVC OFNP	AC	12 F MTP® (SM APC)	AC	FC One Piece (SM SPC)	0052	5m
	F	SM(G652D) 9/125um			D	BR	G	PVC OFNP End B Pulling eye	AD	12 F MTP® (SM APC Low Loss)	AD	FC One Piece (SM UPC)	0102	10m
	H	SM(G657A2) 9/125um			E	GY	I	LSZH	AE	12 F MTP®+Guide Pin (MM)	AE	FC One Piece (SM APC)	0152	15m
					F	WH	K	LSZH End B Pulling eye	AF	12 F MTP®+Guide Pin (MM Low Loss)	BA	ST (MM)	0202	20m
					G	RD			AG	12 F MTP®+Guide Pin (SM APC)	BB	ST (MM Low Loss)	0252	25m
					H	BK			AH	12 F MTP®+Guide Pin (SM APC Low Loss)	BC	ST (SM SPC)		
					I	YL			BA	12 F MPO (MM)	BD	ST (SM UPC)		
					J	VT(PU)			BB	12 F MPO (MM Low Loss)	CF	SCII w/Clip (MM)		
					K	RS(PK)			BC	12 F MPO (SM APC)	CG	SCII w/Clip (MM Low Loss)		
					L	AQ			BD	12 F MPO (SM APC Low Loss)	CH	SCII w/Clip (SM SPC)		
									BE	12 F MPO+Guide Pin (MM)	CJ	SCII w/Clip (SM UPC)		
									BF	12 F MPO+Guide Pin (MM Low Loss)	CE	SCII w/Clip (SM APC)		
									BG	12 F MPO+Guide Pin (SM APC)	DF	LC w/Clip (MM)		
									BH	12 F MPO+Guide (SM APC Low Loss)	DG	LC w/Clip (MM Low Loss)		
											DH	LC w/Clip (SM SPC)		
											DI	LC w/Clip (SM UPC)		
											DJ	LC w/Clip (SM APC)		

Example:
LP-F56DELAAADF0102 Fiber Optic Harness, OM3 50/125um, 12C-Round cable, 2.0mm PCV jacket, 12F MTP® MM to LC w/Clip MM, 10m length.

Trunk Harness

LanPro Trunk Harness Series is for backbone installation. LanPro provides a complete set of choices for fiber connector's interface. MTP®/ MPO in 12 or 24 fiber connectors interface are available and pulling eyes design to fit for different environment. Similar to LanPro Harness series, LanPro Trunk Harness supports desire cable, such as round or mini-core cable structure to eliminate bend sensitivity.



Specifications:

Fiber connector interface available in ST, SC, FC, LC, MTP® and MPO in forms of simplex or duplex channeling (further assemblies, 24 fibers MTP®/MPO available on request).

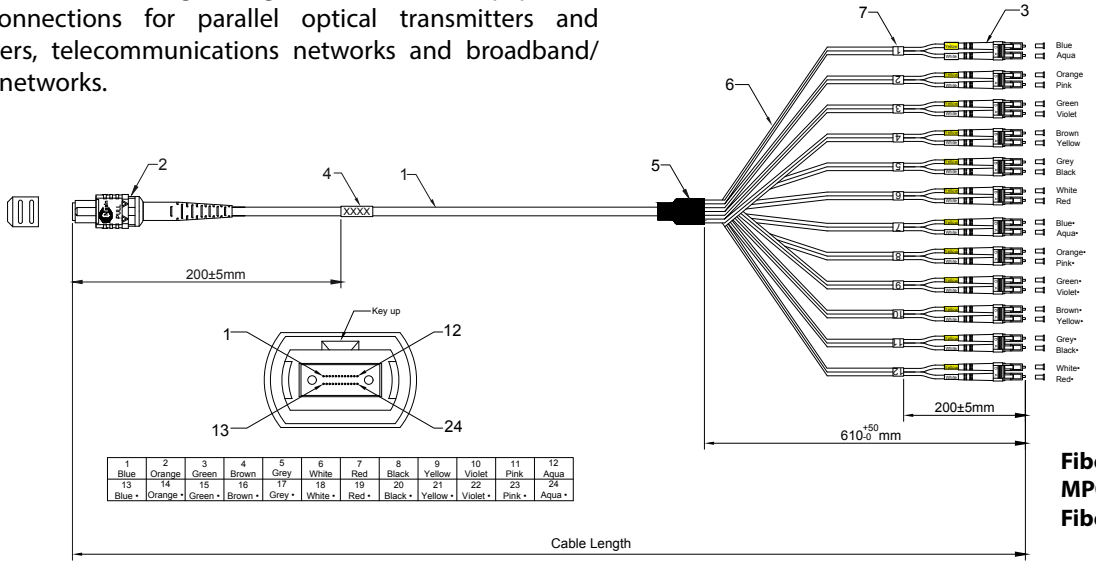
Fiber Compatibility:

OM1, OM2, OM3, OM4, OS1/OS2

OM2 (50/125 um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1/OS2 (9/12um): Laser-based propagation.

Applications:

Tailor configuration and breakout construction to application requirements to minimize waste, optimize cable management, speed deployment and improve flexibility and manageability for lower installation costs. Reliable high-density interconnection for: Data communications networks, including high-bandwidth equipment, interconnections for parallel optical transmitters and receivers, telecommunications networks and broadband/ CATV networks.



Fiber Optic Patch Cord MPO/PC-LC/PC 24 Fibers Multimode

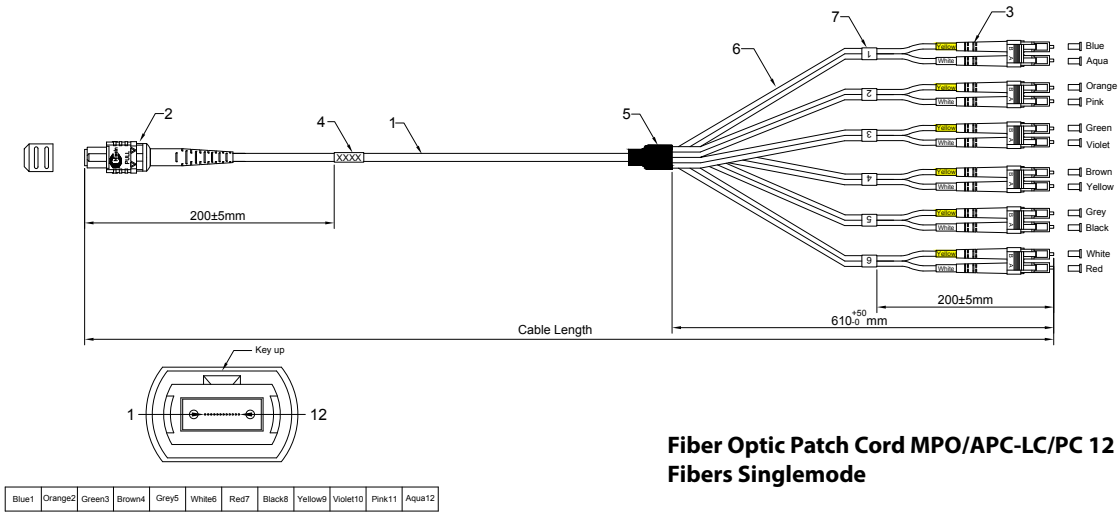
1	**A/R**	OD:3.0mm, Multimode 50/125 OM4, 24Fibers Micro Cable, PVC, Aqua
2	**1**	MPO/PC Female MM 24 Fibers Connector (Aqua Housing Black Boot)
3	**12**	LC/PC Multimode Duplex 2.0mm Connector (Beige Housing White Boot)
4	**1**	Cable Label
5	**1**	Fanout Kit
6	**A/R**	OD:2.0mm, Duplex, PVC, Aqua
7	**12**	Cable Marker

NOTES:

Insertion loss ≤0.5dB (MPO) ≤ 0.2dB (LC)
Return loss ≥ 30dB (MPO) ≥ 35dB (LC)

Cable Length	Tolerance
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%

Trunk Harness



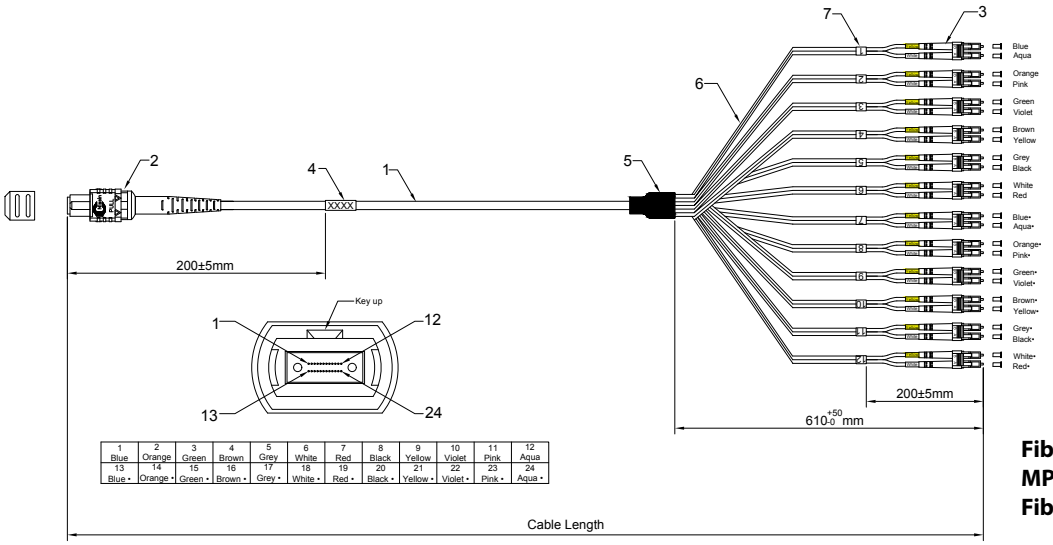
Fiber Optic Patch Cord MPO/APC-LC/PC 12 Fibers Singlemode

1	A/R	OD:3.0mm, Singlemode 9/125 G657A1, 12 Fibers Micro Cable, PVC, Yellow
2	1	MPO/APC Female SM 12 Fibers Connector (Green Housing Black Boot)
3	6	LC/PC Singlemode Duplex 2.0mm Connector (Blue Housing White Boot)
4	1	Cable Label
5	1	Fanout Kit
6	A/R	OD:2.0mm, Duplex, PVC, Yellow
7	6	Cable Marker

NOTES:

Insertion loss ≤0.7dB (MPO) ≤ 0.2dB (LC)
Return loss ≥ 60dB (MPO) ≥ 50dB (LC)

Cable Length	Tolerance
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%



Fiber Optic Patch Cord MPO/APC-LC/PC 24 Fibers Singlemode

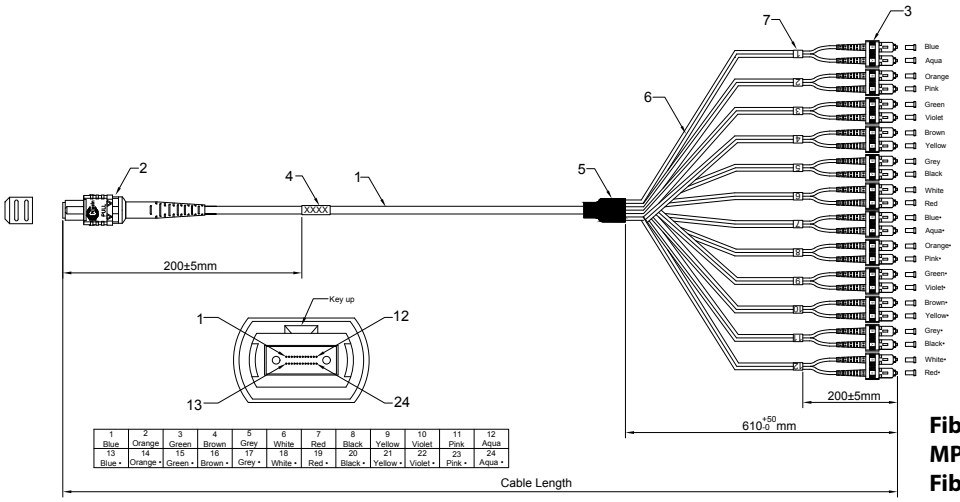
1	A/R	OD: 3.0mm, Singlemode 9/125 G657A1, 24 Fibers Micro Cable, PVC, Yellow
2	1	MPO/APC Female SM 24 Fibers Connector (Green Housing Black Boot)
3	12	LC/PC Singlemode Duplex 2.0mm Connector (Blue Housing White Boot)
4	1	Cable Label
5	1	Fanout Kit
6	A/R	OD:2.0mm, Duplex, PVC, Yellow
7	12	Cable Marker

NOTES:

Insertion loss ≤0.7dB (MPO) ≤ 0.2dB (LC)
Return loss ≥ 60dB (MPO) ≥ 50dB (LC)

Cable Length	Tolerance
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%

Trunk Harness



1	Blue	2	Orange	3	Green	4	Brown	5	Grey	6	White	7	Red	8	Black	9	Yellow	10	Violet	11	Pink	12	Aqua
13	Blue •	14	Orange •	15	Green •	16	Brown •	17	Grey •	18	White •	19	Red •	20	Black •	21	Yellow •	22	Violet •	23	Pink •	24	Aqua •

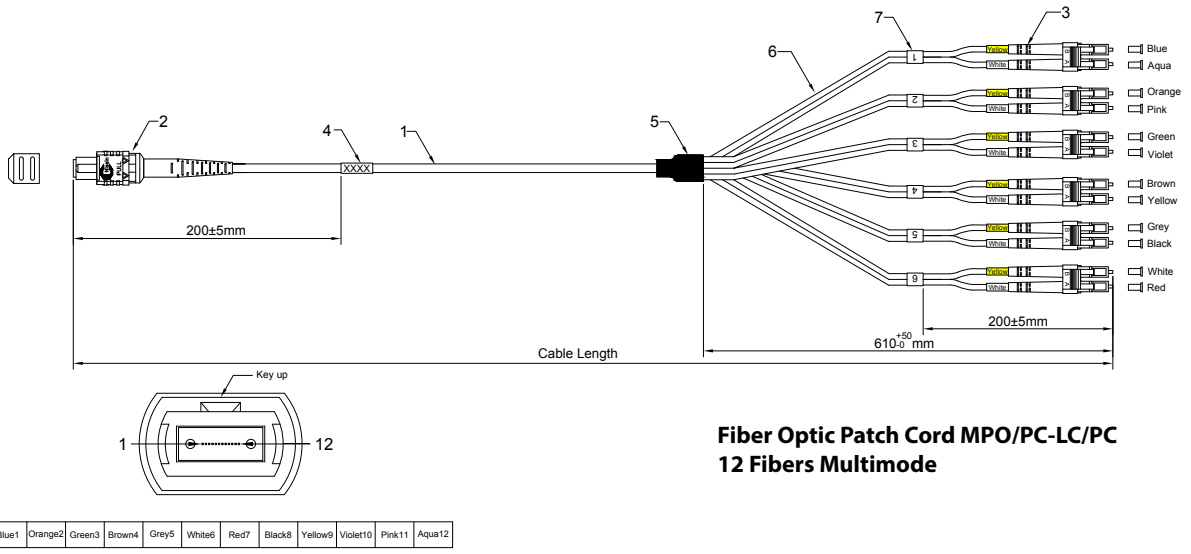
Fiber Optic Patch Cord MPO/APC-SC/PC 24 Fibers Singlemode

1	A/R	OD: 3.0mm, Singlemode 9/125 G657A1, 24 Fibers Micro Cable, PVC, Yellow
2	1	MPO/APC Female SM 24 Fibers Connector (Green Housing Black Boot)
3	6	SC/PC Singlemode Duplex 2.0mm Connector (Blue Housing Blue Boot)
4	1	Cable Label
5	1	Fanout Kit
6	A/R	OD:2.0mm, Duplex, PVC, Yellow
7	6	Cable Marker

NOTES:

Insertion loss ≤0.7dB (MPO) ≤ 0.2dB (SC)
Return loss ≥ 60dB (MPO) ≥ 50dB (SC)

Cable Length	Tolerance
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%



Blue1	Orange2	Green3	Brown4	Grey5	White6	Red7	Black8	Yellow9	Violet10	Pink11	Aqua12

Fiber Optic Patch Cord MPO/PC-LC/PC 12 Fibers Multimode

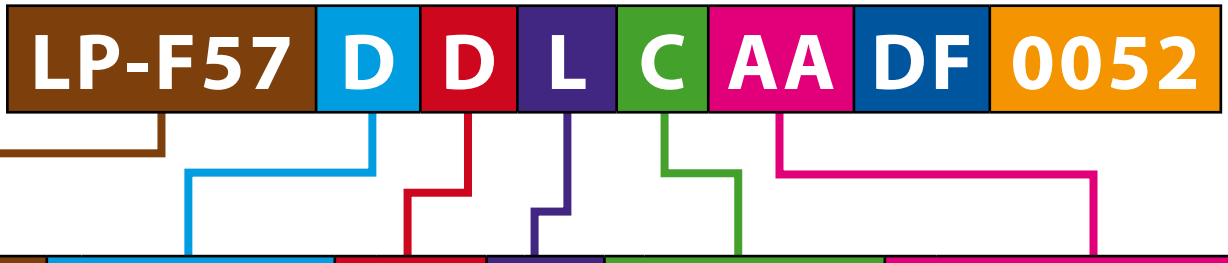
1	A/R	OD:3.0mm, Multimode 50/125 OM4, 12 Fibers Micro Cable, PVC, Aqua
2	1	MPO/PC Female MM 12 Fibers Connector (Aqua Housing Black Boot)
3	12	LC/PC Multimode Duplex 2.0mm Connector (Beige Housing White Boot)
4	1	Cable Label
5	1	Fanout Kit
6	A/R	OD:2.0mm, Duplex, PVC, Aqua
7	12	Cable Marker

NOTES:

Insertion loss ≤0.5dB (MPO) ≤ 0.2dB (LC)
Return loss ≥ 30dB (MPO) ≥ 35dB (LC)

Cable Length	Tolerance
Cable Length < 1m	5cm
1m ≤ Cable length < 15m	10cm
15m ≤ Cable Length < 30m	15cm
Cable Length ≥ 30m	Cable Length*1%

Order Information



LP-F57	FIBER TYPE		FIBER COUNTS		COLOR		JACKET MATERIAL		A CONNECTOR	
LANPRO TRUNK HARNESS	C	10G 50/125um	A	8C	A	BL	C	PVC End B Pulling eye	AA	12 F MTP® (MM)
	D	OM3 50/125um	B	12C	B	OR	G	PVC OFNP End B Pulling eye	AB	12 F MTP® (MM Low Loss)
	E	OM4 50/125um	C	24C	C	GN	K	LSZH End B Pulling eye	AC	12 F MTP® (SM APC)
	F	SM(G652D) 9/125um	D	36C	D	BR			AD	12 F MTP® (SM APC Low Loss)
	H	SM(G657A2) 9/125um	E	48C	E	GY			AE	12 F MTP®+Guide Pin (MM)
			F	72C	F	WH			AF	12 F MTP®+Guide Pin (MM Low Loss)
			G	96C	G	RD			AG	12 F MTP®+Guide Pin (SM APC)
			H	144C	H	BK			AH	12 F MTP®+Guide Pin (SM APC Low Loss)
					I	YL			BA	12 F MPO (MM)
					J	VT(PU)			BB	12 F MPO (MM Low Loss)
					K	RS(PK)			BC	12 F MPO (SM APC)
					L	AQ			BD	12 F MPO (SM APC Low Loss)
									BE	12 F MPO+Guide Pin (MM)
									BF	12 F MPO+Guide Pin (MM Low Loss)
									BG	12 F MPO+Guide Pin (SM APC)
									BH	12 F MPO+Guide Pin (SM APC Low Loss)

Example:
LP-F57DDLCAADF0052 Fiber Optic Trunk Harness, OM3 50/125um, 36C, PCV end B pulling eye Aqua jacket, 12F MTP® MM to LC w/Clip MM, 5m length.

Order Information

B CONNECTOR		LENGTH	
AA	FC One Piece (MM)	**0032**	3M
AB	FC One Piece (MM Low Loss)	**0052**	5M
AC	FC One Piece (SM SPC)	**0102**	10M
AD	FC One Piece (SM UPC)	**0152**	15M
AE	FC One Piece (SM APC)	**0202**	20M
BA	ST (MM)	**0252**	25M
BB	ST (MM Low Loss)	**0302**	30M
BC	ST (SM SPC)	**0402**	40M
BD	ST (SM UPC)	**0502**	50M
CF	SCII w/Clip (MM)	**0602**	60M
CG	SCII w/Clip (MM Low Loss)	**0702**	70M
CH	SCII w/Clip (SM SPC)	**0802**	80M
CI	SCII w/Clip (SM UPC)	**0902**	90M
CJ	SCII w/Clip (SM APC)	**1002**	100M
DF	LC w/Clip (MM)		
DG	LC w/Clip (MM Low Loss)		
DH	LC w/Clip (SM SPC)		
DI	LC w/Clip (SM UPC)		
DJ	LC w/Clip (SM APC)		

Example:
LP-F57DDLCAADF0052 Fiber Optic Trunk Harness, OM3 50/125um, 36C, PCV end B pulling eye Aqua jacket, 12F MTP® MM to LC w/Clip MM, 5m length.

40G to 100G migration series
MTP® & MPO LanPro Y cable

LanPro Y cable is typically to join two 12-fiber trunk cables to a 24-fiber patch cords as part of a migration to 100GbE. LanPro also supports the rather rare version of 1 to 3 allowing three 8-fiber.

Specifications:

Support
1 x 24 MTP® /MPO = 2 x 12 MTP® /MPO
1 x 24 MTP® /MPO = 3 x 8 MTP® /MPO
2 x 12 MTP® /MPO = 3 x 8 MTP® /MPO

Fiber Compatibility:

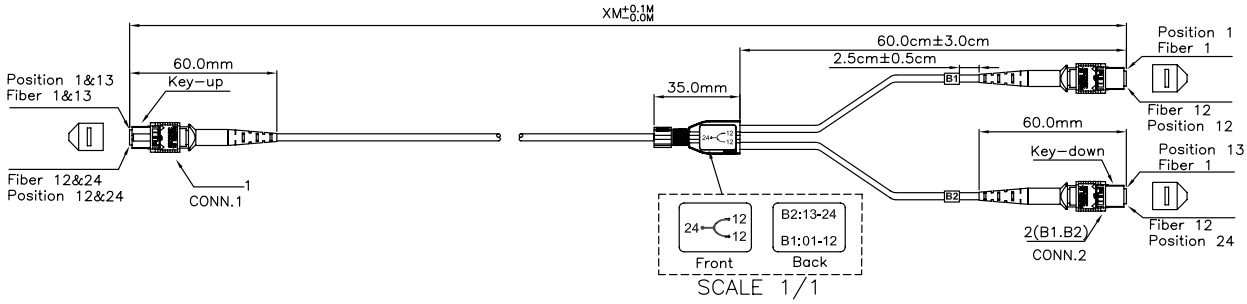
OM1, OM2, OM3, OM4, OS1/OS2.

Applications:

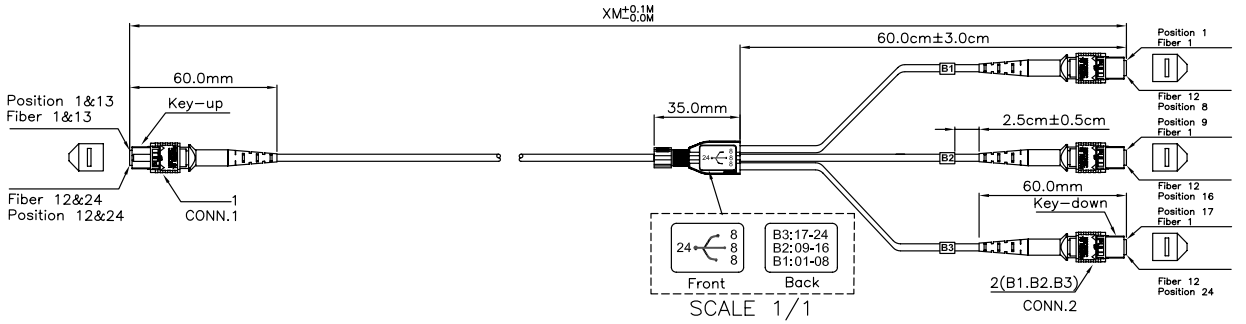
Provide interconnect and cross-connect of migration from 401G to 100G.

OM1 (62.5/125 um): for LED-based propagation
OM2 (50/125UM): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation.

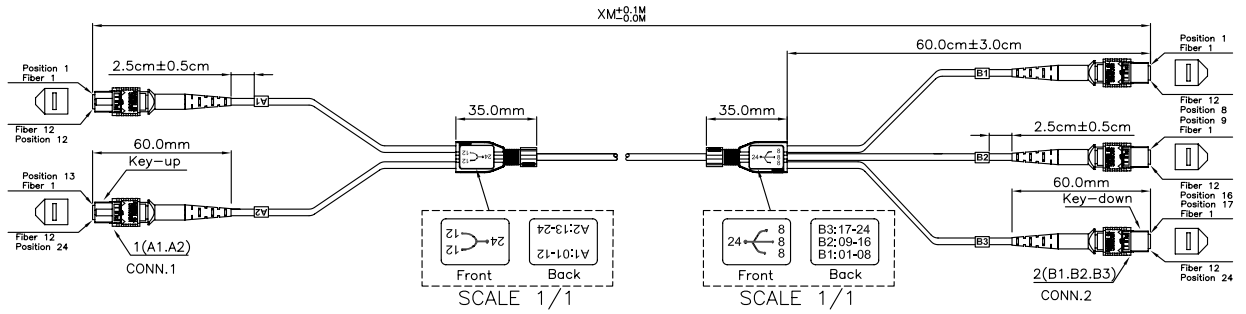
1 to 2



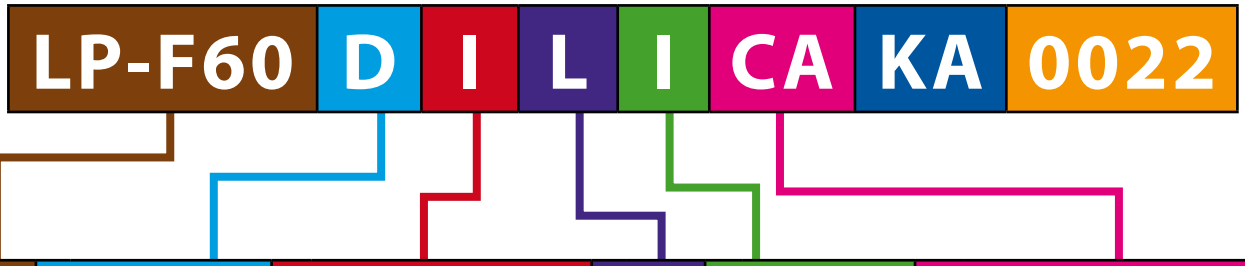
1 to 3



2 to 3



Order Information



LP-F60	FIBER TYPE		BREAKOUT CABLE TYPE		COLOR		JACKET MATERIAL		A CONNECTOR	
LANPRO Y CABLE	C	10G 50/125um	I	24C-Round Cable, 3.0mm Jacket	A	BL	A	PVC	CA	24 F MTP® (MM)
	D	OM3 50/125			B	OR	E	PVC OFNP	CB	24 F MTP® (MM Low Loss)
	E	OM4 50/125			C	GN	I	LSZH	CC	24 F MTP® (SM APC)
	F	SM(G652D) 9/125um			D	BR			CD	24 F MTP® (SM APC Low Loss)
	H	SM(G657A2) 9/125um			E	GY			CE	24 F MTP®+Guide Pin (MM)
					F	WH			CF	24 F MTP®+Guide Pin (MM Low Loss)
					G	RD			CG	24 MTP®+Guide Pin (SM APC)
					H	BK			CH	24 F MTP®+Guide Pin (SM APC Low Loss)
					I	YL			DA	24 F MPO (MM)
					J	VT(PU)			DB	24 F MPO (MM Low Loss)
					K	RS(PK)			DC	24 F MPO (SM APC)
					L	AQ			DD	24 F MPO (SM APC Low Loss)
									DE	24 F MPO+Guide Pin (MM)
									DF	24 F MPO+Guide Pin (MM Low Loss)
									DG	24 F MPO+Guide Pin (SM APC)
									DH	24 F MPO+Guide (SM APC Low Loss)

Example:
LP-F60DILICAKA0022 Fiber Optic Y Cable, OM3 50/125, 24C-Round Cable, 3.0mm Aqua LSZH Jacket, 24F MTP® (MM) to 8F MTP® (MM), 2m length.

Order Information

LP-F60 D I L I CA KA 0022

B CONNECTOR		LENGTH	
KA	8 F MTP® (MM)	**0022**	2m
KB	8 F MTP® (MM Low Loss)	**0032**	3m
KC	8 F MTP® (SM APC)	**0052**	5m
KD	8F MTP® (SM APC Low Loss)	**0102**	10m
KE	8 F MTP®+Guide Pin (MM)	**0152**	15m
KF	8 F MTP®+Guide Pin (MM Low Loss)	**0202**	20m
KG	8 F MTP®+Guide Pin (SM APC)	**0252**	25m
KH	8 F MTP®+Guide Pin (SM APC Low Loss)		
KI	12 F MTP® (MM)		
KJ	12 F MTP® (MM Low Loss)		
KK	12 F MTP® (SM APC)		
KL	12 F MTP® (SM APC Low Loss)		
KM	12 F MTP®+Guide Pin (MM)		
KN	12 F MTP®+Guide Pin (MM Low Loss)		
KO	12 F MTP®+Guide Pin (SM APC)		
KP	12 F MTP®+Guide Pin (SM APC Low Loss)		
LA	8 F MPO (MM)		
LB	8 F MPO (MM Low Loss)		
LC	8 F MPO (SM APC)		
LD	8 F MPO (SM APC Low Loss)		
LE	8 F MPO+Guide Pin (MM)		
LF	8 F MPO+Guide Pin (MM Low Loss)		
LG	8 F MPO+Guide Pin (SM APC)		
LH	8 F MPO+Guide Pin (SM APC Low Loss)		
LI	12 F MPO (MM)		
LJ	12 F MPO (MM Low Loss)		
LK	12 F MPO (SM APC)		
LL	12 F MPO (SM APC Low Loss)		
LM	12 F MPO+Guide Pin (MM)		
LN	12 F MPO+Guide Pin (MM Low Loss)		
LO	12 F MPO+Guide Pin (SM APC)		
LP	12 F MPO+Guide Pin (SM APC Low Loss)		

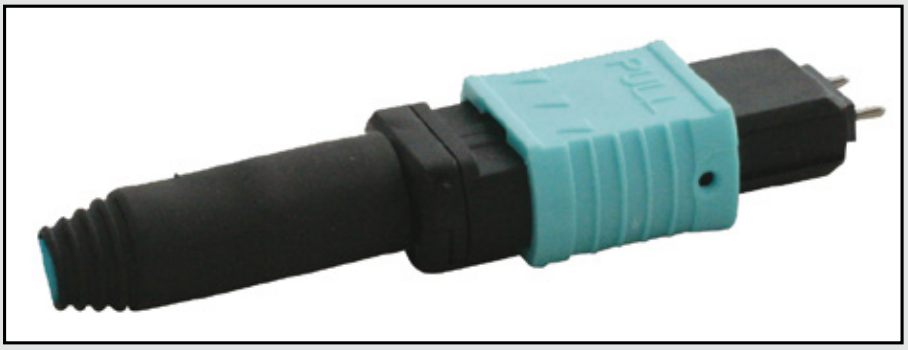
Example:
LP-F60DILICAKA0022 Fiber Optic Y Cable, OM3 50/125, 24C-Round Cable, 3.0mm Aqua LSZH Jacket, 24F MTP® (MM) to 8F MTP® (MM), 2m length.

What is MTP®, MPO?

MPO stands for "multi-fiber push on". It was developed by Nippon Telegraph and Telephone (NTT) in the early 90´s. MTP® is and MPO-style connector that is manufactured by US CONEC (www.usconec.com). The MTP® design and performance have made signification improvements over the standard MPO connector. A common misconception is that these are two different styles of connectors, in fact, they are the same footprint. The difference between MTP® and MPO can be found:

- MPO (Multi-fiber push-on), MTP® (Mechanical Transfer Push-on)
- MTP® design is an improved version of the MPO
- MTP® is patented and is a ruggedized version with elliptical shaped
- MTP® is with stainless alignment pin tips to improve insertion guidance and reduce guide hole wear
- MTP® also provides a ferrule float to improve mechanical performance by maintaining physical contact while under an applied load.

IEEE 802.3ba, the standard for implementing 40/100 Gb/s Ethernet, indicates that the MPO footprint be the standard for multimode transmission. This is a radical new transmission type called "parallel transmission". This assures the MTP® and/or MPO connector will be the future of optical transmission in the data center for the next generations to come.



• FIBER CONNECTOR & ADAPTOR

ST, SC, FC, LC, MTRJ, MTP®, MPO

LanPro provides a complete line of fiber connectors & adaptors, ST, SC, FC, LC, MTRJ, MTP® and MPO, for the flexibility to answer any factory termination need or others. Both singlemode and multimode are available. Each connector meets FOCIS and TIA/EIA-568-C.3 standards and delivers pre-assembled from the factory to reduce installation time. Zirconia ferrules with pre-radius end faces allows for physical contact polishing supporting super or ultra PC performance (SPC or UPC).

Simplex Duplex Quad SC LC ST FC

Adapter Color Code	
Singlemode	Blue
Singlemode APC	Green
Multimode OM1/OM2	Beige
Multimode OM3/OM4	Aqua

Adapter Color Code	
Singlemode	Yellow
Singlemode APC	Green
Multimode OM1/OM2	Black
Multimode OM3/OM4	Black

Flang and Flangless version available

Table 1: Connector Performance

Test & Standard Ref	ST			FC			SC			LC			MTRJ			MPO		
Interma-teability Standard	TIA/EIA-604-2			TIA/EIA-604-4			TIA/EIA-604-3			TIA/EIA-604-10			TIA/EIA-604-12			TIA/EIA-604-5		
Stretch Test																		
IL & RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL
Singlemode (SPC)	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≥0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	N/A	N/A	N/A
Singlemode (UPC)	≤0.15 dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.15dB	≥0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≥0.3dB	N/A	≥45dB
Singlemode (APC)	N/A	N/A	N/A	≤0.15dB	≤0.2dB	≥60dB	≤0.15dB	≥0.2dB	≥60dB	≤0.15dB	≤0.2dB	≥60dB	N/A	N/A	≥60dB	N/A	≤0.75dB	≥60dB
Multimode Mode (PC)	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.30dB	N/A	≥0.4dB	≤0.5dB	N/A
Ferrule Ø / tolerance	SM: Ø125.5~126.um (±0.5um) M.MØ126.0~127.5um (±75um)																	
Thermal age: GR-326-CORD 4.4.2.1.	85˚C for 168 hours <0.2Db Change																	
Temperature Cycling: IEC 60603-7-4	-40˚C to + 70˚C, 30min, 25 cycles <0.2dB Change																	
Damp Heat: IEC 60603-7-4	+65˚C at 93% RH, 12 hours, +25˚C at 93% RH, 10 Hours, -10˚C, 2 hours, 21 cycles <0.25dB Change																	
Salt Spray Test: IEC 60068-2-11	Saline concentration: 5%, PH: 6.8±0.45, value of spray: 1.0~2.0mL 80cm²/H, Test hours: 8H; 24H; 48H; 72H; 96H																	
Mating Du-rability: TIA/EIA-455-21	Maximum insertion loss ≤0.3dB after 500 mating																	

Table 2: Connector Performance

Test & Standard Ref	ST	FC	SC	LC	MTRJ	MPO
Intermateability Standard	TIA/EIA-604-2	TIA/EIA-604-4	TIA/EIA-604-3	TIA/EIA-604-10	TIA/EIA-604-12	TIA/EIA-604-5
Stretch Test						
Insertion force test PB sleeve	200~700gf	200~700gf	200~700gf	100~300gf	N/A	N/A
Insetion force test Zirconia sleeve	200~600gf	200~600gf	200~600gf	100~250gf	N/A	N/A
Insetion Loss (Multimode/Singlemode)	< 0.2dB / < 0.2dB	< 0.2dB / < 0.2dB	< 0.2dB / < 0.2dB	< 0.2dB / < 0.2dB	< 0.2dB / < 0.2dB	< 0.3dB / < 0.3dB
Thermal age: GR-326-CORD 4.4.2.1.	85˚C for 168 hours <0.2dB Change					
Temperature Cycling: IEC 60603-7-4	-40˚C to + 70˚C, 30min, 25 cycles <0.2dB Change					
Damp Heat: IEC 60603-7-4	+65˚C at 93% RH, 12 hours, +25˚C at 93% RH, 10 hours, -10˚C, 2 hours, 21 cycles <0.2dB Change					
Salt Spray Test	Saline concentration: 5%, PH: 6.8±0.45, value of spray: 1.0~2.0 ml 80cm²/H, Test hours: 8H; 24h; 48H:72H:96H					

ST TYPE

Specifications:

ST is compatible with TIA FOCIS-2 and field installable in one module space. The fibers terminate in 2.5mm ferrules and have typical insertion loss of 0.3dB (multimode) or 0.2dB (singlemode) per connector.

Fiber Compatibility:

Multimode 62.5 / 125um, 50/125um
Singlemode 9/125um

Applications:

ST fiber optic connectors & adaptor are widely used in fiber optic backbone and horizontal applications for high speed data transmissions. Multimode connectors provide a low cost, easy to terminate solution for fiber-to-the-desk and horizontal applications. Singlemode provides ultimate data transmission capabilities.

Connector Order Information

Type	Mode	Polish	S/D	Boot Size (mm)	Boot Color	Code
ST	MM	PC	Simplex	0.9	Black	LP-F11A1219
ST	SM	SPC	Simplex	0.9	Yellow	LP-F11A3239
ST	MM	PC	Simplex	2.0	Black	LP-F11A1319
ST	SM	SPC	Simplex	2.0	Yellow	LP-F11A3339
ST	MM	PC	Simplex	3.0	Black	LP-F11A1119
ST	SM	SPC	Simplex	3.0	Yellow	LP-F11A3139

Adaptor Order Information

Adaptor	Port	Type	Mode	Sleeve	Housing Color	Code
ST	Simplex	Thread	OM1, OM2, OM3, OM4	Phosphor Bronze	Metal	LP-F1501M14
ST	Simplex	Thread	OS1, OS2	Zr. Ceramic	Metal	LP-F1501S14
ST	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1502M13
ST	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1502S11
ST	Duplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1503M13
ST	Duplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1503S11

FC TYPE

Specifications:

LanPro´s FC connector & adaptor are designed to NTT-FC standards, including FC Angled Physical Contact (APC). The pre-assembled, one-piece body design and pre-polished ferrules provide quick and economical terminations for in-factory and in-the-field setting. Besides, the pre-polished ferrule and LanPro termination method guarantees uniform endface geometry.

Fiber Compatibility:

Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

Applications:

FC is specifically approved for telecommunication applications, such as ATM testing, CATV, active device termination, FTTX, Fiber channel testing and optical switches.

Connector Order Information

Type	Mode	Polish	S/D	Boot Size (mm)	Boot Color	Code
FC	MM	PC	Simplex	0.9	Black	LP-F11C1219
FC	SM	SPC	Simplex	0.9	Yellow	LP-F11C3239
FC	SM	APC	Simplex	0.9	Green	LP-F11I5249
FC	MM	PC	Simplex	3.0	Black	LP-F11C1119
FC	SM	SPC	Simplex	3.0	Yellow	LP-F11C3139
FC	SM	APC	Simplex	3.0	Green	LP-F11I5149

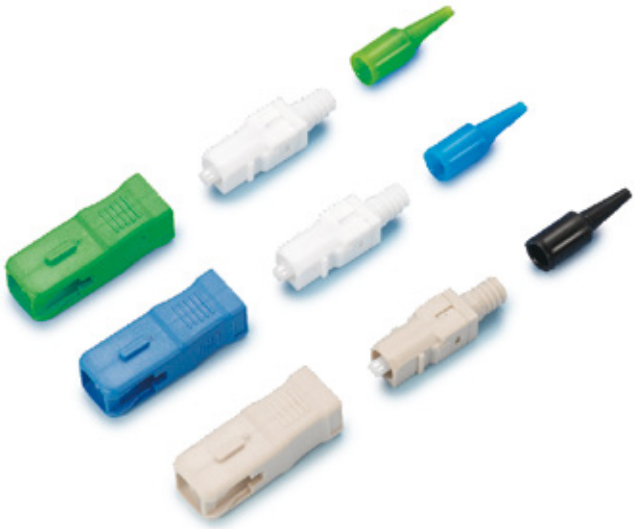
Adaptor Order Information

Adaptor	Port	Type	Mode	Sleeve	Housing Color	Code
FC	Simplex	Square	OM1, OM2, OM3, OM4	Phosphor Bronze	Metal	LP-F1504M14
FC	Simplex	Square	OS1, OS2	Zr. Ceramic	Metal	LP-F1504S14
FC	Simplex	D Type	OM1, OM2, OM3, OM4	Phosphor Bronze	Metal	LP-F1505M14
FC	Simplex	D Type	OS1, OS2	Zr. Ceramic	Metal	LP-F1505S14
FC	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1506M13
FC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1506S11

SC TYPE

Specifications:

SC field polish connectors are compliant with TIA/EIA-604 FOCIS-3. Both simplex and duplex are field terminable. The fiber terminates in 2.5mm ceramic ferrules with non-optical disconnect functionality and an average insertion loss of 0.3dB (multimode) and 0.2dB (singlemode) per mated pair.



Fiber Compatibility:

Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

Applications:

SC connectors are used for equipment cross-connects or interconnects in backbone, horizontal, work area applications and data room. SC is the one, recommended by TIA/EIA-604 FOCIS-3. At the wall outlet and the telecommunication closet. Multimode supports a robust and rapid termination for lower cost fiber-to-the-desk applications. Singlemode connectors provide the flexible capacity.

Connector Order Information

Type	Mode	Polish	S/D	Boot Size (mm)	Boot Color	Code
SC	MM	PC	Simplex	0.9	Black	LP-F11F12166
SC	SM	SPC	Simplex	0.9	Blue	LP-F11F32555
SC	SM	APC	Simplex	0.9	Green	LP-F11J52448
SC	MM	PC	Simplex	3.0	Black	LP-F11F11166
SC	SM	SPC	Simplex	3.0	Blue	LP-F11F31558
SC	SM	APC	Simplex	3.0	Green	LP-F11J51448
SC	MM	PC	Duplex	3.0	Black&Red	LP-F11H11766
SC	SM	SPC	Duplex	3.0	Blue	LP-F11H31558
SC	SM	APC	Duplex	3.0	Green	LP-F11H51448

SC TYPE

LanPro SC and LC adaptors simplex, duplex, with flange and flangeless type, are engineered to one piece type. This one piece housing feature prevents breaking of the adaptor due to the deficiency in ultrasonic process. The true one piece body optimizes side loading performance over conventional adaptors.

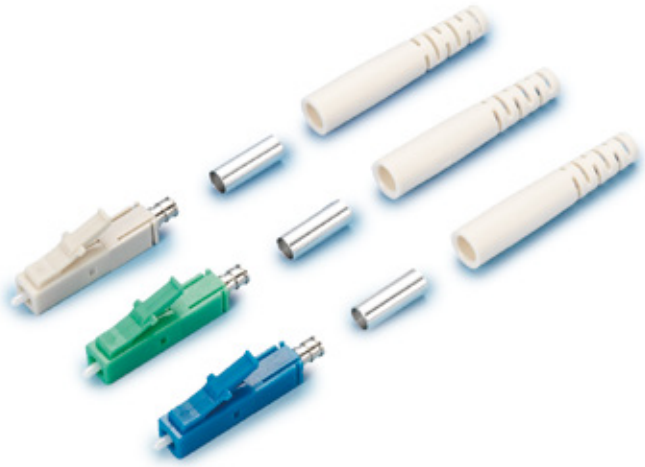
Adaptor Order Information

Adaptor	Port	Type	Mode	Sleeve	Housing Color	Code
SC	Simplex	Flange	OM1, OM2	Phosphor Bronze	Ivory	LP-F1507M13
SC	Simplex	Flange	OM3, OM4	Zr. Ceramic	Aqua	LP-F1507M26
SC	Simplex	Flange	OM4	Zr. Ceramic	Violet	LP-F1507M27
SC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1507S11
SC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Green	LP-F1507S12
SC	Simplex	Flangeless	OM1, OM2	Phosphor Bronze	Ivory	LP-F1507M131
SC	Simplex	Flangeless	OM3, OM4	Zr. Ceramic	Aqua	LP-F1507M261
SC	Simplex	Flangeless	OM4	Zr. Ceramic	Violet	LP-F1507M271
SC	Simplex	Flangeless	OS1, OS2	Zr. Ceramic	Blue	LP-F1507S111
SC	Simplex	Flangeless	OS1, OS2	Zr. Ceramic	Green	LP-F1507S121
SC	Duplex	OM1, OM2	OM1, OM2	Phosphor Bronze	Ivory	LP-F1508M13
SC	Duplex	OM3, OM4	OM3, OM4	Zr. Ceramic	Aqua	LP-F1508M26
SC	Duplex	OM4	OM4	Zr. Ceramic	Violet	LP-F1508M27
SC	Duplex	OS1, OS2	OS1, OS2	Zr. Ceramic	Blue	LP-F1508S11
SC	Duplex	OS1, OS2	OS1, OS2	Zr. Ceramic	Green	LP-F1508S12
SC	Duplex	OM1, OM2	OM1, OM2	Phosphor Bronze	Ivory	LP-F1508M131
SC	Duplex	OM3, OM4	OM3, OM4	Zr. Ceramic	Aqua	LP-F1508M261
SC	Duplex	OM4	OM4	Zr. Ceramic	Violet	LP-F1508M271
SC	Duplex	OS1, OS2	OS1, OS2	Zr. Ceramic	Blue	LP-F15085111
SC	Duplex	OS1, OS2	OS1, OS2	Zr. Ceramic	Green	LP-F15085121

LC TYPE

Specifications:

LC is small form factor (SFF), compliant with TIA/EIA-604 FOCIS-10. The main drivers of SFF is cost and space saving for cabling, hardware and equipment interfaces. There are three industry standards colors, beige (multimode), blue (singlemode) and green (8° angle polish) colors and will accommodate 900um buffered fiber, 1.6 mm, 2.0 mm or 3.0 mm jacketed cable. With the particular six-position turning feature, the connector achieves unprecedented insertion loss performance by optimizing the alignment of the fiber cores.



Fiber Compatibility:

Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

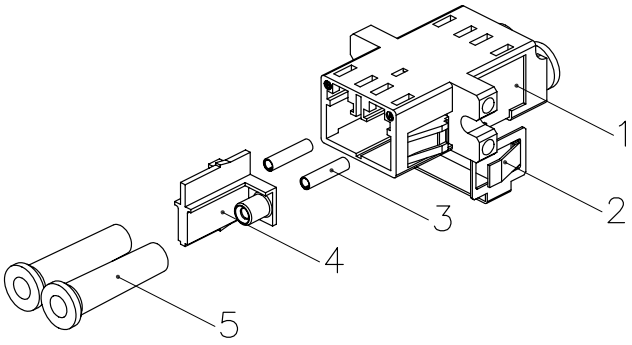
Applications:

LC connectors can be used with iMC® series, patch panels, faceplates and surface mounted box. It also can support a rugged solution for LANs, public networks, storage area networks and fiber-to-the-desk applications. The particular 1.25mm ferrules double the port density (compared with SC) to increase space on racks and enclosures. LC is the ideal one to answer the high density in data centers.

Connector Order Information

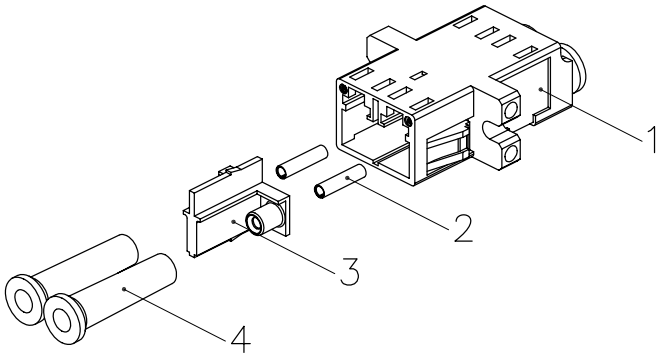
Type	Mode	Polish	S/D	Boot Size (mm)	Boot Color	Code
LC	MM	PC	Simplex	0.9	White	LP-F11L1286
LC	SM	SPC	Simplex	0.9	White	LP-F11L3285
LC	SM	APC	Simplex	0.9	White	LP-F11L5284
LC	MM	PC	Simplex	2.0	White	LP-F11L1386
LC	SM	SPC	Simplex	2.0	White	LP-F11L3385
LC	SM	APC	Simplex	2.0	White	LP-F11L5384
LC	MM	PC	Simplex	3.0	White	LP-F11L1186
LC	SM	SPC	Simplex	3.0	White	LP-F11L3185
LC	SM	APC	Simplex	3.0	White	LP-F11L5184

Duplex LC adaptors with stainless clip for iMC® series



1. Housing : Polycarbonate, UL94V-0
2. Clip: Stainless
3. Split Sleeve: Zr.,PB
4. Holder : Polycarbonate, UL94v-0
5. Dust Cover: PP, White Color

Duplex LC adaptors without stainless clip



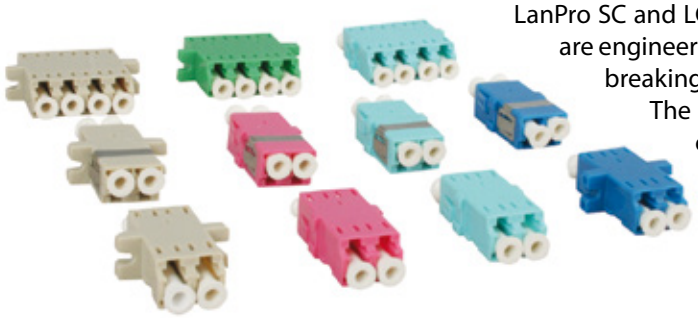
1. Housing : Polycarbonate, UL94V-0
2. Split Sleeve: Zr.,PB
3. Holder : Polycarbonate, UL94v-0
4. Dust Cover: PP, White Color

Adaptor Order Information

Adaptor	Port	Type	Mode	Sleeve	Housing Color	Code
LC	Duplex	Flange	OM1, OM2	Phosphor Bronze	Ivory	LP-F1515M13
LC	Duplex	Flange	OM3, OM4	Zr. Ceramic	Aqua	LP-F1515M27
LC	Duplex	Flange	OM4	Zr. Ceramic	Violet	LP-F1515M27
LC	Duplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1515S11
LC	Duplex	Flange	OS1, OS2	Zr. Ceramic	Green	LP-F1515S12
LC	Duplex	Flangeless	OM1, OM2	Phosphor Bronze	Ivory	LP-F1515M131
LC	Duplex	Flangeless	OM3, OM4	Zr. Ceramic	Aqua	LP-F1515M261
LC	Duplex	Flangeless	OM4	Zr. Ceramic	Violet	LP-F1515M271
LC	Duplex	Flangeless	OS1, OS2	Zr. Ceramic	Blue	LP-F1515S111
LC	Duplex	Flangeless	OS1, OS2	Zr. Ceramic	Green	LP-F1515S121

Adaptor Order Information

Adaptor	Port	Type	Mode	Sleeve	Housing Color	Code
LC	Quad	Flange	OM1, OM2	Phosphor Bronze	Ivory	LP-F1514M13
LC	Quad	Flange	OM3, OM4	Zr. Ceramic	Aqua	LP-F1514M26
LC	Quad	Flange	OM4	Zr. Ceramic	Violet	LP-F1514M27
LC	Quad	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1514S11
LC	Quad	Flange	OS1, OS2	Zr. Ceramic	Green	LP-F1514S12
LC	Quad	Flangeless	OM1, OM2	Phosphor Bronze	Ivory	LP-F1514M131
LC	Quad	Flangeless	OM3, OM4	Zr. Ceramic	Aqua	LP-F1514M261
LC	Quad	Flangeless	OM4	Zr. Ceramic	Violet	LP-F1515M271
LC	Quad	Flangeless	OS1, OS2	Zr. Ceramic	Blue	LP-F1514S111
LC	Quad	Flangeless	OS1, OS2	Zr. Ceramic	Green	LP-F1514S121
LC	Duplex	Flange (w/metallic clip)	OM1, OM2	Phosphor Bronze	Ivory	LP-F1515M132
LC	Duplex	Flange (w/metallic clip)	OS1, OS2	Zr. Ceramic	Blue	LP-F1515S112
LC	Duplex	Flangeless (w/metallic clip)	OM1, OM2	Phosphor Bronze	Ivory	LP-F1515M133
LC	Duplex	Flangeless (w/metallic clip)	OS1, OS2	Zr. Ceramic	Blue	LP-F1515S113

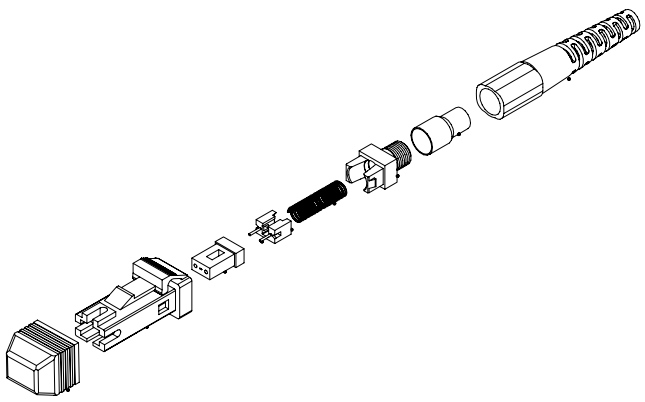


LanPro SC and LC adaptors simplex, duplex, with flange and flangeless type, are engineered to one piece type. This one piece housing feature prevents breaking of the adaptor due to the deficiency in ultrasonic process. The true one piece body optimizes side loading performance over conventional adaptors.

MTRJ TYPE

Specifications:

MTRJ stands for Mechanical Transfer Registered Jack and is also popular for small form factor devices on account of its small size. It utilizes two fibers and integrates them into a single design that looks similar to a RJ45 connector. Alignment is completed through the use of two pins that mate with the connector.



Fiber Compatibility:

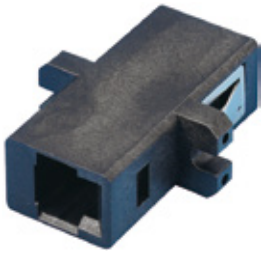
Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

Applications:

MTRJ supports a rugged solution for LANs, public networks, storage area networks and fiber-to-the-desk applications. The particular 1.25mm ferrules double the port density (compared with SC) to increase space on racks and enclosures.

Connector Order Information

Type	Mode	Polish	F/M	Boot Size (mm)	Boot Color	Code
MTRJ	MM	PC	Female	1.8	Black	LP-F11M1411
MTRJ	SM	SPC	Female	1.8	Black	LP-F11M3411
MTRJ	MM	PC	Male	1.8	Black	LP-F11N1411
MTRJ	SM	SPC	Male	1.8	Black	LP-F11N3411
MTRJ	MM	PC	Female	3.0	Black	LP-F11M1111
MTRJ	SM	SPC	Female	3.0	Black	LP-F11M3111
MTRJ	MM	PC	Male	3.0	Black	LP-F11N1111
MTRJ	SM	SPC	Male	3.0	Black	LP-F11N3111



Adaptor Order Information

Type	Mode	Type	Mode	Sleeve	Housing Color	Code
MTRJ	Simplex	Flange	OM1, OM2, OM3, OM4	*	Black	LP-F1513M18
MTRJ	Simplex	Flange	OM1, OM2, OM3, OM4	*	Gray	LP-F1513M19

MTP® / MPO TYPE

Specifications:

MPO connectors with push-pull latching are available with 4, 8, 12 or fibers color-housings differentiate singlemode (green) and multimode (beige). Manufactured to IEC standard 1754-7 and TIA/EIA 604-5. MTP® is the patented MPO, owning to US Conec. Both MTP® and MPO are available.

Fiber Compatibility:

Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

Applications:

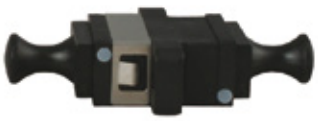
MPO supports a rugged solution for LANs, public networks and storage area networks. The particular MT ferrules increase the port density (compared with SC,LC) on racks and enclosures. MPO is the ideal and a exclusive one to answer the high density in 10G, 40G and 100G data centers.

Connector Order Information

Type	Fiber	Mode	Polish	F/M	Boot Size (mm)	Boot Color	Housing Color	Code
MPO	12	MM	PC	Female	3.0	Black	Aqua	LP-F4061113
MPO	12	SM	APC	Female	3.0	Black	Green	LP-F4065111
MPO	12	MM	PC	Male	3.0	Black	Aqua	LP-F4051113
MPO	12	SM	APC	Male	3.0	Black	Green	LP-F4055111
MPO	24	MM	PC	Female	3.6	Black	Aqua	LP-F4081213
MPO	24	SM	APC	Female	3.6	Black	Green	LP-F4085211
MPO	24	MM	PC	Male	3.6	Black	Aqua	LP-F4071213
MPO	24	SM	APC	Male	3.6	Black	Green	LP-F4075211
MTP®	12	MM	PC	Female	3.0	Black	Aqua	LP-F40F1113
MTP®	12	SM	APC	Female	3.0	Black	Green	LP-F40F5111
MTP®	12	MM	PC	Male	3.0	Black	Aqua	LP-F40E1113
MTP®	12	SM	APC	Male	3.0	Black	Green	LP-F40E5111
MTP®	24	MM	PC	Female	3.6	Black	Aqua	LP-F40H1213
MTP®	24	SM	APC	Female	3.6	Black	Green	LP-F40H5211
MTP®	24	MM	PC	Male	3.6	Black	Aqua	LP-F40G1213
MTP®	24	SM	APC	Male	3.6	Black	Green	LP-F40G5211

MTP® / MPO TYPE

Type	Part	A/B	Type	Mode	Housing Material	Housing color	Code
MPO	Simplex	A (up to down)	Flange	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F4101111
MPO	Simplex	B (up to up)	Flange	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F4102111
MPO	Simplex	A (up to down)	Flangeless	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41011111
MPO	Simplex	B (up to up)	Flangeless	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41021111
MPO	Simplex	A (up to down)	Flange (SC Footprint)	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41011113
MPO	Simplex	B (up to up)	Flange (SC Footprint)	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41021113
MPO	Simplex	A (up to down)	Flangeless (SC Footprint)	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41011114
MPO	Simplex	B (up to up)	Flangeless (SC Footprint)	OM3, OM4, OS1, OS2	PBT + 15%	Black	LP-F41021114
MTP®	Simplex	A (up to down)	Flange	OM3, OM4, OS1, OS2	Polyethermide	Black	LP-F4103112
MTP®	Simplex	B (up to up)	Flange	OM3, OM4, OS1, OS2	Polyethermide	Gray	LP-F4104122



A type: with 2 white dot

B type: with 1 white dot

HYBRID Adaptor

Adaptor Order Information

Adaptador	Port	Type	Mode	Sleeve	Housing Color	Code
ST to FC	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1509M13
ST to FC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1509S11
ST to SC	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1510M13
ST to SC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1510S11
SC to FC	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1511M13
SC to FC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1511S11
SC to ST	Duplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory	LP-F1512M13
SC to ST	Duplex	Flange	OS1, OS2	Zr. Ceramic	Blue	LP-F1512S11




Fast Accu-Cleaner

Applications:

LanPro Fast Accu-Cleaner by LanPro are dry cloth cleaners specially designed to clean single fiber connectors residing in an adapter, faceplate or bulkhead. LanPro Fast Accu-Cleaner are simple to use and highly effective at removing oil and dust contaminants that can negatively impact optical performance. Fast, simple and efficient.

Specifications:

- Up to 400 cleanings.
- Disposable type.
- For LC, SC, ST,FC, optical connectors.

Order Information

Part number	Description
LPT-FACLEANER250	Fast Accu-Cleaner dry cleaner for single SC, ST, FC fiber optic connectors 2.50mm.
LPT-FACLEANER125	Fast Accu-Cleaner dry cleaner for single LC fiber optic connector 1.25mm.

Aerial Optical Fiber Attenuators

Applications:

Fiber optic attenuator is used for reducing the power of the light in the fiber optic network.

Optic fixed type connector (male to female) attenuator can be selected in need of the project. It is used in the fiber transmission system.

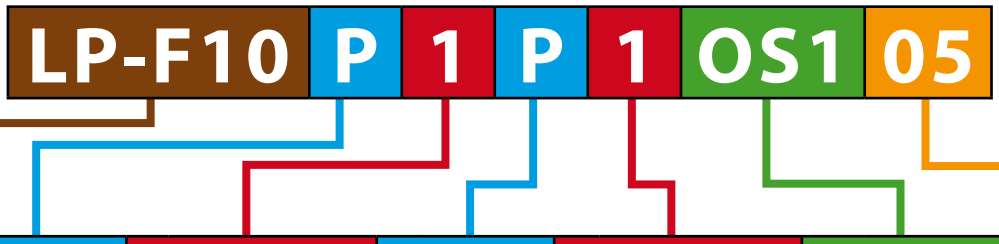
Specifications:

- Low back reflection and Low PDL
- High precision attenuation value
- Precise control of attenuation range
- Simple manipulation
- Connector type: FC, SC, ST, LC or other type

Applications:

- Fiber optical telecommunication system
- Fiber optical CATV
- Fiber optical sensor
- Testing equipment

Order Information



LP-F	INPUT CONNECTOR TYPE		POLISH GRADE FOR INPUT CONNECTOR		OUTPUT CONNECTOR TYPE		POLISH GRADE FOR OUTPUT CONNECTOR		TRANSMISSION TYPE		ATTENUATION	
Aerial Optical Fiber Attenuator (standard)	T	ST Simplex	1	UPC polish, RL>50dB Blue Color Connector	T	ST Simplex	1	UPC polish, RL>50dB Blue Color Connector	OS1	Singlemode OS1 9/125 um	05	5 dB
	E	E2000 Simplex	2	APC polish, RL>60dB Green Color Connector	E	E2000 Simplex	2	APC polish, RL>60dB Green Color Connector	OS2	Singlemode OS2 9/125 um	07	7 dB
	F	FC Simplex	3	PC Polish, RL> 20dB Blue Color Connector	F	FC Simplex	3	PC Polish, RL> 20dB Blue Color Connector	OM1	Multimode OM1 62.5/125um	10	10 dB
	S	SC Simplex	4	SPC polish, RL>40dB Blue Color Connector	S	SC Simplex	4	SPC polish, RL>40dB Blue Color Connector	OM2	Multimode OM2 62.5/125um	12	12 dB
	P	LC Simplex			P	LC Simplex			OM3	Multimode OM3 62.5/125um	15	15 dB
	M	MTRJ Female			M	MTRJ Female			OM4	Multimode OM4 62.5/125um	20	20 dB
	N	MTRJ with Guide Pin Male			N	MTRJ with Guide Pin Male			OM5	Multimode OM5 62.5/125um	25	25 dB
											30	30 dB

Example:
LP-UF10S1S1OS107 LanPro Attenuator Input SC/UPC, Output SC/UPC Singlemode OS1 9/125um, 7dB.

iMC® Series

Applications:

iMC® Series offers one flexible connectivity for workstation cabling termination on singlemode and multimode fiber cable and easily snaps into any housing with LanPro´s flush and surface mount outlets, box and configuration panels.

Fiber Compatibility:

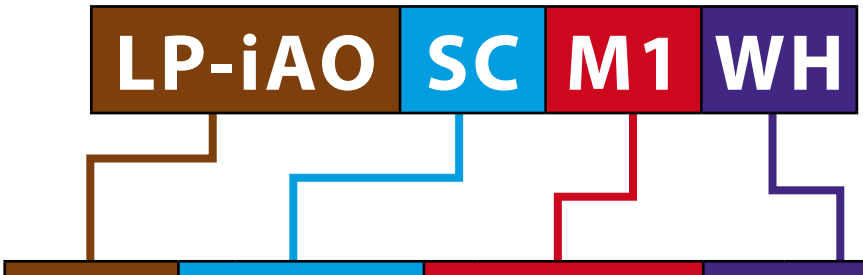
Multimode 62.5/125 um, 50/125um
Singlemode 9/125um

Design Considerations:

- ST, FC, SC and LC are available in phosphor bronze and zirconia ceramic sleeves
- Convenient to use in permanent or temporary applications
- iMC® series snap into panels, surface mounted box and flush outlets
- SC is available in blue for identification in singlemode applications

Adaptador	Port	Type	Mode	Sleeve	Housing Color
ST	Simplex	Thread	OM1, OM2, OM3, OM4	Phosphor Bronze	Metal
ST	Simplex	Thread	OS1, OS2	Zr. Ceramic	Metal
SC	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory
SC	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue
SC to ST	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory
SC to ST	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue
SC to ST	Simplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory
SC to ST	Simplex	Flange	OS1, OS2	Zr. Ceramic	Blue
MTRJ	Simplex	Flange	OM1, OM2, OM3, OM4	*	Ivory
LC	Duplex	Flange	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory
LC	Duplex	Flange	OS1, OS2	Zr. Ceramic	Blue
LC	Duplex	Flangeless	OM1, OM2, OM3, OM4	Phosphor Bronze	Ivory
LC	Duplex	Flangeless	OS1, OS2	Zr. Ceramic	Blue
FC	Simplex	D Type	OM1, OM2, OM3, OM4	Phosphor Bronze	Metal
FC	Simplex	D Type	OS1, OS2	Zr. Ceramic	Metal

Order Information

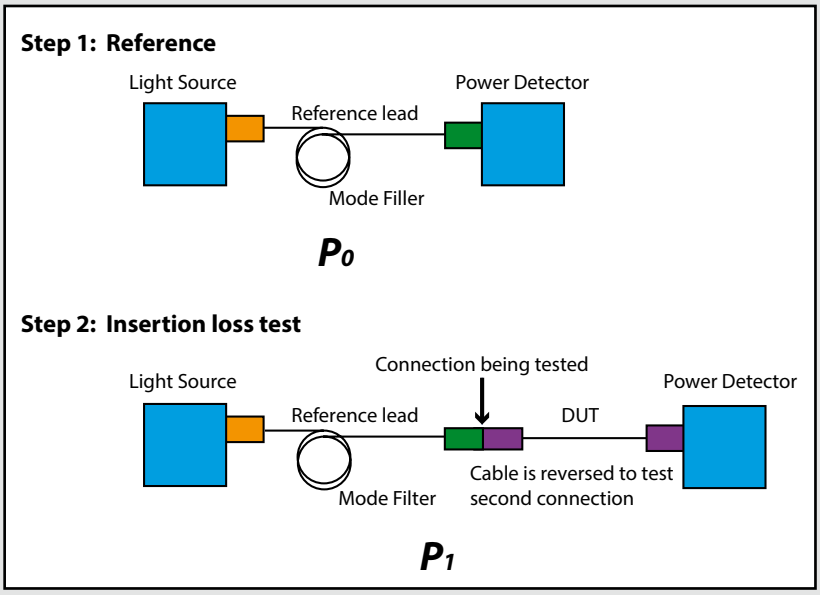


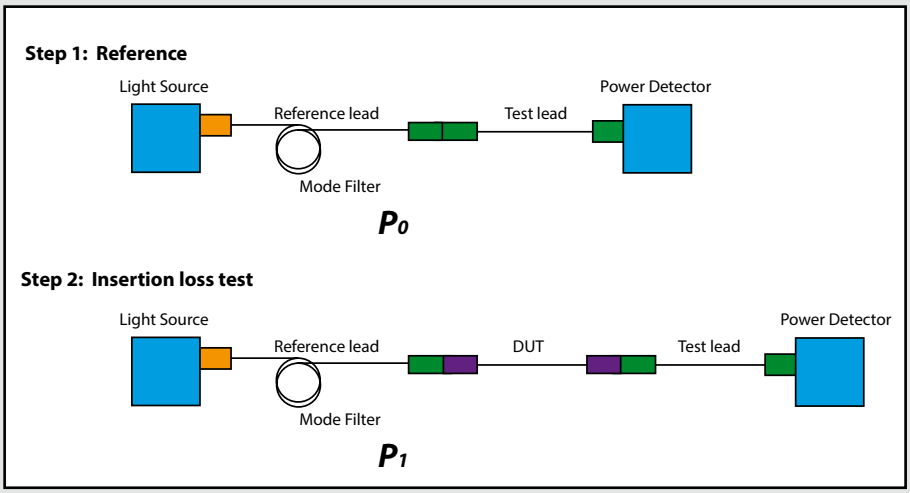
LP-iAO	MODEL		MODE		COLOR	
LANPRO iMC® SERIES ADAPTORS	LC	LC Duplex	M1	Multimode	Blank	BL
	ST	ST Simplex	S1	Singlemode	WH	OR
	SC	SC Simplex			IV	Ivory
	MT	MTRJ				

Example:
LP-iAOSCM1WH iMC® Series Adaptor, SC Simplex, Multimode, white color body.

What is Fiber Optic Insertion Loss?

Insertion loss (IL) is the amount of light lost (it is measured in dB) from the origination of a signal to the reception of that same signal. What happens if insertion loss is too high? Too high of an insertion loss will lead to what is known as "channel errors" that can cause equipment to go down and possibly cause data center downtime. Is insertion loss important? Sure, knowing the insertion loss before you purchase, ask for insertion loss specifications and pay attention to the words like "typical" versus "maximum" insertion loss.



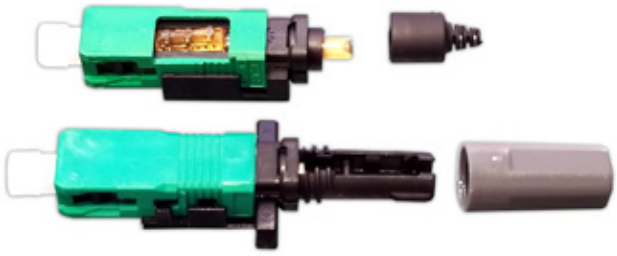


FusionLess® 2

Specifications:

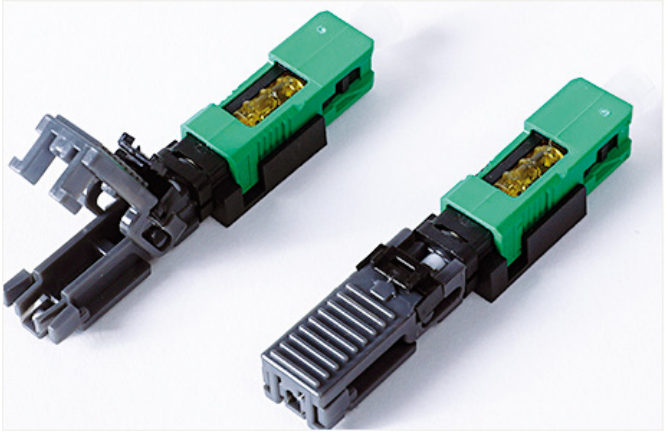
The FusionLess® 2 Optical Mechanical Connectors by LanPro is designed for fast and simple field termination of FTTH Drop cable and Indoor cables without any extra manufacturing process like polishing and epoxy on the ferrule. The FusionLess® 2 is made with high precision and quality zirconia ferrule and provide a highly reliable connection in most of the fiber optic network application.

- Quick and easy fiber termination.
- Reusable termination capability (up to 5 times).
- High success rate of connection.
- Superior optical characteristic value.
- Simple assembly process.
- No failure after opening.

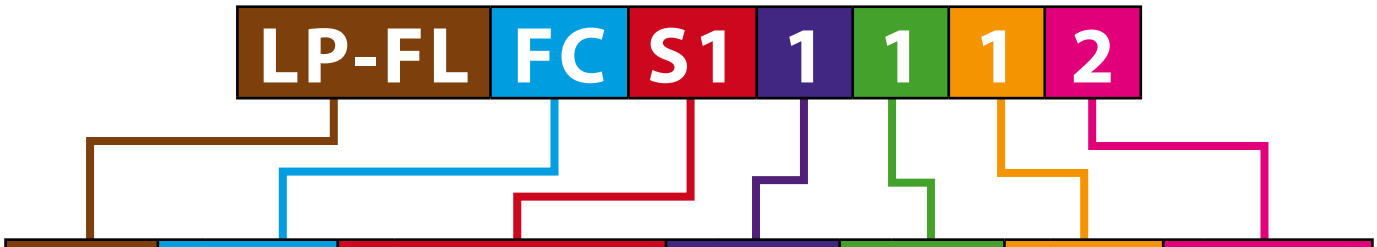


Applications:

- Fiber Optic Telecommunication.
- Fiber Distribution Frame.
- FTTH Outlets.
- Optical Cable Interconnection.
- Cable Television.



Order Information



LP-FL	CONNECTOR TYPE		FIBER MODE AND TYPE		FIBER CABLE DIAMETER		COLOR HOUSING		COLOR BOOT		LINE	
FUSIONLESS® OPTICAL CONNECTOR FIELD INSTALLABLE	FC	FC Connector	M1	Multimode OM1 IEC 60793-2-10 Type A1b 62.5/125µm	1	0.9mm	1	Blue (SM)	1	Standard	2	FusionLess® 2 line
	LC	LC Connector	M2	Multimode OM2 IEC 60793-2-10 Type A1a.1 50/125µm	2	0.25mm	2	Green (APC)				
	SC	SC Connector	M3	Multimode OM3 IEC 60793-2-10 Type A1a.2 50/125µm	3	Both 0.9 and 0.25mm	3	Black (OM2)				
	ST	ST CONNECTOR	M4	Multimode OM4 IEC 60793-2-10 Type A1a.3 50/125µm	4	2.0mm	4	Beige (OM1)				
			S1	Singlemode ITU-T G.652.D Type B1.3 9/125µm	5	3.0mm	5	Aqua (OM3/OM4)				
					6	2x3 and 1.6x2 mm GPON						
					7	Universal						

Example:
LP-FLSTS11112 FusionLess® 2 Connector, ST, Singlemode, PC Polish, ITU-T G.652.D Type B1.3 9/125µm, Fiber cable diameter 0.9mm, Blue Housing, White boot.

FusionLess® 2 ECCO

Specifications:

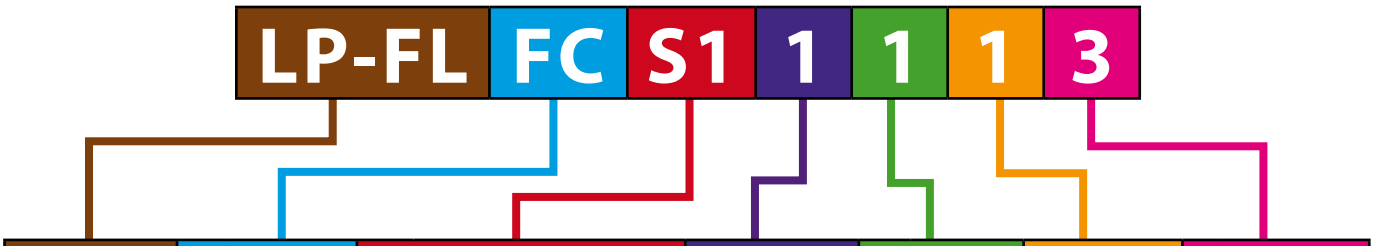
The FusionLess® 2 ECCO Optical Mechanical Connectors by LanPro is the most widely used fiber optic connector in FTTx that does not need epoxy or polishing.

It enables fast and on-site installation of 3mm, 2X3mm cable type connectors even when the user has no access to power. Two pieces of the preassembled connector components can be installed within 2 minutes using simple tools and can be reused several times in the field. It accommodates a reliable and durable optical network especially suitable for advanced fiber optic systems requiring exceptional stability and low loss.

Applications:

- High Tensile strength.
- No Epoxy and Polishing required.
- Quick and Easy fiber termination.
- High success rate of connections.

Order Information



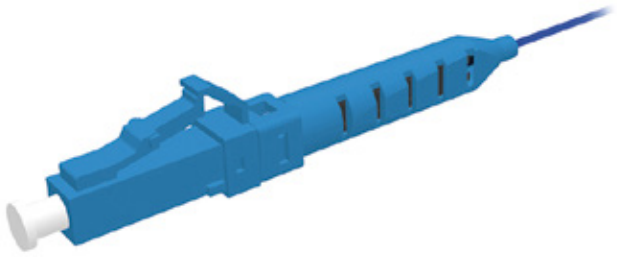
LP-FL	CONNECTOR TYPE		FIBER MODE AND TYPE		FIBER CABLE DIAMETER		COLOR HOUSING		COLOR BOOT		LINE	
FUSIONLESS® 2 ECCO UNIVERSAL CONNECTOR	FC	FC Connector	M1	Multimode OM1 IEC 60793-2-10 Type A1b 62.5/125µm	1	0.9mm	1	Blue (SM)	1	Standard	3	FusionLess® 2 ECCO line
	LC	LC Connector	M2	Multimode OM2 IEC 60793-2-10 Type A1a.1 50/125µm	2	0.25mm	2	Green (APC)				
	SC	SC Connector	M3	Multimode OM3 IEC 60793-2-10 Type A1a.2 50/125µm	3	Both 0.9 and 0.25mm	3	Black (OM2)				
	ST	ST CONNECTOR	M4	Multimode OM4 IEC 60793-2-10 Type A1a.3 50/125µm	4	2.0mm	4	Beige (OM1)				
			S1	Singlemode ITU-T G.652.D Type B1.3 9/125µm	5	3.0mm	5	Aqua (OM3/OM4)				
					6	2x3 and 1.6x2 mm GPON						
					7	Universal						

Example:
LP-FLSCS17213 FusionLess® 2 ECCO, Universal Connector, SC, Singlemode, APC Polish, ITU-T G.652.D Type B1.3 9/125µm, Fiber cable diameter 2x3mm, 3mm round cable, Green Housing

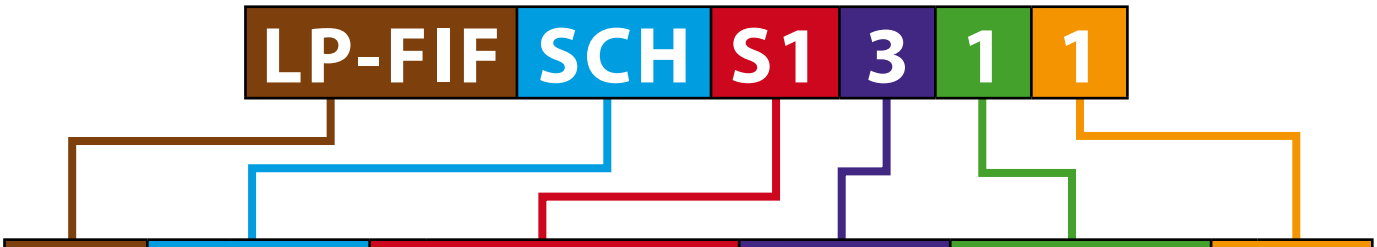
LanPro's **In-Fusion®** with factory pre-polished ferrule, utilizes fusion splicer to terminate the connector in the field. This eliminates polishing, adhesives and crimping in the field, which minimizes the potential for operator error and expensive connector scrap. Fusion splice addresses return loss concerns present in analog optical networks. The innovative design and simplified field installation makes the In-Fusion® the ideal choice for various fiber termination and FTTX applications.

Specifications:

- FTTH Field-Fusion type
- Faster and stabile assembly
- No sleeve heating process required
- Simple protection using wing type sleeves
- Lower Insertion Loss an Return Loss



Order Information



LP-FIF	CONNECTOR TYPE		FIBER MODE AND TYPE		JACKET TYPE		COLOR HOUSING		BOOT COLOR	
In-Fusion® Field Fusion-splicing connector	**SCH**	SC Hard Connector	**M1**	Multimode OM1 IEC 60793-2-10 Type A1b 62.5/125µm	**1**	9um	**IV**	Blue (SM - UPC)	**1**	White
	SCS	SC Soft Connector	**M2**	Multimode OM2 IEC 60793-2-10 Type A1a.1 50/125µm	**2**	2mm	**BK**	Green (SM - APC)		
	LCS	LC Soft Connector	**M3**	Multimode OM3 IEC 60793-2-10 Type A1a.2 50/125µm	**3**	3mm	**GR**	Black (OM2 - UPC)		
			M4	Multimode OM4 IEC 60793-2-10 Type A1a.3 50/125µm	**4**	3mm round	**WH**	Beige (OM1- UPC)		
			S1	Singlemode ITU-T G.652.D Type B1.3 9/125µm	**5**	2x3mm rectangular	**5**	Aqua (OM3/OM4 -UPC)		

Example:
LP-FIFSCHS1311 In-Fusion® Fusion-spliced Connector, SC Hard, Singlemode, UPC Polish, ITU-T G.652.D Type B1.3 9/125µm, 3mm, Blue Housing, White boot.

Fusion-splicing No-Heating Connector Maker Tool

In-Fusion

LanPro's **In-Fusion®** FTTH Field Fusion-splicing connector Maker is a long-used tool in outside plant fiber-optic installation, and in recent years has been more commonly used in indoor environments as well. In addition to being used on pigtails, fusion splicers are now commonly used to join optical fibers to splice-on connectors.

Specifications:

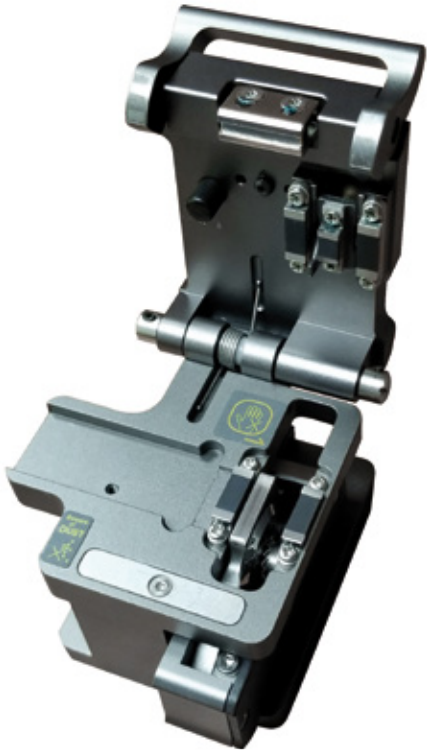
- Process Drop Cable Termination Faster and easier
- No sleeve heating process required
- Micro 5pin port charging
- Portable compact size
- Easy Installation constrained space
- Fast Splicing Time

Order Information

Part number	Description
LP-FIFCM1000	In-Fusion® FTTH Field Fusion-splicing No-Heating Connector Maker Tool, Single core
LP-FIFCM2000	In-Fusion® FTTH Field Fusion-splicing No-Heating Connector Maker Tool, Single core

Fiber Optic High Precision Cleaver

LPT-FCLEAVA05 is high precision optical fiber cleaver which can support various fiber type (Flat, 250um, 900um, 3mm). Simplified two step cleaving technology gives rapid and accurate cleave angle. Also guaranteed durable blade support 48,000 cleaving. LPT-FCLEAVA05 fiber cleaver is best model to satisfy maintenance and cost efficiency.



Specifications:

- Auto slide back blade support Simple and accurate operation.
- Stable and accurate cleave angle distribution (>0.5).
- Guaranteed 48,000 cleaving long lifespan Blade.
- Simple drop down Trash can.
- Suitable size and weight for stable working condition.
- Multi holder (Flat, 250um, 900um, 3mm) support various cleaving process.

Order Information

Part number	Description
LPT-FCLEAVA05	Fiber Optic High Precision Cleaver

PLUG & PLAY

LanPro understands that the ultimate goal in Data Center networks is to have zero downtime or extreme network availability. The strict schedule constrains and budgets, demanding reliability and performance without compromise is a must. LanPro's 5S (Safety +, Speed +, Space +, Saving +, Service +) delivers fast-deployment , with built-in reliability combined with guaranteed performance and headroom.

Save Time & Money

- No testing or troubleshooting required
- Up to 90% reduction in installation time and labor cost
- Fast delivery to meet short project turn-around deadlines

Easy Plug & Play

- Easy to order: simplified ordering process eliminates errors
- Easy to install immediately
- Easy to configure: a complete range to choose from to build a system

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Make it "Green"

- Small, flexible and efficient cable assembly design mean less cable to be deployed and no unnecessary slack
- Up to 50% material reduction in Data Center cabling topology
- Al l system components can be easily re-deployed and reused.

Complexity in the data center increases expense and risk, so for new technology deployments to meet business requirements they must be simple to manage, maintain and make provision. Infrastructure reliability, performance, flexibility and availability are essential, and trade-off of one for the other are no longer accepted.

Deploying a modular, high-density, MTP®/MPO-based structure wired cabling system in the data center will significantly increase response to data center moves, adds and changes (MACs). LanPro provides one complete range of MTP®/MPO products: adaptors, connectors, array cable, trunk cable, distribution cable, direct harness, harness and trunk harness. Here, it is meant to provide you with an introduction to the practical application of MTP®/MPO technology. It shows the migration approach via 10 Gigabit to 40/100 Gigabit.

- **Components: adaptor, cable types and modules**
- **Method A, B, C**
- **Migration: from 10GbE to 100GbE**

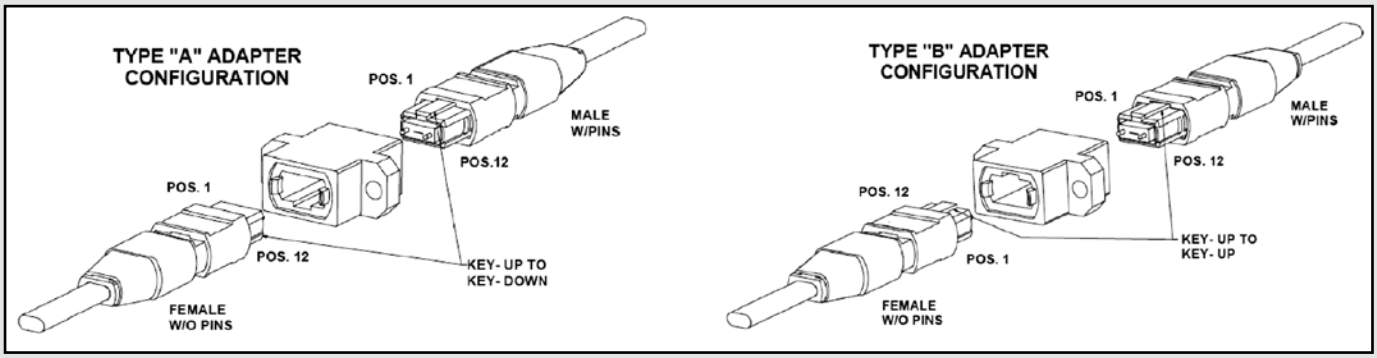
Adaptor

There are two types of MPO adaptors, according to the placement of the key:

Type A: Key-up to Key-down = the key is up on one side and the other is down. The two connector are connected turned 180°.

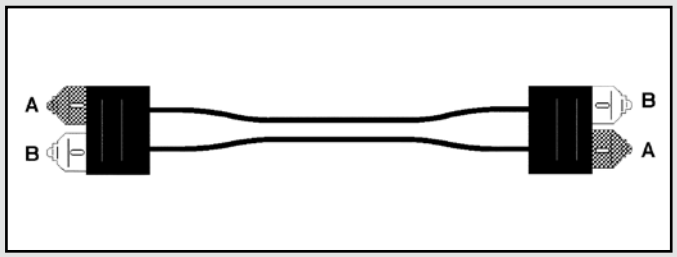
Type B: Key-up to Key-up = the key is up at both sides.

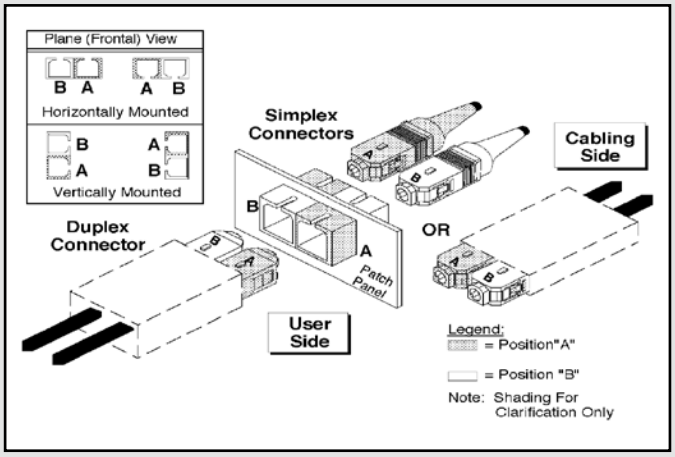
When making an MTP®/MPO connection, use one male connector and female connector plus one MTP®/MPO adaptor. MTP®/MPO, with guide pins, is called male (refer to the following photo, right side, with guide pin). Don't connect a male to a male or a female to a female. Their guide pins hit against pins so it damages the connector.



Cables

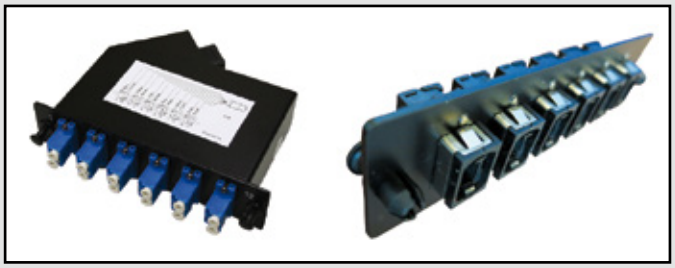
LanPro supports 11 series for fiber patch cords, including array cord, direct harness, harness, trunk harness, trunk, distribution cable and mini Breakout. These are delivered with pre-termination at factory. The following illustrates the straight-through version (A-to-B). A-to-A is for cross-over version.





Cassette Module & Adapter plate

The cassette modules and adaptor plates are what connect the permanent link to the patch cable. The MTP®/ MPO module enables the user to take the fibers brought by a trunk cable and distribute them to a duplex cable. Because the cassette is already assembled with direct harness cable inside, it is fitted with 12 or 24 fibers and has LC or SC adaptors on the front side and MTP®/MPO at the rear side. The adaptor plate connects the MTP®/MPO trunk cable with one MTP®/MPO patch cord or harness cable. The adaptor plates are available with 6 MTP®/MPO adaptors, type A or type B.



The Polarity Methods

TIA-568-C defines three polarity, A, B, C. The main purpose is to guarantee the right bi-directional allocation.

Method A: use type A MTP®/MPO adaptor (key-up to key-down) and straight-through backbones. This method is easy, saving time and money. Just one cassette type is needed. It is the most popular method, widely deployed in data center.

Method B: use type B MTP®/MPO adaptor (key-up to key-up). Singlemode cannot be used in method B and it is necessary to prepare two types for cassette modules. Compared with method A, method B requires more planning effort and expense.

Method C: use type A MTP®/MPO adaptor (key-up to key-down). A straight-through patch cord (A-to-B) is used on both ends of the link. The pair-wise flip of polarity occurs in the backbone, which absolutely increases effort to plan. This is not very widespread either because of the greater effort. It doesn't offer a way of migrating to 40/100GbE, in other words, method C increases expense.

MTP®/MPO Cable Type A: Key-up to key-down			MTP®/MPO Cable Type B: Key-up to key-down			MTP®/MPO Cable Type C: Key-up to key-down		
Fibers		Fibers	Fibers		Fibers	Fibers		Fibers
1	Key-up ITEM 1	1	1	Key-up Key-down ITEM 1	1	1	Key-up ITEM 1	1
2		2	2		2	2		2
3		3	3		3	3		3
4		4	4		4	4		4
5		5	5		5	5		5
6		6	6		6	6		6
7		7	7		7	7		7
8	ITEM 12	8	8	ITEM 12	8	8	ITEM 12	8
9		9	9		9	9		9
10		10	10		10	10		10
11		11	11		11	11		11
12	Key-down ITEM 1	12	12	Key-up Key-down ITEM 12	12	12	Key-down ITEM 1	12
	ITEM 12			ITEM 1			ITEM 12	

TIA Connectivity Method	Patch Cord Type one end of the link	MTP®/MPO adaptor type at the back of cassette	Array Cable-to-cassette keying	Array Cable Type	MTP®/MPO adaptor type at the back of cassette	Array Cable-to-cassette keying	Patch Cord Type at one end of the link
Method A	A-to-B	A	Key up to Key down	A	A	Key up to Key down	A-to-A
Method B	A-to-B	B	Key up to Key down	B	B	Key up to Key up	A-to-B
MethodC	A-to-B	A	Key up to Key down	C	A	Key up to Key down	A-to-B

The Polarity Methods

In data center, the capacity expansion is usually carried out in three steps:

- Increase capacity in existing 10G environment
- From 10G to 40G
- From 40G to 100G

Expansion in 10G	A-to-B patch cord (LC or SC)	+	Cassette (Type A)	MTP®/MPO array cord 12 core (Type A)	+	Cassette (Type A)	+	A-to-A patch cord (LC or SC)
	A-to-B patch cord (LC or SC)	+	Cassette (Type A)	MTP®/MPO array cord 12 core (Type A)	+	MTP®/MPO adaptor plate (Type A)	+	Harness/Trunk Harness (MTP®/MPO to LC/SC)
	A-to-B patch cord (LC or SC)	+	Cassette (Type A)	*	+	*	+	Harness/Trunk Harness (MTP®/MPO to LC/SC)

10G to 40G	MTP®/MPO array cord 12 core (Type A)	+	MTP®/MPO adaptor plate (Type A)	+	MTP®/MPO array cord 12 core (Type A)	+	MTP®/MPO adaptor plate (Type A)	+	MTP®/MPO array cord 12 core (Type B)
	MTP®/MPO array cord 12 core (Type B)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO array cord 12 core (Type B)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO array cord 12 core (Type B)

40G to 100G	MTP®/MPO Trunk (Type A, 2 x 12 core in one MTP®/MPO 24 core)	+	MTP®/MPO adaptor plate (Type A)	+	MTP®/MPO array cord 12 core (Type A) x 2 pcs	+	MTP®/MPO Trunk (Type B, 2 x 12 core in one MTP®/MPO 24 core)
	MTP®/MPO Trunk 24 core (Type A)	+	MTP®/MPO adaptor plate (Type A)	+	MTP®/MPO adaptor plate (Type A)	+	MTP®/MPO Trunk 24 core (Type B)
	MTP®/MPO Trunk (Type B, 2 x 12 core in one MTP®/MPO 24 core)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO Trunk (Type B, 2 x 12 core in one MTP®/MPO 24 core)
	MTP®/MPO Trunk 24 core (Type B)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO adaptor plate (Type B)	+	MTP®/MPO Trunk 24 core (Type B)

OM3 & OM4

Why OM3 & OM4 is widely deployed in data center? Statistics show that among the backbone optical fiber links in data centers, 88% are shorter than 100 meters 94% are shorter than 125 meters and 100% are shorter than 300 meters. Basically 100 meters is enough. IEEE ultimately adopted OM4 as it is capable of transmitting 40/100Gb/s over 150m and thereby supports over 97% of all links in data center.

Application	OM1		OM2		OM3		OM4		OS1/OS2	
Wavelength	850	1.300	850	1.300	850	1.300	850	1.300	1.310	1.550
FDDI PMD		2000		2000		2000		2000		
FDDI SMF-PMD									10,000	
10/100Base-SX	300		300		300		300			
100Base-FX		2000		2000		2000		2000		
1000Base-SX	275		550		800		800			
1000Base-LX		550		550		800		800	5000	
10GBase-S	33		82		300		550			
10GBase-LX4		300		300		300		300	10,000	
10GBase-L									10,000	
10GBase-LRM		220		220		220		220		
10GBase-E										40,000
40GBase-SR4					100		150			
40GBase-LR4									10,000	
100GBase-SR10					100		150			
100GBase-LR4									10,000	
100GBase-ER4										30,000

Low Loss

Total connector loss within a system channel impacts the ability of a system to operate over the maximum supportable distance for a give date rate. The 40/100G Ethernet standard specifies the OM3 fiber 100M distance maximum channel loss to be 1.9dB (a 1.5dB total connector loss is included). The OM4 fiber 150M distance maximum channel loss is 1.5dB, which includes a 1.0dB total connector loss budget. With low-loss MTP®/MPO connectivity components, maximum flexibility can be obtained with the ability to introduce multiple connector mating into the connectivity link.

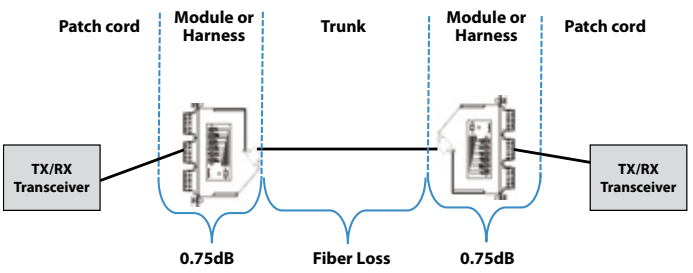
Fiber Pre-Terminated Cabling Performance (dB)

LanPro recommends using pre-terminated trunks and harness whenever and wherever possible. With 100% factory testing and no need for field terminations or splices, installation time and cost are reduced by up to 50%

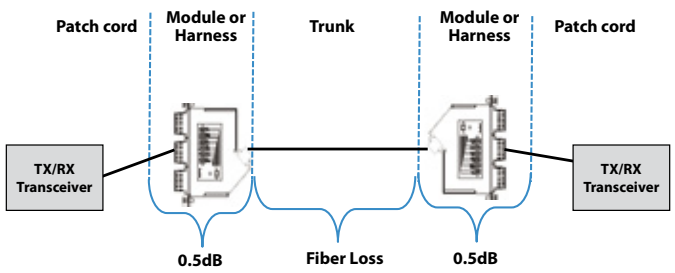
Connector Mated Pairs	MULTIMODE (OM3 & OM4)						Singlemode (OS1, OS2)		
	Duplex Typical IL	Duplex Max IL	Duplex Max IL (Low-Loss)	12-fiber Standard Typical IL	12-fiber Standard Max IL	12-fiber Standard Max IL (Low-Loss)	Typical IL	Max IL	Low Loss Max IL
LC	0.15	0.50	0.15	-	-	-	0.25	0.30	0.15
SC	0.20	0.50	0.15	-	-	-	0.25	0.30	0.15
MTP®/MPO	-	-	-	0.40	0.50	0.35	0.30	0.75	0.35

MTP®/MPO Modules & Harness	MULTIMODE (OM3 & OM4)			Singlemode (OS1, OS2)		
	12-fiber Standard Typical IL	12-fiber Standard Max IL	12-fiber Standard Low Max IL	Typical IL	Max IL	Low Loss Max IL
LC	-	0.50	0.50	0.50	0.50	0.50
SC	-	0.50	0.50	0.50	0.50	0.50
MTP®/MPO	0.40	0.50	0.35	0.60	0.75	0.35

Standard loss Maximum Channel Loss = Fiber loss + 1.5dB



Low loss Maximum Channel Loss = Fiber loss + 1.0dB



How to calculate Insertion Loss?

When you start to calculate the maximum distance for an optical link, consider tables 1 and 2:

Table 1

For Wavelength: 1310nm	Attenuation Km (dB/Km)	Attenuation/Optical connector (dB)	Attenaution/join (Db)	
MIN	0.30	0.40	0.02	Best Conditions
Average	0.38	0.60	0.10	Normal
MAX	0.50	1.00	0.20	Worst

Table 2

For Wavelength: 1550nm	Attenuation Km (dB/Km)	Attenuation/Optical connector (dB)	Attenaution/join (Db)	
MIN	0.17	0.20	0.01	Best Conditions
Average	0.22	0.35	0.05	Normal
MAX	0.40	0.70	0.10	Worst

Total Attenuation (TA)= **n x C + c x J + L x a + M**

- **n-** number of connectors
- **C-** attenuation for one optical connector (dB)
- **c-** number of splices in elementary cable section
- **J-** attenuation for one splice (dB)
- **L-** total length of the optical cable
- **a-** attenuation for optical cable (dB/Km)
- **M-** system margin (patch cord, cable bend, unpredictable optical attenuation events, and so on, should be considerate around 3dB).

When you apply this formula to the example, and assume certain values for the optical cards, you obtain these results:
For wavelength 1310nm:
Normal **TA = n x C + c x J + L x a + M = 2 x 0.6dB + 4x 0.1dB + 20.5Km x 0.38dB/Km + 3dB = 12.39dB**

For wavelength 1310nm: Worst Situation **TA = n x C + c x J + L x a + M = 2 x 1dB + 4x 0.2dB + 20.5Km x 0.5dB/Km + 3dB = 16.05dB.**

For wavelength 1550nm: Normal **TA = n x C + c x J + L x a + M = 2 x 0.35dB+ 4x 0.05dB+ 20.5Km x 0.22dB/Km+ 3dB = 8.41dB**

For wavelength 1550nm: Worst Situation **TA = n x C + c x J + L x a + M = 2 x 0.7dB+ 4x 0.1dB+ 20.5Km x 0.4dB/Km+ 3dB = 13dB**

Assume that the optical card has these specifications:
Tx = - 3 dB to 0dB at 1310nm Rx = -20 dB to -27 dB at 1310nm In this case, the power budget is between 27 dB and 17 dB.

If you consider the worst card, which has the power budget at 17 db at 1310nm, and the worst situation for the optical link to be 16.05dB at 1310nm, you can estimate that your optical link will work without any problem. In order to be sure of this, you must measure the link.

Pigtail & Patchcord

Test & Standard Ref	ST			FC			SC			LC			MTRJ			MPO		
Intermateability Standard	TIA/EIA-604-2			TIA/EIA-604-4			TIA/EIA-604-3			TIA/EIA-604-10			TIA/EIA-604-12			TIA/EIA-604-5		
Stretch Test																		
IL & RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL	Typical IL	Max IL	Max RL
Singlemode (SPC)	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.15dB	≤0.2dB	≥45dB	≤0.35dB	0.75dB	≥45dB
Singlemode (UPC)	≤0.15 dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.15dB	≤0.2dB	≥55dB	≤0.35dB	0.75dB	≥55dB
Singlemode (APC)	N/A	N/A	N/A	≤0.15dB	≤0.2dB	≥60dB	≤0.15dB	≤0.2dB	≥60dB	≤0.15dB	≤0.2dB	≥60dB	N/A	N/A	N/A	≤0.35dB	≤0.75dB	≥60dB
Multimode Mode (PC)	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.3dB	N/A	≤0.25dB	≤0.30dB	N/A	≤0.4dB	≤0.75dB	N/A

3D Interferometer																		
APC Polish Angle	8°(APC) ±0.3°																	
Ferrule ROC	PC Polosh: Ø 2.5mm 10<R0<25mm, Ø1.25mm 7<R<25mm (PC), 5<R<12mm (APC)																	
Apex Offset	PC: <50um																	
Protrusion	PC: <50nm, APC: <100nm																	
Undercut	PC: <50nm, APC: <100nm																	

MT Ferrule	12C				24C			
	Multimode		Singlemode APC		Multimode		Singlemode APC	
X Radius of Curvature (mm)	MM: > 1000		APC: > 1000		MM: > 1000		APC: > 1000	
Y Radius of Curvature (mm)	MM: > 100		APC: > 100		MM: > 100		APC: > 100	
X Endface Ang (degree)	MM: -0.2°~0.2°		APC: -0.2°~0.2°		MM: -0.2°~0.2°		APC: -0.2°~0.2°	
Y Endface Ang (degree)	MM: -0.2°~0.2°		SM: 7.7°~8.3°		MM: -0.2°~0.2°		SM: 7.7°~8.3°	
Flatness Deviation (um)	MM: -0.5~0.5		APC: -0.5~0.5		MM: -0.5~0.5		APC: -0.5~0.5	
Max Difference Height Total (um)	MM: 0~0.3		APC: 0~0.3		MM: 0~0.3		APC: 0~0.3	
Planar Difference Height Total (um)	MM: 0~1.0		APC: 0~1.0		MM: 0~1.0		APC: 0~1.0	
Fiber Protrusion (um)	MM: 1.0~3.0		APC: 1.0~3.0		MM: 1.0~3.0		APC: 1.0~3.0	
Fiber Core Dip (um)	MM: -0.10~0.1		SM: -0.1~0.10		MM: -0.30~0.3		SM: -0.3~0.30	

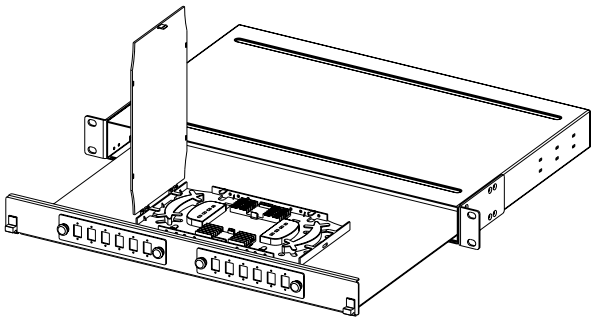
• OPTICAL DISTRIBUTION FRAMES (ODF), WALL ENCLOSURES AND PATCH PANELS

12 Port, Optical Distribution Frame (ODF). Unloaded

The 12 port Optical Distribution Frame (ODF) is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. The 12 port ODF has wide operation temperature range and made for high density fiber optic installations.

Classic Style ODF

PHASE OUT Process as per May 2021



Dimension : 1.75" x 19" x 11"
Apply with adaptor panel size : 130 x 29 mm, pitch 116 mm

Specifications:

- Dust covers: PVC.
- Chassis (Matrix): 1.2mm thickness SPCC.
- Splice tray: 1 Set ABS+ PC UL 94V-0.
- Panel: 1.2mm Thickness SPCC.
- 6 places for 130 x 29 mm adaptor panels.
- Paint: Black Painted.
- Weight: 3.2 Kg.
- Dimensions: 1.75" x 19" x 11"(44.5 x 480.4 x 280 mm).
- Plastic Lock: 2 pieces ABS UL 94-HB.
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Voltage withstand capability ≤ 15kv (DC) /1min no spark-over and no flying arc.
- Fiber bending radium guaranteed: ≥40mm.
- Application: to terminate and distribute optical fiber cables, they are convenient in order to organize and connect fiber optic links.
- It can appropriately protect fiber connectors.

Applications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance, it is a solid and durable equipment.
- Number of Adapters output: 12 ports (Not included).
- Holds up to two 130x29mm adapter holding panels.
- Strength member core clamp and shell insulated and with grounding lead.
- SC, FC, ST or LC adaptors panels available in separate order as unloaded or loaded.
- 12 cores maximum Capacity.
- Reliable fiber lead grounding and perfect fix up.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for operation and its maintenance.

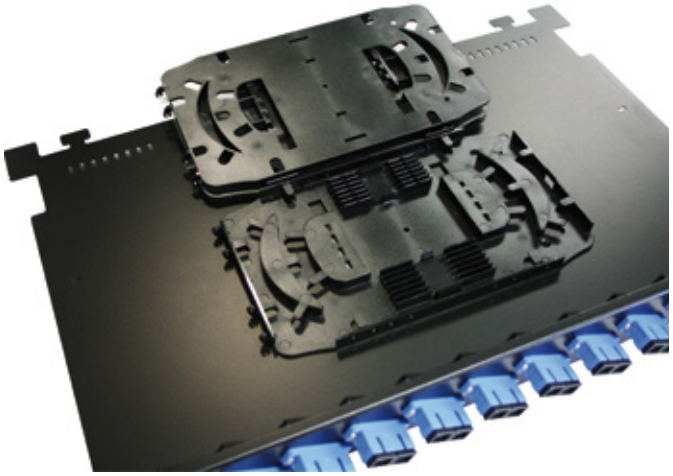
24 Port, Optical Distribution Frame (ODF). Loaded

Classic Style ODF

The 24 port Optical Distribution Frame (ODF) is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. The 24 port ODF has wide operation temperature range and made for high density fiber optic installations.

Specifications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance, it is a solid and durable equipment.
- Number of Adapters output: 24 ports.
- Strength member core clamp and shell insulated and with grounding lead.
- Comes with factory loaded SC, FC, ST or LC adaptors.
- Excellent design.
- 24 cores maximum Capacity.
- Reliable fiber lead grounding and perfect fix up.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for operation and its maintenance.



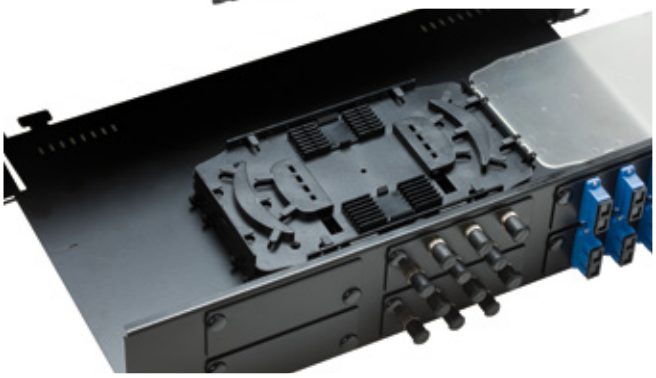
Applications:

- 24 Port factory installed as ordered.
- Dust covers: 2, PVC.
- Chassis (Matrix): 1.2 mm Thickness, SPCC.
- Splice tray: 2 sets, ABS+PC, UL 94V-0.
- Panel: 1.2mm thickmness SPCC.
- Plastic Lock: 2 sets ABS.
- Dimensions: 1.75" x 19" x 11" (44.5 mm x 480.4 mm x 280 mm)
- Weight: 3.3. Kg
- Finish: black painted
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Fiber bending radium guaranteed: ≥40mm.
- It can appropriately protect fiber connectors.

36 Port, Optical Distribution Frame (ODF). Loaded

Classic Style ODF

The 36 port Optical Distribution Frame (ODF) is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. The 36 port ODF has wide operation temperature range and made for high density fiber optic installations.



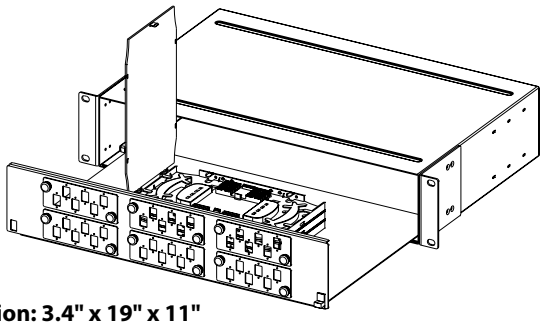
Specifications:

- Dust covers: PVC.
- Chassis(Matrix): 1.2 mm thickness SPCC.
- Splice tray: 3 Sets ABS+PC UL 94V-0.
- Panel: 1.2 mm Thickness SPCC.
- 6 places for 99 x 37 mm adaptor panels.
- Paint: Black Painted.
- Weight: 4.1 Kg.
- Dimensions: 3.4" x 19" x 11" (89.7 x 480.4 x 280 mm).
- Plastic Lock: 2 pieces ABS UL 94-HB.
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Voltage withstand capability ≤ 15kv (DC) /1min no spark-over and no flying arc.
- Fiber bending radius guaranteed: ≥40mm.
- Application: to terminate and distribute optical fiber cables, they are convenient in order to organize and connect fiber optic links.
- It can appropriately protect fiber connectors.

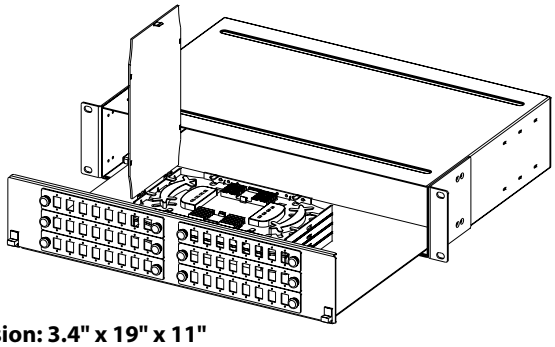
Applications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance, it is a solid and durable equipment.
- Number of Adapter ports (Not included): 36 ports.
- Holds up to six (6) 99 x 37 mm adaptor panels.
- Strength member core clamp and shell insulated and with grounding lead.
- SC, FC, ST or LC adaptors panels available in separate order as unloaded or loaded.
- Reliable fiber lead grounding and perfect fix up.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for operation and its maintenance.

PHASE OUT Process as per May 2021



Dimension: 3.4" x 19" x 11"
Apply with adaptor panel size: 99 x 37 mm, pitch 87 mm



Dimension: 3.4" x 19" x 11"
Apply with adaptor panel size: 160 x 25.5 mm, pitch 146 mm

48 Port, Optical Distribution Frame (ODF). Loaded

Classic Style ODF

The 48 port Optical Distribution Frame (ODF) is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. The 48 port ODF has wide operation temperature range and made for high density fiber optic installations.

No panels included, the user can buy them separately in order to configure it as per the design needs.

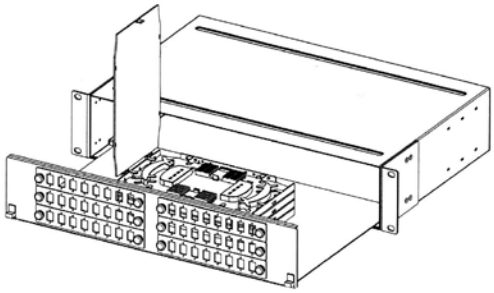
Specifications:

- Dust covers: PVC
- Chassis(Matrix): 1.2 mm thickness SPCC
- Splice tray: 4 Sets ABS+PC UL 94V-0
- Panel: 1.2 mm Thickness SPCC
- 6 places for 160 x 25.5 mm adaptor panels
- Paint: Black Painted
- Weight: 4.2 Kg
- Dimensions: 3.4" x 19" x 11" (89.7 x 480.4 x 280 mm)
- Plastic Lock: 2 pieces ABS UL 94-HB
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Voltage withstand capability ≤ 15kv (DC) /1min no spark-over and no flying arc.
- Fiber bending radius guaranteed: ≥40mm.
- Application: Fiber distribution for terminating and distributing fiber optic cables in an organized and convenient way.
- Duct and direct buried.
- It can appropriately protect fiber connectors.

Applications:

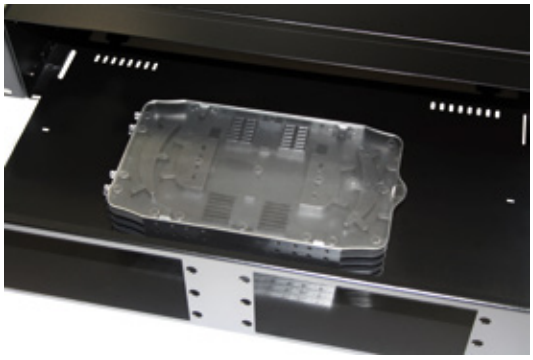
- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance, it is a solid and durable equipment.
- Number of Adapter ports (Not included): 48 ports.
- Holds up to six (6) 160 x 25.5 mm adaptor panels.
- Strength member core clamp and shell insulated and with grounding lead.
- SC, FC, ST or LC adaptors panels available in separate order as unloaded or loaded.
- Reliable fiber lead grounding and perfect fix up.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for fiber distribution, its operation and maintenance.

PHASE OUT Process as per May 2021



Dimension：3.4"x19"x11"

Panel Size：Apply with 160 x 25.5mm panel



12 or 24 Port, Wall Mounted Optical Distribution Frame (ODF). Unloaded

The 12 or 24 port Wall Mounted Optical Distribution Frame (ODF) unloaded and black painted, is designed as a reliable fiber optic organization and distribution product, is of the enclosure with two doors type, convenient for distribution operations and maintenance of fiber optics.

The 12 and 24 port ODF has wide operation temperature range and made for high density fiber optic installations. The user can decide wich and how many adaptors to install by separately purchasing the 130 x 29 mm panels loaded with his / her choice of adaptors.

Specifications:

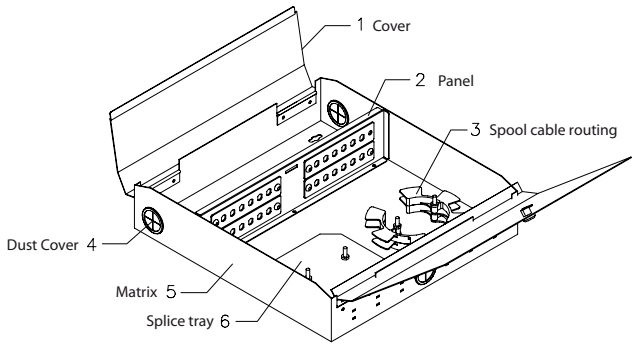
- Dust covers: Qty.: 3. PVC
- Matrix (Chassis): SPCC, 1.2mm thickness
- Cover: 1.0mm thickness SPCC
- Lock: 1 piece metal with circular key
- Panel for mounting adaptor panels: 1.5mm Thickness SPCC
- 4 eMTP®y places for 130 x 29 mm adaptor panels
- Splice tray: 2 Set Aluminum
- Spool Cable routing: ABS, UL 94V-0, 2 sets
- Fiber bending radium guaranteed: ≥40mm
- Paint: Black Painted
- Dimensions: 3.2" x 13.8" x 14.5"(81.5 mm x 350 mm x 370 mm)
- Weight: 4.0 Kg
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Application: to terminate and distribute optical fiber cables, they are convenient in order to organize and connect fiber optic links.
- It can appropriately protect fiber connectors.

Applications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance. It is a solid and durable equipment.
- Two door key-locked.
- Number of Adapters outputs (Not included): 12 or 24 ports.
- Holds up to four 130 x 29mm 6 port adapter holding panels.
- Lateral access openings for conduit entrance.
- SC, FC, ST, LC, etc., adaptors panels available in separate order as unloaded or loaded.
- 24 cores maximum Capacity.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications in optical fiber distribution.
- Convenient for its operation and maintenance.

Classic Style ODF

These wall enclosures come without Modules for you to fill and configure with a variety of Fiber Optic Adaptor Modules



12 and 24 Port Unit
364mm * 350mm * 81mm (14.5x13.8x3.2 inches)

36 or 48 Port, Wall Mounted Optical Distribution Frame (ODF). Unloaded

The 36 or 48 port Wall Mounted Optical Distribution Frame (ODF) without adaptors is designed as a reliable fiber optic organization and distribution product, it is of the enclosure with doors type, convenient for operations and maintenance. The 36 or 48 port ODF has wide operation temperature range and is made for high density distribution in fiber optic installations.

The user can decide wich and how many adaptors to install by separately purchasing the 99 x 37 mm panels loaded with his / her choice of adaptors.

Specifications:

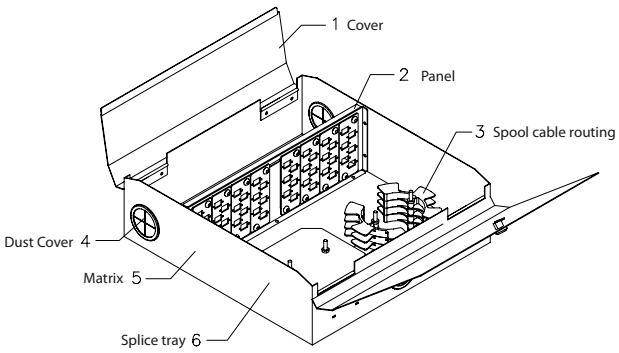
- Dust covers: Qty.: 3. PVC.
- Matrix (Chassis): SPCC, 1.2mm thickness.
- Cover: 1.0mm thickness SPCC.
- Lock: 1 piece metal with circular key.
- Panel for mounting adaptor panels: 1.5mm Thickness SPCC.
- 8 eMTP®y places for 99x37 mm adaptor panels.
- Splice tray: 4 Set Aluminum.
- Spool Cable routing: ABS, UL 94V-0, 4 sets.
- Fiber bending radium guaranteed: ≥40mm Dust covers: PVC.
- Paint: Black Painted
- Dimensions: 4.4" x 13.8" x 14.5"(111.5 mm x 350 mm x 370 mm).
- Weight: 5 Kg
- Environment temperature: -40°C ~+80°C.
- Relative humidity: ≤85% (30°C).
- Atmospheric pressure: 70~106KPa.
- Insulation Resistance: ≥2×10MΩ/500V (DC).
- Application: to terminate and distribute optical fiber cables, they are convenient in order to organize and connect fiber optic links.
- It can appropriately protect fiber connectors.

Applications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance. It is a solid and durable equipment.
- Dual door with keylock, circular type.
- Number of Adapters outputs (Not included): 36 or 48 ports.
- Holds up to eight (8) 99x37mm six(6) port adapter holding panels(Not included).
- Lateral opening for conduit access of optical cable.
- Panels for SC, FC, ST, LC, etc. adaptors, available in separate order as unloaded or loaded.
- 48 Fiber cores maximum capacity.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for its operation and maintenance.

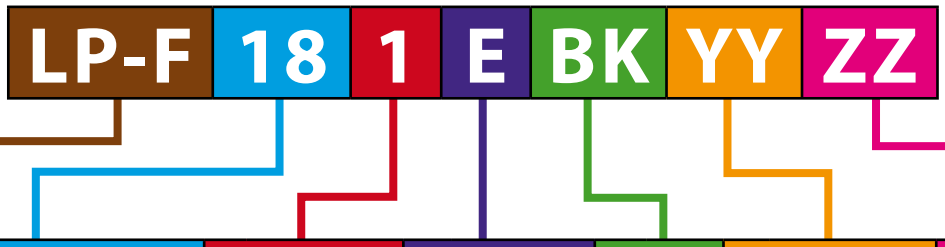
Classic Style ODF

These wall enclosures come without Modules for you to fill and configure with a variety of Fiber Optic Adaptor Modules



36 and 48 Port Unit
364mm * 350mm * 112mm (14.5x13.8x4.4 inches)

Order Information



LP-F	FIBER OPTIC WALL CABINET (BOX) OR PATCH PANEL LOADED OR UNLOADED		BOX/PANEL TYPE		PORTS		BOX/PANEL COLOR		COLOR BOOT		SLEEVE TYPE	
LANPRO FIBER OPTIC	18	Fiber Optic Wall Cabinet (Box) or Patch Panel Unloaded	1	Fiber Optic Wall Mounting Cabinet (Box)	A	12 Ports	IV	Ivory	00	Without adaptors	M1	Multimode Phosphor Bonze Sleeve
	19	Fiber Optic Wall Cabinet (Box) or Patch Panel Loaded	4	Patch Panel Rack mounted	B	24 Ports	BK	Black	01	ST Thread Type	S1	Singlemode Zirconia Sleeve
					C	36 Ports	GR	Gray	02	ST Thread Type	Blank: Don't care	
					D	48 Ports	WH	White	03	ST Duplex Type		
					E	12 and 24 Ports			04	FC/PC Metal Square Type		
					F	36 and 48 Ports			05	FC/PC Metal D Type		
									06	FC/PC Flange Type		
									07	SC Simplex Type		
									08	SC Duplex Type		
									09	ST to FC Hybrid Type		
									10	ST to SC Hybrid Type		
									11	FC to SC Hybrid Type		
									12	ST to SC Duplex Type		
									13	MTRJ Type		
									14	LC Duplex Square Type		
									15	LC Simplex Type		
									16	LC Duplex Footprint Type		
									18	LC Duplex Footprint Type		
									19	SC Duplex Flangeless Type		
									20	SC Quad Flangeless Type		
									XX	Mixed Adaptor Type		
									YY	Without adaptors plate		
									Blank Don't care			

Example:
LP-F181EBKYY 12 & 24 Port empty Fiber Optic Wall Enclosure without panels.

Adaptor Panel Loaded
(for Classic Style ODF)

Optical Fiber Wall Enclosures (Boxes) and Rack Mounted Patch Panels use Fiber Adaptor Panel Modules that can be loaded or unloaded with adaptors. A choice of Optical Fiber Adaptor Modules for panel mounting are manufactured by LanPro with stringent specifications in order to comply with the demanding standards of today.

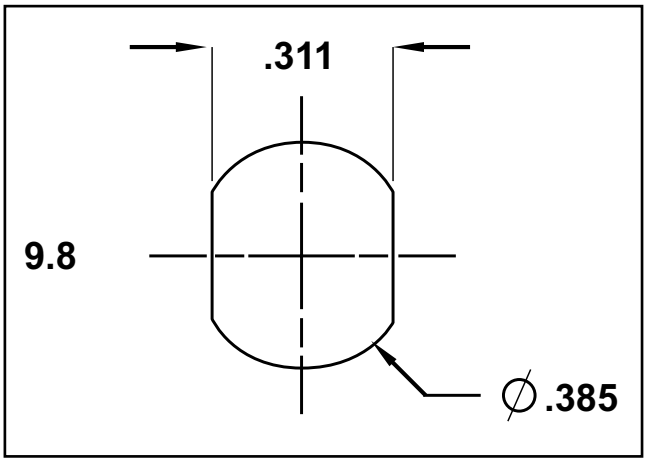
Order Information

LP-F17 | 01 | B | BK | M1 | X

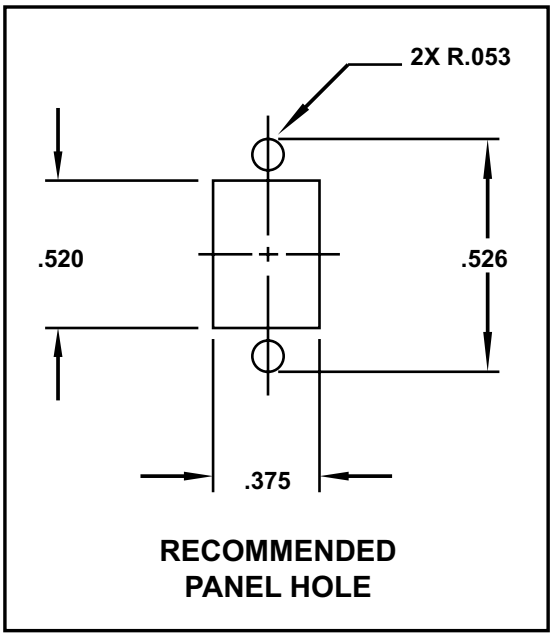
LP-F17	ADAPTOR TYPE		PANEL & SIZE		PANEL COLOR		SLEEVE TYPE		ADAPTOR COLOR	
LanPro Adaptor Loaded Type	01	ST Thread	A	4 Ports 130x29mm	IV	Ivory	M1	Multimode Phosphor Bronze Sleeve	1	Blue Used for SM
	02	ST Flange	B	6 Ports 130x29mm	BK	Blak	S1	Singlemode Zirconia Sleeve	2	Green Used for SM APC Polish
	03	ST Duplex	C	2x3 Ports 99x37mm					3	IVORY used for MM
	04	FC Square							4	Black Used for MM
	05	FC D Type							X	Metal Used for MM and SM
	06	FC Flange								
	07	SC Simplex								
	08	SC Duplex								
	09	ST to FC								
	10	ST to SC Simplex								
	11	FC to SC								
	12	ST to SC Duplex								
	13	MTRJ								
	14	LC Duplex Square Type								
	15	LC Simplex								
	16	LC Duplex Footprint type								
	18	SC Flangeless								
	19	SC Duplex Flangeless								

Example:
LP-F1701BBKM1X Fiber Optic Adaptor Loaded Type, ST Thread, 6 ports 130x29mm, Black color panel, multimode with Phosphor Bronze Sleeves and metal adaptor.

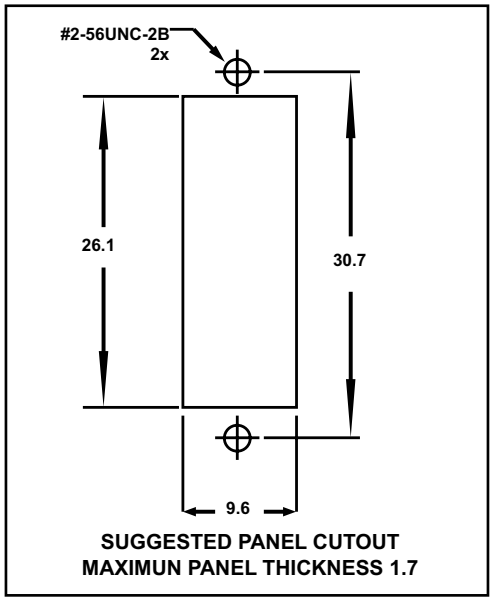
Adaptor Panel Unloaded
(for Classic Style ODF)



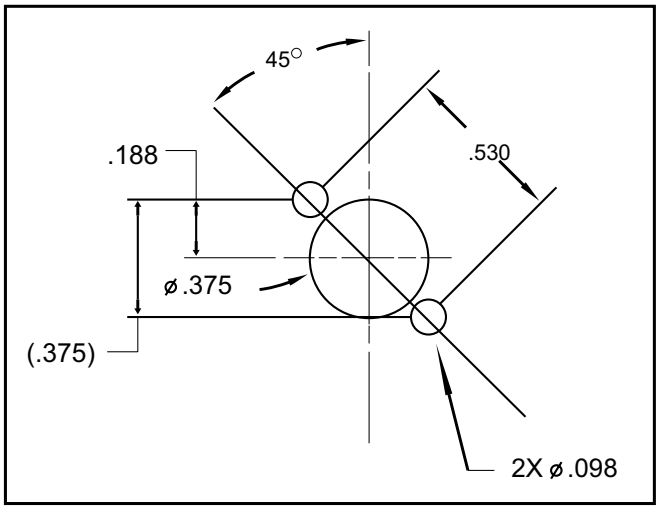
01: ST Thread



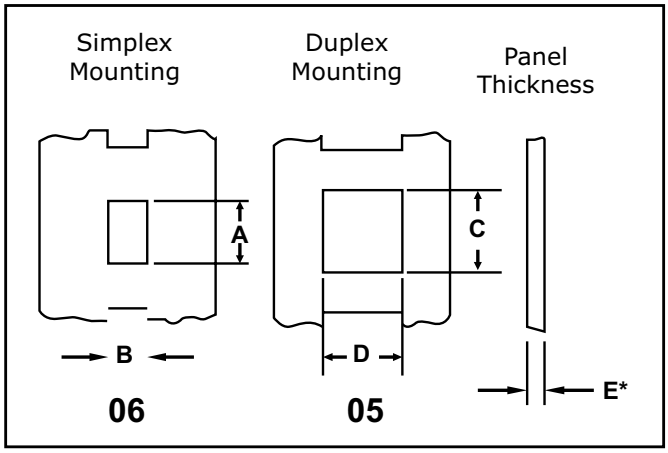
02: FC Flange, ST Flange, SC Simplex



03: ST,SC Duplex, ST to SC Duplex



04: FC Square, FC D Type

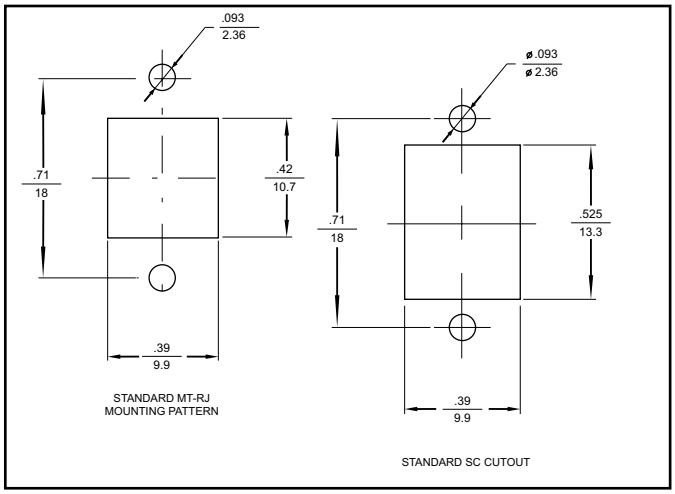


05 and 06: LC Duplex Square Type LC Simplex

2.3 - Panel Cutout Dimensions for Mounting LC Adapters

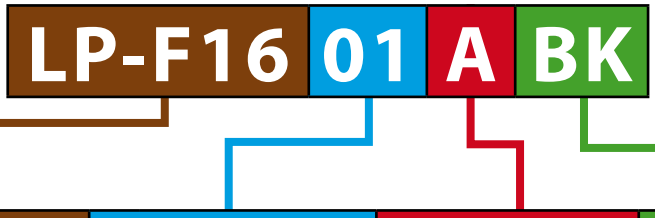
Dimension	Minimum (mm)	Maximum (mm)
A	11.7	11.8
B	7.1	7.2
C	13.2	13.4
D	13.2	13.4
E*	1.2	1.7

*Panel Thickness "E" applies after srface preparation i.e. painting, etc.



07: LC Duplex SC Footprint/MTRJ

Order Information



LP-F16	HOLE TYPE		DUMMY PANEL & SIZE		COLOR	
LANPRO ADAPTOR UNLOADED TYPE	01	ST Thread	A	4 Ports 130 x 29 mm	IV	Ivory
	02	ST Flange	B	6 Ports 130 x 29 mm	BK	Black
	03	ST Duplex	C	2 x 3 Ports 99 x 37 mm		
	04	FC Square	D	8 Ports 160 x 25.5 mm		
	04	FC D Type				
	02	FC Flange				
	02	SC Simplex				
	03	SC Duplex				
	05	LC Duplex Square Type				
	06	LC Simplex				
	07	LC Duplex (SC Footprint)				
	07	MTRJ				
	02	ST to FC				
	02	ST to SC Simplex				
	02	FC to SC				
	03	ST to SC Duplex				
	XX	XX: Dummy				

Example:
LP-F1601ABK Fiber Optic Adaptor Unloaded Type, ST Thread Hole, 4 ports 130x29mm, Black color panel.

UniFiber™ Fiber Enclosure

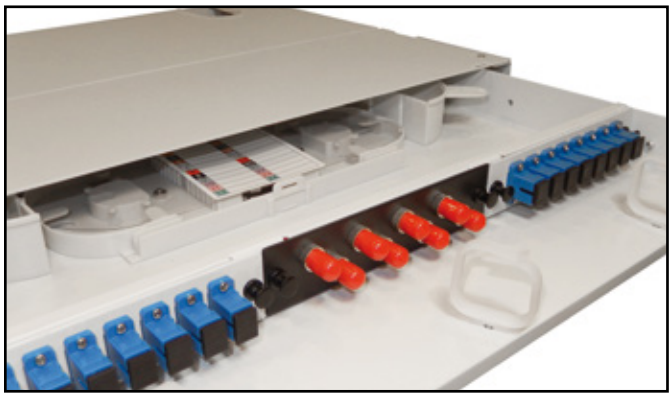
The Optical Distribution Frame (ODF) Model UniFiber™ is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. This ODF has wide operation temperature range and made for high density fiber optic installations.

Specifications:

- Number of Adapter ports (Not included): depending on adaptor plates used.
- Dust covers: PVC.
- Paint: Ivory Painted (Standard)
- Rear metallic door to help on maintenance and similar chores.
- Strength member core clamp and shell insulated and with grounding lead.
- SC, FC, ST or LC adaptors panels available in separate order as unload or loaded.

Applications:

- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance; it is solid and durable equipment.
- Heavy duty rack mount. No plastic. No aluminum. No weakness whatsoever. Thick metal plate of 1.5mm to handle heavy cables and abuse.
- Uses the same size adapter Interchangeable plates of 130 x 30 mm.
- A Fiber shelf is mounted over rolling bearings. Easy to pull out and get back in place. Thousands of times. Effortlessly.
- Attractive Ivory color, the Standard color for this kind of equipment.
- Several lateral as well as up/down openings to provide options to customers to feed the cable inside the unit. All metal edges protected to avoid cutting and/or abrasion.
- Front polycarbonate clear door, to keep dust and particles outside the unit.
- Recessed design. Once the lid is closed is almost impossible to damage the cables accidentally.
- Good organizer capability. Several anchor points for Tie-Wraps.



UniFiber™ Fiber Enclosure

Order Information

LP-F185 1 IV

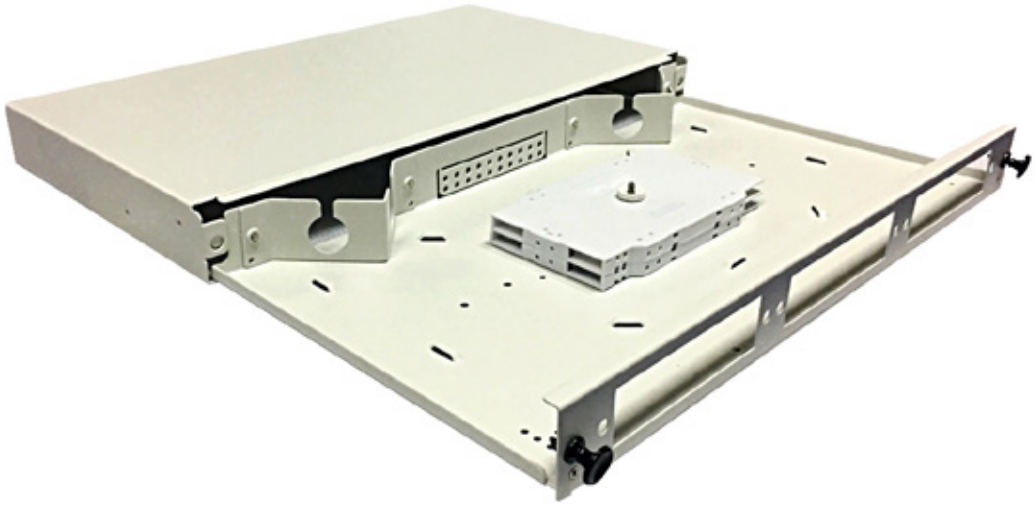
LP-F185	HEIGHT		BOX COLOR	
LANPRO (ODF) UNIFIBER™ TYPE	1	1U	IV	12 Ports
	2	2U	BK	16 Ports
	3	3U	GR	24 Ports
	4	4U	WH	36 Ports

Example:
LP-F1851IV Optical Distribution Frame (ODF) UniFiber™ type, 1U Height, Ivory color without panels.

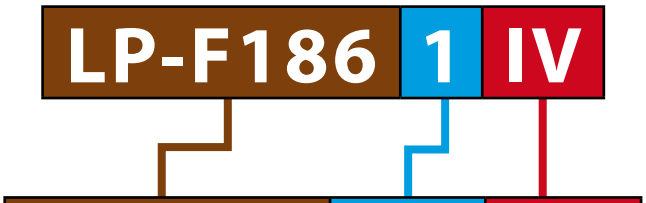
UniFiber™ Lite

The UniFiber™ Lite Optical Distribution Frame (ODF), chassis with up to 4U rack and capacity up to 192 Ports, Rack Mounted Unloaded, is designed as a reliable fiber optic organization and distribution product, it is of the sliding type, convenient for operations and maintenance. It has a wide operation temperature range and is made for high density fiber optic installations.

- Number of adaptor ports (Not included): up to 192, depending on the number of Rack Units and adaptor plates used.
- Height is 1U, 2U, 3U and 4U.
- The chassis is made of hardened steel & insulation materials, thus having excellent mechanical and electrical performance, it is a solid and durable equipment.
- Heavy duty rack-mount. Non plastic. Non aluminum. No weakness whatsoever. Uses the same size adapter Interchangeable panels of 130*30mm.
- Neat. Less inventory.
- Attractive Ivory color, the Standard color for this kind of equipment, but you might chose also Black, White or Grey.
- Several lateral as well as up/ down openings to provide options to customers to feed the cable inside the unit. All metal edges protected to avoid cutting and/or abrasion.
- Good organizer capability. Several anchor points for tie wraps.
- Rear metallic door for easy serving and check-ups.
- Very attractive design to enhance the looking of your telecom cabinet.
- Holds three (3) 130*30mm mm adaptor panels per rack unit height.
- Strength member core clamp and shell insulated and with grounding lead.
- SC, APC, FC, ST or LC adaptors panels available in separate order as unloaded or loaded.
- Reliable fiber lead grounding and perfect fix up.
- Reliable pigtail enclosure for protection and organization.
- For extensive field applications.
- Convenient for operation and its maintenance.
- Very good price for a versatile chassis.



Order Information



LP-F186	HEIGHT		BOX COLOR	
LANPRO (ODF) UNIFIBER™ LITE	1	1U	IV	12 Ports
	2	2U	BK	16 Ports
	3	3U	GR	24 Ports
	4	4U	WH	36 Ports

Example:
LP-F1861IV UniFiber™ Lite, 1U height for up to 48 Ports, Rack Mounted Optical Distribution Frame (ODF), Unloaded, Ivory color.

Wall Mounted Optical Distribution Frame (ODF). Unifiber™ Series

LanPro's single -panel housing is a cost -effective option for storage, protection and termination of optical fiber cables in applications with minimal mounting space. The housing accepts standard Unifiber™ solution connector panels and offers protection for the fiber cable and connectors for indoor wall -mount installations. This compact unit has frontal projection and is optimized for use in locations such as Box -in -a -Box applications, building entrances, terminals, wiring closets, open office and other areas where space is a premium. The built -in splice tray with routing guides provide both protection and segregation of the cable and fiber during initial install and any future MAC work that is needed. The durable metal housing can be used for splice management, cross -connect or both for up to 12 single fiber heat -shrink splices, and the improved splice organizer will also handle six ribbon heat -shrink splices if so desired. The single -panel housing can be mounted in multiple orientations including a DIN rail mounting option to allow fiber protection and connectivity in electronic and/or control cabinet applications as well as standard wall mounting.

Specifications:

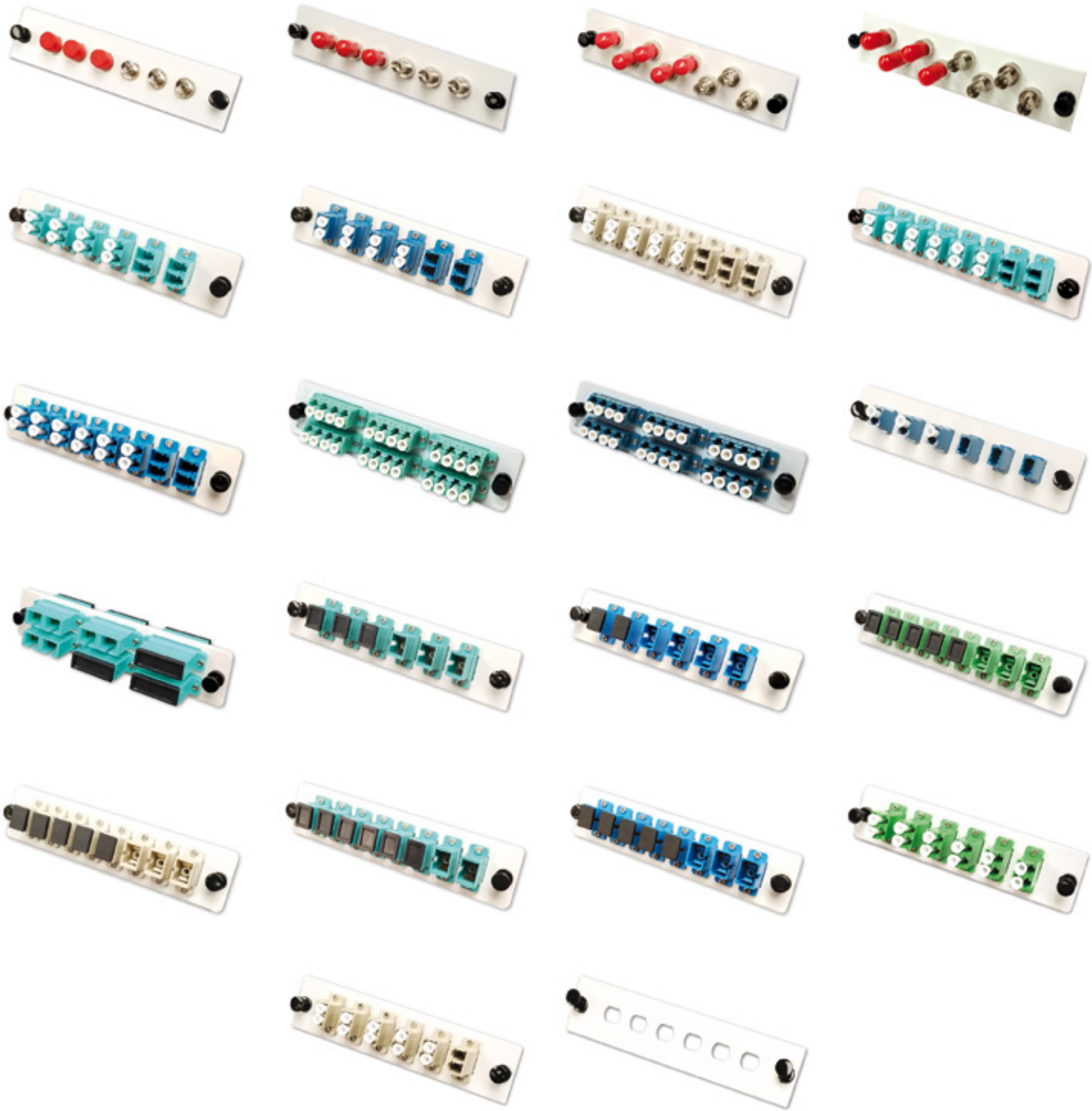
- Small wall-mount housing for pre-term or field term; Minimal mounting space required; Box-in-a-Box.
- Metal housing; Durability with better label adhesion.
- Cable and fiber management; protection.
- DIN Rail Mountable; Versatile mounting options Unifiber™ Solutions Complexity reduction and adapter panel availability.

Order Information

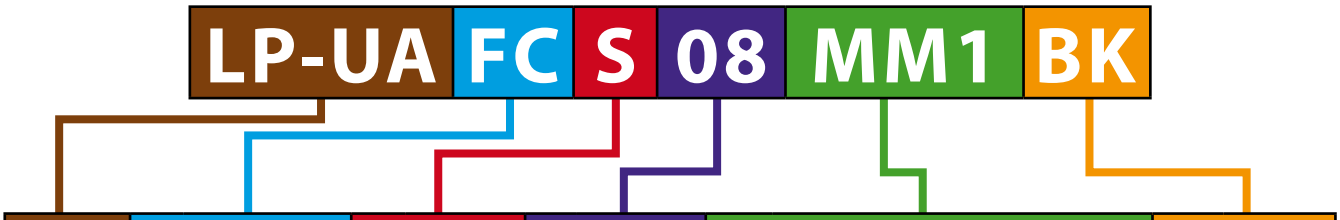
Code	Description
LP-F181AIV0012	Ports Wall Mounted Optical Distribution Frame (ODF), unloaded ivory color. Unifiber™ Series.

Adaptor Panel Loaded
(for UniFiber™ ODF)

These adaptor panels are meant to be used for patching fiber optic cable to the termination UniFiber™ (ODF). They snap in easily into the UniFiber™ (ODF) and enable you to make quick and easy fiber patch panel connections.



Order Information



LP-UA	HOLE TYPE		ADAPTER TYPE		CORES		SLEEVE TYPE		COLOR	
LANPRO UNIFIBER™ ADAPTOR PLATE	00	No hole	0	No Adaptor	00	Blank Plate	APC	Zirconia Singlemode adaptor type	Blank	Ivory color
	SC	SC Adapter hole	S	Simplex	06	6 Cores	UPC	Zirconia Singlemode adaptor type	BK	Black
	LC	LC Adapter hole	D	Duplex	08	8 Cores	MM1	Bronze Multimode OM1/OM2 adaptor type	GR	Gray
	ST	ST Adapter hole	Q	Quad	12	12 Cores	MM2	Zirconia Multimode OM3/OM4 adaptor type		
	FC	FC Adapter hole			24	24 Cores				

Example:
LP-UAFCS08MM1BK Fiber Optic UniFiber™ Adaptor Plate, FC Simplex, 8 cores, Multimode OM1, Black color plate.

Fiber Enclosures Galaxy™ Series

Galaxy™ Series type Optical Distribution Frame is made of top-quality steel and deformed aluminum alloy and treated with galvanizing, oxidation and electrostatic plastic spraying, and it has the advantages of anti-corrosion, solid structure and pleasing appearance.

- Standard 19" installations.
- Designed to be used together with high density swing type modules.
- Maximum fiber density and superior cable management.
- All the plastic elements in the frame are fire-resistant meets UL-94.
- Minimal cable movement while opening and closing modules.
- Wide range of splice, patch and cable storage options.
- Minimum bend radius is controlled of 30mm.
- The side-hinged doors help to well protect the patch cords distribution area.
- Suitable for ribbon and non-ribbon optical fibers.
- 2U horizontal cable organizer for carrying patchcords.
- Height: 12U to 47U.
- Enough space for fiber distribution and storage space and very easy for installation and operation.
- Fully front side operation, convenient for maintenances.

Order Information

LP-FGF WWDD HH

LP-UA	WIDTH/DEPTH		HEIGHT	
GALAXY SERIES OPTICAL DISTRIBUTION FRAME	0903	900mm width / 300 mm Depth	12	12U
			18	18U
			24	24U
			47	47U

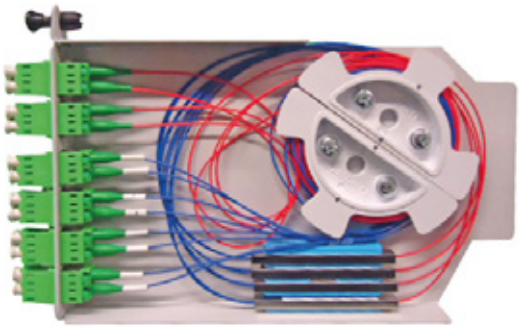
Example:

LP-FGF090347 Galaxy Series Optical Distribution Frame, Width: 900mm, Depth: 300mm, Height: 47U.

Front Access Splitter module Galaxy™ Series

GALAXY™

LanPro's Front Access Splitter Module (GPON spliter module) is designed for high density splitting applications in optical distribution frames and outdoor distribution hubs.



- 3U Height aluminum chassis for rack mountable applications.
- Splitter modules with integrated, high-quality splitters and pre-terminated fiber ends.
- Splitter configuration 1:2, 1:4, 1:8 options per module.
- Front facing orientation of adaptors for fast access to connectors and patchcords.
- Etiquette for fibers identification on the front face.
- 100% Compatible to Bellcore GR-326 standards.
- High Reliability.
- Low insertion loss.
- Compact size.

Order Information

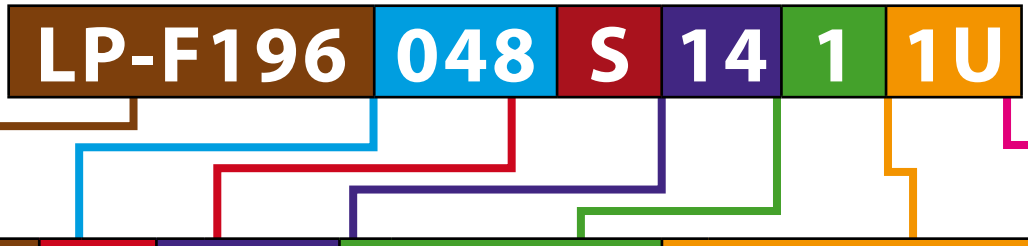
Code	Description
LP-FGASF04033	Galaxy Series Front Access splitter Module, Width: 435mm, Depth: 280mm, Height: 3U.

Fiber Enclosure Pivot Series

Pivot™ Series is a family if high density ODF's. It is made of cold roll steel, splice tray can be rotated out. It could be pre-installed with various kinds of fiber optic adapters and pigtails. It is ideal for indoor fiber optic cables connection storage, distribution and management. Typically used on over 96 ports installations. With LC duplex capacity can be doubled.

Specifications:

- 19" Standard size, Suitable for ribbon and single fiber
- Various panel plate to fit different adapter interface
- Front mark on the plate is easy for identification and operation
- 48C, 72C, 96C,144C, 288C. Optional, with or without fiber optic pigtails and adapters
- Material: Outer shell is Cold-roll steel; Inside ABS material splice tray
- 6pcs splice trays; each splice tray 24 cores
- Capacity: up to 144 SC (288 w/LC duplex) cores



LP-F196	CORES	FIBER TYPE		ADAPTOR PANEL		POLISH GRADE		HEIGHT	
Fiber Optic Wall Cabinet (Box) or Patch Panel rack mounted Loaded Pivot Series.	048-288	**S**	Single Fiber	**00**	Without adaptors	**1**	UPC polish, RL>50dB Blue Color Connector	**1U**	1U
		R	Ribbon Fiber	**01**	ST Thread Type	**2**	APC polish, RL>60dB Green Color Connector	**2U**	2U
				02	ST Flange Type	**3**	PC Polish , RL > 20dB Blue Color Connector	**3U**	3U
				03	ST Duplex Type	**4**	SPC polish, RL>40dB Blue Color Connector	**4U**	4U
				04	FC/PC Metal Square Type				
				05	FC/PC Metal D Type				
				06	FC/PC Flange Type				
				07	SC Simplex Type				
				08	SC Duplex Type				
				09	ST to FC Hybrid Type				
				10	ST to SC Hybrid Type				
				11	FC to SC Hybrid Type				
				12	ST to SC Duplex Type				
				13	MTRJ Type				
				14	LC Duplex Square Type				
				15	LC Simplex Type				
				16	LC Duplex Footprint Type				
				18	SC Flangeless Type				
				19	SC Duplex Flangeless Type				
				20	SC Quad Flangeless Type				
				XX	Mixed Adaptor Type				

Example:
LP-UAFCS08MM1BK Fiber Optic UniFiber™ Adaptor Plate, FC Simplex, 8 cores, Multimode OM1, Black color plate.

LP-F19604 8S1411U Pivot Series Fiber Optic Patch Panel rack mounted loaded with 48 LC Duplex / UPC polish adapters 1U height.

• OPTICAL DISTRIBUTION FRAMES (ODF) FOR MTP®/MPO CASSETTES

This series is designed to increase flexibility for any environment in data center. Stylish and innovative design is ideal for today's most advanced networks and stetting. One-piece removable panel face supports both cassette and flush-mount adaptor bulkhead for easy of moves, adds and changes. Accepts 3pcs x LGX cassette or 5pcs High Density cassette. The maximum capacity is 120pcs x LC (one HD cassette: 24pcs x LC, 24pcs x 5 = 120pcs). Optional cable management trays help route and organize cables on enclosures. Because the trays can be mounted directly to the front of the enclosures, they do not require additional rack space. With the convertible ears, this panel facilities the recessed depth, up to 60mm. Sliding tray glides 45 degree forward (with stop) and backward, and removes for easy field terminations and splicing.assist you future-proof your networks.

Specifications:

- Compliant with EIA 19" cabinet
- Sliding tray with front and rear stop glides forward and backward providing accessibility to front and rear of bulkhead after installation
- Convertible ear support recessed depth, up to 60 mm
- A variety of removable pane faces
- Optical cable management tray

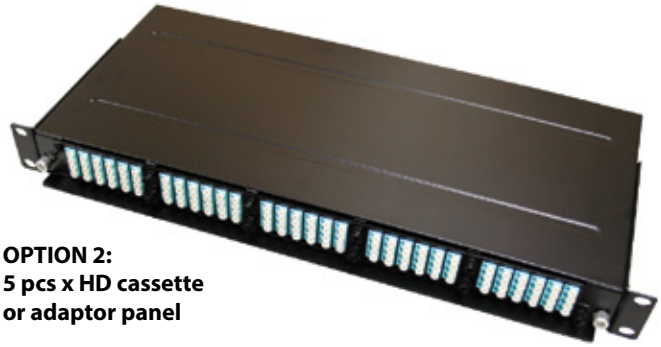
Fiber Compatibility:

Maximum LC: 120 pcs
Maximum MTP®®/MPO: 384 core

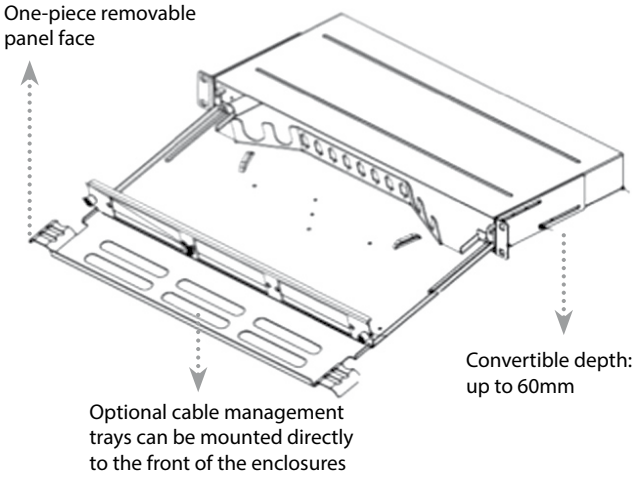
Applications:

Physical protection of fiber connection and storage of fiber slack.

OPTION 1:
3pcs x LGX cassette or adaptor panel



OPTION 2:
5 pcs x HD cassette
or adaptor panel



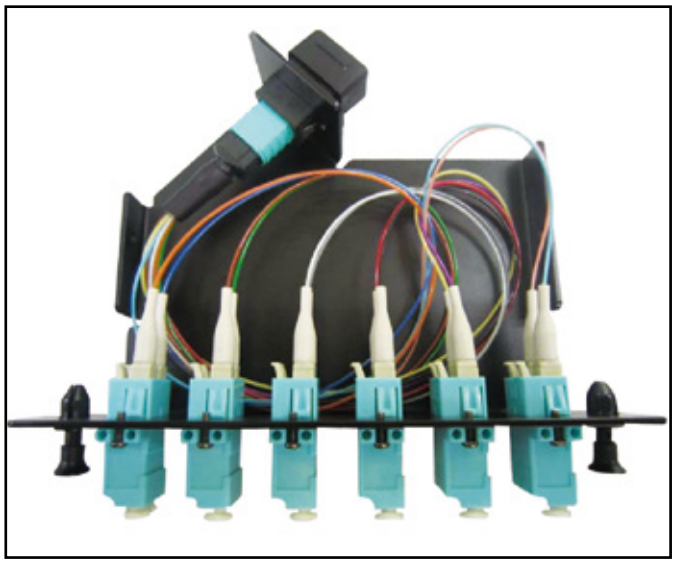
OPTION 3:
Flush-mount adaptor bulkhead for ST, FC, SC and LC

Order Information

Type of Panel	Part number	Description
3 Cassette Panel with support bar	LP-F59NC0000000001	Metal, Advanced Fiber Patch Panel, for Cassette LGX Type, 3P w/Support Bar, BK
5 Cassette Panel with support bar	LP-F59NE0000000001	Metal, Advanced Fiber Patch Panel, for Cassette HD Type, 5P w/Support Bar, BK
3 Cassette Panel w/o support bar	LP-F59OC0000000001	Metal, Advanced Fiber Patch Panel, for Cassette LGX Type, 3P w/o Support Bar, BK
5 Cassette Panel w/o support bar	LP-F59OE0000000001	Metal, Advanced Fiber Patch Panel, for Cassette HD Type, 5P w/o Support Bar, BK

MTP®/MPO Cassette

In June 2010, the IEEE published new standards for answering Ethernet speeds of 40Gbps for server and computing applications and 100Gbps for network aggregation applications. IEEE802.3ba responds to the demand of many data centers and enterprise requiring speeds beyond 10Gbps. IEEE802.3ba specifies that communication medium is performed across copper, MMF and SMF. LanPro´s 5S solution (Safety +, Space +, Speed +, Saving + and Service +) provides the efficient pre-terminated 40/100G laser optimized multimode system, as is an ideal migration path to 40/100G speeds from 10G and meets the new IEEE802.3ba standard. The system features pre-terminated trunks, harness, array cords and MTP®/MPO cassette to assist you future-proof your networks.



Specifications:

SC and LC are available. PC, SPC, UPC and APC polish meet standard requirement. Each modules supports up to 12 fibers using MTP®/MPO, of 24 fibers using LC. Low loss MTP® CONNECTORS (Elite series) are deployed upon request. Bend-insensitive fibers are available too.

Method A,B, C are available
MTP®/MPO cassette: male (female available on request)
Weight: 0.4 Kg.

Applications:

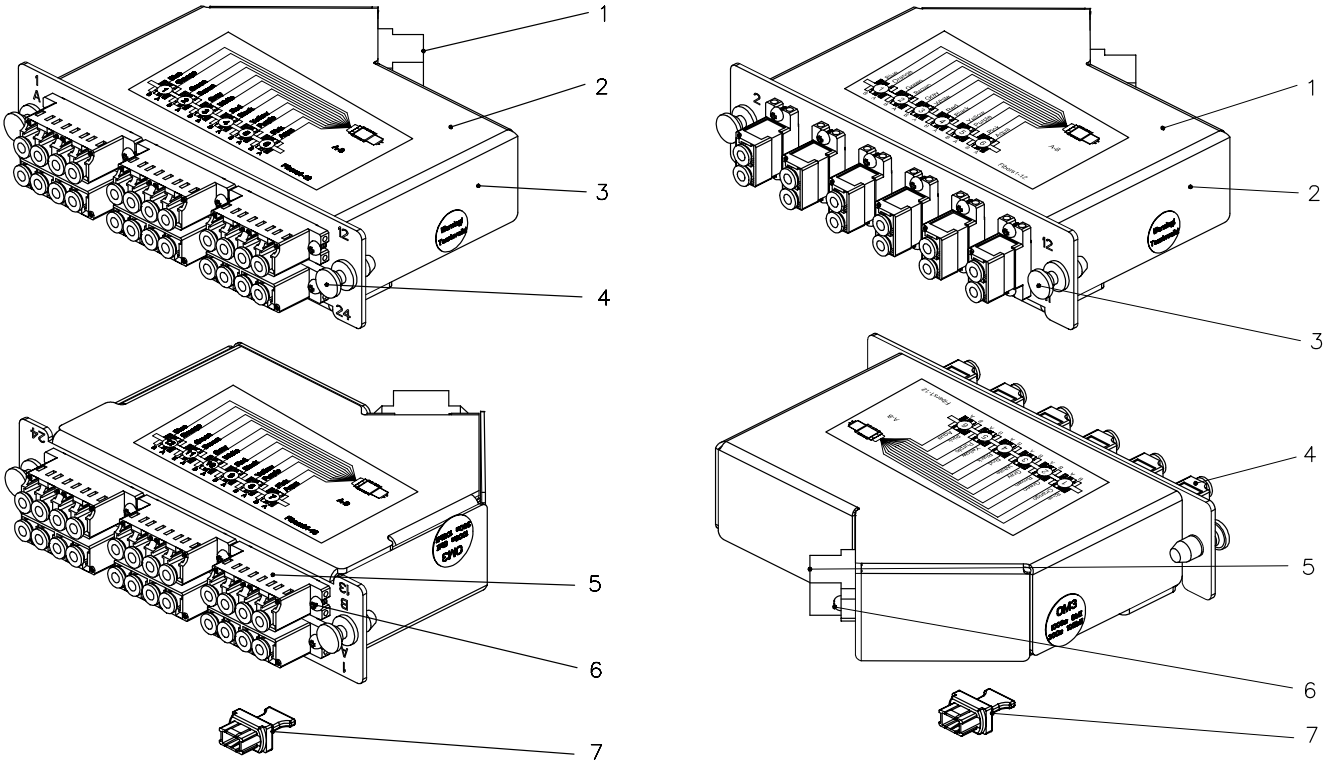
Provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at desk. Allows easy migration from 10G to 40G or 4100G
OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL -based propagation
OS1/OS2 (9/125um): Laser -based propagation.

Fiber Compatibility:

OM2, OM3, OM4, OS1/OS2

Left to Right: LC Duplex adaptor x 6pcs (12 ports), SC duplex adaptor x 6pcs (12 ports), LC Quad adaptor x 6pcs (24 port), LC Quad adaptor x 6pcs (24 port, vertical type is for high density cassette, up to 120 port x LC)

MTP®/MPO Cassette



1. MTP® adaptor: A type key up to key down, 2pcs.
2. Top Case: 1.5mm thickness.
3. Bottom case: 1.5mm thickness.
4. Plunger: 2pcs, Black color.
5. LC adaptor: 6pcs, MM, LC quad (SC footprint), w/Zr. sleeve.
6. Screw: 16pcs, M2.0 x 6.0 Zinc Plated, Black color.
7. MTP® dust cover: 2pcs, Black color.
8. Screw: 2pcs, M3.0 x 4.0/4.5mm Zinc plated.
9. Harness patch cord (APE series): 2pcs, MTP® (male) to LC OM3 12C x 2, 30cm.

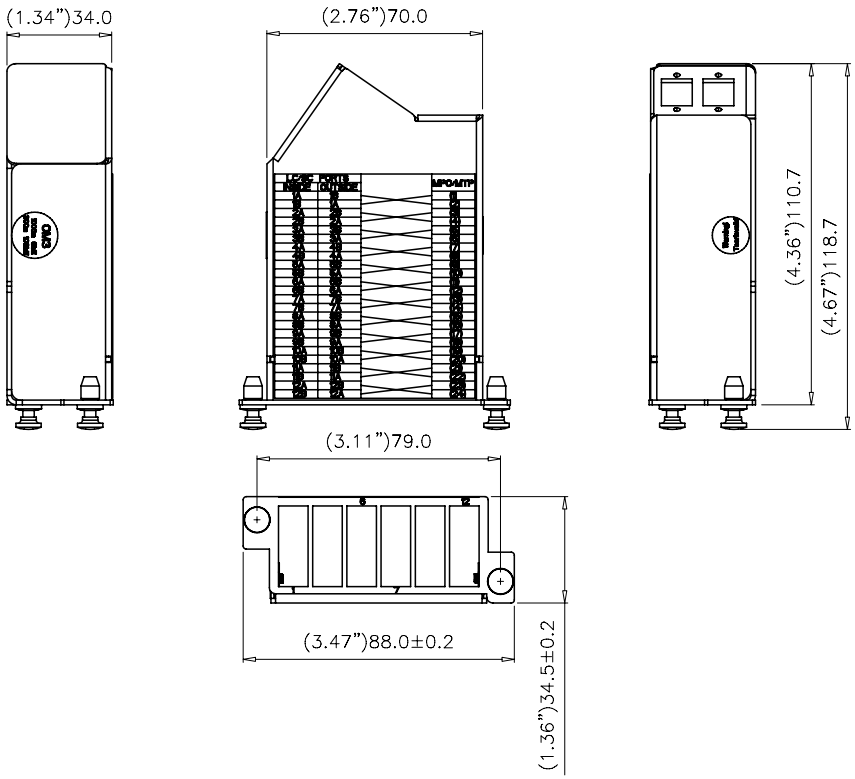
1. Top Case: 1.5mm thickness.
2. Bottom case: 1.5mm thickness.
3. Plunger: 2pcs, Black color.
4. LC adaptor: 6pcs, MM, LC duplex (SC footprint), w/Zr. sleeve.
5. MTP® adaptor: A type key up to key down, 1pc.
6. Screw: 14pcs, M2.0 x 6.0 Zinc Plated, Black color.
7. MTP® dust cover: 1pc, Black color.
8. Screw: 2pcs, M3.0 x 4.0/4.5mm Zinc plated.
9. Harness patch cord (APE series): 1pc, MTP® (male) to LC OM3 12C x 1, 30cm.

Order Information

LP-F58 BB 01 01 1 026 29

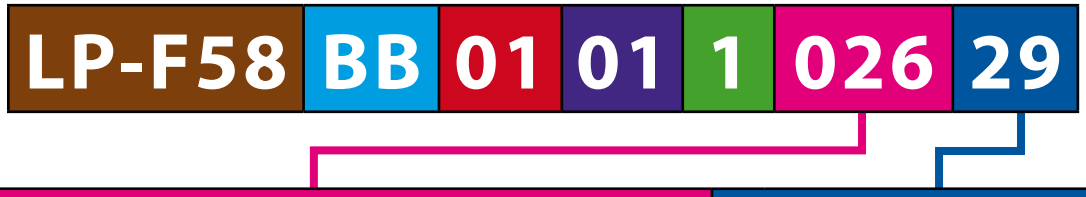
LP-F58	CASSETTE TYPE		COLOR		METHOD		MTP®/MPO	
LANPRO MTP®/MPO CASSETTE HD TYPE	AA	12P LGX Type	01	BK	01	Method A,C	1	MPO Flange Type, MM, (Key Up-Down), BK
	AB	24P LGX Type	02	Ivory	02	Method B	2	MPO Flange Type, MM, (Key Up-Up), BK
	BB	24P HD Type			03	Method B Distaled	3	MTP® Flange Type, MM, (Key Up-Down), BK
							4	MTP® Flange Type, MM, (Key Up-Up), Light Gray

NEW AS PER 2021: TYPE AA AND AB NOW ITS UNIFIBER COLOR AND SIZE COMPATIBLE!!!



Example:
LP-F58BB0101102629 Fiber Optic MPO Cassette, 24P HD Type method A, MPO flange type, MM, (Key Up-Down), Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-LC (MM Low Loss), LC-LC, Flange Type, MM, Duplex, w/Zr Sleeve, One Piece Type, AQ, Black color cassette.

Order Information



DIRECT HARNESS	
026	Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-LC (MM Low Loss), even-aligment, 30cm.
027	Direct Harness, OM4,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss)-LC (MM Low Loss), even-aligment, 30cm.
034	Direct Harness, MM, 50/125um, 12C, 0.9mm Jacket, Mix, PVC, 12F MPO+Guide Pin(MM)-LC(MM), even-alignment, 30cm.
035	Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (MM), -LC (MM), even-aligment, 30cm.
036	Direct Harness, OM4,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (MM), -LC (MM), even-aligment, 30cm.
039	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -LC (SM UPC), even-aligment, 30cm.
040	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -LC (SM UPC), even-aligment, 30cm.
041	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -LC (SM APC), even-aligment, 30cm.
042	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -LC (SM APC), even-aligment, 30cm.
047	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC Low Loss), -LC (SM APC), even-aligment, 30cm.
048	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC Low Loss), -LC (SM APC), even-aligment, 30cm.
226	Direct Harness, OM3, 50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM Low Loss), -LC (MM Low Loss), even-aligment, 30cm.
227	Direct Harness, OM4, 50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM Low Loss), -LC (MM Low Loss), even-aligment, 30cm.
234	Direct Harness, MM, 50/125um, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -LC (MM), even-aligment, 30cm.
235	Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -LC (MM), even-aligment, 30cm.
236	Direct Harness, OM4,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -LC (MM), even-aligment, 30cm.
239	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -LC (SM UPC), even-aligment, 30cm.
240	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -LC (SM UPC), even-aligment, 30cm.
241	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -LC (SM APC), even-aligment, 30cm
242	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -LC (SM APC), even-aligment, 30cm.
247	Direct Harness, SM (G652D), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC Low Loss), -LC (SM APC), even-aligment, 30cm.
248	Direct Harness, SM (G657A2), 9/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MTP®+Guide Pin (SM APC Low Loss), -LC (SM APC), even-aligment, 30cm.

LC/SC ADAPTOR	
05	LC-LC, Flange Type, MM, Quad, w/PB Sleeve, One Piece Type, IV
31	LC-LC, Flange Type, MM, Quad, w/Zr Sleeve, One Piece Type, AQ
07	LC-LC, Flange Type, SM, Quad, w/Zr Sleeve, One Piece Type, BL
08	LC-LC, Flange Type, SM, Quad, w/Zr Sleeve, One Piece Type, GN
09	LC-LC, Flange Type, MM, Duplex, w/PB Sleeve, One Piece Type, AQ
29	LC-LC, Flange Type, MM, Duplex, w/Zr Sleeve, One Piece Type, AQ
11	LC-LC, Flange Type, SM, Duplex, w/Zr Sleeve, One Piece Type, BL
12	LC-LC, Flange Type, SM, Duplex, w/Zr Sleeve, One Piece Type, GN
17	LC-LC, Flangeless Type, MM, Quad, w/PB Sleeve, One Piece Type, IV
32	LC-LC, Flangeless Type, MM, Quad, w/Zr Sleeve, One Piece Type, AQ
19	LC-LC, Flangeless Type, SM, Quad, w/Zr Sleeve, One Piece Type, BL
20	LC-LC, Flangeless Type, SM, Quad, w/Zr. Sleeve, One Piece Type, GN

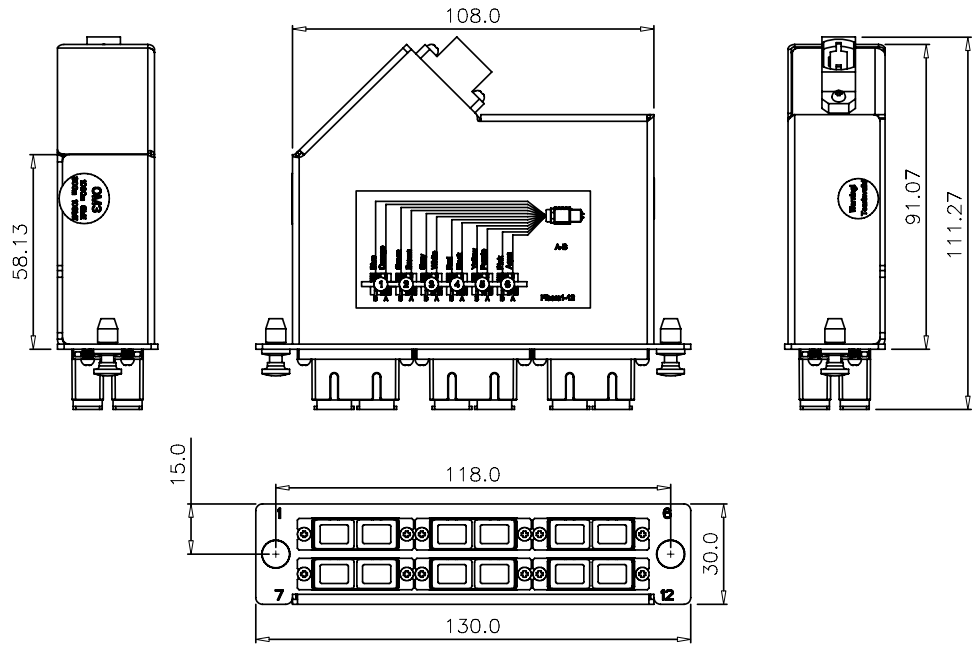
Example:
LP-F58BB0101102629 Fiber Optic MPO Cassette, 24P HD Type method A, MPO flange type, MM, (Key Up-Down), Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-LC (MM Low Loss), LC-LC, Flange Type, MM, Duplex, w/Zr Sleeve, One Piece Type, AQ, Black color cassette.

Order Information

LP-F58	AA	01	01	1	002	27

LP-F58	CASSETTE TYPE		COLOR		METHOD		MPO/MTP®	
LANPRO LANPRO MTP®/MPO CASSETTE LGX TYPE	AA	12P LGX Type	01	BK	01	Method A,C	1	MPO Flange Type, MM, (Key Up-Down), BK
					02	Method B	2	MPO Flange Type, MM, (Key Up-Up), BK
					03	Method B Distaled	3	MTP® Flange Type, MM, (Key Up-Down), BK
							4	MTP® Flange Type, MM, (Key Up-Up), Light Gray

NEW AS PER 2021: TYPE AA AND AB NOW ITS UNIFIBER COLOR AND SIZE COMPATIBLE!!!



Example:
LP-F58AA0101100227 Fiber Optic MPO Cassette, 12P LGX Type method A, MPO flange type, MM, (Key Up-Down), Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-SC II (MM Low Loss), SC-SC, Flange Type, MM, Duplex, w/Zr Sleeve, One Piece Type, AQ, Black color cassette

Order Information

LP-F58	AA	01	01	1	002	27

DIRECT HARNESS	
002	Direct Harness, OM3, 50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-SC II (MM Low Loss), even-aligment, 30cm
003	Direct Harness, OM4, 50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss)-SC II (MM Low Loss), even-aligment, 30cm
010	Direct Harness, MM, 50/125um, 12C, 0.9mm Jacket, Mix, PVC, 12F MPO+Guide Pin(MM)-LC(MM), even-alignment, 30cm.
011	Direct Harness, OM3, 50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (MM), -SC II (MM), even-aligment, 30cm
012	Direct Harness, OM4, 50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (MM), -SC II (MM), even-aligment, 30cm
015	Direct Harness, SM, (G652D), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -SC II (SM UPC), even-aligment, 30cm
016	Direct Harness, SM, (G657A2), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -SC II (SM UPC), even-aligment, 30cm
017	Direct Harness, SM, (G625D), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -SC II (SM APC), even-aligment, 30cm
018	Direct Harness, SM, (G657A2), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC), -SC II (SM APC), even-aligment, 30cm
023	Direct Harness, SM, (G652D), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC Low Loss), -SC II (SM APC), even-aligment, 30cm
024	Direct Harness, SM, (G657A2), 9/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MPO+Guide Pin (SM APC Low Loss), -SC II (SM APC), even-aligment, 30cm
202	Direct Harness, OM3,50/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM Low Loss), -SC II (MM Low Loss), even-aligment, 30cm
203	Direct Harness, OM4,50/125um Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM Low Loss), -SC II (MM Low Loss), even-aligment, 30cm
210	Direct Harness, MM,50/125um, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -SC II (MM), even-aligment, 30cm
211	Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -SC II (MM), even-aligment, 30cm
212	Direct Harness, OM4,50/125um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (MM), -SC II (MM), even-aligment, 30cm
215	Direct Harness, SM (G652D), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -SC II (SM UPC), even-aligment, 30cm
216	Direct Harness, SM (G657A2), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -SC II (SM UPC), even-aligment, 30cm
217	Direct Harness, SM (G652D), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -SC II (SM APC), even-aligment, 30cm
218	Direct Harness, SM (G657D), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC), -SC II (SM APC), even-aligment, 30cm
223	Direct Harness, SM (G652D), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC Low Loss), -SC II (SM APC), even-aligment, 30cm
224	Direct Harness, SM (G657A2), 9/125 um, Corning, 12C, 0.9mm Jacket Mix, PVC, 12 F MTP®+Guide Pin (SM APC Low Loss), -SC II (SM APC), even-aligment, 30cm

LC/SC ADAPTOR	
01	SC-SC, Flange Type, MM, Duplex,w/PB Sleeve, One Piece Type, IV
27	SC-SC, Flange Type, MM, Duplex,w/Zr. Sleeve, One Piece Type, AQ
03	SC-SC, Flange Type, SM, Duplex,w/Zr. Sleeve, One Piece Type, BL
04	SC-SC, Flange Type, SM, Duplex,w/Zr. Sleeve, One Piece Type, GN

Example:
LP-F58AA01011002 27 Fiber Optic MPO Cassette, 12P LGX Type method A, MPO flange type, MM, (Key Up-Down), Direct Harness, OM3,50/125um, Corning, 12C, 0.9mm Jacket, Mix, PVC, 12 F MPO+Guide Pin (MM Low Loss),-SC II (MM Low Loss), SC-SC, Flange Type, MM, Duplex, w/Zr Sleeve, One Piece Type, AQ, Black color cassette

Ultra Slim Fiber Enclosure
Series 96 & 144 port

Specifications:

1U panel can scale up to 96 and 144 discrete LC connectors and up to 8 and 12 x MTP®/MPO

Fiber Compatibility:

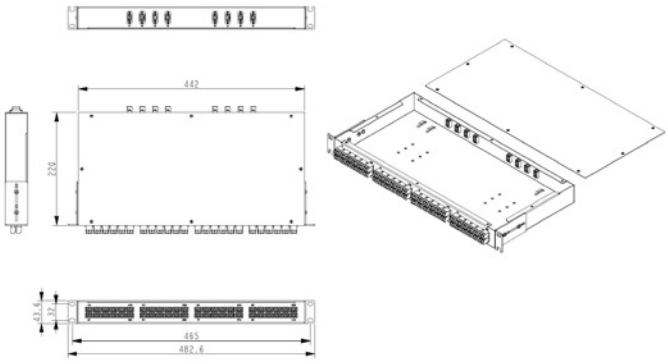
OM1, OM2, OM3, OM4, OS1/OS2

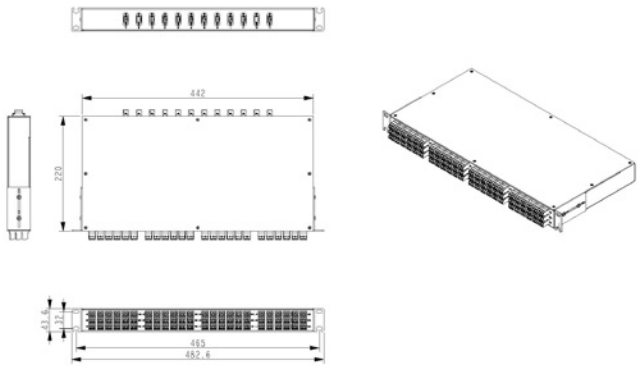
Applications:

Data communication and data center infrastructure and fiber channel for storage area network
OM1 (62.5/125um): for LED-based propagation
OM2 (50/125um): for LED or laser-based propagation
OM3 & OM4 (50/125um): for VCSEL-based propagation
OS1/OS2 (9/125um): Laser-based propagation

This series supports extraordinary advantage:

- 1U size up to 144 port: 13cm depth saves space and makes the Panel compatible with copper racking system
- Rapid Deployment: Factory terminated modular system saves Installation and reconfiguration time during moves, adds and Changes
- Reliability-100% tested: Combination of high quality components and LanPro manufacturing quality control guarantees product to the highest standards.





Order Information

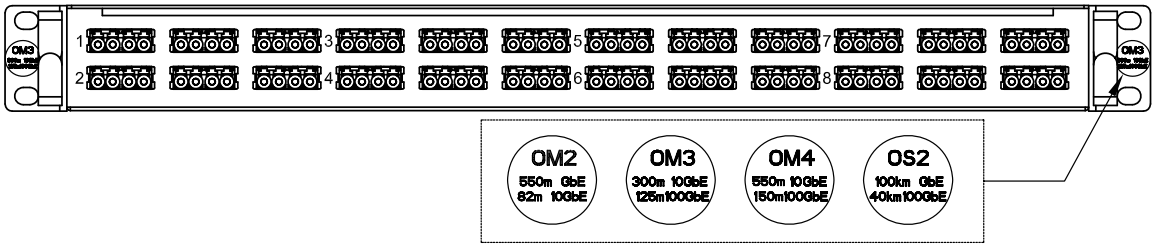
Code	Panel Type	Description
LP-F58CA0100103532	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ.
LP-F58CA0100103919	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G6252D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CA0100104120	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM APC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58CA100323532	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58CA100323919	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CA0100324120	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM APC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58CB0100103532	144 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58CB100103919	144 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CB0100104120	144 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM APC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58CB0100323532	144 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (MM), LC (MM) 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58CB0100323919	144 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM UPC) 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CB0100324120	144 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM APC) 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58DA0100103532	96 Port Protrude	MPO Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (MM), LC(MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58DA0100103919	96 Port Protrude	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC(SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58DA0100104120	96 Port Protrude	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC(SM APC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN

Order Informatic

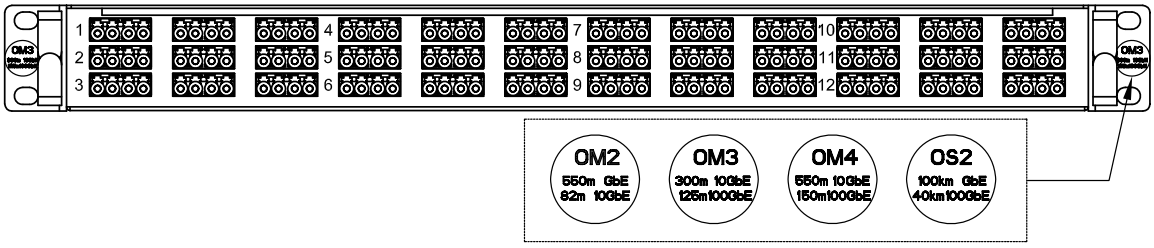
Code	Panel Type	Description
LP-F58CA0100103532	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ.
LP-F58CA0100103919	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G6252D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM APC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CA0100104120	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM APC) 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58CA100323532	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58CA100323919	96 Port Inner	MTP® Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MTP®+Guide Pin (SM APC), LC (SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL
LP-F58CA0100324120	96 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM APC) 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, GN
LP-F58CB0100103532	144 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, OM3 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (MM), LC (MM), 30cm; LC Flangeless Adaptor, MM, Quad, w/Zr. Sleeve, AQ
LP-F58CB100103919	144 Port Inner	MPO Flange Type, Key Up-Down, BK; Direct Harness, SM (G625D) 12C 0.9mm Jacket, Mix.. color, PVC, 12 F MPO+Guide Pin (SM APC), LC (SM UPC), 30cm; LC Flangeless Adaptor, SM, Quad, w/Zr. Sleeve, BL

- All Panel w/Support Bar, color = RAL9005 Black

1U 96 port x LC



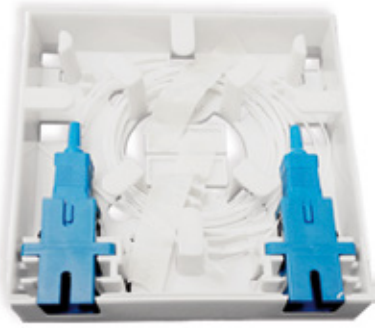
1U 144 port x LC



Plastic Fiber Enclosures (FTTH)

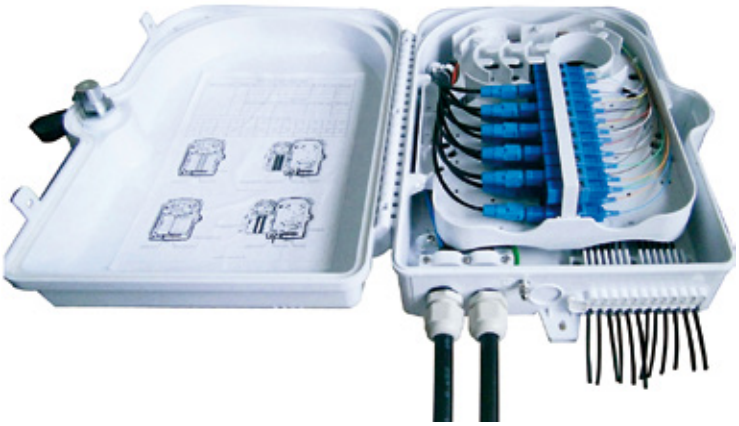
2, 4 or 8, 12 and 24 ports, Plastic Fiber Enclosures.

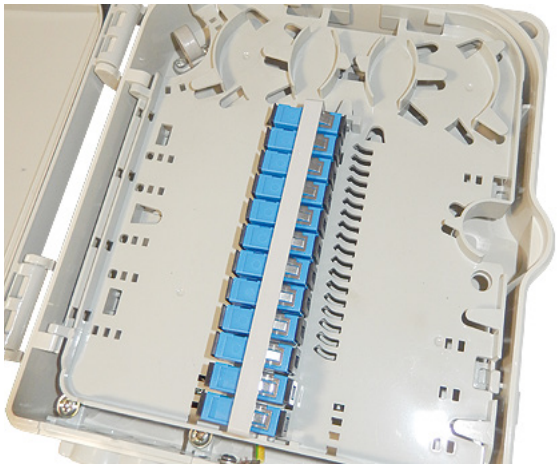
These boxes have been designed for termination of FTTH cables arriving to customer premises and the orderly arrangement and identification of splices, pigtails and adaptors. They can be installed on walls or masts with a variety of options and styles of optical connection. They are made with high quality ABS material, and the arrangement of the design permits a comfortable accommodation of up to 12 fibers and the corresponding LC or SC adaptors with the structural details that give the fiber a flex radius of 30 mm minimum.



Specifications:

- They are Wall or Mast Mountable.
- Made of High quality ABS material, (White or Oyster color).
- Adaptors are not included. (Can be loaded with 12 LC or SC adaptors under special order).





Order Information

LP-F	PLASTIC FIBER OPTIC WALL ENCLOSURES		BOX/PANEL TYPE		PORTS		BOX/PANEL COLOR		ADAPTOR PLATE		SLEEVE TYPE	
LANPRO PLASTIC FIBER ENCLOSURES	20	FTTH Fiber Optic Terminal Box	5	Plastic Box Pole or Wall Mountable	2	2 Ports	IV	Ivory	00	Without adaptor plate	M1	Multimode Phosphor Bonze Sleeve
	21	FTTH Fiber Optic Terminal Box Small Enclosure			4	4 Ports	BK	Black	01	ST Thread Type	S1	Singlemode Zirconia Sleeve
					8	8 Ports	GR	Gray	02	ST Flange Type	Blank Don't care	
					A	12 Ports	OY	Oyster White	03	ST Duplex Type		
					B	24 Ports	WH	White	04	FC/PC Metal Square Type		
					C	36 Ports			05	FC/PC Metal D Type		
					D	48 Ports			06	FC/PC Flange Type		
					E	12 and 24			07	FC/PC Flange Type		
					F	36 and 48			08	SC Duplex Type		
					G	4 or 8			09	ST to FC Hybrid Type		
									10	ST to SC Hybrid Type		
									11	FC to SC Hybrid Type		
									12	ST to SC Duplex Type		
									13	MTRJ Type		
									14	LC Duplex Square Type		
									15	LC Duplex Square Type		
									16	LC Duplex Footprint Type		
									18	SC Flangeless Type		
									19	SC Duplex Flangeless Type		
									20	SC Quad Flangeless Type		
									XX	Mixed Adaptor Type		

Example:
LP-F20 5 G OY 20 S1 Fiber Optic terminal plastic box FTTH, Pole or Wall mountable with 4 SC Singlemode Adaptors, Oyster White color.

Fiber Optic Consolidation Terminal Box

LanPro's Fiber optic consolidation terminal box is used for fiber to the home. The box is light and compact, it is especially for connecting and protection for fiber cable of FTTH. It integrates fiber splicing, splitting, distribution, storage and cable connection in one solid protection box.

Specifications:

- Suitable for wall-mounting installation.
- Indoor & outdoor using, IP65 Protection level.
- Suitable for 4pcs SC simplex adapters installation and usage.
- Easily to access the box by sliding shackle, Fiber bend radius control more than 40mm.
- Applicable for outdoor cables or indoor soft cables, fusion splice or mechanical splice.
- 1*8 Splitter can be installed as an option.
- 3 Cable ports for feeder cable and drop cable.
- Max. 8pcs SC simplex or LC duplex adapters.

Order Information

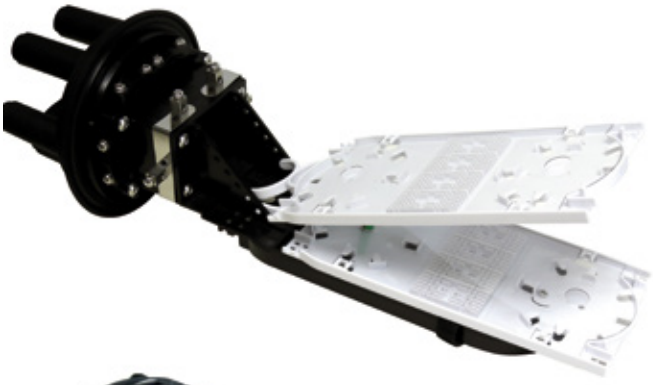
Code	Description
LP-F2053IV00	3 ports Unloaded Fiber Optic Consolidation Terminal Box.

Universal Fiber Enclosure

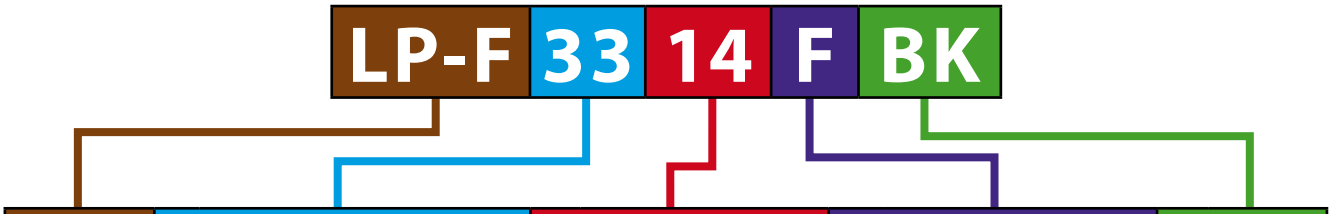
The Cylindrical Fiber Optical Splice Closure is widely applied to the splicing, distributing variable optical cables.
Specifications

Specifications:

- Splice tray: It comes from factory with 2 splicing trays with 24 connections per tray for a total of 48 connections. Optional up to 6 splicing trays for a grand total of 144 connections.
- Each additional tray is available separately.
- Waterproof: IP68.
- Wall-mounting, aerial hanger and pole holding.
- Material: high impact resistance PP materials with UV.
- All hardware is stainless steel and ABS to fight rust and to provide a long working life to the splice. No cheap components are used here. Provided Heat Shrinkable tube are thick wall (adhesive lined) style to assure water protection.



Order Information



LP-F	FIBER OPTIC CODE		FIBER ENTRIES		DIMENSIONS		BOX COLOR	
LP-F LANPRO OPTICAL	33	Cylindrical Fiber Optical Splice Closure	Oval ports		2	A: Φ146 x 300 mm (H)	BK	Black
			0	Without oval port	4	B: Φ177 x 310.5 mm (H)		
			1	1 Port	8	C: Φ190 x 434.5 mm (H)		
			Round ports		A	D: Φ168 x 424.5 mm (H)		
			2	2 Ports	B	E: Φ182.5 x 521.1 mm (H)		
			4	4 Ports	C	F: Φ182.5 x 509.1 mm (H)		
			6	6 Ports				
			7	7 Ports				
			8	8 Ports				

Universal Fiber Enclosure

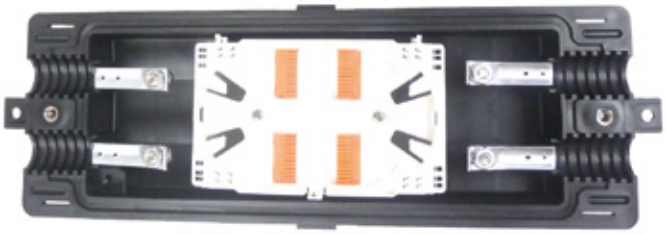
LanPro Horizontal Fiber Optical Splice Closure 4 port for 48 single cores or up to 96 tape shaped cores this product can be applied in the straight line and branch line (one into two, one into three) connections of optical cables within a diameter of 22 mm(φ), all types and structures, when laid overhead, in the pipeline, underground or in the well.

It is also applied to the connection of all-plastic city phone cables.

Specifications:

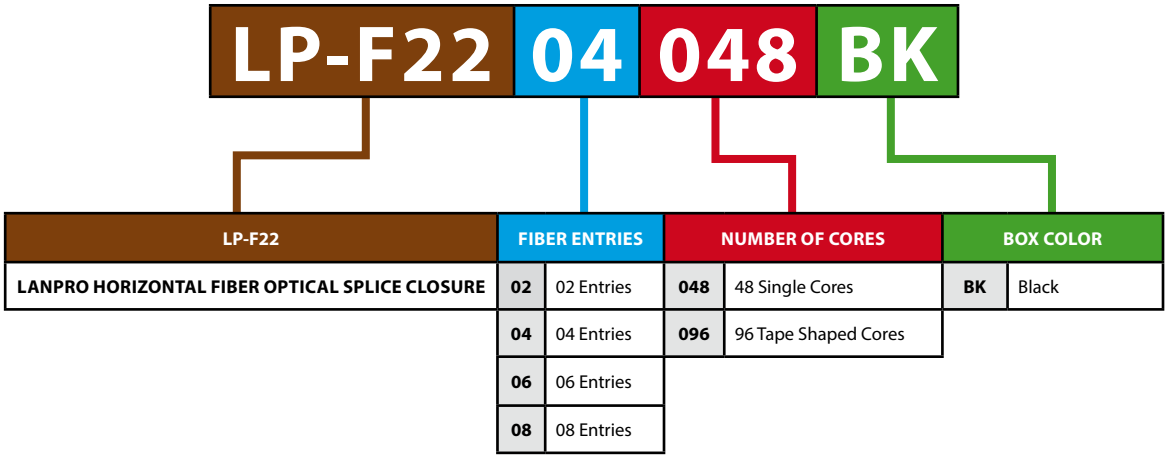
- External Size (length × width × height) [mm]: 435 × 190 × 120
- Weight [Kg]: 2.5
- Optical fiber winding radius [mm]: ≥40
- Extra loss of fiber tray [dB]: ≤0.01
- Fiber length left in tray [m]: ≥1.6
- Fiber capacity Single: 48 cores, Tape-shaped: 96 cores
- Working temperature [ºC]: - 40~ + 70
- Lateral pressure-resistance [N/10cm]: ≥2000
- Shock-resistance [N.m]: ≥20
- 4 Port for 48 single cores or up to 96 tape shaped cores.

Applications:



- The case body is made from high-intensity engineering plastics (ABS) and the shape formed with mould plastics under high pressure. It is in the shape of HALF rectangle, with the advantages of less weight, high mechanical resistance, corrosive - resistance, anti-thunderstruck and long service life.
- The case body and cable entrance are sealed with adhesive rubber strip (non-vulcanized) and sealed tape. Reliable sealing capability. It can be re-opened and easy to maintain.
- Unique disposition of 4 different cable loops (φ12.5, φ17, φ20, φ22) enables the user to choose different the outer diameter according to actual conditions, it enhances the reliability of the cable entrance sealing.
- Overlapping fiber-melting tray and separate insulation earth unit make the disposition of the cores, expanding the capacity and cable-earthing flexible, convenient and safe.
- Outer metal component and fixing unit are made of stainless steel, so it can be repeatedly used in different environments.
- Versatile Installation: Can be used aerial, buried or screwed to walls or poles.

Order Information



LP-F22	FIBER ENTRIES		NUMBER OF CORES		BOX COLOR	
LANPRO HORIZONTAL FIBER OPTICAL SPLICE CLOSURE	02	02 Entries	048	48 Single Cores	BK	Black
	04	04 Entries	096	96 Tape Shaped Cores		
	06	06 Entries				
	08	08 Entries				

Example:
LP-F2204**048**BK Fiber Optic Horizontal splice closure, 4 ports for up to 48 cores, black color box.

Fiber Distribution Cabinets

Specifications:

- 19" standard installation.
- Fully closed structure to ensure the fiber protection, dust proof.
- Cold rolled steel body with integrated structure, electrostatic spraying surface.
- High intensity, good rigidity and sharp appearance, several types of distribution boxes are selectable according customer's requirements.
- Optical cable can be led in/out from the top or the bottom of frame.
- Including splicing, distribution, maintenance, cable/fiber fixing and grounding, operation can be done on both front and rear sides.
- Side panels can be dismounted in order to lead in/out fibers inter optical distribution frame.
- Horizontal fiber tray, vertical fiber tray, and fiber hanging ring make it easy to guide fibers, optimizing the whole distribution system.
- Kinds of arc kits and protection accessories along the fiber path ensure the minimum ratio of fibers more than 40mm.
- Cable fixed plate protect optical cable from torsion and pull.
- Suitable for ordinary optical fiber or ribbon optical fiber. LP-D72 allow 72 connectors per tray. Up to 10 per rack.

Applications:

These ODF are a fit for splicing, connection and distribution of fibers with large capacity. Normally it is used for backbone cable distribution at exchange side in an optical access network.

Fiber Optic Cable Colors. Realities and Myths.

There has been a need to diferentiate optical cables in the field, and color has been an easy way to do it. We briefly review the common practice related to the use of coloring for the identification of optical cables in the Telecom Industry.

The following table shows the sheath or jacket colors used for identifying the type of fiber core used in optical fiber cables utilized in patchcords or zipcords.

TYPE OF FIBER CORE BY CABLE SHEATH COLOR (as per the TIA-598-C Standard)
Singlemode Optical Fiber Core (Os1, OS2)
Multimode Optical Fiber Core (OM1, OM2)
Multimode Optical Fiber Core 50/125 µm Optimized for 10 Gbps Laser (OM3, OM4)
Not used in new systems for Multimode fiber cores
Mantained Polarization Singlemode Fiber Optic Core

THE INTERNAL OR EXTERNAL DISTRIBUTION FIBER CABLES DOESN'T NEED TO COMPLY WITH A PARTICULAR SHEATH COLOR. A DISTRIBUTION CABLE COULD BE BLACK COLORED LIKE THE POLYETHYLENE JACKET CABLES USED IN OUTDOOR OR THE COLOR USED BY THE MANUFACTURER OR FROM THE CUSTOMER'S CHOICE.

This scheme **DOES NOT APPLY** when the cables are for interior or exterior environment distribution. Some manufacturers use bright colors that differentiate them from copper cabling, and could also be black or black with colored stripes. The legend printed on the sheath or jacket should be read in order to know the exact type of cable dealt with. In a distribution cable, the color has no practical meaning.

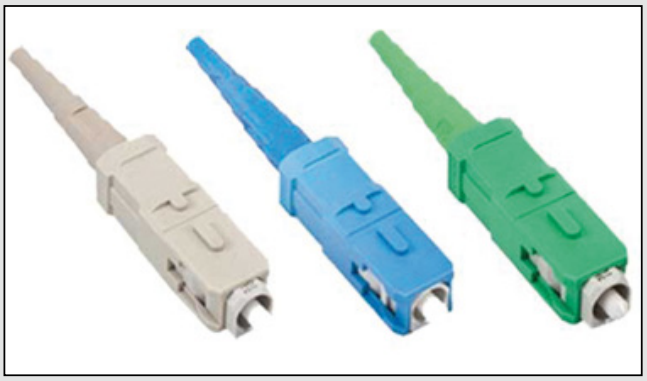
Depending on the fiber core contained in the cable, some manufacturers use non common colors like violet or color combinations with color stripes. In the same token, connectors also help in the identification of fiber cores as shown in the following table:

COLOR CODE FOR CONNECTORS

PC, 0	Mainly used for singlemode Fiber, but some manufacturers use it also for multimode.
APC, 8°	Singlemode only
PC, 0°	Multimode 50/125µm Fiber
PC, 0°	Multimode 62.5/125µm Fiber
PC, 0°	Singlemode Fiber
	High Optic Power Laser connection

The connector's color coding refers mostly to the color of the boot which is shown in the next photo. Some manufacturers don't follow this scheme and use their own colors.

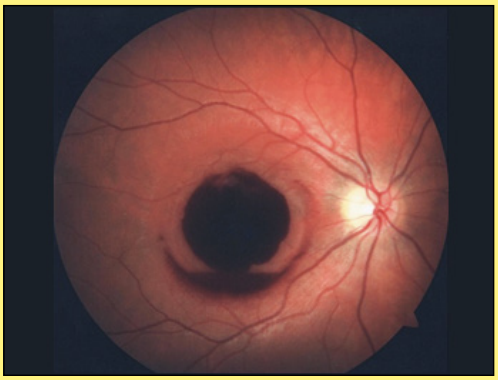
The red color is used by Telecom Companies to warn on high optical power signals that serve many customers in a distribution scheme.



WARNING

Never observe a fiber optic connector if you ignore if there is a signal output through it. Invisible light doesn't mean it is not dangerous to the human eyes. Red colored connectors output optical power is high enough to burn and damage a large zone of the retina, causing permanent burn and irreversible blindness.

In the next photo, a severe retina burn is shown caused by a high power laser. Though the light cannot be seen, it is capable of this type of damage.



Finally, a color coding also exist in The individual cores inside the cable, being them inside of loose tubes or embedded in the cable jacket, the TIA-598 is the most accepted color coding as is shown in the following table:

INDIVIDUAL FIBERS COLOR (AS PER THE TIA-598-C)

POSITION	COLOR	POSITION	COLOR
1	Blue	13	Blue with black stripe
2	Orange	14	Orange with black stripe
3	Green	15	Green with black stripe
4	Brown	16	Brown with black stripe
5	Grey	17	Grey with black stripe
6	White	18	White with black stripe
7	Red	19	Red with black stripe
8	Black	20	Black with yellow stripe
9	Yellow	21	Yellow with black stripe
10	Violet	22	Violet with black stripe
11	Rose	23	Rose with black stripe
12	Aqua	24	Aqua with black stripe

After the 12th core, the 13th repeats the sequence again (blue), like the number 1.

Heat-shrinkable Single Fiber Fusion Splice Protection Sleeve

Specifications:

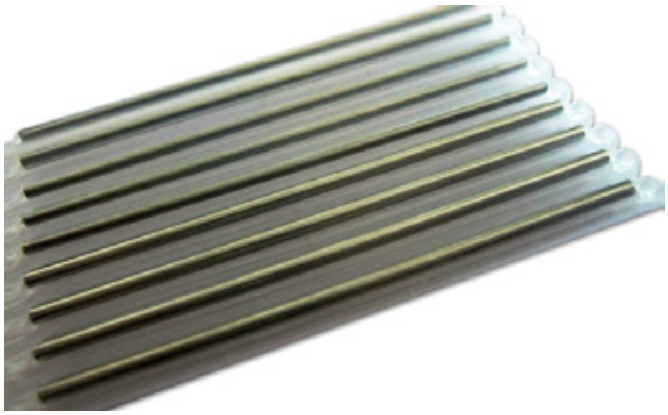
- For one fiber.
- Heat-shrinkable.
- Diameters from 1.0 to 3.7 mm.
- Lengths from 25 to 60 mm.
- Clear color standard, colored for production batch.
- For fiber diameters of 250 µm / 900µm.
- With strength members of stainless steel, fibre–reinforced plastic (FRP) or flexible types.
- Tapered or not tapered ends.
- Bags with 25/50 or 100 pieces.

Applications:

Heat-shrinkable Single Fiber Fusion Splice Protection Sleeves is part of the fiber optic system solutions by LanPro for today's structured fiber optic cabling systems.

Heat-shrinkable splice protection is the most popular way to protect fusion splices. Coated fibers of 250 or 900 µm diameter are securely protected once they are stripped from the protection of their buffer and fused to make the splice.

In order to use the LP-F35XX, the technician must slide it on the fiber before making the splice. Once the fusion takes place, the sleeve should be slided so the splice is located in the middle of the LP-F35XX and then it must be placed on the heat-shrink oven. The oven heating time should be selected, depending on the type of sleeve. Once done, the LP-F35XX should be placed in its location on the tray in the order selected.



LanPro is able to provide several sizes of Heat-shrinkable Single Fiber Fusion Splice Protection Sleeves, from micro sized diameter of 1.0 mm to 3.7 mm and lengths from 25 mm to 60 mm. With strength members of stainless steel, fibre–reinforced plastic (FRP) or flexible types.

Order Information

LP-F35	ADAPTOR TYPE		PANEL & SIZE		STYLE AND STRENGTH MEMBER		COLOR		PACKAGE QTY	
LANPRO SINGLE FIBER FUSION SPLICE PROTECTION SLEEVES	1	25 mm	0	1.0 mm for 250 µm	0	Steel Single Strength member	0	Clear	0	25 pieces
	2	40 mm	1	1.2 mm for 250 µm	1	Tapered ends Steel Single Strength member	1	Black	1	50 pieces
	3	45 mm	2	Micro 1.3 mm for 250 µm	2	FRP Single Strength member	2	Brown	2	100 pieces
	4	60 mm	3	1.5 mm for 250 µm	3	Tapered ends FRP Single Strength member	3	Red		
			4	Mini 1.6 mm for 250 µm	4	Ceramic (Dielectric) Single Strength member	4	Orange		
			5	Midi 1.9 mm for 900 or 250 µm	5	Ceramic (Dielectric) Dual Strength Member	5	Yellow		
			6	Standard 2.1 mm for 900 or 250 µm	6	Tappered ends Ceramic Single Strength member	6	Green		
			7	Standard 2.4 mm for 900 or 250 µm	7	Tappered ends Ceramic Dual Strength Member	7	Blue		
			8	US 2.6 mm for 900 or 250 µm	8	Pin Less Flexible	8	Purple		
			9	US Large 2.9 mm Large for 900 or 250 µm			9	Grey		
			A	Large 3.0 mm for 900 or 250 µm			A	White		
			B	Large 3.2 mm for 900 or 250 µm			B	Pink		
			C	Extra Large 3.7 mm for 900 or 250 µm			C	Turquoise		

Example:
LP-F3532101 Single Fiber Fusion Protection Sleeve, 45 mm length, 1.3 mm diameter tapered and Steel Single Strength Member, Clear Color, 25 per Package.

Fiber Optic Hanging and Support Systems

LanPro provides a diversified and complete range of solutions for **ADSS cables.** These devices are engineered as compatible with cables deployed on spans up to 250m. Designed to permanently enhance cable roll-out jobs, our anchor clamps suit to different network configurations.

LP-F51B07530M
Stainless Steel Band 3/4", 30m per spool

LP-F51GCS075
Galvanized Carbon Steel Ear-Lokt Buckle, 3/4" Width

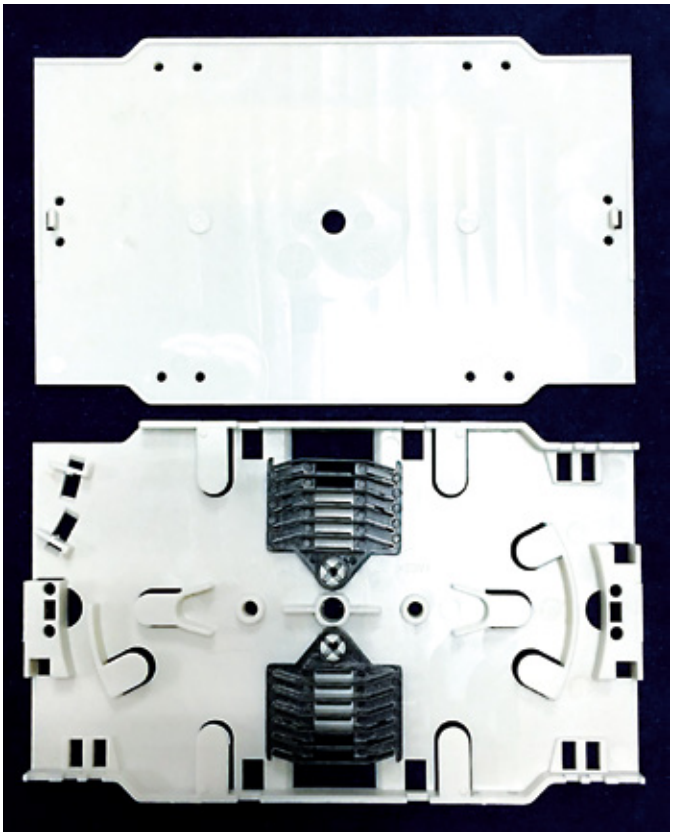
LP-F51CBTP01
Cable Bracket TP type model 01

LP-F51PMCB02
Pole Mounting Clamp Bracket (with or without provision for screws)

LP-F51DCCB01
Drop Cable Clamp B type size 01

Fiber Optic Splice Tray

The Fiber Optic splice trays provide the function of protection and storage of fiber splices, they allow fibers to be installed in a guided and orderly manner, with the proper radius of curvature.



Specifications:

Capacity: 12 cores
Material: High quality ABS white color plastic
Dimensions: 154 x 91 x 10mm

Applications:

Fiber Optic distribution frames (ODF)
FTTH terminal box
Fiber Optic splice closures
Optical cabinets

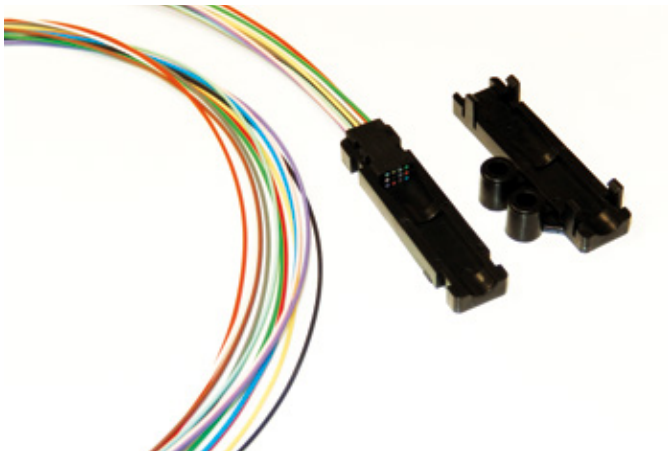
Order Information

Part number	Description
LP-F701C1WH	White color ABS plastic Fiber Optic Splice tray for 12 cores with Shrink tube Fusion splices

Fan-Out Kits for Indoor use

Specifications:

- Length 36 inches.
- Eliminates strain on fibres by isolating them from tensile forces.
- Bend radius is limited by the tubing.
- Snap together furcation enclosure, eliminates epoxy filler adhesive for indoor kits, black colored.
- Compact design.
- Fiber routing capabilities are excellent for better fiber management.
- Are quick and easy to install.
- Wide temperature compensation.
- Optimized for indoor field termination of cables.
- Temperature range of 0° to +70°C (+32° to +158°F).



Applications:

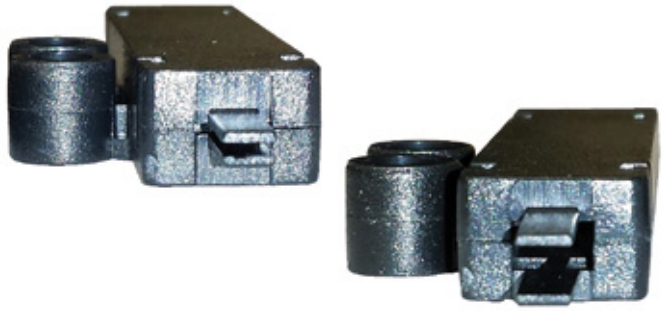
LanPro Indoor Fan-Out Kits provide our customers with the best practical solution for the field installation of connectors for terminating 6 and 12 fiber buffer tubes.

They are designed to sleeve the 250µm loose tube fibre with a 900 µm buffer tube. They are ideal for indoor cross connects and require no additional space or hardware devices for terminating buffer tubes.

The robust 900 µm fan-out has been color coded in order to facilitate the identification and matching with the individually colored fiber coming from the tube.

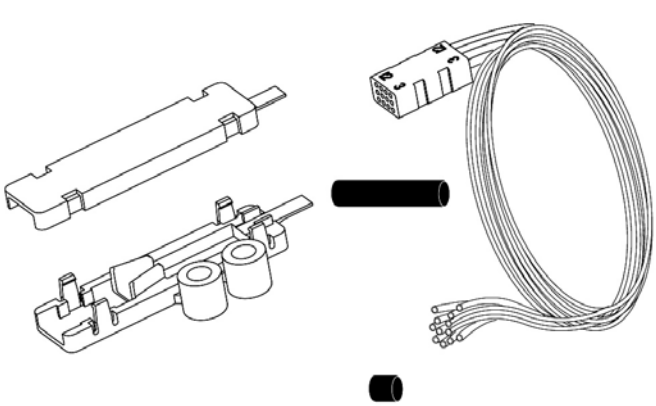
There are versions of 6 and 12 fibers and lengths of 25, 36 and 47 inches for your convenience and flexibility needed by your field installation.

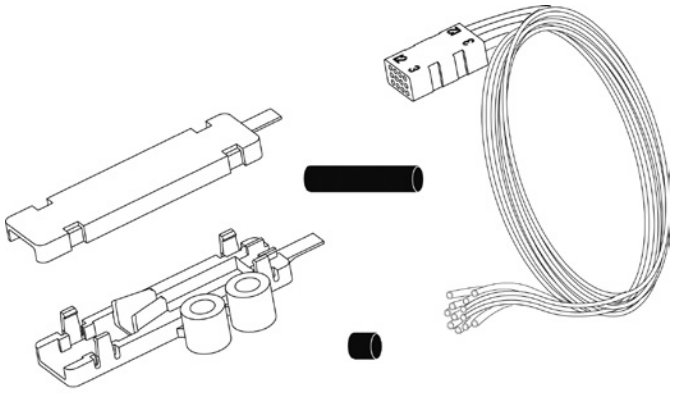
Indoor kits are recommended in environments within a temperature range of 0° to +70°C (+32° to +158°F). In applications where colder temperatures are expected, the outdoor version is recommended.

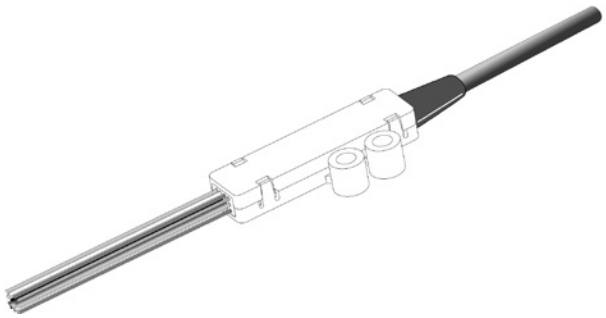


Order Information

Part number	Description
LP-F2101136121BK	Type 1 Fan-Out Kit for Flat Ribbon Fiber Cable with 12 Cores and 36 inch long LSZH rated 0.9 mm buffer tube colored legs, in a black color Enclosure for Indoor use.
LP-F2102136121BK	Type 2 Fan-Out Kit for Round 3mm Ribbon cable, or Loose Fibers in Round 3mm tubes with 12 Cores and 36 inch long LSZH rated 0.9 mm buffer tube colored legs in a black color Enclosure for Indoor use.
LP-F2103136121BK	Type 3 Fan-Out Kit for Round Tube Fiber Cable with 12 Cores and 36 inch long LSZH rated 0.9 mm buffer tube colored legs, in a black color Enclosure for Indoor use.







*** Can be supplied under customer request.**

How to select the proper type of Optical Fiber?

What type of optical fiber should I use, singlemode (SM) or multimode (MM)? Which multimode fiber optic cable is the best option?

There are two types of basic fibers:
Singlemode (SM) (two types: OS1 and OS2)
Multimode (MM) (four types: OM1, OM2, OM3, and OM4)

There also are several dozens of jackets, such as polyethylene, PVC, LSZH, silicone, among others. Similarly, the jackets can be armored to prevent rodent attacks; they can have more than one jacket and more than one cladding. These combinations are practically unlimited!

THERE IS EVEN MORE TO FIBER THAN MEETS THE EYE!

Singlemode (SM)

This type of optical fiber is relatively simple and is smaller in diameter than the traditional fibers. SM fiber is made with a core of glass of 9 µm and a cladding of 125 µm. Transmission is possible by only one ray of light. SM fiber has an outer yellow jacket (PVC or LSZH) and it can be used for 100 km connections. Some people refer to singlemode optical fiber (SM) as OS1 and OS2. This is due to the attenuation of the SM thread, which depends on the cable construction and other manufacturing details.

Fundamentally:

- **OS1 "Optical Singlemode type 1":** Este cable es hecho con la fibra G.652. La atenuación máxima a 1300 o 1500 nm es 1 dB/km.
- **OS2 "Optical Singlemode type 2":** This cable is constructed with fiber G.652c. This type has maximum attenuation of 0.4 dB/km and it must have loose fibers inside the tube in order to reach such low levels of attenuation. OS2 also has a low water peak and it is useful for Metropolitan CWDM applications in a wide range of wavelengths.

As you can notice, OS1 and OS2 are singlemode (SM) and both of them have the same diameter. Thus, they use the same connectors and components, but 2 km of singlemode (SM) OS2 have lower attenuation than 1 Km of singlemode (SM) OS1. In case you need to deploy 100 km of fiber, OS2 will make your life easier!

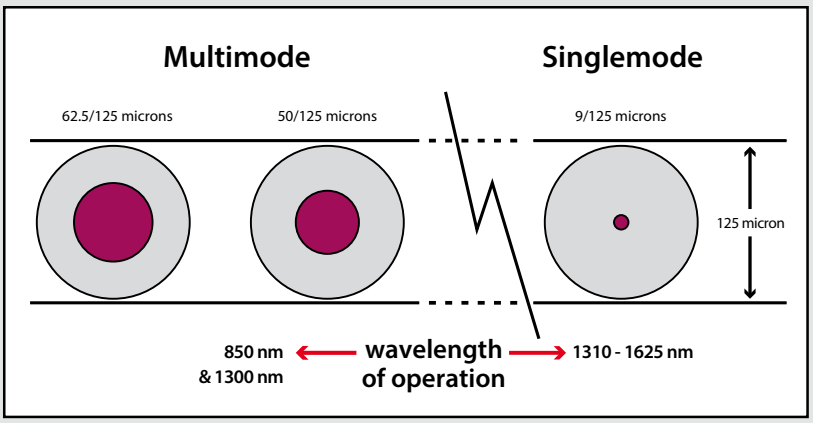
Multimode (MM)

Multimode optical fiber (MM) transmits several rays of light (modes) simultaneously. There are four basic types: Cores of 62.5 µm (OM1) or 50 µm (OM2, OM3, and OM4). Nowadays it is not enough to buy MM optical fiber. A LanPro client should not request generic multimode fiber; he needs to be more specific and ask for OM1, OM2, OM3, or OM4 since all these types are MM.

There are four (4) basic types of multimode optical fiber (MM):

• **OM1** (optical mode 1): Original multimode fiber (MM) and rarely used nowadays. It has the largest diametrical core: 62.5 µm. It works for 100 m and 1 G, however, it is limited for the current high demands of speed. OM1 is typically orange; we do not recommend it for new installations since it is not beneficial as 50 µm fibers. In addition, it is more expensive than OM2!

• **OM2** (very popular nowadays): It is a good combination of performance and price. OM2 has a core diameter of 50 µm and it was introduced in the 80s with 1 gb technology which was being tested at that time, but it is irrelevant now due to the development of laser optimized multimode fibers. OM2 is not recommended for long distances.



• **OM3** It is also one of the most popular fibers nowadays. It has a glass diameter of 50 µm and it is laser optimized. OM3 has been designed to work on the range of 40 G to 100 m and it is identified by its aquamarine color.

• **OM4** It is "The New Kid on the Block" and very expensive. Although it is available since many years, OM4 has just been standardized. It is also laser optimized and has a glass core of 50 µm. This technology is the favorite for the emerging standards that will work in 40 G and in 10 G if distances are less than 150 m. OM4 is broadly used in data centers. It is suggested as a benchmark for the future.

	62.5/125 OM1	50/125 OM2	50/125 OM3	50/125 OM4	9/125 OS1
f/ λ	200 MHz	500 MHz 850 nm	1500 MHz 850 nm	3500 MHz 850 nm	1310 nm
100 M	2 km	2 km	2 km	2 km	100 km
1 G	275 m	550 m	800 m	1100 m	100 km
10 G	33 m	82 m	300 m	550 m	40 km
40 G/100 G	N/A	N/A	100 m	150 m	40 km

Practical examples from the previous chart:

Let´s say our client needs a connection between 10 km and… He will obviously choose the singlemode optical fiber (SM) OS1, ideal for this scenario.

Another example:
Your client needs a connection between two buildings with a distance of 100 m (328 ft). In this case OM3 will be the option, since 10 gb is just around the corner and OM2 does not cover more than 80 m. Likewise, OM3 will be able to manage 40 G at such distance. **One more try:** Your client requires a 500 m connection (1640 ft). What would you select? OM4 for sure! This will let you reach 10 G, which is a tendency in the next ten years.

Fiber is not like its cousin, the copper wire. Fiber has more variables and details to be considered when selected. You can choose more than one type of fiber for the same scenario, thus the integrator should work at the desire speed, distance, attenuation, installation lifetime, and price of the active components as parameters to be considered when you select a type of fiber for a system. Consider the following aspects before selecting the fiber:

Distance	Unquestionably, singlemode reaches 100 G at 40 km
Speed	Singlemode can provide 40 G as OM4
Safety	No difference. Fiber optic cable is highly safe
Cable price	Small difference, although singlemode is cheaper
Ending	Singlemode has a core of smaller diameter and the ending is slower to do, which is time consuming
Active devices	Prices can be four times higher than multimode optical fiber (this is the biggest downside of singlemode)

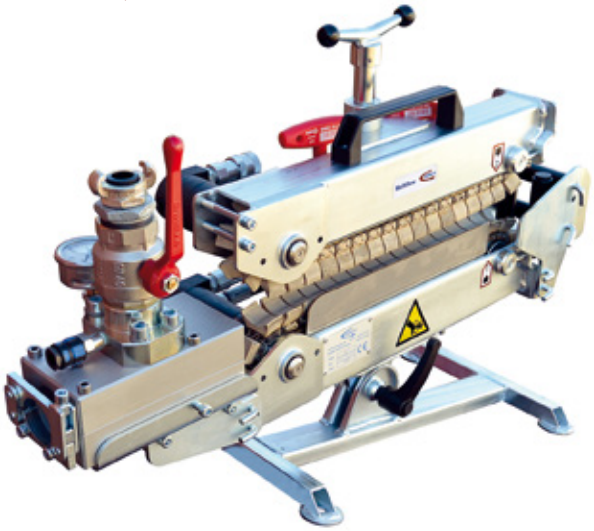
To summarize, multimode (MM), types OM2, OM3, and OM4, is usually used for LANs and connections inside and between buildings with distances up to 550 m. In spite of the high price of the equipment, singlemode (SM) is the only alternative for networks based in MAN long distances. However, it is important to note that there will be a tendency to reduce the prices of singlemode equipment (SM), making it more feasible for short connections. For instance, some of our clients use singlemode (SM) for most of their projects no matter the distance, either short or long.

LanPro offers a complete array of fiber products available for immediate delivery for your applications, from OM1 to OM4 and SM. In addition, we have a proper inventory of cables for indoor and outdoor environments for the most common applications. We also have expertise in manufacturing custom-made cables and OEM fibers, special jackets, FTTH styles, hybrids, OEM, mixtures, and many other products.

LanPro is a US-based company with several decades of expertise that offers solutions for data transmission, either by air (wireless) or copper wire (LAN), and solutions based on light (fiber optics). For further information, do not hesitate to contact us.

• FIBER BLOWING MACHINES

FREMCO LANPRO



Model	MicroFlow Touch	MiniFlow Rapid	PowerFlow	MultiFlow
Typical Usage	Inside Plant	In/Outside Plant	Outside Plant	Outside Plant
Fiber/Cable Diameter	0,8 - 5,5 mm	4 - 12 mm	8 - 25 mm	8 - 32 mm
Tube Size (OD)	5 - 16 mm	7 - 20 mm	18 - 70 mm	18 - 70 mm
Part #	101 - 10005	101 - 10031	101 - 10001	101 - 10002
Install Speed to	90 m/min	100 m/min	80 m/min	80 m/min
Distance	Up to 2.5 km	Up to 3.5 km	Up to 10 Km	Up to 10 Km
Recommended Airflow	200 - 500 l/pr. min	1000 l/pr. min	8000 - 12000 l/pr.min	8000 - 12000 l/pr.min
Recommended Pressure	8 - 16 bar air	8 - 16 bar air	8 - 16 bar air	8 - 12 bar air
	Machine: / **Control Box:**			
Length:	25 cm / 25 cm	650 mm	650 mm	700 mm
Width:	15 cm / 16 cm	225 mm	230 mm	230 mm
Height:	22 cm / 13 cm	210 mm	350 mm	350 mm
Weight:	9,7 kg / 1,9 kg	24 kg	38 kg	40 kg
Unique Features	Automatic Buckle Detection Adjustable Torque Preset Automatic Stop Adjustable Speed Control Speed, Torque & Count Display Air Pressure & Flow Regulation Easy to Operate Simple Maintenance	Use with Air or Water Push Force Monitor Rugged Construction Flexible Adaptability Adjustable Torque Distance and Speed measurment Ease of Use Simple Maintenance	Use with Air or Water Installs Single Cable Rugged Construction Flexible Adaptability Adjustable Torque Distance and Speed measurment Ease of Use Simple Maintenance	Use with Air Water Jets Tubes or Cable Rugged Construction Flexible Adaptability Adjustable Torque Distance and Speed measurment Ease of Use Simple Maintenance

Fiber Blowing Machine

FREMCO LANPRO

Specifications:

• User friendly desing
MINIFLOW RAPID has a user friendly design, that makes for easy operation. The machine is designed with the main focus on functionality that includes:
- Rugged Stainless construction
- Safety chain guard
- Large easy to use adjustable knobs
- Push force indicator.

• Efficient cable blowing Compact and efficient cable blowing machine. The machine is capable of installing fiber cable at a speeds up to 100m/min. abd yo ti a dustabce if 3.5 km.

• Built-in meter counter and tachometer Has a built-in digital meter counter and tachometer with long life battery (7 years).

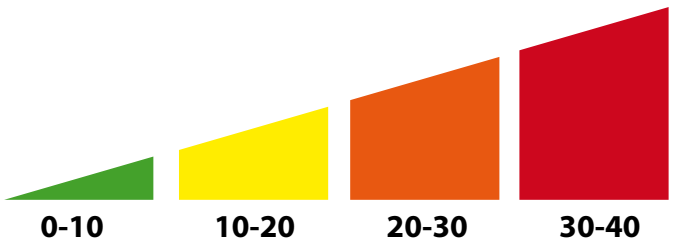
• Robust and compact The machine is constructed in stainless steel and anodized aluminium that makes it suited for use under rugged conditions at cable blowing locations.

• Flexible The machine can quickly be adapted to accommodate different cable and duct sizes.

- Micro cable diameter: 4 - 12 mm.
- Micro duct diameter: 7 - 20 mm.
- Blowing distance[1]: Up to 3,5 km.
- Blowing speed: Up to 100 m/min.
- Recommended pressure and airflow[2]: 8-16 bar (100 l/pr.min)
- Weight: 24 kg
- Length: 650 mm
- Width: 225 mm
- Height: 210 mm

[1]Depending on type of micro duct and cable.
[2]Cooled and dried air.

CABLE DAMAGE SAFETY
MINIFLOW RAPID has a unique monitoring system, which continuously monitors the pushing force, applied on the fiber cable. This makes it possible to stop the drive wheels before the cable is damaged.



HDPE Tube Bundle DB Series

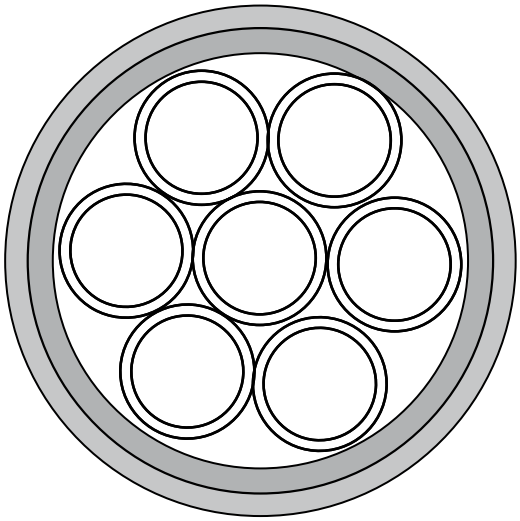
Specifications:

Individual Microduct:
- Microduct Φ14/12 mm
- Outer diameter (mm): 14.0 ± 0.1
- Wall thickness (mm): 1.0 ± 0.1
- Ovality (%, before coiled): ≤ 5
- Max. Pulling force (N): 550

Tube bundle:
- Weight: 746 Kg/k m
- Bending radius: 600 mm
- Tensile strength: 7340 N
- Internal pressure: 12 bar
- Crush performance: 2000 N
- Outdoor exposure limit: 6 Month
- Maximum delivery lengths on drums: 1000 m

Standard:
- Crush performance: IEC 60794-1-2-E3
- Tensile: IEC 60794-1-2-E1
- Bend: IEC 60794-1-2-E11
- Flexibility: IEC 60794-1-2-E8

Storage:
- Completed packages of the HDPE Tube Bundle on drums can be stored outdoor max. 6 months upon the date of production.
- Storage temperature: -40°C ~ +70°C
- Installation temperature: -20°C ~ +50°C
- Operating temperature: -40°C ~ +70°C



Applications

Developed to be the best solution of direct burial modular-tubes family, featuring a non-metallic construction.

A bundle of micro- or mini-tubes (regular wall size) is surrounded by dual HDPE sheath. The design makes the duct assemblies suitable for outdoor direct buried. The microducts are optimized for best cable blowing performance.

HDPE Tube Bundle DB Series

Specifications:

Inner micro duct
- Microduct Φ12/10mm
- Outer diameter (mm): 12.0 ± 0.1
- Wall thickness (mm): 1.0 ± 0.1
- Ovality (%, before coiled): ≤ 5
- Max. Pulling force (N): 575

Tube bundle:
- Tensile strength: 4600 N
- Bending radius: 580 mm
- Crush performance: 2000 N
- Impact: 12 J
- Internal pressure: 12 bar

Storage:
- Completed packages of tube bundle on drums can be stored outdoor max. 12 months upon the date of production.
- Storage temperature: -40°C to 70°C
- Installation temperature: -20°C to 50°C
- Operating temperature: -40°C to 70°C

Applications

Developed to be the best solution of direct burial modular-tubes family, featuring a non-metallic construction.

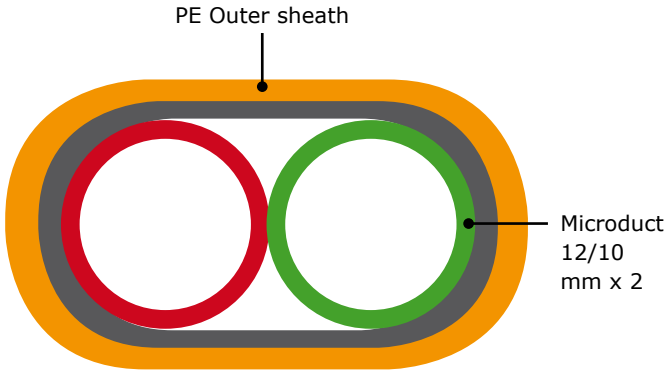
A bundle of micro- or mini- tubes (regular wall size) is surrounded by dual HDPE sheath. The design makes the duct assemblies suitable for outdoor direct buried. The microducts are optimized for best cable blowing performance.

HDPE Tube Bundle DB Series

Specifications:

Individual Microduct:
- Microduct Φ12/10mm
- Outer diameter (mm): 12.0 ± 0.1
- Wall thickness (mm): 1.0 ± 0.1
- Ovality (%, before coiled): ≤ 5
- Max. Pulling force (N): 515

Tube bundle:
- Weight: 306 Kg/km
- Bending radius: 300 mm
- Tensile strength: 3000 N
- Internal pressure: 12 bar
- Crush performance: 2000 N
- Outdoor exposure limit: 6 Month
- Maximum delivery lengths on drums: 1000, 2000 m



Modular Tube

Standard:
- Crush performance: IEC 60794-1-2-E3
- Tensile: IEC 60794-1-2-E1
- Bend: IEC 60794-1-2-E11
- Flexibility IEC 60794-1-2-E11: IEC 60794-1-2-E11

Storage:
Completed packages of the HDPE Tube Bundle on drums can be stored outdoor max. 6 months upon the date of production.
- Storage temperature: -40°C ~ +70°C
- Installation temperature: -20°C ~ +50°C
- Operating temperature: -40°C ~ +70°C

Applications

Developed to be the best solution of direct burial modular-tubes family, featuring a non-metallic construction.

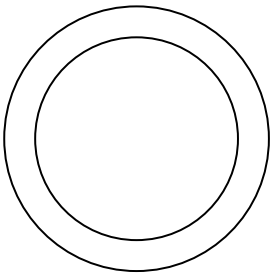
A bundle of micro- or mini-tubes (regular wall size) is surrounded by dual HDPE sheath. The design makes the duct assemblies suitable for outdoor direct buried. The microducts are optimized for best cable blowing performance.

HDPE Tube Bundle DB Series

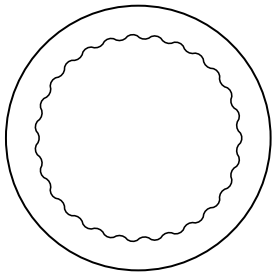
Specifications:

- Two layers, inner and outer layer is manufactured by the technology of synchronized extrusion of PE in order to achieve the tight joint without separation.
- Inner wall of duct has two kinds: smooth inner wall or the inner wall with longitudinal ribs to guide the airflow.
- No matter which kinds, both are permanently solid lubricant layer with very low friction of coefficient. The duct surface is smooth without defects such as visible holes or scars.
- Tensile Strength: ≥20 MPa
- Elongation Rate at break: ≥350 %
- Bending Test: ≥12D
- Longitudinal Conversion Rate: ≤3%
- Endurable Inner Pressure: 1.2 MPa
- 7 Friction Coefficient of inner wall: ≤0.1

Micro duct refers to the duct made of high density polyethylene (HDPE) as raw material and made by PE co-extrusion technology. Its nominal out diameter is less than 16mm and its inner wall is permanent solid lubricant layer (silicon layer). Its inner wall has two kinds as below:

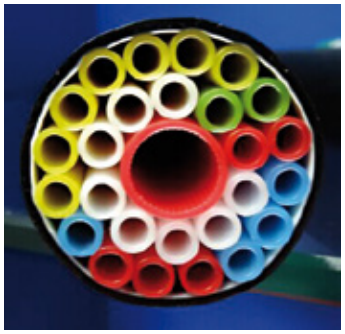


Micro duct with smooth inner wall



Inner wall with longitudinal ribs to guide the airflow

SHD (super heavy duty)



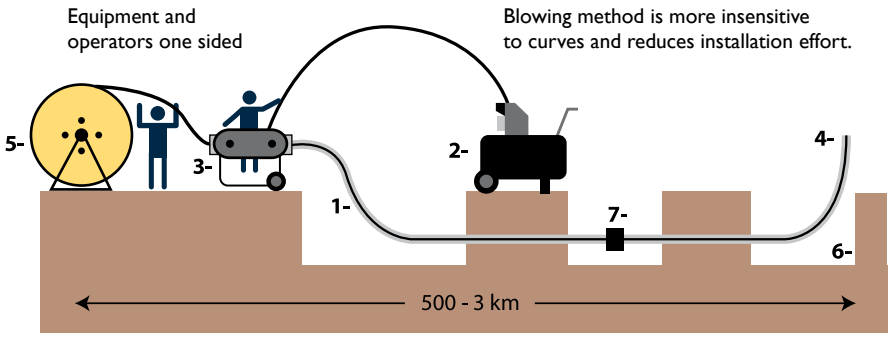
HD (heavy duty)

Indoor

Type	Named Dimension mm OD×ID	OD Deviation mm	Wall Thickness Deviation mm
LPM0535	Φ5.0×3.5	-0.10, +0.10	-0.1, +0.1
LPM0735	Φ7.0×3.5	-0.10, +0.10	-0.1, +0.1
LPM0755	Φ7.0×5.5	-0.10, +0.10	-0.1, +0.1
LPM0806	Φ8.0×6.0	-0.10, +0.10	-0.1, +0.1
LPM1008	Φ10.0×8.0	-0.10, +0.10	-0.1, +0.1
LPM1210	Φ12.0×10.0	-0.10, +0.10	-0.1, +0.1
LPM1410	Φ14.0×10.0	-0.10, +0.10	-0.1, +0.1
LPM1412	Φ14.0×12.0	-0.10, +0.10	-0.1, +0.1
LPM1614	Φ16.0×14.0	-0.10, +0.10	-0.1, +0.1
LPM2016	Φ20.0×16.0	-0.10, +0.10	-0.1, +0.1

Differences between conventional Pulling and Blowing Method of Fiber Optic Cable

CABLE BLOWING



Cable is installed faster and safely.

Duct can be as little as 25% larger than fiber diameter.

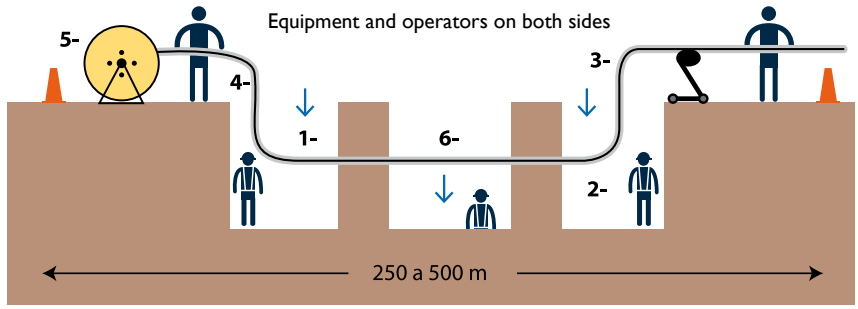
Elements on Blow installation

1- Duct
2- Compressor
3- Blowing machine
4- Fiber optic cable
5- Cable reel in spool holder with shaft
6- Telco Registration
7- Coupler

- Workers needed: 2-3 people
- Cable routing: 500m to 3 km.
- Installation speed: 40-80m/min.

CONVENTIONAL CABLE PULLING METHOD

In the conventional cable pulling method, the cable is stressed over the installation time, which can end up damaging it.



The inner diameter of the duct should be much larger than the diameter of the cable to reduce friction and lower the installation tension force.

Installation Factors on conventional Pulling

1- Conduit or duct
2- Telco Registration box
3- Winch
4- Fiber optic cable
5- Cable reel shaft mounted
6- Splice

- Workers needed: 6 or more
- Length of run: 250 - 500m
- Installation speed: 8 - 15m/min.

INSTALLATION BY BLOWING METHOD, THINGS TO CONSIDER:

RIGIDITY: The cables for blowing machine must be flexible. LanPro has specially designed cables for installation on blowing machine with PE jackets to withstand water, abrasion, impacts and more. Otherwise, the duct must not be GREATER than 25% to 30% the diameter of the cable. A large duct isn't recommended because it becomes a problem in the installation method by blowing machine.

CONDUIT OR DUCT: Must withstand at least 200 pounds (PSI) of pressure (14 bar) during installation. The cable must be made from HDPE or Similar. It must be lubricated and manufactured for this type of process. It must be the cleanest slippery as possible. Must be calibrated and tested before blowing. They exist from 5 (one tube) to 50mm (multi-tube). The more duct the more difficult to bend and work with.

COUPLING: It must resist the same pressure as the conduit or Duct. SHOULD NOT BE OF AN INFERIOR DIAMETER TO THE TUBE.

CLEANING AND LUBRICATION: Use special lubricant for this application. If the day is very hot the speed should be lowered. It must be free of dirt and garbage. When working with injected fiber a clean process is always required. The integrity of the ducts must be check; zero animals, dirt and dust. It's recommended to fire a test (Pellet) to ensure it reaches the other end verifying there are no breaks, obstacles, insects, or/and pipelines stuck in curves, etc.

CURVATURE: Blowing fiber is less sensitive to curves than pulled, but anyway we should try to be as few curves as possible.

COMPRESSOR TYPE: Typically, field compressors, gasoline or oil are used. They must be heavy duty with a minimum of 175 psi throughout the entire time. Keep in mind the larger the duct, the more air flow is required.

Media Converters

The LanPro Fiber Media Converters operate as seamless bridges between 10/100/1000 UTP ports and optical ports. The IP data is immediately and flawlessly translated from one port to the other, both ways.

By using standard 850/1310/1550 nm wavelengths, singlemode or multimode fiber, single fiber and WDM technology or dual fiber schemes, the network coverage can be extended enormously from the UTP maximum of 100 m to up to 80 km in some cases. Single or Multimode fiber are used depending again on the fiber available or best suited for the application.

In example: where legacy multimode fiber is already installed and substitution is not feasible and migration to Gigabit is mandatory, LanPro´s LP-ICF310005 Fiber Media Converter solve this application.

Double Fiber Gigabit 10/100 Mbps Media Converter Series

- Double Fiber 10/100 Mbps Media Converter Series.
- Distance suported by Multimode: 550m or 2km and Singlemode: 20/40/60/80/120km.
- Standards compliance: IEEE802.3, IEEE802.3u 10/100Base-TX, 100Base-FX
- The Twitsted pair port supports Auto-Negotiation for a automatic selection of speed and automatic crossover MDI/MDIX.
- Switching mode: Store and Forward.
- LED Indicators: PWR, TX-LNK, TX-ACT, FX-LNK, FX-ACT, FDX.
- Connector: FTP RJ45 and 2x SC.
- With Internal or external power supply and card version for chassis mount.

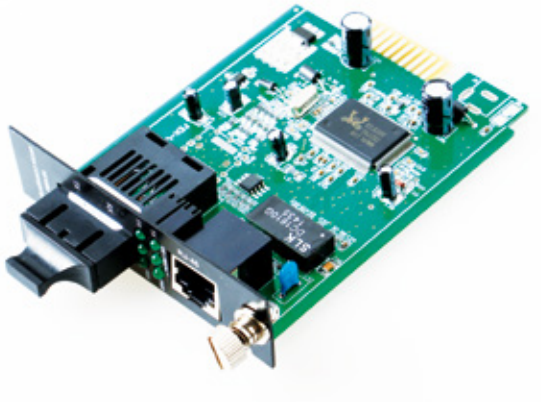
Media Converters

Double Fiber Gigabit 10/100/1000 Mbps Media Converter Series

- Double Fiber Gigabit Media Converter. Wavelength: 850nm for 550m, 1310nm from 2km to 20km and 1550nm from 40km to 60km.
- Gigabit 10/100/1000M Speeds.
- Transmission Distance: Multimode from 550m to 2km and Singlemode from 20km to 60km.
- 802.3z and 802.3ab standards compliant.
- The FTP port supports Auto-Negociation for a fast automatic speed selection.
- Auto-MDI/MDIX support.
- LED Indications: PWR, TX-LNK, TX-ACT, FX-LNK, FX-ACT, FDX.
- Connector: one (1) FTP RJ45 and two(2) SC.
- With Internal or external power supply and card version for chassis mount.

WDM Bidirectional 10/100 Mbps Media Converter Series

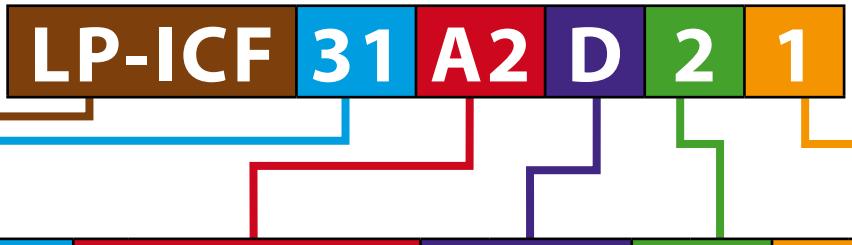
- Singlemode/Multimode one fiber only.
- BiDi (bidirectional) technology, 1310nm/1550nm and 1550nm/1310nm, WDM 10/100M, Multimode distances of 550m and Singlemode distances of 2/20/25/40/60/80km. (Sold in Pairs or on side to be used).
- Complies IEEE802.3, IEEE802.3u 10/100Base-TX, 100Base-FX Standards.
- Connectors: (1)TP RJ45 and (1)SC.
- TP Port supports Auto-Negotiation for fast automatic speed selection.
- Auto MDI/MDIX.
- Store and Forward switching mode.
- LED indicators: PWR, TX-LNK, TX-ACT, FX-LNK, FX-ACT, FDX.
- With Internal or external power supply and card version for chassis mount.



WDM Bidirectional Gigabit 10/100/1000 Mbps Media Converter Series

- Individual Fiber Gigabit Media Converters.
- BiDi technology(bidirectional), 1310nm/1550nm and 1550nm/1310nm, WDM 10/100/100M, Multimode distances to 550m y Singlemode distances of 2/20/40/80km. (Sold in Pairs or on side to be used).
- Gigabit speeds 10/100/1000M.
- Complies 802.3z and 802.3ab standards.
- TP Port supports Auto-Negotiation for fast automatic speed selection.
- Auto MDI/MDIX.
- LED indicators: PWR, TX-LNK, TX-ACT, FX-LNK, FX-ACT, FDX.
- Connectors: (1)TP RJ45 and (1)SC.
- With Internal or external power supply and card version for chassis mount.

Order Information



LP-ICF	ETHERNET TYPE		TYPE		WDM SUFFIX		DISTANCE		MODEL	
LANPRO MEDIA CONVERTERS	21	10/100	00	Media converter WDM sold in pairs or media converters dual fiber	Blank	If it is dual fiber	05	550m	Blank	Internal power supply
	31	10/100/1000	A1	WDM single side Tx1550/Rx1310	D	WDM	2	2km	1	External Power Supply 5VDC
			A2	WDM single side Tx1310/Rx1550			20	20km	2	External Power Supply -48VDC
			B1	WDM single side Tx1310/Rx1490			25	25km	3	Card version for chassis mount
			B2	WDM single side Tx1490/Rx1310			40	40km		
			C1	WDM single side Tx1510/Rx1570			60	60km		
			C2	WDM single side Tx1570/Rx1510			80	80km		
			D1	WDM single side Tx1270/Rx1330			120	120km		
			D2	WDM single side Tx1330/Rx1270						
			E1	WDM single side Tx1270/Rx1577						
			E2	WDM single side Tx1557/Rx1270						

Example:
LP-ICF31A2D21 BiDi Single Fiber Gigabit Media Converter, 1310nm/1550nm Single-Mode, WDM, 10/100/1000M with external power supply 5VDC, Supports 2km transmission. SC Connector. Sold single side.

Media Converters Rack-mounted Chassis

Rack-mounted chassis Dual power supply

The LP-RKICFXY 19 inch rack mountable chassis with dual power supplies is the housing specially designed for powering and carrying LanPro card version Media converter.

Dual power supplies version increase the overall availability of the system of media converters by signaling the user the failure of the power supplies by means of an audible and visual indication.

This media converter chassis can supply up to 16 media converters with power in the PCB card format, it will simplify the cabling and installation, and can work reliably and adapt to a broad range of voltages that go from 100 to 260 VAC or 48 VDC as an option. Operation, management and maintenance of this chassis is very easy.

The LanPro LP-RKICFXY is highly recommended to meet the requirements of good stability, high capacity, good integration and good quality.

This chassis supports hot-swap convert modules. It can work with single power supply or dual power supply as users wish. When the power supply must be maintained or changed, it is not necessary to pull-out the converters, this makes the maintenance easy. With all these advantages, the LanPro LP-RKICFXY provides an effective solution for the deployment of optical link networks.

Specifications:

- Number of slots: 14 or 16.
- For Media converters: 10/100 Mbps; 10/100/1000 Mbps.
- Mains voltage: AC 100 V~260 V; or DC 48V.
- Power out: For 14 or 16 slots media converter chassis: DC 5V, 12A.
- Diameter of DC plug: 2.5/5.5 mm.
- Ripple: 50 mV rms.
- Noise: 50 mV rms.
- Protection of power supply: over voltage, overcurrent and short circuit.
- Operating temperature: 0ºC~50ºC.
- Storage temperature: -20ºC~85ºC.
- Humidity: 5%~95%.

Order Information

Part number	Description
LP-RKICFDB	16 Slots media converter Rack-mounted chassis Dual power supply (DC 48V)
LP-RKICFDA	16 Slots media converter Rack-mounted chassis Dual power supply (AC 100 to 260 VAC)
LP-RKICFCB	14 Slots media converter Rack-mounted chassis Dual power supply (DC 48V)
LP-RKICFCA	14 Slots media converter Rack-mounted chassis Dual power supply (AC 100 to 260 VAC)

Media Converters Chassis

SFP one port media converter chassis with external power supply

The media converter is designed with a switch controller and buffer memory that connects two types segments to operate smoothly. With external power unit, it provides good stability and reliability.
Specifications:

- Complies with IEEE 802.3 10 Base-T standard.
- Complies with IEEE 802.3u 10/100 Base-TX/FX standard.
- Complies with IEEE 802.3X standard.
- 10/100Mbps or 10/100/1000Mbps port with full/half duplex auto negotiation.
- Back pressure flow control for full duplex.
- Converter mode with auto change forward (switch) function.
- Back pressure flow control for full/half duplex IEEE802.3X.
- Automatic identification of MDI/MDI-X cross line.

Order Information

Part number	Description
LP-CHOSF21001	10/100M SFP one port media converter chassis with external power supply
LP-CHOSF31001	10/100/1000M SFP one port media converter chassis with external power supply
LP-CHOSF41001	10G SFP+ one port media converter chassis with external power supply

Transceivers

LanPro offers a complete line of SFP transceivers (short form factor pluggable) E.G.: Copper, WDM (1 fiber) in 100M and Gigaspeed, Traditional (2 fibers) also in 100M and Gigaspeed, and also the new 10G for distances from 550m to 120km.

These transceivers are used in an ample range of applications like LAN's, WAN's. MAN's, High Capacity Storage (NAS), and other. Besides that, our modules can optionally provide the Digital Diagnostic Function.

All of our modules comply the RoHS norm and can be made 100% compatible with the following Brands: Cisco, Extreme, Juniper, HP, H3C, Linksys, Huawei, HTC, Alcatel-Lucent, Foundry, Nortel, Force10 etc.

Transceiver SFP Copper, Duplex RJ45

- For up to 1.25Gb/s bidirectional data links.
- (Hot-pluggable) SFP template.
- Extended temperature range available (0°C a +85°C).
- In metalic enclosure for lower EMI noise.
- Low power (1.05 W typical).
- The RJ45 assembly is very compact.
- SERDES interface for 1000 BASE-T operation with Host.
- SGMII interface for 10/100/1000Mbps operation with Host
- Complies with interface transfer rates for Host type systems.

Transceiver SFP Singlemode (SM) LC Duplex DDM, 1000BASE-EX

- For up to 1.25Gb/s bidirectional data links.
- FP Laser in 1310nm and PIN Photo Diode for up to 40 Km distance transmissions.
- Compliant with the SFP standard and with the SFF-8472 with duplex connector.
- Has Digital Diagnostic MoNITORING(ddm): with internal and external calibration.
- Compatible WITH SONET OC-24-LR-1.
- Compatible WITH RoHS.

Transceiver SFP Singlemode (SM) LC Duplex MSA, 1000BASE-LX

- For up to 1.25Gb/s bidirectional data links.
- Fabry-Perot Transmitting Laser in 1310 nm.
- LC duplex Connector.
- Transmission distance up to 20km on 9/125 µm fiber.
- IEEE Std802.31 Gigabit Ethernet standard compliant for 1x fiber channel.
- Typical low power disipation of less than 700mW.

Transceiver SFP Multimode (MM) LC Duplex MSA, 1000BASE-SX

For up to 1.25Gb/s bidirectional data links.

- VCSEL type Transmitting Laser on 850nm.
- Transmitting distance up to 550m on 50/125 µm and up to 220 m on 62.5 µm multimode fiber.
- Typical low power disipation of less than 700mW
- IEEE Std 802.31 Gigabit Ethernet standard compliant for 1x fiber channel.

Transceiver SFP Singlemode (SM) LC Duplex MSA, 1000BASE-ZX

- For up to 1.25Gb/s bidirectional data links.
- Transmitting distance up to 80km. (Hot-pluggable) SFP template
- DFB Laser and PIN Diode on 1550 nm.
- I/O Data Interface with LVPECL.
- Low EMI and excellent ESD.
- IEC-60825 RoHS Laser standard compliant.

Transceiver SFP Multimode (MM) MSA, LC Duplex, 1000BASE-ZX

- For up to 1.25Gb/s bidirectional data links.
- Transmission distance up to 550m
- (Hot-pluggable) SFP template.
- DFB Laser and PIN Diode on 1550 nm.
- Data input/output Interface with LVPECL.
- Low EMI and excellent ESD protection.
- IEC-60825 RoHS Laser standard compliant
- Compatible with RoHS.

Transceiver SFP Singlemode (SM) DDM, LC Duplex, 1000BASE-ZX

- For up to 1.25Gb/s bidirectional data links.
- DFB Laser and PIN Diode on 1550 nm.
- Has Digital Diagnostic MoNITORING(DDM): with internal and external calibration.
- Low EMI and excellent ESD protection.
- IEC-60825 RoHS Laser standard compliant
- Compatible with RoHS.

Transceiver SFP Multimode (MM) DDM, LC Duplex, 1000BASE-ZX

- For up to 1.25Gb/s bidirectional data links.
- DFB Laser and PIN Diode on 1550 nm.
- Has Digital Diagnostic MoNITORING(DDM): with internal and external calibration.
- Transmitting distance up to 550m on multimode fiber.
- Low EMI and excellent ESD protection.
- IEC-60825 RoHS Laser standard compliant
- Compatible with RoHS.

Transceiver SFP Multimode (OM1)
MSA, LC Duplex, 10GBASE-LRM

- Transmission rate 9.95 to 10.3Gbps
- Transmitting distance up to 220m Huella SFP+
- (Hot-pluggable) SFP template.
- Fabry-Perot Transmitting Laser in 1310 nm, PIN Photo Diode.
- Has Digital Diagnostic Monitoring(DDM.
- Compatible WITH RoHS, Lead free.
- In metallic enclosure for lower EMI noise.
- Single 3.3V power supply.
- FC-PI-4 800-Mx-SN-I, SFF-8431, SFF-8432, and SFF-8472 standard compliant.

Transceiver SFP Singlemode
MSA, LC Duplex, 10GBASE-LR

- Optical interface compliant to IEEE 802.3ae 10GBASE-LR.
- Electrical interface compliant to SFF-8431.
- Hot Pluggable.
- 1310nm DFB transmitter, PIN photo-detector.
- Operating case temperature: 0 to 70 °C.
- Low power consumption.
- Applicable for 10km SMF connection.
- All-metal housing for superior EMI performance.
- Advanced firmware allows customer system encryption information to be stored in transceiver.
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth.
- 10GBASE-LR at 10.3125Gbps.
- 10GBASE-LW at 9.953Gbps.
- Other optical links.

Transceiver SFP Multimode (MM)
DDM, LC Duplex, 2GBASE

- For up to 2.67Gbps bidirectional data links.
- VCSEL type Transmitting Laser on 850nm.
- Transmitting distance up to 300m.
- SFP MSA , SFF-8472 standards compliant.
- Has Digital Diagnostic Monitoring(DDM): with internal and external calibration.
- Compatible with RoHS.

Order Information

LP-OSFP FX03 D WA1

LP-OSFP	TYPE GIGABIT		
LANPRO TRANSCEIVERS	XX	NN	-
	T	01	Duplex Copper pair RJ45 100BASE-T
		02	Duplex Copper pair RJ45 1000BASE-T
	FX	00	Duplex 100BASE-FX 100Mbps 850 nm 2km 62.5/125nm OM1
		01	Duplex 100BASE-FX 100Mbps 1300 nm 2Km 62.5/125nm OM1
		02	Duplex 100BASE-FX 100Mbps 40Km 9/125nm Single mode
		03	Duplex 100BASE-FX 100Mbps 1300 nm 10Km 9/125nm Single mode
		04	Duplex 100BASE-FX 100Mbps 20Km 9/125nm Single mode
		05	Duplex 100BASE-FX 100Mbps 60 Km 9/125nm Single mode
		06	Duplex 100BASE-FX 100Mbps 80Km 9/125nm Single mode
		07	Duplex 100BASE-FX 100Mbps 100 Km 9/125nm Single mode
		08	Duplex 100BASE-FX 100Mbps 120Km 9/125nm Single mode
	BX	01	SC Simplex 1000BASE-BX-D1.0625GbdFiber Channel/1.25 Gigabit Ethernet, 1310nm/1550nm 9/125µm Singlemode Fiber SFP BiDi up to 20 Km.
	SX	01	Duplex LC 1000BASE-SX 1.25G, 850nm 550m (50/125um OM2), 220m(62.5/125nm OM1)
		02	Simplex LC 1000BASE-SX, 1.25G,1550nm, 1310nm(50/125µm OM2)
		03	Duplex SC 1000BASE-SX 1.25G, 850nm 550m (50/125um OM2), 220m(62.5/125nm OM1)
	LX	00	1000BASE-LX, 850nm, up to 550m (50/125nm), 440m (62.5/125nm), MM
		01	1000BASE-LX, 1310nm, up to 550m (50/125nm), 440m (62.5/125nm), MM
		02	1000BASE-LX, 1310nm, up to 10Km (9/125µm G.652D), SM (-20dBm sensitivity)
		03	1000BASE-LX, 1310nm, up to 20Km (9/125µm G.652D), SM (23dBm sensitivity)
		04	1000BASE-LX, 1310nm, up to 40Km (9/125µm G.652D), SM (23dBm sensitivity)
		05	1000BASE-LX, 1310nm, up to 80Km (9/125µm G.652D), SM (23dBm sensitivity)
		06	LC duplex 1000BASE-LX 1.25Gb/s Multimode Fiber SFP 1310nm Transceiver up to 2Km with DDM.
	EX	01	1000BASE-EX, 1310nm, up to 40Km(9/125µm), SM
	ZX	01	1000BASE-ZX, 1550nm, up to 80Km(9/125µm), SM
		02	1000BASE-ZX, 1550nm, up to 120km (9/125µm), SM
	LH	01	1000BASE-LH, 1550nm, UP TO 70 Km (9/125nm), SM
	EZX	01	01 1000BASE-EZX, 1550nm, up to 120Km, SM
	LRM	01	10Gbps 1310nm 220m Multi Mode OM1
	2G	01	2.125GB 850nm, 300m
	SR	01	10GBASE-SR 850nm, up to 550m MM
		02	10GBASE-SR 850nm, up to 300m MM
	FE	01	Optical Transceiver(Esfp, 1310nm, STM1,-15dBM --8dBm, 31dBm, Singlemode, LC, 15KM)
	LR	01	10GBASE-LR 1310nm, up to 10Km SM
		02	10GBASE-LR 1310nm, up to 20Km SM
		03	10GBASE-LR 1310nm, up to 40Km SM
	ZR	01	10GBASE-ZR 1550nm, up to 80Km SM
	ER	01	10GBASE-ER 1270 – 1330 nm, up to 40Km SM

Order Information

DIGITAL DIAGNOSTIC MONITORING AND TEMPERATURE RANGE	
Blank	No DDM
D	With DDM

WDM SUFFIX	
WA	WDM Paired: 1550nm/1310nm
WB	WDM Paired: 1310nm/1490nm
WC	WDM Paired: 1510nm/1570nm
WD	WDM Paired: 1270nm/1330nm
WE	WDM Paired: 1270nm/1577nm
WA1	WDM single side Tx1550/Rx1310
WA2	WDM single side Tx1310/Rx1550
WB1	WDM single side Tx1310/Rx1490
WB2	WDM single side Tx1490/Rx1310
WC1	WDM single side Tx1510/Rx1570
WC2	WDM single side Tx1570/Rx1510
WD1	WDM single side Tx1270/Rx1330
WD2	WDM single side Tx1330/Rx1270
WE1	WDM single side Tx1270/Rx1577
WE2	WDM single side Tx1557/Rx1270

Example:
LP-OSFPFX03DWA1 Transceiver SFP Singlemode (SM) 9/125µm, LC simplex, DDM, 100BASE-FX, Tx 1550nm /Rx 1310nm, WDM, up to 10 km Single side.

All weather Outdoor Cabinets

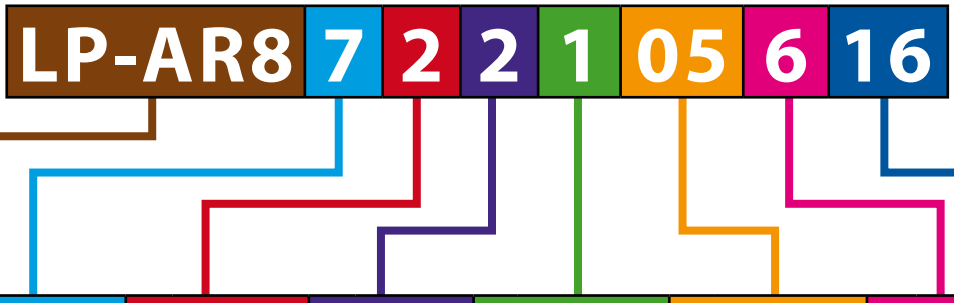
All weather outdoor Cabinets are mainly used in wireless communication base station, such as 4G systems, communication/network integrated service, access/ transmission switching station, emergency communication/ transmission etc.

These cabinets are designed to make the equipment have a longer working life and have more stable performance.

Specifications:

- The cabinet is dustproof, sunproof and rainproof.
- Cabinet cooling: DC48V fans. MTBF≥50000h.
- The layout of the cabinet is reasonable, which will facilitate cable access, fixing and grounding. There are entrance holes individually for power cable, signal cable and optical cable.
- All the cables used in the cabinet are made from flame retardant materials.
- The cabinet includes grounding bar.
- Surface treatment: degreasing, derusting, rustproof phosphating (or galvanizing), powder coated.
- Cabinet load bearing: ≥600kg.
- Flame retardance: comply with GB5169.7 test A.
- Insulation resistance: the insulation resistance between grounding devices and cabinet body parts is not lower than 2X104M / 500V (DC).
- Withstand voltage: The withstand voltage between grounding devices and cabinet body parts is not lower than 3000V (DC)/1min.
- Mechanical strength: each surface can bear upright pressure >980N; after the door is open, its outer end can bear upright pressure >200N.

Order Information

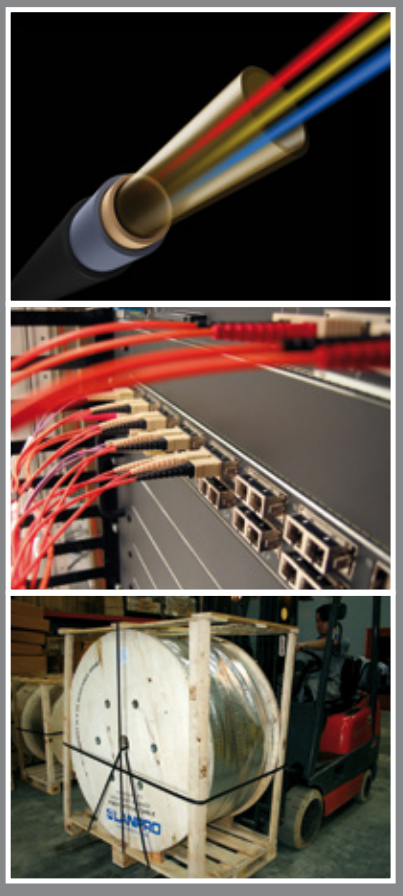


LP-AR8	TYPE		THERMAL INSULATION		VENTILATION		MATERIAL		DEPTH		WIDTH		HEIGHT RACK UNITS	
ALL WEATHER OUTDOOR CABINETS 8000 SERIES	1	Wall Mounted	1	Without Thermal insulation	1	Without ventilation	1	Stainless Steel	Depth/100 (XX means it suits all depths)		Width/100		06	6U
	2	Pole Mounted	2	Thermal insulation (Double wall)	2	Fan Ventilation	2	Aluminum	05	500 a 550 mm	6	600 to 700mm	09	9U
	3	Floor Mounted			3	Air conditioned	3	Galvanized steel with metallic electrostatic painted	06	551 a 600 mm	7	700 to 800mm	12	12U
	4	Wall and Pole Mounted							08	601 a 800 mm	8	800 to 900mm	15	15U
	5	Wall and Floor Mounted							10	800 a 1000 mm	9	900 to 1000mm	16	16U
	6	Pole and Floor Mounted							12	1001 a 1200 mm			18	18U
	7	Wall, Pole and Floor Mounted											22	22U
													27	27U
													32	32U
													37	37U
													42	42U
													47	47U

Example:
LP-AR8722105616 8000 Series Outdoor Cabinet, wall floor and pole mounted, fan ventilation, galvanized steel, Depth: 500 mm, Width: 600 to 700 mm, Height: 16U.

LANPRO

Fiber Solutions Catalog



LANPRO

Connect-and-Forget

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