Fiber Optic Cabling Infrastructure Offering



Panduit[®] Opti-Core[®] Fiber Optic Cabl<u>e</u>

High-Speed Fiber Cabling Systems

Panduit provides high bandwidth and mission-critical physical infrastructures in data center, enterprise, and campus networks with comprehensive fiber optic systems that deliver high performance, reliability, and scalability. The deployment of high-speed cabling systems has been increasing rapidly as data centers enable their physical infrastructure with 10 Gb/s capacity to support server virtualization, I/O consolidation, and convergence of backbone applications.

Structured Cabling Infrastructure

A properly designed and implemented cabling infrastructure is a fundamental asset of every business. Carefully planning a structured cabling solution facilitates the delivery of new services, lowers network maintenance costs, and increases productivity. New high-bandwidth applications enable organizations to better fulfill their need for productivity and innovation in a rapidly changing world.

Innovative Data Center Infrastructure Solutions

Panduit provides a comprehensive, intelligent data center offering that supports best practice methodologies. Our data center solutions enable physical to logical architecture integration, and deliver robust, scalable physical infrastructures that address:

- · Visibility and control for managing and automating real-time data processes and documentation
- · Convergence of new technologies and high-speed data applications
- Operational efficiency through process improvement and IT initiatives, such as cooling conservation
 through energy efficient data cabinets
- · Capacity management for greater real estate utilization
- Modular pods designed to support high-density applications and provide consistent, reliable deployments while lowering
 infrastructure risk and costs

Panduit's fiber solutions facilitate faster implementation and simple specification, streamlining the process of designing, specifying, installing, and managing the increasingly complex physical infrastructure necessary to optimize your data center. Panduit knows the data center space intimately. We help you discover tangible infrastructure and business process improvements that increase functionality, interoperability, and manageability of mission-critical operations across your entire organization.

PanNet® System Warranty

All Panduit channels are field tested by Panduit Certified Installers (PCI) using industry standard hand-held devices which provide verified network performance, and ensures your network operates at optimal performance.

Cable Fire Ratings Reference Guide

Cable fire ratings need to be considered when specifying cabling infrastructure to ensure local building codes are met. The below rating guide provides the information needed to determine which rating is appropriate for different installation environments.

Plenum Rated Cable (OFNP)

A Plenum Rating (OFNP) signifies cable that has passed stringent burn testing and is suitable for installation into air plenum spaces. OFNP cables have fire-resistance and low smoke production characteristics. They can be installed in ducts, plenums, and other spaces used for building airflow. This is the highest fire rating fiber cable and no other cable types can be used as substitutes.

Plenum Rated Cable (OFCP)

A Plenum Rating (OFCP) differs from OFNP in that the cable contains metallic elements, typically armor, and therefore, conducts electricity. All other aspects of this rating are the same as OFNP.

Riser Rated Cable (OFNR)

A Riser Rating (OFNR) is commonly required when cables are run between floors through open vertical shafts. OFNR cables are used in Riser areas which are building vertical shafts or runs from one floor to another floor. OFNR cables cannot be installed in plenum areas since they do not have the required smoke rating as plenum rated cables. OFNP plenum cables can be used as substitutes for OFNR Riser cables.

Riser Rated Cable (OFCR)

A Riser Rating (OFCR) differs from OFNR in that the cable contains metallic elements, such as a layer of armor, and therefore, conducts electricity. All other aspects of this rating are the same as OFNR.

Low Smoke Zero Halogen (LSZH)

A Low Smoke Zero Halogen Rating (LSZH) is sometimes referred to as low toxicity cable. When burned, PVC-based cables produce a cloud of toxic smoke containing corrosive compounds. The LSZH cables do not contain the Halogen type compounds that form these toxic substances. LSZH ratings are expressed as OFN-LS or OFNR-LS if the cable also meets the requirements of a OFNR rated cable.

EuroClass

EuroClass cable for the EMEA market is LSZH cable that has been tested to more stringent standards and labeling requirements as per the EU's Construction Products Regulation. EuroClass ratings range from B2ca, the highest applicable rating for communications cable, to Fca, which is non-rated or self-declared. Each level of EuroClass cable from B2ca down to Dca are further characterized by Smoke, Flaming Droplets, and Acidity ratings. Local regulations vary on which rating can be used in which application, so it is important to understand the local requirement. Further information on Panduit's EuroClass offering is available at the CPR landing page.

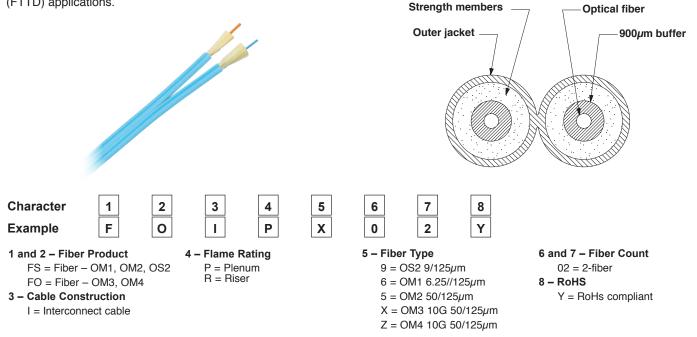
Non-Flame Rated

Outside Plant (OSP) cables are intended for outdoor use only. Typically, these cables are constructed using varying densities of Polyethylene, (PE) in the outer jacket. Because cables without flame ratings do not contain flame suppressants and emit noxious gasses when burned, building codes often restrict the distance installers are permitted to route inside buildings before termination to 50 feet or 15 meters.

Fiber Cable for Americas (North America and Latin America)

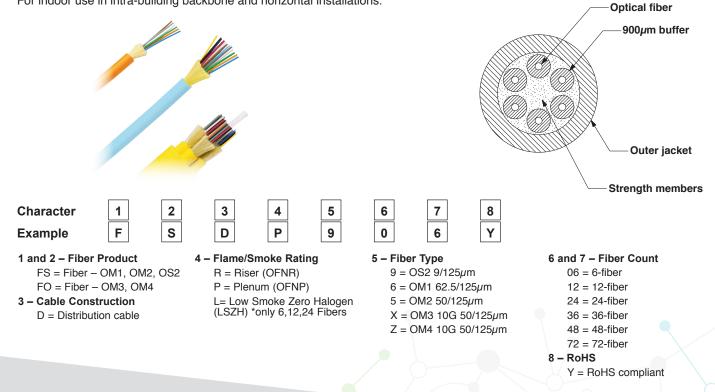
Opti-Core® Interconnect Cable

Used in interconnect, horizontal installations, routing in tight spaces such as panels, cable trays, and fiber-to-the-desk (FTTD) applications.



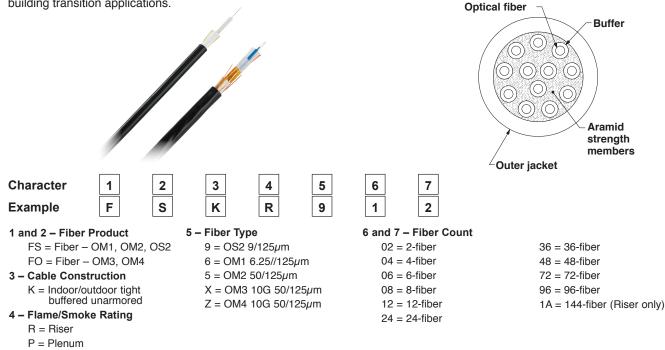
Opti-Core® Indoor Distribution Cable

For indoor use in intra-building backbone and horizontal installations.



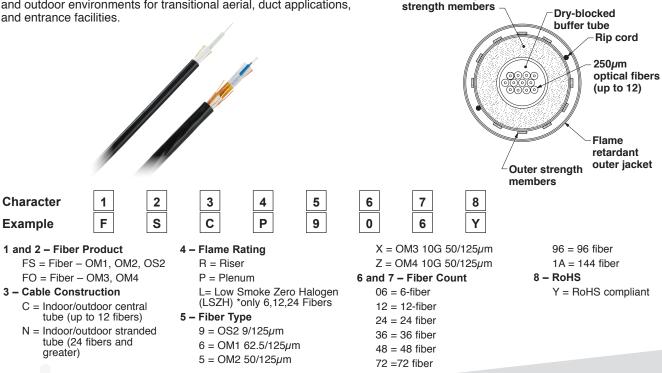
Opti-Core® Indoor/Outdoor All-Dielectric Cable with Tight Buffered Fibers

These cables provide an effective solution for inter-building and building transition applications.



Opti-Core® Indoor/Outdoor All-Dielectric Cable

Allows installation using loose tube cable methods within buildings and outdoor environments for transitional aerial, duct applications, and entrance facilities.



Water-blocking

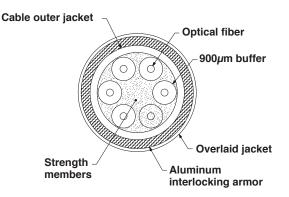
Fiber Cable for Americas (North America and Latin America)

Opti-Core® Interlocking Armored Cable Offering

Opti-Core® Indoor Interlocking Armored Cable

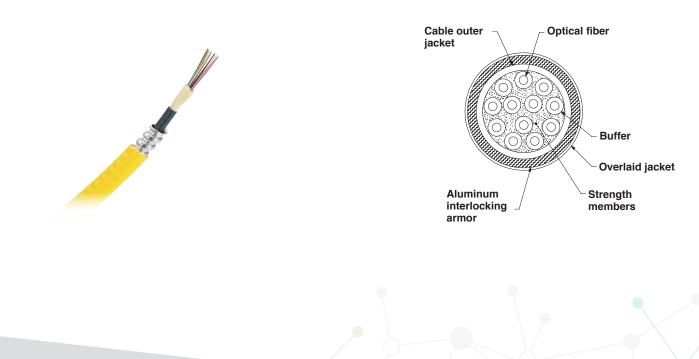
Used in intrabuilding backbone, building backbone, horizontal installations and harsh environments.





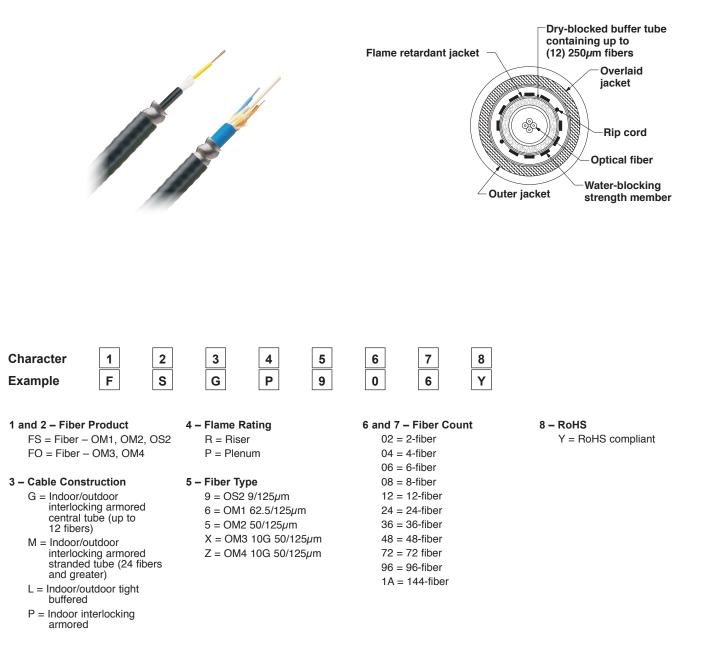
Opti-Core® Indoor/Outdoor Interlocking Armored Cable with Tight Buffered Fibers

For use indoors and outdoors. Interlocking aluminum armor eliminates the need for inner duct or conduit.



Opti-Core® Indoor/Outdoor Interlocking Armored Cable

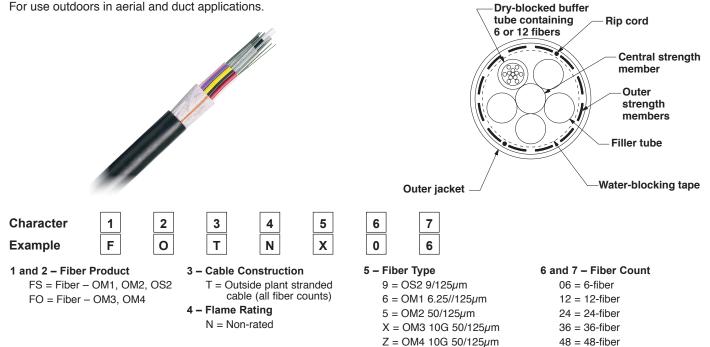
For use indoor and outdoors. Central loose tube constructions. Interlocking aluminum armor eliminates the need for inner duct or conduit.



Fiber Cable for Americas (North America and Latin America)

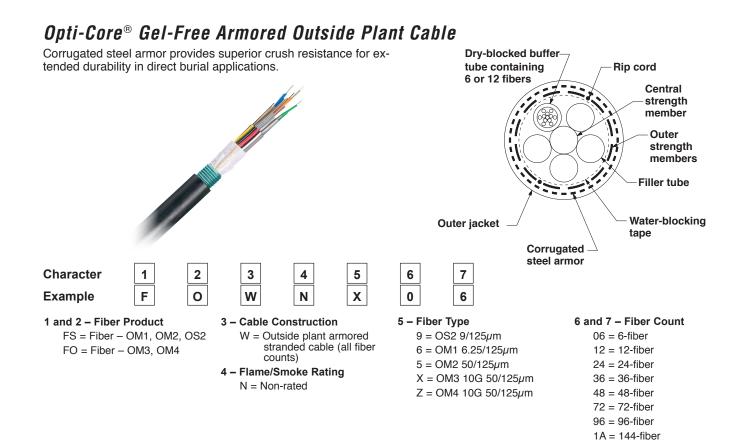
Opti-Core® Gel-Free All-Dielectric Outside Plant Cable

For use outdoors in aerial and duct applications.



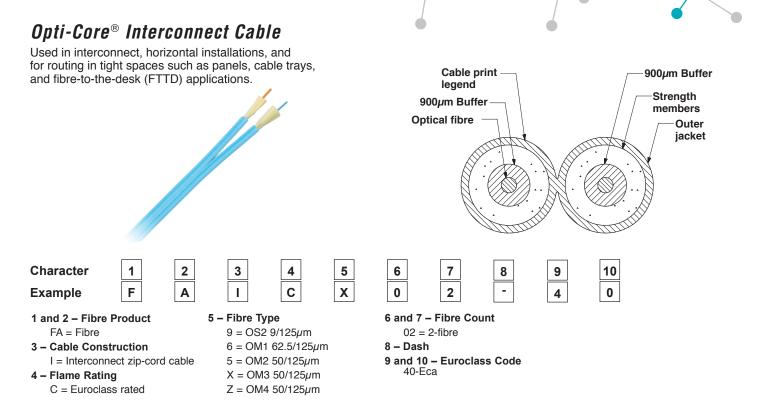
72 = 72-fiber 96 = 96-fiber

1A = 144-fiber



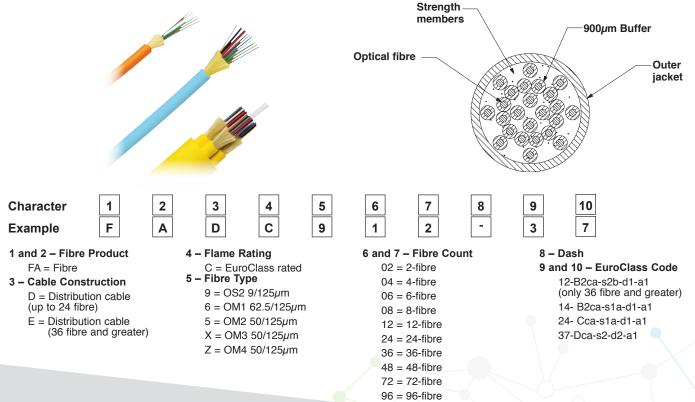
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Fibre Cable for EMEA (Europe, Middle East, and Africa)



Opti-Core® Indoor Distribution Cable

For indoor use in intrabuilding backbone and horizontal installations.



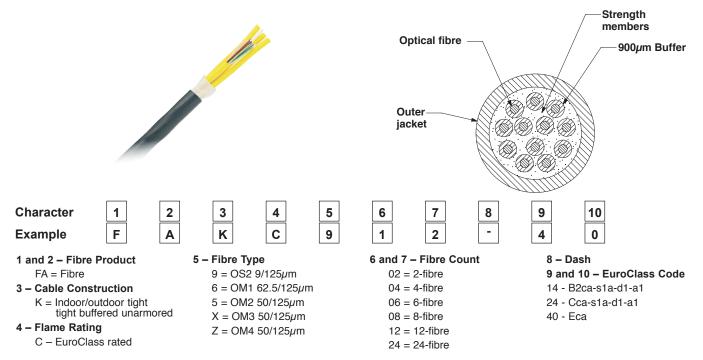
10 Visit www.panduit.com for more information.

Water-blocking tape

Outer strength members

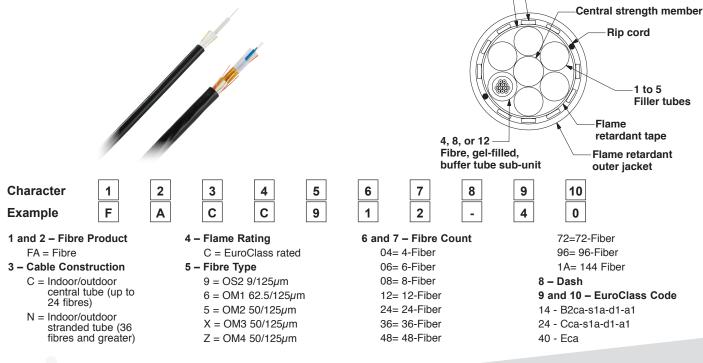
Opti-Core® Indoor/Outdoor All-Dielectric Cable with Tight Buffered Fibres

For indoor and outdoor use.

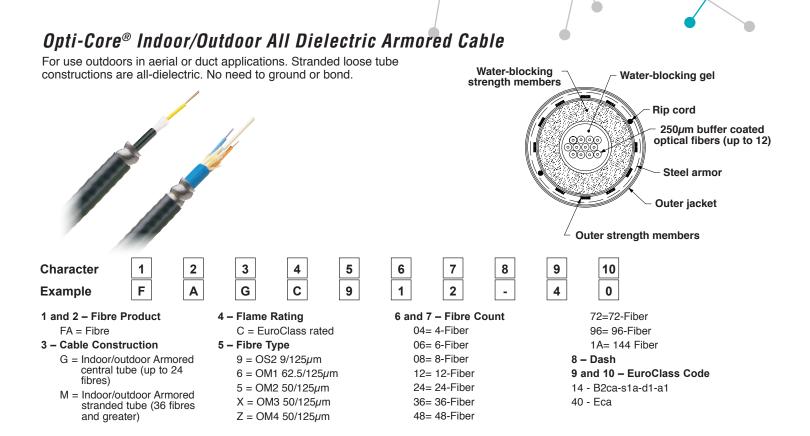


Opti-Core® Indoor/Outdoor All-Dielectric Cable

For use indoor or outdoors. Central and stranded loose tube constructions are all-dielectric.



Fibre Cable for EMEA (Europe, Middle East, and Africa)

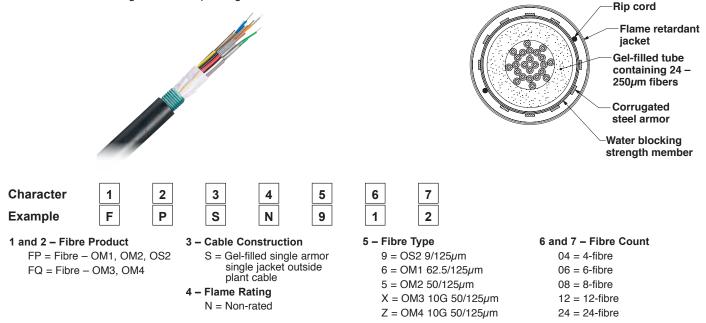


Opti-Core® Gel-Filled All-Dielectric Outside Plant Cable

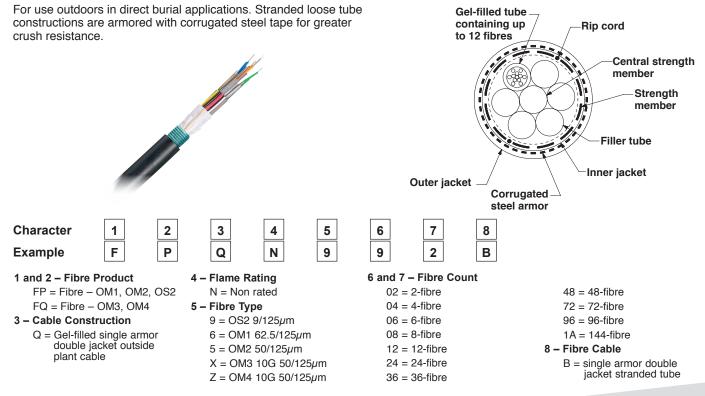
For use outdoors in aerial or duct applications. Stranded loose tube Gel-filled tube containing constructions are all-dielectric. No need to ground or bond. Rip cord up to 12 fibre Central strength member Strength member Filler tube Outer jacket Water-blocking tape Character 6 7 1 2 3 5 F Ρ т 9 1 2 Ν Example 1 and 2 - Fibre Product 6 and 7 - Fibre Count 3 – Cable Construction 5 – Fibre Type FP = Fibre - OM1, OM2, OS2 U = Indoor/outdoor central 9 = OS2 9/125µm 06 = 6-fibre tube (up to 24 fibres) FQ = Fibre - OM3, OM4 6 = OM1 62.5/125µm 08 = 8-fibre T = Indoor/outdoor stranded 5 = OM2 50/125µm 12 = 12-fibre tube (all fibre counts) X = OM3 10G 50/125µm 24 = 24-fibre 4 – Flame Rating Z = OM4 10G 50/125µm 36 = 36-fibre N = Non-rated 48 = 48-fibre 72 = 72-fibre 96 = 96-fibre 1A = 144-fibre

Opti-Core® Gel-Filled Single Armor Single Jacket Outside Plant Cable

For use outdoors in direct burial applications. Central loose tube constructions are armored with corrugated steel tape for greater crush resistance.



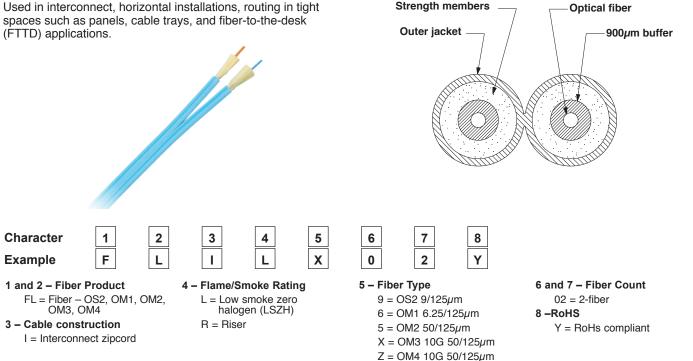
Opti-Core® Gel-Filled Single Armor Double Jacket Outside Plant Cable



Fiber Cable for APAC (Asia Pacific)

Opti-Core® Interconnect Cable

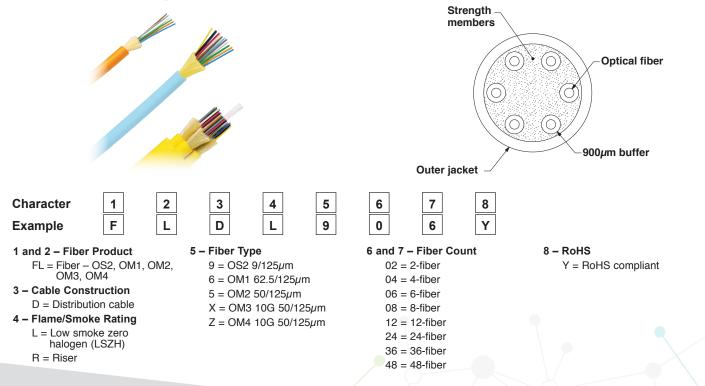
Used in interconnect, horizontal installations, routing in tight



Strength members

Opti-Core® Indoor Distribution Cable

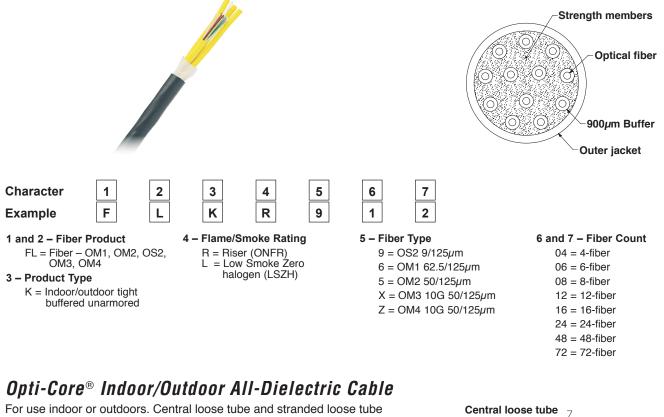
For indoor use in intrabuilding backbone and horizontal installations.

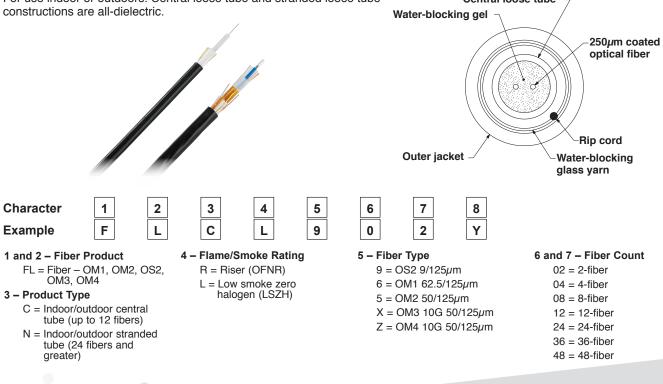


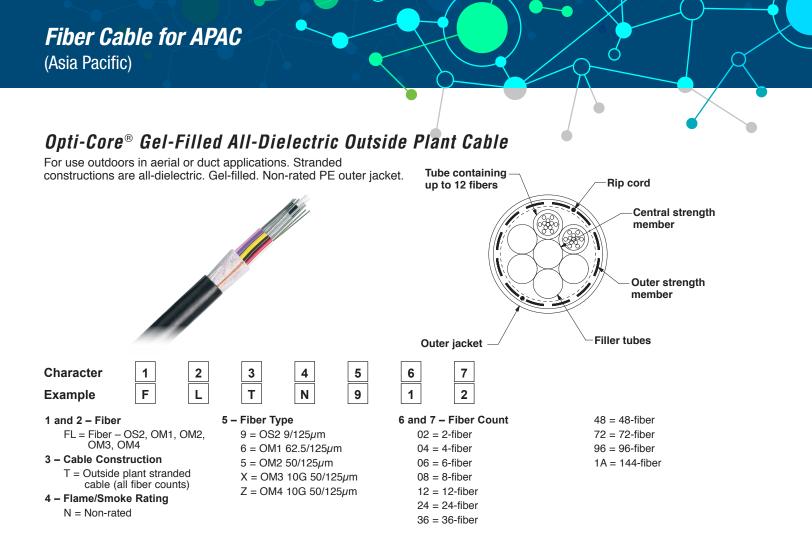
14 Visit www.panduit.com for more information.

Opti-Core® Indoor/Outdoor All-Dielectric Cable with Tight Buffered Fibers

For use indoor and outdoors.

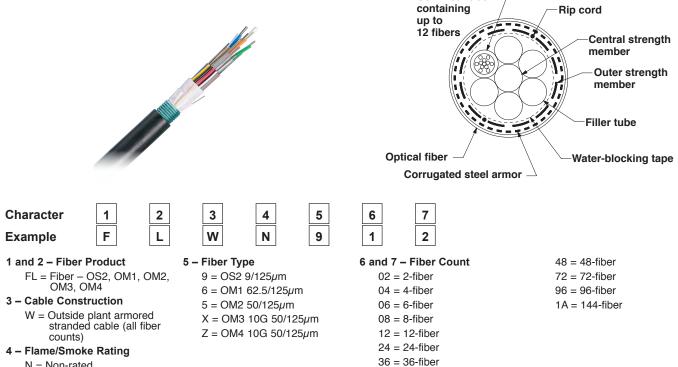






Opti-Core® Gel-Filled Armored Outside Plant Cable

For use outdoors in direct burial applications. Stranded loose tube constructions are armored with corrugated steel tape for greater crush resistance. Gel-filled. Non-rated PE outer jacket.



Gel-filled tube

Pre-Polished Fiber Optic Kit & Connectors

OptiCam® Pre-Polished Cam Fiber Optic Termination Kit

- · For termination of all Panduit OptiCam® Pre-Polished Connectors
- OptiCam[®] 2 Termination Tool simplifies tooling and termination by providing calculated insertion loss at the point of termination



OptiCam® Pre-Polished and Fusion Splice Fiber Optic Connectors

- TIA/EIA-604 FOCIS compatible connectors
- · Exceed TIA/EIA-568-D.3 requirements
- · Connector housing and boot colors follow TIA/EIA-568-D.3 suggested color identification scheme
- · Non-optical disconnect on OptiCam® Connectors maintain data transmission under tensile loads for jacketed cable
- · Quick installation provides field termination in less than half the time of field polish connectors
- · Patented re-termination capability on OptiCam® Connectors provide yield rates approaching 100%
- Factory pre-polished fiber endface eliminates time-consuming field polishing to reduce installation costs, labor, scrap and the number of tools required
- OptiCam[®] Cam activated fiber and buffer clamp mechanisms provide superior fiber and buffer retention less sensitivity to fiber tensile loading

OptiCam® Pre-Polished Fiber Optic Connectors LC OptiCam[®] **Pre-Polished Fiber Optic Connectors**

Quick installation - provides field termination in less than half the time of field polish connectors. Patented re-termination capability.



selection information

Part Number	Connector Type	Ferrule Material	Fiber	Ferrule Finish	Backbone Color	Boot Color	Average Insertion Loss**	Return Loss
FLCSMCXAQY	Simplex	Zirconia	10 GbE 50/125µm (laser optimized) OM3/OM4	PC	Aqua	Aqua	0.3dB	>26dB
FLCDMCXAQY	Duplex	Ceramic						
FLCSMC5BLY	Simplex	Zirconia	50/125µm OM2	PC	Black	Black	0.3dB	
FLCDMC5BLY	Duplex	Ceramic						>20dB
FLCSMC6EI	Simplex	Zirconia	62.5/125µm OM1	PC	Electric Ivory	Black	0.3dB	>20dB
FLCDMC6EI	Duplex	Ceramic						>200D
FLCSSCBUY	Simplex	Zirconia	9/125µm OS1/OS2	UPC	Blue	Blue	0.3dB	> EOdD
FLCDSCBUY	Duplex	Ceramic						>50dB

*All connector insertion loss values calculated from tests taken with precision launch jumper assemblies per TIA/EIA-FOTP-171.

Add-C for 100 pack connectors.

Simplex connectors can be made into duplex using FLCCLIPBL-L.

SC OptiCam[®] Pre-Polished Fiber Optic Connectors



selection information

Part Number	Connector Type	Ferrule Material	Fiber	Ferrule Finish	Housing Color	Backbone Color	Boot Color	Average Insertion Loss**	Return Loss
FSC2MCXAQ	Simplex	Zirconia	10 GbE 50/125µm (laser optimized) OM3/OM4	PC	Black	Aqua	Aqua	0.3dB	>26dB
FSC2DMCXAQ	Duplex	Ceramic							
FSC2MC5BL	Simplex	Zirconia	50/125µm OM2	PC	Black	Black	Black	0.3dB	>20dB
FSC2DMC5BL	Duplex	Ceramic							>200D
FSC2MC6EI	Simplex	Zirconia	62 5/1250m OM1	PC	Electric	Electric	Disali		
FSC2DMC6EI	Duplex	Ceramic		FC	lvory	lvory	Black	0.3dB	>20dB
FSC2SCBU	Simplex	Zirconia Ceramic	9/125µm OS1/OS2	UPC	Blue	Blue	Blue	0.3dB	>50dB

**All connector insertion loss values calculated from tests taken with precision launch jumper assemblies per TIA/EIA-FOTP-171.

Add-C for 100 pack connectors.

Simplex connectors can be made into duplex using FSCCLIP-L.

Field Polished Fiber Optic Kit & Connectors

ST OptiCam[®] Pre-Polished Fiber Optic Connectors



selection information

Part Number	Connector Type	Ferrule Material	Fiber	Ferrule Finish	Backbone Color	Boot Color	Average Insertion Loss**	Return Loss
FST2MCXAQ	Simplex	Zirconia Ceramic	10 GbE 50/125µm (laser optimized) OM3/OM4		Natural	Aqua	0.3dB	>26dB
FST2MC5BL	Simplex	Zirconia Ceramic	50/125µm OM2	PC	Natural	Black	0.3dB	>20dB
FST2MC6EI	Simplex	Zirconia Ceramic	62.5/125µm OM1		Natural	Black	0.3dB	>20dB
FST2SCBU	Simplex	Zirconia Ceramic	9/125µm OS1/OS2	UPC	Natural	Blue	0.3dB	>50dB

**All connector insertion loss values calculated from tests taken with precision launch jumper assemblies per TIA/EIA-FOTP-171. Add-C for 100 pack connectors.

Fusion Splice Fiber Optic Connectors



Part Number	Connector Type	Polish	Color	Fiber	Insertion Loss*	Return Loss
FLCS2/9SOCU9BU	Simplex LC	UPC	Blue	9/125um OS1/OS2	0.15dB Average	>55dB
FLCS2/9SOCA9AG	Simplex LC	APC	Green	9/125um OS1/OS2	0.15dB Average	>65dB
FLCS2/9SOCPXAQ	Simplex LC	PC	Aqua	50/125um OM2, OM3, OM4	0.10dB Average	>30dB
FSCS2/9SOCU9BU	Simplex SC	UPC	Blue	9/125um OS1/OS2	0.15dB Average	>55dB
FSCS2/9SOCA9AG	Simplex SC	APC	Green	9/125um OS1/OS2	0.15dB Average	>65dB
FSCS2/9SOCPSAQ	Simplex SC	PC	Aqua	50/125um OM2, OM3, OM4	0.10dB Average	>30dB

Fiber Optic Fiber Accessories



selection information

Part Number	Description
FSPCVR	Precision fiber optic cleave tool with rotary blade for 7mm and 10mm cleaves.connector termination.
FO6CB	The fan-out kit for six fibers is used to build up 250µm fiber to the 900µm tight-buffered coating size for connector termination.
FO12CB	The fan-out kit for 12 fibers is used to build up 250µm fiber to 900µm tight-buffered coating size for connector termination.
F250BT-C	250 micron fiber build-up tube kit, includes 100 build-up tubes and supplemental installation instructions to build up to 250μm fiber to 900μm.
FOLPC-1.25MM	1.25mm Multimode fiber optic patch cord for OCTT2 (termination tool).
FOLPC-1.25SM	1.25mm Singlemode fiber optic patch cord for OCTT2 (termination tool).
FOLPC-2.5MM	2.5mm Multimode fiber optic patch cord for use with OCTT2 (termination tool).
FOLPC-2.5SM	2.5mm Singlemode fiber optic patch cord for use with OCTT2 (termination tool).
OCTTR1.25SS	Replacement 1.25mm split sleeves for Opticam Termination Tool. 5 sleeves.
OCTTR2.5SS	Replacement 2.5mm split sleeves for Opticam Termination Tool. 5 sleeves.

Optical Fiber Color Coding

TIA 598-C

The Telecommunications Industry Association's TIA-598-C Optical Fiber Cable Color Coding, is an American National Standard, that provides all necessary information for color-coding optical fiber cables in a uniform manner. It defines identification schemes for fibers, buffered fibers, fiber units, and groups of fiber units within outside plant and premises optical fiber cables. This standard allows for fiber units to be identified by means of a printed legend. The legend will contain a corresponding printed numerical position number and/or color for use in identification.

TIA-598-C Fiber Color Code Chart

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

Contact Customer Service for fiber cable minimum order quantities, lead times, and stocked availability.

Notes



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