Fiber Optic Cabling Infrastructure Offering



building a smarter, unified business foundation Connect. Manage. Automate.

# Panduit<sup>®</sup> Opti-Core<sup>®</sup> Fiber Optic Cable

#### 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 intelligent data center 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.

## High Speed Data Transport Solutions

High Speed Data Transport (HSDT) Solutions are a set of complementary copper and optical fiber technologies for mission critical data center applications, spanning storage and compute requirements and leading edge architectures. Based on an understanding of today's vital business and technology challenges and how they impact data centers, Panduit has created best-in-class physical infrastructure solutions for HSDT. Panduit provides the broadest offering of end-to-end HSDT solutions supporting all data center architectures. Designed for high-density/high-speed applications, Panduit HSDT solutions are backed by comprehensive research and development programs to ensure high network performance, systems reliability, energy efficiencies, and seamless integration.

## PanNet<sup>®</sup> 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.

# Panduit<sup>®</sup> Opti-Core<sup>®</sup> Fiber Optic Cable

#### 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 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 and, therefore, conducts electricity. All other aspects of this rating are the same as OFNR.

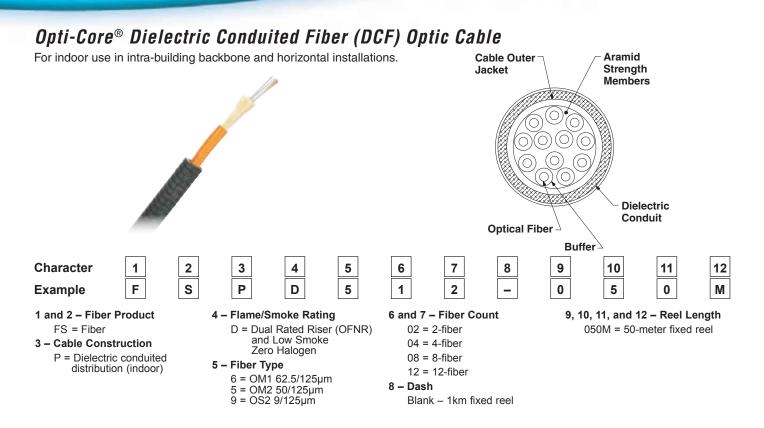
#### Low Smoke Zero Halogen (LSZH)

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 such as hydrochloric acid. The LSZH cables do not contain the Halogen type compounds that form these toxic substances. Smoke emitted from burning LSZH cables do not produce the toxic halogen-based gasses previously mentioned.

#### **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, and perhaps in other OSP cable components. 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.

(North America and Latin America)



#### **Opti-Core® Indoor Interlocking Armored Cable**

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

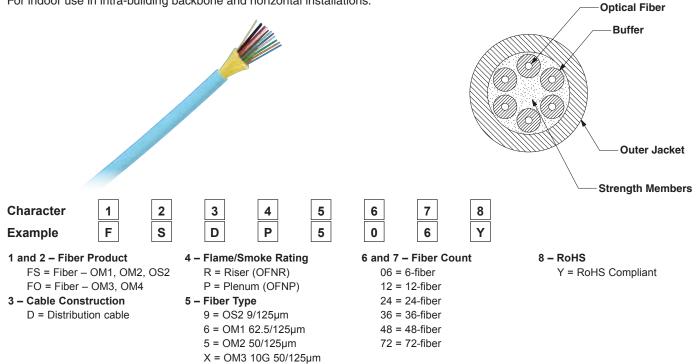


4 Visit www.panduit.com for more information.

(North America and Latin America)

#### **Opti-Core® Indoor Distribution Cable**

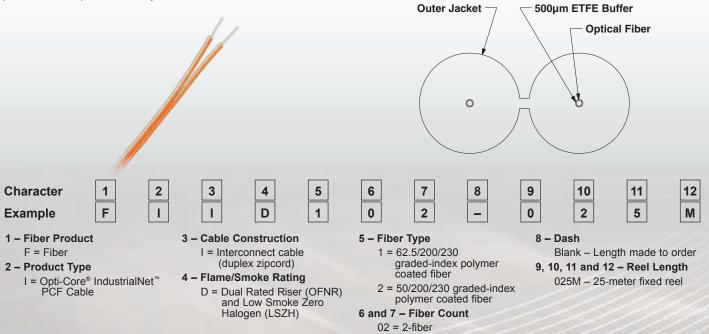
For indoor use in intra-building backbone and horizontal installations.



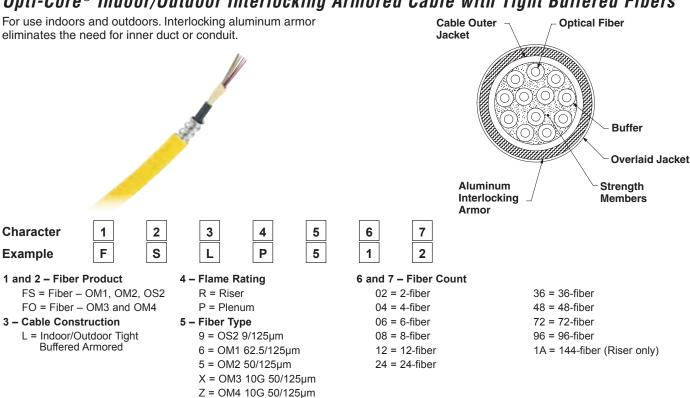
#### Opti-Core® IndustrialNet™ Polymer Coated Fiber (PCF) Fiber Optic Cable – Interconnect

Z = OM4 10G 50/125µm

Used for in-cabinet applications demanding high mechanical performance; quick and easy to terminate.

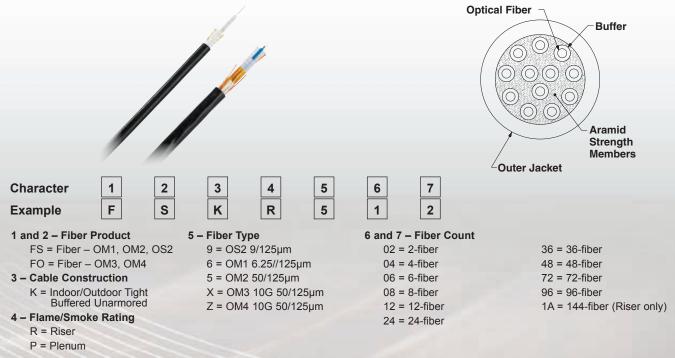


(North America and Latin America)



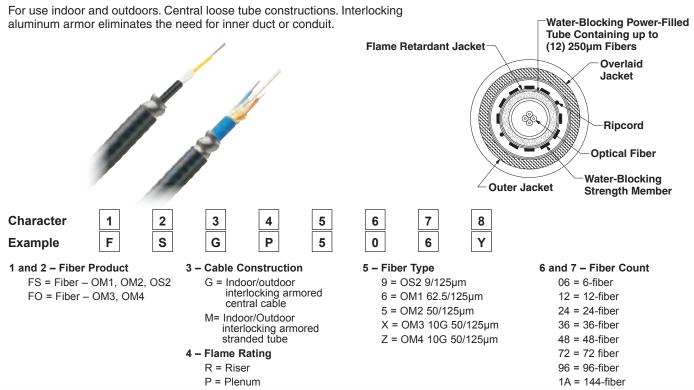
#### **Opti-Core® All-Dielectric Indoor/Outdoor Cable with Tight Buffered Fibers**

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



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

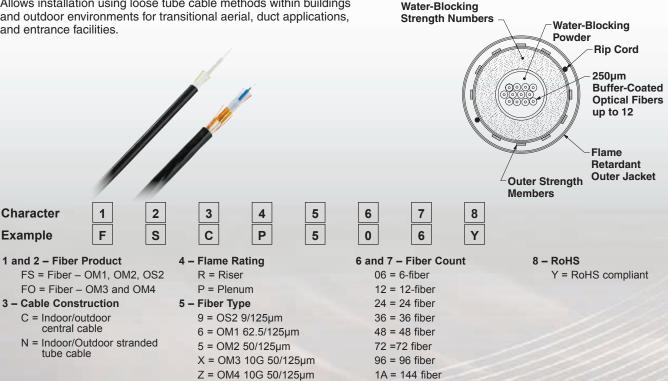
(North America and Latin America)



#### **Opti-Core® Indoor/Outdoor Interlocking Armored Cable**

#### **Opti-Core® Indoor/Outdoor All-Dielectric Cable**

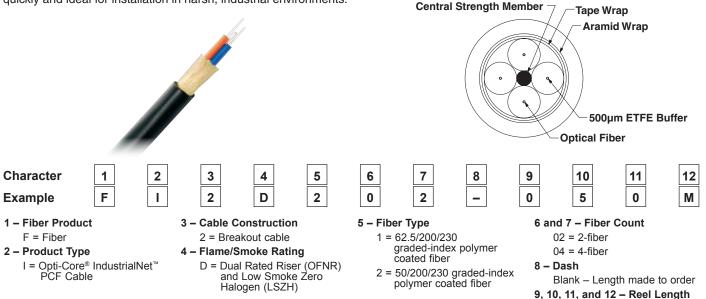
Allows installation using loose tube cable methods within buildings and outdoor environments for transitional aerial, duct applications, and entrance facilities.



(North America and Latin America)

#### Opti-Core® IndustrialNet™ Polymer Coated Fiber (PCF) Fiber Optic Cable – Breakout

Allows installers to install high speed fiber optic permanent links quickly and ideal for installation in harsh, industrial environments.



050M - 50-meter fixed reel

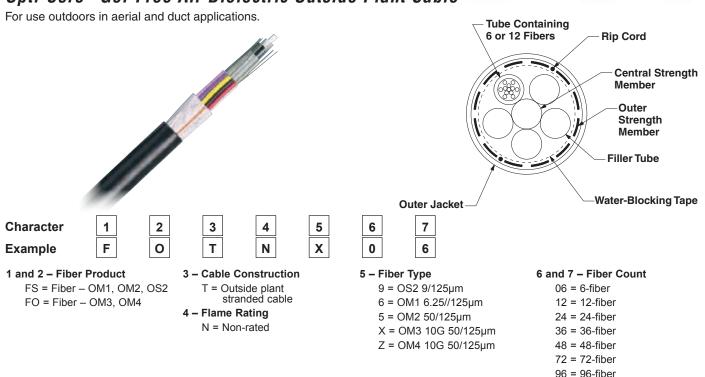
#### **Opti-Core® Gel-Free Armored Outside Plant Cable**

Corrugated steel armor provides superior crush resistance for **Tube Containing** 6 or 12 Fibers extended durability in direct burial applications. **Rip Cord** Central Strenath Member Outer Strenath Member Filler Tube Water-Blocking **Outer Jacket** Tape Corrugated Steel Armor 7 1 2 3 4 5 6 Character F 0 W Ν Х 0 6 Example 1 and 2 - Fiber Product 3 – Cable Construction 5 – Fiber Type 6 and 7 - Fiber Count FS = Fiber - OM1, OM2, OS2 W = Outside plant armored 9 = OS2 9/125µm 06 = 6-fiber stranded cable FO = Fiber - OM3, OM4 6 = OM1 6.25/125µm 12 = 12-fiber 4 - Flame/Smoke Rating 5 = OM2 50/125µm 24 = 24-fiber N = Non-rated X = OM3 10G 50/125µm 36 = 36-fiber Z = OM4 10G 50/125µm 48 = 48-fiber 72 = 72-fiber 96 = 96-fiber 1A = 144-fiber

8 Visit www.panduit.com for more information.

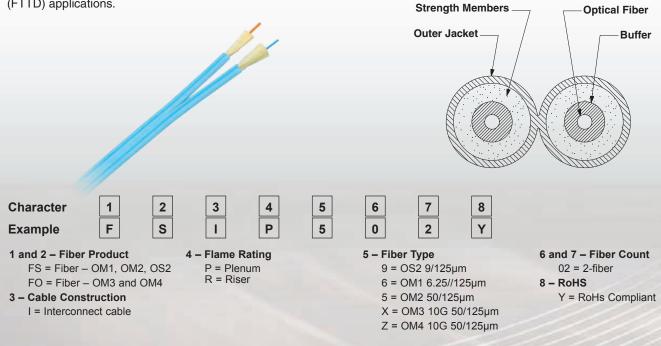
(North America and Latin America)

1A = 144-fiber



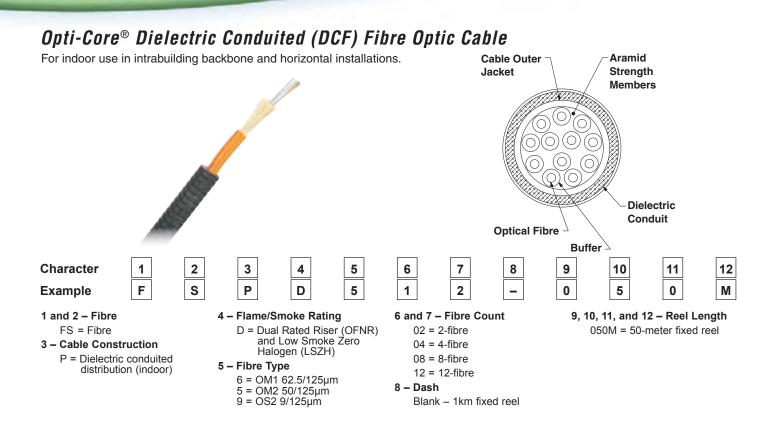
#### **Opti-Core® Interconnect Cable**

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



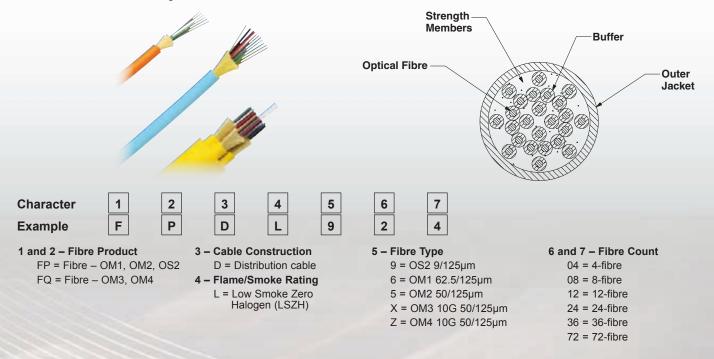
#### **Opti-Core® Gel-Free All-Dielectric Outside Plant Cable**

(Europe, Middle East, and Africa)



## **Opti-Core® Distribution Cable**

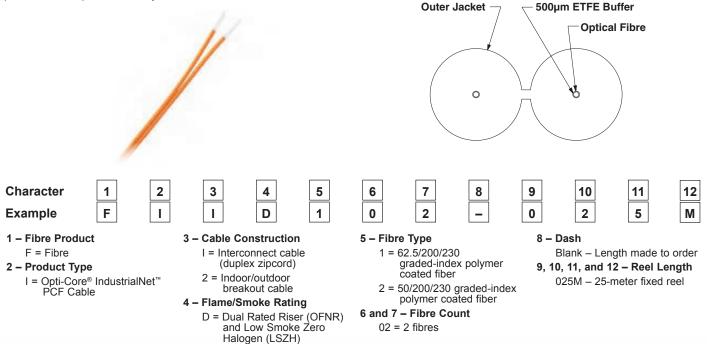
For indoor use in intrabuilding backbone and horizontal installations.



(Europe, Middle East, and Africa)

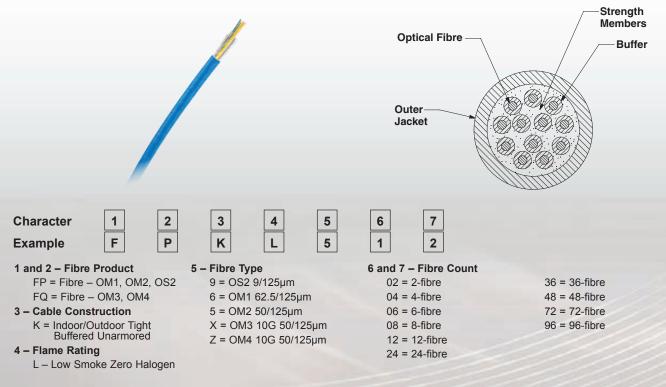
### Opti-Core<sup>®</sup> IndustrialNet<sup>™</sup> Polymer Coated Fiber (PCF) Fibre Optic Cable – Interconnect

Used for in-cabinet applications demanding high mechanical performance; quick and easy to terminate.



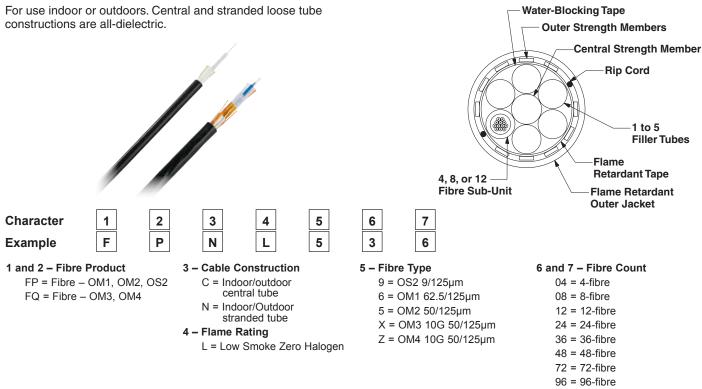
# **Opti-Core®** All-Dielectric Indoor/Outdoor Cable with Tight Buffered Fibres

For indoor and outdoor use.



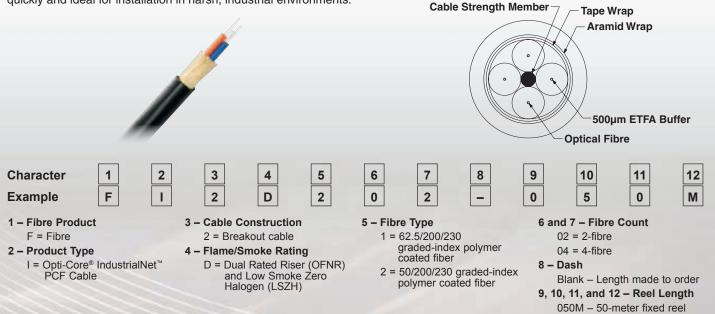
(Europe, Middle East, and Africa)

#### **Opti-Core® Indoor/Outdoor All-Dielectric Cable**



#### Opti-Core® IndustrialNet™ Polymer Coated Fiber (PCF) Fibre Optic Cable – Breakout

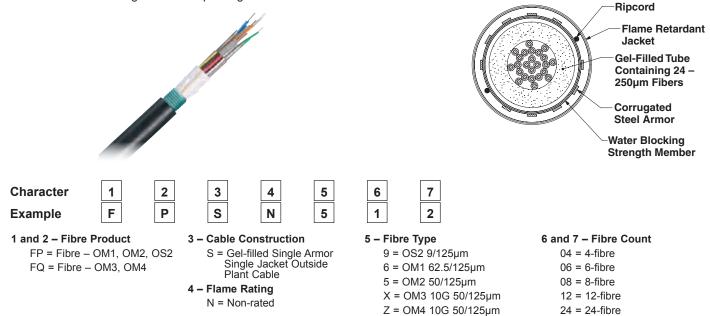
Allows installers to install high speed fibre optic permanent links quickly and ideal for installation in harsh, industrial environments.



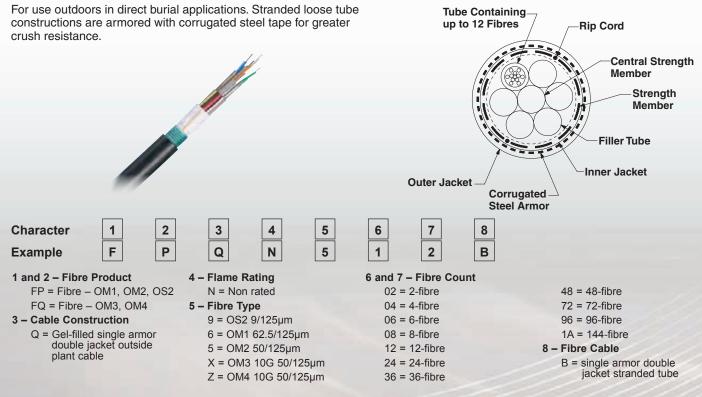
(Europe, Middle East, and Africa)

#### **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.



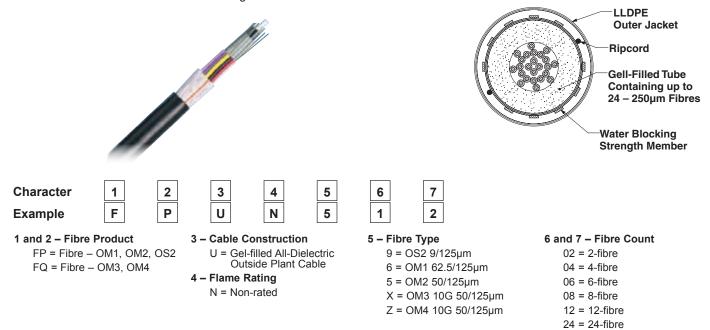
#### **Opti-Core® Gel-Filled Single Armor Double Jacket Outside Plant Cable**



(Europe, Middle East, and Africa)

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

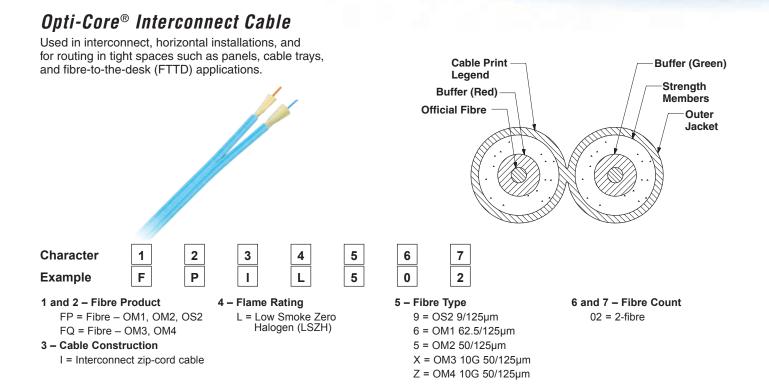
For use outdoors in aerial or duct applications. Central loose tube constructions are all-dielectric. No need to ground or bond.



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

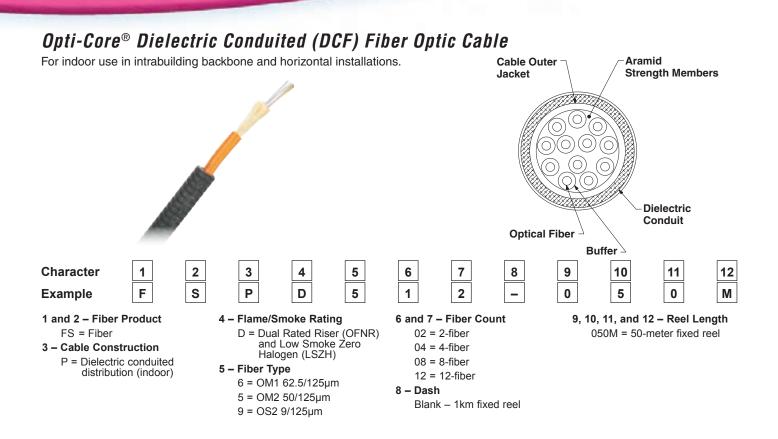
For use outdoors in aerial or duct applications. Stranded loose tube Tube Containing constructions are all-dielectric. No need to ground or bond. up to 12 Fibre **Rip Cord Central Strength** Member Strength Member Filler Tube Water-Blocking Tape **Outer Jacket** Character 1 2 3 4 5 6 7 F Ρ Т Ν 5 1 2 Example 1 and 2 - Fibre Product 4 - Flame Rating 6 and 7 - Fibre Count FP = Fibre - OM1, OM2, OS2 06 = 6-fibre 96 = 96-fibre N = Non-rated 1A = 144-fibre FQ = Fibre - OM3, OM408 = 8-fibre 5 – Fibre Type 9 = OS2 9/125µm 3 – Cable Construction 12 = 12-fibre 6 = OM1 62.5/125µm T = Outside plant, gel-filled, 24 = 24-fibre all-dielectric, unarmored 5 = OM2 50/125µm 36 = 36-fibre stranded tube X = OM3 10G 50/125µm 48 = 48-fibre Z = OM4 10G 50/125µm 72 = 72-fibre

(Europe, Middle East, and Africa)



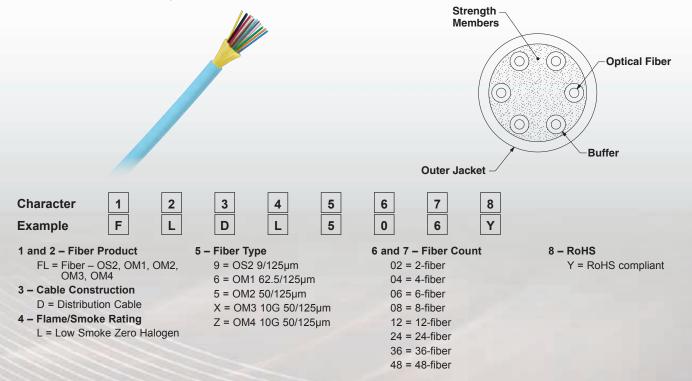
## Fiber Cable for APAC

(Asia Pacific)



#### **Opti-Core**<sup>®</sup> **Distribution Cable**

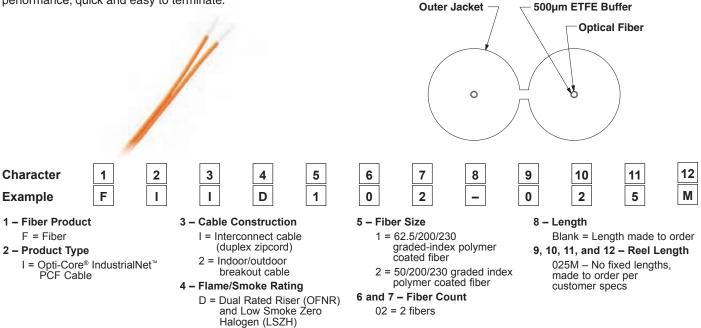
For indoor use in intrabuilding backbone and horizontal installations.



## Fiber Cable for APAC (Asia Pacific)

### Opti-Core® IndustrialNet™ PCF (Polymer Coated Fiber) Fiber Optic Cable – Interconnect

Used for in-cabinet applications demanding high mechanical performance; quick and easy to terminate.



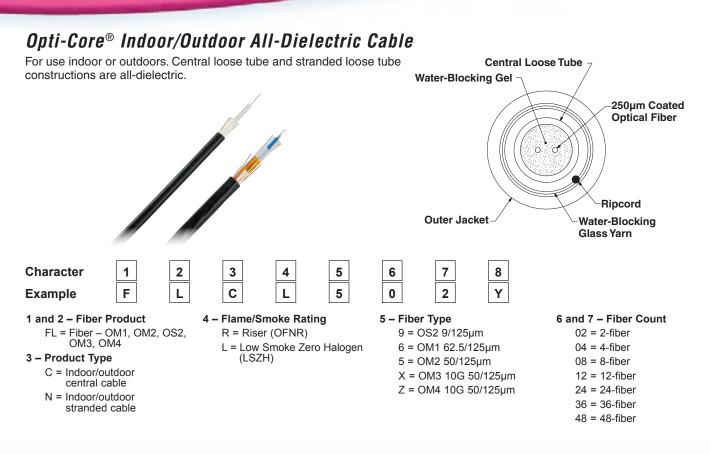
# **Opti-Core® All-Dielectric Indoor/Outdoor Cable with Tight Buffered Fibers**

For use indoor and outdoors.



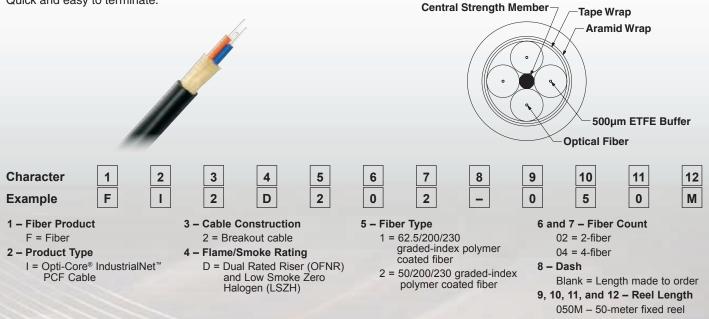
## Fiber Cable for APAC

(Asia Pacific)



#### Opti-Core® IndustrialNet™ Polymer Coated Fiber (PCF) Fiber Optic Cable – Breakout

Used for in-cabinet applications demanding high mechanical performance. Quick and easy to terminate.

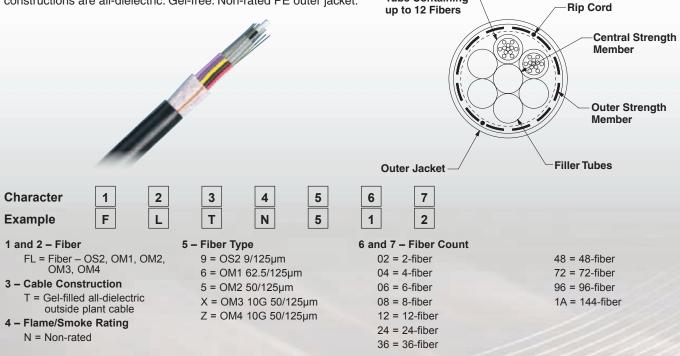


Fiber Cable for APAC (Asia Pacific)

**Opti-Core® Gel-Filled Armored Outside Plant Cable** For use outdoors in direct burial applications. Stranded loose tube Tube Containing constructions are armored with corrugated steel tape for greater up to 12 Fibers **Rip Cord** crush resistance. Gel-filled. Non-rated PE outer jacket. Central Strength Member **Outer Strength** Member Filler Tube **Optical Fiber** Water-Blocking Tape **Corrugated Steel Armor-**7 Character 1 2 3 5 6 4 F 2 Example L W Ν 5 1 1 and 2 - Fiber Product 5 - Fiber Type 6 and 7 - Fiber Count FL = Fiber - OS2, OM1, OM2, 9 = OS2 9/125µm 02 = 2-fiber 48 = 48-fiber OM3, OM4 6 = OM1 62.5/125µm 04 = 4-fiber 72 = 72-fiber 3 – Cable Construction 5 = OM2 50/125µm 06 = 6-fiber 96 = 96-fiber W = Gel-filled armored X = OM3 10G 50/125µm 08 = 8-fiber 1A = 144-fiber outside plant cable Z = OM4 10G 50/125µm 12 = 12-fiber 4 - Flame/Smoke Rating 24 = 24-fiber N = Non-rated 36 = 36-fiber

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

For use outdoors in aerial or duct applications. Stranded constructions are all-dielectric. Gel-free. Non-rated PE outer jacket.



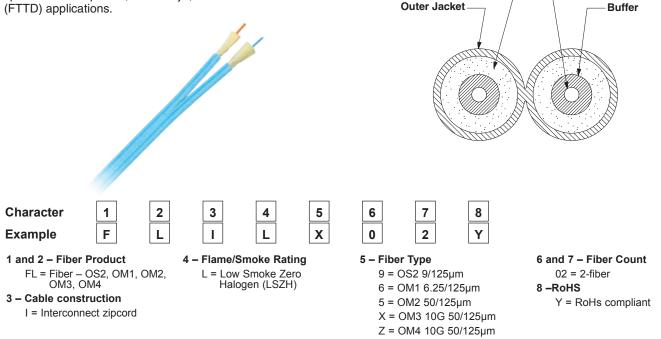
**Tube Containing** 

## Fiber Cable for APAC

(Asia Pacific)

#### **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.



**Strength Members** 

**Optical Fiber** 

#### 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.

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

#### **TIA-598-C Fiber Color Code Chart**

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

## **Real-World Solutions**

With a proven reputation for excellence and innovation, Panduit and our partners work with you to overcome challenges and implement real-world solutions that create a competitive business advantage. Panduit offers the broadest range of solutions, from data centers and intelligent buildings to manufacturing operations, to help you build a **smarter, unified business foundation.** 

#### **Technology Leadership**

Panduit develops innovative physical infrastructure solutions that meet the rapidly changing needs of our clients, from hardware and software to advisory services. This commitment is supported by investment in advanced research, solutions-focused product development, world-class manufacturing, and collaboration with customers at the forefront of technology.



#### Partner Ecosystem

Our best-in-class partner ecosystem offers a comprehensive portfolio of services that span the project lifecycle, from planning and design to delivery, deployment, maintenance, and operation. Panduit business partners – distributors, and certified architects, consultants, engineers, designers, system integrators, and contractors – are qualified to help you achieve your objectives and realize predictable and measurable results.

#### Strategic Alliances

Panduit cultivates long-term strategic alliances with industry leaders, including Cisco Systems, EMC, IBM, and Rockwell Automation, to develop, optimize, and validate solutions for our customers. This investment in people and resources helps solve our customers' greatest business challenges.



#### **Global Business Commitment**

Panduit is committed to delivering a consistently high level of quality and service the world over. With a presence in more than 100 countries, local Panduit sales representatives and technical specialists offer guidance and support that bring value to your business. Our global supply chain, which includes manufacturing, customer service, logistics, and distribution partners, provides prompt response to your inquiries and streamlines delivery to any worldwide destination.

#### Sustainability

With a commitment to environmental sustainability, Panduit develops and implements solutions that protect, replenish, and restore the world in which we live. This commitment is demonstrated by Panduit's LEED Gold certified World Headquarters, leveraging the Unified Physical Infrastructure<sup>SM</sup> approach to enable convergence of critical building systems to drive energy efficiency and ongoing operational improvement.

Transform Your Physical Infrastructure

Call or visit us online, we can show you how.

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#### www.panduit.com

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