PANDUIT®

Opti-Core® Dielectric Conduited Fiber (DCF) Optic Cable

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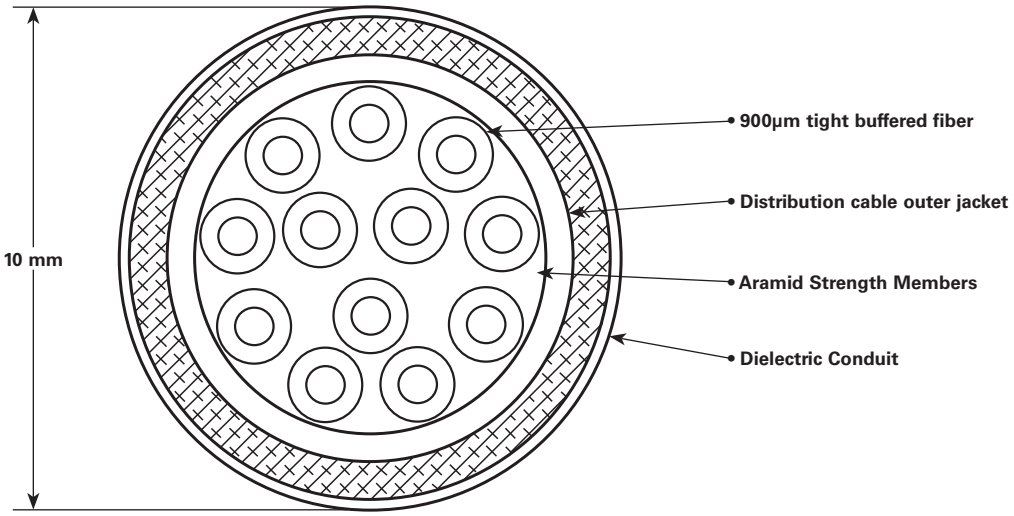
Opti-Core® Dielectric Conduited Fiber (DCF) Optic Cable

Panduit has introduced a Dielectric Conduited Fiber (DCF) Optic Cable into its fiber cable offering available in 9µm (OS1/OS2), 50µm (OM2) and 62.5µm (OM1) core diameters. This cable is constructed of a rugged conduit that is extruded over a standard tight buffered fiber distribution cable. DCF cable has a crush resistance six times (6x) greater than that of an unarmored cable and removes the grounding and bonding requirements that pertain to the standard armored type cable.

What types of DCF are offered?

Panduit offers the DCF cable in two fibers (2F), four fiber (4F), eight fiber (8F) and twelve fiber (12F) count cables that meet both Low Smoke Zero Halogen (LSZH) and Optical Fiber Nonconductive Riser (OFNR) flame ratings, with the conduit being UL and Restriction of Hazardous Substances (ROHS) compliant. The 10mm conduit outer diameter for all fiber counts offered, is smaller than that of the standard armored cabling solution (between 13.10mm to 15.6mm), so a higher density of cables can be deployed into a similar area. Shown below is a profile drawing of the twelve fiber (12F) cable.



12F Dielectric Conduited Fiber (DCF)

What are the specifications of DCF?

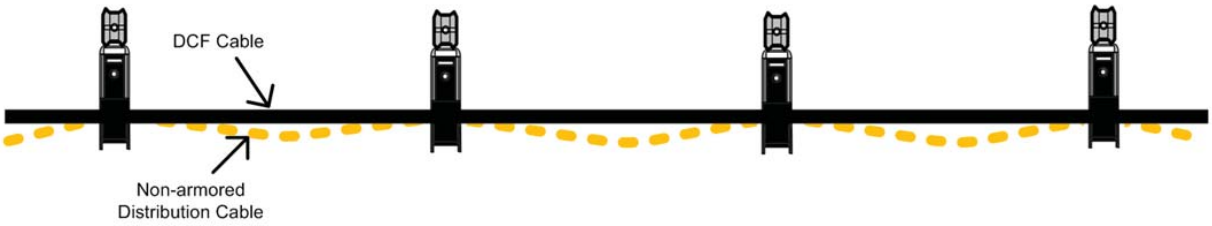
The fiber specifications of the DCF are the same as standardized OM1, OM2, and OS1/OS2 fiber cabling. The differentiator is the all dielectric conduit that houses the fiber cable. The conduit is UL listed riser (UL 2024) with a 10mm diameter and a crush resistance of 5.88 N-m (52.4 in-lbs). The tensile strength during installation is 1320N (298lbf) and it can operate in temperatures ranging from -20˚C to +70˚C.

Where can I use DCF?

DCF can be used in applications that normally would require armored cable or where a conduit or inner duct would need to be placed to protect the fiber cable. DCF will cover these installation scenarios by providing a tight buffered fiber cable within an all-dielectric conduit housing with a crush rating of 5.88 N-m (52.4 in-lbs.). Some of the pathways where DCF will supply benefits are J-Hooks and the ladder rack.

J-Hook

Under normal load conditions, standard non-armored low count distribution cables (shown below in orange) have a tendency to sag between the J-hooks due to the normal weight of the cabling solution. Maximum spacing for J-hook installation per TIA-569 standard is between four feet (4') and five feet (5'). Due to this condition, it is possible to introduce additional fiber attenuation loss into the system. If the cable is heavy enough, it is possible to pinch the fibers located at the bottom of the cable and cause a total loss of signal, resulting in possible downtime. The DCF is more rugged, will not sag as much, and all of the weight is placed upon the conduit, not the fiber.



Ladder Rack

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Some installation areas where the DCF can be cost effective and beneficial are:

- Tight areas where both data and power cabling would need to co-exist
- Riser cabling areas between floors
- Between buildings in a campus environment
- Industrial space between the mini-datacenter and control panels
- Connectivity to remote cameras or security points

How do I terminate DCF?

DCF cable is a 900µm tight buffered fiber cable with either a 50µm or 62.5µm core. It can be terminated following standard field polish, mechanical connector (Opticam) or pigtail fusion splice termination methods.

How do I test DCF?

Testing the DCF link is performed utilizing the standard testing procedures outlined in TIA-568-C (TIA-526-14A and TIA-526-7). These procedures and best practices are explained and demonstrated in Panduit Best Practice PN445-Permanent Link Testing of Multimode and Singlemode Fiber Optic Cabling Systems.

About Panduit

Panduit is a world-class developer and provider of leading-edge solutions that help customers optimize the physical infrastructure through simplification, increased agility and operational efficiency. Panduit's Unified Physical Infrastructure℠ (UPI) based solutions give Enterprises the capabilities to connect, manage and automate communications, computing, power, control and security systems for a smarter, unified business foundation. Panduit provides flexible, end-to-end solutions tailored by application and industry to drive performance, operational and financial advantages. Panduit's global manufacturing, logistics, and e-commerce capabilities along with a global network of distribution partners help customers reduce supply chain risk. Strong technology relationships with industry leading systems vendors and an engaged partner ecosystem of consultants, integrators and contractors together with its global staff and unmatched service and support make Panduit a valuable and trusted partner.

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