Single-mode 6-core fiber optic specifications and models

Article Overview

A single-mode 6-core fiber optic cable typically features 8-10 um cores with 125 um cladding, supporting long-distance, high-speed data transmission, and is available in standard, bend-insensitive, and armored variants.

Core Specifications

A standard 6-core single-mode fiber optic cable has core diameters of approximately 8-10 microns and a cladding diameter of 125 microns, optimized for long-distance transmission with low attenuation, typically around 0.2 dB/km at 1550 nm wavelength . Some cables, like Corning SMF-28(R), have a mode field diameter of 9.2 um and comply with ITU-T G.652.D and G.657.A1 standards, ensuring compatibility with legacy single-mode fibers .

Types and Features

o Bend-Insensitive Fiber: Engineered to resist signal loss during bends, ideal for congested or complex installation routes. Specialized refractive index profiles limit modal dispersion when the cable is bent .
o Polarization-Maintaining Fiber (PMF): Maintains the polarization state of light, suitable for precision sensing, quantum optics, and interferometry applications .
o Armored Fiber: Features corrugated steel tape or metallic armor for protection in harsh environments, such as underground telecom or railway signaling applications. These cables are durable and RDSO-approved for industrial use .

Applications

6-core single-mode fiber cables are widely used in:

o Telecom networks for long-distance data transmission
o FTTH (Fiber to the Home) deployments
o CCTV and security systems
o Campus or industrial networks requiring multiple signal pathways
o Precision measurement and scientific applications when PMF fibers are used .

Installation and Environmental Considerations

o Indoor Distribution: Riser-rated cables (CMR) are suitable for vertical tray applications, elevator shafts, and inter-floor connections .

o Outdoor/Harsh Environments: Armored cables provide mechanical protection and are suitable for underground or exposed installations .
o Temperature Range: Typically operate safely between -20?C to +70?C, with storage tolerances from -40?C to +70?C .

Procurement Considerations

When selecting a 6-core single-mode fiber optic cable, buyers should evaluate:

o Fiber type (standard, bend-insensitive, PMF)
o Core count and cladding specifications
o Jacket material and outdoor rating
o Connector plan and testing requirements
o Compliance with ITU-T standards and local regulations
o Project-specific environmental and mechanical requirements . This ensures the cable meets both performance and installation requirements for long-term reliability in telecom, industrial, or scientific applications.

Save valuable time and money by making use of this 6 Fiber, Single-mode, pre-terminated fiber optic cable assembly from Fibertronics.

Model NO.: GYXTW Application: Communication Type: Single-mode Fiber Material Shape: Round Wire

An all inclusive list of the various optical fiber specification sheets.

This document outlines the specifications for a single-mode optical fiber and cable designed for use around the 1310 nm zero

Draka Single-Mode Fiber (SMF) provides optimum performance in both the 1310 nm and 1550 nm wavelength operation ranges

6 Fiber Single Mode Multitube Fiber Optic Cable Part No. 1-2225406-4

Single mode fiber is optimized to work with fiber optic equipment using light wave lengths of 1310nm

The 6 Core Single Mode Fiber Optical Cable is engineered for high-performance telecommunications and networking applications,

Single-mode 6-core fiber optic specifications and models

For optical fiber specifications and standards, ISO and IEC collaborate on several Joint Technical Committees (JTC). IEC

G.653, 4, 5 and 6 For bespoke network requirements and specific optical characteristics, there is a wide range of fiber specifications

Camplex manufactures fiber optic solutions that improve and extend the performance of broadcast operations. Because the Camplex

Our 6 Core FTTH Single Mode Optical Fiber Cables are designed to meet the specific needs of telecom operators and ISPs. They

Fiber Optic Cable Buying Guide Understand how to choose fiber optic cable by comparing single-mode vs.

This comprehensive guide explores Single-Mode Fiber Optic Cable, covering technical specifications, deployment

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

Introduction Fiber optic cables are the backbone of modern telecommunications infrastructure, enabling high-speed

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