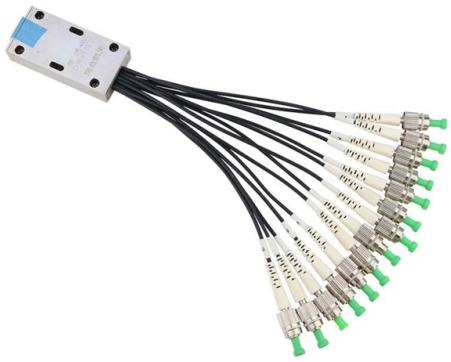
Single-mode fiber optic cable specifications



Article Overview

Single-mode fiber optic cables typically feature a 9 µm core, operate at 1310 nm and 1550 nm wavelengths, and support long-distance, low-attenuation transmission with minimal dispersion.

Core and Cladding

Single-mode fibers have a core diameter of approximately 8–10 µm, surrounded by a 125 µm cladding made of silica glass, often germania-doped for refractive index control . The small core allows light to propagate in a single mode, minimizing modal dispersion and enabling long-distance transmission up to 100 km without signal regeneration . Core concentricity error and cladding non-circularity are tightly controlled to ensure consistent optical performance .

Wavelength and Transmission

Single-mode fibers are designed for operation primarily in the 1310 nm (O-band) and 1550 nm (C-band) regions, with some fibers supporting the L-band (1565–1625 nm) for DWDM systems . They exhibit low attenuation, typically around 0.35 dB/km at 1310 nm and 0.22 dB/km at 1550 nm, and maintain low chromatic dispersion, which is critical for high-speed data transmission .

Standards and Types...

Article Content

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SINGLE MODE OPTICAL FIBER CABLE SPECIFICATION (ARSS)

1.3 The optical fiber which is used in the cable is also in compliance with ITU-T Rec. G.652.D. Acquisition of ISO: 9001 and TISI 2166

Jan 05, 2026

OS1 and OS2 SMF fiber Cables: A Comprehensive

In the realm of optical communication, Single-Mode Fiber (SMF) cables, specifically OS1

Oct 05, 2025

Optical Fiber Product Information Sheets

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

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Fiber Optic Cable Buying Guide

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

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Fiber Optic Cable Types Explained

Learn all about the differences between single mode and multimode cables, as well as the various fiber wavelengths and standard

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Key Specifications of Single-Mode Fiber Optic Cables

Single-mode fiber optic cables are widely used for long-distance, high-bandwidth optical

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Single-Mode Optical Fiber (SMF)

It can be used in all cable constructions, including loose tube, tight buffered, ribbon, and central tube designs. It supports long haul,

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Recommendation ITU-T G.652 (08/2024)

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

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Fiber Optic Cable Types – Multimode and Single Mode

Application Fiber Optic connectors and cables are present in nearly every communications project that we might sell into, be it a DAS

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Fiber Optic Cables: Speed, Standards, and More

There are two major types of fiber optic cables, single-mode and multimode. Single-mode cable is used for long-distance network

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What are the key specifications of... | AIMIFIBER

Single-mode fiber optic cables have a core diameter of about 9μm, operate at wavelengths

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OS1/OS2 Singlemode Optical Fiber

These fibers ensure performance over the entire 1260nm to 1625nm spectrum and are compatible with legacy fiber and the

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CORNING OPTICAL COMMUNICATIONS GENERIC SPECIFICATION

2.0 Fiber Specifications 2.1 Detailed information on the fiber types available for this cable design can be found in the following

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Single Mode Fiber: Types and Applications

Single mode fiber (SMF) is a type of fiber optic cable that only allows one light mode to transmit at a time. Generally,

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Corning Single-mode Fiber Type on Fiber Optic Cable Specification

This updated fiber type reporting process allows AFL to manufacture the cable with the latest generation of Corning SM fiber without

Sep 24, 2025

Understanding Single Mode Fiber Optic Cable: A

The single-mode optical fiber cable is crucial to contemporary telecommunication systems

Feb 23, 2026

Singlemode Fibre | Comms InfoZone

The single-mode fibres in telecommunication cables operate at 1310 or 1550 nm wavelength. OS1 and OS2 are the specifications for

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SINGLE MODE OPTICAL FIBER CABLE

Renka Single Mode Optical Fiber Cables are constructed with Dispersion Unshifted Single Mode Optical Fibers, with a matched

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Fiber Optic Cable Types – Multimode and Single Mode

Fiber Optic Cable Types – Multimode and Single Mode Application Fiber Optic connectors

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Single Mode Fiber Cable Explained

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

Jun 09, 2026

Single-Mode Fiber Cable Guide: Types, Specs & Selection

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

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Single-mode optical fiber

There are a number of special types of single-mode optical fiber which have been chemically or physically

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G.652 : Characteristics of a single-mode optical fibre and cable

Recently posted - Search Recommendations G.652 : Characteristics of a single-mode optical fibre and cable

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SINGLE-MODE OPTICAL FIBER IN LOOSE TUBE AND RIBBON

This ultra-low-loss single-mode fiber with advanced bend capability for long haul terrestrial applications utilized in optical fiber cable

Jul 11, 2026

TECHNICAL SPECIFICATION FOR Single Mode Optical Fiber Cable

3. Performance of Cabled Optical Fiber The performance of cabled single mode optical fiber (Corning ITU-T Rec. G.652D) Item

Feb 12, 2026

28941-CMD_High_Performance_Singlemode_Fiber_Cable

Indoor and Indoor/Outdoor The 3M portfolio of singlemode fiber cables features the latest in fiber technology and provides

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Single Mode vs. Multimode Fiber: Core Differences and Selection Guide

How do you choose between single mode and multimode fiber? Compare their differences in core size, light source,

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The Ultimate Fiber Optic Cable Size Reference Chart

Fiber optic size specifications— core, cladding, coating, buffer, and jacket —directly affect performance, installation,

Contact Us

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