Indoor Multimode Fiber Optic Equipment Parameters



Overview

Multimode Fiber Data Sheet All fibers are designed for use at 850 nm and/or 1300 nm. In addition, the fibers are suitable for use in premises wiring applic.

Key Takeaways

Indoor multimode fiber optic equipment typically uses OM1–OM5 graded-index fibers with core diameters of 50–62. 5 µm, supporting 1G to 400G data rates over distances up to 550 meters depending on fiber type and wavelength. Fiber Types and Core SpecificationsOM1: 62.

5 µm core, 125 µm cladding, orange jacket; LED source; suitable for 1G Ethernet up to 275 m; legacy indoor installations. OM2: 50 µm core, 125 µm cladding, typically used with LED; supports 1G and limited 10G Ethernet up to 550 m. OM3: Laser-optimized 50 µm core; aqua jacket; supports 10G Ethernet up to 300 m, 40/100G up to 100 m; compatible with VCSEL sources at 850 nm.

OM4: Enhanced laser-optimized 50 µm core; supports 10G up to 550 m, 40/100G up to 150 m; ideal for high-performance indoor networks. OM5: Wideband multimode fiber (WB-MMF), 50 µm core; lime green jacket; supports short-wavelength division multiplexing (SWDM) from 850–950 nm; designed for 40/100/400G short-range applications.

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Key Performance Parameters

Modal Bandwidth: Determines maximum data rate over distance; OM3 ~2000 MHz·km at 850 nm, OM4 ~4700 MHz·km, OM5 ~4700 MHz·km at 850 nm and 2470 MHz·km at 953 nm. Wavelength Range: Typically 850 nm and 1300 nm for standard VCSEL and LED sources; OM5 extends to 950 nm for SWDM. Bend Insensitivity: Most modern indoor fibers (OM2–OM5) are bend-optimized to reduce macro-bending losses, improving installation flexibility in tight indoor spaces.

Transmission Speeds: Supports 1G, 10G, 25G, 40G, 100G, and in some cases 400G depending on fiber type and distance. Connector Compatibility: Standard indoor connectors include LC, SC, and MTP/MPO; fibers are compatible with standard multimode transceivers.

Installation Considerations

Indoor Use: Fibers are typically 900 µm buffered for protection, suitable for patch panels, splice trays, and conduit installations. Standards Compliance: ISO/IEC 11801 and IEEE 802. 3 standards define OM1–OM5 performance and interoperability.

Environmental Ratings: Indoor fibers often meet flame-retardant and low-smoke zero-halogen (LSZH) requirements for building safety.

Summary

For indoor multimode fiber optic deployments, OM3 and OM4 remain the most common choices due to cost-effectiveness, high bandwidth, and compatibility with VCSEL-based transceivers. OM5 is emerging for SWDM applications in high-speed data centers. Key parameters to consider include core size, modal bandwidth, supported data rates, wavelength compatibility, bend-insensitivity, and connector type, ensuring reliable short-range connectivity within buildings and enterprise networks.

Article Content

Multimode Fiber Data Sheet

All fibers are designed for use at 850 nm and/or 1300 nm. In addition, the fibers are suitable for use in premises wiring application like LAN''s with video, data and or voice services using LED, VCSEL and

Multimode Fiber: OM1 vs OM2 vs OM3 vs OM4 vs OM5 Comparison

This comprehensive guide elaborates on the definition, classification, core differences, and practical application scenarios of various multimode fiber types, helping you select the most

The Ultimate Guide to Indoor Fiber Cable in 2025

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When selecting an indoor fiber cable, several key characteristics must be considered to ensure optimal network performance and safety. These include

ANSI/TIA-568.3-E: Optical Fiber Cabling and Components Standard

Scope: This Standard specifies performance, transmission, and test and measurement requirements for premises optical fiber cable, connectors, connecting hardware, and patch cords.

Fiber Indoor Cables

Explore CommScope''s Fiber Optic Cables for reliable connectivity. Our high-quality fiber optic cabling solutions ensure seamless data transmission.

Fiber Optic Cable Size Chart: Complete Guide

Fiber optic cable size chart with complete guide to core, cladding, and jacket dimensions, types, and specifications for networking and installation use.

Fiber Testing Standards 2025 Guide for IEC and TIA

Fiber Testing Standards Overview IEC, TIA, and FOA Standards You need to understand the main fiber testing standards before you start any project.

The FOA Reference For Fiber Optics

Designers of fiber optic cable plants and networks depend on these specifications to determine if networks will work for the planned applications. For the purposes of

Fiber Optic Cable Types and Applications: The Engineer''s Guide to ...

Executive Summary: Fiber optic cable selection is not one decision — it is a chain of six interdependent choices: single-mode or multimode, which OM/OS grade, tight-buffer or loose-tube

Fiber Optic Connectors Explained: Design, Types & Applications

Fibers in lasers are found in the medical, industrial equipment, military, and transportation industries. There are many different connectors for fiber optic cables because of these various

What Is Fiber Patch Cord? Singlemode/Multimode,LC SC FC,UPC Vs

With the booming development of 5G, cloud computing, hyperscale data centers and FTTH deployment, fiber optic patch cord has become an indispensable interconnect cable in optical

10 Best Loose Tube Fiber Optic Cables (July 2026)

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Discover the best loose tube fiber optic cables for outdoor runs with our 2026 guide. We tested 10 models for performance, protection and value.

Fiber Optic Cable Components & Materials: Complete

Explore the 5 key fiber optic cable components and materials used in modern networks. Learn how glass, coatings, and strength members affect

Single Mode vs. Multimode Fiber Optic Cables

There are two main types of fiber optic cables: single mode and multimode. Although they can do the same job in some instances, the different construction methods make each of them better

How to choose fiber optic pigtails?

Splicing of pigtails to each fiber in the trunk "breaks out" the multi-fiber cable into its component fibers for connection to the end equipment. High quality fiber pigtails combined with correct fusion splicing

Optical cable model meaning and optical cable specifications

Ⅲ: Main dimension parameters of optical fiber The core diameter and cladding diameter of multimode fiber and single mode fiber are expressed in Arabic numerals (including decimal points)

Fiber Optic Patch Cord, Single Mode & Multimode Patch Cord

Fiber Optic Patch Cord In this category, you will find various duplex and simplex LC/SC/FC/ST/Uniboot LC/MDC fiber optic patchcords, which are used to connect network devices such as switches,

Huijue Drop Cable 2-Core Multi Mode/Single Mode Optical Fiber CE ...

Huijue Drop Cable 2-Core Multi Mode/Single Mode Optical Fiber CE Certified Easy-Strip for FTTH/Indoor Networking Wiring No reviews yet $0.05 Minimum order quantity: 5,000 meters

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