Which type of multimode fiber is best



Overview

Compare OM1, OM2, OM3, OM4, and OM5 multimode fiber specs, distances, bandwidth, and applications. Essential guide for data center fiber selection.

Key Takeaways

OM5 is the most advanced multimode fiber, offering the highest bandwidth and support for multi-wavelength transmission, but OM4 remains the most widely used for cost-effective high-speed networks. Overview of Multimode Fiber TypesOM1: Core diameter 62. 5 µm, LED light source, orange jacket.

Supports 1G Ethernet up to 2 km and 10G Ethernet up to 33 meters. Mostly obsolete in modern networks due to limited bandwidth and poor compatibility with VCSELs. OM2: Core diameter 50 µm, LED light source, orange jacket.

Supports 1G Ethernet up to 550 meters and 10G Ethernet up to 33 meters. Slightly better bandwidth than OM1 but still limited for high-speed applications. OM3: Core diameter 50 µm, laser-optimized for VCSELs, aqua jacket.

Supports 10G Ethernet up to 300 meters, 40G/100G up to 100 meters. Introduced for high-speed data centers and enterprise networks. OM4: Core diameter 50 µm, laser-optimized, aqua jacket.

Higher modal bandwidth (4700 MHz·km) than OM3, supporting 10G Ethernet up to 550 meters, 40G/100G up to 150 meters. Most commonly deployed in modern data centers due to cost-effectiveness and high performance. OM5: Core diameter 50 µm, lime green jacket, designed for short-wavelength division multiplexing (SWDM).

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Supports multiple wavelengths (850–953 nm) for 40G, 100G, and 400G applications. Backward compatible with OM4 but adds value mainly for multi-wavelength SWDM transceivers.

Choosing the Best Fiber

For future-proofing and high-bandwidth applications: OM5 is ideal if you plan to use SWDM technology and need multi-wavelength support for 40G, 100G, or 400G networks. For most current enterprise and data center deployments: OM4 offers a balance of high performance, cost-effectiveness, and compatibility with existing VCSEL-based transceivers. For legacy or budget-constrained projects: OM1 or OM2 may still be used, but they are not recommended for modern high-speed networks due to limited distance and bandwidth.

Recommendation

For modern high-speed networks, OM4 is generally the best choice for most applications due to its wide adoption, high bandwidth, and cost efficiency. OM5 should be considered if you anticipate future upgrades to multi-wavelength SWDM systems. OM1 and OM2 are largely outdated and suitable only for legacy or low-speed installations.

Article Content

OM1 vs OM2 vs OM3 vs OM4 vs OM5 Multimode Fiber Guide

Compare OM1, OM2, OM3, OM4, and OM5 multimode fiber specs, distances, bandwidth, and applications. Essential guide for data center fiber selection.

Multimode Fiber Cable Types: OM1/OM2/OM3/OM4/OM5 Compared

Compare all five multimode fiber grades — OM1 through OM5 — with full specs, bandwidth, distance limits, and real-world data center use cases. Learn which grade fits your

A Guide to Multimode Fiber Types (OM1-OM5) – trueCABLE

We have seen many multimode (MMF) fiber types introduced, and technology has improved. Not only this, but from the beginning with OM1, to the most current OM5, there have been

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

Choosing the right multimode fiber depends on required bandwidth, transmission distance, existing infrastructure, and long-term upgrade plans. For most modern networks, OM4

Single Mode vs. Multimode Fiber Optic Cables

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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

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

Learn about the differences between multimode fiber types OM1, OM2, OM3, OM4, and OM5. Discover which one is right for your network with expert insights from Omnitron Systems.

Multi-mode optical fiber

Multi-mode fiber has a fairly large core diameter that enables multiple light modes to be propagated and limits the maximum length of a transmission link because of modal dispersion. The standard G.651.1

Multimode Fiber Optic Cable Types: OM1 vs OM2 vs OM3 vs OM4 vs

The primary types of multimode fiber, OM1, OM2, OM3, OM4 and OM5, differ in terms of standardization and performance. Differences in construction and functionality mean each fiber type

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

In summary, single mode fiber is better suited for long-distance, high-bandwidth, and future-oriented networks, while multimode fiber is often the better choice for short-reach and budget

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables, as well as the various fiber wavelengths and standard core sizes used

Single Mode vs Multimode Fiber, What is The Difference?

In this in-depth single mode vs. Multimode Fiber comparison, I will compare those two fiber optic cables, helping you learn the difference and determine which best suits your fiber cabling

OM2, OM3, OM4, OM5: Which Multimode Fiber Optic Cable is the

The difference between multimode fiber optic cables is important when choosing the right cabling for your network. Therefore, we take a detailed look at the four multimode types and provide

Fiber Optic Cable Types: Comprehensive Guide

Explore the different types of fiber optic cables and understand which type suits your specific needs for speed, distance, and durability.

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Fiber Optic Connector Types: A Beginners Guide

The fiber connector types, sometimes referred to as terminations, link fiber optic cables together through terminals, switches, adapters, and patch

Choosing the Right Fiber Optic Cable: Singlemode vs

Although single-mode fiber (SM) and multimode fiber (MM) cable types are widely used in various applications, their differences can still be

Everything you need to know about fiber optic termination

With two multimode fibers in usage today and two others which have been used occasionally in the past and several types of singlemode fiber in use, it is

Bend-Insensitive Fiber: Types, Benefits & Applications

This guide explores the science behind bend-insensitive fiber, its key types (single-mode and multimode), performance advantages, and real-world applications. Whether you''re designing a

What Is Fiber Optics? Definition from SearchNetworking

Types of fiber optic cables Multimode fiber and single-mode fiber are the two primary types of fiber optic cable. Single-mode fiber Single-mode fiber is used for longer distances due to the

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