

How to Choose Multimode Fiber



Article Overview

Selecting the right multimode fiber (MMF) depends on data rate, distance, cost, and future scalability, with OM3, OM4, and OM5 being the preferred choices for modern enterprise and data center networks.

Understanding Multimode Fiber

Multimode fiber (MMF) has a larger core diameter (50–62.5 μm) than single-mode fiber, allowing multiple light modes to propagate simultaneously. This makes MMF ideal for short-range, high-bandwidth applications such as LANs, data centers, and campus networks, typically up to 550 meters. MMF uses lower-cost transceivers like LEDs or VCSELs operating at 850 nm and 1300 nm, simplifying installation and reducing overall network costs .

MMF Types and Characteristics

Fiber Type	Core Diameter	Max Data Rate	Max Distance (Typical)	Jacket Color	Key Features
OM1	62.5 μm	1 GbE	275 m	Orange	Legacy fiber, LED source, not suitable for 10G+
OM2	50 μm	1–10 GbE	550 m	Orange	Early 50 μm fiber, limited 10G support, compatible with OM3/OM4
OM3	50 μm	10–40 GbE	300 m (10G), 100 m (40G)	Aqua	Laser-optimized for VCSELs, cost-effective for modern networks
OM4	50 μm	10–100 GbE	550 m (10G), 150 m (40/100G)	Aqua	Extended distance and bandwidth over OM3, future-proof for high-speed links
OM5	50 μm	10–400 GbE	150 m+ (SWDM)	Lime Green	Wideband MMF, supports short-wavelength division multiplexing (SWDM) for multi-wavelength 40/100/400G applications

Selection Criteria...

Article Content

The Ultimate Guide to Multimode Fiber Optic Cable

Multimode fiber optic cables are essential in modern data communication systems since

Single Mode vs Multimode Fiber: What's the difference?

Single mode and multimode fiber differ mainly in core size, distance and use case: single

Multimode vs Single Mode Fiber

Learn the differences between multimode (OM1-OM5) and single mode (OS1-OS2) fiber optic cables—speed,

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

Identified by ISO 11801 standard, multimode fiber optic cables can be classified into OM1 fiber, OM2 fiber, OM3 fiber,

Choosing the Right Fiber Optic Cable: Singlemode vs

Although single-mode fiber (SM) and multimode fiber (MM) cable types are widely used in

Single Mode vs Multimode Fiber Cable

Multi-Mode Optical Fiber Cable : Multimode fiber cables are the type of fiber cables that transmit data via their core of

Choosing the Right Multimode Fiber for Your Network in

Learn to select the best multimode fiber for your 2024 network needs. Explore its benefits,

Single Mode vs Multimode Fiber: A Complete Comparison Guide

Choosing the right fiber type and compatible optical transceivers is critical for network performance and scalability.

How to Choose the Right Fiber Type: Singlemode vs

Practical guide for system integrators and IT teams to choose between OS2 singlemode and

OM2, OM3, OM4 vs. OM5 | How to Choose the Right Fiber Optic

Multimode fiber comes in different types, and the most common are OM2, OM3, OM4, and OM5. All four use a 50

Single Mode and Multimode Fiber: What's the Difference?

Learn more about Single Mode and Multimode Optical Fibers - their design, key differences, and intended fiber optic systems

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

With a larger fiber core and good alignment tolerances, multimode fiber and components are less expensive and often

Single-Mode vs Multimode Fiber: Differences, Uses, and How to

Single-mode and multimode fiber differ in distance, cost, and performance. Learn their key advantages, applications,

Single Mode vs Multimode Fiber: What's the Difference?

Discover the key differences between Single Mode vs Multimode Fiber. Learn how to

Fiber Optic Cable Buying Guide

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

Single Mode vs. Multimode Fiber Optic Cables: How to choose?

Explore the key differences between single mode and multimode fiber optic cables, including construction, bandwidth,

Single Mode vs Multimode Fiber: Understanding the

Single mode fiber is best for long distances and high bandwidth needs, while multimode

Single Mode vs. Multimode Fiber Optic Cables

To help you decide on the type of cable you need for your project, here's everything you need to know about single

Single Mode vs Multimode Fiber Cable: Difference & How to Choose

Learn the complete differences between single mode and multimode fiber optic cables, including distance, core size, wavelength,

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

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

How to Choose Between Multimode and Singlemode Fiber for Your

A practical buying guide for choosing multimode vs singlemode fiber. Distance, cost, equipment, future-proofing, and a decision

Singlemode vs Multimode Fiber Optic Cable

We breakdown the differences between single mode and multimode fiber optic cable, covering aspects like physical

Single Mode vs Multimode Fiber Explained | TRG Datacenters

Understand the difference between single mode and multimode fiber, including performance, cost, and use cases, to choose the right

Single-Mode vs Multimode Fiber Optic Cables: A Comprehensive

Compare Single Mode vs Multimode fiber optic cables. Expert analysis on distance, bandwidth, 800G compatibility, and TCO for

Understanding the Differences Between OM4 and OM5 Multimode Fiber

Learn the basics of multimode fiber and the evolution of the different fiber standards as well as the differences

Single Mode vs Multimode Fiber: What's the Difference?

If your project requires short-range, cost-effective networking, choose multimode fiber. Some companies deploy single mode and

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