Multimode fiber grades



Overview

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

Key Takeaways

Multimode fiber grades, including OM1, OM2, OM3, OM4, and OM5, differ in core size, bandwidth, and transmission capabilities, making them suitable for various applications in networking.

Overview of Multimode Fiber Grades

Multimode fiber (MMF) is designed for short-distance communication and is commonly used in local area networks (LANs) and data centers. The different grades of multimode fiber are defined by their core sizes and performance characteristics, as follows: OM1: Core Size: 62. 5 µmBandwidth: 200 MHz·kmMaximum Distance: 33 meters for 10 Gigabit Ethernet (10GbE), 300 meters for 1 Gigabit Ethernet (1GbE).

Jacket Color: OrangeLight Source: LEDUsage: Primarily used in legacy systems and 100 Megabit Ethernet applications. It is being phased out due to limited performance. OM2: Core Size: 50 µmBandwidth: 500 MHz·kmMaximum Distance: 82 meters for 10GbE, 600 meters for 1GbE.

Jacket Color: Orange (sometimes aqua)Light Source: LEDUsage: Suitable for small to medium business environments, but also being phased out as higher-performance fibers become more common. OM3: Core Size: 50 µmBandwidth: 2000 MHz·kmMaximum Distance: 300 meters for 10GbE, 100 meters for 40/100 Gigabit Ethernet (40/100GbE). Jacket Color: AquaLight Source: Laser-optimized (VCSEL)Usage: Commonly used for high-speed data center applications.

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OM4: Core Size: 50 µmBandwidth: 4700 MHz·kmMaximum Distance: 550 meters for 10GbE, 150 meters for 40/100GbE. Jacket Color: AquaLight Source: Laser-optimized (VCSEL)Usage: Developed for higher bandwidth and longer distances, suitable for modern data center applications. OM5: Core Size: 50 µmBandwidth: 5000 MHz·kmMaximum Distance: Similar to OM4 but optimized for short wave division multiplexing (SWDM) technology.

Jacket Color: Lime greenLight Source: Laser-optimizedUsage: Designed for future high-speed applications, supporting multiple wavelengths for increased data transmission.

Conclusion

Each grade of multimode fiber has specific characteristics that make it suitable for different applications, particularly in networking environments. As technology advances, newer grades like OM5 are being developed to meet the increasing demands for higher bandwidth and longer transmission distances. Understanding these grades helps in selecting the right fiber for specific networking needs.

Article Content

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

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.

Multi-mode optical fiber

In addition, multi-mode fibers are described using a system of classification determined by the ISO 11801 standard — OM1, OM2, and OM3 — which is based on the modal bandwidth of the multi-mode fiber.

What Is Multimode Fiber? OM Grades, Distance, and Cost

Multimode fiber is classified into five standard grades, labeled OM1 through OM5. The grades reflect increasing bandwidth capacity, which directly determines how fast and how far data

Multimode Fiber Data Sheet

This fiber is a laser-optimized, bend-insensitive, graded-index multimode fiber designed for transmission speeds of 10 Gb/s and beyond. OM5 is backwards compatible with OM4 and supports single

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Multimode Optical Fiber Selection & Specification

This Applications Engineering Note (AE Note) discusses the criteria for properly selecting the optimal multimode fiber (MMF) for enterprise applications. This AE Note classifies multimode fiber according

Multimode Fibers – optical glass fiber, large-core fibers,

We discuss various aspects of multimode fibers: their main parameters, launching light into multimode fibers, output beam profiles, graded-index designs and others.

Multimode Optical Fiber

Thorlabs'' multimode optical fibers include hard-clad silica fibers, small- and large-core fibers, and fiber with very high or low numerical apertures. Additional multimode optical fiber offerings include graded

Guide To Multimode Fiber (62.5um & 50um, OM1 to OM5)

As mentioned earlier, there are 5 commonly used multimode fiber types used in most industries worldwide. The most common optical multimode fiber types are

Fiber Patch Cable Selection Guide 2026: How to Choose the Right

Executive Summary: Choosing the right fiber patch cable is one of the most consequential decisions in network infrastructure planning. The wrong choice — whether it''s an

The Ultimate Guide to Fiber Optic Cables – Types, Standards, and ...

Discover how to choose the right fiber optic cables for your network. Learn about fiber types, cable constructions, connectors, and industry standards — plus expert recommendations from

Guide To Multimode Fiber (62.5um & 50um, OM1 to OM5)

Multimode (OM1, OM2, OM3, OM4 & OM5) Patch Cables manufactured by Megladon are built to reference grade performance and geometrical standards.

How Far Can Multimode Fiber Optic Cables Transmit?

Fiber optic technology is the backbone of modern high-speed communication networks, enabling the transmission of data over vast distances

Multi-mode optical fiber

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 campus. Multi-mode links can be used for data rates up to 800 Gbit/s.

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2025 Single-Mode vs Multimode Fiber: Distance, Cost & Choice

Choosing between single-mode (SMF/OS2) and multimode (MMF/OM3–OM5) fiber is more than a cabling preference, it determines your reachable distance, optics cost, upgrade path, and even day

MPO/MTP-24 Female to Female OM5 Fiber Patch Cable | Type B

Our MPO/MTP-24 architecture packs 24 individual fibers into a single, compact interface, consolidating cable footprints significantly compared to separate duplex lines. Combined with OM5 Wideband

What is the Diffrence Bitween Fiber optic Cable Single Mode And ...

What is the Diffrence Bitween Fiber optic Cable Single Mode And Multimode Share your Suggestions □□□□ #atifvloginfo #engineering #FTTH #fiberoptic

Singlemode vs Multimode Fiber Pigtails: How to Choose

Multimode fiber pigtails, affected by modal dispersion, are typically limited to hundreds of meters to a few kilometers, depending on fiber grade

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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African project coordination: Century City, Cape Town, Western Cape, South Africa

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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