

Multimode Fiber Diameter Comparison Table



AI Overview

Multimode fiber typically has core diameters of 50 μm or 62.5 μm with a standardized cladding diameter of 125 μm . Core and Cladding Sizes Multimode fiber (MMF) is designed with a larger core diameter than single-mode fiber to allow multiple light modes to propagate simultaneously. The most common core diameters are:

- OM1: 62.5 μm core, 125 μm cladding, typically with an orange jacket, used with LED light sources for short-distance applications (up to 33 meters at 10 Gbps).
- OM2: 50 μm core, 125 μm cladding, also with an orange jacket, supports up to 82 meters at 10 Gbps, commonly used for 1 Gbps Ethernet.
- OM3: 50 μm core, 125 μm cladding, aqua jacket, laser-optimized for 850 nm VCSELs, supports 10 Gbps up to 300 meters.
- OM4: 50 μm core, 125 μm cladding, aqua jacket, enhanced modal bandwidth for longer distances, supports 10 Gbps up to 550 meters.
- OM5: 50 μm core, 125 μm cladding, lime green jacket, designed for shortwave wavelength division multiplexing (SWDM) using multiple wavelengths (850–953 nm), supports high-speed data rates like 40G and 100G over short distances.

The cladding diameter is standardized at 125 μm across all multimode fiber types to ensure compatibility with connectors and splicing.

Comparison with Single-Mode Fiber Single-mode fiber has a much smaller core diameter of 8–10 μm with the same 125 μm cladding, allowing only one mode of light to propagate. This enables longer-distance transmission with lower attenuation but requires more expensive laser sources.

Summary

- Core diameters: 50 μm (OM2–OM5) or 62.5 μm (OM1)
- Cladding diameter: 125 μm (standard for all MMF)
- Jacket colors: Orange (OM1/OM2), Aqua (OM3/OM4), Lime Green (OM5)
- Applications: Short-distance, high-speed data transmission in buildings, data centers, and campus networks.

These standardized diameters ensure interoperability, cost-effectiveness, and reliab...

Article Content

Pre-Terminated Fiber Cable Assemblies: Complete Buyer's Guide

Pre-terminated fiber cable assemblies save 30-50% on install costs vs field splicing. Learn types, connectors, pricing, and how to order custom fiber optic cable assemblies from BWNFiber.

Fiber Optic Cable Buying Guide | Eaton

Fiber Optic Cable Buying Guide Choosing single-mode or multimode fiber for high-performance data networking and telecommunications Fast data transmission, thinner, lighter cables and long signal

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

For a clearer comparison, the following sections examine the main differences between single mode and multimode fiber in terms of jacket color, core diameter, light source and wavelength,

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

Reference Guide to Fiber Optic Testing

Step-index (SI) multimode fiber guides light rays through total reflection on the boundary between the core and cladding. The refractive index is uniform in the core. Step-index multimode fiber has a

7 Best Fiber Optic LAN Cable | Stop Losing Signal at Distance

After sifting through armored sheathing data, insertion loss specs, and hundreds of verified buyer accounts, this guide narrows down the best fiber optic lan cable for runs that demand reliability,

Fiber Optic Pigtail: Types, Splicing Guide, Specs & Price

Fiber optic pigtail guide : SC/APC & LC/UPC connectors, 0.9/2.0/3.0 mm buffers, single-mode and multimode types, fusion splicing steps, price ranges, specifications, and how to

5 Best Fiber Optic Cable | Tone Loss Down

How To Choose The Best Fiber Optic Cable Fiber optic cabling decisions come down to three locked variables: the transceiver's wavelength, the distance of the

Multimode Fiber Optic Cable Types: OM1 vs OM2 vs

Multimode fiber optic cable types OM1, OM2, OM3, OM4 and OM5 compared for core size, bandwidth, speed, distance & applications in modern

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In this guide, I break down the most reliable fiber optic cable for internet installations, covering armored outdoor runs, flexible indoor patch cables, and the exact connector types your ISP's ONT expects to

OM1 vs OM2 vs OM3 vs OM4 vs OM5: Understanding

With several types available—OM1, OM2, OM3, OM4, and OM5—each offering distinct performance characteristics, selecting the right fiber

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

OM1-OM5 multimode fiber standards, detailing their core sizes, jacket colors, transmission capabilities and more.

Fiber Optic Sensor Cables for Advanced Monitoring | AP Sensing

AP Sensing's fiber optic sensor cables enable real-time, precise monitoring of temperature, strain & acoustics in harsh environments with minimal maintenance.

Optical Fiber Types

Nomenclature For Optical Fibers And Cross Reference To International Standards
Singlemode Fiber Types There are several international standards designations to describe various types of

Fast Ethernet vs Gigabit Ethernet: What is the difference

1000Base-SX: It uses multimode fiber with a core diameter of 50um and 62.5um and a working wavelength of 850nm. The transmission distance is 220m and 550m, respectively. 1000Base

5 Best LC Fiber Cable | Fiber That Actually Delivers 10G Speeds

Unlike copper Ethernet, fiber has no electrical interference and supports longer reach, but the cable's internal construction — core diameter, jacket material, and ferrule polish — determines whether your

5 Best Fiber Optic Cable | Skip The Static Cables

How To Choose The Best Fiber Optic Cable A fiber optic cable is not a one-size-fits-all accessory. The optical core diameter, connector type, and jacket rating must match both your hardware ports and

The Fiber Optic Association

Other groups may have fiber optic standards also: ANSI is the governing bodies for standards in the US, NIST provides primary standards, IEEE has standards for networks like Ethernet, IWCS has

The Ultimate Fiber Optic Cable Size Reference Chart

Use visual and tabular charts to quickly compare fiber specs and simplify cable selection. Following industry standards ensures interoperability, safety, and long-term network performance.

5 Best LC Fiber Optic Patch Cord | Stop Replacing Broken Pigtails

The LC fiber optic patch cord that fits your link depends on whether you need single-mode reach, multimode density, or a multi-pack for a structured cabling refresh.

Recent Progress in Development of Hollow-Core Fibers for ...

For comparison, the cladding diameter is the only diameter requiring precise control while drawing all solid-core fibers, in addition to the spin pattern in some single-mode fibers for PMD

Fiber Optic Cable Jacket Guide: OFNP vs OFNR, LSZH, PVC, PE,

Compare fiber optic cable jacket materials and fire ratings: OFNP vs OFNR, LSZH, PVC, PE, TPU. Selection guide for data center, FTTH, outdoor, and industrial use. Request samples.

Best Direct Burial Fiber Optic Cable Solutions for Harsh Environments

Check Price on Amazon This armored multimode fiber patch cable is built for outdoor deployments, featuring a thick industrial TPU jacket that withstands UV exposure, moisture, and

Fiber Optic Couplers | Fiber Optical ST Couplers for Sale | RS

Fiber mode: You must match the coupler to your cable type. Singlemode fiber couplers are utilized for long-distance transmissions and high-bandwidth applications, whereas multimode fiber couplers are

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.

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 fiber for your network.

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

This guide explores the differences between these fiber types, providing an authoritative comparison that empowers IT professionals, network engineers, and procurement teams to make

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

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