

How to choose between OM3 and OM4 multimode fiber optic cables



AI Overview

OM3 and OM4 multimode fibers share the same core size and compatibility, but OM4 offers higher bandwidth and longer transmission distances, making it ideal for future-proofing high-speed networks.

Key Technical Differences

Core Size and Type: Both OM3 and OM4 have a 50/125 μm core/cladding structure and are optimized for VCSEL laser sources at 850 nm, making them suitable for 10G, 40G, and 100G Ethernet networks.

Bandwidth: OM3 has an effective modal bandwidth (EMB) of approximately 2000 MHz·km, while OM4 doubles this to around 4700 MHz·km, allowing higher data throughput over longer distances.

Maximum Transmission Distance:

- 10G Ethernet: OM3 supports up to 300 meters; OM4 extends to 550 meters.
- 40G/100G Ethernet: OM3 supports up to 100 meters; OM4 can reach 150 meters.

Compatibility: OM4 is fully backward-compatible with OM3, so it can be used in existing OM3 networks without issues.

Practical Considerations

Current Network Requirements: If your network primarily runs 1G or 10G Ethernet and fiber runs are under 300 meters, OM3 is generally sufficient and cost-effective.

Future-Proofing: For networks that may upgrade to 40G or 100G, or where longer link distances are needed, OM4 provides better scalability and performance longevity.

Budget: OM4 is slightly more expensive than OM3, so the decision often balances immediate cost versus long-term benefits.

Installation Environment: Both fibers are suitable for data centers, enterprise backbones, and campus networks. OM4 is preferred in high-density or high-speed environments where performance margins are critical.

Decision Guidelines

Short-term, cost-sensitive deployment: Choose OM3 if your network is limited to 10G Ethernet and fiber runs are under 300 meters.

High-speed or future-ready deployment: Choose OM4 for longer distances, higher bandwidth, or anticipated up...

Article Content

OM3 vs OM4 Fiber Optic Cables: Key Differences Explained

OM3 vs OM4 fiber optic cables explained. Compare performance, distances, and key differences for your network setup.

Choosing the Right Fiber Optic Cable: Singlemode vs

Confused between SM and MM fiber optic cables? This article clarifies the differences and helps you choose the right one for your data

1000BASE-SX vs 1000BASE-LX, EX, ZX & BX SFP Guide

If the installed cable is OM3 or OM4 multimode fiber and the route stays within the supported short-reach range, 1000BASE-SX is usually the most direct choice. LX, EX or ZX would add

Single-Mode vs Multimode Fiber: OS2, OM3, OM4 Explained for

Fiber optic cabling is the backbone of modern data infrastructure, but choosing between single-mode and multimode comes down to distance, bandwidth, and budget. This guide breaks

OM3 vs OM4 Multimode Fiber: Which to Choose

OM3 and OM4 multimode fibers are the most widely used multimode fiber types today. The following post will discuss the differences between OM3 and OM4 fiber from the aspect of

The 2026 Fiber Optic Pigtail Guide: SN/CS/MDC, Bend

The 2026 Fiber Optic Pigtail Guide: SN/CS/MDC, Bend-Insensitive OS2, and AI-Ready Networks How to choose, deploy, and scale fiber optic

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

This comprehensive guide explores Multimode Fiber Cable Types, covering technical specifications, deployment scenarios, and best practices to help you optimize your fiber infrastructure

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

Quick overview: A pre-terminated fiber cable assembly is a factory-made fiber optic cable with connectors installed and tested before shipment. It is ready to deploy without field splicing.

Fiber Optic Cable: Single & Multimode Cables By The

We offer fiber optic cable by the foot in a variety of fiber types and strand counts to meet your network installation needs. Whether you're building a new system or

Fiber Optic Cable Types: Single-Mode, Multimode, and

Discover fiber optic cable types, including single-mode (OS1, OS2) and multimode (OM1, OM2, OM3, OM4, OM5), indoor/outdoor variants, and how

Simplex vs Duplex Fiber Optic Cables: Key Differences & Guide

Confused about simplex vs duplex fiber optic cables? Learn key differences, BiDi & WDM technology, FTTH vs data center use cases, and how to choose the right fiber.

Fiber Optic Cable OM3 vs. OM4: Speed, Distance, and Differences

Compare OM3 vs OM4 multimode fiber: modal bandwidth, real-world distances for 10G/40G/100G, cost tradeoffs, compatibility tips, and engineer feedback from Reddit & field tests.

How Far Can a Fiber Optic Cable Be Run? Distance Guide

Fiber optic cables can run up to 80 km without a repeater. Learn exact limits by cable type, application, and how to extend your network.

400G Optical Modules Explained: SR4 Vs. DR4 Vs.

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center

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

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: A Complete Guide

The plethora of fiber optic cable types can seem overwhelming, but choosing the right cable for the job is important. Read on to learn what fiber optic

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

Multimode Fiber Types: OM1 vs OM2 vs OM3 vs OM4

Identified by ISO 11801 standard, multimode fiber optic cables can be classified into OM1 fiber, OM2 fiber, OM3 fiber, OM4 fiber and newly released

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,

5 Best Fiber Optic Cable | Under 10ms Latency Data Lines

How To Choose The Best Fiber Optic Cable Not all fiber cables are interchangeable. The wrong mode or connector type will either fail to link or introduce enough loss to cripple throughput. Focus on three

Multimode Fiber Types: OM1 vs OM2 vs OM3 vs OM4

A complete guide to multimode fiber types OM1, OM2, OM3, OM4, and OM5. Compare speed, distance, bandwidth, and applications, and learn how

10 Best Rackmount Fiber Optic Patch Panels (May

The Cable Matters OM4/OM3 multimode panel is the most affordable entry point in our lineup, and it punches well above its weight in terms

How Do Multimode Fiber Optic Cable Prices.

Multimode fiber optic cable prices 1 vary based on fiber type (OM1 2, OM3 3, OM4 4), construction (riser, plenum, armored 5), and application.

What are the differences between OM3 and OM4 patch

OM3 and OM4 patch cables are both multimode optical fibers designed for high-speed data transmission in networking applications. However,

OM1 vs OM2 vs OM3 vs OM4 vs OM5 Multimode Fiber

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

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.

Everything You Need to Know About Multimode Fiber

Explore multimode fiber optic cables for enterprise, campus, and data center networks. Learn about OM1-OM5 types, transmission ranges,

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