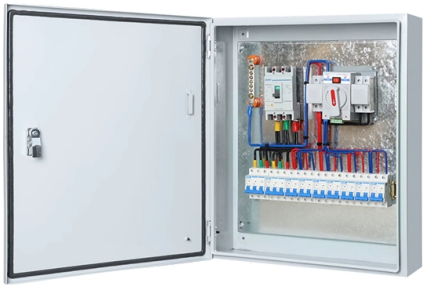
Comparison of OM4 and OM3 fiber optic cables



Overview

Fiber Optic Cable OM3 vs. OM4: Speed, Distance, and DifferencesIn this guide, we will compare OM3 vs. OM4 fiber optic cables from both a technical and prac.

Key Takeaways

OM4 fiber offers higher bandwidth and longer transmission distances than OM3, making it better suited for high-speed and future-proof network deployments.

Core Specifications

Both OM3 and OM4 are laser-optimized multimode fibers (MMF) with a 50/125 µm core/cladding structure, designed for use with VCSEL-based optical transceivers. They share similar physical characteristics, including jacket color (typically aqua) and connector types, and are fully compatible with each other. OM3: Effective Modal Bandwidth (EMB) of 2,000 MHz·km at 850 nm OM4: EMB of 4,700 MHz·km at 850 nm, more than double that of OM3 Higher EMB allows OM4 to transmit data over longer distances without signal degradation due to modal dispersion.

Maximum Transmission Distances

The main practical difference between OM3 and OM4 is the distance they can support at various Ethernet speeds: Ethernet SpeedOM3 Max DistanceOM4 Max Distance1G1,000 m1,000 m10G300 m400 m25G70 m100 m40G100 m150 m100G100 m150 mAt 1G speeds, both fibers perform identically. OM4 provides a longer reach at 10G and above, which is particularly important in large data centers or campus networks where longer cable runs are required.

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Practical Considerations

Compatibility: OM4 is fully backward-compatible with OM3, so it can be used in existing OM3 networks without issues. Cost vs. Performance: OM4 is slightly more expensive than OM3, but the extra cost is justified if you anticipate future upgrades to 40G or 100G Ethernet or need longer 10G runs.

Use Cases: OM3 is sufficient for shorter 10G links under 300 meters. OM4 is preferred for high-speed, long-distance, or future-proof deployments, especially in modern data centers.

Summary

While OM3 and OM4 fibers look similar and support the same core speeds, OM4's higher modal bandwidth and extended reach make it the better choice for high-speed networks and future scalability. For networks with shorter runs and 10G or lower speeds, OM3 remains a cost-effective option. The decision should consider link length, current and future data rates, and budget.

Article Content

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

In this guide, we will compare OM3 vs. OM4 fiber optic cables from both a technical and practical perspective, including: The core specifications and bandwidth differences

OM3 vs OM4 Fiber Optic Cables: Key Differences Explained

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

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

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

OM3 Vs OM4 Fiber: Which "Aqua" Cable Do You Need?(2026 Guide)

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Confused by Aqua cables? We break down the real limits of OM3 vs OM4 (300m vs 550m). Learn when to save money with OM3 and when you MUST upgrade to OM4 for 100G.

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, OM4 fiber and newly released OM5 fiber. The next part will compare

Fibre Optic Cable

Key Features: Fibre Optic Cables Application: Fibre optic connections. Suitability: Data transmission. For both indoor and outdoor installations. Standards & Fibre Types: IEC 60794. OM1, OM2, OM3, OM4

How Far Can Multimode Fiber Optic Cables Transmit?

As an industry-leading provider of fiber optic solutions, we offer a wide range of multimode fiber cables, including but not limited to OM1, OM2,

Multimode vs Single Mode Fiber Optic Cables: A Complete Guide to

Learn the differences between multimode (OM1-OM5) and single mode (OS1-OS2) fiber optic cables—speed, distance, applications, and how to choose the right one for data centers and

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.

Quality Bulk Multimode & Single Mode Fiber Optic Cables

Bulk Fiber Optic Cable - Multimode & Singlemode Shop our diverse range of bulk fiber optic cables, tailored for various networking needs. We provide both single-mode and multimode options, catering

Single Mode vs. Multimode Fiber Optic Cables

OM1, OM2, OM3, and OM4 are classifications of multimode fiber optic cables defined by their bandwidth and performance capabilities. OM1 and OM2 use LED light sources and support lower data rates

10 Types of Fiber Optic Cable Explained: Selection

Explore the top 10 fiber optic cable types for 400G/800G networks. From ADSS to MPO, learn technical specs, applications, and how to choose the right fiber for

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

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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,

Best Premade Fiber Optic Cables for Outdoor and Indoor Use

Answer: These ready-made fiber optic cables are designed for fast, reliable installations in harsh outdoor and high-density indoor settings. They suit contractors, IT professionals, and DIY

Best Direct Burial Fiber Optic Cable Solutions for Harsh Environments

Buying Guide: Key Purchase Considerations Fiber Type and Bandwidth: Choose OS2 single-mode cables for long-distance links and minimal attenuation, or OM3/OM4 multimode cables

Fiber Optic Cables

CommScope designs and manufactures a comprehensive line of fiber optic cables—from outside plant to indoor/outdoor and fire-rated indoor fiber cables.

Complete Guide to Fiber Optic Cables for Data Centers

Everything you need to know about fiber optic cables for data center deployments. Covers OS2, OM3, OM4, OM5 cable types, LC/SC/MPO connectors, and distance and speed compatibility.

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