

How many meters of multimode optical cable can be supported



Summary of Content

Multimode optical fiber supports distances ranging from 33 meters to 550 meters depending on fiber type and data rate.

Distance by Fiber Type and Data Rate

- OM1 (62.5 μm core): Supports up to 275 meters at 1 Gbps and 33 meters at 10 Gbps. It is typically used for low-speed applications like 100 Mbps Ethernet and uses LED light sources .
- OM2 (50 μm core): Can transmit up to 550 meters at 1 Gbps and 82 meters at 10 Gbps. It is suitable for medium-speed applications and also uses LED sources .
- OM3 (50 μm laser-optimized): Designed for high-speed Ethernet, supporting 300 meters at 10 Gbps, 100 meters at 40 Gbps, and up to 100 meters at 100 Gbps. It uses VCSEL lasers for improved performance .
- OM4 (50 μm laser-optimized): Enhanced for higher bandwidth, supporting 550 meters at 10 Gbps, 150 meters at 40 Gbps, and 150 meters at 100 Gbps. It is backward compatible with OM3 .
- OM5 (50 μm wideband multimode): Supports Short-Wavelength Division Multiplexing (SWDM) and can transmit 150 meters at 40 Gbps and 100 meters at 100 Gbps, offering higher bandwidth for modern data centers .

Factors Affecting Maximum Distance

- Data Rate: Higher speeds reduce the maximum distance due to modal dispersion and signal attenuation.

Article Content

Understanding Distance Limits with Multimode Fiber

OM1 cable will support 1000BASE-SX out to 275 meters, and that distance jumps to 550 meters with OM2 cable.

Multimode Fiber Distance — OM3, OM4 Max Distance by Data Rate

This guide covers the actual distance limits for OM3 and OM4 multimode fiber at every common data rate, what

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

Multimode fiber optic cable has a larger core, typically 50 or 62.5 microns that enables multiple light modes to be

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

Fiber optic cable can be run anywhere from 300 meters up to 80 kilometers (roughly 50 miles) depending on the

Multi-mode optical fiber

Optical fiber manufacturers have greatly refined their manufacturing process since that standard was issued and cables can be made

Multimode Distance Limits: OM3 vs. OM4 Fiber Standards

Under this standard, OM3 fiber is officially rated to support a maximum multimode distance of 300m. This distance satisfies the

How Far Can Multimode Fiber Optic Cables Transmit?

This article explores the transmission distance limitations of multimode fibers across different transmission speeds,

Different Fiber Optic Cable and supported distance

What are the differences between OM1, OM2, OM3, OM4, and OM5 fiber optic cables, and what are their supported

How Far Can Fiber Optic Cable Be Run? Distance Limits Explained

Single-mode fiber (SMF) supports distances up to 40-100+ kilometers for standard applications, while multimode fiber

Fibre Optic Distance Limits Explained – OM3, OM4 & OS2

Even details like connector quality, splicing, and cleaning practices impact maximum optical cable reach. This guide takes a deep

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