

How many meters is a single multimode optical fiber



Article Overview

A single multimode optical fiber can typically transmit signals over distances ranging from 33 meters to 550 meters, depending on the fiber type and data rate.

Typical Distances by Fiber Type

- OM1 (62.5 μm core): Supports 10 Gigabit Ethernet up to 33 meters and 1 Gigabit Ethernet up to 275 meters. Commonly used for 100 Megabit Ethernet applications within buildings .
- OM2 (50 μm core): Supports 10 Gigabit Ethernet up to 82 meters and 1 Gigabit Ethernet up to 550 meters .
- OM3 (50 μm , laser-optimized): Supports 10 Gigabit Ethernet up to 300 meters, and 40/100 Gigabit Ethernet up to 100 meters .
- OM4 (50 μm , enhanced laser-optimized): Extends 10 Gigabit Ethernet links up to 550 meters, and 40/100 Gigabit Ethernet up to 150 meters .
- OM5 (50 μm , wideband multimode): Similar to OM4 but optimized for shortwave wavelength division multiplexing, supporting high-speed data over comparable distances .

Factors Affecting Distance

The maximum distance a multimode fiber can carry a signal depends on:

- Data rate: Higher speeds reduce the maximum distance due to modal dispersion .

Article Content

OM1 vs OM5 Fiber Guide: Bandwidth, Speed & Max Distance Charts

OM Fiber Types Overview OM (Optical Multimode) fiber comes in five generations. Each one is built for specific bandwidth and

Single-Mode vs Multimode Fiber: Which Do You Need?

Quick answer: Single-mode fiber has a 9-micrometer core, carries light in one path, and supports distances up to 80+ km. Multimode

Fiber-optic communication

An optical fiber patching cabinet. The yellow cables are single-mode fibers; the orange and blue cables are multi-mode fibers:

Multi-mode optical fiber

MMF supports high data rates—up to 100 Gbps—over distances typically ranging from 300 to 550 meters, depending on fiber type

Fiber Optic Cable Types – Multimode and Single Mode

Single Mode fibers are identified by the designation OS or Optical Single-mode Fiber. Single Mode cable has a much smaller core (8

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

Single mode fiber typically has a core diameter of about 9 μm , which allows only one mode of light to propagate. In

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

Contact Us

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