

Multimode fiber optic cable standards



Article Overview

Multimode fiber optic cables (MMF) are designed for short- to medium-distance data transmission, with specifications varying by type (OM1-OM5) in core size, bandwidth, data rate, and distance.

Overview of Multimode Fiber

Multimode fiber (MMF) has a larger core diameter than single-mode fiber, typically 50 μm or 62.5 μm , allowing multiple light modes to propagate simultaneously. This enables higher data throughput over short distances using LEDs or VCSELs as light sources, making MMF cost-effective for data centers, office buildings, and campus networks. MMF is optimized for shorter distances due to modal dispersion, which can limit signal quality over long spans. MMF consists of three main layers:

- Core: Carries the light; larger diameter allows multiple modes but introduces modal dispersion.
- Cladding: Surrounds the core with a lower refractive index to maintain total internal reflection.
- Coating/Jacket: Provides mechanical protection and environmental resilience.

Types of Multimode Fiber

Multimode fibers are classified according to the ISO/IEC 11801 standard into OM1, OM2, OM3, OM4, and OM5, each with distinct specifications:

Fiber Type	Core Size	Bandwidth (MHz·km)	Max 10G Distance	Max 40/100G Distance	Jacket Color	Light Source	Typical Use
OM1	62.5 μm	200	33 m	Not supported	Orange	LED	Legacy
OM2	50 μm	500	82 m	Not supported	Brown	LED	Legacy
OM3	50 μm	4700	400 m	40 m	Brown	VCSEL	High-speed
OM4	50 μm	4700	400 m	100 m	Brown	VCSEL	High-speed
OM5	50 μm	>4700	>400 m	>100 m	Brown	VCSEL	High-speed

Article Content

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IEEE 802.3 Multimode Optical Fiber Ethernet Standards

The key considerations when planning a multimode optical fiber infrastructure capable of supporting multiple generations of Ethernet

Dec 21, 2025

ANSI/TIA-568.3-E: Optical Fiber Cabling and Components Standard

Scope: This Standard specifies performance, transmission, and test and measurement requirements for premises optical fiber cable,

Jun 03, 2026

Multimode Optical Fiber Selection & Specification

Industry standard MMF specification includes dimensional (or geometry) requirements, mechanical requirements, optical

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Single Mode vs. Multimode Fiber Optic Cables

There are two main types of fiber optic cables: single mode and multimode. Although they can do the same job in

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Multimode Fiber: OM1 to OM5 – MapYourTech

Multimode optical fiber represents one of the most critical infrastructure components in modern data centers,

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Optical fibre standards and norms

With the great popularity of optical links in the last few years, the main part of them is currently based on modern single-mode fibers.

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Fiber Optic Cable Types – Multimode and Single Mode

Multimode fibers are identified by the OM (optical mode) designation and their specifications are outlined by the ISO/IEC 11801

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Multimode Fibre Optics (MMF) | Comms InfoZone

Multimode fibre optic patch leads and bulk cable are both available. Shop Fibre Optics Cables Understanding Fibre Optic Cable In all

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What does OS1, OS2, OM1, OM2, OM3 and OM4 mean? | Proterial Cable ...

These are fiber optic cable designations that originated in the international ISO/IEC 11801 standard. The designations indicate a

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Singlemode vs Multimode Fiber Optic Cable

We breakdown the differences between single mode and multimode fiber optic cable, covering aspects like physical

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Multimode Fiber Cable Types: OM1/OM2/OM3/OM4/OM5 Compared

This comprehensive guide explores Multimode Fiber Cable Types, covering technical specifications, deployment

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OM2, OM3, OM4, OM5: Which Multimode Fiber Optic Cable is the

The difference between multimode fiber optic cables is important when choosing the right cabling for your network.

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Single Mode vs Multimode Fiber Cable: Guide to Fiber Optic Cable

Single Mode vs Multimode Fiber Cable: Compare core size, bandwidth, distance, cost, and best use cases to help you

Mar 24, 2026

Multi-mode optical fiber

Multi-mode fiber has a fairly large core diameter that enables multiple light modes to be propagated and limits the maximum length of

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Multimode fiber standards: OM1, OM2, OM3, OM4, and OM5

In fiber optic communication systems, multimode fiber is favored because of its suitability for short-distance

Mar 30, 2026

Guide to Multimode Fiber: OM1, OM2, OM3, OM4, OM5

We've spoken frequently in the past about the difference between single mode and multimode fiber. Multimode fiber

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Multimode Fiber Guide: OM1 to OM5 | PHILISUN

Multimode Fiber Guide: OM1, OM2, OM3, OM4 & OM5 A practical guide to OM1, OM2, OM3, OM4 multimode fibers:

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

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

Dec 28, 2025

OM1 Vs OM2 Vs OM3 Vs OM4 Vs OM5: Multimode Fibre Guide

Multimode optical fiber is the preferred choice for optical fiber communication systems due to its affordability and

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Multimode Fiber Data Sheet

GENERAL DESCRIPTION R& M offers the full range of multimode fibers for all its cables, whether for installations or assemblies.

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Multimode Optical Fiber Selection & Specification

All multimode fibers utilizing the above nomenclature should be graded-index MMF and compliant with industry prevailing standards

May 18, 2026

What Are The Multimode Fiber Cable Types?

According to the standard ISO/IEC 11801 specification, multimode fibers are divided into five categories: OM1, OM2,

Contact Us

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