

Sorting Rules for Multimode Fiber Types



Article Overview

Multimode fibers are classified into OM1, OM2, OM3, OM4, and OM5 based on core size, bandwidth, maximum distance, optical source, and application suitability.

Overview of Multimode Fiber

Multimode fiber (MMF) has a larger core diameter (50-62.5 μm) than single-mode fiber, allowing multiple light modes to propagate simultaneously. This makes MMF ideal for short- to medium-range applications, such as within buildings, campuses, or data centers, using lower-cost optical sources like LEDs or VCSELs. The ISO/IEC 11801 standard defines the five generations of multimode fiber: OM1, OM2, OM3, OM4, and OM5.

Classification of Multimode Fiber Types

Fiber Type	Core Size	Optical Source	Jacket Color	Bandwidth / Modal Bandwidth	Max Distance (10G Ethernet)	Typical Applications
OM1	62.5 μm	LED	Orange	200 MHz·km at 850 nm	33 m	Legacy 100 Mb/s to 1 Gb/s LANs
OM2	50 μm	LED	Orange	500 MHz·km at 850 nm	82 m	1 Gb/s Ethernet, limited 10G
OM3	50 μm	VCSEL (Laser-Optimized)	Aqua	2000 MHz·km at 850 nm	300 m	10G Ethernet, 40G/100G short-range
OM4	50 μm	VCSEL (Enhanced Laser-Optimized)	Aqua	4700 MHz·km at 850 nm	550 m	10G/25G/40G/100G Ethernet, data centers
OM5	50 μm	SWDM (Short-Wavelength Division Multiplexing)	Lime Green	4700 MHz·km at 850 nm, 2470 MHz·km at 953 nm	150 m+	100G High-speed, multi-wavelength data center applications, future-proofing for 400G+

Key Points...

Article Content

Jun 28, 2026

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

A complete guide to multimode fiber types: from OM1 to OM5, covering modal dispersion, bandwidth limits, cabling design, and

Sep 19, 2025

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

Oct 11, 2025

Singlemode or Multimode Fiber

They can help you determine whether singlemode or multimode fiber is the best choice for today—and tomorrow. For

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All-in-Fiber Dynamically Reconfigurable Orbital Angular Momentum

optical fiber systems. Here, we propose and experimentally demonstrate, to the best of our knowledge, the first all-in-fiber method for

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OM1 vs OM2 vs OM3 vs OM4 vs OM5 Multimode Fiber Guide

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

Mar 26, 2026

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

OM5 fiber provides a versatile and reliable solution for applications requiring multi-channel transmission. What's the

Aug 01, 2025

Multimode Fiber Guide: OM1 to OM5 | PHILISUN

This guide compares multimode fiber types by core size, bandwidth, distance, jacket color, optics and upgrade path. It

Jun 09, 2026

Multimode Optical Fiber Selection & Specification

Per industry standards, MMF cable plants should once again maintain uniform fiber types throughout the entire operating channel

May 30, 2026

Multimode Fibers: A Comprehensive Guide

Introduction to Multimode Fibers Multimode fibers are a type of optical fiber that allows multiple modes of light to

Jan 04, 2026

Multimode Fiber: OM1 to OM5 – MapYourTech

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

Jul 27, 2026

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,

Mar 28, 2026

Networks on Multimode Fiber: A Reference Guide

Fiber manufacturers have been actively updating multimode fiber to meet the needs of high-speed networks by engineering new

May 14, 2026

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

Explore OM1, OM2, OM3, OM4 & OM5 multimode fibres. Compare features, bandwidth & distances to choose the

Feb 04, 2026

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

These multimode fiber types are available for high-speed network installations, and each with a different reach and

Feb 25, 2026

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

Aug 18, 2025

Optical Access Architecture Reference Document: Single-Mode vs

deployment of optical fiber infrastructure within carrier-grade and enterprise analysis of Single-Mode Fiber (SMF) and Multi-Mode

Mar 12, 2026

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

How do you choose between single mode and multimode fiber? Compare their differences in core size, light source,

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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

Jul 02, 2026

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,

Jun 07, 2026

Arbitrary spatial mode sorting in a multimode fiber

Sorting spatial optical modes is a key challenge that underpins many applications from super-resolved imaging to high

Aug 02, 2025

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

Types of Multimode Fiber There are several types of multimode fibers classified by the ISO 11801 standard, including

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Multimode Fibers – optical glass fiber, large-core fibers,

Multimode fibers are fibers supporting more than one guided mode per polarization direction – in some

Mar 23, 2026

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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Arbitrary spatial mode sorting in a multimode fiber

Here we implement a simple full-field mode sorting system that can operate on any basis. For this, we leverage the com-plex spatial

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Single Mode and Multimode Fiber: What's the Difference?

Learn more about Single Mode and Multimode Optical Fibers - their design, key differences, and intended fiber optic systems

Sep 15, 2025

Optical Fiber Types

Optical Fiber Types There are the 5 types of multimode fiber currently on the market. OM1 and OM2, the original 62.5 micron (μm)-

Oct 21, 2025

Optical Fiber Types: Single-Mode vs. Multimode

Optical fiber is the backbone of modern networks — from the internet backbone that connects cities to the short links

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Fiber Optic Cable Types – Multimode and Single Mode

Application Fiber Optic connectors and cables are present in nearly every communications project that we might sell into, be it a DAS

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Mode switching and sorting in few-mode fiber ports using

We present the operation and characteristics of a multimode interference (MMI)-based optical device for switching a

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

How Many Types of Multimode Fiber? Identified by ISO 11801 standard, multimode fiber optic cables can be classified

Jan 31, 2026

A Guide to Multimode Fiber Types (OM1-OM5) – trueCABLE

OM1-OM5 multimode fiber standards, detailing their core sizes, jacket colors, transmission capabilities and more.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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