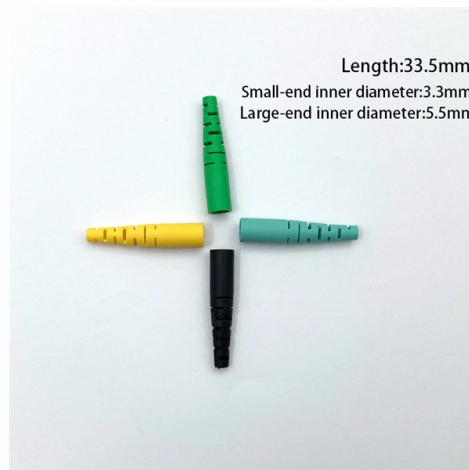


How many types of multimode fiber are there



Overview

ISO/IEC 11801 defines the OM1, OM2, OM3, OM4, and OM5 types of multimode fiber. It also lists the key technical requirements for each type.

Key Takeaways

Multimode fiber types include OM1, OM2, OM3, OM4, and OM5, each differing in core size, bandwidth, transmission distance, optical source, and typical applications.

Overview of Multimode Fiber

Multimode fiber (MMF) is designed for short- to medium-range communication, typically within buildings or campuses. It has a larger core diameter (50–62.5 μm) that allows multiple light modes to propagate simultaneously, making it ideal for high-speed LAN and data center applications.

MM

F is generally paired with lower-cost optical transceivers like LEDs or VCSELs and supports data rates up to 10 Gbit/s over distances up to 550 meters, depending on the fiber type.

Multimode Fiber Types



Fiber Type

Core Diameter	Jacket Color	Optical Source	Max 10G Distance	Typical Use
OM1 62.5 μ m	Orange	LED	33 m	Legacy 100M–1G Ethernet, older networks
OM2 50 μ m	Orange	LED	82 m	1G Ethernet, limited 10G applications
OM3 50 μ m	Aqua	VCSEL (laser-optimized)	300 m	10G Ethernet, 40G/100G up to 100 m, modern enterprise networks
OM4 50 μ m	Aqua	VCSEL (enhanced)	550 m	10G–100G Ethernet, data centers, backward compatible with OM3
OM5 50 μ m	Lime Green	SWDM (shortwave wavelength division multiplexing)	Similar to OM4	Supports multiple wavelengths for higher bandwidth, future-proof data centers

Key Differences
Core Size: OM1 has a larger 62.5 μ m core, while OM2–OM5 have 50 μ m cores, allowing higher bandwidth and longer distances.

Optical Source: OM1 and OM2 use LEDs, limiting speed and distance. OM3–OM5 are laser-optimized (VCSEL or SWDM), enabling higher-speed transmission.
Bandwidth and Distance: Each successive OM type increases modal bandwidth and maximum transmission distance at high data rates.

OM4 and OM5 are optimized for modern 40G/100G networks.
Jacket Color: OM1/OM2 are orange, OM3/OM4 are aqua, and OM5 is lime green to indicate wideband capability.
Applications: OM1/OM2 are mostly legacy networks, OM3/OM4 are standard for current enterprise and data center deployments, and OM5 is designed for future high-bandwidth, multi-wavelength applications.

Summary

Choosing the right multimode fiber depends on network speed requirements, distance, and future scalability. For modern high-speed data centers, OM3 or OM4 is typically recommended, while OM5 is suitable for next-generation networks requiring multiple wavelength channels. Legacy installations may still use OM1 or OM2, but these are generally considered obsolete for 10G+ applications.

Article Content

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

ISO/IEC 11801 defines the OM1, OM2, OM3, OM4, and OM5 types of multimode fiber. It also lists the key technical requirements for each type. In the two tables above, we've summarized

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

We have seen many multimode (MMF) fiber types introduced, and technology has improved. Not only this, but from the beginning with OM1, to the most current OM5, there have been

Multimode Fiber Types Introduction and Application

How Many Types of Multimode Fiber? 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.

Multi-mode optical fiber

Because multi-mode fiber has a larger core size than single-mode fiber, it supports more than one propagation mode; hence, it is limited by modal dispersion, while single mode is not.

Everything You Need to Know About Multimode Fiber Cable

Q: What types of multimode fiber are available? Multimode fibers are categorized into OM1, OM2, OM3, OM4, and OM5, each with varying bandwidth and distance capabilities to suit

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

There are several types of multimode fibers classified by the ISO 11801 standard, including OM1, OM2, OM3, OM4, and the recently released OM5 fiber. Each fiber type has distinct

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

There are five main types of multimode fiber, standardized by ISO/IEC 11801: OM1, OM2, OM3, OM4 and OM5. These multimode fiber types vary based on core diameter, bandwidth,

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

A complete guide to multimode fiber types OM1, OM2, OM3, OM4, and OM5. Compare speed, distance, bandwidth, and applications, and learn how to choose.

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

Guide To Multimode Fiber (62.5um & 50um, OM1 to OM5)

Overview of common multimode glass types: OM1, OM2, OM3, OM4, and OM5 With many options, it can be tough to select the most suitable multimode cable for

What is SFP+ Module? An Ultimate Guide (2024)

Initially posted on May 2, 2017 In the previous post, we explained the SFP module and learned its basics. As one of our tutorial series, we focus on the

Fiber Optic Cable Types: A Complete Guide

Fiber Optic Cable Type FAQs What are the three types of fiber optic cable? The three main types of fiber optic cable are single mode fiber, multimode

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

Fiber optic cables can run up to 80 km without a repeater. Learn exact limits by cable type, application, and how to extend your network.

The FOA Reference For Fiber Optics

In regular graded index multimode fiber, there are many modes (or rays of light - about 400 of them) being transmitted down the fiber. The inner modes are

What Is Fiber Optics? Definition from SearchNetworking

Types of fiber optic cables Multimode fiber and single-mode fiber are the two primary types of fiber optic cable. Single-mode fiber Single-mode fiber is used for longer distances due to the

Singlemode vs Multimode Fiber Optic Cable

Singlemode fiber, with its narrow core and single light path, stands as the champion of long-distance, high-bandwidth transmission. In contrast,

Fiber Optic Cable Distance: A Comprehensive Guide

The type, transmission rate, fiber material, and other factors affect the maximum transmission distance of fiber optic cable. This article also

Tutorial Passive Fiber Optics, Part 6: Fiber Joints

Part 6: Fiber Joints Types of Fiber Joints Optical fibers can be joined together, such that light is efficiently transferred from one fiber to another. There are various possibilities: Mechanical splicing

Contact Us

Continue your research online:

Website: <https://artduferoger.fr>

Technical inquiry: <https://artduferoger.fr/contact.html>

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

