

# What is the multimode and length of a 40G optical fiber



## AI Overview

40G Ethernet over multimode fiber typically uses OM3, OM4, or OM5 fiber, with maximum distances of 100–150 meters depending on the fiber type.

**Fiber Types for 40G**

- OM3 (50/125  $\mu\text{m}$  laser-optimized multimode fiber):** Supports 40G Ethernet up to 100 meters using 850 nm VCSEL transceivers.
- OM4 (50/125  $\mu\text{m}$  enhanced laser-optimized multimode fiber):** Extends 40G Ethernet reach to 150 meters at 850 nm.
- OM5 (Wideband multimode fiber, 50/125  $\mu\text{m}$ ):** Designed for Short Wavelength Division Multiplexing (SWDM), OM5 also supports 40G Ethernet up to 150 meters, with additional benefits for multi-wavelength 100G and 400G applications.

**Key Characteristics**

- Core diameter:** 50  $\mu\text{m}$  for OM3, OM4, and OM5, allowing multiple light modes to propagate simultaneously.
- Wavelength:** 850 nm is standard for 40G VCSEL transceivers. OM5 additionally supports 850–953 nm for SWDM applications.
- Application:** Short-reach data center links, typically within the same building or campus.

**Summary Table**

| Fiber Type | Core Diameter    | Max 40G Distance | Notes                                       |
|------------|------------------|------------------|---------------------------------------------|
| OM3        | 50 $\mu\text{m}$ | 100 m            | Standard laser-optimized MMF                |
| OM4        | 50 $\mu\text{m}$ | 150 m            | Enhanced bandwidth for longer reach         |
| OM5        | 50 $\mu\text{m}$ | 150 m            | Supports SWDM for multi-wavelength 40G/100G |

For most modern data centers, OM4 or OM5 is preferred for 40G links due to their higher bandwidth and extended reach, while OM3 remains suitable for shorter connections.



## Article Content

### 40G and 100G Data Center Multimode Fiber Connectivity | Corning

Multimode fiber remains a leading optical media in the data center for short-reach distances up to 150 meters. Forty and 100G multimode fiber backbones are being deployed to facilitate data center 10G

### KeepFly Fiber

KeepFly Fiber - Our Fiber Patch Cable is designed to provide high-quality and reliable fiber optic connectivity for the North American market. With length options ranging from 0.2m to 100m, this OM4

### QSFP+ Explained: 40G Types, Distances & Selection | Network

QSFP+ (Quad Small Form-Factor Pluggable Plus) is the workhorse optical form factor for 40 GbE compact, hot-pluggable, and built around 4×10 Gb/s electrical lanes per direction. In data

### Everything You Need to Know About Multimode Fiber

Explore multimode fiber optic cables for enterprise, campus, and data center networks. Learn about OM1-OM5 types, transmission ranges,

### Cisco 40GBASE QSFP Modules Data Sheet

The QSFP-40G-CSR-S is a pluggable optical transceiver with a duplex LC connector interface used for connectivity using MultiMode Fiber (MMF). The Cisco 40GBASE-CSR Modules support link lengths

### Fiber Optic Cable Types: A Complete Guide

The plethora of fiber optic cable types can seem overwhelming, but choosing the right cable for the job is important. Read on to learn what fiber optic

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

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

### Fiber Optic Color Code: The Ultimate TIA-598-C Guide

Master the TIA-598-C fiber optic color code standard. Read our complete guide and use our free interactive calculator to easily identify 1-144 core cables.

### StarTech 5 m LC-LC OM5 fiber optic cable | AiO.lv

Short description Multimode fiber optic patch cable StarTech, 5 m length, LC to LC (UPC) connectors, OM5 fibre (50/125 µm) in duplex LOMMF zipcord construction. Designed for VCSEL

## OM1 vs OM5 Fiber Guide: Bandwidth, Speed & Max

Match your fiber type to your distance needs and network speeds. The table below shows all critical distance specs across OM1 through OM5 and singlemode fiber

StarTech LCLCL-20M-OM5-FIBER InfiniBand/fibre optic cable

Short description 20 m StarTech multimode fiber optic cable with LC to LC (UPC) connectors, OM5 multimode fiber (50/125 µm) in duplex LOMMF zipcord format. Designed for

## Multimode Fiber Distance — OM3, OM4 Max Distance

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

How far can OM3 run 40G

OM3 (multimode optical fiber with a core size of 50 micrometers) is commonly used in data center and enterprise environments to support high-speed networking applications, including 40

Fiber Optic Cable Jacket Guide: OFNP vs OFNR, LSZH, PVC, PE,

Compare fiber optic cable jacket materials and fire ratings: OFNP vs OFNR, LSZH, PVC, PE, TPU. Selection guide for data center, FTTH, outdoor, and industrial use. Request samples.

Fiber Optic Pigtail: The Complete Guide to Types,

Confused about fiber optic pigtails—which connector type, which polish, fusion or mechanical splice? Our guide covers LC vs SC, APC vs UPC,

OM5 Multimode Fiber Optic Cable 1m LC to LC 40G 100G

Discover the reliable 1m OM5 Multimode Fiber Optic Cable by StarTech , perfect for 40G/100G applications. Upgrade your network today!

How do You Connect Fiber Optic Cable to SFP?

Learn how to connect a fiber optic cable to an SFP module correctly. Follow our step-by-step guide, avoid common mistakes, and troubleshoot connection issues.

What is a Fiber Optic Pigtail, and What Is It Used For?

Learn what fiber optic pigtails are, their crucial role in network connections, and how to choose the right one for your needs.

FAQ: 40Gb/s Ethernet extended optical multimode fiber cable for link ...

When using multimode fiber (MMF) optical cable for 40Gb/s Ethernet (40GbE) extended connections, the distance between the host or switch and the storage system can be up to 400 meters over OM4

## Choosing the Right Fiber Optic Cable: Singlemode vs

Although single-mode fiber (SM) and multimode fiber (MM) cable types are widely used in various applications, their differences can still be

## What Is Fiber Optics? A Guide

What Is Fiber Optics? Fiber optics is a technology that sends data as pulses of light through strands of glass. This method allows high-speed data

## Data Center 40G and 100G Multimode Fiber Connectivity

Learn how 40G and 100G multimode fiber connectivity continues to provide reliable and low-cost solutions in the data center.

## Contact Us

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