Recommended Multimode Fiber Optic Cables for Data Centers

Article Overview

For modern data centers, OM3, OM4, and OM5 multimode fiber cables are recommended for high-speed, short-reach connections, while OM1 and OM2 are largely legacy options.

Overview of Multimode Fiber Types

Multimode fiber (MMF) uses a larger core (50 um or 62.5 um) to carry multiple light modes simultaneously, making it cost-effective for short-distance data center connections using VCSEL or LED transceivers . MMF is ideal for intra-rack, inter-rack, and horizontal cabling within 300 meters, supporting speeds from 1G to 400G depending on the fiber type .

OM1 and OM2

o OM1: 62.5 um core, orange jacket, LED light source. Supports 10G Ethernet up to ~33 meters. Mostly found in legacy networks; not recommended for modern high-speed deployments .
o OM2: 50 um core, orange jacket, LED source. Supports 10G Ethernet up to ~82 meters. Suitable for older 1G/10G networks but limited for high-density data centers .

OM3 and OM4

o OM3: 50 um core, aqua jacket, laser-optimized for VCSELs. Supports 10G Ethernet up to 300 meters, 40G/100G up to 100 meters. Cost-effective for current 10G/25G/40G deployments .
o OM4: 50 um core, aqua jacket, enhanced laser-optimized. Supports 10G Ethernet up to 400 meters, 40G/100G up to 150 meters. Recommended for high-density, high-speed data centers with future-proofing for 400G short-reach links .

OM5

o OM5: 50 um core, lime green jacket, designed for Short Wavelength Division Multiplexing (SWDM). Supports multiple wavelengths (850-940 nm), enabling 40G, 100G, and 400G SWDM4 links over a single fiber. Ideal for next-generation data centers requiring multi-wavelength, high-bandwidth applications . OM5 is backward compatible with OM4 for standard 850 nm transceivers.

Practical Recommendations for Data Centers
o Intra-rack and horizontal patching (

Recommended Multimode Fiber Optic Cables for Data Centers

Comprehensive guide to multimode fiber optic cable -- definitions, OM1-OM5 differences, specs, construction, typical

Explore multimode fiber optic cables for enterprise, campus, and data center networks.

An optical-cable infrastructure that can be fully utilized for 15 to 20 years will more than likely have to be operational through multiple

Compare OM3 vs OM4 vs OM5 multimode fiber for office, warehouse, and data center

Multimode fiber optic cables are essential in modern data communication systems since

Forty and 100G multimode fiber backbones are being deployed to facilitate data center 10G and 25G server connections. Multimode

Fiber Optic Cable Types - Multimode and Single Mode Application Fiber Optic connectors

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables,

Explore different types of fiber optic cables, from single mode to armored and LC uniboot options. Learn how to

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

Multimode fiber is also very commonly used in Data Centers. Multimode fiber typically has a 50µm (micron) core that

Multimode fiber provides a balanced combination of bandwidth, cost, and easy deployment, making it ideal for

Everything you need to know about fiber optic cables for data center deployments. Covers OS2, OM3, OM4, OM5 cable types,

Discover why fiber optic cable is ideal for today"s AI-driven data centers and learn five practical steps to deploy it

Introduction of Multimode Fibers Multimode optical fiber (MMF) is a type of optical fiber mostly used for

commu-nication over short

In data centers, fiber optic cabling plays a key role in connecting servers, switches, and routers. While both single mode

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