What type of fiber optic cable should be used to connect the equipment to the ODF rack



Overview

Fiber Optic Cable Types Explained: Choosing the Right Fiber Cable In this guide, we categorize them into fiber patch cable types and specialty fiber cable.

Key Takeaways

For connecting equipment to an ODF rack in a data center or network room, duplex multimode fiber (OM3 or OM4) with LC connectors is typically recommended for short-distance indoor patching.

Fiber Type Selection

Multimode Fiber (MMF): OM3 or OM4 multimode fiber is ideal for short-distance connections within data centers or equipment rooms, supporting high-speed links up to 100 Gbps over distances typically under 150 meters. Singlemode Fiber (SMF): OS2 singlemode fiber is used for longer-distance or backbone connections, but for standard equipment-to-ODF links inside a rack or room, multimode is more cost-effective and easier to handle.

Cable Construction

Duplex Patch Cables: Use duplex cables (two fibers) for bidirectional communication (Tx/Rx), which is standard for Ethernet and PON links. Jacket Material: For indoor use, choose PVC or LSZH jackets depending on fire code requirements.

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LSZ

H is preferred in confined spaces for low smoke and halogen-free properties. Fiber Count: Typically, a single duplex cable is sufficient per device port. Distribution or breakout cables may be used if multiple fibers need to be routed from one trunk to several devices.

Connector TypeLC Connectors: Small form-factor LC connectors are widely used in modern data centers due to their high density and compatibility with most switches and patch panels.

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C Connectors: Larger SC connectors are less common in modern racks but may be used in legacy systems. Ensure the connectors match the ODF panel ports and the equipment transceivers. Additional ConsiderationsBend-Insensitive Fiber: For tight rack spaces, consider G.

657A1/A2 bend-insensitive fibers to reduce signal loss from sharp bends. Cable Length: Keep patch cords as short as practical to reduce clutter and maintain signal integrity. Color Coding: Use standard color codes (e.g., aqua for OM3/OM4) to easily identify fiber type and maintain organization.

By selecting duplex OM3 or OM4 multimode patch cords with LC connectors and appropriate indoor jacket, you ensure reliable, high-speed connectivity between your equipment and the ODF rack while maintaining compliance with data center standards and fire codes.

Article Content

Fiber Optic Cable Types Explained: Choosing the Right Fiber Cable

In this guide, we categorize them into fiber patch cable types and specialty fiber cable types to help you better understand the differences and choose accordingly.

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Optical fiber connector

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An optical fiber connector is a device used to link optical fibers, facilitating the efficient transmission of light signals. An optical fiber connector enables quicker connection and disconnection than splicing.

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