

Multimode fiber optic cable used to connect the switch to the BRAS



Overview

Fiber Optic Patch Cables: The Complete 2026 Buyer's Guide Confused by LC, SC, MPO, UPC, and APC?

This complete fiber optic patch cable guide covers connecto.

Key Takeaways

Use duplex multimode fiber (OM3 or OM4) with SFP+ transceivers and LC connectors for high-speed switch-to-BRAS links. Recommended Fiber Type

For connecting a switch to a BRAS, OM3 or OM4 multimode fiber (MMF) is typically used. OM3 supports 10Gbps transmission up to 300 meters, while OM4 extends this distance to around 400 meters, making it suitable for most data center or campus deployments . OM5 fiber is also available and optimized for short wavelength division multiplexing (SWDM), allowing multiple wavelengths over a single fiber for longer distances, but OM3/OM4 remains the standard for most 10G links .

Transceivers

The connection requires SFP+ multimode transceivers, commonly referred to as 10GBASE-SR modules. These operate at 850 nm and are designed for short-reach, high-speed applications . SFP+ modules are hot-pluggable and compatible with duplex LC connectors, providing reliable 10Gbps connectivity between the switch and BRAS .

Cabling and Connectors

- Duplex fiber: Two strands are required—one for transmit (TX) and one for receive (RX).
- LC connectors: Most SFP+ modules use LC-style connectors, which are compact and widely supported .
- MTP/MPO options: For higher-density or multi-fiber deployments, MTP/MPO trunk cables can be used, typically with OM4 fiber, supporting multiple fibers under a single sheath .

Deployment Considerations

- Ensure the fiber type matches the SFP+ module (OM3/OM4 for 10GBASE-SR).
- Maintain proper polarity: connect TX on the switch to RX on the BRAS and vice versa.
- Use plenum-rated cables for indoor installations where fire safety is required .
- For distances beyond 400 meters at 10Gbps, consider single-mode fiber (OS2) instead of multimode.

Summary

To connect a switch to a BRAS using multimode fiber:

- Use OM3 or OM4 duplex multimode fiber.
- Install 10GBASE-SR SFP+ transceivers on both ends.
- Terminate with LC connectors or use pre-terminated duplex cables.
- Verify polarity and distance limitations to ensure reliable 10Gbps connectivity . This setup provides a cost-effective, high-speed, and low-latency connection suitable for enterprise and service provider networks.

Article Content

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Relevant Technologies and Terms - DAC Cable: Direct Attach Cable (DAC) is used for short-range connections. It's a

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Fiber Optic Cable Buying Guide

Fiber Optic Cable Buying Guide Understand how to choose fiber optic cable by comparing single-mode vs.

Optical fiber connector

An optical fiber connector is a device used to link optical fibers, facilitating the efficient transmission of light

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

Multimode fiber (MMF) is a kind of optical fiber mostly used in communication over short distances, for example, inside

Single Mode vs Multimode Fiber and When to Use Each

For building-to-building connections within a single campus or business park, multimode fiber provides a cost-effective, high

Everything You Need to Know About Multimode Fiber Cable

Multimode fiber works well for short to medium distances, providing scalable capacity and cost-effective deployment

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Single Mode vs Multimode Fiber Cable: Compare core size, bandwidth, distance, cost, and best use cases to help you

Application Guide: Connecting Fiber-ready Network Switches

Terminate your fiber optic cabling with two LC-style connectors or purchase a pre-terminated fiber optic cable with two LC-style

Single-mode optical fiber

In fiber-optic communication, a single-mode optical fiber, also known as fundamental- or mono-mode, is an optical fiber designed

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Single-mode: Single-mode fiber-optic cable allows only one mode (or wavelength) of light to propagate through the fiber. This type of

How to Connect Multiple Ethernet Switches Using Fiber Optic Cables ...

Most importantly, any upgrades and advancements in networking technology can be easily accommodated by existing

How to connect OM1, OM2, OM3 and OM4 multimode

What is meant by multimode fiber? Multimode fiber optics (MMF) are optical cables with a wide core (50

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