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The pull rings of single-fiber optical modules are different colors



Overview

Optical fibers are circular dielectric wave-guides used to contain and transmit light over short or long distances.

Key Takeaways

Single-fiber (BiDi) optical modules use color-coded pull rings to indicate their wavelength and transmission direction, with common colors including purple, yellow, and green depending on the wavelength combination.Overview

Single-fiber bidirectional (BiDi) optical modules transmit and receive signals on a single fiber using different wavelengths for each direction. The pull ring color serves as a quick visual identifier for technicians to determine the module's wavelength and transmission specification without removing it from the port, improving installation and maintenance efficiency .

Common Pull Ring Colors for BiDi Modules
• Purple: Often used for modules operating at 1490nm, suitable for medium-distance transmission .

• Yellow: Typically indicates 1550nm for long-distance transmission (40 km and above) on single-mode fiber .

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• Green: Usually represents 1550nm for ultra-long-distance transmission (80 km and above) on single-mode fiber . Each BiDi module must be paired with a complementary module at the opposite end of the fiber, matching the Tx/Rx wavelength combination. The pull-ring color provides an intuitive reference for correct pairing during deployment .
Notes on Color Coding
• Manufacturer Variations: While most manufacturers follow industry-standard color codes, some may use custom schemes. Always verify with the module label or datasheet .

• Wavelength Identification: Pull-ring colors are primarily linked to the module's operating wavelength, which is critical for ensuring compatibility with the fiber type and network design .

• Multi-Mode vs Single-Mode: Multi-mode modules typically use black pull tabs (850nm), while single-mode modules use blue, purple, yellow, or green depending on distance and wavelength .
Practical Tip

Before installation, always confirm the pull-ring color against the module label and network documentation to prevent mismatched connections, which could lead to link failure or degraded performance . By following these color conventions, network engineers can quickly identify and correctly deploy single-fiber optical modules in complex fiber optic networks.

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The pull ring of the optical module adopts the function of using different colors Their main function is to identify the type, wavelength,

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For the CWDM optical module,the color of its pull ring is colorful,with a total of 18 wavelengths.The wavelength band is divided into

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Explanation Of SFP Optical Module Plugging And

After installing the optical module, insert the corresponding fiber jumper horizontally into the

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Learn the key differences between single mode vs multimode fiber cables and choose the right one for your fiber optic

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SFP modules, or Small Form-factor Pluggable modules, are essentially the workhorses of

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Discover how to identify if your SFP (Small Form-factor Pluggable) module is single-mode or multimode. Look for SM

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The FOA Reference For Fiber Optics

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The core of step index multimode fiber is made completely of one type of optical material and the cladding is another type with

OSFP OCTAL SMALL FORM FACTOR PLUGGABLE MODULE

A structure in the back of the module serves as a guard to protect the PCB and gives lead-in when the module is being inserted to

Fiber Optic Cable Types – Multimode and Single Mode

Single Mode fibers are identified by the designation OS or Optical Single-mode Fiber. Single Mode cable has a much

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