

Network Cable and Fiber Optic Cable Connector Specification Table

Article Overview

Network and fiber optic cables use standardized connectors and specifications to ensure compatibility, performance, and reliability across Ethernet and optical networks.

Ethernet Cable Connectors

Cable Type	Connector	Pinout/Notes	Speed/Use
Cat5e / Cat6 / Cat6a	RJ-45	8P8C modular connector, T568A/B wiring	100 Mbps - 10 Gbps, twisted-pair copper
Console Cable	RJ-45 to DB-9	9-pin RJ-45, used for console PC connection	Management port connection
10-Gigabit Ethernet	XENPAK module	SC connector for fiber	10 Gbps fiber-optic uplinks (Catalyst 3750G-16TD)
SFP Modules	LC or SC (depending on module)	Hot-swappable fiber or copper uplink	1 Gbps - 10 Gbps, fiber or copper

Fiber Optic Cable Connectors

Connector Type	Fiber Type	Core Diameter	Typical Use	Notes
SC	Single-mode / Multimode	8-10 um (SM), 50/62.5 um (MM)	Data centers, long-distance links	Push-pull coupling, low insertion loss
ST	Multimode	50/62.5 um	LANs, campus networks	Bayonet-style twist lock
LC	Single-mode / Multimode	8-10 um (SM), 50/62.5 um (MM)	High-density patch panels	Small form factor, latch mechanism
MT-RJ	Multimode	50/62.5 um	100BASE-FX connections	Duplex fiber in a single connector housing
FC	Single-mode	8-10 um	High-vibration environments	Screw-on type, precise alignment

Fiber Optic Cable Types

Cable Type	Construction	Indoor/Outdoor	Notes
Simplex	Single tight-buffered fiber	Indoor	Interconnects, patch panels
Multichannel	Multiple fibers around central strength member	Indoor/Outdoor	Backbone or trunking applications
Loose Tube	Fibers in water-blocked polymer tubes	Outdoor	Long-distance, aerial, or buried installations
Armored	Loose tube with metal armor	Outdoor	Protection against rodents and mechanical damage
Ribbon	Multiple fibers in flat ribbon	Indoor/Outdoor	High-density applications

Key Fiber Parameters

Parameter	Description	Typical Values
Bandwidth	Maximum sinusoidal light modulation frequency	MHz/km, depends on fiber type
Attenuation	Optical power loss per km	0.2-3 dB/km depending on wavelength and fiber
Core Diameter	Central region of fiber	8-10 um (SM), 50/62.5 um (MM)
Jacket Type	Outer protection	OFNR (riser), OFNP (plenum), LSZH (low smoke zero halogen)

Standards and Compliance

- o IEC 61754 Series: Defines mechanical interface and physical dimensions of fiber connectors for global interoperability.
- o IEC 61753 Series: Specifies optical performance, mechanical tests, and environmental reliability for fiber

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connectors.

- o IEEE 802.3: Defines Ethernet standards for twisted-pair and fiber-optic cabling.
- o Cisco Catalyst 3750 Documentation: Provides supported SFP/XENPAK modules, pinouts, and connector types for Ethernet and fiber ports. This table provides a comprehensive reference for selecting network and fiber optic cables and connectors, ensuring compatibility with Ethernet speeds, fiber types, and installation environments while adhering to international standards .

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

This tutorial explains which network media cables use which connectors. Learn the

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

MPO and MTP connectors serve the same purpose, but MTP connectors offer enhanced performance, better

The 4 fiber type designations OM1, OM2, OM3, OS1 and OS2 relate to cable transmission performance. In ISO/IEC 11801:2002 and

Table B-3 lists the cable specifications for the fiber-optic SFP module connections. Each port must match the wave-length

A fiber connector is a precise coupling device to join fiber cables quickly. This guide introduces LC, SC, FC, ST, MPO,

Standard Fiber Patch Cables Fiber optic patch cables are ideal for supporting high speed telecommunication network fiber

This document provides specifications for single mode and multimode optical fibers according to various ITU-T and IEC standards.

A number of fiber connector types have been evolved and withstood the test of time to become industry standards. Then how many

However, no matter what the fiber connector types are, they have the same function and similar basic

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components--ferrule,

Discover how to choose the right fiber optic cables for your network. Learn about fiber types, cable constructions,

These cables can be classified based on key parameters including fiber mode, fiber count, cable jacket rating,

Choosing the correct connector type ensures ideal performance of the fiber optics cables and devices. Learn more about the types of

Fibre Optic Cable & Connector Guide White paper Introduction Organising through cables and connectivity options can be an

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