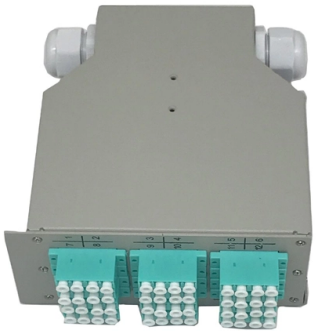
Optical module interfaces SC and LC



Overview

SFP Fiber Optic Connector Types: LC, SC, MPO ExplainedExplore common SFP fiber optic connector types, including LC, SC, and MPO/MTP. Learn their difference.

Key Takeaways

SC and LC are two common fiber optic connectors for SFP modules, with LC being smaller, higher-density, and dominant in modern networks, while SC is larger and often used in legacy or specialized applications.

Overview of SC and L

C ConnectorsSC (Subscriber Connector or Standard Connector) features a 2. 5 mm ferrule and a square push-pull design, making it easy to insert and remove. It is robust and reliable, suitable for long-distance telecommunications, enterprise networks, and applications where durability is prioritized over port density.

S

C connectors are commonly found in Single-Fiber BiDi modules, GPON/EPON networks, and older SFP modules.

L

C (Lucent Connector) uses a 1. 25 mm ferrule, half the size of SC, and a clip-style latching mechanism similar to RJ45 Ethernet jacks. Its compact size allows high-density deployment, fitting 48 or more ports in a 1U switch, making it the default choice for modern duplex SFP/SFP+ transceivers supporting 1G, 10G, 25G, and higher speeds.

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Key DifferencesFeatureSC ConnectorLC ConnectorFerrule Size2. 5 mm1. 25 mmShapeSquareRectangular/compactLatchingPush-pullClip-styleDensityLower, larger footprintHigh, fits more ports per panelCommon UseLegacy networks, PON, BiDi modulesModern enterprise LANs, high-speed SFP/SFP+ modulesDurabilityRobust, easy to handleSmaller, precise alignment requiredApplications and ConsiderationsSC connectors are still used in legacy SFP modules, FTTH/ISP networks, and simplex BiDi transceivers, where ease of handling and durability are important.

L

C connectors dominate modern high-density switches, data centers, and enterprise LANs, providing efficient use of space and compatibility with most current SFP modules. Connector compatibility is critical: even if two SFP modules are electrically and optically compatible, a mismatch in connector type requires adapters, which can increase insertion loss and operational complexity.

Summary

Choosing between SC and LC depends on network density, equipment type, and legacy infrastructure.

L

C is preferred for high-density, modern deployments, while SC remains relevant for legacy systems, PON networks, and field installations requiring robust connectors. Understanding these differences ensures proper SFP module selection, optimal fiber management, and smooth network expansion.

Article Content

SFP Fiber Optic Connector Types: LC, SC, MPO Explained

Explore common SFP fiber optic connector types, including LC, SC, and MPO/MTP. Learn their differences, use cases, and compatibility.

Fiber Optic Cable Assembly Guide | LC, SC & ST Connectors Explained

Learn how to select and test LC, SC, and ST connectors for reliable fiber optic cable assemblies. Includes polish types, OFC specs, and transceiver pairing tips.

LC vs SC SFP Module: Key Differences & 2025 Buying Guide

Confused about the LC vs SC SFP module choice? We explain the physical differences, density benefits, and why Wolontek recommends LC for data centers and SC for FTTH.

How to distinguish between LC and SC interfaces of optical modules?

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In the entire system, the optical module plays a very important role. Its most common interface types are LC and SC interfaces. The following article will introduce how to distinguish the

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PHILISUN provides a complete range of LC, SC, ST, FC, and MPO connectors and assemblies, all engineered to ensure low insertion loss, high return loss, and consistent optical

Complete Guide to Fiber Optic Connector Types: LC,

Learn all major fiber optic connector types (LC, SC, MPO, APC/UPC), their differences, applications, and how to choose the right connector

Differences Between SC and LC Connectors | LC vs SC connector

While both SC SFP module and LC SFP module serve the same purpose of establishing a connection between the network device and fiber optic cable, they differ significantly in design,

Optical fiber connector

In many data center applications, small (e.g., LC) and multi-fiber (e.g., MTP/MPO) connectors have replaced larger, older styles (e.g., SC), allowing more fiber

LC vs SC vs FC vs ST: A Complete Fiber Optic Connector Guide

Compare LC, SC, FC & ST fiber-optic connectors — size, coupling, and ideal use cases — to help you choose the best fit for your network setup.

Differences Between ST, SC, FC, and LC Fiber

Learn the differences between ST, SC, FC, and LC fiber connectors. Explore connector types, PC/UPC/APC polish, single-mode vs multi-mode

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise

How do You Connect Fiber Optic Cable to SFP?

Choosing incompatible components is one of the most common reasons optical links fail to establish. How to Connect the Fiber Patch Cable to the SFP 1. Confirming the SFP Module Fiber Interface

Optical module – A comprehensive exploration

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The optical module is one of the core devices of the optical communication system, and its development has a vital impact on its related industrial chain. So, what is an optical module? How

Cisco 40GBASE QSFP Modules Data Sheet

Cisco QSFP-40G-CSR-S (S-Class) The QSFP-40G-CSR-S is a pluggable optical transceiver with a duplex LC connector interface used for

The Ultimate Guide to SFP Modules (2026): Types, Speeds

Where you see it: You will almost strictly find SC interfaces on PON (Passive Optical Network) modules—specifically OLT (Optical Line Terminal) or ONU Stick modules. Why: SC connectors are

Meaning of Optical Module Pull Tap Colors

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SFP 2.5G Modules | Reliable Optical Transceivers

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Fiber Optic Transceiver Guide | PHILISUN

What Is a Fiber Optic Transceiver? A fiber optic transceiver (also called an optical transceiver) is a compact module that both transmits and receives data signals through optical fibers.

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