

Fiber Optic Connector LC Type



Overview

Fiber optic connector is a flexible device that can connect and disconnect fiber optic cable quickly.

Key Takeaways

The LC (Lucent Connector) is a small form-factor fiber optic connector with a 1.25 mm ferrule, designed for high-density, low-loss applications in single-mode and multimode networks.

The LC connector, developed by Lucent Technologies, is a miniaturized version of the SC connector, featuring a 1.25 mm ceramic ferrule, which is half the size of the SC connector ferrule (2.5 mm) and allows for higher port density in patch panels and transceivers. It uses a push-and-latch mechanism similar to an RJ-style plug, providing secure, pull-proof connections in tight spaces. LC connectors are widely used in SFP, SFP+, and QSFP transceivers, as well as in data centers and telecommunications networks.

Types of LC Connectors

LC connectors are available in several configurations to meet different performance requirements:

- LC/UPC (Ultra Physical Contact): Features a flat polish for standard digital and data transmission, offering low insertion loss (~ 0.25 dB) and return loss up to 55 dB.

- LC/APC (Angled Physical Contact): Features an 8-degree angled polish to minimize back reflection, ideal for high-frequency, CATV, or analog applications, with return loss up to 65 dB .
- Simplex and Duplex: Simplex connectors handle a single fiber, while duplex connectors manage two fibers in a single assembly, supporting bidirectional communication .
- Push-Pull Uniboot: A compact duplex design using a single cable to improve airflow and density in high-density racks .

Advantages

- High-density compatibility: Smaller ferrule size allows twice the port density compared to SC connectors .
- Low insertion loss and back reflection: Ensures stable signal transmission and minimal signal degradation .
- Mechanical stability: Push-and-latch design prevents accidental disconnections .
- Durability: Rated for up to 500 mating cycles .
- Standards compliance: Meets IEC 61754-20, TIA/EIA-604-10 (FOCIS-10), and Telcordia GR-326-CORE for interconnect and reliability .

Applications

LC connectors are ideal for environments where space is limited and high port density is required, such as:

- Data centers and server racks
- Telecommunications networks
- Fiber-to-the-home (FTTH) deployments
- High-performance transceiver modules (SFP, SFP+, QSFP)

Comparison with Other Connectors

Compared to SC, FC, and ST connectors:

- Size: LC is smaller than SC (1.25 mm vs 2.5 mm ferrule) and more suitable for high-density applications .
- Locking mechanism: LC uses push-and-latch, SC uses push-pull, FC uses threaded, and ST uses bayonet .
- Best use: LC is preferred for high-density, low-loss environments; SC for general-purpose networking; FC for high-precision or high-vibration; ST for legacy multimode systems . In summary, the LC connector combines compact size, low insertion loss, and secure connections, making it the preferred choice for modern high-density fiber optic networks .

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SC Connector The SC (Standard Connector, Subscriber Connector) is a fiber optic connector released by NTT in the

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LC-LC Fiber Optic Connectors: A Complete Guide with Tips,

LC-LC connectors are a popular type of connector because of their small size and exceptional performance, which

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LC Connectors and Adapters The Lucent connector, commonly known as the LC connector, is a small form factor type of fiber optic

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LC-LC fiber patch cable with two LC fiber connectors terminated at both ends is the most commonly used fiber optic

Fiber Connector Types

However, the widely used types are about a dozen of fiber optic connectors, which can be divided into single-fiber,

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Learn about the main types of fiber optic connectors — LC, SC, ST, and FC — their specs, applications, and how to

Fiber Connectors

Fiber Optic Connectors are used to connect two runs of fiber optic cable and consist of an adapter assembly along with two plugs.

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A comprehensive guide to fiber optic connectors including FC, SC, LC, ST, and MPO/MTP types.

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