

Article Overview

A fiber optic dual LC connector, also known as a duplex LC connector, houses two LC connectors in a single interface to enable simultaneous bidirectional optical communication.

Overview

A duplex LC connector combines two LC (Lucent Connector) interfaces into one compact housing, allowing one fiber to transmit (TX) and the other to receive (RX) optical signals . This dual-fiber design supports full-duplex communication, which is essential for Ethernet, telecom, and data center applications . The LC form factor is small, using a 1.25 mm ceramic ferrule, which allows for high-density port layouts in switches, routers, and servers .

Key Features

- o Ferrules: Two 1.25 mm zirconia ceramic ferrules align and protect the fiber cores .
- o Housing: Plastic shell secures ferrules and internal springs.
- o Latch: Push-pull clip for easy connection and disconnection, even in crowded panels .
- o Duplex Clip: Holds two simplex LC connectors together to form a duplex pair .
- o Polish Types: UPC (Ultra Physical Contact) for low return loss (-50 dB) and APC (Angled Physical Contact) for applications sensitive to reflections (-60 dB), .
- o Variants: Uniboot LC (both fibers in a single jacket), polarity-reversible LC, and pull-tab LC for easier handling in dense panels .

Applications

Duplex LC connectors are widely used in:

- o SFP, SFP+, and SFP28 optical transceivers for 1G, 10G, and 25G Ethernet .
- o Data centers and enterprise networks where high port density is required .
- o Telecom and CATV networks, especially when APC connectors are needed to minimize reflections .
- o Multimode and single-mode fiber systems, supporting both types of fiber for bidirectional communication .

Advantages

- o Compact size allows more ports in limited space.
- o Reliable full-duplex operation ensures simultaneous transmission and reception.
- o Low insertion loss and high return loss for stable optical links .
- o Ease of installation and maintenance with push-pull latching and duplex clips .

Fiber Optic Dual LC Connector

Best Practices

- o Ensure correct fiber polarity to maintain TX/RX alignment.
- o Handle connectors carefully to avoid contamination or damage to ferrules.
- o Use appropriate cleaning tools such as lint-free wipes and alcohol pads before mating.
- o Choose the correct polish type (UPC or APC) based on network requirements . In summary, a fiber optic dual LC connector is a compact, high-performance solution for connecting two fibers in a single interface, enabling efficient full-duplex communication in modern high-speed networks .

As part of our new fiber optic guide series, we need to start addressing connectors. While Patrick is installing a MPO/

Duplex LC Connectors Fiber Optic Connectors are available at Mouser Electronics. Mouser offers inventory, pricing, & datasheets for

Discover the Duplex LC Connector: your ultimate guide to fiber optic connectivity. Explore

The LC is a small-form-factor connector system for fibre optic cabling in telecommunications systems, data centres and LANs. LC

Mouser offers inventory, pricing, & datasheets for Duplex LC Connectors Fiber Optic Connectors.

LC simplex and duplex connectors are used for equipment cross-connects or interconnects in backbone, horizontal and work area

Mouser offers inventory, pricing, & datasheets for LC Duplex Fiber Optic Connectors.

A: A Duplex LC Connector is designed to connect two fiber optic cables using one modular

This article explains what Duplex LC connectors are, how they work, the difference

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

Across small and medium data centers, enterprise networks, telecom ODNs, and AI

Learn what an SFP duplex LC connector is, how it works in optical transceivers, and why it is widely used in fiber



Fiber Optic Dual LC Connector

OCC introduces L-JACK™, a robust fiber optic duplex LC connector that couples the small form factor of traditional LCs with the

Expert guide covering LC duplex connector types, polarity reversal methods, cost-control

The small footprint design gives these fiber optic connectors huge popularity in datacoms and makes them more ideal

This coupler provides a simple and easy way to link together two fiber optic cables with LC connectors. Can be used with duplex or

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