

Double connector for fiber optic cable



AI Overview

A dual connector fiber optic cable, often called a duplex cable, uses two fibers for simultaneous transmit and receive signals, commonly terminated with LC or SC connectors for high-density, low-loss network connections.

Overview of Dual Connector Fiber Optic Cables

Dual connector cables, also known as duplex fiber optic cables, consist of two parallel optical fibers within a single cable assembly. One fiber transmits data (Tx) while the other receives data (Rx), enabling full-duplex communication. These cables are widely used in data centers, enterprise networks, and telecommunications for connecting patch panels, switches, and transceivers.

Common Connector Types

- LC (Lucent Connector):** Small form factor with 1.25 mm ferrules, available in duplex for high-density applications. Variants include UPC (Ultra Physical Contact) and APC (Angled Physical Contact) for different return loss requirements.
- SC (Standard Connector):** Larger 2.5 mm ferrule, duplex versions are robust and easier to handle in legacy or outdoor installations.
- ST (Straight Tip):** Bayonet-style, duplex capable, often used in industrial or older networks.

Fiber Types and Modes

- Single-mode (OS2):** Core $\sim 9 \mu\text{m}$, suitable for long-distance links (up to 40 km+ with optics) and high-speed telecom applications.
- Multimode (OM1, OM2, OM3, OM4, OM5):** Core 50–62.5 μm , optimized for shorter distances in LANs and data centers. OM3/OM4 supports 10G–100G speeds, OM5 supports SWDM for next-gen networks.

Cable Construction and Jacket Types

- Jacket Materials:** OFNR (Riser), OFNP (Plenum), LSZH (Low-Smoke Zero Halogen) depending on fire safety and building codes.
- Durability:** Some cables, like opticalCON DUO, feature ruggedized metal housings, aramid yarn for strain relief, and IP65 dust/water protection for field use.

Performance Considerations

- Insertion Loss (IL):** Typically $\leq 0.3 \text{ dB}$ per mated LC pair; critical for maintaining signal integrity.
- Return Loss (RL):** UPC $\geq -50 \text{ dB}$, APC $\geq -60 \text{ dB}$; APC is preferred for reflection-sensitive applications like CATV or DWDM.
- Polarity:** C...

Article Content

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LC Fiber Optic Connectors

The high-density design and 0.049 in. (1.25mm) ferrules double the port density (compared to SC connectors) to reduce space requirements on racks, enclosures, panels and faceplates.

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Understanding the Duplex LC Connector: The Go-To

The connector is used with multimode duplex fiber optic cables. This Duplex LC Connector finds its use in places where there are many networks

The FOA Reference For Fiber Optics

Fiber optic cables, especially those used for backbone cables, may contain many fibers that connect a number of different links going to several different locations

Ceramic Fiber Optic Connector

Terminate your fiber optic cable. Has a 127-micron diameter. Boot opening measures 0.9-mm.

Understanding the LC Duplex Connector: A

A: An LC Duplex Connector is a small form factor (SFF) fiber optic connector used in high-density situations. It has two fibre connections in a single

Understanding the Duplex LC Connector: The Go-To Fiber Network

A: A Duplex LC Connector is designed to connect two fiber optic cables using one modular plug. It is widely viewed as the best choice for fiber networks because of its high-density

Fiber Connector Types: A Complete Guide (2024)

The fiber connector is called a fiber optic or optical fiber connector. It is a precise coupling device that joins fiber optic cables quickly, enabling faster

Fiber Connector Types: A Comprehensive Guide 2025

Among these components, fiber connector types are essential to network performance, reliability, and scalability. This guide will walk you through

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ST Fiber Optic Couplers for Extending STUPC Single Mode Cables - Our STUPC Fiber Connectors are pre-Cleaned Barrel Connectors.

opticalCON DUO

The opticalCON DUO cable connector accommodates a standard optical LC-Duplex connector in a ruggedized and durable all-metal housing. It features a spring

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LC Fiber Connectors

LC Fiber Connectors APPLICATION r faster terminations. Simplex connectors include one LC connector, one boot, a crimp ring (not included for 900-micron), a dust cap, and duplex LC

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For more information, pricing, or custom solutions, please contact us:

Website: <https://www.tomor.eu>

Email: info@tomor.eu

Phone: +49 69 2381 5497

Address: Am Hauptbahnhof 10, 60329 Frankfurt am Main, Germany

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