FCLC fiber optic single-mode dual-core

Article Overview

FCLC fiber optic cables are single-mode, dual-core patch cables with FC to LC connectors, designed for high-capacity, long-distance data transmission.

Overview

The term FCLC refers to a fiber optic patch cable with FC connectors on one end and LC connectors on the other. When labeled as single-mode dual-core, it means the cable contains two separate cores within a single fiber strand, each capable of transmitting a single-mode light signal. This allows simultaneous transmission of two independent data channels, effectively doubling the data capacity compared to a single-core fiber .

Key Characteristics

o Fiber Type: Single-mode (SM), typically 9/125 um (core/cladding diameter), optimized for long-distance communication with minimal signal loss .
o Dual-Core Structure: Contains two cores, enabling parallel data transmission. This is ideal for high-throughput applications but may require careful design to minimize crosstalk between cores .
o Connectors: FC (Ferrule Connector) on one end and LC (Lucent Connector) on the other, providing secure, low-loss connections compatible with standard networking equipment .
o Jacket: Often features LSZH (Low-Smoke Zero Halogen) for safety in indoor installations .
o Applications: Suitable for high-capacity short- to medium-range networks, data centers, and telecom systems where dual-channel transmission is beneficial. Single-mode ensures long-distance signal integrity, while dual-core increases bandwidth without adding extra fibers .

Advantages

o Higher Data Throughput: Dual-core design allows two independent signals, effectively doubling capacity over a single-core fiber .
o Long-Distance Performance: Single-mode fibers reduce attenuation and modal dispersion, making them ideal for long-haul communication .
o Reduced Interference: Compared to multi-core or multi-mode fibers, single-mode dual-core fibers maintain signal clarity with lower crosstalk when properly engineered .
o Flexibility: FC to LC connectors provide compatibility with a wide range of optical transceivers and networking equipment .

Considerations

o Crosstalk: Dual-core fibers can experience interference between cores if not properly isolated, which may

affect signal quality .
o Cost and Complexity: More complex to manufacture and deploy than single-core fibers, potentially increasing installation costs .
o Equipment Compatibility: Requires compatible transceivers and patch panels designed for dual-core operation. In summary, FCLC single-mode dual-core fiber optic cables are a high-performance solution for networks requiring long-distance, high-bandwidth, and dual-channel transmission, combining the reliability of single-mode fibers with the increased capacity of dual cores. They are widely used in telecommunications, data centers, and high-speed networking environments .

The fiber optic patch cord is one of the most consumable basic fiber optic network components. It can be made up with different

The DCF13 Double-Clad Fiber features a single mode core and dual cladding structure that allows both

The secret lies in fiber optic technology, and understanding the basics--1-core, 2-core, Single Mode (SM), and Multi

LC fiber connector products are robust optical solutions designed for telecom applications, encompassing LC fiber

Single-mode fiber optic cable is the best choice for long-distance networking. It features a

Most optical fibers have a single fiber core, which is usually located on the fiber axis. However, there are

Our single mode fiber adapters feature ceramic sleeves for precision alignment and our multimode fiber adapters are built with

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

There are two main types of fiber optic cables: single mode and multimode. Although they

This high-quality singlemode fiber optic patch cable is specifically designed using SMF-28e fiber for ethernet applications. Each

Optcore offers an extensive line of LC to FC 9/125µm OS2 single-mode duplex fiber optic patch cables with many choices of different

Australia"s Leading Supplier of LC-LC OS1 Singlemode Fibre Optic Cables & OS1 Fibre Cables. Buy

online & save from retail price.

Single Mode fibers have a smaller core, allowing light to travel in a single, straight path,

The L-com FCA-FCLC-DPS1P-10 is a Duplex single mode fiber optic patch cable, with FC to LC connectors. The L-com FCA-FCLC

Find a full range of fibre optic adaptors to help you combine cables and extend your fibre network with a stronger signal. 4Cabling

Description Fiber Optic Patch Cable also known as fiber patch cord cable,optical cable or fiber optic jumper. As an important

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