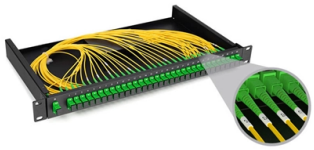
Fiber Optic Cable FC



Overview

Thorlabs offers single mode patch cables with FC/PC connectors on both ends. Each cable is manufactured in our facility on state-of-the-art equipment.

Key Takeaways

The FC (Ferrule Connector) is a threaded fiber optic connector designed for high-precision, high-vibration environments, commonly used with single-mode and polarization-maintaining fibers.

Overview

The F

C connector is a fiber optic connector with a screw-threaded metal body that ensures a secure and stable connection, making it ideal for environments with vibration or mechanical stress. Originally called a "Field Assembly Connector," the FC connector is now standardized under TIA/EIA-604-4. The name "FC" stands for ferrule connector or sometimes "fiber channel".

The fiber end is embedded in a 2. 5 mm ferrule, typically made of zirconia ceramic or stainless steel, and polished to a physical contact (PC) finish to minimize signal loss and back-reflection.

Design and Features

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Threaded coupling mechanism: The screw-on design prevents accidental disconnections and ensures precise alignment of fiber cores. Ferrule construction: Ceramic or metal ferrules maintain core alignment and reduce insertion loss. Polish types: FC connectors can have PC, SPC (super), or UPC (ultra) polish, with higher grades providing lower insertion loss and back-reflection.

Spring-loaded fibers: Control mating force and maintain consistent contact between fiber cores. Keyed design: Prevents rotation of the fiber during mating, preserving signal integrity. ApplicationsFC connectors are widely used in: Telecommunications and datacom systemsOptical measurement equipmentSingle-mode lasersOptical distribution frames (ODFs) and long-haul networks They are particularly favored in high-vibration or precision environments due to their robust threaded design.

While F

C connectors are gradually being replaced by SC and LC connectors in some applications, they remain important in legacy systems and specialized setups. Comparison with Other ConnectorsST: Bayonet-style, push-twist, used in early LANs; less vibration-resistant.

S

C: Square push-pull, common in switches and routers; easier to plug/unplug but larger footprint.

L

C: Small form factor, high-density applications; not threaded.

F

C: Threaded, round metal body, highly reliable under vibration, precise alignment.

Best Practices

Cleaning: Use a fiber-cleaning pen or alcohol-soaked lint-free wipes; avoid touching ferrule ends. Handling: Minimize unnecessary plugging/unplugging to extend lifespan. Storage: Keep unused connectors capped and dust-free.

F

C connectors are essential for high-precision fiber optic systems, offering low insertion loss, minimal back-reflection, and mechanical stability, making them a reliable choice for critical optical networks.

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Article Content

Single Mode FC/PC Fiber Optic Patch Cables

Thorlabs offers single mode patch cables with FC/PC connectors on both ends. Each cable is manufactured in our facility on state-of-the-art equipment.

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

The following guide systematically describes each connector type to help you make an informed selection for the connector that best suits your fibre-optic networking system.

FC/PC Fiber Connectors: Single Mode and Polarization

Threaded FC/PC connectors are designed for high-vibration environments. The "PC" stands for "physical contact" because these connectors allow the surfaces

Fiber Connector Types

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

Single and Multimode Patch Cables

Single-Mode Fiber Optic Cables Before diving any further into the different types of fiber optics cable, it''s necessary to understand how these enhanced cabling

Optical Fiber & Fiber Patch Cables

Thorlabs manufactures and stocks a range of optical fibers and patch cables based on single mode (SM), polarization maintaining (PM), multimode (MM), or

Fiber Optic Patch Cables — SC, LC, FC, ST, Single Mode

Fiber patch cables, also known as fiber optic patch cords or fiber jumpers, are fiber optic cables terminated with connectors on both ends for reliable optical connectivity. They are manufactured

Fiber Optic Cables, Fiber Optic Patch Cables, Fiber Optic Adapters ...

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Fiber Optic Cables Turned Into Hidden Microphones to Secretly Spy

Fiber Optic Cables Turned Into Microphones Fiber optic cables have long been considered inherently secure communication channels resistant to RF emissions and electromagnetic

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Companies Target Hybrid Fiber Strategies to Meet Global Connectivity Demands in Diverse MarketsDublin, April 14, 2025 (GLOBE NEWSWIRE) -- The "Fiber Optic Cables for Last Mile

Fiber Connector Types

According to the estimating, there are hundreds of different fiber optic connection types on the market. However, the widely used types are about a dozen of fiber optic connectors, which

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables, as well as the various fiber wavelengths and standard core sizes used

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German tech company AP Sensing just developed a technology that lets undersea cables detect tampering and sabotage through soundwaves. The company tested its new Distributed

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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