Single-mode dual-core optical cable connector



Overview

Single Mode fibers have a smaller core, allowing light to travel in a single, straight path, ideal for long distances with less signal loss.

Key Takeaways

A single-mode dual-core optical cable contains two single-mode fiber cores, allowing simultaneous bidirectional or parallel long-distance data transmission with minimal signal loss.

Overview

A single-mode dual-core optical cable consists of two separate single-mode fiber cores within a single cable jacket. Each core has a small diameter, typically around 8–10 micrometers, allowing only one mode of light to propagate. This design minimizes modal dispersion, enabling high-speed data transmission over long distances, often exceeding 10 km at 1310 nm and up to 40 km at 1550 nm.

Dual-core cables are sometimes referred to as 2-core or duplex cables, and they are ideal for applications requiring simultaneous bidirectional communication or redundancy. Key FeaturesSingle-Mode Fiber (SMF): Supports a single light path, reducing signal degradation and allowing long-haul transmission.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Dual-

Core Configuration: Two cores allow either full-duplex communication (one core for sending, one for receiving) or parallel data channels, effectively doubling the data capacity compared to a single-core cable. Standards Compliance: Often built to OS2 or G. 652.

D standards, ensuring compatibility with telecom networks, GPON, and DWDM systems. Low Attenuation: Typical attenuation is 0. 3–0.

4 dB/km, supporting high-quality signal transmission over long distances. ApplicationsSingle-mode dual-core cables are widely used in: Telecommunications backbones for long-distance data transport. Data center interconnects where high-speed, low-latency links are required.

FTT

H (Fiber to the Home) deployments for reliable broadband delivery. High-speed Ethernet networks (1G, 10G, 40G, 100G, and beyond) using duplex connections. AdvantagesLong-distance capability: Single-mode cores allow minimal signal loss over tens of kilometers.

High bandwidth: Supports high-speed data transmission with low dispersion. Flexibility: Dual-core design enables full-duplex communication without additional cabling. Future-proof: Compatible with advanced optical technologies like DWDM and 5G fronthaul networks.

In summary, a single-mode dual-core optical cable is a high-performance fiber solution for long-distance, high-speed, and reliable data transmission, combining the benefits of single-mode fiber with the efficiency of dual-core design.

Article Content

The Key Differences Between 1-core, 2-core, Single

Single Mode fibers have a smaller core, allowing light to travel in a single, straight path, ideal for long distances with less signal loss. Multi-mode

Single Mode Fiber Optic Connectors

Thorlabs stocks an extensive selection of single mode fiber optic connectors, available for immediate shipping. Choose from FC/PC, FC/APC, ST/PC, LC/PC,

Single Mode Fiber Optic Patch Cables

Thorlabs offers single mode fiber optic patch cables with a variety of connector options, including FC/PC, FC/APC, and hybrid FC/PC to FC/APC and FC/PC to SMA.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

OS2 Single Mode Fiber Optic Cables, SMF Duplex

Get OS2 single mode duplex fiber patch cables for 1G/10G/40G/100G/400G Ethernet fiber connections to transport data up to 10km at 1310nm and 40km at

Multi-mode optical fiber

The LED light sources sometimes used with multi-mode fiber produce a range of wavelengths and these each propagate at different speeds. This chromatic dispersion is another limit to the useful length for

bahrain-imported-dual-core-optical-cable-wholesale

All Companies and suppliers for bahrain-imported-dual-core-optical-cable-wholesale Find wholesalers and contact them directly Leading B2B martketplace Find companies now!

Fiber Optic Cable Types | Omnitron Systems Guide

Conclusion Understanding fiber optic cable types, fiber core sizes, and proper installation methods is essential for building high-speed, reliable fiber networks.

Bulk Fiber Optic Cables for Internet | CableWholesale

Browse our wide selection of fiber optic cables for sale and check out our accessories, including connectors, enclosures, and ethernet fiber converters.

Markertek: Video Cameras, Intercom, Wireless Mics, Cable, Connector

Essential Tech Gear for Broadcast Quality Video Productions Markertek, an employee-owned company, provides tech gear for video production, audio recording, and media entertainment professionals -

Optical fiber connector

Optical fiber connectors are categorized into single-mode and multimode types based on their distinct characteristics. Industry standards ensure compatibility

Go4Fiber Ltd-One Stop Fiber Optic Superstore

EXFO Optical Power Expert, PX1-S, Standard power measurement range, 11 calibrated wavelengths, measure absolute power (dBm) and loss (dB), with universal 2.5mm connector adaptor

Compatible ZTE 155M SFP 40km Single Mode LC Connector

Find Compatible ZTE 155M SFP 40km single mode LC connector at ETU-Link,we are committed to provide professional technical Compatible ZTE 155M SFP 40km single mode LC connector.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Legrand AV | C2G | USB-C Docking Stations, HDMI, HDBaseT,

The C2G Thunderbolt™ 5 USB-C Cable is Intel®-certified and designed for ultra-fast data transfer, high-resolution video, and powerful device charging.

Cisco 10GBASE SFP+ Modules Data Sheet

Cisco SFP+ Active Optical Cables (Figure 5) are direct-attach fiber assemblies with SFP+ connectors. They are suitable for very short distances and offer a cost-effective way to connect within

10 Types of Fiber Optic Cable Explained: Selection Guide (2026)

Explore the top 10 fiber optic cable types for 400G/800G networks. From ADSS to MPO, learn technical specs, applications, and how to choose the right fiber for your infrastructure.

Fibre optic connector systems | singlemode and multimode

The SC is an optical fibre push-on connector in compliance with DIN standard IEC 61754-15 for applications in the telecommunications sector, data centres, LAN

Optical fiber connector

Field-mountable optical fiber connectors are used to join optical fiber jumper cables that contain one single-mode fiber. Field-mountable optical fiber connectors are

Single Mode vs. Multimode Fiber Optic Cables

Multimode fiber optic cables are engineered with a larger core diameter—typically 50 or 62.5 microns—compared to single mode fibers, and

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Contact Us

Continue your research online:

Website: https://kenhardtprimary.co.za
Technical inquiry: https://kenhardtprimary.co.za/project-desk.html
African project coordination: Century City, Cape Town, Western Cape, South Africa

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

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved