

Article Overview

LC port single-mode optical modules are compact, high-performance transceivers designed for long-distance fiber optic communication using single-mode fiber.

Overview

LC (Lucent Connector) single-mode optical modules are fiber optic transceivers that use LC connectors to interface with single-mode fiber (SMF) cables. These modules are widely used in data centers, enterprise networks, and telecom environments to provide reliable long-distance optical links with minimal signal loss and low latency . The LC connector features a 1.25 mm ferrule, enabling precise alignment of the fiber core and efficient light transmission, which is critical for high-bandwidth and long-range applications .

Key Features

- o Compact Design: LC connectors are smaller than SC connectors, allowing high port density in switches and patch panels .
- o Single-Mode Fiber Compatibility: Designed for SMF with a core diameter of approximately 9 μm , supporting long-distance transmission with minimal modal dispersion .
- o Wavelength and Distance: Common modules operate at 1310 nm or 1550 nm, supporting distances up to 10 km or more depending on the module type and standard (e.g., 10GBASE-LR for 10 Gbps Ethernet), .
- o Hot-Pluggable: SFP/SFP+ LC modules can be inserted or removed without powering down the network device, facilitating easy upgrades and maintenance .
- o Low Insertion Loss: The precise ferrule alignment and optimized design reduce signal loss, ensuring reliable high-speed data transfer .
- o Digital Optical Monitoring (DOM/DDM): Many modules support real-time monitoring of optical power, temperature, and voltage for proactive network management .

Applications

- o 10 Gigabit Ethernet (10GBASE-LR): Long-reach connections over single-mode fiber up to 10 km .
- o Telecommunications: High-speed backbone links between switches, routers, and optical transport equipment.
- o Data Centers: High-density switch uplinks and inter-rack connections where space efficiency is critical.
- o Enterprise Networks: Reliable long-distance links for campus or building-to-building connectivity.

Considerations



Single-port single-mode LC optical module

- o Connector Compatibility: Ensure the LC module matches the fiber patch cable type; mismatched connectors require adapters, which can increase insertion loss .
- o Standards Compliance: Verify the module adheres to IEEE standards (e.g., 10GBASE-LR) for interoperability across vendors .
- o Environmental Durability: LC single-mode modules are designed to maintain stable performance under demanding conditions, including temperature variations and mechanical stress . In summary, LC port single-mode optical modules provide a compact, efficient, and reliable solution for long-distance fiber optic communication, supporting high-speed data transfer in modern network infrastructures while maintaining compatibility with standard single-mode fiber cabling .

SFP-1GLXLC SFP-1G Series SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating

Gigabit Fiber SFP Optical Transceiver Module, 1000Base-LX (LC) Single-Mode Port, 20 km (12.4 mi.) - White Box

MINI-GBIC-LX-SM1310 Module The MINI-GBIC-LX-SM1310 is aligned to IEEE 1000BASE-LX optical specifications and supports a

Compatibility in your network is everything, and this industrial SFP Transceiver Module delivers. Use it with

Fan Modules Installing a Power Surge Protector Pluggable Modules for Ports Understanding Optical Modules Understanding Copper

The XG-SFP-LR-SM1310 is aligned to IEEE 10GBASE-LR optical specifications and supports a link length of up to 10 kilometers

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

This data sheet describes the benefits, specifications, and ordering information for the

Mouser offers inventory, pricing, & datasheets for LC Series Singlemode Simplex Fiber Optic Connectors.

Industrial Gigabit Fiber SFP Optical Transceiver Module, 1000Base-LX (LC) Single-Mode Port, 10 km (6.2 mi.), MSA-compliant for

Learn how to choose the right SFP LC Single Mode transceiver for distance, compatibility, fiber type, and



Single-port single-mode LC optical module

stable network performance.

One 1000Base-LX single-mode Fiber LC duplex port Distance support: up to 20 km (12.4 mi.) Wavelength: 1310 nm SFP standard

Generic SFP-1G-LX Compatible 1000BASE-LX/LH SFP 1310nm 10km-20km Transceiver supports 1G

Learn what a single mode SFP transceiver is, how it works, key specs, common types, and real-world use cases for long-distance

Single Mode SFP Fiber Module is a cost effective way to connect a single network device to a wide variety of fiber cable distances

About this item 1000Base-LX/LH SFP: Gigabit Single Mode SFP Module support 1.25 Gb/s data rates, 1310nm wavelength, SMF;

Web: <https://www.millstraining.co.za>

