10G Single-Mode Fiber Specifications



Overview

This data sheet describes the benefits, specifications, and ordering information for the Cisco 10GBASE SFP+ Modules Data Sheet.

Key Takeaways

10G single-mode fiber enables 10 Gigabit Ethernet connections over distances up to 10 km using 1310 nm wavelength SFP+ transceivers with duplex LC connectors.

Key Specifications

Standard: 10GBASE-LR (Long Reach) defined under IEEE 802. 3ae for 10GbE over SMF. Wavelength: 1310 nm, optimized to balance chromatic dispersion and fiber attenuation.

Maximum Link Distance: Up to 10 km on standard single-mode fiber (G. 652) without repeaters. Connector Type: Duplex LC UPC connectors are commonly used for SMF SFP+ modules.

Transceiver Form Factor: SFP+ modules, hot-swappable, supporting Digital Diagnostic Monitoring (DDM/DOM) for real-time monitoring of optical power, temperature, and voltage.

Deployment Considerations

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Compatibility: 10G SMF SFP+ modules are widely compatible with switches, routers, and network interface cards from vendors like Cisco, Ubiquiti, Meraki, and others. Optical Budget: Proper planning of optical power, fiber path, and connector quality is critical to maintain link reliability and avoid signal loss or errors. Applications: Commonly used in enterprise backbones, data center interconnects, metro networks, and campus networks where single-mode fiber is available and moderate distances are required.

Example Modules

Cisco 10GBASE-LR SFP+: Supports up to 10 km on SMF, with optional DOM support for monitoring. Ubiquiti 10G Single-Mode Optical Module: Supports 10G connections up to 10 km using duplex LC UPC connectors, suitable for Ubiquiti switches and other compatible devices. 10Gtek 10GBASE-LR SFP+: Compatible with multiple vendors, supports 1310 nm wavelength, and is designed for data center and HPC applications.

Summary10

G single-mode fiber provides a reliable, long-reach solution for 10 Gigabit Ethernet networks. Using SFP+ transceivers at 1310 nm with duplex LC connectors, it supports distances up to 10 km, making it ideal for enterprise, data center, and metro network deployments. Proper attention to optical budget, fiber quality, and module compatibility ensures stable high-speed connectivity over single-mode fiber.

Article Content

Cisco 10GBASE SFP+ Modules Data Sheet

This data sheet describes the benefits, specifications, and ordering information for the Cisco 10GBASE SFP+ Modules Data Sheet.

Cisco 10GB Single Mode SFP: Specs, Types & Features

Explore Cisco 10GB Single Mode SFP modules, including types, specifications, parameters, and key features for reliable long-distance fiber networking.

SFP-10G-LR Specifications: Optical, Electrical & Link Params

The SFP-10G-LR specification defines a standardized 10-gigabit Ethernet optical transceiver designed for 10GBASE-LR links over single-mode fiber (SMF). “LR” stands for Long Reach, indicating support

U®Fiber Modules and FiberCable Datasheet

For long-distance single-mode runs, use the UF-SM-10G for distances of up to 10 km at 10 Gbps, or use the UF-SM-1G for distances of up to 3 km at 1 Gbps. To protect DC power and fiber, deploy

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Comprehensive Guide to FS 10G BiDi SFP Modules

FS 10G BiDi SFP+ modules are a powerful tool for network engineers seeking to boost bandwidth without doubling fiber investment. With their compact form factor, reduced power draw,

10G Single-Mode/10KM Fiber SFP+ Module

As a hotpluggable module with a standard duplex connector for fiber communications, the 2A-142G works with single-mode-fiber (SMF) connections and operates at a nominal wavelength of 1310 nm.

10G SFP+ Fiber – SFP+ Single Mode LC Module (10km)| TRENDnet

TRENDnet''s 10G SFP+ Single Mode LC Modules enable reliable, long-distance network applications. Each 10G SFP+ transceiver supports high-speed data rate up to 10.31Gbps.

PRODUCT SPECIFICATIONS

This single mode fiber (SMF) SFP+ transceiver provides 10GBase-LR troughput to up to 10km making use of a wavelenght of 1310nm over a duplex LC connector.

10G SFP+ Fiber – SFP+ Single Mode LC Module

Each single mode 10G SFP+ transceiver is equipped with a duplex LC fiber connection interface, and supports high-speed data rates up to 10.31Gbps. All

Fiber Patch Cable Selection Guide 2026: How to Choose the Right

Which fiber patch cable fits your network? Compare OS2, OM3 & OM4 specs, match fiber to distance and speed, avoid costly mistakes. Expert guide for data centers.

10G BiDi SFP+ 20km Tx1270/Rx1330

10GBASE-BX20 10G BiDi SFP+, 20km single fiber, Tx1270/Rx1330nm, 9dB budget, DOM. Matched-pair module. EU stock + lifetime warranty. €16.33.

OM1-OM5 vs Singlemode Fiber: Best for 2025 Data

Compare OM1-OM5 and singlemode fiber for 2025 data centers and AI networks. Expert guide to choosing the right fiber type for high-speed

Meaning of Optical Module Pull Tap Colors

2. BIDI SFP Single-fiber Bidirectional Optical Module Pull Tap Color The characteristic of a single-fiber bidirectional optical module is that it can realize signal transmission in two directions

Small-Form Factor Pluggable (SFP) and Stacking Accessories

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This article provides technical data on Fiber Transceivers and stacking accessories compatible with Meraki devices.

10G BiDi SFP+ TX1550nm/RX1490nm 70KM LC Optical Transceiver

Product Description□10G BiDi SFP+ 1490nm/1550nm 70KM LC Optical Transceiver This high-performance bidirectional SFP+ transceiver delivers 10Gbps connectivity over 70km single-mode

Cisco 40GBASE QSFP Modules Data Sheet

It primarily enables high-bandwidth 40G optical links over 12-fiber parallel fiber terminated with MPO/MTP multifiber female connectors. It can also be used in a 4x10G breakout mode for

Ubiquiti 10G Single-Mode Optical Module UACC-OM-SM-10G-D-2

Ubiquiti 10G Single-Mode Optical Module SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector. Max data rate: 10 Gbps Compatible with

OS2 Fiber LC to LC Single Mode Fiber Patch Cables 1.6ft/0.5m

Buy OS2 Fiber LC to LC Single Mode Fiber Patch Cables 1.6ft/0.5m-8PACK, SM Singlemode Fiber Optic Cable 10G SMF LSZH Duplex 9/125m OD 2.0mm, with fast shipping and top-rated customer

Related Video Reference

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

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

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