

Product Brief

Brocade[®] 32 Gb/s ELWL (25 km) SFP+ Transceiver

Highlights

- Provides high system reliability through rigorous qualification and certification processes
- Leverages unique design parameters to provide the highest performance with industry-leading Brocade switch and director platforms to support business continuity and disaster recovery
- Helps eliminate issues related to SFP incompatibility, reducing downtime and support costs
- Helps eliminate issues resulting from unexpected design changes, providing ongoing end-to-end compatibility
- Optimizes connectivity with Brocade platforms to enable maximum cable distance
- Extends Fibre Channel connectivity over distance in mainframe environments, enabling high-performance business continuity and disaster recovery solutions

Key Features

- Hot-swappable, low-voltage (3.3V) digital diagnostic optical transceivers that support high-speed serial links over single-mode optical fiber at signaling rates up to 28.05 Gb/s
- 1310 nm DFB laser
- FC-PI-6 compliance for 28.05/14.025/8.5 Gb/s operation

Optimized, Certified Optical Transceivers for Extending Service Provider and Data Center Networks

Overview

Today's enterprise data centers are undergoing an infrastructure transformation, requiring higher speeds, greater scalability, and higher levels of performance and reliability to better meet the demands of business. As speed and performance needs increase, optical transceivers—once considered a generic component of Fibre Channel switching technologies—have become an integral part of overall system design. However, optical transceiver design margins and parameters vary widely, and can be the difference between an optimized, highly reliable fabric, and incompatibility issues that drive up support costs.

The Brocade 32 Gb/s Long Wavelength (ELWL) 25 km SFP+, part of the Brocade family of small form-factor pluggable (SFP) optical transceivers, is optimized to fully leverage Brocade 32 Gb/s switch and director products. Brocade ELWL SFPs extend native Fibre Channel connectivity over distance, enabling high-performance disaster recovery and business continuity solutions.

The Brocade ELWL SFPs are the standard choice for use in mainframe environments, connecting to IBM System z channels and FICON devices over distance for business continuity and disaster recovery. Together with Brocade switching products, they provide state-of-the-art performance, helping IT organizations achieve new levels of infrastructure consolidation while expanding the capabilities of their applications and services.

End-to-End Compatibility and Reliability

The Brocade 32 Gb/s ELWL 25 km SFP+ modules support highly reliable operations in data center fabrics and are optimized for Brocade 32 Gb/s switching platforms. They undergo rigorous qualification and certification testing that results in an end-to-end solution that is easier to maintain—helping improve the availability of data center fabrics supporting mission-critical applications.

Key Features (con't)

- Diagnostic features per SFF-8472 *Diagnostic Monitoring Interface for Optical Transceivers*, providing real-time monitoring of:
 - Transmitted optical power
 - Received optical power
 - Laser bias current
 - Temperature
 - Supply voltage
- Industry-standard LC duplex connector
- 25 km link lengths on 9 μ m single-mode fiber (with 10 km minimum link length)
- IEC 60825-1 Class 1/CDRH Class 1 laser, eye-safe
- Compliance with Restriction on Hazardous Substances (RoHS) directive

Ordering Part Number

- XBR-000278 (1-pack)

Regulatory and Standards Compliance

- North America: UL/CSA 60950, CDRH Class 1
- European Union: EN 60950, EN 60825 Class 1

Caution

- Do not look through the optical ports, as it is a potential eye hazard.
- SFP is an ESD sensitivity Class 1 device. It should be handled accordingly.

Family of Optical Transceivers

Brocade offers a comprehensive family of reliable optical transceivers to provide highly compatible, high-performance connectivity to Brocade director and switch products.

For additional ordering information, contact a Brocade representative or visit www.broadcom.com/products/fibre-channel-networking/transceiver-modules.

Maximizing Investments

To help optimize technology investments, Brocade, a Broadcom Inc. Company, and its partners offer complete solutions that include professional services, technical support, and education. For additional information, contact a Brocade sales partner or visit www.broadcom.com.

System Specifications

Parameter	Description
Performance	Fibre Channel: 8.5 Gb/s, 14.025 Gb/s, and 28.05 Gb/s line speed, full duplex; auto-sensing of 8 Gb/s, 14 Gb/s, and 28 Gb/s port speeds
Media	Hot-pluggable, industry-standard SFP+, LC connector; ELWL 25 km; minimum distance of 10 km required
Operating Parameters	Transmit (Tx): <ul style="list-style-type: none"> • Wavelength: 1295 nm to 1310 nm • Spectral width: 1.0 nm • Average power: +2.0 dBm to +7.0 dBm • RIN: -130 dB/Hz max. • OMA: 1.585 mW min. Receive (Rx): <ul style="list-style-type: none"> • Average power: 2 dBm max. • Optical return loss: 26 dB min. • Unstressed sensitivity: 41 μW, -13.9 dBm

Mechanical Specifications

Size	Width: 14.81 mm (0.58 inches) Height: 11.90 mm (0.47 inches) Depth: 56.50 mm (2.22 inches)
------	--

Environmental Specifications

Storage Temperature	-40°C to +85°C (-40°F to +185°F)
---------------------	----------------------------------

Power Specifications

Power Dissipation	1.5W max.
-------------------	-----------