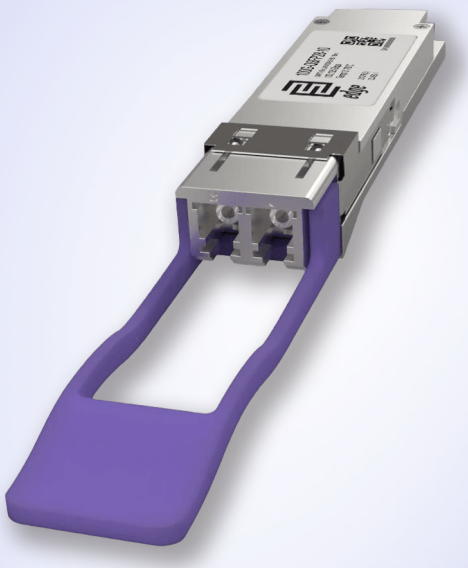
edge OPTICAL SOLUTIONS

Product Data Sheet

100G-QSFP28-10

Optical Transceiver



Key Features

- Media Type: **Single-Mode Fiber (SMF)**
- Connector: **Double LC/UPC**
- Fiber Count: **Duplex**
- Maximum Distance: **10 km**
- Average Link Budget: **6.3 dB**
- Tx Wavelength: **1310 nm**
- Supported Data Rate: **112 Gbps**
- DDM/DOM: **Supported**

Product Description

EdgeOptic's 100G-QSFP28-10 is a 100GBASE-LR4 QSFP28 transceiver designed for 100 Gigabit Ethernet links over single-mode fiber. The module multiplexes four LAN-WDM optical lanes at 25.78125 Gbps each (NRZ modulation) onto a single LC duplex pair, for an aggregate line rate of 103.125 Gbps (100 Gbps usable payload after 64B/66B encoding). The platform also supports OTU4 (4I1-9D1F per ITU-T G.959.1) at 111.81 Gbps on the same wavelength plan. A single SKU covers both 100G Ethernet uplink and OTN client-side roles. Codeable for over 80 vendor host platforms with vendor-recognized EEPROM.

The 100G-QSFP28-10 uses LAN-WDM technology with four discrete wavelength channels at 1295.56 nm, 1300.05 nm, 1304.58 nm, and 1309.14 nm. The transmitter is built on an EML (Electro-absorption Modulated Laser) array with a PIN photodiode array on the receive side. This optical architecture enables full-duplex 100G transmission over a single fiber pair by multiplexing the four channels within the 1310 nm wavelength window.

The 100G-QSFP28-10 carries a 6.3 dB guaranteed optical link budget, supporting reach up to 10 km on G.652 single-mode fiber. Actual reach depends on installed fiber attenuation and connector loss; the 10 km figure assumes industry-typical attenuation against the guaranteed budget. The duplex fiber configuration reduces cabling-infrastructure cost versus parallel single-mode (PSM4) alternatives at the same data rate.

The 100G-QSFP28-10 is a hot-pluggable QSFP28 module with a duplex LC/UPC optical interface. The electrical interface conforms to SFF-8636 and SFF-8665 MSA specifications for compatibility with standard QSFP28 host systems across multi-vendor equipment platforms. The module is coded with vendor-recognized EEPROM for over 80 equipment brands.

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The module reports DDM/DOM (Digital Diagnostic Monitoring) telemetry per SFF-8636, including TX/RX optical power per lane, case temperature, laser bias current, and supply voltage. The QSFP28 has no internal FEC engine but is fully transparent to host-side RS-FEC (IEEE 802.3bj Clause 91), which runs in the switch or router ASIC. The module operates within a 0 to 70°C case temperature range on a single 3.3 V supply with maximum power consumption of 3.5 W.

Standards compliance covers IEEE 802.3ba 100GBASE-LR4, IEEE 802.3bm CAUI-4, QSFP28 MSA SFF-8665, and SFF-8636 management interface. Multi-vendor interoperability is achieved through MSA adherence; equipment with vendor-specific module validation may require custom EEPROM programming. The module carries CE marking, RoHS-6 compliance, and Class 1 laser safety classification (FDA 21 CFR 1040, IEC 60825-1).

Typical applications include data center site interconnects, ISP backbone and aggregation networks, mobile operator core and backhaul, and enterprise campus links. The LAN-WDM design delivers a balance between reach capability and fiber-utilization efficiency for 10 km deployments.

Ships next business day from EU stock with a lifetime warranty. Backed by 15+ years of EdgeOptic compatibility engineering across vendor optical platforms. For volume orders, custom EEPROM programming, or pre-sales engineering questions, contact our sales team.

Technical Specifications

Specification	Value
Form Factor	QSFP28
Modulation	NRZ (Non-Return to Zero)
Media Type	Single-Mode Fiber (SMF)
Connector	Double LC/UPC
Fiber Count	Duplex
Maximum Distance	10 km
Average Link Budget	6.3 dB
TX Wavelength	4-channel LAN WDM (1295.56/1300.05/1304.58/1309.14 nm)

RX Wavelength	4-channel LAN WDM (1295.56/1300.05/1304.58/1309.14 nm)
Supported Data Rate	112 Gbps
Supported Ethernet Applications	100G Ethernet (103.125 Gbps)
Optical Transport Network (OTN) Applications	OTU4 (112 Gbps)
DDM/DOM	Supported
Forward Error Correction (FEC)	Host FEC Supported
Transmitter Type	EML Laser
Tx Wave Bandwidth	4 LAN WDM Seperated 1310 nm Lanes (15.66 nm 1294.53 – 1310.19nm) (L0 Tx center 1295.56nm, L1 Tx center 1300.05nm, L2 Tx center 1304.58nm, L3 Tx center 1309.14nm)
Average Launch Power (Min) Each Lane	-4.3 dBm
Average Launch Power (Max) Each Lane	4.5 dBm
Extinction Ratio (Min)	4 dB
Receiver Type	PIN photodiode
RX Wave Bandwidth	4 LAN WDM Seperated 1310 nm Lanes (15.66 nm 1294.53 – 1310.19nm) (L0 Tx center 1295.56nm, L1 Tx center 1300.05nm, L2 Tx center 1304.58nm, L3 Tx center 1309.14nm)
Average Receiver Sensitivity (Min) Each Lane	-10.6 dBm
Average Receiver Sensitivity (Max) Each Lane	-8.6 dBm
Receiver Overload	5.5 dBm
Temperature Range	Standard 0°-70°C
Storage Temperature	-40° to 85°C
Relative Humidity	5 to 85%

Power Consumption (Max)	3.5 W
Power	+3.3V single power supply
Compliance	CE, RoHS, Class 1 FDA and IEC60825-1 Laser Safety Compliant, IEEE 802.3ba, IEEE 802.3bm, 100GBASE-LR4, QSFP28 MSA, SFF-8636 (Management Interface for 4-lane modules), SFF-8665

Ordering Info

SKU	Description
100G-QSFP28-10	Double Fiber 100GBASE-LR4 QSFP28 Module (Tx/Rx 4 LAN WDM lines:1295.56, 1300.05, 1304.58, 1309.14, up to 112 Gbps, Max. 10km over SMF, 6.3 dB, Temp. 0-70C, LC/UPC)

Warranty

EDGE Optic's provides a limited warranty for **sixty (60) months** from Purchaser's receipt of the Equipment represented in this data sheet against defective design or workmanship.

Compatibility

EDGE Optical transceivers can be provided with custom-encoded firmware, in order to provide compatibility with more than 100 vendor brands in data and telecom communications industry:

MS - General MSA
AD - Adva (Adtran)
AR - Arista
MS - Arris
AU - Aruba
AG - Avago
BR - Broadcom
QL - Cavium (Qlogic)
MS - Ceragon
CH - Checkpoint
MS - Chelsio
CN - Ciena
CI - Cisco
MS - DCN
DL - Dell
EI - ECI
MS - EdgeCore
MS - EdgeWare
MS - Eltex
ER - Ericsson
EX - Extreme Networks
F5 - F5 Networks
MS - Finisar
FO - Fortinet
MS - Fujitsu
HP - HP
HU - Huawei
IB - IBM
IF - Infinera
MS - Innolight
IN - Intel
MS - Ixia
MS - JDSU
JU - Juniper
MS - KyLand
LN - Lenovo
ML - Mellanox (NVIDIA)
MS - MikroTik
MS - MRV
MS - NetApp
MS - Netgear
MS - Netinsight
NK - Nokia (Alcatel)
NS - NSN
MS - OE Solutions
MS - Oracle
MS - Palo Alto Network
MS - Planet
QL - Qlogic (Oracle)
MS - QNAP
RD - RAD
MS - RadWare
MS - Raisecom
MS - Ruckus
MS - Ruijie Networks
MS - Sandvine
MS - Silicom
MS - SolarFlare
SW - Sonicwall
MS - Sophos
MS - Sumitomo
MS - Supermicro
MS - Synology
MS - Telco Systems
MS - TP-LINK
TM - Transmode
MS - Trendnet
MS - Ubiquiti Networks
MS - WatchGuard
MS - ZTE
MS - Zyxel
XX - Other

Version Control

Version: 3.0
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CERTIFIED
ISO 9001

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