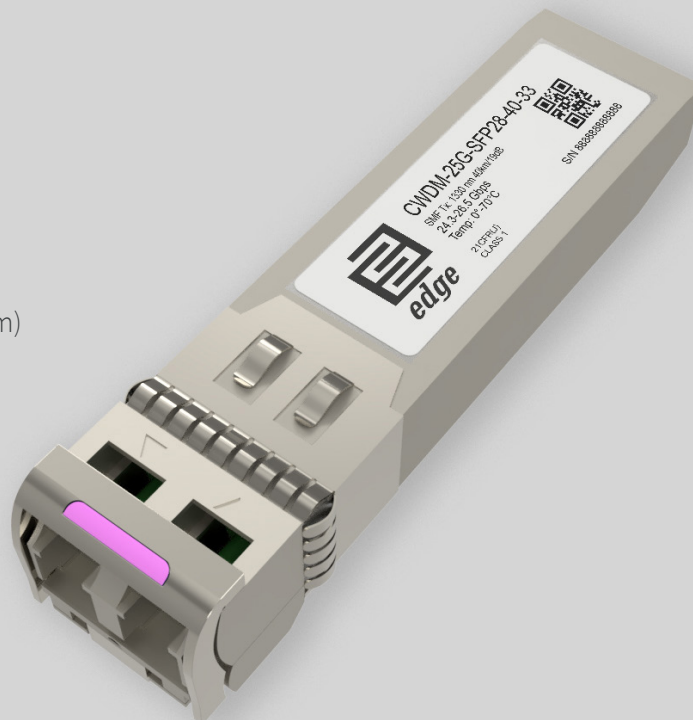# edge
## OPTICAL SOLUTIONS

# *Product Data Sheet*

## Key Highlights:

- **Type:** SFP28
- **Compatibility:** Multi-Vendor MSA Compatible
- **Tx Wavelength:** 1330 nm
- **Rx Wavelenght:** G.694.2 CWDM Grid (1270-1610nm)
- **Transmitter Type:** DFB Laser
- **Media Type:** Single-Mode Fiber (SMF)
- **Connectors:** Double LC
- **Optical Budget:** 19 dB
- **Max. Distance:** 40km (with FEC), 30km (no FEC)
- **Data Rate:** 24.33-25.78 Gbps
- **DDM/DOM:** Supported
- **Power Consumption:** <1.2W
- **Temperature:** Standard 0°-70°C

## *Optical Transceiver:*    *CWDM-25G-SFP28-40-33*

## Product Description:

CWDM-25G-SFP28-40-33 is a 1330 nm CWDM 25GBASE-ER Lite Multi-Vendor MSA Compatible SFP28 (Small Form-Factor Pluggable 28) Transceiver, operating over Double Fiber Single-Mode Fiber (SMF) optical cable. It has minimum guaranteed optical budget of 19 dB, which in most cases is enough to reach 40 km over OS2 fiber with FEC (Forward Error Correction) function, or 30km without FEC. However, distance is just indicative parameter for comfort of identification that is calculated by taking into account minimal optical budget and average attenuation of optical cabling in industry. CWDM-25G-SFP28-40-33 uses top quality DFB (Distributed Feedback Laser) transmitter and 25Gb/s APD receiver. CWDM-25G-SFP28-40-33 1330 nm CWDM 25GBASE-ER Lite supports DDM/DOM optical diagnostics that provide real-time diagnostic information about the present operating conditions. CWDM-25G-SFP28-40-33 operates in Standard 0°-70°C temperature range and has Double LC interface. CWDM-25G-SFP28-40-33 1330 nm CWDM 25GBASE-ER Lite SFP28 support 24.33-25.78 Gbps data rate and is designed for 25G Ethernet (25.78 Gbps) applications. CWDM-25G-SFP28-40-33 SFP28 Double Fiber optical transceiver is multi-purpose module used in number of different places of today's networking. Consequently, most popular use cases are in Internet Service Provider (ISP) Access and Metro Networks Data Center Core Networks and Enterprise Campus Networks.

CWDM-25G-SFP28-40-33 1330 nm CWDM 25GBASE-ER Lite SFP28 transceiver is CE/RoHS certified and is compliant with product safety standards. CWDM-25G-SFP28-40-33 is fully compliant to SFF-8431 and SFF-8472 Multi Source Agreement (MSA), IEEE 802.3by 25 Gb/s specification. Consequently, compliance to above standards guarantees that module is compatible and works with majority of networking equipment, where is not implemented special algorithm for protection against third party modules. However - our technical team has accumulated deep expertise in custom-encoded firmware's for 1330 nm CWDM 25GBASE-ER Lite SFP28 transceiver in order to make it work in almost any brand equipment. We will be glad to know your requirements.

# Product Data Sheet

## Product Specification:

| General Parameter | Value |
|---|---|
| Media Type: | Single-Mode Fiber (SMF) |
| Connectors: | Double LC |
| Tx Wavelength: | 1330 nm |
| Rx Wavelength: | G.694.2 CWDM Grid (1270-1610nm) |
| Minimum Optical Budget: | 19 dB |
| Maximum Distance: | 40km (with FEC), 30km (no FEC) |
| Supported Data Rate: | 24.33-25.78 Gbps |
| Supported Applications: | 25G Ethernet (25.78 Gbps) |
| Modulation Format: | NRZ |
| DDM/DOM: | Supported |
| CDR (Clock and Data Recovery): | Supported |
| Operating Temperature Range: | Standard 0°-70°C |
| Storage Temperature Range: | -40° to 85°C |
| Relative Humidity (Non-Condensation): | 0 to 85% |
| Power Consumption: | <1.2W |
| Power Supply Voltage Typical: | +3.3V single power supply |
| Power Supply Voltage Range: | 3.14 to 3.46V |
| Supply Current (Max): | 360 mA |
| Chipset: | Macom, Oclaro, Renesas Electronics, II-VI, Neo, Maxim, Sumitomo, Semtech |
| Compliance: | SFP+ MSA, SFF-8402, SFF-8472, SFF-8431, SFF-8432, CE, RoHS-6, Class 1 FDA and IEC60825-1 Laser Safety Compliant |
| MTBF value at 35 °C: | 1'000'000 Hours. |

| Transmitter Parameters | Value |
|---|---|
| Transmitter Type: | DFB Laser |
| Tx Wavelength Bandwidth: | 20nm (1320-1340 nm) |
| Average Optical Power (Min): | 0 dBm |
| Average Optical Power (Max): | 6 dBm |
| Spectral Width (RMS) (Max): | 1nm |
| Extinction Ratio (Min): | 4 dB |
| Relative Intensity Noise: | -130 dB/Hz |

# Product Data Sheet

| Transmitter Parameters | Value |
| --- | --- |
| Input differential impedance (Max): | 100 Ohm |
| Single ended data input swing (Min): | 180 mV |
| Single ended data input swing (Max): | 700 mV |
| Transmit Disable Voltage (Min): | 2 V |
| Transmit Disable Voltage (Max): | Vcc V |
| Transmit Enable Voltage (Min): | Vee V |
| Transmit Enable Voltage (Max): | Vee+ 0.8 V |

| Receiver Parameters | Value |
| --- | --- |
| Receiver Type: | PIN photodiode |
| Rx Wavelength Bandwidth: | G.694.2 CWDM Grid (1270-1610nm) |
| Receiver Sensitivity (Max): | -19 dBm |
| Receiver Overload: | -6 dBm |
| LOS Assert (Min): | -30 dBm |
| LOS De-Assert (Max): | -19 dBm |
| LOS Hysteresis (Min): | 0.5 dB |
| Differential data output swing (Min): | 400 mV |
| Differential data output swing (Max): | 800 mV |
| LOS Fault (Max): | 2 V |
| LOS Normal (Min): | VccHOST V |
| LOS Normal (Max): | Vee V |

# edge OPTICAL SOLUTIONS

# Product Data Sheet

## Compatibility:

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

| | | | |
|---|---|---|---|
| **MS** - General MSA | **DZ** - DZS(Dasan-Zhone) | **KY** - KyLand | **SV** - Sandvine |
| **AD** - ADVA | **EI** - ECI | **LN** - Lenovo | **SC** - Silicom |
| **AE** - Advantech | **EC** - EdgeCore | **ML** - Mellanox | **SF** - SolarFlare |
| **AL** - Alcatel (Nokia) | **EW** - EdgeWare | **ME** - Meraki (Cisco) | **SW** - Sonicwall |
| **AT** - Allied Telesis | **EL** - Eltex | **MT** - MikroTik | **SM** - Supermicro |
| **AR** - Arista | **EM** - EMC2 | **MO** - Moxa | **SY** - Synology |
| **AS** - Arris | **EN** - Enterasys | **MR** - MRV | **TC** - Telco Systems |
| **AV** - Avaya | **ER** - Ericsson | **NC** - NEC | **TP** - TP-LINK |
| **BC** - Barracuda | **EF** - EXFO | **NG** - Netgear | **TN** - Trendnet |
| **BR** - Broadcom | **EX** - Extreme Networks | **NK** - Nokia | **UN** - Ubiquiti Networks |
| **QL** - Cavium (Qlogic) | **F5** - F5 Networks | **NT** - Nortel | **VX** - VeEx |
| **CR**- Ceragon | **FI** - Finisar | **NS** - NSN | **WG** - WatchGuard |
| **CP** - Checkpoint | **FO** - Fortinet | **OR** - Oracle | **WS** - Waystream |
| **CH** - Chelsio | **FU** - Fujitsu | **PA** - Palo Alto Network | **WT** - Westermo |
| **CN** - Ciena | **H3** - H3C | **PL** - Planet | **ZT** - ZTE |
| **CI** - Cisco | **HI** - Hirschmann | **QC** - QCT(Quanta) | **ZX** - Zyxel |
| **LI** - Cisco (Linksys) | **HU** - Huawei | **QN** - QNAP | **HP** - HP |
| **CE** - Comnet | **IB** - IBM | **RD** - RAD | **AG** - Avago |
| **CO** - Coriant | **IF** - Infinera | **RW** - RadWare | **OC** - Oclaro |
| **DH** - Dahua | **IN** - Intel | **RC** - Raisecom | **EU** - Emulex |
| **DC** - DCN | **IX** - Ixia | **RK** - Ruckus | **TM** - Transmode |
| **DL** - Dell & Force10 | **JU** - Juniper Networks | **RU** - Ruijie Networks | **AU** - HP Aruba |
| **DK** - D-Link | **KM** - KeyMile | **SG** - Samsung | **XX** - Other |

## 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. Warranty does not cover damage caused by improper deployment, misuse and accidents.

**EDGE Technologies Ltd.**
Plienciema Street 33, Marupe
Latvia, LV-2167
sales@edgeoptic.com
www.edgeoptic.com