

Standards and Regulatory Compliance:

- RoHS compliant
- QSFP28 MSA (multi-source agreement)
- CWDM4 MSA
- 4WDM MSA

Protocols and Data Rates

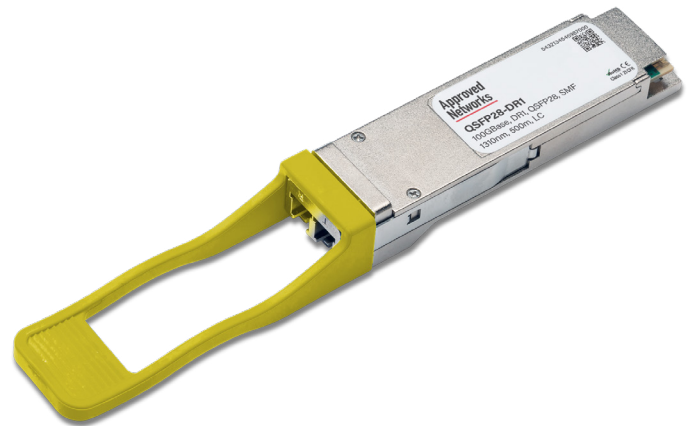
- 100G Ethernet (103.125 Gbps)

Dimensions

- LxWxH (mm): 72 (122 incl. pull ring) x 18.4 x 8.5

Connector

- MPO12 receptacle (SR4)
- MPO 8° angled (PSMIR4 – MPO-to-LC breakout cables available)



- LC connector (CWDM4, 4WDM-10 (CWDM4-10), CLR4, LR4, LR4-Lite, ER4-Lite, and 4WDM-40)

Warranty

- All feature a limited 3-year warranty

Notes

- Includes MDIO digital diagnostics

Part Number	Wavelength (nm)	Fiber Type	Rated Distance	Temp. Range (°C)	Description	Avg. Launch Power/Lane (min/max) (dBm)	Avg. Rx Power/Lane (min/max) (dBm)	Max Power Consumption (W)
SINGLE RATE (100GBASE ETHERNET)								
100GQSFP28E-SR4	850 (4x25Gb/s)	MMF	70m (OM3) ¹ 100m (OM4) ¹	0 to 70	100GBase-SR4 QSFP28, 70m/100m, MMF MPO connector	-8.4 / 2.4	-10.3 / 2.4	3.5
100GQSFP28E-SW4	850 (4x25Gb/s)	MMF	75 (OM3) ¹ 100m (OM4) ¹ 150m (OM5) ¹	0 to 70	100GBase-SWDM4 QSFP28, 75m/100m/150m, MMF LC connector	-5.5 / -3.0	-9.4 / 3.4	3.5
100GQSFP28E-PSMIR4	1310	SMF	2km	0 to 70	100GBase-PSMIR4 QSFP28, 2km, SMF MPO 8° angled connector	-5.5 / 2.0	-10.2 / 2.0	3.5
100GQSFP28E-LR4L	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	2km	0 to 70	Single-Rate 100GBase-LR4 Lite QSFP28 2km, SMF LC/UPC connector	-6.0 / 4.5	-10.0 / 4.5	4.0
100GQSFP28E-CW4	1264.5-1277.5 1284.5-1297.5 1304.5-1317.5 1324.5-1337.5	SMF	2km ²	0 to 70	Single-Rate 100GBase-CWDM4 QSFP28 2km (w/ FEC) SMF LC/UPC connector	-6.5 / 2.5	-10 / 2.5	3.5
100GQSFP28E-4W10 ⁴	1264.5-1277.5 1284.5-1297.5 1304.5-1317.5 1324.5-1337.5	SMF	10km ²	0 to 70	Single-Rate 100GBase-4WDM10 (CWDM4-10) QSFP28 10km (w/FEC) SMF LC/UPC connector	-6.5 / 2.5	-12.8 ³ / 2.5	3.5
100GQSFP28E-LR4(-H)	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	10km	0 to 70 (-40 to 85)	Single-Rate 100GBase-LR4 QSFP28 10km SMF LC/UPC connector	-4.3 / 4.5	-10.6 / 4.5	4.5

Part Number	Wavelength (nm)	Fiber Type	Rated Distance	Temp. Range (°C)	Description	Avg. Launch Power/Lane (min/max) (dBm)	Avg. Rx Power/Lane (min/max) (dBm)	Max Power Consumption (W)
SINGLE RATE (100GBASE ETHERNET)								
100QSFP28E-LR4S ¹	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	10km	0 to 70	Single-Rate 100GBASE-LR4 QSFP28 10km SMF LC/UPC connector	-4.3 / 4.5	-10.6 / 4.5	4.0
100QSFP28E-ER4L	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	40km ²	0 to 70	Single-Rate 100GBASE-ER4 QSFP28 40km (w/FEC), SMF LC connector, C-Temp	-2.9 / 4.5	-18.5 / -4.9 (40km) -12.65 / -4.9 (25km)	4.5
100QSFP28E-ER4L-H	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	40km ²	-20 to 85	Dual-Rate 100G Base-ER4 QSFP28 40km (w/FEC), SMF, LC connector, I-Temp	-2.5/6.5	-20.5 / -3.5	5.5
100QSFP28E-4W40	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	40km ²	0 to 70	Single-Rate 100GBASE-4WDM40 QSFP28 40km (w/FEC), SMF LC connector, C-Temp	-2.5 / 6.5	-20.5 / -3.5	5.0
100QSFP28E-ZR4	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	80km ²	0 to 70	Single-Rate 100GBASE-ZR4 QSFP28 80km w/FEC (40km W/o FEC) 1310nm SMF LC, C-Temp	2.0 / 6.5	-28.0 / -5.0	5.0
MULTI-RATE (100GBASE ETHERNET/OTN OTU4)								
100QSFP28M-LR4	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	10km	0 to 70	Multi-Rate 100GBASE-LR4/OTU4 QSFP28 10km SMF LC connector, C-Temp	100GBASE-LR4: -4.3 / 4.5 OTU4: -0.6 / 4.0	100GBASE-LR4: -10.6 / 4.5 OTU4: -8.4 / 4.0	4.5
100QSFP28M-ER4L	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	40km ²	0 to 70	Multi-Rate 100GBASE-ER4/OTU4 QSFP28 40km (w/FEC) SMF LC connector, C-Temp	100GBASE-LR4: -2.5 / 6.5 OTU4: 0.6 / 5.1	100GBASE-LR4: -18.5 / -3.5 OTU4: -17.4 / -4.9	4.5
100QSFP28M-4W40	1294.53-1296.59 1299.02-1301.09 1303.54-1305.63 1308.09-1310.19	SMF	40km ²	0 to 70	Multi-Rate 100GBASE-4WDM40/OTU4 QSFP28 40km/FEC SMF LC connector, C-Temp	100GBASE-4WDM40: -2.5 / 6.5 OTU4: 0.6 / 5.1	100GBASE-4WDM40: -20.5 / -3.5 OTU4: -18.9 / -4.9	5.0
SINGLE LAMBDA 100G ETHERNET								
100QSFP28E-DR1	1310	SMF	500m	0 to 70	100G QSFP28 DR1, 1x106.25Gb/S PAM4, 1310nm SMF LC connector, C-Temp, 500m, single Lambda	-2.9 / 4.0	-5.9 / 4.0	4.5
100QSFP28E-FR1	1310	SMF	2km	0 to 70	100G QSFP28 FR1, 1x106.25Gb/S PAM4, 1310nm SMF LC connector, C-Temp, 2km, single Lambda	-2.4 / 4.0	-6.4 / 4.5	4.5
100QSFP28E-LR1	1310	SMF	10km	0 to 70	100G QSFP28 LR1, 1x106.25Gb/S PAM4, 1310nm SMF LC connector, C-Temp, 10km, single Lambda	-1.4 / 4.5	-7.7 / 4.5	4.5

Notes:

- Requires FEC on the host to support maximum distance, per 100GBASE-SR4.
- Requires FEC on the host to support maximum distance, per 100GBASE-CWDM4, 100GBASE-4WDM, etc.
- Min. is informative (BER = 5x10⁻⁵, PRBS = 2³¹ - 1).
- Previously 100QSFP28E-ECW4.
- Fully interoperable with 100QSFP28E-LR4.

Accessories

CFP2-to-QSFP28 Adapter

Approved Networks provides a CFP2-to-QSFP adapter, CON-CFP2-QSFP28, which converts a 100G CFP2 port into a 100G QSFP28 port. This simple plug-and-play product gives customers the flexibility of using 100G QSFP28 modules in the 100G CFP2 interface port of a legacy switch.

Features:

Part Number: CON-CFP2-QSFP28

- CAUI-4 Electrical Interface: 4 lanes @25.78G per lane
- MDIO, I2C support
- Compliant to CFP2 MSA
- ROHS-6 compliant
- C-Temp (0 to 70° C)



*QSFP28 transceivers sold separately.

Cable Ordering Guide

In addition to a full line of 100G QSFP28 transceivers, Approved Networks also offers breakout cables, which can be customized to your particular application according to the ordering scheme listed below.

Part Number Scheme:

FIBER-MPOT-8**CC**-**LLM**-**FM**

T	MPO Connector Type
M	Male
F	Female

CC	Connector Type
FC	FC connector
LC	LC connector
SC	SC connector
ST	ST connector

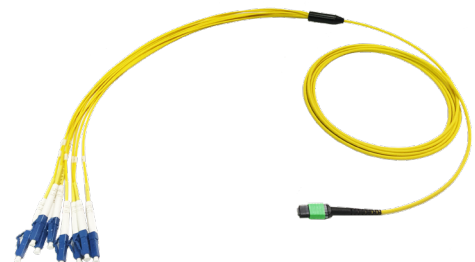
LL	Cable Length
01	1m
03	3m
05	5m
07	7m

F	Fiber Type
S	Single Mode
M	Multi Mode

Other Custom Distances Available.
Contact your Champion ONE sales representative for assistance.



FIBER-MPOM-8LC-03M-SM



FIBER-MPOF-8LC-03M-SM