

## DATASHEET 5.0

# DS-8G-ZR-DXXX

**SFP+, 8/4/2 Gbps FC/FICON, DWDM 100GHz, DDM, 23dB, 80km, D200 - D600 (41ch)**

## OVERVIEW

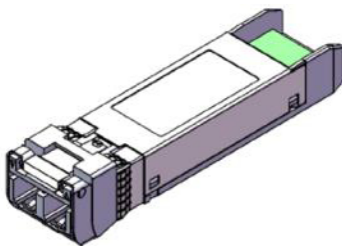
The DS-8G-ZR-Dxxx is a versatile DWDM transceiver in SFP+ form-factor supporting a wide range of Fiber Channel (FC) services (2G to 8G). The transceiver has been layer-1 tested and approved by Cisco.

The transceiver is provided in 41 channel versions at the 100GHz DWDM grid as specified in the ITU-T 694.1 standard. The transceiver can also be used in 1550/1530nm CWDM applications by selecting wavelength versions that match these.

The optical performance provides a bridgeable distance of up to 80km (without dispersion compensation) for 8G FC.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

The transceiver module is compliant to RoHS-6/6.



For a 1550nm CWDM channel the DWDM channels D250 – D410 can be used.

For a 1530nm CWDM channel the DWDM channels D500 – D600 can be used.

(The ITU G.694.2 channel grid states 1551/1531nm ± 7nm)

For 1550nm single-channel applications, the ITU-T G.959 states 1500nm – 1565nm, which means any channel between D200 – D600.

## TECHNICAL DATA

Technology	DWDM 100GHz SFP+
Transmission media	SM (2x LC)
Typical reach	80 km
Nominal wavelengths	192.00 - 196.00 THz (41ch)
Bit rate range	2.125 – 8.5 Gbps
Protocol support	FC: 8G FC 4G FC 2G FC
Power budget	10 – 23 dB <sup>1)2)</sup>
Dispersion tolerance	-500 to 1600 ps/nm
Dispersion penalty	Max: 3 dB
Temperature range	0°C to +70°C
Power consumption	< 1.7 W
<b>Transmitter data:</b>	
Output power (avg):	Min: -1.0 dBm Max: +3.0 dBm
Tx wavelengths	192.00 - 196.00 THz in 100GHz steps (G.694.1)
<b>Receiver data:</b>	
Minimum input power	-24.0 dBm <sup>1)2)</sup>
Max input power	-7.0 dBm
Wavelength range	1480 – 1580 nm
DDM	Yes
MSA compliance	SFP+ MSA
<b>Regulatory compliance</b>	
RoHS	RoHS 6
Safety	EN 60825-1 Class 1 laser product
Storage temp.	-40°C to 85°C

<sup>1)</sup>@ 8.5 Gbps (8G FC)

<sup>2)</sup>@ BER < 1E-12 using PRBS 2<sup>31</sup>-1

## ORDERING INFORMATION

Part Number	ITU channel	$\lambda$ nm
DS-8G-ZR-D200	192.00	1561.42
DS-8G-ZR-D210	192.10	1560.61
DS-8G-ZR-D220	192.20	1559.79
DS-8G-ZR-D230	192.30	1558.98
DS-8G-ZR-D240	192.40	1558.17
DS-8G-ZR-D250	192.50	1557.36
DS-8G-ZR-D260	192.60	1556.55
DS-8G-ZR-D270	192.70	1555.75
DS-8G-ZR-D280	192.80	1554.94
DS-8G-ZR-D290	192.90	1554.13
DS-8G-ZR-D300	193.00	1553.33
DS-8G-ZR-D310	193.10	1552.52
DS-8G-ZR-D320	193.20	1551.72
DS-8G-ZR-D330	193.30	1550.92
DS-8G-ZR-D340	193.40	1550.12
DS-8G-ZR-D350	193.50	1549.32
DS-8G-ZR-D360	193.60	1548.51
DS-8G-ZR-D370	193.70	1547.72
DS-8G-ZR-D380	193.80	1546.92
DS-8G-ZR-D390	193.90	1546.12

Part Number	Freq. THz	$\lambda$ nm
DS-8G-ZR-D400	194.00	1545.32
DS-8G-ZR-D410	194.10	1544.53
DS-8G-ZR-D420	194.20	1543.73
DS-8G-ZR-D430	194.30	1542.94
DS-8G-ZR-D440	194.40	1542.14
DS-8G-ZR-D450	194.50	1541.35
DS-8G-ZR-D460	194.60	1540.56
DS-8G-ZR-D470	194.70	1539.77
DS-8G-ZR-D480	194.80	1538.98
DS-8G-ZR-D490	194.90	1538.18
DS-8G-ZR-D500	195.00	1537.40
DS-8G-ZR-D510	195.10	1536.61
DS-8G-ZR-D520	195.20	1535.82
DS-8G-ZR-D530	195.30	1535.04
DS-8G-ZR-D540	195.40	1534.25
DS-8G-ZR-D550	195.50	1533.47
DS-8G-ZR-D560	195.60	1532.68
DS-8G-ZR-D570	195.70	1531.90
DS-8G-ZR-D580	195.80	1531.12
DS-8G-ZR-D590	195.90	1530.33
DS-8G-ZR-D600	196.00	1529.55

## DEFINITIONS

<b>Technology</b>	Grey; Transceiver type for non-WDM applications. Electrical or optical. CWDM; Transceiver type for CWDM applications using G.694.2 channel grid. DWDM; Transceiver type for DWDM applications using G.694.1 channel grid. BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber.
<b>Transmission Media</b>	Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
<b>Typical reach</b>	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
<b>Bit rate range:</b>	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
<b>Protocols:</b>	Protocols within supported bit rate range.
<b>Nominal wavelength</b>	Typical wavelength from transmitter.
<b>Interface standards</b>	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
<b>Power budget</b>	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
<b>Dispersion tolerance/penalty</b>	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than 1E-12. Defined at a specific bit rate.
<b>Temperature range</b>	Max operating case temperature range. Standard temperature range: Typically 0°C to +70°C (32°F to +158°F) Extended temperature range (E-temp): Typically -20°C to +75°C (-4°F to +167°F) Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)
<b>Power consumption</b>	Worst case power consumption.
<b>Transmitter Output power</b>	Average output power. Provided in min and max values.
<b>Receiver minimum input power</b>	Minimum average input power at specified BER, normally 1E-12.
<b>Receiver max input power</b>	Maximum average input power giving a BER, normally 1E-12.
<b>DDM</b>	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.