

# SO-SFP-L160D-CXX & -CXX-E

SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1270 – 1610nm (18ch)

## OVERVIEW

The SO-SFP-L160D-Cxx is a CWDM transceiver for Gigabit Ethernet (GbE) and 1G Fiber channel (1G FC). The optical performance provides a bridgeable distance of up to 160km.

The transceiver is available in 18 CWDM wavelengths, spanning from 1270nm to 1610nm in accordance with the G.694.2 standard. This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

The transceiver is available in two temperature range options, one being an extended range: -20°C to 85°C (-4°F to 185°F).

## TECHNICAL DATA

<b>Technology</b>	CWDM SFP
<b>Transmission media</b>	SM (2x LC)
<b>Typical reach</b>	160 km
<b>Nominal wavelength</b>	1270 nm - 1610 nm (18ch)
<b>Bit rate range</b>	1.0625 - 1.25 Gbps
<b>Protocols</b>	Eth: GbE FC: 1G FC
<b>Power budget</b>	17.0 - 38.0 dB
<b>Dispersion tolerance</b>	3200 ps/nm <sup>1)</sup>
<b>Dispersion penalty</b>	1.0 dB <sup>1)</sup>
<b>Temperature range</b>	0°C to +70°C (Cxx) -20°C to +85°C (Cxx-E)
<b>Power consumption</b>	< 1.0W

<b>Transmitter data</b>	Output power:	Min: +2.0 dBm Max: +7.0 dBm
	Tx wavelength:	1270 - 1610 nm in 20nm steps (G.694.2)
<b>Receiver data</b>	Minimum input power:	-36.0 dBm <sup>1)</sup>
	Overload (max power):	-10.0 dBm
	Wavelength range:	1260 - 1635 nm
<b>DDM</b>		Yes
<b>MSA compliance</b>		SFP MSA SFF-8472

<sup>1)</sup> @ 1.25Gbps

### Regulatory compliance

<b>EMC CE</b>	EN 55032:2012, EN 55032:2015 EN 55024:2010, EN 55024:2010+A1
<b>UL/Safety</b>	UL 60950-1
<b>FCC</b>	47 CFR PART 15 OCT, 2013
<b>RoHS</b>	RoHS 6
<b>TUV</b>	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

<b>Storage temp.</b>	-40°C to +85°C
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Note! See "Definitions" below.

## ORDERING INFORMATION

Part number	Description
SO-SFP-L160D-C27	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1270nm
SO-SFP-L160D-C29	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1290nm
SO-SFP-L160D-C31	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1310nm
SO-SFP-L160D-C33	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1330nm
SO-SFP-L160D-C35	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1350nm
SO-SFP-L160D-C37	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1370nm
SO-SFP-L160D-C39	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1390nm
SO-SFP-L160D-C41	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1410nm
SO-SFP-L160D-C43	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1430nm
SO-SFP-L160D-C45	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1450nm
SO-SFP-L160D-C47	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1470nm
SO-SFP-L160D-C49	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1490nm
SO-SFP-L160D-C51	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1510nm
SO-SFP-L160D-C53	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1530nm
SO-SFP-L160D-C55	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1550nm
SO-SFP-L160D-C57	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1570nm
SO-SFP-L160D-C59	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1590nm
SO-SFP-L160D-C61	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1610nm
SO-SFP-L160D-C27-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1270nm, E-temp
SO-SFP-L160D-C29-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1290nm, E-temp
SO-SFP-L160D-C31-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1310nm, E-temp
SO-SFP-L160D-C33-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1330nm, E-temp
SO-SFP-L160D-C35-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1350nm, E-temp
SO-SFP-L160D-C37-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1370nm, E-temp
SO-SFP-L160D-C39-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1390nm, E-temp
SO-SFP-L160D-C41-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1410nm, E-temp
SO-SFP-L160D-C43-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1430nm, E-temp
SO-SFP-L160D-C45-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1450nm, E-temp
SO-SFP-L160D-C47-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1470nm, E-temp
SO-SFP-L160D-C49-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1490nm, E-temp
SO-SFP-L160D-C51-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1510nm, E-temp
SO-SFP-L160D-C53-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1530nm, E-temp
SO-SFP-L160D-C55-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1550nm, E-temp
SO-SFP-L160D-C57-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1570nm, E-temp
SO-SFP-L160D-C59-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1590nm, E-temp
SO-SFP-L160D-C61-E	SFP, 1.25 Gbps GbE, CWDM, DDM, 38dB, 160km, 1610nm, E-temp

## DEFINITIONS

Technology:	CWDM; Transceiver type for CWDM applications using G.694.2 channel grid.
Transmission Media:	Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
Typical reach:	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
Bit rate range:	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
Protocols:	Protocols within supported bit rate range.
Nominal wavelength:	Typical wavelength from transmitter.
Interface standards:	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
Power budget:	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
Dispersion tolerance/penalty:	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than $1E^{-12}$ . Defined at a specific bit rate.
Temperature range:	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)
Power consumption:	Worst case power consumption.
Transmitter Output power:	Average output power. Provided in min and max values.
Receiver minimum input power:	Minimum average input power at specified BER, normally $1E^{-12}$ .
Receiver max input power:	Maximum average input power at specified BER, normally $1E^{-12}$ .
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.