

**DATASHEET 5.2****SO-SFP-10GE-LR40-Cxx****SFP+, 10G Multirate, CWDM, DDM, 14dB, 1270nm-1450nm (10ch)****OVERVIEW**

The SO-SFP-10GE-LR40-Cxx is a versatile CWDM transceiver supporting a wide range of traffic formats ranging from 0.614Gbps to 11.3Gbps. The optical performance provides a power budget of 14dB giving a distance of up to 40km depending on used wavelength. Please note the higher intrinsic fiber attenuation in the 1271-1451nm area.

The transceiver is available in 10 CWDM wavelength versions, spanning from 1270nm to 1450nm 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.

TECHNICAL DATA

Parameter	Value
Technology	CWDM SFP
Transmission media	SM (2x LC)
Typical reach	Up to 40km ¹⁾
Nominal wavelengths	1271 – 1451nm (10ch)
Bit rate range	0.614Gbps – 11.3Gbps
Protocol support	10GbE-WAN, 10GbE-LAN GbE STM-64 / OC192 STM-16 / OC48 STM-4/OC12 OTU2e, OTU2, OTU1 10G FC, 8G FC, 4G FC, 1G FC CPRI Opt 1 (0.6144Gbps) CPRI Opt 2 (1.2288Gbps) CPRI Opt 3 (2.4576Gbps) CPRI Opt 4 (3.0720Gbps) CPRI Opt 5 (4.9152Gbps) CPRI Opt 6 (6.1440Gbps) CPRI Opt 7 (9.8304Gbps) CPRI Opt 7A (8.11008Gbps) CPRI Opt 8 (10.1376Gbps) OBSAI 0.768Gbps OBSAI 1.536Gbps OBSAI 3.0720Gbps OBSAI 6.1440Gbps
Power consumption	< 1.2W
Operating temperature	-5°C to +70°C
Storage temperature	-40°C to +85°C

- 1). Dependent on fiber type, used channel and bit rate.
- 2). Measured at 10.3Gbps using PRBS31 @ BER 1×10^{-12}
- 3). Average power

Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information)

RoHS compliance

Parameter	Value
Transmitter data:	
Output power	Min: -1dBm ³⁾ Max: +4dBm ³⁾
Transmit wavelength	1271 to 1451nm (G.694.2)
Receiver data:	
Minimum input power	-15dBm ^{2) 3)}
Overload (max power)	+0.5dBm ^{1) 2)}
Wavelength range	1260nm – 1620nm
Power budget	3.5 – 14.0dB
Optical path penalty	2dB
DDM	Yes
MSA compliance	SFF-8431, SFF-8472



ORDERING INFORMATION

Ordering number	Description
SO-SFP-10GE-LR40-C27	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1270nm
SO-SFP-10GE-LR40-C29	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1290nm
SO-SFP-10GE-LR40-C31	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1310nm
SO-SFP-10GE-LR40-C33	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1330nm
SO-SFP-10GE-LR40-C35	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1350nm
SO-SFP-10GE-LR40-C37	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1370nm
SO-SFP-10GE-LR40-C39	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1390nm
SO-SFP-10GE-LR40-C41	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1410nm
SO-SFP-10GE-LR40-C43	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1430nm
SO-SFP-10GE-LR40-C45	SFP+, 614Mbps - 11.3Gbps, Multirate, CWDM, DDM, 14dB, 1430nm

GENERAL DEFINITIONS

Parameter	Description
Technology	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. DAC: Direct Attach Cable. Electrical cable with attached connectors. AOC: Active Optical Cable. Optical cable with attached connectors.
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 typical fiber dispersion, fiber loss and power budget properties, i.e. w/o dispersion compensation and optical amplification. Actual distance is dependent on actual optical path loss and dispersion properties.
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(s) from transmitter.
Interface standards	Referenced interface standards or MSA's, e.g. IEEE 802.3 standard for 10GbE services or 100G 4WDM-10 etc.
Power budget	Min and max power budget between Transmitter and Receiver w/o optical path penalties.
Dispersion tolerance/penalty	Maximum amount of tolerated dispersion and required reduction of power budget to maintain stipulated Bit Error Rate (BER) and at a given bit rate.
Temperature range	Max operating case temperature range. Standard temperature range (C-temp): 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. Will vary over temperature.
Transmitter Output power	Average output power. Provided in min and max values.
Receiver minimum input power	Minimum average input power at specified BER, normally $1E^{-12}$. Note that some protocols require FEC to achieve sufficient BER.
Receiver max input power	Maximum average input power giving a BER, normally $1E^{-12}$.
DDM	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.

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