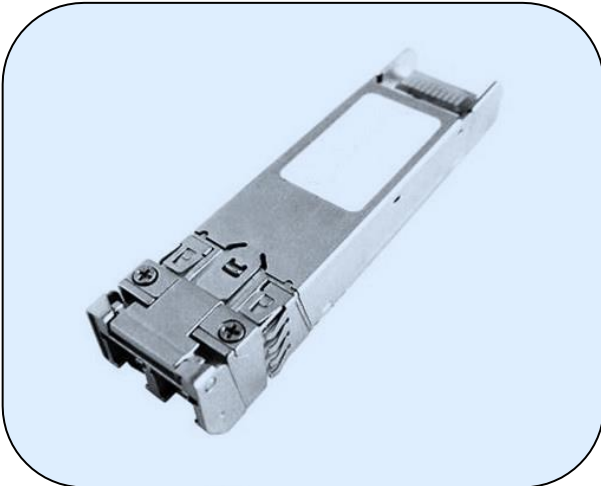


## XTCxxA-40LY

10 Gbps 40 km CWDM SFP+ Transceiver  
1470 nm ~1610 nm



### Features

- Compliant with SFF-8431, SFF-8432 and IEE802.3ae
- CWDM EML transmitter from 1470 nm to 1610 nm
- PIN photodiode
- Operating case temperature: 0°C to 70°C
- Applicable for 40 km SMF connection
- Low Power Consumption
- All-metal housing for superior EMI performance
- Advanced firmware allow customer system encryption information to be stored in transceiver
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- RoHS compliant and lead free

### Applications

- 10 G Ethernet and Fibre Channel
- Other optical links

### Description

XenOpt SFP+ CWDM 40 km Transceiver is a “Limiting module”, designed for 10 Ethernet and 2G/4G/8G/10 G Fiber-Channel applications.

The transceiver consists of two sections: The transmitter section incorporates an EML laser. The receiver section consists of a PIN photodiode integrated with a TIA. All modules satisfy class I laser safety requirements. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472, which allows real-time access to device operating parameters such as transceiver temperature, laser bias current, transmitted optical power, received optical power and transceiver supply voltage.

### Absolute maximum rating

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V <sub>CC</sub>	0	3.6	V
Storage Temperature	T <sub>C</sub>	-40	85	°C
Operating Case Temperature	T <sub>C</sub>	0	70	°C
Relative Humidity	RH	0	85	%
RX Input Average Power	P <sub>max</sub>	-	0	dBm

These values represent the damage threshold of the module. Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate catastrophic damage to the module even if all other parameters are within Operating Conditions.

### Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V <sub>CC</sub>	3.13	3.3	3.47	V
Supply Current	I <sub>CC</sub>	-	-	360	mA
Operating Case temperature	T <sub>ca</sub>	-5	-	70	°C
Module Power Dissipation	P <sub>m</sub>	-	-	1.5	W

## Optical Characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Unit	Min	Max	Note
<b>Transmitter</b>					
Center wavelength	$\lambda$	nm	( $\lambda - 6.5$ )	( $\lambda + 6.5$ )	5
Side Mode Suppression Ratio	SMSR	dB	30		
Average launched power	Pave	dBm	-2	+3	1
Optical Modulation Amplitude (OMA)	Poma	dBm	-2.5		
Transmitter and dispersion penalty	TDP	dB		3.2	3,4
Average launch power of OFF transmitter	Poff	dBm		-30	
Extinction ratio	ER	dB	3.5		2
Relative Intensity Noise		dB/Hz		-128	
Optical Return Loss Tolerance	RIN	dB	12		
<b>Receiver</b>					
Center wavelength	$\lambda$	nm	1260	1600	
Receive overload	Pave	dBm		-8	
Receive sensitivity	Rsen	dBm		-14.4	3
Receiver Reflectance	Rrx	dB		-14	
LOS De-Assert	LOSd	dBm		-22	
LOS Assert	LOSa	dBm	-35		
LOS Hysteresis	LOSh	dB	0.5		

### Notes

1. The optical power is launched into SMF
2. Measured with a PRBS  $2^{31}-1$  test pattern@10.3125 Gbps
3. Measured with a PRBS  $2^{31}-1$  test pattern@10.3125 Gbps BER $\leq 10^{-12}$
4. In G.652 and G.655 (NDSF)
5. The available transmitter center wavelengths ( $\lambda$ ) are: 1271 nm, 1291 nm, 1311 nm... and 1451 nm

## Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		0.6	10.3125	11.3	Gbps	
Power Consumption		-	1200	1500	mW	
<b>Transmitter</b>						
Input differential impedance	Rin		100		$\Omega$	1
Differential data input swing	Vin, pp	180		700	mV	
Tx Fault	VoL	-0.3		0.4	V	
Data Dependent Input Jitter	DDJ			0.10	UI	
Data Input Total Jitter	TJ			0.28	UI	
<b>Receiver</b>						
Differential data output swing	Vout, pp	300		850	mV	2
Rx Output Rise and Fall Time	Tr/Tf	28		50	ps	3
Total Jitter	TJ			0.70	UI	
Deterministic Jitter	DJ			0.42	UI	

## Notes

1. Connected directly to TX data input pins. AC coupling from pins into laser driver IC.
2. Into 100  $\Omega$  differential termination.
3. 20 – 80%. Measured with Module Compliance Test Board and OMA test pattern. Use of four 1's and four 0's sequence in the PRBS 9 is an acceptable alternative. SFF-8431 Rev 3.0.

## Ordering information<sup>1</sup>

PN	Description
XTCxxA-40LY	SFP+ER, 10 Gbps, 40 km, DDM, 0°C ~ +70°C xx = 47 – 1470 nm, 49 – 1490 nm, 51 – 1510 nm, 53 – 1530 nm, 55 – 1550 nm, 57 – 1570 nm, 59 – 1590 nm, 61 – 1610 nm

Notes:

<sup>1</sup> Specification may change without notice. For accurate specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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