

# 4L-Q40BLX4-02

QSFP+ 40GBASE-LX4 , 4x CWDM, MM/SM, DDM, LC Duplex, 150m/2km



## Applications

- Compliant with 40GBASE-LX4 Ethernet
- Datacenter backbones
- Compliant with QDR/DDR Infiniband
- High-speed servers
- SAN, Routers, Hubs, Load Balancer
- High-performance Computing Clusters
- Other optical links

## Features

- QSFP+ 40G Optical Transceiver
- QSFP+ SFF-8436 and MSA Compliant
- Up to 150m links on MMF OM3 fiber
- Up to 2km links on SMF fiber
- DFB laser transmitter
- LC Duplex receptacle
- 4-channel CWDM
- Digital Diagnostic Monitoring
- RoHS-6 and Lead Free
- Operating temperature: 0°C ~ +70°C

## Description

The 4L-Q40BLX4-02 is a QSFP+ designed for data communications over MMF and/or SMF using 4 CWDM channels.

This modules are compatible with most switch/router/server brands and designed to operate with LC Duplex connectors, using the CWDM wavelengths 1271, 1291, 1311 and 1331nm. This modules reach up to 100m over MMF OM3 and 2km over SMF.

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## General Specifications – Absolute Maximum Ratings

Parameter	Symbol	Min	Recommended	Max
Max. Link Length	$l_{max}$			150m (OM3 fiber) 2km (SMF fiber)
Optical Budget	dB	4dB		
Storage Temperature	$T_c$	-40°C		+85°C
Operating Case Temperature	$T_c$	0°C		+70°C
Supply Voltage	$V_{cc}$	-0.5V	3.3V	3.6V

## Optical Specifications

Transmitter				
Parameter	Symbol	Min	Recommended	Max
Total Average Launch Power				8.3dBm (SMF) 9.5dBm (MMF)
Average Output Power	$P_{out}$	-7dBm		2.3dBm
Central Wavelength	$\lambda_{nm}$	1264.5nm 1284.5nm 1304.5nm 1324.5nm	1271nm 1291nm 1311nm 1331nm	1277.5nm 1297.5nm 1317.5nm 1337.5nm
Receiver				
Parameter	Symbol	Min	Recommended	Max
Receiver Sensitivity	$R_{sen}$	-11.5dBm(SMF) -10.5dBm(MMF)		
Receiver Overload (Damage)	$P_{max}$			
Central Wavelength	$\lambda_{nm}$	1264.5nm 1284.5nm 1304.5nm 1324.5nm	1271nm 1291nm 1311nm 1331nm	1277.5nm 1297.5nm 1317.5nm 1337.5nm

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## Electrical Specifications

Parameter	Symbol	Min	Typ.	Max	Unit	Ref.
Supply Voltage	V <sub>cc</sub> V <sub>cc</sub> T <sub>x</sub> V <sub>cc</sub> R <sub>x</sub>				V	
Supply Current	I <sub>cc</sub>				mA	
Transmit turn-on time					ms	
<b>Transmitter (per Lane)</b>						
Single ended input voltage tolerance	V <sub>inT</sub>				V	
Differential data input swing	V <sub>in pp</sub>				mV <sub>pp</sub>	
Differential input threshold					mV	
AC common mode input voltage tolerance (RMS)					mV	
Differential input return loss		Per IEEE P	ba Section	A	dB	
J <sub>2</sub> Jitter Tolerance	J <sub>t</sub>				UI	
J <sub>9</sub> Jitter Tolerance	J <sub>t</sub>				UI	
Data Dependent Pulse Width Shrinkage	DDPWS				UI	
Eye mask coordinates {X1, X2, Y1, Y2}					UI mV	

<b>Receiver (per Lane)</b>						
Single-ended output voltage					V	
Differential data output swing	V <sub>out pp</sub>				mV <sub>pp</sub>	

Quick access to other products:

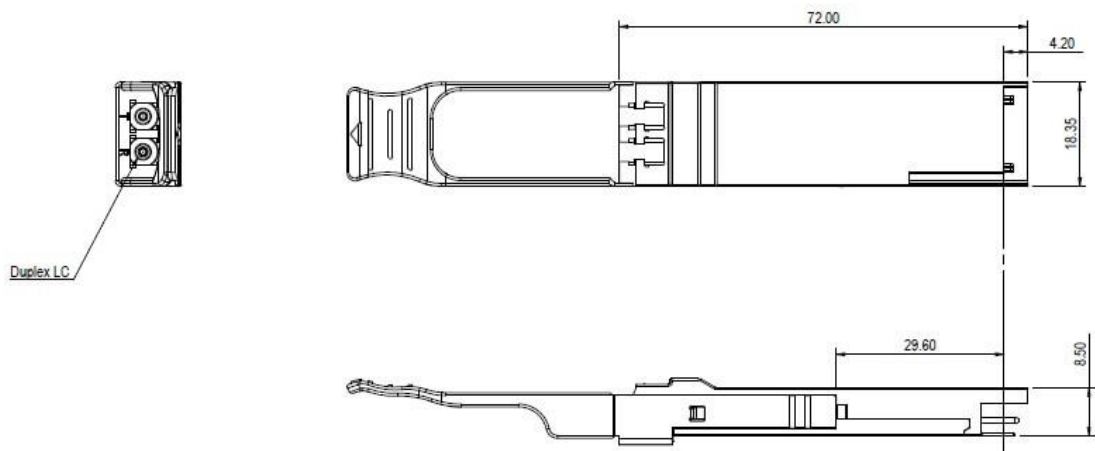
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## Electrical Specifications

AC common mode output voltage (RMS)				mV
Termination mismatch at 1 MHz				
Differential output return loss	Per IEEE P	ba Section	A	dB
Common mode output return loss	Per IEEE P	ba Section	A	dB
Output transition time, 20% to 80%				ps
J2 Jitter output	Jo			UI
J9 Jitter output	Jo			UI
Eye mask coordinates #1 {X1, X2, Y1, Y2}				UI mV
Power Supply Ripple Tolerance	PSR			mVpp

## Mechanical Specifications



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## Ordering Information

Part Number	Description
4L-Q40SR4-M100	QSFP+ 40GBASE-SR4, 850nm, MM, DDM, MPO/MTP, 100m
4L-Q40BSR4-001	QSFP+ 40GBASE-SR4, 850/900nm, BiDi MM, DDM, LC, 150m
4L-Q40BLX4-02	QSFP+ 40GBASE-LX4, CWDM, LC, MM 150m, SM 2km.
4L-Q40PLR4-M10	QSFP+ 40GBASE-LR4, 1310nm, SM, DDM, Duplex LC, 10Km
4L-Q40LR4-10	QSFP+ 40GBASE-LR4, 1310nm, SM, DDM, Duplex LC, 10Km
4L-Q40LR4-20	QSFP+ 40GBASE-LR4, 1310nm, SM, DDM, Duplex LC, 20Km
4L-Q40ER4-40	QSFP+ 40GBASE-ER4, 1310nm, SM, DDM, Duplex LC, 40Km

### Note

This modules have been tested by 4LAN on equipment like Cisco, Juniper, Dell, HP, Mikrotik, Huawei, and other brands. The equipment brand must be informed before shipping the order, so the transceivers are reprogrammed to the corresponding brand.

### Contact Information

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