



# CWDM 10GBASE-ER/OC-192 IR-2 XFP Transceiver 10Gb/s 40km P/N 4ER0P0y-CWxx



## Applications

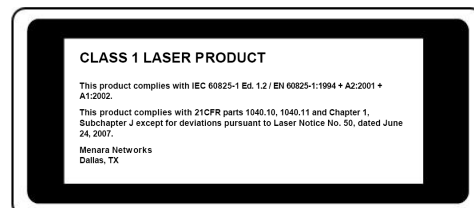
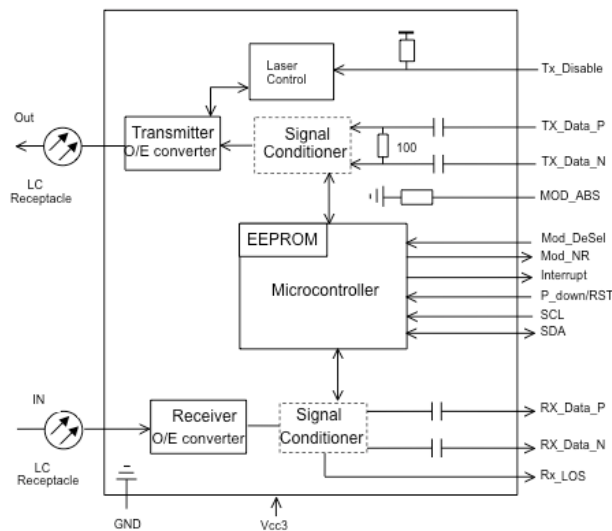
- CWDM 10GBASE-ER/EW 10GEthernet
- 8GB/10GB Fibre Channel
- SONET OC-192 IR-2
- SDH STM-64 ITU-T G.959 S-64.2b
- Ethernet Switch or IP Router Interconnect

## Features

- Hot-pluggable XFP footprint
- CWDM ITU-T fixed wavelength
- Support 9.95Gb/s to 11.3Gb/s bit rates
- 40km CWDM EML laser
- PIN photodiode receiver
- Power dissipation < 3.5 W
- -5°C to +70°C and -40C to +85°C
- Duplex LC fiber connectors
- IEEE 802.3ae 10GBASE-ER/EW
- SONET OC-192 IR-2
- SDH STM-64 ITU-T G.959 S-64.2b
- Full Digital Optical Monitoring
- Metal enclosure for lower EMI
- Complies with RoHS directive (2002/95/EC)
- Compliant with XFP Electrical and Mechanical MSA INF-8077
- Laser Class 1 IEC/CDRH compliant
- Links of 40 km with 9/125 μm single mode fiber (SMF) of maximum interconnect distances

## Description

Menara Networks' CWDM 4ER0P0y-CWxx XFP transceivers are designed for use in 10Gb/s to 11.1Gb/s CWDM links up to 40km over single mode fiber. The XFP module supports IEEE 802.3ae 10GBASE-ER and -EW applications along with SONET OC-192 IR-2 and SDH STM-64 ITU-T G.959 S-64.2b applications for Ethernet Switches, IP Routers or SONET/SDH optical interfaces. Digital Optical Monitoring interfaces are provided via the XFP standards compliant I<sup>2</sup>C interface.



### Transmitter E-O Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Data Rate	-	9.95	10.3125	11.1	Gb/s	-
Center Wavelength	$\lambda$	1270	-	1610	nm	-
Spectral Width (RMS)	$\Delta\lambda$	-	-	0.20	nm	-
Wavelength Stability after Startup	$\Delta\lambda_{EOL}$	$\lambda_i - 5.5$	-	$\lambda_i + 7.5$	nm	-
Average Optical Output Power	Po	0	-	+4	dBm	1
Extinction Ratio	Er	8.2	-	-	dB	-
Differential data Inputs swing	Vinpp	120	-	820	mV	2
Output Power After Disabled	-	-	-	-30	dBm	-
Output Eye Diagram	Compliant with ITU-T and IEEE recommendation MASK					

### Receiver O-E Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Data Rate	-	9.95	10.3125	11.3	Gb/s	-
Operate Wavelength	-	1260	-	1620	nm	-
Sensitivity @ 9.95 to 10.7Gbps	Sen1			-16	dBm	1
Sensitivity @ 11.1Gbps	Sen1			-15	dBm	1
Saturation	Ps	-1	-	-	dBm	1
Optical Path Penalty @ 9.95Gbps to 10.7Gbps 800ps/nm	OPP1			2	dB	1
Optical Path Penalty @ 11.1Gbps 800ps/nm	OPP2			3	dB	1
LOS Asserted	-	-26	-	-	dBm	High level: Alarm
LOS De-Asserted	-	-	-	-18	dBm	
LOS Hysteresis	-	0.5	-	-	dB	

#### Notes

1. Measured at PRBS 2<sup>31</sup>-1, NRZ, BER $\leq$ 10<sup>-12</sup>

2. Internally AC coupled

### Ordering Information

Part Number	ROHS Compliant	Operating Case Temperature
4ER0P0y-CWxx	ROHS-6	-5 ~ +70°C
4ER0P1y-CWxx		-10 ~ +85°C
4ER0P2y-CWxx		-40 ~ +85°C

xx = CWDM Wavelength. See bold in table below for details.

y = Router compatibility; J = Juniper, A = AlcatelLucent, C = Cisco, O = Cisco ONS

CWDM Wavelength	Latch Color
<b>1470</b>	Gray
<b>1490</b>	Violet
<b>1510</b>	Blue
<b>1530</b>	Green

CWDM Wavelength	Latch Color
<b>1550</b>	Yellow
<b>1570</b>	Orange
<b>1590</b>	Red
<b>1610</b>	Brown

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