Omnitron Optical Transceivers

SFP+ and XFP Transceivers for CWDM/DWDM Wavelengths

Omnitron Small Form Pluggable 10 Gigabit SFP+ and XFP optical transceivers are interchangeable compact fiber connectors that enable a single network device to connect to a wide variety of fiber optic cable types and distances.

Omnitron CWDM/DWDM Optical Transceivers are used to customize iConverter®, OmniConverter® and RuggedNet® products to meet specific networking protocols and media requirements. They support single-mode dual fiber applications with Coarse Wave Division Multiplexing (CWDM) and Dense Wave Division Multiplexing (DWDM) wavelengths.

CWDM/DWDM Optical Transceivers increase network capacity by transmitting multiple data channels using separate optical wavelengths on the same fiber pair.

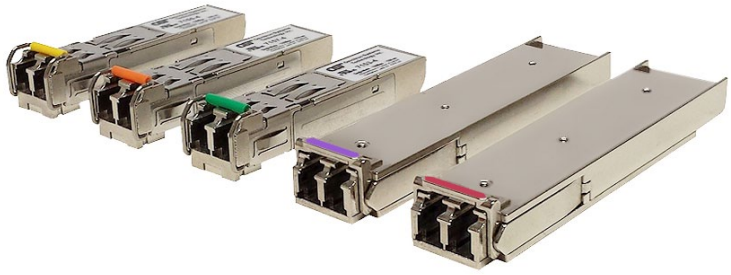
CWDM Optical Transceivers support wavelengths 1270nm to 1610nm in 20nm increments. The CWDM wavelengths are compliant to the ITU G.694 CWDM standard.

DWDM Optical Transceivers support wavelengths between 1525–1565 nm (C band) with 100GHz spacing.

Optical Transceivers reduce network equipment inventories by eliminating the need to maintain surplus units/ devices of various fiber types for network repairs or upgrades. They also enable network upgrades by providing interchangeable fiber connectors that can easily adapt to and modify any existing network. For example, a media converter that was originally used in a single-mode network can be re-configured to operate over a CWDM/DWDM network by simply replacing the pluggable optical transceiver.

Based on the MSA SFF-8472 standard, CWDM/DWDM Optical Transceivers support digital diagnostic capabilities, providing enhanced diagnostic information to assist network administrators with network maintenance and management. When installed in a managed Omnitron product, CWDM optical transceivers can collect enhanced, real time optical diagnostic information including fiber optic TX and RX power, voltage and transceiver temperature.

By providing compact physical size and the ease of interchangeability, Omnitron Optical Transceivers provide a cost-effective and flexible solution for fiber optic network design.



KEY FEATURES

- Omnitron Optical Transceivers enable flexible fiber connectivity
- Compatible with iConverter, OmniConverter and RuggedNet 10G media converter, switches and Network Interface Devices that support SFP+ and XFP transceivers
- Supports Coarse Wave Division Multiplexing optics
- Supports standard wavelengths in the spectrum defined by ITU-T G.694.2
- Supports Dense Wave Division Multiplexing (DWDM) optics
- Supports standard channels in the spectrum defined by ITU Grid C-Band, 100GHz - spacing
- Compliant with MSA SFF-8472 standard, which provides interoperability with other network devices
- Compliant with IEEE 802.3ae 10 Gigabit Ethernet specifications
- Compliant with RoHS, WEEE, REACH and UKCA
- Compliant with TAA
- Duplex LC/UPC Models
- Supports Digital Diagnostic capability
- Low EMI metal enclosure
- Case Operating Temperature:
  - Commercial (0° C to +70° C)
  - Industrial (-40° C to +85° C)
- One (1) Year Warranty and free 24/7 Technical Support

ORDERING INFORMATION

Step 1: Choose a Distance Requirement

For 10 Gigabit CWDM SFP+ Ethernet network protocol (73λλE-**x**t)

Model	Spec. Distance (km)	Wavelength (nm)	Center Wavelength (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Sensitivty (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dBm)	Link Budget (dBm)
73λλE-1t	10	1270 to 1610	1271 to 1611	-6	-0.5	-14.4	0.5	-	8.4
73λλE-2t	40	1270 to 1330	1271 to 1331	1	5	-15	0	5	16
73λλE-2t	40	1470 to 1610	1471 to 1611	-1	3	-16	-1	4	15
ITU-T G.652 single-mode fiber optic cable is not optimized for CWDM wavelengths from 1360nm to 1460nm due to high attenuation. Register to access the white paper titled "CWDM Design Guide" for more information on designing CWDM network over single-mode fiber.									

Step 2: Choose the Wavelength Option (73λλE-xt)

27 (1270nm)	35 (1350nm)	43 (1430nm)	51 (1510nm)	59 (1590nm)
29 (1290nm)	37 (1370nm)	45 (1450nm)	53 (1530nm)	61 (1610nm)
31 (1310nm)	39 (1390nm)	47 (1470nm)	55 (1550nm)	
33 (1330nm)	41 (1410nm)	49 (1490nm)	57 (1570nm)	
For 73λλE-1t, wavelengths 1270 to 1610 are only available at 10km distance. **For 73λλE-2t, wavelengths 1270 to 1330 and 1470 to 1610 are only available at 40km distance (1350 to 1450 are not available).**				

Step 3: Choose your Case Operating Temperature Option (73λλE-x**t**)

<leave blank> = Commercial temperature (0 to 70°C)
Z = Industrial temperature (-40 to 85°C) - Not available on all models. Contact Omnitron to verify.
End user needs to ensure case temperature is not exceeded for the model purchased. Contact Omnitron for other fiber options.

Step 1: Choose a Distance Requirement

For 10 Gigabit CWDM XFP Ethernet network protocol (75λλ-**x**t or 75λλ-**2LH**t)

Model	Spec. Distance (km)	Wavelength (nm)	Center Wavelength (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Sensitivty (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dBm)	Link Budget (dBm)
75λλ-1t	10	1270 to 1610	1271 to 1611	-3	1	-14	0.5	0.5	11
75λλ-2t	40	1270 to 1330	1271 to 1331	1	5	-15	0	5	16
75λλ-2t	40	1470 to 1610	1471 to 1611	-1	4	-16	-1	5	15
75λλ-2LHt	70	1470 to 1610	1471 to 1611	0	4	-23	-7	11	23
ITU-T G.652 single-mode fiber optic cable is not optimized for CWDM wavelengths from 1360nm to 1460nm due to high attenuation. Register to access the white paper titled "CWDM Design Guide" for more information on designing CWDM network over single-mode fiber.									

Step 2: Choose the Wavelength Option (75λλ-xt or 75λλ-2LHt)

27 (1270nm)	35 (1350nm)	43 (1430nm)	51 (1510nm)	59 (1590nm)
29 (1290nm)	37 (1370nm)	45 (1450nm)	53 (1530nm)	61 (1610nm)
31 (1310nm)	39 (1390nm)	47 (1470nm)	55 (1550nm)	
33 (1330nm)	41 (1410nm)	49 (1490nm)	57 (1570nm)	
For 75λλ-1t, wavelengths 1270 to 1610 are only available at 10km distance. **For 75λλ-2,t wavelengths 1270 to 1330 and 1470 to 1610 are only available at 40km distance (1350 to 1450 are not available).** **For 75λλ-2LHt, wavelengths 1470 to 1610 are only available at 70km distance.**				

Step 3: Choose your Case Operating Temperature Option (73λλ-x**t** or 75λλ-2LH**t**)

<leave blank> = Commercial temperature (0 to 70°C)
Z = Industrial temperature (-40 to 85°C) - Not available on all models. Contact Omnitron to verify.
End user needs to ensure case temperature is not exceeded for the model purchased. Contact Omnitron for other fiber options.

In most case, a CWDM network design will include multiplexers and/or add/drop devices. These devices will have insertion loss. When selecting a CWDM SFP transceiver, select the model that will meet the link budget of the network design. The link budget includes multiplexer, add/drop devices and the loss across the fiber. Always add an additional 3dBm to the link budget for a safety margin. Register to access the white paper titled "CWDM Design Guide" for more information on designing CWDM network over single-mode fiber.

ORDERING INFORMATION

Step 1: Choose a Distance Requirement

For 10 Gigabit DWDM SFP+ Ethernet network protocol (76λλE-**x**t)

Model	Spec. Distance (km)	Channel # (100GHz Spacing)	Wavelength (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Sensitivty (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dBm)	Link Budget (dBm)
76λλE-2t	40	18 to 61	1563.05 to 1528.77	-1	4	-16	0.5	4	15
76λλE-3t	80	18 to 61	1563.05 to 1528.77	-1	3	-24	-7	10	23

Step 2: Choose the Wavelength Option (76λλE-xt)

18 (1563.05nm)	27 (1555.75nm)	36 (1548.51nm)	45 (1541.35nm)	54 (1534.25nm)
19 (1562.23nm)	28 (1554.94nm)	37 (1547.72nm)	46 (1540.56nm)	55 (1533.47nm)
20 (1561.42nm)	29 (1554.13nm)	38 (1546.92nm)	47 (1539.77nm)	56 (1532.68nm)
21 (1560.61nm)	30 (1553.33nm)	39 (1546.12nm)	48 (1538.98nm)	57 (1531.90nm)
22 (1559.79nm)	31 (1552.52nm)	40 (1545.32nm)	49 (1538.19nm)	58 (1531.12nm)
23 (1558.98nm)	32 (1551.72nm)	41 (1544.53nm)	50 (1537.40nm)	59 (1530.33nm)
24 (1558.17nm)	33 (1550.92nm)	42 (1543.73nm)	51 (1536.61nm)	60 (1529.55nm)
25 (1557.36nm)	34 (1550.12nm)	43 (1542.94nm)	52 (1535.82nm)	61 (1528.77nm)
26 (1556.55nm)	35 (1549.32nm)	44 (1542.14nm)	53 (1535.04nm)	

Step 3: Choose your Case Operating Temperature Option (76λλE-x**t**)

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End user needs to ensure case temperature is not exceeded for the model purchased. Contact Omnitron for other fiber options.

Step 1: Choose a Distance Requirement

For 10 Gigabit CWDM XFP Ethernet network protocol (77λλ-**x**t)

Model	Spec. Distance (km)	Channel # (100GHz Spacing)	Wavelength (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Sensitivty (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dBm)	Link Budget (dBm)
77λλ-2t	40	18 to 61	1563.05 to 1528.77	-1	4	-16	0.5	4	15
77λλ-3t	80	18 to 61	1563.05 to 1528.77	0	5	-24	-7	12	24

Step 2: Choose the Wavelength Option (77λλ-xt)

18 (1563.05nm)	27 (1555.75nm)	36 (1548.51nm)	45 (1541.35nm)	54 (1534.25nm)
19 (1562.23nm)	28 (1554.94nm)	37 (1547.72nm)	46 (1540.56nm)	55 (1533.47nm)
20 (1561.42nm)	29 (1554.13nm)	38 (1546.92nm)	47 (1539.77nm)	56 (1532.68nm)
21 (1560.61nm)	30 (1553.33nm)	39 (1546.12nm)	48 (1538.98nm)	57 (1531.90nm)
22 (1559.79nm)	31 (1552.52nm)	40 (1545.32nm)	49 (1538.19nm)	58 (1531.12nm)
23 (1558.98nm)	32 (1551.72nm)	41 (1544.53nm)	50 (1537.40nm)	59 (1530.33nm)
24 (1558.17nm)	33 (1550.92nm)	42 (1543.73nm)	51 (1536.61nm)	60 (1529.55nm)
25 (1557.36nm)	34 (1550.12nm)	43 (1542.94nm)	52 (1535.82nm)	61 (1528.77nm)
26 (1556.55nm)	35 (1549.32nm)	44 (1542.14nm)	53 (1535.04nm)	

Step 3: Choose your Case Operating Temperature Option (77λλ-x**t**)

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Z = Industrial temperature (-40 to 85°C) - Not available on all models. Contact Omnitron to verify.
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In most case, a DWDM network design will include multiplexers and/or add/drop devices. These devices will have insertion loss. When selecting a DWDM SFP+ or XFP transceiver, select the model that will meet the link budget of the network design. The link budget includes multiplexer, add/drop devices and the loss across the fiber. Always add an additional 3dBm to the link budget for a safety margin.