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Optelian Pluggable Modules

SFP, SFP+, XFP, QSFP28, CFP, and CFP2 modules



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Table of contents

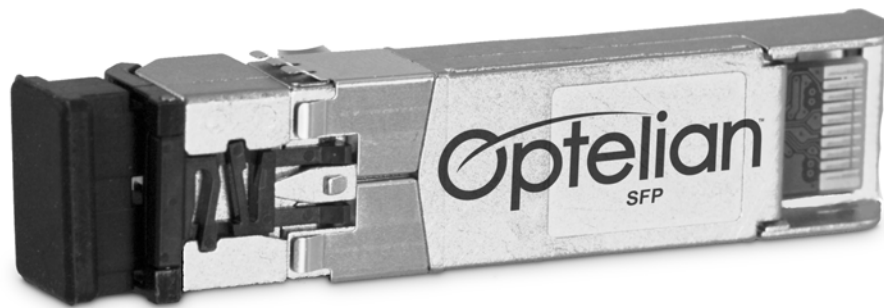
SFP modules	1
Electrical (RJ45)SFP specifications	2
850 nm SFP specifications	2
1310 nm SFP specifications	3
1550 nm SFP specifications	5
OSC SFP specifications	5
Bidirectional WDM SFP specifications	6
CWDM SFP specifications	9
DWDM, 120 km, multi-rate, 0°C to 70°C SFP specifications	13
DWDM, 80 km, 1/2/4G FC, 0°C to 70°C SFP specifications	14
DWDM, 80 km, multi-rate, -40°C to 85°C SFP specifications	15
SFP+ modules	16
850 nm SFP+ specifications	17
1310 nm SFP+ specifications	18
CWDM SFP+ specifications	19
DWDM SFP+ specifications	21
Tunable SFP+ specifications	23
QSFP28 modules	25
QSFP28 specifications	26
XFP modules	27
850 nm XFP specifications	27
1310 nm XFP specifications	28
1550 nm XFP specifications	29
CWDM XFP specifications	32
DWDM, LR-2, 80 km, multi-rate, 0°C to 70°C XFP specifications	36
DWDM, LR-2, 80 km, multi-rate, -40°C to 85°C XFP specifications	37
Tunable XFP specifications	38
CFP modules	40
CFP specifications	41
CFP2 modules	45
CFP2-DCO specifications	46
Customer support	47

SFP modules

Optelian MSA-compliant SFP modules are available in a wide variety of interfaces that can be used in various applications, such as bandwidth provisioning, reach extension (regeneration), wavelength conversion with xWDM systems, mode conversion (multi-mode to single-mode, electrical to optical, etc.), and MSA diagnostics.

With data rates ranging from 10 Mb/s to 4.25 Gb/s, and wavelengths ranging from 1271 nm to 1611 nm, Optelian SFP modules can be used with most MSA-compliant optical transmission equipment, and are ideal for use in Optelian wavelength and packet services products.

SFP modules can be inserted and removed while the system is powered without affecting traffic on the other SFP ports in the system.



Electrical (RJ45)SFP specifications

SFP type	Parameter	Value
RJ 45 Electrical (802.3z, 802.3ab, 802.3u compliant, with auto-negotiation), 0 to 70°C	Data rate	10, 100, 1000 Mb/s
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1005-2101
RJ 45 Electrical (802.3u compliant, with auto-negotiation and LOS), 0°C to 70°C	Data rate	10, 100 Mb/s
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1005-2102

850 nm SFP specifications

SFP type	Parameter	Value
850 nm MM SR, 300 m, GbE, 1/2/4G FC, -20°C to 85°C	Transmit wavelength	830 nm to 860 nm
	Receive wavelength	830 nm to 860 nm
	Transmit power	-9 dBm to -2.5 dBm
	Reach	550 m (0.34 miles) @ 1G FC 300 m (0.19 miles) @ 2G FC 150 m (0.09 miles) @ 4G FC
	Receive sensitivity	-17 dBm @ 1.25 Gb/s -15 dBm @ 2.125 Gb/s
	Receive overload	0 dBm
	Data rate	1.06 Gb/s to 4.25 Gb/s
	Extinction ratio	9 dB @ 1.25 Gb/s
	Power consumption	0.9 W
	Operating temperature	-20°C to 85°C (-4°F to 185°F)
	Part number	1005-1801

1310 nm SFP specifications

SFP type	Parameter	Value
1310 nm SR-1, 2 km, multi-rate, -40°C to 85°C	Transmit wavelength	1266 nm to 1360 nm
	Transmit power	-10 dBm to -3 dBm
	Reach	2 km (1.24 miles)
	Receive sensitivity	-18 dBm @ 2.5 Gb/s
	Receive overload	-3 dBm
	Data rate	155 Mb/s to 2.7 Gb/s
	Extinction ratio	8.2 dB @ 2.5 Gb/s
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1005-1701
1310 nm SR-1, 10 km, 1/2/4G FC, -5°C to 70°C	Transmit wavelength	1285 nm to 1345 nm
	Transmit power	-9 dBm to -1 dBm
	Reach	10 km (6.21 miles)
	Receive sensitivity	-18 dBm
	Receive overload	0 dBm
	Data rate	1.06 Gb/s to 4.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	-5°C to 70°C (23°F to 158°F)
	Part number	1018-7800
1310 nm IR, 10 km, 100BASE-FX SGMII, 0°C to 70°C	Transmit wavelength	1260 nm to 1360 nm
	Transmit power	-8 dBm to -15 dBm
	Reach	10 km (6.21 miles)
	Receive sensitivity	-31 dBm @ 125 Mb/s
	Receive overload	-8 dBm
	Data rate	125 Mb/s
	Extinction ratio	9 dB @ 125 Mb/s
	Power consumption	1.2 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1027-0400

SFP type	Parameter	Value
1310 nm IR-1, 15 km, multi-rate, -40°C to 85°C	Transmit wavelength	1260 nm to 1360 nm
	Transmit power	-5 dBm to 0 dBm
	Reach	15 km (9.32 miles)
	Receive sensitivity	-18 dBm @ 2.5 Gb/s
	Receive overload	0 dBm
	Data rate	155 Mb/s to 2.7 Gb/s
	Extinction ratio	8.2 dB @ 2.5 Gb/s
	Power consumption	1.2W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1005-1601
1310 nm LR-1, 40 km, multi-rate, -40°C to 85°C	Transmit wavelength	1280 nm to 1335 nm
	Transmit power	-2 dBm to 3 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-27 dBm @ 2.5Gb/s
	Receive overload	-9 dBm
	Data rate	100 Mb/s to 3.07 Gb/s
	Extinction ratio	8.2 dB
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1018-7600
1310 nm LR-1, 40 km, multi-rate, -40°C to 85°C	Transmit wavelength	1280 nm to 1335 nm
	Transmit power	-2 dBm to 3 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-27 dBm @ 2.5 Gb/s
	Receive overload	-9 dBm
	Data rate	155 Mb/s to 2.7 Gb/s
	Extinction ratio	8.2 dB @ 2.5 Gb/s
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1005-9101

1550 nm SFP specifications

SFP type	Parameter	Value
1550 nm, LR-2, 80 km, multi-rate, -40°C to 85°C	Transmit wavelength	1500 nm to 1580 nm
	Transmit power	-2 dBm to 3 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-28 dBm @ 2.5 Gb/s
	Receive overload	-9 dBm
	Data rate	155 Mb/s to 2.7 Gb/s
	Extinction ratio	8.2 dB @ 2.5 Gb/s
	Dispersion penalty	2 dB
	Dispersion tolerance	1600 ps/nm
	Power consumption	1.2W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1005-1501

OSC SFP specifications

SFP type	Parameter	Value
OSC 1511 nm, 120 km, 0°C to 70°C	Transmit wavelength	1504.5 nm to 1517.5 nm
	Transmit power	0.5 dBm to 5 dBm
	Reach	120 km (74.6 miles)
	Receive sensitivity	-42 dBm
	Receive overload	-10 dBm
	Data rate	100 Mb/s to 155 Mb/s
	Extinction ratio	10 dB
	Dispersion penalty	2 dB @ 155 Mb/s and 120 km
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1006-4201

Bidirectional WDM SFP specifications

SFP type	Parameter	Value
Bidirectional WDM, 20 km, GbE, 0°C to 70°C	Transmit wavelengths	1310: 1260 nm to 1360 nm 1490: 1480 nm to 1500 nm
	Receive wavelengths	1310 Tx: 1490 nm 1490 Tx: 1310 nm
	Transmit power	-7 dBm to 0 dBm
	Reach	20 km (12.4 miles)
	Receive sensitivity	-20 dBm @ 1.25 Gb/s
	Receive overload	-3 dBm
	Data rate	1.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part numbers	1310 Tx and 1490 Rx: 1016-5201 1490 Tx and 1310 Rx: 1016-5202
Bidirectional WDM, 20 km, GbE, -40°C to 85°C	Transmit wavelengths	1310: 1260 nm to 1360 nm 1490: 1480 nm to 1500 nm
	Receive wavelengths	1310 Tx: 1490 nm 1490 Tx: 1310 nm
	Transmit power	-7 dBm to 0 dBm
	Reach	20 km (12.4 miles)
	Receive sensitivity	-20 dBm @ 1.25 Gb/s
	Receive overload	-3 dBm
	Data rate	1.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part numbers	1310 Tx and 1490 Rx: 1016-5501 1490 Tx and 1310 Rx: 1016-5502

SFP type	Parameter	Value
Bidirectional WDM, 40 km, GbE, 0°C to 70°C	Transmit wavelengths	1310: 1260 nm to 1360 nm 1550: 1500 nm to 1600 nm
	Receive wavelengths	1310 Tx: 1550 nm 1550 Tx: 1310 nm
	Transmit power	-5 dBm to 0 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-22 dBm @ 1.25 Gb/s
	Receive overload	-3 dBm
	Data rate	1.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part numbers	1310 Tx and 1550 Rx: 1016-5303 1550 Tx and 1310 Rx: 1016-5304
Bidirectional WDM, 40 km, GbE, -40°C to 85°C	Transmit wavelengths	1310: 1260 nm to 1360 nm 1550: 1500 nm to 1600 nm
	Receive wavelengths	1310 Tx: 1550 nm 1550 Tx: 1310 nm
	Transmit power	-5 dBm to 0 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-22 dBm @ 1.25 Gb/s
	Receive overload	-3 dBm
	Data rate	1.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part numbers	1310 Tx and 1550 Rx: 1016-5603 1550 Tx and 1310 Rx: 1016-5604

SFP type	Parameter	Value
Bidirectional WDM, 80 km, GbE, -40°C to 85°C	Transmit wavelengths	1590: 1580 nm to 1620 nm 1490: 1480 nm to 1500 nm
	Receive wavelengths	1590 Tx: 1490 nm 1490 Tx: 1590 nm
	Transmit power	-2 dBm to 4dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-26 dBm @ 1.25 Gb/s
	Receive overload	0 dBm
	Data rate	1.25 Gb/s
	Extinction ratio	9 dB
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part numbers	1490 Tx and 1590 Rx: 1016-5701 1590 Tx and 1490 Rx: 1016-5702

CWDM SFP specifications

SFP type	Parameter	Value	
CWDM, 80 km, 1/2/4 G FC, 0°C to 70°C	Transmit wavelength	Typical wavelength -6.5 nm to typical wavelength +6.5 nm (see part number parameter for typical wavelengths)	
	Transmit power	0 dBm to 5 dBm	
	Reach	80 km (49.7 miles)	
	Receive sensitivity	-24 dBm	
	Receive overload	-9 dBm	
	Data rate	1.06 Gb/s to 4.25 Gb/s	
	Extinction ratio	5 dB	
	Dispersion penalty	3 dB	
	Power consumption	1.2 W	
	Operating temperature	0°C to 70°C (32°F to 158°F)	
	Part numbers	1271 nm	1019-8601
		1291 nm	1019-8602
		1311 nm	1019-8603
		1331 nm	1019-8604
		1351 nm	1019-8605
		1371 nm	1019-8606
		1391 nm	1019-8607
		1411 nm	1019-8608
		1431 nm	1019-8609
1451 nm		1019-8610	
1471 nm		1019-8611	
1491 nm		1019-8612	
1511 nm		1019-8613	
1531 nm		1019-8614	
1551 nm		1019-8615	
1571 nm		1019-8616	
1591 nm		1019-8617	
1611 nm		1019-8618	

SFP type	Parameter	Value	
CWDM, 80 km, multi-rate, 0°C to 70°C	Transmit wavelength	Typical wavelength -6.5 nm to typical wavelength +6.5 nm (see part number parameter for typical wavelengths)	
	Transmit power	0 dBm to 5 dBm	
	Reach	80 km (49.7 miles)	
	Receive sensitivity	-28 dBm @ 2.5 Gb/s	
	Receive overload	-9 dBm	
	Data rate	100 Mb/s to 2.7 Gb/s	
	Extinction ratio	8.2 dB	
	Dispersion penalty	2 dB @ 80 km	
	Dispersion tolerance	1600 ps/nm	
	Power consumption	1 W	
	Operating temperature	0°C to 70°C (32°F to 158°F)	
	Part numbers	1271 nm	1005-1901
		1291 nm	1005-1902
		1311 nm	1005-1903
		1331 nm	1005-1904
		1351 nm	1005-1905
		1371 nm	1005-1906
		1391 nm	1005-1907
		1411 nm	1005-1908
		1431 nm	1005-1909
1451 nm		1005-1910	
1471 nm		1005-1911	
1491 nm		1005-1912	
1511 nm		1005-1913	
1531 nm		1005-1914	
1551 nm		1005-1915	
1571 nm		1005-1916	
1591 nm		1005-1917	
1611 nm		1005-1918	

SFP type	Parameter	Value	
CWDM, 80 km, multi-rate, -40°C to 85°C	Transmit wavelength	Typical wavelength -6.5 nm to typical wavelength +6.5 nm (see part number parameter for typical wavelengths)	
	Transmit power	0 dBm to 5 dBm	
	Reach	80 km (49.7 miles)	
	Receive sensitivity	-28 dBm @ 2.5 Gb/s	
	Receive overload	-9 dBm	
	Data rate	100 Mb/s to 2.7 Gb/s	
	Extinction ratio	8.2 dB	
	Dispersion penalty	2 dB @ 80 km	
	Dispersion tolerance	1600 ps/nm	
	Power consumption	1 W	
	Operating temperature	-40°C to 85°C (-40°F to 185°F)	
	Part numbers	1271 nm	1012-9301
		1291 nm	1012-9302
		1311 nm	1012-9303
		1331 nm	1012-9304
		1351 nm	1012-9305
		1371 nm	1012-9306
		1391 nm	1012-9307
		1411 nm	1012-9308
1431 nm		1012-9309	
1451 nm		1012-9310	
1471 nm		1012-9311	
1491 nm		1012-9312	
1511 nm		1012-9313	
1531 nm		1012-9314	
1551 nm		1012-9315	
1571 nm		1012-9316	
1591 nm		1012-9317	
1611 nm	1012-9318		

SFP type	Parameter	Value	
CWDM, 120 km, GbE, 1G FC, -40°C to 85°C	Transmit wavelength	Typical wavelength -6.5 nm to typical wavelength +6.5 nm (see part number parameter for typical wavelengths)	
	Transmit power	0 dBm to 5 dBm	
	Reach	120 km (74.6 miles)	
	Receive sensitivity	-32 dBm @ 1.25 Gb/s	
	Receive overload	-9 dBm	
	Data rate	1.06 Gb/s to 1.25 Gb/s	
	Extinction ratio	9 dB	
	Dispersion penalty	2 dB @ 1.25 Gb/s and 120 km	
	Power consumption	1.6 W	
	Operating temperature	-40°C to 85°C (-40°F to 185°F)	
	Part numbers	1271 nm	1011-9701
		1291 nm	1011-9703
		1311 nm	1011-9703
		1331 nm	1011-9704
		1351 nm	1011-9705
		1371 nm	1011-9706
		1391 nm	1011-9707
		1411 nm	1011-9708
		1431 nm	1011-9709
1451 nm		1011-9710	
1471 nm		1011-9711	
1491 nm		1011-9712	
1511 nm		1011-9713	
1531 nm		1011-9714	
1551 nm		1011-9715	
1571 nm		1011-9716	
1591 nm		1011-9717	
1611 nm		1011-9718	

DWDM, 120 km, multi-rate, 0°C to 70°C SFP specifications

Parameter		Value			
Transmit wavelength		Typical wavelength -0.15 nm to typical wavelength +0.1 nm (see part number parameter for typical wavelengths)			
Transmit power		2 dBm to 7 dBm			
Reach		120 km (74.6 miles)			
Receive sensitivity		-28 dBm @ 2.5 Gb/s			
Receive overload		-8 dBm			
Data rate		100 Mb/s to 2.7 Gb/s			
Extinction ratio		8.2 dB			
Dispersion penalty		2 dB @ 100 km SMF and 2.488 Gb/s			
Dispersion tolerance		2400 ps/nm			
Power consumption		1.5 W			
Operating temperature		0°C to 70°C (32°F to 158°F)			
Part numbers					
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1005-1301	1541.35 nm	1005-1315	1551.72 nm	1005-1328
1531.12 nm	1005-1302	1542.14 nm	1005-1316	1552.52 nm	1005-1329
1531.90 nm	1005-1303	1542.94 nm	1005-1317	1553.33 nm	1005-1330
1532.68 nm	1005-1304	1543.73 nm	1005-1318	1554.13 nm	1005-1331
1533.47 nm	1005-1305	1544.53 nm	1005-1319	1554.94 nm	1005-1332
1534.25 nm	1005-1306	1545.32 nm	1005-1320	1555.75 nm	1005-1333
1535.04 nm	1005-1307	1546.12 nm	1005-1321	1556.55 nm	1005-1334
1535.82 nm	1005-1308	1546.92 nm	1005-1322	1557.36 nm	1005-1335
1536.61 nm	1005-1309	1547.72 nm	1005-1323	1558.17 nm	1005-1336
1537.40 nm	1005-1310	1548.51 nm	1005-1324	1558.98 nm	1005-1337
1538.19 nm	1005-1311	1549.32 nm	1005-1325	1559.79 nm	1005-1338
1538.98 nm	1005-1312	1550.12 nm	1005-1326	1560.61 nm	1005-1339
1539.77 nm	1005-1313	1550.92 nm	1005-1327	1561.42 nm	1005-1340
1540.56 nm	1005-1314	—	—	—	—

DWDM, 80 km, 1/2/4G FC, 0°C to 70°C SFP specifications

Parameter		Value			
Transmit wavelength		Typical wavelength -0.15 nm to typical wavelength +0.1 nm (see part number parameter for typical wavelengths)			
Transmit power		2 dBm to 5 dBm			
Reach		80 km (49.7 miles)			
Receive sensitivity		-23 dBm			
Receive overload		-7 dBm			
Data rate		1.06 Gb/s to 4.25 Gb/s			
Extinction ratio		5 dB			
Dispersion penalty		3 dB @ 4.25 Gb/s			
Dispersion tolerance		1600 ps/nm			
Power consumption		1.5 W			
Operating temperature		0°C to 70°C (32°F to 158°F)			
Part numbers					
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1018-7701	1541.35 nm	1018-7715	1551.72 nm	1018-7728
1531.12 nm	1018-7702	1542.14 nm	1018-7716	1552.52 nm	1018-7729
1531.90 nm	1018-7703	1542.94 nm	1018-7717	1553.33 nm	1018-7730
1532.68 nm	1018-7704	1543.73 nm	1018-7718	1554.13 nm	1018-7731
1533.47 nm	1018-7705	1544.53 nm	1018-7719	1554.94 nm	1018-7732
1534.25 nm	1018-7706	1545.32 nm	1018-7720	1555.75 nm	1018-7733
1535.04 nm	1018-7707	1546.12 nm	1018-7721	1556.55 nm	1018-7734
1535.82 nm	1018-7708	1546.92 nm	1018-7722	1557.36 nm	1018-7735
1536.61 nm	1018-7709	1547.72 nm	1018-7723	1558.17 nm	1018-7736
1537.40 nm	1018-7710	1548.51 nm	1018-7724	1558.98 nm	1018-7737
1538.19 nm	1018-7711	1549.32 nm	1018-7725	1559.79 nm	1018-7738
1538.98 nm	1018-7712	1550.12 nm	1018-7726	1560.61 nm	1018-7739
1539.77 nm	1018-7713	1550.92 nm	1018-7727	1561.42 nm	1018-7740
1540.56 nm	1018-7714	—	—	—	—

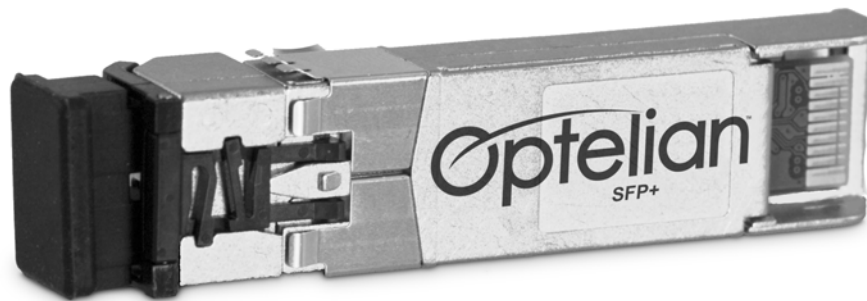
DWDM, 80 km, multi-rate, -40°C to 85°C SFP specifications

Parameter		Value			
Transmit wavelength		Typical wavelength -0.15 nm to typical wavelength +0.1 nm (see part number parameter for typical wavelengths)			
Transmit power		0 dBm to 4 dBm			
Reach		80 km (49.7 miles)			
Receive sensitivity		-28 dBm			
Receive overload		-8 dBm			
Data rate		125 Mb/s to 2.7 Gb/s			
Extinction ratio		8.2 dB			
Dispersion penalty		2 dB @ 80 km SMF and 2.488 Gb/s			
Dispersion tolerance		1600 ps/nm			
Power consumption		1.5 W			
Operating temperature		-40°C to 85°C (-40°F to 185°F)			
Part numbers					
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1018-6101	1541.35 nm	1018-6115	1551.72 nm	1018-6128
1531.12 nm	1018-6102	1542.14 nm	1018-6116	1552.52 nm	1018-6129
1531.90 nm	1018-6103	1542.94 nm	1018-6117	1553.33 nm	1018-6130
1532.68 nm	1018-6104	1543.73 nm	1018-6118	1554.13 nm	1018-6131
1533.47 nm	1018-6105	1544.53 nm	1018-6119	1554.94 nm	1018-6132
1534.25 nm	1018-6106	1545.32 nm	1018-6120	1555.75 nm	1018-6133
1535.04 nm	1018-6107	1546.12 nm	1018-6121	1556.55 nm	1018-6134
1535.82 nm	1018-6108	1546.92 nm	1018-6122	1557.36 nm	1018-6135
1536.61 nm	1018-6109	1547.72 nm	1018-6123	1558.17 nm	1018-6136
1537.40 nm	1018-6110	1548.51 nm	1018-6124	1558.98 nm	1018-6137
1538.19 nm	1018-6111	1549.32 nm	1018-6125	1559.79 nm	1018-6138
1538.98 nm	1018-6112	1550.12 nm	1018-6126	1560.61 nm	1018-6139
1539.77 nm	1018-6113	1550.92 nm	1018-6127	1561.42 nm	1018-6140
1540.56 nm	1018-6114	—	—	—	—

SFP+ modules

Optelian MSA-compliant SFP+ modules are available in a variety of interfaces that can be used for both client and line optical connectivity in applications delivering wavelength services, sub-wavelength services and Carrier Ethernet. Data rates ranging from 8.5 Gb/s to 11.3 Gb/s are supported with transmit wavelengths in the 850nm, 1310nm, and xWDM bands. Optelian SFP+ modules can be used with most MSA-compliant optical transmission equipment, and are fully qualified for use in Optelian wavelength and packet services products.

SFP+ modules can be inserted and removed while the system is powered without affecting traffic on other ports in the system.



850 nm SFP+ specifications

SFP+ type	Parameter	Value
850 nm, MM, SR, 2/4/8 G FC, -5°C to 85°C	Transmit wavelength	840 nm to 860 nm
	Transmit power	-9 dBm to 0 dBm
	Reach	550 m (0.3 miles) @ 2G FC 300 m (0.2 miles) @ 4G FC 150 m (0.1 miles) @ 8G FC
	Receive sensitivity	-13 dBm
	Receive overload	0 dBm
	Data rate	2.125 Gb/s to 8.57 Gb/s
	Power consumption	0.9 W
	Operating temperature	-5°C to 85°C (23°F to 185°F)
	Part number	1021-4400
850 nm, MM, SR, 300 m, 10GbE, -40°C to 85°C	Transmit wavelength	840 nm to 860 nm
	Transmit power	-9 dBm to -1 dBm
	Reach	300 m (0.2 miles)
	Receive sensitivity	11.1 dBm OMA (optical modulation amplitude)
	Receive overload	0 dBm
	Data rate	10.125 Gb/s
	Power consumption	1 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1021-4300

1310 nm SFP+ specifications

SFP+ type	Parameter	Value
1310 nm, 10 km, 8.5 G and 9.95 to 11.3 G, 0°C to 70°C	Transmit wavelength	1310 nm
	Transmit power	-6 dBm to -1 dBm <ul style="list-style-type: none"> • expected: -3 dBm • tolerance: +2 dB, -3 dB
	Reach	10 km (6.21 miles)
	Receive sensitivity	-11 dBm
	Receive overload	0.5 dBm
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 11.3 Gb/s
	Extinction ratio	6 dB
	Power consumption	1.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1018-5900
1310 nm, 10 km, 8.5 G and 9.95 to 11.3 G, -40°C to 85°C	Transmit wavelength	1310 nm
	Transmit power	-8.2 dBm to 0.5 dBm
	Reach	10 km (6.21 miles)
	Receive sensitivity	-14 dBm
	Receive overload	0.5 dBm
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 11.3 Gb/s
	Extinction ratio	3.5 dB
	Power consumption	1.04W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1025-5000
1310 nm, 10 km, 10 GbE, 0°C to 70°C	Transmit wavelength	1310 nm
	Transmit power	-8.2 dBm to 0.5dBm
	Reach	10 km (6.21 miles)
	Receive sensitivity	-14.4 dBm
	Receive overload	0.5 dBm
	Data rate	10.3 Gb/s
	Extinction ratio	3.5 dB
	Power consumption	1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1018-1900

CWDM SFP+ specifications

SFP+ type	Parameter	Value	
CWDM, 70 km, 8.5 G and 9.95 to 10.7 G, 0°C to 70°C	Transmit wavelength	Typical wavelength -6.5 nm to typical wavelength +6.5 nm (see part number parameter for typical wavelengths)	
	Receive wavelength	1471 nm to 1611 nm	
	Transmit power	0 dBm to 4 dBm	
	Reach	70 km (43.5 miles)	
	Receive sensitivity	-24 dBm @ 9.95 Gb/s	
	Receive overload	-6 dBm	
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 10.7 Gb/s	
	Extinction ratio	8.2 dB	
	Dispersion penalty	2 dB @ 9.95 Gb/s	
	Power consumption	2 W	
	Operating temperature	0°C to 70°C (32°F to 158°F)	
	Part number	1471 nm	1020-8301
		1491 nm	1020-8302
	1511 nm	1020-8303	
	1531 nm	1020-8304	
	1551 nm	1020-8305	
	1571 nm	1020-8306	
	1591 nm	1020-8307	
	1611 nm	1020-8308	

SFP+ type	Parameter	Value	
CWDM, 70 km, 8.5 G and 9.95 to 11.3 G, -40°C to 85°C	Transmit wavelength	1471 nm to 1611 nm (see part number parameter for individual wavelengths)	
	Receive wavelength	1270 nm to 1620nm	
	Transmit power	0 dBm to 4 dBm	
	Reach	70 km (43.5 miles)	
	Receive sensitivity	-24 dBm @ 9.95 Gb/s	
	Receive overload	-6 dBm	
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 11.3 Gb/s	
	Extinction ratio	8.2 dB	
	Dispersion penalty	2 dB @ 9.95 Gb/s	
	Power consumption	2.6 W	
	Operating temperature	-40°C to 85°C (-40°F to 185°F)	
	Part number	1471 nm	1025-4801
		1491 nm	1025-4802
1511 nm		1025-4803	
1531 nm		1025-4804	
1551 nm		1025-4805	
1571 nm		1025-4806	
1591 nm		1025-4807	
1611 nm		1025-4808	

DWDM SFP+ specifications

SFP+ type	Parameter	Value			
DWDM, 80 km, 8.5 G and 9.95 to 10.7 G, 0°C to 70°C	Transmit wavelength	40 channels (1530.33 nm to 1561.42)			
	Transmit power	-1 dBm to 4 dBm			
	Reach	80 km (49.7 miles)			
	Receive sensitivity	-24 dBm @ 9.95Gb/s			
	Dispersion penalty	2 dB @ 9.95 Gb/s			
	Receive overload	-7 dBm			
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 10.7 Gb/s			
	Extinction ratio	8.2 dB @ 9.95 Gb/s			
	Power consumption	2 W			
	Operating temperature	0°C to 70°C (32°F to 158°F)			
	Part number				
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1018-5801	1541.35 nm	1018-5815	1551.72 nm	1018-5828
1531.12 nm	1018-5802	1542.14 nm	1018-5816	1552.52 nm	1018-5829
1531.90 nm	1018-5803	1542.94 nm	1018-5817	1553.33 nm	1018-5830
1532.68 nm	1018-5804	1543.73 nm	1018-5818	1554.13 nm	1018-5831
1533.47 nm	1018-5805	1544.53 nm	1018-5819	1554.94 nm	1018-5832
1534.25 nm	1018-5806	1545.32 nm	1018-5820	1555.75 nm	1018-5833
1535.04 nm	1018-5807	1546.12 nm	1018-5821	1556.55 nm	1018-5834
1535.82 nm	1018-5808	1546.92 nm	1018-5822	1557.36 nm	1018-5835
1536.61 nm	1018-5809	1547.72 nm	1018-5823	1558.17 nm	1018-5836
1537.40 nm	1018-5810	1548.51 nm	1018-5824	1558.98 nm	1018-5837
1538.19 nm	1018-5811	1549.32 nm	1018-5825	1559.79 nm	1018-5838
1538.98 nm	1018-5812	1550.12 nm	1018-5826	1560.61 nm	1018-5839
1539.77 nm	1018-5813	1550.92 nm	1018-5827	1561.42 nm	1018-5840
1540.56 nm	1018-5814	—	—	—	—

SFP+ type	Parameter	Value			
DWDM, 80 km, 8.5 G and 9.95 to 11.3 G, -40°C to 85°C	Transmit wavelength	40 channels (1530.33 nm to 1561.42)			
	Transmit power	-1 dBm to 4 dBm			
	Reach	80 km (49.7 miles)			
	Receive sensitivity	-23 dBm @ 9.95 Gb/s			
	Dispersion penalty	2 dB @ 9.95 Gb/s			
	Receive overload	-7 dBm			
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 11.3 Gb/s			
	Extinction ratio	8.2 dB @ 9.95 Gb/s			
	Power consumption	2.1 W			
	Operating temperature	-40°C to 85°C (-40°F to 185°F)			
	Part number				
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1025-4901	1541.35 nm	1025-4915	1551.72 nm	1025-4928
1531.12 nm	1025-4902	1542.14 nm	1025-4916	1552.52 nm	1025-4929
1531.90 nm	1025-4903	1542.94 nm	1025-4917	1553.33 nm	1025-4930
1532.68 nm	1025-4904	1543.73 nm	1025-4918	1554.13 nm	1025-4931
1533.47 nm	1025-4905	1544.53 nm	1025-4919	1554.94 nm	1025-4932
1534.25 nm	1025-4906	1545.32 nm	1025-4920	1555.75 nm	1025-4933
1535.04 nm	1025-4907	1546.12 nm	1025-4921	1556.55 nm	1025-4934
1535.82 nm	1025-4908	1546.92 nm	1025-4922	1557.36 nm	1025-4935
1536.61 nm	1025-4909	1547.72 nm	1025-4923	1558.17 nm	1025-4936
1537.40 nm	1025-4910	1548.51 nm	1025-4924	1558.98 nm	1025-4937
1538.19 nm	1025-4911	1549.32 nm	1025-4925	1559.79 nm	1025-4938
1538.98 nm	1025-4912	1550.12 nm	1025-4926	1560.61 nm	1025-4939
1539.77 nm	1025-4913	1550.92 nm	1025-4927	1561.42 nm	1025-4940
1540.56 nm	1025-4914	_____	_____	_____	_____

Tunable SFP+ specifications

SFP+ type	Parameter	Value
Tunable, DWDM, C-Band, LR-2, 80 km, multi-rate, °C to 70°C	Transmit wavelength	1530.33 nm to 1561.83 nm
	Receive wavelength	1528 nm to 1564 nm
	Transmit power	-1 dBm to 3 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-23 dBm @ 9.95 Gb/s
	Receive overload	-7 dBm
	Data rate	8.5 Gb/s, and 9.95 Gb/s to 11.3 Gb/s
	Extinction ratio	8.2 dB
	Dispersion penalty	2 dB @ 9.95 Gb/s
	Grid frequency spacing	50 GHz 100 GHz
	Channels	80 channels (1530.33 nm to 1561.83 nm) @ 50 GHz 40 channels (1530.33 nm to 1561.42 nm) @ 100 GHz
	Wavelength stability	±25 pm
	Power consumption	2.1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	1025-3700	

SFP+ type	Parameter	Value
Tunable, DWDM, C-Band, LR-2, 80 km, multi-rate, -40°C to 85°C	Transmit wavelength	1530.33 nm to 1561.83 nm
	Receive wavelength	1525 nm to 1575 nm
	Transmit power	-1 dBm to 3 dBm <ul style="list-style-type: none"> • expected: 1 dBm • tolerance: ±2 dB
	Reach	80 km (49.7 miles)
	Receive sensitivity	-24 dBm @ 10.7 Gb/s
	Receive overload	-7 dBm
	Data rate	9.95 Gb/s to 11.3 Gb/s
	Extinction ratio	9 dB
	Dispersion penalty	2 dB @ 9.95 Gb/s
	Grid frequency spacing	50 GHz 100 GHz
	Channels	80 channels (1530.33 nm to 1561.83 nm) @ 50 GHz 40 channels (1530.33 nm to 1561.42 nm) @ 100 GHz
	Wavelength stability	±25 pm
	Power consumption	2.3 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1025-3710

QSFP28 modules

Optelian MSA-compliant 100G QSFP28 transceiver modules are designed for use in 100GbE links over single-mode and multi-mode fiber. They are available in two varieties: 100G SR4 and 100G LR4.

Data rates ranging from 103.1 Gb/s to 111.81 Gb/s are supported. Optelian QSFP28 modules can be used with MSA-compliant optical transmission equipment, and are fully qualified for use in Optelian wavelength and packet services products.

QSFP28 modules can be inserted and removed while the system is powered without affecting traffic on other ports in the system.

QSFP28 specifications

QSFP28 type	Parameter	Value
103.1G, SR4, 100 m, 0°C to 70°C	Transmit wavelength	840 nm to 860 nm
	Receive wavelength	840 nm to 860 nm
	Transmit power per lane	-8.4 dBm to 2.4dBm
	Reach	100 m (0.06 miles)
	Receive sensitivity per lane	-5.2 dBm
	Receive overload	3.4 dBm
	Data rate	103.125 Gb/s to 111.81 Gb/s
	Extinction ratio	2.0 dB
	Receive reflectance	-12 dB
	Protocol	100G Ethernet compliant, OTU4 compliant
	Optical return loss	12 dB
	Connector	Single MPO
	Power consumption	3.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	1029-3600	
111.81G, LR4, 10 km, 0°C to 70°C	Transmit wavelength range per lane	λ 0: 1294.53 nm to 1296.59 nm λ 1: 1299.02 nm to 1301.09 nm λ 2: 1303.54 nm to 1305.63 nm λ 3: 1308.09 nm to 1310.19 nm
	Transmit power per lane	-4.3 dBm to 4.5dBm
	Reach	10 km (6.2 miles)
	Receive sensitivity per lane	-10.6 dBm
	Receive overload	4.5 dBm
	Data rate	103.125 Gb/s to 111.81 Gb/s 25.78 Gb/s typical, per channel
	Extinction ratio	4.0 dB
	Receive reflectance	-26 dB
	Protocol	100G Ethernet compliant, OTU4 compliant
	Connector	Duplex LC
	Power consumption	3.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1029-3601

XFP modules

Optelian XFP transceiver modules are available in a wide variety of interfaces including CWDM, DWDM, 850 nm, 1310 nm, and 1550 nm. Data rates ranging from 9.95 Gb/s to 11.32 Gb/s are supported. Forward Error Correction (FEC) rates are also supported.

Optelian XFP modules are MSA compliant, and are compatible with Optelian muxponder cards and transponder/regenerator cards. The modules can be used for reach extension (regeneration), wavelength conversion, and for multi-mode to single-mode conversion. Optelian XFP modules can be used with most MSA compliant optical transmission equipment.

XFP modules can be inserted and removed while the system is powered without affecting traffic on the other XFP ports in the system.



850 nm XFP specifications

XFP type	Parameter	Value
850 nm, MM, 300 m, multi-rate, 0°C to 70°C	Transmit wavelength	840 nm to 860 nm
	Transmit power	-7.3 dBm to -1.3 dBm
	Reach	300 m (0.19 miles) @ 50/125 μ m
	Receive sensitivity	-11.1 dBm (OMA)
	Receive overload	-1 dBm
	Data rate	9.95 Gb/s to 10.7 Gb/s
	Extinction ratio	3 dB
	Dispersion penalty	3.9 dB
	Power consumption	1.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1003-4752

1310 nm XFP specifications

XFP type	Parameter	Value
1310 nm, SR-1, 10 km, multi-rate, 0°C to 70°C	Transmit wavelength	1290 nm to 1330 nm
	Receive wavelength	1260 nm to 1355 nm
	Transmit power	-6 dBm to -1 dBm
	Reach	10 km (6.2 miles)
	Receive sensitivity	-11 dBm
	Receive overload	0.5 dBm
	Data rate	9.95 Gb/s to 11.32 Gb/s
	Extinction ratio	6 dB
	Dispersion penalty	1 dB
	Power consumption	2 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	1003-4753	
1310 nm, SR-1, 10 km, multi-rate, -40°C to 85°C	Transmit wavelength	1290 nm to 1330 nm
	Receive wavelength	1260 nm to 1355 nm
	Transmit power	-6 dBm to -1 dBm
	Reach	10 km (6.2 miles)
	Receive sensitivity	-13.3 dBm
	Receive overload	0.5 dBm
	Data rate	9.95 Gb/s to 11.09 Gb/s
	Extinction ratio	6 dB
	Dispersion penalty	1 dB
	Power consumption	2.5 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
Part number	1025-2100	

1550 nm XFP specifications

XFP type	Parameter	Value
1550 nm, IR-2, 40 km, multi-rate, 0°C to 70°C	Transmit wavelength	1530 nm to 1565 nm
	Transmit power	-1 dBm to 2 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-14 dBm
	Receive overload	-1 dBm
	Data rate	9.95 Gb/s to 11.32 Gb/s
	Extinction ratio	8.2 dB
	Dispersion penalty	3 dB
	Dispersion tolerance	800 ps/nm
	Power consumption	2.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	1003-4754	
1550 nm, IR-2, 40 km, multi-rate, 0°C to 70°C (jitter compliant when used with the RGN-10GXT card)	Transmit wavelength	1530 nm to 1565 nm
	Receive wavelength	1530 nm to 1565 nm
	Transmit power	-1 dBm to 2 dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-15 dBm
	Receive overload	-1 dBm
	Data rate	9.95 Gb/s to 11.32 Gb/s
	Extinction ratio	8.2 dB
	Dispersion penalty	2 dB @ 9.95 to 10.3 Gb/s 3 dB @ 10.5 to 11.3 Gb/s
	Dispersion tolerance	800 ps/nm
	Power consumption	3.1 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1003-4764

XFP type	Parameter	Value
1550 nm, IR-2, 40 km, multi-rate, -40°C to 85°C	Transmit wavelength	1530 nm to 1565 nm
	Transmit power	-1 dBm to 3dBm
	Reach	40 km (24.9 miles)
	Receive sensitivity	-16 dBm
	Receive overload	-1 dBm
	Data rate	9.95 Gb/s to 11.09 Gb/s
	Extinction ratio	8.2 dB
	Dispersion penalty	2 dB
	Dispersion tolerance	800 ps/nm
	Power consumption	3.5 W
	Operating temperature	-40°C to 85°C (-40°F to 185°F)
	Part number	1024-0400
1550 nm, LR-2, 80 km, multi-rate, 0°C to 70°C	Transmit wavelength	1530 nm to 1565 nm
	Receive wavelength	1530 nm to 1565 nm
	Transmit power	0 dBm to 4 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-24 dBm @9.95 Gb/s
	Receive overload	-7 dBm
	Data rate	9.95 Gb/s to 11.09 Gb/s
	Extinction ratio	9 dB
	Dispersion penalty	2 dB @ 1600 ps/nm and 9.95 Gb/s
	Dispersion tolerance	1600 ps/nm @ 9.95 Gb/s
	Power consumption	3.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1003-4763

XFP type	Parameter	Value
1550 nm, LR-2, 80 km, multi-rate, 0°C to 70°C (jitter compliant when used with the RGN-10GXT card)	Transmit wavelength	1530 nm to 1565 nm
	Receive wavelength	1530 nm to 1565 nm
	Transmit power	0 dBm to 4 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-24 dBm
	Receive overload	-7 dBm
	Data rate	9.95, 10.31, 10.71, 11.09 Gb/s
	Extinction ratio	9 dB
	Dispersion penalty	2 dB @ 1600 ps/nm and 9.95 Gb/s
	Dispersion tolerance	1600 ps/nm
	Power consumption	3.5 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Part number	1003-4765

CWDM XFP specifications

XFP type	Parameter	Value	
CWDM, 1471 nm to 1611 nm, 40 km, multi-rate, 0°C to 70°C	Transmit wavelength	1471 nm to 1611 nm (see part number parameter for all wavelengths)	
	Receive wavelength	1460 nm to 1620 nm	
	Transmit power	0.5 dBm to 4dBm	
	Reach	40 km (24.9 miles)	
	Receive sensitivity	-15 dBm	
	Receive overload	-2 dBm	
	Data rate	9.95 Gb/s to 11.09 Gb/s	
	Extinction ratio	8.2 dB	
	Optical path penalty	2 dB	
	Dispersion tolerance	800 ps/nm	
	Power consumption	3.5 W	
	Operating temperature	0°C to 70°C (32°F to 158°F)	
	Part numbers	1471 nm	1003-4755
		1491 nm	1003-4756
1511 nm		1003-4757	
1531 nm		1003-4758	
1551 nm		1003-4759	
1571 nm		1003-4760	
1591 nm		1003-4761	
	1611 nm	1003-4762	

XFP type	Parameter	Value	
CWDM, 1471 nm to 1611 nm, 40 km, multi-rate, -40°C to 85°C	Transmit wavelength	1471 nm to 1611 nm (see part number parameter for all wavelengths)	
	Receive wavelength	1270 nm to 1610 nm	
	Transmit power	-1 dBm to 4 dBm	
	Reach	40 km (24.9 miles)	
	Receive sensitivity	-16.5dBm	
	Receive overload	0.5 dBm	
	Data rate	9.95 Gb/s to 11.32 Gb/s	
	Extinction ratio	8.2 dB	
	Optical path penalty	2 dB	
	Power consumption	2.5 W	
	Operating temperature	-40°C to 85°C (-40°F to 185°F)	
	Part numbers	1471 nm	1029-1801
		1491 nm	1029-1802
1511 nm		1029-1803	
1531 nm		1029-1804	
1551 nm		1029-1805	
1571 nm		1029-1806	
1591 nm		1029-1807	
	1611 nm	1029-1808	

XFP type	Parameter	Value	
CWDM, 1471 nm to 1611 nm, 70 km, multi-rate, 0°C to 70°C	Transmit wavelength	1471 nm to 1611 nm (see part number parameter for all wavelengths)	
	Receive wavelength	1460 nm to 1620 nm	
	Transmit power	0.5 dBm to 4dBm	
	Reach	70 km (43.5 miles)	
	Receive sensitivity	-21 dBm	
	Receive overload	-9 dBm	
	Data rate	9.95 Gb/s 11.09 Gb/s	
	Extinction ratio	9 dB	
	Optical path penalty	1 dB	
	Chromatic dispersion	0 to 1400 ps/nm	
	Power consumption	3.5 W	
	Operating temperature	0°C to 70°C (32°F to 158°F)	
	Part numbers	1471 nm	1008-7001
		1491 nm	1008-7002
1511 nm		1008-7003	
1531 nm		1008-7004	
1551 nm		1008-7005	
1571 nm		1008-7006	
1591 nm		1008-7007	
	1611 nm	1008-7008	

XFP type	Parameter	Value	
CWDM, 1471 nm to 1611 nm, 70 km, multi-rate, -40°C to 85°C	Transmit wavelength	1471 nm to 1611 nm (see part number parameter for all wavelengths)	
	Receive wavelength	1460 nm to 1620 nm	
	Transmit power	0 dBm to 4dBm	
	Reach	70 km (43.5 miles)	
	Receive sensitivity	-22 dBm	
	Receive overload	-9 dBm	
	Data rate	9.95 Gb/s 11.09 Gb/s	
	Extinction ratio	8.2 dB	
	Optical path penalty	3 dB	
	Chromatic dispersion	0 to 1400 ps/nm	
	Power consumption	3.5 W	
	Operating temperature	-40°C to 85°C (-40°F to 185°F)	
	Part numbers	1471 nm	1024-0301
		1491 nm	1024-0302
1511 nm		1024-0303	
1531 nm		1024-0304	
1551 nm		1024-0305	
1571 nm		1024-0306	
1591 nm		1024-0307	
	1611 nm	1024-0308	

DWDM, LR-2, 80 km, multi-rate, 0°C to 70°C XFP specifications

Parameter		Value			
Jitter generation		Compliant with GR-253 when used in the RGN-10GXT card			
Transmit wavelength		1530.33 nm to 1561.42 nm (see part number parameter for all wavelengths)			
Receive wavelength		1530 nm to 1565 nm			
Transmit power		-1 dBm to 3 dBm			
Reach		80 km (49.7 miles)			
Receive sensitivity		-24 dBm			
Receive overload		-7 dBm			
Data rate		9.95 Gb/s to 11.09 Gb/s			
Extinction ratio		9 dB			
Dispersion penalty		2 dB @ 1600 ps/nm and 9.95 Gb/s			
Dispersion tolerance		1600 ps/nm			
Power consumption		3.5 W			
Operating temperature		0°C to 70°C (32°F to 158°F)			
Part numbers					
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1003-4709	1541.35 nm	1003-4712	1551.72 nm	1003-4744
1531.12 nm	1003-4726	1542.14 nm	1003-4735	1552.52 nm	1003-4718
1531.90 nm	1003-4727	1542.94 nm	1003-4736	1553.33 nm	1003-4745
1532.68 nm	1003-4728	1543.73 nm	1003-4737	1554.13 nm	1003-4746
1533.47 nm	1003-4708	1544.53 nm	1003-4738	1554.94 nm	1003-4747
1534.25 nm	1003-4729	1545.32 nm	1003-4739	1555.75 nm	1003-4711
1535.04 nm	1003-4713	1546.12 nm	1003-4740	1556.55 nm	1003-4748
1535.82 nm	1003-4730	1546.92 nm	1003-4741	1557.36 nm	1003-4715
1536.61 nm	1003-4731	1547.72 nm	1003-4707	1558.17 nm	1003-4749
1537.40 nm	1003-4732	1548.51 nm	1003-4742	1558.98 nm	1003-4714
1538.19 nm	1003-4719	1549.32 nm	1003-4717	1559.79 nm	1003-4750
1538.98 nm	1003-4733	1550.12 nm	1003-4743	1560.61 nm	1003-4725
1539.77 nm	1003-4710	1550.92 nm	1003-4716	1561.42 nm	1003-4751
1540.56 nm	1003-4734	—	—	—	—

DWDM, LR-2, 80 km, multi-rate, -40°C to 85°C XFP specifications

Parameter	Value
Transmit wavelength	1530.33 nm to 1561.42 nm (see part number parameter for all wavelengths)
Receive wavelength	1530 nm to 1565 nm
Transmit power	0 dBm to 4 dBm
Reach	80 km (49.7 miles)
Receive sensitivity	-24 dBm
Receive overload	-7 dBm
Data rate	9.95 Gb/s to 11.09 Gb/s
Extinction ratio	8.2 dB
Dispersion penalty	2.5 dB @ 1600 ps/nm and 9.95 Gb/s
Dispersion tolerance	1600 ps/nm
Power consumption	3.5 W
Operating temperature	-40°C to 85°C (-40°F to 185°F)

Part numbers					
Wavelength	Part number	Wavelength	Part number	Wavelength	Part number
1530.33 nm	1024-0201	1541.35 nm	1024-0215	1551.72 nm	1024-0228
1531.12 nm	1024-0202	1542.14 nm	1024-0216	1552.52 nm	1024-0229
1531.90 nm	1024-0203	1542.94 nm	1024-0217	1553.33 nm	1024-0230
1532.68 nm	1024-0204	1543.73 nm	1024-0218	1554.13 nm	1024-0231
1533.47 nm	1024-0205	1544.53 nm	1024-0219	1554.94 nm	1024-0232
1534.25 nm	1024-0206	1545.32 nm	1024-0220	1555.75 nm	1024-0233
1535.04 nm	1024-0207	1546.12 nm	1024-0221	1556.55 nm	1024-0234
1535.82 nm	1024-0208	1546.92 nm	1024-0222	1557.36 nm	1024-0235
1536.61 nm	1024-0209	1547.72 nm	1024-0223	1558.17 nm	1024-0236
1537.40 nm	1024-0210	1548.51 nm	1024-0224	1558.98 nm	1024-0237
1538.19 nm	1024-0211	1549.32 nm	1024-0225	1559.79 nm	1024-0238
1538.98 nm	1024-0212	1550.12 nm	1024-0226	1560.61 nm	1024-0239
1539.77 nm	1024-0213	1550.92 nm	1024-0227	1561.42 nm	1024-0240
1540.56 nm	1024-0214	—	—	—	—

Tunable XFP specifications

XFP type	Parameter	Value
Tunable DWDM, C-Band, LR-2, 80 km, multi-rate, -5°C to 70°C	Transmit wavelength	1530.33 nm to 1561.83 nm
	Receive wavelength	1528 nm to 1564 nm
	Transmit power	-1 dBm to 3 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-24 dBm
	Receive overload	-7 dBm
	Data rate	9.95 Gb/s to 11.3 Gb/s
	Extinction ratio	9 dB
	Dispersion penalty	2 dB
	Grid frequency spacing	50 GHz 100 GHz
	Channels	80 channels (1530.33 nm to 1561.83 nm) @ 50 GHz 40 channels (1530.33 nm to 1561.42 nm) @ 100 GHz
	Wavelength stability	±25 pm
	Power consumption	3.5 W
	Operating temperature	-5°C to 70°C (23°F to 158°F)
Part number	1014-7200	

XFP type	Parameter	Value
Tunable DWDM, C-Band, LR-2, 80 km, multi-rate, -5°C to 85°C	Transmit wavelength	1530.33 nm to 1561.83 nm
	Receive wavelength	1528 nm to 1564 nm
	Transmit power	-1 dBm to 3 dBm
	Reach	80 km (49.7 miles)
	Receive sensitivity	-24 dBm @10.3 Gb/s BER 1×10^{-12} without decision threshold -27 dBm @11.3 Gb/s BER 1×10^{-4} with decision threshold
	Receive overload	-6 dBm
	Data rate	8.5 Gb/s to 11.3 Gb/s
	Extinction ratio	9 dB
	Dispersion penalty	2 dB @ receive sensitivity of -24 dBm 3 dB @ receive sensitivity of -27 dBm
	Tolerance	-300 to 1600 ps/nm
	Grid frequency spacing	50 GHz 100 GHz
	Channels	80 channels (1530.33 nm to 1561.83 nm) @ 50 GHz 40 channels (1530.33 nm to 1561.42 nm) @ 100 GHz
	Wavelength stability	± 2.5 GHz (until end-of-life)
	Power consumption	4.5 W
	Operating temperature	-5°C to 85°C (23°F to 185°F)
Part number	1014-7210	

CFP modules

Optelian MSA-compliant CFP modules provide high-capacity service access to the MPX series of flexible 100G platforms. A variety of interface options are available, including 100G Coherent, 100G LR4, and 100G SR10, that support both OTU4 and 100 GbE protocols.



CFP specifications

CFP type	Parameter	Value
CFP-DCO, 100G, -5°C to 70°C	Transmit wavelength	80 channels (1530.33 nm to 1561.83 nm) @ 50 GHz 40 channels (1530.33 nm to 1561.42 nm) @ 100 GHz
	Modulation	100G DP-QPSK
	Transmit optical return loss	27 dB
	Transmitter frequency range	191.25 to 196.10 THz
	Transmitter laser frequency stability	±1.8 GHz
	Transmit power	1 dBm • expected: 1 dBm • tolerance: ±1 dB
	Reach (amplified network)	2400 km (1491 miles)
	Receiver OSNR sensitivity	12.5 dB
	Receiver input power range, amplified network	-18 to 0 dBm (based on OSNR sensitivity of 12.5 dB)
	Receiver sensitivity, unamplified network	-30 dBm (for OTU4 with GFEC)
	Receive overload	Maximum (target channel): 10 dBm
	Receiver frequency range	191.25 to 196.10 THz
	Receiver PDL (polarization dependent loss) tolerance	3 dB
	Input power monitor accuracy	±1.5 dB
	Receiver CD (chromatic dispersion) tolerance	40 ns/nm
	Receiver PMD (polarization-mode dispersion) tolerance	25 ps
	Power consumption	20 W
	Operating temperature	-5°C to 70°C (23°F to 158°F)
	Connector	Duplex LC
	Part number	1031-9600

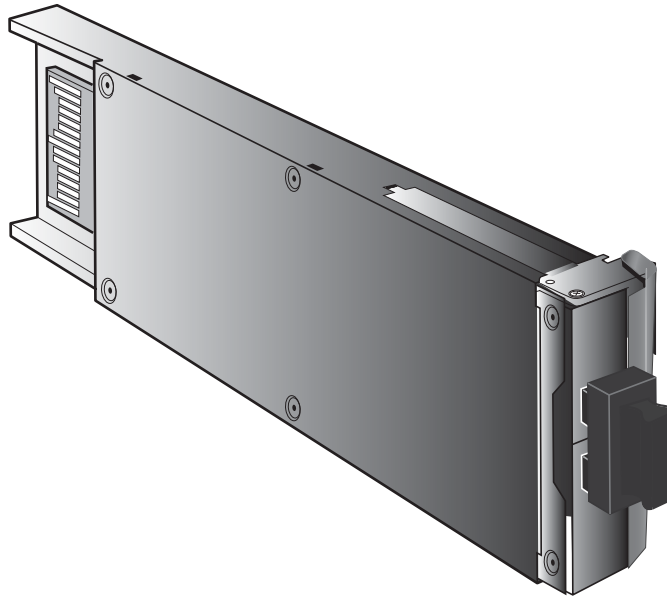
CFP type	Parameter	Value
100GbE/OTU4, SR-10, 100 m, 0°C to 70°C	Transmit wavelength	850 nm
	Transmit power	Minimum: -6.5 dBm per lane Maximum: 1 dBm per lane
	Reach	100 m (0.06 miles)
	Overload receive power	2.4 dBm per lane
	Data rate	Minimum: 103 Gb/s Maximum: 112 Gb/s
	Power consumption	8 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Connector	MPO
	Part number	1019-2900
100GbE/OTU4, LR-4, 10 km, 0°C to 70°C	Transmit wavelength	1295 nm, 1300 nm, 1304 nm, 1309 nm
	Transmit power	Minimum: -1 dBm per lane OMA (optical modulation amplitude) Maximum: 4.5 dBm per lane OMA Maximum total average: 10.5 dBm
	Receive sensitivity	-8.6 dBm per lane OMA
	Dispersion penalty	2.2 dB per lane
	Overload receive power	4.5 dBm per lane OMA
	Reach	10 km (6.21 miles)
	Data rate	Minimum: 103 Gb/s Maximum: 112 Gb/s
	Power consumption	16 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Connector	LC
	Part number	1018-6200

CFP type	Parameter	Value
100GbE/OTU4, ER-4, 40 km, 0°C to 70°C	Transmit wavelength	1295 nm, 1300 nm, 1304 nm, 1309 nm
	Transmit power	Minimum: -2.9 dBm per lane Maximum: 2.9 dBm per lane Maximum total average: 8.9 dBm
	Receive sensitivity	-21.4 dBm per lane OMA
	Dispersion penalty	2.5 dB per lane
	Overload receive power	4.5 dBm per lane
	Reach	40 km (24.9 miles)
	Data rate	Minimum: 103 Gb/s Maximum: 112 Gb/s
	Power consumption	9 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Connector	LC
Part number	1018-6240	
40GbE-FR, OTU3 VSR-4, 2 km, 0°C to 70°C	Transmit wavelength	1530 nm to 1565 nm
	Transmit power	0 dBm to 3 dBm
	Receive sensitivity	-6 dBm
	Dispersion penalty	2 dB
	Receive overload	3 dBm
	Reach	2 km (1.2 miles)
	Data rate	41.25 Gb/s to 43.01 Gb/s
	Extinction ratio	8.2 dB
	Power consumption	8 W
	Operating temperature	0°C to 70°C (23°F to 158°F)
Part number	1021-9800	

CFP type	Parameter	Value
40GbE, SR-4, 300 m, Dual Port, 0°C to 70°C	Transmit wavelength	850 nm
	Transmit power	Minimum: -8 dBm per lane Maximum: 1 dBm per lane
	Receive sensitivity	-9.5 dBm per lane
	Dispersion penalty	2 dB
	Receive overload	1 dBm per lane
	Reach	300 m (0.2 miles)
	Data rate	41.25 Gb/s
	Extinction ratio	6 dB
	Power consumption	8 W
	Operating temperature	0°C to 70°C (32°F to 158°F)
	Connector	MPO
	Part number	1021-9900

CFP2 modules

Optelian MSA-compliant CFP2 modules provide high-capacity service access to the 200G series of service cards. The modules can be configured by the user for 100G and 200G operating mode, and are available with and without physical layer encryption, and with a fully tunable transmitter that can be set to a specific ITU channel.



CFP2-DCO specifications

CFP2 type	Parameter	Value
CFP2-DCO, 100G/200G, -5°C to 70°C	Tunable transmit wavelength	1530.33 to 1561.83 nm at 50 GHz grid spacing 1530.33 to 1561.42 nm at 100 GHz grid spacing
	Configurable modulation	100G DP-QPSK 200G DP-16QAM
	Reach, amplified network	1200/ 2400 km (745.6/ 1491 miles)
	Transmit optical return loss	27 dB
	Transmitter frequency range	191.25 to 196.10 THz
	Transmitter laser frequency stability	±1.8 GHz
	Transmit power	1 dBm to 2 dBm
	Receiver OSNR sensitivity	100G: 12.5 dB 200G: 20.5 dB
	Receiver input power range, amplified network	100G: -18 to 0 dBm (based on OSNR sensitivity of 12.5 dB) 200G: -18 to 0 dBm (based on OSNR sensitivity of 20.5 dB)
	Receiver sensitivity, unamplified network	100G: -29 dBm 200G: -22 dBm
	Receiver overload	1 dBm
	Receiver frequency range	191.25 to 196.10 THz
	Receiver PDL (polarization dependent loss) tolerance	3 dB
	Input power monitor accuracy	±1.5 dB
	Receiver CD (chromatic dispersion) tolerance	100G: 40 ns/nm 200G: 20 ns/nm
	Receiver PMD (polarization-mode dispersion) tolerance	100G: 30 ps 200G: 15 ps
	Power consumption	100G: 17 W 200G: 20 W
	Operating temperature	-5°C to 70°C (23°F to 158°F)
Connector	Duplex LC	
Part number	1029-3501	

Customer support

Customer support is available 7 days a week, 24 hours a day, and can be contacted as follows:

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