

SFP Transceivers – 1.25 Gbps

Description:

The 1.25 Gbps series are hot pluggable Small-Form-Factor (SFP) duplex, bidirectional and CWDM transceiver modules expressly designed for high speed communication applications that requiring rates of up to 1.25 Gbps. The transceivers are manufactured with LC receptacle that is compatible with the industry LC connector standard. All SFP transceivers have the digital diagnostic monitor feature.



	Unit	SX	LRM	LX03	LX	HX	ZX	UX	EZX
Average output power (min / max)	dBm	-9 / -3	-20 / -14	-11 / 3	-9 / -3	-5 / 0	0 / 5	0 / 5	2 / 6
Receiver sensitivity	dBm	-18	-28	-19	-20	-24	-26	-32 ⁱ	-34
Overload	dBm	0	-3	-3	-3	-1	-10	-10	-10
Maximum distance	km	550	1,5	3	20	40	80	120	160
Fiber type	-	MMF	MMF	SMF	SMF	SMF	SMF	SMF	SMF
Optical link budget	dB	9	8	8	11	19	26	32	36
Wavelength / laser type	nm	850 / VCSEL	1310 / FP	1310 / FP	1310 / FP	1310/FP 1550/D FB	1550 / DFB	1550 / DFB	1550 / DFB

Table 1: Basic technical specifications according to distance.

Temperature:

OPTOKON is always trying to satisfy as much market demand as possible and with this in mind, almost all OPTOKON SFP transceivers are manufactured in the commercial (D), extended (E) and industrial (I) temperature ranges to provide you all possibilities you need for your application.

Code	Temperature
D	0 °C to + 70 °C
E	-10°C to + 80 °C
I	-40°C to + 85 °C

Table 2: Temperature specifications.

Safety and regulatory compliance

Electrostatic discharge (ESD)	IEC/EN 61000-4-2
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN 55022 Class B (CISPR 22A)
Laser Eye Safety	Class 1 laser product
Component Recognition	IEC/EN 60950, UL
ROHS	2002/95/EC
EMC	EN 61000-3

Digital diagnostics:

All OPTOKON SFP transceivers are assembled with digital diagnostic feature as a standard.

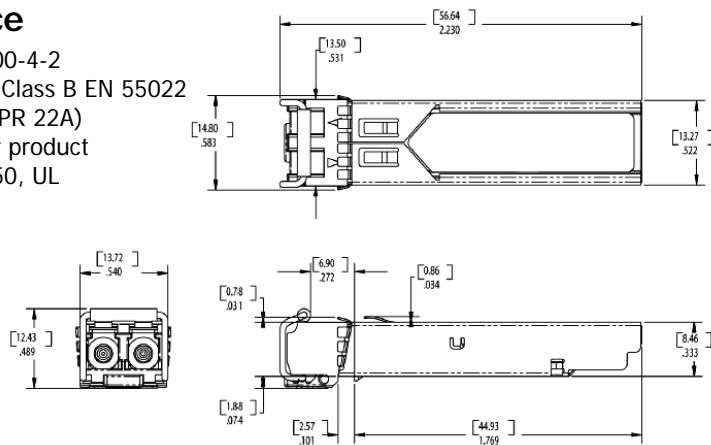


Figure 1: Transceiver dimensions schema.



Ordering codes for 1.25 Gbps SFP transceivers:

Standard series:

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [nm]	Temperature [-]	Fiber type [-]	Connector [-]
M125-V85-LP-SX-D-XX	1.25	0,550	850	D, E, I	MMF	LC
M125-F31-LP-LRM-D-XX	1.25	1,500	1310	D, E, I	MMF	LC
S125-F31-LP-LX-D-XX	1.25	20	1310	D, E, I	SMF	LC
S125-D31-LP-HX-D-XX	1.25	40	1310	D, E, I	SMF	LC
S125-D55-LP-HX-D-XX	1.25	40	1550	D, E, I	SMF	LC
S125-D55-LP-ZX-D-XX	1.25	80	1550	D, E, I	SMF	LC
S125-D55-LP-UX-D-XX	1.25	120	1550	D	SMF	LC
S125-D55-LP-EZX-D-XX	1.25	160	1550	D, E, I	SMF	LC

Bidirectional series:

Part number:	Speed [Gbps]	Distance - dd [-]	TX wavelength [nm]	Rx wavelength [nm]	Temperature [-]	Fiber [-]	Connector [-]
S125-W31/55-LP-LX03-D-XX	1.25	3	1310	1550	D, E, I	SMF	LC
S125-W55/31-LP-LX03-D-XX	1.25	3	1550	1310	D, E, I	SMF	LC
S125-W31/55-LP-LX-D-XX	1.25	20	1310	1550	D, E, I	SMF	LC
S125-W55/31-LP-LX-D-XX	1.25	20	1550	1310	D, E, I	SMF	LC
S125-W31/55-LP-HX-D-XX	1.25	40	1310	1550	D, E, I	SMF	LC
S125-W55/31-LP-HX-D-XX	1.25	40	1550	1310	D, E, I	SMF	LC
S125-W31/55-LP-ZX-D-XX	1.25	80	1310	1550	D, E, I	SMF	LC
S125-W55/31-LP-ZX-D-XX	1.25	80	1550	1310	D, E, I	SMF	LC
S125-W31/55-LP-UX-D-XX	1.25	120	1310	1550	D	SMF	LC
S125-W55/31-LP-UX-D-XX	1.25	120	1550	1310	D	SMF	LC
S125-W31/49-LP-LX-D-XX	1.25	20	1310	1490	D, E, I	SMF	LC
S125-W49/31-LP-LX-D-XX	1.25	20	1490	1310	D, E, I	SMF	LC
S125-W31/49-LP-HX-D-XX	1.25	40	1310	1490	D, E, I	SMF	LC
S125-W49/31-LP-HX-D-XX	1.25	40	1490	1310	D, E, I	SMF	LC
S125-W49/55-LP-HX-D-XX	1.25	40	1490	1550	D, E, I	SMF	LC
S125-W55/49-LP-HX-D-XX	1.25	40	1550	1490	D, E, I	SMF	LC
S125-W49/55-LP-ZX-D-XX	1.25	80	1490	1550	D, E, I	SMF	LC
S125-W55/49-LP-ZX-D-XX	1.25	80	1550	1490	D, E, I	SMF	LC
S125-W49/55-LP-UX-D-XX	1.25	120	1490	1550	D	SMF	LC
S125-W55/49-LP-UX-D-XX	1.25	120	1550	1490	D	SMF	LC
S125-B31/55-LP-LX03-D-XX	1,25	3	1310	1550	D, E, I	SMF	SC
S125-B55/31-LP-LX03-D-XX	1,25	3	1550	1310	D, E, I	SMF	SC
S125-B31/55-LP-LX-D-XX	1,25	20	1310	1550	D, E, I	SMF	SC
S125-B55/31-LP-LX-D-XX	1,25	20	1550	1310	D, E, I	SMF	SC
S125-B31/55-LP-HX-D-XX	1,25	40	1310	1550	D, E, I	SMF	SC
S125-B55/31-LP-HX-D-XX	1,25	40	1550	1310	D, E, I	SMF	SC
S125-B31/55-LP-ZX-D-XX	1,25	80	1310	1550	D, E, I	SMF	SC
S125-B55/31-LP-ZX-D-XX	1,25	80	1550	1310	D, E, I	SMF	SC
S125-B31/49-LP-20-D-XX	1,25	20	1310	1490	D, E, I	SMF	SC
S125-B49/31-LP-20-D-XX	1,25	20	1490	1310	D, E, I	SMF	SC
S125-B31/49-LP-HX-D-XX	1,25	40	1310	1490	D, E, I	SMF	SC
S125-B49/31-LP-HX-D-XX	1,25	40	1490	1310	D, E, I	SMF	SC
S125-B49/55-LP-ZX-D-XX	1,25	80	1490	1550	D, E, I	SMF	SC
S125-B55/49-LP-ZX-D-XX	1,25	80	1550	1490	D, E, I	SMF	SC

DWDM series:

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [-]	Temperature [-]	Fiber type [-]	Connector [-]
S125-Dyy yy ⁱⁱ -LP-ZX-D-XX	1.25	80	DWDM	D, E, I	SMF	LC
S125-Dyy yy-LP-UX-D-XX	1.25	120	DWDM	D, E, I	SMF	LC

DWDM laser code:

yy [-]	Frequency [THz]	Wavelength [nm]	yy [-]	Frequency [THz]	Wavelength [nm]
C17	191,7	1563,86	C29	192,9	1554,13
C18	191,8	1563,05	C30	193,0	1553,33
C19	191,9	1562,23	C31	193,1	1552,52
C20	192,0	1561,42	C32	193,2	1551,72
C21	192,1	1560,61	C33	193,3	1550,92
C22	192,2	1559,79	C34	193,4	1550,12
C23	192,3	1558,98	C35	193,5	1549,32
C24	192,4	1558,17	C36	193,6	1548,51
C25	192,5	1557,36	C37	193,7	1547,72
C26	192,6	1556,55	C38	193,8	1546,92
C27	192,7	1555,75	C39	193,9	1546,12
C28	192,8	1554,94			

yy [-]	Frequency [THz]	Wavelength [nm]	yy [-]	Frequency [THz]	Wavelength [nm]
C40	194,0	1545,32	C51	195,1	1536,61
C41	194,1	1544,53	C52	195,2	1535,82
C42	194,2	1543,73	C53	195,3	1535,04
C43	194,3	1542,94	C54	195,4	1534,25
C44	194,4	1542,14	C55	195,5	1533,47
C45	194,5	1541,35	C56	195,6	1532,68
C46	194,6	1540,56	C57	195,7	1531,90
C47	194,7	1539,77	C58	195,8	1531,12
C48	194,8	1538,98	C59	195,9	1530,33
C49	194,9	1538,19	C60	196,0	1529,55
C50	195,0	1537,40	C61	196,1	1528,77

DWDM code examples:

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [nm]	Temperature [-]	Fiber type [-]	Connector [-]
S125-D63 86-LP-ZX-D-XX	1.25	80	1563,86 (channel 17)	D, E, I	SMF	LC
S125-D59 79-LP-ZX-D-XX	1.25	80	1559,79 (channel 22)	D, E, I	SMF	LC
S125-D58 98-LP-UX-D-XX	1.25	120	1558,98 (channel 23)	D, E, I	SMF	LC
S125-D54 94-LP-UX-D-XX	1.25	120	1554,94 (channel 28)	D, E, I	SMF	LC
S125-D53 33-LP-ZX-D-XX	1.25	120	1553,33 (channel 30)	D, E, I	SMF	LC
S125-D52 52-LP-ZX-D-XX	1.25	120	1552,52 (channel 31)	D, E, I	SMF	LC

CWDM series:

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [-]	Temperature [-]	Fiber type [-]	Connector [-]
S125-Cyy-LP-LX-D-XX	1.25	20	CWDM	D, E, I	SMF	LC
S125-Cyy-LP-HX-D-XX	1.25	40	CWDM	D, E, I	SMF	LC
S125-Cyy-LP-ZX-D-XX	1.25	80	CWDM	D, E, I	SMF	LC
S125-Cyy-LP-UX-D-XX	1.25	120	CWDM	D	SMF	LC
S125-Cyy-LP-EZX-D-XX	1.25	160	CWDM	D	SMF	LC

CWDM laser code:

yy/zz [-]	Wavelength [nm]	Clasp Color Code [-]	yy/zz [-]	Wavelength [nm]	Clasp Color Code [-]
27	1270	Gray	45	1450	Brown
29	1290	Gray	47	1470	Gray
31	1310	Gray	49	1490	Purple
33	1330	Purple	51	1510	Blue
35	1350	Blue	53	1530	Green
37	1370	Green	55	1550	Yellow
39	1390	Yellow	57	1570	Orange
41	1410	Orange	59	1590	Red
43	1430	Red	61	1610	Brown

dd code [-]	Distance [km]
SX	0.550
LRM	1,5
LX03	3
LX	20
HX	40
ZX	80
UX	120
EZX	160

Table 3: Distance code.

CWDM code examples:

Code	Description
S125-C27-LP-HX-D-XX	CWDM series, 1270nm, 40km, 0 °C to + 70 °C operational temperature
S125-C55-LP-HX-I-XX	CWDM series, 1550nm, 40km, -40°C to +80°C operational temperature
S125-C31-LP-HX-D-XX	CWDM series, 1310nm, 40km, 0 °C to + 70 °C operational temperature
S125-C33-LP-HX-D-XX	CWDM series, 1330nm, 40km, 0 °C to + 70 °C operational temperature
S125-C53-LP-HX-D-XX	CWDM series, 1530nm, 40km, 0 °C to + 70 °C operational temperature
S125-C59-LP-HX-D-XX	CWDM series, 1590nm, 40km, 0 °C to + 70 °C operational temperature

Temperature code examples:

To order SFP with extended or industrial temperature, please replace the "D" mark with temperature mark in ordering number.

Code	Description
S125-D55-LP-HX-E-XX	Standard series, 1550nm, 40km, -10°C to +70°C operational temperature
S125-D55-LP-HX-I-XX	Standard series, 1550nm, 40km, -40°C to +80°C operational temperature

ⁱ 120 km DWDM SFP has different receiver sensitivity (-30 dBm)

ⁱⁱ yy yy means last 4 digits of DWDM wavelength. Example: For channel C17 of DWDM use 63 86 in ordering code