SFP+ Transceivers – 8 Gbps

Description:

The OPTOKON transceivers are compliant with IEEE 802.3ae and the SFP+ MSA. This upgrade, and reliability benefits by virtue of being hot-pluggable, also is designed for single-mode and multimode fiber with cost effective and high performance.

Applications:

- Multi-rate 8x / 4x / 2x Fiber Channel
- Supports 8.5 Gbps bit rates

	Unit	SR	LR02	LR	ER	ZR
Average output power (min / max)	dBm	-6 / -1	-8 / -1	-6 / -0.5	-1 / +3	0 / +4
Receiver sensitivity	dBm	-10	-10	-14.4	-16	-23
Overload	dBm	0.5	0	0.5	0.5	-6
Maximum distance	km	0.300	2	10	40	80
Fiber type	-	MMF	SMF	SMF	SMF	SMF
Optical link budget	dBm	4	2	8.4	15	23
Wavelength / laser type	nm	850/VCSEL	1310/FP	1310/DFB	1550/EML	1550/EML

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 **C**ommercial, **E**xtended and **I**ndustrial 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
Fiber Channel	FC-PI-4 800-SM-LC-L

Digital diagnostics:

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

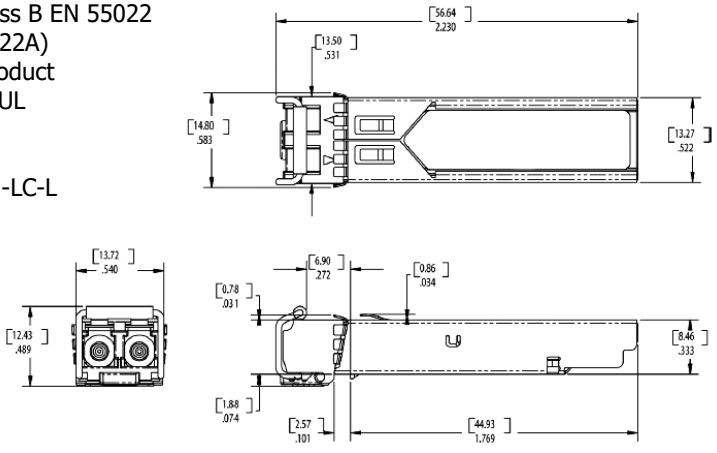

Figure 1: Transceiver dimensions schema

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Ordering codes:

8G SFP+ Standard series

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [-]	Temperature [-]	Fiber type [-]	Connector [-]
M85-V85-SP-SR-D-XX	8.5	2	850	D	MMF	LC
S85-D31-SP-LR-D-XX	8.5	10	1310	D	SMF	LC
S85-D31-SP-ER-D-XX	8.5	40	1550	D	SMF	LC
S85-D31-SP-ZR-D-XX	8.5	80	1550	D	SMF	LC

8G SFP+ CWDM series

Part number:	Speed [Gbps]	Distance dd [-]	Wavelength [-]	Temperature [-]	Fiber type [-]	Connector [-]
S85-Cyy-SP-dd-D-XX	8.5	LR	CWDM –1270 ÷ 1450	D	SMF	LC
S85-Cyy-SP-dd-D-XX	8.5	ER, ZR	CWDM –1470 ÷ 1610	D	SMF	LC

8G SFP+ DWDM series

Part number[1)]:	Speed [Gbps]	Distance dd [km]	Wavelength [-]	Temperature [-]	Fiber type [-]	Connector [-]
S10-Dxx xx-SP-ER-D-XX	10	40	DWDM	D	SMF	LC
S10-Dxx xx-SP-ZR-D-XX	10	80	DWDM	D	SMF	LC

1) ***XX XX*** *means last 4 digits of DWDM wavelength. Example: For channel C17 of DWDM use 63 86 in ordering code*

CWDM laser code:

yy [-]	Wavelength [nm]	Clasp Color [-]	yy [-]	Wavelength [nm]	Clasp Color [-]
27	1270	Gray	45	1450	Brown
29	1290	Gray	47	1470	Gray
31	1310	Gray	49	1490	Violet
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

Table 3: CWDM ordering code.

DWDM laser code:

Ch [-]	Frequency [THz]	Wavelength [nm]	Ch [-]	Frequency [THz]	Wavelength [nm]
C17	191,7	1563,86	C40	194,0	1545,32
C18	191,8	1563,05	C41	194,1	1544,53
C19	191,9	1562,23	C42	194,2	1543,73
C20	192,0	1561,42	C43	194,3	1542,94
C21	192,1	1560,61	C44	194,4	1542,14
C22	192,2	1559,79	C45	194,5	1541,35
C23	192,3	1558,98	C46	194,6	1540,56
C24	192,4	1558,17	C47	194,7	1539,77
C25	192,5	1557,36	C48	194,8	1538,98
C26	192,6	1556,55	C49	194,9	1538,19
C27	192,7	1555,75	C50	195,0	1537,40
C28	192,8	1554,94	C51	195,1	1536,61
C29	192,9	1554,13	C52	195,2	1535,82
C30	193,0	1553,33	C53	195,3	1535,04
C31	193,1	1552,52	C54	195,4	1534,25
C32	193,2	1551,72	C55	195,5	1533,47
C33	193,3	1550,92	C56	195,6	1532,68
C34	193,4	1550,12	C57	195,7	1531,90
C35	193,5	1549,32	C58	195,8	1531,12
C36	193,6	1548,51	C59	195,9	1530,33
C37	193,7	1547,72	C60	196,0	1529,55
C38	193,8	1546,92	C61	196,1	1528,77
C39	193,9	1546,12			

Table 4: DWDM orderign code

Distance & Temperature codes:

dd code [-]	Distance [km]
SR	0.3
LR02	2
LR	10
ER	40
ZR	80

Table 5: Distance codes

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

Table 6: Temperature codes

CWDM and DWDM code examples:

Part number:	Speed [Gbps]	Distance dd [km]	Wavelength [nm]	Temperature [-]	Fiber type [-]	Connector [-]
S85-C31-SP-LR-D-XX	8.5	10	1310	- 0 °C to + 70 °C	SMF	LC
S85-C59-SP-ER-I-XX	8.5	40	1590	- 40 °C to + 85 °C	SMF	LC
S85-D31 12-SP-ER-D-XX	8.5	40	1531,12 (Channel 58)	- 0 °C to + 70 °C	SMF	LC
S85-D28 77-SP-ZR-D-XX	8.5	80	1528,77 (Channel 61)	- 0 °C to + 70 °C	SMF	LC