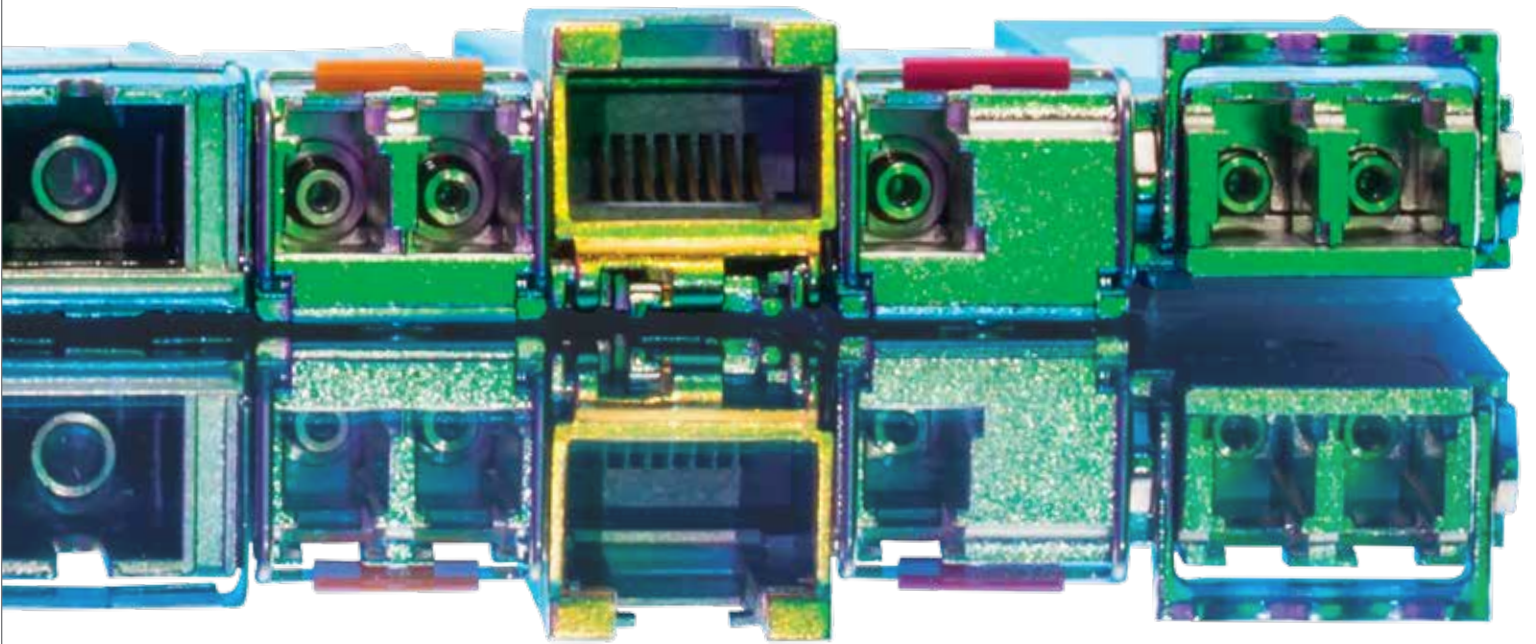




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OPTICS

for the smart data center



OPTICAL TRANSCEIVER SPECIFICATIONS GUIDE

Optics | DACs | Cables | Cable Management | Media Converters

OPTICAL TRANSCEIVER SPECIFICATIONS FOR THE SMART DATA CENTER.

QUALITY OPTICS - TESTED, TRUSTED & APPROVED.

Approved takes pride in taking a proactive roll in qualifying and validating our components and finished goods before programming even begins on our optics. To guarantee 100% compatibility and compliance, Approved's transceivers are coded to meet the specific requirements of the switch, server or router in which it will be installed. Approved engineers then test the optic in the system with the most commonly used applications and operating systems. Since transceiver performance varies slightly between contract manufacturers, Approved's quality standards call for in-system qualification of every new solution, running thousands of hours at full network emulation.

Since 2002, Approved and its companies have been known for the highest quality optical products available. Quality has always been the reason for the tremendous growth of Approved's presence inside the data center. Approved recognizes the important role that optics and connectivity products play in the networking landscape and take the necessary steps to guarantee a reliable product.

Approved's quality system provides our clients with:

Quality – Approved qualifies components and tests every transceiver at all stages of the process.

Reliability – Approved's return and failure rates are the lowest in the industry. Return rate on modules shipped is 0.010% (1 in 9890). Failure rate on modules deployed in the field is .0029% (1 in 33,600). These low rates are due to Tier 1 CMs, programming & in-house testing. This means that most failures/defects are found in process.

Compliance – Approved programs and tests our products for guaranteed compatibility and backs this process up with a lifetime warranty.

Expedience – Approved keeps a complete line of tested optical solutions at competitive prices for thousands of networking switches, routers and servers, in stock and ready to ship.

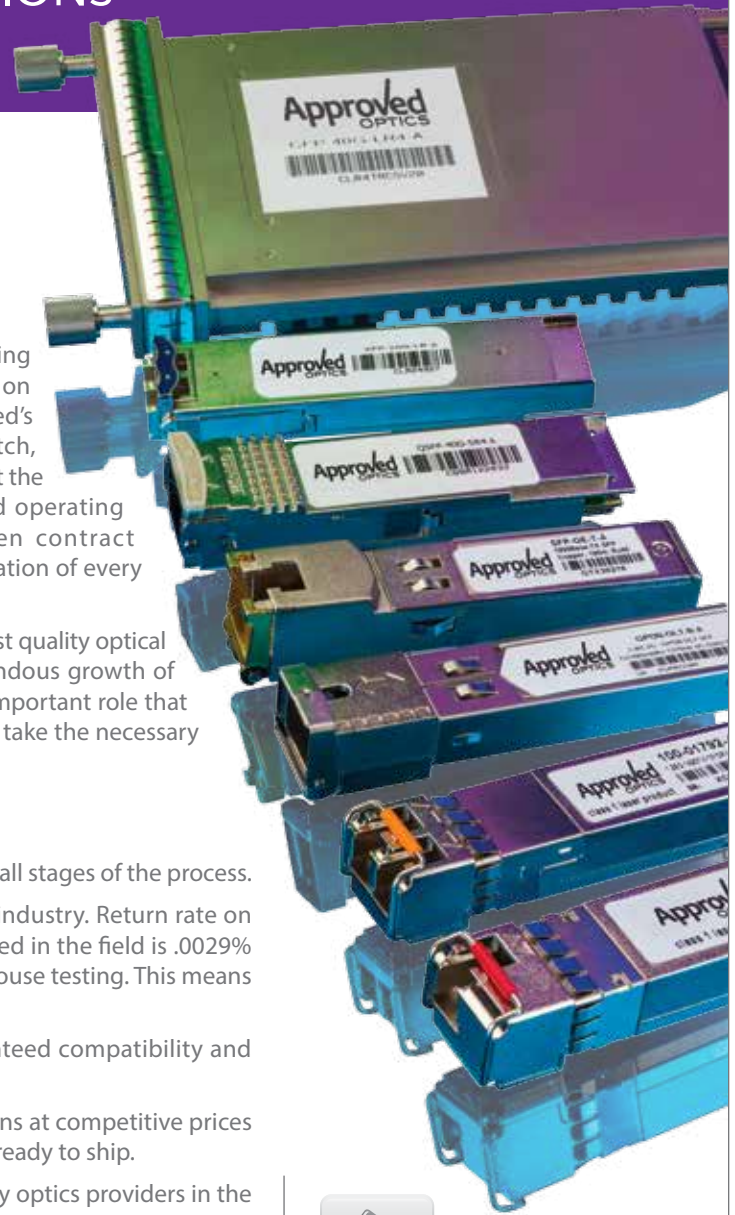
Stability – Approved has grown into the largest independent third party optics providers in the industry. We have been an established, quality solution for over a decade.

Industry Leadership – Approved takes pride in its active role within our industry and its organizations, participating as a voice of authority and education at all levels of the networking technology market.

Expertise – Approved's experienced technical engineering staff has contributed to the development of both first-to-market products (as the industry's first third party 40G IR4 MPO), as well as customized solutions to help clients build the highest-performing networks in the world.

Approved transceivers support the following:

3Com | Adtran | Adva | Aerohive | Alcatel | Allied Telesis | Alvarion | Arista | Aruba | Asus | Avaya
Blade Networks | Brocade | BTI | Calix | Ceragon | Check Point | Chelsio | Ciena | Cisco | D-Link | DELL
Delta | ECI Telecom | Enterasys | Extreme | F5 Networks | Finisar | Fluke Networks | Force10 | Fortinet
Foundry | FTTX | Fujitsu | Gigamon | H3C | HP | Huawei | IBM | Intel | JDSU | Juniper | Linksys | Marconi
Mellanox | Meraki | MRV | Netgear | Nokia | Nortel | Nutanix | Oplink | Overture | Palo Alto | Pannaway
Planet | Rad Group | Redback | Riverbed | Riverstone | Sixnet | SMC | Sun | Sunrise Telecom
Tejas Networks | Telco Systems | TP Link | Transition Networks | TRENDnet | Ubiquiti | XKL | Zhone | ZTE | Zyxel



WARRANTY SAFE

Approved products **will not void your OEM warranty**, and they present zero service-level risk. Federal law protects you and your rights.



DATA CENTER CERTIFIED

Approved's entire product line has been **certified compliant** within the data center environment and appears on the AVL of most major telecom and technology corporations.

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SFP TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
SFP Copper T	SFP-T100	Copper	10/100	100m	Cat 5	-	-	-	-	
	SFP-TM	Copper	10/100/1000	100m	Cat 5	-	-	-	-	
	SFP-T	Copper	1000	100m	Cat 5	-	-	-	-	
SFP OC3	SFP-OC3-SRD	1310	155	2Km	MM	-20	-14	-31	-5	17
	SFP-OC3-SR	1310	155	2Km	SM	-15	-8	-23	-8	17
	SFP-OC3-IR1	1310	155	20Km	SM	-8	-14	-28	-8	14
	SFP-OC3-LR1	1310	155	40Km	SM	0	-5	-34	-10	29
	SFP-OC3-LR2	1550	155	80Km	SM	0	-5	-34	-10	29
SFP OC3 BIDI	SFP-OC3B34-15	1310/1490	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B43-15	1490/1310	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B34-40	1310/1490	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B43-40	1490/1310	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B35-15	1310/1550	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B53-15	1550/1310	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B35-40	1310/1550	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B53-40	1550/1310	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B45-15	1490/1550	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B54-15	1550/1490	155	15km	SM	-15	-8	-24	-8	10
	SFP-OC3B45-40	1490/1550	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B54-40	1550/1490	155	40km	SM	3	-2	-24	-10	22
	SFP-OC3B45-80	1490/1550	155	80km	SM	0	5	-28	-3	26
	SFP-OC3B54-80	1550/1490	155	80km	SM	0	5	-28	-3	26
SFP OC12	SFP-OC12-SRD	850	622	2Km	MM	-20	-14	-31	-6	17
	SFP-OC12-SR	1310	622	2Km	SM/MM	-15	-8	-31	-8	17
	SFP-OC12-IR1	1310	622	20Km	SM	-8	-15	-28	-8	14
	SFP-OC12-LR1	1310	622	40Km	SM	2	-3	-28	-8	29
	SFP-OC12-LR2	1550	622	80Km	SM	2	-3	-28	-8	29
SFP OC12 BIDI	SFP-OC12B34-15	1310/1490	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B43-15	1490/1310	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B34-40	1310/1490	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B43-40	1490/1310	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B35-15	1310/1550	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B53-15	1550/1310	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B35-40	1310/1550	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B53-40	1550/1310	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B45-15	1490/1550	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B54-15	1550/1490	155	15km	SM	0	5	-28	-3	28
	SFP-OC12B45-40	1490/1550	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B54-40	1550/1490	155	40km	SM	-2	3	-27	-9	22
	SFP-OC12B45-80	1490/1550	155	80km	SM	0	5	-28	-3	26
	SFP-OC12B54-80	1550/1490	155	80km	SM	0	5	-28	-3	26
SFP OC48	SFP-OC48-SR	1310	2.5	2Km	SM/MM	-10	-3	-18	-3	15
	SFP-OC48-IR1	1310	2.5	20Km	SM	0	-5	-18	-10	13
	SFP-OC48-LR1	1310	2.5	40Km	SM	3	-2	-28	-9	26
	SFP-OC48-LR2	1550	2.5	80Km	SM	5	0	-28	-9	28
SFP OC48 BIDI	SFP-OC48B34-15	1310/1490	155	15km	SM	-5	0	-18	0	13
	SFP-OC48B43-15	1490/1310	155	15km	SM	-5	0	-18	0	13
	SFP-OC48B34-40	1310/1490	155	40km	SM	-2	3	-27	-9	22
	SFP-OC48B43-40	1490/1310	155	40km	SM	-2	3	-27	-9	22
	SFP-OC48B35-15	1310/1550	155	15km	SM	-5	0	-18	0	13

OPTICAL TRANSCEIVER SPECIFICATIONS FOR THE SMART DATA CENTER.



SFP TRANCEIVERS CONT.

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
SFP OC48 BIDI CONT.	SFP-OC48B53-15	1550/1310	155	15km	SM	-5	0	-18	0	13
	SFP-OC48B35-40	1310/1550	155	40km	SM	-2	3	-27	-9	22
	SFP-OC48B53-40	1550/1310	155	40km	SM	3	-2	-24	-9	22
	SFP-OC48B45-15	1490/1550	155	15km	SM	-5	0	-18	0	13
	SFP-OC48B54-15	1550/1490	155	15km	SM	-5	0	-18	0	13
	SFP-OC48B45-40	1490/1550	155	40km	SM	-2	3	-27	-9	22
	SFP-OC48B54-40	1550/1490	155	40km	SM	-2	3	-27	-9	22
	SFP-OC48B45-80	1490/1550	155	80km	SM	3	-2	-28	0	26
	SFP-OC48B54-80	1550/1490	155	80km	SM	3	-2	-28	0	26
1GB SFP	SFP-SX	850	1.25	220/500m	MM	-9	-2	-17	-3	8
	SFP-LX	1310	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-EX	1310	1.25	40km	SM	-2	3	-23	-3	21
	SFP-ZX	1550	1.25	80km	SM	-2	3	-24	-3	22
	SFP-ZX-120	1550	1.25	120km	SM	0	5	-32	-10	32
	SFP-ZX-160	1550	1.25	160km	SM	3	7	-37	-10	40
SFP BIDI	SFP-BX34-10	1310/1490	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX43-10	1490/1310	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX34-40	1310/1490	1.25	40km	SM	-2	3	-23	-3	21
	SFP-BX43-40	1490/1310	1.25	40km	SM	-2	3	-23	-3	21
	SFP-BX35-10	1310/1550	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX53-10	1550/1310	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX35-40	1310/1550	1.25	40km	SM	-2	3	-23	-3	21
	SFP-BX53-40	1550/1310	1.25	40km	SM	-2	3	-23	-3	21
	SFP-BX45-10	1490/1550	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX54-10	1550/1490	1.25	10km	SM	-9	-3	-23	-3	14
	SFP-BX45-40	1490/1550	1.25	40km	SM	-5	0	-23	-3	18
	SFP-BX54-40	1550/1490	1.25	40km	SM	-5	0	-23	-3	18
	SFP-BX45-80	1490/1550	1.25	80km	SM	-2	3	-25	-8	23
	SFP-BX54-80	1550/1490	1.25	80km	SM	-2	3	-25	-8	23
	SFP-BX17-80	1510/1570	1.25	80km	SM	-2	3	-25	-8	23
	SFP-BX71-80	1570/1510	1.25	80km	SM	-2	3	-25	-8	23
	SFP-BX17-120	1510/1570	1.25	120km	SM	0	5	-33	-8	33
	SFP-BX71-120	1570/1510	1.25	120km	SM	0	5	-33	-8	33
SFP GPON	GPON-B34-20	1310/1490	1.25/2.5	20km	SM ONU	0.5	5	-28	-8	28
	GPON-B43-20	1490/1310	2.5/1.25	20km	SM OLT	1.5	5	-28	-8	30
	GPON-C43-20	1490/1310	2.5/1.25	20km	SM OLT	4	7	-31	-12	35
SFP CWDM	CWDM-SFP-xx-40	1270-1610	1.25	40km	SM	-5	0	-24	-3	19
	CWDM-SFP-xx-80	1270-1610	1.25	80km	SM	0	5	-24	-3	24
	CWDM-SFP-xx-120	1470-1610	1.25	120km	SM	0	5	-35	-10	35
SFP DWDM	DWDM-SFP-xx-40	C-Band	1.25	40km	SM	0	4	-24	-9	24
	DWDM-SFP-xx-80	C-Band	1.25	80km	SM	0	4	-30	-7	30
	DWDM-SFP-xx-120	C-Band	1.25	120km	SM	2	7	-35	-10	37



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CSFP TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
CSFP 1GB	CSFP-BXU-10	1310/1490	1.25	10km	SM	-9	-3	-23	-3	11
	CSFP-BXD-10	1490/1310	1.25	10km	SM	-9	-3	-23	-3	11
	CSFP-BXU35-10	1310/1550	1.25	10km	SM	-9	-3	-23	-3	11
	CSFP-BXD53-10	1550/1310	1.25	10km	SM	-9	-3	-23	-3	11
	CSFP-BXU-20	1310/1490	1.25	20km	SM	-2	3	-23	-3	13
	CSFP-BXD-20	1490/1310	1.25	20km	SM	-2	3	-23	-3	13
	CSFP-BXU35-20	1310/1550	1.25	20km	SM	-2	3	-23	-3	13
	CSFP-BXD53-20	1550/1310	1.25	20km	SM	-2	3	-23	-3	13
	CSFP-BXU-40	1310/1490	1.25	40km	SM	-2	3	-23	-3	21
	CSFP-BXD-40	1490/1310	1.25	40km	SM	-2	3	-23	-3	21



XENPAK TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
10GB XENPAK	XENPAK-SR	850	10.313	300m	MM	-5	5	-9.9	0.5	4.9
	XENPAK-LR	1310	10.313	10km	SM	-5	0	-10.3	0.5	5.3
	XENPAK-ER	1550	10.313	40km	SM	-1	3	-10.3	0.5	9.3
	XENPAK-ZR	1550	10.313	80km	SM	0	4	-27	-7	27
XENPAK CWDM	CWDM-XENPAK-xx-40	1470-1610	9.9-11.3	40km	SM	-1	2	-15.8	-1	14.8
	CWDM-XENPAK-xx-80	1470-1610	9.9-11.3	80km	SM	0	4	-24	-7	24
XENPAK DWDM	DWDM-XENPAK-xx-40	C-Band	9.9-11.3	40km	SM	-1	2	-15.8	-1	14.8
	DWDM-XENPAK-xx-80	C-Band	9.9-11.3	80km	SM	-1	3	-24	-7	23



X2 TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
10GB X2	X2-SR	850	10.313	300m	MM	-5	-1	-11.1	-1	6.1
	X2-LR	1310	10.313	10km	SM	-8.2	0.5	-12.6	0.5	4.4
	X2-ER	1550	10.313	40km	SM	-1	3	-11.4	0.5	10.4
	X2-ZR	1550	10.313	80km	SM	0	4	-23	0.5	23
X2 CWDM	CWDM-X2-xx-40	1470-1610	9.9-11.3	40km	SM	-1	2	-15.8	-1	14.8
	CWDM-X2-xx-80	1470-1610	9.9-11.3	80km	SM	0	4	-24	-7	24
X2 DWDM	DWDM-X2-xx-40	C-Band	9.9-11.3	40km	SM	-1	2	-15.8	-1	14.8
	DWDM-X2-xx-80	C-Band	9.9-11.3	80km	SM	-1	3	-24	-7	23

Approved optical transceivers are available in Commercial (0°C to 70°C), Extended (-10°C to 85°C) or Industrial Temperature (-40°C to 85°C).

OPTICAL TRANSCEIVER SPECIFICATIONS FOR THE SMART DATA CENTER.



XFP TRANCEIVERS

	Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget
10GB XFP	XFP-SR	850	10.3125	300m	MM	-7	-3	-11	0.5	4
	XFP-LR-OC192	1310	9.9-11.3	10km	SM	-8.2	0.5	-14.4	0.5	6.2
	XFP-ER-OC192	1550	9.9-11.3	40km	SM	-1	3	-19	-1	18
	XFP-ZR-OC192	1550	9.9-11.3	80km	SM	-1	4	-24	-7	23
XFP BIDI	XFP-BXU-10	1270/1330	9.9-11.3	10km	SM	-5	0	-14	0.5	9
	XFP-BXD-10	1330/1270	9.9-11.3	10km	SM	-5	0	-14	0.5	9
	XFP-BXU-20	1270/1330	9.9-11.3	20km	SM	-2	3	-14	0.5	12
	XFP-BXD-20	1330/1270	9.9-11.3	20km	SM	-2	3	-14	0.5	12
	XFP-BXU-40	1270/1330	9.9-11.3	40km	SM	1	5	-14	0.5	15
	XFP-BXD-40	1330/1270	9.9-11.3	40km	SM	1	5	-14	0.5	15
XFP CWDM	CWDM-XFP-xx-10	1470-1610	9.9-11.3	40km	SM	-4.8	0.5	-12.6	0.5	7.8
	CWDM-XFP-xx-40	1470-1610	9.9-11.3	40km	SM	-1	3	-14	0.5	13
	CWDM-XFP-xx-80	1470-1610	9.9-11.3	80km	SM	0	4	-25	0.5	25
XFP DWDM	DWDM50-XFP-xx-40	50GHz C-Band	9.9-11.3	40km	SM	-1	3	-19	0.5	18
	DWDM50-XFP-xx-80	50GHz C-Band	9.9-11.3	80km	SM	-1	4	-27	-7	26
	DWDM-XFP-xx-40	100GHz C-Band	9.9-11.3	40km	SM	-1	3	-19	0.5	18
	DWDM-XFP-xx-80	100GHz C-Band	9.9-11.3	80km	SM	-1	4	-27	-7	26
XFP Tunable	XFP-TUNE-80	C-Band	9.9-11.3	80km	SM	-1	3	-26	-5	25



SFP+ TRANCEIVERS

	Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget
10GB SFP+	SFP10G-SR	850	10.3125	300m	MM	-5	-1	-11.1	0.5	6.1
	SFP10G-LRM	1310	9.9-11.3	220m	MM	-6.5	0.5	-10	1.5	3.5
	SFP10G-LR	1310	9.9-11.3	10km	SM	-8.2	0.5	-10.3	0.5	6.2
	SFP10G-LR20	1310	9.9-11.3	20km	SM	-3	1	-14.4	0.5	11.4
	SFP10G-LR40	1310	9.9-11.3	40km	SM	-1	4	-15	0.5	14
	SFP10G-LR70	1310	9.9-11.3	70km	SM	2	5	-20	-8	22
	SFP10G-ER	1550	9.9-11.3	40km	SM	-4.7	4	-14.1	-1	9.4
	SFP10G-ZR	1550	9.9-11.3	80km	SM	0	5	-20	-8	20
SFP+ BIDI	SFP10G-BXU-10	1270/1330	9.9-11.3	10km	SM	-5	0	-14	0.5	9
	SFP10G-BXD-10	1330/1270	9.9-11.3	10km	SM	-5	0	-14	0.5	9
	SFP10G-BXU-20	1270/1330	9.9-11.3	20km	SM	-2	3	-14	0.5	12
	SFP10G-BXD-20	1330/1270	9.9-11.3	20km	SM	-2	3	-14	0.5	12
	SFP10G-BXU-40	1270/1330	9.9-11.3	40km	SM	1	5	-15	0.5	16
	SFP10G-BXD-40	1330/1270	9.9-11.3	40km	SM	1	5	-15	0.5	16
	SFP10G-BXU-60	1270/1330	9.9-11.3	60km	SM	1	6	-20	-1	21
	SFP10G-BXD-60	1330/1270	9.9-11.3	60km	SM	1	6	-20	-1	21
SFP+ CWDM	CWDM-SFP+xx-10	1270-1330	9.9-11.3	10km	SM	-1	4	-14	-1	13
	CWDM-SFP+xx-40	1470-1610	9.9-11.3	40km	SM	-1	4	-14	-1	13
	CWDM-SFP+xx-80	1470-1610	9.9-11.3	80km	SM	0	4	-21	-8	21
SFP+ Tunable	SFP+TUNE-80	C-Band	9.9-11.3	80km	SM	-1	3	-26	-7	25

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SFP+ TRANCEIVERS CONT.

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
SFP+ DWDM	DWDM50-SFPP-xx-40	50GHz C-Band	9.9-11.3	40km	SM	-4.7	4	-14.1	-1	9.4
	DWDM50-SFPP-xx-80	50GHz C-Band	9.9-11.3	80km	SM	0	5	-20	-8	20
	DWDM-SFPP-xx-40	100GHz C-Band	9.9-11.3	40km	SM	-4.7	4	-14.1	-1	9.4
	DWDM-SFPP-xx-80	100GHz C-Band	9.9-11.3	80km	SM	0	5	-20	-8	20



QSFP+ TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
40G QSFP+ (4 X 10)	QSFP-SR4	850	41.25	100m	MM	-7.6	-1	-9.5	5	2
	QSFP-CSR4	850	41.25	300m	MM	-7.3	0	-9.9	0	2.4
	QSFP-IR4	1270-1330	41.25	1km	SM	-10	2.3	-13.7	2.3	4
	QSFP-LR4	1270-1330	41.25	10km	SM	-7	2.3	-11.5	2.3	4.5
	QSFP-PLRM	1270-1330	41.25	10km	SM	-7	2.3	-11.5	2.3	4.5
100G QSFP+ (4x28)	QSFP28-SR4	850	103.1-111.8	100m	MM	-9.1	2.4	-11	2.4	1.9
	QSFP28-LR4	1290-1310	103.1-111.8	10km	SM	-2.7	2.9	-21.1	2.5	18.4



CFP & CXP TRANCEIVERS

Form Factor	Wave Length	Data Rate	Max Distance	Connectivity	TX Min (dBm)	TX Max (dBm)	RX Sensitivity	RX Overload	Link Budget	
40G CFP (4x10)	CFP-40G-SR4	850	39.8-44.8	100m	MM	-7.5	2.5	-9.9	1	2.4
	CFP-40G-CSR4	850	39.8-44.8	300m	MM	-6.5	2.5	-10	1	3.5
	CFP-40G-IR	1530-1565	39.8-44.8	2km	SM	-5.5	3	-11	1.5	5.5
	CFP-40G-LR4	1270-1330	39.8-44.8	10km	SM	-4	3.5	-11.5	2.3	7.5
	CFP-40G-LR4-20	1270-1330	39.8-44.8	20km	SM	-3.5	4	-15.5	2.3	12
	CFP-40G-ER4	1270-1330	39.8-44.8	40km	SM	-1	4	-21	3.8	20
100G CFP (10x10)	CFP-100G-SR10	850	103.1-111.8	100m	MM	-8	1	-9.9	1	1.9
	CFP-100G-CSR10	850	103.1-111.8	300m	MM	-8	1	-9.9	1	1.9
	CFP-100G-LR10	1521-1597	103.1-111.8	10km	SM	-5.8	3	-11.7	1.5	5.9
	CFP-100G-LR10-20	1521-1597	103.1-111.8	20km	SM	-4.1	3	-13.7	1.5	9.6
	CFP-100G-ER10	1521-1597	103.1-111.8	40km	SM	-2.7	2.9	-21.1	2.5	18.4
100G CFP (4x28)	CFP-100G-SR4	850	103.1-111.8	100m	MM	-7.5	2.5	-9.9	1	2.4
	CFP-100G-CSR4	850	103.1-111.8	300m	MM	-7.5	2.5	-9.9	1	2.4
	CFP-100G-LR4-10	1295-1310	103.1-111.8	10km	SM	-4.3	4.5	-10.6	1.5	6.3
	CFP-100G-LR4	1295-1310	103.1-111.8	20km	SM	-2.5	2.9	-10.6	1.5	8.1
	CFP-100G-ER4	1295-1310	103.1-111.8	40km	SM	-2.7	2.9	-20.9	2.5	18.2
100G CFP Tunable	CFP-100G-DWDM	DWDM	103.1-111.8	100km	SM	-2.7	2.9	-21.3	2.5	18.6
100G CXP (12x10.5)	CXP-SR10	850	12.7-126	300m	MM	-7.6	2.4	-9.5	-5.4	1.9

Approved optical transceivers are available in Commercial (0°C to 70°C), Extended (-10°C to 85°C) or Industrial Temperature (-40°C to 85°C).



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