



Datasheet

Skylight sensor: SFP compute

Pluggable service assurance and demarcation

Enhance mobile, Carrier Ethernet, and IP service deployments with key performance assurance features addressing the end-to-end service lifecycle: service activation testing (SAT), continuous performance monitoring, remote troubleshooting, connectivity fault management (CFM), and more.

Ideal for fiber exhaust applications, the SFP compute employs a fully-featured FPGA capable of active Layer 2-4 testing and traffic generation. These capabilities come in a compact, power-efficient footprint without compromising performance, scalability, and precision. This sensor is an ideal fit for cost and space-sensitive applications where performance is a key service differentiator.

SFP compute 1G copper



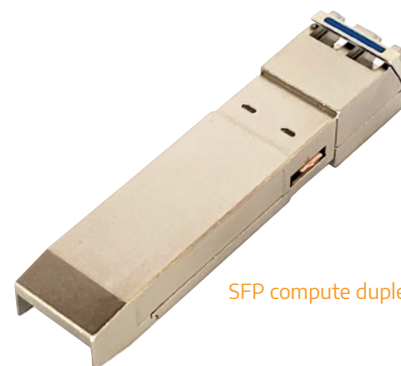
SFP compute 1G



SFP compute duplex 10G Base LR

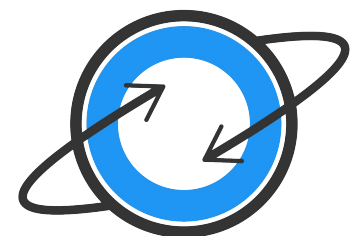


SFP compute duplex 10G Base SR



SFP compute duplex, copper, and single fiber models (SFP variants)

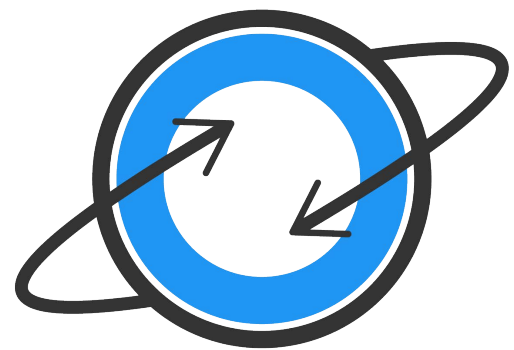
Model	Speed	Wave length	Media type	Rated distance	Temp. hardened	DHCP enabled	CLEI label	Specific configuration/ vendor coding	Part number
SFP compute duplex	1 Gbps	1310 nm	SMF	10 km	•		•	No force linkup (inline only)	770-300
	1 Gbps	1310 nm	SMF	10 km	•				770-301
								Cisco GLC-LH-SMD	870-301-A1
								Cisco GLC-LH-SMD	870-303-A1
								Juniper SRX-SFP-1GE-LX	870-301-B1
								Huawei SFP-GE-LX-SM1310	870-301-C1
								Nokia 3FE25773AA	870-301-D1
	1 Gbps	1310 nm	SMF	10 km	•	•			770-302
	1 Gbps	1310 nm	SMF	10 km	•		•		770-303
	1 Gbps	1310 nm	SMF	10 km	•	•	•		770-305
	1 Gbps	1310 nm	SMF	10 km	•			Ericsson coded	770-311
	1 Gbps	1310 nm	SMF	10 km	•	•		Ericsson coded	770-312
	1 Gbps	850 nm	MMF	550 m	•		•	No force linkup (inline only)	771-300
	1 Gbps	850 nm	MMF	550 m	•				771-301
								Cisco GLC-SX-MMD	871-301-A1
								Cisco GLC-SX-MMD	871-303-A1
								Cisco FTLF8518P2BCL for ASR 901	871-301-A2
								Nokia 3FE25773AA	871-301-D1
	1 Gbps	850 nm	MMF	550 m	•	•			771-302
	1 Gbps	850 nm	MMF	550 m	•		•		771-303
							Cisco GLC-SX-MMD	871-303-A1	
							Nokia 3FE25773AA	871-303-D1	
1 Gbps	850 nm	MMF	550 m	•	•	•		771-305	
1 Gbps	850 nm	MMF	550 m	•			Ericsson coded	771-311	
1 Gbps	850 nm	MMF	550 m	•	•		Ericsson coded	771-312	
SFP compute copper	100 Mbps/1 Gbps	•	Copper	100 m	•			No force linkup (inline only)	774-300
	100 Mbps/1 Gbps	•	Copper	100 m	•				774-301
								Cisco GLC-T	874-301-A1
								Cisco GLC-TE	874-301-A2
								Cisco SFP-GE-T	874-301-A3
								Juniper SRX-SFP-1GE-T	874-301-B1
								Huawei SFP-GE-T	874-301-C1
	100 Mbps/1 Gbps	•	Copper	100 m	•	•			774-302
	100 Mbps/1 Gbps	•	Copper	100 m	•		•		774-303
								Cisco GLC-T	874-303-A1
								Cisco GLC-TE	874-303-A2
								Cisco SFP-GE-T	874-303-A3
100 Mbps/1 Gbps	•	Copper	100 m	•	•	•		774-305	
100 Mbps/1 Gbps	•	Copper	100 m	•			Ericsson coded	774-311	
100 Mbps/1 Gbps	•	Copper	100 m	•	•		Ericsson coded	774-312	
SFP compute duplex	1 Gbps	1550 nm	SMF	50 km	•		•	No force linkup (inline only)	77P-300
	1 Gbps	1550 nm	SMF	50 km	•	•	•		77P-303



SFP compute duplex, copper, and single fiber models (SFP variants)

Model	Speed	Wave length	Media type	Rated distance	Temp. hardened	DHCP enabled	CLEI label	Specific configuration/ vendor coding	Part number
SFP compute single fiber	1 Gbps	1310/1490 nm	SMF BiDir	10 km	•		•		77T-101
	1 Gbps	1310/1490 nm	SMF BiDir	10 km	•		•		77T-103
	1 Gbps	1490/1310 nm	SMF BiDir	10 km	•		•		77U-101
	1 Gbps	1490/1310 nm	SMF BiDir	10 km	•		•		77U-103
	1 Gbps	1310/1490 nm	SMF BiDir	20 km	•		•		77T-111
	1 Gbps	1310/1490 nm	SMF BiDir	20 km	•		•		77T-113
	1 Gbps	1490/1310 nm	SMF BiDir	20 km	•		•		77U-111
	1 Gbps	1490/1310 nm	SMF BiDir	20 km	•		•		77U-113
	1 Gbps	1310/1490 nm	SMF BiDir	40 km	•		•		77T-121
	1 Gbps	1310/1490 nm	SMF BiDir	40 km	•		•		77T-123
	1 Gbps	1490/1310 nm	SMF BiDir	40 km	•		•		77U-121
	1 Gbps	1490/1310 nm	SMF BiDir	40 km	•		•		77U-123
	1 Gbps	1310/1550 nm	SMF BiDir	40 km	•		•		77T-131
	1 Gbps	1310/1550 nm	SMF BiDir	40 km	•		•		77T-133
	1 Gbps	1550/1310 nm	SMF BiDir	40 km	•		•		77U-131
	1 Gbps	1550/1310 nm	SMF BiDir	40 km	•		•		77U-133
	1 Gbps	1490/1590 nm	SMF BiDir	80 km	•		•		77T-141
	1 Gbps	1490/1590 nm	SMF BiDir	80 km	•		•		77T-143
1 Gbps	1590/1490 nm	SMF BiDir	80 km	•		•		77U-143	
SFP compute duplex	10 Gbps	850 nm	MMF	150 m	•		•		771-703
								Cisco SFP-10G-SR	871-703-A1
	10 Gbps	1310 nm	SMF	10km	•		•		770-703
								Cisco SFP-10G-LR	870-703-A1

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Supplies

SFP compute 10G duplex 850 nm

Power & Connectivity	
Connector type	Duplex LC interface
Interface type	IEEE 802.3ae 10G Base-SR
Physical specifications	
Dimensions	13 H x 13 W x 64.5 D mm
Weight	25g
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Industrial case operating temperature	TC -40°C to +85°C
Supply voltage	3.3 V
Supply current	940 mA (Max)
Power consumption	2.4 W typical TC +85C 2.0 W typical TC +40C
Operating/storage humidity	5-85% RH, non-condensing
Transmitter optical specifications	
Output optical power	-3.5 dBm typical (-6 dBm min, -1 dBm max)
Center wavelength	850 nm typical (840 nm min, 860 nm max)
Optical extinction ratio	3.5 dB min
Spectral width (RMS)	0.35 nm typical, (0.5 nm max)
Receiver optical specifications	
Optical input power-maximum	0 dBm max
Receiver sensitivity	-12 dBm typical (-10 dBm max)
Signal detect-asserted/deasserted	-30 dBm to -11 dBm
Operating wavelength	850 nm typical (830 nm to 860 nm)
Power budget	
Total power budget	4 dB min
Recommended transmit distance	150 m (50 µm OM3 MMF)
Regulatory and certification	
CFR title 21, parts 1040.10 and 1040.11 compliant FCC part 15 class B compliant/ICES 003 class B compliant SFF-847 rev 12.3 IEC 62368-1 2nd edition compliant IEC 60825-1 3rd edition laser class 1 compliant	

SFP compute 10G duplex 1310 nm

Power & Connectivity	
Connector type	Duplex LC interface
Interface type	IEEE 802.3ae 10G Base-LR
Physical specifications	
Dimensions	13 H x 13 W x 64.5 D mm
Weight	25g
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Industrial case operating temperature	TCASE -40°C to +85°C
Supply voltage	3.3 V
Supply current	970 mA (Max)
Power consumption	2.5 W typical TC +85C 2.1 W typical TC +40C
Operating/storage humidity	5-85% RH, non-condensing
Transmitter optical specifications	
Output optical power	-3.5 dBm typical (-7. dBm min, 0 dBm max)
Center wavelength	1310 nm typical (1260 nm min, 1355 nm max)
Optical extinction ratio	3.5 dB min
Spectral width (RMS)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	+0.5 dBm max
Receiver sensitivity	-16.5 dBm typical (-14.4 dBm max)
Signal detect-asserted/deasserted	-30 dBm to -15 dBm
Operating wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Power budget	
Total power budget	7.4 dB min
Recommended transmit distance	10 km
Regulatory and certification	
CFR Title 21, parts 1040.10 and 1040.11 compliant FCC Part 15 class B compliant/ICES 003 class B compliant SFF-847 rev 12.3 IEC 62368-1 2nd edition compliant IEC 60825-1 3rd edition laser class 1 compliant	

SFP compute duplex 850 nm

Power & Connectivity	
Connector type	Duplex LC interface
Interface type	IEEE 802.3z 1000 base-SX
Physical specifications	
Dimensions (SFP compute only)	0.51 H x 0.51 W x 2.23 D in. (13 H x 13 W x 56.6 D mm)
Weight (SFP compute only)	21g or 1 oz.
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Industrial case operating temperature	TCASE -40°C to +85°C
Supply voltage	3.3 V typical (3.13 V min, 3.46 V max)
Supply current	450 mA typical (530 mA max)
Power consumption	1.5 W typical (1.75 W max)
Operating/storage humidity	5-85% RH, non-condensing
Transmitter optical specifications	
Output optical power	-6.5 dBm typical (-9.5 dBm min, -4 dBm max)
Center wavelength	850 nm typical (830 nm min, 860 nm max)
Optical extinction ratio	9 dB min
Spectral width (RMS)	0.6 nm typical, (0.85 nm max)
Receiver optical specifications	
Optical input power-maximum	0 dBm max
Receiver sensitivity	-23 dBm typical (-18 dBm max)
Signal detect-asserted/deasserted	-35 dBm to -18 dBm
Operating wavelength	850 nm typical (770 nm to 860 nm)
Power budget	
Total power budget	9.5 dB min
Recommended transmit distance	550 m (50 µm fiber) typical 275 m (62.5 µm fiber)
Regulatory and certification	
CFR title 21, parts 1040.10 and 1040.11 compliant FCC part 15 class B compliant/ICES 003 class B SFF-8472 rev 11.0 compliant IEC 60980-1 2nd edition compliant IEC 60825-1 2nd edition laser class 1 compliant	

SFP compute duplex 1310 nm

Power & Connectivity	
Connector type	Duplex LC interface
Interface type	IEEE 802.3z 1000 base-LX
Physical specifications	
Dimensions (SFP compute only)	0.51 H x 0.51 W x 2.23 D in. (13 H x 13 W x 56.6 D mm)
Weight (SFP compute only)	21g or 1 oz.
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Industrial case operating temperature	TCASE -40°C to +85°C
Supply voltage	3.3 V typical (3.13 V min, 3.46 V max)
Supply current	450 mA typical (530 mA max)
Power consumption	1.5 W typical (1.75 W max)
Operating/storage humidity	5-85% RH, non-condensing
Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Optical extinction ratio	9 dB min
Spectral width (RMS)	2 nm typical (3 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-21 dBm max)
Signal detect-asserted/deasserted	-35 dBm to -21 dBm
Operating wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Power budget	
Total power budget	12 dB min
Recommended transmit distance	10 km typical
Regulatory and certification	
CFR Title 21, parts 1040.10 and 1040.11 compliant FCC Part 15 class B compliant/ICES 003 class B SFF-8472 rev 11.0 compliant IEC 60980-1 2nd edition compliant IEC 60825-1 2nd edition laser class 1 compliant	

SFP compute duplex 1550 nm LX

Power & connectivity	
Connector type	Duplex LC interface
Interface type	IEEE 802.3z 1000 Base-ZX
Physical specifications	
Dimensions (SFP compute only)	0.51 H x 0.51 W x 2.23 D in. (13 H x 13 W x 61.6 D mm)
Weight (SFP compute only)	23g or 1 oz.
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Industrial case operating temperature	TCASE -40°C to +85°C
Supply voltage	3.3 V typical (3.13 V min, 3.46 V max)
Supply current	470 mA typical (560 mA max)
Power consumption	1.55 W typical (1.85 W max)
Operating/storage humidity	5-85% RH, non-condensing
Transmitter optical specifications	
Output optical power	-1.5 dBm typical (-4 dBm min, +1 dBm max)
Center wavelength	1550 nm typical (1520 nm min, 1580 nm max)
Optical extinction ratio	9 dB min
Spectral width (RMS)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	+1 dBm max
Receiver sensitivity	-27 dBm typical (-24 dBm max)
Signal detect-asserted/deasserted	-35 dBm to -24 dBm
Operating wavelength	1550 nm typical (1500 nm min, 1600 nm max)
Power budget	
Total power budget	20.0 dB min
Recommended transmit distance	50 km typical
Regulatory and certification	
CFR title 21, parts 1040.10 and 1040.11 compliant	
FCC part 15 class B compliant/ICES 003 class B	
SFF-8472 rev 11.0 compliant	
IEC 60980-1 2nd edition compliant	
IEC 60825-1 2nd edition laser class 1 compliant	

SFP compute RJ45 copper

Power & connectivity	
Connector type	RJ-45
Interface type	IEEE 802.3 1000 Base-T (RJ45 SGMII)
Physical specifications	
Dimensions (SFP compute only)	0.51 H x 0.51 W x 2.48 D in. (13 H x 13 W x 63 D mm)
Weight (SFP compute only)	27g or 1 oz.
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Recommended operating conditions	
Commercial case operating temperature (7SV-000)	TCASE -40°C to +85°C
Industrial case operating temperature (7SV-100)	TCASE -40°C to +85°C
Supply voltage	3.3 V typical (3.13 V min, 3.46 V max)
Supply current	500 mA typical (575 mA max)
Power consumption	1.65 W typical (1.9 W max)
Operating/storage humidity	5-85% RH, non-condensing
Transmitter electrical specifications	
Transmitter differential input voltage	0.5 V to 2.0 V
Differential input impedance	100 Ohms typical (80 Ohms min, 120 Ohms max)
Receiver electrical specifications	
Data output differential voltage	0.7 V typical (0.35 V min, 1.2 V max)
Differential output impedance	100 Ohms typical (80 Ohms min, 120 Ohms max)
Power budget	
Total power budget	100 m
Recommended transmit distance	10 km typical
Regulatory and certification	
CFR title 21, parts 1040.10 and 1040.11 compliant	
FCC part 15 class B compliant/ICES 003 class B	
SFF-8472 rev 11.0 compliant	
IEC 60980-1 2nd edition compliant	
IEC 60825-1 2nd edition laser class 1 compliant	

1000 Base U-BX10-U TX1310/RX1490 (10km)

Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Optical extinction Ratio	6 dB min
Spectral width (RMS)	1.8 nm typical (3 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-21 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -21 dBm
Operating wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Absolute maximum ratings	
Storage temperature	-40°C to +85°C (Max)
Supply voltage	0 V to 3.47 V (Max)
Power budget	
Total power budget	12 dB min
Recommended transmit distance	10 km typical

1000 Base-Bidi 20km-U TX1310/RX1490 (20km)

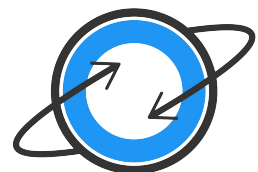
Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Optical extinction ratio	6 dB min
Spectral width (RMS)	1.8 nm typical (3 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-23 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -23 dBm
Operating wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Power budget	
Total power budget	14 dB min
Recommended transmit distance	20 km typical

1000 Base U-BX10-U TX1310/RX1490 (10km)

Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Optical extinction ratio	6 dB min
Spectral width (RMS)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-21 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -21 dBm
Operating wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Power budget	
Total power budget	12 dB min
Recommended transmit distance	10 km typical

1000 Base U-BX10-U TX1310/RX1490 (10km)

Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Optical extinction ratio	6 dB min
Spectral width (-20 dB)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-23 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -23 dBm
Operating wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Power budget	
Total power budget	14 dB min
Recommended transmit distance	20 km typical



1000 Base-Bidi 40km
TX1310/RX 1490|1550 (40km)

Transmitter optical specifications	
Output optical power	-1.5 dBm typical (-4 dBm min, +1 dBm max)
Center wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Optical extinction ratio	6 dB min
Spectral width (-20 dB)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	-3 dBm max
Receiver sensitivity	-26 dBm typical (-24 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -24 dBm
Operating wavelength	1490 nm typical (1480 nm min, 1500 nm max) 1550 nm typical (1480 nm min, 1600 nm max)
Power budget	
Total power budget	20 dB min
Recommended transmit distance	40 km typical

1000 Base-Bidi 40km-D
TX 1490|1550/RX 1310 (40km)

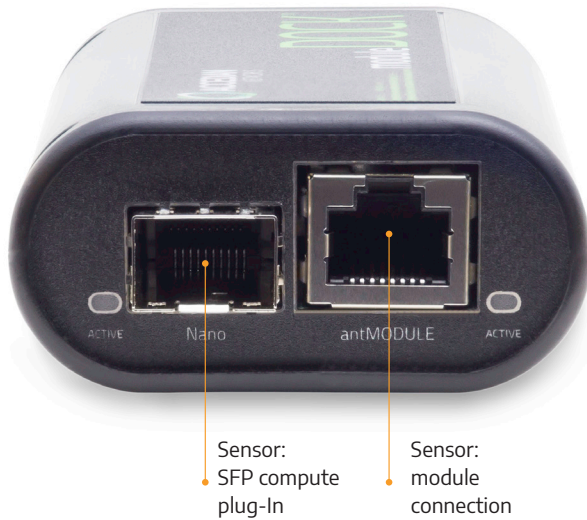
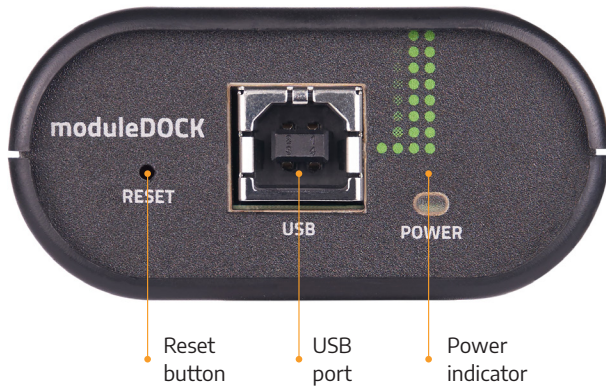
Transmitter optical specifications	
Output optical power	-6 dBm typical (-9 dBm min, -3 dBm max)
Center wavelength	1490 nm typical (1480 nm min, 1600 nm max) 1550 nm typical (1520 nm min, 1580 nm max)
Optical extinction ratio	6 dB min
Spectral width (-20 dB)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	+1 dBm max
Receiver sensitivity	-26 dBm typical (-24 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -26 dBm
Operating wavelength	1310 nm typical (1260 nm min, 1360 nm max)
Power budget	
Total power budget	15 dB min
Recommended transmit distance	40 km typical

1000 Base-Bidi 80km-U
TX1490/RX1590 (80km)

Transmitter optical specifications	
Output optical power	-1.5 dBm typical (-4 dBm min, +1 dBm max)
Center wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Optical extinction ratio	9 dB min
Spectral width (RMS)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	+1 dBm max
Receiver sensitivity	-28 dBm typical (-26 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -26 dBm
Operating wavelength	1590 nm typical (1580 nm min, 1600 nm max)
Power budget	
Total power budget	22 dB min
Recommended transmit distance	80 km typical

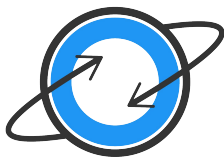
1000 Base-Bidi 80km-D
TX1590/RX1490 (80km)

Transmitter optical specifications	
Output optical power	-1.5 dBm typical (-4 dBm min, +1 dBm max)
Center wavelength	1590 nm typical (1580 nm min, 1600 nm max)
Optical extinction ratio	9 dB min
Spectral width (-20 dB)	0.3 nm typical (1 nm max)
Receiver optical specifications	
Optical input power-maximum	+1 dBm max
Receiver sensitivity	-28 dBm typical (-26 dBm max)
Signal detect-asserted/ deasserted	-35 dBm to -26 dBm
Operating wavelength	1490 nm typical (1480 nm min, 1500 nm max)
Power budget	
Total power budget	22 dB min
Recommended transmit distance	80 km typical



Contact us

For detailed specifications, ask for a copy of our Capabilities Matrix. Our engineers can help you select the right unit for your application: [acedian.com/contact](https://www.acedian.com/contact)



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Dock specifications

Power & connectivity

Supply/voltage	USB 2.0
Maximum power consumption	2.5 W

LED indicators

RJ45 module activity LED
SFP module activity LED
Product LED for power and status

Cooling

Passive (fanless device)

Physical specifications

Dimensions	1.15" H x 2.3" W x 5.4" D in. (30 H x 58 W x 137 D mm)
Weight	115 g (4 oz.)

Environmental

Standard operating temperature	0°C to +50°C
Storage temperature	-40°C to +70°C
Maximum altitude	2000 meters above sea level
Operating/storage humidity	20-80% RH, non-condensing

Language support

The language of the AMD's application interface can be changed on-the-fly without restarting.

Current	English
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Warranty

One-year limited warranty covering parts and labor

Regulatory and certification

FCC part 15/ICES 003 class A
CE marking approval
WEEE compliant

Models

Model	Description	Part number
AMD-1000-DX	1 x 12" (30cm) USB 2.0 cable	773-000