Key Specifications for Palo Alto Networks Fiber Transceivers

Palo Alto Networks' family of next-generation firewalls support a mix of fixed form factor and pluggable interface options including 1 gigabit Ethernet (Copper), 1 gigabit fiber and 10 gigabit fiber. The number of traffic interfaces supported by each of the Palo Alto Networks platforms are shown below.

Traffic Interface Type	Number of Traffic Interfaces Supported								
	PA-5060	PA-5050	PA-5020	PA-4060	PA-4050	PA-4020	PA-2050	PA-2020	PA-500
1 Gigabit fixed Ethernet (copper)	12	12	12	--	16	16	16	12	8
1 Gigabit fiber	8	8	8	4	8	8	4	2	--
10 Gigabit fiber	4 (SFP+)	4 (SFP+)	--	4 (XFP)	--	--	--	--	--

Customers that are deploying 1 gigabit or 10 gigabit fiber interfaces will need to decide between short haul (SX) / long haul (LX) for 1 Gigabit connections or Short Range (SR) / Long Range (LR) for 10 Gigabit connections using the technical specifications shown below. All of the fiber transceivers are LC type, pluggable connectors (photo).

1 Gigabit Fiber Transceivers, SFP (All PA Series except PA-500 which does not support fiber)

1 Gigabit Fiber Transceiver – Short Haul (Part #: PAN-SFP-SX)									
Connector Type (LC or SC	Wavelength (nm)	Max. Operating Temp (°C)	Output Power (dBm)	Reach	Extinction Ratio (dB)	Received Power (dBm)	TOSA Isolator	TOSA Stub	ROSA Stub
LC	770 to 860	-20 to 85	-9.5 to -3	≤ 550 m SX	>9	-17 to 0	--	--	--

1 Gigabit Fiber Transceiver – Long Haul (Part #: PAN-SFP-LX)									
Connector Type (LC or SC	Wavelength (nm)	Max. Operating Temp (°C)	Output Power (dBm)	Reach	Extinction Ratio (dB)	Received Power (dBm)	TOSA Isolator	TOSA Stub	ROSA Stub
LC	1,270 to 1,355	-40 to 85	-9.5 to -3	≤ 10 km LX	>9	-19 to -3	--	--	--

10 Gigabit Fiber Transceivers, XFP (PA-4000 Series)

10 Gigabit Fiber Transceiver – Short Haul (Part #: PAN-XFP-SR)										
Connector Type (LC or SC	Data Rate (Gbit/s)	Wavelength (nm)	Operating Temp (°C)	Output Power (dB)	Extinction Ratio (dB)	Received Power (dBm)	Electrical I/F	Power Supply (v)	Power Consumption (W)	Reach
LC	10.3 10.5 11.1(*5) 11.3(*5)	850	0 to 70	>-4.3*2	>3	-7.5*3	XFI	+3.3	<1.5	≤300m (*1) 10GBASE-S (10GbE) 1200-MX-SN-I (10GFC)

10 Gigabit Fiber Transceiver – Long Haul (Part #: PAN-XFP-LR)										
Connector Type (LC or SC	Data Rate (Gbit/s)	Wavelength (nm)	Operating Temp (°C)	Output Power (dB)	Extinction Ratio (dB)	Received Power (dBm)	Electrical I/F	Power Supply (v)	Power Consumption (W)	Reach
LC	10.3 10.5 11.1	1,310	-5 to 85	-5.2*2 to 0.5	>3.5	-10.3*3 to 0.5	XFI	+3.3	<2.0	≤10 km 10GBASE-L (10GbE) 1200-SM-LL-L(10GFC)

10 Gigabit Fiber Transceivers, SFP+ (PA-5000 Series)

10 Gigabit Fiber Transceiver – Short Haul (Part #: PAN-SFP-PLUS-SR)										
Connector Type (LC or SC)	Data Rate (Gbit/s)	Wavelength (nm)	Operating Temp (ºC)	Output Power (dB)	Extinction Ratio (dB)	Received Power (dBm)	Electrical I/F	Power Supply (v)	Power Consumption (W)	Reach
LC	10.3	850	0 to 70	>-4.3*2	>3	-7.5*3	SFF-8431	+3.3	<1	≤300m (*1) 10GBASE-SR (10GbE)

10 Gigabit Fiber Transceiver – Long Haul (Part #: PAN-SFP-PLUS-LR)										
Connector Type (LC or SC)	Data Rate (Gbit/s)	Wavelength (nm)	Operating Temp (ºC)	Output Power (dB)	Extinction Ratio (dB)	Received Power (dBm)	Electrical I/F	Power Supply (v)	Power Consumption (W)	Reach
LC	9.95 10.3 10.5	1,310	-5 to 70	-5.2*2 to 0.5	>3.5	-10.3*3	SFF-8431	+3.3	<1	≤10 km 10GBASE-LR (10GbE) 1200-SM-LL-L(10GFC)

*1: This solution applies to high bandwidth 50 multimode fiber with a minimum modal bandwidth of 2,000 MHz·km
*2: This value is in Optical Modulation Amplitude (OMA)
*3: Stressed receiver sensitivity in Optical Modulation Amplitude (OMA)
*5: y:0: Does not support 11.1 Gb/s, 1: Supports 11.1 Gb/s