

### QSFP-4X10G-AOC1M-PRO

Cisco<sup>®</sup> QSFP-4X10G-AOC1M Compatible TAA 40GBase-AOC QSFP+ to 4xSFP+ Active Optical Cable (850nm, MMF, 1m)

### Features

- 850nm VCSEL transmitter, PIN photo-detector receiver
- Electrical interface compliant to QSFP+ connector (SFF-8436) and SFP+ connectors (SFF-8431)
- All-metal housing for superior EMI performance
- Operating temperature: 0 to 70 Celsius
- RoHS compliant and Lead free
- Hot Pluggable



### **Applications:**

- 40GBase Ethernet
- Fiber Channel Application
- InfiniBand QDR, SDR, DDR
- Servers, switches, storage, and host card adapters

### **Product Description**

This is a Cisco<sup>®</sup> QSFP-4X10G-AOC1M Compatible 40GBase-AOC QSFP+ to 4xSFP+ active optical cable that operates over active fiber with a maximum reach of 1m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

Proline's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.



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# **QSFP Interface Specifications**

Parameter	Description			
Module Form Factor	QSFP+ (Supports SFF-8436/SFF-8472)			
Channel Data Rate	Rate 40Gbps			
BER	<10 <sup>-12</sup>			
Operating Case Temperature	0 °C to 70°C			
Storage Temperature	-20 °C to 85 °C			
Supply Voltage	3.3V			
Supply Current	180mA Per End Typical			
Management Interface Serial	I <sup>2</sup> C (Supports SFF-8472)			

## **Optical Characteristics**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes		
Transmitter								
Center Wavelength	λC	840	850	860	nm			
RMS Spectral Width	Δλ			0.65	nm			
Average Launch Power Per Lane	POUT	-7.5		-2.5	dBm			
Difference in Launch Power Between Any Two Lanes (OMA)					dB			
Extinction Ratio	ER	3			dB			
Peak Power Per Lane				4	dBm			
Transmitter and Dispersion Penalty (TDP) Per Lane	TDP			3.5	dB			
Average Launch Power of Off Transmitter Per Lane				-30	dB			
Eye Mask Coordinates: (X1, X2, X3, Y1, Y2, Y3)	(0.23, 0.34, 0.43, 0.27, 0.33, 0.4)				Hit Ratio = 5x10 <sup>-5</sup>			
Receiver								
Center Wavelength	λC	840	850	860	nm			
Stressed Receiver Sensitivity in OMA Per Lane				-5.4		1		
Maximum Average Power at Receiver Input Per Lane				2.4				
Receiver Reflectance				-12				
Peak Power Per Lane				4				
LOS Assert		-30						
LOS De-Assert – OMA				7.5				
LOS Hysteresis		0.5						

# Notes:

1. Measured with conformance test signal at TP3 for BER=10E<sup>-12</sup>.

#### **SFP+ Interface Specifications**

Parameter	Description			
Module Form Factor	SFP+ (Supports SFF8431/SFF8432/SFF8472)			
Channel Data Rate	Rate 1 to 10.3125Gbps			
BER	<10 <sup>-12</sup>			
Operating Case Temperature	0 to 70ºC			
Storage Temperature	-20 to 85ºC			
Supply Voltage	3.3V			
Supply Current	455mA Maximum			
Management Interface Serial	I <sup>2</sup> C (Supports SFF-8472)			

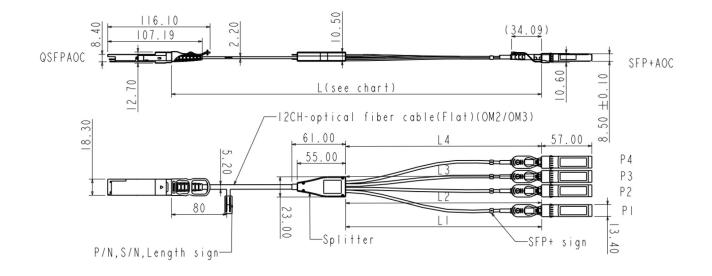
### **Optical Characteristics**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes	
Transmitter							
Center Wavelength	λC	840	850	860	nm		
RMS Spectral Width	Δλ			Note 1	nm		
Average Optical Power	Pavg	-6.5		-1	dBm	2	
Extinction Ratio	ER	3.5			dB	3	
Transmitter Dispersion Penalty	TDP			3.9	dB		
Relative Intensity Noise	RIN			-128	dB/Hz	-12B Reflection	
Optical Return Loss Tolerance				12	dB		
Receiver							
Center Wavelength	λC	840	850	860	nm		
Receiver Sensitivity	Psens			-11.1	dBm	4	
Stressed Sensitivity in OMA				-7.5	dBm	4	
LOS Function	LOS	-30		-12	dBm		
Overload	Pin			-1.0	dBm	4	
Receiver Reflectance				-12	dB		

Notes:

- 1. Trade-offs are available between spectral width, center wavelength, and minimum OMA.
- 2. The optical power is launched into MMF.
- 3. Measured with a PRBS 2<sup>31</sup>-1 test pattern @10.3125Gbps.
- 4. Measured with a PRBS  $2^{31}$ -1 test pattern @10.3125Gbps and BER $\leq 10^{-12}$ .

## **Mechanical Specifications**



### About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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