

# QDD-400G-AOC-5M

Part number: 740-090166

## Optics Overview

Juniper Networks offers a complete portfolio of modular and fixed-chassis routers and switches for both WAN and data center networks. These solutions span Juniper’s MX-Series Universal Routing Platform and PTX-Series Packet Transport Routers to EX-Series Ethernet Switches and QFX-Series Data Center Switches among others. Depending on deployment scenarios, Juniper’s platforms support different pluggable optic modules that can be selected based on speed, distance, form-factor, and wavelength among other relevant attributes.

## Additional Resources

### Hardware Compatibility Tool

HCT contains a regularly updated database of Juniper’s transceivers, DACs, and AOCs along with information regarding compatibility with Juniper’s platforms and interface modules.

<https://apps.juniper.net/hct/home/>

## Product Description

400GE QSFP-DD AOC OM4 5m 850nm 70C

## Overview

Part Number	740-090166
Speed	400 Gigabit Ethernet
Breakout Capable	No
Transceiver Type	QSFP-DD
Product Type	AOC
Connector	None. Transceivers are permanently attached.
Monitoring Available	Yes
Digital Optical Monitoring	Yes

Note:

- Monitoring Available - Can measure received optical power and display in CLI.
- Digital Optical Monitoring - Full support for SFF-8636.
- Common Optic - The common optics product line provides competitively priced single-SKU optics offerings for use across Juniper routing, switching, and security platforms.

## Specifications

### Standard: QSFPDD-400G-AOC

MSA compliance (SFF, for e.g. SFF-8665)	QSFP-DD MSA, QSFP-DD Hardware Specification for QSFP Double Density 8X Pluggable Transceivers, Rev 4.0. Common Management Interface Specification for 8X/16X PLUGGABLE TRANSCEIVERS, Rev 3.0, September 18, 2018
Optic Type (Commercial Vs Service Provider Grade)	OM4
Digital Diagnostic Monitoring	Tx Power Rx Power Bias Current Case Temperature Power Supply Voltage
Signaling rate, each lane	26.5625 GBd PAM4 +/-100 ppm
Cable type	N/A
Distance	5 m
Maximum Power consumption (W)	12 W
Operating Temperature (range)	0° C to 70° C
Storage temperature	-40° C to 85° C
Typical Weight & Dimensions	Height: 13.5 mm Width: 18.35 mm Depth: 93.36 mm

## Supported Platforms

Platform	Introduced Release	Additional Information
Routing		
ACX7100-32C	Junos OS Evolved 21.2R1	
ACX7100-48L	Junos OS Evolved 21.1R1	
ACX7509	Junos OS Evolved 21.4R1	
MX304	Junos OS 22.2R1	
PTX10001-36MR	Junos OS Evolved 20.2R1	
PTX10004	Junos OS Evolved 20.1R1	
PTX10008	Junos OS Evolved 20.1R1	
PTX10016	Junos OS Evolved 20.1R1	
Switching		
QFX5130-32CD	Junos OS Evolved 20.4R1	
QFX5220-32CD	Junos OS Evolved 19.2R1	
QFX5230-64CD		
QFX5700	Junos OS Evolved 21.4R1	

## Supported Interface Modules

### Flexible PIC Concentrators (FPCs)

Name	Description	Platforms and Introduced Releases
400 Gigabit Ethernet		
QFX5K-FPC-4CD	4X400G linecard for QFX700 chassis	QFX5700 Junos OS Evolved 21.4R1

## Line Cards

Name	Description	Platforms and Introduced Releases	
400 Gigabit Ethernet			
ACX7509-FPC-4CD	ACX7509 4X200GE/4X400GE LINE CARD	ACX7509 Junos OS Evolved 21.4R1	
MX304-LMIC16	The MX304-LMIC16-BASE is a 16-port line card that supports maximum data throughput of 1.6 TB ingress and 1.6 TB egress	MX304 Junos OS 22.2R1	
PTX10K-LC1201-36CD	PTX10K 36 ports of 400 Gigabit Ethernet that provide 14.4-Tbps line rate processing speeds	PTX10004 Junos OS Evolved 20.1R1  PTX10016 Junos OS Evolved 20.1R1	PTX10008 Junos OS Evolved 20.1R1

## Why buy optics from Juniper?

There is value in choosing Juniper over 3<sup>rd</sup> party optics

### ✓ Full testing, validation, and JTAC support for Juniper optics

- Power, Electrical, and Management interfaces tested at the system level.
- Extended temperature and functional testing in DVT chamber using fully loaded systems.
- Full software integration into JUNOS/EVO for seamless part recognition, functionality, and telemetry.
- Latest qualification status and optics specifications published on [Hardware Compatibility Tool](#).

### ✓ Single-source provider for 1G to 400G on a variety of optical technologies

- Juniper's optics portfolio is maintained and constantly refreshed based on vendor availability.
- Automatic supply chain diversity and supply continuity - multiple optics suppliers fulfilled through Juniper.

### ✓ Rigorous evaluation of optical vendors

- Juniper ensures uniformity across all vendors by standardizing P-Specs for management, specs, and logs.
- Vendors are scored based on engineering and supply-chain analysis.
- Factory audits and critical component evaluation (Ex. Who is supplying the laser?).

## Aren't 3<sup>rd</sup> party optics the same?

Optics may be a commodity, but some things are too good to be true

### × Juniper does not Provide JTAC support for 3<sup>rd</sup> party optics

- JTAC will only assist with host-related issues unrelated to the use of 3<sup>rd</sup> party optics.

### × Not all optics are the same - standards compliance does not guarantee quality or performance

- Third-party providers lack system-level knowledge and testing.
- No guarantee of vendor reliability or accountability.

### × Newer technologies (ex. Coherent 400G ZR/ZR+) are complex and not simply plug-and-play

- Significant software integration necessary to enable full functionality, management, and telemetry.
- Use of unqualified 3<sup>rd</sup> party high-power optics can damage the host equipment.

### × Third-party providers simply can't scale

- Incomplete solution offerings and fast turnaround times only for limited quantities.

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