



# QSFP28 to QSFP28 Active Optical Cable - 100GbE, AOC, M/M, Aqua, 20M (65.61 ft.)

# MODEL NUMBER: N28H-20M-AQ









QSFP28 cable connects high-speed 100 Gb switches, servers and other networking devices in data centers and enterprise wiring closets.

#### **Features**

QSFP28 Cable Connects Network Equipment at Speeds up to 100 GbpsThis 20-meter (65.6-foot) QSFP28 Active Optical Cable (AOC) provides next-generation performance by combining four full-duplex 25 Gbps SFP channels into one affordable high-density package. Each male connector contains four independent 850 nm VCSEL-based transmitters and four independent receivers using PIN photo detectors inside. Each lane supports data transfer speeds up to 25 Gbps. Together, the N28H-20M-AQ provides an aggregated speed up to 100 Gbps, making it ideal for switches, servers, routers and other high-end networking equipment.

**Push/Pull Tab Connectors Provide Quick, Easy Connections**The hot-pluggable QSFP28 connectors include ergonomic push/pull tabs, which are easily accessible in high-density applications and make the cable easy to install and remove with just one hand.

Engineered and Optimized for Bandwidth-Intense Applications This QSFP28 active optical cable integrates a 100 Gbps Ethernet-optimized 38-position "board as connector" design. Die-cast zinc connectors offer superior EMI (electromagnetic interference) resistance and reduced crosstalk. The connectors have also been tested to meet stringent insertion loss standards. The cable is suitable for high-speed, short-reach dense data connections, such as 100GBASE-SR4 Ethernet, PCIe, Fibre Channel and InfiniBand applications. The plenum-rated OFNP jacket is designed for connecting network components in drop ceiling, walls and ducts.

**Fully Compliant and Compatible with the Latest Standards**This cable is fully compliant with the latest QSFP28 Multi-Source Agreement (MSA), IEEE 802.3bm standards and industry-standard SFF-8636 specifications. It is compatible with all QSFP and QSFP+ ports.

## **Highlights**

- Combines 4 full-duplex 25 Gbps SFP lanes for an aggregated 100 Gbps rate
- Ideal for switches, servers, routers and other high-end networking equipment
- Multi-platform support for 100 Gb Ethernet, InfiniBand, Fibre Channel and PCIe
- Ergonomic push/pull tabs allow easy one-handed connection and disconnection
- Compliant with QSFP28 MSA and SFF-8636 architecture for full QSFP compatibility

#### **Applications**

- 25GBASE-SR and 100GBASE-SR4 Ethernet
- InfiniBand EDR (4x25G) and QDR (4x10G) with CDR turned off
- High-speed parallel interconnects for highperformance computing (HPC) and data center interconnects (DCI)
- Connect active network equipment in high-end server rooms or enterprise wiring closets

#### **System Requirements**

 Network switch or other devices with QSFP or QSFP+ ports

## **Package Includes**

 N28H-20M-AQ QSFP28 to QSFP28 Active Optical Cable -100GbE, AOC, M/M, Aqua, 20 m (65.6 ft.)

# **Specifications**

OVERVIEW	
UPC Code	037332225641
Technology	Multimode





PHYSICAL           Cable Jacket Color         Aqua           Cable Jacket Material         PVC           Cable Jacket Rating         OFNP           Cable Demeter (DD)         2.9 mm           Clad Diameter (microns)         50           Core Diameter (microns)         125           Number of Fibers         8           Cable Length (ft.)         65.6           Cable Length (m)         20.00           Cable Length (m)         787.4           Minimum Band Radius         30 mm           Shipping Dimensions (ftwd / in.)         0.00 x 0.00 x 0.00           Shipping Weight (kg)           Operating Temperature Range         32° to 158°F (0° to 70°C)           Storage Temperature Range         32° to 158°F (0° to 70°C)           Storage Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm; 1300nm           Attenuation @ 850NM         3.0dB/KM           Attenuation @ 1300NM         1.0dB/KM	Optical Mode	ОМЗ	
Cable Jacket Color         Aqua           Cable Jacket Material         PVC           Cable Jacket Rating         OFNP           Cable Outer Diameter (DD)         2.9 mm           Clad Diameter (microns)         50           Core Diameter (microns)         125           Number of Fibers         8           Cable Length (It.)         65.6           Cable Length (Im.)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (Ind / In.)         0.00 x 0.00 x 0.00           Shipping Weight (kg)         0.00           ENVIRONMENTAL           Operating Temperature Range         32" to 158"F (0" to 70"C)           Operating Temperature Range         32" to 158"F (0" to 70"C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Wavelength         3.0dB/KM           Attenuation @ 850NM         3.0dB/KM           Attenuation @ 1300NM         1.0dB/KM           LEE Estandards Supported         80.2 3BM           CONNECTIONS <td< td=""><td>Mode Type</td><td>Multimode</td></td<>	Mode Type	Multimode	
Cable Jacket Material         PVC           Cable Jacket Rating         OFNP           Cable Outer Diameter (OD)         2.9 mm           Clad Diameter (microns)         50           Gore Diameter (microns)         125           Number of Fibers         8           Cable Length (ft)         65.6           Cable Length (m)         20.00           Cable Length (m)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           Environmental           Environmental           Environmental           Spring Weight (kg)           Operating Temperature Range         32* to 158*F (0* to 70*C)           Comperature Range         35* TO 85% RH, Non-Condensing           Storage Temperature Range         55* TO 85% RH, Non-Condensing           Community Range         59* TO 85% RH, Non-Condensing           Competiting Renge (a) Solom         3.04B/KM      <	PHYSICAL		
Cable Jacket Rating         OFNP           Cable Outer Diameter (microns)         2.9 mm           Clad Diameter (microns)         50           Core Diameter (microns)         125           Number of Fibers         8           Cable Length (m)         65.6           Cable Length (m)         20.00           Cable Length (m)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           ENVIRONMENTAL           Operating Temperature Range         32* to 158°F (0* to 70°C)           Storage Temperature Range         32* to 158°F (0* to 70°C)           Operating Humidity Range         5% TO 85% RH. Non-Condensing           Storage Humidity Range         5% TO 85% RH. Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm; 1300nm           Attenuation @ 850NM         3.048/KM           Attenuation @ 1300NM         1.048/KM           IEEE Standards Supported         80.28BM           ONNECTIONS           Side A - Connector 1         QSFP28 (MALE)           Connector Material	Cable Jacket Color	Aqua	
Cable Outer Diameter (OD)         2.9 mm           Clad Diameter (microns)         50           Core Diameter (microns)         125           Number of Fibers         8           Cable Length (It)         65.6           Cable Length (In)         20.00           Cable Length (In)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (thed / in.)         0.00 x 0.00 x 0.00           ENVIRONMENTAL           Operating Temperature Range         32* to 158*F (0* to 70*C)           Storage Temperature Range         32* to 158*F (0* to 70*C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compasibility         100 Gbps           Wavelength         850nm: 1300nm           Attenuation @ 850NM         3.04BrkM           4ttenuation @ 1300NM         1.04BrkM           1EEE Standards Supported         80.23BM           CONNECTIONS           Side A - Connector 1         QSFP28 (MALE)           Side B - Connector Material         Zinc Alloy	Cable Jacket Material	PVC	
Clad Diameter (microns)   50	Cable Jacket Rating	OFNP	
Core Diameter (microns)         125           Number of Fibers         8           Cable Length (ht.)         65.6           Cable Length (m)         20.00           Cable Length (in.)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           ENVIRONMENTAL           Coperating Temperature Range         32° to 158°F (0° to 70°C)           Storage Temperature Range         32° to 158°F (0° to 70°C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range           5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm; 1300nm           Attenuation @ 850NM         3.04BrKM           LEEE Standards Supported         802.3BM           CONNECTIONS           Side A - Connector 1         QSFP28 (MALE)           Side B - Connector 1         QSFP28 (MALE)           Connector Material         Zinc Alloy	Cable Outer Diameter (OD)	2.9 mm	
Number of Fibers         8           Cable Length (ft.)         65.6           Cable Length (m)         20.00           Cable Length (in.)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           Shipping Weight (kg)         0.00           ENVIRONMENTAL           Operating Temperature Range         32° to 158°F (0° to 70°C)           Storage Temperature Range         32° to 158°F (0° to 70°C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm; 1300nm           Attenuation @ 850NM         3.0dB/kM           Attenuation @ 1300NM         1.0dB/kM           IEEE Standards Supported         802.3BM           CONNECTIONS           Side A - Connector 1         QSFP28 (MALE)           Side B - Connector Material         Zinc Alloy	Clad Diameter (microns)	50	
Cable Length (ft.)         65.6           Cable Length (m)         20.00           Cable Length (in.)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           ENVIRONMENTAL           Operating Temperature Range         32° to 158°F (0° to 70°C)           Storage Temperature Range         32° to 158°F (0° to 70°C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm: 1300nm           Attenuation @ 850NM         3.0dB/KM           Attenuation @ 1300NM         1.0dB/KM           IEEE Standards Supported         802.3BM           CONNECTIONS           Side A - Connector 1         OSFP28 (MALE)           Side B - Connector 1         OSFP28 (MALE)           Connector Material         Zinc Alloy	Core Diameter (microns)	125	
Cable Length (m)         20.00           Cable Length (in.)         787.4           Minimum Bend Radius         30 mm           Shipping Dimensions (hwd / in.)         0.00 x 0.00 x 0.00           ENVIRONMENTAL           Operating Temperature Range         32° to 158°F (0° to 70°C)           Storage Temperature Range         32° to 158°F (0° to 70°C)           Operating Humidity Range         5% TO 85% RH, Non-Condensing           Storage Humidity Range         5% TO 85% RH, Non-Condensing           COMMUNICATIONS           Network Compatibility         100 Gbps           Wavelength         850nm; 1300nm           Attenuation @ 850NM         3.0dB/kM           Attenuation @ 1300NM         1.0dB/kM           IEEE Standards Supported         802.3BM           CONNECTIONS           Side A - Connector 1         QSFP28 (MALE)           Side B - Connector 1         QSFP28 (MALE)           Connector Material         Zinc Alloy	Number of Fibers	8	
Cable Length (in.) 787.4  Minimum Bend Radius 30 mm  Shipping Dimensions (hwd / in.) 0.00 x 0.00 x 0.00  Shipping Weight (kg) 0.00  ENVIRONMENTAL  Operating Temperature Range 32° to 158°F (0° to 70°C)  Storage Temperature Range 32° to 158°F (0° to 70°C)  Operating Humidity Range 5% TO 85% RH, Non-Condensing  Storage Humidity Range 5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  ILEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Cable Length (ft.)	65.6	
Minimum Bend Radius 30 mm  Shipping Dimensions (hwd / in.) 0.00 x 0.00 x 0.00  Shipping Weight (kg) 0.00  ENVIRONMENTAL  Operating Temperature Range 32° to 158°F (0° to 70°C)  Storage Temperature Range 32° to 158°F (0° to 70°C)  Operating Humidity Range 5% TO 85% RH, Non-Condensing  Storage Humidity Range 5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  ILEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Cable Length (m)	20.00	
Shipping Dimensions (hwd / in.)  Shipping Weight (kg)  0.00  ENVIRONMENTAL  Operating Temperature Range 32° to 158°F (0° to 70°C)  Storage Temperature Range 32° to 158°F (0° to 70°C)  Operating Humidity Range 5% TO 85% RH, Non-Condensing  Storage Humidity Range 5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE) Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Cable Length (in.)	787.4	
Shipping Weight (kg)  ENVIRONMENTAL  Operating Temperature Range  32° to 158°F (0° to 70°C)  Storage Temperature Range  32° to 158°F (0° to 70°C)  Operating Humidity Range  5% TO 85% RH, Non-Condensing  Storage Humidity Range  5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility  100 Gbps  Wavelength  850nm; 1300nm  Attenuation @ 850NM  3.0dB/rM  Attenuation @ 1300NM  1.0dB/rM  IEEE Standards Supported  802.3BM   CONNECTIONS  Side A - Connector 1  QSFP28 (MALE)  Side B - Connector 1  QSFP28 (MALE)  Connector Material  Zinc Alloy	Minimum Bend Radius	30 mm	
ENVIRONMENTAL  Operating Temperature Range 32° to 158°F (0° to 70°C)  Storage Temperature Range 32° to 158°F (0° to 70°C)  Operating Humidity Range 5% TO 85% RH, Non-Condensing  Storage Humidity Range 5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation © 850NM 3.0dB/KM  Attenuation © 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Shipping Dimensions (hwd / in.)	$0.00 \times 0.00 \times 0.00$	
Operating Temperature Range 32° to 158°F (0° to 70°C) Storage Temperature Range 32° to 158°F (0° to 70°C) Operating Humidity Range 5% TO 85% RH, Non-Condensing Storage Humidity Range 5% TO 85% RH, Non-Condensing  COMMUNICATIONS  Network Compatibility 100 Gbps Wavelength 850nm; 1300nm Attenuation @ 850NM 3.0dB/KM Attenuation @ 1300NM 1.0dB/KM IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE) Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Shipping Weight (kg)	0.00	
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COMMUNICATIONS  Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM   CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Operating Humidity Range	5% TO 85% RH, Non-Condensing	
Network Compatibility 100 Gbps  Wavelength 850nm; 1300nm  Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Storage Humidity Range	5% TO 85% RH, Non-Condensing	
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Attenuation @ 850NM 3.0dB/KM  Attenuation @ 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy	Network Compatibility	100 Gbps	
Attenuation @ 1300NM 1.0dB/KM  IEEE Standards Supported 802.3BM  CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Wavelength	850nm; 1300nm	
CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Attenuation @ 850NM	3.0dB/KM	
CONNECTIONS  Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Attenuation @ 1300NM	1.0dB/KM	
Side A - Connector 1 QSFP28 (MALE)  Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	IEEE Standards Supported	802.3BM	
Side B - Connector 1 QSFP28 (MALE)  Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	CONNECTIONS		
Connector Material Zinc Alloy  FEATURES & SPECIFICATIONS	Side A - Connector 1	QSFP28 (MALE)	
FEATURES & SPECIFICATIONS	Side B - Connector 1	QSFP28 (MALE)	
	Connector Material	Zinc Alloy	
IP68 Rated No	FEATURES & SPECIFICATIONS		
lacksquare	IP68 Rated	No	





IP20 Rated	No	
STANDARDS & COMPLIANCE		
OTANDARDO & COMI LIANCE		
Product Certifications	IEC 60825-1; UL Compliant (E347511)	
Product Compliance	RoHS; REACH	
WARRANTY & SUPPORT		
Product Warranty Period (Worldwide)	1-year limited warranty	

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