



400GbE QSFP-DD Direct Attach Copper Cable

MCP1660-W0xxEyy

Mellanox® MCP1660-W0xxEyy direct attach copper cables are high speed, cost-effective alternatives to fiber optics in 400GbE Ethernet applications.

Mellanox QSFP-DD passive copper cable⁽¹⁾ contains 16 high-speed copper pairs, each operating at data rates of up to 50Gb/s. Each QSFP-DD port comprises an EEPROM providing product information, which can be read by the host system.

Mellanox's unique quality passive copper cable solutions provide power-efficient connectivity for short distance interconnects. They enable higher port bandwidth, density and configurability at a low cost and reduced power requirement in the data centers.

Rigorous cable production testing ensures best out-of-the-box installation experience, performance and durability.

Table 1 - Absolute Maximum Ratings

Parameter	Minimum	Maximum	Units
Supply voltage	-0.3	3.6	V
Data input voltage	-0.3	3.6	V
Control input voltage	-0.3	3.6	V
Storage temperature	-40	85	°C

Table 2 - Operational Information

Parameter	Minimum	Typical	Maximum	Units
Supply voltage (Vcc)	3.135	3.3	3.465	V
Power consumption	---	---	0.1	W
Operating case temperature	0	---	70	°C
Operating relative humidity	5	---	85	%

Table 3 - Electrical Specifications

Parameter	Minimum	Typical	Maximum	Units
Characteristic impedance	90	100	110	Ω
Time propagation delay (informative)	---	---	4.5	ns/m



HIGHLIGHTS

- Up to 400Gb/s data rate
- 8 x 50Gb/s PAM4 modulation
- QSFP-DD MSA compliant
- Operating case temperature of 0-70°C
- Single 3.3V supply voltage
- Bit Error Rate (BER) better than 1E-15 with Mellanox systems
- Hot pluggable
- RoHS compliant
- LSZH (Low Smoke Zero Halogen) jacket
- LF (Lead Free) HF (Halogen Free) PCB
- SFF-8636 compliant I²C management interface

⁽¹⁾ Raw cables are provided from different sources to ensure supply chain robustness.

Mechanical Schematics

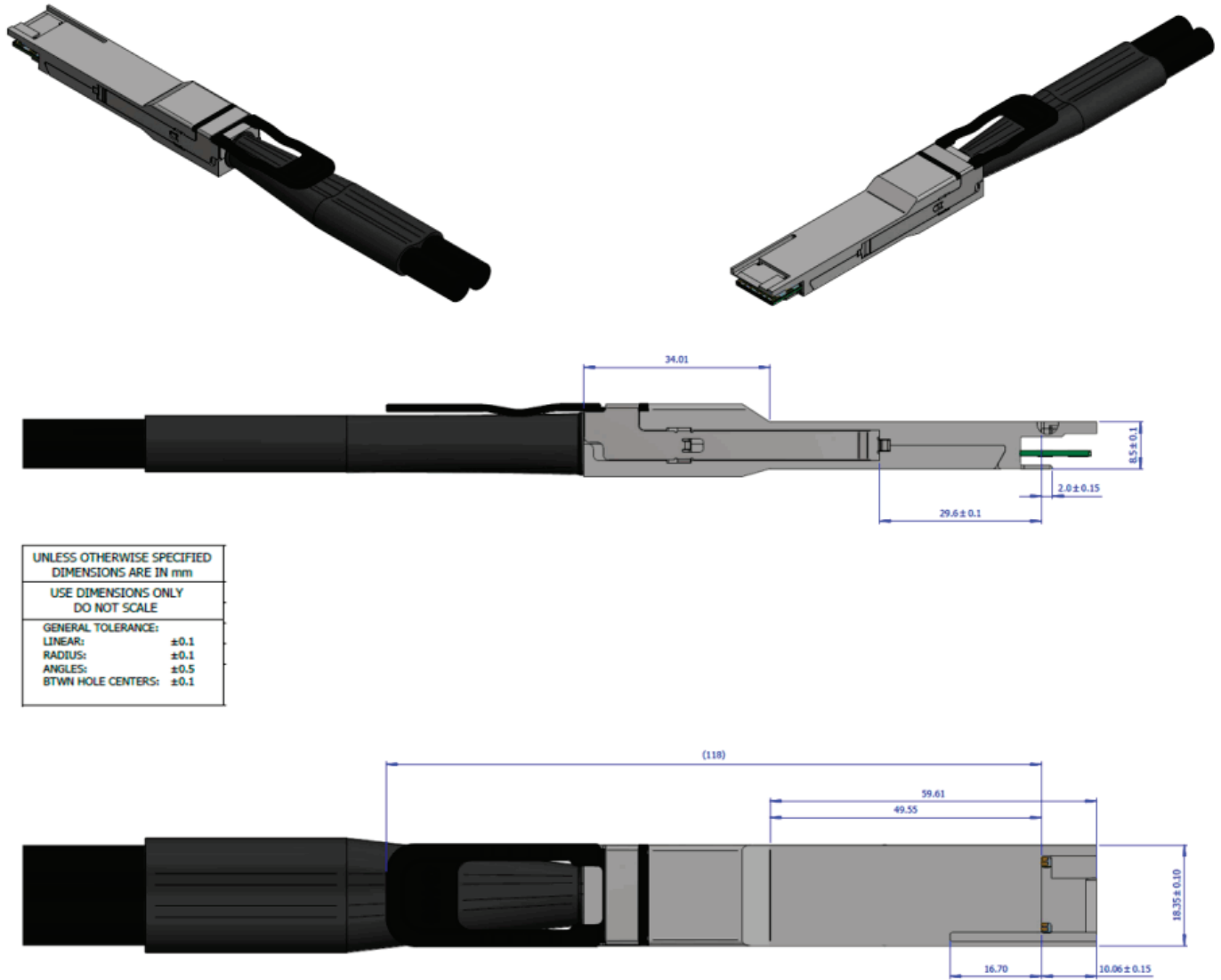


Figure 1. Cable Length Definition

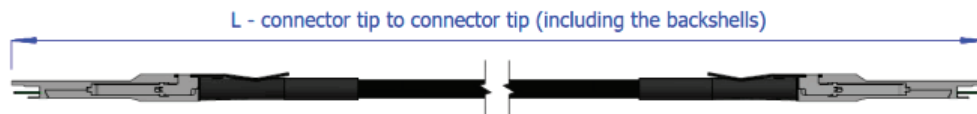


Table 4 - Cable Mechanical Specifications

OPN	AWG	Length (m)	Single Cable Diameter	Minimum Bend Radius
MCP1660-W00AE30	30	0.5 ± 0.025mm	7.1 ± 0.35mm	Single bend: 35.5mm Repetitive and assembly bend: 71mm
MCP1660-W001E30		1 ± 0.025mm		
MCP1660-W01AE30		1.5 ± 0.025mm		
MCP1660-W002E26	26	2 ± 0.050mm	9.4 ± 0.4mm	Single bend: 47mm Repetitive and assembly bend: 94mm
MCP1660-W02AE26		2.5 ± 0.050mm		
MCP1660-W003E26		3 ± 0.050mm		

Note 1. The minimum assembly bending radius (close to the connector) is 10x the cable's outer diameter. The repeated bend (far from the connector) is also 10x the cable's outer diameter. The single bend (far from the connector) is 5x the cable's outer diameter.

Figure 2. Assembly Bending Radius

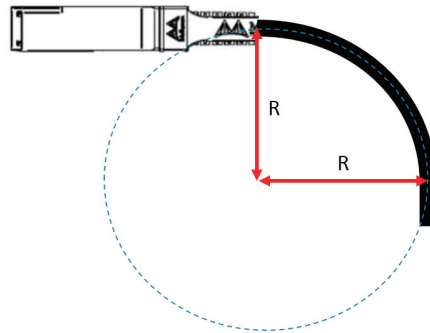


Table 5 - Part Numbers and Descriptions

Part Number	Description
MCP1660-W00AE30	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 0.5m, 30AWG
MCP1660-W001E30	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1m, 30AWG
MCP1660-W01AE30	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1.5m, 30AWG
MCP1660-W002E26	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2m, 26AWG
MCP1660-W02AE26	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2.5m, 26AWG
MCP1660-W003E26	Mellanox® Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 3m, 26AWG

Note 1. See Figure 1 for the cable length definition.

Note 2. xx = reach; yy = wire gauge.

Warranty Information

Mellanox LinkX DAC cables include a 1-year limited hardware warranty, which covers parts repair or replacement.



350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085
 Tel: 408-970-3400 • Fax: 408-970-3403
www.mellanox.com