

200Gb/s HDR QSFP56 MMF Active Optical Cable

MFS1S00-HxxxE

LinkX[†]

Mellanox[®] MFS1S00-HxxxE is a QSFP56 VCSEL-based (Vertical Cavity Surface-Emitting Laser) active optical cable (AOC) designed for use in 200Gb/s InfiniBand HDR systems. The MFS1S00-HxxxE AOC offers high port density and configurability, and a much longer reach than passive copper cables in the data centers. Since the AOC is hot pluggable, it is easy to install and replace.

MFS1S00-HxxxE has a standard SFF-8665 compliant QSFP56 port on the electrical side towards the host system. It contains four multi-mode fibers (MMF) optic transceivers per end; each operating at data rates of up to 50Gb/s. MFS1S00-HxxxE offers selectable retiming per lane for both its optical transmitters and receivers up to 50Gbp/s rates.

Rigorous production testing ensures the best out-of-the-box installation experience, performance and durability. Mellanox's unique quality active fiber cable solutions provide power-efficient connectivity for data center interconnects. They enable higher port bandwidth, density and configurability at a low cost, and reduced power requirement in the data centers.

Table 1 - Absolute Maximum Ratings

Parameter	Minimum	Maximum	Units
Supply voltage	-0.3	3.6	V
Data input voltage	-0.3	3.465	V
Control input voltage	-0.3	4.0	V
Damage threshold	3.4	---	dBm
Storage temperature	-40	85	°C

Table 2 - Operational Specifications

Parameter	Minimum	Typical	Maximum	Units
Supply voltage (Vcc)	3.135	3.3	3.465	V
Power dissipation (each end, retiming on all lanes)	---	4.35	4.55	W
Supply noise tolerance (10Hz-10MHz)	66	---	---	mVpp
Operating case temperature	0	---	70 ⁽¹⁾	°C
Operating relative humidity	5	---	85	%

Note 1. Internal temperature readout through DDM1 of up to 75°C is allowed.

HIGHLIGHTS

- Supports IBTA InfiniBand HDR
- Up to 200Gb/s data rate
- 4x 50Gb/s PAM4 modulation
- Programmable Rx output amplitude and pre-emphasis
- SFF-8665 compliant QSFP56 port
- Single 3.3V power supply
- 4.35W power dissipation (typ., each end, with retiming)
- Bit Error Rate (BER) better than 1E-15 with Mellanox systems
- Up to 100m length
- Hot pluggable
- RoHS compliant
- SFF-8636 compliant I²C management interface

Table 3 - Cable Mechanical Specifications

Parameter	Value	Units
Diameter	3 ± 0.2	mm
Minimum bend radius	30	mm
Length tolerance	Length < 5m:	+300mm /-0
	5m ≤ Length < 50m:	+500mm /-0
	50m ≤ Length:	+1000mm /-0
Cable color	Aqua	--

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

Mechanical Schematics

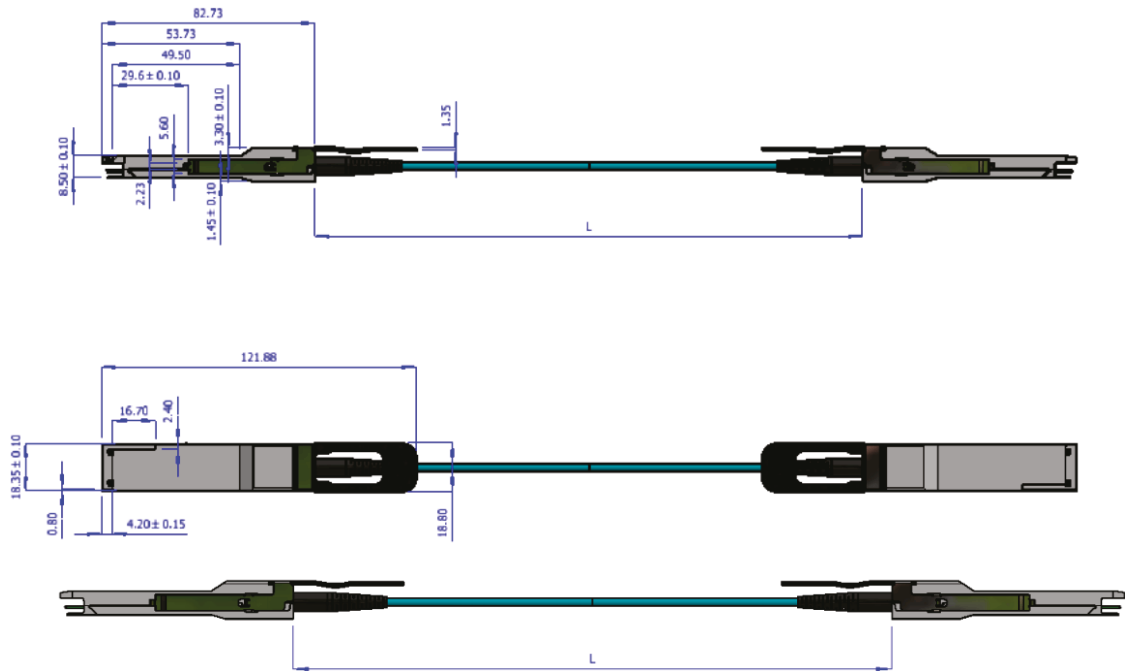


Figure 1. Cable Length

Table 4 - Part Numbers and Descriptions

Part Number	Description
MFS1S00-H003E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 3m
MFS1S00-H005E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 5m
MFS1S00-H010E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m
MFS1S00-H015E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 15m
MFS1S00-H020E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 20m
MFS1S00-H030E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 30m
MFS1S00-H050E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 50m
MFS1S00-H100E	Mellanox® active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 100m

Warranty Information

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