



# 100Gb/s QSFP28 MMF Active Optical Cables

## MFA1A00-Exxx

NVIDIA® Mellanox® MFA1A00-Exxx are QSFP28 VCSEL-based (Vertical Cavity Surface-Emitting Laser) active optical cables designed for use in InfiniBand 100Gb/s EDR (Enhanced Data Rate) systems.

MFA1A00-Exxx 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.

MFA1A00-Exxx offers selectable retiming per lane for both its optical transmitters and receivers for the 25Gb/s rate, but the AOC also supports lower bit rates without retiming. The transmitters have programmable input equalizers and input squelch function, while the receivers have programmable output amplitude and pre-emphasis.

These 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.

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

Table 1 - Absolute Maximum Ratings

Parameter	Minimum	Maximum	Units
Supply voltage	-0.3	3.465	V
Data input voltage	-0.3	3.465	V
Control input voltage	-0.3	4.0	V
Damage threshold	3.4	---	dBm

Table 2 - Operational Specifications

Parameter	Minimum	Typical	Maximum	Units
Supply voltage (Vcc)	3.135	3.3	3.6	V
Power dissipation (each end, no retiming)	---	1.5	1.8	W
Power dissipation (each end, retiming on all lanes)	---	2.2	2.5	W
Supply noise tolerance (10Hz-10MHz)	66	---	---	mVpp
Operating case temperature	0	---	70	°C
Operating relative humidity	5	---	85	%



## HIGHLIGHTS

- Up to 100Gb/s data rate
- Programmable Rx output amplitude and pre-emphasis
- Programmable Tx input equalizer
- Selectable retiming
- SFF-8665 compliant QSFP28 port
- Single 3.3V power supply
- 2.2W power dissipation (typ, each end, with retiming)
- Up to 100m length
- Hot pluggable
- RoHS compliant
- SFF-8636 compliant I²C management interface

## Mechanical Schematics

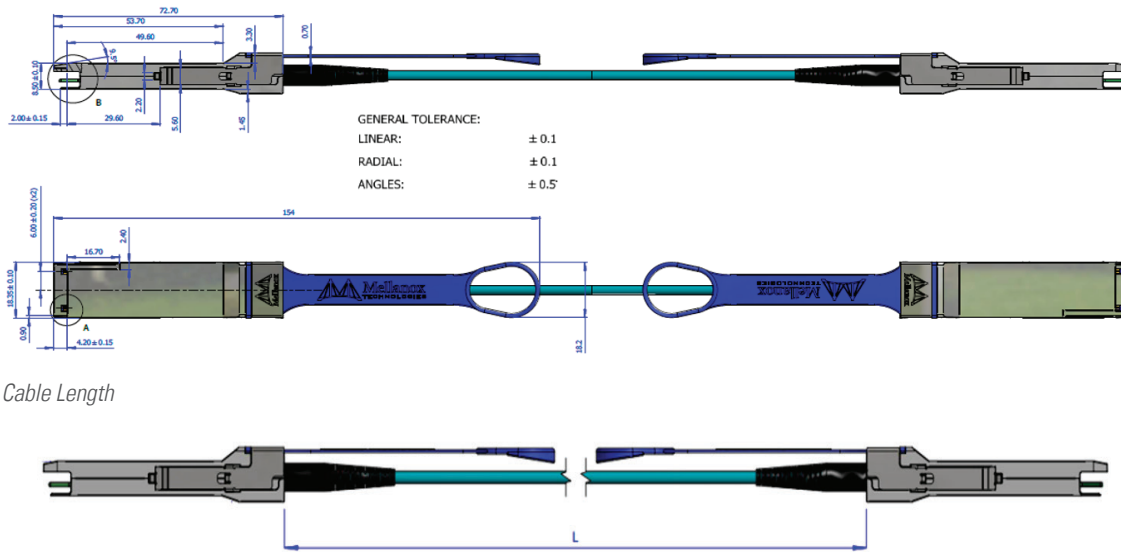


Figure 1. Cable Length

Table 3 - Part Numbers and Descriptions

OPN	Description
MFA1A00-E001	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m
MFA1A00-E01A	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m
MFA1A00-E002	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m
MFA1A00-E003	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m
MFA1A00-E004	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 4m
MFA1A00-E005	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 5m
MFA1A00-E010	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m
MFA1A00-E015	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 15m
MFA1A00-E020	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 20m
MFA1A00-E030	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 30m
MFA1A00-E050	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 50m
MFA1A00-E100	Mellanox® active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 100m

Note 1. See Figure 1 for the cable length definition. Note 2. LSZH is an abbreviation for Low Smoke, Zero Halogen jacket.

## Warranty Information

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