

# Q400G-AOC

QSFP-DD 400G Active Optical Cable 400Gbase-SR8

## 1. Product overview

GLOBALfiber Q400G-AOC is an active optical cable assembly for optical interconnection between compatible host ports.

## 2. Key features

QSFP-DD; 8 x 53.125 Gb/s PAM4; 400GAUI-8; 850 nm VCSEL / PIN. Power: <=8.5 W.

## 3. Applications

400GBASE-SR8 Ethernet; switch/router and data center interconnects.

## 4. Technical data

| Parameter                                                                                      | Specification                                | Parameter                                                                                      | Specification                             |
|------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------|
| Supply Voltage                                                                                 | Unit: V; Min.: 3.135; Typ.: 3.3; Max.: 3.465 | Common Mode Noise, RMS                                                                         | Unit: mV; Max.: 17.5                      |
| Power Consumption                                                                              | Unit: W; Max.: 8.5                           | Differential Termination Mismatch                                                              | Unit: %; Max.: 10                         |
| Transceiver MgmtInitDuration Time                                                              | Unit: ms; Max.: 2000                         | Differential Output Return Loss(SDD22)                                                         | Unit: dB; Typ.: IEEE Equation (83E-2)     |
| Differential Peak-to-Peak Input Voltage tol                                                    | Unit: mV; Min.: 900; Max.: 10%               | Common-mode to Differential Conversion and Differential to Common-Mode Conversion(SCD22,SDC22) | Unit: dB; Typ.: IEEE Equation (83E-3)     |
| Differential Termination Mismatch                                                              | Unit: V                                      | Near-End ESMW (Eye Symmetry Mask Width)                                                        | Unit: UI; Typ.: 0.265                     |
| Differential Input Return Loss(SDD11)                                                          | Unit: dB; Typ.: IEEE Equation (83E-5)        | Near-End Eye Height, Differential                                                              | Unit: mV; Typ.: 70                        |
| Common-Mode to Differential Conversion and Differential to Common-Mode Conversion(SCD11,SDC11) | Unit: dB; Typ.: IEEE Equation (83E-6)        | Far-End ESMW (Eye Symmetry Mask Width)                                                         | Unit: UI; Typ.: 0.2                       |
| Stressed Input Test                                                                            | Min.: IEEE 120E.3.4 . 1                      | Far-End Eye Height, Differential                                                               | Unit: mV; Typ.: 30                        |
| Differential Peak-to-Peak Output Voltage                                                       | Unit: mV; Max.: 900                          | IIC Clock Frequency                                                                            | Unit: kHz; Min.: /; Typ.: 400; Max.: 1000 |
| DC Common Mode Voltage                                                                         | Unit: mV; Min.: -350; Max.: 2850             | Clock Stretching                                                                               | Unit: us; Min.: /; Typ.: /; Max.: 500     |

## 5. Recommended operating conditions

Absolute limits are labelled separately and are not normal operating conditions.

| Parameter                             | Specification                               |
|---------------------------------------|---------------------------------------------|
| Power consumption                     | <=8.5 W                                     |
| Storage Temperature Range             | Unit: °C; Min: -40; Max.: +85               |
| Relative Humidity                     | Unit: %; Min: 0; Max.: 85                   |
| Power Supply Voltage (absolute limit) | Unit: V; Min: -0.3; Max.: +3.465            |
| Operating Case Temperature Range      | Unit: °C; Min: 0; Typ.: /; Max.: 70         |
| Power Supply Voltage                  | Unit: V; Min: 3.135; Typ.: 3.3; Max.: 3.465 |
| Bit Rate(Per channel)                 | Unit: GBd; Typ.: 26.5625                    |



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## 6. Optical characteristics

| Parameter             | Specification                             |
|-----------------------|-------------------------------------------|
| Vcsel Wavelength      | Unit: nm; Min.: 840; Typ.: 850; Max.: 860 |
| Vcsel Beam Divergence | Max.: 25°                                 |
| PD Wavelength         | Unit: nm; Min.: 840; Typ.: 850; Max.: 860 |

## 7. Digital diagnostics and management

DDM implemented; two-wire IIC. Clock: 400 kHz typical / 1000 kHz maximum; clock stretching 500 us maximum; management initialization 2000 ms maximum.

## 8. Safety and regulatory

QSFP-DD MSA; 400G Ethernet; RoHS10; Class 1 laser. Use ESD-safe handling and observe the stated cable bend limits.

## 9. Ordering information

| Parameter                  | Specification                                                 |
|----------------------------|---------------------------------------------------------------|
| GLOBALfiber product number | Q400G-AOC                                                     |
| Product description        | QSFP-DD 400G Active Optical Cable 400Gbase-SR8                |
| Selectable lengths         | 1 m, 2 m, 3 m, 5 m, 7 m                                       |
| Available coding           | Arista, Cisco, Custom, Generic, Juniper, NVIDIA-Mellanox(ETH) |

Confirm equipment model, port mode and software version when ordering. Coding availability does not guarantee support for every platform or mode.