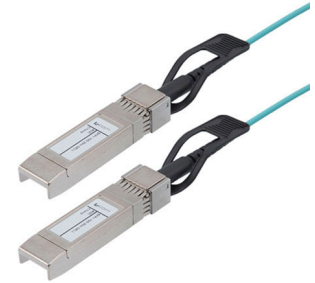Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters
Riser Rated (OFNR), Coded for Various Platforms

## AOC-SPP-ER-RRR-PPP

### Features

- Operating Data Rates up to 10G
- Distance Range from 1 Meter to 20 Meters (additional standard and custom lengths are available)
- Hot Pluggable SFP+
- Simplifies Patching and Offers a Cost-effective approach for Short Links
- Standard Temperature Range (available in Industrial Operating Temperatures)
- 100% compatible with other OEM and third-party Active Optical Cables

### Applications

- Telecommunication Service Providers
- Metro Ethernet
- Intra-rack and across rack interconnect
- Transport Networks
- Switch and router high speed
- backplane interconnect
- High-performance computing clusters

### Description

The L-com AOC-SPP-ER-RRR-PPP series is a 10G SFP+ to SFP+ Active Optical Cable (AOC), that is factory pre-programmed with all the necessary configuration data for seamless network integration and digital diagnostics for performance monitoring. The L-com AOC-SPP-ER-RRR-PPP Active Optical Cable series is designed, programmed and tested to perform identically to and is 100% compatible with other OEM and third-party Active Optical Cables. The L-com's AOC-SPP-ER-RRR-PPP Active Optical Cable series has been manufactured with riser rated (OFNR) cable in lengths from 1 meter to 20 meters (additional standard and custom lengths are available) of reach at a center wavelength of 850 nm. The L-com AOC-SPP-ER-RRR-PPP Active Optical Cable series is tested for 100% functionality and guaranteed compatible for outstanding network performance.

L-com offers all brands and form factors of Active Optical Cables, optical transceivers and cabling for all your networking needs. Now you have a reliable, compatible and affordable means to expand your network while maintaining its integrity. Contact our technical support and sales staff with your questions on fiber optic connectivity or other L-com products.

### Configuration

| | |
|---|---|
| Module Form Factor | SFP+ |
| Maximum Data Rate | 10Gbps |
| Manufacturer Compatibility | Various Platforms, See Table |
| Distance | 1 to 20 m |
| Jacket Burn Rating | OFNR |

### Electrical Specifications

| Description | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|
| Center Wavelength | | 850 | | nm |
| Supply Voltage (VccT, VccR) | 3.14 | 3.3 | 3.46 | V |
| Supply Current (Icc) | | | 300 | mA |
| Transmitter Differential Input Swing (Vin,pp) | 180 | | 1,000 | mVpp |
| Transmitter Input Voltage Tolerance (VinT) | -0.3 | | 4 | V |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications:
AOC-SPP-ER-RRR-PPP

Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters
Riser Rated (OFNR), Coded for Various Platforms
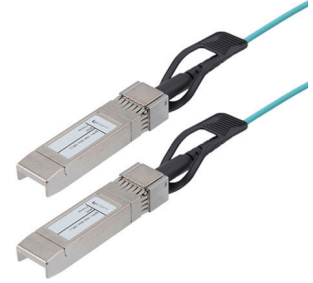
## AOC-SPP-ER-RRR-PPP

| | | | |
|---|---|---|---|
| Receiver Output Voltage | -0.3 | 4 | V |

**Electrical Notes**
- AC coupled internally. Self-biasing 100 ohms differential input.

**Environmental Specifications**
**Temperature**
Operating Range                    +0C to +70C (Without air flow)
Storage Range                      -40C to +85C

Relative Humidity                  5% to 95%

**Compliance Certifications** (see product page for current document)

**Plotted and Other Data**
Notes:

USA & Canada **+1(800) 341-5266** | International **+1(978) 682-6936** | **L-com.com**

Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters
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## AOC-SPP-ER-RRR-PPP

**SFP+ Pin Assignment & Pin Assignment Table**

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Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters
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**AOC-SPP-ER-RRR-PPP**

| Pin | Symbol | Name/Description | NOTE |
|---|---|---|---|
| 1 | $V_{EET}$ | Transmitter Ground    (Common with Receiver Ground) | 1 |
| 2 | $T_{FAULT}$ | Transmitter Fault. | 2 |
| 3 | $T_{DIS}$ | Transmitter Disable. Laser output disabled on high or open. | 3 |
| 4 | SDA | 2-wire Serial Interface Data Line | 4 |
| 5 | SCL | 2-wire Serial Interface Clock Line | 4 |
| 6 | MOD_ABS | Module Absent. Grounded within the module | 4 |
| 7 | RS0 | Rate Select 0 | 5 |
| 8 | LOS | Loss of Signal indication.    Logic 0 indicates normal operation. | 6 |
| 9 | RS1 | No connection required | 1 |
| 10 | $V_{EER}$ | Receiver Ground    (Common with Transmitter Ground) | 1 |
| 11 | $V_{EER}$ | Receiver Ground    (Common with Transmitter Ground) | 1 |
| 12 | RD- | Receiver Inverted DATA out.    AC Coupled | |
| 13 | RD+ | Receiver Non-inverted DATA out.    AC Coupled | |
| 14 | $V_{EER}$ | Receiver Ground    (Common with Transmitter Ground) | 1 |
| 15 | $V_{CCR}$ | Receiver Power Supply | |
| 16 | $V_{CCT}$ | Transmitter Power Supply | |
| 17 | $V_{EET}$ | Transmitter Ground    (Common with Receiver Ground) | 1 |
| 18 | TD+ | Transmitter Non-Inverted DATA in. AC Coupled. | |
| 19 | TD- | Transmitter Inverted DATA in.    AC Coupled. | |
| 20 | $V_{EET}$ | Transmitter Ground    (Common with Receiver Ground) | 1 |

Notes:
1. Circuit ground is internally isolated from chassis ground.
2. $T_{FAULT}$ is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
3. Laser output disabled on $T_{DIS}$ >2.0V or open, enabled on $T_{DIS}$ <0.8V.
4. Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. Internally pulled down per SFF-8431 Rev 4.1.
6. LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters
Riser Rated (OFNR), Coded for Various Platforms
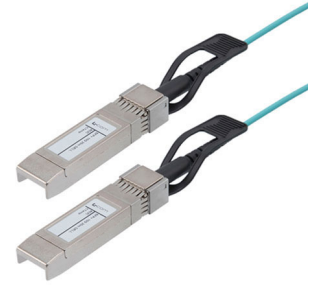
## AOC-SPP-ER-RRR-PPP

| Available Platforms | | | | |
|---|---|---|---|---|
| **OEM/Designations** | | | | |
| A10 Networks | A1N | | Force10 | F10 |
| Accedian | ACC | | Fortinet | FOR |
| Adtran | ADT | | Fujitsu | FUJ |
| Adva | ADV | | Fujitsu 4100 | F41 |
| Alcatel 73XX | A73 | | Fujitsu 7120 | F71 |
| Alcatel 7x50 | A7x | | Fujitsu CDS | FCD |
| Alcatel TSS-100 | ATS | | Fujitsu 9500 | F95 |
| Alcatel DMX | ADM | | Gigamon | GIG |
| Alcatel LambdaUnite | ALU | | Hewlett Packard | HPP |
| Alcatel OMNI | AOM | | Huawei | HWI |
| Alcatel PSS 1830 | A83 | | IBM | IBM |
| Allied Telesis | ATE | | Infinera | INF |
| Arista | ARI | | Ixia | IXA |
| Arista/Dell | ARD | | Juniper | JUN |
| Arris | ARS | | Mellanox | MEL |
| Avaya/Nortel Passport | ANP | | Meraki | MER |
| Brocade/Foundry | BFO | | MikroTik | MTK |
| BTI | BTI | | MOXA | MOX |
| Calix | CLX | | MRV | MRV |
| Check Point | CHP | | MSA | MSA |
| Ciena | CAN | | NetApp | NTA |
| Ciena/Nortel OM6500 | CNO | | NetScout | NTS |
| Canoga Perkins | CGP | | Nokia | NOK |
| Cisco | CSC | | Nokia 7xxx | N7x |
| Cisco ONS | ONS | | Occam | OCM |
| Coriant | CRN | | Optelian | OPT |
| Cyan | CYN | | Palo Alto Networks | PAN |
| Dasan Networks | DAN | | RAD | RAD |
| Dell | DLL | | Raisecom | RAI |
| Edgecore Networks | ECN | | Tejas Network | TEN |
| Ekinops | EKS | | Telco | TEL |
| Enterasys | ENT | | Tellabs | TLB |
| Ericsson | ERC | | Transmode | TSM |
| Extreme | EXT | | Ubiquiti Networks | UBI |
| F5 | F5 | | Zhone | ZHO |

| Cable Lengths | |
|---|---|
| Meters | Designations |
| 1 | 001 |
| 2 | 002 |
| 3 | 003 |
| 5 | 005 |
| 7 | 007 |
| 10 | 010 |
| 15 | 015 |
| 20 | 020 |
| 25 | 025 |
| 30 | 030 |

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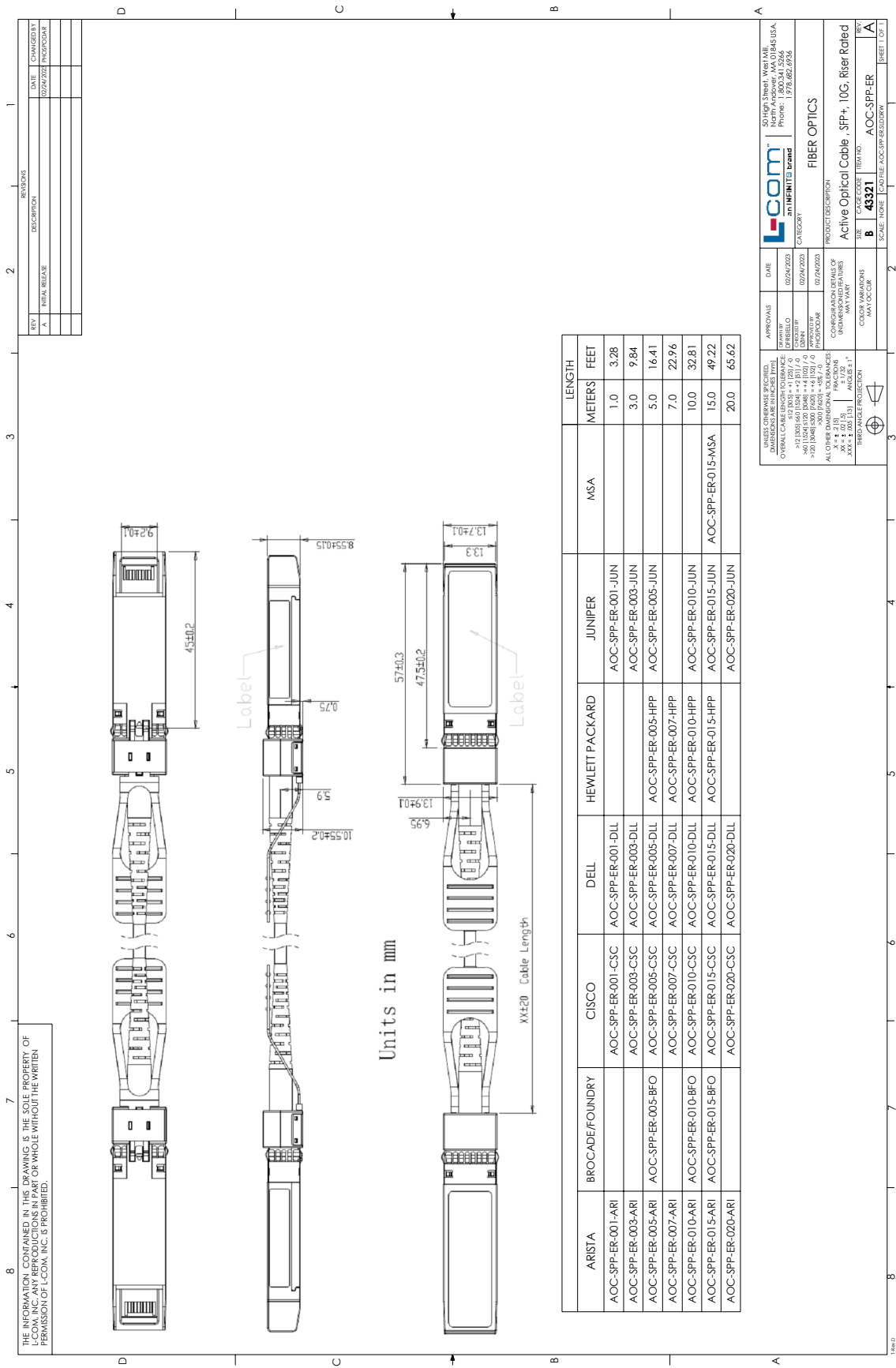
## AOC-SPP-ER-RRR-PPP

Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters Riser Rated (OFNR), Coded for Various Platforms from L-com has same day shipment for domestic and International orders. Our portfolio includes coaxial cable assemblies, connectors, adapters and custom products as well as lightning and surge protectors, NEMA rated enclosures, and an RF product line which includes antennas, amplifiers, passive, and active components.

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein.  It may be necessary to make modifications to the part and/or the documentation of the part in order to impliment improvements.  L-com reserves the right to make such changes as required.  Unless otherwise stated, all specifications are nominal.  L-com does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and L-com does not assume liability arising out of the use of any part or document.

# Active Optical Cable SFP+ to SFP+, 10G, 1 to 20 Meters Riser Rated (OFNR), Coded for Various Platforms

## L-com CAD Drawing



Units in mm

| ARISTA | BROCADE/FOUNDRY | CISCO | DELL | HEWLETT PACKARD | JUNIPER | MSA | LENGTH | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | METERS | FEET |
| AOC-SPP-ER-001-ARI | | AOC-SPP-ER-001-CSC | AOC-SPP-ER-001-DLL | | AOC-SPP-ER-001-JUN | | 1.0 | 3.28 |
| AOC-SPP-ER-003-ARI | | AOC-SPP-ER-003-CSC | AOC-SPP-ER-003-DLL | | AOC-SPP-ER-003-JUN | | 3.0 | 9.84 |
| AOC-SPP-ER-005-ARI | AOC-SPP-ER-005-BFO | AOC-SPP-ER-005-CSC | AOC-SPP-ER-005-DLL | AOC-SPP-ER-005-HPP | AOC-SPP-ER-005-JUN | | 5.0 | 16.41 |
| AOC-SPP-ER-007-ARI | | AOC-SPP-ER-007-CSC | AOC-SPP-ER-007-DLL | AOC-SPP-ER-007-HPP | | | 7.0 | 22.96 |
| AOC-SPP-ER-010-ARI | AOC-SPP-ER-010-BFO | AOC-SPP-ER-010-CSC | AOC-SPP-ER-010-DLL | AOC-SPP-ER-010-HPP | AOC-SPP-ER-010-JUN | | 10.0 | 32.81 |
| AOC-SPP-ER-015-ARI | AOC-SPP-ER-015-BFO | AOC-SPP-ER-015-CSC | AOC-SPP-ER-015-DLL | AOC-SPP-ER-015-HPP | AOC-SPP-ER-015-JUN | AOC-SPP-ER-015-MSA | 15.0 | 49.22 |
| AOC-SPP-ER-020-ARI | | AOC-SPP-ER-020-CSC | AOC-SPP-ER-020-DLL | | AOC-SPP-ER-020-JUN | | 20.0 | 65.62 |

### Title Block

L-com — an INFINITE brand

50 High Street, West Mill, North Andover, MA 01845 USA. Phone: 1.800.341.5266 Phone: 1.978.682.6936

CATEGORY: FIBER OPTICS

PRODUCT DESCRIPTION: Active Optical Cable , SFP+, 10G, Riser Rated

ITEM NO.: AOC-SPP-ER

CAGE CODE: 43321

SIZE: B | REV: A

SCALE: NONE | CAD FILE: AOC-SPP-ER.SLDDRW | SHEET 1 OF 1

| APPROVALS | DATE |
|---|---|
| DRAWN BY DFRRBELLO | 02/24/2023 |
| CHECKED BY DJINN | 02/24/2023 |
| APPROVED BY PHOSPODAR | 02/24/2023 |

CONFIGURATION DETAILS OF UNDIMENSIONED FEATURES MAY VARY

COLOR VARIATIONS MAY OCCUR

THIRD-ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES [mm]

OVERALL CABLE LENGTH TOLERANCE:
≤12 [305] = +1 [25] / -0
>12 [305] ≤60 [1524] = +2 [51] / -0
>60 [1524] ≤120 [3048] = +4 [102] / -0
>120 [3048] ≤300 [7620] = +6 [152] / -0
>300 [7620] = +9% / -0

ALL OTHER DIMENSIONAL TOLERANCES:
X = ± .2 [5]
.XX = ± .02 [.5]
.XXX = ± .005 [.13]

FRACTIONS ± 1/32
ANGLES ± 1°

USA & Canada **+1(800) 341-5266** | International **+1(978) 682-6936** | **l-com.com**