

ProLabs SFP-10G-AOCxM

10G SFP+ Active Optical Cables

Key Features:

- Electrical interface compliant to SFF-8431
- Hot Pluggable
- 850nm VCSEL transmitter, PIN photo-detector receiver
- Up to 300m on MMF
- Operating case temperature: 0 to 70°C
- All-metal housing for superior EMI performance
- RoHS compliant (lead free)

Applications:

- 10 Gigabit Ethernet and 4G and 8G Fibre Channel Applications
- 1x InfiniBand QDR. DDR, SDR
- High performance servers, switches, storage and host card adapters

Ordering Information

Part number	Description
SFP-10G-AOCxM	SFP+ Active Optical Cable Assembly, xM

Introduction

ProLabs SFP+ Active Optical Cables are direct-attach fiber assemblies with SFP+ connectors. They are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. ProLabs SFP+ Active Optical Cables's length is up to 300 meters on OM3 MMF.

Ordering Information

OEM Manufacturer	ProLabs SKU	Product Description
Alcatel	SFP-10G-AOC1M-ALC-C	10G SFP+ Active Optical Cable 1m
Allied	SFP-10G-AOC1M-ALLIED-C	10G SFP+ Active Optical Cable 1m
Arista	AOC-S-S-10G-1M-C	10G SFP+ Active Optical Cable 1m
Avaya	SFP-10G-AOC1M-AVAYA-C	10G SFP+ Active Optical Cable 1m
Blackbox	SFP-10G-AOC1M-BLACKBOX-C	10G SFP+ Active Optical Cable 1m
Brocade	10G-SFPP-AOC-0101-C	10G SFP+ Active Optical Cable 1m
BTN/IBM	SFP-10G-AOC1M-IBM-C	10G SFP+ Active Optical Cable 1m
Ciena	SFP-10G-AOC1M-CIENA-C	10G SFP+ Active Optical Cable 1m
Cisco	SFP-10G-AOC1M-C	10G SFP+ Active Optical Cable 1m
Dell Force10	CBL-10GSFP-AOC-1M-C	10G SFP+ Active Optical Cable 1m
D-Link	SFP-10G-AOC1M-DLINK-C	10G SFP+ Active Optical Cable 1m
Emulex	OC10-SFP-AOC-1M-C	10G SFP+ Active Optical Cable 1m
Enterasys	10GB-F1-SFPP-C	10G SFP+ Active Optical Cable 1m
Extreme	10304-AOC-1M-C	10G SFP+ Active Optical Cable 1m
Generic	AOC1M-SFP-10G-C	10G SFP+ Active Optical Cable 1m
HP ProCurve	J9281B-AOC-1M-C	10G SFP+ Active Optical Cable 1m
Huawei	SFP-10G-AOC1M-HUW-C	10G SFP+ Active Optical Cable 1m
Intel	XAOCBL1M-C	10G SFP+ Active Optical Cable 1m
Juniper	EX-SFP-10GE-AOC-1M-C	10G SFP+ Active Optical Cable 1m
Alcatel	SFP-10G-AOC2M-ALC-C	10G SFP+ Active Optical Cable 2m
Allied	SFP-10G-AOC2M-ALLIED-C	10G SFP+ Active Optical Cable 2m
Arista	AOC-S-S-10G-2M-C	10G SFP+ Active Optical Cable 2m
Avaya	SFP-10G-AOC2M-AVAYA-C	10G SFP+ Active Optical Cable 2m
Blackbox	SFP-10G-AOC2M-BLACKBOX-C	10G SFP+ Active Optical Cable 2m
Brocade	10G-SFPP-AOC-0201-C	10G SFP+ Active Optical Cable 2m
BTN/IBM	SFP-10G-AOC2M-IBM-C	10G SFP+ Active Optical Cable 2m
Ciena	SFP-10G-AOC2M-CIENA-C	10G SFP+ Active Optical Cable 2m
Cisco	SFP-10G-AOC2M-C	10G SFP+ Active Optical Cable 2m
Dell Force10	CBL-10GSFP-AOC-2M-C	10G SFP+ Active Optical Cable 2m
D-Link	SFP-10G-AOC2M-DLINK-C	10G SFP+ Active Optical Cable 2m
Emulex	OC10-SFP-AOC-2M-C	10G SFP+ Active Optical Cable 2m
Enterasys	10GB-F2-SFPP-C	10G SFP+ Active Optical Cable 2m
Extreme	10304-AOC-2M-C	10G SFP+ Active Optical Cable 2m
Generic	AOC2M-SFP-10G-C	10G SFP+ Active Optical Cable 2m
HP ProCurve	J9281B-AOC-2M-C	10G SFP+ Active Optical Cable 2m
Huawei	SFP-10G-AOC2M-HUW-C	10G SFP+ Active Optical Cable 2m
Intel	XAOCBL2M-C	10G SFP+ Active Optical Cable 2m
Juniper	EX-SFP-10GE-AOC-2M-C	10G SFP+ Active Optical Cable 2m
Alcatel	SFP-10G-AOC3M-ALC-C	10G SFP+ Active Optical Cable 3m
Allied	SFP-10G-AOC3M-ALLIED-C	10G SFP+ Active Optical Cable 3m
Arista	AOC-S-S-10G-3M-C	10G SFP+ Active Optical Cable 3m
Avaya	SFP-10G-AOC3M-AVAYA-C	10G SFP+ Active Optical Cable 3m
Blackbox	SFP-10G-AOC3M-BLACKBOX-C	10G SFP+ Active Optical Cable 3m
Brocade	10G-SFPP-AOC-0301-C	10G SFP+ Active Optical Cable 3m
BTN/IBM	SFP-10G-AOC3M-IBM-C	10G SFP+ Active Optical Cable 3m
Ciena	SFP-10G-AOC3M-CIENA-C	10G SFP+ Active Optical Cable 3m
Cisco	SFP-10G-AOC3M-C	10G SFP+ Active Optical Cable 3m
Dell Force10	CBL-10GSFP-AOC-3M-C	10G SFP+ Active Optical Cable 3m
D-Link	SFP-10G-AOC3M-DLINK-C	10G SFP+ Active Optical Cable 3m
Emulex	OC10-SFP-AOC-3M-C	10G SFP+ Active Optical Cable 3m
Enterasys	10GB-F3-SFPP-C	10G SFP+ Active Optical Cable 3m
Extreme	10304-AOC-3M-C	10G SFP+ Active Optical Cable 3m
Generic	AOC3M-SFP-10G-C	10G SFP+ Active Optical Cable 3m
HP ProCurve	J9281B-AOC-3M-C	10G SFP+ Active Optical Cable 3m
Huawei	SFP-10G-AOC3M-HUW-C	10G SFP+ Active Optical Cable 3m
Intel	XAOCBL3M-C	10G SFP+ Active Optical Cable 3m
Juniper	EX-SFP-10GE-AOC-3M-C	10G SFP+ Active Optical Cable 3m

Ordering Information

OEM Manufacturer	ProLabs SKU	Product Description
Alcatel	SFP-10G-AOC5M-ALC-C	10G SFP+ Active Optical Cable 5m
Allied	SFP-10G-AOC5M-ALLIED-C	10G SFP+ Active Optical Cable 5m
Arista	AOC-S-S-10G-5M-C	10G SFP+ Active Optical Cable 5m
Avaya	SFP-10G-AOC5M-AVAYA-C	10G SFP+ Active Optical Cable 5m
Blackbox	SFP-10G-AOC5M-BLACKBOX-C	10G SFP+ Active Optical Cable 5m
Brocade	10G-SFPP-AOC-0501-C	10G SFP+ Active Optical Cable 5m
BTN/IBM	SFP-10G-AOC5M-IBM-C	10G SFP+ Active Optical Cable 5m
Ciena	SFP-10G-AOC5M-CIENA-C	10G SFP+ Active Optical Cable 5m
Cisco	SFP-10G-AOC5M-C	10G SFP+ Active Optical Cable 5m
Dell Force10	CBL-10GSFP-AOC-5M-C	10G SFP+ Active Optical Cable 5m
D-Link	SFP-10G-AOC5M-DLINK-C	10G SFP+ Active Optical Cable 5m
Emulex	OC10-SFP-AOC-5M-C	10G SFP+ Active Optical Cable 5m
Enterasys	10GB-F5-SFPP-C	10G SFP+ Active Optical Cable 5m
Extreme	10304-AOC-5M-C	10G SFP+ Active Optical Cable 5m
Generic	AOC5M-SFP-10G-C	10G SFP+ Active Optical Cable 5m
HP ProCurve	J9281B-AOC-5M-C	10G SFP+ Active Optical Cable 5m
Huawei	SFP-10G-AOC5M-HUW-C	10G SFP+ Active Optical Cable 5m
Intel	XAOCBL5M-C	10G SFP+ Active Optical Cable 5m
Juniper	EX-SFP-10GE-AOC-5M-C	10G SFP+ Active Optical Cable 5m
Alcatel	SFP-10G-AOC7M-ALC-C	10G SFP+ Active Optical Cable 7m
Allied	SFP-10G-AOC7M-ALLIED-C	10G SFP+ Active Optical Cable 7m
Arista	AOC-S-S-10G-7M-C	10G SFP+ Active Optical Cable 7m
Avaya	SFP-10G-AOC7M-AVAYA-C	10G SFP+ Active Optical Cable 7m
Blackbox	SFP-10G-AOC7M-BLACKBOX-C	10G SFP+ Active Optical Cable 7m
Brocade	10G-SFPP-AOC-0701-C	10G SFP+ Active Optical Cable 7m
BTN/IBM	SFP-10G-AOC7M-IBM-C	10G SFP+ Active Optical Cable 7m
Ciena	SFP-10G-AOC7M-CIENA-C	10G SFP+ Active Optical Cable 7m
Cisco	SFP-10G-AOC7M-C	10G SFP+ Active Optical Cable 7m
Dell Force10	CBL-10GSFP-AOC-7M-C	10G SFP+ Active Optical Cable 7m
D-Link	SFP-10G-AOC7M-DLINK-C	10G SFP+ Active Optical Cable 7m
Emulex	OC10-SFP-AOC-7M-C	10G SFP+ Active Optical Cable 7m
Enterasys	10GB-F7-SFPP-C	10G SFP+ Active Optical Cable 7m
Extreme	10304-AOC-7M-C	10G SFP+ Active Optical Cable 7m
Generic	AOC7M-SFP-10G-C	10G SFP+ Active Optical Cable 7m
HP ProCurve	J9281B-AOC-7M-C	10G SFP+ Active Optical Cable 7m
Huawei	SFP-10G-AOC7M-HUW-C	10G SFP+ Active Optical Cable 7m
Intel	XAOCBL7M-C	10G SFP+ Active Optical Cable 7m
Juniper	EX-SFP-10GE-AOC-7M-C	10G SFP+ Active Optical Cable 7m
Arista	AOC-S-S-10G-9M-C	10G SFP+ Active Optical Cable 9m
Alcatel	SFP-10G-AOC10M-ALC-C	10G SFP+ Active Optical Cable 10m
Allied	SFP-10G-AOC10M-ALLIED-C	10G SFP+ Active Optical Cable 10m
Arista	AOC-S-S-10G-10M-C	10G SFP+ Active Optical Cable 10m
Avaya	SFP-10G-AOC10M-AVAYA-C	10G SFP+ Active Optical Cable 10m
Blackbox	SFP-10G-AOC10M-BLACKBOX-C	10G SFP+ Active Optical Cable 10m
Brocade	10G-SFPP-AOC-1001-C	10G SFP+ Active Optical Cable 10m
BTN/IBM	SFP-10G-AOC10M-IBM-C	10G SFP+ Active Optical Cable 10m
Ciena	SFP-10G-AOC10M-CIENA-C	10G SFP+ Active Optical Cable 10m
Cisco	SFP-10G-AOC10M-C	10G SFP+ Active Optical Cable 10m
Dell Force10	CBL-10GSFP-AOC-10M-C	10G SFP+ Active Optical Cable 10m
D-Link	SFP-10G-AOC10M-DLINK-C	10G SFP+ Active Optical Cable 10m
Emulex	OC10-SFP-AOC-10M-C	10G SFP+ Active Optical Cable 10m
Enterasys	10GB-F10-SFPP-C	10G SFP+ Active Optical Cable 10m
Extreme	10304-AOC-10M-C	10G SFP+ Active Optical Cable 10m
Generic	AOC10M-SFP-10G-C	10G SFP+ Active Optical Cable 10m
HP ProCurve	J9281B-AOC-10M-C	10G SFP+ Active Optical Cable 10m
Huawei	SFP-10G-AOC10M-HUW-C	10G SFP+ Active Optical Cable 10m

Ordering Information

OEM Manufacturer	Prolabs SKU	Product Description
Intel	XAOCBL10M-C	10G SFP+ Active Optical Cable 10m
Juniper	EX-SFP-10GE-AOC-10M-C	10G SFP+ Active Optical Cable 10m
Alcatel	SFP-10G-AOC15M-ALC-C	10G SFP+ Active Optical Cable 15m
Allied	SFP-10G-AOC15M-ALLIED-C	10G SFP+ Active Optical Cable 15m
Arista	AOC-S-S-10G-15M-C	10G SFP+ Active Optical Cable 15m
Avaya	SFP-10G-AOC15M-AVAYA-C	10G SFP+ Active Optical Cable 15m
Blackbox	SFP-10G-AOC15M-BLACKBOX-C	10G SFP+ Active Optical Cable 15m
Brocade	10G-SFPP-AOC-1501-C	10G SFP+ Active Optical Cable 15m
BTN/IBM	SFP-10G-AOC15M-IBM-C	10G SFP+ Active Optical Cable 15m
Ciena	SFP-10G-AOC15M-CIENA-C	10G SFP+ Active Optical Cable 15m
Cisco	SFP-10G-AOC15M-C	10G SFP+ Active Optical Cable 15m
Dell Force10	CBL-10GSFP-AOC-15M-C	10G SFP+ Active Optical Cable 15m
D-Link	SFP-10G-AOC15M-DLINK-C	10G SFP+ Active Optical Cable 15m
Emulex	OC10-SFP-AOC-15M-C	10G SFP+ Active Optical Cable 15m
Enterasys	10GB-F15-SFPP-C	10G SFP+ Active Optical Cable 15m
Extreme	10304-AOC-15M-C	10G SFP+ Active Optical Cable 15m
Generic	AOC15M-SFP-10G-C	10G SFP+ Active Optical Cable 15m
HP ProCurve	J9281B-AOC-15M-C	10G SFP+ Active Optical Cable 15m
Huawei	SFP-10G-AOC15M-HUW-C	10G SFP+ Active Optical Cable 15m
Intel	XAOCBL15M-C	10G SFP+ Active Optical Cable 15m
Juniper	EX-SFP-10GE-AOC-15M-C	10G SFP+ Active Optical Cable 15m
Alcatel	SFP-10G-AOC20M-ALC-C	10G SFP+ Active Optical Cable 20m
Allied	SFP-10G-AOC20M-ALLIED-C	10G SFP+ Active Optical Cable 20m
Arista	AOC-S-S-10G-20M-C	10G SFP+ Active Optical Cable 20m
Avaya	SFP-10G-AOC20M-AVAYA-C	10G SFP+ Active Optical Cable 20m
Blackbox	SFP-10G-AOC20M-BLACKBOX-C	10G SFP+ Active Optical Cable 20m
Brocade	10G-SFPP-AOC-2001-C	10G SFP+ Active Optical Cable 20m
BTN/IBM	SFP-10G-AOC20M-IBM-C	10G SFP+ Active Optical Cable 20m
Ciena	SFP-10G-AOC20M-CIENA-C	10G SFP+ Active Optical Cable 20m
Cisco	SFP-10G-AOC20M-C	10G SFP+ Active Optical Cable 20m
Dell Force10	CBL-10GSFP-AOC-20M-C	10G SFP+ Active Optical Cable 20m
D-Link	SFP-10G-AOC20M-DLINK-C	10G SFP+ Active Optical Cable 20m
Emulex	OC10-SFP-AOC-20M-C	10G SFP+ Active Optical Cable 20m
Enterasys	10GB-F20-SFPP-C	10G SFP+ Active Optical Cable 20m
Extreme	10304-AOC-20M-C	10G SFP+ Active Optical Cable 20m
Generic	AOC20M-SFP-10G-C	10G SFP+ Active Optical Cable 20m
HP ProCurve	J9281B-AOC-20M-C	10G SFP+ Active Optical Cable 20m
Huawei	SFP-10G-AOC20M-HUW-C	10G SFP+ Active Optical Cable 20m
Intel	XAOCBL20M-C	10G SFP+ Active Optical Cable 20m
Juniper	EX-SFP-10GE-AOC-20M-C	10G SFP+ Active Optical Cable 20m
Alcatel	SFP-10G-AOC50M-ALC-C	10G SFP+ Active Optical Cable 50m
Allied	SFP-10G-AOC50M-ALLIED-C	10G SFP+ Active Optical Cable 50m
Arista	AOC-S-S-10G-50M-C	10G SFP+ Active Optical Cable 50m
Avaya	SFP-10G-AOC50M-AVAYA-C	10G SFP+ Active Optical Cable 50m
Blackbox	SFP-10G-AOC50M-BLACKBOX-C	10G SFP+ Active Optical Cable 50m
Brocade	10G-SFPP-AOC-5001-C	10G SFP+ Active Optical Cable 50m
BTN/IBM	SFP-10G-AOC50M-IBM-C	10G SFP+ Active Optical Cable 50m
Ciena	SFP-10G-AOC50M-CIENA-C	10G SFP+ Active Optical Cable 50m
Cisco	SFP-10G-AOC50M-C	10G SFP+ Active Optical Cable 50m
Dell Force10	CBL-10GSFP-AOC-50M-C	10G SFP+ Active Optical Cable 50m
D-Link	SFP-10G-AOC50M-DLINK-C	10G SFP+ Active Optical Cable 50m
Emulex	OC10-SFP-AOC-50M-C	10G SFP+ Active Optical Cable 50m
Enterasys	10GB-F50-SFPP-C	10G SFP+ Active Optical Cable 50m
Extreme	10304-AOC-50M-C	10G SFP+ Active Optical Cable 50m
Generic	AOC50M-SFP-10G-C	10G SFP+ Active Optical Cable 50m
HP ProCurve	J9281B-AOC-50M-C	10G SFP+ Active Optical Cable 50m

Ordering Information

OEM Manufacturer	ProLabs SKU	Product Description
Huawei	SFP-10G-AOC50M-HUW-C	10G SFP+ Active Optical Cable 50m
Intel	XAOCBL50M-C	10G SFP+ Active Optical Cable 50m
Juniper	EX-SFP-10GE-AOC-50M-C	10G SFP+ Active Optical Cable 50m
Alcatel	SFP-10G-AOC100M-ALC-C	10G SFP+ Active Optical Cable 100m
Allied	SFP-10G-AOC100M-ALLIED-C	10G SFP+ Active Optical Cable 100m
Arista	AOC-S-S-10G-100M-C	10G SFP+ Active Optical Cable 100m
Avaya	SFP-10G-AOC100M-AVAYA-C	10G SFP+ Active Optical Cable 100m
Blackbox	SFP-10G-AOC100M-BLACKBOX-C	10G SFP+ Active Optical Cable 100m
Brocade	10G-SFPP-AOC-10001-C	10G SFP+ Active Optical Cable 100m
BTN/IBM	SFP-10G-AOC100M-IBM-C	10G SFP+ Active Optical Cable 100m
Ciena	SFP-10G-AOC100M-CIENA-C	10G SFP+ Active Optical Cable 100m
Cisco	SFP-10G-AOC100M-C	10G SFP+ Active Optical Cable 100m
Dell Force10	CBL-10GSFP-AOC-100M-C	10G SFP+ Active Optical Cable 100m
D-Link	SFP-10G-AOC100M-DLINK-C	10G SFP+ Active Optical Cable 100m
Emulex	OC10-SFP-AOC-100M-C	10G SFP+ Active Optical Cable 100m
Enterasys	10GB-F100-SFPP-C	10G SFP+ Active Optical Cable 100m
Extreme	10304-AOC-100M-C	10G SFP+ Active Optical Cable 100m
Generic	AOC100M-SFP-10G-C	10G SFP+ Active Optical Cable 100m
HP ProCurve	J9281B-AOC-100M-C	10G SFP+ Active Optical Cable 100m
Huawei	SFP-10G-AOC100M-HUW-C	10G SFP+ Active Optical Cable 100m
Intel	XAOCBL100M-C	10G SFP+ Active Optical Cable 100m
Juniper	EX-SFP-10GE-AOC-100M-C	10G SFP+ Active Optical Cable 100m

Specifications

SFP+ AOC Specifications:

Parameter	Description
Module Form Factor	SFP+ (Supports SFF8431/SFF8432/SFF8472)
Protocols Supported	InfiniBand, Ethernet, Fiber Channel
Channel Data Rate	Rate 1 to 10.3125Gbps
BER	$<10^{-12}$
Operating Case Temperature	0 to + 70°C
Storage Temperature	-20 to + 85°C
Supply Voltage	3.3V
Supply current	230mA per end typical
Management Interface Serial	I ² C (Supports SFF8472)

Optical characteristics:

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_t	840	850	860	nm	
RMS spectral width	P _m	-	-	Note 1	nm	
Average Optical Power	P _{avg}	-6.5	-	-1	dBm	2
Extinction Ratio	ER	3.5	-	-	dB	3
Transmitter Dispersion Penalty	TDP	-	-	3.9	dB	
Relative Intensity Noise	R _{in}	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	12	dB	
Receiver						
Center Wavelength	λ_r	840	850	860	nm	
Receiver Sensitivity	P _{sens}	-	-	-11.1	dBm	4
Stressed Sensitivity in OMA		-	-	-7.5	dBm	4
Los function	Los	-30	-	-12	dBm	
Overload	P _{in}	-	-	-1.0	dBm	4
Receiver Reflectance		-	-	-12	dB	

Note:

- 1. Trade-offs are available between spectral width, center wavelength and minimum OMA, as shown in table 6.
- 2. The optical power is launched into MMF
- 3. Measured with a PRBS 2³¹-1 test pattern @10.3125Gbps
- 4. Measured with a PRBS 2³¹-1 test pattern @10.3125Gbps, BER $\leq 10^{-12}$.

Specifications

Mechanical specification:

