

DATASHEET

10G & 100G EDFAMUX



1. GENERAL DESCRIPTION

The Solid Optics EDFA-MUX is a Passive Multiplexer with Active Components, which combines three devices into one rack unit. Typically, long distance projects require a 1RU standalone Passive MUX, a separate EDFA (amplifier), and a separate Dispersion Compensation unit. The Solid Optics EDFA-MUX combines all of these features in a 1RU 19" casing, which requires less space and less patching.

2. AVAILABLE DEFAULT VERSIONS

PARTNAME 10G	DESCRIPTION
SO-DWDM-10x10G-EDFAMUX-140Km	Solid Optics 10CH Active MUX with built-in EDFA and Dispersion Compensator. 10 x 10G to reach a max of 140Km, Net Power Budget 34dB, Channels 28-37 C-Band 100Ghz with 1% Monitor port, Dual AC 100/240V, build in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing
SO-DWDM-16x10G-EDFAMUX-140Km	Solid Optics 16CH Active MUX with built-in EDFA and Dispersion Compensator. 16 x 10G to reach a max of 140Km, Net Power Budget 32dB Channels 20-35 C-Band 100Ghz with 1% Monitor port. Dual AC 100/240V, build in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing
SO-DWDM-10x10G-EDFAMUX-200Km	Solid Optics 10CH Active MUX with built-in EDFA and Dispersion Compensator. 10 x 10G to reach a max of 200Km, Net Power Budget 48dB, Channels 28-37 C-Band 100Ghz with 1% Monitor port. Dual AC 100/240V, build in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing

PARTNAME 100G	DESCRIPTION
SO-DWDM-8x100G-EDFAMUX-80km	Solid Optics 8Ch Active MUX with built-in EDFAs and Tunable Dispersion Compensator, 8 x 100G to reach max of 80km, Net Power Budget 18dB, Channels 28-35 C-Band 100Ghz with 2 x 10G (ports CH59 and CH60), 10G Extension port (CH17-27 & 37-57) and 1% Monitor port, Dual AC 100/240V. Built-in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing.
SO-DWDM-16x100G-EDFAMUX-40Km	Solid Optics 16Ch Active MUX with built-in EDFAs and Tunable Dispersion Compensator, 16 x 100G to reach max of 40km, Net Power Budget 18dB. Channels 20-35 C-Band 100Ghz and 1% Monitor port, Dual AC 100/240V. Built-in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing.
SO-DWDM-8x100G-EDFAMUX-120Km	Solid Optics 8Ch Active MUX with built-in EDFAs and Tunable Dispersion Compensator, 8 x 100G to reach max of 120km, Net Power Budget 35.5dB Channels 28-35 C-Band 100Ghz and 1% Monitor port, Dual AC 100/240V. build in LAN+WLAN to access internal webserver for monitoring and configuration, 1RU 19" casing.

3. PRODUCT SPECIFICATIONS & FEATURES

- ✓ 100G EDFAMUX supports 8 or 16 communication lines of 100G from 5Km up to 120Km
- ✓ 8 Channel 100G version comes default with CH28-35 (other channels available on request)
- ✓ The max distance of 140km and 200km for the 10G EDFAMUX models is reached with 80% of the ports populated. With a port population of 100% we are able guarantee a distance of 125km and 180km.
- ✓ 10 Channel 10G version comes default with CH28-37 (other channels available on request)
- ✓ Active one rack unit device
- ✓ 16 Channel 10G version comes default with CH20-35 (other channels available on request)
- ✓ Default 2 x AC (100-240V), DC optional

- ✓ 8 Channel 100G version comes with an Extension port (CH17 to 27 & CH36 to 57)
- ✓ Web monitoring of EDFA
- ✓ Includes 1% Monitor Port
- ✓ Possible to use optical supervisor channel
- ✓ with SFP connection
- ✓ EDFA is default on Auto Gain Control (adding same dB when extra channels are plugged in). If needed, the user can adjust settings.
- ✓ Default LC/UPC with auto dust shutters
- ✓ Mix of 1G optics and/or Fiber Channel possible

4. TECHNICAL SPECIFICATIONS

MUX	SYMBOLS	100G 80Km	100G 120Km	10G 140Km	10G 200Km
CHANNEL SPACING	Nm	0.8	0.8	0.8	0.8
OPERATION WAVELENGTH RANGE	ITU 100 GHz	Default CH 28-35	Default CH 28-35	10CH: Default CH 28-37 16CH: Default CH 20-35	Default CH 28-37
CHANNEL CENTER WAVELENGTH (CWL)	Nm	ITU ± 0.11	ITU ± 0.11	ITU ± 0.11	ITU ± 0.11
MAX CHANNEL INSERTION LOSS	dB	2.5	2.5	2.5	2.5
ADJACENT CHANNEL ISOLATION	dB	30	30	30	30
NON-ADJACENT CHANNEL ISOLATION	dB	45	45	45	45
RETURN LOSS @ CWL	dB	45	45	45	45
MONITOR PORT	%	1%	1%	1%	1%

EDFA BOOSTER

	SYMBOLS	100G 80Km	100G 120km	10G 140Km	10G 200Km
EDFA OPERATING MODE		AGC	AGC	N/A	AGC
INPUT POWER RANGE	dBm	-15 - +8	-15 - +8	N/A	-15 - +8
TYPICAL NOISE FIGURE	dB	4.5	4.5	N/A	4.5
TYPICAL PUMP POWER	dB	Adjustable 10-16	Adjustable 14-20	N/A	Adjustable 14-20
SATURATION	dBm	17	20	N/A	20

EDFA POST Amp

	SYMBOLS	100G 80Km	100G 120km	10G 140Km	10G 200Km
EDFA OPERATING MODE		AGC	AGC	AGC	AWG
INPUT POWER RANGE	dBm	-15 to +8	-33 to -10	-30 to +5	-33 to -5
TYPICAL NOISE FIGURE	dB	4.5	4.5	4.5	4.5
TYPICAL PUMP POWER	dB	Adjustable 10-16	33	20	21

DISPERSION COMPENSATOR

	SYMBOLS	100G 80Km	100G 120km	10G 140Km	10G 200Km
DCM TYPE		Fiber Bragg Grating	Fiber Bragg Grating	Fiber Bragg Grating	Fiber Bragg Grating
DISPERSION COMPENSATING	Ps/nm	0 to -1300	-1000 to -2300	-1000	-2000
INSERTION LOSS	dB	4	6.5	2.5	2.5

CASING

	SYMBOL	100G 80Km	100G 120km	10G 140Km	10G 200Km
	S				
INPUT POWER	AC/V	100-240	100-240	100-240	100-240
DIMENSIONS	Mm	482.6*300*44mm	482.6*300*44mm	482.6*300*44mm	482.6*300*44mm
OPERATING TEMPERATURE	°C	-5-60	-5-60	-5~60	-5-60
POWER CONSUMPTION	W	<11	<8	<8	<12
AIRFLOW		Side to Side	Side to Side	Side to Side	Side to Side

5. PATCHES

100G EDFAMUX

	100G DWDM	MON	EXT
SO-DWDM-8x100G-EDFAMUX-80Km	CH 28-35	1%	CH 17-26 & 37-58 2 x 10G (port CH59 and CH60)
SO-DWDM-8x100G-EDFAMUX-120Km	CH 28-35	1%	N/A
SO-DWDM-16x100G-EDFAMUX-140Km	CH 20-35	1%	N/A

10G EDFAMUX

	10G DWDM	MON	EXT
SO-DWDM-10x10G-EDFAMUX-140Km	CH 28-37	1%	N/A
SO-DWDM-16x10G-EDFAMUX-140Km	CH 20-35	1%	N/A
SO-DWDM-10x10G-EDFAMUX-200Km	CH 28-37	1%	N/A

6. POWER BUDGET SPECIFICATIONS

100G 80Km	SYMBOLS	POWER	LOSS	MAX.
POWER BUDGET QSFP DWDM	dB	-8		
EDFA BOOSTER with FULL 8 x 100G LOAD	dB	16		
EDFA POST AMP	dB	16		
MUX LOSS	dB		1	
DEMUX LOSS	dB		2	
DISPERSION COMPENSATOR	dB		3	
TOTAL	dB	24	7	18*

100G 120Km	SYMBOLS	POWER	LOSS	MAX.
POWER BUDGET QSFP DWDM	dB	-8		
EDFA BOOSTER with FULL 8 x 100G LOAD	dB	20		
EDFA POST AMP	dB	33		
MUX LOSS	dB		1	
DEMUX LOSS	dB		2	
DISPERSION COMPENSATOR	dB		6.5	
TOTAL	dB	45	9.5	35.5*

10G 140Km	SYMBOLS	POWER	LOSS	MAX.
POWER BUDGET ZR 10G	dB	24		
EDFA PUMP	dB	20		
DISPERSION PENALTY SFP	dB		2	
MUX LOSS	dB		2 (10CH) 3 (16CH)	
DEMUX LOSS	dB		2	

DISPERSION COMPENSATOR	dB		3	
INTERNAL PATCHING	dB		1	
TOTAL	dB	44	10 (10CH) 12 (16CH)	34 (10CH)* 32 (16CH)*

10G 200Km	SYMBOLS	POWER	LOSS	MAX.
POWER BUDGET ZR 10G	dB	24		
EDFA BOOSTER with FULL 10 x 10G LOAD	dB	15		
EDFA POST AMP	dB	21		
DISPERSION PENALTY SFP			2	
MUX LOSS	dB		2	
DEMUX LOSS	dB		2	
DISPERSION COMPENSATOR	dB		5	
INTERNAL PATCHING	dB		1	
TOTAL	dB	60	12	48*

* Calculation of power budget left for the fiber is based on the EDFAMUX populated at 80%.

With the EDFAMUX populated at 100% the following power budget specifications apply:

EDFAMUX 10/16x10 140 - 125 km / 27dB

EDFAMUX 10x10 200 - 180 km / 40dB

7. MANAGEMENT MODULE

The EDFA-MUX comes standard with an integrated management module with LAN and WLAN connectivity. By using LAN/WLAN, you can configure and monitor the system over GUI or SNMP.

The operating settings are stored in the device itself. Rebooting the management module or upgrading its firmware won't interrupt the communication.

For information about how to configure the EDFAMUX please refer to the EDFAMUX manual provided with the unit or download it from download.solid-optics.com.

8. RECOMMENDED TRANSCEIVERS

10G

DESCRIPTION

SFP-10G-DWDMXX-ZR-SO	10G DWDM SFP, (100GHz ITU grid), 80Km/24dB, DOM, Solid Optics
SFP-8G-FC-DWDMXX-ZR-SO	8G-FC DWDM SFP, (100GHz ITU grid), 80Km/24dB, DOM, Solid Optics
SFP-10G-DWDM-TUN-ZR-SO	10G-DWDM, tunable (100/50-GHz ITU grid), 80km/24dB, Solid Optics

100G

DESCRIPTION

QSFP-100G-DWDMXX-SO	100G-DWDM, QSFP28, Chxx, for single mode fiber, 100GHz ITU Grid, require EDFA and DCM to work, LC duplex connectors, DOM, Solid Optics
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9. WARNING & SYMBOLS



Solid Optics EU N.V. has tested the equipment based on European legislation. It is safe to use, doesn't intervene with other electronic devices and it is not affected by interference from other Electronic devices.

RoHS

Hazardous Goods; Our equipment complies with Directive 2011/65/EU (RoHS II) and 2002/95 EC (RoHS I)



Only (dis)connect the equipment in a EPA (ESD Protected Area) while using only certified equipment and taking all necessary precautions.

10. DISCLAIMER & COPYRIGHT

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