

## Description

CWDM and DWDM technology expands network bandwidth capacity without the cost of expanding the fiber cable infrastructure. The multiplexing (Mux) module combines all the wavelengths, each of which carries its own data, into one fiber link. The DeMultiplexing (DeMux) module, on the other end, separates and sort these wavelengths back to the individual fiber links. The CWDM and DWDM systems are transparent to all the data rates and independent of different fiber network standards.

CWDM system uses the standard wavelengths from 1270 nm through 1610 nm with a channel spacing of 20 nm. Typical DWDM wavelengths are positioned in a grid with 50 - 200 GHz spacing in optical frequency, and cover the ITU channels from 17 to 61.

OptixCom's Mux/Demux module uses advanced optical grating components to combine and separate the wavelengths. The CWDM Mux/Demux module is available from 1x2 to 1x16 ports with dual path channels and a bypass band. The DWDM Mux/Demux module supports up to 48 ITU channels with 100 or 200 GHz spacing. The module is conveniently packaged in a 19"rack mount for systems with large port counts.

## Key Features

- Low Insertion Loss & High Isolation
- Low PDL & Compact Design
- Excellent channel-to-channel uniformity
- CWDM: 1270 -1610 nm, 20 nm channel spacing
- DWDM: ITU channels 17-61, 1528.77 – 1563.86 nm.
- 100 and 200 GHz DWDM channel spacing
- Extended Operating Temperature: -40 to 85°C
- Superior Reliability and Stability
- Meet Telcordia GR-1209-CORE-2001
- RoHS compliant

## CWDM Mux/Demux Module

1x2, 1x4, 1x8, 1x16

## DWDM Mux/DeMux Module

100/200 GHz, up to 1x48



## Applications

- ✓ CWDM & DWDM Transport System
- ✓ PON Networks
- ✓ Ethernet, SONET/SDH, STM Networks
- ✓ Routers, Switches fro LAN, WAN
- ✓ CATV Links

**Product Specifications (CWDM)**

Parameters		1x2	1x4	1x8	1x16
Center Wavelength (nm)		ITU, ITU+1			
Passband (nm)		ITU±6.5			
Operating Wavelength (nm)		1470~1610 or 1270~1610			
Channel Space (nm)		20			
Fiber Type		SMF-28e or customer specified			
Insertion Loss (dB)		< 1.3	< 1.9	< 2.7	< 4.2
Isolation (dB)	Adjacent Channel	30			
	Non-Adjacent Channel	50			
Ripple (dB)		0.3	0.4	0.5	0.5
PDL (dB)		0.2			
PMD (ps)		0.1			
Return Loss (dB)		45			
Directivity (dB)		50			
Maximum Optical Power (mw)		500			
Operating Temperature (°C)		-40~85			
Storage Temperature (°C)		-40~85			
BOX Package (mm)		100 x 80 x 10			140 x115 x18
LGX Package		1U, 2U			
19'' Rack mount Package		1U			

**Configuration Table (MDX-AA-BCDDEFFG)**

Ports No. (AA)	WDM Type (B)	Module Type (C)	1 <sup>st</sup> Wave. (D)	Fiber Type (E)	Fiber Length (F)	Fiber Connector (G)
01 = 1x1 02 = 1x2 ... 16 = 1 x 16 18 = 1x18	C=1470-1610 Q=1270-1610	1=Mux 2=Demux 3=Mux/Demux 4=Mux& 1310 nm 5=Demux & 1310 nm	27 = 1270 47=1470 ... 61=1610	09 = 0.9 mm 20 = 2.0 mm 30 = 3.0 mm	10 = 1 m 12 = 1.2 m 15 = 1.5 m XX = X.X m	0 = None 1 = SC/APC 2 = SC/UPC 3 = LC/APC 4 = LC/UPC

Part Number Example: MDX-16-Q32709104

Description: 1x16 CWDM Mux/Demux, 1270 –1610 nm, 1 m long and 0.9 mm diameter fiber cable with LC/UPC connector.

**Product Specifications (DWDM 200 GHz Channel Spacing)**

Parameters		1x4	1x8	1x16	1x32 – 1x48
Center Wavelength		ITU Grid 17 - 61			
Center Wavelength Accuracy		± 0.1 nm			
Operating Wavelength		1528.77 nm – 1563.86 nm			
Channel Passband (@-0.5 dB)		0.5 nm			
Fiber Type		SMF-28e or customer specified			
Insertion Loss (dB)		<1.7	<2.9	<3.8	<5.5
Isolation (dB)	Adjacent Channel	28			
	Non-Adjacent Channel	40			
Pass band Ripple (dB)		0.35	0.4	0.5	0.5
PDL (dB)		0.2			
PMD (ps)		0.1			
Return Loss (dB)		45			
Directivity (dB)		50			
Maximum Optical Power (mw)		300			
Operating Temperature (°C)		-40~85			
Storage Temperature (°C)		-40~85			
BOX Package (mm)		100 x 80 x 10			140 x115 x 18
LGX Package		1U, 2U			
19" Rack mount Package		1U			

**Configuration Table (MDX-AA-BCDDEEFFG)**

Ports No. (AA)	WDM Type (B)	Module Type (C)	1 <sup>st</sup> Wave. (D)	Fiber Type (E)	Fiber Length (F)	Fiber Connector (G)
01 = 1x1 02 = 1x2 ... 48 = 1 x 48	X=100G DWDM Y=200GDWDM	1=Mux 2=Demux 3=Mux/Demux 4=Mux& 1310 nm 5=Demux & 1310 nm	17=17 CH ... 61=61 CH	09 = 0.9 mm 20 = 2.0 mm 30 = 3.0 mm	10 = 1 m 12 = 1.2 m 15 = 1.5 m XX = X.X m	0 = None 1 = SC/APC 2 = SC/UPC 3 = LC/APC 4 = LC/UPC

Part Number Example: MDX-16-Y32109104

Description: 1x16 DWDM Mux/Demux, 200GHz, ITU 21 to 36 grid wavelength channels, 1 m long and 0.9 mm diameter fiber cable with LC/UPC connector.

**Product Specifications (DWDM 100 GHz Channel Spacing)**

Parameters		1x4	1x8	1x16	1x32 – 1x48
Center Wavelength		ITU Grid 17 - 61			
Center Wavelength Accuracy		± 0.05 nm			
Operating Wavelength		1528.77 nm – 1563.86 nm			
Channel Passband (@-0.5 dB)		0.22 nm			
Fiber Type		SMF-28e or customer specified			
Insertion Loss (dB)		<1.8	<3.0	<4.0	<5.5
Isolation (dB)	Adjacent Channel	25			
	Non-Adjacent Channel	40			
Pass band Ripple (dB)		0.35	0.4	0.5	0.5
PDL (dB)		0.2			
PMD (ps)		0.1			
Return Loss (dB)		45			
Directivity (dB)		50			
Maximum Optical Power (mw)		300			
Operating Temperature (°C)		-40~85			
Storage Temperature (°C)		-40~85			
BOX Package (mm)		100 x 80 x 10			140 x115 x 18
LGX Package		1U, 2U			
19" Rack mount Package		1U			

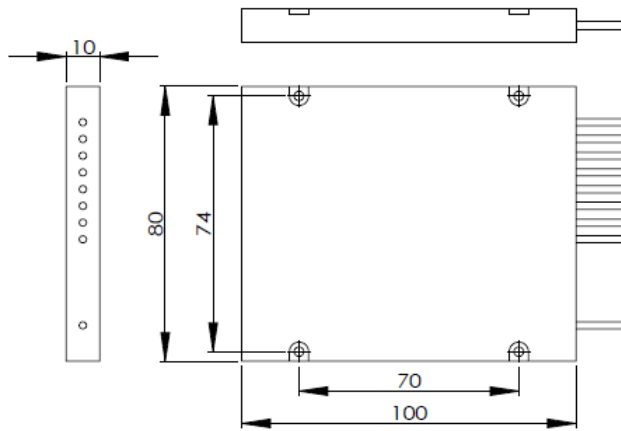
**Configuration Table (MDX-AA-BCDDEEFFG)**

Ports No. (AA)	WDM Type (B)	Module Type (C)	1 <sup>st</sup> Wave. (D)	Fiber Type (E)	Fiber Length (F)	Fiber Connector (G)
01 = 1x1 02 = 1x2 ... 48 = 1 x 48	X=100G DWDM Y=200GDWDM	1=Mux 2=Demux 3=Mux/Demux 4=Mux& 1310 nm 5=Demux & 1310 nm	17=17 CH ... 61=61 CH	09 = 0.9 mm 20 = 2.0 mm 30 = 3.0 mm	10 = 1 m 12 = 1.2 m 15 = 1.5 m XX = X.X m	0 = None 1 = SC/APC 2 = SC/UPC 3 = LC/APC 4 = LC/UPC

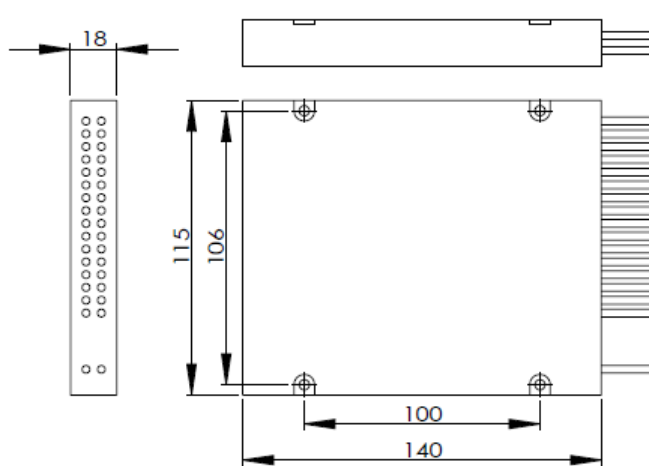
Part Number Example: MDX-16-X34009104

Description: 1x16 DWDM Mux/Demux, 100GHz, ITU 40 to 55 grid wavelength channels, 1 m long and 0.9 mm diameter fiber cable with LC/UPC connector.

## Mechanical Specifications



100 X 80 X 10 (mm)



140 X 115 X 18 (mm)

Notes:

1. Contact OptixCom for package dimensions of the smaller Mux/Demux modules.
2. Connector power loss is not considered in the specifications.