

WaveReady[®] 8-Channel DWDM OSP Optical Add/Drop Multiplexer for Splice Enclosures

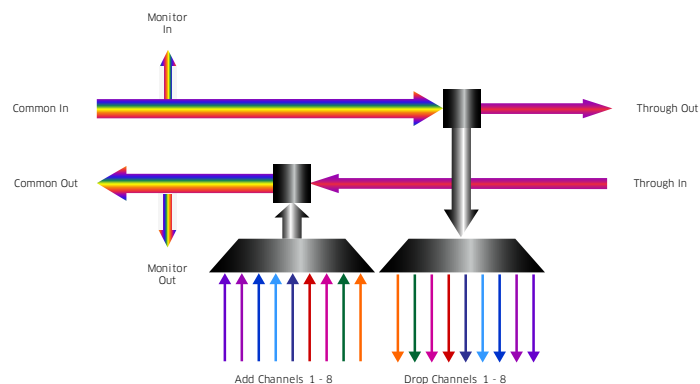
MDF-08MD1N0xB and
MDF-08MD1Z0xB



The WaveReady Mux/Demux Fiber (MDF) line of 100 GHz Optical Add/Drop Multiplexer Modules (OADM) comprise a family of flexible, cost-effective solutions that expand the bandwidth capacity of existing fiber. Packaged in a rugged splice pack housing with exceptional stability over extended temperature, the Lumentum MDF line is ideally suited for outside plant (OSP) deployments. Deployable in unpowered OSP splice enclosures, network operators can deliver high channel count dense wave division multiplexing (DWDM) to virtually any location. By eliminating the costly requirements for thermally controlled huts or controlled environmental vaults, the WaveReady MDF portfolio enables cost-effective DWDM installations in the last mile letting a single optical fiber transport up to 40 discrete optical channels of any data rate.

Each WaveReady MDF OADM can fit in a wide range of commonly available splice enclosures including Tyco FOSC™ A and B; modular adapter brackets installation into Preformed Line Products (PLP) Coyote™ or FOSC D trays.

The 100 GHz OADM operates with both the WaveReady line of optical amplifiers, headend multiplexing, and managed transponder solutions as well as third-party solutions, enabling a variety of end-to-end optical transport solutions.



Key Benefits

- Expands the bandwidth capacity of existing fiber up to 40 times
- Cost-effective because it eliminates the need for environmentally controlled huts or vaults
- Simple to deploy because it is adaptable into a variety of widely deployed third-party OSP enclosures
- Simplifies DWDM in the last mile for broadband and mobile backhaul solutions

Key Features

- Mux and demux up to eight ITU 100 GHz spaced channels to and from a fiber pair
- Upgrade to 32 or 40 channels per fiber

Applications

- Dense wavelength aggregation of business, broadband, and mobile backhaul services from a passive OSP enclosure
- Fiber reclamation and capacity extension from existing OSP enclosures.
- Passive OADM adaptable to protected and unprotected ring or bus network topologies.

Compliance

- ITU-T G694.1
- GR-3108, Class 3 environments
- GR-63-CORE

Specifications¹

Parameter	Min	Typical	Max
Optical Characteristics			
DWDM Channel Spacing	100 GHz		
DWDM Channel Bandwidth	ITU λ \pm 0.1 nm		
DWDM Mux/Demux Insertion Loss - 32 WL System - 40 WL System		2.5 dB 3.0 dB	4.0 dB 4.5 dB
Upgrade Path Insertion Loss - 32 WL system - 40 WL System		1.0 dB 1.2 dB	1.8 dB 2 dB
DWDM Channel Flatness			1 dB
Optical Tap Port Ratio	11 dB	13 dB	15 dB
Adjacent DWDM Channel Isolation	22 dB	30 dB	
Nonadjacent DWDM Channel Isolation	40 dB	55 dB	
Through-Channel Isolation	12 dB		
Polarization Dependent Loss			0.3 dB
Polarization Mode Dispersion			0.2 ps
Optical Return Loss	40 dB		-
Input Optical Power - Sum of All DWDM Channel Ports			500 mW
Physical Characteristics			
Package Dimensions (Excluding bracket)	9.25 x 3.85 x 0.53 inch		
Pigtail Length	2.0 \pm 0.10 m		
Optical Fiber Type	9/125/900 μ m single mode with 5.8 mm over-wrap. See Fiber Identification for color coding of 900 μ m breakout fibers		
Environmental Characteristics			
Operating Ambient Temperature (Short term)	-40°C	-	+85°C
Storage Temperature	-40°C	-	+85°C
Relative Humidity (Non-condensing)	5%	-	95%

¹ Specifications are worst case end-of-life over specified temperature and wavelength range.

Fiber Identification¹

Port	Port Description	Pigtail Color
1	Common In	Blue
2	Common Out	Orange
3	Channel 1 Add	Green
4	Channel 1 Drop	Brown
5	Channel 2 Add	Slate
6	Channel 2 Drop	White
7	Channel 3 Add	Red
8	Channel 3 Drop	Black
9	Channel 4 Add	Yellow
10	Channel 4 Drop	Violet
11	Upgrade In	Rose
12	Upgrade Out	Aqua
13	Not used	Blue with stripe
14	Not used	Orange with stripe
15	Channel 5 Add	Green with stripe
16	Channel 5 Drop	Brown with stripe
17	Channel 6 Add	Slate with stripe
18	Channel 6 Drop	White with stripe
19	Channel 7 Add	Red with stripe
20	Channel 7 Drop	Black with stripe
21	Channel 8 Add	Yellow with stripe
22	Channel 8 Drop	Violet with stripe
23	Not used	Rose with stripe
24	Not used	Aqua with stripe

¹ Specifications are worst case end-of-life over specified temperature and wavelength range.

Channel Plans

Channel Plan for 40-Wavelength System

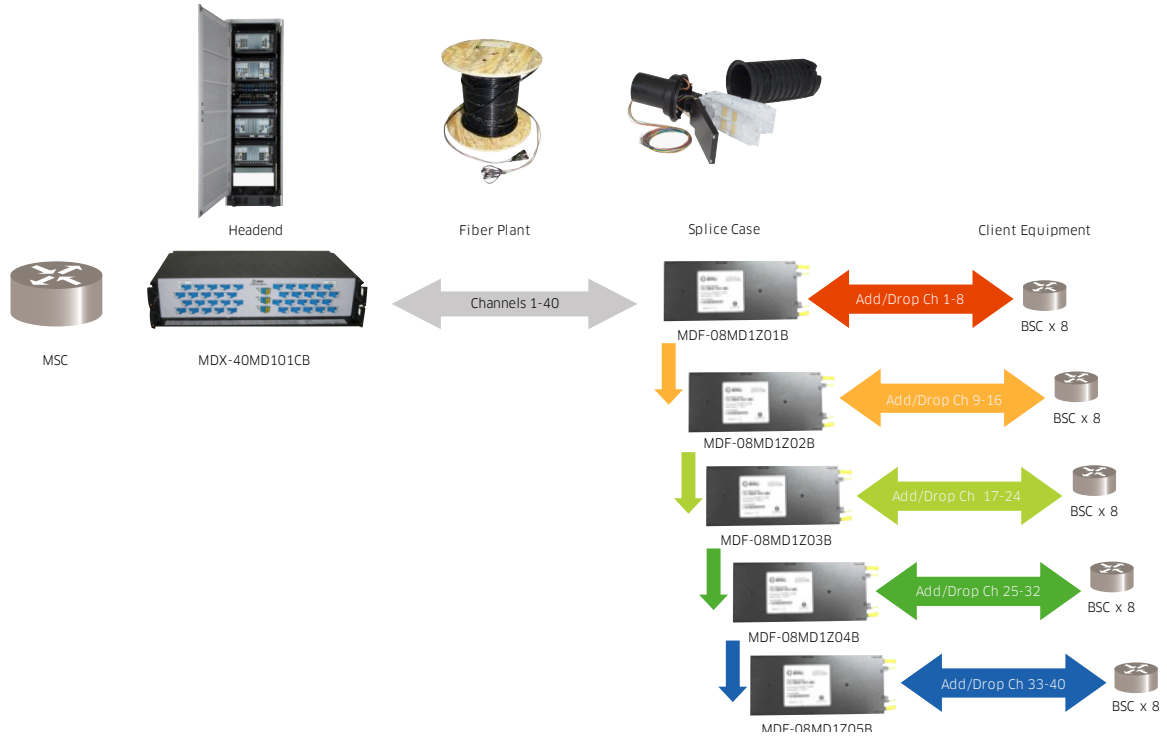
Band	Channel	Frequency (GHz)	Wavelength (nm)
1	59	195.9	1530.33
	58	195.8	1531.12
	57	195.7	1531.90
	56	195.6	1532.68
	55	195.5	1533.47
	54	195.4	1534.25
	53	195.3	1535.04
	52	195.2	1535.82
2	51	195.1	1536.61
	50	195.0	1537.40
	49	194.9	1538.19
	48	194.8	1538.98
	47	194.7	1539.77
	46	194.6	1540.56
	45	194.5	1541.35
	44	194.4	1542.14
3	43	194.3	1542.94
	42	194.2	1543.73
	41	194.1	1544.93
	40	194.0	1545.32
	39	193.9	1546.12
	38	193.8	1546.92
	37	193.7	1547.72
	36	193.6	1548.51
4	35	193.5	1549.32
	34	193.4	1550.12
	33	193.3	1550.92
	32	193.2	1551.72
	31	193.1	1552.52
	30	193.0	1553.33
	29	192.9	1554.13
	28	192.8	1554.94
5	27	192.7	1555.75
	26	192.6	1556.55
	25	192.5	1557.36
	24	192.4	1558.17
	23	192.3	1558.98
	22	192.2	1559.79
	21	192.1	1560.61
	20	192.0	1561.42

Channel PlansChannel Plan for 32-Wavelength System²

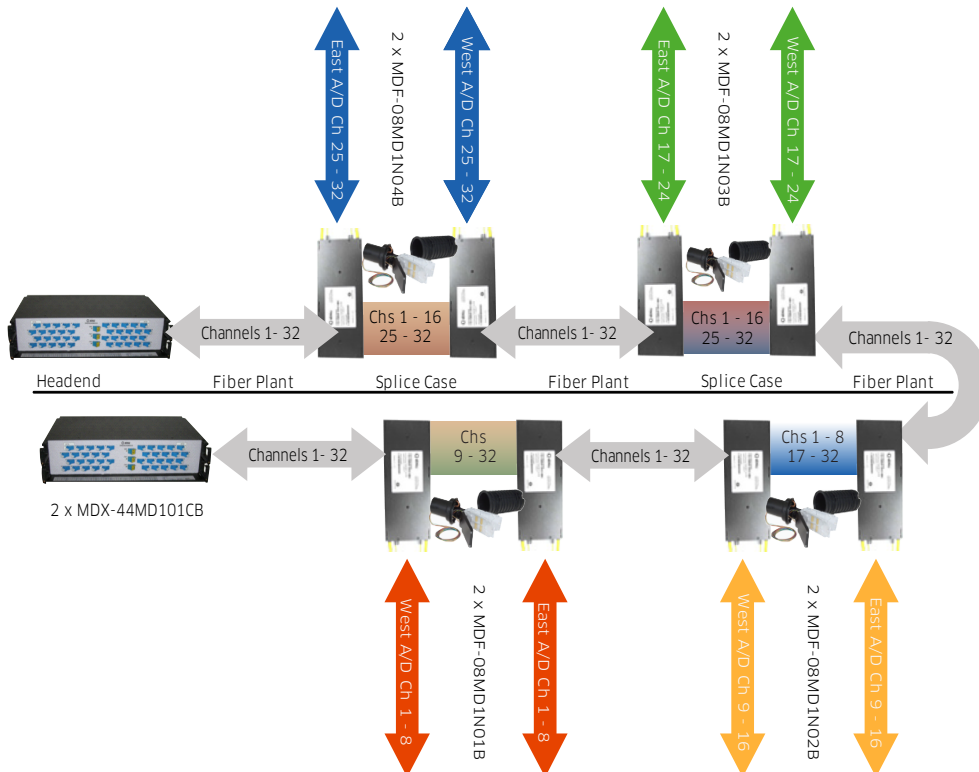
Band	Channel	Frequency (GHz)	Wavelength (nm)	Band	Channel	Frequency (GHz)	Wavelength (nm)
A	61	196.1	1528.77	C	39	193.9	1546.12
	60	196.0	1529.55		38	193.8	1546.92
	59	195.9	1530.33		37	193.7	1547.72
	58	195.8	1531.12		36	193.6	1548.51
	57	195.7	1531.90		35	193.5	1549.32
	55	195.5	1533.47		33	193.3	1550.92
	54	195.4	1534.25		32	193.2	1551.72
	53	195.3	1535.04		31	193.1	1552.52
	52	195.2	1535.82		30	193.0	1553.33
B	51	195.1	1536.61	D	29	192.9	1554.13
	50	195.0	1537.40		28	192.8	1554.94
	49	194.9	1538.19		27	192.7	1555.75
	48	194.8	1538.98		26	192.6	1556.55
	47	194.7	1539.77		25	192.5	1557.36
	45	194.5	1541.35		23	192.3	1558.98
	44	194.4	1542.14		22	192.2	1559.79
	43	194.3	1542.94		21	192.1	1560.61
	42	194.2	1543.73		20	192.0	1561.42
41	194.1	1544.53	19	191.9	1562.23		

² Adjacent channels shaded in gray are not usable in the 32 Wavelength system variants.

Sample Configurations



Terminal Mux/Demux with 40-Wavelength System



Protected Add/Drop with 32-Wavelength System

Ordering Information

For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum directly at customer.service@lumentum.com.

Description	Product Code
40-Wavelength System	
8-channel DWDM OADM for splice enclosures, band 1 (ITU channels 52, 53, 54, 55, 56, 57, 58, 59)	MDF-08MD1Z01B
8-channel DWDM OADM for splice enclosures, band 2 (ITU channels 44, 45, 46, 47, 48, 49, 50, 51)	MDF-08MD1Z02B
8-channel DWDM OADM for splice enclosures, band 3 (ITU channels 36, 37, 38, 39, 40, 41, 42, 43)	MDF-08MD1Z03B
8-channel DWDM OADM for splice enclosures, band 4 (ITU channels 28, 29, 30, 31, 32, 33, 34, 35)	MDF-08MD1Z04B
8-channel DWDM OADM for splice enclosures, band 5 (ITU channels 20, 21, 22, 23, 24, 25, 26, 27)	MDF-08MD1Z05B
32-Wavelength System (4 skip 1)	
8-channel DWDM OADM for splice enclosures, band A (ITU channels 52, 53, 54, 55, 57, 58, 59, 60)*	MDF-08MD1N0AB
8-channel DWDM OADM for splice enclosures, band B (ITU channels 44, 45, 46, 47, 48, 49, 50, 51)*	MDF-08MD1N0BB
8-channel DWDM OADM for splice enclosures, band C (ITU channels 30, 31, 32, 33, 35, 36, 37, 38)*	MDF-08MD1N0CB
8-channel DWDM OADM for splice enclosures, band D (ITU channels 20, 21, 22, 23, 25, 26, 27, 28)*	MDF-08MD1N0DB
Mounting Accessories	
Mounting bracket, Tyco/Raychem FOSC™ D style enclosure	MDF-MNTCD1
Mounting bracket, PLP Coyote™ style enclosure	MDF-MNCYT1

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