



Passive DWDM products

Multiplexer, Demultiplexer and OADM Products

Optelian offers an extensive suite of passive networking products with the functionality required to serve optical transport requirements. DWDM solutions ranging from 1 to 80 channels per unit are available in a variety of packages for deployment in many environments. Customer-specific versions are an option. Multiple options for MUX-only, DMX-only, combined MUX and DMX, and OADM ensure maximum flexibility and ideal fit.

LGX modules

LGX modules are packaged in the industry-standard format originally designed by Lucent Technologies. All are passive, with no power or ground, and have front access faceplate connectors. They are deployed in the Optelian family of CMS passive mounting shelves, or in any standard LGX-compatible passive mounting platform. For information on the CMS shelves, refer to the data sheet. LGX modules for DWDM are available in single-slot and triple-slot widths.

DMS modules

DMS modules are packaged in a format similar to LGX but are more compact in height. All are completely passive with no power or ground, and have faceplate connectors for front access. DMS modules are designed to fit in the Optelian DMS-0104 passive mounting shelf. For detailed information on the Optelian DMS mounting solution, refer to the data sheet. DMS modules for DWDM are available in single-slot and half-slot widths.

OMS cards

OMS format passive cards are designed to fit in the Optelian family of OMS active mounting shelves. They contain passive optical elements, and all optical signals are transported passively. The cards additionally have electronics to allow connectivity to the OMS shelf purely for system detection purposes. For information on the OMS shelves, refer to the data sheet. All cards are single-slot width.

Splice trays

Optical devices are packaged in industry-standard outside plant (OSP) splice tray modules, such as FOSC-B. Custom packaging options are also available. Splice tray modules are designed to be installed in any general OSP enclosure, such as cabinets or huts.

Enclosed mounting shelves

Passive shelves are available for high-fanout power splitter application, and high-fanout DWDM MUX/DMX application. The shelves are enclosed metal units that mount in standard 19-inch and 23-inch racks. They have faceplate connectors for front access. Units are available in 1RU and 2RU height.

Table of Contents

Physical form	2
LGX module common specifications	2
DMS module common specifications	2
OMS card common specifications	2
Enclosed mounting shelf common specifications	3
Splice tray common specifications	3
DWDM filters	4
DWDM – common optical specifications	5
DWDM MUX, DMX complementary pair – LGX	6
DWDM MUX, DMX complementary pair – OMS	9
DWDM Terminal MUX, DMX – enclosed shelf	12
DWDM OADM, dual fiber – LGX	15
DWDM OADM, dual fiber – DMS	20
DWDM OADM, dual fiber – splice tray	22
DWDM OADM, single fiber – splice tray	24
DWDM Band OADM, dual fiber – LGX	25
DWDM Band OADM, dual fiber – splice tray	27

Physical form

Optelian's passive products provide customers maximum flexibility, delivered in industry-standard and customized formats to suit a wide range of network designs, site requirements, and mounting options.

LGX module common specifications

Parameter	Value
Operating temperature (SC or LC)	-40 to 65°C (-40 to 149°F)
Relative Humidity (non-condensing)	5 to 95%
Dimensions, case (HxWxD) (single-slot)	10.2 x 2.8 x 16.5 cm (4.0 x 1.1 x 6.5 in.)
Dimensions, case (HxWxD) (triple-slot)	10.2 x 8.6 x 15.2 cm (4.0 x 3.4 x 6.0 in.)

Note: selected LGX modules have minor differences in depth

DMS module common specifications

Parameter	Value
Operating temperature	-40 to 65°C (-40 to 149°F)
Relative Humidity (non-condensing)	5 to 95%
Optical connectors	LC/PC
Dimensions, case (HxWxD) (half-slot)	9.14 x 2.8 x 16.5 cm (3.6 x 1.1 x 6.5 in.)
Dimensions, case (HxWxD) (half-slot)	9.14 x 1.5 x 16.5 cm (3.6 x 0.6 x 6.5 in.)

OMS card common specifications

Parameter	Value
Operating temperature	-40 to 65°C (-40 to 149°F)
Relative Humidity (non-condensing)	5 to 95%
Optical connectors	LC/PC
Power supply and power consumption	-48V nominal; 2W typical
Dimensions	10.2 x 2.8 x 15.5 cm (4.0 x 1.1 x 6.1 in.)

Enclosed shelf common specifications

Parameter	Value
Operating temperature	-5 to 65°C (-23 to 149°F)
Relative Humidity (non-condensing)	5 to 95%
Optical connectors	LC/PC
Dimensions (HxWxD) 1RU unit	4.3 x 43 x 23 cm (1.7 x 16.9 x 9 in.)
Dimensions (HxWxD) 2RU unit (MDX-8200)	8.6 x 43 x 23 cm (3.4 x 16.9 x 9 in.)

Splice tray common specifications

Parameter	Value
Operating temperature	-40 to 65°C (-40 to 149°F)
Relative humidity (non-condensing)	5 to 95%
Fiber length	3 meters, 900 micrometer jacket
Connectors	None; fibers labeled with wavelength

DWDM filters

A range of products are available to deliver various types of DWDM filter functionality. Filters for 1, 2, 4, 8, 13, 40 and 80 channels (wavelengths) are available.

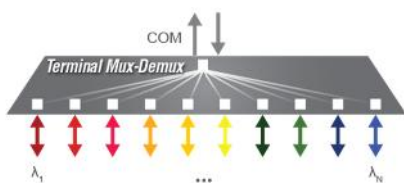
“MUX, DMX complementary pair” modules are single-circuit single-fiber filters provided in matched pairs, one module for multiplexing, and its complement for demultiplexing. Insertion losses per channel are complimentary such that end-to-end MUX-to-DMX loss is the same for each channel on the fiber. OMS versions exist that include an Express/Expansion port to pass and continue all other wavelengths.

Terminal MUX, DMX products multiplex and demultiplex a full set of channels aggregated on a common line, with capacity ranging from 40 to 80 channels per unit. These are implemented in enclosed mounting shelves. Single line single circuit units (MDX-4000 and MDX-5000) support a choice of either 20 channels bidirectionally (MUX and DMX), or 40 channels unidirectionally (all MUX, or all DMX). All other versions are dual line dual circuit modules, supporting simultaneously all channels MUX and all channels DMX.

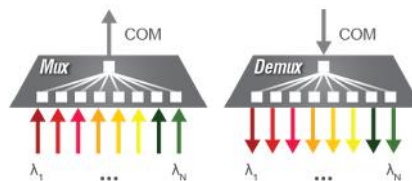
OADM modules multiplex and demultiplex a subset of channels on the common line. They exist in dual-common fiber and single-common fiber versions. Dual-fiber OADM packages a drop (DMX) of channels from the line, and separately package an add (MUX) of the same channels onto the line. Single-fiber OADMs have a single bidirectional common and express filter, permitting a wavelength to be either dropped or added uniquely on the line. In all cases, channels that are not dropped or added are expressed through.

Band OADMs are dual-common fiber modules that drop a composite of several channels per port and add a composite of the same channels from the add port. In all cases, channels that are not dropped or added are expressed through.

Terminal MUX, DMX bidirectional

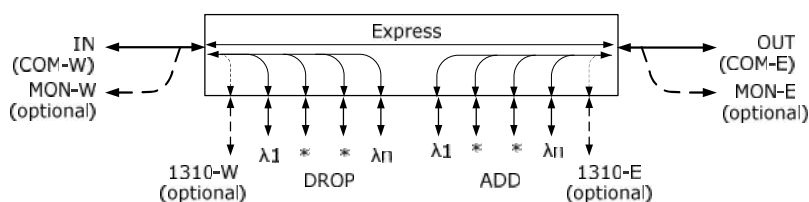


MUX or DMX complementary pair; Also MUX, DMX two-circuit combo

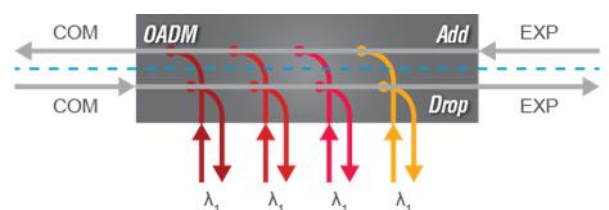


OADM single fiber

Bidirectional or unidirectional



OADM dual fiber



DWDM – common optical specifications

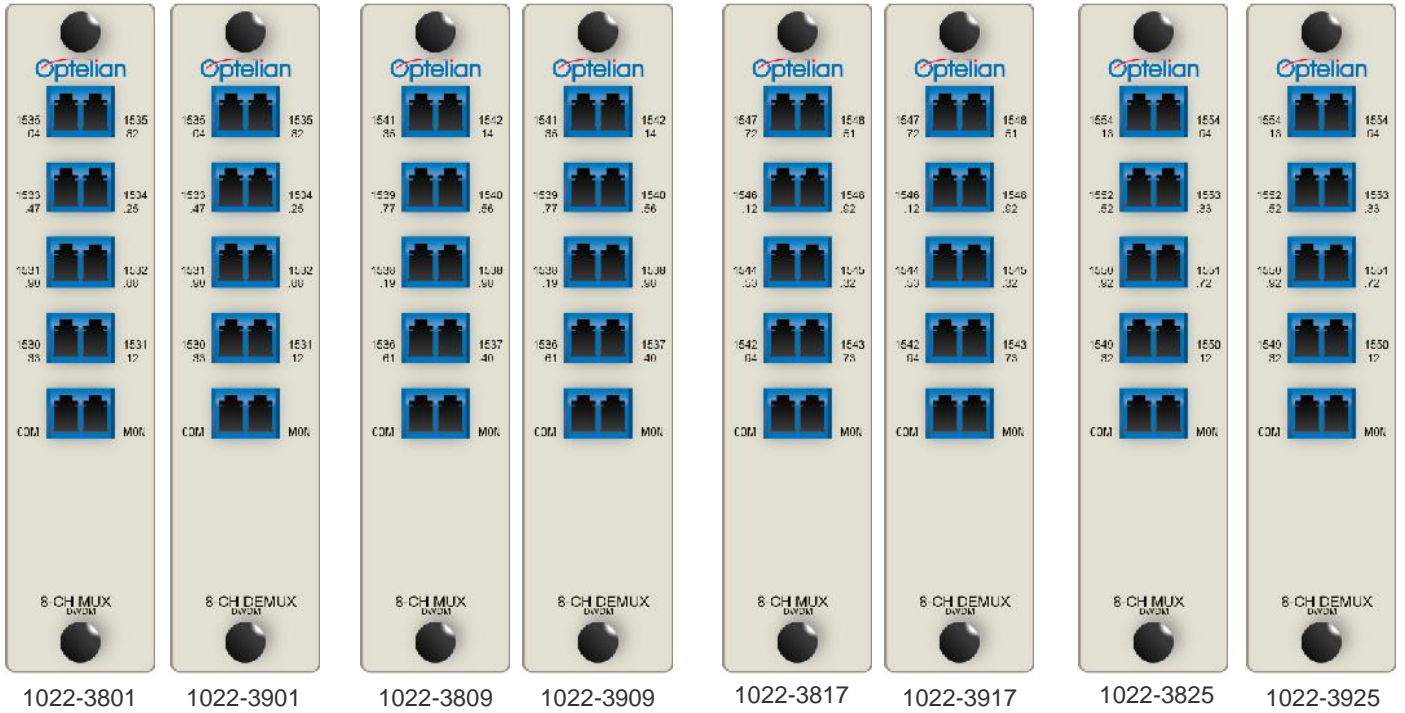
Parameter	LGX and OMS values	DMS values
DWDM operating wavelength	1510 to 1590 nm	1510 to 1620 nm
Channel passband width	ITU \pm 0.2 nm (maximum)	ITU \pm 0.1 nm (maximum)
1310 nm channel passband width	1260 to 1360 nm	1260 to 1360 nm
Channel spacing	100 GHz	100 GHz
Thermal wavelength stability	3.0 pm/°C (maximum)	
Passband ripple (flatness)	\pm 0.4 dB (maximum)	
Adjacent and 1310 channel isolation	40 dB (minimum)	30 dB (minimum)
Non-adjacent channel isolation (add/drop)	40 dB (minimum)	40 dB (minimum)
Polarization Dependent Loss	0.25 dB (maximum)	0.2 dB (maximum)
Return Loss	45 dB (minimum)	50 dB (minimum)
Directivity		50 dB (minimum)

Note 1: Channel spacing of MDX-8200 MUX, DMX shelf is 50 GHz

Note 2: Channel spacing of L-130 MUX and L-130 DMX are each 200 GHz

Note 3: Return loss of L-130 MUX and L-130 DMX are each 35 dB

DWDM MUX, DMX complementary pair – LGX



DWDM MUX, DMX complementary pair – LGX – channel allocation

CH #	Wavelength (nm)	8-channel MUX	8-channel DMX
1	1530.33	1022-3801	1022-3901
2	1531.12		
3	1531.90		
4	1532.68		
5	1533.47		
6	1534.25		
7	1535.04		
8	1535.82		
9	1536.61	1022-3809	1022-3909
10	1537.40		
11	1538.19		
12	1538.98		
13	1539.77		
14	1540.56		
15	1541.35		
16	1542.14		
17	1542.94	1022-3817	1022-3917
18	1543.73		
19	1544.53		
20	1545.32		
21	1546.12		
22	1546.92		
23	1547.72		
24	1548.51		
25	1549.32	1022-3825	1022-3925
26	1550.12		
27	1550.92		
28	1551.72		
29	1552.52		
30	1553.33		
31	1554.13		
32	1554.94		
33	1555.75	1022-3833	1022-3933
34	1556.55		
35	1557.36		
36	1558.17		
37	1558.98		
38	1559.79		
39	1560.61		
40	1561.42		

CH #	Wavelength (nm)	L-130 MUX	L-130 DMX
1	1530.33	1	1
2	1531.12		
3	1531.90		
4	1532.68		
5	1533.47	2	2
6	1534.25		
7	1535.04		
8	1535.82	3	3
9	1536.61		
10	1537.40	4	4
11	1538.19		
12	1538.98		
13	1539.77		
14	1540.56	5	5
15	1541.35		
16	1542.14	6	6
17	1542.94		
18	1543.73		
19	1544.53	7	7
20	1545.32		
21	1546.12		
22	1546.92		
23	1547.72	8	8
24	1548.51		
25	1549.32	9	9
26	1550.12		
27	1550.92		
28	1551.72	10	10
29	1552.52		
30	1553.33	11	11
31	1554.13		
32	1554.94		
33	1555.75	12	12
34	1556.55		
35	1557.36	13	13
36	1558.17		
37	1558.98		
38	1559.79	13	13
39	1560.61		
40	1561.42		

CWDM MUX, DMX complementary pair – LGX – insertion loss specifications

Channel	8-channel MUX	8-channel DMX	L-130 MUX	L-130 DMX
Monitor	20 dB	20 dB	15 dB	15 dB
1	1.4 dB	4.8 dB	4.0 dB	2.5 dB
2	1.9 dB	4.4 dB	3.7 dB	2.8 dB
3	2.3 dB	3.9 dB	3.4 dB	3.1 dB
4	2.9 dB	3.4 dB	3.1 dB	3.4 dB
5	3.4 dB	2.9 dB	2.8 dB	3.7 dB
6	3.9 dB	2.4 dB	2.5 dB	4.0 dB
7	4.4 dB	1.9 dB	4.5 dB	2.0 dB
8	4.8 dB	1.4 dB	4.2 dB	2.3 dB
9	-	-	3.9 dB	2.6 dB
10	-	-	3.6 dB	2.9 dB
11	-	-	3.3 dB	3.2 dB
12	-	-	3.0 dB	3.5 dB
13	-	-	2.7 dB	3.8 dB

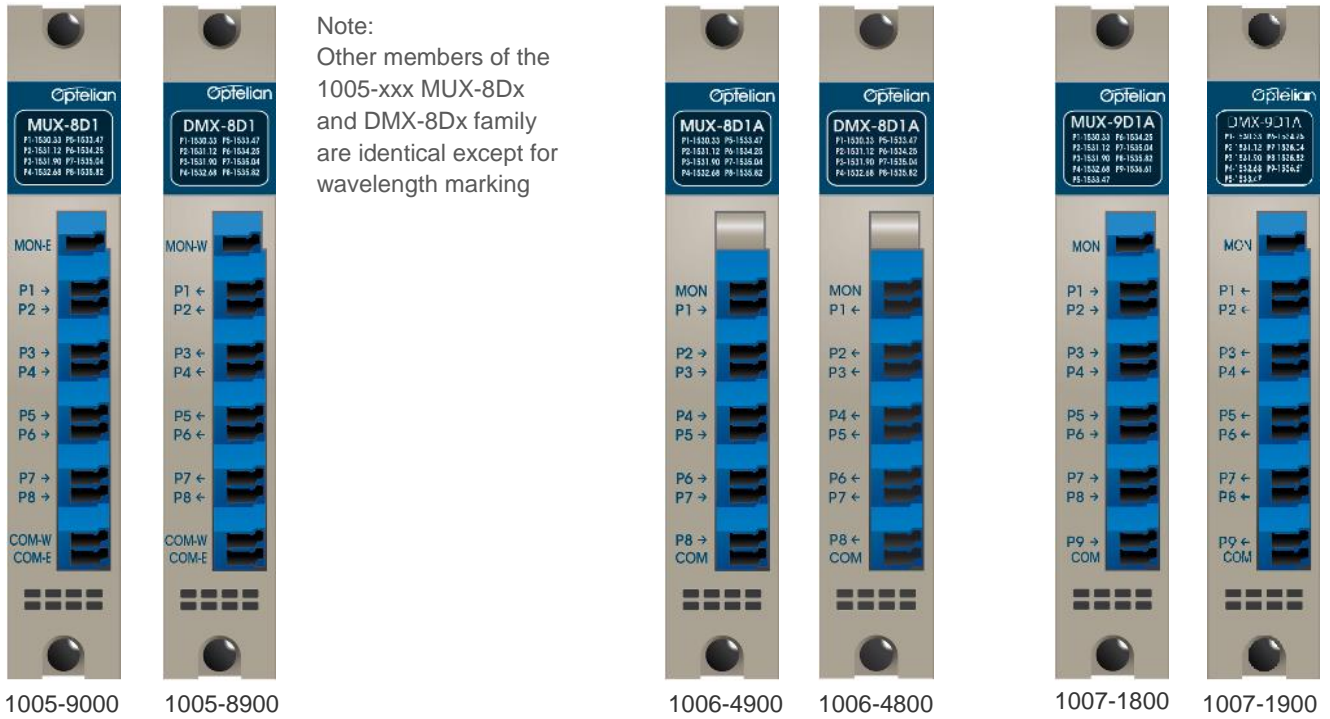
Maximum End of Life, includes one connector

Monitor port: 2% for 8-channel modules; 5% for L-130 modules

DWDM MUX, DMX complementary pair – LGX - ordering information

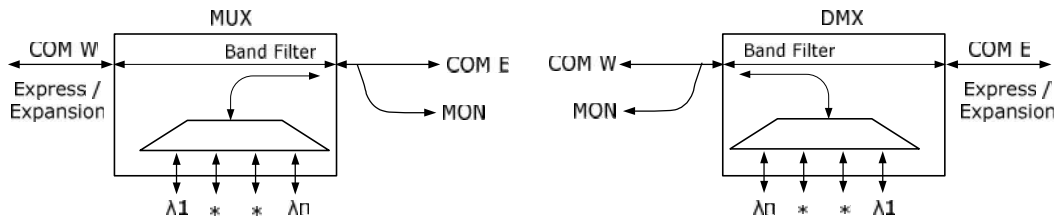
Part Number	Description
1022-3801	DWDM MUX, 8-CH, CH 1-8 (1530.33-1535.82 nm), 2% Monitor, LGX, LC
1022-3901	DWDM DMX, 8-CH, CH 1-8 (1530.33-1535.82 nm), 2% Monitor, LGX, LC
1022-3809	DWDM MUX, 8-CH, CH 9-16 (1536.61-1542.14 nm), 2% Monitor, LGX, LC
1022-3909	DWDM DMX, 8-CH, CH 9-16 (1536.61-1542.14 nm), 2% Monitor, LGX, LC
1022-3817	DWDM MUX, 8-CH, CH 17-24 (1542.94-1548.51 nm), 2% Monitor, LGX, LC
1022-3917	DWDM DMX, 8-CH, CH 17-24 (1542.94-1548.51 nm), 2% Monitor, LGX, LC
1022-3825	DWDM MUX, 8-CH, CH 25-32 (1549.32-1554.94 nm), 2% Monitor, LGX, LC
1022-3925	DWDM DMX, 8-CH, CH 25-32 (1549.32-1554.94 nm), 2% Monitor, LGX, LC
1022-3833	DWDM MUX, 8-CH, CH 33-40 (1555.75-1561.42 nm), 2% Monitor, LGX, LC
1022-3933	DWDM DMX, 8-CH, CH 33-40 (1555.75-1561.42 nm), 2% Monitor, LGX, LC
1017-7712	L-130, DWDM MUX, 13 CH (1530.33-1558.98 nm), 5% Monitor, LGX 3-Wide, SC
1017-7713	L-130, DWDM DMX, 13 CH (1530.33-1558.98 nm), 5% Monitor, LGX 3-Wide, SC

DWDM MUX, DMX complementary pair – OMS



Note:

The eight members of the 1005-xxx MUX-8Dx and DMX-8Dx family have the customary common interface, and in addition an express line interface (East-West), allowing for single fiber in-line MUX/DMX (add, drop and continue functionality), in addition to the customary terminating MUX/DMX; this can be configured unidirectionally or bidirectionally.



DWDM MUX, DMX complementary pair – OMS – channel allocation

CH #	Wavelength (nm)	8-channel MUX	8-channel DMX	9-channel MUX	9-channel DMX
1	1530.33	1005-9000 MUX-8D1 - also - 1006-4900 MUX-8D1A	1005-8900 MUX-8D2 - also - 1006-4800 DMX-8D1A	1007-1800 MUX-8D1A	1007-1900 DMX-8D1A
2	1531.12				
3	1531.90				
4	1532.68				
5	1533.47				
6	1534.25				
7	1535.04				
8	1535.82				
9	1536.61	1005-9005 MUX-8D2	1005-8905 DMX-8D2		
10	1537.40				
11	1538.19				
12	1538.98				
13	1539.77				
14	1540.56				
15	1541.35				
16	1542.14				
17	1542.94	-	-		
18	1543.73				
19	1544.53				
20	1545.32				
21	1546.12				
22	1546.92				
23	1547.72				
24	1548.51				
25	1549.32	1005-9015 MUX-8D4	1005-8915 DMX-8D4		
26	1550.12				
27	1550.92				
28	1551.72				
29	1552.52				
30	1553.33				
31	1554.13				
32	1554.94				
33	1555.75	1005-9020 MUX-8D5	1005-8920 DMX-8D5		
34	1556.55				
35	1557.36				
36	1558.17				
37	1558.98				
38	1559.79				
39	1560.61				
40	1561.42				

DWDM MUX, DMX complementary pair – OMS - insertion loss specifications

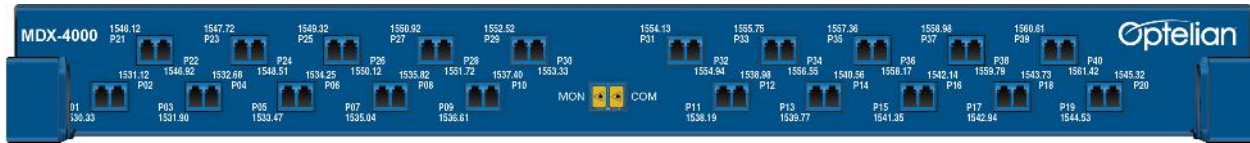
Channel	1005-xxxx MUX-8Dx	1005-xxxx DMX-8Dx	1006-4900 MUX-8D1A	1006-4800 DMX-8D1A	1007-1800 MUX-9D1A	1007-1900 DMX-9D1A
Monitor	19 dB	19 dB	19 dB	19 dB	19 dB	19 dB
1	2.7 dB	6.1 dB	1.4 dB	4.9 dB	1.4 dB	5.3 dB
2	3.2 dB	5.6 dB	2.0 dB	4.4 dB	2.0 dB	4.9 dB
3	3.6 dB	5.1 dB	2.4 dB	3.9 dB	2.4 dB	4.4 dB
4	4.2 dB	4.6 dB	2.9 dB	3.4 dB	2.9 dB	3.9 dB
5	4.6 dB	4.2 dB	3.4 dB	2.9 dB	3.4 dB	3.4 dB
6	5.1 dB	3.6 dB	3.9 dB	2.4 dB	3.9 dB	2.9 dB
7	5.6 dB	3.2 dB	4.4 dB	2.0 dB	4.4 dB	2.4 dB
8	6.1 dB	2.7 dB	4.9 dB	1.4 dB	4.9 dB	2.0 dB
9	-	-	-	-	5.3 dB	1.4 dB
Express	1.3 dB	1.3 dB	-	-	-	-

For all: maximum end-of-life; includes one connector

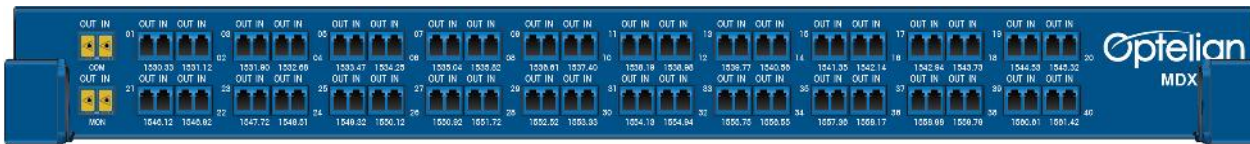
DWDM MUX, DMX complementary pair – OMS - ordering information

Part Number	Description
1005-9000	MUX-8D1, DWDM MUX, 8 CH (1530.33-1535.82), With Express, 2% Monitor, OMS, LC
1005-8900	DMX-8D1, DWDM DMX, 8 CH (1530.33-1535.82), With Express, 2% Monitor, OMS, LC
1005-9005	MUX-8D2, DWDM MUX, 8 CH (1536.61-1542.14), With Express, 2% Monitor, OMS, LC
1005-8905	DMX-8D2, DWDM DMX, 8 CH (1536.61-1542.14), With Express, 2% Monitor, OMS, LC
1005-9015	MUX-8D4, DWDM MUX, 8 CH (1549.32-1554.94), With Express, 2% Monitor, OMS, LC
1005-8915	DMX-8D4, DWDM DMX, 8 CH (1549.32-1554.94), With Express, 2% Monitor, OMS, LC
1005-9020	MUX-8D5, DWDM MUX, 8 CH (1555.75-1561.42), With Express, 2% Monitor, OMS, LC
1005-8920	DMX-8D5, DWDM DMX, 8 CH (1555.75-1561.42), With Express, 2% Monitor, OMS, LC
1006-4900	MUX-8D1A, DWDM MUX, 8 CH (1530.33-1535.82), 2% Monitor, OMS, LC
1006-4800	DMX-8D1A, DWDM DMX, 8 CH (1530.33-1535.82), 2% Monitor, OMS, LC
1007-1800	MUX-9D1A, DWDM MUX, 9 CH (1530.33-1536.61), for hybrid DWDM/CWDM Applications, 2% Monitor, OMS, LC
1007-1900	DMX-9D1A, DWDM MUX, 9 CH (1530.33-1536.61), for hybrid DWDM/CWDM Applications, 2% Monitor, OMS, LC

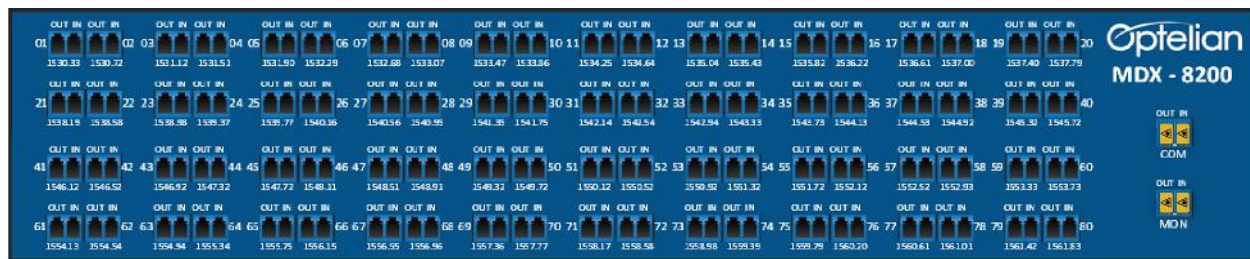
DWDM Terminal MUX, DMX – enclosed shelf



MDX-4000 (Gaussian) illustrated; MDX-5000 (Flat-top) externally similar. Includes one Athermal Arrayed Waveguide (AAWG) and one common line fiber, for unidirectional (40-CH) or bidirectional (20-CH) application.



MDX-4200 (Gaussian) illustrated; MDX-5200 (Flat-top) externally similar. Includes two AAWG circuits and dual common line fibers, for all 40-CH simultaneous MUX/IN and DMX/OUT connectivity (80 LC client connections).



MDX-8200; illustrated without fiber management guides installed. Includes two AAWG circuits and dual common line fibers, for all 80-CH simultaneous MUX/IN and DMX/OUT connectivity (160 LC client connections).

DWDM Terminal MUX, DMX – enclosed shelf - specifications

Parameter	MDX-4000, MDX-4200	MDX-5000, MDX-5200	MDX-8200
Number channels; channel spacing	40; 100 GHz	40; 100 GHz	80; 50 GHz
Center frequencies (nm) (THz)	1530.33 - 1561.42 195.9 – 192.0	1530.33 - 1561.42 195.9 – 192.0	1530.33 - 1561.83 195.9 – 191.95
Clear passband	± 12.5 GHz	± 12.5 GHz	
Passband stability	± 0.05 nm	± 0.05 nm	± 0.05 nm
Insertion loss within clear passband *	5.0 dB (maximum)	6.5 dB (maximum)	6.5 dB (maximum)
Adjacent channel crosstalk	-24 dB (minimum)	-24 dB (minimum)	-25 dB (minimum)
Non-adjacent channel crosstalk	-30 dB (minimum)	-30 dB (minimum)	-25 dB (minimum)
Insertion loss uniformity at ITU-T	1.5 dB (maximum)	1.2 dB (maximum)	1.5 dB (maximum)
1 dB bandwidth	0.2 nm (minimum)	0.36 nm (minimum)	0.18 nm (minimum)
3 dB bandwidth	0.4 nm (minimum)	0.51 nm (minimum)	0.28 nm (minimum)
Polarization-dependent loss (PDL)	0.6 dB (maximum)	0.6 dB (maximum)	0.5 dB (maximum)
Polarization mode dispersion (PMD)	0.5 ps (maximum)	0.5 ps (maximum)	1.0 ps (maximum)
Optical input power	23 dBm (maximum)	23 dBm (maximum)	23 dBm (maximum)
Optical return loss	40 dB (minimum)	40 dB (minimum)	40 dB (minimum)

* Maximum end-of-life; includes one connector

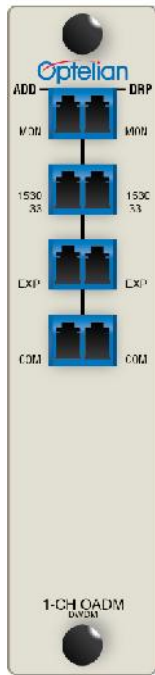
DWDM Terminal MUX, DMX – enclosed shelf – channel allocation

Wavelength (nm)	Port: MDX-4xxx MDX-5xxx	Port: MDX-8200	Wavelength (nm)	Port: MDX-4xxx MDX-5xxx	Port: MDX-8200
1530.33	1	1	1546.12	21	41
1530.72		2	1546.52		42
1531.12	2	3	1546.92	22	43
1531.51		4	1547.32		44
1531.90	3	5	1547.72	23	45
1532.29		6	1548.11		46
1532.68	4	7	1548.51	24	47
1533.07		8	1548.91		48
1533.47	5	9	1549.32	25	49
1533.86		10	1549.72		50
1534.25	6	11	1550.12	26	51
1534.64		12	1550.52		52
1535.04	7	13	1550.92	27	53
1535.43		14	1551.32		54
1535.82	8	15	1551.72	28	55
1536.22		16	1552.12		56
1536.61	9	17	1552.52	29	57
1537.00		18	1552.93		58
1537.40	10	19	1553.33	30	59
1537.79		20	1553.73		60
1538.19	11	21	1554.13	31	61
1538.58		22	1554.54		62
1538.98	12	23	1554.94	32	63
1539.37		24	1555.34		64
1539.77	13	25	1555.75	33	65
1540.16		26	1556.15		66
1540.56	14	27	1556.55	34	67
1540.95		28	1556.96		68
1541.35	15	29	1557.36	35	69
1541.75		30	1557.77		70
1542.14	16	31	1558.17	36	71
1542.54		32	1558.58		72
1542.94	17	33	1558.90	37	73
1543.33		34	1559.39		74
1543.73	18	35	1559.79	38	75
1544.13		36	1560.20		76
1544.53	19	37	1560.61	39	77
1544.92		38	1561.01		78
1545.32	20	39	1561.42	40	79
1545.72		40	1561.83		80

DWDM Terminal MUX, DMX – enclosed shelf - ordering information

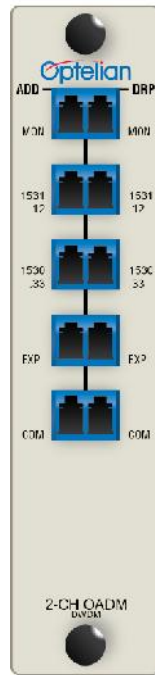
Part Number	Description
1014-6700	MDX-4000, MUX/DMX, 40 CH, 1 Circuit Gaussian, 2% Monitor, 1RU, 42 LC
1025-6000	MDX-5000, MUX/DMX, 40 CH, 1 Circuit Flat-top, 2% Monito, 1RUr, 42 LC
1014-6730	MDX-4200, MUX,DMX, 40 CH, 2 Circuit Gaussian, 2% Monitor, 1RU, 84 LC
1025-6010	MDX-5200, MUX,DMX, 40 CH, 2 Circuit Flat-top, 2% Monitor, 1RU, 84 LC
1027-0600	MDX-8200, MUX,DMX, 80 CH, 2 Circuit Gaussian, 2% Monitor, 2RU, 164 LC

DWDM OADM, dual fiber – LGX



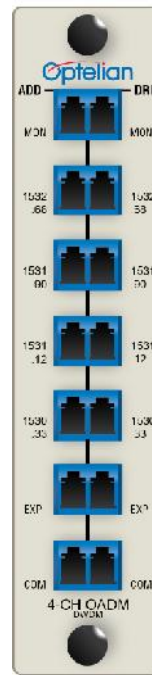
1022-2101

Related 1022-21xx modules differ visually only in port label assignment



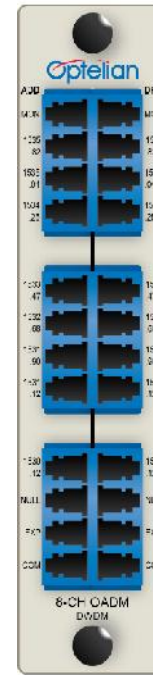
1022-2201

Related 1022-22xx modules differ visually only in port label assignment



1022-2401

Related 1022-24xx modules differ visually only in port label assignment



1022-2801

Related 1022-28xx modules differ visually only in port label assignment

DWDM OADM dual fiber - LGX - insertion loss specifications

Channel	1 CH ADD	1 CH DROP	2 CH ADD	2 CH DROP	4 CH ADD	4 CH DROP	8 CH ADD	8 CH DROP
1	1.4 dB	1.4 dB	1.4 dB	1.9 dB	1.4 dB	2.9 dB	2.6 dB	6.0 dB
2	-	-	1.9 dB	1.4 dB	1.9 dB	2.4 dB	3.1 dB	5.5 dB
3	-	-	-	-	2.4 dB	1.9 dB	3.6 dB	5.0 dB
4	-	-	-	-	2.9 dB	1.4 dB	4.1 dB	4.6 dB
5	-	-	-	-	-	-	4.6 dB	4.1 dB
6	-	-	-	-	-	-	5.0 dB	3.6 dB
7	-	-	-	-	-	-	5.5 dB	3.1 dB
8	-	-	-	-	-	-	6.0 dB	2.6 dB
Express	1.0 dB	1.0 dB	1.5 dB	1.5 dB	2.1 dB	2.1 dB	1.3 dB	1.3 dB

For all: maximum end-of-life; includes one connector

DWDM OADM dual fiber - LGX – channel allocation

CH #	Wavelength (nm)	1-channel 1022-xxxx	2-channel 1022-xxxx	4-channel 1022-xxxx	8-channel 1022-xxxx	
1	1530.33	2101	2201	2401	2801	
2	1531.12	2102				2202
3	1531.90	2103	2203			
4	1532.68	2104				2204
5	1533.47	2105	2205	2405	2809	
6	1534.25	2106				2206
7	1535.04	2107	2207			
8	1535.82	2108		2208		
9	1536.61	2109	2209	2409	2817	
10	1537.40	2110				2210
11	1538.19	2111	2211	2413		
12	1538.98	2112				2212
13	1539.77	2113	2213	2417	2833	
14	1540.56	2114				2214
15	1541.35	2115	2215	2421		
16	1542.14	2116				2216
17	1542.94	2117	2217	2425	2809	
18	1543.73	2118				2218
19	1544.53	2119	2219	2429		
20	1545.32	2120				2220
21	1546.12	2121	2221	2433	2825	
22	1546.92	2122				2222
23	1547.72	2123	2223	2437		
24	1548.51	2124				2224
25	1549.32	2125	2225	2401	2801	
26	1550.12	2126				2226
27	1550.92	2127	2227	2405		
28	1551.72	2128				2228
29	1552.52	2129	2229	2409	2817	
30	1553.33	2130				2230
31	1554.13	2131	2231	2413		
32	1554.94	2132				2232
33	1555.75	2133	2233	2417	2833	
34	1556.55	2134				2234
35	1557.36	2135	2235	2421		
36	1558.17	2136				2236
37	1558.98	2137	2237	2425	2809	
38	1559.79	2138				2238
39	1560.61	2139	2239	2429		
40	1561.42	2140				2240

DWDM OADM, dual fiber – LGX - ordering information

Part Number	Description
1022-2101	DWDM OADM, 1 CH, CH 1 (1530.33 nm), 2% Monitor, LGX, LC
1022-2102	DWDM OADM, 1 CH, CH 2 (1531.12 nm), 2% Monitor, LGX, LC
1022-2103	DWDM OADM, 1 CH, CH 3 (1531.9 nm), 2% Monitor, LGX, LC
1022-2104	DWDM OADM, 1 CH, CH 4 (1532.68 nm), 2% Monitor, LGX, LC
1022-2105	DWDM OADM, 1 CH, CH 5 (1533.47 nm), 2% Monitor, LGX, LC
1022-2106	DWDM OADM, 1 CH, CH 6 (1534.25 nm), 2% Monitor, LGX, LC
1022-2107	DWDM OADM, 1 CH, CH 7 (1535.04 nm), 2% Monitor, LGX, LC
1022-2108	DWDM OADM, 1 CH, CH 8 (1535.82 nm), 2% Monitor, LGX, LC
1022-2109	DWDM OADM, 1 CH, CH 9 (1536.61 nm), 2% Monitor, LGX, LC
1022-2110	DWDM OADM, 1 CH, CH 10 (1537.4 nm), 2% Monitor, LGX, LC
1022-2111	DWDM OADM, 1 CH, CH 11 (1538.19 nm), 2% Monitor, LGX, LC
1022-2112	DWDM OADM, 1 CH, CH 12 (1538.98 nm), 2% Monitor, LGX, LC
1022-2113	DWDM OADM, 1 CH, CH 13 (1539.77 nm), 2% Monitor, LGX, LC
1022-2114	DWDM OADM, 1 CH, CH 14 (1540.56 nm), 2% Monitor, LGX, LC
1022-2115	DWDM OADM, 1 CH, CH 15 (1541.35 nm), 2% Monitor, LGX, LC
1022-2116	DWDM OADM, 1 CH, CH 16 (1542.14 nm), 2% Monitor, LGX, LC
1022-2117	DWDM OADM, 1 CH, CH 17 (1542.94 nm), 2% Monitor, LGX, LC
1022-2118	DWDM OADM, 1 CH, CH 18 (1543.73 nm), 2% Monitor, LGX, LC
1022-2119	DWDM OADM, 1 CH, CH 19 (1544.53 nm), 2% Monitor, LGX, LC
1022-2120	DWDM OADM, 1 CH, CH 20 (1545.32 nm), 2% Monitor, LGX, LC
1022-2121	DWDM OADM, 1 CH, CH 21 (1546.12 nm), 2% Monitor, LGX, LC
1022-2122	DWDM OADM, 1 CH, CH 22 (1546.92 nm), 2% Monitor, LGX, LC
1022-2123	DWDM OADM, 1 CH, CH 23 (1547.72 nm), 2% Monitor, LGX, LC
1022-2124	DWDM OADM, 1 CH, CH 24 (1548.51 nm), 2% Monitor, LGX, LC
1022-2125	DWDM OADM, 1 CH, CH 25 (1549.32 nm), 2% Monitor, LGX, LC
1022-2126	DWDM OADM, 1 CH, CH 26 (1550.12 nm), 2% Monitor, LGX, LC
1022-2127	DWDM OADM, 1 CH, CH 27 (1550.92 nm), 2% Monitor, LGX, LC
1022-2128	DWDM OADM, 1 CH, CH 28 (1551.72 nm), 2% Monitor, LGX, LC
1022-2129	DWDM OADM, 1 CH, CH 29 (1552.52 nm), 2% Monitor, LGX, LC
1022-2130	DWDM OADM, 1 CH, CH 30 (1553.33 nm), 2% Monitor, LGX, LC
1022-2131	DWDM OADM, 1 CH, CH 31 (1554.13 nm), 2% Monitor, LGX, LC
1022-2132	DWDM OADM, 1 CH, CH 32 (1554.94 nm), 2% Monitor, LGX, LC
1022-2133	DWDM OADM, 1 CH, CH 33 (1555.75 nm), 2% Monitor, LGX, LC

(Table continued on following page...)

DWDM OADM, dual fiber – LGX - ordering information (continued)

Part Number	Description
1022-2134	DWDM OADM, 1 CH, CH 34 (1556.56 nm), 2% Monitor, LGX, LC
1022-2135	DWDM OADM, 1 CH, CH 35 (1557.36 nm), 2% Monitor, LGX, LC
1022-2136	DWDM OADM, 1 CH, CH 36 (1558.17 nm), 2% Monitor, LGX, LC
1022-2137	DWDM OADM, 1 CH, CH 37 (1558.98 nm), 2% Monitor, LGX, LC
1022-2138	DWDM OADM, 1 CH, CH 38 (1559.79 nm), 2% Monitor, LGX, LC
1022-2139	DWDM OADM, 1 CH, CH 39 (1560.61 nm), 2% Monitor, LGX, LC
1022-2140	DWDM OADM, 1 CH, CH 40 (1561.42 nm), 2% Monitor, LGX, LC
1022-2201	DWDM OADM, 2 CH, CH 1-2 (1530.33-1531.12 nm), 2% Monitor, LGX, LC
1022-2202	DWDM OADM, 2 CH, CH 2-3 (1531.12-1531.9 nm), 2% Monitor, LGX, LC
1022-2203	DWDM OADM, 2 CH, CH 3-4 (1531.9-1532.68 nm), 2% Monitor, LGX, LC
1022-2204	DWDM OADM, 2 CH, CH 4-5 (1532.68-1533.47 nm), 2% Monitor, LGX, LC
1022-2205	DWDM OADM, 2 CH, CH 5-6 (1533.47-1534.25 nm), 2% Monitor, LGX, LC
1022-2206	DWDM OADM, 2 CH, CH 6-7 (1534.25-1535.04 nm), 2% Monitor, LGX, LC
1022-2207	DWDM OADM, 2 CH, CH 7-8 (1535.04-1535.82 nm), 2% Monitor, LGX, LC
1022-2208	DWDM OADM, 2 CH, CH 8-9 (1535.82-1536.61 nm), 2% Monitor, LGX, LC
1022-2209	DWDM OADM, 2 CH, CH 9-10 (1536.61-1537.4 nm), 2% Monitor, LGX, LC
1022-2210	DWDM OADM, 2 CH, CH 10-11 (1537.4-1538.19 nm), 2% Monitor, LGX, LC
1022-2211	DWDM OADM, 2 CH, CH 11-12 (1538.19-1538.98 nm), 2% Monitor, LGX, LC
1022-2212	DWDM OADM, 2 CH, CH 12-13 (1538.98-1539.77 nm), 2% Monitor, LGX, LC
1022-2213	DWDM OADM, 2 CH, CH 13-14 (1539.77-1540.56 nm), 2% Monitor, LGX, LC
1022-2214	DWDM OADM, 2 CH, CH 14-15 (1540.56-1541.35 nm), 2% Monitor, LGX, LC
1022-2215	DWDM OADM, 2 CH, CH 15-16 (1541.35-1542.14 nm), 2% Monitor, LGX, LC
1022-2216	DWDM OADM, 2 CH, CH 16-17 (1542.14-1542.94 nm), 2% Monitor, LGX, LC
1022-2217	DWDM OADM, 2 CH, CH 17-18 (1542.94-1543.73 nm), 2% Monitor, LGX, LC
1022-2218	DWDM OADM, 2 CH, CH 18-19 (1543.73-1544.53 nm), 2% Monitor, LGX, LC
1022-2219	DWDM OADM, 2 CH, CH 19-20 (1544.53-1545.32 nm), 2% Monitor, LGX, LC
1022-2220	DWDM OADM, 2 CH, CH 20-21 (1545.32-1546.12 nm), 2% Monitor, LGX, LC
1022-2221	DWDM OADM, 2 CH, CH 21-22 (1546.12-1546.92 nm), 2% Monitor, LGX, LC
1022-2222	DWDM OADM, 2 CH, CH 22-23 (1546.92-1547.72 nm), 2% Monitor, LGX, LC
1022-2223	DWDM OADM, 2 CH, CH 23-24 (1547.72-1548.51 nm), 2% Monitor, LGX, LC
1022-2224	DWDM OADM, 2 CH, CH 24-25 (1548.51-1549.32 nm), 2% Monitor, LGX, LC
1022-2225	DWDM OADM, 2 CH, CH 25-26 (1549.32-1550.12 nm), 2% Monitor, LGX, LC
1022-2226	DWDM OADM, 2 CH, CH 26-27 (1550.12-1550.92 nm), 2% Monitor, LGX, LC

(Table continued on following page...)

DWDM OADM, dual fiber – LGX - ordering information (continued)

Part Number	Description
1022-2227	DWDM OADM, 2 CH, CH 27-28 (1550.92-1551.72 nm), 2% Monitor, LGX, LC
1022-2228	DWDM OADM, 2 CH, CH 28-29 (1551.72-1552.52 nm), 2% Monitor, LGX, LC
1022-2229	DWDM OADM, 2 CH, CH 29-30 (1552.52-1553.33 nm), 2% Monitor, LGX, LC
1022-2230	DWDM OADM, 2 CH, CH 30-31 (1553.33-1554.13 nm), 2% Monitor, LGX, LC
1022-2231	DWDM OADM, 2 CH, CH 31-32 (1554.13-1554.94 nm), 2% Monitor, LGX, LC
1022-2232	DWDM OADM, 2 CH, CH 32-33 (1554.94-1555.75 nm), 2% Monitor, LGX, LC
1022-2233	DWDM OADM, 2 CH, CH 33-34 (1555.75-1556.56 nm), 2% Monitor, LGX, LC
1022-2234	DWDM OADM, 2 CH, CH 34-35 (1556.56-1557.36 nm), 2% Monitor, LGX, LC
1022-2235	DWDM OADM, 2 CH, CH 35-36 (1557.36-1558.17 nm), 2% Monitor, LGX, LC
1022-2236	DWDM OADM, 2 CH, CH 36-37 (1558.17-1558.98 nm), 2% Monitor, LGX, LC
1022-2237	DWDM OADM, 2 CH, CH 37-38 (1558.98-1559.79 nm), 2% Monitor, LGX, LC
1022-2238	DWDM OADM, 2 CH, CH 38-39 (1559.79-1560.61 nm), 2% Monitor, LGX, LC
1022-2239	DWDM OADM, 2 CH, CH 39-40 (1560.61-1561.42 nm), 2% Monitor, LGX, LC
1022-2401	DWDM OADM, 4 CH, CH 1-4 (1530.33-1532.68 nm), 2% Monitor, LGX, LC
1022-2405	DWDM OADM, 4 CH, CH 5-8 (1533.47-1535.82 nm), 2% Monitor, LGX, LC
1022-2409	DWDM OADM, 4 CH, CH 9-12 (1536.61-1538.98 nm), 2% Monitor, LGX, LC
1022-2413	DWDM OADM, 4 CH, CH 13-16 (1539.77-1542.14 nm), 2% Monitor, LGX, LC
1022-2417	DWDM OADM, 4 CH, CH 17-20 (1542.94-1545.32 nm), 2% Monitor, LGX, LC
1022-2421	DWDM OADM, 4 CH, CH 21-24 (1546.12-1548.51 nm), 2% Monitor, LGX, LC
1022-2425	DWDM OADM, 4 CH, CH 25-28 (1549.32-1551.72 nm), 2% Monitor, LGX, LC
1022-2429	DWDM OADM, 4 CH, CH 29-32 (1552.52-1554.94 nm), 2% Monitor, LGX, LC
1022-2433	DWDM OADM, 4 CH, CH 33-36 (1555.75-1558.17 nm), 2% Monitor, LGX, LC
1022-2437	DWDM OADM, 4 CH, CH 37-40 (1558.98-1561.42 nm), 2% Monitor, LGX, LC
1022-2801	DWDM OADM, 8 CH, CH 1-8 (1530.33-1535.82 nm), 2% Monitor, LGX, LC
1022-2809	DWDM OADM, 8 CH, CH 9-16 (1536.61-1542.14 nm), 2% Monitor, LGX, LC
1022-2817	DWDM OADM, 8 CH, CH 17-24 (1542.94-1548.51 nm), 2% Monitor, LGX, LC
1022-2825	DWDM OADM, 8 CH, CH 25-32 (1549.32-1554.94 nm), 2% Monitor, LGX, LC
1022-2833	DWDM OADM, 8 CH, CH 33-40 (1555.75-1561.42 nm), 2% Monitor, LGX, LC

DWDM OADM, dual fiber – DMS - ordering information

Part Number	Description
1025-5131	DWDM OADM, 1-CH, CH 31 (1552.52 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5132	DWDM OADM, 1-CH, CH 32 (1551.72 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5133	DWDM OADM, 1-CH, CH 33 (1550.92 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5134	DWDM OADM, 1-CH, CH 34 (1550.12 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5136	DWDM OADM, 1-CH, CH 36 (1548.51 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5137	DWDM OADM, 1-CH, CH 37 (1547.72 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5138	DWDM OADM, 1-CH, CH 38 (1546.92 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-5139	DWDM OADM, 1-CH, CH 39 (1546.12 nm), 1310, 2% Monitor, DMS 1/2-Wide, LC
1025-6434	DWDM OADM, 4-CH, CH 34-31 (1550.12, 1550.92, 1551.72, 1552.52 nm), 1310, 2% Monitor, DMS, LC
1025-6439	DWDM OADM, 4-CH, CH 39-36 (1546.12, 1546.92, 1547.72, 1548.51 nm), 1310, 2% Monitor, DMS, LC
1025-5839	DWDM OADM, 8-CH, CH 39-31 (1546.12, 1546.92, 1547.72, 1548.51, 1550.12, 1550.92, 1551.72, 1552.52 nm), 1310, 2% Monitor, DMS, LC

DWDM OADM dual fiber – splice tray

DWDM OADM dual fiber – splice tray – channel allocation

CH #	Wavelength (nm)	1-channel OADM	4-channel TA-ODM
1	1530.33		1014-9901 TA-ODM-4D1
2	1531.12		
3	1531.90		
4	1532.68		
5	1533.47		1014-9902 TA-ODM-4D2
6	1534.25		
7	1535.04		
8	1535.82		
9	1536.61	1025-3609	1014-9903 TA-ODM-4D3
10	1537.40		
11	1538.19		
12	1538.98		
13	1539.77		1014-9904 TA-ODM-4D4
14	1540.56		
15	1541.35		
16	1542.14		
17	1542.94		1014-9905 TA-ODM-4D5
18	1543.73		
19	1544.53		
20	1545.32		
21	1546.12		1014-9906 TA-ODM-4D6
22	1546.92		
23	1547.72		
24	1548.51		
25	1549.32		1014-9907 TA-ODM-4D7
26	1550.12		
27	1550.92		
28	1551.72		
29	1552.52		1014-9908 TA-ODM-4D8
30	1553.33		
31	1554.13	1025-3631	
32	1554.94		
33	1555.75		1014-9909 TA-ODM-4D9
34	1556.55		
35	1557.36		
36	1558.17		
37	1558.98		1014-9910 TA-ODM-4D10
38	1559.79		
39	1560.61		
40	1561.42		

DWDM OADM dual fiber - LGX - insertion loss specifications

Channel	4 CH ADD	4 CH DROP
1	4.1 dB	2.4 dB
2	3.6 dB	2.9 dB
3	3.1 dB	3.4 dB
4	2.6 dB	3.9 dB
Express	1.8 dB	1.8 dB

For all: maximum end-of-life

Monitor port: 19 dB

DWDM OADM, dual fiber – splice tray - ordering information

Part Number	Description
1014-9901	TA-ODM-4D1, DWDM OADM, 4 CH (1530.33, 1531.12, 1531.90, 1532.68), FOSC B
1014-9902	TA-ODM-4D2, DWDM OADM, 4 CH (1533.47, 1534.25, 1535.04, 1535.82), FOSC B
1014-9903	TA-ODM-4D3, DWDM OADM, 4 CH (1536.61, 1537.40, 1538.19, 1538.98), FOSC B
1014-9904	TA-ODM-4D4, DWDM OADM, 4 CH (1539.77, 1540.56, 1541.35, 1542.14), FOSC B
1014-9905	TA-ODM-4D5, DWDM OADM, 4 CH (1542.94, 1543.73, 1544.53, 1545.32), FOSC B
1014-9906	TA-ODM-4D6, DWDM OADM, 4 CH (1546.12, 1546.92, 1547.72, 1548.51), FOSC B
1014-9907	TA-ODM-4D7, DWDM OADM, 4 CH (1546.12, 1546.92, 1547.72, 1548.51), FOSC B
1014-9908	TA-ODM-4D8, DWDM OADM, 4 CH (1546.12, 1546.92, 1547.72, 1548.51), FOSC B
1014-9909	TA-ODM-4D9, DWDM OADM, 4 CH (1555.75, 1556.55, 1557.36, 1558.17), FOSC B
1014-9910	TA-ODM-4D10, DWDM OADM, 4 CH (1558.98, 1559.79, 1560.61, 1561.42), FOSC B
1025-3609	DWDM OADM, 1 CH (1536.61 nm), 1625, 2% Monitor, 2 Circuit FOSC B
1025-3631	DWDM OADM, 1 CH, CH 31 (1554.13 nm), 1625, 2% Monitor, 2 Circuit FOSC B

DWDM OADM single fiber – splice tray

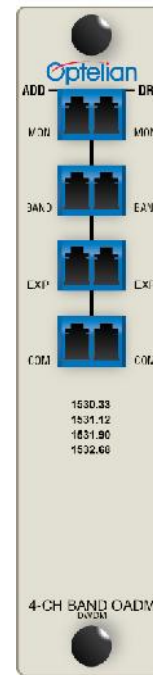
DWDM OADM, single fiber – splice tray - ordering information

Part Number	Description
1014-0380	DWDM Single Fiber OADM, 1 CH (1554.13 nm), 2% Monitor, FOSC B
1014-0382	DWDM Single Fiber OADM, 1 CH (1555.75 nm), 2% Monitor, FOSC B
1014-0384	DWDM Single Fiber OADM, 1 CH (1557.36 nm), 2% Monitor, FOSC B
1014-0386	DWDM Single Fiber OADM, 1 CH (1558.98 nm), 2% Monitor, FOSC B

DWDM Band OADM dual fiber – LGX

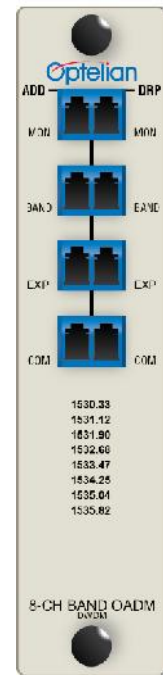
DWDM OADM dual fiber – splice tray – channel allocation

CH #	Wavelength (nm)	4-channel 1022-xxxx	8-channel 1022-xxxx	
1	1530.33	1022-4401	1022-4801	
2	1531.12			
3	1531.90			
4	1532.68			
5	1533.47	1022-4405		
6	1534.25			
7	1535.04			
8	1535.82			
9	1536.61	1022-4409	1022-4809	
10	1537.40			
11	1538.19			
12	1538.98			
13	1539.77	1022-4413		
14	1540.56			
15	1541.35			
16	1542.14			
17	1542.94	1022-4417		1022-4817
18	1543.73			
19	1544.53			
20	1545.32			
21	1546.12	1022-4421		
22	1546.92			
23	1547.72			
24	1548.51			
25	1549.32	1022-4425	-	
26	1550.12			
27	1550.92			
28	1551.72			
29	1552.52	1022-4429		
30	1553.33			
31	1554.13			
32	1554.94			
33	1555.75	1022-4433		-
34	1556.55			
35	1557.36			
36	1558.17			
37	1558.98	1022-4437		
38	1559.79			
39	1560.61			
40	1561.42			



1022-4401

Related 1022-44xx modules differ visually only in port label assignment



1022-4801

Related 1022-480x modules differ visually only in port label assignment

DWDM Band OADM dual fiber - LGX - insertion loss specifications

Channel	4 CH ADD	4 CH DROP	8 CH ADD	8 CH DROP
Band of 4	1.7 dB	1.7 dB	-	-
Band of 8	-	-	1.8 dB	1.8 dB
Express	1.2 dB	1.2 dB	1.3 dB	1.3 dB

For all: maximum end-of-life; includes one connector

Monitor: 20 dB

DWDM Band OADM, dual fiber – LGX - ordering information

Part Number	Description
1022-4401	DWDM Band OADM, 4 CH, CH 1-4 (1530.33-1532.68 nm), 2% Monitor, LGX, LC
1022-4405	DWDM Band OADM, 4 CH, CH 5-8 (1533.47-1535.82 nm), 2% Monitor, LGX, LC
1022-4409	DWDM Band OADM, 4 CH, CH 9-12 (1536.61-1538.98 nm), 2% Monitor, LGX, LC
1022-4413	DWDM Band OADM, 4 CH, CH 13-16 (1539.77-1542.14 nm), 2% Monitor, LGX, LC
1022-4417	DWDM Band OADM, 4 CH, CH 17-20 (1542.94-1545.32 nm), 2% Monitor, LGX, LC
1022-4421	DWDM Band OADM, 4 CH, CH 21-24 (1546.12-1548.51 nm), 2% Monitor, LGX, LC
1022-4425	DWDM Band OADM, 4 CH, CH 25-28 (1549.32-1551.72 nm), 2% Monitor, LGX, LC
1022-4429	DWDM Band OADM, 4 CH, CH 29-32 (1552.52-1554.94 nm), 2% Monitor, LGX, LC
1022-4433	DWDM Band OADM, 4 CH, CH 33-36 (1555.75-1557.36 nm), 2% Monitor, LGX, LC
1022-4437	DWDM Band OADM, 4 CH, CH 37-40 (1558.98-1561.42 nm), 2% Monitor, LGX, LC
1022-4801	DWDM BAND OADM, 8-CH, CH 1-8 (1530.33-1535.82 nm), 2% Monitor, LGX, LC
1022-4809	DWDM BAND OADM, 8-CH, CH 9-16 (1536.61-1542.14 nm), 2% Monitor, LGX, LC
1022-4817	DWDM BAND OADM, 8-CH, CH 17-24 (1542.94-1548.51 nm), 2% Monitor, LGX, LC

DWDM Band OADM dual fiber – splice tray

DWDM Band OADM, dual fiber – splice tray - ordering information

Part Number	Description
1025-3503	DWDM Band OADM, 4 CH, CH 9-12 (1536.61-1538.98 nm), 2% Monitor, FOSC B
1025-3508	DWDM Band OADM, 4 CH, CH 29-32 (1554.94-1552.52 nm), 2% Monitor, FOSC B