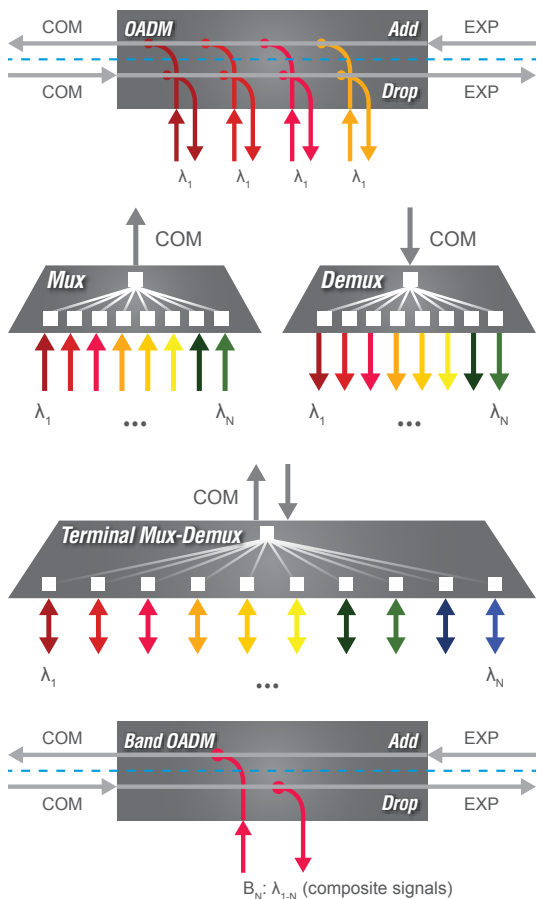


WDM Passive Multiplexing

CWDM and DWDM Passive LGX Modules

Optelion's LightMUX portfolio offers passive multiplexing capabilities to address CWDM and DWDM applications in a range of packaging options. The functionality includes service wavelength add/drop at Central Office (CO) facilities and along a linear path or ring for business services, FTTx connectivity, or residential broadband service distribution.

Optelion offers an extensive set of passive elements to address terminal and add/drop requirements for CWDM and DWDM wavelength plans. The offering includes OADMs, Mux-Demux pairs, Terminal Mux/Demuxes and Band OADMs. All elements offer a 2% unidirectional (DWDM) or 2.5% bidirectional (CWDM) monitor port for ease of commissioning and troubleshooting. CWDM include 1310 or 1550 nm ports to enable overlays on legacy networks.



Element Types

OADM

Provides multiplexing and de-multiplexing of a subset of channels from the composite (line) in from one direction while allowing untargeted wavelengths to express through.

Mux and Demux Pairs

Provides multiplexing or de-multiplexing of a full system of channels aggregated on the composite (line) and are typically paired for network termination at COs or POPs.

Terminal Mux-Demux

Rack-mountable passive elements for multiplexing and de-multiplexing of a full 40-channel DWDM system aggregated on the composite (line) and are typically deployed for network termination at COs or POPs.

Band OADM

4-channel (DWDM) add/drop from the composite (line) but leaves the targeted 4-channels as a sub-composite signal, minimizing loss. These passives split off a set of wavelengths to address spurs in the network. Banded OADMs express untargeted wavelengths through.

CWDM Portfolio

		OADMs				Mux and Demux				
CH #	nm	1-channel 1022-XXXX	2-channel 1022-XXXX	4-channel 1022-XXXX	8-channel 1022-XXXX	Mux and Demux		16-channel 1022-XXXX		
					Mux	Demux	Mux	Demux		
1	1271	Grey			1801	1901				
2	1291									
3	1311									
4	1331									
5	1351									
6	1371									
7	1391									
8	1411									
9	1471	1109	1209		1409	1809	1909	1829	1601	1701
10	1491	1110								
11	1511	1111	1211		1413					
12	1531	1112								
13	1551	1113	1213							
14	1571	1114								
15	1591	1115	1215							
16	1611	1116								
Form Factor		1-wide LGX Cassette								

Part Number ordering: 1022-XXXX where XXXX represents the specific element required as identified

CWDM Loss Specifications

Element Type	Add Losses (Ch. add to COM)							Drop Losses (COM to Ch. drop)				
	Ch. 1	Ch. 2	Ch. 3	Ch. 4	1310/1550	EXP-COM	COM-EXP	Ch. 1	Ch. 2	Ch. 3	Ch. 4	1310/1550
1-channel OADM	1.8	-	-	-	1.4	1.8	1.8	0.7	-	-	-	1.4
2-channel OADM	1.8	2.1	-	-	1.4	2.1	2.1	1.1	0.7	-	-	1.4
4-channel OADM	1.8	2.1	2.5	2.8	1.4	2.8	2.8	2.8	2.5	2.1	1.8	1.4

Element Type	Losses (MUX: Ch. add to COM / DMX: COM to Ch. drop)									
Channel	1	2	3	4	5	6	7	8	1310/1550	
8-channel MUX	1.8	2.1	2.5	2.8	3.2	3.6	3.9	4.3	1.4	
8-channel DEMUX	4.3	3.9	3.6	3.2	2.8	2.5	2.1	1.8	1.4	

Element Type	Losses (MUX: C. add to COM / DMX: COM to Ch. drop)															
Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
16-channel MUX	1.2	1.6	1.9	2.3	2.6	3.0	3.4	3.7	4.1	4.5	4.8	5.2	5.5	5.9	6.2	6.6
16-channel DEMUX	6.6	6.2	5.9	5.5	5.2	4.8	4.5	4.1	3.7	3.4	3	2.6	2.3	1.9	1.6	1.2_

All CWDM LightMUX elements offer a 2.5% bidirectional monitor port with 20db insertion loss, except for 16-channel Mux and Demux.

All CWDM models (except for the 16-channel Mux and Demux) include either a 1310 nm port (channel 9 - 16 only) or 1550 nm port (channel 1 - 8 only) for legacy network overlays.

DWDM Portfolio

CH #	nm	OADM				Mux/Demux Pairs		MDX-40 40ch Terminal Mux/Demux 1014-6700	Band OADM 4-channel 1022-XXXX	Band OADM 8-channel 1022-XXXX	
		1-channel 1022-XXXX	2-channel 1022-XXXX	4-channel 1022-XXXX	8-channel 1022-XXXX	8-channel 1022-XXXX					
						Mux	Demux				
1	1530.33	2101	2201								
2	1531.12	2102									
3	1531.90	2103	2203		2401			4401			
4	1532.68	2104									
5	1533.47	2105	2205			2801	3801	3901	4801		
6	1534.25	2106									
7	1535.04	2107	2207		2405			4405			
8	1535.82	2108									
9	1536.61	2109	2209								
10	1537.40	2110									
11	1538.19	2111	2211		2409			4409			
12	1538.98	2112									
13	1539.77	2113	2213			2809	3809	3909	4809		
14	1540.56	2114									
15	1541.35	2115	2215		2413			4413			
16	1542.14	2116									
17	1542.94	2117	2217		2417			4417			
18	1543.73	2118									
19	1544.53	2119	2219			2817	3817	3917	1014-6700	4421	4817
20	1545.32	2120									
21	1546.12	2121	2221		2421						
22	1546.92	2122									
23	1547.72	2123	2223								
24	1548.51	2124									
25	1549.32	2125	2225		2425						
26	1550.12	2126									
27	1550.92	2127	2227			2825	3825	3925			
28	1551.72	2128									
29	1552.52	2129	2229		2429						
30	1553.33	2130									
31	1554.13	2131	2231								
32	1554.94	2132									
33	1555.75	2133	2233		2433						
34	1556.56	2134									
35	1557.36	2135	2235			2833	3833	3933			
36	1558.17	2136									
37	1558.98	2137	2237		2437						
38	1559.79	2138									
39	1560.61	2139	2239								
40	1561.42	2140									
Form Factor				1-wide LGX	1-wide LGX	1-wide LGX	1-wide LGX	1U Rack	1-wide	1-wide	

Part Number ordering: 1022-XXXX where XXXX represents the specific element required as identified

DWDM Loss Specifications

Element Type	Add Losses (Ch. add to COM)								Drop Losses (COM to Ch. drop)										
	Channel	1	2	3	4	5	6	7	8	EXP-COM	COM-EXP	1	2	3	4	5	6	7	8
1-channel OADM	1.4	-	-	-	-	-	-	-	-	1.0	1.0	1.4	-	-	-	-	-	-	-
2-channel OADM	1.4	1.9	-	-	-	-	-	-	-	1.5	1.5	1.9	1.4	-	-	-	-	-	-
4-channel OADM	1.4	1.9	2.4	2.9	-	-	-	-	-	2.1	2.1	2.9	2.4	1.9	1.4	-	-	-	-
8-channel OADM	2.6	3.1	3.6	4.1	4.6	5.0	5.5	6.0	-	1.3	1.3	6.0	5.5	5.0	4.6	4.1	3.6	3.1	2.6

Element Type	Losses (MUX: Ch. add to COM / DMX: COM to Ch. drop)								
	Channel	1	2	3	4	5	6	7	8
8-channel MUX		1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.8
8-channel DEMUX		4.8	4.4	3.9	3.4	2.9	2.4	1.9	1.4

Element Type	Loss	Loss Uniformity
40-channel MUX/DEMUX	< 5.0 dB	< 1.5 dB

Element Type	Add Losses (Ch. add to COM)				Drop Losses (COM to Ch. drop)			
	Band	EXP-COM	COM-EXP	Band				
4-channel Band OADM	1.7	1.2	1.2	1.7				
8-channel Band OADM	1.8	1.3	1.3	1.8				

All DWDM LightMux elements offer a 2% monitor port with 20 dB insertion loss.

Common Specifications

Parameter and Storage	Minimum	Maximum
Operating Temperature	-40°C / -40°F	+65°C / +149°F
Relative Humidity (Non-condensing)	5%	95%

Dimensions	Height		Width		Depth	
1-wide LGX cassette	10.2 cm	4.0 in	2.8 cm	1.1 in	15.5 cm	6.1 in
1U Rack (40-channel MUX/DEMUX)	4.3 cm	1.7 in	42.9 cm	16.9 in	27.9 cm	11 in

All CWDM and DWDM LightMux elements come standard with LC/PC connectors.

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