



PL-300 3.2 INSTALLATION AND CONFIGURATION MANUAL

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1 Introduction

This chapter provides an overview of the PL-300.

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1.1 Overview

The PL-300 family of products extends PacketLight's optical network solution capabilities by providing a wide range of passive optical modules.

The PL-300 interconnects seamlessly with PacketLight's products, such as the PL-400E, PL-1000, PL-1000RO, and third-party WDM products to form cost-effective, high-capacity DWDM and CWDM solutions.

The PL-300 provides low granularity wavelengths and add-and-drop capabilities. It can also be used to increase the 4G and 10G solution reach.

The PL-300 provides the essential optical layer functions of 4/8/16/32/40/44/88 DWDM wavelength multiplexing over single or dual fiber, 4/8/16 CWDM wavelength multiplexing over single or dual fiber, Optical Dispersion Compensation Module (DCM), Optical Add and Drop Multiplexers (OADMs), splitters and combiners.

1.2 Main Features

The PL-300 effectively combines the following key functionalities:

- Passive solution that does not require power and therefore can operate over a wide temperature range
- Passive transparent to any rate and any service multiplexing
- Compatible with all optical networking products (ITU grid)
- Supports both ITU DWDM 100 GHz and 50 GHz spacing grid
- Single or dual fiber operation
- Supports CWDM and DWDM passive MUX/DEMUX
- Supports CWDM and DWDM passive OADM
- Fully standards-based and can integrate with third-party solutions
- Dispersion compensation with passive DCM

- High-capacity stackable solution with PL-400E, PL-1000, PL-1000E, PL-1000EM, PL-1000GM, PL-1000GT, PL-1000IL, PL-1000RO, PL-1000TE, PL-1000TN, and PL-2000 products
- Provides dedicated fibers for Optical Supervisory Channels (OSC) to enable multiplexing of management data.

1.2.1 Passive MUX/DEMUX Modules

The PL-300 may contain up to two MUX/DEMUX modules with 4, 8, 16, 44, and 88 channels.

The client ports of the PL-300 passive MUX/DEMUX modules are typically connected to the SFP and XFP uplink ports of the PL-400E, PL-1000, PL-1000E, PL-1000EM, PL-1000GM, PL-1000GT, PL-1000TE, PL-1000TN, or PL-2000. The client ports may also be connected to other devices, such as a third-party switch, router or SONET/SDH ADM equipped with colored optics with matching wavelengths.

The COM ports of the PL-300 can be connected directly to the line fiber or, in the case of DWDM PL-300, to other PacketLight products, such as PL-1000IL, for amplification of the aggregated optical signal or to the PacketLight ROADM node PL-1000RO.

For examples of how to connect the PL-300 with other PacketLight devices, see [PL-300 Application Examples](#) (p. 45).

1.2.2 Passive OADM Modules

The PL-300 may contain up to two OADM DWDM or OADM CWDM passive modules. Each module may be used to add/drop up to four WDM channels in addition to the OSC. The remaining wavelengths may be bypassed via an external connection between the express ports.

1.2.3 Passive DCM Modules

The PL-300 may contain up to four DCM passive modules that may be connected to other devices with DWDM links, such as the PL-400 or PL-1000, to compensate the optical dispersion caused by long distances.

The supported distances are 40Km, 60Km, 80Km, 100Km, 120Km, 160Km, 220Km, and 400Km.

1.3 Typical Applications

The PL-300 is a low-cost solution that can be used to:

- Expand existing fiber capacity regardless of service type
- Build scalable, high-capacity, pay-as-you-grow optical networks

- Converge existing networks and new services over existing infrastructure
- Provide a fully passive optical layer solution, transparent to service rate and type
- Extend the fiber optical solution reach with dispersion compensators
- Build cost-effective add and drop networks
- Integrate with third-party CWDM/DWDM optical solutions and colored optics.

1.4 Physical Description

The PL-300 is a compact 1U unit intended for installation in 19-inch or 23-inch racks or placed on desktops or shelves.

All connections are made to the front panel.

The following figure shows a general view of the PL-300.



Figure 1: PL-300 Unit, General View

1.5 Configurations

The PL-300 is designed in a modular way, thereby enabling various configurations and applications.

1.5.1 CWDM MUX/DEMUX Configurations

The following table lists the PL-300 CWDM MUX/DEMUX configurations.

Table 1: CWDM MUX/DEMUX Configurations

PL-300 Model	MUX Type	MUX #	MUX WLS #	COM Ports #	COM Fiber Type	Clients #	MUX1 WLS	MUX2 WLS	MNG1 WL	MNG2 WL
CWDM-1M-4W-1C-2F	CWDM	1	4	1	Dual	4	1471-1531	N/A	1311	N/A
CWDM-1M-4W-1C-2F-10G	CWDM	1	4	1	Dual	4	1531-1591	N/A	1311	N/A
CWDM-1M-8W-1C-2F	CWDM	1	8	1	Dual	8	1471-1611	N/A	1311	N/A

PL-300 Model	MUX Type	MUX #	MUX WLS #	COM Ports #	COM Fiber Type	Clients #	MUX1 WLS	MUX2 WLS	MNG1 WL	MNG2 WL
CWDM-1M-16W-1C-2F	CWDM	1	16	1	Dual	16	1311-1611	N/A	1291	N/A
CWDM-2M-4W-2C-2F	CWDM	2	4	2	Dual	8 (4+4)	1471-1531	1471-1531	1311	1311
CWDM-2M-8W-2C-2F	CWDM	2	8	2	Dual	16 (8+8)	1471-1611	1471-1611	1311	1311
CWDM-2M-16W-2C-2F	CWDM	2	16	2	Dual	32 (16+16)	1311-1611	1311-1611	1291	1291
CWDM-1M-8W-1C-1F	CWDM	1	8	1	Single	4	1471-1611	N/A	1291	1311
CWDM-1M-16W-1C-1F	CWDM	1	16	1	Single	8	1311-1611	N/A	1271	1291
CWDM-2M-8W-2C-1F	CWDM	2	8	2	Single	8 (4+4)	1471-1611	1471-1611	1291	1311
CWDM-2M-16W-2C-1F	CWDM	2	16	2	Single	16 (8+8)	1311-1611	1311-1611	1271	1291

1.5.1.1 CWDM MUX/DEMUX Models

1. PL-300 CWDM-1M-4W-1C-2F:

- Single passive optical MUX/DEMUX module with four wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with dual fiber

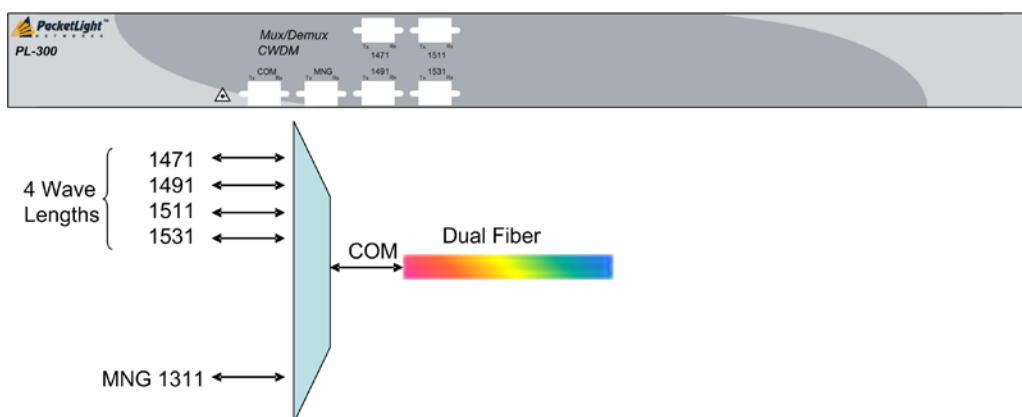


Figure 2: PL-300 CWDM-1M-4W-1C-2F

2. PL-300 CWDM-1M-4W-1C-2F-10G:

- Single passive optical MUX/DEMUX module with four wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel

- One COM port with dual fiber
- The four wavelengths match the DWDM ITU grid which allows for 10G client signals

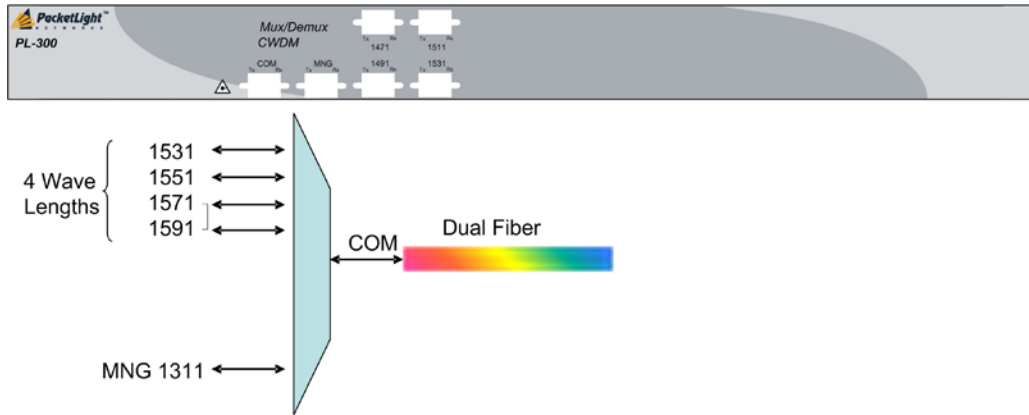


Figure 3: PL-300 CWDM-1M-4W-1C-2F-10G

3. PL-300 CWDM-1M-8W-1C-2F:

- Single passive optical MUX/DEMUX module with eight wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with dual fiber

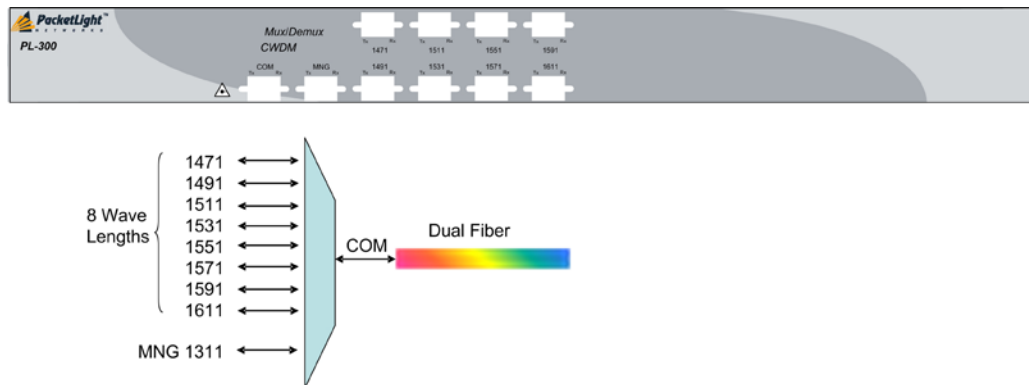


Figure 4: PL-300 CWDM-1M-8W-1C-2F

4. PL-300 CWDM-1M-16W-1C-2F:

- Single passive optical MUX/DEMUX module with 16 wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel

- One COM port with dual fiber

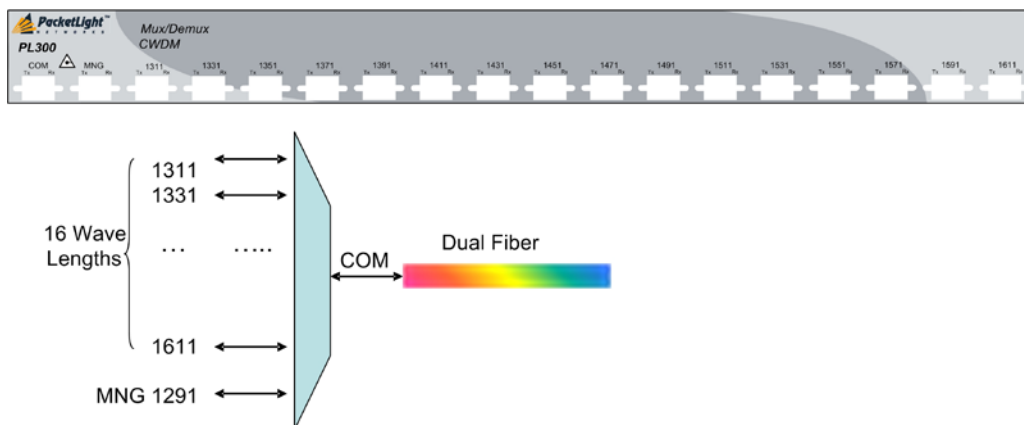


Figure 5: PL-300 CWDM-1M-16W-1C-2F

5. PL-300 CWDM-2M-4W-2C-2F:

- Two passive optical MUX/DEMUX modules with four wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel
- Two COM ports with dual fiber

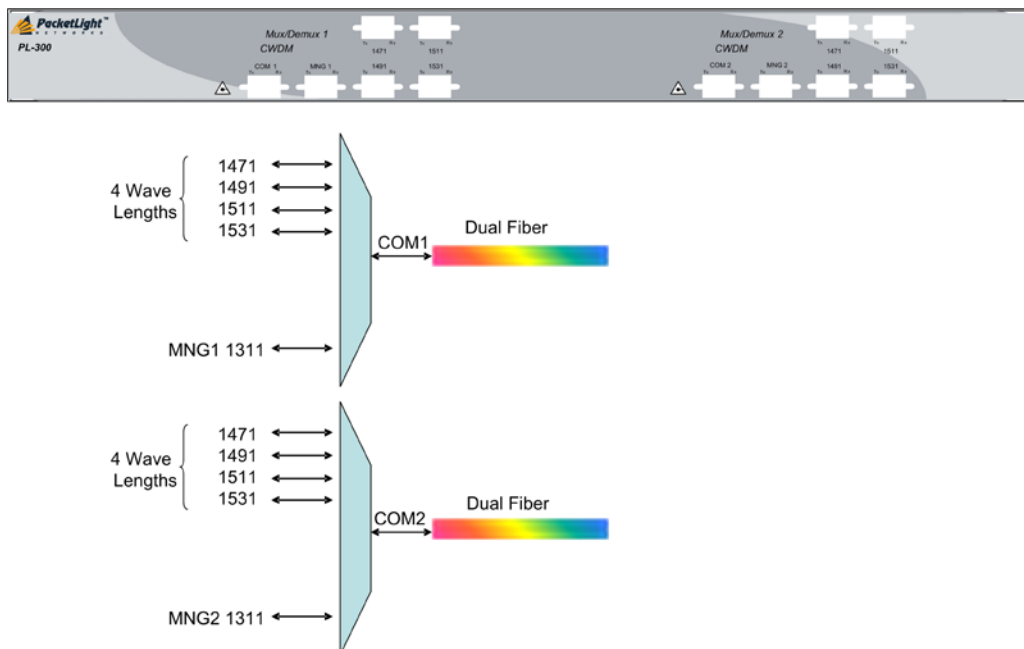


Figure 6: PL-300 CWDM-2M-4W-2C-2F

6. PL-300 CWDM-2M-8W-2C-2F:

- Two passive optical MUX/DEMUX modules with eight wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with dual fiber

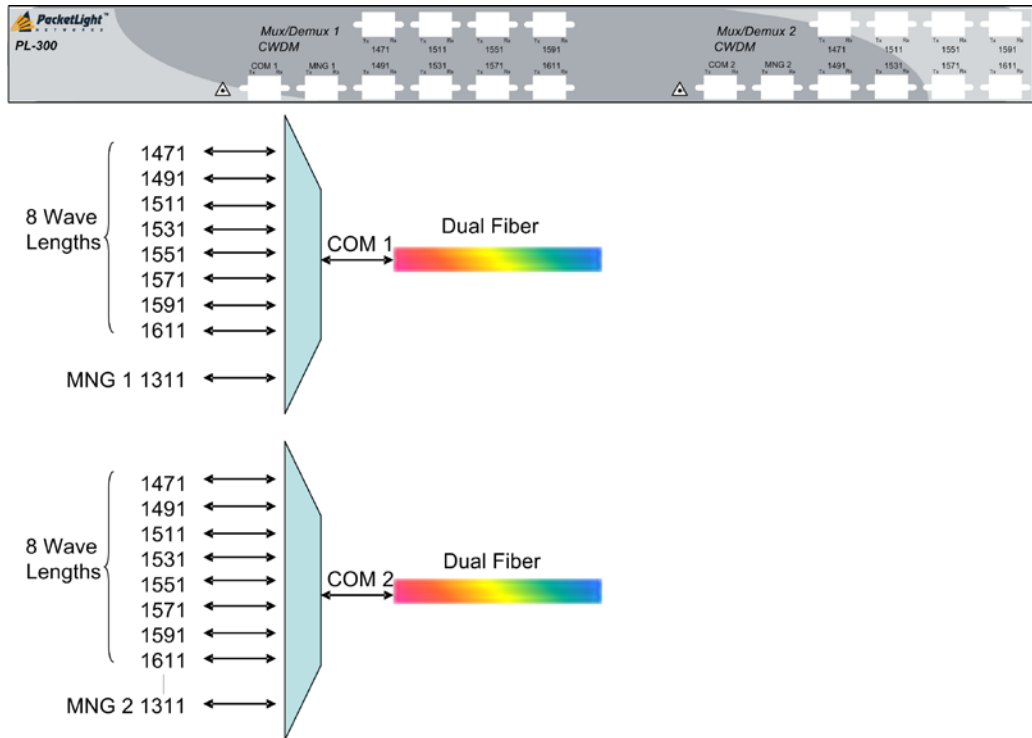


Figure 7: PL-300 CWD-2M-8W-2C-2F

- PL-300 CWD-2M-16W-2C-2F:
 - Two passive optical MUX/DEMUX modules with 16 wavelengths each
 - Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with dual fiber

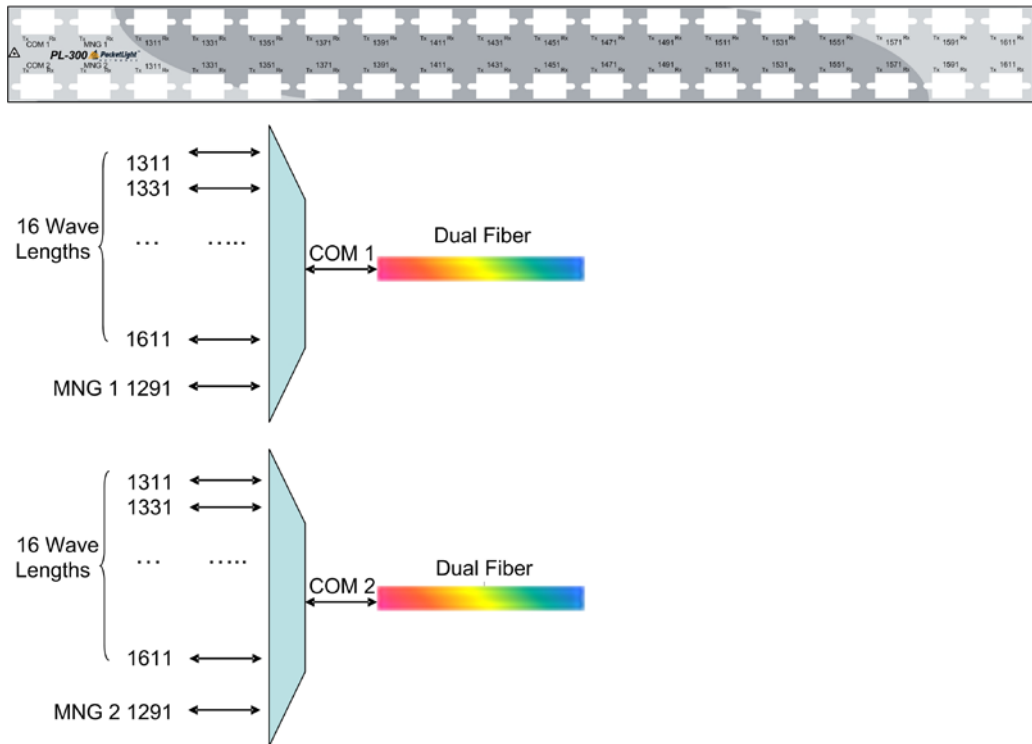


Figure 8: PL-300 CWDM-2M-16W-2C-2F

8. PL-300 CWDM-1M-8W-1C-1F:

- Single passive optical MUX/DEMUX module with eight wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with single fiber

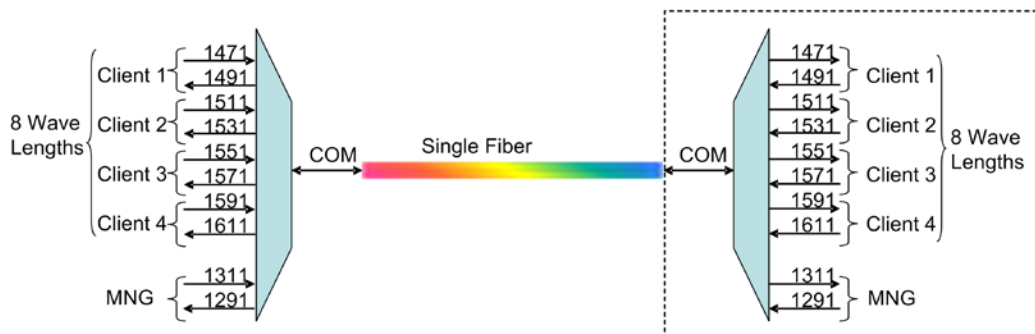


Figure 9: PL-300 CWDM-1M-8W-1C-1F

9. PL-300 CWDM-1M-16W-1C-1F:

- Single passive optical MUX/DEMUX module with 16 wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with single fiber

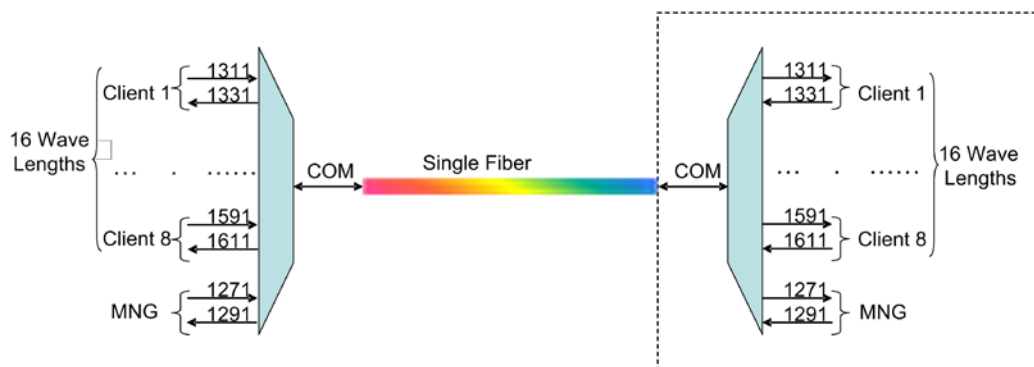
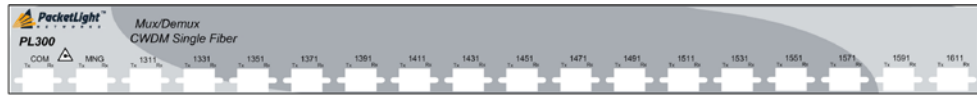


Figure 10: PL-300 CWDM-1M-16W-1C-1F

10. PL-300 CWDM-2M-8W-2C-1F:

- Two passive optical MUX/DEMUX modules with eight wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with single fiber

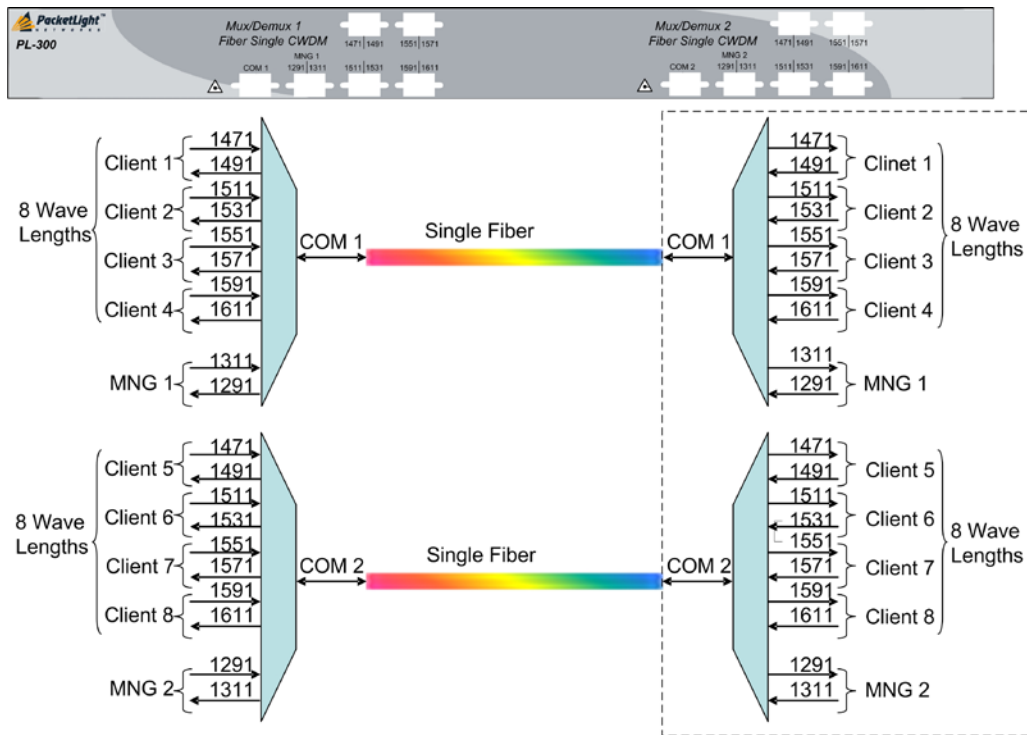


Figure 11: PL-300 CWDM-2M-8W-2C-1F

11. PL-300 CWDM-2M-16W-2C-1F:

- Two passive optical MUX/DEMUX modules with 16 wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with single fiber

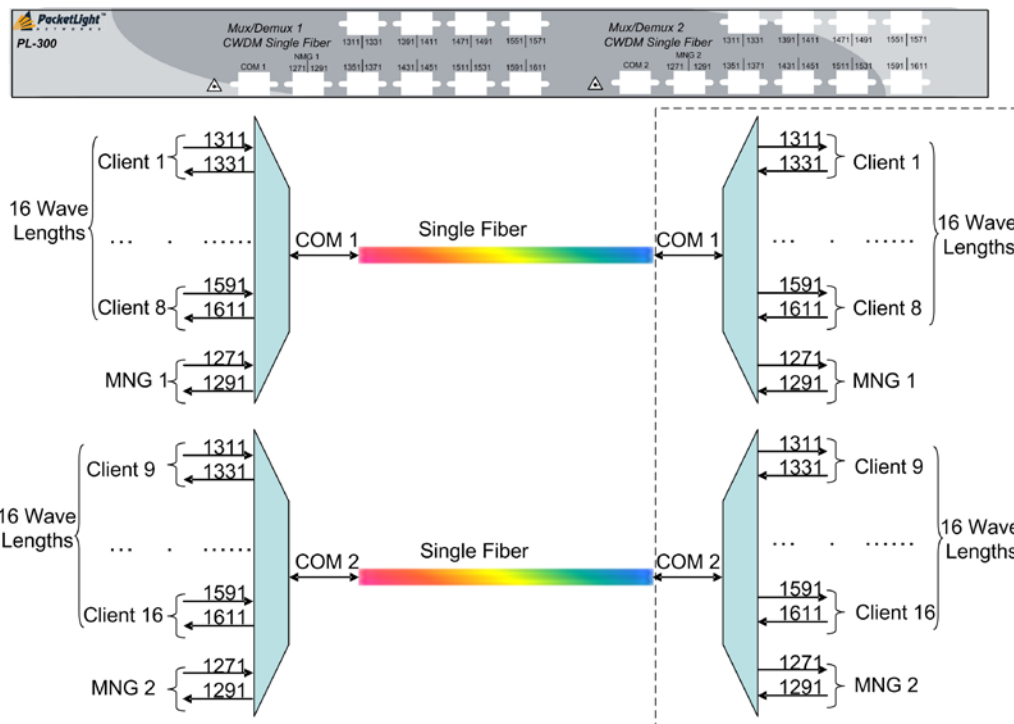


Figure 12: PL-300 CWDM-2M-16W-2C-1F

1.5.2 CWDM OADM Configurations

The following table lists the PL-300 CWDM OADM configurations.

Table 2: CWDM OADM Configurations

PL-300 Model	OADM Type	OADM #	OADM WLS #	COM Ports #	COM Fiber Type	EXP Ports #	EXP Fiber Type	Clients #	OADM WLS	MNG WL
CWDM-1O-1Wxxxx-1C-2F	CWDM	1	1	1	Dual	1	Dual	1	xxxx	1310
CWDM-1O-2Wxxxx-1C-2F	CWDM	1	2	1	Dual	1	Dual	2	xxxx-xxxx+20	1310
CWDM-1O-3Wxxxx-1C-2F	CWDM	1	3	1	Dual	1	Dual	3	xxxx-xxxx+40	1310
CWDM-1O-4Wxxxx-1C-2F	CWDM	1	4	1	Dual	1	Dual	4	xxxx-xxxx+60	1310

PL-300 Model	OADM Type	OADM #	OADM WLS #	COM Ports #	COM Fiber Type	EXP Ports #	EXP Fiber Type	Clients #	OADM WLS	MNG WL
CWDM-2O-1Wxxxx-2C-2F	CWDM	2	1	2	Dual	2	Dual	2 (1+1)	xxxx	1310
CWDM-2O-2Wxxxx-2C-2F	CWDM	2	2	2	Dual	2	Dual	4 (2+2)	xxxx-xxxx+20	1310
CWDM-2O-3Wxxxx-2C-2F	CWDM	2	3	2	Dual	2	Dual	6 (3+3)	xxxx-xxxx+40	1310
CWDM-2O-4Wxxxx-2C-2F	CWDM	2	4	2	Dual	2	Dual	8 (4+4)	xxxx-xxxx+60	1310

1.5.2.1 Examples of CWDM OADM Models

1. PL-300 CWDM-1O-4W1470-1C-2F:

- Single OADM module with four Add/Drop wavelengths
- The Add/Drop wavelengths are: 1470, 1490, 1510 and 1530nm
- Additional OSC 1310 management channel
- Single COM port with dual fiber
- Single express (EXP) port with dual fiber

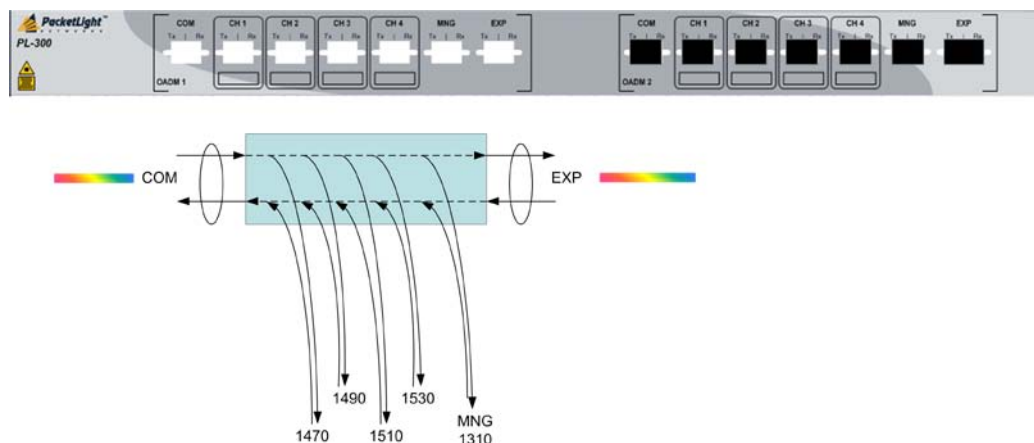


Figure 13: PL-300 CWDM-1O-4W1470-1C-2F

2. PL-300 CWDM-1O-3W1410-2C-2F:

- Dual OADM module with three Add/Drop wavelengths
- The Add/Drop wavelengths are: 1410, 1430 and 1450nm

- Additional OSC 1310 management channel
- Two COM ports with dual fiber
- Two EXP ports with dual fiber

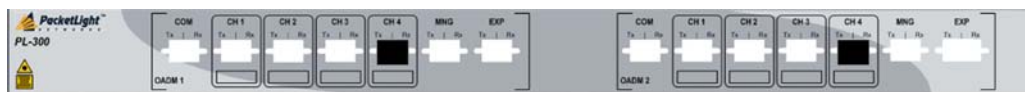


Figure 14: PL-300 CWDM-10-3W1410-2C-2F

1.5.3 DWDM MUX/DEMUX Configurations

The following table lists the PL-300 DWDM MUX/DEMUX configurations.

Table 3: DWDM MUX/DEMUX Configurations

PL-300 Model	MUX Type	MUX #	MUX WLS #	COM Ports #	COM Fiber Type	Clients #	MUX1 WLS	MUX2 WLS	MNG1 WL	MNG2 WL
DWDM-1M-4W-1C-2F	DWDM	1	4	1	Dual	4	CH28-CH31	N/A	1511	N/A
DWDM-1M-8W-1C-2F	DWDM	1	8	1	Dual	8	CH28-CH35	N/A	1511	N/A
DWDM-1M-16W-1C-2F	DWDM	1	16	1	Dual	16	CH20-CH35	N/A	1511	N/A
DWDM-1M-40W-1C-2F	DWDM	1	40	1	Dual	40	CH20-CH59	N/A	1511	N/A
DWDM-2M-4W-2C-2F	DWDM	2	4	2	Dual	8 (4+4)	CH28-CH31	CH28-CH31	1511	1511
DWDM-2M-8W-2C-2F	DWDM	2	8	2	Dual	16 (8+8)	CH28-CH35	CH28-CH35	1511	1511
DWDM-2M-16W-2C-2F	DWDM	2	16	2	Dual	32 (16+16)	CH20-CH35	CH20-CH35	1511	1511

PL-300 Model	MUX Type	MUX #	MUX WLS #	COM Ports #	COM Fiber Type	Clients #	MUX1 WLS	MUX2 WLS	MNG1 WL	MNG2 WL
DWDM-2M-8W-2C-1F	DWDM	2	8	2	Single	8 (4+4)	CH28-CH35	CH28-CH35	1511	1491
DWDM-2M-16W-2C-1F	DWDM	2	16	2	Single	16 (8+8)	CH20-CH35	CH20-CH35	1511	1491
DWDM-2M-16W-1C-1F	DWDM	2	16	1	Single	16	CH21-CH36	CH45-CH60	1491	1511
DWDM-2M-44W-1C-1F-50G	DWDM	2	44	1	Single	44	<ul style="list-style-type: none"> • 15H-37C • 40C-61H (See Note 1)	N/A	1511	N/A
DWDM-1M-88W-1C-1F-50G-1D	DWDM	1	88	1	Single	88 (See Note 2)	17C-60H (See Note 1)	N/A	N/A	N/A

NOTE:

1. 50 GHz spacing
2. Unidirectional

1.5.3.1 DWDM MUX/DEMUX Models

1. PL-300 DWDM-1M-4W-1C-2F:

- Single passive optical MUX/DEMUX module with four wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with dual fiber

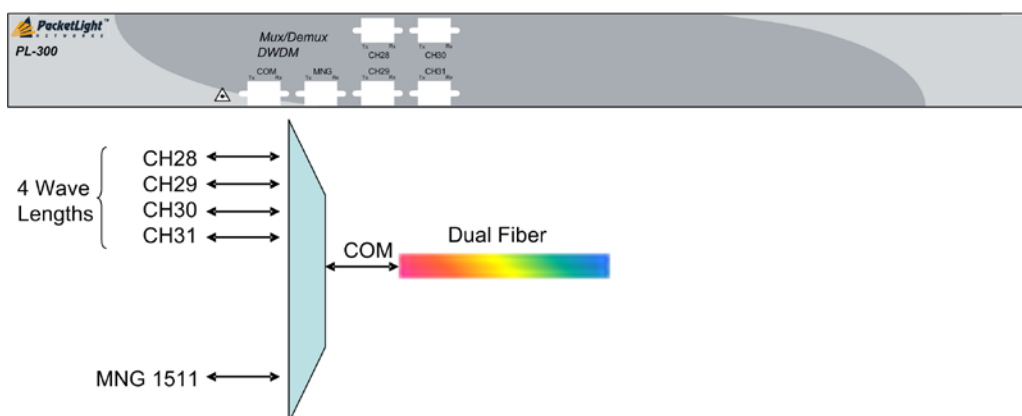


Figure 15: PL-300 DWDM-1M-4W-1C-2F

2. PL-300 DWDM-1M-8W-1C-2F:

- Single passive optical MUX/DEMUX module with eight wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with dual fiber

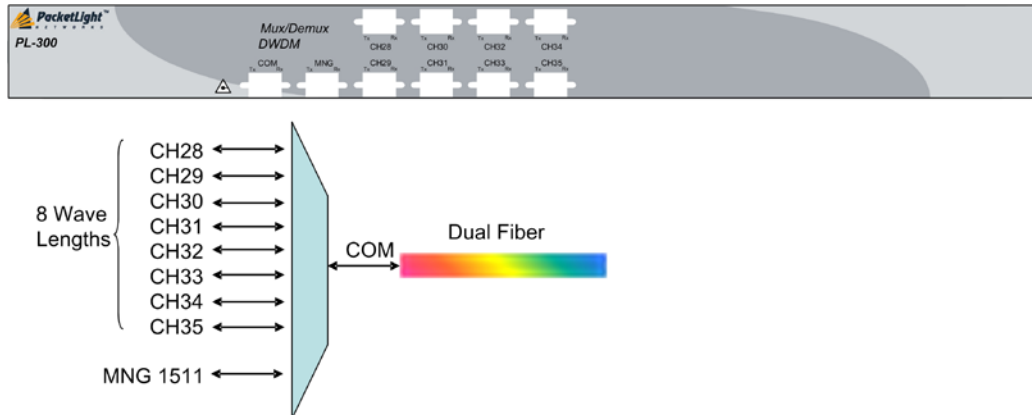


Figure 16: PL-300 DWDM-1M-8W-1C-2F

3. PL-300 DWDM-1M-16W-1C-2F:

- Single passive optical MUX/DEMUX module with 16 wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel
- One COM port with dual fiber

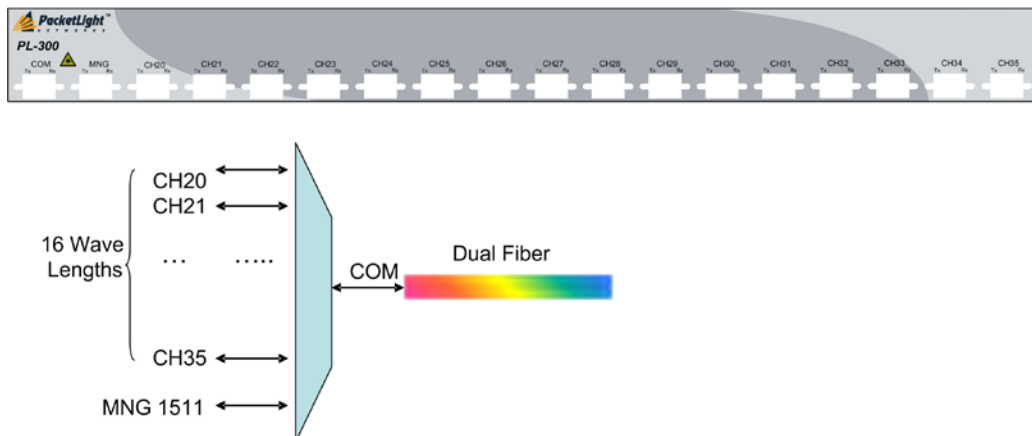


Figure 17: PL-300 DWDM-1M-16W-1C-2F

4. PL-300 DWDM-1M-40W-1C-2F:

- Single passive optical MUX/DEMUX module with 40 wavelengths
- The MUX/DEMUX module has an additional channel for the management OSC channel

- One COM port with dual fiber

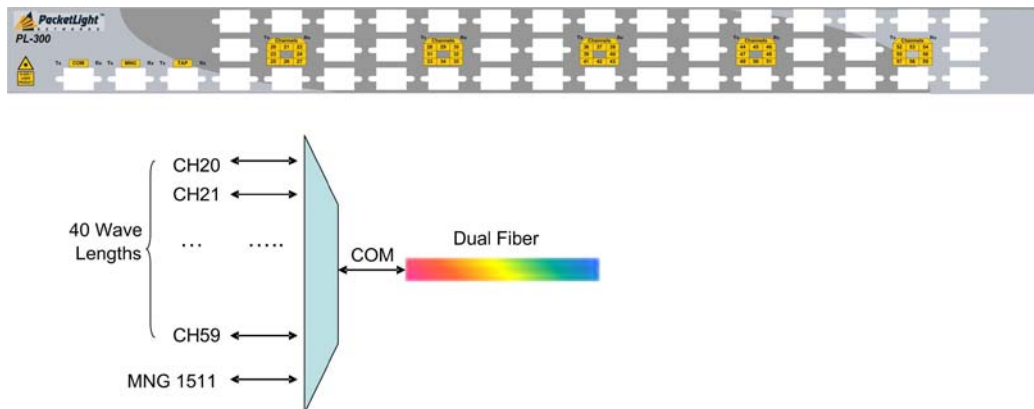


Figure 18: PL-300 DWDM-1M-40W-1C-2F

5. PL-300 DWDM-2M-4W-2C-2F:

- Two passive optical MUX/DEMUX modules with four wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel
- Two COM ports with dual fiber

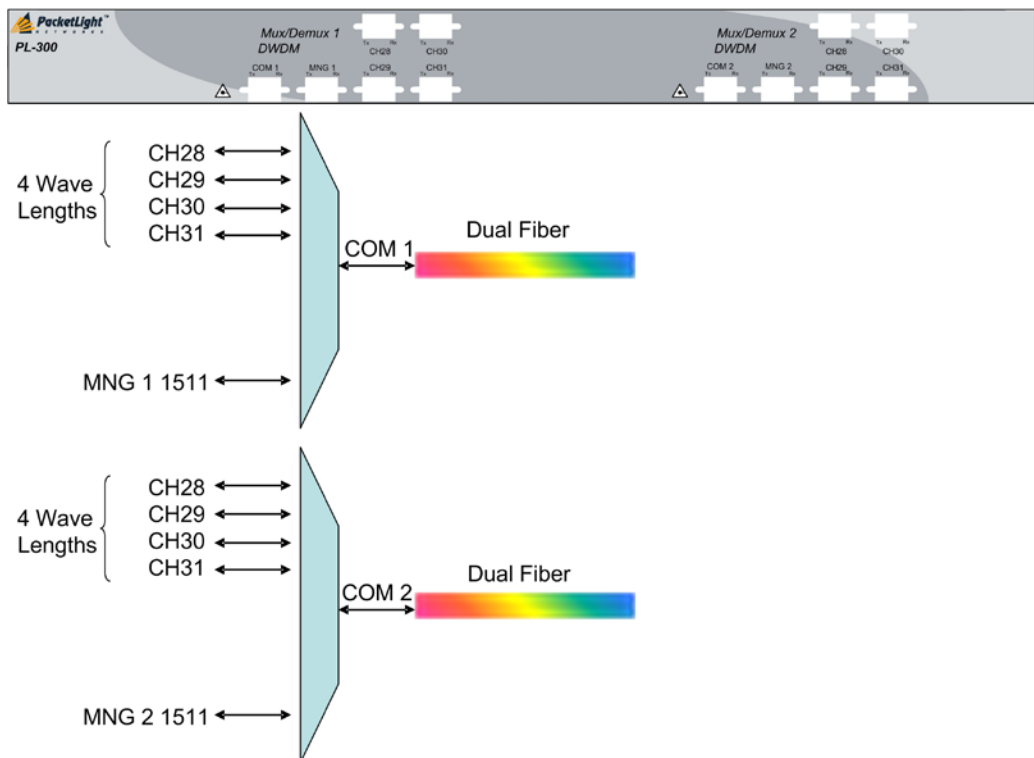


Figure 19: PL-300 DWDM-2M-4W-2C-2F

6. PL-300 DWDM-2M-8W-2C-2F:

- Two passive optical MUX/DEMUX modules with eight wavelengths each

- Each MUX/DEMUX module has an additional channel for the management OSC channel
- Two COM ports with dual fiber

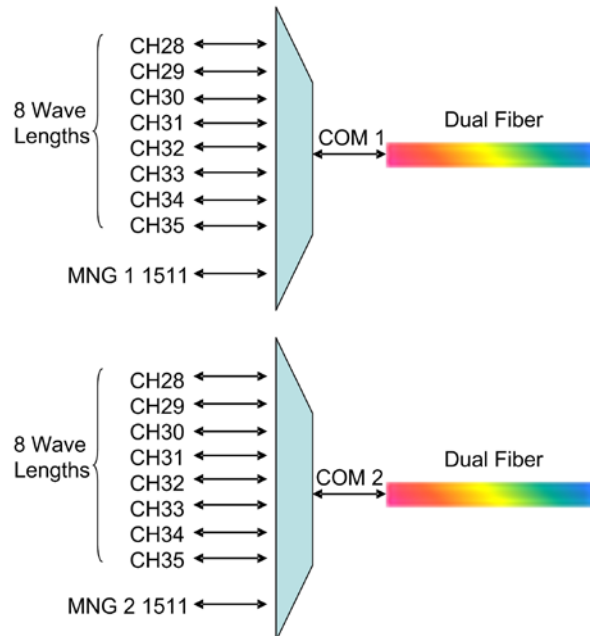
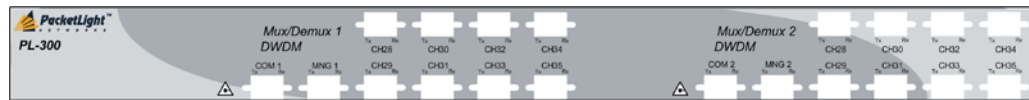


Figure 20: PL-300 DWDM-2M-8W-2C-2F

7. PL-300 DWDM-2M-16W-2C-2F:
 - Two passive optical MUX/DEMUX modules with 16 wavelengths each
 - Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with dual fiber

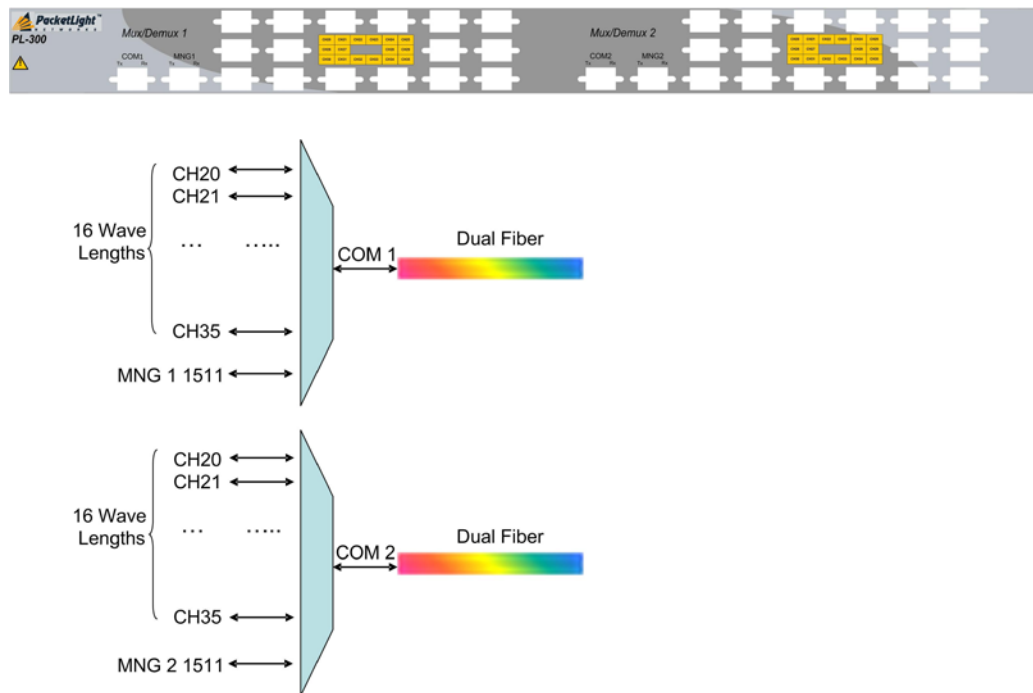


Figure 21: PL-300 DWDM-2M-16W-2C-2F

- PL-300 DWDM-2M-8W-2C-1F:
 - Two passive optical MUX/DEMUX modules with eight wavelengths each
 - Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with single fiber

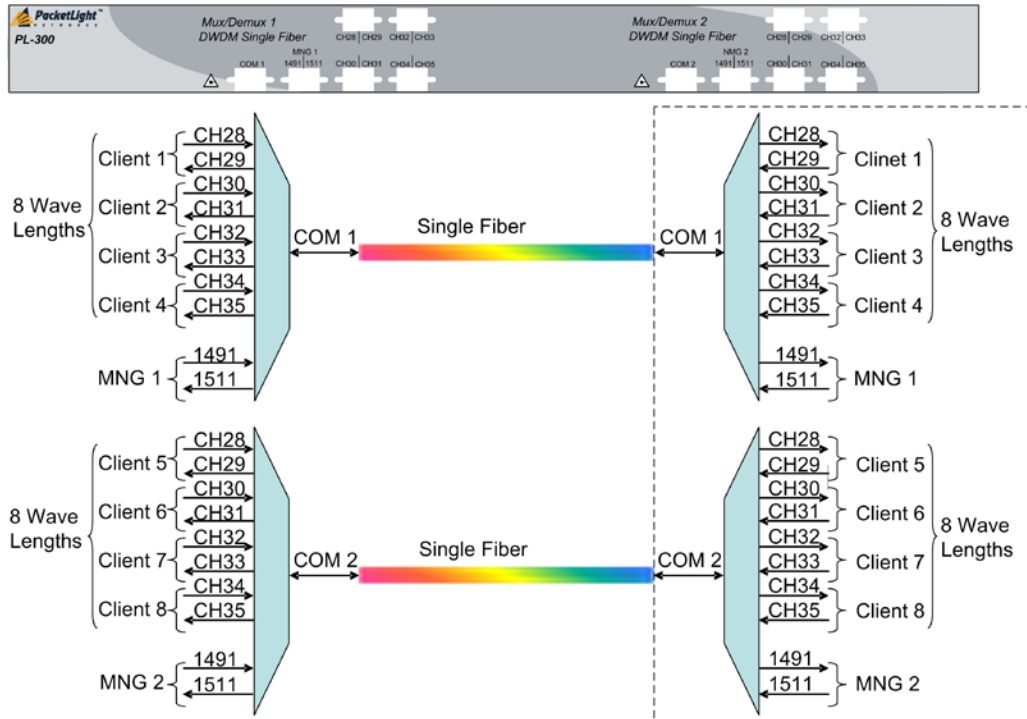


Figure 22: PL-300 DWDM-2M-8W-2C-1F

- PL-300 DWDM-2M-16W-2C-1F:
 - Two passive optical MUX/DEMUX modules with 16 wavelengths each
 - Each MUX/DEMUX module has an additional channel for the management OSC channel

- Two COM ports with single fiber

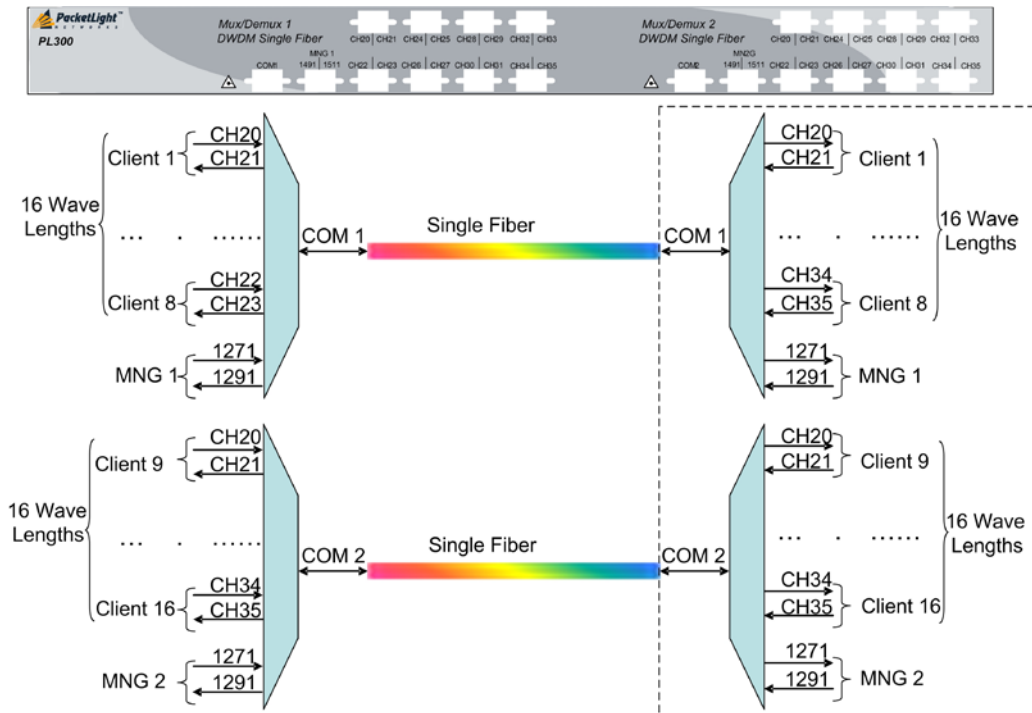


Figure 23: PL-300 DWDM-2M-16W-2C-1F

10. PL-300 DWDM-2M-16W-1C-1F (Red/Blue):

- Two passive optical MUX/DEMUX modules with 16 wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel
- Red/Blue band filter

- One COM port with single fiber

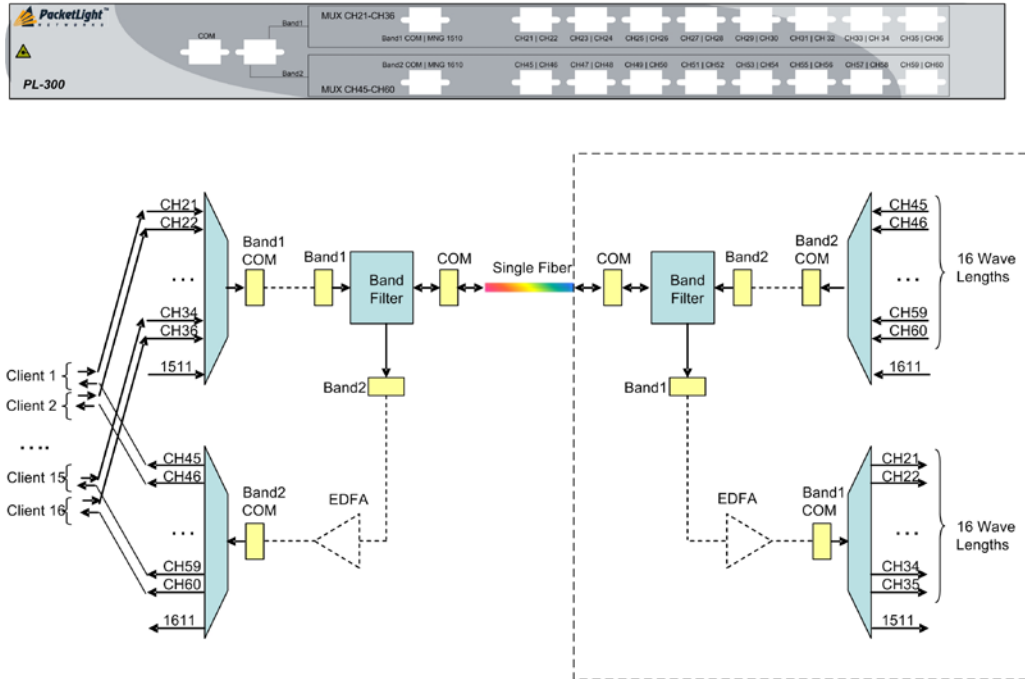


Figure 24: PL-300 DWDM-2M-16W-1C-1F (Red/Blue)

11. PL-300 DWDM-2M-44W-1C-1F-50G (Red/Blue):

- Two passive optical MUX/DEMUX modules with 44 wavelengths each
- Each MUX/DEMUX module has an additional channel for the management OSC channel
- Red/Blue band filter
- One COM port with single fiber
- 50 GHz spacing

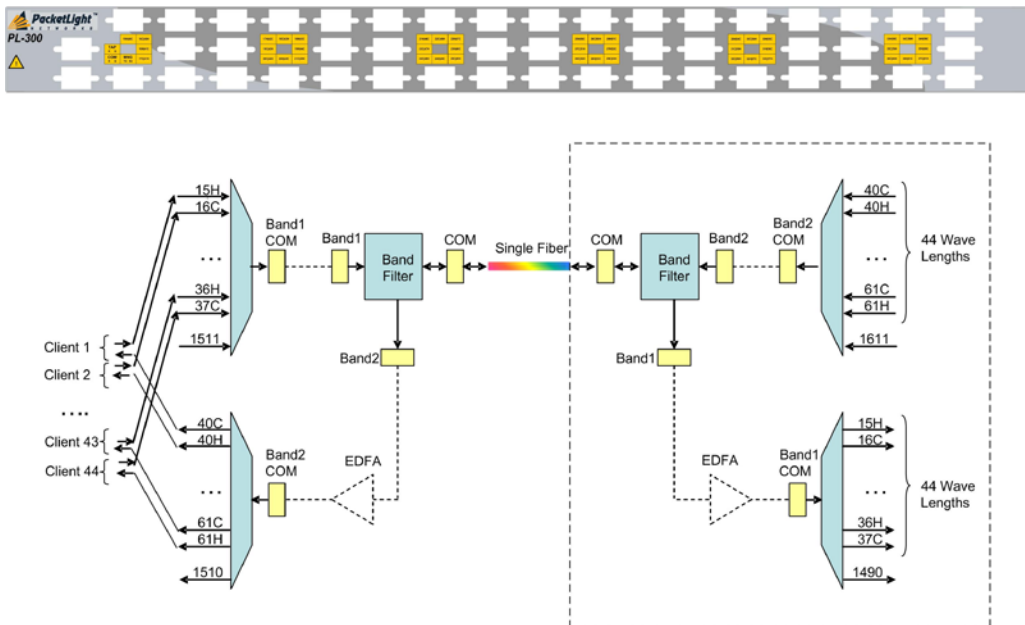


Figure 25: PL-300 DWDM-2M-44W-1C-1F-50G (Red/Blue)

12. PL-300 DWDM-1M-88W-1C-1F-50G-1D (Unidirectional):

- Single passive optical MUX (or DEMUX) module with 88 wavelengths each
- The MUX (or DEMUX) module has an additional channel for the management OSC channel
- One COM port with single fiber
- 50 GHz spacing
- Unidirectional

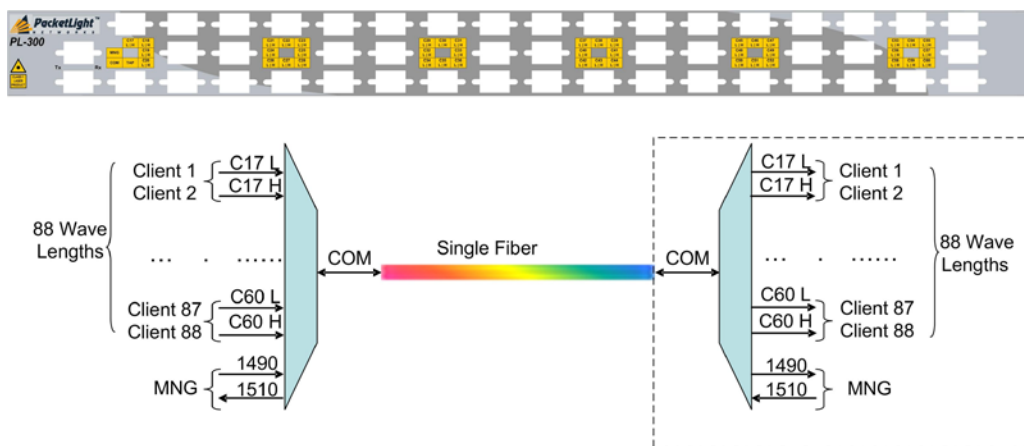


Figure 26: PL-300 DWDM-1M-88W-1C-1F-50G-1D (Unidirectional)

1.5.4 DWDM OADM Configurations

The following table lists the PL-300 DWDM OADM configurations.

Table 4: DWDM OADM Configurations

PL-300 Model	OADM Type	OADM #	OADM WLS #	COM Ports #	COM Fiber Type	EXP Ports #	EXP Fiber Type	Clients #	OADM WLS	MNG WL
DWDM-1O-1Wxx-1C-2F	DWDM	1	1	1	Dual	1	Dual	1	CHxx	1511
DWDM-1O-2Wxx-1C-2F	DWDM	1	2	1	Dual	1	Dual	2	CHxx-CHxx+1	1511
DWDM-1O-3Wxx-1C-2F	DWDM	1	3	1	Dual	1	Dual	3	CHxx-CHxx+2	1511

PL-300 Model	OADM Type	OADM #	OADM WLS #	COM Ports #	COM Fiber Type	EXP Ports #	EXP Fiber Type	Clients #	OADM WLS	MNG WL
DWDM-10-4Wxx-1C-2F	DWDM	1	4	1	Dual	1	Dual	4	CHxx- CHxx+ 3	1511
DWDM-20-1Wxx-2C-2F	DWDM	2	1	2	Dual	2	Dual	2 (1+1)	CHxx	1511
DWDM-20-2Wxx-2C-2F	DWDM	2	2	2	Dual	2	Dual	4 (2+2)	CHxx-CHxx+ 1	1511
DWDM-20-3Wxx-2C-2F	DWDM	2	3	2	Dual	2	Dual	6 (3+3)	CHxx-CHxx+ 2	1511
DWDM-20-4Wxx-2C-2F	DWDM	2	4	2	Dual	2	Dual	8 (4+4)	CHxx-CHxx+ 3	1511

1.5.4.1 Examples of DWDM OADM Models

1. PL-300 DWDM-10-4W28-1C-2F:

- Single OADM module with four Add/Drop wavelengths
- Additional 1510 OSC management channel
- Single COM port with dual fiber
- Single EXP port with dual fiber

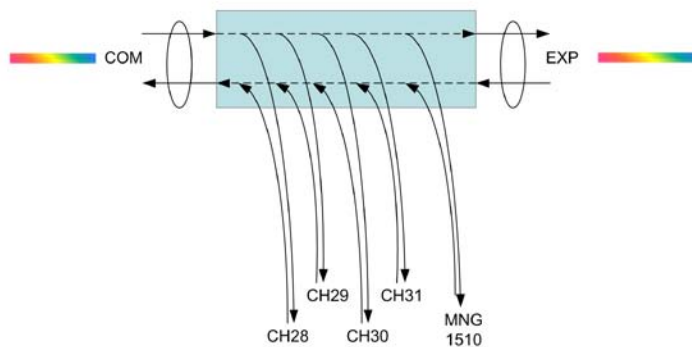


Figure 27: PL-300 DWDM-10-4W28-1C-2F

2. PL-300 DWDM-10-3W28-2C-2F:

- Dual OADM modules each with three Add/Drop wavelengths
The Channels are: CH28, CH29 and CH30
- Additional OSC 1510 management channel
- Two COM ports with dual fiber
- Two EXP ports with dual fiber

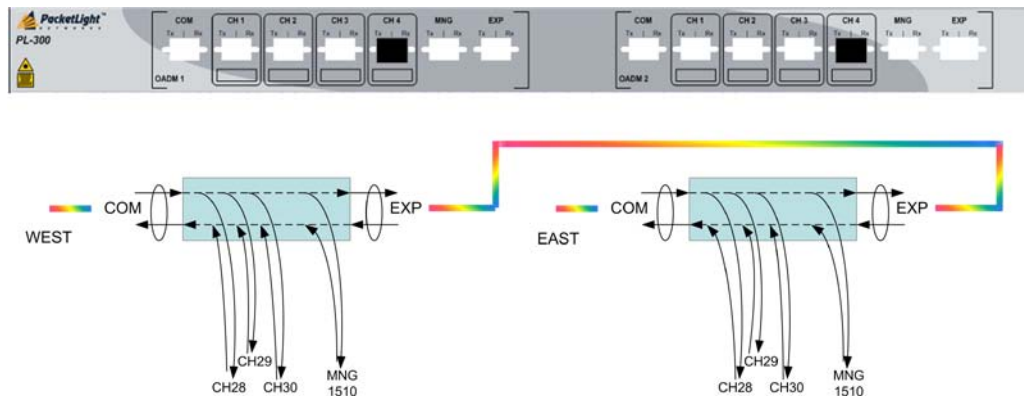


Figure 28: PL-300 DWDM-1M-3W28-2C-2F

1.5.5 DCM Configurations

The following table lists the PL-300 DCM configurations.

Table 5: DCM Configurations

PL-300 Model	DCM #	Distance
DCM1-40K	1	Up to 40 km
DCM1-60K	1	Up to 60 km
DCM1-80K	1	Up to 80 km
DCM1-100K	1	Up to 100 km
DCM1-120K	1	Up to 120 km
DCM1-220K	1	Up to 220 km
DCM1-400K	1	Up to 400 km
DCM1-40K	2	Up to 40 km
DCM1-60K	2	Up to 60 km
DCM1-80K	2	Up to 80 km
DCM1-100K	2	Up to 100 km
DCM2-120K	2	Up to 120 km
DCM2-220K	2	Up to 220 km
DCM2-400K	2	Up to 400 km
DCM1-40K	4	Up to 40 km

PL-300 Model	DCM #	Distance
DCM1-60K	4	Up to 60 km
DCM1-80K	4	Up to 80 km
DCM1-100K	4	Up to 100 km
DCM2-120K	4	Up to 120 km
DCM2-220K	4	Up to 220 km
DCM2-400K	4	Up to 400 km

1.5.5.1 DCM Models

1. PL-300 DCM1-<n>K:

- Single passive optical DCM module
- One In/Out port
- Supports a distance of up to <n> km



Figure 29: PL-300 DCM1

2. PL-300 DCM2-<n>K:

- Two passive optical DCM modules
- Two In/Out ports
- Supports a distance of up to <n> km

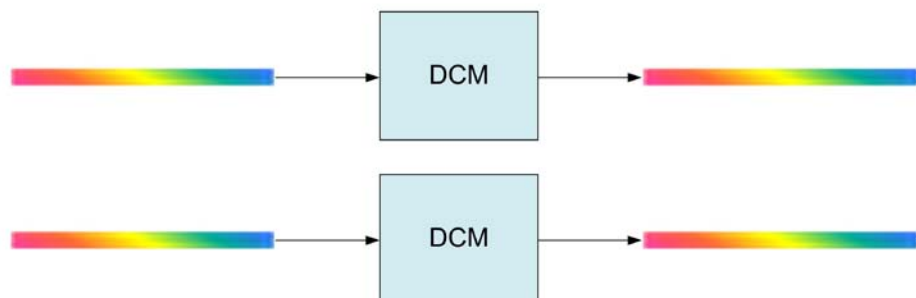


Figure 30: PL-300 DCM2

3. PL-300 DCM4-<n>K:
 - Four passive optical DCM modules
 - Four In/Out port
 - Supports a distance of up to <n> km

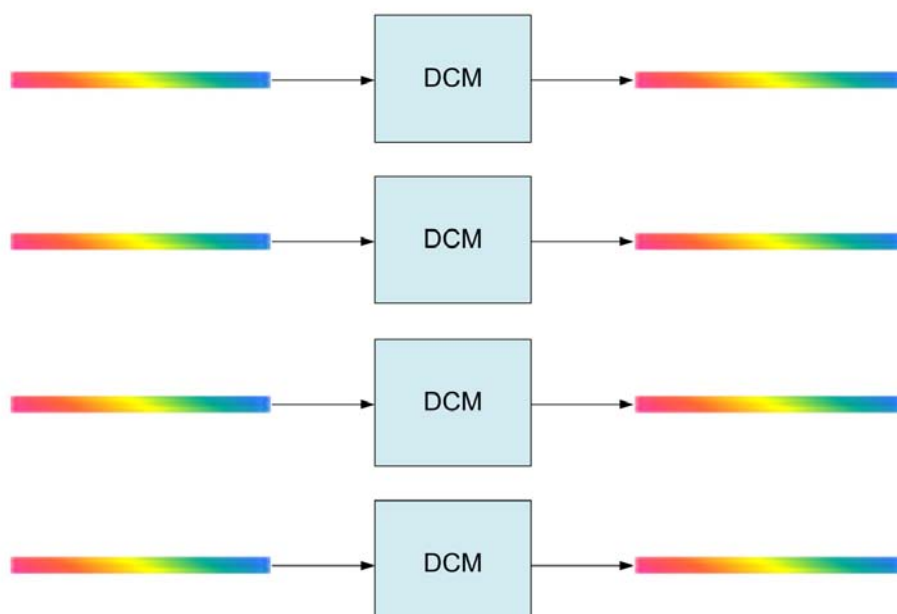


Figure 31: PL-300 DCM4

1.6 Technical Specifications

This section describes the PL-300 technical specifications.

1.6.1 General Specifications

Table 6: General Specifications

Client Ports	Number of Ports	Up to 44 ports
	Connectors	LC
COM Ports	Number of Ports	Up to two ports
	Connectors	LC or SC
EXP Ports NOTE: Applicable only for OADM models.	Number of Ports	Up to two ports
	Connectors	LC or SC

DCM Ports NOTE: Applicable only for OADM models.	Number of Ports	Up to 4 ports
	Connectors	LC or SC
Physical	Height	44 mm/1.733" (1U)
	Width	440 mm/17.32"
	Depth	230 mm/9.05"
	Weight	2.4 kg/5.3 lbs
	Mounting Options	19", 23", ETSI rack mountable
Environment	Operating Temperature	<ul style="list-style-type: none"> • OADM models: 0° to +70°C/+32° to +158°F • Other models: -20° to +85°C/-4° to +185°F
	Storage Temperature	-25° to +55°C/-13° to +131°F
	Normal Operating Humidity	5% to 85% RH non-condensing
	Storage Humidity	Up to 95% RH
Safety	Standards	<ul style="list-style-type: none"> • IEC/EN 60825-1 • IEC/EN 60825-2 • RoHS 5/6

1.6.2 CWDM MUX/DEMUX Specifications

1.6.2.1 CWDM MUX/DEMUX with Dual Fiber Specifications

Table 7: CWDM MUX/DEMUX with Dual Fiber Specifications

Parameter	4 Channels	8 Channels	16 Channels
CWDM Passband (nm)	1471-1531	1471-1611	1311-1611
Channel Spacing (nm)	20	20	20
Link Loss (MUX+DEMUX) (dB)	≤4	≤4	≤6
Adjacent Channel Isolation (dB)	≥30	≥30	≥30
Non-Adjacent Channel Isolation (dB)	≥45	≥45	≥45
Express Channel Wavelength (nm)	1311+/-30	1311+/-6.5	1291+/-6.5
Express Channel Link Loss (dB)	≤1.5	≤1.5	≤1.5
Connector Type	LC/UPC	LC/UPC	LC/UPC

1.6.2.2 CWDM MUX/DEMUX with Single Fiber Specifications

Table 8: CWDM MUX/DEMUX with Single Fiber Specifications

Parameter	8 Channels	16 Channels
CWDM Passband (nm)	1471-1611	1311-1611
Channel Spacing (nm)	20	20
Link Loss (MUX+DEMUX) (dB)	≤6	≤7
Adjacent Channel Isolation (dB)	≥30	≥30
Non-Adjacent Channel Isolation (dB)	≥45	≥45
Express Channel Wavelength (nm)	<ul style="list-style-type: none"> • 1291+/-6.5 • 1311+/-6.5 	<ul style="list-style-type: none"> • 1271+/-6.5 • 1291+/-6.5
Express Channel Link Loss (dB)	≤1.5	≤1.5
Connector Type Channels	LC/UPC	LC/UPC
Connector Type COM	SC/UPC	SC/UPC

1.6.3 CWDM OADM Specifications

Table 9: CWDM OADM Specifications

Parameter	1 Channel	2 Channels	4 Channels
CWDM Passband (nm)	1331-1611	1331-1611	1331-1611
Channel Spacing (nm)	20	20	20
Link Loss (Add/Drop) (dB)	≤1.6	≤2.4	≤4.0
Adjacent Channel Isolation (dB)	≥30	≥30	≥30
Non-Adjacent Channel Isolation (dB)	≥40	≥40	≥40
Operating Temperature (°C/°F)	0° to 70°C/ 32° to 158°F	0° to 70°C/ 32° to 158°F	0° to 70°C/ 32° to 158°F
Connector Type Channels	LC/UPC	LC/UPC	LC/UPC
Connector Type COM	SC/UPC	SC/UPC	SC/UPC

1.6.4 DWDM MUX/DEMUX Specifications

1.6.4.1 DWDM MUX/DEMUX with Dual Fiber Specifications

Table 10: DWDM MUX/DEMUX Dual Fiber Specifications

Parameter	4 Channels	8 Channels	16 Channels	40 Channels
DWDM Passband (Channels)	CH28-CH31	CH28-CH35	CH20-CH35	CH20-CH59
Channel Spacing (GHz)	100 GHz	100 GHz	100 GHz	100 GHz

Parameter	4 Channels	8 Channels	16 Channels	40 Channels
Link Loss (MUX+DEMUX) (dB)	≤4	≤4	≤7	≤7
Adjacent Channel Isolation (dB)	≥26	≥26	≥26	≥26
Non-Adjacent Channel Isolation (dB)	≥45	≥45	≥35	≥35
Express Channel Wavelength (nm)	1511+/-6.5	1511+/-6.5	1511+/-6.5	1511+/-6.5
Express Channel Link Loss (dB)	≤1.5	≤1.5	≤1	≤1
Connector Type	LC/UPC	LC/UPC	LC/UPC	LC/UPC

1.6.4.2 DWDM MUX/DEMUX with Single Fiber Specifications

Table 11: DWDM MUX/DEMUX 100 GHz Single Fiber Specifications

Parameter	8 Channels	16Channels	40 Channels
DWDM Passband (Channels)	CH28-CH35	CH20-CH35	CH20-CH59
Channel Spacing (GHz)	100 GHz	100 GHz	100 GHz
Link Loss (MUX+DEMUX) (dB)	≤6	≤7	≤7
Adjacent Channel Isolation (dB)	≥26	≥26	≥26
Non-Adjacent Channel Isolation (dB)	≥45	≥35	≥35
Express Channel Wavelength (nm)	<ul style="list-style-type: none"> • 1511+/-6.5 • 1491+/-6.5 	<ul style="list-style-type: none"> • 1511+/-6.5 • 1491+/-6.5 	<ul style="list-style-type: none"> • 1511+/-6.5 • 1491+/-6.5
Express Channel Link Loss (dB)	≤1.5	≤1	≤1
Operating Temperature (°C/°F)	-20° to +85°C/ -4° to +185 °F	-20° to 85°C/ -4° to 185°F	-20° to 85°C/ -4° to 185°F
Connector Type Channels	LC/UPC	LC/UPC	LC/UPC
Connector Type COM	SC/UPC	SC/UPC	SC/UPC

Table 12: DWDM MUX/DEMUX 50 GHz Single Fiber Specifications

Parameter	88 Channels
DWDM Passband (Channels)	17C-60H
Channel Spacing (GHz)	50 GHz
Link Loss (MUX+DEMUX) (dB)	≤6
Adjacent Channel Isolation (dB)	≥26
Non-Adjacent Channel Isolation (dB)	≥45
Express Channel Wavelength (nm)	<ul style="list-style-type: none"> • 1511+/-6.5 • 1491+/-6.5

Parameter	88 Channels
Express Channel Link Loss (dB)	≤ 1.5
Operating Temperature ($^{\circ}\text{C}/^{\circ}\text{F}$)	-20 $^{\circ}$ to +85 $^{\circ}\text{C}$ / -4 $^{\circ}$ to +185 $^{\circ}\text{F}$
Connector Type Channels	LC/UPC
Connector Type COM	SC/UPC

1.6.4.3 DWDM Red/Blue MUX/DEMUX with Single Fiber Specifications

Table 13: DWDM Red/Blue MUX/DEMUX 100 GHz Single Fiber Specifications

Parameter	Red	Blue
Passband (Channels)	CH21-CH36	CH45-CH60
Channel Spacing (GHz)	100 GHz	100 GHz
Link Loss (MUX+DEMUX) (dB)	≤ 3.5	≤ 3.5
Adjacent Channel Isolation (dB)	≥ 26	≥ 26
Non-Adjacent Channel Isolation (dB)	≥ 35	≥ 35
Express Channel Wavelength (nm)	1491 +/- 6.5	1511 +/- 6.5
Express Channel Link Loss (dB)	≤ 1	≤ 1
Connector Type Channels	LC/UPC	LC/UPC
Connector Type COM	SC/UPC	SC/UPC

Table 14: DWDM Red/Blue MUX/DEMUX 50 GHz Single Fiber Specifications

Parameter	Red	Blue
Passband (Channels)	15H-37C	40C-61H
Channel Spacing (GHz)	50 GHz	50 GHz
Link Loss (MUX+DEMUX) (dB)	≤ 3.5	≤ 3.5
Adjacent Channel Isolation (dB)	≥ 26	≥ 26
Non-Adjacent Channel Isolation (dB)	≥ 35	≥ 35
Express Channel Wavelength (nm)	1491 +/- 6.5	1511 +/- 6.5
Express Channel Link Loss (dB)	≤ 1	≤ 1
Connector Type Channels	LC/UPC	LC/UPC
Connector Type COM	SC/UPC	SC/UPC

1.6.5 DWDM OADM Specifications

Table 15: DWDM OADM Specifications

Parameter	Value
DWDM Passband (Channels)	ITU DWDM Grid
Add/Drop Channels	1-4
Channel Spacing (GHz)	100 GHz
Link Loss (Add+Drop) (dB)	≤2.3
Adjacent Channel Isolation (dB)	≥25
Non-Adjacent Channel Isolation (dB)	≥45
OSC Channel Wavelength (nm)	1511+/-6.5
Operating Temperature (°C/°F)	0° to +70°C/+32° to +158°F
Connector Type Channels	LC/UPC
Connector Type COM/EXP	SC/UPC

1.6.6 DCM Specifications

Table 16: DCM Specifications

Range	Channel Spacing	Operation BW	Insertion Loss
40 Km	100 GHz	> 40 GHz	< 1 dB
60 Km	100 GHz	> 40 GHz	< 1 dB
80 Km	100 GHz	> 40 GHz	< 1 dB
100 Km	100 GHz	> 40 GHz	< 1.5 dB
120 Km	100 GHz	> 40 GHz	< 1.5 dB
220 Km	100 GHz	> 30 GHz	< 1.5 dB
400 Km	100 GHz	> 30 GHz	5.0 dB

2 Installation

This chapter provides installation information and instructions for the PL-300.

In this Chapter

Safety Precautions	33
Site Requirements	34
Installing the PL-300 Unit	37

2.1 Safety Precautions

This section describes the safety precautions.

2.1.1 General Safety Precautions

The following are the general safety precautions:

- The equipment should be used in a restricted access location only.
- No internal settings, adjustments, maintenance, and repairs may be performed by the operator or the user; such activities may be performed only by skilled service personnel who are aware of the hazards involved.
- Always observe standard safety precautions during installation, operation, and maintenance of this product.

2.1.2 Laser Safety Statutory Warning and Operating Precautions

All personnel involved in equipment installation, operation, and maintenance must be aware that the laser radiation is invisible. Therefore, the personnel must strictly observe the applicable safety precautions and, in particular, must avoid looking straight into optical connectors, either directly or using optical instruments.

In addition to the general precautions described in this section, be sure to observe the following warnings when operating a product equipped with a laser device. Failure to observe these warnings could result in fire, bodily injury, and damage to the equipment.



WARNING: To reduce the risk of exposure to hazardous radiation:

- Do not try to open the enclosure. There are no user serviceable components inside.
- Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
- Allow only authorized service technicians to repair the unit.

2.2 Site Requirements

This section describes the PL-300 site requirements.

2.2.1 Physical Requirements

The PL-300 units are intended for installation in 19-inch or 23-inch racks or placed on desktops or shelves.

All the connections are made to the front panel.

2.2.2 Ambient Requirements

The following table provides the recommended PL-300 ambient requirements.

Table 17: Ambient Requirements

PL-300 Model	Ambient Operating Temperature	Relative Humidity
OADM models	0° to +70°C/+32° to +158°F	5% to 85%, non-condensing
Other models	-20° to +85°C/-4° to +185°F	5% to 85%, non-condensing

2.2.3 Optical Ports

This section provides general requirements for the connections to the various PL-300 ports.

The PL-300 unit has the following types of optical ports.

Table 18: Optical Ports

Port Type	Connectors	Connectivity
Client	LC connectors	Connected to the network ports of the local nodes.
COM	LC or SC connectors	Connected to the remote nodes.
EXP	LC or SC connectors	Connected to the local mate EXP port or to the remote peer COM port.
DCM	LC or SC connectors	Connected to the remote node on one side (the In connector) and to the network port of the local node on the other side (the Out connector).
MNG	LC connectors	Connected to the MNG ports of the local nodes.

2.2.3.1 Client Ports

The PL-300 contains up to 44 clients ports, depending on the configuration. Each port has two optical connectors, one for the receive input and the other for the transmit output.

The following table provides information regarding the fiber and connector specifications for the client ports.

Table 19: Client Port Specifications

Specification	Requirement
Fiber Type	Single mode
Fiber Size	2 mm optical fiber
Connector Type	LC
Port Type	DWDM or CWDM client

2.2.3.2 COM Ports

The COM port is connected to the network line, which carries the common optical signal that aggregates the optical channels of the uplinks and the optical supervisory channel.

The COM port is internally connected to the MUX/DEMUX module.

There are two configurations of the COM ports:

- Configuration 1: Unprotected**
 The front panel has a single common port labeled "COM".
 In this configuration, the PL-300 may include a single MUX module.
- Configuration 2: Protected**
 The front panel has two common ports labeled "COM1" and "COM2".
 These ports are used to connect the node to the two network lines: Working and Protection.
 In this configuration, the PL-300 may include an optical switch.

The following table provides information regarding the fiber and connector specifications for the COM port.

Table 20: COM Port Specifications

Specification	Requirement
Fiber Type	Single mode
Fiber Size	2 mm optical
Connector Type	LC with protective shutters or SC
Port Type	Optical COM port

2.2.3.3 EXP Ports

The EXP ports can be present only on PL-300 OADM models. The EXP port is used to continue the other channels that were not added or dropped by the OADM.

There are two configurations for EXP ports:

- Configuration 1: Single EXP port**
 When a single OADM is used, the EXP port may be connected to the COM port of the remote downstream PL-300 unit.

This configuration may be used for a point-to-point connection or for a Linear Add/Drop topology where all links originate from a node at one end of the chain.

- **Configuration 2:** Two EXP ports

When two OADMs are used, both EXP ports of the PL-300 are available and should be connected to each other.

This configuration should be used in a Ring topology or in a linear add/drop topology where new links may be added by nodes along the chain.

The following table provides information regarding the fiber and connector specifications for the EXP port.

Table 21: EXP Port Specifications

Specification	Requirement
Fiber Type	Single mode
Fiber Size	2 mm optical
Connector Type	LC with protective shutters or SC
Port Type	Optical EXP port

2.2.3.4 DCM Ports

The DCM ports exist only for PL-300 DCM models. The DCM provides chromatic dispersion compensation for DWDM networks. The DCM port is attached to the fiber that arrives from the network before connecting it to the local amplifier.

The DCM module is unidirectional, therefore, each port handles one direction. The DCM port has In and Out connectors. The In connector should be attached to the incoming signal, while the Out connector transmits the same signal after disparity compensation.

The following table provides information regarding the fiber and connector specifications for the DCM port.

Table 22: DCM Port Specifications

Specification	Requirement
Fiber Type	Single mode
Fiber Size	2 mm optical
Connector Type	LC with protective shutters or SC
Port Type	Optical DCM port

2.2.3.5 MNG Ports

There may be up to two OSC (Optical Supervisory Channel) ports. The front panel has a single port labeled "MNG" or two ports labeled "MNG1" and "MNG2". These ports are used the MUX/DEMUX remote management channel.

The following table provides information regarding the fiber and connector specifications for the MNG port.

Table 23: MNG Port Specifications

Specification	Requirement
Fiber Type	Single mode
Fiber Size	2 mm optical fiber
Connector Type	LC
Port Type	Optical Supervisory Channel

2.3 Installing the PL-300 Unit

PL-300 units are intended for installation in 19-inch or 23-inch racks or placed on desktops or shelves.



CAUTION: Before installing a PL-300 unit, review the [Safety Precautions](#) (p. 33).

2.3.1 Package Contents

The PL-300 package includes the following items:

- PL-300 unit
- Fiber tray
- Kit for rack installation: 19", 23" (if ordered), or 600 mm ETSI (if ordered)

2.3.2 Optical Cable Handling Precautions

The following are the optical cable handling precautions:

- Make sure that all the optical connectors are closed at all times, either by the appropriate protective caps or by the mating cable connector. Do not remove the protective cap until an optical fiber is connected to the corresponding connector, and immediately install a protective cap after a cable is disconnected.
- (Recommended) Before installing optical cables, thoroughly clean their connectors using an approved cleaning kit.
- When connecting optical cables, make sure to prevent cable twisting and avoid sharp bends. Unless otherwise specified by the optical cable manufacturer, the minimum fiber bending radius is 35 mm. Always leave some slack, to prevent stress.
- (Recommended) Install plastic supports on each cable connector. These supports determine the fiber bending radius at the connector entry point and also prevent stress at this point.

Appendix A: ITU Grid Specifications

This appendix describes the ITU grid specifications.

In this Appendix

DWDM ITU 100 GHz Spacing Grid 39
 DWDM ITU 50 GHz Spacing Grid 40
 CWDM ITU Grid 43

A.1 DWDM ITU 100 GHz Spacing Grid

The following table presents the DWDM ITU grid with 100 GHz spacing.

Table 24: DWDM ITU 100 GHz Grid

DWDM Channel	Frequency (THz)	Wavelength (nm)		DWDM Channel	Frequency (THz)	Wavelength (nm)
1	190.1	1577.03		41	194.1	1544.53
2	190.2	1576.20		42	194.2	1543.73
3	190.3	1575.37		43	194.3	1542.94
4	190.4	1574.54		44	194.4	1542.14
5	190.5	1573.71		45	194.5	1541.35
6	190.6	1572.89		46	194.6	1540.56
7	190.7	1572.06		47	194.7	1539.77
8	190.8	1571.24		48	194.8	1538.98
9	190.9	1570.42		49	194.9	1538.19
10	191.0	1569.59		50	195.0	1537.40
11	191.1	1568.77		51	195.1	1536.61
12	191.2	1567.95		52	195.2	1535.82
13	191.3	1567.13		53	195.3	1535.04
14	191.4	1566.31		54	195.4	1534.25
15	191.5	1565.50		55	195.5	1533.47
16	191.6	1564.68		56	195.6	1532.68
17	191.7	1563.86		57	195.7	1531.90
18	191.8	1563.05		58	195.8	1531.12
19	191.9	1562.23		59	195.9	1530.33
20	192.0	1561.42		60	196.0	1529.55
21	192.1	1560.61		61	196.1	1528.77
22	192.2	1559.79		62	196.2	1527.99
23	192.3	1558.98		63	196.3	1527.22
24	192.4	1558.17		64	196.4	1526.44

DWDM Channel	Frequency (THz)	Wavelength (nm)		DWDM Channel	Frequency (THz)	Wavelength (nm)
25	192.5	1557.36		65	196.5	1525.66
26	192.6	1556.55		66	196.6	1524.89
27	192.7	1555.75		67	196.7	1524.11
28	192.8	1554.94		68	196.8	1523.34
29	192.9	1554.13		69	196.9	1522.56
30	193.0	1553.33		70	197.0	1521.79
31	193.1	1552.52		71	197.1	1521.02
32	193.2	1551.72		72	197.2	1520.25
33	193.3	1550.92		73	197.3	1519.48
34	193.4	1550.12				
35	193.5	1549.32				
36	193.6	1548.51				
37	193.7	1547.72				
38	193.8	1546.92		S-Band	Short WL	1460 to 1530
39	193.9	1546.12		C-Band	Coarse WL	1530 to 1565
40	194.0	1545.32		L-Band	Long WL	1565 to 1625

A.2 DWDM ITU 50 GHz Spacing Grid

The following table presents the DWDM ITU grid with 50 GHz spacing.

Table 25: DWDM 50 GHz ITU Grid

DWDM Channel	Frequency (THz)	Wavelength (nm)		DWDM Channel	Frequency (THz)	Wavelength (nm)
1C	190.10	1577.03		37C	193.70	1547.72
1H	190.15	1576.61		37H	193.75	1547.32
2C	190.20	1576.20		38C	193.80	1546.92
2H	190.25	1575.78		38H	193.85	1546.52
3C	190.30	1575.37		39C	193.90	1546.12
3H	190.35	1574.95		39H	193.9	1545.72
4C	190.40	1574.54		40C	194.00	1545.32
4H	190.45	1574.13		40H	194.05	1544.92
5C	190.50	1573.71		41C	194.10	1544.53
5H	190.55	1573.30		41H	194.15	1544.13
6C	190.60	1572.89		42C	194.20	1543.73

DWDM Channel	Frequency (THz)	Wavelength (nm)		DWDM Channel	Frequency (THz)	Wavelength (nm)
6H	190.65	1572.48		42H	194.25	1543.33
7C	190.70	1572.06		43C	194.30	1542.94
7H	190.75	1571.65		43H	194.35	1542.54
8C	190.80	1571.24		44C	194.40	1542.14
8H	190.85	1570.83		44H	194.45	1541.75
9C	190.90	1570.42		45C	194.50	1541.35
9H	190.95	1570.01		45H	194.56	1540.95
10C	191.00	1569.59		46C	194.60	1540.56
10H	191.05	1569.18		46H	194.65	1540.16
11C	191.10	1568.77		47C	194.70	1539.77
11H	191.15	1568.36		47H	194.75	1539.37
12C	191.20	1567.95		48C	194.80	1538.98
12H	191.25	1567.54		48H	194.85	1538.58
13C	191.30	1567.13		49C	194.90	1538.19
13H	191.35	1566.72		49H	194.95	1537.79
14C	191.40	1566.31		50C	195.00	1537.40
14H	191.45	1565.90		50H	195.05	1537.00
15C	191.50	1565.50		51C	195.10	1536.61
15H	191.55	1565.09		51H	195.15	1536.61
16C	191.60	1564.68		52C	195.20	1535.82
16H	191.65	1564.27		52H	195.25	1535.43
17C	191.70	1563.86		53C	195.30	1535.04
17H	191.75	1563.45		53H	195.35	1534.64
18C	191.80	1563.05		54C	195.40	1534.25
18H	191.85	1562.64		54H	195.45	1533.86
19C	191.90	1562.23		55C	195.50	1533.47
19H	191.95	1561.83		55H	195.55	1533.07
20C	192.00	1561.42		56C	195.60	1532.68
20H	192.05	1561.01		56H	195.65	1532.29
21C	192.10	1560.61		57C	195.70	1531.90
21H	192.15	1560.20		57H	195.75	1531.51
22C	192.20	1559.79		58C	195.80	1531.12
22H	192.25	1559.39		58H	195.85	1530.72
23C	192.30	1558.98		59C	195.90	1530.33
23H	192.35	1558.58		59H	195.95	1529.94

DWDM Channel	Frequency (THz)	Wavelength (nm)		DWDM Channel	Frequency (THz)	Wavelength (nm)
24C	192.40	1558.17		60C	196.00	1529.55
24H	192.45	1557.77		60H	196.05	1529.16
25C	192.50	1557.36		61C	196.10	1528.77
25H	192.55	1556.96		61H	196.15	1528.38
26C	192.60	1556.55		62C	196.20	1527.99
26H	192.65	1556.15		62H	196.25	1527.60
27C	192.70	1555.75		63C	196.30	1527.22
27H	192.75	1555.34		63H	196.35	1526.83
28C	192.80	1554.94		64C	196.40	1526.44
28H	192.85	1554.54		64H	196.45	1526.05
29C	192.90	1554.13		65C	196.50	1525.66
29H	192.95	1553.73		65H	196.55	1525.27
30C	193.00	1553.33		66C	196.60	1524.89
30H	193.05	1552.93		66H	196.65	1524.50
31C	193.10	1552.52		67C	196.70	1524.11
31H	193.15	1552.12		67H	196.75	1523.72
32C	193.20	1551.72		68C	196.80	1523.34
32H	193.25	1551.32		68H	196.85	1522.95
33C	193.30	1550.92		69C	196.90	1522.56
33H	193.35	1550.52		69H	196.95	1522.18
34C	193.40	1550.12		70C	197.00	1521.79
34H	193.45	1549.72		70H	197.05	1521.40
35C	193.50	1549.32		71C	197.10	1521.02
35H	193.55	1548.91		71H	197.15	1520.63
36C	193.60	1548.51		72C	197.20	1520.25
36H	193.65	1548.11		72H	197.25	1520.25
				73C	197.30	1519.48

A.3 CWDM ITU Grid

The following table presents the CWDM ITU grid with 20 nm spacing.

Table 26: CWDM ITU Grid

Wavelength (nm)
1271
1291
1311
1331
1351
1371
1391
1411
1431
1451
1471
1491
1511
1531
1551
1571
1591
1611

Appendix B: PL-300 Application Examples

This appendix provides examples for using the PL-300.

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B.1 Examples

B.1.1 Example 1: Using PL-300 DWDM-2M-16W-1C-1F

In this example, there are two sites: A and B.

Each site has 16 services.

The two PL-300 DWDM-2M-16W-1C-1F units are used to combine all of these services on a single fiber.

The two additional PL-400E units in each site are used to convert the client signal to DWDM.

NOTE: You can add an additional PL-1000IL unit with Pre-Amp to increase the optical reach between the sites.

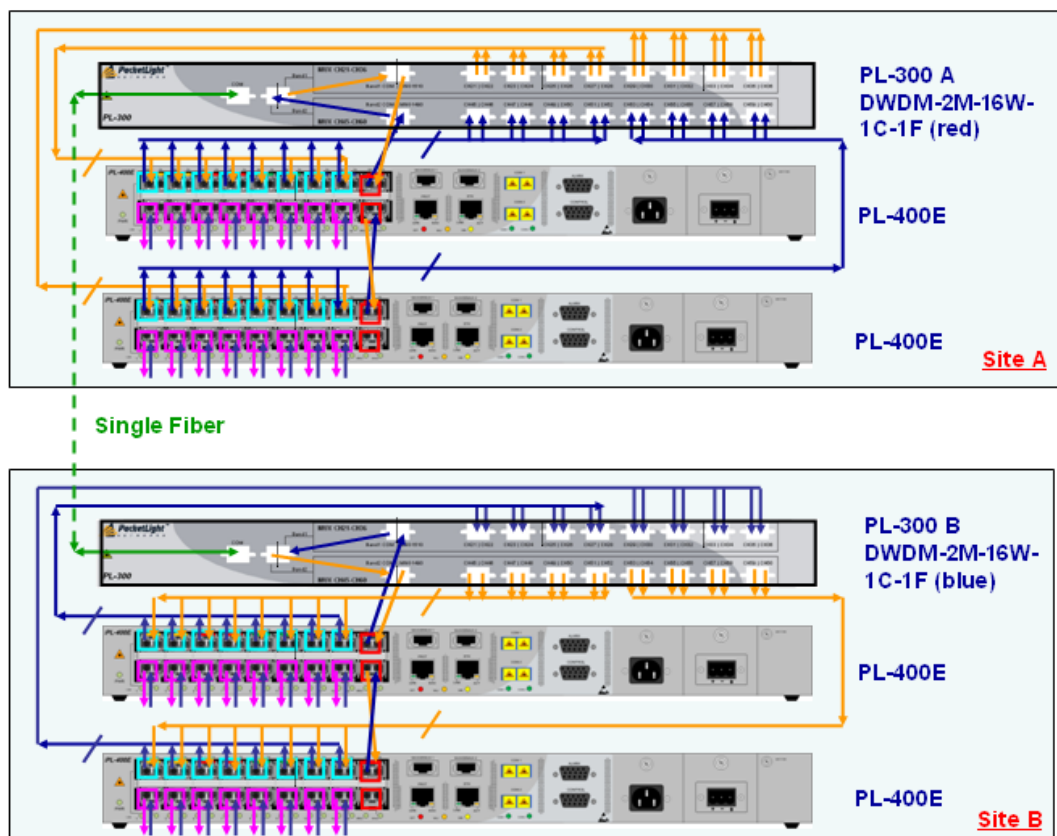


Figure 32: Using PL-300 DWDM-2M-16W-1C-1F (Example)

B.1.2 Example 2: Using PL-300 DWDM-2M-8W-1C-2F

In this example, there are two sites: A and B.

Each site has eight 10G services.

The two PL-300 DWDM-2M-8W-1C-2F units are used to combine all of these services on a dual fiber.

The two additional PL-1000 units in each site are used to convert the client signal to DWDM.

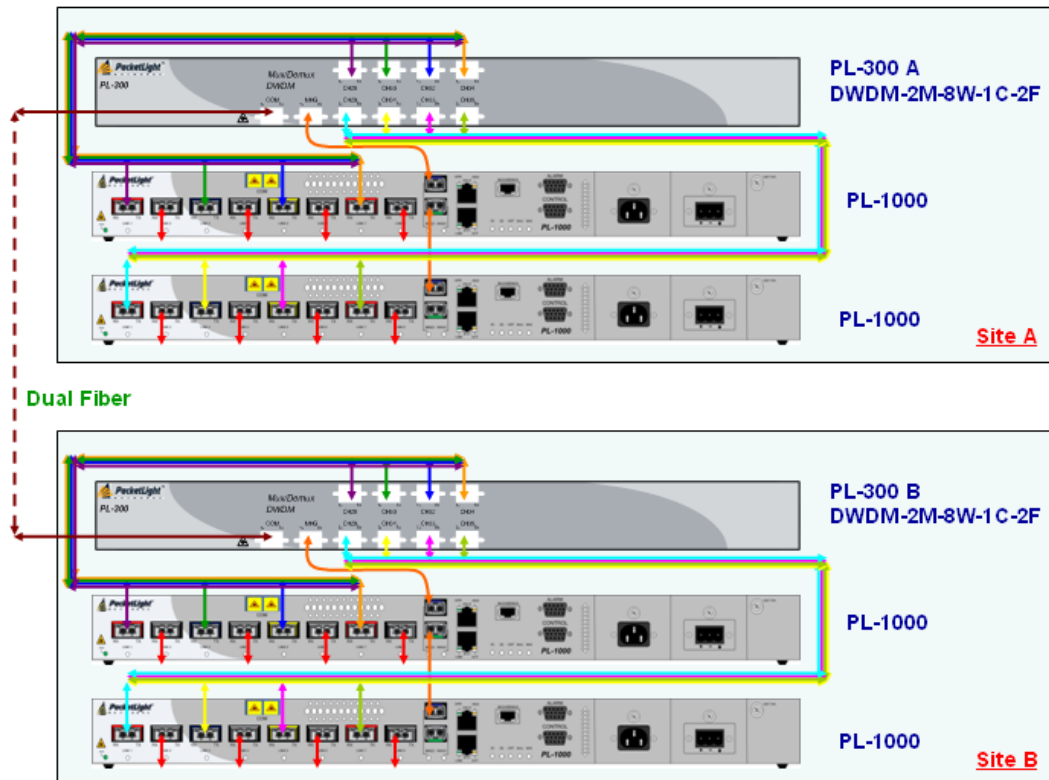


Figure 33: Using PL-300 DWDM-2M-8W-1C-2F (Example)

B.1.3 Example 3: Using PL-300 CWDM-2M-8W-2C-2F

In this example, there are two sites: A and B.

Each site has eight services of up to 4G.

The two PL-300 CWDM-2M-8W-2C-2F units are used to combine all of these services on two protected dual fibers.

The two additional PL-400E units in each site are used to convert the client signal to DWDM and duplicate the client signals to Working and Protection.

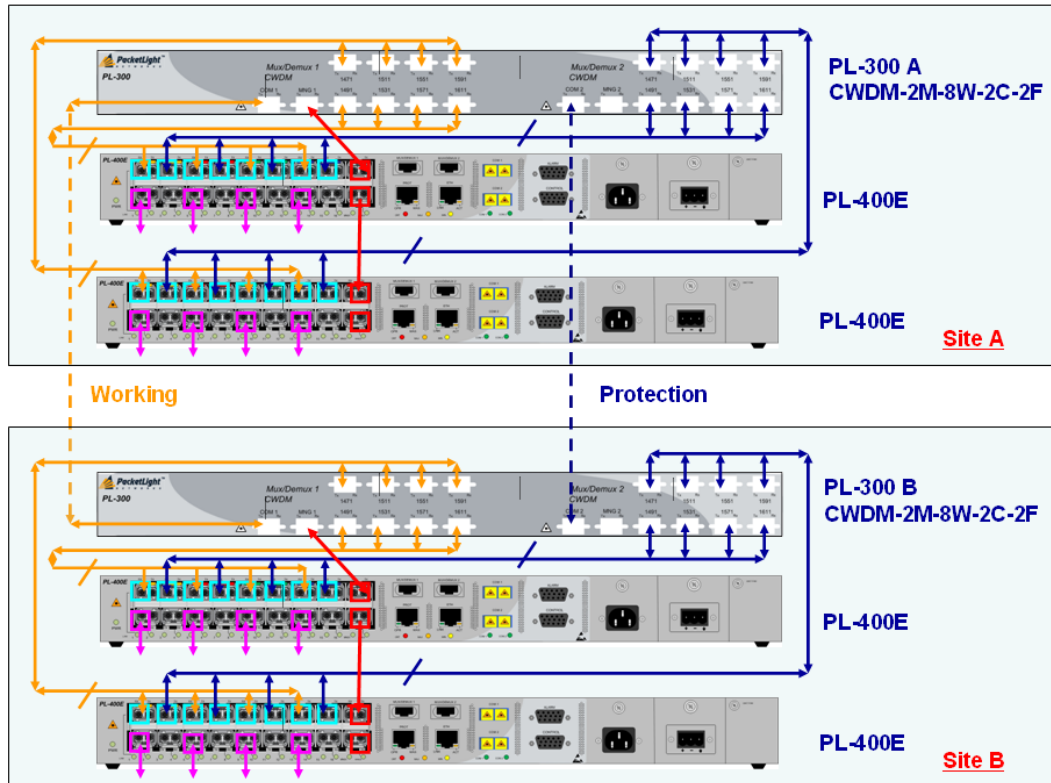


Figure 34: Using PL-300 CWDM-2M-8W-2C-2F (Example)

B.1.4 Example 4: Using PL-300 CWDM-2O-2W1470-2C-2F

In this example, there is a ring with eight wavelengths.

Each site add/drops two protected wavelengths of 10G client signals.

The two PL-300 CWDM-2O-2W1470-2C-2F units are used for the two protected wavelengths that arrive from the PL-1000 node to the ring.

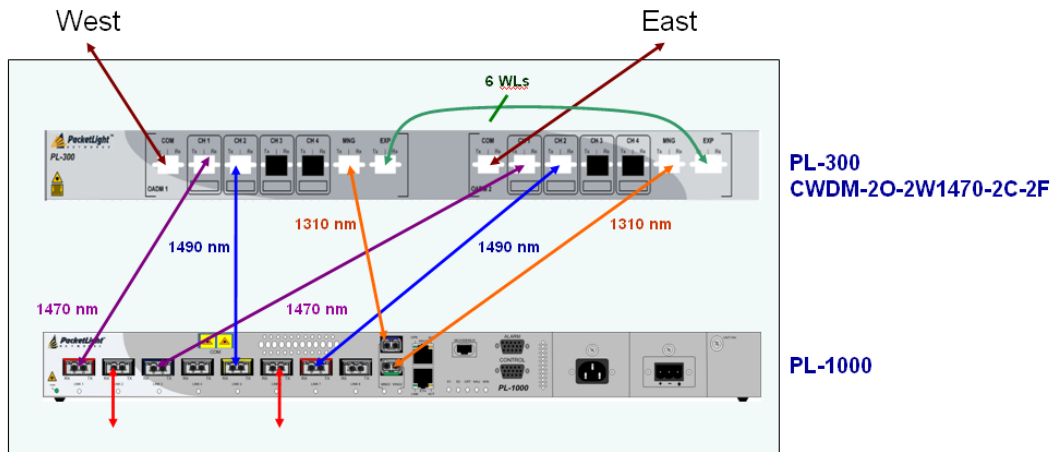


Figure 35: Using PL-300 CWDM-2O-2W1470-2C-2F (Example)

B.1.5 Example 5: Using PL-300 DWDM-2M-8W-2C-2F

In this example, the PL-300 DWDM-2M-8W-2C-2F is connected on one side to two PL-1000RO nodes, and on the other side to two PL-1000 nodes.

The described site is a part of an optical ring. It add/drops four protected wavelengths of 10G clients.

By changing the PL-1000RO configuration, the user can change the added/dropped wavelengths to a different set of channels, thereby allowing flexible optical connectivity on the ring.

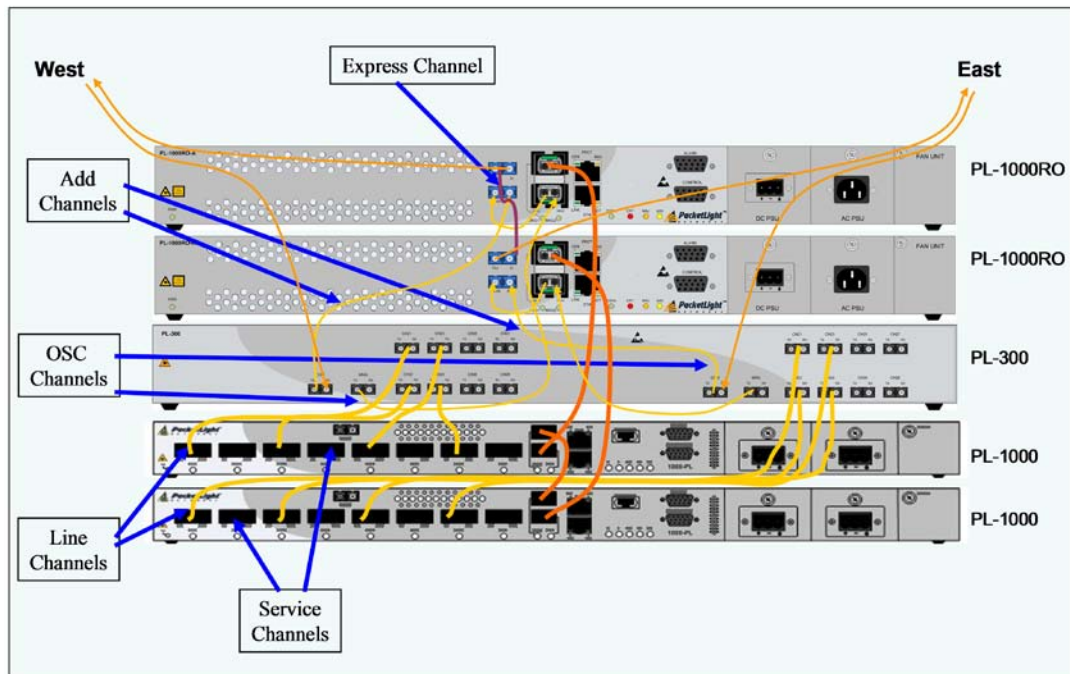


Figure 36: Using PL-300 DWDM-2M-8W-2C-2F (Example)

B.1.6 Example 6: Using PL-300 DCM2-120K

In this example, there are three sites: A, B, and C, with 100 km distance between them.

In Site A there is a single PL-400E unit with aggregated eight DWDM channels.

In Site B there are two units: a single PL-1000IL unit with two EDFA modules and a single PL-300 DCM2-120K unit.

In Site C there is a single PL-400E unit with aggregated eight DWDM channels.

Inputs to the two EDFA modules pass through the PL-300 DCM2-120K unit for dispersion compensation.

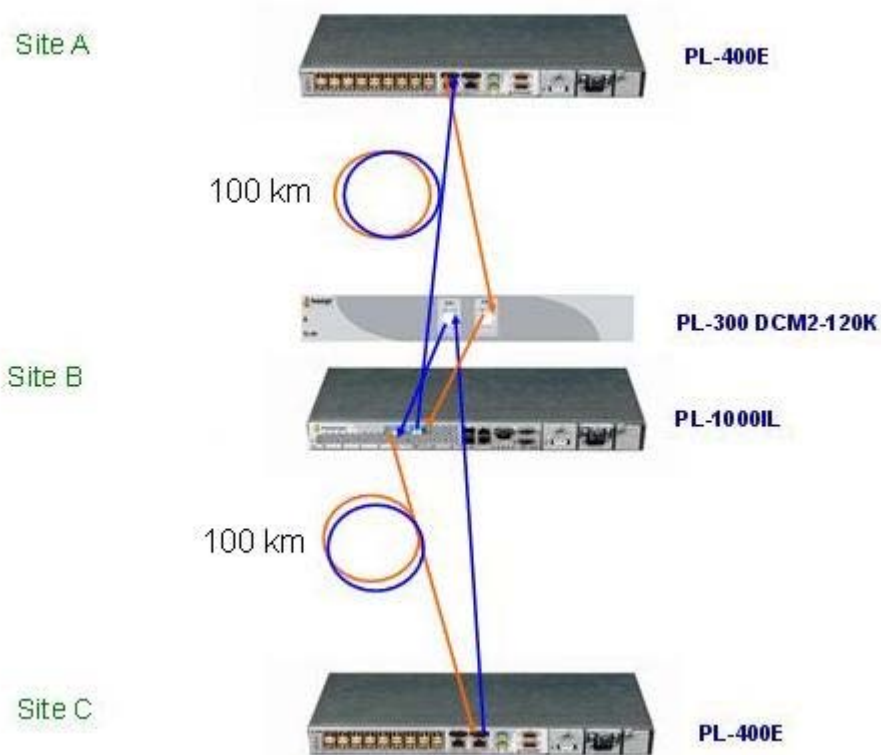


Figure 37: Using PL-300 DCM2-120K (Example)

Appendix C: PL-300 Fiber Shelf

This appendix describes the PL-300 fiber shelf.

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C.1 Fiber Shelf

The fiber shelf is an optional tray that can be attached to the PL-300 to help you organize the optical fibers.

The following figure illustrates the mechanical details of the fiber shelf.

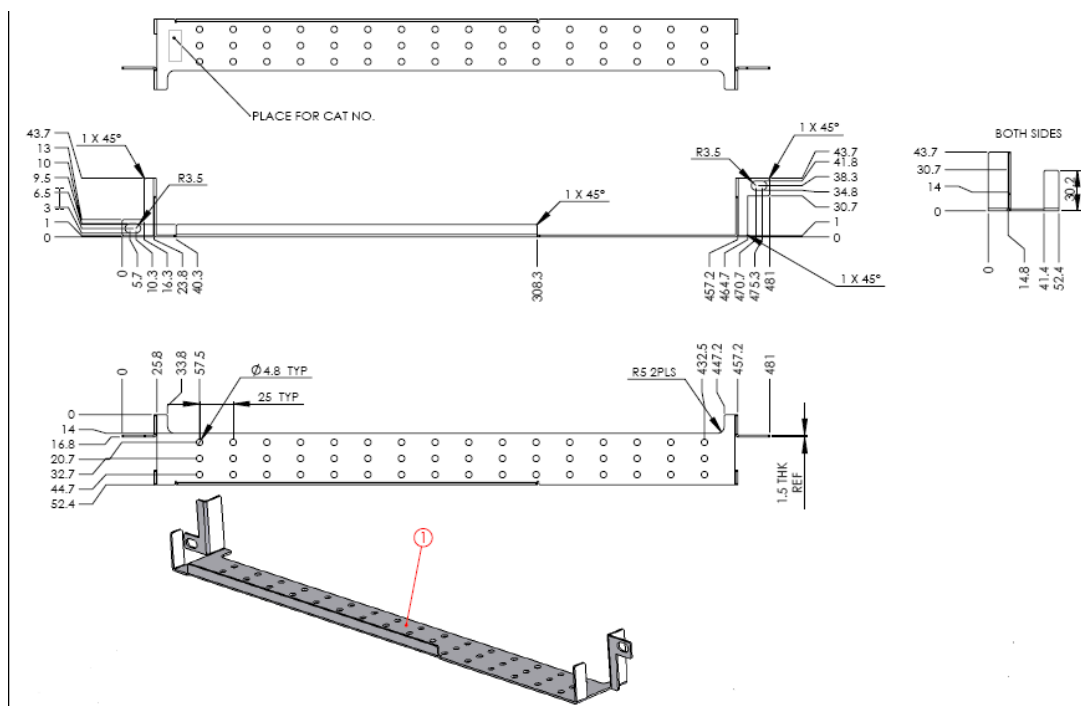


Figure 38: Fiber Shelf Diagram

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