



# PL-400

## MULTI-SERVICE CWDM OR DWDM TRANSPORT ACCESS DEVICE

The most compact 1U Metro CWDM and DWDM platform, for transport of storage, data, voice and video applications, over dark fiber and WDM networks

### FEATURE OVERVIEW

Supports up to 8 channels of CWDM or DWDM over dark fiber

Supports 1G/2G/4G FC & FICON, ESCON, Fast Ethernet, GbE, STM-1/OC-3, STM-4, OC-12, STM-16/OC-48, DVB-ASI, SD-SDI, HD-SDI, 3G SD-SDI and Teleprotection

Increase fiber utilization using two sets of 4xGbE Muxponders

Sub Microsecond ultra low latency performances

Performs bidirectional 3R ensuring error free operation over distance

Cost-effective, compact 1U platform with low power consumption ideal for CPE (Customer Premises Equipment)

Remote management with both optical supervisory channels and in-band management

Pluggable SFP interface for both service and WDM channels, allowing maximum flexibility as well as ease of maintenance and operation

Redundant pluggable PSUs & Fan Unit

Pay-as-you-grow architecture

Supports single and dual fiber connections

Support for 1+1 facility protection

Performance Monitoring for GbE, FC and SONET/SDH services

### PRODUCT DESCRIPTION

PL-400 is designed primarily as an efficient C/DWDM transport device, and is typically deployed as a CPE (Customer Premises Equipment) in enterprise campus environments and in central offices.

The PL-400 supports up to 8 high-speed services up to 4.25Gbps. Each service is configured independently using PacketLight's user-friendly on board Web-based management tool. The PL-400 can be managed by any 3rd party SNMP system or with PacketLight LightWatch™ NMS.

The PL-400 is designed to support point-to-point, Linear ADM, and ring topologies with facility protection.

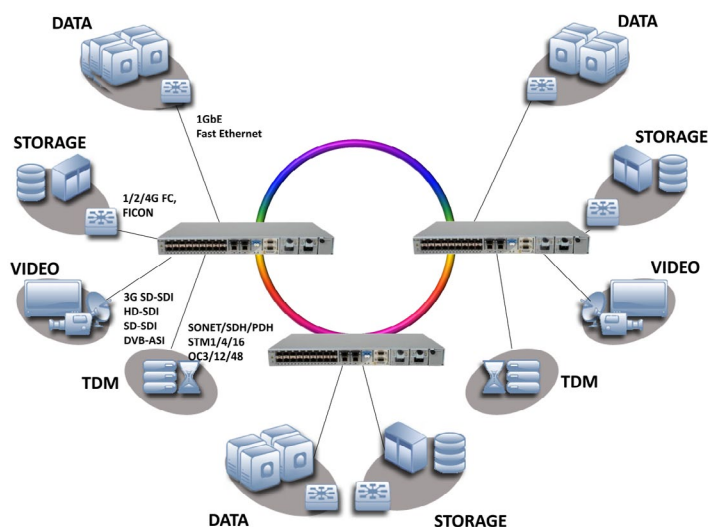
The PL-400 is a highly integrated device, incorporating Mux/DeMux and EDFA for both transponder, muxponder and regenerator modes.

The PL-400 seamlessly integrates with PacketLight's WDM product family thus enabling mixture of low and high bit services over the same fiber and supporting stackable solution operation of up to 40 DWDM, 16 CWDM wavelengths.

All optical transceivers, both on the service side and on the WDM-uplink side, are pluggable and replaceable allowing pay-as-you-grow budget planning and simplified maintenance and full optical performance monitoring of the optical layer.

The PL-400 is highly suitable for applications such as:

- Interconnection of SAN and LAN islands over remote data centers
- High bandwidth managed service over dark fiber
- Low Latency connectivity for trading applications
- Fiber relief for high-capacity multi-tenant buildings and campuses.
- Aggregation of DSLAM and Ethernet switch traffic on a single fiber from access to core
- Video transport over C/DWDM and Dark Fiber
- Teleprotection transport solution over DWDM for utilities



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# TECHNICAL SPECIFICATIONS

System	
<b>Topology</b>	Point-to-point, Ring, Linear ADM Dual or Single Fiber
<b>Muxponder</b>	2x 4GbE 850/1310nm
<b>Transport Network Medium</b>	Metro CWDM/DWDM / Dark Fiber
<b>Software Upgrade</b>	Traffic Hitless – dual image
<b>Protection</b>	1+1 Facility

Product Options	
<b>Transponder</b>	850/1310nm to C/DWDM, 3R, 4/8 wavelengths Mux & Demux
<b>Transponder + Booster Amp</b>	850/1310nm to DWDM, 3R, 4/8 wavelengths Mux Demux, 1/2 EDFA (Booster, Pre-Amp)
<b>Regenerator</b>	C/DWDM to C/DWDM 3R 8 wavelengths 2X Mux & 2X Demux & 2X EDFA

CWDM Link	
<b>Wavelength</b>	ITU-T G.694.2 1270-1610nm 20nm spacing
<b>Optical Supervisory Channel</b>	1310nm, 1290nm
<b>Optical Reach</b>	120Km for 1.25Gbps, 80Km up to 4.25Gbps
<b>Optical Power Output</b>	0dBm (min) to +5dBm (max)
<b>Sensitivity</b>	-28dBm APD, -18dBm PIN
<b>Optical Monitoring</b>	Tx & Rx power
<b>Link Attenuation</b>	<4dB (Mux + DeMux)

DWDM Link	
<b>Wavelength</b>	ITU-T G.694.1 Channels 15-60, 100GHz spacing
<b>Optical Supervisory Channel</b>	1490nm, 1510nm
<b>Optical Reach</b>	400Km for 1.25Gbps, 200Km for 2.66Gbps, 80Km for 4.25Gbps
<b>Optical Power Output</b>	0dBm (min) to +4dBm (max)
<b>Sensitivity</b>	-28 dBm APD
<b>Optical Monitoring</b>	Tx & Rx power
<b>Link Attenuation</b>	<4dB (Mux + DeMux)

Service Side	
<b>Interface Rates</b>	2Mbps up to 4.25Gbps
<b>Optical Interface</b>	850nm/1310nm C/DWDM
<b>Optical Services</b>	1G/2G/4G FC, FICON, ESCON, GbE (LX, SX), STM-1/OC-3, STM-4/ OC-12, STM-16/OC-48, 2.66G OTN, 100FX, & Teleprotection in any mix
<b>Copper Services</b>	10/100/1000MBase-T, E3/DS3, E1/T1, DVB-ASI, SD-SDI, HD-SDI, 3G SD-SDI

Amplifier	
<b>Applications</b>	Booster, Pre-Amp
<b>Output Power</b>	up to 23dBm
<b>Input Power</b>	-36dBm up to 16dBm
<b>Gain</b>	5dB to 22dB
<b>Operating Modes</b>	AGC (Automatic Gain Control), APC (Automatic Power Control)
<b>Eye Safety</b>	Automatic laser power reduction upon fiber cut or disconnection

Network Management	
<b>Management Ports</b>	RJ45 10/100MBase-T 2x SFP 100Base-X RS-232 Serial Port DB9 Alarm Port
<b>Protocols</b>	SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS and SNTP
<b>Management</b>	Web browser over HTTP/HTTPS, Packet- Light EMS or 3rd party EMS over SNMP, CLI over RS-232 or CLI over Telnet/SSH
<b>OAM</b>	Loopbacks PRBS Event Logger Alarms ALS PM for GbE, FC (based on 8b/10b CV) and SONET/SDH (based on B1 CV)
<b>Management Ch.</b>	2x Optical Supervisory Channel (OSC) 2x In-Band Channels
<b>Visual Indicators</b>	LED status indicators for client ports, line interfaces, power and system
<b>Software Upgrade</b>	Traffic Hitless-dual image

Power Supply	
<b>AC/DC</b>	90 to 246VAC, -36 to -72VDC, 68W max
<b>PSU Redundancy</b>	Single/Dual feeding, Hot Swappable
<b>Cooling Unit</b>	Hot Swappable Fan Unit

Physical Dimensions	
<b>Size</b>	1.77" (1 RU) (H) x 17.32" (W) x 9.05" (D) 45 mm (H) x 440mm (W) x 230 mm (D)
<b>Weight</b>	5.5Kg /12.1lb (Max)
<b>Mounting</b>	19", ETSI and 23"

Environmental	
<b>Operating Temperature</b>	-5° C to 50° C (+23° F to+122° F) Operational
<b>Humidity</b>	5% to 90% RHI

Approvals & Standards	
	CE, FCC, RoHS, REACH ISO 9000, NEBS Compliant

