



# PL-1000E

**MULTI-SERVICE CWDM OR DWDM  
TRANSPORT ACCESS DEVICE**

PL-1000E is a unique 1U, all-in-one optical product supporting a combination of Sub 10G Services and 8G/10G services

## FEATURE OVERVIEW

Combines any service and common protocols from 2Mbps up to 10Gbps in the same 1U chassis

Supports up to 4 sub 10G services in any mix- 1G/2G/4G FC & FICON, ESCON, Fast Ethernet, GbE, STM-1/OC-3, STM-4, OC-12, STM-16/OC-48, OTU1 (OTN), Video

In addition supports up to 4 services of 8/10G in any mix- 8G/10G FC, 10G Eth, SONET/SDH OC192/STM64 and optional OTU-2 OTN

Increase fiber utilization using 4xGbE Muxponder

Low latency connectivity, ideal for trading applications and synchronous Data Center Replication

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

Optical interfaces based on MSA pluggable SFP, SFP+ and XFP allowing maximum flexibility as well as ease of maintenance and operation

Redundant pluggable AC/DC PSUs & Fan Unit

Supports single and dual fiber connections

Support for 1+1 facility protection

Performance Monitoring

## PRODUCT DESCRIPTION

The PL-1000E is primarily designed for CWDM/DWDM, Dark Fiber transport solution for high throughput, low latency, data, storage, TDM and ATM connectivity.

PL-1000E is a unique, all-in-one optical product supporting 8G FC, 10G, and sub-10G services. PacketLight solutions intergrate a rich feature set with cost effectiveness in a compact 1U chassis and low power consumption.

PL-1000E is a leading CWDM/DWDM platform that combines a variety of multi-rate services allowing maximum flexibility and scalability for fiber optic connectivity. The combination of sub 10G and 10G transponders provide transparent migration from sub 10G to 10G services with zero downtime.

PL-1000E allows to expand to 10G services by simply adding the needed pluggable optic modules (XFPs). This architecture provides true scalability at the minimum possible cost.

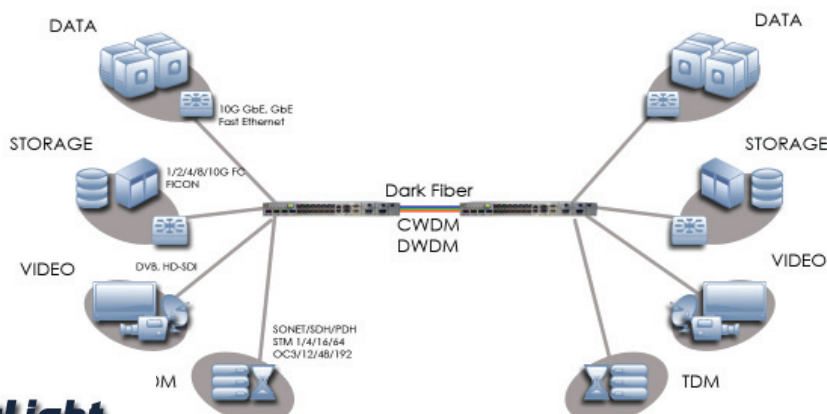
The PL-1000E supports the full spectrum of FC protocol rates: 1Gbps, 2Gbps, 4Gbps, 8Gbps and 10Gbps. Together with its extremely low latency, low power consumption, small foot print (1U, ETSI) and affordable cost PL-1000E is best in class CWDM/DWDM solution for connecting two data centers or back up sites.

The PL-1000E is designed to support point-to-point, Linear ADM and Ring topologies with facility protection. The PL-1000E is a highly integrated device, incorporating Mux/DeMux, EDFA and an optical switch, enabling a simple and cost effective upgrade of existing infrastructure which can carry any type of service.

The PL-1000E seamlessly integrates with the rest of PacketLight's product family (PL-400, PL-1000, PL-300 and PL-1000IL)

The PL-1000E is highly suitable for applications such as:

- High capacity low latency, data center connectivity
- Efficient connectivity for campus, ISP and enterprise networks
- Enables delivery of high bandwidth managed services over dark fiber
- Upgrade of existing WDM networks to support 10G services
- High throughput Metro Ethernet connectivity
- Effective infrastructure for triple play, NGN and DSLAM backhaul



## TECHNICAL SPECIFICATIONS

### System

<b>Topology</b>	Point-to-point, Ring, Linear ADM Dual or Single Fiber
<b>Transport Network Medium</b>	Metro CWDM, DWDM & Dark Fiber
<b>Protection</b>	1+1 Facility

### Product Options

<b>Transponder</b>	850/1310nm to C/DWDM, 3R, 4/8 wavelengths Mux & Demux
<b>Transponder + Amp</b>	850/1310nm to DWDM, 3R, 4/8 wavelengths Mux Demux, 1 EDFA (Booster, Pre-Amp)
<b>Muxponder</b>	4x GbE 850/1310nm
<b>Optical Switch</b>	1+1 OTS Facility Protection

### CWDM Link

<b>Wavelength</b>	ITU-T G.694.2 1270-1610nm 20nm spacing
<b>Optical Supervisory Channel</b>	For 8 Channels- 1310nm, 1330nm For 16 Channels- 1270nm, 1290nm
<b>Optical Reach</b>	120Km for 1.25Gbps, 80Km up to 4.25Gbps,
<b>Optical Output Power</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/8.5Gbps, 120km for 10Gbps
<b>Optical Output Power</b>	Sub 10G: 0dBm (min) to +4dBm (max) 8/10G: -1dBm (min) to +2dBm (max)
<b>Sensitivity</b>	Up to 2.66Gbps: -28 dBm APD 4/8/10G: -24dBm APD, -14dBm PIN
<b>Optical Monitoring</b>	Tx & Rx power
<b>Link Attenuation</b>	<4dB (Mux + DeMux)

### Service Side

<b>Interface Rates</b>	2Mbps up to 10.7Gbps
<b>Optical Interface</b>	850nm/1310nm/1550nm
<b>Optical Services</b>	1G/2G/4G/8G FC, FICON, ESCON, GbE (LX, SX), STM-1/OC-3, STM-4/ OC-12, STM-16/OC-48, 2.66G OTN, 100FX, 10G Eth LAN/WAN, 10G FC and Video, in any mix
<b>Copper Services</b>	10/100/1000MBase-T

### Standards

CE, FCC, RoHS 5/6  
NEBS Compliant

### Amplifier

<b>Applications</b>	Booster, Pre-Amp
<b>Output Power</b>	14dBm, 17dBm, 20dBm, 23dBm
<b>Input Power</b>	-36dBm up to 16dBm
<b>Gain</b>	10dB 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>	10/100MBase-T, RJ-45, RS-232, DB9
<b>Protocols</b>	SNMP, FTP, HTTP, CLI
<b>Management</b>	Web server application, Tivoli ready, HP Openview, SNMPc and integration with RADView EMS
<b>OAM</b>	Facility Loopback (Client and Line Interfaces) Event Logger Alarms PM for GbE, 10G Eth LAN and WAN, 1G/2G/4G & 10G FC, STM-1,STM-4, STM-16, and OC-3, OC-12, and OC-48
<b>Management Channel</b>	2x Optical Supervisory Channel (OSC) 2x In-Band Channels
<b>Visual Indicators</b>	LED status indicators for client ports, line interfaces, power, Management LAN and system
<b>Software Upgrade</b>	Traffic Hitless – dual image

### Optical Switch

<b>Topology</b>	Protected point to point
<b>Switching time</b>	Less than 50ms
<b>Signal WL</b>	C and L band
<b>Max input power</b>	27dBm
<b>Insertion loss</b>	Transmit side 3.8dB Receiver side 1.2dB

### Power Supply and Fans

<b>AC/DC</b>	90 to 246VAC, -40 to -75VDC, 85W 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 (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 85% RHI