

# PL-1000IL

DWDM BOOSTER INLINE AND  
PRE-AMPLIFIER EDFA SOLUTION



PacketLight's C-band optical amplifier unit PL-1000IL meets the demanding requirements of large distances and attenuations of today's DWDM networks. The PL-1000IL is full manageable and protocol rate independent.

## FEATURE OVERVIEW

Supporting 4/8/16/32 and 40 wavelength

Cost effective, compact 1U platform with single or dual DWDM amplifiers

Offering three main EDFA types: Booster, Inline, Pre-Amplifiers and Raman

Support AGC (Automatic Gain Control) and APC (Automatic Power Control) operation modes

Monitoring on the input and output power and user configurable gain

Embedded Optical Supervisory Channel for remote management and topology detection

Dual AC or DC pluggable Power Supply and pluggable FAN Unit

Support for single and dual fiber operation

Eye safety feature allows the automatic shutdown of the EDFA when the output connector is not properly terminated to protect user

## PRODUCT DESCRIPTION

The PL-1000IL is designed to extend the power link budget of DWDM solutions in a cost effective manner. The PL-1000IL provides amplification for a range of optical solutions starting from 4 wavelengths to up to 40 wavelengths and incorporates 3 main types of low-noise EDFAs (Erbium-Doped Fiber Amplifiers) Booster, Inline, Pre-Amplifier and Raman.

Depending on the customer requirements, the PL-1000IL can operate in APC or AGC modes. The AGC operation mode enables seamless wavelengths add/drop functionality without interference to the other active channels. In addition, the EDFA gain is controlled, adjusted and monitored by the user. The APC operating mode allows the maintenance of constant output power.

The EDFAs are gain flattened and have low Optical Signal to Noise Ratio (OSNR), thus enabling cascading of several EDFAs to form amplified link over long distance. PL-1000IL is fully integrated with PL-400 and PL-1000. In addition, PL-1000IL unit are fully managed, configured, and monitored via PacketLight's user-friendly Web-based management tool, PacketLight's EMS solution or any third party SNMP based management tool.

PL-1000IL is ideal of applications such as:

- Extending the optical link budget to meet distance and attenuation requirements of DWDM networks
- High throughput Metro Ethernet connectivity over large distances
- Upgrade the optical link budget to support 10G services
- Reducing number of regenerators and sites along fiber
- Overcome old fiber infrastructure high loss

## BOOSTER



## INLINE



## PRE-AMP RAMAN



## TECHNICAL SPECIFICATIONS

System	
<b>Topology</b>	Point-to-point, Ring, Linear ADM
<b>Transport Network Medium</b>	Metro DWDM / Dark Fiber
<b>Software Upgrade</b>	Traffic Hitless – dual image

Booster	
<b>Number of channels</b>	4, 8, 16, 32, 40
<b>Output Power</b>	14dBm, 17dBm, 20dBm, 23dBm
<b>Input Power</b>	-5dBm up to 16dBm
<b>Gain</b>	10dB to 20dB
<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

Inline	
<b>Number of channels</b>	4, 8, 16, 32, 40
<b>Output Power</b>	Up to 20dBm
<b>Input Power</b>	-24dBm up to 13dBm
<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

Pre-Amplifier	
<b>Number of channels</b>	4, 8, 16, 32, 40
<b>Output Power</b>	Up to 20dBm
<b>Input Power</b>	-36dBm up to 15dBm
<b>Gain</b>	18dB
<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

General	
<b>Gain Flatness</b>	+/- 1dB
<b>Noise Figure</b>	4-6 dB
<b>PMD</b>	0.3 ps
<b>PDL</b>	0.3 dB

Raman	
<b>Wavelength Range</b>	From 1529nm to 1565nm
<b>Input Power Range</b>	From -40dBm to +5dBm At line port with Raman off
<b>Average Gain (G.652 fiber)</b>	10db with 2 pumps 15 dB with 3 pumps
<b>Noise Figure</b>	-1 dB At maximum gain At lower gains NF can reach 0 dB

Network Management	
<b>Management Ports</b>	10/100MBase-T, RJ-45, RS-232, DB9
<b>Protocols</b>	SNMP, FTP, HTTP
<b>Management</b>	Web server application, Tivoli ready, HP Openview, SNMPc integration with RADView EMS
<b>OAM</b>	Loopbacks Event Logger Alarms PM for 10G Eth LAN/WAN, 10G FC and OC-192/STM-64
<b>Management Ch.</b>	Optical Supervisory Channel (OSC)
<b>Visual Indicators</b>	LED status indicators for client ports, line interfaces, power and system

Power Supply	
<b>AC/DC</b>	90 to 246VAC, -40 to -75VDC, 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 (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

Approvals	
	CE, FCC, RoHS 5/6 NEBS Compliant

