PL-1000IL

VERSATILE DWDM AMPLIFICATION SOLUTIONS

PacketLight's optical amplifier unit PL-1000IL meets the demanding requirements of large distances and attenuations of today's DWDM networks.

FEATURE OVERVIEW

Supports 4/8/16/32 and 40 wavelength

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

Offers several EDFA types:
- **Booster,**
- **Inline,**
- **Pre-Amplifiers,**
- **Midstage**
- **Raman**

Supports 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

Supports single and dual fiber operation

Built-In Eye Safety Mechanism

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 several types of low-noise EDFAs Booster, Inline, Pre-Amplifier, Midstage 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 PacketLight's WDM product family. 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

TECHNICAL SPECIFICATIONS

System

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

Booster

Output Power	14dBm, 17dBm, 20dBm, 23dBm
Input Power	-5dBm up to 16dBm
Gain	10dB to 20dB

Inline

Output Power	Up to 20dBm
Input Power	-24dBm up to 13dBm
Gain	5dB to 22dB

Pre-Amplifier

Output Power	Up to 20dBm
Input Power	-36dBm up to 15dBm
Gain	18dB

Midstage

	Full C-Band
Output Power	8dBm per Channel
Input Power	-36dBm up to 15dBm
Total Output Power	up to 23dBm
Gain	up to 40dBm

General

Number of channels	4, 8, 16, 32, 40
Gain Flatness	+/- 1dB
Noise Figure	4-6 dB
PMD	0.3 ps
PDL	0.3 dB
Operating Modes	AGC (Automatic Gain Control) APC (Automatic Power Control)
Eye Safety	Automatic laser power reduction upon fiber cut or disconnection

Raman

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

Network Management

Management Ports	10/100MBase-T, RJ-45, RS-232, DB9
Protocols	SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS
Management	Web browser over HTTP/HTTPS, PacketLight EMS or 3rd party EMS over SNMP, CLI over RS-232 or CLI over Telnet/SSH
OAM	Input/Output Power Monitoring Event Logger Alarms
Management Ch.	2 xOptical Supervisory Channel (OSC)
Visual Indicators	LED status indicators for EDFA ports, power and system
Software Upgrade	Traffic Hitless-dual image

Power Supply

AC/DC	90 to 246VAC, -36 to -72VDC, 60W max
PSU Redundancy	Single/Dual feeding, Hot Swappable
Cooling Unit	Hot Swappable Fan Unit

Physical Dimensions

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

Environmental

Operating Temperature	-5° C to 50° C (+23° F to +122° F) Operational
Humidity	5% to 85% RHI

Approvals & Standards

	CE, FCC, RoHS, REACH NEBS Compliant ISO9001