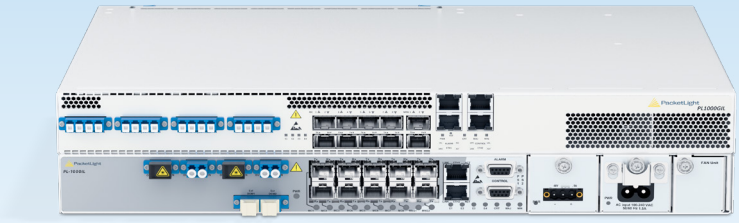


PL-1000IL/GIL Erbium-doped Fiber Amplifier

Versatile Erbium-doped fiber amplifier (EDFA) and optical line protection (OLP) platform

Features Overview

- Up to 4 amplifier modules in a 1U chassis
- Supports up to 96 channels - full C-band spectrum
- Supports AGC and APC operation modes (EDFA)
- Embedded OSC for remote management and topology detection
- Remote management and fiber monitoring with OSC OTDR SFP
- Optical switch for facility protection, optional
- Optical line protection, optional
- Integrated single/dual DCM for long distance 10G amplified links
- Supports single and dual fiber operation
- Supports up to 16 channel mux/demux
- **Supports EDFA types:**
  - Booster
  - Inline
  - Pre-amplifiers
  - Midstage
- Low power consumption
- Built-in eye safety mechanism (EDFA)
- Monitoring on the input and output power (EDFA)
- User-configurable gain (EDFA)
- Dual AC/DC pluggable power supply and fan unit

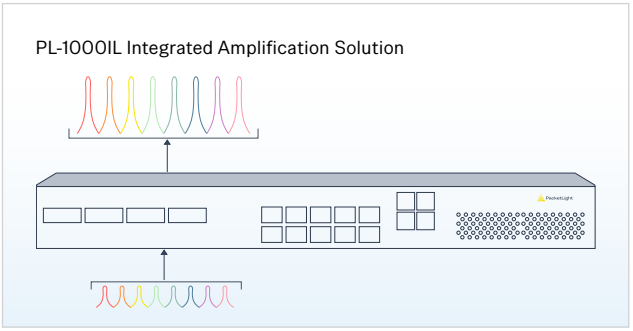
Long Distance and Attenuation in the Network

The PL-1000IL/GIL is designed to cost-effectively extend the optical link power budget for building long distance DWDM solutions. The platform's high optical signal to noise ratio (OSNR), enables to cascade several EDFAs to form an amplified OTN link over long distances, without the need for regenerators.

The platform integrates EDFAs and optical line protection (OLP), or optical switch (OSW). It supports a range of optical solutions, from single wavelength, up to the full C-band.

Main Benefits

- Fully managed via dedicated integrated OSC
- Remote performance monitoring of all optical ports
- Eye safety feature - automatically reduces optical output power in case of fiber interruption
- Fully integrated solution including mux/demux, amplifiers, OLP/OSW, and DCM
- Integrates with PacketLight management platforms and other network products
- Available in front-to-back or side-to-side airflow platforms



Flexibility in Services over the Same Fiber

The PL-1000I/GILL is fully managed, configured and monitored remotely as part of the network, via optical supervisory channel (OSC). The EDFA gain is controlled, adjusted and monitored by the user, and APC operating mode allows to maintain constant output power. The device supports AGC and APC operation modes.

Recommended Applications

- Extending optical link power budget to meet distance and attenuation requirements
- Upgrading the optical link budget to support high capacity services
- Reducing the number of regenerators and sites along the fiber
- Overcoming high loss in old fiber infrastructure
- Facility protection for fiber redundancy solutions
- Inline, edge and unidirectional mid-stage applications

PL-1000IL/GIL Erbium-doped Fiber Amplifier

Technical Specifications

System

Topology:
Point-to-point, ring, linear ADM, inline, edge or midstage

Transport Network Medium:
Metro DWDM / dark fiber

Booster

Output Power: Up to 23dBm

Input Power: -24dBm up to 15dBm

Gain: 8dB to 22dB

Inline

Output Power: Up to 23dBm

Input Power: -24dBm up to 13dBm

Gain: 5dB to 22dB

Pre-amplifier

Output Power: Up to 20dBm

Input Power: -40dBm up to -5dBm

Gain: 20dB

General

Gain Flatness: +/-1dB

Noise Figure: 4-6dB

PMD: 0.3ps

PDL: 0.3 dB

Operating Modes:

- Automatic gain control (AGC)
- Automatic power control (APC)

Eye Safety:
Automatic reduction of optical outpout power in case of fiber interruption

Optical Switch

Switching Time: <50ms
Max Input Power: 27dBm
Insertion Loss Transmit Side: 3.8dB
Insertion Loss Receive side: 1.2dB

OLP

Switching Time: <50ms

Max Input Power: 27dBm

Insertion Loss Transmit Side: 4.3dB

Insertion Loss Receive Side at 1550nm: 1.1dB

DCM

DCM Type: Tunable DCM or fixed DCM

Fiber Type: G.652

Fiber Span: 20-200km

Max insertion loss: <3dB

Standard: ITU G.671.

Network Management

Management Ports, PL-1000IL:

- 2xRJ-45 LAN port 10/100MBase-T
- 2xOSC SFP MNG ports 1000MBase-X
- 8xSFP MNG ports 100MBase-X
- RJ45 serial port
- RJ45 external alarm port

Management Ports, PL-1000GIL:

- 2xRJ-45 LAN port 10/100/1000MBase-T
- 2xOSC SFP MNG ports 100/1000MBase-X
- 8xSFP MNG ports 1000MBase-X
- RJ45 serial port
- RJ45 external alarm port

Management Protocols:
SNMP, HTTP, HTTPS, CLI over RS-232 or CLI over Telnet/SSH, Syslog, RADIUS, TACACS+, SNTP, REST API, NETCONF

NMS:
PacketLight LIghtWatchTM NMS or third party NMS over SNMP

OAM:
Input/output power monitoring event logger and alarms

Management Channel: 2 x OSC

Visual Indicators:
LED status indicators for EDFA ports, power and system

Software Upgrade:
Hitless traffic - dual image

Power Supply

AC/DC:

- **PL-1000IL:** 90 to 246 VAC or -36 to -60 VDC, 50/60 Hz, 60W max
- **PL-1000GIL:** 100 to 240 VAC or -44 to -60 VDC, 50/60 Hz, 120W max

PSU Redundancy:
Single/dual feeding, hot swappable

Cooling Unit:
Hot swappable fan unit

Dimensions

Size:

PL-1000IL:

- 1.77” (H) x 17.32” (W) x 9.05” (D)
- 45mm (H) x 440mm (W) x 230mm (D)

PL-1000GIL:

- 1.77” (H) x 17.32” (W) x 13.78” (D)
- 45mm (H) x 440mm (W) x 350mm (D)

Weight:

- **PL-1000IL:** 5.5kg / 12.13lb (max)
- **PL-1000GIL**: 8.5kg / 18.74lb (max)

Mounting: 19”, 21”, 23”

Environmental

Operating Temperature:

- **PL-1000IL:**
  -5ºC to 50ºC (+23ºF to +122ºF)
- **PL-1000GIL:**
  0ºC to 45ºC (32ºF to 113ºF)

Humidity:
5% to 85% RH

Approvals & Standards

- CE, FCC, RoHS, REACH
- NEBS ready

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