



LPD 100

Log Detector

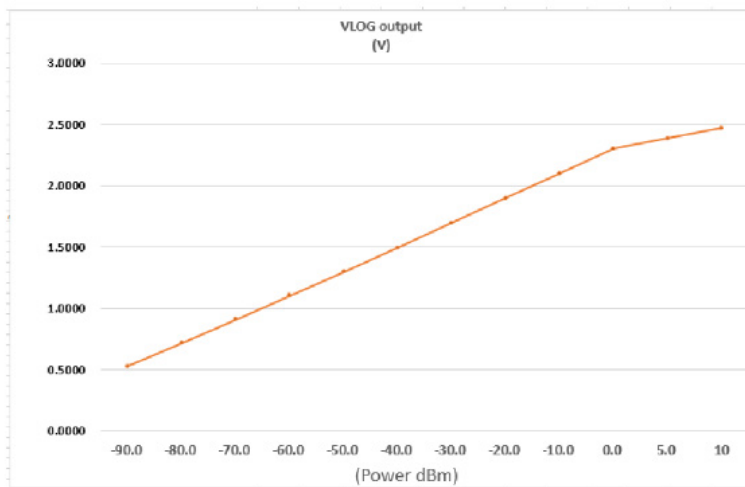
LUNA's Log Detector is a useful photodiode amplifier designed to measure low light levels, down to -85 dBm and produce linear logarithmic electrical signal. It come with two or four channel options.

The LPD 100 is particularly suited to perform high dynamic range power measurements in closed loop related applications. For example, in polarization tracking, specifically when trying to track to a minimum light level, where generating a reliable tracker feedback signal could be a challenging problem.

Luna designed the LPD-100 by utilizing a newer log amp design with a large dynamic range and fast response. Below is an example of the new LPD-100 Logarithmic Detector detecting over 10 decades of optical power from four or two analog outputs.

$$\text{-85~0 dBm: } V_{out} = 0.0199 \times \text{Optical Power [dBm]} + 2.2999$$

$$\text{0~10 dBm: } V_{out} = 0.0170 \times \text{Optical Power [dBm]} + 2.2999$$



KEY FEATURES

- Calibrated from < -85 dBm to >10 dBm
- Response up to 4 MHz
- Single buffered analog (SMA) voltage output
- Compact size
- Modular design

APPLICATIONS

- TE/TM Polarization Alignment
- PIC Testing
- Polarization Tracking
- Directed Laser Energy

High Dynamic Range Power Measurements in Closed Loop-Related Applications

SPECIFICATIONS

Specifications apply at ambient temperature T = 25°C and at center wavelength unless otherwise noted.

PARAMETER	MIN	MAX	UNITS
Operating Wavelength Range ¹	1000	1680	nm
Fiber Type	SM		
Optical Connector Type	FC/APC		
Output Offset (V)	-0.6 ±0.2		V
Output Voltage(V) max@10dbm	2.5 ±0.1		V
SMA Port output impedance (Ω)	50		Ω
Detected Optical Dynamic Range is 100dB	-85	+10	dBm
Frequency Response Range (Optical Power - 90~10dBm)	0.1	4	MHz
Power Supply	AC 100~240V / 15VA		dB
Operating Temperature	0	50	°C
Storage Temperature	-20	70	°C
Dimensions	230 (L) x 240 (W) x 60 (H)		mm

Notes:

1. LPD 100- x - 10 - FC/APC is tested at 1060 nm, and LDP 100 - x - 35 - FC/APC is tested at 1310 nm and 1550 nm.

ORDERING INFORMATION

CATALOG #	DESCRIPTION
LPD-100-2-10-FC/APC	Dual Channel Log Detector (95 dB dynamic range), 1060 nm, FC/APC connectors, and single SMA (buffered) outputs.
LPD-100-2-35-FC/APC	Dual Channel Log Detector (95 dB dynamic range), 1310/1550 nm, FC/APC connectors, and single SMA (buffered) outputs.
LPD-100-4-10-FC/APC	Four Channel Log Detector (95 dB dynamic range), 1060 nm, FC/APC connectors, and single SMA (buffered) outputs.
LPD-100-4-35-FC/APC	Four Channel Log Detector (95 dB dynamic range), 1310/1550 nm, FC/APC connectors, and single SMA (buffered) outputs.