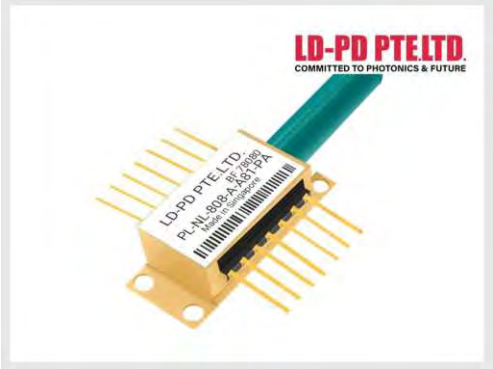
# 808nm Narrow linewidth Laser diode




## Description

The PL-NL series laser is single frequency laser diode module designed for optical measurement and communication. The laser is packaged in 14-pin standard butterfly package with monitor photodiode and thermo-electric cooler (TEC).The Single-Frequency Continuous Tuning Range: > 1.2 nm by adjust the Mini PZT Built in the laser diode. 808nm Tunable laser diodes for CS spectroscopy.

## Features

- Optical output: 20mW
- Narrow linewidth (Δv<1MHz)
- Wavelength: 808nm @ 25℃
- SM or PM Fiber (ø0.9mm)
- FC-APC connector
- 14-pin butterfly package
- Internal monitor PD and TEC
- Low power consumption

## E/O Characteristics

Optical Characteristics (at 25 °C laser temperature)

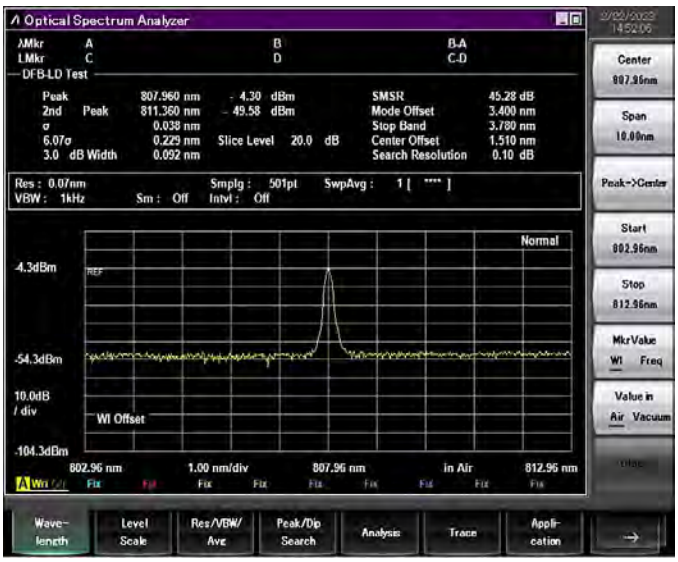
| Parameter | Symbol | Condition | Min. | Typical | Max. | Unit |
|---|---|---|---|---|---|---|
| Center Wavelength | λc | TL=15～35℃ CW | 807 | 808 | 809 | nm |
| Peak Optical Output Power | PO | - | | 10 | 20 | mW |
| Spectral linewidth | LW | - | - | 1 | 10 | MHz |
| Side-mode Suppression Ratio | SMSR | CW | 30 | 40 | - | dB |
| Optical Isolation | - | -10 < TC < +70 | 30 | - | - | dB |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | ºC | | | | |
| Polarization Extinction Ratio | ER | - | 20 | - | - | dB |
| Relative Intensity Noise | RIN | CW, output power 5mW | - | - | -135 | dB |
| Wavelength drift with case (-10 to 70 ºC) temperature | △λ | TL=15～35℃ | - | - | ±30 | pm |

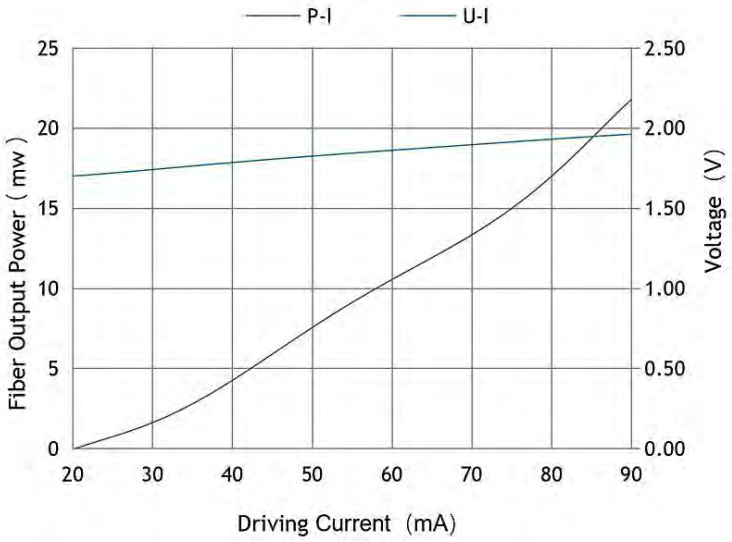
Electrical Characteristics (at 25 °C laser temperature)

| Parameter | Symbol | Condition | Min. | Typical | Max. | Unit |
|---|---|---|---|---|---|---|
| Threshold Current | ITH | - | - | 25 | 40 | mA |
| Slope Efficiency | η | CW output power 30 mW | 0.064 | 0.1 | - | mW/mA |
| Operating current | Iop | CW | - | 60 | 100 | mA |
| TEC set temperature | Ts | - | 15 | - | 35 | ℃ |
| Laser Forward Voltage | VF | CW output power 30 mW | - | 1.3 | 2.5 | V |
| Monitor Dark Current | ID | - | - | - | 0.1 | μA |
| Input Impedance | ZIN | - | 22 | 25 | 28 | Ω |
| Thermistor Current | ITC | - | 10 | - | 100 | μA |
| Thermistor Resistance | RTH | TL = 25 °C | 9.5 | 10 | 10.5 | KΩ |
| TEC Current | ITEC | TL = 25 °C, TC = 70 °C | - | - | 1.8 | A |
| TEC Voltage | VTEC | TL = 25 °C, TC = 70 °C | - | - | 3.5 | V |
| TEC capacity | ΔT | Tc = 70℃ | - | - | 50 | °C |
| Thermistor temperature | - | - | - | - | 100 | °C |

## Spectrum

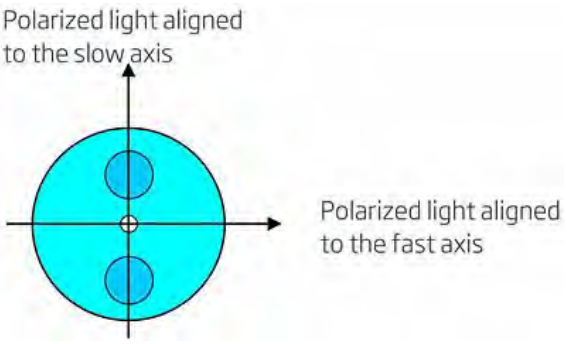



## L-I Curve



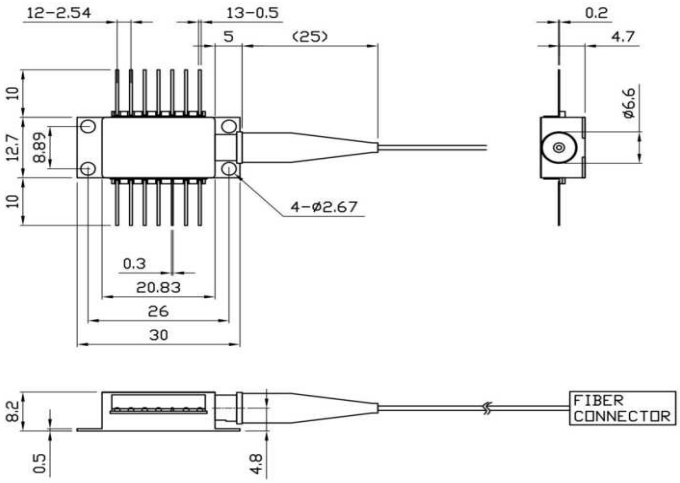

## Fiber Pigtail Specifications

| Parameters | Description |
|---|---|
| Fiber Type | PM fiber |
| Jacket Type | 900μm loose tube |
| Pigtail Length | 1.0±0.1m |
| Connector Type | FC/APC |
| PM fiber Connector Orientation | Please see the right figure |

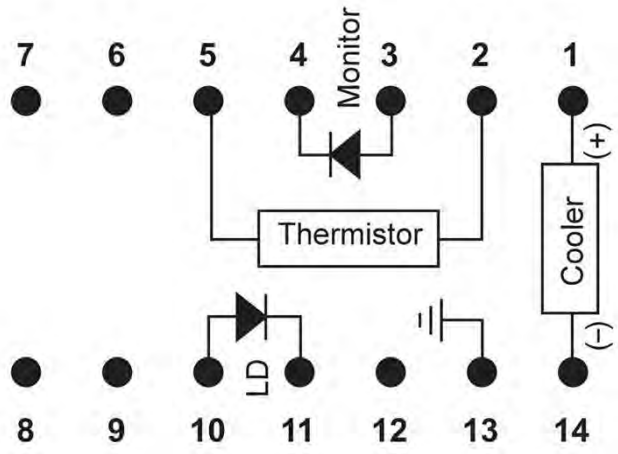



Note: The PM fiber and the connector key are aligned to the slow axis,fast axis is blocked.

## Package Size




## Pin definition



| 1 | Thermoelectric Cooler (+) | 8 | N/C |
|---|---|---|---|
| 2 | Thermistor | 9 | N/C |
| 3 | PD Monitor Anode (-) | 10 | Laser Anode (+) |
| 4 | PD Monitor Cathode (+) | 11 | Laser Cathode (–) |
| 5 | Thermistor | 12 | N/C |
| 6 | N/C | 13 | Case Ground |
| 7 | N/C | 14 | Thermoelectric Cooler (–) |

## Absolute Maximum Ratings

| Item | Unit | Min | Typ | Max |
|---|---|---|---|---|
| Case Temperature | ℃ | -5 | 25 | 70 |
| Chip Temperature | ℃ | +10 | 25 | 40 |
| Operating Current | mA | 0 | 60 | 100 |
| Forward Voltage | V | 0.8 | 1.2 | 1.8 |
| TEC Current | A | - | 1.2 | 1.4 |
| Reverse Voltage（LD） | V | - | - | 1.8 |

## Application

- Laser interference experiment
- Drop-side of DWDM long-haul transport equipment
- Optical Test and Instrumentation
- Microwave Photonics
- CATV networks
- Sensors

## Ordering Info

PL-NL-□□□□-☆-A8▽-XX

□□□□：Wavelength

0633:633nm

0785:785nm

0790:790nm

0808:808nm

1050:1050nm

1550:1550nm

1555:1555nm

*****

1560：1560nm

☆ ：Output Power

A：10mW

B：30mW

▽：Linewidth

1：＜10MHZ

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC