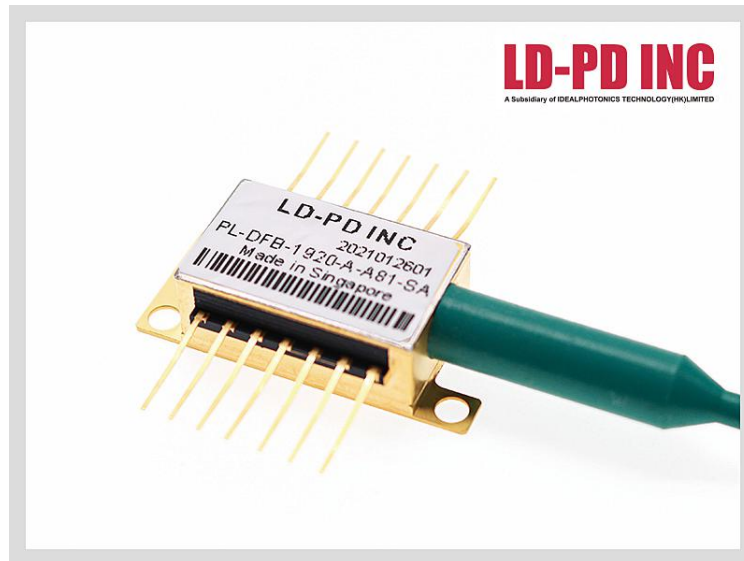


## 1920nm DFB Tunable Laser diode



### Description

The PL-DFB-1920-A1 1920nm DFB laser diode module made by LD-PD is a cost effective, highly coherent laser source. The DFB laser diode chip is packaged in an industry standard hermetically sealed 14 pin butterfly package with TEC and PD Built in.

### Features

- Narrow Linewidth < 2MHz
- Excellent wavelength control and stability
- Industry Standard 14 pin Butterfly package
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

### Application

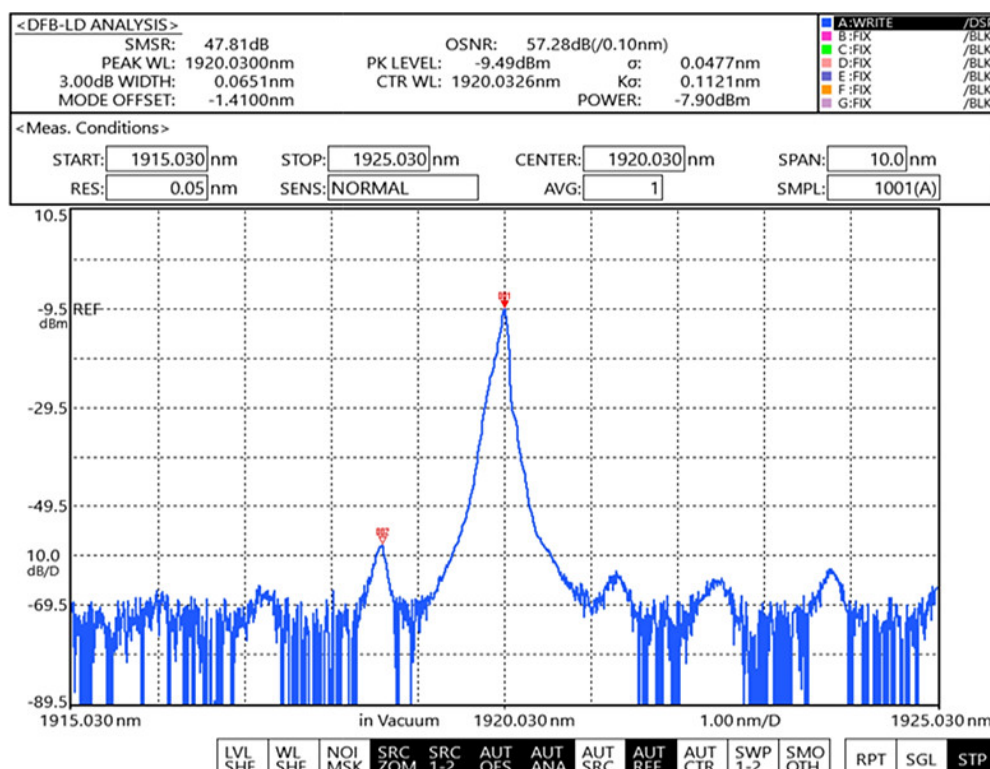
- Tunable diode laser absorption spectroscopy
- Gas Monitoring

## Laser Specifications

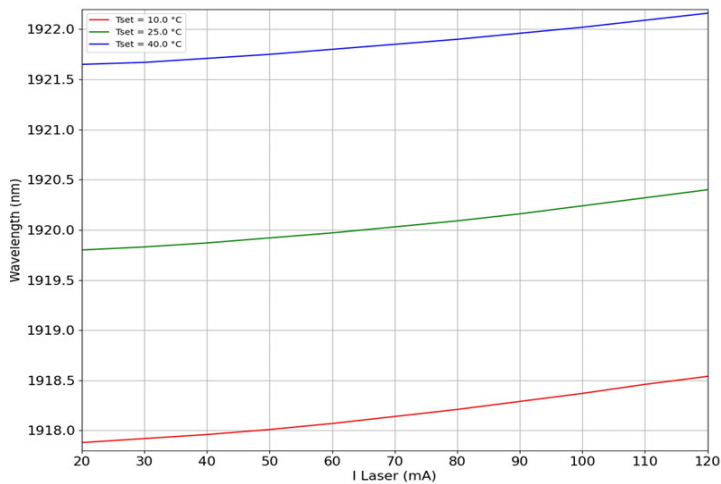
Electrical/Optical Characteristics(Tsub=25°C, CW bias unless stated otherwise)

| Parameter                      | Symbol                   | Min  | Typ   | Max  | Unit       |
|--------------------------------|--------------------------|------|-------|------|------------|
| Centre Wavelength              | $\lambda$                | 1919 | 1920  | 1921 | nm         |
| Side Mode Suppression Ratio    | SMSR                     | 30   | 40    |      | dB         |
| Threshold Current              | I <sub>th</sub>          |      | 20    | 30   | mA         |
| Operating Current              | I <sub>op</sub>          |      | 80    | 120  | mA         |
| Chip output Power              | P <sub>f</sub>           | 2    | 3     | 5    | mW         |
| Quantum Efficiency             | $\eta$                   | 0.08 | 0.12  |      | mW/mA      |
| Current Tuning Coefficient     | $\Delta\lambda/\Delta I$ |      | 0.015 |      | nm/mA      |
| Temperature Tuning Coefficient | $\Delta\lambda/\Delta T$ |      | 0.12  |      | nm/K       |
| Forward Voltage                | V <sub>f</sub>           |      | 1.3   | 2    | V          |
| Thermistor Resistance          | R <sub>T</sub>           | 9.5  | 10    | 10.5 | K $\Omega$ |
| Thermistor Temp. Coefficient   |                          |      | -4.4  |      | %/°C       |
| Connector                      | FC/APC                   |      |       |      |            |

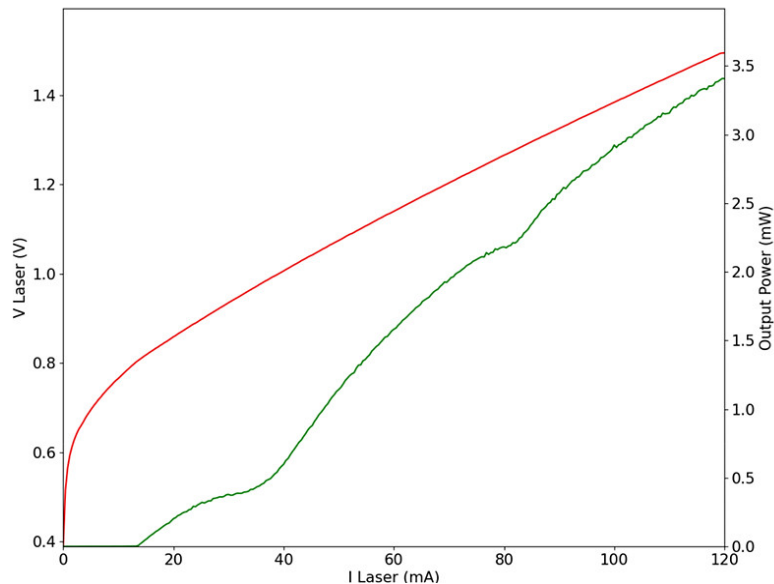
## Spectrum



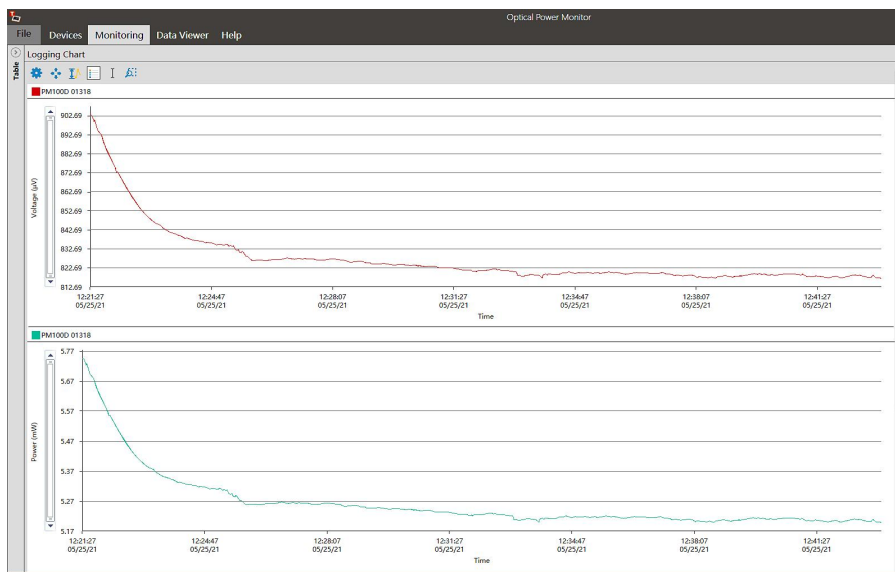
## Tuning Characteristics



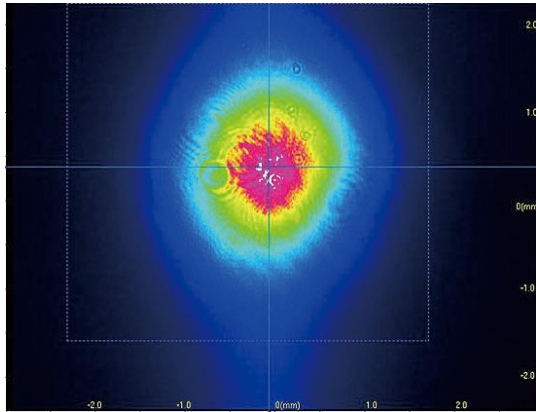
## L-I Curve



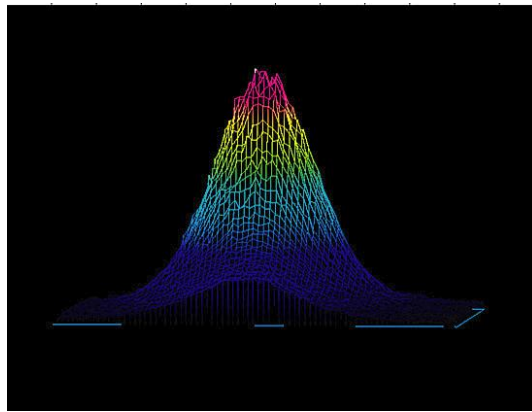
## Power Stability



## Beam Quality

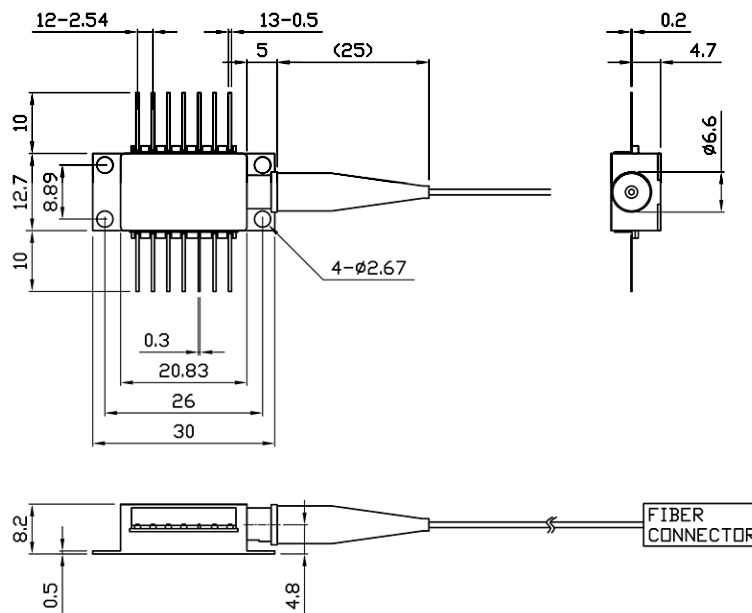


2D

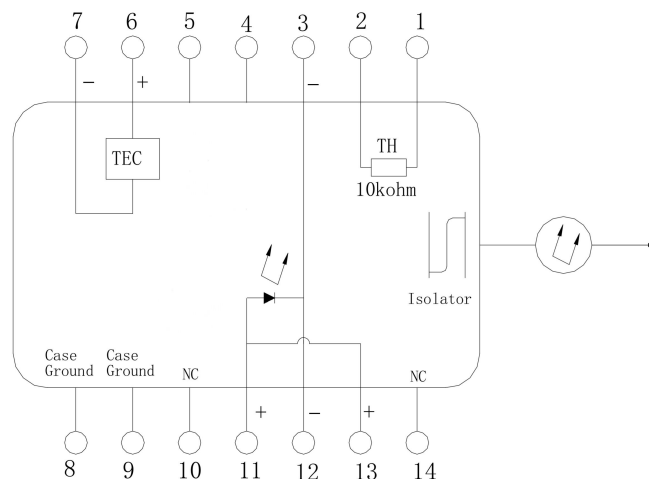


3D

## Package Size



## Pin Definition



| PIN# | Function         | PIN# | Function          |
|------|------------------|------|-------------------|
| 1    | Thermistor       | 8    | Case Ground       |
| 2    | Thermistor       | 9    | Case Ground       |
| 3    | Laser Cathode(-) | 10   | NC                |
| 4    | NC               | 11   | Laser Anode (+)   |
| 5    | NC               | 12   | Laser Cathode (-) |
| 6    | TEC (+)          | 13   | Laser Anode (+)   |
| 7    | TEC (-)          | 14   | NC                |

### Absolute Maximum Ratings

| Item                | Unit | Min | Typ | Max |
|---------------------|------|-----|-----|-----|
| Case Temperature    | °C   | -5  | 25  | 70  |
| Chip Temperature    | °C   | +10 | 25  | 40  |
| Operating Current   | mA   | 0   | 100 | 120 |
| Forward Voltage     | V    | 0.8 | 1.2 | 1.8 |
| TEC Current         | A    | -   | -   | 1.2 |
| Reverse Voltage(LD) | V    | -   | -   | 2.0 |
| Reverse Voltage(PD) | V    | -   | -   | 20  |

### Ordering Info

**PL-DFB-□□□□-☆-A8▽-XX**

□□□□:Wavelength

1512:1512nm

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1653.7: 1653.7nm

1920: 1920nm

☆ :Output Power

A:2mW

B:5mW

▽:Wavelength Tolerance

1:±1nm

2:±2nm

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