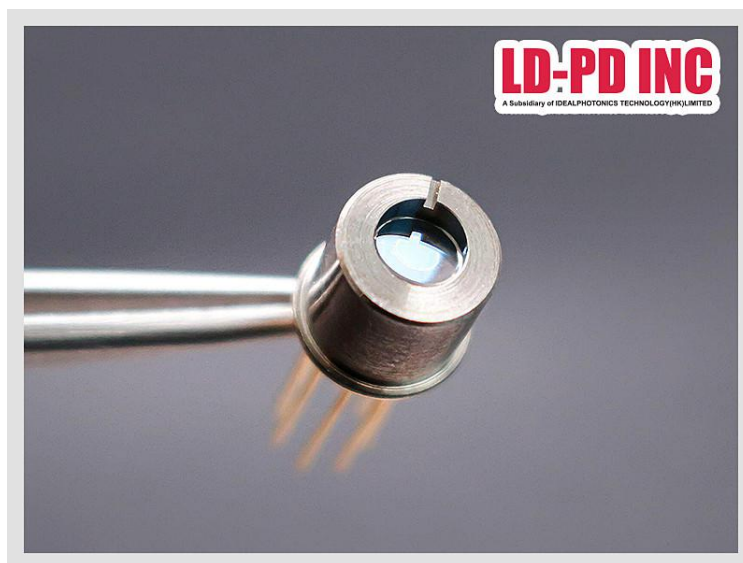


## 2330nm DFB Laser diode for CO Gas monitoring (TO39 Package)



### Description

The PL-DFB-2330-A-A81 2330nm 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 TO39 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
- CO Monitoring

## Laser Specifications

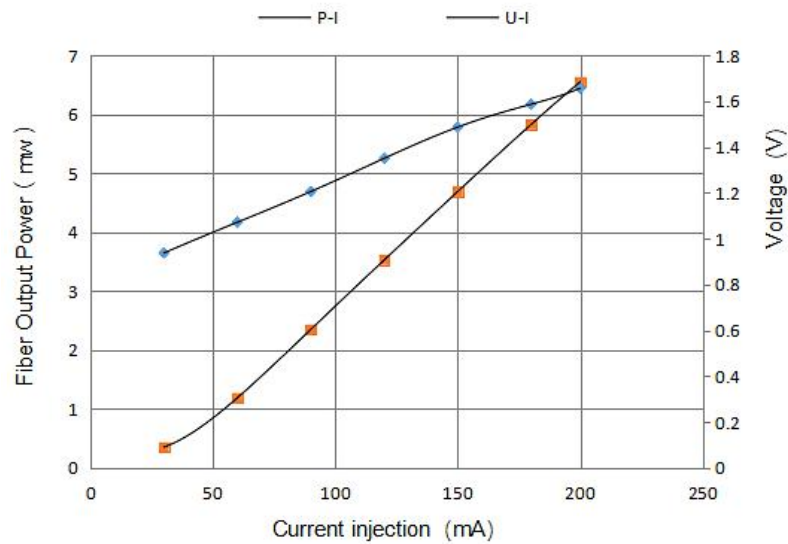
Electrical/Optical Characteristics (Tsub=25°C, CW bias unless stated otherwise)

| Parameter                      | Symbol                   | Min  | Typ   | Max  | Unit       |
|--------------------------------|--------------------------|------|-------|------|------------|
| Centre Wavelength              | $\lambda$                | 2329 | 2330  | 2331 | 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>           | 4    | 5     | 10   | 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                   |      |       |      |            |

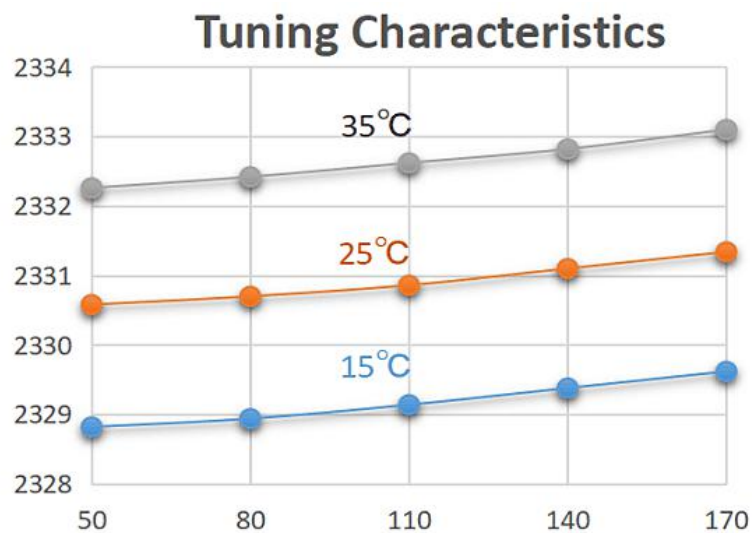
## Spectrum



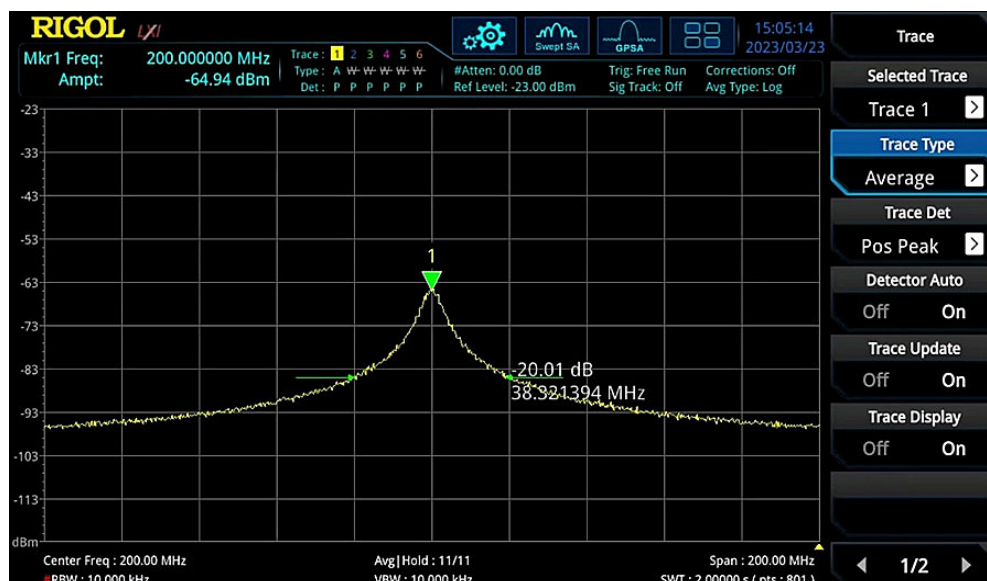
## L-I Curve



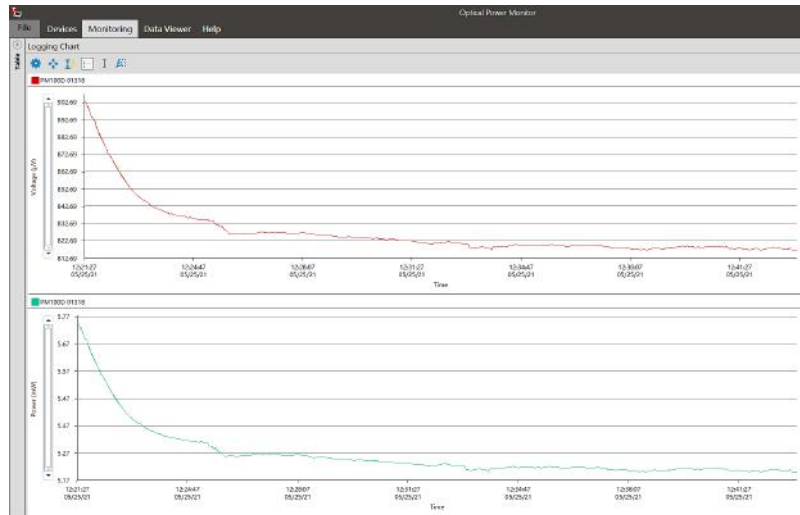
## Tuning characteristics



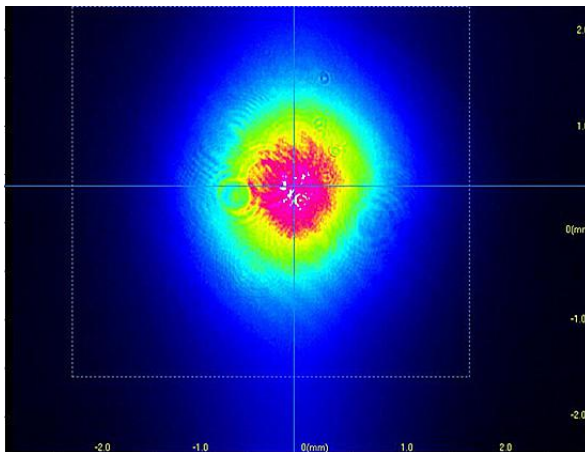
## DFB Linewidth Testing Result



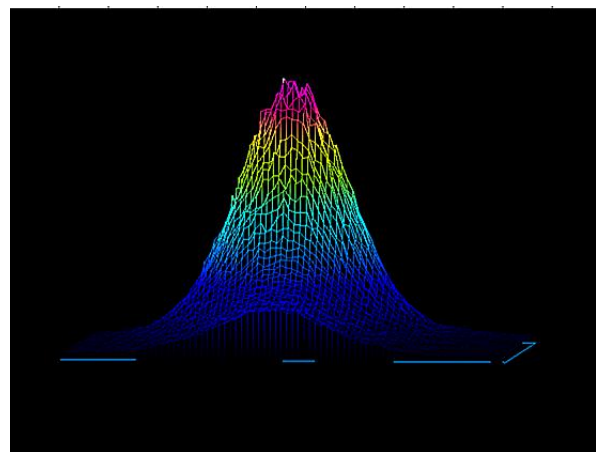
## Power Stability



## Beam Quality

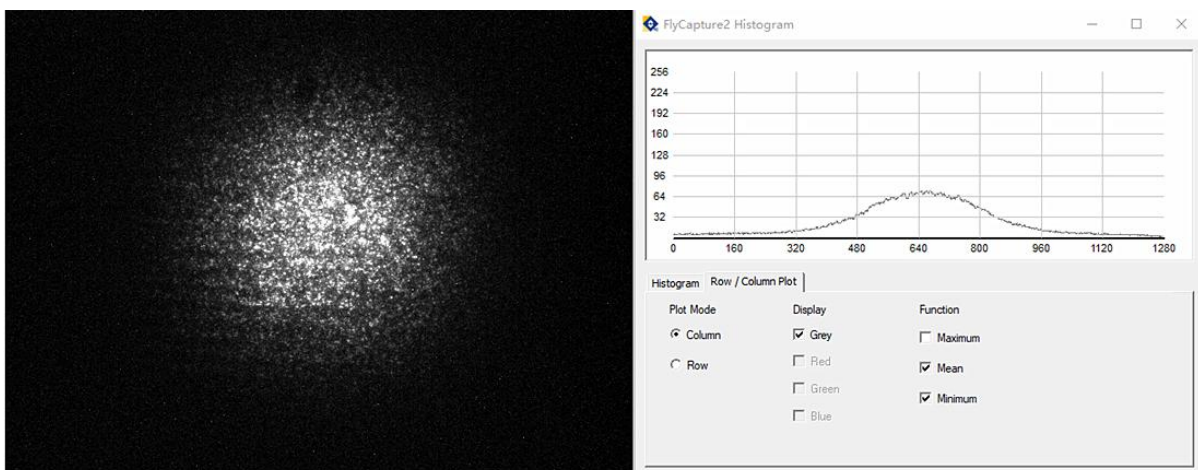


2D



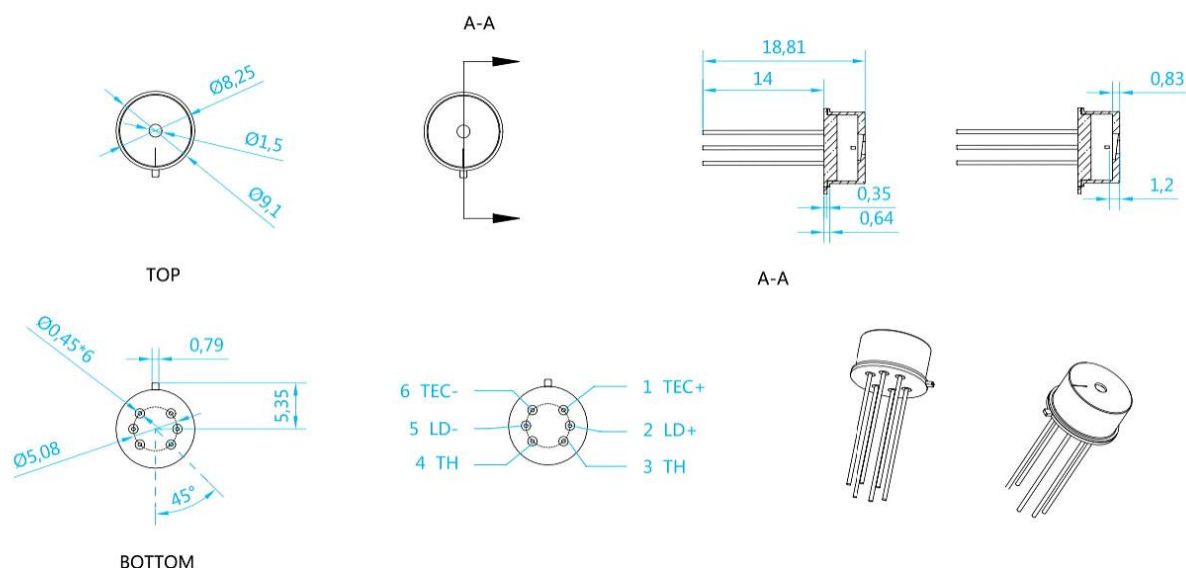
3D

## Camera Analysis



## Dimensions and Pin definitions

Uinte (mm)



## 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▽-TO39

□□□□: Wavelength

1530: 1530nm

1653.7: 1653.7nm

\*\*\*\*\*

2330: 2330nm

☆: Output Power

A: 5mW

B: 10mW

▽: Wavelength Tolerance

1:  $\pm 1$ nm2:  $\pm 2$ nm