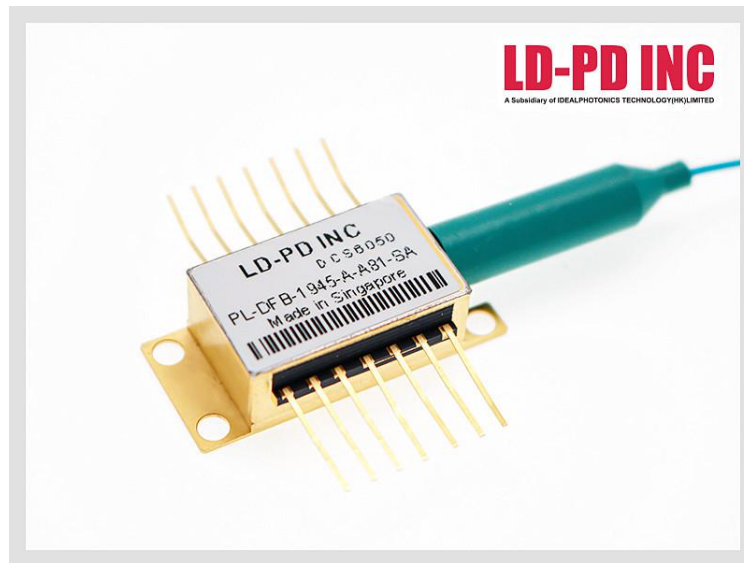


## 1945nm DFB Tunable Laser diode



### Description

The PL-DFB-1945-A1 1945nm 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**

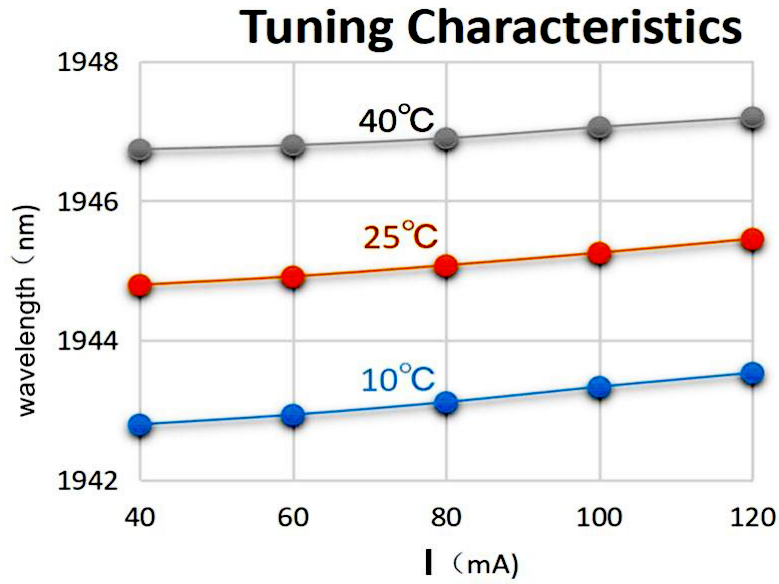
Electrical/Optical Characteristics(Tsub=25°C, CW bias unless stated otherwise)

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	$\lambda$	1944	1945	1946	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		mW/mA
Temperature Tuning Coefficient	$\Delta\lambda / \Delta T$		0.12		nm/K
Forward Voltage	V <sub>f</sub>		1.3	2	V
Thermistor Resistance	RT	9.5	10	10.5	K $\Omega$
Thermistor Temp. Coefficient			-4.4		%/°C
Connector	FC/APC				

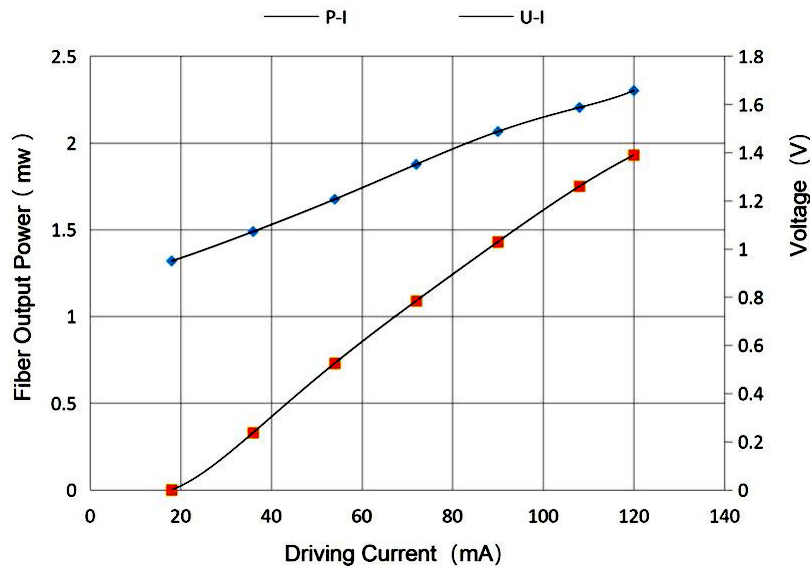
**Spectrum**



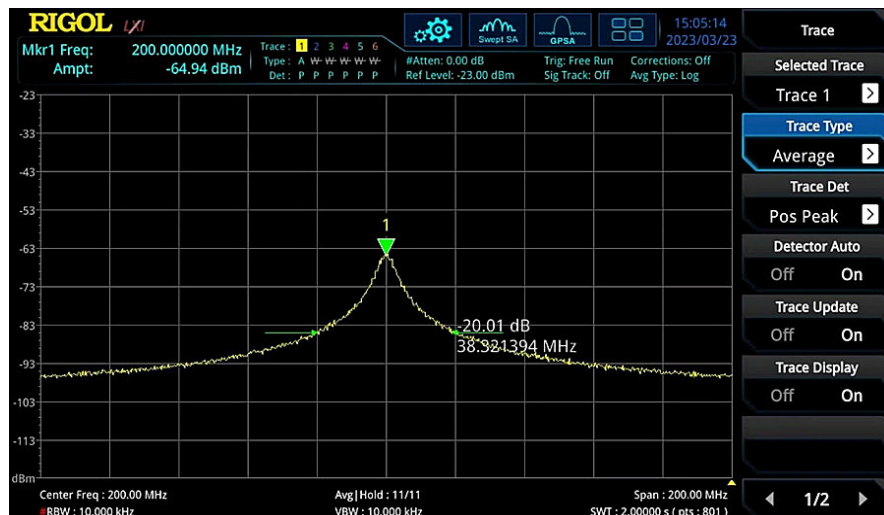
**Tuning Characteristics**



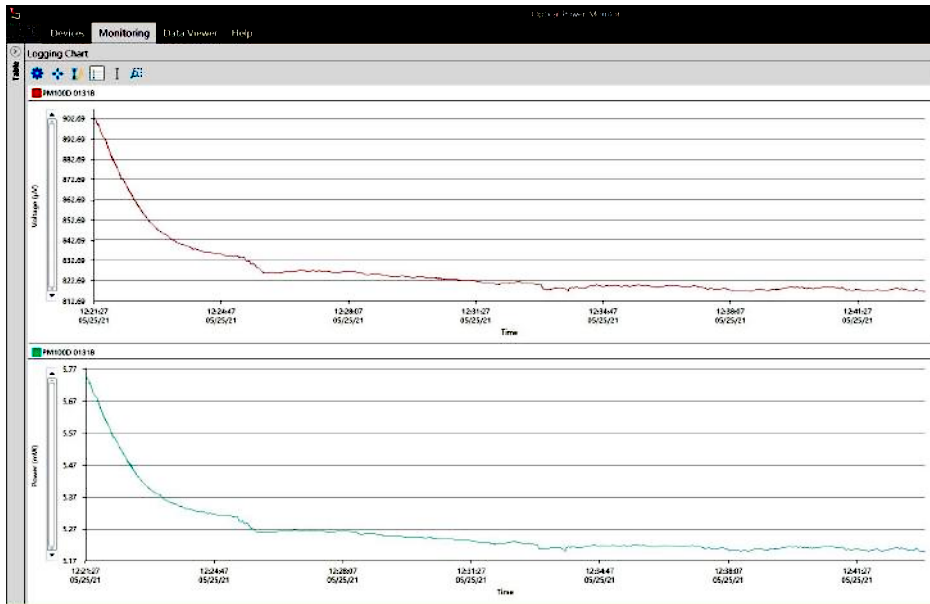
**L-I Curve**



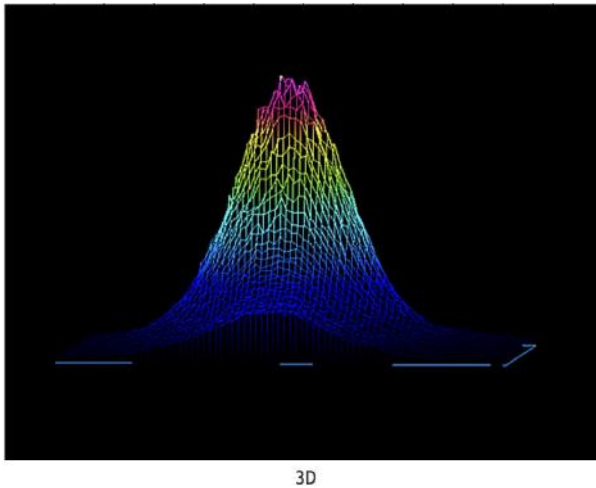
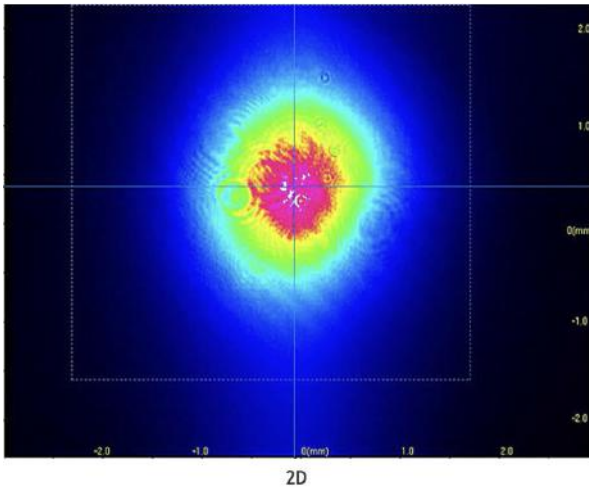
**DFB Linewidth Testing Result**



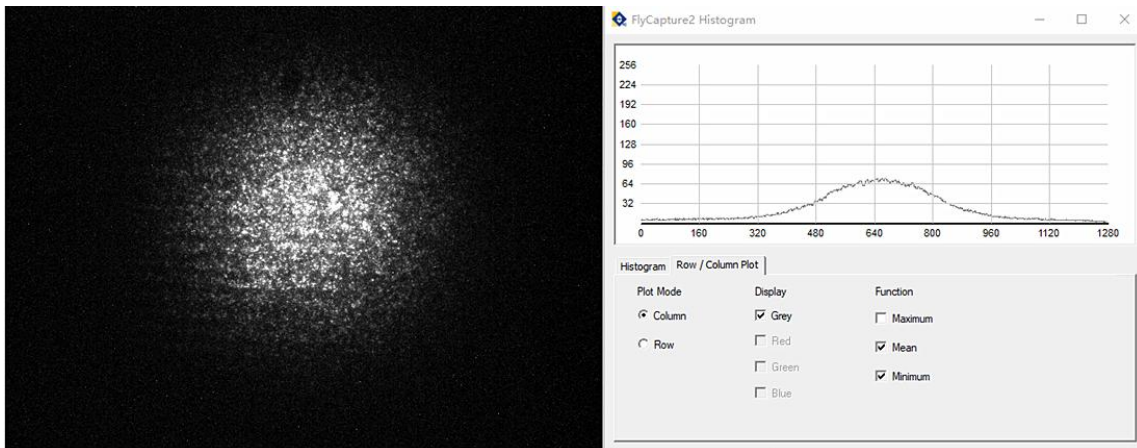
**Power Stability**



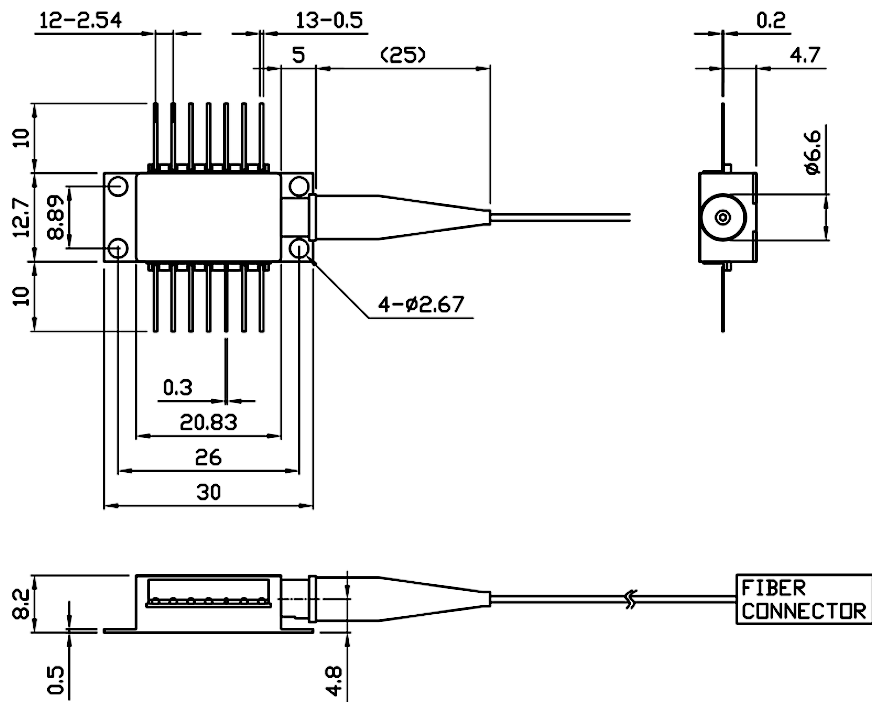
**Beam Quality**



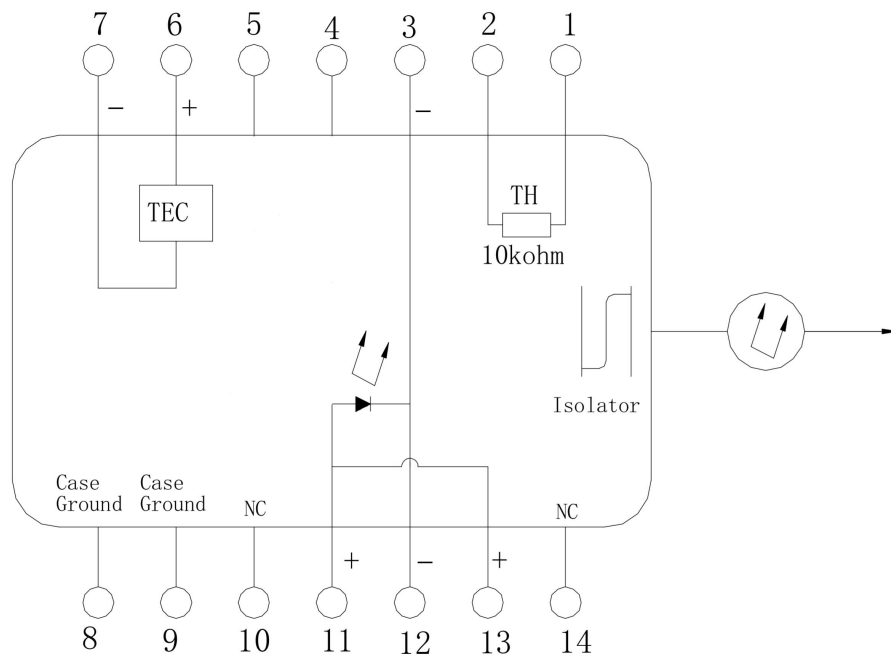
**Camera Analysis**



**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

1947: 1947nm

☆ :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