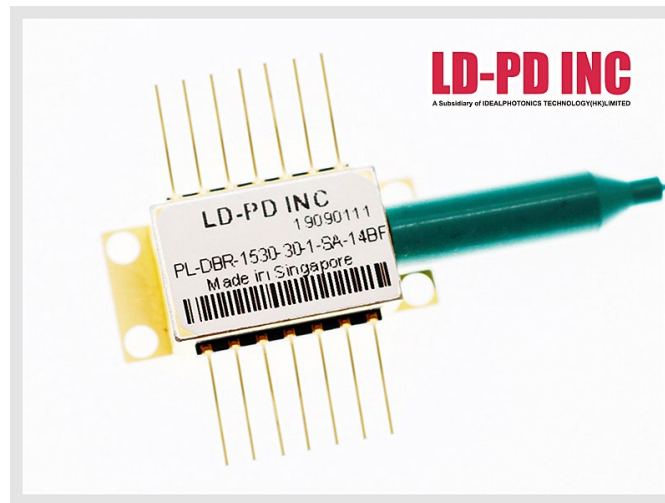


## 1530-1540nm 8nm tunable bandwidth DBR laser diode



### Description:

LD-PD's PL-DBR-1530-30-1-SA-14BF Distributed Bragg Reflector (DBR) laser is a single-frequency laser diode that is well-suited for low-noise pump applications, second harmonic generation and time-resolved fluorescence spectroscopy, and fiber optic sensor.

The PLDBR1550PA includes an integrated optical isolator, thermo-electric cooler (TEC), thermistor, and monitor photodiode. It is packaged in a 14-pin butterfly package with SMF-28E single mode optical fiber and an FC/APC connector.

### Features:

- High output power
- Center wavelength can be customized
- Fast wavelength tuning
- Wavelength tuning range can cover 20-25 / 40-50 ITU channels
- High side mode suppression ratio
- 14pin butterfly package & 7pin RF package
- Integrated Thermoelectric Cooler (TEC), Thermistor, and Monitor Photodiode
- Narrow 3MHz Typical Linewidth
- SM or PM Fiber Output with 2.0 mm Narrow Key FC/APC Connector

**Application:**

- Optical Communication Access Network Application
- Optical Sensing
- High-Resolution Spectroscopy
- Optical Metrology and Sensors
- Fiber Amplifier Seeding
- Nonlinear Frequency Conversion
- Laser Cooling and Trapping
- Free-Space Optical Communications

**Laser Specifications:**

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

Parameter	Min	Type	Max	Unit
Optical output power*a	30	40	-	mW
Center wavelength (customized)	1535	1540	1545	nm
Wavelength tuning range	6	8		nm
Wavelength tuning rate	-	-	10	ms
Spectral width	-	3	--	MHz
RF direct modulation rate	-	10	-	Gb/s
Threshold current	-	40	-	mA
Polarization extinction ratio	20	-	-	dB
Side mode suppression ratio	40	50	-	dB
Relative intensity noise	-	-	-135	dB/Hz
Chip temperature	10	25	40	°C
Operating temperature	-5	-	+75	°C
Storage temperature	-40	-	+85	°C

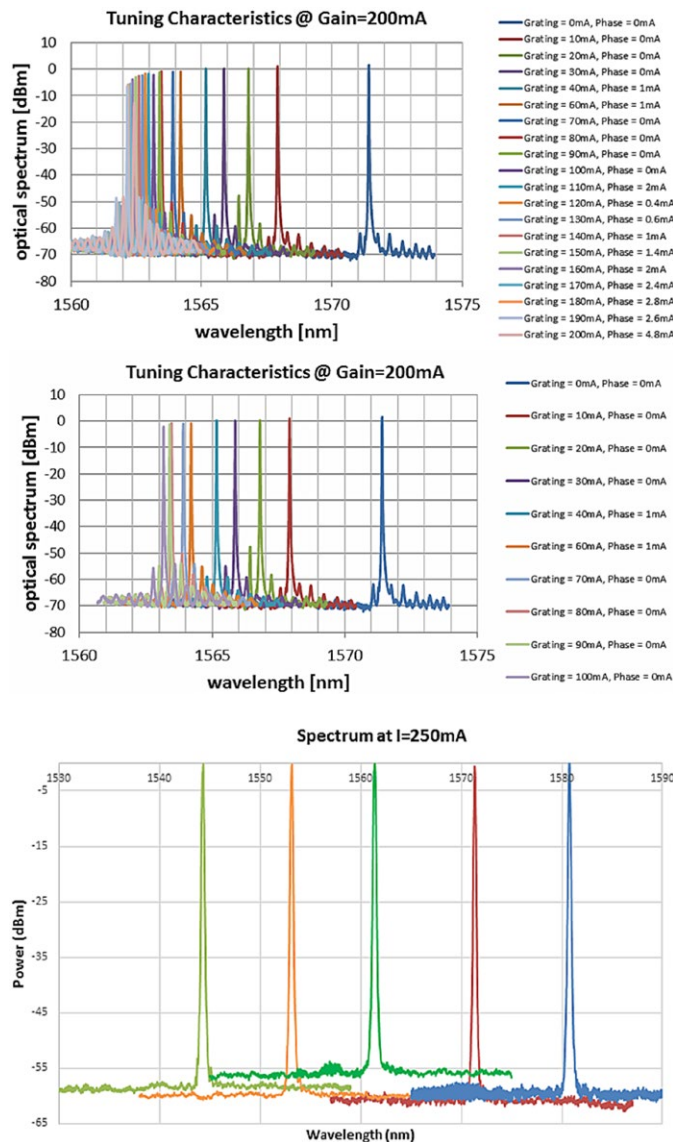
A, The testing driving Current@250mA

B, Test driving current@150mA, Selfheterodyne time-delay optical fiber @25km

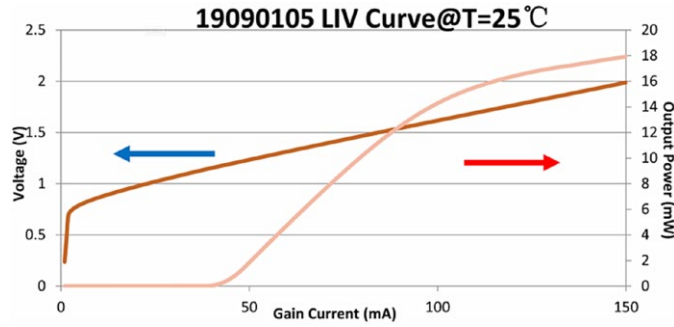
**Absolute Maximum Ratings:**

Laser section	Current Operation	Absolute Maximum Ratings	
	Range, C.W. (mA)	Current ( mA )	Voltage ( V )
Gain	100-250	350	2.0
Rear Grating	0-90	120	2.0
Phase Tuning	0-5	10	2.0

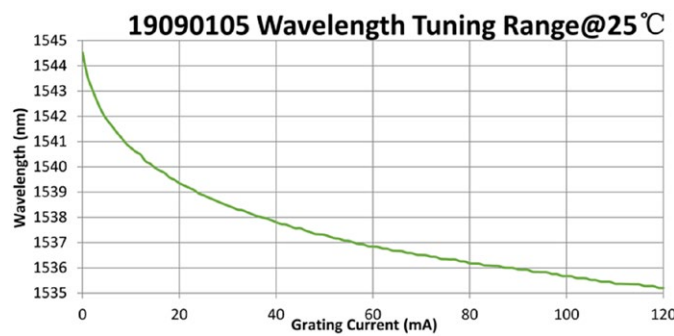
**Tuning Characteristics graph(tuning range 8.5-10nm):**



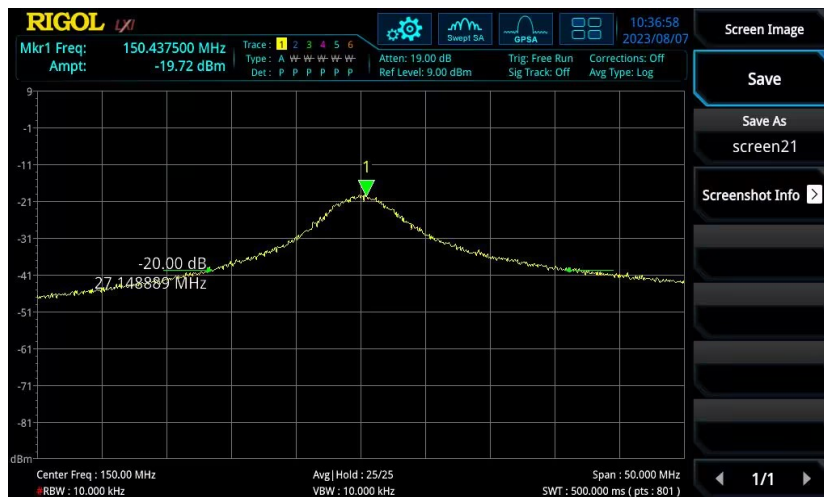
**LIV:**



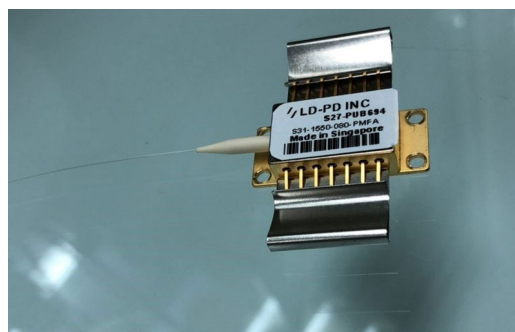
**Grating Current Toward Wavelength:**



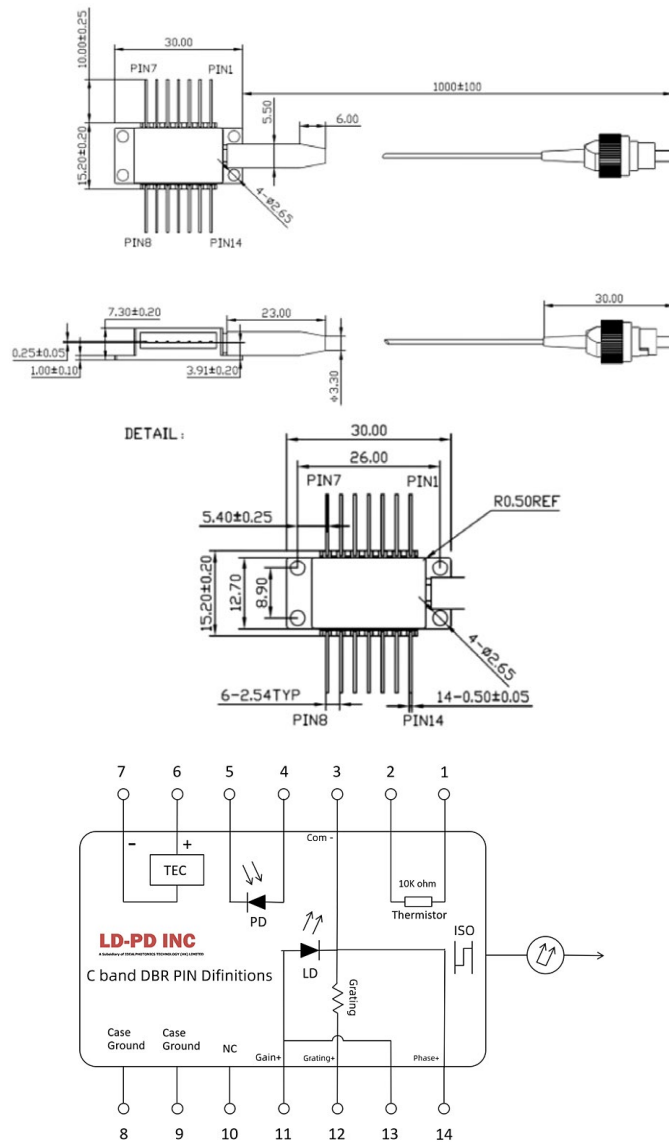
**DBR Linewidth Testing Result:**



**Package Size:**



**14 pin butterfly package:**



**Pin definition:**

Pin	Function	Pin	Function
1	Thermistor	8	Case Ground
2	Thermistor	9	Case Ground
3	LD Cathode (-)	10	NC
4	MPD Anode	11	Gain
5	MPD Cathode	12	Grating
6	TEC (+)	13	Gain
7	TEC (-)	14	Phase

**Ordering Info:**

PL-DBR-□□□□-☆-▽-XX

□□□□:Wavelength

1530:1530nm

\*\*\*\*\*

1580:1580nm

☆:Output Power

30:30mW

50:40mW

▽: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