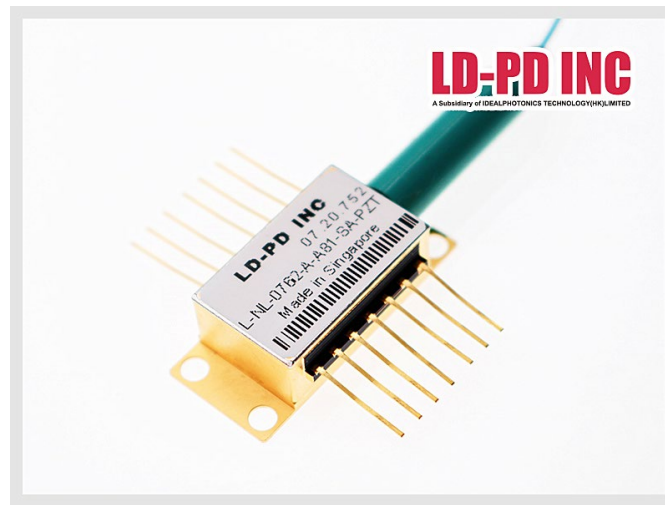


762nm Single frequency FBG stabilized Tunable Narrow Linewidth Laser Diodes



Description:

The PL-NL series Fiber Bragg Grating 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.

Features:

- Optical output: 20mW
- Narrow linewidth ($\Delta\nu < 1\text{MHz}$)
- Wavelength: 762nm @ 25°C
- SM or PM Fiber ($\varnothing 0.9\text{mm}$)
- FC-APC connector
- 14-pin butterfly package
- Internal monitor PD and TEC
- Low power consumption

Application:

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

Laser Specifications:

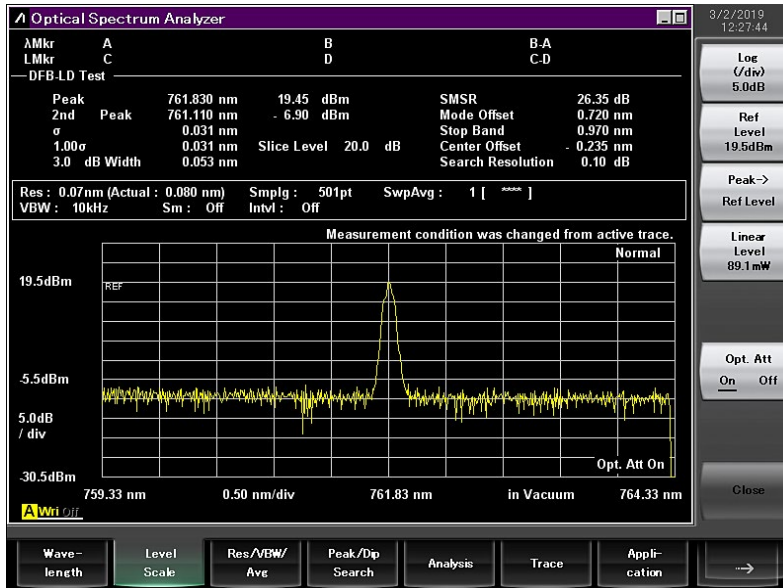
Optical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λ_c	TL=15~35 °C CW	761	762	763	nm
Peak Optical Output Power	PO	-	10	-	30	mW
Spectral linewidth	LW	-	-	1	10	MHz
Side-mode Suppression Ratio	SMSR	CW	40	45	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Polarization Extinction Ratio	ER	-	20	-	-	dB
Relative Intensity Noise	RIN	CW, output power 10mW	-	-	-145	dB/Hz
Wavelength drift with case (-10 to 70 °C) temperature	$\Delta\lambda$	TL=15~35 °C	-	-	± 30	pm
Wavelength Temperature coefficient	$\Delta\lambda/\Delta T$	TL=15~35 °C	-	60	80	pm/°C
Wavelength Current coefficient	$\Delta\lambda/\Delta I$	-	-	1.5	2	pm/mA

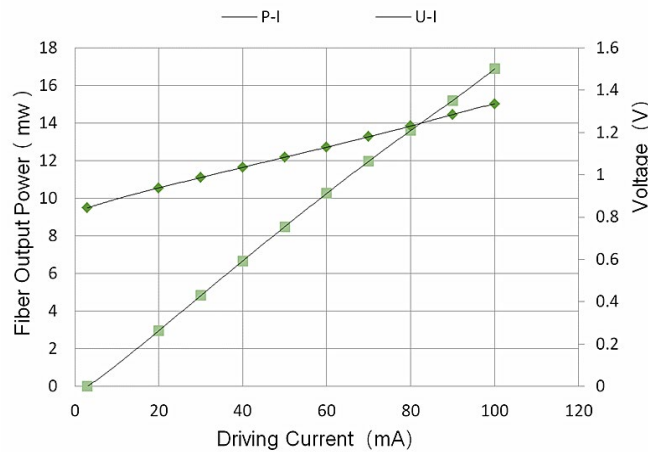
Electrical Characteristics (at 25 °C laser temperature):

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	45	65	mA
Slope Efficiency	η	CW, 10 mW	0.064	0.1	-	mW/mA
Operating current	Iop	CW	-	150	200	mA
TEC set temperature	Ts	-	15	-	35	
Laser Forward Voltage	VF	CW output power 5 mW	-	1.3	1.8	V
Monitor Dark Current	ID	-	-	-	0.1	μ A
Cooler Voltage	Vc	IF=EOL, TC=70°C			2.7	V
Cooler Current	Ic	IF=EOL, TC=70°C	-	-	1.4	A
Thermistor Resistance	RTH	TL = 25 °C	9.5	10	10.5	K Ω
TEC Current	ITEC	TL = 25 °C, TC = 70 °C	-	-	1.8	A
TEC Voltage	VTEC	TL = 25 °C, TC = 70 °C	-	-	3.5	V
Tuning Range	Δf		1		1.5	nm
PZT Tuning Voltage	VT		0		150	V
Mode Hop Free Range	ΔI			30		mA
Extinction Ratio	XP	CW 10 mW	17			dB
TEC capacity	ΔT	Tc = 70°C	-	-	50	°C
Thermistor temperature	-	-	-	-	100	°C

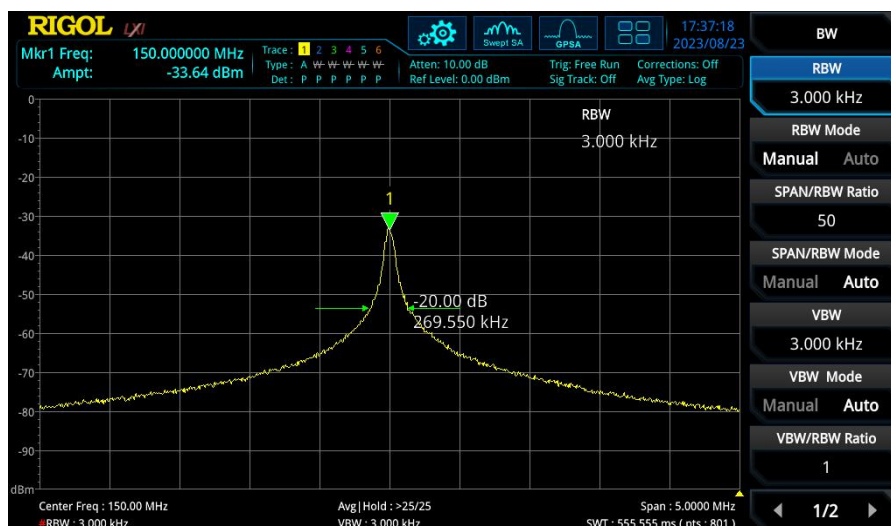
Spectrum:



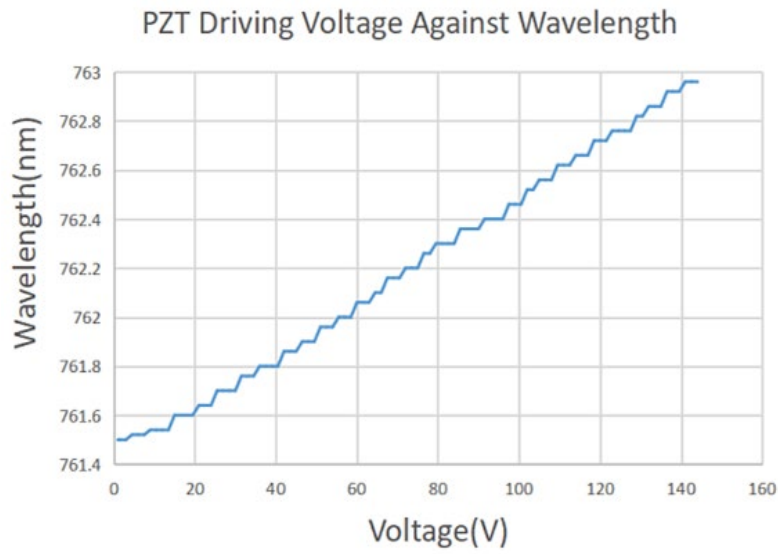
L-I Curve:



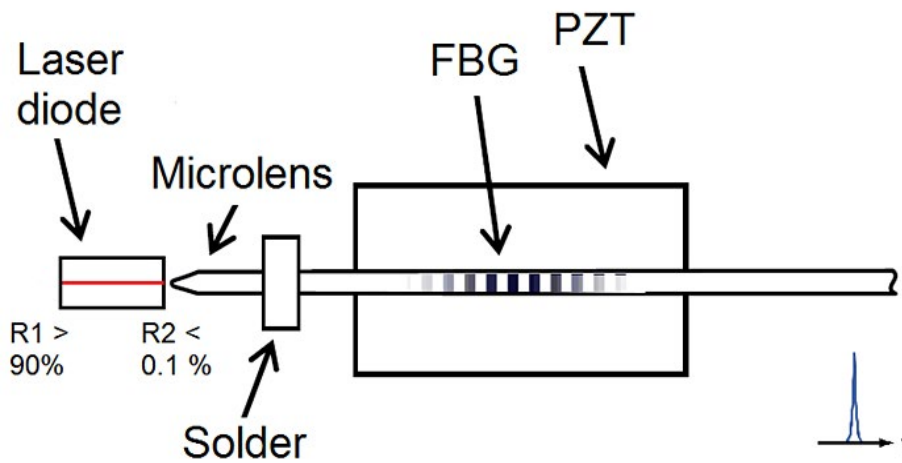
Linewidth Testing Result:



Wavelength VS PZT Voltage:

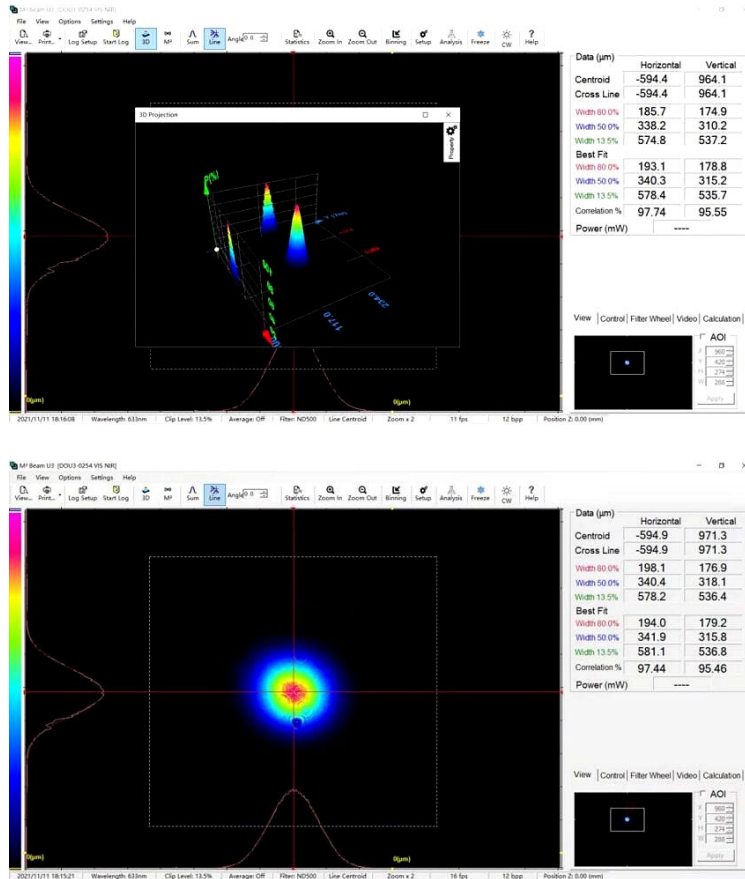


Working Structure:



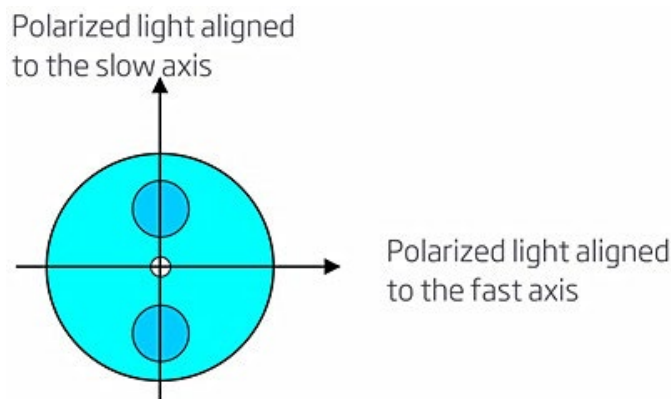
Beam Quality(M2,2D/3D Beam):





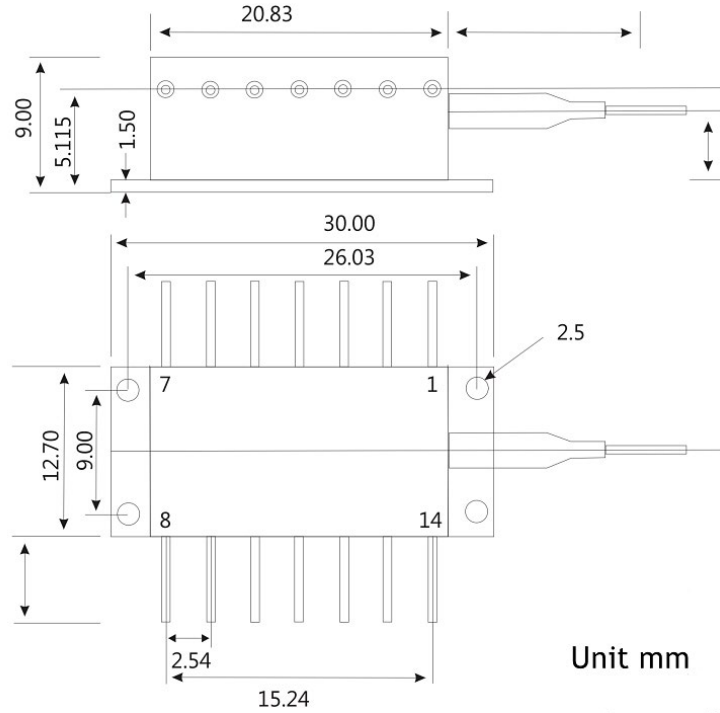
Fiber Pigtail Specifications:

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

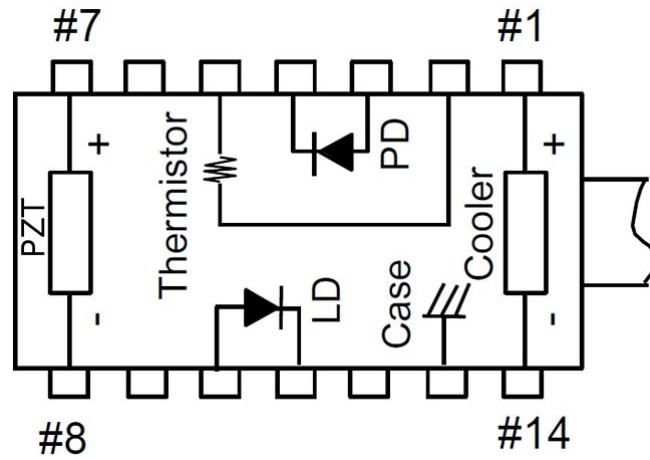


Note: The PM fiber and the connector key are aligned to the slow axis, fast axis is blocked

Package Size:



Pin definition:



None PZT Built inside:

1	Thermoelectric Cooler (+)	8	PZT tuning -
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	PZT tuning +	14	Thermoelectric Cooler (-)

Absolute Maximum Ratings:

Item	Unit	Min	Typ	Max
Case Temperature	°C	-40	25	70
Chip Temperature	°C	+10	25	40
Operating Current	mA	0	150	170
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	-	1.2	1.4
Reverse Voltage (LD)	V	-	-	1.8

Ordering Info:

PL-NL-□□□□-☆-A8▽-XX-☆

□□□□: Wavelength

0660: 660nm

0762: 762nm

1550: 1550nm

1555: 1555nm

1560: 1560nm

☆: Output Power

A: 10mW

B: 30mW

▽: Linewidth

1: <10MHZ

XX: Fiber and Connector Type

SA=HI780+ FC/APC

SP=HI780+ FC/PC

PP=PM850 Fiber+ FC/PC

PA=PM850 Fiber+ FC/APC

☆

No PZT: Leave it Blank

PZT: Version please use PZT to replace