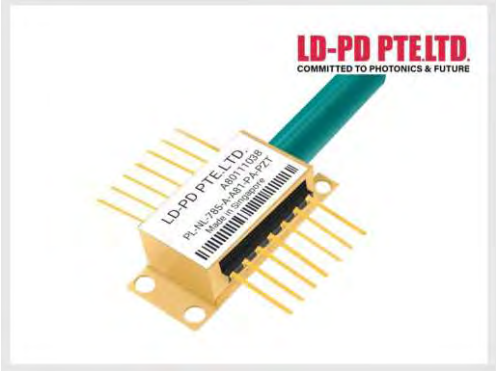
785nm Single frequency FBG stabilized Tunable Narrow Linewidth Laser Diodes



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).

Features

- Optical output: 20mW
- Narrow linewidth (Δv<1MHz)
- Wavelength: 785nm @ 25℃
- SM or PM Fiber (ø0.9mm)
- FC-APC connector
- 14-pin butterfly package
- Internal monitor PD and TEC
- Low power consumption

E/O Characteristics

Optical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λc	TL=15～35℃ CW	780	785	790	nm
Peak Optical Output Power	PO	-	-	10	20	mW
Spectral linewidth	LW	-	-	1	10	MHZ
Side-mode Suppression Ratio	SMSR	CW	30	40	-	dB
Optical Isolation	-	-10 < TC < +70 ºC	30	-	-	dB

Polarization Extinction Ratio	ER	-	20	-	-	dB
Relative Intensity Noise	RIN	CW，output power 5mW	-	-	-135	dB
Wavelength drift with case (-10 to 70 ºC) temperature	△λ	TL=15～35℃	-	-	±30	pm
Tuning Range(For PZT Version)	Δf		0.5		1	nm
PZT Driving Voltage(PZT Version)	VT		0		150	V
Mode Hope free Range	ΔI			3		mA

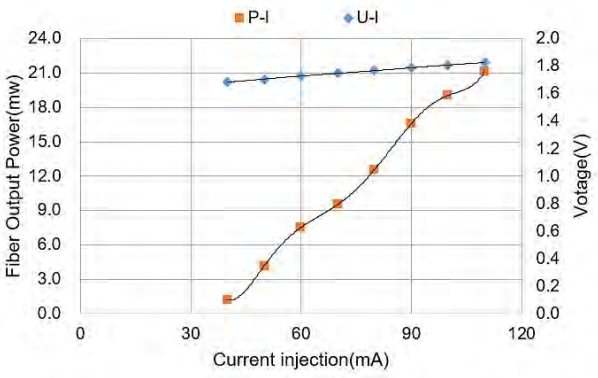
Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	45	65	mA
Operating Current	Iop	CW	-	80	100	mA
Slope Efficiency	η	CW output power 30 mW	0.064	0.1	0.4	mW/mA
TEC set temperature	Ts	-	15	-	35	℃
Laser Forward Voltage	VF	CW output power@30 mW	-	1.3	2.5	V
Input Impedance	ZIN		22	25	28	Ω
Monitor Dark Current	ID	-	-	-	0.1	μA
Thermistor Current	ITC	-	10	-	100	μA
Thermistor Resistance	RTH	TLD=25°C	9.5	10	10.5	KΩ
TEC Current	ITEC	TLD=25°C, TC=70°C	-	-	1.8	A
TEC Voltage	VTEC	IF=EOL, TC=70°C	-	-	3.5	V
TEC capacity	ΔT	Tc = 70℃	-	-	50	℃
Thermistor temperature	-	-	-	-	100	℃

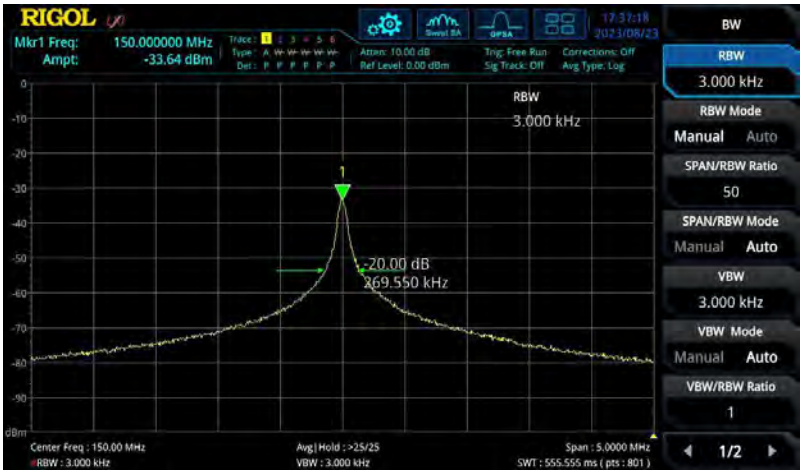
Spectrum



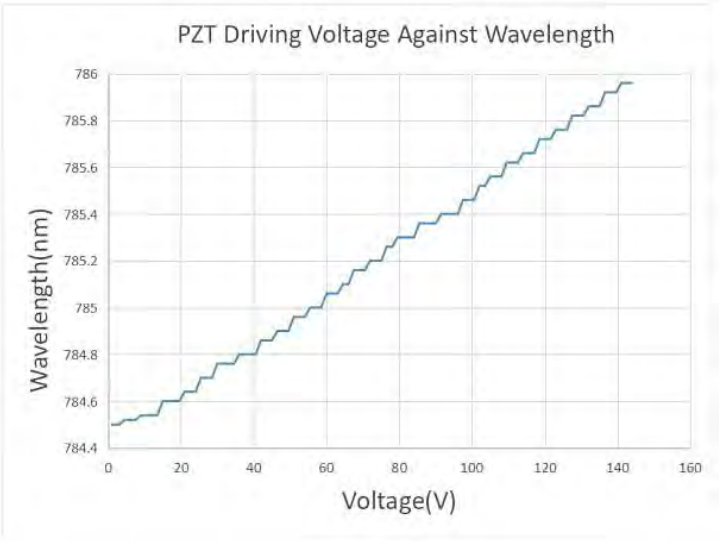
L-I Curve



Linewidth Testing Result

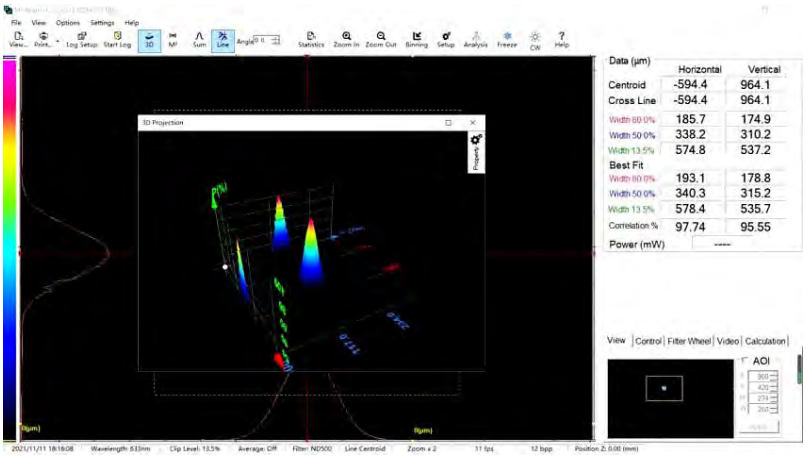


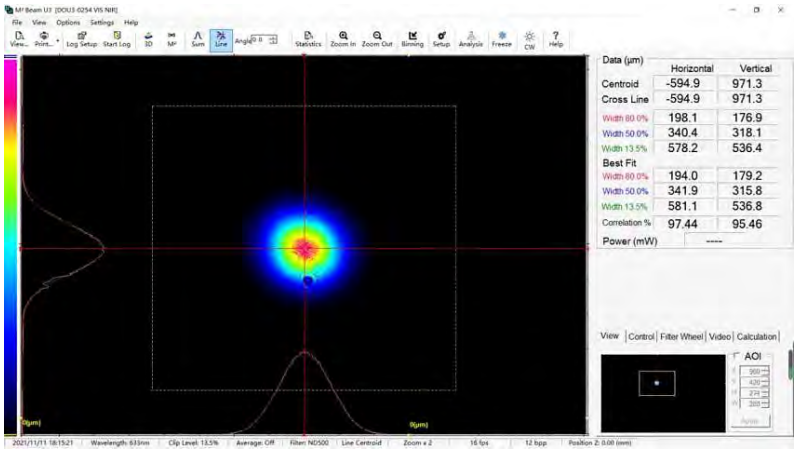
Wavelength VS PZT Voltage



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



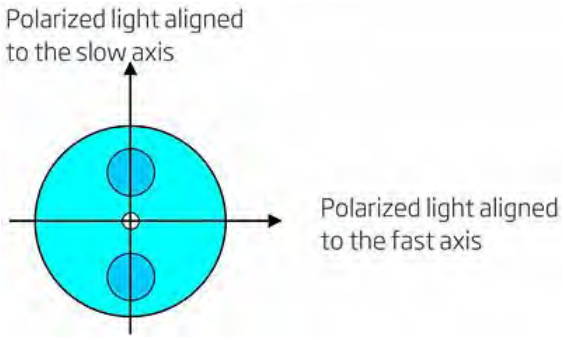




Fiber Pigtail Specifications

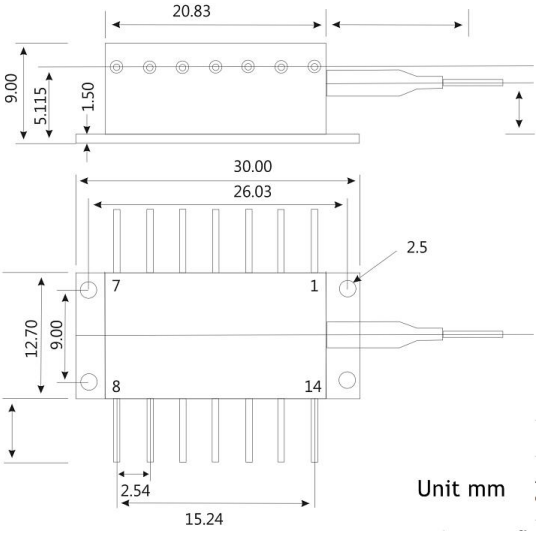
Parameters	Description
Fiber Type	PM fiber

Jacket Type	900μm loose tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC
PM fiber Connector Orientation	Please see the right figure

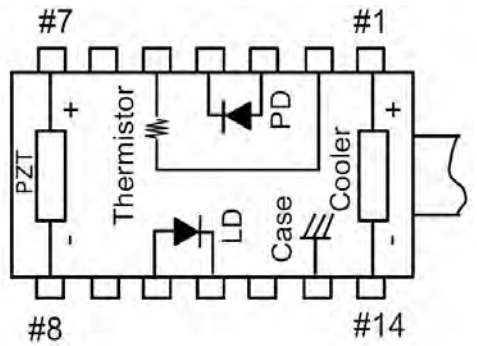


Note: The PM fiber and the connector key are aligned to the slow axis,fast axis is blocked

Package Size



Pin definition



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	℃	-40	25	70
Chip Temperature	℃	+10	25	40
Operating Current	mA	0	250	300
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	-	1.2	1.4
Reverse Voltage（LD）	V	-	-	1.8

Application

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

Ordering Info

PL-NL-□□□□-☆-A8▽-XX-☆
□□□□: Wavelength
0633: 633nm
0785: 785nm
1550: 1550nm
1555: 1555nm
*****

1560: 1560nm

☆: Output Power

A: 10mW

B: 30mW

▽: Linewidth

1: ＜10MHz

XX: Fiber and Connector Type

SA=SM780+ FC/APC

SP=SM780+ FC/PC

PP=PM780 Fiber+ FC/PC

PA=PM780 Fiber+ FC/APC

☆

No PZT: Leave it Blank

PZT: Version please use PZT to replace