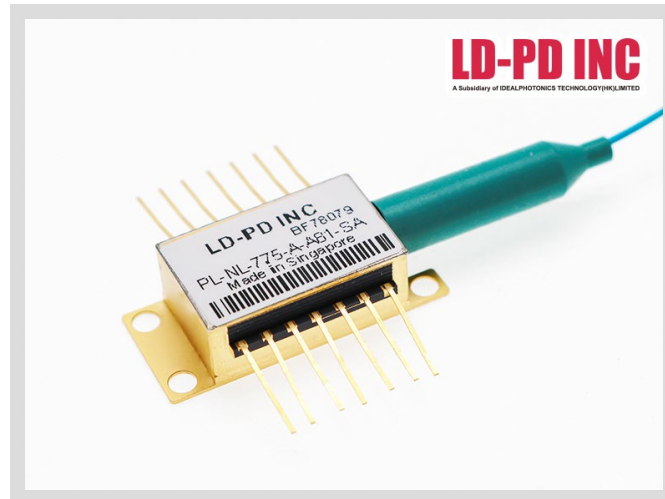


775nm Narrow Linewidth Laser Diodes



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: 30mW
- Narrow linewidth ($\Delta\nu < 1\text{MHz}$)
- Wavelength: 775nm @ 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

Optional:

- Laser interference experiment
- Optical Test and Instrumentation
- Sensors

E/O Characteristics:

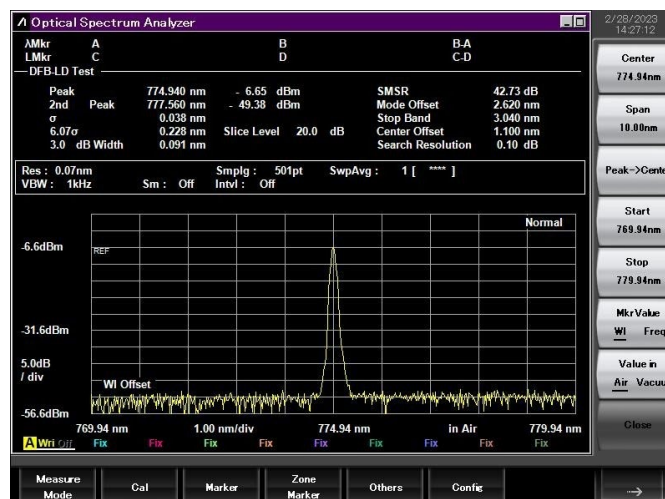
Optical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λ_c	TL=15~35°C CW	770	775	780	nm
Peak Optical Output Power	PO	-	-	20	30	mW
Spectral linewidth	LW	-	-	1	10	MHZ
Relative Intensity Noise	RIN			-145		db/HZ
SMSR	SMSR	CW	40	50	-	dB
PER	ER	-	20	-	-	dB
Wavelength drift with case (-10 to 70 °C) temperature	$\Delta\lambda$	TL=15~35°C	-	-	± 1	pm
Wavelength Temperature coefficient	$\Delta\lambda/\Delta T$	TL=15~35°C	-	100		pm/°C
Wavelength Current coefficient	$\Delta\lambda/\Delta I$	-	-	1		pm/mA
Mode Hope free Range	ΔI			30		mA

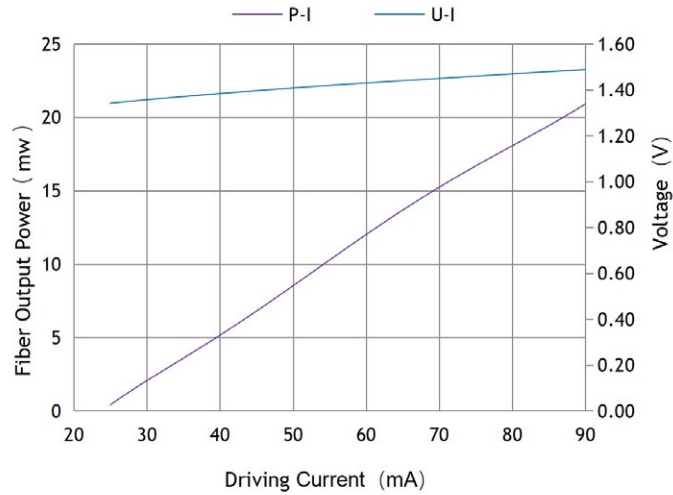
Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	40		mA
Operating current	Iop	CW	-	60	90	mA
TEC set temperature	Ts	-	15	-	35	°C
Laser Forward Voltage	VF	CW output power@5 mW	-	1.3	2.5	V
Monitor Dark Current	ID	Pf=5mw VRD=5V	-	-	0.1	μ A
Thermistor Current	ITC	-	10	-	100	μ A
Thermistor Resistance	RTH	TLD=25°C, B=3900 \pm 100K	9.5	10	10.5	K Ω
TEC Current	ITEC	IF=EOL, TC=70°C	-	-	1.2	A
TEC Voltage	VTEC	IF=EOL, TC=70°C	-	-	2.4	V

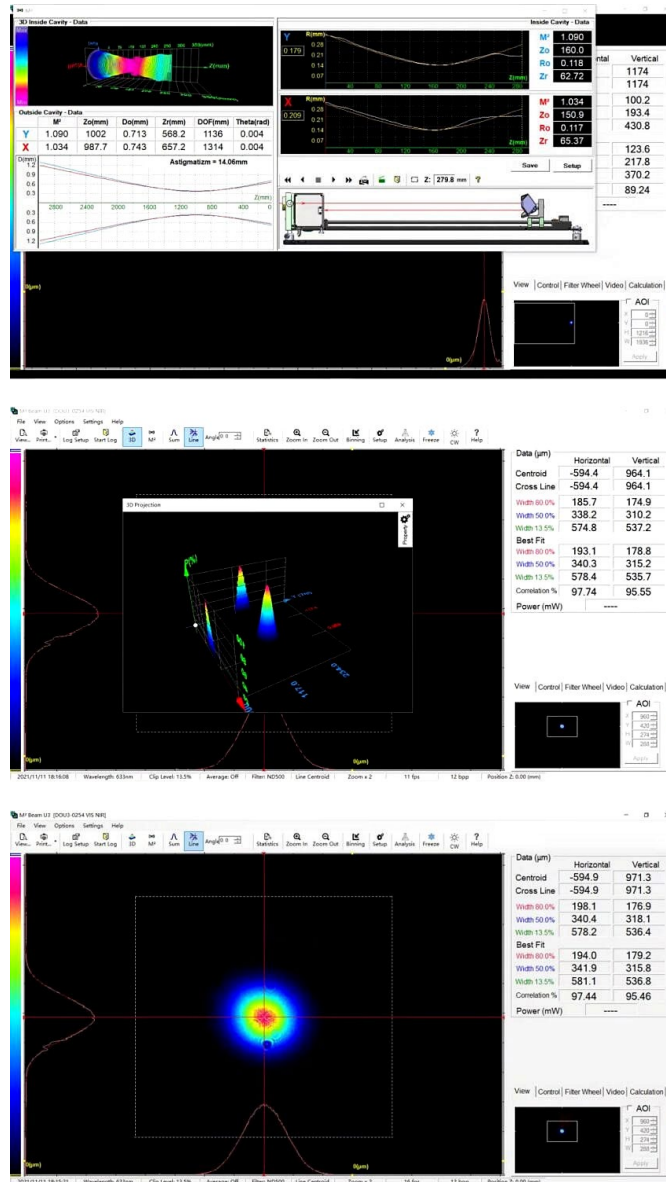
Spectrum:



L-I Curve:

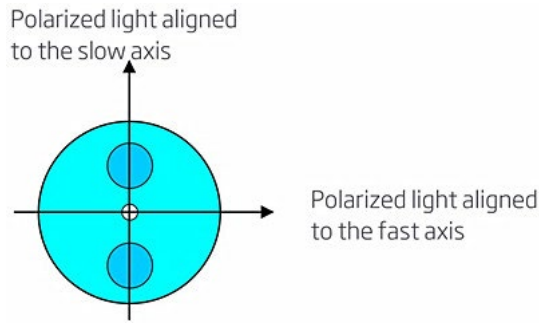


Beam Quality (M2,2D/3D Beam):



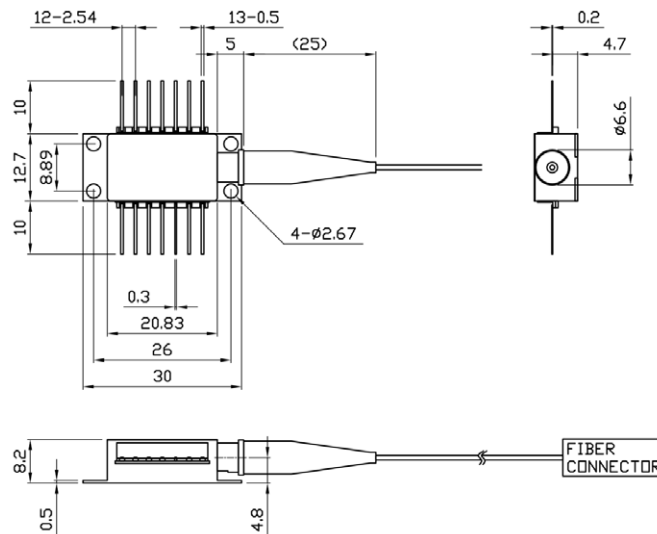
Fiber Pigtail Specifications:

Parameters	Description
Fiber Type	HI780/PM780fiber
Jacket Type	900μm loose tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC
PM fiber Connector Orientation	Please see the right figure

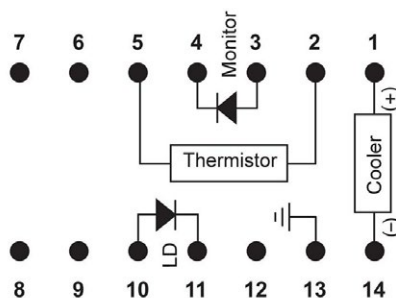


Note: The PM fiber and the connector key are aligned to the slow axis,fast axis is blocked.

Package Size:



Pin definition:



1	Thermoelectric Cooler (+)	8	N/C
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	N/C	14	Thermoelectric Cooler (-)

Absolute Maximum Ratings:

Item	Unit	Min	Typ	Max
Case Temperature	°C	-5	25	70
Chip Temperature	°C	+10	25	40
Operating Current	mA	0	60	90
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

0775: 775nm

1550: 1550nm

1555: 1555nm

1560: 1560nm

☆: Output Power

A: 20mW

B: 30mW

▽: Linewidth

1: 1MHZ

XX: Fiber and Connector Type

SA=HI780+ FC/APC

SP=HI780+ FC/PC

PP=PM780 Fiber+ FC/PC

PA=PM780 Fiber+ FC/APC