685nm Single Frequency Narrow Linewidth Laser



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: 15mW
- Narrow linewidth (Δv < 1MHz)
- Wavelength: 685nm @ 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

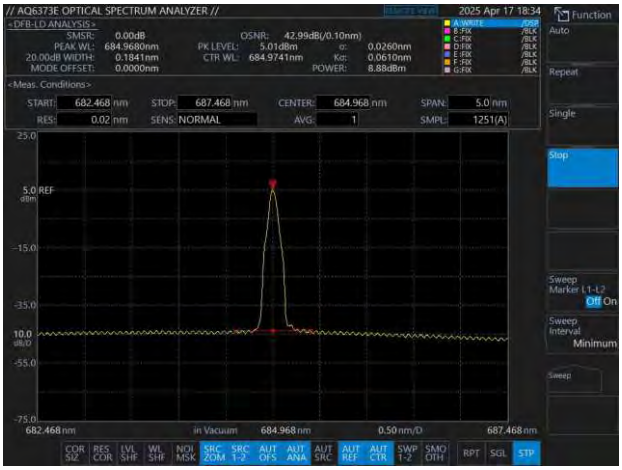
Optical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λc	TL=15～35℃ CW	684	685	686	nm
Peak Optical Output Power	PO	-	-	10	15	mW
Spectral linewidth	LW	-	-	1	10	MHZ
Relative Intensity Noise	RIN			-145		db/HZ
SMSR	SMSR	CW	30	40	-	dB
PER	ER	-	20	-	-	dB
Wavelength drift with case (-10 to 70 ℃) temperature	△λ	TL=15～35℃	-	-	±30	pm

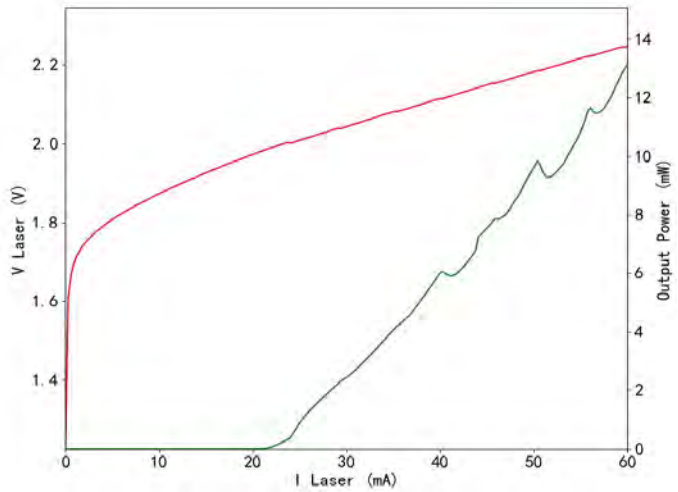
Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	25	60	mA
Operating Current	Iop	CW	-	30	60	mA
TEC set temperature	Ts	-	15	-	40	℃
Laser Forward Voltage	VF	CW output power@15 mW	-	1.3	2.5	V
Monitor Dark Current	ID	Pf=15mw VRD=5V	-	-	0.1	μA
Thermistor Current	ITC	-	10	-	100	μA
Thermistor Resistance	RTH	TLD=25°C, B=3900±100K	9.5	10	10.5	KΩ
TEC Current	ITEC	IF=EOL, TC=70°C	-	-	1.4	A
TEC Voltage	VTEC	IF=EOL, TC=70°C	-	-	2.8	V

Spectrum

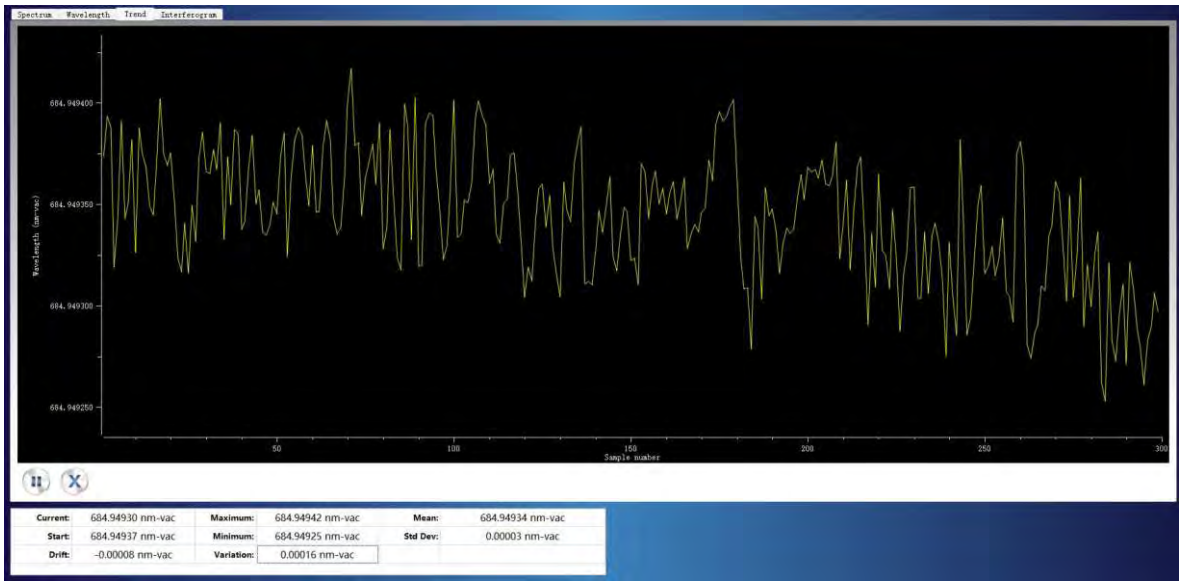


L-I Curve



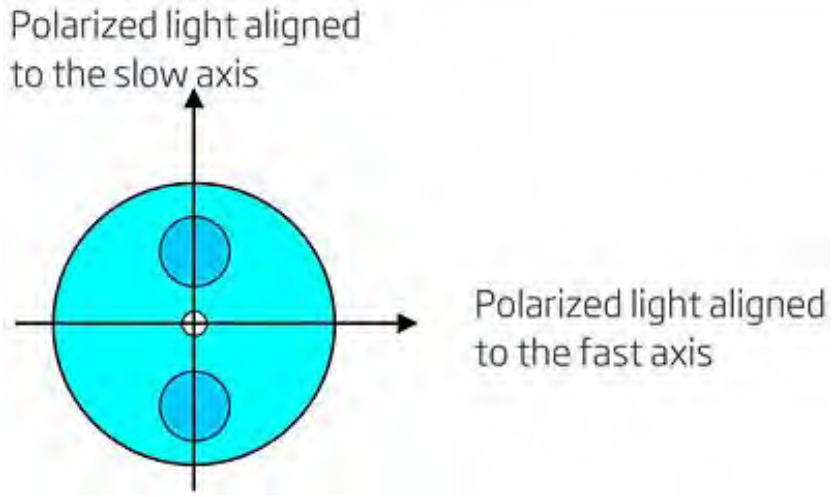
62 Highland Ave., Bethlehem, PA 18017, USA
Sales: contact@cybel-llc.com | Web: www.cybel-llc.com | Tel: +1 (610) 691-7012

Wavelength Stability Test Result



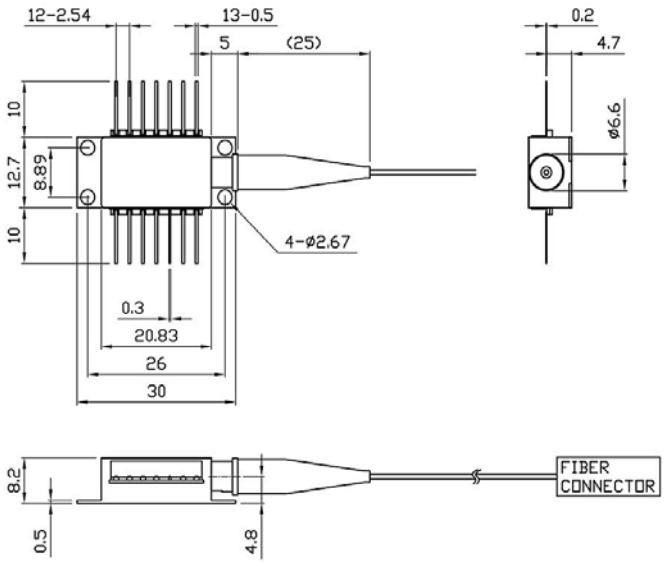
Fiber Pigtail Specifications

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

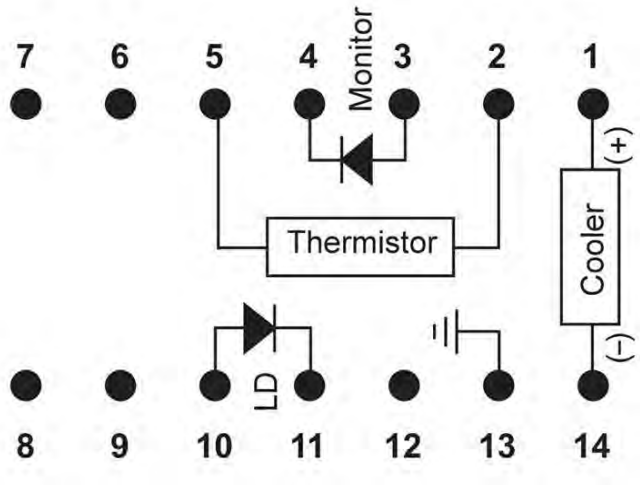


Note: The PM fiber and the connector key are aligned to the slow axis,fast axis is blocked.

Package Size



Pin definition



None PZT Bulit inside

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	℃	-40	25	70
Chip Temperature	℃	+10	25	40
Operating Current	mA	0	35	60
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
- Optical Test and Instrumentation
- Sensors

Ordering Info

PL-NL-□□□□-☆-A8▽-XX-☆
□□□□: Wavelength
0685: 685nm
1550: 1550nm
1555: 1555nm
*****
1560: 1560nm
☆: Output Power
A: 10mW
B: 30mW
▽: Linewidth
1: ＜10MHZ
XX: Fiber and Connector Type
SA=SM600+ FC/APC
SP=SM600+ FC/PC
PP=PM630 Fiber+ FC/PC
PA=PM 630 Fiber+ FC/APC
☆
No PZT: Leave it Blank
PZT: Version please use PZT to replace