



## WAVELENGTH STABILIZED BUTTERFLY MODULE

The LuxxMaster<sup>®</sup> wavelength-stabilized 785nm laser is a fiber-coupled device packaged in a 14-pin Butterfly case. This laser is constructed utilizing PD-LD's patented Volume Bragg Grating<sup>®</sup> (VBG<sup>®</sup>) technology. This award-winning technology is used to stabilize and shape the emission spectrum of high power laser diodes for use in numerous applications including solid-state laser pumping, fiber laser pumping, narrow-line width Raman Spectroscopy and other applications requiring a temperature stabilized narrow linewidth source.

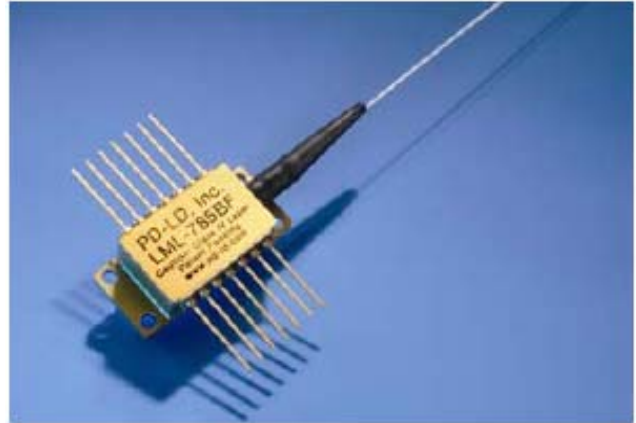


Figure 1: PD-LD butterfly package

### Superior Performance:

- $\Delta\lambda = \pm 0.5 \text{ nm}$
- Typical linewidth  $1.3 \text{ cm}^{-1}$
- Internal Thermo Electric Cooler

### Advantages:

- Simple and compact
- Economical
- Narrow spectral line width

### Applications:

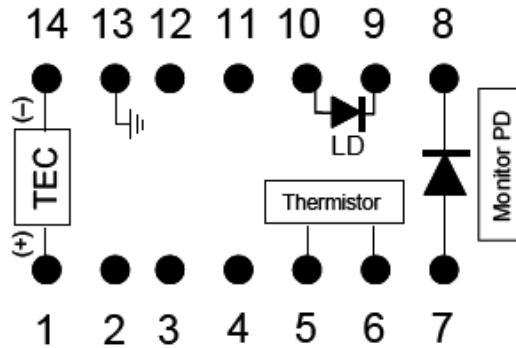
- Sensing
- Spectroscopy
- Medical
- Military

### Optical and Operational Specifications

Parameter	Unit	Minimum	Typical	Maximum
Center Wavelength <sup>A</sup>	nm	784.5	785	785.5
Output Power	Watts	0.10	0.50	1.00
Operating Voltage	Volts	1.9		2.1
Operating Current <sup>B</sup>	Amps		1.10	2.20
Threshold Current	mAmps	300	400	500
TEC Current	Amps			2
TEC Voltage	Volts			4
Slope Efficiency <sup>B</sup>	W/A		0.7	
Spectral Line width (FWHM)	nm		0.08	0.14
ASE Suppression (Optical SNR)	dB		40	
Thermistor Resistance @ 25C	kOhms		10	
TEC Set Temperature <sup>C</sup>	°C	20	25	30
Operating Case Temperature	°C	-20	25	50
Fiber Type	105 Core/125 Cladding/900 Jacket /0.22NA			
Connector Type	FC/PC; SMA905; FC/APC;			
NOTES:	A. Other wavelengths available. Contact sales. FWHM will vary.			
	B. Values based on 0.22NA fiber			
	C. TEC must be on when laser is in operation. Quoted value is set-point inside the package and can be set anywhere within range specified.			



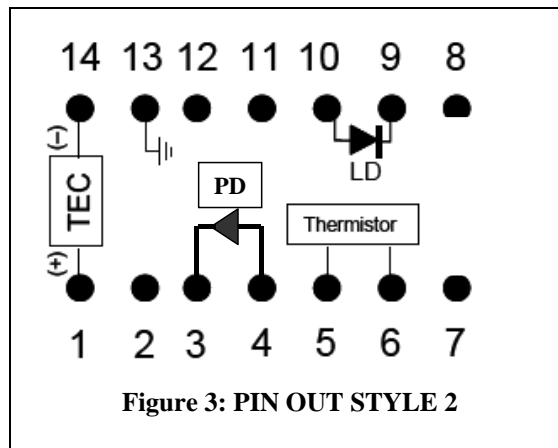
**BUTTERFLY PIN-OUT STYLE 1 [LEGACY DESIGN]**



**Figure 2: PIN OUT STYLE 1**

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	TEC ANODE (+)	8	PD CATHODE (-)
2	OPEN	9	LASER CATHODE (-)
3	OPEN	10	LASER ANODE (+)
4	OPEN	11	OPEN
5	THERMISTOR	12	OPEN
6	THERMISTOR	13	CASE GND
7	PD ANODE (+)	14	TEC CATHODE (-)

**BUTTERFLY PIN-OUT STYLE 2 [RECOMMENDED FOR NEW DESIGN]**



**Figure 3: PIN OUT STYLE 2**

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	TEC ANODE (+)	8	OPEN
2	OPEN	9	LASER CATHODE (-)
3	PD CATHODE (-)	10	LASER ANODE (+)
4	PD ANODE (+)	11	OPEN
5	THERMISTOR	12	OPEN
6	THERMISTOR	13	CASE GND
7	OPEN	14	TEC CATHODE (-)

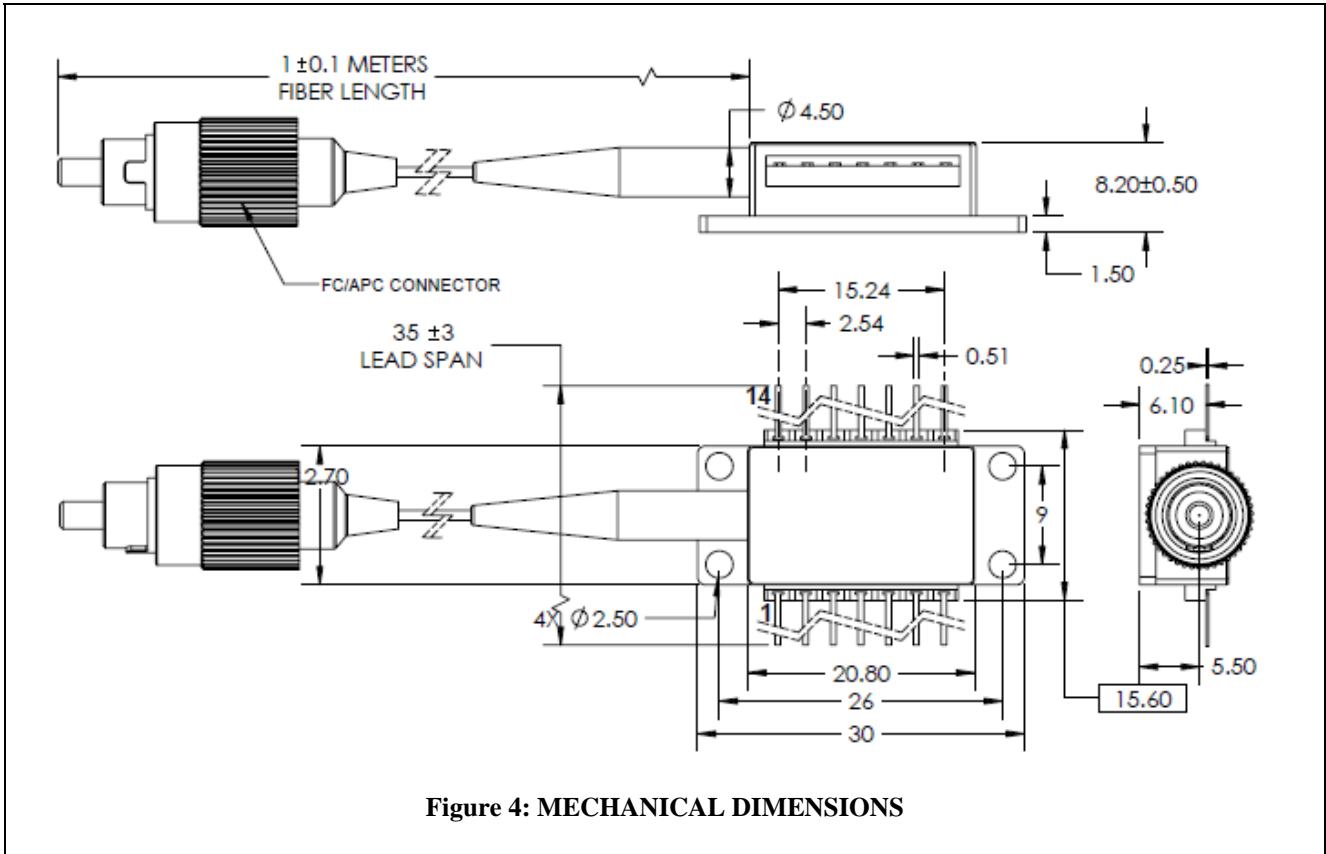
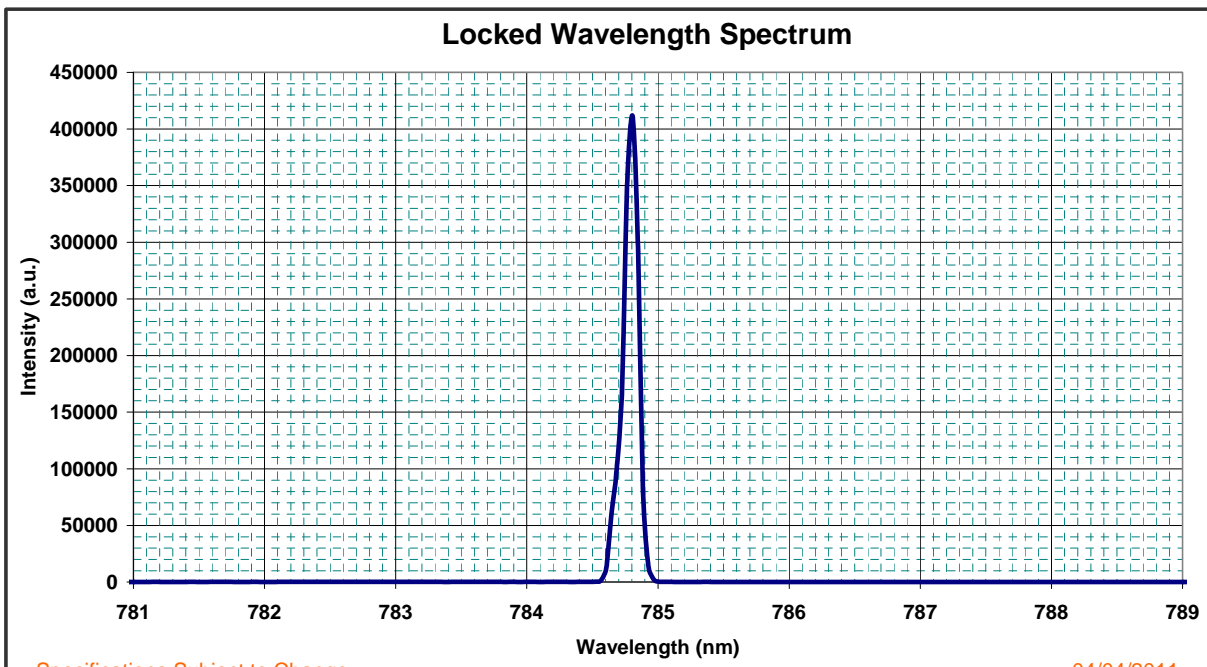


Figure 4: MECHANICAL DIMENSIONS



## Part Number System

**LML-\_\_\_\_-BF-XX**

- \_\_\_\_ indicates the wavelength.
- BF indicates Butterfly.
- XX is a customer specific reference.

**Example: LML-785.0BF-XX.** This is a LuxxMaster<sup>®</sup> Laser with a center wavelength of 785 nm in a Butterfly package.



### EXISTING PART NUMBERS:

	Power (mW)	$\lambda$ (nm)	$\lambda$ Tolerance (nm)	Line width (nm)	Fiber Type*	Fiber Length (meters)	NA of fiber	Connector
<b>LML-785.0BF-09</b>	800	785.00	$\pm 0.50$	0.14 MAX	A	1.0 $\pm$ 0.10	0.22	FC/APC
<b>LML-785.0BF-15</b>	500	785.00	$\pm 0.50$		C	1.0 $\pm$ 0.10	0.15	FC/APC
<b>LML-785.0BF-16</b>	500	785.00	$\pm 0.50$		C	1.0 $\pm$ 0.10	0.15	SMA905
<b>LML-785.0BF-17</b>	500	785.00	$\pm 0.50$		C	1.0 $\pm$ 0.10	0.15	FC/PC

#### \* Fiber Types:

- A. 105/125/250 0.22NA fiber with 900 $\mu$ m loose buffer.
- B. 50/125/900 0.20 NA fiber.
- C. 105/125/250 0.15NA fiber with 900 $\mu$ m loose buffer.
- D. 62.5/125/900 0.29NA fiber