

## WAVELENGTH STABILIZED RAMAN SOURCE

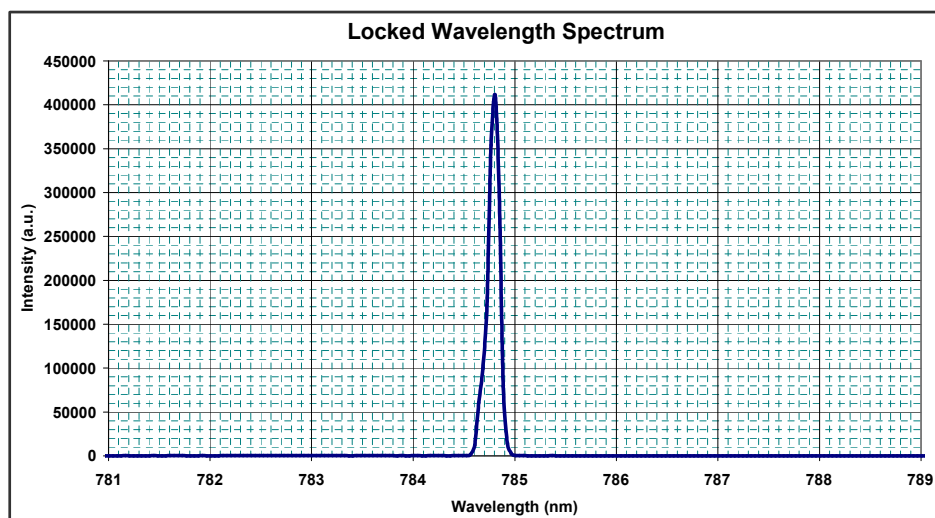
The LuxxMaster<sup>®</sup> LML series Raman Boxx<sup>®</sup> packages PD-LD's award winning LuxxMaster<sup>®</sup> Volume Bragg Grating<sup>®</sup> (VBG<sup>®</sup>) in a rugged box ideally suited for Raman spectroscopy and other narrow linewidth applications. Its small size and simple interface makes the Raman Boxx<sup>®</sup> ideal for industrial, military and security applications.



Figure 1: Luxxmaster<sup>®</sup> Raman Boxx<sup>®</sup>

### Major Features:

- Performance:
  - Custom wavelengths (785 nm is standard);
  - $\Lambda_c = \pm 0.5$  nm;
  - Line width –  $1.3 \text{ cm}^{-1}$  typical;
  - USB interface
  - Programmable with supplied software
  - Built-in Thermo Electric Cooler for Laser Temperature Control
  - Automatic Power/Current Control
  - Built-in cooling fan;
  - Designed to handle high power lasers
- Mechanical
  - External heat sink not required
- Cost
  - Economical



Specifications Subject to Change

04/04/2011

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**RAMAN BOXX<sup>®</sup> SPECIFICATIONS**

	Other	Min.	Typical	Max.	Units
<b>Electrical Specifications</b>					
DC Input		3 Amps @ 4.9 Volts	3 Amps @ 5 Volts	3 Amps @ 5.1 Volts	N/A
Power Modulation	TTL	0	-	100	KHz
Warm up Time			5		Seconds
Power Consumption			9	13	W
<b>Optical Specifications</b>					
Output Power <sup>A</sup>		100	500	1000	mW
Center Wavelength		784.50	785	785.50	nm
Light Mode	Multimode				
Spectral Line Width			0.08	0.14	nm
			39	66	GHz
			1.3	2.2	cm <sup>-1</sup>
Wavelength Stability <sup>B</sup>			± 5		pm
Wavelength Stability <sup>C</sup>			± 5		pm
ASE Suppression (Optical SNR)			40		dB
Optical Power Variations <sup>D</sup>			< 1		% pk-pk
Noise			< 0.25		% rms
Expected Lifetime			>10,000		hours
<i>Note A</i>	<i>Connector port power</i>				
<i>Note B</i>	<i>Over 24 hours with properly stabilized laser</i>				
<i>Note C</i>	<i>Maximum drift due to temperature range and over device lifetime</i>				
<i>Note D</i>	<i>8 hours of continuous operation</i>				
<b>Mechanical Specifications</b>					
Physical Dimensions (L X W X H)	90x90x50				mm
Thermal Management	Laser TEC controlled, air cooled with built-in fan				
Fiber Type	105 Core/125 Cladding/900 Jacket /0.22NA OR 0.15NA				
Connector Type	FC/PC; SMA905; FC/APC;				
Weight			400		Grams
<b>Environmental Specifications</b>					
Ambient Temperature		-20	25	50	°C
Humidity (non-condensing)		5		95	%

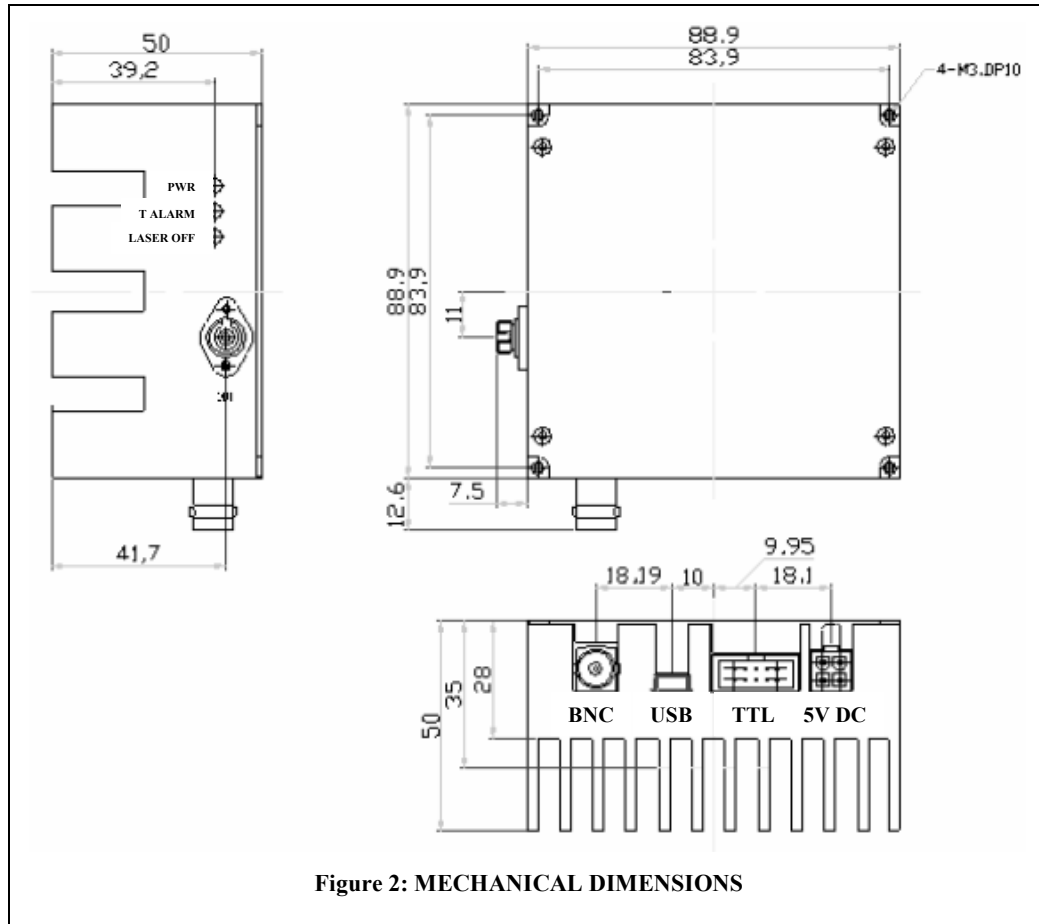
Pin Assignment TTL I/O	
Pin No.:	Pin Assignment
1	Power (TTL out)
2	T Alarm (TTL out)
3	Reserved
4	Laser off (TTL out)
5	NC
6	NC
7	GND
8	NC
9	Laser interlock (TTL in)
10	+5 Volts

Power Connector Pin Assignment		Power Cable
1	+5 Volts	Red
2	+5 Volts	Red
3	Ground	Black
4	Ground	Black

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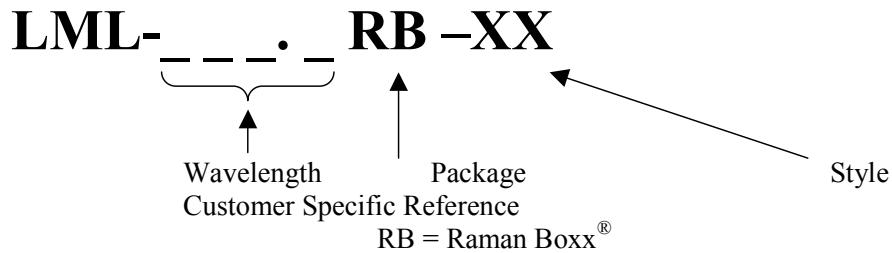


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**WAVELENGTH STABILIZED RAMAN SOURCE**

**Part Number System**



Example: LML-785.0RB-XX

This is a LuxxMaster® Raman Boxx® with a center wavelength of 785nm.

**EXISTING PART NUMBERS:**

	Power (mW)	$\lambda$ (nm)	$\lambda$ Tolerance (nm)	Line width (nm)	Fiber Type*	NA of fiber	Connector
<b>LML-785.0RB-01</b>	500	785.00	$\pm 0.50$	0.14 MAX.	A	0.22	SMA905
<b>LML-785.0RB-02</b>	1000	785.00	$\pm 0.50$		A	0.22	FC/APC
<b>LML-785.0RB-03</b>	500	785.00	$\pm 0.50$		A	0.22	FC/APC
<b>LML-785.0RB-04</b>	500	785.00	$\pm 0.50$		A	0.22	FC/PC
<b>LML-785.0RB-05</b>	800	785.00	$\pm 0.50$		A	0.22	FC/APC
<b>LML-785.0RB-06</b>	800	785.00	$\pm 0.50$		D	0.29	FC/APC

**\* Fiber Types:**

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

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