

## Temperature Stabilized Semiconductor Laser Module

### Key Features:

- ◆ Fiber Coupled or Free Space
- ◆ Circularized Laser Beam
- ◆ Constant Optical Power
- ◆ TTL Modulation Option
- ◆ Low Optical Noise
- ◆ ESD Protection
- ◆ Plug & Play

### Applications:

- ◆ Bio Technology
- ◆ Photo Finishing
- ◆ Semiconductor Instrument
- ◆ Medical Instrument
- ◆ Scientific Research



The FreeBeam™488 Blue Laser Module is a highly integrated diode laser module with thermal electrical cooler, laser power control and protection circuits. For free space application, you can choose either collimated circular beam at 1.3 mm diameter or collimated elliptical beam at 1.3mmX2.6mm. For fiber coupled out put, you can choose single mode fiber, polarization maintain fiber, 50um, 100um, 200um and 400um core diameter multi mode fiber with FC/PC or SMA connector.

FreeBeam™488 features very low optical noise and up to 100 KHz TTL modulation capability. Laser output power can be remotely controlled with 0 ~ 5V DC voltage through electrical cable connected or locally controlled with potential meter mounted on the back panel. The FreeBeam™488 Blue Laser Module comes with two different packages for you to choose from, box style and tube style.

The FreeBeam™488 Blue Laser Module is a Class III b laser product.



## Temperature Stabilized Semiconductor Laser Module

**Specifications:**

Wavelength	488±2nm
Output Power	55mW and 200mW
Noise(RMS)	<0.3%
Transverse Mode	TEM00
Longitudinal Mode	Multi Mode
Spectrum Width	0.5nm
Power stability	<2%(2 hours)
Beam pointing stability	<10urad/°C
Polarization	100 : 1
Beam diameter	2.6 X 1.3mm(Elliptical Beam)
Beam diameter	1.3 mm(Circularized Beam)
Beam divergence	0.3 X 0.6mrad(Elliptical Beam)
Beam divergence	0.6mrad(Circularized Beam)
Operation Voltage	9V+/- 0.5V DC
Operation Current	TEC Max 2.5 A, LD Max 140mA
Operation Temperature	0°C to 40°C(case)
Warm Up Time	5 minutes
Laser Diode Life Time	5000hrs(MTBF)
Mechanical Size(Box)	100mm(L)X44mm(W)X38.5mm(H)
Mechanical Size(Tube)	φ40mmX116.3mm
9V DC Power Supply Size	110mm(L)X50mm(W)X20mm(H)
RF Input(for tube)	SMA Receptacle
RF Input(for box)	SAMTEC #: MMCX-J-P-X-RA-TH1*
Electrical Interface(for box)	SAMTEC #: EHF-105-01-L-D-RA*
Fiber type	Single mode and Multi mode(50um, 100um, 200um, 400um)
Connector Type	FC/PC or SMA
Warranty	Limited One Year

\*You can find mating connector information at [www.samtec.com](http://www.samtec.com)

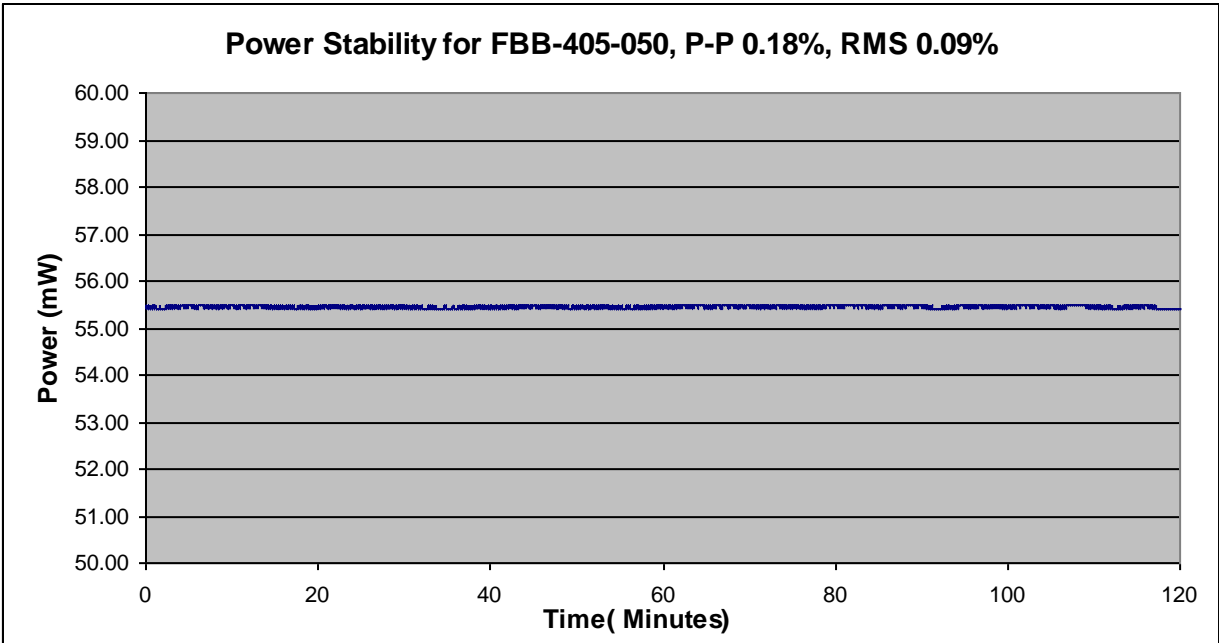
**Laser Output Power:**

Output Power Level(mW)	20	30	55	100	150	180	200	600
Free Space TEM00 Mode			√				√	
Free Space Multi Transverse Mode								*
Single Mode Fiber Coupling	√			√				
50um Multi Mode Fiber coupling		√			√			
100um Multi Mode Fiber coupling		√			√			
200um Multi Mode Fiber coupling			√			√		*
400um Multi Mode Fiber coupling			√			√		*

√ Currently available

\*Under development

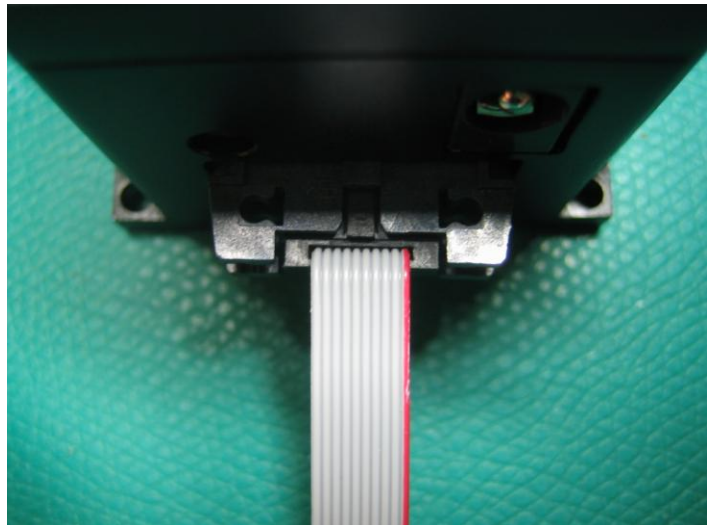
## Temperature Stabilized Semiconductor Laser Module



Typical Power Stability Over 2 hours

### Electrical Pin Assignment:

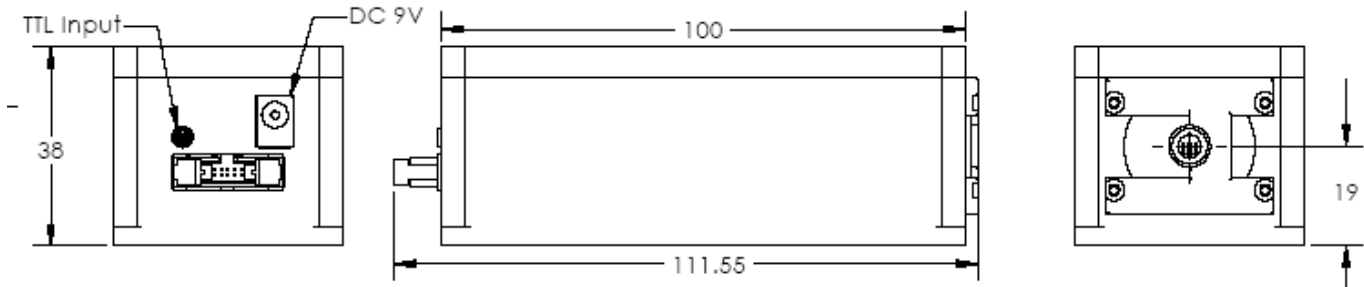
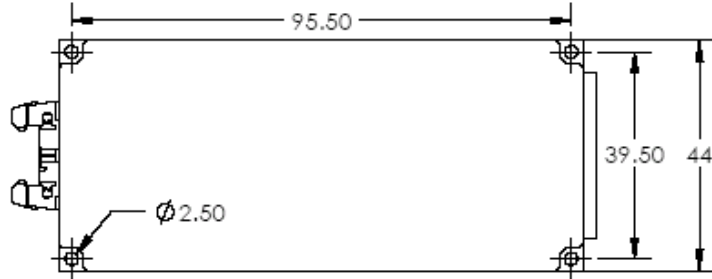
Number	Function
Pin 1	+9V DC
Pin 2	+9V DC
Pin 3	+9V DC
Pin 4	+9V DC
Pin 5	Power GND
Pin 6	Power GND
Pin 7	Power GND
Pin 8	Power GND
Pin 9	Power Setting
Pin 10	Internal Testing Pin



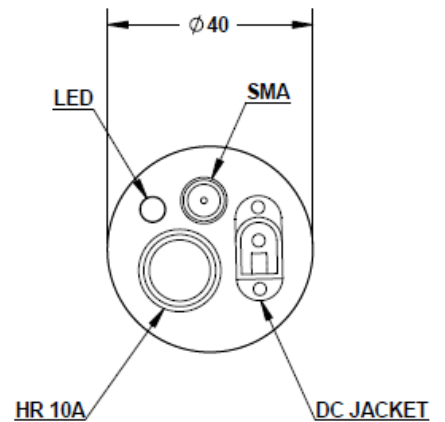
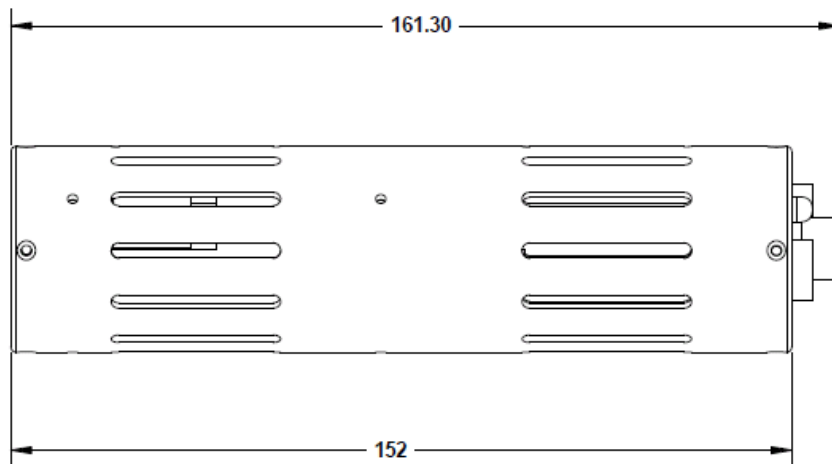
Pin 10 Pin 1

## Temperature Stabilized Semiconductor Laser Module

### Free Space Mechanical Dimension (BOX):

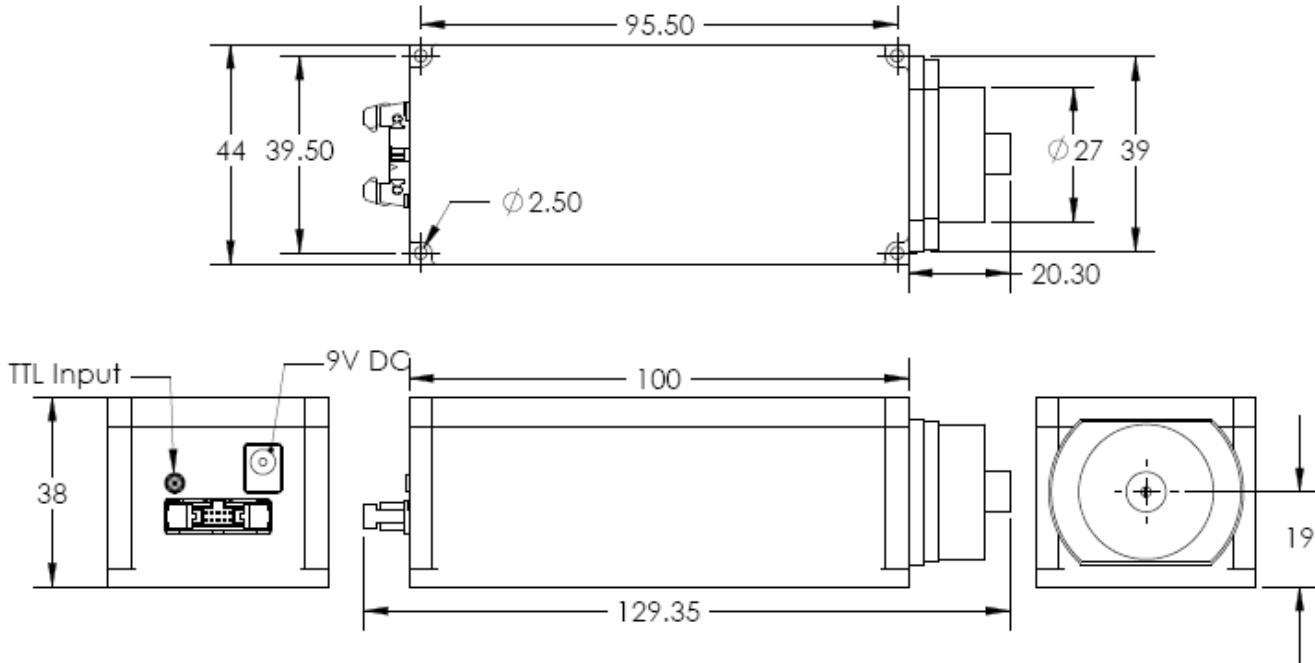


### Free Space Mechanical Dimension (Tube):



## Temperature Stabilized Semiconductor Laser Module

### Fiber Coupled Mechanical Dimension:



This component does not comply with the Federal Regulations (21 CFR Sub chapter 1) as administered by the Center for Devices and Radiological health. Purchaser acknowledges that his/her products must comply with these regulations before they can be sold to a customer. The output light from this product is harmful to a human body even if it is invisible. Avoid looking at the output of this product directly, or through a lens during operation. Observance of operation should be through a TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.

RGBLase LLC follows a policy of continuous product improvement. Specifications are subject to change without notice.