V5.0

405nm Temperature Stabilized Semiconductor Laser Module

Key Features:

- Fiber Coupled or Free Space
- Low Power Consumption
- 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™405 Violet 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 1.3mm diameter or collimated elliptical beam at 1.3mmX2.6mm.

For fiber coupling, 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™405 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™405 Violet Blue Laser Module comes with two different packages for you to choose from, box style and tube style.

The FreeBeam™405 Violet Laser Module is a Class III b laser product.

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Specifications:

Wavelength	**405±5nm**
Output Power	**From 5mW to 800mW**
Noise(RMS)	**<0.3%**
Longitudinal Mode	**Multi Mode or Single Mode Optional**
Power stability	**<2%(2 hours)**
Beam pointing stability	**<10urad/°C**
Polarization	**100 : 1**
Beam diameter	**2.6 X 1.3mm(Elliptical Beam)**
Beam diameter	**1.2mm or 2.4mm(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	**10000hrs(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

Available Laser Output Power:

Output Power Level(mW)	20	40	50	70	90	120	150	200	400	700	800
Free Space TEM00 Mode SLM		√									
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						√		√	√	√	

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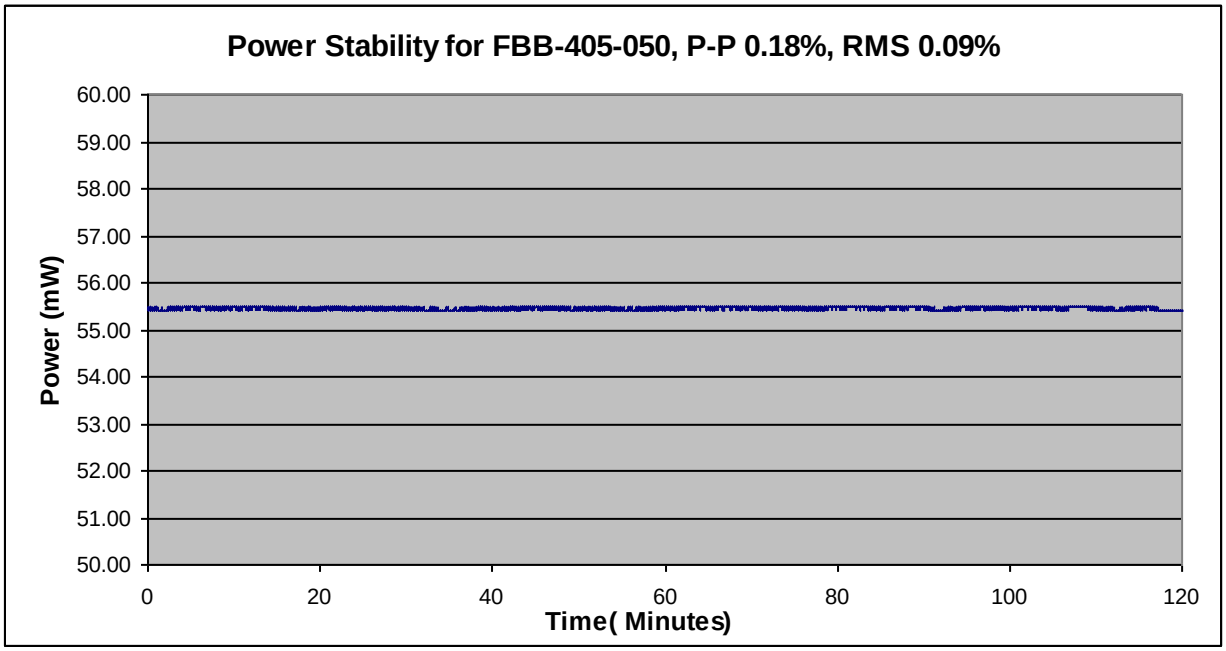
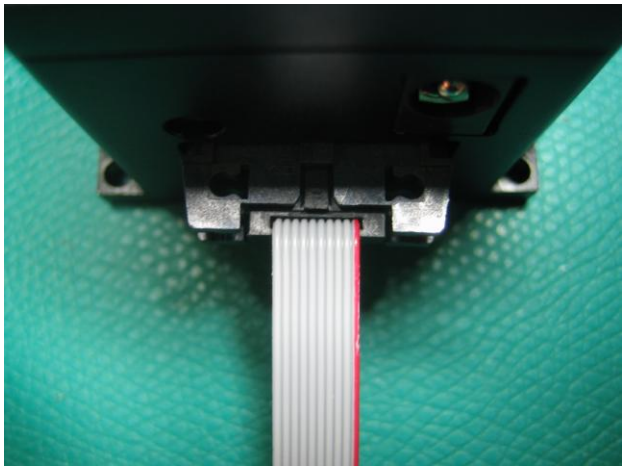


Typical Power Stability Over 2 hours

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 Pin1

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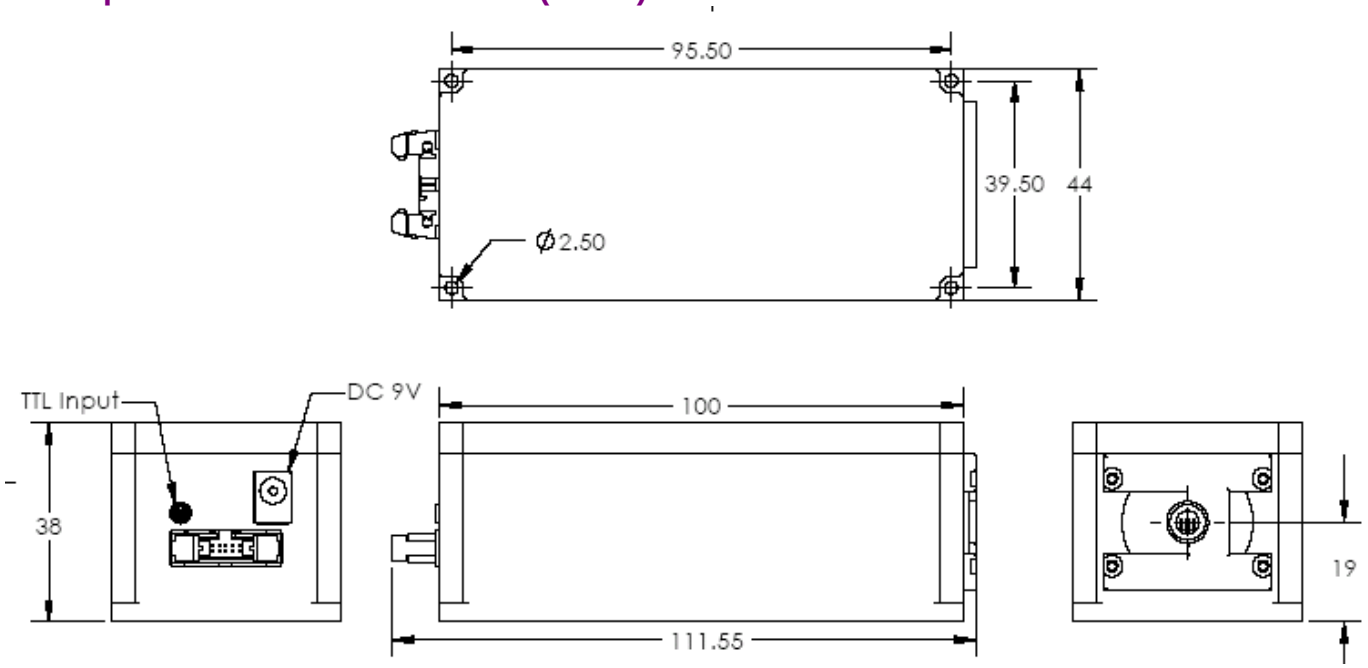
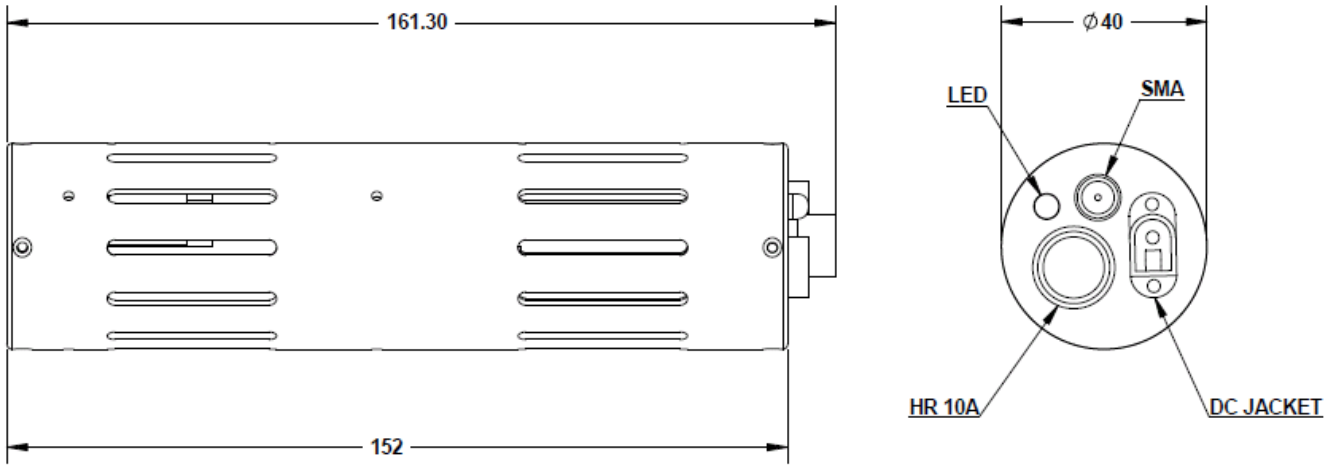
Free Space Mechanical Dimension (BOX):



Free Space Mechanical Dimension (Tube):



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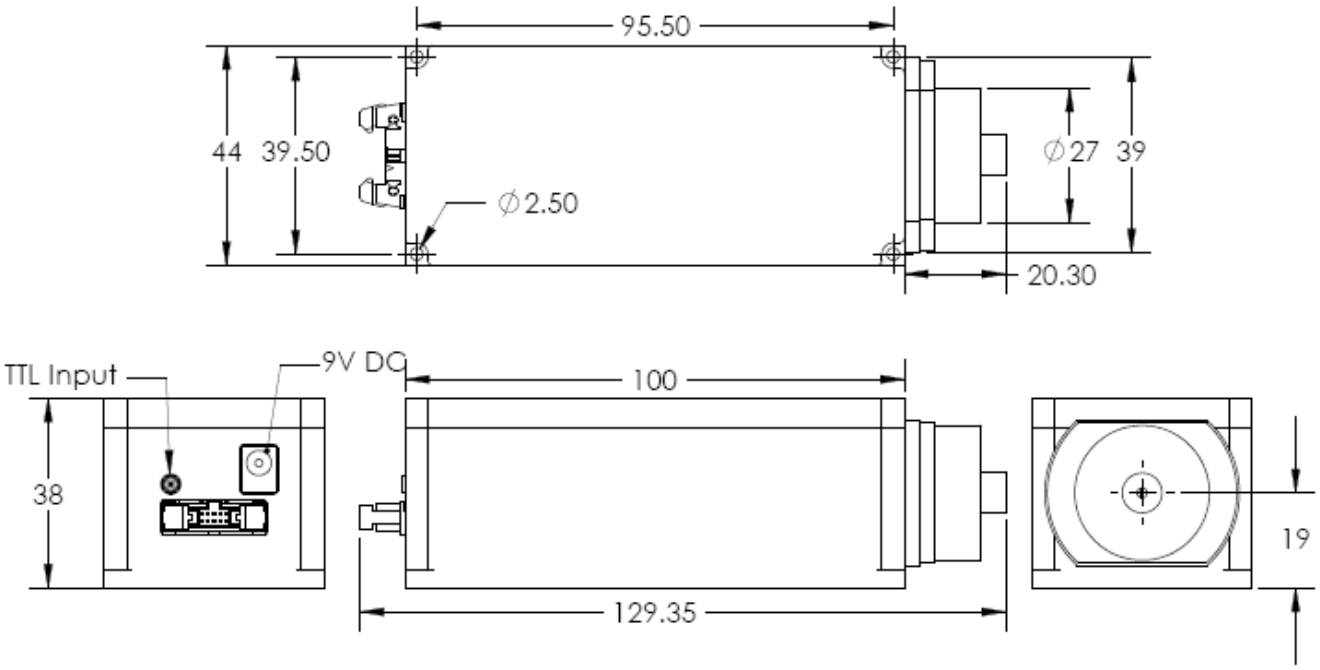
Fiber Coupled Mechanical Dimension:



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.

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