

## 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™705 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 2.6mm diameter or collimated elliptical beam at 1mmX3mm. 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™705 features very low optical noise and up to 100 KHz TTL modulation capability. Laser output power can be remotely controlled with 0 ~ 2.5V DC voltage through electrical cable connected or locally controlled with potential meter mounted on the back panel. The FreeBeam™705 Laser Module comes with two different packages for you to choose from, box style and tube style.

The FreeBeam™705 Laser Module is a Class III b laser product.



## Temperature Stabilized Semiconductor Laser Module

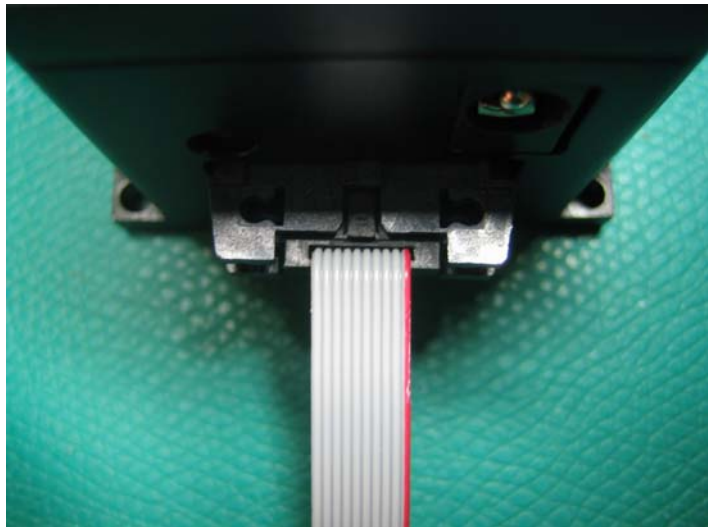
**Specifications:**

|                               |   |
|-------------------------------|---|
| Wavelength                    | 705±5nm   |
| Output Power                  | 40mW  |
| Noise(RMS)                    | <0.2%   |
| Longitudinal Mode             | Multi Mode  |
| Power stability               | <2%   |
| Beam pointing stability       | <10urad/°C  |
| Polarization                  | 100 : 1   |
| Beam diameter                 | 3 X 1mm(Elliptical Beam)                              |
| Beam diameter                 | 2.6mm(Circularized Beam)                              |
| Beam divergence               | 0.2 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   |
| 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                      | One Year  |

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

**Electrical Pin Assignment:**

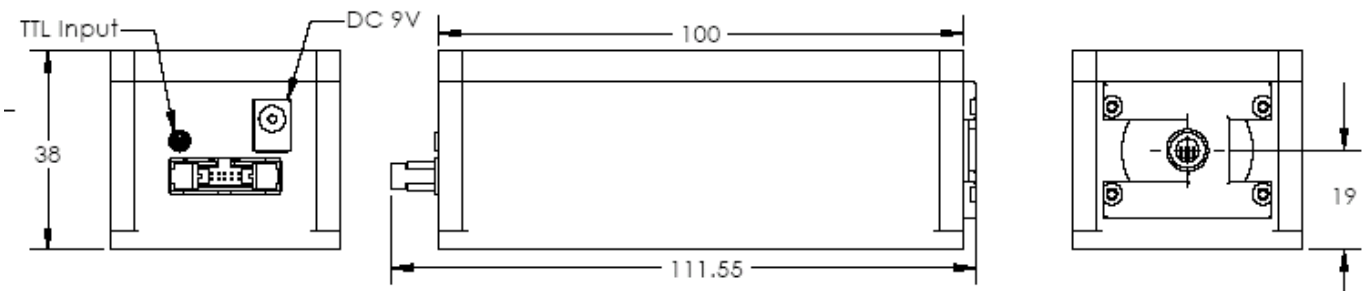
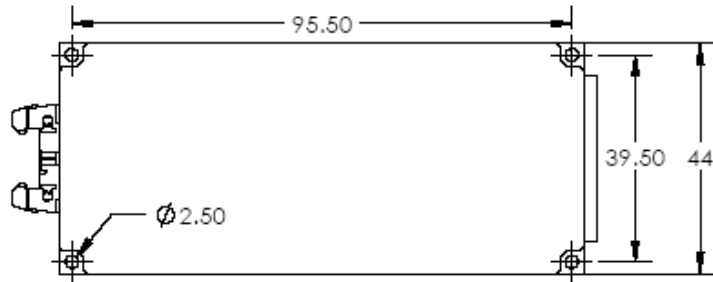
| Number | Function             |
|--------|----------------------|
| Pin 1  | +9V DC               |
| Pin 2  | +9V DC               |
| Pin 3  | +9V DC               |
| Pin 4  | +9V DC               |
| Pin 5  | Power GND            |
| Pin 6  | Power GND            |
| Pin 7  | Power GND        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



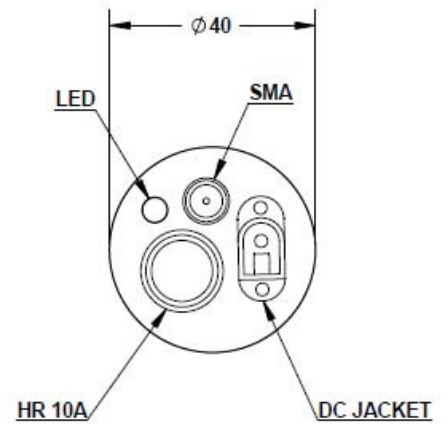
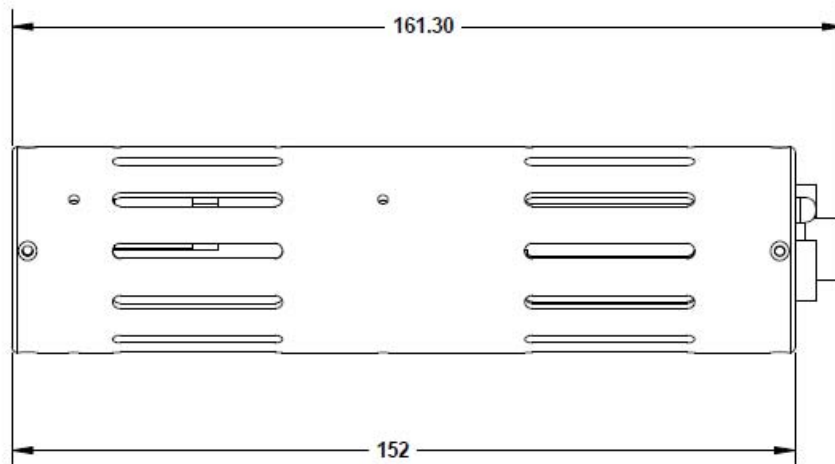
Pin 10    Pin 1

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### Free Space Mechanical Dimension (BOX):

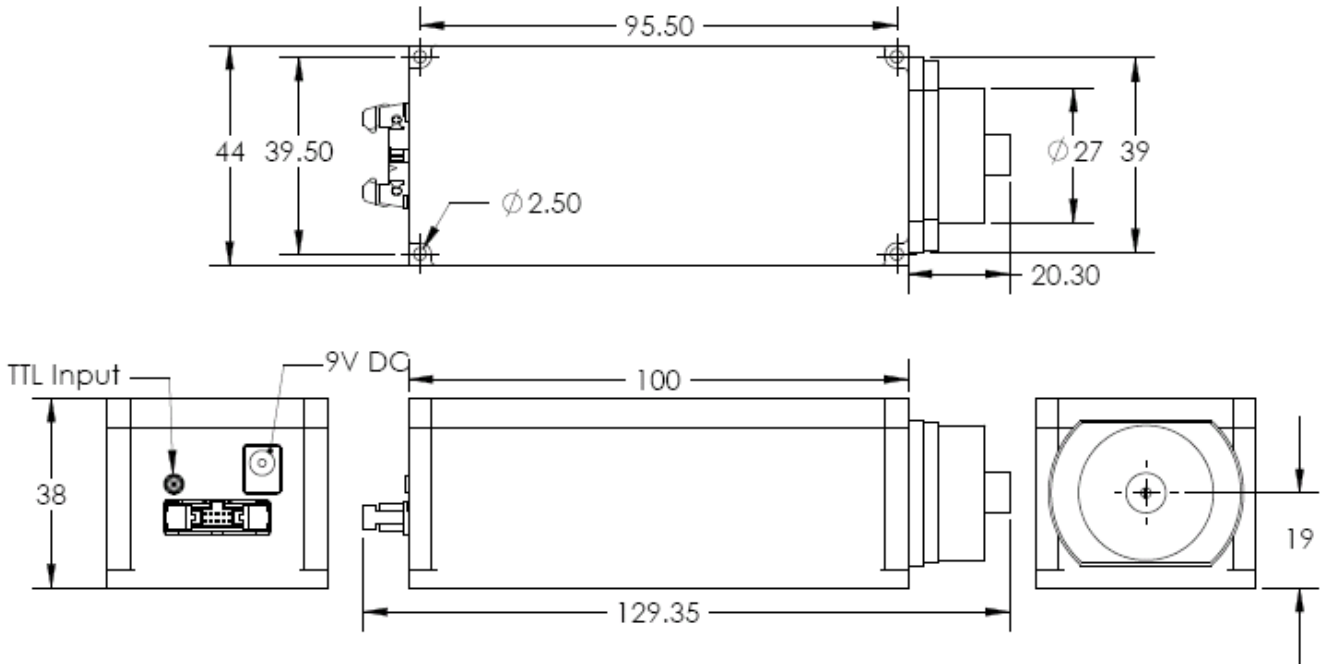


### Free Space Mechanical Dimension (Tube):



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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.