

## 785 nm Single Mode Spectrum Stabilized Laser

### Model # I0785SA0100B & I0785SA0100B-TK



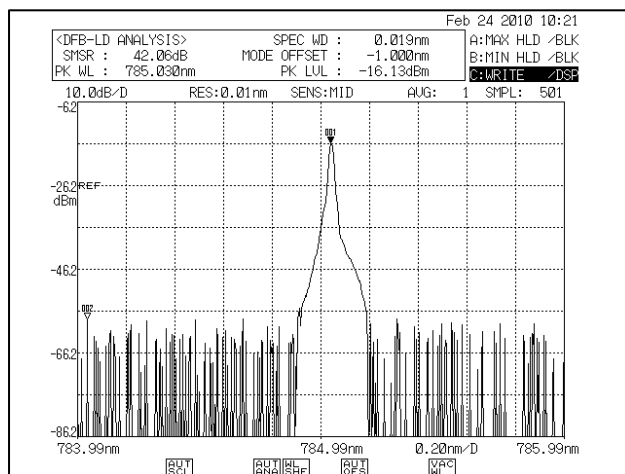
#### Features:

- High Power Single Mode Output (>100 mW)
- Ultra-Narrow Spectral Bandwidth (< 1 MHz)
- Stabilized Output Spectrum (< 0.007 nm<sup>0</sup>C)
- Circularized & Collimated Output Beam
- Integral Laser Line Filter
- Integral Thermistor & TEC
- Integral ESD Protection
- Integral Linear Tracking Photodiode

Innovative Photonic Solution's proprietary Single-Mode Spectrum Stabilized Laser features high output power with ultra-narrow spectral bandwidth and a circularized and collimated output beam. Designed to replace expensive DFB, DBR, fiber, and external cavity lasers, the Single-Mode Spectrum Stabilized Laser offers superior wavelength stability over time, temperature (0.007 nm<sup>0</sup>C), and vibration, and is manufactured to meet the most demanding wavelength requirements.

The I0785SA0100B comes standard with a circularized and collimated output beam, integral laser line filter, internal thermistor & TEC, linear tracking photodiode and ESD protection. Lasing wavelength can be accurately specified and repeatedly manufactured to within 0.1 nm. The laser is ideal for high resolution Raman spectroscopy, confocal microscopy, metrology and interferometry applications.

#### Typical Spectral Plot:



785 nm SS Laser Spectrum @ 25 deg C

**Ultra-Stable Performance  
With Spectral Linewidth  
As Low As 150 KHz**



## Controller Module Operation Instructions:

### **Manual Operation:**

**(5 V DC external power supply & manual enable switch)**

#### Turn On:

1. Mount laser module onto a suitable heat sink using corner mounting holes
2. Assure that external laser enable switch on sidewall of laser module is on Off (O) position
3. Plug 5 V DC power supply into wall outlet and then into 5 V DC jack on back of module
4. Toggle external laser enable switch mounted on side wall of module to the ON (I) position.

#### Turn Off:

1. Toggle external laser enable switch mounted on side wall of module to the OFF (O) position.

### **Remote Operation:**

**(10-Pin Molex Connector)**

#### Turn On:

1. Mount laser module onto a suitable heat sink using corner mounting holes
2. Assure that external laser enable switch on sidewall of laser module is on Off (O) position
3. Plug pre-wired 10 pin Molex connector into module sidewall
4. Assure that external 5 V DC power to the module is off (pin 6) and the Laser enable (Pin 7) is tied to ground
5. Toggle external laser enable switch mounted on side wall of module to the ON (I) position.
6. Apply power (5 V DC) to Pin 6.
7. Break connection to ground on pin 7

Optional: You may chose to utilize the remote modulation option on this module. If you chose to do so, connect pin 2 to ground and bias LD SET on pin 8 between 0 and 0.2 V to adjust laser output power from 0 to max.

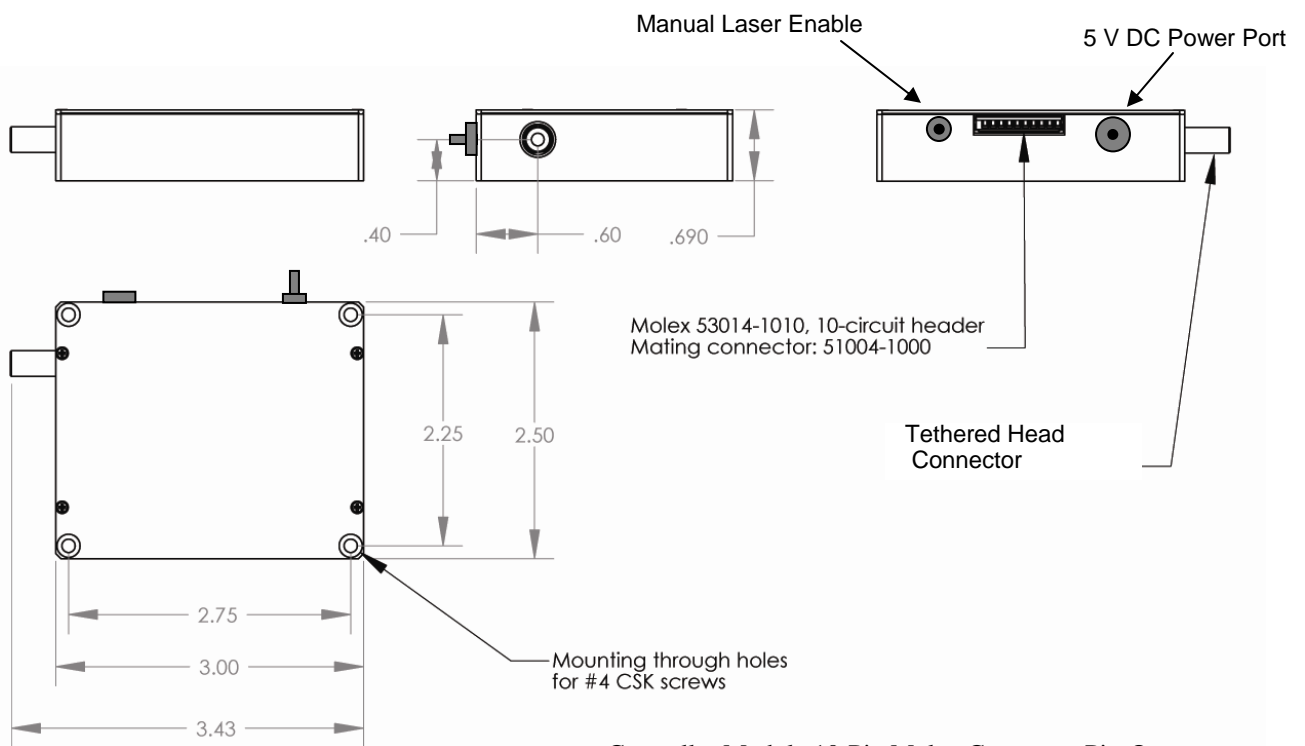
#### Shut Down:

1. Tie pin 7 (Enable ) to ground
2. Turn off 5 V power supply to pin 6

## Controller Module Electrical Specifications:

Absolute Ratings	
Current	3 A Minimum
Voltage	5 V DC

## Controller Module Mechanical Specifications:



Controller Module 10-Pin Molex Connector Pin-Out

Pin #	Symbol	Description
1	NC	Not Connected
2	Vset ENABLE	Enables 'LD SET' on pin 8 when connected to ground. If left open or set to 3-5 Volt, output power defaults to internally pre-set value.
3	T SENS	Not Connected
4	T SENS	Not Connected
5	GND	Ground
6	+ 5V	4.9 to 5.1 Volt; 1 Ampere
7	ENABLE	Tie to GND to DISABLE Laser output. Leave not connected or apply 3-5 Volt to enable Laser output.
8	LD SET	Apply 0 to 0.2 Volt to control optical output power. Pin 2 needs to be grounded to enable this option.
9	PD +	Photodiode anode
10	PD -	Photodiode cathode