

## 785 nm Single Mode Spectrum Stabilized Laser

### Model # I0785SA0100B



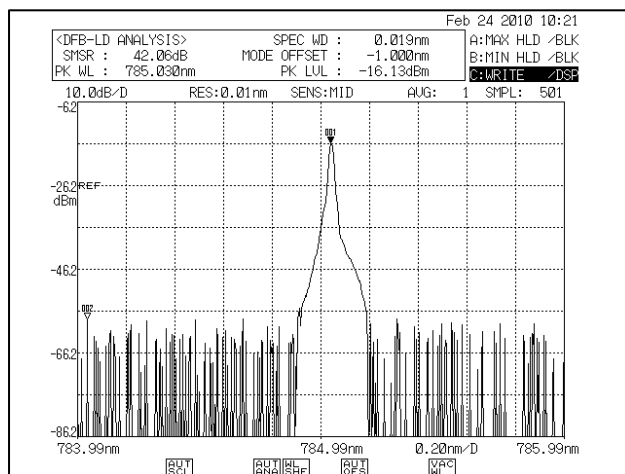
#### Features:

- 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:



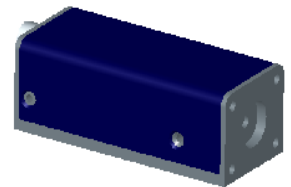
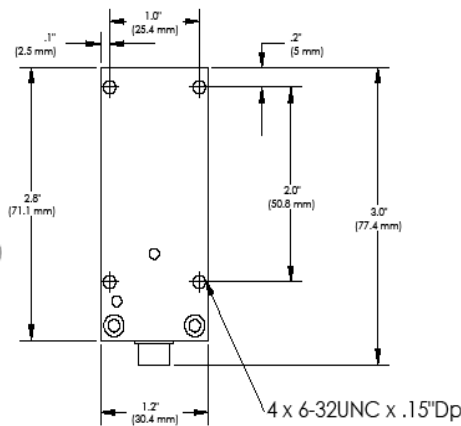
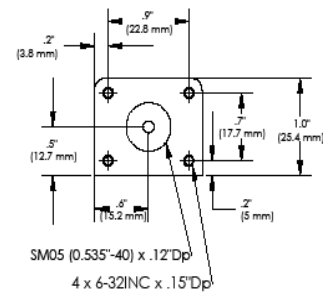
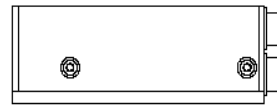
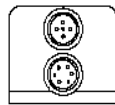
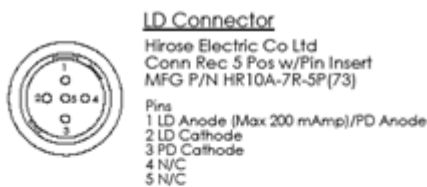
785 nm SS Laser Spectrum @ 25 deg C

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

## Product Specifications:

Parameter	Unit	Min	Typ	Max	Notes
Optical output power	mW	100	120		Circularized & collimated output beam with <0.7 mm dia (1.5:1 aspect ratio) and <2.5 mrad divergence
Output power stability	%		± 0.5	± 1	
Peak wavelength	nm	784	785	786	
3 dB bandwidth (FWHM)	nm		<1 MHz	100 MHz	
Linear Tracking Photodiode (@ lop)	μA		200		Unbiased
Linear Tracking Photodiode Tracking Ratio	μA/mW		2		
Internal TEC Setpoint Range	Deg C	20		40	
Operating Temperature Range	Deg C	10		40	
Polarization Extinction Ratio	dB	17	20		
Power Consumption	W		2	5	C
Wavelength Stability	Seconds			180	Cold Start - to < 1 wavenumber
				1	Warm Start - to < 1 wavenumber
				3	Warm Start - to < 0.1 wavenumber
<b>Absolute Maximum Ratings</b>					
Laser Drive Current	mA		180	200	
Laser Drive Voltage	V			2.2	Compliance
TEC Max Drive Current	A		1.5	2.5	
TEC Max Voltage	V		1.5	2.5	Compliance
Thermistor	K Ohm	10			Measured at 25 deg C
Photodiode Reverse Bias	V			15	

## Mechanical Specifications:



DATE	NAME	DATE	DATE
3/1/10	JBG		

Innovative Photonic Solutions

**IPS A-Type**

REV: M

10038975\_Spec

IPS PROPRIETARY AND CONFIDENTIAL



## OEM Laser Product

This laser module is designed for use as a component (or replacement) part and is thereby exempt from 21 CFR1040.10 and 1040.11 provisions.