

Multi-Mode Fiber Coupled U-type OEM Module

RoHS
COMPLIANT



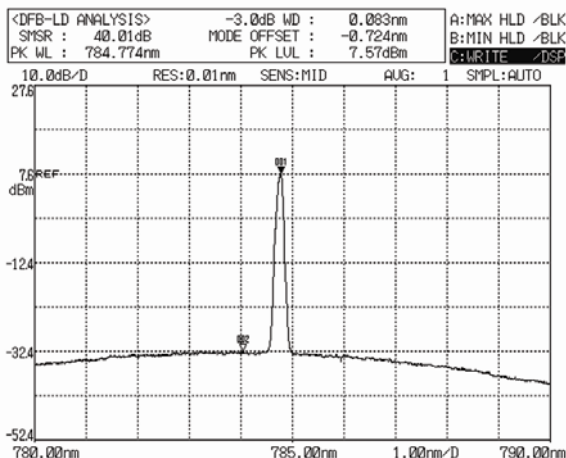
Standard Wavelengths

- 647 nm
- 785 nm
- 808 nm
- 830 nm
- 1064 nm

Additional wavelengths available. Some may require a minimum order.

Innovative Photonic Solution's proprietary multi-mode wavelength stabilized laser features high output power with ultra-narrow spectral bandwidth and a diffraction limited output beam. Designed to replace expensive DFB, DBR, fiber, and external cavity lasers, the multi-mode Spectrum Stabilized Laser offers superior wavelength stability over time, temperature, and vibration; and is manufactured to meet the most demanding wavelength requirements.

The laser's stabilized peak wavelength remains "locked" regardless of case temperature (15 to 45 deg. C). Devices can be spectrally tailored to suit application needs and offer side mode suppression ratios (SMSR) better than 40 dB, thereby providing extremely high signal to noise ratio and making these sources ideal for Raman spectroscopy.



Typical 785 nm SS Laser Spectrum (SMSR > 40 dB)

Features

- High Power Fiber Coupled Output
- Ultra-Narrow Spectral Bandwidth (<0.15 nm FWHM)
- Narrowed Spectral Bandwidth available upon request (< 0.1 nm FWHM). Add " - NL" to part number
- High Power Multi-Mode Fiber Coupled Output
- "Ultra-Track" Linear Tracking Photodiode
- 40 dB SMSR Typical
- Low Power consumption (<5.5 W)
- 3" x 2.5" x 0.69" Package Weighing < 4 oz
- Available with 105 micron core standard or 62.5 micron core fiber upon request

General Optical Specifications

Wavelength Tolerance	+/- 0.5 nm
Spectral Linewidth ($\Delta\lambda$)	< 0.15 nm
Narrowed Linewidth (-NL)	< 0.1 nm
Spectral Linewidth ($\Delta\lambda$)	< 0.1 nm
Wavelength Stability Range	15 C - 45 C
SMSR	35 -45 dB
Output Power Stability	1% typical
Modulation Rate	CW to 10 kHz at 50% duty cycle or CW to 1 kHz at 10-100% duty cycle
Warm-up time	10 seconds from cold start
	1.5 seconds from warm start

Physical Specifications

Optical Fiber	105/125 micron multimode fiber, 0.22 NA
Connector	FC/PC or SMA905
Electrical Connector	10-pin, Molex #53014-1010 (mating connector: 51004-1000)
Module Dimensions	3.0 x 2.5 x 0.69 inches
Module weight	100 grams (3.5 ounces)
Case Material	Anodized Aluminum
Operating Temperature	15 to 45 degrees C
Cooling air flow (internal)	100 LFM with attached heatsink
Environment	0-80% Humidity, non condensing
Storage Temperature	-10 to + 55 degrees C

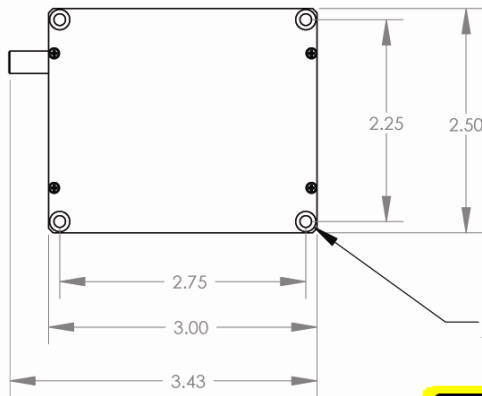
Electrical Requirements

Supply Voltage	4.9V min to 5.1V max
Power Consumption	3.5 W typical, 5.5 W maximum
Photodiode Current	30 uA
Laser setpoint control (LD SET)	900 mV (Typical) when pin 2 grounded

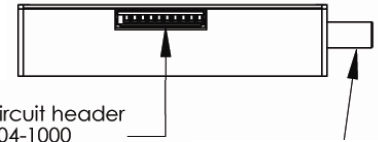
Wavelength (nm)	Min. Power (mW)	Part Number ¹	Connector
647	150	I0647MU0150MF	FC/PC
		I0647MU0150MS	SMA
785	350	I0785MU0350MF	FC/PC
		I0785MU0350MS	SMA
	500	I0785MU0500MF	FC/PC
		I0785MU0500MS	SMA
808	350	I0808MU0350MF	FC/PC
		I0808MU0350MS	SMA
	500	I0808MU0500MF	FC/PC
		I0808MU0500MS	SMA
830	350	I0830MU0350MF	FC/PC
		I0830MU0350MS	SMA
	500	I0830MU0500MF	FC/PC
		I0830MU0500MS	SMA
1064	500	I1064MU0500MF	FC/PC
		I1064MU0500MS	SMA

U-Type Module 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 - (Optional 1000 Ohm
4	T SENS	RTD sensor (with reference to ground)
5	GND	Ground
6	+ 5V	4.9 to 5.1 Volt; 2 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 1V (1.45 Volt for 500 mW Modules) to control optical output power. Pin 2 needs to be grounded to enable this option.
9	PD +	Photodiode anode
10	PD -	Photodiode cathode

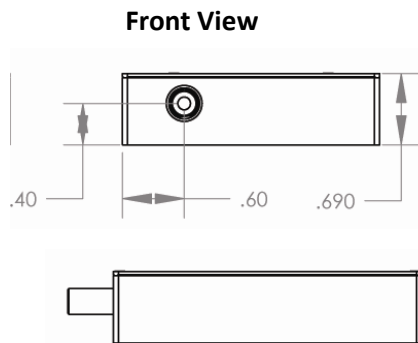
Mechanical Specifications



Side View



FC/PC or SMA Optical Connector
 105/125 Micron 0.22 NA Optical Fiber



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.

1 – For narrowed spectral line width <0.1 nm, add “-NL” to part number

Operational Notes

1. IPS offers a Laser Control Unit (LCU-U) for USB control. Please ask about this option.
2. Heat sink and 5V power supply are not included with module.
3. User must supply 5V power and TTL signal to operate.

Part Numbering Schema

