

High Power Multi-Mode Spectrum Stabilized Laser Subsystem Model # I0785MU0350MS

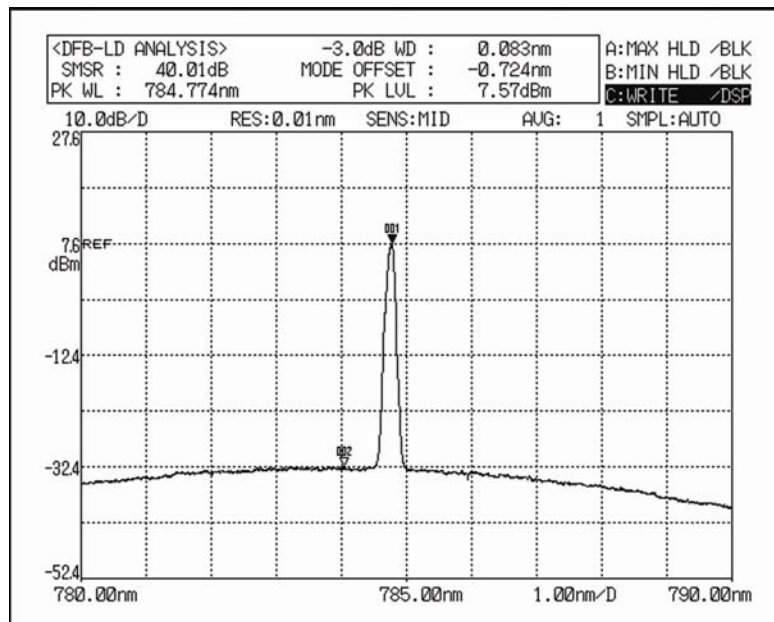


Features:

- Up to 400 mW Fiber Coupled Output Power
- Spectral Linewidth < 0.15 nm
- Ultra-narrow Spectral Linewidth Available (1 cm^{-1})
- Temperature Stabilized Spectrum ($< 0.007 \text{ nm}/^\circ\text{C}$)
- Low Power consumption ($< 5.5 \text{ W}$)
- 40 dB SMSR Typical
- 3" x 2.5" x 0.69" Package Weighing < 4 oz

Innovative Photonic Solution's proprietary Spectrum Stabilized Laser features high output power with narrow spectral bandwidth. The laser's stabilized peak wavelength remains "locked" regardless of case temperature (-10 to +55 deg. C). Devices can be spectrally tailored to suit application needs and offer side mode suppression ratios (SMSRs) better than 40 dB, thereby providing extremely high signal to noise ratio and making these sources ideal for Raman spectroscopy and pump laser applications. The laser is integrated with high performance laser drive and temperature control electronics in a compact package weighing less than 4 oz.

Typical Spectral Plot:



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

Optical Performance Specifications:

Parameter	Unit	Min	Typ	Max	Notes
Optical output power	mw	350	375		
Output power stability	%		± 1		
Peak wavelength	nm	784	785	786	
3 dB bandwidth (FWHM)	nm		0.1	0.15	
Peak wavelength drift	nm			± 0.10	over life
Optical signal-to-noise ratio (SMSR)	dB	35	45		
Warm-up time	sec			10	from cold start
	sec			1.5	from warm start

Electrical Performance Specifications:

Parameter	Unit	Min	Typ	Max	Notes
Supply voltage	V	4.9	5	5.1	
Power consumption	W		3.5	5.5	
Photo diode current	uA		30		
Laser setpoint control (LD SET)	V	0	0.9	1.0	when pin 2 grounded

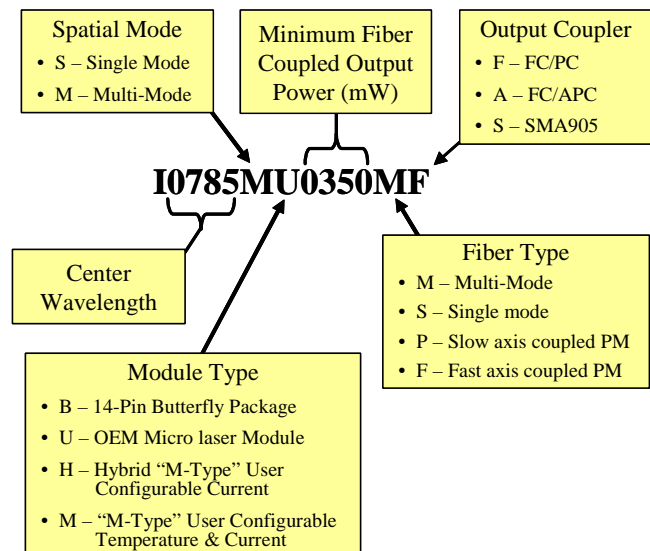
Physical Specifications:

Parameter	Unit	Value
Optical Fiber	type	100-105/125 micron multimode fiber, 0.22 NA
Connector	type	FC/PC or SMA905
Electical connector	type	10-pin, Molex #53014-1010 (mating connector: 51004-1000)
Module dimensions	inch	3.0 x 2.5 x 0.69
Module weight	g (oz)	100 (3.5)
Case material	type	Anodized aluminum
Operating temperature	deg. C	-10 to +55 deg case temperature
Cooling air flow	LFM	100 LFM with attached heatsink
Storage temperature range	deg. C	-20 to +80

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
4	T SENS	
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 1 Volt to control optical output power. Pin 2 needs to be grounded to enable this option.
9	PD +	Photodiode anode
10	PD -	Photodiode cathode

Module Part Numbering Schema:



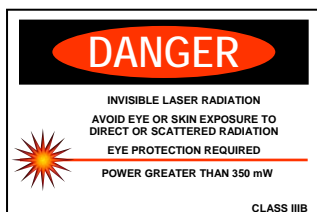
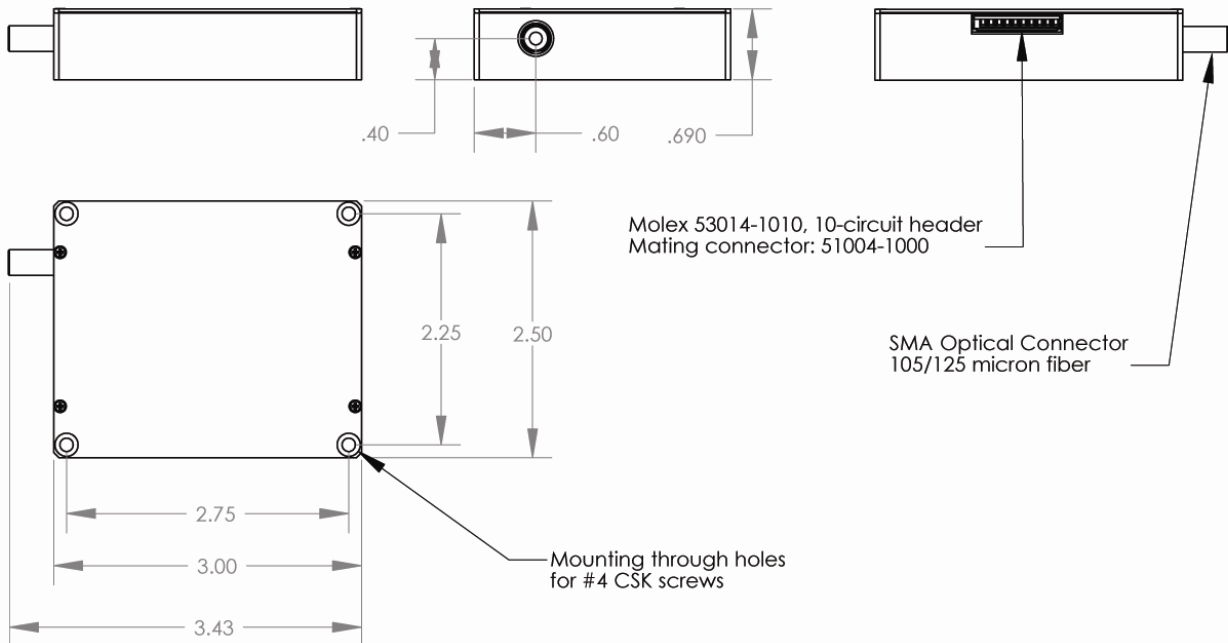
Electrical Specifications:

Optical Output Power	> 350 mW
Power Stability	<1%, Typical
Total Power Consumption	< 5.5 W (over operational temperature range -20 to +55 C)

Other Specifications:

Wavelength	785 nm
Wavelength Stability	+/- 0.1 nm (-20 to 55 C) over temperature range & lifetime
Spectral Linewidth	< 0.2 nm, FWHM

Mechanical Specifications:



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.