

203 Joseph St. • O'Fallon, MO 63366 • PH: 636-272-7227 www.rpmclasers.com • info@rpmclasers.com

Single-Frequency Fiber Coupled U-Type Module





Standard Wavelengths

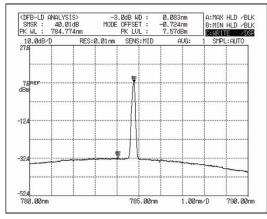
- 780 nm785 nm
- 808 nm
 - •
- 976 nm
- 1053 nm
- 830 nm
- 1030 nm
- 1064 nm

Additional wavelengths available upon request

RPMC's proprietary Wavelength Stabilized Laser features high output power with narrow spectral bandwidth. 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 (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.

In addition to integration into systems, RPMC's OEM U-Type module is designed to "drop in" to our UL/CE and IEC certified turnkey modules to offer wavelength flexibility at a lower cost.



Typical 785 nm Stabilized Laser Spectrum

Features

- Wavelength Stabilized Spectrum
- Narrow Spectral Linewidth (< 100 MHz FWHM)
- High Power Single-mode Fiber Coupled Output
- Temperature Stabilized Spectrum (< 0.007 nm/°C)
- Low Power consumption (< 5.5 W)
- 45 dB SMSR Typical
- 3" x 2.5" x 0.69" Package Weighing < 4 oz

General Optical Specifications		
Wavelength Tolerance	+/- 0.5 nm	
Spectral Linewidth (Δλ)	< 100 MHz	
Wavelength Stability Range	15 C - 45 C	
SMSR	35 -45 dB	
	Standard is PM slow. The "P" in part	
Polarization Orientation	number signifies PM slow.	
	Substitute "F" for PM fast	
Polarization Extinction Ratio (PER)	>17 dB	
Output Power Stability	1% typical	
	+/- 7pm assuming TEC control	
Peak Wavelength Drift	+/- 0.1 degree C	
	CW to 1 KHz (for 10% power to CW)	
Modulation Rate	up to 10 kHz for 50% power	
	10 seconds from cold start	
Warm-Up Time	1.5 seconds from warm start	

Physical Specifications		
Optical Fiber	Polarization Maintaining, Panda Type	
Connector	FC/APC	
	10-pin, Molex#53014-1010 (mating	
Electrical Connector	connector: 51004-1000)	
Module Dimensions	3.0 x 2.5 x 0.69 inches	
Module weight	100 grams (3.5 ounces)	
Case Material	Anodized Aluminmum	
Operating Temperature	10 to 45 degrees C	
Cooling air flow (internal)	100 LFM with attached heatsink	
Environment	0-80% Humidity, non condensing	
Storage Temperature	-10 to + 55 degress C	

Electrical Requirements		
Supply Voltage	4.9V min to 5.1V max	
Power Consumption	3.5 V typical, 5.5V maximum	
Photodiode Current	30 uA	
Laser setpoint control (LD	900 mA to 1000 mA when pin 2	
SET)	grounded	



RPMC Lasers, Inc.

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	U-Type Module Pinout			
	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	TSENS	Not Connected	
_	4	TSENS		
	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	
		(See Operational	power. Pin 2 needs to be grounded to enable	
_		Notes)	this option.	
	9	PD +	Photodiode anode	
_	10	PD -	Photodiode cathode	

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_		17141		P 7-7.	

- 1. Do not retro-reflect beam! This can cause Catastrophic Optical Damage (COD) and is not covered under warranty.
- 2. To adjust power output, RPMC recommends using Pulse Width Modulation (PWM) to adjust average power rather than using pin 4 (LD SET) for single-mode diode lasers. See Note 3.
- 3. By using PWM, user can adjust average power from 10% to 100% in digital increments by setting pulse width and duty cycle. For example, if a 50% duty cycle is selected, the laser will be on 50% of the time, and off 50% of the time, making the average power equal to 50% of the CW output power. The sample will experience a lower average power. Rise/fall time is approximately 20 microseconds.
- 4. RPMC offers a Laser Control Unit (LCU-U) for USB control. Ask about this.
- 5. Heat sink and 5V power supply are not included with module

• L - Factory Configured "L-Type"

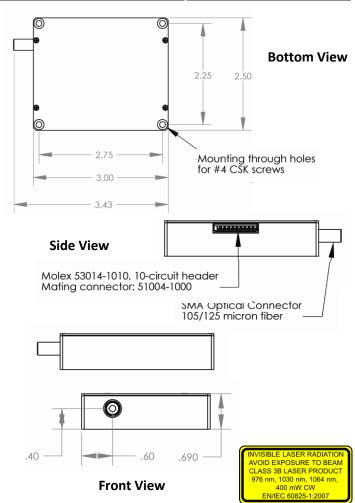
• M - Turn-Key "M-Type" laser

module

Part Numbering Schema Output Spatial Mode Coupler Minimum S – Single Mode F − FC/PC Output M – Multi-Mode Power (mW) A − FC/APC Options S – SMA905 NL – Narrowed spectral R1064SB0050PA-ISlinewidth IS – Built in dual stage isolator Fiber Type • NT - No TEC inside Center M - Multi-Mode package TH - Tethered Head M62 – 62.5 micron MM Wavelength (L-Type Modules Only) S - Single mode NBE – No Beam Module Type Expander P – Slow axis coupled PM • US – Ultra-Stable · 5-TO-56 package Electronics Pkg F - Fast axis coupled PM • B - 14-Pin Butterfly Package · D - D-Type OEM Open Beam • B - Open Beam Module U – "U-Type" OEM Micro Laser Module **OEM Laser Product**

Wavelength (nm)	Min. Power (mW)	Part Number
780	50	R0780SU0050PA
785	50	R0785SU0050PA
808	50	R0808SU0050PA
830	50	R0830SU0050PA
976	220	R0976SU0220PA
1030	100	R1030SU0100PA
1030	280	R1030SU0280PA
1053	120	R1053SU0120PA
1033	300	R1053SU0300PA
1064	50 (integral dual-stage isolator)	R1064SU0050PA-IS
	120	R1064SU0120PA
	300	R1064SU0300PA

Mechanical Specifications



CLASS 3B LASER PRODUCT

780 nm, 785 nm, 808 nm, 30 nm, 1053 nm, 200 mW CW

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.

INVISIBLE LASER RADIATION OID EYE OR SKIN EXPOSURE TO

CT OR SCATTERED RADIATIO

CLASS 4 LASER PRODUCT

976 nm, 800 mW CW EN/IEC 60825-1:2007