Single-Mode Digital L-Type Module

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Our Digital L-Type provides the user with a powerful and extremely stable laser source that is ideal for numerous scientific applications. Our proprietary Wavelength Stabilized Laser Diode 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 power and temperature are "locked" to avoid mode-hops.

Standard Wavelengths

All specified wavelengths are measured "in-vacuum"

Applications

This laser package is designed for turn-key operation and is ideal for:

- High Resolution Raman Spectroscopy
  - Portable Raman
  - Process Raman
  - Confocal Microscopy
  - Raman Imaging
- Direct-Diode Frequency Doubling
- Fiber Laser Seeding
- Remote Sensing
- Metrology/Interferometry

Key Features

- High-Power Single-Spatial-Mode, Single-Frequency Output
- Narrow Spectral Linewidth (< 100 MHz FWHM)
- High Power Single-Mode Fiber Coupled Output
- Excellent Beam Quality (M^2 < 1.1)
- Integral ESD Protection & Thermistor
- Temperature Stabilized Spectrum (< 0.007 nm/°C)
- > 45 dB SMSR Typical
- USB and I^2C, or RS-232 control of all operational features
- UL/CE and IEC certified
- Turn-key operation
- External fiber patch cord sold separately

633nm	780nm	830nm	1053nm
638nm	783nm	852nm	1064nm
660nm	785nm	976nm	
685nm	808nm	1030nm	

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Specifications

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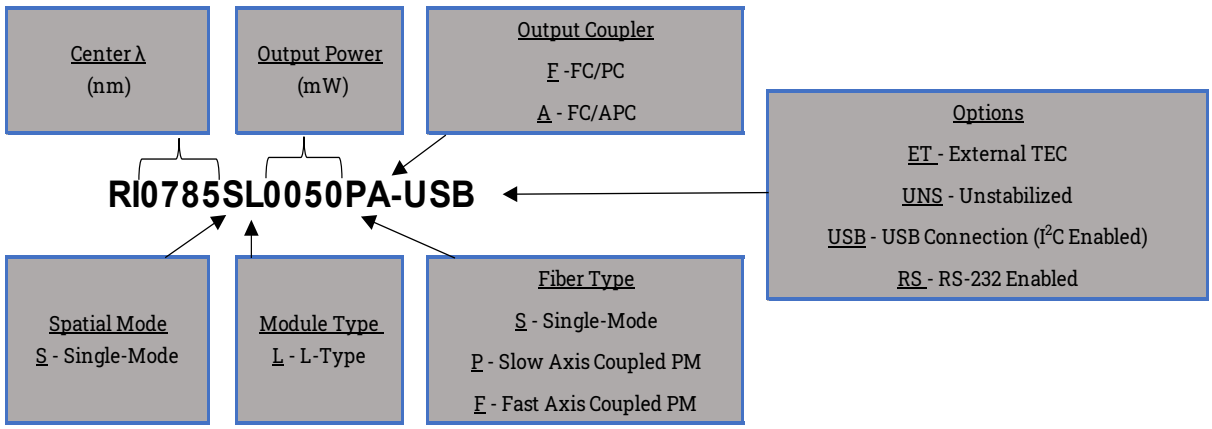
Wavelength Tolerance	+/- 0.5nm
Spectral Linewidth	<100MHz
SMRS	45dB - 55dB
Wavelength Stability Range	15 - 45 °C
Polarization Extinction (PER)	>17 dB (20 dB typical)
Polarization Orientation	Standard is PM Slow Axis
Output Power Stability	1% typical
Modulation Rate	CW to 1KHz (for 10% power to CW) up to 10 KHz for 50% power.
Warm-Up Time	10 seconds from cold start
	1.5 seconds from warm start

λ (nm)	Output Power (mW)	Base Part Number
633	25	RI0633SL0025PA-USB
638	30	RI0638SL0030PA-USB
660	30	RI0660SL0030PA-USB
685	20	RI0685SL0020PA-USB
780	50	RI0780SL0050PA-USB
783	50	RI0783SL0050PA-USB
785	50	RI0785SL0050PA-USB
	75	RI0785SL0075PA-USB
808	100	RI0808SL0100PA-USB
830	100	RI0830SL0100PA-USB
852	100	RI0852SL0100PA-USB
976	220	RI0976SL0220PA-USB
	450	RI0976SL0450PA-USB
1030	100	RI1030SL0100PA-USB
	280	RI1030SL0280PA-USB
1053	120	RI1053SL0120PA-USB
	300	RI1053SL0300PA-USB
1064.X	120	RI1064.XSL0120PA-USB
	300	RI1064.XSL0300PA-USB

Part Schema



Selected Data

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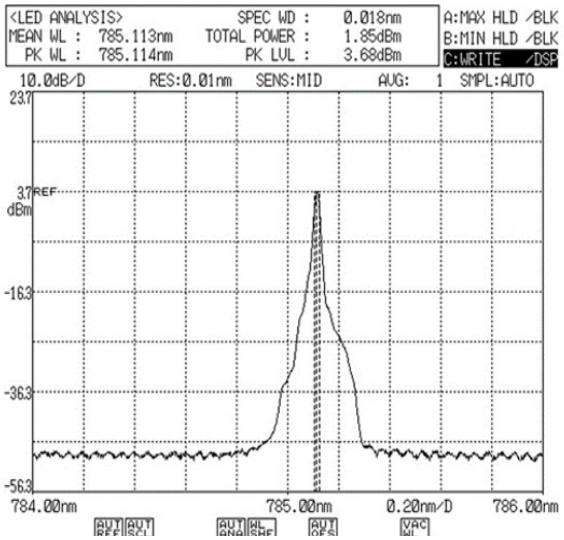


Optical Spectrum Analyzer
Typical Spectrum

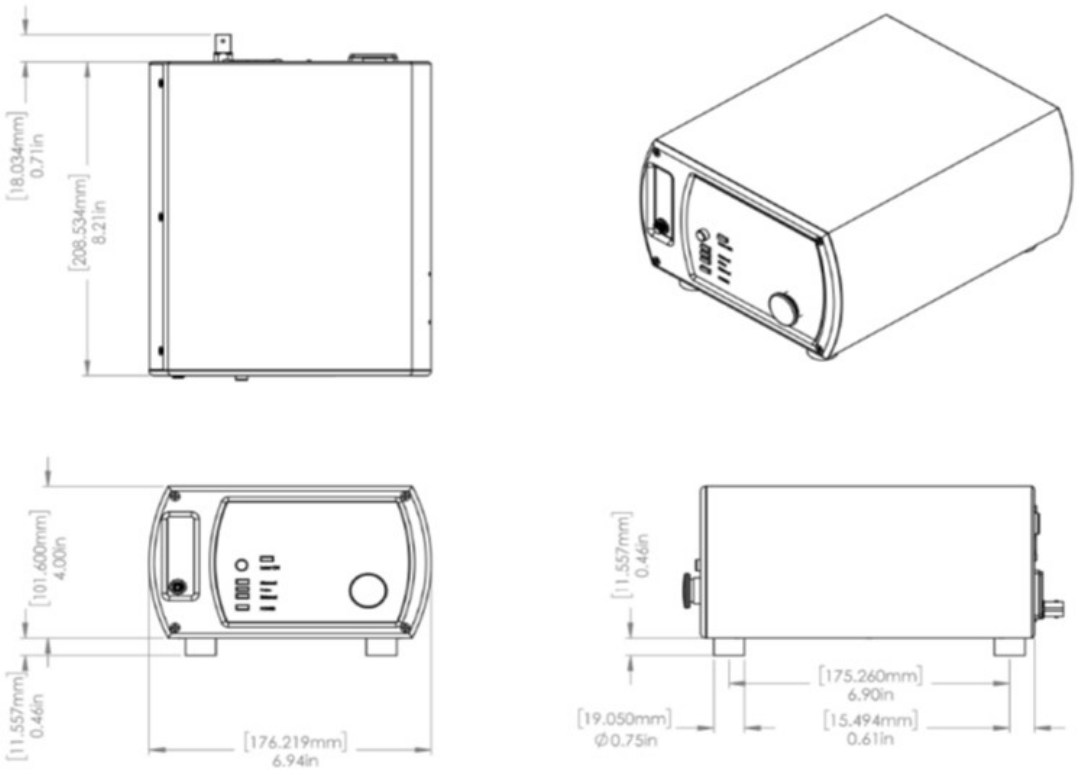
Custom Capability

- Custom wavelengths available upon request
- FC/PC, FC/APC, or SMA output coupler
- Single-mode or Polarization-maintaining fiber available with orientation in either fast or slow axis
- Integral optical isolator available
- External TEC (e.g. No TEC inside of package optional)
- IPS' turn-key system comes standard with a US outlet plug. Europe, UK, and Australia outlet plugs are available as accessories upon request

Electrical Specs

Input Power	100 - 240 VAC 50 - 60Hz, 0.4A
Fuse Rating	250V, 1A, FastBlow
	5mm x 20mm, 2 each

Mechanical Drawings



Operational Notes

1. Do not retro-reflect beam! This can cause Catastrophic Optical Damage (COD) and is not covered under warranty (unless optical isolator is included).
2. A VBG-locked Single-mode laser will experience mode hops as the temperature and driver current are changed (see Mode-Hop White Paper). For this reason, IPS profiles and sets both the current and temperature for this module and does not allow user adjustment.
3. To adjust power output, IPS recommends pulse width modulation (PWM) to adjust AVERAGE power rather than changing the laser diode drive current in order to avoid mode-hops.
4. Module includes 2-port USB hub to allow connection to additional USB devices.
5. See the user guide for full operating, software and safety instructions. This document is meant to offer a product overview.

RoHS COMPLIANT

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