

Single-Mode Digital L-Type Module



The Innovative Photonic Solutions (IPS) 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 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.

Applications

- 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 (< 1 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, RS232, or I2C control of all operational features
- UL/CE and IEC certified
- Turnkey operation

Standard Wavelengths

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

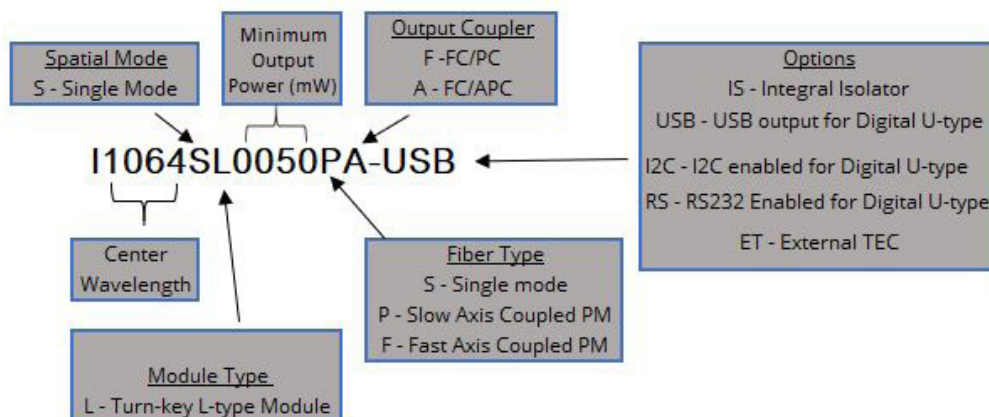
Specifications



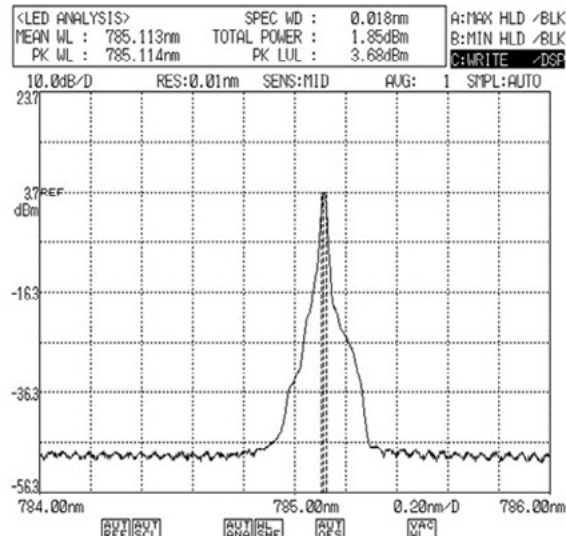
Wavelegnth Tolerance	+/- 0.5nm
Spectral Linewidth	<1 MHz
SMRS	45dB - 55dB
Wavelength Stability Range	15 - 45 °C
Polarization Extinction (PER)	>17 dB (20 dB typical)
Polarization Orientation	Standard is PM Slow
Output Power Stability	1% typical
Modulation Rate	CW to 1KHz (for 10% power to CW) up to 10 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	I0633SL0025PA-USB
638	30	I0638SL0030PA-USB
660	30	I0660SL0030PA-USB
685	20	I0685SL0020PA-USB
780	50	I0780SL0050PA-USB
783	50	I0783SL0050PA-USB
785	50	I0785SL0050PA-USB
	75	I0785SL0075PA-USB
808	100	I0808SL0100PA-USB
830	100	I0830SL0100PA-USB
852	100	I0852SL0100PA-USB
976	220	I0976SL0220PA-USB
	450	I0976SL0450PA-USB
1030	50	I1030SL0050PA-USB-IS
	100	I1030SL0100PA-USB
	280	I1030SL0100PA-USB
1053	50	I1053SL0050PA-USB-IS
	120	I1053SL0120PA-USB
	300	I1053SL0300PA-USB
1064.X	50	I1064.XSL0050PA-USB-IS
	120	I1064.XSL0120PA-USB
	300	I1064.XSL0300PA-USB

Part Schema



Selected Data



*Optical Spectrum Analyzer
Typical Spectrum*

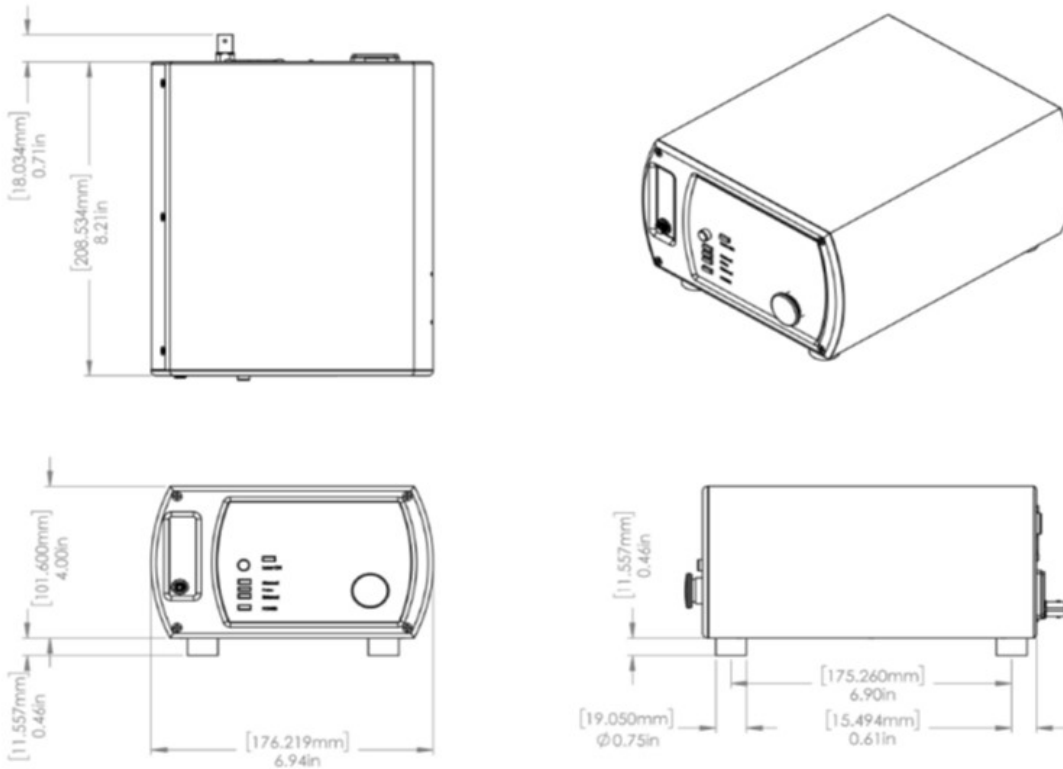
Custom Capability

- 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)

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 (unless you have selected a version with integral optical isolator)! This can cause catastrophic optical damage (COD) and is not covered under warranty.
2. 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.
3. Module includes 2-port USB hub to allow connection to additional USB devices.
4. See operational manual for full operating, software and safety instructions. This document is meant to offer a product overview.

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