

R-Type Single-Mode Turn-Key Laser

Features

- Single-Mode TEM00 Output
- Ultra-Narrow Spectral Bandwidth < 40 MHz typical
- Stabilized Output Spectrum
- Circularized & Collimated Output Beam
- Integral Laser Line Filters¹
- UL/CE and IEC Certified
- > 70 dB SMSR Typical with integral laser line filter (35 dB – 45 dB typical without)
- Integral Laser Drive and TEC Control Electronics
- Remote Interlock

Standard Wavelengths

- 405 nm²
- 514 nm²
- 633 nm
- 638 nm
- 660 nm
- 780 nm
- 785 nm
- 808 nm
- 830 nm
- 976 nm
- 1030 nm
- 1053 nm
- 1064 nm

Additional wavelengths available

General Optical Specifications

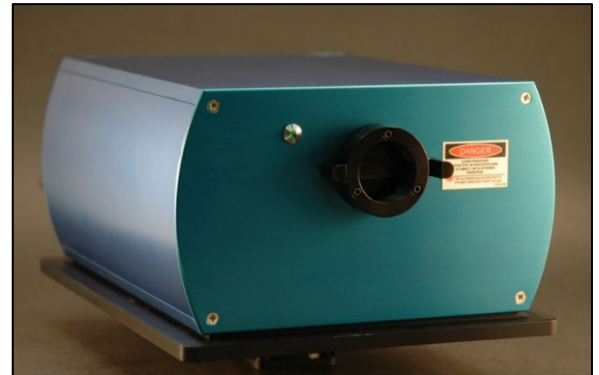
Spectral Linewidth ($\Delta\lambda$)	<100 MHz
Wavelength Stability Range	10 C - 35 C case temperature
SMSR	35 -45 dB
SMSR w/integral laser line filter	70 dB
Polarization Extinction (PER)	>17 dB
Polarization Orientation	Perpendicular to R-type base mounting plate
Spatial Profile	TEM00
Beam Quality (M-Squared)	< 1.5
Beam Ellipticity	1.5:1
Beam Diameter (at aperture)	~ 0.5 mm to 0.7 mm
Beam Divergence ³	~ 2 mrad
Output Power Stability	+/- 1% typical
Warm-up time	10 seconds from cold start
	1.5 seconds from warm start

Physical Specifications

Output Beam Exit Port	Standard C-Mount Thread (1" - 32)
Module dimensions	8.25" x 7" x 4.25"
Module weight	5 lbs.
Case material	Anodized Aluminum
Operating temperature	+15 to +35 deg C case temperature
Storage temperature range	-10 C to +55 C

Electrical Performance Specifications

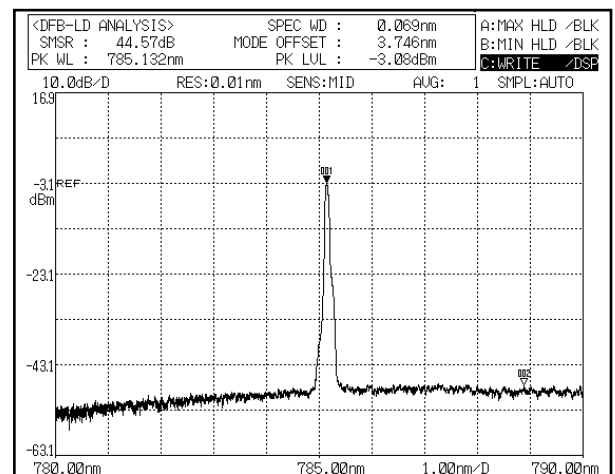
Input Power	100-240 VAC, 50-60 Hz, 0.4A
Fuse Rating	250 V, 1A, Fast Blow, 5 mm x 20 mm, 2 each



Innovative Photonic Solutions' R-type module is a fully turn-key, UL/CE and IEC certified laser module perfect for lab use. It comes complete with an internal wavelength stabilized laser module, a laser enable switch for safety, a safety key lockout, a remote interlock.

IPS'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 (+10 to +35 deg. C) – making this source an ideal choice for the most demanding applications.

Devices can be spectrally tailored to suit application needs and offer side mode suppression ratio (SMSR) better than 40 dB, making these sources ideal for high resolution Raman spectroscopy, confocal microscopy, metrology and interferometry applications.



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

- 1 - Integral laser line filter at 633 nm, 638 nm, 785 nm, 808 nm, 830 nm, and 1064 nm
- 2 - See 405 nm and 514 nm data sheets for specifications for those wavelengths
- 3 - Beam Divergence for 785 nm R-type is ~3 - 4 mrad

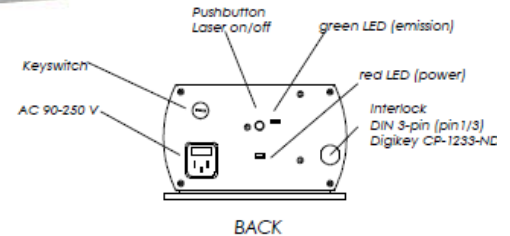
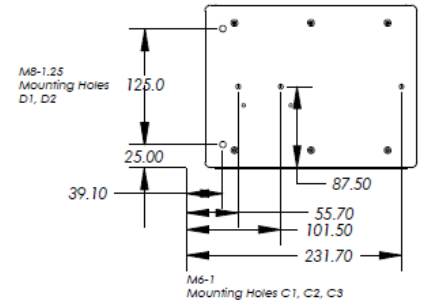
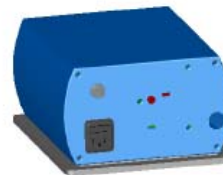
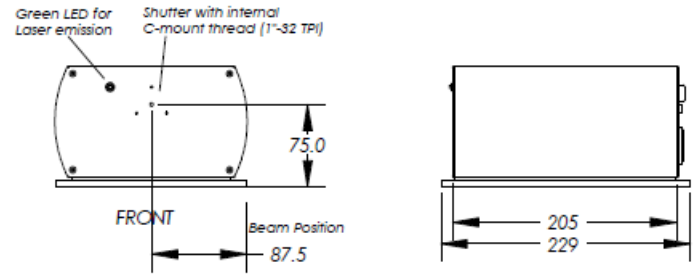
Standard R-type

Wavelength (nm)	Minimum Output Power (mW)	Part number
633	15	I0633SR0015B
633	35	I0633SR0035B
633	50	I0633SR0050B
638	35	I0638SR0035B
638	60	I0638SR0060B
660	50	I0660SR0050B
780	100	I0780SR0100B
785	100	I0785SR0100B1
808	100	I0808SR0100B
830	100	I0830SR0100B
976	200	I0976SR0200B
976	450	I0976SR0450B
1030	450	I1030SR0450B
1053	500	I1053SR0500B
1064	500	I1064SR0500B

R-type with Isolator

Wavelength (nm)	Min. Power (mW)	Part number
405	30	I0405SR0030B-IS
514.5	30	I0514SR0030B-IS
633	10	I0633SR0010B-IS
633	30	I0633SR0030B-IS
638	20	I0638SR0020B-IS
638	35	I0638SR0035B-IS
785	90	I0785SR0090B-IS1

Mechanical Specifications



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 using an external Neutral Density Filter.
3. The R-type is designed to be used in an open beam configuration – Users should design their optical layout in a manner that minimizes or eliminates the possibility of inadvertent exposure to hazardous laser radiation. To this end, IPS has provided a SM-1 threaded mount in the laser's shutter module to facilitate the creation of a class I enclosure.
4. See Operation Manual for full operating and safety instructions. This document is meant to offer a product overview only.

