

CHROMALASE^{II}

Diode Laser Modules

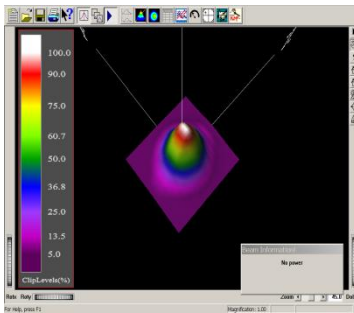
- Ultra Compact Diode Laser Modules.
- Wavelengths including UV, Violet, Blue, Green, Red, NIR
- Integrated Micro-Optic Beam Shaping
- Gaussian, Circular, Diffraction Limited Beam
- Semiconductor Reliability
- Fully integrated temperature control and laser driver electronics
- Sharp edge modulation to 100 kHz for most wavelengths



CHROMALASE^{II} laser modules are our second generation family of high performance and highly integrated diode laser systems.

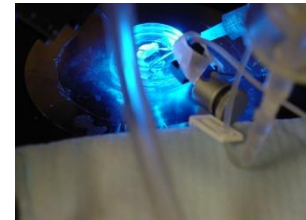
Each Laser incorporates a semiconductor laser diode that has been micro-integrated with a Blue Sky beam correction optics. The beam correction results in near perfect Gaussian and circular beam shape and also helps correct the wavefront distortions inherent in laser diodes. This makes the CHROMALASE^{II} Series of laser modules the ideal choice for cost conscious applications where laser performance is also important.

To complete our product series we also offer laser modules incorporating standard laser diodes without the micro-optic beam correction. These economical units retain all the advantages of our small, highly integrated packaging. The output beam will have a standard elliptical shape with a typical 3:1 aspect ratio.



The CHROMALASE^{II} Laser Modules are complete stand alone lasers. Everything you need to operate this laser from a simple 12volt DC supply is integrated inside the laser module and no external control module is required. The laser is highly temperature stabilized and the integrated controller includes laser driver, output power stabilization, power level control, reverse and over voltage protection, fast transient and ESD suppression.

The CHROMALASE^{II} high performance laser modules include a wide variety of wavelength and optical output power options from 405nm to 1064nm. If you do not see the option you require, please call us to see if it is now available.



Features

- * Diffraction limited Optical Performance
- * Circular or Elliptical Output Beams
- * Integrated drive and power electronics
- * < 12W electrical Power consumption
- * Solid State Reliability
- * Power stability < 0.5% in 2 hours
- * Variable Output Power
- * < 0.5% Optical Noise (RMS)
- * Beam alignment accuracy < 5mRad
- * Pointing stability < 10 μ rad/°C

Contact Information:

BLUE Sky Research * 1537 Centre Pointe Drive * Milpitas, CA 95035 * (408) 941-6068 * FAX (408)941 - 0406
www.blueskyresearch.com * email: Sales @blueskyresearch.com

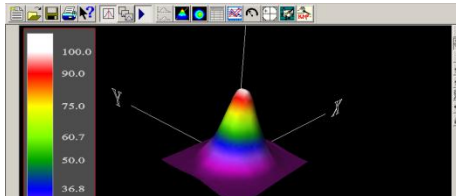


CHROMALASE^{II}

Diode Laser Modules

Circular Beam Laser Systems

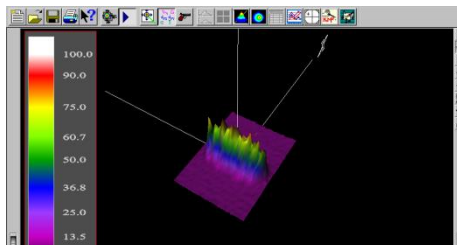
(Call for other power and wavelength options.)



Name	CLAS ^{II} 375-18c	CLAS ^{II} 405-100c	CLAS ^{II} 440-50c	CLAS ^{II} 470-18c	CLAS ^{II} 488-50c	CLAS ^{II} 532-40c	CLAS ^{II} 635-100c	CLAS ^{II} 658-110c	CLAS ^{II} 785-90c
Wavelength (nm)	375±5	405±5	445±5	473±5	488±5	532±5	638±3	658±5	785±5
Power* (mW)	18	100	50	18	50	40	100	110	90
Beam Diameter (mm) typ	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.3	1.3
Divergence (mrad)	<1	<1	<1	<1	<1	<1	<1.1	<1.2	<1.4
Beam Shape (far field)	Circular	Circular	Circular	Circular	Circular	Circular	Circular	Circular	Circular
Ellipticity	<1.15	<1.15	<1.15	<1.15	<1.15	<1.15	<1.15	<1.15	<1.15

Elliptical Beam Laser Systems

(Call for other power and wavelength options)



Name	CLAS ^{II} 375-20e	CLAS ^{II} 405-120e	CLAS ^{II} 440-50e	CLAS ^{II} 470-20e	CLAS ^{II} 488-50e	CLAS ^{II} 635-100e	CLAS ^{II} 658-110e	CLAS ^{II} 785-90e
Wavelength (nm)	375±5	405±5	445±5	473±5	488±5	638±3	658±5	785±5
Power* (mW)	20	120	50	20	50	100	110	90
Beam Size vxh (mm)	1x3	1x2	1x3	1x3	1x3	4x1	1x2	1x2
Divergence (mrad)	0.4x1	0.4x1	0.4x1	0.4x1	0.4x1	0.5x1	0.6x1.2	0.7x1.4
Beam Shape (far field)	Elliptical	Elliptical	Elliptical	Elliptical	Elliptical	Elliptical	Elliptical	Elliptical

- All power levels are factory set power at the time the laser is shipped. Lasers operate in Automatic Power Control (APC) mode but may be set to constant current mode on request.
If you do not see the wavelength and power option you require please call us for availability

Applications

- * Analytical Instruments
- * Biomedical & Medical
- * Flow Cytometry/Confocal Microscopy

- * Confocal Microscopes
- * Ophthalmology
- * Defense & Homeland Security

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CHROMALASE^{II}

Diode Laser Systems

Product General Specifications

Laser System Characteristics

Parameter	Specification
Wavelength Stability	$\lambda \pm 0.5\text{nm P const}$
Noise, RMS 20Hz to 2MHz	< 0.5%
Power Stability (1hrs)	< 0.5%
Power Stability (24hrs)	< 2.0%

Beam Characteristics

Parameter	Specification
Beam Diameter	1mm typical (see table)
Circularity	0.9 – 1.1
Bore site Accuracy	$\pm 5\text{mrad}$
Beam Divergence	<1.0mrad
Beam Stability	typically <10 $\mu\text{rad}/^\circ\text{C}$
Polarization	100:1, Vertical, within 4 degrees

Electrical Specifications

Parameter	Specification
Input Voltage	12Vdc
Power Consumption	2.5W typical, 12W Max
Electrical Connector	Molex 87369-0600

Modulation

Standard	10kHz (NOT for the 532nm)
High Speed - option	100kHz in ACC mode (NOT for the 532nm)

Environmental Specifications

Parameter	Specification
Storage Temperature	-20 C to 60 C
Operating Temperature	10C to 40C
Operating Humidity Range	< 70 % (Non-Condensing)

Mechanical Specifications

Parameter	Specification
Package Dimensions	See Drawing
Mounting	See Drawing
Beam Location	19 \pm 0.5mm Vertical 20 \pm 1.0 Horizontal

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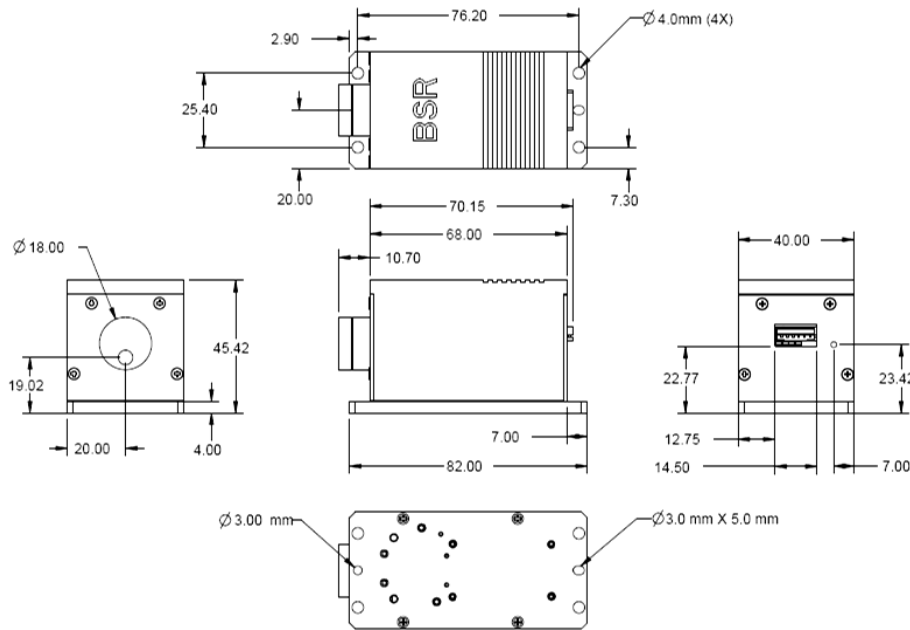
CHROMALASE^I TM Rev 05/26/2010

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CHROMALASE II

Diode Laser Modules

Mechanical Layout



PIN	FUNCTION
1	12V – right pin
2	GND
3	V-SET
4	LD Shut down
5	PD monitor
6	LD monitor

LD Monitor and PD Monitor are voltage outputs that represent the laser drive current and the power monitor photodiode current respectively.
 Pin 3-Vset is a 0V to 5 V input that will adjust the laser output from zero to full power.
 Pin 4 – shut down is 5V to shut down.

Ordering Information

Part Number

CLAS2-XXX-(M)YYYYZ

Product Family – CLAS2

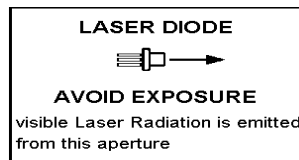
XXX = Wavelength – Pick from wavelength table on page 2
 i.e. 635 for 635nm

(M) = High Speed Modulation, nothing = standard

YYY = Power Output (mW) – Pick from table on page 2
 i.e. 025 for 25mW

Z = C for Circular Beam, E for Elliptical Beam

Example: CLAS2-635-025C, CHROMALASE II model, 635nm, 25mW output power, circular beam



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