# CHROMALASE $^{II}$

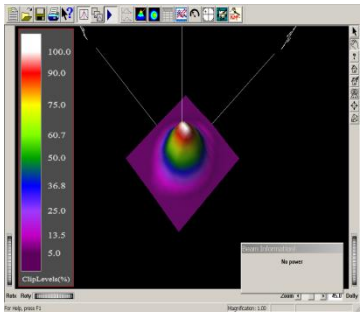
***Diode Laser Modules***

- **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.

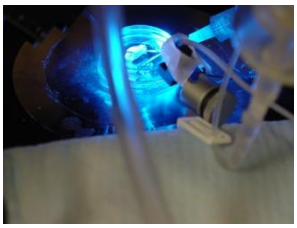
Each Laser incorporates a semiconductor laser diode that has been micro-integrated with a Blue Sky beam correction optics. The beam correction results in near perfect Gaussian and circular beam shape and also helps correct the wavefront distortions inherent in laser diodes. This makes the CHROMALASE $^{II}$ 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 CHROMA*LASE* $^{II}$ 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.

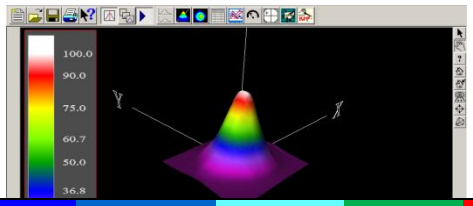


## Features

* 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 µrad/ºC

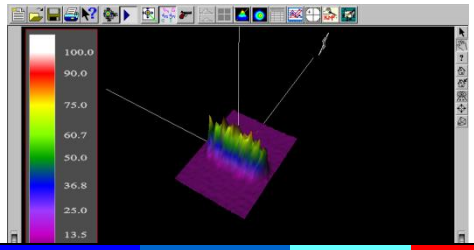
# CHROMA*LASE* II
## *Diode Laser Modules*

### 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 | CLASII 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


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

# CHROMA*LASE* II
## *Diode Laser Systems*

# Product General Specifications

## Laser System Characteristics

| Parameter | Specification |
|---|---|
| Wavelength Stability | λ ± 0.5nm 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 | ± 5mrad |
| Beam Divergence | <1.0mrad |
| Beam Stability | typically <10µrad/ºC |
| 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 ± 0.5mm Vertical<br>20 ± 1.0 Horizontal |

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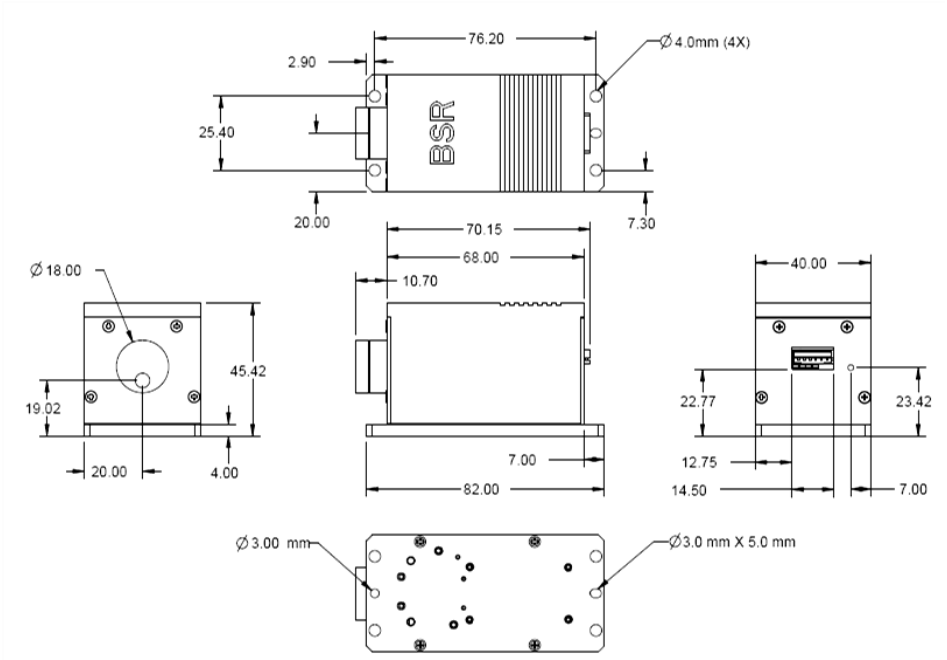
# CHROMA*LASE* II
## *Diode Laser Modules*

### 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)YYYZ**

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