# Laserglow Product Datasheet

## LRD-0447 Collimated Diode Laser System

## Laserglow Part Number: D4412C3FX




### Similar Products:

For information about the other lasers in this product family visit:

http://www.laserglow.com/D44

### Ordering:

Order Online Now or Request Quote:

http://www.laserglow.com/D4412C3FX

### Series Specifications:

| | |
|---|---|
| Nominal Wavelength | 447 nm |
| Output Type | CW |
| Laser Source Type | Diode |

### Overview:

The LRD-0447 Series of Collimated Diode (Semiconductor) Lasers are ideal for applications requiring a short wavelength of 447 nm and output power levels of 5 mW to 20 W with a high level of long-term output power stability and long operating lifetime at a very competitive cost.

These lasers are commonly used for various scientific applications involving fluorescence excitation, as well as PIV, spectral analysis, and a broad spectrum of other applications. The driver is available as a complete FDA-compliant system or as an O.E.M. component with significantly reduced dimensions.

Available with both on-board and remote on/off control as well as a wide array of output power and stability levels, Laserglow products are currently being used by some of the World's top universities and other prominent research facilities.

**Key Features:**

- The most cost-effective blue laser source
- Air cooled - no need for water cooling or external chiller
- Lightweight, compact design
- Efficient Diode Laser technology runs on standard AC power (85 - 264 V, 47 - 63 Hz)
- >10,000 hours continuous maintenance-free operating life
- FDA CDRH Compliant Class IIIb / Class IV enclosure
- 48-hour replacement coverage available for an additional fee on specific models

**Package Includes:**

- Laser Head
- Driver/Power Supply
- Power Cable

- BNC Connector (LabSpec models only)
- Keys, Safety Interlock
- Hard-shell Carrying Case

## Specifications:

This spec sheet has been generated specifically for part number D4412C3FX, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to D4412C3FX have been highlighted below in **red + bold**.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Output Power (mW) | <5, >10, >20, >30 | >30, >50, >80 | >30, >100, >200, >500 | >1000 | >1500, >2000, >3000, >3500, >4000 | >2000, >3000 | >8000, **>12000**, >20000 |
| Output Power Stability (%RMS/4h) | <1, <3 | <1, <3 | <1, <3, <10 | <1, <3, <10 | <1, <3, <10 | <1, <3, <5 | <1, **<3** |
| Central Wavelength (nm) | 447 | 447 | 447 | | 447 | 447 | **447** |
| Wavelength Tolerance (+/- nm) | 5 | 5 | 5 | | 5 | 5 | **5** |
| Divergence (mrad, full angle) | <1 | <1 | <2x1.6 | <1.5 | <1.4x0.2 | <120x240 | <2x0.5 |
| Beam Dimensions (mm, $1/e^2$) | 3.5 | 2.5 | 2.5x5 | 5 | 2.7x2.7, 3.5x3.5 | | 6x5, 11x10 |
| Warm-up Time (minutes) | 15 | 5 | 5 | | 5 | 5 | **5** |
| Approximate Peak Power (W) | | 499 | | | | | |
| Spectral Linewidth (nm) | <0.06 | | | | | | |
| $M^2$ | <1.5 | <1.5 | | | | | |
| Polarization Ratio | >50 | | | | | | |
| Beam Pointing Stability (mrad) | | <0.05 | <0.05 | | <0.05 | <0.05 | |
| Operating Temperature Range (°C) | 20 to 30 | 10 to 35 | 10 to 35 | | 10 to 35 | 10 to 35 | **10 to 35** |
| Max. Analog Modulation Freq. (Hz) | 30000 | 30000 | 30000 | 30000 | 30000 | 30000 | **30000** |
| Max. TTL Modulation Freq. (Hz) | 30000 | 30000 | 10000, 30000 | 10000, 30000 | 10000, 30000 | 30000 | **30000** |
| Modulation Input Signal | 0-5 VDC | 0-5 VDC | 0-5 VDC | 0-5 VDC | 0-5 VDC | 0-5 VDC | **0-5 VDC** |
| Total Power Consumption (W) | 9 | 9 | 12, 25, 30 | 40 | 40, 100 | 40 | |
| Max. Power Input Duty Cycle | 100% | 100% | 100% | 100% | 100% | 100% | **100%** |
| Standard Warranty (months) | 12 | 12 | 12 | 12 | 12 | 12 | **12** |
| MTTF (operational hours) | 10000 | 10000 | 10000 | 10000 | 10000 | 10000 | **10000** |
| Weight of Product or Laser Head (kg) | 0.8 | 0.6 | 0.6 | 0.9 | 1.6 | 5.4 | **6.1** |
| Beam Height from Base Plate (mm) | 30 | 24.8 | 24.8 | 29 | 45 | | **93.5** |
| Dimensions of Product or Laser Head (mm) | 122.5 (l) x 65 (w) x 50 (h) | 140.7 (l) x 73 (w) x 46.2 (h) | 140.7 (l) x 73 (w) x 46.2 (h) | 155 (l) x 77 (w) x 60 (h) | 211.5 (l) x 88 (w) x 74 (h) | 314 (l) x 290 (w) x 134 (h) | **346 (l) x 140 (w) x 125 (h)** |

CW: All specifications are based on performance at full output power and after the specified warmup period. Output characteristics may change if the laser is run at a different power level.
Q-Switched: Specifications are based on the laser pulsing at the specified design frequency. Output characteristics may change if the laser is run at a different frequency.

## Power Supply Options:

These lasers are available with several different power supply options. The model that you have selected is highlighted below, and any other options are shown for easy reference.

| | Power Supply Type: | **FE** | **FR** | **FT** | **FW** | **FF** |
|---|---|---|---|---|---|---|
| FDA-Compliant LabSpec  | Input Power | 85v to 264v | 85v to 264v | 85v to 264v | **85v to 264v** | 85v to 264v |
| | Power Supply Weight (kg) | 6.2 | 1.5 | 2.6 | **5.2** | 2.6 |
| | Dimensions (mm) | 320 (l) x 300 (w) x 123 (h) | 154 (l) x 155 (w) x 95 (h) | 268 (l) x 145 (w) x 106 (h) | **307 (l) x 168 (w) x 123 (h)** | 268 (l) x 145 (w) x 106 (h) |

| | Power Supply Type: | **SR** | **ST** | **SF** |
|---|---|---|---|---|
| FDA-Compliant Standard  | Input Power | 85v to 264v | 85v to 264v | 85v to 264v |
| | Power Supply Weight (kg) | 1.2 | 2.3 | 2.3 |
| | Dimensions (mm) | 133 (l) x 130 (w) x 65 (h) | 238 (l) x 146 (w) x 102 (h) | 238 (l) x 146 (w) x 102 (h) |

| | Power Supply Type: | **II** |
|---|---|---|
| Fiber-Integrated LabSpec  | Input Power | 85v to 264v |
| | Power Supply Weight (kg) | 0 |
| | Dimensions (mm) | 0 (l) x 0 (w) x 0 (h) |

*Power supply may not be exactly as shown, see dimensional drawings on next 2 pages.

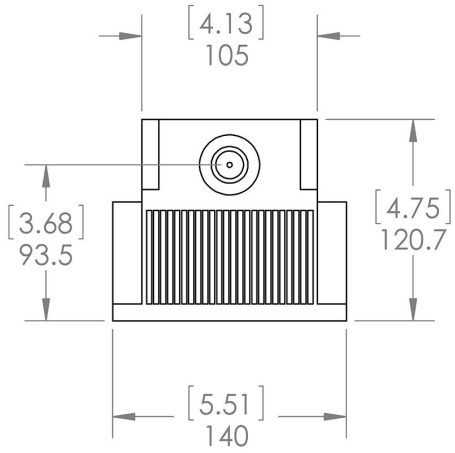
*Dimensions for fiber-integrated (I_) include laser head packaged inside.

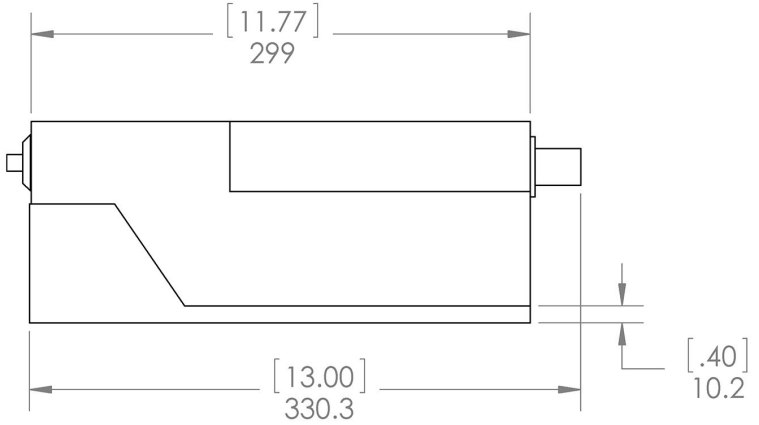
## Regulatory Classification:

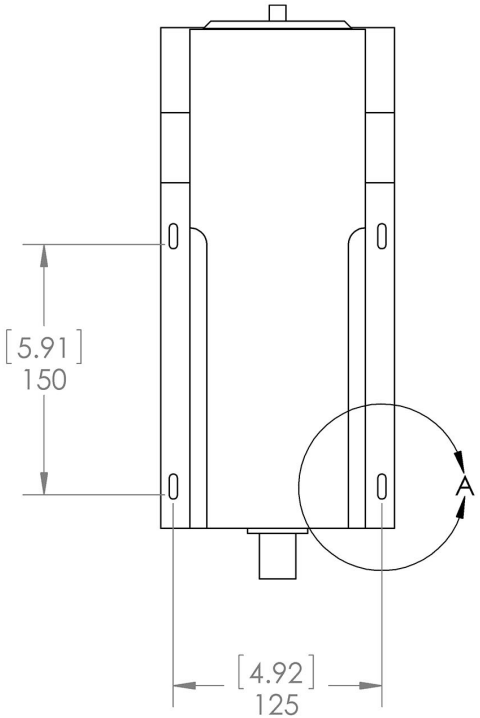
The model you have selected (D4412C3FX) requires the following safety label(s):

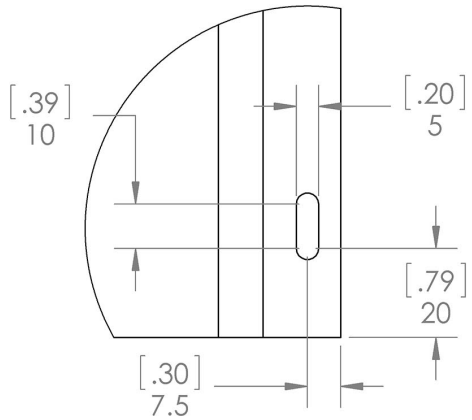


Dimensional Drawing - Laser Form Factor: W:

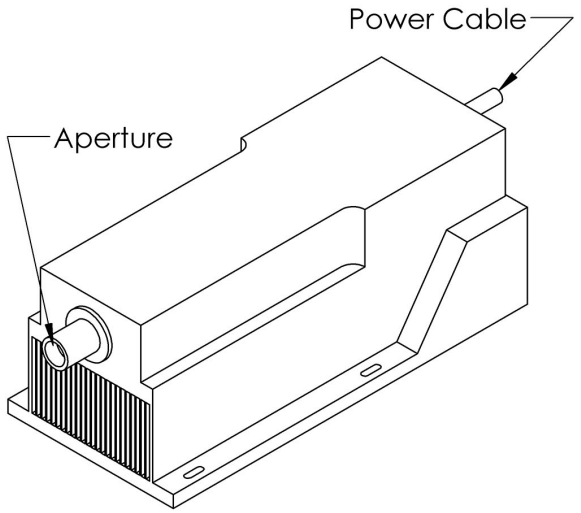



DETAIL A
SCALE 1 : 1.5




Laserglow Technologies

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MM[INCH]
TOLERANCES: +/- 0.75 MM

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LASERGLOW TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF LASERGLOW TECHNOLOGIES IS PROHIBITED. © 2012 LASERGLOW.COM LIMITED. ALL RIGHTS RESERVED

TITLE:

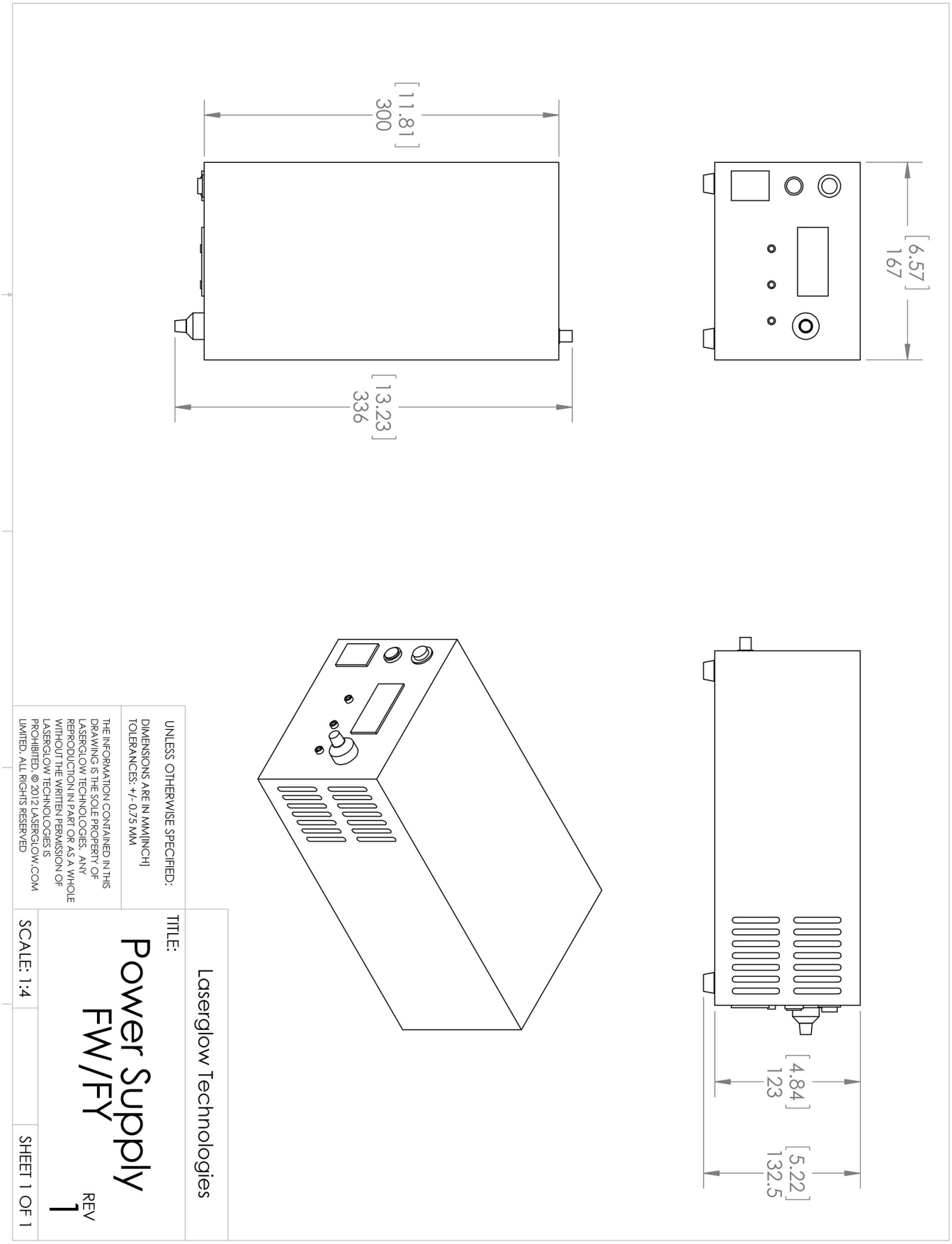
# Lab/OEM W Housing

REV 1

SCALE: 1:4

SHEET 1 OF 1

**Dimensional Drawing - Power Supply Form Factor: FW:**



## Accessories:

The most popular accessories for model D4412C3FX are shown below. For additional details regarding these or other accessories please see our website or contact us directly.

| Part Number | Description | |
|---|---|---|
|  AGF5327XX | LSG-532-NF-7 Fit-Over Safety Goggles 532nm<br>Output: OD 7+ at 190-532 nm<br>CE Certified<br>Full Details: www.laserglow.com/AGF | |
|  ACFVISHXA | FC/PC Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm) (installed and aligned)<br>11mm diameter input lens<br>Full Details: www.laserglow.com/ACF | |
|  ACSVISHXA | SMA-905 Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm) (installed and aligned)<br>11mm diameter input lens<br>Full Details: www.laserglow.com/ACS | |
|  ACALBMXXX | Carrying Case-102<br>Holds Lab/OEM M, R and S size, standard or LabSpec laser<br>Full Details: www.laserglow.com/ACA | Included With Laser |
|  AFS2002XX | Armored Fiber With SMA 905 Connectors 200um Core Multimode 2 m length<br>Full Details: www.laserglow.com/AFS | |
|  AFF2002XX | Armored Fiber With FC/PC Connectors 200um Core Multimode 2m length<br>Full Details: www.laserglow.com/AFF | |

## FOR MORE INFORMATION PLEASE CONTACT:

LASERGLOW TECHNOLOGIES
99 Ingram Dr. Unit B, North York, ON, Canada M6M2L7
Tel. (416) 729-7976 Fax (716) 322-3510
sales@laserglow.com www.laserglow.com

E&OE: Data included in this sheet may be subject to change without notice.
Please confirm critical specifications with our staff prior to ordering.