# Laserglow Product Datasheet

## LRD-0470 Collimated Diode Laser System

## Laserglow Part Number: D4B10B1FX

### Similar Products:

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

http://www.laserglow.com/D4B

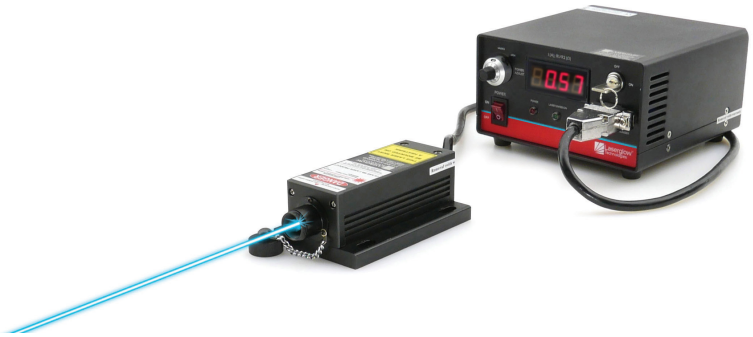
### Ordering:

Order Online Now or Request Quote:

http://www.laserglow.com/D4B10B1FX

### Series Specifications:

| | |
|---|---|
| Nominal Wavelength | 470 nm |
| Output Type | CW |
| Laser Source Type | Diode |



### Overview:

The LRD-0470 Cyanea™ Series of Collimated Diode (Semiconductor) Lasers are ideal for applications requiring a short wavelength of 470 nm and output power levels of 100 mW to 1000 mW with a high level of long-term output power stability and long operating lifetime at a very competitive cost.

This series has specifically been developed for optogenetics applications where channelrhodopsin 2 (ChR2) is used as the light-gated ion channel. The blue light activated ChR2 has a peak activation wavelength at 470 nm, thus making the LRD-0470 series ideal for ChR2-enabled neuron excitation.

The wavelength tolerance on this series is +/- 5nm when electronically modulating the device. 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:**

- 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 IIIa / 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 D4B10B1FX, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to D4B10B1FX have been highlighted below in **red + bold**.

| | |
|---|---|
| Output Power (mW) | >100, >200, >300, >500, >800, **>1000**, >1500 |
| Output Power Stability (%RMS/4h) | **<1**, <3 |
| Central Wavelength (nm) | **468.5** |
| Wavelength Tolerance (+/- nm) | **5** |
| Divergence (mrad, full angle) | <1.4x0.2, <2.5x0.5 |
| Beam Dimensions (mm, $1/e^2$) | 1.5x3, 2.7x2.7 |
| Warm-up Time (minutes) | **5** |
| Operating Temperature Range (°C) | **10 to 35** |
| Max. Analog Modulation Freq. (Hz) | **30000** |
| Max. TTL Modulation Freq. (Hz) | **30000** |
| Modulation Input Signal | **0-5 VDC** |
| Total Power Consumption (W) | **35** |
| Standard Warranty (months) | **12** |
| Weight of Product or Laser Head (kg) | **1.6** |
| Beam Height from Base Plate (mm) | **45** |
| Dimensions of Product or Laser Head (mm) | **211.5 (l) x 88 (w) x 74 (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.

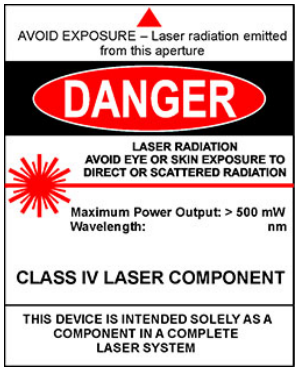
| | | |
|---|---|---|
| FDA-Compliant LabSpec  | Power Supply Type: | **FF** |
| | Input Power | **85v to 264v** |
| | Power Supply Weight (kg) | **2.6** |
| | Dimensions (mm) | **268 (l) x 145 (w) x 106 (h)** |

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

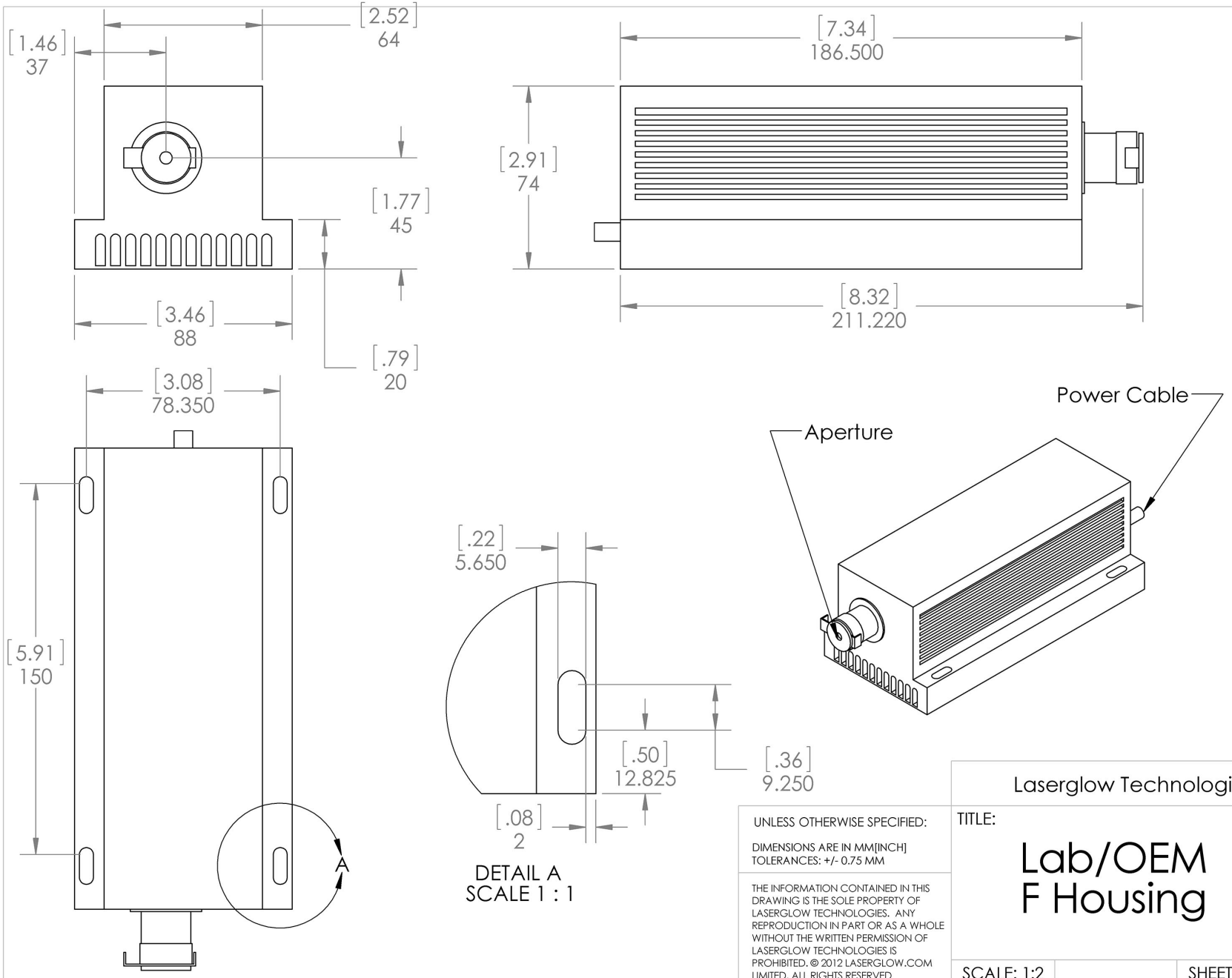
*Dimensions for fiber-integrated (I_) include laser head packaged inside.

## Regulatory Classification:

The model you have selected (D4B10B1FX) requires the following safety label(s):



Dimensional Drawing - Laser Form Factor: FD:




Laserglow Technologies

UNLESS OTHERWISE SPECIFIED:

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

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TITLE:

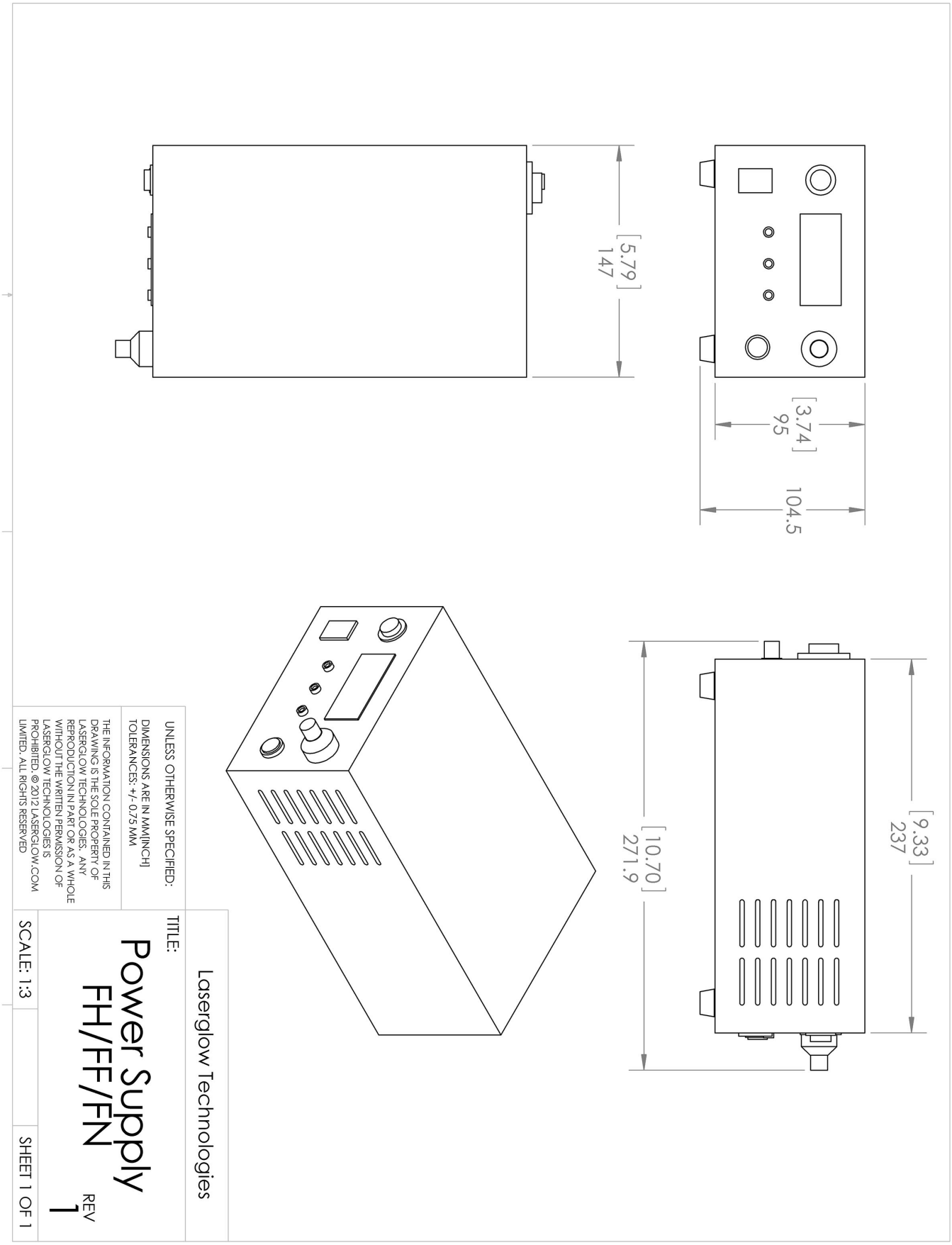
# Lab/OEM F Housing

REV 1

SCALE: 1:2

SHEET 1 OF 1

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



## Accessories:

The most popular accessories for model D4B10B1FX are shown below. For additional details regarding these or other accessories please see our website or contact us directly.

| Part Number | Description | |
|---|---|---|
|  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 | |
|  AGF5322XX | LSG-532-NF-2 Fit-Over Safety Goggles 532nm<br>Output: OD 2+ at 400-532 nm<br>CE Certified<br>Full Details: www.laserglow.com/AGF | |
|  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 | |
|  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 | |
|  ACALBHFXX | Carrying Case-103<br>Holds Lab/OEM H, F and O size Standard/LabSpec laser<br>Full Details: www.laserglow.com/ACA | |
|  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 |

## FOR MORE INFORMATION PLEASE CONTACT:

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Please confirm critical specifications with our staff prior to ordering.