

## Laserglow Product Datasheet

### LLS-0457 Low-Noise DPSS Laser System



#### Series Specifications:

|                    |        |
|--------------------|--------|
| Nominal Wavelength | 457 nm |
| Output Type        | CW     |
| Laser Source Type  | DPSS   |

#### Overview:

The LLS-0457 Series of Low-Noise Diode-Pumped Solid-State (DPSS) Lasers are ideal for applications requiring less than 3% noise and output power levels from 5 mW to 10 W. These 457 nm lasers maintain a high level of long-term output power stability and long operating lifetime at an aggressively competitive cost.

These lasers are commonly used for fluorescence excitation, PIV, Raman Spectroscopy, 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.

Laserglow products are currently being used by some of the World's top universities and other prominent research facilities.

#### Key Features:

- 1% optical noise (20 Hz-20 MHz)
- Air cooled - no need for water cooling or external chiller
- Lightweight, compact design
- Efficient DPSS technology runs on standard AC power (85 - 264 V, 47 - 63 Hz)
- >10,000 hours continuous maintenance-free operating life
- FDA CDRH Compliant Class IIb / Class IV enclosure
- 48-hour replacement coverage available for an additional fee on specific models

#### Package Includes:

- Laser Head
- Driver/Power Supply
- Power Cable
- Keys, Safety Interlock
- Hard-shell Carrying Case

## Specifications:

This spec sheet has been generated specifically for part number L45-N, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to L45-N have been highlighted below in **red + bold**.

|                                                 |                                |                             |                             |                                  |                                    |
|-------------------------------------------------|--------------------------------|-----------------------------|-----------------------------|----------------------------------|------------------------------------|
| Output Power (mW)                               | <5, >10, >50, >100, >300, >500 | >100                        | >300                        | <b>&gt;1000, &gt;2000</b>        | >3000, >4000, >5000, >8000, >10000 |
| Output Power Stability (%RMS/4h)                | <3, <5                         | <3                          | <3                          | <b>&lt;1, &lt;3, &lt;5</b>       | <3, <5                             |
| Central Wavelength (nm)                         | 456.63                         |                             |                             | <b>456.63</b>                    | 456.63                             |
| Wavelength Tolerance (+/- nm)                   | 1                              |                             |                             | <b>1</b>                         | 1                                  |
| Divergence (mrad, full angle)                   | <1.5                           | <1.5                        | <1.5                        | <b>&lt;1.5</b>                   | <2                                 |
| Beam Dimensions (mm, 1/e <sup>2</sup> )         | 3                              | 1                           | 0.7                         | <b>3</b>                         | 4                                  |
| Warm-up Time (minutes)                          | 10                             |                             |                             | <b>10</b>                        | 10                                 |
| Optical Noise Amplitude (%RMS @ 20 Hz - 20 MHz) | <3                             |                             |                             | <b>&lt;3</b>                     | <3                                 |
| Spectral Linewidth (nm)                         | <0.2                           |                             |                             | <b>&lt;0.2</b>                   | <0.2                               |
| M <sup>2</sup>                                  | <2                             | <1.5                        | <1.2                        | <b>&lt;3</b>                     | <6                                 |
| Polarization Ratio                              | >100                           |                             |                             | <b>&gt;100</b>                   | >100                               |
| Beam Pointing Stability (mrad)                  | <0.05                          |                             |                             |                                  |                                    |
| Operating Temperature Range (°C)                | 10 to 35                       |                             |                             | <b>10 to 35</b>                  | 10 to 35                           |
| Total Power Consumption (W)                     | 25, 30, 70, 120                | 30                          | 22                          | <b>135</b>                       | 214, 230, 312                      |
| Max. Power Input Duty Cycle                     | 100%                           | 100%                        | 100%                        | <b>100%</b>                      | 100%                               |
| Standard Warranty (months)                      | 12                             | 12                          | 12                          | <b>12</b>                        | 12                                 |
| MTTF (operational hours)                        | 10000                          | 10000                       | 10000                       | <b>10000</b>                     | 10000                              |
| Weight of Product or Laser Head (kg)            | 1.6                            | 10.2                        | 1                           | <b>2.6</b>                       | 6.1                                |
| Beam Height from Base Plate (mm)                | 45                             | 113                         | 27.4                        | <b>68.2</b>                      | 93.5                               |
| Dimensions of Product or Laser Head (mm)        | 211.5 (l) x 88 (w) x 74 (h)    | 420 (l) x 142 (w) x 144 (h) | 142.5 (l) x 60 (w) x 50 (h) | <b>240 (l) x 99 (w) x 94 (h)</b> | 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.

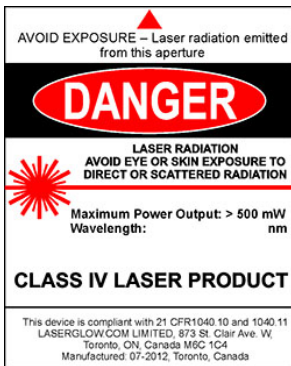
|                                                                                   | Power Supply Type:       | SF                          | SN                          | SW                          | SH                          |
|-----------------------------------------------------------------------------------|--------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|  | Input Power              | 85v to 264v                 | 85v to 264v                 | 85v to 264v                 | 85v to 264v                 |
|                                                                                   | Power Supply Weight (kg) | 2.3                         | 2.3                         | 5.1                         | 2.3                         |
|                                                                                   | Dimensions (mm)          | 238 (l) x 146 (w) x 102 (h) | 238 (l) x 146 (w) x 102 (h) | 307 (l) x 168 (w) x 123 (h) | 238 (l) x 146 (w) x 102 (h) |

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

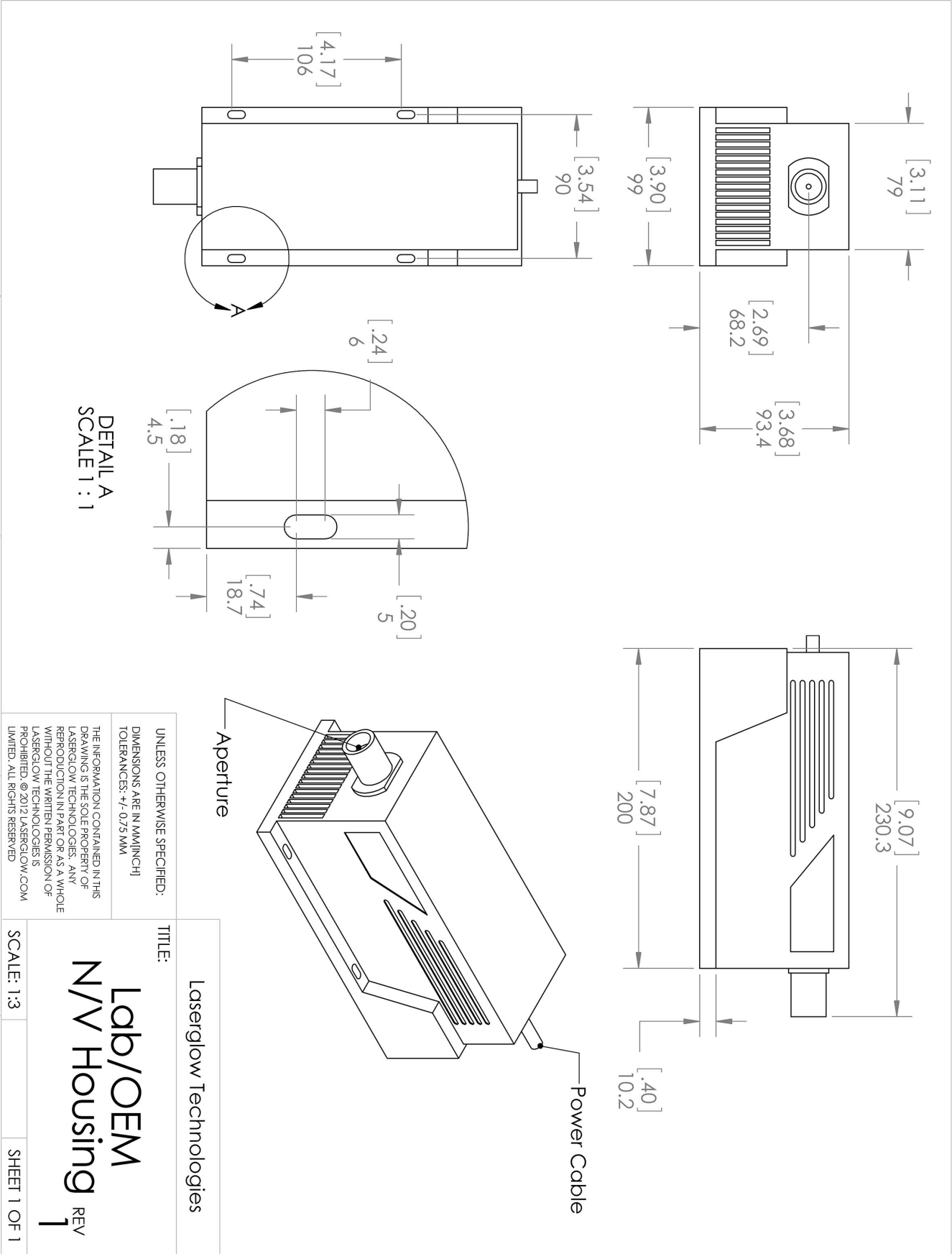
\*Dimensions for fiber-integrated (I\_) include laser head packaged inside.

## Regulatory Classification:

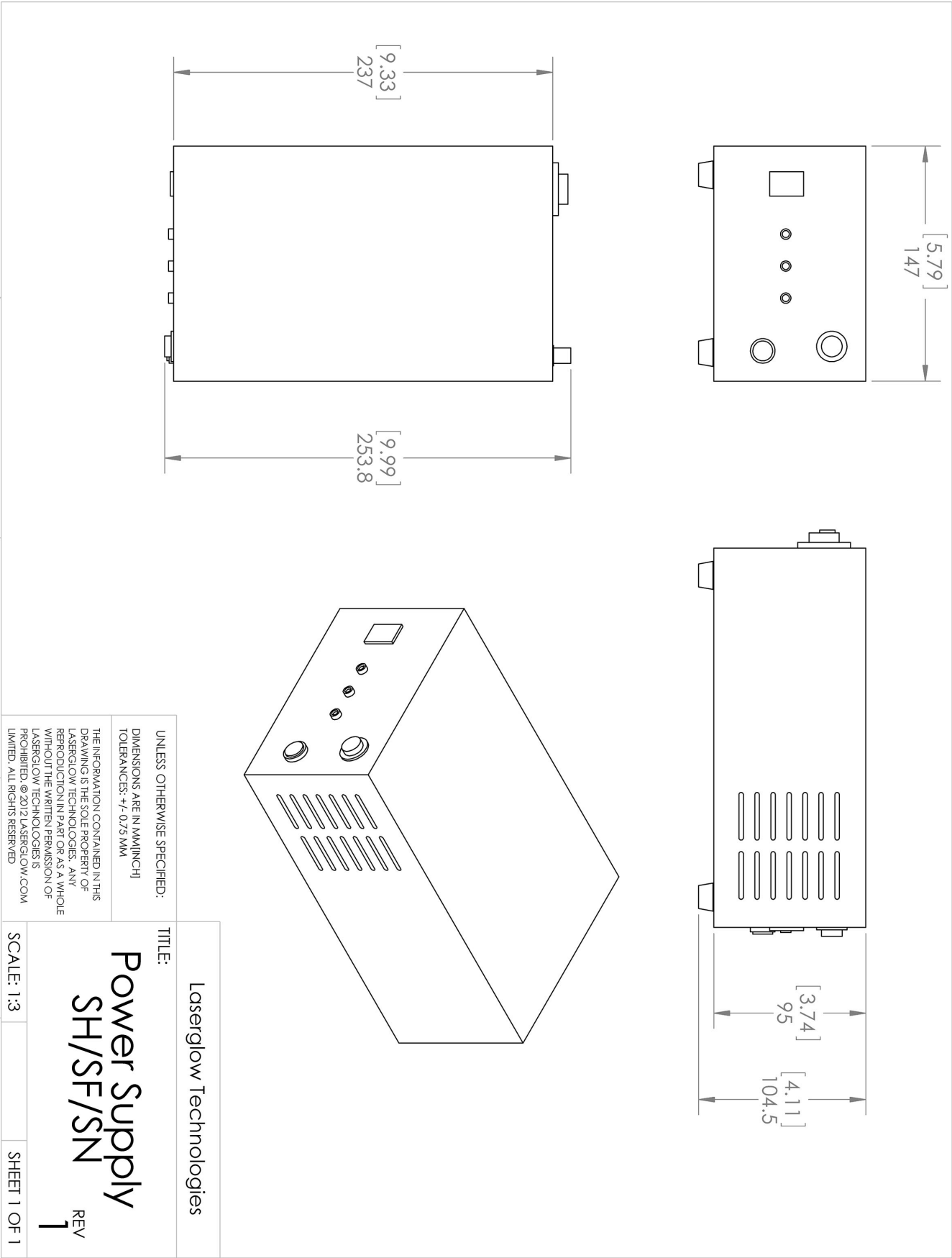
The model you have selected (L45-N) requires the following safety label(s):



Dimensional Drawing - Laser Form Factor: N:



Dimensional Drawing - Power Supply Form Factor: SN:



## Accessories:

The most popular accessories for model L45-N are shown below. For additional details regarding these or other accessories please see our website or contact us directly.

| Part Number                                                                                      | Description                                                                                                                                                                                                                |                     |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <br>AGF5327XX    | LSG-532-NF-7 Fit-Over Safety Goggles 532nm<br>Output: OD 7+ at 190-532 nm<br>CE Certified<br>Full Details: <a href="http://www.laserglow.com/AGF">www.laserglow.com/AGF</a>                                                |                     |
| <br>ACFVISHXA   | FC/PC Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm)<br>(installed and aligned)<br>11mm diameter input lens<br>Full Details: <a href="http://www.laserglow.com/ACF">www.laserglow.com/ACF</a>   |                     |
| <br>ACSVISHXA   | SMA-905 Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm)<br>(installed and aligned)<br>11mm diameter input lens<br>Full Details: <a href="http://www.laserglow.com/ACS">www.laserglow.com/ACS</a> |                     |
| <br>AFF2002XX   | Armored Fiber With FC/PC Connectors 200um Core Multimode 2m length<br>Full Details: <a href="http://www.laserglow.com/AFF">www.laserglow.com/AFF</a>                                                                       |                     |
| <br>AFS2002XX | Armored Fiber With SMA 905 Connectors 200um Core Multimode 2 m length<br>Full Details: <a href="http://www.laserglow.com/AFS">www.laserglow.com/AFS</a>                                                                    |                     |
| <br>TBK        | Complete optics kits with breadboard mounting hardware.<br>External modulators, variable attenuators, free-space fiber launch systems<br>Full Details: <a href="http://www.laserglow.com/TBK">www.laserglow.com/TBK</a>    |                     |
| <br>ACALBNWXX | Carrying Case-104<br>Holds Lab/OEM N or W size Standard/Labspec laser<br>Full Details: <a href="http://www.laserglow.com/ACA">www.laserglow.com/ACA</a>                                                                    | Included With Laser |

## FOR MORE INFORMATION PLEASE CONTACT:

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