

Arktis Laser Product Datasheet

LRD-0447 Collimated Diode Laser System



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 D44-R, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to D44-R have been highlighted below in **red + bold**.


| | | | | | | | |
|--|-----------------------------|---|-------------------------------|---------------------------|-----------------------------------|-----------------------------|-----------------------------|
| Output Power (mW) | <5, >10, >20, >30 | <5, >30, >100, >200, >500 | >30, >50, >80 | >1000 | >1500, >2000, >3000, >3500, >4000 | >2000, >3000 | >8000, >12000, >20000 |
| Output Power Stability (%RMS/4h) | <1, <3 | <1, <3, <10 | <1, <3 | <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 | <2x1.6 | <1 | <1.5 | <1.4x0.2 | <120x240 | <2x0.5 |
| Beam Dimensions (mm, 1/e ²) | 3.5 | 2.5x5 | 2.5 | 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 | 10000, 30000 | 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 | 9 | 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) |

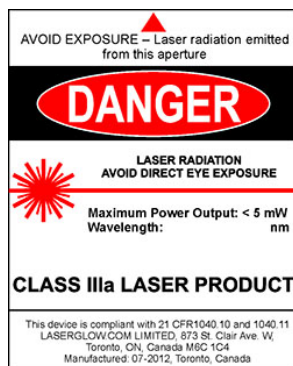
| | Power Supply Type: | II |
|---|--------------------------|-----------------------|
| Fiber-Integrated LabSpec  | Input Power | 85v to 264v |
| | Power Supply Weight (kg) | 0 |
| | Dimensions (mm) | 0 (l) x 0 (w) x 0 (h) |

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

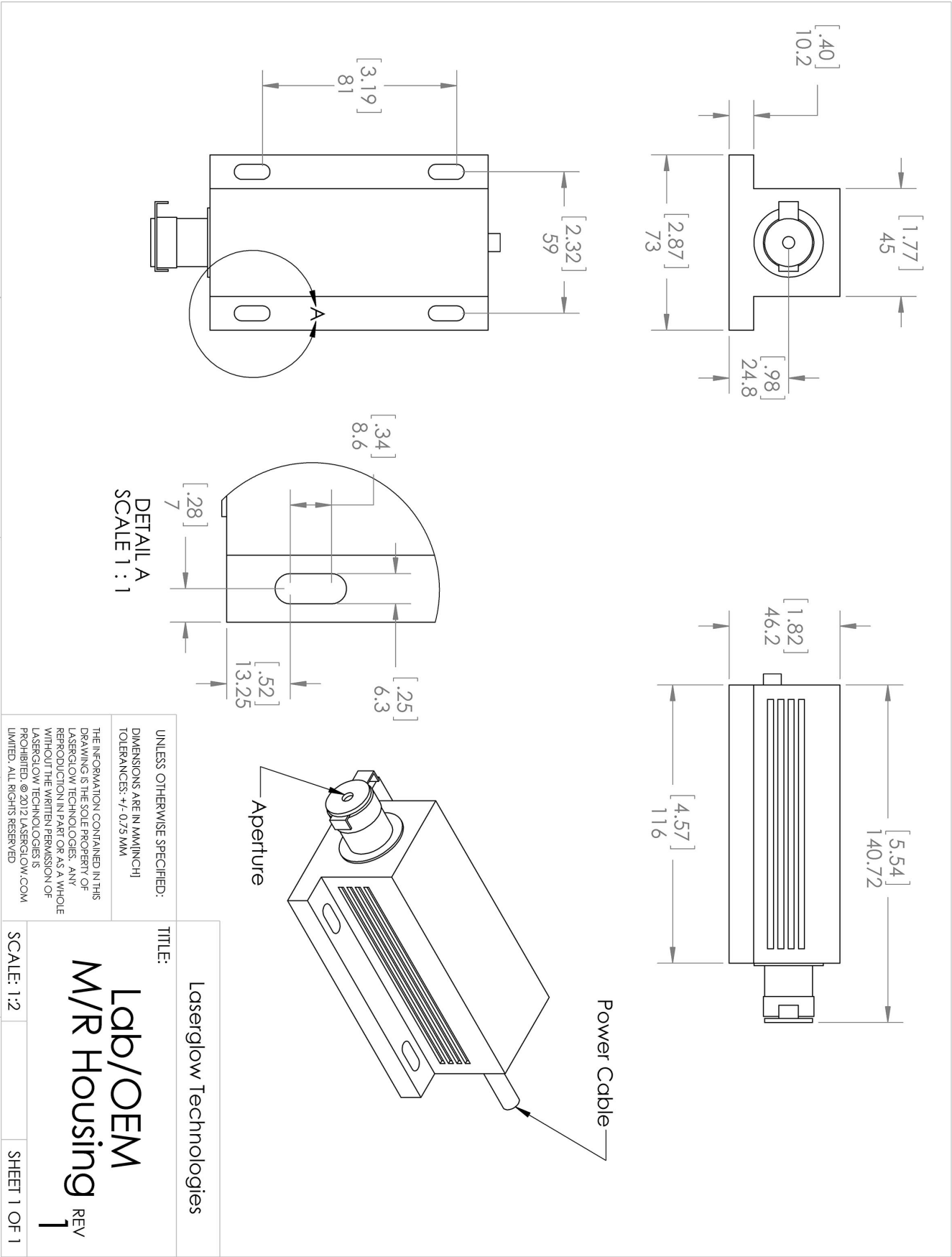
*Dimensions for fiber-integrated (I_) include laser head packaged inside.

Regulatory Classification:

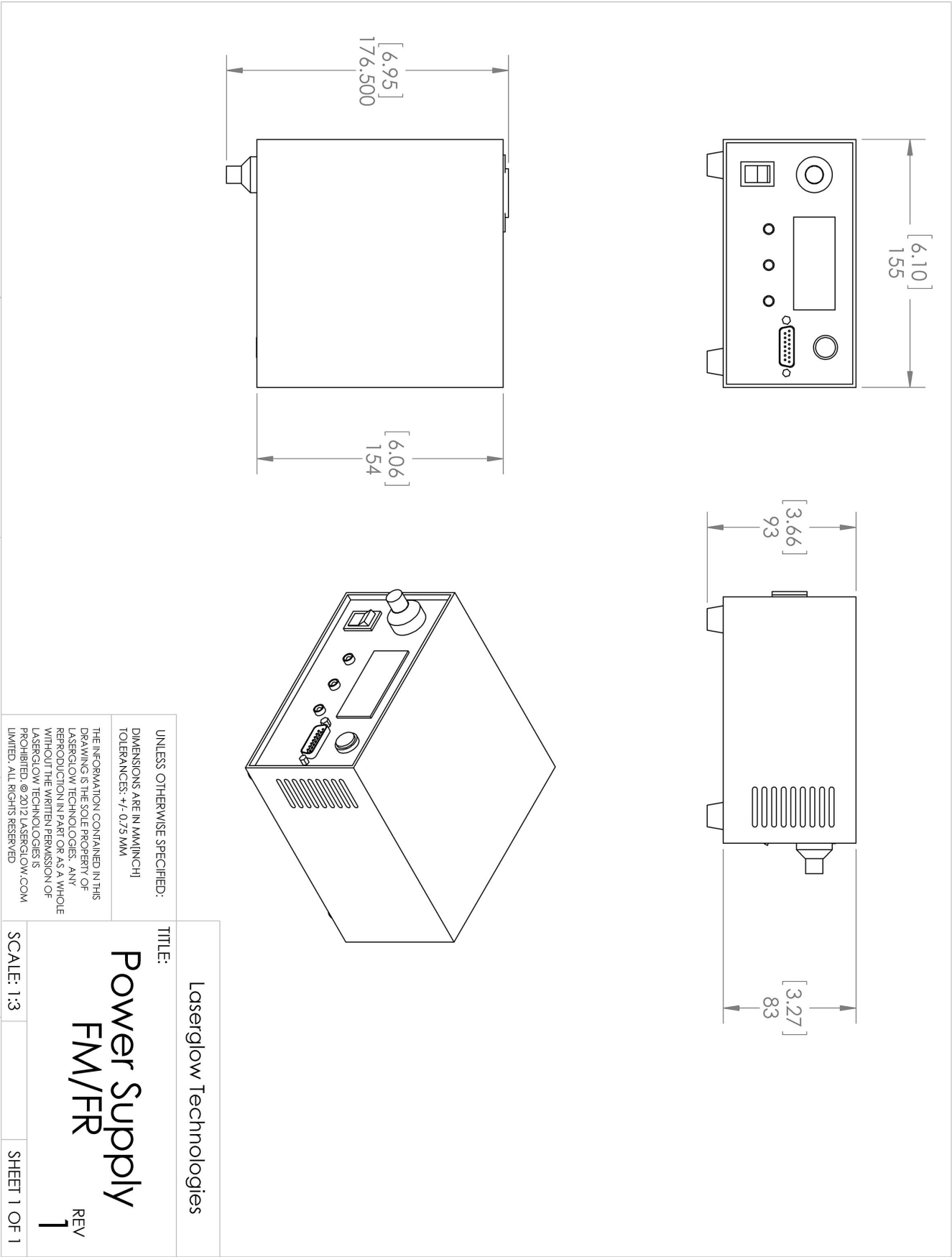
The model you have selected (D44-R) requires the following safety label(s):



Dimensional Drawing - Laser Form Factor: R:









Dimensional Drawing - Power Supply Form Factor: FR:



Accessories:

The most popular accessories for model D44-R 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 Output: OD 7+ at 190-532 nm CE Certified Full Details: www.arktislaser.com/AGF | |
|  ACFVISHXA | FC/PC Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm) (installed and aligned) 11mm diameter input lens Full Details: www.arktislaser.com/ACF | |
|  ACSVISHXA | SMA-905 Fiber Coupler/Collimator for visible spectrum wavelengths (400 to 700 nm) (installed and aligned) 11mm diameter input lens Full Details: www.arktislaser.com/ACS | |
|  ACALBMXXX | Carrying Case-102 Holds Lab/OEM M, R and S size, standard or LabSpec laser Full Details: www.arktislaser.com/ACA | Included With Laser |
|  AFS2002XX | Armored Fiber With SMA 905 Connectors 200um Core Multimode 2 m length Full Details: www.arktislaser.com/AFS | |
|  AFF2002XX | Armored Fiber With FC/PC Connectors 200um Core Multimode 2m length Full Details: www.arktislaser.com/AFF | |

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.