

# Air-Cooled Argon Ion Laser Heads in Cylindrical and Rectangular Packages

## 2218/19 Series

**Key Features**

- Integral-mirror, metal-ceramic construction
- Hands-off operation
- Ultralow noise
- Fast warm-up
- Rugged construction
- Vibration isolation
- Ultrastable resonator and beam pointing

**Applications**

- DNA sequencing
- Flow cytometry
- Confocal microscopy
- Semiconductor inspection
- Hematology
- High speed printing
- Photo processing

**Compliance**

- CE per specification EN55011 and EN50082-2
- UL 1950 and 1262
- CDRH 21 CFR 1040.10
- EN60825-2
- EN60950, IEC 950, and EN61010

JDSU's air-cooled argon lasers are designed for complex, high-resolution OEM applications such as flow cytometry, DNA sequencing, graphic arts, and semiconductor inspection. They are available in two packages:

**Cylindrical Package**

Symmetric design and axial airflow in the cylindrical argon ion laser heads provide the best mechanical package to ensure optimum beam-pointing stability and fast warm-up. Both initial installation and routine maintenance are straightforward due to tight production control of optical and mechanical tolerances. Blower-induced mechanical vibration is virtually eliminated through the use of flexible ducting between the laser head and blower assembly.

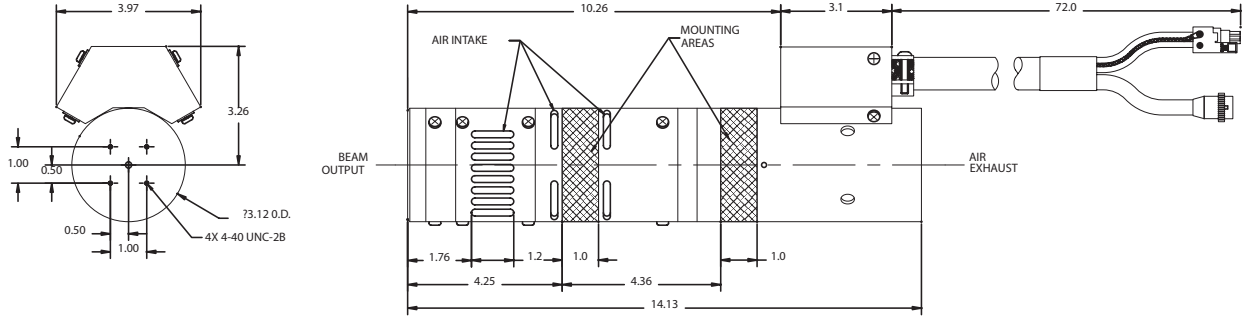
**Rectangular Package**

Industry-standard rectangular packaging and a variety of wavelength options ensure easy initial installation and field replacement for most applications. As with JDSU cylindrical laser heads, rectangular models incorporate axial airflow for exceptional beam pointing stability and fast warm-up. A top-mounted fan assembly simplifies installation. 2219 series laser packages offer a unique replaceable tube cartridge assembly that allows for five-minute laser tube changes in the field. Precise pre-alignment of tube cartridges reduces the need for end-user system realignment after tube replacement.

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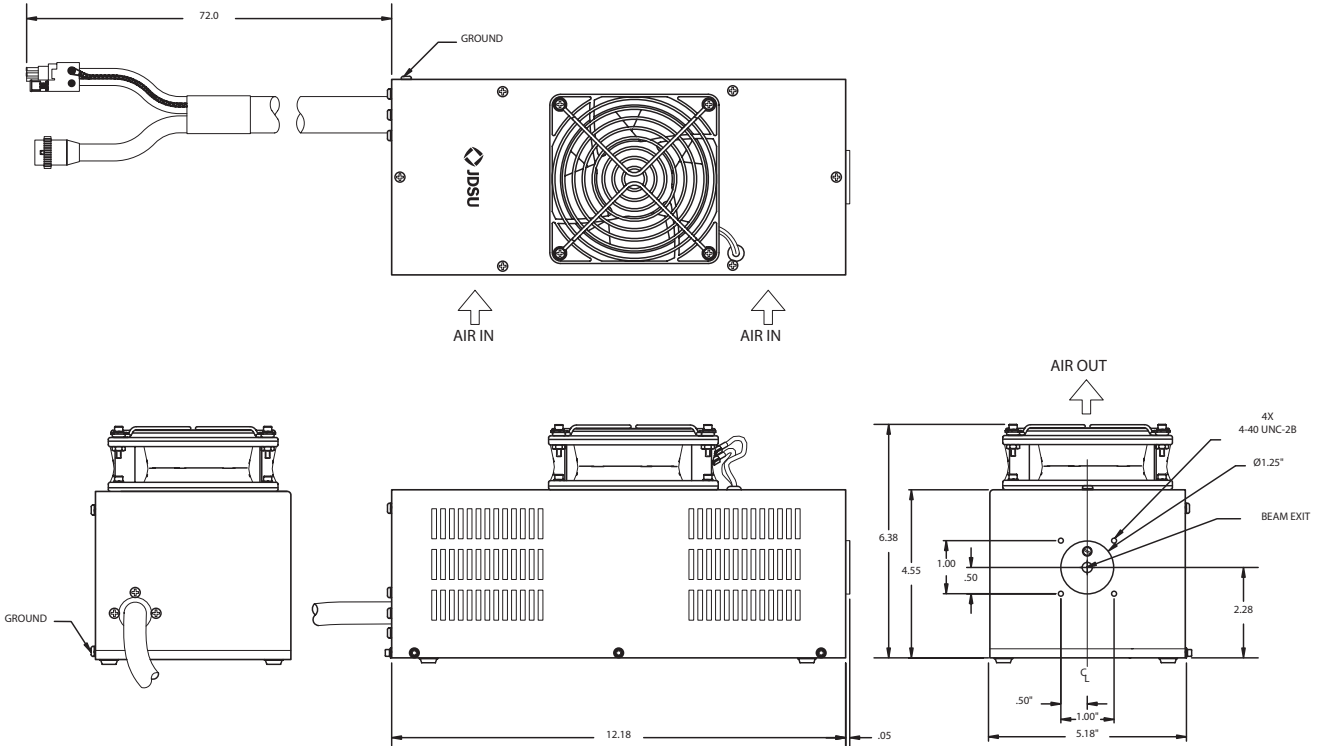
**2218 Series Cylindrical Head**

(Specifications in inches unless otherwise noted. E-vector is vertical with respect to laser housing. Refer to mechanical drawing for details.)



**2219 Series Rectangular Head**

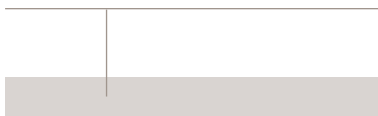
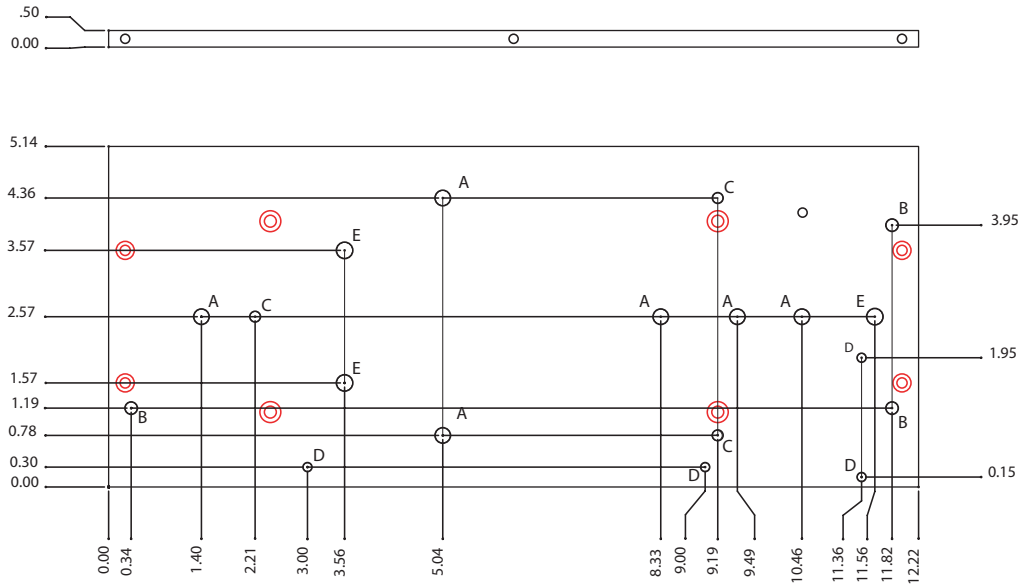
(Specifications in inches unless otherwise noted. E-vector is vertical with respect to laser housing. Refer to mechanical drawing for details.)



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2219 Series Base Plate

(Specifications in inches unless otherwise noted.)



| Hole | Description   |
|------|---------------|
| A    | M6            |
| B    | 10-32 UNC-2B  |
| C    | 8-32 UNC-2B   |
| D    | 6-32 UNC-2B   |
| E    | 1/4-20 UNC-2B |

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## Specifications

| Parameter  | 2218-0xxMLS/2219-0xxMLS | 2218-0xxSLS/2219-0xxSLS |
|--|-------------------------|-------------------------|
| <b>Optical</b>   |                         |                         |
| Output power (TEM <sub>00</sub> )                        | 25 mW                   | 10/20/30 mW             |
| Wavelength   | 458 to 514 nm           | 488 nm                  |
| Mode purity (TEM <sub>00</sub> )                         | >95%                    | >95%                    |
| Beam diameter (1/e <sup>2</sup> ±5%)                     | 0.70                    | 0.69                    |
| Beam divergence (mrad ±5%)                               | 0.90                    | 0.95                    |
| Minimum polarization ratio                               |                         | 250:1                   |
| Longitudinal mode spacing (TEM <sub>00</sub> only)       |                         | 566                     |
| Noise  |                         |                         |
| p-p, 20 Hz to 2 kHz                                      |                         | ≤0.1%                   |
| p-p, 20 Hz to 20 kHz                                     |                         | ≤1.0%                   |
| rms, 20 Hz 2 MHz   |                         | ≤1.0%                   |
| Maximum drift (light control mode over 2 hours)          |                         | ≤1.0%                   |
| Maximum warm-up time                                     |                         | 5 minutes               |
| Beam pointing stability after warm-up (2 hours, 25±3 °C) |                         | <30 μRad                |
| CDRH class   |                         | 3a                      |
| Static alignment   |                         |                         |
| Beam position  |                         | ±0.25 mm                |
| Beam angle   |                         | ±2.5 mrad               |
| <b>Environmental</b>                                     |                         |                         |
| Temperature  |                         |                         |
| Operating  |                         | 4 to 40 °C              |
| Non-operating  |                         | 30 to 60 °C             |
| Altitude   |                         |                         |
| Operating  |                         | 0 to 10,000 feet        |
| Non-operating  |                         | 0 to 70,000 feet        |
| Relative humidity (non-condensing)                       |                         |                         |
| Operating  |                         | 0 to 90%                |
| Non-operating  |                         | 0 to 100%               |
| Shock  |                         |                         |
| Operating  |                         | 25 g for 11 ms          |
| Non-operating  |                         | 25 g for 11 ms          |
| <b>Physical</b>  |                         |                         |
| Weight   |                         | 14 lbs.                 |
| Umbilical length   |                         | 72±2 inches             |

Note: Nominal airflow is 52 CFM. Use Dayton model 4C442 or equivalent fan rated for 140 CFM free air and typical pressure head of 0.95 inches of water.

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### Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at [customer.service@jdsu.com](mailto:customer.service@jdsu.com).

### Sample: 2218-010SLS

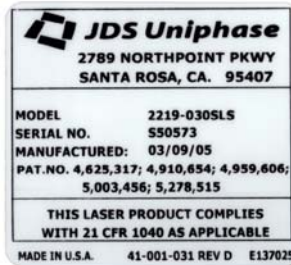
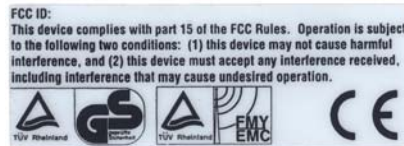
| Product Code | Description   |
|--------------|---|
| 2218-010MLS  | Argon laser head cylindrical package, 10 mW output power, multi line operation at 458 to 514 nm, single mode  |
| 2218-010SLS  | Argon laser head cylindrical package, 10 mW output power, single line operation at 488 nm, single mode        |
| 2218-020MLS  | Argon laser head cylindrical package, 20 mW output power, multi line operation at 458 to 514 nm, single mode  |
| 2218-020SLS  | Argon laser head cylindrical package, 20 mW output power, single line operation at 488 nm, single mode        |
| 2218-030MLS  | Argon laser head cylindrical package, 30 mW output power, multi line operation at 458 to 514 nm, single mode  |
| 2218-030SLS  | Argon laser head cylindrical package, 30 mW output power, single line operation at 488 nm, single mode        |
| 2219-010MLS  | Argon laser head, rectangular package, 10 mW output power, multi line operation at 458 to 514 nm, single mode |
| 2219-010SLS  | Argon laser head, rectangular package, 10 mW output power, single line operation at 488 nm, single mode       |
| 2219-020MLS  | Argon laser head, rectangular package, 20 mW output power, multi line operation at 458 to 514 nm, single mode |
| 2219-020SLS  | Argon laser head, rectangular package, 20 mW output power, single line operation at 488 nm, single mode       |
| 2219-030MLS  | Argon laser head, rectangular package, 30 mW output power, multi line operation at 458 to 514 nm, single mode |
| 2219-030SLS  | Argon laser head, rectangular package, 30 mW output power, single line operation at 488 nm, single mode       |

### Warranty

The 2218/19 laser heads are warranted to be free from defects in materials and workmanship for 8,000 hours of operation at or below specified power, or for 24 months from the date of shipment, whichever occurs first. All other components of the laser and power supply are warranted to be free from defects and workmanship for 12 months from the date of shipment.

**Regulatory Compliance**

The products listed in this datasheet comply with one or more of the following regulatory standards, and may display one or more of the safety labels shown below. Contact your local JDSU sales representative for additional information on specific products or configurations.



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