

## Helium-Neon Laser Heads

### 1100 Series



- Key Features**
- Long operating life
  - Low noise
  - Exceptional beam-pointing stability
  - Long-term amplitude stability

#### Applications

- Flow cytometry
- Metrology
- Semiconductor inspection
- Alignment
- Laser-induced fluorescence
- Hematology
- High-speed printing

#### Compliance

- CDRH 1040.10
- CE

The JDS Uniphase 1100 Series red helium-neon laser products offer low noise, high power stability, and long life for the most demanding applications. With more than 1.5 million units sold, JDS Uniphase lasers are the industry standard for many advanced system designs.

JDS Uniphase manufactures helium-neon lasers in the red, green, yellow, and orange wavelengths. All feature our patented close-cathode design that rapidly and uniformly distributes discharge heat throughout the laser, resulting in excellent thermal, beam-pointing, and power stability. Our patented field concentrator design ignites the discharge within milliseconds of applying the start voltage. Hard-sealed internal mirrors, small physical size, and low noise result in greater reliability, longer life, and enhanced performance.

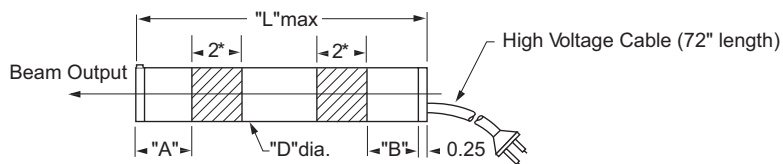
All JDS Uniphase helium-neon lasers are manufactured in a dedicated facility using state-of-the-art process control technology. This enables us to achieve higher process yields, and results in dependable lead times and excellent on-time delivery performance.



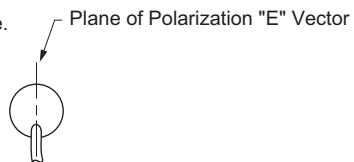
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**1100 Series Laser Heads**

(Specifications in inches unless otherwise noted.)



Accessory Housing Holes:  
 M-3 on 1.38" (34.9 mm) bolt circle.  
 (1.740" diameter head only)





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#### Specifications

Parameter	1101/P	1103/P	1107/P	1108/P	1122/P	1125/P	1135/P	1137/P	1144/P	1145/P	Unit
<b>Optical</b>											
Min. output power (TEM <sub>00</sub> )	1.5	2.0	0.8	0.5	2.0	5.0	10.0	7.0	15.0	22.5/21.0	mW
Wavelength	632.8	632.8	632.8	632.8	632.8	632.8	632.8	632.8	632.8	632.8	nm
Mode purity (TEM <sub>00</sub> )	>95	>95	>95	>95	>95	>95	>95	>95	>95	>95	%
Beam diameter (1/e <sup>2</sup> points, ±3%, TEM <sub>00</sub> )	0.63	0.63	0.48	0.48	0.63	0.81	0.68	0.81	0.70	0.70	mm
Beam divergence (TEM <sub>00</sub> , ±3%, mrad- full angle)	1.3	1.3	1.7	1.8	1.3	1.0	1.2	1.0	1.15	1.15	mrad
Polarization ratio (minimum, P versions)	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	N/A /500:1	-
Longitudinal mode spacing (nominal)	730	730	1090	1090	730	435	320	435	257	257	MHz
Maximum noise (rms, 30 Hz to 10 MHz)	0.1	0.1	0.1	0.1	0.1	0.2	1.0	0.2	0.5	0.5	%
Max. drift (mean power measured over 8 hours)	±2.5	±2.5	±2.5	±2.5	±2.5	±2.5	±3.0	±2.5	±2.0	±2.0	%
Max. mode sweeping contribution	3	3	10	20	3	2	2	2	1	1	%
Max. warm-up time (minutes to 95% power)	10	10	10	10	10	10	15	10	20	20	min.
Beam pointing stability (from cold start, 25 °C)	N/A	N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	mrad
Beam pointing stability (after 15 minutes warm-up)	N/A	N/A	N/A	N/A	<0.10	<0.10	<0.02	<0.02	<0.03	<0.03	mrad
Operating voltage (V DC ±100)	1700	1700	1250	1250	1800	2300	3100	2300	3800	3800	V DC
Operating current (±0.1 mA)	4.9	4.9	4.0	4.0	6.5	6.0	6.5	6.0	6.5	6.5	mA
<b>Dimensions</b>											
L-overall length	9.50	9.50	7.00	7.00	10.71	15.79	19.13	15.79	25.00	25.00	inches
D-mounting diameter (±0.005 inches)	1.245	1.245	1.245	1.245	1.740	1.740	1.740	1.740	1.740	1.740	inches
B-distance: cable end to mounting surface	1.00	1.00	0.75	0.75	1.50	3.00	4.00	3.00	5.00	5.00	inches
A-distance: output end to mounting surface	0.75	0.75	0.50	0.50	1.50	3.00	4.00	3.00	5.00	5.00	inches
CDRH class (head & 1200 Series power supply)	IIIa	IIIa	IIIa	II	IIIa	IIIb	IIIb	IIIb	IIIb	IIIb	-



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**Specifications**
**Continued**

Parameter	1101/P	1103/P	1107/P	1108/P	1122/P	1125/P	1135/P	1137/P	1144/P	1145/P
<b>General</b>										
Maximum starting voltage					10 kV DC					
Mode purity					>95%					
Storage lifetime					Indefinite (hard-sealed)					
Static alignment	Center to outer cylinder within $\pm 0.01$ inch. Parallel to outer cylinder within $\pm 1$ mR.									
<b>Environmental</b>										
Temperature	-40 to 70 °C (operating), -40 to 150 °C (non-operating)									
Atitude	0 to 10,000 feet (operating), 0 to 70,000 feet (non-operating)									
Relative humidity (no condensation)					0 to 100%					
Shock					25 g for 11 ms, 100 g for 1 ms					
<b>Physical</b>										
Shipping weight	5 lb. (1100 Series heads); 10 lb. (1100 Series head and 1200 Series power supply)									

**Ordering Information**

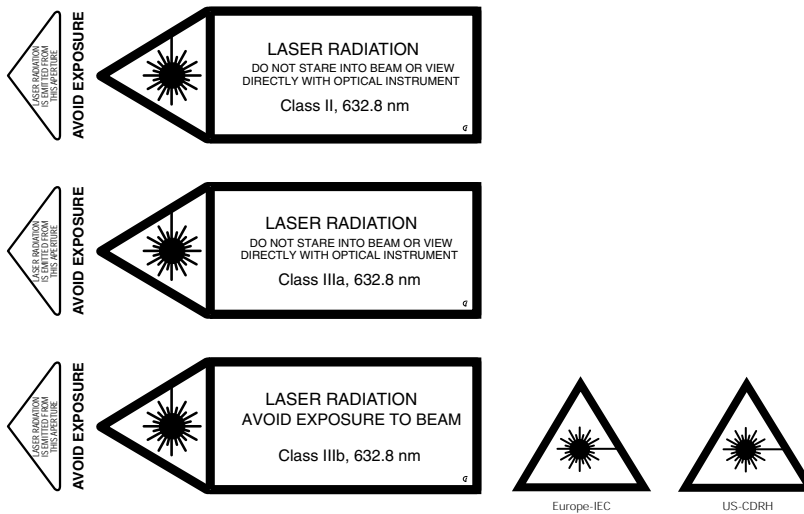
For more information on this or other products and their availability, please contact your local JDS Uniphase account manager or JDS Uniphase directly at 1-800-254-3684 in North America and +800-5378-JDSU worldwide or via e-mail at [sales@jdsu.com](mailto:sales@jdsu.com).

**Sample: 1122P**

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## Warranty

JDS Uniphase helium-neon laser systems are warranted to be free of defects in workmanship and materials for twelve months from the date of shipment.



## Regulatory Compliance

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



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