

Product Bulletin



The JDS Uniphase 098 and 1000 Series red helium-neon laser products offer low noise, high power stability, and long life for the most demanding applications. With millions of 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.

Helium-Neon Laser Tubes 098 and 1000 Series

Key Features

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

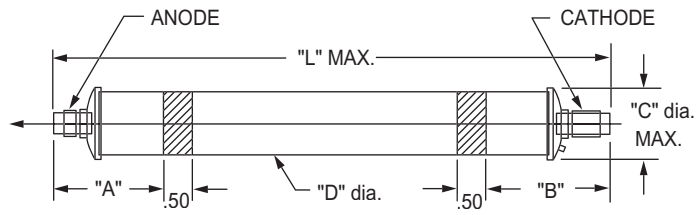
Applications

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

Compliance

- CDRH 1040.10
- CE

098 and 1000 Series Dimension Diagram (Specifications in inches unless otherwise noted.)



The beam exits from the anode mirror on all tubes, except the 1018, 098-2 and 098-3.

Specifications

Parameter	1008/P	1007/P	098-0	1001/P	098-2	098-3	1003/P	1022/P	1018	1025/P	1037/P
Optical											
Output power (Min.; TEM ₀₀ , 633 nm, mW)	0.5	0.8	1.0	1.5	2.0	2.0	2.0	2.0	2.5	5.0	7.0
Beam diameter (1/e ² points, ±3%, TEM ₀₀ , mm)	0.48	0.48	0.75	0.63	0.49	0.49	0.63	0.63	0.55	0.81	0.81
Beam divergence (TEM ₀₀ , ±3%, mrad)	1.7	1.7	2.7	1.3	1.6	1.6	1.3	1.3	1.5	1.0	1.0
Polarization ratio (Min.; P versions only)	NA/500:1	NA/500:1	NA	NA/500:1	NA	NA	NA/500:1	NA/500:1	NA	NA/500:1	NA/500:1
Longitudinal mode spacing (Nom.; MHz)	1090	1090	640	730	647	647	730	730	822	435	435
Noise (Max. rms; 30 Hz - 10 MHz, %)	0.1	0.1	0.5	0.1	0.5	0.5	0.1	0.1	0.1	0.2	0.2
Drift (Max.; mean power measured over 8 hours, %)	±5.0	±5.0	±5.0	±2.5	±5.0	±5.0	±2.5	±2.5	±2.5	±2.5	±2.5
Mode sweeping contribution (Max.; %)	20	10	10	5	10	10	3	3	8	2	2
Warm-up time (Max.; minutes to 95% power)	10	10	15	10	15	15	10	10	10	10	10
Operating voltage (Vdc ±100)	1000	1000	1000	1400	1200	1200	1400	1300	1400	1850	1950
Operating current (±0.1 mA, mA)	4.0	4.0	3.7	4.9	3.7	4.5	4.9	6.5	4.5	6.0	6.0
Starting voltage (Max.; kVdc)	7	7	10	10	10	10	10	10	7	10	10
Dimensions											
L - Overall length (inches)	5.85	5.85	9.57	8.50	9.57	9.57	8.50	8.50	7.50	13.90	13.90
D - Mounting diameter (±0.005 inches)	0.930	0.930	0.950	0.930	0.950	0.950	0.930	1.470	0.930	1.470	1.470
C - Overall diameter (inches)	1.00	1.00	1.04	1.00	1.04	1.04	1.00	1.51	1.00	1.51	1.51
B - Distance: cable end to mounting surface (inches)	1.60	1.60	1.00	2.00	1.00	1.00	2.00	1.50	2.00	2.90	2.90
A - Distance: output end to mounting surface (inches)	1.40	1.40	1.00	1.80	1.00	1.00	1.80	1.50	2.00	3.00	3.00
General (common to all models)											
Mode purity	>95%										
Storage lifetime	indefinite (hard-sealed)										
Static alignment	centered to mirror hub within 0.01 inch, parallel to mirror hub within 6 μrad										
Minimum required anode series resistance	60 KΩ ¹										
Environmental											
Temperature	-40 to 70 °C (operating), -40 to 150 °C (non-operating)										
Altitude	0 to 10,000 feet (operating), 0 to 70,000 feet (non-operating)										
Relative humidity (non-condensing)	0 to 100%										
Shock	25 g for 11 ms, 100 g for 1 ms (non-operating)										

1. Optimum value varies, dependent upon supply design.

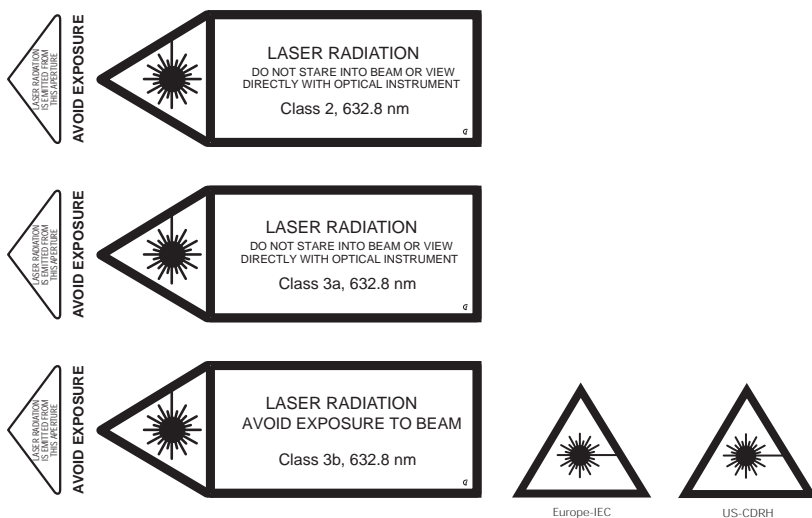
Ordering Information

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.

Sample: 1008P

Warranty

JDS Uniphase helium-neon laser systems are warranted to be free of defects in workmanship and materials for 12 months from the date of shipment.



Compliance to Regulatory Agencies

The products listed in this bulletin may comply to one or more of the following regulatory standards, and 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. The 098 and 1000 Series laser tubes described herein have not been certified with CDRH and are to be used only as components. The customer is responsible for CDRH certification of all systems sold with these products.



North America toll-free: 1-800-254-3684
Worldwide toll-free: +800-5378-JDSU
www.jdsu.com

All statements, technical information and recommendations related to the products herein are based upon information believed to be reliable or accurate. However, the accuracy or completeness thereof is not guaranteed, and no responsibility is assumed for any inaccuracies. The user assumes all risks and liability whatsoever in connection with the use of a product or its application. JDS Uniphase reserves the right to change at any time without notice the design, specifications, function, fit or form of its products described herein, including withdrawal at any time of a product offered for sale herein. JDS Uniphase makes no representations that the products herein are free from any intellectual property claims of others. Please contact JDS Uniphase for more information. JDS Uniphase and the JDS Uniphase logo are trademarks of JDS Uniphase Corporation. Other trademarks are the property of their respective holders. Copyright JDS Uniphase Corporation. All rights reserved.