

Helium-Neon (HeNe) Lasers

RED 633 NM



Dimensions and shapes vary depending on models

Helium-Neon Laser Advantages

- Wide selection of power levels ranging 0.5 – 35 mW
- Optimized cavity mirror performance and quality
- Excellent power and thermal stability due to robust tube design
- Low beam pointing drift (after 20 minute warm-up)
- Power supply included

APPLICATIONS

- Laser alignment
- Metrology
- Particle measurement
- Velocimetry
- Flow Cytometry
- Confocal microscopy

Newport offers a complete line of Helium-Neon (HeNe) Laser products, at the wavelengths of 543 nm, 632.8 nm, 1.15 μm , 1.52 μm , and 3.39 μm , that combine both high performance and affordability. The red HeNe laser product family offers TEM₀₀ mode at 633 nm. All are available in either linear or random polarization. With an emphasis on satisfying a variety of applications and budgetary needs, we offer a variety of power levels ranging from 0.5 mW to 35 mW. 35 mW HeNe laser is one of the most powerful commercial HeNe lasers available. This product family offers some of the highest power levels available in production HeNe lasers. Utilizing enhanced designs and superior optical components these lasers deliver unsurpassed operational stability and lifetimes. The mirror quality and performances are optimized to result in the highest quality HeNe lasers available in the market. These high-performance lasers are supported by a one-year warranty and are available off-the-shelf.

Polarization

We have models whose outputs are either polarized or randomly polarized. Due to the random fluctuation of the polarization state of the beam, it is not recommended to use a polarizer with a random polarization laser for applications where polarized light is required.

HeNe Lasers at Different Output Wavelengths

Newport also offers Helium-Neon lasers stabilized or with other wavelengths: green 543 nm, IR 1.15 μm , 1.52 μm , and 3.39 μm .

Mounts (Sold separately)

Laser Mounts provide convenient mounting of cylindrical lasers to positioners, rods, and tables.



HeNe lasers with a cylindrical head and a power supply



Helium-Neon (HeNe) Lasers

Specifications

Red HeNe—633 nm							
Model	R-31004	R-31007	R-31008	R-31005	R-30025	R-30988	R-30989
Min Output Power	0.5 mW	0.8 mW	0.8 mW	1.5 mW		2.0 mW	
Spatial Mode				00			
Polarization	500:1		Random		500:1	Random	500:1
Beam Diameter, Max @ 1/e ² (mm)	0.57				0.64	0.81	0.81
Beam Divergence Full Angle (mrad)	1.41				1.25	1.0	
Longitudinal Mode (MHz)	1102		1082		714	566	
Noise (%)	1.0				5	1.0	
Beam Drift, Long Term (mrad)			<0.05		<0.2	<0.05	
Laser Head Size [in. (mm)]	7.0 x 2.2 x 2.5 (177.8 x 55.9 x 63.5)		7.00 L x 1.75 D (177.8 x 44.5)		9.50 L x 1.75 D (241.3 x 44.5)		13.00 L x 1.75 D (330.2 x 44.5)
Power Supply Size (WxHxD) [in. (mm)]	Self-Contained (N.A.)			4.125 x 1.5 x 6.5 (104.8 x 38.1 x 165.1)			
Suggested Laser Mount	U-BMP-N			ULM or ULM-TILT			
Power Requirements	115 VAC, 50/60 Hz			120/240 VAC, 50/60 Hz			
CDRH Class	II	II	II	IIIa	IIIa	IIIa	

Red HeNe—633 nm							
Model	R-30990	R-30991	R-30992	R-30993	R-30995	R-31425	R-32413
Min Output Power	5.0 mW		12.0 mW		17.0 mW	35.0 mW	
Spatial Mode				00			
Polarization	Random	500:1	Random		500:1		
Beam Diameter (1/e ²) (mm)	0.80	0.88				0.98	
Beam Divergence Full Angle (mrad)	1.01	0.92		0.82		0.66	
Longitudinal Mode (MHz)	441	316		252		163	
Noise (%)				1.0			
Beam Drift, Long Term (mrad)				<0.05			
Laser Head Size [in. (mm)]	16.75 L x 1.75 D (425.5 x 44.5)		21.00 L x 1.75 D (533.4 x 44.5)		26.00 L x 1.75 D (660.4 x 44.5)		3.75 x 3.75 x 40.16 (95.3 x 95.3 x 1020)
Power Supply Size (WxHxD) [in. (mm)]				4.125 x 1.5 x 6.5			
Suggested Laser Mount				ULM or ULM-TILT			
Power Requirements				120/240 VAC, 50/60 Hz		115 VAC, 50/60 Hz 230 VAC, 50/60 Hz	
CDRH Class				IIIb			



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