



5-COLOR TUNABLE HELIUM-NEON LASER SYSTEM

Research Electro-Optics, Inc. (REO) has been a leader in the field of high performance and high reliability Helium-Neon lasers for over twenty years. The vast majority of our laser tubes manufactured over the years have been incorporated into medical, scientific and critical manufacturing instruments. This experience, combined with our on-staff technical expertise and flexible manufacturing structure, makes REO uniquely suited to supplying Helium-Neon lasers for performance critical applications.

REO's primary strength in the Helium-Neon laser market is our in-house optical fabrication and coating capability. It is widely acknowledged that mirror performance is one of the most critical factors in maintaining consistently long laser life. Manufacturing these components in-house is the best way to develop insight into the technical factors affecting mirror performance and to ensure consistent mirror quality. Our technical insight into optimizing mirror performance provides our laser products with competitive advantages in terms of output power and laser lifetimes. Utilizing enhanced designs and superior components, these lasers deliver unsurpassed operational stability and longer laser lifetimes.

REO's historical emphasis has been on meeting the needs of the OEM customer. Our long history with laser manufacturing, our in-house control of critical components, and our advanced quality system endow REO with all of the desired attributes of a critical OEM vendor. REO's focus on the high performance segment of the Helium-Neon market has enabled us to maintain a flexible, performance-oriented manufacturing structure that can be easily adapted to meet custom requirements when an OEM application demands it.

REO reinforces our quality statement by offering a one-year warranty on all Helium-Neon lasers.



Features:

- Longer Lifetimes
- Higher Output Powers
- Power Stability
- Thermal Stability
- Beam Pointing Stability

Applications:

- Wavelength References
- Calibration
- Basic Research
- General-Purpose Instrumentation

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| Wave-length | Mode Structure | Minimum Output Power (mW) | Beam Diameter (mm) | Beam Divergence (mrad) | Polarization Ratio | Longitudinal Mode Spacing (MHz) | CDRH Class |
|-------------|-------------------|---------------------------|--------------------|------------------------|--------------------|---------------------------------|------------|
| 633 | TEM ₀₀ | 4.0 | 0.77 | 1.05 | 500:1 | 428 | IIIb |
| 612 | TEM ₀₀ | 2.5 | 0.76 | 1.03 | 500:1 | 428 | IIIb |
| 604 | TEM ₀₀ | 0.5 | 0.75 | 1.02 | 500:1 | 428 | IIIb |
| 594 | TEM ₀₀ | 0.6 | 0.74 | 1.02 | 500:1 | 428 | IIIb |
| 543 | TEM ₀₀ | 0.3 | 0.71 | 0.97 | 500:1 | 428 | IIIb |

REO's model LSTP-1010 is the only commercially available multiline Helium-Neon laser that offers wavelength selectable operation. This laser operates on all of the main visible neon laser transitions (543nm, 594nm, 604nm, 612nm, and 633nm), a feature that makes it a versatile and economical research tool.

The LSTP-1010 incorporates a low loss plasma tube with one sealed Brewster Window and an external Littrow prism. By adjusting the angle of the Littrow prism with micrometer adjustments on the rear panel, the user can select among the visible neon laser transitions. A power supply is housed internally in the laser, making the unit completely self-contained.

The LSTP-1010 is ideal for applications in providing wavelength references for calibration of tunable laser systems and as a general-purpose visible tunable light source for optical testing applications.

| | Operating | Non-Operating |
|------------------------------------|------------------|---------------|
| TEMPERATURE (C°) | -20° TO +70° | -40° TO +80° |
| ALTITUDE (meters) | 0 TO 3,000 | 0 TO 6,000 |
| HUMIDITY | ≤ 80% | ≤ 95% |
| SHOCK | 15 g for 11 msec | |
| STARTING VOLTAGE | < 10 kVDC | |
| BEAM DRIFT AFTER 20 MINUTE WARM UP | < 0.2 mrad | |
| LONG TERM BEAM DRIFT | < 0.05 mrad | |
| NOISE (30Hz - 10MHz) | < 1% rms | |

