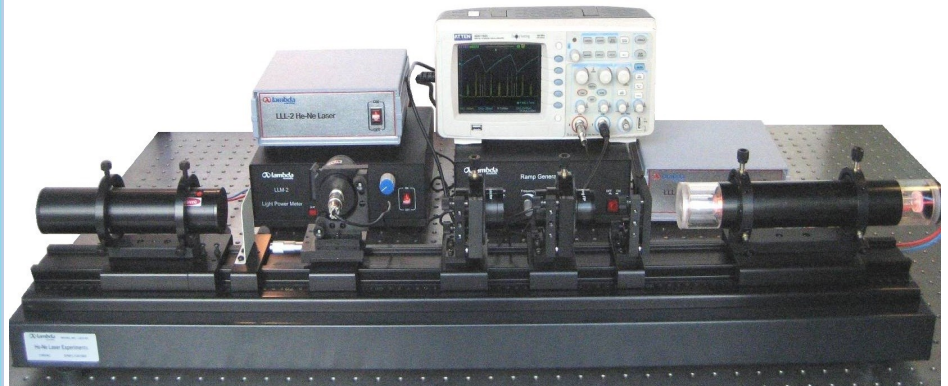
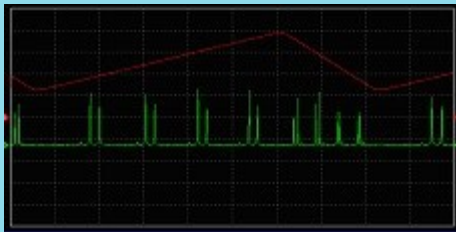


LEOI-53 Serial Experiments of He-Ne Laser

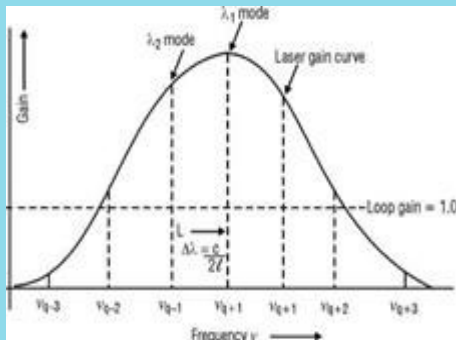
- Including Additional He-Ne Alignment Laser
- High Resolution
- Ideal for Demonstration
- Precise Measurement
- Affordable Price



Note: oscilloscope not included



Modes shown on digital oscilloscope



Laser gain curve & longitudinal modes

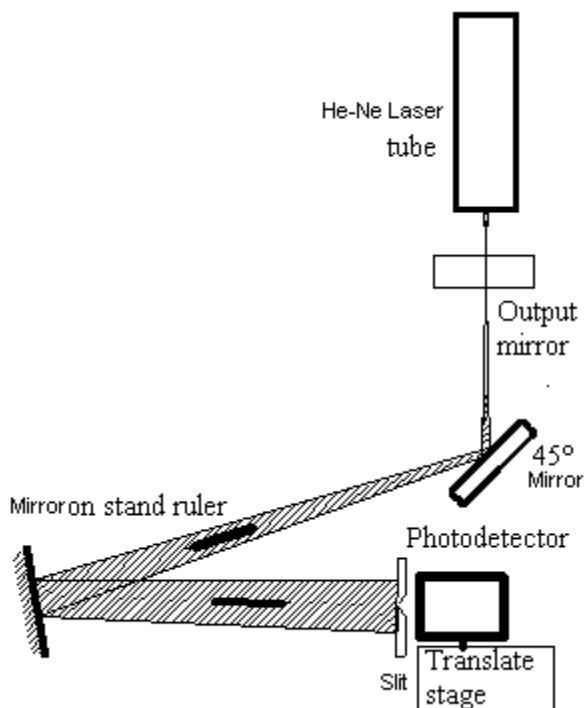
The He-Ne laser serial experimental system (LEOI-53) is designed with an adjustable He-Ne laser cavity. By changing the cavity length or the radius of curvature of the cavity output mirror, corresponding change in lasing mode can be observed. The use of a confocal spherical scanning interferometer further allows students to directly observe the frequency distribution pattern of both longitudinal and transverse modes of a He-Ne laser. The scanning interferometer is also used to measure the frequency spacing between laser modes. Other optical parameters such as the spot size and the beam divergence angle of a He-Ne laser, and the free spectral range and the finesse of a scanning Fabry-Perot interferometer can be also measured with this system.

Specifications

He-Ne Laser Cavity with Brewster Window	
Radii of Curvature of Cavity Mirrors	$R_1=\infty$ or $R_1=1$ m; $R_2=1$ m
Cavity Length	270 mm
Center Wavelength	632.8 nm
Output Power	≤ 1.5 mW
Confocal Spherical Scanning Interferometer	
Cavity Length	20.56 mm
Radius of Curvature of Concave Mirror	20.56 mm
Reflectivity of Concave Mirror	99%
Finesse	>100
Free Spectral Range (FSR)	3.75 GHz
Sawtooth Wave Generator	
Modulation Amplitude of Sinusoidal Wave	0 ~ 250 V, continuously adjustable
DC Offset Voltage Output	0 ~ 250 V, continuously adjustable
Output Frequency	20 ~ 50 Hz
He-Ne Laser for Beam Alignment	
Center Wavelength	632.8 nm
Output Power	≤ 1 mW
Optical Rail	1 m
Optical Power Meter	2 μ W ~ 200 mW, 6 scales

Part List

Optical Rail	1
He-Ne Laser for Beam Alignment (LLL-2A)	1
Semi-External Cavity He-Ne Laser	1
He-Ne Laser Power Supply	1
Output Mirror	1
Four-Axis Adjustable Holder	2
Two-Axis Adjustable Holder	2
Alignment Aperture	1
High Speed Photo-Receiver	1
Confocal Scanning Interferometer	1
High-Voltage Sawtooth Wave Generator	1
Optical Power Meter (LLM-2)	1
Adjustable Slit	1
2-D Adjustable Holder	1
Plane Mirror	1
Tape Measure	1
User's Manual	1



Setup of measuring spot size & divergence angle