

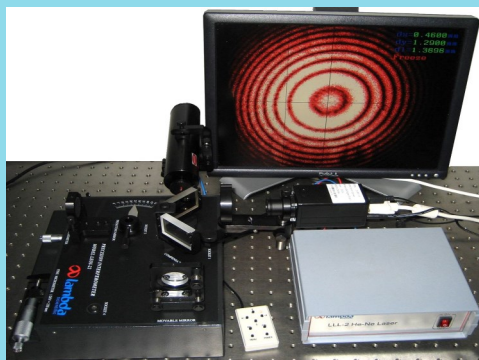
LEOI-22 Precision Interferometer

- Three Modes
- Stable Base for Precise Measurement
- Compact and Lightweight
- Complete Solution
- He-Ne Laser, Sodium-Tungsten Lamp, and Air Chamber Included
- Optional VGA Video Camera for Fringe Image Display and Projection



This equipment combines the historically important Michelson interferometer, the high resolution Fabry-Perot interferometer, and the useful Twyman-Green interferometer in one unit. Michelson interferometer is still an important instrument in today's physics laboratories and is used for observing two-beam interference phenomena. Fabry-Perot interferometer is for observing multiple-beam interference and measuring the fine structure of spectrum. Twyman-Green interferometer is used to measure the defects in optical components such as lenses, prisms, and windows etc.

Measurements are precise in three classical modes of operation. Switching between the three modes of operation and aligning components are very simple, as this complete set of high quality components is carefully mounted on a heavy, stable base. Using an optional color camera, interference fringes can be acquired to a VGA display or a projector for real-time lecture demonstration.



Fringe image acquired by color camera

Experimental Contents

1. Two-beam Interference observation
2. Equal-inclination fringe observation
3. Equal-thickness fringe observation
4. White-light fringe observation
5. Wavelength measurement of the Sodium D-lines
6. Wavelength separation measurement of the Sodium D-lines
7. Measurement of the refractive index of air
8. Measurement of the refractive index of a transparent slice
9. Multi-beam interference observation
10. Measurement of the He-Ne laser wavelength
11. Interference fringe observation of the Sodium D-lines
12. Demonstrating the principle of a Twyman-Green interferometer
13. Interference fringe acquisition by color camera for VGA display or projector (optional)

Specifications

Flatness of Beam Splitter & Compensator Plate	0.05 λ
Minimum Travel Reading	0.00025 mm
Coarse Travel of Mirror 1	10 mm
Fine Travel of Mirror 2	0.25 mm
Fabry-Perot Mirrors	30 mm (dia), R=95%
Wavelength Measurement Accuracy	Relative error: 2% for 100 fringes
Sodium-Tungsten Lamp	Sodium: 20 W; Tungsten: 35 W (Adjustable)
He-Ne Laser Output	0.7 ~ 1 mW at 632.8 nm
Air Chamber with Gauge	Chamber length: 80 mm; Pressure range: 0-40 kPa
Overall Dimension	350 mm×350 mm×245 mm
Weight	Approx. 35 Lb
Camera with VGA port (Option 1)	Detailed specs posted on website

Part List

	Description	Qty
1	Main interferometer	1
2	Ground glass screen	1
3	Extension arm	1
4	He-Ne laser	1
5	Laser holder	1
6	Sodium-Tungsten lamp	1
7	Air chamber with gauge	1
8	Two-in-one screen	1
9	Transparent slice clip	1
10	Beam expander	1
11	Samples	2
12	Hand tally counter	1

