

LEOI-22 Precision Interferometer



Description

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.

Feathure

- Three Modes
- Stable Base for Precise Measurement
- Complete Solution

Application

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

Specification

| | |
|---|------------------------------------|
| Flatness of Beam Splitter and Compensator | 0.05 λ |
| Coarse Travel of Mirror | 10 mm |
| Fine Travel of Mirror | 0.625 mm |
| Fine Travel Resolution | 0.25 μ m |
| Fabry-Perot Mirrors | 30 mm (dia), R=95% |
| Wavelength Measurement Accuracy | Relative error: 2% for 100 fringes |

Part list

| Description | Qty |
|-----------------------------------|---|
| Interferometer Main Frame | 1 |
| Ground Glass Screen | 1 |
| Holder for Beam Expander | 1 |
| Extension Arm | 1 |
| Two-in-One Observation Screen | 1 |
| Transparent Slice Samples | 2 |
| Transparent Slice Clamp | 1 |
| Instruction Manual | 1 |
| Sodium-Tungsten Lamp (optional) | Sodium lamp: 20 W; Tungsten lamp: 30 W adjustable |
| He-Ne Laser (optional) | 0.7-1 mW @632.8 nm, includes laser tube holder |
| Air Chamber with Gauge (optional) | Chamber length: 80 mm; Pressure range: 0-40 kPa |