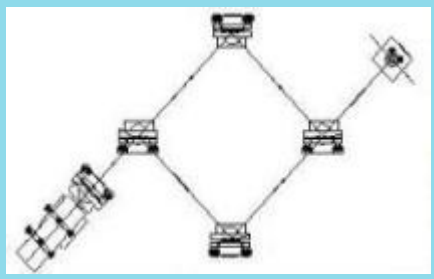
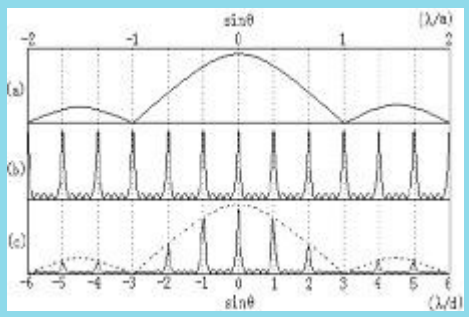
*Construct, Conduct & Comprehend Physics Experiments*

# LEOK-9 Interference, Diffraction and Polarization Kit - Enhanced Model

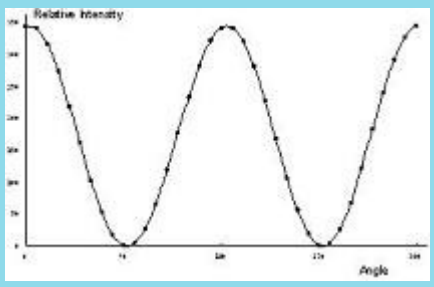
- *Comprehensive experiments*
- *Detailed instruction manual*
- *Easy alignment and setup*
- *Affordable price*



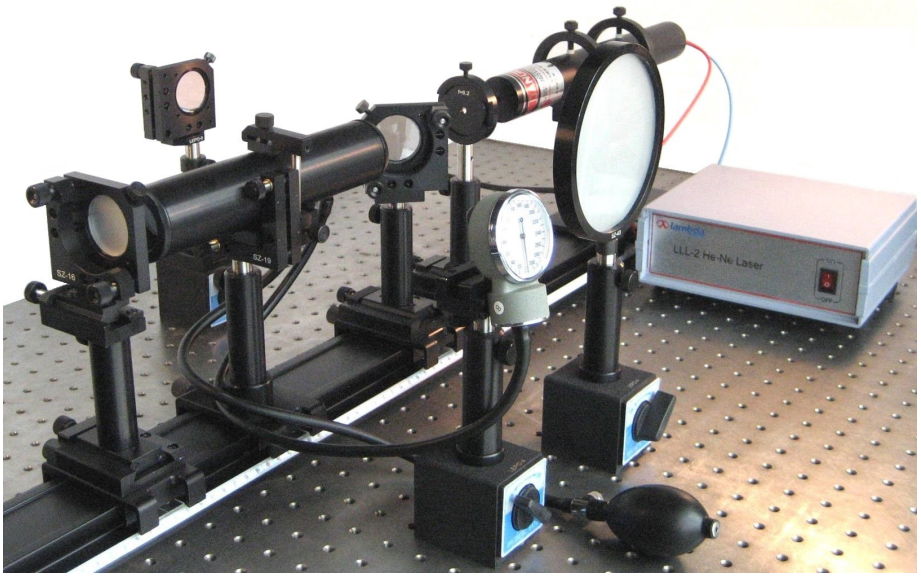
Mach-Zehnder interferometer



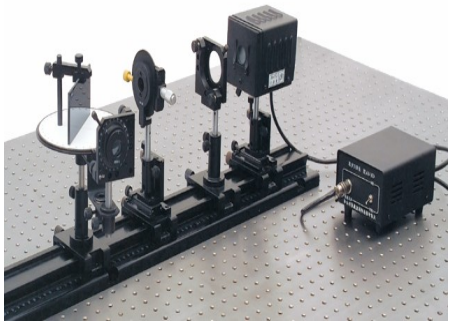

Intensity of muti-slit diffraction

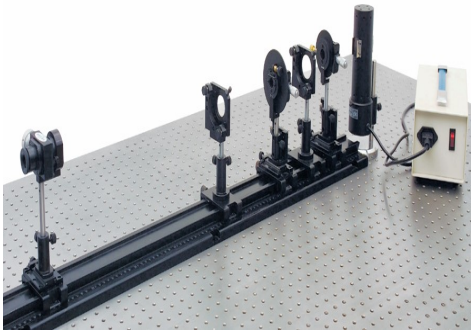



Verification of Malus's law




LEOK-9 is a comprehensive kit including a series of experiments in optical interference, diffraction and polarization. It is developed for general physics education at colleges and universities. It provides a complete set of optical and mechanical components (including light source), which can be conveniently constructed to implement various experiments. Through selecting and assembling individual components into complete experiment setups, students can enhance their experimental skills and problem solving ability. The instruction manual contains comprehensive materials including experimental configurations, principles, step-by-step instructions, and required parts with photos.





## Experimental Contents

**Build Setups of Interferometer and Observe Interference Pattern**

Constructing a Michelson interferometer and measuring the refractive index of air
Constructing a Sagnac interferometer
Constructing a Mach-Zehnder interferometer

**Build Setups of Fraunhofer Diffraction and Measure Intensity Distribution**

Fraunhofer diffraction through a Single Slit
Fraunhofer diffraction through a Multi-Slit Plate
Fraunhofer diffraction through a Circular Aperture
Fraunhofer diffraction through a Trans. Grating

**Build Setups of Fresnel Diffraction and Measure Intensity Distribution**

Fresnel diffraction through a Single Slit
Fresnel diffraction through a Multi-Slit Plate
Fresnel diffraction through a Circular Aperture
Fresnel diffraction past a Straight Edge

**Build Setups for Measuring and Analyzing Polarization Status of Light Beams**

Brewster's angle measurement of a black glass
Verification of Malus's Law
Function study of a half-wave plate
Function study of a quarter-wave plate: circularly and elliptically polarized light

## Part List

| Description | Specs/Part # | Qty |
|---|---|---|
| He-Ne laser | LLL-2 (>1.5 mW@632.8 nm) | 1 |
| Transversal measurement stage | Range: 80 mm; accuracy: 0.01 mm | 1 |
| Magnetic base with post holder | SZ-04 | 3 |
| Two-axis mirror holder | SZ-07 | 2 |
| Lens holder | SZ-08 | 2 |
| Plate holder | SZ-12 | 1 |
| White screen | SZ-13 | 1 |
| Aperture adjustable bar clamp | SZ-19 | 1 |
| Adjustable slit | SZ-40 | 1 |
| Laser tube holder | SZ-42 | 1 |
| Optical goniometer | SZ-47 | 1 |
| Polarizer holder | SZ-51 | 3 |
| Beam splitter | 50/50 | 2 |
| Polarizer | | 2 |
| Half-wave plate | | 1 |
| Quarter-wave plate | | 1 |
| Black glass sheet | | 1 |
| Flat mirror | Φ 36 mm | 2 |
| Lens | f ' = 6.2, 150 mm | 1 ea |
| Grating | 20 l/mm | 1 |
| Multiple-slit & multi-hole plate | Single slit: 0.06 & 0.1 mm<br>Multi-slit: 2, 3, 4, 5 (slit width: 0.03 mm; center-to-center: 0.09 mm)<br>Round holes: diameter: 0.05, 0.1, 0.2, 0.3, 0.4, 0.5 mm<br>Square holes: length: 0.05, 0.1, 0.2, 0.3, 0.4, 0.5 mm | 1 |
| Optical rail | 1 m; aluminum | 1 |
| Universal carrier | | 2 |
| X-translation carrier | | 2 |
| X-Z translation carrier | | 1 |
| Air chamber with gauge | | 1 |
| Manual Counter | 4 digits, counts 0 ~ 9999 | 1 |
| Photocurrent amplifier | LLM-1 or LLM-2 | 1 |

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**Note: above product information is subject to change without notice.**