

# 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.



### **N lambda** scientific

#### **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: 0.1 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           | Light meter  | 1    |

Lambda Scientific Systems, Inc. 16300 SW 137th Ave, Unit 132 Miami, FL 33177, USA Phone: 305.252.3838 Fax: 305.517.3739 E-mail: sales@lambdasys.com Web: www.lambdasys.com

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