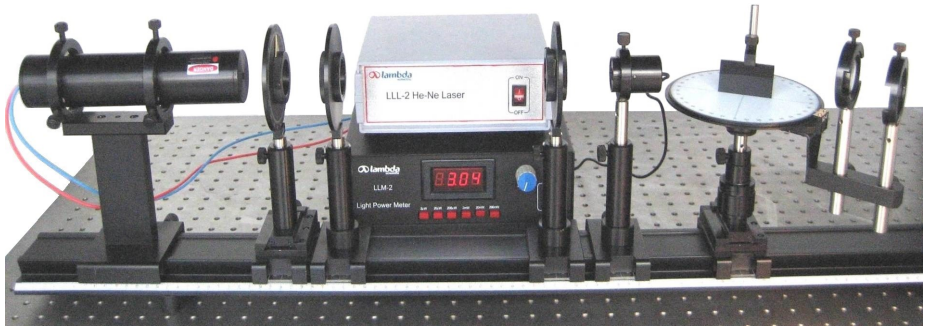
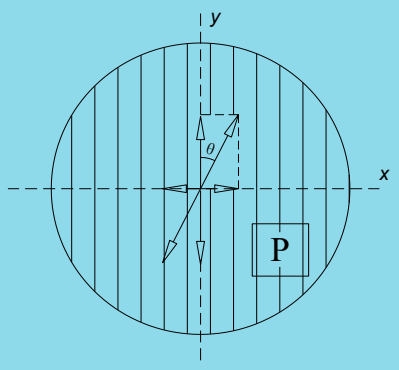
Construct, Conduct & Comprehend Physics Experiments

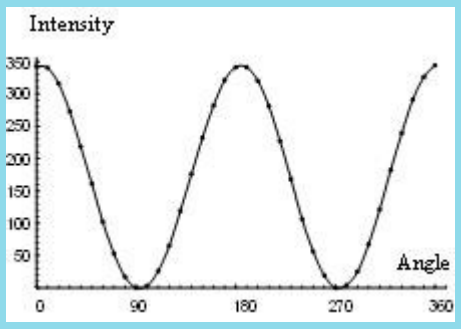
LEOI-40 Complete Experimental System for Polarized Light

- *Ideal for demo*
- *Observing polarization by reflection*
- *Measuring Brewster's angle*
- *Verifying Malus's law*





Schematic of Malus's Law



Verification of Malus's law

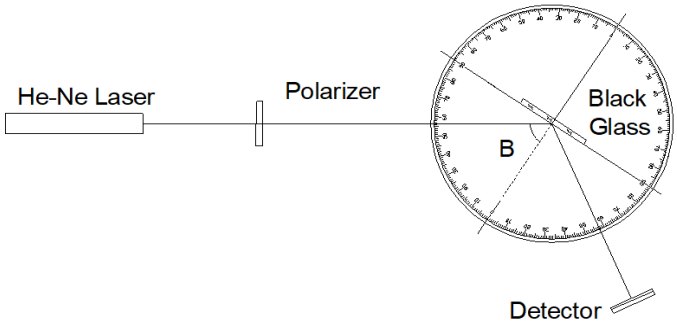
Compared with other important properties of light such as interference and diffraction, polarization is more abstract and relatively hard to understand. Without special equipment, human eyes or even optical detectors cannot recognize polarization phenomena. LEOI-40 is developed to help students understand the concept and mechanism of polarization. It allows students to measure different types of polarization and the working parameters of optical elements involved. The system is designed for manual operation in order to enhance students' hands-on ability and consolidate their knowledge and skills. Experiment results can be graphed to schematically illustrate the theory of polarization. Students should acquire a fundamental understanding of polarization and the mechanism involved in polarization elements.

Using this system, the following experiment examples can be conducted:

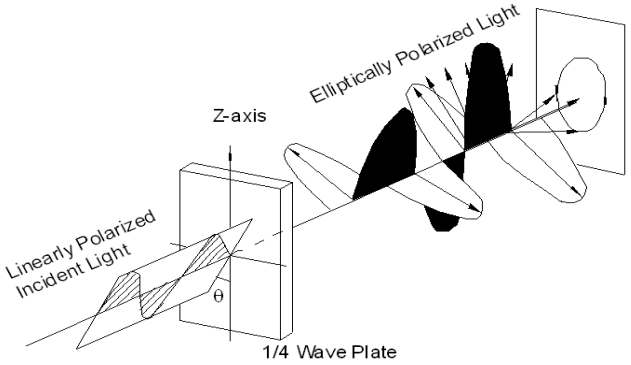
1. Brewster's angle measurement of a black glass
2. Verification of Malus's law
3. Function study of a half-wave plate
4. Function study of a quarter-wave plate: circularly and elliptically polarized light

Specifications and Part List

Optical rail	0.74 meter long and black anodized	1
Carrier	DGL-01	3
Carrier (x-translation)	DGL-02	1
Carrier (x-z translation)	DGL-03	1
Alignment Screen		1
He-Ne laser	2.5 mW@632.8nm	1
Laser holder	SZ-42	1
Lens holder	SZ-08	2
Plate holder	SZ-12	1
Adaptor Piece	SZ-09	1
Optical Goniometer	SZ-47	1
Polarizer Holder	SZ-51	3
Polarizer	Φ 20 mm with holder	2
λ/2 Wave Plate	Φ 10 mm, λ = 632.8 nm	1
λ/4 Wave Plate	Φ 10 mm, λ = 632.8 nm	1
Lens	f = 150 mm	1
Black Glass	50×27 mm	1
Beam Expander	f = 4.5 mm	1
Photocurrent amplifier		1 set



Schematic of experimental configuration



Principle of quarter-wave plate

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