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KSCIPCE Photoconductivity Experiment

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NEW

KSCI-DP1 Data Processor

KSCIEBGA Energy Band Gap Experiment

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KSCIFEE Faraday Effect Experiment

KSCIBSL Biot-Savart's Law Experiment

KSCI-UP025 Electromagnet Set Assembly

Complete Physics Set Ups

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Physics

Klinger Scientific is pleased to present an additional range of products for Upper Level Science Educators and Labs. These experiments are intended for High School, Universities and Technical Colleges

The equipments are designed for efficient and easy understanding of the concepts and included pedagogy and instructions to complement the experiments.

Modularity and accuracy have been the key principles in designs and utmost care is taken in manufacturing to provide fine and flawless finish to the products.

Experiments

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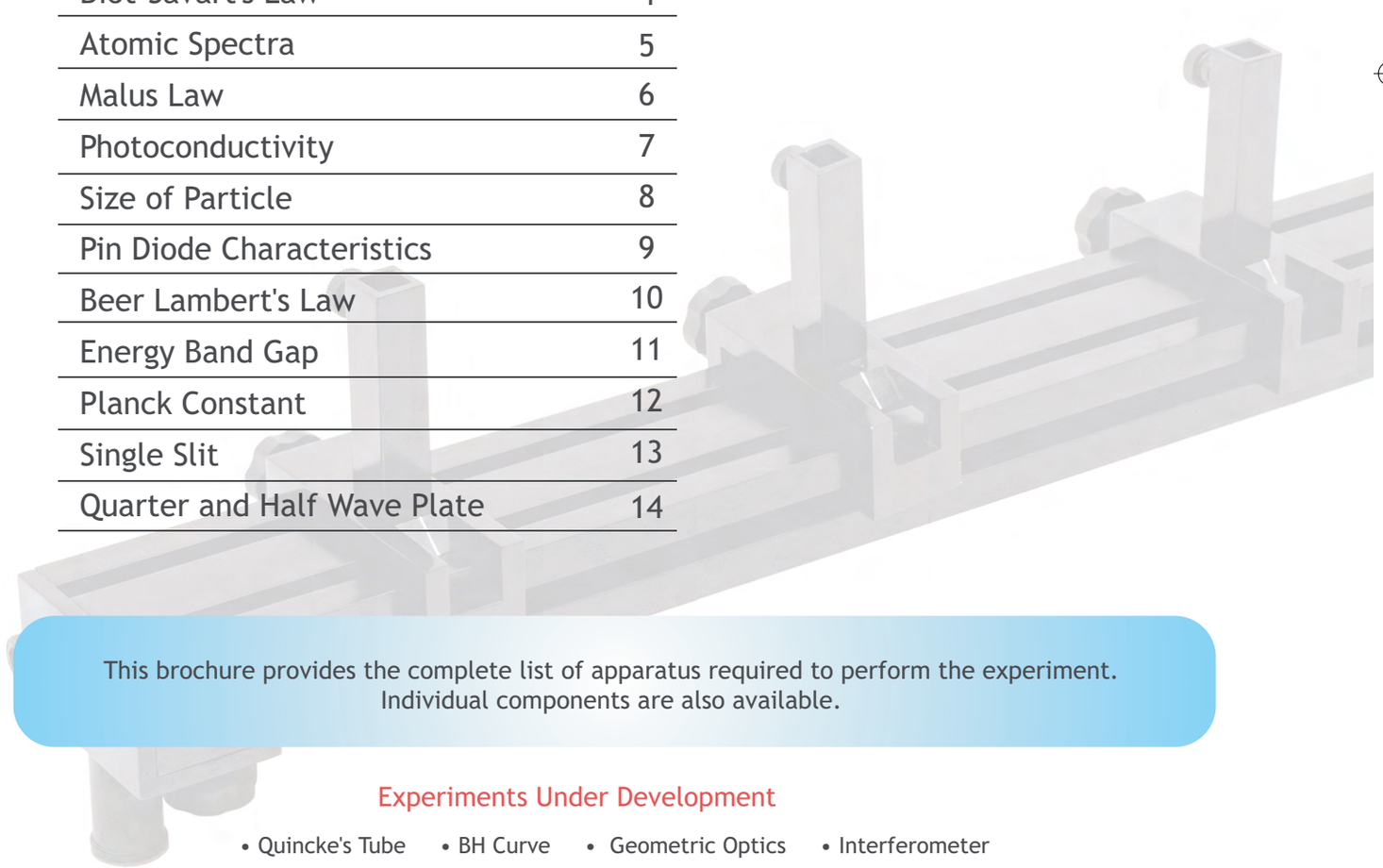

This brochure provides the complete list of apparatus required to perform the experiment. Individual components are also available.

Experiments Under Development

- Quincke's Tube
- BH Curve
- Geometric Optics
- Interferometer

KSCIFEE Faraday Effect Experiment

$1,999

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Objectives

- Observe the effect of a magnetic field on plane of polarization of polarized light as it passes through a dispersive medium.
- Measure the Verdet's constant of a given dispersive material.

Principle

When a linearly polarized light passes through an optical medium in a region of strong magnetic field, the plane of polarization of linearly polarized light rotates by an angle. The angle of rotation of plane polarized light is proportional to the length of optical medium and component of magnetic field in the direction of light. The factor of proportionality is a medium specific and is called Verdet's constant. This effect is known as the Faraday Rotation or Faraday Effect. Discovered by Michael Faraday in 1845, the Faraday effect was the first experimental evidence that light and electromagnetism are related. In the experimental setup the optical medium is SF6 glass cube.

Key Features

- Rotating Table: A simple, smooth and compact rotating table. The rotating table used is extremely smooth to operate. It is a single assembly that holds glass sample, analyzer and light sensor, thus minimizing the size of the whole equipment. Smooth rotation makes measurement continuous and accurate.
- Light Sensor: This enables measurement of light intensity at various angles of reflection. The meter reads with a precision of 1 lux. The Lux meter helps obtain a continuous smooth curve of angle vs intensity and determine the Brewster angle much more accurately than the manual method.

KSCIFEE Klinger Scientific Faraday Effect Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA004	Analyzer Holder	1
KSCIUP025	Electromagnet Set Assembly	1
KSCIAC004	Glass Block	1
KSCIHA510	Light Sensor Holder	1
PH93225G	Teslameter Digital	1
KSCIPS61035D/7	Power Supply for Electromagnet	1
KSCIPS61022D/2	Power Supply for Light Source	1
KSCIDP1	Data Processor	1

KSCIBAE Brewster Angle Experiment

$1,735

Objectives

Measurement of Brewster's angle for a given dielectric dispersive medium.

Principle

When un-polarized light is incident on the surface of a dielectric (such as a glass), at a certain angle of incidence the reflected light is completely plane-polarized. This phenomenon was discovered by Sir David Brewster and the specific angle is called Brewster's angle or polarization angle. Also, from the experiment, it can be confirmed that the reflected ray and the refracted ray are 90° apart when the incident angle is set at Brewster's angle.

Key Features

- Rotating Table: A simple, smooth and compact rotating table. The rotating table used is extremely smooth to operate. It is a single assembly that holds a glass sample, analyzer, and light sensor, thus minimizing the size of the whole equipment. Smooth rotation makes measurement continuous and accurate.

- Light Sensor: This enables measurement of light intensity at various angles of reflection. The meter reads with a precision of 1 lux. The Lux meter helps obtain a continuous smooth curve of angle vs intensity and determine the Brewster angle much more accurately than the manual method.

KSCIBAE Klinger Scientific Brewster Angle Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIHA001	Light Source Holder	1
KSCIHA010	Converging Lense Holder	1
KSCIHA012	Adjustable Collimating Slit Holder	1
KSCIUP030	Rotating Table Assembly	1
KSCIAC002	Analyzer Square	1
KSCIHA511	Light Sensor Holder	1
KSCIPH61022D/2	Power Supply for Light Source	1
KSCIAC004	Glass Block	1
KSCIDP1	Data Processor	1

KSCIBSL Biot-Savart's Law Experiment

$999

Objectives

- Measuring the magnetic field of a straight conductor and of circular conductor loops as a function of the current.
- Measuring the magnetic field of a straight conductor as a function of the distance from the axis of the conductor.
- Measuring the magnetic field of circular conductor loops as a function of the loop radius and the distance from the loop.

Principle

Electric currents generate magnetic fields. Biot-Savart law is an equation describing the magnetic field generated by a constant electric current. It relates the magnetic field to the magnitude, direction, length, and proximity of the electric current. In this experiment, we study the magnetic field characteristics in straight conductor and different types of circular coils.

Key Features

- Multiple coil variants: The equipment comprises a variety of coil to carry out experiments. One can study Biot savart law for a straight conductor, coils of variable length, density and number of turns. All coils are mount on a common horizontal bench and upright system.
- 2-axis Teslameter: The equipment is provided with a teslameter with probes to measure both axial and tangential directions. A square shaft mount is provided for accurate mounting of the probes.

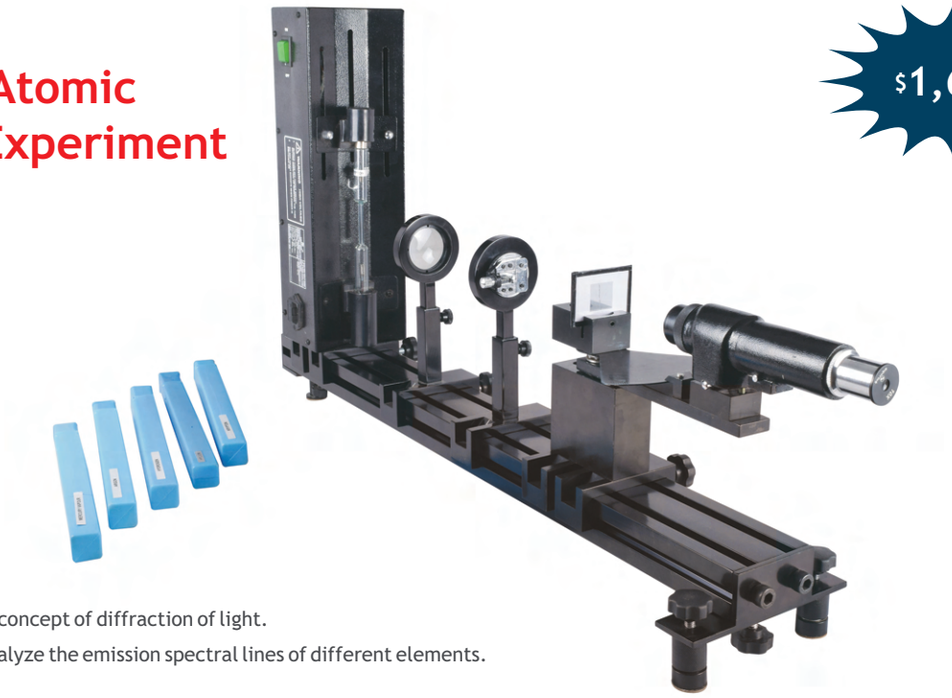
KSCIBSL Klinger Scientific Biot-Savart's Law Complete Experiment Set Up With Instruction Manual

What Is Included

KSCIOB2	Optical Bench Set 0.4m	1
KSCIHA015	Solenoid with Variable Turns	1
KSCIHA016	Solenoid with Variable Lengths	1
KSCIHA017	Solenoid with Different Winding Density (Set)	1
KSCIHA018	Straight Conductor Holder	1
KSCIPH93240	Teslameter, With Axial and Tangential Hall Probe	1
KSCIPS61035D/5	Power Supply	1

KSCIASE Atomic Spectra Experiment

$1,650



Objectives

- To understand the concept of diffraction of light.
- To measure and analyze the emission spectral lines of different elements.

Principle

The source of electromagnetic radiation is atoms. When the atoms of an element are in an excited state, they return to a lower energy state by emitting electromagnetic (EM) radiation. The transition of the electrons in the atom from higher energy level to a lower unique energy level for the occupation of electrons, due to this the EM spectrum emitted is a unique signature of an element or a substance. The study of the characteristics of EM radiation emitted by atoms is called Atomic Emission Spectroscopy.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, the setting up time is faster and experimentation is easy.
- Rotating table with On-board Telescope: The telescope on the rotating table is mounted with bearings for smooth rotation. The diffraction grating mounted is mounted at the center of the rotating table. The telescope is easy to focus and operate. The angle of the rotating arm has a least count of 0.1° for accurate measurement of the spectral lines.
- Power Supply Built in the Discharge Tube Holder: The built-in power supply makes a more compact system with easier changing of the discharge tubes. Easy power connection and no unnecessary wire intrusions.

KSCIASE Klinger Scientific Atomic Spectra Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIHA010	Converging Lens Holder	1
KSCIHA012	Adjustable Collimating Slit Holder	1
KSCIUP040	Spectrum Tube Power Supply Assembly	1
KSCIUP035	Telescope Assembly	1
KSCIAC021	Spectrum Tube, Hydrogen	1
KSCIAC022	Spectrum Tube, Helium	1
KSCIAC023	Spectrum Tube, Mercury	1
KSCIAC024	Spectrum Tube, Krypton	1
SCIAC025	Spectrum Tube, Argon	1

KSCIMLE Malus Law Experiment

$1,430

Objectives

- To experimentally verify the Malus's law

Principle

Light, when modelled as a wave phenomenon, can be classified as a transverse electromagnetic wave consisting of oscillating electric and magnetic fields that are oriented perpendicular to each other. Depending on the orientation of the plane of polarization of the electric field with respect to the direction of propagation of the wave, the wave can be classified as polarized or un-polarized. The measure of the variation of transmission of an EM wave through two polarizers as a function of the angle of orientation between them just proves the Malus's Law.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, set up time is faster and experimentation is easy.
- Easy Analyzer Movement: The design of the analyzer helps for simple rotation without disturbing the optical alignment. The least count of 1° aids for more accurate readings.
- Digital Lux Meter: A digital lux meter enables the measurement of light intensity for each rotation of the analyzer. The least count of 1 Lux provides accurate readings.

KSCIMLE Klinger Scientific Malus Law Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB2	Optical Bench Set 0.4m	1
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA006	Analyzer Holder	1
KSCIHA510	Light Sensor Holder	1
KSCI-PSLS	Power Supply for Light Source	1
KSCIDP1	Data Processor	1

KSCIPCE Photoconductivity Experiment

$999

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Objectives

- To study the photoconductivity of CdS Photoresistor, in the following conditions:
  - Applied voltage vs photocurrent (IPH) at constant irradiance (Φ).
  - Photocurrent (IPH) vs irradiance (Φ) at constant applied voltage (V).

Principle

The phenomenon of photoconductivity occurs when an incident light shown upon a semiconductor causes an increase in its electrical conductivity. This is because of excitation of electrons across the energy gap into the conduction band, which leads to an increase in the number of free carriers in the conduction band, hence, an increase in the conductivity of the semiconductor. Here, we can study the characteristics of the CdS photoresistor under different conditions of light intensity and applied voltage.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, and set up time is faster and experimentation is easy.
- Fine and Easy Light Intensity Adjustment: Light intensity adjustment is done via use of two polarizers. This helps in easier and fine light intensity adjustments.
- Simple and Easy Connections: The color-coded terminals on the various components aids in the ease of connections thus reducing the setup time.

KSCIPCE Klinger Scientific Photoconductivity Experiment Set Up With Instruction Manual

What Is Included

KSCIOB2	Optical Bench Set 0.4m	1
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA006	Analyzer Holder	1
KSCIHA020	LDR Module Holder	1
KSCIPS61022D/20	Power Supply, 0-15V, 200mA	1
KSPS61022D/2	Power Supply for Light Source	1

KSCISOP Size of Particle Experiment

$1,999

Objectives

- To measure the width/thickness of the given samples by analyzing the diffraction pattern.

Principle

The characteristics of light such as interference, diffraction can be understood when light is studied as a wave phenomenon. Interaction of waves with matter results in either transmission, reflection, absorption and diffraction of the wave. When the size of matter is comparable to the wavelength of wave that it interacts with, a phenomenon called diffraction occurs. Diffraction of light due to particles is a function of the size of the particle and the wavelength of the light incident. It is possible to measure the size of a particle by studying the diffraction patterns created by it.

Key Features

- Easy Adjustable Laser: The multiple degree of freedom on the laser mount helps in effortless movement of the laser source. This helps in aligning the laser source with a sample quite easily.
- Laser Range Finder: The addition of a laser range finder allows the user to use any standard wall as a screen, increasing the distance between the screen and the sample. Thus, the diffraction pattern can be seen distinctly and thus increasing the accuracy of the readings.
- Multiple Samples can be Tested and Verified: The modular setup helps in measuring the diameters of different samples and other everyday objects as well.

KSCISOP Klinger Scientific Size of Particle Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIHA003	Laser Source Holder	1
KSCIHA008	Grating Holder	1
KSCIHA024	Screen Holder	1
KSCIAC010	Laser Distance Meter	1

KSCIPIN Pin Diode Characteristics Experiment

$999

BEST SELLER

Objectives

- To study the response of PIN diode, in the following conditions
  - Photo current (I_{PH}) vs Applied voltage at constant irradiance (Φ) under Reverse biased condition of the PIN diode.
  - Current (I) vs Voltage (V) under forward bias condition of the PIN diode.

Principle

The PN-Junction diodes, though are versatile, have a few limitations regarding the amount of current they could handle before breakdown and also have low switching frequency, low power handling capacity and low quantum efficiency. To overcome all these issues the PIN diode was designed. PIN diodes are also extensively used as photo diode in PIN photo diode configuration and are very important in optical fiber communication.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, and the set up time is faster and experimentation is easy.
- Fine and Easy Light Intensity Adjustment: Light intensity adjustment is done via use of two polarizers. This helps in easier and fine light intensity adjustments.
- Simple and Easy Connections: The color-coded terminals on the various components aids in the ease of connections thus reducing the setup time.

KSCIPIN Klinger Scientific Pin Diode Characteristics Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB2	Optical Bench Set 0.4m	1
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA006	Analyzer Holder	1
KSCIHA021	Photodiode Module Holder	1
KSCI-DMM	Multimeter	1
KSCI	Power Supply for Light Source	2

KSCIBLL Beer Lambert's Law Experiment

$1,899

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Objectives

To find the concentration of a liquid using the samples of known concentration using the Beer lambert's Law.

Principle

Beer Lambert Law relates the attenuation of light through a substance and the properties of that substance. Light interacts with matter in the following ways: emission, absorption, transmission, and reflection or scattering. Depending on the physical and chemical properties of the matter under interaction, there can be one or more ways in which light interacts. It is because of these interactions light can be used as a probe to measure the physical and chemical properties of materials.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, and the set up time is faster and experimentation is easy
- Digital Lux Meter: This enables measurement of light intensity at various angles of reflection. The meter reads with a precision of 1 Lux.

KSCIBLL Klinger Scientific Beer Lambert's Law Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIUP001	Upright	2
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA006	Analyzer Holder	1
KSCIHA012	Adjustable Collimating Slit Holder	1
KSCIHA025	Cuvette Holder	1
KSCIHA510	Light Sensor Holder	1
KSCIDP1	Data Processor	1
KSCIPSLS	Power Supply for Light Source	1
KSCIAC006	Glass Cuvette	1

KSCIEBGA Energy Band Gap Experiment

$525

Objectives

To find the energy band gaps for different semiconductor diodes and LEDs

Principle

At absolute zero-degree temperature, semiconductors are pure insulators. As the temperature is increased thermal energy create vibrations in crystal lattice and a few electrons, which acquire sufficient vibrational energy, break their covalent bond, become free, and move to the conduction band. The energy required to rapture the covalent bond is designated as energy gap EG and termed as energy gap or band gap energy.

Key Features

- Built-In Heater: The heating element is built in the system and is powered by 12V input. The efficient heating mechanism heats the system to required temperature in a few minutes with minimum power requirement of 40W.
- Modular Design: The modular design of the setup allows testing of multiple diodes as well as different LED's.
- Built-In Voltage and Temperature Probe: All the necessary parameters to be measured are available directly on the setup itself.

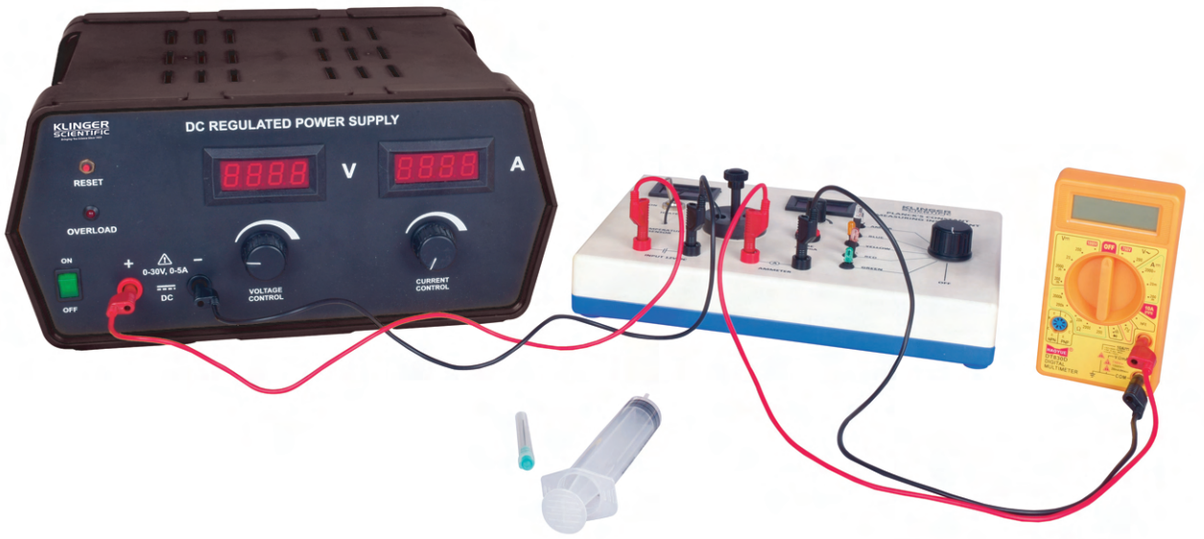
KSCIEBGA Klinger Scientific Energy Band Gap Experiment With Instruction Manual

What Is Included

KSCI-EBGA	Energy Band Gap Apparatus	1
KSCI-APS	Power Supply	1
KSCI-DMM	Multimeter	1
KSCI-AC012	Syringe, 20ml	1

KSCIPLC Planck Constant Experiment

$950



Objectives

To determine the Planck's constant using LED.

Principle

Key Features

- Built-In Heater: The heating element is built in the system and is powered by 12V input. The efficient heating mechanism heats the system to required temperature in a few minutes with minimum power requirement of 40W.
- Modular Design: The modular design of the setup allows testing of different colored LED's.
- Built-In Voltage and Temperature Probe: All the necessary parameters to be measured are available directly on the setup itself.

KSCIPLC Klinger Scientific Planck's Constant Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIPH94004	Planck Constant Apparatus	1
KSCIPS61035D/5	Power Supply	1
KSCIPH64505	Multimeter	1
KSCIAC012	Syringe, 20ml	1

KSCIPLC Single Slit Experiment

$1,400

BEST SELLER

Objectives

- To find the wavelength of given laser using the slit of known width.
- To find the slit width knowing the wavelength of light used.
- Proving the concept of Heisenberg Uncertainty Principle.

Principle

Diffraction is a phenomenon of bending of waves when it encounters obstacles narrow opening. A basic set up to observe diffraction consists of a laser, a slit, screen placed at a distance. The wave fronts are partially obstructed by the slit. The intensity distribution of the diffraction pattern consists of a series of light and dark fringes with the intensity distribution is symmetric along about the central axis. The primary peak is called the central maxima. The corresponding peaks are called secondary, tertiary maxima. This is studied using the single slit experiment.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, and the set up time is faster and experimentation is easy.
- Digital Lux Meter with Transverse Saddle: The digital Lux meter enables measurement of light intensity. The transverse saddle helps in fine movement of Lux meter perpendicular to the direction of light.

KSCISSE Klinger Scientific Single Slit Experiment Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIHA003	Laser Source Holder	1
KSCIHA012	Adjustable Collimating Slit Holder	1
KSCIHA512	Travelling Light Sensor Holder	1
KSCIDP1	Data Processor	1
KSCIPS61022D/2	Power Supply for Light Source	1

KSCIQWP Quarter and Half Wave Plate Experiment

$3,200

Objectives

To study the effect of wave plates on polarized light

- Quarter wave plate
- Half wave plate

Principle

Waveplates are optical devices that resolves a light wave into two orthogonal linear polarization components by producing a phase shift between them. The transmitted light may have a different type of polarization than the incident beam due to the induced phase difference. Commonly used retarders are quarter wave plate and half wave plate.

Quarter-wave plate is used to convert a linearly polarized input beam into a circular (or elliptical) polarized beam and vice-versa. Half-wave plate rotates the plane of polarization of linearly polarized light that is input on it by twice the angle between its optical axis and the initial orientation of the linearly polarized light.

Key Features

- Precise Optical Alignment: The optical alignment of the components is attained by optical bench, and the setup time is faster and experimentation is easy.
- Digital Lux Meter: This enables measurements of light intensity at various angles of reflection. The meter reads with a precision of 1 Lux.
- Easy and accurate adjustments: The design of the setup helps in easier rotation of wave plates without blocking the path of light. The least count of 1° aids for accurate readings

KSCIQWP Klinger Scientific Quarter and Half Wave Plate Experiment Complete Set Up With Instruction Manual

What Is Included

KSCIOB1	Optical Bench Set 0.8m	1
KSCIUP001	Upright	1
KSCIHA001	Light Source Holder	1
KSCIHA004	Polarizer Holder	1
KSCIHA006	Analyzer Holder	1
KSCIHA510	Light Sensor Holder	1
KSCIDP1	Data Processor	1
KSCIPSLS	Power Supply for Light Source	1
KSCIHA030	Quarter Wave Plate Holder	1
KSCIHA031	Half Wave Plate Holder	1

KSCIOB Optical Bench Rail

KSCIOB-1 Klinger Scientific Optical Bench .8m Rail $470

KSCIOB-2 Klinger Scientific Optical Bench .4m Rail $390

A versatile and modular system that can be utilized across many experiments. The optical bench has three core parts: Rail, Mounts and Uprights.All the core parts have been designed in such a way that they are suitable for multiple types of experiments.

Key Features

- Excellent stability and easy set-up of optical bench - Mounts can be fixed to the rail by just aligning and sliding in two screws into the rail and fastened. The uprights can be placed and fastened at any desired position with ease.
- Height adjustable mounts - The optical bench is designed with three-point mounts, with two of them height adjustable and lockable with a range of 20 mm. The height adjustment gives precision in maintaining horizontal axis of the bench. The mount bases are rubber padded to avoid sliding of optical bench on the lab benches.
- Anti-rotation square holders on the uprights (Patent Pending) - The optical bench uprights are designed with square holders and square shafts for holding accessories. One of the major needs in optical experiments is to maintain alignment of accessories. More often, the accessory holder is susceptible to rotation. Square shafts ensure anti rotation of the accessories and makes experimenting hassle free. It also avoids any kind of lateral bend or movement of the accessories.
- All parts are scratch resistant and movement of uprights on the rail is seamless.

KSCIOB-1	0.8m Rail x1, Mounts x2, Uprights x4
KSCIOB-2	0.4m Rail x1, Mounts x2, Uprights x4

$125

Light Source Holder

Light source holder consists of 15W projector light mounted on square rod. The light source with optical glass lens creates a bright and sharp spot of light.

Specifications

- White Color Light Beam
- Power 15W

KSCI-HAOO1

$80

Polarizer / Analyzer Holder

The polarizer linearly polarizes the light from the light source. The analyzer records the angle of polarization of light after it passes through a medium. When used together, one can find the total angle of rotation in light.

KSCI-HA004 - Polarizer Holder
KSCI-HA006 - Analyzer Holder

$100

Laser Source Holder

An adjustable laser source mounted on a square rod. Laser source has a ball bearing mount. This enables the user to minutely adjust the direction of the laser source during experimentation to get proper optical alignment.

Specifications

- Red Laser

KSCI-HA003

$40

Grating Holder

Diffraction grating mounted on a square rod.

Specification

- Diffraction Grating - 500 Lines / Inch

KSCI-HA008

$60

Converging Lens Holder

Our lens holder can hold 50mm diameter lenses and mirrors for optical bench experiments.
KSCI-HA010

$140

Solenoid with Variable Turns

Solenoid with variable turns is mounted on square rod. Output terminals are provided at 100, 200, 400, and 600 turns.
KSCI-HA015

$75

Adjustable Collimating Slit Holder

Precision, spring loaded adjustable slit is mounted on a square rod.

Specifications

- Slit Opening:4mm (Max.)

KSCI-HA012

$80

Solenoid with Variable Lengths

Solenoid with variable lengths is mounted on square rod. Output terminals are provided at 30, 60 and 90mm lengths.
KSCI-HA016

$240

Solenoid with Different Winding Density (Set)

Set of 5 solenoids, each with different turn density (number of turns per unit length). Solenoids are mounted on square rod. Spacing between two consecutive turns in the solenoid varies from 0.7 to 4mm.

KSCI-HA017

$60

Straight Conductor Holder

Straight conductor is mounted on square rod. Solenoid with multiple turns acts as straight conductor along the one open edge of the solenoid.

Specifications

- Wire gauge 21SWG.
- No. of turns 35.

KSCI-HA018

$60

LDR Module Holder

LDR module is mounted on square rod.
LDR module is provided with terminals for easy connections.

KSCI-HA020

$20

Screen Holder

Black screen mounted on a square rod.
Size 110 x 100mm.

KSCI-HA024

$40

Photodiode Module Holder

Photodiode module is mounted on square rod.
Photodiode module is provided with terminals for easy connections

KSCI-HA021

$80

Light Sensor Holder

Light sensor module, mounted on a square rod, when used with the Data Processor gives precise measurement of light intensity. The least count of 1 Lux provides accurate readings.

KSCI-HA510

$80

Light Sensor Holder

Light sensor module for use with rotating table assembly (UP030). The light sensor when used with Data Processor measures light intensity at various angles of reflection and gives a continuous smooth curve of angle vs light intensity. The meter reads with precision of 1 Lux.

KSCI-HA511

$850

Electromagnet Set Assembly

Electromagnet set includes U core, pole pieces coils (x 2) and coils (x 2) mounted on two uprights.

Specifications

- Coils
  - 500 turns
  - Current: 7A(Max.)
  - Wire: 17 SWG, Copper
  - Connections: 4mm safety socket
- U Core
  - 150 x 130mm (Lx H), 40 x 40mm cross section
- Pole Pieces
  - Length = 75mm
  - Material: Ferromagnetic

KSCI-UP025

$375

Rotating Table Assembly

This is a simple, smooth, and compact rotating table. The rotating table used is extremely smooth to operate. It is a single assembly that holds the glass sample, analyzer, and light sensor, thus minimizing the size of the whole equipment. Smooth rotation makes measurement continuous and accurate.
KSCI-UP030

SALE

$560

Telescope Assembly

The telescope on the rotating table is mounted with bearings for smooth rotation. The diffraction grating mounted is mounted at the center of the rotating table. The telescope is easy to focus and operate. The angle of the rotating arm has a least count of 0.1° for accurate measurement of the spectral lines.
KSCI-UP035

$500

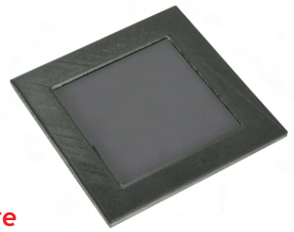
Spectrum Tube Power Supply Assembly

The built-in power supply makes a more compact system with easier changing of the discharge tubes. Easy power connection and no unnecessary wire intrusions.

Specifications

- This can be made for North American Voltage
- Input Voltage: 220V, 50 Hz AC
- Output Voltage: 0-5000V (open circuit)
- Socket: Spring loaded

KSCI-UP040



$80

Analyzer Square

Polarizing sheet in a plastic frame. Size 100 x 100mm.
KSCI-AC002

$80

Glass Block

High grade optical glass block.

Specifications

- Grade - SF6 or Equivalent.
- Size - 20 x 20 x 20mm

KSCI-AC004

$450

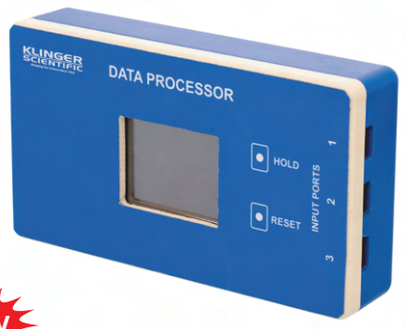
Laser Distance Meter

Portable Laser Distance Meter measures any distance from 0.05 to 40 meters, easily, quickly and with high accuracy. Laser Distance Meter has multi-functions, including self-calibration function, with adjustable range of -9 to 9mm and saves the latest 30 data values. Power is supplied by two AAA batteries (Included)

Specifications

- Designed for Linear, Area and Volume Measurement
- Range 0.05 to 40m
- Tolerance ±2mm
- Readability 30 Degrees

KSCI-AC010



BEST SELLER

NEW

$355

Data Processor

A compact data display system with the ability to capture, process and display multiple sensor data.

Specifications

- 3.5" Touch display interface to able to select which sensor data to be displayed.
- 3 sensor data can be interfaced at a given point.
- The Compact Size of 175mm x 100mm x 40mm makes it handy to use.
- Powered by Micro USB connector makes it more versatile.

KSCI-DP1

$40 EACH

Spectrum Tubes

Spectrum tubes produce bright, well defined spectral lines when the gas inside the tube is excited before the spectroscope. The glass body is provided with metal end caps and has capillary along the middle portion to concentrate the discharge glow. For use with spectrum tube power supply (UP040)

Specifications

- Length 200mm
- Capillary Length 45mm
- Max. Current 3mA

KSCI-AC021 - Spectrum Tube, Hydrogen
KSCI-AC022 - Spectrum Tube, Helium
KSCI-AC023 - Spectrum Tube, Mercury
KSCI-AC024 - Spectrum Tube, Krypton
KSCI-AC025 - Spectrum Tube, Argon

$270

Digital Gauss Meter

Digital Gauss meter works on the principle of Hall Effect in semiconductor. When a semiconductor with current flowing in one direction is introduced perpendicular to a magnetic field a voltage is produced at right angle to the current path. The magnitude of this voltage is proportional to the intensity of the magnetic field. This voltage is called Hall Voltage. This Hall voltage is amplified and calibrated as magnetic field.

Specifications:

Range: 0-2KG & 0-20KG
Resolution: 1G at 0-2KG range
Display: 3½digit LED
Power Supply: 220 V, ±10%, 50 Hz AC
Transducer: Hall probe-InAs

KSCI-PH93225G

Regulated DC Power Supply

Regulated DC Power Supply Unit provides a continuous DC output voltage with excellent load and line regulation at rated current. The voltage output is displayed on analog / digital meter. An internal protection is provided by a slow blow fuse at the primary and overload protection at the output. Power supply operates on 220V, 50Hz input.

	Output Volts	Output Current	
KSCI-RDCPS/2	DC - 0-15V	2 Amp	$195
KSCI-RDCPS/200	DC - 0-15V	200 mA	$165

Advanced Power Supply

Advanced power supply is specially designed for scientific research and product development in laboratories, universities, colleges and electronic production lines. This instrument is widely used due to its high precision, reliable performance, and perfect overload protection circuit. This power supply provides a continuous DC output voltage with excellent load and line regulation. These power supplies have complete control for both voltage and current output. Dual displays (analog / digital) help continuously monitor both output voltage and current. The power supply has short circuit and overload protection. Power supply operates on 220 V, 50 Hz input.

KSCI-APS/5	DC - 0-30 V	0-5 Amp	$299
KSCI-APS/7	DC - 0-30 V	0-7 Amp	$360

Please mention 'A' for analog and 'D' for digital meter at the end of part no. to specify the display required.

$270

Teslameter

The teslameter is used for the measurement of flux densities in steady magnetic fields. The unit includes a Hall sensor probe for measuring axial and tangential magnetic fields up to 20mT. The magnetic field probe is provided with a metric scale for measuring distances. In addition to having a digital display, the unit outputs a voltage proportional to the magnetic field which can be measured with a data logger, XY-recorder or analogue multimeter.

KSCI-TMETER

$16

Digital Multimeter, Economy

Specifications:
Resistance:200 ohm, 2000 ohm,
20k ohm, 200k ohm, & 2000k ohm
D.C.Voltage: 200 mV,
2000 mV, 20V, 200V & 1000 V
A.C.Voltage: 200 & 750 V
D.C.Current: 2000 uA,
20 mA, 200 mA, 10 A
Testing: Diode, transistor
& continuity
Power: Battery 9 V

KSCIDMM

$20

Cuvette Holder

Cuvette holder is designed to be used with optical bench assembly, for holding the glass cuvette of the cross section of 10mm x 10mm.

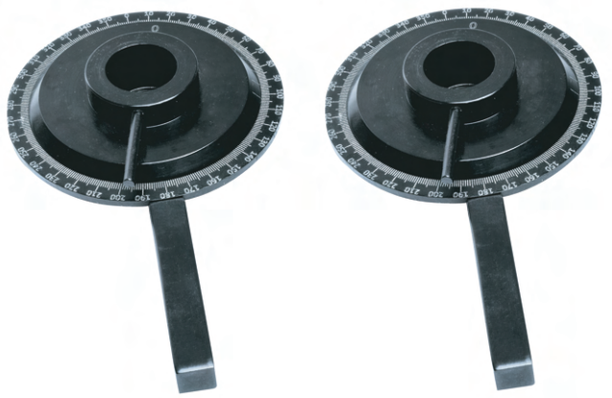
KSCIHA025

$420

Quarter Wave Plate Holder

The holder is designed to hold a 22mm quarter-wave plate. A waveplate is an optical device that alters the polarization state of a light wave travelling through it. The quarter-wave changes the phase difference between the two components of polarized light traversing it by one-fourth cycle.

KSCI-HA030



$420

Half Wave Plate Holder

The holder is designed to hold a 22mm half-wave plate. A waveplate is an optical device that alters the polarization state of a light wave travelling through it. Half-wave plate, reduces by $^1/_2$ cycle, the phase difference between the two components of polarized light traversing it.

KSCIHA031

$180

Travelling Light Sensor Holder

Travelling Light Sensor Holder, mounted on the square rod, can be held in an upright of the optical bench. This holder when used with Data Processor (DP1) measures light intensity of various orders (like 1st, 2nd and so on) of the interference patterns formed by the diffraction of light by any obstacle or opening.

Specifications

Least count - 1 Lux

KSCI-HA512

$475

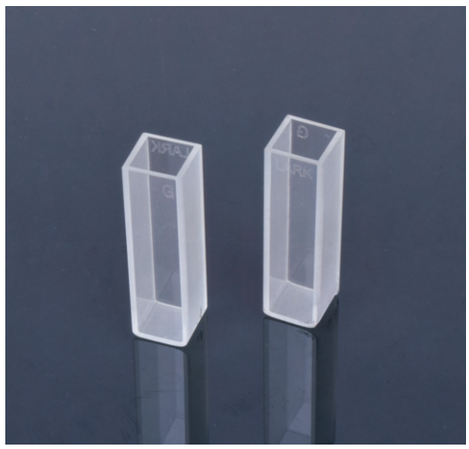
Energy Band Gap Apparatus

Energy band Gap Measuring Instrument is used to find the energy band gaps of the different semiconductor diodes and LEDs. The setup comes with temperature meter, in-built heating element with ON/OFF toggle switch and the following diodes and LEDs (IN4007, Germanium Diode, Green LED and Blue LED) which can be selected by a rotary switch. Ammeter and voltmeter are connected externally to the instrument.

Specifications

Input Voltage - 12V DC
Current Rating - 5 A Max.
Heater Power - 40 Watt
Temperature Range- 0 - 110^{0}C

KSCI-EBA



$90

Glass Cuvette 40 Piece

A glass cuvette is a small tube-like container with straight sides and a square cross section. It is sealed at one end and open at the other end.

Specifications

Size - 10 mm X 10 mm X 50 mm

KSCI-AC006

$495

Planck Constant Apparatus

Planck's Constant Measuring Instrument is used to determine the Planck's constant, “h” using LEDs. The setup comes with voltmeter, temperature meter, heating element with ON/OFF toggle switch and the following LEDs (Amber, Blue, Yellow, Red and Green LED) which can be selected by a rotary switch. Ammeter can be connected externally to the instrument.

Specifications

Input Voltage - 12V DC
Current Rating - 5 A Max.
Heater Power - 40 Watt
Temperature Range- 0 - 110^{0}C

KSCI-PLKCA

$4.50

Syringe, 20ml

A 20ml plastic syringe.

KSCI-AC012

$299

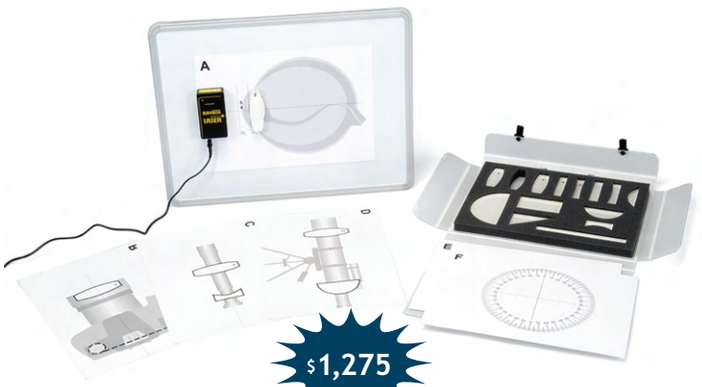
MLTI-LB-KL Multi Pack Laser Box Set

SALE ~~$829~~ $599

KO4100L-2 Laser Whiteboard Optics Kit

$1,275

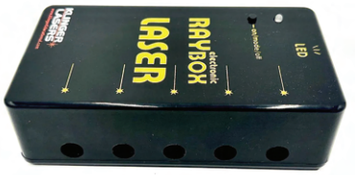
KL-ALS Klinger Laser's Astro Laser Set



$1,275

KO4100L - Laser Whiteboard Optics Kit

SALE ~~$535~~ $435

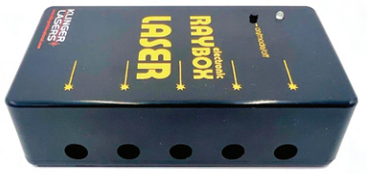


LRB-LED-KL LED Laser Ray Box

SALE ~~$579~~ $419

LRB-DUO-KL DUO Laser Ray Box

$399



LRB-ELEC-KL Laser Ray Box

$85

LTB-MLT-KL Klinger Led Light Box Multi Pack 3 Colors

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