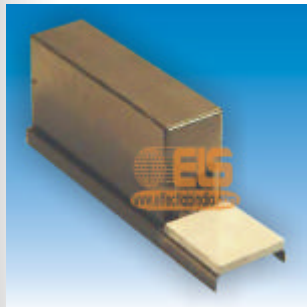


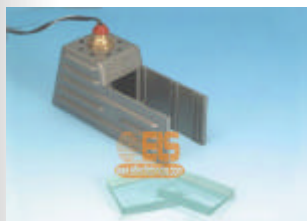
### Ray Track apparatus (ELP.106.177)

Wood board with matt white surfaces, mounted on plastic feet, carries a circular scale with 0-360° four quadrants 0-90° graduated every 2°, removable turntable 170 mm. dia with 2 lines at right angles and a ray box with a 12v, 24w bulb. supplied with a cylindrical, convex lens focal length 75mm and two double screens, giving one wide slit and one each single, three and five slits.



### Parallel Beam Projector (ELP.106.178)

Comprises of sheet metal case. A plano - convex lens 50 x 150 mm. dia x focal length is held in position by 3 plastic screws. A prism table is set in front of the lens. A 12 volt, 24 watt axial filament bulb is housed in the case and is allowed approximately 152 mm. transverse movement for focusing. The lamp mounting is totally enclosed over full length of transverse by removable clip on cover.



### Ray Box (ELP.106.179)

A ventilated lamp house having an open front with extended sides finned externally for heat dissipation and vertical internal grooves to accommodate a slit plate and cylindrical lens. It has a light source comprising a 12 volts lamps in a holder with one meter of twin flex having banana plugs. Complete with metal plate having single and triple slits and whitened on one side and other side black matt. Without lens.



### Ray Box Lenses Set (ELP.106.180)

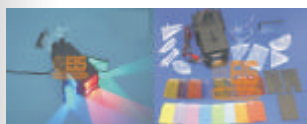
Lens Set, one each plano-convex, planoconcave, Double convex and double concave cylindrical lens of focal length 150 and 300 mm respectively; .



### Ray Box Experimental Set up Kit (ELP.106.181)

Complete Kit comprising of following :-

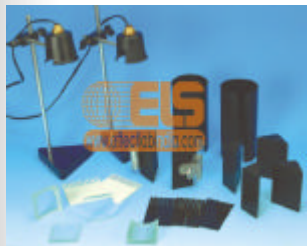
- Ray Box with Lamp
- Color filter Set of 7
- Acrylic block Set of 8 different Figures
- Set of Slits Single, double and Triple
- Set of Cylindrical Concave and convex Mirrors



### Light box & Optical set (ELP.106.182)

This kit is very useful for reflection, refraction and colour mixing experiments. The light box consists of a light source (12 volt, 24 watts lamp), producing convergent, divergent, or parallel beam. On one end a adjustable cylindrical convex lens, for parallel beam and on the other end, a triple aperture system for colour mixing experiments (lateral aperture are provided with adjustable hinged mirror). All aperture in the box are provided with vertical channels to hold slit plates and colour filter. The optical set includes

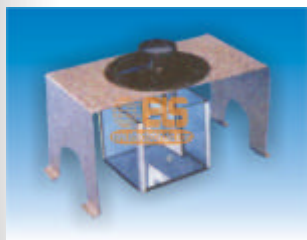
- 10 acrylic blocks
- Set of 3 mirrors
- 2 slit black plates, one with 3 narrow slits at one end & one narrow at other end.



### Ray optics kit (ELP.106.183)

A versatile kit of components for ray optics experiment. Investigations possible include linear propagation of light rays, Focussing of rays by cylindrical lenses, Focussing of multiple rays showing aberration, Law of reflection, refraction in water, prisms etc.

- A. 2 Lamp holder of 12 volts & 24 watts lamp & stands
- B. 1 pair of housing shields
- C. 2 combined single & triple slit plates
- D. 2 Multiple slit combs
- E. 2 holders for combs and slit plates
- F. 4 Wooden light barriers
- G. 4 Plano cylindrical lenses + 7D
- H. 2 Plano cylindrical lenses + 10D
- I. 2 Plano cylindrical lenses + 17D
- J. 2 Plano cylindrical lenses - 7D



### Refractive Index Of Liquid By Critical angle Method

(ELP.106.184)

The apparatus consists of a cemented glass trough, air cell rotatable by knob carrying pointer on circular scale graduated 360° fitted on metal bridge.



### Plane Mirror Image Formation Distance (ELP.106.185)

No more use of prickly pins to demonstrate this important principle. To demonstrate that the image formed in a Plane Mirror is as far behind in the Mirror as the object is from the Mirror or that the image distance is equal to the object distance. It consists of a specially coated mirror in which you can view the image from the front and can also see thru the mirror. If the object which in this case is a mounted flame cut out is placed in front and a similar is placed on the back and parallax error is removed then it will be found that the object and the image are at the same distance.



### Plane Mirror Reflection Angle of Incidence and Reflection

(ELP.106.186)

No more use of prickly pins to demonstrate this important principle. This is self contained unit with a light source to demonstrate that in Plane Mirror Reflection the Angle of Incidence is equal to the Angle of Reflection. It consists of a graduated metal protractor mounted on a base, with a light source producing a beam of light.



### Smoke Box Kit (ELP.106.187)

For three dimensional ray optics experiments, enabling students to observe the complete pattern produced by light rays. Lenses, mirrors and screens of different patterns may be introduced in demonstration. The kit comprises:

- 1 smoke box, 920 x 180 x 340mm high, made of wood with glazed front and ends, and a hinged rear lap or the introduction of lenses, mirrors etc. A hole with pivoted cover in the rear of the case provides the smoke inlet.
- 1 lens, plano-convex, 100mm diameter x 150mm focal length.
- 1 mirror, concave, 100mm diameter x 300mm focal length.
- 2 spring clip holders for lens and mirror, mounted on wooden blocks 150 x 50 x 38mm.
- 3 aluminium screen plates, black, 135 x 135mm with different hole patterns. One with single 44mm hole, and two with seventeen holes covering pattern diameters of 41 and 68mm



### Functional Eye Model (ELP.105.191)

This unique model permits demonstration of the physical principles upon which the eye operates, including defects of vision and their correction.

The lens and culinary body are flexible, the lens itself being fluid filled and connected to a syringe. The syringe can be used to vary the pressure in the lens and hence its thickness, to simulate accommodation. The length of the 'eyeball' may be varied to simulate long or short sight and a lens support mounted in front of the 'cornea' allows external lenses to be used to demonstrate correction via spectacles. A major advantage of this model is that actual images may be projected onto the 'retina', making it an extremely effective demonstration tool. The complete model is mounted on a wooden base

### Diffraction Grating (ELP.106.207)

15,000 lines per 25 mm., mounted between two glass protecting plates 60 x 45 mm., grating area 47 x 35 mm.

### Polarizer and analyzer (ELP.106.191)

This apparatus comprises two identical units each provided with polaroid disc mounted in a rotatable mount, with an aperture of 25 mm. Both rotatable mounts have a lever to add rotation and a pointer which traverses a 75 mm diameter metal silvered scale divided into  $360^\circ \times 1^\circ$ . The size is universal and can be fit to any size of collimator and telescope. (i) Aluminium Scale (ii) Brass Silvered Scale

### Single Slit fitted with micrometer (ELP.106.190)

Same per **Cat no. ELP.106.189** but fitted with a micrometer.

### Single Slit (ELP.106.189)

All metallic diffraction grating clamp type and is fitted on prism table of spectrometer for interference of light experiment.

### Double Slit (ELP.106.188)

All metallic diffraction grating clamp type and is fitted with two micrometers screw slides forming a double slit with fine edges in the centre of the vertical clamp holding device. Very superior quality.

respectively.

- 1 support block 150 x 50 x 38mm with cork lined slot to support the screen plates.
- 1 clip for holding screen plates, mounted on rod 100 x 8mm diameter.
- 1 mirror, plane, mounted on wooden back 150 x 150 x 20mm.
- 1 smoke maker, tinplate body with removable conical end, mounted on bellows base. To be used with roll of slow burning brown card or paper.
- 1 Handling rod for maneuvering lenses, etc., inside the box without undue disturbance of smoke.



**Diffraction Grating** (ELP.106.208)

2,000 lines per 25 mm., mounted between two glass protecting plates 60 x 45 mm., grating area 47 x 35 mm.



**Diffraction Grating Set of 3** (ELP.106.209)

Mounted between two glass protecting plates In velvet lined box.



**Polaroid Film** (ELP.106.210)

Framed in cardboard frame.

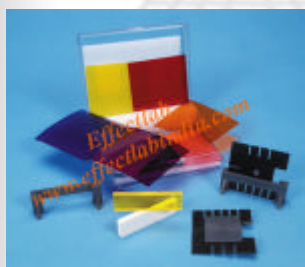
.01 25 x 25 mm pair

.02 50 x 50 mm pair



**Color Filter Set** (ELP.106.211)

Set of eight Primary Colors One each of blue, cyan, green, yellow, magenta, red, ruby and purple. each mounted in cardboard frame.



**Color Filter Set** (ELP.106.212)

Unmounted colored, gelatine film, 50 mm. Square with Visualizer.



**Micrometer Eye Piece Disc** (ELP.106.213)

Glass vertical graduation, scale 10 mm. Divided into 100 parts.



**Micrometer Eye Piece Disc** (ELP.106.214)

Glass horizontal graduation, scale 10 mm. Divided into 100 parts.

**Reading Telescope** (ELP.106.254)

Fitted with an achromatic objective of fl 175 mm. clear aperture of 23 mm and x8 Ramsden eyepiece with a cross - line graticule. The focussing is done by rack & pinion arrangement . Mounted on heavy metal stand.



[www.effectlabindia.com](http://www.effectlabindia.com)

### Direct Vision Spectroscope (ELP.106.255)

Useful for classroom demonstration and laboratory observations. Instrument provides a wide spectrum of any visible light source. Both emission and absorption spectra can be viewed. Features a 10x10mm Amici type 3-element prism train, telescopic focusing housed in brass body and variable optical slit adjustable by knurled head rotating ring. Wooden storage case included.

### D. V. Spectroscope With Wavelength Scale (ELP.106.256)

Portable and precise, the instrument provides direct wavelength readings of visible spectrum from 400nm to 750nm with each scale division representing 5nm. The spectrum is viewed in the plane of scale and for error free readings, D-line on scale can be adjusted. Incorporates a 10x10mm Amici type 3-element prism train, telescopic focusing housed in brass body and variable optical slit adjustable by knurled head rotating ring. Wooden storage case included.

### Matt White Screen (ELP.106.257)

The metal screen is painted matt white, with a cut-out in one side to locate over a metre rule. It may be used in either the vertical or the horizontal position as required.

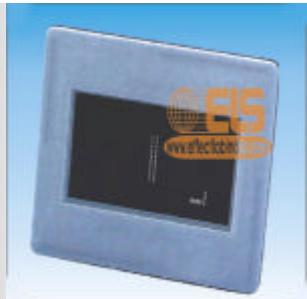
### Young's Slit (ELP.106.258)

A double slit 10 mm long x 1 mm separation in 50x50 mm frame. Mounted in channel with a hinged joint & micrometer screw to give fine adjustment. For observation of fringes produced by interference between two beams of light from a common source.

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### Young's Slit (ELP.106.259)

Double slit 10 mm with 1 mm separation in frame of 50x50 mm. Unmounted.



### Double slit Kit (ELP.106.260)

Containing four ruling devices, one box of 72 microscope slides, a bottle of colloidal graphite to prepare double slits. The slide is accommodated in a groove in the ruling device which has a 0.5 mm pitch feed screw for control of spacing.



### Lens Cleaning Tissues (ELP.106.261)

Lens Cleaning Tissues. Lint free, to clean lenses and other glass objects without scratching the surface. Approximately 140 mm x 95 mm sheet size, booklet of 100 sheets.



### Hand Stroboscope (ELP.106.262)

Simple Hand Driven to show the students the stroboscope effect.



### Optical board Rectangular (ELP.106.263)

Comprises of M.S. sheet, 75 x 100 cm, mounted on two side pillars, The light box consist of a light source (12V, 24W lamp) producing convergent, divergent, or parallel beam and on other end, a triple aperture system for colour mixing experiments. Supplied with all necessary optical components which are held on the board with magnets.

