

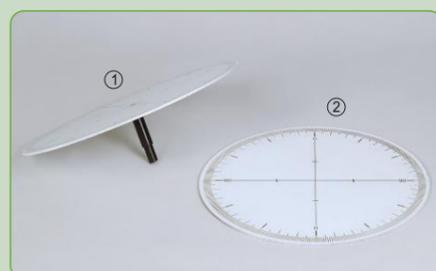
Component Detail



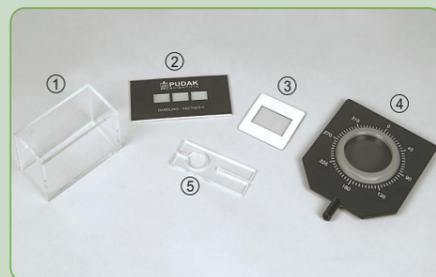
EQUIPMENT FOR GEOMETRICAL OPTICS EXPERIMENT

Optical glass grade is use for the lenses. Diameter 40mm convex and concave lenses. Mounted on ABS plastic holder.

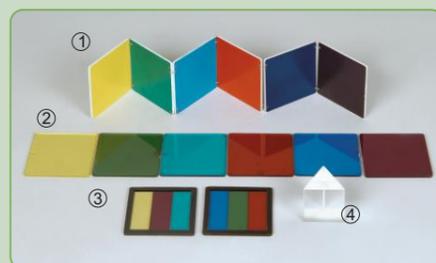
1. Lenses in holder. Convex and concave lens mounted on holder.
2. Mirrors in holder. Convex and concave mirrors mounted on a holder.
3. Diaphragm slide holder. With spring loaded pairs of slot on each side, to hold diaphragm filters and grating.
4. Slide covers. For adjusting the number of holes in use.
5. Translucent screen.
6. White screen.
7. Earth moon model.
8. Prism table. Use for positioning the prism on the rail. It also use to support the cuvette and candle.



OPTICAL DISC



WAVE OPTICS



EQUIPMENT FOR COLOR EXPERIMENT

1. Color strip.
2. Color filter set. Red, green, blue, Cyan, Magenta, Yellow.
3. Color filter RGB set and CMY set. Set for color mixing, comprising a triple color slide with RGB and

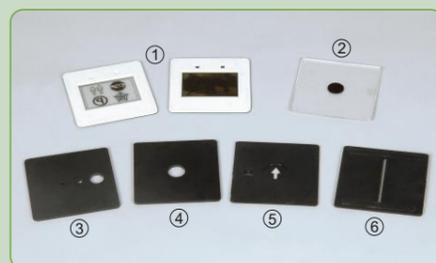
Optional Equipment

(Not included on kit)



POWER SUPPLY | KAL 60/5A

- Designed for Mechanics, Electricity and Magnetism, and Optics kit.
- Input: 220V (50-60 Hz)
- Output: AC/DC: 0, 2, 4, 8, 10, and 12V in steps max 5A.
- Electronically protected against overload/short circuit, LED overload indicator.
- Dimension: 23.3 × 17 × 12.5 cm.



SLIDE AND DIAPHRAGM

1. Slide model, set.
2. Circular disc in mount.
3. Diaphragm with 4 hole.
4. Diaphragm, single hole.
5. Arrow diaphragm.
6. Diaphragm, single slit.

Optics Kit

POK 500

- Comprehensive set of equipments for Optic experiments
- 49 experiments with fully illustrated manual
- Well designed systems consisting of precise and robust



This versatile kit is designed to assist high school student to acquire better understanding of concepts in optics: Propagation of Light, Mirrors, Refraction, Lenses, Colors, The eye, Optical Instruments and Wave Optics

Specifications are subject to change without prior notice

List of Component in Optics Kit

No.	Cat. No.	Description	Qty
1	POG 460 01	Ray box 12V 20W Halogen lamp	1 pc
2	POG 460 02	Ray box holder	1 pc
3	POG 460 03	Diaphragm 1 and 3 slits	1 pc
4	POG 460 04	Diaphragm 1 wide and 5 slits	1 pc
5	FPT 16 06/76	Lamp housing	2 pcs
6	FPT 16.02/66	Precision rail	2 pcs
7	FPT 16 03/67	Rail connector	1 pc
8	FPT 16.04/68	Foot for rail	2 pc
9	FPT 16 17/87	Clamp rider	6 pcs
10	POG 100 01	Mirror concave, in holder 75mm	1 pc
11	POG 100 02	Mirror concave, in holder 150mm	1 pc
12	POG 120 01	Mirror convex, in holder 75mm	1 pc
13	POG 120 02	Mirror convex, in mount 150mm	1 pc
14	FPT 16 13/83	Lens, glass, in holder +50mm	1 pc
15	FPT 16 14/84	Lens, glass, in holder +100mm	1 pc
16	POG 200 01	Lens, glass, in holder +300mm	1 pc
17	FPT 16 16/86	Lens, glass, in holder -100mm	1 pc
18	POG 220 01	Lens, glass, in holder -300mm	1 pc
19	FCA 40	Polarizing filter in holder	2 pcs
20	FPT 16 12/82	Translucent screen	1 pc
21	POG 700	Screen, white	1 pc
22	FPT 16 07/77	Diaphragm slide holder	2 pcs
23	POG 680	Prism table	1 pc
24	POG 050	Earth moon model	1 pc
25	POF 550	Cuvette, plastic	1 pc
26	POG 350	Hollow plastic tank	1 pc

No.	Cat. No.	Description	Qty
27	POG 250	Lens-body, semicircle	1 pc
28	POG 310 02	Prism-body, trapezoid	1 pc
29	POG 310 01	Prism-body, right angle	1 pc
30	POG 240 01	Lens-body, plano-convex	2 pcs
31	POG 260 01	Lens-body, plano-concave	1 pc
32	FPT 55/20	Prism body, equilateral	1 pc
33	POG 320	Prism body, 10 degree	1 pc
34	FPT 16 23/93	Combination mirror	1 pc
35	POG 550 04	Slide model, set	1 pc
36	POG 550 03	Slide with 4 holes	1 pc
37	FPT 16 25/95	Diaphragm, arrow shaped	1 pc
38	FPT 16 07	Slide covers	2 pcs
39	FPT 16 09/79	Diaphragm, single slit	1 pc
40	POF 310	Slide for polarization	1 pc
41	POG 550 01	Diaphragm, single hole	1 pc
42	POG 550 02	Circular disk in mount	1 pc
43	POF 225	Color filter	6 pcs
44	POF 210	Color filter, RGB	1 pc
45	POF 215	Color filter, CMY	1 pc
46	POF 265	Color strip	1 pc
47	POG 099	Plain mirror for color mixing	3 pcs
48	POG 400 02	Optical disk with axle	1 pc
49	POG 400 01	Optical disk with graduation	1 pc
50	POF 180 01	Diffraction grating	1 pc
51	POF 600	Photoelastic solid	1 pc
52	LPO 122	Experiments manual *)	1 pc

*) Available in English and Indonesian Version

All components are stored in a wooden box
Dimension: 68 × 44 × 18 cm, Weight: 7 Kg

Experiment Topics

PROPAGATION OF LIGHT

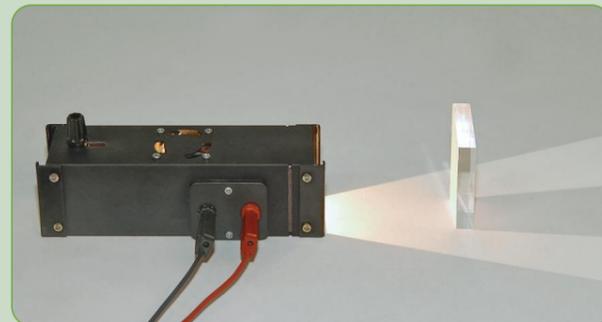
- P 31 21 Light Propagates Rectilinearly
- P 31 22 Shadow
- P 31 23 Core Shadow and Half Shadow
- P 31 24 Lunar Phases
- P 31 25 Solar and Lunar Eclipses
- P 31 26 Pinhole Camera

MIRRORS

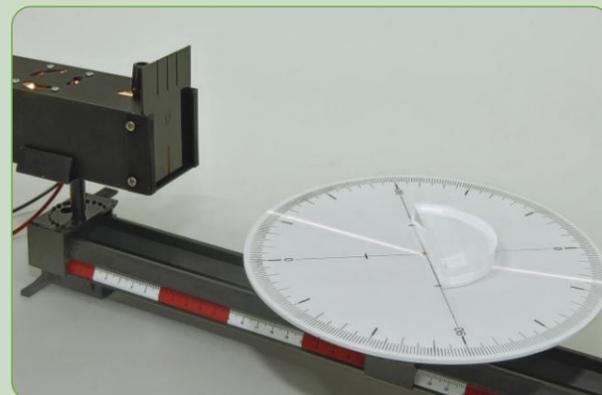
- P 32 21 Reflection of Light on a Plane Mirror
- P 32 22 Reflection of Light on a Curved Mirror
- P 32 23 Object and Image on a Plane Mirror
- P 32 24 Reflection of Parallel Rays on a Concave Mirror
- P 32 25 Image of a Point Object Formed by a Concave Mirror
- P 32 26 Three "Special" Rays for Image Construction in a Concave Mirror
- P 32 27 Locating the image of an object formed by concave mirror
- P 32 28 Refection of Parallel Rays on a Convex Mirror
- P 32 29 Image of a Point Object Formed by Convex Mirror
- P 32 30 Three "Special" Rays for Image Construction in a Convex Mirror
- P 32 31 Image on a Convex Mirror

REFRACTION

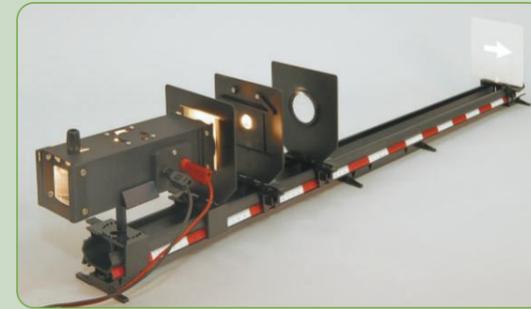
- P 33 21 Refraction of Light on Plain Parallel Surface
- P 33 22 Refraction at the Transition from Air into Water
- P 33 23 Refraction of Light
- P 33 24 Total Reflection
- P 33 25 Refraction trough a Prism



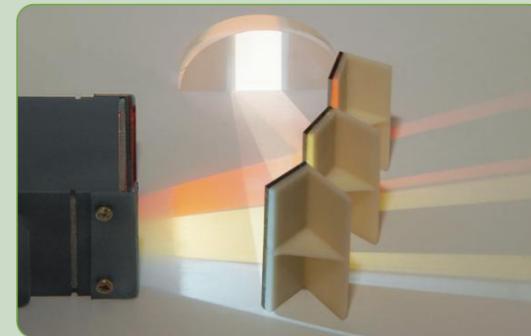
Experiment P 31 22 | Shadow



Experiment P 33 23 | Refraction of Light



Experiment P 34 24 | Image by a Convex Lens



Experiment P 38 22 | Color Mixing



Experiment P 37 21 | Diffraction by Grating

Component Detail



PRECISION RAIL AND CONNECTOR

1. Precision rail. Made from anodized extruded aluminum. With scales on both sides of the rail. Length 50cm, scale in cm and mm.
2. Rail connector. For rigid straight coupling of two precision rails, length 20cm.
3. Foot for rail. For adjusting the height of rail ends when linking precision rail. Length 5cm each.
4. Clamp rider. For attaching optical devices to the precision rail.

Experiment Topics

LENSES

- P 34 21 Refraction at Convex Lenses
- P 34 22 Construction of Image Formed by a Convex Lens
- P 34 23 Spherical Aberrations
- P 34 24 Images by a Convex Lens
- P 34 25 Object Distance, Image Distance and Focal Length
- P 34 26 Refraction at Concave Lenses
- P 34 27 Construction of Image formed by a Concave Lens
- P 34 28 Image Formed by a Concave Lens

COLORS

- P 38 21 Dispersion of Light
- P 38 22 Color Mixing
- P 38 23 Colors of Object
- P 38 24 Color of an Object when Viewed through Color Filter

THE EYE

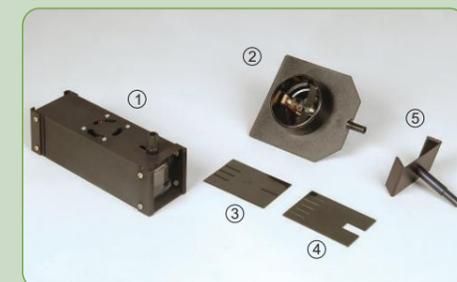
- P 35 21 The Eye
- P 35 22 Short Sightedness
- P 35 23 Long Sightedness
- P 35 24 Optical Illusions

OPTICAL INSTRUMENTS

- P 36 21 Magnifying Glass
- P 36 22 Slide Projector
- P 36 23 Microscope
- P 36 24 Astronomical Telescope
- P 36 25 Camera

WAVE OPTICS

- P 37 21 Diffraction by Grating
- P 37 22 Determination of the Wave Length of Light
- P 37 23 Polarization of Light
- P 37 24 Rotating of the Plane of Polarization by Inserting Solid Materials
- P 37 25 Model of a Saccharimeter
- P 37 26 Photoelasticity



RAY BOX

1. Fan cooled aluminum body. Ray Box with 12V, 20W Halogen lamp with condenser lens.
2. Lamp with housing on rod. 12V, 18W. Lamp tube can be turned around.
3. Diaphragm 1 and 3 slits.
4. Diaphragm 1 wide and 5 slits.
5. Ray box holder. for use precision rail.



LENS AND MIRROR

- Lens. Made from polished acrylic.
- Combination mirror. Chrome, coated plastic.