

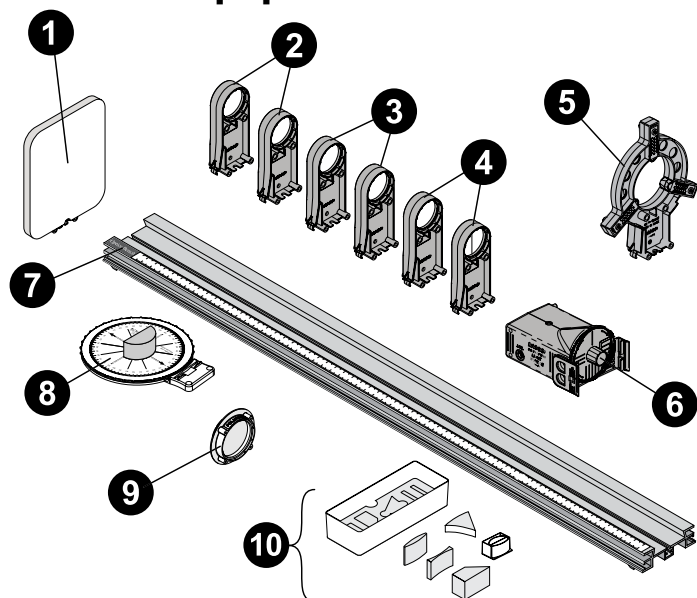
Basic Optics System

OS-8515D

Introduction

The Basic Optics System contains the components needed for a variety of optics experiments and demonstrations. The system can be expanded with a variety of Basic Optics kits and components available from PASCO, including lasers, polarizers, diffraction slits, and light sensors.

Included equipment



- ❶ Basic Optics Viewing Screen (OS-8460)
- ❷ Basic Optics Geometric Lens Set (OS-8456)
- ❸ Accessory Lens Set (OS-8519)
- ❹ Concave/Convex Mirror (OS-8457) with half-screen
- ❺ Adjustable Lens Holder (OS-8474)
- ❻ Basic Optics Light Source (OS-8470)
- ❼ 1.2 m Optics Track (OS-8508)
- ❽ Basic Optics Ray Table (OS-8465A)
- ❾ Polarizer
- ❿ Ray Optics Kit (OS-8516A)

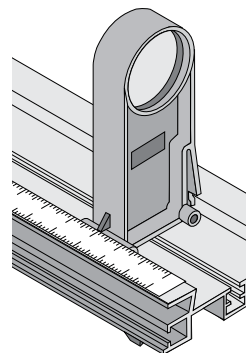
About the equipment

The following sections outline the basic features and functionality of the Basic Optics System's components. For more detailed information about the Basic Optics Light Source (OS-8470), Basic Optics Ray Table (OS-8465A), Adjustable Lens Holder (OS-8474), or Ray Optics Kit (OS-8516A), see the instruction sheets included with those components.

1.2 m Optics Track (OS-8508)

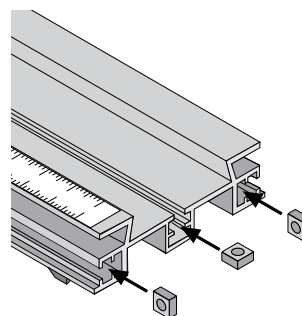
Several Basic Optics components, such as the mounted lenses and the Adjustable Lens Holder, are designed to snap into the wide central channel of the 1.2 m Optics Track. Place the base of the component on the bench and push down firmly to snap it into place. To move the

component, squeeze the tab on the base and slide the component along the bench. Use the metric scale on the bench to measure the relative positions of components.



Components that include a square bolt and thumbscrew are designed to be fastened to the T-slots on the sides and center of the bench. To attach these components:

1. Slide the square bolt into the appropriate T-slot, as shown below.
2. Insert the thumbscrew through the component's mounting hole.
3. Thread the screw into the bolt and tighten it to secure the component in place.



Basic Optics Light Source (OS-8470)

The included Light Source can be used on a tabletop or mounted on the bench. It can function as a bright point source, an illuminated crossed-arrow object, a primary-color source, and a ray box with up to five parallel rays.

Mounted lenses

The Basic Optics System includes four lenses mounted in holders. These include the +100 mm and +200 mm mounted lenses from the Basic Optics Geometric Lens Set (OS-8456) and the +250 mm and -150 mm mounted lenses from the Accessory Lens Set (OS-8519). These lenses can be mounted on the Optics Track and used with the Light Source, the Viewing Screen, and other Basic Optics components.

Adjustable Lens Holder (OS-8474)

To use an unmounted lens with the Optics Track, place it into the Adjustable Lens Holder and secure the holder to the track. The Adjustable Lens Holder can hold any round lens with a diameter between 20 mm and 75 mm.

Basic Optics Viewing Screen (OS-8460)

The Basic Optics Viewing Screen allows you to view real images formed by lenses. To do so, mount the screen on the bench at an appropriate distance from the lens.

Concave/Convex Mirror (OS-8457)

This mounted mirror is concave on one side and convex on the other side. The radius of curvature of both sides is 200 mm. Use the mounted half-screen to view real images created by the concave side of the mirror.

Basic Optics Ray Table (OS-8465A)

Use the Ray Table and included D-shaped lens on a tabletop with the Light Source (in ray-box mode) to study the relationship between angles of incidence, reflection, and refraction.

Ray Optics Kit (OS-8516A)

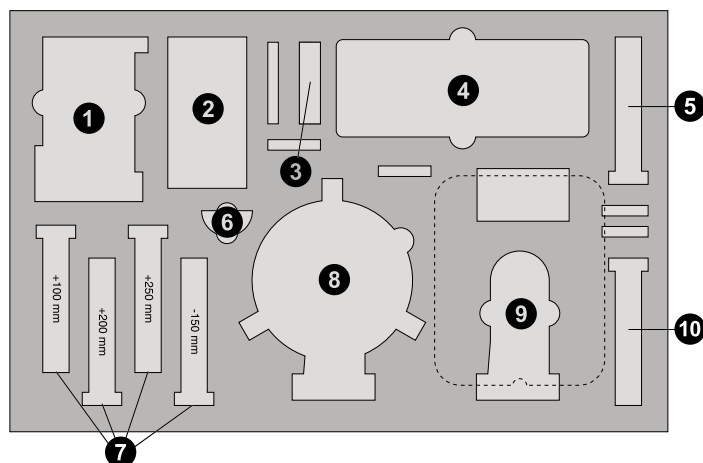
The Ray Optics Kit is a set of optics components designed to be used with the Light Source in ray-box mode. To make the rays easy to see and trace, use the ray optics components on a white sheet of paper on a flat surface. The transparent storage box doubles as a water tank for studying lenses underwater. The components of the kit include a mirror, a hollow lens, a convex lens, a concave lens, and an acrylic trapezoid.

Polarizer

A polarizer allows only light that vibrates in a specific direction to pass through. For the polarizer included in this system, the plane of polarization is parallel to the line between 0° and 180° on the outer casing. If this polarized light passes through another polarizer with a plane of polarization perpendicular to the first polarizer, the light will be fully blocked and unable to pass through. This polarizer is used with the Basic Optics Ray Table to study Brewster's Angle.

About the storage box

Use the foam-padded box to store, organize, and protect the system's components. Place the components into the fitted components as shown below. Extra compartments are included for storing additional components and spare parts.



- ❶ Basic Optics Light Source
- ❷ AC adapter for Light Source
- ❸ Polarizer
- ❹ Ray Optics Kit (in plastic box)

- ❺ Concave/Convex Mirror
- ❻ D-shaped lens for Ray Table
- ❼ Mounted lenses
- ❽ Basic Optics Ray Table and Adjustable Lens Holder
- ❾ Basic Optics Viewing Screen
- ❿ Half-screen for Concave/Convex Mirror

Experiment files

Download one of several student-ready activities from the PASCO Experiment Library. Experiments include editable student handouts and teacher notes. To find a list of basic experiments that use the Basic Optics System, visit www.pasco.com/resources/lab-experiments/collection/116.

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

- ☐ Chat pasco.com
- ☎ Phone 1-800-772-8700 x1004 (USA)
+1 916 462 8384 (outside USA)
- ✉ Email support@pasco.com

Limited warranty

For a description of the product warranty, see the Warranty and Returns page at www.pasco.com/legal.

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