

OPERATING INSTRUCTIONS

Optical Slits Apparatus No. 72702

1. Introduction

Diffraction and interference of light are clearly demonstrated in this kit. It has all the materials for a simple Young's Experiment, and can be used to demonstrate the wave nature of light.

2. Description

The Optical Slits Apparatus comes with a 40 watt clear showcase lamp with a socket and cord, for a bright, direct light source. Also included are ten coated microscope slides, five double-edged razor blades, and two squares of cellophane, one red and one blue.

Not included, but required for operation, are a ring stand, a buret clamp, a ruler, two markers for the ruler, two rubber bands, and, if available, a micrometer.

3. Operation

Experiments in interference and diffraction require a pattern of two parallel slits, as close together as possible. Two clean double-edged razor blades, held tightly together, will produce two clean, even slits separated by a distance equal to the thickness of one blade. To determine this distance, measure a blade with a micrometer, if one is available. If not, carefully measure the thickness of a stack of blades with a finely-graduated ruler, and divide by the number of blades.

Hold the two blades tightly together and tilt them slightly forward to engrave precise lines on the coated slide. Use a thin metal or glass straight edge both to produce straight lines and to protect the coated surface of the slide from nicks and cuts. Further protection can be obtained if desired by taping a clear, clean slide over the slide with the slits.

Hold the slide about two meters from the light source when viewing, in order to see clear, well-defined interference and diffraction patterns.

Once the slits in the coated slide surface are made, the apparatus is ready for use. Complete procedures are described in sixth edition PSSC experiment 42, "Young's Experiment," and in the Project Physics manual. The Optical Slits Apparatus may be used for experiments in these or any other lab system.

4. Maintenance

The Optical Slits Apparatus needs no special maintenance. If any difficulty develops, contact Central Scientific Company, giving all details of the problem. Do not return this apparatus without written authorization from Central Scientific Company.

5. Accessory

<u>Description</u>	<u>Cat. No.</u>
Metric Micrometer	72655

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