

Geometrical Optics Lab



Secondary and higher education



Independent Test Bench



1 workstation



Semiautomatic control



Over 10 hands-on experiments



Powered by NI ELVIS II

Required hardware and software

- Educational Board (1 pc)
- Compact Disk with Lab software (1 pc)
- Transmitter lasers (4 pc)
- Receiver (1 pc)
- Transmitter LED (1 pc)
- Optical lenses (5 pc)
- Optical prisms (2 pc)
- Mirrors (2 pc)
- Optical fiber (1 pc)
- Optical filters (4 pc)
- White screen (1 pc)
- Screen holder (1 pc)
- Asymmetrical figures (2 pc)
- Product guide (1 pc)
- User Manual (1 pc)

List of labs

- Rectilinear propagation of ray
- Rigidity-independent propagation of ray
- Geometrical shadow
- The Law of reflection
- Total internal reflection
- The Law of refraction
- Ray refraction in triangle prism
- Lenticular lens
- Biconcave Lens
- Filters
- Optical fibers

Overview

The Geometrical Optics Lab is based on the NI Educational Laboratory Virtual Instrumentation Suite (NI ELVIS II) platform. The lab provides a complete set of optical and mechanical components which can be conveniently assembled into setups for conducting experiments in geometrical optics.

The Geometrical Optics test bench allows the students to control the light source behavior, lenses, measure reflected and transient light intensity, manipulate the color of the emitted light, imitate optical communication, etc. Highly visual experiments are based on a functional control and acquisition system, allowing the students to explore the world of optics and study the basics of fiberoptical communication.

Features

- Easy maintainable graphical interface
- Students registration mechanism
- High flexible architecture of the stand
- Visualized experiments
- Experiment step-by-step instruction
- Interactive tutorials for each experiment



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