LEOI-30 Diffraction Intensity Measurement System - Complete Model

Description

This system can be used to quantitatively investigate diffraction effects. To capture and analyze diffraction patterns, a photocell is used to transform diffraction pattern into current which is displayed by a LED. The intensity distribution of diffraction can be plotted with the numerical data recorded. This experiment can help students understand the wave nature of light and improve their experimental skills.

Feathure

Stable performance with easy operation
LED display with accurate reading
Including He-Ne laser and photodetector with amplifier
Complete system

Application

Fraunhofer Diffraction (Far-field)

1. Fraunhofer diffraction through a single-slit
2. Fraunhofer diffraction through a multi-slit plate
3. Fraunhofer diffraction through a single circular aperture
4. Fraunhofer diffraction through a transmission grating

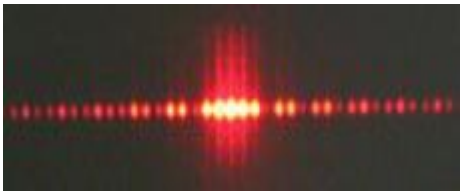
Fresnel Diffraction (Near-field)

1. Fresnel diffraction through a single-slit
2. Fresnel diffraction through a multi-slit plate
3. Fresnel diffraction through a circular aperture
4. Fresnel diffraction past a straight edge

Part list

Description	Specs/Part#	Qty
Optical Rail	1 m, Black anodized aluminum (LEPO-54-1)	1
Carrier	z axis adjustable (LEPO-54-2)	2
Carrier	z and x axes adjustable (LEPO-54-3)	2
Carrier	z, x and y axes adjustable (LEPO-54-4)	1
Transversal Measurement Stage	Travel: 80 mm, Accuracy: 0.01 mm	1
He-Ne Laser	>1.0 mW (LLL-2)	1
Lens Holder	LEPO-9	2
Plate Holder	LEPO-13	1
White Screen	LEPO-14	1
Adjustable Slit	Continuously adjustable from 0-2 mm (LEPO-42)	1
Laser Holder	LEPO-44	1
Lens	*f* '= 6.2, 150 mm	1 each
Multi-slit Plate	2,3,4,5 slits	1
Multi-hole Plate with Holder	Chrome plate, 8 holes, 0.1/0.15/0.2/0.3/0.5/0.7/1/2 mm (dia)	1
Grating	20 l/mm (with mount)	1
Detector and Amplifier	20 μW-200 mW (LLM-2)	1
Alignment Aperture		1

Fraunhofer diffraction of single slit



Fraunhofer diffraction of multiple slits