

Order Code : 20213547.4.4

Name : Lens aberration and Fourier optics experiment.



Specifications:

Features

- ▶ Lens Aberration Demonstration
- ▶ Fourier Optical Processing
- ▶ Easy Operation
- ▶ Cost Effective

Introduction

There are six basic optical aberrations affecting the ideal performance in an optical imaging system, which are chromatic aberration, spherical aberration, coma, distortion, curvature of field and astigmatism. Experiments based on this kit will help students familiarize with these aberrations. Optical lens can perform the Fourier transform to light field on object plane. Various spatial filtering techniques are used in the reconstruction of the filtered images based on Abbe's theory of image formation. Students can get a better understanding of Fourier optics and spatial filtering through the proposed experiments. The instructional manual contains comprehensive materials including experimental setups, principles, procedures and required parts with photos.

Examples of experiments:

Lens Aberrations: spherical aberration, field curvature, astigmatism, coma, distortion, and chromatic aberration

Fourier Optics and Spatial Filtering: low-pass filtering, high-pass filtering, and directional filtering.

Part List

Description	Specs/Part No.	Qty
Optical rail	1.2 m; aluminum	1
Laser holder	SZ-42	1
Carrier	General	3
Carrier	X-translation	4
Carrier	X-Z translation	2
Lens	f = 4.5, 50, 100, 100, 150 mm	1 each
Plano-convex lens	f = 75 mm	1
He-Ne laser	LLL-2 (>1.5 mW@632.8 nm)	1
Tungsten-Bromine lamp	LLC-3 (12 V/30 W, variable)	1
Transmissive character		1
Iris diaphragm	SZ-15	1
Spatial filter	1 set of 6 pcs	1
White screen	SZ-13	1
Optical filter	Red, Green and Blue	1 set
Plate holder	SZ-12	1
Lens holder	SZ-08	6
Object screen	SZ-14	1

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

TESCA TECHNOLOGIES PVT. LTD.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension, Jaipur-302029, Rajasthan, India.
 Ph/ Fax: 91-141-2771791, 2771792; Email: info@tesca.in, tesca.technologies@gmail.com
 Website: www.tesca.in