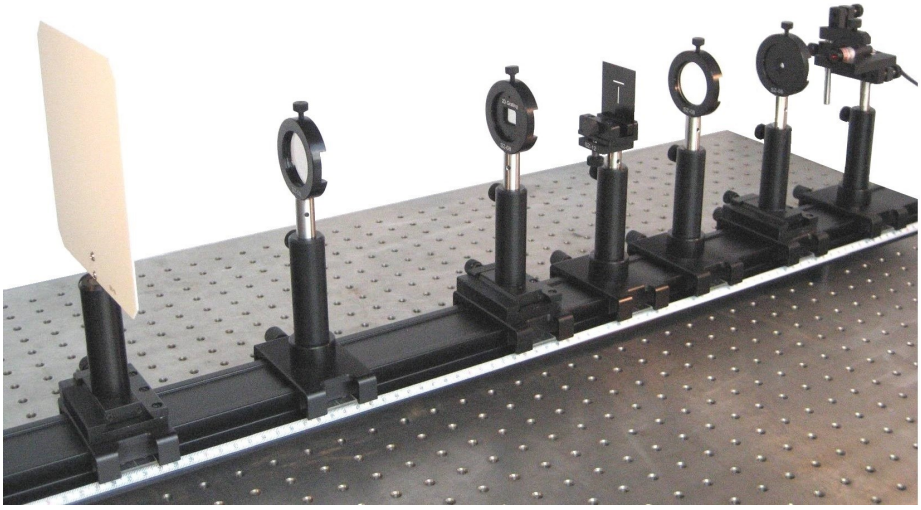
Construct, Conduct & Comprehend Physics Experiments

LEOK-46 Experiment Kit of Optical Image Differentiation



- *Understand principle of optical image differentiation*
- *Understand Fourier spatial light filtering*
- *Acknowledge structure and principle of 4f optical system*
- *Detailed instruction manual*

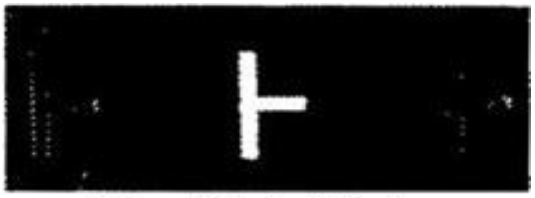
This experiment kit employs an optical correlation method for the spatial differentiation of an optical image, so that the image contour can be outlined with an enhanced contrast. Through this kit, students can get a better understanding of the principles of optical image differentiation, Fourier spatial light filtering, and 4f optical systems.

Specifications

Semiconductor Laser	650 nm, 5.0 mW
Composite Grating	100 and 102 lines/mm
Optical Rail	1 m

Part List

Semiconductor laser, 5.0 mW@650 nm	1
Beam expander (f=4.5 mm)	1
Optical rail, 1 m	1
Carrier	7
Lens holder	3
Composite grating (100 &102 l/mm)	1
Plate holder	2
Lens (f=150 mm)	3
White screen	1
Laser holder	1
Two-axis adjustable holder	1
Small aperture screen	1



Differentiation in X-direction

Differentiation of a phase image

Two results of image differentiation

Note: above product information is subject to change without notice.

Lambda Scientific Systems, Inc.
16300 SW 137th Ave, Unit 132
Miami, FL 33177, USA
Phone: 305.252.3838 Fax: 305.517.3739
E-mail: sales@lambdasys.com
Web: www.lambdasys.com