

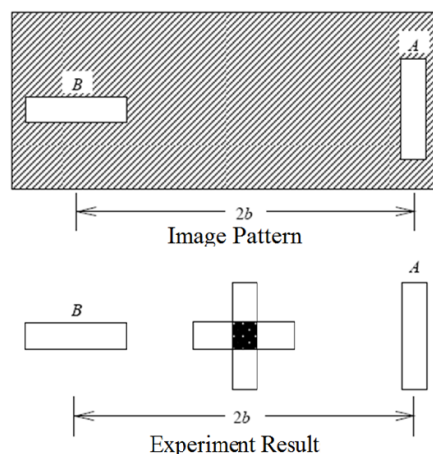
UO-20 Image Addition and Subtraction Experiment

- √ Understand physical meaning of optical image addition/subtraction using grating
- √ Understand Fourier spatial light filtering
- √ Acknowledge structure and principle of 4f optical system
- √ Detailed instruction manual



Image addition/subtraction is an optical operation in coherence optics, and it is a method of image recognition. This experiment kit employs a sine grating as the spatial light filter for the realization of optical image addition and subtraction. Through this kit, students can get a better understanding of the principles of optical image addition/subtraction, Fourier spatial light filtering, and 4f optical systems.

Items	Description	Qty
1	He-Ne Laser 1-2mw	1
2	Beam Expander (f=4.5 mm)	1
3	Optical Rail 100 cm	1
4	Carrier	7
5	One-Dimensional Grating 100/mm	1
6	Plate Holder	1
7	Lens (f=150 mm)	3
8	Lens Holder	4
9	White Screen	1
10	Carrier for Laser	1
11	Two-Axis Adjustable Holder	1
12	Small Aperture Screen	2



In the overlap region, bright will be observed for A+B case, and dark will be for A-B case.