(8) Concave Lens Focal Length Measurement - Virtual Object Imaging Method
凹透鏡焦距測量-虛物成像法
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1. Purpose

To use the virtual object imaging method to measure the focal length of a concave lens.

2. Experimental Principle of Virtual Imaging Method

Use an additional convex lens (L1) to create image, and by measuring the object and image distances to calculate the focal length of the original concave lens to test (L2) .

Fig. 1 Virtual imaging Method
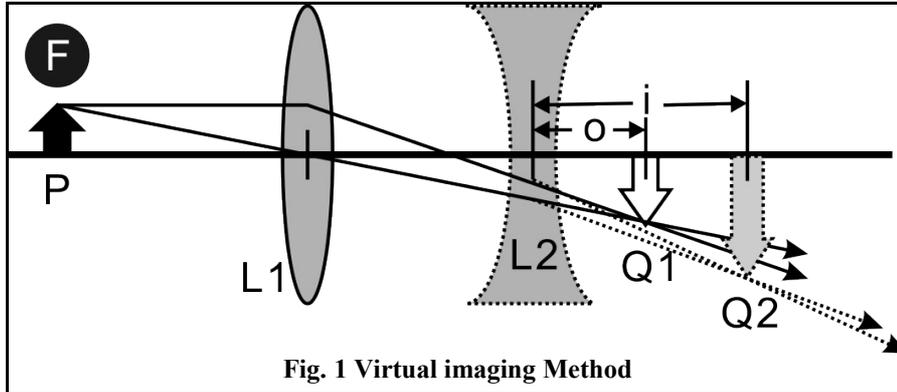
3. 實驗儀器 (Equipment)

HeNe Laser and support (HeNe), Turning Mirror (TM) , Fixed Aperatures (FA,2x), Convex Lens (L0 and L1, 2x), Concave Lens (L2), Frosted Glass, Letter "F", Mirror (M), Screen (1)

4. 實驗步驟 (Procedure)

4.1 光的準直 Collimation of Light
4.2 空間濾波器 Spatial filter
4.3 Autocollimation and creating of diffuse light source
4.4 凹透鏡焦距測量 Measuring the focal length of the concave lens via Virtual Imaging

5. 【實驗記錄】Results

[1] L1 Alone Image Location (Q1)	[2] L2 Lens Position	[3] L1 + L2 Image Location (Q2)	o = L2 -S1 = [2] -[1]	i = S2-L2 = [3]-[2]	f of L2 $f^{-1} = o^{-1} + i^{-1}$
Mean:					