Thin Lenses

As you work through the steps in the lab procedure, record your experimental values and the results on this worksheet. Use the exact values you record for your data to make later calculations.

Positive Lens: Object Distance A

Record the object distance s (the distance between the cross arrow plate and the lens) and the image distance s' (the distance between the lens and the screen).

Calculate the focal length f of the lens and record your result.

Positive Lens: Object Distance B

Measure s and s' again and record your results.

Calculate the focal length f and record your result.

Auto-Collimation Method of Measuring *f*

Record the distance between the lens and the light source that gives an image sharply focused on the paper screen.

Measuring *f* for a Diverging Lens

Record the object and image distances s_1 and s_1'.

Record the distance s_2 from L_2 to I_1. Record s_2 as a negative number, since the location of I_1 is to the right of the diverging lens and therefore it acts as a virtual object.

Record the distance s_2' from L_2 to I_2.

Use your measurements to calculate the focal length f_2 of the diverging lens.