

Physics
Lab – Measuring Focal Length

Name:

Purpose: To determine the focal length of a convex lens (f) by measuring the distance between the lens/mirror and the object (d_o) and the distance between the lens/mirror and the image (d_i), then using the theory:

$$1/f = 1/d_o + 1/d_i$$

Hypothesis: We expect the value that we get for the focal length to match the given value for the focal length.

Materials:

- Tea candle
- Convex Lens
- Index card
- Ruler

Procedure: *It is your job to list the numbered steps you will take to test the hypothesis. This procedure should be clear, specific, and repeatable. Think of it as a recipe.*

1.

Results: *Record the measurements and calculations you made and don't forget to include units.*

<i>Distance to Object, d_o</i>	<i>Distance to Image, d_i</i>	<i>Measured Focal Length, $1/f = 1/d_o + 1/d_i$</i>	<i>Actual Focal Length (written on lens)</i>	<i>Percent Error $PE = f_{\text{measured}} - f_{\text{actual}} / f_{\text{actual}} \times 100$</i>

Analysis & Calculations: *Show any necessary calculations you made in computing your value for the focal length of the lens. No matter how simple the calculation is, you should show equations that you used, show all algebraic steps, and include units.*

Conclusion: *Evaluate the hypothesis in light of your data. Does it confirm or support your hypothesis.*