

# Lab 2: Lenses

Anthony Shea

Course Number: PHYS 353

Lab Section: 3

Institution: Colorado State University

Lab Partner: Jesse Kiedrowski

Lab Partner: Ellen Raad

November 6, 2025

## 1 Objective

## 2 Theory

Thin lens equation:

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i} \quad (1)$$

This was from Physics of Light and Optics by Peatross and Ware equation 7.4.3 [1, p. 230].

Uncertainty in a Function of Several Variables

$$\delta q = \sqrt{\left(\frac{\partial q}{\partial x}\delta x\right)^2 + \dots + \left(\frac{\partial q}{\partial z}\delta z\right)^2} \quad (2)$$

This was from An Introduction to Error Analysis by John R. Taylor equation 3.47 [2, p. 75].

### **3 Experimental Procedure**

### **4 Experimental Results and Analysis**

### **5 Conclusions**

## **References**

- [1] Justin Peatross and Michael Ware. *Physics of Light and Optics*. Brigham Young University, 2015.
- [2] John R. Taylor. *An Introduction to Error Analysis: The study of uncertainties in physical measurements*. University Science Books, 1997.