

LAB 7: LENSES

AIM: To determine the focal length of a converging lens

APPARATUS & MATERIALS:

light source	retort stand
converging lens	lens holder
object screen	image screen
metre rule	

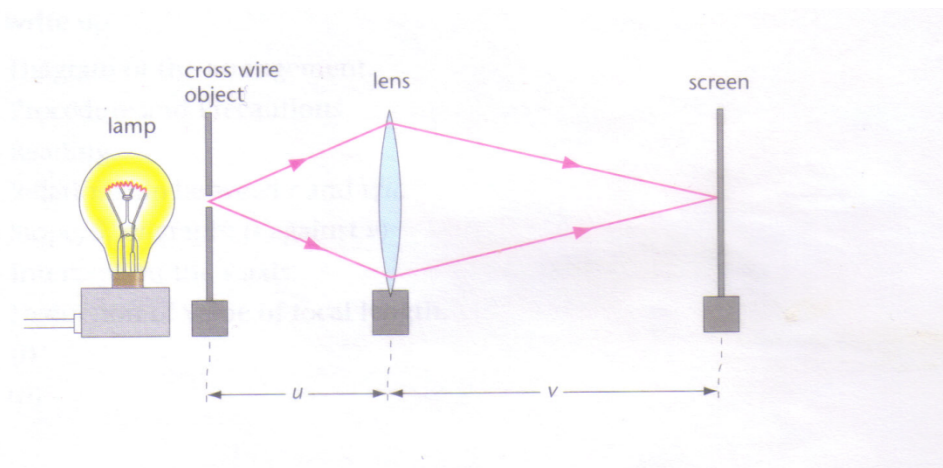


Diagram: Apparatus for the focal length of a converging lens

METHOD:

- Set up the illuminated object screen in front of the lens as shown in the above diagram.
- Adjust the image screen until the object is focussed on it.
- Measure the distance from the illuminated object screen to the lens, u , and measure the distance of the lens to the image screen, v .
- Keep the illuminated in a fixed position and then move the image screen into various positions until a sharp image is formed on the screen.
- Record six (6) different values of u and v .
- Calculate the values of $1/u$ and $1/v$.

THEORY:

- Define the focal length of lens and state the formula.

RESULTS:

- Record and tabulate all results in table below (showing all headings and units)

u (cm)	v (cm)	$1/u$ (cm^{-1})	$1/v$ (cm^{-1})

- Plot the graph of $1/u$ against $1/v$.

CALCULATIONS:

- Find the value where the straight line intercepts the y –axis on your graph, k .
- Calculate the focal length, f , by using the formula below

$$f = 1/k$$

CONCLUSION:

- State the focal length of the converging lens.