

How does the brightness of a light source depend on distance? To find out, carefully measure the distance between the source and sensor. Record the light intensity reading at this distance. Record data for many distances so that you have adequate data to make a reliable graph.

LIGHT INTENSITY DATA

DISTANCE ()	INTENSITY ()

ANALYSIS:

Is there a regular mathematical relationship between intensity and distance? Make a graph of distance (x-axis) vs. intensity (y-axis). If the graph is linear take the slope and determine the equation. If the graph is curved, try a power fit to see which power (if any) best relates the variables. To confirm a power relationship, raise one or both variables to the appropriate power and graph again. If a good linear fit results, determine the equation of the line.

CONCLUSION: If you found an equation relating distance and intensity, write it below. (*Don't forget units!*) If an exact equation could not be determined, describe any general trend in words.