Diluted By Distance

**Question:**

What is the mathematical equation relating the illuminance (intensity of light) on a surface and the distance between the surface and the source?

**Purpose:**

To determine the mathematical equation relating the illuminance (**I**) on a surface and the distance (**d**) the surface is from a light source.

A complete lab write-up includes a Title, a Purpose, a Data section, a Conclusion and a Discussion of Results. The Discussion of Results section should include a discussion of how the experimentally-derived equation was developed. It should be compared to a theoretical equation found in a textbook or online site.

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|  **Diluted by Distance Lab** Included, labeled and organized all parts of the lab report. Data section includes a table of distance-illuminance data; included column headings and units. Graph of I vs. d is printed; the results of a regression analysis (line or curve fit) are shown and equation is written. Data appear reasonably accurate. Conclusion stated the experimentally-derived equation showing the relationship between illuminance and the distance. Discussion of Results describes the process used to determine the experimentally-derived equation. Includes an error analysis comparing the experimentally-derived equation and the theoretical equation. | **Score**\_\_\_\_\_/10 |