

8. A student carries out an experiment to verify the inverse square law for a point source of light.

(a) Describe an experiment to verify the inverse square law for a point source of light.

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(b) The student records the following data from their experiment.

Distance d (m)	0.200	0.300	0.400	0.500	0.600
Irradiance I (W m ⁻²)	142.0	63.1	35.5	22.7	15.8

(i) State what is meant by the term *irradiance*.

1



* X 8 5 7 7 6 0 1 2 4 *

8. (b) (continued)

- (ii) Use **all** the data to establish the relationship between irradiance I and distance d .

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Space for working and answer

- (c) Explain why the irradiance decreases when the distance from a point source of light increases.

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[Turn over

