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Subject- ED

Semester-B-Tech 7th Sem

Illumination: -

- The basic idea of study of illumination engineering is to thoroughly understand the principle of illumination for interior light design which includes domestic light and factory lighting. Further application is highway lighting, sports ground lighting, flood lighting and airport lighting. Artificial lighting produced electrically due to cleanliness, ease of control, as well as low cost and is playing an important role in modern everyday life.
- To summarize the essential features of a lighting system thus.
- It must process sufficient illumination of suitable color on the working surface.
- To avoid glare.
- To avoid unnecessary shadow.
- Good maintenance.

Definition

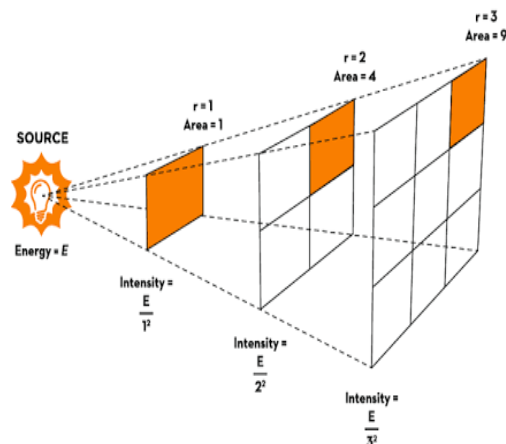
Illumination(E):-

- Luminous flux received by a surface per unit area of surface.
- Its units depend upon the unit in which area is measured.
- It is measured in lumens per square meter or lux or meter candle.

Law of illumination

Inverse square law:-

Inverse Square Law

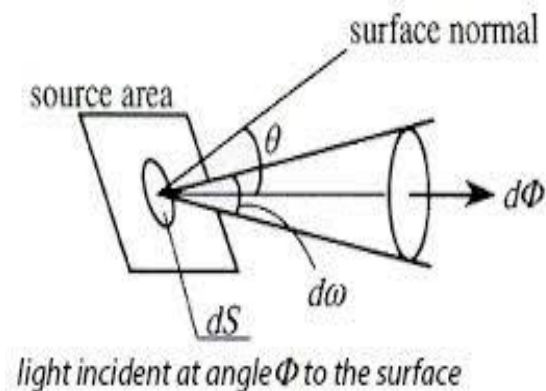


The illumination of surface is inversely proportional to the square of distance between source and light surface provided that the distance between the surface and the source is sufficiently large so that source can be regarded as a point source.

$$E=1/d^2$$

This is known as inverse square law.

Lambert's cosine law :-



It states that when light fall obliquely on a surface, the illumination of the surface is directly proportional to the cosine of the angle theta between the direction of incident light and surface normal. the law is known as cosine emission law or Lambert's emissions law .

Reference:-

- Thomas Brich , the history of the royal society of London ,.....(London , England :1756), vol 2 page 68- 73 see especially pages 70-72 .
- Horkes letter to Newton of 6 January 1680 (koyre1952:332).
- Miller son, G (1991) lighting for film and television - 3rd edition p.27