Exercise 10

Group 26 Tu 16:00
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Assignment 2.

a) $\Phi_e = 5W \quad R = 1m$

Since considering the scenario that a light source is in the center of a sphere with radius R which corresponds to a parabolic surface, the incident direction and the normal direction of each point on the object is $\theta = 0$.

So, $d\Phi_e(x) = \frac{d P(x)}{dt} \cos\theta = \Phi_e \cdot \cos 0 = 5W$

b) ~~differential power of radiation per differential surface area~~

Intensity: ~~I_e~~ Identity can be calculated by calculating differential radiant power per differential solid angle:

$$I_e = \frac{d\Phi_e}{d\omega} \left[\frac{W}{sr}\right] = \int_H L_e(A) \cos(\theta(A))\, dA$$

Irradiance: → ~~can be~~ to calculating differential power of radiation per differential surface area.

$$E_e = \frac{d\Phi_e}{dA} \left[\frac{W}{m^2}\right] = \int_H L_e(w) \cos(\theta(w))\, dw$$

Main diffant: Intensity is related to solid angle,
Irradiance is related to surface area.