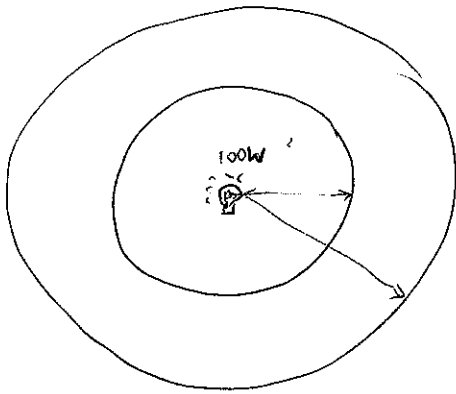


Irradiance

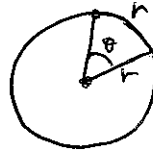


Area of sphere: $4\pi r^2$

Intro to angles

2D angle:

radians:



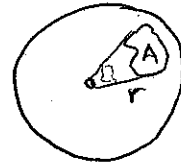
$\theta = 1$ radian — definition

solid angle:

steradian: (sr)



$\omega = 1$ steradian



What is the solid angle subtended by a patch of area A on the surface of a sphere of radius r ?

Ans: $\frac{A}{r^2}$

Human Vision

response to light in cones:

$$L = \int L(\lambda) E(\lambda) d\lambda$$

$$M = \int M(\lambda) E(\lambda) d\lambda$$

$$S = \int S(\lambda) E(\lambda) d\lambda$$

Grassman's Laws

Scaling the color & primaries:

$$C = R + G + B$$

color to be matched

$$\Downarrow$$

$$2C = 2R + 2G + 2B$$

CIE

$$X = \int I(\lambda) \bar{x}(\lambda) d\lambda$$

$$Y = \int I(\lambda) \bar{y}(\lambda) d\lambda$$

$$Z = \int I(\lambda) \bar{z}(\lambda) d\lambda$$