EXERCISE 7

1. Visible Light

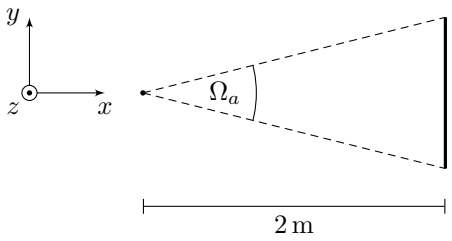
(a) Describe the spectrum of visible light.

(b) Characterize the average spectral sensitivity of human visual perception of brightness.

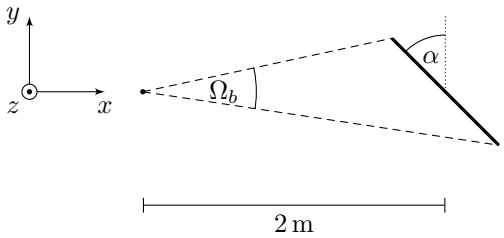
2. Photometric Quantities, Solid Angle

Assume there is a quad with dimensions $1\,\mathrm{m}$ by $1\,\mathrm{m}$ positioned according to the following illustrations.

(a) Compute an approximation of the solid angle Ω_a that the quad spans.



(b) Compute an approximation of the solid angle Ω_b that the quad spans.



(c) Fill in the spaces

Assume, a light source emits a _____ of $I_V = 1\,\mathrm{cd}$, then we can compute the _____ (E_V) in lx (Lux) at the quad.

(d) Compute these measurements, for which you filled the spaces. Compare them for both quads.

(e) Compare this to the Lambert reflection model. Prove your finding.