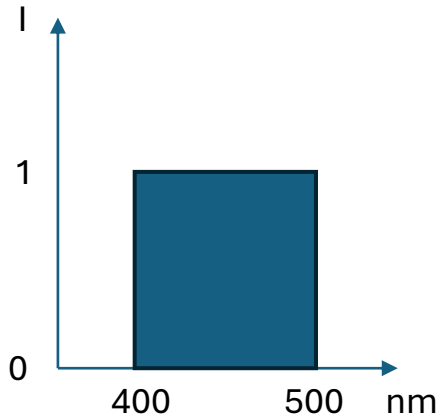# Property definition in ratpac
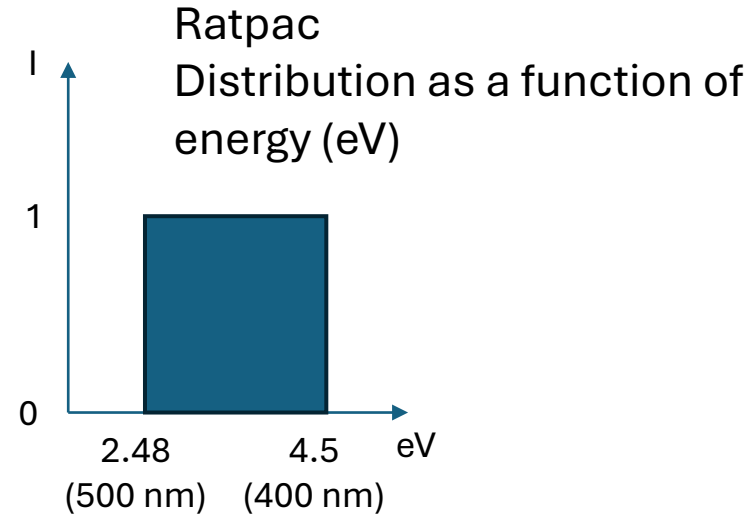
When defining a property as a function of the wavelength in ratpac..
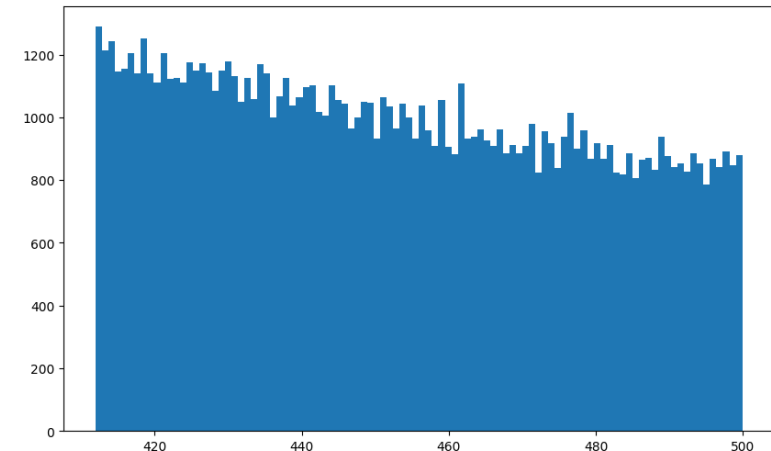

400 nm = 3.01 eV
500 nm = 2.48 eV

Ratpac
Distribution as a function of energy (eV)
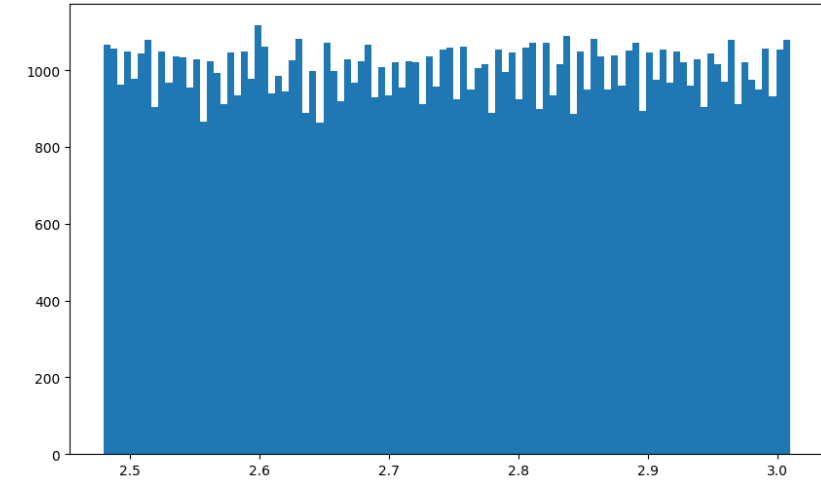
Definition in ratdb
Distribution as a function of wavelength
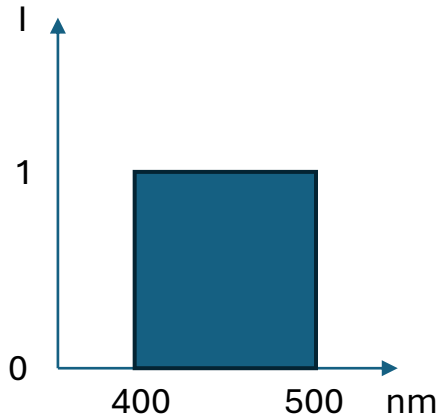(e.g. uniform dist)

Sample from this distribution,
Assuming eV

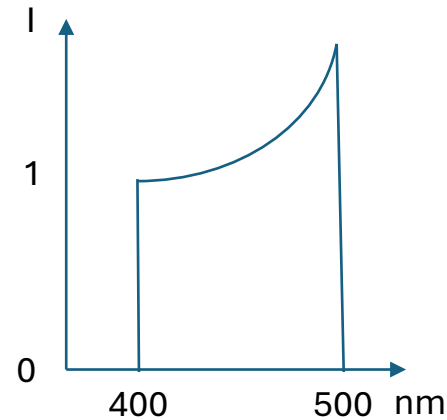However, this does not correspond to a uniform distribution in nm

Property definition in ratpac

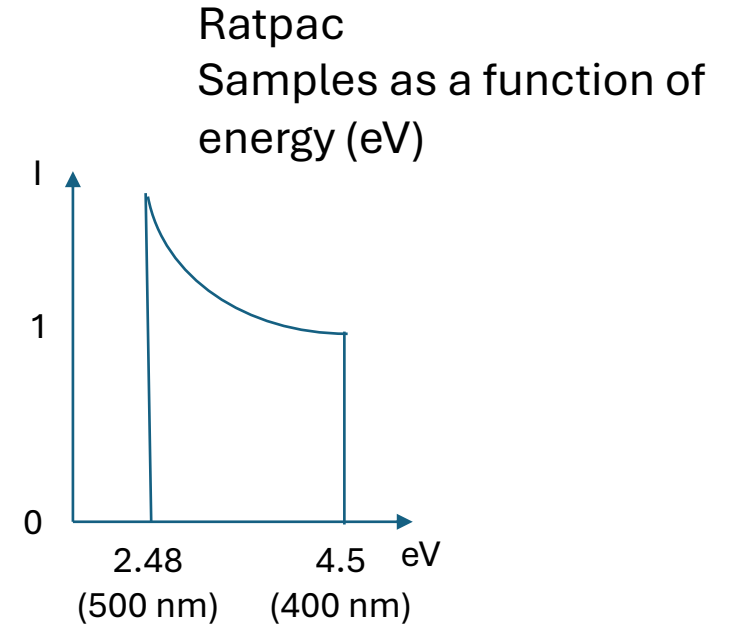Solution - https://en.wikipedia.org/wiki/Inverse_distribution

Ratpac
Samples as a function of energy (eV)

400 nm = 4.5 eV
500 nm = 2.48 eV

Definition in ratdb
Uniform distribution as a function of wavelength

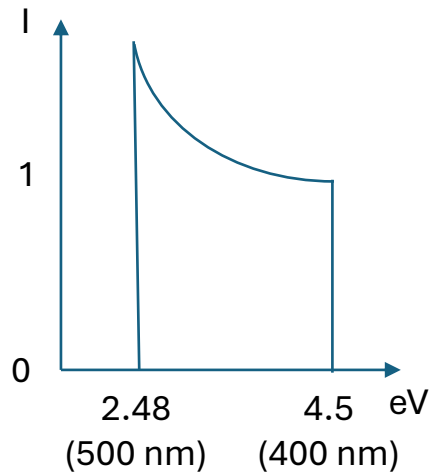Definition in ratdb
Normalise multiplying by wavelength^2

Then the density function of Y is found as the derivative of the cumulative distribution function:

$$g(y) = \frac{1}{y^2} f\left(\frac{1}{y}\right).$$

Property definition in ratpac

Solution - https://en.wikipedia.org/wiki/Inverse_distribution

Ratpac
Samples as a function of
energy (eV)

Sample from this distribution,
Assuming eV

this does correspond to a
uniform distribution in nm