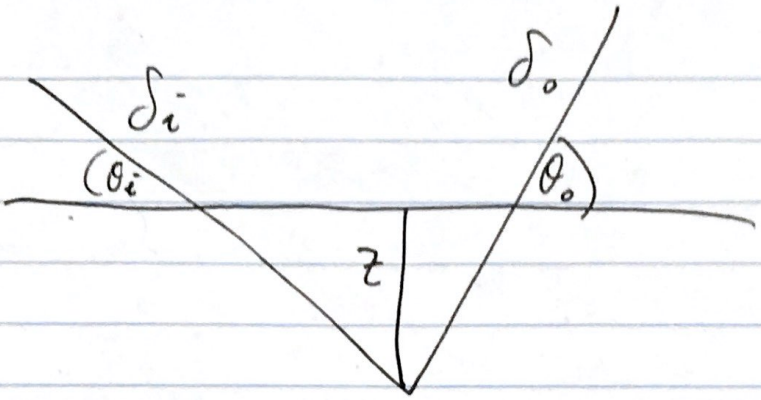

Intensity at z is absorbed on exit as

$$\exp\left(\frac{-z}{\delta_o \sin\theta_o}\right)$$

This needs to be scaled by the intensity at z giving

$$\exp\left(\frac{-z}{\delta_o \sin\theta_o}\right) \times \exp\left(\frac{-z}{\delta_i \sin\theta_i}\right)$$

$$= \exp\left(\frac{-z}{\pi} k\right), \quad k = \frac{\delta_i \sin\theta_i + \delta_o \sin\theta_o}{\delta_i \delta_o \sin\theta_i \sin\theta_o}$$

We set the total incident intensity independent of θ_i

$$\int_0^\infty \exp\frac{-z}{\delta_i \sin\theta_i} = \delta_i \sin\theta_i$$

is constant

$$\frac{1}{\delta_i \sin\theta_i} \int_0^\infty e^{-kz} dz = \frac{1}{\delta_i \sin\theta_i} \frac{1}{k}$$

$$= \frac{\delta_o \sin\theta_o}{\delta_o \sin\theta_o + \delta_i \sin\theta_i} = \frac{1}{1 + \frac{\delta_i \sin\theta_i}{\delta_o \sin\theta_o}}$$