

O6SKINS

Skin Depth

1. Skin depth (in meters) for intensity depending on frequency

$$\epsilon_0 := 8.85 \cdot 10^{-12} \text{ C}^2/\text{Nm}$$

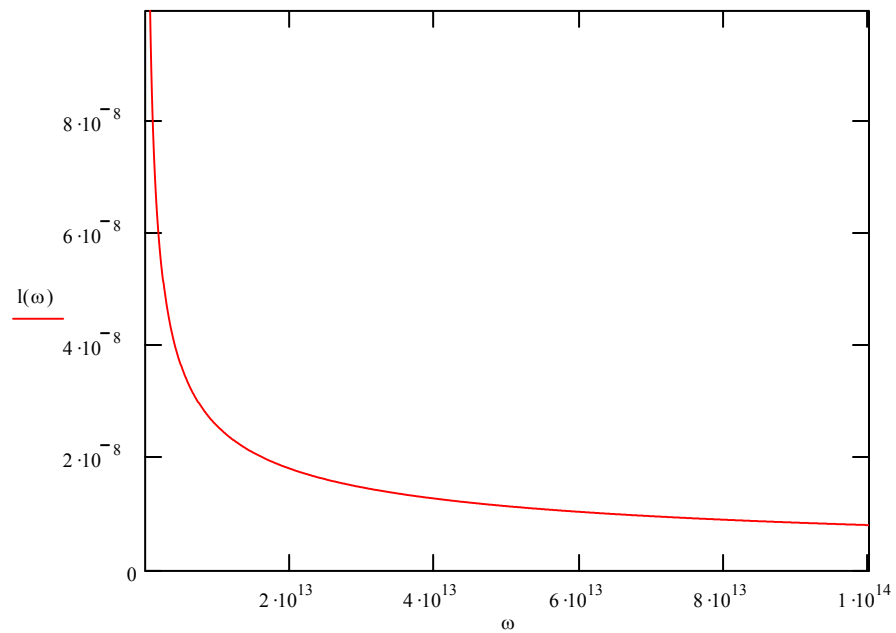
$$c := 3 \cdot 10^8 \text{ m/s}$$

$$\omega := 10^{10}, (10)^{11} .. 10^{14}$$

$$\sigma := 6 \cdot 10^7 \text{ (Am)}^{-1}$$

$$i := \sqrt{-1}$$

$$l(\omega) := \sqrt{\frac{\epsilon_0 \cdot c^2}{2 \cdot \omega \cdot \sigma}} \text{ in meter}$$

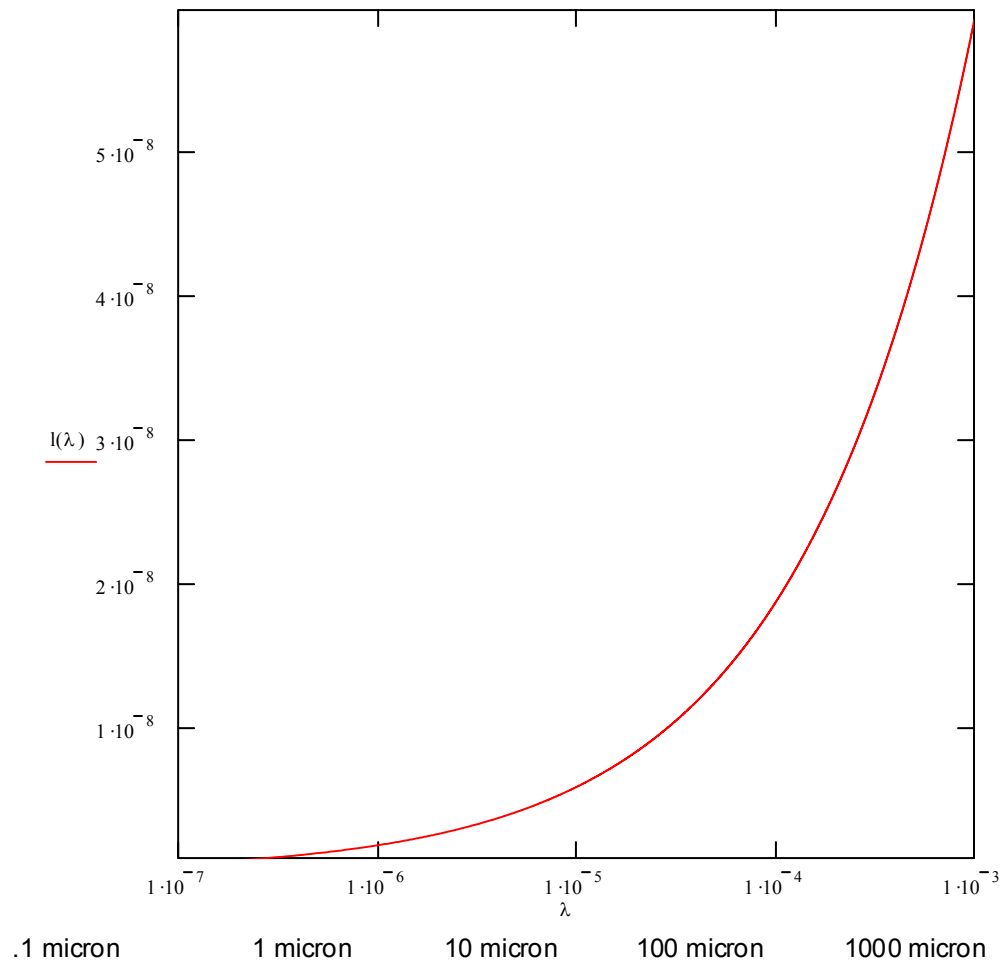


2. Skin depth (in meters) for intensity depending on wavelength

(for checking: For 1 mm wavelength angular frequency is $2\pi \cdot 300 \cdot 10^9$)

$$\lambda := 10^{-9}, (.9 \cdot 10)^{-8} .. 10^{-3}$$

$$l(\lambda) := \sqrt{\frac{\epsilon_0 \cdot c \cdot \lambda}{4 \cdot \pi \cdot \sigma}}$$



1 10^{-9} meter is 1 nm = .001 microns= 10A