$$\text{Pascal} = \frac{K}{S^2 M}$$

$$\approx 0.00478 \frac{M}{S} = RMS(V_x) \qquad \frac{M}{S}\frac{N}{M^2} = 0.00956 \frac{K}{S^3}$$

$$I = 0.004782$$

intensity units

$$\frac{\text{Watt}}{M^2} = \frac{\text{Joule}}{M^2 S} \qquad \text{Joule} = \frac{kM^2}{S^2}$$

$$= \frac{K}{S^3} \qquad rms(V_x) = .00478 \frac{M}{S}$$

$V_x = V_0 \cos(2\pi f t)$ at one fixed point

$x(t) = x_0 \sin(2\pi f t) \Rightarrow V_x(t) = 2\pi f x_0 \cos(2\pi f t)$

$\Rightarrow V_0 = 2\pi f x_0$

$$x_0 = \frac{V_0}{2\pi f}$$

$$rms(x) = \frac{rms(V_x)}{2\pi f}$$

1000hz $\rightarrow$ $rms(x) = \dfrac{0.00478\ M/s}{2\pi\ 1000\ 1/s}$ $7.6 \times 10^{-7}\ M$ $\sim .7$ micron