

64. We use $\beta = 10 \log(I/I_o)$ with $I_o = 1 \times 10^{-12} \text{ W/m}^2$ and Eq. 18-27 with $\omega = 2\pi f = 2\pi(260 \text{ Hz})$, $v = 343 \text{ m/s}$ and $\rho = 1.21 \text{ kg/m}^3$.

$$I = I_o (10^{8.5}) = \frac{1}{2} \rho v (2\pi f)^2 s_m^2 \implies s_m = 7.6 \times 10^{-7} \text{ m} .$$