28. (a) The intensity is

$$I = \frac{P}{4\pi r^2} = \frac{30.0\,\text{W}}{(4\pi)(200\,\text{m})^2} = 5.97 \times 10^{-5}\ \text{W/m}^2\ .$$

(b) Let $A\,(= 0.750\,\text{cm}^2)$ be the cross-sectional area of the microphone. Then the power intercepted by the microphone is

$$P' = IA = 0 = \left(6.0 \times 10^{-5}\,\text{W/m}^2\right)\left(0.750\,\text{cm}^2\right)\left(10^{-4}\,\text{m}^2/\text{cm}^2\right) = 4.48 \times 10^{-9}\ \text{W}\ .$$