

94. We use  $I \propto r^{-2}$  appropriate for an isotropic source. We have

$$\frac{I_{r=d}}{I_{r=D-d}} = \frac{(D-d)^2}{D^2} = \frac{1}{2} ,$$

where  $d = 50.0$  m. We solve for  $D$ :  $D = \sqrt{2}d/(\sqrt{2} - 1) = \sqrt{2}(50.0 \text{ m})/(\sqrt{2} - 1) = 171 \text{ m}$ .