

22.23. Model: Light passing through a circular aperture leads to a diffraction pattern that has a circular central maximum surrounded by a series of secondary bright fringes.

Visualize: The intensity pattern will look like Figure 22.15.

Solve: According to Equation 22.23, the angle that locates the first minimum in intensity is

$$\theta_1 = \frac{1.22\lambda}{D} = \frac{1.22(2.5 \times 10^{-6} \text{ m})}{0.20 \times 10^{-3} \text{ m}} = 0.01525 \text{ rad} = 0.874^\circ$$