HW6-1 Soln)

K = 5 eV = 8×10^{-19} Joules

$$\lambda_{dB} = \frac{h}{\sqrt{2m_{neutron}K}} = 1.28 \times 10^{-11}\ \text{m}$$

From diffraction of light through a single slit,

$$\theta = \frac{m\lambda_{DB}}{b}.$$

This gives the angle from the central maximum to the m^{th} zero. Since we want from side to side,

$$\theta_{\text{full width}} = 2m\lambda_{DB}\, b^{-1} = 2(1)(1.28 \times 10^{-11})(4 \times 10^{-6}) = 6.4 \times 10^{-6}\ \text{radians} = 0.00037^{o}$$