

72. For the first maximum $m = 0$ and for the tenth one $m = 9$. The separation is $\Delta y = (D\lambda/d)\Delta m = 9D\lambda/d$. We solve for the wavelength:

$$\lambda = \frac{d\Delta y}{9D} = \frac{(0.15 \times 10^{-3} \text{ m})(18 \times 10^{-3} \text{ m})}{9(50 \times 10^{-2} \text{ m})} = 6.0 \times 10^{-7} \text{ m} = 600 \text{ nm} .$$