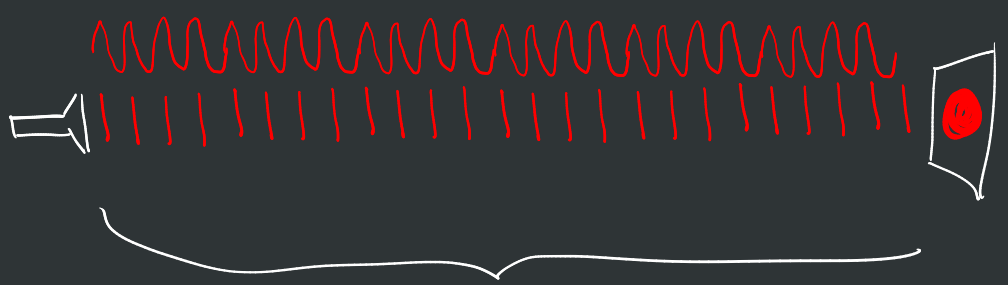
Chapter 9 - Interference + Diffraction

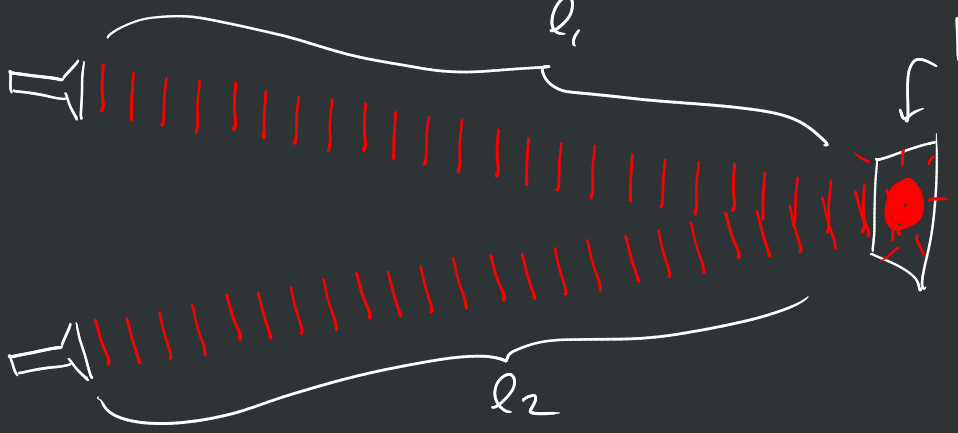
→ coherent light - single wavelength
- every part of the beam is "in phase" or lined up w/ itself

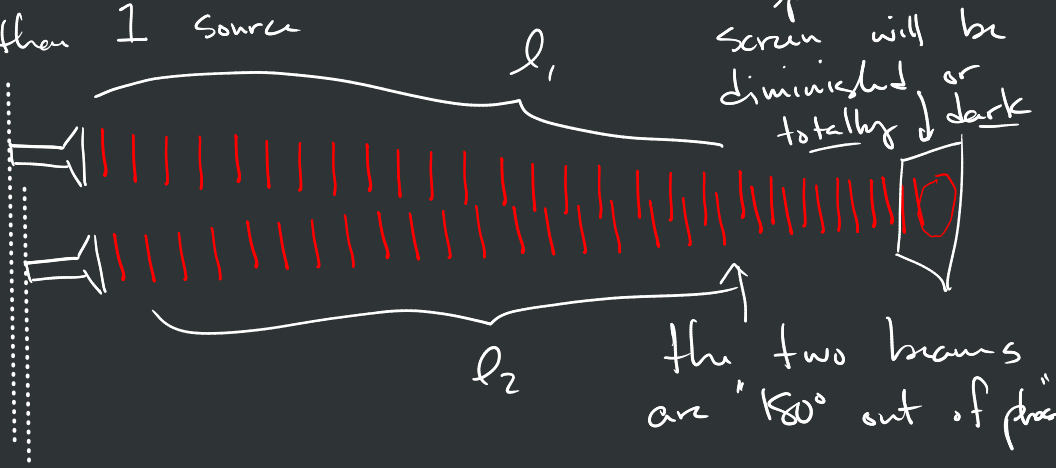


10.1 m

$\lambda = 0.33\,m$

$$\frac{\text{total distance}}{\text{a wavelength}} = \#\text{ of wavelengths} = \frac{10.1\,m}{0.33\,m} = 30.6$$





constructive interference

$$\Delta l = l_2 - l_1 = m\lambda$$

$$m = 0, 1, 2, 3 \ldots$$

destructive interference

$$\Delta l = l_2 - l_1 = \left(m + \frac{1}{2}\right)\lambda$$

$$m = 0, 1, 2, 3 \ldots$$