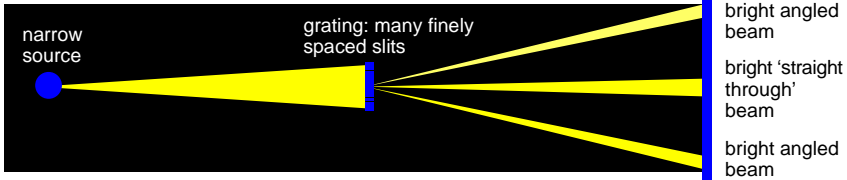


TAP 322- 1: A transmission grating

Many slits produce bright, sharp beams.

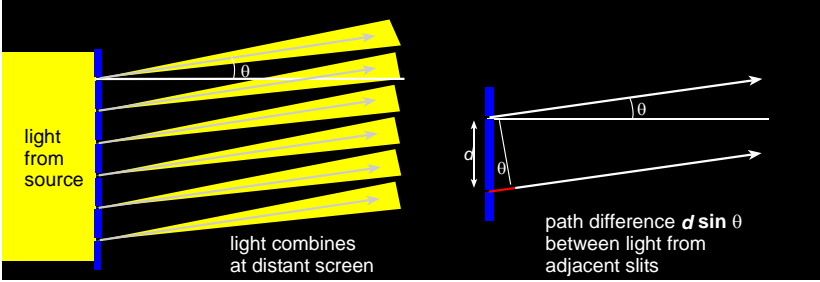
Diffraction grating



narrow source grating: many finely spaced slits

bright angled beam
bright 'straight through' beam
bright angled beam

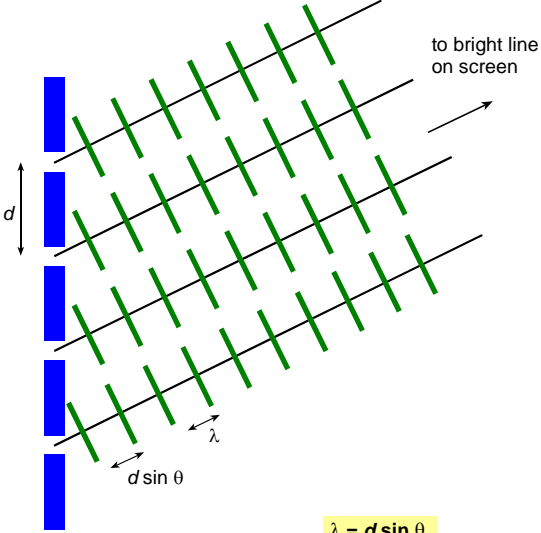
Geometry



light from source light combines at distant screen

path difference $d \sin \theta$ between light from adjacent slits

Waves from many sources all in phase



to bright line on screen

$\lambda = d \sin \theta$

When $\lambda = d \sin \theta$ waves from all slits are in phase
Bright lines at $\lambda = d \sin \theta$ and $n \lambda = d \sin \theta$

Sharp bright spectral lines at angles where $n \lambda = d \sin \theta$

Practical advice

This diagram is provided here for use in the classroom.

External reference

This activity is taken from Advancing Physics chapter 6, 65O