

30 Green laser light passes through a diffraction grating and forms an interference pattern.

The diffraction grating contains 400 lines per mm.

The wavelength of the laser light is 550 nm.

What is the highest order diffraction maximum produced by the grating?

- A** 4 **B** 5 **C** 8 **D** 9

A-Level Physics: **w25 14**

30 A parallel beam of red light of wavelength 700 nm is incident normally on a diffraction grating that has 400 lines per millimetre.

What is the total number of intensity maxima from the grating?

- A** 6 **B** 7 **C** 8 **D** 9

A-Level Physics: **s25 11**

30 Light of wavelength 680 nm is incident normally on a diffraction grating with 450 lines mm^{-1} .

What is the angle of diffraction of the second-order maximum in the diffraction pattern that is produced?

- A** 1.8° **B** 3.5° **C** 18° **D** 38°

A-Level Physics: **m25 12**

29 Light of wavelength 567 nm is incident normally on a diffraction grating. The grating has 400 lines per mm. A number of diffraction maxima are observed on the far side of the grating.

What is the angle between the second-order maximum and the third-order maximum?

- A** 13.1° **B** 13.9° **C** 15.9° **D** 27.0°