

Tape 1 mm slit
28 x 38 mm
over cut out

! Do not view the Sun with your eye

TOP OF CAMERA

Cut out for grating

adapted from
UNIVERSITY OF NEW ENGLAND
PHYSICS AND ELECTRONICS
SMARTPHONE SPECTROSCOPE

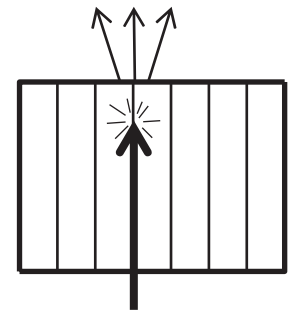
Cut out for slit

First-order diffraction 18° at 600 nm
500 lines/mm 25 x 34 mm grating

Tape grating sheet
over cut out

FOLD DOWN

FOLD UP



Smartphone Spectroscope
Ron Bradbury
Physics and Electronics
University of New England
Armidale NSW
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Materials:

- This sheet printed on 120gsm dark coloured paper
- Diffraction grating sheet Edmund Optics 54.509, cut long side in nine pieces each 34mm, cut short side in six pieces each 25mm
- Plastic sheet 28 x 38 mm
- Sticky tape
- Black electrical tape

Tools:

- Scissors
- Smartphone or tablet, with built-in camera

Method:

- Make a 1mm slit from plastic sheet and two pieces of black electrical tape, 1mm apart
- Cut out spectroscope on solid line
- Cut out two rectangular holes
- Fold up spectroscope such that black surface is inside and fix with tape
- Fix diffraction grating over hole with sticky tape
- Fix slit over hole with sticky tape
- Place grating onto smartphone camera lens

Use:

- Point slit toward light source (fluorescent tube etc.)
- Adjust camera zoom
- View spectrum on smartphone
- Warning: Do **not** view the sun with your eye