Light and colour
Dispersion of light into colours

Detection of ultraviolet radiation - Setup with an ultraviolet phosphorescent screen

Object of the experiment

1. Detection of ultraviolet radiation by means of an ultraviolet phosphorescent screen

Setup

- Darken the room completely.

Apparatus

1 Optical bench, S1 profile, 1 m	460 310
3 Clamp riders with fixed column	460 313
1 Clamp rider with clamp	460 311
1 Lamp housing with cable	450 60
1 Bulbs, 6 V/30 W, E14, set of 2	450 511
1 Diaphragm and slide holder, on rod	459 33
1 Filter, ultra-violet	469 79
1 Lens on rod, *f* = + 50 mm	459 60
1 Plate holder on rod	459 30
1 Card with emission colours	469 82
1 Transformer 6/12 V	521 210

Carrying out the experiment

- Clamp the ultraviolet phosphorescent screen in the plate holder with the coated side up.
- Displace the lamp insert until a circular luminous spot appears on the screen.
- Insert the ultraviolet filter in the diaphragm and slide holder.
- Observe the luminous effect on the screen.

Observation

After the ultraviolet filter has been inserted in the ray path, a green luminescence is seen on the coated side of the screen.

No visible radiation is emitted by the uncoated side of the screen.

Evaluation

Ultraviolet radiation can excite a screen coated with a luminescent material to emit visible light of greater wavelength (fluorescence).

The fluorescence of a screen coated with a luminescent material which is observed after illumination with light is considered to be evidence of ultraviolet radiation.

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