

## HOW INFRARED VIEWER WORKS

Our Infrared viewers we offer work by focusing the infrared light reflected by or emitted from a chosen subject onto the image tube. An electron image is generated in accordance with the incident intensity and the S-1 spectral responsivity of the photocathode material. The unit is powered by depressing and maintaining a push-button switch conveniently located on the device. When powered, and internal high voltage 3V battery – based power supply generates the 16-18 kV required to accelerate the electron image into the output phosphor screen. The fluorescent green light output (550 nm) is observed via an adjustable eyepiece lens.

### APPLICATION

#### Laser alignment and safety.

Near IR viewers are ideal for applications involving the alignment of infrared laser beams and of optical components in near infrared systems.

#### Forensics and Art restoration.

Substances have different transmission and reflection properties when viewed under near-infrared illumination as compared to visible illumination, these near infrared viewers can be used to examine documents, records, engraving, paintings, etc. for hidden differences. (IR filters and IR light sources are required for this applications).

#### Ultraviolet range.

INTRODUCTION TO ULTRAVIOLET RADIATION.

Electromagnetic radiation with a wavelength between 10 and 400nm is called ultraviolet radiation. Radiation below 180nm is referred to as vacuum UV. The 180 to 400nm region may be semantically subdivided. Photobiologists use UV-C for wavelength to 290nm , UV-B for 290-320nm and UV-A for 320-400 . In semiconductor photolithography radiation below 320nm is called «deep UV».

Ultraviolet applications: excimer/UV laser applications, UV spectral applications, UV lithography fingerprint detection and analysis, liquid crystal display annealing.

#### Semiconductor inspection.

With adapter to a microscope IR viewer can be used to view through the surface of silicon and gallium arsenide wafers.

#### Photo processing.

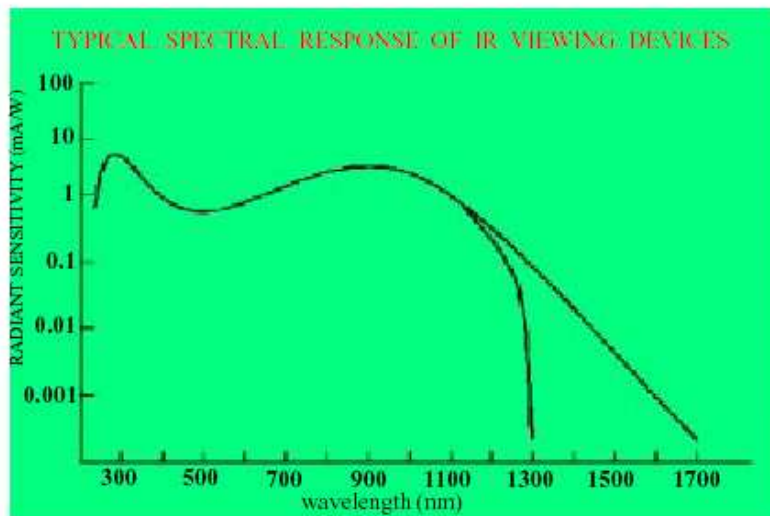
Near-infrared viewing devices have become invaluable tools for assuring error – free processing of color sensitive materials in the photographic.

#### Thermal imaging.

The IR viewers can be used to image the radiation of objects above 600 degrees Centigrade (such as kilns, furnaces and solder pots). Objects in this temperature range (and hotter) emit enough infrared radiation in the 0,8 – 1,7 micron wavelength range to be imaged by the viewers detector.

#### Other applications.

Surveillance and investigation in botany, biophysics, medicine (with using IR filters and IR light sources).



Infrared microscopy. Infrared luminescence (by ultraviolet stimulation), fluorescence. Optical fiber alignment. Telecommunications.



#### Photonic Solutions

Unit A, 40 Captains Road,  
Edinburgh, EH17 8QF, UK,  
Tel: +44 (0)131 664 8122 Fax: +44 (0)131 664 8144  
Email [sales@photronicsolutions.co.uk](mailto:sales@photronicsolutions.co.uk)  
Web [www.photronicsolutions.co.uk](http://www.photronicsolutions.co.uk)