SCANDICO systems
Tomorrow's Quality Today

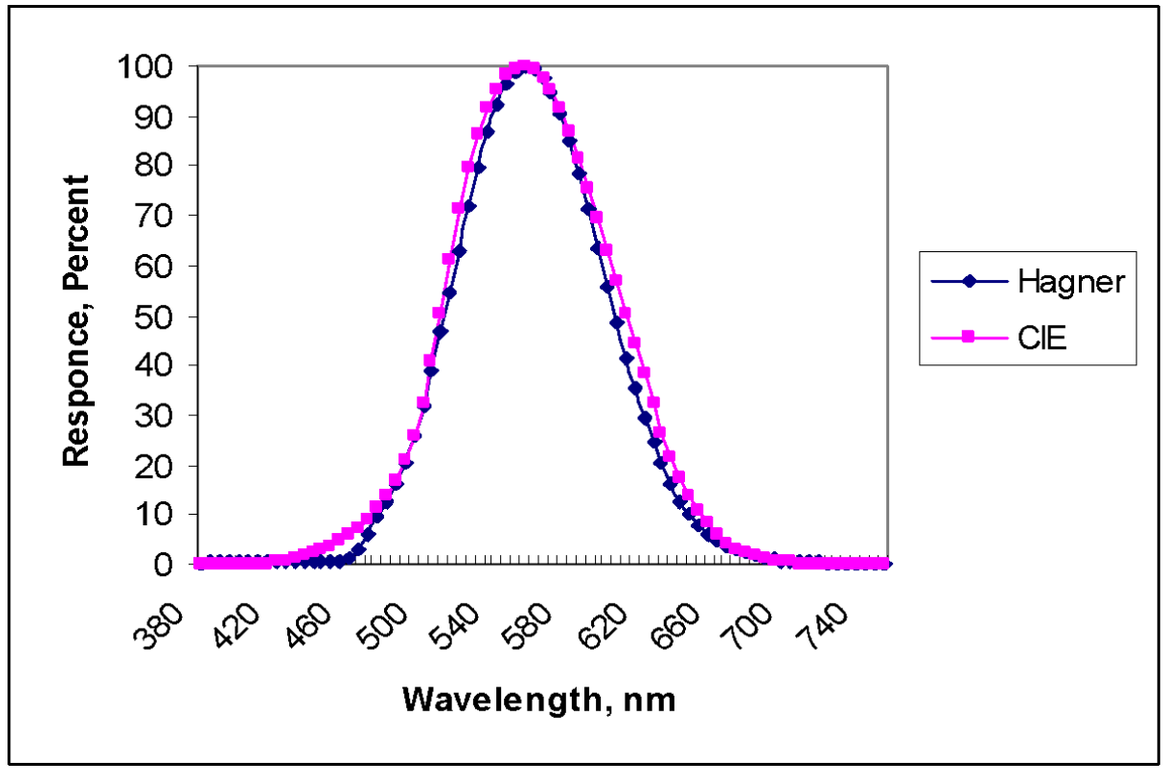
PR 200-X

PHOTOMETER/RADIOMETER
MODEL PR 200-X

General

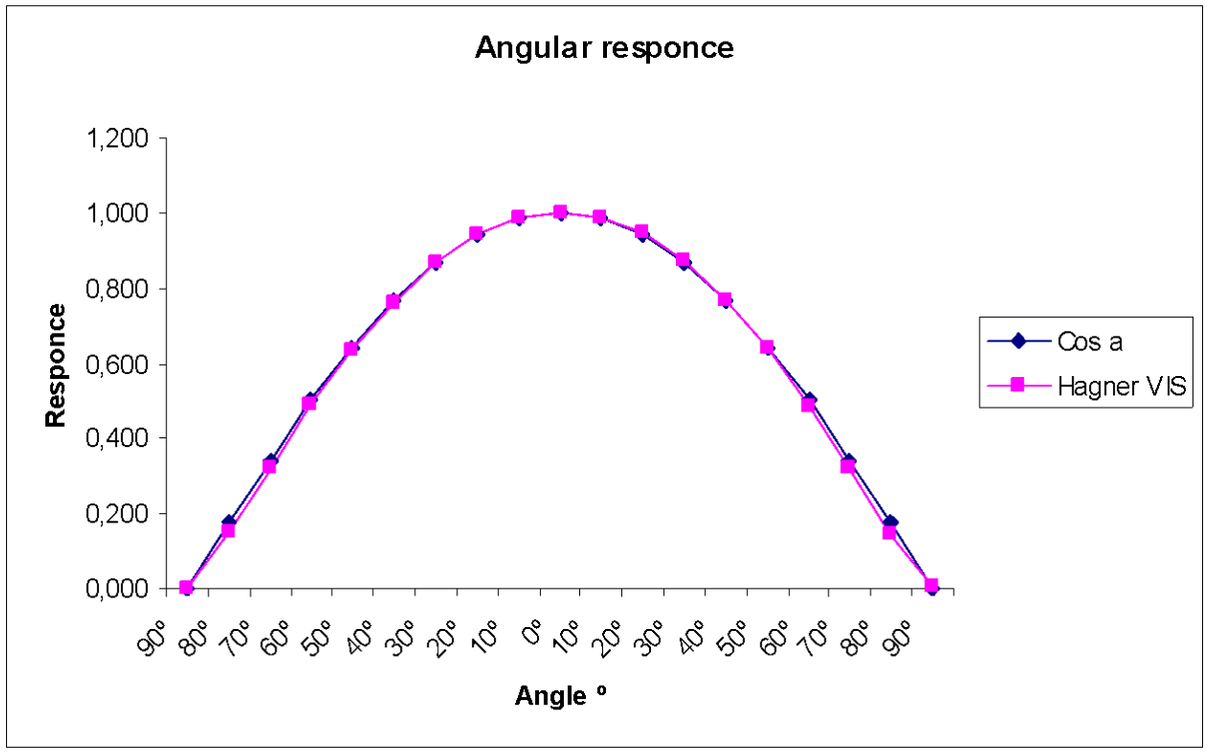
The Scandico Systems PR 200-X is a combined lux and UV-A meter, specially designed for control measurements when making NDT tests but naturally also very useful for other type of measurements of illuminance and UV-A radiation, in the field as well as in the laboratory.
The instrument is compact, ergonomic and easy to use.
The two detectors are cosine corrected for angular incidence of light (fig 2 & 4) and the illuminance detector is carefully filtered to the spectral sensitivity of the human eye in accordance with the CIE standard (fig 1). The UV-A detector measures radiation between 315 – 380 nm with a peak at 355 nm (fig 3). The light sensitive device used in the detectors are very stable long life silicon diodes which result in high reliability and increase recalibration intervals.

Spectral sensitivity VIS (Fig 1)



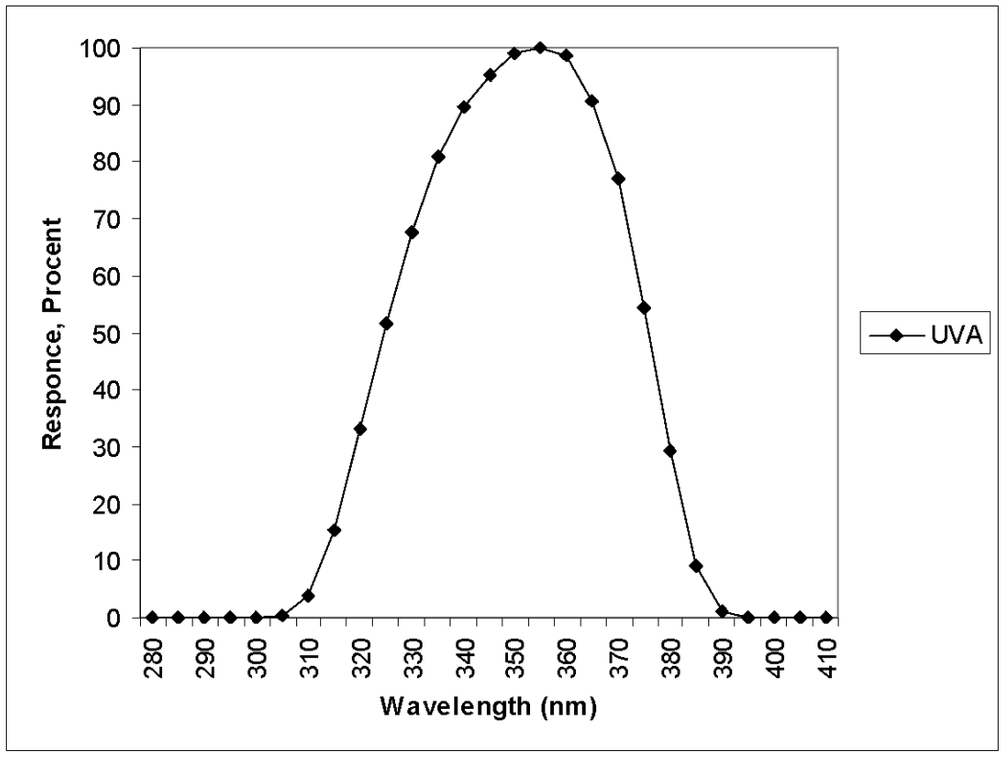
The spectral sensitivity of the illuminance detector

Cosine correction VIS (Fig 2)



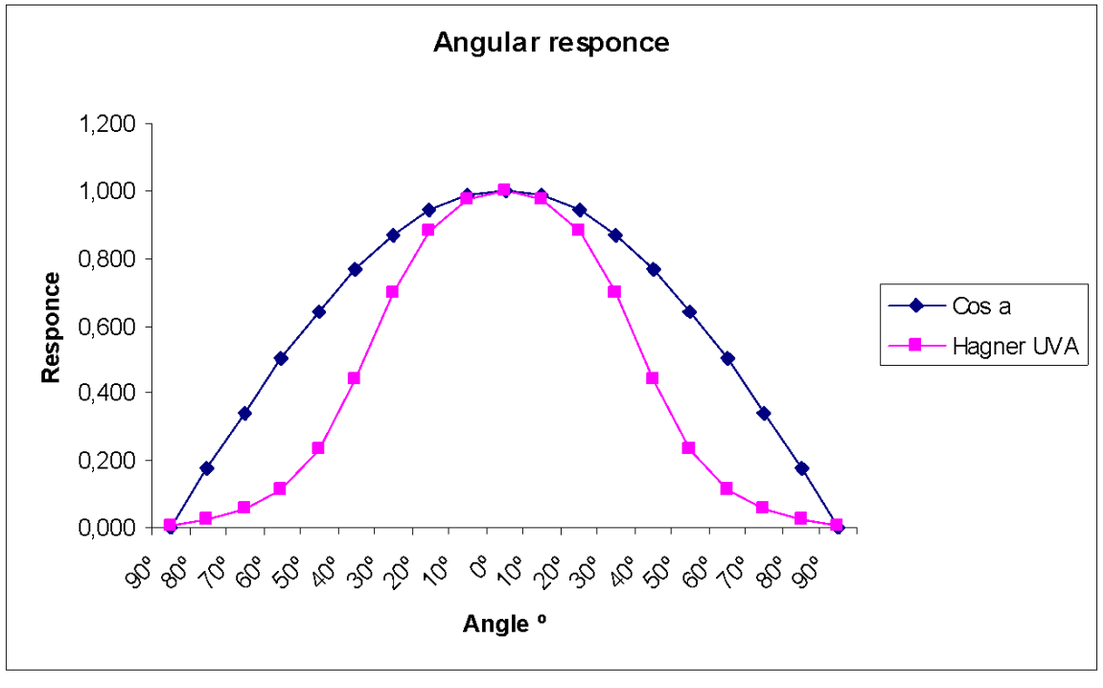
The cosine correction compensates for measuring errors owing to oblique incident light.

Spectral sensitivity UV-A (Fig 3)



The spectral sensitivity of the UV-A detector radiometer

Cosine correction UV-A (Fig 4)



The cosine correction compensates incident light

Characteristics
The Scandico Systems model PR 200-X is distinguished by the following characteristics:
- High degree of accuracy.
- Wide measuring range.
- Built-in temperature compensation.
- Short rise and fall times.
- Dual detectors in one instrument.
- Detector extended from readout unit.
- Auto off, instrument shuts off automatically
- Auto backlight, display is lit when instrument is used in environments less than 30 lux.
- Metric and imperial illumination units.

The accuracy is better than +/- 3% or less than 1 Lux and 1 µW/cm² within the temperature range -5ºC - +50ºC for all usual light sources. The repeatability is as good as +/- 1digit or less than 1 lux and 1 µW/cm².

The temperature compensation has reduced temperature drift to +/- 0.05% / ºC.

Acronyms
VIS is used instead of illuminance or visible light.

Operation
On
To switch on the instrument press ON
The instrument will simultaneously measure illuminance and UV-A radiation. Both shown on the display.

Off
The instrument is automatically switched off after 3 minutes. (Please see also “Switch off” below.)
For manual switch off, press MENU (when display shows readings) and then HOLD.

Units
The display will show measured values in “lux” or “fc” and “W/m²” or “µW/cm²”.
To change displayed units press MENU repeatedly until required unit is shown. Press HOLD to save unit. Continue by pressing MENU.

Measurement

Press ON and the instrument will, after a short start-up process, start to measure illuminance and UV-A radiation. Both values shown on the display.
When measured illuminance value is below 30 lux or 2.8 fc the display will automatically be illuminated. The light will be on until the instrument is switched off, even if higher illuminance is measured.
When MENU button is used, press this until readings again are shown on display.

Hold
When required the value measured can be “frozen” on the display by pressing HOLD. Display states HOLD mode. For return to continuous measurement press HOLD button.

Peak/Valley
When pressing PEAK button the instrument will continue to measure but only highest measured values will be shown on the display. Display states PEAK mode. To enter VALLEY mode press PEAK button. Display states VAL and the instrument will continue to measure but only lowest measured values will be shown on the display. For return to continuous measurement press PEAK button.

Calibration
The instrument is accurately calibrated when delivered. As the light sensitive silicon photo diode is stable for a long time, yearly recalibration should be sufficient with normal use.
However, if for any reason you believe the photo/radiometer is out of calibration, it can be returned to your stockist or the manufacturer for earlier control.

Power
The power source is two standard 1.5V size AA or LR6 batteries. To avoid battery leakage, only alkaline batteries should be used.
When the battery charge is running low, the message “Battery low” will appear on the display.
The instrument can then be used for at least 10 minutes before the battery must be replaced.

Maintenance
The instrument should be cleaned with a lightly dampened cloth when necessary.
Do not keep exhausted batteries in the instrument, owing to risk of leakage.

Instrument data

Measurement function: Measurement of illuminance 0.1 - 200,000 lux =
0.01 – 20,000 fc
Measurement of UV-A irradiance 1 - 200,000 µW/cm² =
0.01 – 2,000 W/m²

Detector: VIS: Silicon photodiode, V_λ-filtered and cosine corrected, with
1 metre connection cable.
UV-A: Silicon photodiode, UVA-filtered and cosine corrected, with 1 metre connection cable.

Accuracy: Better than +/- 3% or less than 1 Lux and 1 µW/cm².

Temperature range: -5ºC - +50ºC

Hold function: When required the value measured can be ”frozen” on the
display by pressing HOLD.

Peak function: By pressing PEAK button the display will show highest (or
lowest) measured value until button is pressed again.

Battery: 2 x Size AA or LR6, 1.5V

Current consumption: Without backlight Approx 5 mA.
With backlight 60mA
Battery life: Without backlight approx 350 hours.
With backlight approx 35 hours.

Calibration temperature: +22ºC.

Dimensions: Read out unit: 168 x 75 x 36 mm.
Detector unit: 96 x 47 x 24 mm.

Weight: 280g, 770g with carrying case & standard accessories.

Instrument number: Noted in the battery compartment of the instrument.

Standard accessories: Carrying case
Detector fixture.
Instruction manual.

Extra accessories: Special detectors.
Bracket for permanent mounting.