URAD-PR DATASHEET

Measuring device for the determination of the UV irradiance

Smartphone based UV radiometer with dosimeter and data logging features

Full UV LED range available: UVC, UVB and UVA

Electronics	Sensor connector	USB Type C (cable length of 2 meters)
	Smartphone	Android Motorola smartphone (USB-C battery charger included)
Optics	Spectral sensitivity	240 nm – 560 nm
	Calibration wavelength available	UVC: 255, 265, 275 nm UVB: 295, 305, 325, 340 nm UVA: 365, 385, 395, 405 nm BLUE: 420, 445 nm
	Standard measurement range	1mW/cm² to 10W/cm² (other ranges available on request)
Mechanics	Width x Height x Length	Probe: 53mm x 38mm x 24mm Smartphone: 165mm x 75mm x 10mm
	Weight	Probe: 56g Smartphone: 210g
	IP rating	IP60
Environment	Operation	Temperature: -20°C to +80°C – Humidity: < 80% humidity (with no condensation)
	Storage	Temperature: -40°C to +80°C – Humidity: < 80% humidity (with no condensation)

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Web: www.uwave-uv.com

Product reference

The **URAD-PR** is delivered with smartphone and case and is calibrated depending on customer needs:

For x1 calibrated wavelength: **URAD - PR - WWW**
N°1

For x2 calibrated wavelengths: **URAD - PR - WWW - XXX**
N°1 N°2

For x3 calibrated wavelengths: **URAD - PR - WWW - XXX - YYY**
N°1 N°2 N°3

For x4 calibrated wavelengths: **URAD - PR - WWW - XXX - YYY - ZZZ**
N°1 N°2 N°3 N°4

CALIBRATION WAVELENGTH AVAILABLE (nm)

UVC: 255, 265, 275
UVB: 295, 305, 325, 340
UVA: 365, 385, 395, 405
BLUE: 420, 450

If an additional sensor is required (without smartphone and case):

For x1 calibrated wavelength: **PR - WWW**
N°1

For x2 calibrated wavelengths: **PR - WWW - XXX**
N°1 N°2

For x3 calibrated wavelengths: **PR - WWW - XXX - YYY**
N°1 N°2 N°3

For x4 calibrated wavelengths: **PR - WWW - XXX - YYY - ZZZ**
N°1 N°2 N°3 N°4

CALIBRATION WAVELENGTH AVAILABLE (nm)

UVC: 255, 265, 275
UVB: 295, 305, 325, 340
UVA: 365, 385, 395, 405
BLUE: 420, 450

➔ **Please note that UVC and UVB wavelengths cannot be calibrated on the same probe as UVA and BLUE wavelengths.**

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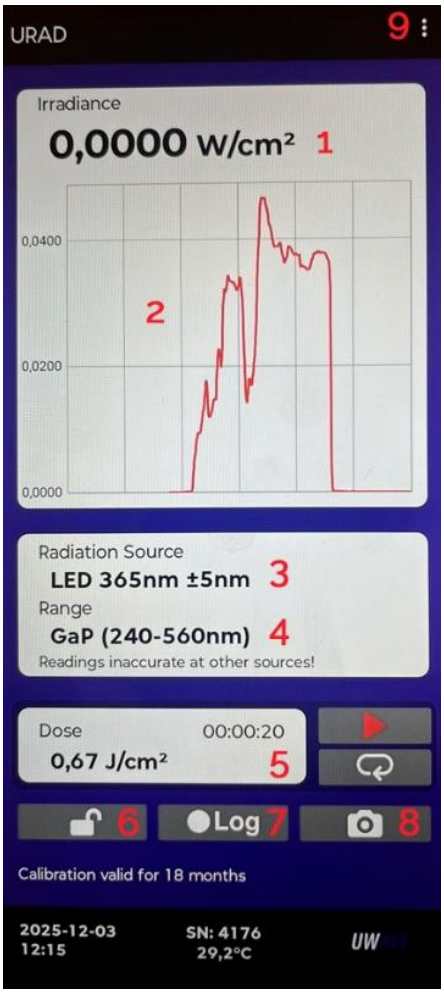
Presentation

General features

The **URAD-PR** is a smartphone-based UV radiometer for the determination of the UV irradiance in industry and research. It consists of a calibrated UV sensor and of a smartphone delivered in a case. The radiometer is calibrated in coordination with the customer to his individual measuring task regarding the sensor type, the measuring range (dynamic range) and the spectral sensitivity. The supplied smartphone serves as the display and control unit, on which a dedicated URAD app is installed. The sensor can be calibrated to different UV radiation sources. Also, the app can manage different sensors. After plugging in the sensor, this sensor and its calibration are automatically recognized by the device.

Display functions of the radiometer



1. Display of irradiance.
2. The course of the irradiance within the last minute is displayed in the diagram.
3. The radiation source to be evaluated. Sensors can be calibrated to multiple sources. The switchover is made in the "burger menu" (9).
4. The range indicates which wavelength range of the source contributes to the displayed irradiance.
5. All functions for dose measurement are located here. The dose is the integration of the irradiance over time.
6. With this function, the measured value of the irradiance can be stopped; a red "hold" appears there.
7. This button can be used to log the measured values (irradiance, dose, temperature) with a time stamp. Further information on this feature can be found in the user manual.
8. Here a screenshot of the current screen content can be taken.
9. The "burger menu" allows the selection of different calibrations. Additionally information about the firmware release and how to contact UWAVE are available.

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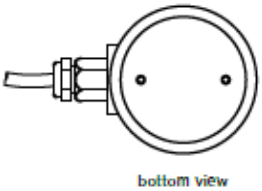
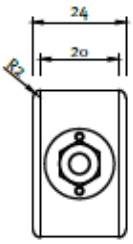
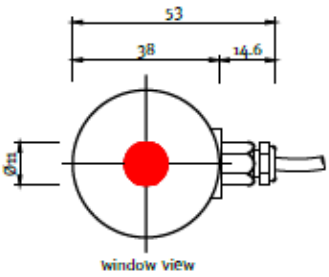
Mechanical dimensions [in mm] and kit







USB cable: Type C and length 2meters
Sensor weight: 56g
Fixing: No fixing holes are available on the sensor.
Mechanical file: Please ask your UWAVE representative for the STEP file in case you need to study / validate mechanical integration.

URAD is delivered in a case that includes a smartphone (Motorola Moto E4 model), the sensor, a battery charger and the calibration certificate. If preferred you can use your own Android smartphone with the radiometer app, please contact us.

Sensor features

Spectral responsivity selection options

Following figure shows the available spectral responsivities. Table 1 shows the position of the peak and the 10% of maximum margins. For UV measurement, by default, unfiltered broadband SiC is applied. If a UV source also emits radiation that must not contribute to the sensor's signal (e.g. UV medium pressure lamps used for water or air purification that also emit non germicidal UV radiation) a filtered sensor (UVC, UVB+C or UVA only) is to be selected. For measurement of radiation above 390nm GaP based detectors are used.

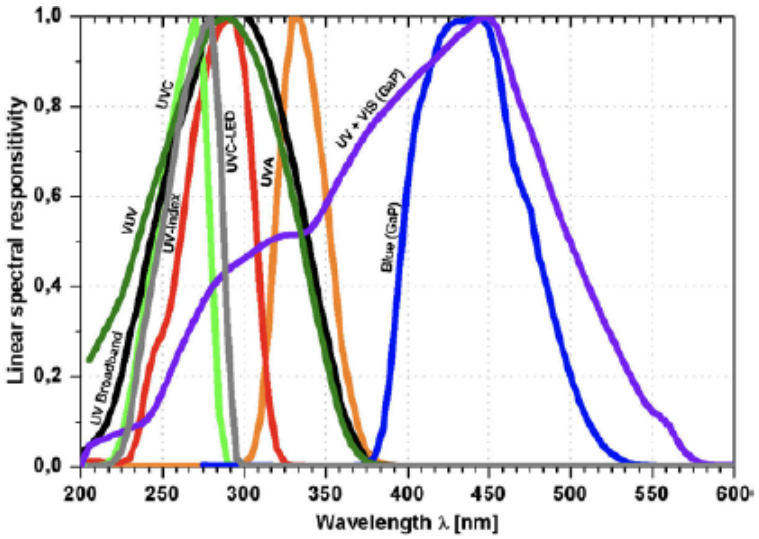
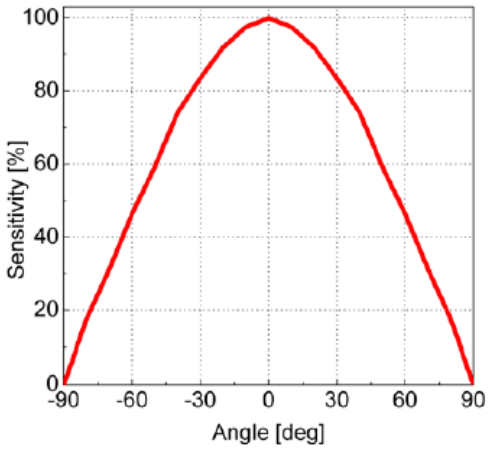


Table 1: position of the peak maximum and position of sensitiviy = 10% of peak

SR	Peak	λ_S_{low}	λ_S_{high}
BroadB	280	221	358
UVA	331	309	367
UVB	280	231	309
UVC	275	225	287
UVC-LED	285	225	298
VUV	280	170	355
UV+VIS	445	240	560
BLUE	445	390	515

Sensor Field of view and picture



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Warranty and calibration

UWAVE products come with a warranty of 1 year (except specific agreements and contracts), starting from UWAVE shipping date. Any improper use voids the warranty.

The URAD calibration is valid for 18 months. Each URAD is unique through its customization and generates the best conditions for permanently precise and reliable UV measurement. However, expert operation and care are required. Accordingly, the radiometer must be protected from shocks and dirt and should be recalibrated every 18 months.

The URAD comes with its own calibration certificate, dated and signed by our partner lab. It contains all technical information on the system.

Regulations compliancy

Regulation & marking	CE - UKCA
Environmental standards	RoHS III Directives - REACH Regulation - WEEE Regulation
HS Codes	90275010 for radiometers
Country of origin	Germany (DE) – Manufactured by sglux GmbH

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