

# Radiometer UVX

## Description Radiometer

For easy measurement of UV lamp irradiance.  
The most effective way to monitor the lifespan and quality control of UV light sources.  
The UVX radiometer is equipped with the latest in solid state electronics. It features a rugged housing, over-ranging and a low-battery indicator.

The digital readout is in radiometric units with a broad dynamic range from  $0.1 \mu\text{W}/\text{cm}^2$  to  $20 \text{ mW}/\text{cm}^2$  with accuracy and precision traceable to the National Institute of Standards and Technology (NIST).

The UVX radiometer is suitable for a wide range of research and industrial applications. Typical applications using UV light sources include genetic experiments, photochemical reactions, sterilization procedures, optical laboratory measurements, experimental biology, dermatological research, non-destructive testing, and graphics procedures.

Three measuring ranges are available as standard:  
0 -  $20 \text{ mW}/\text{cm}^2$   
0 -  $200 \text{ mikroW}/\text{cm}^2$   
0 -  $2000 \text{ mikroW}/\text{cm}^2$

The UVX radiometer comes standard with a connection for a chart recorder (user-supplied).

The UVX is powered by a 9-volt battery, making it completely portable.  
(Battery sufficient for up to 120 hours of operation)  
Not included.

## Optional Attenuator

A 10:1 attenuator extends the reading range to up to  $200 \text{ mW}/\text{cm}^2$ .

The attenuator is used to enable measurements that require high UV light intensity without overloading the detector or producing false readings.



UVX Radiometer



Example sensor for radiometer UVX

## Description Sensors

The UVX series sensors are designed and calibrated for measurement of radiant incidences from line type and phosphor coated mercury arc source.

Depending on the measuring range, select an appropriate sensor for your radiometer.

### Optional Sensors for:

- UV 254 nm (shortwave)  
Measurement range: 250-290 nm
- UV 310 nm (medium wave)  
Measurement range: 280-340 nm
- UV 365 nm (longwave)  
Measurement range: 335-380 nm

## Radiometer UVX



### Specifications

- Three sensitivity ranges covering the span from 200  $\mu\text{W}/\text{cm}^2$  to 20  $\text{mW}/\text{cm}^2$
- 3.5 digit liquid crystal display readout
- Sensitivity down to 0.1  $\mu\text{W}/\text{cm}^2$
- Outstanding ruggedness and reliability
- Negligible sensitivity to infrared
- Linearity of  $\pm 1\%$  over the total range,  $\pm$  one digit
- Readout and sensor are stored in their own storage and carrying case with room for one additional sensor
- Light weight
- Powered by a single 9V transistor battery
- Long battery life (more than 120 hours of continuous operation with a single alkaline battery)
- Automatic low voltage battery indication ("LOBAT" or ":" displayed on the LCD screen)
- Not sensitive to capacitive or AC pick up
- Fully interchangeable sensors for full UV band coverage
- Automatic circuit that tests the display each time the unit is turned on
- Read/Hold switch that allows holding any reading indefinitely
- Automatic reverse battery connection protection circuit
- Calibration of sensors is traceable to NIST through a standard lamp and proven laboratory techniques
- Independent calibration of all sensors and digital Radiometers allowing complete interchangeability without reference to individual calibration factors
- Remote sensor of small size permitting measurements to be taken in constricted areas
- 90 cm long electrically shielded connecting cable

- Excellent cosine response with typical curve supplied in the manual
- A filter system which significantly reduces shortwave solarization phenomenon
- Internal temperature correction retains the accuracy of the sensors at both high and low temperatures
- Externally accessible zero adjust
- Connector port for an external chart recorder (recorder not included)

### Order Information

The sensors are optional. Please select a sensor with the appropriate measuring range.

Model	Description	Order No.
Radiometer UVX	UV-Radiometer (without Sensor) 254/302/365 nm	110.4400
Sensor UVX 25	Sensor for 254 nm, Measuring range: 250-290 nm	110.4410
Sensor UVX 31	Sensor for 310 nm, Measuring range: 280-340 nm	110.4411
Sensor UVX 36	Sensor für 365 nm, Measuring range: 335-380 nm	110.4412
Attenuator	10:1 attenuator for reading ranges up to 200 $\text{mW}/\text{cm}^2$	on request

## UVX Radiometer - Technical Data



### Radiometer

Conversion rate	2.8 readings / sec
Display	3.5 digit LCG
Accuracy	± 2,5%
Linearity	± 0.2%
Sensitivity ranges	0 to 199.9 $\mu\text{W}/\text{cm}^2$ 0 to 1999 $\mu\text{W}/\text{cm}^2$ 0 to 19,99 $\text{mW}/\text{cm}^2$ 0 to 199,9 $\text{mW}/\text{cm}^2$ (with 10:1 attenuator)
Temperature coefficient	$\pm 0.025\% / ^\circ\text{C}$ $\pm 1$ digit, 0 to $50^\circ\text{C}$
Zero drift	$\pm 0.02 \mu\text{W}/\text{cm}^2 / ^\circ\text{C}$ nominal 0 to $50^\circ\text{C}$
Operating temperature range	0 to $50^\circ\text{C}$
Humidity	5% to 90%
Dimensions Radiometer (W x H x D)	157 x 51 x 91 mm
Weight	0.3 kg

### Sensors

Spectral response	s.figures below
Sensor accuracy	± 5% (NIST standard)
Linearity	± 1.0%
Temperature coefficient	± 0.04% / $^\circ\text{C}$ nominal, 0 to $40^\circ\text{C}$
Zero drift	$\pm 0.35 \mu\text{W}/\text{cm}^2 / ^\circ\text{C}$ nominal 0 to $50^\circ\text{C}$

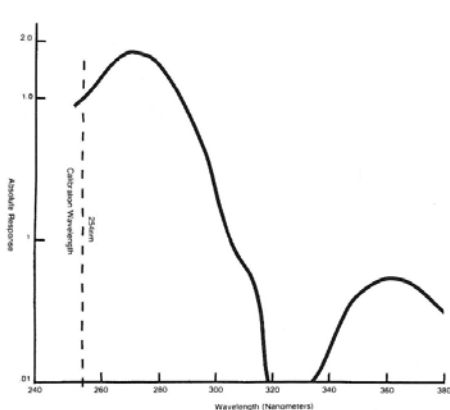


Figure 6: Typical UVX-25 Sensor Spectral Response

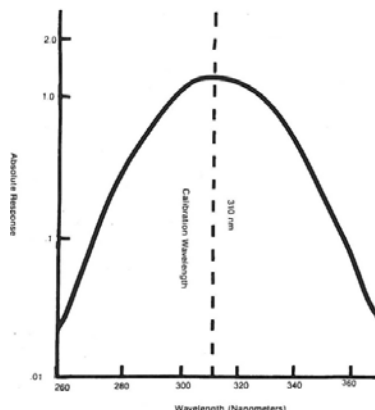


Figure 7: Typical UVX-31 Sensor Spectral Response

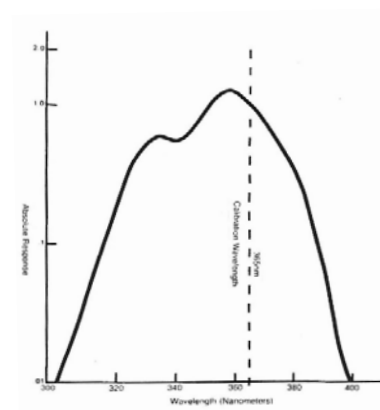


Figure 8: Typical UVX-36 Sensor Spectral Response