

# Reference Radiometer

UVRRM according to DVGW W 294-3:2006

## ▶ GENERAL FEATURES



### **Properties of the Reference Radiometer**

The Reference Radiometer UVRM is designed to check and recalibrate duty sensors for water sterilisation systems according to DVGW norm. This mobile radiometer consists of a handheld unit and one sensor head. The sensor is built according to DVGW W 294-3:2006. It is identical in construction with the duty sensors. The radiometer is calibrated to microbicidal weighted irradiance at  $\lambda = 254 \text{ nm}$  against a PTB traceable standard. Medium pressure calibration can be done on request.

## ▶ HAND-HELD DISPLAY DEVICE

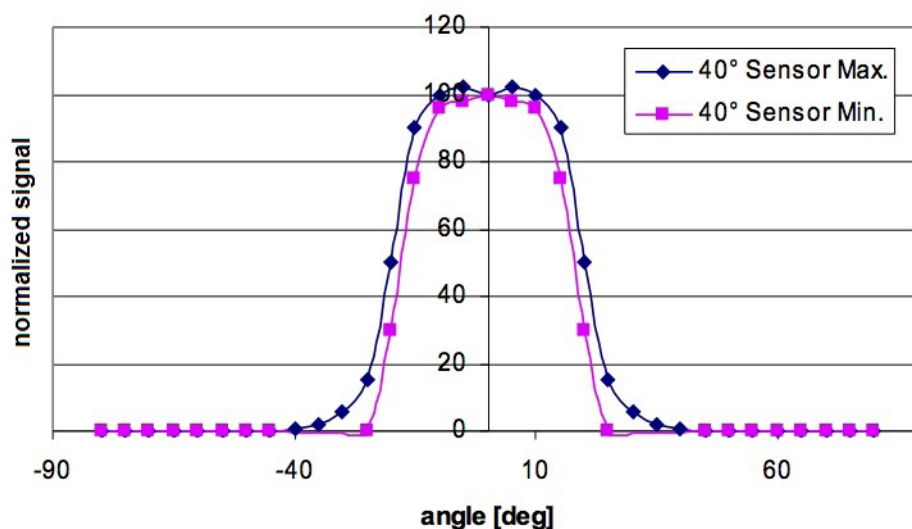
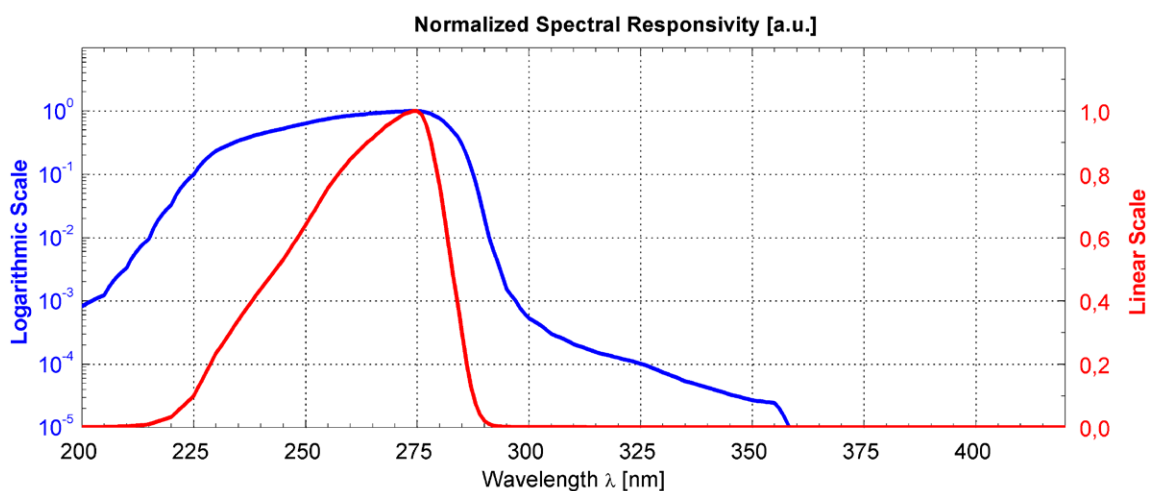
- 20 / 200 / 2,000 / 20,000 W/m<sup>2</sup> ranges, selectable with rotary switch
- Display with 3 ½ digits
- Hold function: to be activated with main switch at left side of case (off - on - hold)
- Battery powered: 9 V type 6F22 or similar, displays „Batt“ when battery runs down, battery has to be changed

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## ▶ PLUG-IN SENSOR UNIT - according to DVGW W 294-3:2006

- Sensor with coaxial cable plugs into hand-held display device
- Range of sensed wavelength: 220 ... 290 nm, spectral sensitivity according to DVGW W 294-3:2006
- Wavelength of calibration: 254 nm
- Field of view: 40°
- Sensor: SiC-photodiode with filter



DVGW Sensor: sensor field of view

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## CALIBRATION

- Radiation source: Hg-low-pressure, quasi-parallel radiation (using sufficient distance and screen)
- Calibration of sensor at  $2 \text{ W/m}^2$  microbicidal weighted irradiation
- Calibration by substitution with PTB calibrated reference sensor
- Relative expanded uncertainty of measurement ( $k=2$ ): 6%
- Re-calibration is recommended after 1 year.

## OPERATING INSTRUCTIONS

Plug the sensor unit into the hand held display device (coaxial connector). Please select the measurement range according to the expected measurement values using the rotary switch.

**Note:** In case of saturation, please select a higher measurement range (although the device will not be damaged if saturated).

Switch the device on (sliding switch, left side of case, middle position). The display shows the measurement value in the selected range. Please note that there can be a significant settling time until stable values are shown (up to 3 sec. in the  $20 \text{ W/m}^2$  range). In this most sensitive range an offset error of  $\pm 2$  digits is tolerable.

Using the sliding switch position “Hold” the current measurement value displayed will be shown until the sliding switch is put back into middle position.

Please switch the device off after use. **There is no timed automatic power down.**

In case of low battery voltage (below  $2/3 U_{\text{max}}$ ) the sign “Batt” appears in the display. Please change battery to avoid measurement errors. The device will power down automatically if the battery runs down further on. The lifetime of a new battery (alkali) is approximately 100 hours.

Please keep the sensor measurement window clean. If necessary clean it with a soft fabric.