

# UV SENSOR “UV-Cosine”

## Waterproof UV Sensor for outdoor use



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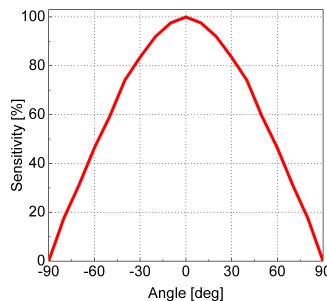
The sensor **UV-Cosine** is an outdoor cosine corrected waterproof sensor (IP68 at window side, IP65 at plug side, or, on request IP68 for submerge applications). The PTFE housing is stain repellent. Available calibrated (NIST or PTB traceable) on request.

The probe is amplified and shielded against electromagnetic interference. The sensor is based on a Silicon Carbide (SiC) UV photodiode, which guarantees highest radiation hardness, long term stability and  $>10^5$  visible blindness (ratio of UV to Vis-IR sensitivity). Please find at page 2 an individual configuration procedure which allows the prospective user to select the correct spectral response (STEP 1), different output types (STEP 2) and to select a sensitivity range (STEP 3). Please feel invited to contact us for assistance.

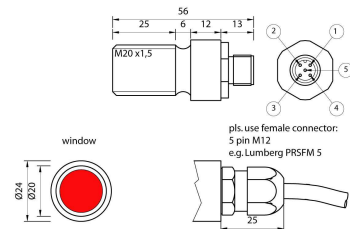
#### Picture



#### Field of View



#### Drawing



## Specifications

### Fixed Specifications

Parameter	Value
Dimensions	pls. refer to the drawing
Weight	27 g
Temp. Coefficient	0,035%/K
Operating Temp.	-20...+80°C
Storage Temp.	-40...+80°C
Humidity	<80%, non condensing, on request: 100% submersible

### Configurable Specifications

Parameter	Value
Absolute Sensitivity	1nW/cm <sup>2</sup> ... 10W/cm <sup>2</sup>
Spectral Sensitivity	UV-Broadband, UVA, UVB, UVC, UV-Index
Signal Output	0...5V, 4...20mA, USB, impulse count
Connections	2m cable or 2m cable with 5 pin male connector type Lumberg PRSFS5

Please find the configuration guide at page 2 of this datasheet

### Monitor Accessories



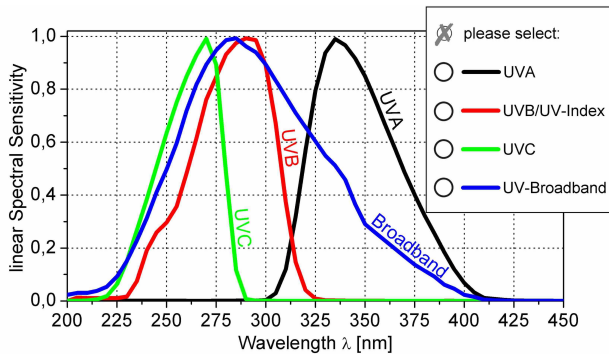
Please consider our UV monitor and UV controller offer

### Calibration



We are pleased to issue an individual quotation for NIST or PTB traceable calibration.

### STEP 1 → Configuration of the Spectral Sensitivity



Please select one spectral sensitivity curve (shown left). Other spectral responses are available on request.

In the UV, we use SiC photodetectors which makes the probe radiation hard and stable. The visible blindness is better than  $10^5$ .

### STEP 2 → Signal Output

Please tick your selection. The pin configuration is shown in the drawings on page 1.

<input checked="" type="checkbox"/> Output Type	Description	<input checked="" type="checkbox"/> Connection = "cable"	<input checked="" type="checkbox"/> Connection = "male plug"
<input type="checkbox"/> 0...5V	0...5V voltage output proportional to radiation input, supply voltage is 7..24VDC, current consumption is <30mA	<input type="checkbox"/> V <sub>0</sub> =brown, V <sub>+</sub> =white, Out=green, Shield=black	<input type="checkbox"/> V <sub>0</sub> =1, V <sub>+</sub> =2, Out=3
<input type="checkbox"/> 4...20mA	4...20mA current loop for PLC controllers. The current is proportional to the radiation, supply voltage is 24VDC	<input type="checkbox"/> V <sub>0</sub> =brown, V <sub>+</sub> =white	<input type="checkbox"/> V <sub>0</sub> =1, V <sub>+</sub> =2
<input type="checkbox"/> USB	The signal is transmitted via USB to a computer. Software is included.	----->	<input type="checkbox"/> Standard USB-A plug, 1,5 m cable
<input type="checkbox"/> Pulse	UV pulse counting for pulses > 30ns, signal out is 5V when the pulse intensity is above threshold and 0V when below.	<input type="checkbox"/> V <sub>0</sub> =brown, V <sub>+</sub> =white, Out=green, Shield=black	<input type="checkbox"/> V <sub>0</sub> =1, V <sub>+</sub> =2, Out=3

### STEP 3 → Sensitivity

We configure your UV sensor for intensities across 10 orders of magnitude from 1nW/cm<sup>2</sup> to 10W/cm<sup>2</sup>. For good dynamic behaviour the min and max. intensity at the probe position needs to be known as precisely as possible. Please fill that value, if known, into the box below. If only a rough estimate is possible, please estimate it in the range selection fields. We will contact you for further refinement of the range.

max. radiation in mW/cm<sup>2</sup> or, if not precisely known, range estimation

1nW/cm<sup>2</sup> ... 10μW/cm<sup>2</sup>  10μW/cm<sup>2</sup> ... 100mW/cm<sup>2</sup>  100mW/cm<sup>2</sup> ... 10W/cm<sup>2</sup>

### Probe mechanical design overview

Besides the ticked mechanical design of this datasheet other mechanical designs are available

<input checked="" type="checkbox"/> Type	Description
<input type="checkbox"/> UV-Surface	Standard surface-mount 180° FOV UV Sensor
<input type="checkbox"/> UV-Air	Standard axis oriented in-chamber UV Sensor
<input checked="" type="checkbox"/> UV-Cosine	<b>Waterproof UV Sensor for outdoor use (this datasheet)</b>
<input type="checkbox"/> UV-Water	10 bar water pressure proof
<input type="checkbox"/> UV-DVGW	UV Sensor for DVGW certified water purifiers
<input type="checkbox"/> UV-MINILOG	UV Datalogger with PC software
<input type="checkbox"/> TOCON	Pre-amplified UV Photodiode