

UV Sensor "UV-Cosine"

Waterproof cosine corrected UV sensor for outdoor use

GENERAL FEATURES

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Properties of this sensor

The "UV-Cosine" is a cosine corrected waterproof sensor with a male threaded body (M20x1.5). The PTFE housing is stain repellent. This UV sensor is suited for outdoor or in-water UV measurements. It is particularly suited for UV-Index measurements. The sensor contains integrated electronics and is shielded against electromagnetic interference. Sensor configuration options are spectral response, signal output type and measuring range. The signal output is either a voltage of 0 to 5 V, a current of 4 to 20 mA, CAN bus interface or USB. The UV sensor is available with a NIST or PTB traceable calibration.

The measuring range of **analog sglux UV sensors** is 3 orders of magnitude corresponding to 5 mV to 5 V or 4.02 mA to 20 mA output. The highest sensitivity range is 1 nW/cm² to 1 μW/cm². The lowest sensitivity range is 20 mW/cm² to 20 W/cm². The **digital sglux UV sensors** contain an integrated microprocessor that converts the UV radiation into 125kbit/s digital CAN bus data. A large dynamic range of 5 orders of magnitude allows to measure low radiation and strong radiation without changing the probe. Customers may specify any range between the mentioned limits.

Page 3 of this datasheet allows to enter requirements of the needed sensor. After selection you may forward this document to factory or agent, or alternatively use the sensor probe online configurator at www.sglux.com. Please contact us for assistance.

SPECIFICATIONS

Fixed Specifications

Parameter	Value
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Dimensions	please refer to drawing on page 2
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Weight	27 g
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Temperature Coefficient (30 to 65°C)	0.05 to 0.075%/K
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Operating Temperature	-20 to +80°C
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Storage Temperature	-40 to +80°C
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IP Protection Class	IP68 at window side, IP65 at plug side, on request IP68 for submerge applications
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Configurable Specifications

Parameter	Value (page 3 shows more detailed information)
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Spectral Sensitivity	Broadband UV, UVA, UVB, UVC, UV-Index, Bluelight and UV+VIS
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Signal Output	0 to 5 V or 4 to 20 mA or CAN bus signal (125kbit/s) or USB
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Current Consumption	for 0 to 5 V = < 30 mA / for 4 to 20 mA = signal out / digital = < 17 mA
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Connections	cable = 2 m cable with tinned leads on free end plug = 5 pin male connector with 2 m cable with tinned leads on free end CAN = 2 m cable with 8 pin male connector (to converter or else) USB = with 1.5 m cable with USB-A plug
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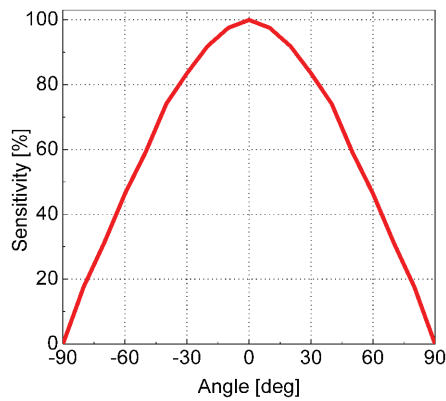
Measuring Range	between 1 nW/cm ² to 1 μW/cm ² and 20 mW/cm ² to 20 W/cm ² for analog or 100 μW/cm ² to 20 W/cm ² for digital sensors (see questionnaire sheet)
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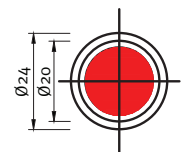
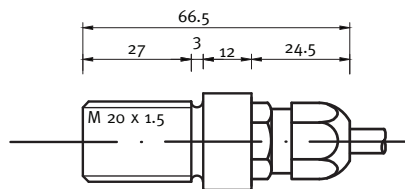
FIELD OF VIEW

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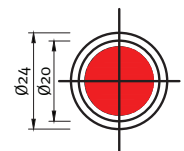
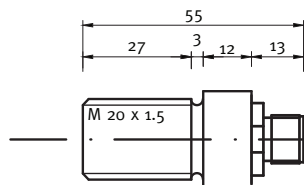
DRAWING

ANALOG CABLE

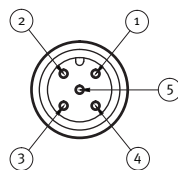


window view

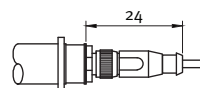
ANALOG PLUG



window view

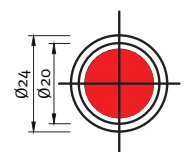
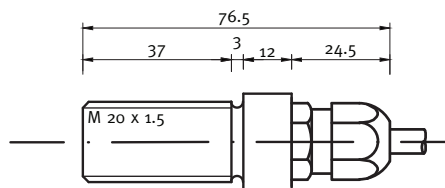


connector view
5 pin M 12 x 1
RSFM₅

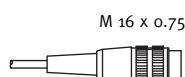


plug connection
5 pin M 12 x 1
e.g. Lumberg PRSFM 5

DIGITAL



window view



KFV 80 plug

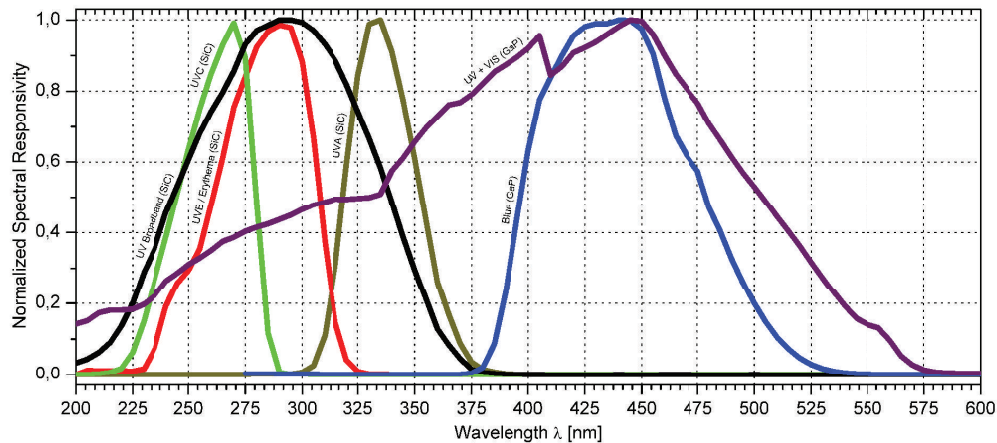


pin layout

UV Sensor "UV-Cosine"

Requirements questionnaire sheet

STEP 1 → Configuration of Normalized Spectral Responsivity



Please select

- Broadband UV (SiC)**
- UVC (SiC)**
- UVB/Erythema (SiC)**
- UVA (SiC)**
- Blue (GaP)**
- UV + VIS (GaP)**

STEP 2 → Signal Output Type Selection

Please tick your selection. The pin configuration is shown in drawings on page 2.

Output Type	Description	Connection = "cable"	Connection = "male plug"
<input type="checkbox"/> 0 to 5 V	0 to 5 V voltage output proportional to radiation input. Supply voltage is 7 to 24VDC, current consumption is < 30 mA.	<input type="checkbox"/> V ₋ = brown, V ₊ = white, V _{out} = green, shield = black	<input type="checkbox"/> V ₋ = 1, V ₊ = 4, V _{out} = 3
<input type="checkbox"/> 4 to 20 mA	4 to 20 mA current loop for PLC controllers. The current is proportional to the radiation, supply voltage is 24VDC.	<input type="checkbox"/> V ₋ = brown, V ₊ = white, shield = black	<input type="checkbox"/> V ₋ = 1, V ₊ = 4
<input type="checkbox"/> CAN bus signal	VSCP protocol according to the following specifications: http://download.sglux.de/probes-digital/vscp-protocol/	Pins 1 & 7 = CAN low Pins 3 & 8 = CAN high Pins 2 & 4 & 5 = GND	
<input type="checkbox"/> USB	The signal is transmitted via standard USB-A plug to a computer. Software and 1.5 m cable are included.		

STEP 3 → Measurement Range Selection

Please mark your approx. max. UV intensity to be measured. The dynamic range for analog UV sensors is 3 orders of magnitude and for digital UV sensors it is 5 orders of magnitude.

max. UV intensity	1 μW/cm ²	10 μW/cm ²	100 μW/cm ²	1 mW/cm ²	10 mW/cm ²	100 mW/cm ²	1 W/cm ²	10 W/cm ²	20 W/cm ²

Sensor Probes Overview and Accessories

SENSOR PROBES OVERVIEW



UV-Surface → Top looking surface-mount UV sensor
For UV radiation reference measurements of radiation exposed to a surface (diameter 38 mm).



UV-Air → Threaded body UV sensor
With M22x1.5 thread for many mounting possibilities i.e. inside UV radiation chambers.



UV-Cosine → Waterproof cosine corrected UV sensor for outdoor use
Stain repellent for outdoor or in-water measurements. Particularly suited for UV-Index measurements.



UV-Water-G3/4 → 10 bar water pressure proof UV sensor with G3/4" thread
Used in pressurized water systems. Suited for low and medium pressure lamps.



UV-Water-PTFE → 10 bar water pressure proof UV sensor with G1/4" thread
Used in pressurized water systems. Suited for low pressure lamps.



UV-DVGW → UV sensor for DVGW (40°) certified water purifiers
Complies with standard DVGW294-3(2006), suited for certified water purifiers.



UV-DVGW-160 → UV sensor for DVGW (160°) and ÖNORM certified water purifiers
Complies with standard DVGW294-3(2006) and ÖNORM 5873-2, suited for certified water purifiers with 160° FOV.



UV-Cure → Sensor for strong UV irradiation, working temperature up to 170° (338°F)
To control curing processes or other high temperature operations where strong UV light is present.



TOCON-Probe → Miniature UV sensor
Miniature UV sensor in M12x1 housing. Available with 0 to 5 V voltage output.

ACCESSORIES FOR ANALOG SENSOR PROBES



Sensor Monitor 5.0 measuring and control module



RADIKON → converter box and measurement controller

ACCESSORIES FOR DIGITAL SENSOR PROBES



UVTOUCH → digital multi-channel UV radiometer



DIGIBOX → CAN-to-USB converter



Control Pad → windows 8 based 10.1" tablet computer display unit

WINDOWS



WIN294 → measurement window acc. to DVGW 294-3 and ÖNORM M5873