

UV Sensor "UV-Sanitize"

UV sensor for monitoring of air and surface UV disinfection systems

GENERAL FEATURES



The "UV-Sanitize" is a UV sensor with PTFE housing for monitoring of air and surface UV disinfection systems. An M20x1,5 male thread allows an easy assembly. It is available for monitoring of Hg low pressure lamps, 222nm excimer lamps or xenon flash lamps. It will be configured upon individual customer's requirements which are clarified within the order process. The sensor works with a SiC photodiode with a UVC filter according to the germicidal action spectrum as defined by DIN 19294-1:2020.

According to the WHO worldwide hundreds of millions hospitalized patients are affected by healthcare-associated infections (HAI). Hygienic rules and precautions are necessary to prevent patients of HAIs which also include multiple drug resistant germs. Besides chemical treatments, sterilization of surfaces by using UVC radiation from Hg low pressure or pulsed Xenon sources is widespread in hospitals and medical facilities. This is realized with irradiation chambers for smaller parts, fixed lamp systems or mobile irradiance robots to sterilize complete hospital rooms. Especially the latter systems need the collaboration with a UV sensor measuring the germicidal radiation in certain points of a room to teach the systems and the user about the UVC distribution inside a treated room. With the sglux sensor „UV-Sanitize“, treatment times and germicidal dose can be evaluated and optimized and less treated parts of rooms can be determined.

SENSOR SPECTRAL RESPONSIVITY

The below figure 1 shows the sensor's microbicidal weighted spectral responsivity.

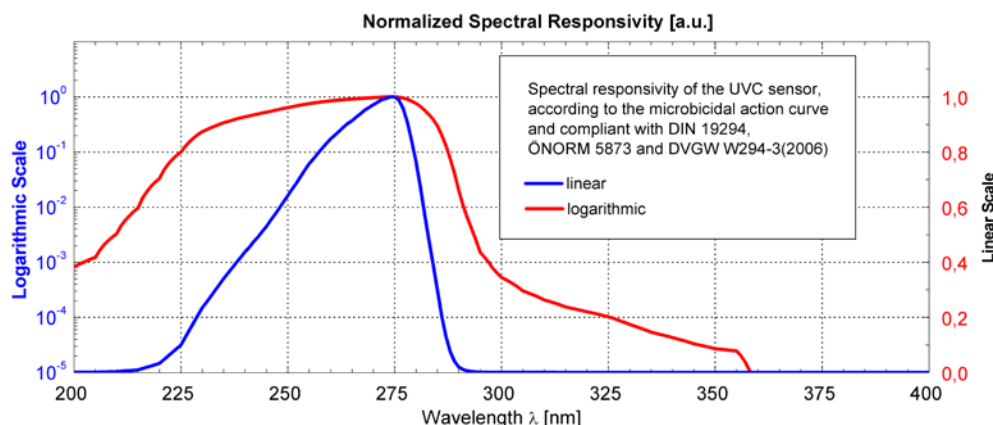


Figure 1: sensor's spectral responsivity

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GENERAL SPECIFICATIONS

<i>FIXED SPECIFICATIONS</i>	Parameter	Value
	Dimensions	Please refer to drawing on page 4.
	Field of view	Please refer to graph on page 4.
	Weight	27 g
	Temperature coefficient (30 to 65°C)	0.05 to 0.075%/K
	Operating temperature	-20 to +80°C
	Storage temperature	-40 to +80°C
	Humidity	< 80%, non condensing
	Time constant	0.1s +/-20% - other time constants on request, device has 1st order low pass characteristics
	Spectral sensitivity	UVC (germicidal) as defined by DIN 19294-1:2020

SIGNAL OUTPUT SPECIFICATIONS

Signal Output 0 to 5 V or 0 to 10V	0 to 5V or 0 to 10V voltage output proportional to the irradiance
Supply voltage	7,5 to 24 VDC (0 to 5V output) and 12 to 24 VDC (0 to 10V)
Current consumption	< 30mA
Connections	2m cable version: V-=brown, V+=white, V _{OUT} =green, shield=black cable version is not available for 0 to 10V voltage output plug version 0-5V: GND=1(brown), V+=4(black), V _{OUT} =3(blue) plug version 0-10V: GND = 2(white), V+=4(black), V _{OUT} =1(brown)
Dark offset voltage	< 3 mV
Measurement range	3 orders of magnitude

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▶ 3/4

Signal Output 4 to 20 mA 4 to 20mA current loop for PLC controllers - The current is proportional to the irradiance.

Supply voltage 24 VDC +-10% (down to 12V possible if compliance voltage and loop resistance is considered)

Current consumption =signal out

Connections cable version: IOUT=brown, V+=white, shield=black
2 m cable length, other lengths available (max.20 m)
plug version: IOUT=1(brown), V+=4(black)

Measurement range 3 orders of magnitude

Sensor compliance voltage 8,5 V

Max. loop resistance 645 Ohm @ 24V and 145 Ohm @12V

Offset 4 mA +- 0,01 mA

Signal Output USB USB output with USB-A (to computer) or μ USB connector (to smartphone)

Supply voltage 5V (USB powered)

Current consumption < 17 mA

Connections USB2.0-A connector (to computer, free software "UVPLOT" is available) or USB2.0-micro-B connector (to a smartphone device like the Radiometer SXL55) 2m cable length.

Measurement range 4 orders of magnitude

Signal Output CAN bus CAN Bus with VSCP protocol for integration into a bus system or to be used with the sglux UVTOUCH or the sglux Digibox

Supply voltage, current consumption 5 to 24 V +- 10%

Connections 8-pin M16 x 0.75 connector: Pins 1&7 = CAN low, Pins 3&8 = CAN high, Pin 6=V+, Pins 2&4&5 = GND, 2m cable length, other lengths available

Measurement range 4 orders of magnitude

Available displays and converters UVTOUCH and Digibox

Signal Output MOD bus MOD bus RTU over RS-485 (connection parameters programmable)

Supply voltage, current consumption 5 to 24V +-10%, typ. 20mA, max. 25mA

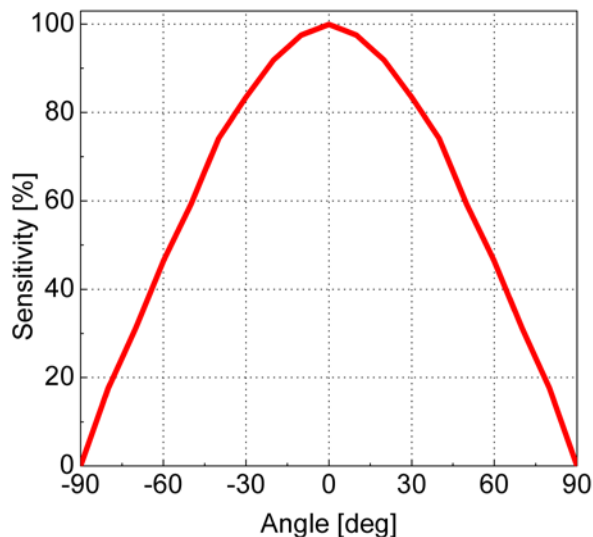
Connections 5-pin M12 connector at sensor side and Binder cable M12-A Series 763 with open wires, Shield =1 (shield), V+ = 2 (red), GND = 3 (black), B = 4 (white), A = 5 (blue)



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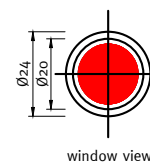
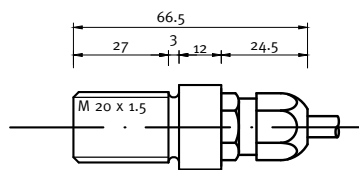
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FIELD OF VIEW

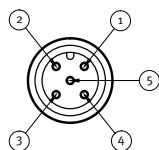
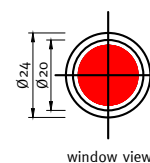
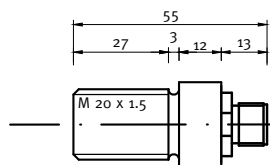


DRAWING (values in mm)

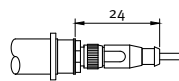
ANALOG CABLE



ANALOG PLUG

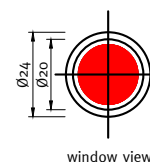
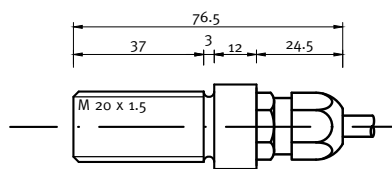


connector view
5 pin M 12 x 1
RSFM₅

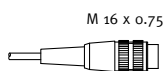


plug connection
5 pin M 12 x 1
e.g. Lumberg PRSFM 5

DIGITAL



CAN



KFV 80 plug



pin layout

USB



USB Type A



Micro USB

Sensor Probes Overview

LABORATORY & EXPERIMENTS



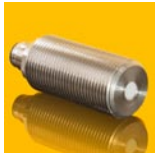
UV-Surface

Universal radiometric UV sensor for calibration and reference measurements, cosine correction. Often used with radiometer SXL55.



UV-Cosine

Waterproof dirt repellent UV sensor for outdoor measurement, cosine field of view. Also available as UVI sensor (ERYCA), M20x1,5 thread



UV-Air

Axial measuring screw-in UV sensor very good EMC properties, M22x1.5 thread,



TOCON-Probe

Miniature UV sensor with 0 to 5 V voltage output, M12x1 thread

SPECIAL APPLICATIONS



UV-Arc

Waterproof UV sensor for measurement of electric arcs between overhead contact wires and pantograph, complies with EN 50317, G3/4" thread



sglux ERYCA

high accuracy UV-Index sensor, measurement uncertainty is < 5%. The sensor complies with ISO 17166, M20x1,5 thread



UVI-Solo

like sglux ERYCA but configured as a ready-to-mount system (available for pole or railings assembly)



UV-Wireless

wireless UV sensor with a display unit for intensity and dose measurement

DUTY SENSORS MONITORING

UV DISINFECTION OF AIR, SURFACES AND WATER



UV-Sanitize

UV sensor for monitoring of air and surface UV disinfection systems, configurable for monitoring of Hg low pressure lamps, excimer lamps or xenon flash lamps, M20x1,5 thread



UV-Water-G3/4

UV sensor for operation in pressurized water (10 bar), for Hg medium and low pressure lamps. Also available as UV-Water-G1/4, G3/4" thread



UV-Water-PTFE

PTFE UV sensor for operation in pressurized water (10 bar), only for Hg low pressure lamps or LEDs, G1/4" thread



UV-ÖNORM / UV-DVGW

UV sensor for DVGW(160°) and ÖNORM certified water purifiers, also available as UV-DVGW (40°). The sensors comply with ÖNORM M5873, DVGW W294(06), DIN19294



UV-Radial

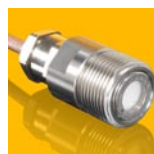
Waterproof side looking UV sensor for monitoring of lamp bundles, for operation in a cladding tube or directly in water, M20x1,5 thread

HIGH UV RADIATION



UV-Cure

UV sensor for high irradiance (> 100W/cm²) for LED curing or cooled medium pressure lamps, M22x1,5 thread (temperature sensor available).



UV-Cure_HT

Like UV-Cure but for temperatures up to 170°C, e.g. for uncooled medium pressure systems, M22x1,5 thread