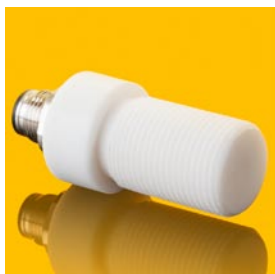# UV Sensor "UV-Sanitize"

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

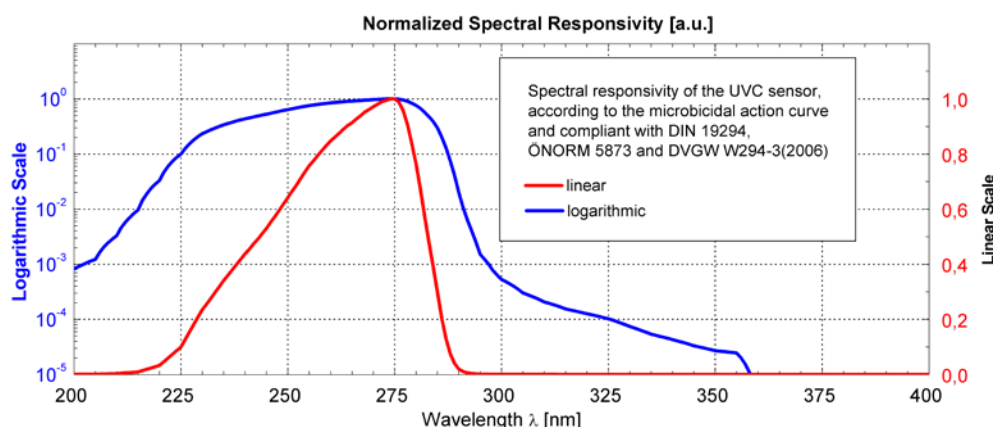The below figure 1 shows the sensor's microbicidal weighted spectral responsivity.

Figure 1: sensor's spectral responsivity

UV Sensor "UV-Sanitize"

UV sensor for monitoring of air and surface UV disinfection systems

▶ GENERAL SPECIFICATIONS

FIXED SPECIFICATIONS 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 sensitiviy	UVC (germicidal) as 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

UV Sensor "UV-Sanitize"

UV sensor for monitoring of air and surface UV disinfection systems

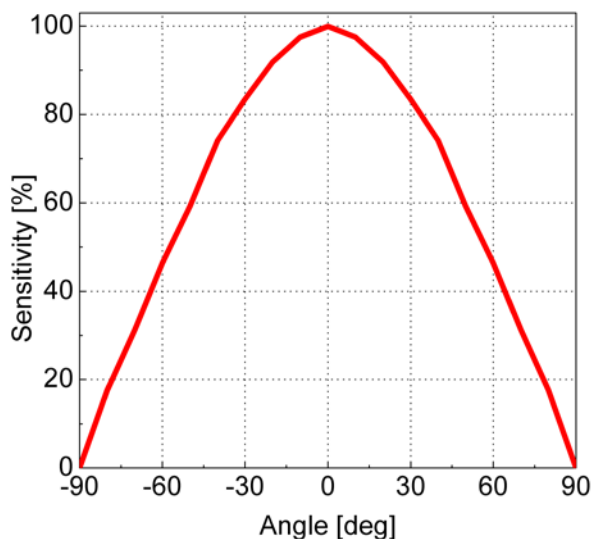|	
Signal Output 4 to 20 mA	4 to 20mA current loop for PLC controllers - The current is proportional to the irradiance.
Supply voltage	24 VDC +/-10% (down to 12V possible if compliance voltage and loop resistance is considered)
Current consumption	=signal out
Connections	cable version: I_{OUT}=brown, V+=white, shield=black 2 m cable length, other lengths available (max.20 m) plug version: I_{OUT}=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 µUSB 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)

UV Sensor "UV-Sanitize"

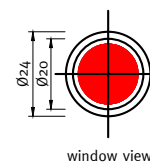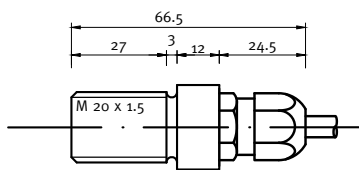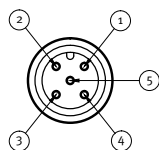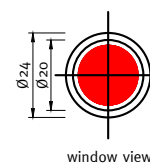UV sensor for monitoring of air and surface UV disinfection systems

sg *lux*
The UV Experts

Boston Electronics

▶ FIELD OF VIEW

▶ DRAWING (values in mm)

ANALOG CABLE

Ø24

66.5
27 | 3 | 12 | 24.5

M 20 X 1.5

Ø24 / Ø20

window view

ANALOG PLUG

Ø24

55
27 | 3 | 12 | 13

M 20 X 1.5

Ø24 / Ø20

window view
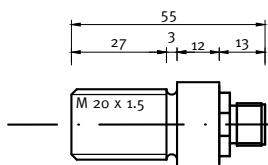
connector view
5 pin M 12 x 1
RSFM5

24
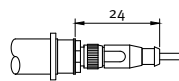
plug connection
5 pin M 12 x 1
e.g. Lumberg PRSFM 5

DIGITAL

Ø24

76.5
37 | 3 | 12 | 24.5

M 20 X 1.5

Ø24 / Ø20

window view

CAN

M 16 x 0.75
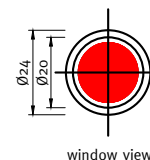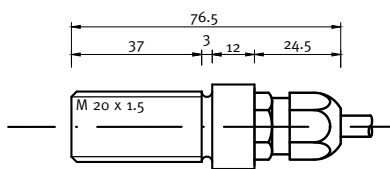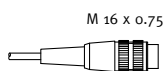
KFV 80 plug

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.

UV-Water-PTFE
PTFE UV sensor for operation in pressurized water (10 bar), only for Hg low pressure lamps or LEDs, G1/4" thread.
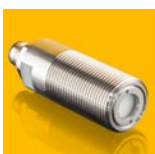
UV-ÖNORM / UV-DVGW
UV sensor for DVGW(160°) and ÖNORM certified water purifiers, also available as UV-DVGW (40°). The sensors comply with ÖNORM M5873, DVGW W294(06), DIN19294
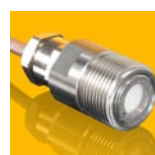
UV-Radial
Waterproof side looking UV sensor for monitoring of lamp bundles, for operation in a cladding tube or directly in water, M20x1.5 thread.

HIGH UV RADIATION

UV-Cure
UV sensor for high irradiance (>100mW/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.