UV Sensor "UV-Surface_UVI"

Top looking surface-mount UV sensor for UV-Index measurements

GENERAL FEATURES

The "UV-Surface_UVI" is designed for high accuracy UV-Index measurements. The measurement uncertainty of this sensor is 5% only. The spectral responsivity and the field of view are in near perfect accordance with the requirements defined in the ISO 17166 standard. It is featured by a cosine shaped field of view and is often used with the sglux Radiometer SXL 55 (see page 5). The signal output type can be configured as a voltage output of 0 to 5 V or a current of 4 to 20 mA. Digital output sensors are available with a MOD bus, a CAN bus or a USB interface. A magnetic sensor holder is available as accessory (see page 5). The UV sensor is available with a PTB traceable calibration.

For customers that like to purchase a ready-to-install system to monitor the UV-Index we produce the "UVI-Solo" and the "stand alone UV Index transmitter". The UVI-Solo is a waterproof pole or railings mounted UV-Index sensor. The integrated leveling mechanism allows a precise zenith alignment. The solar cell powered stand-alone UV Index transmitter measures the UV Index and transmits the values via cellular radio using the MQTT protocol to a server where the obtained values are stored. By default this server is hosted by sglux (ThingsBoard open IoT). Alternatively the user's server can be used. The unit does not require any wiring to the building where it is placed. It can also be used where lightning protection requirements exclude wires on the roof of a building. For further information please refer to the related datasheets at www.sglux.com.

SPECTRAL RESPONSIVITY

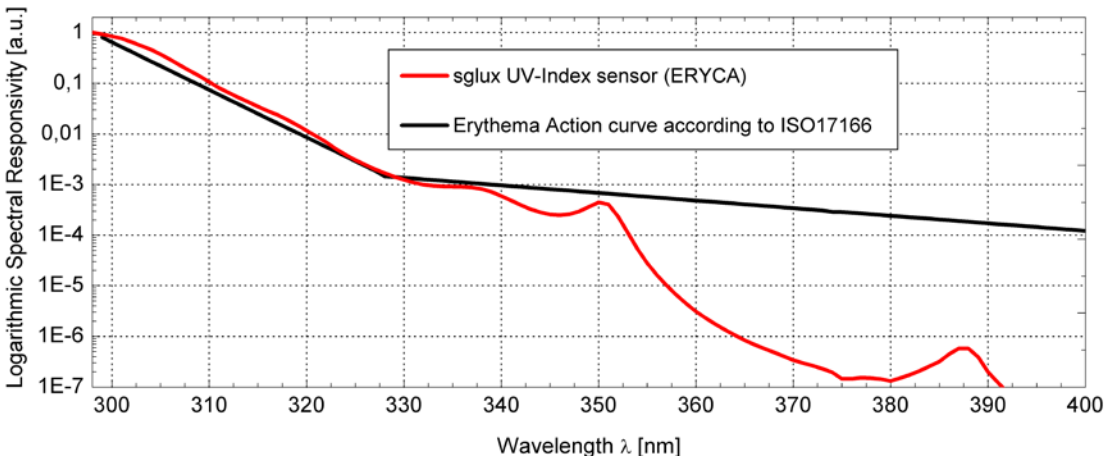

Figure 1: Spectral responsivity of the sglux ERYCA compared with the Erythema action curve as defined by ISO 17166

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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 responsivity	UV-Index as definded by ISO 17166
Measurement range	UVI 0 ... 30
IP protection class	60

SIGNAL OUTPUT SPECIFICATIONS

Signal output 0 to 5 V	0 to 5 V output proportional to the irradiance
Supply voltage	7.5 to 24 VDC
Current consumption	< 30 mA
Connections	2 m cable version: V_-=brown, V_+=white, V_{out}=green, shield=black plug version: not available
Dark offset voltage	< 3 mV
Measurement range	UVI 0 ... 30

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Signal output 4 to 20 mA	4 to 20 mA current loop for PLC controllers - The current is proportional to the irradiance.
Supply voltage	24 VDC +/-10% (down to 12 V 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. 20m) plug version: not available
Measurement range	UVI 0 ... 30
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	5 V (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) 2 m cable length.
Measurement range	UVI 0 ... 30
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, 2 m cable length, other lengths available
Measurement range	4 orders of magnitude
Available displays and converters	UVTOUCH and Digibox

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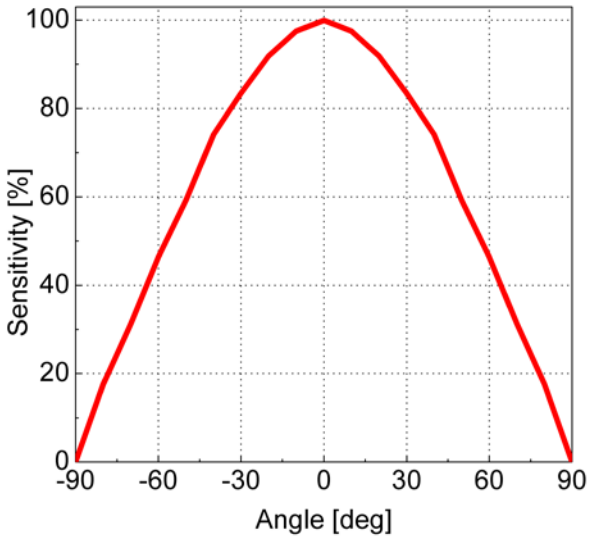
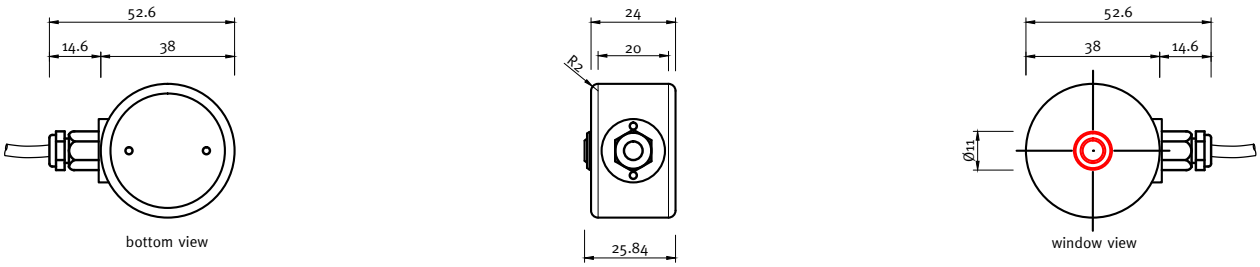
FIELD OF VIEW

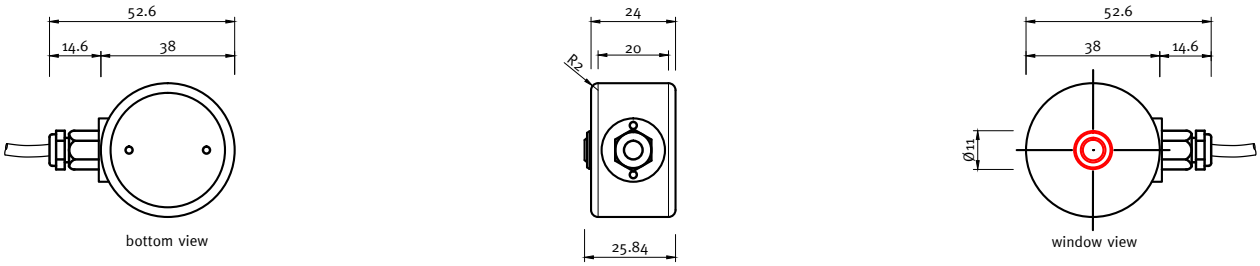


DRAWING (values in mm)

ANALOG CABLE



DIGITAL



CAN

KFV 80 plug

pin layout

USB

USB Type A

Micro USB

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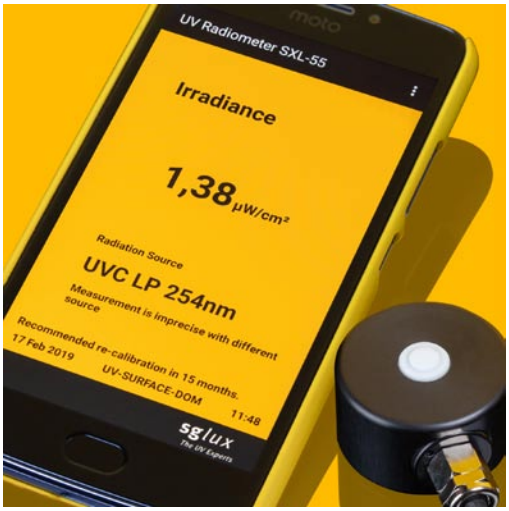
SENSOR HOLDER AVAILABLE AS OPTIONAL ACCESSORY

The below pictures show a useful accessory for the UV-Surface sensor. This sensor holder is featured by a magnetic foot that allows to attach the sensor on every steel surface, also at a ceiling. The sensor and the holder are also connected by a magnet. The bottom of the holder has a 1/4" 20 UNC threaded hole to be connected to a standard camera tripod.

The holder allows various usages with one sensor. The sensor can be attached at a defined fixed position but also can be removed from this position to measure the UV radiation at another place. Additionally, the holder can be used as a protective cap when flipped.

DISPLAY UNIT AVAILABLE AS OPTIONAL ACCESSORY



The UV Radiometer SXL 55 is a smartphone based useful accessory to display the UV-Surface sensor probe measurement values and to excute dose or dosimeter measurement.

For detailled information please refer to the SXL 55 datasheet available on our webpage.

Sensor Probes Overview

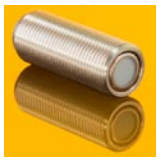
sglux
The UV Experts

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 o 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).

uvLink One
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.

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