

UV Sensor "TOCON-probe"

Miniature UV sensor

GENERAL FEATURES



Properties of this sensor

The "TOCON-probe" is a miniature UV sensor with a male threaded body (M12x1) configured with an amplified UV photodetector. The sensor contains integrated electronics and is shielded against electromagnetic interference. It is configured with an integrated sensor connector (Binder 4 pin plug) and comes with 2 m connector cable. The sensor is easy to mount and connect. Sensor configuration options are spectral response and measuring range. The signal output is a voltage of 0 to 5 V. The UV sensor is available with a NIST or PTB traceable calibration.

The measuring range of the TOCON-probe is 3 orders of magnitude. The highest sensitivity range is 1.8 pW/cm² to 1.8 nW/cm². The lowest sensitivity range is 18 mW/cm² to 18 W/cm². Customers may specify any 3 decade range between the mentioned limits.

Page 3 of this datasheet allows to enter requirements of the needed sensor. After selection please forward this document to factory or agent. Please contact us for assistance.

SPECIFICATIONS

Fixed Specifications

Parameter	Value
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Dimensions	please refer to drawing on page 2
Weight	30 g
Temperature Coefficient (30 to 65°C)	< -0.3%/K for SiC / < -0.5%/K for GaP
Operating Temperature	-25 to +85°C
Storage Temperature	-40 to +100°C
Humidity	< 80%, non condensing
Signal Input Voltage V_{in}	5 to 24 V
Signal Output V_{out}	0 to 5 V
Current Consumption	150 µA
Connections	4 pin plug (see drawing)

Configurable Specifications

Parameter	Value (page 3 shows more detailed information)
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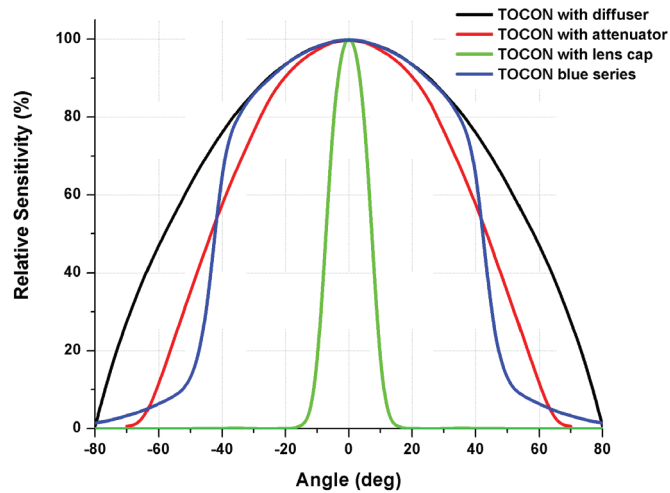
Spectral Sensitivity	Broadband UV, UVA, UVB, UVC, UV-Index, Bluelight and UV+VIS
Sensors Available	types from 1.8 pW/cm ² to 1.8 nW/cm ² up to 18 mW/cm ² to 18 W/cm ²
Measuring Range	3 orders of magnitude

UV Sensor "TOCON-probe"

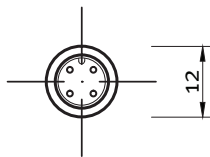
Miniature UV sensor

FIELD OF VIEW

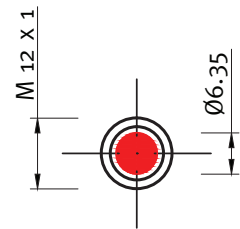
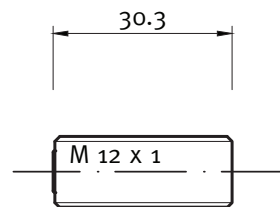
▶ 2/2



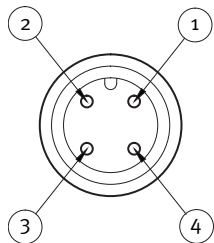
DRAWING



connector view
4 pin M 12 x 1
RSFM₅



window view

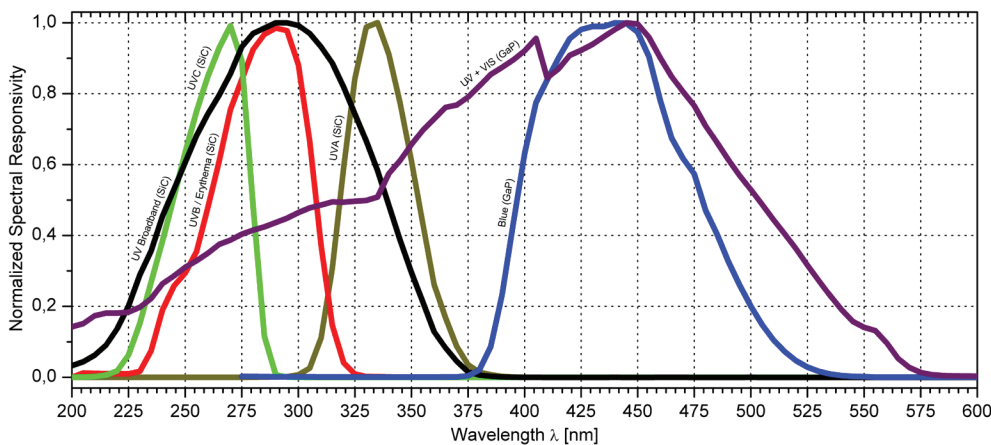


plug connection
4 pin M 12 x 1
e.g. Lumberg PRSFM 5

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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

Signal output $V_{out} = 0$ to 5 V.

Probe connection:

Pin 1 = GND

Pin 3 = V_{out}

Pin 4 = V_{in}

Cable configuration:

WHITE to GND, BLACK to V_{in} , BLUE is V_{out} .

STEP 3 → Measuring Range

The sensors are available in different types from 1.8 pW/cm^2 to 1.8 nW/cm^2 up to 18 mW/cm^2 to 18 W/cm^2 . Dynamic range of a TOCON is 3 orders of magnitude. The TOCON are offered at different sensitivity ranges.

The selection of the sensitivity range must be thorough. If the TOCON is too sensitive it will saturate below the upper limit of the radiation range to be measured. Conversely, a TOCON that is too insensitive gives no or a too low voltage output. Thus, for dynamic range selection, please estimate, it is best to calculate what is the max. radiation your TOCON must measure without getting saturated (the sensor will not be damaged if saturated).

For correct selection of a TOCON with a suited range please refer to the document **product overview** to be downloaded from the TOCON section of our webpage.

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