



(picture similar)

According to ÖNORM M 5873 and DIN 19294 annual calibration checks of plant sensors are required. For this purpose the reference sensor is placed on the measurement position of the plant sensor and both measured values are compared with each other.

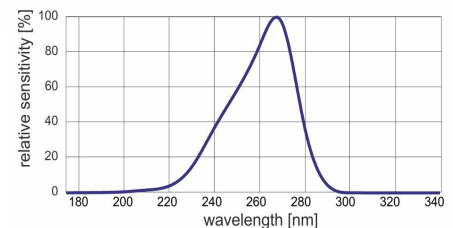
The UV-C Reference Sensor D-SiCONORM-LP-REF 500W/m² is a digital sensor with RS485 interface for measuring/monitoring UV irradiation in lowpressure applications.

The sensor features digital signal processing. The measured value is converted into a digital signal with ZCON protocol.

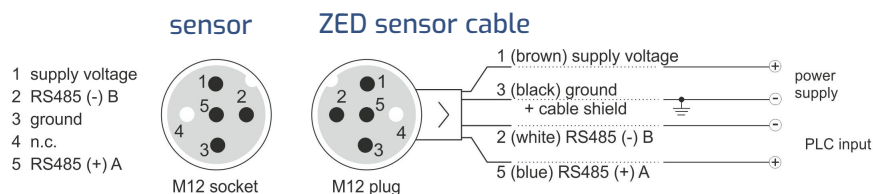
The Reference sensor must be sent to the manufacturer for periodic inspection and recalibration. A recalibration of the displaying system is not necessary.

1 Technical specification

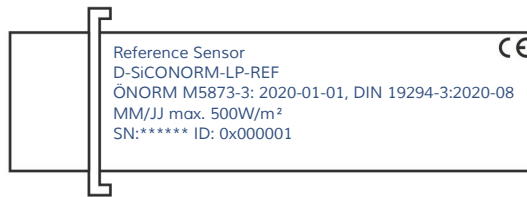
manufacturer	ZED Ziegler Electronic Devices GmbH Langewiesen, In den Folgen 7, 98693 Ilmenau, Germany
name of product	Reference Sensor D-SiCONORM-LP-REF 500W/m ²
article code	619-013
measurement range	0.10 - 500W/m ²
spectral sensitivity	220 - 290nm (see diagram)
adjustment wavelength	253.7nm
sensor element	SIC-Diode with integrated UV-C Filter
signal interface	RS485 with ZCON protocol, ID: 0x000001
supply voltage	9...27V (stabilized)
current consumption	max. 30mA
temperature drift	<0,1%/K (0...40°C) <0,2%/K (0...60°C)
operation temperature	0 - 60°C (32 - 140°F)
body material	stainless steel 1.4305
dimensions/weight	see drawing
max. pressure / protection class	The sensor is not watertight, it must not be exposed to water directly. The use of a compliant measurement window, e.g. ZED MF001, is mandatory. Terminal ends: IP64 if connected to appropriate M12 sensor cable.
sensor cable	not included, order separately



2 Wiring



3 Marking



(picture similar)

4 General Information

The power supply has to be turned off before connecting or disconnecting the sensor, otherwise the sensor may be damaged. Shielding connection may not be used as earth connection for safety reasons.

The sensor is intended for use in chemical and biological inactive environment only!

Handle the sensor, especially the window surface, with care. Be careful not to touch the quartz glass sensor front. If the window is damaged, scratched or polluted, accurate measurement cannot be warranted.

Keep the sensor front clean and check this state before every measurement, since foreign materials on the window can seriously affect transmittance. Use acetone and a cleaning tissue, an iron-free sponge or a soft brush for cleaning the sensor front.

The protective cap is an additional mechanical protection for the sensor front. Use the protection cap when no measurement is being made. Please note that the sensor front might be polluted by a polluted protection cap. Clean the protective cap if necessary, clean the sensor front after removing the protection cap.

5 UV plant sensor calibration check

Using the application Radiometer on the ZED SmartMeter [ZED Art.-no.: 800-009] the measured values of the reference sensor can be visualized.

The PC-Software ZED Sensor Configurator with the adapter RS485/USB-DigiSens [ZED Art.-no.: 609-010] is available for operating the sensor with a PC. Additionally the adapter cable USB-RS485-DigiSens [ZED Art.-no.: 609-cable-046] is needed.



5.1 Procedure

The UV system has to be in stable operating state before the comparative measurement is started. Note the progression chart on the ZED Smartmeter to recognize UV variations.

Disabling the UV warning / alarm functions of your UV system can be kept as short as possible by preparing the measurement as far as possible → connect the reference sensor to the SmartMeter, switch on and start the application 'Radiometer'.

1. Note (write down) the current measurement value of your plant sensor.
2. Disable / pause any alarm functions of your system and remove the plant sensor from the measurement window.

Advice:

Check the condition of the quartz glass window of the sensor and the measurement window. Note that condensate can accumulate in the measuring window, which distorts the measurement results. If necessary, clean the sensor or measurement window and repeat the measurement with the plant sensor.

3. Place the reference sensor in the measurement window and fix it.
4. Note the current measurement value of your reference sensor or freeze it at the SmartMeter with [HOLD].
5. Remove the reference sensor from the measurement window.
6. Place the plant sensor in the measurement window again, reconnect and fix it. Make sure that all warning / alarm system functions are reactivated.
7. Compare the measurement value of the reference sensor with the recorded value of your plant sensor. In case of deviations larger than $\pm 15\%$ (ÖNORM) or $\pm 12\%$ (DVGW) the plant sensor should be returned for recalibration.

The ZED Smartmeter can be used as UV-C meter for plant sensors:

- ZED D-SiC UV sensors with RS485 interface
- ZED D-SiC-I/U UV sensors with 4-20mA, 0,-2V or 0-10V signal output
- ZED D-SiC-SLS UV side-looking sensors

6 EU-Konformitätserklärung/EU Declaration of Conformity

Nummer / number	619-013 2024-07-05
Hersteller manufacturer	ZED Ziegler Electronic Devices GmbH In den Folgen 7, 98693 Ilmenau, Germany
Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller. This declaration of conformity is issued under the sole responsibility of the manufacturer.	
Produktbezeichnung name of product	UV-C Reference Sensor D-SiCONORM-LP-REF 500W/m ²
Produktfamilie product family	UV-Sensor D-SiC
Der oben beschriebene Gegenstand erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union: The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:	
2014/30/EU	Richtlinie des Europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit" / Directive of the European Parliament and of the Council concerning the standardization of legal regulations of the member countries for electromagnetic compatibility"
2011/65/EU + 2015/863EU	Richtlinie des Europäischen Parlaments und des Rates zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS II) / Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS II)
Angewandte Normen: Applied standards:	
DIN EN IEC 61326-1:2022-11	Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen - Teil 1: Allgemeine Anforderungen / Electrical equipment for measurement, control and laboratory use - EMC-requirements – Part 1: General requirements

Ilmenau, 10.05.2023

Dr.-Ing. Rolf Ziegler,
Technischer Direktor/Technical Director

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

This declaration certifies the agreement with the mentioned directives. This is not any assurance of characteristics. Note the safety references of the delivered product documents.

Die Verwendung CE-konformer Komponenten impliziert nicht automatisch die CE-Konformität des Gesamtsystems. Das Anlagendesign, die Kabelführung, die Art der Kabel, die Anzahl und die Kombination der Geräte beeinflussen die Messergebnisse und sollten für jede Applikation gesondert betrachtet werden.

The use of CE conform components in systems does not automatically implicate CE conformity for the complete system. For example the design of the cabinet, the type and routing of cables, the number and the combination of devices influence the measurement results and should be evaluated for every different application.