

UV Calibration, Irradiance

Calibration of UV Index sensors regarding their sensitivity s_D for special UV sources

GENERAL INFORMATION

Calibration object: all sensors manufactured by sglux, costs for other sensors depend on time and material requirement

Action spectra: e.g. erythemat, microbicidal, ICNIRP / TROS IOS

Calibration references: spectroradiometer, currents sensors, traceable calibrated according to the calibration standard of the National Metrology Institute (PTB)

UV sources: mercury low pressure lamp (UVA, UVB, UVC), mercury medium pressure lamp (1kW), LEDs, sun (UVI), supplied UV lamps depending on time and material requirement

Measurement error¹: 5 - 20 % (depending on type of sensor and wavelength)



SERVICES

For the calibration of a UV sensors, a special UV source with a specific spectrum is needed and will be defined. The UV source needs a sufficiently high irradiance. Typical UV sources are available or can be supplied by the customer.

In order to reduce the measurement uncertainty caused by different field of views, sglux uses a reference system with an equal input optic. A traceable calibrated spectroradiometer is used to regularly control the reference sensors. In case of a missing reference sensor, the traceable calibrated spectroradiometer will be used for calibration. A sufficient irradiance and a homogeneous illumination is necessary to measure the signal of the sensor. Thus, the distance is individually defined. Various different measurements of irradiance are possible to verify the linearity of the sensor, if requested.

The calibration service is performed according to DAkkS-DKD-MB-3.

MEASUREMENT INSTRUMENTS

Reference sensors: UV-Surface, UV-Cosine

Spectroradiometer: Gigahertz BTS2048-UV-S-F

Current measurement device: Keithley Electrometer 6514

UV sources : Our UV sources are listed on our homepage.

¹ The measurement error is determined according to „Guide of expression of uncertainty in measurement“ (GUM).