UV Calibration, **UV** Index



Calibration of UV Index sensors regarding their erythemal weighted sensitivity \mathbf{s}_{n} in the sun

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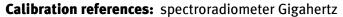
GENERAL INFORMATION

Calibration object: sglux UV Index sensors (UV-Cosine-UVI,

UV-Surface-UVI, TOCON_E2), costs for other

sensors depend on time and material

requirement



BTS2048-UV-S-F, traceable calibrated according to the calibration standard of the

National Metrology Institute (PTB)

UV sources: sun, Berlin, Adlershof 52° 26′ 16″ N , 13° 32′ 51″ O:

clear sky May - September (UVI>4)

Calibration in winter is possible with additional costs at a

measurement station in Malaga (Spain).

Measurement error¹: 10%



According to ISO 17166, the UV radiation is measured in UV Index values (1 UVI = 25 mW/m²). Those values are required by a convolution of the solar UV radiation (E(λ), measured with a spectrometer from 280 nm to 400 nm) and the erythemal action spectrum ($s_{ar}(\lambda)$, according to ISO 17166).

 $\begin{array}{ccc} & & 400 \text{ nm} \\ \text{UV-Index (UVI)} & = & \mathbf{k}_{er} \cdot \int \mathbf{E}(\lambda) \cdot \mathbf{s}_{er}(\lambda) \cdot d\lambda \\ & 280 \text{ nm} \end{array}$

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

MEASUREMENT INSTRUMENTS

Spectroradiometer: Gigahertz BTS2048-UV-S-F

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