SUVAB – UV radiometer

(Rev.2 230126)

Description

SUVAB is a combined ultraviolet radiation meter in the 280 to 400nm spectrum (UVA and UVB).

The sensor is mounted on a self-cleaning head, equipped with a special UV measurement filter system, making the sensor extremely reliable and stable over time.

The UV sensor uses advanced photodiode technology to provide precise and reliable measurements of UV radiation levels, ensuring accurate data collection and analysis.

With a wide dynamic range, this sensor can capture UV radiation levels at different intensities, from low UV index values to high solar radiation levels, making it suitable for a variety of applications.

The sensor provides real-time monitoring of UV radiation levels, allowing you to monitor changes in UV exposure throughout the day and take the necessary precautions to minimize the risks associated with excessive UV exposure.
The SUVAB series ultraviolet radiometers are available with standardized voltage (0…5Vdc) or current (4…20mA) outputs.

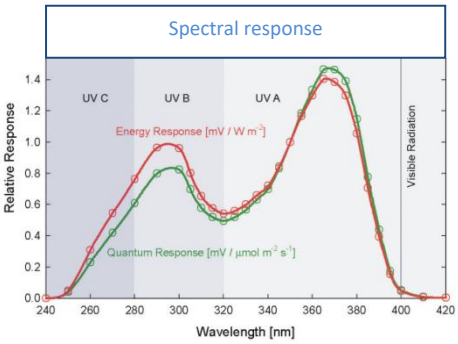
Main Applications

By connecting the sensor to a data acquisition system, it can provide useful information for various applications, such as:

- UV index, health effects caused by UV rays (e.g., skin erythema),
- agrovoltaics
- meteorology,
- industry,
- construction,
- research and medical care

Operating Principle

SUVAB detects ultraviolet radiation between 280 and 400 nm in micromoles of photons per m2 per second (or in Watts/m2). Although UV radiation from 280 to 315 nm (UV-B) is critically important in photochemical and photobiological reactions, less than 3% of UV photons are in this range. Since only a small fraction of photons are in the UV-B range, SUVAB series meters cannot be used to selectively measure UV-B radiation. The sensor is sensitive to UV-B radiation, but also includes UV-A radiation to provide a total UV radiation measurement.



In addition to natural UV radiation from the sun, many electric light sources emit UV radiation (e.g., cool white fluorescent lights, metal halide lamps, mercury vapor, and germicidal lamps). Although the relative wavelengths of UV radiation differ between sunlight and electric lights, in most applications, very low systematic errors **(<0.5%)** are achieved with sunlight.

Advantages

- Excellent quality/price ratio
- High measurement sensitivity
- Amplified output signal easily interfaced with most common data loggers and PLCs
- Excellent robustness and reliability over time

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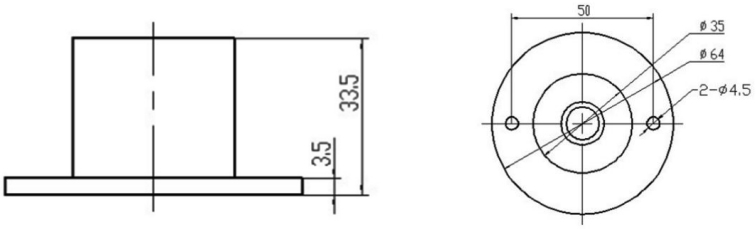
Dimensions (in mm)



Technical data

Model	SUVAB
Spectral range	280…400nm
Transducer	Silicium photodiode
Available range	0…200W/m2 or 0…15 UV index
Accuracy	±5% rdg
Response time	< 1s
Stability	≤±2%/year
No linearity	≤±3%
View range	180°
Temperature response	±0.08%/°C
Cosine response	≤±4% (Sun elevation angle = 30°)
Outputs /power supply Versions:	**-I** 4…20mA / 12…24Vdc **-V** 0…5Vdc / 12…24Vdc
Working temperature	-40…+85°C
Protection degree	IP65
Housing	Anodized alluminium and teflon
Dimensions / weight	Ø64xh34mm / 150g (pole bracket excluded)

Electrical connection

Version	**-I**	**-V**
Electrical output	4…20mA	0…5Vdc
Shunt resistance load	25…440Ω (typ.100Ω)	

Mounting

Install the radiometer away from obstacles that could cast the sun's reflection (or shadow) on the sensor. The radiometer must be positioned so that the power cable exits from the NORTH pole when used in the NORTHERN hemisphere (from the opposite pole when installed in the SOUTHERN hemisphere), in accordance with ISO TR9901 and WMO recommendations. To facilitate installation, the sensor is equipped with a universal bracket that allows for mounting on horizontal or vertical poles. The installer must ensure that the height of the support pole does not exceed the sensor plane, to avoid introducing measurement errors caused by reflections and shadows from the pole. It is preferable to thermally insulate the pyranometer from its support, while also ensuring good electrical contact to ground.

Installation

Application	Installation height	Localization and orienting
Meteorology (ref. WMO Annex 8)	1,5…2 m from the ground or on the top of main pole	Facing south, and in any case without any overhead obstacles that could cast shadows on the sensor. Installation at eye level or on support poles is recommended to ensure easy maintenance and visual inspection of the transducer's cleanliness.

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