BLAKE-LARSEN
SUNSHINE RECORDER

INSTALLATION AND USER MANUAL

The Blake-Larsen Sun Recorder is a simple and unique sensor to determine sunshine duration. It detects sunshine duration as the human eye would do by its design and measuring principle. It can even determine sunshine duration with dusk and dawn, in contrast with other methods.

The lux-sensor measures irradiance from the reflected and filtered light. This signal is compared with a dynamic threshold in order to determine sunshine duration. The dynamic threshold based on the GPS-data and calibration value. In the end it is either sun on or off.

Installation

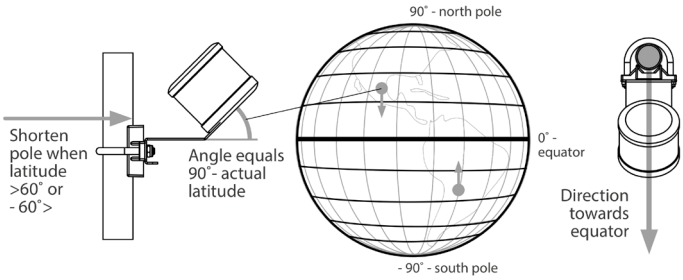
1. Select the right location

The ideal location to install the sunshine recorder should at least confine with the requirements stated below. The quality of the measurement will decline when these requirements are not met.

- Free sight until the horizon
- No shadow during the whole year
- Shortened pole when above or below ± 60˚ latitude

2. Install the sunshine recorder

1. Bend the sunshine recorder up until the angle equals 90˚ - actual latitude (see figure). So no bend at poles and 90˚ at equator. Do not bend afterwards.
2. Intall the sunshine recorder onto a vertical pole. Make sure, when connecting to the pole, that the sunshine recorder is aimed exactly at the equator. (see figure below).
3. Clean the glass after the installation.



3. Connect to datalogger

Use the connection diagram to connect the sunshine recorder to the computer and power supply

Technical Specifications

Operating latitude	-90˚ to +90˚
Analogue output signals (yes/no)	5V/1V, 20mA/4mA and open drain
Resolution	1s
Sunshine duration uncertainty	± 0.3 hours per day
Accuracy of sunshine hours	>90% per weekly sums
Weight	800g
Size (total/housing only)	160x100x83 / Ø83x74 mm
Power supply / usage	12-30 VDC / < 0.5W

Connection diagram

brown	**12 - 30 VDC**	white	**signal GND**
yellow	**signal voltage**	green	**power GND**
pink	**signal current**	red	**open drain switch**
grey	**-**	violet	**RS232 TXD**
black	**RS232 GND**	blue	**RS232 RXD**

Clean regularly

It is important to keep the glass of the sunshine recorder clean on the outside. Light needs to get to the sensor without any unnecessary limitations. It is advised to clean the glass once a year and in urban areas twice a year.

Maintenance

The sunshine recorder needs to be calibrated every 5 years for a trustworthy performance on the long term.

Never open the sunshine recorder. When it is opened in any way please send it to us for correct sealing.

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