

# HelioScale

Measurement Solutions for Solar Radiation



## HelioScale $\alpha$ [alpha]

Your all-in-one solution for a successful analysis and assessment of solar resource and PV potential.

Reduce  
Project Risk  
Monitor Plant  
Performance  
Deliver  
Bankable  
Data

With **HelioScale  $\alpha$** , you acquire an all-in-one solution that provides all fundamental solar radiation and meteorological parameters.

**HelioScale  $\alpha$**  is all you need to perform a successful analysis and assessment of solar resource and PV potential. We offer:





- Qualified Global Horizontal Irradiance (GHI) data with a Secondary Standard thermopile Pyranometer (conforms to ISO 9060 & IEC 61725 standards)
- Robust stand-alone system with low maintenance requirements
- Off-grid power supply consisting of a photovoltaic system including 12V backup batteries to ensure operation in low irradiance conditions
- Daily data retrieval via mobile phone networks, satellite or radio connections
- A calibrated data logging system
- Measurement data storage in 1-minute resolution for 1 year
- Various additional options concerning all meteorological parameters

The meteorological stations are engineered, assembled and tested by Wilmers Messtechnik. The stations are usually sold to the client, who then would be in charge of recalibration, operation and maintenance. Suntrace offers these monitoring services and quality control plus data analysis in an additional package.

[www.HelioScale.com](http://www.HelioScale.com)

**HelioScale**  
Solar Measurement Solutions

## HELIOSCALE ALPHA TECHNICAL SPECIFICATIONS

<b>Thermopile Pyranometer</b> GHI (Global Horizontal Irradiance) [W/m <sup>2</sup> ] 	Classification	Secondary Standard (ISO9060) / WMO High Quality
	Calibration uncertainty	<1.2%
	Zero offset	5 W/m <sup>2</sup> unventilated, 2.5 W/m <sup>2</sup> ventilated
	Spectral range	300 to 3000 nm
	Operating temperature range	-40 to +80 °C
	Temperature response	<± 0.4% (-30 to +50 °C)
<b>Silicon Based Pyranometer</b> [W/m <sup>2</sup> ] 	Response time 95%	<1 ms
	Zero offset – Thermal rad. (200 W/m <sup>2</sup> )	0 W/m <sup>2</sup>
	Spectral range	400 to 1100 nm
	Operating temperature range	-30 to +70 °C
	Non-stability (change/year)	± 2%
<b>Thermo Hygro Sensor</b> Air-temperature [°C]  Relative Humidity [%] 	Sensing element	Semi-conductor temperature with capacitive humidity sensor
	Transducer	Electronical with serial output
	Output signal	RS485
	Accuracy	± 0.5 °C from 0 to 40 °C
	Operating temperature	-40 to +80 °C
	Accuracy	± 2% from 10 to 90 %RH
	Typical long-term stability	±1 %RH/a
	Response time	<10 s
	Radiation shield	Naturally aspirated multi-plate radiation shield
<b>Barometric Pressure Sensor</b> Barometric Pressure [hPa]	Type	Integrated in the blueberry COMPACT
	Measuring range	400 to 1100 hPa
	Resolution	0.1 hPa
	Long-term stability	±0.5 hPa/a
<b>Data Logging System</b> blueberry COMPACT 	Digital inputs	10
	Analogue inputs	6 differential or 12 single ended
	Additional inputs	Via RS485 and INPUT modules
	Serial inputs	RS485, half-duplex, RS232 for modem
	Analogue measuring range	0 to 10 V
	Resolution	16 bit, autoranging
	Measuring interval	1 s to 24 h
	Statistical interval	1 s to 24 h
	Statistical functions	Mean value, standard deviation, max, min, sum
	Data memory	1 GB (non-volatile ring buffer)
	Data interface	RS232 interface, 1200 to 115200 baud, RS485 interface, half duplex, 1200 to 115200 baud
	Remote data transfer	Ethernet interface (LAN), 10 MBit/s, GSM, GPRS, DSL, ISDN router
	External power supply	15 to 30 VDC or solar panel (optional 120/220 )
	Power consumption	Typ. 600 mW (50 mA at 12 V)
	Sensor excitation	12 VDC switched, max. 100 mA
	Temperature range	-40 to +70 °C
<b>Technical Surrounding</b>	Autonomous power supply	
	Lightning protection & grounding kit	
	Waterproof enclosure	