HelioScale

Measurement Solutions for Solar Radiation

HelioScale ω

[omega]

Your must-have
for commissioning
of CSP power plants.

Reduce
Project Risk

Monitor Plant
Performance

Deliver
Bankable
Data

www.HelioScale.com

HelioScale ω is a must-have for the commissioning of CSP power plants. With its high quality sensors, it is a research grade solar radiation measurement station that can be used throughout all stages of CSP and PV project development. **HelioScale ω** offers you:

- Highly precise measurement of DNI with a pyrheliometer including a two-axis tracker
- Sensor equipped with a heated window to reduce the need for cleaning due to dew
- Broadband pyranometer fulfilling highest standard ISO and WMO specifications to measure GHI and DIF (optional)
- 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

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

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Solar Measurement Solutions

HelioScale ω [omega]

HELIOSCALE OMEGA TECHNICAL SPECIFICATIONS

Pyrheliometer [W/m²] 	Classification	First Class ISO 9060 (1990) / WMO Quality
	Response time (95%)	12 s (nominal)
	Full field of view angle	5°
	Slope angle	1°
	Calibration uncertainty	<1.2% for daily totals
	Measurement range	0 to 4000 W/m²
	Spectral range	200 to 4000 nm
	Sensitivity (nominal)	10 µV/(W/m²)
	Rated operating temperature	–40 to +80 °C
	Temperature response	< ± 1% (–10 to +40 °C)
	... with correction in data processing	< ± 0.4% (–30 to +50 °C)
	Heater	12 VDC, 0.5 W
	Sun-tracker with sun sensor	Included
Silicon Based Pyranometer [W/m²] 	Response time 95%	<1 ms
	Zero offset – Thermal rad. (200W/m²)	0 W/m²
	Spectral range	400 to 1100 nm
	Operating temperature range	–30 to +70 °C
	Non-stability (change/year)	± 2%
Thermo Hygro Sensor 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
Barometric Pressure Sensor 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
Data Logging System 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 Vac)
	Power consumption	Typ. 600 mW (50 mA at 12 V)
	Sensor excitation	12 VDC switched, max. 100 mA
	Temperature range	–40 to +70 °C
Technical Surrounding	Autonomous power supply	
	Lightning protection & grounding kit	
	Waterproof enclosure	

06/2016

wilmers
Environment · Measurement · Systems

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