



HOBOnet Solar Radiation (Silicon Pyranometer) Sensor

Product Images



Short Description

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The HOBOnet Wireless Solar Radiation (Silicon Pyranometer) Sensor is calibrated to measure light intensity for frequencies relevant for solar radiation.

HOBOnet Wireless Sensors communicate data directly to the RX3000 weather station or pass data through other wireless sensors back to the central station. They are preconfigured and ready to deploy, and data is accessed through HOBOLink, Onset's innovative cloud-based software platform.

Sensor Features

- Measurement range of 0 to 1280 W/m² over a spectral range of 300 to 1100 nm
- Enclosed in an anodized aluminum housing with acrylic diffuser and O-ring seal.

Wireless Features

- 900 MHz wireless mesh self-healing technology
- 450 to 600 meter (1,500 to 2,000 feet) wireless range and up to five hops
- Up to 50 wireless sensors per RX3000
- Simple button-push to join the HOBOnet wireless network
- Onboard memory to ensure no data loss
- Powered by rechargeable AA batteries and built-in solar panel.

Note: A complete [HOBOnet](#) system requires at least one [HOBOnet RX3000](#) Remote Monitoring Station, a [HOBOnet Wireless Manager](#), and a HOBOnet Wireless Sensor. [HOBOnet Wireless Repeaters](#) can be added to extend the range.

For full specifications for this product, please see the User Manual found under the Resources tab below.

Additional Information

Country of Manufacture	United States	
Brand	Onset HOBO	
Measurements	Evapotranspiration, Light Intensity, Solar Radiation	
Typical applications	Environmental (Outdoor), Field Research, Weather Monitoring	
Explanation	Sensor	
	Measurement Range	0 to 1280 W/m2
	Spectral Range	300 to 1100 nm
	Accuracy	Typically within ± 10 W/m2 or $\pm 5\%$, whichever is greater in sunlight; Additional temperature induced error ± 0.38 W/m2/°C from 25°C (0.21 W/m2/°F from 77°F)
	Angular Accuracy	Cosine corrected 0 to 80 degrees from vertical (see Plot B); Azimuth Error $< \pm 2\%$ error at 45 degrees from vertical, 360 degree rotation
	Resolution	1.25 W/m2
	Drift	$< \pm 2\%$ per year
	Wireless Mote	
	Operating Temperature Range	-25° to 60°C (-13° to 140°F) with rechargeable batteries -40 to 70°C (-40 to 158°F) with lithium batteries
	Radio Power	12.6 mW (+11 dBm) non-adjustable
	Transmission Range	Reliable connection to 457.2 m (1,500 ft) line of sight at 1.8 m (6 ft) high Reliable connection to 609.6 m (2,000 ft) line of sight at 3 m (10 ft) high
	Wireless Data Standard	IEEE 802.15.4
	Radio Operating Frequencies	RXW-LIB-900: 904–924 MHz RXW-LIB-868: 866.5 MHz RXW-LIB-922: 916–924 MHz
	Modulation Employed	OQPSK (Offset Quadrature Phase Shift Keying)
	Data Rate	Up to 250 kbps, non-adjustable
	Duty Cycle	$< 1\%$
	Maximum Number of Motes	50 motes per one RX Wireless Sensor Network
	Battery Type/ Power Source	Two AA 1.2V rechargeable NiMH batteries, powered by built-in solar panel or two AA 1.5 V lithium batteries for operating conditions of -40 to 70°C (-40 to 158°F)
	Battery Life	With NiMH batteries: Typical 3–5 years when operated in the temperature range -20° to 40°C (-4°F to 104°F) and positioned toward the sun (see Deployment and Mounting), operation outside this range will reduce the battery service life With lithium batteries: 1 year, typical use
	Memory	16 MB
	Dimensions	Sensor: 4.1 cm height x 3.2 cm diameter (1.61 x 1.26 inches) Cable length: 2 m (6.56 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches)
	Weight	Sensor and cable: 109 g (3.85 oz) Mote: 223 g (7.87 oz)
	Materials	Sensor: Anodized aluminum housing with acrylic diffuser and O-ring seal Mote: PCPBT, silicone rubber seal
	Environmental Rating	Sensor: Weatherproof Mote: IP67, NEMA 6
	Compliance	 RXW-LIB-868
Ideal For	Professional, Agronomy	