



## RXW-LIA-xxx Sensor

### HOBOnet PAR Sensor

The HOBOnet Wireless Photosynthetic Active Radiation (PAR) Sensor measures light intensity for frequencies relevant to photosynthesis. 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.

#### Supported Measurements:

Light Intensity and PAR

#### Key Advantages:

#### Sensor Features

- Measurement range of 0 to 2500  $\mu\text{mol}/\text{m}^2/\text{sec}$  over wavelengths from 400 to 700 nm
- Enclosed in an anodized aluminum housing with acrylic diffuser

#### 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






## RXW-LIA-xxx Sensor Specifications

### Sensor

|                          |   |
|--------------------------|---|
| <b>Measurement Range</b> | 0 to 2500 mol/m <sup>2</sup> /sec, wavelengths 400 to 700 nm  |
| <b>Accuracy</b>          | ±5 mol/m <sup>2</sup> /sec or ± 5%, whichever is greater in sunlight; Additional temperature induced error ±0.75 mol/m <sup>2</sup> /sec/°C from 25°C (0.42 mol/m <sup>2</sup> /sec/°F from 77°F) |
| <b>Angular Accuracy</b>  | Cosine corrected 0 to 80 degrees from vertical; Azimuth Error <2% error at 45 degrees from vertical, 360 degree rotation  |
| <b>Resolution</b>        | 2.5 mol/m <sup>2</sup> /sec   |
| <b>Drift</b>             | <±2% per year   |

### Wireless Mote

|                                    |   |
|------------------------------------|---|
| <b>Operating Temperature Range</b> | -25° to 60°C (-13° to 140°F) with rechargeable batteries<br>-40 to 70°C (-40 to 158°F) with lithium batteries   |
| <b>Radio Power</b>                 | 12.6 mW (+11 dBm) non-adjustable  |
| <b>Transmission Range</b>          | Reliable connection to 457.2 m (1,500 ft) line of sight at 1.8 m (6 ft) high<br>Reliable connection to 609.6 m (2,000 ft) line of sight at 3 m (10 ft) high   |
| <b>Wireless Data Standard</b>      | IEEE 802.15.4   |
| <b>Radio Operating Frequencies</b> | RXW-LIA-900: 904–924 MHz<br>RXW-LIA-868: 866.5 MHz<br>RXW-LIA-922: 916–924 MHz  |
| <b>Modulation Employed</b>         | OQPSK (Offset Quadrature Phase Shift Keying)  |
| <b>Data Rate</b>                   | Up to 250 kbps, non-adjustable  |
| <b>Duty Cycle</b>                  | <1%   |
| <b>Maximum Number of Motes</b>     | 50 motes per one RX Wireless Sensor Network   |
| <b>Battery Type/ Power Source</b>  | 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)   |
| <b>Battery Life</b>                | 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                 |
| <b>Memory</b>                      | 16 MB   |
| <b>Dimensions</b>                  | Sensor: 4.1 cm height x 3.2 cm diameter (1.61 x 1.26 inches)<br>Cable length: 2 m (6.56 ft)<br>Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches)  |
| <b>Weight</b>                      | Sensor and cable: 109 g (3.85 oz)<br>Mote: 223 g (7.87 oz)  |
| <b>Materials</b>                   | Sensor: Anodized aluminum housing with acrylic diffuser and O-ring seal<br>Mote: PCPBT, silicone rubber seal  |
| <b>Environmental Rating</b>        | Sensor: Weatherproof<br>Mote: IP67, NEMA 6  |
| <b>Compliance Marks</b>            |  RXW-LIA-900<br> RXW-LIA-868<br> RXW-LIA-922 |