



Light Sensor Working correctly?

Is my Light Sensor working correctly?

The only accurate method of checking the correct operation of a light sensor, is to compare it's output against an identical calibrated sensor. However, this is not always easy or convenient, so the guidelines below offer a quick rough check method.

Each Skye light sensor is supplied with a Calibration Certificate, showing the sensor output in current (mA or mA) or voltage (mV or V) per unit of light (e.g. mA per $\mu\text{mol m}^{-2} \text{s}^{-1}$). The current or voltage output from the sensor can be measured using a multimeter.

The correct configuration of scaling factors in a Skye DataHog logger or SpectroSense meter can also be checked using these guidelines. The following table shows the approximate values of light sensor units to expect from each type of sensor:

<i>SENSOR TYPE</i>	<i>TYPICAL READINGS ON A CLEAR SUMMER DAY</i>
PAR Special	2,000 $\mu\text{mol m}^{-2} \text{s}^{-1}$
PAR Quantum	2,000 $\mu\text{mol m}^{-2} \text{s}^{-1}$
PAR Energy	500 W m^{-2}
Lux	100,000 lux
Pyranometer	1,000 W m^{-2}
Red 660 nm	150 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Far-red 730 nm	150 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Red / Far-red ratio	1.0 around solar noon
UVA	50 W m^{-2}
UVB	2 W m^{-2}
UVI	>4 UVI or >0.1 W m^{-2}

<i>SENSOR TYPE</i>	<i>VERY APPROXIMATE READINGS 30 cm FROM A 100 Watt INCANDESCENT LIGHT BULB</i>
PAR Special	18 $\mu\text{mol m}^{-2} \text{s}^{-1}$
PAR Quantum	19 $\mu\text{mol m}^{-2} \text{s}^{-1}$
PAR Energy	4 W m^{-2}
Lux	1000 lux (or 1 klux)
Pyranometer	30 W m^{-2}
Red 660 nm	2.6 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Far-red 730 nm	4.2 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Red / Far-red ratio	0.6

<i>SENSOR TYPE</i>	<i>VERY APPROXIMATE READINGS 9 cm FROM A 20 Watt HALOGEN LIGHT BULB POWERED BY 12VDC</i>
UVA	0.8 W m^{-2}
UVB	0.08 W m^{-2}
UVI	0.4 UVI or 0.01 W m^{-2}