USING SKYE PRI SENSORS WITH CAMPBELL LOGGERS

When taking measurements for the calculation of PRI you need 4 logger channels in total.

E.g.:   Logger channel 1 - sensor 12345, 531 nm band facing upwards

Logger channel 2 - sensor 12345, 570 nm band facing upwards

Logger channel 3 - sensor 12346, 531 nm band facing downwards

Logger channel 4 - sensor 12346, 570 nm band facing downwards

The response of the sensor is 10 ns, so measurement frequencies of 1 Hz or less is no problem. The output of these sensors is extremely linear, the working range is up to several 1000s of micromoles, well above natural daylight measurement ranges.

Each sensor is supplied with its own Calibration Certificate

E.g. Sensor serial number 12345

The output of the 531nm channel is 82.11 umol per 1 microA.

The output of the 570nm channel is 28.66 umol per 1 microA.

Skye can provide a 1 kohm precision resistor (needed for each sensor channel) and wiring instructions to convert the microA output to mV for the Campbell logger (see separate datasheet). The calculation is simple, in the above example, with the addition of the resistor the 531 nm channel output will now be 82.11 micromoles per 1 mV.

When these PRI sensors are connected to the Skye DataHog2 logger we use a 0-4 microA range (equivalent to ~0-300 μmol m^{-2} s^{-1} of radiation in the 531 nm band). The equivalent for the Campbell logger would be 4 mV but the nearest you can choose is probably the 0-10 mV range.

IMPORTANT NOTE

The sensor to be used for reflected light MUST have the cosine correcting diffuser head removed, so that it has a narrow angle field of view. The sensor output with the diffuser head removed is only given in raw microA (or mV with the resistor).

Skye are unable to give an exact calibration to micromoles for this geometry of light collection, only the relative sensitivity of channel 1 to channel 2 is given. However, this is not a limitation, as the PRI can still easily be calculated.

Please see the files "Application Notes for PRI" and the example template for this calculation in Excel for full details.