

Chlorophyll WETStar Characterization

Date: February 27, 2014

S/N: WS3S-942P

Chlorophyll concentration expressed in $\mu\text{g/l}$ can be derived using the equation:

$$\text{CHL}(\mu\text{g/l}) = \text{Scale Factor} \times (\text{Output} - \text{Clean Water Offset})$$

| | |
|--------------------------------------|--------------------------|
| Clean Water Offset (CWO) | Analog output 0.055 V |
| Scale Factor (SF) | 5.2 $\mu\text{g/l/V}$ |
| Maximum Output | 5.52 V |
| Resolution | 0.45 mV |
| Ambient Characterization Temperature | 22 \pm 1°C |
| Current Draw | 30 mA @ 12V (typical) |
| 12-hour Stability | 0.20 mV/hr |
| Temperature Stability, 25–2 °C | 0.24 mV/°C |

| Range | |
|---------------------|---|
| 15 $\mu\text{g/l}$ | 0 |
| 26 $\mu\text{g/l}$ | X |
| 150 $\mu\text{g/l}$ | 0 |

Definitions:

CWO: Clean Water Offset value obtained using pure filtered de-ionized water.

SF: Scale Factor is used to convert the fluorescence response of the instrument into chlorophyll-a concentration. Scale Factor is determined at WET Labs during a cross calibration using a liquid fluorescent standard and a reference fluorometer whose chlorophyll fluorescence response has been characterized in a laboratory using a mono-species lab culture of *Thalassiosira weissflogii* phytoplankton.

Maximum Output: Maximum signal output of the fluorometer.

Resolution: Standard deviation of 1 minute of clean water data, sampled once per second.

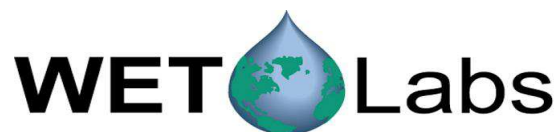
Ambient Characterization Temperature: Room temperature at time of characterization.

Current Draw: The amount of current the instrument uses for operation.

12-hour Stability: Deviation of output averaged over 12 hours.

Temperature Stability: Measured output variation per degree.

PO Box 518
620 Applegate St.
Philomath, OR 97370



(541) 929-5650
Fax (541) 929-5277
www.wetlabs.com

WETStar Calibration and Repairs

Date February 27, 2014 **Customer** Oregon State University

S/N# WS3S-942P **Repair Order** 22279

Standard Service

- Performed noise test: 1 sample/sec for 60 sec
- Performed stability test: 1 sample/min for 12 hrs
- Performed temperature test: 25–2 °C
- Performed saturation test
- Shake-tested unit
- Pressure-tested unit
- Updated unit's calibration sheet

Diagnosis

No Problems Found. Standard Service.

Repairs

Replaced the O-Rings.

Comments

WETStar was re-calibrated with 24ppb Uranine.