



## Chlorophyll WETStar Characterization

Date: 07/09/2004

Customer: USGS,WRD

Job #: 0406018

S/N#: WS3S-1081P

Work order: 001

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

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

	Analog meter	
Clean Water Offset (CWO)	0.051 V @	24 °C
Scale Factor (SF)	14.8 $\mu\text{g/l/V}$ @	24 °C
Maximum Output	5.2 V @	24 °C
Resolution	0.29 mV	
Ambient Characterization Temperature	24 $\pm$ 1 °C	
Current Draw	40 mA @ 12V (typical)	
12-hour Stability	0.25 mV/hr	
Temperature Stability, 25–2 °C	0.19 mV/°C	

### 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 solid 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.