



Chlorophyll WETStar Characterization

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S/N: WSCHL-1485

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 output	Digital output
Clean Water Offset (CWO)	0.061 V @	66 counts
Scale Factor (SF)	14.9 $\mu\text{g/l/V}$ @	0.0181 $\mu\text{g/l/count}$
Maximum Output	4.95 V @	4095 counts
Resolution	0.31 mV	1 counts
Ambient Characterization Temperature	22 \pm 1°C	
Current Draw	57 mA @ 12V (typical)	
12-hour Stability	0.23 mV/hr	1 counts/hr
Temperature Stability, 25–2 °C	0.09 mV/°C	1 counts/°C

Range	
15 $\mu\text{g/l}$	
75 $\mu\text{g/l}$	x
150 $\mu\text{g/l}$	

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.