

FLNTU Characterization Sheet

Date: February 21, 2005 Customer: MBARI

Job #: 502008

S/N#: **FLNTSB-286**

Chlorophyll Scale Factor

Chlorophyll concentration expressed in µg/l can be derived using the equation:

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

	Analog		Digital	
Clean Water Offset (CWO)	0.062	V	52	counts
CHL Equivalent Concentration (CEC)	2.5	V	2082	counts
Scale Factor (SF)	10	µg/l/V	0.0123	µg/l/count
Maximum Output	4.92	V	4120	counts
Resolution	0.9	mV	0.7	counts
Ambient temperature during calibration	23.3	°C		

Nephelometric Turbidity Unit (NTU) Scale Factor

Turbidity units expressed in NTU can be derived using the equation:

$$\text{NTU} = \text{Scale Factor} \times (\text{Output} - \text{Clean Water Offset})$$

	Analog		Digital	
Clean Water Offset (CWO)	0.122	V	94	counts
NTU Solution Value	2.70	V	2239	counts
Scale Factor (SF)	5	µg/l/V	0.0062	NTU/count
Maximum Output	4.93	V	4120	counts
Resolution	0.7	mV	0.9	counts
Ambient temperature during calibration	23.3	°C		

See reverse side for definition of terms.

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

CEC: Signal output of the fluorometer when using a fluorescent proxy that has been determined to be approximately equivalent to 25 µg/l of a *Thalassiosira weissflogii* phytoplankton culture.

NTU Solution Value: Signal output of the turbidity sensor when measuring a sample of interest.

SF (CHL): Chlorophyll concentration from the signal output of the fluorometer. The scale factor is determined using the following equation: $SF = 25 \div (CEC - CWO)$. For example: $25 \div (2865 - 43.5) = 0.00886$.

SF (NTU): Scale factor is determined using the following equation: $SF = xx \div (Output - CWO)$, where xx is the value of a Formazin concentration. For example: $12.2 \div (2011 - 50) = 0.0062$.

Maximum Output: Maximum signal output the fluorometer is capable of.

Resolution: standard deviation of 1 minute of collected data.