

FLNTU Characterization Sheet

Date: October 5, 2005 Customer: MBARI

Job #: 512010 S/N#: **FLNTUSB-411**

Chlorophyll Scale Factor

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

$$\text{CHL } (\mu\text{g/l}) = \text{Scale Factor} \times (\text{Output} - \text{Dark Counts})$$

	Analog		Digital	
Dark Counts	0.078	V	55	counts
CHL Equivalent Concentration (CEC)	2.5	V	2059	counts
Scale Factor (SF)	10	µg/l/V	0.0125	µg/l/count
Maximum Output	4.98	V	4117	counts
Resolution	3.1	mV	1.0	counts
Ambient temperature during calibration	21.5	°C		

Nephelometric Turbidity Unit (NTU) Scale Factor

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

$$\text{NTU} = \text{Scale Factor} \times (\text{Output} - \text{Dark Counts})$$

	Analog		Digital	
Dark Counts	0.071	V	55	counts
NTU Solution Value	2.58	V	2141	counts
Scale Factor (SF)	5	NTU/V	0.0060	NTU/count
Maximum Output	4.98	V	4117	counts
Resolution	3.4	mV	0.8	counts
Ambient temperature during calibration	21.5	°C		

See reverse side for definition of terms.

Dark Counts: Signal output of the meter in clean water with black tape over detector.

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: $SF = 25 \div (CEC - \text{dark counts})$. For example: $25 \div (2865 - 43.5) = 0.00886$.

SF (NTU): Scale factor is determined using the following equation: $SF = xx \div (\text{Output} - \text{Dark counts})$, 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.