

FLNTU Characterization Sheet

Date: February 28, 2024

S/N: FLNTUSB-4878

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	0.066	V	50	counts
Scale Factor (SF)	15	µg/l/V	0.0182	µg/l/count
Maximum Output	4.98	V	4130	counts
Resolution	0.5	mV	1.0	counts
Ambient temperature during calibration	21.0	°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	0.075	V	50	counts
NTU Solution Value	3.31	V	2715	counts
Scale Factor (SF)	40	NTU/V	0.0484	NTU/count
Maximum Output	4.98	V	4130	counts
Resolution	0.4	mV	1.0	counts
Ambient temperature during calibration	21.0	°C		

Definition of terms:

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

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

SF (CHL): Determined using the following equation: $\text{SF} = x \div (\text{output} - \text{dark counts})$, where x is the concentration of the solution used during instrument characterization. SF is used to derive instrument output concentration from the raw signal output of the fluorometer.

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