

# FLNTU Characterization Sheet

Date: April 25, 2014

S/N: FLNTURTD-1013

## 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	0.087	V	64	counts
Scale Factor (SF)	6	µg/l/V	0.0075	µg/l/count
Maximum Output	4.97	V	4120	counts
Resolution	1.1	mV	1.5	counts
Ambient temperature during calibration	22.3	°C		

## Nephelometric Turbidity Unit (NTU) Scale Factor

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

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

	Analog		Digital	
Dark Counts	0.080	V	52	counts
NTU Solution Value	3.03	V	2489	counts
Scale Factor (SF)	2	NTU/V	0.0026	NTU/count
Maximum Output	4.98	V	4122	counts
Resolution	1.2	mV	1.4	counts
Ambient temperature during calibration	22.3	°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:  $SF = x \div (\text{output} - \text{dark counts})$ , 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:  $SF = xx \div (\text{Output} - \text{Dark counts})$ , 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.