PO Box 518
620 Applegate St.
Philomath OR 97370
wetlabs@wetlabs.com

WET Labs

(541) 929-5650
Fax (541) 929-5277
www.wetlabs.com

Date: 12/172009 **Customer: University of Washington**

S/N# BBFL2VMT-452 **Technician: dcm**

Repairs and Modifications: Face polish and factory testing. New cal sheets and Dev. File included.

Comments:

620 Applegate St.
Philomath, OR 97370

WET Labs

Fax (541) 929-5277
www.wetlabs.com

Scattering Meter Calibration Sheet

12/16/2009
Wavelength: 660

S/N BBFL2VMT-452

Use the following equation to obtain "scaled" output values:

$$\beta(\theta_c)\ m^{-1}\ sr^{-1} = \text{Scale Factor} \times (\text{Output} - \text{Dark Counts})$$

• **Scale Factor for 660 nm**	=	4.032E-06	$(m^{-1}sr^{-1})$/counts	
• **Output**	=	meter reading	counts	
• **Dark Counts**	=	58	counts	
Instrument Resolution	=	1.0	counts	4.06E-06 $(m^{-1}sr^{-1})$

Definitions:

- **Scale Factor**: Calibration scale factor, $\beta(\theta_c)$/counts. Refer to User's Guide for derivation.
- **Output**: Measured signal output of the scattering meter.
- **Dark Counts**: Signal obtained by covering detector with black tape and submersing sensor in water.

Instrument Resolution: Standard deviation of 1 minute of collected data.

PO Box 518
620 Applegate St.
Philomath, OR 97370

WET Labs

(541) 929-5650
Fax (541) 929-5277
www.wetlabs.com

ECO Chlorophyll Fluorometer Characterization Sheet

Date: 12/17/2009

S/N: BBFL2VMT-452

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

CHL (µg/l) = Scale Factor * (Output - Dark counts)

	Digital
Dark counts	52 counts
Scale Factor (SF)	0.0110 µg/l/count
Maximum Output	4118 counts
Resolution	1.0 counts
Ambient temperature during characterization	22.3 °C

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

SF: Determined using the following equation: SF = x ÷ (output - 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.

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

Resolution: Standard deviation of 1 minute of collected data.

The relationship between fluorescence and chlorophyll-a concentrations in-situ is highly variable. The scale factor listed on this document was determined using a mono-culture of phytoplankton (Thalassiosira weissflogii). The population was assumed to be reasonably healthy and the concentration was determined by using the absorption method. To accurately determine chlorophyll concentration using a fluorometer, you must perform secondary measurements on the populations of interest. This is typically done using extraction-based measurement techniques on discrete samples. For additional information on determining chlorophyll concentration see "Standard Methods for the Examination of Water and Wastewater" part 10200 H, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation.

PO Box 518
620 Applegate St.
Philomath, OR 97370

WET Labs

(541) 9
Fax (541) 9
www.wetla

ECO CDOM Fluorometer Characterization Sheet

Date: 12/17/2009

S/N: BBFL2VMT-452

CDOM concentration expressed in ppb can be derived using the equation:

CDOM (ppb) = Scale Factor * (Output - Dark Counts)

	Digital
Dark Counts	64 counts
Scale Factor (SF)	0.0963 ppb/count
Maximum Output	4117 counts
Resolution	1.5 counts
Ambient temperature during characterization	22.3 °C

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

SF: Determined using the following equation: SF = x ÷ (output - dark counts), where x is the concentration of th solution used during instrument characterization. SF is used to derive instrument output concentration from the signal output of the fluorometer.

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

Resolution: Standard deviation of 1 minute of collected data.