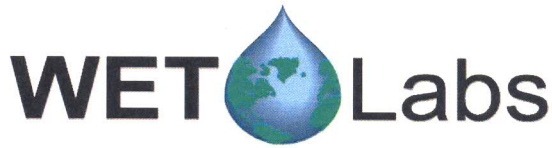


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C-Star Calibration

Date **12.8.16** S/N# **CST-854DR** Pathlength **25 cm**

Analog output
V_d **0.058 V**
V_{air} **4.757 V**
V_{ref} **4.657 V**

Factory M =
21.7440
B = -1.2610

Temperature of calibration water **20.9 °C**
Ambient temperature during calibration **21.9 °C**

Relationship of transmittance (Tr) to beam attenuation coefficient (c), and pathlength (x, in meters): **Tr = e^{-cx}**

To determine beam transmittance: **Tr = (V_{sig} - V_{dark}) / (V_{ref} - V_{dark})**

To determine beam attenuation coefficient: **c = -1/x * ln (Tr)**

- V_d** Meter output with the beam blocked. This is the offset.
- V_{air}** Meter output in air with a clear beam path.
- V_{ref}** Meter output with clean water in the path.
- Temperature of calibration water: temperature of clean water used to obtain V_{ref}.
- Ambient temperature: meter temperature in air during the calibration.
- V_{sig}** Measured signal output of meter.

In use AT39-06:
DI water recal:

Field recalibration 25 March 2018

V_d = .05617
V_{air} = 4.66370
V_{ref} = 4.57875

$$M = \left(\frac{T_w}{w_0 - y_0} \right) * \frac{A_0 - y_0}{A_1 - y_1}$$

$$M = \frac{100}{4.57875 - .05617} * \frac{4.66370 - .05617}{4.66370 - .05617}$$

$$M = \frac{100}{4.52258} * \frac{4.60753}{4.60753}$$

Air recal: $M = \left(\frac{T_w}{w_0 - y_0} \right) * \frac{A_0 - y_0}{A_1 - y_1}$

$$M = \left(\frac{100}{4.657 - .058} \right) * \frac{4.757 - .058}{4.66370 - .05617}$$

M = 22.11127 * 1
M = 22.11127

$$M = \frac{100}{4.599} * \frac{4.699}{4.60753}$$

Revision M

$$B = -M * y_1$$

$$B = -22.11127 * \frac{.05617}{7126/11}$$

$$M = 21.743857 * 1.01985$$

M = 22.1755

$$B = -M * y_1$$

$$B = -22.1755 * .05617$$

B = -1.2456

B = -1.2413