



C-Star Calibration

Date **March 9, 2011** S/N# **CST-401DR** Pathlength **25 cm**

Analog meter

V_d **0.059 V**
 V_{air} **4.875 V**
 V_{ref} **4.804 V**

Temperature of calibration water **20.8 °C**
Ambient temperature during calibration **22.0 °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.