



C-Star Calibration

Date **February 5, 2014** S/N# **CST-1269DR** Pathlength **25cm**

Analog output

V_d **0.060 V**
V_{air} **4.752 V**
V_{ref} **4.661 V**

Temperature of calibration water **16.1 °C**
 Ambient temperature during calibration **19.0 °C**

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

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

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

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.