



C-Star Calibration

Date **July 31, 2012** S/N# **CST-758DR** Pathlength **25**

Analog output

V_d **0.061 V**
V_{air} **4.895 V**
V_{ref} **4.453 V**

Temperature of calibration water **21.0 °C**
Ambient temperature during calibration **21.8 °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.