



C-Star Calibration

Date **August 5, 2011** S/N# **CST-1117DR** Pathlength **25cm**

	Analog output	Digital output
V_d	0.009 V	0 counts
V_{air}	4.869 V	15968 counts
V_{ref}	4.754 V	15589 counts

Temperature of calibration water **24.2 °C**
Ambient temperature during calibration **22.4 °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.