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C-Star Calibration

Date January 6, 1900 *2007-08* Customer: Oregon State University Work order 001
Job # 0706021 S/N# CST-1031DR Pathlength 25 cm

Analog meter

V_d	0.060 V
V_{air}	4.729 V
V_{ref}	4.633 V

Temperature of calibration water	22.1 °C
Ambient temperature during calibration	22.3 °C

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

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.