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C-Star Calibration

Date October 2, 2007

Customer Oregon State University

Work order 002

Job # 0706021

S/N# CST-1031DR

Pathlength 25cm

	Analog meter	
V_d	0.061 V	
V_{air}	4.800 V	
V_{ref}	4.702 V	
Temperature of calibration water		23.1 °C
Ambient temperature during calibration		24.2 °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.

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C-Star Calibration and Repairs

Date	10/2/2007	Customer	Oregon State University		
Job #	0706021	S/N#	CST-1031DR	Work order	002

Repairs and Modifications:

Replaced two diodes on board and recalibrated.

Comments:

- Shake-tested unit
- Pressure-tested unit
- Noise test: 1 sample/sec for 60 sec
- Stability test: 1 sample/min for 12 hrs
- Performed water calibration
- Temperature test, 27-2 °C
- Updated unit's calibration sheet