

C-Star Calibration

Date	August 27, 2025	S/N#	CST-1853DR	Pathlength	25cm
		Analog output	Digital output		
V _d		0.003 V	0 counts		
V _{air}		4.804 V	15780 counts		
V _{ref}		4.700 V	15439 counts		
Temperature of calibration water			20.7	°C	
Ambient temperature during calibration			21.9	°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.