



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

CONTROL COMPANY
 4455 Rex Road
 Friendswood, TX 77546
 Wallace Berry Phone: 281 482 1714

CALIBRATION

Valid To: December 31, 2013

Certificate Number: 1750.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Chemical

Parameter/Equipment	Range	CMC ² (±)	Comments
Conductivity Cell/Probe – Fixed Points	1 µS/cm 5 µS/cm 10 µS/cm 100 µS/cm 1000 µS/cm 1413 µS/cm 10 000 µS/cm 100 000 µS/cm 150 000 µS/cm 200 000 µS/cm	0.017 µS/cm 0.016 µS/cm 0.025 µS/cm 0.32 µS/cm 1.8 µS/cm 2.0 µS/cm 20 µS/cm 150 µS/cm 180 µS/cm 230 µS/cm	Conductivity reference solutions
Conductivity Solutions – Fixed Points	1 µS/cm 5 µS/cm 10 µS/cm 100 µS/cm 1000 µS/cm 1413 µS/cm 10 000 µS/cm 100 000 µS/cm 150 000 µS/cm 200 000 µS/cm	0.022 µS/cm 0.021 µS/cm 0.028 µS/cm 0.34 µS/cm 2.0 µS/cm 2.3 µS/cm 22 µS/cm 160 µS/cm 200 µS/cm 250 µS/cm	Conductivity meter plus 4-wire reference cell
Salinity for Meter	(5 to 42) PSS	(-0.045 + 0.010S) PSS	Conductivity solutions S = Salinity PSS = Practical Salinity Scale

Peter Whyte

Parameter/Equipment	Range	CMC ² (±)	Comments
pH – Measure	(0 to 14) pH	0.0076 pH	pH meter
pH – Measuring Equipment	(4, 7, 10) pH	0.0056 pH	Buffer solutions
Dissolved Oxygen Meter	20.95 % Oxygen	1 % Oxygen	Calibration gas

II. Dimensional

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Digital Calipers – Outside & Depth Inside	(0 to 8) in 1 in	(290 + 21L) μin 0.00041 in	Gage set

III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Electrical Simulation of Thermocouple, Type K	(-120 to -50) °C (-50 to 50) °C (50 to 100) °C (100 to 250) °C (250 to 500) °C (500 to 1050) °C (1050 to 1300) °C	0.19 °C 0.17 °C 0.18 °C 0.21 °C 0.26 °C 0.38 °C 0.48 °C	Omega thermocouple calibrators

IV. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Barometric Pressure	(500 to 1100) hPa or mb	0.22 hPa or mb	Digital barometer class A
Gauge and Differential Pressure	(0 to 100) psi (0 to 300) psi	0.025 psi 0.46 psi	Druck pressure transducer Cole Parmer pressure transducer
Scales and Balances	100 g 200 g 300 g 1000 g 2000 g	0.75 mg 0.90 mg 0.91 mg 7.5 mg 8.1 mg	Troemner ultra class weights

V. Optical Quantities

Parameter/Equipment	Range	CMC ² (±)	Comments
UV Irradiance – Calibration of UV Light Meters	(0 to 199.9) $\mu\text{W}/\text{cm}^2$ (0.1 to 1.999) mW/cm^2 (1.999 to 3.999) mW/cm^2	2.7 $\mu\text{W}/\text{cm}^2$ 0.062 mW/cm^2 0.24 mW/cm^2	Irradiance meter, 365 nm
Calibration of Light Meters	(0 to 35) lux 350 lux 1000 lux 3500 lux 10 000 lux 20 000 lux	0.81 lux 3.8 lux 11 lux 36 lux 450 lux 500 lux	Standard light meter

VI. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Digital Thermometers and Temperature Probes	-80 °C 0 °C 25 °C 75 °C 100°C	0.023 °C 0.0045 °C 0.0043 °C 0.0065 °C 0.0095 °C	PRT thermometer plus calibration bath Thermistor probe plus water bath

Parameter/Equipment	Range	CMC ² (±)	Comments
Digital Thermometers and Temperature Probes (cont)	200 °C 300 °C	0.037 °C 0.048 °C	PRT thermometer plus calibration bath
IR Temperature – Measuring Equipment	0 °C	0.17 °C	Liquid bath
	25 °C	0.13 °C	Digital thermometer w. infrared calibrator BB
	50 °C	0.19 °C	Infrared calibrator BB
	(>50 to 100) °C	0.25 °C	
	(>100 to 250) °C	0.23 °C	
(>250 to 500) °C	0.42 °C		
Relative Humidity	(20 to 80) % RH	0.31 % RH	Chilled mirror hygrometer

VII. Time and Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Digital Stopwatch Timer and Time Base Error	(0 to 10) s/24 hr	0.034 s/24 hr	Non-contact frequency counter
Revolutions per Minute – Digital Tachometer	(10 to 100 000) rpm	$(5.4 \times 10^{-4} + 6.3 \times 10^{-6}R)$ rpm	Pulse generator and frequency counter <i>R</i> = reading in rpm of UUT

¹ This laboratory offers commercial calibration service.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ In the statement CMC, *L* is the length.