

Calibration Date: 4/8/2016 Calibration By: KS

Calibration Due: 10/8/2016

Using: Omega - Model CL23A Calibrator #1240

Use Procedure: WI-L-AMER-Cali-1257

Description: Omega (Data acquisition system)

Serial: E10706227003

Model: OMB DAQ-56

Asset #: 986

All measurements are in °F

Calibrator	Computer	Deviation	Calibrator	Computer	Deviation
50.00	49.49	0.51	650.00	647.26	2.74
100.00	100.29	0.29	700.00	697.45	2.55
150.00	150.12	0.12	750.00	747.26	2.74
200.00	200.86	0.86	800.00	797.42	2.58
250.00	250.73	0.73	850.00	847.22	2.78
300.00	300.06	0.06	900.00	897.38	2.62
350.00	351.02	1.02	950.00	947.09	2.91
400.00	400.95	0.95	1000.00	997.29	2.71
450.00	450.25	0.25	1050.00	1047.60	2.4
500.00	499.73	0.27	1100.00	1097.65	2.35
550.00	549.18	0.82	1150.00	1147.53	2.47
600.00	598.65	1.35	1200.00	1197.96	2.04
Average Deviation:					1.59
Standard Deviation:					1.06

Uncertainty of Readings of #1240 at 95% CL

Total Uncertainty: 3.82

Reviewed by:

Paul Pratt

Date:

4/8/16

Measurement Uncertainty is calculated using the following formula:

$$O.M.U. = k \cdot \sqrt{(A.D.)^2 + (S.D.)^2 + (R.M.U./2)^2}$$

O.M.U. = Overall Measurement Uncertainty

A.D. = Average Deviation of the difference of all measured results compared to the reference value.

S.D. = Standard Deviation of the difference of all measured results compared to the reference value.

k = Confidence Factor (2 for 95% confidence)

R.M.U. = Standard Measurement Uncertainty of Reference Measurement Equipment. R.M.U. is considered as the measurement uncertainty as stated on calibration certificates of equipment, or the tolerance listed in the calibration standard of the test equipment.

Gas Analyzers

Channel	Analyzer		Zero Gas	Span Gas	Cal Gas
26	CO	DAS	0.01	9.19	1
		Meter	0	9.16	0.99
		Deviation	-0.10%	-0.33%	-1.01%
27	CO ₂	DAS	0.01	24.56	4.97
		Meter	0.01	24.55	4.95
		Deviation	1.00%	-0.04%	-0.40%
28	O ₂	DAS	0.01	22.03	5.01
		Meter		22.01	4.99
		Deviation	-0.10%	-0.09%	-0.40%

CO Stdev 0.004736339

CO₂ Stdev 0.007287486

O₂ Stdev 0.001763632