Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

Breath Alcohol Calibration
Test No. 16-569 Summary Report

This test was sent to 33 participants. Each sample pack consisted of four 34L certified reference material dry gas cylinders which participants were requested to analyze. Data were returned from 30 participants (91% response rate) and are compiled into the following tables:

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set consisted of four 34L certified reference material dry gas cylinders (Items 1-4). Participants were requested to analyze the contents of each cylinder and report the apparent breath alcohol concentration.

SAMPLE PREPARATION-
Each dry gas cylinder was compared to its corresponding Certificate of Analysis. After verifying the breath alcohol concentration with the lot number, the cylinder was labeled with the appropriate Item number.

SAMPLE SET ASSEMBLY: Each sample set was assembled with an Item 1, 2, 3 and 4 in a pre-labeled sample pack box.

Item	Lot Number	Breath Alcohol Concentration (g/210L)	Manufacturer's Uncertainty (g/210L)
1	16616280A2	0.280	± 0.0056
2	16616110A3	0.110	± 0.0022
3	16616020A4	0.020	± 0.0020
4	16616210A5	0.210	± 0.0042

The information presented here details how test samples were prepared as well as any design specifications. This information does not necessarily represent the answers that should or could be obtained from an examination of the sample(s). Final interpretation of the results should be deferred until the summary report is available.

Summary Comments

This test was designed to allow participants to assess their proficiency in the previous calibration of their breath alcohol instrument. Each participant was supplied with a sample set consisting of four 34L certified reference material dry gas cylinders which contained different breath alcohol concentration (BrAC) values. (Refer to Manufacturer's Information for production details.)

En analysis was performed on reported results for each item. Please refer to the En Analysis Guide for more information on this statistical analysis. One participant reported "extreme" data (En absolute values greater than 1.00) for Items 1, 2, and 3. Two participants reported "extreme" data for Item 4. At this time, the linearity of the results for each participant will not be analyzed utilizing regression statistics.

CTS noted many participants reported their instrument's serial numbers. For the sake of anonymity, CTS did not reproduce this information in the report.

En Analysis Guide

Normalized Error, or En, is used in proficiency testing in many other industries to judge the quality of measurement results. It measures the relationship of a participant's value to the reference value, relative to the combined uncertainties of those values. En is calculated as follows:

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Where the assigned value, Xref, is determined in the manufacturer's reference laboratory, Uref is the expanded uncertainty of Xref, and Ulab is the Expanded Uncertainty of a participant's result, Xlab. En is not calculated for participants who did not report their Expanded Uncertainty.

Absolute values of En less than 1.00 should be obtained for the measurements to be acceptable. This is because there is a 95% probability that the calculated En will fall within an absolute value of 1.00. Any absolute values over 1.00 have been highlighted with an "X".

The following table and graph represent the results reported by participants.

Xref and Uref were determined by the dry gas cylinder manufacturer. The manufacturer is an accredited ISO Guide 34 reference material supplier with an ISO 17025 accredited laboratory.

Reported Results

As a verification of calibration, report the ethanol concentration of each cylinder and the uncertainty determined during the last calibration of the instrument.

TABLE 1 - Item 1

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 1 Manufacturer's Concentration: 0.280 g/210L **Item 1 Manufacturer's Uncertainty:** 0.0056 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En1)
2JJJ8A	0.207	± 0.003	750.9mmHg	-11.49 X
2RR6AJ	0.276	± 0.0049	745 mmHg	-0.54
38MZ7A	0.280	± 0.020	754.0 mm Hg	0.00
6EAJEE	0.276		1001	
6GF42E	0.273		757	
8FYM27	0.279	± 0.003	1008 mbar	-0.16
8RG6Z6	0.281	± 0.012	747	0.08
9QZ996	0.286	± 0.005	1012 mb	0.80
9XEDK3	0.276	± 0.004	1013 mbar	-0.58
BEYJ62	0.277	± 0.012	748 mmHG	-0.23
C6L2Z9	0.282	± 0.006	754 mm Hg	0.24
D9HX9Y	0.282		924	
ECE7TZ	0.281	± 0.005	1012 mbar	0.13
ETL3CY	0.280	± 0.016	990	0.00
H4BZQU	0.279	± 0.012	752 mmHg	-0.08
H93E64	0.276	± 0.0099	843	-0.35
H9M73U	0.280	± 0.016	997.9	0.00
KL9ZRT	0.284		1004-1005 hPas	
L2GBWR	0.277	± 0.016	1002.3	-0.18

TABLE 1 - Item 1

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 1 Manufacturer's Concentration: 0.280 g/210L **Item 1 Manufacturer's Uncertainty:** 0.0056 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En1)
LR79BQ	0.278	± 0.016	994.5	-0.12
LZLRVQ	0.273	± 0.005	1012 mbar	-0.93
PBQCKM	0.279		904 mB	
QDU6EL	0.273	± 0.005	1009 mbar	-0.93
QFFX6U	0.282		1002.6 mbar	
R79QNL	0.283		1014.0	
UNXN4H	0.269		1012	
WKUJFN	0.275	± 0.0062	747-748 mmHg	-0.60
WX3HBF	0.2762	± 0.006	852 hPa	-0.46
YLUVPL	0.283	± 0.001	1000.6	0.53
YV6XBL	0.279	± 0.0021	952	-0.17

TABLE 1 - Item 2

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 2 Manufacturer's Concentration: 0.110 g/210L **Item 2 Manufacturer's Uncertainty:** 0.0022 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En2)
2JJJ8A	0.018	± 0.003	750.9mmHg	-24.73 X
2RR6AJ	0.108	± 0.0034	745 mmHg	-0.49
38MZ7A	0.107	± 0.008	754.0 mm Hg	-0.36
6EAJEE	0.108		1001	
6GF42E	0.107		757	
8FYM27	0.110	± 0.003	1008 mbar	0.00
8RG6Z6	0.110	± 0.005	747	0.00
9QZ996	0.112	± 0.002	1012 mb	0.67
9XEDK3	0.109	± 0.004	1013 mbar	-0.22
BEYJ62	0.108	± 0.005	748 mmHG	-0.37
C6L2Z9	0.110	± 0.006	754 mm Hg	0.00
D9HX9Y	0.112		924	
ECE7TZ	0.109	± 0.005	1012 mbar	-0.18
ETL3CY	0.110	± 0.005	990	0.00
H4BZQU	0.109	± 0.005	752 mmHg	-0.18
H93E64	0.107	± 0.0038	843	-0.68
H9M73U	0.110	± 0.005	997.9	0.00
KL9ZRT	0.110		1004-1005 hPas	
L2GBWR	0.108	± 0.005	1002.3	-0.37
LR79BQ	0.109	± 0.005	994.5	-0.18
LZLRVQ	0.108	± 0.005	1012 mbar	-0.37

TABLE 1 - Item 2

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 2 Manufacturer's Concentration: 0.110 g/210L **Item 2 Manufacturer's Uncertainty:** 0.0022 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En2)
PBQCKM	0.111		904 mB	
QDU6EL	0.108	± 0.005	1009 mbar	-0.37
QFFX6U	0.114		1002.6 mbar	
R79QNL	0.111		1014.0	
UNXN4H	0.106		1012	
WKUJFN	0.107	± 0.0037	747-748 mmHg	-0.70
WX3HBF	0.108	± 0.006	852 hPa	-0.31
YLUVPL	0.110	± 0.001	1000.6	0.00
YV6XBL	0.110	± 0.0021	952	0.00

TABLE 1 - Item 3

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 3 Manufacturer's Concentration: 0.020 g/210L **Item 3 Manufacturer's Uncertainty:** 0.0020 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En3)
2JJJ8A	0.105	± 0.003	750.9mmHg	23.57 X
2RR6AJ	0.019	± 0.0022	745 mmHg	-0.34
38MZ7A	0.018	± 0.008	754.0 mm Hg	-0.24
6EAJEE	0.020		1001	
6GF42E	0.019		757	
8FYM27	0.021	± 0.003	1008 mbar	0.28
8RG6Z6	0.019	± 0.001	747	-0.45
9QZ996	0.020	± 0.001	1012 mb	0.00
9XEDK3	0.019	± 0.004	1013 mbar	-0.22
BEYJ62	0.019	± 0.001	748 mmHG	-0.45
C6L2Z9	0.019	± 0.003	754 mm Hg	-0.28
D9HX9Y	0.022		924	
ECE7TZ	0.020	± 0.005	1012 mbar	0.00
ETL3CY	0.020	± 0.005	990	0.00
H4BZQU	0.019	± 0.001	752 mmHg	-0.45
H93E64	0.018	± 0.0036	843	-0.49
H9M73U	0.020	± 0.005	997.9	0.00
KL9ZRT	0.020		1004-1005 hPas	
L2GBWR	0.020	± 0.005	1002.3	0.00
LR79BQ	0.021	± 0.005	994.5	0.19
LZLRVQ	0.020	± 0.005	1012 mbar	0.00
PBQCKM	0.022		904 mB	

TABLE 1 - Item 3

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 3 Manufacturer's Concentration: 0.020 g/210L **Item 3 Manufacturer's Uncertainty:** 0.0020 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En3)
QDU6EL	0.020	± 0.005	1009 mbar	0.00
QFFX6U	0.026		1002.6 mbar	
R79QNL	0.020		1014.0	
UNXN4H	0.019		1012	
WKUJFN	0.019	± 0.0022	747-748 mmHg	-0.34
WX3HBF	0.0088		852 hPa	
YLUVPL	0.021	± 0.001	1000.6	0.45
YV6XBL	0.021	± 0.0019	952	0.36

TABLE 1 - Item 4

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 4 Manufacturer's Concentration: 0.210 g/210L **Item 4 Manufacturer's Uncertainty:** 0.0042 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En4)	
2JJJ8A	0.268	± 0.003	750.9mmHg	11.24	X
2RR6AJ	0.210	± 0.0049	745 mmHg	0.00	
38MZ7A	0.209	± 0.015	754.0 mm Hg	-0.06	
6EAJEE	0.209		1001		
6GF42E	0.208		757		
8FYM27	0.212	± 0.003	1008 mbar	0.39	
8RG6Z6	0.212	± 0.009	747	0.20	
9QZ996	0.217	± 0.004	1012 mb	1.21	X
9XEDK3	0.208	± 0.004	1013 mbar	-0.34	
BEYJ62	0.208	± 0.009	748 mmHG	-0.20	
C6L2Z9	0.214	± 0.006	754 mm Hg	0.55	
D9HX9Y	0.216		924		
ECE7TZ	0.213	± 0.005	1012 mbar	0.46	
ETL3CY	0.211	± 0.016	990	0.06	
H4BZQU	0.211	± 0.009	752 mmHg	0.10	
H93E64	0.206	± 0.0074	843	-0.47	
H9M73U	0.213	± 0.016	997.9	0.18	
KL9ZRT	0.215		1004-1005 hPas		
L2GBWR	0.208	± 0.016	1002.3	-0.12	
LR79BQ	0.211	± 0.016	994.5	0.06	
LZLRVQ	0.208	± 0.005	1012 mbar	-0.31	
PBQCKM	0.212		904 mB		

TABLE 1 - Item 4

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

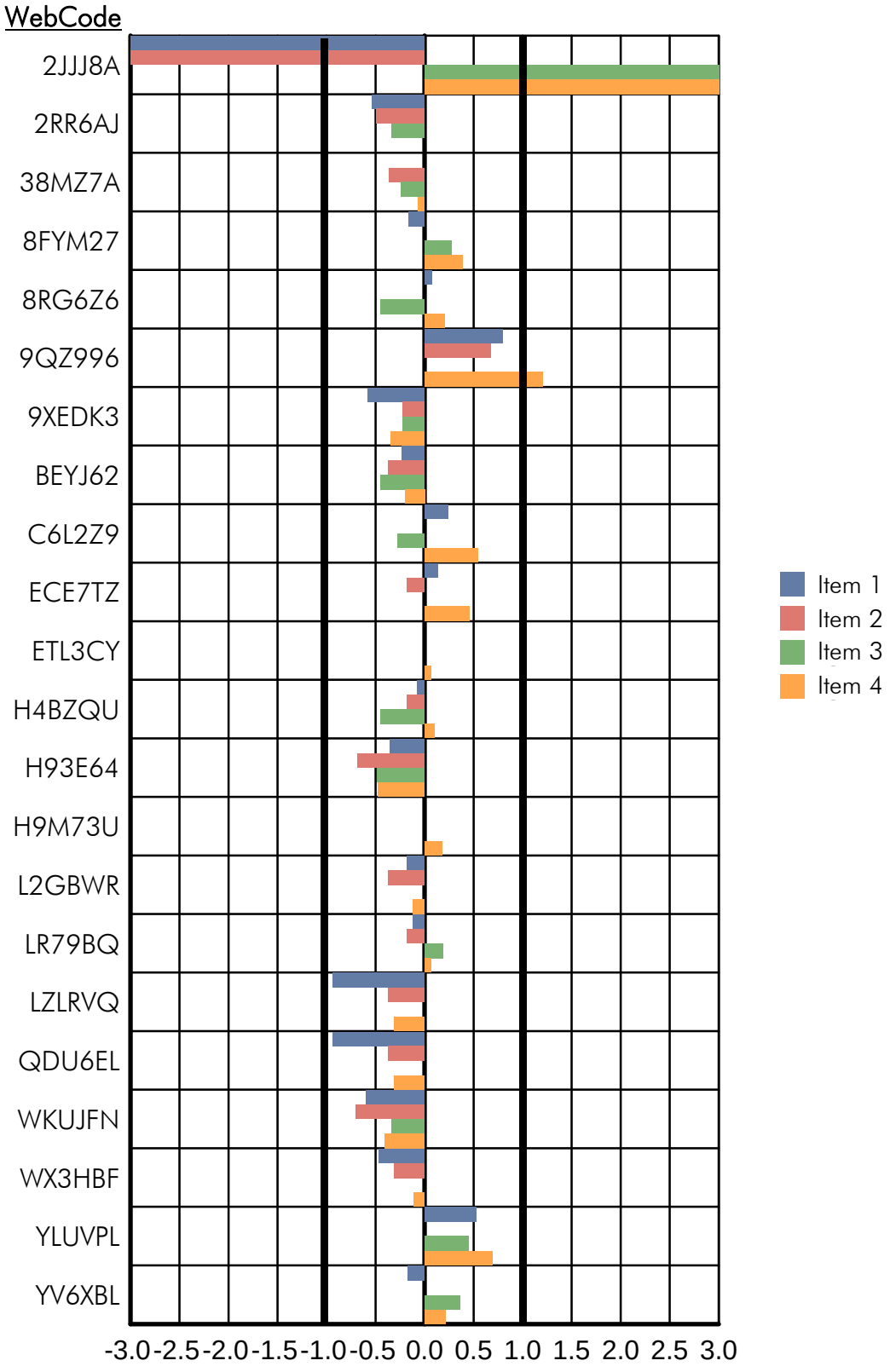
Xlab: Participant's concentration
Xref: Manufacturer's concentration
Ulab: Participant's uncertainty
Uref: Manufacturer's uncertainty

Item 4 Manufacturer's Concentration: 0.210 g/210L **Item 4 Manufacturer's Uncertainty:** 0.0042 g/210L

WebCode	Concentration (g/210L)	Uncertainty k=2 (g/210L)	Barometric Pressure (not used in En)	Performance Statistic (En4)
QDU6EL	0.208	± 0.005	1009 mbar	-0.31
QFFX6U	0.216		1002.6 mbar	
R79QNL	0.211		1014.0	
UNXN4H	0.204		1012	
WKUJFN	0.207	± 0.0062	747-748 mmHg	-0.40
WX3HBF	0.2092	± 0.006	852 hPa	-0.11
YLUVPL	0.213	± 0.001	1000.6	0.69
YV6XBL	0.211	± 0.0021	952	0.21

En Results

Graph 1



Raw Data Adjustments

TABLE 2

List the type and amount of any adjustments made on the raw data to produce the reported concentration, such as for barometric pressure, the wet/dry offset etc.

WebCode	
2JJJ8A	Analysts do not make manual adjustments. The instrument will make the necessary adjustments for wet/dry offsets. In addition, there is a 4.5% correction factor (wet/dry offset) for uncorrected dry gas standards.
2RR6AJ	+4% correction factor for dry gas standard and barometric pressure correction (745/760 mmHg)
38MZ7A	The ASV-XL does an internal wet/dry offset. (4%)
6EAJEE	none
6GF42E	Raw data was corrected with a factor of +4.5% to account for the wet/dry offset.
8FYM27	Barometric pressure
8RG6Z6	All results normalized for barometric pressure using the mean result x (760/barometer reading) then multiplied by wet/dry offset used by Intoximeters which is 4.5% (x 1.045)
9QZ996	Instrument's barometric pressure reading is the same as the external barometer. Instrument's wet/dry offset = 3%
9XEDK3	Barometric pressure offsets the concentration of the standards.
BEYJ62	For each of Items 1-4, 3 raw values were obtained. The mean from these 3 values was determined. To normalize for barometric pressure and wet/dry offset the following conversion was done: Mean value x 760/barometric reading x 1.045 (offset)
C6L2Z9	4.5% adjustment for wet/dry offset, normalize for barometric pressure. 4.5% added. Pressure to 760 mm.
D9HX9Y	none
ETL3CY	No adjustment was required. Instrument has a pressure sensor to make an automatic adjustment.
H4BZQU	The raw data was normalized to atmospheric pressure at sea level and corrected for wet/dry offset.
H9M73U	No adjustments were made. The instrument contains a pressure sensor that makes automatic adjustments.
KL9ZRT	N/A
L2GBWR	No adjustment was required. Instrument has a pressure sensor to make an automatic adjustment.
LR79BQ	An adjustment was not performed because the instrument has a built-in pressure sensor.
PBQCKM	Correction factor = 1.11
QDU6EL	DATAMASTER DMT HAS AN INTERNAL BAROMETER THAT ADJUSTS ATMOSPHERIC PRESSURE FOR DRY GAS DEPENDENT ON WHERE THE INSTRUMENT IS LOCATED. NOMINAL CONCENTRATION IS ADJUSTED TO THE TARGET CONCENTRATION DUE TO THE ADJUSTMENT OF BAROMETRIC PRESSURE.
QFFX6U	Instrument correction factor = 1.04
R79QNL	None

TABLE 2

WebCode	
UNXN4H	The instrument used is programmed to adjust the target alcohol concentration of the dry gas cylinder based on barometric pressure. No additional calculations were performed to adjust the results obtained back to the actual tank value.
WKUJFN	Barometric pressure adjustment = 760mmHg / instrument barometric pressure in mmHg. wet/dry offset = 1.04 (+4% correction factor for dry gas standard)
WX3HBF	The instrument internally adjusts for barometric pressure
YLUVPL	n/a

Instrument Information

TABLE 3

WebCode	Instrument used	Detector type
2JJJ8A	AlcoSensor VXL	Fuel Cell
2RR6AJ	EC/IR II (Intoximeters, Inc.)	Fuel Cell
38MZ7A	AlcoSensor V-XL	E.C.
6EAJEE	Draeger 9510 serial # [serial number]	IR
6GF42E	Intoximeter EC/IR II	Electrochemical Fuel Cell
8FYM27	DataMaster DMT [serial number]	Infrared
8RG6Z6	Intoximeters Intox ECIR II SN [serial number]	Fuel Cell
9QZ996	Draeger Alcotest 9510	IR
9XEDK3	Datamaster DMT [serial number]	Infrared; Thermoelectrically Cooled Lead Selenide
BEYJ62	Intoximeter ECIR II	Fuel Cell
C6L2Z9	Intoximeter EC/IR II	Fuel cell
D9HX9Y	Intoxilyzer 8000	IR
ECE7TZ	DATAMASTER DMT [serial number]	Infrared
ETL3CY	Drager Alcotest 7510	Electrochemical fuel cell
H4BZQU	Intoximeters Inc., Intox EC/IR II	Fuel Cell
H93E64	Intoxilyzer 8000 SN [serial number]	3.4 μm and 9.4 μm dual wavelength, pyroelectric detector
H9M73U	Dräger Alcotest 7510	Electrochemical Fuel Cell
KL9ZRT	Draeger Alcotest 9510	Infrared and Fuel Cell, but only IR is admissible by law in our state
L2GBWR	Dräger Alcotest A7510	Electrochemical Fuel Cell
LR79BQ	Draeger A7510: [serial number]	Electrochemical Sensor (Fuel Cell)
LZLRVQ	DATAMASTER DMT [serial number]	INFRARED
PBQCKM	Intoxilyzer 8000	IR
QDU6EL	DATAMASTER DMT BREATH INSTRUMENT [serial number]	THERMOELECTRICALLY COOLED LEAD SELENIDE THAT MEASURES IR ENERGY THAT HAS PASSED THROUGH THE BREATH/GAS SAMPLE
QFFX6U	Intoxilyzer 9000	4 filter IR
R79QNL	Alcotest 9510 serial# [serial number], [serial number]	IR
UNXN4H	DMT	IR
WKUJFN	EC-IR	Fuel Cell
WX3HBF	Intoxilyzer 8000	Infrared
YLUVPL	Intoxilyzer 9000	Infrared
YV6XBL	Intoxilyzer 8000	IR

Additional Comments

TABLE 4

WebCode	Additional Comments
2JJJ8A	Results are an average of triplicate analysis. Tests were run as a check for accuracy where the instrument adjusted targets for dry gas standards based on temperature and pressure. No additional adjustments were made to the actual result.
38MZ7A	The reported uncertainty is a combined uncertainty for all laboratory maintained ASV-XL instruments over the last time period calculated.
6EAJEE	This laboratory does not determine uncertainty for breath test calibrations. [From Table 1 - Items 1, 2, 3, and 4 Reported Results: Participant also reported data for EC detector "Item 1 - 0.275; Item 2 - 0.108; Item 3 - 0.019; Item 4 - 0.208."]
6GF42E	The uncertainty of measurement is calculated for the certification process using a coverage factor of k=3. Four concentrations of dry gas standards are used to certify the instrument for accuracy and the uncertainty of measurement is calculated for these concentrations. The uncertainty of measurement is: 0.040 +/- 0.002 g/210L, 0.082 +/- 0.003 g/210L, 0.200 +/- 0.007 g/210L, and 0.300 +/- 0.010 g/210L.
8FYM27	Laboratory calibration certificates are issued with an expanded uncertainty using k=3. Additionally, the certificate lists an expanded uncertainty for each of the four (4) calibration standards used in the calibration process. Laboratory practice is to apply the largest expanded uncertainty value from the calibration certificate to casework breath alcohol values obtained from the corresponding instrument. The uncertainty provided in 1A was determined using k=2. The k=3 expanded uncertainty is +/-0.005.
8RG6Z6	estimated uncertainty of measurement expressed at k=2 is 4.2%
9QZ996	For Item 3, expanded uncertainty at k=2 is in the fourth decimal (± 0.0004) place, but since the measurement result and the expanded uncertainty must be reported to the same level of significance, the expanded uncertainty was rounded up to the third decimal place.
9XEDK3	Laboratory calibration certificates are issued with an expanded uncertainty using k=3. Additionally, the certificate lists an expanded uncertainty for each of the four (4) calibration standards used in the calibration process. Laboratory practice is to apply the largest expanded uncertainty value from the calibration certificate to casework breath alcohol values obtained from the corresponding instrument. The uncertainty provided in 1A was determined using k=2. The k=3 expanded uncertainty is +/-0.005.
D9HX9Y	The reported concentration is an average of five analyses, truncated to the third digit after the decimal. Uncertainty has not yet been established for our lab. This test came with very few instructions. It needs to be clarified. Was the intent to run each cylinder once? Or several times and report an average? The wet-bath proficiency test has better instructions.
ECE7TZ	Laboratory calibration certificates are issued with an expanded uncertainty using k=3. Additionally, the certificate lists an expanded uncertainty for each of the four (4) calibration standards used in the calibration process. Laboratory practice is to apply the largest expanded uncertainty value from the calibration certificate to casework breath alcohol values obtained from the corresponding instrument. The uncertainty provided in 1A was determined using k=2. The k=3 expanded uncertainty is +/-0.006.
ETL3CY	Uncertainty was calculated with a k=2 coverage factor. Normally results would be reported with a k= 3.17 T-distribution and would have been repoted as follows: 0.280 +/- 0.025 g/210L, 0.110 +/- 0.008 g/210L, 0.020 +/- 0.008 g/210L, 0.211 +/- 0.025 g/210L
H9M73U	The uncertainty submitted was converted from a K=3.17 (99%, T-distribution) to a K=2 coverage factor. Results would normally be reported as: 0.280 ± 0.025, 0.110 ± 0.008, 0.020 ± 0.008, 0.213 ± 0.025

TABLE 4

WebCode	Additional Comments
KL9ZRT	Our laboratory is in the process of determining uncertainty of measurement.
L2GBWR	Uncertainty submitted was converted from a K=3.17 (99% T-distribution) to a K=2 coverage factor. The results would normally be reported as follows: 0.277 ± 0.025 g/210L, 0.108 ± 0.008 g/210L, 0.020 ± 0.008 g/210L, 0.208 ± 0.025 g/210L. Also, results are given as g/210L. I believe there was a typo in the reported concentrations section that said g/200L.
LR79BQ	The [Laboratory] report results to three decimal places in g/210L and uses a coverage factor of 3.17 (k=3.17) representing a 99% CL for the expanded uncertainty. Result would have been reported as the following: Item 1: 0.278 (g/210L) +/-0.025, Item 2: 0.109 (g/210L) +/-0.008, Item 3: 0.021 (g/210L) +/-0.008, Item 4: 0.211 (g/210L) +/-0.025
LZLRVQ	Laboratory calibration certificates are issued with an expanded uncertainty using k=3. Additionally, the certificate lists an expanded uncertainty for each of the four (4) calibration standards used in the calibration process. Laboratory practice is to apply the largest expanded uncertainty value from the calibration certificate to casework breath alcohol values obtained from the corresponding instrument. The uncertainty provided in 1A was determined using k=2. The k=3 expanded uncertainty is +/-0.006.
PBQCKM	[From Table 1 - Items 1, 2, 3, and 4 Reported Results: Participant reported the following uncertainty results in units other than g/210L, which did not allow for En analysis - "4.4%".]
QDU6EL	Laboratory calibration certificates are issued with an expanded uncertainty using k=3. Additionally, the certificate lists an expanded uncertainty for each of the four (4) calibration standards used in the calibration process. Laboratory practice is to apply the largest expanded uncertainty value from the calibration certificate to casework breath alcohol values obtained from the corresponding instrument. The uncertainty provided in 1A was determined using k=2. The k=3 expanded uncertainty is +/-0.006.
QFFX6U	At this time the uncertainty for a measurment by the instrument is not required for analytical testing.
UNXN4H	Five dry gas samples are obtained during our calibration procedure so each PT cylinder was tested five times. The average result with standard rounding to three digits was reported. We estimate the uncertainty of measurement annually for the calibration of the fleet of DMTs. The only dry gas uncertainty that we have calculated is at the nominal 0.08 level (+/-0.005). We are not reporting the uncertainty at the levels that were measured during the PT as we have not calculated the uncertainty at those levels.
WX3HBF	The Intoxilyzer 8000 was calibrated according to the laboratory's calibration procedure prior to analyzing the test samples. The reported results are the average of six samples analyzed on the instrument. An uncertainty of measurement was not recorded for Item 3 because the analyzed results for this item fell outside the laboratory's calibration range of 0.05-0.30 g EtOH/210L breath.

Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

*****

Test No. 16-569: Breath Alcohol Calibration

DATA MUST BE RECEIVED BY ***September 19, 2016*** TO BE INCLUDED IN THE REPORT

Participant Code: WebCode:

Accreditation Release Statement

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB and A2LA. Please select one of the following statements to ensure your data is handled appropriately.

☐ This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA.
(Accreditation Release section on the last page must be completed and submitted.)

☐ This participant's data is NOT intended for submission to ASCLD/LAB, ANAB or A2LA.

Items Submitted (Sample Pack BRC):

Items 1-4: 34L certified reference material dry gas cylinders

Note: Please disregard the cylinder labeling with regard to concentration.

1a.) As a verification of calibration, report the ethanol concentration of each cylinder and the uncertainty determined during the last calibration of the instrument (Results should be reported to **three decimal places in g/210L** and use a coverage factor of 2 for expanded uncertainty).

	Reported Concentration (g/210L)		Uncertainty (k=2)
Item 1:	_____	±	_____
Item 2:	_____	±	_____
Item 3:	_____	±	_____
Item 4:	_____	±	_____

Please note that it is the responsibility of the laboratory to normalize for barometric pressure and the wet/dry offset (if applicable).

1b.) Barometric Pressure _____

1c.) List the type and amount of any adjustments made on the raw data to produce the reported concentration, such as for barometric pressure, the wet/dry offset etc.

_____

_____

Please return all pages of this data sheet.

Participant Code:
WebCode:

Instrument Information

2a.) Instrument used: _____

2b.) Detector type: _____

3.) Additional Comments

_____

_____

_____

_____

_____

_____

4.) *BREATH ALCOHOL CALIBRATION SURVEY*

CTS is committed to finding ways to improve the statistical analysis of results. Please indicate if your laboratory is capable of reporting breath alcohol concentration and uncertainty in parts per million (yes or no). _____

Return Instructions: Data must be received via online data entry, fax (please include a cover sheet), or mail by ***September 19, 2016*** to be included in the report. Emailed data sheets are not accepted.

QUESTIONS?
TEL: +1-571-434-1925 (8 am - 4:30 pm EST)
EMAIL: forensics@cts-interlab.com
www.ctsforensics.com

Participant Code:

ONLINE DATA ENTRY: www.cts-portal.com

FAX: +1-571-434-1937

MAIL: Collaborative Testing Services, Inc.
P.O. Box 650820
Sterling, VA 20165-0820 USA

Please return all pages of this data sheet.

Collaborative Testing Services ~ Forensic Testing Program

RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code: WebCode:

for Test No. **16-569 Breath Alcohol Calibration**

This release page must be completed and received by ***September 19, 2016*** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ASCLD/LAB Certificate No. _____

ANAB Certificate No. _____

A2LA Certificate No. _____

Step 2: Complete the Laboratory Identifying Information in its entirety

Signature and Title _____

Laboratory Name _____

Location (City/State) _____

Return Instructions

Accreditation Release

Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.

Questions? Contact us 8 am-4:30 pm EST
Telephone: +1-571-434-1925
email: forensics@cts-interlab.com

Please return all pages of this data sheet.