Certificate ID: NU10382

Certificate of Calibration

Quality Calibrations, Inc.
QCI
102 E Bay Front Road
Deale, MD 20751
Phone: 877-747-3883

Device Details

Device ID: **2543**
Serial Number: NU10382
Description: THERMO FINN 100 SC
Method: SINGLE CHANNEL
Test Plan: 100 SC LMH 10-100
Operator: DEBRA NEILAN

Customer: Sample ISO III SC

Contact: Customer Name
Location:
Address: ANY BUSINESS
ANY ROAD LAUREL,
MD 20708

Calibration Date: **04-May-2017** **Status:** **Passed**
Calibration Type: **Pipette Calibration** **Next Due:** **30-Nov-2017**

Environmental Factors

Temperature: 20.70 °C
Barometric Pressure: 30.12 inHg
Relative Humidity: 41.4 %
Liquid Density: 0.99806
Air Density: 0.00121
Z Factor: 1.00301

Comment:

Measurement Standards

Device ID	Description	Serial Number	Next Calibration
1114512406	METTLER AG 245	1114512406	31-Jul-2017
HTM210DN	HUMIDITY TEMPERATURE METER	110400365	18-Aug-2018
J37372-D	THERMOMETER	J37372	09-Jul-2017

Maintenance

☑ PM SERVICE

As Calibrated

Summary Statistics				Accuracy %		Precision %			Sample Volumes (µL)				
100.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	100.15	0.276	0.31	0.153	0.800	0.276	0.300	Passed	100.30	100.28	100.27	100.25	99.66
50.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	50.13	0.031	0.18	0.257	1.600	0.062	0.600	Passed	50.15	50.12	50.08	50.13	50.16
10.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	10.01	0.037	0.18	0.121	8.000	0.371	3.000	Passed	10.03	10.06	10.00	10.01	9.96

As Found

Summary Statistics				Accuracy %		Precision %			Sample Volumes (µL)				
100.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	100.41	0.076	0.19	0.411	0.800	0.076	0.300	Passed	100.32	100.43	100.35	100.44	100.51
50.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	50.27	0.118	0.21	0.542	1.600	0.234	0.600	Passed	50.17	50.27	50.21	50.23	50.47
10.0 ul	**Mean**	**SD**	**Unc. +/-**	**Actual**	**Target**	**Actual**	**Target**	**Status**	**1**	**2**	**3**	**4**	**5**
Ch 1	10.08	0.040	0.19	0.843	8.000	0.395	3.000	Passed	10.05	10.07	10.15	10.06	10.09

Statement of Traceability

This certificate has been issued in accordance with QCI SOP QACCRED and ISO 8655-2. This statement certifies that this calibration has been performed with instruments and standards traceable to NIST or equivalent National Metrology Institute. This certificate shall not be reproduced except in full, without written approval of the laboratory. These results relate only to item calibrated.

ANAB ACCREDITED ISO/IEC 17025 CALIBRATION LABORATORY

Measurement Uncertainties are determined using the factor of k=2 at a 95% confidence level.

ISO 17025:2005 Certified CertificateAC 1347

Completed by: Debra L Neilan DEBRA NEILAN **Date:** May 4, 2017

Reviewed by: _____ **Date:** _____

Certificate ID: SN: V56692

Certificate of Calibration

Quality Calibrations, Inc.
QCI
102 E Bay Front Road
Deale, MD 20751
Phone: 877-747-3883

Device Details

Device ID: G35-011
Serial Number: SN: V56692
Description: Fisher, Multi Channel 300 ul x 12
Method: 12 CHANNEL CERT
Test Plan: 300 MC LMH
Operator: DEBRA NEILAN

Customer: Sample ISO III NAN
Contact: Customer Name
Location:
Address: ON SITE ANY BUSINESS
ANY ROAD LAUREL, MD 20708

Calibration Date: 06-Nov-2017 **Status:** Passed
Calibration Type: Pipette Calibration **Next Due:** 28-Feb-2018

Environmental Factors

Temperature: 21.30 °C
Barometric Pressure: 29.93 inHg
Relative Humidity: 55 %
Liquid Density: 0.99793
Air Density: 0.00120
Z Factor: 1.00313

Comment: NO ADJUSTMENT NECESSARY

Measurement Standards

Device ID	Description	Serial Number	Next Calibration
1114512406	METTLER AG 245	1114512406	31-Aug-2018
170199049	TRACEABLE DIGITAL	170199049	13-Mar-2019
J37372-D	THERMOMETER	J37372	14-Jul-2019

As Found

Summary Statistics				Accuracy %		Precision %		Sample Volumes (µL)		
300.0 uL	Mean	SD	Unc. +/-	Actual	Target	Actual	Target	Status	1	2
Ch 1	300.91	0.014	0.18	0.303	2.667	0.005	1.000	Passed	300.92	300.90
Ch 2	300.96	0.014	0.18	0.320	2.667	0.005	1.000	Passed	300.95	300.97
Ch 3	300.41	0.716	1.03	0.138	2.667	0.238	1.000	Passed	300.92	299.91
Ch 4	300.93	0.050	0.19	0.312	2.667	0.016	1.000	Passed	300.90	300.97
Ch 5	300.97	0.035	0.19	0.325	2.667	0.012	1.000	Passed	300.95	301.00
Ch 6	300.93	0.035	0.19	0.312	2.667	0.012	1.000	Passed	300.96	300.91
Ch 7	300.59	0.468	0.69	0.196	2.667	0.156	1.000	Passed	300.92	300.26
Ch 8	300.76	0.262	0.41	0.255	2.667	0.087	1.000	Passed	300.58	300.95
Ch 9	300.63	0.468	0.69	0.210	2.667	0.156	1.000	Passed	300.96	300.30
Ch 10	300.94	0.043	0.19	0.313	2.667	0.014	1.000	Passed	300.91	300.97
Ch 11	300.99	0.014	0.18	0.330	2.667	0.005	1.000	Passed	300.98	301.00
Ch 12	300.61	0.440	0.65	0.203	2.667	0.146	1.000	Passed	300.30	300.92
150.0 uL	Mean	SD	Unc. +/-	Actual	Target	Actual	Target	Status	1	2
Ch 1	150.46	0.035	0.19	0.310	5.333	0.024	2.000	Passed	150.49	150.44
Ch 2	150.46	0.043	0.19	0.307	5.333	0.028	2.000	Passed	150.43	150.49
Ch 3	150.49	0.007	0.18	0.330	5.333	0.005	2.000	Passed	150.50	150.49
Ch 4	150.19	0.511	0.74	0.126	5.333	0.340	2.000	Passed	150.55	149.83
Ch 5	149.99	0.604	0.87	0.005	5.333	0.403	2.000	Passed	149.57	150.42
Ch 6	150.52	0.028	0.19	0.347	5.333	0.019	2.000	Passed	150.54	150.50
Ch 7	150.46	0.043	0.19	0.307	5.333	0.028	2.000	Passed	150.49	150.43
Ch 8	150.42	0.028	0.19	0.280	5.333	0.019	2.000	Passed	150.44	150.40
Ch 9	150.52	0.043	0.19	0.347	5.333	0.028	2.000	Passed	150.49	150.55
Ch 10	150.51	0.007	0.18	0.337	5.333	0.005	2.000	Passed	150.50	150.51
Ch 11	150.51	0.028	0.19	0.340	5.333	0.019	2.000	Passed	150.53	150.49
Ch 12	150.51	0.007	0.18	0.337	5.333	0.005	2.000	Passed	150.51	150.50

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ANAB ACCREDITED ISO/IEC 17025 CALIBRATION LABORATORY

Measurement Uncertainties are determined using the factor of k=2 at a 95% confidence level.

ISO 17025:2005 Certified CertificateAC 1347

Completed by: Debra L Neilan DEBRA NEILAN **Date:** November 6, 2017

Reviewed by: _____ **Date:** _____

As Found

Summary Statistics				Accuracy %		Precision %		Sample Volumes (µL)		
50.0 uL	Mean	SD	Unc. +/-	Actual	Target	Actual	Target	Status	1	2
Ch 1	50.15	0.035	0.19	0.303	1.000	0.071	1.000	**Passed**	50.18	50.13
Ch 2	50.13	0.064	0.20	0.263	1.000	0.127	1.000	**Passed**	50.09	50.18
Ch 3	50.19	0.021	0.18	0.383	1.000	0.042	1.000	**Passed**	50.21	50.18
Ch 4	50.21	0.035	0.19	0.424	1.000	0.071	1.000	**Passed**	50.24	50.19
Ch 5	50.17	0.007	0.18	0.343	1.000	0.014	1.000	**Passed**	50.18	50.17
Ch 6	50.14	0.014	0.18	0.273	1.000	0.028	1.000	**Passed**	50.15	50.13
Ch 7	50.18	0.085	0.22	0.353	1.000	0.170	1.000	**Passed**	50.12	50.24
Ch 8	50.18	0.007	0.18	0.363	1.000	0.014	1.000	**Passed**	50.19	50.18
Ch 9	50.13	0.014	0.18	0.253	1.000	0.028	1.000	**Passed**	50.12	50.14
Ch 10	50.17	0.006	0.18	0.344	1.000	0.013	1.000	**Passed**	50.18	50.17
Ch 11	50.11	0.028	0.19	0.213	1.000	0.057	1.000	**Passed**	50.09	50.13
Ch 12	50.21	0.007	0.18	0.424	1.000	0.014	1.000	**Passed**	50.21	50.22

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ANAB ACCREDITED ISO/IEC 17025 CALIBRATION LABORATORY

Measurement Uncertainties are determined using the factor of k=2 at a 95% confidence level.

ISO 17025:2005 Certified CertificateAC 1347

Completed by: Debra L Neilan DEBRA NEILAN **Date:** November 6, 2017

Reviewed by: _____ **Date:** _____

Certificate ID: SN: V56692