

Certificate of Calibration

校正證書

Certificate No. : C133030

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1223)

Description / 儀器名稱 : Acoustical Calibrator

Manufacturer / 製造商 : Brüel & Kjær

Model No. / 型號 : 4231

Serial No. / 編號 : 3003246

Supplied By / 委託者 : Atkins China Limited

13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 21 May 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

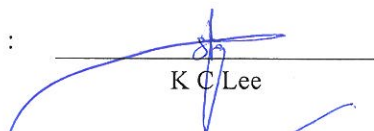
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By

測試


K C Lee

Certified By

核證


K M Wu

Date of Issue :
簽發日期

23 May 2013

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Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

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- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

5.1.1 Before Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.1.2 After Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

5.2.1 Before Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

5.2.2 After Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

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Certificate No. : C133030

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Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

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Certificate of Calibration

校正證書

Certificate No. : C135382
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-2172)

Description / 儀器名稱 : Integrating Sound Level Meter
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2808432
Supplied By / 委託者 : Atkins China Limited
13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$
Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 26 August 2013

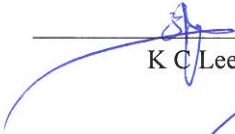
TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

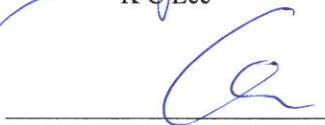
The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By
測試

: 
K C Lee

Certified By
核證

: 
K M Wu

Date of Issue
簽發日期

: 28 August 2013

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C135382

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L _{AFP}	A	F	94.00	1	94.2

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.1	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L _{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.1

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

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6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.1	Ref.
	L _{ASP}		S			94.1	± 0.1
	L _{AIP}		I			94.2	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L _{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L _{ASP}	S	Continuous		106.0	Ref.	
	L _{ASMax}		500 ms		102.0	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L _{AFP}	A	F	94.00	31.5 Hz	55.0	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	78.0	-16.1 ± 1.0
					250 Hz	85.4	-8.6 ± 1.0
					500 Hz	90.9	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

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6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L _{CFP}	C	F	94.00	31.5 Hz	91.3	-3.0 ± 1.5
					63 Hz	93.4	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						1/10 ²		90	90.0	± 0.5
			60 sec.			1/10 ³		80	79.7	± 1.0
			5 min.			1/10 ⁴		70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2791442

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5 Hz - 125 Hz : ± 0.35 dB
 250 Hz - 500 Hz : ± 0.30 dB
 1 kHz : ± 0.20 dB
 2 kHz - 4 kHz : ± 0.35 dB
 8 kHz : ± 0.45 dB
 12.5 kHz : ± 0.70 dB
 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
 Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

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ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : AMS5(Ma Wan Chung Village)
Calibrated by : K.F.Ho
Date : 17/02/2014

Sampler

Model : TE-5170
Serial Number : S/N3640

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 12 Mar 2013
Slope (m) : 2.05818
Intercept (b) : 0.01929
Correlation Coefficient(r) : 0.99991

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1019
Ta(K) : 288

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.8	3.330	1.608	62	62.82
2	13 holes	8.6	2.971	1.434	55	55.73
3	10 holes	6.6	2.603	1.255	48	48.63
4	7 holes	4.6	2.173	1.046	39	39.52
5	5 holes	2.8	1.695	0.814	28	28.37

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 43.182 Intercept(b): -6.177 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 22/02/2014

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : AMS5(Ma Wan Chung Village)
Calibrated by : K.F.Ho
Date : 10/04/2014

Sampler

Model : TE-5170
Serial Number : S/N3640

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1015
Ta(K) : 296

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.6	3.263	1.572	61	61.13
2	13 holes	8.6	2.939	1.416	55	55.12
3	10 holes	6.8	2.613	1.259	47	47.10
4	7 holes	4.8	2.196	1.058	39	39.08
5	5 holes	2.6	1.616	0.779	26	26.06

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{dH(Pa/Pstd)(Tstd/Ta)}\}$

Sampler Calibration Relationship

Slope(m): 44.369 Intercept(b): -8.298 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 22/04/2014

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : AMS6(Dragonair Building)
Calibrated by : K.F.Ho
Date : 12/03/2014

Sampler

Model : TE-5170
Serial Number : S/N3639

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2421
Service Date : 27 Jan 2014
Slope (m) : 2.06238
Intercept (b) : -0.02415
Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014
Ta(K) : 291

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.6	3.296	1.610	60	60.75
2	13 holes	8.6	2.969	1.451	54	54.67
3	10 holes	6.4	2.561	1.254	46	46.57
4	7 holes	4.3	2.099	1.030	36	36.45
5	5 holes	2.4	1.568	0.772	26	26.32

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{dH(Pa/Pstd)(Tstd/Ta)}\}$

Sampler Calibration Relationship

Slope(m): 41.548 Intercept(b): -5.876

Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 19/03/2014

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : AMS6(Dragonair Building)
Calibrated by : K.F.Ho
Date : 14/04/2014

Sampler

Model : TE-5170
Serial Number : S/N3639

Calibration Office and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014
Ta(K) : 297

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	12.2	3.508	1.690	56	56.24
2	13 holes	9.8	3.144	1.515	50	50.22
3	10 holes	7.6	2.769	1.334	45	45.20
4	7 holes	5.2	2.290	1.104	37	37.16
5	5 holes	3.0	1.740	0.838	29	29.13

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{dH(Pa/Pstd)(Tstd/Ta)}\}$

Sampler Calibration Relationship

Slope(m): 31.815 Intercept(b): 2.344

Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 22/04/2014



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145 SOUTH MIAMI AVE.
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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 12, 2013 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 748.03

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4750	3.2	2.00
2	NA	NA	1.00	1.0290	6.4	4.00
3	NA	NA	1.00	0.9170	8.0	5.00
4	NA	NA	1.00	0.8740	8.9	5.50
5	NA	NA	1.00	0.7220	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9967	0.6757	1.4150		0.9957	0.6750	0.8851
0.9925	0.9645	2.0010		0.9915	0.9635	1.2517
0.9902	1.0799	2.2372		0.9892	1.0788	1.3995
0.9891	1.1317	2.3464		0.9881	1.1305	1.4678
0.9839	1.3627	2.8299		0.9828	1.3613	1.7702
Qstd slope (m) = 2.05818				Qa slope (m) = 1.28880		
intercept (b) = 0.01929				intercept (b) = 0.01207		
coefficient (r) = 0.99991				coefficient (r) = 0.99991		
y axis = SQRT[H2O(Pa/760) (298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}
Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 758.19

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4740	3.2	2.00
2	NA	NA	1.00	1.0340	6.4	4.00
3	NA	NA	1.00	0.9240	7.9	5.00
4	NA	NA	1.00	0.8820	8.8	5.50
5	NA	NA	1.00	0.7270	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0103	0.6854	1.4245	0.9958	0.6755	0.8791
1.0061	0.9730	2.0146	0.9916	0.9590	1.2433
1.0040	1.0866	2.2524	0.9895	1.0709	1.3900
1.0028	1.1370	2.3623	0.9884	1.1206	1.4579
0.9976	1.3722	2.8491	0.9832	1.3524	1.7583
Qstd slope (m) = 2.07593			Qa slope (m) = 1.29991		
intercept (b) = -0.00102			intercept (b) = -0.00063		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		
y axis = $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$			y axis = $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$		

CALCULATIONS

$$\text{Vstd} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$$

$$\text{Qstd} = \text{Vstd}/\text{Time}$$

$$\text{Va} = \text{Diff Vol}[(\text{Pa} - \text{Diff Hg})/\text{Pa}]$$

$$\text{Qa} = \text{Va}/\text{Time}$$

For subsequent flow rate calculations:

$$\text{Qstd} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b\}$$

$$\text{Qa} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))] - b\}$$



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ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 27, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2421 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4360	3.2	2.00
2	NA	NA	1.00	1.0120	6.4	4.00
3	NA	NA	1.00	0.9090	7.9	5.00
4	NA	NA	1.00	0.8650	8.8	5.50
5	NA	NA	1.00	0.7140	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0052	0.7000	1.4209	0.9957	0.6934	0.8814
1.0010	0.9891	2.0095	0.9915	0.9798	1.2464
0.9989	1.0989	2.2467	0.9894	1.0885	1.3936
0.9977	1.1535	2.3564	0.9883	1.1426	1.4616
0.9925	1.3901	2.8419	0.9831	1.3769	1.7627
Qstd slope (m) = 2.06238			Qa slope (m) = 1.29142		
intercept (b) = -0.02415			intercept (b) = -0.01498		
coefficient (r) = 0.99994			coefficient (r) = 0.99994		
x axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}
Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

EQUIPMENT CALIBRATION RECORD

Type : Laser Dust Monitor
Manufacturer / Brand : SIBATA
Model No.: LD-3B
Equipment No.: LD-3B-003
Sensitivity Adjustment Scale Setting : 799 CPM

Operator:

Standard Equipment

Equipment : MFC High Volume Air Sampler
Venue : The Arcade, Cyberport
Model No.: TE-5170 Total Suspended Particulated
Serial No.: 276018
Last Calibration Date N/A

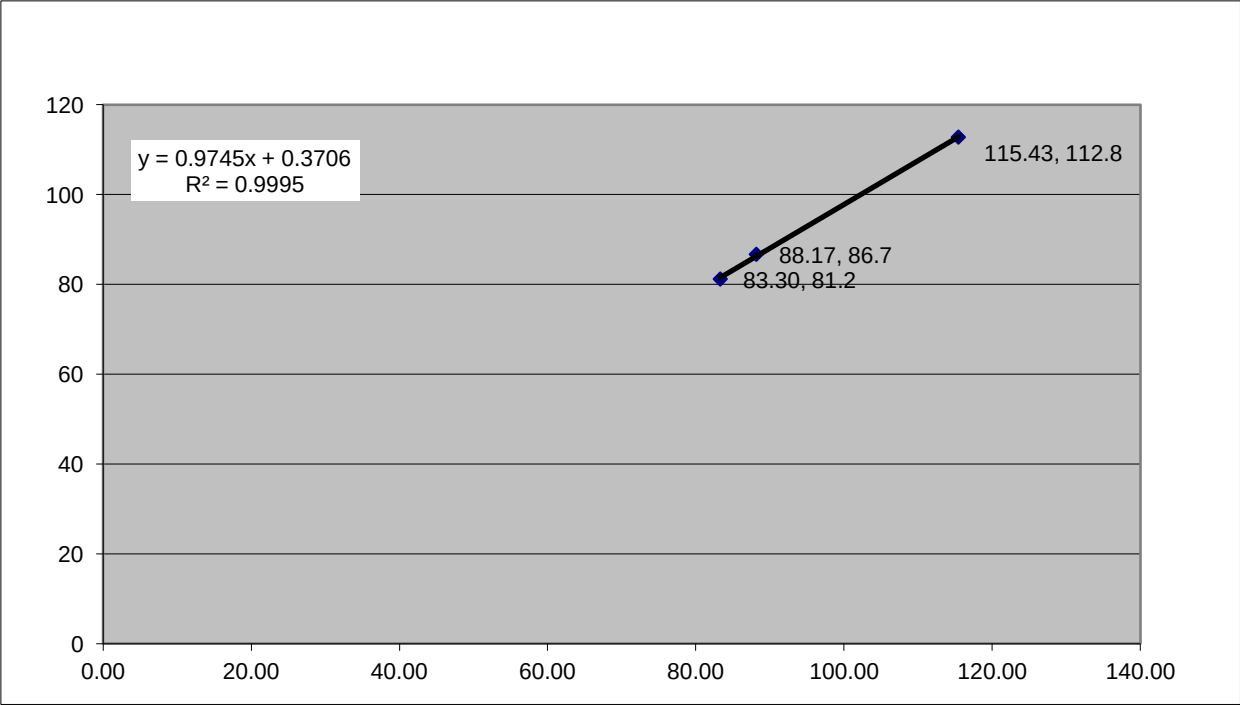
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) : 799 CPM
Sensitivity Adjustment Scale Setting (After Calibration) : 799 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	04-Oct-13	09:34	10:34	26.2	72%	112.8	6926	115.43
2	04-Oct-13	10:45	11:45	26.2	72%	86.7	5290	88.17
3	04-Oct-13	11:50	12:50	26.2	72%	81.2	4998	83.30

Be Linear Regression of Y or X
Slope (K-factor): 0.975
Correlation coefficient : 0.9995

Remark:



Recorded by: Ruby Law Signature:  Date: 21/10/2013
Checked by: Keith Chau Signature:  Date: 21/10/2013

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1404435
Date of Issue: 20/02/2014
Client: AECOM ASIA COMPANY LIMITED



Equipment Type: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 13 February, 2014 Date of next Calibration: 13 May, 2014

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	151.0	2.8
6667	6558	-1.6
12890	12670	-1.7
58670	58020	-1.1
Tolerance Limit (±%)		10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.40	3.42	0.02
5.50	5.54	0.04
7.65	7.60	-0.05
Tolerance Limit (±mg/L)		0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.02	0.02
7.0	7.05	0.05
10.0	9.97	-0.03
Tolerance Limit (±pH unit)		0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.03	--
10	9.88	-1.2
20	19.62	-1.9
30	29.50	-1.7
Tolerance Limit (±%)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1404435
Date of Issue: 20/02/2014
Client: AECOM ASIA COMPANY LIMITED



Equipment Type: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 13 February, 2014 Date of next Calibration: 13 May, 2014

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical
Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	13.92	-0.1
26.0	25.91	-0.1
38.5	38.40	-0.1
Tolerance Limit ($\pm^{\circ}\text{C}$)		2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.9	-2.5
10	9.7	-3.0
20	19.6	-2.0
50	49.3	-1.4
100	99.2	-0.8
Tolerance Limit ($\pm\%$)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1404442
Date of Issue: 20/02/2014
Client: AECOM ASIA COMPANY LIMITED



Equipment Type: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 13 February, 2014 Date of next Calibration: 13 May, 2014

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	150.5	2.5
6667	6566	-1.5
12890	12650	-1.9
58670	57730	-1.6
Tolerance Limit (±%)		10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.40	3.35	-0.05
5.50	5.47	-0.03
7.65	7.62	-0.03
Tolerance Limit (±mg/L)		0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

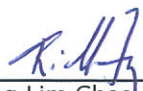
Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.04	0.04
7.0	7.06	0.06
10.0	10.05	0.05
Tolerance Limit (±pH unit)		0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.02	--
10	9.85	-1.5
20	19.78	-1.1
30	29.54	-1.5
Tolerance Limit (±%)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


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General Manager
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1404442
Date of Issue: 20/02/2014
Client: AECOM ASIA COMPANY LIMITED



Equipment Type: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 13 February, 2014 Date of next Calibration: 13 May, 2014

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical
Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	14.06	0.1
26.0	25.88	-0.1
38.5	38.45	0.0
Tolerance Limit ($\pm^{\circ}\text{C}$)		2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.0	0.0
10	10.3	3.0
20	20.4	2.0
50	50.5	1.0
100	100.7	0.7
Tolerance Limit ($\pm\%$)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.