

Certificate No.

23166

Page

1

4 Pages

Customer: Lam Geotechnics Limited

Address: 11/F, Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong.

Order No.: Q21208

Date of receipt

24-May-12

Item Tested

Description: Precision Integrating Sound Level Meter

Manufacturer: Rion

Model

: NL-14

Serial No.

: 10303242

Test Conditions

Date of Test:

5-Jun-12

Supply Voltage

Ambient Temperature:

 $(23 \pm 3)^{\circ}C$

Relative Humidity: (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1 or IEC 804 Type 1 specification after adjustment.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No. Description

Cert. No.

Traceable to

S017

Multi-Function Generator

C101623

SCL-HKSAR

S024

Sound Level Calibrator

15136

NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by

6-Jun-12

Date:

This Certificate is issued by

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong

Tel: 2425 8801 Fax: 2425 8646

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Results:

1. SPL Accuracy

	UUT Set	ting			UUT Rea	ding (dB)
Level Range (dB)	Filter	Weight	Time Const.	Applied Value (dB)	Before adjust.	After adjust.
40 – 100	OFF L _P Fast	94.0		94.1		
40 - 100	OII	L _{PA}	Fast		*92.2	94.1
		DIA.	Slow			94.1
		L _{PC}	Fast	1		94.1
60 – 120 OFF L _P	Fast	94.0		94.0		
00 – 120	L_{PA}	Fast			94.0	
		DPA	Slow			94.0
		L_{PC}	Fast	45		94.0
60 – 120	OFF	L _P	Fast	114.0		114.1
60 – 120	NAME OF TAXABLE PARTY.	L_{PA}	Fast			114.1
		1.73	Slow			114.1
		L _{PC}	Fast			114.1

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : $\pm 0.2 \text{ dB}$

2. Level Stability: 0.1 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty: ± 0.01 dB



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3. Linearity

3.1 Level Linearity

UUT Range	Applied	UUT Reading	Variation	IEC 651 Type 1 Spec.
(dB)	Value (dB)	(dB)	(dB)	(Primary Indicator Range)
140	114.0	113.9	-0.1	± 0.7 dB
130	104.0	103.9	-0.1	
120	94.0	94.0 (Ref.)		
110	84.0	84.0	0.0	
100	74.0	74.1	+0.1	
90	64.0	64.1	+0.1	
80	54.0	54.2	+0.2	=

Uncertainty: ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	+0.1	± 0.4 dB
	94.0	94.0 (Ref.)		
	95.0	95.0	0.0	± 0.2 dB

Uncertainty: ± 0. 1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.0	$-39.4 \text{ dB}, \pm 1.5 \text{ dB}$
63 Hz	-25.9	- 26.2 dB, ± 1.5 dB
125 Hz	-15.9	- 16.1 dB, ± 1 dB
250 Hz	-8.5	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	$0 \text{ dB}, \pm 1 \text{ dB}$
2 kHz	+1.1	+ 1.2 dB, ± 1 dB
4 kHz	+0.8	+ 1.0 dB, ± 1 dB
8 kHz	-1.5	- 1.1 dB, + 1.5 dB ~ -3 dB
16 kHz	-7.2	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty: ± 0.1 dB



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5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	39.7	
$1/10^3$	40.0	39.4	± 1.0 dB
1/10 ⁴	40.0	39.3	

Uncertainty: ± 0.1 dB

Remark: 1. UUT: Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure: 1 000 hPa.

4. *Out of Specification

----- END -----



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Customer: Lam Geotechnics Limited

Address: 11/F, Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong.

Order No.: Q21208

Date of receipt

24-May-12

Item Tested

Description: Sound Level Calibrator

Manufacturer: Rion

Model : NC-73

Serial No.

: 10465798

Test Conditions

Date of Test:

6-Jun-12

Supply Voltage

.

Ambient Temperature :

 $(23 \pm 3)^{\circ}C$

Relative Humidity: (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: F21, Z02.

Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

Main Test equipment used:

ption	Cert. No.		Traceable to
rum Analyzer	13535		NIM-PRC & SCL-HKSAR
Level Calibrator	15136		NIM-PRC & SCL-HKSAR
rsal Counter	15610		SCL-HKSAR
Level Meter	16338		SCL-HKSAR
	iption rum Analyzer d Level Calibrator rsal Counter d Level Meter	rum Analyzer 13535 d Level Calibrator 15136 rsal Counter 15610	rum Analyzer 13535 I Level Calibrator 15136 rsal Counter 15610

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :

P. F. Wong

Approved by :

6-Jun-12

Date:

Dorothy Cheuk

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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Results:

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.43	± 1 dB

Uncertainty: ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.982 kHz	± 2 %

Uncertainty: ± 0.1 %

3. Level Stability: 0.0 dB Uncertainty: ± 0.01 dB

4. Total Harmonic Distortion : < 0.5 %

Mfr's Spec. : < 3 %

Uncertainty: ± 2.3 % of reading

Remark: 1. UUT: Unit-Under-Test

- 2. The uncertainty claimed is for a confidence probability of not less than 95%.
- 3. The above measured values are the mean of 3 measurement.
- 4. Atmospheric Pressure: 1 000 hPa

----- END -----



Certificate No. 24235

Page 1 of 4 Pages

Customer: Lam Geotechnics Limited

Address: 11/F, Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong.

Order No.: Q21745 Date of receipt : 4-Jul-12

Item Tested

Description: Sound Level Meter

Manufacturer: B&K

Test Conditions

Date of Test: 6-Jul-12 Supply Voltage : --

Ambient Temperature : $(23 \pm 3)^{\circ}$ C Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No. Description Cert. No. Traceable to

S017 Multi-Function Generator C101623 SCL-HKSAR

S024 Sound Level Calibrator 15136 NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI). The test results apply to the above Unit-Under-Test only

Calibrated by :

Approved by :

6-Jul-12

orothy Ghet

Ρ. Ι

This Certificate is issued by Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646



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Results:

1. SPL

	UUT S	Setting				
				Applied	UUT Read	ding (dB)
Range	Freq. Wgt.	Time Const.	Center Freq.	Value (dB)	Before adjust	After adjust
20 - 140	A (SPL)	Fast		94.0	93.5	93.7
		Slow	11			93.7
	C (SPL)	Fast		94.0		93.7
	A (SPL)	Fast		114.0		113.8
		Slow				113.8
	C (SPL)	Fast	7.3	114.0		113.8
		1/1 – Oct/Fast	1 kHz	94.0		93.7
				114.0		113.8
		1/3 – Oct/Fast	1 kHz	94.0		93.6
				114.0		113.7

IEC 651 Type 1 Spec. : \pm 0.7 dB

Uncertainty: $\pm 0.1 \text{ dB}$

2. Level Stability: 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty: $\pm 0.01 \text{ dB}$

3. Linearity

Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
20~140	84.0	83.7	0.0	± 0.4 dB
	94.0	93.7 (Ref.)		
	95.0	94.7	0.0	± 0.2 dB

Uncertainty: ± 0.1 dB

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4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.4	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- $3.2 \text{ dB}, \pm 1 \text{ dB}$
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1 dB
4 kHz	+0.9	+ 1.0 dB, ± 1 dB
8 kHz	-1.5	- 1.1 dB, + 1.5 dB ~ -3 dB
16 kHz	-6.1	- 6.6 dB, + 3 dB \sim - ∞

Uncertainty: ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	 .	
1/10	40.0	40.1	± 0.5 dB
$1/10^2$	40.0	40.1	
$1/10^3$	40.0	40.1	± 1.0 dB
$1/10^4$	40.0	40.0	

Uncertainty: $\pm 0.1 \text{ dB}$



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6. Filter Characteristics

6.1 1/1 - Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec. (dB)
125 Hz	-74.5	<- 61
250 Hz	-53.2	<- 42
500 Hz	-24.0	<- 17.5
707 Hz	-4.8	- 2 ~ - 5
1 kHz (Ref)	44. 14	
1.414 kHz	-2.8	<i>-</i> 2 ~ <i>-</i> 5
2 kHz	-19.7	< - 17.5
4 kHz	-55.4	<- 42
8 kHz	-85.8	<- 61

Uncertainty: $\pm 0.25 \text{ dB}$

6.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec.(dB)
326 Hz	-67.7	<- 61
530 Hz	-50.7	<- 42
772 Hz	-24.3	<- 17.5
891 Hz	-4.1	+ 0.3 ~ - 5.0
1 kHz (Ref)		
1.122 kHz	-3.4	+ 0.3 ~ - 5.0
1.296 kHz	-23.0	< - 17.5
1.887 kHz	-47.7	<- 42
3.070 kHz	-69.2	<- 61

Uncertainty: ± 0.25 dB

Remarks: 1. UUT: Unit-Under-Test

- 2. The uncertainty claimed is for a confidence probability of not less than 95%.
- 3. Atmospheric pressure: 1000 hPa.
- 4. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.



ALS Technichem (HK) Pty Ltd

REPORT OF EOUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT,

181-185 GLOUCESTER ROAD.

WAN CHAI, HONG KONG

PROJECT:

WORK ORDER:

HK1213705

LABORATORY:

HONG KONG

DATE RECEIVED:

25/05/2012

DATE OF ISSUE:

29/05/2012

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal aceptance criteria of ALS will be followed.

Scope of Test:

Dissolved Oxygen, pH, Salinity and Temperature

Description:

YSI SONDE

Brand Name:

YSI

Model No.:

YSI Professional plus

Serial No.:

11F100421

Equipment No.:

Date of Calibration: 29 May, 2012

NOTES

This is the Final Report and supersedes any preliminary report with this batch number. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr Chan Kwok Fai, Godfrey Laboratory Manager - Hong Kong

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Page 1 of 2

ADDRESS 11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong PHONE +852 2610 1044 FAX +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order:

HK1213705

Date of Issue:

29/05/2012

Client:

LAM GEOTECHNICS LIMITED



Description:

YSI SONDE

Brand Name:

YSI

Model No.:

YSI Professional plus

Serial No.:

11F100421

Equipment No.:

--

Date of Calibration:

29 May, 2012

Date of next Calibration:

29 August, 2012

Parameters:

Dissolved Oxygen

Method Ref: APHA (21st edition), 45000: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)		
2.40	2.38	-0.02		
5.26	5.17	-0.09		
8.38	8.40	0.02		
	T-1	0.20		
	Tolerance Limit (±mg/L)	0.20		

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)		
4.0	4.15	0.15		
7.0	7.03	0.03		
10.0	9.83	-0.17		
	Tolerance Limit (±unit)	0.20		

Salinity

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

memor nem nem (2 recommon), 2 - 2 - 2									
Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)							
0	0.00								
10.0	10.0 9.90								
20.0	19.47	-2.7							
30.0	30.29	1.0							
		9							
	Tolerance Limit (±%)	10.0							

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)		
	11.0	11.0	0.0		
	21.5	21.1	-0.4		
١	40.0	39.6	-0.4		
	Ty.	Tolerance Limit (°C)	, 2.0		

Mr Chan Kwok Fai, Godfrey Laboratory Manager - Hong Kong



佳力高試驗中心有限公司 CASTCO TESTING CENTRE LTD.

TEST REPORT Performance Check / Calibration of Turbidity Meter

Date of issue: 31-07-2012

Page 1 of 1 page(s)

Castco LRN: EN0120726-13

Sample details as supplied by customer:-

Customer: Lam Geotechnics Ltd.

Customer Ref. No.: --

Address: 11/F., Centre Point, 181-185 Gloucester Rosd, Wanchai, Hong Kong

Contract No .: --

Job Title: --

Sample Identification No.: --

Date Sampled: --

Laboratory Test Results:-

Date of sample received: 26-07-2012

Test period: 27-07-2012

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)	Method
0	0.06		
5	4.53	-9.4	
10	9.08	-9.2	ENV-WAT-TUR
50	46.0	-8.0	ENV-WAI-TOR
100	101	+1.0	
200	190	-5.0	

Remark(s):

- 1. Test results only relate to the specimen tested.
- 2. Compliance requirement : Tolerance Limit \pm 10.0%.
- 3. Turbidity meter model No.: HACH 2100P.
- 4. Turbidity meter serial No.: 931000003861.
- 5. Next Calibration due date: 27-10-2012.
- 6. Reference method: APHA 21st Ed. 2130B (Nephelometric method).

Checked by:

H T M.

Certified by:

End of Report

LEE STEPHEN SHU HANG

Tel: 2677 2138

Fax: 2677 0351

Ph.D. Chief Chami-

Form No. ENV CAL Tur T1 dd 26/06/2012



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

	l 19, 2012 Tisch	Rootsmeter Orifice I.I	D / = .	138320 0005	Ta (K) - Pa (mm) -	298 751.84
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00	1.3840 0.9760 0.8730 0.8340 0.6890	3.2 6.4 7.9 8.8 12.7	2.00 4.00 5.00 5.50 8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9850 0.9809 0.9788 0.9777 0.9725	0.7117 1.0050 1.1212 1.1723 1.4115	1.4066 1.9892 2.2240 2.3326 2.8132		0.9957 0.9915 0.9894 0.9883 0.9831	0.7194 1.0159 1.1333 1.1850 1.4268	0.8903 1.2591 1.4078 1.4765 1.7807
Qstd slo intercep coeffici	t (b) =	2.01145 -0.02803 0.99995		Qa slop intercep coeffici	t (b) = ent (r) =	1.25953 -0.01774 0.99995
v axis =	SORT[H2O(- Pa/760)(298/	Ta)]	'y axis =	SQRT [H20 ([a/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 = $1/m\{[SQRT H2O(Ta/Pa)] - b\}$



Location :		CMA1b				Calbra	tion Date	:	15-Jun-12
Equipment no. :		EL452				Calbra	tion Due Dat	: -	15-Aug-12
								_	
	ITINIIOU	S EL OW DI	CODDED						
CALIBRATION OF CON	NIINUOUS	S FLOW RI							
	ı		А	mbient Co					
Femperature, T _a		303		Kelvin I	Pressure, P	a		101	0 mmHg
			Orifice Tra	nsfer Stand	lard Informa	ation			
Equipment No.		EL086		Slope, m _c	2.0159	93	Intercept, b	С	-0.03978
Last Calibration Date		11-Jul-1	1		(Hxl	P _a / 101	13.3 x 298	/ T	a) 1/2
Next Calibration Date		11-Jul-12	2		=	$m_c x$	$Q_{std} + b_c$:	
			C	alibration	of RSP				
Calibration	Mar	nometer Re	eading	Q	std	Continu	uous Flow		IC
Point	Н (inches of v	water)	(m ³ /	min.)	Reco	order, W	(W(F	P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-a	ıxis	(0	CFM)		Y-axis
1	6.1	6.1	12.2	1.7	352		62		61.3861
2	5.0	5.0	10.0	1.5	728		54		53.4653
3	3.9	3.9	7.8	1.3	914		45		44.5544
4	2.4	2.4	4.8	1.0	958		35		34.6535
5	1.5	1.5	3.0	0.8	704		26		25.7426
By Linear Regression of	Y on X								
	Slope, m	=	40.4	856	Inte	ercept, b	= -1	10.01	119
Correlation C	oefficient*	=	0.99	970					
Calibration	Accepted	=	Yes/	Ne**					
if Correlation Coefficier	nt < 0.990,	check and	l recalibratio	n again.					
** Delete as appropriate.									
Remarks :									
Calibrated by	5	Sam Lam				Check	ed by	:	Derek Lo
Calibrated by		5-Jun-12				Date	-	: -	15-Jun-12
Date								_	



Location :		CMA1b				Calbra	tion Date	:	13-Aug-12
Equipment no.		EL452		Calbration Due Dat				:	13-Oct-12
CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER						
				mbient Co	ndition				
Temperature, T _a		305		1	Pressure, P	, a	T	1015	mmHg
. , ,									
	ı		Orifice Tra	I I	dard Informa	I			
Equipment No.		EL086		Slope, m _c	2.0114		Intercept, b		-0.02803
Last Calibration Date		19-Jul-12	2				3.3 x 298		1/2
Next Calibration Date		19-Jul-1	3		=	$m_c x$	$Q_{std} + b_c$		
			C	alibration	of RSP				
Calibration	Mar	nometer R	eading	C	std	Continu	ious Flow		IC
Point	Н (inches of	water)	(m ³	/ min.)	Reco	rder, W	(W(P _a /1	013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-	axis	(C	FM)		Y-axis
1	6.0	6.0	12.0	1.7	7177		60		59.3572
2	5.0	5.0	10.0	1.5	5692		54		53.4215
3	4.0	4.0	8.0	1.4	1050		47		46.4965
4	2.5	2.5	5.0	1.1	1137	:	36		35.6143
5	1.5	1.5	3.0	0.8	3658	:	24		23.7429
By Linear Regression of	Y on X		•	•		•			
	Slope, m	=	41.2	723	Inte	ercept, b =	= -1	1.3427	
Correlation C	oefficient*	=	0.99	991					
Calibration	Accepted	=	Yes/l	No**					
* if Correlation Coefficier	nt < 0.990,	check and	I recalibratio	n again.					
** Delete as appropriate.									
Remarks :									
<u> </u>									
		Fung				Checke	ed by		Derek Lo
Calibrated by .	1	3-Aug-12				Date	 ,	· —	13-Aug-12
Date		- / wy 12				Date		·	



Location :		CMA5a				Calbrat	ion Date	:	15-Jun-12
Equipment no.		EL380		Calbration Due Dat :					15-Aug-12
CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER						
	ı		Α	mbient Co	ndition				
Temperature, T _a		303		Kelvin	Pressure, P	a		1010	mmHg
			Orifice Tra	nsfer Stan	dard Informa	ation			
Equipment No.		EL086		Slope, m _c	2.0159	93	Intercept, bo	;	-0.03978
Last Calibration Date		11-Jul-1	1		(HxF	P _a / 101	3.3 x 298	/ T _a)	1/2
Next Calibration Date		11-Jul-12	2		=	$m_c x$	$Q_{std} + b_c$		
			C	alibration	of RSP				
Calibration	Mar	nometer R	eading	C	std	Continu	ous Flow		IC
Point	Н (inches of	water)	(m ³	/ min.)	Reco	rder, W	(W(P _a /1	013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-			(CFM)		Y-axis
1	6.0	6.0	12.0	1.7	7 211	5	58		57.4257
2	5.0	5.0	10.0	1.5	5728	Ę	52		51.4851
3	3.7	3.7	7.4	1.0	3558	4	44		43.5643
4	2.4	2.4	4.8	1.0)958	3	35		34.6535
5	1.4	1.4	2.8	0.8	3416	2	26		25.7426
By Linear Regression of	Y on X								
	Slope, m	=	35.7	743	Inte	ercept, b =	= -4	1.5550	
Correlation C	oefficient*	=	0.99	97					
Calibration	Accepted	=	Yes/	\0 **					
* if Correlation Coefficier	nt < 0.990,	check and	l recalibration	n again.					
** Delete as appropriate.									
Remarks :									
Calibrated by:	S	Sam Lam				Checke	ed by	:	Derek Lo
Calibrated by	1	5-Jun-12				Date		:	15-Jun-12
Date									



Location :		CMA5a				Calbr	ation Date	:	13-Aug-12		
Equipment no.		EL380				Calbr	ation Due Dat	۱:	13-Oct-12		
								-			
CALIBRATION OF COM	ITINUOU:	S FLOW R	ECORDER								
			Δ.	mbient Co	ndition						
Temperature, T _a		305	5	Kelvin	Pressure, P	a		101	15 mmHg		
			Orifice Tra	nsfer Stan	dard Inform	ation					
Equipment No.		EL086		Slope, m _c	2.011	45	Intercept, b	С	-0.02803		
Last Calibration Date		19-Jul-1	2		(Hxl	P _a / 10	13.3 x 298	/ 7	a) 1/2		
Next Calibration Date		19-Jul-1	3				$x Q_{std} + b_c$				
			C	Calibration	of RSP						
Calibration	Mar	nometer R	eading	C	std	Continuous Flow			IC		
Point	Н (inches of	water)	(m ³	/ min.)	Rec	order, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)		
	(up)	(down)	(difference)	x-	exis (CFM)		(CFM)		Y-axis		
1	6.1	6.1	12.2	1.7	1.7318 58		58		57.3786		
2	5.0	5.0	10.0	1.5	1.5692 52		52		51.4429		
3	3.7	3.7	7.4	1.3	3519		44	43.5286			
4	2.4	2.4	4.8	1.0	0915		35		34.6250		
5	1.4	1.4	2.8	0.8	3369		26		25.7215		
By Linear Regression of	Y on X										
	Slope, m	=	35.3	013	Int	ercept, b	= -	-3.92	263		
Correlation Co	oefficient*	=	0.99	999							
Calibration	Accepted	=	Yes/	No**							
* if Correlation Coefficier	nt < 0.990	check and	d recalibratio	n again							
ii Gerreialieri Geerreia		, orroon arn	a roodiibratio	rr agairi.							
** Delete as appropriate.											
Remarks :											
Calibrated by		Fung				Chec	ked by	:	Derek Lo		
Date	1	3-Aug-12				Date		:	13-Aug-12		



Location :		CMA4a				Calbra	15-Jun-12		
Equipment no.				Calbra	tion Due Dat	ı : _	15-Aug-12		
CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER						
			Α	mbient Co	ndition				
Temperature, T _a		303	3	Kelvin	Pressure, P	a		1010	mmHg
			Orifice Tra	nsfer Stan	dard Informa	ation			
Equipment No.		EL086		Slope, m _c	2.0159	93	Intercept, b	ıc	-0.03978
Last Calibration Date		11-Jul-1	1		(HxF	P _a / 101	13.3 x 298	/ T _a) 1/2
Next Calibration Date		11-Jul-1	2		=	$m_c x$	$Q_{std} + b_{c}$;	
			C	alibration	of RSP				
Calibration	Mar	nometer R	eading	C) _{std}	ous Flow		IC	
Point	Н (inches of	water)	(m ³	(m ³ / min.) Record		order, W	(W(P _a	/1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis (CF		CFM)		Y-axis	
1	5.9	5.9	11.8	1.	1.7068		60		59.4059
2	4.9	4.9	9.8	1.5	1.5572		53		52.4752
3	3.5	3.5	7.0	1.3	3192		44		43.5643
4	2.4	2.4	4.8	1.0	0958		35		34.6535
5	1.4	1.4	2.8	0.8	3416		26		25.7426
By Linear Regression of	Y on X								
	Slope, m	=	38.7	214	Inte	ercept, b	=	-7.328	8
Correlation Co	oefficient*	=	0.99	992					
Calibration	Accepted	=	Yes/	No**					
* if Correlation Coefficier	nt < 0.990,	, check and	d recalibratio	n again.					
** Delete as appropriate.									
Remarks :									
						<u> </u>			De 11
Calibrated by		Sam Lam				Check	ea Dy	: —	Derek Lo
Date :	1	5-Jun-12				Date		:	15-Jun-12



Location :		CMA4a				Calbr	ation Date	:	13-Aug-12	
Equipment no.		EL390				Calbr	ation Due Dat	: -	13-Oct-12	
								_		
CALIBRATION OF CON	ITINUOUS	S FLOW RI	ECORDER					_		
			A	mbient Co	ndition					
Temperature, T _a		305 Kelvin Pressure, P _a 1015								
			Orifice Tra	nsfer Stan	dard Informa	ation				
Equipment No.		EL086		Slope, m _c	2.0114	45	Intercept, b	С	-0.02803	
Last Calibration Date		19-Jul-12	2		(HxI	P _a / 10	13.3 x 298	/ T	a) 1/2	
Next Calibration Date		19-Jul-13	3		=	m_c	$\times Q_{std} + b_{c}$;		
			C	alibration	of RSP					
Calibration	Mar	nometer Re	eading	Q	Q _{std} Continuous				IC	
Point	Н (inches of v	water)	(m ³ /	(m³ / min.) Recor		order, W	(W(F	P _a /1013.3x298/T _a) ^{1/2} /35.31)	
	(up)	(down)	(difference)	X-axis		((CFM)		Y-axis	
1	6.1	6.1	12.2	1.7318			60		59.3572	
2	5.0	5.0	10.0	1.5692			53		52.4322	
3	3.7	3.7	7.4	1.3	3519		45		44.5179	
4	2.5	2.5	5.0	1.1	137		36		35.6143	
5	1.4	1.4	2.8	0.8	3369		26		25.7215	
By Linear Regression of	Y on X									
	Slope, m	=	37.3	619	Int	ercept, b	= -	5.81	54	
Correlation Co	oefficient*	=	0.99	996			'			
Calibration	Accepted	=	Yes/	No**						
* if Correlation Coefficier	nt < 0.990,	check and	l recalibratio	n again.						
** Delete as appropriate.										
Remarks :										
Calibrated by		Fung				Chec	ked by	:	Derek Lo	
Date	1	3-Aug-12				Date		: -	13-Aug-12	
	te							_		



Location :		СМАЗа				Calbra	ation Date	:	15-Jun-12
Equipment no.		EL888				Calbra	ation Due Dat	: _	15-Aug-12
								_	
CALIBRATION OF CON	ITINUOUS	S FLOW RI	ECORDER						
			Α	mbient Co	ndition				
Temperature, T _a		0 mmHg							
			Orifice Tra	nsfer Stan	dard Informa	ation			
Equipment No.		EL086		Slope, m _c	2.015	93	Intercept, b	С	-0.03978
Last Calibration Date		11-Jul-1	1		(HxI	P _a / 10	13.3 x 298	/T	a) ^{1/2}
Next Calibration Date		11-Jul-12	2		=	m_c x	$Q_{std} + b_c$:	
			C	alibration	of RSP				
Calibration	Mar	nometer Re	eading	Q	std	Contin	uous Flow		IC
Point	Н (inches of v	water)	(m ³ /	(m³ / min.) Recor		order, W	(W(P	P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis		(CFM)		Y-axis
1	6.0	6.0	12.0	1.7211			48		47.5247
2	4.7	4.7	9.4	1.5255			41		40.5940
3	3.8	3.8	7.6	1.3	737		34		33.6634
4	2.4	2.4	4.8	1.0	958		24		23.7624
5	1.6	1.6	3.2	0.8	983		15		14.8515
By Linear Regression of	Y on X								
	Slope, m	=	39.5	332	Int	ercept, b	= -2	20.21	84
Correlation C	oefficient*	=	0.99	991					
Calibration	Accepted	=	Yes/	No**					
				_					
* if Correlation Coefficier	nt < 0.990,	check and	l recalibratio	n again.					
** Delete as appropriate.									
Remarks :									
Calibrated by		Sam Lam				Check	red by	:	Derek Lo
Date :	1	5-Jun-12				Date		: -	15-Jun-12
•								_	



Calibration Due Dat	Location :		CMA3a				Calbr	ation Date	:	13-Aug-12	
Temperature, T_s 305 Kelvin Pressure, P_s 1015 mmHg	Equipment no.		EL888				Calbr	ation Due Da	۱:	13-Oct-12	
Temperature, T_s 305 Kelvin Pressure, P_s 1015 mmHg									-		
Temperature, T_s 305 Kelvin Pressure, P_s 1015 mmHg											
Temperature, T _a 305 Kelvin Pressure, P _a 1015 mmHg	CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER							
Stope, m				Α	mbient Co	ndition					
Equipment No. EL086 Slope, m; 2.01145 Intercept, bc -0.02803	Temperature, T _a		305	,	Kelvin	Pressure, P	a		101	15 mmHg	
Last Calibration Date 19-Jul-12				Orifice Tra	nsfer Stan	dard Inform	ation				
Next Calibration Date 19-Jul-13	Equipment No.		EL086		Slope, m _c	2.011	45	Intercept, b	С	-0.02803	
Calibration Manometer Reading Q std Continuous Flow IC	Last Calibration Date		19-Jul-1	2		(HxI	P _a / 10)13.3 x 298	/7	a) ^{1/2}	
Calibration Manometer Reading Point Q and (m³ / min.) Continuous Flow (W(P₂/1013.3x298/T₂)¹²²/35.31) IC (W(P₂/1013.3x298/T₂)¹²²/35.31) 1 6.0 6.0 12.0 1.7177 48 47.4858 2 4.7 4.7 9.4 1.5219 41 40.5608 3 3.9 3.9 7.8 1.3875 36 35.6143 4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** 1.8.3502 **if Correlation Coefficient < 0.990, check and recalibration again. **Delete as appropriate. **Remarks :	Next Calibration Date		19-Jul-1	3		=	m_c	$x Q_{std} + b_{o}$;		
Point H (inches of water) (up) (down) (difference) (m³ / min.) Recorder, W (W(P₂/1013.3x2990T₂) ^{1/2} /35.31) 1 6.0 6.0 12.0 1.7177 48 47.4858 2 4.7 4.7 9.4 1.5219 41 40.5608 3 3.9 3.9 7.8 1.3875 36 35.6143 4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754				C	alibration	of RSP					
(up) (down) (difference) X-axis (CFM) Y-axis 1	Calibration	Mar	nometer R	eading	C	Q _{std} Continuous Flow				IC	
1 6.0 6.0 12.0 1.7177 48 47.4858 2 4.7 4.7 9.4 1.5219 41 40.5608 3 3.9 3.9 7.8 1.3875 36 35.6143 4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/No** ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo Date : 13-Aug-12	Point	Н (inches of	water)	(m ³	/ min.) Recorder, W			(W((P _a /1013.3x298/T _a) ^{1/2} /35.31)	
2 4.7 4.7 9.4 1.5219 41 40.5608 3 3.9 3.9 7.8 1.3875 36 35.6143 4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/No** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo		(up)	(down)	(difference)	X-	X-axis (0		(CFM)		Y-axis	
3 3.9 3.9 7.8 1.3875 36 35.6143 4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo	1	6.0	6.0	12.0	1.	1.7177		48		47.4858	
4 2.4 2.4 4.8 1.0915 24 23.7429 5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks : Checked by : Derek Lo Lagrange (13-August 2)	2	4.7	4.7	9.4	1.5	1.5219		41		40.5608	
5 1.5 1.5 3.0 0.8658 15 14.8393 By Linear Regression of Y on X Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks : Checked by : Derek Lo Logical School (13-Aug-12)	3	3.9	3.9	7.8	1.3	1.3875		36		35.6143	
By Linear Regression of Y on X Slope, m = 38.5754	4	2.4	2.4	4.8	1.0	0915	24			23.7429	
Slope, m = 38.5754 Intercept, b = -18.3502 Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo	5	1.5	1.5	3.0	0.8	3658		15		14.8393	
Correlation Coefficient* = 0.9997 Calibration Accepted = Yes/Ne** * if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo	By Linear Regression of	Y on X									
* if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. **Calibrated by : Fung Checked by : Derek Lo 13-Aug-12 **Date : 13-Aug-12		Slope, m	=	38.5	754	Int	ercept, b	= -	18.3	502	
* if Correlation Coefficient < 0.990, check and recalibration again. ** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo	Correlation Co	pefficient*	=	0.99	997						
** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo : 13-Aug-12	Calibration	Accepted	=	Yes/l	No**						
** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo : 13-Aug-12											
** Delete as appropriate. Remarks: Calibrated by : Fung Checked by : Derek Lo : 13-Aug-12	+110										
Calibrated by : Fung Checked by : Derek Lo	a if Correlation Coefficier	it < 0.990,	cneck and	recalibratio	n agaın.						
Calibrated by : Fung Checked by : Derek Lo 13-Aug-12 Date : 13-Aug-12	** Delete as appropriate.										
13-Aug-12	Remarks :										
13-Aug-12											
. 13-Aug-12 Date : 13-Aug-12	Calibrated by		Fung				Chec	ked by	:	Derek Lo	
		1:	3-Aug-12				Date		:	13-Aug-12	



Location :		CMA2a				15-Jun-12				
Equipment no.		EL449				Calbr	ation Due Dat	: _	15-Aug-12	
								_		
	TINUIQUE	S EL OW D								
CALIBRATION OF CON	ITINUOUS	S FLOW R								
			A	mbient Co			_			
Temperature, T _a		303		Kelvin	Pressure, P	a		1010	mmHg	
			Orifice Tra	nsfer Stan	dard Informa	ation				
Equipment No.		EL086		Slope, m _c	2.0159	93	Intercept, b	С	-0.03978	
Last Calibration Date	11-Jul-11				(HxF	P _a / 10	13.3 x 298	/ T _e) 1/2	
Next Calibration Date		11-Jul-1	2		=	m_c	$\langle Q_{std} + b_c \rangle$			
			c	alibration	of RSP					
Calibration	Mar	Manometer Reading Q _{std}				Contir	uous Flow	IC		
Point	H (i	inches of	water)	(m ³	/ min.)	Rec	order, W	(W(P	_a /1013.3x298/T _a) ^{1/2} /35.31)	
	(up)	(down)	(difference)	X-axis (CF		CFM)		Y-axis		
1	6.2	6.2	12.4	1.	1.7492		53		52.4752	
2	5.1	5.1	10.2	1.5	1.5883		45		44.5544	
3	4.0	4.0	8.0	1.4	4089		38		37.6237	
4	2.5	2.5	5.0	1.	1179		26		25.7426	
5	1.6	1.6	3.2	0.8	8983		15		14.8515	
By Linear Regression of	Y on X									
	Slope, m	=	43.2	622	Inte	ercept, b	= -2	23.46	38	
Correlation Co	pefficient*	=	0.99	991						
Calibration	Accepted	=	Yes/l	No**						
* if Correlation Coefficien	nt < 0.990,	check and	l recalibratio	n again.						
** Delete as appropriate.										
Remarks :										
: Calibrated by	S	Sam Lam				Chec	ked by	:	Derek Lo	
Date	1	5-Jun-12				Date		: _	15-Jun-12	



Location		CIVIAZA				Calbrat	ion Date	•	13-Aug-12	
Equipment no.		EL449				Calbrat	ion Due Dat	:	13-Oct-12	
CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER							
				mbient Co	ndition					
Temperature, T _a		305	;	Kelvin	Pressure, P	a		101	5 mmHg	
			Orifice Tra	nsfer Stan	dard Informa	ation				
Equipment No.		EL086		Slope, m _c	2.011	45	Intercept, be	-0.02803		
Last Calibration Date		19-Jul-12	2		(HxI	P _a / 101	3.3 x 298	/ T	a) 1/2	
Next Calibration Date		19-Jul-1	3	-			$Q_{std} + b_c$			
			C	alibration	of RSP					
Calibration	Mar	nometer R	eading	G	l _{std}	Continu	ous Flow	IC		
Point	Н(inches of	water)	(m ³	/ min.)	Reco	der, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)	
	(up)	(down)	(difference)	X-axis		(C	FM)		Y-axis	
1	6.0	6.0	12.0	1.5	1.7177		51		50.4536	
2	5.0	5.0	10.0	1.5	1.5692		14		43.5286	
3	3.9	3.9	7.8	1.0	3875	3	36		35.6143	
4	2.5	2.5	5.0	1.1	1137	2	6		25.7215	
5	1.4	1.4	2.8	0.8	3369	1	14		13.8500	
By Linear Regression of	Y on X									
	Slope, m	=	40.8	952	Int	ercept, b =	= -2	20.3	530	
Correlation Co	oefficient*	=	0.99	992						
Calibration	Accepted	=	Yes/	No**						
* if Correlation Coefficier	nt < 0.990,	, check and	l recalibratio	n again.						
** 5										
** Delete as appropriate.										
Remarks :										
Calibrated by		Fung	<u></u>			Checke	d by	: -	Derek Lo	
Date :	1	3-Aug-12			Date				13-Aug-12	



Location :		CMA6a				Calbrat	ion Date	: 15-Jun-12			
Equipment no.		EL448				Calbrat	ion Due Dat	:	15-Aug-12		
CALIBRATION OF CON	ITINUOUS	S FLOW R	ECORDER								
			A	mbient Co	ndition						
Temperature, T _a		303		Kelvin	Pressure, P	a		1010	mmHg		
			Orifice Tra	nsfer Stan	dard Informa	ation					
Equipment No.		EL086		Slope, m _c	2.015	93	Intercept, bo	3	-0.03978		
Last Calibration Date		11-Jul-1	1		(Hxl	P _a / 101	3.3 x 298	/ T _a)	1/2		
Next Calibration Date		11-Jul-1	2				$Q_{std} + b_c$				
			C	alibration	of RSP						
Calibration	Mar	nometer R	eading	C	std	Continu	ous Flow		IC		
Point	Н (inches of	water)	(m³ / min.)		Reco	rder, W	(W(P _a /1	1013.3x298/T _a) ^{1/2} /35.31)		
	(up)	(down)	(difference)	X-axis		(C	FM)		Y-axis		
1	6.1	6.1	12.2	1.7	7352	ţ	59	58.4158			
2	4.8	4.8	9.6	1.5415		ţ	51		50.4950		
3	3.9	3.9	7.8	1.3	3914	4	45		44.5544		
4	2.5	2.5	5.0	1.1	179	;	35		34.6535		
5	1.5	1.5	3.0	0.8	3704	2	24		23.7624		
By Linear Regression of	Y on X										
	Slope, m	=	39.5	476	Inte	ercept, b =	= -1	0.2730)		
Correlation C	oefficient*	=	0.99	995							
Calibration	Accepted	=	Yes/l	\\o **							
* if Correlation Coefficier	nt < 0.990.	. check and	l recalibratio	n again.							
				J							
** Delete as appropriate.											
Remarks :											
Calibrated by		Sam Lam				Checke	ed by	:	Derek Lo		
Date :	1	5-Jun-12				Date		:	15-Jun-12		



Location		CIVIAGA				Calbrat	ion Date	. 13-Aug-12			
Equipment no. :		EL448				Calbrat	ion Due Dat	:	13-Oct-12		
CALIBRATION OF CON	HINUOUS	S FLOW R	ECORDER								
	ī		Α	mbient Co	ndition						
Temperature, T _a		305		Kelvin	Pressure, P	a		1015	mmHg		
			Orifice Tra	nsfer Stan	dard Informa	ation					
Equipment No.		EL086		Slope, m _c	2.0114	45	Intercept, b	С	-0.02803		
Last Calibration Date		19-Jul-12	2		(HxI	P _a / 101	3.3 x 298	/ T _a) 1/2		
Next Calibration Date		19-Jul-1	3		=	$m_c x$	$Q_{std} + b_c$:			
			C	alibration	of RSP						
Calibration	Mar	nometer R		G	IC						
Point		inches of		(m ³	/ min.)	Reco	rder, W	(W(P _a /	1013.3x298/T _a) ^{1/2} /35.31)		
	(up)	(down)	(difference)		X-axis (CFM				Y-axis		
1	6.2	6.2	12.4		,		61		60.3465		
2	5.0	5.0	10.0				53		52.4322		
3	4.1	4.1	8.2				46		45.5072		
4	2.5	2.5	5.0		1137		34	33.6358			
5	1.5	1.5	3.0		8658		24		23.7429		
		1.0	3.0	0.0	J030		24		23.1429		
By Linear Regression of			44.0	400	l-a			10.000	2		
	Slope, m		41.3		int	ercept, b =	= -·	12.362	<u></u>		
Correlation Co			0.99								
Calibration	Accepted	=	Yes/l	Ne**							
* if Correlation Coefficier	nt < 0.990.	. check and	I recalibratio	n again.							
		,									
** Delete as appropriate.											
Remarks :											
_											
Calibrate d les		Fung				Checke	ed by	:	Derek Lo		
Calibrated by	1	3-Aug-12				Date	-	<u> </u>	13-Aug-12		
Date		· · · · · · · · · · · · · · · ·				- 4.0		·			

Certificate for a Qualified Odour Panel Member



Odour Research Laboratory
The Hong Kong Polytechnic University,
Hung Hom, Kowloon, Hong Kong
Tel: (852) 2766 6011 Fax: (852) 2334 6389

25 June 2012

Re: A Certificate for a Qualified Odour Panel Member

This is to certify that Mr. Ng Kin-hung participated in a set of n-butanol screening tests in our laboratory between Nov 2011 – May 2012 and his odour threshold of n-butanol in nitrogen gas was found to be in the range of 20 – 80 ppb/v. According to the requirement of the European Standard Method of Air Quality – Determination of Odour Concentration by Dynamic Olfactometry (EN13725), he is qualified to participate olfactometry analysis to determine odour concentration.

Yours sincerely

Professor S. C. Lee

Odour Research Laboratory at PolyU