Cal. Date:		(AM1A)		_ Operator: _	Gary Choi			
	24-Nov-12			Next Due Date:	24-Ja	n-13		
quipment No.:	A-001-53T			Serial No	102	0216		
			Amhient	Condition				
Temperatu	re Ta (K)	292.5		Pa (mmHg)		763.1		
Temperatur	ie, ia (it)	202.0	1 1000010, 1	<u> </u>				
			Orifice Transfer S	tandard Informatio		—		
Serial	No:	988	Slope, mc	1.97048	Interce			
Last Calibra	ation Date:	15-May-12			= [DH x (Pa/760) x			
Next Calibra	ation Date:	15-May-13		Qstd = {[DH x (F	Pa/760) x (298/Ta)] ¹	^{1/2} -bc} / mc		
de de			Colibration	of TSP Sampler	-P			
			Orfice	or 15P Sampler	HVS	S Flow Recorder		
Resistance Plate No.	Resistance DH (crifica)			Qstd (m³/min) X -	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis		
18	8.9		3.02	1.53	51.0	51.58		
13	6.1	+	2.50	1.27	40.0	40.46		
	4.7		2.19	1.12	32.0	32.37		
10			2.10					
7			1.89	0.96	26.0	26.30		
10 7 5	3.5		1.89 1.57	0.96	26.0	26.30 20.23		
7 5	3.5 2.4 ession of Y on X 43.2459		9000000000		20.0			
7 5 By Linear Regre Slope , mw = Correlation Coe	3.5 2.4 ession of Y on X 43.2459	0	1.57	0.80	20.0	20.23		
7 5 By Linear Regre Slope , mw = Correlation Coe	3.5 2.4 ession of Y on X 43.2459 efficient* =	0	1.57 9.9971 librate.	0.80	20.0	20.23		
7 5 By Linear Regree Slope, mw = Correlation Coe *If Correlation Co	3.5 2.4 ession of Y on X 43.2459 efficient* =	0 check and recal	1.57 9.9971 librate.	0.80	20.0	20.23		
7 5 By Linear Regres Slope, mw = Correlation Coe *If Correlation Coe From the TSP Fi	3.5 2.4 ession of Y on X 43.2459 efficient* = oefficient < 0.990,	check and recal	1.57 9.9971 librate. Set Poin = 1.30m³/min	0.80	20.0	20.23		
7 5 By Linear Regres Slope, mw = Correlation Coe *If Correlation Coe From the TSP Fi	3.5 2.4 ession of Y on X 43.2459 efficient* = 0efficient < 0.990,	check and recal	1.57 2.9971 Bibrate. Set Point 1.30m³/min arding to	Intercept, bw =	-14.	20.23		
7 5 By Linear Regres Slope, mw = Correlation Coe *If Correlation Coe From the TSP Fi	3.5 2.4 ession of Y on X 43.2459 efficient* = 0efficient < 0.990,	check and recal	1.57 2.9971 Bibrate. Set Point 1.30m³/min arding to	0.80	-14.	20.23		

Cal. Date: Equipment No.: _	Snan rong ivew	Village (AM2)		Operator:	Shum Ka	Shum Kam Yuen 1-Jan-13 10202		
equipment No.:	1-Nov-12			Next Due Date:	1-Jar			
	A-001-29T			Serial No.	102			
			Ambient	Condition				
Temperature	e. Ta (K)	294.1	Pressure, F			762.7		
	-, ,					,		
			Orifice Transfer S	tandard Informatio	n			
Serial	No:	988	Slope, mc	1.97048	Interce	•		
Last Calibrat	tion Date:	15-May-12			= [DH x (Pa/760) x			
Next Calibra	tion Date:	15-May-13		$Qstd = \{[DH \times (Family = Family = Fami$	Pa/760) x (298/Ta)]	^{1/2} -bc} / mc		
			Calibration of	of TSP Sampler				
		(Orfice		HVS	S Flow Recorder		
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] ^{1/2}		Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis		
18	9.4		3.09	1.57	49.0	49.41		
13	7.2		2.71	1.38	41.0	41.34		
10	5.3		2.32	1.18	35.0	35.29		
7	4.2		2.07	1.05	30.0	30.25		
5	2.6		1.63	0.83	24.0	24.20		
By Linear Regres Slope , mw = Correlation Coef	33.8863 ficient* =	0	. 9942 ibrate.	Intercept, bw =	-4.6	180		
			Sat Paint	Calculation				
	ald Calibration Cu	irve take Ostd =		Calculation				
From the TSP Fie								
From the TSP Fie	Sion Equation, th	c i value acco	rung to					
From the TSP Fie								
		mv	x Qstd + bw = IC	x [(Pa/760) x (298/	Ta)]"²			
From the Regress					Ta)]" ²			
From the Regress	oint; IC = (mw x		v x Qstd + bw = IC		Ta)]" ²	39.11		

Station	Riverain Bayside	(AM3)		Operator:	Shum Kam Yuen			
Cal. Date:	1-Nov-12			Next Due Date:	1-Jar	1-Jan-13 716		
Equipment No.:	A-001-69T			Serial No.	71			
			Ambiant	Condition				
	T (10)	004.4				762.7		
Temperatu	ire, Ta (K)	294.1	Pressure, F	ra (IIIIIIng)		102.1		
			Orifice Transfer St	tandard Informatio	n			
Seria	l No:	988	Slope, mc	1.97048	Interce		-0.00546	
Last Calibra	ation Date:	15-May-12			= [DH x (Pa/760) x			
Next Calibra	ation Date:	15-May-13		Qstd = {[DH x (I	Pa/760) x (298/Ta)]	^{1/2} -bc} / mc		
				of TSP Sampler				
			Orfice		HV	S Flow Recorde	<u> </u>	
Resistance Plate No.	I D⊟ (orifice) I		Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)		Flow Recorder CFM) Y-axis		
18	8.8		2.99	1.52	47.0	47	7.39	
13	7.9		2.83	1.44	43.0	43	3.36	
10	6.1		2.49	1.27	36.0	36	6.30	
7	4.9		2.23	1.14	32.0	32	2.27	
5	3.2		1.80	0.92	23.0	23	3.19	
Slope , mw =	ession of Y on X 39.2809	_	.9971	Intercept, bw =	-12.	8527	<u>e</u> 1	
Correlation Coe				_ 8				
"If Correlation Co	oefficient < 0.990	, check and recal	ibrate.					
			Set Point	Calculation				
From the TSP Fi	ield Calibration C	urve, take Qstd =	: 1.30m³/min					
From the Regres	ssion Equation, th	ie "Y" value acco	rding to					
					- >-1/2			
		mv	v x Qstd + bw = IC	x [(Pa/760) x (298/	Ta)]"-			
Therefore Set P	Point: IC = (mw x	Ostd + bw) x [(]	760 / Pa) x (Ta / 2	98)] ^{1/2} =		37.89		
moroloro, oct r	onit, to (the X			S 2 14				
Remarks:	2							
				71		- 1	1	
QC Reviewer: _	WS CH	AN	Signature:	F-1		Date: 2/1	(11)	

Station	168 Shek Kwu Lu	ing Village (AM4)	A)	Operator:	Gary	Choi	_	
Cal. Date:	24-Nov-12			Next Due Date:	24-Ja	I-Jan-13 10273		
Equipment No.:	A-001-70T			Serial No.	102			
			4 11 4	Oundition				
		202 5		Condition		763.1		
Temperatu	re, Ta (K)	292.5	Pressure, F	Pa (mmHg)		703.1		
			Orifice Transfer St	tandard Informatio	n			
Serial	No:	988	Slope, mc	1.97048	Interce		-0.00546	
Last Calibra	ation Date:	15-May-12		mc x Qstd + bc	= [DH x (Pa/760) x	(298/Ta)] ^{1/2}		
Next Calibra	ation Date:	15-May-13		Qstd = {[DH x (F	Pa/760) x (298/Ta)]	^{1/2} -bc} / mc		
				/=00.0				
				of TSP Sampler	HVS	S Flow Recorder		
Resistance			rfice	2				
Plate No.	DH (orifice), in. of water	[DH x (Pa/7)	60) x (298/Ta)] ^{1/2}	Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flo Reading IC (Cl		
18	9.4		3.10	1.58	49.0	49.5	i6	
13	7.4		2.75	1.40	45.0	45.5	51	
10	5.5		2.37	1.21	37.0	37.4	2	
7	3.5		1.89	0.96	31.0	31.3	35	
5	2.3		1.53	0.78	23.0	23.2	26	
By Linear Regre Slope , mw = Correlation Coe	assion of Y on X 32.8953 afficient* =	_	9901	Intercept, bw =	-1.5	6671	_	
*If Correlation Co	pefficient < 0.990,	check and recali	brate.	es e				
			Set Point	Calculation				
From the TSP Fi	eld Calibration Co	urve, take Qstd =	1.30m ³ /min	8		*		
	ssion Equation, th							
		mw	v Ostd + hw = IC	x [(Pa/760) x (298/	Ta)1 ^{1/2}			
		11144	A GOLG - DIV 10	X [(/1			
Therefore, Set P	oint; IC = (mw x	Qstd + bw) x [(7	60 / Pa) x (Ta / 2	98)] ^{1/2} =		40.73		
					, K			
Remarks:								
. Comano								
						5	F	
QC Reviewer: _	INS CHI	AN	Signature:	KA		Date: 26 / 1	1/12	



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

Date - Ma Operator	•	Rootsmeter Orifice I.I		438320 0988	Ta (K) - Pa (mm) -	295 - 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 1.00	1.3860 0.9700 0.8690 0.8290 0.6840	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)
0.9951 0.9908 0.9887 0.9876 0.9824	0.7179 1.0215 1.1378 1.1913 1.4363	1.4137 1.9993 2.2353 2.3444 2.8275	0.9957 0.9915 0.9894 0.9883 0.9831	0.7184 1.0222 1.1385 1.1921 1.4372	0.8859 1.2528 1.4007 1.4690 1.7717
Qstd slo	t (b) = ent (r) =	1.97048 -0.00546 0.99991 	 Qa slope intercept coefficient v axis =	= (b) $=$	1.23388 -0.00342 0.99991

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

Type: Manufacturer/Brand Model No.: Equipment No.: Sensitivity Adjustme		Laser Do SIBATA LD-3 A.005.07 557 CPI	'a	tor		
Operator:		Mike She	ek (MSKN	М)		
Standard Equipmen	t					
Equipment: Venue: Model No.: Serial No: Last Calibration Dat	Sensor: 1. e*: 5 May 2012	Ying Seco 3 40AB2198 200C1436	99803 59803	K _o : <u>12500</u>		
Remarks: Recomme	ended interval for hardw	are calibra	tion is 1 y	year		
Calibration Result	de established					*
	ent Scale Setting (Before ent Scale Setting (After			557 CF		
Hour Date (dd-mm-yy	Time	A Section of the sect	dition R.H.	Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
1 02-06-12	13:30 - 14:30		63	0.04070	1628	27.13
2 02-06-12	14:30 - 15:30		63	0.04167	1669	27.82
3 02-06-12	15:30 - 16:30		64	0.04283	1713	28.55
4 02-06-12	16:30 - 17:30		63	0.04146	1655	27.58
2. Total Cou 3. Count/mi By Linear Regression Slope (K-factor): Correlation coefficie	0.0015 ent: 0.9951	Dust Mon (Total Cou	itor	ashnick TEOM [®]		an and an
Validity of Calibratio Remarks:	n Record:1 June 2	2013				
			4/			

Type: Manufacturer/Brand: Model No.: Equipment No.: Sensitivity Adjustment Sca	ala Satting	8a	nitor			
Operator:	are detung.	702 CP Mike Sh		(M)		
Standard Equipment						
Equipment: Venue: Model No.: Serial No: Last Calibration Date*: *Remarks: Recommended i	Sensor: 12 5 May 2012	Ying Sec 10AB2198 200C1436	ondary 199803 159803	School) K _o : _12:	500	
	Titerval for flaruwa	ile Calibra	ilion is	year		
Calibration Result						
Sensitivity Adjustment Sca Sensitivity Adjustment Sca				702 702	CPM CPM	
Hour Date (dd-mm-yy)	Time	Amb Cond Temp (°C)		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
	:30 - 14:30	28.9	73	0.04127	1545	25.75
	:30 - 15:30	29.0	73	0.04163	1566	26.10
	:30 - 16:30	29.0	73	0.04334	1630	27.17
	:30 - 17:30	29.1	74	0.04426	1665	27.74
Note: 1. Monitoring data 2. Total Count was 3. Count/minute was By Linear Regression of Y of Slope (K-factor): Correlation coefficient:	s logged by Laser as calculated by (Dust Mor	itor	AGENTION TEOM		
Validity of Calibration Reco	ord: <u>1 July 20</u>	13				
Remarks:			10			

Mod- Equi	e: ufacturer/Brand: el No.: pment No.: sitivity Adjustmer		ng:	Laser L SIBATA LD-3 A.005.0 797 CF	9a	nitor		
Oper	ator:			Mike Sh	ek (MSK	(M)		
Stand	ard Equipment	-						
Venu Mode Seria Last (el No.:	Cyber Series Contro Senso 5 May	or: 12 2012	Ying Sec 10AB2198 100C1436	ondary S 199803 159803	K _o : _12500	2	
<i>Calibra</i> Sensi	ntion Result tivity Adjustment tivity Adjustment	Scale Setting	g (Before	Calibratio	nu).		PM	*
Hour	Date (dd-mm-yy)	Tim		Amb Cond Temp	pient dition R.H.	Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
1 2 3 4	02-06-12 02-06-12 02-06-12 02-06-12	13:30 - 14:30 - 15:30 - 16:30 -	14:30 15:30 16:30 17:30	(°C) 27.9 27.9 28.2 28.1	(%) 63 63 64 63	0.04070 0.04167 0.04283	1626 1667 1708	27.10 27.78 28.47
Note:	Monitoring of 2. Total Count 3. Count/minut Regression of	lata was mea was logged t e was calcula	sured by by Laser [Rupprech Dust Moni	nt & Pata	0.04146 shnick TEOM [®]	1659	27.65
Slope (Correla	(K-factor): ation coefficient: v of Calibration R		0.0015 0.9949 June 20	13				
Remarks	S:							
QC Rev	viewer: YW Fu	ıng	Signatu	re:	4/	Date:	4 June 1	2012

Type:					Laser D	ust Moni	itor		
	cturer/Brand:			_	SIBATA				
Model I				_	LD-3				
	ent No.:			_	A.005.10				
Sensitiv	ity Adjustment	Scale Se	tting:	<u>~</u>	753 CP	M			
Operato	or:			_	Mike She	ek (MSKI	M)		
Standard	d Equipment								
Caulon	1-	-				TEO. (8)			
Equipm Venue:	ent.				tashnick		1 1)		
Model N	do :		ries 14		Ying Seco	ondary So	cnooi)		W = 30
Serial N			ntrol:		DAB2198	00002			
ociiai iv	10.		nsor:		00C1436		V · 1050	20	
Last Ca	libration Date*:		1501. 1ay 20		1001436	09803	K₀: <u>1250</u>)()	
					4000				
*Remarks	s: Recommend	ed interva	al for h	ardwai	e calibra	tion is 1 y	/ear		
Calibration	on Result				- x x				
	ity Adjustment ity Adjustment							CPM CPM	
Hour	Date	Т	ime		Amb	pient	Concentration ¹	Total	Count/
	(dd-mm-yy)				1	dition	(mg/m ³)	Count ²	Minute ³
	, ,,,				Temp	R.H.	Y-axis	Journ	X-axis
					(°C)	(%)			
1	02-06-12	12:45	- 1	3:45	27.9	63	0.04041	1613	26.88
2	02-06-12	13:45	- 1	4:45	27.9	63	0.04085	1631	27.18
3	02-06-12	14:45	- 1	5:45	27.9	63	0.04154	1663	27.72
4	02-06-12	15:45		6:45	28.1	64	0.04272	1711	28.52
	 Monitoring d Total Count Count/minut 	was logge	ed by L	_aser [Oust Mon	itor	shnick TEOM [®]		
	Regression of	Y or X							
Slope (K			0.0						
Correlati	ion coefficient:		0.9	939					
Validity of	of Calibration R	Record:	_1 Ju	ıne 20	13				
Remarks:									
								4	
	27.77								
QC Revi	ewer: YWF	ung		Signat	ure:	1/	Da	te: 4 June	2012

Mode Equip	facturer/Brand:	Scale Settin	- - - ng: _	Laser D SIBATA LD-3 A.005.11 799 CP		itor		
Opera	ator:		· · · · · · · · · · · · · · · · · · ·	Mike She	ek (MSKN	м)		
Standa	ard Equipment							
	e: I No.:	Cyber Serie Contr Senso 5 May	or: 120 2012	Ying Seco 0AB2198 00C1436	99803 59803	K _o : <u>12500</u>)	
Calibra	tion Result	- 						
Sensit	tivity Adjustment tivity Adjustment					CONTRACTOR OF THE PARTY OF THE	PM PM	
Hour	Date (dd-mm-yy)	Tin	ne		dition R.H. (%)	Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
1	02-07-12	13:45 -	14:45	29.0	73	0.04152	1659	27.65
2	02-07-12	14:45 -	15:45	29.0	73	0.04194	1670	27.83
3	02-07-12	15:45 -	16:45	29.1	74	0.04318	1725	28.75
4	02-07-12	16:45 -	17:45	29.1	74	0.04443	1780	29.67
Slope Correl	2. Total Count 3. Count/minut ar Regression of (K-factor): ation coefficient:	was logged e was calcu Y or X - -	by Laser [lated by (T 0.0015 0.9928	Oust Mon otal Cou	itor	shnick TEOM [®]		
Validity Remark	y of Calibration F s:	Record: _	1 July 201	13				
					(//	/		
QC Re	eviewer: YW F	ung	Signat	ure:		Date	e: 3 July 2	2012

Model Equip	acturer/Brand: No.: ment No.: ivity Adjustment	Scale Setting		Laser Du SIBATA LD-3B A.005.14 786 CPN	а	tor		
Opera	tor:		_	Mike She	k (MSKN	1)		
Standa	rd Equipment							
Equipment: Rupprecht & P. Venue: Cyberport (Pui Model No.: Series 1400AB Serial No: Control: 14					ndary So 9803	chool) K _o : _1250	0	
*Remar	ks: Recommend	ed interval for	hardwar	e calibrat	ion is 1 y	/ear		
Calibra	tion Result							,
Sensit	ivity Adjustment ivity Adjustment						PM PM	
Hour	Date (dd-mm-yy)	Time		Amb Cond Temp (°C)		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
1	02-06-12	13:15 -	14:15	27.9	63	0.04073	1746	29.10
2	02-06-12	14:15 -	15:15	27.9	63	0.04154	1778	29.63
3	02-06-12 02-06-12	15:15 - 16:15 -	16:15 17:15	28.1 28.1	64 64	0.04269 0.04136	1830 1769	30.50 29.48
Slope Correl	1. Monitoring of 2. Total Count 3. Count/minut ar Regression of (K-factor): ation coefficient: y of Calibration F	was logged be was calculary or X	y Laser D	Oust Moni otal Cour	tor	shnick TEOM [®]		
Remark	s:							
QC Re	eviewer: YW F	ung	Signat	ure:	b /	Dat	te: _4 June	2012



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:

12CA1115 01-01

Page

of

Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Manufacturer:

B&K

B&K

Type/Model No.: Serial/Equipment No .: 2238

4188 2250447

Adaptors used:

2255680 / N.009.01

Item submitted by

Customer Name:

AECOM ASIA CO., LTD.

Address of Customer:

Request No.:

Date of receipt:

15-Nov-2012

Date of test:

15-Nov-2012

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator

B&K 4226

2288444

22-Jun-2013

CIGISMEC

Signal generator

DS 360

33873

29-May-2013

CEPREI

Signal generator

DS 360

61227

29-May-2013

CEPREI

Ambient conditions

Temperature:

22 ± 1 °C

Relative humidity: Air pressure:

60 ± 10 % 1000 ± 5 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of +20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3, between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

h/Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

17-Nov-2012

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

© Soils & Materials Engineering Co., Ltd.

Form No.CARP152-1/Issue 1/Rev.C/01/02/2007



綜 合 試 驗 有 限 公 司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 Website: www.cigismec.com E-mail: smec@cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:

12CA1008 02

Page

of

Item tested

Description: Manufacturer: Sound Level Meter (Type 1)

Rion Co., Ltd.

Microphone Rion Co., Ltd. Preamp Rion Co., Ltd.

2

Type/Model No.: Serial/Equipment No.: **NL-31**

UC-53A 00320528/NOOT. 03 A 90565

NH-19 75883

Adaptors used:

Item submitted by

Customer Name:

AECOM ASIA CO., LTD.

Address of Customer:

Request No .:

Date of receipt:

08-Oct-2012

Date of test:

08-Oct-2012

Reference equipment used in the calibration

Description:

Multi function sound calibrator

Signal generator Signal generator Model: B&K 4226

DS 360

DS 360

2288444 33873 61227

Serial No.

Expiry Date:

22-Jun-2013 29-May-2013 29-May-2013 Traceable to:

CIGISMEC CEPREI **CEPREI**

Ambient conditions

Temperature:

(22 ± 1) °C $(60 \pm 10) \%$ (1000 ± 5) hPa

Relative humidity: Air pressure:

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Win/Feng Jun Qi

Date: 08-Oct-2012

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

C Soils & Materials Engineering Co., Ltd.

Form No.CARP152-1/Issue 1/Rev.C/01/02/2007



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:

11CA1221 01-02

Page:

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Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Rion Co., Ltd.

Type/Model No.:

NC-73

Serial/Equipment No .:

10307216 / N.004.06

Adaptors used:

Item submitted by

Curstomer:

AECOM ASIA CO., LTD.

Address of Customer:

Request No.:

Date of receipt:

21-Dec-2011

Date of test:

16-Jan-2012

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	18-May-2012	SCL
Preamplifier	B&K 2673	2239857	14-Dec-2011	CEPREI
Measuring amplifier	B&K 2610	2346941	15-Dec-2011	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI
Digital multi-meter	34401A	US36087050	09-Dec-2011	CEPREI
Audio analyzer	8903B	GB41300350	27-May-2012	CEPREI
Universal counter	53132A	MY40003662	30-May-2012	CEPREI

Ambient conditions

Temperature:

22 ± 1 °C

Relative humidity: Air pressure:

65 ± 5 % 1005 ± 5 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 1, and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian Min/Feng Jun Qi

carry no implication regarding the long-term stability of the instrument.

Approved Signatory:

Date:

16-Jan-2012

Company Chop:

Comments: The results reported in this pertificate refer to the condition of the instrument on the date of calibration and

Soils & Materials Engineering Co., Ltd.

Form No.CARP156-1/Issue 1/Rev.D/01/03/2007

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綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F, 9/F, 12/F, 13/F. & 20/F, Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com Tel : (852) 2873 6860 Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:

12CA0817 01

Page:

of

2

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Rion Co., Ltd.

Type/Model No.: Serial/Equipment No.: NC-73

Serial/Equipment N

10307223 / N.004.08

Adaptors used:

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Item submitted by

Curstomer:

AECOM ASIA CO., LTD.

Address of Customer:

-

Request No.: Date of receipt:

17-Aug-2012

Date of test:

17-Aug-2012

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-May-2013	SCL
Preamplifier	B&K 2673	2239857	05-Jan-2013	CEPREI
Measuring amplifier	B&K 2610	2346941	29-Dec-2012	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI
Digital multi-meter	34401A	US36087050	16-Dec-2012	CEPREI
Audio analyzer	8903B	GB41300350	29-May-2013	CEPREI
Universal counter	53132A	MY40003662	29-May-2013	CEPREI

Ambient conditions

Temperature:

22 ± 1 °C

Relative humidity: Air pressure:

60 ± 10 % 995 ± 5 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian Min/Feng Jun Qi

Approved Signatory:

Date:

17-Aug-2012

Company Chop:

WAS ENGINEER ING COMPANY OF THE STREET OF T

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long term stability of the instrument.

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