Ha Wun Yiu (AM1)

Station

20-Dec-09

Next Due Date:

39.73

Set Point (IC)

20-Oct-09

Cal. Date:

or: Shum Kam Yuen	te: 20-Dec-09	Jo. 10216
M1) Operator:	Next Due Date:	Serial No
Ha Wun Yiu (AM1)	Cal, Date: 20-Oct-09	Equipment No.: A-001-53T

		Ambient Condition	ondition		
Temperature, Ta (K)	301	Pressure, Pa (mmHg)	a (mmHg)	755.7	
		Orifice Transfer Standard Information	indard Informatio	u	
Serial No:	843	Slope, mc	2.02158	Intercept, bc -0.	-0.02524
Last Calibration Date:	4-Nov-08		mc x Qstd + bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$	
Next Calibration Date:	4-Nov-09		$Qstd = \{[DH \times (I)]\}$	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$	

		Calibration o	Calibration of TSP Sampler		
		Orfice		HV	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.1	3.15	1.57	50.0	49.61
13	8.0	2.81	1.40	44.0	43.66
10	6.5	2.53	1.26	38.0	37,70
7	4.6	2.13	1.07	30.0	29.77
5	2.6	1,60	08.0	22.0	21.83
Slope , mw =	36.8527	0300 0	Intercept, bw =	-8.4	-8.4900
Correlation Coefficient* =	officient* =	0.9960			
f Correlation Co	oefficient < 0.990, c	*If Correlation Coefficient < 0.990, check and recalibrate.  Set Point (	Set Point Calculation		
rom the TSP Fi	ield Calibration Cun	From the TSP Field Calibration Curve, take Qstd = 1.30m³/min			
om the Regres	ssion Equation, the	From the Regression Equation, the "Y" value according to			
		$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$	([(Pa/760) × (298/T	.a)] <sup>1/2</sup>	
Therefore, Set Point; IC ≈	oint; IC = ( mw x Q	$(mw \times Qstd + bw) \times [(760/Pa) \times (Ta/298)]^{1/2}$	e ]]' <sup>1/2</sup> =	·	39.73

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	***************************************
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Remarks	

Ostd (m³/min) 0.882 0.909	0.963 0.963 0.990	1.044	1,126 1,153	1.180 1.207 1.234	1,262 1,289 1,316	1.343	1.397 1.424 1.451	1,479	1.533	1.587	1.669	1.750 1.777 1.804	1.858 1.886 1.913	1.940 1.994
IC (CFM) 24 25	27 28 29	31	33	35 36 37	38 39 40	41	43	46	48	51	53	55 57 58	60 61 62	65

Signature:

Shan Tong New Village (AM2)

Station

20-Dec-09

Next Due Date:

43.34

Set Point (IC)

20-Oct-09

Cal. Date:

StationShan Tong New Village (AM2)Operator:Shum Kam YuenCal. Date:20-Oct-09Equipment No.:A-001-29TSerial No.

	755.7	
Ambient Condition	Pressure, Pa (mmHg)	
	301	
	Temperature, Ta (K)	

	-0.02524		
	Intercept, bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd = { $[DH \times (Pa/760) \times (298/Ta)]^{1/2} -bc$ } / mc
ndard Informatio	2.02158	mc x Qstd + bc =	Qstd = {[DH x (P
Orifice Transfer Standard Informatio	Slope, mc		
	843	4-Nov-08	4-Nov-09
	Serial No:	Last Calibration Date:	Next Calibration Date:

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es de la companya de	
Remarks:	

Signature: ...

QC Reviewer:

Qstd (m³/min) 0.905 0.858 0.928 0.951 0.974 0.998 1.114 1,230 1.346 1.416 1.463 1.486 1.509 1.532 1.556 1.672 1.695 1.718 1,742 0.881 1.021 1.044 1.091 1.137 1.160 1,184 1.253 1.300 1.323 1.370 1.439 1.579 1,602 1,625 7,649 1.765 1.067 1.207 1.277 1.393 IC (CFM) 51 52 53 54 33 32 33 37 38 39 40 42 43 41 45 46 48

Shan Tong New Village (AM2) - 2

Station

21-Dec-09

Next Due Date:

36.20

Set Point (IC)

21-Oct-09

Cal. Date:

 Station
 Shan Tong New Village (AM2) - 2
 Operator:
 Shum Kam Yuen

 Cal. Date:
 21-Oct-09
 Next Due Date:
 21-Dec-09

 Equipment No.:
 A-001-29T
 Serial No.
 10202

	758.8	
Ambient Condition	Pressure, Pa (mmHg)	
	298	
	Temperature, Ta (K)	

		Orifice Transfer Standard Information	andard Informatio	n e	
Serial No:	843	Slope, mc	2.02158	Intercept, bc	-0.02524
Last Calibration Date:	4-Nov-08		mc x Qstd + bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$	
Next Calibration Date:	4-Nov-09		$Qstd = \{[DH \times (I)]\}$	Qstd = {[DH x (Pa/760) x (298/Ta)] <sup><math>^{1/2}</math></sup> -bc} / mc	

		Calibration of	Calibration of TSP Sampler		
		Orfice		H	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X • axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	12.3	3.50	1.75	52.0	51.96
13	9.5	3.08	1.54	46.0	45.96
10	7.3	2.70	1.35	38.0	37.97
7	4.6	2.14	1.07	26.0	25.98
5	2.7	1.64	0.82	20.0	19.98
Slope, mw = 36.3	36.3870		Intercept, bw = _	-11.	-11.1288
Correlation Coefficient* =	efficient* =	0.9908			
*If Correlation Cc	oefficient < 0.990, ct	*If Correlation Coefficient < 0.990, check and recalibrate.	Sot Boise Calculation		
From the TSP Field Calibr	eld Calibration Curv	ation Curve, take Qstd = 1.30m³/min	alculation		
From the Regres	ssion Equation, the '	From the Regression Equation, the "Y" value according to			
		mw x Qstd + bw = IC x $[(Pa/760) \times (298/Ta)]^{1/2}$	[(Pa/760) × (298/T	a)] <sup>1/2</sup>	
Therefore, Set Point; IC =	oint; IC = ( mw x Qs	( mw x Qstd + bw ) x [( 760 / Pa ) x ( Ta / 298 )] $^{1/2}$ =	3 )] <sup>1/2</sup> =	·	36.20

QC Reviewer: Signature: Oct

Remarks:

Qstd (m³/min) 0.965	0.993	1.048	1.103	600000000000000000000000000000000000000	1.158			DESCRIPTION OF		300000000000000000000000000000000000000	1.323	1,350		1.405	1.433	1.460	1.488	1.515	1.543	1.570	1.598	1.625	1.652	1.680	1.707	1539153853859 <b>1</b>	1.762	1.790	1.817	1.845	1.872	1.927	18	1.982	2.037	2.065	2.092
IC (CFM) 24	25	27	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	5/	59	09	61	63	64	65

V:\EM&A Calibration Certificate\High Volume Sampler\60102979\AM2\SHAN TONG NEW VILLAGE - AM2 - 2

Qstd (m³/min)

IC (CFM)

Riverain Bayside (AM3)

Station

20-Oct-09

Cal. Date:

20-Dec-09

Next Due Date:

35.42

Set Point (IC)

1,014

Shum Kam Yuen 20-Dec-09 716 Operator:

Next Due Date:

Serial No. Riverain Bayside (AM3) 20-Oct-09 Equipment No.: A-001-69T Cal. Date: Station

	755.7
Ambient Condition	Pressure, Pa (mmHg)
	301
	Temperature, Ta (K)

-0.02524		A STATE OF THE PERSON OF THE P
Intercept, bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} -bc\} / mc$
2.02158	mc x Qstd + bc	Qstd = {[DH x (F
Slope, mc		
843	4-Nov-08	4-Nov-09
Serial No:	Last Calibration Date:	Next Calibration Date:

		Calibration o	Calibration of TSP Sampler		
		Orfice		'AH	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH × (Pa/760) × (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	12.5	3,51	1,75	52.0	51.59
13	9.6	3.07	1,53	46.0	45.64
10	7.5	2.72	1.36	38.0	02′28
L	4.8	2.17	1.09	26.0	25.80
2	2.9	1.69	0.85	18.0	17.86
Slope , mw = 38.9 Correlation Coefficient* =	Slope, mw = 38.9432 Correlation Coefficient* =	0.9943	Intercept, bw =	-15.	-15.4801
Correlation Coefficient <		0.990, check and recalibrate.	į		
		Set Point	Set Point Calculation		
From the TSP Fi	ield Calibration Cur	From the TSP Field Calibration Curve, take $Qstd = 1.30m^3$ /min			
From the Regres	ssion Equation, the	From the Regression Equation, the "Y" value according to			
		mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)] <sup>1/2</sup>	× [(Pa/760) × (298/	ra)] <sup>1/2</sup>	
Therefore, Set Point; IC = (		mw x Qstd + bw) x [( 760 / Pa) x ( Ta / 298 )] <sup>1/2</sup> =	8)] <sup>1/2</sup> =		35.42

Remarks:

2.067

1.039 1.065 1,219 1,990 2.015 1,116 1,271 1.579 1,707 1.758 1.810 1.091 1.142 1.168 1.194 1.245 1.296 1.322 1.348 1.373 1.399 1.425 1.450 1,476 1.502 1.527 1.553 1.604 1,630 1.656 1,681 1,784 1,835 1.913 1.938 1.964 2.041 1.861 24 25 26 27 28 29 30 31 38 33 34 39 33 34 39 39 34 40 39 88 8 42 45 97 41 43 44 48 47

D:\My Documents\Joe\Equipment List\EM&A Calibration Certificate\High Volume Sampler\60102979\AM3\RIVERAIN BAYSIDE - AM3

Date:

Signature:

QC Reviewer:

Tai Kwong Secondary School (AM4)

Station

20-Dec-09

Next Due Date:

39.12

Set Point (IC)

20-Oct-09

Cal. Date:

StationTai Kwong Secondary School (AM4)Operator:Shum Kam YuenCal. Date:20-Oct-09Next Due Date:20-Dec-09Equipment No.:A-001-70TSerial No.10273

	755.7
Ambient Condition	Pressure, Pa (mmHg)
	301
	Temperatu

Šervii.			
	-0.02524		
<b>=</b>	Intercept, bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} -bc\} / mc$
ındard Informatik	2.02158	mc x Qstd + bc	$Qstd = \{ DH \times ($
Oritice Transfer Standard Information	Slope, mc		
	843	4-Nov-08	4-Nov-09
	Serial No:	Last Calibration Date:	Next Calibration Date:

		Calibration o	Calibration of TSP Sampler		
		Orfice		HV	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X . axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.9	3.28	1.63	56.0	55.56
13	9.6	3.07	1.53	49.0	48.62
10	7.3	2.68	1.34	40.0	39.69
7	4.7	2.15	1.08	28.0	27.78
5	3.0	1,72	98.0	20.0	19.84
Slope , mw =	45.7375		Intercept, bw =	-20.	-20.6449
Correlation Coefficient* =	fficient* =	0.9935			
Correlation Co	efficient < 0.990, c	*If Correlation Coefficient < 0.990, check and recalibrate.			
om the TSP Fie	eld Calibration Cun	Set rounty From the TSP Field Calibration Curve, take Qstd = 1.30m³/min	Set Form Calculation		
om the Regres	sion Equation, the	From the Regression Equation, the "Y" value according to			
		mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)] <sup>1/2</sup>	[(Pa/760) × (298/T	a)] <sup>1/2</sup>	
Therefore, Set Point; IC =	oint; IC = ( mw x Qs	( mw x Qstd + bw) x [( 760 / Pa) x ( Ta / 298 )] <sup>102</sup> =	= <sub>213</sub> [( {	·	39.12

QC Reviewer: br - LA Signature: Date: 2

Remarks:

Qstd (m³/min) 0.998 1,151 1,195 1.042 1,064 1.085 1.107 1.129 1.217 1,238 1.260 1.282 1.304 1.326 1.348 1.370 1.392 1.413 1.435 1,457 1.479 1,523 1,**545** 1.566 **1.588** 1.610 1,654 1,676 1,698 1,719 1.873 1.501 1.741 1.807 1.829 1.851 IC (CFM) 35 36 37 40 40 40 42 44 45 46 41 43 48

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Tai Kwong Secondary School (AM4)

Station

22-Dec-09

Next Due Date:

42.01

Set Point (IC)

22-Oct-09

Cal. Date:

Station	Tai Kwong Secondary School (AM4)	Operator:	Shum Kam Yuen	
Cal. Date:	22-Oct-09	Next Due Date:	22-Dec-09	
pment No.:	Equipment No.: A-001-70T	Serial No.	10273	

Ambient Condition

		74		
		-0.02524		
		Intercept, bc	mc x Qstd + bc = $[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd = {[DH x ( $Pa/760$ ) x ( $298/Ta$ )] <sup>1/2</sup> -bc} / mc
t (IIIIIII)	ndard Informatic	2.02158	mc x Qstd + bc	Qstd = {[DH x (
riessuie, ra (IIIIIng)	Orifice Transfer Standard Information	Slope, mc		
301	)	843	4-Nov-08	4-Nov-09
ıemperature, ⊺a (ҡ)		Serial No:	Last Calibration Date:	Next Calibration Date:

		Calibration o	Calibration of TSP Sampler		
		Orfice		HV	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X- axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	12.0	3,44	1.7	56.0	55,56
13	9.8	3.11	1.55	20.0	49.61
10	7.5	2,72	1.36	44.0	43.66
2	4.7	2.15	1.08	36.0	35.72
\$	3.0	1.72	0.86	26.0	25.80
Slope , mw = Correlation Coe	33.7587 :fficient* =	- 0.9927	Intercept, bw =	-2.2	-2.2041
Correlation Coefficient* = **   **   **   **   **   **   **	fficient* = pefficient < 0.990, c	0.990, check and recalibrate.	ţ	·	
		Set Point	Set Point Calculation		
From the TSP Fi	eld Calibration Cun	From the TSP Field Calibration Curve, take $Qstd = 1.30m^3$ /min			
From the Regression Equat	sion Equation, the	lion, the "Y" value according to			
		mw x Qstd + bw = $IC \times [(Pa/760) \times (298/Ta)]^{1/2}$	< [(Pa/760) × (298/⁻	Га)] <sup>1/2</sup>	
Therefore, Set Point; IC = (		mw x Qstd + bw) x [( 760 / Pa) x ( Ta / 298 )] <sup>1/2</sup> =	8)] <sup>1/2</sup> =	·	42.01

	Remarks:

QC Reviewer: Date: 2 OCT

Qstd (m³/min) 0,776 0.806 0,835 0,865 0,924 0,924 0,984	1.043 1.072 1.102 1.161 1.221 1.221	1.280 1.309 1.369 1.369 1.369	1,487 1,517 1,546 1,576 1,606 1,635 1,665 1,695	1.754 1.813 1.872 1.902 1.931 1.961
IC (CFM)  24 25 25 27 27 28 29 31 31	33 34 35 36 37 39 39	41 42 43 44 45 46 47	48 49 50 52 53 54 56 56	57 59 60 62 63 65

Tai Kwong Secondary School (AM4)

Station

27-Oct-09

Cal. Date:

27-Dec-09

Next Due Date:

41.29

Set Point (IC)

r: Shum Kam Yuen	e: 27-Dec-09	10273
Operator:	Next Due Date	Serial No
Tai Kwong Secondary School (AM4)	27-Oct-09	A-001-70T
Station	Cal, Date:	Equipment No.:

	-0.02524		
U	Intercept, bc	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{4/2}$	Qstd = {[DH $\times$ (Pa/760) $\times$ (298/Ta)] <sup>4/2</sup> -bc} / mc
Indard Information	2.02158	mc x Qstd + bc =	$Qstd = \{ IDH \times (P) \}$
Orifice Transfer Standard Info	Slope, mc		
	843	4-Nov-08	4-Nov-09
			le:

755.7

Ambient Condition
Pressure, Pa (mmHg)

301

Temperature, Ta (K)

		Calibration o	Calibration of TSP Sampler		
		Orfice		H	HVS Flow Recorder
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X -	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	12.2	3.47	1.73	56.0	55.56
13	6.6	3.12	1.56	50.0	49.61
10	7.8	2.77	1.38	44.0	43.66
1	4.7	2.15	1.08	32.0	31.75
5	3.0	1,72	98.0	28.0	27.78
Siope, mw =	33.2467		Intercept, bw =	-2.2	-2.2523
Correlation Coefficient* =	fficient* =	0.9905	•		Advantage of the state of the s
'If Correlation Cc	oefficient < 0.990, cl	*If Correlation Coefficient < 0.990, check and recalibrate.			
From the TSP Fit	eld Calibration Curv	Set Point ( Set Toint or the TSP Field Calibration Curve, take Qstd = $1.30m^3$ /min	Set Point Calculation		
From the Regres	sion Equation, the	From the Regression Equation, the "Y" value according to			
		mw x Qstd + bw = $IC \times [(Pa/760) \times (298/Ta)]^{1/2}$	[(Pal760) x (298/T	a)] <sup>1/2</sup>	
Therefore, Set Point; IC = 1	~	mw x Qstd + bw ) x [( 760 / Pa ) x ( Ta / 298 )] $^{1/2}$ =	3 )] <sup>172</sup> =	•	41.29

	Date: 28 Oct 09
	3:
	Signature:
	Joseph Fre
Remarks:	QC Reviewer:

Ostd (m³/min) 0.790 0.820 0.850 0.880 0.910	0.970 1.000 1.030 1.060 1.090	1.181 1.211 1.241 4.271	1.331 1.361 1.391 1.451 1.451	1.511 1.542 1.572 1.602 1.662 1.692 1.722	1.782 1.812 1.872 1.903 1.963 1.963
IC (CFM) 24 25 25 27 27 28	30 32 33 34 35	36 37 39 39 41	42 43 44 45 46 47	48 49 50 52 53 54 56	57 59 60 61 63 65

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Model				LD-3				
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Operator: Mike Shek (MSKM)								
Standa	rd Equipment							
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Equipr Venue		Cul	ornort (Di	i Ying Secc	ndary Si	chool)		
Model			ies 1400A		nidary Ot	311001)		
Serial				40AB2198	30803	., ,		
Jenai	NQ.			1200C1436		K <sub>o</sub> : 12500		<del></del>
Last C	Calibration Date*:		ine 2009	200014000	30000		***************************************	
			16 1					
*Remar	ks: Recommend	ed interva	il for hardv '\.	vare calibra	tion is 1 y	year		
Calibra	tion Result							
0 :	(* *1 <b>A</b> .P (	Ol- O-4	Alian (Dafa	n Calibratia	· ~ ).	<i>557</i> CP	ON A	
Sensit	tivity Adjustment	Scale Set	ting (Beloi	Colibration	)!1). \-	557 CP		
Sensil	tivity Adjustment	Scale Sei	uilg (Altei	Calibration	<i>)•</i>	<u> </u>		
Hour	Date	т	ime	Aml	oient	Concentration	Total	Count/
Hou	(dd-mm-yy)	,	,	E	dition	(mg/m³)	Count <sup>2</sup>	Minute <sup>3</sup>
	(ud-iiiii-yy)			Temp	R.H.	Y-axis		X-axis
				(°C)	(%)			
1	06-06-09	09:00	- 10:0		76	0.04175	1392	23.20
2	06-06-09	10:00	- 11:0		76	0.03983	1330	22.17
3	06-06-09	11:00	- 12:0	0 31.0	75	0.04025	1339	22.31
4	06-06-09	13:00	- 14:0	0 31.2	76	0.04271	1426	23.77
Note:	1. Monitoring of	lata was r	neasured	by Rupprec	ht & Pata	ashnick TEOM®		
	2. Total Count	was logge	ed by Lase	er Dust Mon	itor			
	3. Count/minu	te was cal	culated by	(Total Cou	nt/60)			
D. J. t.	D	VanV						
	ar Regression of	YOFA	0.0018					
	(K-factor): lation coefficient:		0.9965					
Corre	iation coefficient.		0.9900					
Validit	ty of Calibration I	Record:	5 June	2010				
Remark	ks:							
	····	······································		······································				
					h/	•		
QC R	eviewer: YW I	- ung	Sig	nature:	' Y	Date	e: 8 June	e 2009
		····	·		- //			

Model 1 Equipm	cturer/Brand: No.: ent No.: vity Adjustment	Scale Settir	.g: _	Laser D SIBATA LD-3 A.005.03 702 CP	Ba .	nitor		
Operato	or:			Mike Sh	ek (MSK	(M)		
Standard	d Equipment							
Equipm Venue:	ent:		recht & Pa port (Pui					
Model N	۷o.:		1400AB					~
Serial N		Contr		0AB2198	99803			
	llibration Date*:	Senso	Sensor: 1200C143659803 K <sub>o</sub> : 12500 5 June 2009					
*Remark	s: Recommend	ed interval f	or hardwa	re calibra	ition is 1	year		
Calibrati	on Result		``````````````````````````````````````					
	rity Adjustment rity Adjustment					702 702	CPM CPM	
Hour	Date (dd-mm-yy)	Tim	e	Amb Cond Temp (°C)		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> <b>X-axis</b>
1	06-06-09	14:00 -	15:00	31.5	75	0.04325	2046	34.10
2	06-06-09	15:00 -	16:00	31.7	76	0.04278	2019	33.65
3	06-06-09	16:00 -	17:00	31.4	76	0.04351	2059	34.32
4	06-06-09	17:00 -	18:00	31.4	75	0.04152	1965	32.75
Slope (I	2. Total Count 3. Count/minut r Regression of K-factor): tion coefficient:	was logged e was calcu	by Laser	Dust Mor	nitor	tashnick TEOM <sup>®</sup>		
Validity	of Calibration F	Record:	5 June 20	010				
Remarks	:				4, 4			
QC Rev	viewer: YW F	-ung	Signa	ature:	V		Date: _8	June 2009

Model Equipr	acturer/Brand: No.: nent No.: ivity Adjustment	Scale Setti		Laser Du SIBATA LD-3 A.005.09 797 CPI	a	for		
Operator:				Mike She	k (MSKN	1)		
Standar	rd Equipment							
	: No.:	Cybe Serie Cont Sens 5 Jui	sor: <u>120</u> ne 2009	ing Seco 0AB21989 00C14365	99803 59803	K <sub>o</sub> : 12500	)	
0 111			<u> </u>					
Sensiti	tion Result ivity Adjustment ivity Adjustment	Scale Setti Scale Setti	ing (Before ( ing (After Ca	Calibration)	on): ):		PM	
Hour	Date (dd-mm-yy)	Tı	me	Amb Cond Temp (°C)		Concentration <sup>1</sup> (mg/m³) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
1	07-06-09	09:00	- 10:00	30.5	76	0.04255	1546	25.77
2	07-06-09	10:00	- 11:00	30.7	76	0.04233	1537	25.62
3 4	07-06-09	11:00 12:00	- 12:00 - 13:00	30.7 30.9	75 76	0.04113 0.04147	1492 1507	24.87 25.12
Note:	07-06-09 1. Monitoring of 2. Total Count 3. Count/minuter Regression of	ata was m was logge e was calc	easured by d by Laser [	Rupprecl Dust Mon	ht & Pata itor	ashnick TEOM®		60 0 1 60
	(K-factor):	1 01 70	0.0017					
	àtion coefficient:		0.9976					
Validity	y of Calibration F	Record:	6 June 20	10				
Remark	<b>S</b> :							
QC Re	eviewer: YW F	ung	Signat	ture:	1)	Dat	e: 8 June	e 2009

Type:  Manufacturer/Brand:  Model No.:  Equipment No.:  Sensitivity Adjustment Scale Setting:  Laser Dust Monitor  SIBATA  LD-3  A.005.11a  799 CPM  Operator:  Mike Shek (MSKM)								
Opera	ator:		_	Mike She	k (MSKI	м)		
Standa	rd Equipment							
	e: No.: No: Calibration Date*:	Cybe Serie Cont Sens 5 Jun	or: 120 ne 2009	7ing Seco DAB21989 DOC14369	99803 99803	K <sub>o</sub> : 12500	)	
	ks: Recommend	ed interval	for hardwar '	e calibra	tion is 1 y	/ear		
Calibra	tion Result						<del></del>	
	ivity Adjustment ivity Adjustment					***************************************	PM PM	
Hour	Date (dd-mm-yy)	Tir	me	Amb Cond Temp (°C)		Concentration <sup>1</sup> (mg/m³) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
1	04-07-09	11:00	- 12:00	29.7	78	0.03713	1498	24.97
2	04-07-09		- 13:00	29.7	78	0.03520	1404	23.41
3	04-07-09		- 15:00	30.1	81	0.03891	1553	25.91
4	04-07-09		- 16:00	30.1	81	0.04025	1618	26.97
	2. Total Count 3. Count/minut ar Regression of (K-factor):	was logged e was calcu	l by Laser D	Dust Moni	tor	shnick TEOM®		·
Correla	ation coefficient:	•	0.9907					
Validity	∕ of Calibration R	ecord:	3 July 201	0				
Remarks	3:				······································			
						·		
QC Re	viewer: YW F	ung	Signati	ure:		Date	e: 6 July 2	2009



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



# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0710 04-02

Page

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Item tested

Description: Manufacturer: Type/Model No.: Sound Level Meter (Type 1)

**B&K** 2238

2255680 / N009.01

Microphone **B&K** 

4188 2250447

Adaptors used:

Item submitted by

Serial/Equipment No.:

**Customer Name:** Address of Customer:

Request No.:

ENSR ASIA (HK) LTD.

Date of request:

10-Jul-2009

Date of test:

11-Jul-2009

# Reference equipment used in the calibration

Description: Multi function sound calibrator Signal generator

DS 360 Signal generator DS 360

Model: B&K 4226

Y.

Serial No. 2288444 33873 61227

**Expiry Date:** 12-Jan-2010

22-Jun-2010

22-Jun-2010

Traceable to: CIGISMEC CEPREI CEPREI

**Ambient conditions** 

Temperature: Relative humidity:

Air pressure:

 $(23 \pm 1) ^{\circ}C$ (55 ± 10) % (1000 ± 10) 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%,

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.

Huang Jian Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

**Approved Signatory:** 

Date:

14-Jul-2009

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.

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# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0311 02-04

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2

Item tested

Description: Manufacturer: Sound Level Meter (Type I)

ENSR ASIA (HK) LTD.

**B&K** 

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

2125116 / N.002.04A

**B&K** 

Microphone

4188 2141430

Adaptors used:

Item submitted by

**Customer Name:** 

Address of Customer: Request No.:

Date of request:

11-Mar-2009

Date of test:

14-Mar-2009

Reference equipment used in the calibration

Description:

Multi function sound calibrator

Signal generator

Signal generator

B&K 4226 DS 360 DS 360

Model:

Serial No.

2288444 33873

61227

12-Jan-2010 12-Jun-2009

18-Jul-2009

**Expiry Date:** 

Traceable to:

CIGISMEC **CEPREI** CEPREI

Ambient conditions

Temperature:

(22 ± 2) °C (65 ± 15) %

Relative humidity: Air pressure:

(1000 ± 10) 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.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi Date:

17-Mar-2009

Company Chop:

Comments: The results reported in this gertificate 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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# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0710 04-01

Page

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Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Manufacturer: Type/Model No.: B & K 2238

**B&K** 

Serial/Equipment No.:

2255677 / N009.02

4188 2250420

Adaptors used:

Item submitted by

**Customer Name:** 

ENSR ASIA (HK) LTD.

Address of Customer:

Request No .:

Date of request:

10-Jul-2009

Date of test:

11-Jul-2009

Reference equipment used in the calibration

Description:

Multi function sound calibrator

Model:

Serial No.

**Expiry Date:** 

Traceable to:

Signal generator

B&K 4226 DS 360

2288444 33873

12-Jan-2010 22-Jun-2010 CIGISMEC

Signal generator

DS 360

61227

22-Jun-2010

**CEPREI** CEPREI

**Ambient conditions** 

Temperature:

(23 ± 1) °C  $(55 \pm 10) \%$ 

Relative humidity: Air pressure:

(1000 ± 10) 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%.

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,

Huang Jian-Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

**Approved Signatory:** 

Date:

14-Jul-2009

Company Chop:

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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# **CERTIFICATE OF CALIBRATION**

Certif	icate	Nο	
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of

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### Item tested

Description: Manufacturer: Sound Level Meter (Type 1)

**B&K** 2238

B & K 4188

Microphone

Type/Model No.: Serial/Equipment No.: Adaptors used:

2255687 / N.009.03

2250455

# Item submitted by

**Customer Name:** 

AECOM ASIA CO., LTD.

Address of Customer:

Request No.:

Date of request:

20-Aug-2009

Date of test:

24-Aug-2009

# Reference equipment used in the calibration

Description: Multi function sound calibrator Signal generator

Model: **B&K 4226**  Serial No. 2288444

**Expiry Date:** 12-Jan-2010 22-Jun-2010

Traceable to: CIGISMEC CEPREI

**CEPREI** 

Signal generator

DS 360 DS 360

33873 61227

22-Jun-2010

# **Ambient conditions**

Temperature: Relative humidity: Air pressure:

(21 ± 1) °C  $(60 \pm 5) \%$ (1005 ± 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%.
- 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.

Huang Jian Win/Ferig Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

26-Aug-2009

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.

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



# CERTIFICATE OF CALIBRATION

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Page

2

Item tested

Description:

Sound Level Meter (Type I)

Microphone **B&K** 

Manufacturer:

**B&K** 2238

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

4188

2255688 / N.009.05

2250454

Adaptors used:

# Item submitted by

**Customer Name:** 

ENSR ASIA (HK) LTD.

Address of Customer:

Room 1213-1219, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Rd, Sha Tin, New Territories, HK

Request No.: Date of request:

28-Apr-2008

Date of test:

29-Apr-2008

## Reference equipment used in the calibration

Description:

Multi function sound calibrator

Model:

Serial No.

**Expiry Date:** 

Traceable to:

Signal generator Signal generator B&K 4226 DS 360 DS 360

2288444 33873

61227

11-Jan-2009 13-Jun-2008 06-Dec-2008 CIGISMEC CEPREI CEPREI

**Ambient conditions** 

Temperature:

 $(23 \pm 2)$  °C

Relative humidity: Air pressure:

(50 ± 15) % (995 ± 10) hPa

**Test specifications** 

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, 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.

Huang Jian Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

30-Apr-2008

Company Chop:

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



# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0311 02-05

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2

Item tested

Description: Manufacturer:

Sound Level Meter (Type I) **B&K** 

Microphone **B&K** 

Type/Model No.: Serial/Equipment No.: 2238 2285692 4188 2565556

Adaptors used:

Item submitted by

**Customer Name:** 

ENSR ASIA (HK) LTD.

Address of Customer:

Request No.: Date of request:

11-Mar-2009

Date of test:

14-Mar-2009

Reference equipment used in the calibration

Description:

Model: B&K 4226

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

DS 360

2288444 33873

12-Jan-2010 12-Jun-2009

CIGISMEC **CEPREI** 

Signal generator

DS 360

61227

18-Jul-2009

CEPREI

**Ambient conditions** 

Temperature:

Air pressure:

(22 ± 2) °C

Relative humidity:

(65 ± 15) % (1000 ± 10) hPa

**Test specifications** 

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, 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.

Hyang Jian Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

17-Mar-2009

Company Chop:

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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# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0710 04-05

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Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

B&K BK423

Type/Model No.:

BK4231

Serial/Equipment No.:

1790985 / N.004.001

Adaptors used:

-

Item submitted by

Curstomer:

ENSR ASIA (HK) LTD.

Address of Customer:

Request No.: Date of request:

10-Jul-2009

Date of test:

14-Jul-2009

# Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	23-Jun-2010	SCL
Preamplifier	B&K 2673	2239857	02-Dec-2009	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Dec-2009	CEPREI
Signal generator	DS 360	61227	22-Jun-2010	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2009	CIGISMEC
Audio analyzer	8903B	GB41300350	27-Nov-2009	CEPREI
Universal counter	53132A	MY40003662	23-Jun-2010	CEPREI

# **Ambient conditions**

Temperature: Relative humidity:

23 ± 1 °C 55 ± 10 %

Air pressure:

995 ± 10 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**

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 Jiam Min/Feng Jun Qi

Approved Signatory:

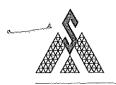
Date:

14-Jul-2009

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.



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# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0311 02-02

Page:

of

2

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer: Type/Model No.: B&K BK4231

Serial/Equipment No.:

1850426 / N.004.02

Adaptors used:

-

Item submitted by

Curstomer:

ENSR ASIA (HK) LTD.

Address of Customer:

-

Request No.: Date of request:

11-Mar-2009

Date of test:

13-Mar-2009

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-Jun-2009	SCL
Preamplifier	B&K 2673	2239857	02-Dec-2009	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Dec-2009	CEPREI
Signal generator	DS 360	61227	18-Jul-2009	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2009	CIGISMEC
Audio analyzer	8903B	GB41300350	27-Nov-2009	CEPREI
Universal counter	53132A	MY40003662	11-Jul-2009	CEPREI

### **Ambient conditions**

Temperature: Relative humidity: 23 ± 1 °C 65 ± 10 %

Air pressure:

1000 ± 15 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**

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

Approved Signatory:

Date:

17-Mar-2009

Company Chop:

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

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# CERTIFICATE OF CALIBRATION

Certifi	cate	No:	

09CA0311 02-03

Page

2

### Item tested

Description:

Sound Level Meter (Type I)

Microphone RION CO. LTD. Preamp

Manufacturer:

Adaptors used:

RION CO. LTD. NL-18

RION CO. LTD.

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

00570446

UC-53A 90565

NH-19 75883

Item submitted by

**Customer Name:** 

ENSR ASIA (HK) LTD.

Address of Customer:

Request No.: Date of request:

11-Mar-2009

Date of test:

13-Mar-2009

# Reference equipment used in the calibration

Description:

Model: Multi function sound calibrator B&K 4226

Serial No.

**Expiry Date:** 

Traceable to:

Signal generator Signal generator DS 360 DS 360

2288444 33873 61227

12-Jan-2010 12-Jun-2009 18-Jul-2009

CIGISMEC CEPREI **CEPREI** 

### **Ambient conditions**

Temperature:

(23 ± 2) °C

Relative humidity: Air pressure:

(65 ± 15) % (1000 ± 10) 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.

Huang Jian Mih/Fehg Jun Qi

Actual Measurement data are documented on worksheets.

**Approved Signatory:** 

Date:

17-Mar-2009

Company Chop:

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



# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0827 02-01

Page

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Item tested

Description: Manufacturer: Type/Model No.: Sound Level Meter (Type 1)

RION CO., LTD.

NL-31

00320534 / N.007.02A

Microphone

RION CO., LTD.

UC-53A 90526

Adaptors used:

Item submitted by **Customer Name:** 

Serial/Equipment No.:

AECOM ASIA CO., LTD.

Address of Customer: Request No.:

Date of request:

27-Aug-2009

Date of test:

29-Aug-2009

Reference equipment used in the calibration

Description:

Multi function sound calibrator

Signal generator Signal generator

Model:

B&K 4226 DS 360 DS 360

Serial No. 2288444

33873 61227

**Expiry Date:** 

12-Jan-2010 22-Jun-2010 22~lun-2010

Traceable to: CIGISMEC

**CEPREI** CEPREI

**Ambient conditions** 

Temperature: Relative humidity: 23 ± 2 °C 60 ± 10 % 995 ± 10 hPa

Air pressure:

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%.

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 Mih/Feng Jun Qi

Date:

31-Aug-2009

Company Chop:

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



# CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0827 02-02

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of

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Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Rion Co., Ltd.

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

Adaptors used:

10307216

Item submitted by

Curstomer:

AECOM AISA CO., LTD.

Address of Customer:

Request No.:

Date of request:

27-Aug-2009

Date of test:

29-Aug-2009

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	23-Jun-2010	SCL
Preamplifier	B&K 2673	2239857	02-Dec-2009	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Dec-2009	CEPREI
Signal generator	DS 360	61227	22-Jun-2010	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2009	CIGISMEC
Audio analyzer	8903B	GB41300350	27-Nov-2009	CEPREI
Universal counter	53132A	MY40003662	23-Jun-2010	CEPREI

### **Ambient conditions**

Temperature:

23 ± 1 °C 60 ± 10 %

Relative humidity: Air pressure:

995 ± 10 hPa

# Test specifications

- 1, 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**

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

**Approved Signatory:** 

Date:

31-Aug-2009

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.

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CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0710 04-04

Page:

of

2

Item tested

Description: Manufacturer: Acoustical Calibrator (Class 1)

Rion Co., Ltd. NC-73 10307223

Type/Model No.: Serial/Equipment No.: Adaptors used:

- 2

Item submitted by

Curstomer:

ENSR ASIA (H.K.) LTD.

Address of Customer:

-

Request No.: Date of request:

10-Jul-2009

Date of test:

14-Jul-2009

## Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	23-Jun-2010	SCL
Preamplifier	B&K 2673	2239857	02-Dec-2009	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Dec-2009	CEPREI
Signal generator	DS 360	61227	22-Jun-2010	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2009	CIGISMEC
Audio analyzer	8903B	GB41300350	27-Nov-2009	CEPREI
Universal counter	53132A	MY40003662	23-Jun-2010	CEPREI

# Ambient conditions

Temperature:

23 ± 1 °C

Relative humidity:

55 ± 10 %

Air pressure:

995 ± 10 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

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

Approved Signatory:

Date:

14-Jul-2009

Company Chop:

SENGINEST NO.

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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