

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Sheung Wun Yiu (AM1A) Operator: Shum Kam Yuen
 Cal. Date: 15-Jun-11 Next Due Date: 15-Aug-11
 Equipment No.: A-001-53T Serial No.: 10216

Station: Sheung Wun Yiu (AM1A)

Cal. Date: 15-Jun-11

Next Due Date: 15-Aug-11

Set Point (IC) 43.08

Ambient Condition			
Temperature, Ta (K)	297.5	Pressure, Pa (mmHg)	759.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.02214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.3	3.21	1.61	55.0	55.02
13	6.4	2.53	1.27	42.0	42.01
10	4.7	2.17	1.09	34.0	34.01
7	3.5	1.87	0.94	31.0	31.01
5	2.2	1.48	0.75	22.0	22.01

By Linear Regression of Y on X

Slope, mw = 37.7709 Intercept, bw = -6.0065

Correlation Coefficient* = 0.9943

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 43.08

Remarks: _____

QC Reviewer: Mike stek Signature: Mike Date: 18 Jul 11

IC (CFM)	Qstd (m ³ /min)
24	0.794
25	0.821
26	0.847
27	0.874
28	0.900
29	0.927
30	0.953
31	0.980
32	1.006
33	1.033
34	1.059
35	1.086
36	1.112
37	1.139
38	1.165
39	1.192
40	1.218
41	1.245
42	1.271
43	1.297
44	1.324
45	1.350
46	1.377
47	1.403
48	1.430
49	1.456
50	1.483
51	1.509
52	1.536
53	1.562
54	1.589
55	1.615
56	1.642
57	1.668
58	1.695
59	1.721
60	1.748
61	1.774
62	1.801
63	1.827
64	1.853
65	1.880

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Shan Tong New Village (AM2) Operator: Choi wing ho
 Cal. Date: 24-May-11 Next Due Date: 24-Jul-11
 Equipment No.: A-001-29T Serial No.: 10202

Station: Shan Tong New Village (AM2)

Cal. Date: 24-May-11

Next Due Date: 24-Jul-11

Set Point (IC) 37.58

Ambient Condition			
Temperature, Ta (K)	297	Pressure, Pa (mmHg)	755.5

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.0214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.8	3.28	1.65	48.0	47.94
13	8.0	2.82	1.42	42.0	41.95
10	5.4	2.32	1.17	34.0	33.96
7	4.2	2.05	1.03	28.0	27.96
5	2.5	1.58	0.80	22.0	21.97

By Linear Regression of Y on X

Slope, mw = 31.4651 Intercept, bw = -3.3763

Correlation Coefficient* = 0.9946

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 37.58

Remarks: _____

QC Reviewer: Joe Fu Signature: Joe Date: 30 May 11

IC (CFM)	Qstd (m ³ /min)
24	0.870
25	0.902
26	0.934
27	0.965
28	0.997
29	1.029
30	1.061
31	1.093
32	1.124
33	1.156
34	1.188
35	1.220
36	1.251
37	1.283
38	1.315
39	1.347
40	1.379
41	1.410
42	1.442
43	1.474
44	1.506
45	1.537
46	1.569
47	1.601
48	1.633
49	1.665
50	1.696
51	1.728
52	1.760
53	1.792
54	1.823
55	1.855
56	1.887
57	1.919
58	1.951
59	1.982
60	2.014
61	2.046
62	2.078
63	2.110
64	2.141
65	2.173

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Shan Tong New Village (AM2) Operator: Shum Kam Yuen
 Cal. Date: 21-Jul-11 Next Due Date: 21-Sep-11
 Equipment No.: A-001-29T Serial No.: 10202

Station: Shan Tong New Village (AM2)

Cal. Date: 21-Jul-11

Next Due Date: 21-Sep-11

Set Point (IC) 38.15

Ambient Condition			
Temperature, Ta (K)	304	Pressure, Pa (mmHg)	752.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.02214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.6	3.21	1.61	48.0	47.28
13	7.7	2.73	1.37	40.0	39.40
10	5.4	2.29	1.15	34.0	33.49
7	4.0	1.97	0.99	28.0	27.58
5	2.4	1.53	0.77	22.0	21.67

By Linear Regression of Y on X

Slope, mw = 30.6369 Intercept, bw = -2.2523

Correlation Coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]^{1/2} = 38.15

Remarks: _____

QC Reviewer: Mike Stek Signature: Mike Date: 22 Jul 11

IC (CFM)	Qstd (m ³ /min)
24	0.857
25	0.890
26	0.922
27	0.955
28	0.987
29	1.020
30	1.053
31	1.085
32	1.118
33	1.151
34	1.183
35	1.216
36	1.249
37	1.281
38	1.314
39	1.346
40	1.379
41	1.412
42	1.444
43	1.477
44	1.510
45	1.542
46	1.575
47	1.608
48	1.640
49	1.673
50	1.706
51	1.738
52	1.771
53	1.803
54	1.836
55	1.869
56	1.901
57	1.934
58	1.967
59	1.999
60	2.032
61	2.065
62	2.097
63	2.130
64	2.163
65	2.195

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Riverain Bayside (AM3) Operator: Choi wing ho
 Cal. Date: 24-May-11 Next Due Date: 24-Jul-11
 Equipment No.: A-001-69T Serial No.: 716

Station: Riverain Bayside (AM3)

Cal. Date: 24-May-11

Next Due Date: 24-Jul-11

Set Point (IC) 40.43

Ambient Condition			
Temperature, Ta (K)	297	Pressure, Pa (mmHg)	755.5

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.0214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.5	3.24	1.62	50.0	49.94
13	8.5	2.91	1.46	46.0	45.94
10	6.4	2.53	1.27	40.0	39.95
7	4.5	2.12	1.07	34.0	33.96
5	2.7	1.64	0.83	24.0	23.97

By Linear Regression of Y on X
 Slope, mw = 32.4101 Intercept, bw = -1.7559
 Correlation Coefficient* = 0.9908
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 40.43

Remarks: _____

QC Reviewer: [Signature] Signature: [Signature] Date: 30 May 11

IC (CFM)	Qstd (m ³ /min)
24	0.795
25	0.826
26	0.856
27	0.887
28	0.918
29	0.949
30	0.980
31	1.011
32	1.042
33	1.072
34	1.103
35	1.134
36	1.165
37	1.196
38	1.227
39	1.258
40	1.288
41	1.319
42	1.350
43	1.381
44	1.412
45	1.443
46	1.473
47	1.504
48	1.535
49	1.566
50	1.597
51	1.628
52	1.659
53	1.689
54	1.720
55	1.751
56	1.782
57	1.813
58	1.844
59	1.875
60	1.905
61	1.936
62	1.967
63	1.998
64	2.029
65	2.060

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Riverain Bayside (AM3) Operator: Shum Kam Yuen
 Cal. Date: 21-Jul-11 Next Due Date: 21-Sep-11
 Equipment No.: A-001-69T Serial No.: 716

Station: Riverain Bayside (AM3)

Cal. Date: 21-Jul-11

Next Due Date: 21-Sep-11

Set Point (IC) 41.55

Ambient Condition			
Temperature, Ta (K)	304	Pressure, Pa (mmHg)	752.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.02214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.2	3.15	1.58	52.0	51.22
13	8.3	2.84	1.43	46.0	45.31
10	6.2	2.45	1.23	38.0	37.43
7	4.3	2.04	1.03	32.0	31.52
5	2.5	1.56	0.79	24.0	23.64

By Linear Regression of Y on X
 Slope, mw = 34.6911 Intercept, bw = -4.1697
 Correlation Coefficient* = 0.9957
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 41.55

Remarks: _____

QC Reviewer: Mike Stek Signature: Mike Date: 21 Jul 11

IC (CFM)	Qstd (m ³ /min)
24	0.812
25	0.841
26	0.870
27	0.898
28	0.927
29	0.956
30	0.985
31	1.014
32	1.043
33	1.071
34	1.100
35	1.129
36	1.158
37	1.187
38	1.216
39	1.244
40	1.273
41	1.302
42	1.331
43	1.360
44	1.389
45	1.417
46	1.446
47	1.475
48	1.504
49	1.533
50	1.561
51	1.590
52	1.619
53	1.648
54	1.677
55	1.706
56	1.734
57	1.763
58	1.792
59	1.821
60	1.850
61	1.879
62	1.907
63	1.936
64	1.965
65	1.994

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Tai Kwong Secondary School (AM4) Operator: Choi wing ho
 Cal. Date: 24-May-11 Next Due Date: 24-Jul-11
 Equipment No.: A-001-70T Serial No.: 10273

Station: Tai Kwong Secondary School (AM4)

Cal. Date: 24-May-11

Next Due Date: 24-Jul-11

Set Point (IC) 42.89

Ambient Condition			
Temperature, Ta (K)	297	Pressure, Pa (mmHg)	755.3

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.0214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	11.0	3.31	1.66	55.0	54.92
13	9.0	3.00	1.50	50.0	49.93
10	6.2	2.49	1.25	41.0	40.94
7	4.4	2.09	1.05	35.0	34.95
5	2.8	1.67	0.84	27.0	26.96

By Linear Regression of Y on X
 Slope, mw = 34.0441 Intercept, bw = -1.4331
 Correlation Coefficient* = 0.9991
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation
 From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$
 Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 42.89

IC (CFM)	Qstd (m ³ /min)
24	0.747
25	0.776
26	0.806
27	0.835
28	0.865
29	0.894
30	0.923
31	0.953
32	0.982
33	1.011
34	1.041
35	1.070
36	1.100
37	1.129
38	1.158
39	1.188
40	1.217
41	1.246
42	1.276
43	1.305
44	1.335
45	1.364
46	1.393
47	1.423
48	1.452
49	1.481
50	1.511
51	1.540
52	1.570
53	1.599
54	1.628
55	1.658
56	1.687
57	1.716
58	1.746
59	1.775
60	1.805
61	1.834
62	1.863
63	1.893
64	1.922
65	1.951

Remarks: _____

QC Reviewer: Joe Fu Signature: Joe Date: 30 May 11

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Tai Kwong Secondary School (AM4) Operator: Shum Kam Yuen
 Cal. Date: 21-Jul-11 Next Due Date: 21-Sep-11
 Equipment No.: A-001-70T Serial No.: 10273

Station: Tai Kwong Secondary School (AM4)

Cal. Date: 21-Jul-11

Next Due Date: 21-Sep-11

Set Point (IC) 39.83

Ambient Condition			
Temperature, Ta (K)	304	Pressure, Pa (mmHg)	752.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00691	Intercept, bc	-0.02214
Last Calibration Date:	8-Nov-10	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Nov-11	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.4	3.18	1.59	50.0	49.25
13	7.7	2.73	1.37	42.0	41.37
10	5.9	2.39	1.20	36.0	35.46
7	4.1	1.99	1.00	30.0	29.55
5	2.6	1.59	0.80	24.0	23.64

By Linear Regression of Y on X
 Slope, mw = 32.3160 Intercept, bw = -2.7780
 Correlation Coefficient* = 0.9975
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 39.83

Remarks: _____

QC Reviewer: Mike Stek Signature: Mike Date: 22 Jul 11

IC (CFM)	Qstd (m ³ /min)
24	0.829
25	0.860
26	0.891
27	0.921
28	0.952
29	0.983
30	1.014
31	1.045
32	1.076
33	1.107
34	1.138
35	1.169
36	1.200
37	1.231
38	1.262
39	1.293
40	1.324
41	1.355
42	1.386
43	1.417
44	1.448
45	1.478
46	1.509
47	1.540
48	1.571
49	1.602
50	1.633
51	1.664
52	1.695
53	1.726
54	1.757
55	1.788
56	1.819
57	1.850
58	1.881
59	1.912
60	1.943
61	1.974
62	2.005
63	2.035
64	2.066
65	2.097



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, 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 - Nov 08, 2010 Roots-meter S/N 9833620 Ta (K) - 292
 Operator Tisch Orifice I.D. - 0843 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4030	3.2	2.00
2	NA	NA	1.00	0.9880	6.4	4.00
3	NA	NA	1.00	0.8850	7.9	5.00
4	NA	NA	1.00	0.8440	8.8	5.50
5	NA	NA	1.00	0.6970	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0087	0.7189	1.4234	0.9957	0.7097	0.8799
1.0044	1.0166	2.0130	0.9915	1.0036	1.2443
1.0023	1.1325	2.2506	0.9894	1.1180	1.3912
1.0012	1.1862	2.3604	0.9883	1.1710	1.4591
0.9959	1.4289	2.8468	0.9831	1.4105	1.7597
Qstd slope (m) = 2.00691			Qa slope (m) = 1.25670		
intercept (b) = -0.02214			intercept (b) = -0.01369		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

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

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

For subsequent flow rate calculations:

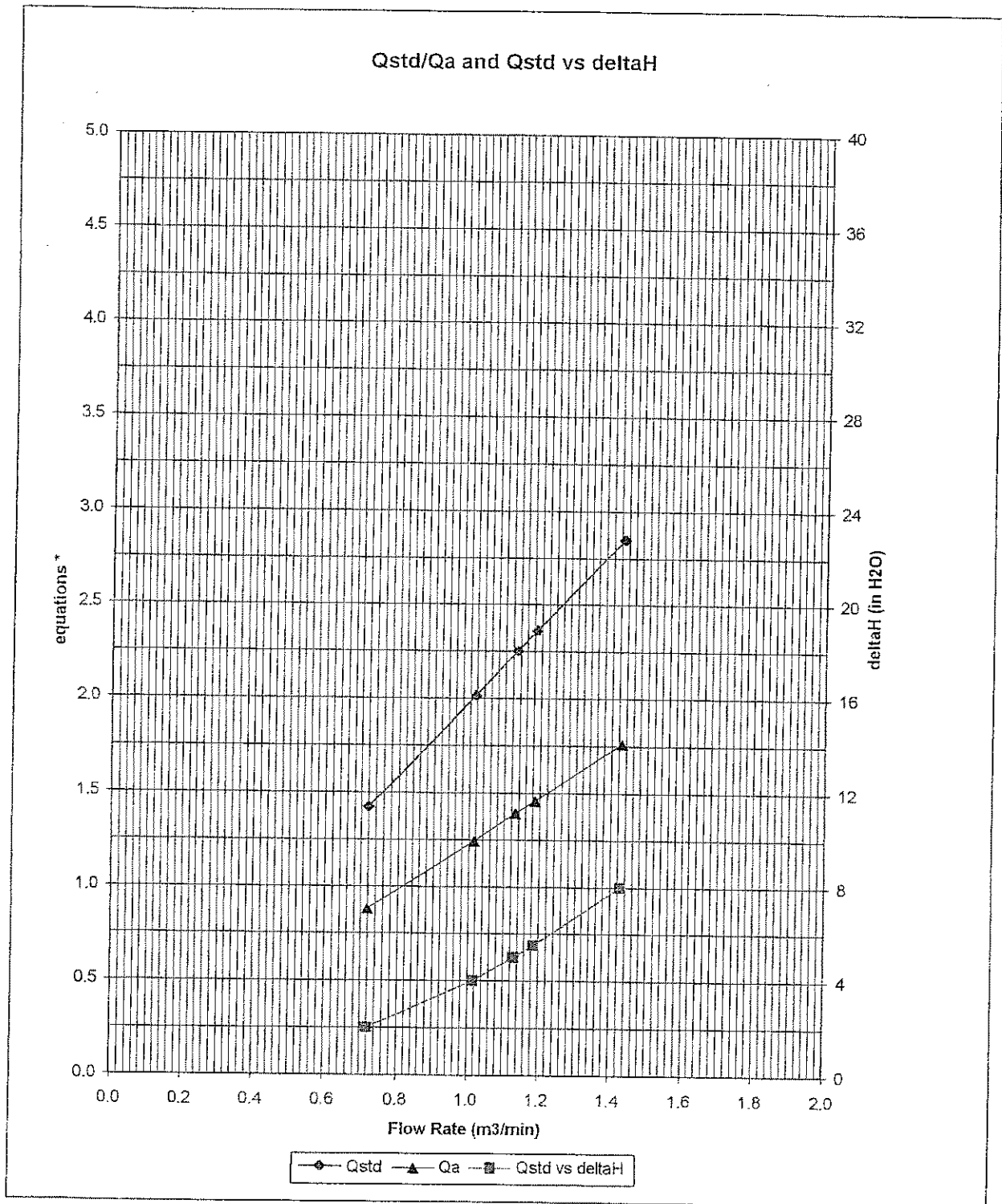
$$Qstd = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760) (298/\text{Ta}))] - b \}$$

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



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



* y-axis equations:

Qstd series:
$$\sqrt{\Delta H \left(\frac{P_a}{P_{std}} \right) \left(\frac{T_{std}}{T_a} \right)}$$

Qa series:
$$\sqrt{(\Delta H (T_a / P_a))}$$

#0843

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.07a
 Sensitivity Adjustment Scale Setting: 557 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 557 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 557 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	05-06-11	09:30 - 10:30	31.3	67	0.04118	1540	25.67
2	05-06-11	10:30 - 11:30	31.3	67	0.04354	1637	27.28
3	05-06-11	11:30 - 12:30	31.3	67	0.04633	1730	28.83
4	05-06-11	12:30 - 13:30	31.4	66	0.04271	1603	26.72

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0016
 Correlation coefficient: 0.9958

Validity of Calibration Record: 4 June 2012

Remarks:

QC Reviewer: YW Fung

Signature: 

Date: 8 June 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.08a
 Sensitivity Adjustment Scale Setting: 702 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 702 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 702 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-07-11	09:00 - 10:00	31.1	70	0.04313	1607	26.78
2	02-07-11	10:00 - 11:00	31.1	70	0.04137	1550	25.83
3	02-07-11	11:00 - 12:00	31.2	71	0.04552	1713	28.55
4	02-07-11	12:00 - 13:00	31.2	71	0.04736	1771	29.51

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0016
 Correlation coefficient: 0.9949

Validity of Calibration Record: 1 July 2012

Remarks:

QC Reviewer: YW Fung

Signature: 

Date: 4 July 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.09a
 Sensitivity Adjustment Scale Setting: 797 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

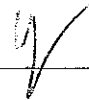
Sensitivity Adjustment Scale Setting (Before Calibration): 797 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 797 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	05-06-11	13:30 - 14:30	31.4	66	0.04416	1758	29.30
2	05-06-11	14:30 - 15:30	31.5	66	0.04752	1889	31.48
3	05-06-11	15:30 - 16:30	31.5	66	0.04371	1748	29.13
4	05-06-11	16:30 - 17:30	31.5	67	0.04543	1808	30.13

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
 Slope (K-factor): 0.0015
 Correlation coefficient: 0.9953
 Validity of Calibration Record: 4 June 2012

Remarks:

QC Reviewer: YW Fung Signature:  Date: 8 June 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.11a
 Sensitivity Adjustment Scale Setting: 799 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No.: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

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

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-07-11	09:30 - 10:30	31.1	70	0.04305	1718	28.63
2	02-07-11	10:30 - 11:30	31.1	71	0.04257	1703	28.38
3	02-07-11	11:30 - 12:30	31.2	71	0.04424	1763	29.38
4	02-07-11	12:30 - 13:30	31.2	71	0.04632	1855	30.92

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9961

Validity of Calibration Record: 1 July 2012

Remarks:

QC Reviewer: YW Fung Signature:  Date: 4 July 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.12a
 Sensitivity Adjustment Scale Setting: 805 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 30 May 2010

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 805 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 805 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	24-10-10	12:30 - 13:30	26.6	68	0.07973	2984	49.73
2	24-10-10	13:30 - 14:30	26.6	69	0.08356	3144	52.40
3	24-10-10	15:30 - 16:30	26.7	69	0.08867	3338	55.63
4	24-10-10	16:30 - 17:30	26.7	68	0.09234	3449	57.48

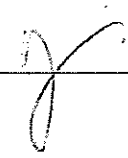
Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0016
 Correlation coefficient: 0.9962

Validity of Calibration Record: 23 October 2011

Remarks:

QC Reviewer: YW Fung Signature:  Date: 25 Oct 2010

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.13a
 Sensitivity Adjustment Scale Setting: 643 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 643 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 643 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	05-06-11	11:00 - 12:00	31.4	67	0.04513	1933	32.21
2	05-06-11	12:00 - 13:00	31.4	67	0.04392	1833	31.38
3	05-06-11	13:00 - 14:00	31.5	66	0.04751	2042	34.03
4	05-06-11	14:00 - 15:00	31.5	66	0.04476	1918	31.97

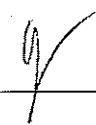
Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014
 Correlation coefficient: 0.9978

Validity of Calibration Record: 4 June 2012

Remarks:

QC Reviewer: YW Fung Signature:  Date: 8 June 2011



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0317 06-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2285692/N.009.04	2250420
Adaptors used:	-	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of request: 17-Mar-2011

Date of test: 26-Mar-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	10-Jan-2012	CIGISMEC
Signal generator	DS 360	33873	28-Jun-2011	CEPREI
Signal generator	DS 360	61227	24-Jun-2011	CEPREI

Ambient conditions

Temperature: (22 ± 1) °C
Relative humidity: (60 ± 5) %
Air pressure: (1005 ± 5) hPa

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.
- 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 between the free-field and pressure responsiveness 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.

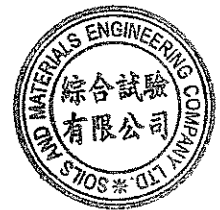
Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 29-Mar-2011

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 10CA1105 01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2255688	2141430
Adaptors used:	-	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of request: 05-Nov-2010

Date of test: 08-Nov-2010

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	12-Jan-2011	CIGISMEC
Signal generator	DS 360	33873	28-Jun-2011	CEPREI
Signal generator	DS 360	61227	24-Jun-2011	CEPREI

Ambient conditions

Temperature: (21 ± 1) °C
Relative humidity: (60 ± 5) %
Air pressure: (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%.
- 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 responsiveness of the Sound Level Meter.

Test results

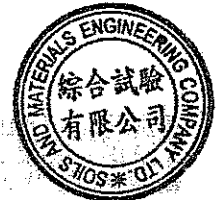
This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

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

Actual Measurement data are documented on worksheets.

Approved Signatory:  Date: 09-Nov-2010 Company Chop:

Huang Jian Min/Feng Jun Qi



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.



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-04

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: B & K
Type/Model No.: BK4231
Serial/Equipment No.: 1790985 / N.004.01
Adaptors used: Yes

Item submitted by

Customer: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 11-Jul-2011

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: 55 ± 5 %
Air pressure: 990 ± 5 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.

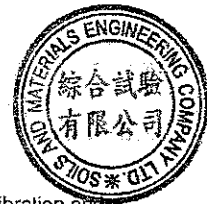
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 13-Jul-2011

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 10CA0803 01

Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	RION CO., LTD.	RION CO., LTD.
Type/Model No.:	NL-31	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	88783
Adaptors used:	-	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of request:	03-Aug-2010

Date of test: 05-Aug-2010

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	12-Jan-2011	CIGISMEC
Signal generator	DS 360	33873	28-Jun-2011	CEPREI
Signal generator	DS 360	61227	24-Jun-2011	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 5 %
Air pressure:	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%.
- 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 responsiveness 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.

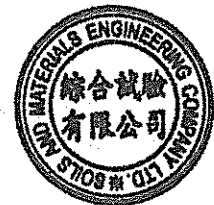
Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian-Min/Fang Jun Qi

Date: 06-Aug-2010

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 10CA0728 02-02

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10307223 / N-004-08
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of request: 28-Jul-2010

Date of test: 29-Jul-2010

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	02-Jul-2011	SCL
Preamplifier	B&K 2673	2239857	15-Dec-2010	CEPREI
Measuring amplifier	B&K 2610	2346941	11-Dec-2010	CEPREI
Signal generator	DS 360	61227	24-Jun-2011	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2010	CIGISMEC
Audio analyzer	8903B	GB41300350	07-Dec-2010	CEPREI
Universal counter	53132A	MY40003662	05-Jul-2011	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 5 %
Air pressure: 1000 ± 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.
- 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.

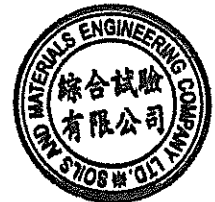
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jian-Min/Feng Jun Qi

Date: 29-Jul-2010

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-05

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10307223 / N.004.08
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 13-Jul-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	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: 55 ± 5 %
Air pressure: 990 ± 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.
- 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.

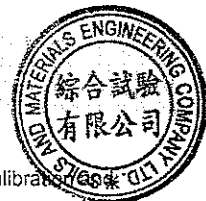
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

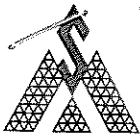
Huang Jian Min Feng Jun Qi

Date: 13-Jul-2011

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0317 06-02

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10186482/N.004.09
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of request: 17-Mar-2011

Date of test: 26-Mar-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	02-Jul-2011	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	24-Jun-2011	CEPREI
Digital multi-meter	34401A	US36087050	09-Dec-2011	CEPREI
Audio analyzer	8903B	GB41300350	28-Jun-2011	CEPREI
Universal counter	53132A	MY40003662	05-Jul-2011	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 5 %
Air pressure: 1005 ± 5 hPa

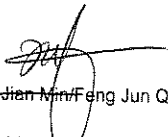
Test specifications

- 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

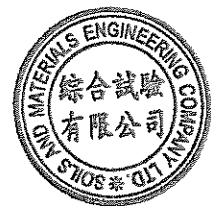
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

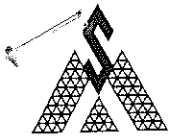

Huang Jian Min / Feng Jun Qi

Date: 29-Mar-2011

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 10CA0831 03-02

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10307216
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of request: 26-Aug-2010

Date of test: 31-Aug-2010

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	02-Jul-2011	SCL
Preamplifier	B&K 2673	2239857	15-Dec-2010	CEPREI
Measuring amplifier	B&K 2610	2346941	11-Dec-2010	CEPREI
Signal generator	DS 360	61227	24-Jun-2011	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2010	CIGISMEC
Audio analyzer	8903B	GB41300350	07-Dec-2010	CEPREI
Universal counter	53132A	MY40003662	05-Jul-2011	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 5 %
Air pressure: 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.
- 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.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 02-Sep-2010

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.