

Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House
 Manufacturer: Davis Instruments
 Model No.: Davis7440
 Serial No.: MC01010A44
 Equipment No.: SA-03-04
 Date of Calibration: 17-Aug-2024
 Next Due Date: 17-Feb-2025

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V2)	$D = V1 - V2$
0.0	0.0	0.0
1.5	1.6	-0.1
2.5	2.3	0.2
4.0	4.0	0.0

2. Performance check of Wind Direction

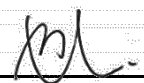
Wind Direction (°)		Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

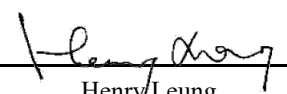
1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer

2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:


 Wong Shing Kwai

Approved by:


 Henry Leung

Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 15, 2024	Rootsmeter S/N: 438320	Ta: 294	°K
Operator: Jim Tisch		Pa: 755.4	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 3864		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4380	3.3	2.00
2	3	4	1	1.0270	6.4	4.00
3	5	6	1	0.9180	8.0	5.00
4	7	8	1	0.8750	8.9	5.50
5	9	10	1	0.7230	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
1.0031	0.6975	1.4195	0.9956	0.6924	0.8823
0.9989	0.9727	2.0075	0.9915	0.9655	1.2477
0.9968	1.0858	2.2444	0.9894	1.0778	1.3950
0.9956	1.1378	2.3539	0.9882	1.1294	1.4631
0.9903	1.3697	2.8390	0.9829	1.3595	1.7645
QSTD	m=	2.11196	QA	m=	1.32248
	b=	-0.05043		b=	-0.03134
	r=	0.99998		r=	0.99998

Calculations			
Vstd=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0049

Project No. AM1 - Tin Hau Temple
 Date: 14-Aug-24 Next Due Date: 14-Oct-24 Operator: SK
 Equipment No.: A-01-05 Model No.: GS2310 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	302.2	Pressure, Pa (mmHg)	754.8

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Q_{std} + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	14-Jan-25	$Q_{std} = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.2	3.60	61.01	8.7	2.92
2	10.4	3.19	54.24	6.4	2.50
3	7.5	2.71	46.19	4.4	2.08
4	5.3	2.28	38.96	2.8	1.66
5	3.1	1.74	30.00	1.5	1.21

By Linear Regression of Y on X

Slope, $m_w =$ 0.0550 Intercept, $b_w =$ -0.4631
 Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take $Q_{std} = 43$ CFM

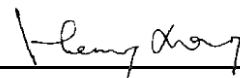
From the Regression Equation, the "Y" value according to

$$m_w \times Q_{std} + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Q_{std} + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.70

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 14-Aug-24

Checked by: Henry Leung Signature:  Date: 14-Aug-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0050

Project No. AM1 - Tin Hau Temple
 Date: 14-Oct-24 Next Due Date: 14-Dec-24 Operator: SK
 Equipment No.: A-01-05 Model No.: GS2310 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	301	Pressure, Pa (mmHg)	760.2

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	14-Jan-25	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.1	3.60	61.11	8.6	2.92
2	10.3	3.19	54.28	6.6	2.56
3	7.4	2.71	46.14	4.4	2.09
4	5.2	2.27	38.81	2.7	1.64
5	3.0	1.72	29.68	1.5	1.22

By Linear Regression of Y on X

Slope, mw = 0.0551 Intercept, bw : -0.4506

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

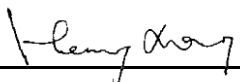
From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.71

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 14-Oct-24

Checked by: Henry Leung Signature:  Date: 14-Oct-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0049

Project No. AM2 - Sai Tso Wan Recreation Ground

Date: 14-Aug-24 Next Due Date: 14-Oct-24 Operator: SK

Equipment No.: A-01-08 Model No.: GS2310 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	302.2	Pressure, Pa (mmHg)	754.8

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	14-Jan-25				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.3	3.61	61.23	8.4	2.87
2	10.2	3.16	53.73	6.2	2.46
3	7.5	2.71	46.19	4.3	2.05
4	5.2	2.26	38.60	2.7	1.63
5	3.0	1.71	29.52	1.5	1.21

By Linear Regression of Y on X

Slope , mw = 0.0528 Intercept, bw : -0.3750

Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.66

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 14-Aug-24

Checked by: Henry Leung Signature: Date: 14-Aug-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0050

Project No. AM2 - Sai Tso Wan Recreation Ground

Date: 14-Oct-24 Next Due Date: 14-Dec-24 Operator: SK

Equipment No.: A-01-08 Model No.: GS2310 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	301	Pressure, Pa (mmHg)	760.2

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	14-Jan-25	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.2	3.62	61.34	8.3	2.87
2	10.1	3.16	53.76	6.1	2.46
3	7.4	2.71	46.14	4.2	2.04
4	5.1	2.25	38.45	2.6	1.60
5	3.0	1.72	29.68	1.5	1.22

By Linear Regression of Y on X

Slope, mw = 0.0527 Intercept, bw : -0.3803

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.59

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 14-Oct-24

Checked by: Henry Leung Signature: Date: 14-Oct-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0049

Project No. AM3 - Yau Lai Estate, Bik Lai House
 Date: 14-Aug-24 Next Due Date: 14-Oct-24 Operator: SK
 Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	<u>302.2</u>	Pressure, Pa (mmHg)	<u>754.8</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05976</u>	Intercept, bc	<u>-0.05018</u>
Last Calibration Date:	<u>15-Jan-24</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>14-Jan-25</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>12.9</u>	3.55	60.32	<u>8.0</u>	2.80
2	<u>10.6</u>	3.22	54.76	<u>6.2</u>	2.46
3	<u>7.6</u>	2.73	46.49	<u>4.4</u>	2.08
4	<u>5.0</u>	2.21	37.87	<u>2.8</u>	1.66
5	<u>2.9</u>	1.69	29.04	<u>1.6</u>	1.25

By Linear Regression of Y on X

Slope, mw = 0.0490 Intercept, bw : -0.1883

Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.75

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 14-Aug-24

Checked by: Henry Leung Signature: Date: 14-Aug-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0050

Project No. AM3 - Yau Lai Estate, Bik Lai House
 Date: 14-Oct-24 Next Due Date: 14-Dec-24 Operator: SK
 Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	301	Pressure, Pa (mmHg)	760.2

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Q_{std} + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	14-Jan-25	$Q_{std} = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.8	3.56	60.42	7.9	2.80
2	10.5	3.22	54.80	6.1	2.46
3	7.5	2.73	46.44	4.3	2.06
4	5.0	2.23	38.08	2.7	1.64
5	2.8	1.67	28.70	1.5	1.22

By Linear Regression of Y on X

Slope, $m_w =$ 0.0495 Intercept, $b_w =$ -0.2257

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take $Q_{std} = 43$ CFM

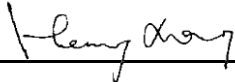
From the Regression Equation, the "Y" value according to

$$m_w \times Q_{std} + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Q_{std} + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.65

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 14-Oct-24

Checked by: Henry Leung Signature:  Date: 14-Oct-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/028

Project No. CKL 2 - Flat 103 Cha Kwo Ling Village
 Date: 4-Sep-24 Next Due Date: 4-Nov-24 Operator: SK
 Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956

Ambient Condition			
Temperature, Ta (K)	302.7	Pressure, Pa (mmHg)	751.8

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05976	Intercept, bc	-0.05018
Last Calibration Date:	15-Jan-24	$mc \times Q_{std} + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	14-Jan-25	$Q_{std} = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.6	3.64	61.74	9.4	3.03
2	11.4	3.33	56.60	7.4	2.68
3	9.3	3.01	51.20	6.0	2.42
4	5.6	2.34	39.92	2.9	1.68
5	3.6	1.87	32.17	2.0	1.40

By Linear Regression of Y on X

Slope, $m_w =$ 0.0562 Intercept, $b_w =$ -0.4760
 Correlation coefficient* = 0.9965

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take $Q_{std} = 43$ CFM

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

$$m_w \times Q_{std} + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Q_{std} + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.87

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 4-Sep-24

Checked by: Henry Leung Signature: Date: 4-Sep-24

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 8Y2374
 Equipment No.: SA-01-04 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 652
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 652

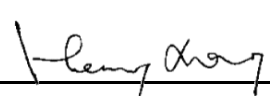
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	75.0	137.0
2	65.0	120.0
3	55.0	102.0
Average	65.0	119.7
By Linear Regression of Y on X Slope , mw = <u>1.7500</u> Intercept, bw = <u>5.9167</u> Correlation coefficient* = <u>0.9999</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	119.7	
Particulate Concentration by Dust Meter (µg/m ³)	65.0	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.8</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Limited)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 8Y2373
 Equipment No.: SA-01-05 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 657
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 657

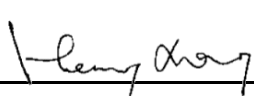
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	74.0	135.0
2	64.0	116.0
3	54.0	100.0
Average	64.0	117.0
By Linear Regression of Y on X Slope , mw = <u>1.7500</u> Intercept, bw = <u>5.0000</u> Correlation coefficient* = <u>0.9988</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	117.0	
Particulate Concentration by Dust Meter (µg/m ³)	64.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.8</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 972777
 Equipment No.: SA-01-06 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 645
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 645

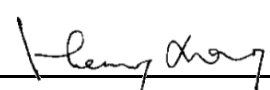
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	75.0	136.0
2	65.0	117.0
3	55.0	100.0
Average	65.0	117.7
By Linear Regression of Y on X Slope , mw = <u>1.8000</u> Intercept, bw = <u>0.6667</u> Correlation coefficient* = <u>0.9995</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	117.7	
Particulate Concentration by Dust Meter (µg/m ³)	65.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.8</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 735 CPM

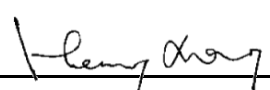
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	75.0	139.0
2	65.0	122.0
3	55.0	101.0
Average	65.0	120.7
By Linear Regression of Y on X Slope , mw = <u>1.9000</u> Intercept, bw = <u>-2.8333</u> Correlation coefficient* = <u>0.9982</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	120.7	
Particulate Concentration by Dust Meter (µg/m ³)	65.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.9</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 972780
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 739 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 739 CPM

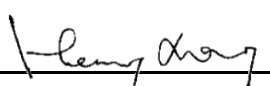
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	73.0	139.0
2	63.0	119.0
3	53.0	102.0
Average	63.0	120.0
By Linear Regression of Y on X Slope , mw = <u>1.8500</u> Intercept, bw = <u>3.4500</u> Correlation coefficient* = <u>0.9989</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	120.0	
Particulate Concentration by Dust Meter (µg/m ³)	63.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.9</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-24
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-24
 Model No.: LD-5R
 Serial No.: 972781
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 734 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 734 CPM


Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	80.0	135.0
2	70.0	116.0
3	60.0	101.0
Average	70.0	117.3
By Linear Regression of Y on X Slope , mw = <u>1.7000</u> Intercept, bw = <u>-1.6667</u> Correlation coefficient* = <u>0.9977</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	117.3	
Particulate Concentration by Dust Meter (µg/m ³)	70.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.7</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
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Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00736
Application No. : HP00592

Issue Date : 28 Jun 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-16-01

Manufacturer: : Hangzhou Aihua Instruments Co., Ltd.

Other information :

Model No.	AWA6021A
Serial No.	1023253

Date Received : 27 Jun 2024

Test Period : 28 Jun 2024 to 28 Jun 2024

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00736
Application No. : HP00592

Issue Date : 28 Jun 2024

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	570183
Microphone No.	570605
Equipment No.	N-12-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 0.3
114.0	114.1	+ 0.1	± 0.5

Note : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
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Report No. : 00582
Application No. : HP00451

Issue Date : 14 Feb 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-16-02

Manufacturer: : Hangzhou Aihua Instruments Co., Ltd.

Other information :

Model No.	AWA6021A
Serial No.	1023064

Date Received : 14 Feb 2024

Test Period : 15 Feb 2024 to 15 Feb 2024

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

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Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

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Report No. : 00582
Application No. : HP00451

Issue Date : 14 Feb 2024

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	SVANTEK
Model No.	SVAN 977
Serial No.	92677
Microphone No.	10352
Equipment No.	N-14-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.2	+ 0.2	± 0.3
114.0	114.2	+ 0.2	± 0.5

Note : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
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Report No. : 00583
Application No. : HP00452

Issue Date : 16 Feb 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-08-07

Manufacturer: : SVANTEK

Other information :

Model No.	SVAN 957
Serial No.	21455
Microphone No.	17204

Date Received : 14 Feb 2024

Test Period : 15 Feb 2024 to 15 Feb 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

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Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

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Report No. : 00583

Issue Date : 16 Feb 2024

Application No. : HP00452

Certificate of Calibration

Measuring equipment :	Description	Sound Calibrator
	Manufacturer	Brüel & Kjær
	Model No.	TYPE 4231
	Serial No.	2326353
	Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.1	+ 0.1	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
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Report No. : 00647
Application No. : HP00514

Issue Date : 11 Apr 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-01

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	570183
Microphone No.	590073

Date Received : 09 Apr 2024

Test Period : 09 Apr 2024 to 09 Apr 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
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Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00647
Application No. : HP00514

Issue Date : 11 Apr 2024

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.2	+ 0.2	± 1.5

- Note** : 1. “Instrument Readings” presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
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Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00648
Application No. : HP00515

Issue Date : 11 Apr 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-05

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580287
Microphone No.	570610

Date Received : 09 Apr 2024

Test Period : 09 Apr 2024 to 09 Apr 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

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Report No. : 00648

Issue Date : 11 Apr 2024

Application No. : HP00515

Certificate of Calibration

Measuring equipment :	Description	Sound Calibrator
	Manufacturer	Brüel & Kjær
	Model No.	TYPE 4231
	Serial No.	2326353
	Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.1	+ 0.1	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

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Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00618
Application No. : HP00473

Issue Date : 18 Mar 2024

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-06

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580156
Microphone No.	580804

Date Received : 06 Mar 2024

Test Period : 14 Mar 2024 to 14 Mar 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

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Report No. : 00618

Issue Date : 18 Mar 2024

Application No. : HP00473

Certificate of Calibration

Measuring equipment :	Description	Sound Calibrator
	Manufacturer	Brüel & Kjær
	Model No.	TYPE 4231
	Serial No.	2326353
	Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	± 0.0	± 1.5
114.0	114.1	+ 0.1	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -