

Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House

Manufacturer: <u>Davis Instruments</u>

Model No.: <u>Davis7440</u>

Serial No.: MC01010A44

Equipment No.: <u>SA-03-04</u>

Date of Calibration <u>20-Aug-2021</u>

Next Due Date <u>20-Feb-2022</u>

1. Performance check of Wind Speed

| Wind Sp | peed, m/s | Difference D (m/s) | | |
|---|-----------|--------------------|--|--|
| Wind Speed Reading (V1) Anemometer Value (V2) | | D = V1 - V2 | | |
| 0.0 0.0 | | 0.0 | | |
| 1.5 | 1.5 | 0.0 | | |
| 2.8 | 2.7 | 0.1 | | |
| 4.0 | 4.1 | -0.1 | | |

2. Performance check of Wind Direction

| Wind Di | rection (°) | 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: Approved by: Approved by: Henry Leung



Certificate of Calibration - Wind Monitoring Station

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1. Performance check of Wind Speed

| Wind Sp | peed, 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 | 2.5 | 0.0 | | |
| 3.5 | 3.4 | 0.1 | | |

2. Performance check of Wind Direction

| Wind Di | rection (°) | 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: | | Approved by: | Leany Chang |
|----------------|-----------------|--------------|-------------|
| | Wong Shing Kwai | _ | Henry Leung |



RECALIBRATION
DUE DATE:

January 11, 2022

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 11, 2021

Rootsmeter S/N: 438320

°K

Operator: Jim Tisch

Ta: 297
Pa: 750.1

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 | 1.4470 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0210 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9140 | 8.0 | 5.00 |
| 4 | , 7 | 8 | 1 | 0.8670 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7140 | 12.9 | 8.00 |

| | Data Tabulation | | | | | | | |
|--------|--|----------|--------|----------|---------------------------|--|--|--|
| Vstd | Qstd $\sqrt{\Delta H(\frac{Pa}{Pstd})(\frac{Tstd}{Ta})}$ | | | Qa | $\sqrt{\Delta H (Ta/Pa)}$ | | | |
| (m3) | (x-axis) | (y-axis) | Va | (x-axis) | (y-axis) | | | |
| 0.9860 | 0.6814 | 1.4073 | 0.9957 | 0.6881 | 0.8899 | | | |
| 0.9818 | 0.9616 | 1.9902 | 0.9915 | 0.9711 | 1.2585 | | | |
| 0.9797 | 1.0719 | 2.2251 | 0.9893 | 1.0824 | 1.4071 | | | |
| 0.9786 | 1.1288 | 2.3337 | 0.9883 | 1.1399 | 1.4757 | | | |
| 0.9732 | 1.3630 | 2.8146 | 0.9828 | 1.3765 | 1.7798 | | | |
| | m= | 2.06566 | | m= | 1.29348 | | | |
| QSTD | b= | 0.00315 | QA | b= | 0.00199 | | | |
| | r= | 0.99996 | | r= | 0.99996 | | | |

| Calculations | | | | | |
|--|--|-----|--|--|--|
| Vstd= | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | Va= | ΔVol((Pa-ΔP)/Pa) | | |
| Qstd= | Vstd/ΔTime | Qa= | Va/∆Time | | |
| 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= | $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$ | | |

| | 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

FAX: (513)467-9009

www.tisch-env.com

Digital Dust Indicator



Date of Calibration 2-Aug-21

Certificate of Calibration

Description:

| It | is certified tha | t the item und | er calibration l | nas been o | calibrated by | corresponding | calibrated High | Volume Sampl | lei |
|----|------------------|----------------|------------------|------------|---------------|---------------|-----------------|--------------|-----|
| | | | | | | | | | |

| Manufacturer: | Sibata Scientific Technology LTD. | <u> </u> | Validity of Calibration Record 2-Oct-21 | | |
|--------------------------------------|---|--------------------------------|---|--------------------------------------|---------------------|
| Model No.: | LD-5R | | | | |
| Serial No.: | 972781 | | | | |
| Equipment No.: | SA-01-10 | Sensitivity | 0.001 mg/m3 | _ | |
| High Volume Sa | mpler No.: <u>A-01-03</u> | Before Sensitiv | vity Adjustment | 734 CPM | |
| Tisch Calibration | n Orifice No.: <u>3864</u> | After Sensitivi | ty Adjustment | 734 CPM | |
| | Ca | alibration of 1 h | r TSP | | |
| Calibration | Laser Dust Monito | r | | HVS | |
| Point | Mass Concentration (μg. X-axis | /m3) | Mas | ss concentration (μ Y-axis | .g/m ³) |
| 1 | 66.0 | | | 131.0 | |
| 2 | 57.0 | | | 125.0 | |
| 3 | 46.0 | | | 116.0 | |
| Average | 56.3 | | | 124.0 | |
| Slope , mw = Correlation co | | | ept, bw = | 81.6096 | |
| Particaulate Con | centration by High Volume Sampler | | actor | 124.0 | |
| | centration by Dust Meter (µg/m³) | (1-8) | | 56.3 | |
| Measureing time | | | 60.0 | | |
| Set Correlation F | Factor, SCF | | | | |
| SCF = [K=Higl | h Volume Sampler / Dust Meter, (μ | ıg/m3)] | 2.2 | | |
| The Dust Monitor Factor (CF) betw | in according to the instruction manuor was compared with a calibrated Hiveen the Dust Monitor and High Voluers are weighted by HOKLAS labelets. | gh Volume Samp ıme Sampler. | | was used to gener | ate the Correlation |
| Calibrated by: Technica | al Officer (Wong Shing Kwai) | _ | Approved by: | Ct Manager (Henry | Leung) |



Certificate of Calibration

| Description: | Digital Dust Indicator | | | Date of Calibration 1-Jun-21 | | |
|--|--|---|--------------------------------------|------------------------------|-------------------------------------|---------------------|
| Manufacturer: | Sibata Scientific Technology LTD. | | Validity of Calibration Record 1-Aug | | 1-Aug-21 | |
| Model No.: | LD-5R | | | | | |
| Serial No.: | 972781 | | | | | |
| Equipment No.: | SA-01-10 | | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: A- | 01-03 | Before Sensit | ivity Adjustment | 734 CPM | |
| Tisch Calibration Orifice No.: 3864 After Se | | | | vity Adjustment | 734 CPM | |
| | | Ca | libration of 1 | hr TSP | | |
| Calibration | La | ser Dust Monitor | • | | HVS | |
| Point | Mass | Concentration (µg/ X-axis | m3) | Mas | s concentration (μ Y-axis | ug/m ³) |
| 1 | | 69.0 | | | 146.0 | |
| 2 | | 60.0 | | | 139.0 | |
| 3 | | 48.0 | | 130.0 | | |
| Average 59.0 | | | | | 138.3 | |
| • | ession of Y on X 0.7613 efficient* = | 0.9999 | | ccept, bw = | 93.4189 | |
| | | | t Correlation | Factor | | |
| | | Volume Sampler (| (μg/m³) | | 138.3 | |
| | centration by Dust | Meter (μg/m ³) | | 59.0 | | |
| Measureing time Set Correlation F | • | | | | 60.0 | |
| | • | ·/ Dust Meter, (µ | g/m3)] | 2.3 | | |
| The Dust Monitor Factor (CF) betw | or was compared ween the Dust Moni | e instruction manualith a calibrated Hightor and High Voluby HOKLAS labor | gh Volume San me Sampler. | npler and The result | was used to gener | ate the Correlation |
| Calibrated by: | al Officer (Wong S | bing Kwai) | _ | Approved by: | t Manager (Henry | Zeung) |



Certificate of Calibration

| Description: | Digital Dust I | ndicator | | Date | of Calibration | 2-Aug-21 |
|--|----------------------------------|--|------------------------------|--------------------|---------------------------|---------------------|
| Manufacturer: | Sibata Scienti | fic Technology LTD. | <u> </u> | Validity of Calibr | ration Record | 2-Oct-21 |
| Model No.: | LD-5R | | | | | |
| Serial No.: | 972780 | | | | | |
| Equipment No.: | SA-01-09 | | Sensitivity | 0.001 mg/m3 | • | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensit | ivity Adjustment | 739 CPM | |
| Tisch Calibration | Orifice No.: | 3864 | After Sensitiv | rity Adjustment | 739 CPM | |
| | | Ca | libration of 1 h | nr TSP | | |
| Calibration | | Laser Dust Monitor | | | HVS | |
| Point | М | ass Concentration (μg/ X-axis | m3) | Mas | s concentration (µ Y-axis | ug/m ³) |
| 1 | | 56.0 | | | 131.0 | |
| 2 | | 53.0 | | | 125.0 | |
| 3 | | 47.0 | | | 116.0 | |
| Average | | 52.0 | | | 124.0 | |
| By Linear Regressions, mw = Correlation co | 1.642 | 0.9972 | | ccept, bw = | 38.5714 | |
| - · · · · | | | t Correlation 1 | Factor I | | |
| | • | High Volume Sampler (| μg/m³) | | 124.0 | |
| Measureing time | • | Oust Meter (μg/m³) | | | 52.0 60.0 | |
| Set Correlation F | | | | <u>l</u> | 00.0 | |
| | | npler / Dust Meter, (μ | g/m3)] | 2.4 | | |
| The Dust Monitor Factor (CF) betw | or was compare een the Dust N | o the instruction manual of with a calibrated Hig Monitor and High Voluted by HOKLAS laborated | gh Volume Sam me Sampler. | | was used to gener | ate the Correlation |
| Calibrated by: | _ | ng Shing Kwai) | _ | | t Manager (Henry | / } |

Digital Dust Indicator



Date of Calibration 1-Jun-21

Certificate of Calibration

Description:

| Manufacturer: | Sibata Scient | ific Technology LTD. | _ | Validity of Calibr | ration Record | 1-Aug-21 |
|--------------------------------------|-----------------------------------|---|-------------------------------|--------------------|--------------------|----------------------|
| Model No.: | LD-5R | | | | | |
| Serial No.: | 972780 | | | | | |
| Equipment No.: | SA-01-09 | | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensitiv | vity Adjustment | 739 CPM | |
| Tisch Calibration | n Orifice No.: | 3864 | After Sensitivi | ty Adjustment | 739 CPM | |
| | | Cal | libration of 1 h | r TSP | | |
| Calibration | | Laser Dust Monitor | | | HVS | |
| Point | M | lass Concentration (μg/1 | m3) | Mas | s concentration (µ | \lg/m^3) |
| 1 | | X-axis | | | Y-axis | |
| 1 | | 59.0 | | | 146.0 | |
| 3 | | 54.0 49.0 | | | 139.0 130.0 | |
| Average | | 54.0 | | | 138.3 | |
| Slope , mw = Correlation co | 1.60 pefficient* = | 0.9974 | | ept, bw = | 51.9333 | |
| | | Set | t Correlation F | actor | | |
| | | High Volume Sampler (| $(\mu g/m^3)$ | | 138.3 | |
| | • | Oust Meter (μg/m ³) | | | 54.0 | |
| Measureing time | · · | | | | 60.0 | |
| Set Correlation F SCF = [K=Higl | | npler / Dust Meter, (με | g/m3)] | 2.6 | | |
| The Dust Monitor Factor (CF) betw | or was compare veen the Dust I | to the instruction manual of with a calibrated Hig Monitor and High Volumeted by HOKLAS laborated | gh Volume Samp me Sampler. | | was used to gener | rate the Correlation |
| Calibrated by: | | ng Shing Kwai) | - | Approved by: | leng (Menry | y Leung) |



Certificate of Calibration

| Description: | Digital Dust Indicator | | Date | of Calibration | 2-Aug-21 |
|--------------------------------------|---|---|--------------------|-------------------------------------|---------------------|
| Manufacturer: | Sibata Scientific Technology LTD. | <u>-</u> | Validity of Calibr | ation Record | 2-Oct-21 |
| Model No.: | LD-5R | | | | |
| Serial No.: | 972779 | | | | |
| Equipment No.: | SA-01-08 | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: <u>A-01-03</u> | Before Sensiti | vity Adjustment | 744 CPM | |
| Tisch Calibration | n Orifice No.: 3864 | After Sensitivi | ty Adjustment | 744 CPM | |
| | Cal | libration of 1 h | r TSP | | |
| Calibration | Laser Dust Monitor | | | HVS | |
| Point | Mass Concentration (μg/n X-axis | m3) | Mas | s concentration (μ Y-axis | g/m ³) |
| 1 | 60.0 | | | 131.0 | |
| 2 | 55.0 | | | 125.0 | |
| 3 | 48.0 | | | 116.0 | |
| Average | 54.3 | | | 124.0 | |
| Slope , mw = Correlation co | 1.2523 pefficient* = 0.9998 | | cept, bw = | 55.9587 | |
| | Sec | t Correlation F | actor | | |
| | centration by High Volume Sampler (| $(\mu g/m^3)$ | | 124.0 | |
| | centration by Dust Meter (µg/m³) | | | 54.3 | |
| Measureing time | | | | 60.0 | |
| Set Correlation F SCF = [K=HigI | ractor , SCF h Volume Sampler / Dust Meter, (με | g/m3)] | 2.3 | | |
| The Dust Monitor Factor (CF) betw | in according to the instruction manual or was compared with a calibrated Hig ween the Dust Monitor and High Volumers are weighted by HOKLAS labor | gh Volume Sam _l me Sampler. | | was used to gener | ate the Correlation |
| Calibrated by: | m | | Approved by: | \-Pa | - (X)27 |



Certificate of Calibration

| Description: | Digital Dust Indicator | | Date | of Calibration | 1-Jun-21 |
|--------------------------------------|---|--|-------------------|--|---------------------|
| Manufacturer: | Sibata Scientific Technology LTD. | _ | Validity of Calib | ration Record | 1-Aug-21 |
| Model No.: | LD-5R | | | | |
| Serial No.: | 972779 | | | | |
| Equipment No.: | SA-01-08 | Sensitivity | 0.001 mg/m3 | _ | |
| High Volume Sa | mpler No.: <u>A-01-03</u> | Before Sensiti | vity Adjustment | 744 CPM | |
| Tisch Calibration | n Orifice No.: 3864 | After Sensitivi | ty Adjustment | 744 CPM | |
| | Ca | libration of 1 h | r TSP | | |
| Calibration | Laser Dust Monitor | r | | HVS | |
| Point | Mass Concentration (μg/ X-axis | /m3) | Mas | ss concentration (µ ₂ Y-axis | g/m^3) |
| 1 | 63.0 | | | 146.0 | |
| 2 | 58.0 | | | 139.0 | |
| 3 | 51.0 | | | 130.0 | |
| Average | 57.3 | | | 138.3 | |
| Slope , mw = Correlation co | 1.3303 pefficient* = 0.9997 | | cept, bw = | 62.0642 | |
| | Se | t Correlation F | actor | | |
| Particaulate Con | centration by High Volume Sampler | $(\mu g/m^3)$ | | 138.3 | |
| Particaulate Con | centration by Dust Meter (µg/m³) | | | 57.3 | |
| Measureing time | e, (min) | | | 60.0 | |
| Set Correlation I | | | | | |
| SCF = [K=Higl | h Volume Sampler / Dust Meter, (μ | g/m3)] | 2.4 | | |
| The Dust Monitor Factor (CF) betw | in according to the instruction manual or was compared with a calibrated Hig ween the Dust Monitor and High Volu pers are weighted by HOKLAS labor | gh Volume Sam _l ime Sampler. | | was used to genera | ate the Correlation |
| Calibrated by: | al Officer (Wong Shing Kwai) | _ | | Leny (Mo | 1 |

Digital Dust Indicator



Date of Calibration 2-Aug-21

Certificate of Calibration

Description:

| Manufacturer: | Sibata Scient | ific Technology LTD. | _ | Validity of Calibr | ation Record | 2-Oct-21 |
|--|---|---------------------------------|-----------------|--------------------|---------------------|----------|
| Model No.: | LD-5R | | | | | |
| Serial No.: | 972778 | | | | | |
| Equipment No.: | SA-01-07 | | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensitiv | vity Adjustment | 735 CPM | |
| Tisch Calibration | n Orifice No.: | 3864 | After Sensitivi | ty Adjustment | 735 CPM | |
| | Calibration of 1 hr TSP | | | | | |
| Calibration | | Laser Dust Monitor | | | HVS | |
| Point | N. | Iass Concentration (μg/1 | m3) | Mas | ss concentration (µ | ıg/m³) |
| 1 | | X-axis | | | Y-axis | |
| 2 | | 61.0 56.0 | | | 131.0 125.0 | |
| 3 | | 48.0 | | | 116.0 | |
| Average | | 55.0 | | | 124.0 | |
| By Linear Regr Slope , mw = Correlation co | 1.15 | | Interc | ept, bw = | 60.6860 | |
| | | Set | t Correlation F | actor | | |
| Particaulate Con | centration by I | High Volume Sampler (| $\mu g/m^3$) | | 124.0 | |
| Particaulate Con | centration by I | Oust Meter (μg/m ³) | | 55.0 | | |
| Measureing time | | | | | 60.0 | |
| | Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] 2.3 | | | | | |
| The Dust Monitor Factor (CF) betw | n-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: Technica | | ng Shing Kwai) | - | | t Manager (Henry | , (|

Digital Dust Indicator



1-Jun-21

Date of Calibration

Certificate of Calibration

Description:

| • | | | | | | |
|--------------------------------------|--|--|--------------------------------|--------------------|---------------------------|---------------------|
| Manufacturer: | Sibata Scient | ific Technology LTD. | <u>-</u> | Validity of Calibr | ation Record | 1-Aug-21 |
| Model No.: | LD-5R | | | | | |
| Serial No.: | 972778 | | | | | |
| Equipment No.: | SA-01-07 | | Sensitivity _ | 0.001 mg/m3 | i | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensitivi | ity Adjustment | 735 CPM | |
| Tisch Calibration | n Orifice No.: | 3864 | After Sensitivity | Adjustment | 735 CPM | |
| | | Cal | libration of 1 hr | TSP | | |
| Calibration | | Laser Dust Monitor | | | HVS | |
| Point | Mass Concentration (μg/m3) X-axis | | | Mas | s concentration (µ Y-axis | ug/m ³) |
| 1 | | 62.0 | | | 146.0 | |
| 2 | | 57.0 | | | 139.0 | |
| 3 | | 49.0 | | | 130.0 | |
| Average | | 56.0 | | | 138.3 | |
| Slope , mw = Correlation co | 1.22 pefficient* = | 0.9982 | | pt, bw = | 69.9612 | |
| | | Se | t Correlation Fa | ctor | | |
| | | High Volume Sampler (| $(\mu g/m^3)$ | | 138.3 | |
| | • | Dust Meter (μg/m ³) | | | 56.0 | |
| Measureing time | | | | | 60.0 | |
| Set Correlation I SCF = [K=Higl | | npler / Dust Meter, (μ | g/m3)] | 2.5 | | |
| The Dust Monitor Factor (CF) betw | or was compare ween the Dust I | o the instruction manual of with a calibrated Hig Monitor and High Voluted by HOKLAS laborated | gh Volume Sampl me Sampler. | | was used to gener | ate the Correlation |
| Calibrated by: | | ng Shing Kwai) | - | Approved by: | t Manager (Henry | Leung) |

Digital Dust Indicator



Date of Calibration 2-Aug-21

Certificate of Calibration

Description:

| Manufacturer: | Sibata Scienti | fic Technology LTD. | _ | Validity of Calibra | ntion Record | 2-Oct-21 |
|--|---|---|-------------------------------|---------------------|-------------------------------------|---------------------|
| Model No.: | LD-5R | | | | | |
| Serial No.: | 8Y2373 | | | | | |
| Equipment No.: | SA-01-05 | | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensitiv | vity Adjustment | 657 | |
| Tisch Calibration | n Orifice No.: | 3864 | After Sensitivi | ty Adjustment | 657 | |
| | | Cal | libration of 1 h | r TSP | | |
| Calibration | | Laser Dust Monitor | | | HVS | |
| Point | М | ass Concentration (μg/1 X-axis | m3) | Mass | s concentration (µ Y-axis | .g/m ³) |
| 1 | | 57.0 | | | 131.0 | |
| 2 | | 51.0 | | | 125.0 | |
| 3 | | 45.0 | | | 116.0 | |
| Average | | 51.0 | | | 124.0 | |
| By Linear Regr Slope , mw = Correlation co | 1.250 | | Interd | eept, bw = | 60.2500 | |
| | | Set | Correlation F | actor | | |
| Particaulate Con | centration by I | High Volume Sampler (| $\mu g/m^3$) | | 124.0 | |
| Particaulate Con | centration by I | Oust Meter (μg/m ³) | | 51.0 | | |
| Measureing time | e, (min) | | | 60.0 | | |
| Set Correlation I SCF = [K=Higl | | npler / Dust Meter, (με | g/m3)] | 2.4 | | |
| The Dust Monitor Factor (CF) betw | or was compare yeen the Dust N pers are weigh | o the instruction manual of with a calibrated High Monitor and High Volunted by HOKLAS labo | gh Volume Samp me Sampler. | | , | ate the Correlation |
| | | ng Shing Kwai) | _ | _ | Manager (Henry | |

Digital Dust Indicator



1-Jun-21

Date of Calibration

Certificate of Calibration

Description:

| Manufacturer: | Sibata Scientific Technology LTD. | | Validity of Calibr | ation Record | 1-Aug-21 |
|--------------------------------------|--|----------------------------------|--|-------------------|---------------------|
| Model No.: | LD-5R | | | | |
| Serial No.: | 8Y2373 | | | | |
| Equipment No.: | SA-01-05 | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | ampler No.: <u>A-01-03</u> | Before Sensitivit | y Adjustment | 657 | |
| Tisch Calibratio | n Orifice No.: 3864 | After Sensitivity | Adjustment | 657 | |
| | Ca | libration of 1 hr | ΓSP | | |
| Calibration | Laser Dust Monitor | r | | HVS | |
| Point | Mass Concentration (μg/ X-axis | /m3) | Mass concentration (μg/m³) Y-axis | | |
| 1 | 59.0 | | | 146.0 | |
| 2 | 53.0 | | | 139.0 | |
| 3 | 47.0 | | | 130.0 | |
| Average | 53.0 | | | 138.3 | |
| Slope, mw = Correlation co | 1.3333 pefficient* = 0.9974 | Intercep |)t, bw = | 67.6667 | |
| | Se | et Correlation Fac | tor | | |
| Particaulate Con | ncentration by High Volume Sampler | $(\mu g/m^3)$ | | 138.3 | |
| Particaulate Cor | ncentration by Dust Meter (µg/m³) | | | 53.0 | |
| Measureing time | e, (min) | | | 60.0 | |
| Set Correlation | | | | | |
| SCF = [K=Hig | h Volume Sampler / Dust Meter, (μ | g/m3)] | 2.6 | | |
| The Dust Monitor Factor (CF) betw | I in according to the instruction manual or was compared with a calibrated Higween the Dust Monitor and High Volupers are weighted by HOKLAS laborated | gh Volume Sample ıme Sampler. | | was used to gener | ate the Correlation |
| | : | _ | | leng M | |
| Lechnic | al Officer (Wong Shing Kwai) | | Project | t Manager (Henry | (Leimo) |

Digital Dust Indicator



2-Aug-21

Date of Calibration

Certificate of Calibration

Description:

| * | | | |
|--------------------------------------|---|--|---------------------------------------|
| Manufacturer: | Sibata Scientific Technology LTD. | Validity of Calibr | ration Record 2-Oct-21 |
| Model No.: | LD-5R | | |
| Serial No.: | 8Y2374 | | |
| Equipment No.: | SA-01-04 | Sensitivity 0.001 mg/m3 | |
| High Volume Sa | ampler No.: <u>A-01-03</u> | Before Sensitivity Adjustment | 652 |
| Tisch Calibration | n Orifice No.: 3864 | After Sensitivity Adjustment | 652 |
| | Ca | libration of 1 hr TSP | |
| Calibration | Laser Dust Monitor | r | HVS |
| Point | Mass Concentration (μg/ | /m3) Mas | ss concentration (μg/m ³) |
| | X-axis | | Y-axis |
| 1 | 67.0 | | 131.0 |
| 2 | 61.0 | | 125.0 |
| 3 | 53.0 | | 116.0 |
| Average | 60.3 | | 124.0 |
| Slope , mw = Correlation co | | | 59.1824 |
| Dantiagulata Com | Se acentration by High Volume Sampler | t Correlation Factor | 124.0 |
| | acentration by Dust Meter (µg/m³) | (μg/m) | 124.0 60.3 |
| Measureing time | | | 60.0 |
| Set Correlation I | · · · · · · · · · · · · · · · · · · · | | 00.0 |
| | h Volume Sampler / Dust Meter, (μ | g/m3)] 2.1 | |
| The Dust Monitor Factor (CF) betw | I in according to the instruction manusor was compared with a calibrated Higween the Dust Monitor and High Volumers are weighted by HOKLAS laborations. | gh Volume Sampler and The result ime Sampler. | was used to generate the Correlation |
| Calibrated by: | al Officer (Wong Shing Kwai) | Approved by: | t Manager (Henry Leung) |

Digital Dust Indicator



Date of Calibration 1-Jun-21

Certificate of Calibration

Description:

| Manufacturer: | Sibata Scient | ific Technology LTD. | _ | Validity of Calibr | ation Record | 1-Aug-21 |
|--|--|---------------------------------|------------------|--------------------|--------------------|--|
| Model No.: | LD-5R | | | | | |
| Serial No.: | 8Y2374 | | | | | |
| Equipment No.: | SA-01-04 | | Sensitivity | 0.001 mg/m3 | | |
| High Volume Sa | mpler No.: | A-01-03 | Before Sensitiv | vity Adjustment | 652 | |
| Tisch Calibration | n Orifice No.: | 3864 | After Sensitivi | ty Adjustment | 652 | |
| | | Cal | libration of 1 h | r TSP | | |
| C-1:1 | | Laser Dust Monitor | | | HVS | |
| Calibration Point | N | Iass Concentration (μg/1 | m3) | Mas | s concentration (µ | ug/m ³) |
| | | X-axis | | | Y-axis | |
| 1 | | 68.0 | | | 146.0 | |
| 2 | | 62.0 | | | 139.0 | |
| 3 | | 54.0 | | | 130.0 | |
| Average | | 61.3 | | | 138.3 | |
| By Linear Regr Slope , mw = Correlation co | 1.14 | | Interc | ept, bw = | 68.2973 | <u>. </u> |
| | | Set | t Correlation F | actor | | |
| Particaulate Con- | centration by l | High Volume Sampler (| $\mu g/m^3$) | | 138.3 | |
| Particaulate Con- | centration by I | Oust Meter (μg/m ³) | | 61.3 | | |
| Measureing time | , (min) | | | | 60.0 | |
| Set Correlation F SCF = [K=Higl | • | npler / Dust Meter, (με | g/m3)] | 2.3 | | |
| The Dust Monitor Factor (CF) betw | 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: Technica | al Officer (Wo | ng Shing Kwai) | - | Approved by: | t Manager (Henry | y Leung) |



Equipment no.: N-13-03

Calibration Certificate

0025248

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code: SVEC09005

Date of calibration:

Date of the recommended re-calibration:

05/11/2020 05/11/2021

Object 1:

ST-120 sound calibrator

Serial No. /Ref. No. : 181001637

Object 2:

Serial No. /Ref. No. :

Manufacturer: Soundtek

Certificate No.: Handle by:

0025248 E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB | 93.8dB | -0.2dB | +/- 0.3dB | 1 |
| 114.0dB | 113.6dB | -0.4dB | +/- 0.5dB | 1 |

Measuring equipment

| index | | Calibrator / Master | Traceability |
|-------|---|-------------------------------------|--------------|
| | 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 |
| | 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s) within

the allowable deviation.

Performed by

Calibration Technician

Appleone Calibration Laboratory Ltd.

Mr. K.L. Ng

Approved by

Quality Manager

Tel: +852 2370 4437 Fax: +852 2114 0393 Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR



Equipment no.: N-13-02

Calibration Certificate

0025249

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code: SVEC09005

Date of calibration:

Date of the recommended re-calibration:

Object 1:

ST-120 sound calibrator

Serial No. /Ref. No. :

Object 2:

Serial No. /Ref. No.

Manufacturer:

Soundtek

Certificate No.:

Handle by:

0025249 E0002

181001636

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB | 93.7dB | -0.3dB | +/- 0.3dB | 1 |
| 114.0dB | 113.6dB | -0.4dB | +/- 0.5dB | 1 |

05/11/2020

05/11/2021

Measuring equipment

| index | | Calibrator / Master | Traceability |
|-------|---|-------------------------------------|--------------|
| | 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 |
| | 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source ..

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s) within

the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Quality Manager

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR

Tel: +852 2370 4437 Fax: +852 2114 0393



Equipment no.: N-13-01

Calibration Certificate

0025247

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code:

Date of calibration:

SVEC09005

V EC09005

Date of the recommended re-calibration:

Object 1:

ST-120 sound calibrator

Serial No. /Ref. No.: 181001608

Object 2 :

Serial No. /Ref. No. :

Manufacturer :

Soundtek

Certificate No.:

0025247

Handle by:

E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB | 93.7dB | -0.3dB | +/- 0.3dB | 1 |
| 114.0dB | 113.6dB | -0.4dB | +/- 0.5dB | 1 |

05/11/2020

05/11/2021

Measuring equipment

| index | Calibrator / Master | Traceability | |
|-------|-------------------------------------|--------------|--|
| 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 | |
| 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 | |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)

within

the allowable deviation.

Performed by

Mr. K.L. Ng

Approved by

Quality Manager

Calibration Technician



Equipment no.: N-12-03

Calibration Certificate

0024996

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code: SVEC09005

Date of calibration:

Date of the recommended re-calibration:

Object 1:

BSWA 308 SLM

Serial No. /Ref. No. : 570188 / 550850

Object 2:

Serial No. /Ref. No. :

Manufacturer: **BSWAtech**

Certificate No.:

0024996

Handle by:

E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|---------------------|------------------|-----------|-------------------|--------|
| 94.0dB | 92.9dB | -1.1dB | +/- 1.5dB | 1 |
| 114.0dB | 112.8dB | -1.2dB | +/- 1.5dB | 1 |

07/10/2020

07/10/2021

Measuring equipment

| index | Calibrator / Master | Traceability |
|-------|-------------------------------------|--------------|
| 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 |
| 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measu | ıred | val | اعيرا | (e) |
|-------|------|-----|-------|-----|

(s) within

the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR

Tel: +852 2370 4437 Fax: +852 2114 0393



Equipment no.: N-12-02

Calibration Certificate

0024995

Customer :: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Object 1: Serial No. /Ref. No. :

BSWA 308 SLM 570187 / 550841

Object 2:

Serial No. /Ref. No.

Hong Kong

SVEC09005

Manufacturer:

BSWAtech

Customer Code Date of calibration:

07/10/2020

Certificate No.:

0024995

Date of the recommended re-calibration:

07/10/2021

Handle by:

E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB | 93.1dB | -0.9dB | +/- 1.5dB | 1 |
| 114.0dB | 113.1dB | -0.9dB | +/- 1.5dB | 1 |

Measuring equipment

| index | Calibrator / Master | Traceability |
|-------|-------------------------------------|--------------|
| 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 |
| 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)

the allowable deviation.

Performed by

Mr. K.L. Ng

Approved by

Mr. K.S. Na

Calibration Technician

Quality Manager



Equipment no.: N-12-01

Calibration Certificate

0024993

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code:

SVEC09005

Date of calibration:

Date of the recommended re-calibration:

Object 1:

BSWA 308 SLM

Serial No. /Ref. No. :

570183 / 550233

Object 2:

Serial No. /Ref. No. :

Manufacturer:

BSWAtech

Certificate No.:

Handle by:

0024993 E0002

Measuring results

| Reference | value | Indication value | Deviation | Allowed deviation | Object |
|-----------|-------|------------------|-----------|-------------------|--------|
| 94.0 | dB | 93.4dB | -0.6dB | +/- 1.5dB | 1 |
| 114.0 |)dB | 113.2dB | -0.8dB | +/- 1.5dB | 1 |

07/10/2020

07/10/2021

Measuring equipment

| index | Calibrator / Master | Traceability |
|-------|-------------------------------------|--------------|
| 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672 |
| 2 | Sound Calibrator, SV30A sn:32580 | IEC60942 |

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)

within

the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Mr. K.S. N

Quality Manager

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR

Tel: +852 2370 4437 Fax: +852 2114 0393



File No. MA16034/54/0031

| Project No. | AM4(A) - Cha I | Kwo Ling Public | Cargo Working A | rea Administra | tive Office | | |
|---|-------------------|-------------------|--|-------------------------------|----------------------------------|------------------------------|--------------------------------|
| Date: | 10-A | ug-21 | Next Due Date: | 10-Oct-21 | | Operator: | SK |
| Equipment No.: | A-0 | 1-54 | Model No.: | TE | TE-5170 | | 1536 |
| | | | | | | | |
| | | | Ambient C | ondition | | | |
| Temperatu | re, Ta (K) | 302 | Pressure, Pa | (mmHg) | | 754.3 | |
| | | | | | | | |
| | | | ifice Transfer Star | | | | |
| Serial | 1 | 3864 | Slope, mc | 0.05846 | Intercept | | -0.00313 |
| Last Calibra | 1 | 11-Jan-21 | | | $c = [\Delta H \times (Pa/760)]$ | | |
| Next Calibra | ation Date: | 11-Jan-22 | (| $2std = \{ \Delta H x \}$ | (Pa/760) x (298/7 | [a)] ^{1/2} -bc} / n | <u>1C</u> |
| | | | Calibration of T | CCD Commission | | | |
| | | 0- | Calibration of Trice | isr sampier | | HVS | |
| Calibration Point | ΔH (orifice), | | 50) x (298/Ta)] ^{1/2} | Qstd (CFM) | ΔW (HVS), in. | [ΔW x (Pa/7 | 60) x (298/Ta)] ^{1/2} |
| | in. of water | | | X - axis | of water | | Y-axis |
| 1 | 13.4 | 1 | 3.62 | 62.02 | 9.4 | | 3.03 |
| 2 | 10.8 | | 3.25 | 55.69 | 7.2 | | 2.66 |
| 3 | 7.6 | | 2.73 | 46.72 | 5.1 | | 2.23 |
| 5 | 5.6 3.0 | | 2.34 1.71 | 40.11 29.37 | 3.6 1.9 | | 1.88 |
| Slope, mw = Correlation | | 0. | .9994 calibrate. | - | -0.142 | 4 | |
| C 4 TOD E | | | Set Point Ca | llculation | | | |
| | eld Calibration C | , | | | | | |
| From the Regres | sion Equation, th | ie "Y" value acco | ording to | | | | |
| | | mw x Q | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29 | 98/Ta)] ^{1/2} | | |
| Therefore, Se | et Point; W = (m | w x Qstd + bw) | ² x (760 / Pa) x (7 | Γa / 298) = | 4.25 | | |
| Remarks: | | | | | | | |
| Conducted by: | Wong Sh | ing Kwai | Signature: | K | <u></u> | Date: | 10-Aug-21 |
| Checked by: Henry Leung Signature: Lemy May Date: 10-Aug-21 | | | | | | | |



File No. MA16034/03/0031

| Project No. | AM3 - Yau Lai | Estate, Bik Lai I | House | | | | |
|--|----------------------------|-------------------|--|--------------------------------|----------------------------------|------------------------------|---|
| Date: | 10-Aug-21 | | Next Due Date: | 10-Oct-21 | | Operator: | SK |
| Equipment No.: | A-0 | 1-03 | Model No.: | GS | S2310 | Serial No. | 10379 |
| | | | Ambient C | ondition | | | |
| Temperatur | re Ta (K) | 302 | Pressure, Pa | | | 754.3 | |
| T T T T T T T T T T T T T T T T T T T | 10, 10 (11) | 502 | 11000010,10 | () | | 70 110 | |
| | | Or | ifice Transfer Star | ndard Informa | ation | | |
| Serial | No. | 3864 | Slope, mc | 0.05846 | Intercept | t, bc | -0.00313 |
| Last Calibra | ntion Date: | 11-Jan-21 | r | nc x Qstd + bo | $c = [\Delta H \times (Pa/760)]$ |) x (298/Ta)] ^{1/} | 2 |
| Next Calibra | ation Date: | 11-Jan-22 | (| $Qstd = \{ [\Delta H \ x] \}$ | (Pa/760) x (298/7 | Γa)] ^{1/2} -bc} / m | c |
| | * | • | • | | | | |
| | | | Calibration of T | ΓSP Sampler | | | |
| Calibration | | Or | fice | _ | | HVS | |
| Point | ΔH (orifice), in. of water | [ΔH x (Pa/76 | (0) x (298/Ta)] ^{1/2} | Qstd (CFM) X - axis | ΔW (HVS), in. of water | | 60) x (298/Ta)] ^{1/2} -axis |
| 1 | 13.2 | | 3.60 | 61.56 | 9.0 | | 2.97 |
| 2 | 10.2 | | 3.16 | 54.12 | 6.8 | | 2.58 |
| 3 | 8.0 | | 2.80 | 47.93 | 5.4 | | 2.30 |
| 4 | 5.4 | | 2.30 | 39.39 | 3.5 | | 1.85 |
| 5 | 2.9 | | 1.69 | 28.88 | 2.0 | 1.39 | |
| By Linear Regr Slope, mw = Correlation of *If Correlation C | 0.0484 coefficient* = | 0 | .9994 | | -0.025 | 51 | |
| From the TSP Fi | eld Calibration (| Curve, take Qstd | | il culturon | | | |
| From the Regres | | | | | | | |
| rom the regres | Sion Equation, a | | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29 | 98/Ta)] ^{1/2} | | |
| Therefore, Se | et Point; W = (m | nw x Qstd + bw) | ² x (760 / Pa) x (7 | Γα / 298) = | 4.31 | | |
| Remarks: | | | | | | | |
| Conducted by: | Wong Sh | ning Kwai | Signature: | K | <u></u> | Date: | 10-Aug-21 |
| Checked by: | Henry | Leung | Signature: | - -lem | y day_ | Date: | 10-Aug-21 |



File No. MA16034/08/0031

| Project No. | AM2 - Sai Tso Wan Recreation Ground | | | | | | |
|-------------------|-------------------------------------|---------------------------|---|------------------------|----------------------------------|-----------|--|
| Date: | 10-Aug-21 | | Next Due Date: | 10- | Oct-21 | Operator: | SK |
| Equipment No.: | A-(| A-01-08 Model No.: GS2310 | | S2310 | Serial No. | 1287 | |
| | | | | | | _ | |
| | T | | Ambient C | Condition | | | |
| Temperatur | re, Ta (K) | 302 | Pressure, Pa | (mmHg) | | 754.3 | |
| | | O | Gas Tuansfor C4s | ndoud Inform | -4: ou | | |
| Serial | No | 3864 | Slope, mc | 0.05846 | Intercept | t he | -0.00313 |
| Last Calibra | | 11-Jan-21 | | • | $c = [\Delta H \times (Pa/760]]$ | | |
| Next Calibra | | 11-Jan-22 | | | (Pa/760) x (298/7 | | |
| | | | | - (1 | | | |
| | | | Calibration of | TSP Sampler | | | |
| Calibration | | Or | fice | | | HVS | |
| Point | ΔH (orifice), in. of water | [ΔH x (Pa/76 | 0) x (298/Ta)] ^{1/2} | Qstd (CFM) X - axis | ΔW (HVS), in. of water | | 60) x (298/Ta)] ^{1/2} Y-axis |
| 1 | 13.4 | | 3.62 | 62.02 | 9.0 | | 2.97 |
| 2 | 10.2 | | 3.16 | 54.12 | 6.4 | 2.50 | |
| 3 | 7.9 | 2 | 2.78 | 47.63 | 4.9 | | 2.19 |
| 4 | 5.1 | 2 | 2.23 | 38.28 | 3.3 | | 1.80 |
| 5 | 3.0 | | 1.71 | 29.37 | 2.0 | | 1.40 |
| | 0.0472 coefficient* = | 0. | 9976 | Intercept, bw = - | -0.014 | 17 | |
| *If Correlation C | Coefficient < 0.9 | 90, check and red | calibrate. | | | | |
| | | | Set Point C | alculation | | | |
| From the TSP Fi | eld Calibration | Curve, take Qstd | = 43 CFM | | | | |
| From the Regress | sion Equation, t | he "Y" value acco | ording to | | | | |
| | | mw v O | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W}]$ | y (Pa/760) y (29 | 98/Ta)1 ^{1/2} | | |
| | | mw x Q | | (1 a/ 700) X (2) | 70/1 <i>a)</i> j | | |
| Therefore, Se | et Point; W = (n | nw x Qstd + bw) | ² x (760 / Pa) x (| Ta / 298) = | 4.15 | | |
| | | | | | | | _ |
| | | | | | | | |
| Remarks: | | | | | | | |
| • | | | | | | | |
| | | | | | | | |
| | | | | , | 1 | | |
| Conducted by: | Wong Sl | ning Kwai | Signature: | X | 7 | Date: | 10-Aug-21 |
| conducted by. | THOIR BI | 5 12 17 1111 | Digitature. | | | . Date | 10 /1ug-21 |
| Checked by: | Henry | Leung | Signature: | - lem | y day | Date: | 10-Aug-21 |



File No. MA16034/05/0031

| Project No. | AM1 - Tin Hau | Temple | | | | | |
|---------------------------|----------------------------|------------------------|--|------------------------|--|--|--|
| Date: | 10-A | 10-Aug-21 | | Date: 10-Oct-21 | | Operator: | SK |
| Equipment No.: | A-0 | 1-05 | Model No.: | GS | GS2310 | | 10599 |
| | | | • | | | · <u>-</u> | |
| | Ī | | Ambient C | ondition | | | |
| Temperatu | re, Ta (K) | 302 | Pressure, Pa | (mmHg) | | 754.3 | |
| | | _ | | | _ | | |
| 0 : 1 | N | | fice Transfer Star | | | 1 | 0.00212 |
| Serial | | 3864 | Slope, mc | 0.05846 | Intercept $c = [\Delta H \times (Pa/760)]$ | | -0.00313 |
| Last Calibra Next Calibra | | 11-Jan-21 11-Jan-22 | | | $(Pa/760) \times (298/7)$ | | |
| INEXT Callula | ation Date. | 11-Jan-22 | ` | ZStu ([ZII X | (1 a/ 700) X (270/) | [a) ₁ -bc ₃ / II | |
| | | • | Calibration of T | ΓSP Sampler | | | |
| Calibration | | Or | fice | • | | HVS | |
| Point | ΔH (orifice), in. of water | [ΔH x (Pa/76 | (0) x (298/Ta)] ^{1/2} | Qstd (CFM) X - axis | ΔW (HVS), in. of water | | 60) x (298/Ta)] ^{1/2} V-axis |
| 1 | 13.2 | | 3.60 | 61.56 | 9.6 | | 3.07 |
| 2 | 9.6 | | 3.07 | 52.50 | 7.4 | | 2.69 |
| 3 | 7.4 | | 2.69 | 46.10 | 5.4 | | 2.30 |
| 4 | 5.2 | | 2.26 | 38.66 | 3.4 | 1.82 | |
| 5 | 3.0 | | 1.71 | 29.37 | 2.0 | 1.40 | |
| Slope, mw = Correlation | | 0. | 9971 calibrate. | - | -0.185 | | |
| | | | Set Point Ca | lculation | | | |
| | eld Calibration C | , | | | | | |
| From the Regres | sion Equation, th | ie "Y" value acc | ording to | | | | |
| | | mw x Q | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29 | 98/Ta)] ^{1/2} | | |
| Therefore, Se | et Point; W = (m | w x Qstd + bw) | ² x (760 / Pa) x (7 | Γa / 298) = | 4.57 | | |
| Remarks: | | | | | | | |
| Conducted by: | Wong Sh | ing Kwai | Signature: | K | <u> </u> | Date: | 10-Aug-21 |
| Checked by: | Henry | Leung | Signature: | - lem | Jan _ | Date: | 10-Aug-21 |



File No. MA16034/54/0030

| Project No. | AM4(A) - Cha | Kwo Ling Public | Cargo Working A | rea Administra | tive Office | <u>-</u> | |
|-------------------|-------------------|----------------------------|---|-----------------------------|------------------------|----------------------------|----------------------------------|
| Date: | 10-Jun-21 | | Next Due Date: | 10-Aug-21 | | Operator: | SK |
| Equipment No.: | A-0 | A-01-54 Model No.: TE-5170 | | E-5170 | Serial No. | 1536 | |
| | | | | | | | |
| | T. (II) | 201.0 | Ambient C | | Ι | | |
| Temperatur | re, Ta (K) | 301.8 | Pressure, Pa | (mmHg) | | 754 | |
| | | Or | ifice Transfer Star | ndard Inform | ation | | |
| Serial | No. | 3864 | | | | | -0.00313 |
| Last Calibra | tion Date: | 11-Jan-21 | mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | | |
| Next Calibra | ntion Date: | 11-Jan-22 | | $Qstd = \{ [\Delta H \ x] $ | (Pa/760) x (298/7 | Γa)] ^{1/2} -bc} / | mc |
| | | | | | | | |
| 1 | | | Calibration of | TSP Sampler | l | | |
| Calibration | ΔH (orifice), | | fice | Qstd (CFM) | AW (IIVO) : | HVS | /760) x (298/Ta)] ^{1/2} |
| Point | in. of water | [ΔH x (Pa/76 | [ΔH x (Pa/760) x (298/Ta)] ^{1/2} | | ΔW (HVS), in. of water | [ΔW X (Pa | Y-axis |
| 1 | 13.2 | | 3.60 | 61.56 | 9.0 | | 2.97 |
| 2 | 9.9 | | 3.11 | 53.32 | 6.4 | | 2.50 |
| 3 | 7.5 | | 2.71 | 46.42 | 5.0 | | 2.21 |
| 4 | 5.4 | | 2.30 | 39.40 | 3.3 | | 1.80 |
| 5 | 3.0 | | 1.71 | 29.38 | 1.9 | | 1.36 |
| By Linear Regr | ession of Y on | X | | | | | |
| Slope , mw = | | |] | Intercept, bw | -0.127 | 7 | |
| Correlation of | coefficient* = | | .9986 | _ | | | |
| *If Correlation C | Coefficient < 0.9 | 990, check and re | calibrate. | | | | |
| | | | Set Point Ca | alculation | | | |
| From the TSP Fig | eld Calibration | Curve, take Qstd | | | | | |
| From the Regress | sion Equation, t | he "Y" value acc | ording to | | | | |
| | | _ | | ~ (= co) (= | no (m. v.1/2 | | |
| | | mw x (| $Qstd + bw = [\Delta W x]$ | (Pa/760) x (29 | 98/Ta)]** | | |
| Therefore, Se | t Point; W = (r | mw x Qstd + bw) | ² x (760 / Pa) x (⁷ | Ta / 298) = | 4.16 | | |
| | | | | | | | |
| | | | | | | | |
| Remarks: | | | | | | | |
| | | | | | | | |
| - | | | [n] | | | | |
| Conducted by: | SK Wong | Signature: | | <u>.</u> | | Date: | 10 June 2021 |
| Checked by: | Henry Leung | Signature: | -lemy (| Xoz | _ | Date: | 10 June 2021 |



File No. MA16034/03/0030

| Project No. | AM3 - Yau La | i Estate, Bik Lai I | House | | | | |
|------------------------------------|----------------------------|----------------------|--|---------------------------|------------------------------|-----------|--|
| Date: | 10-Jun-21 | | Next Due Date: | 10-Aug-21 | | Operator: | SK |
| Equipment No.: | oment No.: A-01 | | 1-03 Model No.: | | GS2310 | | 10379 |
| | | | | | | | |
| | | | Ambient C | ondition | T | | |
| Temperatur | re, Ta (K) | 301.8 | Pressure, Pa | (mmHg) | | 754 | |
| | | 0.1 | e a | 1 17 6 | | | |
| Samial | No | 3864 | fice Transfer Star | | Intercept | ha | 0.00212 |
| Serial No. Last Calibration Date: | | 11-Jan-21 | Slope, mc | 0.05846 nc x Qstd + bo | -0.00313 1 ^{1/2} | | |
| Next Calibra | | 11-Jan-22 | | | $(Pa/760) \times (298/7)$ | | |
| TVCAL Calloid | ition Bate. | | | Q560 ([LII A | (1 th 700) K (250) | (a) (b) | |
| | | · | Calibration of 7 | TSP Sampler | | | |
| Calibratian | | Or | fice | | | HVS | |
| Calibration Point | ΔH (orifice), in. of water | | 50) x (298/Ta)] ^{1/2} | Qstd (CFM) X - axis | ΔW (HVS), in. of water | | 760) x (298/Ta)] ^{1/2} Y-axis |
| 1 | 12.9 | | 3.55 | 60.86 | 8.5 | | 2.89 |
| 2 | 9.7 | | 3.08 | 52.78 | 6.4 | | 2.50 |
| 3 | 7.9 | | 2.78 | 47.64 | 4.9 | | 2.19 |
| 4 | 5.1 | : | 2.24 | 38.29 | 3.2 | 1.77 | |
| 5 | 3.0 | | 1.71 | 29.38 | 2.0 | | 1.40 |
| | | | | | | | |
| By Linear Regre | | X | | | | | |
| Slope, mw = | | _ | | Intercept, bw = | -0.029 | 0 | |
| Correlation of | | | .9984 | · | | | |
| *If Correlation C | Coefficient < 0.9 | 990, check and red | calibrate. | | | | |
| | | | Set Point Ca | alculation | | | |
| From the TSP Fig | eld Calibration | Curve, take Qstd | | | | | |
| From the Regress | | | | | | | |
| | 1 | | | | 1.0 | | |
| | | mw x Q | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29 | 98/Ta)] ^{1/2} | | |
| Therefore Se | t Point: W = (r | nw x Ostd + bw) | ² x (760 / Pa) x (7 | Ta / 298) = | 4.15 | | |
| Therefore, Sc | (1 | iiw ii Qola (o ii) | N (700 / 14) N (| 14, 200) | 4.13 | | |
| | | | | | | | |
| | | | | | | | |
| Remarks: | | | | | | | |
| <u>-</u> | | | | | | | |
| | | | £2 1 | | | | |
| Conducted by: | SK Wong | Signature: | | | • | Date: | 10 June 2021 |
| Checked by: | Henry Leung | Signature: | -lem, a | Xoz | | Date: | 10 June 2021 |



File No. MA16034/08/0030

| Project No. | AM2 - Sai Tso | Wan Recreation | Ground | | | | |
|--|----------------------------|------------------|---|--------------------|------------------------|----------------|--|
| Date: | 10-Jun-21 | | Next Due Date: | 10-Aug-21 | | Operator: | SK |
| Equipment No.: | uipment No.: A-0 | | 1-08 Model No.: | | GS2310 | | 1287 |
| | | | | | | | |
| T | T. (IZ) | 201.0 | Ambient C | | T T | 754 | |
| Temperatur | re, 1a (K) | 301.8 | Pressure, Pa | (mmHg) | | 754 | |
| | | Or | ifice Transfer Star | ndard Informa | ation | | |
| Serial | No. | 3864 | | | | | -0.00313 |
| Last Calibra | tion Date: | 11-Jan-21 | mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | | |
| Next Calibration Date: $11-Jan-22 \qquad \qquad \mathbf{Qstd} = \{ [\Delta \mathbf{H} \times (\mathbf{Pa}/760) \times (\mathbf{298/Ta})]^{1/2} - \mathbf{bc} \} / \mathbf{mc}$ | | | | | | | |
| | | | | | | | |
| | | | Calibration of | FSP Sampler | | HIVO | |
| Calibration Point | ΔH (orifice), in. of water | | Orfice I x (Pa/760) x (298/Ta)] ^{1/2} | | ΔW (HVS), in. of water | HVS [ΔW x (Pa/ | /760) x (298/Ta)] ^{1/2} Y-axis |
| 1 | 13.3 | | 3.61 | 61.80 | 8.9 | | 2.95 |
| 2 | 10.1 | | 3.15 | 53.86 | 6.3 | | 2.48 |
| 3 | 7.9 | | 2.78 | 47.64 | 4.9 | | 2.19 |
| 4 | 5.1 | | 2.24 | 38.29 | 3.3 | | 1.80 |
| 5 | 3.0 | | 1.71 | 29.38 | 2.0 | | 1.40 |
| | | | | | | | |
| By Linear Regre | | X | _ | | 0.00= | 0 | |
| Slope, mw = | | _ | | Intercept, bw = | -0.007 | <u>U</u> | |
| *If Correlation C | | | .9976 | • | | | |
| ii conclation c | octificient < 0.5 | 70, eneck and re | canorate. | | | | |
| | | | Set Point Ca | alculation | | | |
| From the TSP Fig | eld Calibration | Curve, take Qstd | = 43 CFM | | | | |
| From the Regress | sion Equation, t | he "Y" value acc | ording to | | | | |
| | | mw v C | $\mathbf{0std} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) v (20 | 08/Ta)1 ^{1/2} | | |
| | | mw x Q | gstu · bw – _{[ΔW A} | (1 a/ /00) x (2) | 76/ 1 a) _] | | |
| Therefore, Se | t Point; W = (r | nw x Qstd + bw) | 2 x (760 / Pa) x (7 | Ta / 298) = | 4.14 | | |
| | | | | | | | |
| | | | | | | | |
| Remarks: | | | | | | | |
| | | | | | | | |
| - | | | f a l | | | | |
| Conducted by: | SK Wong | Signature: | <u> </u> | J' | | Date: | 10 June 2021 |
| Checked by: | Henry Leung | Signature: | -leng (| Xoy_ | | Date: | 10 June 2021 |

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0030

| Project No. | AM1 - Tin Hau | Temple | | | | | | |
|--|----------------------------|---|-----------------------------------|---------------------|----------------------------------|--------------------|--|--|
| Date: | 10-Jun-21 | | Next Due Date: | 10-2 | Aug-21 Operator | | SK | |
| Equipment No.: | A-0 | 1-05 | Model No.: | GS | 52310 | Serial No. | 10599 | |
| | | | Ambient C | ondition | | | | |
| Temperatur | re Ta (K) | 301.8 | Pressure, Pa | | | 754 | | |
| | 10, 10 (11) | 20110 | 11000010,10 | (15) | | 70. | | |
| | | Or | ifice Transfer Star | ndard Informa | ntion | | | |
| Serial | No. | 3864 | Slope, mc | 0.05846 | Intercept | rcept, bc -0.00313 | | |
| Last Calibra | ation Date: | 11-Jan-21 | r | nc x Qstd + bo | $c = [\Delta H \times (Pa/760)]$ |) x (298/Ta)] | 1/2 | |
| Next Calibra | ation Date: | 11-Jan-22 | | | (Pa/760) x (298/7 | | | |
| | | | | | | | | |
| | | | Calibration of | ΓSP Sampler | | | | |
| Calibration | | Oı | fice | | | HVS | | |
| Point | ΔH (orifice), in. of water | [ΔH x (Pa/760) x (298/Ta)] ^{1/2} | | Qstd (CFM) X - axis | ΔW (HVS), in. of water | | 760) x (298/Ta)] ^{1/2} Y-axis | |
| 1 | 12.8 | | 3.54 | 60.63 | 9.3 | | 3.02 | |
| 2 | 9.4 | | 3.03 | 51.96 | 7.0 | | 2.62 | |
| 3 | 7.5 | | 2.71 | 46.42 | 5.4 | | 2.30 | |
| 4 | 4.8 | | 2.17 | 37.15 | 3.4 | | 1.83 | |
| 5 | 2.5 | | 1.56 | 26.82 | 2.0 | 1.40 | | |
| By Linear Regr Slope, mw = Correlation (** | 0.0487 coefficient* = | 0 | .9987 | ntercept, bw = | 0.060 | 8 | | |
| | | | Set Point Ca | lculation | | | | |
| From the TSP Fi | | ne "Y" value acc | = 43 CFM | | 98/Ta)] ^{1/2} | | | |
| Therefore, Se | et Point; W = (m | nw x Qstd + bw) | ² x (760 / Pa) x (7 | Ta / 298) = | 4.74 | | | |
| Remarks: | | | | | | | | |
| Conducted by: | SK Wong | Signature: | | | | Date: | 10 June 2021 | |
| Checked by: | Henry Leung | Signature: | - lemy (| Xon | | Date: | 10 June 2021 | |