

**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-Feb-2026  
Next Due Date 17-Aug-2026

## 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                     | 1.5                   | 0.0                |
| 2.5                     | 2.5                   | 0.0                |
| 4.0                     | 4.1                   | -0.1               |

## 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:**

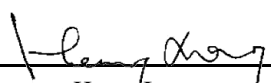
1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer

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 7, 2026      Rootsmeter S/N: 438320      Ta: 294 °K  
Operator: Jim Tisch      Pa: 749.0 mm Hg  
Calibration Model #: TE-5025A      Calibrator S/N: **3864**

| Run | Vol. Init<br>(m3) | Vol. Final<br>(m3) | ΔVol.<br>(m3) | ΔTime<br>(min) | ΔP<br>(mm Hg) | ΔH<br>(in H2O) |
|-----|-------------------|--------------------|---------------|----------------|---------------|----------------|
| 1   | 1                 | 2                  | 1             | 1.4310         | 3.2           | 2.00           |
| 2   | 3                 | 4                  | 1             | 1.0260         | 6.4           | 4.00           |
| 3   | 5                 | 6                  | 1             | 0.9150         | 7.9           | 5.00           |
| 4   | 7                 | 8                  | 1             | 0.8730         | 8.8           | 5.50           |
| 5   | 9                 | 10                 | 1             | 0.7200         | 12.8          | 8.00           |

## Data Tabulation

| Vstd<br>(m3) | Qstd<br>(x-axis) | $\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$<br>(y-axis) | Va        | Qa<br>(x-axis) | $\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$<br>(y-axis) |
|--------------|------------------|---------------------------------------------------------------------------------------------|-----------|----------------|------------------------------------------------------------|
| 0.9947       | 0.6951           | 1.4135                                                                                      | 0.9957    | 0.6958         | 0.8860                                                     |
| 0.9905       | 0.9654           | 1.9990                                                                                      | 0.9915    | 0.9663         | 1.2530                                                     |
| 0.9885       | 1.0803           | 2.2349                                                                                      | 0.9895    | 1.0814         | 1.4009                                                     |
| 0.9873       | 1.1309           | 2.3440                                                                                      | 0.9883    | 1.1320         | 1.4693                                                     |
| 0.9819       | 1.3638           | 2.8270                                                                                      | 0.9829    | 1.3652         | 1.7720                                                     |
| <b>QSTD</b>  | m=               | <b>2.11337</b>                                                                              | <b>QA</b> | m=             | <b>1.32336</b>                                             |
|              | b=               | <b>-0.04919</b>                                                                             |           | b=             | <b>-0.03083</b>                                            |
|              | r=               | <b>0.99993</b>                                                                              |           | r=             | <b>0.99993</b>                                             |

## Calculations

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

## Standard Conditions

|                                           |           |
|-------------------------------------------|-----------|
| Tstd:                                     | 298.15 °K |
| Pstd:                                     | 760 mm Hg |
| <b>Key</b>                                |           |
| 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. MA20003/44/0035

Project No. KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)/AM7 - Hong Kong Children's Hospital  
 Date: 8-May-26 Next Due Date: 8-Jul-26 Operator: SK  
 Equipment No.: A-01-44 Model No.: TE-5170 Serial No. 1316

| Ambient Condition   |              |                     |              |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>299.9</u> | Pressure, Pa (mmHg) | <u>759.2</u> |

| Orifice Transfer Standard Information |                 |                                                                          |                |               |                 |
|---------------------------------------|-----------------|--------------------------------------------------------------------------|----------------|---------------|-----------------|
| Serial No.                            | <u>3864</u>     | Slope, mc                                                                | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date:                | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                |               |                 |
| Next Calibration Date:                | <u>7-Jan-27</u> | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |                |               |                 |

| Calibration of TSP Sampler |                                    |                                                    |                        |                                |                                                              |
|----------------------------|------------------------------------|----------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------|
| Calibration Point          | Orifice                            |                                                    |                        | HVS                            |                                                              |
|                            | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$<br>Y-axis |
| 1                          | <u>13.4</u>                        | <u>3.65</u>                                        | <u>61.81</u>           | <u>9.4</u>                     | <u>3.05</u>                                                  |
| 2                          | <u>11.2</u>                        | <u>3.33</u>                                        | <u>56.58</u>           | <u>7.2</u>                     | <u>2.67</u>                                                  |
| 3                          | <u>9.5</u>                         | <u>3.07</u>                                        | <u>52.17</u>           | <u>5.5</u>                     | <u>2.34</u>                                                  |
| 4                          | <u>6.2</u>                         | <u>2.48</u>                                        | <u>42.31</u>           | <u>3.3</u>                     | <u>1.81</u>                                                  |
| 5                          | <u>3.0</u>                         | <u>1.73</u>                                        | <u>29.68</u>           | <u>1.7</u>                     | <u>1.30</u>                                                  |

### By Linear Regression of Y on X

Slope, mw = 0.0541 Intercept, bw = -0.3887  
 Correlation coefficient\* = 0.9911

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.78

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 8-May-26

Checked by: Henry Leung Signature: [Signature] Date: 8-May-26

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/41/0035

Project No. KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

Date: 8-May-26 Next Due Date: 8-Jul-26 Operator: SK

Equipment No.: A-01-41 Model No.: TE 5170 Serial No. 5280

| Ambient Condition   |              |                     |              |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>299.9</u> | Pressure, Pa (mmHg) | <u>759.2</u> |

| Orifice Transfer Standard Information |                 |                                                                          |                |               |                 |
|---------------------------------------|-----------------|--------------------------------------------------------------------------|----------------|---------------|-----------------|
| Serial No.                            | <u>3864</u>     | Slope, mc                                                                | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date:                | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                |               |                 |
| Next Calibration Date:                | <u>7-Jan-27</u> | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |                |               |                 |

| Calibration of TSP Sampler |                                    |                                                    |                        |                                |                                                              |
|----------------------------|------------------------------------|----------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------|
| Calibration Point          | Orifice                            |                                                    |                        | HVS                            |                                                              |
|                            | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$<br>Y-axis |
| 1                          | <u>13.6</u>                        | <u>3.67</u>                                        | <u>62.26</u>           | <u>9.5</u>                     | <u>3.07</u>                                                  |
| 2                          | <u>11.3</u>                        | <u>3.35</u>                                        | <u>56.83</u>           | <u>8.7</u>                     | <u>2.94</u>                                                  |
| 3                          | <u>9.5</u>                         | <u>3.07</u>                                        | <u>52.17</u>           | <u>6.2</u>                     | <u>2.48</u>                                                  |
| 4                          | <u>7.1</u>                         | <u>2.65</u>                                        | <u>45.21</u>           | <u>4.6</u>                     | <u>2.14</u>                                                  |
| 5                          | <u>4.1</u>                         | <u>2.02</u>                                        | <u>34.56</u>           | <u>2.2</u>                     | <u>1.48</u>                                                  |

### By Linear Regression of Y on X

Slope, mw = 0.0595 Intercept, bw = -0.5682

Correlation coefficient\* = 0.9929

\*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>4.00</u> |  |

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 8-May-26

Checked by: Henry Leung Signature: [Signature] Date: 8-May-26

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/04/0037

Project No. Location KER1c - Site Boundary at Cheung Yip Street

Date: 1-Jun-26 Next Due Date: 1-Aug-26 Operator: SK

Equipment No.: A-01-04 Model No.: TE 5170 Serial No. 10595

| Ambient Condition   |              |                     |              |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>302.2</u> | Pressure, Pa (mmHg) | <u>756.7</u> |

| Orifice Transfer Standard Information |                 |                                                                          |                |               |                 |
|---------------------------------------|-----------------|--------------------------------------------------------------------------|----------------|---------------|-----------------|
| Serial No.                            | <u>3864</u>     | Slope, mc                                                                | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date:                | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                |               |                 |
| Next Calibration Date:                | <u>7-Jan-27</u> | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |                |               |                 |

| Calibration of TSP Sampler |                                    |                                                    |                        |                                |                                                              |
|----------------------------|------------------------------------|----------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------|
| Calibration Point          | Orifice                            |                                                    |                        | HVS                            |                                                              |
|                            | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$<br>Y-axis |
| 1                          | <u>12.4</u>                        | <u>3.49</u>                                        | <u>59.17</u>           | <u>8.5</u>                     | <u>2.89</u>                                                  |
| 2                          | <u>10.2</u>                        | <u>3.16</u>                                        | <u>53.74</u>           | <u>7.2</u>                     | <u>2.66</u>                                                  |
| 3                          | <u>8.3</u>                         | <u>2.85</u>                                        | <u>48.56</u>           | <u>5.6</u>                     | <u>2.34</u>                                                  |
| 4                          | <u>5.2</u>                         | <u>2.26</u>                                        | <u>38.61</u>           | <u>2.8</u>                     | <u>1.66</u>                                                  |
| 5                          | <u>2.8</u>                         | <u>1.66</u>                                        | <u>28.55</u>           | <u>2.1</u>                     | <u>1.44</u>                                                  |

### By Linear Regression of Y on X

Slope, mw = 0.0507 Intercept, bw = -0.1190

Correlation coefficient\* = 0.9851

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.32

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 1-Jun-26

Checked by: Henry Leung Signature: [Signature] Date: 1-Jun-26

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/18/038

Project No. CKL 1 - Flat 121 Cha Kwo Ling Village

Date: 4-May-26 Next Due Date: 4-Jul-26 Operator: SK

Equipment No.: A-01-18 Model No.: TE 5170 Serial No. 0723

| Ambient Condition   |              |                     |            |
|---------------------|--------------|---------------------|------------|
| Temperature, Ta (K) | <u>296.7</u> | Pressure, Pa (mmHg) | <u>761</u> |

| Orifice Transfer Standard Information |                 |                                                                          |                |               |                 |
|---------------------------------------|-----------------|--------------------------------------------------------------------------|----------------|---------------|-----------------|
| Serial No.                            | <u>3864</u>     | Slope, mc                                                                | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date:                | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                |               |                 |
| Next Calibration Date:                | <u>7-Jan-27</u> | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |                |               |                 |

| Calibration of TSP Sampler |                                    |                                                    |                        |                                |                                                           |
|----------------------------|------------------------------------|----------------------------------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
| Calibration Point          | Orifice                            |                                                    |                        | HVS                            |                                                           |
|                            | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1                          | <u>13.5</u>                        | <u>3.68</u>                                        | <u>62.44</u>           | <u>9.3</u>                     | <u>3.06</u>                                               |
| 2                          | <u>10.3</u>                        | <u>3.22</u>                                        | <u>54.64</u>           | <u>7.0</u>                     | <u>2.65</u>                                               |
| 3                          | <u>8.1</u>                         | <u>2.85</u>                                        | <u>48.55</u>           | <u>5.4</u>                     | <u>2.33</u>                                               |
| 4                          | <u>6.4</u>                         | <u>2.54</u>                                        | <u>43.25</u>           | <u>3.7</u>                     | <u>1.93</u>                                               |
| 5                          | <u>3.5</u>                         | <u>1.88</u>                                        | <u>32.19</u>           | <u>1.6</u>                     | <u>1.27</u>                                               |

### By Linear Regression of Y on X

Slope, mw = 0.0599 Intercept, bw = -0.6386

Correlation coefficient\* = 0.9982

\*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>3.73</u> |  |

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 4-May-26

Checked by: Henry Leung Signature: [Signature] Date: 4-May-26

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/038

Project No. CKL 2 - Flat 103 Cha Kwo Ling Village

Date: 4-May-26

Next Due Date: 4-Jul-26

Operator: SK

Equipment No.: A-01-55

Model No.: TE 5170

Serial No. 1956

| Ambient Condition   |              |                     |              |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <b>295.5</b> | Pressure, Pa (mmHg) | <b>758.1</b> |

| Orifice Transfer Standard Information |          |                                                                          |         |               |          |
|---------------------------------------|----------|--------------------------------------------------------------------------|---------|---------------|----------|
| Serial No.                            | 3864     | Slope, mc                                                                | 0.05980 | Intercept, bc | -0.04908 |
| Last Calibration Date:                | 7-Jan-26 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |         |               |          |
| Next Calibration Date:                | 7-Jan-27 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |         |               |          |

| Calibration of TSP Sampler |                                    |                                                    |                        |                                |                                                              |
|----------------------------|------------------------------------|----------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------|
| Calibration Point          | Orifice                            |                                                    |                        | HVS                            |                                                              |
|                            | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$<br>Y-axis |
| 1                          | <b>13.5</b>                        | 3.69                                               | 62.44                  | <b>9.6</b>                     | 3.11                                                         |
| 2                          | <b>11.1</b>                        | 3.34                                               | 56.70                  | <b>7.0</b>                     | 2.65                                                         |
| 3                          | <b>9.5</b>                         | 3.09                                               | 52.52                  | <b>5.3</b>                     | 2.31                                                         |
| 4                          | <b>5.0</b>                         | 2.24                                               | 38.32                  | <b>2.8</b>                     | 1.68                                                         |
| 5                          | <b>3.4</b>                         | 1.85                                               | 31.75                  | <b>1.7</b>                     | 1.31                                                         |

### By Linear Regression of Y on X

Slope, mw = 0.0560

Intercept, bw = -0.4970

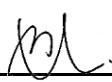
Correlation coefficient\* = 0.9924

\*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>3.63</u> |  |

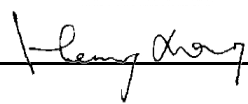
Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai

Signature: 

Date: 4-May-26

Checked by: Henry Leung

Signature: 

Date: 4-May-26