

## Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

### Information of Calibrated Equipment

Verification Test Date:	13-Sep-24	to	14-Sep-24	Next Verification Test Date:	12-Sep-25
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:	0Z4545				
Our Report Reference No.:	RPT-23-HVS-0065				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

### Standard Equipment Information

Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	13-Sep-24	16-Jan-24
Next Calibration Date:	12-Sep-25	15-Jan-25

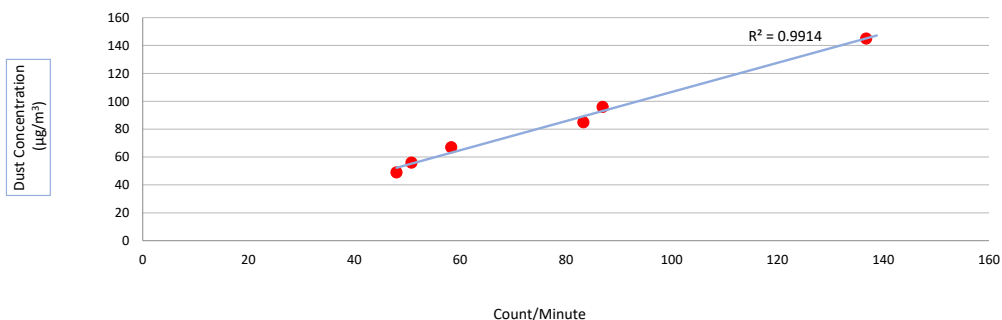
### Equipment Verification Result

Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration ( $\mu\text{g}/\text{m}^3$ ) y-axis
1	28/11/23	8789.68	8792.68	180.00	15648	87	96
2	28/11/23	8792.68	8795.68	180.00	14993	83	85
3	28/11/23	8795.68	8798.68	180.00	8635	48	49
4	30/11/23	8798.68	8801.68	180.00	10501	58	67
5	30/11/23	8801.68	8804.68	180.00	24622	137	145
6	30/11/23	8804.68	8807.68	180.00	9145	51	56

### Linear Regression of y on x

Slope, K factor:	<u>1.0451</u>	Intercept:	<u>2.1545</u>	*Correlation Coefficient, R:	<u>0.9957</u>
Verification Test Result:	<u>Strong Correlation, Results were accepted.</u>			* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.	

Verification Curve



Operated By:

Andy Li

Project Technician, Environmental

Date: 14-09-2024

Checked By:

Tandy Tse

Senior Consultant, Environmental

Date: 14-09-2024

## Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

### Information of Calibrated Equipment

Verification Test Date:	<b>13-Sep-24</b>	to	<b>14-Sep-24</b>	Next Verification Test Date:	<b>12-Sep-25</b>
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:	882106				
Our Report Reference No.:	RPT-23-HVS-0068				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

### Standard Equipment Information

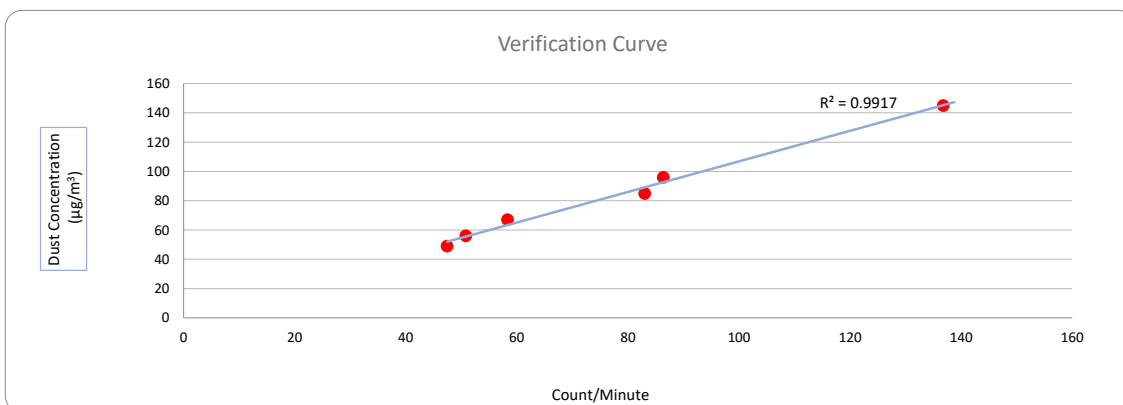
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	13-Sep-24	16-Jan-24
Next Calibration Date:	12-Sep-25	15-Jan-25

### Equipment Verification Result

Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration ( $\mu\text{g}/\text{m}^3$ ) y-axis
1	28/11/23	8789.68	8792.68	180.00	15546	86	96
2	28/11/23	8792.68	8795.68	180.00	14944	83	85
3	28/11/23	8795.68	8798.68	180.00	8543	47	49
4	30/11/23	8798.68	8801.68	180.00	10499	58	67
5	30/11/23	8801.68	8804.68	180.00	24622	137	145
6	30/11/23	8804.68	8807.68	180.00	9145	51	56

### Linear Regression of y on x

Slope, K factor:	<b>1.0437</b>	Intercept:	<b>2.4993</b>	*Correlation Coefficient,R:	<b>0.9958</b>
Verification Test Result:	<u>Strong Correlation, Results were accepted.</u>			* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.	



Operated By:

Andy Li

Project Technician, Environmental

Date: 14-09-2024

Checked By:

Tandy Tse

Senior Consultant, Environmental

Date: 14-09-2024

## Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

### Information of Calibrated Equipment

Verification Test Date:	<b>13-Sep-24</b>	to	<b>14-Sep-24</b>	Next Verification Test Date:	<b>12-Sep-25</b>
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:	942532				
Our Report Reference No.:	RPT-23-HVS-0071				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

### Standard Equipment Information

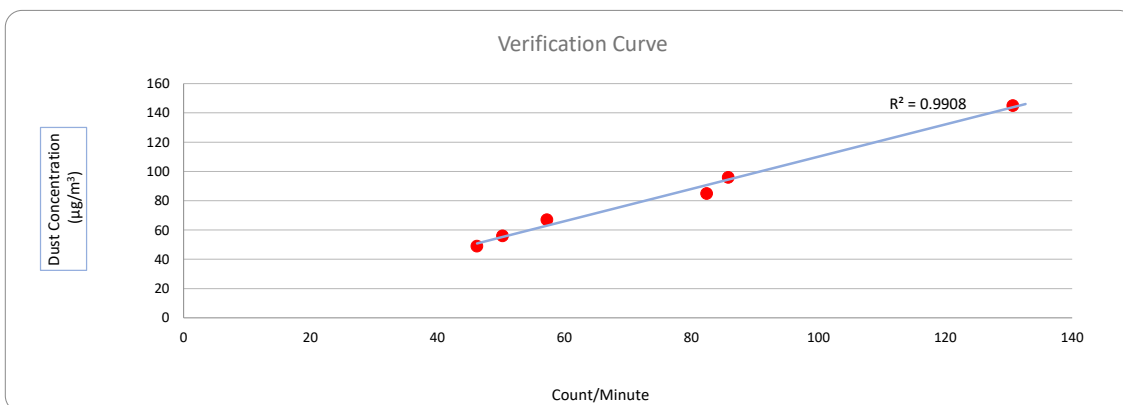
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	13-Sep-24	16-Jan-24
Next Calibration Date:	12-Sep-25	15-Jan-25

### Equipment Verification Result

Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration ( $\mu\text{g}/\text{m}^3$ ) y-axis
1	28/11/23	8789.68	8792.68	180.00	15446	86	96
2	28/11/23	8792.68	8795.68	180.00	14835	82	85
3	28/11/23	8795.68	8798.68	180.00	8320	46	49
4	30/11/23	8798.68	8801.68	180.00	10303	57	67
5	30/11/23	8801.68	8804.68	180.00	23517	131	145
6	30/11/23	8804.68	8807.68	180.00	9043	50	56

### Linear Regression of y on x

Slope, K factor:	<b><u>1.1020</u></b>	Intercept:	<b><u>-0.1223</u></b>	*Correlation Coefficient,R:	<b><u>0.9954</u></b>
Verification Test Result:	<b><u>Strong Correlation, Results were accepted.</u></b>				* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Operated By:

Andy Li

Project Technician, Environmental

Date: 14-09-2024

Checked By:

Tandy Tse

Senior Consultant, Environmental

Date: 14-09-2024

# Certificate of Calibration

for

**Description:** Sound Level Meter  
**Manufacturer:** SVANTEK  
**Type No.:** SVAN 971 (Serial No.: 96062)  
**Microphone:** ACO 7052E (Serial No.: 85231)  
**Preamplifier:** SV-18 (Serial No.: 121481)

## Submitted by:

**Customer:** Aurecon Hong Kong Limited  
**Address:** Unit 1608, 16/F, Tower B, Manulife Financial Centre,  
223-231 Wai Yip Street,  
Kwun Tong, Kowloon, Hong Kong

Upon receipt for calibration, the instrument was found to be:

- ☒ Within (31.5Hz – 4kHz)  
☐ Outside

the allowable tolerance.


The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

**Date of receipt:** 22 July 2024

**Date of calibration:** 24 July 2024

**Date of NEXT calibration:** 23 July 2025

**Calibrated by:**   
Calibration Technician

**Date of issue:** 24 July 2024

**Certified by:**   
Mr. Ng Yan Wa  
Laboratory Manager



**Certificate No.:** APJ23-155-CC002

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**1. Calibration Precaution:**

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

**2. Calibration Conditions:**

Air Temperature: 23.4°C  
Air Pressure: 1005 hPa  
Relative Humidity: 56.7 %

**3. Calibration Equipment:**

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV240081	HOKLAS

**4. Calibration Results**

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting		Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dBA SPL	Fast		94	1000	94.0	±0.4

Linearity

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting		Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dBA SPL	Fast		94	1000	94.0	Ref
				104		104.0	±0.3
				114		114.0	±0.3

Time Weighting

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting		Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dBA SPL	Fast		94	1000	94.0	Ref
		Slow				94.0	±0.3

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## Frequency Response

## Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dB	SPL	94	31.5	94.6	$\pm 2.0$
				63	94.4	$\pm 1.5$
				125	94.4	$\pm 1.5$
				250	94.3	$\pm 1.4$
				500	94.2	$\pm 1.4$
				1000	94.0	Ref
				2000	93.6	$\pm 1.6$
				4000	93.5	$\pm 1.6$

## A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dBA	SPL	94	31.5	55.2	$-39.4 \pm 2.0$
				63	68.3	$-26.2 \pm 1.5$
				125	78.2	$-16.1 \pm 1.5$
				250	85.6	$-8.6 \pm 1.4$
				500	90.9	$-3.2 \pm 1.4$
				1000	94.0	Ref
				2000	94.8	$+1.2 \pm 1.6$
				4000	94.5	$+1.0 \pm 1.6$

## C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
35-137	dBC	SPL	94	31.5	91.6	$-3.0 \pm 2.0$
				63	93.6	$-0.8 \pm 1.5$
				125	94.2	$-0.2 \pm 1.5$
				250	94.3	$-0.0 \pm 1.4$
				500	94.2	$-0.0 \pm 1.4$
				1000	94.0	Ref
				2000	93.4	$-0.2 \pm 1.6$
				4000	92.7	$-0.8 \pm 1.6$



## 5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.05
	125 Hz	± 0.10
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:

The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)\*L shall not be liable for any loss or damage resulting from the use of the equipment.



Certificate No.: APJ23-155-CC002

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# *Certificate of Calibration*

*for*

*Description:* *Sound Level Calibrator*

*Manufacturer:* *RION*

*Type No.:* *NC-75*

*Serial No.:* *34724243*

*Submitted by:*

*Customer:* *Aurecon Hong Kong Limited*

*Address:* *Unit 1608, 16/F, Tower B, Manulife Financial Centre,  
223-231 Wai Yip Street, Kwun Tong,  
Kowloon, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

☒ **Within**

☐ **Outside**

**the allowable tolerance.**

The test equipments used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

**Date of receipt: 2 October 2024**

**Date of calibration: 4 October 2024**

**Date of NEXT calibration: 3 October 2025**

*Calibrated by:*   
*Calibration Technician*

*Certified by:*   
*Mr. Ng Yan Wa*  
*Laboratory Manager*

**Date of issue: 4 October 2024**



*Certificate No.: APJ23-154-CC004*

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**1. Calibration Precautions:**

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

**2. Calibration Specifications:**

Calibration check

**3. Calibration Conditions:**

Air Temperature: 22.9°C  
Air Pressure: 1005 hPa  
Relative Humidity: 50.7 %

**4. Calibration Equipment:**

Test Equipment	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV240081	HOKLAS
Sound Level Meter	RION NA-28	30721812	AV240109	HOKLAS

**5. Calibration Results****5.1 Sound Pressure Level**

Nominal value dB	Accept lower level dB	Accept upper level dB	Measured value dB
94.0	93.6	94.4	94.0

Note:

The values given in this certification only related to the values measured at the time of the calibration.



Certificate No.: APJ23-154-CC004

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Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street, Fo Tan, Shatin, N.T., Hong Kong

Tel: (852) 2668 3423

Fax: (852) 2668 6946

Homepage: <http://www.aa-lab.com>

E-mail: [inquiry@aa-lab.com](mailto:inquiry@aa-lab.com)