

## Appendix E Noise Monitoring Equipment Calibration Certificate

# Certificate of Calibration

for

**Description:** *Sound Level Meter*  
**Manufacturer:** *SVANTEK*  
**Type No.:** *SVAN 971 (Serial No.:C132269)*  
**Microphone:** *ACO 7052 E (Serial No.: 85230)*  
**Preamplifier:** *SVANTEK SV-18 (Serial No.:C122483)*

**Submitted by:**

**Customer:** *Acuity Sustainability Consulting Limited*  
**Address:** *Unit E, 12/F, Ford Glory Plaza,  
Nos. 37-39 Wing Hong Street,  
Cheung Sha Wan, Kowloon, Hong Kong*

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

- Within (31.5Hz – 8kHz)**  
 **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: 19 October 2023**

**Date of calibration: 26 October 2023**

**Date of NEXT calibration: 25 October 2024**

**Calibrated by:** \_\_\_\_\_  
*Calibration Technician*

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

**Date of issue: 27 October 2023**

**Certificate No.:** APJ23-091-CC003



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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: 22.6 °C  
 Air Pressure: 1016 hPa  
 Relative Humidity: 65.3 %

**3. Calibration Equipment:**

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS

**4. Calibration Results**

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25-124.9	dBA SPL	Fast	94	1000	94.3	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25-124.9	dBA SPL	Fast	94	1000	94.3	Ref
			104		104.3	±0.3
			114		114.3	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25-124.9	dBA SPL	Fast	94	1000	94.3	Ref
		Slow			94.3	±0.3

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## Frequency Response

## Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25-124.9	dB	SPL	Fast	94	31.5	94.6	±2.0
					63	95.2	±1.5
					125	94.5	±1.5
					250	94.3	±1.4
					500	94.3	±1.4
					1000	94.3	Ref
					2000	94.5	±1.6
					4000	94.2	±1.6
				8000	91.1	+2.1; -3.1	

## A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25-124.9	dBA	SPL	Fast	94	31.5	55.3	-39.4 ±2.0
					63	68.4	-26.2 ±1.5
					125	78.3	-16.1 ±1.5
					250	85.7	-8.6 ±1.4
					500	91.1	-3.2 ±1.4
					1000	94.3	Ref
					2000	95.3	+1.2 ±1.6
					4000	94.9	+1.0 ±1.6
				8000	89.8	-1.1 +2.1; -3.1	

## C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25-124.9	dBC	SPL	Fast	94	31.5	91.7	-3.0 ±2.0
					63	94.4	-0.8 ±1.5
					125	94.3	-0.2 ±1.5
					250	94.3	-0.0 ±1.4
					500	94.3	-0.0 ±1.4
					1000	94.3	Ref
					2000	94.3	-0.2 ±1.6
					4000	93.4	-0.8 ±1.6
				8000	88.3	-3.0 +2.1; -3.1	

## 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	± 0.10
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
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 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

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

**Date of issue:** 24 July 2024



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, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
35-137	dBA SPL	Fast	94	1000	94.0	±0.4

Linearity

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

A-weighting

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

C-weighting

Setting of Unit-under-test (UUT)				Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
35-137	dBC	SPL	Fast	94	31.5	91.6	-3.0±2.0
					63	93.6	-0.8±1.5
					125	94.2	-0.2±1.5
					250	94.3	-0.0±1.4
					500	94.2	-0.0±1.4
					1000	94.0	Ref
					2000	93.4	-0.2±1.6
					4000	92.7	-0.8±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 Meter*  
**Manufacturer:** *SVANTEK*  
**Type No.:** *SVAN 971 (Serial No.: 103482)*  
**Microphone:** *ACO 7052E (Serial No.: 90365)*  
**Preamplifier:** *SV-18 (Serial No.: 149618)*

**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*

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

**Date of issue:** 24 July 2024



**Certificate No.:** APJ24-043-CC001

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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, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
35-137.2	dBA SPL	Fast	94	1000	94.0	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
35-137.2	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, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
35-137.2	dBA SPL	Fast	94	1000	94.0	Ref
		Slow			94.0	±0.3

## Frequency Response

## Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
35-137.2	dB	SPL	Fast	94	31.5	94.6	±2.0
					63	94.5	±1.5
					125	94.4	±1.5
					250	94.3	±1.4
					500	94.2	±1.4
					1000	94.0	Ref
					2000	93.4	±1.6
					4000	93.0	±1.6

## A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
35-137.2	dBA	SPL	Fast	94	31.5	55.3	-39.4±2.0
					63	68.3	-26.2±1.5
					125	78.3	-16.1±1.5
					250	85.7	-8.6±1.4
					500	91.0	-3.2±1.4
					1000	94.0	Ref
					2000	94.6	+1.2±1.6
					4000	94.0	+1.0±1.6

## C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
35-137.2	dBC	SPL	Fast	94	31.5	91.6	-3.0±2.0
					63	93.6	-0.8±1.5
					125	94.2	-0.2±1.5
					250	94.3	-0.0±1.4
					500	94.2	-0.0±1.4
					1000	94.0	Ref
					2000	93.3	-0.2±1.6
					4000	92.2	-0.8±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	± 0.10
	63 Hz	± 0.05
	125 Hz	± 0.05
	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 of Calibration

for

**Description:** *Sound Level Calibrator*  
**Manufacturer:** *RION*  
**Type No.:** *NC-75*  
**Serial No.:** *34524163*

## 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:** 22 July 2024

**Date of calibration:** 24 July 2024

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

**Calibrated by:**   
Calibration Technician

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

**Date of issue:** 24 July 2024



Certificate No.: APJ24-010-CC001

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

**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	AV230128	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	93.9

Note:

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

