

## Appendix H Noise Monitoring Equipment Calibration Certificate

# Certificate of Calibration

for

**Description:** *Sound Level Meter*  
**Manufacturer:** *SVANTEK*  
**Type No.:** *971 (Serial No.: 77731)*  
**Microphone:** *ACO 7052E (Serial No.: 72681)*  
**Preamplifier:** *SV18 (Serial No.: 78763)*

**Submitted by:**

**Customer:** *Acuity Sustainability Consulting Limited*  
**Address:** *Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon*

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

- Within**  
 **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:** 12 February 2020

**Date of calibration:** 13 February 2020

**Calibrated by:** Ng  
*Calibration Technician*

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

**Date of issue:** 13 February 2020

**Certificate No.:** APJ19-160-CC001



Page 1 of 4

**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: 23.7°C  
 Air Pressure: 1006 hPa  
 Relative Humidity: 66.2 %

**3. Calibration Equipment:**

|                          | Type     | Serial No. | Calibration Report Number | Traceable to |
|--------------------------|----------|------------|---------------------------|--------------|
| Multifunction Calibrator | B&K 4226 | 2288467    | AV180064                  | 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 |
| 34.2-136.2                       | 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 |
| 34.2-136.2                       | 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, | IEC 61672 Class 1 |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------|-------------------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz | dB           | Specification, dB |
| 34.2-136.2                       | dBA SPL         | Fast           | 94            | 1000          | 94.0         | Ref               |
|                                  |                 | Slow           |               |               | 94.0         | ±0.3              |

Certificate No.: APJ19-160-CC001



Page 2 of 4

Frequency Response

Linear Response

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading,<br>dB | IEC 61672 Class 1<br>Specification, dB |      |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------------|--|------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz |                    |  |      |
| 34.2-136.2                       | dB              | SPL            | Fast          | 94            | 31.5               | 94.1                                   | ±2.0 |
|                                  |                 |                |               |               | 63                 | 94.0                                   | ±1.5 |
|                                  |                 |                |               |               | 125                | 93.9                                   | ±1.5 |
|                                  |                 |                |               |               | 250                | 93.9                                   | ±1.4 |
|                                  |                 |                |               |               | 500                | 93.9                                   | ±1.4 |
|                                  |                 |                |               |               | 1000               | 94.0                                   | Ref  |
|                                  |                 |                |               |               | 2000               | 94.1                                   | ±1.6 |
|                                  |                 |                |               |               | 4000               | 93.9                                   | ±1.6 |
|                                  |                 |                |               | 8000          | 91.2               | +2.1; -3.1                             |      |

A-weighting

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading,<br>dB | IEC 61672 Class 1<br>Specification, dB |           |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------------|--|-----------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz |                    |  |           |
| 34.2-136.2                       | dBA             | SPL            | Fast          | 94            | 31.5               | 54.8                                   | -39.4±2.0 |
|                                  |                 |                |               |               | 63                 | 67.8                                   | -26.2±1.5 |
|                                  |                 |                |               |               | 125                | 77.9                                   | -16.1±1.5 |
|                                  |                 |                |               |               | 250                | 85.3                                   | -8.6±1.4  |
|                                  |                 |                |               |               | 500                | 90.7                                   | -3.2±1.4  |
|                                  |                 |                |               |               | 1000               | 94.0                                   | Ref       |
|                                  |                 |                |               |               | 2000               | 95.3                                   | +1.2±1.6  |
|                                  |                 |                |               |               | 4000               | 94.9                                   | +1.0±1.6  |
|                                  |                 |                |               | 8000          | 90.1               | -1.1±2.1; -3.1                         |           |

C-weighting

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading,<br>dB | IEC 61672 Class 1<br>Specification, dB |          |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------------|--|----------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz |                    |  |          |
| 34.2-136.2                       | dBC             | SPL            | Fast          | 94            | 31.5               | 91.1                                   | -3.0±2.0 |
|                                  |                 |                |               |               | 63                 | 93.2                                   | -0.8±1.5 |
|                                  |                 |                |               |               | 125                | 93.7                                   | -0.2±1.5 |
|                                  |                 |                |               |               | 250                | 93.9                                   | -0.0±1.4 |
|                                  |                 |                |               |               | 500                | 93.9                                   | -0.0±1.4 |
|                                  |                 |                |               |               | 1000               | 94.0                                   | Ref      |
|                                  |                 |                |               |               | 2000               | 93.8                                   | -0.2±1.6 |
|                                  |                 |                |               |               | 4000               | 93.1                                   | -0.8±1.6 |
|                                  |                 |                |               | 8000          | 88.2               | -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 | ± 0.15 |
|        | 63 Hz   | ± 0.10 |
|        | 125 Hz  | ± 0.10 |
|        | 250 Hz  | ± 0.10 |
|        | 500 Hz  | ± 0.10 |
|        | 1000 Hz | ± 0.05 |
|        | 2000 Hz | ± 0.05 |
|        | 4000 Hz | ± 0.05 |
|        | 8000 Hz | ± 0.15 |
| 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.





# MAXLAB

## CALIBRATION CERTIFICATE

### Certificate Information

Date of Issue

22-Oct-2019

Certificate Number

MLCN192765S

### Customer Information

Company Name

Acuity Sustainability Consulting Limited

Address

Unit C, 11/F, Ford Glory Plaza,  
No. 37-39 Wing Hong Street,  
Cheung Sha Wan, Kowloon, Hong Kong

### Equipment-under-Test (EUT)

Description

Sound Level Calibrator

Manufacturer

Rion

Model Number

NC-74

Serial Number

34504770

Equipment Number

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### Calibration Particular

Date of Calibration

22-Oct-2019

Calibration Equipment

4231(MLTE008) / AV180068 / 13-May-20  
1357(MLTE190) / MLEC19/05/02 / 26-May-20

Calibration Procedure

MLCG00, MLCG15

Calibration Conditions

|            |                   |                  |
|------------|-------------------|------------------|
| Laboratory | Temperature       | 23 °C ± 5 °C     |
|            | Relative Humidity | 55% ± 25%        |
| EUT        | Stabilizing Time  | Over 3 hours     |
|            | Warm-up Time      | Not applicable   |
|            | Power Supply      | Internal battery |

Calibration Results

Calibration data were detailed in the continuation pages.  
All calibration results were within EUT specification.

### Approved By & Date

K.O. Lo

22-Oct-2019

### Statements

- \* Calibration equipment used for this calibration are traceable to national / international standards.
- \* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the EUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
- \* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the EUT.
- \* The copy of this Certificate is owned by MaxLab Calibration Centre Limited. No part of this Certificate may be reproduced without the prior written approval of MaxLab Calibration Centre Limited.



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Certificate No. MLCN192765S

## Calibration Data

| EUT Setting | Standard Reading | EUT Error from Setting | Calibration Uncertainty | EUT Specification |
|-------------|------------------|------------------------|-------------------------|-------------------|
| 94 dB       | 94.0 dB          | 0.0 dB                 | 0.20 dB                 | ± 0.3 dB          |

- END -

Calibrated By :

Dan

Checked By :

K.O. Lo

Date :

22-Oct-19

Date :

22-Oct-19

Page 2 of 2

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