

Appendix H Noise Monitoring Equipment Calibration Certificate



Certificate of Calibration

for

Description: *Sound Level Meter*
Manufacturer: *SVANTEK*
Type No.: *971 (Serial No.: 96063)*
Microphone: *ACO 7052 E (Serial No.:78092)*
Preamplifier: *SVANTEK SV 18 (Serial No.:97278)*

Submitted by:

Customer: *Acuity Sustainability Consulting Limited*
Address: *Unit 1908, Nos. 301-305 Castle Peak Road,
Kwai Chung, N.T.*

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

- Within**
 Outside

the allowable tolerance.

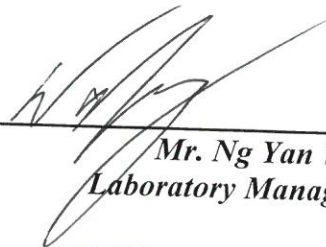
The test equipment used for calibration are traceable to National Standards via:

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

Date of receipt: 28 June 2021

Date of calibration: 30 June 2021

Calibrated by: 
Calibration Technician

Certified by: 
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 30 June 2021

Certificate No.: APJ21-030-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: 24.2 °C
 Air Pressure: 1004 hPa
 Relative Humidity: 60.8 %

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	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		
20-140	dBA SPL	Fast	94	1000	93.7	±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		
20-140	dBA SPL	Fast	94	1000	93.7	Ref
			104		103.7	±0.3
			114		113.7	±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		
20-140	dBA SPL	Fast	94	1000	93.7	Ref
		Slow			93.7	±0.3

Certificate No.: APJ21-030-CC001



Page 2 of 4

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			
20-140	dB	SPL	Fast	94	31.5	94.0	±2.0
					63	93.9	±1.5
					125	94.0	±1.5
					250	94.0	±1.4
					500	93.9	±1.4
					1000	93.7	Ref
					2000	93.8	±1.6
					4000	95.6	±1.6
					8000	92.1	+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			
20-140	dBA	SPL	Fast	94	31.5	54.7	-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	93.7	Ref
					2000	95.0	+1.2±1.6
					4000	96.3	+1.0±1.6
					8000	91.2	-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			
20-140	dBC	SPL	Fast	94	31.5	90.9	-3.0±2.0
					63	93.1	-0.8±1.5
					125	93.8	-0.2±1.5
					250	94.0	-0.0±1.4
					500	93.9	-0.0±1.4
					1000	93.7	Ref
					2000	93.6	-0.2±1.6
					4000	94.5	-0.8±1.6
					8000	89.3	-3.0+2.1; -3.1

Certificate No.: APJ21-030-CC001



Page 3 of 4

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:

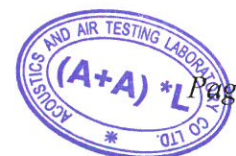
94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.10
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

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 No.: APJ21-030-CC001



Page 4 of 4

Certificate of Calibration

for

Description: *Sound Level Meter*
Manufacturer: *SVANTEK*
Type No.: *971 (Serial No.: 96062)*
Microphone: *ACO 7052 E (Serial No.:78090)*
Preamplifier: *SVANTEK SV 18 (Serial No.:103808)*

Submitted by:

Customer: *Acuity Sustainability Consulting Limited*
Address: *Unit 1908, Nos. 301-305 Castle Peak Road,
Kwai Chung, N.T.*

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

- Within (31.5 Hz to 4k Hz)**
 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: 2 July 2021

Date of calibration: 5 July 2021

Calibrated by: _____
Calibration Technician

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

Date of issue: 5 July 2021

Certificate No.: APJ21-029-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: 24.2 °C
 Air Pressure: 1004 hPa
 Relative Humidity: 60.8 %

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	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			
20-140	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			
20-140	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			
20-140	dBA SPL	Fast	94	1000	94.0	Ref	
		Slow			94.0	±0.3	

Certificate No.: APJ21-029-CC001

Page 2 of 4

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			
20-140	dB	SPL	94	Fast	31.5	94.1	±2.0
					63	94.1	±1.5
					125	94.1	±1.5
					250	94.1	±1.4
					500	94.1	±1.4
					1000	94.0	Ref
					2000	93.8	±1.6
4000	93.3	±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			
20-140	dBA	SPL	94	Fast	31.5	54.9	-39.4±2.0
					63	68.0	-26.2±1.5
					125	78.0	-16.1±1.5
					250	85.4	-8.6±1.4
					500	90.8	-3.2±1.4
					1000	94.0	Ref
					2000	95.0	+1.2±1.6
4000	94.3	+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			
20-140	dBC	SPL	94	Fast	31.5	91.1	-3.0±2.0
					63	93.3	-0.8±1.5
					125	93.9	-0.2±1.5
					250	94.1	-0.0±1.4
					500	94.1	-0.0±1.4
					1000	94.0	Ref
					2000	93.6	-0.2±1.6
4000	92.5	-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	± 0.15
	63 Hz	± 0.10
	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 Meter*
Manufacturer: *Svantek*
Type No.: *971 (Serial No.: 103449)*
Microphone: *ACO 7052E (Serial No.: 79778)*
Preamplifier: *SV 18 (Serial No.:97276)*

Submitted by:

Customer: *Acuity Sustainability Consulting Limited*
Address: *Unit 1908, Nos. 301-305 Castle Peak Road, Kwai Chung, N.T.*

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

- Within (31.5Hz to 4000Hz)**
 Outside

the allowable tolerance.

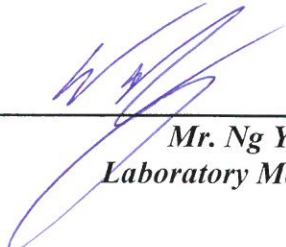
The test equipment used for calibration are traceable to National Standards via:

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

Date of receipt: 17 January 2022

Date of calibration: 19 January 2022

Calibrated by: 
Calibration Technician

Certified by: 
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 19 January 2022

Certificate No.: APJ21-145-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: 23.4°C
 Air Pressure: 1001 hPa
 Relative Humidity: 46.4%

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	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		
25-124.3	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		
25-124.3	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		
25-124.3	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			
25-124.3	dB	SPL	Fast	94	31.5	94.4	±2.0
					63	94.2	±1.5
					125	94.1	±1.5
					250	94.1	±1.4
					500	94.1	±1.4
					1000	94.0	Ref
					2000	93.7	±1.6
					4000	93.1	±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			
25-124.3	dBA	SPL	Fast	94	31.5	55.0	-39.4±2.0
					63	68.1	-26.2±1.5
					125	78.1	-16.1±1.5
					250	85.5	-8.6±1.4
					500	90.8	-3.2±1.4
					1000	94.0	Ref
					2000	94.9	+1.2±1.6
					4000	94.2	+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			
25-124.3	dBC	SPL	Fast	94	31.5	91.3	-3.0±2.0
					63	93.4	-0.8±1.5
					125	94.0	-0.2±1.5
					250	94.1	-0.0±1.4
					500	94.1	-0.0±1.4
					1000	94.0	Ref
					2000	93.6	-0.2±1.6
					4000	92.4	-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.

Scanned

Certificate of Conformance and Calibration for

CEL-120 Acoustic Calibrator

Applicable Standards :- IEC 60942: 2003 & ANSI S1.40: 2006

CEL-120/1 Class 1

CEL-120/2 Class 2

Serial No: 5007536

Firmware: 04

Temperature: 23.3 °C Pressure: 1026 mb %RH 26

Frequency = 1.00kHz ± 2Hz T.H.D. = < 1%	Calibration Level
SPL (@ 114.0dB Setting)	114.01 dB
SPL (@ 94.0dB Setting (CEL-120/1 only))	93.96 dB/N.A

Engineer :- [Signature] Date :- 23 APR 2021

Company test equipment and acoustic working standards, used for conformance testing, are subject to periodic calibration, traceable to UK national standards, in accordance with the company's ISO9001 Quality System.

DECLARATION OF CONFORMITY


This certificate confirms that the instrument specified above has been produced and tested to comply with the manufacturer's published specifications and the relevant European Community CE directives.

Casella
Regent House, Wolseley Road, Kempston, Bedford, MK42 7JY
Phone: +44 (0) 1234 844100 Fax: +44 (0) 1234 841490
E-mail: info@casellasolutions.com
Web: www.casellasolutions.com



MAXLAB

CALIBRATION CERTIFICATE

<i>Certificate Information</i>																
Date of Issue	11-Feb-2022															
Certificate Number	MLCN220284S															
<i>Customer Information</i>																
Company Name	Acuity Sustainability Consulting Limited															
Address	Unit E, 12/F., Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, HK															
<i>Equipment-under-Test (EUT)</i>																
Description	Sound Level Calibrator															
Manufacturer	Rion															
Model Number	NC-74															
Serial Number	34504770															
Equipment Number	--															
<i>Calibration Particular</i>																
Date of Calibration	11-Feb-2022															
Calibration Equipment	4231(MLTE008) / AV200063 / 23-Jun-23 1357(MLTE190) / MLEC21/05/02 / 26-May-22															
Calibration Procedure	MLCG00, MLCG15															
Calibration Conditions	<table border="1"> <tr> <td>Laboratory</td> <td>Temperature</td> <td>23 °C ± 5 °C</td> </tr> <tr> <td></td> <td>Relative Humidity</td> <td>55% ± 25%</td> </tr> <tr> <td>EUT</td> <td>Stabilizing Time</td> <td>Over 3 hours</td> </tr> <tr> <td></td> <td>Warm-up Time</td> <td>Not applicable</td> </tr> <tr> <td></td> <td>Power Supply</td> <td>Internal battery</td> </tr> </table>	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
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. Calibration result was within EUT specification.															
<i>Approved By & Date</i>																
	 K.O. Lo 11-Feb-2022															
<i>Statements</i>																
<ul style="list-style-type: none"> * 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. 																



MAXLAB

Certificate No. MLCN220284S

<i>Calibration Data</i>				
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
Date : 11-Feb-22

Checked By : K.O. Lo
Date : 11-Feb-22

Page 2 of 2

萬儀校正中心有限公司
MaxLab Calibration Centre Limited

香港新界葵涌華星街 16-18 號保盈工業大廈 9 樓 B 室