

# Appendix E

# Noise Monitoring Equipment Calibration

# Certificate



# MAXLAB

## CALIBRATION CERTIFICATE

<i>Certificate Information</i>			
<b>Date of Issue</b>	23-May-2022	<b>Certificate Number</b>	MLCN221167S
<i>Customer Information</i>			
<b>Company Name</b>	Acuity Sustainability Consulting Limited		
<b>Address</b>	Unit E, 12/F., Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, HK		
<i>Equipment-under-Test (EUT)</i>			
<b>Description</b>	Sound Calibrator		
<b>Manufacturer</b>	Scarlet Tech		
<b>Model Number</b>	ST-120		
<b>Serial Number</b>	200504747		
<b>Equipment Number</b>	--		
<i>Calibration Particular</i>			
<b>Date of Calibration</b>	23-May-2022		
<b>Calibration Equipment</b>	4231(MLTE008) / AV200063 / 23-Jun-23 1357(MLTE190) / MLEC21/05/02 / 26-May-22		
<b>Calibration Procedure</b>	MLCG00, MLCG15		
<b>Calibration Conditions</b>	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
<b>Calibration Results</b>	Calibration data were detailed in the continuation pages.		
<i>Approved By &amp; Date</i>			
		K.O. Lo	23-May-2022
<i>Statements</i>			
<ul style="list-style-type: none"> <li>* Calibration equipment used for this calibration are traceable to national / international standards.</li> <li>* 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.</li> <li>* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the EUT.</li> <li>* 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.</li> </ul>			



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<i>Calibration Data</i>			
EUT Setting	Standard Reading	EUT Error from Setting	Calibration Uncertainty
94 dB	95.3 dB	1.3 dB	0.15 dB
114 dB	116.0 dB	2.0 dB	0.15 dB

- END -

Calibrated By : Dan  
Date : 23-May-22

Checked By : K.O. Lo  
Date : 23-May-22

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# Certificate of Calibration

for

**Description:** *Sound Level Meter*  
**Manufacturer:** *Scarlet Tech*  
**Type No.:** *ST11D (Serial No.: 820250)*  
**Microphone:** *BSWA 231 (Serial No.:590497)*

**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 – 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: 05 October 2022**

**Date of calibration: 07 October 2022**

**Date of NEXT calibration: 06 October 2023**

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

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

**Date of issue: 7 October 2022**

Certificate No.: APJ22-083-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: 23.3 °C  
 Air Pressure: 1005 hPa  
 Relative Humidity: 57.6 %

**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		
43-138	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		
43-138	dBA SPL	Fast	94	1000	93.8	Ref
			104		104.2	±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		
43-138	dBA SPL	Fast	94	1000	93.8	Ref
		Slow			94.3	±0.3

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Frequency Response

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		
43-138	dBA	SPL	94	31.5	56.2	-39.4±2.0
				63	68.6	-26.2±1.5
				125	78.3	-16.1±1.5
				250	85.8	-8.6±1.4
				500	91.1	-3.2±1.4
				1000	94.3	Ref
				2000	94.9	+1.2±1.6
				4000	93.5	+1.0±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	± 0.15
	125 Hz	± 0.05
	250 Hz	± 0.10
	500 Hz	± 0.10
	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.

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