



# Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong

7<sup>th</sup> Monthly Noise Monitoring Report  
(For November 2022)

13 December 2022

Project No.: 0540005

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				Name	Date	
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Revised	3.0	KC Chan	Mandy To	Terence Fong	12.13.2022	IEC



**Environmental Permit No. EP-249/2006/D**  
**Ocean Park Master Redevelopment Project**  
**Environmental Team Leader Certification**

**Reference Document/Plan**

Document/ <del>Plan</del> to be Certified/ <del>Verified</del> :	Monthly Noise Monitoring Report (For November 2022)
Date of Report:	13 December 2022

**Reference EP Condition**

Environmental Permit Condition:	3.4
Four hard copies and one electronic copy of the monthly EM&A Reports for the construction and operation stages shall be submitted to the Director within two weeks after the end of the reporting month. The monthly EM&A Reports shall include a summary of all non-compliance with the recommendations in the EIA Report or this Permit. The submissions shall be certified by the ET Leader and verified by the IEC as complied with the requirements as set out in the EM&A Manual before submission to the Director. Additional copies of the submission shall be provided upon request by the Director.	

**ETL Verification**

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-249/2006/D.

Ms Mandy To  
Environmental Team Leader

Date: 15 December 2022

*Our ref: 0540005\_ETL Verification Cert\_7\_20221215.docx*

**Ocean Park Master Redevelopment Project**

**Environmental Permit No. EP-249/2006/D - Condition 3.1**

**Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong  
7<sup>th</sup> Monthly Noise Monitoring Report  
(For November 2022)**

**Submitted by ERM-Hong Kong, Limited dated 14 December 2022**

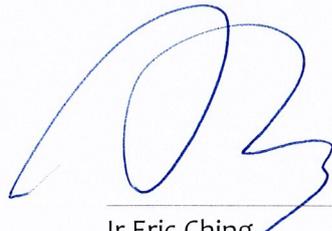
**This is to verify that**

**Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong  
7<sup>th</sup> Monthly Noise Monitoring Report  
(For November 2022)**

**Submitted by ERM-Hong Kong, Limited dated 14 December 2022**

**Has been verified by the undersigned.**

Signed



Ir Eric Ching  
Independent Environmental Checker (IEC)  
Retained by Ocean Park Corporation  
pursuant to Environmental Permit No. EP-249/2006/D

Date

14 December 2022

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## Signature Page

13 December 2022

# Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong

7th Monthly Noise Monitoring Report (For November 2022)



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## 1. INTRODUCTION

ERM-Hong Kong, Limited (ERM) has been appointed by Ocean Park Corporation (OPC) to undertake noise monitoring for the first operational year of the Update of Design of the Existing Lagoon Show under the “*Repositioning and Long Term Operation Plan of Ocean Park*” (the Project) with an updated layout of loudspeaker clusters, as presented in the *Noise Review Study Report (Noise Review 2020)* deposited to the EPD on 9 January 2020.

### 1.1 Purpose of the Report

The Update of Design of the Existing Lagoon Show, including the Soul of the Ocean (SOTO) and Vision of Hong Kong (VHK), commenced on 19 January 2020. The associated 1<sup>st</sup> noise monitoring report which presented monitoring results during the reporting period from 10 January to 9 February 2020 submitted to EPD in February 2020. The operation of Ocean Park was then temporarily closed and the lagoon show was suspended due to COVID-19 afterwards.

The operation of Ocean Park resumed in February 2021 and the lagoon show has been resumed during holiday periods. The Lagoon Show (SOTO and VHK) was resumed from 12 November 2022. This is the 7<sup>th</sup> noise monitoring report which summarises the impact monitoring results during the reporting period from **12 November 2022 to 30 November 2022**.

### 1.2 Structure of the Report

After this introductory section, the remainder of this report is arranged as follows:

**Section 2** describes the noise monitoring methodology, presents the monitoring results and discusses the results; and

**Section 3** presents an overall conclusion of the noise monitoring.

## 2. NOISE MONITORING

### 2.1 Introduction

Noise monitoring has been carried out following the requirements given in Condition 3.1 of the Environmental Permit (EP-249/2006/D) and the updated EM&A Manual. The requirements and results are detailed in the following sections.

### 2.2 Noise Monitoring Requirements

It has been recommended in the approved EIA Report for “*Relocation and Long Term Operation Plan of Ocean Park*” and stated in the EM&A Manual that fixed plant noise source monitoring should be conducted during the first operational year of the Open-air Night Show at the Aqua City. Therefore, noise monitoring is carried out during the first operational year of the Update of Design of the Existing Lagoon Show to review the compliance with the noise limits and requirements stipulated in the *Noise Review 2020*.

The monitoring of fixed plant noise source impact is to be conducted:

- During the lagoon night show (hereinafter referred to as “lagoon night show noise monitoring”)

Lagoon night show noise monitoring was carried out at all designated monitoring stations during the performance of lagoon night shows at a logging interval of 5 minutes. The noise monitoring should be conducted twice a week, i.e. once on a normal weekday and once on a general holiday or Sunday, as per the EM&A Manual.

As confirmed with OPC, lagoon night show (VHK) has been resumed during weekends (Saturdays and Sundays) from 18 December 2021 to 2 January 2022. The other lagoon night show (Soul of the Ocean) has not been performed during this period. Based on the change in the show frequency, the need for noise monitoring during the lagoon night show was reviewed based on the monitoring results. Agreement from the IEC and approval from EPD (EPD’s letter dated 2 December 2021) have been sought to reduce the monitoring frequency to once a week.

In view of the lagoon night show (SOTO and VHK) would be resumed during weekends (Saturday and Sunday) and Public Holidays from 12 November 2022 to 1 January 2023, agreement from the IEC and approval from EPD (EPD’s letter dated 4 November 2022) have also been sought for the monitoring frequency of once a week.

The following sections describe the detailed methodology of the fixed plant noise monitoring.

#### 2.2.1 Monitoring Locations

Noise monitoring was conducted at five alternative noise monitoring stations, which are the similar locations as that carried out during the first year of operation for the lagoon night show (ie Symbio) from January 2011 to February 2012. The five alternative noise monitoring stations are presented in *Table 2.1*, and shown in *Figure 2.1*.

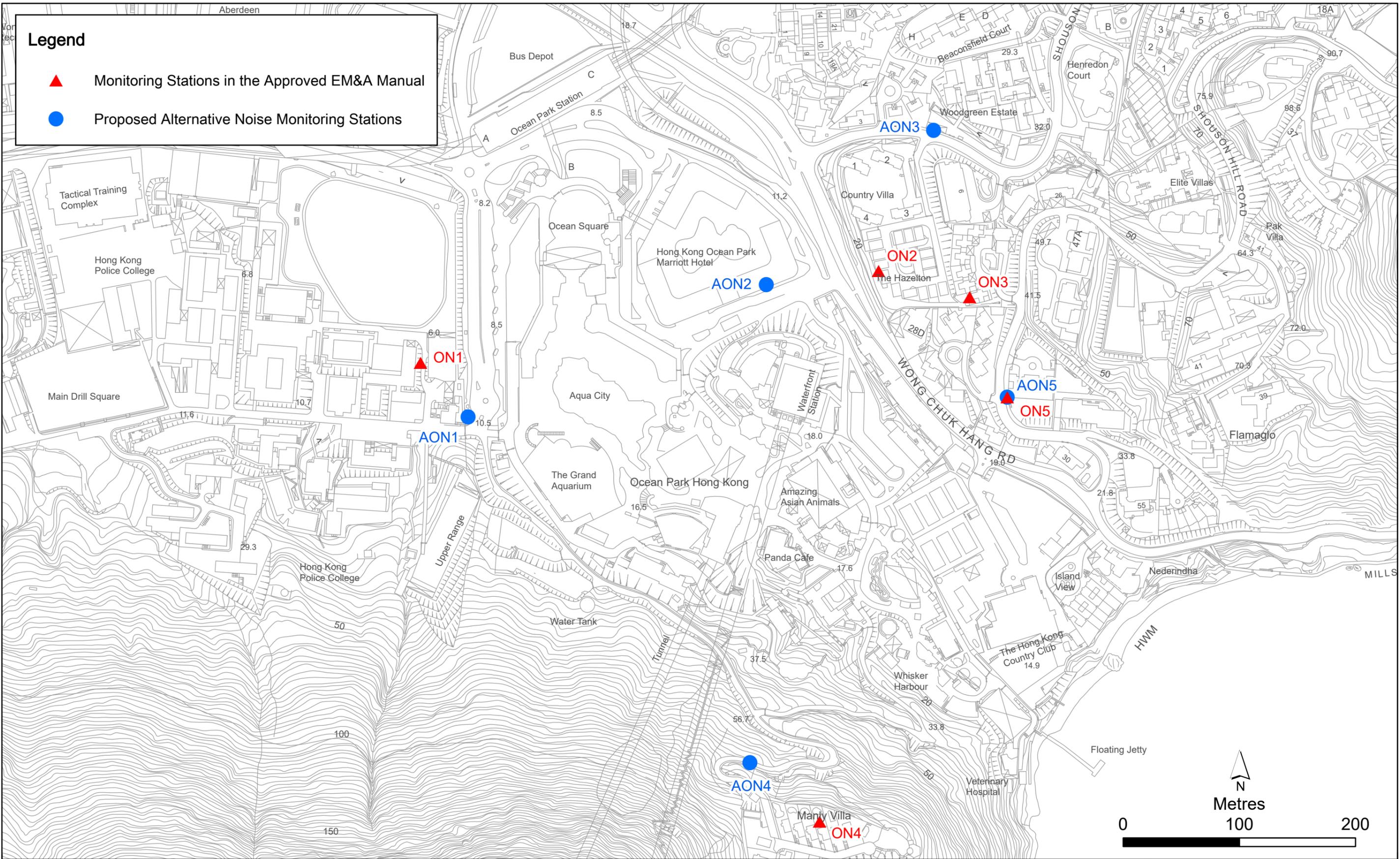


Figure 2.1

Noise Monitoring Locations

**Table 2.1 Alternative Noise Monitoring Stations**

Alternative Noise Monitoring Stations	Description	Location	With or without Façade Correction
AON1	Open Area adjacent to Police Training School	1.2m above street level	without façade correction
AON2	Marriott Hotel, Ocean Park	1m from façade at roof level	with façade correction
AON3	Woodgreen Estate	1.5m above street level outside boundary wall	with façade correction
AON4 <sup>(a)</sup>	Manly Villa	1.2m above street level	with façade correction
AON5	Hau Yuen	3.0m above street level outside boundary wall	with façade correction

**Note:**

(a) Due to security concern from Manly Villa, alternative noise monitoring location, AON4, has been relocated away from the entrance of Manly Villa (see *Figure 2.1*) which is closer to Ocean Park. Therefore, it is considered representative.

## 2.2.2 Monitoring Parameters

### 2.2.2.1 Show Noise Monitoring

The measurements of  $L_{Aeq, 5 \text{ min}}$  reading were carried out to calculate the noise level during the show with schedule shown in *Table 2.2*.

**Table 2.2 Schedule of the Show**

Description	Time
Soul of the Ocean (SOTO)	Twice (Last for around 16 minutes) between 1900 and 2100 hrs on Saturdays
Vision of Hong Kong (VHK)	<ul style="list-style-type: none"> <li>Twice (Last for around 6 minutes) after SOTO between 1925 and 2115 hrs on Saturdays;</li> <li>once between 1900 and 1930 hrs on Sundays and Public Holidays</li> </ul>

### 2.2.2.2 Background Noise Level

Measurements of  $L_{Aeq, 5 \text{ min}}$  reading were carried out before and after the show when speakers were switched off to calculate the overall background noise level at each locations.

Any significant influencing factors on the measured noise levels were noted in accordance with standard acoustical principles and practices. The background-corrected noise level due to the show was computed based on the background noise level and measured noise level during the shows.

## 2.2.3 Monitoring Frequency

The noise monitoring for the show was conducted once per week. Noise monitoring schedule during this reporting month is summarised in *Table 2.3*.

**Table 2.3 Noise Monitoring Schedule during this Reporting Month**

Scheduled Monitoring Date	Monitoring Stations
12 November 2022 (Saturday)	AON1 to AON5
19 November 2022 (Saturday)	AON1 to AON5
26 November 2022 (Saturday)	AON1 to AON5

## 2.2.4 Monitoring Methodology

The sound level meters and calibrator used for the noise monitoring, as listed in *Table 2.4* below, complies with IEC 651: 1979 and 804:1985 (Type 1) or equivalent international standards.

**Table 2.4 Noise Measurement Equipment**

Monitoring Location		Monitoring Equipment
AON1	Open Area adjacent to Police Training School	RION NL-52 Sound Level Meter CAL200 Calibrator
AON2	Marriott Hotel, Ocean Park	RION NL-52 Sound Level Meter CAL200 Calibrator
AON3	Woodgreen Estate	RION NL-52 Sound Level Meter CAL200 Calibrator
AON4	Manly Villa	RION NL-52 Sound Level Meter CAL200 Calibrator
AON5	Hau Yuen	RION NL-52 Sound Level Meter CAL200 Calibrator

Noise monitoring was conducted with reference to the calibration and measurement procedures as stated in the *Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM)* issued under the *Noise Control Ordinance (NCO)*. Immediately prior to and following each noise measurement the accuracy of the monitoring equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as the calibration levels from before and after the noise measurement agree to within 1.0 dB.

The sound level meters and acoustic calibrators have been calibrated by a HOKLAS accredited laboratory every two years. The relevant calibration certificates are presented in *Appendix A*.

Noise measurements were conducted without the presence of fog and rain, and with steady wind speed and gusts not exceeding 5 ms<sup>-1</sup> and 10 ms<sup>-1</sup>, respectively in accordance with international standards and practices <sup>(1)</sup>. Measurement of L<sub>Aeq</sub>, L<sub>10</sub>, L<sub>90</sub>, L<sub>max</sub> and L<sub>min</sub> has been recorded for reference.

If measured noise level is affected by other noise sources at the monitoring station, eg traffic noise, such that the measured noise level is dominated by noise source other than the show, noise data will be discarded.

If measured noise level for the show is below or equal to the measured background noise level, the noise from the show is considered as insignificant and hence negligible at the monitoring location.

## 2.2.5 Compliance Assessment

### 2.2.5.1 Fixed Plant Noise Criteria

As recommended in the approved EIA Report and stated in the EM&A Manual, OPC will follow the Action and Limit (A/L) Levels as recommended in the approved EIA Report and EM&A Manual which are summarised in *Table 2.5*. In case exceedances are resulted from cumulative impacts, all steps stipulated in the Event/ Action Plan shall be followed.

**Table 2.5 Action and Limit Levels for Entertainment Noise**

Identification No.	Action Level	Limit Level
ON1/AON1	When documented complaint is received from any one of the sensitive receivers	L <sub>eq</sub> (5 min) 60 dB(A)
ON2/AON2		L <sub>eq</sub> (5 min) 60 dB(A)
ON3/AON3		L <sub>eq</sub> (5 min) 55 dB(A)
ON4/AON4		L <sub>eq</sub> (5 min) 55 dB(A)
ON5/AON5		L <sub>eq</sub> (5 min) 55 dB(A)

<sup>(1)</sup> ISO 11819-1:1997 and ISO/FDIS 13472-1:2001

### 2.2.5.2 Noise Criteria for Outdoor Activities

As advised by EPD, the noise levels from the outdoor activities should not be more than 5dB(A) above the prevailing background noise level during the daytime and evening periods (0700-2300 hrs), as measured at 1m from the exterior building façade of the most affected NSRs for regular outdoor activities in accordance with the *Noise Control Guidelines for Music, Singing and Instrument Performing Activities*. For the night-time period (2300-0700 hrs of the next day), the noise from outdoor events should not be audible at the nearby NSRs.

## 2.3 Results of Noise Monitoring

The results of noise monitoring conducted during this reporting period are given in *Appendix B*, with summary of compliance shown in *Table 2.6*. Photographs taken at the monitoring stations are shown in *Appendix C*.

**Table 2.6 Compliance of Noise Monitoring during this Reporting Period**

Date	ID	Compliance		
		<BGL+5	Limit Level	Not Applicable
12 November 2022 (Saturday) (1 <sup>st</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
12 November 2022 (Saturday) (1 <sup>st</sup> round of VHK)	AON1	-	-	N/A <sup>(a)</sup>
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
12 November 2022 (Saturday) (2 <sup>nd</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	-	-	N/A <sup>(a)</sup>
	AON4	Yes	Yes	
	AON5	Yes	Yes	
12 November 2022 (Saturday) (2 <sup>nd</sup> round of VHK)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	-	-	N/A <sup>(a)</sup>
	AON4	Yes	Yes	
	AON5	Yes	Yes	
19 November 2022 (Saturday) (1 <sup>st</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
19 November 2022 (Saturday) (1 <sup>st</sup> round of VHK)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	-	-	N/A <sup>(a)</sup>
19 November 2022 (Saturday) (2 <sup>nd</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
19 November 2022 (Saturday) (2 <sup>nd</sup> round of VHK)	AON1	Yes	Yes	
	AON2	Yes	Yes	

Date	ID	Compliance		
		<BGL+5	Limit Level	Not Applicable
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
26 November 2022 (Saturday) (1 <sup>st</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
26 November 2022 (Saturday) (1 <sup>st</sup> round of VHK)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
26 November 2022 (Saturday) (2 <sup>nd</sup> round of SOTO)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	Yes	Yes	
	AON4	Yes	Yes	
	AON5	Yes	Yes	
26 November 2022 (Saturday) (2 <sup>nd</sup> round of VHK)	AON1	Yes	Yes	
	AON2	Yes	Yes	
	AON3	-	-	N/A <sup>(a)</sup>
	AON4	Yes	Yes	
	AON5	Yes	Yes	

(a) Noise data discarded as measurement was affected by other significant noise sources, i.e., traffic and idling heavy vehicle.

## 2.4 Summary of Noise Exceedances

No record of noise exceedance during this reporting month.

### 3. CONCLUSION

This is the 7<sup>th</sup> monthly noise monitoring report which summarises the noise monitoring results during the reporting period on **12 November 2022 to 30 November 2022**.

The noise monitoring were carried out at five designated monitoring stations during this reporting period.

No noise exceedances have been recorded during this reporting period.

**APPENDIX A            CALIBRATION CERTIFICATES OF THE NOISE  
MEASUREMENT EQUIPMENT**



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C223340  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC22-1069 )

Date of Receipt / 收件日期 : 2 June 2022

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00131627

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 June 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

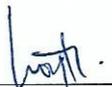
The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

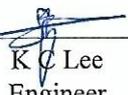
Tested By

測試

  
\_\_\_\_\_  
H T Wong  
Assistant Engineer

Certified By

核證

  
\_\_\_\_\_  
K C Lee  
Engineer

Date of Issue

簽發日期

20 June 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

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Website/網址: www.suncreation.com

# Certificate of Calibration

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Certificate No. : C223340

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- Self-calibration was performed before the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

- Test procedure : MA101N.

- Results :

### 6.1 Sound Pressure Level

#### 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 1.1

#### 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

### 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate No. : C223340

證書編號

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					16 kHz	86.0	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					16 kHz	84.1	-8.5 (+3.5 ; -17.0)

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C223340

證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 10446

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

# Certificate of Calibration

## 校正證書

Certificate No. : C220590  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC22-0067 )      Date of Receipt / 收件日期 : 11 January 2022

Description / 儀器名稱 : Sound Level Meter  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-52  
Serial No. / 編號 : 00331805  
Supplied By / 委託者 : Envirotech Services Co.  
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$       Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$   
Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 30 January 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
The results do not exceed manufacturer's specification. (after adjustment)  
The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By :   
測試 : \_\_\_\_\_  
H T Wong  
Assistant Engineer

Certified By :   
核證 : \_\_\_\_\_  
K C Lee  
Engineer

Date of Issue : 31 January 2022  
簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C220590

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

- Test procedure : MA101N.

- Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

- 6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	* 91.9	± 1.1

\* Out of IEC 61672 Class 1 Spec.

- 6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 1.1

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C220590

證書編號

### 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					16 kHz	86.0	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.7	-0.2 ± 1.5
					250 Hz	93.9	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					16 kHz	84.1	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。



# Certificate of Calibration

## 校正證書

Certificate No. : C220590  
證書編號

- Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06829  
- Mfr's Spec. : IEC 61672 Class 1  
- Uncertainties of Applied Value :
- |        |                  |                          |
|--------|------------------|--------------------------|
| 94 dB  | : 63 Hz - 125 Hz | : ± 0.35 dB              |
|        | 250 Hz - 500 Hz  | : ± 0.30 dB              |
|        | 1 kHz            | : ± 0.20 dB              |
|        | 2 kHz - 4 kHz    | : ± 0.35 dB              |
|        | 8 kHz            | : ± 0.45 dB              |
|        | 16 kHz           | : ± 0.70 dB              |
| 104 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |
- The uncertainties are for a confidence probability of not less than 95 %.

Note :  
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.  
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C223976  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC22-1282 )

Date of Receipt / 收件日期 : 4 July 2022

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00331806

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 16 July 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

H T Wong  
Assistant Engineer

Certified By

核證

K C Lee  
Engineer

Date of Issue

簽發日期

18 July 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

# Certificate of Calibration

## 校正證書

Certificate No. : C223976  
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

- Test procedure : MA101N.

- Results :

### 6.1 Sound Pressure Level

#### 6.1.1 Reference Sound Pressure Level

##### 6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	* 92.2	± 1.1

\* Out of IEC 61672 Class 1 Spec.

##### 6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 1.1

### 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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# Certificate of Calibration

## 校正證書

Certificate No. : C223976

證書編號

### 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
16 kHz	86.1	-6.6 (+3.5 ; -17.0)					

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
16 kHz	84.1	-8.5 (+3.5 ; -17.0)					

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# Certificate of Calibration

## 校正證書

Certificate No. : C223976  
證書編號

- Remarks : - UUT Microphone Model No. : UC-59 & S/N : 16652  
- Mfr's Spec. : IEC 61672 Class 1  
- Uncertainties of Applied Value :
- |        |                  |                          |
|--------|------------------|--------------------------|
| 94 dB  | : 63 Hz - 125 Hz | : ± 0.35 dB              |
|        | 250 Hz - 500 Hz  | : ± 0.30 dB              |
|        | 1 kHz            | : ± 0.20 dB              |
|        | 2 kHz - 4 kHz    | : ± 0.35 dB              |
|        | 8 kHz            | : ± 0.45 dB              |
|        | 16 kHz           | : ± 0.70 dB              |
| 104 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |
- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C223339

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1069)

Date of Receipt / 收件日期 : 2 June 2022

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00643039

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,

New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 18 June 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

:

H T Wong

Assistant Engineer

Certified By

核證

:

K C Lee

Engineer

Date of Issue

簽發日期

:

20 June 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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# Certificate of Calibration

## 校正證書

Certificate No. : C223339  
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

### 6.1 Sound Pressure Level

#### 6.1.1 Reference Sound Pressure Level

##### 6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	* 96.2	± 1.1

\* Out of IEC 61672 Class 1 Spec.

##### 6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 1.1

### 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C223339

證書編號

### 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow				

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					16 kHz	86.0	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					16 kHz	84.1	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C223339

證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 12128

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 4 of 4



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C224775

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1518)

Date of Receipt / 收件日期 : 1 August 2022

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00643040

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 August 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By  
測試

:

H T Wong  
Assistant Engineer

Certified By  
核證

:

K C Lee  
Engineer

Date of Issue

:

23 August 2022

簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C224775

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.3	± 1.1

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.3 (Ref.)
				104.00		104.5
				114.00		114.6

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

- 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.3	Ref.
			Slow			94.3	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C224775

證書編號

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

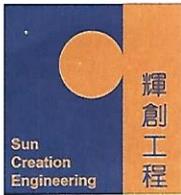
UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.1	-16.1 ± 1.5
					250 Hz	85.6	-8.6 ± 1.4
					500 Hz	91.0	-3.2 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	95.5	+1.2 ± 1.6
					4 kHz	95.3	+1.0 ± 1.6
					8 kHz	93.3	-1.1 (+2.1 ; -3.1)
					16 kHz	86.3	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.4	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.5
					250 Hz	94.3	0.0 ± 1.4
					500 Hz	94.3	0.0 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	94.1	-0.2 ± 1.6
					4 kHz	93.5	-0.8 ± 1.6
					8 kHz	91.4	-3.0 (+2.1 ; -3.1)
					16 kHz	84.4	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C224775

證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 10446

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C223338

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1069)

Date of Receipt / 收件日期 : 2 June 2022

Description / 儀器名稱 : Precision Acoustic Calibrator

Manufacturer / 製造商 : LARSON DAVIS

Model No. / 型號 : CAL200

Serial No. / 編號 : 11333

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 June 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

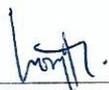
The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

:

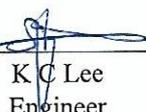
  
H T Wong

Assistant Engineer

Certified By

核證

:

  
K C Lee

Engineer

Date of Issue

簽發日期

:

20 June 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

# Certificate of Calibration

## 校正證書

Certificate No. : C223338

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C213954
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221705

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.8	± 0.2	± 0.2
114 dB, 1 kHz	113.8		

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000	1 kHz ± 1 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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# Certificate of Calibration

## 校正證書

Certificate No. : C220969  
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC22-0235 )      Date of Receipt / 收件日期 : 9 February 2022

Description / 儀器名稱 : Precision Acoustic Calibrator  
Manufacturer / 製造商 : LARSON DAVIS  
Model No. / 型號 : CAL200  
Serial No. / 編號 : 11334  
Supplied By / 委託者 : Envirotech Services Co.  
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$       Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$   
Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

**DATE OF TEST / 測試日期** : 19 February 2022

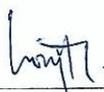
### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
The results do not exceed manufacturer's specification & user's specified acceptance criteria.  
The results are detailed in the subsequent page(s).

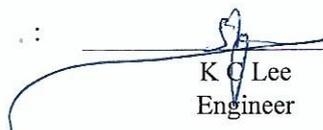
The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By  
測試

  
\_\_\_\_\_  
H T Wong  
Assistant Engineer

Certified By  
核證

  
\_\_\_\_\_  
K C Lee  
Engineer

Date of Issue  
簽發日期

22 February 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.  
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C220969

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C213954
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C201309

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	User's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.6	± 0.5	± 0.2
114 dB, 1 kHz	113.7		

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000	1 kHz ± 1 %	± 1

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- The uncertainties are for a confidence probability of not less than 95 %.

#### Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C224774  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1518)

Date of Receipt / 收件日期 : 1 August 2022

Description / 儀器名稱 : Precision Acoustic Calibrator

Manufacturer / 製造商 : LARSON DAVIS

Model No. / 型號 : CAL200

Serial No. / 編號 : 16878

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 August 2022

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

:

H T Wong

Assistant Engineer

Certified By

核證

:

K C Lee

Engineer

Date of Issue

簽發日期

:

23 August 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

# Certificate of Calibration

## 校正證書

Certificate No. : C224774

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C223647
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221705

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.2	± 0.2
114 dB, 1 kHz	113.9		

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000	1 kHz ± 1 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

#### Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



# Certificate of Calibration

## 校正證書

Certificate No. : C222146  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-0627)

Date of Receipt / 收件日期 : 4 April 2022

Description / 儀器名稱 : Acoustic Calibrator  
Manufacturer / 製造商 : Casella  
Model No. / 型號 : CEL-120/1  
Serial No. / 編號 : 3421612  
Supplied By / 委託者 : Envirotech Services Co.  
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$   
Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 April 2022

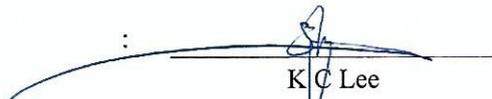
### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
The results do not exceed manufacturer's specification.  
The results are detailed in the subsequent page(s).

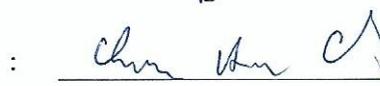
The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By  
測試

  
K C Lee  
Engineer

Certified By  
核證

  
H C Chan  
Engineer

Date of Issue  
簽發日期

28 April 2022

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C222146

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C213954
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221750

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.25	± 0.2
114 dB, 1 kHz	114.1		

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 5 Hz	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

## **APPENDIX B      RESULTS OF NOISE MONITORING**

**Appendix B - Noise Measurement Field Record Sheet**

Project Name / GMS No.: 0511456 OPC Noise Monitoring

Noise Monitoring Station: AON1

Noise Monitoring Staff: Kwan Yong Liang

Noise Meter Model / Identification: Rion-NL52/ 00331805

Calibrator Model / Identification: CAL200 / 11333

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark	
											NCO (BGL+5)	Limit Level		
12-Nov-22	19:25	19:30	Background	63.4	-	59.7	-	-	64.7	60	-	-		
	19:30	19:35	Background	57.2										
	19:35	19:40	Background	57.8										
	19:40	19:45	1st SOTO	63.4	61.2	59.7	1.5	56.0	64.7	60	Yes	Yes		
	19:45	19:50	1st SOTO	60.6										
	19:50	19:55	1st SOTO	58.1										
	20:05	20:10	1st VHK	65.6	65.6	-	-	-	64.7	60	N/A	N/A	Noise monitoring affected by passby bus and compliance would be not applicable	
	20:10	20:15	Background	59.5										
	20:15	20:20	Background	59.3										
	20:20	20:25	Background	56.9	-	57.4	58.6	-1.2	Negligible	63.6	60	-	-	
	20:15	20:20	Background	59.3										
	20:20	20:25	Background	56.9										
	20:25	20:30	Background	58.3										
	20:30	20:35	2nd SOTO	56.1										
	20:35	20:40	2nd SOTO	58.4										
	20:40	20:45	2nd SOTO	57.3										
	20:55	21:00	2nd VHK	60.3	60.3	1.7	55.5	Yes	Yes					
21:00	21:05	Background	61.2	-	-	-	-	-	-	-	-	-		
21:05	21:10	Background	57.3											
21:10	21:15	Background	56.5											

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
19-Nov-22	18:50	18:55	Background	62.2	-	62.9	-	-	67.9	60	-	-	
	18:55	19:00	Background	64.9									
	19:00	19:05	Background	62.9									
	19:05	19:10	1st SOTO	61.0	62.5	62.9	-0.4	Negligible	67.9	60	Yes	Yes	
	19:10	19:15	1st SOTO	64.2									
	19:15	19:20	1st SOTO	61.5									
	19:20	19:25	1st VHK	62.1	62.1	-	-	-	67.9	60	Yes	Yes	
	19:25	19:30	Background	64.2									
	19:30	19:35	Background	60.7									
	19:35	19:40	Background	61.2	-	57.3	2.6	56.4	62.3	60	-	-	
	20:15	20:20	Background	58.8									
	20:20	20:25	Background	58.3									
	20:25	20:30	Background	57.6									
	20:30	20:35	2nd SOTO	60.0									
	20:35	20:40	2nd SOTO	59.7									
	20:40	20:45	2nd SOTO	59.9									
	20:45	20:50	2nd VHK	58.6	58.6	1.3	52.7	Yes	Yes				
20:50	20:55	Background	54.5	-	-	-	-	62.3	60	-	-		
20:55	21:00	Background	57.5										
21:00	21:05	Background	55.6										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark	
											NCO (BGL+5)	Limit Level		
26-Nov-22	18:45	18:50	Background	58.2	-	60.2	-	-	65.2	60	-	-		
	18:50	18:55	Background	58.5										
	18:55	19:00	Background	62.2										
	19:00	19:05	1st SOTO	58.6	60.0	60.2	-0.2	Negligible	65.2	60	Yes	Yes	Leq, 15min for 1st SOTO was calculated using the Leq, 5min from 19:00 to 19:20.	
	19:05	19:10	1st SOTO	60.1										
	19:10	19:15	1st SOTO	61.5										
	19:15	19:20	1st SOTO / 1st VHK	59.1	61.6	60.2	1.4	56.0	65.2	60	Yes	Yes	Leq, 15min for 1st VHK was calculated using the Leq, 5min from 19:15 to 19:25.	
	19:20	19:25	1st VHK	63.2										
	19:25	19:30	Background	61.7										
	19:30	19:35	Background	56.4	-	59.2	58.4	0.8	51.3	63.4	60	-	-	
	19:35	19:40	Background	61.3										
	20:15	20:20	Background	56.7										
	20:20	20:25	Background	59.1										
	20:25	20:30	Background	59.5										
	20:30	20:35	2nd SOTO	61.1										
	20:35	20:40	2nd SOTO	56.8										
	20:40	20:45	2nd SOTO	57.5	59.2	Yes	Yes	Leq, 15min for 2nd SOTO was calculated using the Leq, 5min from 20:30 to 20:50.						
20:45	20:50	2nd SOTO / 2nd VHK	60.0	60.9	60.2	2.5	57.3	63.4	60	Yes	Yes	Leq, 15min for 2nd VHK was calculated using the Leq, 5min from 20:45 to 20:55.		
20:50	20:55	2nd VHK	61.7											
20:55	21:00	Background	60.3											
21:00	21:05	Background	58.1	-	-	-	-	63.4	60	-	-			
21:05	21:10	Background	54.7											

Schedule of Event:

12-Nov-22: 1st SOTO (19:40-19:55), 1st VHK (20:05-20:10), 2nd SOTO (20:30-20:45), 2nd VHK (20:55-21:00)

19-Nov-22: 1st SOTO (19:05-19:20), 1st VHK (19:20-19:25), 2nd SOTO (20:30-20:45), 2nd VHK (20:45-20:50)

26-Nov-22: 1st SOTO (19:00-19:16), 1st VHK (19:18-19:25), 2nd SOTO (20:30-20:46), 2nd VHK (20:48-20:55)

Note:

(a) Average BGL was calculated using  $L_{eq, 5min}$  15 minutes before and after the show.

(b) Impact from the show is considered negligible when measured noise level with the show is lower than measured background noise level.

(c) The Schedule of Event on each monitoring date was confirmed with OPC's staff on-site.

(d) +3dB free-field correction has been applied to monitoring results at AON1

Appendix B - Noise Measurement Field Record Sheet

Project Name / GMS No.: 0511456 OPC Noise Monitoring

Noise Monitoring Station: AON2

Noise Monitoring Staff: Ho Kam Fat

Noise Meter Model / Identification: Rion-NL52/ 00331805

Calibrator Model / Identification: CAL200/ 11334

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
12-Nov-22	19:25	19:30	Background	62.3	-	61.6	-	-	66.6	60	-	-	
	19:30	19:35	Background	63.0									
	19:35	19:40	Background	62.7									
	19:40	19:45	1st SOTO	63.1	63.7	61.6	2.1	59.4	66.6	60	Yes	Yes	
	19:45	19:50	1st SOTO	63.6									
	19:50	19:55	1st SOTO	64.2									
	20:05	20:10	1st VHK	62.4	62.4	-	-	-	-	-	Yes	Yes	Noise monitoring affected by passby bus and compliance would be not applicable
	20:10	20:15	Background	60.5									
	20:15	20:20	Background	60.0									
	20:20	20:25	Background	60.0	-	-	-	-	-	-	-	-	
	20:15	20:20	Background	60.0									
	20:20	20:25	Background	60.0									
	20:25	20:30	Background	59.7	62.6	59.9	2.7	59.3	64.9	60	Yes	Yes	
	20:30	20:35	2nd SOTO	61.9									
	20:35	20:40	2nd SOTO	62.5									
	20:40	20:45	2nd SOTO	63.4	59.7	-	-	-	-	-	Yes	Yes	
	20:55	21:00	2nd VHK	59.7									
21:00	21:05	Background	60.5										
21:05	21:10	Background	59.9	-	-	-	-	-	-	-	-		
21:10	21:15	Background	59.2										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
19-Nov-22	18:50	18:55	Background	63.1	-	63.3	-	-	68.3	60	-	-	
	18:55	19:00	Background	63.2									
	19:00	19:05	Background	63.1									
	19:05	19:10	1st SOTO	64.1	64.2	63.3	0.9	56.9	68.3	60	Yes	Yes	
	19:10	19:15	1st SOTO	64.1									
	19:15	19:20	1st SOTO	64.5									
	19:20	19:25	1st VHK	63.6	63.6	-	-	-	-	-	Yes	Yes	
	19:25	19:30	Background	63.4									
	19:30	19:35	Background	64.5									
	19:35	19:40	Background	62.5	-	-	-	-	-	-	-	-	
	20:15	20:20	Background	60.8									
	20:20	20:25	Background	60.8									
	20:25	20:30	Background	60.3	62.3	60.3	2.0	57.9	65.3	60	Yes	Yes	
	20:30	20:35	2nd SOTO	63.1									
	20:35	20:40	2nd SOTO	61.4									
	20:40	20:45	2nd SOTO	62.2	60.1	-	-	-	-	-	Yes	Yes	
	20:45	20:50	2nd VHK	60.1									
20:50	20:55	Background	61.1										
20:55	21:00	Background	58.3	-	-	-	-	-	-	-	-		
21:00	21:05	Background	60.1										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
26-Nov-22	18:45	18:50	Background	62.8	-	62.7	-	-	67.7	60	-	-	
	18:50	18:55	Background	61.7									
	18:55	19:00	Background	61.4									
	19:00	19:05	1st SOTO	64.2	64.2	62.7	1.5	58.7	67.7	60	Yes	Yes	Leq, 15min for 1st SOTO was calculated using the Leq, 5min from 19:00 to 19:20.
	19:05	19:10	1st SOTO	63.2									
	19:10	19:15	1st SOTO	64.9									
	19:15	19:20	1st SOTO / 1st VHK	64.2	64.2	62.7	1.5	58.6	67.7	60	Yes	Yes	Leq, 15min for 1st VHK was calculated using the Leq, 5min from 19:15 to 19:25.
	19:20	19:25	1st VHK	64.1									
	19:25	19:30	Background	61.9									
	19:30	19:35	Background	64.8	-	-	-	-	-	-	-	-	
	19:35	19:40	Background	62.8									
	20:15	20:20	Background	60.8									
	20:20	20:25	Background	61.0	-	-	-	-	-	-	-	-	
	20:25	20:30	Background	60.1									
	20:30	20:35	2nd SOTO	63.0									
	20:35	20:40	2nd SOTO	61.5	62.2	60.2	2.0	57.8	65.2	60	Yes	Yes	Leq, 15min for 2nd SOTO was calculated using the Leq, 5min from 20:30 to 20:50.
	20:40	20:45	2nd SOTO	62.1									
20:45	20:50	2nd SOTO / 2nd VHK	62.1										
20:50	20:55	2nd VHK	61.1	61.6	-	-	-	-	-	Yes	Yes	Leq, 15min for 2nd VHK was calculated using the Leq, 5min from 20:45 to 20:55.	
20:55	21:00	Background	59.3										
21:00	21:05	Background	60.9										
21:05	21:10	Background	58.9	-	-	-	-	-	-	-	-		

Schedule of Event:

12-Nov-22: 1st SOTO (19:40-19:55), 1st VHK (20:05-20:10), 2nd SOTO (20:30-20:45), 2nd VHK (20:55-21:00)

19-Nov-22: 1st SOTO (19:05-19:20), 1st VHK (19:20-19:25), 2nd SOTO (20:30-20:45), 2nd VHK (20:45-20:50)

26-Nov-22: 1st SOTO (19:00-19:16), 1st VHK (19:18-19:25), 2nd SOTO (20:30-20:46), 2nd VHK (20:48-20:55)

Note:

(a) Average BGL was calculated using  $L_{eq, 5min}$  15 minutes before and after the show.

(b) Impact from the show is considered negligible when measured noise level with the show is lower than measured background noise level.

(c) The Schedule of Event on each monitoring date was confirmed with OPC's staff on-site.

Appendix B - Noise Measurement Field Record Sheet

Project Name / GMS No.: 0511456 OPC Noise Monitoring

Noise Monitoring Station: AON3

Noise Monitoring Staff: Kwok Chi Lap

Noise Meter Model / Identification: Rion-NL52/ 00331805

Calibrator Model / Identification: CAL200/ 16878

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
12-Nov-22	19:25	19:30	Background	63.3	-	63.4	-	-	68.4	55	-	-	
	19:30	19:35	Background	64.8							-	-	
	19:35	19:40	Background	64.4							-	-	
	19:40	19:45	1st SOTO	63.3	62.4	63.4	-1.0	Negligible	68.4	55	Yes	Yes	
	19:45	19:50	1st SOTO	60.6									
	19:50	19:55	1st SOTO	62.9	60.4	63.4	-3.0	Negligible	68.4	55	Yes	Yes	Noise monitoring results affected by passby bus and compliance would be not applicable
	20:05	20:10	1st VHK	60.4									
	20:10	20:15	Background	59.4	-	63.4	-	-	68.4	55	-	-	
	20:15	20:20	Background	63.5									
	20:20	20:25	Background	63.5	-	63.4	-	-	68.4	55	-	-	
	20:25	20:30	Background	60.6									
	20:30	20:35	2nd SOTO	65.0	66.7	62.0	4.7	64.9	67.0	55	N/A	N/A	Noise monitoring results affected by passby bus and compliance would be not applicable
	20:35	20:40	2nd SOTO	69.7									
	20:40	20:45	2nd SOTO	62.0	65.1	62.0	3.1	62.1	67.0	55	N/A	N/A	Noise monitoring results affected by passby bus and compliance would be not applicable
	20:55	21:00	2nd VHK	65.1									
	21:00	21:05	Background	57.2	-	62.0	-	-	67.0	55	-	-	
	21:05	21:10	Background	61.3									
21:10	21:15	Background	63.2										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
19-Nov-22	18:50	18:55	Background	66.5	-	66.3	-	-	71.3	55	-	-	
	18:55	19:00	Background	65.5							-	-	
	19:00	19:05	Background	67.1							-	-	
	19:05	19:10	1st SOTO	67.8	66.5	66.3	0.2	51.0	71.3	55	Yes	Yes	
	19:10	19:15	1st SOTO	65.7									
	19:15	19:20	1st SOTO	65.5	66.3	66.3	0.0	Negligible	71.3	55	Yes	Yes	
	19:20	19:25	1st VHK	66.3									
	19:25	19:30	Background	66.2	-	66.3	-	-	71.3	55	-	-	
	19:30	19:35	Background	67.7									
	19:35	19:40	Background	64.2									
	20:15	20:20	Background	66.4	-	66.3	-	-	71.3	55	-	-	
	20:20	20:25	Background	64.3									
	20:25	20:30	Background	64.4	63.5	65.0	-1.5	Negligible	70.0	55	Yes	Yes	
	20:30	20:35	2nd SOTO	62.6									
	20:35	20:40	2nd SOTO	64.5	64.3	65.0	-0.7	Negligible	70.0	55	Yes	Yes	
	20:40	20:45	2nd SOTO	63.2									
	20:45	20:50	2nd VHK	64.3	-	65.0	-	-	70.0	55	-	-	
20:50	20:55	Background	64.4										
20:55	21:00	Background	65.4										
21:00	21:05	Background	64.5										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
26-Nov-22	18:45	18:50	Background	68.5	-	66.2	-	-	71.2	55	-	-	
	18:50	18:55	Background	65.7							-	-	
	18:55	19:00	Background	66.1							-	-	
	19:00	19:05	1st SOTO	68.1	66.7	66.2	0.5	57.4	71.2	55	N/A	N/A	Leq, 15min for 1st SOTO was calculated using the Leq, 5min from 19:00 to 19:20. Noise monitoring results affected by heavy vehicle with idling engine parked nearby and compliance would be not applicable.
	19:05	19:10	1st SOTO	65.6									
	19:10	19:15	1st SOTO	68.1	65.0	66.2	-1.2	Negligible	71.2	55	Yes	Yes	Leq, 15min for 1st VHK was calculated using the Leq, 5min from 19:15 to 19:25.
	19:15	19:20	1st SOTO / 1st VHK	63.6									
	19:20	19:25	1st VHK	66.0	-	66.2	-	-	71.2	55	-	-	
	19:25	19:30	Background	65.0									
	19:30	19:35	Background	66.4									
	19:35	19:40	Background	64.1	-	66.2	-	-	71.2	55	-	-	
	20:15	20:20	Background	64.7									
	20:20	20:25	Background	63.9	63.1	64.4	-1.3	Negligible	69.4	55	Yes	Yes	Leq, 15min for 2nd SOTO was calculated using the Leq, 5min from 20:30 to 20:50.
	20:25	20:30	Background	61.3									
	20:30	20:35	2nd SOTO	64.6	66.8	64.4	2.4	63.0	69.4	55	N/A	N/A	Leq, 15min for 2nd VHK was calculated using the Leq, 5min from 20:45 to 20:55. Noise monitoring results affected by heavy vehicle with idling engine parked nearby and compliance would be not applicable.
	20:35	20:40	2nd SOTO	61.4									
	20:40	20:45	2nd SOTO	63.7	-	64.4	-	-	69.4	55	-	-	
20:45	20:50	2nd SOTO / 2nd VHK	61.9										
20:50	20:55	2nd VHK	69.0										
20:55	21:00	Background	62.6	-	64.4	-	-	69.4	55	-	-		
21:00	21:05	Background	66.6										
21:05	21:10	Background	65.1										

Schedule of Event:

12-Nov-22: 1st SOTO (19:40-19:55), 1st VHK (20:05-20:10), 2nd SOTO (20:30-20:45), 2nd VHK (20:55-21:00)

19-Nov-22: 1st SOTO (19:05-19:20), 1st VHK (19:20-19:25), 2nd SOTO (20:30-20:45), 2nd VHK (20:45-20:50)

26-Nov-22: 1st SOTO (19:00-19:16), 1st VHK (19:18-19:25), 2nd SOTO (20:30-20:46), 2nd VHK (20:48-20:55)

Note:

(a) Average BGL was calculated using  $L_{eq, 5min}$  15 minutes before and after the show.

(b) Impact from the show is considered negligible when measured noise level with the show is lower than measured background noise level.

(c) The Schedule of Event on each monitoring date was confirmed with OPC's staff on-site.

Appendix B - Noise Measurement Field Record Sheet

Project Name / GMS No.: 0511456 OPC Noise Monitoring  
 Noise Monitoring Station: AON4  
 Noise Monitoring Staff: Yeung Ping Fai  
 Noise Meter Model / Identification: Rion-NL52/ 00331805  
 Calibrator Model / Identification: CAL200/ 11333

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
12-Nov-22	19:25	19:30	Background	54.1	-	54.6	-	-	59.6	55	-	-	
	19:30	19:35	Background	54.9									
	19:35	19:40	Background	52.4									
	19:40	19:45	1st SOTO	50.0	50.6	54.6	-4.0	Negligible	59.6	55	Yes	Yes	
	19:45	19:50	1st SOTO	51.2									
	19:50	19:55	1st SOTO	50.6	47.9	54.6	-6.7	Negligible	59.6	55	Yes	Yes	
	20:05	20:10	1st VHK	47.9									
	20:10	20:15	Background	48.1	-	54.6	-	-	59.6	55	-	-	
	20:15	20:20	Background	47.4									
	20:20	20:25	Background	59.4									
	20:15	20:20	Background	47.4	-	54.6	-	-	59.6	55	-	-	
	20:20	20:25	Background	59.4									
	20:25	20:30	Background	49.0									
	20:30	20:35	2nd SOTO	49.5	50.1	53.3	-3.2	Negligible	58.3	55	Yes	Yes	
	20:35	20:40	2nd SOTO	49.2									
	20:40	20:45	2nd SOTO	51.4	49.1	53.3	-4.2	Negligible	58.3	55	Yes	Yes	
	20:55	21:00	2nd VHK	49.1									
21:00	21:05	Background	50.2	-	53.3	-	-	58.3	55	-	-		
21:05	21:10	Background	49.8										
21:10	21:15	Background	48.9										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
19-Nov-22	18:50	18:55	Background	59.0	-	57.6	-	-	62.6	55	-	-	
	18:55	19:00	Background	57.6									
	19:00	19:05	Background	54.3									
	19:05	19:10	1st SOTO	53.9	55.6	57.6	-2.0	Negligible	62.6	55	Yes	Yes	
	19:10	19:15	1st SOTO	53.7									
	19:15	19:20	1st SOTO	57.9	58.3	57.6	0.7	50.2	62.6	55	Yes	Yes	
	19:20	19:25	1st VHK	58.3									
	19:25	19:30	Background	57.2	-	57.6	-	-	62.6	55	-	-	
	19:30	19:35	Background	55.7									
	19:35	19:40	Background	59.5									
	20:15	20:20	Background	49.6	-	57.6	-	-	62.6	55	-	-	
	20:20	20:25	Background	50.3									
	20:25	20:30	Background	51.1									
	20:30	20:35	2nd SOTO	50.4	51.1	57.6	0.4	41.1	62.6	55	Yes	Yes	
	20:35	20:40	2nd SOTO	50.3									
	20:40	20:45	2nd SOTO	52.4	51.7	57.6	1.0	44.9	62.6	55	Yes	Yes	
	20:45	20:50	2nd VHK	51.7									
20:50	20:55	Background	47.5	-	57.6	-	-	62.6	55	-	-		
20:55	21:00	Background	49.6										
21:00	21:05	Background	53.6										

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
26-Nov-22	18:45	18:50	Background	53.0	-	52.7	-	-	57.7	55	-	-	
	18:50	18:55	Background	52.6									
	18:55	19:00	Background	52.2									
	19:00	19:05	1st SOTO	55.2	53.1	52.7	0.4	42.1	57.7	55	Yes	Yes	Leq, 15min for 1st SOTO was calculated using the Leq, 5min from 19:00 to 19:20.
	19:05	19:10	1st SOTO	51.3									
	19:10	19:15	1st SOTO	52.8	52.6	52.7	-0.1	Negligible	57.7	55	Yes	Yes	Leq, 15min for 1st VHK was calculated using the Leq, 5min from 19:15 to 19:25.
	19:15	19:20	1st SOTO / 1st VHK	52.0									
	19:20	19:25	1st VHK	53.2	-	52.7	-	-	57.7	55	-	-	
	19:25	19:30	Background	52.3									
	19:30	19:35	Background	53.0									
	19:35	19:40	Background	53.2	-	52.7	-	-	57.7	55	-	-	
	20:15	20:20	Background	52.0									
	20:20	20:25	Background	51.2									
	20:25	20:30	Background	52.0	51.0	53.0	-2.0	Negligible	58.0	55	Yes	Yes	Leq, 15min for 2nd SOTO was calculated using the Leq, 5min from 20:30 to 20:50.
	20:30	20:35	2nd SOTO	51.3									
	20:35	20:40	2nd SOTO	51.2	50.5	53.0	-2.5	Negligible	58.0	55	Yes	Yes	Leq, 15min for 2nd VHK was calculated using the Leq, 5min from 20:45 to 20:55.
	20:40	20:45	2nd SOTO	51.3									
20:45	20:50	2nd SOTO / 2nd VHK	50.3	-	53.0	-	-	58.0	55	-	-		
20:50	20:55	2nd VHK	50.6										
20:55	21:00	Background	52.8										
21:00	21:05	Background	56.7	-	53.0	-	-	58.0	55	-	-		
21:05	21:10	Background	48.9										

Schedule of Event:  
 12-Nov-22: 1st SOTO (19:40-19:55), 1st VHK (20:05-20:10), 2nd SOTO (20:30-20:45), 2nd VHK (20:55-21:00)  
 19-Nov-22: 1st SOTO (19:05-19:20), 1st VHK (19:20-19:25), 2nd SOTO (20:30-20:45), 2nd VHK (20:45-20:50)  
 26-Nov-22: 1st SOTO (19:00-19:16), 1st VHK (19:18-19:25), 2nd SOTO (20:30-20:46), 2nd VHK (20:48-20:55)

- Note:
- (a) Average BGL was calculated using  $L_{eq, 5min}$  15 minutes before and after the show.
  - (b) Impact from the show is considered negligible when measured noise level with the show is lower than measured background noise level.
  - (c) The Schedule of Event on each monitoring date was confirmed with OPC's staff on-site.

Appendix B - Noise Measurement Field Record Sheet

Project Name / GMS No.: 0511456 OPC Noise Monitoring

Noise Monitoring Station: AONS

Noise Monitoring Staff: Magnum Fan

Noise Meter Model / Identification: Rion-NL52/ 00331805

Calibrator Model / Identification: CAL200/ 16878

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
12-Nov-22	19:25	19:30	Background	59.4	-	57.3	-	-	62.3	55	-	-	
	19:30	19:35	Background	55.7							-	-	
	19:35	19:40	Background	56.9							-	-	
	19:40	19:45	1st SOTO	55.2	59.0	57.3	1.7	54.3	62.3	55	Yes	Yes	
	19:45	19:50	1st SOTO	57.5									
	19:50	19:55	1st SOTO	61.8									
	20:05	20:10	1st VHK	51.9	51.9	-	-	-	62.3	55	Yes	Yes	
	20:10	20:15	Background	58.2	-5.4						Negligible		
	20:15	20:20	Background	56.6	-						-		
	20:20	20:25	Background	55.6	-	54.8	-	-	59.8	55	-	-	
	20:15	20:20	Background	56.6							-	-	
	20:20	20:25	Background	55.6							-	-	
	20:25	20:30	Background	53.7	56.5	54.8	1.7	51.7	59.8	55	Yes	Yes	
	20:30	20:35	2nd SOTO	57.0									
	20:35	20:40	2nd SOTO	55.8									
	20:40	20:45	2nd SOTO	56.7	55.4	54.8	0.6	46.6	59.8	55	Yes	Yes	
	20:55	21:00	2nd VHK	55.4									
21:00	21:05	Background	53.6	-							-		
21:05	21:10	Background	55.3	-	54.8	-	-	59.8	55	-	-		
21:10	21:15	Background	52.7							-	-		

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
19-Nov-22	18:50	18:55	Background	54.5	-	55.5	-	-	60.5	55	-	-	
	18:55	19:00	Background	57.6							-	-	
	19:00	19:05	Background	57.3							-	-	
	19:05	19:10	1st SOTO	55.4	55.9	55.5	0.4	45.9	60.5	55	Yes	Yes	
	19:10	19:15	1st SOTO	57.7									
	19:15	19:20	1st SOTO	53.7									
	19:20	19:25	1st VHK	58.9	58.9	-	-	-	60.5	55	N/A	N/A	Noise monitoring results affected by passby bus and compliance would be not applicable
	19:25	19:30	Background	54.6	3.4						56.3		
	19:30	19:35	Background	52.5	-						-		
	19:35	19:40	Background	53.9	-	53.7	-	-	58.7	55	-	-	
	20:15	20:20	Background	55.5							-	-	
	20:20	20:25	Background	51.4							-	-	
	20:25	20:30	Background	55.3	52.9	53.7	-0.8	Negligible	58.7	55	Yes	Yes	
	20:30	20:35	2nd SOTO	53.6									
	20:35	20:40	2nd SOTO	50.1									
	20:40	20:45	2nd SOTO	54.0	53.5	53.7	-0.2	Negligible	58.7	55	Yes	Yes	
	20:45	20:50	2nd VHK	53.5									
20:50	20:55	Background	50.1	-							-		
20:55	21:00	Background	55.0	-	53.7	-	-	58.7	55	-	-		
21:00	21:05	Background	51.7							-	-		

Date	Start Time	End Time	Monitoring Event	Leq, 5min	Leq, 15min	Average BGL	Noise Level with Show - BGL	BG-corrected Leq, 15min	NCO (BGL+5)	Limit Level	Compliance		Remark
											NCO (BGL+5)	Limit Level	
26-Nov-22	18:45	18:50	Background	53.9	-	56.9	-	-	61.9	55	-	-	
	18:50	18:55	Background	57.6							-	-	
	18:55	19:00	Background	54.7							-	-	
	19:00	19:05	1st SOTO	57.1	56.7	56.9	-0.2	Negligible	61.9	55	Yes	Yes	Leq, 15min for 1st SOTO was calculated using the Leq, 5min from 19:00 to 19:20.
	19:05	19:10	1st SOTO	57.6									
	19:10	19:15	1st SOTO	56.0									
	19:15	19:20	1st SOTO / 1st VHK	56.0	56.1	56.9	-0.8	Negligible	61.9	55	Yes	Yes	Leq, 15min for 1st VHK was calculated using the Leq, 5min from 19:15 to 19:25.
	19:20	19:25	1st VHK	56.2									
	19:25	19:30	Background	61.2							-	-	
	19:30	19:35	Background	54.7	-	54.9	-	-	59.9	55	-	-	
	19:35	19:40	Background	53.8							-	-	
	20:15	20:20	Background	56.6							-	-	
	20:20	20:25	Background	57.5	53.5	54.9	-1.4	Negligible	59.9	55	Yes	Yes	Leq, 15min for 2nd SOTO was calculated using the Leq, 5min from 20:30 to 20:50.
	20:25	20:30	Background	54.2									
	20:30	20:35	2nd SOTO	55.2									
	20:35	20:40	2nd SOTO	48.8	52.7	54.9	-2.2	Negligible	59.9	55	Yes	Yes	Leq, 15min for 2nd VHK was calculated using the Leq, 5min from 20:45 to 20:55.
	20:40	20:45	2nd SOTO	53.7									
20:45	20:50	2nd SOTO / 2nd VHK	54.1										
20:50	20:55	2nd VHK	50.6	-	54.9	-	-	59.9	55	-	-		
20:55	21:00	Background	55.7							-	-		
21:00	21:05	Background	48.0							-	-		
21:05	21:10	Background	51.1										

Schedule of Event:

12-Nov-22: 1st SOTO (19:40-19:55), 1st VHK (20:05-20:10), 2nd SOTO (20:30-20:45), 2nd VHK (20:55-21:00)

19-Nov-22: 1st SOTO (19:05-19:20), 1st VHK (19:20-19:25), 2nd SOTO (20:30-20:45), 2nd VHK (20:45-20:50)

26-Nov-22: 1st SOTO (19:00-19:16), 1st VHK (19:18-19:25), 2nd SOTO (20:30-20:46), 2nd VHK (20:48-20:55)

Note:

(a) Average BGL was calculated using  $L_{eq, 5min}$  15 minutes before and after the show.

(b) Impact from the show is considered negligible when measured noise level with the show is lower than measured background noise level.

(c) The Schedule of Event on each monitoring date was confirmed with OPC's staff on-site.

## **APPENDIX C      PHOTOGRAPHS OF THE MONITORING STATIONS**











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**ERM has over 160 offices across the following countries and territories worldwide**

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