



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

3<sup>rd</sup> Monthly Noise Monitoring Report  
(6 Apr 2021 – 5 May 2021)

5 May 2021

Project No.: 0540005

Document details	
Document title	Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong
Document subtitle	3 <sup>rd</sup> Monthly Noise Monitoring Report (6 Apr 2021 – 5 May 2021)
Project No.	0540005
Date	5 May 2021
Version	1.0
Author	Susan Chan
Client Name	Ocean Park Corporation

#### Document history

Version	Revision	Author	Reviewed by	ERM approval to issue		Comments
				Name	Date	
Draft	1.0	Susan Chan	Mandy To	Terence Fong	5.5.2021	-



**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 EM&A Report (6 Apr to 5 May 2021)
Date of Report:	5 May 2021

**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: 5 May 2021

Our ref: 0540005\_ETL Verification Cert\_3\_20210505.docx

Ocean Park Corporation  
180 Wong Chuk Hang Road  
Aberdeen  
Hong Kong

**Attn: Ms. Eva Au Yeung**

**Ocean Park Master Redevelopment Project Contract No. P007**  
**Independent Environmental Checker (IEC)**  
**Environmental Permit No. EP-249/2006/D - Condition 3.1**  
**Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong –**  
**3<sup>rd</sup> Monthly Noise Monitoring Report dated 5 May 2021**

**Our Reference**  
AFK/EC/hl/416500/02.02/  
L-0008

3/F International Trade  
Tower  
348 Kwun Tong Road  
Kowloon  
Hong Kong

6 May 2021  
By Email and Post

Dear Eva,

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F +852 2827 1823  
mottmac.hk

I refer to the captioned submission dated 5 May 2021. Pursuant to the requirement under Condition 3.1 of the Environmental Permit No. EP-249/2006/D, I hereby verify the Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong – 3<sup>rd</sup> Monthly Noise Monitoring Report for the Project.

Yours sincerely,  
for MOTT MACDONALD HONG KONG LIMITED



Ir Eric Ching  
Independent Environmental Checker (IEC)  
T 2828 5825  
Eric.Ching@mottmac.com

**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  
3<sup>rd</sup> Monthly Noise Monitoring Report  
(6 Apr 2021 – 5 May 2021)**

**Submitted by ERM-Hong Kong, Limited dated 05 May 2021**

**This is to verify that**

**Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong  
3<sup>rd</sup> Monthly Noise Monitoring Report  
(6 Apr 2021 – 5 May 2021)**

**Submitted by ERM-Hong Kong, Limited dated 05 May 2021**

**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

06 May 2021

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## Signature Page

5 May 2021

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

3rd Monthly Noise Monitoring Report (6 Apr 2021 – 5 May 2021)



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Terence Fong  
Partner

ERM-Hong Kong, Limited  
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## CONTENTS

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Purpose of the Report.....	1
1.2	Structure of the Report .....	1
<b>2.</b>	<b>NOISE MONITORING .....</b>	<b>2</b>
2.1	Introduction .....	2
2.2	Noise Monitoring Requirements.....	2
2.2.1	Monitoring Locations.....	2
2.2.2	Monitoring Parameters.....	3
2.2.3	Monitoring Frequency .....	3
2.2.4	Monitoring Methodology.....	3
2.2.5	Compliance Assessment .....	4
2.3	Results of Noise Monitoring .....	5
2.4	Summary of Noise Exceedances .....	5
<b>3.</b>	<b>CONCLUSION .....</b>	<b>6</b>

## List of Appendices

<b>APPENDIX A</b>	<b>CALIBRATION CERTIFICATES OF THE NOISE MEASUREMENT EQUIPMENT</b>
<b>APPENDIX B</b>	<b>RESULTS OF NOISE MONITORING</b>
<b>APPENDIX C</b>	<b>PHOTOGRAPHS OF THE MONITORING STATIONS</b>

## List of Tables

Table 2.1	Alternative Noise Monitoring Stations.....	3
Table 2.2	Schedule of the Shows .....	3
Table 2.3	Noise Monitoring Schedule during this Reporting Month.....	3
Table 2.4	Noise Measurement Equipment.....	4
Table 2.5	Action and Limit Levels for Entertainment Noise .....	4
Table 2.5	Compliance of Noise Monitoring during this Reporting Period .....	5

## 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 and Vision of Hong Kong) commenced on 19 January 2020 with the 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 2021. 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 on 18 February 2021 and the Vision of Hong Kong (VHK) has been relaunched since 6 March 2021. This is the 3<sup>rd</sup> noise monitoring report which summarises the impact monitoring results during the reporting period from **6 April to 5 May 2021**.

### 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 “*Repositioning 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 relaunched during public holidays (including Easter seasonal events from 2 to 9 April 2021) and weekends (Saturdays and Sundays) from 6 March 2021 to 2 May 2021. 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 25 February 2021) have been sought to reduce the monitoring frequency to 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*.

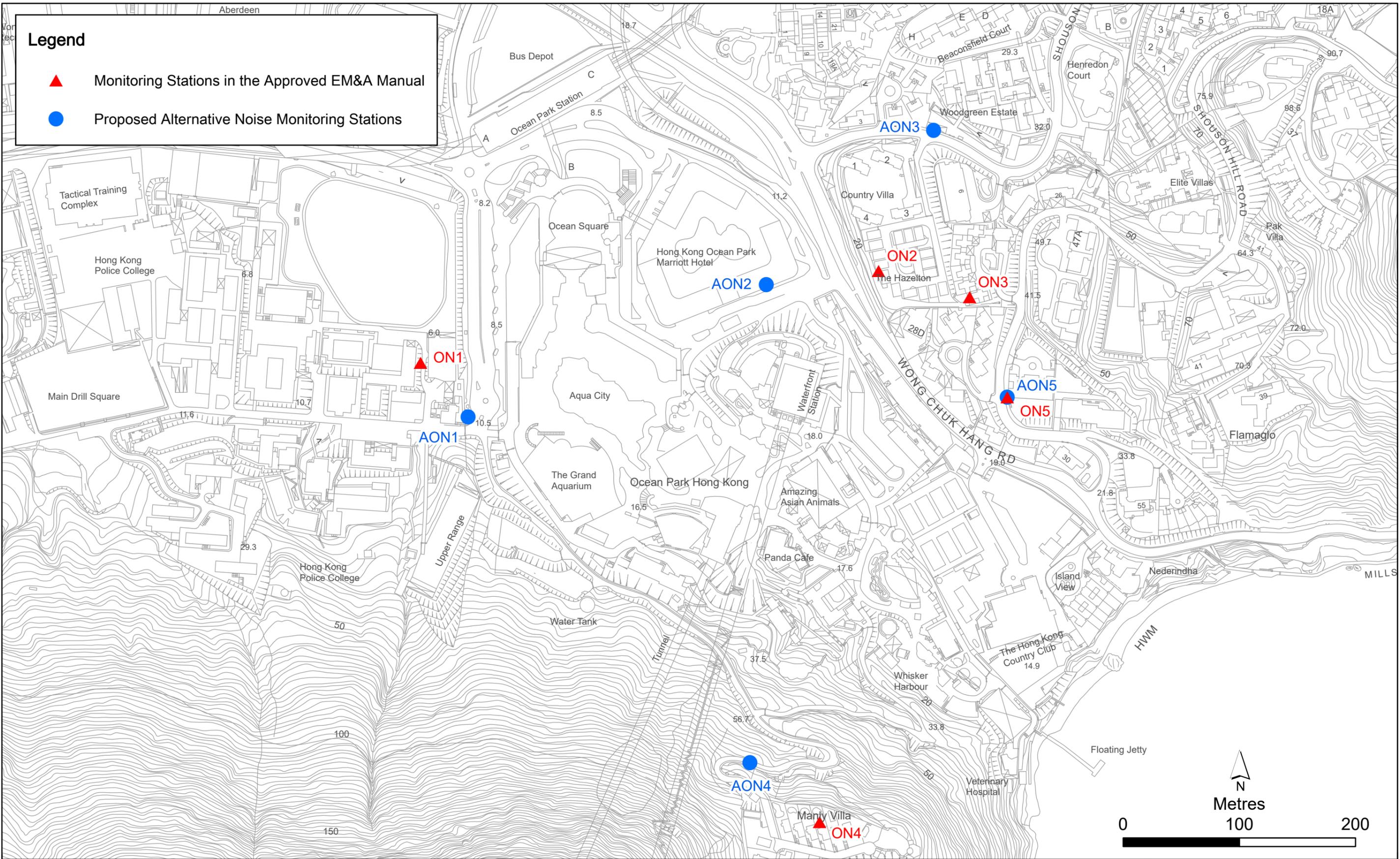


Figure 2.1

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
Vision of Hong Kong (VHK)	19:15-19:20 hours

### 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
10 Apr 2021 (Saturday)	AON1 to AON5
17 Apr 2021 (Saturday)	AON1 to AON5
24 Apr 2021 (Saturday)	AON1 to AON5
1 May 2021 (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
10 Apr 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-
17 Apr 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-
24 Apr 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-
1 May 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-

## 2.4 Summary of Noise Exceedances

No record of noise exceedance during this reporting month.

### 3. CONCLUSION

This is the 3<sup>rd</sup> monthly noise monitoring report which summarises the noise monitoring results during the reporting period from **6 April** to **5 May 2021**.

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**



# Certificate of Calibration 校正證書

Certificate No. : C203821  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-1389)      Date of Receipt / 收件日期 : 30 June 2020  
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 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 ± 2)°C      Relative Humidity / 相對濕度 : (50 ± 25)%  
Line Voltage / 電壓 : ---

## TEST SPECIFICATIONS / 測試規範

Calibration

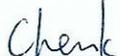
DATE OF TEST / 測試日期 : 9 July 2020

## 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
- The Bruel & Kjaer Calibration Laboratory, Denmark

Tested By :   
測試 : K P Cheuk  
Assistant Engineer

Certified By :   
核證 : K C Lee  
Engineer

Date of Issue : 10 July 2020  
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. : C203821  
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	C200258
CL281	Multifunction Acoustic Calibrator	CDK1806821

- 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所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C203821

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	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.6	-4.3 (+3.0 ; -6.0)

#### 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)
					12.5 kHz	87.6	-6.2 (+3.0 ; -6.0)

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. : C203821  
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
	12.5 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.

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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. : C202701  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC20-0981 )

Date of Receipt / 收件日期 : 7 May 2020

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 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 : 18 May 2020

### 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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By :

測試

K P Cheuk

Assistant Engineer

Certified By :

核證

K C Lee

Engineer

Date of Issue :

簽發日期

22 May 2020

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

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# Certificate of Calibration

## 校正證書

Certificate No. : C202701

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	C200258
CL281	Multifunction Acoustic Calibrator	CDK1806821

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	* 97.3	± 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. : C202701  
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	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.6	-4.3 (+3.0 ; -6.0)

#### 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	93.2	-0.8 ± 1.5
					125 Hz	93.9	-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	93.9	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.7	-6.2 (+3.0 ; -6.0)

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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. : C202701  
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
	12.5 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.

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Page 4 of 4



# Certificate of Calibration 校正證書

Certificate No. : C203481  
證書編號

**ITEM TESTED / 送檢項目** (Job No. / 序引編號 : IC20-1282)      Date of Receipt / 收件日期 : 15 June 2020  
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 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** : 23 June 2020

## 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
- The Bruel & Kjaer Calibration Laboratory, Denmark

Tested By  
測試

  
K P Cheuk  
Assistant Engineer

Certified By  
核證

  
K C Lee  
Engineer

Date of Issue : 29 June 2020  
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. : C203481  
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	C200258
CL281	Multifunction Acoustic Calibrator	CDK1806821

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	93.7	± 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	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

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	93.7	Ref.
			Slow				

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. : C203481  
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	67.4	-26.2 ± 1.5
					125 Hz	77.5	-16.1 ± 1.5
					250 Hz	85.0	-8.6 ± 1.4
					500 Hz	90.5	-3.2 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	94.9	+1.2 ± 1.6
					4 kHz	94.7	+1.0 ± 1.6
					8 kHz	92.7	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.3	-4.3 (+3.0 ; -6.0)

#### 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	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.5
					250 Hz	93.7	0.0 ± 1.4
					500 Hz	93.7	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	92.9	-0.8 ± 1.6
					8 kHz	90.8	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.3	-6.2 (+3.0 ; -6.0)

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. : C203481  
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
	12.5 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.

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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. : C206812  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-2542) Date of Receipt / 收件日期 : 26 November 2020

Description / 儀器名稱 : Sound Level Meter  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-52  
Serial No. / 編號 : 00131628  
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 : 12 December 2020

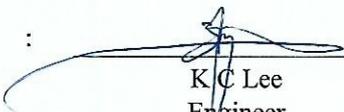
## TEST RESULTS / 測試結果

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- 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 : 14 December 2020  
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。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

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

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Website/網址: www.suncreation.com



# Certificate of Calibration

## 校正證書

Certificate No. : C206812  
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	C200258
CL281	Multifunction Acoustic Calibrator	CDK1806821

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	93.6	± 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	93.6 (Ref.)
				104.00		103.6
				114.00		113.7

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	93.6	Ref.
			Slow				

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. : C206812  
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	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.3	-3.2 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	94.8	+1.2 ± 1.6
					4 kHz	94.6	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.2	-4.3 (+3.0 ; -6.0)

#### 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	92.7	-0.8 ± 1.5
					125 Hz	93.4	-0.2 ± 1.5
					250 Hz	93.6	0.0 ± 1.4
					500 Hz	93.6	0.0 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	93.4	-0.2 ± 1.6
					4 kHz	92.8	-0.8 ± 1.6
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.2	-6.2 (+3.0 ; -6.0)

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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. : C206812  
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
	12.5 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 :

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Page 4 of 4



# Certificate of Calibration

## 校正證書

Certificate No. : C203474  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-1282)      Date of Receipt / 收件日期 : 15 June 2020  
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 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

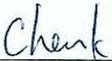
DATE OF TEST / 測試日期 : 23 June 2020

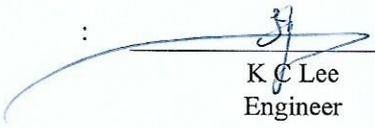
### TEST RESULTS / 測試結果

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
- The Bruel & Kjaer Calibration Laboratory, Denmark

Tested By :   
測試 : \_\_\_\_\_  
K P Cheuk  
Assistant Engineer

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

Date of Issue : 29 June 2020  
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.

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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. : C203474  
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	C193756
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C201309

- 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.

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Website/網址: www.suncreation.com



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Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C206427

證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC20-2353 )      Date of Receipt / 收件日期 : 3 November 2020

Description / 儀器名稱 : Precision Acoustic Calibrator  
Manufacturer / 製造商 : LARSON DAVIS  
Model No. / 型號 : CAL200  
Serial No. / 編號 : 16172  
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

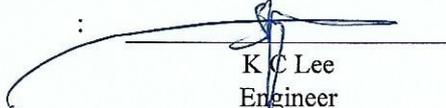
DATE OF TEST / 測試日期 : 21 November 2020

### 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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- 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 : 24 November 2020  
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.

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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. : C206427  
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	C203952
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C201309

4. Test procedure : MA100N.

5. 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 :

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Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C206428  
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-2353)      Date of Receipt / 收件日期 : 3 November 2020

Description / 儀器名稱 : Precision Acoustic Calibrator  
Manufacturer / 製造商 : LARSON DAVIS  
Model No. / 型號 : CAL200  
Serial No. / 編號 : 10227  
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 : 21 November 2020

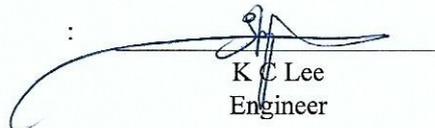
## TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
The results are detailed in the subsequent page(s).

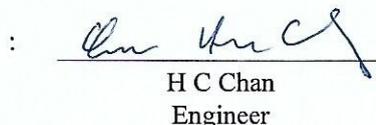
The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- 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 : 24 November 2020  
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.

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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. : C206428  
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	C203952
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C201309

4. Test procedure : MA100N.

5. 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	93.7	± 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 :

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Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C206429  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC20-2353 )      Date of Receipt / 收件日期 : 3 November 2020

Description / 儀器名稱 : Sound Level Meter  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-52  
Serial No. / 編號 : 00710259  
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 : 21 November 2020

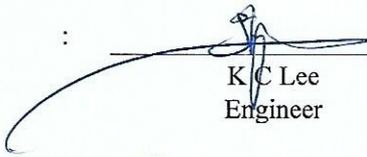
### TEST RESULTS / 測試結果

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- 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 : 24 November 2020  
簽發日期

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# Certificate of Calibration

## 校正證書

Certificate No. : C206429  
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	C200258
CL281	Multifunction Acoustic Calibrator	CDK1806821

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	93.9	± 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	93.9 (Ref.)
				104.00		103.9
				114.00		113.9

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	93.9	Ref.
			Slow				

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# Certificate of Calibration

## 校正證書

Certificate No. : C206429

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	67.6	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.5
					250 Hz	85.2	-8.6 ± 1.4
					500 Hz	90.6	-3.2 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	95.1	+1.2 ± 1.6
					4 kHz	94.9	+1.0 ± 1.6
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.4	-4.3 (+3.0 ; -6.0)

#### 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	93.9	0.0 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	93.7	-0.2 ± 1.6
					4 kHz	93.1	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.5	-6.2 (+3.0 ; -6.0)

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.

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Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C206429

證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 10990

- 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
	12.5 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 :

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Page 4 of 4

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	10 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Chuen
Temperature:	22 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00131628
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON1	19:00-19:05	Background	60.7	60.9	-	-	-	-	-	-	
AON1	19:05-19:10	Background	62.4								
AON1	19:10-19:15	Background	60.3								
AON1	19:15-19:20	VHK	60.6		-0.3	Negligible	60.0	YES	YES	-	
AON1	19:20-19:25	Background	58.0		-	-	-	-	-	-	
AON1	19:25-19:30	Background	61.7								

**Note:**

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	10 April 2021 (Saturday)
Noise Monitoring Staff:	Yeung Ping Fai
Temperature:	22 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00331806
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON2	19:00-19:05	Background	63.3	63.9	-	-	-	-	-	-	
AON2	19:05-19:10	Background	63.1								
AON2	19:10-19:15	Background	64.5								
AON2	19:15-19:20	VHK	65.4		1.5	60.0	60.0	YES	YES	-	
AON2	19:20-19:25	Background	65.7		-	-	-	-	-	-	
AON2	19:25-19:30	Background	62.0								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	10 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Hiu Wa
Temperature:	22 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643039
Calibrator Model / Identification:	CAL200/ 16172
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON3	19:00-19:05	Background	67.3	68.1	-	-	-	-	-	-	
AON3	19:05-19:10	Background	67.8								
AON3	19:10-19:15	Background	67.6								
AON3	19:15-19:20	VHK	66.2		-1.9	Negligible	55.0	YES	YES	-	
AON3	19:20-19:25	Background	67.7		-	-	-	-	-	-	
AON3	19:25-19:30	Background	69.5								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	10 April 2021 (Saturday)
Noise Monitoring Staff:	Cheng Tse Ho
Temperature:	22 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00710259
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON4	19:00-19:05	Background	53.8	51.2	-	-	-	-	-	-	
AON4	19:05-19:10	Background	48.8								
AON4	19:10-19:15	Background	51.6								
AON4	19:15-19:20	VHK	51.8		0.6	42.6	55.0	YES	YES	-	
AON4	19:20-19:25	Background	50.9		-	-	-	-	-	-	
AON4	19:25-19:30	Background	49.2								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	10 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Fat
Temperature:	22 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643040
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON5	19:00-19:05	Background	58.9	60.1	-	-	-	-	-	-	
AON5	19:05-19:10	Background	60.0								
AON5	19:10-19:15	Background	62.8								
AON5	19:15-19:20	VHK	61.2		1.1	54.7	55.0	YES	YES	-	
AON5	19:20-19:25	Background	58.7		-	-	-	-	-	-	
AON5	19:25-19:30	Background	58.3								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	17 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Chuen
Temperature:	23 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00131628
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON1	19:00-19:05	Background	56.3	58.8	-	-	-	-	-	-	
AON1	19:05-19:10	Background	60.1								
AON1	19:10-19:15	Background	60.0								
AON1	19:15-19:20	VHK	60.4		1.6	55.3	60.0	YES	YES	-	
AON1	19:20-19:25	Background	58.1		-	-	-	-	-	-	
AON1	19:25-19:30	Background	58.4								

**Note:**

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	17 April 2021 (Saturday)
Noise Monitoring Staff:	Yeung Ping Fai
Temperature:	23 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00331806
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON2	19:00-19:05	Background	63.4	65.1	-	-	-	-	-	-	
AON2	19:05-19:10	Background	64.4								
AON2	19:10-19:15	Background	63.8								
AON2	19:15-19:20	VHK	65.5		0.4	55.3	60.0	YES	YES	-	
AON2	19:20-19:25	Background	65.8		-	-	-	-	-	-	
AON2	19:25-19:30	Background	66.9								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	17 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Hiu Wa
Temperature:	23 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643039
Calibrator Model / Identification:	CAL200/ 16172
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON3	19:00-19:05	Background	68.1	66.5	-	-	-	-	-	-	
AON3	19:05-19:10	Background	66.3								
AON3	19:10-19:15	Background	66.8								
AON3	19:15-19:20	VHK	66.3		-0.2	Negligible	55.0	YES	YES	-	
AON3	19:20-19:25	Background	65.5		-	-	-	-	-	-	
AON3	19:25-19:30	Background	65.4								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	17 April 2021 (Saturday)
Noise Monitoring Staff:	Cheng Tse Ho
Temperature:	23 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00710259
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON4	19:00-19:05	Background	48.9	49.8	-	-	-	-	-	-	
AON4	19:05-19:10	Background	48.7								
AON4	19:10-19:15	Background	49.7								
AON4	19:15-19:20	VHK	50.8		1.0	43.9	55.0	YES	YES	-	
AON4	19:20-19:25	Background	51.9		-	-	-	-	-	-	
AON4	19:25-19:30	Background	49.0								

**Note:**

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	17 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Fat
Temperature:	23 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643040
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON5	19:00-19:05	Background	58.7	59.7	-	-	-	-	-	-	
AON5	19:05-19:10	Background	57.7								
AON5	19:10-19:15	Background	57.5								
AON5	19:15-19:20	VHK	57.7		-2.0	Negligible	55.0	YES	YES	-	
AON5	19:20-19:25	Background	61.7		-	-	-	-	-	-	
AON5	19:25-19:30	Background	61.1								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	24 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Chuen
Temperature:	24 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00131628
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON1	19:00-19:05	Background	57.3	58.6	-	-	-	-	-	-	
AON1	19:05-19:10	Background	62.1								
AON1	19:10-19:15	Background	58.6								
AON1	19:15-19:20	VHK	59.2		0.6	50.0	60.0	YES	YES	-	
AON1	19:20-19:25	Background	57.3		-	-	-	-	-	-	
AON1	19:25-19:30	Background	53.8								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	24 April 2021 (Saturday)
Noise Monitoring Staff:	Yeung Ping Fai
Temperature:	24 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00331806
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON2	19:00-19:05	Background	63.3	63.7	-	-	-	-	-	-	
AON2	19:05-19:10	Background	64.0								
AON2	19:10-19:15	Background	63.1								
AON2	19:15-19:20	VHK	64.5		0.8	56.8	60.0	YES	YES	-	
AON2	19:20-19:25	Background	65.6		-	-	-	-	-	-	
AON2	19:25-19:30	Background	61.3								

**Note:**

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	24 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Hiu Wa
Temperature:	24 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643039
Calibrator Model / Identification:	CAL200/ 16172
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON3	19:00-19:05	Background	67.6	66.3	-	-	-	-	-	-	
AON3	19:05-19:10	Background	66.1								
AON3	19:10-19:15	Background	66.6								
AON3	19:15-19:20	VHK	65.4		-0.9	Negligible	55.0	YES	YES	-	
AON3	19:20-19:25	Background	66.7		-	-	-	-	-	-	
AON3	19:25-19:30	Background	63.3								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	24 April 2021 (Saturday)
Noise Monitoring Staff:	Cheng Tse Ho
Temperature:	24 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00710259
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

Measurement Location:	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON4	19:00-19:05	Background	48.8	50.6	-	-	-	-	-	-	
AON4	19:05-19:10	Background	53.7								
AON4	19:10-19:15	Background	47.3								
AON4	19:15-19:20	VHK	52.9		2.3	49.0	55.0	YES	YES	-	
AON4	19:20-19:25	Background	51.4		-	-	-	-	-	-	
AON4	19:25-19:30	Background	48.7								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	24 April 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Fat
Temperature:	24 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643040
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON5	19:00-19:05	Background	59.1	58.7	-	-	-	-	-	-	
AON5	19:05-19:10	Background	58.3								
AON5	19:10-19:15	Background	59.5								
AON5	19:15-19:20	VHK	58.7		0.0	38.4	55.0	YES	YES	-	
AON5	19:20-19:25	Background	58.0		-	-	-	-	-	-	
AON5	19:25-19:30	Background	58.2								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	1 May 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Chuen
Temperature:	26 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00131628
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON1	19:00-19:05	Background	56.7	61.3	-	-	-	-	-	-	
AON1	19:05-19:10	Background	63.5								
AON1	19:10-19:15	Background	58.4								
AON1	19:15-19:20	VHK	58.7		-2.6	Negligible	60.0	YES	YES	-	
AON1	19:20-19:25	Background	62.5		-	-	-	-	-	-	
AON1	19:25-19:30	Background	61.8								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	1 May 2021 (Saturday)
Noise Monitoring Staff:	Yeung Ping Fai
Temperature:	26 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00331806
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON2	19:00-19:05	Background	62.9	63.3	-	-	-	-	-	-	
AON2	19:05-19:10	Background	61.6								
AON2	19:10-19:15	Background	62.3								
AON2	19:15-19:20	VHK	63.8		0.5	54.2	60.0	YES	YES	-	
AON2	19:20-19:25	Background	64.8		-	-	-	-	-	-	
AON2	19:25-19:30	Background	64.1								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	1 May 2021 (Saturday)
Noise Monitoring Staff:	Ho Hiu Wa
Temperature:	26 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643039
Calibrator Model / Identification:	CAL200/ 16172
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON3	19:00-19:05	Background	64.8	66.5	-	-	-	-	-	-	
AON3	19:05-19:10	Background	66.5								
AON3	19:10-19:15	Background	64.6								
AON3	19:15-19:20	VHK	63.6		-2.9	Negligible	55.0	YES	YES	-	
AON3	19:20-19:25	Background	64.7		-	-	-	-	-	-	
AON3	19:25-19:30	Background	69.6								

**Note:**

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

**Noise Monitoring Field Record Sheet**

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	1 May 2021 (Saturday)
Noise Monitoring Staff:	Cheng Tse Ho
Temperature:	26 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00710259
Calibrator Model / Identification:	CAL200/ 10227
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

<b>Measurement Location:</b>	
AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

**Measurement Results (dB(A)):**

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON4	19:00-19:05	Background	50.3	51.7	-	-	-	-	-	-	
AON4	19:05-19:10	Background	47.8								
AON4	19:10-19:15	Background	48.9								
AON4	19:15-19:20	VHK	50.9		-0.8	Negligible	55.0	YES	YES	-	
AON4	19:20-19:25	Background	53.8		-	-	-	-	-	-	
AON4	19:25-19:30	Background	54.1								

**Note:**

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

### Noise Monitoring Field Record Sheet

Project Name / GMS No.:	0540005 OPC Noise Monitoring
Date of Monitoring:	1 May 2021 (Saturday)
Noise Monitoring Staff:	Ho Kam Fat
Temperature:	26 °C
Wind Speed:	<5 m/s
Noise Meter Model / Identification:	Rion-NL52/ 00643040
Calibrator Model / Identification:	CAL200/ 16878
Calibration Level before Measurement (dB(A)):	94.0
Calibration Level after Measurement (dB(A)):	94.0

#### Measurement Location:

AON1	Open Area adjacent to Police Training School
AON2	Marriott Hotel
AON3	Woodgreen Estate
AON4	Manly Villa
AON5	Hau Yuen

#### Measurement Results (dB(A)):

Measurement Location	Time	Background/ With Show	L <sub>eq, 5min</sub>	Averaged BGL	Noise Level with Show - BGL	BG-corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Limit Level	Compliance			Remarks
								NCO (BGL+5)	Limit Level	Not Applicable	
AON5	19:00-19:05	Background	59.6	58.7	-	-	-	-	-	-	
AON5	19:05-19:10	Background	59.5								
AON5	19:10-19:15	Background	58.7								
AON5	19:15-19:20	VHK	58.6		-0.1	Negligible	55.0	YES	YES	-	
AON5	19:20-19:25	Background	57.7		-	-	-	-	-	-	
AON5	19:25-19:30	Background	57.5								

#### Note:

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

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



Appendix C

Open Area adjacent to Police Training School (AON1)

DATE: 03/05/2021

Environmental  
Resources  
Management





Appendix C

Marriot Hotel, Ocean Park (AON2)

DATE: 03/05/2021

Environmental  
Resources  
Management





Appendix C

Woodgreen Estate (AON3)

DATE: 03/05/2021

Environmental  
Resources  
Management





Appendix C

Manly Villa (AON4)

DATE: 03/05/2021

Environmental  
Resources  
Management





Appendix C

Hau Yuen (AON5)

DATE: 03/05/2021

Environmental  
Resources  
Management



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Indonesia	Spain
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Italy	Switzerland
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