



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

5<sup>th</sup> Monthly Noise Monitoring Report (For August 2021)

1 September 2021 Project No.: 0540005



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Draft	1.0	Susan Chan	Mandy To	Terence Fong	1.9.2021	-





# 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 Noise Monitoring Report (For August 2021)
Date of Report:	1 September 2021

#### **Reference EP Condition**

Environmental Permit Condition:

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.

3.4

### ETL Verification

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

Mondy 20.

Ms Mandy To Environmental Team Leader

Date:

2 September 2021

*Our ref:* 0540005\_ETL Verification Cert\_5\_20210902.docx



Ocean Park Corporation 180 Wong Chuk Hang Road Aberdeen Hong Kong

Attn: Ms. Eva Au Yeung

Our Reference AFK/EC/hl/416500/02.02/ L-0012

3/F International Trade Tower 348 Kwun Tong Road Kowloon Hong Kong 7 September 2021 By Email and Post

Dear Eva,

T +852 2828 5757 F +852 2827 1823 mottmac.hk

I refer to the captioned submission dated 1 September 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 – 5<sup>th</sup> Monthly Noise Monitoring Report for the Project.

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

Ocean Park Master Redevelopment Project Contract No. P007

5<sup>th</sup> Monthly Noise Monitoring Report dated 1 September 2021

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

Independent Environmental Checker (IEC)

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 5<sup>th</sup> Monthly Noise Monitoring Report (For August 2021)

Submitted by ERM-Hong Kong, Limited dated 01 September 2021

This is to verify that

Update of Design of the Existing Lagoon Show in Ocean Park Hong Kong 5<sup>th</sup> Monthly Noise Monitoring Report (For August 2021)

Submitted by ERM-Hong Kong, Limited dated 01 September 2021

Has been verified by the undersigned.

Ir Eric Ching

Signed

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

Date

07 September 2021

#### **Signature Page**

1 September 2021

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

5th Monthly Noise Monitoring Report (For August 2021)

NO

Terence Fong Partner

ERM-Hong Kong, Limited 2509, 25/F One Harbourfront, 18 Tak Fung Street, Hunghom, Kowloon Hong Kong

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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 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 resumed from 17 July 2021 to 29 August 2021. This is the 5<sup>th</sup> noise monitoring report which summarises the impact monitoring results during the reporting period from **1 August** to **31 August** 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")

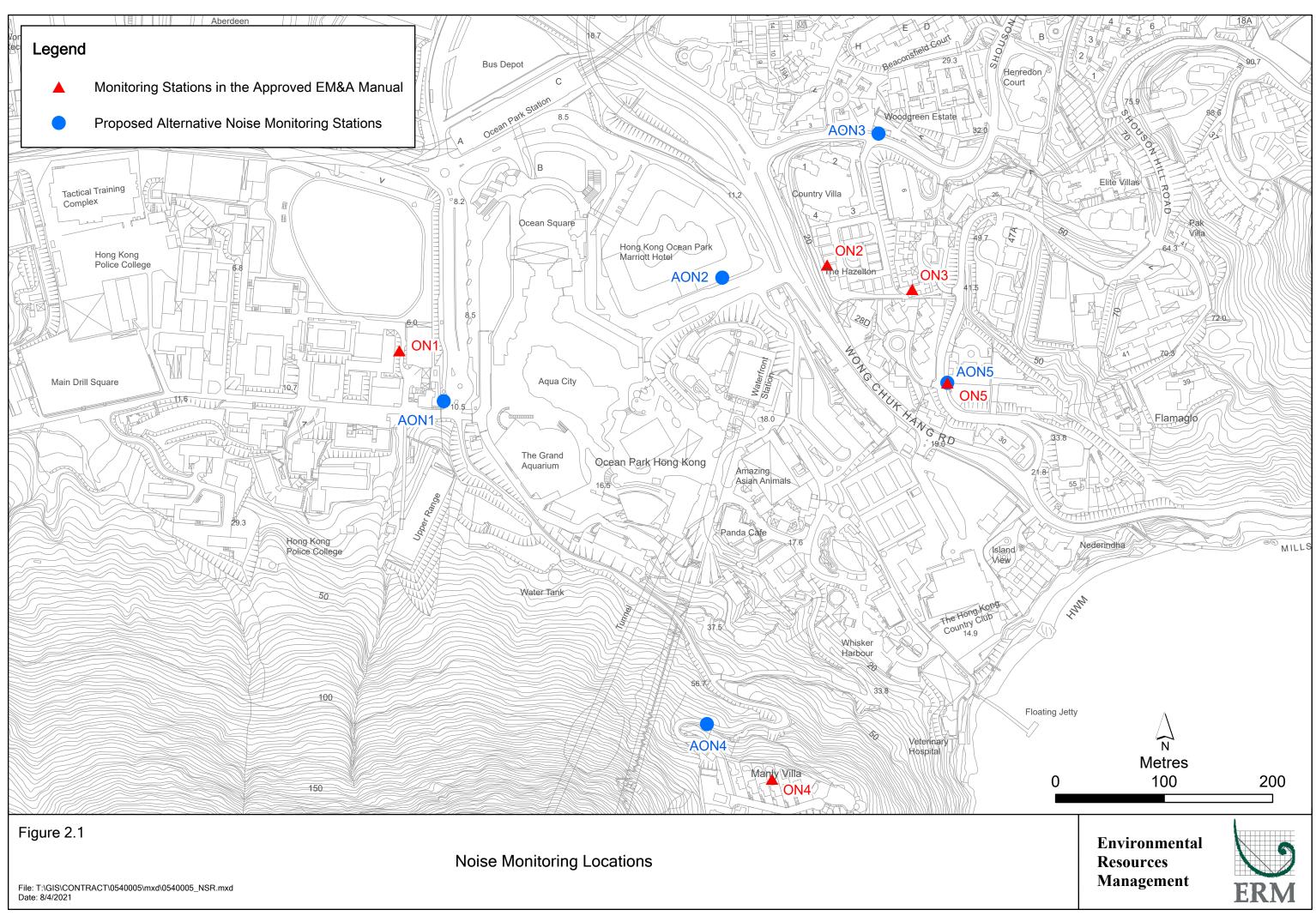
Lagoon night show noise monitoring was carried out at all designated monitoring stations during the performance of lagoon night shows at a logging interval of 5 minutes. The noise monitoring should be conducted twice a week, i.e. once on a normal weekday and once on a general holiday or Sunday, as per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

As confirmed with OPC, lagoon night show (VHK) has been resumed during weekends (Saturdays and Sundays) from 17 July 2021 to 29 August 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 15 July 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*.



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

#### Table 2.1 Alternative Noise Monitoring Stations

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

Description	Time
Vision of Hong Kong (VHK)	19:45-19:50 hours

### 2.2.2.2 Background Noise Level

Measurements of  $L_{Aeq, 5 min}$  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
7 Aug 2021 (Saturday)	AON1 to AON5
14 Aug 2021 (Saturday)	AON1 to AON5
21 Aug 2021 (Saturday)	AON1 to AON5
28 Aug 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.

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 CEL120 Calibrator	
AON4	Manly Villa	RION NL-52 Sound Level Meter CAL200 Calibrator	
AON5	Hau Yuen	RION NL-52 Sound Level Meter CAL200 Calibrator	

### Table 2.4 Noise Measurement Equipment

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  $L_{Aeq}$ ,  $L_{10}$ ,  $L_{90}$ ,  $L_{max}$  and  $L_{min}$  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.

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

<sup>(&</sup>lt;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*.

Date	ID		Compliance	;
		<bgl+5< th=""><th>Limit Level</th><th>Not Applicable</th></bgl+5<>	Limit Level	Not Applicable
7 Aug 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-
14 Aug 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-
21 Aug 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	-	-	NA <sup>(a)</sup>
	AON4	YES	YES	-
	AON5	-	-	NA <sup>(a)</sup>
28 Aug 2021 (Saturday)	AON1	YES	YES	-
	AON2	YES	YES	-
	AON3	YES	YES	-
	AON4	YES	YES	-
	AON5	YES	YES	-

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

(a) Noise data discarded as measurement was affected by other significant noise sources, ie pass-by vehicle.

### 2.4 Summary of Noise Exceedances

No record of noise exceedance during this reporting month.

### 3. CONCLUSION

This is the 5<sup>th</sup> monthly noise monitoring report which summarises the noise monitoring results during the reporting period in **August 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



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C213254 證書編號

ITEM TESTED / Description / 儀器名 Manufacturer / 製造 Model No. / 型號 Serial No. / 編號 Supplied By / 委託	名稱 : Sound Level Meter 造商 : Rion : NL-52 : 00643039 者 : Envirotech Services Co.	9 Hoi Wing Road, Tuen Mun,	pt / 收件日期:21 May 2021
<b>TEST CONDITIO</b> Temperature / 溫度 Line Voltage / 電壓	$f: (23 \pm 2)^{\circ}C$	Relative Humidity	/ 相對濕度 : (50±25)%
<b>TEST SPECIFIC</b> , Calibration	ATIONS / 測試規範		
DATE OF TEST /	/ 測試日期 : 4 June 2021	6	
The results do not of The results are deta The test equipment - The Government	/ 測試結果 o the particular unit-under-test only. exceed manufacturer's specification. ailed in the subsequent page(s). t used for calibration are traceable to t of The Hong Kong Special Adminis ogies / Keysight Technologies	National Standards via :	tion Laboratory
- Agrient Technolog - Fluke Everett Ser			
Tested By 測試	: <u>Chenk</u> K P Cheuk Project Engineer		· · · ]
Certified By 核證	: K Lee Engineer	Date of Issue : 簽發日期	7 June 2021



Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

# Certificate of Calibration 校正證書

Certificate No. : C213254 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	C210084
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	d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	* 91.7	± 1.1

#### · 6.1.1.2 After Adjustment

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

#### 6.1.2 Linearity

	UU'	T Setting		Applie	ed Value	UUT 1
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
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. :  $\pm$  0.6 dB per 10 dB step and  $\pm$  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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C213254 證書編號

#### 6.2

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#### Time Weighting

	UUT	Setting		Applie	d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
10 Low 0.042 (c			Slow			94.0	± 0.3

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

	UUT	Setting		Appl	ied Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	-Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	А	Fast	94.00	63 Hz	67.7	$-26.2 \pm 1.5$
					125 Hz	77.8	$-16.1 \pm 1.5$
					250 Hz	85.3	$-8.6 \pm 1.4$
					500 Hz	90.7	$-3.2 \pm 1.4$
					1 kHz	94.0	Ref.
		1 1 4 5 1		20	2 kHz	95.2	$+1.2 \pm 1.6$
					4 kHz	95.0	$+1.0 \pm 1.6$
					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		Appli	ied Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.2	$-0.8 \pm 1.5$
					125 Hz	93.8	$-0.2 \pm 1.5$
			2 같은 것 같은 것 같이 많이 많이 같이 같이 않는 것이 같이 않는 것이 같이 않는 것이 같이		250 Hz	94.0	0.0 ± 1.4
٩					500 Hz	94.0	$0.0 \pm 1.4$
					1 kHz	94.0	Ref.
					2 kHz	93.8	$-0.2 \pm 1.6$
			12.1.10.1		4 kHz	93.2	$-0.8 \pm 1.6$
					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所書面批准。

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Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C213254 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

alue :	94 dB : 63 Hz - 125 Hz	$\pm 0.35 \text{ dB}$
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	$\pm 0.45 \text{ dB}$
0	16 kHz	: ± 0.70 dB
	104 dB : 1 kHz	$: \pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB : 1 kHz	$\pm 0.10 \text{ dB}$ (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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C212881 證書編號

ITEM TESTED	/送檢項目	(Job No. / 序引編號: IC21-0837)	Date of Receip	ot / 收件日期: 30	0 April 202
Description / 儀岩	器名稱 :	Sound Level Meter			•
Manufacturer / 製		Rion			
Model No. / 型號	Contraction of the second second	NL-52			
Serial No. / 編號		00542913			
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 CONDIT	IONS / 泪唁	式條件			
Temperature / 溫		$3 \pm 2)^{\circ}C$	Relative Humidity	/ 相對記事	$(50 \pm 25)\%$
Line Voltage / 電	(March 1997)	5 ± 2) C	Relative Humbily /	/ 伯對/M/支 ·	$(30 \pm 23)/6$
	5/ <del>35</del> . •				
TEST SPECIFI	CATIONS	/ 測計相節			
Calibration check		/ 川武水地			
Calibration check	s.				
DATE OF TEST	□ / 測試日其	用 : 17 May 2021	<u>-</u>		
DATE OF TEST	Γ/測試日其	月 : 17 May 2021			
DATE OF TEST					
TEST RESULT	S/測試結	 表			
TEST RESULT	S / 測試結	果 cular unit-under-test only.			
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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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C212881 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 :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
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			UUT Setting			UUT Setting Applied Value				IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.			
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)			
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.9	$\pm 1.1$			

#### 6.1.2 Linearity

	UU	T Setting	Applied Value		UUT	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.9 (Ref.)
				104.00		104.0
1.1				114.00		114.0

- IEC 61672 Class 1 Spec. :  $\pm$  0.6 dB per 10 dB step and  $\pm$  1.1 dB for overall different.

6.2 Time Weighting

	UUT	Setting		Applied Value		UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	· 93.9	Ref.
			Slow			93.9	± 0.3

in

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** 

# Certificate of Calibration 校正證書

Certificate No. : C212881 證書編號

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

	UUT	Setting		Appl	ied Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.6	$-26.2 \pm 1.5$
				125 Hz	77.7	$-16.1 \pm 1.5$	
					250 Hz	85.2	$-8.6 \pm 1.4$
					500 Hz	90.7	$-3.2 \pm 1.4$
					1 kHz	93.9	Ref.
			~		2 kHz	95.1	$+1.2 \pm 1.6$
					4 kHz	94.9	$+1.0 \pm 1.6$
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					16 kHz	85.9	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

15

		Setting		Appli	ed Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>C</sub>	С	Fast	94.00	63 Hz	93.0	$-0.8 \pm 1.5$
					125 Hz	93.7	$-0.2 \pm 1.5$
					250 Hz	93.9	$0.0 \pm 1.4$
					500 Hz	93.9	$0.0 \pm 1.4$
					1 kHz	93.9	Ref.
					2 kHz	93.7	$-0.2 \pm 1.6$
		÷			4 kHz	93.1	$-0.8 \pm 1.6$
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					16 kHz	84.0	-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.



Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

# Certificate of Calibration 校正證書

Certificate No. : C212881 證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 13748

- 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	$\pm 0.70 \text{ dB}$
	104 dB : 1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB : 1 kHz	$\pm 0.10 \text{ dB}$ (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. 本證書所載枝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

# Certificate of Calibration 校正證書

Certificate No. : C213807 證書編號

ITEM TESTED / 🕽		(Job No. / 序引編號: IC21-1168)		ot / 收件日期:15 June 202
Description / 儀器名	名稱 :	Sound Level Meter		
Manufacturer / 製逆		Rion		
Model No. / 型號	:	NL-52		
Serial No. / 編號		00331806		
Supplied By / 委託	者 :	Envirotech Services Co.		,
II	ц	Room 113, 1/F, My Loft, 9 Hoi Wing	Road. Tuen Mun.	
		New Territories, Hong Kong	,,	
TEST CONDITIO	DNS / 測試	條件		
Temperature / 溫度		± 2)°C	Relative Humidity /	相對濕度 : (50±25)
Line Voltage / 電壓	122 Page 1	-2) 0	Relative Humblery /	
TEST SPECIFICA	ATIONS /	測試拍觀		
Calibration check				
		1	6	
DATE OF TEST /	測試日期	: 30 June 2021		
DATE OF TEST /				
, TEST RESULTS /	/ 測試結果	L.		
TEST RESULTS / The results apply to	/ <mark>測試結</mark> 集 o the partic	L ular unit-under-test only.		
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, <b>TEST RESULTS</b> / The results apply to The results do not e	/ <mark>測試結</mark> 集 o the partic exceed man	L ular unit-under-test only.		1 4 4 4
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Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C213807 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 :

Equipment ID	Description .	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
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		Applie	d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.6	± 1.1

#### 6.1.2 Linearity

	UUT Setting				Applied Value	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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

#### 6.2 Time Weighting

	UUT Setting				d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast Slow	94.00	1	. 93.6	Ref. ± 0.3

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。

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

輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓

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

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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C213807 證書編號

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

	UUT Setting		Applied Value		UUT -	IEC 61672	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.3	$-26.2 \pm 1.5$
					125 Hz	77.4	$-16.1 \pm 1.5$
		× *		250 Hz	85.0	$-8.6 \pm 1.4$	
					500 Hz	90.4	$-3.2 \pm 1.4$
					1 kHz	93.6	Ref.
					2 kHz	94.9	$+1.2 \pm 1.6$
					4 kHz	94.6	$+1.0 \pm 1.6$
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					16 kHz	85.7	-6.6 (+3.5 ; -17.0)

#### 6.3.2 C-Weighting

	UUT Setting				d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>C</sub>	С	Fast	94.00	63 Hz	92.8	$-0.8 \pm 1.5$
					125 Hz	93.5	$-0.2 \pm 1.5$
					250 Hz	93.6	$0.0 \pm 1.4$
			~		500 Hz	93.7	$0.0 \pm 1.4$
					1 kHz	93.6	Ref.
					2 kHz	93.5	$-0.2 \pm 1.6$
					4 kHz	92.9	$-0.8 \pm 1.6$
					8 kHz	90.7	-3.0 (+2.1 <sup>2</sup> ; -3.1)
					16 kHz	83.8	-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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C213807 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	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB : 1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)
N		

- 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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C206813 證書編號

۲.	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	:	00331805		\
	Supplied By / 委託者	:	Envirotech Services Co.		1
			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 Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

#### 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 簽發日期	:	14 December 2020
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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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C206813 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 :

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

UUT Setting				Applie	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.7	± 1.1

#### 6.1.2 Linearity

	UU	T Setting	Applie	UUT		
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	93.7 (Ref.)
				104.00	10 10 10 1	103.7
				114.00		113.7

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

6.2 Time Weighting

UUT Setting				Applie	d Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast .	94.00	1 .	93.7	Ref.
			Slow			93.7	± 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所書面批准。



Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C206813 證書編號

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting			Appl	ied Value	UUT	IEC 61672	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.3	$-26.2 \pm 1.5$
					125 Hz	77.4	$-16.1 \pm 1.5$
					250 Hz	85.0	$-8.6 \pm 1.4$
					500 Hz	90.4	$-3.2 \pm 1.4$
					1 kHz	93.7	Ref.
			1. A.		2 kHz	94.9	$+1.2 \pm 1.6$
					4 kHz	94.7	$+1.0 \pm 1.6$
					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

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	UUT Setting			Appli	ied Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>C</sub>	C	Fast	94.00	63 Hz	92.7	$-0.8 \pm 1.5$
					125 Hz	93.5	$-0.2 \pm 1.5$
					250 Hz	93.7	0.0 ± 1.4
					500 Hz	93.7	$0.0 \pm 1.4$
					1 kHz	93.7	Ref.
			N <sub>R</sub> .		2 kHz	93.5	$-0.2 \pm 1.6$
					4 kHz	92.9	$-0.8 \pm 1.6$
					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.



Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C206813 證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 13748

- 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	$\pm 0.20 \text{ dB}$
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	$\pm 0.70 \text{ dB}$
	104 dB : 1 kHz	$\pm 0.10 \text{ dB} (\text{Ref. 94 dB})$
· · · · · · · · · · · · · · · · · · ·	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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C211632 證書編號

	A	
	(Job No. / 序引編號: IC21-0400) Acoustic Calibrator Casella CEL-120/1 3421612 Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing 1 New Territories, Hong Kong	Date of Receipt / 收件日期:26 February 2021 Road, Tuen Mun,
TEST CONDITIONS / 測試 Temperature / 溫度 : (23 Line Voltage / 電壓 :		Relative Humidity / 相對濕度 : (50 ± 25)%
<b>TEST SPECIFICATIONS /</b> Calibration check	測試規範	•
DATE OF TEST / 測試日期	: 18 March 2021	
TEST RESULTS / 測試結果 The results apply to the partic The results do not exceed man The results are detailed in the	ular unit-under-test only. nufacturer's specification.	

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 P Cheuk

Project Engineer

Certified By	. ELA	
核證	K Ç Lee	-
(	Engineer	

Date of Issue 簽發日期

:

19 March 2021

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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C211632 證書編號

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

Equipment ID	Description	Certificate No.	
CL130	Universal Counter	C203952	
CL281	Multifunction Acoustic Calibrator	AV210017	
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	94.0	± 0.25	± 0.2
114 dB, 1 kHz	114.0		

#### .5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 0	$1 \text{ kHz} \pm 5 \text{ Hz}$	± 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 enviroiment 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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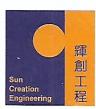
Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C206427 證書編號

Manufacturer / 集 Model No. / 型閉 Serial No. / 編號 Supplied By / 委	器名稱 : W造商 : 【 :	(Job No. / 序引編號 Precision Acoustic C LARSON DAVIS CAL200 16172 Envirotech Services Room 113, 1/F, My New Territories, Hor	Calibrator Co. Loft, 9 Hoi Wing		收件日期:3 November 202
<b>TEST CONDIT</b> Temperature / 溫 Line Voltage / 電	度: (23	<b>(條件</b> 5 ± 2)°C	4	Relative Humidity	/ 相對濕度 : (50±25)9
TEST SPECIFI Calibration check		測試規範			
DATE OF TEST	ſ/測試日期	] : 21 Novemb	er 2020		
	to the partic ot exceed ma	tular unit-under-test o nufacturer's specificat subsequent page(s).			
The results are de The test equipme - The Governme - The Bruel & K	ent used for c ent of The Ho jaer Calibrat	alibration are traceab ong Kong Special Adr tion Laboratory, Denn wight Technologies	ninistrative Regio		ation Laboratory
The results are de The test equipme - The Governme - The Bruel & K	ent used for c ent of The Ho jaer Calibrat ologies / Key	ong Kong Special Adr tion Laboratory, Denn vsight Technologies	ninistrative Regio		ation Laboratory
The results are de The test equipme - The Governme - The Bruel & K - Agilent Techno	ent used for c ent of The Ho jaer Calibrat ologies / Key	ong Kong Special Adr tion Laboratory, Denn vsight Technologies	ninistrative Regio		ation Laboratory

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

# Certificate of Calibration 校正證書

Certificate No.: C206427 證書編號

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

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C203952
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C201309
	4	

- 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	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(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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Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C206426 證書編號

ITEM TESTED / 送檢項目       (Job No. / 序引編號: IC20-2346)       Date of Receipt / 收件日期: 2 Nove         Description / 儀器名稱       :       Precision Acoustic Calibrator         Manufacturer / 製造商       :       LARSON DAVIS         Model No. / 型號       :       CAL200         Serial No. / 編號       :       15678         Supplied By / 委託者       :       Envirotech Services Co.         Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,       New Territories, Hong Kong		Date of Receipt / 收件日期:2 November 2020 ; Road, Tuen Mun,		
TEST CONDITIONS / 測試條件          Temperature / 溫度 : (23 ± 2)°C       Relative Humidity / 相對濕度 : (50 ± 2)         Line Voltage / 電壓 :				
	TEST SPECIFICATIONS	5/ 測試規範		
I	DATE OF TEST / 測試日	期 : 21 November 2020		
ן נ	FEST RESULTS / 測試結 The results apply to the part The results do not exceed m The results are detailed in th	icular unit-under-test only. anufacturer's specification.		
	The Government of The H			
	Fested By : 測試	K C Lee Engineer		
	Certified By :		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. 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

## Certificate of Calibration 校正證書

Certificate No.: C2 證書編號

C206426

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

Equipment IDDescriptionCertificate No.CL130Universal CounterC203952CL281Multifunction Acoustic CalibratorCDK1806821TST150AMeasuring AmplifierC201309

- 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	94.0	$\pm 0.2$	± 0.2
114 dB, 1 kHz	114.0		

#### 5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(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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**Calibration & Testing Laboratory** 

# Certificate of Calibration 校正證書

Certificate No. : C213253 證書編號

ITEM TESTED	/送檢項目	] (Job No. / 序引編號: IC21-10	06) Date	of Receip	t/收件日期:21 May 202
Description / 儀著		Precision Acoustic Calibrator			
Manufacturer / 集		LARSON DAVIS			
Model No. / 型號		CAL200			
Serial No. / 編號		11333			N
Supplied By / 委	託者 :	Envirotech Services Co.			/
		Room 113, 1/F, My Loft, 9 Hoi New Territories, Hong Kong	Wing Road, Tuen N	1un,	
TEST CONDIT	IONS / 測詞	式條件			
Temperature / 溫	All and a second second	$(23 \pm 2)^{\circ}C$	Relative H	umidity /	相對濕度 : (50±25)
Line Voltage / 霍	壓:				
TEST SPECIFI	CATIONS	/ 測試規範	•	1.52.444	
Calibration check	5				
DATE OF TEST	[/測試日]	期 : 4 June 2021			
TEST RESULT	S / 測試結:	果			
	552,555 (657,5755)	icular unit-under-test only.			
		anufacturer's specification.			
The results are de	etailed in th	e subsequent page(s).			
Th	. 10	19	10. 1 1 .		1 9.2
The test equipme	nt used for nt of The F	calibration are traceable to National long Kong Special Administrative	Il Standards Via : Region Standard &	Calibrati	on Laboratory
		eysight Technologies	Region Standard &	Canorati	on Laboratory
					7
- Fluke Everett S					- 1
					1
- Fluke Everett S Tested By	:	Chenk			· · · )
- Fluke Everett S	: _	Chenk K P Cheuk			· · · )
- Fluke Everett S Tested By	: _	K P Cheuk Project Engineer			· · · )
- Fluke Everett S Tested By 測試	: _		Doto of Issue		7 huns 2021
- Fluke Everett S Tested By 測試 Certified By	: _	Project Engineer	Date of Issue 答發口钳		7 June 2021
- Fluke Everett S Tested By 測試	: _	Project Engineer	Date of Issue 簽發日期		7 June 2021
- Fluke Everett S Tested By 測試 Certified By	: _	Project Engineer			7 June 2021



Sun Creation Engineering Limited Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No. : C213253 證書編號

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

3. Test equipment :

Equipment IDDescriptionCertificate No.CL130Universal CounterC203952CL281Multifunction Acoustic CalibratorAV210017TST150AMeasuring AmplifierC201309

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

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

#### 5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration Certificate No. : C211598 校正證書 證書編號 · ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-0400) Date of Receipt / 收件日期: 26 February 2021 Description / 儀器名稱 • Sound Level Meter Manufacturer / 製造商 Rion Model No. / 型號 NL-52 Serial No. / 編號 00643049 : 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 :  $(23 \pm 2)^{\circ}C$ 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 17 March 2021 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 K P Cheuk Project Engineer Certified By Date of Issue 18 March 2021 核證 簽發日期 K¢ Lee Engineer 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** 

## Certificate of Calibration 校正證書

Certificate No. : C211598 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	C210084
CL281	Multifunction Acoustic Calibrator	AV210017

- Test procedure : MA101N. 5.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level
- 6.1.1.1 Before Adjustment

UUT Setting			Applie	d Value	UUT	IEC 61672	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
30 - 130	LA	A	Fast	94.00	1	* 92.0	± 1.1

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#### 6.1.1.2 After Adjustment

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

#### 6.1.2 Linearity

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

IEC 61672 Class 1 Spec. :  $\pm$  0.6 dB per 10 dB step and  $\pm$  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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Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No. : C211598 證書編號

#### 6.2 Time Weighting

UUT Setting			Applie	d Value	UUT	IEC 61672	
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
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		Appl	ied Value	UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.7	$-26.2 \pm 1.5$
					125 Hz	77.7	$-16.1 \pm 1.5$
					250 Hz	85.3	$-8.6 \pm 1.4$
					500 Hz	90.7	$-3.2 \pm 1.4$
					1 kHz	94.0	Ref.
				2.5	2 kHz	95.2	$+1.2 \pm 1.6$
					4 kHz	95.0	$+1.0 \pm 1.6$
					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		Appl	pplied Value UU7		IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
30 - 130	L <sub>C</sub>	С	Fast	94.00	63 Hz	93.1	$-0.8 \pm 1.5$
			그는 것은 것은 말을 가지 않는 것이 없는 것이 없다.	125 Hz	93.8	$-0.2 \pm 1.5$	
					250 Hz	94.0	$0.0 \pm 1.4$
			1		500 Hz	94.0	$0.0 \pm 1.4$
					1 kHz	94.0	Ref.
					2 kHz	93.8	$-0.2 \pm 1.6$
					4 kHz	93.2	$-0.8 \pm 1.6$
					8 kHz	91.1	-3.0 (+2.1 ; -3.1
					12.5 kHz	87.6	-6.2 (+3.0 ; -6.0

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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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No.: C211598 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  $:\pm 0.35 \, dB$ 250 Hz - 500 Hz :  $\pm 0.30 \text{ dB}$  $:\pm 0.20 \text{ dB}$ 1 kHz 2 kHz - 4 kHz  $: \pm 0.35 \, dB$ 8 kHz  $: \pm 0.45 \, dB$ 12.5 kHz  $:\pm 0.70 \text{ dB}$ 104 dB: 1 kHz  $:\pm 0.10 \text{ dB}$  (Ref. 94 dB) 114 dB: 1 kHz  $:\pm 0.10 \text{ dB}$  (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.

APPENDIX B RESULTS OF NOISE MONITORING

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring
Date of Monitoring:	7 August 2021 (Saturday)	)
Noise Monitoring Staff:	Ho Kam Chuen	
Temperature:	30 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identific	ation:	Rion-NL52/ 00331805
Calibrator Model / Identification	on:	CAL200/ 11333
Calibration Level before Mea	94.0	
Calibration Level after Measu	94.0	

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON1	19:30-19:35	Background	66.1	62.0	-	-	-	-	-	-	passby bus
AON1	19:35-19:40	Background	57.1								
AON1	19:40-19:45	Background	58.8								
AON1	19:45-19:50	VHK	59.4		-2.6	Negligible	60.0	YES	YES	-	
AON1	19:50-19:55	Background	61.8		-	-	-	-	-	-	passby bus
AON1	19:55-20:00	Background	60.1								passby bus

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring				
Date of Monitoring:	7 August 2021 (Saturday)	)				
Noise Monitoring Staff:	Yeung Ping Fai					
Temperature:	30 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00542913				
Calibrator Model / Identification	on:	CAL200/ 15678				
Calibration Level before Mea	94.0					
Calibration Level after Measu	94.0					

Measuren	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		Background/		Averaged	Noise Level	BG-	Limit	C	Compliance		
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	evel NCO	Limit Level	Not Applicable	Remarks
AON2	19:30-19:35	Background	61.2	63.2	-	-	-	-	-	-	
AON2	19:35-19:40	Background	61.2								
AON2	19:40-19:45	Background	61.8								
AON2	19:45-19:50	VHK	62.5		-0.7	Negligible	60.0	YES	YES	-	
AON2	19:50-19:55	Background	66.9		-	-	-	-	-	-	passby vehicle
AON2	19:55-20:00	Background	61.7								

Note:

(a)

Project Name / GMS No.:	itoring	
Date of Monitoring:	7 August 2021 (Saturday)	
Noise Monitoring Staff:	Ho Hiu Wa	
Temperature:	30 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identifica	ation:	Rion-NL52/ 00643049
Calibrator Model / Identification	on:	CEL-120/ 3421612
Calibration Level before Mea	94.0	
Calibration Level after Measu	94.0	

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	C	Compliance		
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>		Limit Level	Not Applicable	Remarks	
AON3	19:30-19:35	Background	64.1	65.0	-	-	-	-	-	-	
AON3	19:35-19:40	Background	65.0								
AON3	19:40-19:45	Background	65.7								
AON3	19:45-19:50	∨нк	65.3		0.3	53.9	55.0	YES	YES	-	
AON3	19:50-19:55	Background	66.2		-	-	-	-	-	-	
AON3	19:55-20:00	Background	63.2								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	itoring
Date of Monitoring:	7 August 2021 (Saturday)	)
Noise Monitoring Staff:	Cheng Tse Ho	
Temperature:	30 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identific	ation:	Rion-NL52/ 00661806
Calibrator Model / Identification	on:	CAL200/ 11333
Calibration Level before Mea	94.0	
Calibration Level after Measu	94.0	

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON4	19:30-19:35	Background	53.5	53.7	-	-	-	-	-	-	
AON4	19:35-19:40	Background	53.7								
AON4	19:40-19:45	Background	53.6								
AON4	19:45-19:50	∨нк	54.7		1.0	47.8	55.0	YES	YES	-	
AON4	19:50-19:55	Background	55.0		-	-	-	-	-	-	
AON4	19:55-20:00	Background	52.4								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring				
Date of Monitoring:	7 August 2021 (Saturday)	)				
Noise Monitoring Staff:	Ho Kam Fat					
Temperature:	30 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643039				
Calibrator Model / Identificati	on:	CAL200/ 16172				
Calibration Level before Mea	94.0					
Calibration Level after Measu	94.0					

Measuren	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON5	19:30-19:35	Background	54.2	59.2	-	-	-	-	-	-	
AON5	19:35-19:40	Background	58.6								
AON5	19:40-19:45	Background	58.5								
AON5	19:45-19:50	∨нк	59.3		0.1	42.2	55.0	YES	YES	-	
AON5	19:50-19:55	Background	60.4		-	-	-	-	-	-	
AON5	19:55-20:00	Background	61.4								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	nitoring		
Date of Monitoring:	14 August 2021 (Saturda	у)		
Noise Monitoring Staff:	Ho Kam Chuen			
Temperature:	32 °C			
Wind Speed:	<5 m/s			
Noise Meter Model / Identific	ation:	Rion-NL52/ 00331805		
Calibrator Model / Identification	on:	CAL200/ 11333		
Calibration Level before Mea	94.0			
Calibration Level after Measu	94.0			

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON1	19:30-19:35	Background	65.1	61.3	-	-	-	-	-	-	passby bus
AON1	19:35-19:40	Background	57.5								
AON1	19:40-19:45	Background	56.5								
AON1	19:45-19:50	VHK	63.7		2.4	60.0	60.0	YES	YES	-	passby bus
AON1	19:50-19:55	Background	61.0		-	-	-	-	-	-	passby bus
AON1	19:55-20:00	Background	60.9								passby bus

Note: (a)

Project Name / GMS No.:	Project Name / GMS No.: 0540005 OPC Noise Mo			
Date of Monitoring:	14 August 2021 (Saturda	у)		
Noise Monitoring Staff:	Yeung Ping Fai			
Temperature:	32 °C			
Wind Speed:	<5 m/s			
Noise Meter Model / Identific	ation:	Rion-NL52/ 00542913		
Calibrator Model / Identificati	on:	CAL200/ 15678		
Calibration Level before Mea	surement (dB(A)):	94.0		
Calibration Level after Measu	urement (dB(A)):	94.0		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON2	19:30-19:35	Background	62.3	62.1	-	-	-	-	-	-	passby vehicle along Wong Chuk Hang Road
AON2	19:35-19:40	Background	61.0								
AON2	19:40-19:45	Background	60.6								
AON2	19:45-19:50	VHK	63.9		1.8	59.3	60.0	YES	YES	-	passby vehicle along Wong Chuk Hang Road
AON2	19:50-19:55	Background	64.7		-	-	-	-	-	-	passby vehicle along Wong Chuk Hang Road
AON2	19:55-20:00	Background	60.0								

Note:

(a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring				
Date of Monitoring:	14 August 2021 (Saturda	у)				
Noise Monitoring Staff:	Ho Hiu Wa					
Temperature:	32 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643049				
Calibrator Model / Identification	on:	CEL-120/ 3421612				
Calibration Level before Mea	94.0					
Calibration Level after Measu	94.0					

Measuren	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5</sub> min	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON3	19:30-19:35	Background	66.5	65.3	-	-	-	-	-	-	
AON3	19:35-19:40	Background	65.6								
AON3	19:40-19:45	Background	59.8								
AON3	19:45-19:50	VHK	63.9		-1.4	Negligible	55.0	YES	YES	-	
AON3	19:50-19:55	Background	65.5		-	-	-	-	-	-	
AON3	19:55-20:00	Background	66.3								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring	
Date of Monitoring:	14 August 2021 (Saturda	у)	
Noise Monitoring Staff:	Cheng Tse Ho		
Temperature:	32 °C		
Wind Speed:	<5 m/s		
Noise Meter Model / Identific	ation:	Rion-NL52/ 00661806	
Calibrator Model / Identificati	on:	CAL200/ 11333	
Calibration Level before Mea	94.0		
Calibration Level after Measu	94.0		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	C	Compliance		
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON4	19:30-19:35	Background	53.8	54.4	-	-	-	-	-	-	
AON4	19:35-19:40	Background	53.5								
AON4	19:40-19:45	Background	53.7								
AON4	19:45-19:50	∨нк	55.0		0.6	46.1	55.0	YES	YES	-	
AON4	19:50-19:55	Background	55.0		-	-	-	-	-	-	
AON4	19:55-20:00	Background	55.6								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	nitoring				
Date of Monitoring:	14 August 2021 (Saturda	у)				
Noise Monitoring Staff:	Ho Kam Fat					
Temperature:	32 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643039				
Calibrator Model / Identification	on:	CAL200/ 16172				
Calibration Level before Mea	94.0					
Calibration Level after Measu	94.0					

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	with Show - corrected <sup>(6)</sup> Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks	
AON5	19:30-19:35	Background	58.6	58.9	-	-	-	-	-	-	
AON5	19:35-19:40	Background	58.0								
AON5	19:40-19:45	Background	59.2								
AON5	19:45-19:50	∨нк	60.4		1.5	55.1	55.0	YES	YES	-	
AON5	19:50-19:55	Background	60.5		-	-	-	-	-	-	
AON5	19:55-20:00	Background	57.3								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	nitoring		
Date of Monitoring:	21 August 2021 (Saturda	y)		
Noise Monitoring Staff:	Ho Kam Chuen			
Temperature:	32 °C			
Wind Speed:	<5 m/s			
Noise Meter Model / Identific	ation:	Rion-NL52/ 00331805		
Calibrator Model / Identification	on:	CAL200/ 11333		
Calibration Level before Mea	94.0			
Calibration Level after Measu	94.0			

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Complianc		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON1	19:30-19:35	Background	63.1	61.6	-	-	-	-	-	-	passby bus
AON1	19:35-19:40	Background	62.6								passby bus
AON1	19:40-19:45	Background	57.5								
AON1	19:45-19:50	∨нк	60.8		-0.8	Negligible	60.0	YES	YES	-	
AON1	19:50-19:55	Background	60.9		-	-	-	-	-	-	
AON1	19:55-20:00	Background	61.8								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring
Date of Monitoring:	21 August 2021 (Saturda	у)
Noise Monitoring Staff:	Yeung Ping Fai	
Temperature:	32 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identifica	ation:	Rion-NL52/ 00542913
Calibrator Model / Identification	on:	CAL200/ 15678
Calibration Level before Mea	surement (dB(A)):	94.0
Calibration Level after Measu	94.0	

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	C	Compliance		
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON2	19:30-19:35	Background	69.4	65.8	-	-	-	-	-	-	passby vehicle along Wong Chuk Hang Road
AON2	19:35-19:40	Background	65.4								passby vehicle along Wong Chuk Hang Road
AON2	19:40-19:45	Background	61.3								
AON2	19:45-19:50	∨нк	63.1		-2.7	Negligible	60.0	YES	YES	-	
AON2	19:50-19:55	Background	66.0		-	-	-	-	-	-	passby vehicle along Wong Chuk Hang Road
AON2	19:55-20:00	Background	61.3								

Note:

(a)

Project Name / GMS No.:	hitoring	
Date of Monitoring:	21 August 2021 (Saturda	у)
Noise Monitoring Staff:	Ho Hiu Wa	
Temperature:	32 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643049
Calibrator Model / Identification	on:	CEL-120/ 3421612
Calibration Level before Mea	94.0	
Calibration Level after Measu	94.0	

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Comp		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON3	19:30-19:35	Background	63.2	65.2	-	-	-	-	-	-	
AON3	19:35-19:40	Background	65.4								passby vehicle
AON3	19:40-19:45	Background	65.0								passby vehicle
AON3	19:45-19:50	∨нк	66.9		1.7	62.1	55.0	-	-	N/A	passby vehicle
AON3	19:50-19:55	Background	66.3		-	-	-	-	-	-	passby vehicle
AON3	19:55-20:00	Background	65.3								passby vehicle

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	itorina
Date of Monitoring:	21 August 2021 (Saturda	y)
Noise Monitoring Staff:	Cheng Tse Ho	
Temperature:	32 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identific	ation:	Rion-NL52/ 00661806
Calibrator Model / Identification	on:	CAL200/ 11333
Calibration Level before Mea	94.0	
Calibration Level after Measu	94.0	
-		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON4	19:30-19:35	Background	50.8	55.6	-	-	-	-	-	-	
AON4	19:35-19:40	Background	55.6								
AON4	19:40-19:45	Background	58.0								
AON4	19:45-19:50	∨нк	53.9		-1.7	Negligible	55.0	YES	YES	-	
AON4	19:50-19:55	Background	55.1		-	-	-	-	-	-	
AON4	19:55-20:00	Background	55.6								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring	
Date of Monitoring:	21 August 2021 (Saturda	у)	
Noise Monitoring Staff:	Ho Kam Fat		
Temperature:	32 °C		
Wind Speed:	<5 m/s		
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643039	
Calibrator Model / Identificati	on:	CAL200/ 16172	
Calibration Level before Mea	94.0		
Calibration Level after Measu	94.0		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance			
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON5	19:30-19:35	Background	57.0	58.0	-	-	-	-	-	-	
AON5	19:35-19:40	Background	57.5								
AON5	19:40-19:45	Background	56.9								
AON5	19:45-19:50	∨нк	61.1		3.1	58.2	55.0	-	-	N/A	passby vehicle
AON5	19:50-19:55	Background	59.6		-	-	-	-	-	-	
AON5	19:55-20:00	Background	58.2								

Note: (a)

Project Name / GMS No.:	hitoring		
Date of Monitoring:	28 August 2021 (Saturda	у)	
Noise Monitoring Staff:	Ho Kam Chuen		
Temperature:	30 °C		
Wind Speed:	<5 m/s		
Noise Meter Model / Identific	ation:	Rion-NL52/ 00331805	
Calibrator Model / Identification	on:	CAL200/ 11333	
Calibration Level before Mea	94.0		
Calibration Level after Measu	94.0		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON1	19:30-19:35	Background	67.3	63.3	-	-	-	-	-	-	passby bus
AON1	19:35-19:40	Background	57.7								
AON1	19:40-19:45	Background	59.4								
AON1	19:45-19:50	∨нк	59.9		-3.4	Negligible	60.0	YES	YES	-	
AON1	19:50-19:55	Background	61.5		-	-	-	-	-	-	
AON1	19:55-20:00	Background	63.7								passby bus

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring
Date of Monitoring:	28 August 2021 (Saturda	у)
Noise Monitoring Staff:	Yeung Ping Fai	
Temperature:	30 °C	
Wind Speed:	<5 m/s	
Noise Meter Model / Identifica	ation:	Rion-NL52/ 00542913
Calibrator Model / Identification	on:	CAL200/ 15678
Calibration Level before Mea	surement (dB(A)):	94.0
Calibration Level after Measu	urement (dB(A)):	94.0

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON2	19:30-19:35	Background	62.5	63.2	-	-	-	-	-	-	
AON2	19:35-19:40	Background	61.6								
AON2	19:40-19:45	Background	62.1								
AON2	19:45-19:50	VHK	63.1		-0.1	Negligible	60.0	YES	YES	-	
AON2	19:50-19:55	Background	65.4		-	-	-	-	-	-	passby vehicle along Wong Chuk Hang Road
AON2	19:55-20:00	Background	63.2								

Note:

(a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring				
Date of Monitoring:	28 August 2021 (Saturda	у)				
Noise Monitoring Staff:	Ho Hiu Wa					
Temperature:	30 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643049				
Calibrator Model / Identification	on:	CEL-120/ 3421612				
Calibration Level before Mea	94.0					
Calibration Level after Measu	94.0					

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	C	Compliance		
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON3	19:30-19:35	Background	66.7	65.9	-	-	-	-	-	-	passby vehicle
AON3	19:35-19:40	Background	65.4								passby vehicle
AON3	19:40-19:45	Background	67.0								passby vehicle
AON3	19:45-19:50	∨нк	65.6		-0.3	Negligible	55.0	YES	YES	-	
AON3	19:50-19:55	Background	64.9		-	-	-	-	-	-	
AON3	19:55-20:00	Background	64.8								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Mor	hitoring	
Date of Monitoring:	28 August 2021 (Saturda	у)	
Noise Monitoring Staff:	Cheng Tse Ho		
Temperature:	30 °C		
Wind Speed:	<5 m/s		
Noise Meter Model / Identific	ation:	Rion-NL52/ 00661806	
Calibrator Model / Identificati	on:	CAL200/ 11333	
Calibration Level before Mea	94.0		
Calibration Level after Measu	94.0		

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliar		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON4	19:30-19:35	Background	59.9	55.6	-	-	-	-	-	-	passby vehicle
AON4	19:35-19:40	Background	52.5								
AON4	19:40-19:45	Background	52.9								
AON4	19:45-19:50	∨нк	55.2		-0.4	Negligible	55.0	YES	YES	-	
AON4	19:50-19:55	Background	55.2		-	-	-	-	-	-	
AON4	19:55-20:00	Background	51.5								

Note: (a)

Project Name / GMS No.:	0540005 OPC Noise Monitoring					
Date of Monitoring:	28 August 2021 (Saturda	у)				
Noise Monitoring Staff:	Ho Kam Fat					
Temperature:	30 °C					
Wind Speed:	<5 m/s					
Noise Meter Model / Identific	ation:	Rion-NL52/ 00643039				
Calibrator Model / Identificati	on:	CAL200/ 16172				
Calibration Level before Mea	surement (dB(A)):	94.0				
Calibration Level after Measu	urement (dB(A)):	94.0				
Magazine						

Measurem	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		Background/		Averaged	Noise Level	BG-	Limit	Compliance		nce	
Location	Time	With Show	L <sub>eq, 5min</sub>	BGL	with Show - BGL	corrected <sup>(a)</sup> L <sub>eq, 5min</sub>	Level	NCO (BGL+5)	Limit Level	Not Applicable	Remarks
AON5	19:30-19:35	Background	58.3	57.7	-	-	-	-	-	-	
AON5	19:35-19:40	Background	56.2								
AON5	19:40-19:45	Background	57.7								
AON5	19:45-19:50	∨нк	57.8		0.1	42.7	55.0	YES	YES	-	
AON5	19:50-19:55	Background	58.6		-	-	-	-	-	-	
AON5	19:55-20:00	Background	57.1								

Note: (a)

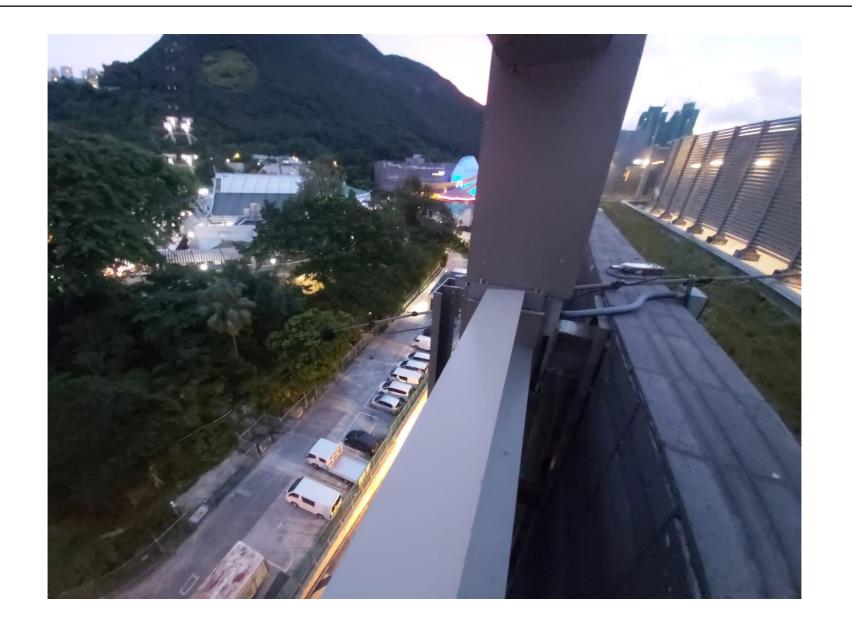
APPENDIX C PHOTOGRAPHS OF THE MONITORING STATIONS



Open Area adjacent to Police Training School (AON1)

Environmental Resources Management





Marriot Hotel, Ocean Park (AON2)

Environmental Resources Management





Woodgreen Estate (AON3)

Environmental Resources Management

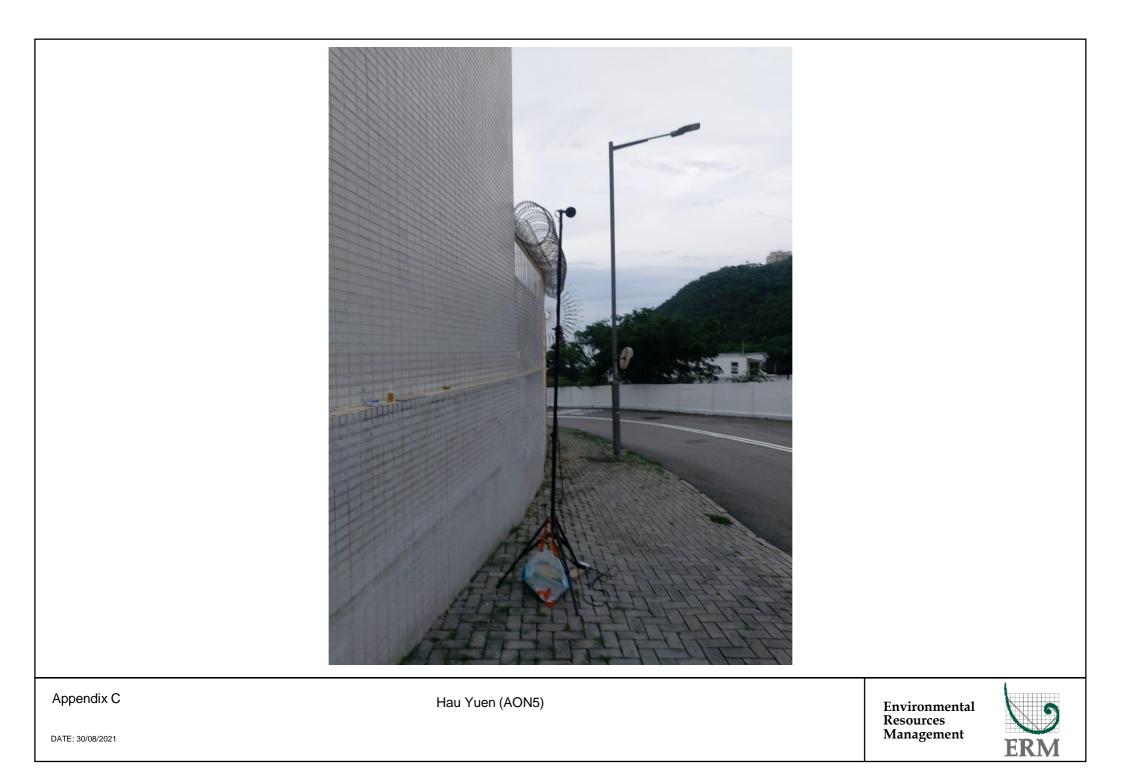




Manly Villa (AON4)

Environmental Resources Management





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#### **ERM-Hong Kong, Limited**

2509, 25/F One Harbourfront 18 Tak Fung Street Hunghom Kowloon Hong Kong

T: +852 2271 3000 F: +852 3015 8052

www.erm.com

