

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AM1(ICC)  
 Calibrated by : K.T.Ho  
 Date : 16/04/2016

Sampler

Model : TE-5170  
 Serial Number : S/N 0767

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 14 Mar 2016  
 Slope (m) : 2.09532  
 Intercept (b) : -0.03812  
 Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition


Pa (hpa) : 1008  
 Ta(K) : 296

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	10.2	3.197	1.552	60	60.05
2   13 holes	8.4	2.901	1.411	54	54.05
3   10 holes	6.2	2.492	1.217	44	44.04
4   7 holes	4.4	2.099	1.030	36	36.03
5   5 holes	2.6	1.614	0.799	26	26.02

Notes: $Z=\sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X=Z/m-b$ ,  $Y(\text{Corrected Flow})=IC*\{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m):45.600 Intercept(b): -10.760 Correlation Coefficient(r): 0.9994

Checked by:   
 Magnum Fan

Date: 22/04/2016

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AM2 (Harbourside)  
 Calibrated by : K.T.Ho  
 Date : 16/04/2016

Sampler

Model : TE-5170  
 Serial Number : S/N 8919

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 14 Mar 2016  
 Slope (m) : 2.10326  
 Intercept (b) : -0.06696  
 Correlation Coefficient(r) : 0.99989

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 296

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.0	3.467	1.680	60	60.05
2   13 holes	9.0	3.003	1.459	52	52.05
3   10 holes	6.5	2.552	1.245	42	42.04
4   7 holes	4.4	2.099	1.030	32	32.03
5   5 holes	2.4	1.551	0.769	22	22.02

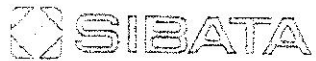
Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 42.631      Intercept(b): -11.089      Correlation Coefficient(r): 0.9990

Checked by:   
 Magnum Fan

Date: 22/04/2016



SIBATA SCIENTIFIC TECHNOLOGY LTD.

1-1-62, Nakane, Soka, Saitama, 340-0005 Japan

TEL : 048-933-1582 FAX : 048-933-1591

## CALIBRATION CERTIFICATE

Date: October 7, 2015

Equipment Name	: Digital Dust Indicator, Model LD-3B
Code No.	: 080000-42
Quantity	: 1 unit
Serial No.	: 245834
Sensitivity	: 0.001 mg/m <sup>3</sup>
Sensitivity Adjustment	: 710CPM
Scale Setting	: October 2, 2015

We hereby certify that the avobe mentioned instrment has been calibrated satisfactory.

· Sincerely

**SIBATA SCIENTIFIC TECHNOLOGY LTD.**

Shintaro Okamura

Shintaro Okamura

Overseas Sales Division

# TEST CERTIFICATE

Report No. 15-1461

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.



**SIBATA SCIENTIFIC TECHNOLOGY LTD.**  
DATE 05/October /2015

APPROVED BY	VERIFIED BY	ISSUED BY

PRODUCT NAME	: Digital Dust Indicator
MODEL NUMBER	: LD--3B
SERIAL NUMBER	: 245834
CALIBRATION DATE	: 02-October-2015

Testing Category	Judging Standard	Judgment	
Function Test	Switch, Display, Wiring will normally function	OK	
Sensitivity Calibration	Count is $\pm 2\%$ accurate to the master by the standard calibration particle	Reading of Master	Correction
		797 CPM	-0.6 %
		2068 CPM	-1.4 %
		1038 CPM	+0.4 %
Dust Concentration Measuring	Count is $\pm 10\%$ accurate to the master under the 3 different concentration.	1042 CPM	+0.4 %
Stability	The maximum value of the sensitivity adjustment scale setting value of the machine and the difference with minimum value are within 5% compared with the maximum value. (The measurement is repeated three times for one minute.)	532 CPM	+1.1 %
		OK	
		Good	
		710 CPM	
		Reference Value(S)	
		Test atmosphere	
		Temperature	Humidity
		23 °C	60 %



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE  
 VILLAGE OF CLEVELAND, OH  
 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 14, 2016 Rootsmeter S/N 0438320 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 2454 Pa (mm) - 745.49

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4020	3.2	2.00
2	NA	NA	1.00	1.0060	6.4	4.00
3	NA	NA	1.00	0.9010	7.9	5.00
4	NA	NA	1.00	0.8590	8.8	5.50
5	NA	NA	1.00	0.7090	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9866	0.7037	1.4078	0.9957	0.7102	0.8896
0.9824	0.9765	1.9909	0.9914	0.9855	1.2581
0.9803	1.0880	2.2259	0.9893	1.0980	1.4066
0.9792	1.1399	2.3345	0.9882	1.1504	1.4753
0.9738	1.3735	2.8155	0.9828	1.3862	1.7792
Qstd slope (m) = 2.10326			Qa slope (m) = 1.31703		
intercept (b) = -0.06696			intercept (b) = -0.04232		
coefficient (r) = 0.99989			coefficient (r) = 0.99989		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)  
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]  
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}  
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C153242

證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC15-1330 )

Date of Receipt / 收件日期 : 10 June 2015

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-31

Serial No. / 編號 : 00320533

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,  
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 14 June 2015

TEST RESULTS / 測試結果

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


All results are within manufacturer's specification.

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

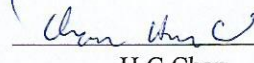
The test equipment used for calibration are traceable to National Standards via :

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

Tested By :  
測試

  
K C Lee  
Project Engineer

Certified By :  
核證

  
H C Chan  
Engineer

Date of Issue : 16 June 2015  
簽發日期

The test equipment used for calibration are traceable to the Nation 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

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# Certificate of Calibration

## 校正證書

Certificate No. : C153242

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 form 6.1.1.2 to 6.4.
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	C150014
CL281	Multifunction Acoustic Calibrator	DC130171

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 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.4	± 0.7

- 6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 0.7

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

The test equipment used for calibration are traceable to the Nation 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. : C153242

證書編號

### 6.2 Time Weighting

#### 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.1

#### 6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
20 -110	L <sub>A</sub>	A	Fast	106.00	Continuous	106.0	Ref.
	L <sub>Amax</sub>				200 ms	105.0	-1.0 ± 1.0
	L <sub>A</sub>		Slow		Continuous	106.0	Ref.
	L <sub>Amax</sub>				500 ms	102.0	-4.1 ± 1.0

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>A</sub>	A	Fast	94.00	31.5 Hz	54.3	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5; -3.0)
					12.5 kHz	90.1	-4.3 (+3.0; -6.0)

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# Certificate of Calibration

## 校正證書

Certificate No. : C153242  
證書編號

### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>C</sub>	C	Fast	94.00	31.5 Hz	90.6	-3.0 ± 1.5
					63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.4	-0.8 ± 1.0
					8 kHz	91.1	-3.0 (+1.5; -3.0)
					12.5 kHz	88.2	-6.2 (+3.0; -6.0)

### 6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)	
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)			
20 - 110	L <sub>Aeq</sub>	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5	
			60 sec.					1/10 <sup>2</sup>	90	90.0	± 0.5
								1/10 <sup>3</sup>	80	80.0	± 1.0
								5 min.	1/10 <sup>4</sup>	70	70.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 320128

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 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)
	Burst equivalent level	: ± 0.2 dB (Ref. 110 dB continuous sound level)

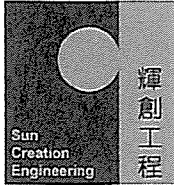
- The uncertainties are for a confidence probability of not less than 95 %.

#### Note :

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 are traceable to the Nation 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 and Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C153930

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1508)

Date of Receipt / 收件日期 : 6 July 2015

Description / 儀器名稱 : Precision Integrating Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-18

Serial No. / 編號 : 00360030

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,  
Hong Kong

### TEST CONDITIONS / 測試條件

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

Relative Humidity / 相對濕度 :  $(55 \pm 20)\%$

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 July 2015

### TEST RESULTS / 測試結果

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

All results are within 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
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By

測試

:

H T Wong

Assistant Technical Officer

Certified By

核證

:

K C Lee

Project Engineer

Date of Issue

簽發日期

:

22 July 2015

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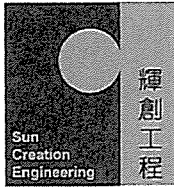
c/o 香港新界屯門與安里一號青洲機樓四樓

Tel 電話: 2927 2606

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C153930

證書編號

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C150014
CL281	Multifunction Acoustic Calibrator	DC130171

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 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	93.6	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
60 - 120	LA	A	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	93.6	Ref.
			Slow				

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Website 網址: www.suncreation.com

# Certificate of Calibration

## 校正證書

Certificate No. : C153930

證書編號

### 6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
50 -110	LA	A	Fast	106.00	Continuous	106.0	Ref.
	LAmx				200 ms	105.0	-1.0 ± 1.0
	LA	Slow	Continuous		106.0	Ref.	
	LAmx		500 ms		102.4	-4.1 ± 1.0	

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LA	A	Fast	94.00	31.5 Hz	53.9	-39.4 ± 1.5
					63 Hz	67.2	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.0
					250 Hz	84.8	-8.6 ± 1.0
					500 Hz	90.3	-3.2 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.7	+1.0 ± 1.0
					8 kHz	92.5	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.3	-4.3 (+3.0 ; -6.0)

#### 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LC	C	Fast	94.00	31.5 Hz	90.5	-3.0 ± 1.5
					63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					250 Hz	93.6	0.0 ± 1.0
					500 Hz	93.6	0.0 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.0
					4 kHz	92.8	-0.8 ± 1.0
					8 kHz	90.6	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.3	-6.2 (+3.0 ; -6.0)

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Sun Creation Engineering Limited Calibration & Testing Laboratory

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輝創工程有限公司 校正及檢測實驗室

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C153930  
證書編號

### 6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)	
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)			
50 - 110	LAeq	A	10 sec.	4	1	1/10	110	100	100.1	± 0.5	
								1/10 <sup>2</sup>	90	90.1	± 0.5
			60 sec.					1/10 <sup>3</sup>	80	79.6	± 1.0
			5 min.					1/10 <sup>4</sup>	70	69.8	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307435

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	31.5 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)
Burst equivalent level		± 0.2 dB (Ref. 110 dB continuous sound level)

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

#### Note :

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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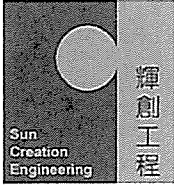
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# Certificate of Calibration 校正證書

Certificate No. : C153241  
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC15-1330 )      Date of Receipt / 收件日期 : 10 June 2015  
Description / 儀器名稱 : Sound Level Calibrator  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NC-73  
Serial No. / 編號 : 10997142  
Supplied By / 委託者 : Envirotech Services Co.  
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,  
Hong Kong

## TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$       Relative Humidity / 相對濕度 :  $(55 \pm 20)\%$   
Line Voltage / 電壓 : ---

## TEST SPECIFICATIONS / 測試規範

Calibration check


**DATE OF TEST / 測試日期** : 14 June 2015

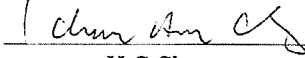
## TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
All results are within 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
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By :   
測試 : K C Lee  
Project Engineer

Certified By :   
核證 : H C Chan  
Engineer

Date of Issue : 16 June 2015  
簽發日期

The test equipment used for calibration are traceable to the Nation 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 and Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C153241

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	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

- 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	93.7	± 0.5	± 0.2

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.986	1 kHz ± 2 %	± 1

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

### Note :

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