AECOM Asia Company Limited <u>Tisch TSP Mass Flow Controlled High Volume Air Sampler</u> <u>Field Calibration Report</u>

Station	Block B, Merit Industrial Centre (E-A14a)			Operator:	am Yuen		
Cal. Date:	24/4/2025			Next Due Date:	24/6/2025		
Model No.:	TE-5170	-		Serial No.	102	280	•
Equipment No.:	A-001-15T	-		•			•
		_					
			Ambient C	Condition			
Temperatur	e, Ta (K)	303.0	Pressure, F	Pa (mmHg)		766.8	
		(Orifice Transfer Sta	ndard Information	1		
Serial	No:	843	Slope, mc	2.00	0986	Intercept, bc	-0.0218
Last Calibrat	tion Date:	7-Jan-25		mc v Oetd + bo	: = [H x (Pa/760) x ((208/Ta)1 ^{1/2}	
Next Calibra	tion Date:	7-Jan-26		ilic x Qstu + bu	, – [H X (Fa//00) X ((290/14)]	
			Calibration of	TSP Sampler			
			Orfice		HV	S Flow Recorder	
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/7	760) x (298/Ta)] ^{1/2}	Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Reading IC (CF	
18	7.6		2.75	1.38	49.0	48.81	
13	6.4		2.52	1.26	42.0	41.84	
10	5.2		2.27	1.14	36.0	35.86	
7	4.2		2.04	1.03	32.0	31.88	
5	3.2		1.78	0.90	25.0	24.90	
By Linear Regression of Y on X Slope , mw =48.2316 Correlation Coefficient* =0.9965 *If Correlation Coefficient < 0.990, check and recalibrate.				Intercept, bw = _	-18.:	3932	-
			Set Point C	alculation			
From the TSP Field							
From the Regression	on Equation, the "Y	" value accordi	ng to				
		mw :	x Qstd + bw = IC x	[(Pa/760) x (298/Ta	a)] ^{1/2}		
Therefore, Set Poin	it; IC = (mw x Qst	d + bw) x [(760	/Pa)x(Ta/298)] ^{1/2} =		44.48	-
Remarks:							





RECALIBRATION DUE DATE:

January 7, 2026

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 7, 2025

Rootsmeter S/N: 438320

Ta: 293
Pa: 759.0

°K

Operator: Jim Tisch

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 0843

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4050	3.2	2.00
2	3	4	1.	0.9940	6.4	4.00
3	5	6	1	0.8870	7.9	5.00
4	7	8	1	0.8460	8.7	5.50
5	9	10	1	0.6990	12.7	8.00

	Data Tabulation							
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H(Ta/Pa)}$			
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(γ-axis)			
1.0114	0.7198	1.4252	0.9958	0.7087	0.8787			
1.0071	1.0132	2.0156	0.9916	0.9976	1.2427			
1.0051	1.1331	2.2535	0.9896	1.1157	1.3893			
1.0040	1.1868	2.3635	0.9885	1.1685	1.4572			
0.9987	1.4287	2.8505	0.9833	1.4067	1.7574			
	m=	2.00986		m=	1.25854			
QSTD	b=	-0.02180	QA	b=	-0.01344			
	r=	1.00000		r=	1.00000			

	Calculation	S		
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)	
Qstd=	Vstd/ΔTime	Qa= Va/ΔTime		
	For subsequent flow rat	e calculatio	ns:	
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$	

	Standard Conditions						
Tstd:	298.15 °K						
Pstd:	760 mm Hg						
	Key						
	ΔH: calibrator manometer reading (in H2O)						
	ter manometer reading (mm Hg)						
	solute temperature (°K)						
L	Pa: actual barometric pressure (mm Hg)						
b: intercept							
m: slope							

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

EQUIPMENT CALIBRATION RECORD

Type:			Laser Dus	<u>t Mon</u> itor			_
Manufacturer/Brand:			SIBATA		•		
Model No	.:		LD-3				•
Equipmen	t No.:		A.005.11a	3			•
	Adjustment Sca	le Setting:	799 CPM				•
,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0					•
Operator:			WS CHAN				
Standard E	Equimment						
Equipmen	t:		High Volu	me Sampl	er		
Venue:			Ma Wan (•
Model No	.:		TE-5170		<u> </u>		•
Serial No.:			5008				=
	ration Date:		27-Jun-24	ļ			-
							•
Calibration	n Result						
C	Adi dada Ca	la Cautaa (Bafa	o Calibrati	1		700	CDN 4
•	Adjustment Sca			-		799	CPM
Sensitivity	Adjustment Sca	le Setting (After	Calibration	n):		799	СРМ
Hour	Date	Time	Ambient (Condition	Concentration ①	Total Count 2	Count/
	(dd/mm/yy)		Temp (°C)	R.H.(%)	(mg/m3)		Minute ③
					Y-axis		X-axis
1	09/08/24	9:00-10:00	33.0	76	0.1280	5150	85.83
2	09/08/24	10:20-11:20	33.0	76	0.0615	2645	44.08
3	09/08/24	13:00-14:00	33.0	76	0.1590	5945	99.08
Note:	1 Monitoring	data was measu	red by Hig	h Volume	Sampler	•	
	~	was logged by L			•		
	Ξ.	ite was calculate))		
By Linear I	Regression of Y c	nn X					
Dy Linear i	Slope (K-factor)		0.0015				
	Correlation coe		0.9978				
Validity of	Calibration Reco	ard:	9-Au	g_25			
validity of	Calibration Necc	Jiu.	<u>J-Au</u>	g-23			
Remarks:							
					1/		
					1/1 /		

EQUIPMENT CALIBRATION RECORD

Type:			Laser Dus	_			
	ırer/Brand:		SIBATA				_
Model No.	:		LD-3B				_
Equipmen	t No.:		A.005.13a	1			_
Sensitivity	Adjustment Scal	e Setting:	643 CPM				_
Operator:			WS CHAN				_
a							
Standard E	quimment						
Equipmen	+•		High Volu	me Samn	er		
Venue:			Ma Wan (-
Model No.			TE-5170	chang viii	48c		-
Serial No.:	•		5008				-
	ation Date:		27-Jun-24				-
Last Calibi	ation Date.		27-3411-24	1			-
Calibration	Result						
Sensitivity	Adjustment Scal	e Setting (Befor	e Calibration	on):		643	СРМ
Sensitivity	Adjustment Scal	e Setting (After	Calibration	n):		643	СРМ
-						_	
Hour	Date	Time	Ambient	Condition	Concentration \bigcirc	Total Count 2	Count/
	(dd/mm/yy)		Temp (°C)	R.H.(%)	(mg/m3)		Minute ③
					Y-axis		X-axis
1	09/08/24	9:00-10:00	33.0	76	0.128	5325	88.75
2	09/08/24	10:20-11:20	33.0	76	0.062	2650	44.17
3	09/08/24	13:00-14:00	33.0	76	0.159	6120	102.00
Note:	(1) Monitoring	data was measu	red by High	n Volume	Sampler		
	2 Total Count	was logged by L	aser Dust N	Monitor			
	③ Count/minu	te was calculate	d by (Total	Count/60)		
By Linear F	Regression of Y o						
	Slope (K-factor)		0.0015		•		
	Correlation coef	ficient:	0.9981				
Validity of	Calibration Dosa	ard.	0.4	a 25			
validity of	Calibration Reco	nu.	9-Au	g-23			
Remarks:							
					IA		
					0//		
QC	Reviewer:	Y.W. Fung	S	Signature:		Date:	9-Aug-24

EQUIPMENT CALIBRATION RECORD

Type:			Laser Dus	t Monitor	·		_
Manufacturer/Brand:			SIBATA		•		
Model No.	•		LD-3B				•
Equipmen			A.005.16a		•		
	Adjustment Sca	le Setting:	521 CPM				•
SCHOLLAND	ajastinent sta	Jetting.	321 01 141				•
Operator:			WS CHAN				
Standard E	quimment						
Equipmen	t:		High Volu	me Samp	ler		
Venue:			Ma Wan (Chung Vill	age		
Model No.	.:		TE-5170				•
Serial No.:			5008				•
Last Calibr	ation Date:		27-Jun-24				
Calibration	າ Result						
			6 111	,		=	
-	Adjustment Sca					521	CPM
Sensitivity	Adjustment Sca	le Setting (After	Calibration	n):		521	CPM
	I						
Hour	Date	Time	Ambient (Concentration ①	Total Count 2	Count/
	(dd/mm/yy)		Temp (°C)	R.H.(%)	(mg/m3)		Minute ③
	00/00/0	0.00.10.00	22.2	7.	Y-axis	F440	X-axis
1	09/08/24	9:00-10:00	33.0	76	0.128	5110	85.17
2	09/08/24	10:20-11:20	33.0	76	0.062	2645	44.08
3	09/08/24	13:00-14:00	33.0	76	0.159	5942	99.03
Note:	_	data was measu			Sampler		
	_	was logged by L					
	③ Count/minu	ite was calculate	ed by (Total	Count/60))		
By Linear I	Regression of Y c	on X					
,	Slope (K-factor)		0.0015				
	Correlation coef		0.998		•		
		-			•		
Validity of Calibration Record:			9-Au	g-25			
Remarks:							
c.marks.							
					1A		
					0/		
QC I	Reviewer:	Y.W. Fung	<u> </u>	ignature:		_ Date:	9-Aug-24



香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



CERTIFICATE OF CALIBRATION

Certificate No.:

24CA1031 03-04

Page:

of.

2

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

MVI

Type/Model No.:

CAL21

Serial/Equipment No.:

34113610(2011) / N.004.11

Adaptors used:

Yes (BAC21)

Item submitted by

Curstomer:

AECOM ASIA CO., LTD.

Address of Customer: Request No.:

-

Date of receipt:

31-Oct-2024

Date of test:

06-Nov-2024

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	3257888	30-Jul-2025	SCL
Preamplifier	B&K 2673	3353200	29-Jun-2025	CEPREI
Measuring amplifier	B&K 2610	2346941	27-Jun-2025	CEPREI
Signal generator	DS 360	33873	06-Mar-2025	CEPREI
Digital multi-meter	34401A	US36087050	20-Jun-2025	CEPREI
Audio analyzer	8903B	GB41300350	19-Jun-2025	CEPREI
Universal counter	53132A	MY40003662	26-Jun-2025	CEPREI

Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity:

55 ± 10 %

Air pressure:

1005 ± 5 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Feng

Approved Signatory:

Date:

07-Nov-2024

Company Chop:

SENGIMECA W 综合試驗 有限公司 A R C O N A R

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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香港新界葵涌永基路22-24號好爸爸創科大厦 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



2



CERTIFICATE OF CALIBRATION

Certificate No.:

25CA0408 03-03

Page:

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer: Type/Model No.: Rion Co., Ltd. NC-74

Serial/Equipment No.:

34246490

Adaptors used:

Item submitted by

Curstomer:

AECOM

Address of Customer:

Request No .: Date of receipt:

08-Apr-2025

Date of test:

10-Apr-2025

Reference equipment used in the calibration

Description: Lab standard microphone Preamplifier Measuring amplifier Signal generator Digital multi-meter	Model: B&K 4180 B&K 2673 B&K 2610 DS 360 34401A	Serial No. 3257888 3353200 2346941 61227 US36087050	Expiry Date: 30-Jul-2025 29-Jun-2025 27-Jun-2025 24-Feb-2026 20-Jun-2025	Traceable to: SCL CEPREI CEPREI CEPREI CEPREI
Audio analyzer Universal counter	34401A 8903B 53132A	GB41300350 MY40003662	19-Jun-2025 26-Jun-2025	CEPREI CEPREI

Ambient conditions

Temperature:

(20.8~21.3) °C

Relative humidity:

 $(55 \pm 10) \%$

Air pressure:

(1010 ± 5) hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 1, and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique. 2,
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference 3. pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Feng Jungi

Approved Signatory:

Date:

11-Apr-2025

Company Chop:

ENGINA

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

Soils & Materials Engineering Co., Ltd.



香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



CERTIFICATE OF CALIBRATION

Certificate No.:

25CA0416 02-02

Page:

of

2

Item tested

Description: Manufacturer: Acoustical Calibrator (Class 1) B & K

Type/Model No.: Serial/Equipment No.:

4231 3006428

Adaptors used:

_

Item submitted by

Curstomer:

AECOM

Address of Customer:

-

Request No.:

_

Date of receipt:

16-Apr-2025

Date of test:

30-Apr-2025

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	3257888	30-Jul-2025	SCL
Preamplifier	B&K 2673	3353200	29-Jun-2025	CEPREI
Measuring amplifier	B&K 2610	2346941	27-Jun-2025	CEPREI
Signal generator	DS 360	61227	24-Feb-2026	CEPREI
Digital multi-meter	34401A	US36087050	22-Apr-2026	CEPREI
Audio analyzer	8903B	GB41300350	19-Jun-2025	CEPREI
Universal counter	53132A	MY40003662	26-Jun-2025	CEPREI

Ambient conditions

Temperature: Relative humidity:

Air pressure:

(20.7~20.9)°C (56.6~57.2)%RH (1010 ± 5) hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Fena

Approved Signatory:

Date:

02-May-2025

Company Chop:

宗合試験 宗合試験 有限公司 MOMPA の MOMPA の MOMPA MOMP

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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CERTIFICATE OF CALIBRATION

Certificate No.:

24CA1031 03-01

Page

2

Item tested

Description: Manufacturer: Sound Level Meter (Class 1) B & K

Microphone B & K 4189 Preamp B & K ZC0032

of

Type/Model No.: Serial/Equipment No.: 2250 3001291/N011.05

3005374

31351

Adaptors used:

Item submitted by

Customer Name:

AECOM ASIA CO LIMITED

Address of Customer:

-

Request No.: Date of receipt:

31-Oct-2024

Date of test:

Date of test.

06-Nov-2024

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date: 28-Aug-2025 Traceable to:

Multi function sound calibrator Signal generator B&K 4226 DS 360 2288444 33873

06-Mar-2025

CIGISMEC CEPREI

Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity: Air pressure: 55 ± 10 % 1005 ± 5 hPa

Test specifications

 The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

 The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

D

Feng

Approved Signatory:

Date:

07-Nov-2024

Company Chop:

ate of calibration and

FNGINE

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



2



CERTIFICATE OF CALIBRATION

Certificate No.:

24CA1031 03-02

Page

of

Item tested

Description: Manufacturer: Sound Level Meter (Class 1) **B&K**

Microphone **B&K**

Preamp B&K ZC0032

Type/Model No.: Serial/Equipment No .:

Adaptors used:

2270 3007965 4189 2846461

17965

Item submitted by

Customer Name:

AECOM ASIA CO LIMITED

Address of Customer:

Request No.:

Date of receipt:

31-Oct-2024

Date of test:

06-Nov-2024

Reference equipment used in the calibration

Description:

B&K 4226

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

Model: DS 360

2288444 33873

28-Aug-2025

CIGISMEC CEPREL

06-Mar-2025

Ambient conditions

Temperature:

21 ± 1 °C 55 ± 10 %

Relative humidity: Air pressure:

1005 ± 5 hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, and the lab calibration procedure SMTP004-CA-152.

The electrical tests were performed using an electrical signal substituted for the microphone which was removed and 2, replaced by an equivalent capacitance within a tolerance of ±20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3, between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test

Details of the performed measurements are presented on page 2 of this certificate.

Fena Junai

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

07-Nov-2024

Company Chop:

ENGINE

The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

Soils & Materials Engineering Co., Ltd.



香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com





CERTIFICATE OF CALIBRATION

Certificate No.:

24CA1031 03-03

Page

of

2

Item tested

Description:

Sound Level Meter (Class 1) B & K

Microphone B & K Preamp B & K

Manufacturer: Type/Model No.: Serial/Equipment No.:

2270 2644597

4189 2879980 ZC0032 29398

Adaptors used:

_

287998

29398

Item submitted by

Customer Name:

AECOM ASIA CO LIMITED

Address of Customer:

Request No.: Date of receipt:

31-Oct-2024

Date of test:

06-Nov-2024

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator B&K 4226 DS 360 2288444 33873 28-Aug-2025 06-Mar-2025 CIGISMEC CEPREI

Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity:

55 ± 10 %

Air pressure:

1005 ± 5 hPa

Test specifications

 The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

 The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Feng Junqi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

07-Nov-2024

Company Chop:

综合試驗 SONOS ※ OLL SONOS * OLL

ENGINE

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



CERTIFICATE OF CALIBRATION

Certificate No.:

25CA0408 03-01

Page

of

2

Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Preamp

Manufacturer:

Nti

Nti Andio MC230A

Nti Andio MA220

Type/Model No.: Serial/Equipment No.: XL2 A2A-17788-EO

A24645

9087

Adaptors used:

Item submitted by

Customer Name:

AECOM

Address of Customer:

Request No .: Date of receipt:

08-Apr-2025

Date of test:

09-Арг-2025

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

B&K 4226 DS 360

2288444 61227

28-Aug-2025 24-Feb-2026

CIGISMEC CEPREI

Ambient conditions

Temperature:

(21.3~21.8) °C

Relative humidity:

 $(55 \pm 10) \%$

Air pressure:

(1005 ± 5) hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, and the lab calibration procedure SMTP004-CA-152.

The electrical tests were performed using an electrical signal substituted for the microphone which was removed and 2, replaced by an equivalent capacitance within a tolerance of ±20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3. between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Fend Jungi

Approved Signatory:

Date:

10-Apr-2025

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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香港新界葵涌永基路22-24號好爸爸創科大廈 Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com



2



CERTIFICATE OF CALIBRATION

Certificate No.:

25CA0408 03-02

Page

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Item tested

Description: Manufacturer:

Adaptors used:

Sound Level Meter (Class 1) **B&K**

Microphone **B&K**

Preamp **B&K** ZC0032

Type/Model No.: Serial/Equipment No.: 2250-L 2681366 4950 2665582

17190

Item submitted by

Customer Name:

AECOM

Address of Customer:

Request No.:

08-Apr-2025

Date of receipt:

Date of test:

10-Apr-2025

Reference equipment used in the calibration

Description:

Serial No. Model:

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

B&K 4226 **DS 360**

2288444 61227

28-Aug-2025 24-Feb-2026

CIGISMEC CEPREI

Ambient conditions

Temperature:

(20.8~21.3) °C

Relative humidity:

(55 ± 10) %

Air pressure:

(1010 ± 5) hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, and the lab calibration procedure SMTP004-CA-152.

The electrical tests were performed using an electrical signal substituted for the microphone which was removed and 2, replaced by an equivalent capacitance within a tolerance of ±20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3, between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Feng Junqi

Actual Measurement data are documented on worksheets.

Approved Signatory:

11-Apr-2025

Company Chop:

ENGINE

The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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