

**APPENDIX C
COPIES OF CALIBRATION
CERTIFCATES**



東恒測試顧問有限公司
AQUALITY TESTCONSULT LIMITED
香港新界粉嶺坪輦路啟芳園11A&B號
NO.11A&B, KAI FONG GARDEN, PING CHE ROAD, FANLING, N.T., HONG KONG

TEL : 852-2674-0478
FAX : 852-2674-1177
EMAIL : main.aqtl@gmail.com
WEBSITE : www.aqtlgroup.com

CERTIFICATE OF CALIBRATION

Ka Shing Facility Management Ltd. Flat C, 14/F, Jing Ho Industrial Building, 78-84 Wang Lung Street, Tsuen Wan, N.T.	Test Report No.	250603MCA-1P
	Date of Issue	3-Jun-25
	Date of Testing	2-Jun-25
	Page	1 of 1

Item for Calibration

Description : Laser Dust Monitor
Manufacturer : Met One Instruments, Inc.
Model No. : AEROCET-831
Serial No. : F12258

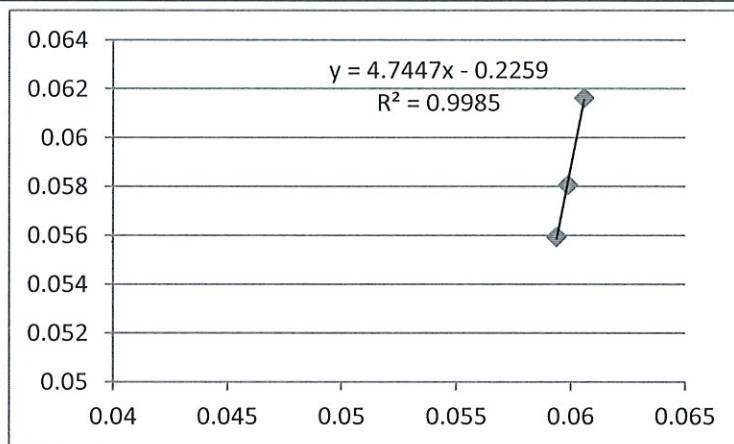
Standard Equipment

Description : High Volume Sampler / Calibration Orifice
Manufacturer : Tisch Environmental, Inc.
Model No. : TE-5170 / TE-5025A
Serial No. : 3476 / 4088
Last Calibration : 24-AUG-24 / 15-OCT-24

Date	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration Standard Equipment (mg/m3)	Concentration Calibrated Equipment (mg/m3)
2-Jun-25	19:00	24.8	1002.2	0.0606	0.0616
2-Jun-25	20:05	24.8	1002.2	0.0594	0.0560
2-Jun-25	21:10	24.8	1002.2	0.0599	0.0581

By Linear Regression of Y or X

Slope : 4.7447
Correlation Coefficient : 0.9985
K-Factor : 1.0253
Validity of Calibration : 1-Jun-26



Recorded by : Jessica Liu

Signature:

Date: 2-Jun-25

Checked by : S Tang

Signature:

Date: 2-Jun-25



東恒測試顧問有限公司

AQUALITY TESTCONSULT LIMITED

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CERTIFICATE OF CALIBRATION

Ka Shing Facility Management Ltd. Flat C, 14/F, Jing Ho Industrical Building, 78- 84 Wang Lung Street, Tsuen Wan, N.T.	Test Report No.	250512MCA-2P
	Date of Issue	12-May-25
	Date of Testing	11-May-25
	Page	1 of 1

Item for Calibration

Description : Laser Dust Monitor

Manufacturer : Met One Instruments, Inc.

Model No. : AEROCET-831

Serial No. : F12045

Standard Equipment

Description : High Volume Sampler / Calibration Orifice

Manufacturer : Tisch Environmental, Inc.

Model No. : TE-5170 / TE-5025A

Serial No. : 3476 / 4088

Last Calibration : 24-AUG-24 / 15-OCT-24

Date	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration Standard Equipment (mg/m ³)	Concentration Calibrated Equipment (mg/m ³)
11-May-25	19:00	24.8	1010.1	0.0612	0.0625
11-May-25	20:05	24.8	1010.1	0.0560	0.0568
11-May-25	21:10	24.8	1010.1	0.0582	0.0599

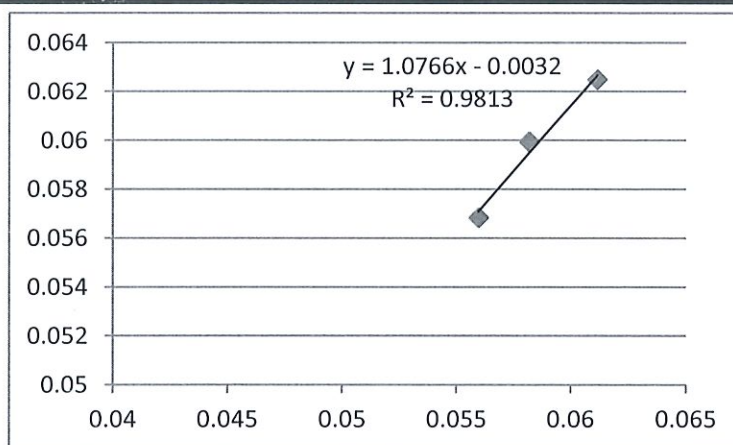
By Linear Regression of Y or X

Slope : 1.0766

Correlation Coefficient : 0.9813

K-Factor : 0.9783

Validity of Calibration : 10-May-26



Recorded by : Jessica Liu

Signature:

Date: 11-May-25

Checked by : S Tang

Signature:

Date: 11-May-25



Cal Lab Limited 校正實驗室有限公司

Room 2103, Technology Plaza, 29-35 Sha Tsui Road,

Tsuen Wan, NT, Hong Kong

Tel: +852 25680106 Email: info@callab.com.hk

Fax: +852 30116194 Website: www.callab.com.hk

CERTIFICATE OF CALIBRATION

Applicant: Ka Shing Facility Management Ltd. Address: Flat C, 14/F, Jing Ho Industrial Building, 78-84 Wang Lung Street, Tsuen Wan, N.T.	Calibration Certificate No.	HV0022605
	Date of Receipt	8 May 2026
	Date of Calibration	11 May 2026
	Page	1 of 1

Item for Calibration

Description : Laser Dust Monitor

Manufacturer : Met One Instruments, Inc.

Model No. : AEROCET-831

Serial No. : F12045

Standard Equipment

Description : High Volume Sampler / Calibration Orifice

Manufacturer : Tisch Environmental, Inc.

Model No. : TE-5170 / TE-5025A

Serial No. : 3476 / 4088

Last Calibration : 23 October 2025/ 9 September 2025

Date	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration Standard Equipment (mg/m ³)	Concentration Calibrated Equipment (mg/m ³)
11 May 2026	10:08:00 AM	22.7	999.4	0.058	0.056
11 May 2026	11:16:00 AM	22.7	999.4	0.047	0.046
11 May 2026	12:23:00 PM	22.7	999.4	0.043	0.038

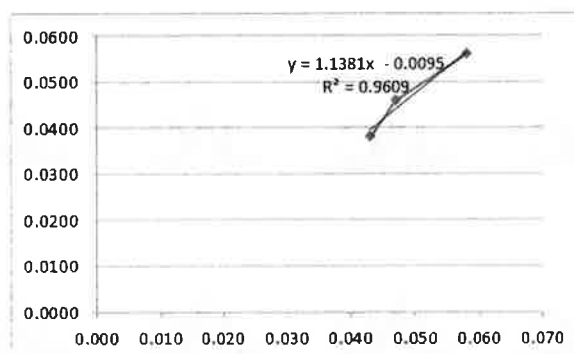
By Linear Regression of Y on X

Slope : 1.1381

Correlation Coefficient : 0.9609

K-Factor : 1.0630

Validity of Calibration : 10 May 2027



Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 13 May 2026

CT-BEG-04

*** End of Certificate ***

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Limited
2. The certificate is issued subject to the latest Terms and Conditions, available at our web site



Certificate of Calibration

Calibration Certification Information

Cal. Date: September 9, 2025 Rootsmeter S/N: 438320 Ta: 294 °K
Operator: Jim Tisch Pa: 754.9 mm Hg
Calibration Model #: TE-5025A Calibrator S/N: 4088

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4460	3.2	2.00
2	3	4	1	1.0320	6.4	4.00
3	5	6	1	0.9210	8.0	5.00
4	7	8	1	0.8840	8.8	5.50
5	9	10	1	0.7240	12.8	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
1.0025	0.6933	1.4190	0.9958	0.6886	0.8826
0.9983	0.9673	2.0068	0.9915	0.9608	1.2481
0.9961	1.0816	2.2436	0.9894	1.0743	1.3955
0.9951	1.1256	2.3532	0.9883	1.1180	1.4636
0.9897	1.3670	2.8380	0.9830	1.3578	1.7651
QSTD	m=	2.11142	QA	m=	1.32213
	b=	-0.03845		b=	-0.02391
	r=	0.99983		r=	0.99983

Calculations

Vstd=	$\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va=	$\Delta Vol((Pa-\Delta P)/Pa)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions

Tstd: 298.15 °K

Pstd: 760 mm Hg

Key

ΔH: calibrator manometer reading (in H2O)

ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

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

FAQ / Information

Mutual Recognition Arrangements (MRA) / Multilateral Recognition Arrangements (MLA)

Mutual Recognition Arrangement (MRA) Partners for HOKLAS ^

Every effort is made to promote acceptance of test data from accredited laboratories, both internationally and locally. HKAS has concluded mutual recognition arrangements with accreditation bodies listed below by being one of the signatories of the [International Laboratory Accreditation Cooperation Mutual Recognition Arrangement \(ILAC MRA\)](#) and the [Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement \(APAC MRA\)](#) for testing, calibration, medical testing, Proficiency Testing Providers (PTP) and Reference Material Producers (RMP). Click [here](#) to view the up-to-date signatories of ILAC and [here](#) to access the up-to-date signatories of APAC.

Visitors checking the names, logos and accreditation symbols shown on an endorsed certificate or report should note that some of our MRA partners may have their names, logos or accreditation symbols changed recently and test reports or certificates endorsed by displaying their old accreditation symbols may still be valid during the change-over period. For details, please visit their websites or contact them directly.

» [Mutual Recognition Arrangement \(MRA\) Partners for HOKLAS](#)

HKAS MRA partners will recognise HOKLAS endorsed test certificates as having the same technical validity as certificates endorsed by their respective schemes.

Multilateral Recognition Arrangements (MLA) for HKCAS v

Mutual Recognition Arrangement (MRA) Partners for HKIAS v

 back

Hong Kong Laboratory Accreditation Scheme (HOKLAS) - Mutual Recognition Arrangement (MRA) Partners

Economy	Logo	Name of Partner	URL	Test Area
United Kingdom of Great Britain and Northern Ireland		United Kingdom Accreditation Service (UKAS)	http://www.ukas.com	Calibration, Medical Testing, Non-medical Testing, Proficiency Testing Provider, Reference Material Producer
United States of America		AIHA Laboratory Accreditation Programs, LLC (AIHA-LAP, LLC)	http://www.aihaaccreditedlabs.org/	Non-medical Testing
United States of America		American Association for Laboratory Accreditation (A2LA)	http://www.a2la.org	Calibration, Medical Testing, Non-medical Testing, Proficiency Testing Provider, Reference Material Producer
United States of America		ANSI National Accreditation Board (ANAB)	http://www.anab.org/	Calibration, Medical Testing, Non-medical Testing, Proficiency Testing Provider, Reference Material Producer
United States of America		International Accreditation Service Inc. (IAS)	http://www.iasonline.org/	Calibration, Medical Testing, Non-medical Testing
United States of America		National Accreditation Center LLC (NAC)		Calibration, Non-medical Testing
United States of America		National Voluntary Laboratory Accreditation Program (NVLAP)	http://www.nist.gov/nvlap	Calibration, Non-medical Testing



INTERNATIONAL
ACCREDITATION
SERVICE®

CERTIFICATE OF ACCREDITATION

This is to attest that

AQUALITY TESTCONSULT LIMITED

11A&B, KAI FONG GARDEN, PING CHE ROAD
FANLING, HONG KONG

Calibration Laboratory CL-207

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date February 19, 2024



A handwritten signature in black ink, reading "Raj Nathan".

President

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
			dimensional requirements as specified in BS 1881- Part 105: 1984)
Test Sieve ³	4 mm to 50 mm	50 µm	Reference Caliper by direct measurement as per BS 410 : 1986
Elongation Gauge ³	Gap between Pins of Gauge 10 mm to 100 mm	0.29 mm	Reference Caliper by direct measurement (Verification in accordance with in-house method for the dimensional requirements as specified in BS 812- Part 1:1975; BS 812- Part 105.2: 1990)
Flakiness Gauge ³	Length of Slot of Gauge 4.9 mm to 33.9 mm	0.06 mm	Reference Caliper by direct measurement ((Verification in accordance with in-house method for the dimensional requirements as specified in BS 812- Part 1:1975; BS 812- Part105.1:1985; BS 812- Part105.1:1989)
Riffle Box ³	Width 6 mm to 100 mm	0.06 mm	Reference Caliper by direct measurement (Verification in accordance with in-house method for the dimensional requirements as specified in BS 812- Part 1:1975)
Mechanical			
Force Measuring Machine ³ (Compression Mode)	1 kN to 3000 kN	0.4 %	Reference Load cell by direct measurement (Based on BS 1610: Part 1:1985; BS 1610: Part 1:1992; BS EN ISO 12390-4:2000 Annex B; BS EN 12390-4: 2019; BS EN ISO 7500-1:2004, BS EN ISO 7500-1: 2015, BS EN ISO 7500-1: 2018)
Laser Dust Meter ³	Dust particles 0.1 mg/m ³ to 3 mg/m ³ 3 mg/m ³ to 8 mg/m ³	0.006 mg/m ³ 0.39 mg/m ³	By comparison method by using reference laser dust meter (Based on ISO 12103-1:2016)
Rebound Hammer ³	80 unit (hardness)	1.6 rebound count	Reference Rebound count by comparison method (Based on BS1881: Part 202:1986; BS EN 12504-2:2001; BS EN

Certificate of Calibration

Certificate No. ATS26-017-CC001

Customer: **Ka Shing Facility Management Limited**

Flat C, 14/F., Jing Ho Industrial Building,
78-84 Wing Lung Street, Tsuen Wan,
N.T., Hong Kong

Unit-under-test (UUT):

Description:	Sound Level Meter	,	Microphone	,	Pre-amplifier
Manufacturer:	RION	,	RION	,	RION
Type No.:	NL-53	,	UC-59	,	NH-25
Serial No.:	01130782	,	24906	,	33673

Conditions during calibration:

Temperature:	23°C
Relative Humidity:	59%

Test Specifications: Calibration Check

Date of Calibration: 26 January 2026

Test Results: All calibration points are within manufacturer's specification.

Certified by:


Mr. Y. T. Leung Technical Manager
MIOA, MHKIOA, MHKIQEP



Issue Date: 26 January 2026

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

Description:	Sound Calibrator
Manufacturer:	Brüel & Kjær
Type No.:	4231
Serial No.:	2478237
Last Calibration Date:	18 February 2025
Certificate No.:	AV250027

The calibration equipment used for calibration is traceable to National Standards via Standards and Calibration Laboratory, the Government of the HKSAR.

3. The sensitivity of the microphone has been recorded before the calibration.

Recorded Microphone Sensitivity (dB)	-27.7
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4. The Sound Analyzer has been calibrated in accordance with the requirements as specified in IEC 61672-1 Class 1, and vendor specific procedures.

5. The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted, if any, will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. Acoustic Testing Services Limited shall not be liable for any loss or damage resulting from the use of the equipment.



6. Calibration Results

Setting of unit-under-test (UUT)				Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter*	Frequency Weighting	Response	Level, dB	Frequency, Hz			
30-130	Overall SPL	A	F	94.00	1000	93.9	± 0.7	PASS
			S			93.9	± 0.7	PASS
			I			93.9	± 0.7	PASS
		C	F			93.9	± 0.7	PASS
			S			93.9	± 0.7	PASS
			I			93.9	± 0.7	PASS
		L	F			93.9	± 0.7	PASS
			S			93.9	± 0.7	PASS
			I			93.9	± 0.7	PASS
		A	F	114.00	1000	113.9	± 0.7	PASS
			S			113.9	± 0.7	PASS
			I			113.9	± 0.7	PASS

* Based on the setting of the UUT, the reading is overall sound pressure level in dB(A), dB(C) & dB.

All calibration points are within manufacturer's specification.





CERTIFICATE OF CALIBRATION



京制01020122号

Class 1

TYPE: BSWA 308

S/N: 630178

1. APPEARANCE Pass

2. CALIBRATION (sound)

Calibrator: BK4231 Sound Level: 93.8 dB Frequency: 1000 Hz

Microphone Model / SN: MP231 / 591159

Filter	Nominal[dB]	Indication[dB]	Error[dB]
A	93.8	93.8	0.0
C	93.8	93.8	0.0
Z	93.8	93.8	0.0

3. FREQUENCY WEIGHTINGS (sound & electrical)

Z-weighting (sound & electrical); A/C-weighting (electrical, plus Z-weighting error)

Frequency [Hz]	Attenuation[dB]		
	A	C	Z
10	-69.0	-14.3	0.0
20	-50.3	-6.2	0.0
31.5	-39.5	-3.1	0.0
63	-26.2	-0.8	0.0
125	-16.1	-0.2	0.0
250	-8.6	0.0	0.0
500	-3.3	0.0	0.0
1000	0.1	0.1	0.1
2000	1.4	0.0	0.2
4000	0.8	-1.0	-0.1
8000	-1.4	-3.3	0.1
16000	-12.2	-14.2	0.7
20000	-25.3	-27.3	-0.4

4. LEVEL LINEARITY (electrical)

Filter=A; Fsin=1kHz

Nominal[dB]	20	21	22	23	24	25	30	40	50	60	70	80	89
Indication[dB]	19.9	20.9	21.9	22.9	23.9	24.9	30.0	39.8	49.8	59.9	69.9	79.9	88.9
Error[dB]	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1
Nominal[dB]	90	91	92	93	94	95	96	97	98	99	100	110	120
Indication[dB]	89.9	90.9	91.9	92.9	94.0	95.0	96.0	97.0	98.0	99.0	100.0	110.0	120.0
Error[dB]	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nominal[dB]	129	130	131	132	133	134							
Indication[dB]	129.0	130.0	131.0	132.0	133.0	134.0							
Error[dB]	0.0	0.0	0.0	0.0	0.0	0.0							

5. SELF-GENERATED NOISE LEVEL (sound)

Measured in anechoic chamber with microphone; Backlight Off; Electrical noise please refer user manual

Filter	A	C	Z
Indication[dB]	~ 18	~ 23	~ 31

6. TIME WEIGHTINGS (electrical)

Filter=A; Fsin=4kHz; Steady Level=132dB

Detector	F	S
Rate of Decay[dB/s]	30.4	4.4
Delta of F/S[dB]	0.0	

7. TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Response[dB]		
	$L_{AFmax} - L_A$	$L_{ASmax} - L_A$	$L_{AE} - L_A$
500	-0.1	-4.1	-3.1
200	-1.0	-7.5	-7.0
50	-4.9	-13.2	-13.1
10	-11.2	-20.1	-20.1

8. REPEATED TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Tone Burst Interval [ms]	Response[dB]
		$L_{AeqT} - L_A$
500	2000	-7.0
200	800	-7.0
50	200	-7.0
10	40	-7.0

9. OVERLOAD INDICATION (electrical)

Filter=A; Fsin=1000Hz

Nominal[dB]	Error[dB]			Delta of Positive and Negative[dB]
	Steady	Positive Half Cycle	Negative Half Cycle	
134.1	0.1	0.1	0.1	0.0

10. C-WEIGHTED PEAK SOUND LEVEL (electrical)

Filter=C; Peak; Fsin=500Hz

Steady Signal Level	$(L_{Cpeak} - L_c)$ [dB]		
	Single Cycle	Positive Half Cycle	Negative Half Cycle
4dB Below Top	3.6	2.3	2.3
Middle	3.5	2.3	2.3
1dB Above Floor	3.2	2.3	2.5

CONDITIONS

Temperature	23	°C
Relative Humidity	36	%
Static Pressure	100.7	kPa

TEST EQUIPMENT

Item	Manufacturer	Model	S/N	Description
1	B&K	4231	3008422	Sound Calibrator
2	Agilent	33220A	MY44038043	Signal Generator
3	Agilent	34401A	SG47000236	Digital Multimeter
4	NJZY	ZY5142D	0425	Step Attenuator
5	B&K	4180	2412874	Standard Microphone

TEST PROCEDURES IN ACCORDANCE WITH
IEC 61672-3:2013Class 1 Performance Verified.
Test Qualified.

DATE: 2025.07M0 1D TEST (sig.):

LZH

APVD (sig.):



BSWA308 (SN#630178)

Calibrated by manufacturer

Calibration Date: 01 July 2025

Call. Due Day: 30 June 2026



CERTIFICATE OF CALIBRATION

Class 1



京制01020122号

TYPE: BSWA 308 S/N: 630179

1. APPEARANCE Pass

2. CALIBRATION (sound)

Calibrator: BK4231 Sound Level: 93.8 dB Frequency: 1000 Hz
Microphone Model / SN: MP231 /591340

Filter	Nominal[dB]	Indication[dB]	Error[dB]
A	93.8	93.8	0.0
C	93.8	93.8	0.0
Z	93.8	93.8	0.0

3. FREQUENCY WEIGHTINGS (sound & electrical)

Z-weighting (sound & electrical); A/C-weighting (electrical, plus Z-weighting error)

Frequency [Hz]	Attenuation[dB]		
	A	C	Z
10	-69.0	-14.3	0.0
20	-50.3	-6.2	0.0
31.5	-39.5	-3.1	0.0
63	-26.2	-0.8	0.0
125	-16.1	-0.2	0.0
250	-8.6	0.0	0.0
500	-3.2	0.0	0.0
1000	0.2	0.2	0.2
2000	1.5	0.1	0.3
4000	1.1	-0.7	0.2
8000	-0.7	-2.6	0.8
16000	-12.0	-14.0	0.9
20000	-25.9	-27.9	-1.0

4. LEVEL LINEARITY (electrical)

Filter=A; Fsin=1kHz

Nominal[dB]	20	21	22	23	24	25	30	40	50	60	70	80	89
Indication[dB]	20.0	21.0	22.0	23.0	24.0	25.0	30.0	39.8	49.8	59.9	69.9	80.0	89.0
Error[dB]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.1	-0.1	0.0	0.0
Nominal[dB]	90	91	92	93	94	95	96	97	98	99	100	110	120
Indication[dB]	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0	110.0	120.0
Error[dB]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nominal[dB]	129	130	131	132	133	134							
Indication[dB]	129.0	130.0	131.0	132.0	133.0	134.0							
Error[dB]	0.0	0.0	0.0	0.0	0.0	0.0							

5. SELF-GENERATED NOISE LEVEL (sound)

Measured in anechoic chamber with microphone; Backlight Off; Electrical noise please refer user manual

Filter	A	C	Z
Indication[dB]	~ 18	~ 23	~ 31

6. TIME WEIGHTINGS (electrical)

Filter=A; Fsin=4kHz; Steady Level=132dBA

Detector	F	S
Rate of Decay[dB/s]	32.2	4.4
Delta of F/S[dB]	0.0	

7. TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Response[dB]		
	$L_{AFmax}-L_A$	$L_{ASmax}-L_A$	$L_{AE}-L_A$
500	-0.1	-4.1	-3.1
200	-1.0	-7.5	-7.0
50	-4.9	-13.2	-13.1
10	-11.2	-20.1	-20.1

8. REPEATED TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Tone Burst Interval [ms]	Response[dB]
		$L_{AeqT}-L_A$
500	2000	-7.0
200	800	-7.0
50	200	-7.0
10	40	-7.0

9. OVERLOAD INDICATION (electrical)

Filter=A; Fsin=1000Hz

Nominal[dB]	Error[dB]			Delta of Positive and Negative[dB]
	Steady	Positive Half Cycle	Negative Half Cycle	
134.1	0.1	0.1	0.1	0.0

10. C-WEIGHTED PEAK SOUND LEVEL (electrical)

Filter=C; Peak; Fsin=500Hz

Steady Signal Level	$(L_{Cpeak}-L_C)[dB]$		
	Single Cycle	Positive Half Cycle	Negative Half Cycle
4dB Below Top	3.6	2.3	2.3
Middle	3.5	2.3	2.3
1dB Above Floor	3.9	2.3	2.3

CONDITIONS		
Temperature	23	°C
Relative Humidity	36	%
Static Pressure	100.7	kPa

TEST EQUIPMENT				
Item	Manufacturer	Model	S/N	Description
1	B&K	4231	3008422	Sound Calibrator
2	Agilent	33220A	MY44038043	Signal Generator
3	Agilent	34401A	SG47000236	Digital Multimeter
4	NJZY	ZY5142D	0425	Step Attenuator
5	B&K	4180	2412874	Standard Microphone

TEST PROCEDURES IN ACCORDANCE WITH
IEC 61672-3:2013

Class 1 Performance Verified.
Test Qualified.

DATE: 2025-07-01 TEST (sig.): LZH APVD (sig.):



BSWA308 (SN#630179)

Calibrated by manufacturer

Calibration Date: 01 July 2025

Cali. Due Day: 30 June 2026



CERTIFICATE OF CALIBRATION



京制01020122号

Class 1

TYPE: BSWA 308

S/N: 630177

1. APPEARANCE Pass

2. CALIBRATION (sound)

Calibrator: BK4231 Sound Level: 93.8 dB Frequency: 1000 Hz

Microphone Model / SN: MP231/591089

Filter	Nominal[dB]	Indication[dB]	Error[dB]
A	93.8	93.8	0.0
C	93.8	93.8	0.0
Z	93.8	93.8	0.0

3. FREQUENCY WEIGHTINGS (sound & electrical)

Z-weighting (sound & electrical); A/C-weighting (electrical, plus Z-weighting error)

Frequency [Hz]	A	C	Z
10	-69.0	-14.3	0.0
20	-50.4	-6.2	0.0
31.5	-39.5	-3.0	0.0
63	-26.2	-0.9	0.0
125	-16.1	-0.2	0.0
250	-8.6	0.0	0.0
500	-3.2	0.0	0.0
1000	0.1	0.1	0.1
2000	1.3	-0.1	0.1
4000	0.5	-1.3	-0.4
8000	-1.6	-3.5	-0.1
16000	-13.2	-15.1	-0.2
20000	-27.2	-29.1	-2.2

4. LEVEL LINEARITY (electrical)

Filter=A; Fsin=1kHz

Nominal[dB]	20	21	22	23	24	25	30	40	50	60	70	80	89
Indication[dB]	20.2	21.2	22.2	23.1	24.2	25.1	30.0	39.9	49.8	59.8	69.9	79.9	88.9
Error[dB]	0.2	0.2	0.2	0.1	0.2	0.1	0.0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1
Nominal[dB]	90	91	92	93	94	95	96	97	98	99	100	110	120
Indication[dB]	89.9	90.9	91.9	92.9	94.0	95.0	96.0	96.9	97.9	98.9	100.0	110.0	120.0
Error[dB]	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0
Nominal[dB]	129	130	131	132	133	134							
Indication[dB]	129.0	130.0	131.0	132.0	133.0	134.0							
Error[dB]	0.0	0.0	0.0	0.0	0.0	0.0							

5. SELF-GENERATED NOISE LEVEL (sound)

Measured in anechoic chamber with microphone; Backlight Off; Electrical noise please refer user manual

Filter	A	C	Z
Indication[dB]	~ 18	~ 23	~ 31

6. TIME WEIGHTINGS (electrical)

Filter=A; Fsin=4kHz; Steady Level=132dBA

Detector	F	S
Rate of Decay[dB/s]	32.3	4.4
Delta of F/S[dB]	0.0	

7. TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Response[dB]		
	$L_{AFmax} - L_A$	$L_{ASmax} - L_A$	$L_{AE} - L_A$
500	-0.2	-4.1	-3.1
200	-1.1	-7.5	-7.0
50	-4.9	-13.2	-13.1
10	-11.3	-20.1	-20.1

8. REPEATED TONEBURST RESPONSE (electrical)

Filter=A; Fsin=4kHz

Steady Level L_A = 132.0 dB

Tone Burst Duration [ms]	Tone Burst Interval [ms]	Response[dB]
		$L_{Aavg} - L_A$
500	2000	-7.1
200	800	-7.1
50	200	-7.1
10	40	-7.1

9. OVERLOAD INDICATION (electrical)

Filter=A; Fsin=1000Hz

Nominal[dB]	Error[dB]			Delta of Positive and Negative[dB]
	Steady	Positive Half Cycle	Negative Half Cycle	
134.1	0.0	0.1	0.1	0.0

10. C-WEIGHTED PEAK SOUND LEVEL (electrical)

Filter=C; Peak; Fsin=500Hz

Steady Signal Level	$(L_{Cpeak} - L_C)$ [dB]		
	Single Cycle	Positive Half Cycle	Negative Half Cycle
4dB Below Top	3.5	2.3	2.3
Middle	3.5	2.2	2.2
1dB Above Floor	3.7	2.2	2.6

CONDITIONS

Temperature	23	°C
Relative Humidity	36	%
Static Pressure	100.7	kPa

TEST EQUIPMENT

Item	Manufacturer	Model	S/N	Description
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