



CRYSTAL CALIBRATION SALES AND SERVICE CO., LTD.

45/48 Soi Salathammasop31, Salathammasop Rd.,

Salathammasop, Thawewatthana, Bangkok 10170 Thailand

Tel : 0-2408-8474-5 Fax : 0-2408-8477 Email : info@crystalcal.com www.crystalcal.com



CERTIFICATE OF CALIBRATION

Issue Date : 25 December 2025
Certificate No. : 25-1739-002
Work Order No. : 25/1739

Customer Name : Faculty of Science and Technology
Suan Sunandha Rajabhat University
1 U-Thong nok Road, Dusit, Bangkok 10300 Thailand

Date of Received : 22 December 2025

Date of Calibration : 22 December 2025

Instrument Details : Description : Electronic Balance
Manufacturer : METTLER TOLEDO
Model : ME204
Serial No. : B534348442
ID No. : สส.07.14.02.0003/59
Resolution : 0.0001 g
Capacity : 220 g
Location : ห้อง 26311 อาคาร 26 คณะวิทยาศาสตร์และเทคโนโลยี

Calibration Method : This calibration was conducted by using in-house method according to calibration procedure no. CWI-B-01 based on UKAS LAB14 edition 6, October 2019

Environmental Condition

Temperature : Maximum 25.1°C / Minimum 24.6°C
Humidity : Maximum 48%R.H. / Minimum 44%R.H.
Air Pressure : Maximum 1019.1hPa / Minimum 1018.9hPa

Traceability of Measurement

: This certificate of calibration documents the traceability to national standard, which realize the unit of measurement according to the International system of Units (SI)

Calibrated by : Mr. Kritsada Kaewwangpa
Calibration Engineer

Approved by : 
(Mr. Thichakorn Srisupob)
Technical Manager

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CERTIFICATE OF CALIBRATION

Issue Date : 25 December 2025

Certificate No. : 25-1739-002

Work Order No. : 25/1739

Details of Calibration

1. Reference Standards Instrument

Instrument	Capacity of Weight	Serial No. / ID No.	Certificate No.	Due date
Weight Set E2	1mg to 200g	B744909236	22-130801	6 December 2026

2. Certificate traceable

: This certificate traceable to The International System of Unit refer to
Asia Medical and Agricultural Laboratory and Research center Co., Ltd. , NAC Calibration No.
0152

3. Condition of item

: Used

4. Calibration site

: On-site

Result of Calibration

1. Calibration result : Check performance before calibration

Applied Weight g	Balance Reading g	Correction Value g	Uncertainty ($\pm$) g	Coverage Factor (k)
100.0000	100.0000	0.0000	0.00019	2.00
200.0000	200.0000	0.0000	0.00032	2.00

2. The result of check performance in frist step has to Without Reset span

3. Calibration result : Without adjustment

3.1 Repeatability number of repeatability is 10 times

Norminal Value (g)	Standard Deviation of Reading (g)
100	0.0000422
200	0.0000422



This result of calibration was found accurate as shown on date and place of calibration only.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k=2$ providing a level of confidence of approximately 95%.



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CERTIFICATE OF CALIBRATION

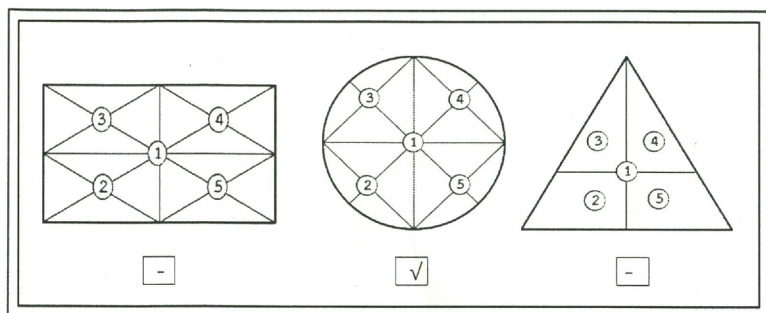
Issue Date : 25 December 2025

Certificate No. : 25-1739-002

Work Order No. : 25/1739

3. Calibration result : Without adjustment (continued)

3.2 Eccentric or Off-center Error A mass of 100 g was placed and moved to various position on pan.



Result of Eccentric Error		
Position 1	100.0000	g
Position 2	100.0001	g
Position 3	100.0000	g
Position 4	100.0000	g
Position 5	100.0001	g
(Maximum Difference)	0.0001	g

3.3 Departure of indication from nominal value

Applied Weight g	Balance Reading g	Correction Value g	Uncertainty (±) g	Coverage Factor (k)
Unload	0.0000	0.0000	0.00010	2.00
0.1000	0.1000	0.0000	0.00010	2.00
0.5000	0.5000	0.0000	0.00010	2.00
1.0000	1.0000	0.0000	0.00010	2.00
2.0000	2.0000	0.0000	0.00010	2.00
3.0000	3.0000	0.0000	0.00010	2.00
4.0000	4.0000	0.0000	0.00010	2.00
5.0000	5.0000	0.0000	0.00010	2.00
10.0000	10.0000	0.0000	0.00011	2.00
50.0000	50.0000	0.0000	0.00013	2.00
100.0000	100.0000	0.0000	0.00019	2.00
150.0000	150.0000	0.0000	0.00026	2.00
200.0000	200.0000	0.0000	0.00032	2.00

Note

Calibrate items it good condition and this report customer request and accepted in certificate

This result of calibration was found accurate as shown on date and place of calibration only.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k=2$ providing a level of confidence of approximately 95%.



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CERTIFICATE OF CALIBRATION

Certificate No. : 25-1739-001

Issue Date : 25 December 2025

Work Order No. : 25/1739

Customer Name : Faculty of Science and Technology
Suan Sunandha Rajabhat University
1 U-Thong nok Road, Dusit, Bangkok 10300 Thailand

Date of Received : 22 December 2025

Date of Calibration : 22 December 2025

Instrument Details : Description : Temperature Controlled Enclosures [Hot Air Oven]
Manufacturer : memmert
Model : UN 55
Serial No. : B216.3645
ID No. : สส.07.99.05.0012/60
Resolution : 0.1 °C
Location : ห้อง 2424 อาคาร 24 คณะวิทยาศาสตร์และเทคโนโลยี

Calibration Method : This instrument was calibrated by insert standard thermometer into the chamber according to calibration procedure no. CWI-T-10 follow up to TLAS G-20-1/02-08 (E) : Guidelines for Calibration and Checks of Temperature Controlled Enclosures.

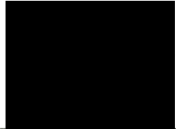
Environmental Conditions :

Temperature : Area Monitoring between 15°C to 40°C
Humidity : Area Monitoring between 30%RH to 85%RH
Line Voltage : Area Monitoring 220 VAC $\pm$ 10%

Traceability of Measurement :

This certificate of calibration documents the traceability to national standard, which realize the unit of measurement according to the International system of Units (SI) and The temperature scale in use at this laboratory is The International Temperature scale of 1990.

Calibrated by : Mr. Kritsada Kaewwangpa
Calibration Engineer

Approved by : 
(Mr. Thichakorn Srisupob)
Asst. Laboratory Manager

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CERTIFICATE OF CALIBRATION

Issue Date : 25 December 2025

Certificate No. : 25-1739-001

Work Order No. : 25/1739

Details of Calibration

1. Reference Standards Instrument

Instrument	Model	Serial No./Ins No.	Certificate No.	Due Date
Data Acquisition unit	34972A	MY49024826	23-1564-005	14 November 2026
Sensor type	RTD	CH # 101-109	23-1564-005	14 November 2026

2. Certificate traceable : This certificate traceable to The International System of Unit refer to
Crystal Calibration Sales and Service Co., Ltd. , NAC Calibration No. 0260
3. Condition of item : Used
4. Calibration site : On - Site
5. Result of Calibration : Without adjustment
6. Evaluate Condition : Time Constant : - Hour 33 Minute At cal. point 105 °C
Air vent : Off
Fan speed status : None Fan Speed
7. Calibration note : The results reported in this certificate refer to the condition of instrument on
the process into the steady state of chamber
8. Sensors Installation Diagram : When ; Sensor installation location in Chamber @ Working Space
A = Distance between sensor and wall of chamber is 5 cm
9. Dimensions of chamber : W = 0.4 m ; D = 0.336 m ; H = 0.4 m

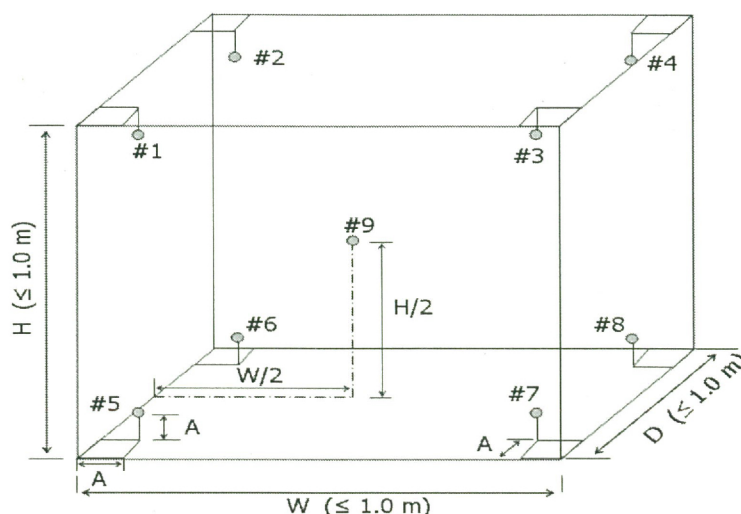


Diagram of Chamber



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CERTIFICATE OF CALIBRATION

Issue Date : 25 December 2025

Certificate No. : 25-1739-001

Work Order No. : 25/1739

Result of Temperature Distribution and Performance Check

Table1 : Reporting of Temperature Distribution

Calibration point (°C)	Average Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	#1	#2	#3	#4	#5	#6	#7	#8	#9	
105.0	105.71	105.69	105.66	105.64	105.41	105.86	105.29	105.40	106.03	0.40
150.0	150.08	149.94	149.94	149.83	149.55	150.19	149.39	149.51	150.61	0.65

Table 2 : Reporting of Performance check

Calibration Point (°C)	Indicator Set Point (°C)	Indicator Reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
		MAX	MIN	Average			
105.0	105.0	105.0	104.9	105.0	0.26	0.86	0.96
150.0	150.0	150.0	149.9	150.0	0.35	1.55	1.68

Note

Calibrate items it good condition and this report customer request and accepted in certificate

The reference sensor is preferably located of the geometric center of chamber

The measured temperature data readout by software "Benchlink Datalogger 3"

The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity) "

Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.

Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady state conditions.

Overall Variation - The difference of the maximum and minimum measured temperatures throughtout observation time.

Indicating Temperature - the average reading of indicating device that forms the integral part of the enclosure.

This result of calibration was found accurate as shown on date and place of calibration only.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k=2$ providing a level of confidence of approximately 95%.

Certificate of Calibration

Calibration Certification Information

Cal. Date: August 5, 2025 Rootsmeter S/N: 438320 Ta: 296 °K
Operator: Jim Tisch Pa: 748.3 mm Hg
Calibration Model #: TE-5025A Calibrator S/N: **710725**

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3740	3.2	2.00
2	3	4	1	0.9780	6.4	4.00
3	5	6	1	0.8730	7.9	5.00
4	7	8	1	0.8300	8.8	5.50
5	9	10	1	0.6870	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)
0.9870	0.7183	1.4080	0.9957	0.7247	0.8895
0.9828	1.0049	1.9912	0.9914	1.0137	1.2579
0.9808	1.1234	2.2262	0.9894	1.1334	1.4064
0.9796	1.1802	2.3349	0.9882	1.1907	1.4750
0.9743	1.4182	2.8160	0.9829	1.4307	1.7789
QSTD	m=	2.00936	QA	m=	1.25823
	b=	-0.03294		b=	-0.02081
	r=	0.99998		r=	0.99998

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



THAI METEOROLOGICAL DEPARTMENT

4353 Sukhumvit, Bangna, Bangkok 10260 Tel. 081-454-2804,0-2399-0469

Calibration Certificate

Issued by : Calibration & Test Section : Meteorological Instruments Bureau

Date of Issue 27 January, 2026

Certification No. 005/26

Page : 1 of 3

Object : Wind speed and wind direction

Manufacturer : Davis Instruments Inc.

Type : Weather Wizard III Product No. 7425

Serial No. : WC90601A48

Customer : Evergreen Consulting Co.,Ltd.
17/106 Moo 3, Sattahip, Sattahip,
Chonburi 20180 Thailand.

Calibration Condition : Temperature 25.1 °C Barometric Pressure 1012.2 hPa

NATIONAL STANDARD WIND TUNNEL :

: Thermal Anemometer 642 S/N 91563

: HOOK GAGE NO 1425 Pitot Tube Theodor Friedrichs Type 0800.0000 serial 9023

N.I.S.T. Test Reference Number 731/241460

: Ultrasonic Anemometer Model DA-650-3TV (sensor TR-90AH)

Serial Number 110730029 (sensor 120629586)

JAPAN QUALITY ASSURANCE ORGANIZATION

STANDARD THERMOMETER

: Theodor Friedrich : Dry No.8389/94 Wet No. 8389/94

: Thermoschneider No.918802

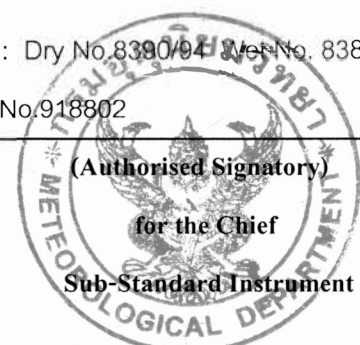
Calibrated by :

Mr. Watcharapol Subwat

Mechanical Engineer

Signed

Mr. Pisood Promsut



(Authorised Signatory)

for the Chief

Sub-Standard Instrument



THAI METEOROLOGICAL DEPARTMENT

4353 Sukhumvit, Bangna, Bangkok 10260 Tel. 081-454-2804,0-2399-0469

The Result of Calibration

Certification No. 005/26

27 January, 2026

Page : 2 of 3

Standard Ultrasonic Anemometer m/sec	HOOK GAGE NO. 1425			TESTED ANEMOMETER	
	Pressure inches	Vacumm inches	Pressure hPa	Velocity m/sec	Correction m/sec
1.00	-	-	-	0.9	0.10
3.02	-	-	-	2.7	0.32
5.00	-	-	-	4.9	0.10
7.00	-	-	-	6.7	0.30
9.02	-	-	-	8.1	0.92
11.01	-	-	-	10.3	0.71
13.01	-	-	-	12.1	0.91
15.01	-	-	-	14.3	0.71
17.02	-	-	-	16.1	0.92
20.02	-	-	-	19.3	0.72

Wind Aloft Plotting Board.	
US.DEPARTMENT OF COMMERCE WEATHER BUREAU	
WIND DIRETION	TESTED WIND DIRECTION
0	0
90	90
180	180
270	270

Calibrated by :



Mr. Watcharapol Subwat
Mechanical Engineer





THAI METEOROLOGICAL DEPARTMENT

4353 Sukhumvit, Bangna, Bangkok 10260 Tel. 081-454-2804,0-2399-0469

The Result of Calibration

Certification No. 005/26

27 January, 2026

Page : 3 of 3

Standard Temp. °C	Temperature Sensor Reading	
	Reading °C	Correction °C
45.1	44.8	0.3
30.4	30.2	0.2
15.6	15.4	0.2

Calibrated by :

Mr. Watchapol Subwat
Mechanical Engineer



Calibration Test

Calibrated Date: 29 July 2025

Certificate No. 031/25

Instruments Information

Manufacturer : YOUNG Instrument Type : four blade helicoid propeller
Model : 40C Serial Number : Logger 428007859

Environment : Temperature 25.5 °C Humidity: 51 %RH

NATIONAL STANDARD WIND TUNNEL : Thermal Anemometer 642 S/N 91563
: HOOK GAGE NO 1425 : Wind Aloft Plotting Board
N.I.S.T. Test Reference Number 731/241460
: Ultrasonic Anemometer Model DA-650-3TV (sensor TR-90AH)
Serial Number 110730029 (sensor 120629586) JAPAN QUALITY ASSURANCE ORGANIZATION

Standard Ultrasonic Anemometer m/sec	HOOK GAGE NO 1425			TESTED ANEMOMETER			
	Pressure inches	Vacuum inches	Pressure hPa	Pressure hPa	Correction hPa	Velocity m/sec	Correction m/sec
1.00	-	-	-	-	-	0.9	0.1
3.02	-	-	-	-	-	2.9	0.12
5.04	-	-	-	-	-	4.8	0.24
7.03	-	-	-	-	-	6.8	0.23
9.01	-	-	-	-	-	8.7	0.31
11.03	-	-	-	-	-	10.7	0.33
13.01	-	-	-	-	-	12.5	0.51
15.03	-	-	-	-	-	14.4	0.63
17.05	-	-	-	-	-	16.5	0.55
20.02	-	-	-	-	-	19.3	0.72

Wind Aloft Plotting Board. US. DEPARTMENT OF COMMERCE WEATHER BUREAU			
WIND DIRECTION	TESTED WIND DIRECTION	Deviation	Result
0	0	0	Pass
90	90	0	Pass
180	180	0	Pass
270	270	0	Pass

Calibrate By :



MR. KITTISAK JANSANGWATTANA

Approve by :



MR. PASAGORN SAMOL



SCARLET | TECH

Certificate of Calibration

WL-21 Wireless Anemometer

Scarlet Tech Ltd. hereby certifies that the WL-21 wireless anemometer listed below was thoroughly calibrated, test and inspected following the standard calibration procedure (st-wl-21) and is within manufacture's specification at the time when the calibration is don

Client: Envir Service Co., Ltd.

Serial: 2122DR0059

Calibration Date: 2025/5/7

Calibration Expiry Date: 2026/5/6

The Result of Calibration

Measured Value (m/s)	Actual Value (m/s)	Velocity		Result
		Deviation	Tolerance	
1.0	1.0	0.0	0.9-1.1	Pass
1.9	2.0	0.1	1.8-2.2	Pass
4.9	5.0	0.1	4.7-5.3	Pass
7.0	7.0	0.0	6.0-8.0	Pass
10.0	10.0	0.0	9.5-10.5	Pass
19.6	20.0	0.4	19.0-21.0	Pass

Measured Value (m/s)	Actual Value (m/s)	Wind Direction		Result
		Deviation	Tolerance	
48°	47°	1	42-48	Pass
135°	135°	0	132-138	Pass
226°	225°	1	222-228	Pass
316°	315°	1	312-318	Pass
359°	0°	1	357-3	Pass

Inspection Room Temp	Actual Value	Deviation	Tolerance	Result
22.2°C	22.5	0.3	21.5-23.5	Pass

Atmospheric Pressure Inspection	Actual Value	Deviation	Tolerance	Result
1007	1005	2	1001-1019	Pass

Environment Conditions :

Air temperature: 22 °C

Relative humidity: 55 %

Static pressure: 102.2 kPa



Performed by: _____



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4F-3, No. 347, 2nd Sec., Heping E. Rd., Daan Dist. Taipei City 106, Taiwan



SCARLET | TECH

Certificate of Calibration

WL-21 Wireless Anemometer

Scarlet Tech Ltd. hereby certifies that the WL-21 wireless anemometer listed below was thoroughly calibrated, test and inspected following the standard calibration procedure (st-wl-21) and is within manufacture's specification at the time when the calibration is don

Client: Envir Service Co., Ltd.

Serial: 2112DR0071

Calibration Date: 2025/5/7

Calibration Expiry Date: 2026/5/6

The Result of Calibration

Measured Value (m/s)	Actual Value (m/s)	Velocity		Result
		Deviation	Tolerance	
1.0	1.0	0.0	0.9-1.1	Pass
1.9	2.0	0.1	1.8-2.2	Pass
4.9	5.0	0.1	4.7-5.3	Pass
7.0	7.0	0.0	6.0-8.0	Pass
10.0	10.0	0.0	9.5-10.5	Pass
19.6	20.0	0.4	19.0-21.0	Pass

Measured Value (m/s)	Actual Value (m/s)	Wind Direction		Result
		Deviation	Tolerance	
48°	47°	1	42-48	Pass
135°	135°	0	132-138	Pass
226°	225°	1	222-228	Pass
316°	315°	1	312-318	Pass
359°	0°	1	357-3	Pass

Inspection Room Temp	Actual Value	Deviation	Tolerance	Result
22.2°C	22.5	0.3	21.5-23.5	Pass

Atmospheric Pressure Inspection	Actual Value	Deviation	Tolerance	Result
1007	1005	2	1001-1019	Pass

Environment Conditions :

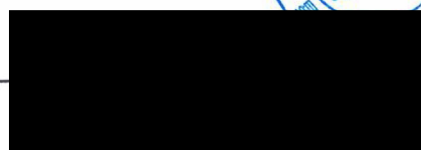
Air temperature: 22 °C

Relative humidity: 55 %

Static pressure: 102.2 kPa



Performed by: _____



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4F-3, No. 347, 2nd Sec., Heping E. Rd., Daan Dist. Taipei City 106, Taiwan



www.accl-calibration.com
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www.accl-cal.com

ADVANTAGE CENTER CO., LTD.

59/494 M.6, Frakham Road, T.Kukhot, Lumlookkar, Pathumthani 12130 Thailand.

Tel. (66-2) 9873248-50 Fax: (66-2) 9873252 E-mail: info.accl2662@gmail.com

pornsak2008@yahoo.co.th

CALIBRATION LABORATORY

Certificate No. RA-2601013-13

Job No. RA-2601013

Certificate of Calibration

FOR

Equipment Name : Sound Calibrator

Manufacturer : PONPE

Model : ND09

Serial Number : N753415

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPE-04-01

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

CONDITION AS RECEIVED : Normal

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :



(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Page 1 of 3

Certificate No.: RA-2601013-13

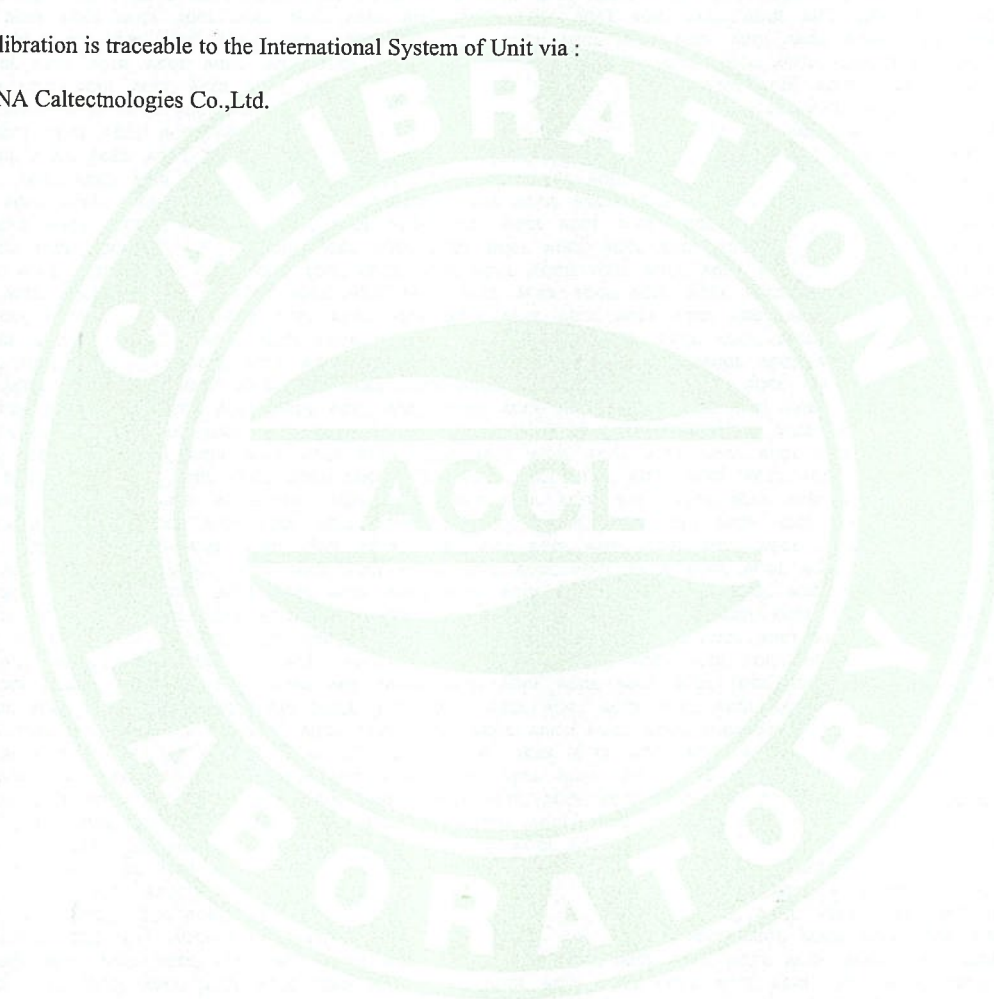
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Digital Sound Level Meter	HF:2556826	RA-2511002-21	Dec 1, 2026	NA

Traceability

This calibration is traceable to the International System of Unit via :

- NA : NA Caltechnologies Co.,Ltd.



Certificate No. : RA-2601013-13

Result of Calibration

Calibration Range : 94 dB, 114 dB

Frequency : 1 kHz

UUC Setting	STD Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94 dB	93.9	0.1	0.88
114 dB	114.1	-0.1	0.88

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -





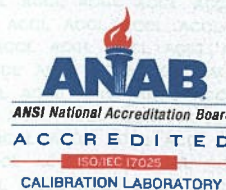
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pomsak2008@yahoo.co.th



CALIBRATION LABORATORY

Certificate No. RA-2601013-4

Job No. RA-2601013

Certificate of Calibration

FOR

Equipment Name : Sound Level Meter

Manufacturer : pulsar

Model : N/A

Serial Number : PN1923

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPE-04-01

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

CONDITION AS RECEIVED : Normal

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :

(Pomsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Page 1 of 3

Certificate No.: RA-2601013-4

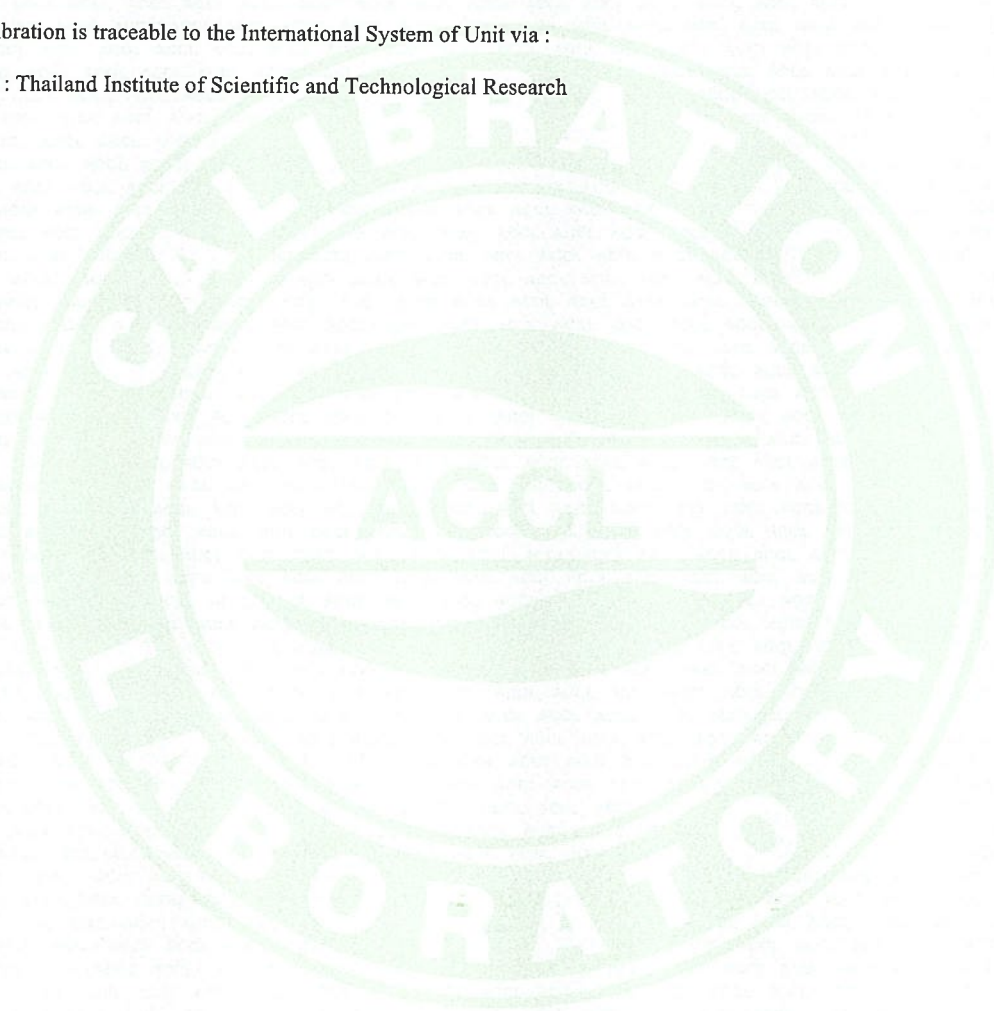
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Sound Calibrator	170603302	EEL.BP. 76/1068	Oct 28, 2026	TISTR

Traceability

This calibration is traceable to the International System of Unit via :

- TISTR : Thailand Institute of Scientific and Technological Research



Certificate No. : RA-2601013-4

Result of Calibration

Calibration Range : 94 dB, 114 dB

Function : Measurement @ 1 kHz

Select A Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.6	-0.03	0.12
114.54 dB	114.7	-0.16	0.12

Select A Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.6	-0.03	0.12
114.54 dB	114.7	-0.16	0.12

Select C Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.6	-0.03	0.12
114.54 dB	114.7	-0.16	0.12

Select C Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.6	-0.03	0.12
114.54 dB	114.7	-0.16	0.12

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -





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pornsak2008@yahoo.co.th



CALIBRATION LABORATORY

Certificate No. RA-2601013-2

Job No. RA-2601013

Certificate of Calibration

FOR

Equipment Name : Sound Level Meter

Manufacturer : pulsar

Model : N/A

Serial Number : PN1929

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bangkok 10160

Calibration Procedure : CPE-04-01

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

CONDITION AS RECEIVED : Normal

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :

(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

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Certificate No.: RA-2601013-2

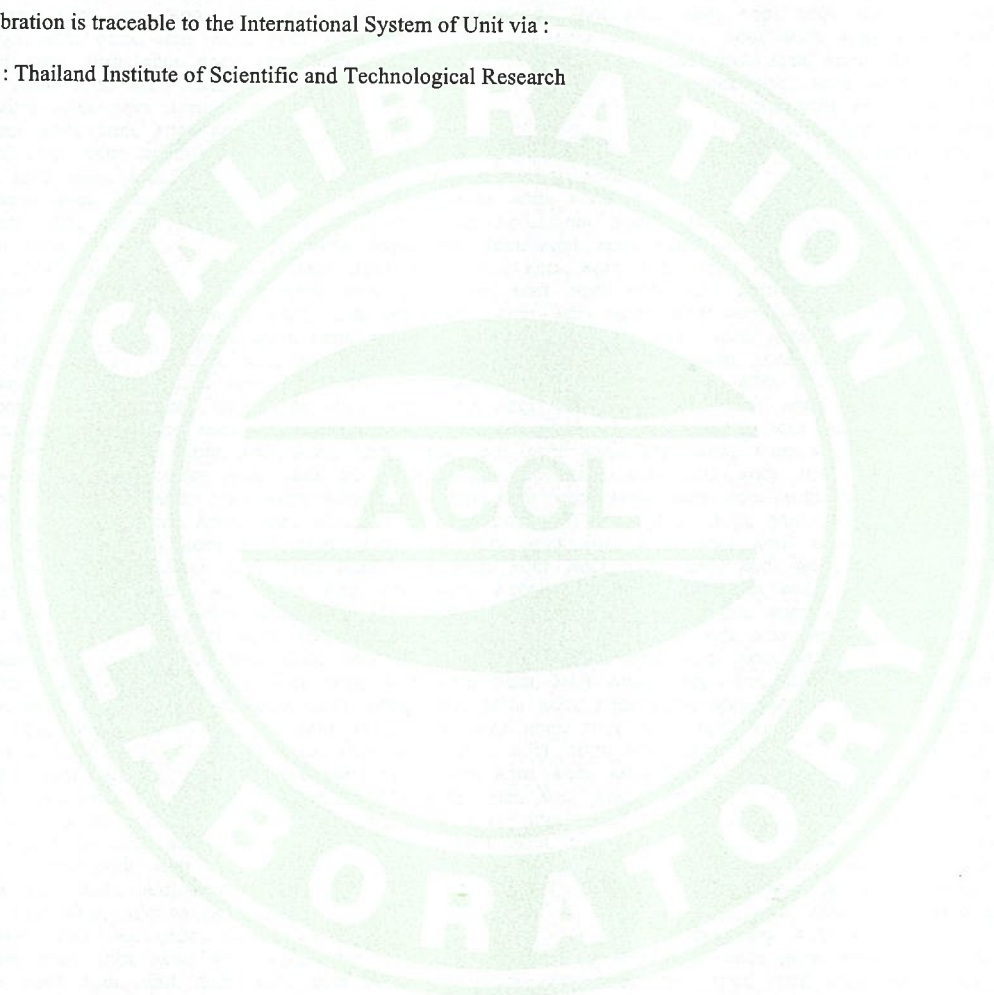
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Sound Calibrator	170603302	EEL.BP. 76/1068	Oct 28, 2026	TISTR

Traceability

This calibration is traceable to the International System of Unit via :

- TISTR : Thailand Institute of Scientific and Technological Research



Certificate No. : RA-2601013-2

Result of Calibration

Calibration Range : 94 dB, 114 dB

Function : Measurement @ 1 kHz

Select A Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select A Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select C Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select C Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -





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CALIBRATION LABORATORY

Certificate No. RA-2601013-6

Job No. RA-2601013

Certificate of Calibration

FOR

Equipment Name : Sound Level Meter

Manufacturer : pulsar

Model : N/A

Serial Number : PN1932

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPE-04-01

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

CONDITION AS RECEIVED : Normal

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by

Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :

(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Page 1 of 3

Certificate No.: RA-2601013-6

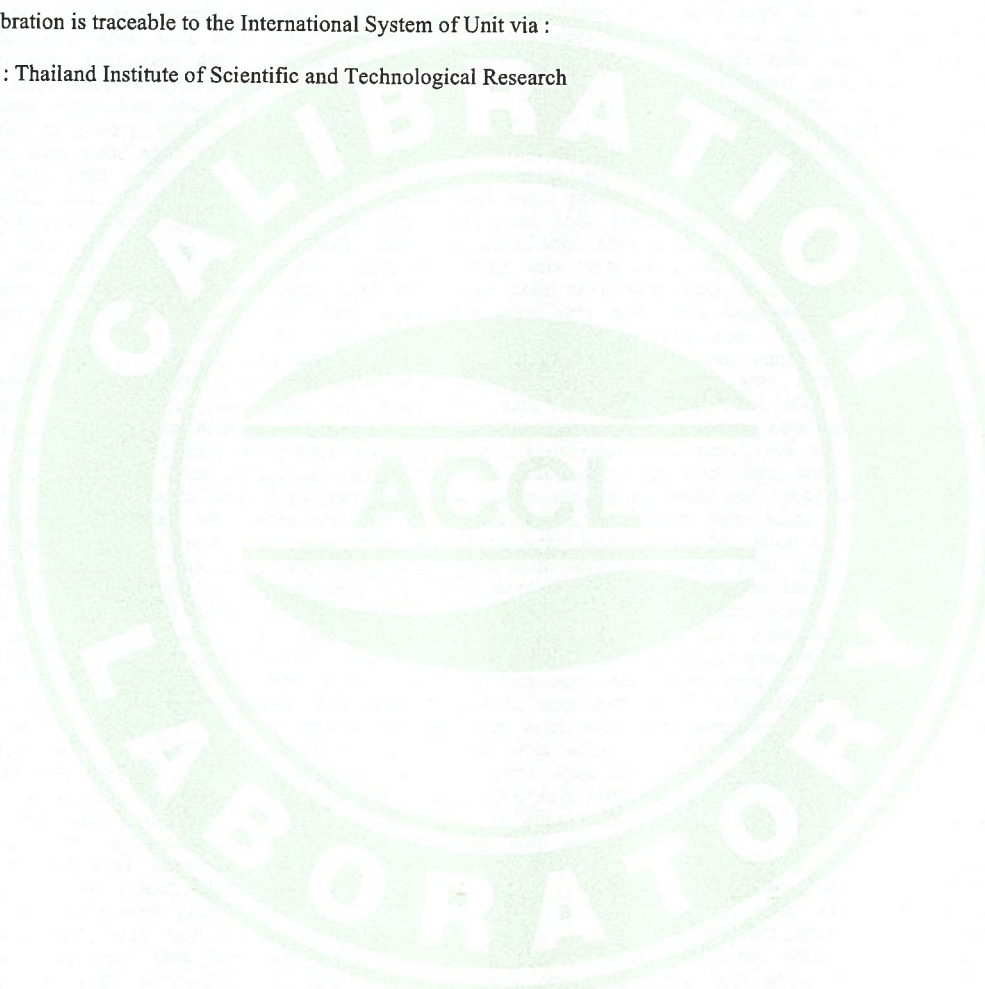
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Sound Calibrator	170603302	EEL.BP. 76/1068	Oct 28, 2026	TISTR

Traceability

This calibration is traceable to the International System of Unit via :

- TISTR : Thailand Institute of Scientific and Technological Research



Certificate No. : RA-2601013-6

Result of Calibration

Calibration Range : 94 dB, 114 dB

Function : Measurement @ 1 kHz

Select A Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select A Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select C Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

Select C Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty of Measurement (± dB)
94.57 dB	94.4	0.17	0.12
114.54 dB	114.4	0.14	0.12

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -



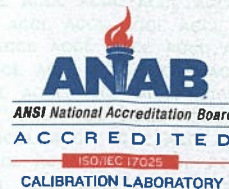


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pornsak2008@yahoo.co.th



CALIBRATION LABORATORY

Certificate No. RA-2601013-7

Job No.: RA-2601013

Certificate of Calibration

FOR

Equipment Name : Heat Stress Monitor

Manufacturer : Quest Technologies

Model : QUESTemp 34

Serial Number : A12BI0044

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPT-04-11

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :



(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Certificate No.: RA-2601013-7

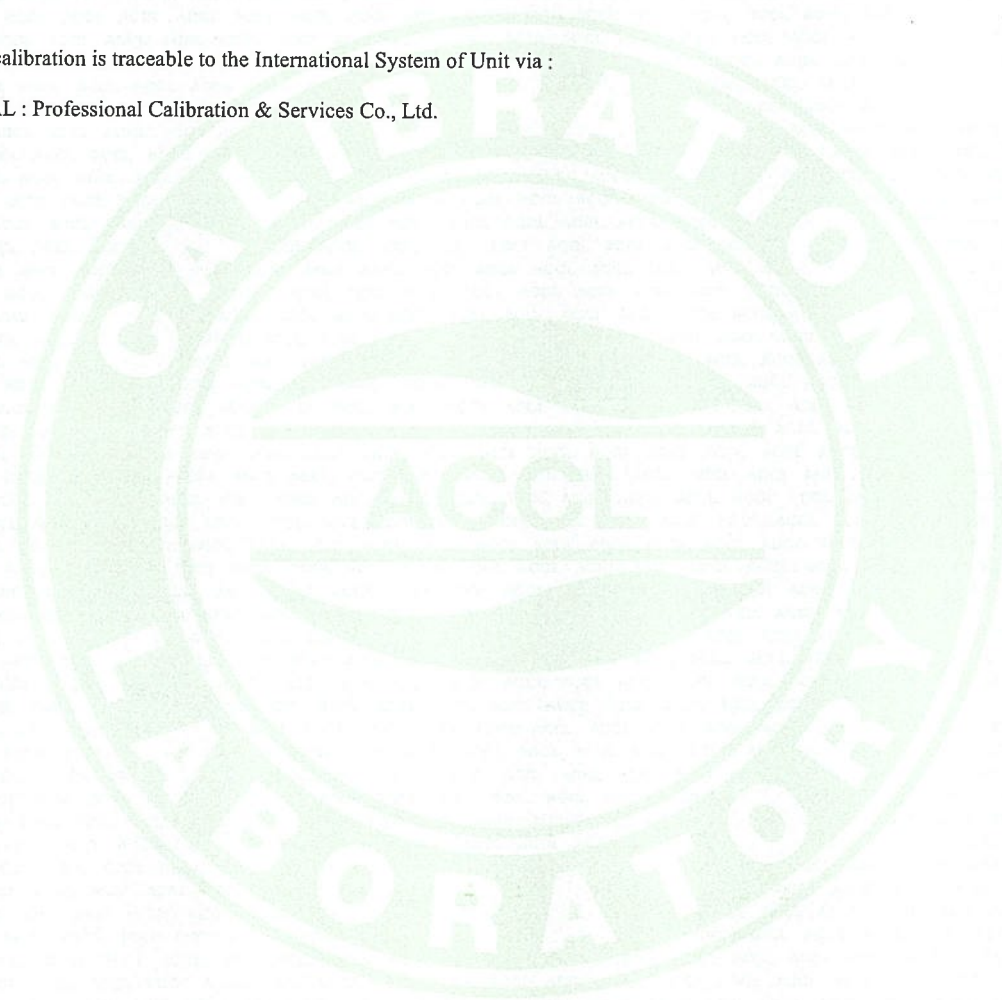
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Data Logger	ID.ACCL0200	EL66910/25	Nov 13, 2026	PCAL

Traceability

This calibration is traceable to the International System of Unit via :

- PCAL : Professional Calibration & Services Co., Ltd.



Certificate No. : RA-2601013-7

Result of Calibration

1. Temperature measurement

STD Reading (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty of Measurement (±°C)
30.009	30.1	-0.091	0.50
32.013	32.1	-0.087	0.50
34.019	34.1	-0.081	0.50

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -





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CALIBRATION LABORATORY

Certificate No. RA-2601013-9

Job No.: RA-2601013

Certificate of Calibration

FOR

Equipment Name : Area Heat Stress Monitor

Manufacturer : METROSONICS

Model : hs-32

Serial Number : MCH110032

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPT-04-11

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :

(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Page 1 of 3

Certificate No.: RA-2601013-9

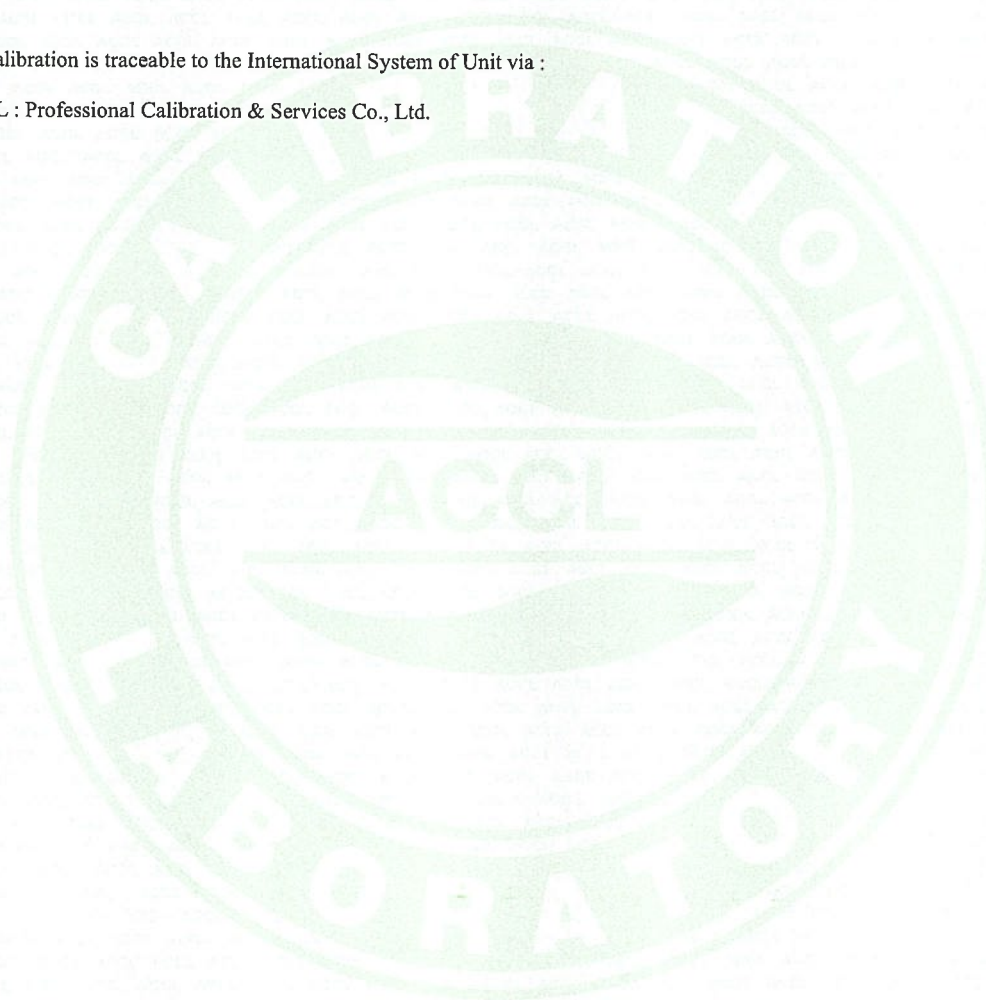
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Data Logger	ID.ACCL0200	EL66910/25	Nov 13, 2026	PCAL

Traceability

This calibration is traceable to the International System of Unit via :

- PCAL : Professional Calibration & Services Co., Ltd.



Certificate No. : RA-2601013-9

Result of Calibration

1. Temperature measurement

STD Reading (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty of Measurement (±°C)
30.009	30.1	-0.091	0.50
32.013	32.1	-0.087	0.50
34.019	34.1	-0.081	0.50

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -





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CALIBRATION LABORATORY

Certificate No. RA-2601013-8

Job No.: RA-2601013

Certificate of Calibration

FOR

Equipment Name : Heat Stress Monitor

Manufacturer : Quest Technologies

Model : QUESTemp 34

Serial Number : TEF110023

Customer Code : N/A

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

Calibration Procedure : CPT-04-11

Received Date : Jan 6, 2026

Calibration Date : Jan 10, 2026

Recommended Due Date : Jan 10, 2027

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$

Relative Humidity : $(50 \pm 15) \% \text{RH}$

Result : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by

Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :

(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Certificate No.: RA-2601013-8

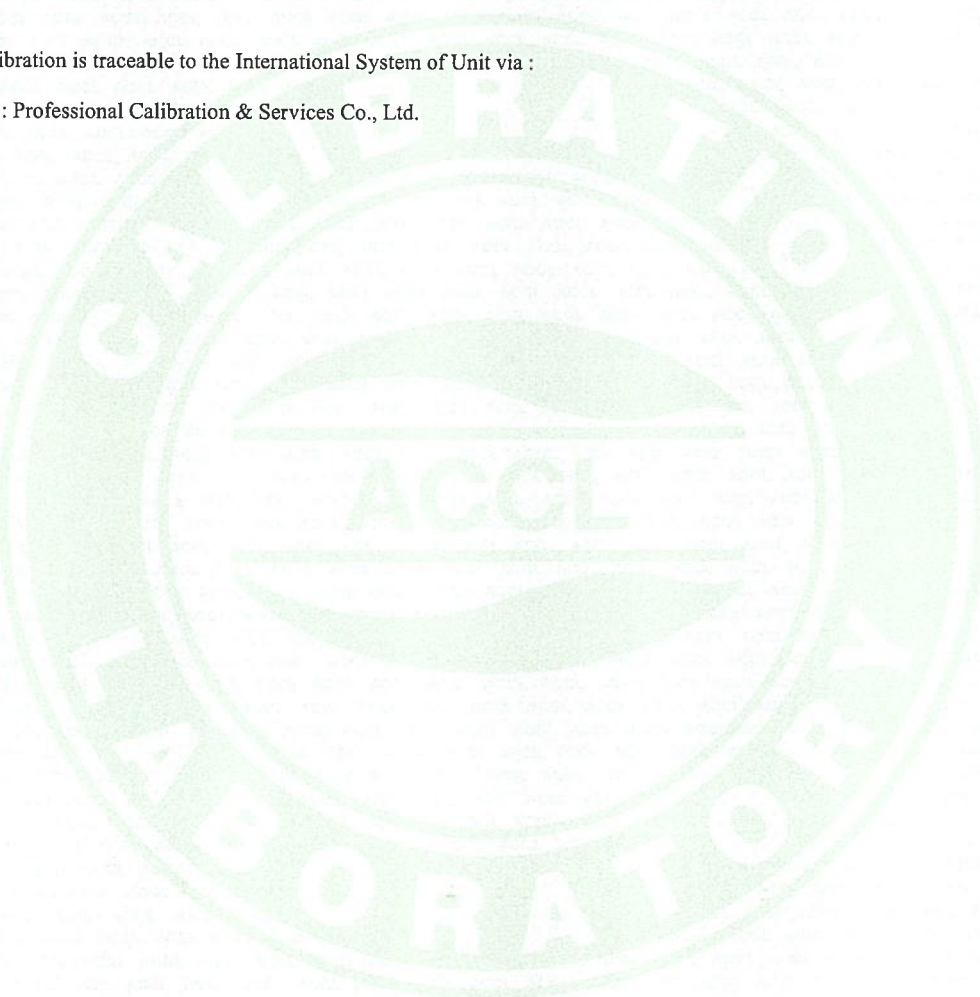
Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
Data Logger	ID.ACCL0200	EL66910/25	Nov 13, 2026	PCAL

Traceability

This calibration is traceable to the International System of Unit via :

- PCAL : Professional Calibration & Services Co., Ltd.



Certificate No. : RA-2601013-8

Result of Calibration

1. Temperature measurement

STD Reading (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty of Measurement (±°C)
30.009	30.3	-0.291	0.50
32.013	32.2	-0.187	0.50
34.019	34.4	-0.381	0.50

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -



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pornsak2008@yahoo.co.th

CALIBRATION LABORATORY

Certificate No. RA-2601013-16

Job No. RA-2601013

Certificate of Calibration

Equipment Name : Light Meter

FOR

Manufacturer : TENMARS

Calibration Procedure : Comparison Technique

Model : TM-201

Received Date : Jan 6, 2026

Serial Number : 181001471

Calibration Date : Jan 10, 2026

Customer Code : N/A

Recommended Due Date : Jan 10, 2027

Location of Calibration : In Lab

Customer Name : Safety Lab Co., Ltd.

88/269, Kanlapaphruek, Bang Khae, Bang Khae, Bangkok 10160

CONDITION AS RECEIVED : Normal

LABORATORY ENVIRONMENT

TEMPERATURE : (25 ± 15) °C

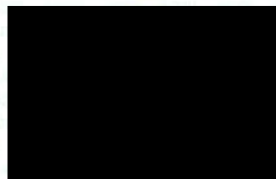
HUMIDITY : (50 ± 30) %RH

RESULT : No Adjustment (See data attached in page 3 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Units. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2017
3. The working standard is indicated in page 2 of this certificate.
4. This report applies to the item calibrated and shall not be reproduced except in full, without written approval by Calibration Laboratory, Advantage Center Co., Ltd.

Calibrated by : J. Sutep

Approved by :



(Pornsak Suksawaeng)

Date of Issue : Jan 12, 2026

Laboratory Management

Page 1 of 3

Certificate No.: RA-2601013-16

Reference Standards

Equipment Name	Serial No.	Certificate No.	Due Date	Traceability to
6.5 Digit Multimeter	US36127537	E1U2504945	Oct 24, 2026	NA
Standard Tungsten Halogen Lamp	504004	BP-P451/52	Jul 23, 2026	TISTR
Environmental Meter	A.096058	PL49198/24	Oct 15, 2026	PCAL

Traceability

This calibration is traceable to the International System of Unit via :

- NA : NACaltechnologies Co.,Ltd.
- TISTR : Thailand Institute of Scientific and Technological Research
- PCAL : Professional Calibration & Services Co., Ltd.



Result of Calibration

Certificate No. : RA-2601013-16

Range (Lux)	STD. Value (Lux)	UUC Reading (Lux)	Correction (Lux)	(±) Expanded Uncertainty (Lux)
400.0	35	35.10	-0.10	0.075
	50	50.1	-0.1	0.075
	100	101.1	-1.1	0.15
4000	500	501	-1	0.60
	1000	999	1	1.1
	2000	2000	0	2.2
	3000	3021	-21	3.3
40000	4000	3970	30	4.4
50000	5000	4960	40	5.5

STD = Standard

UUC = Unit Under Calibration

- End of Certificate -

