

ផ បច្ចេកវិទ្យា

ទេសាសនាសម្រាប់ប្រើប្រាស់ក្នុងការវិភាគ

**CALIBRATION LABORATORY Co.,LTD.**2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.com**REPORT OF CALIBRATION****FOR**

NOMENCLATURE : pH METER WITH TEMPERATURE
MANUFACTURER : EUTECH INSTRUMENTS
MODEL / TYPE : PH700
SERIAL NO. : 3150127[LAB-0001]
LOCATION SITE : ANALYTICAL LABORATORY 1
DATE OF CALIBRATION : 23 August 2024

ENVIRONMENT CONDITIONS :

Temperature : 22°C to 24°C

Relative Humidity : 50% to 55%

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPCH-01 [pH Meter]. The calibration was performed by direct measurement with Certified Reference Material (CRM).

This instrument was calibrated under procedure No. CLC-CPTH-03 [Temperature] based on ASTM E 644-04 as calibration guidelines. The calibration was performed by using Dry Block Calibrator, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. pH Standard Solution, NIMT TRM CODE TRM-S-2002, TRM CODE TRM-S-2003, TRM CODE TRM-S-2007.
2. pH Standard Solution, Control Company Catalog Number 06664260, 11754256, Lot Number CC787362.
3. Dry Block Calibrator, Presys Model T-45NL S/N. 234.01.22.
4. Precision Thermometer, Wika Model CTH 7000 S/N. 014471/18.
5. IPRT, SDL Model TI00-450-1D S/N. K0897A-1-19.

Certificate No. Q24083519

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getcalibration

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.com**CERTIFICATE OF CALIBRATION****FOR**

NOMENCLATURE : pH METER WITH TEMPERATURE
MANUFACTURER : EUTECH INSTRUMENTS
MODEL / TYPE : PH700
SERIAL NO. : 3150127[LAB-0001]
CLID. NO. : 372400303
JOB CONTROL NO. : 240809083519
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE
CUSTOMER : WE ENVIRONMENT CO., LTD.
280/19 MOO 9 BANGTOEI SAM KHOK
PATHUM THANI 12160 THAILAND

DATE OF RECEIVED : 09 August 2024

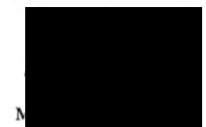
DATE OF ISSUED : 28 August 2024

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Calibration Engineer



Authorized Signatory

28 August 2024

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q24083519

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.comCLC
Accredited
ISO/IEC 17025**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION****MEASUREMENT RESULTS : (X) without adjustment () adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of pH meter with temperature.

CALIBRATION DATA**1. pH METER RESULT @ 25 °C**

Standard pH Buffer Solution (pH)	pH Meter Reading (pH)	pH Meter Reading (mV)	Correction (pH)	Uncertainty of pH Measurement (\pm pH)	k Factor
1.684	1.67	303	+0.014	0.010	2,00
4.003	3.98	169.4	+0.023	0.010	2,00
7.005	6.99	-5.2	+0.015	0.013	2,00
10.015	10.01	-176.9	+0.005	0.016	2,05

Technical Note. Setting function CAL 3 point (4,7,10).

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2. TEMPERATURE RESULT

Immersion depth (mm)	Actual Temperature (°C)	DUC Reading (°C)	Correction (°C)	Uncertainty \pm (°C)
115	24.99	24.9	+0.09	0.14

Technical Note. Type of sensor : Thermistor

Probe \varnothing 3 mm

Materials : Stainless Steel.

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The reported uncertainty is based on a standard uncertainty multiplied by coverage factor of $k = 2,00$.

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q24083519

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.comCLC
Accredited
ISO/IEC 17025**TRACEABILITY :**

1. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Lot Number. 260124 , 040822, 120124. Due Date 04 March 2025.
2. The measurements are traceable to International System of Units (SI), through Control Company.
Certificate No. 4281-14495731 , Due Date 27 September 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.
Certificate No. Q24052152, Due Date 17 June 2025.
4. The measurements are traceable to International System of Units (SI), through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 0961/66, Due Date 30 August 2024.
5. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Certificate No. TT-0100-23, Due Date 23 August 2024.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q24083519

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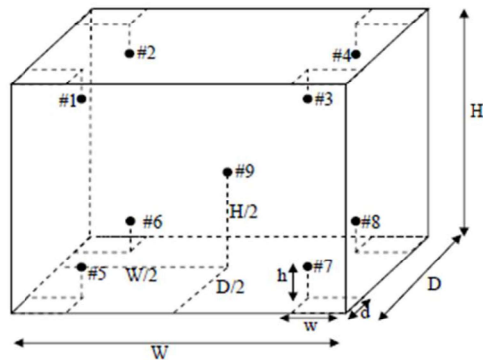
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**Standard Installation Locations**

Volume (Calibration Zone)= 32 (Liters)

Inside chamber: W = 50 (cm) D = 45 (cm) H = 50 (cm)

Standard Locations (#1, #2, #3, #4): w = 5 (cm) d = 5 (cm) h = 12 (cm)

Standard Locations (#5, #6, #7, #8): w = 5 (cm) d = 5 (cm) h = 15 (cm)

#9: Geometric center of the chamber

Position of Std	#1	#2	#3	#4	#5	#6	#7	#8	#9
Channel of Logger	201	202	203	204	205	206	207	208	209

Definitions**Indicating Temperature:** The average reading of indicating device which forms the integral part of the enclosure.**Measured Temperature:** The average reading of standards at any positions or location.**Measured Uniformity:** The maximum difference of measured temperatures between of any probes and the measured temperature at the reference location which are observed at same time or at close observation time as possible to determine the temperature pattern or homogeneity with the chamber at steady-state. The reference probe is preferably located in the geometric center of the chamber.**Measured Stability:** The one-half of greatest maximum difference of measured temperatures at any one probe.**Overall Variation:** The difference of maximum and minimum measured temperatures throughout observation time.**บริษัท ชัยนิเทศ จำกัด (SCIMET CO., LTD.)**1194 Soi Wachirathamsathit 57, Bangchak, Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

FC17-02: 30 MAY 2023



SCIMET Co., Ltd.

1194 Soi Wachirathamsathit 57, Bangchak,
Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239
https://www.scimet.co.thNSC-TIS1-TIS 17025
CALIBRATION 0454

Certificate No. C17240304

Calibration Certificate**Equipment:**

Hot Air Oven

Model: XUE112

Serial No.(or ID): Y0137 (LAB-0002)

Manufacturer: France Etuves

Condition: In Condition

Ventilation Valve: Closed Shelves(pc.): 2

Job No.: KSMT2402529

Received Date: 20 September 2024

Issued Date: 23 September 2024

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Customer

WE Environment CO., Ltd.

280/19 Moo. 9 Bang Toei, Sam Khok, Pathum Thani, 12160

Calibration Place

WE Environment CO., Ltd. (Laboratory 1)

280/19 Moo. 9 Bang Toei, Sam Khok, Pathum Thani, 12160

Calibration Date

20 September 2024

Environment Condition

Temperature: 31.7 °C ± 0.6 °C

Humidity: 66.7 %RH ± 3.5 %RH

The Method used

In-house method, W117, based on TLAS-G20

TraceabilityThis certificate is traceable to the SI Units maintained by
National Institute of Metrology (NIMT), Thailand through
SCIMET Co.,Ltd.Certificate No. C23240006

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognized national standard laboratories.

The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM).

These results may be affected by deviations from specified conditions. The results relate only to the items tested, calibrated or sampled. The report shall not be reproduced except in full without approval of SCIMET Co., Ltd.

(M)

Person in charge



Authorized signatory

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After adjustment (Cont.)

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 104.0 °C

Locations	Measured Temperature (°C)	Correction (°C)	Uncertainty (± °C)
#1	104.24	0.24	0.39
#2	103.93	-0.07	0.39
#3	103.77	-0.23	0.39
#4	103.68	-0.32	0.39
#5	103.75	-0.25	0.39
#6	104.11	0.11	0.39
#7	103.62	-0.38	0.39
#8	103.86	-0.14	0.39
#9	103.93	-0.07	0.39

Temperature Distribution

Desired (°C)	Setting (°C)	Indicating (°C)	Measured Temperature at Spread Locations (°C)									Uncertainty (± °C)*
			#1	#2	#3	#4	#5	#6	#7	#8	#9	
104.0	104.0	104.0	104.24	103.93	103.77	103.68	103.75	104.11	103.62	103.86	103.93	0.39

Chamber Characterization

Indicating (°C)	Measured Uniformity (°C)	Measured Stability (± °C)	Overall Variation (°C)
104.0	0.40	0.11	0.78

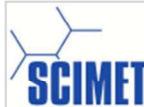
Note: * Maximum uncertainty of the each position

** Offset 1: -0.7 °C, Offset 2: -0.0 °C

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1194 Soi Wachirathamsathit 57, Bangchak, Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

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Calibration Results:

Before adjustment

Desired (°C)	Setting (°C)	Indicating (°C)	#1 (°C)	#2 (°C)	#3 (°C)	#4 (°C)	#5 (°C)	#6 (°C)	#7 (°C)	#8 (°C)	#9 (°C)
104.0	104.0	104.0	102.60	102.31	102.24	102.05	102.16	102.56	101.94	102.34	102.40

After adjustment

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 85.0 °C

Locations	Measured Temperature (°C)	Correction (°C)	Uncertainty (± °C)
#1	85.37	0.37	0.26
#2	85.16	0.16	0.26
#3	85.05	0.05	0.26
#4	84.99	-0.01	0.26
#5	85.04	0.04	0.26
#6	85.29	0.29	0.26
#7	84.95	-0.05	0.26
#8	85.12	0.12	0.26
#9	85.19	0.19	0.26

Temperature Distribution

Desired (°C)	Setting (°C)	Indicating (°C)	Measured Temperature at Spread Locations (°C)									Uncertainty (± °C)*
			#1	#2	#3	#4	#5	#6	#7	#8	#9	
85.0	85.0	85.0	85.37	85.16	85.05	84.99	85.04	85.29	84.95	85.12	85.19	0.26

Chamber Characterization

Indicating (°C)	Measured Uniformity (°C)	Measured Stability (± °C)	Overall Variation (°C)
85.0	0.29	0.07	0.52

Note: * Maximum uncertainty of the each position

** Offset 1: -0.7 °C, Offset 2: -0.0 °C

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1194 Soi Wachirathamsathit 57, Bangchak, Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

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Refer to Certificate No.: C17240304 Page: 1 of 2

Statements of conformity:

This conformity certificate documents the validity of the following statements of conformity based on the measurement results of corresponding calibration certificate:

The correction of indication determined during calibration are under given measurement and environmental conditions and considering the expanded measurement uncertainty (coverage probability 95%) within the specification. The given measurement uncertainty already includes other all effects by according to the standard method, TLAS-G20. Therefore, those parameters have not

Tolerance and Decision rules:

Assessment of the conformity of the measurement device are done based on direct comparison of the relevant measurement results with the tolerances and decision rule are prescribed by the customer.

- Decision rule : ☐ Choice A Binary Statement for Simple Acceptance Rule ($w = 0$), Specific Risk < 50% PFA.
- ☒ Choice B Non-binary statement with guard band ($w = 1 U$), Pass or Fail Specific Risk < 2.5% PFA and Condition Pass or Condition Fail Specific Risk < 50% PFA.
- ☐ Choice C Customer defined, Customers may define arbitrary multiple of r to have applied as guard band ($w = r U$).
- ; PFA: Probability of False Accept



Authorized signatory

After adjustment

Desired Temperature : 85.0 °C

Tolerances : 1.0 °C

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 85.0 °C

Locations	Measured (°C)	Correction of UUC (°C)	Guard band (W) (± °C)	Tolerance (± °C)	Conformity
#1	85.37	0.37	0.26	1.0	Pass
#2	85.16	0.16	0.26	1.0	Pass
#3	85.05	0.05	0.26	1.0	Pass
#4	84.99	-0.01	0.26	1.0	Pass
#5	85.04	0.04	0.26	1.0	Pass
#6	85.29	0.29	0.26	1.0	Pass
#7	84.95	-0.05	0.26	1.0	Pass
#8	85.12	0.12	0.26	1.0	Pass
#9	85.19	0.19	0.26	1.0	Pass

Correction of UUC.* = Measured Temperature - Desired Temperature

The validity of the statements of conformity cannot be guaranteed for different places of use, environmental conditions or improper use.

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1194 Soi Wachirathamthit 57, Bangchak, Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

FC17-02: 30 MAY 2023



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After adjustment (Cont.)

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 180.0 °C

Locations	Measured Temperature (°C)	Correction (°C)	Uncertainty (± °C)
#1	180.73	0.73	0.46
#2	180.25	0.25	0.45
#3	179.54	-0.46	0.45
#4	179.35	-0.65	0.45
#5	179.45	-0.55	0.45
#6	180.40	0.40	0.45
#7	178.98	-1.02	0.47
#8	179.72	-0.28	0.45
#9	180.20	0.20	0.48

Temperature Distribution

Desired (°C)	Setting (°C)	Indicating (°C)	Measured Temperature at Spread Locations (°C)									Uncertainty (± °C)*
180.0	180.0	180.0	#1	#2	#3	#4	#5	#6	#7	#8	#9	
180.0	180.0	180.0	180.73	180.25	179.54	179.35	179.45	180.40	178.98	179.72	180.20	0.48

Chamber Characterization

Indicating (°C)	Measured Uniformity (°C)	Measured Stability (± °C)	Overall Variation (°C)
180.0	1.48	0.16	1.99

Note: * Maximum uncertainty of the each position

** Offset 1 : -0.7 °C, Offset 2 : 0.0 °C

The End of Certificate

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Statements of conformity:(Cont.)

After adjustment (Cont.)

Desired Temperature : 104.0°C

Tolerances : 1.0 °C

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 104.0 °C

Locations	Measured (°C)	Correction of UUC. (°C)	Guard band (W) (± °C)	Tolerance (± °C)	Conformity
#1	104.24	0.24	0.39	1.0	Pass
#2	103.93	-0.07	0.39	1.0	Pass
#3	103.77	-0.23	0.39	1.0	Pass
#4	103.68	-0.32	0.39	1.0	Pass
#5	103.75	-0.25	0.39	1.0	Pass
#6	104.11	0.11	0.39	1.0	Pass
#7	103.62	-0.38	0.39	1.0	Pass
#8	103.86	-0.14	0.39	1.0	Pass
#9	103.93	-0.07	0.39	1.0	Pass

Correction of UUC.* = Measured Temperature - Desired Temperature

The validity of the statements of conformity cannot be guaranteed for different places of use, environmental conditions or improper use.

After adjustment (Cont.)

Desired Temperature : 180.0°C

Tolerances : 2.0 °C

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 180.0 °C

Locations	Measured (°C)	Correction of UUC. (°C)	Guard band (W) (± °C)	Tolerance (± °C)	Conformity
#1	180.73	0.73	0.46	2.0	Pass
#2	180.25	0.25	0.45	2.0	Pass
#3	179.54	-0.46	0.45	2.0	Pass
#4	179.35	-0.65	0.45	2.0	Pass
#5	179.45	-0.55	0.45	2.0	Pass
#6	180.40	0.40	0.45	2.0	Pass
#7	178.98	-1.02	0.47	2.0	Pass
#8	179.72	-0.28	0.45	2.0	Pass
#9	180.20	0.20	0.48	2.0	Pass

Correction of UUC.* = Measured Temperature - Desired Temperature

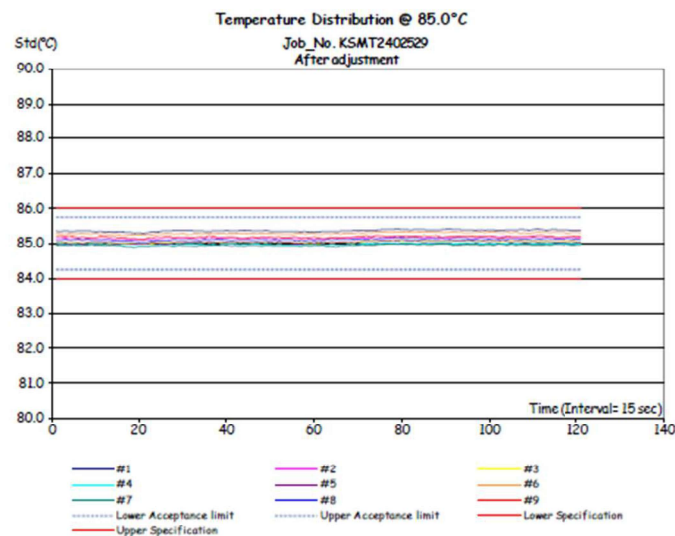
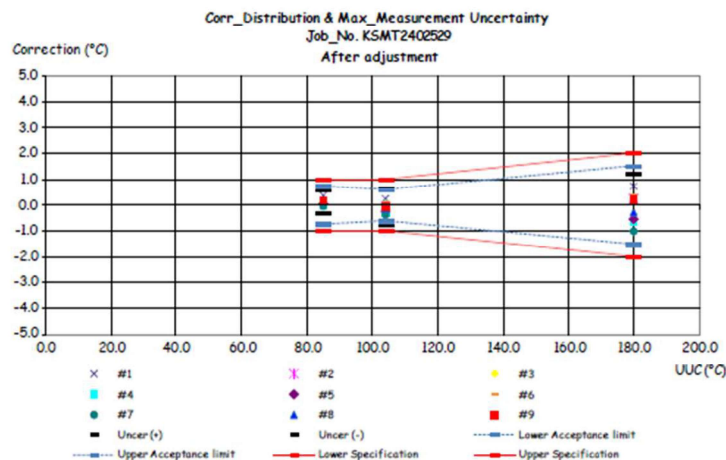
The validity of the statements of conformity cannot be guaranteed for different places of use, environmental conditions or improper use.

The End of Statements of Conformity

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1194 Soi Wachirathamsathit 57, Bangchak, Phrakhanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

FC17-02: 30 MAY 2023





ใบตรวจสอบสภาพเครื่องควบคุมอุณหภูมิ

เลขที่ใบงาน: KSMT2402529

ชนิดเครื่องมือ: Hot Air Oven

รุ่น: XUE112

หมายเลขเครื่อง: Y0137 (LAB-0002)

ตรวจสอบ (รับ)		รายการตรวจเช็ค	ตรวจสอบ (ส่ง)		หมายเหตุ
20 Sep 2024			20 Sep 2024		
ปกติ	ไม่ปกติ		ปกติ	ไม่ปกติ	
		General			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. สายไฟ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. การทำงาน Main Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. การทำงาน Selector Key	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. การแสดงผล Display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. การทำงาน พัดลม	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. สภาพ Lever of Ventilation valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. สภาพ Lever door open / close	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. สภาพ Door seal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	9. การทำงานของระบบ Safety	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	10. การทำงานของระบบทำความเย็น	<input type="checkbox"/>	<input type="checkbox"/>	-
<input type="checkbox"/>	<input type="checkbox"/>	11. การทำงานของระบบทำความร้อน	<input type="checkbox"/>	<input type="checkbox"/>	-
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. สภาพตัวเครื่อง	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. สภาพแวดล้อม ณ สถานที่ตั้งเครื่อง	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

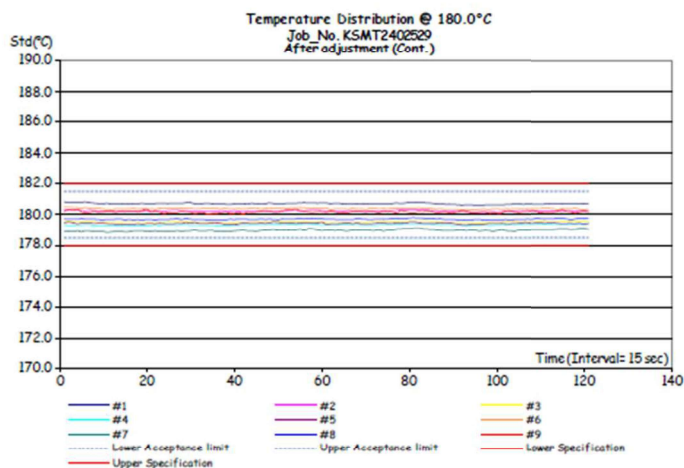
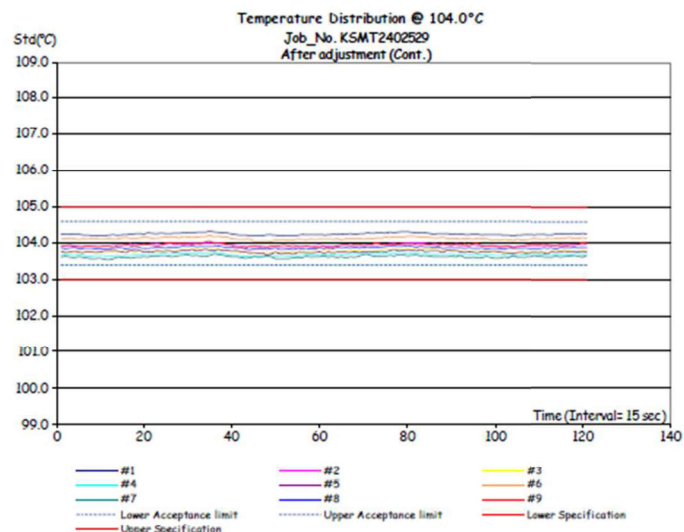
ขอแนะนำ :



บริษัท ชายนันเม จำกัด (SCIMET CO., LTD.)

1194 Soi Wachirathamsesthit 57, Bangchak, Phra Khanong, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

F117-00: 08 MAR 2023





CALIBRATION LABORATORY Co.,LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.com



REPORT OF CALIBRATION

FOR

NOMENCLATURE : ELECTRONIC BALANCE
MANUFACTURER : SARTORIUS
MODEL / TYPE : BSA224S-CW
SERIAL NO. : 3143517467[LAB-0003]
LOCATION SITE : ANALYTICAL LABORATORY 2
DATE OF CALIBRATION : 23 August 2024

ENVIRONMENT CONDITIONS :

Temperature : 22 °C to 23 °C

Relative Humidity : 51 % to 53 %

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPMB-01 based on EURAMET/eg-18/Version 4.0 (11/2015).
The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Weight Set, Mettler Toledo Class E2 S/N. 158850.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Certificate No. MM-0165-23, Due Date 21 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q24083517

F3-011-05/12-23

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@dcalibration



CALIBRATION LABORATORY Co.,LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cai-laboratory.com E-mail:sale@cai-laboratory.com



CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : ELECTRONIC BALANCE
MANUFACTURER : SARTORIUS
MODEL / TYPE : BSA224S-CW
SERIAL NO. : 3143517467[LAB-0003]
CLID. NO. : 362401555
JOB CONTROL NO. : 240809083517
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : WE ENVIRONMENT CO., LTD.
280/19 MOO 9 BANGTOEI SAM KHOK
PATHUM THANI 12160 THAILAND

DATE OF RECEIVED : 09 August 2024

DATE OF ISSUED : 29 August 2024

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :

Calibration Engineer



Approved By :

Authorized Signatory

29 August 2024

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q24083517

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@dcalibration



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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



3. Repeatability of indications

Nominal Test Value (g)	Standard Deviation of Reading (g)
200.0000	0.00007

4. Effect of eccentric application of a load on the indication

Nominal Test Value (g)	Display Value (g)					Maximum Difference of Center Value (g)
	Position 1	Position 2	Position 3	Position 4	Position 5	
100.0000	100.0000	100.0000	100.0001	100.0000	99.9999	0.0001

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 012 Page 49 of 67

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q24083517

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@dcalibration



CALIBRATION LABORATORY CO., LTD.

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION
MEASUREMENT RESULTS : () without adjustment (X) adjustment

CALIBRATION DATA

1. Error of indications [Before Adjustment]

Nominal Test Value (g)	Conventional mass (g)	Display Value (g)	Error of Balance (g)	Uncertainty \pm (mg)	Coverage factor k
10.0000	10.0000	10.0002	+0.0002	-	-
50.0000	49.9999	49.9998	-0.0001	-	-
100.0000	99.9999	99.9997	-0.0002	-	-
150.0000	149.9998	149.9991	-0.0007	-	-
200.0000	199.9997	199.9988	-0.0009	-	-

2. Error of indications [After Adjustment]

Nominal Test Value (g)	Conventional mass (g)	Display Value (g)	Error of Balance (g)	Uncertainty \pm (mg)	Coverage factor k
Unload	0.0000	0.0000	0.0000	0.05	2,32
0.0010	0.0010	0.0010	0.0000	0.07	2,00
0.0050	0.0050	0.0050	0.0000	0.07	2,00
0.0100	0.0100	0.0101	+0.0001	0.07	2,00
0.1000	0.1000	0.1001	+0.0001	0.07	2,00
1.0000	1.0000	1.0000	0.0000	0.07	2,00
2.0000	2.0000	2.0000	0.0000	0.07	2,00
5.0000	5.0000	5.0000	0.0000	0.08	2,00
20.0000	20.0000	20.0000	0.0000	0.08	2,00
50.0000	49.9999	50.0000	+0.0001	0.09	2,00
100.0000	99.9999	100.0000	+0.0001	0.12	2,00
200.0000	199.9997	199.9998	+0.0001	0.24	2,00

Certificate No. Q24083517

F3-011-05/12-23

page 3 of 4



@dcalibration



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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE : INCUBATOR
MANUFACTURER : ACCUPLUS
MODEL / TYPE : SMART i250
SERIAL NO. : 0410-0423-0017[LAB-0004]
LOCATION SITE : ANALYTICAL LABORATORY 1
DATE OF CALIBRATION : 23 August 2024

ENVIRONMENT CONDITIONS :

Temperature : 21 °C to 22 °C

Relative Humidity : 55% to 58 %

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPTH-07 based on TLAS G-20 as calibration guidelines.
The calibration was performed by using Hydra Series II which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Hydra Series II, Fluke Model 2635A S/N. 8209003.

TRACEABILITY :

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.
Certificate No. Q24052151, Due Date 27 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q24083518

F3-011-05/12-23

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@clccalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : INCUBATOR
MANUFACTURER : ACCUPLUS
MODEL / TYPE : SMART i250
SERIAL NO. : 0410-0423-0017[LAB-0004]
CLID. NO. : 332401680
JOB CONTROL NO. : 240809083518
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : WE ENVIRONMENT CO., LTD.
280/19 MOO 9 BANGTOEI SAM KHOK
PATHUM THANI 12160 THAILAND

DATE OF RECEIVED : 09 August 2024

DATE OF ISSUED : 30 August 2024

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :

Calibration Engineer

Approved By :

30 August 2024

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the
International System of Units (SI)

Certificate No. Q24083518

F3-011-05/12-23

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@clccalibration



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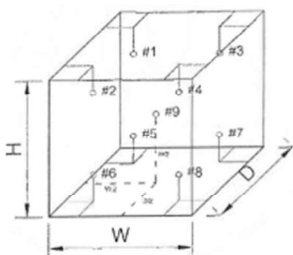
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

DUC		Measured Temperature (°C)@Probe No.9 is Ref.									Uncertainty ± (°C)	Coverage factor k
Setting (°C)	Indicating (°C)	1	2	3	4	5	6	7	8	9		
20.0	20.0	20.23	20.33	20.30	20.05	20.29	20.12	20.09	20.11	20.10	0.60	2.00

Technical Note : W = 50 cm, D = 45 cm, H = 118 cm.

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 012 Page 58 of 67



This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q24083518
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@ckcalibration



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2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment () adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring incubator.

CALIBRATION DATA

1. INCUBATOR PERFORMANCE

DUC		Measured Uniformity	Measured Stability	Measured Overall
Setting (°C)	Indicating (°C)	(°C)	(°C)	Variation (°C)
20.0	20.0	0.52	0.47	1.09

Certificate No. Q24083518
F3-011-05/12-23

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@ckcalibration

Certificate No. : T/O 670085

The Reference Standard Instrument :-

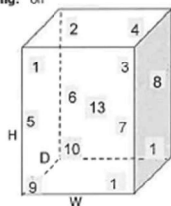
Instrument	Model	Serial No.	Cert No.	Due date
1) Data logger with RTD Probe	Agilent 34972A	MY41187730	PSL-T 0484-1/67	19-Feb-2025
		MY60008352	PSL-T 0484-3/67	19-Feb-2025

Measured room conditions

Temperature :	Minimum: 24.2 °C	Maximum: 25.6 °C
Humidity :	Minimum: 49.8 %RH	Maximum: 60.7 %RH
Voltage :	Minimum: 219.8 VAC	Maximum: 223.3 VAC

Fresh Air Setting: off

Sensor Position :



Working Space of chamber :

(Inside Dimensions) W x D x H : 1020 mm x 500 mm x 1450 mm

Sensor Installation Details :

- Sensor Number 1 to 12 installed approximately 50 mm from each wall.
- Sensor Number 13 installed approximately geometric of the chamber.

Results : The measurement results of the calibration were reported in the table below.
(*) Without adjustment () After adjustment

UUC* Setting	UUC* Reading	Temperature Reading of Standard Sensor												
(°C)	(°C)	Sensor Position												
3.0	3.0	4.1	4.2	3.9	3.8	3.7	3.8	3.1	3.1	3.6	3.8	3.1	2.9	3.1

UUC* Setting	UUC* Reading	Temperature Uniformity	Temperature Stability	Overall Variation	Uncertainty of Measurement	Coverage Factor K
(°C)	(°C)	(°C)	(± °C)	(°C)	(± °C)	
3.0	3.0	1.43	0.50	2.11	0.79	2

UUC* = Unit Under Calibration

Remark :-

- Temperature reading of Standard Sensors shown in the table were taken from the average of Standard reading at each position.
- Temperature Uniformity was calculated from the difference between the maximum and minimum of actual temperature reading from all reference sensors at the same time.
- Temperature Stability was calculated from the maximum stability of nine positions, and formula of Stability is $[(\text{Maximum Temperature Value} - \text{Minimum Temperature Value}) / 2]$
- Overall Variation was calculated from the difference between the maximum and minimum measured temperature throughout observation time.

End of Report

Certificate No.: T/O 670085

Date of issue : 23-May-2024

Equipment Description	: Refrigerator
Equipment Model	: P7011
Equipment Serial No.	: P701-0723-0003
I.D. No. or Control No.	: -
Manufacturer	: Entech Industrial Solution Co.,Ltd.
Customer Name	: WE ENVIRONMENT CO., LTD.
Customer Address	: 280/19 Moo.9 Bangtoey, Sam khok, Pathum Thani 12160, Thailand
Total pages of certificate	: 2 pages
Instrument Receiving Date	: 21-May-2024
Receiving No.	: O-240109
Environmental Conditions	: All of the measurement were carried out in the working area Temperature : (25 ± 15) °C Humidity : (55 ± 30) % RH Voltage : (220 ± 22) VAC
Calibration Place	: (Production Room Floor 1) 17/121 Soi Ngamwongwan 47 Yaek 48 Toongsonghong, Lakki, Bangkok 10210 Thailand
Calibration Procedure No.	: This instrument was calibrated by comparison of reference radiation source standard according to calibration work instruction no WI-CL-15-C

The calibration certificate expended uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k, which for a normal distribution corresponds to a coverage probability of approximately 95%

The standard uncertainty of measurement has been determined in accordance with M 3003

The expression uncertainty and confidence in measurement.

This certificate is applied only to item under test environmental condition.

This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature and seal are not valid.

This calibration certificate documents are traceability to national standards, which realize the unit of measurement according to the International system of units (SI).

Date of Calibration : 21-May-2024



Technical Manager