

เอกสารแนบ 6

เอกสารสอบเทียบ
เครื่องมือที่ใช้ในการวิเคราะห์



REPORT OF CALIBRATION

FOR

NOMENCLATURE : BALANCE
MANUFACTURER : METTLER TOLEDO
MODEL / TYPE : MS204TS/00
SERIAL NO. : B935191252[LA-002]
LOCATION SITE : LABORATORY - BALANCE ROOM
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 22 °C to 23 °C Relative Humidity : 52 % to 54 %

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-46 based on EURAMET cg-18 Version 4.0 (11/2015).

The calibration was performed by Comparison with Standard Weight which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Standard Weight, W&J Class E2 S/N. 1228.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.
Certificate No.Q25059626 , Due Date 28 May 2027.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty 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. Q26013128

F3-011-05/12-23

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : BALANCE
MANUFACTURER : METTLER TOLEDO
MODEL / TYPE : MS204TS/00
SERIAL NO. : B935191252[LA-002]
CLID. NO. : 362200356
JOB CONTROL NO. : 260130013128
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER :

ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 11 February 2026

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

Calibrated By :

[REDACTED]
Calibration Engineer



Approved By :

[REDACTED]
Authorized Signatory
11 February 2026

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. Q26013128

F3-011-05/12-23

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REPORT OF CALIBRATION

FOR

NOMENCLATURE : BALANCE
MANUFACTURER : SHIMADZU
MODEL / TYPE : AP225WD
SERIAL NO. : D376300692[LA-001]
LOCATION SITE : LABORATORY-BALANCE ROOM
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 22 °C to 23 °C Relative Humidity : 52 % to 54 %

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-46 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 :

Standard weight, W&J Class E2 S/N. 1228

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.
Certificate No. Q25059626, Due Date 28 May 2026.

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. Q26013127

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

CALIBRATION DATA

1. Error of indications

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	0.07	2,00
0.1000	0.1000	0.1000	0.0000	0.15	2,00
0.5000	0.5000	0.5000	0.0000	0.15	2,00
1.0000	1.0000	1.0000	0.0000	0.15	2,00
2.0000	2.0000	2.0001	+0.0001	0.15	2,00
5.0000	5.0000	5.0000	0.0000	0.15	2,00
10.0000	10.0000	10.0001	+0.0001	0.15	2,00

2. Repeatability of indications

Nominal Test Value (g)	Standard Deviation of Reading (g)
10.0000	0.00005

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

☐	☒	
Nominal Test Value (g)	Display Value (g)	Maximum Difference of Center Value (g)
100.0000	Position 1: 99.9999, Position 2: 100.0001, Position 3: 99.9999, Position 4: 100.0001, Position 5: 100.0001	0.0002

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116 of 138

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

End of Certificate

Certificate No. Q26013128

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

CALIBRATION DATA

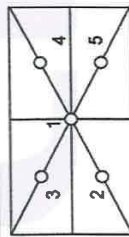
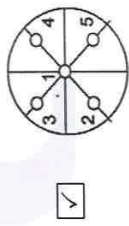
1. Error of indications

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	0.07	2.00
1.0000	1.0000	1.0000	0.0000	0.15	2.00
10.0000	10.0000	10.0000	0.0000	0.15	2.00
20.0000	20.0000	20.0000	0.0000	0.16	2.00
40.0000	40.0000	39.9999	-0.0001	0.18	2.00
60.0000	60.0000	59.9999	-0.0001	0.18	2.00
80.0000	80.0000	79.9999	-0.0001	0.21	2.00
100.0000	100.0000	100.0000	0.0000	0.17	2.00
120.0000	120.0000	120.0000	0.0000	0.22	2.00
140.0000	140.0000	139.9999	-0.0001	0.24	2.00
160.0000	160.0000	159.9998	-0.0002	0.24	2.00
180.0000	179.9999	179.9998	-0.0001	0.27	2.00
200.0000	200.0000	199.9997	-0.0003	0.24	2.00

2. Repeatability of indications

Nominal Test Value (g)	Standard Deviation of Reading (g)
200.0000	0.000063

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

					
	☒				
Nominal Test Value (g)	Display Value (g)				
	Position 1	Position 2	Position 3	Position 4	Position 5
100.0000	100.0000	99.9999	100.0000	99.9999	99.9998
	Maximum Difference of Center Value (g)				
	0.0002				

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116 of 138

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

End of Certificate

Certificate No. Q26013127

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : BALANCE
MANUFACTURER : SHIMADZU
MODEL / TYPE : AP225WD
SERIAL NO. : D376300692[L/A-001]
CLID. NO. : 362100172
JOB CONTROL NO. : 260130013127
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 07 February 2026

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 :

07 February 2026

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. Q26013127

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : DO METER
MANUFACTURER : YSI
MODEL / TYPE : 5000-230V/5010
SERIAL NO. : 16D101626/19D100367[DOM-01]
CLID. NO. : 272100329
JOB CONTROL NO. : 260127011808
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 27 January 2026

DATE OF ISSUED : 29 January 2026

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

Calibrated By : **Sukgasem Sechanart**

Calibration Engineer

Approved By : **Mongkol Yotsoontorn**

Authorized Signatory

29 January 2026

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. Q26011808

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@clccalibration

REPORT OF CALIBRATION

FOR

NOMENCLATURE : DO METER
MANUFACTURER : YSI
MODEL / TYPE : 5000-230V/5010
SERIAL NO. : 16D101626/19D100367[DOM-01]
DATE OF CALIBRATION : 28 January 2026

ENVIRONMENT CONDITIONS :

Temperature : $(25 \pm 2.5) ^\circ\text{C}$ Relative Humidity : $(50 \pm 15) \% \text{RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPCH-06. The calibration was performed by direct measurement with Certified Reference Material (CRM).

REFERENCE STANDARD USED :

Dissolved Oxygen, Sigma-Aldrich Product ID QC3077-500ML.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Sigma-Aldrich USA.
Lot LRAD8571, Due Date April 2026.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$ 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. Q26011808

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@clccalibration



CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : HOT AIR OVEN
MANUFACTURER : MEMMERT
MODEL / TYPE : UF110
SERIAL NO. : B422.0026[LA-0012]
CLID. NO. : 33202464
JOB CONTROL NO. : 260130013129
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 09 February 2026

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

09 February 2026

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. Q26013129

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CALIBRATION DATA

DO METER RESULT @ 20 °C

Nominal Value (mg/L)	DUC Reading (mg/L)	Correction (mg/L)	Uncertainty (mg/L)
8.18	8.22	-0.04	± 0.38

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 018 Page 5 of 73

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

End of Certificate

Certificate No. Q26011808

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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 hot air oven.

CALIBRATION DATA

1. HOT AIR OVEN PERFORMANCE

Setting (°C)	DUC		Measured Uniformity (°C)	Measured Stability (°C)	Measured Overall Variation (°C)
	Indicating (°C)				
104.0	104.0		0.29	0.16	0.55
180.0	180.0		1.08	0.38	2.16

Certificate No. Q26013129

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REPORT OF CALIBRATION

FOR

NOMENCLATURE : HOT AIR OVEN
MANUFACTURER : MEMMERT
MODEL / TYPE : UF110
SERIAL NO. : B422.0026[LA-0012]
LOCATION SITE : LABORATORY - HOT ZONE
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C Relative Humidity : 48% to 52 %

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: 1700013.

TRACEABILITY :

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.
Certificate No. Q25059630, Due Date 02 June 2026.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty 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. Q26013129

F3-011-05/12-23

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : INCUBATOR
MANUFACTURER : ACCUPLUS
MODEL / TYPE : SMART 1250
SERIAL NO. : 2059-0718-0010[L/A-002]
CLID. NO. : 332100155
JOB CONTROL NO. : 260130013130
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 09 February 2026

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

09 February 2026

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. Q26013130

F3-011-05/12-23

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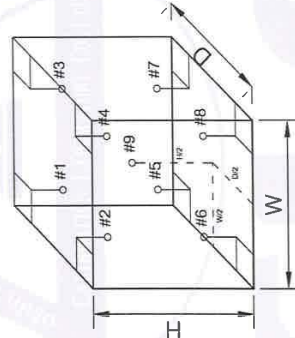
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

DUC	Setting (° C)	Indicating (° C)	Measured Temperature (° C)@Probe No.9 is Ref.									Uncertainty ± (° C)	Coverage factor k
			1	2	3	4	5	6	7	8	9		
	104.0	104.0	103.65	103.93	103.70	104.00	103.69	103.94	103.69	103.94	103.91	0.21	2,00
	180.0	180.0	178.96	178.84	179.84	180.32	178.74	180.02	179.09	180.34	179.69	0.51	2,00

Technical Note : W = 56 cm, D = 40 cm, H = 48 cm.

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 018 Page 63 of 73



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

End of Certificate

Certificate No. Q26013129

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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

Setting (°C)	DUC		Measured Uniformity (°C)	Measured Stability (°C)	Measured Overall Variation (°C)
	Indicating (°C)				
20.0	20.0		0.59	0.36	0.81

Certificate No. Q26013130

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REPORT OF CALIBRATION

FOR

NOMENCLATURE : INCUBATOR
MANUFACTURER : ACCUPLUS
MODEL / TYPE : SMART i250
SERIAL NO. : 2059-0718-0010[LA-002]
LOCATION SITE : LABORATORY
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C

Relative Humidity : 48 % to 52 %

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-165 based on TLAS G-20-1/02-08 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. Q25044222. Due Date 21 April 2026.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty 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. Q26013130

F3-011-05/12-23

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CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-010-00000 FAX. 02-010-00000 E-mail: sale@cal-laboratory.com

CLC
Accredited
ISO/IEC 17025

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : pH METER
MANUFACTURER : APERA
MODEL / TYPE : PH700/201T-F
SERIAL NO. : PH700X1019061009/N/A [LA-008/PH-02]
CLID. NO. : 272401000
JOB CONTROL NO. : 260127011809
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
545 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 27 January 2026 DATE OF ISSUED : 29 January 2026
The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Sukgasem Seehanart

Calibration Engineer



Approved By :

29 January 2026

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. Q26011809
F3-011-05/12-23

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CALIBRATION LABORATORY CO., LTD.

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Tel. 02-010-00000 FAX. 02-010-00000 E-mail: sale@cal-laboratory.com

CLC
Accredited
ISO/IEC 17025

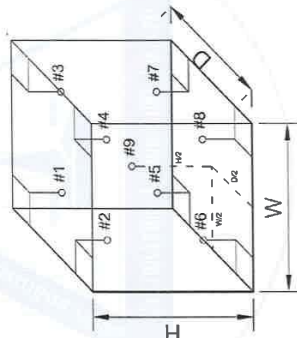
CALIBRATION DATA

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	20.63	20.61	20.71	20.61	20.43	20.53	20.50	20.53	20.56	20.38

Technical Note : W = 50 cm, D = 48 cm, H = 110 cm.

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 129 of 138



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

End of Certificate

Certificate No. Q26013130
F3-011-05/12-23

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CALIBRATION LABORATORY Co., LTD.

2/10-11, 4, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
www.cal-laboratory.com E-mail: sale@cal-laboratory.com
Tel. [REDACTED]



TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Lot Number: 191025, 241025, Due Date 24 December 2026.
2. The measurements are traceable to International System of Units (SI), through Control Company.
Certificate No. 4288-15743843, Due Date 27 February 2027.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.
Certificate No. Q25097314, Due Date 29 August 2026.
4. The measurements are traceable to International System of Units (SI), through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 0177/68, Due Date 10 February 2026.
5. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Certificate No. TT-1008-25, Due Date 04 March 2026.

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. Q26011809
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CALIBRATION LABORATORY Co., LTD.

2/10-11, 4, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
www.cal-laboratory.com E-mail: sale@cal-laboratory.com
Tel. [REDACTED]



REPORT OF CALIBRATION

FOR

NOMENCLATURE : pH METER
MANUFACTURER : APERA
MODEL / TYPE : PH700/201T-F
SERIAL NO. : PH700X1019061009/N/A [LA-008/PH-02]
DATE OF CALIBRATION : 28 January 2026

ENVIRONMENT CONDITIONS :

Temperature : $(25 \pm 2.5) ^\circ\text{C}$ Relative Humidity : $(50 \pm 15) \% \text{ RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-128, WI-305-238. The calibration was performed by direct measurement with Certified Reference Material (CRM) and comparison with Temperature Bath, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. pH Standard Solution, NIMT TRM CODE TRM-S-2003, TRM CODE TRM-S-2007.
2. pH Standard Solution, Control Company Catalog Number 06664263, 11784256, Lot Number CC818772.
3. Temperature Bath, Jingmi Model RTS-35S S/N: 16339.
4. Precision Thermometer, ASL Model F200-A-8 S/N: 014433/03.
5. IPRT, ASL Model T100-250-1D S/N: PO106346-1-13.

Certificate No. Q26011809
F3-011-05/12-23

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REPORT OF CALIBRATION

FOR

NOMENCLATURE : WATER BATH
MANUFACTURER : MEMMERT
MODEL / TYPE : WNB14
SERIAL NO. : L418.0758[LA-004]
LOCATION SITE : LABORATORY - HOT ZONE
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C Relative Humidity : 48% to 52%

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-135 based on ASTM E 715-80:2016 as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

TRACEABILITY :

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.

Certificate No. Q25111569, Due Date 24 March 2026.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$ 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. Q26013132

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CLC Calibration

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.

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 Measurement (± pH)	k Factor
4.012	4.00	123	+0.012	0.014	2,15
6.997	7.00	-53	-0.003	0.015	2,06
9.994	10.00	-220	-0.006	0.100	2,00

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 91 of 138

*2. TEMPERATURE RESULT

Immersion depth (mm)	Actual Temperature (°C)	DUC Reading (°C)	Correction (°C)	Uncertainty ± (°C)
100	25.00	25.0	0.00	0.08

Technical Note. Type of sensor : pH Probe

Probe Ø 12 mm

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

Note. * means Calibrations marked " Not TISI Accredited " in this Certificate have been included for completeness.

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

End of Certificate

Certificate No. Q26011809

F3-011-05/12-23

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CALIBRATION LABORATORY Co., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Road, Ladphrao, Bangkok 10230
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 water bath.

CALIBRATION DATA

1. WATER BATH PERFORMANCE

Test Point (°C)	DUC Reading (°C)	Uniformity (°C)	Stability (°C)
95.0	95.0	0.39	0.20

Certificate No. Q26013132

F3-011-05/12-23

page 3 of 4

u.6/12



CALIBRATION LABORATORY Co., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Road, Ladphrao, Bangkok 10230
www.cal-laboratory.com E-mail: sale@cal-laboratory.com



CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : WATER BATH
MANUFACTURER : MEMMERT
MODEL / TYPE : WNB14
SERIAL NO. : L418.0758[L4-004]
CLID. NO. : 332100157
JOB CONTROL NO. : 260130013132
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE
CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 09 February 2026

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

09 February 2026

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. Q26013132

F3-011-05/12-23

page 1 of 4

@clcalibration

@clcalibration

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : WATER BATH
MANUFACTURER : M-LAB
MODEL / TYPE : WBN I5
SERIAL NO. : 0335[LA-007]
CLID. NO. : 332300657
JOB CONTROL NO. : 260130013133
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE
CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 30 January 2026

DATE OF ISSUED : 09 February 2026

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

Calibrated By : [REDACTED]

Calibration Engineer



Approved By :

Authorized Signatory

09 February 2026

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. Q26013133

F3-011-05/12-23

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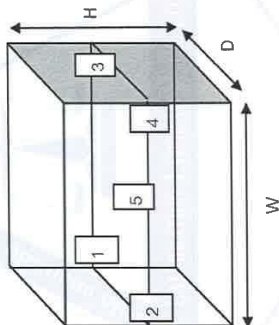
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

Test Point (°C)	DUC Reading (°C)	STD Reading (°C)					Uncertainty ± (°C)
		Probe No. 1	Probe No. 2	Probe No. 3	Probe No. 4	Probe No. 5	
95.0	95.0	96.25	96.15	96.08	95.99	96.03	0.52

Technical Note : W = 35 cm, D = 29 cm, H = 14 cm.

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138



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

End of Certificate

Certificate No. Q26013132

F3-011-05/12-23

page 4 of 4

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 water bath.

CALIBRATION DATA

1. WATER BATH PERFORMANCE

Test Point (°C)	DUC Reading (°C)	Uniformity (°C)	Stability (°C)
85.0	85.0	0.21	0.14

Certificate No. Q26013133

F3-011-05/12-23

page 3 of 4

REPORT OF CALIBRATION

FOR

NOMENCLATURE : WATER BATH
MANUFACTURER : M-LAB
MODEL / TYPE : WBN 15
SERIAL NO. : 0335[LA-007]
LOCATION SITE : LABORATORY - HOT ZONE
DATE OF CALIBRATION : 04 February 2026

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C

Relative Humidity : 48% to 52%

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-135 based on ASTM E 715-80:2016 as calibration guidelines.
The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.
Certificate No. Q25111569, Due Date 24 March 2026.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$ 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. Q26013133

F3-011-05/12-23

page 2 of 4

Report No.: 15257

Date: Feb 12, 2026
 Job No.: 14590
 Instrument: DT2520

Customer: UAE
 Address: Bangkok
 Serial: 91905060

Travel To Customer (Hrs): 13:30
 Travel From Customer (Hrs): 15:00

Job Type

Application	Special	Standard
Distributor	Courtesy Visit	Installation
Digital Service	PMA Approval Check	Quote
Internal	Warranty	Repair
Training	Sales Support	Investigate

PMA Type

Smartcare	Smartcare Pro	Fosscore
		N/A

Details of Work / Test

- PM
- Visual Check
- + No leak -ok
- + No damage -ok
- Change PM kit x 1 Set -ok
- Function Check
- + Quick mode
- + Set Temp / Timer -ok
- + Run -ok
- heating -ok
- Lift UP/Down -ok
- Clean X20 holes with blind head

Instrument Ready for Use

OK	Not OK*

Part No:	Batch	Description	Q'ty
60079730	27.09.2025	Fold PM kit, Digester 20 pot, 12 unit	1

It is accurate and complete

Signed FOSS	Signed Customer
Name:	Name
Tel:	Tel:
Email:	Email:

*Remark:

เอกสารไม่ครบ
 Please scan QR code



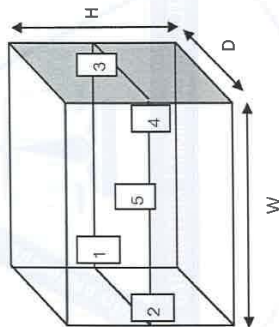
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

Test Point (°C)	DUC Reading (°C)	STD Reading (°C)					Uncertainty ± (°C)
		Probe No. 1	Probe No. 2	Probe No. 3	Probe No. 4	Probe No. 5	
85.0	85.0	84.91	84.92	84.92	84.92	84.84	0.32

Technical Note : W = 35 cm, D = 30 cm, H = 15 cm.

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138



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

End of Certificate

Certificate No. Q26013133

F3-011-05/12-23

page 4 of 4

Certificate No. : C26030162

Page : 1 of 2

CERTIFICATE OF ANALYSIS

Equipment : Cyanuric Acid Portable Photometer
Meter Model : HI97722C Serial No. : 905060058111
Manufacturer : Hanna Instruments
Made in : Romania
Condition As-Received : Used Product
Reference : RE260497
Customer name : United Analyst and Engineering Consultant Co., Ltd.

3 Soi Udomsuk 41, Sukhumvit Rd., Bangchak
Phrakhanong, Bangkok 10260

Received date : 12 March 2026
Calibrate date : 17 March 2026
Issue date : 18 March 2026
Ambient Temperature : (25 ± 2) °C
Relative Humidity : (50 ± 15) %RH

Calibrated Location : Hanna Instruments (Thailand) Ltd.

Calibrated by : Mr. Pichit Petthong

Approved by :

Authorized Signatory



This certificate was certified only for the instrument we calibrated. This result of calibration was found accurate on date and place of calibration only.
This certificate may not be reproduced other than in full, except with the prior written approval of the head of Hanna Instrument (Thailand) Ltd.

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FOSS

Customer Service Report

Date: Feb 12, 2026

Job No.: 14589

Instrument: KTA Distillator

Report No.: 15256

Customer: UAE

Address: Bangkok

Serial: 919053913

Start	Finish	Travel To Customer (Hrs)	Labour (Hrs)	Travel From Customer (Hrs)
08.30	09.30	1.5	09.30	4
			13.30	

Job Type				
Application	Special	Standard		
Distributor	Courtesy Visit	Installation	In House	
Digital Service	PMA Approval Check	Quote	PM	
Internal	Warranty -	Repair	HC Visit	
Training	Sales Support	Investigate	Others	

PMA Type	Smartcare	Smartcare Pro	Fosscore	
	Smartcare Advance	Fosscore Pro	N/A	

Details of Work / Test	
- DM -	
- Visual Check	-ok
+ No leak	-ok
+ No Damage	-ok
- change DM kit x1 Set	-ok
- Function Check	-ok
+ Diffusion	-ok
+ Allen	-ok
+ Receiver	-Not VC
+ System Drive	-ok
-	

Instrument Ready for Use	OK	Not OK*
Part No: 60100196		
Batch: 11-03-2025		
Description: PM kit kjeltec & distillator		
Qty: 1		

It is accurate and complete	
Signed Foss	Signed Customer
Name: [REDACTED]	Name: [REDACTED]
Tel: [REDACTED]	Tel: [REDACTED]
Email: [REDACTED]	Email: [REDACTED]

*Remark:

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Please scan QR code

REPORT OF CALIBRATION

Certificate No. : SP26-013

Page 2 of 5

Environment Condition : Ambient Temperature 25 ± 5 °C

Relative humidity 55 ± 20 %RH

Calibration method : In-house method CP-01 Based on ASTM E275-08

Certified Reference Materials :

Material	Serial No.	Certificate No.	Due date
Absorbance Standard set	25760	136858	5 November 2027
Absorbance Standard set	25757	136848	5 November 2027
Wavelength Standard set	25806	136824	5 November 2027
Wavelength Standard set	25758	136827	5 November 2027

Traceability : This certification is traceable to the International System of Unit maintained at National -

Institute of Standards and Technology (NIST) through Starna Scientific Limited

Spectral Band Width of UUC : 1.5 nm.

Scan Speed of UUC : 60 nm/min

Scan Interval of UUC : 0.15 nm.

Resolution of UUC : Photometric 0.000 Abs.

Wavelength 0.1 nm.

Condition of this result :

Product name : Cyanuric Acid
Product code : HI97722-11 Lot number : SC0221/26
Best used before : May 2028
Standard Cuvettes specifications @ 25°C :

Standard cuvette code	Lot number	Standard value (mg/L)	Lot standard deviation (mg/L)
A ZERO	9661	0	0.002
HI97722B	9432	20	0.104

Specifications for validation procedure :

Standard cuvette	Lot number	Validation standard value (mg/L)	Lot acceptable reading (mg/L)
HI97722B	9432	20 ± 1	19 to 21

Method : Adaptation of the turbidimetric method

Result :

Cyanuric Acid Standard (mg/L)	Reading (mg/L)	Error (mg/L)
0	0	0
20 ± 1	20	0

** End of certificate **

REPORT OF CALIBRATION

Certificate No. : SP26-013

Page 4 of 5

Photometric Accuracy :

Wavelength (nm.)	CRMs Values (Abs)	UUC Reading (Abs)	Correction (Abs)	Uncertainty (Abs)	Coverage factor k
235	0.0000 0.7455	0.0000 0.7457	0.0000 -0.0002	0.0050 0.0056	2.00 2.00
257	0.0000 0.8656	0.0000 0.8669	0.0000 -0.0013	0.0050 0.0059	2.00 2.00
313	0.0000 0.2910	0.0000 0.2907	0.0000 0.0003	0.0050 0.0051	2.00 2.00
350	0.0000 0.6414	0.0000 0.6414	0.0000 0.0000	0.0050 0.0055	2.00 2.00

REPORT OF CALIBRATION

Certificate No. : SP26-013

Page 3 of 5

Calibration Results : Without adjustment

Photometric Accuracy :

Wavelength (nm.)	CRMs Values (Abs)	UUC Reading (Abs)	Correction (Abs)	Uncertainty (Abs)	Coverage factor k
420	0.0000 0.5772 1.0478 2.1879	0.0001 0.5731 1.0427 2.1782	-0.0001 0.0041 0.0051 0.0097	0.0028 0.0031 0.0029 0.0075	2.00 2.00 2.00 2.00
440	0.0000 0.5581 1.0224 2.1227	0.0000 0.5574 1.0210 2.1159	0.0000 0.0007 0.0014 0.0068	0.0028 0.0034 0.0035 0.0083	2.00 2.00 2.00 2.00
465	0.0000 0.5225 0.9628 1.9744	0.0000 0.5184 0.9603 1.9698	0.0000 0.0041 0.0025 0.0046	0.0028 0.0029 0.0028 0.0073	2.00 2.00 2.00 2.00
546.1	0.0000 0.5174 0.9990 1.9953	0.0000 0.5150 0.9964 1.9884	0.0000 0.0024 0.0026 0.0069	0.0028 0.0031 0.0033 0.0085	2.00 2.00 2.00 2.00
590	0.0000 0.5508 1.0801 2.0356	0.0000 0.5491 1.0781 2.0274	0.0000 0.0017 0.0020 0.0082	0.0028 0.0030 0.0029 0.0078	2.00 2.00 2.00 2.00
635	0.0000 0.5579 1.0512 1.9257	0.0000 0.5570 1.0491 1.9201	0.0000 0.0009 0.0021 0.0056	0.0028 0.0031 0.0029 0.0079	2.00 2.00 2.00 2.00

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REPORT OF CALIBRATION

Certificate No.: SP26-013

Page 5 of 5

Wavelength Accuracy :

CRMs Values	UUC Reading	Correction	Uncertainty	Coverage factor
(nm.)	(nm.)	(nm.)	(nm.)	<i>k</i>
241.70	241.6	0.10	0.18	2.00
279.44	279.2	0.24	0.18	2.00
287.71	287.6	0.11	0.18	2.00
334.02	333.5	0.52	0.18	2.00
360.89	360.2	0.69	0.18	2.00
418.53	417.8	0.73	0.18	2.00
445.82	445.2	0.62	0.18	2.00
453.67	453.0	0.67	0.18	2.00
459.99	459.6	0.39	0.18	2.00
536.52	536.4	0.12	0.18	2.00
638.00	638.2	-0.20	0.18	2.00
431.22	430.5	0.72	0.18	2.00
472.66	472.2	0.46	0.18	2.00
513.39	513.3	0.09	0.18	2.00
528.90	528.7	0.20	0.18	2.00
572.99	573.6	-0.61	0.18	2.00
585.19	585.7	-0.51	0.20	2.00
684.50	684.5	0.00	0.18	2.00
741.02	741.2	-0.18	0.20	2.00
748.56	749.0	-0.44	0.18	2.00
807.02	806.8	0.22	0.18	2.00
879.41	879.4	0.01	0.18	2.00

Remark : - UUC = Unit Under Calibration

- N/A = Not Available

The result expanded uncertainty of measurement U is stated as the standard uncertainty multiplied by the coverage factor k .

which for a normal distribution corresponds to a coverage probability of approximately 95%

* Indicates non TISI accredited

- End of Certificate -

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

REPORT OF CALIBRATION

Certificate No. : SP26-014

Page 3 of 5

Calibration Results : Without adjustment

Photometric Accuracy :

Wavelength (nm.)	CRMs Values (Abs)	UUC Reading (Abs)	Correction (Abs)	Uncertainty (Abs)	Coverage factor k
420	0.0000	0.000	0.0000	0.0028	2.00
	0.5772	0.574	0.0032	0.0031	2.00
	1.0478	1.043	0.0048	0.0029	2.00
	2.1879	2.182	0.0059	0.0082	2.00
440	0.0000	0.000	0.0000	0.0028	2.00
	0.5581	0.556	0.0021	0.0034	2.00
	1.0224	1.020	0.0024	0.0035	2.00
	2.1227	2.121	0.0017	0.0079	2.00
465	0.0000	0.000	0.0000	0.0028	2.00
	0.5225	0.518	0.0045	0.0029	2.00
	0.9628	0.961	0.0018	0.0028	2.00
	1.9744	1.974	0.0004	0.0070	2.00
546.1	0.0000	0.000	0.0000	0.0028	2.00
	0.5174	0.514	0.0034	0.0031	2.00
	0.9990	0.996	0.0030	0.0033	2.00
	1.9953	1.995	0.0003	0.0087	2.00
590	0.0000	0.000	0.0000	0.0028	2.00
	0.5508	0.549	0.0018	0.0030	2.00
	1.0801	1.078	0.0021	0.0029	2.00
	2.0356	2.028	0.0076	0.0079	2.00
635	0.0000	0.000	0.0000	0.0028	2.00
	0.5579	0.558	-0.0001	0.0031	2.00
	1.0512	1.050	0.0012	0.0029	2.00
	1.9257	1.923	0.0027	0.0083	2.00

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REPORT OF CALIBRATION

Certificate No. : SP26-014

Page 2 of 5

Environment Condition : Ambient Temperature 25 ± 5 °C

Relative humidity 55 ± 20 %RH

Calibration method : In-house method CP-01 Based on ASTM E275-08

Certified Reference Materials :

Material	Serial No.	Certificate No.	Due date
Absorbance Standard set	25760	136858	5 November 2027
Absorbance Standard set	25757	136848	5 November 2027
Wavelength Standard set	25806	136824	5 November 2027
Wavelength Standard set	25758	136827	5 November 2027

Traceability : This certification is traceable to the International System of Unit maintained at National -

Institute of Standards and Technology (NIST) through Starna Scientific Limited

Spectral Band Width of UUC : 5.0 nm.

Scan Speed of UUC : 40

Scan Interval of UUC : 0.1 nm.

Resolution of UUC : Photometric 0.001 Abs.

Wavelength 0.1 nm.

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REPORT OF CALIBRATION

Certificate No. :SP26-014

Page 5 of 5

Wavelength Accuracy :

CRMs Values (nm.)	UUC Reading (nm.)	Correction (nm.)	Uncertainty (nm.)	Coverage factor <i>k</i>
241.00	240.3	0.70	0.18	2.00
279.30	278.9	0.40	0.18	2.00
288.90	288.2	0.70	0.18	2.00
334.50	333.8	0.70	0.18	2.00
361.40	360.7	0.70	0.18	2.00
418.40	417.9	0.50	0.18	2.00
447.20	446.6	0.60	0.18	2.00
459.30	459.4	-0.10	0.18	2.00
537.00	536.5	0.50	0.18	2.00
638.00	637.3	0.70	0.18	2.00
441.29	440.6	0.69	0.18	2.00
479.88	479.2	0.68	0.18	2.00
513.75	513.0	0.75	0.18	2.00
528.59	528.1	0.49	0.18	2.00
575.10	574.5	0.60	0.18	2.00
585.56	585.0	0.56	0.20	2.00
684.70	684.2	0.50	0.18	2.00
740.51	739.9	0.61	0.20	2.00
747.61	747.0	0.61	0.18	2.00
807.04	806.5	0.54	0.18	2.00
879.68	879.0	0.68	0.18	2.00

Remark : - UUC = Unit Under Calibration
 - N/A = Not Available
 - The result expanded uncertainty of measurement U 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%
 - * Indicates non TISI accredited

CALIBRATION 6404

REPORT OF CALIBRATION

Certificate No. : SP26-014

Page 4 of 5

Photometric Accuracy :

Wavelength (nm.)	CRMs Values (Abs)	UUC Reading (Abs)	Correction (Abs)	Uncertainty (Abs)	Coverage factor k
235	0.0000	0.000	0.0000	0.0050	2.00
	0.7455	0.744	0.0015	0.0056	2.00
257	0.0000	0.000	0.0000	0.0050	2.00
	0.8656	0.863	0.0026	0.0059	2.00
313	0.0000	0.000	0.0000	0.0050	2.00
	0.2910	0.290	0.0010	0.0051	2.00
350	0.0000	0.000	0.0000	0.0050	2.00
	0.6414	0.640	0.0014	0.0055	2.00

Calibration Certificate

Certificate No.: 2602303-001-01
Page : 2 of 2

Calibration Condition:

Equipment:	CHAMBER (Incubator)	Place of Calibration:	Microbiology Laboratory
UUC* Resolution:	0.1 °C	Environment Conditions:	Ambient Temperature (17.2 ± 1) °C Relative Humidity (51.5 ± 4) % Line Voltage (229 ± 2) V.
Condition of the item:	Normal & Good		
	Without adjustment / As Found		
- Time of record	1 hour 9 minute / point		

Calibration Results:

Table 1 : Reporting of Temperature

Calibration Point (°C)	Std.#1	Std.#2	Std.#3	Std.#4	Std.#5	Std.#6	Std.#7	Std.#8	Std.#9	Measurement Uncertainty (±°C)
35.0	35.01	34.94	35.20	35.15	35.26	34.99	34.79	34.83	35.02	0.28

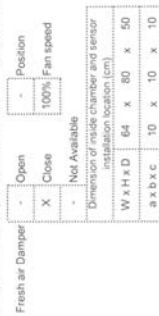
Table 2 : Reporting of Characterization Results

UUC* Setting (°C)	Max	Min	Average	Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
35.0	35.0	35.0	35.0	0.069	0.24	0.53

Note

- UUC* : Unit Under Calibration
- The quoted uncertainty includes contributions from 'Stability' and 'Loading Effect' (20% of Temperature Uniformity).
- Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.
- 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.
- Overall Variation = The difference of The maximum and minimum measured temperatures throughout observation time.

For more information, details of the sensor installation should be reported.



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

..... End of Report



nfiorth

Calibration Certificate

Certificate No.: 2602303-001-01
Page : 1 of 2

Equipment: CHAMBER (Incubator)

Manufacturer: MEMMERT

Model: IPP260

Serial No.: V615.0187

ID No.: UAE MIC 0032559

Order No.: 2602303

Operation No.: 2602303-001

Date of Receipt: 11 March 2026

Date of Calibration: 11 March 2026

Customer Name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.

Address: 3 Soi Udomsak 41, Sukhumvit Road,

Banghach, Prakhong, Bangkok 10260

Metrological traceability:

1. Calibration Method:

- This instrument was calibrated by inserting 9 standard thermometers into its chamber, in accordance with WTE-014, based on TLAS G-20-102-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used in this laboratory is the International Temperature Scale of 1990 (ITS-90).

- All data shown below are final values, and the initial data may be obtained upon request.

2. Reference Standard Instrument:

Instrument	Model/Type	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	DAQ973A	MY59008964	2502244-001-01	29 March 2026	NATIONAL FOOD INSTITUTE
	RTD	CH4101-10W RTD#101-109			

3. This certificate is traceable to the International System of Units (SI).

4. This certificate is valid only for the instrument that was calibrated.

5. The result of this calibration was found to be accurate only on the date and at the place of calibration shown.

Calibrated by

Approved by

Date of Issue: 19 March 2026

Manager, Division of Calibration Laboratory

Responsible for the Technical Management Team

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.



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Calibration Certificate

Certificate No.: 2602303-003-01

Page : 2 of 2

Calibration Condition:

Equipment:	CHAMBER (Incubator)	Place of Calibration:	Microbiology Laboratory (302)
UUC* Resolution:	0.1 °C	UNITED ANALYST AND ENGINEERING CONSULTANT CO.LTD	
Condition of the item:	Normal & Good	Environment Conditions:	Ambient Temperature (25.5 ± 1) °C
	Without adjustment / As Found		Relative Humidity (59.1 ± 3) %
	- Time of record 1 hour 9 minute / point		Line Voltage (223 ± 3) V.

Calibration Results:

Tablet : Reporting of Temperature

Calibration		Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)								Measurement
Point (°C)	Std #1	Std #2	Std #3	Std #4	Std #5	Std #6	Std #7	Std #8	Std #9	Uncertainty (±°C)
22.0	22.39	22.34	22.25	22.24	21.99	22.02	21.96	21.99	22.11	0.27
25.0	25.36	25.30	25.24	25.25	25.12	25.12	25.04	25.08	25.18	0.27

Table 2 : Reporting of Characterization Results

UUC* Setting (°C)	Max	Average	Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
22.0	22.0	22.0	0.029	0.28	0.46
25.0	25.0	25.0	0.049	0.17	0.37

Note

- UUC* : Unit Under Calibration
- The quoted uncertainty includes contributions from Stability and Loading Effect (20% of Temperature Uniformity).
- Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.
- 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.
- Overall Variation = The difference of The maximum and minimum measured temperatures throughout observation time.

For more information, details of the sensor installation should be reported

Fresh air Damper	-	Open	-	Position	-	100%	Fan speed
	X	Close	-		-	Not Available	
Dimension of inside chamber and sensor installation location (cm)							
W x H x D	64	x	80	x	50		
A x B x C	10	x	10	x	10		



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

..... End of Report

F-CS-009 Revision 02 Date: 01-10-68

u.6/23

Calibration Certificate

Certificate No.: 2602303-003-01

Page : 1 of 2

Equipment: CHAMBER (Incubator)

Manufacturer: MEMMERT

Model: IPP260

Serial No.: V618 0033

ID No.: UAE MIC 021/2561

Order No.: 2602303

Operation No.: 2602303-003

Date of Receipt: 11 March 2026

Date of Calibration: 11 March 2026

Customer Name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.LTD.

Address: 3 Soi Udomsak 41, Sukhumvit Road,

Bangchack, Prakhronong, Bangkok 10260

Metrological traceability:

1. Calibration Method:

- This instrument was calibrated by inserting 9 standard thermometers into its chamber, in accordance with WTE-014, based on TLAS G-20-1/02-08 (E). Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used in this laboratory is the International Temperature Scale of 1990 (ITS-90).
- All data shown below are final values, and the initial data may be obtained upon request.

2. Reference Standard Instrument:

Instrument	Model/Type	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59003377	2601300-001-01	10 January 2027	NATIONAL FOOD INSTITUTE
	RTD	CH4101-109/ RTD4101-109			

3. This certificate is traceable to the International System of Units (SI).

4. This certificate is valid only for the instrument that was calibrated.

5. The result of this calibration was found to be accurate only on the date and at the place of calibration shown.

Calibrated by

Approved by

Manager, Division of Calibration Laboratory

Responsible for the Technical Management Team

Date of Issue: 18 March 2026

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-CS-009 Revision 02 Date: 01-10-68

u.6/23



nfi.or.th

Calibration Certificate

Certificate No.: 2602303-002-01
Page : 2 of 2

Calibration Condition:

Equipment:	CHAMBER (Incubator)	Place of Calibration:	Microbiology Laboratory (302)
UUC* Resolution:	0.1 °C	UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD	
Condition of the item:	Normal & Good	Environment Conditions:	Ambient Temperature (23.5 ± 1) °C
	Without adjustment / As Found	Relative Humidity	(59.1 ± 3) %
	- Time of record 1 hour 9 minute / point	Line Voltage	(223 ± 3) V.

Calibration Results:

Table 1 : Reporting of Temperature

Calibration Point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Measurement Uncertainty (±°C)
	Std.#1	Std.#2	Std.#3	Std.#4	Std.#5	Std.#6	Std.#7	Std.#8	Std.#9	
36.0	35.95	36.39	35.57	35.65	36.51	36.36	36.35	36.54	35.93	0.33

Table 2 : Reporting of Characterization Results

UUC* Setting (°C)	UUC* Reading (°C)		Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	Max	Average			
36.0	36.0	36.0	0.14	0.60	1.36

Note

- UUC* : Unit Under Calibration

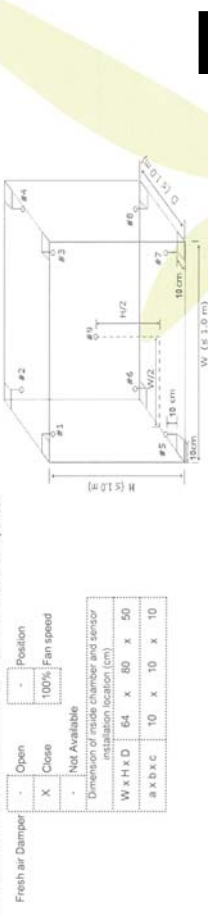
- The quoted uncertainty includes contributions from 'Stability' and 'Loading Effect' (20% of Temperature Uniformity).

- Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

- 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.

- Overall Variation = The difference of The maximum and minimum measured temperatures throughout observation time.

For more information, details of the sensor installation should be reported.



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

..... End of Report

F-CS-009 Revision 02 Date 01-10-68

Calibration Certificate

Certificate No.: 2602303-002-01
Page : 1 of 2

Equipment:

Manufacturer: CHAMBER (Incubator)

Model: MEMMERT

Serial No.: IPP260

ID No.: V616-0066

Order No.: UAE MIC 032/2559

Operation No.: 2602303

Date of Receipt: 2602303-002

Date of Calibration: 11 March 2026

Customer Name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.

Address: 3 Soi Udomsuk 41, Sukhumvit Road,

Bangchack, Prakhanoeng, Bangkok 10260

Metrological traceability:

1. Calibration Method:

- This instrument was calibrated by inserting 9 standard thermometers into its chamber, in accordance with W-TE-014, based on TLAS G-20-102-08 (E). Guidelines for Calibration and Checks of Temperature Controlled Enclosures

- The temperature scale used in this laboratory is the International Temperature Scale of 1990 (ITS-90).

- All data shown below are final values, and the initial data may be obtained upon request.

2. Reference Standard Instrument:

Instrument	Model/Type	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A RTD	MY59003377 CH201-260/RTD201-260	2601300-001-01	10 January 2027	NATIONAL FOOD INSTITUTE

3. This certificate is traceable to the International System of Units (SI).

4. This certificate is valid only for the instrument that was calibrated.

5. The result of this calibration was found to be accurate only on the date and at the place of calibration shown.

Calibrated by

Approved by

Manager, Division of Calibration Laboratory

Responsible for the Technical Management Team

18 March 2026

Date of Issue:

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-CS-009 Revision 02 Date 01-10-68



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2602-0004OC-1
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 26TM193
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			Position					
			1	2	3	4	5 (ref.)	
44.5	44.5	44.5	44.493	44.480	44.472	44.487	44.488	0.15

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor k
44.5	0.065	0.041	2

Average* : The average of 30 values in each position.
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.
Stability : One-half of the greatest maximum difference of measured temperature at any one probe.
UUC* : Unit Under Calibration
Note : The reported uncertainty of measurement was included stability and excluded uniformity.

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

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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TEL 0-2717-3000-29 FAX 0-2719-9484



Certificate of Calibration

Cert. No.: 26TM193
Page : 1 of 3

Equipment : Water Bath
Manufacturer : Memmert
Model : WNE 14
Serial No. : L416.0606
ID No. : MIC.002/2560
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong,
Bangkok 10260
Location : Microbiology Laboratory (302)

Received Order : 02 February 2026
Calibration Date : 02 February 2026
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V

Calibrated by : 

Approved by : 
Approved Signatory

Issue Date : 17 February 2026

The Uncertainties are for a confidence probability of approximately 95%

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เอกสารไม่ควบคุม



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TEL 0-2717-3000-29 FAX 0-2719-9484



Certificate of Calibration

Cert. No.: 26TM194
Page : 1 of 3

Equipment : Water Bath
Manufacturer : Memmert
Model : WNE 14
Serial No. : L416.0612
ID No. : MIC.003/2560

Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong,
Bangkok 10260
Location : Microbiology Laboratory (302)

Received Order : 02 February 2026
Calibration Date : 02 February 2026
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V

Calibrated by : 
Approved by : 

Approved Signatory

Issue Date : 17 February 2026

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2602-0004OC-1
Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument : Serial No. : Cert. No. : Traceable : Due Date :
1) Data Acquisition MY57013711 25LM117 TPA 17 Jul 2026
2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This measurement result is traceable to the International System of Unit maintained through :

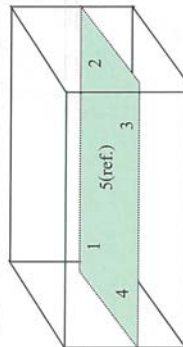
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	Environmental		AC Voltage Supply (Volt)
	(°C)	(%R.H.)	
Beginning of Calibration	24	51	220
Finished of Calibration	25	53	221



Front

Position :	Ref. Std. ID No.:
1	4803988-001
2	4803988-002
3	4803988-003
4	4803988-004
5(ref.)	4803988-005



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2602-0004OC-2
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 26TM194
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			Position					
			1	2	3	4	5 (ref.)	
44.5	44.6	44.6	44.518	44.463	44.472	44.508	44.521	0.15

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor <i>k</i>
44.5	0.11	0.044	2

Average* : The average of 30 values in each position.
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.
Stability : One-half of the greatest maximum difference of measured temperature at any one probe.
UUC* : Unit Under Calibration
Note : The reported uncertainty of measurement was included stability and excluded uniformity.

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

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Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2602-0004OC-2
Procedure Used :-

Cert. No.: 26TM194
Page : 2 of 3

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument **Serial No.** **Cert. No.** **Traceable** **Due Date**
1) Data Acquisition MY57013711 25LM117 TPA 17 Jul 2026

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This measurement result is traceable to the International System of Unit maintained through :

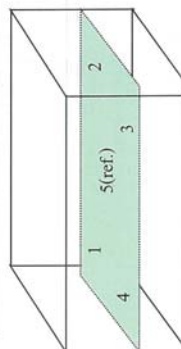
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	Environmental		AC Voltage Supply (Volt)
	(°C)	(%R.H.)	
Beginning of Calibration	25	52	221
Finished of Calibration	24	51	220



Front

Position :	Ref. Std. ID No.:
1	4803988-001
2	4803988-002
3	4803988-003
4	4803988-004
5(ref.)	4803988-005



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2603-0427OC-1
Procedure Used :

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument Serial No. Cert. No. Traceable Due Date
1) Data Acquisition MY57013711 25LM117 TPA 17 Jul 2026

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This measurement result is traceable to the International System of Unit maintained through :

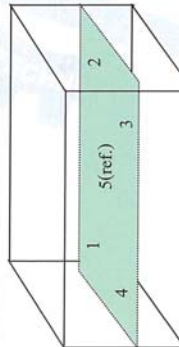
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	Environmental		AC Voltage Supply (Volt)
	(°C)	(%R.H.)	
Beginning of Calibration	23	52	230
Finished of Calibration	24	55	229



Front

Position :	Ref. Std. ID No.:
1	4803988-001
2	4803988-002
3	4803988-003
4	4803988-004
5(ref.)	4803988-005



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Certificate of Calibration

Cert. No.: 26TM442
Page : 1 of 3

Equipment : Water Bath

Manufacturer : Memmert

Model : WNE 14

Serial No. : L414.1407

ID No. : UAE.MIC.006/2558

Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong,
Bangkok 10260

Location : Microbiology Laboratory (302)

Received Order : 16 March 2026

Calibration Date : 16 March 2026

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

AC Line Voltage : (220 ± 22) V

Calibrated by :

Approved by :

Approved Signatory

Issue Date :

23 March 2026

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Calibration Certificate

Certificate No.: 2602303-007-01
Page : 1 of 2

Equipment: Autoclave
Manufacturer: ALP
Model: QL-40L
Serial No.: 808763
ID No.: UAE MIC 026/2563
Order No.: 2602303
Operation No.: 2602303-007
Date of Receipt: 11 March 2026
Date of Calibration: 11 March 2026

Customer Name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Address: 3 Soi Udomsuik 41, Sukhumvit Road,
Bangchack, Prakhong, Bangkok 10260

Metrological traceability:

- Calibration Method:
- This instrument was calibrated by inserting 3 standard data loggers with RTDs into its autoclave, in accordance with W.TE-018, based on BS 2646-1:2021. Autoclaves for sterilization in laboratories Part 1: Design, construction, safety and performance - specification.
- The temperature scale used in this laboratory is the International Temperature Scale of 1990 (ITS-90).
- All data shown below are final values, and the initial data may be obtained upon request.

2. Reference Standard Instrument:

Instrument	Model/Type	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with RTD (Data Logger)	HiTemp140-PT	S33753	2502245-002-01	22 March 2026	NATIONAL FOOD INSTITUTE
	HiTemp140	S25602	2601300-004-01	10 January 2027	NATIONAL FOOD INSTITUTE
	PRTemp140	R38546	2601300-003-01	10 January 2027	NATIONAL FOOD INSTITUTE

- This certificate is traceable to the International System of Units (SI).
- This certificate is valid only for the instrument that was calibrated.
- The result of this calibration was found to be accurate only on the date and at the place of calibration shown.

Calibrated by Mr. Nutapol N. [Redacted] **Approved by** [Redacted] (Mr. Phetaporn [Redacted])
Specialist Manager, Division of Calibration Laboratory
Date of Issue: 19 March 2026
Responsible for the Technical Management Team

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FCS-009 Revision: 02 Date: 01-10-68



Equipment : Water Bath

Condition As-Received : Used Item

Reference : 2603-0427OC-1

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			1	2	3	4	5 (ref.)	
44.5	44.5	44.5	44.506	44.456	44.478	44.509	44.502	0.15

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor k
44.5	0.083	0.068	2

Average* : The average of 30 values in each position.

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.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

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

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Calibration Certificate

Certificate No.: 2603377-001-01
 Page : 1 of 2

Equipment: Autoclave
Manufacturer: ALP
Model: CL-40L
Serial No.: 810010
ID No.: UAE.MIC.032/2565
Order No.: 2603377
Operation No.: 2603377-001
Date of Receipt: 4 June 2026
Date of Calibration: 4 June 2026

Customer Name: UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.
Address: 3 Soi Udomsuk 41, Sukhumvit Road, Bangchack, Prakhonong, Bangkok 10260

Metrological traceability:

- Calibration Method:
 - This instrument was calibrated by inserting 3 standard data loggers with RTDs into its autoclave, in accordance with W-TE-018, based on BS 2646:1-2021, Autoclaves for sterilization in laboratories Part 1: Design, construction, safety and performance - specification.
 - The temperature scale used in this laboratory is the International Temperature Scale of 1990 (ITS-90).
 - All data shown below are final values, and the initial data may be obtained upon request.
- Reference Standard Instrument:

Instrument	Model/Type	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with RTD (Data Logger)	HiTemp 140-PT	T20607	2602103-005-01	7 March 2027	NATIONAL FOOD INSTITUTE
	HiTemp 140-PT	T20610	2602103-006-01	7 March 2027	NATIONAL FOOD INSTITUTE
	HiTemp 140-PT	T20615	2602103-007-01	7 March 2027	NATIONAL FOOD INSTITUTE

- This certificate is traceable to the International System of Units (SI).
- This certificate is valid only for the instrument that was calibrated.
- The result of this calibration was found to be accurate only on the date and at the place of calibration shown.

Calibrated by Mr.Yothin Ch...
Date of Issue: 9 June 2026

Approved by [Redacted]
 (Mr.Pherap...)
 Manager, Division of Calibration Laboratory
 Responsible for the Technical Management Team

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

Calibration Certificate

Certificate No.: 2602303-007-01
 Page : 2 of 2

Equipment: Autoclave
Resolution: 0.1 °C
Condition of the item: Normal & Good
Without adjustment / As Found
 - Setting program function sterilization STERILIZE/NORMAL
 - Time of sterilization 15 Minute at 115.0, 121.0 °C

Place of Calibration: Room 301
 UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.

Environment Conditions: Ambient Temperature (26.0 ± 1) °C
 Relative Humidity (47.5 ± 3) %
 Line Voltage (228.5 ± 4) V.

Calibration Results:

Table 1 : Reporting of Temperature

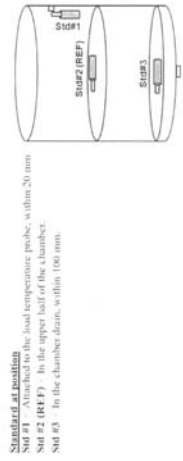
Calibration Point (°C)	Std.# 1	Measured Temperature (°C) @ Sensor No.	Std.# 2 (REF)	Std.# 3	Measurement Uncertainty (±°C)
115.0	115.29	115.33	115.37	115.37	0.64
121.0	121.17	121.18	121.06	121.06	0.64

Table 2 : Reporting of Characterization Results

UUC* Setting (°C)	Max	Min	Average	MPa	Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
115.0	115.1	114.9	115.0	0.08	0.23	0.53	0.51
121.0	121.1	120.9	121.0	0.12	0.24	0.67	0.67

Note

- UUC* : Unit Under Calibration
 - 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 sensors, for at least half an hour after reaching steady state.
 - 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.
 - Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.
- For more information, details of the sensor installation should be reported.



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

----- End of Report -----

Certificate of Calibration

Certificate No.: 260311-4-BL005-26
Code No.: BL005-26
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Customer Name: United Analyst and Engineering Consultant Co., Ltd.
Address: 3 Soi Udom suk 41, Sukhumvit Rd., Bang Chak, Phrakhanong, Bangkok 10260

Equipment: Electronic Balance

Manufacturer: OHUAS

Model: PX623

Serial No.: C236754745

Asset No.: UAE.MIC.055/2565

Building: UAE number 3

Room: 301

Received Date: March 16, 2026

Date of Calibration: March 16, 2026

Calibration Conditions: Temperature start 26.7 °C end 27.4 °C
Humidity start 49.2 % end 50.2 %
Pressure start 757.2 mmHg end 756.2 mmHg

Calibrated by: Thanachat Chatpahol

Approved by: Suwit

Signature:

Issued Date: March 18, 2026

Note : 1) The Uncertainties are for a confidence probability of approximately 95%

2) This Certificate is valid only to the item calibrated on date and place of calibration.

3) This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the United Analyst and Engineering Consultant Co.,Ltd. (UAE)

Calibration Certificate

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Calibration Condition:

Equipment: Autoclave
Resolution: 0.1 °C
Condition of the item: Normal & Good
Without adjustment / As Found
- Setting program function sterilization STERILIZE/NORMAL
- Time of sterilization 15 Minute at 115.0 and 121.0 °C
Place of Calibration: Microbiology Laboratory (301)
UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.
Environment Conditions: Ambient Temperature (27.0 ± 1) °C
Relative Humidity (68.8 ± 1) %
Line Voltage (224.6 ± 1) V.

Calibration Results:

Table 1 : Reporting of Temperature

Calibration Point (°C)	Std # 1	Measured Temperature (°C) @ Sensor No.	Std # 2 (REF)	Std # 3	Measurement Uncertainty (±°C)
115.0	115.41	115.42	115.39	115.39	0.64
121.0	121.43	121.44	121.41	121.41	0.64

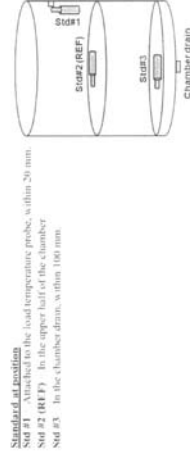
Table 2 : Reporting of Characterization Results

UUC* Setting (°C)	Max	Min	Average	MPa	Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
115.0	115.0	115.0	115.0	0.10	0.13	0.13	0.26
121.0	121.0	121.0	121.0	0.12	0.17	0.12	0.36

Note

- UUC* : Unit Under Calibration
- 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 sensors, for at least half an hour after reaching steady state.
- 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.
- Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

For more information, details of the sensor installation should be reported.



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

----- End of Report -----



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Equipment: Electronic Balance
Model: PX623
Serial No.: C236754745
Max. Capacity: 620 (g)
Calibration Date: March 16, 2026

Manufacturer: OHJAS
Readability: 0.001 (g)
ID No.: UAE.MC.055/2565

Calibration Result: (Continued)
Calibration Range: 0 to 600 (g)
Calibration Adjustment: Internal Calibration

3. Error of indication from nominal or conventional mass value:

Nominal Value (g)	Reference Value (g)	Indication (g)	Correction (g)	Uncertainty ($\pm$ g)	Coverage Factor k
Unload	0.0000000	0.000	0.000	0.0011	2.09
1	1.0000119	1.000	0.000	0.0011	2.09
5	5.0000146	5.001	-0.001	0.0011	2.09
10	10.0000330	10.001	-0.001	0.0011	2.09
20	20.0000280	20.001	-0.001	0.0011	2.09
50	50.0000370	50.001	-0.001	0.0011	2.09
100	100.0000420	100.001	-0.001	0.0011	2.09
120	120.0000700	120.001	-0.001	0.0011	2.09
240	240.0002000	240.000	0.001	0.0012	2.08
360	360.0002580	360.000	0.001	0.0012	2.07
480	480.0003400	480.000	0.000	0.0013	2.05
600	599.9999800	599.998	0.002	0.0013	2.04

4. Effect of Tare test:

Tare Load (g)	Test Load (g)	Indication (g)	Correction (g)
300	30.000061	30.001	-0.001
	60.000070	60.000	0.000
	90.000091	89.999	0.001
	120.000137	119.999	0.001
	150.000146	149.998	0.002

Remark:

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k, providing a level of confidence of approximately 95%.

O—o-End-o—o



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Equipment: Electronic Balance
Model: PX623
Serial No.: C236754745
Max. Capacity: 620 (g)
Calibration Date: March 16, 2026
Condition As-Received: In Condition

Manufacturer: OHJAS
Readability: 0.001 (g)
ID No.: UAE.MC.055/2565

Condition of Equipment:

Condition of This Result of Calibrations:

1. Calibration Method: This instrument was calibrated by method UAE-CP-Cal-006 In-House Method based on UKAS Lab 14 - 2022

2. Reference Standards:

Reference Standards: Standard Weight Class E2 (OIML) 1 mg to 1 kg METTLER TOLEDO GmbH Certificate No. C510641605 Traceability METTLER TOLEDO GmbH Due Date 3-Mar-27

Standard Weight Class E2 (OIML) 1 mg to 1 kg AMARAC 25-009359 Certificate No. 25-009359 Traceability AMARAC Due Date 21-Jan-27

Instrument: Thermo-Hygro Baro Meter Model MHB-3825D Serial No. AK46457 Certificate No. 5G-H-00992/68 Traceability Success Gateway Due Date 26-Nov-26

Thermo-Hygro Baro Meter Model MHB-3825D Serial No. AK46457 Certificate No. 2594644 Traceability TPA Due Date 18-Dec-26

3. This certification is traceable to SI Unit

4. This certification was certified only for the instrument we calibrated

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

6. Through the reference standard laboratory of Mettler-Toledo GmbH C510641605, SAC accreditation number SCS 0032

7. Through the reference standard laboratory of AMARAC 25-009359, TIS accreditation number 0152

Calibration Result:

1. Repeatability of Reading:

Nominal Value (g)	Standard Deviation of Reading (g)
300	0.00055
600	0.00055

2. Eccentric or off-center loading

A mass of 200 g was placed and moved to various positions on pan

Nominal Value (g)	Standard Deviation of Reading (g)
300	0.00055
600	0.00055

The Balance reading obtained is given in the table.

The Balance reading obtained is given in the table.

1 (g)	2 (g)	3 (g)	4 (g)	5 (g)	Maximum Difference (g)
199.998	200.001	200.000	199.997	200.000	0.003