

ภาคผนวก จ

เอกสารสอบเทียบเครื่องมือที่ใช้ในการตรวจวิเคราะห์

List of Instruments Certification for Water Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
Water									
1	pH Meter	pH	YSI	Pro 10 / 18C101710	Technology Promotion Association (Thailand-Japan)	24CH813	10 Jul 24	9 Jul 25	-



Certificate of Calibration

Cert.No.: 24CH813
Page.: 1 of 3

Equipment : pH Meter
Manufacturer : YSI
Model : Pro 10
Serial No. : 18C101710
ID No. : UAE.EFM.194/2561(ENV.pH.03/61)
Condition As-Received: Used item
Received Date : 09 July 2024
Calibration Date : 10 July 2024
Reference : 2407-0334WSC-1
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong, Bangkok 10260

Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with
certified reference material (CRM)
- CP-CH8 by comparison with temperature standard

Calibrated by : Warakorn Lannantrakul

Approved by :

() Unnopphol Harachai
() Ponpan Peipim
(✓) Saithip Maangmai
Issue Date :

Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Ref. Standard Thermometer	2188080	130RC044	2311216	10 Oct 2024

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	970851	25 Apr 2026
pH 6.986	CPA chem	970852	25 Apr 2026
pH 6.986	CPA chem	970852	25 Apr 2026
pH 9.997	CPA chem	970853	25 Apr 2026

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

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4.7)(7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement (±)	Coverage factor k
pH Electrode S/N.: YSI1001 pH23B	4.008	4.02	166.0	0.0085	2.05
	6.986	6.99	-7.3	0.011	2.00
	6.986	6.99	-7.4	0.0099	2.00
	9.997	10.00	-165.3	0.0095	2.00

Remark - Can not connect the BNC because the plug does not match with the socket.

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



Cert.No.: 24CH813
Page.: 3 of 3

Calibration Results

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : -

- Serial No. : YSI1001 pH23B

Dimension of probe

- Length : 7 mm.

- Diameter : 2.5 mm.

- Immersion Depth : 75 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor k
25.0	25.002	25.0	-0.002	0.13	2.00
30.0	30.002	30.0	-0.002	0.13	2.00
35.0	35.002	35.0	-0.002	0.13	2.00

Remark - UUC* = Unit Under Calibration

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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เอกสารไม่ควบคุม

List of Instruments Certification for Environmental Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration*	Remark
Equipment for Water Quality Analysis									
1	pH Meter	pH	HANNA Instruments	HI2020-02 / C0051107	National Food Institute, Ministry of Industry, (Thailand-Japan)	2404042-001-01	21 Aug 24	19 Aug 25	-
2	Analytical Balance	FAT OIL AND GREASE	Mettler Toledo	MS6035 / 01 / 8007010311	National Food Institute, Ministry of Industry, (Thailand-Japan)	2402284-001-01	2 Apr 24	1 Apr 25	-
3	Analytical Balance	TOTAL SUSPENDED SOLIDS	Mettler Toledo	XSR205DU / C009071872	National Food Institute, Ministry of Industry, (Thailand-Japan)	250226-001-01	20 Mar 25	19 Mar 26	-
4	BOD Incubator	BIOCHEMICAL OXYGEN DEMAND	ARCO	UC4-1320 / 13URC4S013201	Technology Promption Association (Thailand-Japan)	25TM205	21 Feb 25	20 Feb 26	-
5	DO Meter	BIOCHEMICAL OXYGEN DEMAND	YSI	5100 / 11B 101863	Technology Promption Association (Thailand-Japan)	25TW29	17 Feb 25	17 Feb 26	-
6	Incubator	FECAL COLIFORM BACTERIA	Binder	INB 400 / E411.1325	Technology Promption Association (Thailand-Japan)	24TM939	9 Jul 24	8 Jul 25	-
7	Kjeltec System Distilling unit	TOTAL KJELDAHL NITROGEN	Foss Tecator (Labtc)	KT200 / 91790524	FOSS South East Asia	13319	27 Jan 25	27 Jan 26	-
8	Digestion Units	TOTAL KJELDAHL NITROGEN	Foss	Tecator Digester 2520 / 91905060	National Food Institute Ministry of Industry, Thailand	2501440-001-01	27 Jan 25	26 Jan 26	-
9	Water Bath	FECAL COLIFORM BACTERIA	Memmert	WINE 14 / L407.0756	Technology Promption Association (Thailand-Japan)	24TM1016/1	9 Jul 24	8 Jul 25	-

Due Date of Calibration* : Based on the annual calibration plan. At least 1 time per year.

Calibration Certificate

Certificate No.: 2404042-001-01
Client name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Address: 3 Soi Udomsuk 41, Sukhumvit Road,
Bangcheck, Prakhonong, Bangkok 10260

Page 1 of 6

Equipment:	pH Meter
Manufacturer:	HANNA Instruments
Model:	HI2020-02
Serial No.:	C0051107
ID No.:	UAE.WAO.003/2557
Order No.:	2404042
Operation No.:	2404042-001
Date of Receipt:	14 August 2024
Date of Calibration:	21 August 2024

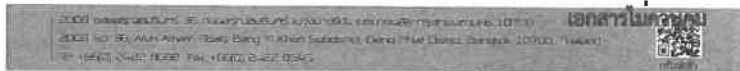
Calibrated by Mr. Menes Somsak
Specialist

Date of Issue: 21 August 2024

The uncertainties are for a confidence probability of approximately 95%.

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: 01 Date: 20-04-65



Calibration Report

Certificate No.:	2404942-001-01		
Equipment:	pH Meter	Resolution:	0.001 pH : 0.1 mV
	Manufacturer: HANNA Instruments	Model:	H2020-02
Serial No.:	C0051107	Type:	Bench top
ID No.:	UAE.WAO.005/2557		

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Date of Calibration:	21 August 2024			Page 2 of 5
Location:	Chemical Calibration Laboratory, National Food Institute			
Environment Condition:	Ambient Temperature: { 23.1 ± 1.5 } °C		Relative Humidity: { 55 ± 3 } %	
Condition of Equipment:	Good Condition			
Condition of this Results of Calibration				

1. Calibration Method W-CC-002, in house method based on direct measurement by using standard voltage calibrator and certified reference material (CRM)

Reference Standards / Certified Reference Material					
Instructions	Serial / ID No.	Manufacturer	Certificate No.	Exp. Date	
2.1 DC Voltage Calibrator	2709007	Fuka	24E1762	30 May 2025	
2.2 Digital Thermometer	2709007	Fuka	CC 080570-01	30 October 2024	
2.3 Thermo-Hygro Meter	NFI.BTH.01B923	testo	CR24-0492	4 March 2025	
Certified Reference Material		Lot No.	Manufacturer	Ref. Id.	Expiry Date
2.4 pH buffer 4.005 (Primary pH buffer Solution)	873608	CPAchem	PH416.L5	16 February 2025	
2.5 pH buffer 6.865 (Primary pH buffer Solution)	873609	CPAchem	PH017.L5	16 February 2025	
2.6 pH buffer 10.01 (Primary pH buffer Solution)	946185	CPAchem	PH220.L5	30 November 2024	
2.7 pH buffer 7.00 (Standard pH buffer Solution)	C9319	HACH LANGE GmbH	S114M904	16 October 2025	
3. This certification is traceable to The International System of Use (SI Unit)					
3.1 Instruments N 2.1	through	NSC-TISI-TS 17025 Laboratory Accreditation of Calibration No.0008			
3.2 Instruments N 2.2	through	NSC-TISI-TS 17025 Laboratory Accreditation of Calibration No.0081			
3.3 Instruments N 2.3	through	NSC-TISI-TS 17025 Laboratory Accreditation of Calibration No.0092			
3.4 Certified Reference Material N 2.4 to 2.6	traceable to	Primary measurement method: Homed cell using calibrated thermometer, buret/meter, and mass/volume The Standard Solution preparation and certified by CPAchem Ltd is accredited to ISO 17034 and ISO/IEC 17025			
3.5 Certified Reference Material N 2.7	traceable to	PTB Certificate Nr. PTB-PhD-5034/50350/034/03 and Certificate Nr. PTB-PhD-555/00870/02 (PTB: Physikalisch-Technische Bundesanstalt, Braunschweig, Germany)			
4. This certificate was certified only for the instrument we calibrated.					
5. The result of calibration was found accurate as shown on date and place of calibration only.					

F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.:	2404042-001-01		
Equipment:	pH Meter	Resolution:	0.001 pH 0.1 mV
	Manufacturer: HANNA Instruments	Model:	HI2020-02
	Serial No.: C0051107	Type:	Bench top
	ID No.: UAE WAO 005/2557		

Date of Calibration: 21 August 2024 Page 3 of 5

Calibration Results:

1. Calibration of pH Meter [Manual Temperature Compensation at 25 °C]

Nominal pH	DC Voltage Standard (mV)	Average Indicator Reading		Uncertainty (mV)	Coverage Factor (k)
		mV	pH		
0	414.122	-421.0	-0.001	0.038	2.00
2	295.815	302.7	-9.999	0.063	2.00
4	177.463	181.3	4.000	0.063	2.00
6	59.160	66.0	6.000	0.083	2.00
7	0.031	8.8	7.001	0.063	2.00
8	-86.158	-57.3	8.000	0.063	2.00
10	-177.462	-170.6	10.000	0.063	2.00
12	-296.813	-289.0	12.032	0.063	2.00
14	-414.121	-407.3	14.002	0.063	2.9C

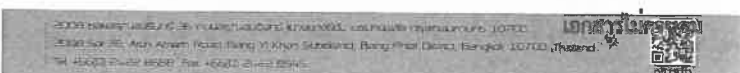
2. Calibration of pH Meter with Electrode (Manual Temperature Compensation at 25 °C)

Equipment:	pH Electrode	Type:	Combined Electrode
Manufacturer:	HANNA Instruments	Model:	HI11310
Serial No.:	539960	ID No.	N/A

Performance of Electrode system (Three-Point Calibration at pH 4, 7 and 10)

Certified Value (25 °C (µH)	Average Indicator Reading		Relative Slope (%)	Uncertainty (± µH)	Coverage Factor (k)
	pH	mV			
4.008	4.011	173.4	-	0.0043	2.00
7.001	7.004	-1.6	98.8	0.0073	2.00
9.997	10.011	-175.9	99.8	0.0073	2.00
8.065	8.070	6.4	-	0.0049	2.00

F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.:	Z404042-001-01		
Equipment:	Digital Thermometer with RTD (pH Meter)		
Resolution:	0.1 °C	Model:	HI2020-02
Serial No.:	C0051107	ID No.:	UAEWAQ.005/2557

Date of Calibration: 21 August 2024 Page 4 of 5

Location:	Chemical Calibration Laboratory, National Food Institute		
Environment Condition:	Ambient Temperature	23 °C	± 1 °C
	Relative Humidity	55 %	± 3 %

Condition of this results of Calibration:

1. Calibration Method :
- In house method: W-TE-G25 by comparison with standard thermometer.
 - The Calibration is determined by comparing with a known temperature from a standard resistance thermometer
 - The temperature scale in use at this laboratory is the International Temperature scale of 1990 (ITS-90).

2. Reference Standard Instrument

Instrument	Model	Serial No.	Certificate No.	Due Date	Through
HANDHELD THERMOMETER	1521	A5597	TE 670-01-01	16-Dec-24	NATIONAL FOOD INSTITUTE
Platinum Resistance Thermometer (PRT)	365	508201			

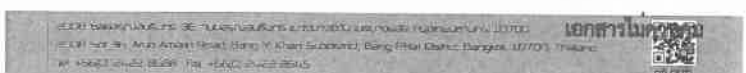
Support Equipment: - Low Temperature Bath (AMETEK RTC-187), Model: RTC-187C, S/N: 670835-00018

3. This certificate is traceable to International System of Units (SI Units).
4. This certificate 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. Condition of Calibrated Item : ☒ Good

7. Result of Calibration : ☒ X Without adjustment ☐ After adjustment

F-CS-012 Revision: 01 Date: 20-04-66



Calibration Report

Certificate No.: 240402-001-01

Equipment: Digital Thermometer with RTD (pH Meter)

Resolution: 0.1 °C Model: HI2020-02
Serial No.: C3051107 ID No.: UAE.WAO.005/2957
Manufacturer: HANNA Instruments

Date of Calibration: 21 August 2024

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Calibration point: 15.0, 20.0 and 25.0 °C

Calibration result:

- The probe was immersed in liquid bath or dry bath to a minimum depth of 120 mm
- Description of probe, model: HI111410 S/N: 539960
- Dimension of probe: Diameter 12 mm, Length 120 mm.
- Sheath material: Glass

UUC* Reading (°C)	Standard Temperature (°C)	Correction Value (°C)	Uncertainty ± (°C)
15.0	14.998	0.0	0.099
20.0	19.999	0.0	0.099
25.0	24.999	0.0	0.099

Note

- UUC* Unit Under Calibration

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 -----

F-C5-012 Revision: 01 Date: 20-04-65



Calibration Certificate

Certificate No.: 2402284-001-01
Client name: UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.
Address: 3 Sol Udomsuk 41, Sukhumvit Road,
Bangchack, Prakhonong, Bangkok 10260

Page 1 of 3

Equipment: Electronic Balance

Manufacturer: METTLER TOLEDO

Model: MS6035/01

Serial No.: B007010311

ID No.: UAE.TOX.008/2553

Order No.: 2402284

Operation No.: 2402284-001

Date of Receipt: 2 April 2024

Date of Calibration: 2 April 2024

Calibrated by Mr.Jerawut Prapawuttipong
Scientist

Date of Issue: 9 April 2024

The uncertainties are for a confidence probability of approximately 95%

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: 01 Date: 20-04-65

Calibration Report

Certificate No.: 2402284-001-01
Equipment: Electronic Balance
Manufacturer: METTLER TOLEDO
Model: MS6035/01
Resolution: 0.001
Serial No.: B007010311
ID No.: UAE.TOX.008/2553
Capacity: 620

Page 2 of 3

Date of Calibration: 2 April 2024
Environment Condition: Ambient Temperature: 24.5 ± 0.5 °C Relative Humidity: 40 ± 2.5 %
Place of Calibration: Laboratory, UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.
Condition of Equipment: Good Condition

Condition of This Results of Calibration:

1. Calibration Method: NFI Method W-NA-001 In-House Method based on UKAS Lab 14 : 2019

2. Reference Standards:

Reference Standard	Model	Serial No.	Calibrated By	Certificate No.	Due Date
Standard Weight Class E2	1mg to 200g	B505567572	TCS	M23040535	8 April 2024
Standard Weight Class E2	500g	B505567696	TCS	M23040545	8 April 2024
Instrument	Model	Serial No.	Calibrated By	Certificate No.	Due Date
Thermo-Hygro Meter	608-HI	NFL8TH 017723	Quality Reborn	QR24-0344	9 February 2025

3. This certification is traceable to SI UNIT

4. This certificate 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.

Calibration Results:

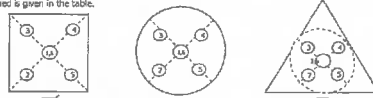
1. Repeatability of Reading:

Nominal Value (g)	Standard Deviation of Reading (g)
300	0.00000
600	0.00048

2. Off-Center Error:

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

The balance reading obtained is given in the table.



1	2	3	4	5	6	(Maximum Difference)
(g)	(g)	(g)	(g)	(g)	(g)	(g)
200.000	199.997	199.999	199.999	199.998	200.000	0.003

F-CS-012 Revision: 01 Date: 20-04-65

Calibration Report

Certificate No.: 2402284-001-01
Equipment: Electronic Balance
Manufacturer: METTLER TOLEDO
Model: MS6035/01
Resolution: 0.001
Serial No.: B007010311
ID No.: UAE.TOX.008/2553
Capacity: 620

Date of Calibration: 2 April 2024

Page 3 of 3

Calibration Results: (Continued)

Calibration Range: 0 - 600 g

Calibration Adjustment: Internal Calibration

3. Departure from Nominal Value:

Nominal value (g)	Standard Value (g)	Average Reading (g)	Correction (g)	Uncertainty (g)	Coverage Factor k
Unloaded	0.0000	0.000	0.000	0.00062	2.00
0.1	0.1000	0.100	0.000	0.00067	2.00
0.5	0.5000	0.500	0.000	0.00063	2.00
1	1.0000	1.000	0.000	0.00062	2.00
2	2.0000	2.000	0.000	0.00067	2.00
5	5.0000	5.000	0.000	0.00062	2.00
10	10.0000	10.000	0.000	0.00063	2.00
20	20.0000	20.000	0.000	0.00062	2.00
50	50.0000	50.000	0.000	0.00062	2.00
100	100.0001	100.000	0.000	0.00063	2.00
150	150.0001	150.000	0.000	0.00064	2.00
200	200.0002	200.000	0.000	0.00066	2.00
300	300.0002	299.999	0.001	0.00066	2.00
400	400.0003	399.998	0.002	0.00100	2.00
500	500.0003	499.997	0.003	0.0013	2.00
600	600.0004	599.996	0.004	0.0012	2.00

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 %.

F-CS-012 Revision: 01 Date: 20-04-65

Equipment : Electronic Balance									
Model: MS6035/01									
ID No.: UAE.TOX.008/2553									
Nominal Value	Standard Value	Average Reading	Correction	Error	Uncertainty (U)	Judgement	(Total Error < Judgement)		
							U + Error	Total Error	Result (Pass / Fail)
0	0.0000	0.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
0.1	0.1000	0.100	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
0.5	0.5000	0.500	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
1	1.0000	1.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
2	2.0000	2.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
5	5.0000	5.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
10	10.0000	10.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
20	20.0000	20.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
50	50.0000	50.000	0.000	0.000	0.00062	Pass	0.001	0.001	Pass
100	100.0001	100.000	0.000	0.000	0.00063	Pass	0.001	0.001	Pass
150	150.0001	150.000	0.000	0.000	0.00064	Pass	0.001	0.001	Pass
200	200.0002	200.000	0.000	0.000	0.00066	Pass	0.001	0.001	Pass
300	300.0002	299.999	0.001	-0.001	0.00090	Pass	0.002	0.002	Pass
400	400.0003	399.998	0.002	-0.002	0.00100	Pass	0.003	0.003	Pass
500	500.0003	499.997	0.003	-0.003	0.0011	Pass	0.004	0.004	Pass
600	600.0004	599.996	0.004	-0.004	0.0012	Pass	0.006	0.006	Pass
Unit Under Calibration									

เอกสารไม่ควบคุม

Calibration Certificate

Certificate No.: 2502226-001-01
Client name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Address: 3 Soi Udomsuk 41, Sukhumvit Road,
Bangchack, Prakhonong, Bangkok 10260

Page 1 of 4

Equipment: Electronic Balance

Manufacturer: METTLER TOLEDO

Model: XSR205DU

Serial No.: C009071872

ID No.: UAE.WAO.012/2563

Order No.: 2502226

Operation No.: 2502226-001

Date of Receipt: 19 March 2025

Date of Calibration: 20 March 2025

Calibrated by Mr.Yothin Charoensuk
Scientist

Date of Issue: 25 March 2025

The uncertainties are for a confidence probability of approximately 95%

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.

FCS-012 Revision 01 Date: 20-04-65

3008 Soi 35, Sukhumvit Road, Bang Phli Subdistrict, Bang Phli District, Bangkok 10700, Thailand
Tel: +662 042 5500 Fax: +662 042 5505



Calibration Report

Certificate No.: 2502226-001-01
Equipment: Electronic Balance
Model: XSR205DU
Serial No.: C009071872
Capacity: 82 g / 220 g
Manufacturer: METTLER TOLEDO
Resolution: 0.0001 g / 0.0001 g
ID No.: UAE.WAO.012/2563

Page 2 of 4

Date of Calibration: 20 March 2025
Environment Condition: Ambient Temperature: 21.2 ± 0.6 °C Relative Humidity: 48 ± 3.5 %
Place of Calibration: 208 Balance Room, UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Condition of Equipment: Good Condition

Condition of This Results of Calibration:

1. Calibration Method: NFI Method W-MA-001 In-house Method based on UKAS Lab 14 : 2019

2. Reference Standards:

Reference Standard	Model	Serial No.	Calibrated By	Certificate No.	Due Date
Standard Weight Class E2	1mg to 200g	8505567572	TCS	M24941005	19 April 2025
Instrument	Model	Serial No.	Calibrated By	Certificate No.	Due Date
Thermo-Hygro Meter	608-H1	NFI.BTH.017/23	Quality Reborn	QR25-0542	10 February 2026

3. This certification is traceable to SI UNIT

4. This certificate 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.

Calibration Results:

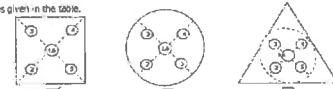
1. Repeatability of Reading:

Nominal Value (g)	Standard Deviation of Reading (g)
40	0.000007
80	0.000042
100	0.000000
200	0.000005

2. Off-Center Error:

A mass of 100 g was placed and moved to various position on pan.

The balance reading obtained is given in the table.



1	2	3	4	5	6	(Maximum Difference)
(g)	(g)	(g)	(g)	(g)	(g)	(g)
100.0001	100.0001	100.0001	100.0001	100.0001	100.0002	0.0001

FCS-012 Revision 01 Date: 20-04-65

3008 Soi 35, Sukhumvit Road, Bang Phli Subdistrict, Bang Phli District, Bangkok 10700, Thailand
Tel: +662 042 5500 Fax: +662 042 5505



Calibration Report

Certificate No.: 2502226-001-01
Equipment: Electronic Balance
Model: XSR205DU
Serial No.: C009071872
Capacity: 82 g / 220 g
Manufacturer: METTLER TOLEDO
Resolution: 0.0001 g / 0.0001 g
ID No.: UAE.WAO.012/2563

Date of Calibration: 20 March 2025

Page 3 of 4

Calibration Results: (Continued)

Calibration Range: 0-80 g

Calibration Adjustment: Internal Calibration

3. Departure from Nominal Value: (Range: 0 - 82 g; Resolution: 0.00001 g)

Nominal Value (g)	Standard Value (g)	Average Reading (g)	Correction (g)	Uncertainty (g)	Coverage Factor k
Unload	0.00000	0.00000	0.00000	0.00000991	2.00
0.001	0.001003	0.00100	0.00000	0.00000921	2.00
0.005	0.005002	0.00500	0.00000	0.00000994	2.00
0.01	0.010003	0.01000	0.00000	0.00000991	2.00
0.05	0.050006	0.05000	0.00000	0.00000996	2.00
0.1	0.100011	0.10000	0.00001	0.000011	2.00
0.5	0.500016	0.50000	0.00002	0.000014	2.00
1	1.00003	1.00001	-0.00002	0.000016	2.00
2	2.000023	2.00005	-0.00003	0.000017	2.00
5	5.000015	5.00005	-0.00003	0.000021	2.00
10	10.000009	10.00005	-0.00004	0.000026	2.00
20	20.000030	20.00012	-0.00009	0.000037	2.00
30	30.000039	30.00012	-0.00008	0.000039	2.00
50	50.000028	50.00014	-0.00011	0.000068	2.00
80	80.000067	80.00020	-0.00013	0.00011	2.00

Calibration Report

Certificate No.: 2502226-001-01
Equipment: Electronic Balance
Model: XSR205DU
Serial No.: C009071872
Capacity: 82 g / 220 g
Manufacturer: METTLER TOLEDO
Resolution: 0.00001 g / 0.0001 g
ID No.: UAE.WAO.012/2563

Date of Calibration: 20 March 2025

Page 4 of 4

Calibration Results: (Continued)

Calibration Range: >80-200 g

Calibration Adjustment: Internal Calibration

3. Departure from Nominal Value: (Range: >80 - 200 g; Resolution: 0.0001 g)

Nominal Value (g)	Standard Value (g)	Average Reading (g)	Correction (g)	Uncertainty (g)	Coverage Factor k
90	90.00010	90.0002	-0.0001	0.00015	2.00
100	100.00006	100.0001	0.0000	0.00016	2.00
110	110.00007	110.0001	0.0000	0.00017	2.00
120	120.00002	120.0002	-0.0002	0.00018	2.00
130	130.00010	130.0002	-0.0001	0.00019	2.00
140	140.00013	140.0002	-0.0001	0.00019	2.00
150	150.00009	150.0002	-0.0001	0.00021	2.00
160	160.00010	160.0002	-0.0001	0.00022	2.00
170	170.00012	170.0002	-0.0001	0.00023	2.00
200	200.00013	200.0002	-0.0001	0.00028	2.00

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 %.

----- End -----

FCS-012 Revision 01 Date: 20-04-65

3008 Soi 35, Sukhumvit Road, Bang Phli Subdistrict, Bang Phli District, Bangkok 10700, Thailand
Tel: +662 042 5500 Fax: +662 042 5505





Equipment : BOD Incubator
Condition As-Received : Used Item
Reference : 2502-0166OC-1
Procedure Used :-

Calibration was conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).
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	MY57013823	24LM71	TPA	12 May 2025

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

3. This certification is traceable to the International System of Unit.

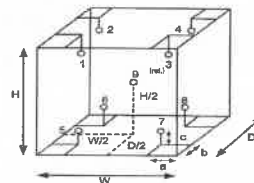
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Not Available

Environment during calibration		
	Beginning	Finished
Temp. (°C)	26	25
REL.Humid. (%)	49	52
AC Supply (Volt)	221	220



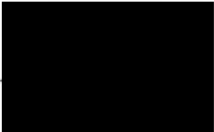
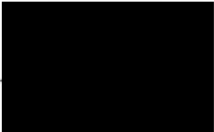
Probe Installation Details :

Probe Installation Details :		Dimension of Chamber :	
a =	10 cm	D =	0.82 m
b =	10 cm	W =	1.2 m
c =	10 cm	H =	1.2 m
		Capacity =	0.89 m ³

Position :	Ref. Std. ID No.:
1	21-17RTD-01
2	21-17RTD-02
3	17RTD-03
4	24-17RTD-04
5	17RTD-05
6	17RTD-06
7	17RTD-07
8	23-17RTD-08
9 (ref.)	23-17RTD-09

Certificate of Calibration

Cert. No.: 25TM205
Page : 1 of 3

Equipment : BOD Incubator
Manufacturer : Arco
Model : UC4-1320
Serial No. : 13URC4S013201
ID No. : UAE.WAO.015/2561
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road
Bangchak, Phrakhanong
Bangkok 10260
Location : Lab. Floor 2
Received Order : 08 February 2025
Calibration Date : 08 February 2025
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V
Calibrated by : 
Approved by : 
() Chakrit Waewwanjua
() Suwit Imjai
(✓) Kunchit Promprat
Issue Date : 21 February 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



Equipment : BOD Incubator
Condition As-Received : Used Item
Reference : 2502-0166OC-1
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Not Available

Cert. No.: 25TM205
Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
20.0	20.0	19.9	0.36	0.56	0.99	2

Calibration Point (°C)	Measured Temperature (°C)									Uncertainty (± °C)
	1	2	3	4	5	6	7	8	9 (ref.)	
20.0	19.841	19.714	20.110	19.862	19.747	19.710	19.676	19.789	19.695	0.54

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

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

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

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

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 %.

เอกสารไม่ควบคุม



Cert.No.: 25TW29
Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :
This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments	Serial No.	ID No.	Certificate No.	Due Date
1. Burette	-	130BU10	23CG1172	22 Mar 2025
2. Balance	14233821	110RC001	24MM131	04 July 2025

2. Standard Material :-

Material	Manufacturer	Lot.No.	Assay
Sodium Thiosulfate 5-Hydrate AR	KEMAUS	2203162447	99.6%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %
Dissolved Oxygen Probe No.: 24F100202

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.22	8.22	0.0055

This report was certified only for the instrument we tested. It is allowable to use for study
Intend to use for advertising and referral purpose is prohibited. This report may not be reproduced
other in full, without written approval of the laboratory

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 : EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PAITANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000 FAX. 0-2719-9484

Certificate of Testing

Cert.No.: 25TW29
Page.: 1 of 2

Equipment : DO Meter
Manufacturer : YSI
Model : 5100
Serial No. : 11B 101863
ID No. : UAE.WAO.004/2554
Received Date : 14 February 2025
Test Date : 17 February 2025
Reference : 2502-0473DSC-1
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udornasuk 41, Sukhumvit Road, Bangchak,
Phrakhanong, Bangkok 10280
Laboratory Condition : Temperature (25 ± 5) °C
Humidity (50 ± 20) %
Test Procedure : In - house method : CP-CH9
by Comparison Technique with Azide Modification Method

Tested by :
Approved by :
() Chakrit Waewwanjua
() Ponpan Paipim
(✓) Salthip Meangmai

Issue Date : 18 February 2025

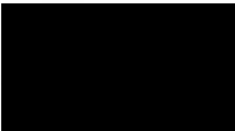
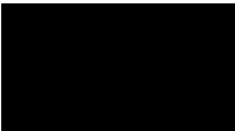
เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



Certificate of Calibration

Cert. No.: 24TM939
Page : 1 of 3

Equipment : Incubator
Manufacturer : Mammert
Model : INB 400
Serial No. : E411.1325
ID No. : UAE.MIC.003/2555
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Sol Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong,
Bangkok 10260
Location : Microbiology Laboratory
Received Order : 09 July 2024
Calibration Date : 09 - 10 July 2024
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (60 ± 30) %
Calibrated by : 
Approved by : 
() Porpan Paipim
(✓) Suwit Injai
() Kunchit Promprat

Issue Date : 19 July 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the Head of Corporate Services 3 : Equipment Calibration and Testing Services.

เอกสารไม่ควบคุม



Equipment : Incubator
Condition As-Received : Used Item
Reference : 2407-0153OC-3
Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).
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	MY46001451	24LM44	TPA	17 Mar 2025

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

3. This certification is traceable to the International System of Unit.

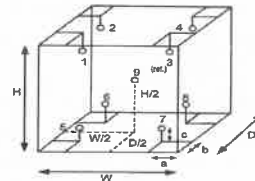
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close

Environment during calibration		
	Beginning	Finished
Temp. (°C)	24	24
REL Humid. (%)	54	51
AC Supply (Volt)	222	222



Probe Installation Details :

a = 5.0 cm	D = 0.33 m
b = 5.0 cm	W = 0.40 m
c = 5.0 cm	H = 0.40 m
	Capacity = 0.053 m³

Position :	Ref. Std. ID No.:
1	19RTD-2/1
2	19RTD-2/2
3	19RTD-2/3
4	19RTD-2/4
5	19RTD-2/5
6	24-19RTD-2/6
7	19RTD-2/7
8	19RTD-2/8
9 (ref.)	19RTD-2/9

เอกสารไม่ควบคุม



Equipment : Incubator
Condition As-Received : Used Item
Reference : 2407-0153OC-3
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Cert. No.: 24TM939
Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
36.0	35.0	35.0	0.23	0.38	0.68	2

Calibration Point (°C)	Measured Temperature (°C)									Uncertainty (± °C)
	1	2	3	4	5	6	7	8	9 (ref.)	
36.0	36.109	35.985	35.769	36.062	35.538	35.837	35.888	35.782	35.863	0.46

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

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

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

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

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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เอกสารไม่ควบคุม

FOSS

Customer Service Report

FOSS South East Asia

3388 Sirinrat Building, 25th – 26th Floor, Unit No. 3388/90,
Rama IV Road, Klongton , Klongtoey, Bangkok, Thailand 10110

Report No.:

13319

Date:

Jan 27, 2025

Customer:

UAE

Job No.:

11675

Address:

Bangkok

Instrument:

KT200

Serial:

91790524

Start
Finish

Travel To Customer (Hrs)

09.00

1

Labour (Hrs)

10.00

3

Travel From Customer (Hrs)

-

-

Job Type

Application		Special		Standard	
Distributor	x	Courtesy Visit	x	Installation	x
Digital Service	x	PMA Onboarding	x	Quote	x
Internal	x	Warranty	x	Repair	x
Investigate	x	Sales Support	x	Remote	x
				Training	x
				In House	x
				PM	x
				Health Check Visit	x

PMA Type

Smartcare

x

Smartcare Pro

x

Fossicare

x

Smartcare Advance

x

Fossicare Pro

x

N/A

x

Details of Work / Test

- PM -	
+ Visual Check	
- No leak	- ok
- have damage on heater & main switch	- not ok
replace heater 110v main switch interview Vaa	- ok
+ 110v PM kit & 1 set	- ok
+ Function Check	
- Power on / off	ok
- Alarm	
- Steam	
- Condenser	
Water pump	- ok
Instrument Ready for Use	OK
	x
	Not OK*
	x

Part No.	Batch	Description	Qty
10069965	11-06-2024	FOSS PM kit KT200 heater Analyser / 2100	1
10003512	29-03-2024	Heating element Steam	1
15630111	19-10-2022	Switch R595kmt + 2 FA	1

Verification Certificate

Certificate No.: 2501440-001-01
Client name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Address: 3 Soi Udomsuk 41, Sukhumvit Road,
Bangchack, Prakhong, Bangkok 10260

Page 1 of 4

Equipment: Digestion Unit (Heating Block)

Manufacturer: FOSS

Model: Tecator Digestor 2520

Serial No.: 91905060

ID No.: UAE.WAS.030/2566

Order No.: 2501440

Operation No.: 2501440-001

Date of Receipt: 27 January 2025

Date of Calibration: 27 January 2025

Calibrated by Mr. Worapob Sookthong
Scientist

Date of Issue: 29 January 2025

The uncertainties are for a confidence probability of approximately 95 %.

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: 01 Date: 20-04-65

Verification Report

Certificate No.: 2501440-001-01
Equipment: Digestion Unit (Heating Block)
Model: Tecator Digestor 2520 Serial No.: 91905060
Resolution: 1 °C ID No.: UAE.WAS.030/2566
Manufacturer: FOSS

Date of Calibration: 27 January 2025

Page 2 of 4

Location: Dry Laboratory (312), UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.
Environment Condition: Ambient Temperature (29 ± 1) °C
Relative Humidity (58 ± 2) %
Line Voltage (224 ± 1) Volt

Condition of this results of Calibration:

- This instrument was calibrated by insert standard thermocouples type R into its Digestion blocks and Calibration according to NF1 Method W-TE-026 based on BS 4309 : 1968
- The temperature scale used was based on ITS - 90 .
- All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No.	Certificate No.	Due Date	Through
Digital Thermometer with Thermocouple	34970A	HY404576/MY41184453	TC24/0063	5-Jun-2025	N.M. Technical Center Laboratory
Type R	S/CH1, R/CH2, R/CH3				

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

UUC* Description
Time of Record 1 Hour 6 Minute At 380 °C

7. Result of Calibration : ☒ Without adjustment ☐ After adjustment

F-CS-012 Revision: 01 Date: 20-04-65

Verification Report

Certificate No.: 2501440-001-01
Equipment: Digestion Unit (Heating Block)
Model: Tecator Digestor 2520 Serial No.: 91905060
Resolution: 1 °C ID No.: UAE.WAS.030/2566
Manufacturer: FOSS

Date of Calibration: 27 January 2025

Page 3 of 4

Calibration point: 380 °C

Calibration result:

Table 1 : Reporting of Temperature

Block No.	UUC* Setting (°C)	UUC* Reading (°C)	Stability (± °C)	Standard Thermometer (°C)	Uncertainty (± °C)
1	380	380	0.22	377.84	2.0
2	380	380	0.19	378.68	2.0
3	380	380	0.13	378.70	2.0
4	380	380	0.12	379.82	2.0
5	380	380	0.20	381.01	2.0
6	380	380	0.15	380.48	2.0
7	380	380	0.15	378.22	2.0
8	380	380	0.19	377.99	2.0
9	380	380	0.09	378.48	2.0
10	380	380	0.15	378.17	2.0
11	380	380	0.18	377.64	2.0
12	380	380	0.11	379.27	2.0
13	380	380	0.13	378.14	2.0
14	380	380	0.25	379.11	2.0
15	380	380	0.15	379.83	2.0
16	380	380	0.18	378.05	2.0
17	380	380	0.31	378.44	2.0
18	380	380	0.18	378.29	2.0
19	380	380	0.17	378.41	2.0
20	380	380	0.13	379.24	2.0

Note:

- UUC* = Unit Under Calibration
- Immersion depth of standard thermometer in tube level high of sand is equal heater plate of UUC.
- Stability = One-half of the greatest maximum difference of measured temperatures at one sensors, for at least half an hour after reaching steady state.

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

F-CS-012 Revision: 01 Date: 20-04-65

Verification Report

Certificate No.: 2501440-001-01
Equipment: Digestion Unit (Heating Block)
Model: Tecator Digestor / Serial No.: 91905060
Resolution: 1 °C ID No.: UAE.WAS.030/2566
Manufacturer: FOSS

Date of Calibration: 27 January 2025

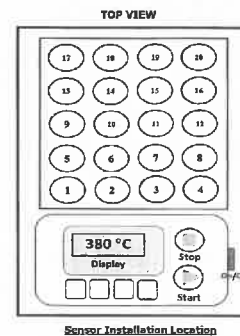
Page 4 of 4

Calibration point: 380 °C

Calibration result:

Continued

Figure 1. Location of Reference Standard and Block Diagram of Digestion Unit



Sensor Installation Location

F-CS-012 Revision: 01 Date: 20-04-65



Certificate of Calibration

Cert. No.: 24TM1016/1
Page : 1 of 3

This Certificate was issued to replace to the Certificate No. 24TM1016
Equipment : Water Bath

Manufacturer : Memmert

Model : WNB 14

Serial No. : L407.0758

ID No. : UAE.MIC.024/2550

Submitted by : United Analyst and Engineering Consultant Co.,Ltd.
3 Soi Udomsuk 41, Sukhumvit Road,
Bangchak, Phrakhanong,
Bangkok 10280

Location : Microbiology Laboratory

Received Order : 09 July 2024

Calibration Date : 09 - 10 July 2024

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

Calibrated by :

Approved by :

() Ponpan Palpin
(✓) Suwit Imjai
() Kunchit Promprat

Issue Date : 5 August 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced either in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

เอกสารไม่ควบคุม



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2407-0153OC-8
Procedure Used :-

Cert. No.: 24TM1016/1
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	MY59003411	23LM208	TPA	27 Dec 2024

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

3. This certification is traceable to the International System of Unit.

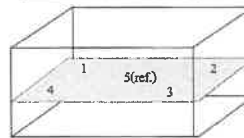
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	Environmental		AC Voltage Supply
	(°C)	(%R.H.)	(Volt)
Beginning of Calibration	26	67	221
Finished of Calibration	27	66	222



Front

Position :	Ref. Std. ID No.:
1	4804539-001
2	4804539-002
3	4804539-003
4	4804539-004
5(ref.)	4804539-005

เอกสารไม่ควบคุม



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2407-0153OC-8
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 24TM1016/1
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			1	2	3	4	5 (ref.)	
41.0	41.8	41.8	41.004	40.968	41.027	40.988	41.000	0.15
44.5	45.2	45.2	44.498	44.461	44.468	44.449	44.496	0.15
45.0	45.7	45.7	44.969	44.927	44.931	44.914	44.960	0.15

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor k
41.0	0.085	0.041	2
44.5	0.089	0.038	2
45.0	0.095	0.036	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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