



๐ ๓ ธันวาคม ๒๕๖๘

เรื่อง เปลี่ยนแปลงชื่อห้องปฏิบัติการวิเคราะห์เอกชน และต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการ
วิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท อีโคเทค วอเตอร์ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๖ ตุลาคม ๒๕๖๘

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือเปลี่ยนแปลงชื่อห้องปฏิบัติการวิเคราะห์เอกชน และต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน บริษัท บริษัท อีโคเทค วอเตอร์ จำกัด จำนวน ๑ แผ่น

ตามคำขอที่อ้างถึง บริษัท บริษัท อีโคเทค วอเตอร์ จำกัด ขอเปลี่ยนแปลงชื่อห้องปฏิบัติการ
วิเคราะห์เอกชน จากเดิม บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด เป็น บริษัท อีโคเทค วอเตอร์ จำกัด และขอต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๙๕ สถานที่ตั้งเลขที่ ๒๐ ซอยเคหะร่มเกล้า ๗๔
แยก ๖ แขวงราษฎร์พัฒนา เขตสะพานสูง กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้เปลี่ยนแปลงชื่อห้องปฏิบัติการวิเคราะห์เอกชน
จากเดิม บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด เป็น บริษัท อีโคเทค วอเตอร์ จำกัด และต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมห้องปฏิบัติการวิเคราะห์เอกชน

๑) นายเปี่ยมศักดิ์ ไชยสิงห์

ทะเบียนเลขที่ ว-๒๙๕-ค-๐๐๐๑

๒) นางอังสนา ร่มสายหยุด

ทะเบียนเลขที่ ว-๒๙๕-ค-๐๐๐๒

ข. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน

๑) นายนิสิต เหลืองภัทรวงศ์

ทะเบียนเลขที่ ว-๒๙๕-จ-๐๐๐๓

๒) นายประพันธ์ วงษ์เจ๊ะเซ็ม

ทะเบียนเลขที่ ว-๒๙๕-จ-๐๐๐๔

๓) นางสาวสุทธิดา มินกาเซ็ม

ทะเบียนเลขที่ ว-๒๙๕-จ-๐๐๐๕

๔) นางสาวจิราพร ฤทธิ์เต็ม

ทะเบียนเลขที่ ว-๒๙๕-จ-๐๐๐๘

๕) นางสาวยอดขวัญ คำกลิ้ง

ทะเบียนเลขที่ ว-๒๙๕-จ-๐๐๐๙

ค. ขอบข่ายชนิดสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำ/น้ำเสีย ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้จะสิ้นอายุในวันที่ ๑๑ ตุลาคม ๒๕๖๒ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๖๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



(นางสาวปัทมวรรณ คุณประเสริฐ)

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



เอกสารแนบท้ายหนังสือเปลี่ยนแปลงชื่อห้องปฏิบัติการวิเคราะห์เอกชน และต่ออายุหนังสือรับขึ้นทะเบียน
ห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีโคเทค วอเตอร์ จำกัด

เลขทะเบียน ว-๒๙๕

ที่ อก ๐๓๑๐(๑)/ ๙ ๗ ๘ ๗

ลงวันที่ ๐๓ ธันวาคม ๒๕๖๘

ขอข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๘ รายการ

น้ำ/น้ำเสีย จำนวน 8 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Biochemical Oxygen Demand	5-Day BOD Test, Azide Modification Method
2	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method
3	Oil & Grease	Liquid-Liquid, Partition-Gravimetric Method
4	pH	Electrometric Method
5	Sulfide	Iodometric Method
6	Total Dissolved Solids	Dried at 180 °C
7	Total Kjeldahl Nitrogen	Semi-Micro-Kjeldahl Method
8	Total Suspended Solids	Dried from 103 to 105 °C

เอกสารอ้างอิง

APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater. 24th ed. Washington, DC: APHA, 2023.

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Certificate of Calibration

Certificate No. : 68-400529-3

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Autoclave

Manufacturer : Labtech

Model : LAC-5060S

Range : N/A °C

Resolution 0.1 °C

Serial No. : 090414007

ID No. : INS008

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (25.5 to 26.5) °C

Relative Humidity : (30 to 40) %

Line Voltage : (225.5 to 228.5) V

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : This instrument was calibrated by In-house method CAL-M4007 based on BS 2646 Part 1 : 2021

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

Standard Temperature Data Logger with RTD pt 100

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400039	68-400344-1	24 Dec 2025	National Institute of Metrology Thailand (NIMT)
400040	68-400344-2	24 Dec 2025	National Institute of Metrology Thailand (NIMT)
400041	68-400344-3	24 Dec 2025	National Institute of Metrology Thailand (NIMT)

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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www.calibratech.co.th

Certificate of Calibration

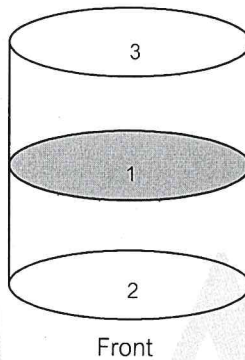
Certificate No. 68-400529-3

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement



Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Temperature (°C) @ Sensor No.			Uncertainty (± °C)	Measured Uniformity (°C)	Measured Stability (°C)	Sterilizing Time (minute)	Pressure Gauge Reading (kgf/cm ²)
			1	2	3					
121.0	121.0	121.0	121.4	121.5	121.6	1.0	0.7	0.6	15	1.2

Remark

1. UUC : Unit Under Calibration
2. Pressure Gauge reading are out of accreditation's scope.

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

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

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Certificate of Calibration

Certificate No. : 68-200541-1

Page : 1 of 2

Submitted by : Ecotech Water Co.,Ltd.
20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Electronic Balance
Manufacturer : OHAUS Model : PA214
Serial No. : 8328380168 ID No. : INS013
Capacity : 210 g Resolution : 0.0001 g

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co.,Ltd.
Ambient Temperature : (25.2 to 26.4) °C
Relative Humidity : (57.3 to 62.6) %
Air Pressure : 1009.0 mbar

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 22 September 2025

Calibrated by : Akaradath Thippichai

Calibration Method : In-house method CAL-M2001 based on UKAS Publication ref : LAB 14
Edition 7 - November 2022

Reference Standard Instruments : This certification is traceable to the International System of Units

Standard Weights

ID No.	Cert. No.	Due Date	Traceability
E261-E2624	C02242009	07 Nov 2025	National Institute of Metrology (Thailand), (NIMT)

Approved by :

(Satja Sangkhun)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-200541-1

Page : 2 of 2

Result of Calibration : After Adjustment

UUC Condition As-Received : Good

Departure of indication from nominal value

Nominal Value (g)	Correction (g)	Uncertainty \pm (g)	Error before Adjustment (g)
0.01	0.0000	0.00012	0.0000
0.1	0.0001	0.00012	0.0000
1	0.0000	0.00013	0.0000
5	0.0000	0.00013	-0.0001
10	0.0000	0.00013	-0.0003
20	0.0000	0.00014	-0.0004
50	0.0001	0.00015	-0.0008
100	0.0001	0.00020	-0.0014
150	0.0001	0.00038	-0.0021
200	0.0001	0.00038	-0.0025

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

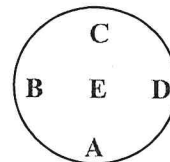
This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.06$, providing a level of confidence of approximately 95%

Eccentric error

Load test : 50 g

A B C D E

0.0003 0.0003 -0.0001 0.0001 0.0000 g



Repeatability

Load test : 200 g

Stdev. : 0.00005 g

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Certificate No. : HIT-2538-1768

Page : 1 of 2

CERTIFICATE OF CALIBRATION

Equipment	: COD Test Tube Heater	Serial No.	: 101450029111
Meter Model	: HI839150-02	Resolution	: 0.1 °C
Tube Heater Capacity	: 25 Vial Capacity	Temperature of Reaction	: 150°C
Temperature Range	: (20 to 160)°C	Made in	: Romania
Manufacturer	: Hanna Instruments	Reference	: RE251773
Condition As-Received	: Used Product	Relative Humidity	: (50 ± 15)% RH
Ambient Temperature	: (25 ± 2)°C		
Customer name	: Ecotech Water Systems Co., Ltd. 20 Soi Khaharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240		
Received date	: 15 September 2025		
Calibrate date	: 17 September 2025		
Issue date	: 19 September 2025		
Calibrated Location	: Hanna Instruments (Thailand) Ltd.		
Calibration Procedure	: This calibrator was conducted by using in-house: calibration procedure CP-04 by using certified reference standard instruments.		

Calibrated by : Mr. Panat Lumpa**Approved by :**

(Mr. Anan Suwanchaisakul)

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.

Condition of this calibration result :

Reference standard instrument : This Certification is traceable to the SI Unit maintained through:

Instrument	Model	Serial No.	Certificate No.	Traceable
Digital Thermo-Hygrometer	HT-771SD	AI.07155	25H171	Technology Promotion Association (Thailand-Japan).
Data Acquisition Switch Unit	34970A	MY44065265	WK2507-171-1	WK Electric Co., Ltd.

Calibration Result :

Measurement Temperature Source Accuracy for COD Reactor.

Capacity	Nominal Value	Average Value	Error	Uncertainty (\pm)
25 Vials	150.0 °C	150.8 °C	0.8 °C	0.59 °C

Unit : °C

(1A)	(2A)	(3A)	(4A)	(5A)
150.280	150.518	151.422	151.270	151.367
(1B)	(2B)	(3B)	(4B)	(5B)
151.786	151.278	150.947	151.487	151.049
(1C)	(2C)	(3C)	(4C)	(5C)
150.637	150.533	150.797	149.115	149.728
(1D)	(2D)	(3D)	(4D)	(5D)
150.883	151.239	150.902	150.788	151.864
(1E)	(2E)	(3E)	(4E)	(5E)
150.431	150.119	151.492	150.314	149.878

Figure: Shows the location of the temperature source.

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

**** End of certificate ****

Certificate of Calibration

Certificate No. : 68-400529-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Temperature controlled enclosure (Oven)

Manufacturer : Labtech

Model : LDO-080F

Range : N/A °C

Resolution : 0.1 °C

Serial No. : 081029024

ID No. : INS007

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (25.5 to 26.5) °C

Relative Humidity : (30 to 40) %

Line Voltage : (225.5 to 228.5) V

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : CAL-M4004, TLAS G-20

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units
Standard Digital Thermometer with Thermocouple probe

ID No.	Cert. No.	Due Date	Traceability
400046 & 400028	68-400148-3	01 Oct 2025	National Institute of Metrology Thailand (NIMT)

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400529-2

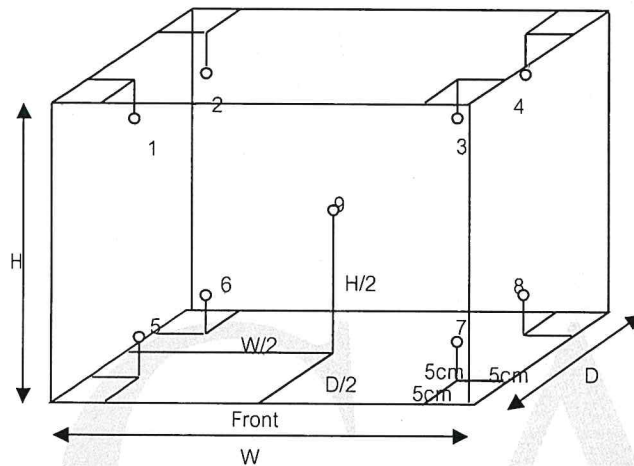
Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

This instrument was setting air ventilation at position 0 (close)



Inside of Chamber

W = 0.50 m

D = 0.40 m

H = 0.40 m

Capacity = 0.08 m³

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Temperature (°C) @ Sensor No.									Uncertainty (± °C)
			1	2	3	4	5	6	7	8	9	
104.0	104.0	104.0	104.1	103.7	104.1	104.1	104.0	103.8	103.9	105.2	104.7	2.0
180.0	180.0	180.0	178.4	178.1	178.4	179.1	178.2	178.2	178.4	181.9	180.8	4.0

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
104.0	104.0	104.0	1.4	1.6	4.0
180.0	180.0	180.0	4.6	3.2	9.4

Remark The uncertainty is not combine uniformity of the air chamber

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

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

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Certificate of Calibration



Equipment:	Cooled Incubator	Certificate No.:	CA2503100
Model:	BJPX-B400II	Issued Date:	09 September 2025
Serial No.(or ID):	KYP400II2010002	Job No.:	QT2025090019
Manufacturer:	BIOBASE	Page:	1 of 3
Condition:	Normal	Ventilation Valve:	None
Shelves(pc.):	4		

Customer: Ecotech Water Co.,Ltd.
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Environment Condition:

Temperature:	19.7	±	0.5	°C
Humidity:	56.5	±	1.1	%RH
Voltage:	231.7	±	0.5	VAC

Calibration Place: Ecotech Water Co.,Ltd. (Laboratory 4 (pH))
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Calibration By: Mr. Kriangsak Kalasri

Date Received: 09 September 2025

Calibration Date: 09 September 2025

The Method used: In house method, CA-WI-03, base on TLAS-G20

Traceability: This certificate is traceable to the SI Units maintained by National Institute of Metrology (NIMT), Thailand through Quality Reborn Co.,Ltd. Certificate No. QR25-0732

บริษัท แคลิอะเบิล จำกัด



(Mr. Kriangsak Kalasri)

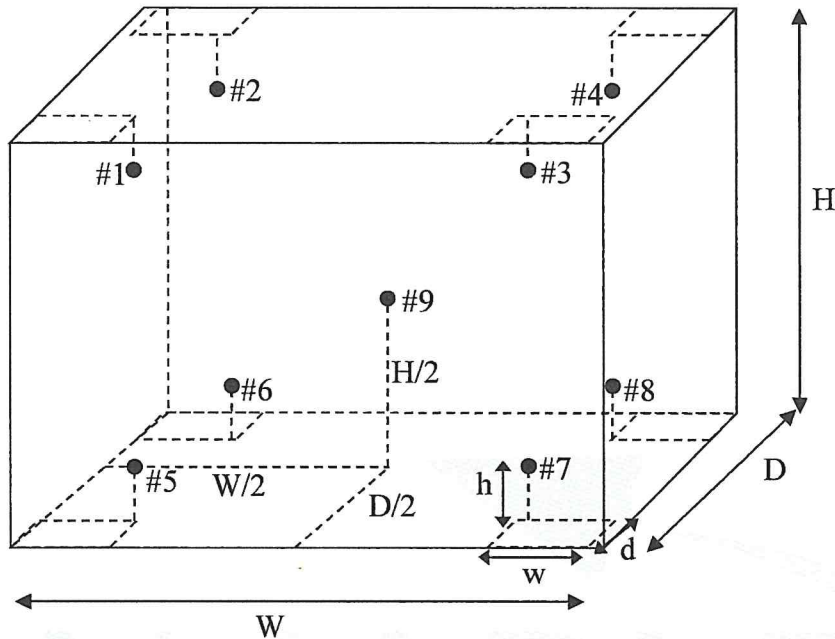
Approved By

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

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

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





Standard Installation Locations

Volume (Calibration Zone)= 123 (Liters)

Inside chamber: W = 80 (cm) D = 50 (cm) H = 60 (cm)

Standard Locations (#1, #2, #3, #4): w = 8 (cm) d = 5 (cm) h = 6 (cm)

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

#9: Geometric center of the chamber

Position of Std	#1	#2	#3	#4	#5	#6	#7	#8	#9
Channel of Logger	1	2	3	4	5	6	7	8	9

Definitions

Indicating Temperature: The average reading of indicating device which forms the integral part of the enclosure.

Measured Temperature: The average reading of standards at any positions or location.

Measured Uniformity: The maximum difference of measured temperatures between of any probes and the measured temperature at the reference location which are observed at same time or at close observation time as possible to determine the temperature pattern or homogeneity with the chamber at steady-state. The reference probe is preferably located in the geometric center of the chamber.

Measured Stability: The one-half of greatest maximum difference of measured temperatures at any one probe.

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



Calibration Results:
Without adjustment

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 20.1 °C

Locations	Measured Temperature (°C)	Correction of UUC. (°C)	Uncertainty (± °C)
#1	20.29	0.19	0.89
#2	20.17	0.07	0.90
#3	20.17	0.07	0.91
#4	20.01	-0.09	0.89
#5	20.04	-0.06	1.07
#6	20.03	-0.07	0.86
#7	19.96	-0.14	1.05
#8	19.96	-0.14	0.90
#9	20.00	-0.10	1.19

Temperature Distribution

Desired (°C)	Setting (°C)	Indicating (°C)	Measured Temperature at Spread Locations (°C)									Uncertainty (± °C)*
			#1	#2	#3	#4	#5	#6	#7	#8	#9	
20.0	20.0	20.1	20.29	20.17	20.17	20.01	20.04	20.03	19.96	19.96	20.00	1.19

Chamber Characterization

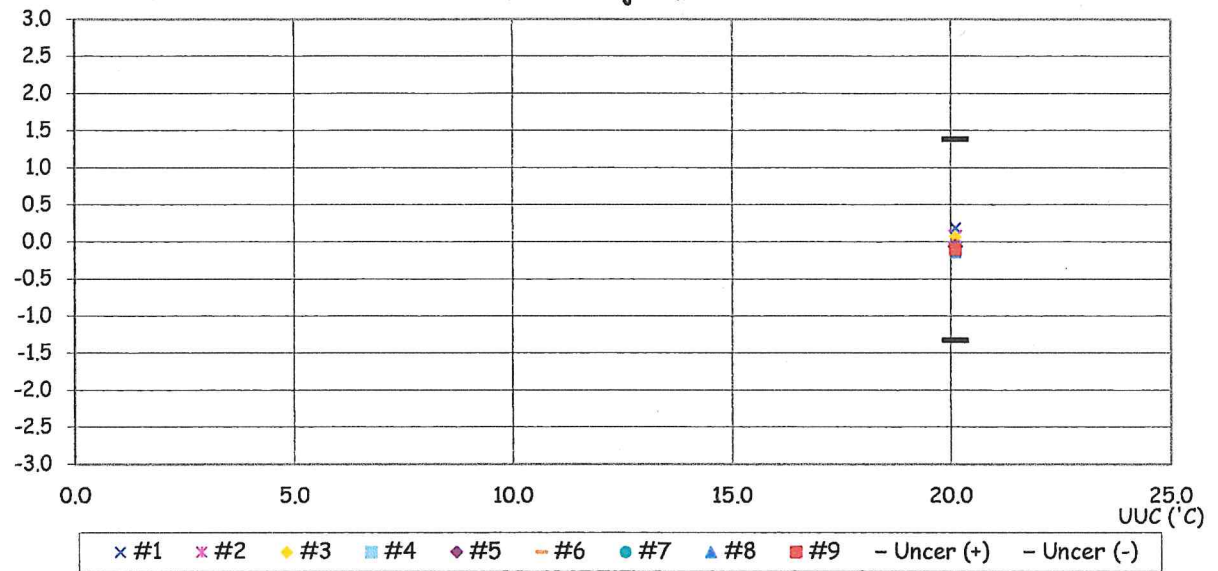
Indicating (°C)	Measured Uniformity (°C)	Measured Stability (± °C)	Overall Variation (°C)
20.1	0.87	0.87	1.79

Note: * Maximum uncertainty of the each position

The End of Certificate

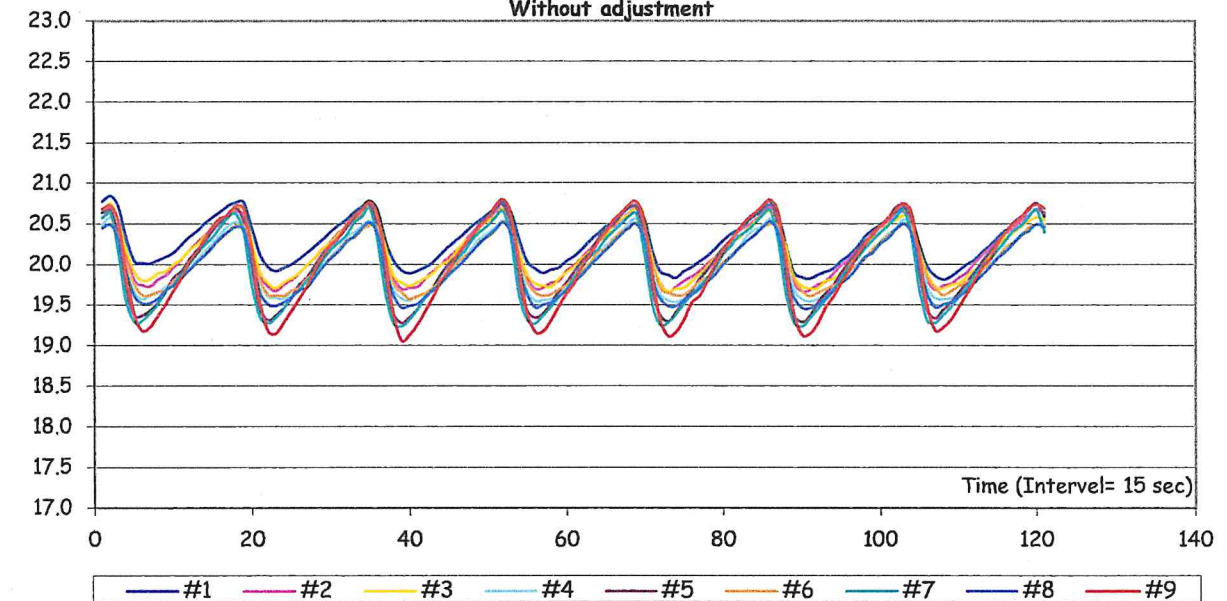

CA2503100

Without adjustment



CA2503100

Without adjustment



Certificate of Calibration



Equipment:	Cooled Incubator	Certificate No.:	CA2503076
Model:	BJPX-B400II	Issued Date:	29 August 2025
Serial No.(or ID):	KYP400II2310015	Job No.:	QT2025080038
Manufacturer:	BIOBASE	Page:	1 of 3
Condition:	Normal	Ventilation Valve:	None
Shelves(pc.):	4		

Customer: Ecotech Water Co.,Ltd.
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Environment Condition:

Temperature:	18.2	±	0.6	°C
Humidity:	44.0	±	0.6	%RH
Voltage:	233.1	±	0.9	VAC

Calibration Place: Ecotech Water Co.,Ltd. (Laboratory 5 (BOD))
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Calibration By: Mr. Todsapol Moolsruang

Date Received: 29 August 2025

Calibration Date: 29 August 2025

The Method used: In house method, CA-WI-03, base on TLAS-G20

Traceability: This certificate is traceable to the SI Units maintained by National Institute of Metrology (NIMT), Thailand through Quality Reborn Co.,Ltd. Certificate No. QR25-0732

บริษัท แคลิอะเบิล จำกัด



(Mr. Kriangsak Kalasri)

Approved By

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

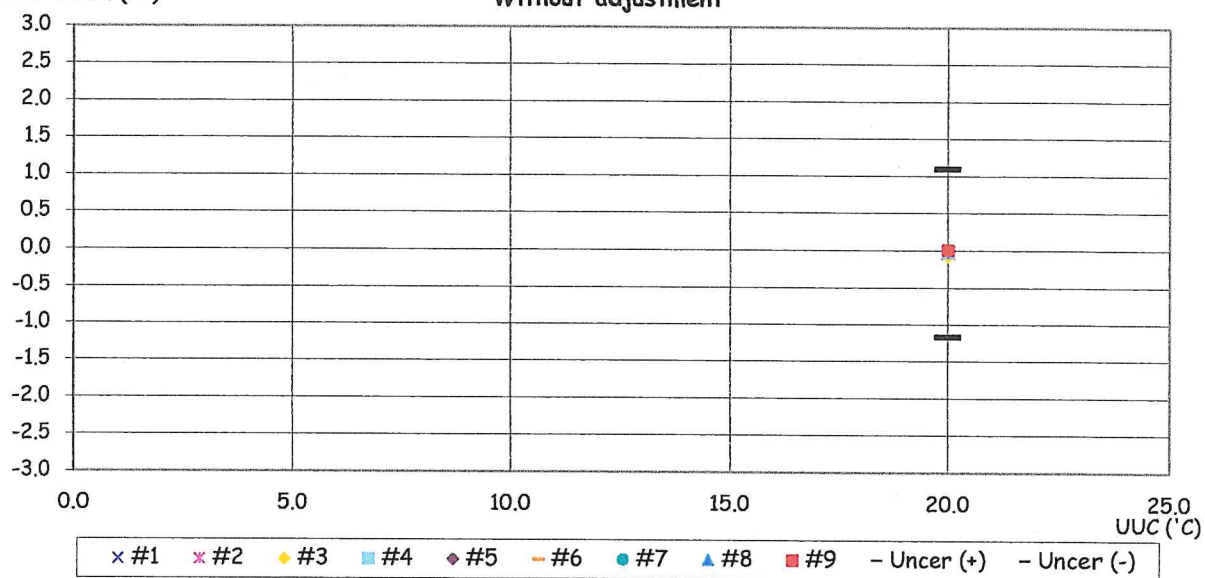
The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor ($k=2$) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM).

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



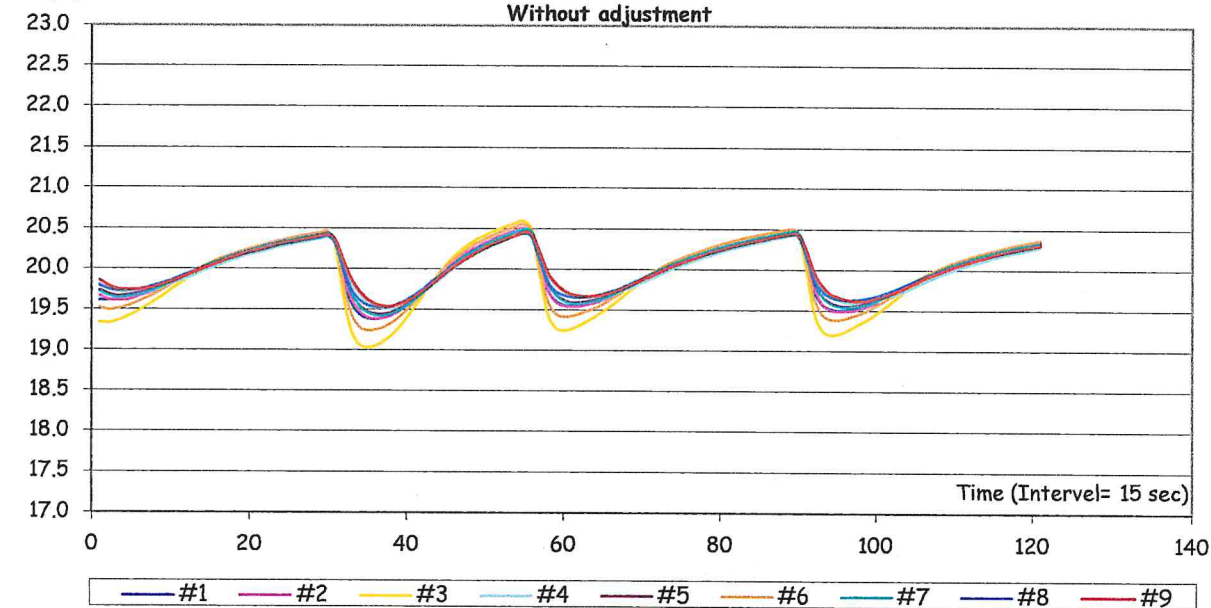
CA2503076

Without adjustment



CA2503076

Without adjustment



Certificate of Calibration



Equipment:	Cooled Incubator	Certificate No.:	CA2503076
Model:	BJPX-B400II	Issued Date:	29 August 2025
Serial No.(or ID):	KYP400II2310015	Job No.:	QT2025080038
Manufacturer:	BIOBASE	Page:	1 of 3
Condition:	Normal	Ventilation Valve:	None
Shelves(pc.):	4		

Customer: Ecotech Water Co.,Ltd.
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Environment Condition:

Temperature:	18.2	±	0.6	°C
Humidity:	44.0	±	0.6	%RH
Voltage:	233.1	±	0.9	VAC

Calibration Place: Ecotech Water Co.,Ltd. (Laboratory 5 (BOD))
20 Soi Kheharomklao 74 Yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Calibration By: Mr. Todsapol Moolsruang

Date Received: 29 August 2025

Calibration Date: 29 August 2025

The Method used: In house method, CA-WI-03, base on TLAS-G20

Traceability: This certificate is traceable to the SI Units maintained by National Institute of Metrology (NIMT), Thailand through Quality Reborn Co.,Ltd. Certificate No. QR25-0732

บริษัท แคลิอะเบิล จำกัด



(Mr. Kriangsak Kalasri)

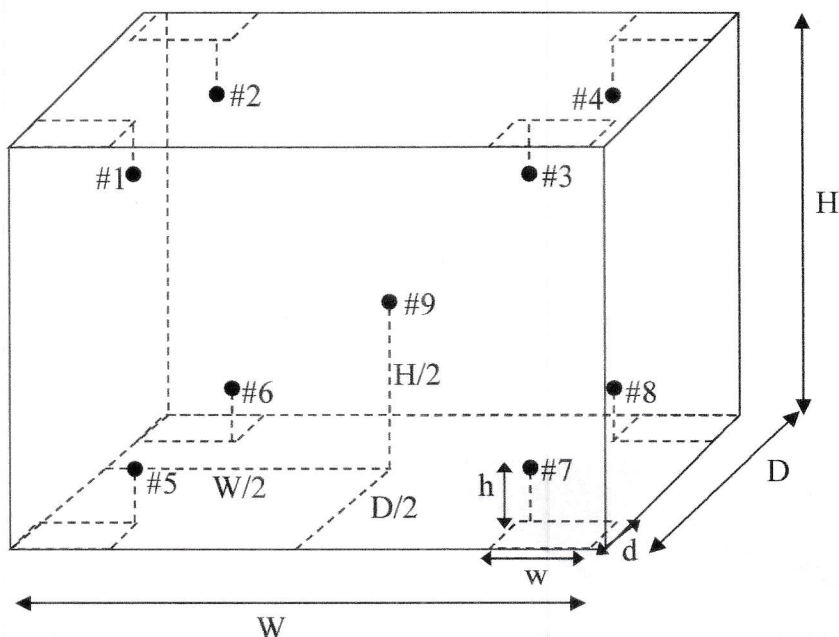
Approved By

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

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

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





Standard Installation Locations

Volume (Calibration Zone)= 194 (Liters)

Inside chamber: W = 58 (cm) D = 55 (cm) H = 128 (cm)

Standard Locations (#1, #2, #3, #4): w = 6 (cm) d = 6 (cm) h = 15 (cm)

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

#9: Geometric center of the chamber

Position of Std	#1	#2	#3	#4	#5	#6	#7	#8	#9
Channel of Logger	1	2	3	4	5	6	7	8	9

Definitions

Indicating Temperature: The average reading of indicating device which forms the integral part of the enclosure.

Measured Temperature: The average reading of standards at any positions or location.

Measured Uniformity: The maximum difference of measured temperatures between of any probes and the measured temperature at the reference location which are observed at same time or at close observation time as possible to determine the temperature pattern or homogeneity with the chamber at steady-state. The reference probe is preferably located in the geometric center of the chamber.

Measured Stability: The one-half of greatest maximum difference of measured temperatures at any one probe.

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



Calibration Results:
Without adjustment

Measurement Temperature at Spread Locations, Indicating of Unit Under Calibration: 20.0 °C

Locations	Measured Temperature (°C)	Correction of UUC. (°C)	Uncertainty (± °C)
#1	19.98	-0.02	0.91
#2	19.98	-0.02	0.91
#3	19.92	-0.08	1.09
#4	19.98	-0.02	0.84
#5	20.00	0.00	0.88
#6	19.97	-0.03	0.98
#7	20.00	0.00	0.89
#8	20.00	0.00	0.83
#9	20.01	0.01	0.83

Temperature Distribution

Desired (°C)	Setting (°C)	Indicating (°C)	Measured Temperature at Spread Locations (°C)									Uncertainty (± °C)*
			#1	#2	#3	#4	#5	#6	#7	#8	#9	
20.0	20.0	20.0	19.98	19.98	19.92	19.98	20.00	19.97	20.00	20.00	20.01	1.09

Chamber Characterization

Indicating (°C)	Measured Uniformity (°C)	Measured Stability (± °C)	Overall Variation (°C)
20.0	0.66	0.78	1.56

Note: * Maximum uncertainty of the each position

The End of Certificate


Certificate of Calibration

Certificate No. : 68-430031-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Conductivity meter with probe

Manufacturer : Eutech Model : PC 450

Serial No. : 2535550 ID No. : N/A

Electrode

Model : N/A Serial No. : CONSEN91W 141

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature (22.0 to 23.5) ° C

Relative Humidity (40 to 50) %

Date of Received : 20 September 2025

Date of Calibration : 24 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : In-house method CAL-M4301 direct measurement by conductivity buffer solution

Reference Standard Instruments : This certification is traceable to the International System of Units

Standard Buffer Solution

Material	Lot No.	Exp. Date	Traceability
84 µS/cm	0300	01 June 2027	National Institute of Standards and Technology (NIST), U.S.A., S.R.M.
1413.1 µS/cm	1081106	28 February 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
12.881 mS/cm	1081107	11 March 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-430031-1

Page : 2 of 2

Result of Calibration :

UUC Condition As-Received : Good

Function : Conductivity measurement

Before Adjustment

Standard Conductivity Solution	UUC Reading	Correction	Uncertainty (±)	Unit
84*	95.00	-11.00	1.1	μS/cm
1413	1238	175	9.0	μS/cm
12.88	13.04	-0.16	0.082	mS/cm

After Adjustment : at 84, 1413 μS/cm 12.880 mS/cm

Standard Conductivity Solution	UUC Reading	Correction	Uncertainty (±)	Unit
84*	84.00	0.00	1.1	μS/cm
1413	1413	0	9.0	μS/cm
12.88	12.88	0.00	0.082	mS/cm

Remark

UUC : Unit Under Calibration

* This parameter are out of accreditation's scope.

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

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

- ๐0๐ -



Certificate of Calibration

Certificate No. : 68-420086-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : pH Meter with electrode

pH meter

Manufacturer : Eutech

Model : PC 450

Range : N/A pH

Resolution : 0.01 pH

Serial No. : 2535550

ID No. : N/A

Electrode

Model : ECFC7252201B

Serial No. : 01X099323 172

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (22.0 to 23.5)° C

Relative Humidity : (40 to 50) %

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : In-house method CAL-M4201 direct measurement by using standard voltage calibrator and using certified reference material (CRM)

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Multiproduct Calibrator

ID No.	Cert. No.	Due Date	Traceability
400005	SG-E-00231/68	20 Aug 2027	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.007	61314276	1081108	28 Feb 2027	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.965	61318175	1081110	28 Feb 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
10.010	61325043	1081109	28 Feb 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :

(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-420086-1

Page : 2 of 2

Result of Calibration :

UUC Condition As-Received : Good

Function : Electrical measurement

pH meter

Performing standard curve by Multiproduct Calibrator at pH (4,7,10)

Adjustment Curve at nominal pH	Applied Voltage (mV)	Nominal Value (pH)	UUC Reading		Correction (mV)	Uncertainty (± mV)
			(pH)	(mV)		
4, 7, 10	177.4800	4	4.00	177.5	0.0	0.12
	0.0000	7	7.02	0.0	0.0	0.086
	-177.4800	10	10.00	-177.5	0.0	0.12

Function : pH meter with electrode

Performing a three - buffer standard curve using buffer nominal pH (4,7,10)

Adjustment Curve at nominal pH	Standard Buffer (pH)	UUC Reading (pH)	Correction (pH)	Uncertainty (± pH)
4, 7, 10	4.007	4.01	0.00	0.0097
	6.965	7.00	-0.03	0.011
	10.010	10.01	0.00	0.014

Remark

UUC : Unit Under Calibration

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

This reported uncertainty of measurment was based on a standard uncertainty multiplied by a coverage factor $k = 2$,
providing a level of confidence of approximately 95%

- o0o -



Certificate of Calibration

Certificate No. : 68-400530-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.
20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Temperature Indicator with Thermistor Probe
Temperature Indicator

Manufacturer :	Eutech	Model :	PC 450
Range :	N/A °C	Resolution :	0.1 °C
Serial No. :	2535550	ID No. :	N/A
Thermistor probe			
Model :	N/A	Sheath Material :	Stainless
Diameter :	3.5 mm.	Length :	100 mm.
Serial No. :	CONSEN91W 141	ID No. :	N/A

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature :	(21.5 to 22.5) °C
Relative Humidity :	(40 to 50) %
Line Voltage :	(225.0 to 225.9) VAC

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 25 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4003 by compared with PRT in the liquid bath at the constant controlled temperature.

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Platinum Resistance Thermometer (PRT)

ID No.	Cert. No.	Due Date	Traceability
400016	TT-1019-25	13 May 2027	National Institute of Metrology Thailand (NIMT)

2. Standard Digital Thermometer

ID No.	Cert. No.	Due Date	Traceability
400033	24E633	21 Feb 2026	National Institute of Metrology Thailand (NIMT)

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400530-1

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

Immersion Depth (mm.)	Standard Reading (° C)	UUC Reading (° C)	Correction (° C)	Uncertainty (± ° C)
100	20.003	20.0	0.0	0.19
100	25.002	25.0	0.0	0.19
100	30.004	30.0	0.0	0.19

Remark

UUC : Unit Under Calibration

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

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

- ๐0๐ -



Certificate of Calibration

Certificate No. : 68-400530-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.
20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Temperature Indicator with Thermistor Probe
Temperature Indicator

Manufacturer :	Eutech	Model :	PC 700
Range :	N/A °C	Resolution :	0.1 °C
Serial No. :	3082600	ID No. :	N/A
Thermistor probe			
Model :	N/A	Sheath Material :	Stainless
Diameter :	3.5 mm.	Length :	100 mm.
Serial No. :	CONSEN9501D 028	ID No. :	N/A

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature :	(21.5 to 22.5) °C
Relative Humidity :	(40 to 50) %
Line Voltage :	(225.0 to 225.9) VAC

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 25 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4003 by compared with PRT in the liquid bath at the constant controlled temperature.

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Platinum Resistance Thermometer (PRT)

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400016	TT-1019-25	13 May 2027	National Institute of Metrology Thailand (NIMT)

2. Standard Digital Thermometer

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400033	24E633	21 Feb 2026	National Institute of Metrology Thailand (NIMT)

Approved by :

(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400530-2

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

Immersion Depth (mm.)	Standard Reading (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (± °C)
100	20.005	20.3	-0.3	0.19
100	25.006	25.3	-0.3	0.19
100	30.002	30.3	-0.3	0.19

Remark

UUC : Unit Under Calibration

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-420086-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : pH Meter with electrode

pH meter

Manufacturer : Eutech

Model : PC 700

Range : N/A pH

Resolution : 0.01 pH

Serial No. : 3082600

ID No. : N/A

Electrode

Model : ECFC7252201B

Serial No. : 2404252231

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (22.0 to 23.5)° C

Relative Humidity : (40 to 50) %

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permon Chanpu

Calibration Method : In-house method CAL-M4201 direct measurement by using standard voltage calibrator and using certified reference material (CRM)

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Multiproduct Calibrator

ID No.	Cert. No.	Due Date	Traceability
400005	SG-E-00231/68	20 Aug 2027	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.007	61314276	1081108	28 Feb 2027	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.965	61318175	1081110	28 Feb 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
10.010	61325043	1081109	28 Feb 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :



(Permon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-420086-2

Page : 2 of 2

Result of Calibration :

UUC Condition As-Received : Good

Function : Electrical measurement

pH meter

Performing standard curve by Multiproduct Calibrator at pH (4,7,10)

Adjustment Curve at nominal pH	Applied Voltage (mV)	Nominal Value (pH)	UUC Reading		Correction (mV)	Uncertainty (± mV)
			(pH)	(mV)		
4, 7, 10	177.4800	4	4.00	177.4	0.1	0.12
	0.0000	7	7.00	0.1	-0.1	0.086
	-177.4800	10	10.00	-177.4	-0.1	0.12

Function : pH meter with electrode

Performing a three - buffer standard curve using buffer nominal pH (4,7,10)

Adjustment Curve at nominal pH	Standard Buffer (pH)	UUC Reading (pH)	Correction (pH)	Uncertainty (± pH)
4, 7, 10	4.007	4.01	0.00	0.0097
	6.965	7.00	-0.03	0.011
	10.010	10.01	0.00	0.014

Remark

UUC : Unit Under Calibration

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-430031-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Conductivity meter with probe

Manufacturer : Eutech Model : PC 700

Serial No. : 3082600 ID No. : N/A

Electrode

Model : N/A Serial No. : CONSEN9501D 028

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature (22.0 to 23.5) ° C

Relative Humidity (40 to 50) %

Date of Received : 20 September 2025

Date of Calibration : 24 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : In-house method CAL-M4301 direct measurement by conductivity buffer solution

Reference Standard Instruments : This certification is traceable to the International System of Units

Standard Buffer Solution

Material	Lot No.	Exp. Date	Traceability
84 µS/cm	0300	01 June 2027	National Institute of Standards and Technology (NIST), U.S.A., S.R.M.
1413.1 µS/cm	1081106	28 February 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
12.881 mS/cm	1081107	11 March 2026	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-430031-2

Page : 2 of 2

Result of Calibration :

UUC Condition As-Received : Good

Function : Conductivity measurement

Before Adjustment

Standard Conductivity Solution	UUC Reading	Correction	Uncertainty (±)	Unit
84*	90.2	-6.2	1.1	μS/cm
1413	1402	11	9.0	μS/cm
12.88	12.56	0.32	0.082	mS/cm

After Adjustment : at 84, 1413 μS/cm 12.880 mS/cm

Standard Conductivity Solution	UUC Reading	Correction	Uncertainty (±)	Unit
84*	84.0	0.0	1.1	μS/cm
1413	1413	0	9.0	μS/cm
12.88	12.88	0.00	0.082	mS/cm

Remark

UUC : Unit Under Calibration

* This parameter are out of accreditation's scope.

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-400529-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Temperature controlled enclosure (Refrigerator)

Manufacturer : Every Digital

Model : N/A

Range : N/A °C

Resolution : 0.1 °C

Serial No. : ASS1001

ID No. : INS005

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (21.5 to 22.5) °C

Relative Humidity : (40 to 50) %

Line Voltage : (225.0 to 226.5) V

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : CAL-M4004, TLAS G-20

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

Standard Digital Thermometer with RTD Probe

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400046 & 400047	68-400410-2	26 Jan 2026	National Institute of Metrology Thailand (NIMT)

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400529-1

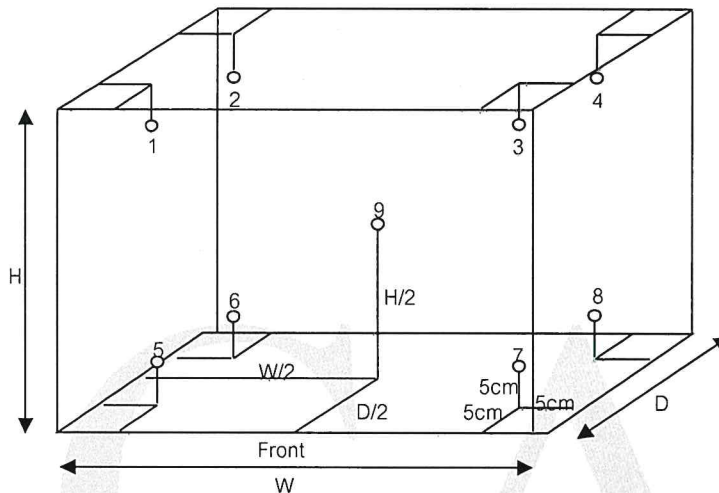
Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

This instrument was setting air ventilation at position 0 (close)



Inside of Chamber
 W = 1.00 m
 D = 0.50 m
 H = 1.35 m
 Capacity = 0.68 m³

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Temperature (°C) @ Sensor No.									Uncertainty (± °C)
			1	2	3	4	5	6	7	8	9	
4.0	3.0	3.0	5.13	4.92	5.20	4.77	4.94	4.45	4.62	4.79	4.53	0.74

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
4.0	3.0	3.0	0.72	0.39	1.34

Remark The uncertainty is not combine uniformity of the air chamber

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-400529-4

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Temperature controlled enclosure (Refrigerator)

Manufacturer : S-Cool

Model : N/A

Range : N/A °C

Resolution : 1 °C

Serial No. : Eco-Ins14

ID No. : N/A

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Co., Ltd.

Ambient Temperature : (21.5 to 22.5) °C

Relative Humidity : (40 to 50) %

Line Voltage : (225.0 to 226.5) V

Date of Received : 20 September 2025

Date of Calibration : 20 September 2025

Date of Issue : 24 September 2025

Calibrated by : Permpon Chanpu

Calibration Method : CAL-M4004, TLAS G-20

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units
Standard Digital Thermometer with RTD Probe

ID No.	Cert. No.	Due Date	Traceability
400046 & 400042	68-400410-1	25 Jan 2026	National Institute of Metrology Thailand (NIMT)

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400529-4

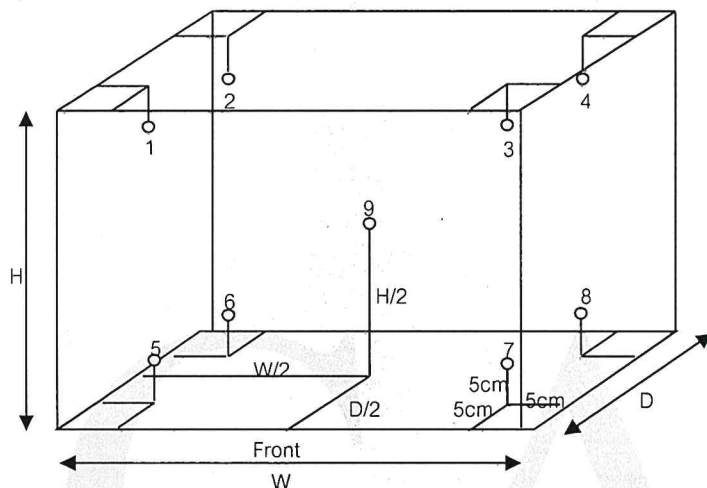
Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

This instrument was setting air ventilation at position 0 (close)



Inside of Chamber

W = 1.02 m

D = 0.44 m

H = 1.30 m

Capacity = 0.58 m³

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Temperature (°C) @ Sensor No.									Uncertainty (± °C)
			1	2	3	4	5	6	7	8	9	
4	3	3	4.64	4.22	4.44	4.28	4.62	4.30	4.10	3.99	3.95	1.3

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
4	3	3	1.23	0.66	1.64

Remark The uncertainty is not combine uniformity of the air chamber

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

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

- oOo -





Bangkok High Lab Co.,Ltd.

4/176 Soi Ladplakao 66, Ladplakao Rd., Anusawari, Bangkhen, Bangkok 10220

Tel: (662) 971-5800

Fax: (662) 971-5300

Website: www.bangkokhighlab.com

E-mail: info@bangkokhighlab.com



CERTIFICATE OF CALIBRATION

Certificate No : S2025/091

Page : 1/5

Order No : 147/2025

Customer : Ecotech Water Co.,Ltd
Address : 20 Kheha Rom Klao 74 Yeak 6, Ratphatthana, Saphansung, Bangkok 10240
Instrument : UV/VIS spectrophotometer
Manufacture : Rayleigh
Model : VIS-723G
Serial Number : 00080889
Environment : Temperature (27.8 - 27.2) °C
: Humidity (45 - 44) %RH
Received Date : May 23, 2025
Calibration Date : May 23, 2025
Issued Date : May 27, 2025
Calibrate Status : No Adjustment
Calibration Area : Customer area
Roomname : Laboratory Room of Ecotech Water Co.,Ltd

Calibrated By : Pacharapol
(Mr. Pacharapol Kwanbang)

Calibration Engineer

Approved By : [Signature]
(Mr. Wanchai Meesiri)

Manager

This calibration certificate shall not be reproduced other than in full except with the prior written approval of the Bangkok High Lab Co.,Ltd.



Certificate No : S2025/091

Page : 2/5

1. Photometric Accuracy

CRMs: Neutral Density Glass Filters

CRMs Serial Number: 10563

Traceability: Traceable to NIST, U.S.A. through Neutral density filters NIST SRM 930e & 1930, Double Aperture method through Starna certificate report no.113594

Spectral slit width : 2.00 nm

1.1 Reading scale at 420.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5604	0.561	-0.0006	0.0044
1.0723	1.075	-0.0027	0.0038
2.1753	2.180	-0.0047	0.0064

1.2 Reading scale at 440.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5503	0.550	0.0003	0.0040
1.0467	1.047	-0.0003	0.0040
2.1117	2.116	-0.0043	0.0064

1.3 Reading scale at 465.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.4996	0.499	0.0006	0.0034
0.9649	0.964	0.0009	0.0040
1.9646	1.969	-0.0044	0.0060

1.4 Reading scale at 546.1 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5136	0.514	-0.0004	0.0028
0.9765	0.976	0.0005	0.0028
1.9848	1.985	-0.0002	0.0064



Certificate No : S2025/091

Page : 3/5

1.5 Reading scale at 590.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5424	0.541	0.0014	0.0029
1.0130	1.011	0.0020	0.0029
2.0238	2.026	-0.0022	0.0061

1.6 Reading scale at 635.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5265	0.528	-0.0015	0.0030
0.9667	0.967	-0.0003	0.0031
1.9145	1.919	-0.0045	0.0062

2. Photometric Accuracy

CRMs: Potassium Dichromate in Perchloric acid

CRMs Serial Number: 132023

Blank Serial Number: 128038

Traceability: Traceable to NIST, U.S.A. through crystalline potassium dichromate NIST SRM 935a through Starna certificate report no.120920

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
235	0.0000	#N/A	#N/A	#N/A
	0.7351	#N/A	#N/A	#N/A
257	0.0000	#N/A	#N/A	#N/A
	0.8564	#N/A	#N/A	#N/A
313	0.0000	#N/A	#N/A	#N/A
	0.2855	#N/A	#N/A	#N/A
350	0.0000	#N/A	#N/A	#N/A
	0.6363	#N/A	#N/A	#N/A



Bangkok High Lab Co.,Ltd.

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**NSC-TISI-TIS 17025
CALIBRATION 0366**

Certificate No : S2025/091

Page : 4/5

3. Wavelength Accuracy

Spectral slit width : 2.00 nm

3.1 CRMs: Holmium Glass Filter

CRMs Serial Number: 10763

Traceability Traceable to NIST Holmium oxide filter NIST SRM 2034, through Starna certificate report no. 113607

Filter STDs (nm) Certificate	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
241.74	#N/A	#N/A	#N/A
279.44	#N/A	#N/A	#N/A
287.98	#N/A	#N/A	#N/A
334.10	333.6	0.50	0.12
361.00	360.2	0.80	0.12
418.61	418.0	0.61	0.12
453.63	452.8	0.83	0.12
460.05	459.2	0.85	0.12
536.66	535.8	0.86	0.12
637.98	637.2	0.78	0.12

3.2 CRMs: Didymium Glass Filter

CRMs Serial Number: 10764

Traceability Traceable to NIST Didymium filter NIST SRM 2034, through Starna certificate report no. 113608

Filter STDs (nm) Certificate	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
585.29	584.8	0.49	0.12
684.49	684.0	0.49	0.12
740.18	739.6	0.58	0.12
748.48	748.8	-0.32	0.12
807.03	806.6	0.43	0.12
879.27	878.6	0.67	0.12



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E-mail: info@bangkokhighlab.com



Certificate No : S2025/091

Page : 5/5

4. *Stray Light

CRMs: Potassium Chloride aqueous solution

CRMs Serial Number: 14912

Blank Serial Number: 14958

Traceability Traceable to NIST, U.S.A. potassium chloride NIST SRM2032, through Starna certificate report no.113597

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate	Average Measured
201.13	>2A	#N/A
201.13	<1%T	#N/A

5. *Spectral Resolution

CRMs: Toluene in Hexane

CRMs Serial Number: 14812

Blank Serial Number: 14803

Traceability Traceable to toluene in hexane NIST SRM2034,through Starna certificate report no. 113598

Spectral slit width (nm)	Abs Ratio
0.5	#N/A
1.0	#N/A
1.5	#N/A
2.0	#N/A
3.0	#N/A

Note : * "Not TISI Accredited" in this certificate have been included for completeness

Remark: 1 Calibrate Method

1.1 Photometric and Wavelength accuracy: In-house method W-SER-001 based on ASTM E925-02 and ASTM E275-01

1.2 Stray light: Measuring the CRMs in both absorbance and transmittance unit at wavelength 201.23 nm. Base on European Pharmacopoeia V.6.19.3 1984

1.3 Spectral resolution: Measuring the CRMs. The maximum absorbance values were read at closest to 268.7nm and the minimum absorbance values were read at closest 267.0 nm. Refer to European Pharmacopoeia V.6.19.3 1984

2. N/A = not available.

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

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

5. This report will certify of calibrated equipment only.

- End of Report -

Certificate of Calibration

Certificate No. : 68-410138-3

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Thermo-Hygrometer

Manufacturer : N/A

Model : HTC-2

Range Temperature : N/A °C

Resolution : 0.1 °C

Range Humidity : N/A %R.H.

Resolution : 1 %R.H.

Serial No. : N/A

ID No. : 66-410106-3

Environment : Ambient Temperature : $(23 \pm 2) ^\circ \text{C}$

Relative Humidity : $(50 \pm 15) \%$

Date of Received : 20 September 2025

Date of Calibration : 22 September to 23 September 2025

Date of Issue : 23 September 2025

Calibrated by : Chortip Samchusri

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4013 by compared with standard probe sensor humidity/temperature into humidity/temperature chamber.

Reference Standard Instruments : This certification is traceable to the International System of Units

Digital Indicator with Standard Probe Temp&Hum

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400034 & 400036	SG-H-00599/68	02 Jan 2026	Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-410138-3

Page : 2 of 2

UUC Condition As-Received : Good

Result of Calibration : Without Adjustment

Function : Temperature measurement (Mode : In)

Reference Humidity @ 50 %R.H.

Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (± °C)
20.03	20.8	-0.8	0.46
25.01	25.6	-0.6	0.46
30.02	30.6	-0.6	0.46

Result of Calibration : Without Adjustment

Function : Humidity measurement

Reference Temperature @ 25 °C

Standard Humidity (%R.H.)	UUC Reading (%R.H.)	Correction (%R.H.)	Uncertainty (± %R.H)
40.00	38	2	2.2
50.01	45	5	2.2
60.00	51	9	2.3

Remark

UUC : Unit Under Calibration

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-410138-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomkiao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Thermo-Hygrometer

Manufacturer : Digicon

Model : TH-03A

Range Temperature : -10 °C to 50 °C

Resolution : 0.1 °C

Range Humidity : 20 %R.H. to 99 %R.H.

Resolution : 1 %R.H.

Serial No. : 365051554

ID No. : N/A

Environment : Ambient Temperature : (23 ± 2) °C

Relative Humidity : (50 ± 15) %

Date of Received : 20 September 2025

Date of Calibration : 22 September to 23 September 2025

Date of Issue : 23 September 2025

Calibrated by : Chortip Samchusri

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4013 by compared with standard probe sensor humidity/temperature into humidity/temperature chamber.

Reference Standard Instruments : This certification is traceable to the International System of Units

Digital Indicator with Standard Probe Temp&Hum

ID No.

Cert. No.

Due Date

Traceability

400034 & 400036

SG-H-00599/68

02 Jan 2026

Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268

Approved by :



(Permpoon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-410138-2

Page : 2 of 2

UUC Condition As-Received : Good

Result of Calibration : Without Adjustment

Function : Temperature measurement (Mode : In)

Reference Humidity @ 50 %R.H.

Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (± °C)
20.01	20.2	-0.2	0.46
25.02	25.1	-0.1	0.46
30.01	29.6	0.4	0.46

Result of Calibration : Without Adjustment

Function : Humidity measurement

Reference Temperature @ 25 °C

Standard Humidity (%R.H.)	UUC Reading (%R.H.)	Correction (%R.H.)	Uncertainty (± %R.H.)
39.99	37	3	2.2
49.99	47	3	2.2
59.98	57	3	2.3

Remark

UUC : Unit Under Calibration

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

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

- o0o -



Certificate of Calibration

Certificate No. : 68-410138-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Thermo-Hygrometer

Manufacturer : Digicon

Model : TH-03A

Range Temperature : -10 °C to 50 °C Resolution : 0.1 °C

Range Humidity : 20 %R.H. to 99 %R.H. Resolution : 1 %R.H.

Serial No. : 365052106

ID No. : N/A

Environment : Ambient Temperature : (23 ± 2) °C

Relative Humidity : (50 ± 15) %

Date of Received : 20 September 2025

Date of Calibration : 22 September to 23 September 2025

Date of Issue : 23 September 2025

Calibrated by : Chortip Samchusri

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4013 by compared with standard probe sensor humidity/temperature into humidity/temperature chamber.

Reference Standard Instruments : This certification is traceable to the International System of Units

Digital Indicator with Standard Probe Temp&Hum

ID No.	Cert. No.	Due Date	Traceability
400034 & 400036	SG-H-00599/68	02 Jan 2026	Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268

Approved by :



(Permpon Chanpu)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-410138-1

Page : 2 of 2

UUC Condition As-Received : Good

Result of Calibration : Without Adjustment

Function : Temperature measurement (Mode : In)

Reference Humidity @ 50 %R.H.

Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (± °C)
20.00	20.3	-0.3	0.46
25.01	25.2	-0.2	0.46
30.02	29.8	0.2	0.46

Result of Calibration : Without Adjustment

Function : Humidity measurement

Reference Temperature @ 25 °C

Standard Humidity (%R.H.)	UUC Reading (%R.H.)	Correction (%R.H.)	Uncertainty (± %R.H.)
39.98	38	2	2.2
50.00	48	2	2.2
60.00	58	2	2.3

Remark

UUC : Unit Under Calibration

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

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

- o0o -





Certificate of Calibration

Certificate No.: WK2509-404-143

Page 1 of 2

Customer : Ecotech Water Co., Ltd.
20 Soi Kheharomklao 74 yaek 6, Ratphatthana,
Saphansung, Bangkok 10240

Instrument	: BLOCK Digesto	Ambient Temperature	: (25 ± 2) °C
Manufacturer	: BIOBASE	Humidity	: (50 ± 15) %RH
Model	: BKD-88	Received Date	: 25-Sep-25
Serial No.	: XZL8B-202108-116	Calibrated Date	: 27-Sep-25
Identity No.	: N/A	Issued Date	: 27-Sep-25
Range	: 380 °C	Calibrated Location	: In Lab
Resolution	: 1 °C		
Calibration Method	: CP-WK-T11		

Reference standard instruments :

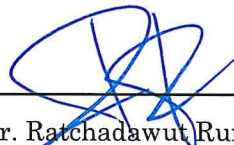
<u>Instrument</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>	<u>Traceability to</u>
Data Acquisition / Switch Unit	MY41115060	WK2503-300-8	1-Mar-26	WK Electric Co., Ltd.

This result calibrate was found accurate as shown on date and place of calibrate only
This certificate is traceability to the International System of Unit (SI)

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

Calibrated by : Ms. Usa Phuangphiphat

Approved by :


Mr. Ratchadawut Rungravee
Authorized Signatory

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Calibration Results

Certificate No. : WK2509-404-143

Page 2 of 2

Calibration Result of the Accuracy

Function : Temperature Measurement

Range : 380 °C

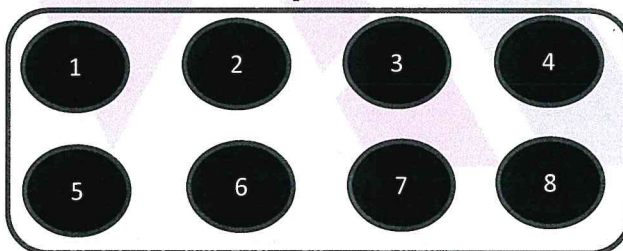
Resolution : 1 °C

Unit : °C

channel	Set Point	Average STD Reading	Error	Uncertainty (± °C)
1	380	380.33	-0.33	1.2
2	380	380.48	-0.48	1.2
3	380	380.43	-0.43	1.2
4	380	380.53	-0.53	1.2
5	380	380.59	-0.59	1.2
6	380	380.54	-0.54	1.2
7	380	380.60	-0.60	1.2
8	380	380.55	-0.55	1.2

Measurement Zone : Measurement at four position on the heater.

Top View



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**** End of Certificate****

Certificate of Calibration

Certificate No. : 68-300672-1

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Burette

Manufacturer : WERTLAB

Class : A

Capacity : 10 ml

Graduation : 0.02 ml

ID No. : BU10/01/21

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.5 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Wipa Tovadee

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241003	68-200298-2	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-1

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Delivery Time : 40.68 sec.

Nominal Volume (ml)	Measuring Volume (ml)
2	2.0018
5	5.0025
10	10.0050

Uncertainty of measurement with in \pm 0.0039 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

- oOo -



Certificate of Calibration

Certificate No. : 68-300672-2

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Burette

Manufacturer : Witeg

Class : A

Capacity : 25 ml

Graduation : 0.05 ml

ID No. : BU25/01/25

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.4 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Wipa Tovadee

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241003	68-200298-2	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-2

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Delivery Time : 39.25 sec.

Nominal Volume (ml)	Measuring Volume (ml)
5	5.0137
15	15.0102
25	25.0156

Uncertainty of measurement with in \pm 0.0066 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

- o0o -




Certificate of Calibration

Certificate No. : 68-300672-3

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Burette

Manufacturer : TS

Class : A

Capacity : 50 ml

Graduation : 0.1 ml

ID No. : BU50/01/19

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1006.2 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Wipa Tovadee

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.

Cert. No.

Due Date

Traceability

241003

68-200298-2

02 Dec 2025

National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-3

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Delivery Time : 42.26 sec.

Nominal Volume (ml)	Measuring Volume (ml)
10	10.0152
25	24.9994
50	50.0157

Uncertainty of measurement with in \pm 0.011 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-4

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Measuring Pipette

Manufacturer : Witeg

Class : A

Capacity : 5 ml

Graduation : 0.05 ml

ID No. : MP5/01/25

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.2 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Areerat Sombun

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241005	68-200298-4	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-4

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Delivery Time : 7.00 sec.

Nominal Volume (ml)	Measuring Volume (ml)
1	1.0098
2.5	2.5065
5	4.9865

Uncertainty of measurement with in \pm 0.0027 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

- o0o -



Certificate of Calibration

Certificate No. : 68-300672-5

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Measuring Pipette

Manufacturer : HBG

Class : A

Capacity : 10 ml

Graduation : 0.1 ml

ID No. : MP10/1

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1006.2 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Areerat Sombun

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.

Cert. No.

Due Date

Traceability

241005

68-200298-4

02 Dec 2025

National Institute of Metrology (Thailand) (NIMT)

Approved by :

(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-5

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Delivery Time : 5.77 sec.

Nominal Volume (ml)	Measuring Volume (ml)
2	2.0055
5	5.0071
10	10.1102

Uncertainty of measurement with in \pm 0.0039 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-6

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Cylinder

Manufacturer : Witeg

Class : A

Capacity : 100 ml

Graduation : 1 ml

ID No. : CY100/1

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.5 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Areerat Sombun

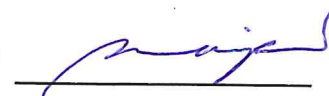
Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instrument : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241002	68-200298-1	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-6

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Nominal Volume (ml)	Measuring Volume (ml)
50	50.16
100	100.13

Uncertainty of measurement with in \pm 0.063 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-7

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Cylinder

Manufacturer : PYREX

Class : A

Capacity : 1000 ml

Graduation : 10 ml

ID No. : CY1000/01/12

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.5 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Areerat Sombun

Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instrument : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241002	68-200298-1	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-7

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Nominal Volume (ml)	Measuring Volume (ml)
500	502.35
1000	1001.20

Uncertainty of measurement with in \pm 0.17 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-8

Page : 1 of 2

Submitted by : Ecotech Water Co., Ltd.

20 Soi Kheharomklao 74 Yaek 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Volumetric Flask

Manufacturer : SCHOTT

Class : A

Capacity : 1000 ml

ID No. : VF1000/01

Environment : Ambient Temperature : (20 ± 3) °C

Relative Humidity : (50 ± 10) %

Air Pressure : 1007.7 mbar.

Date of Received : 02 September 2025

Date of Calibration : 08 September 2025

Date of Issue : 08 September 2025

Calibrated by : Areerat Sombun

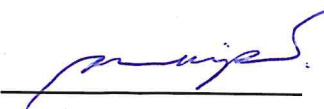
Calibration Method : In-house method CAL-M3001 based on ASTM E 542-22

Reference Standard Instruments : This certification is traceable to the International System of Units

Electronic Balance

ID No.	Cert. No.	Due Date	Traceability
241002	68-200298-1	02 Dec 2025	National Institute of Metrology (Thailand) (NIMT)

Approved by :



(Wipa Tovadee)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-300672-8

Page : 2 of 2

Result of Calibration : This result of true Volume is referred to standard temperature at 20 °C

UUC Condition As-Received : Good

Nominal Volume (ml)	Measuring Volume (ml)
1000	1000.05

Uncertainty of measurement with in \pm 0.14 ml

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

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2.00$,
providing a level of confidence of approximately 95%

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