


ภาคผนวก 9 :

เอกสารรับรองห้องปฏิบัติการ,เอกสารขึ้นทะเบียนน้ำเสีย และเอกสารเทียบเครื่องมือวัด

9.1. เอกสารรับรองห้องปฏิบัติการ



ที่อก ๐๓๓๐(๓) ๑๕๔๒๖

๒๘ ตุลาคม ๒๕๖๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารเคมีของห้องปฏิบัติการวิเคราะห์เอกชน
เมื่อวันที่ ๔ กันยายน ๒๕๖๕

สิ่งที่ส่งมาด้วย เอกสารแบบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด จำนวน ๓ แผ่น

ตามหนังสือที่อ้างถึง บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียน
ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๒๕๕-๕ สถานที่ตั้งเลขที่ ๒๐ ซอยเคหะร่มเกล้า ๓๕ แยก ๖
แขวงราชบุรีพัฒนา เขตสะพานสูง กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ความเห็นชอบ ให้บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด ต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์	
๑) นายเปี่ยมศักดิ์ ไชยสิงห์	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๑
๒) นางอังสนา ร่มสาธิตกุล	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๒
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์	
๑) นายอนุรักษ์ ดันตราสัย	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๓
๒) นางสาวปรีชาบุษ หมดจิ	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๔
๓) นายนิสิต เหลืองโพธิวงศ์	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๕
๔) นายประพันธ์ วงษ์เชื้อชื่น	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๖
๕) นางสาวสุพัตรา มินภาเพิ่ม	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๗
๖) นางสาวญาณิศา สุวรรณมาศ	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๘
๗) นางสาววิศรา บุญลาภามณี	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๐๙
๘) นางสาวจิราพร ฤทธิเดช	ทะเบียนเลขที่ ๖-๒๕๕-๕-๐๐๑๐

ค. ขอบข่ายสารเคมีที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย ตามสิ่งที่ส่งมาด้วย



หนังสือฉบับนี้...

- ๒ -

หนังสือฉบับนี้จะหมดอายุในวันที่ ๓๓ ตุลาคม ๒๕๖๘ หากประสงค์จะต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อ
กรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code
ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



- (นายประพนธ์ คำพงษ์)
ผู้อำนวยการกองวิเคราะห์สิ่งแวดล้อมโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์

กองวิจัยและพัฒนาสิ่งแวดล้อมพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๙๓๐ ๖๓๓๖ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๙๓๐ ๖๓๓๖ ต่อ ๒๑๐๓

ไปรษณีย์อิเล็กทรอนิกส์ sarabangdiw@mail.go.th





"อุตสาหกรรมก้าวไกล ปะเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีโคเทค วอเตอร์ซิสเต็มส์ จำกัด เลขทะเบียน ว-๒๕๕

ที่ จก ๐๓๓๐(๑)/ ๑๕.๕๒๖ ลงวันที่ ๒๔ ตุลาคม ๒๕๖๕

ขอรับรองสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๘ รายการ

วิธีเสีย 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 at 103-105 °C

เอกสารอ้างอิง

APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater, 23rd ed. Washington, DC: APHA, 2017.



Autoclave

CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachanan 3 Rd., Banggood, Pakkred, Nonthaburi 11120

Tel.(02) 954-6211 Fax (02) 954-5155, e-mail : calibratech.cal@yahoo.com, calibratech.cal@hotmail.com

Certificate of Calibration

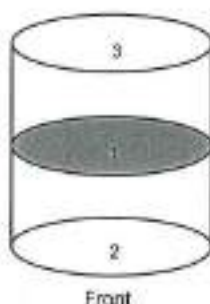
Certificate No. 65-400508-3

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 (kg/cm²)
			1	2	3					
121.0	121.0	121.0	121.5	121.0	121.1	0.71	0.6	0.1	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%

- o/lo -



B



Eletronic Balance



CAL
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7106-7 Moo 2, Sukhaphachan 3 Rd., Bangkok, Prakhro, Nonthaburi 11120
Tel.(02) 964-6211 Fax.(02) 964-7135, e-mail : calibratech.co.th@yahoo.co.th, calibratech.co.th@hotmail.com

Certificate of Calibration

Certificate No. : 65-200308-1

Page : 1 of 2

Submitted by : Ecotech Water Systems Co., Ltd.
20 Soi Kheharomklao 74 Yak 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 : (24.6 to 24.7) °C
 Relative Humidity : (59.9 to 61.3) %
 Air Pressure : 1005.0 mbar

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
Calibrated by : Satja Sangkhum

Calibration Method : In-house method CAL-M2001 based on UKAS Publication ref : LAB 14
 Edition 5, July 2015

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


ID No.	Cert. No.	Due Date	Traceability
E261-E2624	C02213103	18 Nov 2022	National Institute of Metrology (Thailand), (NIMT)

Approved by : 

(Surachai Promthong)
Laboratory Manager

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 65-200308-1

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	0.00011	0.0000
0.1	0.0000	0.00011	0.0000
1	0.0000	0.00011	-0.0001
5	0.0000	0.00011	0.0000
10	0.0000	0.00011	-0.0003
20	-0.0001	0.00011	-0.0004
50	0.0001	0.00012	-0.0014
100	0.0000	0.00020	-0.0027
150	0.0000	0.00038	-0.0042
200	0.0000	0.00038	-0.0055

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 $k = 2.11$, providing a level of confidence of approximately 95%

Eccentric error

Load test : 50 g

A B C D E

0.0002 0.0001 -0.0003 -0.0001 0.0000 g



Repeatability

Load test : 200 g


Stdev. : 0.00005 g

- o0o -

Handwritten signature



COD Reactor



Calibratech Co.,Ltd.
 7/109-7 Moo 2, Sukhaphrasong 2 Rd., Bangprovi, Pathumthani 11120
 Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : cal@caltech.co.th, cal@caltech.co.th, cal@caltech.co.th

Certificate of Calibration

Certificate No. : 65-400523-1 **Page : 1 of 2**

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

Equipment : COD Reactor

Manufacturer :	Hanna	Model :	HI839800
Range :	N/A °C	Resolution :	0.1 °C
Serial No. :	05220009101	ID No. :	N/A


Environment : Ambient Temperature : (23 ± 2) °C
 Relative Humidity : (50 ± 15) %

Date of Received : 30 September 2022
Date of Calibration : 03 October 2022
Date of Issue : 03 October 2022

Calibration Method : This instrument was calibrated by In-house method direct measurement with Standard Digital Thermometer with TC Type T probe
 The temperature scale used was based on ITS-90

Reference Standard Instruments :
 Standard Digital Thermometer with TC Probe


ID No.	Cert. No.	Due Date	Traceability
400029 & 400030	65-400272-1	24 Nov 2022	National Institute of Metrology Thailand (NIMT)
400029 & 400032	65-400274-1	25 Nov 2022	National Institute of Metrology Thailand (NIMT)

Approved by : 

(Bunjerd Masri)
 Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Tel. (02) 964-6211 Fax. (02) 964-5155, e-mail : calibratech.cal@yahoo.com, calibratech.cal@hotmail.com

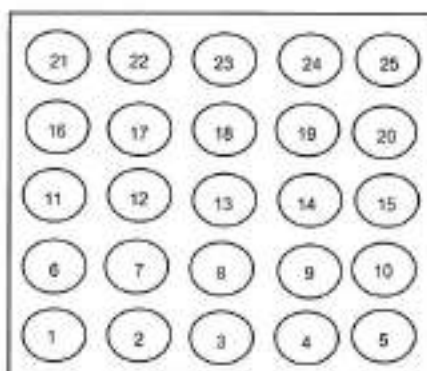
Certificate of Calibration

Certificate No. : 65-400523-1

Page : 2 of 2

Result of Calibration : Without Adjustment

Function : Temperature measurement



Controller

Test Point (°C)	UUC Setting (°C)	UUC Reading (°C)	Standard Reading at Position (°C)									
			1	2	3	4	5	6	7	8	9	10
150.0	150.0	150.0	150.6	150.1	152.0	150.1	149.7	149.3	151.3	152.0	150.9	150.4

Test Point (°C)	UUC Setting (°C)	UUC Reading (°C)	Standard Reading at Position (°C)									
			11	12	13	14	15	16	17	18	19	20
150.0	150.0	150.0	149.4	152.0	151.4	151.0	150.1	150.3	150.6	151.8	151.7	149.9

Test Point (°C)	UUC Setting (°C)	UUC Reading (°C)	Standard Reading at Position (°C)					Uncertainty (± °C)
			21	22	23	24	25	
150.0	150.0	150.0	150.3	149.9	151.4	150.2	150.1	0.73

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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Hot Air Oven

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <h1 style="color: #0070C0; font-size: 2em; margin: 0;">CAL</h1> <p>Calibratech Co., Ltd. <small>11106-7 Moo 2, Sakthapachara 3 Rd., Bangpoo, Pakkred, Nonthaburi 11120 Tel. (02) 969-6211 Fax. (02) 969-5155, e-mail : calibratech.cal@yaboo.com, calibratech.cal@gmail.com</small></p> </div> <div style="text-align: center;"> <small>NAC-TISI-TS17025 CALIBRATION 0030</small> </div> </div> <h2 style="text-align: center; color: #0070C0; margin-top: 10px;">Certificate of Calibration</h2>	<p>Certificate No. : 65-400508-2 Page : 1 of 2</p> <p>Submitted by : Ecotech Water Systems Co., Ltd. 20 Soi Khecharomklao 74 Yak 6, Ratphatthana, Saphansung, Bangkok 10240</p> <p>Equipment : Air Chamber (Oven) Manufacturer : LABTECH Model : LDO-080F Range : N/A °C Resolution : 0.1 °C Serial No. : 081029024 ID No. : INS007</p> <p>Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd. Ambient Temperature : (26.0 to 27.0) °C Relative Humidity : (48 to 52) % Line Voltage : (225.0 to 226.4) V</p> <p>Date of Received : 30 September 2022 Date of Calibration : 30 September 2022 Date of Issue : 01 October 2022 Calibrated by : Penrpon Charpu Calibration Method : CAL-M4004, TLAS G-20 The temperature scale used was based on ITS-90</p> <p>Reference Standard Instruments : This certification is traceable to the International System of Units Standard Digital Thermometer with Thermocouple probe</p> <table border="0" style="width: 100%; font-size: 0.9em;"> <tr> <td style="text-align: center;"><u>ID No.</u></td> <td style="text-align: center;"><u>Cert. No.</u></td> <td style="text-align: center;"><u>Exp. Date</u></td> <td style="text-align: center;"><u>Traceability</u></td> </tr> <tr> <td style="text-align: center;">400029 & 400030</td> <td style="text-align: center;">65-400272-1</td> <td style="text-align: center;">24 Nov 2022</td> <td style="text-align: center;">National Institute of Metrology Thailand (NIMT)</td> </tr> </table>	<u>ID No.</u>	<u>Cert. No.</u>	<u>Exp. Date</u>	<u>Traceability</u>	400029 & 400030	65-400272-1	24 Nov 2022	National Institute of Metrology Thailand (NIMT)
<u>ID No.</u>	<u>Cert. No.</u>	<u>Exp. Date</u>	<u>Traceability</u>						
400029 & 400030	65-400272-1	24 Nov 2022	National Institute of Metrology Thailand (NIMT)						

Approved by :

(Bunjerd Masri)
Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 65-400508-2

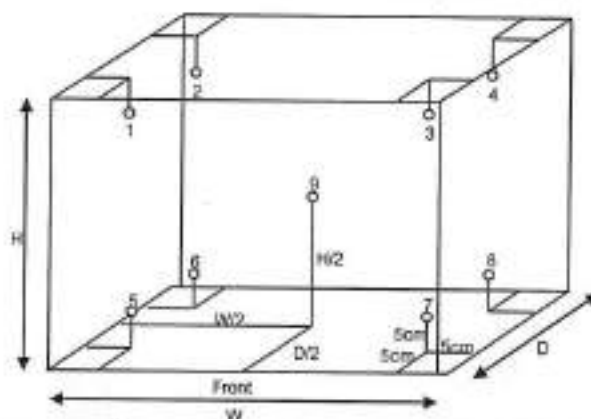
Page : 2 of 2

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	104.3	103.4	104.6	104.2	103.2	103.5	104.1	105.3	105.3	1.7
180.0	180.0	180.0	179.1	178.7	180.0	179.1	178.6	178.9	178.9	181.6	181.8	2.9

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
104.0	104.0	104.0	2.5	1.3	4.6
180.0	180.0	180.0	4.3	2.2	7.5

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%

- 000 -

B



Incubator-BioBase

<div style="text-align: center;">  <p>CAL Calibratech Co.,Ltd. 7/106-7 Moo 2, Sukhaphrachin 3 Rd., Bangpoo, Pakkret, Nonthaburi 11120 Tel.(02) 964-6231 Fax.(02) 964-5155, e-mail : cal@caltech.co.th, cal@caltech.co.th@hotmail.com</p> </div>	  <p>NAC-TISI-TIS17025 CALIBRATION 0099</p>								
<h2 style="color: #0070C0;">Certificate of Calibration</h2>									
<p>Certificate No. : 65-400508-6</p> <p>Submitted by : Ecotech Water Systems Co., Ltd. 20 Soi Kheharemklao 74 Yak 6, Ratphatthana, Saphansung, Bangkok 10240</p> <p>Equipment : Air Chamber (Incubator) <div style="display: flex; justify-content: space-between;"> <div> <p>Manufacturer : Biobase</p> <p>Range : N/A °C</p> <p>Serial No. : KYP400II2010002</p> </div> <div> <p>Model : BJPX-B400II</p> <p>Resolution : 0.1 °C</p> <p>ID No. : N/A</p> </div> </div> </p> <p>Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd. <div style="display: flex; justify-content: space-between;"> <div>Ambient Temperature :</div> <div>(24.6 to 26.8) °C</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Relative Humidity :</div> <div>(58 to 60) %</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Line Voltage :</div> <div>(225.0 to 226.5) V</div> </div> </p> <p>Date of Received : 30 September 2022</p> <p>Date of Calibration : 30 September 2022</p> <p>Date of Issue : 01 October 2022</p> <p>Calibrated by : Bunjerd Masri</p> <p>Calibration Method : CAL-M4004, TLAS G-20</p> <p style="margin-left: 40px;">The temperature scale used was based on ITS-90</p>	<p>Page : 1 of 2</p>								
<p>Reference Standard Instruments : This certification is traceable to the International System of Units Standard Digital Thermometer with RTD Probe</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ID No.</th> <th style="text-align: left;">Cert. No.</th> <th style="text-align: left;">Due Date</th> <th style="text-align: left;">Traceability</th> </tr> </thead> <tbody> <tr> <td>400046 & 400047</td> <td>65-400419-3</td> <td>03 Feb 2023</td> <td>National Institute of Metrology Thailand (NIMT)</td> </tr> </tbody> </table>		ID No.	Cert. No.	Due Date	Traceability	400046 & 400047	65-400419-3	03 Feb 2023	National Institute of Metrology Thailand (NIMT)
ID No.	Cert. No.	Due Date	Traceability						
400046 & 400047	65-400419-3	03 Feb 2023	National Institute of Metrology Thailand (NIMT)						
<p>Approved by : </p> <p>(Bunjerd Masri)</p> <p>Supervisor</p>									
<p>The Uncertainties are for a confidence probability of approximately 95%</p> <p>This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.</p> <div style="text-align: right;">  </div>									

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Certificate of Calibration

Certificate No. : 65-400508-6

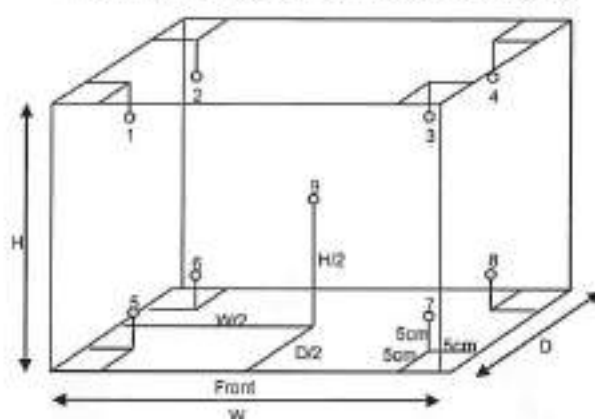
Page : 2 of 2

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 = 0.58 m
 D = 0.55 m
 H = 1.28 m
 Capacity = 0.41 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	10	
20.0	20.0	20.0	20.18	20.15	20.21	20.13	20.07	20.07	20.11	20.07	20.02	20.02	0.44

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
20.0	20.0	20.0	0.22	0.20	0.5

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%

- o/O -



B



pH Meter



Calibratech Co.,Ltd.
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 Tel:(02) 964-0211 Fax:(02) 964-5155, e-mail : calibratech.co@yahoo.com, calibratech.co2@hotmail.com

NSG-TIS1-TIS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 65-420082-2

Page : 1 of 2

Submitted by : Ecotech Water Systems Co., Ltd.
 20 Soi Kheharomklao 74 Yak 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 : N/A Serial No. : 01X099323

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd.
 Ambient Temperature : (25.0 to 26.0)° C
 Relative Humidity : (55 to 60) %

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
Calibrated by : Permpoon Chanpu

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

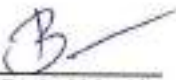
Reference Standard Instruments : This certification is traceable to the International System of Units

1. Multiproduct Calibrator

ID No.	Cert. No.	Due Date	Traceability
400005	SG-E-00473/64	27 Aug 2023	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution


pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.008	61235182	833447	19 Aug 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.985	61255708	833449	19 Aug 2023	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
10.008	61244986	833448	19 Aug 2023	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by : 

(Bunjerd Masri)
 Supervisor



The Uncertainties are for a confidence probability of approximately 95%

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NSG-TISI-TS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 65-420082-1

Page : 1 of 2

Submitted by : Ecotech Water Systems Co., Ltd.
20 Soi Kheharomklao 74 Yak 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. : 2728583 ID No. : N/A
Electrode
Model : N/A Serial No. : 01X099323

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd.
Ambient Temperature : (25.0 to 26.0)° C
Relative Humidity : (55 to 60) %

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
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-00473/64	27 Aug 2023	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution


pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.008	61235182	833447	19 Aug 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.985	61255708	833449	19 Aug 2023	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
10.008	61244986	833448	19 Aug 2023	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by : 

(Bunjerd Masri)
Supervisor

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Tel.(02)-964-8211 Fax:(02) 964-5155, e-mail : calibratech.cal@yahoo.com, calibratech.cal@gmail.com

Certificate of Calibration

Certificate No. : 65-420082-1

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	166.7	10.8	0.12
	0.0000	7	7.00	-8.4	8.4	0.086
	-177.4800	10	10.00	-183.5	6.0	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	4.008	4.01	0.00	0.0097
	6.985	7.00	-0.01	0.011
	10.008	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%

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7/106-7 Moo 2, Sukhaphadusorn 3 Rd., Bangnae, Pakkred, Nonthaburi 11120
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NSO-TISI-TIS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 65-400509-1

Page : 1 of 2

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

Equipment : Digital Thermometer with Thermistor probe
Temperature Indicator
Manufacturer : Eutech Model : PC 700
Range : N/A °C Resolution : 0.1 °C
Serial No. : 2728583 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 Systems Co., Ltd.
Ambient Temperature : (25.0 to 26.0) °C
Relative Humidity : (55 to 60) %
Line Voltage : (225.0 to 225.9) VAC

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
Calibrated by : Permpon Chanpa

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>
400002	TT-0074-22	20 Jun 2024	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	22E569	22 Feb 2024	National Institute of Metrology Thailand (NIMT)

Approved by : 

(Bunjerd Masri)
Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 65-400509-1

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	20.3	-0.3	0.19
100	25.002	25.3	-0.3	0.19
100	30.004	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%

- ๐0๐ -

B



CAL

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7/106-7 Moo 2, Sukhprachasan 3 Rd., Bangpoo, Pakkret, Nonthaburi 11120

Tel:021 964-6211 Fax:021 964-5155, e-mail : calibratech_cal@yahoo.com, calibratech_cal@hotmail.com

Certificate of Calibration

Certificate No. : 65-420082-2

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	177.6	-0.1	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	4.008	4.01	0.00	0.0097
	6.985	7.00	-0.01	0.011
	10.008	10.00	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%

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NSG-TISI-TIS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 65-400509-2

Submitted by : Ecotech Water Systems Co., Ltd.
20 Soi Kheharomkiao 74 yeak 6, Ratphatthana, Saphansung, Bangkok 10240

Equipment : Digital Thermometer 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 Systems Co., Ltd.
Ambient Temperature : (25.0 to 26.0) °C
Relative Humidity : (55 to 60) %
Line Voltage : (225.0 to 225.9) VAC

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
Calibrated by : Permpoon 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
400002	TT-0074-22	20 Jun 2024	National Institute of Metrology Thailand (NIMT)
2. Standard Digital Thermometer			
ID No.	Cert. No.	Due Date	Traceability
400033	22E569	22 Feb 2024	National Institute of Metrology Thailand (NIMT)

Approved by : 

(Bunjerd Masri)
Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Tel:(02) 964-0211 Fax:(02) 964-5155, e-mail : calibratech.co@gmail.com, calibratech.co@khorram.com

Certificate of Calibration

Certificate No. : 65-400509-2

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	20.1	-0.1	0.19
100	25.006	25.1	-0.1	0.19
100	30.005	30.1	-0.1	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%

- ๐/0๐ -



Refrigerator

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <h1 style="margin: 0;">CAL</h1> <p>Calibratech Co.,Ltd. <small>7106-7 Moo 7, Sukhprachan 3 Rd., Bangnae, Pakkret, Nonthaburi 11120 Tel:(02) 904-6211 Fax:(02) 904-5155, e-mail : calibratech.co@yahoo.com, calibratech.co@gmail.com</small></p> </div> <div style="text-align: center;"> <small>MSC-TISI-TIS17025 CALIBRATION 0030</small> </div> </div> <h2 style="text-align: center; margin-top: 20px;">Certificate of Calibration</h2>	<p>Page : 1 of 2</p>								
<p>Certificate No. : 65-400508-1</p> <p>Submitted by : Ecotech Water Systems Co., Ltd. 20 Soi Kheharomklao 74 Yak 6, Ratphatthana, Saphansung, Bangkok 10240</p> <p>Equipment : Air Chamber (Refrigerator) Manufacturer : Every Digital Model : N/A Range : N/A °C Resolution : 0.1 °C Serial No. : ASS1001 ID No. : INS005</p> <p>Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd. Ambient Temperature : (24.6 to 26.8) °C Relative Humidity : (58 to 60) % Line Voltage : (225.0 to 226.5) V</p> <p>Date of Received : 30 September 2022 Date of Calibration : 30 September 2022 Date of Issue : 01 October 2022 Calibrated by : Bunjerd Masri Calibration Method : CAL-M4004, TLAS G-20 The temperature scale used was based on ITS-90</p> <p>Reference Standard Instruments : This certification is traceable to the International System of Units Standard Digital Thermometer with Thermocouple probe</p> <table border="0" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">ID No.</th> <th style="text-align: left;">Cert. No.</th> <th style="text-align: left;">Due Date</th> <th style="text-align: left;">Traceability</th> </tr> </thead> <tbody> <tr> <td>400046 & 400023</td> <td>65-400157-1</td> <td>02 Oct 2022</td> <td>National Institute of Metrology Thailand (NIMT)</td> </tr> </tbody> </table>		ID No.	Cert. No.	Due Date	Traceability	400046 & 400023	65-400157-1	02 Oct 2022	National Institute of Metrology Thailand (NIMT)
ID No.	Cert. No.	Due Date	Traceability						
400046 & 400023	65-400157-1	02 Oct 2022	National Institute of Metrology Thailand (NIMT)						
<p>Approved by : </p> <p>(Bunjerd Masri) Supervisor</p>									
<p>The Uncertainties are for a confidence probability of approximately 95%.</p> <p>This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.</p> <div style="text-align: right;"> </div>									

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Certificate of Calibration

Certificate No. : 65-400508-1

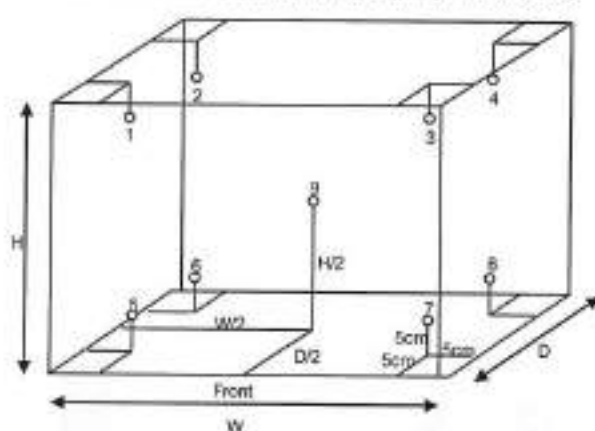
Page : 2 of 2

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	4.3	4.1	3.9	4.2	4.1	4.2	4.1	4.3	4.0	0.63

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
4.0	3.0	3.0	0.6	0.3	0.8

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 -



CAL

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Tel:(02) 964-6211 Fax:(02) 964-5155, e-mail : cal@caltech.co.th, cal@caltech.co.th, cal@caltech.co.th




MSC-TIS1-TIS17025
CALIBRATION 0039

Certificate of Calibration

Certificate No. : 65-400508-4

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

Equipment : Air Chamber (Refrigerator)
Manufacturer : S-Cool
Range : N/A °C
Serial No. : Eco-Ins14

Environment : On site calibration was carried out at the Laboratory, Ecotech Water Systems Co., Ltd.
Ambient Temperature : (24.6 to 26.8) °C
Relative Humidity : (58 to 60) %
Line Voltage : (225.0 to 226.5) V

Date of Received : 30 September 2022
Date of Calibration : 30 September 2022
Date of Issue : 01 October 2022
Calibrated by : Bunjerd Masri
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 & 400043	65-400419-2	02 Feb 2023	National Institute of Metrology Thailand (NIMT)

Page : 1 of 2

Approved by : 

(Bunjerd Masri)
Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech.co@yahoo.com, calibratech_cal@hotmail.com

Certificate of Calibration

Certificate No. : 65-400508-4

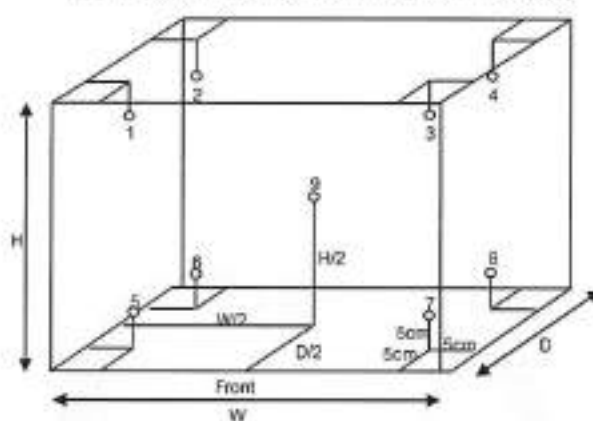
Page : 2 of 2

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	4	4	5.18	4.99	4.44	3.88	5.05	5.20	4.41	3.66	4.04	1.3

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
4.0	4.0	4.0	1.30	0.62	2.3

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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Therme-Hygro Meter

<div style="text-align: center;">  <p>Calibratech Co.,Ltd. 7/106-7 Moo 2, Sukhaphrachan 3 Rd., Banggood, Pakkred, Northburi 11120 Tel:(02) 964-6211 Fax:(02) 964-6133; e-mail : calibratech.co@yahoo.com, calibratech.cal@gmail.com</p> </div>	  <p>NSG-TISI-TIS17025 CALIBRATION 0030</p>																
<h3 style="color: #0070C0;">Certificate of Calibration</h3>																	
Certificate No. : 65-410116-1	Page : 1 of 2																
Submitted by : Ecotech Water Systems Co., Ltd. 20 Soi Khecharomklao 74 Yak 6, Ratphatthana, Saphansung, Bangkok 10240																	
Equipment : Digital Thermo-Hygrometer <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Manufacturer :</td> <td style="width: 33%;">Digicon</td> <td style="width: 33%;">Model :</td> <td style="width: 33%;">TH-03A</td> </tr> <tr> <td>Range Temperature :</td> <td>-10 °C to 50 °C</td> <td>Resolution :</td> <td>0.1 °C</td> </tr> <tr> <td>Range Humidity :</td> <td>20 %R.H. to 99 %R.H.</td> <td>Resolution :</td> <td>1 %R.H.</td> </tr> <tr> <td>Serial No. :</td> <td>365052106</td> <td>ID No. :</td> <td>N/A</td> </tr> </table>		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
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 : 30 September 2022 Date of Calibration : 03 October to 05 October 2022 Date of Issue : 05 October 2022 Calibrated by : Chertip 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																	
<table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><u>ID No.</u></td> <td style="width: 25%;"><u>Cert. No.</u></td> <td style="width: 25%;"><u>Due Date</u></td> <td style="width: 25%;"><u>Traceability</u></td> </tr> <tr> <td>400034 & 400035</td> <td>SG-H-00713/65</td> <td>07 Jan 2023</td> <td>Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268</td> </tr> </table>	<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>	400034 & 400035	SG-H-00713/65	07 Jan 2023	Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268									
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400034 & 400035	SG-H-00713/65	07 Jan 2023	Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268														
<p>Approved by : </p> <p>(Bunjerd Masri) Supervisor</p>																	
<p>The Uncertainties are for a confidence probability of approximately 95%</p> <p>This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.</p>																	
																	

CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachuen 3 Rd., Bangpoo, Pakkred, Nonthaburi 11120

Tel.(02) 964-8211 Fax.(02) 964-5155, e-mail : calibratech_cal@yahoo.com, calibratech_cal@hotmail.com

Certificate of Calibration

Certificate No. : 65-410116-1

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	20.5	-0.5	0.46
24.97	25.4	-0.4	0.46
30.01	29.9	0.1	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.)
40.01	38	2	2.2
49.99	48	2	2.2
60.02	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%

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CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhaphachan 3 Rd., Bangpoo, Pakkret, Nonthaburi 11120

Tel.021 964-6211 Fax.021 964-5155, e-mail : calibratech_cal@yahoo.com, calibratech_cal@gmail.com



Certificate of Calibration

Certificate No. : 65-410116-2

Page : 1 of 2

Submitted by : Ecotech Water Systems Co., Ltd.

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

Equipment : Digital Thermo-Hygrometer

Manufacturer : Digieon

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 : 30 September 2022

Date of Calibration : 03 October to 05 October 2022

Date of Issue : 05 October 2022

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.	Exp. Date	Traceability
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400034 & 400035	SG-H-00713/65	07 Jan 2023	Success Gateway Co., Ltd., Accredited by TISI Calibration No.0268
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Approved by :

(Bunjerd Masri)

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech.cal@posteo.com, calibratech.cal@hotmail.com

Certificate of Calibration

Certificate No. : 65-410116-2

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)
19.99	20.3	-0.3	0.46
25.00	25.2	-0.2	0.46
30.00	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	39	1	2.2
50.00	49	1	2.2
59.99	59	1	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%

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