

ภาคผนวกที่ 5
เอกสารสอบเทียบเครื่องมือตรวจวัด

ภาคผนวกที่ 5-1
เอกสารสอบเทียบเครื่องมือตรวจวัดวิเคราะห์คุณภาพน้ำ

CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachasan 3 Rd., Bangpood, Pakkred, Nonthaburi 11120

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



NSC-TISI-TIS 17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 68-420062-1

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : pH Meter with electrode

pH meter

Manufacturer : Eutech

Model : pH 700

Range : N/A pH

Resolution : 0.01 pH

Serial No. : 2841305

ID No. : LAB-PH-002

Electrode

Model : N/A

Serial No. : 3172493

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

Ambient Temperature : (23.5 to 25.0) °C

Relative Humidity : (50 to 55) %

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 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

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400005	SG-E-00307/66	23 Aug 2025	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

<u>pH</u>	<u>Cert. No.</u>	<u>Lot No.</u>	<u>Exp. Date</u>	<u>Traceability</u>
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. : 68-420062-1

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	7.00	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%

- o()o -



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NSC-TISI-TIS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 68-420062-2

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : pH Meter with electrode

pH meter

Manufacturer : Eutech

Model : pH 700

Range : N/A pH

Resolution : 0.01 pH

Serial No. : 2841305

ID No. : LAB-PH-002

Electrode

Model : N/A

Serial No. : 3052953

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

Ambient Temperature : (23.5 to 25.0)^o C

Relative Humidity : (50 to 55) %

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 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

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400005	SG-E-00307/66	23 Aug 2025	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

<u>pH</u>	<u>Cert. No.</u>	<u>Lot No.</u>	<u>Exp. Date</u>	<u>Traceability</u>
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 :

Supervisor

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Certificate of Calibration

Certificate No. : 68-420062-2

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	177.5	0.0	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.

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- o()o -

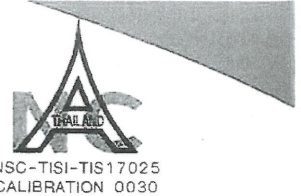


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Certificate of Calibration

Certificate No. : 68-400421-1

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : Temperature Indicator with Thermistor Probe

Temperature Indicator

Manufacturer : Eutech

Model : pH 700

Range : N/A °C

Resolution : 0.1 °C

Serial No. : 2841305

ID No. : LAB-PH-002

Thermistor probe

Model : N/A

Sheath Material : Stainless

Diameter : 3 mm.

Length : 115 mm.

Serial No. : PHSTEMB01P 049

ID No. : LAB-PH-002

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

Ambient Temperature : (23.5 to 25.0) °C

Relative Humidity : (50 to 55) %

Line Voltage : (220.0 to 221.0) VAC

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 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)

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Certificate of Calibration

Certificate No. : 68-400421-1

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)
115	25.002	24.9	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%

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CALIBRATION 0030

Certificate of Calibration

Certificate No. : 68-400420-3

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : Temperature controlled enclosure (Incubator)

Manufacturer : Aqua Lytic

Model : TC 135S

Range : N/A °C

Resolution : 0.1 °C

Serial No. : 0614/000033

ID No. : LAB-IB-001

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

Ambient Temperature : (23.0 to 24.5) °C

Relative Humidity : (40 to 45) %

Line Voltage : (220.0 to 222.0) V

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 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>
400029 & 400048	68-400063-1	01 Aug 2025	National Institute of Metrology Thailand (NIMT)

Approved by :

Supervisor

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Certificate of Calibration

Certificate No. : 68-400420-3

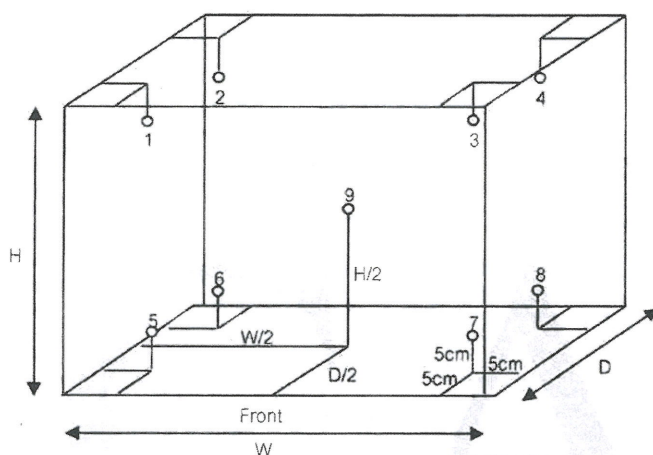
Page : 2 of 2

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 = 0.51 m

D = 0.04 m

H = 0.70 m

Capacity = 0.02 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	
20.0	20.5	20.5	20.10	19.94	19.99	19.96	19.92	19.90	20.02	19.99	19.87	0.69

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
20.0	20.5	20.5	0.43	0.36	0.78

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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NSC-TISI-TIS17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 68-400420-2

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : Water Bath

Manufacturer : Memmert

Model : WNB 22

Range : N/A °C

Resolution : 0.1 °C

Serial No. : L514.0184

ID No. : LAB-WB-001

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

Ambient Temperature : (31.0 to 31.8) °C

Relative Humidity : (50 to 55) %

Line Voltage : (220.0 to 222.0) V

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 2025

Calibrated by : Permpoon Chanpu

Calibration Method : This instrument was calibrated by In-house method CAL-M4006 based on ASTM E715-80
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>
400029 & 400031	68-400214-1	25 Oct 2025	National Institute of Metrology Thailand (NIMT)

Approved by :

Supervisor

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Certificate of Calibration

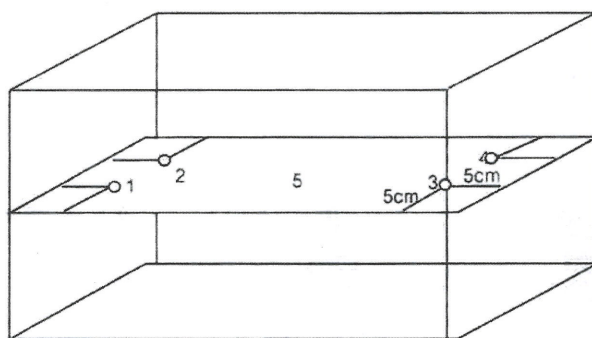
Certificate No. : 68-400420-2

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement



Front

Test Point (° C)	Setting Temperature (° C)	Indicating Temperature (° C)	Measured Temperature (° C) @					Uncertainty (± ° C)	Measured Uniformity (° C)	Measured Stability (° C)
			Sensor No.							
			1	2	3	4	5			
65.0	65.0	65.0	64.62	64.64	64.64	64.63	64.63	0.18	0.05	0.03
95.0	95.0	95.0	94.60	94.61	94.63	94.68	94.58	0.18	0.17	0.05

Remark The uncertainty is not combine uniformity of the water bath

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. : 68-400420-1

Page : 1 of 2

Submitted by : Pacific Laboratory Co., Ltd.

14/5358 Moo 14, T. Bang Bua Thong, A. Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : Temperature controlled enclosure (Oven)

Manufacturer : Memmert

Model : UN 55

Range : N/A °C

Resolution : 0.1 °C

Serial No. : B214.1879

ID No. : LAB-OV-001

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

Ambient Temperature : (31.0 to 31.8) °C

Relative Humidity : (50 to 55) %

Line Voltage : (220.0 to 222.0) V

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 24 July 2025

Calibrated by : Permpoon 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

<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceability</u>
400029 & 400032	68-400217-1	28 Oct 2025	National Institute of Metrology Thailand (NIMT)

Approved by :

Supervisor

The Uncertainties are for a confidence probability of approximately 95%

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Certificate of Calibration

Certificate No. : 68-400420-1

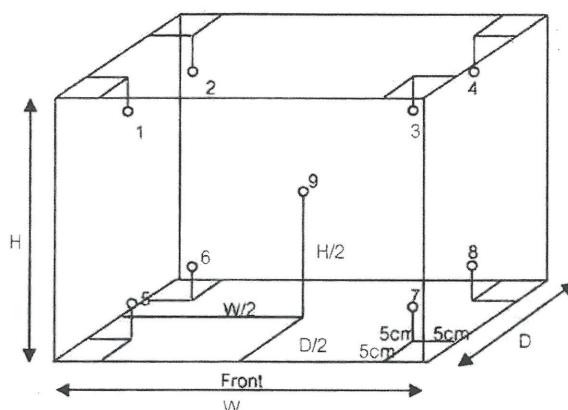
Page : 2 of 2

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 = 0.40 m

D = 0.33 m

H = 0.40 m

Capacity = 0.05 m³

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Temperature (°C) @ Sensor No.										Uncertainty
			1	2	3	4	5	6	7	8	9	(± °C)	
104.0	107.0	107.0	105.1	105.1	104.9	104.9	102.9	104.4	103.5	104.4	104.5	0.87	
180.0	184.0	184.0	181.2	180.9	180.7	180.9	177.2	177.1	178.5	179.8	180.3	1.4	

Test Point (°C)	Setting Temperature (°C)	Indicating Temperature (°C)	Measured Uniformity (°C)	Measured Stability (°C)	Overall Variation (°C)
104.0	107.0	107.0	1.8	0.3	2.6
180.0	184.0	184.0	3.6	0.6	4.6

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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NSC-TISI-TIS 17025
CALIBRATION 0030

Certificate of Calibration

Certificate No. : 68-200468-1

Page : 1 of 2

Submitted by : Pacific Laboratory Co.,Ltd.
14/5358 Moo 14, T.Bang Bua Thong, A.Bang Bua Thong, Nonthaburi 11110 Thailand

Equipment : Electronic Balance
Manufacturer : SHIMADZU Model : AP225WD
Serial No. : D316301828 ID No. : LAB-BL-003
Capacity : 220000 mg
Resolution : 0.01mg/102000mg, 0.1mg/220000mg

Environment : On site calibration was carried out at the Laboratory, Pacific Laboratory Co.,Ltd.
Ambient Temperature : (27.3 to 27.4) °C
Relative Humidity : (53.6 to 53.7) %
Air Pressure : 1003.0 mbar

Date of Received : 21 July 2025

Date of Calibration : 21 July 2025

Date of Issue : 25 July 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

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

Approved by : _____

Supervisor

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Certificate of Calibration

Certificate No. : 68-200468-1

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Departure of indication from nominal value

Nominal Value (mg)	Correction (mg)	Uncertainty $\pm$ (mg)
1	0.01	0.012
10	0.00	0.012
50	0.01	0.012
100	0.01	0.014
1000	0.00	0.026
2000	0.01	0.034
5000	0.00	0.043
20000	0.00	0.071
50000	0.01	0.11
100000	0.00	0.20
150000	0.0	0.38
200000	0.0	0.38

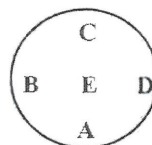
This result of calibration was found accurate as shown on date and place of calibration only.

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Eccentric error

Load test : 50000 mg

A	B	C	D	E	
0.01	0.01	0.02	0.02	0.00	mg



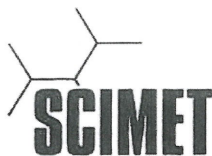
Repeatability

Load test : 200000 mg

Stdev. : 0.053 mg

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SCIMET Co., Ltd.
818/124 Udomsuk Rd., Bangna-Nuea,
Bangna, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239
https://www.scimet.co.th



Certificate No. C07250105

Calibration Certificate

Equipment:	SPECTROPHOTOMETER		
Model:	DR3900	Job No.:	KSMT2502636
Serial No.(or ID):	2076219 (LAB-ST-002)	Received Date:	30 June 2025
Manufacturer:	HACH	Issued Date:	01 July 2025
Condition:	In Condition	Page:	1 of 3

Customer

Pacific Laboratory Co., Ltd.
14/5358 Moo 14, Bang Bua Thong, Bang Bua Thong, Nonthaburi 11110 Thailand

Calibration Place

Environment Laboratory, SCIMET Co., Ltd.
818/124 Udomsuk Rd., Bangna-Nuea, Bangna, Bangkok 10260 Thailand

Calibration Date

01 July 2025

Environment Condition

Temperature: 23 °C ± 2 °C
Humidity: 50 %RH ± 15 %RH

The Method used

In-house method, WI07, based on ASTM E 275-08 and
ASTM E 387-04

Traceability

This certificate is traceable to the CRM maintained by National Institute
of Standards and Technology (NIST) through Starna Scientific Limited.

The standard for Wavelength Certificate No. 128819 and 128820

The standard for Photometric Certificate No. 129803

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

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

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

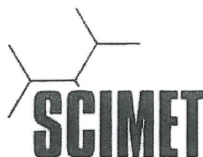
(Mr. Dumrong Boonsopon)

Person in charge



(Mr

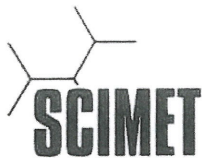
Authorized signatory

**Condition of reference standards Instruments / CRM:**

<u>Instruments</u>	<u>Set No.</u>	<u>Certificate No.</u>	<u>Due date</u>
Holmium Oxide Glass Reference	121512	128819	3-Feb-27
Didymium Oxide Glass Reference	119722	128820	3-Feb-27
Neutral Density Filter Reference	12276	129803	6-Mar-27

Calibration Results:**Without Adjustment****Wavelength Accuracy (nm), The spectral bandwidth of Std at 5 nm and UUC at 5 nm**

Standard Wavelength (nm)	Unit Under Calibration (nm)	Correction (nm)	Uncertainty of Measurement (± nm)
361.02	360	1.02	0.59
417.80	417	0.80	0.59
441.29	441	0.29	0.59
471.51	471	0.51	0.59
479.88	480	-0.12	0.59
513.75	513	0.75	0.59
528.59	528	0.59	0.59
537.75	537	0.75	0.59
585.56	585	0.56	0.59
641.95	642	-0.05	0.59
684.70	684	0.70	0.59
747.61	747	0.61	0.59
807.04	807	0.04	0.59
879.68	879	0.68	0.59



Calibration Results:

Without Adjustment

Photometric Accuracy (Absorbance)

Wavelength	Standard absorbance (Abs)	Unit Under Calibration (Abs)	Correction (Abs)	Uncertainty of Measurement($\pm$ Abs)
420 nm	0.0000	0.000	0.0000	0.0045
	0.2361	0.234	0.0021	0.0045
	0.5632	0.561	0.0022	0.0045
	0.7400	0.736	0.0040	0.0045
	1.0592	1.056	0.0032	0.0056
440 nm	0.0000	0.000	0.0000	0.0045
	0.2324	0.230	0.0024	0.0045
	0.5529	0.551	0.0019	0.0045
	0.7240	0.721	0.0030	0.0045
	1.0366	1.032	0.0046	0.0056
465 nm	0.0000	0.000	0.0000	0.0045
	0.2117	0.211	0.0007	0.0045
	0.5055	0.506	-0.0005	0.0045
	0.6747	0.674	0.0007	0.0045
	0.9658	0.965	0.0008	0.0057
546.1 nm	0.0000	0.000	0.0000	0.0045
	0.2194	0.218	0.0014	0.0045
	0.5199	0.520	-0.0001	0.0045
	0.6934	0.693	0.0004	0.0045
	0.9944	0.992	0.0024	0.0050
590 nm	0.0000	0.000	0.0000	0.0045
	0.2434	0.242	0.0014	0.0045
	0.5548	0.554	0.0008	0.0045
	0.7199	0.718	0.0019	0.0045
	1.0332	1.030	0.0032	0.0045
635 nm	0.0000	0.000	0.0000	0.0045
	0.2636	0.262	0.0016	0.0045
	0.5388	0.539	-0.0002	0.0045
	0.6866	0.686	0.0006	0.0045
	0.9852	0.983	0.0022	0.0045

The End of Certificate

บริษัท ชายน์เมท จำกัด (SCIMET CO., LTD.)

818/124 Udomsuk rd., Bangna-Nuea, Bangna, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

FC07-04: 27 JAN 2025



Refer to Certificate No.: C07250105

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Statements of conformity:

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

The error of temperature determined during calibration are under given measurement and environmental conditions and considering the expanded measurement uncertainty (coverage probability 95%) within the specification. The given measurement uncertainty already includes other all effects by according to the standard method, ASTM E 275-08 and ASTM E 387-04. Therefore, those parameters have not been assessed separately.

Tolerance and Decision rules:

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

Decision rule : ☐ Choice A Binary Statement for Simple Acceptance Rule ($w = 0$), Specific Risk $< 50\%$ PFA.

☒ Choice B Non-binary statement with guard band ($w = 1 U$), Pass or Fail Specific Risk $< 2.5\%$ PFA and Condition Pass or Condition Fail Specific Risk $< 50\%$ PFA.

☐ Choice C Customer defined, Customers may define arbitrary multiple of r to have applied as guard band ($w = r U$).

; PFA – Probability of False Accept



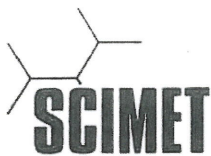
(M)

Authorized signatory

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FC07-04: 27 JAN 2025



Refer to Certificate No.: C07250105

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Without Adjustment

Wavelength Accuracy (nm), The spectral bandwidth of Std at 5 nm and UUC at 5 nm

Unit Under Calibration	Correction	Guard Band (w)	Tolerance ($\pm$)	Conformity
360	1.02	0.59	2.0	Pass
417	0.80	0.59	2.0	Pass
441	0.29	0.59	2.0	Pass
471	0.51	0.59	2.0	Pass
480	-0.12	0.59	2.0	Pass
513	0.75	0.59	2.0	Pass
528	0.59	0.59	2.0	Pass
537	0.75	0.59	2.0	Pass
585	0.56	0.59	2.0	Pass
642	-0.05	0.59	2.0	Pass
684	0.70	0.59	2.0	Pass
747	0.61	0.59	2.0	Pass
807	0.04	0.59	2.0	Pass
879	0.68	0.59	2.0	Pass



Refer to Certificate No.: C07250105

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Without Adjustment

Wavelength	Unit Under Calibration	Correction	Guard Band (w)	Tolerance ($\pm$)	Conformity
420 nm	0.000	0.0000	0.0045	0.015	Pass
	0.234	0.0021	0.0045	0.015	Pass
	0.561	0.0022	0.0045	0.015	Pass
	0.736	0.0040	0.0045	0.015	Pass
	1.056	0.0032	0.0056	0.015	Pass
440 nm	0.000	0.0000	0.0045	0.015	Pass
	0.230	0.0024	0.0045	0.015	Pass
	0.551	0.0019	0.0045	0.015	Pass
	0.721	0.0030	0.0045	0.015	Pass
	1.032	0.0046	0.0056	0.015	Pass
465 nm	0.000	0.0000	0.0045	0.015	Pass
	0.211	0.0007	0.0045	0.015	Pass
	0.506	-0.0005	0.0045	0.015	Pass
	0.674	0.0007	0.0045	0.015	Pass
	0.965	0.0008	0.0057	0.015	Pass
546.1 nm	0.000	0.0000	0.0045	0.015	Pass
	0.218	0.0014	0.0045	0.015	Pass
	0.520	-0.0001	0.0045	0.015	Pass
	0.693	0.0004	0.0045	0.015	Pass
	0.992	0.0024	0.0050	0.015	Pass
590 nm	0.000	0.0000	0.0045	0.015	Pass
	0.242	0.0014	0.0045	0.015	Pass
	0.554	0.0008	0.0045	0.015	Pass
	0.718	0.0019	0.0045	0.015	Pass
	1.030	0.0032	0.0045	0.015	Pass
635 nm	0.000	0.0000	0.0045	0.015	Pass
	0.262	0.0016	0.0045	0.015	Pass
	0.539	-0.0002	0.0045	0.015	Pass
	0.686	0.0006	0.0045	0.015	Pass
	0.983	0.0022	0.0045	0.015	Pass

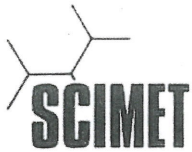
The validity of the statements of conformity cannot be guaranteed for different places of use, environmental conditions or improper use.

The End of Statements of Conformity

บริษัท ชายน์เมท จำกัด (SCIMET CO., LTD.)

818/124 Udomsuk rd., Bangna-Nuea, Bangna, Bangkok 10260 Thailand
Email: scimet2022@gmail.com, Tel: 02 460 9239

FC07-04: 27 JAN 2025



ใบตรวจสอบสภาพเครื่อง Spectrophotometer

เลขที่ใบงาน: KSMT2502636

ชนิดเครื่องมือ: SPECTROPHOTOMETER

รุ่น: DR3900

หมายเลขเครื่อง: 2076219

ตรวจสอบ (รับ)		รายการตรวจเช็ค	ตรวจสอบ (ส่ง)		หมายเหตุ
30 Jun 2025			01 Jul 2025		
ปกติ	ไม่ปกติ		ปกติ	ไม่ปกติ	
☒	☐	1. ความสมบูรณ์เครื่อง	☒	☐	
☒	☐	2. ความสะอาด (ช่องใส่ตัวอย่าง, ภายใน-นอกเครื่อง)	☒	☐	
☒	☐	3. สวิตช์ ปิด – เปิด เครื่อง (On-Off Swicth)	☒	☐	
☒	☐	4. ปุ่มกด (Keypad)	☒	☐	
☒	☐	5. หน้าจอ (Display, Screen Contrast)	☒	☐	
☐	☐	6. ตัวหมุนเลือกความยาวคลื่น (Wavelength Control)	☐	☐	-
☒	☐	7. ความยาวคลื่น (Wavelength Check)	☒	☐	807.0nm=806.4nm
☐	☐	8. แหล่งกำเนิดแสง (UV < 3,000 hour)	☐	☐	-
☒	☐	9. แหล่งกำเนิดแสง (Visible < 5,000 hour)	☒	☐	
☐	☐	10. ช่องวัดหลายตัวอย่าง (Carousel Module)	☐	☐	-

เพิ่มเติม/ขอแนะนำ :

Service Engineer

บริษัท ชายันเมท จำกัด (SCIMET CO., LTD.)

818/124 Udomsuk rd., Bangna-Nuea, Bangna, Bangkok 10260 Thailand
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FI07-02: 27 JAN 2025