เอกสารแนบ 6

เอกสารสอบเทียบเครื่องมือที่ใช้ในการวิเคราะห์

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	BALANCE
MANUFACTURER	:	SHIMADZU
MODEL / TYPE	:	AP225WD
SERIAL NO.	:	D316300692[LA-001]
CLID. NO.	:	362100172
JOB CONTROL NO.	:	250215018253
CALIBRATION SERVICE	:	☐ IN-LABORATORY ☑ ON-SITE

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

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

 [redacted]

CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025

NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	BALANCE
MANUFACTURER	:	SHIMADZU
MODEL / TYPE	:	AP225WD
SERIAL NO.	:	D316300692[LA-001]
LOCATION SITE	:	LABORATORY-BALANCE ROOM
DATE OF CALIBRATION	:	27 February 2025

ENVIRONMENT CONDITIONS :

Temperature : 23 °C to 24 °C Relative Humidity : 49 % to 51 %

PROCEDURE USED :

This instrument was calibrated under procedure No. **WI-305-46** based on **EURAMET/cg-18/Version 4.0 (11/2015).**
The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Weight Set, Mettler Toledo Class E2 S/N. 158850.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).
Certificate No. MM-0165-23, Due Date 21 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

CALIBRATION DATA

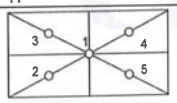
1. Error of indications

Nominal Test Value (g)	Conventional mass (g)	Display Value (g)	Error of Balance (g)	Uncertainty ± (mg)	Coverage factor *k*
Unload	0.0000	0.0000	0.0000	0.07	2,00
5.0000	5.0000	5.0001	+0.0001	0.11	2,00
10.0000	10.0000	10.0000	0.0000	0.11	2,00
20.0000	20.0000	20.0000	0.0000	0.12	2,00
40.0000	40.0000	39.9999	-0.0001	0.14	2,00
60.0000	59.9999	59.9999	0.0000	0.15	2,00
80.0000	79.9999	80.0000	+0.0001	0.19	2,00
100.0000	99.9999	100.0000	+0.0001	0.17	2,00
120.0000	119.9999	120.0000	+0.0001	0.21	2,00
140.0000	139.9999	139.9999	0.0000	0.25	2,00
160.0000	159.9998	159.9998	0.0000	0.26	2,00
180.0000	179.9998	179.9998	0.0000	0.30	2,00
200.0000	199.9997	199.9996	-0.0001	0.26	2,00

2. Repeatability of indications

Nominal Test Value (g)	Standard Deviation of Reading (g)
200.0000	0.00006

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

☐ 

☑

Nominal Test Value (g)	Display Value (g)					Maximum Difference of Center Value (g)
	Position 1	Position 2	Position 3	Position 4	Position 5	
100.0000	100.0000	99.9999	100.0000	100.0001	100.0000	0.0001

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116,117 of 138

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

End of Certificate

[redacted]

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CLC Accredited ISO/IEC 17025

ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	HOT AIR OVEN
MANUFACTURER	:	MEMMERT
MODEL / TYPE	:	UF110
SERIAL NO.	:	B422.0026[LA-0012]
CLID. NO.	:	332202464
JOB CONTROL NO.	:	250306027140
CALIBRATION SERVICE	:	☐ IN-LABORATORY ☑ ON-SITE

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

DATE OF RECEIVED : 06 March 2025 DATE OF ISSUED : 25 March 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

4.671

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	HOT AIR OVEN
MANUFACTURER	:	MEMMERT
MODEL / TYPE	:	UF110
SERIAL NO.	:	B422.0026[LA-0012]
LOCATION SITE	:	LABORATORY-HOT ZONE
DATE OF CALIBRATION	:	19 March 2025

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C **Relative Humidity : 49% to 51 %**

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPTH-07** based on **TLAS G-20** as calibration guidelines.

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

REFERENCE STANDARD USED :

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

TRACEABILITY :

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

Certificate No. Q24052150, Due Date 27 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring hot air oven.

CALIBRATION DATA

1. HOT AIR OVEN PERFORMANCE

DUC		Measured Uniformity	Measured Stability	Measured Overall
Setting (°C)	Indicating (°C)	(°C)	(°C)	Variation (°C)
104.0	104.0	0.29	0.11	0.68
180.0	180.0	0.83	0.22	1.40

[redacted]

[redacted]

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2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

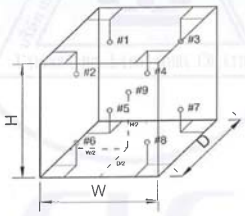
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

DUC		Measured Temperature (°C)@Probe No.9 is Ref.									Uncertainty ±(°C)	Coverage factor *k*
Setting (°C)	Indicating (°C)	1	2	3	4	5	6	7	8	9		
104.0	104.0	103.64	103.91	103.49	103.54	103.67	103.61	103.47	103.96	103.72	0.43	2,00
180.0	180.0	179.19	179.91	178.87	179.17	179.38	179.38	178.90	179.22	179.63	0.51	2,00

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

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 59 of 68



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

End of Certificate

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	INCUBATOR
MANUFACTURER	:	ACCUPLUS
MODEL / TYPE	:	SMART i250
SERIAL NO.	:	2059-0718-0010[LA-002]
CLID. NO.	:	332100155
JOB CONTROL NO.	:	250215018255
CALIBRATION SERVICE	:	☐ IN-LABORATORY ☑ ON-SITE

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

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

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

Calibrated By : [redacted] [redacted]

Approved By :

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	INCUBATOR
MANUFACTURER	:	ACCUPLUS
MODEL / TYPE	:	SMART i250
SERIAL NO.	:	2059-0718-0010[LA-002]
LOCATION SITE	:	LABORATORY
DATE OF CALIBRATION	:	27 February 2025

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C **Relative Humidity : 49 % to 51 %**

PROCEDURE USED :

This instrument was calibrated under procedure No. **WI-305-165** based on **TLAS G-20-1/02-08** as calibration guidelines.

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

REFERENCE STANDARD USED :

Hydra Series II, Fluke Model 2635A S/N. 8209003.

TRACEABILITY :

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

Certificate No. Q24052151, Due Date 27 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring incubator.

CALIBRATION DATA

1. INCUBATOR PERFORMANCE

DUC		Measured Uniformity	Measured Stability	Measured Overall
Setting (°C)	Indicating (°C)	(°C)	(°C)	Variation (°C)
20.0	20.0	0.43	0.34	0.98

[redacted]

[redacted]

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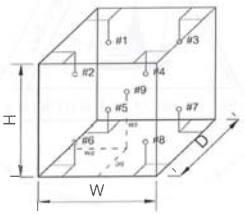
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

DUC		Measured Temperature (°C)@Probe No.9 is Ref.									Uncertainty ±(°C)	Coverage factor *k*
Setting (° C)	Indicating (° C)	1	2	3	4	5	6	7	8	9		
20.0	20.0	20.55	20.53	20.57	20.51	20.59	20.52	20.40	20.47	20.27	0.58	2,00

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

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



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

End of Certificate

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	pH METER
MANUFACTURER	:	APERA
MODEL / TYPE	:	PH700/201T-F
SERIAL NO.	:	PH700X1019061009/N/A [LA-008/PH-02]
CLID. NO.	:	272401000
JOB CONTROL NO.	:	250410042961
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

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

CLC Accredited ISO/IEC 17025

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	pH METER
MANUFACTURER	:	APERA
MODEL / TYPE	:	PH700/201T-F
SERIAL NO.	:	PH700X1019061009/N/A [LA-008/PH-02]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (25 ± 2.5) °C Relative Humidity : (50 ± 15) % RH

PROCEDURE USED :

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

REFERENCE STANDARD USED :

1. pH Standard Solution, NIMT TRM CODE TRM-S-2003, TRM CODE TRM-S-2007.
2. pH Standard Solution, Control Company Catalog Number 06664260,11754256, Lot Number CC787362.
3. Calibration Bath, Kambic Model OB-22/2 ULT S/N. 17115653.
4. Precision Thermometer, ASL Model F250 S/N. 1334023800.
5. IPRT, Wika Model CTP5000-250-D S/N. PO00043543-1-10-1.

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI) , through National Institute of Metrology (Thailand). Lot Number. 080124 , 120124. Due Date 23 January 2026.
2. The measurements are traceable to International System of Units (SI) , through Control Company. Certificate No. 4281-14495731 , Due Date 27 September 2025.
3. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24120999, Due Date 26 November 2025.
4. The measurements are traceable to International System of Units (SI) , through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 1042/67, Due Date 16 October 2025.
5. The measurements are traceable to International System of Units (SI) , through National Institute of Metrology (Thailand). Certificate No. TT-0146-24, Due Date 28 October 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

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2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of pH meter.

CALIBRATION DATA

1. pH METER RESULT @ 25 °C

Standard pH Buffer Solution (pH)	pH Meter Reading (pH)	pH Meter Reading (mV)	Correction (pH)	Uncertainty of Measurement (± pH)	*k* Factor
4.003	4.01	134	-0.007	0.014	2,00
7.005	7.00	-43	+0.005	0.014	2,00
10.015	10.01	-208	+0.005	0.100	2,05

Technical Note. Setting function CAL 3 point (4,7,10).

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

***2. TEMPERATURE RESULT**

Immersion depth (mm)	Actual Temperature (°C)	DUC Reading (°C)	Correction (°C)	Uncertainty ± (°C)
100	25.01	24.9	+0.11	0.07

Technical Note. Type of sensor : pH Probe

Probe ∅ 12 mm

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor of $k = 2,00$.

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

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

End of Certificate

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	WATER BATH
MANUFACTURER	:	M-LAB
MODEL / TYPE	:	WBN 15
SERIAL NO.	:	0335[LA-007]
CLID. NO.	:	332300657
JOB CONTROL NO.	:	250215018258
CALIBRATION SERVICE	:	☐ IN-LABORATORY ☑ ON-SITE

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

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	WATER BATH
MANUFACTURER	:	M-LAB
MODEL / TYPE	:	WBN 15
SERIAL NO.	:	0335[LA-007]
LOCATION SITE	:	LABORATORY - HOT ZONE
DATE OF CALIBRATION	:	27 February 2025

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C **Relative Humidity : 49% to 51%**

PROCEDURE USED :

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

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

REFERENCE STANDARD USED :

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

TRACEABILITY :

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

Certificate No. Q24120965, Due Date 13 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

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

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

CALIBRATION DATA

1. WATER BATH PERFORMANCE

Test Point (°C)	DUC Reading (°C)	Uniformity (°C)	Stability (°C)
85.0	85.0	0.40	0.28

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

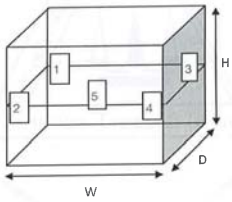
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

Test Point (°C)	DUC Reading (°C)	STD Reading (°C)					Uncertainty ± (°C)
		Probe No. 1	Probe No. 2	Probe No. 3	Probe No. 4	Probe No. 5	
85.0	85.0	85.15	84.79	84.96	84.89	85.06	0.58

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

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



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

End of Certificate

[redacted]

[redacted]

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	WATER BATH
MANUFACTURER	:	MEMMERT
MODEL / TYPE	:	WNB14
SERIAL NO.	:	L418.0758[LA-004]
CLID. NO.	:	332100157
JOB CONTROL NO.	:	250215018257
CALIBRATION SERVICE	:	☐ IN-LABORATORY ☑ ON-SITE

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

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	WATER BATH
MANUFACTURER	:	MEMMERT
MODEL / TYPE	:	WNB14
SERIAL NO.	:	L418.0758[LA-004]
LOCATION SITE	:	LABORATORY - HOT ZONE
DATE OF CALIBRATION	:	27 February 2025

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C **Relative Humidity : 49% to 51%**

PROCEDURE USED :

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

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

REFERENCE STANDARD USED :

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

TRACEABILITY :

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

Certificate No. Q24120965, Due Date 13 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

 [redacted]

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

CALIBRATION DATA

1. WATER BATH PERFORMANCE

Test Point (°C)	DUC Reading (°C)	Uniformity (°C)	Stability (°C)
95.0	95.0	0.39	0.17

[redacted]

 [redacted]

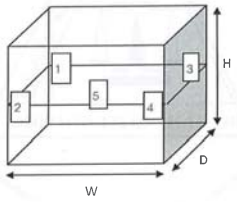
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

Test Point (°C)	DUC Reading (°C)	STD Reading (°C)					Uncertainty ±(°C)
		Probe No. 1	Probe No. 2	Probe No. 3	Probe No. 4	Probe No. 5	
95.0	95.0	96.45	96.30	96.22	96.04	96.26	0.51

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

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



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

End of Certificate

[redacted]

 [redacted]

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC PIPETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	10 ml
SERIAL NO.	:	N/A[VLP-10-01]
CLID. NO.	:	272100140
JOB CONTROL NO.	:	250410042802
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

 [redacted]

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REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC PIPETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	10 ml
SERIAL NO.	:	N/A[VLP-10-01]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-06** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

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CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
10	9.9906	-0.0094	0.0038	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 55 of 68

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

End of Certificate

[redacted]

[redacted]

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	1000 ml
SERIAL NO.	:	N/A[VLF-1000-01]
CLID. NO.	:	272100139
JOB CONTROL NO.	:	250410042809
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 **DATE OF ISSUED : 21 April 2025**

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	1000 ml
SERIAL NO.	:	N/A[VLF-1000-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) %RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-05** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model Secura6102-1s S/N.0042104938.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24112878, Due Date 22 October 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

น. [redacted]

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
1000	1000.20	+0.20	0.14	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

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[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com
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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	500 ml
SERIAL NO.	:	N/A[VLF-500-01]
CLID. NO.	:	272100145
JOB CONTROL NO.	:	250410042808
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 21 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

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REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	500 ml
SERIAL NO.	:	N/A[VLF-500-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) %RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-05** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model Secura6102-1s S/N.0042104938.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24112878, Due Date 22 October 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
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CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
500	499.98	-0.02	0.08	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

น [redacted]

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	200 ml
SERIAL NO.	:	N/A[VLF-200-01]
CLID. NO.	:	272100144
JOB CONTROL NO.	:	250410042807
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 21 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	200 ml
SERIAL NO.	:	N/A[VLF-200-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C Relative Humidity : (50 ± 10) %RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-05** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model Secura1103-1s S/N.0042104933.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24112876, Due Date 22 October 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
200	199.959	-0.041	0.029	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	100 ml
SERIAL NO.	:	N/A[VLF-100-01]
CLID. NO.	:	272100143
JOB CONTROL NO.	:	250410042806
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 21 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	100 ml
SERIAL NO.	:	N/A[VLF-100-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) %RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-05** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

@clccalibration

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
100	99.9679	-0.0321	0.0173	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

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

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	50 ml
SERIAL NO.	:	N/A[VLF-50-01]
CLID. NO.	:	272100142
JOB CONTROL NO.	:	250410042805
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 **DATE OF ISSUED : 21 April 2025**

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	VOLUMETRIC FLASK
MANUFACTURER	:	WITEG
MODEL / TYPE	:	50 ml
SERIAL NO.	:	N/A[VLF-50-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) %RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-05** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
50	49.9869	-0.0131	0.0100	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED PIPETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	5 ml
SERIAL NO.	:	N/A[GPT-05-01]
CLID. NO.	:	272100137
JOB CONTROL NO.	:	250410042811
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED PIPETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	5 ml
SERIAL NO.	:	N/A[GPT-05-01]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity : (50 ± 10) % RH**

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-06** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

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

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
2.5	2.4821	-0.0179	0.0025	2,00
5	4.9795	-0.0205	0.0026	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 55 of 68

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

End of Certificate

[redacted]

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[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	PISTON PIPETTE [MICRO PIPETTE]
MANUFACTURER	:	CAPP BRANO
MODEL / TYPE	:	1-10 ml
SERIAL NO.	:	QI525879
CLID. NO.	:	272500887
JOB CONTROL NO.	:	250410042814
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	PISTON PIPETTE [MICRO PIPETTE]
MANUFACTURER	:	CAPP BRANO
MODEL / TYPE	:	1-10 ml
SERIAL NO.	:	QI525879
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C Relative Humidity : 50 (+10 % , - 5%) Barometric Pressure : 1007 hPa

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-02** based on **ISO 8655-6** as calibration guidelines.
The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan Model N/A S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC). The actual volume readings from STD were reported in average of ten times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (µl)	Actual volume (µl)	Systematic Error (µl)	% CV	Uncertainty ± (µl)	Coverage factor *k*
5000	5024.8	+24.8	0.01	11.6	2,00
10000	10039.3	+39.3	0.01	12.0	2,00

Type of Tip ; Color : Clear Volume : 1000-10000 µl

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 50 % , Barometric Pressure : 1007 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 53 of 68

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

End of Certificate

[redacted]

CALIBRATION LABORATORY CO., LTD.
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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	DISPENSER
MANUFACTURER	:	WITEG
MODEL / TYPE	:	5 ml
SERIAL NO.	:	42 0518 075
CLID. NO.	:	272300702
JOB CONTROL NO.	:	250410042815
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 19 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	DISPENSER
MANUFACTURER	:	WITEG
MODEL / TYPE	:	5 ml
SERIAL NO.	:	42 0518 075
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity : (50 ± 10) %RH**

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-07** based on **ISO 8655** as calibration guidelines. The calibration was performed by using Barometer, Electronic Balance, Thermo-hygrograph and Thermometer maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Radwag Model TH-1 S/N. N/A.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan Model N/A S/N. 1.

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q23078619, Due Date 20 July 2025.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025 .
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

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[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC). The actual volume readings from STD were reported in average of ten times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Systematic Error (ml)	% CV	Uncertainty ± (ml)	Coverage factor *k*
2.5	2.4860	-0.0140	0.04	0.0008	2,16
5	5.0062	+0.0062	0.03	0.0012	2,21

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 55 of 68

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

End of Certificate

[redacted]

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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED CYLINDER
MANUFACTURER	:	WITEG
MODEL / TYPE	:	100 ml
SERIAL NO.	:	0859-62[CLD-100-01]
CLID. NO.	:	272100141
JOB CONTROL NO.	:	250410042803
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 **DATE OF ISSUED : 19 April 2025**

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

น.[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ANSI National Accreditation Board ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED CYLINDER
MANUFACTURER	:	WITEG
MODEL / TYPE	:	100 ml
SERIAL NO.	:	0859-62[CLD-100-01]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-01** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model Secura1103-1s S/N.0042104933.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24112876, Due Date 22 October 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
50	50.080	+0.080	0.018	2,00
100	99.997	-0.003	0.029	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 53 of 68

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

End of Certificate

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED CYLINDER
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	50 ml
SERIAL NO.	:	N/A[C-50-02]
CLID. NO.	:	272400322
JOB CONTROL NO.	:	250410042804
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 **DATE OF ISSUED :** 19 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	GRADUATED CYLINDER
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	50 ml
SERIAL NO.	:	N/A[C-50-02]
DATE OF CALIBRATION	:	17 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-01** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

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CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
25	25.2470	+0.2470	0.0120	2,00
50	50.1690	+0.1690	0.0180	2,00

Type of glassware : ☑ to Contain ☐ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 53 of 68

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

End of Certificate

[redacted]

[redacted]

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	BURETTE
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[BL-25-02]
CLID. NO.	:	272300703
JOB CONTROL NO.	:	250410042812
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	BURETTE
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[BL-25-02]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-03** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

[redacted]

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
12.5	12.4057	-0.0943	0.0063	2,00
25	24.8171	-0.1829	0.0066	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	BURETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	10 ml
SERIAL NO.	:	N/A[19CG4117]
CLID. NO.	:	272500886
JOB CONTROL NO.	:	250410042810
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	BURETTE
MANUFACTURER	:	WITEG
MODEL / TYPE	:	10 ml
SERIAL NO.	:	N/A[19CG4117]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C Relative Humidity : (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-03** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
5	4.9989	-0.0011	0.0037	2,00
10	10.0038	+0.0038	0.0038	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	AUTO BURETTE
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[WK2403-30]
CLID. NO.	:	272500885
JOB CONTROL NO.	:	250410042801
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

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CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com
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REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	AUTO BURETTE
MANUFACTURER	:	ISOLAB
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[WK2403-30]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-03** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com
CLC Accredited ISO/IEC 17025
ilac-MRA ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
12.5	12.4603	-0.0397	0.0063	2,00
25	24.9451	-0.0549	0.0066	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
[redacted] www.cal-laboratory.com E-mail:sale@cal-laboratory.com
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CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE	:	AUTO BURETTE
MANUFACTURER	:	HIRSCHMANN
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[ATB-25-01]
CLID. NO.	:	272100138
JOB CONTROL NO.	:	250410042800
CALIBRATION SERVICE	:	☑ IN-LABORATORY ☐ ON-SITE

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

DATE OF RECEIVED : 10 April 2025 **DATE OF ISSUED : 18 April 2025**

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

Calibrated By : [redacted]

Approved By : [redacted]

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

[redacted]

CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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REPORT OF CALIBRATION

FOR

NOMENCLATURE	:	AUTO BURETTE
MANUFACTURER	:	HIRSCHMANN
MODEL / TYPE	:	25 ml
SERIAL NO.	:	N/A[ATB-25-01]
DATE OF CALIBRATION	:	11 April 2025

ENVIRONMENT CONDITIONS :

Temperature : (20 ± 2.5) °C **Relative Humidity :** (50 ± 10) % RH

PROCEDURE USED :

This instrument was calibrated under procedure No. **CLC-CPGW-03** based on **ASTM E542-01** as calibration guidelines. The calibration was performed by using Electronic Balance,Thermo-hygrograph,Barometer and Thermometer which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Barometer, Barigo S/N.001.
2. Electronic Balance, Sartorius Model CPA224S S/N.23908487.
3. Thermo-hygrograph, Isuzu Model 3-3126 S/N.30760420.
4. Thermometer, Brannan S/N. 1.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q25008389, Due Date 24 January 2026.
2. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137029, Due Date 27 December 2025.
3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24121014, Due Date 18 November 2025.
4. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24137031, Due Date 26 December 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

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CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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CLC Accredited ISO/IEC 17025

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ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

The calibration was performed by applied volume to the Device Under Calibration (DUC) . The actual volume readings from STD were reported in average of seven times measurements.

CALIBRATION DATA

CORRECTION OF VOLUME

DUC Test point (ml)	Actual volume (ml)	Correction (ml)	Uncertainty ± (ml)	Coverage factor *k*
12.5	12.4190	-0.0810	0.0063	2,00
25	24.8660	-0.1340	0.0066	2,00

Type of glassware : ☐ to Contain ☑ to Deliver

The Exact value : Water Temperature : 20.0 °C, Relative Humidity : 51 % , Barometric Pressure : 1009 hPa

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 54 of 68

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

End of Certificate

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