

ภาคผนวก - ง

เอกสารสอบเทียบเครื่องมือที่ใช้ในการวิเคราะห์



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Salmal, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3967

Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd.	Order No.	: 1617/26
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Digital with Probe (Type K)	Calibration date	: Jun 02, 2026
Manufacturer	: CHY	Environment Condition :	
Model	: 502A	Temperature	: (25+/-10) °C
Serial No.	: 56000360	Humidity	: (50+/-30) %RH
Identification No.	: E-035		
Calibration Place	: Laboratory Room		

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-001 According to comparison with Standard Digital Thermometer with Probe.
The calibration methods based on ITS-90.

Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
Standard Digital Thermometer with Probe	UM RTD	2002Z Z380 073A	MT25-7592	Nov 14, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Mr.Worasorn Thongngiw

Approved by : (Mr.Panuwat Phuklan)

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-002



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3967

Page : 2 of 2

Result : Without Adjustment
Function : Temperature measurement
Sensor Type : Thermocouple type K
Diameter : 3 mm
Calibration point : 0 to 20 °C

Resolution : 0.1 °C

Channel : T1

Immersion depth (mm)	Calibration point (°C)	Standard reading (°C)	UUC* reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
140	0	-0.03	0.2	-0.23	0.24
140	3	2.97	3.2	-0.23	0.24
140	20	19.97	20.1	-0.13	0.24
140	0	-0.03	0.2	-0.23	0.24

Result : Without Adjustment
Function : Temperature measurement
Sensor Type : Thermocouple type K
Diameter : 3 mm
Calibration point : 150 to 380 °C

Resolution : 0.1 °C

Channel : T2

Immersion depth (mm)	Calibration point (°C)	Standard reading (°C)	UUC* reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
140	150	150.00	150.6	-0.60	0.47
140	380	380.05	382.0	-1.95	0.93
140	150	150.00	150.6	-0.60	0.47

UUC* = Unit under calibration

-oOo-

Rev.03 / Feb 2024

FM-MT-002



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3968

Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd.	Order No.	: 1617/26
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Digital Thermometer with RTD	Calibration date	: Jun 02, 2026
Manufacturer	: CHY	Environment Condition :	
Model	: 804U	Temperature	: (25+/-10) °C
Serial No.	: 090034	Humidity	: (50+/-30) %RH
Identification No.	: E-028		
Calibration Place	: Laboratory Room		

Calibration Method : Calibration were conducted using In-house calibration procedure *CP-MT-001* According to comparison with Standard Digital Thermometer with Probe.
The calibration methods based on ITS-90.

Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
Standard Digital Thermometer with Probe	UM RTD	2002Z Z380 073A	MT25-7592	Nov 14, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Mr.Worasorn Thongngiw

Approved by : (Mr.Panuwat Phuklan)

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-002



Inctech Metrological Center Co., Ltd.
 39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
 Saimai, Bangkok 10220, Thailand
 Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3968
Page : 2 of 2

Result : Without Adjustment
Function : Temperature measurement
Sensor Type : Resistance Temperature Detector PT100
Diameter : 3 mm **Resolution** : 0.1 °C
Calibration point : 104, 150, 180 °C

Immersion depth (mm)	Calibration point (°C)	Standard reading (°C)	UUC* reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
140	104	103.99	104.5	-0.51	0.12
140	150	150.00	150.6	-0.60	0.12
140	180	180.00	180.5	-0.50	0.13
140	104	103.99	104.5	-0.51	0.12

UUC* = Unit under calibration

Rev.03 / Feb 2024

-oOo-

FM-MT-002



Intech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3969

Page : 1 of 2

Customer	: Water Index & Consultant Co., Ltd	Order No.	: 2085/25
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Kjeldahl Digestion Furnace	Calibration date	: Jun 02, 2026
Manufacturer	: Biobase	Environment Condition :	
Model	: BKD-88	Temperature	: (25+/-10) °C
Serial No.	: 08B-250610-015	Humidity	: (50+/-30) %RH
Identification No.	: E-078		
Calibration Place	: Laboratory Room		
Calibration Method	: Calibration were conducted using In-house calibration procedure CP-MT-006 According to comparison with LXI Data Acquisition Switch Unit with sensor. The calibration methods based on Euramet Calibration Guide No.20 - guidelines on the Calibration of Temperature and/or Humidity Controlled Enclosures.		

Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
Data Acquisition System with Sensor	DAQ970A	MY58003372	MT25-7942	Dec 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Mr.Amuparp Sangsrikham

Approved by : Mr.Panuwat Phukian

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Intech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-002



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3969
Page : 2 of 2

Function : Temperature measurement

Calibration point : 380 °C

Immersion depth : 50 mm

Result : Without adjustment

Resolution : 1 °C

Media : Sand

Position No.	UUC* setting (°C)	UUC* reading (°C)	Standard reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
1	385	385	380.22	-4.78	0.58
2	385	385	380.21	-4.79	0.58
3	385	385	380.15	-4.85	0.58
4	385	385	380.21	-4.79	0.58
5	385	385	380.14	-4.86	0.58
6	385	385	379.86	-5.14	0.58
7	385	385	380.07	-4.93	0.58
8	385	385	380.32	-4.68	0.58



Front View

UUC* = Unit under calibration

-oOo-

Rev.03 / Feb 2024

FM-MT-002



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com




ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3963
Page : 1 of 3

Customer	: Water Indcx & Consultant Co.,Ltd.	
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	
Description	: Heating Block (COD)	Order No. : 1617/26
Manufacturer	: Lovibond	Received date : Jun 02, 2026
Model	: ET 125 SC	Calibration date : Jun 02, 2026
Serial No.	: 0980/2426	<u>Environment Condition :</u>
Identification No.	: E-005	Temperature : (25+/-10) °C
Calibration Place	: Laboratory Room	Humidity : (50+/-30) %RH
Calibration Method	: Calibration were conducted using In-house calibration procedure CP-MT-009 According to comparison with LXI Data Acquisition Switch Unit with Sensor.	

Reference Standard Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
LXI Data Acquisition Switch Unit with Sensor	34972A	MY49028922	MT25-7593	Nov 17, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k = 2, providing a level of confidence of not less than 95%

Calibrated by : Mr.Porntep Homchuay



Approved by : (Mr.Panuwat Phuklan)
Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-019



Intech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com

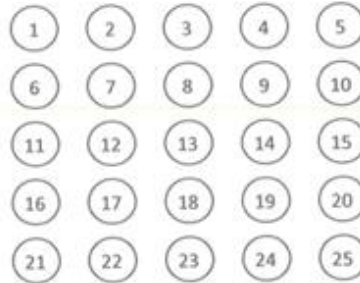


ISO/IEC 17025 : 2017

Certificate No. : MT26-3963

Page : 2 of 3

Position



Top view

Function : Temperature measurement
Calibration point : 150 °C
Immersion depth : 50 mm

Result : Without adjustment

Position No.	UUC* setting (°C)	Standard reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
1	150	150.807	0.807	0.16
2	150	150.607	0.607	0.16
3	150	150.522	0.522	0.16
4	150	150.565	0.565	0.16
5	150	150.725	0.725	0.16
6	150	150.342	0.342	0.16
7	150	150.471	0.471	0.16
8	150	150.377	0.377	0.16
9	150	150.400	0.400	0.16
10	150	150.510	0.510	0.16

UUC* = Unit under calibration



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3963

Page : 3 of 3

Function : Temperature measurement Cont.
Calibration point : 150 °C
Immersion depth : 50 mm

Result : Without adjustment

Position No.	UUC* setting (°C)	Standard reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
11	150	150.354	0.354	0.16
12	150	150.651	0.651	0.16
13	150	150.632	0.632	0.16
14	150	150.597	0.597	0.16
15	150	150.243	0.243	0.16
16	150	150.430	0.430	0.16
17	150	150.674	0.674	0.16
18	150	150.484	0.484	0.16
19	150	150.415	0.415	0.16
20	150	150.327	0.327	0.16
21	150	150.358	0.358	0.16
22	150	150.592	0.592	0.16
23	150	150.532	0.532	0.16
24	150	150.547	0.547	0.16
25	150	150.712	0.712	0.16

UUC* = Unit under calibration

-oOo-

Rev.03 / Feb 2024

FM-MT-019



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com




ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3964
Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd.	Order No.	: 1617/26
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Hot Air Oven	Calibration date	: Jun 02, 2026
Manufacturer	: Memmert	<u>Environment Condition :</u>	
Model	: SM400	Temperature	: (25+/-10) °C
Serial No.	: B4921010	Humidity	: (50+/-30) %RH
Identification No.	: E-017		
Calibration Place	: Laboratory Room		

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-006 According to comparison with LXI Data Acquisition Switch Unit with sensor. The calibration methods based on Euramet Calibration Guide No.20 - guidelines on the Calibration of Temperature and/or Humidity Controlled Enclosures.

Reference Standard Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
Data Acquisition System with Sensor	DAQ970A	MY58003372	MT25-7942	Dec 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by Coverage factor k = 2, providing a level of confidence of not less than 95%



Calibrated by : Mr.Porntep Homchuay

Approved by : (Mr.Panuwat Phuklan)

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-013



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3964

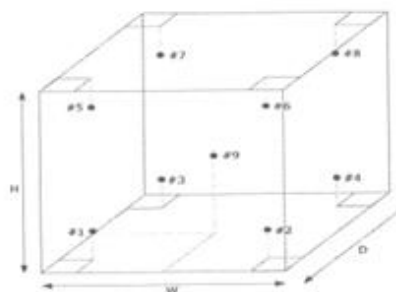
Page : 2 of 2

Function : Temperature measurement
Calibration point : 104, 110, 120, 150, 180 °C

Result : Without adjustment
Resolution : 0.1 °C

Calibration point (°C)	Temperature of UUC* at each position (°C)									Uncertainty of measurement (+/- °C)
	Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8	Ch.9	
104	104.259	104.275	104.202	104.384	104.300	104.010	104.209	104.388	104.395	0.45
110	110.817	110.624	110.512	110.685	110.617	110.606	110.513	110.712	110.733	0.45
120	120.584	120.462	120.763	120.510	120.923	120.232	120.298	120.531	120.548	0.45
150	150.242	150.314	150.236	150.322	150.381	150.273	150.238	150.289	150.361	0.55
180	180.201	180.347	180.289	180.321	180.295	180.232	180.119	180.280	180.167	0.55

Setting temperature (°C)	Indicating Temperature (°C)	Measured stability (+/- °C)	Measured uniformity (°C)	Overall variation (°C)
104.0	104.0	0.12	0.46	0.52
110.0	110.0	0.13	0.27	0.39
120.0	120.0	0.15	0.42	0.82
150.0	150.0	0.44	0.48	0.88
180.0	180.0	0.44	0.56	0.88



- #1 Lower Left Front
- #2 Lower Right Front
- #3 Lower Left Rear
- #4 Lower Right Rear
- #5 Upper Left Front
- #6 Upper Right Front
- #7 Upper Left Rear
- #8 Upper Right Rear
- #9 Geometric Center

Front view

UUC* = Unit under calibration

Uniformity = Maximum and Minimum difference of measured temperature at any probes and the measured temperature at the reference and same time.

Overall Variation = Difference of temperature value between the maximum and minimum any time.

Stability = One half of the maximum difference of measured temperatures at any one probe.

-oOo-

Rev.03 / Feb 2024

FM-MT-013



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3965

Page : 1 of 2

Customer : Water Index & Consultant Co.,Ltd.
Address : 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor,
Bangphlat, Bangkok 10700

Description : Refrigerator
Manufacturer : S-Cool
Model : SSM163T
Serial No. : 144201410
Identification No. : E-015
Calibration Place : Laboratory Room

Order No. : 1617/26
Received date : Jun 02, 2026
Calibration date : Jun 02, 2026
Environment Condition :
Temperature : (25+/-10) °C
Humidity : (50+/-30) %RH

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-006 According to comparison with LXI Data Acquisition Switch Unit with sensor. The calibration methods based on Euramet Calibration Guide No.20 - guidelines on the Calibration of Temperature and/or Humidity Controlled Enclosures.

Reference Standard Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
Data Acquisition System with Sensor	DAQ970A	MY58003372	MT25-7942	Dec 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Mr.Porntep Homchuay

Approved by : (Mr.Panuwat Phuklan)

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-013



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025:2017

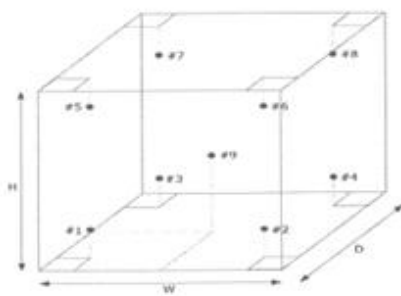
Certificate No. : MT26-3965
Page : 2 of 2

Function : Temperature measurement
Calibration point : 3 °C

Result : Without adjustment
Resolution : 0.1 °C

Calibration point (°C)	Temperature of UUC* at each position (°C)									Uncertainty of measurement (+/- °C)
	Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8	Ch.9	
3	2.994	3.331	3.342	3.118	3.368	3.008	3.417	3.369	2.970	0.32

Setting temperature (°C)	Indicating Temperature (°C)	Measured stability (+/- °C)	Measured uniformity (°C)	Overall variation (°C)
3.0	2.9 to 3.0	0.08	0.52	0.54



Front view

#1 Lower Left Front
#2 Lower Right Front
#3 Lower Left Rear
#4 Lower Right Rear
#5 Upper Left Front
#6 Upper Right Front
#7 Upper Left Rear
#8 Upper Right Rear
#9 Geometric Center

UUC* = Unit under calibration
Uniformity = Maximum and Minimum difference of measured temperature at any probes and the measured temperature at the reference and same time.
Overall Variation = Difference of temperature value between the maximum and minimum any time.
Stability = One half of the maximum difference of measured temperatures at any one probe.

Rev.03 / Feb 2024

-oOo-

FM-MT-013



Intech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Salmal, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3968

Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd.	Order No.	: 1617/26
Address	: 229/8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Incubator	Calibration date	: Jun 02, 2026
Manufacturer	: Accuplus	Environment Condition :	
Model	: i250	Temperature	: (25+/-10) °C
Serial No.	: 1250402-0110-0303	Humidity	: (50+/-30) %RH
Identification No.	: E-001		
Calibration Place	: Laboratory Room		

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-006 According to comparison with LXI Data Acquisition Switch Unit with sensor. The calibration methods based on Euramet Calibration Guide No.20 - guidelines on the Calibration of Temperature and/or Humidity Controlled Enclosures.

Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
Data Acquisition System with Sensor	DAQ970A	MY58003372	MT25-7942	Dec 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Mr.Porntep Homchuay

Approved by : (Mr.Panuwat Phuklan)

Issue date : Jun 08, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Intech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-013



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Salmal, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Function : Temperature measurement

Calibration point : 20 °C

Certificate No. : MT26-3966

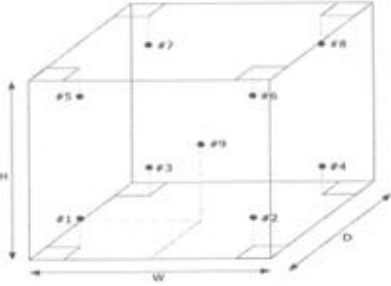
Page : 2 of 2

Result : Without adjustment

Resolution : 0.1 °C

Calibration point (°C)	Temperature of UUC* at each position (°C)									Uncertainty of measurement (+/- °C)
	Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8	Ch.9	
20	20.124	20.119	20.066	20.099	20.033	20.038	20.176	20.249	20.143	0.67

Setting temperature (°C)	Indicating Temperature (°C)	Measured stability (+/- °C)	Measured uniformity (°C)	Overall variation (°C)
20.0	20.0 to 20.1	0.55	0.46	1.2



#1 Lower Left Front

#2 Lower Right Front

#3 Lower Left Rear

#4 Lower Right Rear

#5 Upper Left Front

#6 Upper Right Front

#7 Upper Left Rear

#8 Upper Right Rear

#9 Geometric Center

Front view

UUC* = Unit under calibration

Uniformity = Maximum and Minimum difference of measured temperature at any probes and the measured temperature at the reference and same time.

Overall Variation = Difference of temperature value between the maximum and minimum any time.

Stability = One half of the maximum difference of measured temperatures at any one probe.

Rev.03 / Feb 2024

-oOo-

FM-MT-013



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com




ISO/IEC 17025 : 2017

Certificate of Calibration

Certificate No. : MT26-3970
Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd.	Order No.	: 1617/26
Address	: 229/7-8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Hygro-Thermometer	Calibration date	: Jun 04, 2026
Manufacturer	: Digicon	<u>Environment Condition :</u>	
Model	: TH-02A	Temperature	: (23+/-3) °C
Serial No.	: 1718B0744383	Humidity	: (50+/-15) %RH
Identification No.	: E-074		
Calibration Place	: Temperature & Humidity Laboratory (IMC)		

Calibration Method : Calibration were conducted using In-house calibration procedure *CP-MT-007* According to comparison with Chilled Mirror Hygrometer into Environmental Stability Chamber.

Reference Standard Instruments :	Instrument	Model	Serial No.	Certificate No.	Due Date
	Chilled Mirror Hygrometer	Optidew 401	177506	MT26-3053	Apr 06, 2027
	Chilled Mirror Hygrometer	Optidew 401	177506	TH-0042-25	Jun 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%

Calibrated by : Miss Jarunee Tubsay



Approved by : Mr. Panuwat Phukian

Issue date : Jun 05, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Inctech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-015



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com




ISO/IEC 17025 : 2017

Certificate No. : MT26-3970
Page : 2 of 2

Result : Without adjustment
Function : Temperature measurement
Calibration point : 20, 25, 30 °C
Resolution : 0.1 °C

Test point (°C)	Standard reading (°C)	UUC* reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
20	20.02	19.9	0.12	0.36
25	25.04	24.9	0.14	0.36
30	30.01	29.6	0.41	0.36

Result : Without adjustment
Function : Humidity measurement @ 25 °C
Calibration point : 40, 50, 60 %RH
Resolution : 1 %RH

Test point (%RH)	Standard reading (%RH)	UUC* reading (%RH)	UUC* correction (%RH)	Uncertainty of measurement (+/- %RH)
40	40.08	30	10.08	1.6
50	50.12	40	10.12	1.7
60	60.17	50	10.17	1.7

UUC* = Unit under calibration
Remark : This result of calibration was made on requested at the point specified by customer.

Rev.03 / Feb 2024

-oOo-

FM-MT-015



Intech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025:2017

Certificate of Calibration

Certificate No. : MT26-3971

Page : 1 of 2

Customer	: Water Index & Consultant Co.,Ltd	Order No.	: 1617/26
Address	: 229/7-8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-Aor, Bangphlat, Bangkok 10700	Received date	: Jun 02, 2026
Description	: Hygro-Thermometer	Calibration date	: Jun 04, 2026
Manufacturer	: Digicon	Environment Condition :	
Model	: TH-02A	Temperature	: (23+/-3) °C
Serial No.	: 1718B0744392	Humidity	: (50+/-15) %RH
Identification No.	: E-073		
Calibration Place	: Temperature & Humidity Laboratory (IMC)		

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-007 According to comparison with Chilled Mirror Hygrometer into Environmental Stability Chamber.

Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
Chilled Mirror Hygrometer	Optidew 401	177506	MT26-3053	Apr 06, 2027
Chilled Mirror Hygrometer	Optidew 401	177506	TH-0042-25	Jun 23, 2026

The effect that the result relate only to the items calibrated. It was found accurate as shown on date and place of calibration only.

Traceability : This measurement are traceable to the International System of Unit (SI), through National Institute of Metrology Thailand (NIMT)

The reported expanded uncertainty of measurement was based on standard uncertainty multiplied by coverage factor $k = 2$, providing a level of confidence of not less than 95%



Calibrated by : Miss Jarunee Tubsay

Approved by : (Mr. Panuwat Phuklan)

Issue date : Jun 05, 2026

This calibration certificate shall not be reproduced other than in full except with the prior written approval of Intech Metrological Center Co.,Ltd

Rev.03 / Feb 2024

FM-MT-015



Inctech Metrological Center Co., Ltd.
39/1 Soi 82, Sukhapiban 5 Rd., O ngoen,
Saimai, Bangkok 10220, Thailand
Tel. (662) 909-8820 (Auto 10 lines) www.imcinstrument.com



ISO/IEC 17025 : 2017

Certificate No. : MT26-3971

Page : 2 of 2

Result : Without adjustment
Function : Temperature measurement
Calibration point : 20, 25, 30 °C
Resolution : 0.1 °C

Test point (°C)	Standard reading (°C)	UUC* reading (°C)	UUC* correction (°C)	Uncertainty of measurement (+/- °C)
20	20.02	20.1	-0.08	0.36
25	25.04	24.9	0.14	0.36
30	30.01	29.7	0.31	0.36

Result : Without adjustment
Function : Humidity measurement @ 25 °C
Calibration point : 50, 60, 70 %RH
Resolution : 1 %RH

Test point (%RH)	Standard reading (%RH)	UUC* reading (%RH)	UUC* correction (%RH)	Uncertainty of measurement (+/- %RH)
50	50.12	32	18.12	1.7
60	60.17	42	18.17	1.7
70	70.10	53	17.10	1.9

UUC* = Unit under calibration

Remark : This result of calibration was made on requested at the point specified by customer.



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
 534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
 TEL.0-2717-3000-29 FAX.0-2719-9484




Certificate of Calibration

Cert.No.: 26CH552
 Page.: 1 of 3

Equipment :	pH Meter
Manufacturer :	Mettler Toledo
Model :	SevenCompact S220
Serial No. :	8614308589
ID No. :	E-049
Condition As-Received:	Used Item
Received Date :	22 May 2026
Calibration Date :	25 May 2026
Reference :	2605-0731WN-20
Submitted by :	WATER INDEX & CONSULTANT CO.,LTD. 229/7-8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-aor, Bangphlat, Bangkok 10700
Ambient Temperature :	(25 ± 2.5) °C
Relative Humidity :	(50 ± 15) %
Calibration Procedure :	In - house method : - CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM) - CP-CH8 by comparison with temperature standard
Calibrated by :	Walalak Sirithean 
Approved by :	 Approved Signatory
() Chakrit Waewwanjua () Ponpan Paipim (✓) Saithip Meangmai	
Issue Date :	25 May 2026

The Uncertainties are for a confidence probability of approximately 95%

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

Cert.No.: 26CH552
Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54030049	130RC116	25E2743	25 Aug 2026
2) Ref. Standard Thermometer	4982054	110RC044	25I708	03 July 2026

- This measurement result is traceable to SI through Technology Promotion Association (Thailand - Japan)

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

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	1187328	18 Jan 2028
pH 6.979	CPA chem	1187330	18 Jan 2027
pH 10.010	CPA chem	1187332	18 Jan 2027

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

Calibration Results

Function : mV Measurement

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

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter S/N.: B614308589	4.000	177.48	177.5	4.000	0.058	2.00
	7.000	0.00	0.1	7.000	0.058	2.00
	10.000	-177.48	-177.3	10.000	0.058	2.00



Cert.No.: 26CH552

Page.: 3 of 3

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ($\pm$)	Coverage factor k
pH Electrode S/N.: 6153070	4.008	4.009	183.1	0.0044	2.00
	6.979	6.979	9.1	0.0084	2.00
	10.010	10.010	-166.4	0.0071	2.00

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : InLab Expert Pro-ISM

- Serial No. : 6153070

Dimension of probe

- Length : 120 mm.

- Diameter : 12 mm.

- Immersion Depth : 100 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement ($\pm$ °C)	Coverage factor k
23.0	23.001	22.8	-0.201	0.13	2.00
25.0	25.001	24.8	-0.201	0.13	2.00
27.0	27.001	26.8	-0.201	0.13	2.00

Remark - UUC* = Unit Under Calibration

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

-o0o-

Calibration Certificate ID
TH2004-040-100825-ACC-TH

METTLER TOLEDO

Mettler-Toledo (Thailand) Limited
846/4 - 846/5 Lasalle Rd., Bangna Tai Sub-District
Bangna District, Bangkok 10260
+662 723 0382
MT-TH.ServiceSupport@mt.com



Accuracy Calibration Certificate

Customer

Company: WATER INDEX & CONSULTANT CO., LTD.
Address: 229/7-8 Soi Charansanitwong 95/1, Charansanitwong Rd., Bang-aor
City: Bangphlat Contact: Nungnuthai Sairat
Zip / Postal: 10700
State / Province: Bangkok
Order Number:  0 3 3 3 4 4 0 4 2 1

Weighing Device

Manufacturer: Mettler Toledo Terminal Model: N/A
Model: MS204TS/00 Terminal Serial No.: N/A
Serial No.: B724237367 Terminal Asset No.: N/A
Instrument Type: Weighing Instrument Building: Office
Asset Number: 300EI7 Floor: 2
Room: Laboratory

Range	Max. Capacity	Readability (d)
1	220 g	0.0001 g

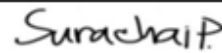
Procedure

Calibration Guideline: EURAMET cg-18 v. 4.0 (11/2015)
METTLER TOLEDO Work Instruction: CP/W002/20

This calibration certificate contains measurements for As Found and As Left calibrations.
The sensitivity/span of the weighing instrument was adjusted before As Found and As Left calibrations with a built-in weight.
In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

	Temperature		Humidity	
As Found	Start: 27.0 °C	End: 26.6 °C	Start: 49.9 %	End: 48.3 %
As Left	Start: 26.3 °C	End: 26.0 °C	Start: 43.1 %	End: 42.6 %

As Found Calibration Date: 08-Oct-2025
As Left Calibration Date: 08-Oct-2025
Issue Date: 10-Oct-2025

Calibrator: 
Surachai Pidkanpai

Approved Signatory:
Technical Manager / Head of Calibration Center

Calibration Certificate ID
TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

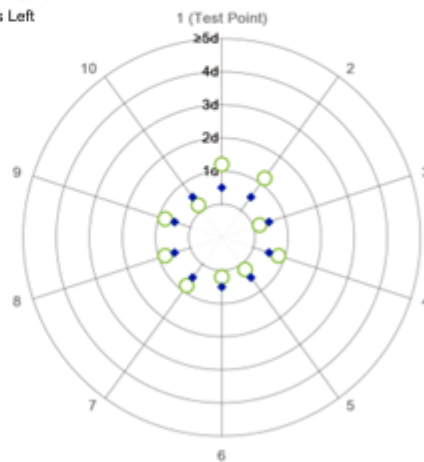
Measurement Results

Repeatability

Test Load: 100 g

	As Found	As Left
1	99.9997 g	100.0001 g
2	99.9997 g	100.0002 g
3	99.9998 g	100.0001 g
4	99.9999 g	100.0001 g
5	99.9998 g	100.0002 g
6	99.9998 g	100.0001 g
7	99.9999 g	100.0001 g
8	99.9999 g	100.0002 g
9	99.9999 g	100.0002 g
10	99.9998 g	100.0002 g

● As Found
◆ As Left



The "d" in the graph represents the readability of the range/interval in which the test was performed.

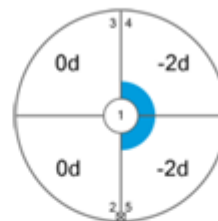
The results of this graph are based upon the absolute values of the differences from the mean value.

Standard Deviation	0.00006 g	0.00005 g
--------------------	-----------	-----------

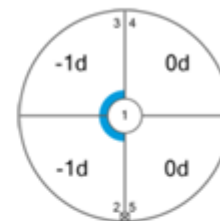
Eccentricity

Test Load: 100 g

Position	As Found	As Left
1	99.9999 g	100.0001 g
2	99.9999 g	100.0000 g
3	99.9999 g	100.0000 g
4	99.9997 g	100.0001 g
5	99.9997 g	100.0001 g



As Found



As Left

The "d" in the graph represents the readability of the range/interval in which the test was performed.

Maximum Deviation	0.0002 g	0.0001 g
-------------------	----------	----------

Calibration Certificate ID
TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

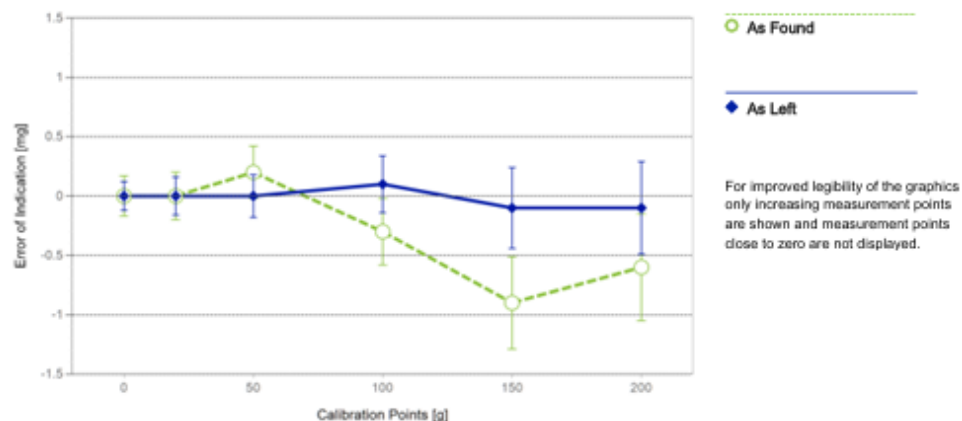
Error of Indication

As Found

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.0000 g	0.0000 g	0.0000 g	0.17 mg	2
2	0.0500 g	0.0499 g	-0.0001 g	0.18 mg	2
3	0.1000 g	0.0999 g	-0.0001 g	0.18 mg	2
4	0.5000 g	0.4999 g	-0.0001 g	0.18 mg	2
5	1.0000 g	0.9999 g	-0.0001 g	0.18 mg	2
6	10.0000 g	10.0001 g	0.0001 g	0.19 mg	2
7	20.0000 g	20.0000 g	0.0000 g	0.20 mg	2
8	50.0000 g	50.0002 g	0.0002 g	0.22 mg	2
9	100.0000 g	99.9997 g	-0.0003 g	0.28 mg	2
10	150.0001 g	149.9992 g	-0.0009 g	0.39 mg	2
11	200.0001 g	199.9995 g	-0.0006 g	0.45 mg	2

As Left

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.0000 g	0.0000 g	0.0000 g	0.12 mg	2
2	0.0500 g	0.0500 g	0.0000 g	0.13 mg	2
3	0.1000 g	0.1001 g	0.0001 g	0.13 mg	2
4	0.5000 g	0.5001 g	0.0001 g	0.14 mg	2
5	1.0000 g	1.0001 g	0.0001 g	0.14 mg	2
6	10.0000 g	10.0001 g	0.0001 g	0.15 mg	2
7	20.0000 g	20.0000 g	0.0000 g	0.16 mg	2
8	50.0000 g	50.0000 g	0.0000 g	0.18 mg	2
9	100.0000 g	100.0001 g	0.0001 g	0.24 mg	2
10	150.0001 g	150.0000 g	-0.0001 g	0.34 mg	2
11	200.0001 g	200.0000 g	-0.0001 g	0.39 mg	2



The expanded measurement uncertainty is reported as the standard measurement uncertainty multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95 %.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.
The results of this calibration certificate relate only to the calibrated item.

Calibration Certificate ID

TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML E2

Weight Set No.:	WS105	Date of Issue:	14-Apr-2025
Certificate Number:	C515828262	Calibration Due Date:	02-Oct-2026

Thermo Hygrometer

Equipment No.:	IN308	Date of Issue:	18-Dec-2024
Certificate Number:	SG-H-01070/67	Calibration Due Date:	17-Dec-2025

Remarks

FACT adjustment functionality activated
 Equipment condition: Good
 Next calibration according to customer's procedure
 Calibration data not decide by calibration laboratory

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

Calibration Certificate ID
TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty with $k=2$ in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use: $1.5 \cdot 10^{-6} / K$

Temperature range on site for the evaluation of the measurement uncertainty in use: $3 K$

Linearization of Uncertainty Equation

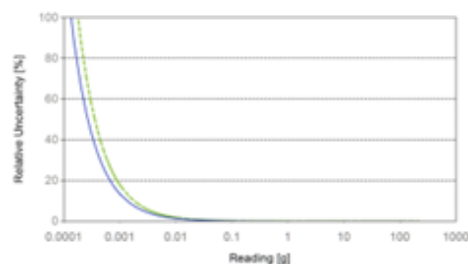
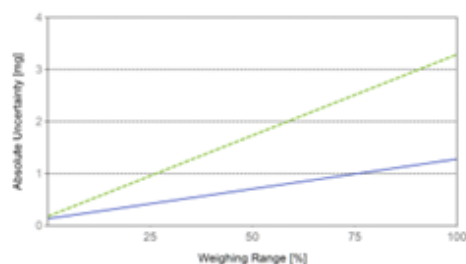
	Range		As Found	As Left
	d	Max		
1	0.0001 g	220 g	$U_1 = 0.18 \text{ mg} + 0.0142 \text{ mg/g} \cdot R$	$U_1 = 0.13 \text{ mg} + 0.00522 \text{ mg/g} \cdot R$

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

The linear approximation of the uncertainty in use should be regarded as information only. The underlying distribution of the errors of indication does not stipulate a stable approximation function [applies to As Found equation].

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Net Indication	As Found		As Left	
0.0220 g	0.18 mg	0.82%	0.13 mg	0.59%
0.2200 g	0.18 mg	0.083%	0.13 mg	0.060%
2.2000 g	0.21 mg	0.0096%	0.14 mg	0.0064%
22.0000 g	0.49 mg	0.0022%	0.24 mg	0.0011%
220.0000 g	3.3 mg	0.0015%	1.3 mg	0.00058%



Are you looking for some clarifications on the terms and graphs in your ACC calibration certificate? Do you know how to leverage its full value?

More information at:
www.mt.com/ACC-Cert-Info



Attachment to Calibration Certificate
TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

GWP™ Certificate



Process Requirements	
Weighing Tolerance	1%
Smallest Net Weight	0.0150 g
Safety Factor	As found = 1; As left = 2

Results As Found	
Minimum Weight Determined	0.0178 g
Measurement Uncertainty at the Smallest Net Weight	1.2%



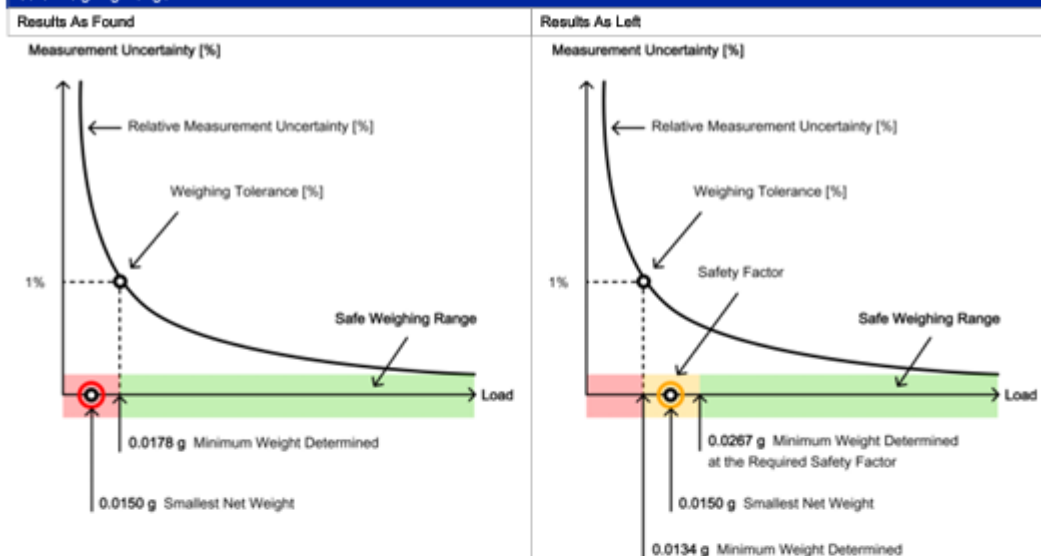
The instrument does not meet the process requirements.

Results As Left	
Minimum Weight Determined at the Safety Factor	0.0267 g
Minimum Weight Determined	0.0134 g
Measurement Uncertainty at the Smallest Net Weight	0.89%



The instrument meets the weighing tolerance but does not meet the safety factor requirements.

Safe Weighing Range



Are you looking for some clarifications on the terms and Safe Weighing Range graph?

More information at:
www.mt.com/GWP-Cert-Info



Attachment to Calibration Certificate
TH2004-040-100825-ACC-TH

METTLER TOLEDO Service

Minimum Weight

As Found Minimum Weight Table: Minimum weights for different weighing tolerances and safety factors					
Weighing Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.1802 g	0.3657 g	0.5566 g	0.9559 g	2.0696 g
0.2%	0.0895 g	0.1802 g	0.2723 g	0.4605 g	0.9559 g
0.5%	0.0357 g	0.0715 g	0.1075 g	0.1802 g	0.3657 g
1%	0.0178 g	0.0357 g	0.0536 g	0.0895 g	0.1802 g
2%	0.0089 g	0.0178 g	0.0268 g	0.0446 g	0.0895 g
5%	0.0036 g	0.0072 g	0.0107 g	0.0178 g	0.0357 g

Result:  Fail

The instrument does not meet the process requirements.

As Left Minimum Weight Table: Minimum weights for different weighing tolerances and safety factors					
Weighing Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.1341 g	0.2695 g	0.4064 g	0.6846 g	1.4068 g
0.2%	0.0669 g	0.1341 g	0.2016 g	0.3378 g	0.6846 g
0.5%	0.0267 g	0.0535 g	0.0803 g	0.1341 g	0.2695 g
1%	0.0134 g	0.0267 g	0.0401 g	0.0669 g	0.1341 g
2%	0.0067 g	0.0134 g	0.0201 g	0.0334 g	0.0669 g
5%	0.0027 g	0.0054 g	0.0081 g	0.0134 g	0.0267 g

Result:  Warning

The instrument meets the weighing tolerance but does not meet the safety factor requirements.

The minimum weight values are calculated from the measurement uncertainty in use equation for various weighing tolerances and safety factors. At the minimum weight, the relative uncertainty in use equals the weighing tolerance divided by the safety factor. If "N/A" is shown in the minimum weight table, no appropriate value could be calculated.

METTLER TOLEDO is not responsible for the definition of the process requirements. The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.

	TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN) CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES 534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250 TEL.0-2717-3000-29 FAX.0-2719-9484		
Certificate of Calibration			
			Cert.No.: 25CH1413 Page.: 1 of 3
Equipment :	pH Meter		
Manufacturer :	Mettler Toledo		
Model :	SevenDirect SD20		
Serial No. :	C238831431		
ID No. :	E-030		
Condition As-Received:	Used Item		
Received Date :	02 December 2025		
Calibration Date :	04 December 2025		
Reference :	2512-0072WN-1		
Submitted by :	WATER INDEX & CONSULTANT CO.,LTD. 229/7-8 Soi Charan Sanit Wong 95/1, Charan Sanit Wong Rd., Bang-aor, Bangphlat, Bangkok 10700		
Ambient Temperature :	(25 ± 2.5) °C		
Relative Humidity :	(50 ± 15) %		
Calibration Procedure :	In - house method : - CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM) - CP-CH8 by comparison with temperature standard		
Calibrated by :	Walalak Sirithean		
Approved by :	Approved Signatory		
() Chakrit Waewwanjua			
() Ponpan Paipim			
(✓) Saithip Meangmai			
Issue Date :	04 December 2025		
The Uncertainties are for a confidence probability of approximately 95% This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.			



Cert.No.: 25CH1413

Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54030049	130RC116	25E2743	25 Aug 2026
2) Ref. Standard Thermometer	4982054	110RC044	25I708	03 July 2026

- This measurement result is traceable to SI through Technology Promotion Association (Thailand - Japan)

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

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.007	CPA chem	1114384	12 June 2027
pH 6.965	CPA chem	1066667	18 Jan 2026
pH 10.010	CPA chem	1135355	16 Aug 2026

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

Calibration Results

Function : mV Measurement

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

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter S/N.: C238831431	4.000	177.48	177.4	4.000	0.058	2.00
	7.000	0.00	0.0	7.000	0.058	2.00
	10.000	-177.48	-177.5	10.000	0.058	2.00



Cert.No.: 25CH1413

Page.: 3 of 3

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ($\pm$)	Coverage factor k
pH Electrode	4.007	4.016	158.2	0.0044	2.00
S/N.: 2256471	6.965	6.966	-15.6	0.0084	2.00
	10.010	10.012	-190.6	0.0065	2.00

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : InLab Expert Pro-ISM

- Serial No. : 2256471

Dimension of probe

- Length : 120 mm.

- Diameter : 12 mm.

- Immersion Depth : 100 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement ($\pm$ °C)	Coverage factor k
23.0	23.001	23.2	0.199	0.13	2.00
25.0	25.001	25.2	0.199	0.13	2.00
27.0	27.001	27.2	0.199	0.13	2.00

Remark - UUC* = Unit Under Calibration

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

-o0o-