



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



Result : Without adjustment
Function : Temperature measurement
Calibration point : 20, 25, 30 °C
Resolution : 0.1 °C
Standard Humidity reading : 50.15 %RH

Certificate No. : MT22-6449-R1
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Certificate of Calibration

Certificate No. : MT22-6449-R1
Page : 1 of 2
Supplement to Calibration Report Cert.No.MT22-6449

Customer : Health & Envitech Co.,Ltd.
Address : 6 Ngamwongwan Rd., Soi 5, T.Bangkhon, A.Muang Nontaburi 11000
Description : Digital Thermo & Hygrometer
Manufacturer : Brannan
Model : N/A
Serial No. : N/A
Identification No. : LB-HE-078
Calibration Place : Temperature & Humidity Laboratory
Order No. : 3486/22
Received date : Nov 28, 2022
Calibration date : Nov 29, 2022
Environment Condition :
Temperature : (23+/-3) °C
Humidity : (50+/-15) %RH
Calibration Method : Calibration were conducted using In-house calibration procedure CP-MT-007 According to comparison with Standard Temperature & Humidity into Environmental Stability Chamber.

Reference Standard Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
Standard Digital Hygrometer	One-TH	0x0000158D000E121E	SG-H-00987/65	Nov 10, 2023
Standard Digital Thermometer with Probe	UM RTD	2002Z A21 0181A	MT22-4301	Jul 18, 2023

This result of calibration 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 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
Issue date : Jan 06, 2023
Approved by : (Mr.Choochong Khumdet)

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Rev.02 / Mar 2020

FM-MT-015

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Rev.02 / Mar 2020

FM-MT-015

Certificate No. : MP22-3299-R1
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Function : Measurement
 Reference Level : Vertical
 Range : 960 to 1070 hPa
 Calibration Result : Without Adjustment
 Pressure Medium : Air
 Resolution : 1 hPa

UUC* Value (hPa)	Standard Reading (hPa)	UUC* Error (hPa)	Uncertainty of Measurement (+/- hPa)
960	960.24	-0.24	0.6
980	980.33	-0.33	0.6
1000	1000.44	-0.44	0.6
1020	1020.50	-0.50	0.6
1040	1040.82	-0.82	0.6
1060	1060.79	-0.79	0.6

Increasing :

Certificate of Calibration

Certificate No. : MP22-3299-R1
 Page : 1 of 2

Supplement to Calibration Report Cert No. MP22-3299

Customer : Health & Envitech Co.,Ltd.
 Address : 6 Ngamwongwan Rd., Soi 5, T. Bangkhen, A. Muang Nontaburi 11000

Description : Barometer
 Manufacturer : Barigo
 Model : 960-1070 hPa
 Serial No. : N/A
 Identification No. : LB-HE-049
 Calibration Place : Mechanical Laboratory

Order No. : 3486/22
 Received date : Nov 28, 2022
 Calibration date : Nov 28, 2022

Environment Condition :
 Temperature : (23+/-3) °C
 Humidity : (50+/-15) %RH

Calibration Method : Calibration were conducted using In-house calibration procedure CP-MP-001.
 According to comparison with Primary Pressure Indicator.
 The calibration methods based on DKD-R6-1/03:2014

Reference Standard Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
Primary Pressure Calibrator	PACE 1000	4318561	MP-0068-22	Apr 22, 2023

This result of calibration 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 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. Suppason Kcawum
 Issue date : Jan 06, 2023

Approved by : (Mr. Suthichai Chanthipa)



UUC* = Unit Under Calibration

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FM-MP-002

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FM-MP-002

Certificate No. : MT22-6000

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Function : Temperature measurement

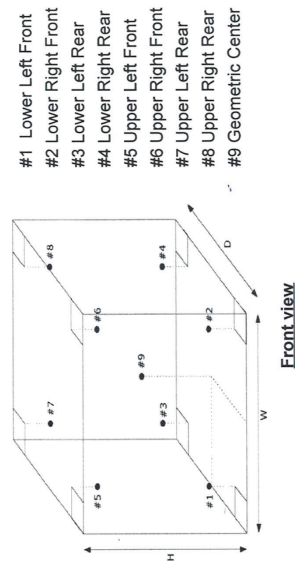
Result : Without adjustment

Calibration point : 104, 150, 180 °C

Resolution : 0.5 °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	103.575	103.640	103.599	103.733	103.749	103.876	103.928	103.965	104.220	0.49
150	149.590	149.851	149.906	149.846	149.924	149.835	149.983	150.198	150.042	0.45
180	179.608	179.845	179.863	179.864	179.951	179.917	180.096	180.175	180.151	0.46

Setting temperature (°C)	Indicating Temperature (°C)	Measured stability (+/- °C)	Measured uniformity (°C)	Overall variation (°C)
104.0	104.0	0.24	1.1	1.2
150.0	150.0	0.23	0.81	1.1
180.0	180.0	0.23	0.90	1.1



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.

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Certificate of Calibration

Certificate No. : MT22-6000
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Customer : Health & Envitech Co.,Ltd.
Address : 77/11 M.2 Ngamwongwan Rd., Soi 5, T. Bangkhen, A. Muang Nontaburi 11000

Description : Hot Air Oven
Manufacturer : Memmert
Model : UNB400
Serial No. : C410.0346
Identification No. : LB-HE-030
Calibration Place : Laboratory 2

Order No. : 3167/22
Received date : Nov 01, 2022
Calibration date : Nov 01, 2022
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
LXI Data Acquisition Switch Unit with Sensor	34972A	MY49028922	MT21-6790	Nov 25, 2022

This result of calibration 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 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. Arnuparp Sangsrikham
Issue date : Nov 04, 2022

Approved by : (Mr. Panuwat Phukian)

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Certificate

of Calibration

Model Number : BP210D

Description : Semi-micro Balance

Serial Number : 70406076

Manufacturer : Sartorius

Certificate No. : 22BNA0225

Issued Date : Thursday, November 10, 2022

Reference No. : 196389

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Sartorius (Thailand) Co., Ltd.

129 Rama 9 Road, Huaykwang, Bangkok 10310
Tel: +66 2643 8361-6 e-mail: service.thailand@sartorius.com

SARTORIUS



Certificate

of Calibration

Model Number : BP210D

Description : Semi-micro Balance

Serial Number : 70406076

Manufacturer : Sartorius

Certificate No. : 22BNA0225

Issued Date : Thursday, November 10, 2022

Reference No. : 196389

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Repeatability

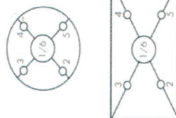
The repeatability is the ability of a weighing instrument to display nearly identical readouts under constant test conditions when the same load within a measurement series is placed repeatedly on the weighing pan in the same manner. The standard deviation is used to express repeatability quantitatively.

Nominal Value : (Low Load)	
20 g	
Tolerance	
0.0001 g	
Nominal Value : (High Load)	
200 g	
Tolerance	
0.0001 g	
Standard Deviation	
0.00001 0.00007	

Nominal value : 100 g
Tolerance 0.0004 g

Difference

1	-
2	-0.0002
3	-0.0002
4	0.0000
5	-0.0001
6	-



Eccentricity (Off-center loading error)

The off-center loading error is yielded by the difference between the readout of the load, i.e. 1/3 or 1/4 of maximum capacity, placed in the middle of the weighing pan and between each of four additional measurement points (positions defined according to OIML R76).

Linearity

The linearity, also called linearity error. Describes the deviation of the characteristic curve of a weighing instrument from the linear slope.

Tolerance 0.0002 g

Nominal Value (g)	Conventional Mass Value (g)	Displayed Value (g)	Deviation (g)	Uncertainty (g)
0.001	0.00100	0.00100	0.00000	0.00018
0.01	0.01000	0.01001	0.00001	0.00018
0.1	0.10000	0.10000	0.00000	0.00018
1	1.00001	1.00001	0.00000	0.00018
2	2.00001	2.00001	0.00000	0.00018
5	4.99999	5.00000	0.00001	0.00018
10	10.00000	10.00001	0.00001	0.00018
50	49.99999	49.99999	0.00000	0.00019
100	99.99999	100.00000	0.00001	0.00020
200	199.99999	199.99999	0.00000	0.00029

Customer Name : Health & Envitech Co., Ltd.

77/11 Moo 2, Ngamwangwan Rd., Soi 5, T Bangkok, A Muang, Nonthaburi 11000

Calibrated Place : Health & Envitech Co., Ltd.

Weighing Room

Calibrated By : Mr Nathapol Aejiangpun

Calibration Date : Tuesday, November 08, 2022

Calibration

Procedure No. : This calibration was conducted by
Using in-house calibration procedure number (WI-003)

Based on UKAS LAB 14 :2019

Metrological data :

Capacity : 60/210 g Readability : 0.01/0.1 mg
Temperature : 25.8 °C ± 5.0 °C
Humidity : 40.2 % RH ± 10.0 % RH
Pressure : ±

Reasons for calibration

☒ New Installation ☐ Service / Repaired ☒ Re-calibration/ Maintenance ☐ Good Operate ☐ Fair

Ambients Conditions:

Temperature : 25.8 °C ± 5.0 °C
Humidity : 40.2 % RH ± 10.0 % RH
Pressure : ±

Equipment Condition:

Measurement Method UKAS Publication Ref :Lab 14

The measurement uncertainty stated is the expanded uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The calibration certificate documents the traceability to National Standards, which realise the unit of measurement according to the International Standard System of Units (SI). Report of Tolerance came from list of Sartorius Metrological Specifications.

Traceability:

Model Number	Description	Traceability	Certificate No.	Due Date
YCS011-612-00	Sartorius weight set 1mg - 1kg E2, YCS011-612-00	DKSH	C02222038	29-Sep-2024
608H1	Thermo-Hygrometer, Testo 608-H1	SPC-RT	C19210657	14-Dec-2022

This certificate relate and apply this equipment only.

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Sartorius (Thailand) Co., Ltd.

SOP FM-33 03 February 2022

Mr. Chonchai Inthana (Technical Manager)

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Sartorius (Thailand) Co., Ltd.

SOP FM-33 03 February 2022