

ภาคผนวก ง

ใบรับรองการสอบเทียบเครื่องมือ

ภาคผนวก ง-1

บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริง คอนซัลแตนท์ จำกัด

List of Instruments Certification

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
Laboratory Instrument/Equipments.(คุณภาพอากาศ)									
1	Analytical Balance (Readability 0.1 mg)	ฝุ่นละอองรวม (TSP) ฝุ่นละอองขนาดไม่เกิน 10 ไมครอน (PM-10)	Mettler-Toledo	AB204-S/FACT / 1129361010	Mettler-Toledo (Thailand) Ltd.	2303074-001-01	23 Jun 23	21 Jun 24	
2	Analytical Balance (Readability 0.1 mg)		Mettler-Toledo	XSR204 / C117635043	Mettler-Toledo (Thailand) Ltd.	2302827-001-01	10 May 23	8 May 24	

List of Instruments Certification

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
Laboratory Instrument/Equipments.(คุณสมบัติ)									
1	Conductivity Meter	ความต่างศักย์ไฟฟ้า (Conductivity)	SI Analytics	Lab955 / 16300356	SPC Calibration Center Co.,Ltd.	C24230059	16 Mar 22	15 Mar 23	
2	UV-VIS Spectrophotometer	ซีไอที ความขุ่น	Agilent Technologies	Cary60 / MY15410009	DQE Services Co.,Ltd.	SP23-021	20 May 23	18 May 24	-
3	UV-VIS Spectrophotometer	ก๊าซไนโตรเจนไดออกไซด์ (มลพิษอากาศ จากแหล่งกำเนิด)	Hitachi	U-1900 / 2021-064	DQE Services Co.,Ltd.	SP23-007	16 Jan 24	14 Jan 25	-
4	UV-VIS Spectrophotometer	ไฮโดรเจนซัลไฟด์ (อากาศ)	Hitachi	U-2900 / 21E22-009	DQE Services Co.,Ltd.	SP23-008	4 Jan 24	2 Jan 25	-
5	DO Meter	DO	YSI	YSI 5100 / 11B101863	Harikul Science	HS-U012C	1 Mar 23	28 Feb 24	
6	pH Meter	ความเป็นกรดและด่าง อุณหภูมิ	Mettler-Toledo	Seven Easy pH / C1113432421	National Food Institute, Ministry of Industry, Thailand	2303560-001-01	26 Jun 23	24 Jun 24	-
7	pH Meter		Mettler-Toledo	Seven Easy pH / 1230525212	National Food Institute, Ministry of Industry, Thailand	2302181-001-01	24 Mar 23	22 Mar 24	-
8	Atomic Absorption Spectrometer (AAS)	กลุ่มโลหะหนัก: สารหนู, ตะกั่ว, แคดเมียม,	Agilent Technologies	System ID:G8432A AA240F5 / MY13160001	Thailand Institute Of Science And Technological Research (TISTR)	Preventive Maintenance Checklist	2 Feb 23	1 Feb 24	-
9	Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES)	ปรอท (น้ำและอากาศ)	Agilent Technologies	System ID:G8444A G8015AA / MY18030001	Agilent Technologies (Thailand) Co.,Ltd.	Preventive Maintenance Checklist	2 Feb 23	1 Feb 24	-



Certificate of Calibration

Equipment: CONDUCTIVITY METER
Model: LA-800
Serial No. (if any): 1607000
Manufacturer: HI Analytic
Certificate Serial No.: 1600007
Condition: In-Condition

Certificate No.: 02600008
Issue Date: 16 March 2021
Job No.: 16PT020472
Page: 1 of 2
Model: LPH12 **Brand:** HI Analytic

Customer: United Analyt and Engineering Consultant Company Limited
 333 Sukhumvit 41 Sukhumvit Road,
 Bangkok, Prachinraj, Bangkok 10250 Thailand

Environment Condition: Temperature: 20 °C ± 0.2 °C
 Humidity: 50 %RH ± 5 %RH

Calibration Place: Environment Laboratory, DKSH Technology Limited,
 333 Sukhumvit Road, Bangkok,
 Prachinraj, Bangkok 10250 Thailand

Calibration By: M. Anand Nijmudhara
Calibration Date: 16 March 2021
The Method Used: Internal method, IEC 60446, based on ASTM D-1122-14 and IEC 60446
Traceability: This certificate is traceable to the SI units maintained by CNL (4200) (SI02) through
 DPA (www.dpa.com), Ltd. (SI0002) (TC04) (Certificate No. 000212, 000015, 000019)

Calibration Results

Before Adjustment

Standard	100 (After Calibration Reading)	Conversion	Coverage Factor (k)	Uncertainty (±1σ)
20.000 µS/cm	24.0 µS/cm	0.833 µS/cm	2.26	0.21 µS/cm
1012.0 µS/cm	1432 µS/cm	100 µS/cm	2.26	0.6 µS/cm
111.0 µS/cm	136.8 µS/cm	2.60 µS/cm	2.26	0.67 µS/cm

After Adjustment

Standard	100 (After Calibration Reading)	Conversion	Coverage Factor (k)	Uncertainty (±1σ)
20.000 µS/cm	19.9 µS/cm	0.997 µS/cm	2.26	0.21 µS/cm
1012.0 µS/cm	1410 µS/cm	9.0 µS/cm	2.26	0.6 µS/cm
111.0 µS/cm	119.9 µS/cm	0.91 µS/cm	2.26	0.27 µS/cm

The End of Certificate



Person in Charge

Authorized Signatory

This certificate is issued on the basis of measurement performed by the designated person of our lab. It is not a guarantee of measurement accuracy or calibration validity by any company or individual elsewhere.
 The measurements recorded herein are the recorded readings which are not corrected for the accuracy indicated by the manufacturer unless there is a note of correction or adjustment. All our measurements are performed with facilities in compliance with ISO 17025:2017. These measurements are subject to uncertainty from several sources. The relative uncertainty for this measurement is indicated on the report and will be indicated on the certificate upon request. The stated uncertainty is based on the standard deviation of the measurement.
 (M) Anand Nijmudhara
 1617 Technology Limited
 333 Sukhumvit Road, Bangkok, Prachinraj, Bangkok 10250 Thailand
 Email: anandn@dksh.com
 Tel: 662-042-0000
 Fax: 662-042-0001
 www.dksh.com

Issuing Branch: - 4 (SEA and Europe) 06-74222-06 22 Dec 2021

เอกสารไม่ควบคุม

(M) Anand Nijmudhara
 1617 Technology Limited
 333 Sukhumvit Road, Bangkok, Prachinraj, Bangkok 10250 Thailand
 Email: anandn@dksh.com
 Tel: 662-042-0000
 Fax: 662-042-0001
 www.dksh.com

Issuing Branch: - 4 (SEA and Europe) 06-74222-06 22 Dec 2021

เอกสารไม่ควบคุม

ใบตรวจคุณสมบัติการเครื่องวัดที่นำกลับมาใช้ใหม่

ชื่อเครื่องวัด: CONDUCTIVITY METER		ยี่ห้อ: LA-800	เลขที่เครื่องวัด: 16070000		
วันที่ตรวจ (ปี)		ชื่อผู้ตรวจ	วันที่ตรวจ (ปี)		สถานะ
ปี	เดือน		ปี	เดือน	
General					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1. การสอบเทียบ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2. การตรวจสอบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4. การสอบเทียบ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Performance					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6. ความแม่นยำ (โดยอิงตามข้อกำหนด) ± 0.2 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7. ความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8. ความแม่นยำ (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9. ความแม่นยำ (ตามข้อกำหนด) ± 0.001 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10. ความแม่นยำ (ตามข้อกำหนด) ± 0.001 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11. ความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Accuracy Check					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	13. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	14. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Reference					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	17. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Accuracy Check					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	18. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	19. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Environment Laboratory 333 Sukhumvit Road, Bangkok 10250 Thailand

M. Anand Nijmudhara
 Sakina Elcham

เอกสารไม่ควบคุม

ชื่อเครื่องวัด: CONDUCTIVITY METER		ยี่ห้อ: LA-800	เลขที่เครื่องวัด: 16070000		
วันที่ตรวจ (ปี)		ชื่อผู้ตรวจ	วันที่ตรวจ (ปี)		สถานะ
ปี	เดือน		ปี	เดือน	
General					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1. การสอบเทียบ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2. การตรวจสอบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4. การสอบเทียบ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Performance					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6. ความแม่นยำ (โดยอิงตามข้อกำหนด) ± 0.2 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7. ความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8. ความแม่นยำ (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9. ความแม่นยำ (ตามข้อกำหนด) ± 0.001 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10. ความแม่นยำ (ตามข้อกำหนด) ± 0.001 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11. ความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Accuracy Check					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	13. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	14. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Reference					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	17. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Accuracy Check					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	18. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	19. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20. การสอบเทียบ / ตรวจวัดความแม่นยำของเครื่องวัด (ตามข้อกำหนด)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Calibrated by: Approved by:

เอกสารไม่ควบคุม

1000 Avenue of the Americas
 Gaithersburg, MD 20899-0100
 Telephone: 301-975-3000
 Fax: 301-975-2855
 www.nist.gov

REPORT OF CALIBRATION

Certificate No.: 1720-022 Page 2 of 2
 Calibration Facility: National Institute of Standards and Technology
 Reference Number: 101-33-5400
 Calibration Method: International Practical Temperature Scale in ITS-90

Calibrated Reference Materials:

Material	Serial No.	Certificate No.	Due Date
Platinum-Iridium	5176	8992	21 October 2012
Platinum-Iridium	2377	8992	21 October 2012
Platinum-Iridium	2384	8992	21 October 2012
Platinum-Iridium	2379	8992	21 October 2012

Traceability: This certificate is traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) through the National Bureau of Standards (NBS).

Special Deal Width of TCC: 0.1 mm
 Max Speed of TCC: 30 mm/min
 Scale Interval of TCC: 0.1 mm
 Resolution of TCC: Minimum: 0.001 mm
 Accuracy: 0.1 mm

เอกสารไม่ควบคุม

1000 Avenue of the Americas
 Gaithersburg, MD 20899-0100
 Telephone: 301-975-3000
 Fax: 301-975-2855
 www.nist.gov

REPORT OF CALIBRATION

Certificate No.: 1720-022 Page 2 of 2
 Calibration Facility: National Institute of Standards and Technology
 Reference Number: 101-33-5400

Platinum-Iridium:

Temperature (mm)	ITS-90 Value (mm)	ITS-90 Reading (mm)	Correction (mm)	Expanded Uncertainty (mm)	Coverage Factor (k)
420	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96
600	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96
800	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96
1000	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96
1200	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96
1400	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
	0.020	0.020	0.000	0.003	1.96

เอกสารไม่ควบคุม

1000 Avenue of the Americas
 Gaithersburg, MD 20899-0100
 Telephone: 301-975-3000
 Fax: 301-975-2855
 www.nist.gov

REPORT OF CALIBRATION

Certificate No.: 1720-022 Page 2 of 2
 Calibration Facility: National Institute of Standards and Technology
 Reference Number: 101-33-5400

Platinum-Iridium Accuracy:

Temperature (mm)	ITS-90 Value (mm)	ITS-90 Reading (mm)	Correction (mm)	Expanded Uncertainty (mm)	Coverage Factor (k)
120	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
150	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
180	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
210	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
240	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
270	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
300	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
330	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
360	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
390	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
420	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
450	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
480	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
510	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
540	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
570	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
600	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
630	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
660	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
690	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
720	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
750	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
780	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
810	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
840	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
870	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
900	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
930	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
960	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
990	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1020	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1050	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1080	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1110	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1140	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1170	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1200	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1230	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1260	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1290	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1320	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1350	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1380	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1410	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1440	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1470	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1500	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1530	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1560	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1590	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1620	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1650	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1680	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1710	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1740	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1770	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1800	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1830	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1860	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1890	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1920	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1950	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
1980	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2010	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2040	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2070	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2100	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2130	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2160	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2190	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2220	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2250	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	1.96
2280	0.000	0.000	0.000	0.003	1.96
	0.010	0.010	0.000	0.003	

ISO 9001:2015
Services
 11, 3rd Lakkon-Prangin St., Lakkon-Prangin Rd., Lakkon, Lakkon, Prangin 9121
 Phone: +62 212 21 212 Email: support@ppp.com

CERTIFICATE OF CALIBRATION

Certificate No.: 0214-001 Page 1 of 1

Customer: Global Facility and Engineering Consultant Co., Ltd (GFECC)

Address: 7-66 (Avenue 4), Sukatani Road, Pangkal, Mendohong, Bengkulu 34291

Location of calibration: Laboratory 111

Equipment: L10-10a Height Gage

Manufacturer: Mitutoyo

Model: L10-10a

Serial No.: 3001-06A

ID No.: GFECC-BANGKOK0210

Received Date: 14 January 2024

Calibrate Date: 14 January 2024

Issue Date: 14 January 2024

Condition Assessment: Good

Calibrated by: [REDACTED] Approved by: [REDACTED]

Technician Manager Quality Manager

This calibration certificate is issued in accordance with the requirements of ISO 9001:2015 and ISO 17025:2017. It is valid only for the equipment and conditions specified in this certificate. It is not valid for other equipment or conditions. The use of this certificate for other purposes is not approved by the PPPT team.

เอกสารไม่ควบคุม

ISO 9001:2015
Services
 11, 3rd Lakkon-Prangin St., Lakkon-Prangin Rd., Lakkon, Lakkon, Prangin 9121
 Phone: +62 212 21 212 Email: support@ppp.com

REPORT OF CALIBRATION

Certificate No.: 0214-001 Page 1 of 1

Environmental Condition: Ambient Temperature: 23 ± 1 °C

Reference Uncertainty: ±0.26 µm

Calibration method: In-house method (PPPT) based on JJG 1275-95

Certified Reference Materials:

Material	Serial No.	Certificate No.	Use Date
Reference Gage Block	27140	119601	21 October 2023
Reference Gage Block	27157	119608	20 October 2023
Working Gage Block set	27088	119607	21 October 2023
Working Gage Block set	27179	119610	21 October 2023

Traceability: This certificate is traceable to the International System of Unit (SI) maintained at National Institute of Standards and Technology (NIST) through Mitutoyo, Limited

Operated Best Width of UUC: 4.0 mm

Max Speed of UUC: 20 mm/min

Max Interval of UUC: 0.1 mm

Resolution of UUC: Micrometer: 0.01 mm
 Vernier: 0.001 mm

เอกสารไม่ควบคุม

ISO 9001:2015
Services
 11, 3rd Lakkon-Prangin St., Lakkon-Prangin Rd., Lakkon, Lakkon, Prangin 9121
 Phone: +62 212 21 212 Email: support@ppp.com

REPORT OF CALIBRATION

Certificate No.: 0214-001 Page 1 of 1

Calibration Results / Without adjustment

Permeability Accuracy:

Nominal Length (mm)	100% Value		110% Reading		Correction (mm)	Uncertainty (mm)	Coverage Ratio
	(mm)	(mm)	(mm)	(mm)			
420	0.0000	0.001	0.0000	0.0023	0.0000	0.0023	1.00
	0.0150	0.017	0.0014	0.0011	-0.0003	0.0011	1.00
	0.0454	0.046	0.0006	0.0023	0.0017	0.0023	1.00
430	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0100	0.010	0.0000	0.0000	0.0000	0.0000	1.00
	0.0200	0.020	0.0000	0.0000	0.0000	0.0000	1.00
440	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0100	0.010	0.0000	0.0000	0.0000	0.0000	1.00
	0.0200	0.020	0.0000	0.0000	0.0000	0.0000	1.00
450	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0225	0.023	0.0005	0.0000	-0.0005	0.0005	1.00
	0.0450	0.046	0.0010	0.0000	-0.0010	0.0010	1.00
540	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0150	0.016	0.0010	0.0000	-0.0010	0.0010	1.00
	0.0300	0.031	0.0010	0.0000	-0.0010	0.0010	1.00
590	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0117	0.012	0.0003	0.0000	-0.0003	0.0003	1.00
	0.0234	0.024	0.0006	0.0000	-0.0006	0.0006	1.00
625	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	1.00
	0.0100	0.010	0.0000	0.0000	0.0000	0.0000	1.00
	0.0200	0.020	0.0000	0.0000	0.0000	0.0000	1.00

เอกสารไม่ควบคุม

ISO 9001:2015
Services
 11, 3rd Lakkon-Prangin St., Lakkon-Prangin Rd., Lakkon, Lakkon, Prangin 9121
 Phone: +62 212 21 212 Email: support@ppp.com

REPORT OF CALIBRATION

Certificate No.: 0214-001 Page 4 of 5

Permeability Accuracy:

Nominal Length (mm)	100% Value (mm)	110% Reading (mm)	Correction (mm)	Uncertainty (mm)	Coverage Ratio
224	0.0000	0.000	0.0000	0.0010	1.00
227	0.0100	0.010	0.0000	0.0010	1.00
231	0.0200	0.020	0.0000	0.0010	1.00
239	0.0300	0.030	0.0000	0.0010	1.00

เอกสารไม่ควบคุม

ISO 9001:2015
 2-Charoeng Pruejai St., Ladprao-Prangut Rd., Ladprao, Ladprao, Bangkok 10160
 Phone: +662 012 276 2861 Email: department@cpaonline.com

REPORT OF CALIBRATION

Certificate No.: 1721482 Page: 1 of 1

Measuring Accuracy:

CRM Value (mm)	ETC Reading (mm)	Correction (mm)	Uncertainty (mm)	Coverage Ratio
341.34	341.1	0.24	0.15	1.00
276.81	276.9	-0.09	0.15	1.00
280.70	280.8	-0.10	0.15	1.00
152.05	151.8	0.25	0.15	1.00
361.26	361.1	0.16	0.15	1.00
411.00	410.2	0.80	0.15	1.00
461.72	461.0	0.72	0.15	1.00
412.00	411.1	0.89	0.15	1.00
460.00	459.9	0.10	0.15	1.00
276.00	276.2	-0.20	0.15	1.00
370.00	370.2	-0.20	0.15	1.00
440.74	440.7	0.04	0.15	1.00
412.00	412.0	0.00	0.15	1.00
411.76	411.8	-0.04	0.15	1.00
336.70	336.2	0.50	0.15	1.00
374.40	374.3	0.10	0.15	1.00
460.46	460.1	0.36	0.15	1.00
450.00	449.7	0.30	0.15	1.00
346.27	346.0	0.27	0.15	1.00
348.38	348.4	-0.02	0.15	1.00
461.16	461.0	0.16	0.15	1.00
476.70	476.2	0.50	0.15	1.00

ISO 9001:2015
 2-Charoeng Pruejai St., Ladprao-Prangut Rd., Ladprao, Ladprao, Bangkok 10160
 Phone: +662 012 276 2861 Email: department@cpaonline.com

CERTIFICATE OF CALIBRATION

Certificate No.: 1721482 Page: 1 of 1

Customer: Charoeng Pruejai and Engineering (Construction) Co., Ltd. (CP&E)

Address: 111/1 Charoeng Pruejai Rd., Ladprao Rd., Bangkok, Phrakong, Bangkok 10160

Location of calibration: Laboratory 201

Equipment: CMM-Archetype equipment

Manufacturer: Heald

Model: U-240

Serial No.: 2022-000

ID No.: 010730X71007200

Inspected Date: 4 January 2024

Calibration Date: 4 January 2024

Issue Date: 7 January 2024

Condition Statement: Good

Calibrated by: [Redacted] Approved by: [Redacted]

Technical Manager Quality Manager

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

ISO 9001:2015
 2-Charoeng Pruejai St., Ladprao-Prangut Rd., Ladprao, Ladprao, Bangkok 10160
 Phone: +662 012 276 2861 Email: department@cpaonline.com

REPORT OF CALIBRATION

Certificate No.: 1721491 Page: 1 of 1

Environment/Condition: Ambient Temperature 25 ± 0.5 °C

Relative Humidity: 37 ± 3% RH

Calibration method: In house method CP&E based on ASTM E271-08

Certified Reference Materials:

Material	Serial No.	Certificate No.	Exp. Date
Metreless Standard	20701	171987	21 October 2023
Metreless Standard	20707	036008	21 October 2023
Weightless Standard	25826	113627	21 October 2023
Weightless Standard	16748	113664	21 October 2023

Responsibility: This certification is restricted to the submitted items of 1 lot maintained at Thailand

Inspection/Verification and Technology (IPVT) through Metrology Institute (MI)

Spectral Band Width of UVC: 1.7 nm

Spot Size of UVC: 201 microns

Spot Interval of UVC: 45.2 microns

Resolution of UVC: Polychrome 0.001 microns

Wavelength: 411 nm

เอกสารไม่ควบคุม

ISO 9001:2015
 2-Charoeng Pruejai St., Ladprao-Prangut Rd., Ladprao, Ladprao, Bangkok 10160
 Phone: +662 012 276 2861 Email: department@cpaonline.com

REPORT OF CALIBRATION

Certificate No.: 1721492 Page: 1 of 1

Calibration Details: Without adjustment

Photometric Accuracy:

Wavelength (nm)	CRM Value (mm)	ETC Reading (mm)	Correction (mm)	Uncertainty (mm)	Coverage Ratio
405	0.000	0.000	0.000	0.0024	1.00
	0.750	0.751	-0.001	0.0021	1.00
	1.000	1.001	-0.001	0.0020	1.00
	1.250	1.252	-0.002	0.0019	1.00
440	0.000	0.000	0.000	0.0023	1.00
	0.750	0.750	0.000	0.0024	1.00
	1.000	1.001	-0.001	0.0021	1.00
	1.250	1.252	-0.002	0.0019	1.00
465	0.000	0.000	0.000	0.0025	1.00
	0.500	0.500	0.000	0.0023	1.00
	0.750	0.749	0.001	0.0020	1.00
	1.000	1.001	-0.001	0.0019	1.00
485	0.000	0.000	0.000	0.0025	1.00
	0.500	0.500	0.000	0.0023	1.00
	0.750	0.749	0.001	0.0020	1.00
	1.000	1.001	-0.001	0.0019	1.00
500	0.000	0.000	0.000	0.0025	1.00
	0.500	0.500	0.000	0.0023	1.00
	0.750	0.749	0.001	0.0020	1.00
	1.000	1.001	-0.001	0.0019	1.00

เอกสารไม่ควบคุม

Calibration Report

Reference No. 0000000000
Equipment Agilent Technologies Agilent 8453 (Agilent)
 Precision 0.1 °C, Range 0.000000
 Serial No. 1234567890, Part No. 1234567890000
 Manufacturer: METTLER TOLEDO
Date of Calibration 20 April 2022 **Next due**

Calibration point 0.0, 25.0 and 50.0 °C
Calibration result

The above measurements were taken at the following ambient conditions:
 Operator's name: John J. Doe, Job: QA
 Location of work: Laboratory 1, 1st floor, Level: 0.0 m, Room number: 101

Set Point Reading (°C)	Measured Temperature (°C)	Temperature Error (°C)	Uncertainty ± (°C)
0.0	0.000	-0.2	0.12
25.0	24.980	-0.2	0.12
50.0	49.990	-0.2	0.12

Signature of the Calibration Engineer

 Calibration Engineer

The above measurements were taken at the following ambient conditions:
 Operator's name: John J. Doe, Job: QA
 Location of work: Laboratory 1, 1st floor, Level: 0.0 m, Room number: 101

Signature of the Customer

 Customer

เอกสารไม่ควบคุม

Agilent 8453 240 GHz Series Atomic Absorption Spectroscopy System Preventive Maintenance Checklist

Agilent 8453 Series Atomic Absorption Spectroscopy System is a highly sensitive system for measuring trace elements and the accuracy of your results.

Delivered by Agilent, this system is designed to provide accurate and reliable results. Agilent 8453 Series Atomic Absorption Spectroscopy System is designed to provide accurate and reliable results. Agilent 8453 Series Atomic Absorption Spectroscopy System is designed to provide accurate and reliable results.

Note: This checklist is for preventive maintenance and is not intended to be used as a diagnostic tool. For more information, see the Agilent 8453 Series Atomic Absorption Spectroscopy System User Manual.

The following checklist is for preventive maintenance and is not intended to be used as a diagnostic tool. For more information, see the Agilent 8453 Series Atomic Absorption Spectroscopy System User Manual.

Customer Information

- Customer name: _____
- Customer representative: _____
- Agilent representative: _____
- Agilent representative: _____

Signature of the Customer

 Customer

Signature of the Agilent Representative

 Agilent Representative

Agilent
เอกสารไม่ควบคุม

Important Customer Web Links

- For more information, visit the Agilent website at www.agilent.com.
- To access Agilent's online resources, visit www.agilent.com/resources.
- For more information, visit the Agilent website at www.agilent.com.
- For more information, visit the Agilent website at www.agilent.com.
- For more information, visit the Agilent website at www.agilent.com.
- For more information, visit the Agilent website at www.agilent.com.

Service Engineer's Responsibilities

- Inspect the customer's equipment for any damage or wear before the preventive maintenance visit.
- Perform the preventive maintenance tasks as specified in the Agilent 8453 Series Atomic Absorption Spectroscopy System Preventive Maintenance Checklist (PML).
- Check the system's performance and accuracy.
- Check the system's safety features.
- Check the system's software and firmware.
- Check the system's calibration.
- Check the system's documentation.
- Check the system's performance and accuracy.
- Check the system's safety features.
- Check the system's software and firmware.
- Check the system's calibration.
- Check the system's documentation.

Signature of the Calibration Engineer

 Calibration Engineer

Signature of the Customer

 Customer

เอกสารไม่ควบคุม

System Information

System Information

Agilent 8453 Series Atomic Absorption Spectroscopy System is a highly sensitive system for measuring trace elements and the accuracy of your results.

Agilent 8453 Series Atomic Absorption Spectroscopy System is a highly sensitive system for measuring trace elements and the accuracy of your results.

Sub-System/Component/Product Name	Reference Number of each Component
1. Chopper	1234567890
2. Lamp	1234567890
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Preparation, Safe operation and initial performance checks

Preparation, Safe operation and initial performance checks

Preparation, Safe operation and initial performance checks

Agilent
เอกสารไม่ควบคุม

Agilent 4-Port power circuit. See also [Power Measurement Circuit](#) of the PNA series software.

NOTE: If the following the flow chart the hypothesis is checked to be suitable for comparison you may NOT NOT use the PNA trace, because the measurement results are not agreed (recommendation that sets of the hypothesis be checked).

- Check the power supply levels with the system before the test.
- Verify HF capabilities (power, frequency) and the measurement system (equipment used and the system bandwidth) etc.
- Verify the measurement output for accuracy problems and comments.
- Search for such errors as might happen during the procedure.
- Perform a general inspection of the system for vibrations.
- Check for errors: impedance standards, impedance standards.
- Check systems for required measurement components, settings or errors of used device terms.
- Check for required frequency calibrations and verify with customer or the available test knowledge.
- Use S11 or S21 for the full bandwidth data for S11, S21 (bandwidth).
- Verify the Agilent CrossLab Software version.
- Verify the knowledge of the measurement of the materials and verify the available data.

Fluorescence Measurement Procedure.pdf

FLAME SYSTEM section

General inspection

Electronic components

- Check the power supply levels with the system before the test.
- Verify HF capabilities (power, frequency) and the measurement system (equipment used and the system bandwidth) etc.
- Verify the measurement output for accuracy problems and comments.

Mechanical components

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
 - Measurement data
 - S11 data
 - Load data
 - S11 data

Optics components

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

Sample Introduction and Measurement

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

Gas handling components and safety interlocks

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

Analytical performance for these systems

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

FURNACE SYSTEM section

General inspection

Electronic components

- Check the power supply levels with the system before the test.
- Verify HF capabilities (power, frequency) and the measurement system (equipment used and the system bandwidth) etc.

Mechanical components

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
 - Measurement data
 - S11 data
 - Load data
 - S11 data

Optics components

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

Gas handling, water system and workload components checks

- Check the burner voltage with the measurement and the measurement of the burner and power supply information use information of the burner and the burner information of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.
- Use S11 data to monitor at least the burner the full range of the burner.

- Title
- Abstract
- Detail

- Check out the new and revised instructions
- Check out the new accessories

Analtical performance for Furnace systems

- Compare the performance to the previous generation
- Run the sample set for a 75 µg injection and record the results in the data file

PSD automation accessory for Furnace systems

- Review the PSD software
- Check out the new PSD software - updated to version 1.0
- Check out the new PSD software - updated to version 1.0 and look at the new software
- Change PSD to the new version
- Check out the new PSD software
- Check out the new PSD software - updated to version 1.0 and look at the new software
- Check out the new PSD software - updated to version 1.0 and look at the new software

Sample introduction pump system (SIPS) accessory

- Review the SIPS software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Check out the new SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software
- Review the SIPS software - updated to version 1.0 and look at the new software



- Review the Type 1 and Type 2 accessories
- Run the Type 1 and Type 2 accessories
- Run the Type 1 and Type 2 accessories
- Run the Type 1 and Type 2 accessories
- Run the Type 1 and Type 2 accessories
- Run the Type 1 and Type 2 accessories

Sample preparation system (SPS) accessory

- Review the SPS software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software

SPS: The sample preparation system (SPS) accessory

- Review the SPS software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software
- Review the SPS software - updated to version 1.0 and look at the new software



Vapor generation accessory (VGA) (hybrid generation)

- Review the VGA software
- Review the VGA software - updated to version 1.0 and look at the new software
- Review the VGA software - updated to version 1.0 and look at the new software
- Review the VGA software - updated to version 1.0 and look at the new software
- Review the VGA software - updated to version 1.0 and look at the new software
- Review the VGA software - updated to version 1.0 and look at the new software

UltraVapor accessory (external)

- Review the UltraVapor software
- Review the UltraVapor software - updated to version 1.0 and look at the new software
- Review the UltraVapor software - updated to version 1.0 and look at the new software

Feature System

- Review the Feature System software - updated to version 1.0 and look at the new software

Guidance

For more information, see the Agilent website at www.agilent.com



Test Results

Table Review

- Review the test results table
- Review the test results table - updated to version 1.0 and look at the new software
- Review the test results table - updated to version 1.0 and look at the new software
- Review the test results table - updated to version 1.0 and look at the new software
- Review the test results table - updated to version 1.0 and look at the new software
- Review the test results table - updated to version 1.0 and look at the new software

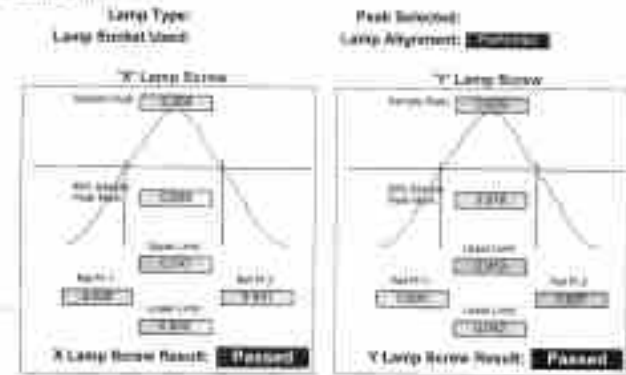
Test Results

Test Description	Expected Test Result	Actual Test Result
Performance Test Results		
Retention Time (min) for 10 µg injection	1.100	1.101
Retention Time (min) for 20 µg injection	1.100	1.101
Resolution Test Results		
Resolution (min) for 10 µg injection	1.100	1.101
Resolution (min) for 20 µg injection	1.100	1.101
Injection Volume Test Results		
Injection Volume (µl) for 10 µg injection	1.100	1.101
Injection Volume (µl) for 20 µg injection	1.100	1.101
Injection Volume Test Results (SPS)		
Injection Volume (µl) for 10 µg injection	1.100	1.101
Injection Volume (µl) for 20 µg injection	1.100	1.101
Injection Volume Test Results (SPS)		
Injection Volume (µl) for 10 µg injection	1.100	1.101
Injection Volume (µl) for 20 µg injection	1.100	1.101
Injection Volume Test Results (SPS)		
Injection Volume (µl) for 10 µg injection	1.100	1.101
Injection Volume (µl) for 20 µg injection	1.100	1.101



Optics

Beam Balance:



Wavelength Repeatability:

Lamp Used: 20440
Peak Location: 224.750
Converted to Bucket: 1

Lamp Current(A): 4
SIT Width(mm): 1.2
SIT Height: None

Lamp Alignment: **Pass**

Lower Limit(mm)	224.750	224.950	Upper Limit(mm)
Sample 1:	224.820	224.890	224.890
Sample 2:	224.800	224.820	224.820
Sample 3:	224.820	224.820	224.820
Sample 4:	224.820	224.820	224.820
Sample 5:	224.820	224.820	224.820
Sample 6:	224.820	224.820	224.820
Sample 7:	224.820	224.820	224.820
Sample 8:	224.820	224.820	224.820
Sample 9:	224.820	224.820	224.820
Sample 10:	224.820	224.820	224.820

Mean: 224.820 Standard Deviation: 0.000

Result: Pass

Grating Squareness:

Lamp Element(s): Global Chromium Cup
Lamp Tilted Position: 1
Lamp Current(A): 10.00
SIT Width(mm): 1.2
1st Order Wavelength(nm): 224.820
Lamp Alignment: **Pass**

	Lower Limit (nm)	Actual (nm)	Upper Limit (nm)	Result:
Zero Order:	4.50	4.80	4.50	Pass
First Order:	224.40	224.80	225.19	Pass
Second Order:	448.20	449.60	449.97	Pass

Mechanical

- Wavelength Drive: **Pass**
- SIT Drive: **Pass**
- Turret Drive: **Pass**
- Auto Burner Adjuster Drive: **Unpass**

Electronics

Calculate Multi: True (Auto Peak)

	Lower Limit	Actual	Upper Limit	Result:
B0	714	801	781	Pass
B1	726	764	741	Pass
B2	277	289	288	Pass
B3	474	487	476	Pass
B4	522	517	520	Pass
B5	1020	1028	1029	Pass
B6	1494	1498	1502	Pass
B7	4007	4144	4114	Pass

Interlocks:

- Burner Fitted: **Pass**
- H2O Burner Fitted: **Pass**
- Flame Signal Cleared: **Pass**
- Gas Control Fitted: **Pass**
- Pressure Release Burg Fitted: **Pass**
- Liquid Trap Fitted: **Pass**
- Flame Detect: **Pass**
- OCU Author: **Pass**
- Oxidant Pressure: **Pass**
- Oxidant Changeover: **Pass**
- Ignition: **Pass**

Auto Lamp Recognition:

- Lamp 1: Unlabeled Lamp Not Connected
 - Lamp 2: AT - Silver Catalyst and aux/thermocouple (not)
 - Lamp 3: 10 - Global 1000watts Copper/Flame Adjuster
 - Lamp 4: Unlabeled Lamp Not Connected
 - Lamp 5: Not Connected
 - Lamp 6: Not Supported
 - Lamp 7: Not Supported
 - Lamp 8: Not Supported
- Result: Pass**

OTA Temperature Monitoring:

Not Performed

Notes:

Signatures:

UNITED WAVE HOLDINGS MALAYSIA BERHAD | UNITED WAVE HOLDINGS MALAYSIA BERHAD

Requested by time report 2021/02/11 09:46 AM Page 1 of 1 Spec:AA

Analysis

Item Name: 2021/02/11 09:46 AM Spec:AA 2021/02/11 09:46 AM
 Method: 2021/02/11 09:46 AM
 Contract: 2021/02/11 09:46 AM
 Material: 2021/02/11 09:46 AM
 Component name: 2021/02/11 09:46 AM
 Serial Number: 2021/02/11 09:46 AM

Method (in Place):

Item ID	Item Name	Unit	Quantity
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM

Requested by time report 2021/02/11 09:46 AM Page 1 of 1 Spec:AA

Analysis

Item Name: 2021/02/11 09:46 AM Spec:AA 2021/02/11 09:46 AM
 Method: 2021/02/11 09:46 AM
 Contract: 2021/02/11 09:46 AM
 Material: 2021/02/11 09:46 AM
 Component name: 2021/02/11 09:46 AM
 Serial Number: 2021/02/11 09:46 AM

Method (in Place):

Item ID	Item Name	Unit	Quantity
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM
2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM	2021/02/11 09:46 AM

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

Requested by time report 2021/02/12 01:49 PM Page 1 of 1 Spec:AA

Analysis

Item Name: 2021/02/12 01:49 PM Spec:AA 2021/02/12 01:49 PM
 Method: 2021/02/12 01:49 PM
 Contract: 2021/02/12 01:49 PM
 Material: 2021/02/12 01:49 PM
 Component name: 2021/02/12 01:49 PM
 Serial Number: 2021/02/12 01:49 PM

Method (in Place):

Item ID	Item Name	Unit	Quantity
2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM
2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM
2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM
2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM	2021/02/12 01:49 PM

Request No: 2566 (1025) ATE: ATE.001.507/00

CALIBRATION CERTIFICATE

RECOMMENDATION: Calibration of the instrument "Digital Force Gauge"
 Model: 40000, Serial No. 400118000
 3 Working standard gauges "Impressor Standard"
 Type: Impressor Standard, Serial No. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

SUBMITTED BY: (Name) (Address) (City) (Country)
 (Name) (Address) (City) (Country)

CALIBRATION PROCEDURE: Calibration of the instrument "Digital Force Gauge"
 Model: 40000, Serial No. 400118000
 3 Working standard gauges "Impressor Standard"
 Type: Impressor Standard, Serial No. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

CALIBRATION DATE: 12 February 2021

ISSUANCE INFORMATION: Issued by (Name) (Address) (City) (Country)
 Issued on (Date) (Time) (Address) (City) (Country)
 Issued at (Address) (City) (Country)
 Issued by (Name) (Address) (City) (Country)

REMARKS: (Name) (Address) (City) (Country)
 (Name) (Address) (City) (Country)

Calibrated by: (Name) (Address) (City) (Country)
 (Name) (Address) (City) (Country)

Working Director of (Name) (Address) (City) (Country)
 (Name) (Address) (City) (Country)

Issue Date: 12 February 2021

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



CALIBRATION DATA

1. Nickel Level

Table with 10 columns: Element, 10, 20, 30, 40, 50, 60, 70, 80, 90. Rows include Nickel and Nickel Standard with various concentration values.

Continue 2 / 3

INDUSTRIAL METROLOGY AND TESTING SERVICE CENTER

For more information or to book an appointment, please contact us at 02-227-1277 or 02-227-1278. For more information, please contact us at 02-227-1277.

MTC.AC.222-001

Head Office: 22/17 Rama 9 Road, Bangkok 10310, Thailand. Tel: 02-227-1277, 02-227-1278, 02-227-1279. Fax: 02-227-1274, 02-227-1275, 02-227-1276.

เอกสารไม่ควบคุม



2. Phosphorus

Table with 13 columns: Element, 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25. Rows include Phosphorus and Phosphorus Standard with various concentration values.

Continue 3 / 3

INDUSTRIAL METROLOGY AND TESTING SERVICE CENTER

For more information or to book an appointment, please contact us at 02-227-1277 or 02-227-1278. For more information, please contact us at 02-227-1277.

MTC.AC.222-001

Head Office: 22/17 Rama 9 Road, Bangkok 10310, Thailand. Tel: 02-227-1277, 02-227-1278, 02-227-1279. Fax: 02-227-1274, 02-227-1275, 02-227-1276.

เอกสารไม่ควบคุม



3. Traces

3.1 Reading on wavelength Chromium (Cr) at 283.4 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include Cr with values 0.0000, 0.0005, 0.0010, 0.0015.

3.2 Reading on wavelength Chromium (Cr) at 312.7 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include Cr with values 0.0001, 0.0002, 0.0003, 0.0004.

3.3 Reading on wavelength Copper (Cu) at 324.7 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include Cu with values 0.0001, 0.0002, 0.0003, 0.0004.

Continue 4 / 3

INDUSTRIAL METROLOGY AND TESTING SERVICE CENTER

For more information or to book an appointment, please contact us at 02-227-1277 or 02-227-1278. For more information, please contact us at 02-227-1277.

MTC.AC.222-001

Head Office: 22/17 Rama 9 Road, Bangkok 10310, Thailand. Tel: 02-227-1277, 02-227-1278, 02-227-1279. Fax: 02-227-1274, 02-227-1275, 02-227-1276.

เอกสารไม่ควบคุม



3.4 Reading on wavelength Van (V) at 347.7 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include V with values 0.0001, 0.0002, 0.0003, 0.0004.

3.5 Reading on wavelength Lead (Pb) at 312.0 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include Pb with values 0.0001, 0.0002, 0.0003, 0.0004.

3.6 Reading on wavelength Manganese (Mn) at 379.2 nm.

Table with 6 columns: Element, Standard Value of Ni, Reading, Error of Measurement, Size of Measurement, Uncertainty. Rows include Mn with values 0.0001, 0.0002, 0.0003, 0.0004.

Continue 5 / 3

INDUSTRIAL METROLOGY AND TESTING SERVICE CENTER

For more information or to book an appointment, please contact us at 02-227-1277 or 02-227-1278. For more information, please contact us at 02-227-1277.

MTC.AC.222-001

Head Office: 22/17 Rama 9 Road, Bangkok 10310, Thailand. Tel: 02-227-1277, 02-227-1278, 02-227-1279. Fax: 02-227-1274, 02-227-1275, 02-227-1276.

เอกสารไม่ควบคุม



5.7 Results on measurement - Metal Zn at 2222 nm

Element	Standard Value (µg/g)	Recovery	Unit of Measurement	Unit of Measurement	Uncertainty
Zn	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000

5.8 Results on measurement - Zinc Cd at 223.8 nm

Element	Standard Value (µg/g)	Recovery	Unit of Measurement	Unit of Measurement	Uncertainty
Zn	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000
	0.000	100%	µg/g	µg/g	± 0.000

Notes: The stated uncertainty is an expanded uncertainty calculated at a coverage factor of 1.96 (k=2)

Calculated by



Approved by



Acting Director of Analytical Chemistry Laboratory
Second Date: 13 February 2024

INDUSTRIAL METALLOGY AND METAL SERVICE CENTRE
Gov of Cambodia

เอกสารไม่ควบคุม

ภาคผนวก ง-2

บริษัท ดี.เอ. รีเซิร์ช เซ็นเตอร์ จำกัด

1. Ölçme sonuçları

Sistemler	Ortalama hız (km/h)		Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
	Ortalama hız (km/h)	Ortalama hız (km/h)				
1000	1000	1000	100	100	100	100

Not: Ölçme sonuçları, ölçme cihazlarının kalibrasyonuna göre değerlendirilmelidir. Ölçme cihazlarının kalibrasyon raporları ekte sunulmuştur.

2. Ölçme sonuçları

Ölçme hızı (km/h)	Sıcaklık (°C)	Maksimum güç (kW)
1000	1000	1000

3. Ölçme sonuçları ile ilgili yorumlar aşağıdaki gibidir.

Ölçme hızı (km/h)	Sıcaklık (°C)	Maksimum güç (kW)
1000	1000	1000

Yapılan Ölçmeler : 11/16/2022

1/1

The results may refer to the facts, circumstances and test process.

2. Ölçme sonuçları ile ilgili yorumlar

Sistemler	Ortalama hız (km/h)			Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
	Ortalama hız (km/h)	Ortalama hız (km/h)	Ortalama hız (km/h)				
1000	1000	1000	1000	100	100	100	100

3. Ölçme sonuçları ile ilgili yorumlar

Sistemler	Ortalama hız (km/h)			Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
	Ortalama hız (km/h)	Ortalama hız (km/h)	Ortalama hız (km/h)				
1000	1000	1000	1000	100	100	100	100

Yapılan Ölçmeler : 11/16/2022

1/1

The results may refer to the facts, circumstances and test process.

1. Ölçme sonuçları

Sistemler	Ortalama hız (km/h)	Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
1000	1000	1000	1000	1000	1000

2. Ölçme sonuçları ile ilgili yorumlar

Sistemler	Ortalama hız (km/h)	Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
1000	1000	1000	1000	1000	1000

3. Ölçme sonuçları ile ilgili yorumlar

Sistemler	Ortalama hız (km/h)	Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
1000	1000	1000	1000	1000	1000

Yapılan Ölçmeler : 11/16/2022

1/1

The results may refer to the facts, circumstances and test process.

1. Ölçme sonuçları ile ilgili yorumlar

Sistemler	Ortalama hız (km/h)	Sıcaklık (°C)	Başlangıç hızı (km/h)	Bitiş hızı (km/h)	Maksimum güç (kW)
1000	1000	1000	1000	1000	1000

Yapılan Ölçmeler : 11/16/2022

1/1

The results may refer to the facts, circumstances and test process.



ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಇಲಾಖೆ

Report No. 21-00011

WHO No. T.11. 01 (1982)

I. Lead (Lead) as per reference method (mg/100g)

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.2 (2.0)	2.0	2.1	0.14	0.7
1-2	13.9 (2.0)	2.0	2.1	0.13	0.7
3-4	14.1 (2.1)	2.1	2.1	0.13	0.7
5-6	14.1 (2.1)	2.1	2.1	0.13	0.7
7-8	14.0 (2.0)	2.0	2.1	0.13	0.7

II. Lead (Lead) as per reference method (mg/100g)

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7
4-5	14.0 (2.0)	2.0	2.1	0.13	0.7
6-7	14.0 (2.0)	2.0	2.1	0.13	0.7

Date of Collection : 11.04.2019

019

The results reported are the mean and standard deviation of the population.

Director: Dr. S. Srinivas Murthy, Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Deputy Director: Dr. S. Srinivas Murthy, Deputy Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Chief, Laboratory: Dr. S. Srinivas Murthy, Chief, Laboratory, Government of Karnataka, Bangalore-560002, India.



ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಇಲಾಖೆ

Report No. 21-00012

WHO No. T.11. 01 (1982)

K. Lead (Lead) as per reference method (mg/100g)

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7
4-5	14.0 (2.0)	2.0	2.1	0.13	0.7
6-7	14.0 (2.0)	2.0	2.1	0.13	0.7
8-9	14.0 (2.0)	2.0	2.1	0.13	0.7
10-11	14.0 (2.0)	2.0	2.1	0.13	0.7

L. Five lead exposure

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7
4-5	14.0 (2.0)	2.0	2.1	0.13	0.7
6-7	14.0 (2.0)	2.0	2.1	0.13	0.7
8-9	14.0 (2.0)	2.0	2.1	0.13	0.7
10-11	14.0 (2.0)	2.0	2.1	0.13	0.7

Date of Collection : 11.04.2019

019

The results reported are the mean and standard deviation of the population.

Director: Dr. S. Srinivas Murthy, Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Deputy Director: Dr. S. Srinivas Murthy, Deputy Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Chief, Laboratory: Dr. S. Srinivas Murthy, Chief, Laboratory, Government of Karnataka, Bangalore-560002, India.



ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಇಲಾಖೆ

Report No. 21-00013

WHO No. T.11. 01 (1982)

M. Lead (Lead) as per reference method (mg/100g)

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7
4-5	14.0 (2.0)	2.0	2.1	0.13	0.7
6-7	14.0 (2.0)	2.0	2.1	0.13	0.7

N. Five lead exposure

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7
4-5	14.0 (2.0)	2.0	2.1	0.13	0.7
6-7	14.0 (2.0)	2.0	2.1	0.13	0.7

O. Five lead exposure

Age group (years)	Mean (SD)	Standard deviation (SD)	Maximum level (mg/100g)	Minimum level (mg/100g)	Reference level (mg/100g)
0-1	14.0 (2.0)	2.0	2.1	0.13	0.7
2-3	14.0 (2.0)	2.0	2.1	0.13	0.7

Collected by: [Redacted]

Approved by: [Redacted]



Director, Health Services and Training, Government of Karnataka, Bangalore-560002, India.

Date of Collection : 11.04.2019

Date of Issue : 12.04.2019

Date of Collection

019

The results reported are the mean and standard deviation of the population.

Director: Dr. S. Srinivas Murthy, Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Deputy Director: Dr. S. Srinivas Murthy, Deputy Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Chief, Laboratory: Dr. S. Srinivas Murthy, Chief, Laboratory, Government of Karnataka, Bangalore-560002, India.



ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಇಲಾಖೆ

Report No. 21-00014

WHO No. T.11. 01 (1982)

CALIBRATION CERTIFICATE

Requested by: Integrated Research Center, Government of Karnataka, Bangalore-560002, India.
Address: Integrated Research Center, Government of Karnataka, Bangalore-560002, India.
Calibrated at: Government of Karnataka, Health Services, Government of Karnataka, Bangalore-560002, India.
Reference Calibration: Government of Karnataka, Health Services, Government of Karnataka, Bangalore-560002, India.
Calibration: Lead (Lead) as per reference method (mg/100g).
Method: Lead (Lead) as per reference method (mg/100g).
Result: 14.0 (2.0) mg/100g.
Reference: WHO No. T.11. 01 (1982).
Accepted: 11.04.2019.

1. Lead (Lead) as per reference method (mg/100g).
2. Lead (Lead) as per reference method (mg/100g).
3. Lead (Lead) as per reference method (mg/100g).
4. Lead (Lead) as per reference method (mg/100g).
5. Lead (Lead) as per reference method (mg/100g).
6. Lead (Lead) as per reference method (mg/100g).
7. Lead (Lead) as per reference method (mg/100g).
8. Lead (Lead) as per reference method (mg/100g).

Date of Collection : 11.04.2019

Date of Issue : 12.04.2019

019

The results reported are the mean and standard deviation of the population.

Director: Dr. S. Srinivas Murthy, Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Deputy Director: Dr. S. Srinivas Murthy, Deputy Director, Health Services, Government of Karnataka, Bangalore-560002, India.
Chief, Laboratory: Dr. S. Srinivas Murthy, Chief, Laboratory, Government of Karnataka, Bangalore-560002, India.

- 1. From: Faculty of Management (TUM) (11/10)
- 2. From: Faculty of Management (TUM) (11/10)
- 3. From: Faculty of Management (TUM) (11/10)
- 4. From: Faculty of Management (TUM) (11/10)

Calculation Procedure:

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

Date of Calculation: 11/10/2011

11/10

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

Head Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

3. Element Properties

Element number	Element value (kN)			Displacement (mm)	Frequency (1/s)	Element period (seconds)
	Strength	Weight	Stiffness			
11101	11.1	11.1	11.1	11.1	11.1	11.1

Note: The element value is defined by the element value. The element value is defined by the element value.

3.1 Element value

3.1.1 Element value

Element value	Element value	Element period (seconds)
11.1	11.1	11.1

3.2 The introduction of the element value was replaced by element value table

Element value	Element value	Element period (seconds)
11.1	11.1	11.1

Date of Calculation: 11/10/2011

11/10

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

Head Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

3. Element value table of frequency weights

Frequency	Element value (kN)			Displacement (mm)	Frequency (1/s)	Element period (seconds)
	Strength	Weight	Stiffness			
11.1	11.1	11.1	11.1	11.1	11.1	11.1

4. Element value table of frequency weights

Frequency	Element value (kN)			Displacement (mm)	Frequency (1/s)	Element period (seconds)
	Strength	Weight	Stiffness			
11.1	11.1	11.1	11.1	11.1	11.1	11.1

Date of Calculation: 11/10/2011

11/10

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

Head Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

3. Element value table

Type	Element value (kN)	Element value (kN)	Displacement (mm)	Frequency (1/s)	Element period (seconds)

4. Frequency and element weights at 11.1

4.1 Frequency weights at 11.1

Frequency	Element value (kN)	Element value (kN)	Displacement (mm)	Frequency (1/s)	Element period (seconds)

4.2 Element weights at 11.1

Frequency	Element value (kN)	Element value (kN)	Displacement (mm)	Frequency (1/s)	Element period (seconds)

Date of Calculation: 11/10/2011

11/10

The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10). The element was defined by using calculation procedure in 1) (11/10) and 2) (11/10) and 3) (11/10) and 4) (11/10).

Head Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...

Office:
 85349 TUM School of Management
 Lehrstuhl für...
 Tel: +49 89 291 3400
 Fax: +49 89 291 3400
 Email: ...



Certificate of Calibration

Equipment: Balance
Model: BR2024-016
Serial No. (if any): 220201
Manufacturer: Sartorius
Condition: In service
Calibration No.: 02022019
Issue Date: 20 November 2022
Job No.: WC-00000110
Page: 1 of 2

Customer: Phipps Research Center Co., Ltd.
 100 Moo 2, Tambon Thoson,
 Amphur Samnathphak, Phetchaburi 20140 Thailand

Environmental Condition: Temperature: 20 °C ± 0.4 °C
 Humidity: 61 %RH ± 4.2 %RH

Calibration Place: DAAM A (191) Private Company Limited
 (Wear Laboratory #1) (Bakara Room)
 1 Moo 1, Thoson, Samnathphak,
 Phetchaburi 20140 Thailand

Calibration By: Mr. Piyarat Manasing
Calibration Date: 20 November 2022
The Method Used: In house method, OIML R110, based on OIML J40 14
Traceability: This method is traceable to the SI Unit maintained by National Institute of Standards and Technology (NIST), Traded through (DKSH Technology Co., Ltd. Certificate No. 02022018)

Calibration Results

Without Adjustment

Accuracy Error Weighted by 10 or 100 (depending on capacity, given that the capacity of the pan is 0.0010000 kg)

Capacity	Tolerance	Reference	Measured Test Value		Error
			100	10	
0.0010	±0.0001	0.0010	0.0010	0.0010	0.0000

Repeatability: (The maximum of the absolute deviation of weighting balance, Repeatability) 0.0001 kg

Measured test value (g)	Standard Deviation
100	0.0000
10	0.0000

Line of calibration for maximum capacity weight (kg): Accuracy 0.0001 kg

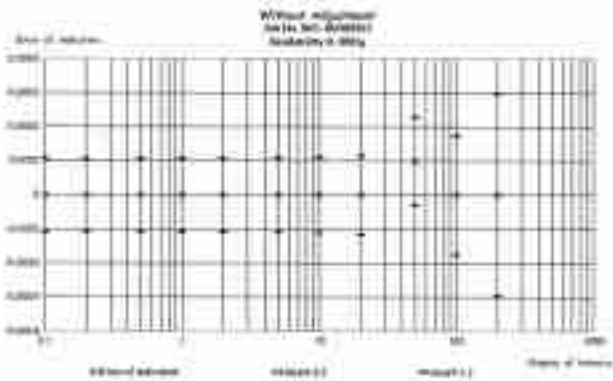
Measured Value	Conventional Mass	Displayed Value	Error of Indication	Uncertainty	k
0.1	0.10000	0.1000	0.0000	0.00011	2.58
0.2	0.20000	0.2000	0.0000	0.00011	2.58
0.5	0.50000	0.5000	0.0000	0.00011	2.58
1	1.00000	1.0000	0.0000	0.00011	2.58
2	2.00000	2.0000	0.0000	0.00011	2.58
5	5.00000	5.0000	0.0000	0.00011	2.58
10	10.00000	10.0000	0.0000	0.00011	2.58
20	20.00000	20.0000	0.0000	0.00011	2.58
50	50.00000	50.0000	0.0000	0.00011	2.58
100	100.00000	100.0000	0.0000	0.00011	2.58



Person's charge: _____
 Authorized signatory: _____
 This certificate is issued for the sole of measurement according to the international system of units (SI). It is not intended for measurement of mass in other units. The measurement uncertainty stated in this certificate is based on the best available information and is subject to change if the measurement conditions change. The accuracy of the measurement is dependent on the quality of the reference mass used. The accuracy of the measurement is dependent on the quality of the reference mass used. The accuracy of the measurement is dependent on the quality of the reference mass used.

The End of Certificate

DAAM A (191) Private Company Limited
 (Wear Laboratory #1) (Bakara Room)
 1 Moo 1, Thoson, Samnathphak,
 Phetchaburi 20140 Thailand
 Issuing branch: In Asia and Region



ใบรับรองการสอบเทียบ

หมายเลขใบรับรอง: 02022019
 วันที่ออกใบรับรอง: 20 พฤศจิกายน 2565
 สถานที่สอบเทียบ: สหกรณ์การเกษตรบ้านดอน

ชนิดของเครื่องมือ	รุ่น/รุ่นย่อย	ผลการสอบเทียบ	วันที่สอบเทียบ		หมายเหตุ
			วันที่สอบเทียบ	วันที่สอบเทียบ	
General					
01	01	1. การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
02	02	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
03	03	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
04	04	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
05	05	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
06	06	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
07	07	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
08	08	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
09	09	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
10	10	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	
11	11	การสอบเทียบความแม่นยำของน้ำหนัก	01	01	

Issued by: _____

 In Charge of the Laboratory
 Senior Engineer



Certificate of Calibration

Equipment: SPECTROPHOTOMETER
Model: D2000
Serial No. (if any): 300000
Manufacturer: JENCO
Location: N. Corridor

Certificate No.: 1300001
Issue Date: 23 November 2018
Lot No.: 3000000000
Page: 1 of 1

Customer: Integrated Research Centre Co., Ltd.
 122 Moo 2, Taniad Thaniad,
 Anusara Srinakharinwirot, Phrasitthi 20140 Thailand

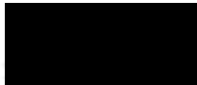
Environmental Condition: Temperature: 25.0 °C ± 0.2 °C
 Humidity: 55.0 %RH ± 0.2 %RH

Calibration Place: Dada & (1991) Public Company Limited, (Water Laboratory RT)
 1991 Z, Thaniad, Srinakharinwirot,
 Phrasitthi (20140 Thailand)

Calibrate By: W. Piyad Sittungs
Calibration Date: 21 October 2018

The Method used: 9 items applied (VVL 49.20, JENCO D2000 and D2000 and D2000)

Traceability: This certificate is traceable to the SI (SI) realized by National Institute of Standards and Technology (NIST) through Dava (Dava) (Dava).
 The accuracy for Wavelength Certificate No. 10001 and 1) 004
 The accuracy for Photometry Certificate No. 10040
 The accuracy for Single Light Certificate No. 10000



Printed on front

Authorized signature

This certificate is valid for use of calibration according to the International System of Units (SI) and is issued according to the requirements of ISO 17025:2017. The measurement uncertainty stated in this certificate is based on the measurement uncertainty of the calibration standard used. The accuracy of the calibration is based on the accuracy of the calibration standard used. The accuracy of the calibration is based on the accuracy of the calibration standard used.

2018 November 23
 W. Piyad Sittungs
 1991 Z, Thaniad, Srinakharinwirot,
 Phrasitthi (20140 Thailand)

Delivery Location - N. Area and Report

CALP/PH/01-01-01-001

Calibration Results

Without Adjustment

Wavelength	The spectral bandwidth of filter is 1 nm and 1 nm			Tolerance
	Standard Wavelength	ISO/IEC Calibration	Observed	
416.41	416	416	0.00	0.10
432.24	432	432	0.00	0.10
520.00	520	520	0.00	0.10
656.28	656	656	0.00	0.10
747.41	747	747	0.00	0.10
847.24	847	847	0.00	0.10

Wavelength	ISO/IEC Calibration			Tolerance
	Standard Wavelength	ISO/IEC Calibration	Observed	
400 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
450 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
500 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
550 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
600 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
650 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
700 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
750 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
800 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
850 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
900 nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000

2018 November 23
 W. Piyad Sittungs
 1991 Z, Thaniad, Srinakharinwirot,
 Phrasitthi (20140 Thailand)

Delivery Location - N. Area and Report

CALP/PH/01-01-01-001

Calibration Results

Without Adjustment

Wavelength	ISO/IEC Calibration	Observed	Tolerance
647.81 ± 0.22 nm	648	647	± 0.1

Calibration Method used "ISO/IEC Calibration" in this Certificate has been verified by comparison.

The End of Certificate

ใบรับรองผลการสอบเทียบ

หมายเลข	รายการ	ผลการสอบเทียบ	ความคลาดเคลื่อน
01	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
02	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
03	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
04	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
05	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
06	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
07	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
08	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
09	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
10	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
11	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
12	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
13	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
14	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
15	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
16	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
17	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
18	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
19	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1
20	ความยาวคลื่น	647.81 ± 0.22 nm	± 0.1

Delivery Location

W. Piyad Sittungs
Service Engineer

2018 November 23
 W. Piyad Sittungs
 1991 Z, Thaniad, Srinakharinwirot,
 Phrasitthi (20140 Thailand)

Delivery Location - N. Area and Report

CALP/PH/01-01-01-001

2018 November 23
 W. Piyad Sittungs
 1991 Z, Thaniad, Srinakharinwirot,
 Phrasitthi (20140 Thailand)

Delivery Location - N. Area and Report

CALP/PH/01-01-01-001


Certificate of Calibration

Equipment	SPECTROPHOTOMETER	Certificate No.	DKC00000
Model	UV2200	Issue Date:	23 November 2023
Serial No. or ID#	910220	Lot No.	9000000000
Manufacturer	HACH	Page:	1 of 1
Condition	in Condition		

Customer: Integrated Research Centre-COLLE
102 Mile 2, Tanjong Pagar,
Singapore 069616, Singapore, P.O. Box 25140, Thailand

Environment Condition: Temperature 25.6 °C ± 0.2 °C
Humidity 66.0 %RH ± 0.7 %RH

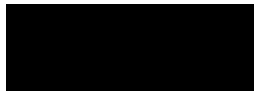
Calibration Place: Guide & (PVT) Public Company Limited (PVT Laboratory PT)
1 Mile 2, Tanjong Pagar, Singapore,
P.O. Box 25140, Thailand

Calibrated by: 04 Physical Settings
Calibration Date: 21 October 2023

The Method used: In house method (VLA-06-24 Internal ASTM E 2749 and ASTM E 391-04)

Traceability: This certificate is traceable to the ISM maintained by National Institute of Standards and Technology (NIST) through Metro (Germany) Limited

- The accuracy is traceable to Weighing Certificate No. 10001 and 11100
- The accuracy is traceable to Calibration No. 10000
- The accuracy is traceable to Calibration No. 10000



This certificate is valid for use of the equipment according to the Method specified in this Certificate. It is not valid for use for any other purpose. The accuracy of the equipment is not guaranteed for use for any other purpose. It is not valid for use for any other purpose. It is not valid for use for any other purpose.

DKSH Calibration Centre
102 Mile 2, Tanjong Pagar, Singapore 069616, Singapore
P.O. Box 25140, Thailand
Phone: +66 2 000 0000 | Email: info@dksh.com | Website: www.dksh.com

Delivery Location - In House Method

Call: +66 2 000 0000

Calibration Results:
Without Adjustment

Wavelength Accuracy (nm), The spectral location of light at various wavelengths				
Standard Wavelength	1st Reading Calibration	Corrected	Uncertainty	Units
410.0	410	0.00	0.05	nm
430.0	430	0.00	0.05	nm
450.0	450	0.00	0.05	nm
480.0	480	-0.04	0.05	nm
510.0	510	0.00	0.05	nm
530.0	530	0.00	0.05	nm

Fluorescence Intensity (Percentage)				
Wavelength	Standard Intensity	1st Reading Calibration	Corrected	Uncertainty
365nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
390nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
410nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
430nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
450nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
480nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
510nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
530nm	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000

DKSH Calibration Centre
102 Mile 2, Tanjong Pagar, Singapore 069616, Singapore
P.O. Box 25140, Thailand
Phone: +66 2 000 0000 | Email: info@dksh.com | Website: www.dksh.com

Delivery Location - In House Method

Call: +66 2 000 0000

Calibration Results:
Without Adjustment

Wavelength*	200C Wavelength (nm)	200C Transmittance (%)	Uncertainty (%)
210.0 nm ± 0.21 nm	210	99	1.4%

* Calibration Method: 1st and 2nd readings are included for uncertainty.

The End of Certificate

ใบรับรองผลการสอบเทียบ

ประเภท (Cat)		พารามิเตอร์		ประเภท (Cat)		หน่วย
200C	200C	200C	200C	200C	200C	
Wavelength						
<input type="checkbox"/>	<input type="checkbox"/>	1	ความยาวคลื่น (nm)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	2	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	3	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	4	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	5	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
Fluorescence Intensity						
<input type="checkbox"/>	<input type="checkbox"/>	6	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	7	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	8	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	9	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	10	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	11	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
Accuracy and Uncertainty						
<input type="checkbox"/>	<input type="checkbox"/>	12	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	13	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	14	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	15	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
Uncertainty						
<input type="checkbox"/>	<input type="checkbox"/>	16	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	17	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
Additional						
<input type="checkbox"/>	<input type="checkbox"/>	18	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	19	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm
<input type="checkbox"/>	<input type="checkbox"/>	20	ความยาวคลื่น (nm) (ความยาวคลื่น)	<input type="checkbox"/>	<input type="checkbox"/>	nm

Delivery Location - In House Method

DKSH Calibration Centre
Tanjong Pagar

DKSH Calibration Centre
102 Mile 2, Tanjong Pagar, Singapore 069616, Singapore
P.O. Box 25140, Thailand
Phone: +66 2 000 0000 | Email: info@dksh.com | Website: www.dksh.com

Delivery Location - In House Method

Call: +66 2 000 0000

DKSH Calibration Centre
102 Mile 2, Tanjong Pagar, Singapore 069616, Singapore
P.O. Box 25140, Thailand
Phone: +66 2 000 0000 | Email: info@dksh.com | Website: www.dksh.com

Delivery Location - In House Method

Call: +66 2 000 0000



Certificate of Calibration

Certificate No.: 01820208 Page: 2 of 2

Equipment: Digital Thermometer with Probe
Model: Goodway
Serial No.: 12220208
Manufacturer: Mettler Toledo
Location: In Condition

Certificate No.: 01820208
Issue Date: 03 November 2023
Lab No.: 0000000000
Dr. No.: -
Page: 1 of 2

Customer: Hengsai Beverage Center Co., Ltd.
 122 Moo 8, Tambon Thaboen,
 Amphur Srirachaphan, Pathumthani 20140 Thailand

Environment Condition:
 Temperature: 20 °C ± 2 °C
 Humidity: 20-80% ± 2% RH
 Voltage: 220 VAC ± 5%

Calibration Place: Duxxy S. (1981) Public Company Limited, (Water Laboratory #11)
 1 Moo 2, Thaboen, Srirachaphan,
 Pathumthani 20140 Thailand

Calibration By: W. Pichat Sakong
Calibration Date: 27 October 2023
The Method used: Manual method, CAL-9999, by comparison with standard thermometer
Traceability: This certificate is traceable to the International System of Units maintained by
 Quality Research Co., Ltd. (QR) Certificate No. QF020219

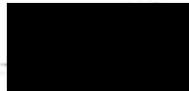
Calibration Results Without Adjustment

Sensor Type: RTD		Display: Celsius		
Parameter	Unit	Length (mm): 100	Resolution: 0.1°C	Accuracy: ±0.2°C
Setpoint Error (%)	0.0	0.004	0.0	0.00

The Cost of Certificate



Report of Change



Authorized Signatory

We warrant that based on our best knowledge and belief, the information provided in this certificate is true and correct to the best of our knowledge and belief.
 The responsibility for the accuracy of the information provided in this certificate is not assumed by us. We warrant that the information provided in this certificate is true and correct to the best of our knowledge and belief.
 This certificate is provided to you as a service. We warrant that the information provided in this certificate is true and correct to the best of our knowledge and belief.

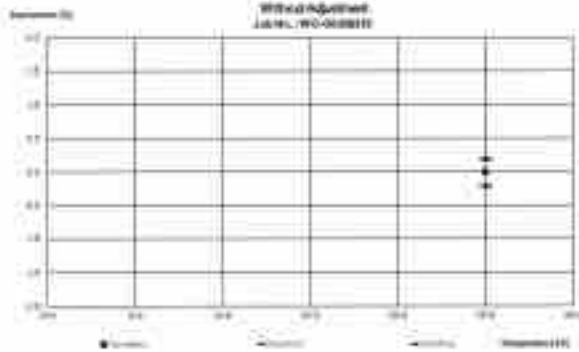
DKSH Service #1234 567
 123 Service Center
 456 Service Road
 789 Service Building
 10110 Service City, Thailand

Call: 02-1234-5678

DKSH Service #1234 567
 123 Service Center
 456 Service Road
 789 Service Building
 10110 Service City, Thailand

Call: 02-1234-5678

ใบรับรองการสอบเทียบ



อุปกรณ์: Digital Thermometer with Probe
 รุ่น: Goodway
 หมายเลข: 12220208

หมายเลข: 01820208
 ชื่อ: Goodway

พารามิเตอร์ (Parameter)	หน่วย (Unit)	ค่าที่วัดได้ (Measured Value)		ขีดจำกัด (Tolerance)
		ค่า (Value)	หน่วย (Unit)	
General				
1. #1474				
2. Adapter Power supply 220 / 110 VAC				
3. Adapter Main Switch				
4. Adapter Safety Key				
5. Adapter Probe				
6. Battery				Fail
7. Accuracy				
8. Serial Number (N / No.)				

ชื่อ: _____

W. Pichat Sakong
 Service Engineer

DKSH Service #1234 567
 123 Service Center
 456 Service Road
 789 Service Building
 10110 Service City, Thailand

Call: 02-1234-5678



Certificate of Calibration

Equipment: Digital Thermometer with Probe
Model: GW6000-52
Serial No.: 800000017
Manufacturer: Mettler Toledo
Location: in Condition
Certificate No.: DT202002
Issue Date: 03 November 2020
Lab No.: 402-0000020
Dr. No.: -
Page: 1 of 2

Customer: Integrated Business Center Co., Ltd.
 122 Moo 8, Tambon Thabkham,
 Amphur SrirachaPhan, Prachinburi 20140 Thailand

Environment Conditions: Temperature: 20 °C ± 0.1 °C
 Humidity: 20-80% ± 2% N/N
 Voltage: 220 VAC ± 5%

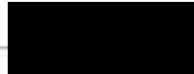
Calibration Place: Duxxy & (1991) Public Company Limited, (Water Laboratory (P))
 1 Moo 2, Tambon, SrirachaPhan,
 Prachinburi 20140 Thailand

Calibration By: Mr. Phipat Sakpany
Calibration Date: 27 October 2020
The Method used: In-house method, CAL-0018, by comparison with standard thermometer
Traceability: This certificate is traceable to the International System of Units maintained by
 Duxxy & (1991) Public Company Limited, (Water Laboratory (P))

Calibration Results With Adjustment

Calibration Point (°C)	Reference Standard		Temperature (°C)	Uncertainty (k=2)
	DTI Reading (°C)	ISAC Reading (°C)		
20.0	20.000	20.1	± 0.001	± 0.001

The End of Certificate



Report in Charge



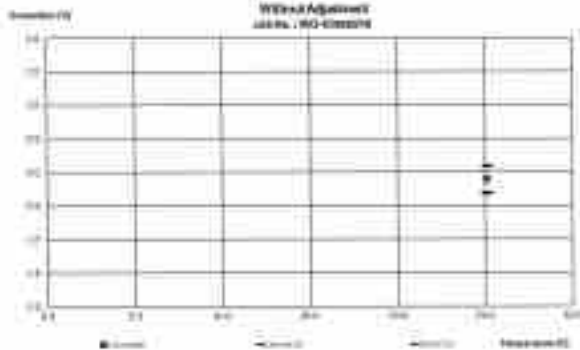
Authorized Signatory

We warrant that the work of measurement obtained in this certificate complies with ISO 9001:2015 standards for quality of the measurement process and the accuracy of the equipment used. We warrant that the equipment used in this certificate complies with the requirements of ISO 9001:2015 standards for quality of measurement process. We warrant that the equipment used in this certificate complies with the requirements of ISO 9001:2015 standards for quality of measurement process.

Duxxy & (1991) Public Company Limited
 122 Moo 8, Tambon Thabkham,
 Amphur SrirachaPhan, Prachinburi 20140 Thailand
 Tel: 037-2011111 Fax: 037-2011112
 Email: info@duxy.com www.duxxy.com

Duxxy & (1991) Public Company Limited
 122 Moo 8, Tambon Thabkham,
 Amphur SrirachaPhan, Prachinburi 20140 Thailand
 Tel: 037-2011111 Fax: 037-2011112
 Email: info@duxy.com www.duxxy.com

ใบตรวจสอบผลการทดสอบ



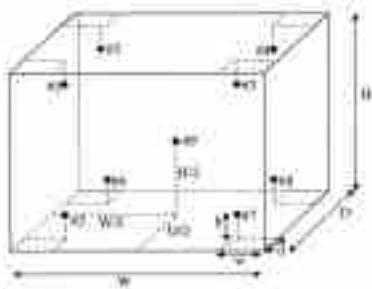
อุปกรณ์: Digital Thermometer with Probe
หมายเลข: 800000017
สถานที่: W02000020

รายการ (รายการ)	พารามิเตอร์	ผลการทดสอบ		หมายเหตุ
		ค่า	หน่วย	
01	General			
02	1. 0.001	02	02	
03	2. Adapter / Power supply 220 / 110 VAC	02	02	Full
04	3. Adapter Main Switch	02	02	
05	4. Adapter/Display Key	02	02	
06	5. Adapter/Display	02	02	
07	6. Battery	02	02	
08	7. Adapter/Probe	02	02	
09	8. Serial Sensor (0 / 0)	02	02	

Signatures: _____

Mr. Phipat Sakpany
 Senior Engineer

Duxxy & (1991) Public Company Limited
 122 Moo 8, Tambon Thabkham,
 Amphur SrirachaPhan, Prachinburi 20140 Thailand
 Tel: 037-2011111 Fax: 037-2011112
 Email: info@duxy.com www.duxxy.com


Standard Installation Location

Industry Calibration Chamber (CC) (300L)

Upper Location	01 - 03 (10)	04 - 06 (10)	07 - 09 (10)
Standard Location (01, 02, 03, 06)	01 - 3 (10)	04 - 3 (10)	07 - 3 (10)
Standard Location (04, 05, 07, 08)	01 - 3 (10)	04 - 3 (10)	07 - 3 (10)

05: Standard's center of the chamber

Position of 05	01	02	03	04	05	06	07	08	09
Checked of Copper	101	102	103	104	105	106	107	108	109

Definition
Industry Temperature: The average reading of industry device when it is in temperature point of 01 minutes.

Absorbed Temperature: The average reading of standard at measurement location.

Absorbed Uniformity: The maximum difference of absorbed temperature between of any points and the measured temperature in the reference location when you observed at each kind of all these distribution time by process to determine the temperature pattern or homogeneity with the chamber of design time. The reference system uniformly located in the geometric center of the chamber.

Measured Stability: The low level of process-to-process difference of Absorbed Temperature daily calibration.

Overall Stability: The difference of process and reference measured temperature throughout calibration time.

 001 Equipment No. 101
 002 Equipment No. 102
 003 Equipment No. 103
 004 Equipment No. 104
 005 Equipment No. 105
 006 Equipment No. 106
 007 Equipment No. 107
 008 Equipment No. 108
 009 Equipment No. 109

Issuing Location: In Asia and Beyond

001-009-010-019-020

Calibration Result:
Before adjustment

Setting	Industry	01	02	03	04	05	06	07	08	09
100	100	102.21	102.02	102.03	102.05	102.07	102.21	102.26	102.16	102.10

After adjustment

Measurement Temperature at Typical Location, including of 100 degree Calibration Test (C)

Location	Absorbed Temperature (TC)	Comparison of UUT	Uncertainty
01	102.90	1.69	0.75
02	102.85	1.84	0.36
03	102.82	1.65	0.75
04	102.81	1.64	0.36
05	102.75	1.55	0.36
06	102.82	1.73	0.36
07	102.88	1.67	0.37
08	102.97	1.76	0.36
09	102.94	1.73	0.42

Temperature Distribution

Checked (TC)	Setting (TC)	Industry (TC)	Measured Temperature at Typical Location (TC)										Uncertainty (TC)	
100	100	100	102.90	102.85	102.82	102.81	102.75	102.82	102.88	102.97	102.94	102.94	102.94	102.94

Checked Characteristic

Industry (TC)	Absorbed Uniformity (TC)	Measured Stability (TC)	Overall Stability (TC)
100	1.64	0.37	0.36

Note: * Maximum overall stability of the each position

 001 Equipment No. 101
 002 Equipment No. 102
 003 Equipment No. 103
 004 Equipment No. 104
 005 Equipment No. 105
 006 Equipment No. 106
 007 Equipment No. 107
 008 Equipment No. 108
 009 Equipment No. 109

Issuing Location: In Asia and Beyond

001-009-010-019-020

After adjustment (Cont.)

Measurement Temperature at Typical Location, including of 100 degree Calibration (TC)

Location	Absorbed Temperature (TC)	Comparison of UUT	Uncertainty
01	102.97	1.97	0.36
02	102.96	1.96	0.44
03	102.95	1.95	0.36
04	102.93	1.93	0.36
05	102.92	1.92	0.36
06	102.93	1.93	0.36
07	102.94	1.94	0.37
08	102.97	1.97	0.36
09	102.94	1.94	0.36

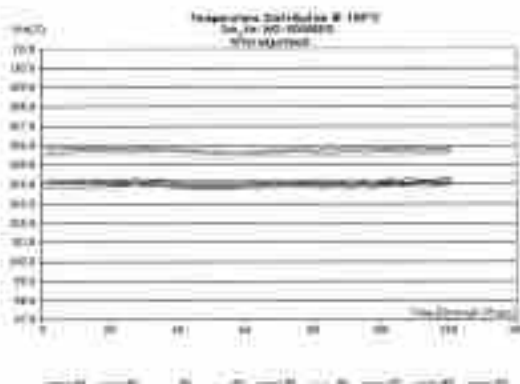
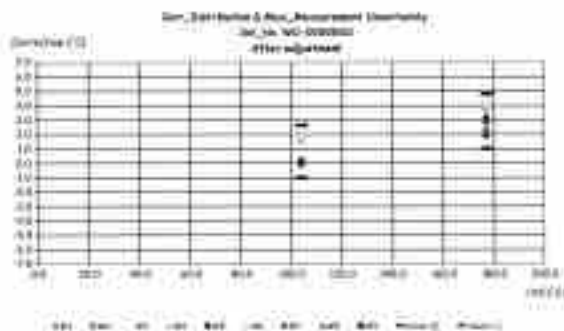
Temperature Distribution

Checked (TC)	Setting (TC)	Industry (TC)	Measured Temperature at Typical Location (TC)										Uncertainty (TC)
100	110	110	102.97	102.96	102.95	102.93	102.92	102.93	102.94	102.97	102.94	102.94	102.94

Checked Characteristic

Industry (TC)	Absorbed Uniformity (TC)	Measured Stability (TC)	Overall Stability (TC)
110	2.23	0.36	0.41

Note: * Maximum uncertainty of the each position

The End of Certificate

 001 Equipment No. 101
 002 Equipment No. 102
 003 Equipment No. 103
 004 Equipment No. 104
 005 Equipment No. 105
 006 Equipment No. 106
 007 Equipment No. 107
 008 Equipment No. 108
 009 Equipment No. 109

Issuing Location: In Asia and Beyond

001-009-010-019-020

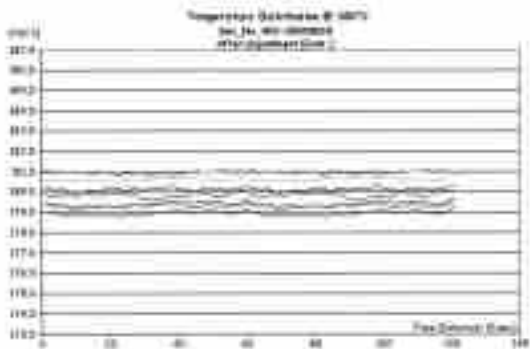
ใบรับรองผลการทดสอบ

หมายเลข Order

01-01110

หมายเลข รายงาน

0000000000



รายการ (No)	หมายเหตุ		รายการ (No)		สถานะ
	01 Nov 2022	01 Nov 2022	01	02	
01	01	1. วัสดุ	01	01	
02	01	2. วัสดุ Main Switch	01	01	
03	01	3. วัสดุ Main Switch Key	01	01	
04	01	4. วัสดุ Safety	01	01	
05	01	5. วัสดุ Wheel	01	01	Fail
06	01	6. วัสดุ Layer of Ventilation valve	01	01	
07	01	7. วัสดุ Layer of Ventilation valve	01	01	
08	01	8. วัสดุ Gear wheel	01	01	
09	01	9. วัสดุ Gear wheel	01	01	
10	01	10. วัสดุ Gear wheel	01	01	Fail
11	01	11. วัสดุ Gear wheel	01	01	Fail
12	01	12. วัสดุ Gear wheel	01	01	
13	01	13. วัสดุ Gear wheel	01	01	

Remark:

M. Suphavit Klomthong
Senior Engineer

DKSH Engineering Ltd.
100/100 Moo 10, Bang Na Expressway, Bang Na District, Bangkok 10760, Thailand
Tel: 02-088-8888
Fax: 02-088-8889
www.dksh.com
Calibrating Equipment - In House and Beyond



Certificate of Calibration

Certificate No. 01020010 Page 2 of 4

Equipment:
Model: 02-118
Serial No./Lot No.: 000000
Manufacturer: OTC
Location: 01-01110
Identification: 0

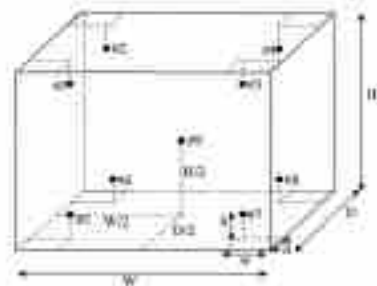
Certificate No.: 01020010
Issue Date: 06 November 2022
Job No.: W01000010
Page: 2 of 4
Version/Value: 0/Good

Customer: Integrated Research Center Co., Ltd.
122 Moo 2, Tachon, Sriracha, Prachinburi 39140 Thailand

Environment Condition:
Temperature: 24 °C ± 1, 1.1 °C
Humidity: 54 %RH ± 3, 0.1 %RH
Pressure: 100 kPa ± 4, 0.2 kPa

Calibration Point: 0.001 (1001) Public Company Limited, (Water Laboratory (P))
1 Moo 2, Tachon, Sriracha, Prachinburi 39140 Thailand

Calibration by: M. Suphavit Klomthong
Calibration Date: 01 November 2022
The Method used: In House method, OTC 02-118, based on 7.4.3.020
Traceability: This certificate is traceable to the SI Units maintained by National Institute of Standards (NIST), Thailand through DKSH Technology Limited. Certificate No. 01020010



Stability evaluation condition

Volume Expansion Chamber 02 Series

Serial Number	01-00 Series	01-01 Series	01-02 Series
01	01-00 Series	01-01 Series	01-02 Series
02	01-00 Series	01-01 Series	01-02 Series
03	01-00 Series	01-01 Series	01-02 Series

Position (No)	A1	B1	C1	A2	B2	C2	A3	B3	C3
Standard (mm)	201	202	203	204	205	206	207	208	209

Definition:
Stability Temperature: The average reading of including observation taken for the average part of the test piece.
Standard Temperature: The average reading of standard of test specimens of standard.
Measured Uncertainty: The combined influence of measured temperature between of test pieces and the standard temperature at the distance location which are measured to be a given standard that is possible to determine the temperature pattern by homogeneity with the thermal of steady state. The reference point is normally located in the geometric center of the test piece.
Measured Stability: The level of all given test items difference of measured temperature of any test piece.
Change Location: The difference of measured and standard measured temperature throughout the test.

DKSH Engineering Ltd.
100/100 Moo 10, Bang Na Expressway, Bang Na District, Bangkok 10760, Thailand
Tel: 02-088-8888
Fax: 02-088-8889
www.dksh.com
Calibrating Equipment - In House and Beyond



This certificate is issued for use in accordance with the requirements of ISO 17025:2017. It is not valid for use in any other context. The information provided in this certificate is for the use of the customer only. It is not valid for use in any other context. The information provided in this certificate is for the use of the customer only. It is not valid for use in any other context.

DKSH Engineering Ltd.
100/100 Moo 10, Bang Na Expressway, Bang Na District, Bangkok 10760, Thailand
Tel: 02-088-8888
Fax: 02-088-8889
www.dksh.com
Calibrating Equipment - In House and Beyond

Calibration Results:
Before adjustment

Setting	Indicating	91	92	93	94	95	96	97	98	99
100	100	100.77	100.42	100.27	100.30	100.22	100.28	99.99	99.99	100.10

After adjustment

Measurement Temperature at Spanned Locations, Indication of 100 (Span Calibration: 101 °C)

Location	Measured Temperature	Correction of IEC	Uncertainty
	100	0.00	0.10
81	101.07	-0.05	0.10
82	100.11	0.11	0.10
83	100.20	0.08	0.10
84	100.26	0.08	0.10
85	100.21	0.08	0.10
86	100.02	0.08	0.10
87	100.21	-0.08	0.10
88	100.28	-0.02	0.10
89	100.28	-0.02	0.10

Spanned Location

Display	Setting	Indicating	Measured Temperature at Spanned Locations (°C)										Uncertainty
100	100	100	81	82	83	84	85	86	87	88	89	0.10	
100	100	100	101.07	100.11	100.20	100.26	100.21	100.02	100.21	100.28	100.28	0.10	

Checker Characteristics

Indicating	Mean of Indication	Measured Stability	Visual Instability
100	100	0.10	0.10
99	1.00	0.20	1.00

Note: * Maximum uncertainty of the most position

100 Precision 0.10 °C
 100 Accuracy 0.10 °C
 100 Resolution 0.01 °C
 100 Minimum Spanned Location Temperature 100 °C
 100 Maximum Spanned Location Temperature 100 °C
 100 Max. Spanned Location Temperature Range 0 °C
 100 Min. Spanned Location Temperature Range 100 °C

Delivering Length: 100 mm and Beyond

100, 100, 100, 100, 100

After adjustment (C96)

Measurement Temperature at Spanned Locations, Indication of 100 (Span Calibration: 101 °C)

Location	Measured Temperature	Correction of IEC	Uncertainty
	100	0.00	0.10
81	100.71	-0.20	0.10
82	100.00	0.00	0.10
83	100.22	-0.10	0.10
84	100.00	0.00	0.10
85	100.00	0.00	0.10
86	100.00	0.00	0.10
87	100.00	-0.10	0.10
88	100.00	0.00	0.10
89	100.00	0.00	0.10

Spanned Location

Display	Setting	Indicating	Measured Temperature at Spanned Locations (°C)										Uncertainty
100	100	100	81	82	83	84	85	86	87	88	89	0.10	
100	100	100	100.71	100.00	100.22	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.10

Checker Characteristics

Indicating	Mean of Indication	Measured Stability	Visual Instability
100	100	0.00	0.00
99	1.00	0.00	1.00

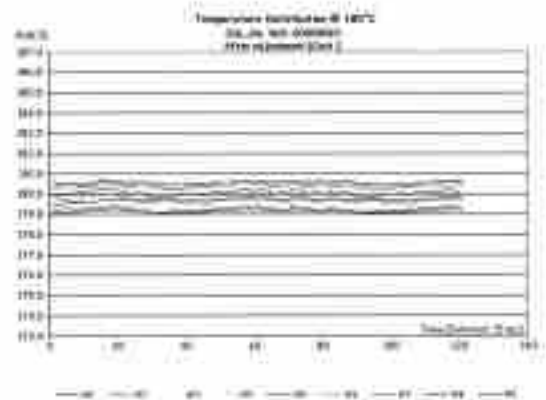
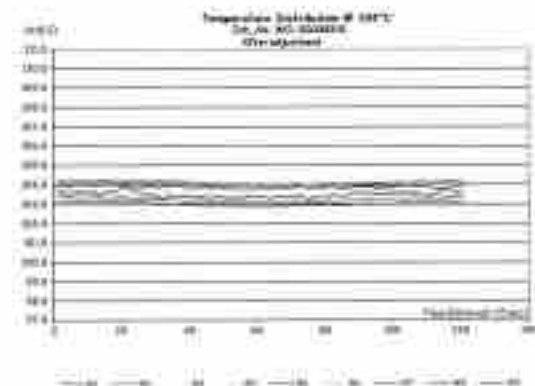
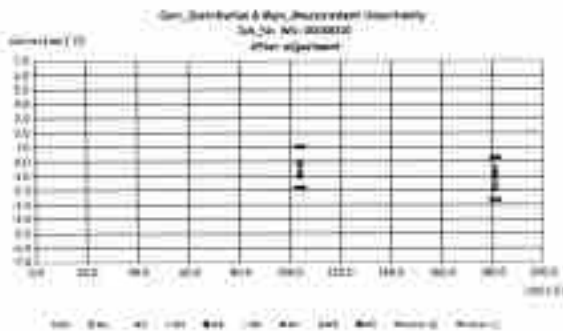
Note: * Maximum uncertainty of the most position

The End of Certificate

100 Precision 0.10 °C
 100 Accuracy 0.10 °C
 100 Resolution 0.01 °C
 100 Minimum Spanned Location Temperature 100 °C
 100 Maximum Spanned Location Temperature 100 °C
 100 Max. Spanned Location Temperature Range 0 °C
 100 Min. Spanned Location Temperature Range 100 °C

Delivering Length: 100 mm and Beyond

100, 100, 100, 100, 100



ใบรับรองการสอบเทียบ

ฉบับเลขที่: 011000000

วันที่ออกใบ: 05/11/2020

ถึง: 45 YTS

ฉบับเลขที่: 00000

วันที่ (ปี)	ชนิด	หมายเหตุ		วันที่ (ปี)		สถานะ	
		ปี	เดือน	ปี	เดือน		
		General					
02	01	1	01/04	02	01		
02	01	2	01/04/01	02	01		
02	01	3	01/04/01	02	01		
02	01	4	01/04/01	02	01		
02	01	5	01/04/01	02	01	100	
02	01	6	01/04/01	02	01		
02	01	7	01/04/01	02	01		
02	01	8	01/04/01	02	01		
02	01	9	01/04/01	02	01		
02	01	10	01/04/01	02	01	100	
02	01	11	01/04/01	02	01	100	
02	01	12	01/04/01	02	01		
02	01	13	01/04/01	02	01		

Remarks:

W. Suphachai Chansriyaporn
Senior Engineer

DKSH Group Calibration Centre
1111 Sukhumvit Road, 11th Floor, Sukhumvit Building, Bangkok, Thailand
Tel: +66 2 262 2100 | Email: calibration@dksh.com

Delivering Growth - At Home and Beyond



Certificate of Calibration

Equipment: Liquid Bath
Model: H4025M20X
Serial No. (or ID.): 1282000
Manufacturer: HANNA INSTRUMENTS
Location: H (London)
Fixed Calibration: None

Calibration No.: 01020000
Issue Date: 01 November 2020
Job No.: 40 0000000
Page: 1 of 3

Customer: Hospital Research Centre Co., Ltd.
122 Moo 2, Jomtien Thani,
Sattahip Subdistrict, Prachinburi 31140 Thailand

Environmental Condition: Temperature: 22 °C ± 0.2 °C
Humidity: 45-55% ± 4.0 %RH
Vibration: 200 mm/s ± 3.4 mm/s

Calibration Place: Division A (R&D) P&A Company Limited / West Laboratory (PT 2)
1 Mile 2, Thaprasan, Srirachaeng,
Prachinburi 31140 Thailand

Calibrated by: Mr. Suphachai Chansriyaporn
Calibration Date: 01 November 2020
The tested used: H (London) (UK) 04 07 2020 (4) 4570 0710 (0)
Traceability: The certificate is traceable to the SI (SI) as defined by National Institute of Standards and Technology (NIST), Thailand through DKSH Technology (Calibration Certificate No. 0000000)



For more information, please contact us at: 1111 Sukhumvit Road, 11th Floor, Sukhumvit Building, Bangkok, Thailand
Tel: +66 2 262 2100 | Email: calibration@dksh.com

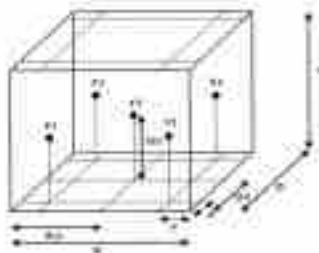
DKSH Group Calibration Centre
1111 Sukhumvit Road, 11th Floor, Sukhumvit Building, Bangkok, Thailand
Tel: +66 2 262 2100 | Email: calibration@dksh.com

Delivering Growth - At Home and Beyond

011000000

ฉบับเลขที่: 011000000

Page: 2 of 3



Standard Installation Locations

Always measured in different parts of the water surface

Water Body (L) (W) (H)	PT1	PT2	PT3	PT4	PT5	PT6
Shallow Location (PT1)	W/4	L/4	W/4	L/4	W/2	H/2
Shallow Location (PT2)	W/4	3L/4	W/4	3L/4	W/2	H/2
Shallow Location (PT3)	W/4	3L/4	3W/4	L/4	W/2	H/2
Shallow Location (PT4)	W/4	L/4	3W/4	3L/4	W/2	H/2

Shallow Location (PT5) Center of any points (PT1-PT4)

Position (L) (W)	PT1	PT2	PT3	PT4	PT5
Center of Liquid	10%	10%	10%	10%	10%

Definition

Average Temperature: The average reading of all working sensors across the volume part of the water

Measured Temperature: The average reading of all sensors at all locations in the bath

Measured Uniformity: The maximum difference of average and temperature between any points and the measured temperature at the reference location across the different sensors from all data observations over a given time duration. The temperature points are independently with the half of study time. The reference point is generally located in the geometric center of the bath.

Measured Stability: The one half of greatest maximum difference of measured temperature at any time of the given duration. The difference of temperature with average measured temperature from given observation time.

DKSH Group Calibration Centre
1111 Sukhumvit Road, 11th Floor, Sukhumvit Building, Bangkok, Thailand
Tel: +66 2 262 2100 | Email: calibration@dksh.com

Delivering Growth - At Home and Beyond

011000000

ฉบับเลขที่: 011000000

Page: 3 of 3

Calibration Results:

Without adjustment

Measurement Temperature at Spread Location, including of 100 Under Calibration: 22.0 °C

Location	Measured Temperature (°C)	Correction of UUC (°C)	Stability (μT)
01	22.08	-0.01	0.02
02	22.08	-0.02	0.02
03	22.01	-0.03	0.02
04	22.06	-0.02	0.02
05	22.05	-0.02	0.02

Temperature Distribution

Depth (°C)	Salinity (°C)	Inhibiting (°C)	Measured Temperature at Spread Location (°C)					Uniformity (°C)
			01	02	03	04	05	
22.0	22.0	22.0	22.08	22.08	22.01	22.06	22.05	0.02

Bath Characterization

Uniformity (°C)	Measured Uniformity (°C)	Measured Stability (μT)	Overall Uniformity (°C)
0.04	0.02	0.01	0.04

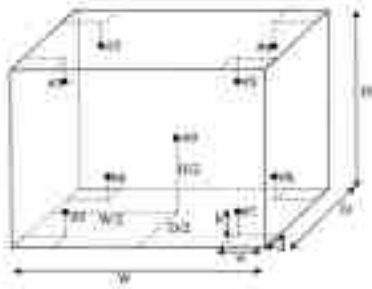
Note: * Maximum uncertainty of the next point

The End of Certificate

DKSH Group Calibration Centre
1111 Sukhumvit Road, 11th Floor, Sukhumvit Building, Bangkok, Thailand
Tel: +66 2 262 2100 | Email: calibration@dksh.com

Delivering Growth - At Home and Beyond

011000000



Standard Installation Location

Volume (Calibration Chamber) : 227 (Liters)

Inside dimension (W x H x D) : 31 x 18 (cm) x 31 x 18 (cm)

Standard Location (1, 2, 3, 4) : 11 x 11 (cm) x 1 x 1 (cm) x 11 x 18 (cm)

Standard Location (5, 6, 7, 8) : 11 x 11 (cm) x 1 x 1 (cm) x 11 x 18 (cm)

10 : Standard center of the chamber

Location of 10	01	02	03	04	05	06	07	08	09
Standard of Output	0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79

Definitions

Average Temperature: The average reading of all reading device which does not change a point of its location.

Measured Temperature: The average reading of standard at any position of sensor.

Measured Uncertainty: The maximum difference of measured temperature between all of sensors with the measured temperature of the calibration chamber which are measured at same time or at close observation time in process of measure the temperature pattern or homogeneity with the chamber at steady state. The reference value is generally located in the general center of the chamber.

Measured Stability: The standard of gradient maximum difference of measured temperature during calibration.

Overall Uncertainty: The difference of measured and reference measured temperature throughout calibration time.

DKSH Laboratory Sdn Bhd
 2507, Telok Ayer Stair
 2507, Telok Ayer Stair, Singapore 439225
 Phone: 65 63311111, Email: info@dksh.com.sg, www.dksh.com.sg

Calibration branch - in Asia and Beyond

02100076-01-01-00000000

Calibration Results:
Water adjustment

Measurement Temperature at fixed location, including of the water calibration (°C)

Location	Measured Temperature (°C)	Expansion of 100L	Uncertainty
01	20.20	-0.01	0.04
02	20.21	-0.01	0.04
03	20.20	-0.01	0.04
04	20.24	-0.01	0.04
05	20.20	-0.01	0.04
06	20.22	-0.01	0.04
07	20.20	-0.01	0.04
08	20.21	-0.01	0.04
09	20.21	-0.01	0.04

Temperature Distribution

Location	Reading	Reference	Measured Temperature at Station (Location) (°C)								Uncertainty
			01	02	03	04	05	06	07	08	
01	20	21	20.24	20.22	20.24	20.24	20.22	20.24	20.24	20.24	0.04

Chamber Characteristics

Uncertainty	Measured Uncertainty	Measured Stability	Overall Uncertainty
0.03	0.01	0.04	0.04

Note: * Maximum uncertainty at the end of process

The End of Certificate

DKSH Laboratory Sdn Bhd
 2507, Telok Ayer Stair
 2507, Telok Ayer Stair, Singapore 439225
 Phone: 65 63311111, Email: info@dksh.com.sg, www.dksh.com.sg

Calibration branch - in Asia and Beyond

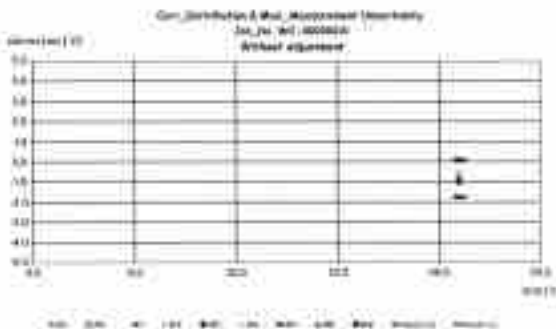
02100076-01-01-00000000

ใบตรวจสอบสภาพห้องควบคุมอุณหภูมิ

เลขที่ใบตรวจ: MO-0000014

ชื่อห้องสอบ: Calibration Chamber 01, 100°C

วันที่ตรวจสอบ: 02/07



รายการ (No)	รายละเอียด (Detail)	ตรวจพบ (No)		หมายเหตุ (Remark)
		01/07	02/07	
General				
01	01. สภาพห้อง	01	01	
02	02. วิธีการมาตรฐาน	01	01	
03	03. วิธีการสอบเทียบ	01	01	
04	04. วิธีการสอบ	01	01	
05	05. การดูแลรักษาห้องสอบ	01	01	OK
06	06. การดูแลรักษาอุปกรณ์	01	01	
07	07. การดูแลห้อง	01	01	
08	08. การดูแลความปลอดภัย	01	01	
09	09. การดูแลเอกสารหลักฐาน	01	01	
10	10. การดูแลเอกสารหลักฐาน	01	01	OK
11	11. การดูแลเอกสารหลักฐาน	01	01	
12	12. การดูแลเอกสาร	01	01	
13	13. การดูแลเอกสาร	01	01	

Signature: _____

(M. Subhawan) Director
 Senior Engineer

DKSH Laboratory Sdn Bhd
 2507, Telok Ayer Stair
 2507, Telok Ayer Stair, Singapore 439225
 Phone: 65 63311111, Email: info@dksh.com.sg, www.dksh.com.sg

Calibration branch - in Asia and Beyond


Certificate of Calibration

Equipment: Dated Issued: Certificate No.: C0102078
 Model: 335 Issued Date: 06 November 2022
 Serial No. of EQ: 301300046 JEL No.: W01H00010
 Manufacturer: Aicoptic Page: 1 of 4
 Condition: In Condition Test Method Value: None
 Storage: 0

Customer: Integrated Research Centre Co., Ltd.
 112 Moo 2, Tanyat Thanyarat,
 Amphur Thanyaburi, Pathumthani 20140 Thailand

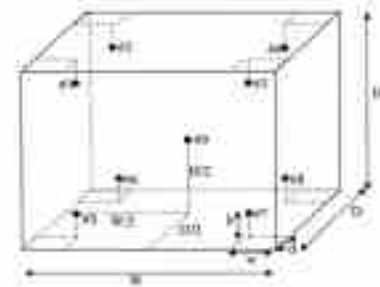
Environment Condition: Temperature: 24 °C ± 0.5 °C
 Humidity: 52 %RH ± 3.5 %RH
 Voltage: 231 VAC ± 3.6 VAC

Calibration Place: Double A (2011) Public Company Limited (Water Laboratory PT)
 1 Mile 2, Thanyarat Sriratchaburi,
 Pathumthani 20140 Thailand

Calibrated By: W. Thanyarat Thanyaburi
Calibration Date: 01 October 2022

The Method Used: In house method, GUM (B) based on GUM-2008

Traceability: This certificate is traceable to the SI units maintained by National Institute of Metrology (NIM), Thailand through CIPM (Technology Limited).
 Certificate No. 01020001


Standard Installation Location

Reference Calibration Chamber: 114 (2000)

Point Number	W1 (50 mm)	W4 (50 mm)	W4 (100 mm)
Standard Location (W1, W2, W3, W4)	W1 = 0.200	W1 = 0.200	W1 = 0.200
Standard Location (W5, W6, W7, W8)	W1 = 0.200	W1 = 0.200	W1 = 0.200

20 mm distance from the chamber

Position of EQ	01	02	03	04	05	06	07	08	09
Maximal of Loggan	011	012	013	014	015	016	017	018	019

Definition

Industry Temperature: The average industry production temperature when taken for the purpose of the process.

Measured Temperature: The average reading of industrial air temperature in location.

Measured Uncertainty: The maximum difference of measured value above minimum of a process and the maximum difference of a reference location when are measured at same time at all three observation time or location to determine the temperature uniformity with the chamber in steady state. The observed results is typically located in the greatest number of the chamber.

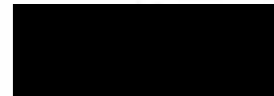
Measured Stability: The maximum of measurement difference of industrial temperature in any condition.

Visual Uniformity: The difference of maximum and minimum measured temperature throughout observation time.

W. Thanyarat Thanyaburi
 335 Thanyaburi Road, Thanyaburi, Pathumthani 20140 Thailand
 Tel: 02-920-1000, Fax: 02-920-1001, Email: w.thanyarat@dksh.com

Following Standard: In-House and BIPM

01020001-01020002



Printed in House

Autograph in House

This certificate is valid for only in the condition accuracy in International System of Unit (SI) Standard Uncertainty of measurement. Uncertainty is stated according to the International System of Units (SI).
 The measurement uncertainty values in this certificate are calculated with the worst scenario, including the uncertainty from a given a full set of calibration data. It is advised to discuss with the client to improve the measurement uncertainty.

* These activities are strictly limited to the conditions. The results will not be valid for other calibration objects. The result will not be transferred to the other objects in other technology class.

W. Thanyarat Thanyaburi
 335 Thanyaburi Road, Thanyaburi, Pathumthani 20140 Thailand
 Tel: 02-920-1000, Fax: 02-920-1001, Email: w.thanyarat@dksh.com

Following Standard: In-House and BIPM

01020001-01020002

Calibration Results:
Without adjustment

Measurement Temperature at Special Location, Industry of 202 (Under Calibration: 202 °C)

Location	Measured Temperature	Comparison of UMC	Uncertainty
	(°C)	(°C)	
01	20.27	0.27	0.01
02	20.48	0.48	0.01
03	20.74	0.74	0.01
04	20.81	0.81	0.01
05	19.80	-0.20	0.01
06	19.87	-0.13	0.01
07	20.02	0.02	0.01
08	19.84	-0.16	0.01
09	20.00	-0.20	0.01

Temperature Distribution

Measured	Industry	Industry	Measured Temperature at Special Location (°C)												Uncertainty
			(°C)	(°C)	(°C)	01	02	03	04	05	06	07	08	09	
20.0	20.0	20.0	20.27	20.20	20.11	19.84	19.80	19.87	20.02	19.84	19.80	20.00	20.00	0.01	

Chamber Characteristics

Industry	Measured Uncertainty	Measured Stability	Visual Uniformity
(°C)	(°C)	(°C)	(°C)
20.0	0.01	0.01	0.01

Note: * Maximum uncertainty of the unit position

W. Thanyarat Thanyaburi
 335 Thanyaburi Road, Thanyaburi, Pathumthani 20140 Thailand
 Tel: 02-920-1000, Fax: 02-920-1001, Email: w.thanyarat@dksh.com

Following Standard: In-House and BIPM

01020001-01020002

Without adjustment (Cont.)

Measurement Temperature at Special Location, Industry of 202 (Under Calibration: 202 °C)

Location	Measured Temperature	Comparison of UMC	Uncertainty
	(°C)	(°C)	
01	20.75	0.75	0.01
02	20.70	0.70	0.01
03	20.60	0.60	0.01
04	20.84	0.84	0.01
05	20.77	0.77	0.01
06	20.71	0.71	0.01
07	20.01	0.01	0.01
08	20.03	0.03	0.01
09	20.04	0.04	0.01

Temperature Distribution

Measured	Industry	Industry	Measured Temperature at Special Location (°C)												Uncertainty
			(°C)	(°C)	(°C)	01	02	03	04	05	06	07	08	09	
20.0	20.0	20.0	20.75	20.70	20.60	20.84	20.77	20.71	20.01	20.03	20.04	20.01	20.01	0.01	

Chamber Characteristics

Industry	Measured Uncertainty	Measured Stability	Visual Uniformity
(°C)	(°C)	(°C)	(°C)
20.0	0.01	0.01	0.01

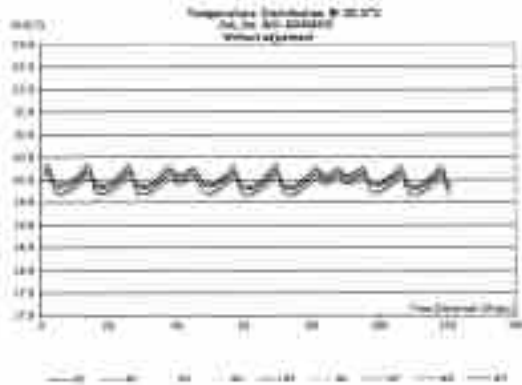
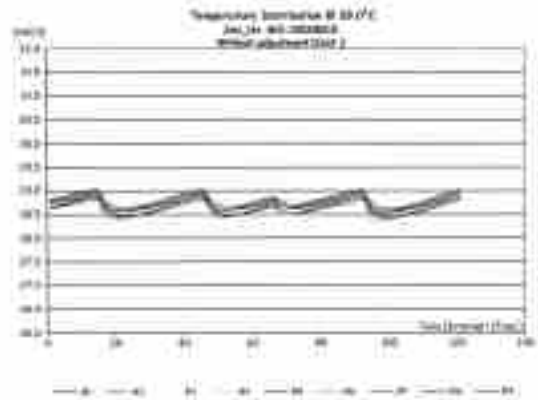
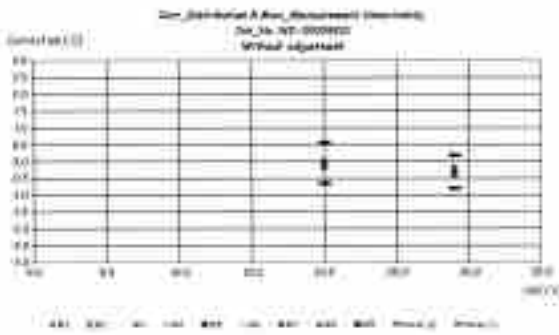
Note: * Maximum uncertainty of the unit position

The End of Certificate

W. Thanyarat Thanyaburi
 335 Thanyaburi Road, Thanyaburi, Pathumthani 20140 Thailand
 Tel: 02-920-1000, Fax: 02-920-1001, Email: w.thanyarat@dksh.com

Following Standard: In-House and BIPM

01020001-01020002



ใบตรวจสอบผลการทดสอบคุณภาพ

หมายเลข: C001702000 01-000
 หมายเลข: 0019-0000

วันที่ (ปี)	ชื่อ	หมายเลข	วันที่ (ปี)		หมายเหตุ
			รับ	ส่ง	
		General			
		1. วัสดุ	02	02	
		2. วิธีการ Measurement	02	02	
		3. วิธีการ Sampling	02	02	
		4. วิธีการ Check	02	02	
		4. วิธีการ Check	02	02	
		4. วิธีการ Check	02	02	
		4. วิธีการ Check	02	02	Fail
		7. วิธีการ Check	02	02	
		8. วิธีการ Check	02	02	
		8. วิธีการ Check	02	02	
		8. วิธีการ Check	02	02	
		11. วิธีการ Check	02	02	Fail
		12. วิธีการ Check	02	02	
		13. วิธีการ Check	02	02	

Search: _____

M. Sathitwong Pichayaporn
 Senior Engineer



Certificate of Calibration

Equipment: CDD Recirculator
 Model: CDD600
 Serial No. or ID: 1607000017
 Manufacturer: Hach
 Division: R-Location
 Contact: CDD (Hach) Location: Bangkok, Thailand

Calibration No.: CTT000106
 Issue Date: 01 November 2020
 Jul 24, 2020: 1607000017
 Page: 1 of 1

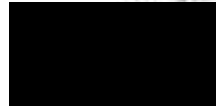
Customer: Integrated Research Center Co., Ltd.
 122 Moo 2, Tambon Thabuaeng,
 Amphur Banchachulan, Prachinburi 25143 Thailand

Environmental Condition: Temperature: 24.1°C ± 0.1°C
 Humidity: 62% RH ± 4.4% RH
 Voltage: 231 VAC ± 2.0 VAC

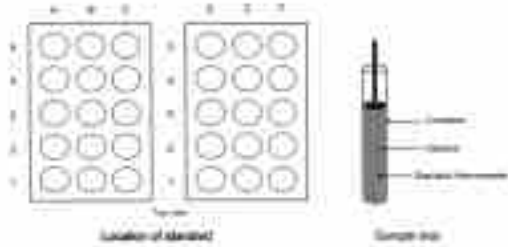
Calibration Place: DKSH (Thailand) Public Company Limited, Water Laboratory (PT)
 1 Moo 2, Tambon Thabuaeng,
 Prachinburi 25143 Thailand

Calibrated By: M. Sathitwong Pichayaporn
 Calibration Date: 01 October 2020

The Method Used: In-house method, based on (Direct Measurement with Standard Thermometer)
 This certificate is provided to the 3rd party maintained by National Institute of Standards (NIST), Thailand through DKSH (Thailand) Limited, Calibration No.



DKSH Engineering (Thailand) Co., Ltd.
 251/251-1, Prachinburi Road, Prachinburi, Thailand
 Tel: 037211511, Fax: 037211512, Email: thailand@dksh.com



Standard Wellplate Locations
The standard measurement location for each well of the plate.

- Definitions**
- Absorbance Temperature:** The average reading of absorbance across the entire well of the calibration solution.
 - Resistor Temperature:** The average reading of resistance across the entire well.
 - Resistor Stability:** The amount of percent resistance differential measured (temperature at one well only).

Calibration Results
Without Adjustment

Measured Performance of the sensor calibration:

Location/Wellplate	Reading (T2)	Calibration Coefficient (T2)
Left	1.00	0.00
Right	1.00	0.00

Location/Wellplate	Measured Temperature (T2)	Conversion of T2 (T2)	Stability (T2)
01	149.20	0.01	0.00
02	149.20	0.00	0.00
03	157.81	1.00	0.00
04	160.00	0.00	0.00
05	150.71	0.71	0.00
06	155.14	0.14	0.00
07	160.00	0.00	0.00
08	160.00	0.00	0.00
09	160.00	0.00	0.00
10	160.00	0.00	0.00
11	160.00	0.00	0.00
12	160.00	0.00	0.00
13	160.00	0.00	0.00
14	160.00	0.00	0.00
15	160.00	0.00	0.00
16	160.00	0.00	0.00
17	160.00	0.00	0.00
18	160.00	0.00	0.00
19	160.00	0.00	0.00
20	160.00	0.00	0.00
21	160.00	0.00	0.00
22	160.00	0.00	0.00
23	160.00	0.00	0.00
24	160.00	0.00	0.00
25	160.00	0.00	0.00
26	160.00	0.00	0.00
27	160.00	0.00	0.00
28	160.00	0.00	0.00
29	160.00	0.00	0.00
30	160.00	0.00	0.00
31	160.00	0.00	0.00
32	160.00	0.00	0.00
33	160.00	0.00	0.00
34	160.00	0.00	0.00
35	160.00	0.00	0.00
36	160.00	0.00	0.00
37	160.00	0.00	0.00
38	160.00	0.00	0.00
39	160.00	0.00	0.00
40	160.00	0.00	0.00
41	160.00	0.00	0.00
42	160.00	0.00	0.00
43	160.00	0.00	0.00
44	160.00	0.00	0.00
45	160.00	0.00	0.00
46	160.00	0.00	0.00
47	160.00	0.00	0.00
48	160.00	0.00	0.00
49	160.00	0.00	0.00
50	160.00	0.00	0.00

Characterization of the well under collection

Location/Wellplate	Stress	Well Under Calibration (T2)		Measured Temperature (T2)
	(T2)	Reading	Reading	Stability (T2)
Left	0.00	0.00	0.00	0.00
Right	0.00	0.00	0.00	0.00

The End of Certificate

ใบรับรองผลการสอบเทียบ

หมายเลข: W00000011

ผู้สอบเทียบ: DCO Sensor by: DKSH
เลขประจำใบ: 1827000001

เลขที่ใบ (No)		ชื่อผู้สอบเทียบ	วันที่สอบเทียบ		หมายเหตุ
ใบที่	ลำดับ		วันที่	เวลา	
		ชื่อผู้สอบเทียบ			
02	01	1. ชื่อผู้สอบเทียบ	02	01	
02	02	2. ชื่อผู้สอบเทียบ	02	02	
02	03	3. ชื่อผู้สอบเทียบ	02	03	
02	04	4. ชื่อผู้สอบเทียบ	02	04	
02	05	5. ชื่อผู้สอบเทียบ	02	05	
02	06	6. ชื่อผู้สอบเทียบ	02	06	
02	07	7. ชื่อผู้สอบเทียบ	02	07	
02	08	8. ชื่อผู้สอบเทียบ	02	08	

Signature: _____

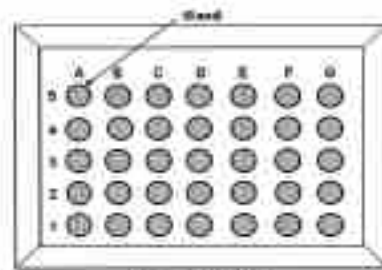
M. Satharath Khamthong
Senior Engineer

Certificate of Calibration

Certificate No. CG20044

Page 2 of 3

Fig. 1. Top view



Location of standard

Equipment: Blue Dragon Ltd
Model: CG20044
Serial No. (S.N.): 20103036
Manufacturer: Environmental Systems
Condition: In-Condition
Certificate No.: CG20044
Issue Date: 14 November 2023
Job No.: 60-0000201
Page: 1 of 3
Digital Read: 50.000

Customer: Integrated Research Center Co., Ltd.
 112 Moo 2, Tambon Thanyarat,
 Amphur SrirachaPhaeng, Pathumthani 20140 Thailand

Calibrated Quantity: Temperature: 20.0 °C ± 0.2 °C
 Humidity: 64.54% ± 0.2 %RH
 Voltage: 230 mV ± 0.2 mV

Calibration Place: Division A (HR) Public Company Limited, / Water Laboratory (P1) /
 1 Moo 2, Tambon SrirachaPhaeng,
 Pathumthani 20140 Thailand.

Calibrated by: Mr. Suphachai Khamwattana
Calibration Date: 14 October 2023
The Validity date: 61 Hours (valid) from 14 to 20 November 2023
Remarks: This certificate is available to the client via email or by personal location of
 Message (SMS), Thailand through N.M. Technical Center Laboratory LTD
 Certificate No.: TC202308



Person in Charge



Authorized Signature

This certificate is valid for use in accordance with the requirements of ISO/IEC 17025:2017. A printed certificate is provided for
 reference and is not a legal document. The certificate is valid for use in accordance with the requirements of ISO/IEC 17025:2017.
 The measurement uncertainty shown in the certificate is based on the standard uncertainty of the measurement. It is not a
 guarantee of accuracy. It is a statement of the quality of the measurement. The measurement uncertainty is based on the
 standard uncertainty of the measurement. The measurement uncertainty is based on the standard uncertainty of the measurement.
 This certificate is valid for use in accordance with the requirements of ISO/IEC 17025:2017.

DKSH Engineering Ltd
 112 Moo 2, Tambon Thanyarat,
 Amphur SrirachaPhaeng, Pathumthani 20140 Thailand
 Tel: +66 2 622 2222
 Email: sales@dksh.com

Delivering Quality - In Asia and Beyond

CG-20044-01-000001

Conditions

Actual Temperature: The average reading of the temperature sensor when the display is on the operation stand.

Measured Humidity: The average reading of the humidity sensor when the display is on the operation stand.

Calibration Results

Before adjustment

Location	Display (°C)	Setting (°C)	Indicated (°C)	Measured Temperature (°C)	Correction of 20°C (°C)	Uncertainty (K 1σ)
01	50.0	50.0	50.0	50.4	-0.4	0.4
02				50.2	-0.2	0.4
03				49.7	-0.3	0.4
04				50.5	-0.5	0.4
05				50.0	-0.0	0.4
06				49.8	-0.2	0.4
07				50.1	-0.1	0.4
08				49.9	-0.1	0.4
09				50.2	-0.2	0.4
10				49.7	-0.3	0.4
11				50.0	-0.0	0.4
12				49.8	-0.2	0.4
13				50.1	-0.1	0.4
14				49.9	-0.1	0.4
15				50.2	-0.2	0.4
16				49.7	-0.3	0.4
17				50.0	-0.0	0.4
18				49.8	-0.2	0.4
19				50.1	-0.1	0.4
20				49.9	-0.1	0.4
21				50.2	-0.2	0.4
22				49.7	-0.3	0.4
23				50.0	-0.0	0.4
24				49.8	-0.2	0.4

DKSH Engineering Ltd
 112 Moo 2, Tambon Thanyarat,
 Amphur SrirachaPhaeng, Pathumthani 20140 Thailand
 Tel: +66 2 622 2222
 Email: sales@dksh.com

Delivering Quality - In Asia and Beyond

CG-20044-01-000001

Certificate No. CG20044

Page 3 of 3

Calibration Results

After adjustment

Location	Setting (°C)	Setting (°C)	Indicated (°C)	Measured Temperature (°C)	Correction of 20°C (°C)	Uncertainty (K 1σ)
01	50.0	50.0	50.0	50.1	-0.1	0.4
02				49.9	-0.1	0.4
03				50.0	-0.0	0.4
04				49.9	-0.1	0.4
05				50.1	-0.1	0.4
06				49.8	-0.2	0.4
07				50.0	-0.0	0.4
08				49.9	-0.1	0.4
09				50.1	-0.1	0.4
10				49.8	-0.2	0.4
11				50.0	-0.0	0.4
12				49.9	-0.1	0.4
13				50.1	-0.1	0.4
14				49.8	-0.2	0.4
15				50.0	-0.0	0.4
16				49.9	-0.1	0.4
17				50.1	-0.1	0.4
18				49.8	-0.2	0.4
19				50.0	-0.0	0.4
20				49.9	-0.1	0.4
21				50.1	-0.1	0.4
22				49.8	-0.2	0.4
23				50.0	-0.0	0.4
24				49.9	-0.1	0.4

Location	Setting (°C)	Setting (°C)	Indicated (°C)	Measured Temperature (°C)	Correction of 20°C (°C)	Uncertainty (K 1σ)
27	50.0	50.0	50.0	50.0	-0.0	0.4
28				50.2	-0.2	0.4
29				50.0	-0.0	0.4
30				50.0	-0.0	0.4
31				50.0	-0.0	0.4
32				50.0	-0.0	0.4
33				50.0	-0.0	0.4
34				50.0	-0.0	0.4
35				50.0	-0.0	0.4
36				50.0	-0.0	0.4
37				50.0	-0.0	0.4
38				50.0	-0.0	0.4
39				50.0	-0.0	0.4
40				50.0	-0.0	0.4
41				50.0	-0.0	0.4
42				50.0	-0.0	0.4
43				50.0	-0.0	0.4
44				50.0	-0.0	0.4
45				50.0	-0.0	0.4
46				50.0	-0.0	0.4
47				50.0	-0.0	0.4
48				50.0	-0.0	0.4
49				50.0	-0.0	0.4
50				50.0	-0.0	0.4

The End of Certificate

DKSH Engineering Ltd
 112 Moo 2, Tambon Thanyarat,
 Amphur SrirachaPhaeng, Pathumthani 20140 Thailand
 Tel: +66 2 622 2222
 Email: sales@dksh.com

Delivering Quality - In Asia and Beyond

CG-20044-01-000001

การตรวจสอบผลการสอบเทียบ

หมายเลขใบสอบเทียบ

ชื่อลูกค้า: Blue Dragon Ltd No. CG20044-01-000001
 หมายเลขใบสอบเทียบ

วันที่ (ปี)	การตรวจสอบ		วันที่ (ปี)		หมายเหตุ
	ผู้สอบ	ผู้ตรวจ	ผู้สอบ	ผู้ตรวจ	
	<input type="checkbox"/>	<input type="checkbox"/>	1	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	2	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	3	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	4	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	5	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	6	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	7	พ.ย. 2565	
	<input type="checkbox"/>	<input type="checkbox"/>	8	พ.ย. 2565	128

Signature: _____

M. Suphachai Khamwattana
 Service Engineer

DKSH Engineering Ltd
 112 Moo 2, Tambon Thanyarat,
 Amphur SrirachaPhaeng, Pathumthani 20140 Thailand
 Tel: +66 2 622 2222
 Email: sales@dksh.com

Delivering Quality - In Asia and Beyond

Certificate of Calibration

Certificate No.: CCB00041

Page 1 of 2

Equipment: **Model:** Digi-Tester Ltd
Serial No. (or S.N.): 81 25484
Manufacturer: General
Condition: In-Condition
Certificate No.: CCB00041
Issue Date: 18 November 2022
Job No.: KC-48888915
Page: 1 of 2
Expiry Date: 20 Years

Customer: Integrated Research Center (I.C.),
 122 Moo 2, Tambon Thabkham,
 Amphur Chonburi, Prachinburi 32140 Thailand

Calibration Condition: Temperature: 24.7°C ± 0.2°C
 Humidity: 24.54% ± 0.2%RH
 Voltage: 230 VAC ± 0.2 VAC

Calibration Place: Division A (IRIT) Public Company Limited, (Water Laboratory PT)
 1 Moo 2, Tambon Thabkham,
 Prachinburi 32140 Thailand

Calibration By: M. Suphavit Khamruean
Calibration Date: 01 November 2022
The Method used: In-house method, (see on file) consistent with standard
Traceability: This certificate is traceable to SI (SI units) maintained by National Institute of
 Metrology (NIM), Thailand through NIM Technical Center Laboratory (TLC)
 Certificate No.: TCC00000



Person in Charge



Authorized Signatory

This certificate is issued in accordance with the requirements of ISO 9001, a general industry standard for
 compliance in order to ensure a high standard of service.
 The responsibility for the accuracy of the measurements is the responsibility of the customer. The accuracy of the
 measurements is dependent on the accuracy of the equipment used. The accuracy of the equipment is dependent on the
 accuracy of the calibration of the equipment. The accuracy of the calibration is dependent on the accuracy of the
 calibration of the equipment used for the calibration of the equipment. The accuracy of the calibration of the
 equipment used for the calibration of the equipment is dependent on the accuracy of the calibration of the
 equipment used for the calibration of the equipment.

DKSH Thailand Co., Ltd.
 222 Moo 2, Tambon Thabkham, Amphur Chonburi, Prachinburi 32140 Thailand
 Tel: +66 37 551 111 Fax: +66 37 551 112
 Email: sales@dksh.com

Calibrating Authority - In-house and Beyond

04 November 2022

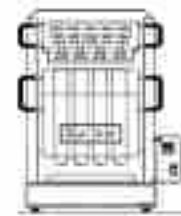
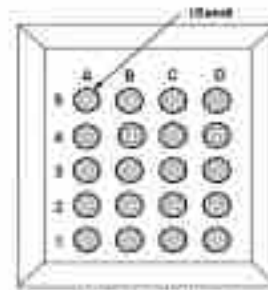


Fig. 1 - Front view



Location of Standard

Fig. 2 - Digi-Tester detail

Definitions

Accuracy: The average reading of a measuring device when the magnitude of the quantity being measured is known.

Measured Quantity: The average reading of a measuring device at any position of a scale.

DKSH Thailand Co., Ltd.
 222 Moo 2, Tambon Thabkham, Amphur Chonburi, Prachinburi 32140 Thailand
 Tel: +66 37 551 111 Fax: +66 37 551 112
 Email: sales@dksh.com

Calibrating Authority - In-house and Beyond

04 November 2022

Certificate No.: CCB00041

Page 2 of 2

Calibration Results:
Wheel adjustment

Location	Deviation (µm)	Setting (µm)	Industry (µm)	Measured Temperature (°C)	Correction of 10°C (µm)	Uncertainty (µm)
11	80.8	80	80	24.7	0.0	0.2
12	81.1	80	80	24.7	0.1	0.2
13	80.9	80	80	24.7	0.0	0.2
14	81.1	80	80	24.7	0.1	0.2
15	81.2	80	80	24.7	0.2	0.2
16	80.9	80	80	24.7	0.0	0.2
17	80.8	80	80	24.7	0.0	0.2
18	80.8	80	80	24.7	0.0	0.2
19	80.7	80	80	24.7	-0.1	0.2
20	80.9	80	80	24.7	0.0	0.2
21	80.8	80	80	24.7	0.0	0.2
22	80.8	80	80	24.7	0.0	0.2
23	80.8	80	80	24.7	0.0	0.2
24	80.9	80	80	24.7	0.0	0.2
25	80.9	80	80	24.7	0.0	0.2
26	80.9	80	80	24.7	0.0	0.2
27	80.9	80	80	24.7	0.0	0.2
28	80.9	80	80	24.7	0.0	0.2
29	80.9	80	80	24.7	0.0	0.2
30	80.9	80	80	24.7	0.0	0.2
31	80.9	80	80	24.7	0.0	0.2
32	80.9	80	80	24.7	0.0	0.2
33	80.9	80	80	24.7	0.0	0.2
34	80.9	80	80	24.7	0.0	0.2
35	80.9	80	80	24.7	0.0	0.2
36	80.9	80	80	24.7	0.0	0.2
37	80.9	80	80	24.7	0.0	0.2
38	80.9	80	80	24.7	0.0	0.2
39	80.9	80	80	24.7	0.0	0.2
40	80.9	80	80	24.7	0.0	0.2

The End of Certificate

ใบรับรองผลการสอบเทียบ

ฉบับที่: 0000000000

ชื่อผู้สอบเทียบ: DKSH Digi-Tester Ltd No. 81 25484
 หมายเลขใบ: CCB000041

รายการ (No.)	คุณสมบัติ		วิธีสอบเทียบ		หมายเหตุ
	ชื่อ	หน่วย	ชื่อ	วันที่	
General					
01	0	mm	0	01	
02	0	mm	0	01	
03	0	mm	0	01	
04	0	mm	0	01	
05	0	mm	0	01	
06	0	mm	0	01	
07	0	mm	0	01	
08	0	mm	0	01	

Signature: _____

M. Suphavit Khamruean
 Senior Engineer

DKSH Thailand Co., Ltd.
 222 Moo 2, Tambon Thabkham, Amphur Chonburi, Prachinburi 32140 Thailand
 Tel: +66 37 551 111 Fax: +66 37 551 112
 Email: sales@dksh.com

Calibrating Authority - In-house and Beyond

04 November 2022

DKSH Thailand Co., Ltd.
 222 Moo 2, Tambon Thabkham, Amphur Chonburi, Prachinburi 32140 Thailand
 Tel: +66 37 551 111 Fax: +66 37 551 112
 Email: sales@dksh.com

Calibrating Authority - In-house and Beyond



Certificate of Calibration

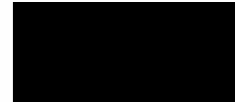
Equipment: Standard Weight
Model: F 3
Serial No. (if SU): Weight 100
Manufacturer: JJ
Condition: In service
Certificate No.: 00000071
Issue Date: 7 November 2020
Job No.: W0-000070
Page: 1 of 2
Date: / /

Customer: Integrated Research Center Co., Ltd.
 122 Moo 2, Tambon Thasarak
 Amphur Bangphayathien, Pathumthani 20140 Thailand

Environmental Condition: Temperature: 22 °C ± 2 °C
 Relative Humidity: 60 %RH ± 10 %RH
 Atmospheric Pressure: 980-1020 mmHg

Calibration Place: Mass Laboratory, DKSH Technology Limited
 2522 Sukhvitay Road, Bangphayathien,
 Pathumthani, Bangkok 10280 Thailand

Calibrated By: W. Pichet Sattang
Calibration Date: 07 November 2020
The Method used: JJ-1000-1 (M1), JJ-1000-2 (M2), JJ-1000-3 (M3)
Traceability: This certificate is traceable to the SI Units maintained by National Institute of Metrology (Thailand), NMI through DKSH Technology Limited, Certificate No. 00001814



Primary SI Traceability



Accredited Signature

This certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process. The certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process. The certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process.

DKSH Metrology Lab Ltd.
 2522 Sukhvitay Road, Bangphayathien, Pathumthani 10280
 Thailand
 Tel: +662-027-1500
 Email: metrology@dksh.com
 Website: www.dksh.com/metrology

Delivering Quality - in Asia and Beyond

Lab No. W0-000070

Calibration Results:

Measured Value	Meas. Unc.	Conventional Unit	Uncertainty	MPE Class
100 g	None	100 g ± 0.002 mg	0.002	0.1 (F 1)

Note: These MPE Class are only conventional units

The End of Certificate

DKSH Metrology Lab Ltd.
 2522 Sukhvitay Road, Bangphayathien, Pathumthani 10280
 Thailand
 Tel: +662-027-1500
 Email: metrology@dksh.com
 Website: www.dksh.com/metrology

Delivering Quality - in Asia and Beyond

Lab No. W0-000070



Certificate of Calibration

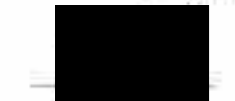
Equipment: Standard Weight
Model: 100g
Serial No. (if SU): Weight 100
Manufacturer: JJ
Condition: In service
Certificate No.: 00000074
Issue Date: 7 November 2020
Job No.: W0-000070
Page: 1 of 2
Date: / /

Customer: Integrated Research Center Co., Ltd.
 122 Moo 2, Tambon Thasarak
 Amphur Bangphayathien, Pathumthani 20140 Thailand

Environmental Condition: Temperature: 22 °C ± 2 °C
 Relative Humidity: 60 %RH ± 10 %RH
 Atmospheric Pressure: 980-1020 mmHg

Calibration Place: Mass Laboratory, DKSH Technology Limited
 2522 Sukhvitay Road, Bangphayathien,
 Pathumthani, Bangkok 10280 Thailand

Calibrated By: W. Pichet Sattang
Calibration Date: 07 November 2020
The Method used: JJ-1000-1 (M1), JJ-1000-2 (M2), JJ-1000-3 (M3)
Traceability: This certificate is traceable to the SI Units maintained by National Institute of Metrology (Thailand), NMI through DKSH Technology Limited, Certificate No. 00001814



Primary SI Traceability



Accredited Signature

This certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process. The certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process. The certificate is valid for use only if accompanied by a copy of the certificate of calibration of the instrument(s) used in the calibration process.

DKSH Metrology Lab Ltd.
 2522 Sukhvitay Road, Bangphayathien, Pathumthani 10280
 Thailand
 Tel: +662-027-1500
 Email: metrology@dksh.com
 Website: www.dksh.com/metrology

Delivering Quality - in Asia and Beyond

Lab No. W0-000070

Calibration Results:

Measured Value	Meas. Unc.	Conventional Unit	Uncertainty	MPE Class
100 g	None	100 g ± 0.004 mg	0.004	0.1 (F 1)

Note: These MPE Class are only conventional units

The End of Certificate

DKSH Metrology Lab Ltd.
 2522 Sukhvitay Road, Bangphayathien, Pathumthani 10280
 Thailand
 Tel: +662-027-1500
 Email: metrology@dksh.com
 Website: www.dksh.com/metrology

Delivering Quality - in Asia and Beyond

Lab No. W0-000070



Certificate of Calibration

Certificate No. 00000000 Page 1 of 3

Calibration Results:

Measured Value	Setting	Conventional Unit	Measuring Unit (mg)	MPE Class (1 mg)
200 g	New	200 g	- 0.05 mg	1.0

Note: These MPE Class are only conventional mass.

The End of Certificate

Equipment: Ohaus N100g
Model: N100g
Serial No. (or ID): Weight 100
Manufacturer: Ohaus
Condition: In condition
Certificate No.: 00000000
Issue Date: 7 November 2022
Job No.: W12020000
Page: 1 of 3
Date: -

Customer: Integrated Research Center Co., Ltd.
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand

Environment Condition: Temperature: 25 °C ± 0.5 °C
 Relative Humidity: 50 %RH ± 10 %RH
 Atmospheric Pressure: 950-1050 hPa

Calibration Place: Mass Laboratory, DKSH Technology Limited
 2033 Sukhumvit Road, Bangkok,
 Prachinburi, Bangkok 10250 Thailand

Calibration By: MS Pichai Sankit
Calibration Date: 07 November 2022
The Method used: 1) Hook method, OIML R110, Item 61, E1114
Traceability: This certificate is traceable to the SI Unit maintained by National Institute of Metrology (Thailand) (NIM) through DKSH Technology Limited, Certificate No. (00000000)



This certificate is issued only after a successful calibration. The calibration system is used only after the successful completion of the calibration. It is not intended to be used for any other purpose. The accuracy of the calibration is dependent on the accuracy of the calibration system. The accuracy of the calibration is dependent on the accuracy of the calibration system. The accuracy of the calibration is dependent on the accuracy of the calibration system.

MS Pichai Sankit
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand
 Phone: 081-000-1000 Email: pichai.sankit@dksh.com

Calibrating Location: In-House and Export

00000000-00000000

MS Pichai Sankit
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand
 Phone: 081-000-1000 Email: pichai.sankit@dksh.com

Calibrating Location: In-House and Export

00000000-00000000

Certificate of Calibration

Certificate No. 01000000 Page 2 of 4

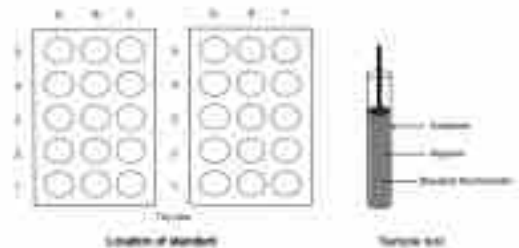
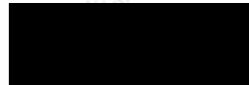
Equipment: OIML Feature
Model: OIML 001
Serial No. (or ID): 1000000001
Manufacturer: OIML
Condition: In Condition
Custom. (User-Def): Location: Heating Block, Left and Right
Certificate No.: 01000000
Issue Date: 21 November 2022
Job No.: WO-00000001
Page: 1 of 4

Customer: Integrated Research Center Co., Ltd.
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand

Environment Condition: Temperature: 25 °C ± 0.5 °C
 Humidity: 50 %RH ± 10 %RH
 Altitude: (0-2000) ± 10.0 hPa

Calibration Place: Temperature Laboratory, DKSH Technology Limited
 2033 Sukhumvit Road, Bangkok,
 Prachinburi, Bangkok 10250 Thailand

Calibration By: Mr. Eimon Jongsittha
Calibration Date: 01 November 2022
The Method used: 1) Hook method, Item 61, OIML R110, Item 61, E1114
Traceability: This certificate is traceable to the SI Unit maintained by National Institute of Metrology (NIM) through DKSH Technology Limited, Certificate No. 01000000



Standard (reference) Location:
 The standard reference location is the center of the scale.

Definition:
Measuring Temperature: The average reading of the measuring instrument at the measuring point of the scale and water calibration.
Measuring Humidity: The average reading of the scale at the measuring point.
Measuring Altitude: The average of the pressure difference of the measuring point of the scale and the reference point.

This certificate is issued only after a successful calibration. The calibration system is used only after the successful completion of the calibration. It is not intended to be used for any other purpose. The accuracy of the calibration is dependent on the accuracy of the calibration system. The accuracy of the calibration is dependent on the accuracy of the calibration system.

MS Pichai Sankit
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand
 Phone: 081-000-1000 Email: pichai.sankit@dksh.com

Calibrating Location: In-House and Export

00000000-00000000

MS Pichai Sankit
 100 Moo 2, Tambon Thraeban,
 Amphur Simatathani, Prachinburi 23140 Thailand
 Phone: 081-000-1000 Email: pichai.sankit@dksh.com

Calibrating Location: In-House and Export

00000000-00000000

**Calibration Results
Without Adjustment**

Measured Temperature at the tested locations:

Location/Reading Point	Setting (°C)	Last Calibration (°C)
L16	100	100
R20	100	100

Location/Reading Point	Measured Temperature (°C)	Correction of (ISO) (°C)	Uncertainty (±) (°C)
R7	100.00	-1.26	0.08
S2	101.00	-1.34	0.07
S6	101.00	-1.26	0.08
H4	100.00	-1.31	0.08
S0	100.00	-1.30	0.08
R1	101.00	-1.28	0.08
S3	100.00	-1.25	0.08
R3	101.00	-1.25	0.08
S4	100.00	-1.27	0.08
S5	100.00	-1.25	0.08
T1	101.00	-1.26	0.08
S2	100.00	-1.27	0.08
T3	100.00	-1.25	0.07
S4	100.00	-1.25	0.08
T2	100.00	-1.26	0.07
S1	100.00	-1.26	0.07
S3	100.00	-1.26	0.08
S1	100.00	-1.25	0.07
S2	100.00	-1.27	0.08
S3	100.00	-1.27	0.07
S4	100.00	-1.26	0.08
T1	100.00	-1.27	0.07
T2	100.00	-1.25	0.08
T3	100.00	-1.25	0.07
T4	100.00	-1.27	0.08
S3	100.00	-1.25	0.07

DKSH Environmental Services
 2222 Sukhumvit Road, 22nd Floor, Sukhumvit District, Bangkok 10110, Thailand
 Tel: +662 010 0000, Fax: +662 010 0001, Email: info@dksh.com

Following Order: In Site and Report

Issued On: 24 Jul 2019

Characterization of the test under calibration:

Location/Reading Point	Set Point Calibration (°C)		Measured Temperature (°C)	
	Setting	Reading	Setting	Reading (°C)
L16	100	100	100	100
R20	100	100	100	100

The End of Certificate

DKSH Environmental Services
 2222 Sukhumvit Road, 22nd Floor, Sukhumvit District, Bangkok 10110, Thailand
 Tel: +662 010 0000, Fax: +662 010 0001, Email: info@dksh.com

Following Order: In Site and Report

Issued On: 24 Jul 2019

ใบรับรองการสอบเทียบอุณหภูมิ

เลขที่ใบ: 01102019

ผู้สอบเทียบ: OUI Reader

ณ: UPH 308

เลขที่ใบสอบ: 01102019

เลขที่ใบ (No.)		จุดสอบเทียบ (Calibration Point)	ความคลาดเคลื่อน (Error)		หมายเหตุ (Remarks)
20 Nov 2019	20 Nov 2019		±0.08	±0.08	
01	01	จุดสอบเทียบ			
02	01	1. 100.00	0.00	0.00	
03	01	2. 100.00	0.00	0.00	
04	01	3. 100.00	0.00	0.00	
05	01	4. 100.00	0.00	0.00	
06	01	5. 100.00	0.00	0.00	
07	01	6. 100.00	0.00	0.00	
08	01	7. 100.00	0.00	0.00	
09	01	8. 100.00	0.00	0.00	

Signatures:

 By: [Signature]
 Service Engineer

DKSH Environmental Services
 2222 Sukhumvit Road, 22nd Floor, Sukhumvit District, Bangkok 10110, Thailand
 Tel: +662 010 0000, Fax: +662 010 0001, Email: info@dksh.com

Following Order: In Site and Report

Certificate of Calibration

Equipment:	TEMPERATURE	Certificate No.:	01102019
Model:	2000C	Serial Date:	01 November 2019
Serial No. (or ID):	100020000	Job No.:	SC-0000010
Manufacturer:	WAGO	Page:	1 of 2
Condition:	In Condition		

Customer: Integrated Research Center Co., Ltd.
 102 Moo 2, Tanyod Thaksin
 Rayong Srirachaphan, Phraeksub 20100 Thailand

Dimensional Condition: Temperature: 20 °C, ± 0.02 °C
 Humidity: 45-55% ± 5-55%

Calibration Place: Divisa A (1021) Public Company Limited (Wako Laboratory (TH))
 1 Moo 2, Tanyod Thaksin, Srirachaphan
 Phraeksub 20100 Thailand

Calibrated By: M. Purnat Sattong
 01 November 2019

The Method used: WAGO method, IEC 60752, based on IEC 60752 Method (TRB)
 The certificate is traceable to Primary National Reference and Date Calibrated by
 United States Environmental Protection Agency (NIST) through High Company
 Certificate No. 4355, 4356, 4357, 4358



Printed on 24 Jul 2019



Issued on 24 Jul 2019

This certificate is issued for use in accordance with the WAGO method (IEC 60752) and is traceable to the National Reference Standard (NIST) through High Company. The certificate is issued for use in accordance with the WAGO method (IEC 60752) and is traceable to the National Reference Standard (NIST) through High Company. The certificate is issued for use in accordance with the WAGO method (IEC 60752) and is traceable to the National Reference Standard (NIST) through High Company.

DKSH Environmental Services
 2222 Sukhumvit Road, 22nd Floor, Sukhumvit District, Bangkok 10110, Thailand
 Tel: +662 010 0000, Fax: +662 010 0001, Email: info@dksh.com

Following Order: In Site and Report

Issued On: 24 Jul 2019

