Name of Accreditation Program	JCSS Accreditation Program
Accreditation Identification	JCSS 0064 Calibration
Name of Conformity Assessment Body	Chubu Testing Center, Japan Quality Assurance Organization
Name of Legal Entity	Japan Quality Assurance Organization JCN 9010005016585
Inquiry Point	Sales Division TEL: +81-568-24-5111 FAX: +81-568-24-5122

*JCN: Japan Corporate Number

24・03・19-NITE-004
2024-03-28

Certificate of Accreditation

International Accreditation Japan (IAJapan) hereby accredits the following conformity assessment body as a calibration laboratory of Japan Calibration Service System.

Accreditation Identification: JCSS 0064 Calibration

Name of Conformity Assessment Body: Chubu Testing Center,
Japan Quality Assurance Organization

Name of Legal Entity: Japan Quality Assurance Organization

Location of Conformity Assessment Body: 22 Gotan, Okimura, Kitanagoya-shi, Aichi 481-0043, JAPAN

Scope of Accreditation: Length, Mass, Temperature, Volume,
Electricity (Direct Current & Low Frequency),
Density & Reflective Index, Force, Torque, Pressure,
Acoustics & Ultrasound, Humidity
(as the following pages)

Accreditation Requirement: ISO/IEC 17025:2017*

* The relevant accreditation requirements described in the Accreditation Scheme Document for JCSS are also applied.

Effective Date of Accreditation: 2021-07-21

Expiry Date of Accreditation: 2025-07-20

Date of Initial Accreditation: 1996-04-03

K. Saito

SAITO Kazunori
Chief Executive, International Accreditation Japan (IAJapan)
National Institute of Technology and Evaluation

- International Accreditation Japan (IAJapan) is a laboratory accreditation body which has signed MRAs of ILAC (International Laboratory Accreditation Cooperation) and APAC (Asia Pacific Accreditation Cooperation).
- MRA requirements are, in addition to relevant international standards and guides, requirements for participation in proficiency testing programs, surveillance and reassessment, and the policy for the traceability of measurement for MRA purpose.
- This laboratory fulfills ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation means this laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).
- The latest accreditation information is publicly available on IAJapan Website as an accreditation certificate.

General Field of Calibration: Length
Date of Initial Accreditation of the Field: 1996-04-03
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Length Measuring Instrument	Gauge Blocks (Comparison Method)	From 0.5 mm up to 50 mm	0.06 μm
		More than 50 mm up to 100 mm	0.07 μm
		More than 100 mm up to 150 mm	0.09 μm
		More than 150 mm up to 200 mm	0.11 μm
		More than 200 mm up to 250 mm	0.13 μm
		More than 250 mm up to 300 mm	0.15 μm
		More than 300 mm up to 400 mm	0.19 μm
		More than 400 mm up to 500 mm	0.23 μm
	End Gauges with Flat Ends (Comparison Method)	Up to 300 mm	1.0 μm
		More than 300 mm up to 500 mm	1.5 μm
		More than 500 mm up to 800 mm	2.5 μm
		More than 800 mm up to 1000 mm	3.0 μm
	Rules	Up to 1 m	11 μm
		More than 1 m up to 5 m	+(11 μm for every above 1 m)
	Rules (Starting Point of Edge)	Up to 3 m	0.07 mm
	Steel Tape Measures	Up to 5 m	0.10 mm
		More than 5 m up to 100 m	+(0.10 mm for every above 5 m)
	Dial gauges	Up to 50.8 mm	0.9 μm
		More than 50.8 mm up to 100 mm	1.4 μm
	Dial test indicators	Up to 0.6 mm	1.0 μm
		More than 0.6 mm up to 1.6 mm	1.4 μm
	Calibration tester for dial gauges	Up to 25 mm	0.5 μm
	Cylinder gauges	Form 18 mm up to 400 mm	1.5 μm
	Calipers	Up to 200 mm	0.03 mm
		More than 200 mm up to 300 mm	0.04 mm
		More than 300 mm up to 600 mm	0.05 mm
		More than 600 mm up to 1000 mm	0.07 mm
	Height gauges	Up to 600 mm	0.005 mm
	Depth gauges	Up to 300 mm	0.02 mm
	Micrometers	Up to 25 mm	0.6 μm
		More than 25 mm up to 50 mm	2 μm
		More than 50 mm up to 150 mm	3 μm
		More than 150 mm up to 200 mm	4 μm
		More than 200 mm up to 300 mm	5 μm
		More than 300 mm up to 400 mm	6 μm
		More than 400 mm up to 500 mm	7 μm

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Mass
Date of Initial Accreditation of the Field: 1999-10-13
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %) (Conventional Mass)
Weight	Weight	50 kg	0.25 g
		20 kg	19 mg
		10 kg	6.9 mg
		5 kg	4.0 mg
		2 kg	1.2 mg
		1 kg	0.59 mg
		500 g	0.32 mg
		200 g	0.14 mg
		100 g	0.090 mg
		50 g	0.050 mg
		20 g	0.031 mg
		10 g	0.023 mg
		5 g	0.019 mg
		2 g	0.014 mg
		1 g	0.012 mg
		500 mg	0.012 mg
		200 mg	0.0072 mg
		100 mg	0.0056 mg
		50 mg	0.0046 mg
		20 mg	0.0037 mg
		10 mg	0.0033 mg
		5 mg	0.0027 mg
		2 mg	0.0027 mg
		1 mg	0.0027 mg
	Deadweight	More than 20 kg up to 60 kg	6.0 μg/g
		More than 15 kg up to 20 kg	30 mg
		More than 10 kg up to 15 kg	23 mg
		More than 9 kg up to 10 kg	15 mg
		More than 5.5 kg up to 9 kg	3.0 μg/g
		More than 5 kg up to 5.5 kg	11 mg
		More than 4 kg up to 5 kg	7.5 mg
		More than 2 kg up to 4 kg	3.0 μg/g
		More than 1 kg up to 2 kg	3.0 mg
		More than 900 g up to 1 kg	1.5 mg
		More than 500 g up to 900 g	3.0 μg/g
		More than 400 g up to 500 g	0.75 mg
		More than 200 g up to 400 g	3.0 μg/g
		More than 100 g up to 200 g	0.30 mg
		More than 90 g up to 100 g	0.15 mg

		More than 50 g up to 90 g	3.0 μg/g
		More than 40 g up to 50 g	0.10 mg
		More than 20 g up to 40 g	0.12 mg
		More than 10 g up to 20 g	0.080 mg
		More than 9 g up to 10 g	0.060 mg
		More than 5 g up to 9 g	10 μg/g
		More than 4 g up to 5 g	0.050 mg
		More than 2 g up to 4 g	0.060 mg
		More than 1 g up to 2 g	0.040 mg
		1 g	0.030 mg

#All Calibration Procedures are in-house procedures developed by this laboratory.

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility, On-site Calibration
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
			Permanent Laboratory	On-site Calibration
Scale	Non-Automatic Electronic Weighing Instruments	More than 60 kg up to 500 kg	73 μg/g	73 μg/g
		More than 2 kg up to 60 kg	2.4 μg/g	2.4 μg/g
		From 1 kg up to 2 kg	0.86 μg/g	0.86 μg/g
		More than 500 g less than 1 kg	0.96 μg/g	0.96 μg/g
		500 g	0.98 μg/g	0.98 μg/g
		More than 200 g less than 500 g	1.1 μg/g	1.1 μg/g
		200 g	0.93 μg/g	0.93 μg/g
		More than 100 g less than 200 g	1.5 μg/g	1.5 μg/g
		100 g	1.2 μg/g	1.2 μg/g
		More than 50 g less than 100 g	1.8 μg/g	1.8 μg/g
		50 g	1.3 μg/g	1.3 μg/g
		More than 20 g less than 50 g	2.5 μg/g	2.5 μg/g
		20 g	2.2 μg/g	2.2 μg/g
		More than 10 g less than 20 g	5.2 μg/g	5.2 μg/g
		10 g	3.2 μg/g	3.2 μg/g
		More than 5 g less than 10 g	7.9 μg/g	7.9 μg/g
		5 g	5.3 μg/g	5.3 μg/g
		More than 2 g less than 5 g	13 μg/g	13 μg/g
		2 g	10 μg/g	10 μg/g
		More than 1 g less than 2 g	28 μg/g	28 μg/g
		1 g	17 μg/g	17 μg/g
		More than 500 mg less than 1 g	43 μg/g	43 μg/g
		500 mg	32 μg/g	32 μg/g
		More than 200 mg less than 500 mg	61 μg/g	61 μg/g
		200 mg	51 μg/g	51 μg/g
		More than 100 mg less than 200 mg	0.14 mg/g	0.14 mg/g
		100 mg	80 μg/g	80 μg/g
		More than 50 mg less than 100 mg	0.20 mg/g	0.20 mg/g
		50 mg	0.13 mg/g	0.13 mg/g
		More than 20 mg less than 50 mg	0.33 mg/g	0.33 mg/g
		20 mg	0.26 mg/g	0.26 mg/g
		More than 10 mg less than 20 mg	0.83 mg/g	0.83 mg/g
		10 mg	0.45 mg/g	0.45 mg/g
		9 mg	1.2 mg/g	1.2 mg/g
		8 mg	1.4 mg/g	1.4 mg/g
		7 mg	1.1 mg/g	1.1 mg/g
		6 mg	1.2 mg/g	1.2 mg/g
		5 mg	0.72 mg/g	0.72 mg/g
		4 mg	1.8 mg/g	1.8 mg/g
		3 mg	2.4 mg/g	2.4 mg/g
		2 mg	1.8 mg/g	1.8 mg/g
		1 mg	3.6 mg/g	3.6 mg/g
		More than 60 kg up to 500 kg	0.16 mg/g	0.16 mg/g
		60 kg	0.21 mg/g	0.21 mg/g

	Non-Automatic Mechanical Weighing Instruments	More than 6 kg less than 60 kg	0.13 mg/g	0.13 mg/g
		6 kg	0.21 mg/g	0.21 mg/g
		From 5 kg less than 6 kg	0.10 mg/g	0.10 mg/g
		From 1 kg less than 5 kg	2.3 μg/g	2.3 μg/g
		More than 500 g less than 1 kg	4.5 μg/g	4.5 μg/g
		500 g	5.0 μg/g	5.0 μg/g
		More than 200 g less than 500 g	6.6 μg/g	6.6 μg/g
		200 g	1.5 μg/g	1.5 μg/g
		More than 100 g less than 200 g	2.0 μg/g	2.0 μg/g
		100 g	2.5 μg/g	2.5 μg/g
		More than 50 g less than 100 g	4.4 μg/g	4.4 μg/g
		50 g	7.0 μg/g	7.0 μg/g
		More than 20 g less than 50 g	11 μg/g	11 μg/g
		20 g	2.2 μg/g	2.2 μg/g
		More than 10 g less than 20 g	5.2 μg/g	5.2 μg/g
		10 g	3.3 μg/g	3.3 μg/g
		More than 5 g less than 10 g	7.9 μg/g	7.9 μg/g
		5 g	5.3 μg/g	5.3 μg/g
		More than 2 g less than 5 g	13 μg/g	13 μg/g
		2 g	10 μg/g	10 μg/g
		More than 1g less than 2 g	28 μg/g	28 μg/g
		1 g	17 μg/g	17 μg/g
		More than 500mg less than 1 g	43 μg/g	43 μg/g
		500 mg	32 μg/g	32 μg/g
		More than 200 mg less than 500 mg	61 μg/g	61 μg/g
		200 mg	51 μg/g	51 μg/g
		More than 100 mg less than 200 mg	0.14 mg/g	0.14 mg/g
		100mg	81 μg/g	81 μg/g
		More than 50 mg less than 100 mg	0.20 mg/g	0.20 mg/g
		50 mg	0.13 mg/g	0.13 mg/g
		More than 20 mg less than 50 mg	0.33 mg/g	0.33 mg/g
		20 mg	0.27 mg/g	0.27 mg/g
		More than 10 mg less than 20 mg	0.84 mg/g	0.84 mg/g
		10 mg	0.47 mg/g	0.47 mg/g
		9 mg	1.2 mg/g	1.2 mg/g
		8 mg	1.4 mg/g	1.4 mg/g
		7 mg	1.1 mg/g	1.1 mg/g
		6 mg	1.3 mg/g	1.3 mg/g
		5 mg	0.76 mg/g	0.76 mg/g
		4 mg	1.9 mg/g	1.9 mg/g
		3 mg	2.5 mg/g	2.5 mg/g
		2 mg	1.9 mg/g	1.9 mg/g
		1 mg	3.8 mg/g	3.8 mg/g

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Temperature
Date of Initial Accreditation of the Field: 1997-03-19
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Contact Type Thermometer	Resistance thermometer (Comparison calibration)	From -100 ºC less than -80 ºC	53 mK (*4)
		From -80 ºC less than 0 ºC	16 mK (*4)
		From 0 ºC up to 100 ºC	12 mK (*4)
		More than 100 ºC up to 250 ºC	14 mK (*4)
		More than 250 ºC up to 420 ºC	18 mK (*4)
	Liquid-in-glass thermometer (Comparative Calibration)	0 ºC	0.027 ºC
		From -50 ºC less than 0 ºC (*1)	0.05 ºC
		More than 0 ºC up to 150 ºC (*1)	0.04 ºC
		More than 150 ºC up to 190 ºC (*1)	0.05 ºC
		More than 190 ºC up to 200 ºC (*1)	0.06 ºC
		More than 200 ºC up to 250 ºC (*1)	0.07 ºC
		More than 250 ºC up to 300 ºC (*1)	0.13 ºC
		More than 300 ºC up to 350 ºC (*1)	0.15 ºC
		From -100 ºC less than -80 ºC (*2)	0.35 ºC
		From -80 ºC less than -50 ºC (*2)	0.30 ºC
		From -50 ºC less than 0 ºC (*3)	0.03 ºC
		More than 0 ºC up to 140 ºC (*3)	0.02 ºC
		More than 140 ºC up to 190 ºC (*3)	0.03 ºC
		More than 190 ºC up to 200 ºC (*3)	0.05 ºC
		More than 200 ºC up to 240 ºC (*3)	0.03 ºC
		More than 240 ºC up to 250 ºC (*3)	0.06 ºC
		More than 250 ºC up to 300 ºC (*3)	0.12 ºC
		More than 300 ºC up to 350 ºC (*3)	0.13 ºC
	Temperature sensors with display unit (Comparison calibration)	From -100 ºC less than -80 ºC	0.055 ºC
		From -80 ºC less than 0 ºC	0.020 ºC
		From 0 ºC up to 250 ºC	0.015 ºC
		More than 250 ºC up to 420 ºC	0.020 ºC
		More than 420 ºC up to 1100 ºC	1.1 ºC
		More than 1100 ºC up to 1200 ºC	1.9 ºC
		More than 1200 ºC up to 1350 ºC	2.2 ºC
		More than 1350 ºC up to 1500 ºC	2.9 ºC
		More than 1500 ºC up to 1554 ºC	3.3 ºC
	Thermocouple K, E, J, T, N (Comparison calibration)	From -100 ºC less than -80 ºC	0.3 ºC
		From -80 ºC up to 250 ºC	0.2 ºC
		More than 250 ºC up to 420 ºC (*5)	0.3 ºC
		More than 420 ºC up to 1100 ºC (*6)	1.1 ºC
		More than 1100 ºC up to 1200 ºC (*7)	1.9 ºC
		More than 1200 ºC up to1350 ºC (*8)	2.2 ºC

		More than 1350 ºC up to1372 ºC	2.9 ºC
	Thermocouple R (Comparison calibration)	From -50 ºC less than -40 ºC	0.9 ºC
		From -40 ºC less than 0 ºC	0.7 ºC
		From 0 ºC up to 420 ºC	0.5 ºC
		More than 420 ºC up to 1100 ºC	1.1 ºC
		More than 1100 ºC up to 1200 ºC	1.9 ºC
		More than 1200 ºC up to 1350 ºC	2.2ºC
		More than 1350 ºC up to 1500 ºC	2.9 ºC
		More than 1500 ºC up to 1554 ºC	3.3 ºC
	Thermocouple S (Comparison calibration)	From -50 ºC less than -40 ºC	0.7 ºC
		From -40 ºC less than 0 ºC	0.6 ºC
		From 0 ºC up to 420 ºC	0.5 ºC
		More than 420 ºC up to 1100 ºC	1.1 ºC
		More than 1100 ºC up to 1200 ºC	1.9 ºC
		More than 1200 ºC up to 1350 ºC	2.2ºC
		More than 1350 ºC up to 1500 ºC	2.9 ºC
		More than 1500 ºC up to 1554 ºC	3.3 ºC
	Thermometer calibration equipment	From -100 ºC less than -80 ºC	0.09 ºC
		From -80 ºC less than -50 ºC	0.07 ºC
		From -50 ºC up to 100 ºC	0.030 ºC
		More than 100 ºC up to 250 ºC	0.050 ºC

#All Calibration Procedures are in-house procedures developed by this laboratory.
(*1) Calibration using working standard of liquid-in-glass thermometer
(*2) Calibration using digital thermometer
(*3) Calibration using working standard of platinum resistance thermometer
(*4) Temperature converted from the ratio of the resistance $R(T_{90})$ to R (273.16K), $W(T_{90})$
(*5) Type T thermocouple: Maximum calibration scope is up to 400 ºC
(*6) Type E thermocouple: Maximum calibration scope is up to 1000 ºC
(*7) Type J thermocouple: Maximum calibration scope is up to 1200 ºC
(*8) Type N thermocouple: Maximum calibration scope is up to 1300 ºC

General Field of Calibration: Volume
Date of Initial Accreditation of the Field: 2014-11-13
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Volumetric Apparatus	Pipette	1 μL	0.070 μL
		More than 1 μL up to 2 μL	0.070 μL
		More than 2 μL up to 5 μL	0.13 μL
		More than 5 μL up to 10 μL	0.15 μL
		More than 10 μL up to 20 μL	0.25 μL
		More than 20 μL up to 50 μL	0.30 μL
		More than 50 μL up to 100 μL	0.50 μL
		More than 100 μL up to 200 μL	1.5 μL
		More than 200 μL up to 500 μL	3.3 μL
		More than 500 μL up to 1 mL	6.2 μL
		More than 1 mL up to 2.5 mL	21 μL
		More than 2.5 mL up to 5 mL	40 μL
		More than 5 mL up to 10 mL	80 μL

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Electricity (Direct Current & Low Frequency)
Date of Initial Accreditation of the Field: 2014-02-06
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Temperature Indicators	Thermocouple with Reference Junction	R	From -0.226 mV up to 5.583 mV (From -50 ºC up to 600 ºC)	0.004 mV
				More than 5.583 mV up to 21.101 mV (More than 600 ºC up to 1768 ºC)	0.005 mV
			K	From -6.458 mV up to -2.920 mV (From -270 ºC up to -80 ºC)	0.009 mV
				More than -2.920 mV up to 54.886 mV (More than -80 ºC up to 1372 ºC)	0.010 mV
			E	From -9.835 mV up to -8.379 mV (From -270 ºC up to -130 ºC)	0.013 mV
				More than -8.379 mV less than 0.000 mV (More than -200 ºC less than 0 ºC)	0.014 mV
				From 0.000 mV up to 76.373 mV (From 0 ºC up to 1000 ºC)	0.015 mV
			J	From -8.095 mV less than -7.123 mV (From -210 ºC up to -170 ºC)	0.011 mV
				From -7.123 mV less than 0.000 mV (From -170 ºC less than 0 ºC)	0.012 mV
				From 0.000 mV up to 69.553 mV (From 0 ºC up to 1200 ºC)	0.013 mV
			T	From -6.258 mV up to -1.819 mV (From -270 ºC up to -50 ºC)	0.009 mV
				More than -1.819 mV less than 0.000 mV (More than -50 ºC less than 0 ºC)	0.010 mV
				From 0.000 mV up to 20.872 mV (From 0 ºC up to 400 ºC)	0.011 mV
			N	From -4.345 mV up to -4.313 mV (From -270 ºC up to -250 ºC)	0.006 mV
				More than -4.313 mV less than 0.000 mV (More than -250 ºC less than 0 ºC)	0.007 mV
				From 0.000 mV up to 47.513 mV (From 0 ºC up to 1300 ºC)	0.008 mV
		Thermocouple without Reference Junction	R	From -0.226 mV up to 14.629 mV (from -50 ºC up to 1300 ºC)	0.003 mV
				More than 14.629 mV up to 21.101 mV (More than 1300 ºC up to 1768 ºC)	0.004 mV
			K	From -6.458 mV up to -5.891 mV (From -270 ºC up to -200 ºC)	0.003 mV
				More than -5.891 mV up to -2.243 mV (More than -210 ºC less than -60 ºC)	0.004 mV
				From -2.243 mV up to 54.886 mV (More than -60 ºC up to 1372 ºC)	0.006 mV
			E	From -9.835 mV up to -9.604 mV (From -270 ºC up to -240 ºC)	0.003 mV
				More than -9.604 mV up to -7.963 mV (More than -240 ºC less than -170 ºC)	0.004 mV
				More than -7.963 mV less than 0.000 mV (More than -170 ºC less than 0 ºC)	0.006 mV
				From 0.000 mV up to 76.373 mV (From 0 ºC up to 1000 ºC)	0.009 mV

			J	From -8.095 mV up to -7.403 mV (From -210 ºC up to -180 ºC)	0.004 mV
				More than -7.403 mV up to -1.482 mV (More than -180 ºC up to -30 ºC)	0.005 mV
				From -1.482 mV up to 69.553 mV (More than -30 ºC up to 1200 ºC)	0.008 mV
			T	From -6.258 mV up to -5.070 mV (From -270 ºC up to -170 ºC)	0.003 mV
				More than -5.070 mV less than 0.000 mV (More than -170 ºC less than 0 ºC)	0.005 mV
				From 0.000 mV up to 20.872 mV (From 0 ºC up to 400 ºC)	0.007 mV
			N	From -4.345 mV up to -3.884 mV (From -270 ºC up to -190 ºC)	0.003 mV
				More than -3.884 mV less than 0.000 mV (More than -190 ºC less than 0 ºC)	0.004 mV
				From 0.000 mV up to 47.513 mV (From 0 ºC up to 1300 ºC)	0.006 mV
		Resistance Thermometer Sensor		From 18.52 Ω up to 100.00 Ω (From -200 ºC up to 0 ºC)	0.008 Ω
				More than 100.00 Ω up to 138.51 Ω (More than 0 ºC up to 100 ºC)	0.017 Ω
				More than 138.51 Ω up to 197.71 Ω (More than 100 ºC up to 260 ºC)	0.018 Ω
				More than 197.71 Ω up to 390.48 Ω (More than 260 ºC up to 850 ºC)	0.019 Ω

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Density & Refractive Index
Date of Initial Accreditation of the Field: 2002-08-19
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Hydrometers	Density Hydrometer (Weighing method)	From 0.60 g/cm^3 up to 0.94 g/cm^3	0.000 09 g/cm^3
		More than 0.94 g/cm^3 up to 1.24 g/cm^3	0.000 10 g/cm^3
		More than 1.24 g/cm^3 up to 1.44 g/cm^3	0.000 11 g/cm^3
		More than 1.44 g/cm^3 up to 1.60 g/cm^3	0.000 12 g/cm^3
		More than 1.60 g/cm^3 up to 1.72 g/cm^3	0.000 13 g/cm^3
		More than 1.72 g/cm^3 up to 1.84 g/cm^3	0.000 14 g/cm^3
		More than 1.84 g/cm^3 up to 1.96 g/cm^3	0.000 15 g/cm^3
		More than 1.96 g/cm^3 up to 2.00 g/cm^3	0.000 16 g/cm^3
	Specific Gravity Hydrometers (Weighing method)	From 0.60 up to 0.94	0.000 09
		More than 0.94 up to 1.24	0.000 10
		More than 1.24 up to 1.44	0.000 11
		More than 1.44 up to 1.60	0.000 12
		More than 1.60 up to 1.72	0.000 13
		More than 1.72 up to 1.84	0.000 14
		More than 1.84 up to 1.96	0.000 15
		More than 1.96 up to 2.00	0.000 16
	Alcohol Hydrometers (Weighing method)	From 0 vol% up to 100 vol%	0.09 vol%
	Sake Hydrometers (Weighing method)	From -40 Nihonshu-do up to +30 Nihonshu-do	0.6 Nihonshu-do
	Baume Hydrometers (heavy scale) (Weighing method)	From 0 degrees Baume (heavy) up to 72 degrees Baume (heavy)	0.06 degrees Baume (heavy)

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Force
Date of Initial Accreditation of the Field: 1999-12-06
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Force-proving Instruments	According to JIS B 7728 (ISO 376) #	Compression	From 10 N up to 50 N	0.021 %
			From 0.05 kN up to 30 kN	0.012 %
			From 30 kN up to 300 kN	0.025 %
			From 300 kN up to 3000 kN	0.029 %
		Tension	From 10 N up to 50 N	0.050 %
			From 50 N up to 500 N	0.028 %
			From 0.5 kN up to 20 kN	0.015 %
			From 20 kN up to 100 kN	0.018 %
			From 100 kN up to 300 kN	0.043 %
	Applying JIS B 7721	Compression	From 1 N up to 300 N	0.018 %
			From 10 N up to 500 N	0.032 %
			From 0.1 kN up to 5 kN	0.032 %
			From 0.5 kN up to 30 kN	0.032 %
			From 3 kN up to 300 kN	0.064 %
			From 30 kN up to 3000 kN	0.070 %
		Tension	From 1 N up to 300 N	0.017 %
			From 10 N up to 500 kN	0.048 %
			From 0.1 kN up to 5 kN	0.037 %
			From 1 kN up to 30 kN	0.032 %
			From 3 kN up to 300 kN	0.061 %
	According to ASTM E74	Compression	From 10 N up to 500 N	0.041 %
			From 0.1 kN up to 5 kN	0.033 %
			From 0.5 kN up to 30 kN	0.030 %
			From 3 kN up to 300 kN	0.066 %
			From 30 kN up to 3000 kN	0.077 %
		Tension	From 10 N up to 500 N	0.12 %
			From 0.1 kN up to 5 kN	0.081 %
			From 1 kN up to 30 kN	0.056 %
			From 3 kN up to 300 kN	0.084 %

JIS B 7728: 2013, ISO 376: 2011

General Field of Calibration: Torque
Date of Initial Accreditation of the Field: 2006-09-06
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Torque measuring devices	Reference torque wrenches	Clockwise Torque and Counterclockwise Torque From 5 N·m up to 1000 N·m	0.15 %
	Torque measuring devices	Clockwise Torque From 5 N・m up to 100 N・m	0.065 %
		Clockwise Torque From 10 N・m up to 200 N・m	0.050 %
		Clockwise Torque From 50 N・m up to 1000 N・m	0.045 %
		Counterclockwise Torque From 5 N・m up to 100 N・m	0.075 %
		Counterclockwise Torque From 10 N・m up to 200 N・m	0.050 %
		Counterclockwise Torque From 50 N・m up to 1000 N・m	0.045 %
	Hand torque tools	Clockwise Torque and Counterclockwise Torque From 5 N·m up to 1000 N·m	1.3 %
Torque testing machines	Torque wrench testers	Clockwise Torque and Counterclockwise Torque From 5 N·m up to 1000 N·m	0.90 % (*)

#All Calibration Procedures are in-house procedures developed by this laboratory.
(*) The case of recognizing only the increasing torque as calibration results.

General Field of Calibration: Pressure
Date of Initial Accreditation of the Field: 2003-03-25
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Pressure Gauge	Pressure Balance	Gas	Gauge Pressure	From 18 kPa up to 5 000 kPa	0.0045 % or 1.4 Pa Whichever is larger
			Absolute Pressure	From 18 kPa up to 350 kPa	0.0055 % or 6.6 Pa Whichever is larger
		Liquid	Gauge Pressure	From 1 MPa up to 100 MPa	0.0065 % or 0.65 kPa Whichever is larger
	Liquid Manometer	Mercury Type	Gauge Pressure (*2)	From 13 kPa up to 220 kPa	0.10 kPa
		Water Type	Gauge Pressure (*2)	From 2 kPa up to 20 kPa	0.010 kPa
	Pressure Gauges (Digital Pressure Gauges, Pressure Transducers)	Gas	Gauge Pressure (*1)	From 18 kPa up to 100 kPa	0.0040 kPa
				More than 100 kPa up to 500 kPa	0.0040 %
				More than 500 kPa up to 5000 kPa	0.0060 %
			Gauge Pressure (*2)	From -100 kPa up to -2 kPa	0.016 kPa
				From 2 kPa up to 100 kPa	0.014 kPa
				More than 100 kPa up to 500 kPa	0.014 %
				More than 500 kPa up to 700 kPa	0.022 %
				More than 700 kPa up to 5 000 kPa	0.018 %
			Absolute Pressure (*1)	From 18 kPa up to 100 kPa	0.0050 kPa
				More than 100 kPa up to 350 kPa	0.0050 %
			Absolute Pressure (*2)	From 18 kPa up to 100 kPa	0.015 kPa
				More than 100 kPa up to 350 kPa	0.015 %
			Gauge Pressure (*2)	From -20 kPa less than -15 kPa	1.8 Pa
				From -15 kPa less than -10 kPa	1.5 Pa
				From -10 kPa less than -7.5 kPa	1.2 Pa
				From -7.5 kPa less than -1 kPa	0.75 Pa
				From -1 kPa up to -0.005 kPa	0.55 Pa
				From 0.005 kPa up to 1 kPa	0.55 Pa
				More than 1 kPa up to 7.5 kPa	0.75 Pa
				More than 7.5 kPa up to 10 kPa	1.2 Pa
				More than 10 kPa up to 15 kPa	1.5 Pa
				More than 15 kPa up to 20 kPa	1.8 Pa
			Absolute Pressure (*2)	From 75 kPa up to 115 kPa	0.050 kPa
			Difference Pressure (*2)	From -20 kPa less than -15 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.8 Pa
		Gas	Difference Pressure (*2)	From -15 kPa less than -10 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.5 Pa
				From -10 kPa less than -7.5 kPa [Line Pressure:100 kPa±	1.2 Pa

				5 kPa (Absolute Pressure)]	
				From -7.5 kPa less than -1 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.75 Pa
				From -1 kPa up to -0.005 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.50 Pa
				From 0.005 kPa up to 1 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.50 Pa
				More than 1 kPa up to 7.5 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.75 Pa
				More than 7.5 kPa up to 10 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.2 Pa
				More than 10 kPa up to 15 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.5 Pa
				More than 15 kPa up to 20 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.8 Pa
		Liquid	Gauge Pressure (*1)	From 1 MPa up to 100 MPa	0.008 0 % or 0.80 kPa Whichever is larger
			Gauge Pressure (*2)	From 1 MPa up to 100 MPa	0.20 MPa
	Mechanical Type Pressure Gauges	Gas	Gauge Pressure (*2)	From -100 kPa up to -2 kPa	0.16 % of minimum pressure or 80 Pa Whichever is larger
				From 2 kPa up to 5 000 kPa	0.16 % of maximum pressure or 80 Pa Whichever is larger
			Absolute Pressure (*2)	From 18 kPa up to 350 kPa	0.18 % of maximum pressure or 0.18 kPa Whichever is larger
			Gauge Pressure (*2)	From -20 kPa less than -0.3 kPa	0.40 % of minimum pressure
				From -0.3 kPa up to -0.005 kPa	1.2 Pa
				From 0.005 kPa up to 0.3 kPa	1.2 Pa
				More than 0.3 kPa up to 20 kPa	0.40 % of maximum pressure
			Absolute Pressure (*2)	From 75 kPa up to 115 kPa	0.050 kPa
			Difference Pressure (*2)	From -20 kPa less than -0.3 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.40 % of minimum pressure
				From -0.3 kPa up to -0.005 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.2 Pa
				From 0.005 kPa up to 0.3 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	1.2 Pa
				More than 0.3 kPa up to 20 kPa [Line Pressure:100 kPa± 5 kPa (Absolute Pressure)]	0.40 % of maximum pressure
		Liquid	Gauge Pressure (*1)	From 1 MPa up to 100 MPa	0.19 % of1maximum pressure or 6.7 kPa Whichever is larger

			Gauge Pressure (*2)	From 1 MPa up to 100 MPa	0.5 % of1maximum pressure or 0.15 MPa Whichever is larger
Vacuum Gauge	Vacuum Gauge	From 0.001 Pa less than 0.01 Pa			1.4 %
		From 0.01 Pa up to 1 Pa			1.2 %
		More than 1 Pa up to 13 Pa			1.4 %
		More than 13 Pa up to 133 Pa			1.7 %
		More than 133 Pa up to 300 Pa			0.9 %
		More than 300 Pa up to 20 000 Pa			0.7 %
		More than 20 000 Pa up to 101 000 Pa			0.4 %
Leak Rate	Calibrated Leak	Gas species: N_2, He R-134a, R-410A Flowing into atmospheric pressure From 3.3×10^{-7} Pa m^3/s up to 1.7×10^{-4} Pa m^3/s			12 %

#All Calibration Procedures are in-house procedures developed by this laboratory.
(*1) Secondary Standard or Working Standard (Pressure Balances for Calibration)
(*2) Working Standard (Pressure Controller/Calibrator for Calibration)

General Field of Calibration: Acoustics & Ultrasound
Date of Initial Accreditation of the Field: 2009-07-01
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Acoustics Measuring Equipment, etc.	Sound Level Meter (Free-Field Frequency Response Level)	From 125 Hz less than 500 Hz		0.6 dB
		From 500 Hz up to 1600 Hz		0.4 dB
		More than 1600 Hz up to 8000 Hz		0.5 dB
	Sound Calibrator (Sound Pressure Level Type LS1 Microphone)	250 Hz		0.10 dB
		1000 Hz		0.12 dB
	Sound Calibrator (Sound Pressure Level Type LS2 Microphone)	250 Hz		0.11 dB
		1000 Hz		0.13 dB
	Audiometers (WS1 Microphone)	Sound Pressure Level	From 125 Hz up to 4000 Hz	0.6 dB
			More than 4000 Hz up to 8000 Hz	0.6 dB
	Audiometers (WS2 Microphone)		From 125 Hz up to 4000 Hz	0.7 dB
			More than 4000 Hz up to 8000 Hz	0.9 dB

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Humidity
Date of Initial Accreditation of the Field: 2016-06-30
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Humidity Measuring Instrument, etc.	Dew point hygrometers	Frost point From -30 ºC up to -10 ºC		Frost point 0.20 ºC
		Dew point From -10 ºC up to 50 ºC		Dew point 0.14 ºC
		Dew Point More than 50 ºC up to 85 ºC		Frost point 0.15 ºC
	Electronic hygrometers	Calibration temperature from 5 ºC less than 20 ºC	Relative humidity From 5 % up to 50 %	Relative humidity 1.2 %
			Relative humidity More than 50 % up to 80 %	Relative humidity 1.7 %
			Relative humidity More than 80 % up to 95 %	Relative humidity 2.0 %
		Calibration temperature from 20 ºC up to 90 ºC	Relative humidity from 5 % less than 20 %	Relative humidity 1.5 %
			Relative humidity from 20 % up to 30 %	Relative humidity 0.7 %
			Relative humidity More than 30 % up to 50 %	Relative humidity 1.0 %
			Relative humidity More than 50 % up to 80 %	Relative humidity 1.5 %
			Relative humidity More than 80 % up to 95 %	Relative humidity 1.8 %
		Dew point From -10 ºC up to 50 ºC		Dew point 0.17 ºC
		Dew point More than 50 ºC up to 85 ºC		Dew point 0.18 ºC

#All Calibration Procedures are in-house procedures developed by this laboratory.