Name of Accreditation Program	JCSS Accreditation Program
Accreditation Identification	JCSS 0024 Calibration
Date of Initial Accreditation	1994-03-01
Effective Date of Accreditation	2020-03-26
Expiry Date of Accreditation	2024-03-25
Name and Location of Conformity Assessment Body	Calibration Engineering Department, CHINO CORPORATION 18 Kawarai-cho, Kuki-shi, Saitama 346-0028, Japan
Name of Legal Entity	CHINO CORPORATION JCN 9011401004118
Inquiry Point	Calibration Engineering Department, Tel: +81-480-23-2511 FAX: +81-480-23-2514
Accreditation Requirements	ISO/IEC 17025:2017 and Accreditation Requirements in the Section 6 of Accreditation Scheme (JCSS) 2nd Edition (Calibration)
Accreditation Scope	As attached

*JCN : Japan Corporate Number

General Field of Calibration：Temperature

Date of Initial Accreditation of the Field：1994-03-01

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 %)	
Contact Type Thermometer	Fixed point apparatus	Triple point of water		0.6 mK	
		Triple point of Mercury		2 mK	
		Freezing point of Indium		3 mK	
		Freezing point of Tin		4 mK	
		Freezing point of Zinc		5 mK	
		Freezing point of Aluminum		15 mK	
		Freezing point of Silver		0.14 K	
		Freezing point of Copper		0.15 K	
	Resistance thermometer (Fixed point calibration)	—		$W(T_{90})$ (*1)	$R(T_{90})$ (*2)
		Standard resistance thermometer (2.5 Ω)	Freezing point of Aluminum	20 mK	-
		Standard resistance thermometer (25 Ω)	Triple point of water	-	2 mK
			Triple point of Mercury	4 mK	-
			Freezing point of Indium	5 mK	-
			Freezing point of Tin	6 mK	-
			Freezing point of Zinc	7 mK	-
			Freezing point of Aluminum	17 mK	-
		Standard resistance thermometer (100 Ω)	Triple point of water	-	4 mK
			Triple point of Mercury	7 mK	-
			Freezing point of Indium	10 mK	-
			Freezing point of Tin	11 mK	-
		Industrial resistance thermometer (100 Ω)	Triple point of water	-	5 mK
			Triple point of Mercury	12 mK	-
			Freezing point of Indium	14 mK	-
			Freezing point of Tin	15 mK	-
			Freezing point of Zinc	16 mK	-
	Resistance thermometer (Comparison calibration)	25 Ω	-196 °C	-	17 mK
			0 °C	-	9 mK
			From -60 °C up to 250 °C	-	29 mK
			More than 250 °C up to 420 °C	-	42 mK

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

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)	100 Ω (Four wires system)	-196 °C	-	28 mK
			0 °C	-	8 mK
			From -60 °C up to 250 °C	-	28 mK
			More than 250 °C up to 420 °C	-	43 mK
		100 Ω (Three wires system)	0 °C	-	10 mK
			From -60 °C up to 250 °C	-	30 mK
			More than 250 °C up to 420 °C	-	44 mK
		Employing Dry-block thermometer calibration equipment	From -100 °C up to 50 °C	0.08 °C	
	Thermocouple (Fixed point calibration)	R,S,Pt/Pd,Au/Pt	Freezing point of Indium	0.11 °C	
			Freezing point of Tin	0.11 °C	
			Freezing point of Zinc	0.10 °C	
			Freezing point of Aluminum	0.11 °C	
			Freezing point of Silver	0.17 °C	
			Freezing point of Copper	0.20 °C	
		R,S	Melting point of Palladium	1.8 °C	
		B	Freezing point of Indium	0.58 °C	
			Freezing point of Tin	0.37 °C	
			Freezing point of Zinc	0.22 °C	
			Freezing point of Aluminum	0.16 °C	
			Freezing point of Silver	0.18 °C	
			Freezing point of Copper	0.21 °C	
			Melting point of Palladium	1.8 °C	
	Thermocouple (Comparison calibration)(*3)	K,E,J,N	From -60 °C up to 420 °C	0.3 °C	
		T	From -60 °C up to 350 °C	0.3 °C	
		R	From 0 °C up to 420 °C	0.6 °C	
		Employing Dry-block thermometer calibration equipment	From -100 °C up to 50 °C	0.2 °C	
	Thermocouple (Comparison calibration)(*4)	R,S,K,N,E,J	From 0 °C up to 1100 °C	1.0 °C	
		K,N	More than 1100 °C up to 1250 °C	2.0 °C	
		R,S	More than 1100 °C up to 1400 °C	2.0 °C	
		B	From 0 °C up to 1100 °C	2.2 °C	
			More than 1100 °C up to 1400 °C	2.1 °C	

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Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Contact Type Thermometer	Liquid-in-glass thermometer	0 ºC		0.02 ºC
		From -50 ºC less than 0 ºC		0.04 ºC
		More than 0 ºC up to 50 ºC		0.03 ºC
		More than 50 ºC up to 100 ºC		0.04 ºC
		More than 100 ºC up to 150 ºC		0.04 ºC
		More than 150 ºC up to 200 ºC		0.04 ºC
		More than 200 ºC up to 250 ºC		0.06 ºC
		More than 250 ºC up to 300 ºC		0.06 ºC
		More than 300 ºC up to 350 ºC		0.07 ºC
	Temperature sensor with display unit (Fixed point calibration)	Standard resistance thermometer (25 Ω)	Triple point of water	0.007 ºC
			Triple point of Mercury	0.006 ºC
			Freezing point of Indium	0.009 ºC
			Freezing point of Tin	0.010 ºC
			Freezing point of Zinc	0.013 ºC
		Standard resistance thermometer (100 Ω)	Triple point of water	0.021 ºC
			Triple point of Mercury	0.021 ºC
			Freezing point of Indium	0.022 ºC
			Freezing point of Tin	0.023 ºC
			Freezing point of Zinc	0.024 ºC
	Temperature sensor with display unit (Comparison calibration)(*3)	Resistance thermometer	0 ºC	0.010 ºC
			From -60 ºC up to 250 ºC	0.028 ºC
			More than 250 ºC up to 420 ºC	0.043 ºC
		Thermocouple	From -60 ºC up to 420 ºC	0.3 ºC
		Employing Dry-block thermometer calibration equipment	From -100 ºC up to 50 ºC	0.08 ºC
		Employing temperature controlled enclosure	From 10 ºC up to 40 ºC	0.2 ºC
	Temperature sensor with display unit (Comparison calibration)(*4)	Thermocouple	From 0 ºC up to 1100 ºC	0.9 ºC
			More than 1100 ºC up to 1400 ºC	2.0 ºC
	Thermometer calibration equipment	From -100 ºC up to 155 ºC		0.15 ºC
		More than 155 ºC up to 400 ºC		0.2 ºC

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

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radiation Thermometer	Fixed point apparatus	Freezing point of Zinc	0.35 °C
		Freezing point of Aluminium	0.35 °C
		Freezing point of Silver	0.35 °C
		Freezing point of Copper	0.35 °C
	Near-infrared radiation thermometer / Visible radiation thermometer (Fixed-point calibration)	Freezing point of Zinc	0.4 °C
		Freezing point of Aluminium	0.4 °C
		Freezing point of Silver	0.4 °C
		Freezing point of Copper	0.4 °C
	Near-infrared radiation thermometer / Visible radiation thermometer (Comparison calibration)	From 400 °C up to 1400 °C	2 °C
		More than 1400 °C up to 1600 °C	3 °C
		More than 1600 °C up to 2500 °C	4 °C
		More than 2500 °C up to 2800 °C	6 °C

(*1) Temperature converted from the ratio of the resistance $R(T_{90})$ to $R(273.16K)$, $W(T_{90})$

(*2) Temperature converted from resistance $R(T_{90})$

(*3) Calibration using working standard of platinum resistance thermometer

(*4) Calibration using working standard of thermocouple

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

Laboratory's permanent facility/On-site Calibration : 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 %)
Contact type thermometer	Temperature sensor with display unit (Comparison calibration)	Resistance thermometer	From 0 °C up to 250 °C	0.40 °C
		Thermocouple	From 0 °C up to 250 °C	0.50 °C
		Equipped within temperature controlled enclosures	From -40 °C up to 250 °C	0.86 °C

#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 : 2017-08-03

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility and 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 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Temperature Indicator	Thermocouple with Reference Junction	K	From -5.891 mV up to 54.819 mV (From -200 °C up to 1370 °C)	0.038 mV
			T	From -6.258 mV up to 20.872 mV (From -270 °C up to 400 °C)	0.040 mV
			R	From 0.000 mV up to 21.003 mV (From 0 °C up to 1760 °C)	0.036 mV
			E	From -9.835 mV up to 76.373 mV (From -270 °C up to 1000 ℃)	0.046 mV
			J	From -7.890 mV up to 69.553 mV (From -200 ℃ up to 1200 °C)	0.078 mV
			N	From -3.990 mV up to 47.513 mV (From -200 ℃ up to 1300 °C)	0.048 mV
		Platinum Resistance Thermometer Sensor	Pt100	From 18.52 Ω up to 390.48 Ω (From -200 °C up to 850 °C)	0.14 Ω
			except for Pt100	From 17.14 Ω up to 284.02 Ω (From -200 °C up to 500 °C)	0.14 Ω

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

General Field of Calibration：Humidity

Date of Initial Accreditation of the Field：2005-07-07

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 -20 ºC less than -10 ºC		Frost Point 0.14 ºC
		Dew Point From -10 ºC less than 0 ºC		Dew Point 0.12 ºC
		Dew Point From 0 ºC less than 30 ºC		Dew Point 0.08 ºC
		Dew Point From 30 ºC up to 40 ºC		Dew Point 0.10 ºC
	Electronic Hygrometers	Calibration temperatures From 10 ºC less than 20 ºC	Relative humidity From 10 % up to 20 %	Relative Humidity 1.4 %
			Relative humidity More than 20 % up to 95 %	Relative Humidity 1.5 %
		Calibration temperatures From 20 ºC up to 30 ºC	Relative humidity From 5 % up to 50 %	Relative Humidity 1.1 %
			Relative humidity More than 50 % up to 95 %	Relative Humidity 1.3 %
		Calibration temperatures More than 30 ºC up to 40 ºC	Relative humidity From 5 % up to 50 %	Relative Humidity 1.2 %
			Relative humidity More than 50 % up to 90 %	Relative Humidity 1.5 %

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