Name of Accreditation Program	JCSS Accreditation Program
Accreditation No.	JCSS0037
Date of Initial Accreditation	1994-08-01
Latest Date of Issue	2018-04-25
Name and Address of Accredited Organization	Standard Laboratory, Yamari Industries, Limited 1-5-4 Mishimae, Takatsuki-shi, Osaka 569-0835, Japan JCN 2120901013202
Inquiry Point	Standard Laboratory Tel: +81-72-678-6518 FAX: +81-72-679-2006
Accreditation Standards	ISO/IEC 17025:2005 (Calibration)
Accreditation Scope	As attached

*JCN : Japan Corporate Number

General Field of Calibration：Temperature

Date of Initial Accreditation of the Field：1994-08-01

Permanent Laboratory/On-site Calibration：Permanent Laboratory

Type of Service		Calibration Scope		CMC (Level of Confidence Approximately 95 %)	
Contact type thermo-meter	Fixed point apparatus	Triple point of Water		0.0006 °C	
		Triple point of Mercury		0.0020 °C	
		Melting point of Gallium		0.0023 °C	
		Freezing point of Indium		0.0035 °C	
		Freezing point of Tin		0.004 °C	
		Freezing point of Zinc		0.006 °C	
		Freezing point of Aluminum		0.008 °C	
		Freezing point of Silver		0.10 °C	
		Freezing point of Copper		0.16 °C	
	Resistance thermometer (Fixed point calibration)	Standard platinum resistance thermometer (25 Ω, 2.5 Ω or 0.25 Ω)		$W(T_{90})$(*1)	$R(T_{90})$(*2)
			Triple point of Water(*4)	-	0.0014 °C
			Triple Point of Mercury	0.0026 °C	-
			Melting point of Gallium	0.0030 °C	-
			Freezing point of Indium	0.0045 °C	-
			Freezing point of Tin	0.006 °C	-
			Freezing point of Zinc	0.008 °C	-
			Freezing point of Aluminu m	0.010 °C	-
			Freezing point of Silver	0.12 °C	-
		Platinum resistance thermometer (100 Ω)	Triple point of Water	-	0.004 °C
			Triple point of Mercury		
			Melting point of Gallium	-	0.005 °C
			Freezing point of Indium	-	0.007 °C
			Freezing point of Tin	-	0.009 °C
			Freezing point of Zinc	-	0.012 °C
			Freezing point of Aluminum	-	0.018 °C

Contact type thermo-meter	Resistance thermometer (Comparison calibration)	Standard platinum resistance thermometer (2.5 Ω, 0.25 Ω)	-195.798 °C	0.007 °C	-
		Standard platinum resistance thermometer (25 Ω)	-195.798 °C	0.007 °C	0.010 °C
			From -196 °C up to -80 °C	-	0.05 °C
			From -80 °C up to 0 °C	-	0.009 °C
			More than 0 °C up to 50 °C	-	0.010 °C
			More than 50 °C up to 100 °C	-	0.020 °C
			More than 100 °C up to 250 °C	-	0.023 °C
			More than 250 °C up to 500 °C	-	0.040 °C
			More than 500 °C up to 660 °C	-	0.10 °C
		Platinum resistance thermometer (100 Ω)	-195.798 °C	-	0.010 °C
			From -196 °C less than -80 °C	-	0.05 °C
			From -80 °C up to 0 °C	-	0.014 °C
			More than 0 °C up to 50 °C	-	0.018 °C
			More than 50 °C up to 100 °C	-	0.026 °C
			More than 100 °C up to 200 °C	-	0.030 °C
			More than 200 °C up to 250 °C	-	0.035 °C
			More than 250 °C up to 500 °C	-	0.06 °C
			More than 500 °C up to 660 °C	-	0.12 °C
		Industrial platinum resistance thermometer (100 Ω, four-wires)	-195.798 °C	-	0.12 °C
			From -196 °C less than -80 °C	-	0.14 °C
			From -80 °C less than -40 °C	-	0.10 °C
			From -40 °C less than 0 °C	-	0.040 °C
			0 °C	-	0.026 °C
			More than 0 °C up to 50 °C	-	0.040 °C
			More than 50 °C up to 250 °C	-	0.06 °C
			More than 250 °C up to 500 °C	-	0.16 °C
			More than 500 °C up to 660 °C	-	0.18 °C
		Industrial platinum resistance thermometer (100 Ω, three-wires)	-195.798 °C	-	0.12 °C
			From -196 °C less than -80 °C	-	0.14 °C
			From -80 °C less than -40 °C	-	0.10 °C
			From -40 °C less than 0 °C	-	0.040 °C
			0 °C	-	0.030 °C
			More than 0 °C up to 50 °C	-	0.040 °C
			More than 50 °C up to 250 °C	-	0.06 °C
			More than 250 °C up to 500 °C	-	0.16 °C
			More than 500 °C up to 660 °C	-	0.18 °C

Contact type thermo-meter	Liquid-in-glass thermometer	Liquid-in-glass thermometer with scale plate	0 °C	0.03 °C
			From -50 °C less than 0 °C	0.04 °C
			More than 0 °C up to 50 °C	
			More than 50 °C up to 100 °C	0.05 °C
			More than 100 °C up to 150 °C	0.06 °C
			More than 150 °C up to 200 °C	
			More than 200 °C up to 250 °C	0.07 °C
			More than 250 °C up to 300 °C	0.08 °C
			More than 300 °C up to 350 °C	0.16 °C
	Thermocouple (Fixed point calibration)	A noble metal thermocouple (R, S, B, Pt/Pd)	Triple point of Mercury	0.18 °C
			Freezing point of Water	0.14 °C
			Melting point of Gallium	
			Freezing point of Indium	0.10 °C
			Freezing point of Tin	0.09 °C
			Freezing point of Zinc	0.08 °C
			Freezing point of Aluminum	
			Freezing point of Silver	0.14 °C
			Freezing point of Copper	0.20 °C
	Thermocouple (Fixed point calibration)	A base metal thermocouple (N, K, E, J, T)	Triple point of Mercury	0.26 °C
			Freezing point of Water	
			Melting point of Gallium	
			Freezing point of Indium	
			Freezing point of Tin	
			Freezing point of Zinc	
			Freezing point of Aluminum	
			Freezing point of Silver	0.30 °C
			Freezing point of Copper	
	Thermocouple (Comparison calibration)	A noble metal thermocouple (R, S, B, Pt/Pd)	From -40 °C up to 660 °C	0.20 °C
			More than 660 °C up to 1100 °C	0.7 °C
			More than 1100 °C up to 1300 °C	1.6 °C
			More than 1300 °C up to 1500 °C	1.8 °C
			More than 1500 °C up to 1554 °C	2.0 °C
			1553.5 °C	1.4 °C
		A base metal thermocouple (N, K, E, J, T)	From -196 °C up to 500 °C	0.30 °C
			More than 500 °C up to 660 °C	0.35 °C
			More than 660 °C up to 1100 °C	0.7 °C
			More than 1100 °C up to 1300 °C	1.6 °C
			More than 1300 °C up to 1372 °C	1.8 °C

Contact type thermo-meter	Temperature sensors with display unit (Fixed point calibration)	Resolution : less than 0.01 °C	Triple point of Water	0.002 °C
			Triple point of Mercury	0.003 °C
			Melting point of Gallium	
			Freezing point of Indium	0.004 °C
			Freezing point of Tin	0.005 °C
			Freezing point of Zinc	0.007 °C
			Freezing point of Aluminum	0.008 °C
			Freezing point of Silver	0.12 °C
			Freezing point of Copper	0.20 °C
		Resolution : from 0.01 °C (*3)	Triple point of Water	0.01 °C
			Triple point of Mercury	
			Melting point of Gallium	
			Freezing point of Indium	
			Freezing point of Tin	
			Freezing point of Zinc	
			Freezing point of Aluminum	
			Freezing point of Silver	0.12 °C
			Freezing point of Copper	0.20 °C
	Temperature sensors with display unit (Comparison calibration)	Resolution : less than 0.01 °C	-195.798 °C	0.010 °C
			From -196 °C less than -80 °C	0.050 °C
			From -80 °C up to 50 °C	0.009 °C
			More than 50 °C up to 250 °C	0.023 °C
			More than 250 °C up to 500 °C	0.035 °C
			More than 500 °C up to 660 °C	0.10 ° C
			More than 660 °C up to 1100 °C	0.6 °C
		Resolution : from 0.01 °C (*3)	-195.798 °C	0.02 °C
			From -196 °C less than -80 °C	0.05 °C
			From -80 °C up to 50 °C	0.02 °C
			More than 50 °C up to 250 °C	0.03 °C
			More than 250 °C up to 500 °C	0.04 °C
			More than 500 °C up to 660 °C	0.10 °C
			More than 660 °C up to 1100 °C	0.6 °C
			More than 1100 °C up to 1300 °C	1.4 °C
			More than 1300 °C up to 1400 °C	1.6 °C
			More than 1400 °C up to 1500 °C	1.8 °C
			More than 1500 °C up to 1554 °C	2.0 °C

Contact type thermo-meter	Thermometer calibration equipment	Resolution : less than 0.1 °C	From -100 °C less than 40 °C	0.14 °C
			From -40 °C up to 0 °C	0.10 °C
			More than 0 °C up to 100 °C	0.14 °C
			More than 100 °C up to 250 °C	0.23 °C
			More than 250 °C up to 500 °C	0.5 °C
			More than 500 °C up to 660 °C	0.6 °C
			More than 660 °C up to 700 °C	0.8 °C
			More than 700 °C up to 900 °C	0.9 °C
			More than 900 °C up to 1000 °C	1.0 °C
			More than 1000 °C up to 1100 °C	1.2 °C
		Resolution : from 0.1 °C less than 1 °C	From -100 °C up to 100 °C	0.2 °C
			More than 100 °C up to 250 °C	0.3 °C
			More than 250 °C up to 500 °C	0.5 °C
			More than 500 °C up to 660 °C	0.6 °C
			More than 660 °C up to 700 °C	0.8 °C
			More than 700 °C up to 900 °C	0.9 °C
			More than 900 °C up to 1000 °C	1.0 °C
			More than 1000 °C up to 1100 °C	1.2 °C
		Resolution : from 1 °C (*3)	From -100 °C up to 800 °C	1 °C
			More than 800 °C up to 1100 °C	2 °C

Radiation Thermometer	Near-infrared radiation thermometer / Visible radiation thermometer (Comparison calibration)	Resolution : 0.1 °C	600 °C	2.0 °C
			660 °C	
			700 °C	
			800 °C	
			900 °C	
			962 °C	
			1000 °C	
			1100 °C	
			1200 °C	
			1300 °C	2.3 °C
			1400 °C	
			1500 °C	2.6 °C
			1600 °C	3.0 °C
			1700 °C	3.5 °C
			1800 °C	
			1900 °C	4.5 °C
			2000 °C	5.0 °C
		Resolution : 1 °C	600 °C	2 °C
			660 °C	
			700 °C	
			800 °C	
			900 °C	
			962 °C	
			1000 °C	
			1100 °C	
			1200 °C	3 °C
			1300 °C	
			1400 °C	
			1500 °C	
			1600 °C	
			1700 °C	4 °C
			1800 °C	
			1900 °C	5 °C
			2000 °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): According to the resolution of an indicator, measurement capability is revalued for the resolution of an indicator.

Permanent Laboratory/On-site Calibration : On-site Calibration

Type of Service		Calibration Scope		CMC (Level of Confidence Approximately 95 %)	
Contact type thermo-meter	Resistance thermometer (Comparison calibration)	Industrial platinum resistance thermometer (100 Ω, four-wires)		$W(T_{90})$(*1)	$R(T_{90})$(*2)
			From -30 °C up to 140 °C	-	0.08 °C
			More than 140 °C up to 250 °C	-	0.4 °C
			More than 250 °C up to 550 °C	-	0.6 °C
		Industrial platinum resistance thermometer (100 Ω, three-wires)	From -30 °C up to 140 °C	-	0.08 °C
			More than 140 °C up to 250 °C	-	0.4 °C
			More than 250 °C up to 550 °C	-	0.6 °C
	Thermocouple (Comparison calibration)	A noble metal thermocouple (R, S, B)	From -30 °C less than 50 °C	0.4 °C	
			From 50 °C up to 140 °C	0.3 °C	
			More than 140 °C up to 250 °C	0.5 °C	
			More than 250 °C up to 550 °C	0.7 °C	
			More than 550 °C up to 1100 °C	1.4 °C	
		A base metal thermocouple (N, K, E, J, T)	From -30 °C up to 140 °C	0.3 °C	
			More than 140 °C up to 250 °C	0.5 °C	
			More than 250 °C up to 550 °C	0.7 °C	
			More than 550 °C up to 1100 °C	1.4 °C	
	Temperature sensors with display unit (Comparison calibration)	Resolution : less than 0.1 °C	From -30 °C up to 140 °C	0.12 °C	
			More than 140 °C up to 250 °C	0.4 °C	
			More than 250 °C up to 550°C	0.6 °C	
		Resolution : from 0.1 °C less than 1 °C	From -30 °C up to 140 °C	0.2 °C	
			More than 140 °C up to 250 °C	0.4 °C	
			More than 250 °C up to 550 °C	0.6 °C	
			More than 550 °C up to 1100 °C	1.4 °C	
		Resolution : from 1 °C (*3)	From -30 °C up to 550 °C	1 °C	
			More than 550 °C up to 1100 °C	2 °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): According to the resolution of an indicator, measurement capability is revalued for the resolution of an indicator.

General Field of Calibration : Electricity (Direct Current & Low Frequency)

Date of Initial Accreditation of the Field : 2012-06-07

Permanent Laboratory/On-site Calibration : Permanent Laboratory and On-site Calibration

Type of Service		Calibration Scope			CMC (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Temperature Indicator	Thermocouple with Reference Junction	B	From 0.178 mV up to 11.263 mV (From 200 °C up to 1600 °C)	0.003 mV
			R	From -0.226 mV up to 18.849 mV (From -50 °C up to 1600 °C)	0.004 mV
			S	From -0.236 mV up to 16.777 mV (From -50 °C up to 1600 °C)	
			N	From -3.990 mV up to 47.513 mV (From -200 °C up to 1300 °C)	0.012 mV
			K	From -5.891 mV up to 54.886 mV (From -200 °C up to 1372 °C)	0.018 mV
			E	From -8.825 mV up to 76.373 mV (From -200 °C up to 1000 °C)	0.026 mV
			J	From -7.890 mV up to 69.553 mV (From -200 °C up to 1200 °C)	0.023 mV
			T	From -5.603 mV up to 20.872 mV (From -200 °C up to 400 °C)	0.018 mV
		Thermocouple without Reference Junction	B	From 0.178 mV up to 11.263 mV (From 200 °C up to 1600 °C)	0.003 mV
			R	From -0.226 mV up to 18.849 mV (From -50 °C up to 1600 °C)	
			S	From -0.236 mV up to 16.777 mV (From -50 °C up to 1600 °C)	
			N	From -3.990 mV up to 47.513 mV (From -200 °C up to 1300 °C)	0.005 mV
			K	From -5.891 mV up to 54.886 mV (From -200 °C up to 1372 °C)	0.006 mV
			E	From -8.825 mV up to 76.373 mV (From -200 °C up to 1000 °C)	0.010 mV
			J	From -7.890 mV up to 69.553 mV (From -200 °C up to 1200 °C)	0.008 mV
			T	From -5.603 mV up to 20.872 mV (From -200 °C up to 400 °C)	
		Platinum Resistance Thermometer Sensor	100 Ω, three-wires	From 18.520 Ω less than 247.092 Ω (From -200 °C less than 400 °C)	0.030 Ω
				From 247.092 Ω up to 390.481 Ω (From 400 °C up to 850 °C)	0.026 Ω
			100 Ω, four-wires	From 18.520 Ω less than 100.000 Ω (From -200 °C less than 0 °C)	0.020 Ω
				From 100.000 Ω up to 390.481 Ω (From 0 °C up to 850 °C)	0.018 Ω