

Scope of Accreditation For Heat Treating Services Unlimited, Inc.

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In recognition of a successful assessment to ISO/IEC 17025:2005, accreditation is granted to **Heat Treating Services Unlimited, Inc.** to perform the following Calibrations:

Accreditation granted through: **August 3, 2015**

Calibration

Electrical – Current

Calibration Parameter/Equipment ¹	Range	Calibration and Measurement Capability(+/-)	Remarks
DC mA – Source	(0 to 4) mA	1.6 μ A	Martel 3001
	(4 to 20) mA	6.6 μ A	
DC mA – Measure	(0 to 4) mA	2.7 μ A	
	(4 to 20) mA	2 μ A	

Electrical – Resistance

Calibration Parameter/Equipment ¹	Range	Calibration and Measurement Capability(+/-)	Remarks
RTD Resistance Simulation – Source 100 Ω PT385	(0 to 400) $^{\circ}$ C	0.071 $^{\circ}$ C	Martel 3001
	(400 to 800) $^{\circ}$ C	0.084 $^{\circ}$ C	
RTD Resistance Simulation – Measure 100 Ω PT385	(0 to 800) $^{\circ}$ C	0.062 $^{\circ}$ C	

Electrical – Voltage

Calibration Parameter/Equipment ¹	Range	Calibration and Measurement Capability(+/-)	Remarks
DC Volts – Source	(0 to 110) mV	22 μ V	Martel 3001
	(0.11 to 1.1) V	6.1 mV	
	(1.1 to 11) V	1 mV	

Calibration Parameter/Equipment ¹	Range	Calibration and Measurement Capability(+/-)	Remarks
DC Volts – Measure	(0 to 110) mV	250 μ V	Martel 3001
	(0.11 to 1.1) V	0.5 mV	
	(1.1 to 11) V	0.91 mV	
Thermocouple Millivolt Simulation			Martel 3001
Type K	(-100 to 400) °C	0.31 °C	
	(400 to 1 372) °C	0.47 °C	
Type J	(-100 to 800) °C	0.22 °C	
	(800 to 1 200) °C	0.29 °C	
Type S	(0 to 200) °C	1.2 °C	
	(200 to 1 400) °C	0.59 °C	
	(1 400 to 1 752) °C	0.73 °C	
Type R	(-20 to 0) °C	1.2 °C	
	(0 to 100) °C	1.1 °C	
	(100 to 1 750) °C	0.84 °C	
Type N	(-100 to 900) °C	0.32 °C	
	(900 to 1 300) °C	0.33 °C	
Type T	(-200 to 0) °C	0.37 °C	
	(0 to 400) °C	0.23 °C	
Type C	(0 to 800) °C	0.36 °C	
	(800 to 1 800) °C	0.59 °C	
	(1 800 to 2 316) °C	0.98 °C	

Thermodynamics –Thermodynamic Sources

Calibration Parameter/Equipment ¹	Range	Calibration and Measurement Capability(+/-)	Remarks
Uniformity survey of Furnaces & Ovens	(0 to 1 093) °C (1 093 to 1 250) °C	1.1 °C 2.7 °C	AMS 2750E, Type K TC and Logger

Calibration and Measurement Capability (CMC) represents expanded uncertainties at approximately a 95% confidence level using a coverage factor of k=2.

Notes:

- 1) Laboratory offers calibration services at the laboratory's own facilities and at the client or other agreed upon facilities.

Approved by:



 R. Douglas Leonard
Chief Technical Officer

 Date: June 14, 2013