

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: **May 10, 2012**

Calibration

Electricity and Magnetism – Voltage

| Calibration Parameter/Equipment | Range | Best Measurement Capability(+/-) ² | Remarks |
|---------------------------------|-----------------|---|---|
| DC Volts - Source | 0 mV to 110 mV | 0.44 mV | Calibrations performed with a Martel 3001 |
| | 110 mV to 1.1V | 0.01 V | |
| | 1.1 V to 11 V | 0.11 V | |
| DC Volts - Measure | 0 mV to 110 mV | 1 mV | |
| | 110 mV to 1.1 V | 0.1 V | |
| | 1.1 V to 11 V | 0.1 V | |

Electricity and Magnetism – Current

| Calibration Parameter/Equipment | Range | Best Measurement Capability(+/-) ² | Remarks |
|---------------------------------|------------|---|---|
| DC mA - Source | 0 to 4 mA | 0.1 mA | Calibrations performed with a Martel 3001 |
| | 4 to 20 mA | 0.11 mA | |
| DC mA - Measure | 0 to 4 mA | 0.1 mA | |
| | 4 to 20 mA | 0.1 mA | |


Electricity and Magnetism – Electrical Temperature Simulation

| Calibration Parameter/Equipment | Range | Best Measurement Capability(+/-) ² | Remarks |
|---------------------------------|-------------------|---|---|
| Thermocouple Source Type K | -100 to 400 °C | 0.55 °C | Calibrations performed with a Martel 3001 |
| | 400 to 1 200 °C | 0.62 °C | |
| | 1 200 to 1 372 °C | 0.62 °C | |
| Type J | -100 to 800 °C | 0.55 °C | |
| | 800 to 1200 °C | 0.58 °C | |
| Type S | 0 to 200 °C | 1.3 °C | |
| | 200 to 1 400 °C | 0.77 °C | |
| | 1 400 to 1 752 °C | 0.89 °C | |

| Calibration Parameter/Equipment | Range | Best Measurement Capability(+/-) ² | Remarks |
|--|----------------------|---|---|
| Type R | -20 to 0 °C | 1.3 °C | Calibrations performed with a Martel 3001 |
| | 0 to 100 °C | 1.2 °C | |
| | 100 to 1 750 °C | 0.98 °C | |
| Type N | -100 to 900 °C | 0.55 °C | |
| | 900 to 1 300 °C | 0.6 °C | |
| Type T | -200 °C to 0 °C | 0.54 °C | |
| | 0 to 400 °C | 0.53 °C | |
| Type C | 0 to 800 °C | 0.63 °C | |
| | 800 to 1 200 °C | 0.78 °C | |
| | 1 200 °C to 1 800 °C | 0.78 °C | |
| | 1 800 °C to 2 316 °C | 1.1 °C | |
| RTD Electronic Source 100ohm PT385 | 0 to 400 °C | 0.51 °C | |
| | 400 to 800 °C | 0.51 °C | |
| Thermocouple Measure Type K | -100 to 400 °C | 0.66 °C | |
| | 400 to 1 200 °C | 0.71 °C | |
| | 1 200 °C to 1 372 °C | 0.71 °C | |
| Type J | -100 to 800 °C | 0.65 °C | |
| | 800 to 1200 °C | 0.67 °C | |
| Type S | 0 to 200 °C | 0.93 °C | |
| | 200 to 1 400 °C | 0.77 °C | |
| | 1 400 to 1 752 °C | 0.84 °C | |
| Type R | -20 to 0 °C | 0.95 °C | |
| | 0 to 100 °C | 0.92 °C | |
| | 100 to 1 750 °C | 0.82 °C | |
| Type N | -100 to 900 °C | 0.65 °C | |
| | 900 to 1 300 °C | 0.69 °C | |
| Type T | -200 °C to 0 °C | 0.71 °C | |
| | 0 to 400 °C | 0.65 °C | |
| Type C | 0 to 800 °C | 0.71 °C | |
| | 800 to 1 200 °C | 0.84 °C | |
| | 1 200 °C to 1 800 °C | 0.85 °C | |
| | 1 800 °C to 2 316 °C | 1.2 °C | |
| RTD Electronic Measure 100ohm PT385 | 0 to 400 °C | 0.51 °C | |
| | 400 to 800 °C | 0.51 °C | |

Notes:

- 1) Laboratory offers calibration services at the laboratory's own facilities and at the client or other agreed upon facilities.
- 2) Best uncertainties represent expanded uncertainties at approximately the 95% confidence level using a coverage factor of k=2.

 Approved by:  Date: August 24, 2009

 R. Douglas Leonard
 Chief Technical Officer

Re-Issued: 7/16/09 Revised: 8/24/09