NVLAP CALIBRATION NVLAP LAB CODE 200502-0

# Report of Calibration

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ITEM 1684

**Report Number:** 87442 **Calibration Date:** 09/30/2019

**Submitted By:** Illiana Instrumentation Service Merrillville, IN 46410 **SO Number:** 1319899
**PO Number:** 4016

**Type T Thermocouple Lot Calibration**
T20-1-507

**Tolerance:** SAE AMS2750E

**Spool/Coil:** 660229 (500 ft.)

| Item | Serial No | Target (°F) | Actual (°F) | Reading (°F) | Correction (°F) | Tolerance (°F) | Status | Immersion (in) | Uncertainty (°F) |
|---|---|---|---|---|---|---|---|---|---|
| BEG | | -320 | -320.2 | -318.8 | -1.4 | ± 5.3 | In Tolerance | 9 | 0.58 |
| | | -103 | -103.0 | -102.1 | -0.9 | ± 1.8 | In Tolerance | 6 | 0.54 |
| | | 32 | 32.0 | 32.0 | 0.0 | ± 4.0 | In Tolerance | 6 | 0.54 |
| | | 100 | 100.2 | 100.2 | 0.0 | ± 4.0 | In Tolerance | 6 | 0.54 |
| END | | -320 | -320.2 | -318.2 | -2.0 | ± 5.3 | In Tolerance | 9 | 0.58 |
| | | -103 | -103.0 | -101.9 | -1.1 | ± 1.8 | In Tolerance | 6 | 0.54 |
| | | 32 | 32.0 | 32.0 | 0.0 | ± 4.0 | In Tolerance | 6 | 0.54 |
| | | 100 | 100.2 | 100.0 | 0.2 | ± 4.0 | In Tolerance | 6 | 0.54 |
| AVG | | -320 | | | -1.7 | | | | |
| | | -103 | | | -1.0 | | | | |
| | | 32 | | | 0.0 | | | | |
| | | 100 | | | 0.1 | | | | |

Remarks:
The correction must be added algebraically to the UUT reading to obtain the correct value.

**Equipment and Standards Used**

| ID Number | Manufacturer | Model | Description | Calibration Due |
|---|---|---|---|---|
| 03-1268 | Hewlett Packard | 3458A | 8 1/2 Digit Digital Multimeter | 01/30/2020 |
| 03-2639 | Hart Scientific | 5626 | IPRT Working Standard | 01/25/2020 |
| 03-3572 | Hart Scientific | 5626 | IPRT Working Standard | 01/24/2020 |

Environmental Conditions at time of Calibration: Temperature: 23 °C [73 °F] Relative Humidity: 35%

Procedure Used: OP-525-06 Rev 6 which is based, in part on ASTM E220-13 and SAE AMS2750E

As Found: In Tolerance As Left: In Tolerance Calibration performed by: Lindi Bunn, Metrology Technician

The temperatures written in this report are those defined by the International Temperature Scale of1990 (ITS-90).

The combined standard uncertainty includes the standard uncertainty reported for the standard, and the measurement process. No allowance is included in the uncertainty for thermocouple drift and inhomogeneity. The combined standard uncertainty is multiplied by a coverage factor of2 to give an expanded uncertainty, which defines and interval having a level of confidence of approximately95 percent. The expanded uncertainty presented in this report is consistent with the JCGM100:2008 Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application. Uncertainties are not included in the determination of acceptance.

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded in accordance with the rounding method of ASTM Practice E29-13

The standards of Pyromation Laboratory are traceable to the International System of Units(SI) through NIST or other National Metrology Institute, and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory report number identified above is the unique report number to be used in referencing measurement traceability for the items identified in this report only.

This calibration is compliant to ISO/IEC 17025:2005. This calibration report applies only to the items described. It must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.