PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Testo, Inc.

40 White Lake Road, Sparta, NJ 07871

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2005
Meets the Requirements of ANSI/NCSL Z540-1-1994

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

Thermodynamic and Mechanical Calibration
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President/Operations Manager

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
September 23, 2013	November 29, 2017	March 31, 2020

Accreditation No.:	*Certificate No.:*
74495	L17-511

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

Testo, Inc.
40 White Lake Road, Sparta, NJ 07871
John DelPezzo Phone: 800-227-0729

Accreditation is granted to the facility to perform the following calibrations:

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
RTD 385 PT100[F]	-20 °C to 150 °C	0.12 °C	Testo Oil bath and Testo 400 with PRT Probe (0614 0240)
	-30°C to 140 °C	0.21 °C	Hart 9103 dry block and Testo 400 with PRT Probe (0614 0240)
	30 °C to 320 °C	0.24 °C	Hart 9122 dry block and Testo 400 with PRT Probe (0614 0240)
Thermistors, Thermocouples type K, Thermocouples type T[F]	-20 °C to 150 °C	0.17 °C	Testo Oil bath and Testo 400 with PRT Probe (0614 0240)
	-30°C to 140 °C	0.26 °C	Hart 9103 dry block and Testo 400 with PRT Probe (0614 0240)
	30 °C to 320 °C	0.30 °C	Hart 9122 dry block and Testo 400 with PRT Probe (0614 0240)
RTD 385 PT100 Thermistors, Thermocouples type K, Thermocouples type T[F]	0 °C to 70 °C	0.13 °C	Thunder Scientific 2500ST with internal PRT
Contact Probes to measure Surface Temperature[F]	-20 °C to 150 °C	0.56 °C	Testo dry block and Testo 400 with PRT Probe (0614 0240)
Thermal Imagers and Infrared thermometers[F]	-20 °C to 150 °C	0.80 °C	Testo Cavity Black Body and Testo 400 with PRT Probe (0614 0240)
Equipment to measure Relative Humidity			
Ambient condition monitors[F]	10% RH to 76% RH	0.51% RH	Thunder Scientific 2500ST
	76% RH to 95% RH	0.53% RH	
Transmitters[F]	10% RH to 76% RH	0.51% RH	
	76% RH to 95% RH	0.78% RH	
Dataloggers[F]	10% RH to 76% RH	0.53% RH	
	76% RH to 95% RH	0.80% RH	
Hand held insertion probes[F]	10% RH to 76% RH	0.51% RH	
	76% RH to 95% RH	0.78% RH	

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Accreditation is granted to the facility to perform the following calibrations:

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Air Velocity For Vane Anemometers, Hot-Wire Anemometers[F]	1 m/s to 2 m/s	0.11 m/s	Westenberg Engineering Wind Tunnel Model 818040/K4-E
	2 m/s to 10 m/s	0.16 m/s	
	10 m/s to 20 m/s	0.27 m/s	
	20 m/s to 40 m/s	0.46 m/s	
Air Volume Flow Flow Hoods[F]	50 CFM to 300 CFM	6.9 CFM	Westenberg Engineering Wind Tunnel Model 818040/K4-E
	300 CFM to 900 CFM	13 CFM	
	900 CFM to 2 120 CFM	20 CFM	
Equipment to output Pressure For differential pressure instruments[F]	-1 in H_2O to 1 in H_2O	0.02 in H_2O	Ashcroft ST-2A with AQS-61699 Differential
	1 in H_2O to 10 in H_2O	0.08 in H_2O	Ashcroft ST-2A with AQS-13666 Differential Pressure Module
	-10 in H_2O to 40 in H_2O	0.11 in H_2O	Ashcroft ST-2A with AQS-13667 Differential Pressure Module
Equipment to output Pressure For differential pressure instruments[F]	40 in H_2O to 100 in H_2O	0.21 in H_2O	Ashcroft ST-2A with AQS-13667 Differential Pressure Module
	0 kPa to 7 000 kPa	0.91 kPa	Mensor CPC 6000 Pressure Module 831547-1
	-100 kPa to 100 kPa	0.03 kPa	Mensor CPC 6000 Pressure Module 831548-1

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Accreditation is granted to the facility to perform the following calibrations:

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor *k* (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.

2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its Fixed location. Example: Outside Micrometer^{F} would mean that the laboratory performs this calibration at its Fixed location.

4. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratories Fixed location for similar calibrations. This is due to the effects of transportation of the standards and equipment and upon environmental conditions at the customer site which are typically not controlled as closely as at the laboratories fixed location.