PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

DTI Japan Ltd. Temperature Calibration Laboratory (TCL)

ITM ATC 2-1-10 Nanko-kita Suminoe-ward Osaka City, Osaka 559-0034

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

ISO/IEC 17025:2017

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 April 2017):

Calibration of thermometer

(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

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
September 28, 2015	October 27, 2023	November 30, 2025

Accreditation No.:	*Certificate No.:*
85110	L23-791

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

DTI Japan Ltd.
Temperature Calibration Laboratory (TCL)
ITM ATC 2-1-10 Nanko-kita Suminoe-ward Osaka City, Osaka 559-0034
Contact Name: Yasuhiro Kurauchi Phone: 06-6616-5900

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
Digital thermometer [F]: Indicating thermometer with probe Indicating thermometer with external sensor Reusable data logger PDF data logger	-30 °C to 5 °C	± 0.08 °C	Thermostatic circulating bath PolyScience PD15R-40-A11B -30 °C to 5 °C (IPA) Platinum resistance thermometer data logger (Reference standard) OMEGA HH376 Data Logger "TCL – Temperature Calibration Procedures" (QP-50) On the basis of JIS Z 8710
	5 °C to 30 °C	± 0.07 °C	Thermostatic circulating bath PolyScience PD15R-40-A11B 5 °C to 30 °C (Purified water) Platinum resistance thermometer data logger (Reference standard) OMEGA HH376 Data Logger "TCL – Temperature Calibration Procedures" (QP-50) On the basis of JIS Z 8710

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Cryo-PDF Digital thermometer[F:]	- 196 °C	± 0.06 °C	Standard thermometer FLUKE 1524/5609 Stainless steel cased dewar flask SS333 Liquid nitrogen as a thermal medium and soaking copper block "Calibration Procedures for TCL-Cryo-PDF Data Logger" (QP-64) On the basis of JIS Z 8710 and AIST "Bulletin of Metrology Vol.8/No.1"
	- 30 °C to 5 °C	± 0.06 °C	Standard thermometer FLUKE 1524/5609 Thermostatic circulating bath PolyScience PD15R-40-A11B IPA as a thermal medium and soaking copper block "Calibration Procedures for TCL-Cryo-PDF Data Logger" (QP-64) On the basis of JIS Z 8710
	5 °C to 30 °C	± 0.06 °C	Standard thermometer FLUKE 1524/5609 Thermostatic circulating bath PolyScience PD15R-40-A11B Purified water as a thermal medium and soaking copper block "Calibration Procedures for TCL-Cryo-PDF Data Logger" (QP-64) On the basis of JIS Z 8710

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Digital thermometer [F]: Reusable data logger with internal sensor PDF data logger with internal sensor	-80 °C to 40 °C	± 0.12 °C	Standard thermometer FLUKE 1524/5623B Thermostatic bath MC-812 Soaking copper block for internal sensor "Temperature Calibration Procedures by Espec MC812 Soaking Copper Block in Thermostatic Circulating Bath" (QP-65) On the basis of JIS Z 8710
Digital thermometer [F]: Reusable data logger with external sensor Indicating thermometer with probe Indicating thermometer with external sensor Cryo-PDF Digital thermometer	-80 °C to 40 °C	± 0.09 °C	Standard thermometer FLUKE 1524/5623B Thermostatic bath MC-812 Soaking copper block for external sensor "Temperature Calibration Procedures by Espec MC812 Soaking Copper Block in Thermostatic Circulating Bath" (QP-65) On the basis of JIS Z 8710
Indicating thermometer with glycol bottle external sensor [F]: Reusable data logger	-50 °C to 40 °C	± 0.10 °C	Standard thermometer FLUKE 1524/5623B Thermostatic bath MC-812 Soaking copper block for glycol bottle "Temperature Calibration Procedures by Espec MC812 Soaking Copper Block in Thermostatic Circulating Bath" (QP-65) On the basis of JIS Z 8710

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represent the smallest measurement uncertainties attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is 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.