CERTIFICATE OF ACCREDITATION

This is to attest

INTERTEK ITALIA SPA

VIA PRINCIPE DI UDINE, 114
CAMPOFORMIDO, 33030, ITALY

Calibration Laboratory CL-289

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories.* This organization is accredited to provide the services specified in the scope of accreditation.

Expiration Date April 1, 2026
Effective Date March 7, 2025

International Accreditation Service
Issued under the authority of IAS management

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SCOPE OF ACCREDITATION

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Accredited to ISO/IEC 17025:2017 *Effective Date March 7, 2025*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Thermal			
Temperature – Generate[3] (Type K)	 -200 °C to -100 °C -100 °C to -25 °C -25 °C to 120 °C 120 °C to 1000 °C 1000 °C to 1372 °C	 0.40 °C 0.24 °C 0.20 °C 0.31 °C 0.47 °C	Using Multi-Product Calibrator by Direct Method
(Type T)	-250 °C to -150 °C -150 °C to 0 °C 0 °C to 120 °C 120 °C to 400 °C	0.73 °C 0.28 °C 0.20 °C 0.17 °C	
Temperature – Measure[4] Probes with indicator (Thermocouples)	-30 °C to 140 °C 140 °C to 350 °C	0.05 °C 0.06 °C	Using portable temperature source, reference thermometer and reference PT-100 by comparison method
Temperature – Measure[4] Probes with indicator (PT100)	-30 °C to 140 °C 140 °C to 350 °C	0.05 °C 0.06 °C	Using portable temperature source, reference thermometer and reference PT-100 by comparison method
Temperature - Measure[4] Thermocouples without indicator (Type K)	 -30 °C to 350 °C	 0.30 °C	Using portable temperature source, reference thermometer and reference PT-100 by comparison method
(Type T)	-30 °C to 350 °C	0.23 °C	
Temperature – Measure[4] Pt100 without indicator	-30 °C to 350 °C	0.11 °C	

** If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Temperature - Measure[4] Temperature-Humidity meters	5 °C to 45 °C	0.65 °C	Using reference datalogger, reference dry/wet bulb and climatic chamber by comparison method
RH - Measure[4] Temperature-Humidity meters	25 %RH to 90 %RH	3.7 %RH	
Temperature – Measure[4] Climatic Chambers	-70 °C to 180 °C	0.22 °C	Using reference datalogger and 9 or 15 reference PT-100 by direct method
RH – Measure[4] Climatic Chambers	25 %RH to 95 %RH	2.3 %RH	Using reference datalogger and reference dry/wet bulb by direct method
Electrical – DC/LF			
DC voltage - Generate[3]	10 mV to 329.9999 mV 330 mV to 3.299999 V 3.3 V to 32.99999 V 33 V to 329.9999 V 330 V to 1020.000 V	0.04 % 0.01 % 0.01 % 0.01 % 0.01 %	Using Multi-Product Calibrator by Direct Method
DC current - Generate[3]	10 µA to 3.29999 mA 3.3 mA to 32.9999 mA 33 mA to 329.999 mA 330 mA to 2.19999 A 2.2 A to 11 A	0.67 % 0.02 % 0.03 % 0.09 % 0.11 %	Using Multi-Product Calibrator by Direct Method
DC Resistance - Generate[3]	0.1 Ω to 10.99 Ω 11 Ω to 32.999 Ω 33 Ω to 109.999 Ω 110 Ω to 329.999 Ω 330 Ω to 1.09999 kΩ 1.1 kΩ to 3.29999 kΩ 3.3 kΩ to 10.9999 kΩ 11 kΩ to 32.9999 kΩ 33 kΩ to 109.999 kΩ 110 kΩ to 329.999 kΩ 330 kΩ to 1.09999 MΩ 1.1 MΩ to 3.29999 MΩ 3.3 MΩ to 10.9999 MΩ 11 MΩ to 32.9999 MΩ 33 MΩ to 109.999 MΩ 110 MΩ to 330 MΩ	11 mΩ 22 mΩ 29 mΩ 52 mΩ 190 mΩ 420 mΩ 1.9 Ω 4.2 Ω 21 Ω 53 Ω 260 Ω 650 Ω 8.3 kΩ 39 kΩ 640 kΩ 1.9 MΩ	Using Multi-Product Calibrator by Direct Method

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE		UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
DC Power – Generate[3]	10 mW to 3.299 W 3.3 W to 32.999 W 33 W to 329.999 W 330 W to 999.99 W 1 kW to 3.299 kW 3.3 kW to 10.2 kW		0.02 % 0.02 % 0.05 % 0.05 % 0.08 % 0.08 %	Using Multi-Product Calibrator by Direct Method
	Voltage	**Frequency**		
AC Voltage - Generate[3]	10 mV to 33 mV	10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 500 kHz	0.64 % 0.41 % 0.47 % 0.52 % 0.79 % 1.9 %	Using Multi-Product Calibrator by Direct Method
	33 mV to 330 mV	10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 500 kHz	0.46 % 0.13 % 0.20 % 0.33 % 0.87 % 2.0 %	
	330 mV to 3.3 V	10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 500 kHz	0.26 % 0.06 % 0.12 % 0.27 % 0.87 % 1.8 %	
	3.3 V to 33 V	10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz	0.26 % 0.07 % 0.19 % 0.40 % 0.87 %	
	33 V to 330 V	45 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 20 kHz	0.15 % 0.15 % 0.22 %	
	330 V to 1020 V	45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.09 % 0.27 % 0.41 %	

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE		UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
	Current	**Frequency**		
AC Current – Generate[3]	29 µA to 330 µA	10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.95 % 1.3 % 1.6 % 1.5 % 2.3 %	Using Multi-Product Calibrator by Direct Method
	330 µA to 3.3 mA	10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.34 % 0.24 % 0.24 % 0.35 % 0.80 %	
	3.3 mA to 33 mA	10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.34 % 0.22 % 0.21 % 0.34 % 0.80 %	
	33 mA to 330 mA	10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.34 % 0.22 % 0.21 % 0.34 % 0.80 %	
	330 mA to 2.2 A	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	0.34 % 0.22 % 0.97 %	
	2.2 A to 11 A	45 Hz to 65 Hz 65 Hz to 500 Hz 500 Hz to 1 kHz	0.18 % 0.23 % 0.49 %	
AC Power Generate[3] @ PF 1	10 mW to 3.299 W 3.3 W to 32.999 W 33 W to 329.999 W 330 W to 3.29 kW 3.3 kW to 10.2 kW	45/65 Hz	0.17 % 0.17 % 0.17 % 0.17 % 0.17 %	Using Multi-Product Calibrator by Direct Method
Time and Frequency				
Frequency - Generate[3]	10 Hz to 119.99 Hz 120 Hz to 1199.9 Hz 1.2 kHz to 9.999 kHz 10 kHz to 11.999 kHz 12 kHz to 119.99 kHz 120 kHz to 1199.9 kHz		4.7 mHz 36 mHz 0.29 Hz 0.36 Hz 3.5 Hz 35 Hz	Using Multi-Product Calibrator by Direct Method

[1]The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

[2]When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

[3]Capability is suitable for the calibration of measuring devices in the stated ranges.

[4]Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.