CERTIFICATE OF ACCREDITATION

This is to attest that

VISION ENERGY SOLUTIONS COMPANY

AL AMIR MUHAMMED BIN FAHD BRANCH ROAD
DAMMAM, 32244, KINGDOM OF SAUDI ARABIA

Calibration Laboratory CL-271

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.

Effective Date December 16, 2022

Expiration Date January 1, 2025

President

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

VISION ENERGY SOLUTIONS COMPANY

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Accredited to ISO/IEC 17025:2017 *Effective Date December 16, 2022*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Vernier Calipers	Up to 250 mm	7.2 µm	Gauge block set Procedure/ Standard: VES-LTP-01/ BS EN ISO 13385-1-2019
Micrometers	Up to 250 mm	7.2 µm	Gauge block set Procedure/ Standard: VES-LTP-02/ BS EN ISO 03611-1:2010
Dial Gauges (Plunger Type)	Up to 50 mm	7.2 µm	Gauge block set Procedure/ Standards: VES-LTP-03/ BS907:2008
Mechanical			
Pneumatic - Pressure Gauges, Pressure Transmitters, Vacuum gauge, Vacuum Transmitters, Vacuum switches	-0.9 bar to 20 bar 20 bar to 70 bar	0.01 bar 0.02 bar	Pneumatic Digital Pressure Calibrator, Procedure/ Standards: VES-LTP-05, 06, 07, 08, 09 & 10/ DKD-R-6-1
Hydraulic -Pressure Gauges, Pressure Calibrators, Pressure Switches, Pressure Transmitters, Pressure Relief Valve	5 bar to 20 bar 20 bar to 140 bar 140 bar to 2600 bar	0.06 bar 0.08 bar 0.75 bar	Hydraulic Dead Weight Tester Procedure/ Standards: VES-LTP-05, 06, 07, 08, 09 & 10/ DKD-R-6-1
Sound Level meter (1 kHz)	94 db, 104 dB	0.07 dB	Sound Level calibrator Procedure/ Standards: VES-LTP-23/ ANSI S1.4; IEC 61672

** 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)
Torque Wrenches	7.5 N·m to 150 N·m 150 N·m to 1000 N·m	0.86 % 0.59 %	Torque Wrench Calibrator Procedure/ Standards: VES-LTP-14/ BS 7996-1:2018
Weighing Scale	1 mg to 500 mg 500 mg to 50 g 50 g to 200 g 200 g to 5 kg 5 kg to 10 kg 10 kg to 30 kg 30 kg to 32 kg	0.03 mg 0.12 mg 0.35 mg 0.84 g 0.02 g 0.04 g 0.84 g	E2 Standard Weights Procedure/ Standards: VES-LTP-12. Direct Method
Tachometers	100 rpm to 8000 rpm (Contact type) 100 rpm to 100000 rpm (Non Contact Type)	0.62 rpm 5.82 rpm	Tachometer Calibrator Procedure/ Standards: VES-LTP-22/ ASTM F2046-00
Vibration meters, Vibration sensors	1 m/s^2 (70 Hz to 1000 Hz)	0.08 m/s^2	Vibration Calibrator Procedure/ Standards: VES-LTP-25/ ASTM F2070-00
Thermal			
RTD, Thermocouple, Thermometers, Temperature Gauges, Temperature Transmitter, Temperature Sensor with indicator	-35 °C to 155 °C 155 °C to 1205 °C	0.23 °C 1.2 °C	Oil Bath & Dry block calibrator Procedure/ Standards: VES-LTP-16, 17, 18, 19 & 21/ ASTM E2877, EURAMET CG-11, BS 6175
Temperature bath, Dry Oven	-35 °C to 155 °C 155 °C to 1205 °C	0.24 °C 2.5 °C	Reference Sensor, Multi Function Calibrator Procedure/ Standards: VES-LTP-20
Electrical – DC/LF			
AC Current – Measure[4] 40 Hz to 2 kHz	1 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10 A to 30 A	0.05 mA 0.61 mA 11 mA 69 mA	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
	30 A to 1000 A	2.3 %	Clamp Meter Direct Method Procedure: VES-LTP-15
AC Voltage – Measure[4] 40 Hz to 2 kHz	100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 500 V 500 V to 1000 V	100 µV 1.5 mV 12 mV 0.09 V 0.15 V	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
	1 kV to 40 kV	5.8 %	HV Probe Direct Method Procedure: VES-LTP-15

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
DC Current – Measure[4]	1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10 A to 30 A	0.25 µA 8.0 µA 0.27 mA 3.2 mA 24 mA	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
	30 A to 1000 A	2.3 %	Clamp Meter Direct Method Procedure: VES-LTP-15
DC Voltage – Measure[4]	100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V	5.7 µV 53 µV 0.83 mV 9 mV	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
	1 kV to 40 kV	2.3 %	HV Probe Direct Method Procedure: VES-LTP-15
DC Voltage – Generate[3]	100 mV to 330 mV 330 mV to 3.3 V 3.3 V to 33 V 33 V to 330 V 330 V to 1020 V	8.9 µV 0.05 mV 0.52 mV 7.6 mV 24 mV	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
AC Voltage Generate[3] (40 Hz to 2 kHz)	1 mV to 330 mV 330 mV to 3.3 V 3.3 V to 33 V 33 V to 330 V 330 V to 1020 V	79 µV 0.79 mV 6.4 mV 77 mV 0.38 V	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
DC Current – Generate[3]	1 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 330 mA to 3 A 3 A to 20 A	0.44 µA 4.3 µA 0.04 mA 1.4 mA 24 mA	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
DC Current – Generate[3]	20 A to 1000 A	0.13 %	Multi Product Calibrator, Current Coil Direct Method Procedure: VES-LTP-15
AC Current – Generate[3] (40 Hz to 2 kHz)	1 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 0.33 A 0.33 A to 3 A 3 A to 20 A	3.0 µA 29 µA 0.4 mA 0.94 mA 8.4 mA	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
AC Current – Generate[3] (40 Hz to 60 Hz)	20 A to 1000 A	0.33 %	Multi Product Calibrator, Current Coil Direct Method Procedure: VES-LTP-15

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Frequency – Measure[4]	10 Hz to 100 kHz	0.03 Hz	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
Frequency – Generate[3]	10 Hz to 1000 Hz 1 kHz to 100 kHz	0.23 mHz 0.03 Hz	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
Capacitance – Measure[4]	100 µF to 2 mF 2 mF to 10 mF	9.6 µF 0.11 mF	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
Capacitance – Generate[3,5]	1 nF to 330 µF 330 µF to 110 mF	1.9 µF 1.5 mF	Multi Product Calibrator Direct Method Procedure: VES-LTP-15
Resistance – Measure[4]	1 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 10 MΩ 10 MΩ to 100 MΩ 100 MΩ to 1 GΩ	0.17 mΩ 4.2 mΩ 12 mΩ 0.12 Ω 1.5 Ω 16 Ω 0.29 kΩ 30 kΩ 0.27 MΩ	PRECISION MULTIMETER Direct Method Procedure: VES-LTP-15
Resistance – Generate[3]	0.1 Ω to 1 Ω 1 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 KΩ to 1 MΩ 1 MΩ to 10 MΩ 10 MΩ to 100 MΩ 100 MΩ to 1 GΩ 1 GΩ to 10 GΩ 10 GΩ to 100 GΩ 100 GΩ to 1 TΩ	0.61 % 0.23 % 0.06 % 0.06 % 0.10 % 0.10 % 0.16 % 0.24 % 0.43 % 0.42 % 0.21 % 0.37 % 1.5 %	Mega Ohm Resistance Box & Decade Resistance Box Direct Method Procedure: VES-LTP-15
Optical Radiation			
Lux Meters, Light Meters	3.2 lux 39 lux 188 lux 2750 lux 20000 lux	3.1 % 2.4 % 2.3 % 3.6 % 7.1 %	Procedure/ Standards: VES-LTP-24/ BS 667:2008. Direct method.

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Chemical/Gas			
Single Gas & Multi Gas Detectors	H2S: 25 ppm CO: 100 ppm O2: 18 % Methane: 50 % LEL	5 % 5 % 2 % 2 %	Standard Gas Mixtures Procedure/ Standards: VES-LTP-26/ BS EN 60079-29-1

[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.

[5]The actual frequency applied by the calibrator cannot be selected and may be dependent on the measurement device under calibration. Approximate frequency ranges for a given capacitance or capacitance range may be found in the calibrator manufacturer's published specifications.

ppm = parts in 10^6