PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Evident Scientific Inc

Evident Scientific Inc
48 Woerd Avenue, Waltham, MA 02453
Evident Scientific Inc
3415, Rue Pierre-Ardouin, Quebec City, Quebec, Canada G1P 0B3
Evident Scientific Inc
110 Magellan Circle, Webster, TX 77598

(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):

Dimensional & Electrical 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:

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
December 14, 2015	May 20, 2024	August 31, 2026

Accreditation No.:	*Certificate No.:*
87902	L24-379

Tracy Szerszen
President

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

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Evident Scientific Inc
110 Magellan Circle, Webster, TX 77598
Contact Name: Fernando DaCosta Phone: +1-781-645-8459

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

Evident Scientific Inc. – 48 Woerd Aveune, Waltham, MA 02453
Evident Scientific Inc Canada - 3415 Rue Pierre-Ardouin, Quebec City, Quebec, CA G1P0B3
Evident Scientific Inc - 110 Magellan Circle, Webster, TX 77598

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Ultrasonic Thickness Gages F	0.01 in to 4 in	(85 + 5.01 x 10^{-1}) µin	Test Blocks Olympus	Manufacturer Procedure

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Verification of Ultrasonic Flaw Detection Equipment for the following capabilities F				Olympus Manufacturer Procedure, ASTM E-317 & EN12668-1:2010 ISO – 22232-1-2020 ISO – 22232-2-2020 ISO – 22232-3-2020
Pulse Voltage F	50 V to 450 V	3 %	40 db Attenuator TDS 3032 Tektronix Oscilloscope	
Rise Time F	5 ns to 50 ns	3 %		
Reverberation F	5 ns to 50 ns	3 %		
Duration F	50 ns to 2 µs	1 %		
Amplifier Frequency Response F	40 kHz to 26.2 MHz	0.9 %		
Center Frequency F	17.8 MHz	2 %		
Bandwidth F	3 dB	3 %		
Equivalent Input Noise F	10 nV/√Hz to 100 nV/√Hz	3 %		
Internal Attenuator /Gain F	10 dB to 110 dB	0.3 dB		
Linearity of Vertical Display F	50 V to 450 V	1 %		
Linearity of Time Base F	3 µs to 7 ms	1 %		
Linearity of Time Base for Digital Ultrasonic Instruments F	3 µs to 7 ms	1 %		

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Ultrasonic Flaw Detector Equipment				ASTM E-317 EN12668-1:2010
Stability after warm-up time [F]	Amplitude at 80 % Screen Height	0.9 %	40 db Attenuator TDS 3032 Tektronix Oscilloscope	
	PositionVariation at 50 % Screen Width	0.03 %		
Display Jitter [F]	Amplitude at 80 % Screen Height	0.32 %	40 db Attenuator TDS 3032 Tektronix Oscilloscope	
	Position Variation at 50 % Screen Width	0.03 %		
Stability against Voltage Variation [F]	Amplitude @ 80 % Screen Height	0.32 %	40 db Attenuator TDS 3032 Tektronix Oscilloscope	
	Position Variation at 50 % Screen Width	0.03 %		

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Eddy Current Flaw Detector & Bond Master Flaw Detector				ISO 15548-1:2013
Excitation Frequency F1[F]	10 MHz	8.2 kHz	1. 40 db Attenuator 2. TDS 3032 Tektronix Oscilloscope 3. Keithley 2302 Battery Simulator 4. Keysight 33250A Signal Generator 5. JFW 50P-1714 Programmable Attenuator	
Excitation Frequency F2[F]	10 MHz	8.2 KHz		
Harmonic Distortion F1[F]	10 MHz	8.2 KHz		
Harmonic Distortion F2[F]	10 MHz	8.2 KHz		
Maximum Output Voltage F1 at 10 Hz [F]	2 Vpp	2.3 mVpp		
Maximum Output Voltage F1 at 10 MHz [F]	2 Vpp	2.4 mVpp		
Maximum Output Voltage F1 at 10 Hz [F]	5 Vpp	0.9 mVpp		
Maximum Output Voltage F1 at 10 MHz [F]	5 Vpp	0.9 mVpp		
Maximum Output Voltage F1 at 10 Hz [F]	8 Vpp	0.6 mVpp		
Maximum Output Voltage F1 at 10 MHz [F]	8 Vpp	0.6 mVpp		

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Eddy Current Flaw Detector & Bond Master Flaw Detector				ISO 15548-1:2013
Maximum Output Voltage F2 at 10 Hz [F]	2 Vpp	2.3 mVpp	1. 40 db Attenuator 2. TDS 3032 Tektronix Oscilloscope 3. Keithley 2302 Battery Simulator 4. Keysight 33250A Signal Generator 5. JFW 50P-1714 Programmable Attenuator	
Maximum Output Voltage F2 at 10 MHz [F]	2 Vpp	2.4 mVpp		
Maximum Output Voltage F2 at 10 Hz [F]	5 Vpp	0.9 mVpp		
Maximum Output Voltage F2 at 10 MHz [F]	5 Vpp	0.9 mVpp		
Maximum Output Voltage F2 at 10 Hz [F]	8 Vpp	0.6 mVpp		
Maximum Output Voltage F2 at 10 MHz [F]	8 Vpp	0.6 mVpp		
Maximum Allowable Input Voltage at 10 Hz [F]	14.4 Vpp	2.5 mVpp		
Frequency Response of Digital Signal Processing at -3 dB [F]	75 Hz	0.006 Hz		
Frequency Response of Digital Signal Processing at -3 dB [F]	2 450 Hz	0.006 Hz		
Frequency Response of Digital Signal Processing at 3 dB [F]	2 450 Hz	0.006 Hz		
Phase Linearity at 10 Hz [F]	10 º	0.006 º		
Phase Linearity at 10 Hz [F]	360 º	0.006 º		
Phase Linearity at 10 MHz [F]	10 º	0.006 º		
Phase Linearity at 10 MHz [F]	360 º	0.006 º		
Gain Setting Accuracy at 10 Hz [F]	6 dB	0.07 dB		
Gain Setting Accuracy at 10 Hz [F]	42 dB	0.07 dB		
Gain Setting Accuracy at 10 MHz [F]	6 dB	0.07 dB		

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Eddy Current Flaw Detector & Bond Master Flaw Detector				ISO 15548-1:2013
Gain Setting Accuracy at 10 MHz [F]	42 dB	0.07 dB	1. 40 db Attenuator 2. TDS 3032 Tektronix Oscilloscope 3. Keithley 2302 Battery Simulator 4. Keysight 33250A Signal Generator 5. JFW 50P-1714 Programmable Attenuator	
Maximum Instrument Noise at 10 Hz [F]	16 Vpp	0.19 Vpp		
Maximum Instrument Noise at 10 MHz [F]	16 Vpp	0.19 Vpp		
Maximum Output Voltage TX MIA at 2 kHz [F]	3.3 Vpp	1.4 mVpp		
Maximum Output Voltage TX MIA at 50 kHz [F]	3.3 Vpp	1.4 mVpp		
Maximum Output Voltage TX MIA at 2 kHz [F]	7.7 Vpp	1.1 mVpp		
Maximum Output Voltage TX MIA at 50 kHz [F]	7.7 Vpp	1.2 mVpp		
Maximum Output Voltage TX MIA at 2 kHz [F]	16.0 Vpp	1.1 mVpp		
Maximum Output Voltage TX MIA at 50 kHz [F]	16.0 Vpp	1.1 mVpp		
Maximum Output Voltage TX Resonance at 1 kHz [F]	1.0 Vpp	4.7mVpp		
Maximum Output Voltage TX Resonance at 500 kHz [F]	3.3 Vpp	4.6 mVpp		
Maximum Output Voltage TX Resonance at 1 kHz [F]	7.7 Vpp	4.6 mVpp		
Maximum Output Voltage TX Resonance at 500 kHz [F]	7.7 Vpp	4.6 mVpp		
Maximum Output Voltage TX Resonance at 1 kHz [F]	16.0 Vpp	4.6 mVpp		
Maximum Output Voltage TX Resonance at 500 kHz [F]	16.0 Vpp	4.6 mVpp		
Maximum Output Voltage HV at 2 kHz [F]	26.5 Vpp	13.5mVpp		
Maximum Output Voltage HV at 50 kHz [F]	26.5 Vpp	13.5mVpp		
Maximum Output Voltage HV at 2 kHz [F]	61.0 Vpp	5.9 mVpp		
Maximum Output Voltage HV at 50 kHz [F]	61.0 Vpp at 50 kHz	5.9 mVpp		
Maximum Output Voltage HV at 2 kHz [F]	126.0 Vpp	2.8 mVpp		
Maximum Output Voltage HV at 50 kHz [F]	126.0 Vpp	2.8 mVpp		

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

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.

4. The term L represents length in inches or millimeters as appropriate to the uncertainty statement