PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Repair and Calibration Ltd.

Unit 1 Weighbridge Row, Cardiff Road, Reading, Berkshire, RG1 8LX

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Calibration

(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

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

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
December 11, 2020	April 30, 2025	April 30, 2027

Accreditation No.:	*Certificate No.:*
110993	L25-333

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

Repair and Calibration Ltd.

Unit 1 Weighbridge Row, Cardiff Road, Reading, Berkshire, RG1 8LX
Contact Name: Jonathan Lee Phone: 011-895-88391

Accreditation is granted to the facility to perform the following conformity assessment activities:

FIELD OF CALIBRATION	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	LOCATION OF ACTIVITY
Electrical	Equipment to Measure DC Voltage	Up to 100 mV	9 µV/V + 3 µV	Fluke 8588 A DMM HP 3458A DMM	Procedure NS02	F, O
Electrical	Equipment to Measure DC Voltage	100 mV to 1 V	4 µV/V + 1 µV	Fluke 8588 A DMM HP 3458A DMM	Procedure NS02	F, O
Electrical	Equipment to Measure DC Voltage	1 V to 10 V	4 µV/V + 1 µV	Fluke 8588 A DMM HP 3458A DMM	Procedure NS02	F, O
Electrical	Equipment to Measure DC Voltage	10 V to 100 V	5 µV/V + 1 µV	Fluke 8588 A DMM HP 3458A DMM	Procedure NS02	F, O
Electrical	Equipment to Measure DC Voltage	100 V to 1 000 V	6 µV/V + 1 µV	Fluke 8588 A DMM HP 3458A DMM	Procedure NS02	F, O
Electrical	Equipment to Measure DC Voltage	1 000 V to 10 000 V	0.35 % of Reading	Fluke 8588 A DMM HP 3458A DMM Fluke 80 Divider	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	Up to 100 mV	11 µV/V + 2 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	100 mV to 1 V	10 µV/V + 3 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	1 V to 10 V	9 µV/V + 7 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	10 V to 100 V	11 µV/V + 0.2 mV	Fluke 5700A Multi-Function Calibrator	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	100 V to 1 000 V	13 µV/V + 0.9 mV	Fluke 5700A Multi-Function Calibrator	Procedure NS02	F, O
Electrical	Equipment to Output DC Voltage	1000 V to 10 000 V	0.35 % of Reading	Fluke 80 Divider	Procedure NS02	F, O
Electrical	Equipment to Measure Resistance	Up to 10 Ω	20 µΩ/Ω + 5 µΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	10 Ω to 100 Ω	11 µΩ/Ω + 1 µΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O

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Electrical	Equipment to Measure Resistance	100 Ω to 1 kΩ	11 μΩ/Ω + 1 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	1 KΩ to 10 kΩ	11 μΩ/Ω + 1 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	10 K to 100 kΩ	11 μΩ/Ω + 1 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	100 K to 1 MΩ	13 μΩ/Ω + 2 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	1 M to 10 MΩ	22 μΩ/Ω + 12 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	10 M to 100 MΩ	140 μΩ/Ω + 116 μΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	100 MΩ to 1 GΩ	1.5 mΩ/Ω + 1.2 mΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Measure Resistance	1 GΩ to 10 GΩ	1.5 mΩ/Ω + 1.2 mΩ	Fluke 8588 A DMM HP 3458A DMM	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	1 Ω	133 μΩ/Ω + 14 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	1.9 Ω	131 μΩ/Ω + 4 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	10 Ω	50 μΩ/Ω + 4 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	19 Ω	37 μΩ/Ω + 8 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	100 Ω	24 μΩ/Ω + 4 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	190 Ω	24 μΩ/Ω + 4 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	1 kΩ	18 μΩ/Ω + 7 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O

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Electrical	Equipment to Output DC Resistance	1.9 kΩ	18 μΩ/Ω + 1 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	10 kΩ	19 μΩ/Ω + 4 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	19 kΩ	17 μΩ/Ω + 5 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	100 kΩ	19 μΩ/Ω + 11 μΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	190 kΩ	19 μΩ/Ω + 500 mΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	1 MΩ	27 μΩ/Ω + 6 Ω	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	1.9 MΩ	29 μΩ/Ω + 3 Ω	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	10 MΩ	55 μΩ/Ω + 1 kΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	19 MΩ	69 μΩ/Ω + 2 kΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Output DC Resistance	100 MΩ	161 μΩ/Ω + 9 kΩ	Fluke 5700A Multi-Function Calibrator	Procedure NS01	F, O
Electrical	Equipment to Measure Current	Up to 100 μA	32 μA/A + 47 μA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O
Electrical	Equipment to Measure Current	100 μA to 1 mA	12 μA/A + 5 μA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O
Electrical	Equipment to Measure Current	1 mA to 10 mA	11 μA/A + 5 μA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O
Electrical	Equipment to Measure Current	10 mA to 100 mA	17 μA/A + 5 μA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O
Electrical	Equipment to Measure Current	100 mA to 1 A	66 μA/A + 12 μA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O

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Electrical	Equipment to Measure Current	1A to 10 A	153 µA/A + 116 µA	Fluke 8588 A DMM HP 3458A DMM	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	Up to 100 µA	71 µA/A + 16 nA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	100 µA to 1 mA	71 µA/A + 23 nA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	1 mA to 10 mA	54 µA/A + 162 nA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	10 mA to 100 mA	83 µA/A + 542 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	100 mA to 1 A	112 µA/A + 92 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current	1A to 10 A	6.5 mA	Fluke 5700A Multi-Function Calibrator	Procedure NS03	F, O
Electrical	Equipment to Output DC Current (Clamp Meters)	10 A to 200A	0.14 A	Fluke 5700A Multi-Function Calibrator with Turn Coils	Procedure NS03	F, O
Electrical	Equipment to Output DC Current (Clamp Meters)	200 A to 700 A	0.52 A	Fluke 5700A Multi-Function Calibrator with Turn Coils	Procedure NS03	F, O
Electrical	Equipment to Measure AC Voltage (@ 10 Hz to 20 kHz)	Up to 100 mV	48 µV	HP 3458A DMM Fluke 8588 A DMM	Procedure NS04	F, O
Electrical	Equipment to Measure AC Voltage (@ 10 Hz to 20 kHz)	100 mV to 1 V	480 µV	HP 3458A DMM Fluke 8588 A DMM	Procedure NS04	F, O
Electrical	Equipment to Measure AC Voltage (@ 10 Hz to 20 kHz)	1 V to 10 V	4.8 mV	HP 3458A DMM Fluke 8588 A DMM	Procedure NS04	F, O
Electrical	Equipment to Measure AC Voltage (@ 10 Hz to 20 kHz)	10 V to 100 V	11 mV	HP 3458A DMM Fluke 8588 A DMM	Procedure NS04	F, O
Electrical	Equipment to Measure AC Voltage (@ 45 Hz to 20 kHz)	100 V to 1000 V	130 mV	HP 3458A DMM Fluke 8588 A DMM	Procedure NS04	F, O

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Electrical	Equipment to Output AC Voltage (@ 30 Hz to 30 kHz)	Up to 100 mV	43 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS04 Procedure NS07	F, O
Electrical	Equipment to Output AC Voltage (@ 30 Hz to 30 kHz)	100 mV to 1 V	450 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS04 Procedure NS07	F, O
Electrical	Equipment to Output AC Voltage (@ 30 Hz to 30 kHz)	1 V to 10 V	850 µV	Fluke 5700A Multi-Function Calibrator	Procedure NS04 Procedure NS07	F, O
Electrical	Equipment to Output AC Voltage (@ 30 Hz to 30 kHz)	10 V to 100 V	11 mV	Fluke 5700A Multi-Function Calibrator	Procedure NS04 Procedure NS07	F, O
Electrical	Equipment to Output AC Voltage (@ 45 Hz to 30 kHz)	100 V to 1000 V	55 mV	Fluke 5700A Multi-Function Calibrator	Procedure NS04 Procedure NS07	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 1 MHZ)	3 mV	0.06 % of Reading + 5 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	10 mV	0.06 % of Reading + 10 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 KHz to 5 MHz)	10 mV	0.06 % of Reading + 37 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 5 MHz to 15 MHz)	10 mV	0.06 % of Reading + 79 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 15 MHz to 30 MHz)	10 mV	0.06 % of Reading + 0.1 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	30 mV	0.04 % of Reading + 26 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 100 KHz to 2 MHz)	30 mV	0.04 % of Reading + 59 µV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 2 MHz to 10 MHz)	30 mV	0.04 % of Reading + 0.18 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 MHz to 30 MHz)	30 mV	0.052 % of Reading + 0.3 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	100 mV	0.04 % of Reading + 60 µV	Fluke 5700 A	Procedure NS04	F, O

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Electrical	Equipment to Measure Wideband Flatness (@ 100 KHz to 2 MHz)	100 mV	0.2 % of Reading + 0.2 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 2 MHz to 15 MHz)	100 mV	0.22 % of Reading + 0.72 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 15 MHz to 30 MHz)	100 mV	0.26 % of Reading + 1.2 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	300 mV	0.03 % of Reading + 0.16 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 100 KHz to 5 MHz)	300 mV	0.1 % of Reading + 1 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 5 MHz to 15 MHz)	300 mV	0.14 % of Reading + 2.3mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 15 MHz to 30 MHz)	300 mV	0.16 % of Reading + 3.6 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	1 V	0.03 % of Reading + 1 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 100 KHz to 5 MHz)	1 V	0.1 % of Reading + 4 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 5 MHz to 30 MHz)	1 V	0.2 % of Reading + 13 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 10 Hz to 100 KHz)	3 V	0.47 % of Reading + 2 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 100 KHz to 2 MHZ)	3 V	0.47 % of Reading + 6 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 2 MHz to 15 MHz)	3 V	0.48 % of Reading + 22 mV	Fluke 5700 A	Procedure NS04	F, O
Electrical	Equipment to Measure Wideband Flatness (@ 15 MHz to 30 MHz)	3 V	0.48 % of Reading + 34 mV	Fluke 5700 A	Procedure NS04	F, O

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Electrical	Equipment to Output AC Current (@ 40 Hz to 400 Hz) (Clamp Meters)	10 A to 200 A	1.7 A	Fluke 9100 Multi-Function Calibrator with 10 and 50 turns coils	Procedure NS07	F
Electrical	Equipment to Output AC Current (@ 40 Hz to 400 Hz) (Clamp Meters)	200 A to 700 A	11 A	Fluke 9100 Multi-Function Calibrator with 10 and 50 turns coils	Procedure NS07	F
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	Up to 200 µA	0.09 % + 0.6 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	100 µA to2 mA	0.09 % + 0.6 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	2 mA to 20 mA	0.09 % + 6 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	20 mA to 200 mA	0.09 % + 82 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	200 mA to 2 A	0.1 % + 0.8 mA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Output AC Current (@ 45 Hz to 1 kHz)	10 A	0.09 % + 0.6 µA	Fluke 5700A Multi-Function Calibrator	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	Up to 10 µA	78 nA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	10 µA to 100 µA	520 nA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	100 µA to 1 mA	7.2 µA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	1 mA to 10 mA	52 µA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	10 mA to 100 mA	0.16 mA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O
Electrical	Equipment to Measure AC Current (@ 45 Hz to 5 kHz)	100 mA to 1 A	7.8 mA	HP3458A DMM Fluke 8588 A DMM	Procedure NS05	F, O

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Electrical	Equipment to Measure AC Power (@ 40 Hz to 850 Hz)	220 V and (up to 7 A)	0.09 % of Reading + 0.1 W	N4L PPA5510 Power Analyzer	Easy Cal Program	F
Electrical	Equipment to Measure AC Power Phase (@ 220 V & 55 Hz)	0°	0.2°	N4L PPA5510 Power Analyzer	Easy Cal Program	F
Electrical	Equipment to Measure AC Power Phase (@ 220 V & 55 Hz)	30°	0.2°	N4L PPA5510 Power Analyzer	Easy Cal Program	F
Electrical	Equipment to Measure AC Power Phase (@ 220 V & 55 Hz)	60°	0.2°	N4L PPA5510 Power Analyzer	Easy Cal Program	F
Electrical	Equipment to Measure AC Power Phase (@ 220 V & 55 Hz)	90°	0.2°	N4L PPA5510 Power Analyzer	Easy Cal Program	F
Electrical	Oscilloscopes (AC Vertical Deflection)	1 mV to 10 mV	50 µV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (AC Vertical Deflection)	10 mV to 100 mV	500 µV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (AC Vertical Deflection)	100 mV to 300 mV	5 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (AC Vertical Deflection)	300 mV to 3 V	50 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (AC Vertical Deflection)	3 V to 30 V	300 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (AC Vertical Deflection)	30 V to 190 V	750 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Electrical	Oscilloscopes (Bandwidth) (10 MHZ to 600 MHz)	100 mV to 5 V p-p	0.35 % FS	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O

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Time and Frequency	Equipment to Generate Frequency (Fixed points)	1 MHz and 10 MHz	5 parts in 10^7+ 1 count	Racal Dana 9475 Rubidium Frequency Standard	Procedure NS06	F, O
Time and Frequency	Equipment to Measure Frequency	10 Hz to 100 Hz	10 nHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	100 Hz to 1 KHz	12 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	1 kHz to 10 KHz	1.2 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	10 kHz to 100 KHz	2 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	100 kHz to 1 MHz	20 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	1 MHz to 5 MHz	25 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	5 MHz to 10 MHz	200 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Equipment to Measure Frequency	10 MHz to 160 MHz	330 mHz	Agilent 53131A Counter	OEM Manual	F, O
Time and Frequency	Oscilloscopes (Time Base)	2 ns to 10 ns	0.02 ns	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	10 ns to 100 ns	0.2 ns	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	100 ns to 10 µs	0.062 µs	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	10 µs to 100 µs	20 ns	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	100 µs to 1 ms	0.2 ns	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	1 ms to 10 ms	2 ns	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O

Certificate of Accreditation: Supplement

Repair and Calibration Ltd.

Unit 1 Weighbridge Row, Cardiff Road, Reading, Berkshire, RG1 8LX
Contact Name: Jonathan Lee Phone: 011-895-88391

Accreditation is granted to the facility to perform the following conformity assessment activities:

FIELD OF CALIBRATION	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	LOCATION OF ACTIVITY
Time and Frequency	Oscilloscopes (Time Base)	10 ms to 100 ms	20 µs	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Time Base)	100 ms to 1 s	200 µs	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	1 mV to 10 mV	50 µV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	10 mV to 100 mV	500 µV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	100 mV to 300 mV	5 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	300 mV to 3 V	50 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	3 V to 30 V	300 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (AC Vertical Deflection)	30 V to 190 V	750 mV	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O
Time and Frequency	Oscilloscopes (Bandwidth) (@ 10 MHZ to 600 MHz)	(100 mV to 5 V) p-p	0.35 % FS	Fluke 9500 w/600 MHz Active Head	Procedure NS011	F, O

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Accreditation is granted to the facility to perform the following conformity assessment activities:

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. Location of activity:

Location Code	Location
F	Conformity assessment activity is performed at the CABs fixed facility
O	Conformity assessment activity is performed onsite at the CABs customer 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.