

Schedule

Issue date: 06 April 2025
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LABORATORY LOCATION/ CENTRAL OFFICE:	Bell Comm Technologies Sdn. Bhd. 2nd Floor, Suite 2.02 Bangunan Basic 8 Lorong 19/1A 46300 Petaling Jaya, Selangor , 46300, SELANGOR MALAYSIA
	
ACCREDITED SINCE :	06 APRIL 2025
FIELD(S) OF CALIBRATION:	ELECTRICAL FLOW & VOLUME PRESSURE TEMPERATURE

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

*** The uncertainty covered by the CMC is expressed as the expanded uncertainty corresponding to a coverage probability of approximately 95 % and have a coverage factor of k=2 unless stated otherwise.**

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FIELD(S) OF CALIBRATION :	ELECTRICAL, FLOW, PRESSURE, HEAT & TEMPERATURE

SCOPE OF CALIBRATION : ELECTRICAL

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
A) Gas Volume	100 mL to 1000 mL 1000 mL to 3000 mL	7mL 16 mL	Comparison with Calibration Syringe
A) Liquid Volume	1 mL to 50 mL	0.15 mL	Comparison with Burette
A) Load Resistance	25 Q to 200 O	0.007 Q	Multimeter/ Fluke 190M-2 Medical
	25 Q to 200 O	None	Scopemeter

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	25 Q to 200 O	None	Calibrated using
	50 © to 500	0.02 Q	Multimeter/ Fluke 190M-2 Medical
	50 © to 500	None	Scopemeter
	50 © to 500	None	Calibrated using
A) Low Pressure	10 mbar to 667 mbar	3.0 mbar	Calibrated using Pressure Calibrator
A) Pressure	7 mbar to 532 mbar	3.0 mbar	Calibrated using Pressure Calibrator
	70 mbar to 3.0 bar	8.0 mbar	Calibrated using Pressure Calibrator
	-700 mbar to 7 bar	8.0 mbar	Calibrated using Pressure Calibrator
A) Thermocouple Type-k	33 °C to 300 °C	0.3 °C	Comparison with
B) Energy	2 Joules to 100 Joules	0.13 Joules 0.20 Joules	Fluke 190M-2 Medical Scopemeter
	101 Joules to 360 Joules	None	and Current Shunt
	2 Joules to 100 Joules	None	Multi product
B) Heart Rate	101 Joules to 360 Joules	None	
	2 Joules to 100 Joules	None	
	101 Joules to 360 Joules	None	
B) High Pressure	30 bpm to 200 bpm	0.2 bpm	Calibrated using Fluke 190M-2 Medical Scopemeter
B) Liquid Flow Rate	70 mbar to 7 bar	3.0 mbar	Calibrated using Pressure Calibrator
B) Pulse Rate	10 mL/hr -" 1000 mL/hr	0.16 mL/hr	Comparison with Burette and Stop Watch
B) Rf Current	80 ppm	0.3 ppm	Fluke 190M-2
	80 ppm	None	Medical Scopemeter
	80 ppm	None	Calibrated using
B) Thermistor	200 mA to 800 mA	1.6 mA	Fluke 190M-2 Medical Scopemeter
	200 mA to 800 mA	None	and Current Shunt
	200 mA to 800 mA	None	Calibrated using
C) Airway Pressure	33 °C to 50 °C	0.3 °C	Calibrator
C) Ecg Amplitude	-100 mbar to -10 mbar	1.0 mbar 3.0 mbar	Calibrated using Pressure Calibrator
	10 mbar to 100 mbar	0.012 mV	Multimeter/ Fluke 190M-2 Medical
	1 mV mV	None	Scopemeter
	50 mHz to 999 mHz	1 mHz	Calibrated using

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C) Pulse Amplitude	0.5 mV to 5 mV	0.115 mV	Calibrated using Fluke 190M-2 Medical Scopemeter
C) Pulse Width	1 mSec	0.33 mSec	Fluke 190M-2
	1 mSec	None	Medical Scopemeter
C) Rf Voltage P-p	200 V pp to 700 V pp	1.7to2V pp	Fluke 190M-2 Medical Scopemeter
	200 V pp to 700 V pp	None	and Current Shunt
	200 V pp to 700 V pp	None	Calibrated using
D) Current, Pulse	1 mA pk 4 mA pk 10 mA pk 20 mA pk	0.002 mA pk 0.06 mA pk 0.04 mA pk 0.08 mA pk	Calibrated using Fluke 190M-2 Medical Scopemeter
Dc Voltage	1 V to 250 V	0.1V	Generating using Calibrator (Fluke: 5522A)
	0 V to 220 mV	4.2	
	220 mV to 2.2 V	6.1 + 1.1	
	2.2Vto11V	5.1 + 2.0	
	11V 22 V to 220 V	5.0 μ V/V + 3.2 7.4 +	Generating Using Fluke 5720A Series 2 Multifunction Calibrator
	220 V to 1100 V	28 8.9 + 0.31 mV	
	100 mV	None	HP3458A
	+ 100 to + 100 mV	1.8	
	-100 mV to - 100	1.8	
	iV	None	
	+100 mV to1V	None	
	-1 V to -100 mV	None	
	10 V	None	
	+1Vto+10V	0.1 mV	
	-10Vto-1V	0.1 mV	
	100 V	None	
	+10V to +100 V	None	
	-100 V to -10 V	1mV	
	1000 V	None	
	+ 100 V to + 1000 V	12 mV	
	- 1000 V to -100 V	12 mV	
	0 to 330 mV 0to3.3V	30 0.2 mV	Generation using calibrator model
	0 to	2.2mV	Fluke 5500A
	33 to 330 V	24 mV	
	330 to 1000 V	110 mV	
	100 mV	None	
	+ 100 to + 100 mV	None	
	-100	None	
	1V	None	

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	+100 mV to 1V	0.12 mV	
	-1 V to -100 mV	0.12 mV	
	10V	None	
	+1V to +10V	None	
	-10V to -1V	None	
	100 V	None	
	+10V to +100 V	None	
	-100 V to -10 V	None	
	1000 V	None	
	+ 100 V to + 1000 V	17 mV	
	- 1000 V to -100 V	17 mV	
	0 to 100 mV	0.004% of rdg + 0.004 mV	Direct measurement using
	0 to 50 mV	0.05% of rdg + 0.005 mV	Direct Measurement using Fluke
	30 V to 329 V	0.066 mV /V	
	329 V to 1020 V	0.066	Calibrated
	1 mV to 33 V	See Matrix A	Calibrated
	1 mV to 33 V	None	according to
	33 V to 330 V	None	procedure
	45 Hz to 1 kHz	0.6 mV/V	LCP01701, Rev 01
	1 kHz to 10 kHz	0.92 mV/V	using Direct
	1 mV to 100 mV 100 mV to 1V 1V to 10V 10 V to 100 V 100 V to 1000 V	0.098 mV /V 0.054 0.046 0.059 0.064 mV /V	Calibrated according to procedure LCP01703 & LCP01715, Rev 01 using Direct Method
	1 kV to 30 kV	23 mV/V	Calibrated according to
	1 kV to 30 kV	None	procedure LCP01707,
	1 kV to 30 kV	None	Rev 01 using Direct
	1 kV to 30 kV	None	Method
	0V to	0.58	Calibrated according to procedure
	1 mV to 100 mV 100 mV to 1 V 1V to 10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	0.17 mV/V 0.10 mV/V 0.096 mV /V 0.10 mV/V 0.11 mV/V 23 mV/V	Calibrated according to procedure LCP01703 & LCP01715, Rev 01 using Direct Method
	1 mV to 100 mV 100 mV to 1 V 1V to 10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	0.17 mV/V 0.10 mV/V 0.096 mV /V 0.10 mV/V 0.11 mV/V 23 mV/V	Calibrated according

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	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	to procedure
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	LCP01707, Rev 01
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	using Direct Method
	10 mV to 750 V	See Matrix E	Calibrated according
	10 mV to 750 V	None	to procedure
	750 V to 1000 V	None	LCP01703, Rev 01
Defibrillator Analyzer	None	None	Calibrated using
E) Heart Rate	30 bpm to 250 bpm	0.2 bpm	Fluke 190M-2
	30 bpm to 250 bpm	None	Medical Scopemeter
E) Resistance	200 to 2 KO 2 KQ to 20	0.40 0.06 KO	Calibrated using Multimeter
E) Sensitivity Amplitude	1 mV pk 5 mV pk 50 mV pk	0.07 mV pk 0.08 mV pk 0.2 mV pk	Calibrated using Fluke 190M-2 Medical Scopemeter
Electrosurgical Analyzer	1 mV pk 5 mV pk 50 mV pk	None	Calibrated using
li. Dc Current (leakage Current)	10 yA to 100 pA 101 yA to 10000 pA	0.1 pA	Generating using Calibrator (Fluke: 5522A)
lii. Ac Voltage	At 50 Hz 1V to 400 V	0.1V	
Infusion Device Analyzer	-100 mbar to -10 mbar	None	
	10 mbar to 100 mbar		
	100 mL to 1000 mL 1000 mL to 3000 mL	None	
Iv. Ac Current (leakage Current)	At 50 Hz 10 yA to 100 pA 101 yA to 10000 pA	None	
Measuring Instrument	None	None	
	None	None	
	None	None	
Pace Maker Analyzer A) Load Resistance	200 500 O 1000 Q	0.01 Q 0.03 Q 0.07 Q	Calibrated using Multimeter/ Fluke 190M-2 Medical Scopemeter
	200 500 O 1000 Q	None	Calibrated using
Parameter Tester	70 mbar to 3.0 bar	None	
Patient Simulator	None	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Patient Simulator A) Frequency	0.125 Hz to 3 Hz 0.5 Hz to 3 Hz 5 Hz to 10 Hz 40 Hz to 60 Hz	0.0015 Hz 0.002 Hz 0.0081 Hz 0.042 Hz	Calibrated using Fluke 190M-2 Medical Scopemeter
Qd) Dc Voltage	1 mV to 120 mV	0.12 mV	Calibrator 5522A and Multimeter
Qd) Frequency	1 Hz to 10 Hz	0.002 mHz	Fluke 190M-2
	11 Hz to 200 Hz	0.040 Hz	Medical Scopemeter
	11 Hz to 200 Hz	None	Calibrated using
Rf Power	25 W to 200 W	0.16 W	Fluke 190M-2 Medical Scopemeter
	25 W to 200 W	None	and Current Shunt
V. Ac Current Consumption	At 50 Hz 1.0Ato10A	None	Measurement by using multimeter
Ventilator Analyzer	7 mbar to 532 mbar	None	
Vi. Resistance	0 mQ to 2000 mQ	1mQ	DC Resistor Box
	2 MQ to 100 MQ 190 MQ	0.1 MQ 1.1 MQ	DC Resistor Box

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SCOPE OF CALIBRATION : FLOW & VOLUME

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : PRESSURE

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : TEMPERATURE

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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