

SCOPE OF ACCREDITATION

ANALYTICAL TESTING AND CALIBRATION (ATC) LABORATORY INTEGRATED MICRO-ELECTRONICS INC. (IMI)

#103 Trade Avenue corner Technology Avenue Laguna, Technopark Special Export Processing Zone, Biñan, Laguna

Calibration

Classification of Scopes	Measured quantities/ instrument	Range to be calibrated	Calibration and Measurement Capability (CMC)*	Standard Method/ Reference Standard		
Engineering Metrology		<u> </u>	T			
Internal/External Micrometer	Analog & Digital Micrometer	0 to 300 mm	0.0060 mm	JIS B 7502:2016 WI CCL 00 010		
Electronic indicators, dial	Dial test indicators	0 to 1 mm	1.8 um	JIS B 7533:2015 WI CCL 07 007		
gauges & test indicators	Dial gauges	0 to 10 mm	2.0 um	JIS B 7503:2017 WI CCL 99 007		
Electronic & Vernier calipers	Vernier and Digital caliper	0 to 200 mm	10 um	JIS B 7507:2016 WI CCL 99 011		
Electronic & Vernier height & Depth gauges	Height gauges	0 to 300 mm	6.0 um	JIS B 7517:2018 WI CCL 05 002		
Feeler Gauge	Feeler Gauges	Up to 3 mm	0.001 mm	JIS B 7524:2008 WI CCL 04 003		
Steel rules & measuring tapes	Steel rules	0 to 150 mm	0.009 mm	WI CCL 05 005 JIS B 7516:2005		
Dimensional Precision Instruments						
Precision projection	Profile projector			On-site Calibration		
apparatus	X-axis	0 to 150 mm	0.0010 mm	WI CCL 05 004		
	Y-axis	0 to 150 mm	0.0010 mm			
Weighing Devices						
Precision Laboratory Balances	Precision and Analytical Balance	Up to 1000 g	0.00010 g	Euramet cg-18 ver. 4.0 (In-house developed		
Industrial Balances	Analog and Digital Weighing Scales	Up to 160 kg	0.010 g	method) WI CCL 17 008 (on-site/in-house calibration)		
Pressure and vacuum measuring devices and pressure gauge tester						
Pressure gauges	Pressure gauges	Up to 100 psi >100 psi to 200 psi	1.0 psi 1.2 psi	WI CCL 16 002 (on-site calibration)		



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Vacuum gauges					
Vacuum gauges			>200 psi to 10000	4.0 psi	
Pressure Pressure Pressure Transducers/ Transmitters Transmitters Transmitters Pressure Transmitters Pressure Transmitters Pressure Transmitters Pressure Transmitters Pressure Pressure Pressure Pressure Pressure recorder Pre					
Pressure	Vacuum gauges	Vacuum gauges			
Pressure			0 mmHg to -690	1.2 mmHg	(on-site calibration)
Pressure Transducers/ Transducers/ Transmitters Pressure Transducers/ Transmitters Up to 100 psi to 200 psi to 12 psi			mmHg		In-house developed
Transducers/ Transmitters Transducers/ Transmitters Transducers/ Transmitters ⇒100 psi to 200 psi to 10000 psi					
Transmitters Transmitters >200 psi to 10000 psi psi 4.0 psi psi In-house developed method Pressure recorder Pressure recorder Up to 100 psi psi to 200 psi psi to 10000 psi psi to 200 psi to 10000 psi psi psi psi to 10000 psi psi psi psi psi psi psi to 10000 psi psi psi to 10000 psi psi psi psi psi psi to 10000 psi psi psi psi psi psi psi to 10000 psi	Pressure	Pressure	Up to 100 psi	1.0 psi	WI CCL 16 002
Pressure recorder		Transducers/	>100 psi to 200 psi	1.2 psi	
Pressure recorder	Transmitters	Transmitters	>200 psi to 10000	4.0 psi	In-house developed
S-100 psi to 200 psi 1.2 psi 200 psi 1.2 psi 200 psi 1.0 psi 200 psi 2			psi		
Pressure calibrators	Pressure recorder	Pressure recorder	Up to 100 psi	1.0 psi	WI CCL 16 002
Pressure calibrators			>100 psi to 200 psi	1.2 psi	
Pressure calibrators Analog test gauges Up to 100 psi to 200 psi to 1.0 psi to 1.0 psi to 1.0 psi to 1.0 psi to 200 psi to 1.0 psi to 200 psi to 1.0 ps			>200 psi to 10000	4.0 psi	
Solution Solution			psi	•	
Section Sect	Pressure calibrators	Analog test gauges	Up to 100 psi	1.0 psi	WI CCL 16 002
Posi			>100 psi to 200 psi	1.2 psi	(on-site calibration)
Force measuring devices Force gauge			>200 psi to 10000	4.0 psi	In-house developed
Force gauges			psi	•	method
Other devices Push pull gauge Up to 160 kgf 0.10% of load In-house developed method Gram Gauge Up to 250g 0.20 g WI CCL 99 005 (on-site/in-house calibration) In-house developed method Indicating and Recording Instruments DC Voltmeter (Up to 6.5 digits) 0 to 100 mV 0.0030 mV 0.000010 V 0.00000 V 0.000000 V 0.00000 V 0.00000 V 0.00000 V 0.000000 V 0.000000 V 0.000000 V 0.000000 V 0.000000 V 0.00000 V 0.00000 V 0.00000 V 0.000000 V 0.00000 V 0.00000 V 0.00000 V 0.00000 V 0.00000 V 0.000000 V 0.00000 V 0.000000 V 0.00000 V 0.000000 V 0.00000 V 0.000000 V 0.00000 V 0.000000 V 0.000000 V 0.00000 V 0.000000 V 0.00000 V 0.00000 V 0.000000 V 0.000000	Force measuring device	ces			
March Marc	Force gauges	Force gauge			WI CCL 17 001
Gram Gauge	Other devices	Push pull gauge	Up to 160 kgf	0.10% of load	In-house developed
Indicating and Recording Instruments					
Calibration In-house developed method In-house developed		Gram Gauge	Up to 250g	0.20 g	WI CCL 99 005
In-house developed method In-house developed method					(on-site/in-house
Indicating and Recording Instruments					calibration)
D.C. voltmeters					In-house developed
D.C. voltmeters					method
O to 10 V 0.00010 V In-house developed method O to 100 V 0.0020 V O to 1000 V O to 100	D.C. voltmeters	DC Voltmeter			
O to 100 V 0.0020 V method		(Up to 6.5 digits)	0 to 1 V	0.000010 V	
A.C. Voltmeters (from 50 Hz to 20kHz) A.C. Voltmeters (from 50 mV to 450 mV 0.0030 mV 0.013 mV 0.013 mV 0.0014 V 0.00014 V 0.00014 V 0.00014 V			0 to 10 V	0.00010 V	<u> </u>
A.C. Voltmeters			0 to 100 V	0.00 2 0 V	method
(from 50 Hz to 20kHz) 50 mV to 450 mV 0.013 mV WI CCL 05 008 In-house developed			0 to 1000 V	0.020 V	
20kHz) 300 mV to 4.5 V 0.00014 V In-house developed	A.C. Voltmeters	A.C. Voltmeters	1 mV to 45 mV	0.0030 mV	EURAMET cg-15 v3.0
,		(from 50 Hz to	50 mV to 450 mV	0.013 mV	
5 V to 45 V 0.002 V method		20kHz)	300 mV to 4.5 V	0.00014 V	In-house developed
			5 V to 45 V	0.002 V	method



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		50 V to 1000 V	0.002 V	
D.C. Ammeters	D.C. Ammeters	0 to 330 μA	0.070 µA	EURAMET cg-15 v3.0
D.C. Allilliciels	D.C. Allilleters	0 to 3.3 mA	0.38 μΑ	WI CCL 05 008
		0 to 33 mA	2.3 mA	In-house developed
		0 to 330 mA	3.5 mA	method
		0 to 1.1 A	0.00024 A	mounou
		0 to 3 A	0.00024 A	
		0 to 20 A	0.0055 A	
A.C. Ammeters	A.C. Ammeters	0 to 500 μA	0.38 µA	EURAMET cg-15 v3.0
A.C. Allilleters	(from 50 Hz to 1kHz)	0 to 5000 μA	2.3 µA	WI CCL 05 008
	(110111 00 112 10 11112)	0 to 50 mA	0.035 mA	In-house developed
		0 to 400 mA	0.24 mA	method
		0 to 10 A	0.24 IIIA 0.0055 A	mounou
Wattmeter	DC Wattmeter	up to 330 W	0.05 % of reading	WI CCL 17 007 In-
vvattinotoi	Bo Wattinetei	up to 3 kW	0.08 % of reading	house developed
	-	up to 20.9 kW	0.07 % of reading	method
	AC Wattmeter,	up to 9 W	0.09 % of reading	ou
	60 Hz, pf = 1	up to 33 W	0.06 % of reading	
	002, p	up to 90 W	0.09 % of reading	
		up to 330 W	0.06 % of reading	
		up to 900 W	0.08 % of reading	
		up to 2.2 kW	0.07 % of reading	
		up to 4.6 kW	0.09 % of reading	
		up to 20.9 kW	0.08 % of reading	
		up to 20.0 KW	0.00 /0 01 10001119	
Ohmmeters	Ohmmeters	0 to 500 Ω	0.032 Ω	EURAMET cg-15 v3.0
		0 to 5 kΩ	0.0003 kΩ	In-house developed
		0 to 50 kΩ	0.003 kΩ	method
		0 to 500 kΩ	0.21 kΩ	WI CCL 05 008
		0 to 180 MΩ	0.0012 MΩ	
LCR Meters	LCR Meters -	0 to 200 Ω	0.0057 Ω	In-house developed
	Resistance	0 to 500 kΩ	0.00057 kΩ	method
	 	0 to 200 MΩ	0.00057 ΜΩ	WI CCL 05 009
	LCR Meters -	0 to 500 pF	0.77 pF	
	Capacitance	0 to 500 nF	0.0019 nF	
		0 to 2000 μF	0.00086 µF	



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	LCR Meters -	0 to 500 mH	0.003 mH	
	Inductance	0 to 20 H	0.003 H	
Other instruments	@ DC voltage	up to 200 mV	7.5 ppm of reading	WI CCL 05 008
	· ·	up to 2.2 V	5 ppm of reading	(in-house/on-site
Digital Multimeter		up to 22 V	3.5 ppm of reading	calibration)
up to 6 1/2 digits		up to 220 V	5 ppm of reading	In-house developed
		up to 1100 V	6.5 ppm of reading	method
Analog Multimeter		'		
	@ AC voltage	up to 22 mV, 40	100 ppm of	WI CCL 05 008
		to 20 kHz	reading	In-house developed
		up to 200 mV, 40	70 ppm of reading	method
		to 20 kHz		
		up to 22 V, 40 to	48 ppm of reading	
		20 kHz		
		up to 220 V, 40 to	65 ppm of reading	
		20 kHz		
		up to 1100 V, 50	80 ppm of reading	
	0.000	to 1 kHz	10 ("	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
	@ DC Current	up to 220 μA	40 ppm of reading	WI CCL 05 008
		up to 22 mA	35 ppm of reading	In-house developed
		up to 220 mA	45 ppm of reading	method
		up to 2.2 A	80 ppm of reading	
		up to 3 A	294 ppm of	
			reading	
		up to 11A	388 ppm of	
			reading	
		up to 20.5 A	775 ppm of	
	0.400		reading	WI 001 05 000
	@ AC Current	up to 220 mA	120 ppm of	WI CCL 05 008
		40 to 1 kHz	reading	In-house developed
		up to 2.2 A	300 ppm of	method
		20 to 1 kHz	reading	
		up to 3 A	0.050 % of reading	
		45 to 1 kHz		



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T		up to 11 A	O OFO O/ of roading		
		up to 11A 45 to 100 kHz	0.050 % of reading		
		up to 20.5 A	0.050 % of reading		
		45 to 100 kHz	0.030 % of reading		
	@ Resistance	0 to 500 Ω	0.032 Ω	WI CCL 05 008	
	w Resistance	0 to 5 kΩ	0.0032 t2 0.00030 kΩ	In-house developed	
		0 to 50 kΩ	0.00030 kΩ	method	
				memou	
		0 to 500 kΩ	0.21 kΩ		
		0 to 100 MΩ	0.0012 ΜΩ		
		0Ω	40 μΩ		
		up to 1.9 Ω	95 ppm of reading		
		up to 19 Ω	23 ppm of reading		
		up to 190 Ω	10 ppm of reading		
		up to 19 kΩ	6.5 ppm of reading		
		up to 190 kΩ	8.5 ppm of reading		
		up to 1 MΩ	13 ppm of reading		
		up to 1.9 MΩ	18 ppm of reading		
		up to 10 MΩ	40 ppm of reading		
		up to 19 MΩ	47 ppm of reading		
		up to 100 $M\Omega$	100 ppm of		
			reading		
		up to 110 $M\Omega$	387 ppm of		
			reading		
		up to 330 $M\Omega$	0.23 % of reading		
		up to 1100 MΩ	15 % of reading		
Clamp meter	Clamp meter	up to 1000 A,	0.5% of reading	WI CCL 17 003	
		AC/DC		(in-house/on-site	
		DC, up to 1000A	0.28% of reading	calibration)	
		AC, up to 1000A			
		45~65 Hz			
		AC, up to 1000A	0.79% of reading		
		65~440 Hz			
Frequency and time measuring instruments and standards					
Frequency meter	Frequency meter	Up to 1.19 MHz	0.0025% of	In-house developed	
	-	<u> </u>	reading	method	
		Up to 15 MHz	50 ppm of reading	(WI CCL 05 008)	



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Time interval meter	Timer/Stopwatch	Up to 550 minutes	0.0064 s	In-house developed	
				method	
				(WI CCL 17 004)	
				onsite calibration	
Frequency standard		10 Hz to 1 MHz	10 ppm of reading	In-house developed	
	standard/source			method	
				(WI CCL 17 002)	
Waveform Measuring					
Other	Oscilloscope		1 1/		
Characteristics	Vertical Deflection	0 to 200 mV	0.045 mV	WI CCL 05 011	
		0 to 20 V	0.0020 V	(in-house/on-site	
		0 to 40 V	0.0040 V	calibration)	
	Horizontal Deflection	0 to 500 ns	2.3 ns	WI CCL 05 011	
		0 to 50 μs	0.022 µs	(in-house/on-site	
		0 to 500 µs	0.022 µs	calibration)	
		0 to 800 µs	0.046 µs		
		0 to 20 ms	0.002 ms		
		0 to 50 ms	0.022 ms		
		0 to 400 ms	0.022 ms		
Power Supplies					
DC Power Supplies	DC Power Supplies	up to 200 mV	5.5 ppm of reading	WI CCL 07 005	
		up to 20 V	3.7 ppm of reading	(in-house/on-site	
		up to 200 V	5.7 ppm of reading	calibration)	
		up to 1000 V	6.0 ppm of reading	In-house developed	
		up to 2 mA	14 ppm of reading	method	
		up to 20 mA	16 ppm of reading		
		up to 200 mA	52 ppm of reading		
		up to 2 A	193 ppm of		
		•	reading		
		up to 20 A	420 ppm of		
		•	reading		
High voltage equipment					
High voltage equipmen		Up to 20 I/V	200/ of roading	WI CCL 14 002	
Direct voltage tests	DC high voltage	Up to 20 KV	2.0 % of reading		
	tester	Up to 35 KV	1.0 % of reading	(on-site calibration)	
		Up to 40 KV	2.0 % of reading		



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Alternating voltage	AC high voltage	Up to 28 KV	5.0 % of reading	In-house developed		
tests	tester	rin a la atrona a ata		method		
Calibration of Ancillary Temperature Measuring Instruments						
Digital thermometer		-200 °C to 1767 °C	0.60 °C	WI-CCL-17-006		
L	Thermocouple type		0.40.00	(on-site calibration)		
Resistance bridge	Digital thermometer	-200 °C to 800 °C	0.10 °C	In-house developed		
	RTD Type			method		
Indicators,	Indicators, recorders	-200 °C to 1767 °C	0.60 °C			
recorders and	and controllers					
controllers	Thermocouple Input					
	Туре		_			
	RTD Input type	-200 °C to 800 °C	0.10 °C			
Testing of temperature			Γ			
Ovens, furnaces	Ovens, furnaces and	20 °C to 300 °C	0.7 °C	WI CCL 99 006		
and baths	baths			(on-site calibration)		
				In-house developed		
				method		
Incubators	Incubators	20 °C to 50 °C	0.7 °C	WI CCL 99 006		
				(on-site calibration)		
				In-house developed		
			_	method		
Autoclaves and	Autoclaves and	20 °C to 300 °C	0.7 °C	WI CCL 23 001		
sterilizing ovens	sterilizing ovens			(on-site calibration)		
				In-house developed		
				method		
Industrial Freezers	Industrial Freezers	-80 °C to 20 °C	0.7 °C	WI CCL 99 006		
	and Refrigerators			(on-site calibration)		
				In-house developed		
				method		
Hygrometer						
Calibration of	Thermohygrometer/	20 °C to 40 °C	0.21 °C	WI CCL 00 001		
Humidity Measuring	Thermohygrograph	33% RH to 96%RH	1.0 % RH	(in-house calibration)		
Devices				In-house developed		
				method		
Humidity Chamber	Environmental	10%RH to 95%RH	1.0 % RH	WI CCL 13 003		
	Chamber			(on-site calibration)		
	(Chamber's Humidity			In-house developed		
	Sensor)			method		



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Torque Measuring Device					
Torque wrenches/	Torque wrenches/	0 to 10 Nm	0.0058 Nm	WI CCL 23 002	
Drivers	Drivers	up to 20 Nm	0.0058 Nm	(on-site)	
		up to 100 Nm	0.26 Nm	In-house developed	
Torque Analyzer/	Torque Analyzer/	0 to 10 Nm	0.0011 Nm	method	
meter	meter	>10 Nm and	0.013 Nm		
		including 20 Nm			
		>20 Nm and	0.016 Nm		
		including 30 Nm			

^{*} CMC expressed as an expanded uncertainty having a specific coverage probability of approximately 95%.

JAMES E. EMPEÑO Director IV

Philippine Accreditation Bureau

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CALIBRATION LABORATORY
PNS ISO/IEC 17025:2017
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