



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

Calibration

Products/ Class of Test	Measured quantities/ instrument	Range to be calibrated	Calibration and Measurement Capability (CMC)*	Standard Method/ Reference Standard
5.01 Limit Gauges				
.01 Plain plug gauges	Calibration of Plug Gauge (Fixed or Go- No-Go gauge)	up to 100 mm	1.2 μ m	On-Site Calibration JIS B 7420:1997
5.02 Jigs, Fixtures, Cutting Tools and Components				
.01 Jigs and fixture	Measurement of Jigs and Fixtures	per evaluation	per evaluation	On-Site Calibration MTR-CMP-019
.02 Cutting tools	Measurement of Cutting Tool	per evaluation	per evaluation	On-Site Calibration MTR-CMP-019
.03 Components	Measurement of Machine part/ components	per evaluation	per evaluation	On-Site Calibration MTR-CMP-019
5.03 Engineering metrology equipment				
.01 Surface plates	Calibration of Surface Plate	up to 2900 mm diagonal length	0.6 μ m	On-Site Calibration AS1004.1-1998 (ISO8512-1:1990) AS1004.2-1990 (ISO8512-1:1990)
.03 Straightedges	Calibration of Steel Straight Edge	up to 1000 mm	1.2 μ m	JIS B 7514:1977
.04 Squares	Calibration of Carpenter's Square	up to 600 mm	2.2 μ m	JIS B 7534:1987
	Calibration of Precision Square	600 mm max	1.8 μ m or 1.5 arc-min	JIS B 7526:1995
.06 Bevel protractors	Calibration of Bevel Protractor	0 - 90°	3.6 arc-min	BS 1685:1959
.08 Precision spirit levels	Calibration of Precision Spirit Level	0.01 mm/m x 200 mm	1.7 Arc-sec	BS 958:1968
.17 Micrometer heads	Calibration of Micrometer Head	0-25 mm	1.0 μ m	JIS B 7502:1994
.18 Internal/ External micrometer	Calibration of External/Outside Micrometer	0-25mm	1.4 μ m	JIS B 7502:1994
		25-50mm	1.4 μ m	
		50-75mm	1.5 μ m	

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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		75-100mm	1.8µm		
		100-125mm	2.0µm		
		125-150mm	2.3µm		
	Calibration of Digital External/Outside Micrometer		0-25mm	0.8µm	JIS B 7502:1994
			25-50mm	0.8µm	
			50-75mm	1.1µm	
			75-100mm	1.4µm	
			100-125mm	1.7µm	
	Calibration of Internal/ Inside Micrometer (Tubular Type)		0-25 mm micrometer head	1.6 µm	JIS B 7502:1994
			Calibration of Internal Micrometer (Caliper type)	up to 100 mm for 0.01 mm res.	1.7 µm
.19 Micrometer height and depth gauges	Calibration of Depth Micrometer	0.01 x 25 mm	2 µm	JIS B 7544:1994	
	Calibration of Digital Depth Micrometer	0.001 x 25 mm	1.7 µm	JIS B 7544:1994	
.20 Electronic indicators, dial gauges and test indicators	Calibration of Digimatic Indicator and Long Range Dial Indicator	up to 150 mm for 0.001 mm res.	0.6 µm	MTR-CMP-032	
	Calibration of Dial/ Digital Thickness Gauge (Non- removable handle type)	up to 25 mm for 0.01 mm res.	2.5 µm	MTR-CMP-036	
	Calibration of Dial Gauge	0.01 mm resolution	1.3 µm	JIS B 7503:1997	
		0.001 and 0.002 mm resolutions	0.6 µm		
	Calibration of Dial Test Indicator (Lever type)	0.01 mm resolution	1.3 µm	JIS B 7533:1990	
0.001 and 0.002 mm resolutions		0.6 µm			



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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.21 Bore gauges	Calibration of Cylinder/Bore Gauge	0-100 mm	0.7 μ m	JIS B 7515:1982
.22 Electronic, vernier and dial calipers	Calibration of Vernier Caliper	0-150 mm	12 μ m	JIS B 7507:1993
		0-200 mm	13 μ m	
		0-300 mm	14 μ m	
		0-450 mm	15 μ m	
		0-600 mm	17 μ m	
	Calibration of Dial Caliper	0-150 mm	7 μ m	
		0-200 mm	8 μ m	
		0-300 mm	10 μ m	
		0-450 mm	11 μ m	
		0-600 mm	13 μ m	
	Calibration of Digital Caliper	0-150 mm	6 μ m	
		0-200 mm	7 μ m	
		0-300 mm	9 μ m	
		0-450 mm	10 μ m	
0-600 mm		13 μ m		
.23 Electronic and vernier height and depth gauges	Calibration of Vernier Height Gauge	0-150 mm	12 μ m	JIS B 7517:1993
		0-200 mm	12 μ m	
		0-300 mm	12 μ m	
		0-450 mm	13 μ m	
		0-600 mm	14 μ m	
	Calibration of Dial Height Gauge	0-150 mm	4 μ m	
		0-200 mm	4 μ m	
		0-300 mm	5 μ m	
		0-450 mm	7 μ m	
		0-600 mm	9 μ m	
	Calibration of Digital Height Gauge	0-150 mm	4 μ m	
		0-200 mm	4 μ m	
		0-300 mm	5 μ m	
		0-450 mm	7 μ m	
		0-600 mm	9 μ m	

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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	Calibration of Vernier Depth Gauge	0-150 mm	8 μ m	JIS B 7518:1993
		0-200 mm	9 μ m	
		0-300 mm	12 μ m	
	Calibration of Dial Depth Gauge	0-150 mm	8 μ m	
		0-200 mm	9 μ m	
		0-300 mm	12 μ m	
	Calibration of Digital Depth Gauge	0-150 mm	6 μ m	
		0-200 mm	8 μ m	
		0-300 mm	11 μ m	
.24 Feeler gauges	Calibration of Feeler Gauge and Slip Gauges	0.01 - 0.35 mm	1.1 μ m	JIS B 7524:1992
		0.35 - 3 mm	2.6 μ m	
.26 Steel rules and measuring tapes	Calibration of Steel/Metal Rule	0-200 mm	9 μ m	JIS B 7518:1987
		0-300 mm	9 μ m	
		0-600 mm	12 μ m	
		0-1000 mm	16 μ m	
.27 Micrometer setting gauges	Calibration of Setting Rod	25-150 mm	0.9 μ m	BS 870:1959
.28 Other measuring instruments and tools	Calibration of Pin Gauge	up to 12 mm	0.7 μ m	MTR-CMP-021
	Calibration of Indicating Micrometer	0-25 mm	1.2 μ m	JIS B 7520:1981
	Calibration of Microindicator	\pm 0.05mm	0.6 μ m	JIS B 7519:1976
	Calibration of Electrical Comparator (Mu-Checkers)	0.1 μ m & 0.2 μ m	0.1 μ m	JIS B 7536:1982
		0.5 μ m	0.3 μ m	
		1 μ m	0.3 μ m	
		5 μ m	1.3 μ m	
10 μ m	2.5 μ m			
Calibration of Precision Square Master	up to 600 mm	0.7 μ m	MTR-CMP-035	

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

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	Calibration of Digital Microindicator and 0.01mm Microindicator	up to 1 mm	0.8 μ m	MTR-CMP-039
	Calibration of Tooth Thickness Micrometer (Disk type)	up to 100 mm	1.0 μ m	JIS B 7502:1994
	Calibration of Check Master (Step Gauge)	up to 600 mm	0.7 μ m	MTR-CMP-044
	Calibration of Caliper Checker (Step Gauge)	up to 600 mm	0.7 μ m	MTR-CMP-045
	Calibration of Bubble Tube Tester	up to 300 mm	1.4 Arc-sec	MTR-CMP-047
	Calibration of Combination Set	up to 500	as per unit	MTR-CMP-050
	Ultrasonic Flaw Detector/ Thickness Gauger	Horizontal Linearity	0.01 % of scale division	On-site calibration INSCMP 026
		Vertical Linearity	0.01 % of scale division	
5.04 Machine tools				
.01 Geometric features	Calibration of CNC Machine Tools	max of 30 m	$U_{95} = 0.24 + L/800$	On-Site Calibration MTR-CMP-018
.02 Positioning accuracy	Calibration of CNC Machine Tools	max of 30 m	$U_{95} = 0.24 + L/800$	On-Site Calibration MTR-CMP-018
5.05 Surface topography				
.02 Roundness	Measurement of Roundness	per evaluation	per evaluation	MTR-CMP-019
5.07 Length and angle standards				
.04 Gauge blocks and accessories	Calibration of Steel Gauge Block	0.5-10 mm	0.058 μ m	AS 1457-1999 (ISO 3650:1998)
		10-25 mm	0.062 μ m	
		25-50 mm	0.086 μ m	
		50-75 mm	0.116 μ m	
		75-100 mm	0.149 μ m	

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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	Calibration of Ceramic Gauge Block	0.5-10 mm	0.058 μ m	
		10-25 mm	0.062 μ m	
		25-50 mm	0.084 μ m	
		50-75 mm	0.113 μ m	
		75-100 mm	0.144 μ m	
.08 Precision linear scales	Calibration of Standard Glass Scale	0-100 mm	0.7 μ m	JIS B 7541:1973 (Revised 2001)
		0-200 mm	0.8 μ m	
		0-300 mm	0.9 μ m	
5.08 Dimensional Precision Instrument				
.09 Height setting micrometers	Calibration of Height Setting Micrometer (Height Master)	0-300 mm	1.3 μ m	AS 3779-1990 (ISO 7863:1984)
.10 Length measuring machines	Calibration of Universal Measuring Machine	0-400 mm	1.0 μ m	On-Site Calibration MTR-CMP-034
.15 Precision projection apparatus	Calibration of Optical/Profile Projector	up to 200 mm	2.3 μ m or 1.2 arc-min	On-Site Calibration MTR-CMP-017
	Calibration of Toolmaker's Microscope/ Measuring Microscope	up to 200 mm	2.3 μ m or 0.6 arc-min	On-Site Calibration JIS B 7150:1995
.16 Dial gauge calibrators	Calibration of Calibration Tester	0.001x 25 mm	0.6 μ m	MTR-CMP-048
		0.0002 x 5 mm	0.3 μ m	
5.10 Masses				
.01 Determination of mass	Determination of Mass	up to 5 kg	0.001 % of load	INSCMP 085, 086, 097
		above 5 kg to 15 kg	0.008 % of load	
5.11 Weighing devices				
.01 Precision laboratory balances	Precision Laboratory Balances	up to 200 g	0.9 ppm of capacity	On-Site Calibration INSCMP 058
		200 g to 1 kg	1 ppm of capacity	



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

**Instrumentation and Metrology Section
Metals Industry Research and Development Center
MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City**

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.02 Industrial balances	Industrial Balances	up to 100 kg	3 ppm of capacity	On-Site Calibration INSCMP 059, 060, 061, 091
.03 Industrial weighing appliances	Industrial Weighing Appliances	up to 100 kg @ 50 g graduation	0.03 % of capacity	On-Site Calibration INSCMP 059, 060, 061, 091
		@ 100 g graduation	0.06 % of capacity	
		@ 200 g graduation	0.12 % of capacity	
.05 Other weighing devices	Other Weighing Devices	up to 100 kg @ 50 g graduation	0.03 % of capacity	On-Site Calibration INSCMP 059, 060, 061, 091
		@ 100 g graduation	0.06 % of capacity	
		@ 200 g graduation	0.12 % of capacity	
5.20 Pressure and vacuum measuring devices				
.01 Pressure gauges	Pressure Gauges	0 to 16000 psi	0.01 % of reading	On-Site Calibration INSCMP 047, 048, 073, 074, 075
.03 Pressure transducers / transmitter	Pressure Transducers / Transmitter	0 to 500 psi	0.01 % of reading	On-Site Calibration INSCMP 053, 054, 055, 056, 076
		0 to 10000 psi	0.02 % of reading	
.04 Pressure recorders	Pressure Recorders	0 to 16000 psi	0.01% of reading	On-site Calibration INSCMP 047, 048, 073, 074, 075
.05 Mercury manometers	Mercury Manometers	0 to 300 psi	0.01 % of reading	INSCMP 051
.06 Other liquid manometers	Other Liquid Manometers	0 to 300 psi	0.01 % of reading	INSCMP 051
.07 Digital manometers	Digital Manometers	0 to 300 psi	0.01 % of reading	INSCMP 051
.08 Pressure control devices	Pressure Control Devices	0 to 1600 psi	0.3 % of full-scale	On-Site Calibration INSCMP 052, 053, 054, 055, 056
5.21 Pressure gauge testers				
.01 Pneumatic operated piston gauges	Pneumatic Operated Piston Gauges	0 to 300 psi	0.05 % of reading	INSCMP 085

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

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.02 Hydraulic operated piston gauges	Hydraulic Operated Piston Gauges	0 to 10000 psi	0.05 % of reading	INSCMP 088
.03 Pressure calibrators	Pressure Calibrators	0 to 300 psi	0.01 % of reading	INSCMP 051
5.22 Force measuring devices				
.01 Elastic force measuring Devices/ Proving Ring	Elastic Force Measuring Devices/ Proving Ring	up to 500 g	0.5 % of load	On-Site Calibration INSCMP 057, 062, 063
		up to 100 kg	0.012 % of load	
		@ 50 g graduation	0.03 % of load	
		@ 100 g graduation	0.06 % of load	
.03 Force gauges	Force gauges	up to 300 g	0.5 % of load	On-Site Calibration INSCMP 057, 062, 063
		up to 100 kg	0.012 % of load	
.04 Other devices	Other Devices	up to 300 g	0.5 % of load	On-Site Calibration INSCMP 057, 062, 063
		up to 100 kg	0.012 % of load	
		@ 50 g graduation	0.03 % of load	
		@ 100 g graduation	0.06 % of load	
5.24 Torque Measuring Devices				
.01 Torque Wrenches/ Drivers	Torque Wrenches/ Drivers	0 to 1000 kgf-cm	1.7 kgf-cm	INSCMP 099
.02 Torque Transducers/ Analyzers/ Meters	Torque Transducers/ Analyzers/Meters	0 to 10 kgf-cm	0.01 kgf-cm	INSCMP 098
		10 to 400 kgf-cm	0.06 kgf-cm	
		400 to 1000 kgf-cm	0.6 kgf-cm	
5.25 Testing machines				
.02 Compression and universal machines in compression	Calibration of Universal Testing Machine	5-200 Ton	1 % max.	On-Site Calibration ASTM E 4 - 98

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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.04 Rockwell hardness machines	Calibration of Rockwell Hardness/	C - Scale B - Scale	1.1 of scale reading	On-Site Calibration ASTM E 18 - 97a
.06 Rockwell superficial hardness machines	Calibration of Rockwell Superficial Hardness Tester	30N - Scale 30T - Scale	1.1 of scale reading	On-Site Calibration ASTM E 18 - 97a
5.28 Resistors, resistance boxes and potential dividers				
.01 Precision resistor, resistance boxes and conductance boxes	Precision resistors	0.1 m Ω	0.01 %	INSCMP 020
		1 m Ω	0.01 %	
		10 m Ω	0.001 %	
		100 m Ω	0.001 %	
		1 Ω	0.001 %	
		10 Ω	0.001 %	
		100 Ω	0.02 %	
		1 k Ω	0.02 %	
		10 k Ω	0.01 %	
		100 k Ω	0.01 %	
	1 M Ω	0.01 %		
	Resistance boxes	10 m Ω to 1 G Ω	0.01 %	INSCMP 009
	Decade Resistance Boxes	10 m Ω to 1 G Ω	0.01 %	INSCMP 010
.02 Volt ratio boxes and potential dividers	Volt ratio boxes	1 mV to 1000 V	0.001 %	INSCMP 022
	Potential dividers	1 mV to 1000 V	0.001 %	INSCMP 022
.03 DC shunts	DC Shunts	1 mA to 50 A	0.1 %	INSCMP 066
.04 AC shunts	AC Shunts	1 mA to 50 A	0.5 %	INSCMP 067
5.34 Electrical Instrument calibrators				
.01 D.C. voltage	DC voltage calibrator	0 to 1100 V	0.001 %	On-Site Calibration INSCMP 022, 065
.02 A.C. voltage	AC voltage calibrator	0 to 1100 V	0.01 %	On-Site Calibration INSCMP 023, 065

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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.03 D.C. current	DC current calibrator	0 to 100 A	0.01 %	On-Site Calibration INSCMP 024, 065
.04 A.C. current	AC current calibrator	0 to 50 A	0.05 %	On-Site Calibration INSCMP 025, 065
.05 Resistance	Resistance calibrator	0 to 10 G Ω	0.001 %	On-Site Calibration INSCMP100, 065
5.35 Electrical Indicating and recording instruments				
.01 D.C. voltmeters	DC voltmeter	0 to 50 mV	0.010 %	On-Site Calibration INSCMP 014, 065
		51 mV to 1000 V	0.001 %	
.02 A.C. voltmeters	AC voltmeter	0 to 100 mV	0.05 %	On-Site Calibration INSCMP 014, 065
		101 mV to 1000 V	0.007 %	
.03 D.C. ammeters	DC ammeter	0 to 1 mA	0.01 %	On-Site Calibration INSCMP 003, 066
		1.1 mA to 100 mA	0.006 %	
		101 mA to 2 A	0.01 %	
		3 A to 11 A	0.05 %	
		12 A to 50 A	0.08 %	
.04 A.C. ammeters	AC ammeter	0 to 1 mA	0.04 %	On-Site Calibration INSCMP 004, 065
		1.1 mA to 100 mA	0.02 %	
		101 mA to 11 A	0.06 %	
		12 A to 20 A	0.1 %	
		21 A to 50 A	0.5 %	
.05 Wattmeters	Wattmeter	0 to 20 kW	0.1 %	On-Site Calibration INSCMP 016, 065
.08 Power Factor Meter	Power Factor Meter	0.2 to 1.0	1 %	INSCMP 065, 101
.09 Ohmmeters	Ohmmeter	0.1 m Ω	0.6 %	On-Site Calibration INSCMP 008, 065
		1 m Ω	0.08 %	
		10 m Ω	0.06 %	
		100 m Ω	0.006 %	
		1 Ω	0.0001 %	
		10 Ω	0.0015 %	
		100 Ω	0.0015 %	
1 k Ω	0.0002 %			

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

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		10 k Ω	0.001 %	
		100 k Ω	0.001 %	
		1 M Ω	0.002 %	
		10 M Ω	0.004 %	
		100 M Ω	0.01 %	
		1 G Ω to 110 G Ω	0.1 %	
.10 LCR meters	Capacitance meter	0.33 nF to 3.3 nF	2 %	On-site Calibration INSCMP 065, 093
		3.4 nF to 330 nF	0.2 %	
		331 nF to 110 mF	0.1 %	
.13 Graphic recording instruments	Graphic recording instrument			
	@ DC voltage	0 to 50 mV	0.01 %	On-Site Calibration INSCMP 014, 018
		51 mV to 1000 V	0.001 %	
	@ AC voltage	0 to 100 mV	0.05 %	On-Site Calibration INSCMP 014, 018
		101 mV to 1000 V	0.007 %	
	@ DC ammeter	0 to 1 mA	0.01 %	On-Site Calibration INSCMP 003, 018
		1.1 mA to 100 mA	0.006 %	
		101 mA to 2 A	0.01 %	
		3 A to 11 A	0.05 %	
		12 A to 50 A	0.1 %	
	@ AC ammeter	0 to 1 mA	0.04 %	On-Site Calibration INSCMP 004, 018
		1.1 mA to 100 mA	0.02 %	
		101 mA to 11 A	0.06 %	
		12 A to 50 A	0.5 %	
	@ Resistance	0.1 m Ω	0.6 %	On-Site Calibration INSCMP 008, 018
		1 m Ω	0.06 %	
		10 m Ω	0.06 %	
	100 m Ω	0.006 %		
	1 Ω	0.0001 %		
	10 Ω	0.0015 %		
	100 Ω	0.0015 %		
	1 k Ω	0.0002 %		
	10 k Ω	0.001 %		



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

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		100 k Ω	0.001 %	
		1 M Ω	0.002 %	
		10 M Ω	0.004 %	
		100 M Ω	0.01 %	
		1 G Ω to 110 G Ω	0.1 %	
.17 Digital Multimeters/ Analog Multimeters	Digital Multimeters/ Analog Multimeters (up to 6 1/2 digit)			On-Site Calibration INSCMP 017, 018, 065
	@ DC voltage	0 to 50 mV 51 mV to 1000 V	0.01 % 0.001 %	
	@ AC voltage	0 to 100 mV 101 mV to 1000 V	0.05 % 0.007 %	
	@ DC ammeter	0 to 1 mA 1.1 mA to 100 mA 101 mA to 2 A 3 A to 11 A 12 A to 50 A	0.01 % 0.006 % 0.01 % 0.05 % 0.1 %	
	@ AC ammeter	0 to 1 mA 1.1 mA to 100 mA 101 mA to 11 A 12 A to 50 A	0.04 % 0.02 % 0.06 % 0.5 %	
	@ Resistance	0.1 m Ω 1 m Ω 10 m Ω 100 m Ω 1 Ω 10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω	0.6 % 0.06 % 0.06 % 0.006 % 0.0001 % 0.0015 % 0.0015 % 0.0002 % 0.001 % 0.001 % 0.002 % 0.004 %	



ACAL-1-0515-008F

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		100 MΩ	0.01 %	
		1 GΩ to 110 GΩ	0.1 %	
.20 Resistivity meters	Resistivity meters	0 to 110 GΩ	0.1 %	On-Site Calibration INSCMP 065, 083
.21 Clamp meters	Clamp Meters	1 to 10 A	4 %	On-Site Calibration INSCMP 001, 002, 065
		11 to 30 A	2 %	
		31 to 40 A	1.5 %	
		41 to 220 A	1.0 %	
		221 to 500 A	0.5 %	
		501 to 1000 A	0.5 %	
.22 Other instruments	Insulation tester	0 to 10 GΩ	0.1 %	On-Site Calibration INSCMP 007, 065
	Earth resistance tester	0 to 100 MΩ	0.1 %	On-Site Calibration INSCMP 065, 070
	Groundstrap tester	0 to 110 GΩ	0.1 %	On-Site Calibration INSCMP 065, 071
	Surface resistance tester	0 to 110 GΩ	0.1 %	On-Site Calibration INSCMP 083, 065
	Electronic Load (voltage & current output only)	0 to 100 V	0.01 %	On-Site Calibration INSCMP 077, 065
		0 to 50 A	0.1 %	
5.36 Bridges, potentiometers, test sets				
.01 D.C. bridges	DC resistance bridges	0.1 mΩ	0.6 %	On-Site Calibration INSCMP 011, 012, 013, 065
		1 mΩ	0.06 %	
		10 mΩ	0.06 %	
		100 mΩ	0.006 %	
		1 Ω	0.0001 %	
		10 Ω	0.0015 %	
		100 Ω	0.0015 %	
		1 kΩ	0.0002 %	
		10 kΩ	0.001 %	
		100 kΩ	0.001 %	
		1 MΩ	0.002 %	



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

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		10 MΩ	0.004 %	
		100 MΩ	0.01 %	
.02 D.C. potentiometer	DC potentiometer	0 to 1100 V	0.001 %	INSCMP 022, 065
.04 A.C. potentiometer	AC potentiometer	0 to 1100 V	0.01 %	INSCMP 023, 065
.06 Current transformer testing sets	Current transformer testing sets	0 to 50 A	0.5 %	INSCMP 066, 067
.07 Voltage transformer testing sets	Voltage transformer testing sets	0 to 1100 V	0.01 %	INSCMP 084
5.37 Frequency and time measuring instruments and standards				
.01 Frequency meters	Frequency meter	1 Hz to 2 MHz	0.006 %	On-Site Calibration INSCMP 090, 065
.04 Time interval meters	Time Interval Meter	0.1 to 900 sec.	0.06 sec.	On-Site Calibration INSCMP 094
		901 to 1800 sec.	0.6 sec.	
.05 Clocks and watches	Clocks and Watches	0.1 to 900 sec.	0.06 sec.	On-Site Calibration INSCMP 094
		901 to 1800 sec.	0.6 sec.	
5.39 Power supplies				
DC Power Supply	DC Power Supply (Voltage and current output only)	0 to 1100 V	0.001 %	On-Site Calibration INSCMP 022, 024, 065
		0 to 100 A	0.01 %	
5.40 Signal sources				
.01 Frequency Characteristics	Frequency Characteristics	40 Hz to 300 kHz	0.001 %	On-Site Calibration INSCMP 102, 065
5.42 High voltage equipment				
.01 Direct voltage tests	Direct Voltage Tests (High Voltage Tester)	0 to 10 kV DC	0.1 %	On-Site Calibration INSCMP 006, 065
	Direct Voltage Tests (High Voltage Meter)	0 to 10 kV DC	0.1 %	On-Site Calibration INSCMP 005, 065
.02 Alternating voltage tests	Alternating Voltage Tests (High Voltage Tester)	0 to 10 kV AC	0.1 %	On-Site Calibration INSCMP 006, 065

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

Instrumentation and Metrology Section Metals Industry Research and Development Center MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City

Products/ Class of Test	Measured quantities/ instrument	Range to be calibrated	Calibration and Measurement Capability (CMC)*	Standard Method/ Reference Standard
	Alternating Voltage Tests (High Voltage Meter)	0 to 10 kV AC	0.3 %	On-Site Calibration INSCMP 005, 065
5.44 Calibration of temperature measurement equipment				
.01 Rare metal thermocouples	Rare Metal Thermocouples	-30 to 600 °C	0.1 °C	INSCMP 069
		600 to 800 °C	1 °C	
		600 to 1000 °C	2 °C	
.02 Base metal thermocouples	Base Metal Thermocouples	-30 to 250 °C	0.1 °C	INSCMP 038, 039, 040
		250 to 600 °C	1 °C	
		600° to 1000 °C	2 °C	
.04 Metallic resistance thermometers	Metallic Resistance Thermometers	-30 to 250 °C	0.1 °C	INSCMP 037
		250 to 600 °C	1 °C	
.06 Liquid-in-glass thermometers	Liquid-in-Glass Thermometers	-30 to 250 °C	0.1 °C	INSCMP 035, 042, 043
.09 Vapour pressure thermometers	Vapour Pressure Thermometers	-30 to 250 °C	0.1 °C	INSCMP 041
		250 to 500 °C	1 °C	
.10 Filled metal systems	Filled Metal Systems	-30 to 250 °C	0.1 °C	INSCMP 041
		250 to 500 °C	1 °C	
.11 Bimetallic systems	Bimetallic Systems	-30 to 250 °C	0.1 °C	INSCMP 041, 046
		250 to 500 °C	1 °C	
.13 Digital temperature indicator systems	Digital Temperature Indicator Systems	-30 to 250 °C	0.1 °C	INSCMP 038, 039, 040
		250 to 500 °C	1 °C	
		600 to 1000 °C	2 °C	
5.45 Calibration of ancillary temperature measuring instruments				
.01 Portable potentiometers	Portable potentiometers	0 to 1100 V	0.001 %	INSCMP 019, 022, 027, 065
.02 Digital voltmeters	Digital Voltmeters	0 to 50 mV	0.01 %	On-Site Calibration INSCMP 014, 018, 065
		51 to 1000 V	0.001 %	
.03 Resistance bridges	Resistance Bridges	0.1 mΩ	0.60 %	INSCMP 008, 088, 065
		1 mΩ	0.06 %	

ACAL-1-0515-008F

SCOPE OF ACCREDITATION

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Products/ Class of Test	Measured quantities/ instrument	Range to be calibrated	Calibration and Measurement Capability (CMC)*	Standard Method/ Reference Standard
		10 mΩ	0.06 %	
		100 mΩ	0.006 %	
		1 Ω	0.0001 %	
		10 Ω	0.0015 %	
		100 Ω	0.0002 %	
		1 kΩ	0.001 %	
		10 kΩ	0.001 %	
.04 Indicators, recorders and controllers	Indicators, Recorders and Controllers	-200 to 1800 °C	0.2 °C	On-Site Calibration INSCMP 028, 029, 030, 031, 032, 033, 065, 068, 087
.05 Temperature Transmitters (T/C and RTD)	Temperature Transmitters (T/C and RTD)	-200 to 1800 °C	0.2 °C	On-Site Calibration INSCMP 065, 072
.08 Other equipment	Other Equipment	-200 to 1800 °C	0.2 °C	On-Site Calibration INSCMP 028, 029, 030, 031, 032, 033, 065, 068, 087
5.46 Calibration of clinical thermometers				
.01 Liquid-in-glass	Liquid-in-Glass thermometers	35 to 42 °C	0.1 °C	INSCMP 043
.03 Electronic	Electronic thermometer	35 to 42 °C	0.1 °C	INSCMP 038, 039, 040
5.47 Testing of temperature controlled enclosures				
.01 Ovens, furnaces and baths	Ovens, Furnaces and Baths	-30 to 800 °C	0.7 °C	On-Site Calibration INSCMP 044, 045, 089, 095
.02 Incubators	Incubators	0 to 200 °C	0.7 °C	On-Site Calibration INSCMP 044
.03 Autoclaves and sterilizing ovens	Autoclaves and Sterilizing Ovens	0 to 200 °C	0.7 °C	On-Site Calibration INSCMP 044
.04 Industrial freezers	Industrial Freezers	- 30 to ambient	0.7 °C	On-Site Calibration INSCMP 044



ACAL-1-0515-008F

SCOPE OF ACCREDITATION

**Instrumentation and Metrology Section
Metals Industry Research and Development Center
MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City**

Products/ Class of Test	Measured quantities/ instrument	Range to be calibrated	Calibration and Measurement Capability (CMC)*	Standard Method/ Reference Standard
.05 Chambers	Chambers	-30 to 800 °C	0.7 °C	On-Site Calibration INSCMP 044, 045, 089, 095
.06 Other enclosures	Other Enclosures	-30 to 800 °C	0.7 °C	On-Site Calibration INSCMP 044, 045, 089, 095
5.48 Hygrometry				
.01 Calibration of humidity measuring devices	Calibration of Humidity Measuring Devices	20 to 26 °C	0.3 °C	INSCMP 034
		40 to 70 % R.H.	2.0 % R.H.	

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

Legend to Reference Standards:

- JIS - Japanese Industrial Standard
- BS - British Standard
- AS - Australian Standard
- ISO - International Organization for Standardization

This Scope of Accreditation is valid until 06 April 2020 subject to continuing conformity with the criteria and PAB conditions for accreditation.


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Metals Industry Research and Development Center
MIRDC Compound, Gen. Santos Ave., Bicutan, Taguig City**

Name	Program/Class of Test Calibration
Rommel N. Corona Eduardo V. Diasanta, Jr.	5.01 Limit Gauges .01 Plain plug gauges
	5.02 Jigs, fixtures, cutting tools and components .01 Jigs and fixture .02 Cutting tools .03 Components
	5.03 Engineering metrology equipment .01 Surface plates .03 Straightedges .04 Squares .06 Bevel protractors .08 Precision spirit levels .17 Micrometer heads .18 internal micrometer .19 Micrometer height and depth gauges .20 Electronic indicators, dial gauges and test indicators .21 Bore gauges .22 Electronic/vernier/dial calipers .23 Electronic and vernier height and depth gauges .24 Feeler gauges .26 Steel rules and measuring tapes .27 Micrometer setting gauges .28 Other measuring instruments and tools (except Ultrasonic Flaw Detector/ Thickness Gauger)
Charles Edward L. Alviar	5.03 Engineering metrology equipment .18 Internal micrometer .20 Electronic indicators, dial gauges and test indicators .22 Electronic/vernier/dial calipers .23 Electronic and vernier height and depth gauges



ACAL-2-0515-008F

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Name	Program/Class of Test Calibration
	.28 Other measuring instruments and tools (Calibration of Tooth Thickness Micrometer, Disk type only)
Joel B. Bañares Myro Jon M. Baroña	5.03 Engineering metrology equipment .28 Other measuring instruments and tools (Ultrasonic Flaw Detector/ Thickness Gauger only)
Rommel N. Coroña Eduardo V. Diasanta, Jr.	5.04 Machine tools .01 Geometric features .02 Positioning accuracy
Rommel N. Coroña Eduardo V. Diasanta, Jr.	5.05 Surface topography .02 Roundness
	5.07 Length and angle standards .04 Gauge blocks and accessories .08 Precision linear scales
	5.08 Dimensional Precision instrument .09 Height setting micrometers .10 Length measuring machine .15 Precision projection apparatus .16 Dial gauge calibrators
Joel B. Bañares, Jr. Myro Jon M. Baroña	5.10 Masses .01 Determination of mass
Joel B. Bañares, Jr. Myro Jon M. Baroña Arlene G. Estacio	5.11 Weighing devices .01 Precision laboratory balances .02 Industrial balances .03 Industrial weighing appliances .05 Other weighing devices
	5.20 Pressure and vacuum measuring devices .01 Pressure gauges .03 Pressure transducers/transmitter .04 Pressure recorder



ACAL-2-0515-008F

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Name	Program/Class of Test Calibration
	.05 Mercury manometers .06 Other liquid manometers .07 Digital manometers .08 Pressure control devices
Joel B. Bañares, Jr. Myro Jon M. Baroña Arlene G. Estacio	5.21 Pressure gauge testers .01 Pneumatic operated piston gauges .02 Hydraulic operated piston gauges .03 Pressure calibrators 5.22 Force measuring devices .01 Elastic force measuring devices / Proving ring .03 Force gauges .04 Other devices
Joel B. Bañares, Jr. Myro Jon M. Baroña	5.24 Torque Measuring Devices .01 Torque Wrenches / Drivers .02 Torque Transducers/ Analyzers
Rommel N. Coroña Eduardo V. Diasanta, Jr.	5.25 Testing machines .02 Compression and universal machines in compression .04 Rockwell hardness machines .06 Rockwell superficial hardness machines
Arlene G. Estacio	5.28 Resistors, resistance boxes and potential dividers .01 Precision resistor, resistance boxes
Paul Dannel P. Aquino Luisito N. Alcantara	5.28 Resistors, resistance boxes and potential dividers .01 Precision resistor, resistance boxes .02 Volt ratio boxes and potential dividers .03 D.C. shunts .04 A.C. shunts 5.34 Electrical Instrument calibrators .01 D.C. voltage .02 A.C. voltage .03 D.C. current



ACAL-2-0515-008F

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Name	Program/Class of Test Calibration
	.04 A.C. current .05 Resistance
Paul Dannel P. Aquino Luisito N. Alcantara	5.35 Electrical Indicating and recording instruments .01 D.C. voltmeters .02 A.C. voltmeters .03 D.C ammeters .04 A.C. ammeters .05 Wattmeters .08 Power Factor Meter .09 Ohmmeters .10 LCR Meters (Capacitance Meter) .13 Graphic recording instruments .17 Digital Multimeters/ Analog Multimeters .20 Resistivity meters .21 Clamp meters .22 Other instruments 5.36 Bridges, potentiometers, test sets .01 D.C. bridges .02 D.C. potentiometer .04 A.C. potentiometer .06 Current transformer testing sets .07 Voltage transformer testing sets 5.37 Frequency and time measuring instrument and standards .01 Frequency meter .04 Time interval meter .05 Clocks and watches 5.39 Power Supplies 5.40 Signal sources .01 Frequency Characteristics



ACAL-2-0515-008F

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Name	Program/Class of Test Calibration
Paul Dannel P. Aquino Luisito N. Alcantara	5.42 High voltage equipment .01 Direct voltage tests .02 Alternating voltage tests
Arlene G. Estacio Christine P. Avelino	5.44 Calibration of temperature measurement equipment .01 Rare metal thermocouples .02 Base metal thermocouples .04 Metallic resistance thermometers .06 Liquid-in-glass thermometers .09 Vapour pressure thermometers .10 Filled metal systems .11 Bimetallic systems .13 Digital temperature indicator systems
Paul Dannel P. Aquino Luisito N. Alcantara Arlene G. Estacio	5.45 Calibration of ancillary temperature measuring instruments .01 Portable potentiometers .02 Digital voltmeters .03 Resistance bridges .04 Indicators, recorders and controllers .05 Transmitters (T/C and RTD) .08 Other equipment
Arlene G. Estacio Christine P. Avelino	5.46 Calibration of clinical thermometers .01 Liquid-in-glass .03 Electronic
	5.47 Testing of temperature controlled enclosures .01 Ovens, furnaces and baths .02 Incubators .03 Autoclaves and sterilizing ovens .04 Industrial freezers .05 Chambers .06 Other enclosures



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Name	Program/Class of Test Calibration
Arlene G. Estacio Christine P. Avelino	5.48 Hygrometry .01 Calibration of humidity measuring devices

The List of PAB Approved Signatories is valid until 06 April 2020 subject to continuing conformity with the criteria and PAB conditions for accreditation.


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