International Accreditation Service

CERTIFICATE OF ACCREDITATION

This is to signify that

AMCAL LABORATORY

22048 SHERMAN WAY, SUITE 110
CANOGA PARK, CALIFORNIA 91303

Calibration Laboratory CL-137

has met the requirements of the IAS Accreditation Criteria for Calibration Laboratories (AC204), has demonstrated compliance with the ANS/ISO/IEC Standard 17025:2005, *General requirements for the competence of testing and calibration laboratories*, and has been accredited commencing November 9, 2011, for the calibration discipline(s) listed in the approved scope of accreditation. The laboratory meets IAS program requirements in the field of calibration.

Patrick V. McCullen
Vice President

C. P. Ramani, P.E.
President

(see attached scope of accreditation for fields of calibration and accredited calibration methods)

ilac-MRA

IAS ACCREDITED

Print Date: 11/29/2011

11-04577

International Accreditation Service

SCOPE OF ACCREDITATION

AMCAL Laboratory CL-137

AMCAL Laboratory
22048 Sherman Way, Suite 110
Canoga Park, CA 91303

Hillary T. Dinh, Ph.D.
President
818-340-6699

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY[1] (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
Dimensional			
Gage Blocks	Up to 1”	95µ”	Comparison using Grade 00 Master
	>1 to 2”	105µ”	Gage Blocks and Supermicrometer
	>2 to 4”	135µ”	
	>4 to 8”	500µ”	Gage Blocks
	>8 to 10”	600µ”	Gage Blocks
Digital Calipers	Up to 6”/0.0005”	598µ”	Use of Grade 00 Master Gage
Digital Micrometer	Up to 1”/0.00005”	150µ”	Use of Grade 00 Master Gage Blocks
Digital Indicators	Up to 1”/0.00005”	150µ”	Use of Grade 00 Master Gage Blocks
Surface Plate Repeatability	Up to 72” Long x 60” Wide	35µ”	Use of Repeat-O-Meter

November 9, 2011
Commencement Date

ACCREDITED

C. P. Ramani, P.E.
President

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MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY[1] (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
Dimensional (continued)			
Vernier Height Gage	Up to 12”/0.0005”	578µ”	Use of Grade 00 Master Gage Blocks and 8 Gage Blocks
Mechanical			
CMM Volumetric Length	Up to 48”	100µ”	Use of Grade 00 Gage Blocks
Pressure	Up to 10,000psi	0.3% of Reading	Use of Reference Gage and High Pressure Pump
Torque	Up to 50 lb in	1% of Reading	Torque Transducer and Display
Wrenches/Screwdrivers	Up to 250 lb ft	1% of Reading	Torque Transducer and Display
	Up to 750 lb ft	1% of Reading	Torque Transducer and Display
Electrical – DC/LF			
DC Voltage - Source	Up to 1000V	0.009 % rdg + 0.002 % range + 10 µV	Fluke 5100B
	Up to 2A	0.06% rdg + 0.05% rng + 0.01 µA	Fluke 5100B

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MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY[1] (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
Resistance – Source	Up to 10MΩ	0.4% Reading	Fluke 5100B
AC Voltage - Source	(0 to 1000V) 50Hz to 1kHz	0.16% rdg + 0.15% rng + 50 µV	Fluke 5100B
	(0 to 110V) 1kHz to 20kHz	0.17% rdg + 0.15% rng + 50 µV	
	(0 to 19.9999V) 20kHz to 50kHz	0.17% rdg + 0.15% rng + 50 µV	
	Up to 2A	0.6% rdg + 0.6% rng + 2 µA	Fluke 5100B
Electrical – DC/LF DC Voltage – Measure	Up to 1000V	0.006 U + 3 uV	6 ½ Digit Multimeter
DC Current – Measure	10 µA to 100 mA 100 mA to 1 A 1 A to 3 A	0.06% Rdg + 2 µA 0.12% Rdg 0.15% Rdg	6 ½ Digit Multimeter

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MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY[1] (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
Electrical – DC/LF			
AC Voltage – Measure	10 mV to 1 kV 10 Hz to 20 kHz	0.0 % Rdg + 50 uV	6 ½ Digit Multimeter
	10 mV to 1 kV 20 kHz to 50 kHz	0.14% Rdg + 50 uV	
	10 mV to 750 V 50 kHz to 100 kHz	0.7% Rdg + 80 uV	
AC Current – Measure	10 mA to 3 A 50 Hz to 1 kHz	0.18% Rdg + 600 µ	6 ½ Digit Multimeter
Resistance – Measure	100 Ω to 1 MΩ 10 MΩ 100 MΩ	0.012% Rdg + 5 mΩ 0.05% Rdg 1% Rdg	6 ½ Digit Multimeter

[1]"Calibration Measurement Capability" is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or of nearly ideal measuring instruments. Calibration Measurement Capabilities are expressed as uncertainties at approximately the 95% level of confidence, usually using a coverage factor of k=2. The measurement uncertainty of a specific calibration performed by the laboratory may be greater than the least uncertainty due to the behavior of the customer's device, to the environment (if the calibration is performed in the field), and to influences from the circumstances of the specific calibration.

November 9, 2011
Commencement Date

ACCREDITED

C. P. Ramani, P.E.
President

Print Date: 11/29/2011