

International Accreditation Service

CERTIFICATE OF ACCREDITATION

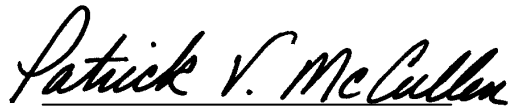
This is to signify that

CAL-CERT COMPANY

6709 SOUTHEAST LAKE ROAD
MILWAUKIE, OREGON 97222

Calibration Laboratory CL-108

has demonstrated compliance with the ANS/ISO/IEC Standard 17025:2005, *General criteria for the competence of testing and calibration laboratories*, and has been accredited commencing September 24, 2010, and expiring September 23, 2012, for the calibration discipline(s) listed in the approved scope of accreditation. The laboratory meets requirements of the 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 testing and accredited test methods)

Print Date: 09/24/2010

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

Page 1 of 15
IAS is a subsidiary of the
International Code Council®



International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

Cal-Cert Company
 6709 SE Lake Rd
 Milwaukie, OR 97222

Marshall Doyle
 President
 (503) 654-9620

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Dimensional</i>			
Length Extensimeters Caliper	0-1 inch 0-12 inches/0.001" >12 to 24"/0.001"	579 μin 1.74 milli-in 3.48 milli-in	CP-007, Gage blocks QF-021, Gage blocks QF-033, Gage blocks
Micrometers Dial indicators Displacement Measurement	0-1 inch/0.00005" 0 to 6"/0.0005" 0 to 24 in	483 μin 3.47 milli-in 3.61 milli-in	CP-010, Gage blocks QF-026 QF-034 ASTM E2309

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 2 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Thermal</i> Thermometer, oven	0°C to 600°C	1.2°C	Use of RTD, procedure CP-011, CP-012
Thermocouple (J, K)	-328°F to 2400°F	0.41°F	Fluke 50D Thermometer, Procedure CP-013
Relative Humidity	20 to 95%	3%	CP-031, Model 10-RH-10 Digital Hygrometer

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 3 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical</i> Pressure gages and transducers	0 to 10,000 psi	0.745 psi	Use of pressure transducer and dead weight tester, procedure CP-003
Pressure gages - Nitrogen	0 to 6,000 psi	3 psi	CP-003, Pressure Transducer
Vacuum	0 to 30 inches Hg	0.753 inches Hg	CP-005, Manometer
Force – Test Machines Compression Tension	0 to 1,000,000 lbf 0 to 200,000 lbf	0.25% of reading 0.25% of reading	CP-001, load cells, ASTM E 4

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 4 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council[®].

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i>			
Force – Load Cells Compression	0 to 600,000 lbf	0.02% of reading	CP-030, Master Load Cell, Set the force, ASTM E 74
Tension	0 to 100,000 lbf		
Scales and balances	0 to 50 kg 0 to 300 lbs	See note	CP-002, Class 1 (gram), Class F (pound)
Torque wrenches	0 to 1000 lb ft	0.25% of reading	CP-006, torque transducer
Mold verification (including proctor molds)	2.0 ft-lbf/ft ³ rd	0.7%	ASTM D 698, verification of volume and rammer using caliper, thermometer, balance

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 5 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Rockwell Hardness	HA Scale HRB Scale HRC Scale HRE Scale HRF Scale HR15N Scale HR30N Scale HR45N Scale HR15T Scale HR30T Scale HR45T Scale	0.813 HRA 1.6 HBC 0.975 HRC 1.94 HRE 1.6 HRF 0.813 HR15N 1.134 HR30N 0.813 HR45N 1.299 HR15T 1.299 HR30T 2.178 HR45T	QF-23-7, Rockwell Hardness blocks QF-23-11, Rockwell Hardness blocks QF-23-1, Rockwell Hardness blocks QF-23-8, Rockwell Hardness blocks QF-23-9, Rockwell Hardness blocks QF-23-10, Rockwell Hardness blocks QF-23-3, Rockwell Hardness blocks QF-23-5, Rockwell Hardness blocks QF-23-2, Rockwell Hardness blocks QF-23-4, Rockwell Hardness blocks QF-23-6, Rockwell Hardness blocks
Brinell Hardness	313 HBW	1.8 HBW	CP-014, Brinell Hardness block

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 6 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the
International Code Council®

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Electrical – DC/LF</i> Timer calibration	Up to 24 hours	1.2 seconds	CP-032, VWR bench Timer
DC Voltage – Source	0 to 329.9999 mV 330mV to 3.299999V 3.3 to 32.99999V 33 to 329.9999V 100V to 1020V	(% Output plus μ V) (.006 + 3) (.005 + 5) (.005 + 50) (.0055 + 500) (.0055 + 1500)	Fluke 5500A

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 7 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council[®].

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Electrical – DC/LF(continued)</i> DC Current – Source	0 to 3.29999 mA 3.3 mA to 32.9999 mA 33 mA to 329.999 mA 330mA to 2.19999 A 2.2 A to 11 A	(% Output plus μ A) (0.013 + 0.05 μ A) (0.01 + 0.25 μ A) (0.01 + 3.3 μ A) (0.03 + 44 μ A) (0.06 + 330 μ A)	Fluke 5500A
AC Voltage – Source	1.0 to 32.99 mV @10 to 45 Hz @45 Hz to 10 kHz @10 to 20 kHz @20 to 50 kHz @50 to 100 kHz @100 to 500 kHz	(0.35% + 20mV) (0.15% + 20mV) (0.2% + 20mV) (0.25% + 20mV) (0.35% + 33 mV) (1% + 60mV)	Fluke 5500A

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 8 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
AC Voltage – Source (continued)	33 to 329.999 mV @10 to 45 Hz @45 Hz to 10 kHz @10 to 20 kHz @20 to 50 kHz @50 to 100 kHz @100 to 500 kHz 0.33 to 3.29999 V @10 to 45 Hz @45 Hz to 10 kHz @10 to 20 kHz @20 to 50 kHz @50 to 100 kHz @100 to 500 kHz	(0.25% + 50mV) (0.05% + 20□V) (0.1% + 20□V) (0.16% + 40□V) (0.24% + 170□V) (0.7% + 330mV) (0.15% + 250mV) (0.03% + 60mV) (0.08% + 60mV) (0.14% + 300mV) (0.24% + 1700vV) (0.5% + 3300mV)	Fluke 5500A

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 9 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
AC Voltage – Source (continued)	3.3 to 32.9999 V @10 to 45 Hz @45 Hz to 10 kHz @10 to 20 kHz @20 to 50 kHz @50 to 100 kHz 33 to 329.999 V @45 Hz to 1 kHz @1 to 10 kHz @10 to 20 kHz 330 to 1000 V @45 Hz to 1 kHz @1 to 5 kHz @5 to 10 kHz	(0.15% + 2500mV) (0.04% + 600mV) (0.08% + 2600mV) (0.19% + 5000mV) (0.24% + 17000mV) (0.05% + 6.6mV) (0.08% + 15mV) (0.09% + 33mV) (0.05% + 80mV) (0.20% + 100mV) (0.20% + 500mV)	Fluke 5500A

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 10 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the International Code Council®.

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
AC Current – Source	0.029 to 0.32999 mA @ 10 to 20 Hz @ 20 to 45 Hz @ 45 Hz to 1 kHz @ 1 to 5 kHz @ 5 to 10 kHz 0.33 to 3.2999 mA @ 10 to 20 Hz @ 20 to 45 Hz @ 45 Hz to 1 kHz @ 1 to 5 kHz @ 5 to 10 kHz	(0.25% + 0.15mA) (0.125% + 0.15mA) (0.125% + 0.25mA) (0.4% + 0.15mA) (1.25% + 0.15mA) (0.2% + 0.3mA) (0.1% + 0.3mA) (0.1% + 0.3mA) (0.2% + 0.3mA) (0.6% + 0.3mA)	Fluke 5500A

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 11 of 15



IAS is a subsidiary of the International Code Council®.

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
AC Current – Source (continued)	3.3 to 32.999 mA @10 to 20 Hz @20 to 45 Hz @45 Hz to 1 kHz @1 to 5 kHz @5 to 10 kHz 33 to 329.99 mA @10 to 20 Hz @20 to 45 Hz @45 Hz to 1 kHz @1 to 5 kHz @5 to 10 kHz	(0.2% + 3mA) (0.1% + 3mA) (0.09% + 3mA) (0.2% + 3mA) (0.6% + 3mA) (0.2% to 30mA) (0.1% + 30mA) (0.09% + 30mA) (0.2% + 30mA) (0.6% + 30mA)	Fluke 5500A

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 12 of 15



IAS is a subsidiary of the
International Code Council™.

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
AC Current – Source (continued)	0.33 to 2.19999 A @10 to 20 Hz @45 Hz to 1 kHz @1 to 5 kHz 2.2 to 11 A @45 to 65 Hz @65 to 500 Hz @500 Hz to 1 kHz	(0.2% + 300mA) (0.1% + 300mA) (0.75% + 300mA) (0.06% + 2000mA) (0.10% + 2000mA) (0.33% + 2000mA)	Fluke 5500A

September 24, 2010
 Commencement Date

Print Date: 09/24/2010



C. P. Ramani
 C. P. Ramani, P.E.
 President

Page 13 of 15



IAS is a subsidiary of the International Code Council®.

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

International Accreditation Service

SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

MEASUREMENT AREA	RANGE & RESOLUTION	BEST MEASUREMENT CAPABILITY ¹ (BMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
Resistance - Generate	0 to 10.99 Ω 11 to 32.999 Ω 33 to 109.999 Ω 110 to 329.999 Ω 330 to 1.09999 kΩ 1.1 to 3.29999 kΩ 3.3 to 10.9999 kΩ 11 to 32.9999 kΩ 33 to 109.999 kΩ 110 to 329.999 kΩ 330 kohms to 1.09999 MΩ 1.1 to 3.29999 MΩ 3.3 to 10.9999 MΩ 11 to 32.9999 MΩ 33 to 109.999 MΩ 110 to 330 MΩ	(0.012% + 0.008 Ω) (0.012% + 0.015 Ω) (0.009% + 0.015 Ω) (0.009% + 0.015 Ω) (0.009% + 0.06 Ω) (0.009% + 0.06 Ω) (0.009% + 0.6 Ω) (0.009% + 0.6 Ω) (0.011% + 6 Ω) (0.012% + 6 Ω) (0.015% + 55 Ω) (0.015% + 55 Ω) (0.06% + 550 Ω) (0.1% + 550 Ω) (0.5% + 5.5 kΩ) (0.5% + 16.5 kΩ)	Fluke 5500A

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 14 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the
International Code Council™

International Accreditation Service
SCOPE OF ACCREDITATION

Cal-Cert Company CL-108

¹ "Best 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. Best 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.

September 24, 2010
Commencement Date

Print Date: 09/24/2010



C. P. Ramani
C. P. Ramani, P.E.
President

Page 15 of 15



This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

IAS is a subsidiary of the
International Code Council™