

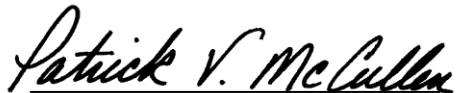
*This is to signify that*

**A-A ENTERPRISES**

12421 CHARLOMA DRIVE  
TUSTIN, CALIFORNIA 92780

Calibration Laboratory CL-106  
(Revised August 23, 2011)

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 criteria for the competence of testing and calibration laboratories*, and has been accredited commencing February 10, 2009, 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)*

## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

A-A Enterprises  
12421 Charloma Drive  
Tustin, CA 92780

Alice M. Haines  
Quality Assurance Manager  
(714) 730-7726

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical</i> Force - Compression	0 to 500 lbf >500 to 20,000 lbf >20,000 to 200,000 lbf >200,000 to 850,000 lbf	0.18% of Reading 0.18% of Reading 0.22% of Reading 0.25% of Reading	ASTM E 4, load cells, procedure UTM-04, Follow the force method
Force – Tension	0 to 20,000 lbf >20,000 to 250,000 lbf	0.1% of Reading 0.3% of Reading	ASTM E 4, load cells, procedure UTM-04, Follow the force method
Force – Compression Load cells	0-750,000 lbf	0.12% of Reading	ASTM E 74 Procedure C LC Master Load Cells

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 2 of 9

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


## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Force – Tension Load Cells	0-750,000 lbf	0.12% of Reading	ASTM E 74 Procedure C LC Master Load Cells
Dynamic Force	0-225,000 lbf	0.1% of Reading	ASTM E 467 Procedure C DY
Machine and specimen alignment	5,000 lbf 12,000 lbf 50,000 lbf	1.50% Bending 1.95% Bending 2.10% Bending	MC 1200 data acquisition system ASTM E 1012, NASM 1312 GE S400 alignment bars
Skidmore	0-225,000 lbf	1% of indicated reading	ASTM E 4 Procedure C skid
Stress Jacks/cable stretcher	0-750,000 lbf	1% of indicated reading	ASTM E 4 Procedure C jacks

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 3 of 9

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

## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Crosshead speed	Up to 40 in per min	0.005 in per 0.2 min	ASTM E 4 Stopwatch Dial indicator, Procedure C speed
Load Pacer Strain Rate	100% of capacity up to 0.5 inches	0.001 in per 0.12 min	ASTM E 4 Stopwatch Dial indicator, Procedure C Pacer
Pressure transducers, gauges	Up to 5,000 psi	0.5% Indicated Value	PSI gauge, Procedure C PSI
Durometer Type A B O	0-100 points (56.08 – 820.87 g)	2 points	Electronic Balance
Recorders: Load Axis Strain Axis	Capacity of machine Up to 1"	0.5% 0.001"	ASTM E 4 Master Load Cells ASTM E 83 Calibrator

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 4 of 9

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


## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Extensometer, compressometer, deflectometer	Up to 2"	0.0005"	ASTM E 83 Procedure C Ext
Calipers/micrometer	Up to 6"/0.001" >6 to 24"/0.0005	0.0008" 0.001"	Gage Blocks Procedure CDI
Dial Indicators	0-1"/0.001" 0-4"/0.0001"	0.0008" 0.0008"	Gage Blocks Procedure CDI CDI Dial Indicator
Scale and Balance	Up to 1000 lb Up to 2 kg	See Note	Class S1, Class C Stainless Steel Weights

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 5 of 9

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

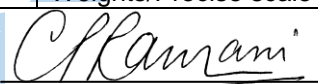
## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Hardness-Rockwell	"HRA" Scale "HRB" Scale "HRC" Scale "HR 15N" Scale "HR 30N" Scale "HR 45 N" Scale "HR 30 TW" Scale	1.1 HRA 1.1 HRB 1.1 HRC 1.1 HR 15N 1.1 HR 30 N 1.1 HR 45 N 1.1 HR 30 TW	Indirect Verification ASTM E 18
Brinell Hardness	307	1.5 HBW	ASTM E 10, Direct verification of force
Charpy Impact Tester	Up to 400J	6%	ASTM E 23, Procedure C. Impact
Mass Weights	.1g–2 kg 0.5–100 lbs	0.1g 0.01 lb	NIST Handbook 44 using Weights/Precise scale

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 6 of 9

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

## International Accreditation Service

# SCOPE OF ACCREDITATION


AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Plastometer/Melt Indexer Length Diameter Weight  Truck and Aircraft Weighting  Torque Wrench	Up to 1000°C Up to 0.4" Up to 0.4" Up to 10kg  0-50,000 lbs.  4-150 in/oz 4-1200 in/lbs 10-1000 ft/lbs 4X, 14X, 18X	2°C 0.0008" 0.0008" See NOTE  0.5% IV  2% 2% 2% 2%	ASTM D 1238 Procedure C Plast     ASTM E4 Master Load Cells Procedure C.AWS  ASME B107-14 Torq system 20-100% of wrench  Procedure C TW

February 10, 2009  


---

 Commencement Date

  
 C. P. Ramani, P.E.  
 President

Print Date: 08/23/2011

Page 7 of 9

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


## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

MEASUREMENT AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY <sup>1</sup> (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
<i>Mechanical (continued)</i> Electronic Torq Instrument	To 5000 lb	Clockwise/counter-clockwise 1%	ASME B 107-28 Weights
Torque Transducer	To 5000 lb	1%	
Torq Analyzer	To 5000 lb	1%	
Torq Calibrator	To 5000 lb	Clockwise/counter-clockwise 1%	ASME B 107-28 Weights
Torq Systems	To 5000 lb	1%	
Reaction Torq Sensor	To 5000 lb	1%	
Tachometer	0-3400 rpm	±2 rpm + 1 digit	Procedure C Tach
LVDT	Up to 6 inches	0.0008"	Gage blocks Height gauge Procedure C.LVDT
	>6 to 20 inches	0.001"	

February 10, 2009  
Commencement Date

  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 8 of 9

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

## International Accreditation Service

# SCOPE OF ACCREDITATION

AA-Enterprises CL-106  
(Revised August 23, 2011)

<sup>1</sup> “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.

**NOTE:** Calibration parameters are performed primarily on-site at customer locations. The uncertainty of scale/balance calibration is highly dependent on local conditions, such as scale resolution and sensitivity, scale cleanliness, local gravity, temperature and humidity, dust, vibration, etc.; therefore, any statement of uncertainty is misleading. The class of the best weights used by the laboratory is shown in the Technique column. Use of weights in combination, whether in the same class or different classes, will increase measurement uncertainty resulting from the additive effect of weight tolerances, as defined in ASTM E 617.

February 10, 2009  
Commencement Date

The background of the page features a large, light blue watermark of the International Accreditation Service (IAS) logo, which consists of the letters 'IAS' in a bold, sans-serif font, with a stylized globe or grid pattern behind them. The letters 'TM' are positioned to the right of the 'S'.  
*C. P. Ramani*  
C. P. Ramani, P.E.  
President

Print Date: 08/23/2011

Page 9 of 9

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