

# **BAGAN**

*Richard J. Bagan, Inc.*



## ***Laboratory Services***



## ***On-Site Services***

***Single Source Calibration***

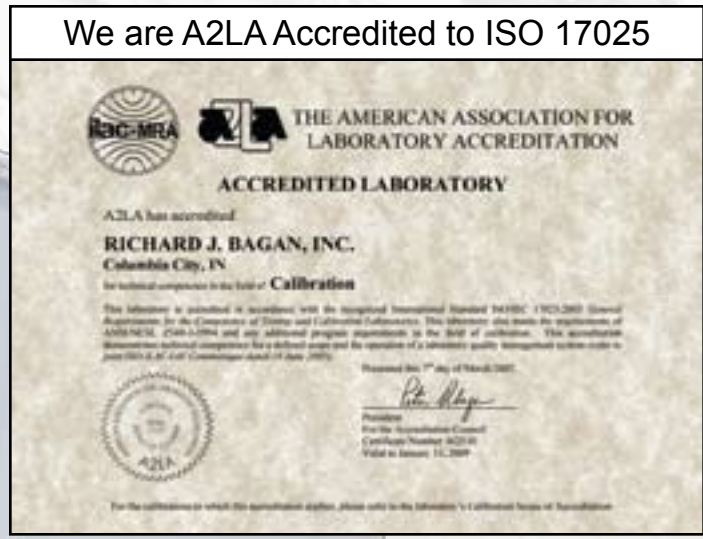
## Total Calibration Management

Managing inspection, measuring, and test equipment (IM & TE) is important for maintaining high standards of quality. By partnering with Bagan, companies reduce the overhead costs of in-house calibration laboratories, while enjoying the benefits of having experienced field technicians and a fully capable ISO 9001:2000 and A2LA accredited calibration laboratory for all facilities.

## Our Single Source Partners Enjoy Bagan Ensuring the Following:

- Maintaining accredited calibration status on all equipment
- Performing all calibrations on schedule
- Seeing realtime status of all in-lab equipment
- Reviewing equipment calibration history
- Downloading printable official certificates of calibration
- Scheduling equipment maintenance online
- Maintaining reverse traceability on all calibrated items
- Reviewing future calibration schedules
- Receiving advanced-user access to BaganTrack™

Item #	Qty	Manufacturer	Model/Description	Location	Calibration Due	Calibration Status	Calibration Date	Calibration By
12100	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12101	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12102	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12103	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12104	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12105	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12106	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12107	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12108	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12109	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12110	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12111	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12112	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12113	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12114	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12115	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12116	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12117	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12118	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12119	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON
12120	1	FLUKE	7000A	INDUSTRIAL	01/15/2010	OK	01/15/2010	DAVID WILKINSON



Our technicians are experienced, certified, insured, and receive ongoing training

**Dimensional**

Angle  
Angle Blocks  
Calipers  
Cylindrical Inside Diameter  
Cylindrical Outside Diameter  
Dial, Digital & Test Indicators  
Diameter/Radius  
Electronic Level Systems  
Flatness Measurements  
Gage Blocks  
Height/Depth Gages  
Laser Micrometers  
Length Standards  
Micrometers  
Micrometer Heads  
One Dimensional Length  
Optical Comparator:

- Angle
- Length
- Magnification
- Radius / Diameter

Parallel Measurements  
Protractors  
Surface Finish Meters  
Surface Plates  
Thread Plugs  
Wire Cloth and Sieves

**Electrical**

AC Current – Generate  
AC Current – Measure  
AC Voltage – High Voltage (HV) Measure  
AC Voltage – Measure  
AC Voltage Measuring Equipment  
Capacitance – Generate  
Capacitance – Measure  
Conductivity Simulation  
DC Current – Generate  
DC Current – Measure  
DC High Voltage (HV) – Measure  
DC Voltage – Generate  
DC Voltage – Measure  
Inductance – Generate  
Inductance – Measure  
Oscilloscope Calibration  
pH Simulation  
Resistance – Generate  
Resistance – Measure  
RTD Indicator Calibration  
Thermocouple Calibration

**Mechanical**

Direct Verification of Durometers  
Extensometers  
Extrusion Plastometers  
Force – Compression  
Force – Tension  
Hardness

- Brinell
- Microindentation
- Rockwell

Linear Velocity  
Mass – Measure, Fixed Points  
Pressure – Gage and Absolute  
Pressure – Gage Only  
Pressure – Hydraulic  
Pressure – Pneumatic  
Scales and Balances  
Tachometers  
Torque Arms  
Torque Tools  
Torque Transducers  
Torque Wrenches

**Thermodynamic**

Humidity  
IR Temperature  
Oven Temperature Uniformity  
Thermistor Probes  
Thermocouple Probes  
RTD Probes  
LIG Thermometers  
Temperature Baths  
Dry-Wells

**Time / Frequency**

Frequency – Measuring Equipment  
Frequency – Measure  
Timers/Stop Watches

**Chemical**

Conductivity Simulation – Measuring Equipment  
pH Simulation – Measuring Equipment  
Viscosity Meter Calibration

**ACCREDITED**

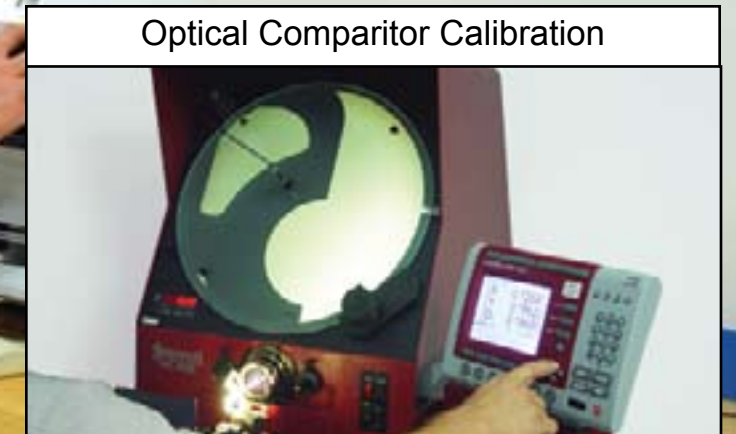
**A2LA Certificate 1625.01**

*Visit our website for scope details and best uncertainties*

## **Dimensional Capabilities**

*Scope details and uncertainties on [www.rjbgagan.com](http://www.rjbgagan.com)*

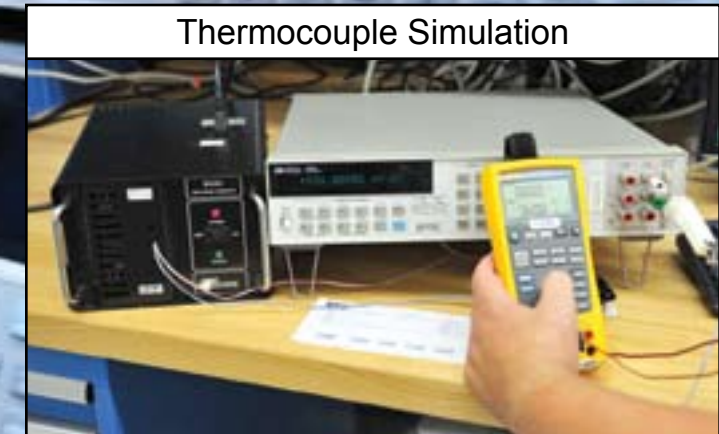
- Angle
- Angle Blocks
- Calipers
- Cylindrical Inside Diameter
- Cylindrical Outside Diameter
- Dial, Digital & Test Indicators
- Diameter/Radius
- Electronic Level Systems
- Flatness Measurements
- Gage Blocks
- Height/Depth Gages
- Laser Micrometers
- Length Standards
- Micrometers
- Micrometer Heads
- One Dimensional Length
- Optical Comparator:
  - Angle
  - Length
  - Magnification
  - Radius / Diameter
- Parallel Measurements
- Protractors
- Surface Finish Meters
- Surface Plates
- Thread Plugs
- Wire Cloth and Sieves



## Electrical Capabilities

Scope details and uncertainties on [www.rjbgagan.com](http://www.rjbgagan.com)

- AC Current – Generate
- AC Current – Measure
- AC Voltage – High Voltage (HV) Measure
- AC Voltage – Measure
- AC Voltage Measuring Equipment
- Capacitance – Generate
- Capacitance – Measure
- Conductivity Simulation
- DC Current – Generate
- DC Current – Measure
- DC High Voltage (HV) – Measure
- DC Voltage – Generate
- DC Voltage – Measure
- Inductance – Generate
- Inductance – Measure
- Oscilloscope Calibration
- pH Simulation
- Resistance – Generate
- Resistance – Measure
- RTD Indicator Calibration
- Thermocouple Calibration



## **Mechanical Capabilities**

*Scope details and uncertainties on [www.rjbagan.com](http://www.rjbagan.com)*

- Direct Verification of Durometers
- Extensometers
- Extrusion Plastometers
- Force – Compression
- Force – Tension
- Indirect Verification of Brinell Hardness
- Indirect Verification of Microindentation Hardness Testers
- Indirect Verification of Rockwell Hardness Testers
- Linear Velocity
- Mass – Measure, Fixed Points
- Pressure – Gage and Absolute
- Pressure – Hydraulic
- Pressure – Pneumatic
- Scales and Balances
- Tachometers
- Torque Arms
- Torque Tools
- Torque Transducers
- Torque Wrenches



Durometer Calibration



Force Calibration



Mass Calibration

## Thermodynamic Capabilities

Scope details and uncertainties on [www.rjbgagan.com](http://www.rjbgagan.com)

- Humidity
- IR Temperature
- Oven Temperature Uniformity
- Thermistor Probes
- Thermocouple Probes
- RTD Probes
- LIG Thermometers
- PRT Probes
- Temperature Baths
- Dry-Well



BaganTrack is completely web-based and available 24/7. Our partners can instantly and securely access BaganTrack from any computer to view: calibration data, certificates, due / done / out-of-tolerance reports, master gage list, and much more.

For your access to the BaganTrack system, please contact us for your username and password.

### Manage assets with a fully searchable and sortable master gauge list

Master Gauge List for Customer# c012465 [Download CSV]

Asset #	Mfg Model/Serial	Primary Location/Current Location	Customer Part Description	Customer Asset Description	Cal Info	Parent Asset
51905	FLUKE 77 62810446	DRIVES-MATT DRIVES-MATT	77 DOTL MULTIMETER	NONE DOTL MULTIMETER	Last: 11/20/2007 Due: 11/30/2010 CAL-Level A M&TE	
53625	FLUKE 77 47640570	FIELD EQUIPMENT - KENNY Kenny's toolbox	NONE DOTL MULTIMETER	NONE DIGITAL MULTIMETER	Last: 08/10/2007 Due: 08/31/2008 CAL-Level A M&TE	
53626	SIMPSON 260-Z B53626C	CBU SHELF CBU SHELF	SPARE ANALOG MULTIMETER	None ANALOG MULTIMETER	Last: 11/23/2007 Due: 11/30/2010 CBU-Level C M&TE	
53833	B&K PRECISION 1472 01353	COMPONENT TEST BENCH COMPONENT TEST BENCH	OSCILLOSCOPE	OSCILLOSCOPE	Last --- Due: --- CNR-Level B M&TE	222030
53922	BIDDLE 72-311 48569	CBU SHELVES CBU SHELVES	POTENTIOMETER	POTENTIOMETER	Last --- Due: --- CBU-Level C M&TE	222079
53926	FLUKE 77 35069442	LAB EQUIPMENT LAB EQUIPMENT	77 MULTIMETER, DIGITAL	CALIBRATED SPARES MULTIMETER, DIGITAL	Last: 10/01/2007 Due: 10/31/2008 CAL-Level A M&TE	
54431	SIMPSON 420 57335	ADVANCED DEVELOPMENT CABINET	420 FUNCTION GENERATOR	NONE FUNCTION GENERATOR	Last: 11/27/2007 Due: 11/30/2010 CAL-Level A M&TE	
54453	LEADER LDC-B22 2060101	MONITOR AREA MONITOR AREA	NONE ELECTRONIC COUNTER	NONE ELECTRONIC COUNTER	Last: 11/20/2007 Due: 11/30/2010 CAL-Level A M&TE	
54696	SPECTRACOM B130 B130-0020	CBU SHELVES CBU SHELVES	ASSET# 97 (1 OF 3) PHASE COMPARTOR	ASSET# 97 (1 OF 3) PHASE COMPARTOR	Last --- Due: --- CBU-Level C M&TE	
54697	SPECTRACOM	CBU SHELVES	ASSET# 97 (2 OF 3) WVVB RECE	ASSET# 97 (2 OF 3)	Last ---	

#### Powerful Searches

Search

Filter Type: Location

Criteria:

- Item#
- Shop Order #
- Purchase Order
- Location
- Customer Part #
- Customer Asset #
- Parent Item#
- Manufacturer
- Model Name
- Serial #
- Description
- Credits

#### Due/Done/OOT report

Calibrations

Type: DUE

From:(mm/dd/yyyy) DUE

To:(mm/dd/yyyy) DONE

Out of Tolerance

Master Gauge List:

Consolidated:

Actions: Find Undo

### Download a PDF of any signed calibration certificate

Richard J. Bagan, Inc.  
1280 South Williams Drive  
Columbia City, IN 46725-0169

Shop Order #: 364798 P.O.#: VBLKENNY Date Received: 11/12/2007

#### Certificate of Calibration

Report#: T130907S364786

Customer #: C012465

Richard J. Bagan Inc  
1280 South Williams Drive  
Columbia City, IN 46725-0169  
Phone: 260-244-0115 Fax:

Richard J. Bagan, Inc. certifies that the equipment listed on the following pages meet or exceed all published specifications, unless indicated otherwise. The equipment has been calibrated using standards that are traceable to the National Institute of Standards and Technology (NIST), or NIST accepted standards of measurement unless otherwise noted. Alternatively, traceability may be achieved from accepted values of natural physical constants, or may be derived by the ratio type of self-calibration techniques.

Richard J. Bagan, Inc. is an ISO-9001 registered company. The calibration laboratory is accredited to ISO/IEC 17025.

The standards and instruments used in this calibration are supported by a system which satisfies the requirements of ISO/IEC 17025, ANSI/NCCL Z540-1, and MIL-STD-45662A.

This report applies only to the equipment identified on the following pages and shall not be reproduced, except in full, without specific written permission of Richard J. Bagan, Inc.

Please handle this IM&TE carefully as any number of factors may cause this calibration item to drift out of calibration before the recommended interval has expired.

The tolerances listed are those provided by the manufacturer unless otherwise noted.

Any "Out of Tolerance" findings require your assessment to determine the impact on your products or services.

Measurement uncertainties provided for accredited calibrations/tests require your assessment to determine the impact on products or services.

Estimates of Measurement Uncertainty reflect a confidence level of approximately 95% at a coverage factor (k) of 2 unless stated otherwise in "Additional Notes".

*Richard J. Bagan*  
Richard J. Bagan, Cal. Technician

#### Calibration Data Sheet

(Report: T130907S364786)

Item#	Condition	As Found	In Tolerance	Condition As Left	Cal Date	Cal Due	Temp.	Humidity
13001	OK	OK	OK	OK	01/02/2008	01/31/2009	73.0°F	20.1%
Mfg/Model	TEKTRONIX/2215							
Serial #	208588							
Customer Asset #	NONE							
Asset Description	OSCILLOSCOPE							
Customer Location	CALIBRATED SPARES							
Calibrated At	Bagan Facility							
This Calibration is	ASLA Accredited							

Standard	Cal Date	Cal Due	Mfg/Model/Desc.	Serial Number
41024	08/09/2007	08/12/2008	ROCKSON/O200/O200SON/ DATA LOGGER	0100279
			FLUKE/1503A/ TACT. PRODUCT	040001
			CALIBRATOR	
			MOB PERFORMANCE	

Procedure: File #CALB104

Test: CH1 Volt/Div	Parameter	Nominal	As Found	As Left	Lower Limit	Upper Limit
20V/Div (10mV)	1.00 Div	5.30	4.95	4.85	5.15	5.15
	2.00 Div	4.25	3.95	3.85	4.12	4.12
	3.00 Div	5.25	4.95	4.85	5.15	5.15
	4.00 Div	4.80	4.50	4.40	4.60	4.60
	5.00 Div	4.19	3.95	3.85	4.12	4.12
	6.00 Div	5.00	4.60	4.50	4.70	4.70
	7.00 Div	5.00	4.60	4.50	4.70	4.70
	8.00 Div	4.20	3.95	3.85	4.12	4.12
	9.00 Div	4.20	4.00	3.90	4.10	4.10
	10.00 Div	5.20	4.80	4.65	5.15	5.15

#### Calibration Data Sheet

(Report: T130907S364786)

Test: Timing (2nd-10th Div)	Parameter	Nominal	As Found	As Left	Lower Limit	Upper Limit
10.00 Div	1.00 Div	7.00	8.05	7.75	8.24	8.24
	2.00 Div	7.00	8.05	7.75	8.24	8.24
	3.00 Div	7.00	8.05	7.75	8.24	8.24
	4.00 Div	7.00	8.05	7.75	8.24	8.24
	5.00 Div	7.00	8.05	7.75	8.24	8.24
	6.00 Div	7.00	8.05	7.75	8.24	8.24
	7.00 Div	7.00	8.05	7.75	8.24	8.24
	8.00 Div	7.00	8.05	7.75	8.24	8.24
	9.00 Div	7.00	8.05	7.75	8.24	8.24
	10.00 Div	7.00	8.05	7.75	8.24	8.24

Test: Duty Time

Parameter	Nominal	As Found	As Left	Lower Limit	Upper Limit
10pass/Cal	1	1	1	1	1

Test: Triggering

Parameter	Nominal	As Found	As Left	Lower Limit	Upper Limit
10pass/Cal	1	1	1	1	1

Additional Notes:  
THE FOLLOWING ARE HAVE BEEN ADJUSTED TO BE WITHIN TOLERANCE: CH1 GRID BIAS (R80), AUTOMATION (R85) & AUTO FOCUS (R14) & (R4), INVERT BALANCE (R04), VERTICAL GAIN (R16), R08, R14, & R08, ATTENUATOR STEP BALANCE (R18 & R08), ATTENUATOR A/D BALANCE (R14) & (R4), INVERT BALANCE (R04), VERTICAL OUTPUT AMPLIFIER COMPENSATION (R07, R07, R08, & R08), HORIZONTAL AMPLIFIER GAIN (R12 & R08), HORIZONTAL REGISTRATION (R12), DELAY CAL. TRIMM (R08 & R08), 5-ut TRIMM (R08 & R08), AND HIGH-SPEED TRIMM (C75). UNCERTAINTIES ATTACHED.

End of Report: T130907S364786

(END OF REPORT)

### Management Tools

#### Asset Management

- Master Gauge List
- Mfg/Model List
- Item
- Parent Item
- Location
- Part
- Quick Change

### Budgetary Reports

#### Contract PO Spending

##### Plant 1

	All (\$)	Cal (\$)	Repair (\$)	Other (\$)
Invoiced	117,887	25,609	91,795	483
Done/Not Inv'd*	100,730	8,546	89,867	2,316
Open*	0	0	0	0
<b>Totals</b>	<b>210,617</b>	<b>34,155</b>	<b>101,662</b>	<b>2,000</b>

##### Plant 2

	All (\$)	Cal (\$)	Repair (\$)	Other (\$)
Invoiced	412,692	408,643	525	3,525
Done/Not Inv'd*	278,700	272,590	3,587	2,523
Open*	0	0	0	0
<b>Totals</b>	<b>691,392</b>	<b>681,233</b>	<b>4,112</b>	<b>6,048</b>

\* Open and Done/Not Inv'd are estimates only. Subject to change.

# *Your single source for calibration services*



## ***On-Site Calibration***

Bagan's on-site calibration service provides accredited field calibrations throughout the western hemisphere. These on-site calibrations are designed to be fast and reliable with minimum down time.

Many of our field calibration technicians are military trained and continue to receive training in their fields of expertise. We can also perform preventive maintenance, emergency service, equipment modification, equipment setup and offer cost-saving, quality-improving ideas for your process.

## ***Laboratory Calibration***

Bagan's calibration labs house state-of-the-art equipment and NIST-traceable standards — all controlled to stringent environmental specifications to ensure our customers of the highest quality and most trusted calibrations and certifications.

Our electronics calibration lab is also equipped with a testing and repair area — allowing us to repair and calibrate your electronic equipment in the same place.

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***BAGAN***  
*Richard J. Bagan, Inc.*

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46725-0169

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