



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**Morgan Precision Instruments**

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**CALIBRATION and TESTING**

Valid to: January 23, 2011

Certificate Number: ACT-1367

**I. Dimensional Calibration**

<b>PARAMETER / EQUIPMENT</b>	<b>RANGE</b>	<b>BEST MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]</b>	<b>REFERENCE STANDARD OR EQUIPMENT</b>	<b>METHOD(S)</b>
Angle Blocks	Up to 90°	20°	Grade II Gage Blocks Master Sine Bar Digital Mu Checker	QP5.4-1 Rev.1
Squares	Up to 18 in	287µin / ft	Cylindrical Square Granite Surface Plate	QP5.4-10 Rev.2
Feeler Gages	(0.001to 0.035) in	139µin	Digital Micrometer Micrometer Stand	QP5.4-12 Rev.1
Micrometer Setting Standards	Up to 80 in	(51+22.6L) µin	Measuring Machine	QP5.4-3 Rev.3
Inside Micrometers	(1.50 - 150) in	(107+2.2L) µin	Measuring Machine	QP5.4-6 Rev.2
Bar Gages	(1 to 120) in	(69+8.8L) µin	Measuring Machine	QP5.4-2 Rev.1
Micrometers (0.001 Resolution)	Up to 72 in	(950+10L) µin	Grade II Gage Blocks	QP5.4-9 Rev.1
Micrometers (0.0001 Resolution)	Up to 36 in	(75+16.7L) µin	Grade II Gage Blocks	QP5.4-9 Rev.1
Micrometers (0.00005 Resolution)	Up to 4 in	(56+12.7L) µin	Grade II Gage Blocks	QP5.4-9 Rev.1
Depth Micrometers (0.001 Resolution)	Up to 20 in	0.0012 in	Grade II Gage Blocks Granite Surface Plate	QP5.4-7 Rev.2



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Electronic Depth Micrometers (0.0001 Resolution)	Up to 12 in	198 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-7 Rev.2
Electronic Depth Micrometers (0.00005 Resolution)	Up to 6 in	105 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-7 Rev.2
Dial Calipers, Vernier Calipers, Depth Gages (0.001 Resolution)	Up to 120 in	(1050+10.5L) μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-16 Rev.1
Digital Calipers and Depth Gages (0.0005 Resolution)	Up to 60 in	(415 + 15L) μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-16 Rev.1
Height Gages (0.001 Resolution)	Up to 40 in	(1050 + 10.5L) μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-4 Rev.1
Digital Height Gages (0.0005 Resolution)	Up to 40 in	(510 + 15L) μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-4 Rev.1
Digital Height Gages (0.0001 Resolution)	Up to 24 in	(450 + 1.15L) μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-4 Rev.1
Dial Indicators (0.001 Resolution)	Up to 4 in	0.0015 in	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Dial Indicators (0.0005 Resolution)	Up to 1 in	580 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Dial Indicators (0.0001 Resolution)	Up to 1 in	153 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Electronic Indicators (0.00005 Resolution)	Up to 1 in	77 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Test Indicator (0.001 Resolution)	Up to 0.06 in	0.0015 in	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Test Indicator (0.0005 Resolution)	Up to 0.06 in	580 μin	Grade II Gage Blocks Granite Surface Plate	QP5.4-5 Rev.1
Precision Levels	Up to 72 in	7.14 % x resolution	Granite Surface Plate	QP5.4-20 Rev.0

PARAMETER / EQUIPMENT	RANGE	BEST MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Surface Roughness	1 μin to 250 μin	5 μin	Surftest and Reference Specimen	QP5.4-21 Rev.0
Sliding Gages (Profiles)	(3 to 60) in	557 μin	TRA Masters	QP5.4-15 Rev.1
Mandrels	(3 to 54) in	0.0014 in	Pi Tape	QP5.4-14 Rev.1
ID Base Bands	(3 to 54) in	0.0014 in	Pi Tape	QP5.4-18 Rev.1
Flat Tapes	(3 to 54) in	0.0019 in	Vernier Caliper	QP5.4-18 Rev.1
Tapes, Rules and Scales	Up to 40 in	0.00258 in	Vernier Caliper	QP5.4-19 Rev.1
Templates, Contour and Tolerance Gages	(3 to 48) in	(96 + 5.4L) μin	Measuring Machine	QP5.4-13 Rev.1

## II. Dimensional Inspection

PARAMETER / EQUIPMENT	RANGE	BEST MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Dimensional Inspection CMM 3D	X = Up to 40 in Y = Up to 80 in Z = Up to 40 in	(150 + 15L) μin	Coordinate Measuring Machine Used as Reference Standard	Dimensional Inspection

### Notes:

1. Best Measurement Capabilities (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of  $k=2$
2. This scope is part of and must be included with the Certificate of Accreditation No. AC-1367

*Karl Greenway*

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Vice President

