

Buehler
 41 WAukeyan Road
 Lake Bluff, IL 60044


Calibration Lab CERT# 2237.01

Certificate of Calibration

Date of Calibration: January 0, 1900 Magnification Used: 0
 Hardness Test Block Serial Number: 0 Hardness Load & Scale: 0 grams / Knoop

This block was calibrated by Instron at the Wilson Calibration Laboratory, 33 Lewis Rd Binghamton NY on Standardized Laboratory Tester serial number LAB 219. The Standardized Laboratory Tester has been performance verified using NIST Standard Reference Materials.

The SRM test block serial numbers are: B0765J, G0008, B0173, D0136 & H0069.

This test block was calibrated using Instron Procedure 640P0107

The calibration performed is in compliance with ASTM E384-11e1, ANSI Z540-1 (02), ISO 10012 (03) & ISO 17025 (05).

RESULTS

Certified Mean Hardness Value of Test Block : 0.0 μm #DIV/0! HK 0

Standard Deviation of the 5 impression diagonals: 0.000 μm

Measured Values:

Test	Length (μm)	Hardness(HK)
Indent 1	0.0	#DIV/0!
Indent 2	0.0	#DIV/0!
Indent 3	0.0	#DIV/0!
Indent 4	0.0	#DIV/0!
Indent 5	0.0	#DIV/0!

Figure 1

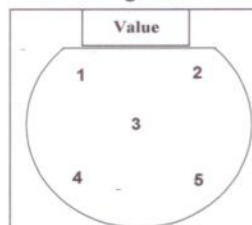


Figure 1 shows the position of the 5 indents of indentations. Mount test block on X-Y stage with the Value away from the operator. Locate indent 1, indent 2 is 0.300 to the right. Indent 3 is 0.150 left and 0.150 down. Indent 4 is 0.150 down and 0.150 to the left. Indent 5 is 0.300 to the right.

Test Block Repeatability Tolerance From Table A2.1 ASTM E384-11e1:

Test Block Repeatability Tolerance in (%)	Test Block Repeatability Tolerance in μm
3% Of Mean Diagonal In μm	0.0 μm

Actual Test Block Repeatability:

Actual Test Block Repeatability in (%)	Actual Test Block Repeatability in μm
#DIV/0! %	0.0 μm

Indirect Verification Testing Machine Error Tolerance From Table A1.5 ASTM E384-11e1:

Machine Indirect Verification Tolerance in μm	Machine Indirect Verification Tolerance
+/- 0.5 μm	+/- 0 HK 0

The measurement uncertainty for a confidence interval of not less than 95% is: +/- 0.0 HK 0
 +/- 0.55 μm

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Temperature: Calibration made at 0 Degrees Celsius
 Humidity: Calibration made at 0 % R. H.

Calibrated by: 0 Date: January 0, 1900

Calibration approved by: _____ Title: Approved Signatory

Note: This certificate shall not be reproduced except in full, without the approval of Buehler.

640P0W0113