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Certificate Of Calibration

Calibrated for :P & B Testing
 6645 West Tidwell
 Houston Texas,77092

Report No:	142090	Calibration Interval:	1 Year
PO. No.:	87163	Calibration Date:	04/09/2026
Company No:	28	Calibration Due Date:	04/09/2027
Description:	Detroit Brinell	Serial No:	28
Model No:	LONG STROKE	Manufacturer:	Detroit
Temperature:	75°F	Humidity :	74.00 %RH
Cal. Procedure:	CP-02		

The standards used in this certification have measurement traceability to the International System of Units (SI), through National Metrology Institutes (NIST, PTB, NIM). The certifications were performed I.A.W Thermo-Temp, Inc. Quality Manual. The work instruction used for this calibration is indicated above. The certification was performed in accordance with one or more of the following specifications: ASTM E10-08, ASTM E103, ASTM E110. All uncertainties calculated in accordance with ASTM E10-08 are only a reference for the customer, and not considered an Accredited report. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor K = 2, providing a level of confidence of approximately 95 %. The results of this certification apply to only the equipment listed on this report, and do not carry any implication regarding long-term stability of the instrument.

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Asset Requirements:

STANDARDS USED FOR CALIBRATION

Manufacturer	Serial Number	Model Number	Calibration Due	Report Number
Sun-Tec	251103-23	HBW		251103-23
Sun-Tec	251008-3	HBW		251008-3
Sun-Tec	20121459	SBS-20	09/24/2026	141709
Morehouse Instrument	70281 / HD115	3000 KGF	09/09/2026	132703
Starrett	ST2232349	796.1	07/23/2026	139199

NOTES:

CALIBRATION RESULTS
 AS FOUND/AS LEFT CONDITION

INDIRECT METHOD - TESTBLOCK 1										
Test Block				ACTUAL READINGS(mm)					AVERAGE	
HBW	BALL	FORCE	INDENTATION							
212.00	10.00	3000.00	4.15	4.14	4.14	4.15			4.14	
REPEATABILITY(mm)				TEST BLOCK	4.15	ERROR			-0.01	
0.01				TOLERANCE			6.36			
Tolerance				ACTUAL READINGS(HBW)					AVERAGE	
6.40				212.86	212.86	211.79			212.50	
UNCERTAINTIES				TEST BLOCK		212.00	ERROR			-0.50
mm		HBW								
0.0146		1.5728								

INDIRECT METHOD - TESTBLOCK 2										
Test Block				ACTUAL READINGS(mm)				AVERAGE		
HBW	BALL	FORCE	INDENTATION							
404.00	10.00	3000.00	3.04	3.04	3.04	3.04			3.04	
REPEATABILITY(mm)				TEST BLOCK		3.04		ERROR		
0.00								TOLERANCE		
Tolerance				12.10		ACTUAL READINGS(HBW)				
UNCERTAINTIES				403.54		403.54		403.54		AVERAGE
mm				HBW		TEST BLOCK		404.00		ERROR
0.0150				4.2000						0.46

DIRECT METHOD								
APPLIED LOAD IN KGF		INDENTER BALL SIZE IN mm		ACTUAL READINGS IN mm			AVERAGE	
3000.000		10.00		0.3410	0.3410	0.3410	0.341	
= 0.342				Proving Ring		0.3420	Error	-0.001

INDENTER BALL VERIFICATION (Batch ID#083012-RB)						
INDENTER BALL SIZE IN mm	ACTUAL READINGS IN mm					AVERAGE
10.0000	9.9990	9.9980	9.9990			9.9987

Buck Snider

Calibration Performed By:			Certificate Authorized By:		
Jeromy Holman	Technician		Ashley Holman	4/13/2026	
Name	Title	Signature	Quality Control	Date	Signature