CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 23 December 2019 CERTIFICATE No: 587147



1 of

3

Page

A





Units 11 - 13 Chorley Central Business Park Stump Lane, Chorley Lancashire PR6 0BL Tel: 01257 244670

PPROVED SIGNATORY
A
E Santos D Pilkington

D Whalley C Reed R Armitage

customer:	DJB LADCATE LLC
Address:	20 Howard Way, Interchange Park Newport Pagnell
	MK16 9QS
Item Number:	13110368 (4046)
Description:	Digital Thermometer
Model/Range:	TMD-56
Manufacturer:	Amprobe
Date of Cal:	23 Dec 2019
Calibrated by:	Mohammed Abid
Procedure Name:	Amprobe, Digital Thermometer, TMD-56 (DJB Labcare)
Rev/Basis:	03:E-650, Based on BS EN 60584.1
Temp/Humidity:	20.0°C ± 2°C <80%rh

The Results on the following pages are: As Found

All Measurements are Traceable to National Standards.

Note 1: The unit under test was calibrated using a multifunction calibrator. Note 2: Where the reported value lies within the stated tolerances then this will be indicated by 'A', if outside then by 'B'. Note 3: Values quoted in the "UUT Indicated Value" column are not necessarily quoted to the same resolution as the actual displayed value on the UUT. Note 4: Any supplied test leads have been checked as part of the Visual/Operational test but have not been used during calibration. Note 5: Temperature indicating instruments that contain an internal reference junction for use with thermocouples are calibrated with the reference junction enabled.

Engineers' Notes:

Multi-function Calibrator: LMMC-02 / LMMC-04 / LMMC-10 / LMMC-14 Equipment Used: The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of

approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements. Unless otherwise stated any reported summary of the results does not take the measurement uncertainty into consideration. This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and / or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. Unless otherwise stated the reported activities were carried out at the address detailed in the header; and the results relate only to the items calibrated.

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UKAS ACCREDITED CALIBRATION LABORATORY No: 0495

CERTIFICATE No:

587147

Page 2 of 3

Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Low	Limits High	Summary	
Visual/Operational Test OK							
Measurement of Thermocouples (Electrical Simulation)							
Channel T1							
Type T		-190.0°C -80.0°C -50.0°C -30.0°C -10.0°C 0.0°C 4.0°C 37.0°C 50.0°C 100.0°C 150.0°C 200.0°C 250.0°C 300.0°C 390.0°C	-190.6 -80.6 -50.5 -30.2 -10.3 -0.3 3.7 36.7 49.7 99.9 149.7 199.7 249.8 299.7 389.8	-190.8 -80.7 -50.7 -30.3 -10.3 -0.3 3.7 36.7 49.7 99.7 149.6 199.6 249.6 299.6 389.5	-189.2 -79.3 -49.3 -29.7 -9.7 0.3 4.3 37.3 50.3 100.3 150.4 200.4 250.4 300.4 390.5	A A A A A A A A A A A A A A A A	
Туре К		100.0°F 0.0°C 500.0°C 1000.0°C	99.5 -0.2 499.6 999.4	99.3 -0.3 499.4 999.2	100.7 0.3 500.6 1000.8	A A A A	
Туре Ј		20.0°C 1100.0°C	19.7 1099.9	19.7 1099.2	20.3 1100.8	A A	
Туре Е		20.0°C 900.0°C	19.7 899.8	19.7 899.3	20.3	A A	
Type N		20.0°C 1100.0°C	19.6 1099.7	19.6 1099.1	20.4 1101.0	A A	
Type R		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	A A	
Type S		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	A A	

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CERTIFICATE No:

587147

Page 3 of 3

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Low		Summary
Channel T2	range	Varue	varue	LOW	High	
channel 12						
Туре Т						
		-190.0°C	-190.6	-190.8	-189.2	A
		-80.0°C	-80.6	-80.7	-79.3	A
		-50.0°C	-50.5	-50.7	-49.3	A
		-30.0°C	-30.2	-30.3	-29.7	A
		-10.0°C 0.0°C	-10.3	-10.3	-9.7	A
		4.0°C	-0.2	-0.3	0.3	A
		4.0°C	3.7 36.7	3.7	4.3	A
		50.0°C	49.8	36.7 49.7	37.3 50.3	A
		100.0°C	99.8	99.7	100.3	A A
		150.0°C	149.7	149.6	150.4	A
		200.0°C	199.9	199.6	200.4	A
		250.0°C	249.7	249.6	250.4	A
		300.0°C	299.7	299.6	300.4	A
		390.0°C	389.8	389.5	390.5	A
		100.0°F	99.5	99.3	100.7	A
Туре К						
		0.0°C	-0.3	-0.3	0.3	A
		500.0°C	499.6	499.4	500.6	A
-		1000.0°C	999.6	999.2	1000.8	A
Type J		20.0°C	10 7	10 5		
		1100.0°C	19.7 1099.8	19.7	20.3	A
Type E		1100.0 C	1099.8	1099.2	1100.8	A
TYPC D		20.0°C	19.7	19.7	20.3	A
		900.0°C	899.7	899.3	900.8	A
Type N				00010	500.0	11
		20.0°C	19.6	19.6	20.4	A
		1100.0°C	1099.8	1099.1	1101.0	A
Type R						
		500.0°C	500.0	497.8	502.3	A
		1100.0°C	1100.0	1097.5	1102.6	A
Type S						
		500.0°C	500.0	497.8	502.3	A
		1100.0°C	1100.0	1097.5	1102.6	A

End of Calibration Data

Estimated Uncertainty of Measurement:

Electrica	al Measur	remen	t of T	hermocouples
Type: B Type: C Type: E Type: J Type: K Type: K Type: L Type: N Type: R Type: S Type: T	+500°C	to + + + + + + + to + + + + + + + + + +	1820°C 2320°C 1000°C 1200°C -250°C 1300°C	± (0.64°C) ± (0.48°C) ± (0.53°C) ± (0.30°C) ± (0.66°C) ± (0.32°C) ± (0.31°C) ± (0.40°C) ± (0.61°C) ± (0.57°C)
Type: T	-200°C	to	+400°C	±(0.32°C)