CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 27 January 2017 CERTIFICATE No: 432175

UKAS CALIBRATION 0495

Lambda CALIBRATION LTD

Units 11 - 13
Chorley Central Business Park
Stump Lane, Chorley
Lancashire PR6 0BL
Tel: 0845 2411533
Fax: 0845 2411544

APPROVED SIGNATORY

A Kelly D Pilkington
D Whalley C Reed R Armitage

Customer:	DJB Labcare Ltd
Address:	20 Howard Way, Interchange Park, Milton Keynes MK16 9QS

Item Number:	13070040 (4046)
Description:	Digital Thermometer
Model/Range:	TMD-56
Manufacturer:	Amprobe
Date of Cal:	27 Jan 2017
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 specified tolerances then this will be indicated by the word "PASS", if outside then by the word "FAIL".
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:

Standard(s) Used: LMMC-02 / LMMC-04 / LMMC-10 / LMMC-14

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.

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.

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UKAS ACCREDITED CALIBRATION LABORATORY No: 0495

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Limits Low	Acceptance Limits High	Pass/ Fail
Visual/Operational Test						
Result of Operator Evaluation						PASS
Measurement of Thermocouples (Electrical Simulation)						
Channel T1						
Type T						
		-190.0°C	-190.2	-190.8	-189.2	PASS
		-80.0°C	-80.0	-80.3	-79.7	PASS
		-50.0°C	-50.0	-50.3	-49.7	PASS
		-30.0°C	-30.0	-30.3	-29.7	PASS
		-10.0°C	-10.0	-10.3	-9.7	PASS
		0.0°C	-0.1	-0.3	0.3	PASS
		4.0°C	3.8	3.7	4.3	PASS
		37.0°C	37.0	36.7	37.3	PASS
		50.0°C	50.0	49.7	50.3	PASS
		100.0°C	100.3	99.7	100.3	PASS
		150.0°C	150.0	149.6	150.4	PASS
		200.0°C	200.3	199.6	200.4	PASS
		250.0°C	250.0	249.6	250.4	PASS
		300.0°C	300.0	299.6	300.4	PASS
		390.0°C	390.2	389.5	390.5	PASS
		100.0°F	99.9	99.3	100.7	PASS
Type K						
		0.0°C	-0.2	-0.3	0.3	PASS
		500.0°C	500.1	499.4	500.6	PASS
		1000.0°C	1000.0	999.2	1000.8	PASS
Type J						
		20.0°C	19.9	19.7	20.3	PASS
		1100.0°C	1100.1	1099.2	1100.8	PASS
Type E						
		20.0°C	20.0	19.7	20.3	PASS
		900.0°C	900.0	899.3	900.8	PASS
Type N						
		20.0°C	19.8	19.6	20.4	PASS
		1100.0°C	1100.3	1099.1	1101.0	PASS
Type R						
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS
Type S						
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Limits Low	Acceptance Limits High	Pass/ Fail
Channel T2						
Type T						
		-190.0°C	-190.3	-190.8	-189.2	PASS
		-80.0°C	-80.2	-80.3	-79.7	PASS
		-50.0°C	-50.1	-50.3	-49.7	PASS
		-30.0°C	-30.1	-30.3	-29.7	PASS
		-10.0°C	-10.2	-10.3	-9.7	PASS
		0.0°C	-0.1	-0.3	0.3	PASS
		4.0°C	3.8	3.7	4.3	PASS
		37.0°C	36.9	36.7	37.3	PASS
		50.0°C	49.9	49.7	50.3	PASS
		100.0°C	100.0	99.7	100.3	PASS
		150.0°C	150.0	149.6	150.4	PASS
		200.0°C	200.0	199.6	200.4	PASS
		250.0°C	250.0	249.6	250.4	PASS
		300.0°C	300.0	299.6	300.4	PASS
		390.0°C	390.1	389.5	390.5	PASS
		100.0°F	100.1	99.3	100.7	PASS
Type K						
		0.0°C	-0.1	-0.3	0.3	PASS
		500.0°C	500.0	499.4	500.6	PASS
		1000.0°C	999.9	999.2	1000.8	PASS
Type J						
		20.0°C	19.9	19.7	20.3	PASS
		1100.0°C	1100.1	1099.2	1100.8	PASS
Type E						
		20.0°C	19.9	19.7	20.3	PASS
		900.0°C	900.1	899.3	900.8	PASS
Type N						
		20.0°C	19.8	19.6	20.4	PASS
		1100.0°C	1100.3	1099.1	1101.0	PASS
Type R						
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS
Type S						
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS

End of Calibration Data

Estimated Uncertainty of Measurement:

Electrical Simulation of Thermocouples

Type: B	+500°C to +1820°C	±(0.56°C + 2 LSD)
Type: C	+0°C to +2320°C	±(0.42°C + 2 LSD)
Type: E	-250°C to +1000°C	±(0.46°C + 2 LSD)
Type: J	-210°C to +1200°C	±(0.27°C + 2 LSD)
Type: K	-200°C to -250°C	±(0.58°C + 2 LSD)
Type: K	-200°C to +1300°C	±(0.29°C + 2 LSD)
Type: L	-200°C to +900°C	±(0.28°C + 2 LSD)
Type: N	-200°C to +1300°C	±(0.34°C + 2 LSD)
Type: R	+0°C to +1767°C	±(0.53°C + 2 LSD)
Type: S	+0°C to +1767°C	±(0.50°C + 2 LSD)
Type: T	-250°C to -200°C	±(0.60°C + 2 LSD)
Type: T	-200°C to +400°C	±(0.29°C + 2 LSD)