CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 24 February 2016 CERTIFICATE No: 385909

UKAS CALIBRATION 0495

Lambda CALIBRATION LTD

Units 11 - 13
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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:	13010005 (4046)
Description:	Digital Thermometer
Model/Range:	TMD-56
Manufacturer:	Amprobe
Date of Cal:	24 Feb 2016
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.

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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	-190.5	-190.8	-189.2	PASS
		-80.0°C	-80.3	-80.3	-79.7	PASS
		-50.0°C	-50.2	-50.3	-49.7	PASS
		-30.0°C	-30.2	-30.3	-29.7	PASS
		-10.0°C	-10.3	-10.3	-9.7	PASS
		0.0°C	-0.2	-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	99.9	99.7	100.3	PASS
		150.0°C	149.9	149.6	150.4	PASS
		200.0°C	199.9	199.6	200.4	PASS
		250.0°C	249.9	249.6	250.4	PASS
		300.0°C	299.9	299.6	300.4	PASS
		390.0°C	390.0	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	499.9	499.4	500.6	PASS
		1000.0°C	999.8	999.2	1000.8	PASS
Type J						
		20.0°C	19.9	19.7	20.3	PASS
		1100.0°C	1099.9	1099.2	1100.8	PASS
Type E						
		20.0°C	19.7	19.7	20.3	PASS
		900.0°C	899.9	899.3	900.8	PASS
Type N						
		20.0°C	19.9	19.6	20.4	PASS
		1100.0°C	1100.0	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	-190.6	-190.8	-189.2	PASS
		-80.0°C	-80.3	-80.3	-79.7	PASS
		-50.0°C	-50.2	-50.3	-49.7	PASS
		-30.0°C	-30.2	-30.3	-29.7	PASS
		-10.0°C	-10.2	-10.3	-9.7	PASS
		0.0°C	-0.2	-0.3	0.3	PASS
		4.0°C	3.7	3.7	4.3	PASS
		37.0°C	36.8	36.7	37.3	PASS
		50.0°C	49.8	49.7	50.3	PASS
		100.0°C	100.0	99.7	100.3	PASS
		150.0°C	149.8	149.6	150.4	PASS
		200.0°C	199.9	199.6	200.4	PASS
		250.0°C	249.9	249.6	250.4	PASS
		300.0°C	299.9	299.6	300.4	PASS
		390.0°C	390.0	389.5	390.5	PASS
		100.0°F	99.9	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	999.8	999.2	1000.8	PASS
Type J						
		20.0°C	19.9	19.7	20.3	PASS
		1100.0°C	1099.9	1099.2	1100.8	PASS
Type E						
		20.0°C	19.7	19.7	20.3	PASS
		900.0°C	899.8	899.3	900.8	PASS
Type N						
		20.0°C	19.6	19.6	20.4	PASS
		1100.0°C	1100.1	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)