CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 23 December 2019 CERTIFICATE No: 587147

UKAS CALIBRATION 0495

Lambda CALIBRATION LTD

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

APPROVED SIGNATORY

E Santos D Pilkington
D Whalley C Reed R Armitage

Customer:	DJB Labcare Ltd
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:

Equipment Used: Multi-function Calibrator: 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. Unless otherwise stated any reported summary of the results does not take the measurement uncertainty into consideration.

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Limits Low	Acceptance Limits High	Summary
Visual/Operational Test						
Result of Operator Evaluation						OK
Measurement of Thermocouples (Electrical Simulation)						
Channel T1						
Type T						
		-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	-10.3	-10.3	-9.7	A
		0.0°C	-0.3	-0.3	0.3	A
		4.0°C	3.7	3.7	4.3	A
		37.0°C	36.7	36.7	37.3	A
		50.0°C	49.7	49.7	50.3	A
		100.0°C	99.9	99.7	100.3	A
		150.0°C	149.7	149.6	150.4	A
		200.0°C	199.7	199.6	200.4	A
		250.0°C	249.8	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
Type K						
		0.0°C	-0.2	-0.3	0.3	A
		500.0°C	499.6	499.4	500.6	A
		1000.0°C	999.4	999.2	1000.8	A
Type J						
		20.0°C	19.7	19.7	20.3	A
		1100.0°C	1099.9	1099.2	1100.8	A
Type E						
		20.0°C	19.7	19.7	20.3	A
		900.0°C	899.8	899.3	900.8	A
Type N						
		20.0°C	19.6	19.6	20.4	A
		1100.0°C	1099.7	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

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptance Limits Low	Acceptance Limits High	Summary
Channel T2						
Type T						
		-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	-10.3	-10.3	-9.7	A
		0.0°C	-0.2	-0.3	0.3	A
		4.0°C	3.7	3.7	4.3	A
		37.0°C	36.7	36.7	37.3	A
		50.0°C	49.8	49.7	50.3	A
		100.0°C	99.8	99.7	100.3	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
Type K						
		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	19.7	19.7	20.3	A
		1100.0°C	1099.8	1099.2	1100.8	A
Type E						
		20.0°C	19.7	19.7	20.3	A
		900.0°C	899.7	899.3	900.8	A
Type N						
		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:

Electrical Measurement of Thermocouples

Type: B	+500°C to +1820°C	±(0.64°C)
Type: C	+0°C to +2320°C	±(0.48°C)
Type: E	-250°C to +1000°C	±(0.53°C)
Type: J	-210°C to +1200°C	±(0.30°C)
Type: K	-200°C to -250°C	±(0.66°C)
Type: K	-200°C to +1300°C	±(0.32°C)
Type: L	-200°C to +900°C	±(0.31°C)
Type: N	-200°C to +1300°C	±(0.40°C)
Type: R	+0°C to +1767°C	±(0.61°C)
Type: S	+0°C to +1767°C	±(0.57°C)
Type: T	-250°C to -200°C	±(0.69°C)
Type: T	-200°C to +400°C	±(0.32°C)