## CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 18 October 2021

CERTIFICATE No: 682284





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

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C Reed E Santos R Armitage K Quigley D Pilkington

Customer:

DJB Labcare Ltd

Address:

Cromwell Business Centre

Newport Pagnell

MK16 90S

Item Number:

17070127 (4046)

Description:

Digital Thermometer

Model/Range:

TMD-56

Manufacturer

Amprobe

Date of Cal:

18 Oct 2021

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 tolerance 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. Note 6: Unless otherwise stated, the device has been calibrated with its protective cover removed (if a cover was fitted) and was powered by battery (if applicable).

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: [1] The 'Compliance Statement' is based on 'simple acceptance' (result vs tolerance) with the relevant calibration uncertainty being no greater than the tolerance. [2] Reported activities were carried out at the address detailed in the header. [3] The results relate only to the items calibrated. 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.

## **CERTIFICATE OF CALIBRATION**

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UKAS ACCREDITED CALIBRATION LABORATORY No: 0495

CERTIFICATE No: 682284

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Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptano Low	ce Limits High	Summary	
Visual/Opera Result of	tional Tes Operator E					PASS	
Measurement	of Thermoc	ouples (Electrical S	Simulation)				
Channel Tl							
Type T		-190.0°C -80.0°C -50.0°C -50.0°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 300.0°C	-189.4 -79.7 -49.7 -29.7 -9.7 0.3 4.2 37.2 50.2 100.3 150.2 200.2 250.1 300.1 390.2	-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	PASS PASS PASS PASS PASS PASS PASS PASS	
Type K		100.0°F 0.0°C 500.0°C 1000.0°C	100.4 0.3 500.3 1000.2	99.3 -0.3 499.4 999.2	100.7 0.3 500.6 1000.8	PASS PASS PASS PASS	
Type J Type E		20.0°C 1100.0°C	20.2 1100.2	19.7 1099.2	20.3 1100.8	PASS PASS	
		20.0°C 900.0°C	20.2 900.2	19.7 899.3	20.3 900.8	PASS PASS	
Type N		20.0°C 1100.0°C	20.3 1100.3	19.6 1099.1	20.4 1101.0	PASS PASS	
Type R		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	PASS PASS	
Type S		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	PASS PASS	

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Parameter Channel T2	UUT Range	UUT Indicated Value	Applied Value	Acceptance Low	Limits High	Summary
Chaimer 12						
Type T						
		-190.0°C	-189.8	-190.8	-189.2	PASS
		-80.0°C	-80.0	-80.7	-79.3	PASS
		-50.0°C	-49.8	-50.7	-49.3	PASS
		-30.0°C	-29.8	-30.3	-29.7	PASS
		-10.0°C	-9.9	-10.3	-9.7	PASS
		0.0°C	0.1	-0.3	0.3	PASS
		4.0°C	4.0	3.7	4.3	PASS
		37.0°C	37.1	36.7	37.3	PASS
		50.0°C	50.1	49.7	50.3	PASS
		100.0°C	100.2	99.7	100.3	PASS
		150.0°C 200.0°C	150.0	149.6	150.4	PASS
		250.0°C	200.1	199.6	200.4	PASS
		300.0°C	250.0 300.0	249.6	250.4	PASS
		390.0°C	390.1	299.6	300.4	PASS
		100.0°F	100.3	389.5 99.3	390.5	PASS
Type K		100.0 1	100.3	99.3	100.7	PASS
- 2 1		0.0°C	-0.1	-0.3	0.3	PASS
		500.0°C	499.9	499.4	500.6	PASS
		1000.0°C	999.7	999.2	1000.8	PASS
Type J						11100
		20.0°C	20.1	19.7	20.3	PASS
		1100.0°C	1100.0	1099.2	1100.8	PASS
Type E						
		20.0°C	20.1	19.7	20.3	PASS
		900.0°C	900.0	899.3	900.8	PASS
Type $N$						
		20.0°C	20.1	19.6	20.4	PASS
		1100.0°C	1100.2	1099.1	1101.0	PASS
Type R		E00 08G	500.0			
		500.0°C 1100.0°C	500.0	497.8	502.3	PASS
Type S		1100.0 C	1100.0	1097.5	1102.6	PASS
TAPE D		500.0°C	500.0	407 0	E00 3	DA GG
		1100.0°C	1100.0	497.8 1097.5	502.3	PASS
		1100.0 0	1100.0	TO31.0	1102.6	PASS

End of Calibration Data

Type: T

Estimated Uncertainty of Measurement:

## Electrical Measurement of Thermocouples \_\_\_\_\_\_ +500°C to +1820°C $\pm (0.64$ °C) Type: B +0°C to +2320°C ±(0.48°C) Type: C -250°C to +1000°C Type: E ±(0.53°C) -210°C to +1200°C Type: J $\pm (0.30^{\circ}C)$ -200°C to -250°C Type: K ±(0.66°C) -200°C to +1300°C Type: K ±(0.32°C) Type: L -200°C to +900°C $\pm (0.31^{\circ}C)$ -200°C to +1300°C Type: N ±(0.40°C) Type: R +0°C to +1767°C ±(0.61°C) ±(0.57°C) +0°C to +1767°C Type: S -250°C to Type: T -200°C ±(0.69°C)

-200°C to +400°C  $\pm (0.32$ °C)