

CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 21st May 2021

CERTIFICATE No: 659926



Lambda
CALIBRATION LTD

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APPROVED SIGNATORY

C Reed

P Robinson K Quigley

Customer: Thermosense Limited, Manchester, M26 2ZT
Item No: 259201
Description: A Thermocouple, Type T (without cold junction), Start, Middle & End of reel.
Date of Cal: 21/05/2021
Method: Lambda Procedure CIE-600e. Calibration was by comparison with a Reference PRT in a dry well. BS EN 60584-1 defines the temperature / voltage relationship. A temperature point was repeated to determine the repeatability of the Unit Under Test (UUT) which is included in the Calibration Uncertainty.
Equipment Used: LTHE-165, LTS-15, LTP-10, LCJ-5-T
Lab Temperature: 21.7°C ± 0.5°C
Visual Examination: Satisfactory.
Comments: N/A

Supplementary information relating to the UUT (All T/Cs):

Probe Length	Probe Diameter	Probe Sheath Material	Termination	Lead
>400mm	M/A Welded wire tip	Plastic	Bare wire	N/A
Temp Scale	Ref Junction Temp	Immersion Depth	Orientation	
ITS-90	0°C	155mm	Vertical	

Measured Results (Start T/C):

[1] Applied Temperature (°C)	[2] Calculated UUT Temperature (°C)	Measured UUT Output (mV)	[2]-[1] UUT Error (°C)	Calibration Uncertainty (±°C)
-40.016	-39.680	-1.4639	0.336	0.32
4.142	4.208	0.1635	0.066	0.32
37.057	37.155	1.4925	0.098	0.32
99.683	99.723	4.2655	0.040	0.32
4.134	4.187	0.1627	0.053	0.32

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.

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UKAS ACCREDITED CALIBRATION LABORATORY No 0495

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Measured Results (Middle T/C):

[1] Applied Temperature (°C)	[2] Calculated UUT Temperature (°C)	Measured UUT Output (mV)	[2]-[1] UUT Error (°C)	Calibration Uncertainty (±°C)
-39.948	-39.636	-1.4624	0.312	0.32
4.128	4.174	0.1622	0.046	0.32
37.063	37.166	1.4930	0.103	0.32
99.696	99.734	4.2660	0.038	0.32
4.129	4.194	0.1630	0.065	0.32

Measured Results (End T/C):

[1] Applied Temperature (°C)	[2] Calculated UUT Temperature (°C)	Measured UUT Output (mV)	[2]-[1] UUT Error (°C)	Calibration Uncertainty (±°C)
-39.944	-39.591	-1.4608	0.353	0.32
4.106	4.172	0.1621	0.066	0.32
37.060	37.149	1.4922	0.089	0.32
99.691	99.730	4.2658	0.039	0.32
4.117	4.170	0.1620	0.053	0.32