

# CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 16<sup>th</sup> October 2015

CERTIFICATE No: 369989



Lambda  
CALIBRATION LTD

11-13 Chorley Central  
Business Park  
Stump Lane  
Chorley  
PR6 0BL  
Tel: 0845 241 1533

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APPROVED SIGNATORY

A Kelly K Quigley  
C Cookson

Customer: Thermosense Limited, Radcliffe, M26 1AD  
Item No: 64304-LAST  
Description: A Thermocouple, Type T (without cold junction)  
Date of Cal: 16/10/2015  
Method: Lambda Procedure CIE-600e. Calibration was by comparison with a **Reference PRT** in a **stirred liquid bath & dry well**. BS EN 60584-1 defines the temperature / voltage relationship.  
Equipment Used: LTHE-159, LTS-02, LTP-10, LTS-08, LTP-15, LCJ-5-T  
Lab Temperature: 20°C ± 3°C

## Supplementary information relating to the UUT

Probe Length	Probe Diameter	Probe Sheath Mat'l	Termination	Lead
>500mm	1mm	PTFE	Bare wire	N/A
Temperature Scale	Ref Junction Temp	Immersion Depth	Orientation	
ITS-90	0°C	155mm	Vertical	

## UUT Visual Examination and Comments

Satisfactory

## Measured Results

[1] Actual Temperature °C	[2] UUT Temperature °C	UUT mV	[2]-[1] UUT Error °C	Calibration Uncertainty ±°C
-44.506	-44.659	-1.6365	-0.153	0.3
3.978	3.989	0.1550	+0.011	0.3
37.021	37.132	1.4915	+0.111	0.3
100.293	100.557	4.3044	+0.264	0.3
3.956	3.964	0.1540	+0.008	0.3

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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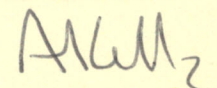


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APPROVED SIGNATORY

  
A Kelly K Quigley  
C Cookson

Customer: Thermosense Limited, Radcliffe, M26 1AD  
Item No: 64304-FIRST  
Description: A Thermocouple, Type T (without cold junction)  
Date of Cal: 16/10/2015  
Method: Lambda Procedure CIE-600e. Calibration was by comparison with a **Reference PRT** in a **stirred liquid bath & dry well**. BS EN 60584-1 defines the temperature / voltage relationship.  
Equipment Used: LTHE-159, LTS-02, LTP-10, LTS-08, LTP-15, LCJ-5-T  
Lab Temperature: 20°C ± 3°C

## Supplementary information relating to the UUT

Probe Length	Probe Diameter	Probe Sheath Mat'l	Termination	Lead
>500mm	1mm	PTFE	Bare wire	N/A
Temperature Scale	Ref Junction Temp	Immersion Depth	Orientation	
ITS-90	0°C	155mm	Vertical	

## UUT Visual Examination and Comments

Satisfactory

## Measured Results

[1] Actual Temperature °C	[2] UUT Temperature °C	UUT mV	[2]-[1] UUT Error °C	Calibration Uncertainty ±°C
-44.507	-44.644	-1.6360	-0.137	0.3
3.982	4.003	0.1555	+0.021	0.3
37.019	37.114	1.4908	+0.095	0.3
100.296	100.498	4.3017	+0.202	0.3
3.956	3.985	0.1548	+0.029	0.3

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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