

CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 6th June 2018

CERTIFICATE No: 502709



Lambda
CALIBRATION LTD

11-13 Chorley Central
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Tel: 0845 241 1533

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APPROVED SIGNATORY

C Reed
P Robinson K Quigley

Customer: Thermosense Limited, Manchester, M26 2ZT
Item No: 71688-FIRST
Description: A Thermocouple, Type T (without cold junction)
Date of Cal: 06/06/2018
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.
Equipment Used: LTHE-159, LTS-15, LTP-10, LCJ-5-T
Lab Temperature: 22.5°C ± 0.5°C

Supplementary information relating to the UUT

Probe Length	Probe Diameter	Probe Sheath Mat'l	Termination	Lead
>500mm	N/A welded wire tip	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
-44.925	-44.556	-1.6330	+0.369	0.32
3.988	4.033	0.1566	+0.045	0.32
37.024	37.132	1.4916	+0.108	0.32
99.952	100.071	4.2817	+0.119	0.32
4.099	4.143	0.1610	+0.044	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.

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

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 6th June 2018

CERTIFICATE No: 502708



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APPROVED SIGNATORY

C Reed

✓ P Robinson K Quigley

Customer: Thermosense Limited, Manchester, M26 2ZT
Item No: 71688-LAST
Description: A Thermocouple, Type T (without cold junction)
Date of Cal: 06/06/2018
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.
Equipment Used: LTHE-159, LTS-15, LTP-10, LCJ-5-T
Lab Temperature: 22.5°C ± 0.5°C

Supplementary information relating to the UUT

Probe Length	Probe Diameter	Probe Sheath Mat'l	Termination	Lead
>500mm	N/A welded wire tip	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
-44.931	-44.608	-1.6348	+0.323	0.32
3.979	4.033	0.1567	+0.054	0.32
37.024	37.132	1.4916	+0.108	0.32
99.966	100.100	4.2831	+0.134	0.32
4.085	4.124	0.1602	+0.039	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.

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