

# CERTIFICATE OF CALIBRATION

ISSUED BY The Roxspur Measurement & Control  
Calibration Laboratory



Page 1 of 2 Pages  
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Certificate No: U38377T

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Date Received             05 October 2009  
Calibration Date         12 October 2009

Order Ref                 43277  
Our Ref                    L208655

Equipment Tested        Digital Thermometer & PRT Probe

Description               Make: Gallenkamp, Model: Autotherm  
                                  Indicator Serial No: CE09/JN/10104-1  
                                  Pt100 resistance thermometer, 4 wire construction.  
                                  Probe length: 330 mm; probe diameter: 6 mm.  
                                  Probe Serial No: 004606 (calibrated in Ch A only)  
                                  Calibrated Range/Scale: -50 °C to 200 °C, 0.01 °C & 0.001 °C resolution.

Measurements            The digital thermometer & platinum resistance thermometer was calibrated at the following points: -50 °C, -20 °C, 0 °C, 4 °C, 20 °C, 80 °C, 130 °C & 200 °C.

Procedure                The thermometer under test was allowed to equilibrate within a controlled, stable environment, the temperature of which was measured using traceable reference Platinum Resistance Thermometers. The following results indicate the measured test thermometer temperature against the measured temperature at the time of calibration.

The measurement uncertainty was calculated in accordance with M3003 (Edition 2 - January 2007) and as such takes into account such factors as the calibration and drift of the reference standards, gradients of the temperature sources, stability, repeatability.

Notes                     The ambient temperature at the time of calibration was 21 °C ± 2 °C.  
Previous Calibration Details: Lab No: 0043, Certificate No: R34018T, Date: 09 October 2008.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.  
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Certificate No.  
U38377T  
Page 2 of 2 Pages

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The probe was immersed to a minimum immersion depth of 200 mm.

## Results

<u>Reference</u> <u>Temperature °C</u>	<u>Indicator</u> <u>Temperature °C at</u> <u>0.01 °C resolution</u>	<u>Indicator</u> <u>Temperature °C</u> <u>at 0.001 °C</u> <u>resolution</u>
-0.0039	0.01	0.011
-49.8567	-49.84	-49.839
-19.8295	-19.82	-19.822
-0.0019	0.01	0.012
4.2928	4.29	4.290
19.9700	19.97	19.964
80.1622	80.18	80.179
129.9552	129.96	129.962
199.7319	199.73	199.727
-0.0014	0.02	0.019

Measurement Uncertainty:  $\pm 0.05$  °C

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.