

CERTIFICATE OF CALIBRATION

ISSUED BY The Roxspur Measurement & Control
Calibration Laboratory



0043

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Approved Signatory



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Date of Issue: 13 October 2010

Certificate No: U40620T

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Date Received 07 October 2010
Calibration Date 13 October 2010

Order Ref 43577
Our Ref L210039

Equipment Tested Digital Thermometer & PRT Probe

Description Manufacturer: 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 in channel A only
Range/Scale: -50 °C to 200 °C with 0.01 °C and 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 and 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 and resolution of reference instruments and that of the unit under test. The results are valid at the time of calibration only. The temperature scale used was ITS-90. All measurements are traceable to National Standards. Calibrated "As Found" [i.e. No Adjustments Made].

Notes The ambient temperature at the time of calibration was 21 °C ± 2 °C.
Previous Calibration Details: Lab No: 0043, Certificate No: U38377T,
Date: 12 October 2009.

M. Donnelly
 J. Fowler
 W. Smith
 J. Watson

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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UKAS ACCREDITED CALIBRATION LABORATORY No.0043

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

Results

<u>Reference</u> Temperature °C	<u>Indicator on</u> 0.01 °C resolution Temperature °C	<u>Indicator on 0.001</u> °C resolution Temperature °C
-0.014	0.00	0.004
-49.955	-49.92	-49.921
-20.102	-20.10	-20.099
-0.067	-0.06	-0.062
3.949	3.98	3.989
19.945	19.96	19.957
80.030	80.05	80.052
129.976	129.99	129.994
200.017	200.03	200.027
-0.067	-0.05	-0.044

Measurement Uncertainty: ± 0.08 °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.