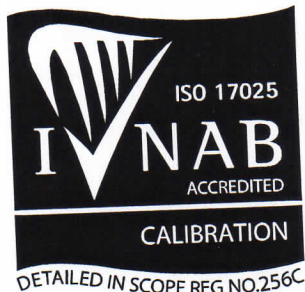


CERTIFICATE of CALIBRATION



Issued By
Butler Transtest Ltd.
G14, Maynooth Business Campus,
Maynooth, Co. Kildare,
Ireland

Tel. 353 1 6292620
Fax. 353 1 6292626
Web www.transtest.ie

Date of Issue **26/01/2011** Certificate No. **71797** Page **1 of 3**

Accreditation Category **A**

Client **SCS**
Address **22 FOX PARK,
FINNSTOWN ABBEY,
LUCAN,
CO DUBLIN**

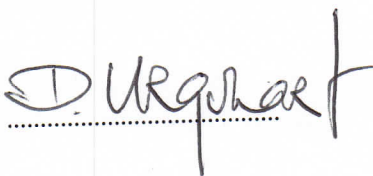
Manufacturer **ISOTECH**
Type **VENUS**
Description **Dry Block Temperature Calibrator**
Serial No. **231335/1**
Asset No. **None**

Purchase Order No. **TBA**
Date In **24/01/2011**
Calibration Date **26/01/2011**
Calibration Due **26/01/2012**

This certificate is issued in accordance with the conditions of accreditation laid down by the Irish National Accreditation Board which has assessed the measurement capability of the laboratory. The reported results are traceable to recognised National and International Standards. The results refer to the 'as received' condition of the equipment prior to any adjustments. If so adjusted then the post adjustment results are also recorded and noted as such.

The reported expanded uncertainties of measurement is stated as the standard uncertainty of measurement multiplied by a coverage factor $k=2$, calculated from a normal distribution to give a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA-4/02. The long term stability of the object has not been taken into account.

Authorised Signatory/code





A Member of the
BUTLER
Group.ie

- Mr. Robin Woods Technical Manager
- Mr. David Urquhart Quality Manager
- Mr. James Sheehy Senior Engineer

The results recorded relate only to the item specified above
This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory

CONFIDENTIAL REPORT

Client **SCS**
 Manufacturer **ISOTECH**
 Model No. **VENUS**
 Serial No. **231335/1**
 Control No. **None**
 Description **Dry Block Temperature Calibrator**
 Location **Transtest Calibration Laboratory**
 Environment **23 °C ± 2 °C, rh = (50 ± 10) %**

Certificate No. **71797**
 Page No. **2 of 3**
 Calibration Date **26-Jan-11**
 Calibrated By **R. Power**

Calibration File No. **DRYBATH high-Rev10_2**

Generated Temperature Accuracy : -

Method used CTM 3030

Measurements taken approx. 30 min. after reaching the set temperature.

Measurements made in hole 6mm

UUT Setting	Units	UUT Ref Probe Reading	Measured Reading	Specification ±	Display Error	Pass/Fail Code	Uncert. ±
-30	°C	-29.6	-29.609	0.10	-9.00E-03	Pass	0.07
0	°C	-0.05	-0.067	0.10	-1.70E-02	Pass	0.05
50	°C	50.11	50.115	0.10	5.48E-03	Pass	0.04
100	°C	100.3	100.305	0.10	4.78E-03	Pass	0.07
140	°C	139.9	139.950	0.10	4.98E-02	#	0.07
140	°C	139.9	139.952	0.10	5.20E-02	#	0.07

Temperature Stability over 30 min. : -

Method used CTM 3031

UUT Setting	Units	Variation	Measured Reading	Specification ±	Stability Error	Pass/Fail Code	Uncert. ±
-30	°C	Max	-29.606	0.03	3.00E-03	Pass	0.01
-30	°C	Min	-29.612				0.01
50	°C	Max	50.124	0.03	8.11E-03	Pass	0.01
50	°C	Min	50.107				0.01
140	°C	Max	139.952	0.03	2.20E-03	Pass	0.01
140	°C	Min	139.948				0.01

No allowance has been made for Axial, Radial or Loading contributions to the uncertainty
 The reading in *Italic* is with the measuring probe raised approx 15mm from the bottom of the tube.
 The stability uncertainty is the relative probe and indicator uncertainty.
 Calibration probe used was 6mm diameter and 300mm long.

End of Section

CALIBRATION INFORMATION

Test Specification Used : -

The Manufacturers Specifications.
Calibration is carried out in terms of temperature scale ITS-90

Summary : -

The Instrument meets or exceeds the Test Specification at the measured points, except where indicated.

Pass Where instrument error is less than 50 % of the test specification
Pass' Where instrument error is greater than 50 % of the test specification
Where the Pass/Fail code is #* the measurement uncertainty may have an effect on the result
Fail Where instrument error minus uncertainty is greater than the test specification

Method : -

Transtest's Common Test Methods manuals (CTM) details equipment.

Test Equipment Used : -

Asset no.	Manuf.	Type	Cal date
321	Hart	2560	11/10/2010
322	Isotech	935-14-72	17/12/2010

The above measurements are traceable via standards maintained by Butler Transtest Ltd Calibration Laboratory, via the National Metrology Laboratory, (Rep. of Ireland), or other approved accredited routes, to the National Physical Laboratory, (U.K.), or The Bureau International des Poids et Mesures, (France).

End of Report