

Accreditation Certificate

Carl Stuart Ltd

Tallaght Business Park, Whitestown, Dublin 24

Calibration Laboratory

Registration number: 270C

is accredited by the Irish National Accreditation Board (INAB) to undertake calibration as detailed in the Schedule bearing the Registration Number detailed above, in compliance with the International Standard **ISO/IEC 17025:2005 2nd Edition**

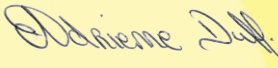
“General Requirements for the Competence of Testing and Calibration Laboratories”
(This Certificate must be read in conjunction with the annexed Schedule of Accreditation)

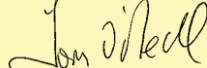
Date of award of accreditation: **07:09:2010**

Date of last renewal of accreditation: **19:08:2015**

Expiry date of this certificate of accreditation: **19:08:2020**

This Accreditation shall remain in force until further notice subject to continuing compliance with INAB accreditation criteria, ISO/IEC 17025 and any further requirements specified by the Irish National Accreditation Board.

Manager: 
Dr Adrienne Duff

Chairperson: 
Mr Tom O'Neill

Issued on 19 August 2015

Organisations are subject to annual surveillance and are re-assessed every five years. The renewal date on this Certificate confirms the latest date of renewal of accreditation. To confirm the validity of this Certificate, please contact the Irish National Accreditation Board.

INAB is a signatory of the European co-operation for Accreditation (EA) Testing Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement.

Schedule of Accreditation



(Annex to Accreditation Certificate)

Permanent Laboratory:

Category A, B

CARL STUART LTD

Balance and volumetric calibration laboratory

Initial Accreditation Date : 7-September-2010 (Balance, volumetric)

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E-mail: info@carlstuart.com
Contact Name: Kevin Arthure
Facilities: Public calibration service

Schedule of Accreditation



Permanent laboratory:
Category A, B

THE IRISH NATIONAL ACCREDITATION BOARD (INAB) is the Irish body for the accreditation of organisations including laboratories.

Laboratory accreditation is available to testing and calibration facilities operated by manufacturing organisations, government departments, educational institutions and commercial testing/calibration services. Indeed, any organisation involved in testing, measurement or calibration in any area of technology can seek accreditation for the work it is undertaking.

Each accredited laboratory has been assessed by skilled specialist assessors and found to meet criteria which are in compliance with ISO/IEC 17025 or ISO 15189 (medical laboratories). Frequent audits, together with periodic inter-laboratory test programmes, ensure that these standards of operation are maintained.

Calibration Categories:

- Category A:** Permanent calibration laboratory where the laboratory is erected on a fixed location for a period expected to be greater than three years.
- Category B:** Site calibration that is performed by staff sent out on site by a permanent laboratory that is accredited by the Irish National Accreditation Board.
- Category C:** Site calibration that is performed in a site/mobile laboratory or by staff sent out by such a laboratory, the operation of which is the responsibility of a permanent laboratory accredited by the Irish National Accreditation Board.
- Category D:** Site calibration that is performed on site by individuals and organisations that do not have a permanent calibration laboratory. Calibration may be performed using
- (a) portable test equipment
 - (b) a site laboratory
 - (c) a mobile laboratory or
 - (d) equipment from a mobile or site laboratory

Standard Specification or Calibration Procedure Used:

The standard specification or calibration procedure that is accredited is the issue that is current on the date of the most recent visit, unless otherwise stated.

Glossary of Terms

Facilities:

- Public calibration service:** Commercial operations which actively seek work from others.
- Conditionally available for public calibration:** Established for another primary purpose but, more commonly than not, is available for outside work.
- Normally not available for public calibration:** Unavailable for public calibration more often than not.

Laboratory users wishing to obtain assurance that calibration results are reliable and carried out to the Irish National Accreditation Board criteria should insist on receiving an accredited calibration certificate. Users should contact the laboratory directly to ensure that this schedule of accreditation is current. INAB will on request verify the status and scope.

Scope of Accreditation



Carl Stuart Ltd

Permanent laboratory:
Category A

Balance and volumetric calibration laboratory

(Nominal temperature for calibration work: 15 °C to 30 °C)

INAB Classification number (P9) Instrument	Range of measurement	Calibration and measurement capability expressed as an uncertainty *	Method and remarks
121 Weighing devices .01 Precision laboratory balances	1mg to 5g	±0.03mg	Documented procedure 5.3 Weights available in OIML class: E2; 1mg to 200g (CSID 175/157/232)
	5g to 20g	±0.05mg	
	20g to 100g	±0.14mg	
121 Weighing devices .01 Precision laboratory balances	100g to 200g	±0.28mg	Documented procedure 5.3 Weights available in OIML class: F1; 1mg to 5Kg (CSID 111/110)
	1mg to 5g	±0.10mg	
	5g to 20g	±0.14mg	
	20g to 100g	±0.28mg	
	100g to 600g	±1.3mg	
121 Weighing devices .01 Precision laboratory balances	600g to 1000g	±2.7mg	Documented procedure 5.3 Weights available in OIML class: M1; 10Kg x 3 to 20Kg x 6 (CSID 14/15/16/17/18/19/237/238/239)
	1kg to 5kg	±14mg	
	1kg to 10kg	±1.2g	
	10kg to 50kg	±1.4g	
130 Volumetric equipment .02 Special Laboratory Volumetric Apparatus - Automatic Piston Operated Apparatus	50kg to 100kg	±1.9g	Documented procedure 5.2 EN ISO 8655- 1 to 5: 2002 & EN ISO 8655-6: 2009, Gravimetric method for determination of volume delivered from a plunger/ piston operated apparatus.
	100kg to 150kg	±2.6g	
	20µl - 100µl	±0.3µl	
	>100µl - 200µl	±0.8µl	
	>200µl - 500µl	±2.6µl	
	>500µl - 1000µl	±5µl	
>1ml - 2ml	±13µl		
>2ml - 5ml	±22µl		
>5ml - 10ml	±75µl		

*** Notes:**

1. In accordance with INAB policy, uncertainties are calculated for an estimated confidence level of not less than 95%.
2. Calibration and measurement capability expressed as an uncertainty (±) is to be reported in compliance with EA-4/02, “Expression of the Uncertainty of Measurement in Calibration”.

Scope of Accreditation



Carl Stuart Ltd

Permanent laboratory:

Category B

Balance and volumetric calibration laboratory

(Nominal temperature for calibration work: 15 °C to 30 °C)

INAB Classification number (P9) Instrument	Range of measurement	Calibration and measurement capability expressed as an uncertainty *	Method and remarks
121 Weighing devices .01 Precision laboratory balances	1mg to 5g	±0.03mg	Documented procedure 5.3 Weights available in OIML class: E2; 1mg to 200g (CSID 175/157/232)
	5g to 20g	±0.05mg	
	20g to 100g	±0.14mg	
	100g to 200g	±0.28mg	
	1mg to 5g	±0.10mg	Documented procedure 5.3 Weights available in OIML class: F1; 1mg to 5Kg (CSID 111/110)
	5g to 20g	±0.14mg	
	20g to 100g	±0.28mg	
	100g to 600g	±1.3mg	
	600g to 1000g	±2.7mg	
	1kg to 5kg	±14mg	
	1kg to 10kg	±1.2g	Documented procedure 5.3 Weights available in OIML class: M1; 10Kg x 3 to 20Kg x 6 (CSID 14/15/16/17/18/19/237/238/239)
	10kg to 50kg	±1.4g	
	50kg to 100kg	±1.9g	
	100kg to 150kg	±2.6g	

*** Notes:**

1. In accordance with INAB policy, uncertainties are calculated for an estimated confidence level of not less than 95%.
2. Calibration and measurement capability expressed as an uncertainty (±) is to be reported in compliance with EA-4/02, “Expression of the Uncertainty of Measurement in Calibration”.

Scope of Accreditation



Carl Stuart Ltd

Permanent laboratory:

Category B

Balance and volumetric calibration laboratory

(Nominal temperature for calibration work: 15 °C to 30 °C)

INAB Classification number (P9) Instrument	Range of measurement	Calibration and measurement capability expressed as an uncertainty *	Method and remarks
130 Volumetric equipment	20µl - 100µl	±0.3µl	Documented procedure 5.2 EN ISO 8655- 1 to 5: 2002 & EN ISO 8655-6: 2009, Gravimetric method for determination of volume delivered from a plunger/ piston operated apparatus.
.02 Special Laboratory	>100µl - 200µl	±0.8µl	
Volumetric Apparatus	>200µl - 500µl	±2.6µl	
- Automatic Piston	>500µl - 1000µl	±5µl	
Operated Apparatus	>1ml - 2ml	±13µl	
	>2ml - 5ml	±22µl	
	>5ml - 10ml	±75µl	

*** Notes:**

1. In accordance with INAB policy, uncertainties are calculated for an estimated confidence level of not less than 95%.
2. Calibration and measurement capability expressed as an uncertainty (±) is to be reported in compliance with EA-4/02, “Expression of the Uncertainty of Measurement in Calibration”.

Scope of Accreditation



Carl Stuart Ltd

Permanent laboratory:
Category B

Temperature Calibration laboratory

(Nominal temperature for calibration work: 15 °C to 30 °C)

INAB Classification number (P9) Instrument	Range of measurement	Calibration and measurement capability expressed as an uncertainty *	Method and remarks
501 Calibration of temperature measuring equipment			
.41 Digital temperature indicator system	-20 to 150 °C	+/- 0.3 °C	Documented Procedure 5.20 Using Ametek Block
	-20 to 105 °C	+/- 0.6 °C	Documented Procedure 5.20A
510 Testing of Temperature Controlled enclosures			Documented Procedure 5.17
.01 Ovens, furnaces and baths	-20 to 50 °C	+/- 0.4 °C	
.02 Incubators	50 to 150 °C	+/- 0.6 °C	
.04 Industrial freezers			
<p>* Notes:</p> <ol style="list-style-type: none"> In accordance with INAB policy, uncertainties are calculated for an estimated confidence level of not less than 95%. Calibration and measurement capability expressed as an uncertainty (\pm) is to be reported in compliance with EA-4/02, "Expression of the Uncertainty of Measurement in Calibration". 			

Scope of Accreditation



Carl Stuart Ltd

Permanent laboratory:

Category B

Temperature Calibration laboratory

The following types of instrument can be calibrated in accordance with the scheduled measured quantities and ranges. An uncertainty reported on an INAB certificate will be that for the instrument itself during calibration plus the appropriate measurement capability of the laboratory for the quantities and ranges concerned.

INAB Classification number (P9)	Instrument
510 Testing of temperature controlled enclosures .01 .02 .04	Ovens, furnaces and baths Incubators Industrial freezers