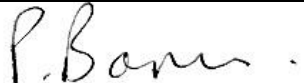


## Laboratory Accreditation Programmes

Schedule to  
**CERTIFICATE OF ACCREDITATION**

<b>Laboratory</b>	Homersham Limited									
<b>Address</b>	PO Box 79085, Avonhead, Christchurch, 8446 3 Homersham Place, Burnside, Christchurch, 8053									
<b>Telephone</b>	03 358-8309									
<b>URL</b>	www.homershams.co.nz									
<b>Authorised Representative</b>	Mrs Anne Evans Laboratory Manager PO Box 12171 Penrose Auckland 1642 New Zealand									
<b>Client No.</b>	85									
<b>Programme</b>	Metrology & Calibration Laboratory									
<b>Accreditation Number</b>	132									
<b>Initial Accreditation Date</b>	5 March 1980									
<b>Conformance Standard</b>	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories									
<b>Testing Services Summary</b>	<table> <tr> <td>5.35</td> <td>Hygrometry</td> </tr> <tr> <td>5.42</td> <td>Differential Pressure Measuring Devices</td> </tr> <tr> <td>5.44</td> <td>Pressure and Vacuum Measurement</td> </tr> <tr> <td>5.61</td> <td>Temperature Measuring Equipment</td> </tr> </table>		5.35	Hygrometry	5.42	Differential Pressure Measuring Devices	5.44	Pressure and Vacuum Measurement	5.61	Temperature Measuring Equipment
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<b>Signatories</b>	<table> <tr> <td>Mrs Rachelle Crause</td> <td>5.35, 5.42, 5.44, 5.61</td> </tr> <tr> <td>Mrs Anne Evans</td> <td>5.42, 5.44, 5.61</td> </tr> <tr> <td>Mr Aidan Lindsay</td> <td>5.35, 5.42, 5.44, 5.61</td> </tr> </table>		Mrs Rachelle Crause	5.35, 5.42, 5.44, 5.61	Mrs Anne Evans	5.42, 5.44, 5.61	Mr Aidan Lindsay	5.35, 5.42, 5.44, 5.61		
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Mrs Anne Evans	5.42, 5.44, 5.61									
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Calibration and Measurement Capability (CMC) Uncertainties are expressed as an expanded uncertainty with a level of confidence of approximately 95 % (k = 2) Note1.

Measurement results are traceable to the International System of Units (SI) via an unbroken chain of comparisons to the New Zealand National Standards or to the National Standards of other Signatories to the CIPM MRA.

Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

## 5.35 Hygrometry

(a) Humidity measuring devices (hygrometers)

Industrial instruments in accordance with an in-house method by comparison with a reference Relative Humidity meter in a controlled humidity chamber

Range	CMC Uncertainty
10 %rh to 90 %rh	1.1 %rh

## 5.42 Differential Pressure Measuring Devices

- (a) Diaphragm types
- (b) Liquid column types
- (c) Other types

Pressure and vacuum gauges by comparison with reference gauges at a line pressure of approximately 100 kPa (in the laboratory or on-site)

Pressure	CMC Uncertainty
0 to 250 Pa	0.36 Pa

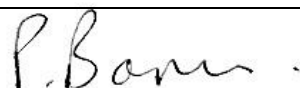
## 5.44 Pressure and Vacuum Measurement

- (a) Pressure gauges
- (b) Vacuum gauges
- (c) Pressure transducers
- (d) Pressure recorders

Accuracy classes: 0.1, 0.25, 0.6, 1.0, 1.6, 2.5, 4.0 in accordance with AS 1349:1986 and BS EN 837-1:1998; gauges of accuracy 3A, 2A, 1A and below as defined in ASME B40.100-2013

Pressure and vacuum gauges by comparison with reference gauges (in the laboratory or on-site)

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Gauge Pressure  
 -100 kPa to 70000 kPa

CMC Uncertainty  
 0.025 % or 0.03 kPa, whichever is greater

Absolute Pressure  
 3 kPa to 200 kPa  
 200 kPa to 3000 kPa

0.07 kPa  
 0.37 kPa

Maximum vacuum achievable is subject to ambient barometric pressure conditions.  
 Including electrical output measurements of 4 to 20 mA transmitter systems for the ranges and least uncertainties above.

## 5.61 Temperature Measuring Equipment

(including temperature calibration of electronic thermometers)

- (d) Germanium thermometers
- (e) Thermistors and other semi-conductor thermometers
- (g) Clinical thermometers
- (j) Radiation pyrometers, including infrared thermometers
- (k) Vapour pressure thermometers
- (l) Filled metal systems
- (m) Bimetallic systems
- (o) Indicators, recorders and controllers
- (p) Other direct reading temperature measuring equipment, excluding liquid in glass thermometers

Range	CMC Uncertainty
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Range applies to (d),(e),(g),(k),(l),(m),(o),(p) for laboratory calibrations

-30 °C to < -20 °C	0.08 °C
Ice point	0.01 °C
-20 °C to < 60 °C	0.03 °C
60 °C to 199 °C	0.05 °C

Range applies to (d),(e),(g),(k),(l),(m),(o),(p) for field (on-site) calibrations

-30 °C to 200 °C	0.3 °C
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Range applies to (j)

-30 °C to 140 °C	0.5 °C
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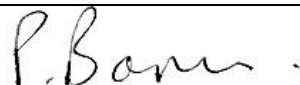
Electrical simulation and measurement of temperature measurement systems

Sensor type

RTD (source and measure), Pt100 385 (3W)

-200 °C to 0 °C	0.7 °C
0 °C to 400 °C	0.9 °C
400 °C to 800 °C	1.2 °C

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Thermocouples

Type K thermocouple – Measure

-200 °C to -100 °C	0.7 °C
-100 °C to 400 °C	0.3 °C
400 °C to 1200 °C	0.5 °C
1200 °C to 1372 °C	0.7 °C

Type K thermocouple – Source

-200 °C to -100 °C	0.4 °C
-100 °C to 400 °C	0.3 °C
400 °C to 1200 °C	0.3 °C
1200 °C to 1372 °C	0.3 °C

Type J thermocouple – Measure

-210 °C to -100 °C	0.6 °C
-100 °C to 800 °C	0.3 °C
800 °C to 1200 °C	0.5 °C

Type J thermocouple – Source

-210 °C to -100 °C	0.3 °C
-100 °C to 800 °C	0.2 °C
800 °C to 1200 °C	0.2 °C

Type N thermocouple – Measure

-210 °C to -100 °C	1.0 °C
-100 °C to 900 °C	0.5 °C
900 °C to 1300 °C	0.6 °C

Type N thermocouple – Source

-210 °C to -100 °C	0.6 °C
-100 °C to 900 °C	0.5 °C
900 °C to 1300 °C	0.3 °C

Type T thermocouple – Measure

-250 °C to -200 °C	1.7 °C
-200 °C to 0 °C	0.6 °C
0 °C to 400 °C	0.4 °C

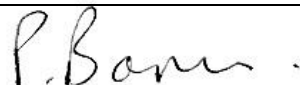
Type T thermocouple – Source

-250 °C to -200 °C	0.9 °C
-200 °C to 0 °C	0.4 °C
0 °C to 400 °C	0.3 °C

Type R thermocouple – Measure

-20 °C to 0 °C	2.3 °C
0 °C to 100 °C	1.5 °C

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100 °C to 1767 °C	1.0 °C
Type R thermocouple – Source	
-20 °C to 0 °C	1.2 °C
0 °C to 100 °C	1.1 °C
100 °C to 1767 °C	0.9 °C
Current	
Measure                      0 to 24 mA	0.025 % of reading + 0.025 % of range
Source                         0 to 22 mA	0.01 % of reading + 0.04 % of range
Voltage	
Measure                      0 to 30 V	0.05 % of reading + 0.005 % of full scale
Source                         0 to 10 V	0.015 % of reading + 0.005 % of full Scale

**Note 1:**  
 Unless stated otherwise the CMC is based on the performance of the best available device and measurement uncertainties achieved for specific calibrations may be greater than the CMC Uncertainty. A laboratory may not report measurement uncertainties lower than its CMC. However, if the device under calibration has a greater accuracy than the device used to calculate the CMC the laboratory may be able to use the calibration data to lower its CMC Uncertainty. Please contact the laboratory to discuss your specific requirements.

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