



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

MadgeTech, Inc.
6 Warner Road
Warner, NH 03278

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

A handwritten signature in black ink, appearing to read 'R. Douglas Leonard Jr.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 28 June 2021
Certificate Number: AC-2481



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

MadgeTech, Inc.
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CALIBRATION

Valid to: **June 28, 2021**

Certificate Number: **AC-2481**

Thermodynamic

| Parameter/Equipment | Range | Expanded Uncertainty of Measurement (+/-) | Reference Standard, Method, and/or Equipment |
|-----------------------------------|----------------|---|---|
| Temperature – Measuring Equipment | (-84 to 5) °C | 0.039 °C | Fluke 5616 PRT with Fluke 1502A Indicator, Fluke 7381 Deep-Well Bath with Methanol |
| | (5 to 80) °C | 0.039 °C | Fluke 5616 PRT with Fluke 1502A Indicator, Fluke 7321 Deep-Well Bath with Distilled Water |
| | (80 to 140) °C | 0.036 °C | Fluke 5616 PRT with Fluke 1502A Indicator, Fluke 7321 Deep-Well Bath with Silicone Oil |
| | (10 to 24) °C | 0.25 °C | Direct Comparison using Vaisala HMP155 Temperature/ Humidity Probe and Indicator, Environmental Chamber |
| | (24 to 26) °C | 0.32 °C | Direct Comparison using Vaisala HMP155 Temperature/ Humidity Probe and Indicator, Environmental Chamber |
| | (26 to 50) °C | 0.87 °C | Direct Comparison using Vaisala HMP155 Temperature/ Humidity Probe and Indicator, Environmental Chamber |
| | (50 to 60) °C | 0.56 °C | Direct Comparison using Vaisala HMP155 Temperature/ Humidity Probe and Indicator, Environmental Chamber |
| | -196 °C | 0.059 °C | LN ₂ Dewar, Fluke 5616 PRT with Fluke 1502A Indicator |

Thermodynamic

| Parameter/Equipment | Range | Expanded Uncertainty of Measurement (+/-) | Reference Standard, Method, and/or Equipment |
|---------------------|----------------|---|--|
| Relative Humidity | (25 to 75) %RH | 1.4 %RH | Direct Comparison using Vaisala HMP 155 Temperature/Humidity Probe and Indicator |

Mass and Mass Related

| Parameter/Equipment | Range | Expanded Uncertainty of Measurement (+/-) | Reference Standard, Method, and/or Equipment |
|---------------------|--------------------------------------|---|--|
| Pneumatic Pressure | (0 to 500) psig (0.5 to 500) psia | 0.084 psi 0.093 psi | Direct comparison using Mensor CPC6000 with MadgeTech Fixture 4020 |
| Pneumatic Pressure | (1.5 to 72.5) psia | 0.063 psi | Direct comparison using Mensor CPC6000 with MadgeTech Fixture 4010 |

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2481.



R. Douglas Leonard Jr., VP, PILR SBU