

Certificate of Gauge Calibration

Issued by: **Wohler Retrotec EU B.V.**

Calibration Date: **2025-01-21**

Certificate Number: **403289 084949**

Results: **As Left**

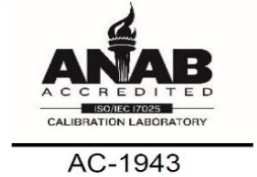


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This calibration laboratory has been assessed by the ANSI National Accreditation Board and meets the requirements of international standard ISO/IEC 17025.

Instrument:

Description: Pressure and Flow Gauge
Manufacturer: Retrotec
Model Number: DM32 4A
Serial Number: 403289
Firmware Version: 2.4 Build 71B1

Authorized by: Alex Peelle

Signature

Environmental conditions:

Temperature: $20^{\circ}\text{C} \pm 6^{\circ}\text{C}$
Relative Humidity: $50\% \pm 30\%$

Calibrated by: Max Kabel

Signature

Issue Date: 2025-01-21

Comments:

Results recorded as received. No adjustment performed.

This calibration applies only to the unit listed on this certificate.

Calibration Information:

The Device was calibrated against laboratory standards whose values are traceable to The International System of Units (SI). The uncertainty represents an expanded uncertainty using a coverage factor of $k=2$ to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits without taking uncertainty into account. The uncertainty evaluation has been carried out in accordance with ISO/IEC 17025 requirements.

Calibration Procedure:

CP-35-01

This Calibration Certificate shall not be reproduced except in full, without written approval from Retrotec.

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Calibration Results

Channel A		
Applied Value (Pa)	Reading (Pa)	Error (%)
-749.58	-745.00	0.61
-599.63	-597.11	0.42
-299.96	-299.60	0.12
-199.95	-199.70	0.13
-150.01	-149.60	0.27
-99.98	-99.69	0.29
-74.97	-74.80	0.23
-50.01	-49.60	0.82
-25.00	-24.68	1.28
-15.02	-14.70	2.13
-9.99	-9.70	2.90
-0.01	0.00	N/A
10.01	10.02	0.10
15.02	15.00	0.13
24.98	25.06	0.32
50.01	49.88	0.26
74.96	74.80	0.21
100.07	100.00	0.07
150.02	149.70	0.21
199.99	199.99	0.00
300.02	299.61	0.14
599.95	596.74	0.54
749.53	743.78	0.77

Channel B		
Applied Value (Pa)	Reading (Pa)	Error (%)
-749.58	-746.96	0.35
-599.63	-599.60	0.01
-299.96	-300.90	0.31
-199.95	-200.58	0.32
-150.01	-150.21	0.13
-99.98	-100.20	0.22
-74.97	-75.10	0.17
-50.01	-49.96	0.10
-25.00	-25.10	0.40
-15.02	-15.50	3.20
-9.99	-10.04	0.50
-0.01	0.00	N/A
10.01	10.10	0.90
15.02	15.00	0.13
24.98	24.60	1.52
50.01	49.36	1.30
74.96	74.66	0.40
100.07	100.00	0.07
150.02	149.94	0.05
199.99	200.04	0.03
300.02	299.99	0.01
599.95	597.80	0.36
749.53	745.20	0.58

Instrument display resolution is 0.1 Pa.

Uncertainties

Calibration and measurement capability (Expanded Uncertainty) is 0.066% of reading + 0.42 Pa (Range 0 - 2 400 Pa) based on a 95% confidence interval, using coverage of k=2. In tolerance conditions are based on test results falling within specified limits without taking uncertainty into account.



Initial

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Disclaimer: opinions and interpretations are outside the scope of accreditation.

The pressure range uncertainty limits are compliant with (meets or exceeds requirements from) the following standards or guidelines:

Name	Accuracy Requirements	Expiration Date
NFPA 2001	± 1 Pa $\pm$ (0 to 50 Pa)	2026-01-21
EN13829	± 2 Pa (up to ± 60 Pa)	2030-01-21
ATTMA: TS1	± 2 Pa (up to ± 100 Pa)	2026-01-21
ASTM E779	$\pm 5\%$ or 0.25 Pa whichever is greater	2030-01-21
ASTM-E3158		
CGSB 149.10	± 1 Pa (up to ± 60 Pa)	2030-01-21
FD P50-784	$\pm 1\%$ or 1 Pa whichever is greater	2026-01-21
ISO14520	± 1 Pa (up to ± 60 Pa)	2030-01-21
EN15004	± 1 Pa (up to ± 100 Pa)	2030-01-21
USACE		
TITLE 24		
RESNET380		
ISO9972	± 1 Pa (up to ± 100 Pa)	2030-01-21
FD E51-767	$\pm 2.5\%$ or 3 Pa whichever is greater	2027-01-21
RE2020	$\pm 3\%$ or 0.5 Pa $\pm$ (50 to 200) Pa	2027-01-21

End of report