

J-TEC Associates, Inc. 5005 BLAIRS FOREST LANE NE, SUITE L CEDAR RAPIDS, IOWA 52402 USA PHONE 319-393-5200 FAX 319-393-5211 www.j-tecassociates.com

## **Certificate of Calibration**

Calibration Performed By:

J-TEC Associates, Inc. 5005 Blairs Forest Lane NE, Suite L Cedar Rapids, IA 52402

Serial Number: 12337 Sales Order #: 4698 As Received

Performed By: T.Tate - Tech Calibration Date: 1/7/2020

Calibration Result: Fail

Meter Range: 7.1-283.2 Gas: Air

Pressure: 760 Temperature: 20.0 L/min

(mmHg) A

System C Instrumenatation

Zi Du Bois Des Lots Allee De Chamille St Paul, Trois Chateaux 26130 France

Gage Description: Inline Flowmeter

Model Number: VF563A Part Number: DAA0325-0003

Procedure Used: TCA0020

Accuracy: ±2.0% FS

Full Scale Spec: 283.2

*∐min* Density: 1.2041  $ka/m^3$ Viscosity: 1.831E-05 kg/(m\*s)

RH: 20-80%

Calibration Date

ACFM LPM (Hz) Volts Volts Max (+) Volts Actual Volts Accuracy (% Full Scale (% Full		nts: 15	inear Points	L	Mindo	Ideal	Freq	Flow Rate	Flow Rate
0.25 7.08 126.0 0.125 0.025 0.225 0.138 0.26   0.71 20.23 374.9 0.357 0.257 0.457 0.357 0.00   1.43 40.45 755.3 0.714 0.614 0.814 0.708 -0.12   2.14 60.68 1106.9 1.071 0.971 1.171 1.056 -0.31   2.86 80.90 1446.2 1.429 1.329 1.529 1.426 -0.05   3.57 101.13 1810.8 1.786 1.686 1.886 1.807 0.43   4.29 121.35 2156.6 2.143 2.043 2.243 2.171 0.56   5.00 141.58 2463.9 2.500 2.400 2.600 2.504 0.09   5.71 161.81 2787.2 2.857 2.757 2.957 2.854 -0.06   7.14 202.26 3434.2 3.571 3.471 3.671 3.557 -0.29   <	Accuracy Pas	100		Max (+)	Min (-)		The second secon	The second secon	ACFM
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5.71 161.81 2787.2 2.857 2.757 2.957 2.854 -0.06   6.43 182.03 3110.5 3.214 3.114 3.314 3.203 -0.22   7.14 202.26 3434.2 3.571 3.471 3.671 3.557 -0.29   7.86 222.48 3759.7 3.929 3.829 4.029 3.930 0.02   8.57 242.71 4058.9 4.286 4.186 4.386 4.255 -0.61   9.29 262.93 4349.9 4.643 4.543 4.743 4.566 -1.54   10.00 283.16 4640.8 5.000 4.000 4.743 4.566 -1.54			2.171	2.243					5.00
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7.14 202.26 3434.2 3.571 3.114 3.314 3.203 -0.22   7.86 222.48 3759.7 3.929 3.829 4.029 3.930 0.02   8.57 242.71 4058.9 4.286 4.186 4.386 4.255 -0.61   9.29 262.93 4349.9 4.643 4.543 4.743 4.566 -1.54   10.00 283.16 4640.8 5.000 1.000 1.000 4.000 1.000				2.957					6.43
7.86 222.48 3759.7 3.929 3.829 4.029 3.930 0.02   8.57 242.71 4058.9 4.286 4.186 4.386 4.255 -0.61   9.29 262.93 4349.9 4.643 4.543 4.743 4.566 -1.54   10.00 283.16 4640.8 5.000 4.023 4.743 4.566 -1.54									7.14
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9.29 262.93 4349.9 4.643 4.543 4.743 <b>4.566</b> -1.54				4.029					8.57
10.00 283.16 4640.8 5.000 4.543 4.743 4.566 -1.54				4.386					9.29
				4.743	4.543				10.00
Jinment Head To 2 W 2.46				5.100	4.900	5.000	4040.8	200.10	

Equipment Used To Calibrate Gage:

Model	ID	T .		
		Last Cal:	Due for Cal:	
	456	12/5/2019	6/30/2020	
8050A	470	4/1/2019	4/30/2020	
DP200I	756			
DP41-TC			6/30/2020	
			4/30/2020	
	758	10/23/2019	4/30/2020	
210	742	4/2/2019	4/30/2021	
	DP41-TC	3270 456 8050A 470 DP200I 756 DP41-TC 744 ASL1-010WD 758	3270 456 12/5/2019 8050A 470 4/1/2019 DP200I 756 7/1/2019 DP41-TC 744 4/3/2019 ASL1-010WD 758 10/23/2019	

Approved By:



Parameters listed were checked against master traceable to the National Institute of Standards & Technology. It is further certified that this calibration was performed in accordance with requirements of ISO/IEC 17025.

All items are considered to be in serviceable condition unless otherwise stated on this certification. The results relate only to the item calibrated. Excessive use, mishandling, environmental conditions or other factors my cause the calibrated item to fall out of tolerance.

This certificate shall not be reproduced except in full without the written approval of the originating metrology laboratory.

The measurement uncertainty is estimated to be 1.3% of full scale.

Reported uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Actual measurements are recorded as is, uncertainty is not taken into account in determining a pass or fail decision.

ACCREDITED CALIBRATION Cert #3773.01

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ISO/IEC 17025