

CERTIFICATE OF CALIBRATION (AIR SAMPLER)



RSA Laboratories, Inc.

19 Pendleton Drive, P.O. Box 61
Hebron, Connecticut 06248
(860) 228-0721 Fax (860) 228-4402

Customer and Contact: **Cabrera Services, Inc., Attn: Chuck Mikaitis (860) 569-0095**
Customer Address: **473 Silver Lane, East Hartford, CT 06118**

Inst. Mfr. **F&J Specialty Products**
Reference Inst. **F&J Venturi D-812**

Inst. Model **LV-1**

Inst. s/n **2772**
Inst. s/n **2541**

Cal. Date **05 February 2013**

Due Date **05 February 2014**

Cal. Interval **1 year**

Barometric Press: Actual **29.64** in. Hg

Corrected to: **29.31** in. Hg

Temperature: Actual **71°F**

Corrected to: **68.4°F**

Filters Used: Particulate Charcoal/silver zeolite Other:

Measurement	Air Sampler Flow Rate (LPM)	Ref. Inst. Flow Rate (LPM)	Percent Deviation
1	19.48	19.82	1.72
2	38.97	38.66	-0.80
3	48.71	47.58	-2.37
4	58.45	56.50	-3.45
5	77.94	72.36	-7.70
6			
7			
8			
9			
10			
11			
12			

****Average percent deviation across the range = -2.52**

This is to certify that RSA Laboratories, Inc. of Hebron, Connecticut, has on this date certified this air sampler to be within the accuracy specified above. The Reference Flow Device bears Letters of Certification traceable to the National Institute of Science and Technology. RSA Laboratories, Inc. ID# 15365.

Calibrated by: **Kurt D. Newton**  Date: **05 February 2013**

CERTIFICATE OF CALIBRATION

(AIR SAMPLER)

Facility: **RSA Laboratories, Inc.** Customer: **Cabrera Services, Inc.**

Air Sampler Model **F&J LV-1**
 Calibrator Model **F&J Venturi D-812**

Air Sampler Serial No. **2772**
 Calibrator Serial No. **2541**

Measurement	AIR SAMPLER					CALIBRATOR			
	Inlet Temp. (°F)	Inlet Press (In-Hg)	Gauge Press (In-Hg)	Indicated Flow (LPM)	Temp/Press Correction Factor	Corrected Flow (LPM)	Indicated Flow (LPM)	Temp/Press Correction Factor	Corrected Flow (LPM)
1	68.4	29.31	1	20	0.974	19.48	20	0.991	19.82
2	68.4	29.31	1	40	0.974	38.97	39	0.991	38.66
3	68.4	29.31	1	50	0.974	48.71	48	0.991	47.58
4	68.4	29.31	1	60	0.974	58.45	57	0.991	56.50
5	68.4	29.31	1	80	0.974	77.94	73	0.991	72.36
6									
7									
8									
9									
10									
11									
12									

$$\text{Air Sampler Temp/Press Corr Factor} = \sqrt{\frac{530^{\circ}\text{R}}{\text{Inlet temp } (^{\circ}\text{F}) + 460^{\circ}\text{R}} \times \frac{(\text{Inlet Press} - \text{Gauge Press})}{29.92 \text{ in. Hg}}}$$

$$\text{Calibrator Temp/Press Corr Factor} = \sqrt{\frac{530^{\circ}\text{R}}{\text{Inlet temp } (^{\circ}\text{F}) + 460^{\circ}\text{R}} \times \frac{\text{Inlet Press}}{29.92 \text{ in. Hg}}}$$

$$\% \text{ Deviation} = \frac{\text{Corrected Flow} - \text{Sampler Flow}}{\text{Corrected Flow}} \times 100$$

$$\text{Corrected Flow} = (\text{Indicated Flow}) \times (\text{Temp/Press Corr Factor})$$

Calibrated by: **Kurt D. Newton**  Date: **05 February 2013**