

Calibration Certificate

201 Wolf Drive • P.O. Box 87 • Thorofare, NJ 08086-0087 • Phone: 856-686-1600 • Fax: 856-686-1601 • www.troemner.com • e-mail: troemner@troemner.com

Page 1 of 2

Electrical Calibration

Serial Number : 140101001

Certificate Number : **123456**

Date of Calibration : 16-Dec-2013

SECTION 1: NAME AND ADDRESS OF CUSTOMER

End User

Troemner LLC
201 Wolf Drive
Thorofare, NJ 08086

SECTION 2: APPROVED SIGNATORY

Lynn Dickerson

SECTION 3: PERSON PERFORMING WORK

Todd Bridges

SECTION 4: CERTIFICATE INFORMATION

Description of DUT :	3500 Advanced Shaker	Date Received :	13-Dec-2013
Order Number :	Customer PO	Date of Calibration :	16-Dec-2013
Manufacturer :	VWR	Date of Issue :	17-Dec-2013
Model :	980303-C		
Serial Number :	140101001		

SECTION 5: ENVIRONMENTAL CONDITIONS DURING TEST

Temperature : 21.5 °C Relative Humidity : 44.4 %

SECTION 6: PERTINENT INFORMATION

This calibration was performed in Troemner's Certification Laboratory at 201 Wolf Drive, Thorofare, NJ 08086

The calibration certificate documents traceability to national standards for the realization of the units of Measurement according to the International System of Units(SI).

The certificate of calibration only applies to the device identified. The device has been calibrated in accordance with Troemner calibration procedures (ECP-CAL)

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Page 2 of 2
 Serial Number : **140101001**
 Certificate Number : **123456**
 Date of Calibration : **16-Dec-2013**

As Found/As Left

Nominal Point	Frequency Counter	DUT	Difference	Uncertainty
min	sec	sec	sec	sec
1	59.64	60.00	0.36	0.63
10	596.59	600.00	3.41	0.63
60	3581.97	3600.00	18.03	0.63

Calibration Standards				
Manufacturer	Model	Serial Number	Cal Due Date	Description
Fluke	PM6681/066	SM928908	31-May-2018	Frequency Std
Fluke	5520A	8825008	30-Nov-2014	Multi Product Calibrator

UNCERTAINTY- The standard deviation associated with the results of the measurements process.
 Uncertainty is calculated per NIST Technical note 1297 using a coverage factor of k = 2 (k = 2 defines a interval having a level of confidence of approximately 95 percent.)

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Page 2 of 2

Serial Number : **140101001**
Certificate Number : **123456A**
Date of Calibration : **17-Dec-2013**

As Found/As Left

Accuracy above 100rpm +/-1% of set speed and below 100rpm +/-1rpm.

Standard rpm	DUT rpm	diff rpm	Upper Limit rpm	Lower Limit rpm	Uncertainty rpm
14.69	15.00	0.31	16.00	14.00	0.85
75.71	75.00	-0.71	76.00	74.00	0.85
125.96	125.00	-0.96	126.25	123.75	0.85
251.1	250.0	-1.1	252.5	247.5	1.0
375.5	375.0	-0.5	378.8	371.3	1.0
501.3	500.0	-1.3	505.0	495.0	1.0

UNCERTAINTY- The standard deviation associated with the results of the measurements process. Uncertainty is calculated per NIST Technical note 1297 using a coverage factor of k = 2 (k = 2 defines a interval having a level of confidence of approximately 95 percent.)

The uncertainty associated with the measurement is not included in determining Pass/Fail Results.

Calibration Standards				
Manufacturer	Model	Serial Number	Cal Due Date	Description
Ametek	1726	SA-001	30-Jun-2014	Tachometer

This certificate of calibration shall not be reproduced except in full, without written approval of Troemner LLC. This certificate of calibration must not be used by the customer to claim product endorsement by NIST,NVLAP or any agency of the U.S. government.