

# Certificate of Calibration

Certificate Number: 20171811 - 88182

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**Issued To:** FLIR COMMERCIAL SYSTEMS  
9 TOWNSEND WEST  
Nashua, NH 03063

**Date Received:** 6/22/2017**Date Issued:** 6/26/2017**Valid Until:** Jun 2018

**Equipment:** Manufacturer: EXTECH  
Model Number: VPC300  
Serial Number: 170526276

**Test Conditions :****Temperature:** 26 °C**Humidity:** 49.9 %**Barometric Pressure:** 983.1 mBar

**As Found:** Control #:  
FULLY FUNCTIONAL AND IN TOLERANCE.

**As Returned:**  
FULLY FUNCTIONAL AND WITHIN TOLERANCE.

**Special Conditions:**  
NONE

**Work Performed:**  
CALIBRATED PER CALIBRATION PROCEDURE DM-001.

**CALIBRATED TO:** MANUFACTURERS SPECIFICATIONS**Device, Description, Report Number, Date Due****Reference Standards:**

1012, PTU200, Vaisala PTU200 environ standard w/HMP45D probe, 25223-2, 6/30/2017

1013, SKC 311-500, 500 ML LAB BURETTE, caltec96675, 3/13/2023

1024, HP 3456A, PRECISION DIGITAL VOLTMETER, 1013870, 5/31/2018

1040, iso 12103-1, ISO 12103-1A1 ULTRAFINE TEST DUST &lt; 20um DIA., 1018bu#01, 6/24/2018

9011, 8220, 6 CHANNEL 660nm 50mW OPTICAL PARTICULATE COUNTER, 70729122-23000157800449727, 1/31/2018

1042, PHOTOMETER, REAL TIME 90DEGREE LIGHT SCATTERING PHOTOMETER, 90893646-171712, 5/22/2018

**Reviewed by:**

6/26/2017

**Authorized Signature:** Brian Stanhope

This report certifies that all calibration equipment used in the test is traceable to the National Institute of Standards ( NIST ) , and applies only to the unit identified under "Equipment" above. This report must not be reproduced except in its entirety without express written approval.

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## Certificate of Calibration

Certificate # 20171811-88182

Model: VPC 300

Date: 6/26/2017

Serial # 170526276

**Test Results As Returned**

| Count Efficiency   |    | Range       | Observed |      |
|--|----|-------------|----------|------|
| 0.3uM  |    | 50 +/- 20 % | 55%      | PASS |
| 0.5uM  |    | 100+/- 10%  | 99%      | PASS |
| Zero Count (HEPA filter measurement with less than 1 particle per 5 minutes)                 |    |             |          |      |
| 0.0  | m3 |             |          | PASS |
| <b>Tolerance Limits</b>  |    |             |          |      |
| Count efficiency baseline is determined at 0.3uM +/-20%<br>and must be 100% at 0.5um +/- 10% |    |             |          |      |

| Count Efficiency Summary |    | Range   |   | Observed | Result |
|--------------------------|----|---------|---|----------|--------|
| 0.3                      | uM | 30 - 70 | % | 55%      | PASS   |
| 0.5                      | uM | 90-110  | % | 99%      | PASS   |
| 1.0                      | uM | 90-110  | % | 107%     | PASS   |
| 2.5                      | uM | 90-110  | % | 96%      | PASS   |
| 5.0                      | uM | 90-110  | % | 105%     | PASS   |
| 10.0                     | uM | 90-110  | % | 99%      | PASS   |

| Flow Rate/Environmental                              |       |          |       |       |                |
|--|-------|----------|-------|-------|----------------|
| Nominal  |       | Observed |       | delta | Result         |
| 2830.0   | cc    | 2738.0   | cc    | -92.0 | -3.25%<br>PASS |
| 47.6   | %RH   | 47.1     | %RH   | -0.5  | PASS           |
| 74.64  | DEG F | 75.1     | DEG F | 0.5   | PASS           |
| <b>Tolerance Limits</b>                              |       |          |       |       |                |
| Nominal +/- 5% flow, +/- 3.0% RH, +/- 0.9 deg F Temp |       |          |       |       |                |

This report is valid only as an attachment to the Calibration Certificate number indicated above.

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