



# Certificate of Calibration

Report #: 030403-U3030032 RMA #: 95-34633

Calibration Date: 3-04-2003

Model #: HMP45AC

Serial #: U3030032

Instrument Range: 0 to 100%RH

Calibration Procedure: 11603100

Recommended Calibration Due Date: 3-03-2004

Customer: UNIVERSITY OF CALIFORNIA, BERKELEY  
City, State: BERKELRY, CA

This unit was calibrated by adjusting its reading at 0% against dry nitrogen and at 75% against reference humidity and temperature instrument, Vaisala model HMP233. Additional instrument verification checkpoints were made against HMP233 reference at 11%RH and 33%RH. Calibration and instrument verification sequences utilize dry nitrogen and a set of controlled aqueous salt solutions Vaisala model HMK13B. Laboratory ambient conditions are maintained at a temperature of 22 °C ± 1 °C with relative humidity level of 50%RH ± 5%RH. The calibration uncertainty is presented at 95% confidence level, k=2. The calibration uncertainty is ± 0.6%RH.

| Calibration Data (As Found) |                 |       |                 |
|-----------------------------|-----------------|-------|-----------------|
| Out of Tolerance: Yes       |                 |       |                 |
| Temperature Calibration, °C |                 |       |                 |
| Reference                   | Unit Under Test | Error | ± Tolerance, °C |
| 22.10                       | 22.80           | 0.70  | 0.20            |
| Humidity Calibration, %RH   |                 |       |                 |
| Reference                   | Unit Under Test | Error | ± Tolerance, %  |
| 0.10                        | 1.70            | 1.60  | 2.00            |
| 11.30                       | 12.70           | 1.40  | 2.00            |
| 32.60                       | 32.80           | 0.20  | 2.00            |
| 75.50                       | 75.40           | -0.10 | 2.00            |
| Calibration Data (As Left)  |                 |       |                 |
| Out of Tolerance: No        |                 |       |                 |
| Temperature Calibration, °C |                 |       |                 |
| Reference                   | Unit Under Test | Error | ± Tolerance, °C |
| 22.16                       | 22.22           | 0.06  | 0.20            |
| Humidity Calibration, %RH   |                 |       |                 |
| Reference                   | Unit Under Test | Error | ± Tolerance, %  |
| 0.10                        | 0.10            | 0.00  | 2.00            |
| 11.30                       | 11.13           | -0.17 | 2.00            |
| 32.60                       | 31.60           | -1.00 | 2.00            |
| 75.50                       | 75.50           | 0.00  | 2.00            |

Replaced cracked sleeve of probe. Cleaned probe PCB.

The results of this calibration are traceable to the National Institute of Standards and Technology through NIST Test Report Number TN267908-03, dated Oct. 22, 2003. Vaisala's calibration system has been established to meet the requirements of ANSI/NCSL Z540-1-1994. This certificate can not be reproduced, except in full, without the expressed written consent of Vaisala. ISO 9002 certified.

| Calibration Equipment Used: Workstation 1 |          |                |            |
|---|----------|----------------|------------|
| Model                                     | Serial # | Calibrate Date | Due Date   |
| Power Supply                              | TW14949  | 11-25-2002     | 11-25-2004 |
| Fluke 45                                  | 6565014  | 8-16-2002      | 8-16-2003  |
| HMK13B                                    | T472     | 9-27-2002      | 3-27-2003  |
| HMP233                                    | V4210035 | 2-25-2003      | 5-25-2003  |

| Ambient Conditions |           |
|--------------------|-----------|
| Temperature:       | 22.90 °C  |
| Humidity:          | 46.70 %RH |

Technical Operator  
Chang Pyun

**Mailing address:**

Vaisala Inc.  
100 Commerce Way  
Woburn, MA 01801-1068

Tel. (781) 933-4500  
Fax (781) 933-8029  
<http://www.vaisala.com>