



SOUTHWEST RESEARCH INSTITUTE®

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Institute Quality Systems
Institute Calibration Laboratory
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Calibration Laboratory
Certificate #0972-01

Certificate of Calibration

Cost Center / Customer: DIV20 / DON BANNON

Mail Stop: B51

Manufacturer/Model: VAISALA / HMP76B

Description: HUMIDITY/TEMPERATURE PROBE

Serial Number: Y1120007

Asset Number: 010786

Procedure: TEMPERATURE, HUMIDITY, DEW-POINT - 3 APR 08

Work Order: 303095535

Date Issued: 22-Sep-2010

Date Calibrated: 14-Jul-2010

*** Date Due :** 21-Sep-2011

**** Results:** FOUND-LEFT

Temperature: 76.0 °F

Humidity: 49 %RH

Barometer: N/A

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 2005, ANSI/NCCL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. **Data type found in this certificate or attached measurement report must be interpreted as: Found-left - adjustment and/or repair was not performed, As-found - data is before unit is adjusted and/or repaired, As-left - data is after adjusted and/or repaired was performed. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance.

Measurement uncertainty calculated in accordance with the method described in the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM), for a confidence level of approximately 95 percent using a coverage factor of $k=2$.

Remarks: CALIBRATED WITH VAISALA MI70 INDICATOR S/N Y2540054.

Standards Used

<u>Asset #</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
006404	THUNDER SCIENTIFIC	2500	HUMIDITY GENERATOR	25-May-2010	25-May-2011
009414	HART SCIENTIFIC	1502A	TEMPERATURE READOUT	14-May-2010	14-Nov-2010
015895	HART SCIENTIFIC	5618B	RTD	14-May-2010	14-Nov-2010

Walt Hill

Laboratory Manager

Mark Romero

Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303095535	Mfr.:	Vaisala	Technician:	Mark Romero
Asset No.:	010786	Model:	HMP76B	Type Data:	Found-left
Serial No.:	Y1120007	Type:	Humidity/Temp Probe	Cal Date:	14-Jul-10

Remarks: Calibrated as a system with Vaisala MI70. Temperature limit increased to +/-1 °C per custodian.

Function/Range	Test Point	TI Reading	Difference	± Limit	± Uncertainty	Result	% Limit
Temperature	°C	°C	°C	°C	°C		
at 20% RH	25.07	25.08	0.01	1	0.12	Pass	1%
40% RH	25.09	25.11	0.02			Pass	2%
60% RH	25.11	25.14	0.03			Pass	3%
80% RH	25.13	25.17	0.04			Pass	4%
	°C	°C	°C				
at 20% RH	48.80	49.09	0.29			Pass	29%
40% RH	49.05	49.29	0.24			Pass	24%
60% RH	49.15	49.42	0.27			Pass	27%
80% RH	49.25	49.50	0.25			Pass	25%
	°C	°C	°C				
at 20% RH	68.30	68.60	0.30			Pass	30%
40% RH	68.50	68.91	0.41			Pass	41%
60% RH	68.75	69.19	0.44			Pass	44%
80% RH	69.00	69.50	0.50			Pass	50%
Humidity	% RH	% RH	% RH	% RH	% RH		
at 25 °C	20.00	19.99	-0.01	2	0.68	Pass	1%
	40.00	39.86	-0.14			Pass	7%
	60.00	59.11	-0.89			Pass	45%
	80.00	78.85	-1.15			Pass	58%
at 50 °C	20.00	19.27	-0.73			Pass	37%
	40.00	39.46	-0.54			Pass	27%
	60.00	59.23	-0.77			Pass	39%
	80.00	78.65	-1.35			Pass	68%
at 70 °C	20.00	19.37	-0.63			Pass	32%
	40.00	39.69	-0.31			Pass	16%
	60.00	59.28	-0.72			Pass	36%
	80.00	78.66	-1.34			Pass	67%

END OF REPORT