SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510
Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834

Certificate of Calibration

A2LA ACCREDITED
Calibration Laboratory
Certificate #0972-01

Submitted By: DIV20
Address: B51
Contact: DON BANNON
Manufacturer / Model: VAISALA / HMP77B
Description: HUMIDITY/TEMPERATURE PROBE
Serial No: Z0750006
Asset No: 010700
Procedure: HUMIDITY-DEW POINT - 19 MAY 06

Work Order: 303080795
Date Issued: May 16, 2008
Calibration Date: May 16, 2008
***Calibration Due:** May 16, 2009
Calibration Location: Bldg. 64
Environment: Temp. 74.0°F Hum. 40 %RH
****Data Type:** FOUND-LEFT
DivID/Location: 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/NCSL 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. **Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The client has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

Remarks: Calibrated as a system with Vaisala MI70 Indicator S/N Z0730015. AN 010699

Standards Used

Asset No.	Serial No.	Manufacturer	Model	Description	Cal Due
009414	A25788	HART SCIENTIFIC	1502A	TEMPERATURE READOUT	Sep 06, 08
010692	632656	HART SCIENTIFIC	5618	RTD	Sep 06, 08
006404	9806123	THUNDER SCIENTIFIC	2500	HUMIDITY GENERATOR	May 30, 08

Reviewed by: (√) srk ( ) mar ( ) wgh

Measurements by: Bob Trollinger
Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303080795	Mfr:	Vaisala	Technician:	blt
Asset No:	010700	Model:	HMP77B w- MI70 Meter		
Serial No:	Z0750006	Type:	Temp/Humidity Meter	Cal Date:	16-May-08
Remarks:	Calibrated with Vaisala MI70 SN Z0730015				
	Per customer Limits set to +/-1.0°C				

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
Humidity	%RH	%RH	%RH	%RH	%RH	Result
at 25 °C	19.99	19.76	-0.23	2.0	0.58	Pass
	40.04	40.12	0.08	2.0	0.58	Pass
	60.00	60.05	0.05	2.0	0.58	Pass
	80.00	79.33	-0.67	2.0	0.58	Pass
Temperature	°C	°C	°C	°C	°C	
25 °C at %RH	25.054	24.96	-0.09	1	0.062	Pass
Set Points	25.080	25.00	-0.08	1	0.062	Pass
	25.156	25.08	-0.08	1	0.062	Pass
	25.163	25.07	-0.09	1	0.062	Pass
Humidity	%RH	%RH	%RH	%RH	%RH	
at 50 °C	20.00	18.64	-1.36	2.0	0.58	Pass
	39.99	39.44	-0.55	2.0	0.58	Pass
	59.99	59.20	-0.79	2.0	0.58	Pass
	80.01	78.34	-1.67	2.0	0.58	Pass
Temperature	°C	°C	°C	°C	°C	
50 °C at %RH	49.392	49.15	-0.24	1	0.062	Pass
Set Points	49.447	49.19	-0.26	1	0.062	Pass
	49.488	49.25	-0.24	1	0.062	Pass
	49.540	49.34	-0.20	1	0.062	Pass
Humidity	%RH	%RH	%RH	%RH	%RH	
at 70 °C	19.99	18.87	-1.12	2.0	0.58	Pass
	40.01	38.82	-1.19	2.0	0.58	Pass
	59.95	58.24	-1.71	2.0	0.58	Pass
	80.57	79.57	-1.00	2.0	0.58	Pass
Temperature	°C	°C	°C	°C	°C	
70 °C at %RH	68.930	68.55	-0.38	1	0.062	Pass
Set Points	69.013	68.67	-0.34	1	0.062	Pass
	69.068	68.71	-0.36	1	0.062	Pass
	68.344	67.78	-0.56	1	0.062	Pass

END OF REPORT