

SOUTHWEST RESEARCH INSTITUTE

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To: Don Bannon/Div20,B57
From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Date: Dec. 30, 2005
Subject: Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

When the as-found results are near the specification limit, +/- a margin less than the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. It is the Institute Calibration Laboratory policy that the client is made aware of this situation because the end-user is taking some of the risk that the instrument listed below may not meet the end-user measurement requirements.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

Manufacturer: Vaisala **Model:** HMP235

Description: Temp/Humidity Trans **Serial Number:** W1840037

Asset Number: 8768 **User ID Number:**

Last Calibration: 5-19-04

Date Received for Service: Nov. 17, 2005 **Work Order Number:** 303066827

Service Requested: Scheduled calibration

Remarks: % RH out of tolerance at upper readings.

OUT OF TOLERANCE

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303066827	Mfr. VAISALA	Technician: msy
Asset No.	008768	Model HMP235 -20 to 180 C	
Serial No.	W1840037	Type. Temp/RH Transmitter	Cal Date: 29-Dec-05
Remarks: Temperature accuracy is based on worst case error. Manufacturer %RH Limits are +/-1% 0 to 90%RH. CALIBRATED 25 to 65 °C			

Function/Range	Test Point	TI Reading		Difference	+/-Limit	+/-Uncertainty	Found
% RH	% RH	mAmp	% RH	% RH	% RH	% RH	Result
0-100	20.05	7.2	20.00	-0.05	1.0	0.63	Pass
	40.50	10.36	39.75	-0.75	1.0	0.63	Pass
	60.00	13.83	61.44	1.44	1.0	0.63	Fail
	69.74	15.42	71.38	1.64	1.0	0.63	Fail
Degrees	°C	mAmp	°C	°C	°C	°C	
	24.99	7.600	25.00	0.01	0.60	0.035	Pass
	44.99	9.237	45.46	0.47	0.60	0.063	Pass
	64.99	10.768	64.60	-0.39	0.60	0.091	Pass
END OF REPORT							



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

0972-01

Submitted By: DIV20	Work Order: 303066827
Address: B57	Date Issued: Dec 30, 2005
Contact: DON BANNON	Calibration Date: Dec 30, 2005
Manufacturer Model: VAISALA HMP235	*Calibration Due: Dec 29, 2006
Description: TEMPERATURE/HUMIDITY TRANSMITTER	Calibration Location: Bldg. 64
Serial No: W1840037	Environment: Temp. 72.0°F Hum. 41 %RH
Asset No: 008768	**Data Type: AS-LEFT
Procedure: TEMPERATURE/HUMIDITY, MAY/03	

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, 1999, 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.

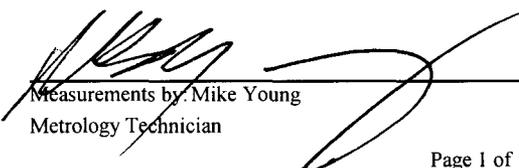
Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

Remarks: None

Standards Used

Asset No.	Serial No.	Manufacturer	Model	Description	Cal Due
006404	9806123	THUNDER SCIENTIFIC	2500	HUMIDITY GENERATOR	Jun 13, 06


 Reviewed by: blt () jrg () pwc () wgh ()
 Metrology Technician


 Measurements by: Mike Young
 Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303066827	Mfr. VAISALA	Technician: msy
Asset No.	008768	Model HMP235 -20 to 180 C	
Serial No.	W1840037	Type. Temp/RH Transmitter	Cal Date: 30-Dec-05
Remarks: Temperature accuracy is based on worst case error. Manufacturer %RH Limits are +/-1% 0 to 90%RH. CALIBRATED 25 to 65 °C			

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Left	
% RH	% RH	mAmp	% RH	% RH	% RH	Result	
0-100	19.99	7.218	20.11	0.12	1.0	0.63	Pass
	39.93	10.421	40.13	0.20	1.0	0.63	Pass
	60.12	13.777	61.11	0.99	1.0	0.63	Pass
	70.00	15.358	70.99	0.99	1.0	0.63	Pass
Degrees	°C	mAmp	°C	°C	°C	°C	
	25.00	7.644	25.55	0.55	0.60	0.035	Pass
	44.97	9.237	45.46	0.49	0.60	0.063	Pass
	65.01	10.772	64.65	-0.36	0.60	0.091	Pass
END OF REPORT							