1.0 PURPOSE

1.1. This procedure establishes the requirements to adhere to when performing calibration of field test instruments.

1.2. Calibration shall be to the requirements of ISO 10012 or ANSI/INCSL Z 540-1. These requirements are considered to be met if calibration is done by a laboratory accredited to ISO/IEC 17025.

2.0 REFERENCE DOCUMENTS

2.1. PI-167 Control of Inspection, Measuring, and Test Equipment.

3.0 ALTEK 422 TEMPERATURE CALIBRATOR

3.1. ID Numbers: LOG 1524 EG, LOG 4146 EG.

3.2. Uses: Calibration of controlling, monitoring, or recording instruments and performance of SATs.

3.3. Calibration Frequency: 3 months max.

3.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

3.5. Calibration Setpoints: 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F (additional setpoints are permissible).

3.5.1. Must be completed for each channel individually.

3.6. Accuracy Limits: +/- 1°F or +/- 0.1% of reading, whichever is greater.

3.7. Thermocouple (TC) Types to be Calibrated: K and R.

3.8. Reporting: Must meet AMS 2750 (current revision at the time of reporting).

4.0 AGILENT 34970A DATA LOGGER

4.1. ID Numbers: LOG 3993 VS, LOG 4348 VS.

4.2. Uses: Performance of TUS's

4.3. Calibration Frequency: 3 months max.

4.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

4.5. Calibration Setpoints: 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F (additional setpoints are permissible).

4.5.1. Must be completed for each channel individually.

Date		Date	
Engineering	KEITH JONES	Quality	ROB SENITZA

4.6. Accuracy Limits: +/- 1°F or +/- 0.1% of reading, whichever is greater.

4.7. TC Types to be Calibrated: K

4.8. Reporting: Must meet AMS 2750 (current revision at the time of reporting).

5.0 TELEVAC MM200 / 7E1 COLD CATHODE / 2A TC TUBE, VACUUM INSTRUMENT/SENSORS

5.1. ID Number: 060224 (reference Meyer LOG 1520 PG).

5.2. Uses: Calibration of controlling, monitoring, or recording instruments.

5.3. Calibration Frequency: 12 months max.

5.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

5.5. Calibration Setpoints: Any setpoints are acceptable so long as 20 microns (for TC tube) as well as 1x10-3, 5x10-4 and 5x10-5 torr (for cold cathode) are included.

5.5.1. Must be completed for each channel individually.

5.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.

5.7. Accuracy Limits: +/- 0.45 decade.

6.0 TRANSMATION 1045 SN PRESSURE CALIBRATOR

6.1. ID Numbers: LOG 1501 TH.

6.2. Uses: Calibration of controlling, monitoring, or recording instruments.

6.3. Calibration Frequency: 3 months max.

6.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

6.5. Calibration Method: Shall be in accordance with manufacturer's recommendations.

6.6. Accuracy Limits: +/- 0.2 psi.

7.0 VAISALA DMT-152 DEWPOINT INSTRUMENT

7.1. ID Numbers: LOG 3689 TH, COX 3488 TH.

7.2. Uses: Calibration of controlling, monitoring, or recording instruments.

7.3. Calibration Frequency: 6 months max.

7.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

7.5. Calibration Setpoints: Any setpoints are acceptable so long as a minimimum of three (3) setpoints are taken and the range from -60°F to -80°F is covered.

7.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.

7.7. Accuracy Limits: Shall be within +/- 5°F.

8.0 GE MMY245 DEWPOINT INSTRUMENT

8.1. ID Numbers: LOG 3689 TH, COX 3488 TH.

8.2. Uses: Calibration of controlling, monitoring, or recording instruments.

8.3. Calibration Frequency: 6 months max.

8.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.

8.5. Calibration Setpoints: Any setpoints are acceptable so long as a minimimum of three (3) setpoints are taken and the range from -60°F to -80°F is covered.

8.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.

8.7. Accuracy Limits: Shall be within +/- 5°F.

9.0 OUT OF TOLERANCE CONDITION

9.1. Any instrument which does not meet the requirements listed herein shall be taken out of service.

9.2. The calibration department shall refer to PI-167 for further action.

Revision History

Rev. Ltr.	Parg.	Description of Revision	Date Rev.	Rev. By
A	4.6	Changed an accuracy limit from +/-1% of reading to +/- 0.1%	8/14/13	O. Bagriy
B	7.5	Allowed any setpoints for Vaisala so long as -60°F to -80°F is covered	3/20/15	K. Jones
C	3.5, 4.5, 5.5	Required each channel to be calibrated individually	6/25/15	K. Jones
C	3.5	Changed setpoints on Altek to go down to 750F, made others equally spaced	6/25/15	K. Jones
C	3.6	Changed accuracy limit from +/-1% of reading to +/- 0.1%	6/25/15	K. Jones
C	4.1	Corrected ID #	6/25/15	K. Jones
C	4.5	Changed setpoints on Agilent to go down to 750°F, made others equally spaced	6/25/15	K. Jones
C	5.0	Added 2A TC Tube	6/25/15	K. Jones
C	5.1	Referenced serial number on vacuum instruments/sensors	6/25/15	K. Jones
C	5.5	Required setpionts 20 microns, 1x10-3, 5x10-4, 5x10-5 torr	6/25/15	K. Jones
C	7.5	Required three (3) setpionts	6/25/15	K. Jones
D	3.5, 4.5	Changed setpoints to 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F	7/20/2015	S. Lawless
D	5.7	Changed .5 decades to .45 decades.	7/20/2015	S. Lawless
E	1.2	New section covering ISO requirements	3/11/16	K. Jones
F	8.0	New instrument added GE MMY245	6/23/17	K. Jones
F	All	General formatting throughout document	6/23/17	K. Jones
G	7.7 & 8.7	Changed accuracy limit on dewpoint to +/- 5F	12/20/18	K. Jones