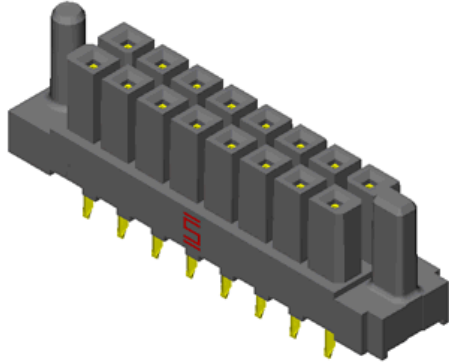




Project Number: N/A		Tracking Code: TC0327-N/A-0223	
Requested by: Phil Eckert		Date: 6/30/2003	Product Rev: N/A
Part #: IPBS-115-H2-T-D		Lot #: N/A	Tech: Troy Cook Eng: John Tozier
Part description: IPBS			Qty to test: 10
Test Start: 07/15/2003	Test Completed: 8/19/2003		



**Satin-Tin contact comparison, soldered with and without a Nitrogen blanket**

**PART DESCRIPTION**

**IPBS-115-H2-T-D**

**Mated with**

**IPBT-115-H2-T-D**

## CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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### SCOPE

To evaluate Satin-Tin contact system integrity after exposure to typical Pb-free soldering processes. The evaluation will occur on systems soldered with and without the Nitrogen blanket.

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

**The two mating components (if applicable) were soldered using AIM TSC-4 lead free alloy using Sn with 3.8%-4% Ag, and 0.5% - 0.7% Cu solder paste using the oven profile .**

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts were cleaned with the Aqueous Inline Cleaning System (Aqueous Millennium Technologies)

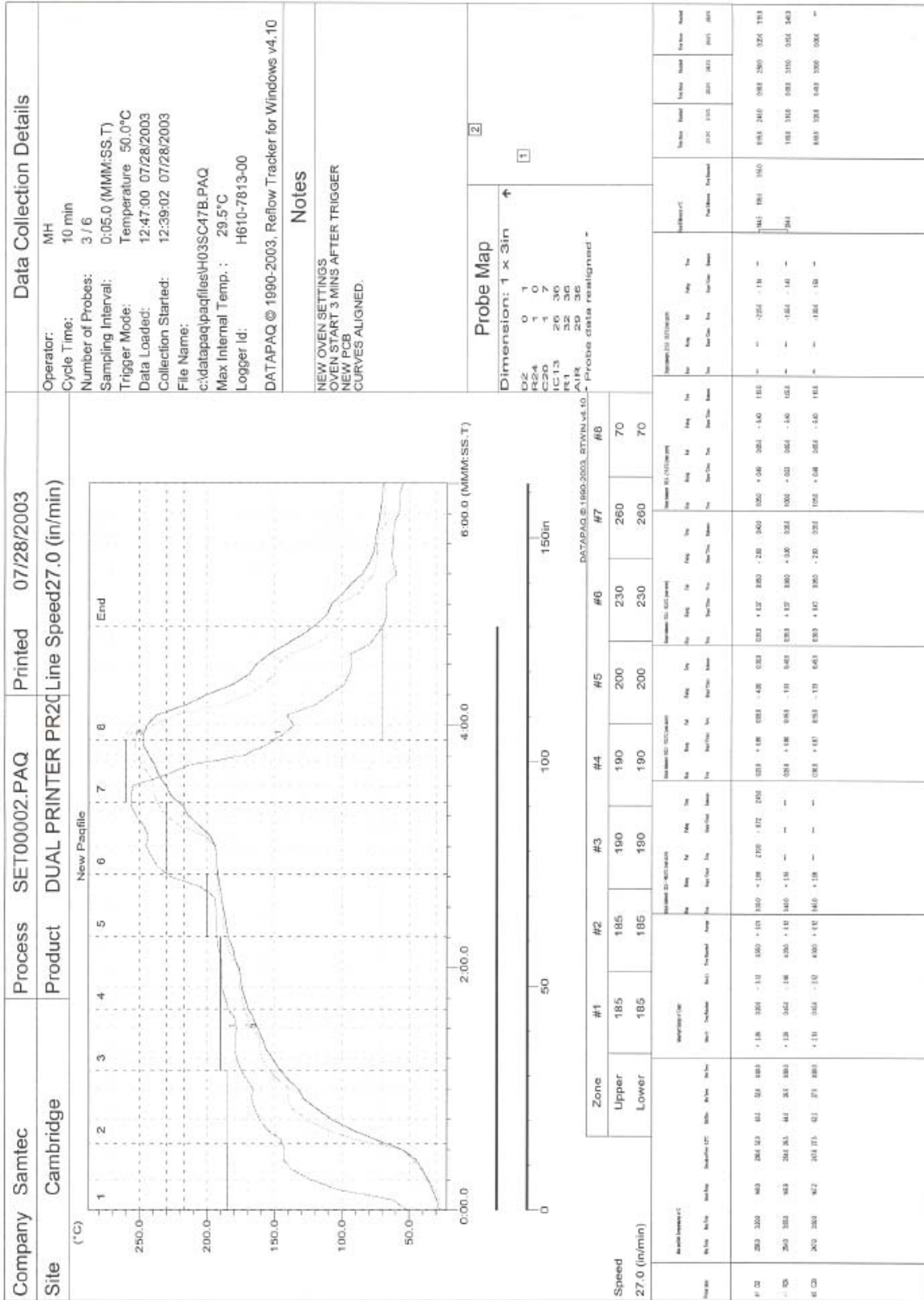
**FLOWCHART**

<b>TEST STEP</b>	<b>GROUP A 200 Points  480 hour Test Processed in AIR</b>	<b>GROUP B 200 Points  480 hour Test Processed in Nitrogen</b>
<b>01</b>	LLCR-1	LLCR-1
<b>02</b>	Data Review	Data Review
<b>03</b>	Cyclic Humidity, 240 Hours	Cyclic Humidity, 240 Hours
<b>04</b>	LLCR-2	LLCR-2
<b>05</b>	Data Review	Data Review
<b>06</b>	Cyclic Humidity, 240 Hours	Cyclic Humidity, 240 Hours
<b>07</b>	LLCR-3	LLCR-3

**Humidity =EIA-364-31, Test Condition B (240 Hours)  
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)  
delete steps 7a and 7b**

**LLCR = EIA-364-23, LLCR  
use Keithley 580 in the dry circuit mode, 10 mA Max**

OVEN PROFILE



**Company** Samtec  
**Site** Cambridge  
**Process** SET00002.PAQ  
**Product** DUAL PRINTER PR2  
**Line Speed** 27.0 (in/min)  
**Printed** 07/28/2003

**Data Collection Details**  
**Operator:** MH  
**Cycle Time:** 10 min  
**Number of Probes:** 3 / 6  
**Sampling Interval:** 0:05.0 (MM:SS.T)  
**Trigger Mode:** Temperature 50.0°C  
**Data Loaded:** 12:47:00 07/28/2003  
**Collection Started:** 12:39:02 07/28/2003  
**File Name:** c:\data\paq\paqfiles\H03SC47B.PAQ  
**Max Internal Temp.:** 29.5°C  
**Logger id:** H610-7813-00  
**DATAPAQ © 1990-2003, Reflow Tracker for Windows v4.10**

**Notes**  
 NEW OVEN SETTINGS  
 OVEN START 3 MINS AFTER TRIGGER  
 NEW PCB  
 CURVES ALIGNED.

**Probe Map**  
 Dimension: 1 x 3in  
 D2 0 1  
 R24 1 0  
 C20 1 7  
 IC13 26 36  
 T1 22 36  
 A2 22 36  
 A3 22 36  
 \* Probe data realigned \*

Speed	Zone	#1	#2	#3	#4	#5	#6	#7	#8
27.0 (in/min)	Upper	185	185	190	190	200	230	260	70
	Lower	185	185	190	190	200	230	260	70

**ATTRIBUTE DEFINITION**

Following is a brief, simplified description of attributes.

**CYCLIC HUMIDITY:**

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
  - a) Test Condition B, 240 Hours.
  - b) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 2) Connectors are mated.
- 3) Test Condition B run twice for a total of 480 hours.
  - a) Intermediate results taken at 240 hours.

**LLCR:**

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
  - a)  $\leq +5.0$  mOhms: ----- Stable
  - b)  $+5.1$  to  $+10.0$  mOhms:----- Minor
  - c)  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d)  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e)  $+50.1$  to  $+2000$  mOhms: ----- Unstable
  - f)  $>+2000$  mOhms:----- Open Failure

**RESULTS****LLCR (200 LLCR test points)**

- **Initial**
  - Air Processed -----1.6 mOhms Max
  - Nitrogen Processed----- 1.7 mOhms Max
- **Stressed 240 Hours**
  - <= +5.0 mOhms
    - Air Processed-----200 Points ----- Stable
    - Nitrogen Processed-----200 Points ----- Stable
  - +5.1 to +10.0 mOhms
    - Air Processed-----0 Points ----- Minor
    - Nitrogen Processed-----0 Points ----- Minor
  - +10.1 to +15.0 mOhms
    - Air Processed-----0 Points ----- Acceptable
    - Nitrogen Processed-----0 Points ----- Acceptable
  - +15.1 to +50.0 mOhms
    - Air Processed-----0 Points ----- Marginal
    - Nitrogen Processed-----0 Points ----- Marginal
  - +50.1 to +2000 mOhms
    - Air Processed-----0 Points ----- Unstable
    - Nitrogen Processed-----0 Points ----- Unstable
  - >+2000 mOhms
    - Air Processed-----0 Points ----- Open Failure
    - Nitrogen Processed-----0 Points ----- Open Failure
- **Stressed 480 Hours**
  - <= +5.0 mOhms
    - Air Processed-----200 Points ----- Stable
    - Nitrogen Processed-----200 Points ----- Stable
  - +5.1 to +10.0 mOhms
    - Air Processed-----0 Points ----- Minor
    - Nitrogen Processed-----0 Points ----- Minor
  - +10.1 to +15.0 mOhms
    - Air Processed-----0 Points ----- Acceptable
    - Nitrogen Processed-----0 Points ----- Acceptable
  - +15.1 to +50.0 mOhms
    - Air Processed-----0 Points ----- Marginal
    - Nitrogen Processed-----0 Points ----- Marginal
  - +50.1 to +2000 mOhms
    - Air Processed-----0 Points ----- Unstable
    - Nitrogen Processed-----0 Points ----- Unstable
  - >+2000 mOhms
    - Air Processed-----0 Points ----- Open Failure
    - Nitrogen Processed-----0 Points ----- Open Failure

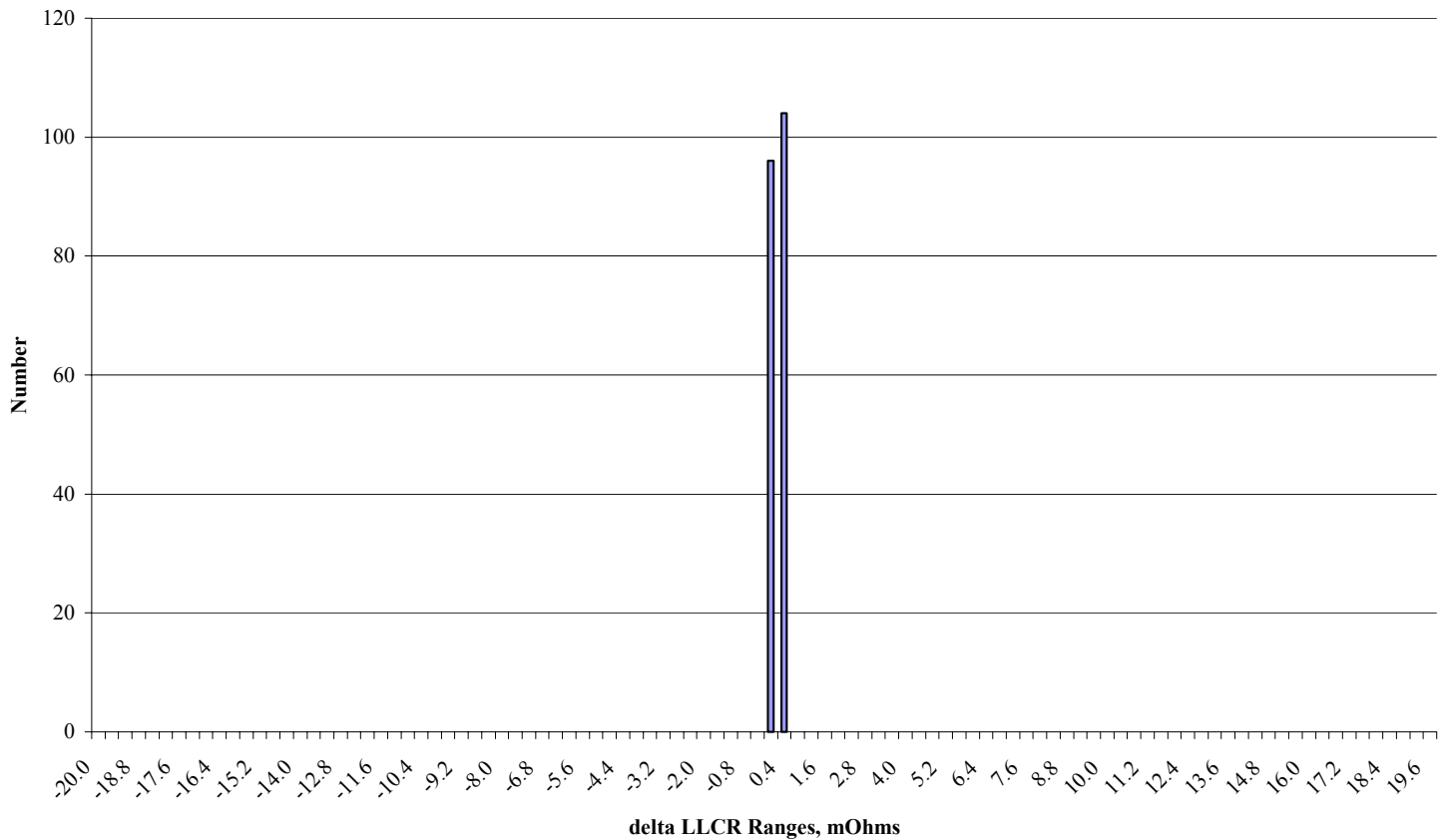
After soldering, parts soldered in the 'open air process' showed slight discoloration compared to those parts soldered in the 'nitrogen blanket process'. Discoloration is seen as a slight 'yellowing' or 'bronzing'.

**DATA SUMMARIES****LLCR:**

- 1) A total of 200 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
  - a)  $\leq +5.0$  mOhms: ----- Stable
  - b)  $+5.1$  to  $+10.0$  mOhms:----- Minor
  - c)  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d)  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e)  $+50.1$  to  $+2000$  mOhms ----- Unstable
  - f)  $>+2000$  mOhms:----- Open Failure

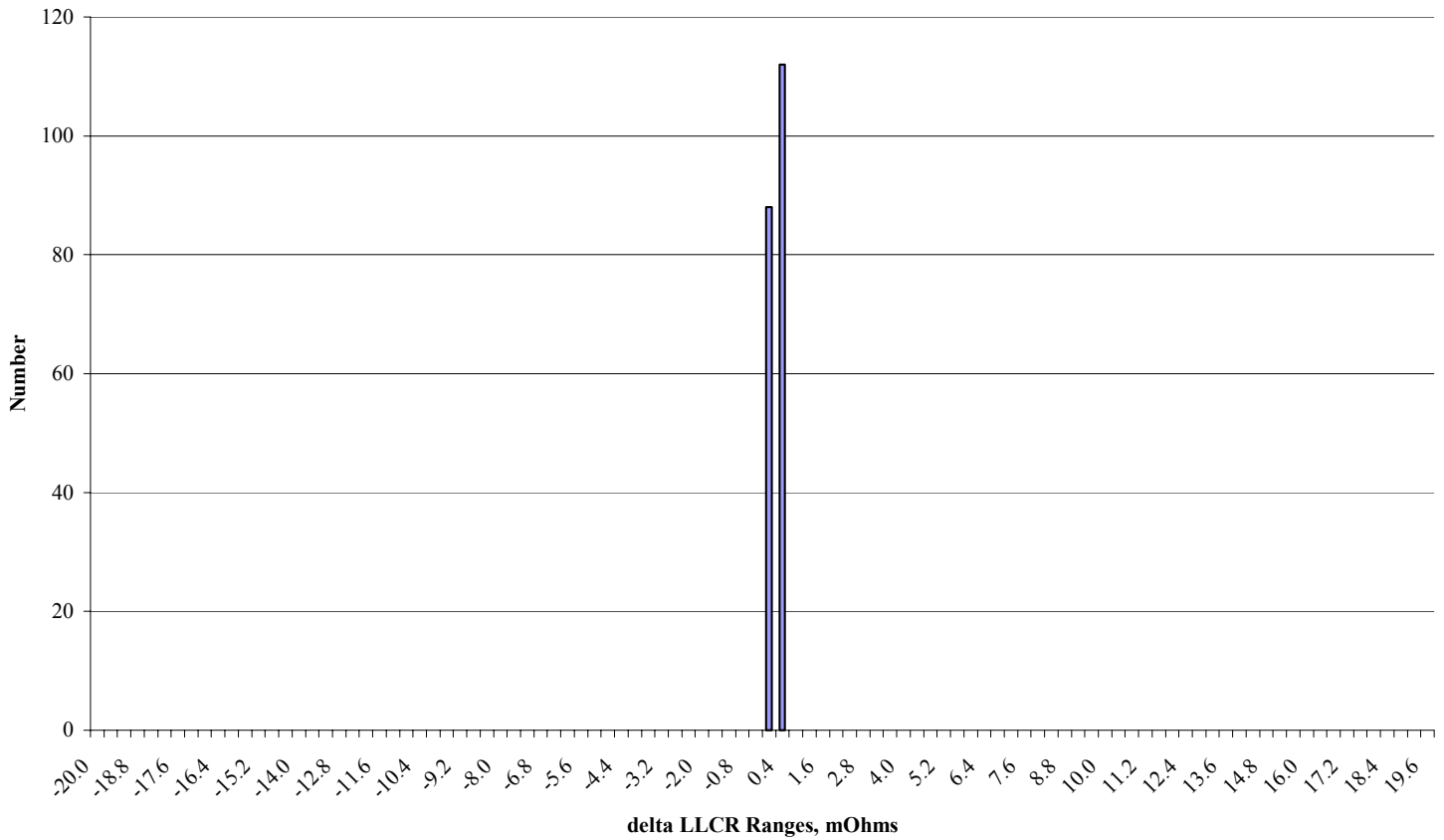
mOhm values	Air Processed		
	Actual Initial	Delta Humidity-240 Hours	Delta Humidity-480 Hours
Average	1.3	0.0	0.0
St. Dev.	0.1	0.1	0.1
Min	1.0	-0.2	-0.2
Max	1.6	0.2	0.2
Count	200	200	200

**Air Processed  
After 480 Hours**



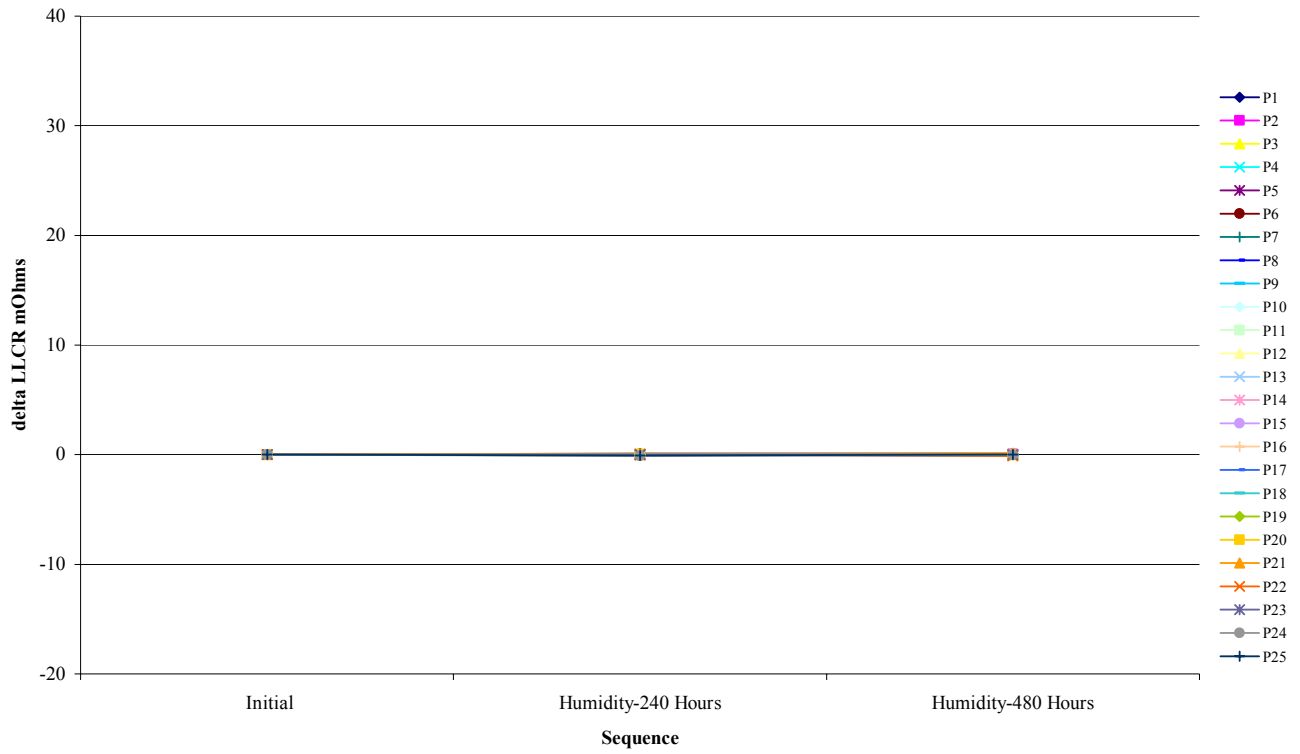
**DATA SUMMARIES Continued**

mOhm values	Nitrogen Processed		
	Actual Initial	Delta Humidity- 240 Hours	Delta Humidity- 480 Hours
Average	1.3	0.0	0.0
St. Dev.	0.1	0.1	0.1
Min	1.0	-0.2	-0.2
Max	1.7	0.5	0.3
Count	200	200	200

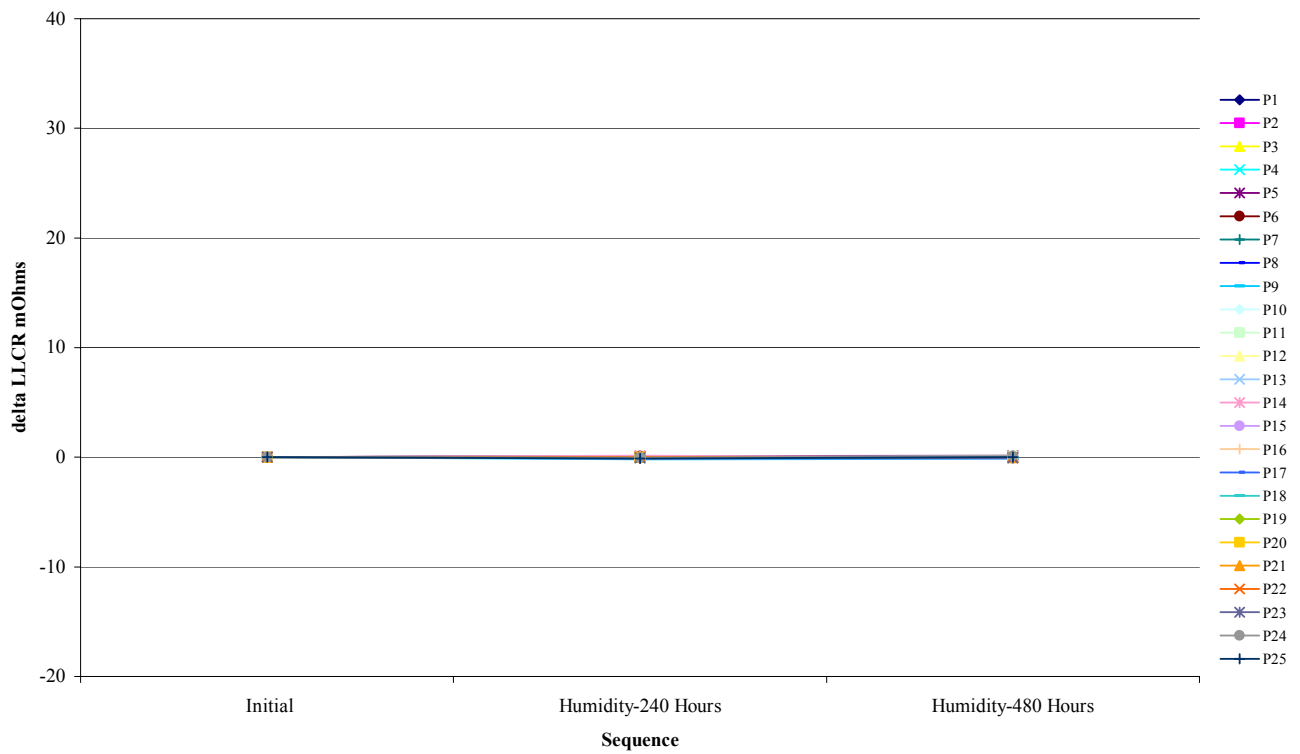
**Nitrogen Processed  
After 480 Hours**

### DATA SUMMARIES Continued

Air Processed  
Board #1

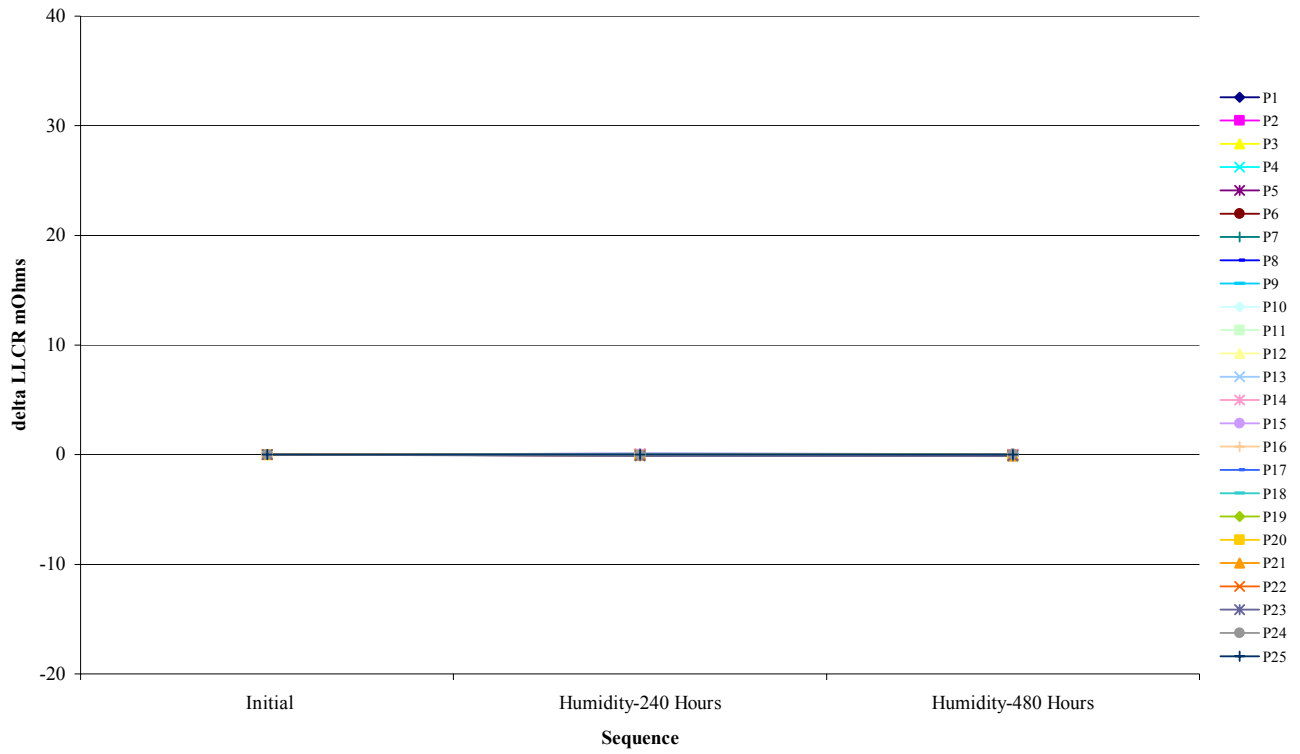


Air Processed  
Board #2

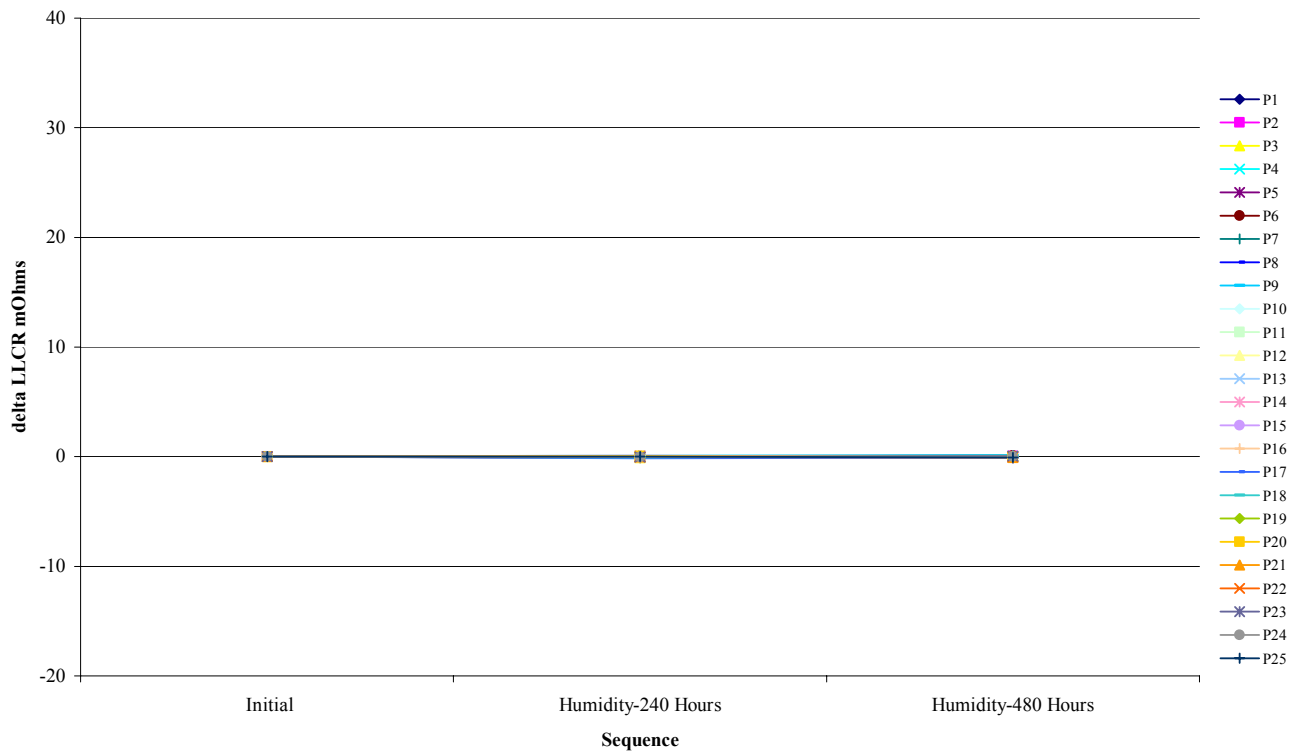


### DATA SUMMARIES Continued

Air Processed  
Board #3

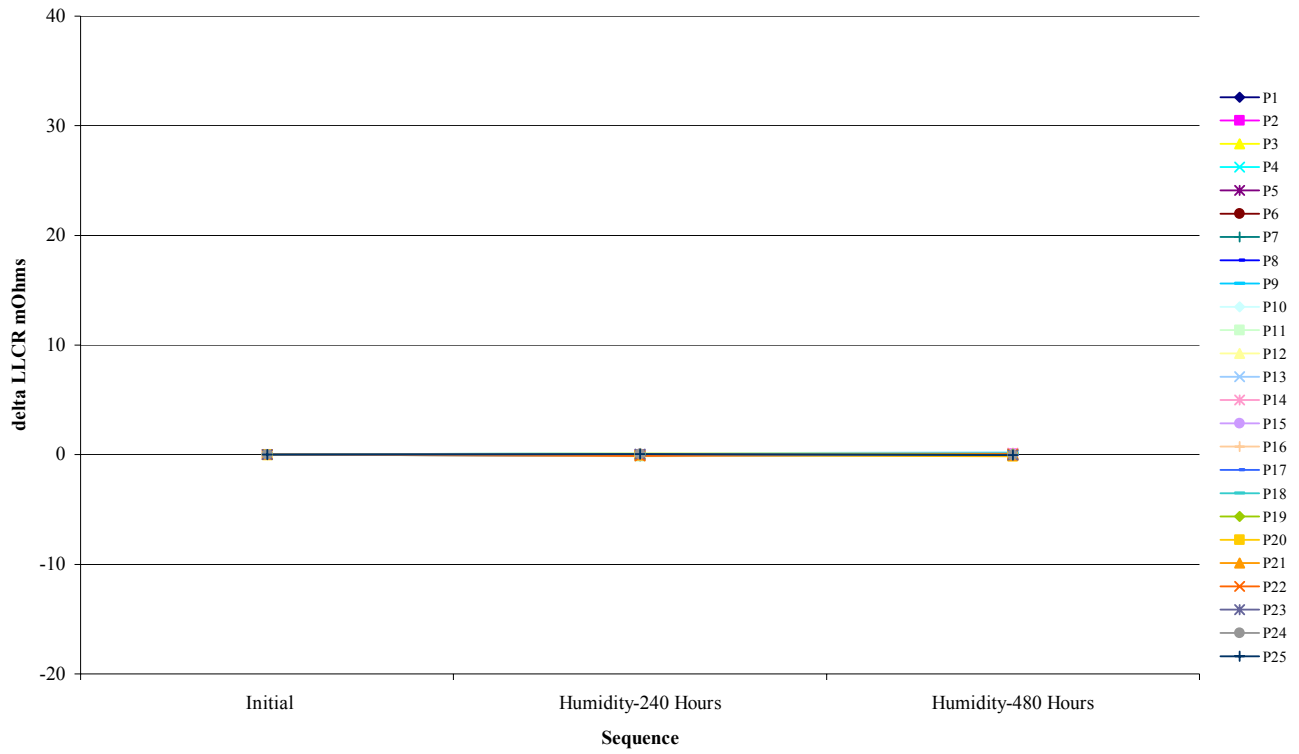


Air Processed  
Board #4

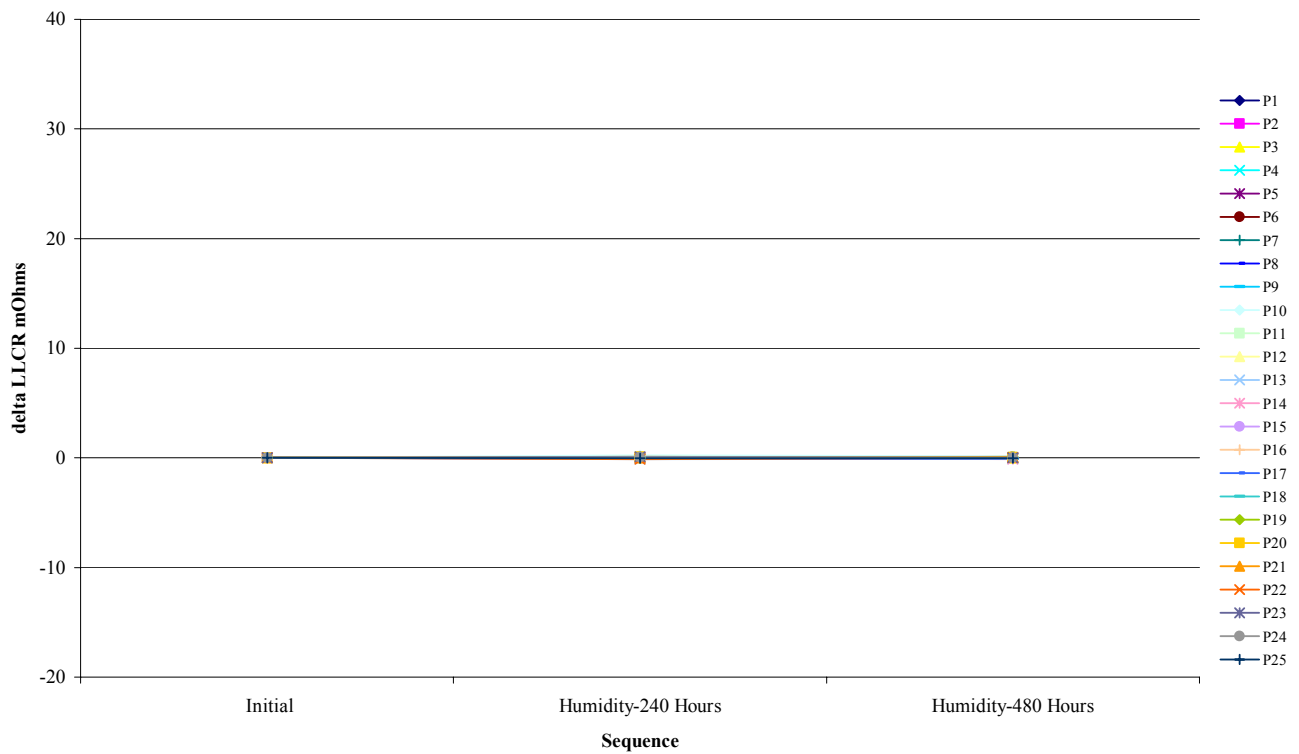


### DATA SUMMARIES Continued

Air Processed  
Board #5

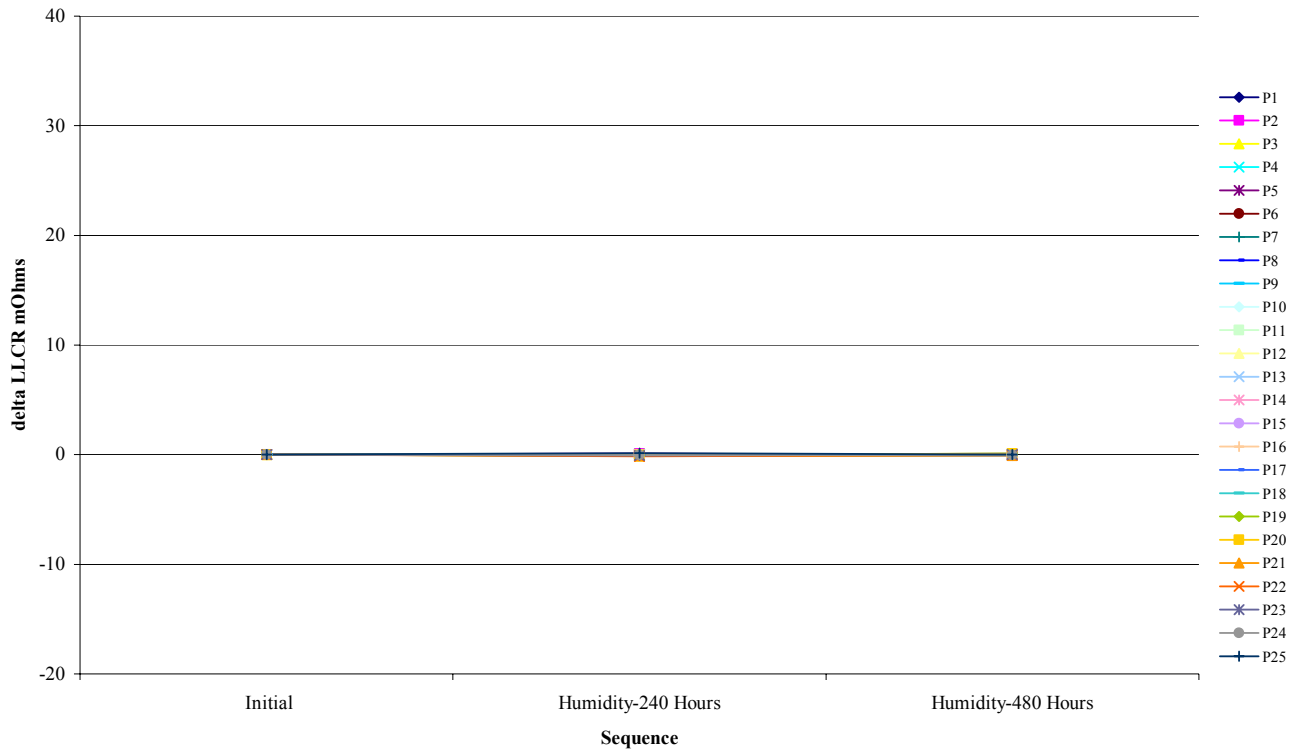


Air Processed  
Board #6

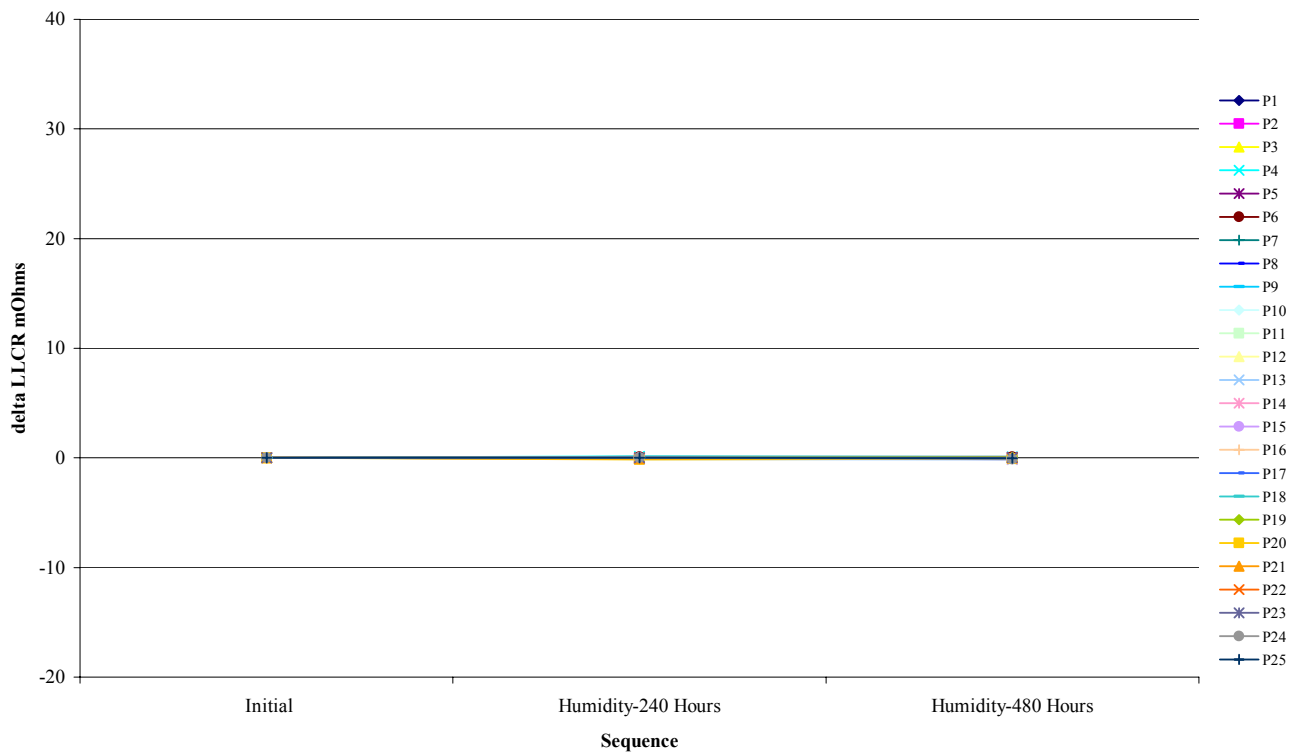


### DATA SUMMARIES Continued

Air Processed  
Board #7

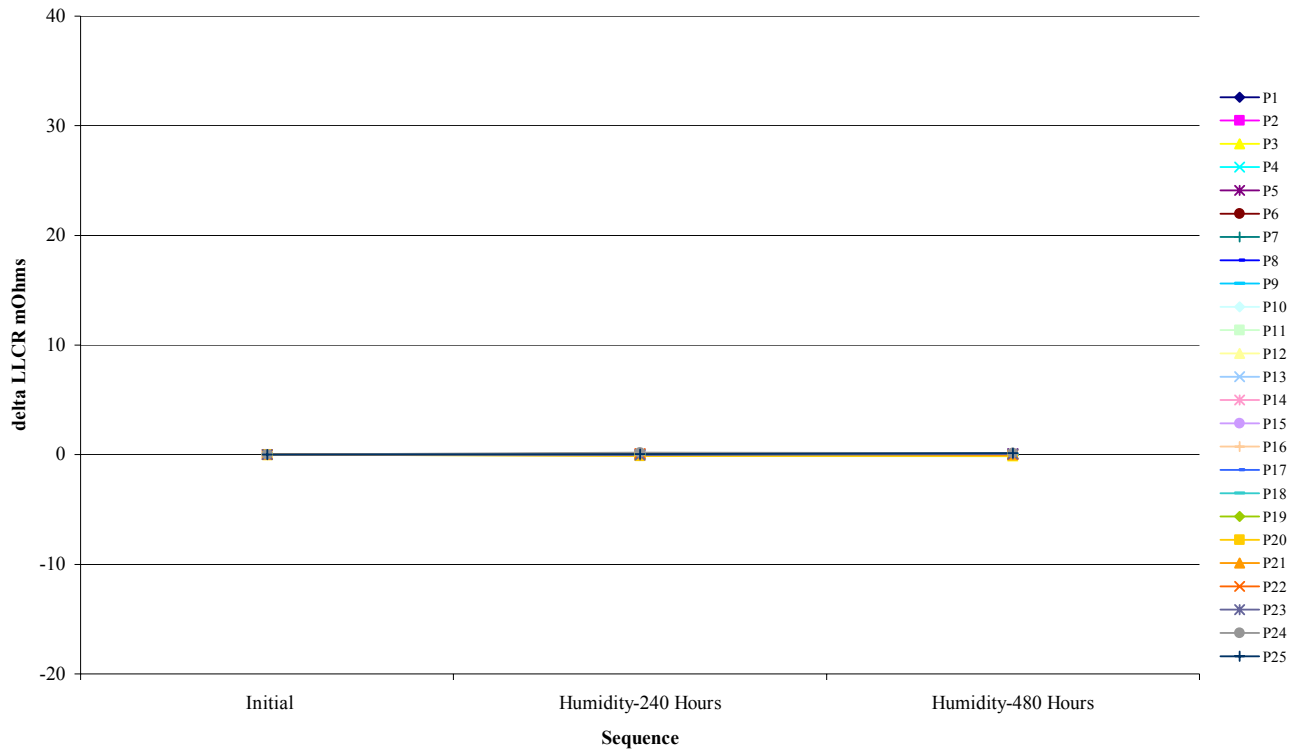


Air Processed  
Board #8

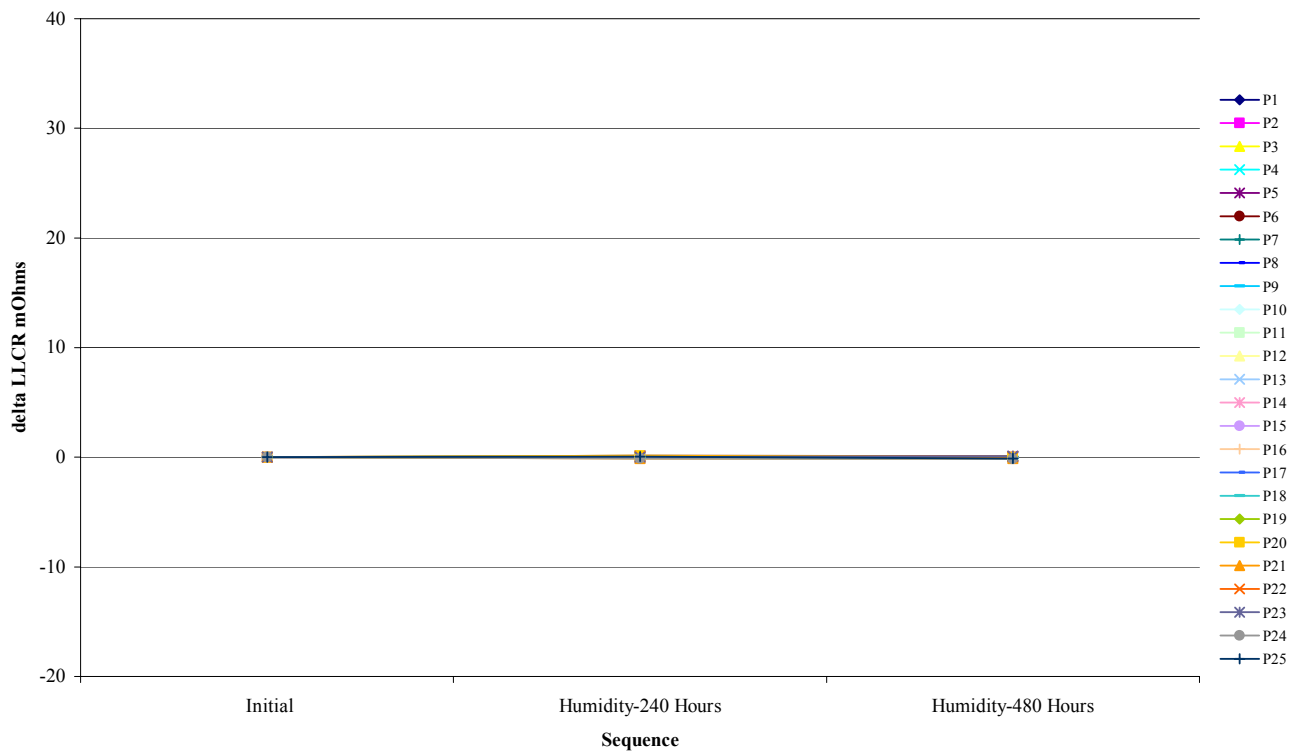


### DATA SUMMARIES Continued

#### Nitrogen Processed Board #1

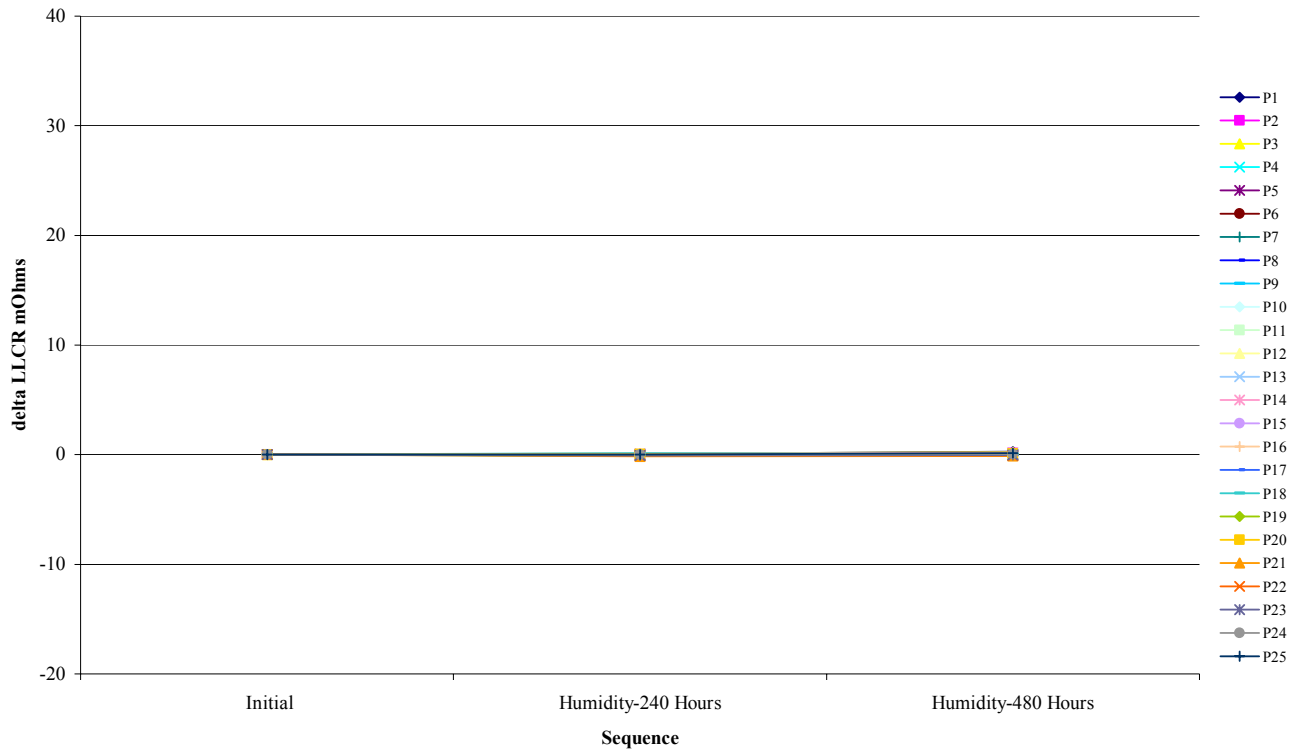


#### Nitrogen Processed Board #2

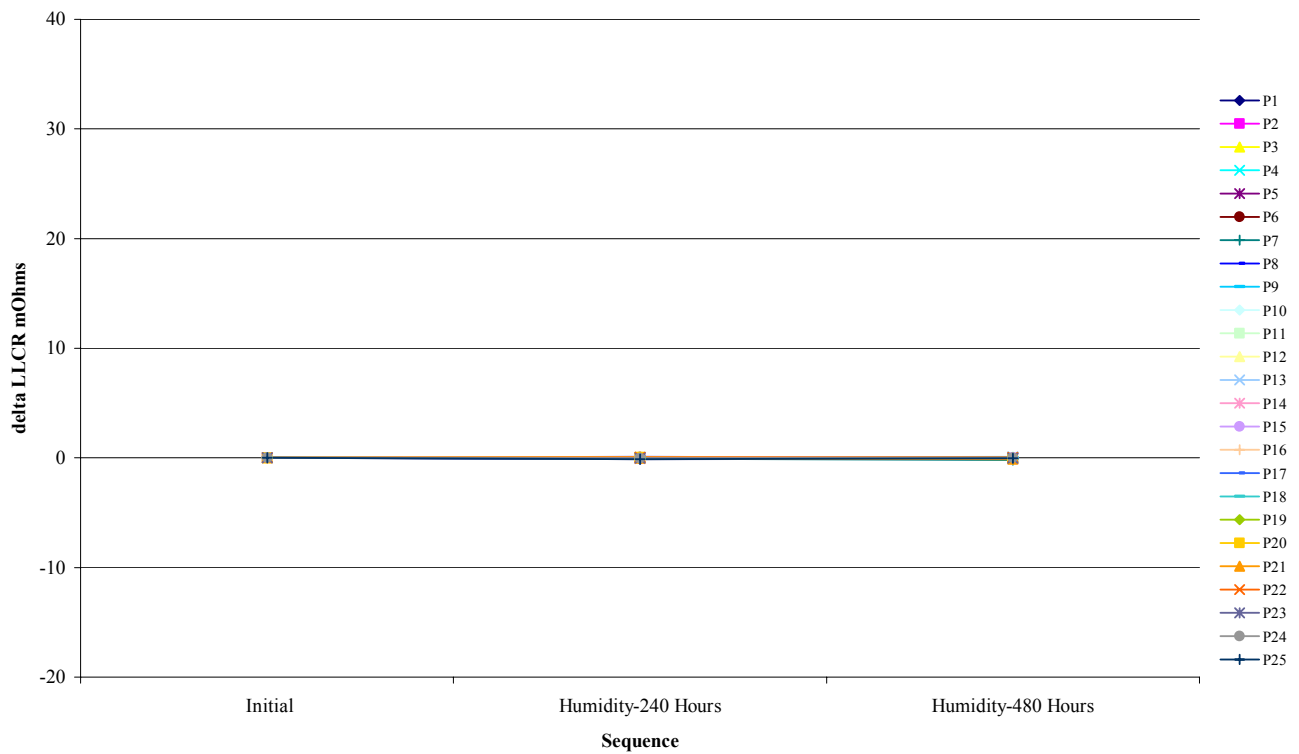


### DATA SUMMARIES Continued

#### Nitrogen Processed Board #3

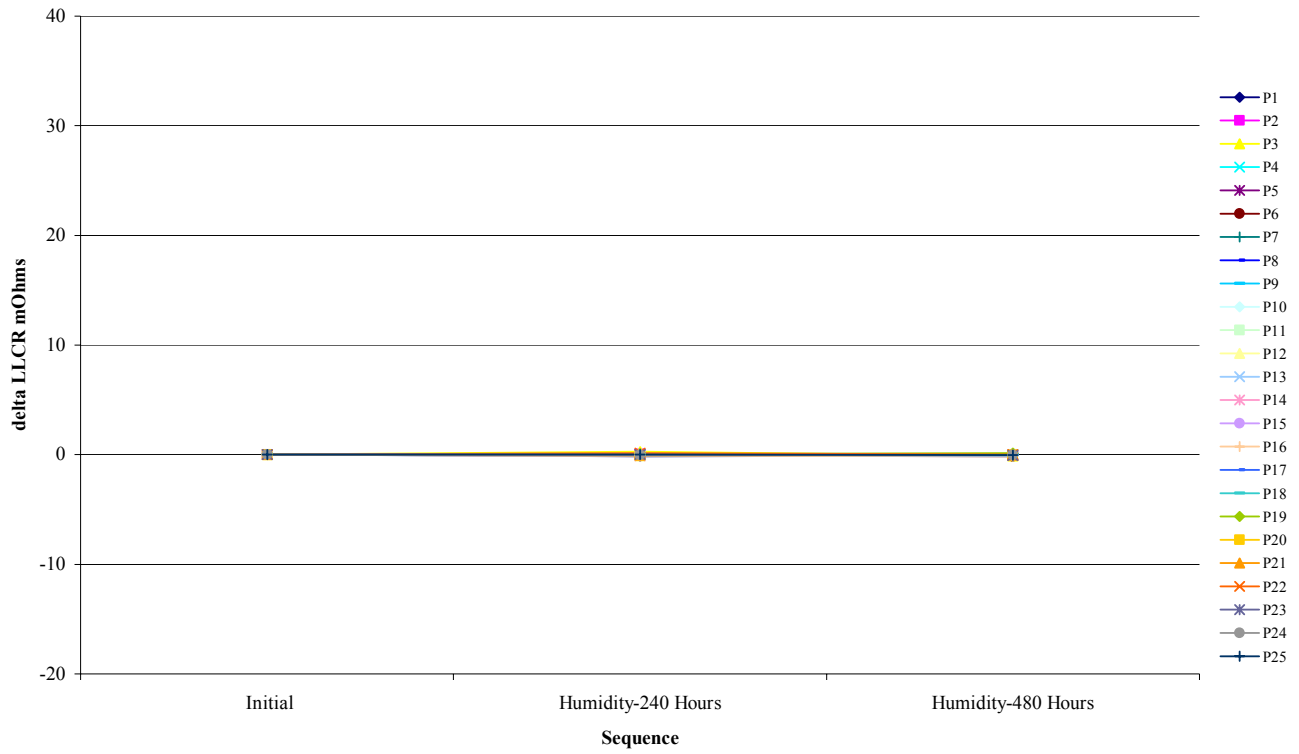


#### Nitrogen Processed Board #4

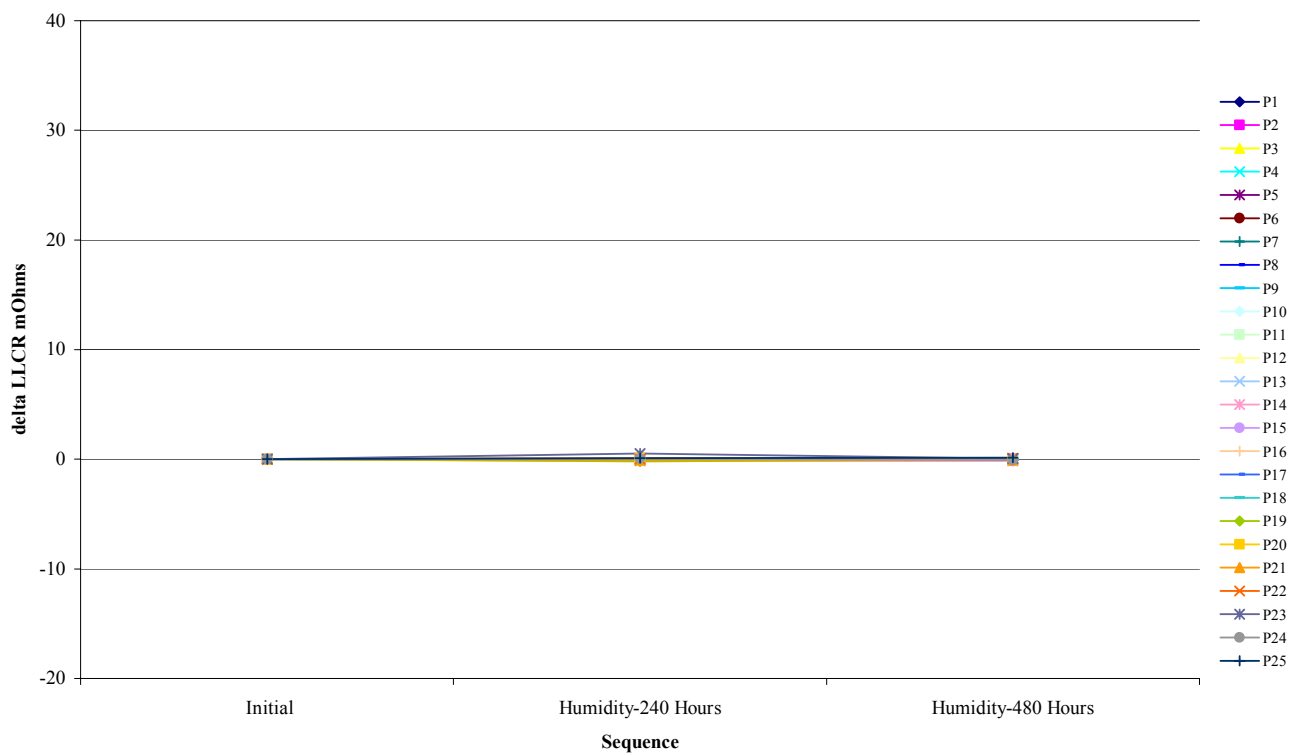


### DATA SUMMARIES Continued

Nitrogen Processed  
Board #5

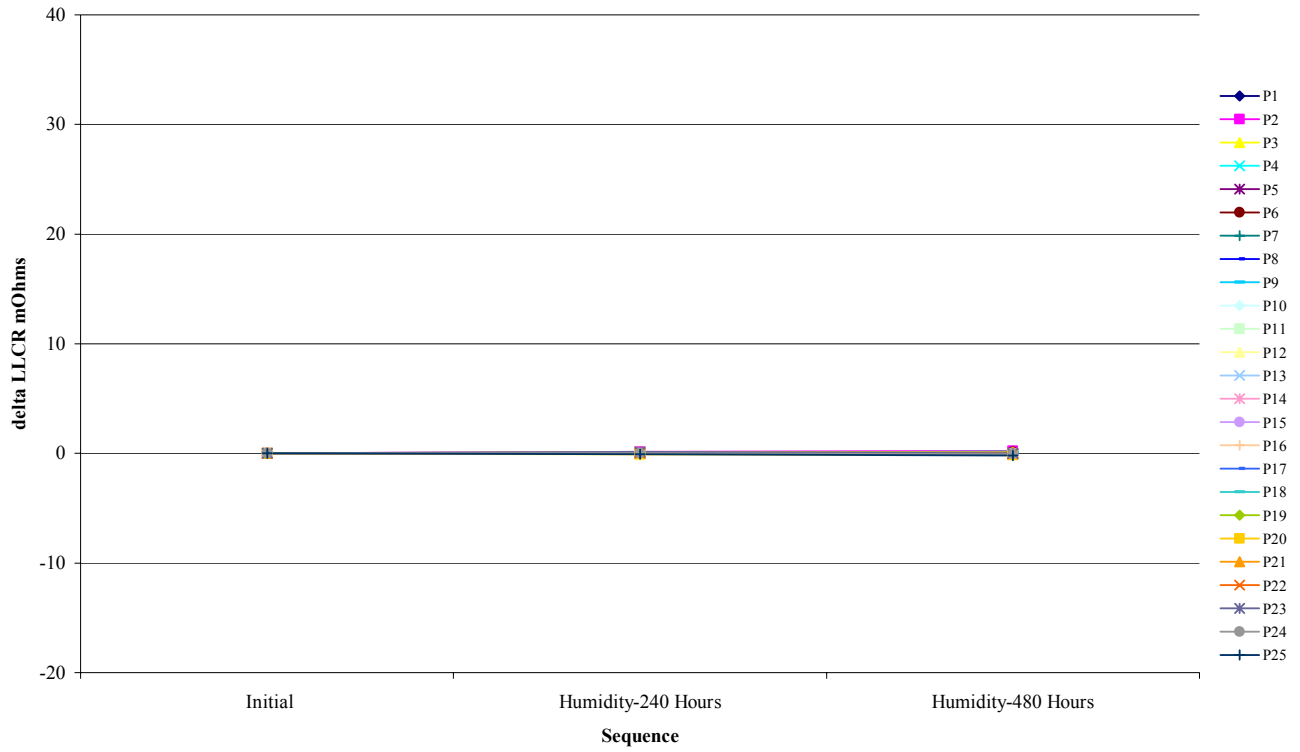


### Nitrogen Processed Board #6

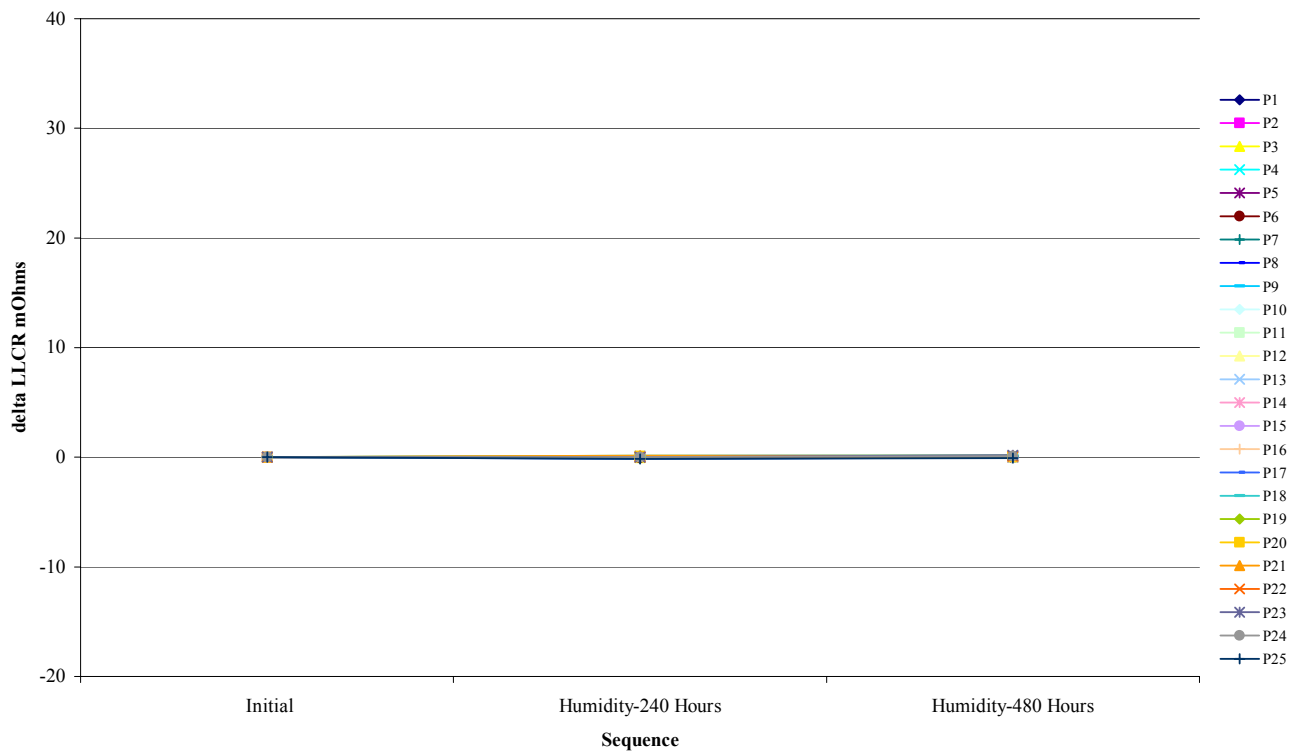


### DATA SUMMARIES Continued

#### Nitrogen Processed Board #7



#### Nitrogen Processed Board #8



**DATA****LLCR, Air Processed:**

Date	Jul. 15 2003	Aug. 04 2003	Aug. 19 2003
Room Temp C	22	23	21
RH	52%	54%	54%
Initials	Troy Cook	Troy Cook	Troy Cook

mOhm values		Actual	Delta	Delta
Board	Position	Initial	Humidity-240 Hours	Humidity-480 Hours
1	P1	1.1	0.1	0.1
1	P2	1.2	0.0	0.0
1	P3	1.2	0.0	0.1
1	P4	1.3	0.0	0.0
1	P5	1.3	0.1	0.0
1	P6	1.2	0.1	0.0
1	P7	1.4	0.0	0.0
1	P8	1.3	0.0	-0.1
1	P9	1.5	0.0	0.0
1	P10	1.4	-0.1	0.0
1	P11	1.4	0.0	0.0
1	P12	1.5	0.0	0.0
1	P13	1.4	0.0	-0.1
1	P14	1.3	-0.1	0.0
1	P15	1.3	0.0	0.0
1	P16	1.3	-0.1	0.0
1	P17	1.2	0.0	-0.1
1	P18	1.2	0.0	0.0
1	P19	1.2	0.0	0.1
1	P20	1.2	0.1	0.0
1	P21	1.2	0.0	0.1
1	P22	1.3	0.0	-0.1
1	P23	1.2	0.0	0.0
1	P24	1.3	-0.1	0.0
1	P25	1.4	-0.1	0.0
2	P1	1.5	0.1	0.0
2	P2	1.3	0.0	0.0
2	P3	1.3	0.1	0.0
2	P4	1.3	0.1	0.1
2	P5	1.3	0.1	0.1
2	P6	1.3	0.1	0.0
2	P7	1.4	0.0	0.0
2	P8	1.5	-0.1	0.0
2	P9	1.6	-0.2	-0.2
2	P10	1.3	0.0	0.0
2	P11	1.3	0.0	0.1

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

2	P12	1.4	0.0	0.0
2	P13	1.3	0.1	0.0
2	P14	1.4	0.1	0.0
2	P15	1.4	-0.1	-0.1
2	P16	1.4	-0.1	0.0
2	P17	1.5	-0.1	-0.1
2	P18	1.5	-0.1	0.0
2	P19	1.5	0.0	0.0
2	P20	1.3	0.0	0.0
2	P21	1.3	0.0	0.0
2	P22	1.3	0.0	0.0
2	P23	1.3	-0.1	-0.1
2	P24	1.4	0.0	0.1
2	P25	1.4	-0.1	0.0
3	P1	1.2	0.1	-0.1
3	P2	1.2	-0.1	0.0
3	P3	1.1	0.1	0.1
3	P4	1.1	0.0	0.0
3	P5	1.1	0.0	0.0
3	P6	1.2	-0.1	0.0
3	P7	1.2	0.0	-0.1
3	P8	1.2	0.0	-0.1
3	P9	1.2	0.0	0.1
3	P10	1.3	0.0	-0.1
3	P11	1.3	0.0	-0.1
3	P12	1.3	0.0	-0.1
3	P13	1.2	0.1	0.0
3	P14	1.1	0.1	0.1
3	P15	1.2	0.1	0.0
3	P16	1.2	0.0	0.0
3	P17	1.2	0.1	0.0
3	P18	1.2	0.0	0.0
3	P19	1.2	0.0	0.1
3	P20	1.2	-0.1	-0.1
3	P21	1.2	0.0	-0.1
3	P22	1.2	0.0	0.0
3	P23	1.2	-0.1	-0.1
3	P24	1.2	0.0	0.1
3	P25	1.3	0.0	0.0
4	P1	1.3	-0.1	-0.1
4	P2	1.3	-0.1	0.0
4	P3	1.2	-0.1	0.1
4	P4	1.3	0.0	0.0
4	P5	1.2	0.0	0.0
4	P6	1.2	0.1	0.1
4	P7	1.1	0.0	0.1
4	P8	1.2	-0.1	0.0
4	P9	1.1	0.1	0.1
4	P10	1.2	0.1	0.0
4	P11	1.3	0.0	-0.1

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

4	P12	1.3	-0.1	0.0
4	P13	1.2	0.0	0.0
4	P14	1.3	0.1	0.0
4	P15	1.3	0.0	-0.1
4	P16	1.3	0.0	0.0
4	P17	1.3	-0.2	-0.1
4	P18	1.3	-0.1	0.1
4	P19	1.3	0.0	0.0
4	P20	1.2	0.1	0.0
4	P21	1.2	0.0	-0.1
4	P22	1.2	0.0	0.0
4	P23	1.2	0.0	0.0
4	P24	1.2	0.0	0.0
4	P25	1.2	0.0	-0.1
5	P1	1.3	-0.1	0.0
5	P2	1.3	0.0	0.1
5	P3	1.3	0.0	0.0
5	P4	1.3	0.0	0.1
5	P5	1.3	0.0	0.0
5	P6	1.3	0.0	0.0
5	P7	1.4	0.0	0.0
5	P8	1.3	-0.1	0.0
5	P9	1.3	0.1	0.2
5	P10	1.3	0.1	0.1
5	P11	1.4	-0.1	0.0
5	P12	1.2	0.1	0.1
5	P13	1.2	0.0	0.1
5	P14	1.1	0.0	0.1
5	P15	1.2	0.1	0.0
5	P16	1.2	0.1	0.0
5	P17	1.2	0.1	0.0
5	P18	1.1	0.0	0.2
5	P19	1.3	0.0	0.0
5	P20	1.3	0.0	-0.2
5	P21	1.3	0.0	-0.1
5	P22	1.3	-0.1	0.1
5	P23	1.3	0.1	0.0
5	P24	1.3	0.0	0.0
5	P25	1.3	0.0	0.0
6	P1	1.5	0.0	0.0
6	P2	1.4	0.0	0.0
6	P3	1.4	0.0	0.0
6	P4	1.4	0.0	-0.1
6	P5	1.4	0.0	0.0
6	P6	1.4	0.1	0.1
6	P7	1.1	0.0	0.0
6	P8	1.2	-0.1	-0.1
6	P9	1.2	0.0	-0.1
6	P10	1.1	0.2	0.1
6	P11	1.2	0.0	0.1

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

6	P12	1.2	0.0	0.0
6	P13	1.3	-0.1	-0.1
6	P14	1.3	0.0	-0.1
6	P15	1.3	0.0	0.0
6	P16	1.2	0.0	0.0
6	P17	1.4	-0.1	-0.1
6	P18	1.3	0.0	0.0
6	P19	1.4	0.0	0.1
6	P20	1.3	0.1	0.1
6	P21	1.3	0.0	0.0
6	P22	1.3	-0.1	0.0
6	P23	1.2	0.1	0.0
6	P24	1.3	0.1	0.0
6	P25	1.4	0.0	0.0
7	P1	1.4	0.0	-0.1
7	P2	1.3	0.1	0.0
7	P3	1.4	-0.1	0.0
7	P4	1.3	0.1	0.0
7	P5	1.3	0.0	0.0
7	P6	1.3	0.0	0.0
7	P7	1.2	0.0	0.1
7	P8	1.2	0.0	0.0
7	P9	1.3	-0.1	0.0
7	P10	1.3	0.0	0.0
7	P11	1.2	0.0	0.0
7	P12	1.2	0.0	0.0
7	P13	1.1	0.0	-0.1
7	P14	1.1	0.0	0.0
7	P15	1.2	0.0	0.1
7	P16	1.0	0.0	0.1
7	P17	1.0	-0.1	0.1
7	P18	1.1	0.0	0.0
7	P19	1.1	0.0	0.1
7	P20	1.3	0.0	0.1
7	P21	1.3	-0.1	-0.1
7	P22	1.4	-0.2	0.0
7	P23	1.3	-0.1	0.0
7	P24	1.2	0.0	0.0
7	P25	1.2	0.2	0.0
8	P1	1.2	0.0	0.0
8	P2	1.2	0.0	0.0
8	P3	1.2	0.0	0.0
8	P4	1.1	0.1	0.1
8	P5	1.1	-0.1	0.0
8	P6	1.1	0.1	0.1
8	P7	1.4	0.1	0.1
8	P8	1.3	0.0	-0.1
8	P9	1.5	0.1	0.0
8	P10	1.3	0.0	0.0
8	P11	1.4	-0.1	-0.1

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

8	P12	1.4	0.0	0.0
8	P13	1.4	-0.1	-0.1
8	P14	1.4	-0.1	-0.1
8	P15	1.3	0.0	0.0
8	P16	1.3	0.0	-0.1
8	P17	1.3	0.1	0.0
8	P18	1.3	0.0	0.1
8	P19	1.3	0.0	0.0
8	P20	1.1	-0.2	-0.1
8	P21	1.1	-0.1	0.0
8	P22	1.1	0.0	0.0
8	P23	1.0	0.0	0.0
8	P24	1.1	0.0	-0.1
8	P25	1.1	0.0	0.0

**DATA Continued****LLCR, Nitrogen Processed:**

Date	Jul. 15 2003	Aug. 04 2003	Aug. 19 2003
Room Temp C	23	22	22
RH	54%	56%	59%
Initials	Troy Cook	Troy Cook	Troy Cook

mOhm values		Actual	Delta	Delta
Board	Position	Initial	Humidity- 240 Hours	Humidity- 480 Hours
1	P1	1.3	0.0	0.1
1	P2	1.2	0.0	0.0
1	P3	1.2	0.0	0.0
1	P4	1.2	0.0	0.1
1	P5	1.2	0.1	0.1
1	P6	1.1	0.0	0.1
1	P7	1.5	0.0	0.0
1	P8	1.4	0.0	0.0
1	P9	1.4	0.1	0.0
1	P10	1.2	0.1	0.1
1	P11	1.3	-0.1	-0.2
1	P12	1.4	0.0	-0.2
1	P13	1.2	0.0	0.0
1	P14	1.2	-0.1	0.0
1	P15	1.1	0.0	0.1
1	P16	1.1	0.0	0.1
1	P17	1.1	0.1	0.0
1	P18	1.2	0.0	0.0
1	P19	1.0	0.0	0.0
1	P20	1.3	-0.1	-0.1
1	P21	1.2	0.1	0.0
1	P22	1.2	0.1	0.0
1	P23	1.2	0.0	0.0
1	P24	1.2	0.2	0.1
1	P25	1.2	0.1	0.1
2	P1	1.2	0.0	0.0
2	P2	1.2	-0.1	0.0
2	P3	1.3	0.2	0.1
2	P4	1.3	0.1	0.0
2	P5	1.2	0.1	0.1
2	P6	1.3	0.0	0.0
2	P7	1.2	0.0	0.0
2	P8	1.3	0.0	0.0
2	P9	1.3	0.1	0.0
2	P10	1.3	0.0	0.0
2	P11	1.4	-0.1	-0.1
2	P12	1.2	0.0	0.0

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

2	P13	1.3	-0.1	0.0
2	P14	1.2	0.0	0.0
2	P15	1.2	0.1	0.0
2	P16	1.3	0.0	0.0
2	P17	1.3	0.1	0.0
2	P18	1.3	-0.1	-0.1
2	P19	1.3	0.0	0.0
2	P20	1.3	0.1	0.0
2	P21	1.2	-0.1	-0.1
2	P22	1.2	0.1	0.0
2	P23	1.2	0.0	0.1
2	P24	1.4	-0.1	-0.1
2	P25	1.3	0.1	-0.1
3	P1	1.2	0.1	0.3
3	P2	1.2	0.0	0.1
3	P3	1.1	0.1	0.2
3	P4	1.1	0.1	0.0
3	P5	1.1	0.0	0.0
3	P6	1.1	0.0	-0.1
3	P7	1.7	-0.1	-0.1
3	P8	1.4	0.1	0.0
3	P9	1.5	0.0	0.1
3	P10	1.4	0.0	0.0
3	P11	1.3	0.0	0.1
3	P12	1.4	0.1	0.0
3	P13	1.5	0.0	0.0
3	P14	1.3	0.1	0.2
3	P15	1.4	0.0	0.0
3	P16	1.3	0.0	0.0
3	P17	1.3	0.0	0.0
3	P18	1.2	0.1	0.0
3	P19	1.2	-0.1	0.1
3	P20	1.0	0.1	0.1
3	P21	1.2	-0.2	-0.1
3	P22	1.2	-0.1	-0.1
3	P23	1.1	-0.1	0.0
3	P24	1.1	0.0	0.0
3	P25	1.1	0.0	0.1
4	P1	1.4	-0.1	-0.1
4	P2	1.3	0.0	0.0
4	P3	1.2	0.1	0.1
4	P4	1.2	0.0	0.0
4	P5	1.2	0.1	0.0
4	P6	1.3	0.0	-0.1
4	P7	1.4	-0.1	-0.2
4	P8	1.3	0.1	0.0
4	P9	1.4	0.0	0.0
4	P10	1.4	0.0	0.1
4	P11	1.4	0.0	-0.1
4	P12	1.4	0.1	0.0

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

4	P13	1.4	0.0	0.1
4	P14	1.4	-0.1	0.0
4	P15	1.3	0.0	0.0
4	P16	1.3	0.1	0.0
4	P17	1.3	-0.1	-0.1
4	P18	1.2	0.0	0.0
4	P19	1.3	0.0	-0.1
4	P20	1.3	0.0	-0.1
4	P21	1.3	0.0	-0.1
4	P22	1.2	0.1	0.1
4	P23	1.2	0.0	0.0
4	P24	1.3	0.0	0.0
4	P25	1.2	-0.1	0.0
5	P1	1.3	-0.2	-0.1
5	P2	1.3	0.1	0.0
5	P3	1.3	0.3	-0.1
5	P4	1.3	-0.1	0.0
5	P5	1.4	0.1	-0.1
5	P6	1.4	-0.1	-0.2
5	P7	1.1	0.0	0.1
5	P8	1.1	0.0	0.0
5	P9	1.1	0.0	0.0
5	P10	1.2	-0.1	-0.1
5	P11	1.1	-0.1	0.0
5	P12	1.1	-0.1	0.0
5	P13	1.1	0.0	0.0
5	P14	1.1	-0.1	0.0
5	P15	1.0	0.0	0.0
5	P16	1.0	0.0	0.0
5	P17	1.1	-0.1	0.0
5	P18	1.0	0.1	0.0
5	P19	1.0	0.0	0.1
5	P20	1.3	-0.1	0.0
5	P21	1.3	0.0	0.0
5	P22	1.3	0.1	0.0
5	P23	1.3	0.0	-0.1
5	P24	1.5	0.0	0.0
5	P25	1.5	0.0	0.0
6	P1	1.7	0.0	0.0
6	P2	1.6	0.0	0.0
6	P3	1.6	0.0	0.1
6	P4	1.6	0.0	0.0
6	P5	1.6	0.0	0.0
6	P6	1.7	0.0	-0.1
6	P7	1.1	0.0	0.0
6	P8	1.1	-0.1	0.0
6	P9	1.1	0.0	0.0
6	P10	1.2	-0.1	-0.2
6	P11	1.2	-0.1	-0.1
6	P12	1.2	0.0	0.0

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

6	P13	1.2	-0.1	0.0
6	P14	1.3	-0.2	-0.1
6	P15	1.3	-0.1	0.0
6	P16	1.2	-0.2	0.0
6	P17	1.3	0.0	-0.1
6	P18	1.3	0.0	0.0
6	P19	1.4	-0.2	0.0
6	P20	1.5	0.1	0.0
6	P21	1.6	0.0	-0.1
6	P22	1.4	0.0	0.1
6	P23	1.5	0.5	0.1
6	P24	1.5	0.0	-0.1
6	P25	1.5	0.1	0.2
7	P1	1.5	0.0	0.2
7	P2	1.5	0.1	0.2
7	P3	1.4	0.0	0.0
7	P4	1.4	0.0	-0.1
7	P5	1.4	0.0	-0.1
7	P6	1.3	0.0	0.1
7	P7	1.4	0.1	0.0
7	P8	1.4	0.0	-0.1
7	P9	1.5	0.1	0.1
7	P10	1.4	0.0	0.0
7	P11	1.3	0.0	0.0
7	P12	1.5	-0.1	0.1
7	P13	1.4	0.1	0.0
7	P14	1.3	0.1	0.0
7	P15	1.3	0.0	0.1
7	P16	1.4	-0.1	0.1
7	P17	1.4	0.0	0.1
7	P18	1.3	0.0	0.2
7	P19	1.3	0.0	0.1
7	P20	1.5	-0.1	-0.2
7	P21	1.3	0.1	0.1
7	P22	1.3	0.0	0.0
7	P23	1.3	0.1	0.0
7	P24	1.4	0.0	-0.1
7	P25	1.5	-0.1	-0.2
8	P1	1.3	0.0	0.0
8	P2	1.2	0.0	0.1
8	P3	1.2	0.0	0.0
8	P4	1.2	0.1	0.1
8	P5	1.3	0.0	0.0
8	P6	1.2	-0.1	-0.1
8	P7	1.7	-0.1	0.0
8	P8	1.5	0.0	0.1
8	P9	1.6	0.0	0.0
8	P10	1.5	0.0	-0.1
8	P11	1.5	0.0	0.0
8	P12	1.5	0.1	0.1

Tracking Code: TC0327-N/A-0223

Part #: IPBS-115-H2-T-D

Part description: IPBS

8	P13	1.5	0.1	0.0
8	P14	1.4	0.1	0.1
8	P15	1.5	0.0	0.1
8	P16	1.4	0.0	0.0
8	P17	1.4	-0.1	0.0
8	P18	1.3	0.1	0.2
8	P19	1.4	0.0	0.1
8	P20	1.2	0.1	0.1
8	P21	1.2	0.1	0.1
8	P22	1.4	0.0	0.1
8	P23	1.2	0.0	0.2
8	P24	1.1	0.0	0.1
8	P25	1.3	-0.2	-0.1

**EQUIPMENT AND CALIBRATION SCHEDULES****Equipment #:** THL-01**Description:** Temperature/Humidity Chart Recorder**Manufacturer:** Dickson**Model:** THDX**Serial #:** 9316255**Accuracy:** Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).

... Last Cal: 7/15/02, Next Cal: 7/15/03

**Equipment #:** MO-01**Description:** Micro-Ohmmeter**Manufacturer:** Keithley**Model:** 580**Serial #:** 0772740**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** MO-03**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0791975**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** THC-01**Description:** Temperature/Humidity Chamber**Manufacturer:** Thermotron**Model:** SM-8-7800**Serial #:** 30676**Accuracy:** See Manual

... Last Cal: 5/28/2003, Next Cal: 5/28/2004

**Equipment #:** OV-5**Description:** Nitrogen Purge IR Reflow**Manufacturer:** Vitronics Soltec**Model:** XPM-730**Serial #:** XN 70328**Accuracy:** +/- 5 deg. C