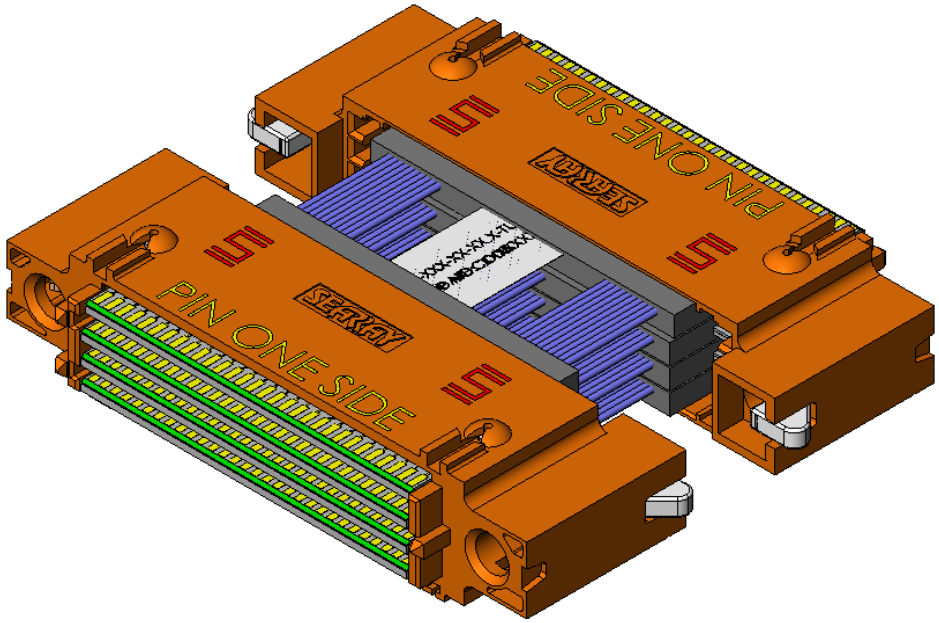
Project Number: Design Verification Test	Tracking Code: TC0841—2024_Report Rev 2		
Requested by: Kevin Meredith	Date: 3/3/2020	Product Rev: 0	
Part #: SEAC-030-06-12.0-TU-TU	Lot #: 0	Tech: Rodney Riley Gary Lomax Troy Cook	Eng: Eric Mings Mark Shireman
Part description: Cable Array			Qty to test: 70
Test Start: 10/08/2008	Test Completed: 6/10/2009		



Design Verification Test Report

PART DESCRIPTION

SEAC-030-06-12.0-TU-TU

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to IS0 10012-l and ANSI/NCSL 2540-1, as applicable.

SCOPE

To perform the following tests: Design verification test. See test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

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 to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
5) The automated procedure is used with aqueous compatible soldering materials.
6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
7) Any additional preparation will be noted in the individual test sequences.
8) Solder Information: Lead Free
9) Samtec Test PCBs used: PCB-101439-TST-XX / PCB-101440-TST-XX / PCB-101580-TST-XX

FLOWCHARTS

Current Carrying Capacity

TEST STEP	GROUP A (cable) 1 Mated Assembly 1 CONTACT POWERED	GROUP B (connector) 1 Mated Assembly 1 CONTACT POWERED
1	CCC	CCC

Tabulate calculated current at RT, 65° C, 75° C and 95° C after derating 20% and based on 105° C or 125° C for Au CCC, Temp rise = EIA-364-70

Mating/Unmating/Gaps/Normal Force/Deflection Force

LATCHES REMOVED

TEST STEP	GROUP A1 3 Boards End 1 (SEAF-DV)
01	Contact Gaps
02	Mating / Unmating
03	Data Review
04	100 Cycles
05	Mating / Unmating
06	Contact Gaps
07	Data Review
08	Thermal Aging (Mated)
09	Mating / Unmating
10	Contact Gaps
11	Data Review
12	Humidity (Mated)
13	Contact Gaps
14	Mating / Unmating

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;
Time Condition 'B' (250 hours)
Humidity =EIA-364-31, Test Condition B (240 Hours)
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
Mating/Un-Mating Forces = EIA-364-13
Contact Gaps/Height - No standard method. Usually measured optically

IR / DWV

LATCHES REMOVED

TEST STEP	GROUP A 2 Boards Ambient	GROUP B1 2 Boards Ambient	GROUP B2 2 Boards Thermal	GROUP B3 2 Boards Humidity
01	IR	DWV/Working Voltage	Thermal Aging	Humidity
02	Data Review		DWV/Working Voltage	DWV/Working Voltage
03	Thermal Aging			
04	IR			
05	Data Review			
06	Humidity			
07	IR			

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;
Time Condition 'B' (250 hours)
Humidity =EIA-364-31, Test Condition B (240 Hours)
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
IR = EIA-364-21
DWV = EIA-364-20

Durability/Thermal Age/Cyclic Humidity/Gas Tight

TEST STEP	GROUP A (End 1 SEAF-DV) 10 Samples 100 Cycles
01	LLCR-1
02	Data Review
03	100 Cycles
04	LLCR-2
05	Data Review
06	Thermal Age
07	LLCR-3
08	Data Review
09	Cyclic Humidity
10	LLCR-4

Thermal Aging = EIA-364-17, Test Condition 1, 55° C;
Test Condition A (96 Hours)
Humidity =EIA-364-31, Test Condition A (96 Hours)
and Method III (+25°C to +65°C @ 90% RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
LLCR = EIA-364-23, LLCR
use Keithley 580 in dry circuit mode, 10 mA Max

Gas Tight

TEST STEP	GROUP A 100 Points
01	LLCR-1
02	Gas Tight
03	LLCR-2

Gas Tight = EIA-364-36A

LLCR = EIA-364-23, LLCR

use Keithley 580 in the dry circuit mode, 10 mA Max

Connector Pull

TEST STEP	GROUP 1A-STD 5 Pieces End 1 SEAF-DV SIG 0°
01	Pull test, Continuity

Secure both cables in the center

Monitor continuity and pull

record forces when continuity fails.

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL:

1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors.*
2) Test Condition 4 at 105° C.
3) Test Time Condition B for 250 hours.
4) All test samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

HUMIDITY:

1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors.*
2) Test Condition B, 240 Hours.
3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
4) All samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

TEMPERATURE RISE (Current Carrying Capacity, CCC):

1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
2) When current passes through a contact, the temperature of the contact increases as a result of I^2R (resistive) heating.
3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
4) The size of the temperature probe can affect the measured temperature.
5) Copper traces on PC boards will contribute to temperature rise:
    a. Self heating (resistive)
    b. Reduction in heat sink capacity affecting the heated contacts
6) A de-rating curve, usually 20%, is calculated.
7) Calculated de-rated currents at three temperature points are reported:
    a. Ambient
    b. 80^o C
    c. 95^o C
    d. 115^o C
8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
12) Hook-up wire length is longer than the minimum specified in the referencing standard.

CONTACT GAPS:

1) Gaps above the surrounding plastic surface were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
2) Typically, all contacts on the connector are measured.

MATING/UNMATING:

1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
2) The full insertion position was to within 0.003" to 0.004" of the plug bottoming out in the receptacle to prevent damage to the system under test.
3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

INSULATION RESISTANCE (IR):

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

1) PROCEDURE:
    a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Electrification Time 2.0 minutes
        iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
2) MEASUREMENTS:
3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 5000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

1) PROCEDURE:
    a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Barometric Test Condition 1
        iii. Rate of Application 500 V/Sec
        iv. Test Voltage (VAC) until breakdown occurs
2) MEASUREMENTS/CALCULATIONS
    a. The breakdown voltage shall be measured and recorded.
    b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
    c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

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. <= +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

GAS TIGHT:

To provide method for evaluating the ability of the contacting surfaces in preventing penetration of harsh vapors which might lead to oxide formation that may degrade the electrical performance of the contact system.

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. <= +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
4) Procedure:
    a. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems*.
    b. Test Conditions:
        i. Class II--- Mated pairs of contacts assembled to their plastic housings.
        ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
        iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
        iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
        v. Exposure time, 55 to 65 minutes.
        vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
        vii. The samples shall be dried after exposure for a minimum of 1 hour.
        viii. Drying temperature 50^{o} C
        ix. The final LLCR shall be conducted within 1 hour after drying.

SUPPLEMENTAL TEST

CONNECTOR/CABLE PULL:

1) Secure cable near center and pull on connector
    a. At 0°, in-line with cable

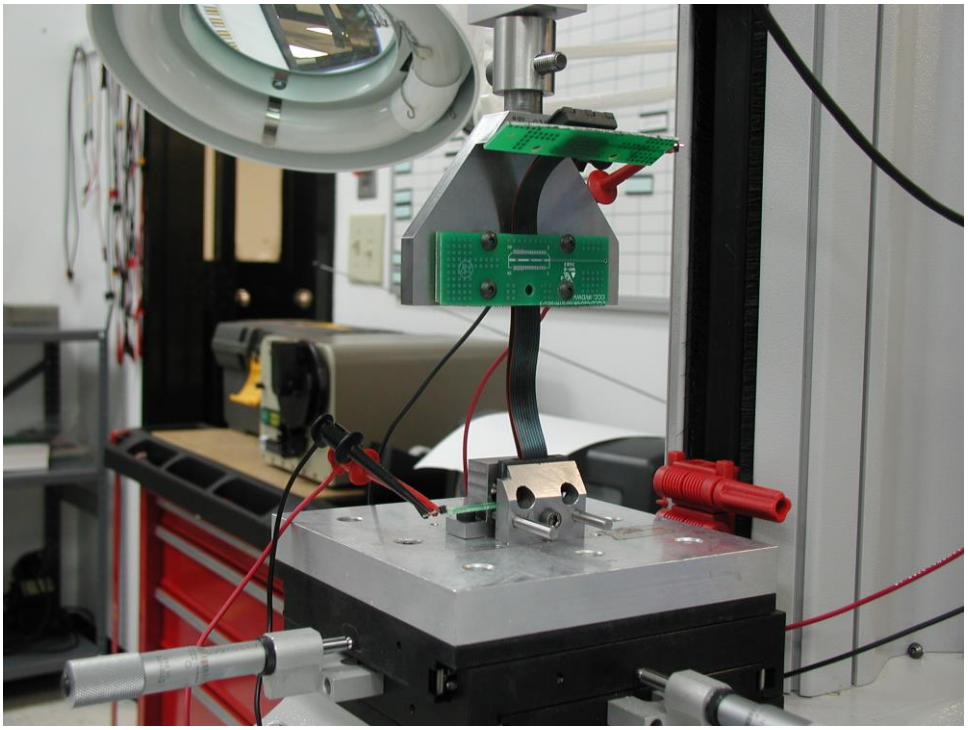


Fig. 1
(Typical set-up, actual part not depicted.)
0° Connector pull, notice the electrical continuity hook-up wires.

RESULTS

Actual Test Results: Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise ----------1.3A per contact with 1 contact powered (cable)**
- **CCC for a 30°C Temperature Rise ----------2.6A per contact with 1 contact powered (connector)**

*****Specified Cable Rating----------0.4A**

Contact Gaps

- **Initial**
  - **Min---------- 0.0354”**
  - **Max ---------- 0.0390”**
- **After 100 Cycles**
  - **Min---------- 0.0317”**
  - **Max ---------- 0.0396”**
- **Thermal**
  - **Min---------- 0.0401”**
  - **Max ---------- 0.0433”**
- **Humidity**
  - **Min---------- 0.0410”**
  - **Max ---------- 0.0439”**

Mating – Unmating Forces
*****All forces taken with latches removed*****

- **Initial**
  - **Mating**
    - **Min ----------12.66 Lbs**
    - **Max----------17.70 Lbs**
  - **Unmating**
    - **Min ---------- 7.70 Lbs**
    - **Max---------- 9.90 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ----------12.12 Lbs**
    - **Max----------16.70 Lbs**
  - **Unmating**
    - **Min ---------- 9.78 Lbs**
    - **Max----------13.20 Lbs**
- **Thermal**
  - **Mating**
    - **Min ----------11.93 Lbs**
    - **Max----------15.20 Lbs**
  - **Unmating**
    - **Min ---------- 8.31 Lbs**
    - **Max----------10.90 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 8.56 Lbs**
    - **Max---------- 9.70 Lbs**
  - **Unmating**
    - **Min ---------- 6.31 Lbs**
    - **Max---------- 7.40 Lbs**

Insulation Resistance minimums, IR

- **Initial**
  - **Mated----------100,000 Meg Ω ----------Pass**
  - **Unmated ----------100,000 Meg Ω ----------Pass**
- **Thermal**
  - **Mated----------100,000 Meg Ω ----------Pass**
  - **Unmated ----------100,000 Meg Ω ----------Pass**
- **Humidity**
  - **Mated----------100,000 Meg Ω ----------Pass**
  - **Unmated ----------100,000 Meg Ω ----------Pass**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage----------480 VAC**
  - **Test Voltage ----------360 VAC**
  - **Working Voltage ----------120 VAC**
- **Initial DWV ----------Passed**
- **Thermal DWV----------Passed**
- **Humidity DWV----------Passed**

LLCR Durability - Signals (200 LLCR test points)

- **Initial ---------- 500.5 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 187 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 9 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 3 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 1 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal**
  - **<= +5.0 mOhms ---------- 200 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms ---------- 189 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 8 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 3 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Durability - Grounds (50 LLCR test points)

- **Initial ---------- 13.1 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 50 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal**
  - **<= +5.0 mOhms ---------- 50 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms ---------- 50 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Gas Tight - Signals (80 LLCR test points)

- **Initial ---------- 497.8 mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ---------- 80 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Gas Tight - Grounds (20 LLCR test points)

- **Initial ---------- 14.1 mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ---------- 20 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

SUPPLEMENTAL TESTING

Connector/Cable Pull

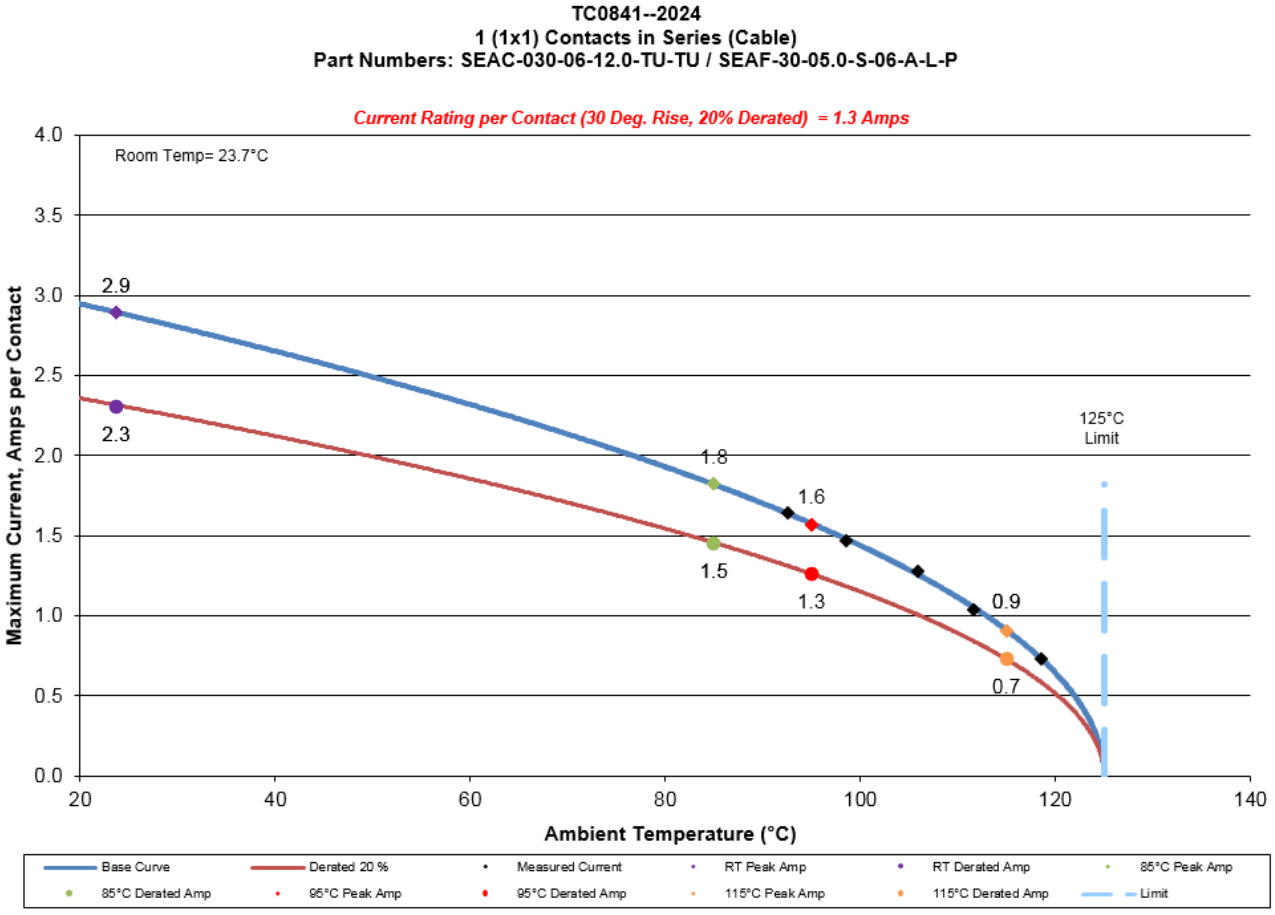
- **0° ---------- 100.00 Lbs min**

DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

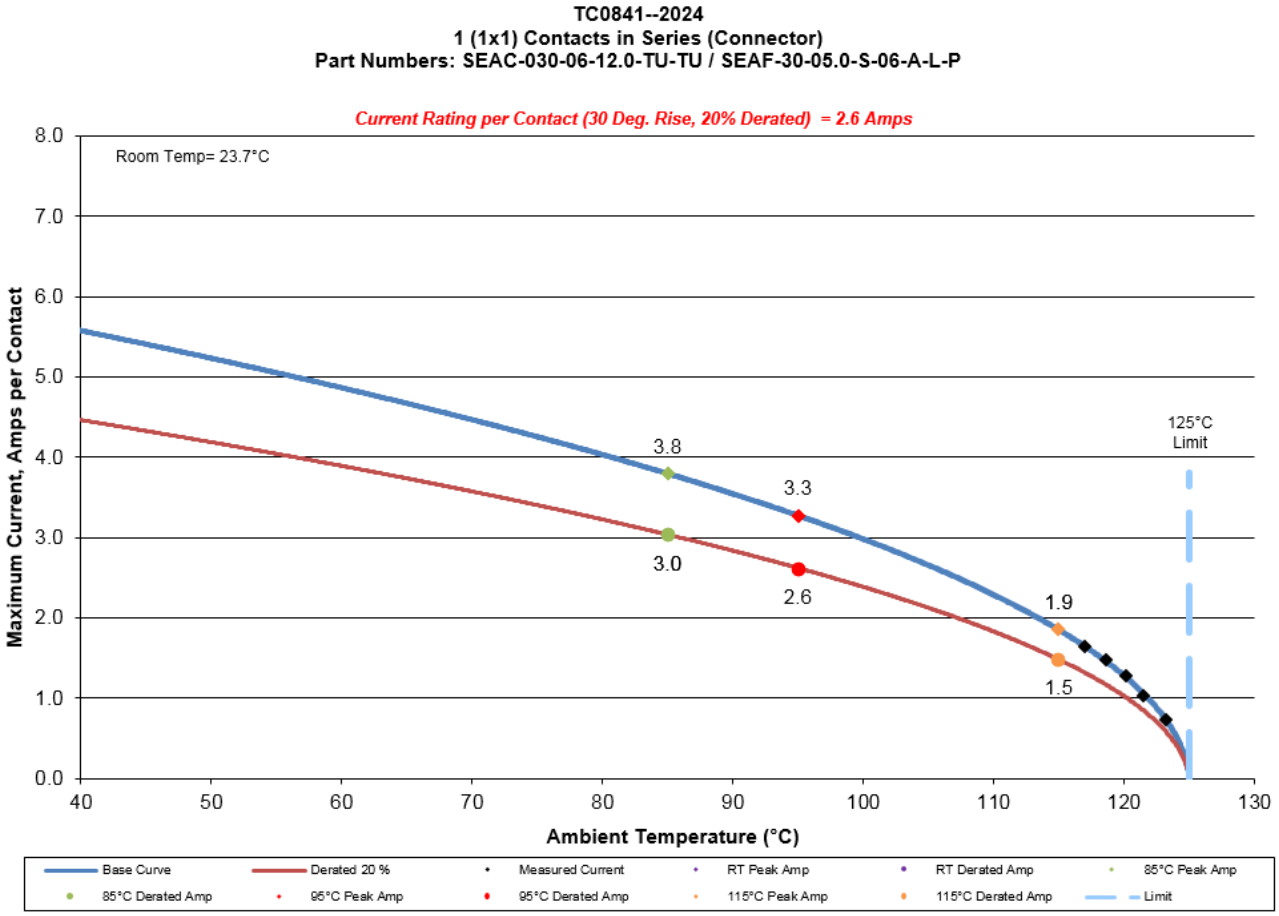
1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
4) Adjacent contacts were powered:

    a. Linear configuration with 1 conductor/contact powered (cable)



*****Specified Cable Rating----------0.4A**

b. Linear configuration with 1 conductor/contact powered (connector)



*****Specified Cable Rating----------0.4A**

CONTACT GAPS:

Initial		After 100 Cycles		After Thermal		After Humidity	
Measured in inches		Measured in inches		Measured in inches		Measured in inches	
Minimum	0.0354	***Minimum***	0.0317	***Minimum***	0.0401	***Minimum***	0.0410
Maximum	0.0390	***Maximum***	0.0396	***Maximum***	0.0433	***Maximum***	0.0439
Average	0.0368	***Average***	0.0378	***Average***	0.0418	***Average***	0.0424
St. Dev.	0.0007	***St. Dev.***	0.0008	***St. Dev.***	0.0006	***St. Dev.***	0.0005
Count	270	***Count***	270	***Count***	270	***Count***	270

MATING/UNMATING:

*****All forces taken with latches removed*****

	Initial				After 100 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	202.6	12.66	123.2	7.70	193.9	12.12	156.5	9.78
Maximum	283.5	17.7	144.3	9.0	267.2	16.7	210.4	13.2
Average	241.9	**15.1**	131.8	**8.2**	225.0	**14.1**	180.8	**11.3**
	After Thermal				After Humidity			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	190.8	11.93	132.9	8.31	137.0	8.56	101.0	6.31
Maximum	243.3	15.2	174.4	10.9	155.8	9.7	118.2	7.4
Average	223.4	**14.0**	156.0	**9.7**	148.5	**9.3**	111.3	**7.0**

INSULATION RESISTANCE (IR):

	Pin to Pin	
	Mated	Unmated
Minimum	**SEAC/SEAF**	**SEAF**
Initial	100000	100000
Thermal	100000	100000
Humidity	100000	100000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**SEAC/SEAF**
Break Down Voltage	480
Test Voltage	360
Working Voltage	120

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

LLCR:

1) A total of 250 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. <= +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

SIGNALS

Date	39982	Jun. 19 2009	Jun. 24 2009	Jun. 30 2009
Room Temp C	23	22	23.2	23.4
RH	52%	41%	46%	0%
Name	Troy Cook	Troy Cook	Troy Cook	Troy Cook
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Thermal**	**Delta Humidity**
Average	485.1	0.8	0.0	0.9
St. Dev.	8.2	2.9	1.3	2.6
Min	466.3	-20.5	-4.0	-4.4
Max	500.5	13.5	4.0	13.0
Count	200	200	200	200

GROUNDS

Date	06/18/09	Jun. 19 2009	Jun. 24 2009	Jun. 30 2009
Room Temp C	23	22	23.2	23.4
RH	52%	41%	46%	0%
Name	Troy Cook	Troy Cook	Troy Cook	Troy Cook
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Thermal**	**Delta Humidity**
Average	11.5	0.0	0.3	0.5
St. Dev.	0.5	0.6	1.0	1.1
Min	10.6	-1.7	-1.0	-0.7
Max	13.1	2.3	3.8	5.0
Count	50	50	50	50

GAS TIGHT:

1) A total of 100 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. <= +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

SIGNALS

Date	Jan. 02 2009	Jan. 13 2009
Room Temp C	23	24
RH	23%	23%
Name	RILEY	Lomax
mOhm values	**Actual Initial**	**Delta Gas Tight**
Average	483.4	-1.1
St. Dev.	8.2	1.7
Min	465.7	-7.4
Max	497.8	4.4
Count	80	80

GROUNDS

Date	Jan. 02 2009	Jan. 13 2009
Room Temp C	23	24
RH	23%	23%
Name	RILEY	Lomax
mOhm values	**Actual Initial**	**Delta Gas Tight**
Average	12.8	0.1
St. Dev.	0.6	0.7
Min	11.8	-1.4
Max	14.1	1.7
Count	20	20

SUPPLEMENTAL TEST

Connector/Cable Pull

	0 Deg.
Pull DV	Force (Lbs)
Minimum	100.00
Maximum	*156.00*
Average	***124.4***

DATA

CONTACT GAPS:

Initial			
Measured in inches			
Pos.#	**B1**	**B2**	**B3**
1	0.0373	0.0361	0.0371
2	0.0368	0.0365	0.0366
3	0.0366	0.0364	0.0368
4	0.0357	0.0364	0.0369
5	0.0368	0.0358	0.0363
6	0.0361	0.036	0.0364
7	0.0365	0.0361	0.0364
8	0.0369	0.0362	0.0365
9	0.0366	0.0361	0.0364
10	0.0361	0.0363	0.0362
11	0.0379	0.0364	0.0368
12	0.0367	0.0369	0.0368
13	0.0368	0.0368	0.0368
14	0.0368	0.0372	0.0367
15	0.0375	0.0368	0.0365
16	0.0365	0.0366	0.0368
17	0.0369	0.0365	0.0364
18	0.0369	0.0367	0.0365
19	0.0368	0.0366	0.0366
20	0.0382	0.0376	0.0378
21	0.0369	0.0363	0.0368
22	0.0365	0.0368	0.0365
23	0.0369	0.0358	0.0363
24	0.0361	0.036	0.0365
25	0.0367	0.0361	0.0364
26	0.0367	0.0365	0.0364
27	0.0368	0.036	0.0369
28	0.0366	0.0364	0.0361
29	0.0371	0.0366	0.0365
30	0.0368	0.0366	0.0367
31	0.0372	0.039	0.0371
32	0.0366	0.0383	0.0365
33	0.0368	0.0383	0.0357
34	0.0375	0.0385	0.0363
35	0.0366	0.0379	0.0365
36	0.0375	0.0374	0.0366
37	0.037	0.0377	0.0365
38	0.0372	0.0376	0.0366
39	0.0374	0.0379	0.0365
40	0.0376	0.0378	0.0368
41	0.0383	0.0387	0.0374
42	0.0385	0.0382	0.0377

43	0.0379	0.0382	0.0371
44	0.0387	0.0383	0.0379
45	0.0381	0.0385	0.0373
46	0.0383	0.0379	0.0371
47	0.0379	0.0378	0.037
48	0.0378	0.0377	0.0376
49	0.0379	0.0378	0.0367
50	0.0381	0.0368	0.0371
51	0.0376	0.0371	0.0364
52	0.0377	0.0372	0.037
53	0.0371	0.0374	0.0369
54	0.0381	0.0363	0.0372
55	0.0379	0.0373	0.0366
56	0.0379	0.037	0.0372
57	0.0377	0.0377	0.0363
58	0.0376	0.0367	0.0375
59	0.0372	0.0376	0.0372
60	0.0374	0.0366	0.0372
61	0.0381	0.036	0.0365
62	0.0368	0.0363	0.0366
63	0.0365	0.036	0.0361
64	0.0361	0.0358	0.0365
65	0.0364	0.0361	0.036
66	0.036	0.0359	0.0357
67	0.0359	0.036	0.0363
68	0.0362	0.0361	0.0363
69	0.036	0.0359	0.0361
70	0.0363	0.0361	0.036
71	0.0365	0.0361	0.0361
72	0.0367	0.0364	0.0361
73	0.0367	0.0358	0.0363
74	0.0361	0.0364	0.0361
75	0.0364	0.0361	0.0365
76	0.0362	0.0363	0.0361
77	0.0365	0.036	0.0359
78	0.0361	0.0357	0.0365
79	0.0362	0.0354	0.0366
80	0.0365	0.0362	0.0365
81	0.0369	0.0361	0.0368
82	0.0372	0.037	0.037
83	0.0372	0.0365	0.0368
84	0.0368	0.0366	0.0369
85	0.0371	0.0363	0.0369
86	0.0372	0.037	0.0374
87	0.0376	0.0362	0.0376
88	0.0372	0.036	0.0372
89	0.0378	0.0362	0.0374
90	0.0376	0.0369	0.0369

After 100 Cycles			
Measured in inches			
Pos.#	**B1**	**B2**	**B3**
1	0.0384	0.0377	0.0385
2	0.0377	0.0382	0.0378
3	0.0378	0.0376	0.0384
4	0.0373	0.0377	0.0376
5	0.0376	0.0371	0.0379
6	0.0356	0.0376	0.0376
7	0.0377	0.0377	0.0376
8	0.0378	0.0377	0.0376
9	0.0376	0.0373	0.0376
10	0.0369	0.0375	0.0365
11	0.0387	0.0379	0.0384
12	0.0376	0.0378	0.0379
13	0.038	0.038	0.038
14	0.0378	0.0384	0.0377
15	0.0387	0.0376	0.038
16	0.0377	0.0378	0.0378
17	0.0382	0.0372	0.0379
18	0.0377	0.038	0.0317
19	0.0381	0.0367	0.038
20	0.0391	0.0384	0.0383
21	0.0378	0.0376	0.038
22	0.0375	0.0377	0.0378
23	0.0379	0.0373	0.0376
24	0.0372	0.0381	0.0376
25	0.0377	0.0368	0.0374
26	0.0379	0.0372	0.0365
27	0.0377	0.0364	0.0379
28	0.0374	0.0376	0.0366
29	0.0383	0.0374	0.037
30	0.0377	0.0378	0.0374
31	0.0388	0.0375	0.0384
32	0.0383	0.0385	0.0379
33	0.0362	0.0374	0.0378
34	0.0387	0.0387	0.0374
35	0.0376	0.0383	0.0384
36	0.0378	0.0386	0.0378
37	0.0388	0.0375	0.0381
38	0.0376	0.0372	0.0378
39	0.0389	0.0383	0.0383
40	0.0386	0.038	0.0376
41	0.0391	0.0376	0.0383
42	0.0391	0.0387	0.0372
43	0.0392	0.0383	0.0386
44	0.039	0.0387	0.038
45	0.0391	0.0383	0.038

46	0.0392	0.0391	0.0383
47	0.0396	0.0383	0.0379
48	0.0387	0.0381	0.0378
49	0.0394	0.0389	0.0379
50	0.0387	0.0395	0.0383
51	0.0387	0.0381	0.0379
52	0.0384	0.0389	0.0378
53	0.0378	0.0386	0.0378
54	0.0381	0.0391	0.0376
55	0.0385	0.0384	0.0381
56	0.0376	0.0391	0.0376
57	0.0383	0.0375	0.038
58	0.0379	0.0392	0.0374
59	0.0382	0.0391	0.0377
60	0.0386	0.0395	0.0381
61	0.039	0.0381	0.0379
62	0.0379	0.0379	0.0379
63	0.0378	0.0376	0.0372
64	0.0362	0.0378	0.0377
65	0.0372	0.0367	0.0378
66	0.037	0.0378	0.0371
67	0.037	0.0375	0.0376
68	0.0365	0.0379	0.0367
69	0.0371	0.0376	0.0374
70	0.0368	0.0369	0.0373
71	0.0376	0.0377	0.0379
72	0.0362	0.0373	0.0372
73	0.0376	0.0374	0.038
74	0.0337	0.0379	0.0368
75	0.0376	0.0372	0.0381
76	0.0375	0.0383	0.0373
77	0.0376	0.0348	0.0379
78	0.0372	0.0376	0.0374
79	0.0377	0.036	0.0378
80	0.0367	0.0375	0.037
81	0.0379	0.0367	0.0379
82	0.0377	0.0361	0.0377
83	0.0382	0.037	0.0379
84	0.0375	0.038	0.0379
85	0.0385	0.037	0.0379
86	0.0381	0.0383	0.0376
87	0.0386	0.0379	0.0383
88	0.0368	0.0368	0.0372
89	0.0387	0.0379	0.0379
90	0.0356	0.0383	0.0374

After Thermal			
Measured in inches			
Pos.#	**B1**	**B2**	**B3**
1	0.0417	0.0418	0.042
2	0.0418	0.0416	0.0421
3	0.0415	0.0414	0.0421
4	0.0418	0.0416	0.0421
5	0.0414	0.0413	0.042
6	0.0417	0.0414	0.042
7	0.0412	0.0416	0.0416
8	0.0415	0.0412	0.0417
9	0.0413	0.0402	0.0416
10	0.0416	0.0413	0.0419
11	0.0409	0.0413	0.0416
12	0.0408	0.0409	0.0417
13	0.0406	0.0413	0.0419
14	0.0411	0.0405	0.0416
15	0.0411	0.0416	0.0411
16	0.041	0.0413	0.0419
17	0.0406	0.0414	0.0415
18	0.0411	0.041	0.0417
19	0.0412	0.0415	0.0416
20	0.0415	0.0413	0.0416
21	0.0408	0.0418	0.0413
22	0.0405	0.0405	0.0418
23	0.0412	0.0416	0.0404
24	0.0413	0.0415	0.0419
25	0.0413	0.0416	0.0412
26	0.0414	0.0416	0.0416
27	0.041	0.0416	0.0416
28	0.0416	0.0411	0.042
29	0.0414	0.0418	0.0416
30	0.0428	0.0417	0.0421
31	0.0423	0.0427	0.0417
32	0.0416	0.0427	0.0419
33	0.0417	0.0429	0.0412
34	0.0423	0.0426	0.042
35	0.042	0.0427	0.0414
36	0.0422	0.0422	0.0418
37	0.0413	0.0423	0.0418
38	0.0425	0.0428	0.0416
39	0.0424	0.0428	0.0401
40	0.0425	0.0424	0.0421
41	0.043	0.0432	0.0424
42	0.0431	0.0426	0.0425
43	0.0426	0.0425	0.0422
44	0.0433	0.043	0.0428
45	0.0428	0.0431	0.0426

46	0.043	0.0424	0.0424
47	0.0428	0.0428	0.0419
48	0.043	0.0424	0.0424
49	0.0426	0.0426	0.042
50	0.0431	0.0413	0.0424
51	0.0425	0.0422	0.0413
52	0.0428	0.0419	0.0416
53	0.0424	0.0419	0.0414
54	0.043	0.0415	0.042
55	0.0425	0.0422	0.0416
56	0.043	0.0421	0.0419
57	0.0424	0.0423	0.0413
58	0.0427	0.0411	0.0421
59	0.0428	0.0422	0.042
60	0.0428	0.0414	0.0425
61	0.0414	0.0412	0.0413
62	0.0421	0.0411	0.0415
63	0.0419	0.0413	0.0414
64	0.0416	0.0412	0.0418
65	0.0413	0.0416	0.0418
66	0.0416	0.0413	0.0414
67	0.0416	0.0419	0.0416
68	0.0421	0.0413	0.0413
69	0.0413	0.0416	0.0413
70	0.0417	0.0413	0.0418
71	0.0426	0.0428	0.0423
72	0.0424	0.042	0.042
73	0.0414	0.0422	0.042
74	0.042	0.0413	0.0417
75	0.0416	0.0417	0.042
76	0.0423	0.0411	0.0415
77	0.0418	0.0422	0.042
78	0.0417	0.0419	0.0414
79	0.0413	0.0419	0.042
80	0.0423	0.042	0.042
81	0.0409	0.0419	0.0413
82	0.0413	0.0415	0.0413
83	0.0413	0.0416	0.0416
84	0.0411	0.0409	0.0415
85	0.0405	0.0416	0.0415
86	0.0415	0.0411	0.0414
87	0.0407	0.0418	0.0418
88	0.0411	0.041	0.0418
89	0.0416	0.0416	0.0416
90	0.0417	0.0413	0.0419

After Humidity			
Measured in inches			
Pos.#	**B1**	**B2**	**B3**
1	0.0419	0.0419	0.042
2	0.0419	0.0421	0.0417
3	0.0417	0.0417	0.0424
4	0.0412	0.0422	0.042
5	0.042	0.0417	0.0421
6	0.041	0.0421	0.0416
7	0.0416	0.0422	0.0419
8	0.0416	0.0423	0.0421
9	0.0417	0.0423	0.0417
10	0.0413	0.0424	0.0419
11	0.0427	0.0427	0.0424
12	0.0419	0.0428	0.0423
13	0.0423	0.043	0.0418
14	0.0422	0.0429	0.0421
15	0.0428	0.0428	0.0423
16	0.0417	0.0427	0.0423
17	0.0426	0.0424	0.0421
18	0.0421	0.0426	0.042
19	0.0427	0.0427	0.0422
20	0.0431	0.0428	0.0428
21	0.0425	0.0422	0.0423
22	0.0417	0.0421	0.0421
23	0.0423	0.042	0.042
24	0.0418	0.0423	0.0421
25	0.0422	0.0417	0.0419
26	0.0419	0.0424	0.0419
27	0.0426	0.042	0.0422
28	0.042	0.0422	0.0417
29	0.0425	0.042	0.0418
30	0.0421	0.0419	0.042
31	0.0428	0.0431	0.042
32	0.0426	0.0434	0.0423
33	0.0429	0.0439	0.0415
34	0.0432	0.0435	0.0424
35	0.0426	0.0435	0.0424
36	0.0428	0.0429	0.0428
37	0.0426	0.0428	0.0423
38	0.0428	0.0431	0.0426
39	0.0428	0.0431	0.042
40	0.0428	0.0429	0.0423
41	0.0435	0.0438	0.0428
42	0.0434	0.0438	0.043
43	0.0431	0.0434	0.0428
44	0.0436	0.0435	0.0429
45	0.0437	0.0439	0.0428

46	0.0432	0.043	0.0423
47	0.0431	0.043	0.0426
48	0.0429	0.0426	0.0431
49	0.0433	0.0431	0.042
50	0.0431	0.0426	0.0425
51	0.0426	0.0428	0.0419
52	0.0431	0.043	0.0424
53	0.0428	0.0424	0.0423
54	0.0435	0.0425	0.0424
55	0.0428	0.0427	0.042
56	0.0432	0.0425	0.0426
57	0.0428	0.043	0.0417
58	0.0428	0.0423	0.0426
59	0.0431	0.0427	0.0427
60	0.0431	0.0422	0.0427
61	0.0434	0.0418	0.0423
62	0.0422	0.0424	0.0425
63	0.0424	0.0421	0.0424
64	0.0414	0.0423	0.0424
65	0.042	0.042	0.0424
66	0.0419	0.0419	0.042
67	0.0418	0.0421	0.0424
68	0.042	0.0424	0.0425
69	0.0417	0.0421	0.0425
70	0.0417	0.0422	0.0423
71	0.0415	0.0422	0.0424
72	0.0417	0.0424	0.0421
73	0.042	0.0421	0.0424
74	0.0411	0.0424	0.0419
75	0.0414	0.0419	0.0424
76	0.0416	0.0424	0.0424
77	0.0417	0.042	0.0419
78	0.0413	0.0423	0.0421
79	0.0417	0.0413	0.042
80	0.0416	0.0417	0.0423
81	0.042	0.0417	0.0423
82	0.0422	0.0421	0.0427
83	0.0421	0.0422	0.0426
84	0.0418	0.0423	0.0429
85	0.0424	0.042	0.0426
86	0.0421	0.0424	0.0427
87	0.0424	0.0422	0.0431
88	0.0421	0.042	0.0424
89	0.0427	0.042	0.0424
90	0.0427	0.0424	0.042

MATING/UNMATING:
*****All forces taken with latches removed*****

	Initial		After 100 Cycles		After Thermal		After Humidity	
Sample#	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating
1	17.72	7.70	16.70	13.15	15.21	10.04	9.55	6.31
2	14.97	8.00	13.36	10.97	14.75	10.90	9.74	7.17
3	12.66	9.02	12.12	9.78	11.93	8.31	8.56	7.39

INSULATION RESISTANCE (IR):

Initial Insulation Resistance
Measured In Meg Ohms

	Pin-Pin		
	Mated	Unmated	
	X		X
Sample#	SEAC/SEAF	SEAC	SEAF
1	100,000		100,000
2	100,000		100,000

Thermal Insulation Resistance
Measured In Meg Ohms

	Pin-Pin		
	Mated	Unmated	
	X		X
Sample#	SEAC/SEAF	SEAC	SEAF
1	100,000		100,000
2	100,000		100,000

Humidity Insulation Resistance
Measured In Meg Ohms

	Pin-Pin		
	Mated	Unmated	
	X		X
Sample#	SEAC/SEAF	SEAC	SEAF
1	100,000		100,000
2	100,000		100,000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**SEAC/SEAF**
Break Down Voltage	480
Test Voltage	360
Working Voltage	120

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

LLCR:

	mOhm values	Actual	Delta	Delta	Delta
Board	**Position**	**Initial**	**100 Cycles**	**Thermal**	**Humidity**
1	P1	488.9	2.5	1.3	2.7
1	P2	472.1	1.9	1.2	2.2
1	P3	493.5	2.4	1.0	2.4
1	P4	490.0	1.2	-0.4	0.9
1	P5	11.3	0.2	0.0	0.3
1	P6	11.3	0.4	0.1	0.7
1	P7	489.3	0.1	-0.4	-0.5
1	P8	471.3	0.0	-0.5	0.8
1	P9	490.4	0.8	-0.3	0.6
1	P10	494.0	-0.9	-2.1	-0.1
1	P11	492.2	0.4	-1.1	-0.1
1	P12	495.6	-1.1	-2.6	-1.3
1	P13	11.3	2.3	2.0	2.3
1	P14	474.1	-0.3	-1.9	-0.8
1	P15	11.3	-0.2	0.7	0.1
1	P16	11.5	0.0	-0.2	0.1
1	P17	489.1	0.4	0.0	0.8
1	P18	490.0	0.1	-1.4	-0.6
1	P19	488.0	0.4	-1.4	-1.1
1	P20	486.5	1.5	0.5	0.5
1	P21	490.6	0.8	1.1	2.2
1	P22	495.7	1.8	0.7	1.2
1	P23	470.8	0.7	-0.1	1.5
1	P24	486.4	1.5	0.7	1.1
1	P25	486.1	1.8	0.9	0.9
2	P1	488.2	1.0	1.5	-0.3
2	P2	471.9	1.3	4.0	-0.4
2	P3	489.7	0.5	3.4	-0.4
2	P4	489.4	0.8	3.5	-0.1

2	P5	10.8	0.2	1.4	0.2
2	P6	11.2	0.1	0.9	0.0
2	P7	491.5	1.6	3.3	-0.5
2	P8	469.8	1.1	0.8	-0.4
2	P9	474.4	-0.5	-1.2	-2.8
2	P10	495.8	1.2	1.6	-0.3
2	P11	490.3	1.5	1.2	0.0
2	P12	490.6	1.3	1.9	0.2
2	P13	11.0	0.5	0.6	-0.1
2	P14	492.5	0.5	0.7	0.0
2	P15	11.4	0.5	0.4	-0.3
2	P16	11.3	0.2	0.2	0.1
2	P17	472.7	1.7	1.0	0.3
2	P18	470.1	1.0	0.6	0.6
2	P19	490.6	0.2	0.9	-0.6
2	P20	485.5	1.4	1.1	-0.3
2	P21	488.2	1.8	0.9	0.0
2	P22	496.3	1.6	1.7	-0.2
2	P23	467.8	0.4	0.3	-0.8
2	P24	486.1	1.2	0.8	-0.2
2	P25	488.8	2.3	2.2	0.8
3	P1	489.4	0.0	-0.8	-1.7
3	P2	494.5	0.5	-1.6	-2.6
3	P3	500.5	0.7	-1.2	-0.8
3	P4	473.1	0.8	-1.7	-2.4
3	P5	11.6	-0.1	-0.3	-0.4
3	P6	11.9	-0.6	-0.7	-0.3
3	P7	488.8	1.7	-1.5	-1.6
3	P8	489.7	1.0	-0.3	1.0
3	P9	471.0	1.0	3.9	1.3
3	P10	479.5	2.5	0.9	0.6
3	P11	489.0	0.4	-1.8	-0.7
3	P12	483.6	1.4	-0.5	-0.7
3	P13	11.5	-0.4	-0.6	-0.4
3	P14	486.2	0.1	-0.8	-1.6
3	P15	12.6	0.0	3.8	0.6
3	P16	13.1	0.1	-0.6	-0.7
3	P17	470.0	-0.1	-1.3	-1.6
3	P18	487.7	0.5	-1.9	0.2
3	P19	476.9	0.4	-1.6	-1.7
3	P20	474.2	-0.8	-4.0	-4.4
3	P21	471.8	0.7	0.9	-0.1
3	P22	488.7	0.2	-2.7	-2.5
3	P23	488.2	0.3	-2.6	-2.5
3	P24	486.7	-0.3	-3.0	-3.4
3	P25	488.8	0.7	-1.6	-2.1
4	P1	489.7	0.2	-0.3	-1.0
4	P2	473.9	0.0	-1.1	-1.2
4	P3	490.8	0.5	-0.8	-1.7

4	P4	490.2	0.1	-1.0	-1.9
4	P5	11.6	0.1	-0.6	-0.6
4	P6	11.1	0.1	-0.3	-0.4
4	P7	489.1	-0.7	-0.7	1.6
4	P8	471.0	-0.4	-1.2	-2.3
4	P9	492.5	-1.0	-1.5	-2.6
4	P10	492.5	-0.1	0.0	-1.0
4	P11	491.6	0.8	0.3	0.1
4	P12	493.9	0.2	0.0	-0.6
4	P13	11.5	-0.3	-0.5	0.5
4	P14	470.2	1.0	-0.7	-1.0
4	P15	10.6	0.4	0.1	0.0
4	P16	11.1	0.5	0.6	0.2
4	P17	471.2	0.7	-0.2	-1.0
4	P18	487.8	0.8	-0.5	-0.5
4	P19	487.3	-0.2	-1.5	-1.9
4	P20	485.8	0.7	-0.4	-1.8
4	P21	487.2	1.4	0.1	-1.0
4	P22	493.1	0.5	-0.4	-1.4
4	P23	468.7	0.4	-0.6	-1.5
4	P24	486.2	-0.2	-1.0	-2.0
4	P25	489.0	0.4	-0.3	-0.8
5	P1	485.2	0.5	0.1	-0.3
5	P2	483.2	0.0	0.6	-1.3
5	P3	481.4	0.4	1.3	-1.0
5	P4	482.0	0.3	1.9	-0.8
5	P5	12.2	-0.1	0.5	-0.1
5	P6	11.6	0.2	2.0	0.0
5	P7	482.9	0.6	-0.8	-0.5
5	P8	488.9	-1.5	0.3	-1.7
5	P9	486.1	0.6	-0.3	-0.5
5	P10	491.5	-0.8	-1.7	-1.0
5	P11	484.2	0.6	-1.0	-0.6
5	P12	492.1	0.5	-0.3	0.3
5	P13	11.1	-0.1	-0.1	0.5
5	P14	488.9	1.1	0.0	-0.2
5	P15	10.9	-0.2	-0.1	0.3
5	P16	11.4	-0.2	0.0	-0.2
5	P17	487.3	2.3	0.9	2.5
5	P18	466.5	1.1	-0.3	-0.2
5	P19	486.7	2.1	1.4	1.0
5	P20	481.6	1.9	0.3	4.3
5	P21	484.9	1.0	1.8	0.1
5	P22	479.5	2.1	0.8	3.0
5	P23	477.6	2.0	1.1	2.5
5	P24	477.0	1.9	0.4	1.3
5	P25	486.4	2.6	2.2	2.2
6	P1	491.2	2.4	1.2	2.5
6	P2	490.9	2.6	0.9	1.1

6	P3	498.9	2.8	0.6	1.6
6	P4	474.5	1.9	0.2	0.7
6	P5	12.1	-0.6	-0.3	0.3
6	P6	11.7	-0.6	-0.3	0.4
6	P7	489.3	1.9	1.4	1.5
6	P8	494.9	1.4	-0.4	7.1
6	P9	490.3	2.9	1.3	4.3
6	P10	485.9	1.2	-0.1	1.0
6	P11	491.9	2.0	2.1	1.5
6	P12	486.3	2.9	0.6	1.3
6	P13	11.8	-0.4	-0.1	1.7
6	P14	486.7	3.5	1.5	1.5
6	P15	11.4	-0.1	0.2	0.1
6	P16	11.1	-0.1	0.0	0.2
6	P17	470.2	2.1	1.2	12.0
6	P18	480.6	2.0	0.7	11.3
6	P19	485.4	2.4	0.4	1.3
6	P20	471.6	1.5	-0.2	0.2
6	P21	472.7	3.2	3.5	2.8
6	P22	488.3	2.5	0.5	0.9
6	P23	487.8	1.9	0.1	0.3
6	P24	485.5	2.4	0.4	1.3
6	P25	487.2	2.4	0.6	6.3
7	P1	488.2	0.7	-0.4	4.2
7	P2	472.1	0.9	-0.4	1.9
7	P3	488.3	0.3	-0.7	1.0
7	P4	490.8	-0.6	-1.6	0.9
7	P5	10.9	0.1	-0.1	0.8
7	P6	11.1	0.2	-0.2	0.6
7	P7	485.0	1.1	0.3	2.0
7	P8	468.6	0.8	0.3	1.6
7	P9	490.0	0.3	-0.1	2.6
7	P10	490.4	1.6	0.4	3.2
7	P11	488.6	2.8	1.5	2.0
7	P12	492.1	1.2	2.3	2.7
7	P13	11.3	0.1	0.4	1.0
7	P14	488.2	1.9	-0.3	7.3
7	P15	11.6	-0.4	0.3	5.0
7	P16	11.6	-0.4	-0.6	2.0
7	P17	466.3	1.7	1.1	1.2
7	P18	470.2	1.0	-0.4	1.3
7	P19	486.7	1.3	-0.3	1.8
7	P20	470.9	1.5	-1.0	0.9
7	P21	468.8	0.6	-1.2	2.6
7	P22	487.1	0.7	-1.3	1.4
7	P23	487.0	0.5	-1.4	1.8
7	P24	485.5	2.5	-0.2	0.6
7	P25	483.2	1.2	-0.4	0.9
8	P1	488.6	0.0	0.9	0.1

8	P2	489.1	-0.6	-1.2	-0.4
8	P3	499.2	0.0	-0.3	-0.2
8	P4	471.3	0.1	0.8	0.2
8	P5	11.7	0.1	-0.2	0.3
8	P6	11.6	0.1	0.0	0.6
8	P7	492.1	0.0	-0.7	2.1
8	P8	491.8	-0.1	-1.1	0.3
8	P9	475.0	0.8	0.0	0.5
8	P10	490.5	0.8	2.7	7.3
8	P11	492.4	-0.3	0.1	4.8
8	P12	494.0	0.4	-1.0	0.0
8	P13	11.6	0.1	-0.4	1.9
8	P14	473.9	0.8	0.0	1.9
8	P15	11.3	-0.1	-0.2	0.8
8	P16	11.5	0.2	0.5	0.6
8	P17	490.4	-0.1	-0.5	6.0
8	P18	491.6	0.1	-0.6	8.7
8	P19	489.8	0.1	-1.1	0.0
8	P20	486.3	0.6	0.1	0.3
8	P21	489.4	0.1	-0.8	8.6
8	P22	495.8	-0.2	-0.3	0.7
8	P23	467.7	1.0	-0.3	1.8
8	P24	485.5	1.8	1.2	1.9
8	P25	487.1	1.0	0.3	9.1
9	P1	491.3	-5.0	-2.8	1.2
9	P2	489.1	-2.4	-0.8	4.5
9	P3	498.6	-11.5	-1.3	-1.1
9	P4	475.5	12.0	0.6	3.8
9	P5	12.3	-1.1	-0.7	-0.7
9	P6	12.3	-0.8	-1.0	-0.3
9	P7	493.1	-4.7	-0.2	0.1
9	P8	489.2	-6.3	-0.5	2.0
9	P9	473.9	-3.6	1.4	13.0
9	P10	495.8	-5.3	0.3	0.1
9	P11	493.4	-4.2	-0.6	0.0
9	P12	491.3	1.0	-0.5	0.5
9	P13	12.0	-0.4	0.4	-0.3
9	P14	471.5	0.4	0.5	1.9
9	P15	13.1	-1.7	3.1	4.9
9	P16	11.4	0.4	1.2	0.7
9	P17	490.1	-20.5	0.5	0.4
9	P18	487.2	1.7	0.5	4.3
9	P19	487.5	-0.5	-2.0	-1.2
9	P20	486.1	3.0	0.2	1.6
9	P21	490.3	2.9	-0.4	4.3
9	P22	492.9	4.4	-1.2	-0.5
9	P23	473.4	-3.0	-0.9	2.6
9	P24	487.4	1.7	-0.5	4.7
9	P25	487.4	-0.9	-0.4	0.2

10	P1	485.6	6.5	0.0	1.4
10	P2	486.3	6.5	-0.7	0.6
10	P3	486.6	13.5	-0.3	0.7
10	P4	487.0	-8.1	-0.5	2.1
10	P5	11.3	1.0	0.0	0.3
10	P6	11.6	0.5	0.0	0.0
10	P7	487.3	6.3	0.0	3.0
10	P8	481.4	9.1	-0.4	-0.4
10	P9	469.5	4.6	0.6	1.1
10	P10	490.5	6.3	-0.6	-0.6
10	P11	488.0	5.9	0.4	1.7
10	P12	490.9	1.3	-0.1	1.6
10	P13	11.7	0.4	2.0	0.4
10	P14	469.4	2.9	2.7	0.9
10	P15	11.6	0.4	1.7	0.9
10	P16	11.3	-0.1	0.1	1.7
10	P17	469.3	1.8	-0.7	-0.4
10	P18	488.3	-0.4	-0.3	0.8
10	P19	485.5	1.4	2.8	0.1
10	P20	488.5	-1.1	0.6	-1.3
10	P21	492.7	-0.8	-0.8	2.7
10	P22	496.8	-3.4	0.7	-0.8
10	P23	470.0	4.0	0.1	-1.1
10	P24	488.9	-0.8	-1.0	-1.4
10	P25	485.1	2.9	0.7	2.1

GAS TIGHT:

	mOhm values	Actual	Delta
Board	Position	Initial	Gas Tight
1	P1	482.0	-1.9
1	P2	484.1	-5.0
1	P3	496.0	-7.4
1	P4	493.0	-2.8
1	P5	12.8	1.7
1	P6	13.6	-0.2
1	P7	480.0	0.7
1	P8	476.7	-3.6
1	P9	489.4	-2.4
1	P10	495.7	-0.6
1	P11	497.3	-3.4
1	P12	479.7	-1.6
1	P13	13.7	0.4
1	P14	491.1	-3.2
1	P15	12.8	-0.8
1	P16	12.5	1.0
1	P17	492.6	-1.4
1	P18	470.1	-2.3
1	P19	478.2	-2.1
1	P20	487.5	0.9
1	P21	489.8	-0.7
1	P22	490.1	-1.7
1	P23	466.3	-0.7
1	P24	488.0	-0.7
1	P25	481.0	-2.0
2	P1	479.0	-3.0
2	P2	480.3	-3.0
2	P3	490.5	-2.3
2	P4	494.5	-3.3
2	P5	13.1	0.2
2	P6	13.0	-0.1
2	P7	479.2	-2.2
2	P8	475.4	-2.8
2	P9	465.7	-1.0
2	P10	493.0	-0.5
2	P11	482.3	-2.3
2	P12	489.4	-0.8
2	P13	13.3	-0.1
2	P14	491.6	-1.7
2	P15	12.1	0.3
2	P16	12.5	1.2
2	P17	491.9	-2.2
2	P18	476.8	-2.6

2	P19	484.6	-1.0
2	P20	477.5	-1.8
2	P21	470.7	-1.4
2	P22	489.2	-1.5
2	P23	484.1	-1.4
2	P24	476.4	-1.0
2	P25	477.2	-1.5
3	P1	497.8	-3.0
3	P2	490.2	-3.1
3	P3	494.8	-2.5
3	P4	486.4	0.1
3	P5	12.2	0.5
3	P6	12.7	-0.2
3	P7	474.6	-0.4
3	P8	477.2	-0.8
3	P9	487.1	-1.1
3	P10	491.9	-1.0
3	P11	489.0	-1.9
3	P12	481.6	-0.5
3	P13	12.3	-0.7
3	P14	489.3	-0.8
3	P15	12.1	-0.2
3	P16	12.2	-0.3
3	P17	470.8	-0.1
3	P18	467.5	0.1
3	P19	479.2	0.0
3	P20	484.2	-0.5
3	P21	487.0	0.9
3	P22	486.0	0.5
3	P23	467.6	0.4
3	P24	485.6	0.6
3	P25	485.4	0.1
4	P1	478.2	2.2
4	P2	479.1	-1.2
4	P3	490.8	-0.1
4	P4	490.2	-1.5
4	P5	12.5	0.0
4	P6	11.8	0.4
4	P7	477.2	2.1
4	P8	467.6	0.7
4	P9	492.2	-0.4
4	P10	493.7	-0.9
4	P11	488.2	-1.9
4	P12	480.1	4.4
4	P13	14.0	-1.4
4	P14	475.3	-1.5
4	P15	14.1	0.1
4	P16	13.0	1.2
4	P17	470.9	-2.5

4	P18	484.0	0.1
4	P19	477.0	-0.2
4	P20	482.1	0.5
4	P21	488.4	1.4
4	P22	485.6	1.2
4	P23	467.0	-0.3
4	P24	488.2	0.3
4	P25	483.8	-1.3

SUPPLEMENTAL TEST

Connector/Cable Pull

	0 Deg.
Sample#	Maximum Force (Lbs)
1	156.00
2	138.50
3	100.00
4	119.00
5	108.70

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual - DO NOT USE UNTIL CALIBRATED.
… Last Cal: 04/06/09, Next Cal: 04/06/2010

Equipment #: HPM-01
Description: Hipot Megommeter
Manufacturer: Hipotronics
Model: H306B-A
Serial #: M9905004
Accuracy: 2 % Full Scale Accuracy
… Last Cal: 11/24/08, Next Cal: 11/24/09

Equipment #: OV-03
Description: Cascade Tek Forced Air Oven
Manufacturer: Cascade Tek
Model: TFO-5
Serial #: 0500100
Accuracy: Temp. Stability: +/-.1C/C change in ambient
… Last Cal: 06/17/2009, Next Cal: 06/17/2010

Equipment #: THC-01
Description: Temperature/Humidity Chamber
Manufacturer: Thermotron
Model: SM-8-7800
Serial #: 30676
Accuracy: See Manual
… Last Cal: 04/07/2009, Next Cal: 04/07/2010

Equipment #: TCT-04
Description: Dillon Quantrol TC21 25-1000 mm/min series test stand
Manufacturer: Dillon Quantrol
Model: TC2 I series test stand
Serial #: 04-1041-04
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;
… Last Cal: 5/12/2009, Next Cal: 5/12/2010

Equipment #: MV-05
Description: 6" x 6" Video Measuring Machine
Manufacturer: Micro-Vu
Model: M3010838
Serial #: V9344
Accuracy: See Manual
… Last Cal: 02/10/2009, Next Cal: 02/10/2010

Equipment #: TCT-03
Description: Dillon Quantrol TC2 Test Stand
Manufacturer: Dillon Quantrol
Model: TC2
Serial #: 02-1033-03
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;
… Last Cal: 5/12/2009, Next Cal: 5/6/2010

Equipment #: MO-01
Description: Micro-Ohmeter
Manufacturer: Keithley
Model: 580
Serial #: 0772740
Accuracy: See Manual
… Last Cal: 06/16/09, Next Cal: 06/16/2010

Equipment #: MO-03
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0791975
Accuracy: See Manual
… Last Cal: 06/16/09, Next Cal: 06/16/2010

Equipment #: MO-06
Description: Micro-Ohmeter
Manufacturer: Keithley
Model: 580
Serial #: 1110525
Accuracy: See Manual
… Last Cal: 06/16/2009, Next Cal: 06/16/2010

Equipment #: MO-07
Description: Multimeter / Data Acquistion System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual
… Last Cal: 6/16/2009, Next Cal: 6/16/2010

Equipment #: OV-5
Description: Nitrongen Purge IR Reflow
Manufacturer: Vitronics Soltec
Model: XPM-730
Serial #: XN 70328
Accuracy: +/- 5 deg. C
… Last Cal: 02/19/2009, Next Cal: 02/19/2010