

SEMI F47-0706 Compliance Certificate EPRI PQ Starsm Test Program

Certification Date: December 4, 2015

PQ Star Reference Number:
 SEMIF47.186

Test Location:
 EPRI
 942 Corridor Park Blvd
 Knoxville, TN 37932

Manufacturer:
 IDEC Corporation

Product:
 PS5R Series DC Power Supplies Set 2

Test Configuration: The power supplies were tested using EPRI's SEMI F47 compliant voltage sag generator.

Test Dates:
 11/30/2015-12/3/2015

Electrical Environment:
 208Vac 50/60Hz
 (See Attachments A for detailed Results)

Model Numbers and Load Configurations Tested

No.	Part Number	Type	Input Voltage Range	Output Specification		Certification Test Voltage	Test Frequency
				Power	V _{Out}		
1	PS5R-VA05	Universal	100 to 240Vac	7.5W	5Vdc	208Vac	50Hz, 60Hz
2	PS5R-VA12	Universal	100 to 240Vac	7.2W	12Vdc	208Vac	50Hz, 60Hz
3	PS5R-VA24	Universal	100 to 240Vac	7.2W	24Vdc	208Vac	50Hz, 60Hz
4	PS5R-VE24	Universal	100 to 240Vac	90W	24Vdc	208Vac	50Hz, 60Hz
5	PS5R-VG24	Universal	100 to 240Vac	240W	24Vdc	208Vac	50Hz, 60Hz

This letter and subsequent documentation certifies that the above specified IDEC Corporation PS5R Series power supplies have been voltage sag tested per SEMI F47-0706 and were found to comply with the voltage sag immunity standard when tested at 208V 50/60Hz. This certification remains valid to the models tested only and as long as no component substitutions are made.

Certified by,



Scott Buntun, C.E.M., C.P.Q
 EPRI Engineer II



Attachment A – SEMI F47 Test Configuration and Test Results

Testing was performed at EPRI’s Power Quality Laboratory in Knoxville, TN. To ensure maximum accuracy of the test, a variable voltage source was used to control the voltage and frequency, and an electronic load bank was used to ensure 100% loading. This was verified at the power supply with a power quality analyzer. Figures 1 and 2 show the configuration of the testing. Table 1 through Table 5 display the related curves and test points for the power supplies under test.

Figure 1: Test Setup Diagram

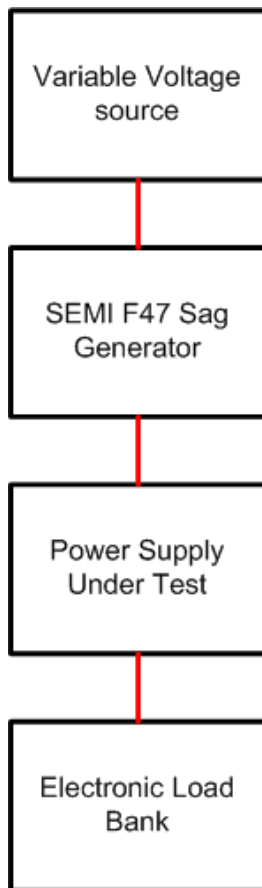


Figure 2: Test Setup Photos

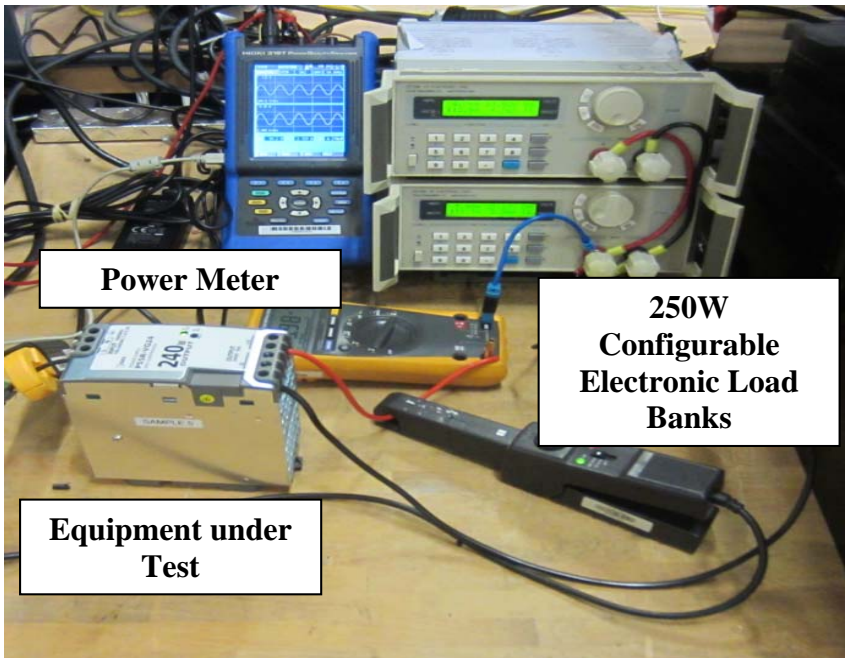
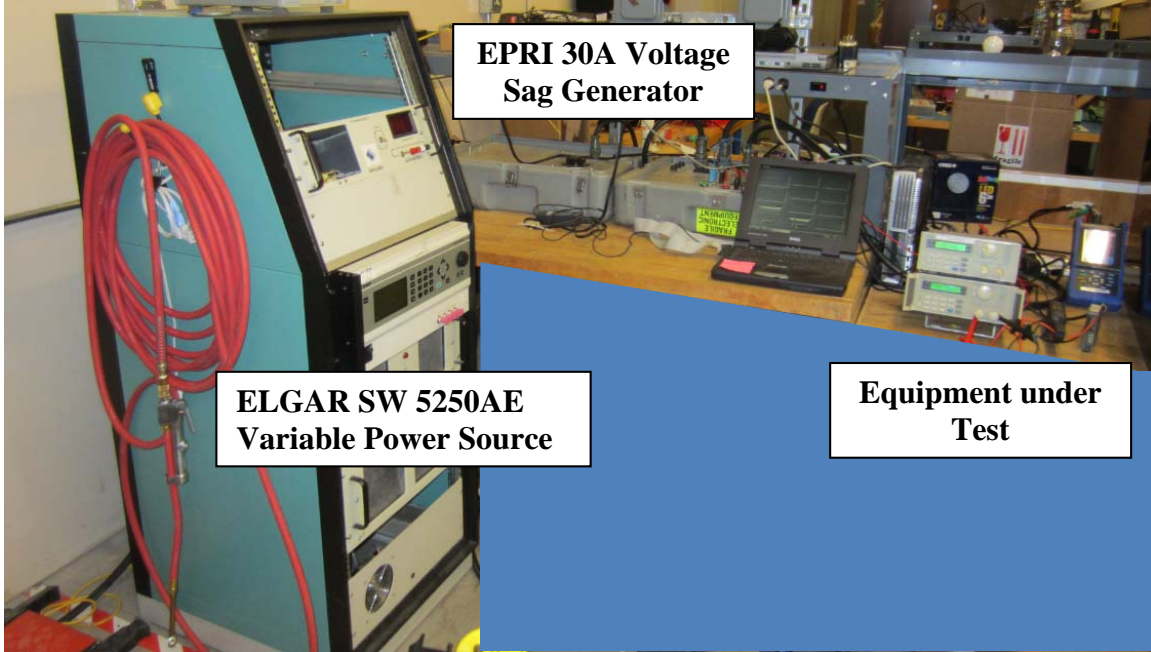


Table 1: IDEC PS5R-VA05 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VA05			
Test Voltage:	208V			
Basic Spec	PS 5Vdc 1.5A			
Date:	12.1.15			
Tested By:	Jason Johns			
Loading:	1.5A			
Notes:	PS#1 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	29%	0.8	Pass
25	0.5	29%	0.7	Pass
13	0.26	23%	0.7	Not a SEMI F47 Test Point
10	0.2	0%	0.5	Pass
1	0.02	0%	0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	29%	0.8	Pass
30	0.5	29%	0.7	Pass
16	0.27	20%	0.7	Not a SEMI F47 Test Point
12	0.2	0%	0.5	Pass
1	0.017	0%	0	Pass

Note: SEMI F47-0706 0%Vnom, 1 Cycle Test Point is Recommended Only and Not Required.

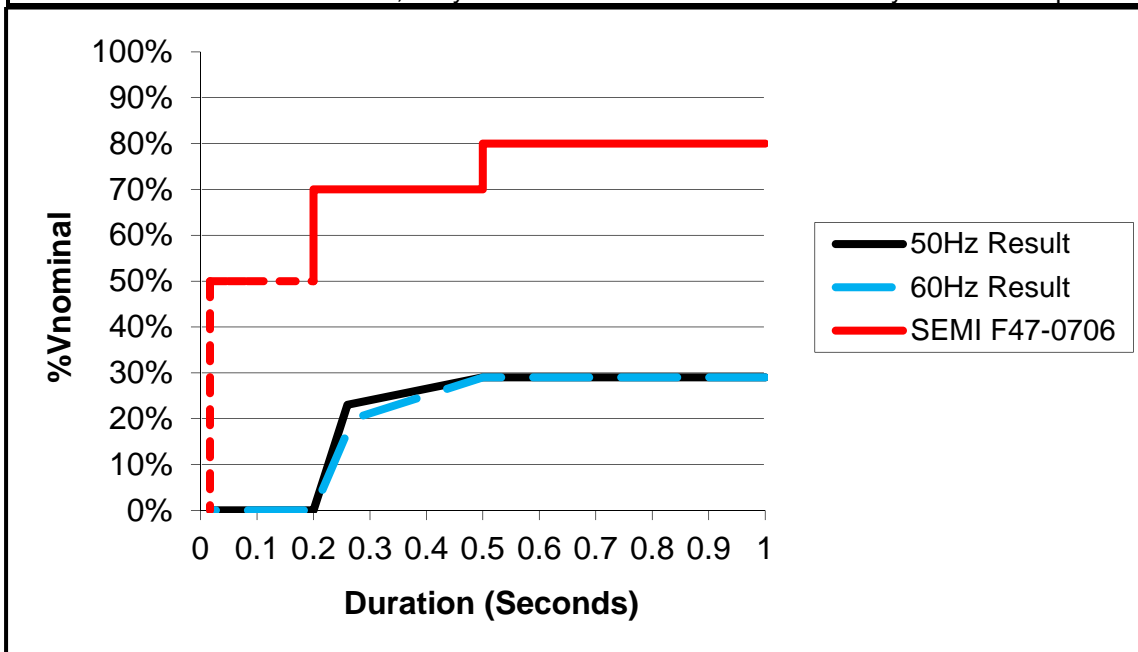


Table 2: IDEC PS5R-VA12 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VA12			
Test Voltage:	208V			
Basic Spec	PS 12Vdc 600mA			
Date:	12.1.15			
Tested By:	Jason Johns			
Loading:	600mA			
Notes:	PS2# - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	23%	0.8	Pass
25	0.5	23%	0.7	Pass
10	0.2	0%	0.5	Pass
8	0.16	0%	0	Not a SEMI F-47 Test Point
1	0.02	0%	0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	23%	0.8	Pass
30	0.5	23%	0.7	Pass
12	0.2	0%	0.5	Pass
10	0.167	0%	0	Not a SEMI F-47 Test Point
1	0.017	0%	0	Pass

Note: SEMI F47-0706 0%Vnom, 1 Cycle Test Point is Recommended Only and Not Required.

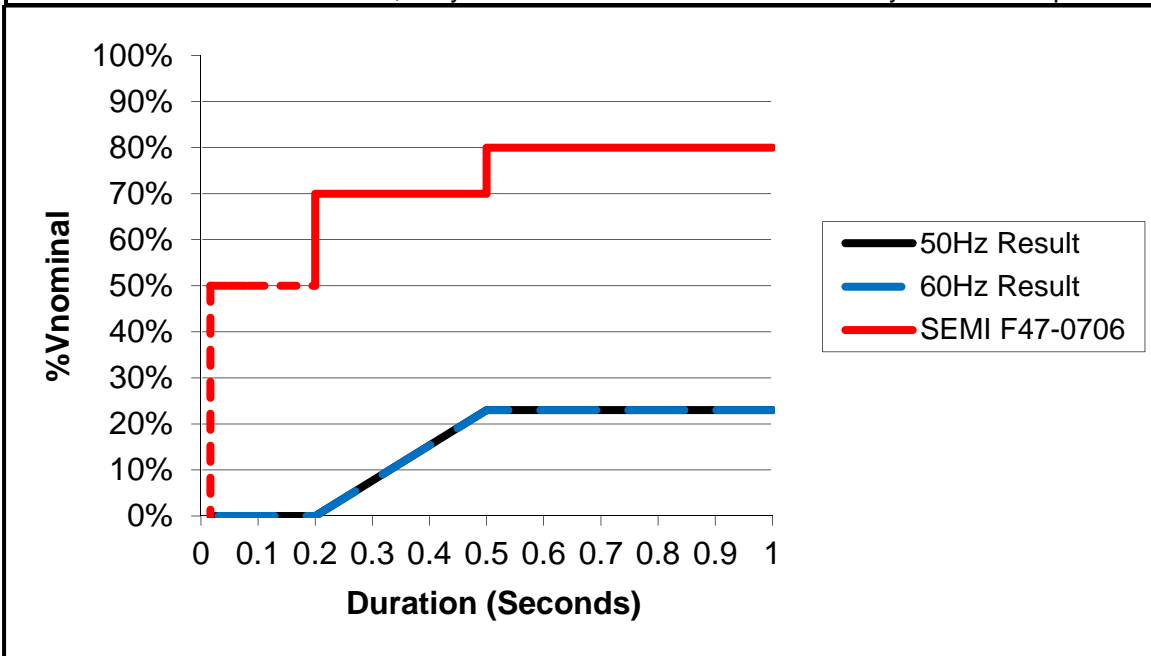


Table 3: IDEC PS5R-VA24 208V Results

Manufacturer:	IDEC			
Series:	PS5R			
Part Number:	PS5R-VA24			
Test Voltage:	208V			
Basic Spec:	PS 24Vdc 300mA			
Date:	12.1.15			
Tested By:	Jason Johns			
Loading:	300mA			
Notes:	PS#3 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	20%	0.8	Pass
25	0.5	20%	0.7	Pass
10	0.2	0%	0.5	Pass
8	0.16	0%	0	Not a SEMI F-47 Test Point
1	0.02	0%	0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	20%	0.8	Pass
30	0.5	20%	0.7	Pass
12	0.2	0%	0.5	Pass
10	0.167	0%	0	Not a SEMI F-47 Test Point
1	0.017	0%	0	Pass
Note: SEMI F47-0706 0%Vnom, 1 Cycle Test Point is Recommended Only and Not Required.				

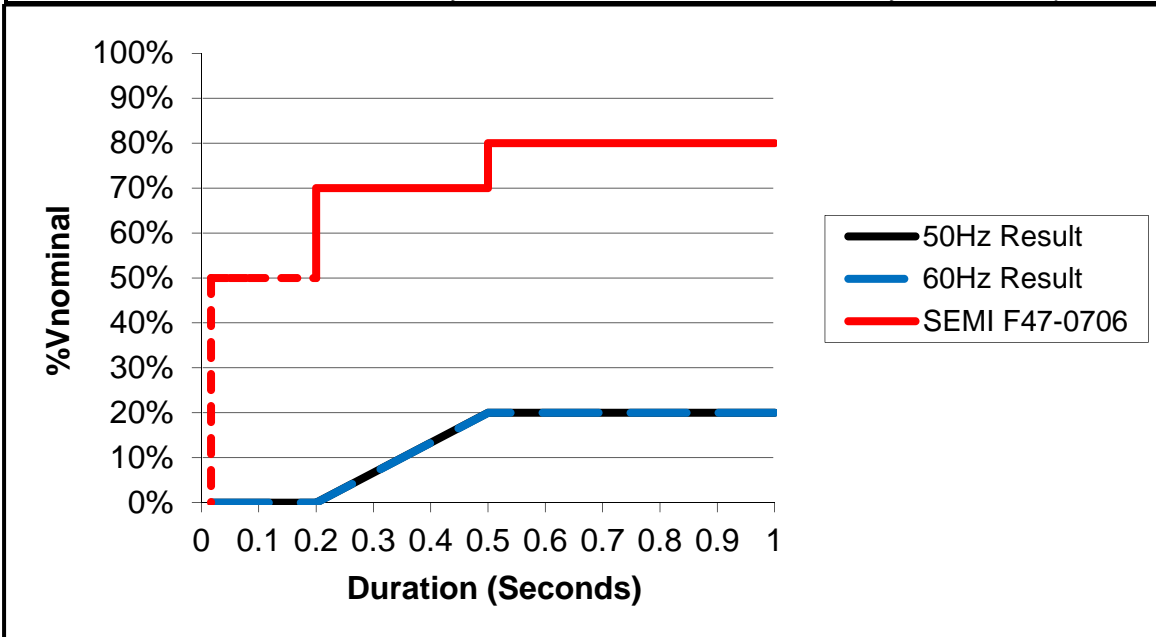


Table 4: IDEC PS5R-VE24 208V Results

Manufacturer:	IDEC			
Series:	PS5R			
Part Number:	PS5R-VE24			
Test Voltage:	208V			
Basic Spec	PS 24Vdc 3.75A			
Date:	11.30.15			
Tested By:	Jason Johns			
Loading:	3.75A			
Notes:	PS #4 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	29%	0.8	Pass
25	0.5	28%	0.7	Pass
10	0.2	27%	0.5	Pass
8	0.16	27%	0	Not a SEMI F-47 Test Point
1	0.02	0%	0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	28%	0.8	Pass
30	0.5	28%	0.7	Pass
12	0.2	27%	0.5	Pass
10	0.167	27%	0	Not a SEMI F-47 Test Point
1	0.017	0%	0	Pass
Note: SEMI F47-0706 0%Vnom, 1 Cycle Test Point is Recommended Only and Not Required.				

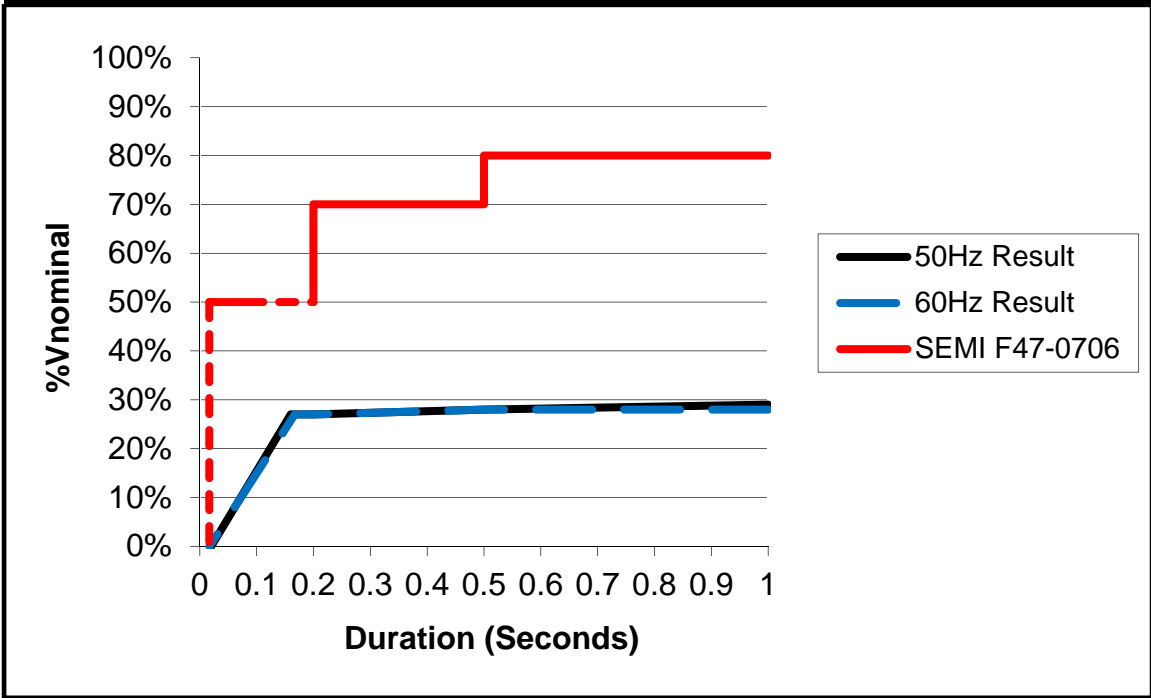
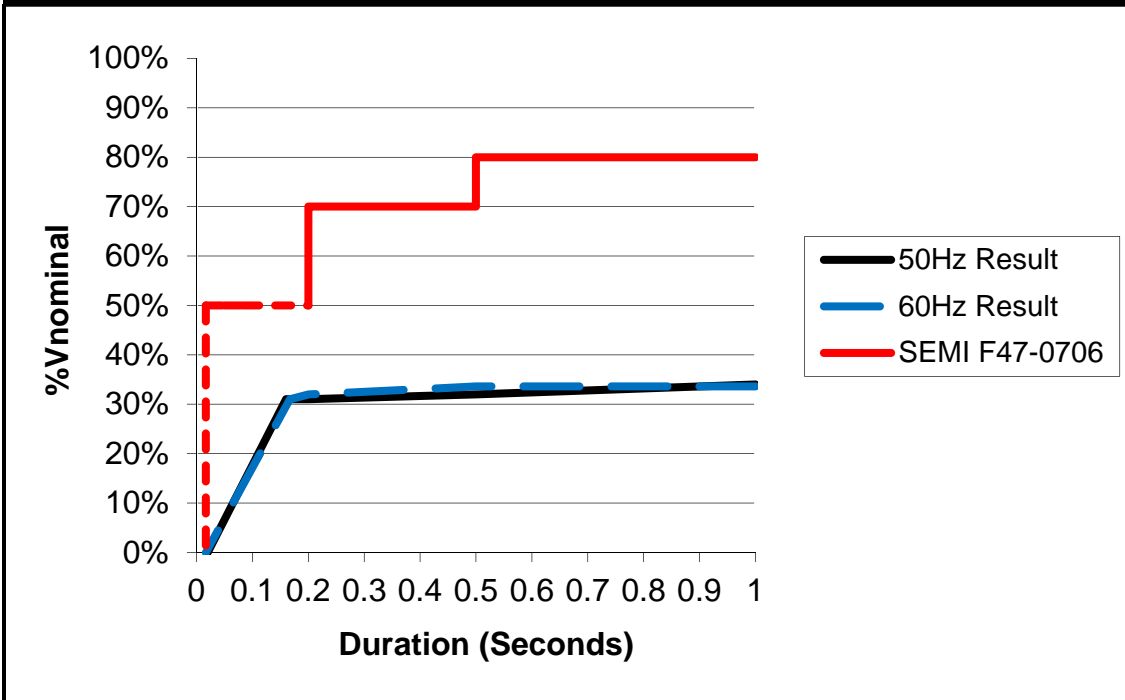


Table 5: IDEC PS5R-VG24 208V Results

Manufacturer:	IDEC			
Series:	PS5R			
Part Number:	PS5R-VG24			
Test Voltage:	208V			
Basic Spec:	PS 24Vdc 10A			
Date:	11.30.15			
Tested By:	Jason Johns			
Loading:	10A			
Notes:	PS #5 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	34%	0.8	Pass
25	0.5	32%	0.7	Pass
10	0.2	31%	0.5	Pass
8	0.16	31%	0	Not a SEMI F-47 Test Point
1	0.02	0%	0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	34%	0.8	Pass
30	0.5	34%	0.7	Pass
12	0.2	32%	0.5	Pass
10	0.167	31%	0	Not a SEMI F-47 Test Point
1	0.017	0%	0	Pass
Note: SEMI F47-0706 0%Vnom, 1 Cycle Test Point is Recommended Only & Not Required.				





Attachment B: Test Equipment List

Equipment Type	Equipment Manufacturer	Model Number	Serial Number
Power Amplifier	ELGAR	SW5250AE	n/a
Power Analyzer	Hioki	3197	111224063
Current Transformer	Hioki	9694	120436030
Hall Effect Current Transformer	AMEC	SL261	127170CBDV
Electronic Load Bank	Circuit Specialists Inc.	3710A	n/a
Voltage Sag Generator	EPRI	PS30-3P	n/a