

SEMI F47-0706 Compliance Certificate EPRI PQ Starsm Test Program

Certification Date: July 2, 2015

PQ Star Reference Number:
 SEMIF47.185

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

Manufacturer:
 IDEC Corporation

Product:
 PS5R Series DC Power Supplies

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

Test Dates:
 6/30/2015-7/2/2015

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-VB05	Universal	100 to 240Vac	10W	5Vdc	208Vac	50Hz, 60Hz
2	PS5R-VB12	Universal	100 to 240Vac	15.6W	12Vdc	208Vac	50Hz, 60Hz
3	PS5R-VB24	Universal	100 to 240Vac	15.6W	24Vdc	208Vac	50Hz, 60Hz
4	PS5R-VC12	Universal	100 to 240Vac	30W	12Vdc	208Vac	50Hz, 60Hz
5	PS5R-VC24	Universal	100 to 240Vac	31.2W	24Vdc	208Vac	50Hz, 60Hz
6	PS5R-VD24	Universal	100 to 240Vac	60W	24Vdc	208Vac	50Hz, 60Hz
7	PS5R-VF24	Universal	100 to 240Vac	120W	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 Bunton, C.E.M..
 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 shows the configuration of the testing. Table 1 through Table 7 display the related curves and test points for the power supplies under test.

Figure 1: Test Setup Diagram

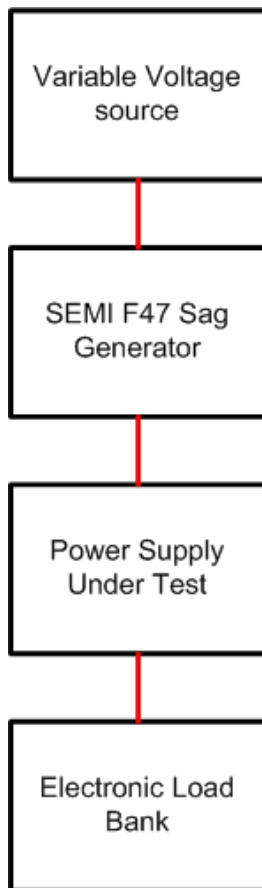


Figure 2: Test Setup Photos

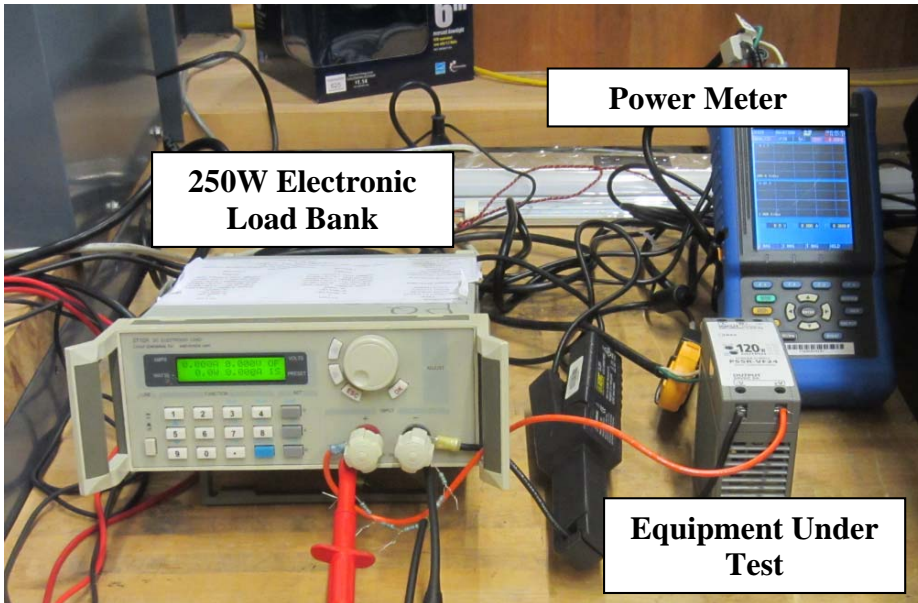
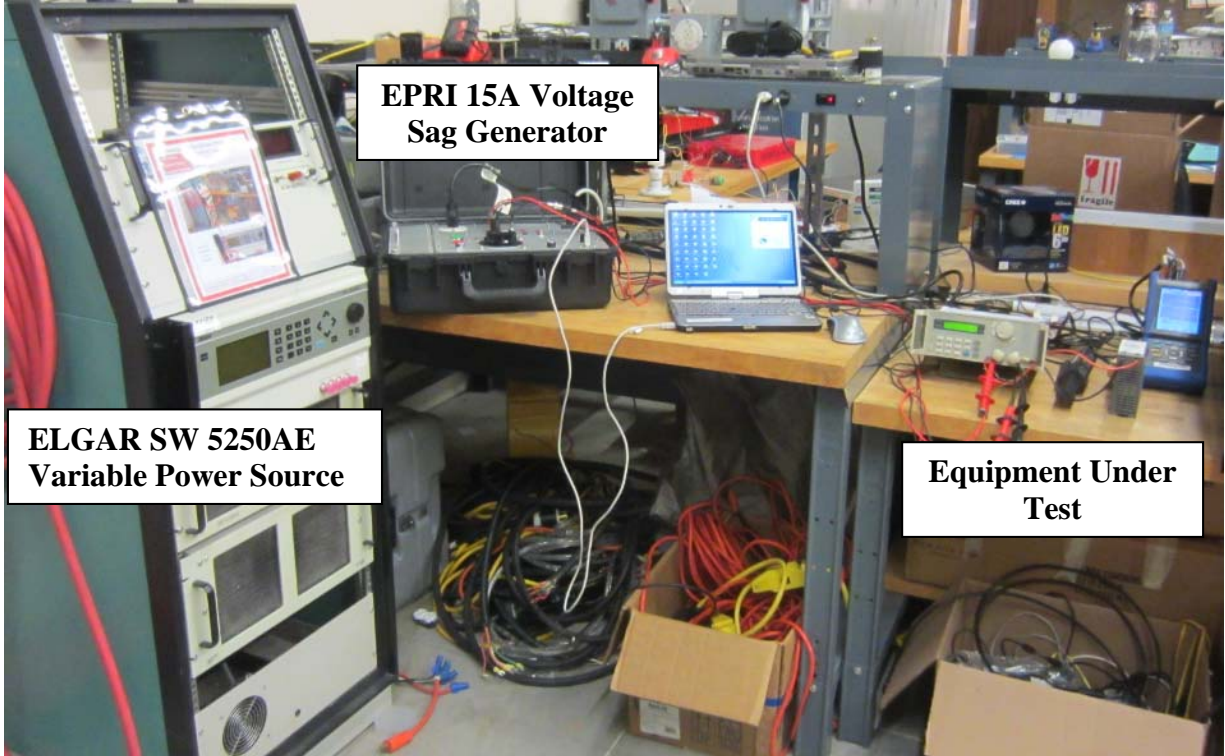


Table 1: IDEC PS5R-VB05 208V Results

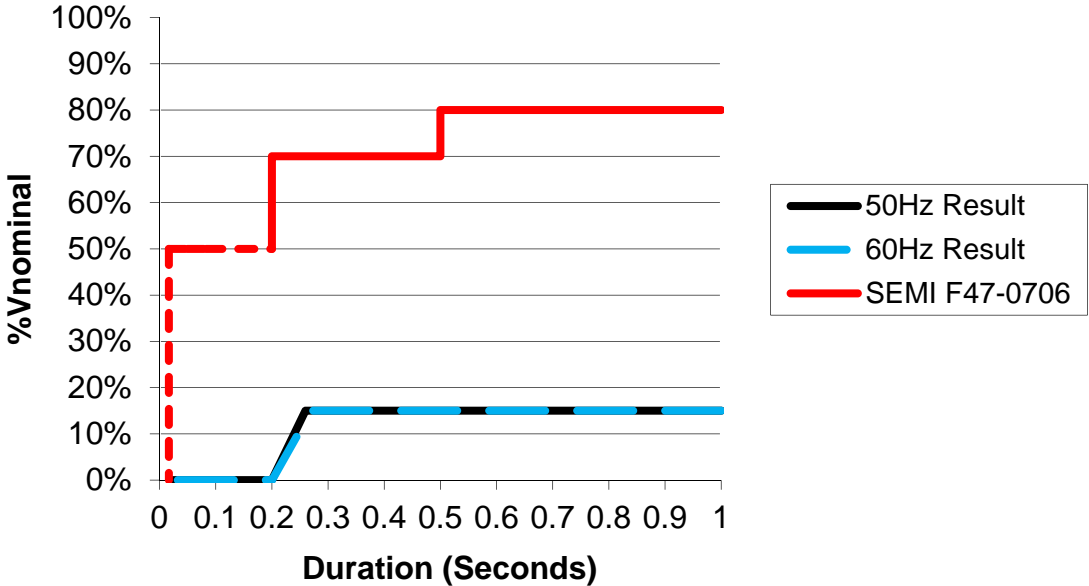
Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VB05			
Test Voltage:	208V			
Basic Spec	PS 5Vdc 2A			
Date:	6/30/2015			
Tested By:	Scott Bunton			
Loading:	2A			
Notes:	PS #1 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	15%	0.8	Pass
25	0.5	15%	0.7	Pass
13	0.26	15%	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	15%	0.8	Pass
30	0.5	15%	0.7	Pass
16	0.27	15%	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-VB12 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VB12			
Test Voltage:	208V			
Basic Spec	PS 12Vdc 1.3A			
Date:	7/1/2015			
Tested By:	Scott Bunton			
Loading:	1.3A			
Notes:	PS #2 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	25%	0.8	Pass
25	0.5	25%	0.7	Pass
10	0.2	25%	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	25%	0.8	Pass
30	0.5	25%	0.7	Pass
12	0.2	25%	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.

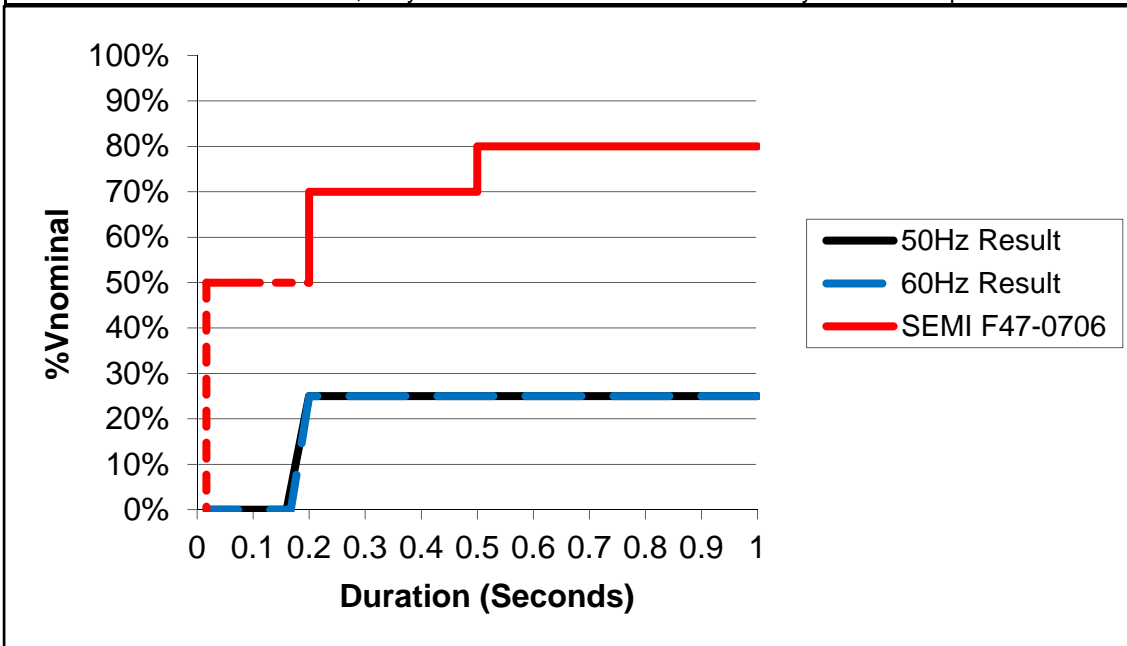


Table 3: IDEC PS5R-VB24 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VB24			
Test Voltage:	208V			
Basic Spec	PS 24Vdc 0.65A			
Date:	7/1/2015			
Tested By:	Scott Bunton			
Loading:	0.65A			
Notes:	PS #3 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	25%	0.8	Pass
25	0.5	25%	0.7	Pass
10	0.2	25%	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	25%	0.8	Pass
30	0.5	25%	0.7	Pass
12	0.2	25%	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.				

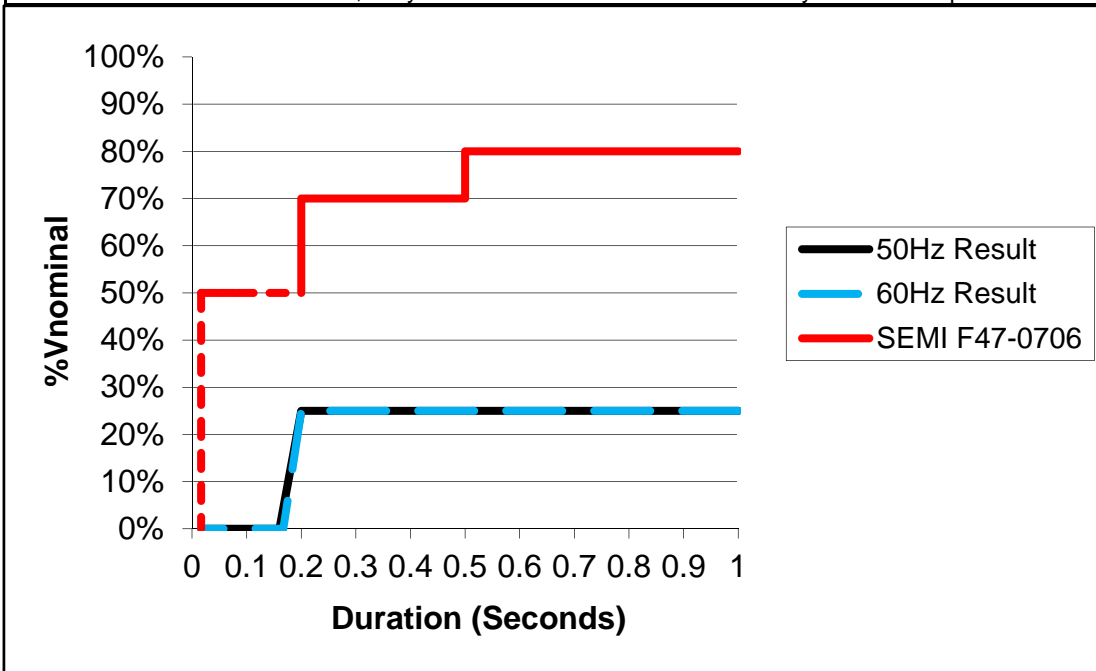


Table 4: IDEC PS5R-VC12 208V Results

Manufacturer	IDEC
Series	PS5R
Part Number:	PS5R-VC12
Test Voltage:	208V
Basic Spec	PS 12Vdc 2.5A
Date:	7/1/2015
Tested By:	Scott Bunton
Loading:	2.5A
Notes:	PS #4 - 208V 1ph

50Hz Testing

Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	30%	0.8	Pass
25	0.5	30%	0.7	Pass
10	0.2	30%	0.5	Pass
5	0.1	30%	0	Not a SEMI F-47 Test Point
4	0.08	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	30%	0.8	Pass
30	0.5	30%	0.7	Pass
12	0.2	30%	0.5	Pass
6	0.1	30%	0	Not a SEMI F-47 Test Point
5	0.085	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.

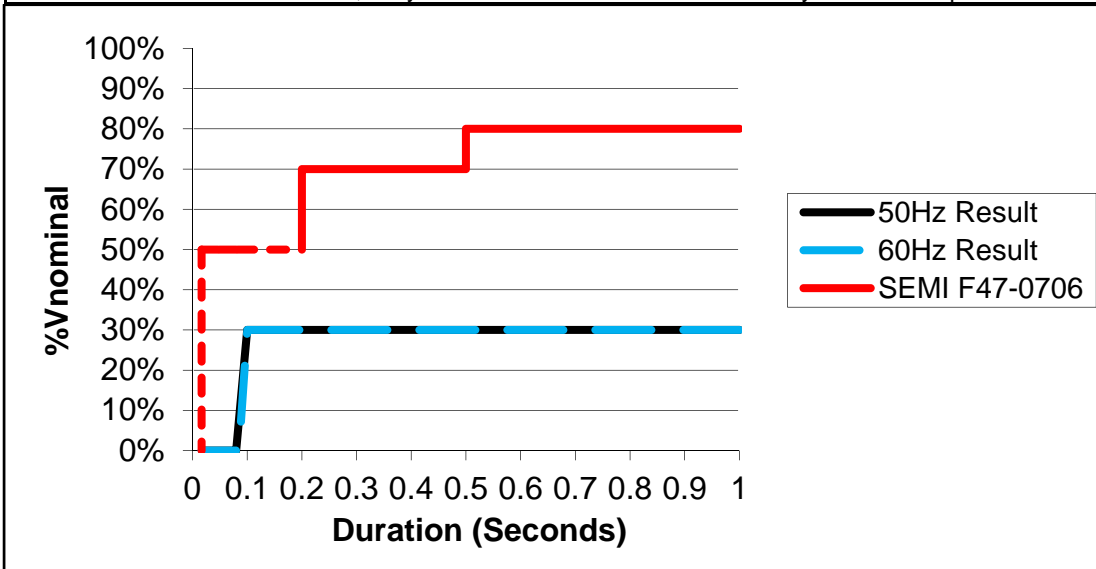


Table 5: IDEC PS5R-VC24 208V Results

Manufacturer	IDEC
Series	PS5R
Part Number:	PS5R-VC24
Test Voltage:	208V
Basic Spec	PS 24Vdc 1.3A
Date:	7/1/2015
Tested By:	Scott Bunton
Loading:	1.3A
Notes:	PS #5 - 208V 1ph

50Hz Testing

Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	30%	0.8	Pass
25	0.5	30%	0.7	Pass
10	0.2	30%	0.5	Pass
5	0.1	30%	0	Not a SEMI F-47 Test Point
4	0.08	0%	0	Not a SEMI F-47 Test Point
1	0.02	0%	0	Pass

Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	30%	0.8	Pass
30	0.5	30%	0.7	Pass
12	0.2	30%	0.5	Pass
6	0.1	30%	0	Not a SEMI F-47 Test Point
5	0.0833	0%	0	Not a SEMI F-47 Test Point
1	0.017	0%	0	Pass

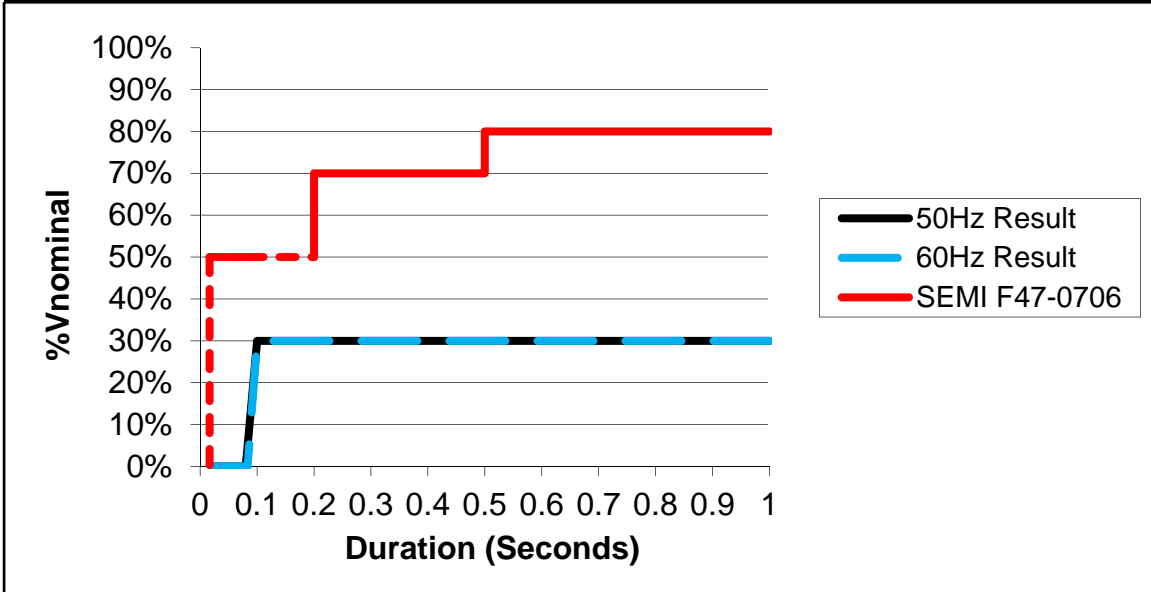


Table 6: IDEC PS5R-VD24 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VD24			
Test Voltage:	208V			
Basic Spec	PS 24Vdc 2.5A			
Date:	7/1/2015			
Tested By:	Scott Bunton			
Loading:	2.5A			
Notes:	PS #6 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	35%	0.8	Pass
25	0.5	35%	0.7	Pass
10	0.2	35%	0.5	Pass
5	0.1	35%	0	Not a SEMI F-47 Test Point
4	0.08	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	30%	0.8	Pass
30	0.5	30%	0.7	Pass
12	0.2	30%	0.5	Pass
5	0.1	30%	0	Not a SEMI F-47 Test Point
4	0.08	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.

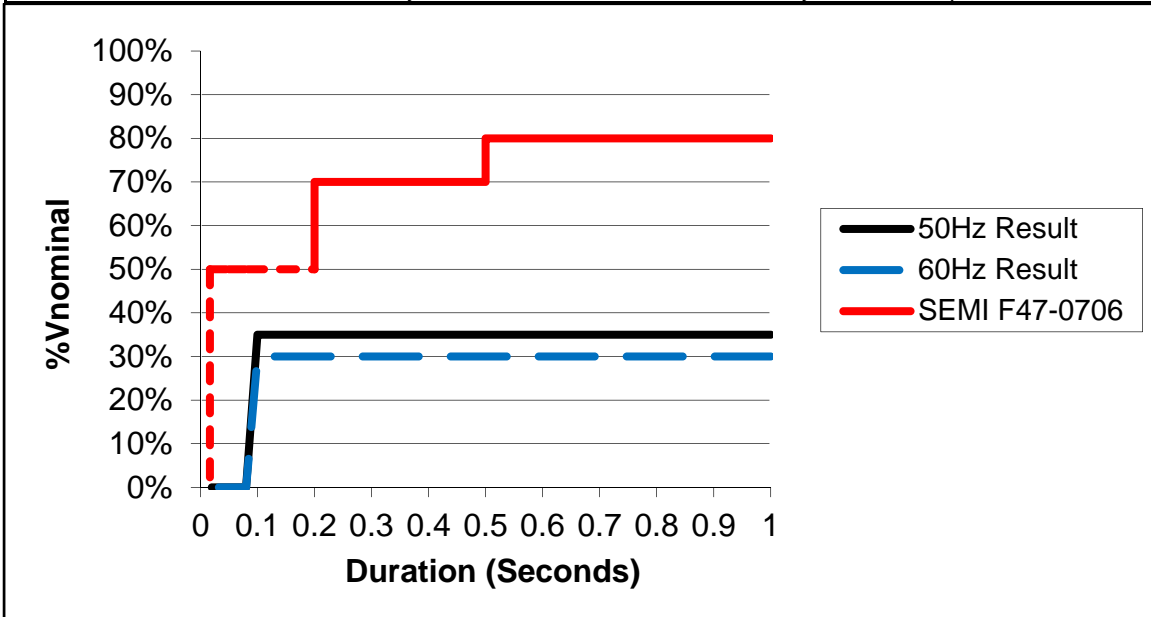
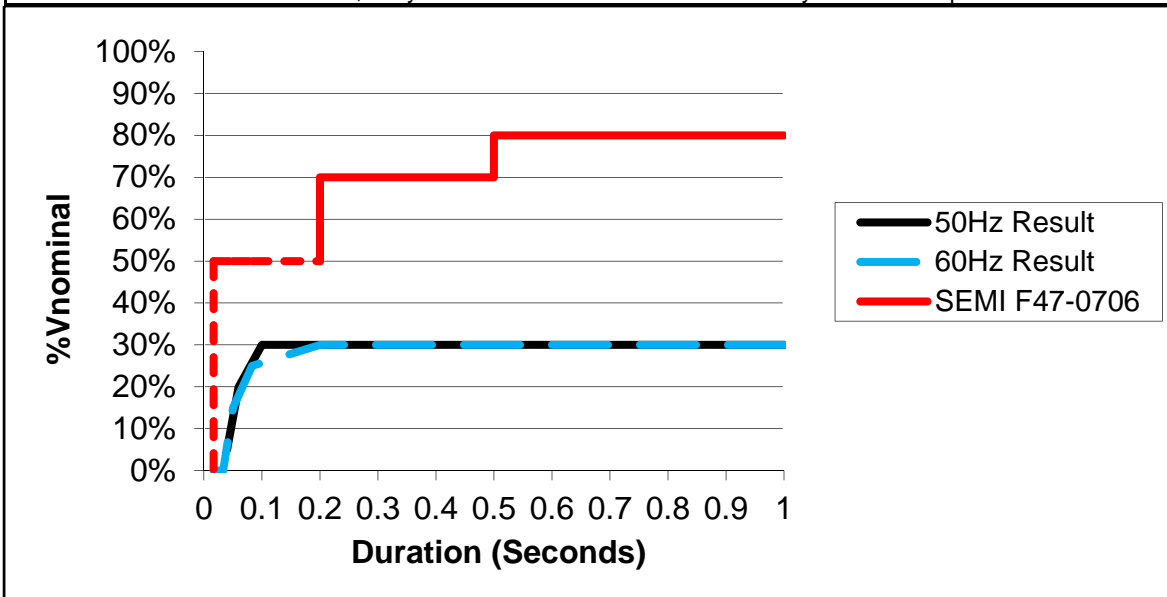


Table 7: IDEC PS5R-VF24 208V Results

Manufacturer	IDEC			
Series	PS5R			
Part Number:	PS5R-VF24			
Test Voltage:	208V			
Basic Spec	PS 24Vdc 5A			
Date:	7/1/2015			
Tested By:	Scott Bunton			
Loading:	5A			
Notes:	PS #7 - 208V 1ph			
50Hz Testing				
Cycles	Seconds	50Hz Result	SEMI F47-0706	Result (Pass/Fail)
50	1	30%	0.8	Pass
25	0.5	30%	0.7	Pass
10	0.2	30%	0.5	Pass
5	0.1	30%	0	Not a SEMI F-47 Test Point
3	0.06	20%	0	Not a SEMI F-47 Test Point
2	0.04	5%	0	Not a SEMI F-47 Test Point
1	0.02		0	Pass
60Hz Testing				
Cycles	Seconds	60Hz Result	SEMI F47-0706	Result (Pass/Fail)
60	1	30%	0.8	Pass
30	0.5	30%	0.7	Pass
12	0.2	30%	0.5	Pass
5	0.083	25%	0	Not a SEMI F-47 Test Point
3	0.05	15%	0	Not a SEMI F-47 Test Point
2	0.033	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.





Attachment B: Test Equipment List

Equipment Type	Equipment Manufacture	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	PS15-1P	0501291