



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: **OSP-0336-10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Powervar, Inc.

Manufacturer's Technical Representative: Cherian Jose, Sustaining Engineering Manager

Mailing Address: 1450 Lakeside Drive, Waukegan, IL 60085

Telephone: (800) 369-7179 Email: Cherian.Jose@POWERVAR.com

Product Information

Product Name: 3200 Series UPS, Security Plus UPS, and Extended Run Battery Cabinet

Product Type: Power protection equipment

Product Model Number: See Attachment

(List all unique product identification numbers and/or part numbers)

General Description: Uninterruptible power supplies and battery cabinets containing batteries, capacitors, contactors, fuses, inductors, transistors, fans, switches, circuit breakers, bypass boards and gate drive board. Seismic enhancements made to the test units required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid base mounted

Applicant Information

Applicant Company Name: DYNAMIC CERTIFICATION LABORATORIES

Contact Person: JOSEPH L. LABRIE, S.E., PRESIDENT / CEO

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

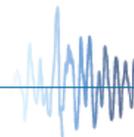
Telephone: (775) 358-5085 Email: LABRIE@MAKEITRIGHT.NET

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 5/31/13

Title: PRESIDENT / CEO Company Name: DYNAMIC CERTIFICATION LABORATORIES

"Access to Safe. Quality Healthcare Environments that Meet California's Diverse and Dvnamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: DYNAMIC CERTIFICATION LABORATORIES
Name: DR. AHMAD ITANI, S.E. California License Number: SE-5220
Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431
Telephone: (775) 358-5085 Email: ITANI@SHAKETEST.COM

Supports and Attachments Preapproval

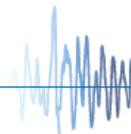
- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORIES
Contact Name: AUSTIN BROWN, P.E., LABORATORY MANAGER
Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431
Telephone: (775) 358-5085 Email: AUSTIN@SHAKETEST.COM





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = 1.55 ($S_{DS} = 2.15g$); 1.80 ($S_{DS} = 2.50g$)

S_{DS} (Design spectral response acceleration at short period, g) = 2.15 (3200 Series UPS, 18 – 40 kW);
2.50 (all other units)

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachments

Overall dimensions and weight (or range thereof) = See attachments

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: Yes No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): _____

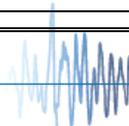
OSHDP Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature:  Date: 7/12/2013

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = 1.0

Condition of Approval (if applicable): _____



Special Seismic Certification List of Certified Units



Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Approved Mounting Description: Rigid base mount

UUT	Model Number and Description	Dimensions (inches)			Approximate Operating Weight (lb)	Sds (g), z/h=1
		Length	Width	Height		
3200 Series						
UUT1	3200 Series UPS, 10 kVa, 9 kW	33.7	18.0	48.0	750	2.50
Interpolated	3200 Series UPS, 20 kVa, 18 kW	33.7	18.0	48.0	750 to 1,370	2.15
Interpolated	3200 Series UPS, 30 kVa, 27 kW	34.8	23.2	59.6		
UUT2	3200 Series UPS, 40 kVa, 40 kW	34.8	23.2	59.6	1,370	2.15
Security Plus UPS						
UUT3	Security Plus UPS, ABCDEF 2000-11, 2 kVA	31.9	11.8	28.9	210	2.50
Interpolated	Security Plus UPS, ABCDEF 3000-11, 3 kVA	31.9	11.8	28.9	210 to 750	2.50
Interpolated	Security Plus UPS, ABCDEF 2000-22, 2 kVA	31.9	11.8	28.9		
Interpolated	Security Plus UPS, ABCDEF 3000-22, 3 kVA	31.9	11.8	28.9		
Interpolated	Security Plus UPS, ABCDEF 4000-22, 4 kVA	31.9	11.8	28.9		
Interpolated	Security Plus UPS, ABCDEF 5200-22, 5.2 kVA	31.9	11.8	28.9		
Interpolated	Security Plus UPS, ABCDEF 6000-22, 6 kVA	31.9	11.8	28.9		
Interpolated	Security Plus UPS, ABCDEF 8000-22, 8 kVA	38.6	13.8	33.5		
Interpolated	Security Plus UPS, ABCDEF 10.0-22, 10 kVA	38.6	13.8	33.5		
Interpolated	Security Plus UPS, ABCDEF 12.0-22, 12 kVA	44.4	15.8	42.5		
UUT4	Security Plus UPS, ABCDEF 15.0-22, 15kVA	44.4	15.8	42.5	750	2.50
Battery Cabinets						
UUT5	Extended Run Battery Cabinet, D9648-11, 2kVA	31.7	11.8	29.0	410	2.50
Interpolated	Extended Run Battery Cabinet, D9632-11, 2kVA	31.7	11.8	29.0	410 to 760	2.50
Interpolated	Extended Run Battery Cabinet, D9632-22, 2kVA	31.7	11.8	29.0		
Interpolated	Extended Run Battery Cabinet, D9648-22, 2kVA	31.7	11.8	29.0		
UUT6	Extended Run Battery Cabinet, D28848-22, 15kVA	38.6	13.7	33.5	760	2.50

Special Seismic Certification
Certified Components:
3200 Series



Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

BATTERIES

Component No.	Component Mfg.	Description	Sds (g)	Unit
HR 1234 FRW	CSB	Battery, 12V 34W	2.50	UUT1
HR 1251 FRW	CSB	Battery, 12V 51W	2.15	Interpolated
GP 12260 FR	CSB	Battery, 12V 26Ah	2.15	UUT2

CAPACITORS

Component No.	Component Mfg.	Description	Sds (g)	Unit
ECG2EPK103MD130B	Jianghai	250VDC 10000uF Electrolytic Capacitor	2.50	UUT1
C65R	Sheng Ye	275VAC 100uF Electrolytic Capacitor	2.50	UUT1
52000YBM4030100E	Yuhchang	300VAC 200uF Electrolytic Capacitor	2.15	UUT2

CONTACTORS

Component No.	Component Mfg.	Description	Sds (g)	Unit
CU-40	Taian	230VAC 40A Contactor	2.50	UUT1
CU-65	Taian	230VAC 65A Contactor	2.15	Interpolated
CU-100	Taian	230VAC 100kW Contactor	2.15	UUT2

FUSES

Component No.	Component Mfg.	Description	Sds (g)	Unit
JKS 70	Bussmann	600VAC 70A Fuse	2.50	UUT1
JKS 80	Bussmann	600VAC 80A Fuse	2.15	Interpolated
JKS 100	Bussmann	600VAC 100A Fuse	2.15	Interpolated
JKS 125	Bussmann	600VAC 125A Fuse	2.15	Interpolated
JKS 150	Bussmann	600VAC 150A Fuse	2.15	UUT2
JKS 200	Bussmann	600VAC 200A Fuse	2.15	UUT2
FWH 70	Bussmann	500VDC 70A Fuse	2.50	UUT1
FWH 100	Bussmann	500VDC 100A Fuse	2.50	UUT1
FWH 150	Bussmann	500VDC 150A Fuse	2.15	UUT2
FWH 200	Bussmann	500VDC 200A Fuse	2.15	Interpolated
FWH 250	Bussmann	500VDC 250A Fuse	2.15	UUT2

INDUCTORS

Component No.	Component Mfg.	Description	Sds (g)	Unit
41-110121-00G	Click	254uH 155 deg C Inductor	2.50	UUT1
41-10070-01G	Click	254uH 180 deg C Inductor	2.15	Interpolated
41-110000-01G	Click	240uH 155 deg C Inductor	2.15	Interpolated
41-110109-01G	Click	240uH 180 deg C Inductor	2.15	UUT2
41-11071-01G	Click	180uH 180 deg C Inductor	2.15	UUT2

INSULATED-GATE BIPOLAR TRANSISTOR (IGBT)

Component No.	Component Mfg.	Description	Sds (g)	Unit
SKM 100 GB12T4	Semikron	1200V 100A IGBT	2.50	UUT1
SKM 150 GB12T4	Semikron	1200V 150A IGBT	2.15	Interpolated
SKM 200 GB12T4	Semikron	1200V 200A IGBT	2.15	Interpolated
SKM 400 GB12E4	Semikron	1200V 400A IGBT	2.15	UUT2

Special Seismic Certification
Certified Components:
3200 Series (Continued)



Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

FANS

Component No.	Component Mfg.	Description	Sds (g)	Unit
A1123-HBT(7).GN	Sunon	115VAC 124CFM Fan	2.50	UUT1
A1175-HBT TC.GN	Sunon	115VAC 239CFM Fan	2.15	UUT2
MA1062-HVL.GN	Sunon	115VAC 18CFM Fan	2.50	UUT1
A1123-HBT TC.GN	Sunon	115VAC 117CFM Fan	2.50	UUT1, UUT2
OA109AP-11-1 TB.XC	Orion	115VAC 131CFM Fan	2.15	UUT2

SWITCHES

Component No.	Component Mfg.	Description	Sds (g)	Unit
OT40F3	ABB	600VAC 40A Switch	2.50	UUT1
OT80F3	ABB	600VAC 80A Switch	2.15	Interpolated
OT125F3	ABB	600VAC 125A Switch	2.15	Interpolated
OT160E3	ABB	600VAC 160A Switch	2.15	UUT2

CIRCUIT BREAKERS

Component No.	Component Mfg.	Description	Sds (g)	Unit
T1N040TL-4	ABB	600VAC 40A Circuit Breaker	2.50	UUT1
T1N080TL-4	ABB	600VAC 80A Circuit Breaker	2.15	Interpolated
T1N100TL-4	ABB	600VAC 100A Circuit Breaker	2.15	Interpolated
T3N150TW-4	ABB	600VAC 150A Circuit Breaker	2.15	UUT2

BYPASS BOARDS

Component No.	Component Mfg.	Description	Sds (g)	Unit
71-300885-00G	Voltronics	10kVA LV Bypass Board	2.50	UUT1
71-300579-02G	Voltronics	20-40kVA LV Bypass Board	2.15	UUT2

GATE DRIVE BOARD

Component No.	Component Mfg.	Description	Sds (g)	Unit
71-300161-03G	Voltronics	10-40kVA LV Gate Drive Board	2.50	UUT1

Special Seismic Certification

Certified Components:

Security Plus Series with Battery Cabinets



Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

BATTERIES

Component No.	Component Mfg.	Description	Sds (g)	Unit
HR1234WF2FR	CSB	12 V Battery	2.50	UUT3, UUT5
HR1251WF2FR	CSB	12 V Battery	2.50	UUT4, UUT6

CAPACITORS

Component No.	Component Mfg.	Description	Sds (g)	Unit
ECG2EPK332H	Nantong Jianghai	250 VDC 3300 uF	2.50	UUT3
ECG2WPK332H	Nantong Jianghai	450 VDC 3300 uF	2.50	Interpolated
ECG2WPK472H	Nantong Jianghai	450 VDC 4700 uF	2.50	Interpolated
ECG2WPK562H	Nantong Jianghai	450 VDC 5600 uF	2.50	UUT4
B32926	EPCOS	X2, 305 VAC, 10uF	2.50	UUT3

FUSES

Component No.	Component Mfg.	Description	Sds (g)	Unit
6S	Sun Electric	250 VAC, 10 A	2.50	UUT5, UUT6
6S	Sun Electric	250 VAC, 20 A	2.50	UUT3
6S	Sun Electric	250 VAC, 25 A	2.50	Extrapolated
660GH-40	Hinode Electric	660VDC 40A	2.50	UUT3, UUT5
660GH-80	Hinode Electric	660VAC 80A	2.50	Interpolated
660GH-100	Hinode Electric	660VAC 100A	2.50	UUT4, UUT6

FANS

Component No.	Component Mfg.	Description	Sds (g)	Unit
AD0912UB-A70GL	ADDA	12VDC, .23A	2.50	UUT3, UUT6
AD0924UX-A71GL	ADDA	24 VDC, 0.22A, 57 CFM	2.50	UUT4
4715KL-05W-B40	EMINEBEA	24 VDC, 0.46A, 118 CFM	2.50	UUT4
D12BH-24D	Yate Loon Electronic	24 VDC	2.50	UUT3
RDH6025S	Xinruilian Electronic	12 VDC, 0.14A	2.50	UUT5

CIRCUIT BREAKERS

Component No.	Component Mfg.	Description	Sds (g)	Unit
FAZ-C63/1	Moeller	277 V 63 A	2.50	UUT3, UUT5, UUT6
FAZ-C63/2	Moeller	277VAC 63A	2.50	UUT3
T1N	ABB	480VAC 80A	2.50	UUT4
T3N	ABB	480VAC 125A	2.50	UUT4

Special Seismic Certification

Certified Components:



Security Plus Series with Battery Cabinets (Continued)

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

PRINTED CIRCUIT BOARDS

Component No.	Component Mfg.	Description	Sds (g)	Unit
PR020A	Kehua Tech	2-3 LV	2.50	UUT3
PR030A	Kehua Tech	2-3 LV	2.50	Interpolated
PR020 Main	Kehua Tech	2-6 HV Main Board	2.50	Interpolated
PR030 Main	Kehua Tech	2-6 HV Main Board	2.50	Interpolated
TP103R-GF01 Main	Kehua Tech	8-15 HV Main Board	2.50	UUT4
PR020 Slave	Kehua Tech	2-6 HV Main Board	2.50	Interpolated
PR030 Slave	Kehua Tech	2-6 HV Main Board	2.50	Interpolated
TP103R-GF01 Slave	Kehua Tech	8-15 HV Main Board	2.50	UUT4
PR020A Control	Kehua Tech	2-3 LV Control Board	2.50	UUT3
PR030A Control	Kehua Tech	2-3 LV Control Board	2.50	Interpolated
PR020 Control	Kehua Tech	2-6 HV Control Board	2.50	Interpolated
PR030 Control	Kehua Tech	2-6 HV Control Board	2.50	Interpolated
PR040 Control	Kehua Tech	2-6 HV Control Board	2.50	Interpolated
PR060 Control	Kehua Tech	2-6 HV Control Board	2.50	Interpolated
TP103R-M03	Kehua Tech	8-15 HV Control Board	2.50	UUT4
PR030A Charger	Kehua Tech	2-3 LV Charger Board	2.50	UUT3, UUT5
PR030 Charger	Kehua Tech	2-6 HV Charger Board	2.50	Interpolated
TP802R-C02	Kehua Tech	8-15 HV Charger Board	2.50	Interpolated
TP802R-C03	Kehua Tech	8-15 HV Charger Board	2.50	UUT4, UUT6
PR030A SCR	Kehua Tech	2-3 LV SCR Board	2.50	UUT3
PR030 SCR	Kehua Tech	2-6 HV SCR Board	2.50	Interpolated
PR060 SCR	Kehua Tech	2-6 HV SCR Board	2.50	Interpolated
TP103R-CON1001	Kehua Tech	8-15 HV SCR Board	2.50	UUT4

TRANSFORMERS

Component No.	Component Mfg.	Description	Sds (g)	Unit
TV-2K-120	Kehua Tech	Main Output Transformer	2.50	UUT3
TV-3K-120	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-2K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-3K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-4K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-6K-240H	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-8K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-10K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-12K-240	Kehua Tech	Main Output Transformer	2.50	Interpolated
TV-15K-240	Kehua Tech	Main Output Transformer	2.50	UUT4

UUT1

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: 3200 Series UPS, 10kVa, 9 kW

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, capacitors, contactors, fuses, inductors, insulated-gate bipolar transistors, fans, switches, circuit breaker, bypass board and gate drive board

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
750	33.7	18.0	48.0	12.5	8.8	25.0

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



The unit was attached to the shake table interface plate using four manufacturer-provided brackets. The front and rear brackets were attached with 1/2-inch diameter Grade 8 bolts: (2) bolts connecting the bracket to the unit and (2) bolts connecting the bracket to the shake table interface plate. The side brackets were attached with 1/2-inch diameter Grade 8 bolts: (3) bolts connecting the bracket to the unit and (3) bolts connecting the bracket to the shake table interface plate. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.

UUT2

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: 3200 Series UPS, 40kVa, 40 kW

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, capacitors, contactors, fuses, inductors, insulated-gate bipolar transistors, fans, switches, circuit breaker, bypass board and gate drive board

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
1,370	34.8	23.2	59.6	7.3	7.3	22.3

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.15	1.0	1.5	3.44	2.58	1.43	0.57

Unit Mounting Description:



The unit was attached to the shake table interface plate using four manufacturer-provided brackets. The front and rear brackets were attached with 1/2-inch diameter Grade 8 bolts: (2) bolts connecting the bracket to the unit and (2) bolts connecting the bracket to the shake table interface plate. The side brackets were attached with 1/2-inch diameter Grade 8 bolts: (3) bolts connecting the bracket to the unit and (3) bolts connecting the bracket to the shake table interface plate. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.

UUT3

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: Security Plus UPS, ABCDEF 2000-11, 2 kVA

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, capacitors, fuses, fan, circuit breakers, circuit boards and transformer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
210	31.9	11.8	28.9	23.5	16.8	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



The unit was attached to the shake table interface plate using two manufacturer-provided brackets. Each bracket was attached to the unit with (3) 5/16-inch diameter Grade 2 bolts. Each bracket was attached to the shake table interface plate with (2) 3/8-inch diameter Grade 8 bolts. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.

UUT4

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: Security Plus UPS, ABCDEF 15.0-22, 15 kVA

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, capacitors, fuses, fan, circuit breakers, circuit boards and transformer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
750	44.4	15.8	42.5	16.5	7.8	24.3

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



The unit was attached to the shake table interface plate using two manufacturer-provided brackets. Each bracket was attached to the unit with (3) 5/16-inch diameter Grade 2 bolts. Each bracket was attached to the shake table interface plate with (3) 3/8-inch diameter Grade 8 bolts. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.

UUT5

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: Extended Run Battery Cabinet, D9648-11, 2 kVA

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, fuses, fan, circuit breakers, and circuit board

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
410	31.7	11.8	29.0	18.5	8.0	30.5

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



The unit was attached to the shake table interface plate using two manufacturer-provided brackets. Each bracket was attached to the unit with (3) 5/16-inch diameter Grade 2 bolts. Each bracket was attached to the shake table interface plate with (3) 3/8-inch diameter Grade 8 bolts. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.

UUT6

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powervar, Inc.

Product Line: Power Protection Equipment

Model Number: Extended Run Battery Cabinet, D28848-22, 15 kVA

Product Construction Summary:

Steel, electrogalvanized, cold-rolled, coil

Options / Component Summary:

12V battery, fuses, fan, circuit breakers, and circuit board

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Cabinet Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
760	38.6	13.7	33.5	22.3	8.5	22.8

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



The unit was attached to the shake table interface plate using two manufacturer-provided brackets. Each bracket was attached to the unit with (3) 5/16-inch diameter Grade 2 bolts. Each bracket was attached to the shake table interface plate with (2) 3/8-inch diameter Grade 8 bolts. The interface plate was attached to the shake table with M12 threaded rod spaced at approximately 8-inches on-center.