



**SPECIAL SEISMIC CERTIFICATION OF
NON-STRUCTURAL COMPONENTS
AND SYSTEMS**

IBC CERTIFICATE OF COMPLIANCE

Dynamic Certification Laboratories has qualified the listed units as CERTIFIED for seismic applications in accordance with the applicable codes listed below. The basis of this certification is through testing of the active and energized components per AC156. The seismic values are obtained from the Maximum Considered Earthquake Short Period Spectral Response Acceleration, Sds. For additional information see DCL Report No. 84450-1201.

Approval for: IBC 2012 Special Seismic Certification of Non-Structural Components and Systems

Manufacturer: Powervar, Inc., 1450 Lakeside Drive, Waukegan, IL 60085

Product Line: Power Protection Equipment

Mounting Description: Rigid base mount using manufacturer-provided brackets

<i>Certified Units</i>						
Unit Under Test (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
TT UPS						
UUT3	TT UPS, ABCDEF 2000-11, 2 kVA	31.9	11.8	28.9	210	2.50
Interpolated	TT UPS, ABCDEF 3000-11, 3 kVA	31.9	11.8	28.9	210 to 750	2.50
Interpolated	TT UPS, ABCDEF 2000-22, 2 kVA	31.9	11.8	28.9		
Interpolated	TT UPS, ABCDEF 3000-22, 3 kVA	31.9	11.8	28.9		
Interpolated	TT UPS, ABCDEF 4000-22, 4 kVA	31.9	11.8	28.9		
Interpolated	TT UPS, ABCDEF 5200-22, 5.2 kVA	31.9	11.8	28.9		
Interpolated	TT UPS, ABCDEF 6000-22, 6 kVA	31.9	11.8	28.9		
Interpolated	TT UPS, ABCDEF 8000-22, 8 kVA	38.6	13.8	33.5		
Interpolated	TT UPS, ABCDEF 10.0-22, 10 kVA	38.6	13.8	33.5		
Interpolated	TT UPS, ABCDEF 12.0-22, 12 kVA	44.4	15.8	42.5		
UUT4	TT UPS, ABCDEF 15.0-22, 15kVA	44.4	15.8	42.5		
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

Seismic Test and Certification Parameters								
Applicable Codes	Unit Under Test (UUT)	S_{DS}	z/h	I_p	Aflx-H	Arig-H	Aflx-V	Arig-V
IBC 2012, 2012 ICC AC156, ASCE 7-10	UUT2	2.15	1.0	1.5	3.44	2.58	1.43	0.57
	UUT1, UUT3-UUT6	2.50	1.0	1.5	4.00	3.00	1.67	0.67

Mounting Description:

The UUTs were rigid-base mounted to the DCL shake table interface frame using the manufacturer-provided brackets. Photographs of the UUTs on the shake table are shown below:



Figure 1 - UUT1



Figure 2 - UUT2



Figure 3 - UUT3



Figure 4 - UUT4



Figure 5 - UUT5



Figure 6 - UUT6

Functionality

The unit was operational before and after shaking, and the unit was tested full of operating content. The structural integrity of the component attachment system and force-resisting systems was maintained.

Site and Project Requirements

It is the responsibility of the Structural Engineer of Record to:

1. Provide engineering for the anchorage and restraint of the unit
2. Validate Certification Design Parameters with actual site conditions
3. Provide engineering of all equipment support structures
4. Confirm component configuration

Certification Issued by: Dynamic Certification Laboratories

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