



SPECIAL SEISMIC CERTIFICATION CERTIFICATE OF COMPLIANCE

Pre No. CC231311-01-R0

Equipment Manufacturer

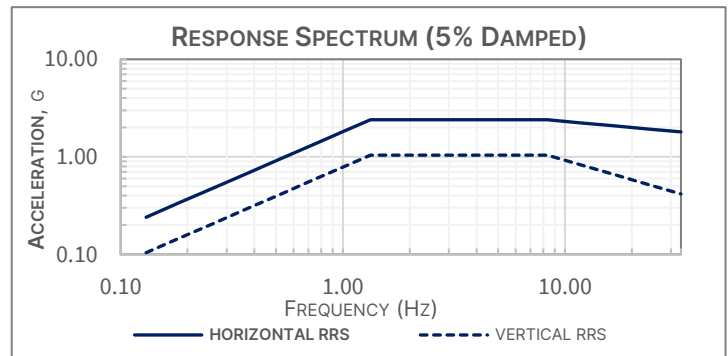
Manufacturer: Vertiv Corporation
Model Line: VES Lithium Ion Battery Cabinets
Product Type: Batteries
Address: 975 Pittsburgh Drive
 Delaware, OH 43015
Phone: (740) 833-8910
Website: www.vertiv.com

Certification Agency

Issue Date: 15-Apr-2024
Expiration Date: 15-Apr-2029
Agency Name: Pre Compliance
Address: 36 SW Wall Street
 Bend, OR 97702
Phone: (541) 241-2310
Website: www.go-pre.com

Seismic Certification Parameters

Method of Certification: Shake Table Testing
Assessment Standard: ICC-ES AC156
Mounting Configuration: Base Mounted - Rigid
Building Codes: IBC 2021, CBC 2022
Importance Factor (I_p): 1.5
 S_{DS} for $z/h = 1$: 1.50 g
 S_{DS} for $z/h = 0$: 1.56 g
 A_{flx-h} : 2.40 g **A_{flx-v} :** 1.04 g
 A_{rig-h} : 1.80 g **A_{rig-v} :** 0.42 g



Certification Terms

- For specific models covered under this certification, see Table of Certified Components and Subcomponents accompanying this certificate.
- For products with $I_p \geq 1.0$, the product is expected to retain position following the design earthquake and is not expected to pose a threat to life and limb.
- For components with $I_p = 1.5$ and certified by testing, the component is expected to remain operational following the design earthquake. Limited structural yielding is expected and minor repairs may be required.
- This certification is dependent on proper mounting and anchorage in the listed mounting configuration(s). This certification does not specify anchorage design due to the variability of supporting structure and substrate conditions that may be present at the installation location.
- Certified products are approved for the Building Codes listed and previous editions of those codes. Extension of this certificate to other Building Codes requires assessment of parameters by Pre Compliance. The seismic levels listed are valid for all soil types and seismic design categories.

Approval

I attest that I have impartially reviewed the documentation supporting this special seismic certification and have confirmed it is in general conformance with the referenced codes and standards and that it meets the seismic levels required for the listed site.

Signature:

Name: Andy Coughlin, SE
Title: Principal Engineer
Email: andy@go-pre.com
Phone: (415) 635-8461
License: S6082 (California)





SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Pre No. CC231311-01-R0

Manufacturer: Vertiv Corporation
Product Type: Batteries
Model Line: EnergyCore Li-ion Battery Cabinet

Seismic Parameters

S_{DS} = 1.50g for z/h=1 **I_p = 1.5**
S_{DS} = 1.56g for z/h=0

Building Codes

CBC 2022
IBC 2021

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Carbon steel framed and sheeted cabinet

Options Summary

10-18 battery modules.
Optional top mounted conduit box (568155G1)

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
EnergyCore Li-ion Battery Cabinet	EnergyCore Lithium Series	29.5	23.6	89.3	954	10 Battery Modules	Interp.
		29.5	23.6	89.3	1060	12 Battery Modules	Interp.
		29.5	23.6	89.3	1167	14 Battery Modules	Interp.
		29.5	23.6	89.3	1273	16 Battery Modules	Interp.
		29.5	23.6	89.3	1338	18 Battery Modules	1

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1

Test Report# TR231311-01-R0

Manufacturer: Vertiv Corporation
Model Line: EnergyCore Li-ion Battery Cabinet
Model Number: 18 Module Battery Cabinet
Serial Number: N/A

Highest Passed Test Level						
S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
1.50	1	1.5	2.40	1.80	1.04	0.42
1.56	0					

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
29.5	23.6	89.3	1338

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
6.69	4.77	25.96

Building Codes
CBC 2022 IBC 2021

Test Criteria
ICC-ES AC156

Construction/Option Summary
Carbon steel framed and sheeted cabinet with top mounted conduit box

UUT Mounting Details:



UUT was rigid base mounted to the table using Seismic Kit 570908G1 with (8) 1/2" Grade 8 hex bolts and flat washers. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #	Wt. (lbs.)
Battery Module (Qty 18)	564756G2	53 ea.
Top mounted conduit box	568155G1	68