APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0588

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: SOCOMEC

Manufacturer's Technical Representative: Mr. PLISSON Bruno

Mailing Address: BOSTON (SAM) 9 Galen Street Suite 120 02472 - WATERTOWN UNITED STATES (US)

Telephone: +1 617-245-0447 (101) Email: bruno.plisson@socomec.com

Product Information

Product Name: Modulys GP – Green Power 2

Product Type: Modular Uninterruptable Power Supply System

Product Model Number: See Attached
(List all unique product identification numbers and/or part numbers)

General Description: Three phase UPS system consisting of UPS and battery cabinets. Seismic enhancements made to the test units and modifications required to address anomalies observed during testing shall be incorporated into the production units.

Mounting Description: Rigid floor mounted with seismic installation kit, see attachment

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 1199 Shoreline Drive, Suite 310, Boise, ID 83703

Telephone: (208) 342-5989 Ext. 115 Email: tsoppe@wegai.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Travis Soppe Date: 2/11/2019

Title: President Company Name: W.E. Gundy & Associates, Inc.

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

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 1199 Shoreline Drive, Suite 310, Boise, ID 83703

Telephone: (208) 342-5989 Ext. 115 Email: tsoppe@wegai.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: IABG mbH

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 89-6088-2052 Email: roedling@iabg.de

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44 for z/h = 1.0 and 1.13 for z/h = 0

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 for z/h = 1.0 and 2.50 for z/h = 0

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) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at S_{DS} =2.00g and 0 at S_{DS} = 2.50g

Equipment or Component Natural Frequencies (Hz) = Multiple, see attachment

Overall dimensions and weight (or range thereof) = Multiple, see attachment

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) = Mohammad Aliaari

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) = DATE: 10/27/2020

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, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: M. Aliaari Date: October 27, 2020

Print Name: Mohammad Aliaari Title: Senior Structural Engineer

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

Condition of Approval (if applicable):

SOCOMEC MODULYS GP - GREEN POWER 2.0
SPECIAL SEISMIC CERTIFICATION CERTIFIED PRODUCT LINE

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

TABLE 1: UPS CABINET PRODUCT LINE - MAX S_{DS} = 2.5 at z/h = 0 and S_{DS} = 2.0 at z/h = 1.0

[1]UPS Cabinet	Power (kW)	Power Modules	Battery Modules	[2]Dimensions (in)			[3]Weight (lb)		UUT
				Width	Length	Height	min	max	
M4-S-100-HCA0 (-A) + P1	25	1	0	23.6	35.0	78.3	1050	1410	extrapolated
M4-S-100-HCA0 (-A) + P2	50	2	0	23.6	35.0	78.3	1120	1485	extrapolated
M4-S-100-HCA0 (-A) + P3	75	3	0	23.6	35.0	78.3	1190	1560	extrapolated
M4-S-100-HCA0 (-A) + P3	75	3	0	23.6	35.0	78.3	1560		UUT-1
M4-S-100-HCA0 (-A) + P4	100	4	0	23.6	35.0	78.3	1270	1650	interpolated
M4-S-100-HCA0 (-A) + P5	100	5	0	23.6	35.0	78.3	1340	1725	interpolated
M4-S-040-HCA0 (-A) + P1 + B0 to B3	25	1	0 to 3	23.6	35.0	78.3	1425	2085	interpolated
M4-S-040-HCA0 (-A) + P3 + B0 to B2	40	3	0 to 2	23.6	35.0	78.3	1575	2015	interpolated
M4-S-040-HCA0 (-A) + P2 + B0 to B3	40	2	0 to 3	23.6	35.0	78.3	1500	2160	interpolated
M4-S-040-HCA0 (-A) + P2 + B3	40	2	3	23.6	35.0	78.3	2160		UUT-2

TABLE 2: BATTERY CABINET PRODUCT LINE - MAX S_{DS} = 2.5 at z/h = 0 and S_{DS} = 2.0 at z/h = 1.0

[1]Battery Cabinet	Amp Hour Rating	Battery Modules	[2]Dimensions (in)			[3]Weight (lb)	UUT
			Width	Length	Height		
M4-BH-03S-009VU	27	3	31.9	37.4	78.3	1975	UUT-3
M4-BH-04S-009VU	36	4	31.9	37.4	78.3	2275	interpolated
M4-BH-05S-009VU	45	5	31.9	37.4	78.3	2570	interpolated
M4-BH-06S-009VU	54	6	31.9	37.4	78.3	2865	interpolated
M4-BH-07S-009VU	63	7	31.9	37.4	78.3	3165	interpolated
M4-BH-08S-009VU	72	8	31.9	37.4	78.3	3460	UUT-4

Notes:

[1] All components are manufactured by SOCOMEC INC. The part numbers listed uniquely identy the type of component, manufacturer, and material of construction for each sub-component within the tested units. UPS Cabinet Codes use 'P' to indicate number of M4-PI-UL25(+CH) power modules and 'B' to indicate number of M4-BM-005VU battery modules.

[2] Enclosures are constructed of carbon steel

[3] Weight includes weight of UPS / power & battery cabinet, internal sub-components, and seismic installation kit.

[4] UPS cabinets and battery cabinets are rigid floor mounted.

SOCOMEC MODULYS GP - GREEN POWER 2.0
SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

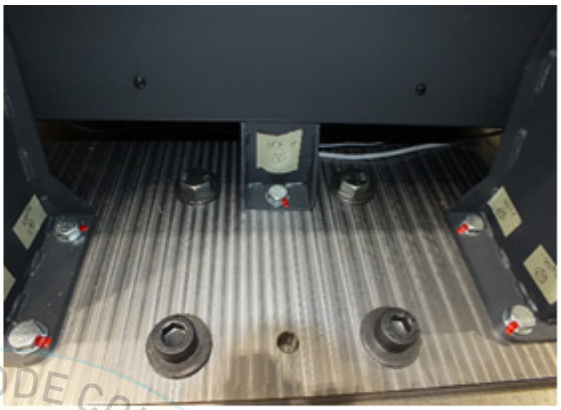
TABLE 3: INVERTER / BATTERY CABINET SUBCOMPONENTS - MAX S_{DS} = 2.5 at z/h = 0 and SDS = 2.0 at z/h = 1.0

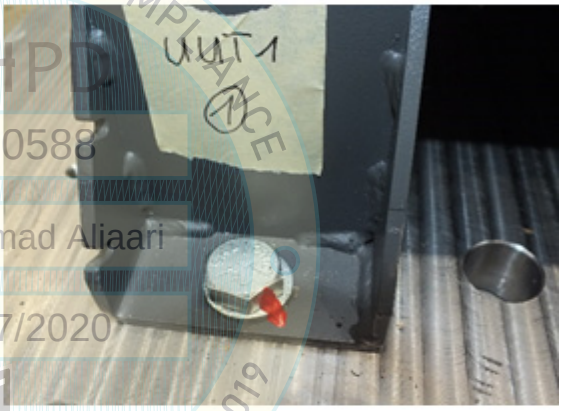
Subcomponent	Description	Manufacturer	Dimensions (in)			Weight (lb)	Representative UUT
			Width	Length	Height		
Power and Battery Modules							
M4-PI-UL25	Power module	SOCOMEC	19.0	29.2	5.1	75	UUT-1
M4-PI-UL25+CH	Power module with battery charger	SOCOMEC	19.0	29.2	5.1	75	UUT-2
M4-BM-005VU	Battery module	SOCOMEC	19.0	29.2	5.1	220	UUT-2
Hot-swap Bypass							
M4-PI-SBPUL	Hot-swap bypass switch	SOCOMEC	10.6	28.5	7.8	55	UUT-1 / 2
Transformers							
100kVA - 415/480V	Dry-type transformer, copper	POWER EUROPE SrL	9.8	16.5	17.3	187	UUT-1
100kVA - 480/415V	Dry-type transformer, copper	POWER EUROPE SrL	9.1	16.5	18.9	231	UUT-1
40kVA - 480/SCH/400V	Dry-type transformer, copper	POWER EUROPE SrL	14.2	18.9	18.9	429	UUT-2
Batteries							
HRL 1223W	Sealed lead acid battery	BATTERY CSB	2.8	3.5	4.2	5	UUT-2
HRL 1225W	Sealed lead acid battery	BATTERY CSB	2.8	3.5	4.2	5	interpolated
HRL 1234W	Sealed lead acid battery	BATTERY CSB	2.6	5.9	3.9	6	UUT-3 / 4
12FGHL34	Sealed lead acid battery	FIAMM	2.6	5.9	3.9	6	UUT-3 / 4
Top Air Exhaust Option							
M4-OP-TEX-UL	Option for top air ventilation	SOCOMEC	23.6	13.9	77.8	66	UUT-1
Top Entry Cable Option							
M4-OP-TCA	Top entry cable	SOCOMEC	23.6	7.3	6.3	9	UUT-2
Seismic Installation Kit							
M4-OP-SEISM-US	UPS cabinet seismic install kit	SOCOMEC	16.9	35.6	59.8	395	UUT-1 / 2
M4-BH-SEISM-US	Battery cabinet seismic install kit	SOCOMEC	16.9	36.1	59.8	365	UUT-3 / 4

Notes:

UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid Floor mounted with standard 6 - 5/8" grade 8.8 bolts / washers and with seismic kit (M4-OP-SEISM-US) consisting of an additional 16 - 5/8" grade 8.8 bolts / washers





Manufacturer: SOCOMEC	**Product Line:** MODULYS GP - GREEN POWER 2.0
Component: 75kW UPS	**Model Number:** M4-S-100-HCA0 (-A) + P3
UUT Function: Uninterruptible Power Supplies (UPS); Ensures continuity of supply to the critical load	
UUT Description: 3 Power Modules, Bypass, 2 Transformers	
Test Location: IABG mbH, Germany	**Test Date:** November 2018

UUT PROPERTIES

*Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Length	Height	FB	SS	V
1,560	23.6"	35.0"	78.3"	27.5	> 33	> 33

SEISMIC TEST PARAMETERS

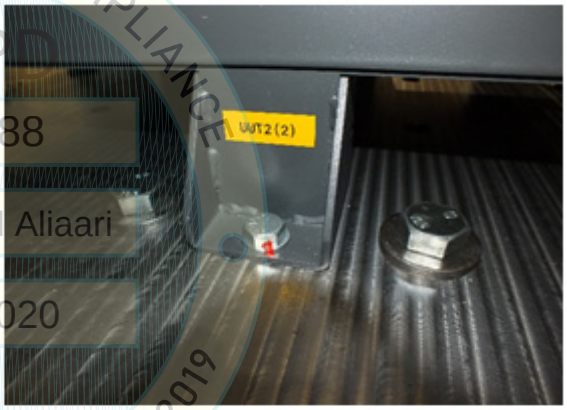
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.68	0.68

Notes: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

*Weight includes weight of unit and seismic installation kit.

UUT-2	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounted with standard 6 - 5/8" grade 8.8 bolts / washers and with seismic kit (M4-OP-SEISM-US) consisting of an additional 16 - 5/8" grade 8.8 bolts / washers



Manufacturer: SOCOMEC	**Product Line:** MODULYS GP - GREEN POWER 2.0
Component: 40kW UPS and batteries	**Model Number:** M4-S-040-HCA0 (-A) + P2 + B3
UUT Function: Uninterruptible Power Supplies; Ensures the continuity of supply to the critical load	
UUT Description: 2 Power Modules, 3 Battery Modules, Bypass, Transformer, Cables, Air Exhaust	
Test Location: IABG mbH, Germany	**Test Date:** November 2018

UUT PROPERTIES

*Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Length	Height	FB	SS	V
2,160	23.6"	35.0"	78.3"	27.1	30.9	> 33

SEISMIC TEST PARAMETERS

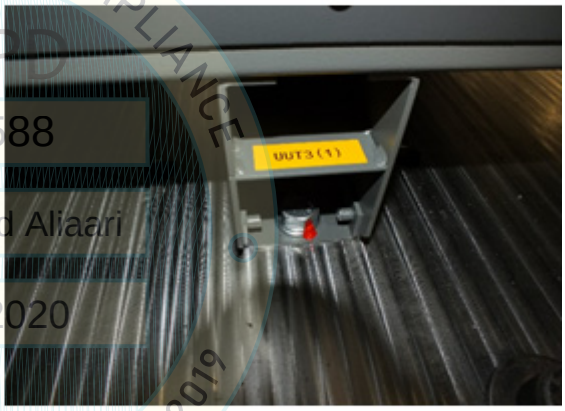
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.68	0.68

Notes: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

*Weight includes weight of unit and seismic installation kit.

UUT-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounted with standard 6 - 5/8" grade 8.8 bolts / washers and with seismic kit (M4-BH-SEISM-US) consisting of an additional 16 - 5/8" grade 8.8 bolts / washers



Manufacturer: SOCOMEC	**Product Line:** MODULYS GP - GREEN POWER 2.0
Component: Battery Cabinet	**Model Number:** M4-BH-03S-009VU
UUT Function: Provides electrical energy to (UPS) in case of absence of the upstream network supply	
UUT Description: 3 Battery Modules	
Test Location: IABG mbH, Germany	**Test Date:** November 2018

UUT PROPERTIES

*Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Length	Height	FB	SS	V
1,975	31.9"	37.4"	78.3"	26.2	33.6	> 33

SEISMIC TEST PARAMETERS

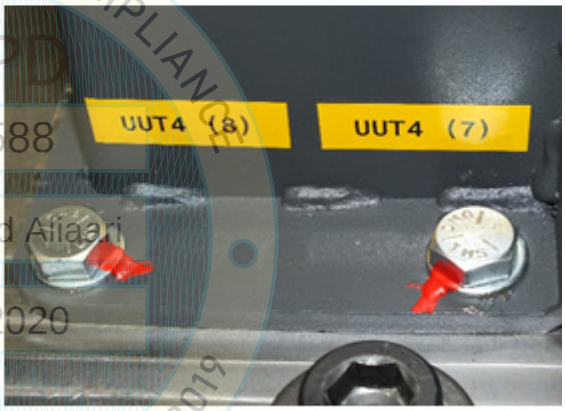
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.68	0.68

Notes: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

*Weight includes weight of unit and seismic installation kit.

UUT-4	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid Floor mounted with standard 6 - 5/8" grade 8.8 bolts / washers and with seismic kit (M4-BH-SEISM-US) consisting of an additional 16 - 5/8" grade 8.8 bolts / washers



Manufacturer: SOCOMEC	**Product Line:** MODULYS GP - GREEN POWER 2.0
Component: Battery Cabinet	**Model Number:** M4-BH-08S-009VU
UUT Function: Provides electrical energy to (UPS) in case of absence of the upstream network supply	
UUT Description: 8 Battery Modules	
Test Location: IABG mbH, Germany	**Test Date:** November 2018

UUT PROPERTIES

*Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Length	Height	FB	SS	V
3,460	31.9"	37.4"	78.3"	14	21.7	> 33

SEISMIC TEST PARAMETERS

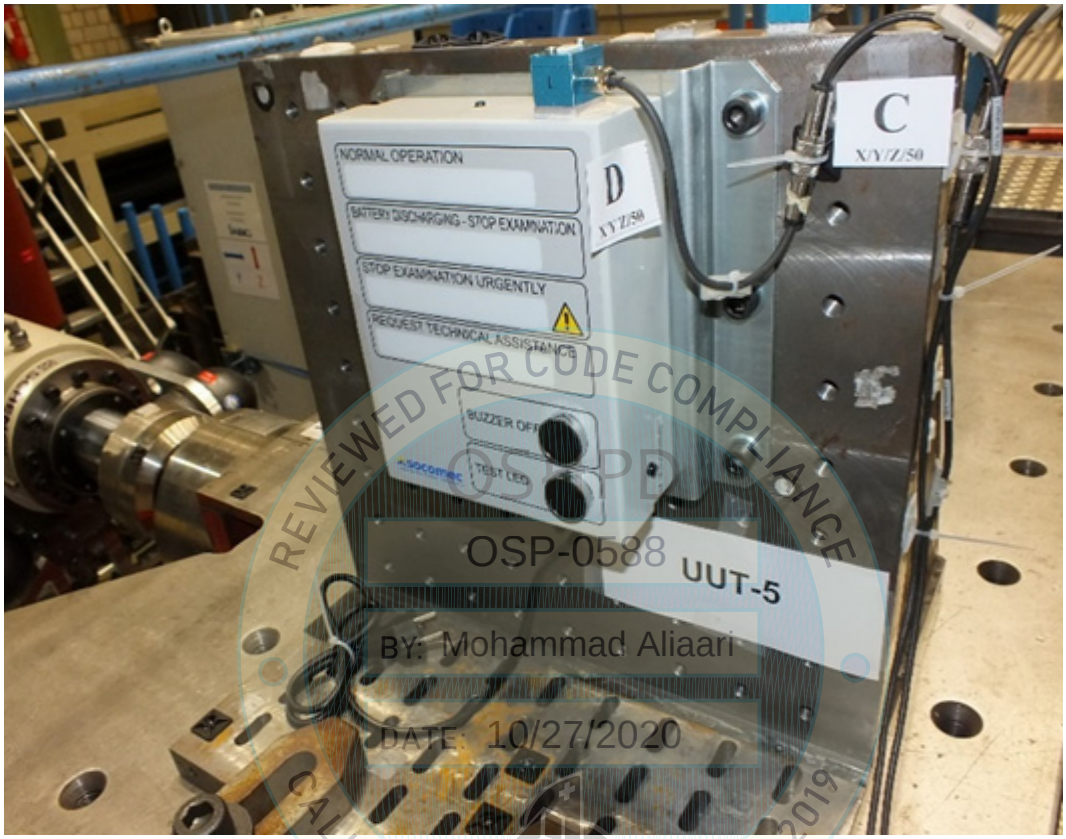
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.68	0.68

Notes: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

*Weight includes weight of unit and seismic installation kit.

UUT-5	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Wall mounted with 4 - 3/16" grade 8.8 bolts / washers



Manufacturer: SOCOMEC	**Product Line:** MODULYS GP - GREEN POWER 2.0
Component: Signaling Box	**Model Number:** U4-HC-LED-RGB
UUT Function: Allows the monitoring of the status of the Uninterruptible Power Supplies	
UUT Description: Optional accesory of Uninterruptible Power Supplies	
Test Location: IABG mbH, Germany	**Test Date:** November 2018

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Length	Height	FB	SS	V
6	7.5"	3.5"	10.0"	> 33	> 33	> 33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.68	0.68

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.