



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0712

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH Manufacturer's

Technical Representative: Tina Kollmann

Mailing Address: Siemensstr. 3, 91301 Forchheim, Germany

Telephone: +49 (9191) 18-5412

Email: tina.kollmann@siemens-healthineers.com

Product Information

Product Name: Fluoroscopy and Radiography Systems

Product Type: NA

Product Model Number: YSIO X.Pree X-Ray system

General Description: Multi-component digital & analog radiographic medical imaging systems.

Mounting Description: Several – See UUT Sheets

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: WE Gundy & Associates, Inc

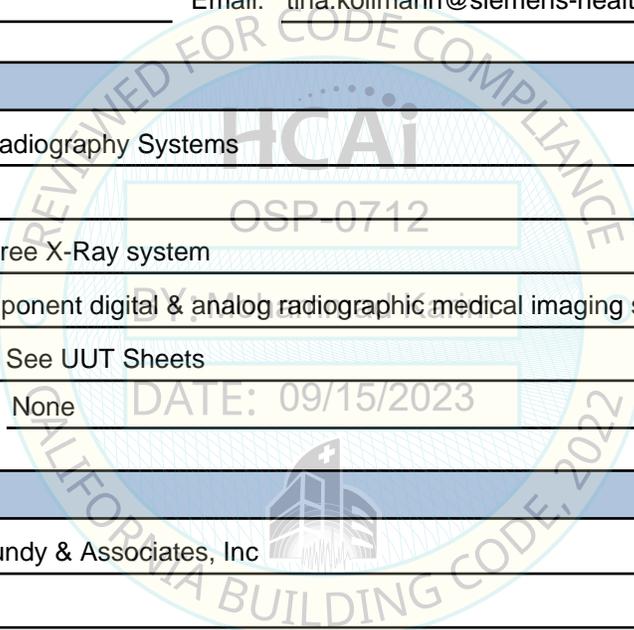
Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





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FACILITIES DEVELOPMENT DIVISION**

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

Company Name: W.E. GUNDY & ASSOCIATES INC.
Name: Travis Soppe California License Number: S6115
Mailing Address: P.O. Box 9121, Boise, ID 83707
Telephone: (208) 342-5989 Email: tsoppe@wegai.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com

Company Name: IABG TEST LABORATORY
Contact Person: Dr. Steffen Roedling
Mailing Address: Einsteinstrasse 20, D-85521, Ottobrunn, Germany
Telephone: +49 89 6088 2052 Email: roedling@iabg.de





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = See Attachments

SDS (Design spectral response acceleration at short period, g) = See attachments

a_p (Amplification factor) = See attachments

R_p (Response modification factor) = See attachments

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 09/15/2029

Date: 9/15/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 09/15/2023

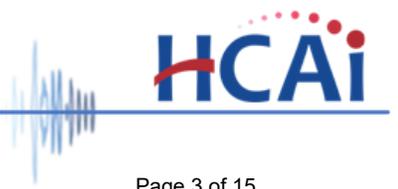


Table 1	SIEMENS HEALTHCARE GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS	 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC.</small> <small>STRUCTURAL & EARTHQUAKE ENGINEERING</small>
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System: Ysio X.pree System	Manufacturer: Siemens Healthcare GmbH
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System Component ¹	Siemens Part Number	Dimensions (in)			Weight (lb) ³	Mounting	UUT ²
		Width	Length	Height			

Ceiling Suspension X-Ray Tubes

Carriage 3D 3m manual Tube stand 3D V semi motorized	07042091	119.0	167.0	33-104	803	ceiling	UUT _x -1
3D stand fully motorized 3m SF	07042109	119.0	167.0	33-104	803	ceiling	interpolated
Carriage 3D 4m manual Tube stand 3D V semi motorized	07042133	172.0	167.0	33-104	816	ceiling	interpolated
3D stand fully motorized 4m SF	07042141	172.0	167.0	33-104	816	ceiling	UUT _x -2

Bucky Wall Stands

Tilting Bucky Wall Stand Fixed Detector	10681702	30.0	48.9	85.0	528	floor	UUT _y -2
Tilting Bucky Wall Stand Fixed Detector	11373360	30.0	26.9	82.5	660	floor	interpolated
Tilting Bucky Wall Stand Wifi Dectector	11373361	30.0	26.9	82.5	660	floor	interpolated
Tilting Bucky Wall Stand Wifi Dectector	11373362	30.0	26.9	82.5	660	floor	interpolated
Tilting Bucky Wall Stand Wifi Dectector	10681704	30.0	28.1	82.9	643	floor	UUT _z -2

¹ All components are manufactured by Siemens Healthcare GmbH unless noted. Part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

² The units were tested at different times and the subscripts on the UUTs reference the following seismic test reports:
v = TA-B-002931_V1 - w = SQ35-1204-01-r3 - x = TAB3-PB-20-134-V1 - y = SQ35-1416-01-r2 - z = SQ35-1415-02-r4

SEISMIC CERTIFICATION LIMITS

System Component	Code	S _{DS} (g)	z / h	I _P	a _p	R _P	Ω ₀	F _P / W _P
Ceiling Suspension X-Ray Tubes	CBC 2022	2.0	1.0	1.50	2.5	2.5	2.0	3.60
		2.5	0					1.50
Bucky Wall Stands	CBC 2022	2.0	1.0	1.50	1.0	1.5	2.0	2.40

Table 1	SIEMENS HEALTHCARE GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS					 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING</small>	
	System: Ysio X.pree System			Manufacturer: Siemens Healthcare GmbH			

System Component ¹	Siemens Part Number	Dimensions (in)			Weight (lb) ³	Mounting	UUT ²
		Width	Length	Height			
Patient Tables							
Ysio MAX Patient Table	10273210	94.9	31.5	20.3-37.6	835	floor	UUT _y -1
Ysio X.pree Patient Table	11373312	94.9	31.5	20.3-37.6	835	floor	interpolated
Ysio Patient Table	10281013	94.9	31.5	20.3-37.5	1015	floor	UUT _w -2
Generator							
Polydoros R80 V2	10910902	28.0	17.0	79.0	944	floor/wall	UUT _x -3
PC / User Interface							
UIS Container / PC	11513440	8.0	21.3	14.8	38	floor	UUT _v -1
	11513962						
UIS Container / PC	11105099	12.0	22.0	22.0	53	floor	UUT _x -4
	11362401						
Wireless Access Point							
SCALANCE W700	Scalance W700	7.9	2.8	6.2	6	wall	UUT _y -4

¹ All components are manufactured by Siemens Healthcare GmbH unless noted. Part numbers listed uniquely identify type of component, manufacturer, and material of construction for each sub-component within the tested units.

² The units were tested at different times and the subscripts on the UUTs reference the following seismic test reports:
 $v = TA-B-002931_V1$ - $w = SQ35-1204-01-r3$ - $x = TAB3-PB-20-134-V1$ - $y = SQ35-1416-01-r2$ - $z = SQ35-1415-02-r4$

³ Patient table weight does not include simulated patient weights of 440lb and 660lb for UUT_y-1 and UUT_w-2, respectively.

SEISMIC CERTIFICATION LIMITS								
System Component	Code	S _{DS} (g)	z / h	I _P	a _p	R _P	Ω ₀	F _P / W _P
Patient Tables	CBC 2022	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.50
Generator	CBC 2022	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.50
PC / User Interface	CBC 2022	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.50
Wireless Access Point	CBC 2022	2.0	1.0	1.50	1.0	2.5	2.0	1.44

UUT_x-1

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rails and connecting parts of the 3D Tube Stand bolt with M10 bolts torqued at 36 ft-lb to unistrut grid spaced at 26.6" on center. The unistrut grid consisted of MURPO#150969 MPR-41/82/2.0 H-Profiles (Unistrut P1001 equivalent) anchored with 2 - M10 bolts with clamping claws (MURPO 157219) at each intersection to the ceiling fixture framing spaced at 23.6" on center.



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG - Munich, Germany
Component: Carriage 3D 3m manual Tube stand 3D V semi motorized	Test Date: September 2020
Model Number: 07042091	Report Number: TAB3-PB-20-134-V1
UUT Function: X-Ray stand, ceiling suspended, for use in radiography imaging, fully automated	
UUT Description: Component of the YSIO X.pree X-Ray System	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
803	119	167	33-104	N/A	N/A	N/A

The ceiling suspended tube stand moves laterally, rotates, and extends up and down to accommodate different patients and procedures. The system was tested in the normal operating position with the system horizontally centered, no rotation, and with a downward extension of 32in (height = 33in + 32in = 65in).

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 2022 / 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.

UUT_x-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rails and connecting parts of the 3D Tube Stand bolt with M10 bolts torqued at 36 ft-lb to unistrut grid spaced at 26.6" on center. The unistrut grid consisted of MURPO#150969 MPR-41/82/2.0 H-Profiles (Unistrut P1001 equivalent) anchored with 2 - M10 bolts with clamping claws (MURPO 157219) at each intersection to the ceiling fixture framing spaced at 23.6" on center.



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG - Munich, Germany
Component: 3D stand fully motorized 4m SF	Test Date: September 2020
Model Number: 07042141	Report Number: TAB3-PB-20-134-V1
UUT Function: X-Ray stand, ceiling suspended, for use in radiography imaging, fully automated	
UUT Description: Component of the YSIO X.pree X-Ray System	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
816	172	167	33-104	N/A	N/A	N/A

The ceiling suspended tube stand moves laterally, rotates, and extends up and down to accommodate different patients and procedures. The system was tested in the normal operating position with the system horizontally centered, no rotation, and with a downward extension of 32in (height = 33in + 32in = 65in).

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 2022 / 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.

UUT_x-3

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Floor/wall mount with 4 - M12 grade 10.9 bolts torqued at 92 ft-lbs to the floor and 2 - M6 grade 10.9 bolts torqued at 11 ft-lbs to the wall fixture.



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG - Munich, Germany
Component: Polydoros R80 V2 Generator	Test Date: September 2020
Model Number: 10910902	Report Number: TAB3-PB-20-134-V1
UUT Function: Generator for radiography and fluoroscopy systems.	
UUT Description: Component of the YSIO X.pree X-Ray System	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
944	28	17	79	N/A	N/A	N/A

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 2022 / 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.

UUT_x-4

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounting using Siemens seismic restraint kit SN:10432402. Seismic restraint kit includes a 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on the long side of the unit. The four angle brackets are attached to the table with individual 3/8"



REVIEWED FOR CODE COMPLIANCE
BY: Mohammad Karim
DATE: 09/15/2023
CALIFORNIA BUILDING CODE 2022

Manufacturer: Siemens Healthcare GmbH	Test Location: IABG - Munich, Germany
Component: UIS Container / PC	Test Date: September 2020
Model Number: 11105099 / 11362401	Report Number: TAB3-PB-20-134-V1
UUT Function: User interface for radiography system.	
UUT Description: Component of the YSIO X.pree X-Ray System	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
53	12	22	22	10.0	19.5	> 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 2022 / 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.

UUT_w-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted using 4 - 5/8" grade 8 bolts with washers



Manufacturer: Siemens Healthcare GmbH **Test Location:** Environmental Testing Laboratory

Component: YSIO Patient Table **Test Date:** March 2012

Model Number: 10281013 **Report Number:** SQ35-1204-01 Rev. 3

UUT Function: Motorized patient table for support and positioning for image acquisition

UUT Description: Component of YSIO X.pree X-Ray system, includes Trixell Pixium FE 3542 pR wireless detector.

UUT PROPERTIES

Weight w/ Patient(lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,675	94.9	31.5	20.3 - 37.5	2.4	23.0	11.7

The patient table moves laterally both ways and vertically to accommodate different patients and procedures. The system was tested in the normal operating position with the table horizontally centered, a table top height of 31.25", and a total simulated patient weight of 662lbs.

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 2022 / 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.

UUT_y-1

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted using 4 - 5/8" grade 8 bolts with washers



Manufacturer: Siemens Healthcare GmbH	Test Location: Environmental Testing Laboratory
Component: YSIO MAX Patient Table	Test Date: October 2014
Model Number: 10273210	Report Number: SQ35-1416-01 Rev. 2
UUT Function: Motorized patient table for support and positioning for image acquisition	
UUT Description: Component of YSIO X.pree X-Ray system, includes MAX wi-D wireless mobile digital detector - Trixell Pixium 3543EZh (P/N: 10762402)	

UUT PROPERTIES

Weight w/ Patient(lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,275	94.9	31.5	20.3 - 37.6	25.2	>33	11.6

The patient table moves laterally both ways and vertically to accommodate different patients and procedures. The system was tested in the normal operating position with the table horizontally centered, a table top height of 30", and a total simulated patient weight of 440lbs.

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

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.

UUT_y-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - 5/8" grade 8 bolts



Manufacturer: Siemens Healthcare GmbH | **Test Location:** Environmental Testing Laboratory

Component: Bucky Wall Stand w/ MAX Static | **Test Date:** October 2014

Model Number: 10681702 | **Report Number:** SQ35-1416-01 Rev. 2

UUT Function: Radiographic wall stand for X-ray exposures

UUT Description: Component of YSIO X.pree X-Ray system includes Trixell MAX Static fixed plate detector (P/N: 10762401)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
528	30	48.9	85	8.6	7.7	8.7

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

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.

UUT_y-4

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid wall mounted with 4 - 1/4" screws



Manufacturer: Siemens Healthcare GmbH **Test Location:** Environmental Testing Laboratory

Component: Wireless access point **Test Date:** October 2014

Model Number: Scalance W700 **Report Number:** SQ35-1416-01 Rev. 2

UUT Function: Wireless access point

UUT Description: Component of the YSIO X.pree X-Ray system

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
6	7.9	2.8	6.2	N/A	N/A	N/A

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

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.

UUT_z-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - 5/8" Gr. 8 bolts



Manufacturer: Siemens Healthcare GmbH **Test Location:** Environmental Testing Laboratory

Component: Tilting Bucky Wall Stand **Test Date:** July 2014

Model Number: 10681704 **Report Number:** SQ35-1415-02 Rev. 4

UUT Function: Wall stand for radiographic medical imaging

UUT Description: Component of the YSIO X.pree X-Ray system

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
643	30	28.1	82.9	11.7	9.1	9.1

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

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.

UUT_v-1

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounting using Siemens seismic restraint kit SN:11107393. Seismic restraint kit includes a 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on the long side of the unit. The four angle brackets are attached to the table with individual M8 grade 10.9 bolts.



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG - Munich, Germany
Component: UIS Container / PC	Test Date: May 2023
Model Number: 11513440 / 11513962	Report Number: TA-B-002931_V1

UUT Function: User interface for radiography system.

UUT Description: Component of the YSIO X.pree X-Ray System

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
38	8.0	21.3	14.8	> 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 2022 / 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.