



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0343

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: ENERVEX Inc.

Manufacturer's Technical Representative: Christian Hagensen

Mailing Address: 1685 Bluegrass Lakes Parkway, Alpharetta, GA 30004

Telephone: (770) 587-3238

Email: christianh@energex.com

Product Information

Product Name: Exhaust/Smoke Control Fans

Product Model Number(s): RSV Chimney Fans & IPVB Inline Power Venters (for model numbers, see attached)

Product Category: Exhaust/Smoke Control Fans

Product Sub-Category: Exhaust/Smoke Control Fans

General Description: Rigid floor mounted RSV chimney fans, ceiling suspended IPVB inline power venters, and rigid wall mounted controls.

Mounting Description: Rigid floor (RSV), ceiling suspended (IPVB), and rigid wall (controls)

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: DCL Labs, LLC

Contact Person: Nastya Veyngerova

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: nastya.veyngerova@shaketest.com

Title: Seismic Test Engineer



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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.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

BY: Mohammad Karim

DATE: 11/10/2025



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Seismic Parameters

Certified Response Spectral Acceleration Factors: (F_p/W_p)

Horizontal (A Flx-H), $g =$ 4.00 (A Rig-H), $g =$ 2.69

Vertical (A Flx-V), $g =$ 1.67 (A Rig-V), $g =$ 0.67

SDS (Design spectral response acceleration at short period, g) = 2.50

Hf (Force amplification height factor) = 3.5 at $z/h=1.0$; 1.0 at $z/h=0$

Ru (Structure ductility reduction factor) = 1.3 at $z/h=1.0$; 1.0 at $z/h=0$

I_p (Importance factor) = 1.5

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

HCAI Approval (For Office Use Only) - Approval Expires on 11/10/2031

Date: 11/10/2025

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Condition of Approval (if applicable): _____

OSP-0343

BY: Mohammad Karim

DATE: 11/10/2025

Special Seismic Certification

Table 1 - Certified Components



DCL Project Number: 30026-2501

Manufacturer: ENERVEX Inc. (Formerly Exhausto)

Product Line: Exhaust/Smoke Control Fans

Mounting: Rigid Base Mount; Ceiling Suspended Mount; Rigid Wall Mount

Certified Seismic Levels: Sds=2.50g with z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_d = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number		Description	Certified Product Construction	Max. Dimensions [in.]			Max. Weight [lb.]	Unit
				Depth	Width	Height		
Rigid Base Mounted Units								
RSV 160		RSV Chimney Fan	Cast aluminum housing. Backwards curved cast aluminum impeller	12.2	12.2	9.9	28	Extrapolated
RSV 200				15.4	15.4	11.0	47	UUT 1
RSV 250				19.1	19.1	13.2	60	Interpolated
RSV 315				22.9	22.9	15.0	88	Interpolated
RSV 400				25.6	25.6	16.9	127	Interpolated
RSV 450				25.6	25.6	23.2	155	UUT 2
Ceiling Suspended Units								
IPVB300		IPVB Inline Power Venter	Stainless steel housing. Backwards inclined cast aluminum impeller	47.0	22.0	22.0	109	UUT 3
IPVB350				51.2	25.3	24.6	118	Interpolated
IPVB400				56.8	29.2	26.3	160	Interpolated
IPVB500				67.0	32.0	30.0	224	UUT 4
Rigidly Wall Mounted Units								
Old Model Number	New Model Number	Description	Certified Product Construction	Max. Dimensions [in.]			Max. Weight [lb.]	Unit
				Depth	Width	Height		
EBC 30	EBC 31	Modulating Pressure Control	NEMA 1 Carbon Steel	4.2	14.7	11.0	9	UUT 5, UUT 6
XTP2	XTP	Differential Pressure Control	NEMA 4X Polystyrene	3.1	3.7	6.2	0.6	UUT 7, UUT 8
Model Number		Description	Certified Product Construction	Max. Dimensions [in.]			Max. Weight [lb.]	Unit
				Depth	Width	Height		
ES 12		Relay Box	NEMA 12 Plastic	3.0	6.9	5.6	1.6	UUT 9, UUT 10

Special Seismic Certification
Table 2 - Certified Subcomponents



DCL Project Number: 30026-2501

Product Line: Exhaust/Smoke Control Fans

Certified Seismic Levels: Sds=2.50g with z/h=1.0 and z/h=0.0

Rigid Base Mounted Units					
Motors					
HP	Manufacturer	Description	Material	Weight [lb.]	Unit
0.15	Exodraft	120V, 1-phase	Aluminum	14	UUT 1
2	ABB	240/480V, 3-phase	Aluminum	38	UUT 2
Backwards Curved Impeller					
Impeller Diameter [mm]	Manufacturer	Description	Material	Weight [lb.]	Unit
160	ENERVEX Inc.	6.3" x 6.3"	Cast Aluminum	3	Extrapolated
200		7.9" x 7.9"		5	UUT 1
250		9.8" x 9.8"		8	Interpolated
315		12.4" x 12.4"		11	Interpolated
400		15.7" x 15.7"		14	Interpolated
450		17.7" x 17.7"		16	UUT 2
Ceiling Suspended Units					
Motors					
HP	Manufacturer	Description	Material	Weight [lb.]	Unit
0.5	Exodraft	120V, 1-phase	Aluminum	22	UUT 3
3	ABB	240/480V, 3-phase	Aluminum	53	UUT 4
Backwards Inclined Impeller					
Impeller Diameter [mm]	Manufacturer	Description	Material	Weight [lb.]	Unit
300	ENERVEX Inc.	11.8" x 11.8"	Cast Aluminum	9	UUT 3
350		13.8" x 13.8"		13	Interpolated
400		15.7" x 15.7"		17	Interpolated
450		19.7" x 19.7"		23	UUT 4

DATE: 11/10/2025



Special Seismic Certification

Table 3 - Tested Units



DCL Project Number: 30026-2501

Manufacturer: ENERVEL Inc. (Formerly Exhausto)

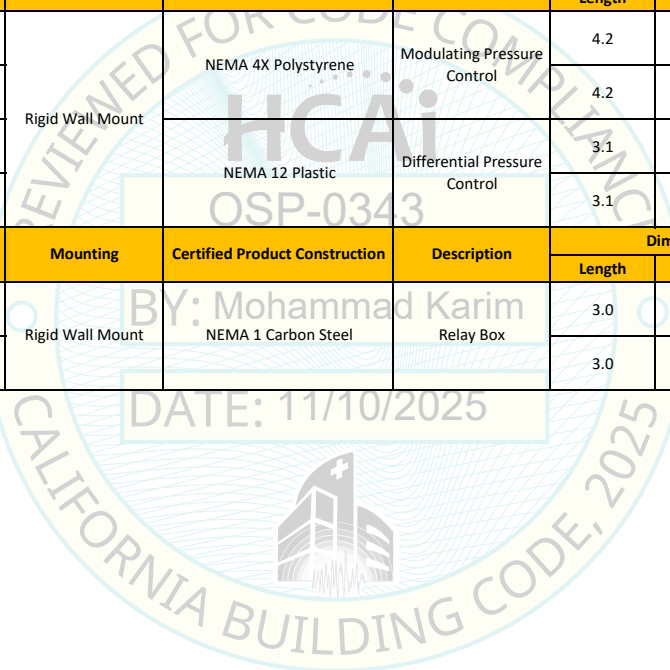
Product Line: Exhaust/Smoke Control Fans

Report Number: 12706 Rev2, Environmental Testing Laboratory, Inc.

Certified Seismic Levels: Sds=2.50g with z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_y = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number		Mounting	Certified Product Construction	Description	Dimensions [in.]			Weight [lb.]	Unit
					Length	Width	Height		
RSV 200		Rigid Base	Cast aluminum housing. Backwards curved cast aluminum impeller	RSV Chimney Fan	15.4	15.4	11.0	47	UUT 1
RSV 450					25.6	25.6	23.2	155	UUT 2
IPVB300		Ceiling Suspended	Stainless steel housing. Backwards inclined cast aluminum impeller	IPVB Inline Power Venter	47.0	22.0	22.0	109	UUT 3
IPVB500					67.0	32.0	30.0	224	UUT 4
Old Model Number	New Model Number	Mounting	Certified Product Construction	Description	Dimensions [in.]			Weight [lb.]	Unit
					Length	Width	Height		
EBC 30	EBC 31	Rigid Wall Mount	NEMA 4X Polystyrene	Modulating Pressure Control	4.2	14.7	11.0	9	UUT 5
EBC 30	EBC 31				4.2	14.7	11.0	9	UUT 6
XTP2	XTP		NEMA 12 Plastic	Differential Pressure Control	3.1	3.7	6.2	0.6	UUT 7
XTP2	XTP				3.1	3.7	6.2	0.6	UUT 8
Model Number		Mounting	Certified Product Construction	Description	Dimensions [in.]			Weight [lb.]	Unit
					Length	Width	Height		
ES 12		Rigid Wall Mount	NEMA 1 Carbon Steel	Relay Box	3.0	6.9	5.6	1.6	UUT 9
ES 12					3.0	6.9	5.6	1.6	UUT 10



UNIT UNDER TEST (UUT) Summary Sheet



UUT 1

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: RSV 200

Product Construction Summary: Cast Aluminum housing. Backwards curved cast aluminum impeller.

Options / Component Summary: Aluminum Exodraft motor (0.15HP), Cast Aluminum ENERVEX Inc. impeller (200).

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 before and after the AC 156 test.

UUT Properties

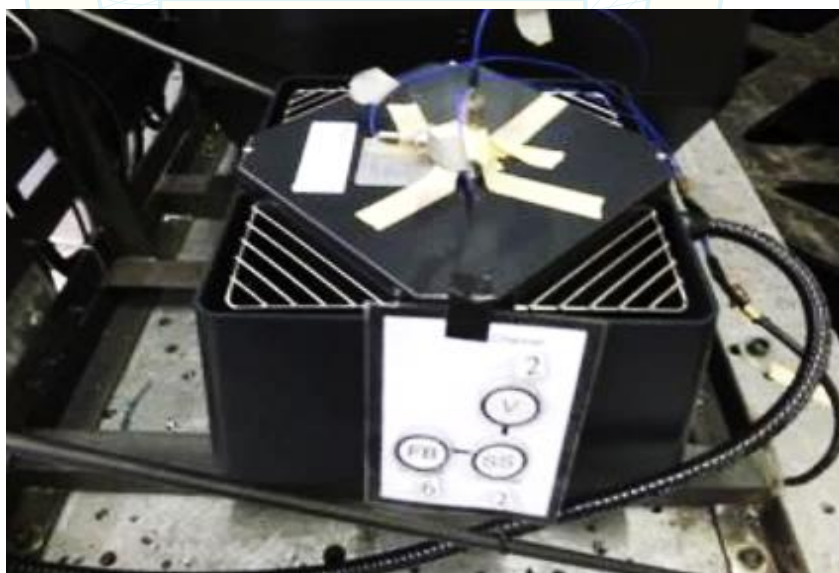
Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
47	15.4	15.4	11.0	>33.3	>33.3	15.4

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 1 was rigid base mounted using (4) #10 Grade 8 bolts.

BY: Mohammad Karim



Overall picture of UUT 1

UNIT UNDER TEST (UUT) Summary Sheet



UUT 2

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: RSV 450

Product Construction Summary: Cast Aluminum housing. Backwards curved cast aluminum impeller.

Options / Component Summary: Aluminum ABB motor (2HP), Cast Aluminum ENERVEX Inc. impeller (450).

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 before and after the AC 156 test.

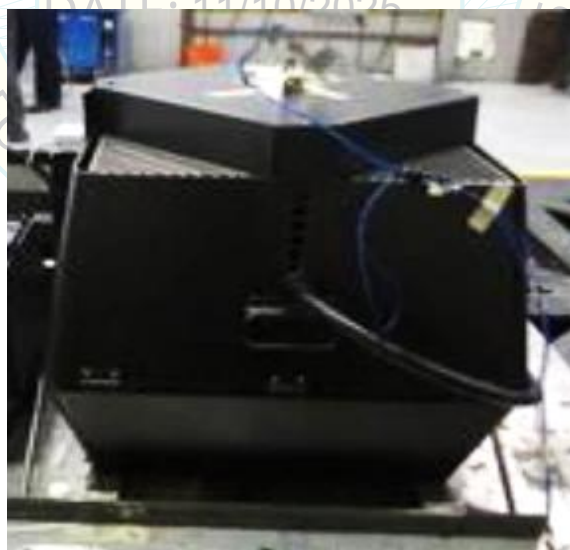
UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
155	25.6	25.6	23.2	24.0	18.8	18.6

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 1 was rigid base mounted using (4) #10 Grade 8 bolts.



Overall picture of UUT 2

UNIT UNDER TEST (UUT) Summary Sheet



UUT 3

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: IPVB300

Product Construction Summary: Stainless steel housing. Backwards inclined cast aluminum impeller.

Options / Component Summary: Aluminum Exodraft motor (0.5HP), Cast Aluminum ENERVEX Inc. impeller (300)

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
109	47.0	22.2	22.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 3 was tested in a ceiling suspended configuration. Unit flange on each end was attached to (2) vertical 1" x 1/8" steel straps with (4) 3/8" Grade 8 bolts on each end (4 straps, 8 bolts total). Each strap connected at top and bottom to horizontal P1000 Unistrut with (1) 3/8" Grade 8 bolt (4 unistrut, 8 bolts total). The unistrut were supported by (4) 1/2" A36 threaded rods directly attached to the upper and lower unistrut. The rods had a 12" drop from the ceiling and were directly attached to the ceiling support member. There were (4) 1/4" seismic bracing cables (one at each corner angled 45-deg from vertical and 45-deg from each horizontal orthogonal axis of the unit) attached to the threaded rod below the lower unistrut with Mason SCBH hooks. The cables were attached to the ceiling with Mason SCBH hooks and 1/2" Grade 8 bolts.



Overall picture of UUT3

UNIT UNDER TEST (UUT) Summary Sheet



UUT 4

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: IPVB500

Product Construction Summary: Stainless steel housing. Backwards inclined cast aluminum impeller.

Options / Component Summary: Aluminum ABB motor (3HP), Cast Aluminum ENERVEX Inc. impeller (500)

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
224	67.0	32.0	30.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 4 was tested in a ceiling suspended configuration. Unit flange on each end was attached to (2) vertical 1" x 1/8" steel straps with (4) 3/8" Grade 8 bolts on each end (4 straps, 8 bolts total). Each strap connected at top and bottom to horizontal P1000 Unistrut with (1) 3/8" Grade 8 bolts (4 unistrut, 8 bolts total). The unistrut were supported by (4) 1/2" A36 threaded rods directly attached to the upper and lower unistrut. The rods had a 12" drop from the ceiling and were directly attached to the ceiling support member. There were (4) 1/4" seismic bracing cables (one at each corner angled 45-deg from vertical and 45-deg from each horizontal orthogonal axis of the unit) attached to the threaded rod below the lower unistrut with Mason SCBH hooks. The cables were attached to the ceiling with Mason SCBH hooks and 1/2" Grade 8 bolts



Overall picture of UUT 4

UNIT UNDER TEST (UUT) Summary Sheet



UUT 5 & UUT 6

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: EBC 30

Product Construction Summary: NEMA 1 carbon steel enclosure.

Options / Component Summary: N/A

Note: The UUTs were operational before and after shaking and were full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test. UUT 5 and UUT 6 are identical.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
9	4.2	14.7	11.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 5 and UUT 6 were rigid wall mounted using (4) #10 Grade 8 bolts.

BY: Mohammad Karim



Overall picture of UUT 5 (left) and UUT 6 (right)

UNIT UNDER TEST (UUT) Summary Sheet



UUT 7 & UUT 8

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: XTP2

Product Construction Summary: NEMA 4X polystyrene enclosure

Options / Component Summary: N/A

Note: The UUTs were operational before and after shaking and were full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test. UUT 7 and UUT 8 are identical.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
0.6	3.1	3.7	6.2	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES AC156-24	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
		2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 7 and UUT 8 were rigid wall mounted using (4) #8 Grade 8 bolts.



Overall picture of UUT 7 (left) and UUT 8 (right)

UNIT UNDER TEST (UUT) Summary Sheet



UUT 9 & UUT 10

ETL Repot Number: 12706 Rev2

Test Dates: 5/13/2013 - 5/14/2013

Manufacturer: ENERVEX Inc. (formerly EXHAUSTO)

Product Line: Exhaust/Smoke Control Fans

Model Number: ES 12

Product Construction Summary: NEMA 12 plastic enclosure

Options / Component Summary: N/A

Note: The UUTs were operational before and after shaking and were full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test. UUT 9 and UUT 10 are identical.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1.6	3.0	6.9	5.6	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.50	1.0	3.5	1.3	1.5	4.00	3.00	N/A	N/A
	AC156-24	2.50	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description: UUT 9 and UUT 10 were rigid wall mounted using (4) #8 Grade 8 bolts.

BY: Mohammad Karim

DATE: 11/10/2025



Overall picture of UUT 9 (left) and UUT 10 (right)