APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0102

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Loren Cook Company

Manufacturer's Technical Representative: Bradley Skidmore

Mailing Address: 2015 East Dale St., Springfield, MO 65808

Telephone: (417) 869-6474 Email: bskidmore@lorencook.com

Product Information

Product Name: Exhaust/Smoke Control Fans

Product Type: NA

Product Model Number: See Attachment for a complete listing of models included in this application.

General Description: Carbon Steel Centrifugal Blowers and Carbon Steel and Aluminum Utility Vent Sets

Mounting Description: Spring Vibration Isolated, Base Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

Title: President

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: CLARK TESTING LABORATORY, INC.

Contact Person: J.R. Antenucci

Mailing Address: 1801 Route 51 South, Jefferson Hills PA 15025

Telephone: (412) 382-5500 Email: jrantenucci@clarkdyanmic.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Paul E. Little

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: paul@etldallas.com

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 4.5 (SDS=2.0g); 1.71 (SDS=2.28g)

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h=1); 2.28 (z/h=0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 2

Ω_0 (System overstrength factor) = 2.5

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 07/27/2028

Date: 7/27/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable):

Table 1 - Certified Centrifugal Blowers

Model [Product]	Model	Pedestal Arrangement	Dimensions [in]			Weight [lb]	UUT
			Length	Width	Height		
CPV [Belt Drive]	CPV 60	10	22.3	26.5	30.4	250	UUT-1
	CPV 70	10	22.3	25.6	36.8	250	Interpolated
	CPV 80	10	22.3	25.6	36.8	250	Interpolated
	CPV 100	10	22.3	25.6	36.8	250	Interpolated
	CPV 120	10	24.8	29.6	36.8	265	Interpolated
	CPV 135	10	26.7	31.7	37.8	297	Interpolated
	CPV 150	10	29.6	35.7	41.4	344	Interpolated
	CPV 165	10	32.0	38.9	44.7	379	Interpolated
	CPV 180	10	34.8	42.2	48.4	441	Interpolated
	CPV 195	10	36.3	44.4	50.8	579	Interpolated
	CPV 210	10	40.0	48.8	55.7	620	Interpolated
	CPV 225	10	42.0	51.8	58.9	665	Interpolated
	CPV 245	10	45.0	55.8	63.8	747	Interpolated
	CPV 270	10	49.0	61.2	69.7	833	Interpolated
	CPV 300	10	54.3	68.9	78.0	1,042	Interpolated
	CPV 330	10	59.8	74.6	84.4	1,169	Interpolated
	CPV 365	10	66.1	82.6	93.1	1,371	Interpolated
	CPV 402	10	73.0	91.0	102.3	1,570	Interpolated
	CPV 445	10	80.5	100.6	112.8	1,946	Interpolated
	CPV 490	10	88.8	110.8	123.7	2,495	UUT-5
CPV-EC [CPV-VF] [Direct Drive]	CPV-EC 60	4	22.3	25.6	36.8	181	UUT-8
	CPV-EC 70	4	22.3	25.6	36.8	226	Interpolated
	CPV-EC 80	4	22.3	25.6	36.8	226	Interpolated
	CPV-EC 100	4	22.3	25.6	36.8	226	Interpolated
	CPV-EC 120	4	24.8	29.6	36.8	237	Interpolated
	CPV-EC 135	4	26.7	31.7	37.8	237	Interpolated
	CPV-EC 150	4	29.6	35.7	41.4	237	UUT-9
CPS [Belt Drive]	CPS 60	10	22.3	25.6	36.8	235	Interpolated[1]
	CPS 70	10	22.3	25.6	36.8	235	Interpolated
	CPS 80	10	22.3	25.6	36.8	235	Interpolated
	CPS 100	10	22.3	25.6	36.8	235	Interpolated
	CPS 120	10	24.8	29.6	36.8	297	Interpolated
	CPS 135	10	26.7	31.7	37.8	356	Interpolated
	CPS 150	10	29.6	35.7	41.4	491	Interpolated
	CPS 165	10	32.0	38.9	44.7	534	Interpolated
	CPS 180	10	34.8	42.2	48.4	616	Interpolated
	CPS 195	10	36.3	44.4	50.8	660	Interpolated
	CPS 210	10	40.0	48.8	55.7	710	Interpolated
	CPS 225	10	42.0	51.8	58.9	757	Interpolated
	CPS 245	10	45.0	55.8	63.8	923	Interpolated
	CPS 270	10	49.0	61.2	69.7	1,072	Interpolated
	CPS 300	10	54.3	68.9	78.0	1,229	Interpolated
	CPS 330	10	59.8	74.6	84.4	1,495	Interpolated
	CPS 365	10	66.1	82.6	93.1	1,740	Interpolated
	CPS 402	10	73.0	91.0	102.3	2,208	Interpolated
	CPS 445	10	80.5	100.6	112.8	2,678	Interpolated
	CPS 490	10	88.8	110.8	123.7	3,225	UUT-3

[1] Unit structurally the same as CPV 60 except with carbon steel wheel

Table 1 - Certified Centrifugal Blowers, Continued

Model [Product]	Model	Pedestal Arrangement	Dimensions [in]			Weight [lb]	UUT
			Length	Width	Height		
CF-SWSI [Belt Drive]	CF-SWSI 120	9	21.5	26.3	27.7	272	UUT-2
	CF-SWSI 120	10	21.5	26.3	27.7	272	Interpolated
	CF-SWSI 135	9 & 10	27.0	36.3	33.2	367	Interpolated
	CF-SWSI 150	9 & 10	29.0	39.9	36.9	426	Interpolated
	CF-SWSI 165	9 & 10	32.0	43.5	40.9	587	Interpolated
	CF-SWSI 180	9 & 10	35.0	46.4	44.0	673	Interpolated
	CF-SWSI 195	9 & 10	37.0	51.5	48.1	743	Interpolated
	CF-SWSI 210	9 & 10	40.0	54.8	51.2	949	Interpolated
	CF-SWSI 225	9 & 10	42.0	58.4	55.2	1,027	Interpolated
	CF-SWSI 245	9 & 10	46.0	63.2	59.9	1,296	Interpolated
	CF-SWSI 270	9 & 10	50.0	68.1	65.4	1,441	Interpolated
	CF-SWSI 300	9 & 10	56.0	74.7	72.6	1,858	Interpolated
	CF-SWSI 330	9 & 10	61.0	82.3	80.0	2,410	Interpolated
	CF-SWSI 365	9 & 10	67.0	89.6	87.9	2,665	Interpolated
	CF-SWSI 402	9 & 10	73.0	99.6	97.0	2,948	Interpolated
	CF-SWSI 445	9 & 10	81.0	108.3	106.8	3,703	Interpolated
	CF-SWSI 490	9 & 10	89.0	118.7	117.0	4,116	Interpolated
	CF-SWSI 540	9	97.0	131.5	128.9	3,870	UUT-6
	CF-SWSI 540	10	97.0	131.5	128.9	3,870	Interpolated
CA-SWSI [Belt Drive]	CA-SWSI 120	9	27.0	33.4	30.8	313	UUT-7
	CA-SWSI 120	10	27.0	33.4	30.8	313	Interpolated
	CA-SWSI 135	9 & 10	27.3	36.3	33.2	372	Interpolated
	CA-SWSI 150	9 & 10	30.5	39.9	36.9	432	Interpolated
	CA-SWSI 165	9 & 10	32.6	43.5	40.1	595	Interpolated
	CA-SWSI 180	9 & 10	36.3	46.4	44.0	682	Interpolated
	CA-SWSI 195	9 & 10	37.5	51.5	48.1	753	Interpolated
	CA-SWSI 210	9 & 10	41.1	54.8	51.2	958	Interpolated
	CA-SWSI 225	9 & 10	42.3	58.4	55.2	1,037	Interpolated
	CA-SWSI 245	9 & 10	46.3	63.2	59.9	1,307	Interpolated
	CA-SWSI 270	9 & 10	48.6	68.1	65.4	1,455	Interpolated
	CA-SWSI 300	9 & 10	53.5	74.7	72.6	1,875	Interpolated
	CA-SWSI 330	9 & 10	56.3	82.3	80.0	2,431	Interpolated
	CA-SWSI 365	9 & 10	63.3	89.6	87.9	2,690	Interpolated
	CA-SWSI 402	9 & 10	67.7	99.6	97.0	2,985	Interpolated
	CA-SWSI 445	9 & 10	75.5	108.3	106.8	3,748	Interpolated
	CA-SWSI 490	9 & 10	79.5	118.7	117.0	4,170	Interpolated
	CA-SWSI 540	9	87.7	131.5	128.9	4,500	Interpolated
	CA-SWSI 540	10	87.7	131.5	128.9	4,500	UUT-4

Table 2 - Certified Fan Wheels

Component [Type]	Manufacturer	Model Size [in]	Weight [lb]	UUT
Riveted Aluminum Wheel [Backward Inclined]	Loren Cook	10.00	4	UUT-1, UUT-8
		12.00	5	Interpolated
		13.50	6	Interpolated
		15.00	7	UUT-9
		16.50	8	Interpolated
		18.00	9	Interpolated
		19.50	10	Interpolated
		21.00	12	Interpolated
		22.50	15	Interpolated
		24.50	17	Interpolated
		27.00	22	Interpolated
		30.00	32	Interpolated
		33.00	38	Interpolated
		36.50	44	Interpolated
		40.25	56	Interpolated
		44.50	66	Interpolated
		49.00	78	UUT-5
Welded Carbon Steel Wheel [Backward Inclined-Flat Blade]	Loren Cook	12.00	17	UUT-2
		13.50	20	Interpolated
		15.00	23	Interpolated
		16.50	29	Interpolated
		18.00	48	Interpolated
		19.50	51	Interpolated
		21.00	60	Interpolated
		22.50	65	Interpolated
		24.50	74	Interpolated
		27.00	96	Interpolated
		30.00	143	Interpolated
		33.00	168	Interpolated
		36.50	193	Interpolated
		40.25	266	Interpolated
		44.50	396	Interpolated
		49.00	451	UUT-3
		54.00	577	UUT-6
Welded Carbon Steel Wheel [Backward Inclined-Airfoil]	Loren Cook	12.00	18	UUT-7
		13.50	20	Interpolated
		15.00	24	Interpolated
		16.50	30	Interpolated
		18.00	48	Interpolated
		19.50	53	Interpolated
		21.00	58	Interpolated
		22.50	67	Interpolated
		24.50	76	Interpolated
		27.00	99	Interpolated
		30.00	146	Interpolated
		33.00	172	Interpolated
		36.50	197	Interpolated
		40.25	253	Interpolated
		44.50	380	Interpolated
		49.00	430	Interpolated
		54.00	495	UUT-4

Table 3 - Certified Fan Motors

Component [Type]	Manufacturer	Model Size	HP	Voltage	Weight [lb]	UUT
Fan Motors	TECO Westinghouse	145 T	1.5	208-230/460	65	Extrapolated
		145 T	2		68	UUT-7
		182 T	3		130	Interpolated
		184 T	5		150	Interpolated
		213 T	7.5		192	Interpolated
		215 T	10	230/460	265	Interpolated
		254 T	15		360	Interpolated
		256 T	20		410	UUT-5
		284 T	25		520	Interpolated
		286 T	30		558	Interpolated
		324 T	40		750	UUT-6
	US Motors[1]	48 T	1/6	120/208-240 VAC	12	Interpolated
		48 T	1/4		12	UUT-8
		48 T	1/3		12	Interpolated
		48 T	1/2		12	Interpolated
		48 T	5/8		17	Interpolated
		48 T	3/4		17	Interpolated
		48 T	7/8		17	Interpolated
		48 T	1		17	UUT-9
	Baldor	56 T	0.75	208-230/460	25	Extrapolated
		143 T	1		35	Extrapolated
		145 T	1.5		41	UUT-1
		145 T	2		45	UUT-2
		182 T	3		73	Interpolated
		184 T	5		107	Interpolated
		213 T	7.5		170	Interpolated
		215 T	10	230/460	191	Interpolated
		254 T	15		275	Interpolated
		256 T	20		309	UUT-3
		284 T	25		425	Interpolated
		286 T	30		437	Interpolated
		324 T	40		570	Interpolated
		326 T	50		640	Interpolated
		364 T	60		912	Interpolated
		365 T	75		955	UUT-4

[1]US Motors models contain Perfect Speed Controller

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1

Test Report: EL:9254A; UUT-1-1

Model Line	Model Number	Manufacturer
CPV	CPV 60	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

10" Riveted Aluminum Wheel (Backward Inclined); Baldor 1.5 HP, 208-230/460V Fan Motor; Access Door; Weather Cover; Shaft seal; Drain; Isolation Rails. Arrangement 10

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
250	22.3	26.5	30.4	4.3	3.9	9.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

UUT-1 was isolated using (4) Caldyne JQA-V-E79 spring isolators. The isolators and equipment were connected to the bolt-on rail using (8) 1/2" Grade 5 bolts. The isolators were connected to the shake table using (2) 3" and (1) 1" 1/4" weld per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2

Test Report: EL:9254A; UUT-1-3

Model Line	Model Number	Manufacturer
CF-SWSI	CF 120	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

10" Welded Carbon Steel Wheel (Backward Inclined-Flat Blade); Baldor 2 HP, 208-230/460V Fan Motor; Belt Guard; Shaft Guard; Shaft Cooler; Weather Cover; Rub Ring; Isolation Rails. Arrangement 9

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
272	21.5	26.3	27.7	3.9	5.7	9.1

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

UUT-2 was isolated using (4) Caldyne JQA-V-E143 spring isolators. The isolators and equipment were connected to the bolt-on rail using (8) 1/2" Grade 5 bolts. The isolators were connected to the shake table using (2) 3" and (1) 1" 1/4" weld per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3

Test Report: EL:9254B; UUT-1-2

Model Line	Model Number	Manufacturer
CPS	CPS-A 490	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

49" Welded Carbon Steel Wheel (Backward Inclined-Flat Blade), Baldor 20 HP, 230/460V Fan Motor; Access Door; Weather Cover; Isolation Rails. Arrangement 10

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
3,225	88.8	110.8	123.7	2.7	3.4	7.1

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

UUT-3 was isolated using (4) Caldyne E1030 spring isolators. The isolators and equipment were connected to the bolt-on rail using (8) 1/2" Grade 5 bolts. The isolators were connected to the shake table using (2) 3" and (1) 1" weld per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-4

Test Report: EL:9254C; UUT-1-4

Model Line	Model Number	Manufacturer
CA-SWSI	CA-AI 540	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

54" Welded Carbon Steel Wheel (Backward Inclined-Airfoil); Baldor 75 HP, 230/460V Fan Motor; Shaft Guard; Weather Cover; Belt Guard; Shaft Seal; Extended Life Bearings; Isolation Rails. Arrangement 10

UUT Properties

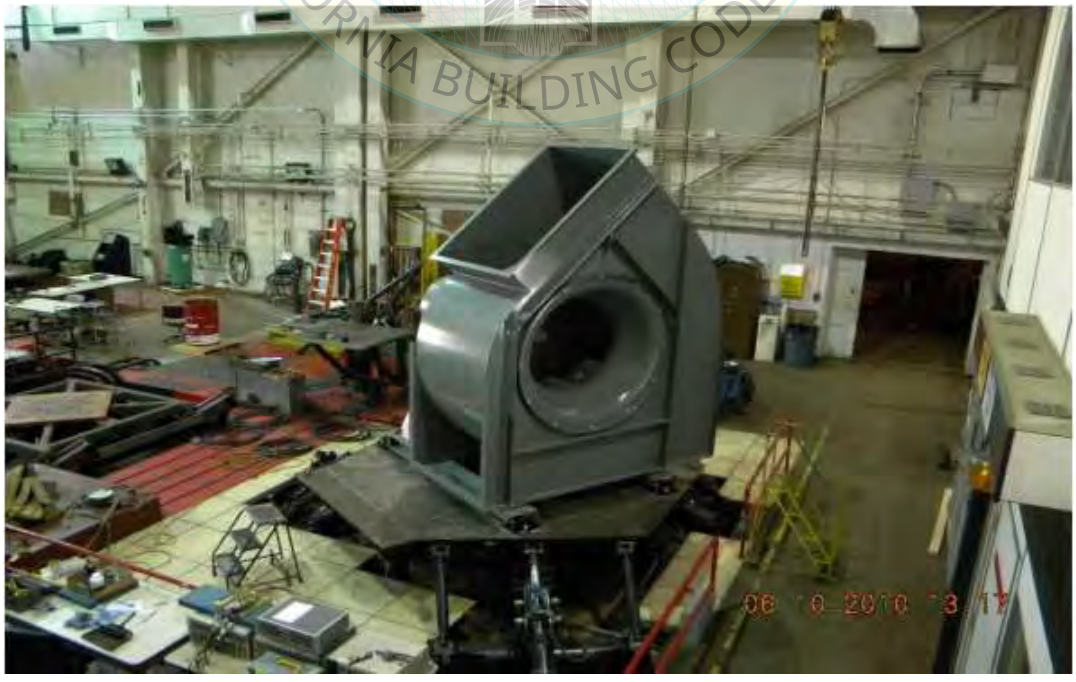
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,500	87.7	131.5	128.9	2.5	3.0	5.7

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

UUT-4 was isolated using (4) Caldyne RJJEQ 1602B spring isolators. The isolators and equipment were connected to the bolt-on rail using (16) 1/2" Grade 5 bolts. The isolators were connected to the shake table using (4) 4" corner welds and (1) 2" weld per isolator.



Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-5

Test Report: 14273; UUT-5

Model Line	Model Number	Manufacturer
CPV	CPV 490	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

49" Riveted Aluminum Wheel (Backward Inclined); Teco 20 HP, 230/460V Fan Motor; Weather Cover; Rub Ring; Drain; Isolation Rails. Arrangement 10

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
2,495	88.8	110.8	123.7	1.8	3.6	6.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	-	-	2.13	0.85

Test Mounting Details

UUT-5 was isolated using (4) Mason Industries SSLFH-C-1750 spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 5 bolt each, and were connected to the shake table using (2) 5/8" diameter Grade 5 bolts per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6

Test Report: 14273; UUT-6

Model Line	Model Number	Manufacturer
CF-SWSI	CF SWSI 540	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

54" Welded Carbon Steel Wheel (Backward Inclined-Flat Blade); Teco 40 HP, 230/460V Fan Motor; Belt Guard; Shaft Guard; Weather Cover; Drain; Isolation Rails. Arrangement 9

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
3,870	97.0	131.5	128.9	2.6	2.1	5.0

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	-	-	2.13	0.85

Test Mounting Details

UUT-6 was isolated using (4) Mason Industries SSLFH-C-1750 spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 5 bolt each, and were connected to the shake table using (2) 5/8" diameter Grade 5 bolts per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-7

Test Report: 14273; UUT-7

Model Line	Model Number	Manufacturer
CA-SWSI	CA SWSI 120	Loren Cook Company

Product Construction Summary

Belt Drive. Carbon steel frame and housing

Options / Subcomponent Summary

12" Welded Carbon Steel Wheel (Backward Inclined-Airfoil); Teco 2 HP, 208-230/460V Fan Motor; Belt Guard; Shaft Guard; Weather Cover; Isolation Rails. Arrangement 9

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
313	27.0	33.4	30.8	4.9	3.4	5.6

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	-	-	2.13	0.85

Test Mounting Details

UUT-7 was isolated using (4) SRS-250 spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 5 bolt each, and were connected to the shake table using (2) 5/8" diameter Grade 5 bolts per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-8

Test Report: 14273; UUT-8

Model Line	Model Number	Manufacturer
CPV-EC	CPV-EC 60	Loren Cook Company

Product Construction Summary

Direct Drive. Carbon steel frame and housing

Options / Subcomponent Summary

10" Riveted Aluminum Wheel (Backward Inclined); US Motors 1/4 HP, 120/208-240VAC Fan Motor; Weather Cover; Isolation Rails. Arrangement 4

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
181	22.3	25.6	36.8	7.3	8.4	15.9

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	-	-	2.13	0.85

Test Mounting Details

UUT-8 was isolated using (4) SRS-100 spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 5 bolt each, and were connected to the shake table using (2) 5/8" diameter Grade 5 bolts per isolator.

Fully equipped units maintained structural integrity and functionality after AC-156 test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-9

Test Report: 14273; UUT-9

Model Line	Model Number	Manufacturer
CPV-EC	CPV-EC 150	Loren Cook Company

Product Construction Summary

Direct Drive. Carbon steel frame and housing

Options / Subcomponent Summary

15" Riveted Aluminum Wheel (Backward Inclined); US Motors 1HP, 120/208-240VAC Fan Motor; Weather Cover; Isolation Rails. Arrangement 4

UUT Properties

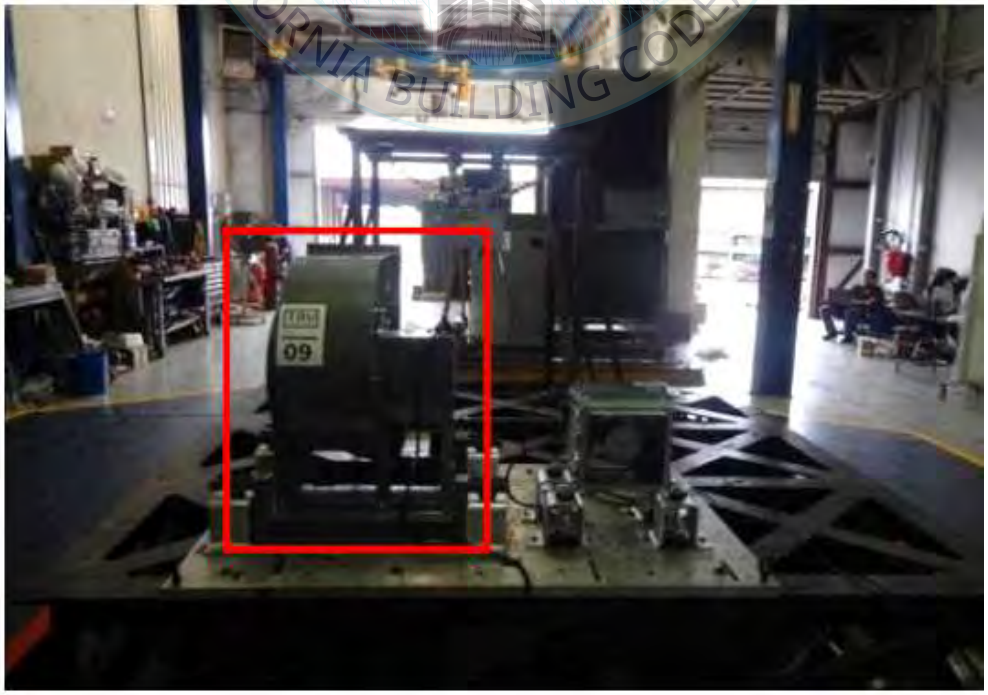
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
237	29.6	35.7	41.4	5.7	4.4	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	-	-	2.13	0.85

Test Mounting Details

UUT-9 was isolated using (4) SRS-100 spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 5 bolt each, and were connected to the shake table using (2) 1/2" diameter Grade 5 bolts per isolator.



Fully equipped units maintained structural integrity and functionality after AC-156 test.