



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-0442

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Loren Cook Company

Manufacturer's Technical Representative: Bill Hohulin

Mailing Address: 2015 E Dale Street, Springfield, MO 65803

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

Product Information

Product Name: QMX-VP / QMXHP-VP

Product Model Number(s): See Attachment

Product Category: Exhaust/Smoke Control Fans

Product Sub-Category: Exhaust/Smoke Control Fans

General Description: Belt drive laboratory exhaust fans with mixing box and fiberglass discharge nozzle.

Mounting Description: Rigid base mounted on 18" high curb, maximum.

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@thvmcgroup.com

Title: President



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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: Timothy J. Piland

DATE: 08/28/2025



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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.50 (SDS = 2.0g); 1.44 (SDS = 3.2g)

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h=1.0); 3.20 (z/h=0.0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 08/28/2031

Date: 8/28/2025

Name: Timothy Piland Title: Senior Structural Engineer

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

Condition of Approval (if applicable): BY: Timothy J. Piland

DATE: 08/28/2025

Table 1: Certified Belt Drive Laboratory Exhaust Fans

Model Line ¹	Model	Dimensions [in]			Weight [lb]	UUT
		Depth	Width	Height		
QMX-VP	90QMXVP09H	28.0	38.0	110.0	1,023	UUT-1
	90QMXVP09L	28.0	38.0	92.0	1,023	Interpolated
	120QMXVP09H	28.0	40.4	100.0	1,277	Interpolated
	120QMXVP09L	28.0	40.4	100.0	1,277	Interpolated
	120QMXVP12H	28.0	40.4	100.0	1,277	Interpolated
	120QMXVP12L	28.0	40.4	100.0	1,277	Interpolated
	135QMXVP09H	28.0	41.6	108.0	1,403	Interpolated
	135QMXVP09L	28.0	41.6	108.0	1,403	Interpolated
	135QMXVP12H	28.0	41.6	108.0	1,403	Interpolated
	135QMXVP12L	28.0	41.6	108.0	1,403	Interpolated
	150QMXVP09H	30.0	44.1	120.0	1,542	Interpolated
	150QMXVP09L	30.0	44.1	120.0	1,542	Interpolated
	150QMXVP12H	30.0	44.1	120.0	1,542	Interpolated
	150QMXVP12L	30.0	44.1	120.0	1,542	Interpolated
	150QMXVP15H	30.0	44.1	120.0	1,542	Interpolated
	150QMXVP15L	30.0	44.1	120.0	1,542	Interpolated
	165QMXVP09H	32.0	45.5	125.0	1,750	Interpolated
	165QMXVP09L	32.0	45.5	125.0	1,750	Interpolated
	165QMXVP12H	32.0	45.5	125.0	1,750	Interpolated
	165QMXVP12L	32.0	45.5	125.0	1,750	Interpolated
	165QMXVP15H	32.0	45.5	125.0	1,750	Interpolated
	165QMXVP15L	32.0	45.5	125.0	1,750	Interpolated
	180QMXVP12H	34.0	48.0	133.0	2,120	Interpolated
	180QMXVP12L	34.0	48.0	133.0	2,120	Interpolated
	180QMXVP15H	34.0	48.0	133.0	2,120	Interpolated
	180QMXVP15L	34.0	48.0	133.0	2,120	Interpolated
	180QMXVP18H	34.0	48.0	133.0	2,120	Interpolated
	180QMXVP18L	34.0	48.0	133.0	2,120	Interpolated
	202QMXVP12H	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP12L	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP15H	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP15L	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP18H	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP18L	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP21H	38.0	51.9	143.0	2,405	Interpolated
	202QMXVP21L	38.0	51.9	143.0	2,405	Interpolated
	225QMXVP12H	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP15H	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP15L	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP18H	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP18L	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP21H	42.0	58.0	154.0	2,765	Interpolated
	225QMXVP21L	42.0	58.0	154.0	2,765	Interpolated
	245QMXVP15H	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP15L	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP18H	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP18L	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP21H	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP21L	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP24H	44.0	60.6	165.0	3,019	Interpolated
	245QMXVP24L	44.0	60.6	165.0	3,019	Interpolated
	270QMXVP15L	48.0	64.6	175.0	3,335	Interpolated
	270QMXVP18H	48.0	64.6	175.0	3,335	Interpolated
	270QMXVP18L	48.0	64.6	175.0	3,335	Interpolated

Notes:

Rigid Base Mounted on 18" high curb (maximum)

¹QMX-VP is Standard Option; QMXHP-VP is High Pressure Option

Table 1: Certified Belt Drive Laboratory Exhaust Fans, Cont.

Model Line ¹	Model	Dimensions [in]			Weight [lb]	UUT
		Depth	Width	Height		
QMXHP-VP	90QMXHPVP09H	28.0	38.0	92.0	1,020	Interpolated
	90QMXHPVP09L	28.0	38.0	92.0	1,020	Interpolated
	120QMXHPVP09H	28.0	40.4	100.0	1,277	Interpolated
	120QMXHPVP09L	28.0	40.4	100.0	1,277	Interpolated
	120QMXHPVP12H	28.0	40.4	100.0	1,277	Interpolated
	120QMXHPVP12L	28.0	40.4	100.0	1,277	Interpolated
	135QMXHPVP09H	28.0	41.6	108.0	1,402	Interpolated
	135QMXHPVP09L	28.0	41.6	108.0	1,402	Interpolated
	135QMXHPVP12H	28.0	41.6	108.0	1,402	Interpolated
	135QMXHPVP12L	28.0	41.6	108.0	1,402	Interpolated
	150QMXHPVP09H	30.0	44.1	120.0	1,543	Interpolated
	150QMXHPVP09L	30.0	44.1	120.0	1,543	Interpolated
	150QMXHPVP12H	30.0	44.1	120.0	1,543	Interpolated
	150QMXHPVP12L	30.0	44.1	120.0	1,543	Interpolated
	150QMXHPVP15H	30.0	44.1	120.0	1,543	Interpolated
	150QMXHPVP15L	30.0	44.1	120.0	1,543	Interpolated
	165QMXHPVP09H	32.0	45.5	125.0	1,750	Interpolated
	165QMXHPVP09L	32.0	45.5	125.0	1,750	Interpolated
	165QMXHPVP12H	32.0	45.5	125.0	1,750	Interpolated
	165QMXHPVP12L	32.0	45.5	125.0	1,750	Interpolated
	165QMXHPVP15H	32.0	45.5	125.0	1,750	Interpolated
	165QMXHPVP15L	32.0	45.5	125.0	1,750	Interpolated
	180QMXHPVP12L	34.0	48.0	133.0	2,122	Interpolated
	180QMXHPVP15H	34.0	48.0	133.0	2,122	Interpolated
	180QMXHPVP15L	34.0	48.0	133.0	2,122	Interpolated
	180QMXHPVP18H	34.0	48.0	133.0	2,122	Interpolated
	180QMXHPVP18L	34.0	48.0	133.0	2,122	Interpolated
	202QMXHPVP12H	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP12L	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP15H	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP15L	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP18H	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP18L	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP21H	38.0	51.9	143.0	2,370	Interpolated
	202QMXHPVP21L	38.0	51.9	143.0	2,370	Interpolated
	225QMXHPVP12H	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP12L	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP15H	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP15L	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP18H	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP18L	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP21H	42.0	58.0	154.0	2,764	Interpolated
	225QMXHPVP21L	42.0	58.0	154.0	2,764	Interpolated
	245QMXHPVP15H	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP15L	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP18H	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP18L	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP21H	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP21L	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP24H	44.0	60.6	165.0	3,021	Interpolated
	245QMXHPVP24L	44.0	60.6	165.0	3,021	Interpolated
	270QMXHPVP15H	48.0	64.6	175.0	3,337	Interpolated
	270QMXHPVP15L	48.0	64.6	175.0	3,337	Interpolated
	270QMXHPVP18H	48.0	64.6	175.0	3,337	Interpolated
	270QMXHPVP18L	48.0	64.6	193.0	3,337	UUT-2

Notes:

Rigid Base Mounted on 18" high curb (maximum)

¹QMX-VP is Standard Option; QMXHP-VP is High Pressure Option

Table 2: Certified Subcomponents

Model Line [MFR]	Model	Description	Material	Weight [lb]	UUT
TEFC Type Motor [WEG]	143T	1HP, 3-phase 208-230/460V	Cu windngs, steel or cast iron case	40	Extrapolated
	143T	1.5HP, 3-phase 208-230/460V	Cu windngs, steel or cast iron case	49	Extrapolated
	145T	2HP, 3-phase 208-230/460V	Cu windngs, steel or cast iron case	51	UUT-1
	182T	3HP, 3-phase 208-230/460V	Cu windngs, steel or cast iron case	90	Interpolated
	184T	5HP, 3-phase 208-230/460V	Cu windngs, steel or cast iron case	95	Interpolated
	213T	7.5HP, 3-phase 208-230/460V	Cu windngs, cast iron case	154	Interpolated
	215T	10HP, 3-phase 208-230/460V	Cu windngs, cast iron case	172	Interpolated
	254T	15HP, 3-phase 208-230/460V	Cu windngs, cast iron case	251	Interpolated
	256T	20HP, 3-phase 208-230/460V	Cu windngs, cast iron case	291	Interpolated
	284T	25HP, 3-phase 208-230/460V	Cu windngs, cast iron case	388	Interpolated
	286T	30HP, 3-phase 208-230/460V	Cu windngs, cast iron case	437	UUT-2
Damper Actuator [Belimo]	LF-120-s	35 in-lb max torque	Galvanized Steel Housing	4	UUT-1
	NF-120-s	60 in-lb max torque	Galvanized Steel Housing	8	UUT-2
Safety Switch [Square-D]	HU361RB	30A	Galvannealed Steel	9	UUT-1
	HU362RB	60A	Galvannealed Steel	16	UUT-2

Table 3: Certified Dampers

Model Line [MFR]	Model	Dimensions [in]			Material	Weight [lb]	UUT
		Depth	Width	Height			
Dampers [Ruskin]	CD50	5	8 1/4	5	Aluminum	4	Extrapolated
		5	13 1/4	5	Aluminum	5	UUT-1
		5	16 1/2	5	Aluminum	5	Interpolated
		5	16 1/2	6 1/2	Aluminum	6.5	Interpolated
		5	16 1/2	7 1/4	Aluminum	7.25	Interpolated
		5	16 1/2	9 1/4	Aluminum	9.25	Interpolated
		5	18 1/2	8	Aluminum	8	Interpolated
		5	18 1/2	11	Aluminum	11	Interpolated
		5	20 1/2	8 3/4	Aluminum	8.75	Interpolated
		5	20 1/2	12 3/4	Aluminum	12.75	Interpolated
		5	22 1/2	9 3/4	Aluminum	9.75	Interpolated
		5	22 1/2	13 1/2	Aluminum	13.5	Interpolated
		5	24 1/2	18	Aluminum	18	UUT-1
		5	25 1/2	11 1/2	Aluminum	11.5	Interpolated
		5	25 1/2	16	Aluminum	16	Interpolated
		5	26 1/2	20	Aluminum	20	Interpolated
		5	28 1/2	13	Aluminum	13	Interpolated
		5	28 1/2	18	Aluminum	18	Interpolated
		5	28 1/2	22	Aluminum	22	Interpolated
		5	30 1/2	14 1/2	Aluminum	14.5	Interpolated
		5	30 1/2	20 1/4	Aluminum	20.25	Interpolated
		5	30 1/2	24	Aluminum	24	Interpolated
		5	34 1/2	15	Aluminum	15	UUT-2
		5	34 1/2	26 1/2	Aluminum	26.5	Interpolated
		5	34 1/2	22	Aluminum	22	Interpolated
		5	38 1/2	30	Aluminum	30	Interpolated
		5	40 1/2	32	Aluminum	32	Interpolated
		5	44 1/2	36	Aluminum	36	UUT-2



UNIT UNDER TEST (UUT) Summary Sheet

UUT-1

Test Report: 1900241-CR-001 R0

Model Line	Model Number	Manufacturer
QMX-VP/QMXHP-VP	90QMXVP09H	Loren Cook Company

Product Construction Summary

Painted carbon steel welded housing. Carbon steel welded wheel. Stainless steel shaft. Stainless steel hardware. NEMA 3R disconnect.

Options / Subcomponent Summary

Belt drive with fiberglass reinforced plastic induction nozzle with mixing box. Motor: Weg - 002236ET3E145T-S; Isolation Damper: Ruskin - CD50 (24 1/2"x18"); Damper Actuator: Belimo-LF-120-s; Bypass Damper: Ruskin - CD50 (13 1/4"x5"); Safety Switch: Square D - HU361RB.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,023	28.0	38.0	110.0	19.8	18.9	17.6

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 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	3.20	-	2.14	0.86

Test Mounting Details

Rigid base mounted on 18" Loren Cook LECQ curb with (20) 3/8" F593 stainless bolts. Curb is welded to test fixture with 2" long welds at 6" O.C. all around.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-2

Test Report: 1900241-CR-001 R0

Model Line	Model Number	Manufacturer
QMX-VP/QMXHP-VP	270QMXHPVP18L	Loren Cook Company

Product Construction Summary

Painted carbon steel welded housing. Carbon steel welded wheel. Stainless steel shaft. Stainless steel hardware. NEMA 3R disconnect.

Options / Subcomponent Summary

Belt drive with fiberglass reinforced plastic induction nozzle with mixing box. Motor: Weg - 03018ETE286T-W22; Isolation Damper: Ruskin - CD50 (44 1/2"x36"); Damper Actuator: Belimo-NF-120-s; Bypass Damper: Ruskin - CD50 (34 1/2"x15"); Safety Switch: Square D - HU362RB.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
3,337	48.0	64.6	193.0	6.6	5.0	6.3

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 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	3.20	-	2.14	0.86

Test Mounting Details

Rigid base mounted on 18" Loren Cook LECQ curb with (28) 3/8" F593 stainless bolts. Curb is welded to test fixture with 2" long welds at 6" O.C. all around.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.