APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0269

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Dynamic Air Quality Solutions

Manufacturer's Technical Representative: Joseph Kramer

Mailing Address: P.O. Box 1258, Princeton, NJ 08542

Telephone: (800) 578-7873 Email: jkramer@dynamicaqs.com

Product Information

Product Name: Air Conditioning Units

Product Type: Air Filters

Product Model Number: See table 1 of attachment

General Description: The filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frames of the module. Used in rigid base mounted HVAC applications.

Mounting Description: Units were stacked in the test structure. Top and bottom of stack were fastened to horizontal frames, each unit's flanges were fastened to vertical support frame on both sides.

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: Versatile Measuring Instruments

Contact Person: Sherwin Jamisola

Mailing Address: 165 Pony Drive, Newmarket ON L3Y7B5

Telephone: (905) 954-0841 Email: cwnc@curtisswright.com

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.87

S_{DS} (Design spectral response acceleration at short period, g) = 2.49

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 09/26/2028

Date: 9/26/2022

Name: Timothy Piland Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.49 z/h = 1

Condition of Approval (if applicable):

Table 1 - Certified Components - Air Cleaners

Model Number	Dimensional Data [in]			MERV Rating	Weight [lbs]	UUT
	Depth	Width	Height			
1V8-2612-24-X-XX	24	26	12	13 & 14	39	Extrapolated
1V8-2612-29.5-F	29.5	26	12	13	47	UUT-1
1V8-2612-29.5-X-XX	29.5	26	12	13 & 14	47	Interpolated
1V8-3012-24-X-XX	24	30	12	13 & 14	42	Interpolated
1V8-3012-29.5-X-XX	29.5	30	12	13 & 14	50	Interpolated
1V8-3412-24-X-XX	24	34	12	13 & 14	47	Interpolated
1V8-3412-29.5-X-XX	29.5	34	12	13 & 14	55	Interpolated
1V8-3812-24-X-XX	24	38	12	13 & 14	47	Interpolated
1V8-3812-29.5-X-XX	29.5	38	12	13 & 14	55	Interpolated
1V8-3912-24-X-XX	24	39	12	13 & 14	50	Interpolated
1V8-3912-29.5-X-XX	29.5	39	12	13 & 14	58	Interpolated
1V8-4312-24-X-XX	24	43	12	13 & 14	57	Interpolated
1V8-4312-29.5-X-XX	29.5	43	12	13 & 14	65	Interpolated
1V8-4812-24-X-XX	24	48	12	13 & 14	59	Interpolated
1V8-4812-29.5-X-XX	29.5	48	12	13 & 14	67	Interpolated
1V8-2618-24-X-XX	24	26	18	13 & 14	58	Interpolated
1V8-2618-29.5-X-XX	29.5	26	18	13 & 14	70	Interpolated
1V8-3018-24-X-XX	24	30	18	13 & 14	63	Interpolated
1V8-3018-29.5-X-XX	29.5	30	18	13 & 14	75	Interpolated
1V8-3418-24-X-XX	24	34	18	13 & 14	69	Interpolated
1V8-3418-29.5-X-XX	29.5	34	18	13 & 14	81	Interpolated
1V8-3818-24-X-XX	24	38	18	13 & 14	71	Interpolated
1V8-3818-29.5-X-XX	29.5	38	18	13 & 14	83	Interpolated
1V8-3918-24-X-XX	24	39	18	13 & 14	75	Interpolated
1V8-3918-29.5-X-XX	29.5	39	18	13 & 14	87	Interpolated
1V8-4318-24-X-XX	24	43	18	13 & 14	81	Interpolated
1V8-4318-29.5-X-XX	29.5	43	18	13 & 14	93	Interpolated
1V8-4818-24-X-XX	24	48	18	13 & 14	87	Interpolated
1V8-4818-29.5-F	29.5	48	18	13	99	UUT-2
1V8-4818-29.5-X-XX	29.5	48	18	13 & 14	99	Interpolated

Notes:
X- Indicates downstream or upstream side for service access; XX- Indicates filter media

Table 2 - Certified Subcomponents - Control Panel

Model Number[1]	Dimensional Data [in]			Input Voltage [V]	Rating [VA]	Weight [lbs]	UUT
	Depth	Width	Height				
CP-75-X	6.3	15.7	11.7	120	75	15	UUT-3

[1] X is defined by input voltage (options: 120, 208, 240, 277, and 480), tested input voltage was 120V, only difference between input voltage options is wiring

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1

Test Report: REPT-33300-01

Model Line	Model Number	Manufacturer
V8 High Efficiency Air Cleaner	1V8-2612-29.5-F	Dynamic Air Quality Solutions

Product Construction Summary

Filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frame of the module. Galvanized steel screeens cover each filter pad and filter pads are connected with a galvanized steel frame. The unit has (4) pads per nominal 12" of height. 24VAC is used to polarize fibers in the media and airborne contaminants.

Options / Subcomponent Summary

Control Panel

UUT Properties

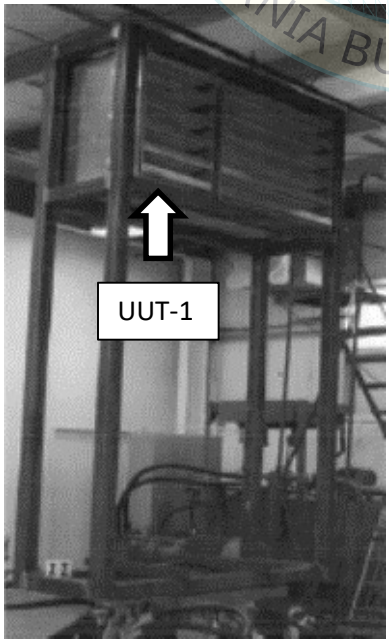
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
47	29.5	26.0	12.0	N/A	N/A	N/A

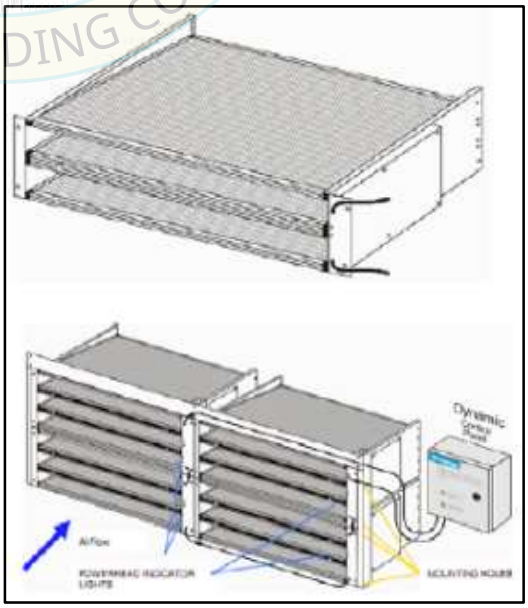
UUT Highest Passed Seismic Run Information

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	2.49	1.0	1.5	3.98	2.99	2.66	1.99
		-	-	-	-	-	-	-

Test Mounting Details

UUT-1 consisted of (3) units stacked. Each unit was fastened to a vertical support framing member with (4) #8x1/2" self tapping screws per unit with a minimum of 2 screws per vertical member (12 total). The multiple rows of air cleaners were fastened together on the backside through the horizontal mounting flanges using (2) #10 x 1" self tapping screws (4 total).





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: REPT-33300-01

Model Line	Model Number	Manufacturer
V8 High Efficiency Air Cleaner	1V8-4818-29.5-F	Dynamic Air Quality Solutions

Product Construction Summary

Filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frame of the module. Galvanized steel screeens cover each filter pad and filter pads are connected with a galvanized steel frame. The unit has (4) pads per nominal 12" of height. 24VAC is used to polarize fibers in the media and airborne contaminants.

Options / Subcomponent Summary

Control Panel

UUT Properties

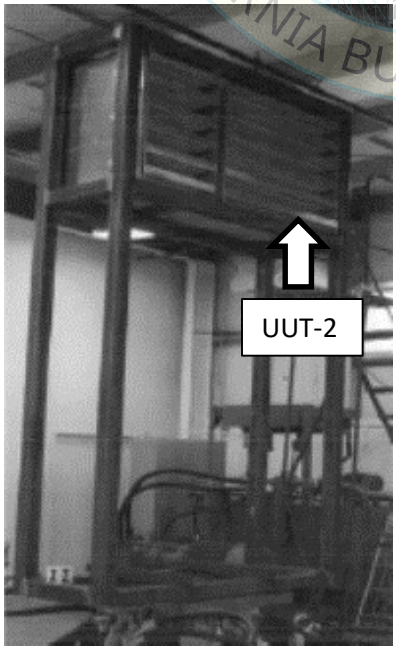
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
99	29.5	48.0	18.0	N/A	N/A	N/A

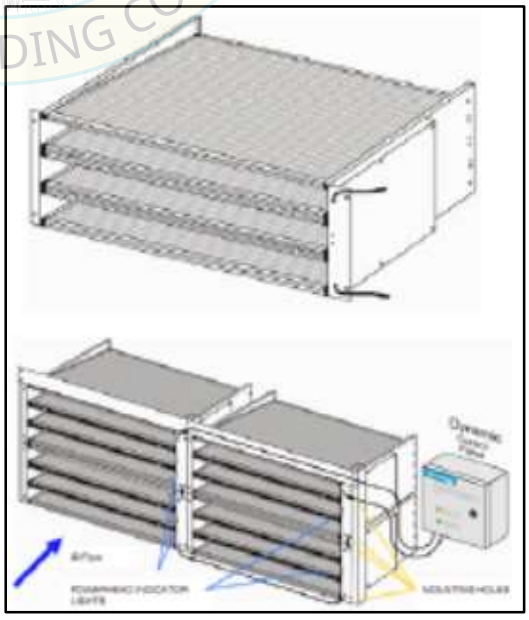
UUT Highest Passed Seismic Run Information

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	2.49	1.0	1.5	3.98	2.99	2.66	1.99
		-	-	-	-	-	-	-

Test Mounting Details

UUT-2 consisted of (2) units stacked. Each unit was fastened to a vertical support framing member (6) #8x1/2" self tapping screws per unit with a minimum of 3 screws per vertical member (12 total). The multiple rows of air cleaners were fastened together on the backside through the horizontal mounting flanges using (2) #10 x 1" self tapping screws (2 total).





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

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3

Test Report: REPT-33300-01

Model Line	Model Number	Manufacturer
V8 High Efficiency Air Cleaner	CP 75-120	Dynamic Air Quality Solutions

Product Construction Summary

Plastic enclosure

Options / Subcomponent Summary

N/A

UUT Properties

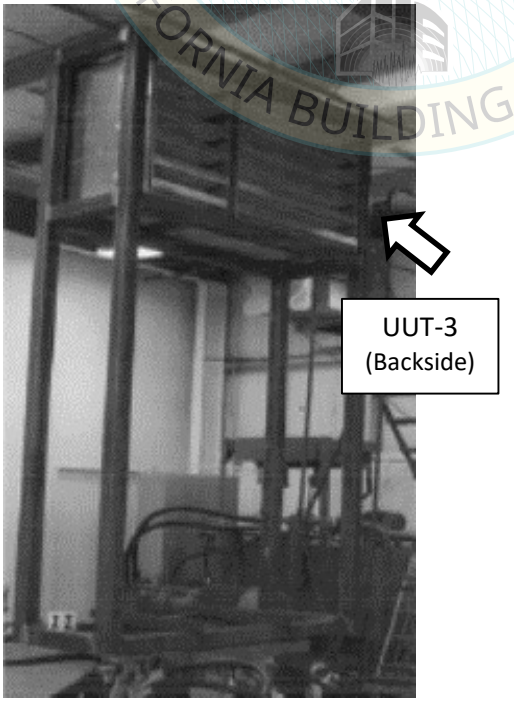
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
15	6.3	15.7	11.7	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

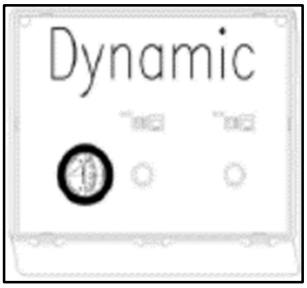
Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.49	1.0	1.5	3.98	2.99	2.66	1.99
		-	-	-	-	-	-	-

Test Mounting Details

UUT-3 was mounted directly to the framing member using (2) #8x1/2" self tapping screws on each corner (8 total).



UUT-3 (Backside)



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