



APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP-0272-10

Check whether application is: NEW RENEWAL

1.0 ClimateCraft, Inc. Andrew Hillis
Manufacturer *Manufacturer's Technical Representative*

518 North Indiana Ave. Oklahoma City, OK 73106
Mailing Address

405.415.9230 Ext. 122
Telephone

ahillis@climatecraft.com
E-mail Address

2.0 FanMatrix Stacked Fan Array
Product Name *Product Type*

Various (See Attachment)

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Rigid floor mounted stacked fan tower consisting of: 4 – HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at fans), 11 gauge seismic punched square, and 5/8" column base plates with internal vibration isolators.

3.0 Tobolski Watkins Engineering, Inc. Matthew J. Tobolski, Ph.D., S.E.
Applicant Company Name *Contact Person*

9246 Lightwave Avenue, San Diego, CA 92123
Mailing Address

858.381.5843
Telephone

mtobolski@tobolskiwatkins.com
E-mail Address

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Signature of Applicant

04/25/12
Date

President & CEO

Tobolski Watkins Engineering, Inc.



Title

Company Name

Registered Design Professional Preparing the Report

4.0

Tobolski Watkins Engineering Inc.

Company Name

Marcus Hecht-Nielsen, P.E.

C73045

Contact Name

California License Number

9246 Lightwave Avenue, San Diego, CA 92123

Mailing Address

858.381.5843

mhn@tobolskiwatkins.com

Telephone

E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

Tobolski Watkins Engineering Inc.

Company Name

Matthew J Tobolski, Ph.D., S.E.

S 5648

Contact Name

California License Number

9246 Lightwave Avenue, San Diego, CA 92123

Mailing Address

858.381.5843

mtobolski@tobolskiwatkins.com

Telephone

E-mail Address

Anchorage Pre-Approval

6.0

Anchorage is pre-approved under OPA-
(Separate application for anchorage pre-approval is required)

Anchorage is not Pre-approved

Certification Method

7.0 Testing in accordance with: ICC-ES AC-156 Other (Please Specify):

Analysis

Experience data

Combination of Testing, Analysis, and/or Experience Data (Please Specify):

Testing Laboratory (if applicable)

8.0

Environmental Testing Laboratory

Paul E. Little

Company Name

Contact Name

11034 Indian Trail Dallas, TX 75229

Mailing Address

972.247.9657

paul@etdallas.com

Telephone

E-mail:



Approval Parameters

9.0

Design in accordance with ASCE 7-05 Chapter 13: Yes No

- Design Basis of Equipment or Components (F_p/W_p) = 4.5
- S_{DS} (Spectral response acceleration at short period) = 2.0g
- a_p (In-structure equipment or component amplification factor) = 2.5
- R_p (Equipment or component response modification factor) = 2.0
- I_p (Importance factor) = 1.5
- z/h (Height factor ratio) = 1.0
- Equipment or Component fundamental period(s) = [See Attachment]
- Building period limits (if any) = None
- Overall dimensions and weight (or range thereof) = [See Attachment]

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: Yes No

Design Basis of Equipment or Components (V/W) =

- S_{DS} (Spectral response acceleration at short period) =
- S_1 (Spectral response acceleration at 1 second period) =
- R (Response modification coefficient) = 1.0
- Ω_0 (System overstrength factor) = 1.0
- C_d (Deflection amplification factor) = 1.0
- I_p (Importance factor) = 1.5
- Height to Center of Gravity above base =
- Equipment or Component fundamental period(s) = Sec
- Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: Yes No

10.0 List of attachments supporting the special seismic certification of equipment or components:

- Test Report Drawings Manufacturer's Catalog
- Calculations Others (Please Specify): **Attachment A**

11.0 OSHPD Approval (For Office Use Only)

 Signature & Date Timothy J. Piland, SSE Name & Title	5/16/2012	December 31, 2016 Approval Expiration Date
Condition of Approval (if any):	S_{DS} (g) = 2.0 z/h = 1.0 Special Seismic Certification Valid Up to	



UUT – 2

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0237-CO-001

Manufacturer: ClimateCraft, Inc.

Model Line: FanMatrix

Model Number: N/A

Product Construction Summary:

Tower consisted of: 4 – HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at fans), 11 gauge seismic punched square, and 5/8" column base plates.

Options/Subcomponent Summary:

Aluminum fan blades, horse power (3-30hp), and voltage (208, 230, 460).

UUT Properties

Weight (lb)	Dimensions (in)			Cabinet Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2,176	48.0	44.0	144.0	3.667	3.596	>33 Hz

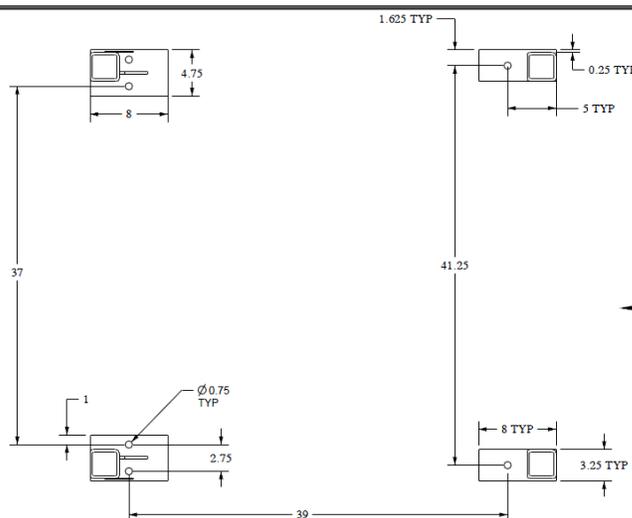
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2010	ICC-ES AC 156	2.0	1.0	1.5	3.2g	2.51g	1.74g	0.70g

Test Mounting Details:



Overall Unit



Anchorage

Unit was bolted to the testing fixture with grade 8 bolts, 6-total.



Table 1

**Special Seismic Certification
Certified Product Matrix**

TWEI Project No.: 2011-0237-CO-001

Manufacturer: ClimateCraft

Model Line: FanMatrix

Certified Product Construction Summary:

Tower consists of: 4 – HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at fans), 11 gauge seismic punched square, and 5/8" column base plates.

Certified Options Summary:

Aluminum fan blades, horse power (3-30hp), voltage (208,230,460), and cell heights between 42"-48"

Certified Mounting Summary:

Base mounted to structure. Cells can be stacked to a maximum of 3-high. Structural engineer of record responsible for anchorage design of FanMatrix to base.

Building Code: CBC 2010

Seismic Certification Limits:

$S_{DS} = 2.0g$

$z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Wheel Size (in)	Weight (lbs.)	Notes	UUT
		Depth	Width	Height				
FanMatrix	12MTX3	48	37	48	12	509	Dimensions and heights shown are for a single cell. Cells can be stacked up to three high.	1
	12MTX5	48	37	48	12	575		
	12MTX7.5	48	37	48	12	735		
	12MTX10	48	37	48	12	719		
	12MTX15	48	37	48	12	858		
	12MTX20	48	37	48	12	892		
	12MTX25	48	37	48	12	835		
	12MTX30	48	37	48	12	870		
	15MTX3	48	37	48	15	509		
	15MTX5	48	37	48	15	575		
	15MTX7.5	48	37	48	15	735		
	15MTX10	48	37	48	15	719		
	15MTX15	48	37	48	15	858		
	15MTX20	48	37	48	15	892		
	15MTX25	48	37	48	15	835		
	15MTX30	48	37	48	15	870		
	16MTX3	48	37	48	16	509		
	16MTX5	48	37	48	16	575		
	16MTX7.5	48	37	48	16	735		
	16MTX10	48	37	48	16	719		
16MTX15	48	37	48	16	858			
16MTX20	48	37	48	16	892			
16MTX25	48	37	48	16	835			
16MTX30	48	37	48	16	870			



Table 1

**Special Seismic Certification
Certified Product Matrix**

TWEI Project No.: 2011-0237-CO-001

Manufacturer: ClimateCraft

Model Line: FanMatrix

Certified Product Construction Summary:

Tower consists of: 4 – HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at fans), 11 gauge seismic punched square, and 5/8" column base plates.

Certified Options Summary:

Aluminum fan blades, horse power (3-30hp), voltage (208, 230, 460), and cell heights between 42"-48"

Certified Mounting Summary:

Base mounted to structure. Cells can be stacked to a maximum of 3-high. Structural engineer of record responsible for anchorage design of FanMatrix to base.

Building Code: CBC 2010

Seismic Certification Limits:

$S_{DS} = 2.0g$

$z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Wheel Size (in)	Weight (lbs.)	Notes	UUT
		Depth	Width	Height				
FanMatrix	18MTX3	48	37	48	18	509	Dimensions and heights shown are for a single cell. Cells can be stacked up to three high.	
	18MTX5	48	37	48	18	575		
	18MTX7.5	48	37	48	18	735		
	18MTX10	48	37	48	18	719		
	18MTX15	48	37	48	18	858		
	18MTX20	48	37	48	18	892		
	18MTX25	48	37	48	18	835		
	18MTX30	48	37	48	18	870		
	20MTX3	48	37	48	20	509		
	20MTX5	48	37	48	20	575		
	20MTX7.5	48	37	48	20	735		
	20MTX10	48	37	48	20	719		
	20MTX15	48	37	48	20	858		
	20MTX20	48	37	48	20	892		
	20MTX25	48	37	48	20	835		
	20MTX30	48	37	48	20	870		
	22MTX3	48	44	48	22	545		
	22MTX5	48	44	48	22	611		
	22MTX7.5	48	44	48	22	771		
	22MTX10	48	44	48	22	755		
22MTX15	48	44	48	22	894			
22MTX20	48	44	48	22	928			
22MTX25	48	44	48	22	871			
22MTX30	48	44	48	22	906			



Table 1

**Special Seismic Certification
Certified Product Matrix**

TWEI Project No.: 2011-0237-CO-001

Manufacturer: ClimateCraft

Model Line: FanMatrix

Certified Product Construction Summary:

Tower consists of: 4 – HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at fans), 11 gauge seismic punched square, and 5/8" column base plates.

Certified Options Summary:

Aluminum fan blades, horse power (3-30hp), voltage (208, 230, 460), and cell heights between 42"-48"

Certified Mounting Summary:

Base mounted to structure. Cells can be stacked to a maximum of 3-high. Structural engineer of record responsible for anchorage design of FanMatrix to base.

Building Code: CBC 2010

Seismic Certification Limits:

$S_{DS} = 2.0g$

$z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Wheel Size (in)	Weight (lbs.)	Notes	UUT
		Depth	Width	Height				
FanMatrix	24MTX3	48	44	48	24	545	Dimensions and heights shown are for a single cell. Cells can be stacked up to three high.	
	24MTX5	48	44	48	24	611		
	24MTX7.5	48	44	48	24	771		
	24MTX10	48	44	48	24	755		2
	24MTX15	48	44	48	24	894		
	24MTX20	48	44	48	24	928		
	24MTX25	48	44	48	24	871		
	24MTX30	48	44	48	24	906		
	27MTX3	48	44	48	27	545		
	27MTX5	48	44	48	27	611		
	27MTX7.5	48	44	48	27	771		
	27MTX10	48	44	48	27	755		
	27MTX15	48	44	48	27	894		
	27MTX20	48	44	48	27	928		
	27MTX25	48	44	48	27	871		
	27MTX30	48	44	48	27	906		2

