



**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-0858

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Nailor Industries, Inc.

Manufacturer's Technical Representative: David Duff

Mailing Address: 4714 Winfield Road, Houston, TX 77039

Telephone: (281) 854-3607 Email: dduff@nailor.com

Product Information

Product Name: Fan Filter Units, 92FF

Product Model Number(s): 92FFU

Product Category: Air Conditioning Units

Product Sub-Category: Air Conditioning Units - Inline Fan and Terminal

General Description: Inline fan units for cleanroom filtration

Mounting Description: Suspended Rigid

Tested Seismic Enhancements: None

Applicant Information

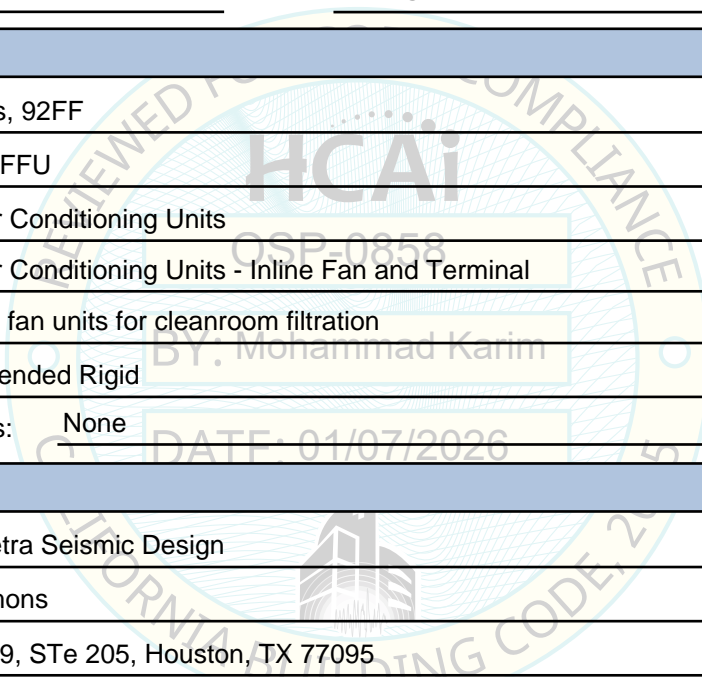
Applicant Company Name: Petra Seismic Design

Contact Person: Robert Simmons

Mailing Address: 11525 FM529, STe 205, Houston, TX 77095

Telephone: (281) 656-1439 Email: rsimmons@petraseismicdesign.com

Title: CEO





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

Company Name: RESPONSE STRUCTURAL ENGINEERS

Name: Todd Kemen California License Number: S5409

Mailing Address: 5441 Fair Oaks Blvd, STE G2, Carmichael, CA 95608

Telephone: (530) 200-4022 Email: toddk@response-eng.com

Certification Method

- GR-63-Core
 ICC-ES AC156
 IEEE 344
 IEEE 693
 NEBS 3
 Other (Please Specify): _____

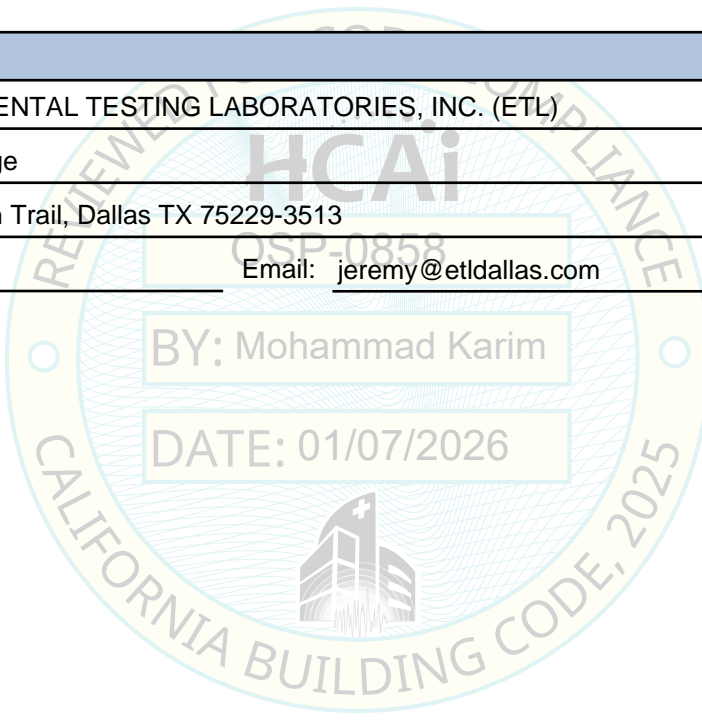
Testing Laboratory

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





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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal (A Flx-H), $g=$ 3.2 (A Rig-H), $g=$ 2.15

Vertical (A Flx-V), $g=$ 1.33 (A Rig-V), $g=$.53

SDS (Design spectral response acceleration at short period, g) = 2.0

H_f (Force amplification height factor) = 3.5 at z/h=1.0

R_u (Structure ductility reduction factor) = 1.3 at z/h=1.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

HCAI Approval (For Office Use Only) - Approval Expires on 01/07/2032

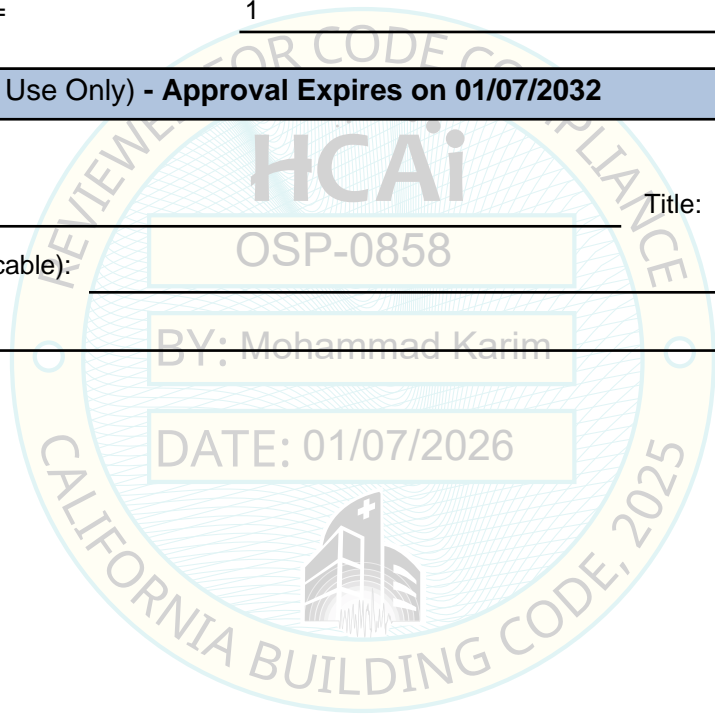
Date: 1/7/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

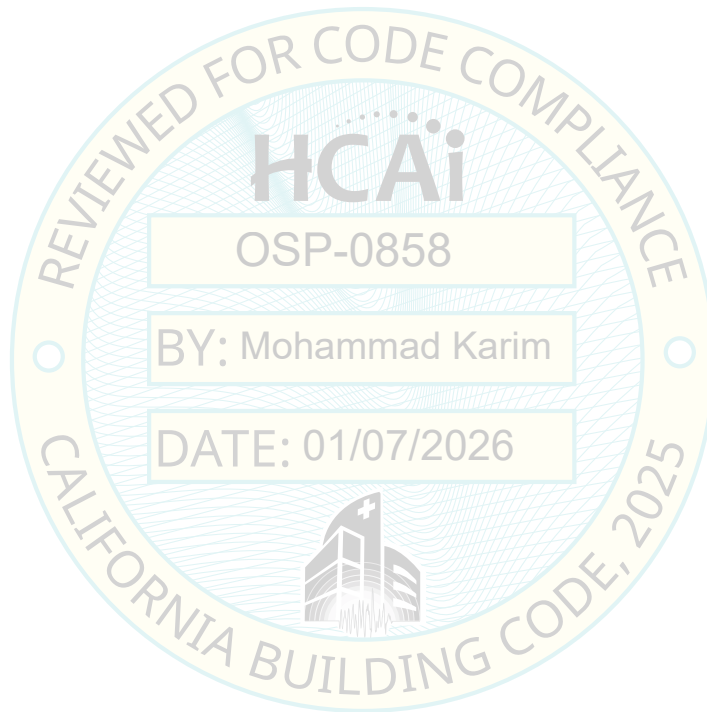
Condition of Approval (if applicable): OSP-0858

BY: Mohammad Karim

DATE: 01/07/2026



Certified Product Tables



BY: SJH 11/24/25
CHK: SJH 11/24/25

APP: SJH 11/24/25
PSD FILE: P25076.01

OSP-858 11/24/25
Certified Products 1

TABLE 1 - CERTIFIED PRODUCTS

Manufacturer: Nailor Industries

Product Family: Model 92FFU⁸ fan filter unit pressure independent volume

Certified Product Construction: Painted 16ga Aluminum Casing

Certified Mounting Description: Ceiling Suspended - Stiffened Support Rods/Mounting Brackets with Seismic Cable Restraints

Certified Seismic Parameters: $S_{DS} = 2.0$, $R_{\mu} = 1.3$, $H_f = 3.5$

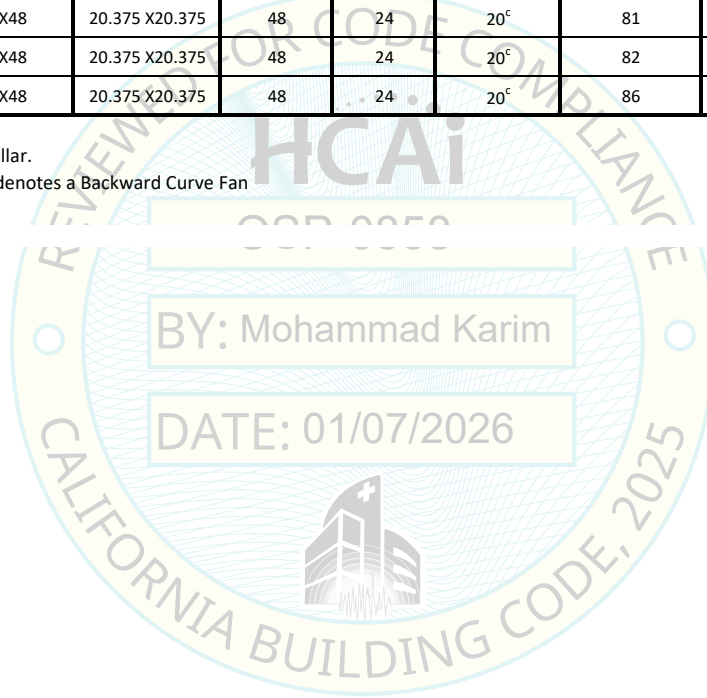
Product Family	Product Model	Unit Size	Inlet Dimensions	Max Length	Max Width	Max Height	Max Weight	No. of ROD Support Hangers	No. of Seismic Cable Braces	UUT
			(in)	(in)	(in)	(in)	(lb)			
92FFU	2x2-92FFU-FC ^(b)	24X24	20.375 X20.375	24	24	20 ^c	53	4	8	UUT-1
	2x3-92FFU-FC ^(b)	24x36	20.375 X20.375	36	24	20 ^c	65	4	4	Interpolated
	2x3-92FFU-BC ^(b)	24x36	20.375 X20.375	36	24	20 ^c	65	4	4	Interpolated
	2x4-92FFU-FC ^(b)	24X48	20.375 X20.375	48	24	20 ^c	81	4	4	UUT-2
	2X4-92FFU-BC ^(b)	24X48	20.375 X20.375	48	24	20 ^c	82	4	4	UUT-3
	2X4-92FFU-BC ^(b)	24X48	20.375 X20.375	48	24	20 ^c	86	4	4	UUT-4

Notes:

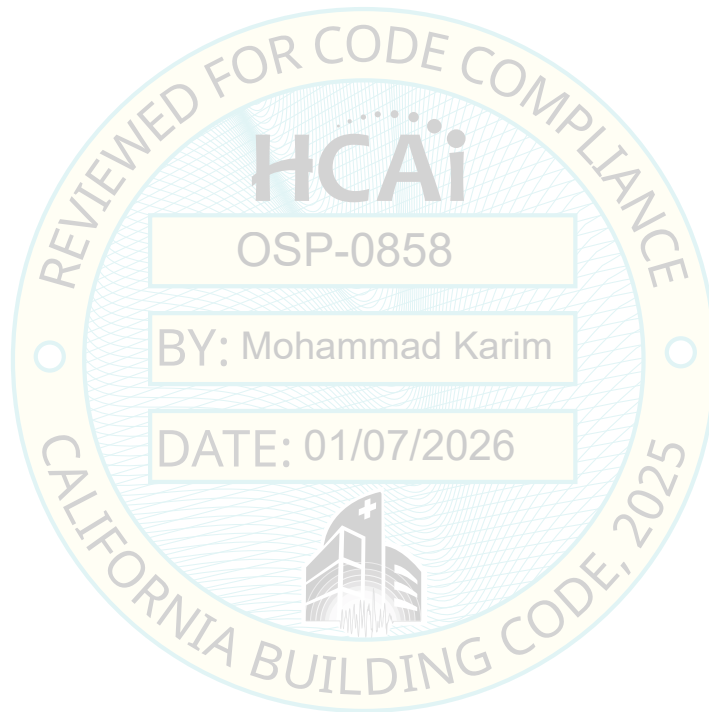
a. Models 92FFU denote a ducted inlet collar.

b. FC denotes a Forward Curve Fan & BC denotes a Backward Curve Fan

c. Includes ducted inlet collar height (2").



Certified Product Sub-Component Tables



BY: SJH 11/24/25
CHK: SJH 11/24/25

APP: SJH 11/24/25
PSD FILE: P25076.01

OSP-858 11/24/25
Sub-Components 1

TABLE 2 - CERTIFIED SUB-COMPONENT^a

Product Family : Model 92FFU-FC & Model 92FFU-BC

Certified Subcomponent: High Efficiency EC Motors

Certified Seismic Parameters: $S_{DS} = 2.0$, $R_{\mu} = 1.3$, $H_f = 3.5$

Product Model	Unit Size	Fan Motor	Voltage	Rated HP	Manufacturer	Number of Motors/Fan	Total Motor Weight (lbs)	UUT
5SAF39DSV5166	24X24	V18	120	1/3	REGAL REXNORD	1/1	7	UUT-1
5SAF39DSV5166	36x24	V18	120	1/3	REGAL REXNORD	1/1	7	Interpolated
5SAF39DSV5166	36x24	V18	120	1/3	REGAL REXNORD	1/1	7	Interpolated
5SAF39DSV5166	48X24	V18	120	1/3	REGAL REXNORD	1/1	7	UUT-2
5SAF39DSV5166	48X24	V18	120	1/3	REGAL REXNORD	1/1	7	UUT-3
5SAF39DSV5166	48X24	V18	120	1/3	REGAL REXNORD	1/1	7	UUT-4

Notes:

a. Certification provided by manufacturer per PIN 55.

Table 3 - Certified Sub-Components

Product Family: Model 92FFU

Product Models: 92FFU-FC, 92FFU-BC

Certified Subcomponents: Transformers, Relays, Switches

Certified Seismic Parameters: $S_{DS} = 2.0$, $R_{\mu} = 1.3$, $H_f = 3.5$

Sub-Component		Voltage DC/AC	VA	Manufacturer	UUT
Device	Model				
Transformers	HCT-01E0BB06	120/24	40	Hartland Controls	1-4
Relays/Fan Control Board	ACM-1020	24/-	--	AirCare	1-4
Air Flow Switch/ Pressure	PS100	24/-	--	DesignFlex	1-4
	PS106	24/-	--	DesignFlex	1-4
	PSF102	24/-	--	DesignFlex	1-4

UUTs

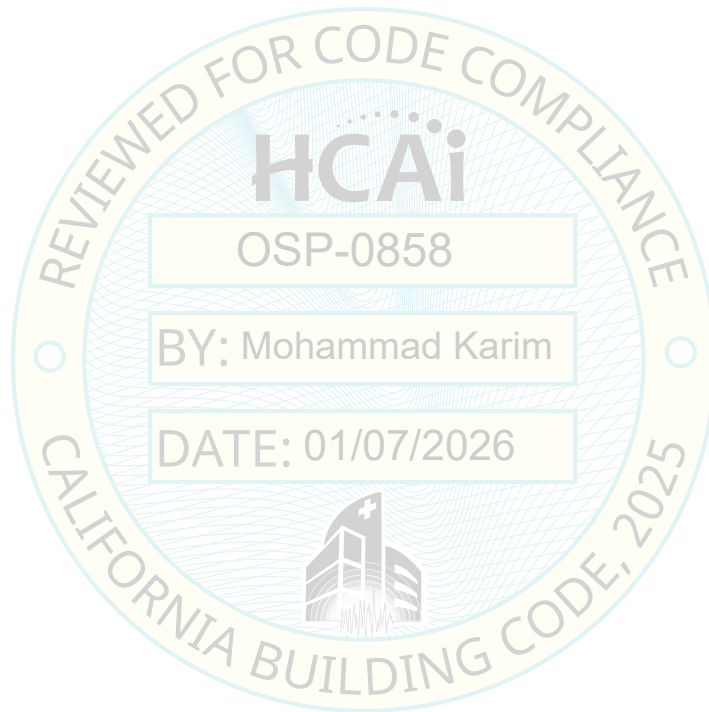


TABLE 4 - SUMMARY OF TESTED UNITS

Manufacturer: Nailor Industries

Product Family: Model 92FFU³ fan filter unit pressure independent volume

Certified Product Construction: Painted 16ga Aluminum Casing Cabinet

Certified Mounting Description: Rod hanging Ceiling Suspended

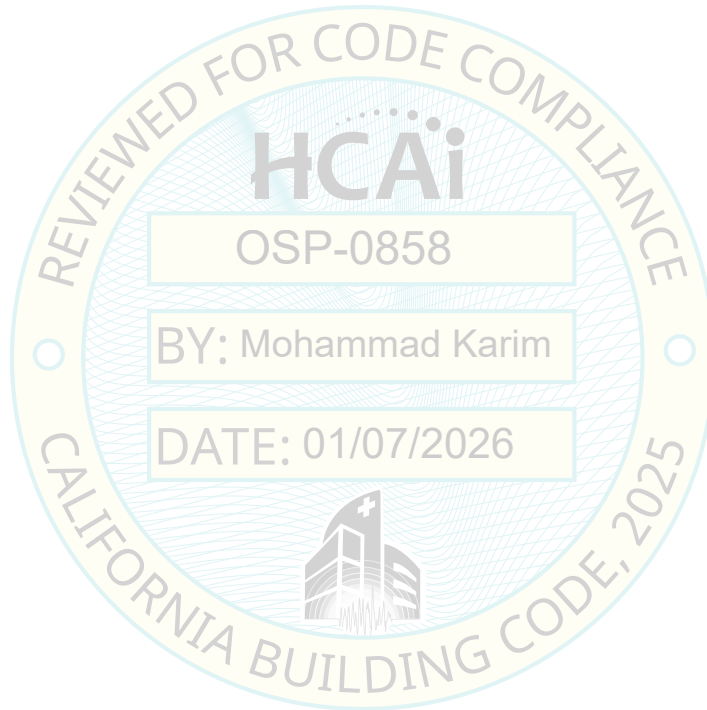
Model	Unit Size	Inlet	Max Length	Max Width	Max Height ^b	Max Weight	Certified Mounting		UUT	Test Report			
							No. of ROD Support Hangers	No. of Seismic Cable Braces		Lab ^c	Report	Rev.	Date
2x2-92FFU-FC	24X24	20.375 X20.375	24	24	20	53	4	8	UUT-1	ETL	17327	0	5/2/2024
2x4-92FFU-FC	48X24	20.375 X20.375	48	24	20	81	4	4	UUT-2	ETL	17327	0	5/2/2024
2X4-92FFU-BC	48X24	20.375 X20.375	48	24	20	82	4	4	UUT-3	ETL	17327	0	5/2/2024
2X4-92FFU-BC	48X24	20.375 X20.375	48	24	20	86	4	4	UUT-4	ETL	17327	0	5/2/2024

Notes:

a. Models 92FFU denote a ducted inlet collar.

b. Included ducted inlet collar height of 2".

c. ETL: Environmental Testing Laboratory, Inc.



UUT - 1 TEST RESULT SUMMARY

Manufacturer: Nailor Industries, Inc.

Product Model: 2x2 Fan Filter Unit Forward Curve

Model Number: 2x2-92FFU-FC

Cabinet: Painted 16ga Aluminum Casing

Options/Sub-Component Summary:

- Controller: SAL Stand Alone
- Fan Motor Voltage: V18 120V ECM
- Loaded Filter Indicator: Face Mounted LED light (red)
- Motor Run Indicator: Face Mounted LED light (green)
- Transformer (Model HCT-01E0BB06)
- Fan Control Board/Relay (Model ACM-1020)
- Pressure Switch (Model PS100)

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Length	Width	Height*	Front-Back	Side-Side	Vertical
53	24	24	20	N/A	N/A	N/A

* Includes ducted inlet collar height (2").

Seismic Test Parameter

Test Criteria	S _{DS} (g)	R _{II}	H _f	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
ICC-ES AC-156	2.0	1.3	3.5	3.2	2.4	1.34	0.54
	--	--	--	-	-	--	--

The UUT was functional before and after shake test.
The structural integrity of the component and attachment system and force resisting systems were maintained.



Unit Mounting Description:

Unit suspended with 3/8" diameter threaded rod, stiffened with solid strut channel and RSC-SNB-375 rod stiffening clips. Threaded rods were attached to Manufacturer's bracket at each corner. Threaded rod connection to shake table frame was double-nutted. Lateral bracing consisted of two Gripple GS-12 braces with 1/8" diameter cable at each corner. Eight (8) cable braces total.

Test Lab: Environmental Testing Laboratory, Inc.

Report: AC156 SEISMIC CERTIFICATION TEST REPORT, ETL 17327, Rev. 1

Report Date: 05/02/2024

Test UUT: UUT #1

UUT - 2 TEST RESULT SUMMARY

Manufacturer: Nailor Industries, Inc.

Product Model: 2x4 Fan Filter Unit Forward Curve

Model Number: 2x4-92FFU-FC

Cabinet: Painted 16ga Aluminum Casing

Options/Sub-Component Summary:

- Controller: SAL Stand Alone
- Fan Motor Voltage: V18 120V ECM
- Loaded Filter Indicator: Face Mounted LED light (red)
- Motor Run Indicator: Face Mounted LED light (green)
- Transformer (Model HCT-01E0BB06)
- Fan Control Board/Relay (Model ACM-1020)
- Pressure Switch (Model PS100)

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Length	Width	Height*	Front-Back	Side-Side	Vertical
81	48	24	20	N/A	N/A	N/A

* Includes ducted inlet collar height (2").

Seismic Test Parameter

Test Criteria	S _{DS} (g)	R _μ	H _f	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
ICC-ES AC-156	2.0	1.3	3.5	3.2	2.4	1.34	0.54
	--	--	--	--	--	--	--

The UUT was functional before and after shake test.

The structural integrity of the component and attachment system and force resisting systems were maintained.



Unit Mounting Description:

Unit suspended with 3/8" diameter threaded rod, stiffened with solid strut channel and RSC-SNB-375 rod stiffening clips. Threaded rods were attached to Manufacturer's bracket at each corner. Threaded rod connection to shake table frame was double-nutted. Lateral bracing consisted of one Gripple GS-12 brace with 1/8" diameter cable at each corner. Four (4) cable braces total.

Test Lab: Environmental Testing Laboratory, Inc.

Report: AC156 SEISMIC CERTIFICATION TEST REPORT, ETL 17327, Rev. 1

Report Date: 05/02/2024

Test UUT: UUT #2

UUT - 3 TEST RESULT SUMMARY

Manufacturer: Nailor Industries, Inc.

Product Model: 2x4 Fan Filter Unit Backward Curve

Model Number: 2X4-92FFU-BC

Cabinet: Painted 16ga Aluminum Casing

Options/Sub-Component Summary:

- Controller: SAL Stand Alone
- Fan Motor Voltage: V18 120V ECM
- Loaded Filter Indicator: Face Mounted LED light (red)
- Motor Run Indicator: Face Mounted LED light (green)
- Transformer (Model HCT-01E0BB06)
- Fan Control Board/Relay (Model ACM-1020)
- Pressure Switch (Model PS100)

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Length	Width	Height*	Front-Back	Side-Side	Vertical
82	48	24	20	N/A	N/A	N/A

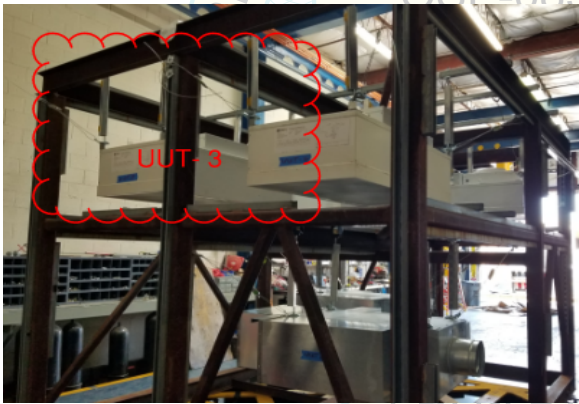
* Includes ducted inlet collar height (2").

Seismic Test Parameter

Test Criteria	S _{DS} (g)	R _μ	H _f	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
ICC-ES AC-156	2.0	1.3	3.5	3.2	2.4	1.34	0.54
	--	--	--	-	-	--	--

The UUT was functional before and after shake test.

The structural integrity of the component and attachment system and force resisting systems were maintained.



Unit Mounting Description:

Unit suspended with 3/8" diameter threaded rod, stiffened with solid strut channel and RSC-SNB-375 rod stiffening clips. Threaded rods were attached to Manufacturer's bracket at each corner. Threaded rod connection to shake table frame was double-nutted. Lateral bracing consisted of one Gripple GS-12 brace with 1/8" diameter cable at each corner. Four (4) cable braces total.

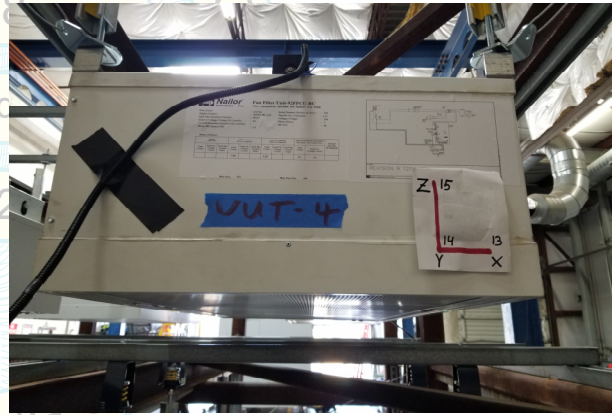
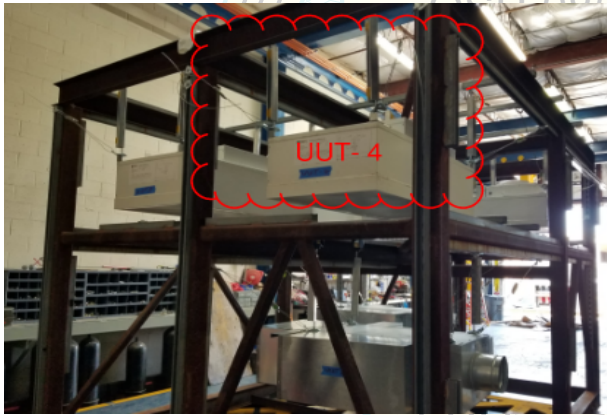
Test Lab: Environmental Testing Laboratory, Inc.

Report: AC156 SEISMIC CERTIFICATION TEST REPORT, ETL 17327, Rev. 1

Report Date: 05/02/2024

Test UUT: UUT #3

UUT - 4 TEST RESULT SUMMARY							
Manufacturer: Nailor Industries, Inc.							
Product Model: 2x4 Fan Filter Unit Backward Curve							
Model Number: 2X4-92FFU-BC							
Cabinet: Painted 16ga Aluminum Casing							
Options/Sub-Component Summary:							
-Controller: SAL Stand Alone							
-Fan Motor Voltage: V18 120V ECM							
-Loaded Filter Indicator: Face Mounted LED light (red)							
-Motor Run Indicator: Face Mounted LED light (green)							
-Transformer (Model HCT-01E0BB06)							
-Fan Control Board/Relay (Model ACM-1020)							
UUT Properties							
Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)			
	Length	Width	Height*	Front-Back	Side-Side	Vertical	
86	48	24	20	N/A	N/A	N/A	
* Includes ducted inlet collar height (2").							
Seismic Test Parameter							
Test Criteria	S _{DS} (g)	R _μ	H _f	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
ICC-ES AC-156	2.0	1.3	3.5	3.2	2.4	1.34	0.54
	--	--	--	-	-	--	--
The UUT was functional before and after shake test.							
The structural integrity of the component and attachment system and force resisting systems were maintained.							



Unit Mounting Description:
Unit suspended with 3/8" diameter threaded rod, stiffened with solid strut channel and RSC-SNB-375 rod stiffening clips. Threaded rods were attached to Manufacturer's bracket at each corner. Threaded rod connection to shake table frame was double-nutted. Lateral bracing consisted of one Gripple GS-12 brace with 1/8" diameter cable at each corner. Four (4) cable braces total.
Test Lab: Environmental Testing Laboratory, Inc.
Report: AC156 SEISMIC CERTIFICATION TEST REPORT, ETL 17327, Rev. 1
Report Date: 05/02/2024
Test UUT: UUT #4