



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-0416

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Huntair - CES Group LLC

Manufacturer's Technical Representative: Preston Harris

Mailing Address: 19855 SW 124th Ave, Tualatin, OR 97062

Telephone: (503) 639-0113 Email: pharris@huntair.com

Product Information

Product Name: Fanwall Technology

Product Model Number(s): Various (See Attachment)

Product Category: Air Handling Units

Product Sub-Category: Air Handling Units – Fans

General Description: FANWALL TECHNOLOGY uses multiple, small diameter, high-efficiency airfoil plenum fans. Coplanar

Mounting Description: See Certified Product Tables - Location (Other) -> rigid base mounted and wall mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Katie Braman

Mailing Address: 324 NW Hill Street, Bend, OR 97703

Telephone: (541) 241-2310 Email: katie@go-pre.com

Title: Principal & Program Manager



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

Company Name: PRE COMPLIANCE

Name: Andrew Coughlin

California License Number: S6082

Mailing Address: 324 NW Hill St, Bend, OR 97703

Telephone: (415) 635-8461

Email: Andy@go-pre.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565

Email: James.Wilcoski@usace.army.mil

Company Name: CLARK TESTING LABORATORY, INC.

Contact Person: Devon Lohr

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1001

Email: dlohr@clarktesting.com

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

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 642-3437

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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal (A Flx-H), g= 3.20 (A Rig-H), g= 2.15

Vertical (A Flx-V), g= 1.34 (A Rig-V), g= 0.54

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

H_f (Force amplification height factor) = 1@z/h=0; 3.5@z/h=1

R_u (Structure ductility reduction factor) = 1@z/h=1; 1.3@z/h=1

I_p (Importance factor) = 1.5

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

HCAI Approval (For Office Use Only) - Approval Expires on 08/29/2031

Date: 8/29/2025

Name: Timothy Piland

Title: Senior Structural Engineer

Condition of Approval (if applicable):

OSP-0416

BY: Timothy J. Piland

DATE: 08/29/2025

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$ $I_p=1.5$

Building Codes

CBC 2025

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Fan cells are constructed of 2x2 aluminum extruded members.
Wheels are constructed of aluminum. Fan cell external and internal panels: 0.40"aluminum and stainless steel sheet - solid and perforated. Cross bracing as indicated in certified drawings.

Options Summary

Backdraft dampers and discharge guards. Motors per Table 3.

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Max. Cells per Stack	Notes	UUT
		D	W	H				
Fanwall Technology™: Welded or Riveted	10" Fan Wheel	24	20	20	133	5		Extrap.
		...	...	...	...			Extrap.
		32	24	20	173	4	UUT3: Welded, Vert. Flow UUT4a: Riveted, Hor. Flow	3 ¹ , 4a
		...	...	...	...			Interp.
		44	36	44	356	3		Interp.
	12" Fan Wheel	24	20	20	140	5		Interp.
		...	...	...	...			Interp.
		44	36	44	364	3		Interp.
	14" Fan Wheel	24	24	20	140	6		Interp.
		...	...	...	...			Interp.
		44	36	44	365	3		Interp.
	16" Fan Wheel	32	28	20	204	5		Interp.
		...	...	...	...			Interp.
		48	44	44	367	3		Interp.
	18" Fan Wheel	32	28	20	207	5		Interp.
		...	...	...	...			Interp.
		48	44	44	367	3		Interp.
	20" Fan Wheel	32	28	20	210	5		Interp.
		...	...	...	...			Interp.
		48	44	44	367	3		Interp.
	22" Fan Wheel	32	36	20	244	4		Interp.
		...	...	...	...			Interp.
		32	44	44	367	3	UUT3: Welded, Vert. Flow UUT4a: Riveted, Hor. Flow	3 ¹ , 4a

Notes:

¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$ $I_p=1.5$

Building Codes

CBC 2025

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Fan cells are constructed of 2x2 aluminum extruded members.
Wheels are constructed of aluminum. Fan cell external and internal panels: 0.40"aluminum and stainless steel sheet - solid and perforated. Cross bracing as indicated in certified drawings.

Options Summary

Backdraft dampers and discharge guards. Motors per Table 3.

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Max. Cells per Stack	Notes	UUT
		D	W	H				
Fanwall Technology™: Gen II	10" Fan Wheel	16	22	24	54	6		Extrap.
		...	...	...	...			Extrap.
		24	22	27	82	5	UUT: 2W x 5H Config.	1
		...	...	...	...			Interp.
	12" Fan Wheel	42	30	30	157	4		Interp.
		16	25	24	57	6		Interp.
		...	...	...	...			Interp.
		23	32	32	125	4	UUT: 2W x 4H Config.	5
	14" Fan Wheel	...	...	...	...			Interp.
		42	32	32	166	4		Interp.
		17	25	24	57	6		Interp.
		...	...	...	...			Interp.
	16" Fan Wheel	42	34	34	173	4		Interp.
		18	28	28	66	5		Interp.
		...	...	...	...			Interp.
		48	38	38	195	2		Interp.
	18" Fan Wheel	21	31	28	74	5		Interp.
		...	...	...	...			Interp.
		48	40	40	199	3		Interp.
		21	31	28	74	5		Interp.
	20" Fan Wheel	...	...	...	...			Interp.
		50	42	42	199	3		Interp.
		22	34	34	83	4		Interp.
		...	...	...	...			Interp.
	22" Fan Wheel	51	34	34	199	4	UUT: (2) 1W x 4H Config.	1
		...	...	...	...			Interp.
		38	40	44	165	3	UUT: 2W x 3H	5
		...	...	...	...			Interp.
	22" Fan Wheel	33	44	44	175	3	UUT: 2W x 3H	5

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters			Building Codes
$S_{DS} = 2.0g$ for	$R_{\mu}=1.3$, $H_f=3.5$	$I_p=1.5$	CBC 2025
$S_{DS} = 2.0g$ for	$R_{\mu}=1.0$, $H_f=1.0$		

TABLE 2

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Fan cells are constructed of 2x2 aluminum extruded members.
Wheels are constructed of aluminum. Fan cell external and internal panels: 0.40"aluminum and stainless steel sheet - solid and perforated. Cross bracing as indicated in certified drawings.

Options Summary

Backdraft dampers and discharge guards. Motors per Table 3.

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Max. Cells per Stack	Notes	UUT
		D	W	H				
Fanwall Technology™: Gen III (Retrofit Application)	10" Fan Wheel	16	22	24	54	6		Extrap.
		...	...	...	...			Extrap.
		28	25	27	209		UUT: 2W x 5H Config.	10 ¹
		...	...	...	...			Interp.
	12" Fan Wheel	42	30	30	157	5		Interp.
		16	25	24	86	5		Interp.
		...	...	...	...			Interp.
		28	25	27	217		UUT: 2W x 5H	10 ¹
	14" Fan Wheel	...	...	...	...			Interp.
		42	32	32	166	5		Interp.
		17	25	24	88	5		Interp.
		...	...	...	...			Interp.
	16" Fan Wheel	42	34	34	173	5		Interp.
		18	28	28	66	6		Interp.
		...	...	...	...			Interp.
		34	38	38	430	3		Interp.
Fanwall Technology™: Gen III (Retrofit Application)	18" Fan Wheel	21	31	28	74	6		Interp.
		...	...	...	...			Interp.
		35	40	40	447	3		Interp.
		21	31	28	74	6		Interp.
	20" Fan Wheel	...	...	...	...			Interp.
		36	42	42	520	3		Interp.
		22	34	31	83	5		Interp.
		...	...	...	...			Interp.
	22" Fan Wheel	38	44	44	524	3		Interp.
		...	...	...	...			Interp.
		57	44	44	693		UUT: 2W x 3H Config.	9 ¹
		...	...	...	...			Interp.

Additional Notes:¹Maximum weight of single tested fan cell.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$ $I_p=1.5$

Building Codes

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TABLE 3

Table Description: Fan Motors

Component (Manufacturer)	Model	Description	Notes	UUT
Fan Motor (Siemens)	1 HP	230/460 Volts	UUT: 55 lbs	3 ¹ , 4a, 1
	...			Interp.
	10 HP	460 Volts	UUT: 144 lbs	1
	...			Interp.
	15 HP	230/460 Volts	UUT: 218 lbs	3 ¹
Fan Motor (Baldor)	...			Interp.
	20 HP	230/460 Volts	UUT: 291 lbs	4a
	1 HP	230/460 Volts	UUT: 45 lbs	1, 10
	...			Interp.
	12 HP	230/460 Volts	UUT: 169 lbs	1
Fan Motor (Toshiba)	15 HP		UUT: 238 lbs	9
	1 HP	230/460 Volts	UUT: 63 lbs	5, 1, 10
	...			Interp.
	12 HP	230/460 Volts	UUT: 202 lbs	1
	...			Interp.
Fan Motor (Nortek Air Solutions)	15 HP	230/460 Volts	UUT: 320 lbs	4a, 9
	2.5-3640-380-480V3Ph	460V, 3 Phase, 60 Hz	UUT: 2.5 kW	5, 10
	...			Interp.
	6.0-180-380-480V3Ph	460V, 3 Phase, 60 Hz	UUT: 6 kW	5, 9
	...			
Fan Motor (ECMI)	2.5 HP		UUT: 22 lbs	10
	...			Interp.
	6 HP		UUT: 86 lbs	9
Fan Motor (Nove Torque)	2 HP		UUT: 72 lbs	1
	...			Interp.
	6 HP		UUT: 74 lbs	1
Fan Wheel/Motor Combo (Nortek Air Solutions)	HPF-P200-ECMi Size 12	Polymer		5
	...			Interp.
	HPF-P200-ECMi Size 22			5

Notes: ¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.



Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$	$I_p=1.5$
$S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$	

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Table Description: Control and VFD Panel

Notes:

¹Wall Mounted - Rigid

²Carbon and stainless steel enclosure. NEMA1/12/3R/4X. There is no physical difference between NEMA 1, NEMA 12, NEMA 3R. NEMA 4X is powder coated.



Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$	$I_p=1.5$
$S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$	

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Mounting Configuration: Wall Mounted - Isolated

Notes:

¹Wall Mounted - Isolated

²Carbon and stainless steel enclosure. NEMA1/12/3R/4X. There is no physical difference between NEMA 1, NEMA 12, NEMA 3R. NEMA 4X is powder coated.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ **CBC 2025**

TABLE 6

Table Description:Electrical Enclosures

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Control & VFD Enclosure (Huntair)	Control & VFD Enclosure	12	20	24	30	Carbon Steel	NEMA 1/12/3R/4X ¹	Extrap.
		...	...	...	...			Extrap.
		16	28	42	176		NEMA 1/12/3R/4X ¹ (UUT: NEMA 12)	3a
		...	...	...	...			Interp.
		10	28	40	143		NEMA 1/12/3R/4X ¹ (UUT: NEMA 1)	5
		...	...	...	...			
		12	36	48	216		NEMA 1/12/3R/4X ¹ (UUT: NEMA 3R)	2b
		...	...	...	...			
		20	56	72	470		NEMA 1/12/3R/4X ¹ (UUT: NEMA 1)	2a
		...	...	...	...			
		16	56	90	530		NEMA 1/12/3R/4X ¹ (UUT: NEMA 11)	5
		...	...	...	...			
		20	56	86	1032		NEMA 1/12/3R/4X ¹ (UUT: NEMA 1)	12a, 12b
		12	20	24	30	Stainless Steel	NEMA 1/12/3R/4X ¹	Extrap.
		...	...	...	...			Extrap.
		14	38	54	404		NEMA 1/12/3R/4X ¹ (UUT: NEMA 4)	13a, 13b
		...	...	...	...			Interp.
		18	56	90	983		NEMA 1/12/3R/4X ¹ (UUT: NEMA 4)	11a, 11b

Additional Notes:

¹No Physical difference between NEMA 1, NEMA 12, and NEMA 3. NEMA 4X is powder coated.



SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

CBC 2025

Table Description:Electrical Enclosures

¹No Physical difference between NEMA 1, NEMA 12, and NEMA 3. NEMA 4X is powder coated.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ **CBC 2025**

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (ABB)	ACH550	208V/230V/460V, 1 HP, 18 lbs	UUT: 1 HP, 18 lbs	2a
		208V/230V/460V, 3 HP, 18 lbs		10, 13 ¹
		208V/230V/460V, 5 HP, 18 lbs		Interp.
		208V/230V/460V, 7.5 HP, 18 lbs		Interp.
		208V/230V/460V, 10 HP, 25 lbs		Interp.
		208V/230V/460V, 15 HP, 25 lbs		Interp.
		208V/230V/460V, 20 HP, 41 lbs		Interp.
		208V/230V/460V, 25 HP, 41 lbs		Interp.
		208V/230V/460V, 30 HP, 41 lbs		Interp.
		208V/230V/460V, 35 HP, 58 lbs		Interp.
		208V/230V/460V, 40 HP, 58 lbs		Interp.
		208V/230V/460V, 50 HP, 58 lbs		Interp.
		208V/230V/460V, 60 HP, 58 lbs		Interp.
		208V/230V/460V, 75 HP, 58 lbs		Interp.
		208V/230V/460V, 100 HP, 190 lbs		Interp.
		208V/230V/460V, 125 HP, 190 lbs		Interp.
		208V/230V/460V, 150 HP, 190 lbs	UUT: 150 HP, 190 lbs	2a, 9, 13 ¹
	ACH580	208/230V, 1 HP, 10.6 lbs		10
		460V, 1 HP, 10.6 lbs		Interp.
		208/230V, 1.5 HP, 10.6 lbs		Interp.
		460V, 1.5 HP, 10.6 lbs		Interp.
		208/230V, 2 HP, 10.6 lbs		Interp.
		460V, 2 HP, 10.6 lbs		Interp.
		208/230V, 3 HP, 10.6 lbs		Interp.
		460V, 3 HP, 10.6 lbs		Interp.
		208/230V, 5 HP, 10.6 lbs		Interp.
		460 V, 5 HP, 10.6 lbs		Interp.
		460V, 7.5 HP, 10.6 lbs		Interp.
		575V, 2 HP, 15 lbs		Interp.
		575V, 3 HP, 15 lbs		Interp.
		575V, 5 HP, 15 lbs		Interp.
		208/230V, 7.5 HP, 15 lbs		Interp.

Additional Notes:¹ Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$ $I_p=1.5$

Building Codes

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TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (ABB)	ACH580	575V, 7.5 HP, 15 lbs		Interp.
		208/230V, 10 HP, 15 lbs		Interp.
		460V, 10 HP, 15 lbs		Interp.
		575V, 10 HP, 15 lbs		Interp.
		460V, 15 HP, 15 lbs		Interp.
		575V, 15 HP, 15 lbs		Interp.
		208/230V, 15 HP, 28.7 lbs		Interp.
		208/230V, 20 HP, 28.7 lbs		Interp.
		460V, 20 HP, 28.7 lbs		Interp.
		575V, 20 HP, 28.7 lbs		Interp.
		460V, 25 HP, 28.7 lbs		Interp.
		575V, 25 HP, 28.7 lbs		Interp.
		460V, 30 HP, 28.7 lbs		Interp.
		575V, 30 HP, 28.7 lbs		Interp.
		208/230V, 25 HP, 44.1 lbs		Interp.
		460V, 40 HP, 44.1 lbs		Interp.
		460V, 50 HP, 44.1 lbs		Interp.
		460V, 60 HP, 44.1 lbs		Interp.
		208/230V, 30 HP, 64 lbs		Interp.
		208/230V, 40 HP, 64 lbs		Interp.
		575V, 40 HP, 64 lbs		Interp.
		575V, 50 HP, 64 lbs		Interp.
		575V, 60 HP, 64 lbs		Interp.
		460V, 75 HP, 64 lbs		Interp.
		575V, 75 HP, 64 lbs		Interp.
		208/230V, 50 HP, 95 lbs		Interp.
		460V, 100 HP, 95 lbs		Interp.
		208/230V, 60 HP, 123.5 lbs		Interp.
		208/230V, 75 HP, 123.5 lbs		Interp.
		575V, 100 HP, 123.5 lbs		Interp.
		460V, 125 HP, 123.5 lbs		Interp.
		575V, 125 HP, 123.5 lbs		Interp.
		460V, 150 HP, 123.5 lbs		9

Additional Notes:¹ Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ **CBC 2025**

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (ABB)	ACS320	208V/230V/460V	UUT: 1 HP, 3.5 lbs	2b, 10, 13 ¹
		208V/230V/460V, 3 HP, 3.5 lbs		Interp.
		208V/230V/460V, 5 HP, 3.5 lbs		Interp.
		208V/230V/460V, 7.5 HP, 3.5 lbs		Interp.
		208V/230V/460V, 10 HP, 7 lbs		Interp.
		208V/230V/460V, 15 HP, 7 lbs		Interp.
		208V/230V/460V	UUT: 20 HP, 11 lbs	2b, 13 ¹
		208V/230V/460V, 25 HP, 11 lbs		Interp.
		208V/230V/460V, 30 HP, 11 lbs		Interp.
	ACS355	480V, 0.5 HP, 2.6 lbs		Interp.
		480V, 0.75 HP, 2.6 lbs		Interp.
		480V, 1 HP, 3.0 lbs		Interp.
		480V, 1.5 HP, 3.0 lbs		Interp.
		480V	UUT: 2 HP, 3.0 lbs	1
		480V, 3 HP, 3.0 lbs		Interp.
		480V, 4 HP, 3.0 lbs		Interp.
		480V, 5 HP, 3.0 lbs		Interp.
		480V, 7.5 HP, 6.9 lbs		Interp.
		480V, 10 HP, 6.9 lbs		Interp.
VFD (Danfoss)	FC101	480V	UUT: 15 HP, 11.5 lbs	1
		208V/230V/460V	UUT: 1 HP	5,10,11 ¹
		208V/230V/460V	UUT: 15 HP	5
	VLT	208V/230V/460V	UUT: 125 HP	9
		208V/230V/460V	UUT: 5 HP	5
		208V/230V/460V	UUT: 15 HP	5
VFD (Yaskawa)	E7	208V/230V/460V	UUT: 150 HP, 212 lbs	3 ¹ , 11 ¹
		208V/230V/460V, 3 HP, 9 lbs		Interp.
		208V/230V/460V, 5 HP, 9 lbs		Interp.
		208V/230V/460V, 7.5 HP, 9 lbs		Interp.
		208V/230V/460V, 10 HP, 13 lbs		Interp.
		208V/230V/460V, 15 HP, 13 lbs		Interp.
		208V/230V/460V, 20 HP, 13 lbs		Interp.

Additional Notes:¹ Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$
CBC 2025

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (Yaskawa)	E7	208V/230V/460V, 25 HP, 22 lbs		Interp.
		208V/230V/460V, 30 HP, 22 lbs		Interp.
		208V/230V/460V, 40 HP, 53 lbs		Interp.
		208V/230V/460V, 50 HP, 53 lbs		Interp.
		208V/230V/460V, 60 HP, 88 lbs		Interp.
		208V/230V/460V, 75 HP, 88 lbs		Interp.
		208V/230V/460V, 100 HP, 88 lbs		Interp.
		208V/230V/460V, 125 HP, 194 lbs		Interp.
	V1000	208V/230V/460V	UUT: 150 HP, 196 lbs	2a
		208V/230V/460V	UUT: 1 HP, 3 lbs	2b, 10, 13 ¹
		208V/230V/460V, 3 HP, 4.2 lbs		Interp.
		208V/230V/460V, 5 HP, 4.2 lbs		Interp.
		208V/230V/460V, 7.5 HP, 5.7 lbs		Interp.
		208V/230V/460V	UUT: 10 HP, 9 lbs	2b
		208V/230V/460V, 15 HP, 9 lbs		Interp.
		208V/230V/460V	UUT: 20 HP, 12 lbs	2b, 13 ¹
	Z1000	208V/230V/460V, 25 HP, 12 lbs		Interp.
		480V	UUT: 3 HP, 11.9 lbs	1, 10, 11 ¹
		480V, 5 HP, 12.6 lbs		Interp.
		480V, 7.5 HP, 13.4 lbs		Interp.
		480V, 10 HP, 16.1 lbs		Interp.
		480V, 15 HP, 16.8 lbs		Interp.
		480V	UUT: 20 HP, 18.5 lbs	1
		480V	UUT: 25 HP 28.7 lbs	1, 11 ¹
VFD (Nortek Air Solutions)	HD4005XX	480V, XX denotes 10" or 25" pressure setting (firmware only)	0.5 HP, 9.5 lbs	Extrap.
	HD4010XX		UUT: 1 HP, 9.5 lbs, 10" model	1, 10, 12 ¹
	HD4015XX		1.5 HP, 9.5 lbs	10
	HD4020XX		2 HP, 9.5 lbs	Interp.
	HD4025XX		2.5 HP, 9.5 lbs	Interp.

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$
CBC 2025

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (Nortek Air Solutions)	HD4030XX	480V, XX denotes 10" or 25" pressure setting (firmware only)	3 HP, 9.5 lbs	10, 12 ¹
	HD4035XX		3.5 HP, 9.5 lbs	10
	HD4040XX		4 HP, 9.5 lbs	Interp.
	HD4045XX		4.5 HP, 9.5 lbs	Interp.
	HD4050XX		5 HP, 9.5 lbs	Interp.
	HD4055XX		5.5 HP, 9.5 lbs	Interp.
	HD4060XX		6 HP, 9.5 lbs	Interp.
	HD4065XX		6.5 HP, 9.5 lbs	Interp.
	HD4070XX		7 HP, 9.5 lbs	Interp.
	HD4075XX		7.5 HP, 9.5 lbs	Interp.
	HD4080XX		8 HP, 9.5 lbs	Interp.
	HD4085XX		8.5 HP, 9.5 lbs	Interp.
	HD4090XX			Interp.
	HD4095XX		9.5 HP, 9.5 lbs	9
	HD4100XX		UUT: 10 HP, 9.5 lbs, 25" model	1, 9, 12 ¹
VFD (Siemens)	RT0002-11N	115V, 1-PH; 0.25HP, 1.43 lbs		Extrap.
	RT0002-23N	230V, 3-PH, 0.25HP, 1.43 lbs		Extrap.
	RT0002-21N	230V, 1-PH, 0.25HP, 1.43 lbs		Extrap.
	RT0005-23N	230V, 3-PH, 0.5HP, 1.5 lbs		Extrap.
	RT0005-11N	115V, 1-PH, 0.5HP, 1.63 lbs		Extrap.
	RT0005-21N	230V, 1-PH, 0.5HP, 1.68 lbs		Extrap.
	RT0005-43N	460V, 3-PH, 0.5HP, 1.68 lbs		Extrap.
	RT001X-23N	230V, 3-PH, 1HP, 1.79 lbs		Extrap.
	RT001X-43N	460V, 3-PH, 1HP, 1.79 lbs		Extrap.
	RT001X-53N	575V, 3-PH, 2HP, 1.87 lbs		Extrap.
	RT002X-53N	575V, 3-PH, 2HP, 1.92 lbs		Extrap.
	RT001X-21N	230V, 1-PH, 1HP, 2.09 lbs		Extrap.
	RT002X-43N	460V, 3-PH, 2HP, 2.21 lbs		Extrap.
	RT002X-23N	230V, 3-PH, 2HP, 2.32 lbs		Extrap.
	RT003X-53N	575V, 3-PH, 3HP, 2.6 lbs		Extrap.
	RT001X-11N	115V, 1-PH, 1HP, 2.73 lbs		Extrap.
	RT002X-21N	230V, 1-PH, 2HP, 2.73 lbs		9

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ **CBC 2025**

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (Siemens)	RT003X-23N	230V, 3-PH, 3HP, 2.73		Interp.
	RT003X-21N	230V, 1-PH, 3HP, 2.73		Interp.
	RT003X-43N	460V, 3-PH, 3HP, 2.73		Interp.
	RT005X-23N	230V, 3-PH, 5HP, 2.73		Interp.
	RT005X-43N	460V, 3-PH, 5HP, 2.73		Interp.
	RT005X-53N	575V, 3-PH, 5HP, 2.84 lbs		Interp.
	RT0075-53N	575V, 3-PH, 7.5HP, 4.5 lbs		Interp.
	RT010X-53N	575V, 3-PH, 10HP, 4.5 lbs		Interp.
	RT0075-23N	230V, 3-PH, 7.5HP, 4.56 lbs		Interp.
	RT0075-43N	460V, 3-PH, 7.5HP, 4.56 lbs		Interp.
	RT010X-43N	460V, 3-PH, 10HP, 4.56 lbs		9
VFD (Schneider)	ATV 212	1 HP, 5 lbs		10
		2 HP, 5 lbs		Interp.
		3 HP, 5 lbs		Interp.
		5 HP, 8 lbs		Interp.
		7.5 HP, 8 lbs		Interp.
		10 HP, 15 lbs		9
		15 HP, 15 lbs	Same Chassis as 10 HP Model	Interp.
Disconnect Switch and Circuit Breaker (Siemens)	CFS361J5	30A	Eaton R4H3030FJ	Extrap.
	CFS362J	60A Disconnect	Eaton R9J3060FJ	4a, 12 ¹
	CFS363J	60A Circuit Breaker	Eaton R9K3100FJ	12 ¹
	CFS364J	300A Circuit Breaker	Eaton R9L3200FJ	2b, 3a, 13 ¹
	CFS365J	400A Circuit Breaker	Eaton R9M3400FJ	2a, 11 ¹
Disconnect Switch and Circuit Breaker (Eaton)	R5A3016U	16A - Non-fused Disconnect		13 ¹
	R9E3400U	400A - Non-fused Disconnect		13 ¹
Compact Circuit Breaker (Eaton)	FAZ-C20/1-NA-SP	1-Pole CB - 20A		11 ¹
	FAZ-C10/2-NA	2-Pole CB - 10A		13 ¹

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters			Building Codes
$S_{DS} = 2.0g$ for	$R_{\mu}=1.3, H_f=3.5$	$I_p=1.5$	CBC 2025
$S_{DS} = 2.0g$ for	$R_{\mu}=1.0, H_f=1.0$		

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Compact Circuit Breaker (Eaton)	FAZ-C16/3-NA	3-Pole CB - 16A		11 ¹ , 12 ¹
Fuse Holder and Fuse (Bussman)	LPJ-1SP	1A		13 ¹
	LPJ-5SP	5A	Bussmann Fuse Type LPJ, full range	12 ¹
	LPJ-10SP	10A	Bussmann Fuse Type DFJ, full range	12 ¹
	LP-CC-15	15A	Bussman Fuse Type LP-CC, full range	11 ¹
	CCP-3-30CC, J60030-3CR	30A	Bussmann Fuse Type KTK, full range	2b, 11 ¹
	J60060-3CR, CCP-3-60CF	60A	Bussmann Fuse Type FNQ, full range	11 ¹
	LPJ-100SP	100A	Bussmann Fuse Type FNM, full range	12 ¹
	LPJ-200SP	200A	Bussmann Fuse Type GMA, full range	12 ¹
	J60400-3CR	400A		2a, 13 ¹
Distribution Block (Marathon)	132580	175A	Bussmann PDBFS220, PDB321-3	2b, 12 ¹
	1403404	310A	Bussmann PDBFS303, PDB323-3	12 ¹ , 13 ¹
	1453579	380A	Bussmann PDBFS330	13 ¹
	1453587	665A	Bussmann PDBFS500	2a, 11 ¹
Contactor (Siemens)	3RT10151AK61	7A	Eaton XTCE007B10A	2a, 13 ¹
	3RT10231AK60	9A	Eaton XTCE009B10A	Interp.
	3RT10241AK60	12A	Eaton XTCE012B10A	Interp.
	3RT10251AK60	17A	Eaton XTCE018C10A - 18A	Interp.

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ **CBC 2025**

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Contactor (Siemens)	3RT10361AK60	50A	Eaton XTCE050D00A	Interp.
	3RT10451AK60	80A	Eaton XTCE080F00A	2a
	3RT10461AK60	95A	Eaton XTCE095F00	Interp.
	3RT10546AF36	115A	Eaton XTCE115G00A	Interp.
	3RT10556AF36	150A	Eaton XTCE150G00A	2a, 11 ¹
Contactor (Siemens)	3RT10646AF36	225A	Eaton XTCE185H22A - 185A	Extrap.
	3RT10656AF36	265A	Eaton XTCS250L22A - 250A	Extrap.
MSP (Siemens)	3RV10210JA10	0.7 to 1.0A	Eaton XTPR001BC1 - 0.63 to 1.0A	Extrap.
	3RV10211AA10	1.1 to 1.6A	Eaton XTPR1P6BC1 - 1.0 to 1.6A	2a
	3RV10211CA10	1.8 to 2.5A	Eaton XTPR2P5BC1 - 1.6 to 2.5A	13 ¹
	3RV10211FA10	3.5 to 5.0A	Eaton XTPR004BC1 - 2.5 to 4.0A	Interp.
	3RV10211HA10	5.5 to 8.0A	Eaton XTPR010BC1 - 6.3 to 10A	3a
	3RV10211KA10	9.0 to 12.5A	Eaton XTPR012BC1 - 8 to 12.5A	2a
	3RV10214AA10	11 to 16A	Eaton XTPR016BC1 - 10 to 16A	2a, 4a
	3RV10314BA10	14 to 20A	Eaton XTPR025DC1 - 16 to 25A	11 ¹ , 13 ¹
	3RV10314EA10	22 to 32A	Eaton XTPR032DC1 - 25 to 32A	Interp.
	3RV10414HA10	36 to 45A	Eaton XTPR050DC1 - 40 to 50A	Interp.
	3RV10414JA10	45 to 50A	Eaton XTPR063DC1 - 55 to 65A	2a

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$ CBC 2025

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Power Supply (Eaton)	PSG120F24RM	480 VAC input - 5A output		12 ¹
	PSF240F24RM	480 VAC input - 10A output		12 ¹
Power Supply (Siemens)	6EP1332-1SH42	2.5A	Eaton PSG60E	Extrap.
	6EP1332-1SH51	4A	Eaton PSG120E	2b, 8, 11 ¹
	6EP1334-3BA00	10A	Eaton PSG240E	5, 13 ¹
Power Supply (IDEC)	PS5R-VE24	0.5 lbs, 3.75A		8
Transformer (Micron)	B075LP7JK	75VA Pri 120x240 vac Sec: 24 vac	Eaton C0075E1B	Extrap.
	B050LP7RB	50VA Pri 120x240 vac Sec: 24 vac	Eaton C0050E1BFB	Extrap.
	B150LP7JKF	150VA Pri 120x240 vac Sec: 24 vac	Eaton C0150E1B	3a
	B250BTZ13RBF	250VA Pri 480x240 vac Sec: 120 vac	Eaton C0250E2AFB	Interp.
	B500BTZ13RBF	500VA Pri 480x240 vac Sec: 120 vac	Eaton C0500E2AFB	2b
	B750BTZ13RBF	750VA Pri 480x240 vac Sec: 120 vac	Eaton C0750E2AFB	2a, 13 ¹
	B1K0-0500-3F	1000VA Pri 480x240 vac Sec: 120 vac	Eaton C1000E2AFB	11 ¹
	B2K0-0502-3H	2000VA Pri 480x240 vac Sec: 120 vac	Eaton C2000K2AFB	Interp.
	B3K0-0503-3H	3000VA Pri 480x240 vac Sec: 120 vac	Eaton C3000K2A	2a, 12 ¹
Reactor (TCI)	KDRA3H	7.6A		5
	KDRA4H	11A		Interp.
	KDRA5H	14A		12 ¹
	KDRB2H	21A		Interp.
	KDRC3H	27A		Interp.
	KDRF4H	52A		Interp.
	KDRF2H	77A		Interp.
	KDRI2H	125A		Interp.
	KDRG3H	156A		2b
	KDRG1H	185A		13 ¹
Terminal Block (Phoenix)	Typ QTC 2.5	15A		11 ¹ , 12 ¹ , 13 ¹
	ST 4	30A		3b, 12 ¹
	Typ ST 4-PE	30A - Grounding Terminals		5, 12 ¹

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

Seismic Parameters

$S_{DS} = 2.0g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 2.0g$ for $R_{\mu}=1.0, H_f=1.0$ $I_p=1.5$

Building Codes

CBC 2025

TABLE 7

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
PLC Controls (Siemens)	Circuit Breaker			2b
	Power Supply			2b, 12 ¹ , 13 ¹
	Controller			2b, 11 ¹ , 12 ¹
	Touch Screen	4" min to 19" maximum		2b, 12 ¹
	Expansion Module	Typ QTC 2.5, Typ QTC 2.5-PE		5, 11 ¹
PLC Controls (Siemens)	Communication Module	Typ ST 4		5, 11 ¹ , 12 ¹
Thermostat (Pfenninger)	ETR201	Thermostat, 120-240V		3 ¹ , 4a, 5, 1, 11 ¹ , 12 ¹ , 13 ¹
Transducer (Dwyer)	MS-W103-LCD-BC	XDCR, DP, Adjustable 0-10", 15", w/ Display	No Eaton Equivalent	2b, 13 ¹
	616KD-03-V			11 ¹
Transducer (Huntair/Setra)	Hunt-010W-D			11 ¹
Cool Fan 4" to 6" (Rittal)	1120 to 240V			5
Cool Fan 4" to 6" (U.S. Toyo)	1120 to 240V			2 ¹ , 3 ¹ , 4a
Cool Fan 4" to 6" (Hoffman)	1120 to 240V	Hoffman-NEMA TYPE 12		11 ¹ , 13 ¹

Additional Notes:¹Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.



Manufacturer: Nortek Air Solutions, LLC
Product Type: Fans
Model Line: Fanwall Technology™

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SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Laboratory	S _{DS}	R _μ	H _f	I _p
1	FWT (Gen II)	13379 Rev.1 (UUT 1)	Environmental Testing Laboratory, Inc.	2.00 3.20	1.3 1.0	3.5 1.0	1.5
2a ¹	Air Handling Cabinet: CSU-10K	HuntAir9293 (UUT 1 - Run #1)	Clark Testing	2.00	1.3 1.0	3.5 1.0	1.5
2b ¹	Air Handling Cabinet: CSU-10K	HuntAir9293 (UUT 1 - Run #2)	Clark Testing	2.00	1.3 1.0	3.5 1.0	1.5
3a ¹	Air Handling Cabinet: CSU-20K	HuntAir9293 (UUT 2 - Run #3)	Clark Testing	2.00	1.3 1.0	3.5 1.0	1.5
3b ¹	Air Handling Cabinet: CSU- 20K (Inlet Wall Removed w/ Cable Bracing)	HuntAir9293 (UUT 2 - Run #4)	Clark Testing	2.00	1.3 1.0	3.5 1.0	1.5
4a ¹	Air Handling Cabinet: CSU-40K	HuntAir9293 (UUT 3 - Run #9)	Clark Testing	2.00	1.3 1.0	3.5 1.0	1.5
5 ¹	Air Handling Cabinet: CSU-20K	1700754-TR-001-R2 (UUT 4)	CERL	2.00 2.50	1.3 1.0	3.5 1.0	1.5
6	Not Used						
7	Not Used						
8 ¹	Air Handling Cabinet: CSU-20K	1801166-TR-001-R0 (UUT 8)	Pacific Earthquake Engineering Research Center (PEER)	2.00 2.50	1.3 1.0	3.5 1.0	1.5
9	3x2 FWT (Gen III)	1801194-TR-001-R0 (UUT 9)	Environmental Testing Laboratory, Inc.	2.20 3.52	1.3 1.0	3.5 1.0	1.5
10	5x2 FWT (Gen III)	1801194-TR-001-R0 (UUT 10)	Environmental Testing Laboratory, Inc.	2.20 3.52	1.3 1.0	3.5 1.0	1.5
11a	Control Panel (NEMA 4 SST - isolated)	1801194-TR-001-R0 (UUT 11a)	Environmental Testing Laboratory, Inc.	2.10 2.20	1.3 1.0	3.5 1.0	1.5
11b	Control Panel (NEMA 4 SST - rigid)	1801194-TR-001-R0 (UUT 11b)	Environmental Testing Laboratory, Inc.	2.23 2.73	1.3 1.0	3.5 1.0	1.5
12a	Control Panel (NEMA 1 CST - isolated)	1801194-TR-001-R0 (UUT 12a)	Environmental Testing Laboratory, Inc.	2.10 2.20	1.3 1.0	3.5 1.0	1.5
12b	Control Panel (NEMA 1 CST - rigid)	1801194-TR-001-R0 (UUT 12b)	Environmental Testing Laboratory, Inc.	2.23 2.73	1.3 1.0	3.5 1.0	1.5
13a	Control Panel (NEMA 4 SST - isolated)	1801194-TR-001-R0 (UUT 13a)	Environmental Testing Laboratory, Inc.	2.10 2.20	1.3 1.0	3.5 1.0	1.5
13b	Control Panel (NEMA 4 SST - rigid)	1801194-TR-001-R0 (UUT 13b)	Environmental Testing Laboratory, Inc.	2.23 2.73	1.3 1.0	3.5 1.0	1.5

Notes:

¹UUT included for inclusion of subcomponents.

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1

Test Report# 13379 Rev. 1 (UUT1)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: FWT
Serial Number: 2101-005

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	2.14	0.86
2.5	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
60	130	150	7155

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
3.6	3.9	22.9

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Fan Cells: 2x2 aluminum extruded members, coplanar and extended coplanar panels are 0.040" aluminum and 22 ga. stainless steel sheet - solid and perforated

UUT Mounting Details:



BY: Timothy J. Piland

FANWALL sections mounted within air handling section constructed of 2" galvanized steel panels with 6" tube sections. FANWALL sections mounted at base using floor rigid CES Group standard mounting details with gage metal blank off panels to air handling walls. Air handling section mounted to shake table with (4) 5/8" diameter grade 8 bolts.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Fan Wheel: 10" Aluminum Gen II Fan Wheel, 22" Aluminum Gen II Fan Wheel; Motor (480V): Siemens 1 HP & 10 HP, Baldor 1 HP & 12 HP, Toshiba 1 HP & 12 HP, Nove Torque 2 HP & 6 HP; VFD (460V): ABB ACS355 3 HP, 20 HP, & 25 HP, Yaskawa Z1000 3 HP, 20 HP, & 25 HP, Nortek Air Solutions HD4010XX, HD4100XX; Thermostat: Pfennenberg; Back Draft Dampers

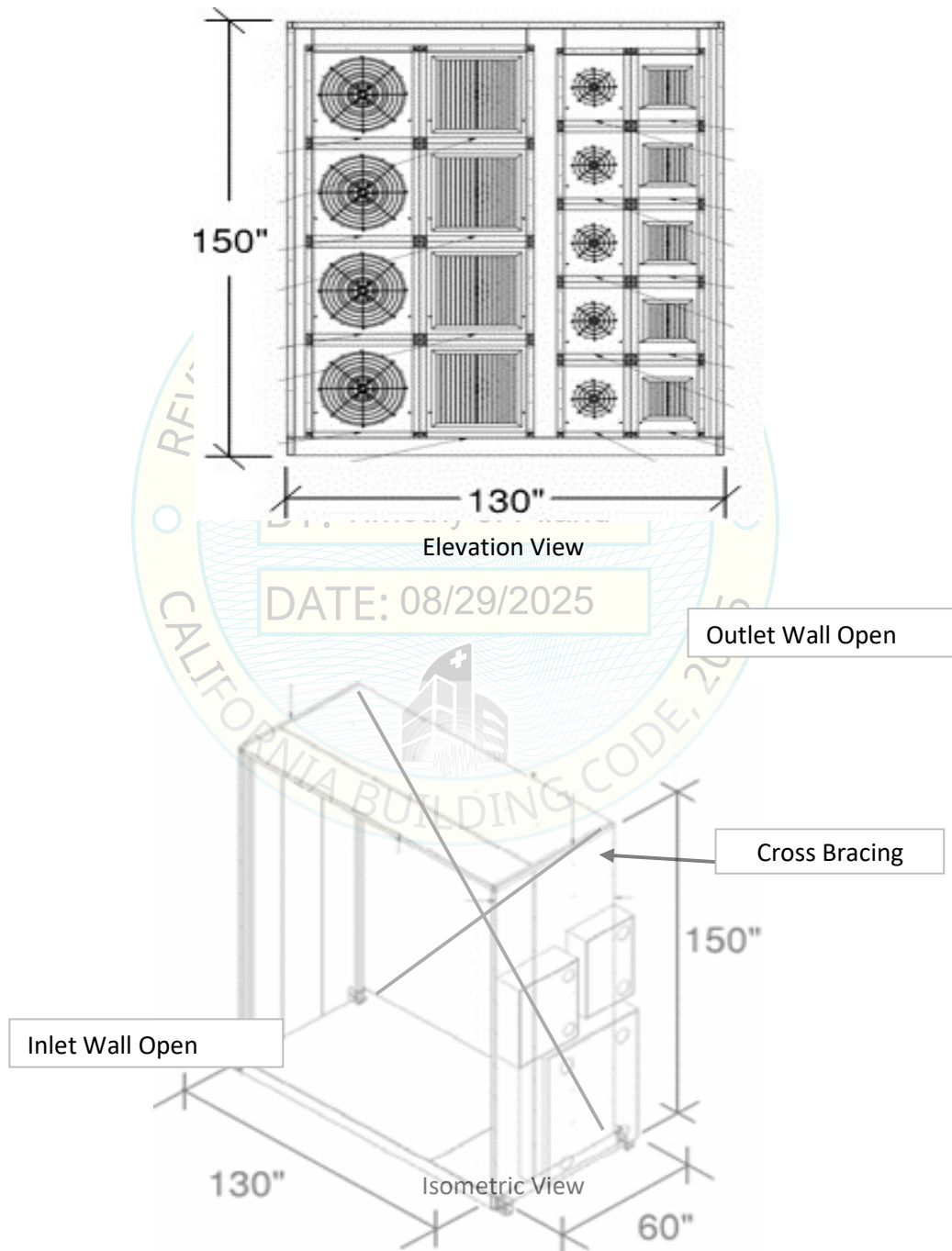
Cable Bracing

3/8" galvanized steel cables with 1/4" A36 brackets
 (10) 28Dx22Wx27H fan cells with 10" wheel (2W x 5H configuration) without extended coplanar
 (4) 34Dx34Wx34H fan cells with 22" wheel (1W x 4H configuration) without extended coplanar
 (4) 51Dx34Wx34H fan cells with 22" wheel (1W x 4H configuration) with extended coplanar

UUT 1

Test Report# 13379 Rev. 1 (UUT1)

Unit Drawings



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2a

Test Report# HuntAir9293 (UUT1-Run#1)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-10K
Serial Number: 2097-01

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.34	0.54
2.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96.25	96	96	7450

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.2	10.7	20.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, additional details listed below.

UUT Mounting Details:



All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using twelve (12) 1/2"-13 Grade 5 hex head bolts (3 bolts per side) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

(4) Walls in place with 2-heat transfer coils

List of Included Subcomponents

Heat Transfer Coil: Heat Transfer Coil (HT1): Huntair, 7 FPI, 1 row, aluminum, staggered mounting - qty. 2 (40"x8"x85.5"); Heat Transfer Coil (HT2): Huntair, 6 FPI, 12 rows, copper, stacked mounting - qty. 2 (83"x17.5"x40.5"); Humidifier: Mfg. Vapac (8"x24"x24"); Electrical Control Panel: NEMA1 (20"x56"x78"), ABB ACH550 150 HP VFD, Yaskawa E7 150 HP VFD; Damper: Huntair HD6 (8"x48"x30"); Louver: Huntair HL (6"x26"x60"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; Disconnect Switch & Circuit Breaker; Fuse Holder & Fuse; Distribution Block; Contactor; MSP; Transformer; VFD

Construction Details

Wall/Roof: Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner
Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor **Door:** (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 12.5(W) x 61.5(H) no window.

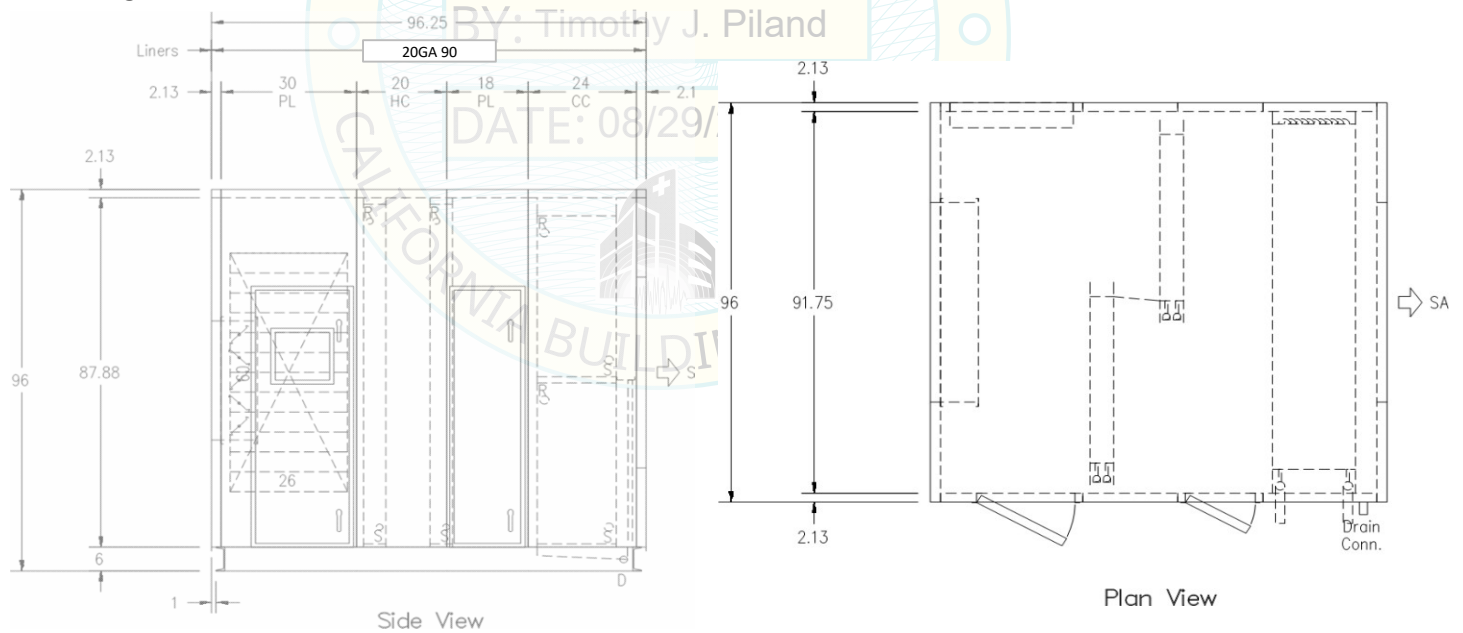
UUT 2a

Test Report# HuntAir9293 (UUT1-Run#1)

UUT Image No. 2



Unit Drawings

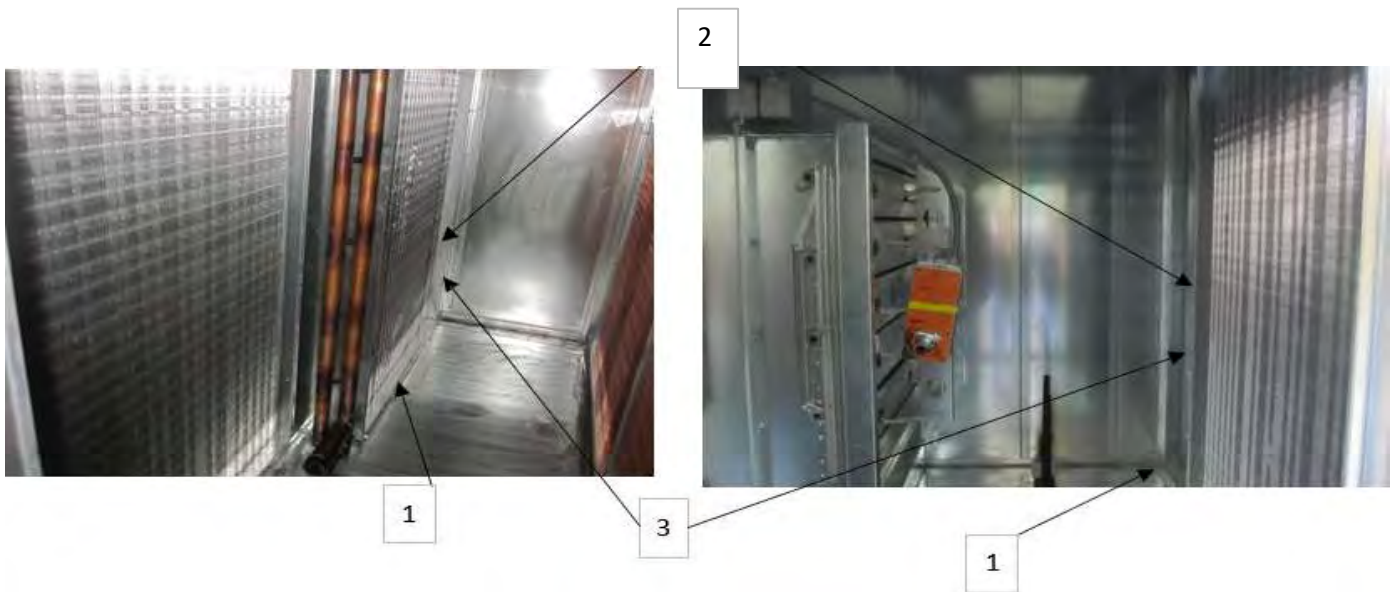


UUT 2a

Test Report# HuntAir9293 (UUT1-Run#1)

Coils Support Details:

(7) 0.188" Rivets at bottom of each coil, (6) 0.188 Rivets at top of each coil, (2) 2-16ga. C-channel stiffeners each side of coil (8- total), (3) #14x1" screws at 7-5/8" o.c. max spacing along each c-channel stiffener.



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2b

Test Report# HuntAir9293 (UUT1-Run#2)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-10K
Serial Number: 2097-01

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.34	0.54
2.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96.25	96	96	7450

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.2	10.7	20.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using twelve (12) 1/2"-13 Grade 5 hex head bolts (3 bolts per side) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Filter Rack: Type 8, 4" pre-filter, 12" final filter (12"x92"x88"); Humidifier: Mfg. Vapac (8"x24"x24"); Electrical Control Panel: NEMA3R (12"x36"x48"), PLC, ABB ACH320 1,20 HP VFD's, Yaskawa V1000 1,10,20 HP VFD's; Damper: Huntair HD6 (8"x48"x30"); Louver: Huntair HL (6"x26"x60"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; Disconnect Switch & Circuit Breaker; Fuse Holder & Fuse; Distribution Block; Power Supply; Transformer; Reactor; Transducer/Display; PLC Controls

Construction Details

Wall/Roof: Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner
Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor
Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 12.5(W) x 61.5(H) no window.



UUT 2b

UUT Image No. 2

[illegible]

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3a

Test Report# HuntAir9293 (UUT2-Run#3)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.34	0.54
2.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); Electrical Control Panel: NEMA12 (16"x28"x42"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Disconnect Switch & Circuit Breaker; MSP; Transformer

Construction Details

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; **Base:** Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; **Door:** (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window.

UUT 3a

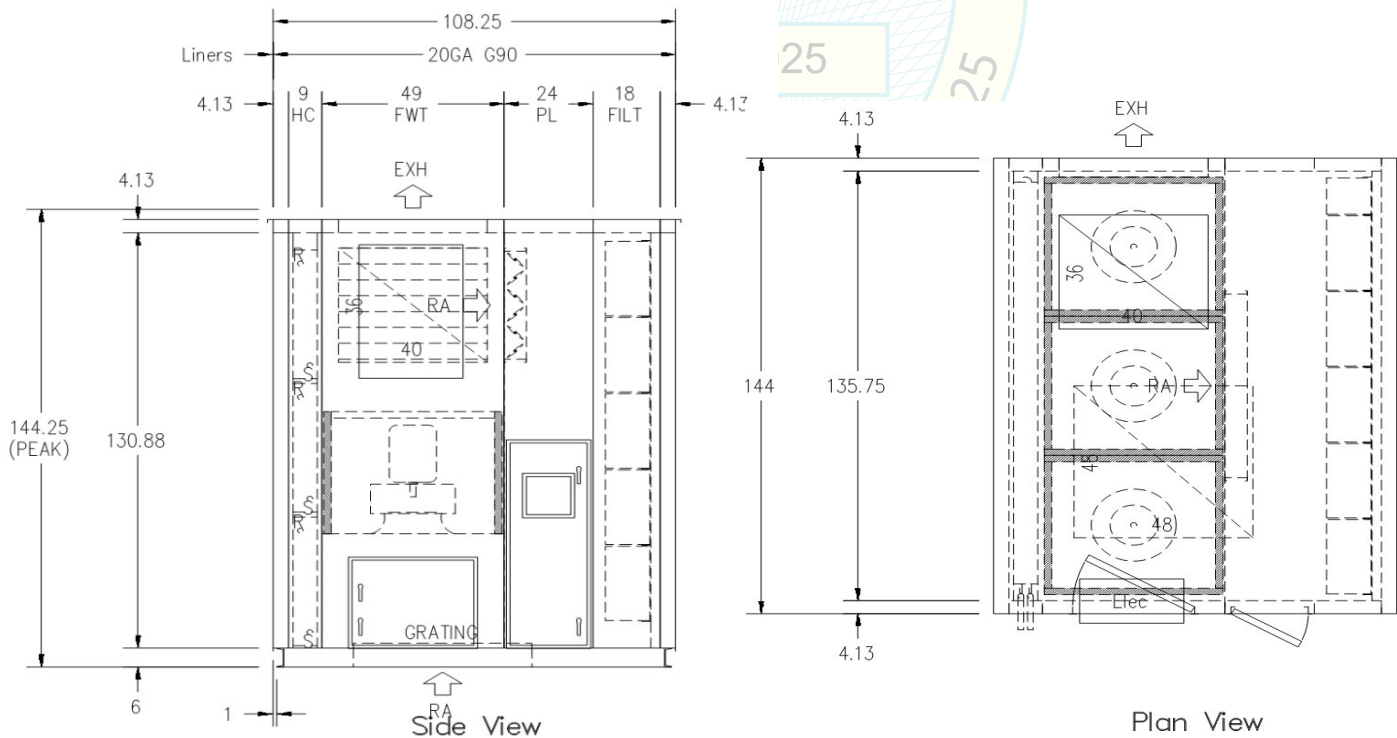
Test Report# HuntAir9293 (UUT2-Run#3)

UUT Image No. 2



Unit Drawings

BY: Timothy J. Piland



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3b

Test Report# HuntAir9293 (UUT2-Run#4)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.34	0.54
2.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.0	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

Inlet wall removed, cable bracing at filter rack.

List of Included Subcomponents

Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); MSP Enclosure: NEMA4X (10"x16"x16"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Terminal Block

Construction Details

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; **Base:** Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; **Door:** (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window; Cable Bracing: 3/8" galvanized steel cables with 1/4" A36 brackets.

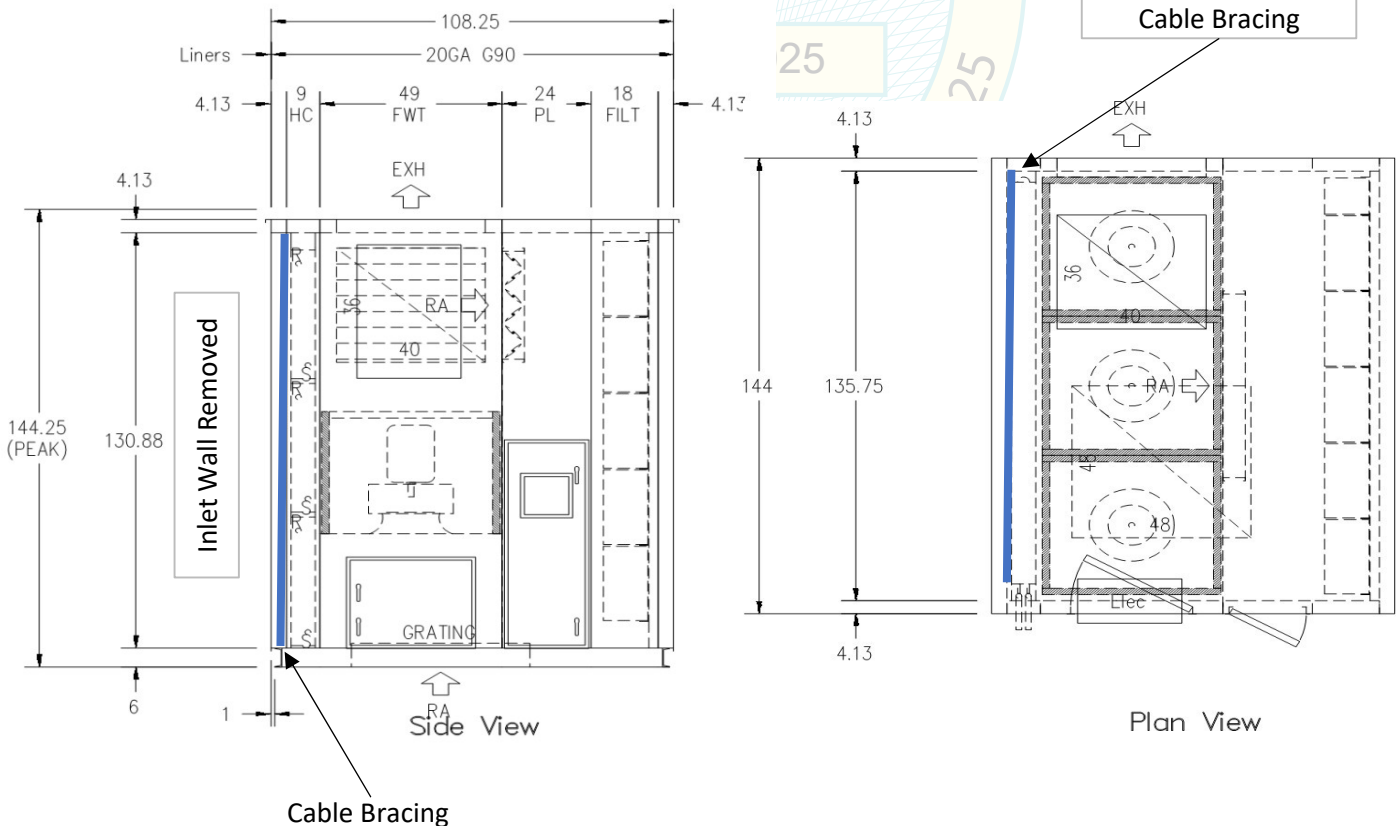
UUT 3b

Test Report# HuntAir9293 (UUT2-Run#4)

UUT Image No. 2 & No. 3



Unit Drawings



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4a

Test Report# HuntAir9293 (UUT3-Run#9)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-40K
Serial Number: 2097-03

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.34	0.54
2.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	240	144	11600

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.7	3.9	14.1

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



Four (4) walls in place

All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using sixteen (16) 1/2" - 13 grade 5 hex head bolts (8 bolts per both exterior sides) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Fanwall: 29 fans, 10" and 22" carbon steel wheels, horizontal standard 5 cell(W) x 7 cell(H), welded/riveted cells, back draft dampers, 1 HP and 20 HP Siemens motors (34"x212"x131"); Filter Rack: 4" pre-filter, 12" final filter, type 8 (12"x236"x140"); Enclosure: NEMA3R (6"x24"x24") Terminal blocks; Damper: Ruskin CD50 (8"x100"x120"), Huntair HD6 (8"x100"x120"); Actuator: Belimo AF24-MFT, Seimens GCA131.1P, Seimens GCA226.1U; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Disconnect Switch & Circuit Breaker; MSP

Construction Details

Wall/Roof: Standard 4" Panels, 0.080" aluminum exterior with 0.063" solid aluminum liner, 0.080" solid aluminum blankoff; **Base:** 6" Aluminum structural tubing, 0.125" aluminum floor liner with 0.063" aluminum base liner; **Door:** 2" thick, 12.5(W) x 61.5(H) no window.

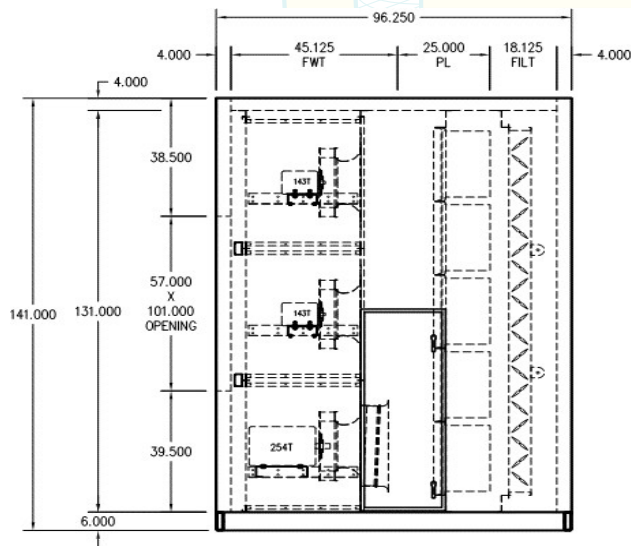
UUT 4a

Test Report# HuntAir9293 (UUT3-Run#9)

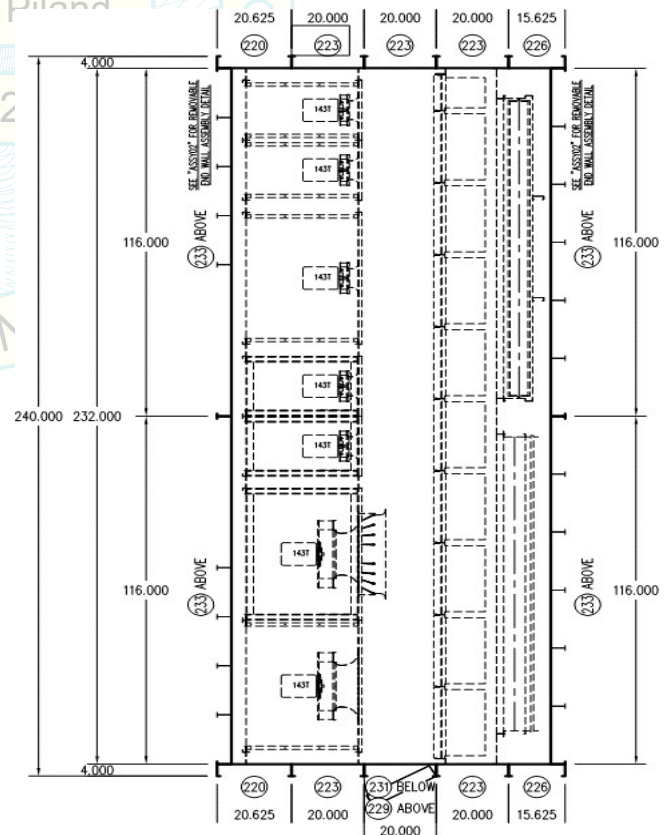
UUT Image No. 2



Unit Drawings



Elevation View



Plan View

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5

Test Report# 1700754-TR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-20k STM/DX
Serial Number: 0120-01

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.67	0.67
2.5	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
138	244	160	24400

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.3	6	13.1

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



Four (4) walls in place

All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using twelve (12) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Louver: AML6 Louver (6"x36"x60"), AML3 Louver (3"x100"x120"), Damper: SD50 Smoke Damper (5"x33"x57"), SD50 Smoke Damper (5"x96"x120"), AMS050 Damper (15"x48"x96"), AMS050 Damper (15"x24"x36"), Fan Motor: 22" P200 ECMI 6kW, 12" P200 ECMI 3.4kW, 22" P200 Toshiba 15hp motor, UV Lights: UVR UV Lights, Coils: Huntair DX Coil (8.5"x 150"x45"), Huntair DX Coil (8.5"x56"x45"), Luvata DX Coil (8.5"x 150"x45"), Luvata DX Coil (8.5"x56"x45"), Fanwall: 2(w) x 4(h) Gen II 22" Fan Wall, 2(w) x 4(h) Gen II 12" Fan Wall, 2(w) x 4(h) Gen II 22" Fan Wall, Fan wheels constructed of aluminum and polymer; Electrical Cabinet: Nema 1 (16"x56"x90"), Nema 1 (10"x28"x40") VFD: Danfoss 1hp and 15hp FC101 VFD; Actuator: Belimo AF120, Honeywell MS4120F; Cool Fan: Rittal 120V-240V; Power Supply ; Reactor ; Terminal Block ; VFD ; PLC Controls ; Pressure Gauge: Dwyer Magnesense MS2

Construction Details

Wall: 4" Panels 4 Variations - (A) 16 ga. stainless steel wall with 0.040" aluminum perforated liner, (B) 16 ga. galv carbon steel wall with 20 ga. galv. carbon steel solid liner, (C) 16 ga. stainless steel wall with 20 ga. stainless steel solid liner, (D) 16 ga. galv. carbon steel wall with 22 ga. stainless steel perforated liner, **Roof:** inner - 16 ga. stainless steel, outer - 16 ga. galv. carbon steel, sloped roof. **Base:** 12" tall stainless structural tubing, 12 ga. galv. carbon steel skin with 16 ga. galv. carbon steel liner and 16 ga. carbon steel subfloor.

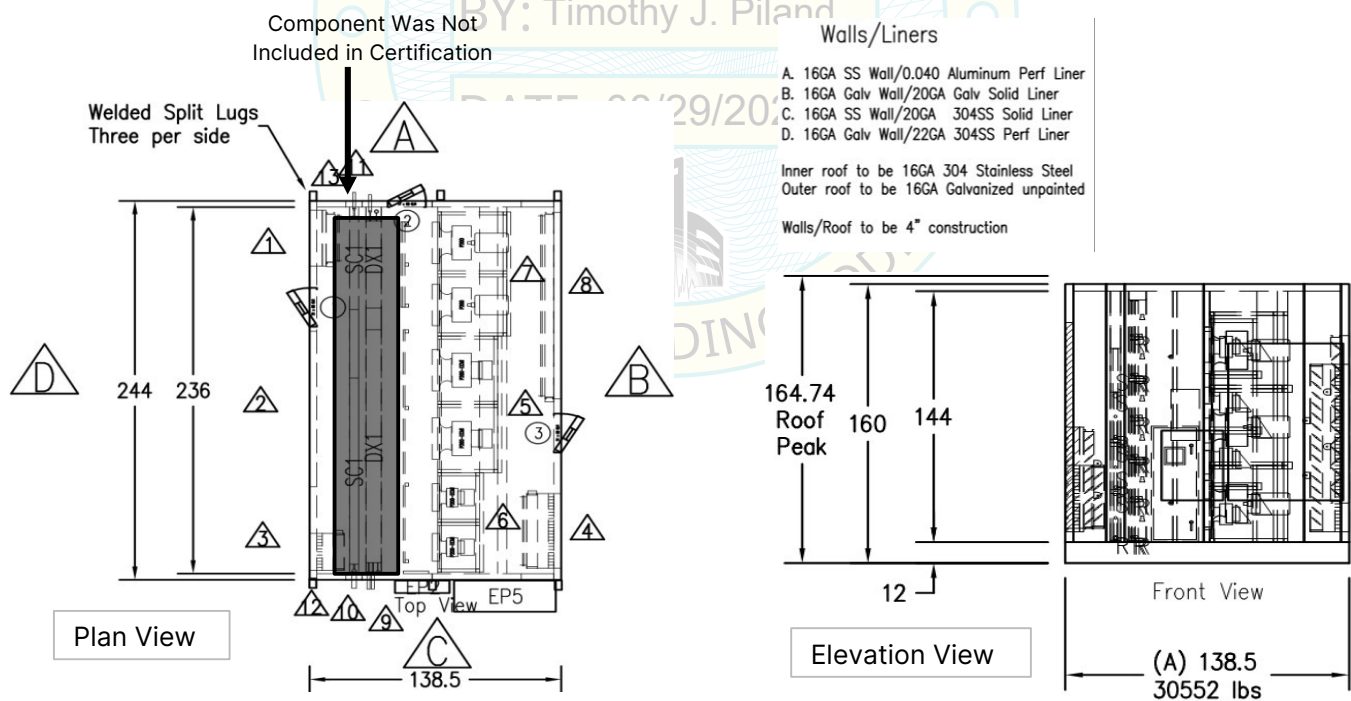
UUT 5

Test Report# 1700754-TR-001-R2

UUT Image No. 2



Unit Drawings



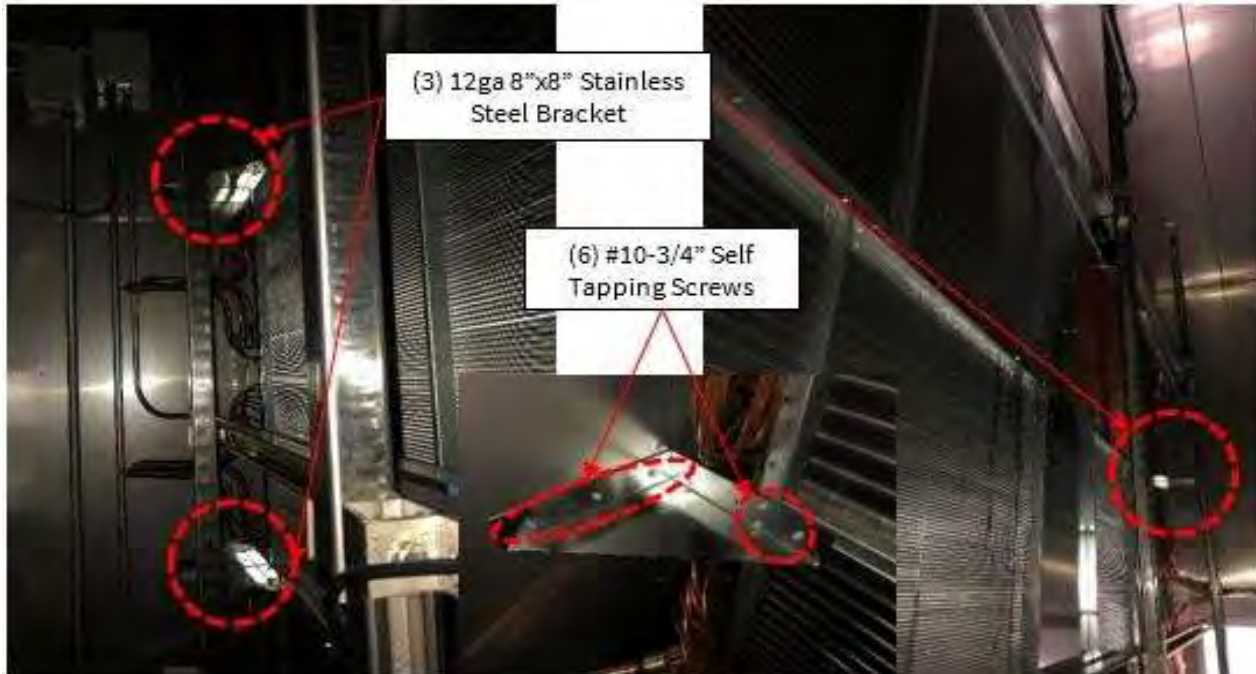
Note: Steam coil is not certified.

UUT 5

Test Report# 1700754-TR-001-R2

Seismic Upgrades Implemented:

The seismic upgrade for UUT5 consisted of mounting (3) 12 ga. 8"x8" stainless steel brackets to the wall and coil rack using (6) #10-3/4" self tapping screws. (2) were mounted to the rear of the unit, and (1) mounted to the front of the unit above the door.



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8

Test Report# 1801166-TR-001 R0 (UUT8)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: CSU-20K CHW
Serial Number: 000139-006

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.0	1.3	3.5	1.5	3.20	2.15	1.67	0.67
2.5	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
130	204	135	14762

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.5	9.8	10.97

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel, more details listed below.

UUT Mounting Details:



All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using fourteen (14) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

Four (4) walls in place, no internal bracing.

List of Included Subcomponents

Chilled Water Coil: 12 FPI, 10 row, copper, stacked mounting - qty. 1 (48"Hx184"Wx15"D); 12 FPI, 10 row, aluminum, stacked mounting - qty. 1 (63"Hx184"Wx15"D); Damper: Ruskin CD 50 (60"x120"); Louver: Huntair (60"Wx120"H), Ruskin ELF6375DX (60"Wx120"H); Pressure Gage: Dwyer Photohelic 3001; Electrical Panel: NEMA1; Actuator: AFBUP-S

Construction Details

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner. **Base:** 8" carbon steel structural tubing, 16 ga. galv. carbon steel base skin with 20 ga. galv. carbon steel liner. **Door:** (1) 4" thick, 24"(W) x 64"(H) no window.

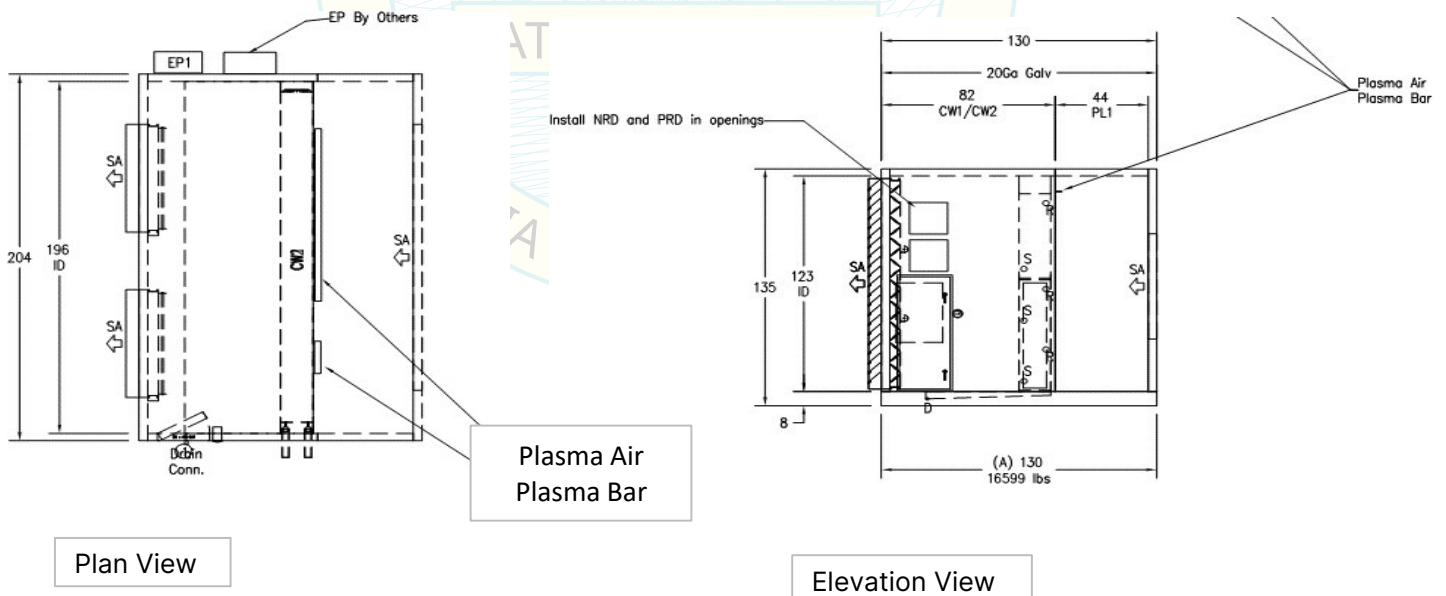
UUT 8

Test Report# 1801166-TR-001 R0 (UUT8)

UUT Image No. 2



Unit Drawings

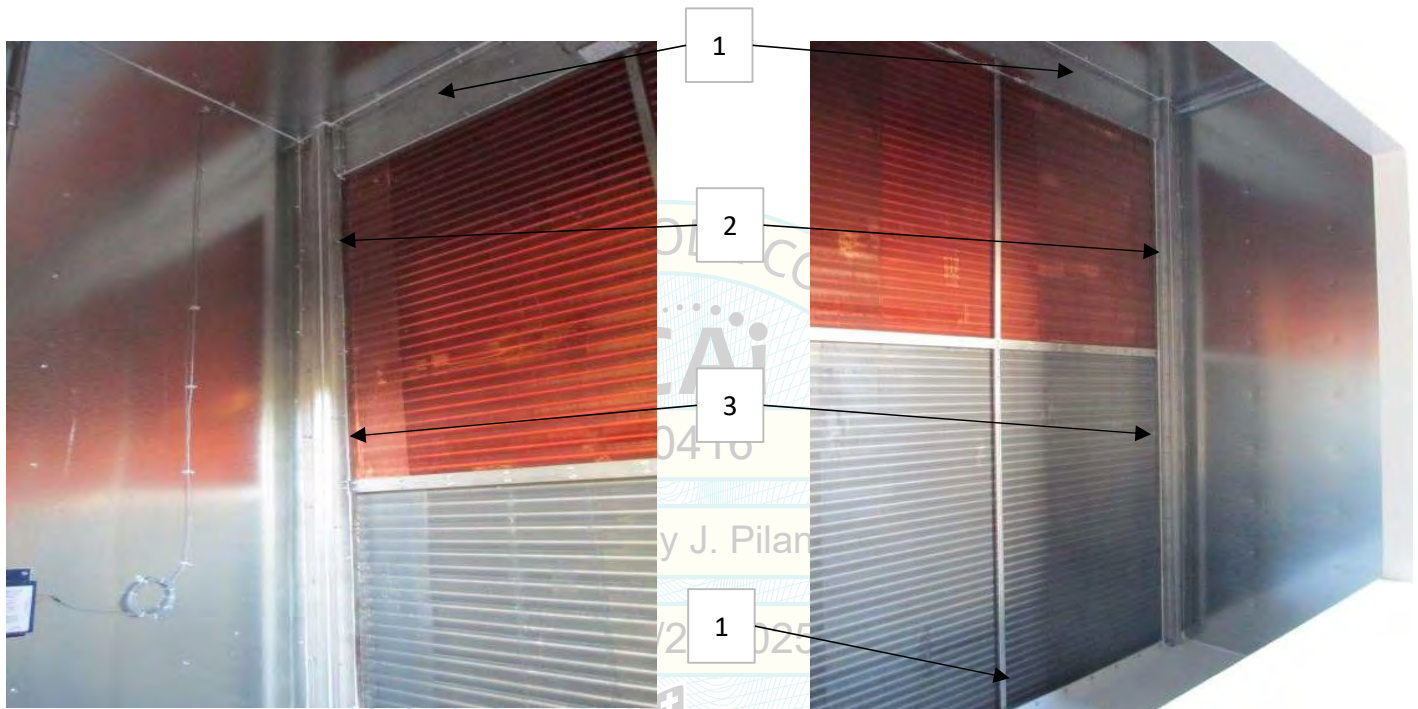


UUT 8

Test Report# 1801166-TR-001 R0 (UUT8)

Seismic Upgrades Implemented (required for large coils as defined in Table 5):

- (1) 1/4"-14 screws top and bottom of coil at 10" o.c. max spacing, (2) 2-12ga. c-channel stiffeners¹ each side of coil, (3) 1/4"-14, screws at 10" o.c. max spacing along each c-channel stiffener



Notes:

¹Stainless steel c-channels tested, stiffener channels may also be constructed of carbon steel

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 9

Test Report# 1801194-TR-001 R0 (UUT9)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: 3X2 Fanwall Retrofit
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.20	1.3	3.5	1.5	3.52	2.36	2.35	0.95
3.52	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
57	88	134	3363

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.6	4.4	19.4

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Alumuminum Extruded members, more details listed below.

UUT Mounting Details:



Unit was attached to base fixture with (54) #12 Sheet Metal Screws

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Fan Wheel: 22" Aluminum and Polymer fan wheels; Motor: NAS 6kW, ECMI 6HP, Baldor 15HP, Toshiba 15HP; VFD: ABB ACH550 150HP, ABB ACH580 150HP, Danfoss FC101 125HP, Yaskawa Z1000 125HP, NAS 9.5HP & 10HP, Siemens 3HP & 10HP, Schneider ATV 212 10HP

Construction Details

Fan Cells: 2x2 aluminum extruded members, coplanar and extended coplanar panels are 0.040" aluminum and 22 ga. Stainless steel sheet-solid and perforated. (6) 57Dx44Wx44H fan cells with 22" wheel (2Wx3H configuration) with extended coplanar

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 10

Test Report# 1801194-TR-001 R0 (UUT10)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: 5X2 Fanwall Retrofit
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.20	1.3	3.5	1.5	3.52	2.36	2.35	0.95
3.52	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
28	50	137	1824

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.6	4.3	18.9

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Alumuminum Extruded members, more details listed below.

UUT Mounting Details:



Unit was attached to base fixture with (48) #12 Sheet Metal Screws

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

ECMI 2.5HP; VFD: ABB ACH550 3HP, ABB ACH580 3HP, ABB ACS320 1HP, Danfoss FC101 1HP, Yaskawa V1000 1HP, Yaskawa Z1000 3HP, NAS 1HP & 1.5HP & 3HP & 3.5HP, Schneider ATV 212 1HP

Construction Details

Fan Cells: 2x2 aluminum extruded members, coplanar and extended coplanar panels are 0.040" aluminum and 22 ga. Stainless steel sheet-solid and perforated.(10) 28Dx25Wx27H fan cells with (2) 10" wheels and (8) 12" wheels (2Wx5H configuration) without extended coplanar

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 11a

Test Report# 1801194-TR-001 R0 (UUT11a)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 4
Serial Number: N/A

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.10	1.3	3.5	1.5	3.36	2.26	1.47	0.59
2.2	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
18	56	86	982.5

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



Unit was attached to wall fixture with (8) 3/8" Grade 8 Bolts. Wall fixture was isolated with (4) Mason Industry SSLFH-C-1750 spring isolators.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

VFD: Danfoss FC101 1HP, Danfoss VLT 150HP, Yaskawa Z1000 3HP & 25HP; Disconnect Switch & Circuit Breaker: Siemens 400A Circuit Breaker; Circuit Breaker: Eaton 16A & 20A; Fuse Holder and Fuse: Bussman 15A, 30A, and 60A; Distribution Block: Marathon 665A; Contactor: Siemens 150A; MSP: Siemens 14A to 20A; Power Supply: Siemens 2.5A; Transformer: Micron; PLC Controls: Siemens Controller, Expansion Module; Thermostat: Pfennenberg; Transducer: Dwyer, Huntair/Setra; Cool Fan: Hoffman

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 11b

Test Report# 1801194-TR-001 R0 (UUT11b)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 4
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.23	1.3	3.5	1.5	3.56	2.4	1.82	0.73
2.73	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
18	56	86	982.5

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

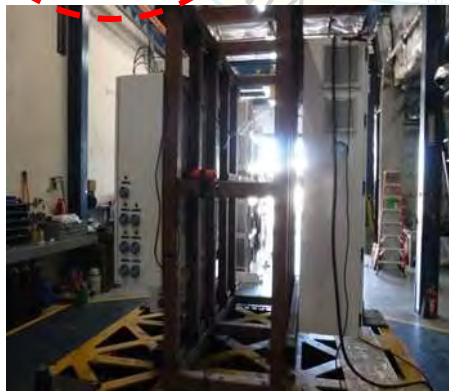
Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



Unit was attached to wall fixture with (8) 3/8" Grade 8 Bolts. Wall fixture was rigidly attached to shake table.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

VFD: Danfoss FC101 1HP, Danfoss VLT 150HP, Yaskawa Z1000 3HP & 25HP; Disconnect Switch & Circuit Breaker: Siemens 400A Circuit Breaker; Circuit Breaker: Eaton 16A & 20A; Fuse Holder and Fuse: Bussman 15A, 30A, and 60A; Distribution Block: Marathon 665A; Contactor: Siemens 150A; MSP: Siemens 14A to 20A; Power Supply: Siemens 2.5A; Transformer: Micron; PLC Controls: Siemens Controller, Expansion Module; Thermostat: Pfennenberg; Transducer: Dwyer, Huntair/Setra; Cool Fan: Hoffman

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 12a

Test Report# 1801194-TR-001 R0 (UUT12a)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 1
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.10	1.3	3.5	1.5	3.36	2.26	1.47	0.59
2.20	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
20	56	86	1032

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



Unit was attached to wall fixture with (8) 3/8" Grade 8 Bolts. Wall fixture was isolated with (4) Mason Industry SSLFH-C-1750 spring isolators.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

VFD: NAS 1HP, 3HP, & 10HP; Disconnect Switch & Circuit Breaker: Siemens 60A Disconnect and Circuit Breaker; Circuit Breaker: Eaton 16A; Fuse Holder and Fuse: Bussman 5A, 10A, 100A, & 200A; Distribution Block: Marathon 175A; Power Supply: Eaton 5A and 10A Output; Transformer: Micron; Reactor: TCI 14A; Terminal Block: Phoenix 15A, 30A, & 30A Grounding Terminals; PLC Controls: Siemens Power Supply, Controller, Touch Screen, Communication Module; Thermostat: Pfennenberg; Cool Fan: San Ace 172

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 12b

Test Report# 1801194-TR-001 R0 (UUT12b)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 1
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.23	1.3	3.5	1.5	3.56	2.40	1.82	0.73
2.73	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
20	56	86	1032

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

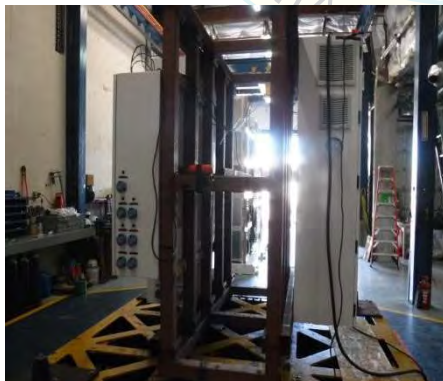
Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



Unit was attached to wall fixture with (8) 3/8" Grade 8 Bolts. Wall fixture was rigidly attached to shake table.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

VFD: NAS 1HP, 3HP, & 10HP; Disconnect Switch & Circuit Breaker: Siemens 60A Disconnect and Circuit Breaker; Circuit Breaker: Eaton 16A; Fuse Holder and Fuse: Bussman 5A, 10A, 100A, & 200A; Distribution Block: Marathon 175A; Power Supply: Eaton 5A and 10A Output; Transformer: Micron; Reactor: TCI 14A; Terminal Block: Phoenix 15A, 30A, & 30A Grounding Terminals; PLC Controls: Siemens Power Supply, Controller, Touch Screen, Communication Module; Thermostat: Pfennenberg; Cool Fan: San Ace 172

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 13a

Test Report# 1801194-TR-001 R0 (UUT13a)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 4
Serial Number: N/A

Highest Passed Test Level

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.10	1.3	3.5	1.5	3.36	2.26	1.47	0.59
2.20	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
14	38	54	403.5

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



Unit was attached to wall fixture with (6) 3/8" Grade 8 Bolts. Wall fixture was isolated with (4) Mason Industry SSLFH-C-1750 spring isolators.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

VFD: ABB ACH550 3HP & 150HP, ABB ACS320 1HP & 20HP, Yaskawa V1000 1HP, Yaskawa Z1000 20HP; Disconnect Switch & Circuit Breaker: Siemens 300A Circuit Breaker, Eaton 16A & 400A Non-fused Disconnect; Circuit Breaker: Eaton 10A; Fuse Holder and Fuse: Bussman 1A & 400A; Distribution Block: Marathon 310A, 380A; Contactor: Siemens 7A; MSP: Siemens 1.8A to 2.5A, Siemens 14A to 20A; Power Supply: Siemens 10A; Transformer: Micron; Reactor: TCI 185A; Terminal Block: Phoenix 15A; PLC Controls: Siemens Power Supply; Thermostat: Pfennenberg; Transducer: Dwyer; Cool Fan: Hoffman, San Ace 172; HMI Screen: Niagara; Expander: Niagara; Controller: Niagara; Contact Switch: Phoenix

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 13b

Test Report# 1801194-TR-001 R0 (UUT13b)

Manufacturer: Nortek Air Solutions, LLC
Model Line: Fanwall Technology™
Model Number: Electrical Panel - NEMA 4
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_{μ}	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.23	1.3	3.5	1.5	3.56	2.4	1.82	0.73
2.73	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
14	38	54	403.5

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

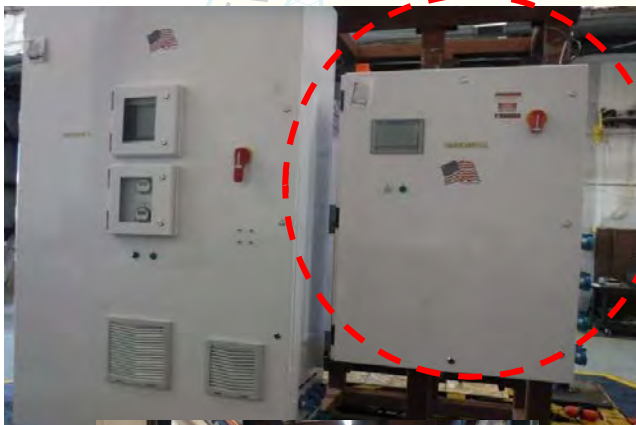
Test Criteria

ICC-ES AC156

Construction/Option Summary

Stainless Steel Enclosure (12 Gage)

UUT Mounting Details:



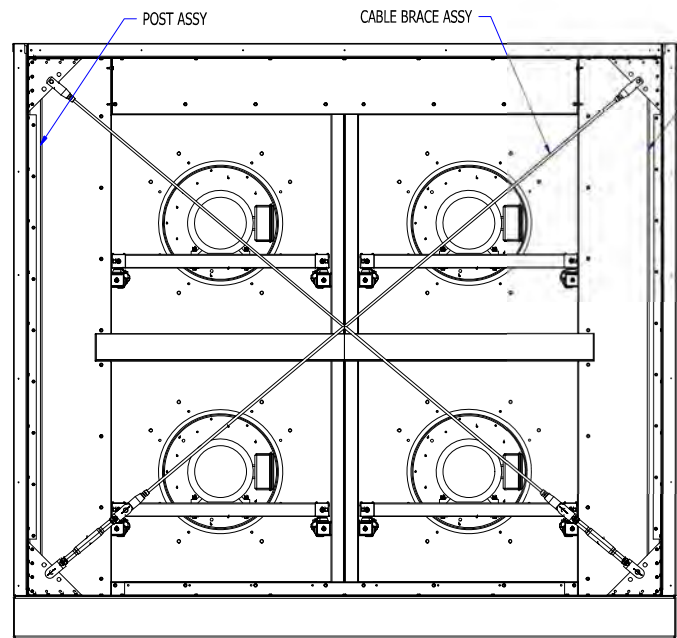
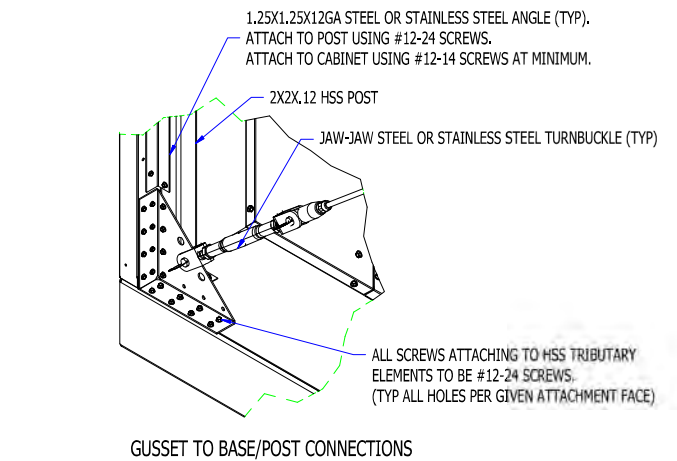
Unit was attached to wall fixture with (6) 3/8" Grade 8 Bolts. Wall fixture was rigidly attached to shake table.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

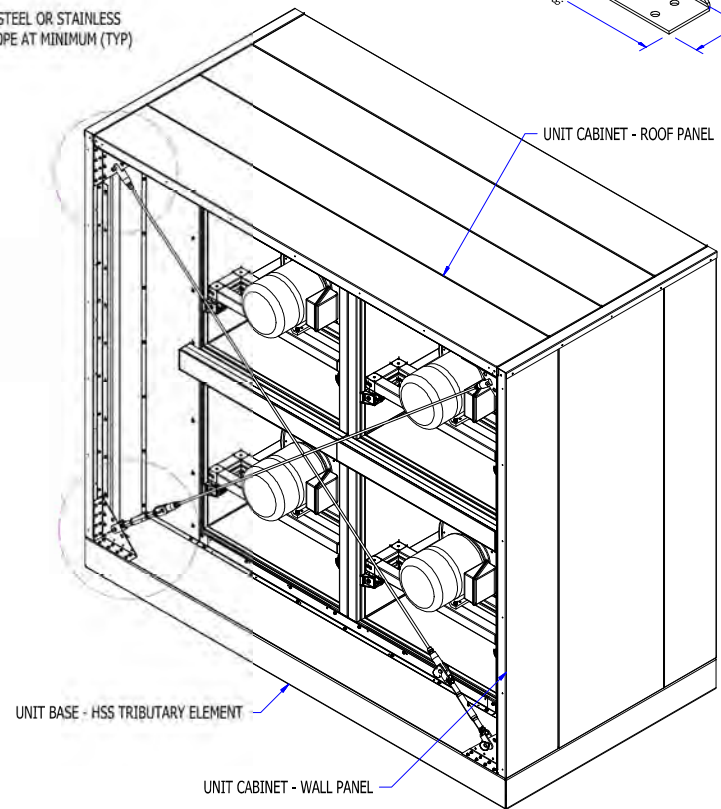
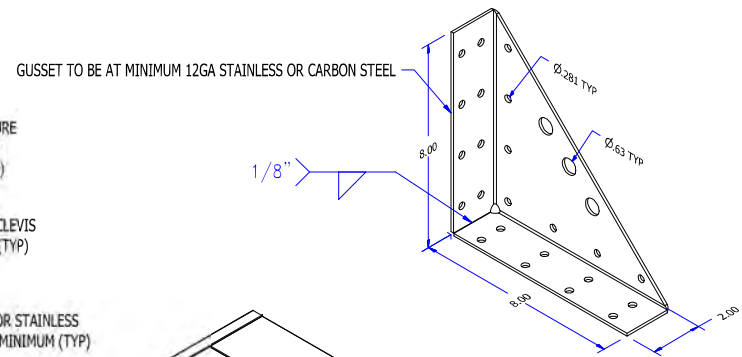
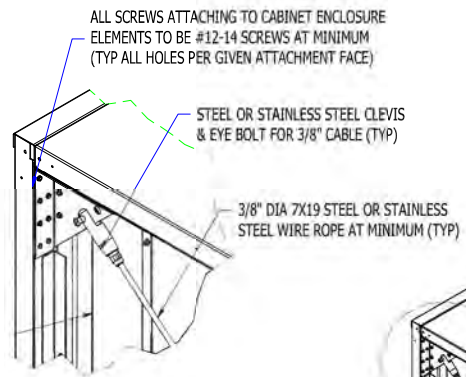
List of Included Subcomponents

VFD: ABB ACH550 3HP & 150HP, ABB ACS320 1HP & 20HP, Yaskawa V1000 1HP, Yaskawa Z1000 20HP; Disconnect Switch & Circuit Breaker: Siemens 300A Circuit Breaker, Eaton 16A & 400A Non-fused Disconnect; Circuit Breaker: Eaton 10A; Fuse Holder and Fuse: Bussman 1A & 400A; Distribution Block: Marathon 310A, 380A; Contactor: Siemens 7A; MSP: Siemens 1.8A to 2.5A, Siemens 14A to 20A; Power Supply: Siemens 10A; Transformer: Micron; Reactor: TCI 185A; Terminal Block: Phoenix 15A; PLC Controls: Siemens Power Supply; Thermostat: Pfennenberg; Transducer: Dwyer; Cool Fan: Hoffman, San Ace 172; HMI Screen: Niagara; Expander: Niagara; Controller: Niagara; Contact Switch: Phoenix

BRACING REQUIRED FOR GEN II FANWALL TECHNOLOGY™ ONLY.

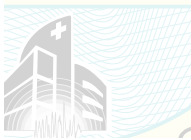


DISCHARGE VIEW



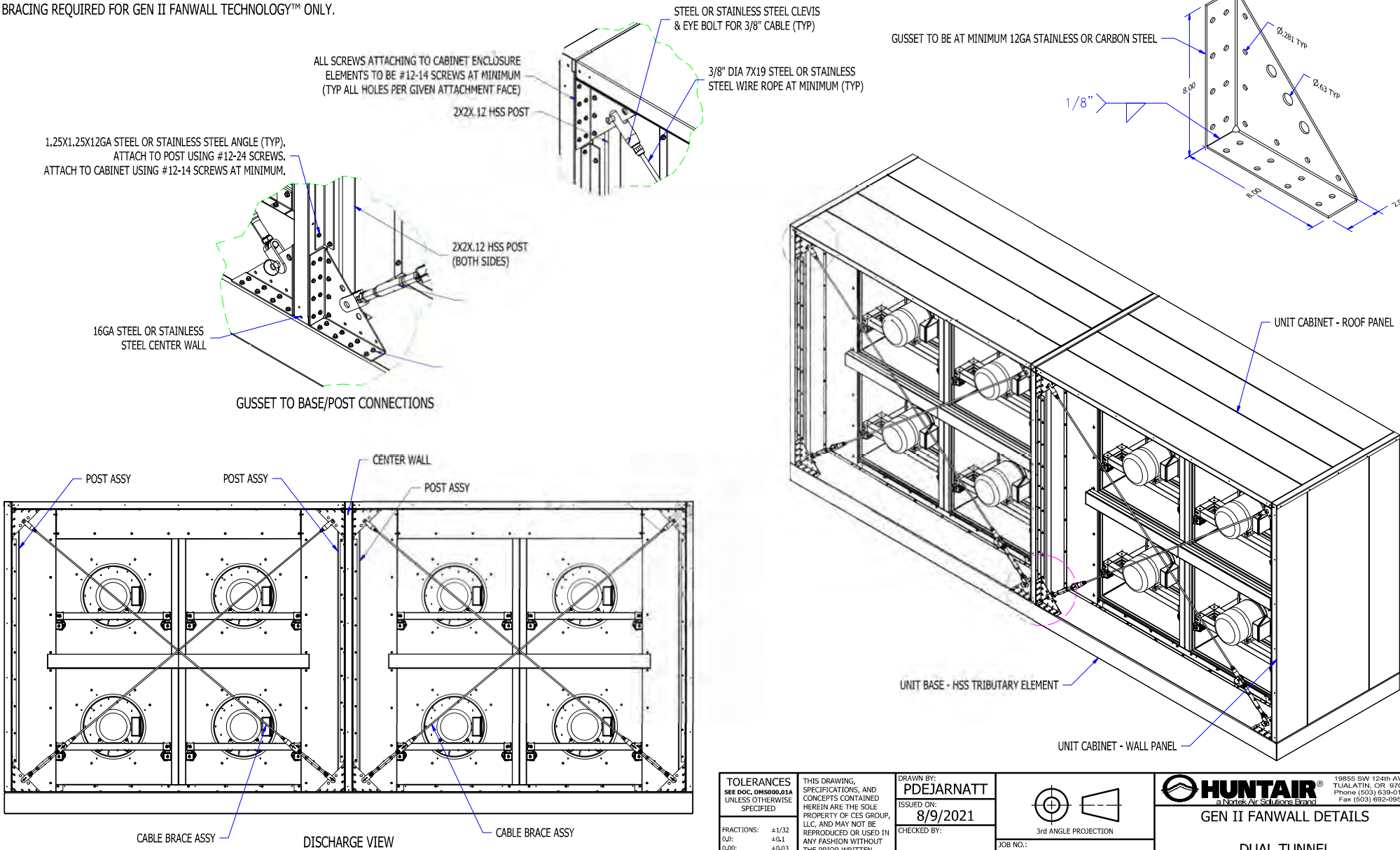
OS
BY: Tim

08/29/2025



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		ISSUED ON: 8/9/2021			
		CHECKED BY:			
FRACTIONS: ±1/32 0.0: ±0.1 0.00: ±0.03 0.000: ±0.010 ANGLES: ±0.5°		PART NO.:	JOB NO.:	SINGLE TUNNEL	REV: Page 54 of 55
		FILE NAME:			
1 of 1					

DUAL TUNNEL REQUIRED WHEN CABINET O.D. IS WIDER THEN 130".
BRACING REQUIRED FOR GEN II FANWALL TECHNOY™ ONLY.



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		ISSUED ON: 8/9/2021				
		CHECKED BY:				
		PART NO.:				
FRACTIONS: ±1/32			JOB NO.:	GEN II FANWALL DETAILS		
0.0: ±0.1			FILE NAME:	DUAL TUNNEL		
0.00: ±0.03				REV: 5/15/21		
0.000: ±0.010				Page 55 of 57		
ANGLES: ±0.5°				1 of 1		

08/20/2021

OSP-0416