



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-0243

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Johnson Controls

Manufacturer's Technical Representative: Jeff Ronald

Mailing Address: 100 JCI Way, York, PA 17406

Telephone: (717) 309-7503 Email: jeffrey.joseph.ronald@jci.com

Product Information

Product Name: York Custom YC / Miller-Picking MP Air Handling Units

Product Model Number(s): See Attachment

Product Category: Air Conditioning Units

Product Sub-Category: Air Conditioning Units - Custom

General Description: Custom sized and configured air handling units.

Mounting Description: Base Mounted Rigid

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: Manwill Engineering LLC

Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102 Email: derek@manwillse.com

Title: President



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

Company Name: MANWILL ENGINEERING LLC

Name: Derek Manwill

California License Number: S6266

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.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: Jim Wilcoski

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

Telephone: (217) 373-4565

Email: james.wilcoski@usace.army.mil

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Josh Sailer

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085

Email: josh@shaketest.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

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Company Name: UNIVERSITY OF BUFFALO (SEESL)

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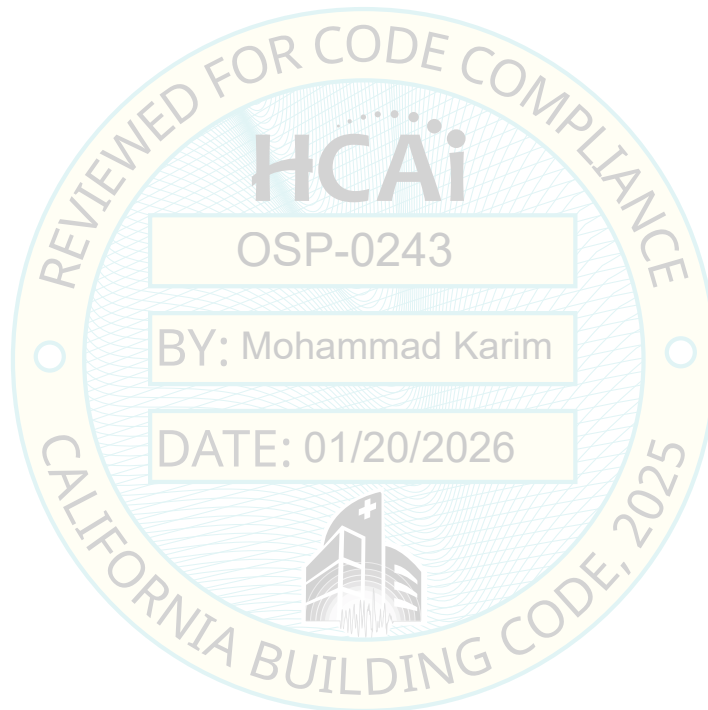
Company Name: TWIN CITY FAN COMPANIES LABORATORY

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Seismic Parameters

Certified Response Spectral Acceleration Factors: (F_p/W_p)

Horizontal (A Flx-H), $g =$ 3.09 (A Rig-H), $g =$ 2.08

Vertical (A Flx-V), $g =$ 1.29 (A Rig-V), $g =$ 0.52

SDS (Design spectral response acceleration at short period, g) = 1.93

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

R_u (Structure ductility reduction factor) = 1 @ $z/h = 0$; 1.3 @ $z/h = 1$

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

HCAI Approval (For Office Use Only) - Approval Expires on 01/20/2032

Date: 1/20/2026

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Condition of Approval (if applicable): _____

OSP-0243

BY: Mohammad Karim

DATE: 01/20/2026

JOHNSON CONTROLS York Custom YC / Miller-Picking MP Air Handling Units

TABLE 1

Mounting: Base Mounted Rigid.	S_{DS} (g)	H_f / R_μ	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Dimensions: Depth = Length in direction of airflow. Width = Total cabinet width including walls, external mounted subcomponents not included. Height = Total cabinet height including base. Maximum dimensions refer to shipping split dimensions and/or dimensions between walls or seismic braces. Maximum width between lines of anchor brackets is 144in for all configuration types.

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.

Unit Configuration: Maximum tributary length allowed for a single wall/brace is 144in, provided that intermediate transverse subcomponents attached to the floor, ceiling, and sidewalls (see Tables 3-16) are spaced no more than 72in apart. A double wall or double seismic brace at a shipping split is required every 288in in the interior of the unit. Large openings have a maximum tributary length of 72in, provided that an intermediate transverse subcomponent attached to the floor, ceiling, and sidewalls (see Tables 3-16) is located within 72in of the opening. A single wall is allowed between vestibule and air tunnel, but the 144in maximum spacing between exterior walls and anchor lines must be kept. Total distributed weight of section surrounded by walls or seismic braces must not exceed 93psf.

Roof/Wall Construction: 2in (min) roof panels, 3in or 4in wall panels; exterior skin is CS 18GA (min); interior liner is CS 22GA (min) or SS 20GA (min); 16GA carbon steel internal channels; foam insulation.

Wall Openings: Large centered opening may be up to 124in x 124in or 86% of height and width of tunnel (whichever is less), provided that an intermediate transverse subcomponent attached to the floor, ceiling, and sidewalls (see Tables 3-16) is located within 72in of the opening. A structural wall or bracing must be spaced at 144in maximum from large openings at the inlet or outlet. Walls with small openings located in the middle third of width and height may be spaced 288in maximum from seismic bracing or another structural wall with small openings, provided that intermediate transverse subcomponents attached to the floor, ceiling, and sidewalls (see Tables 3-16) are spaced no more than 72in apart.

Base Construction: 6in - 12in welded structural carbon steel channel frame; stitch or continuous welded 16GA CS or SS flat or 0.125in AL or SS tread floor; foam insulation.

Subcomponents: Units may have any combination of subcomponents from the following tables.

Abbreviations: CS = carbon steel, SS = stainless steel, AL = aluminum, CU = copper.

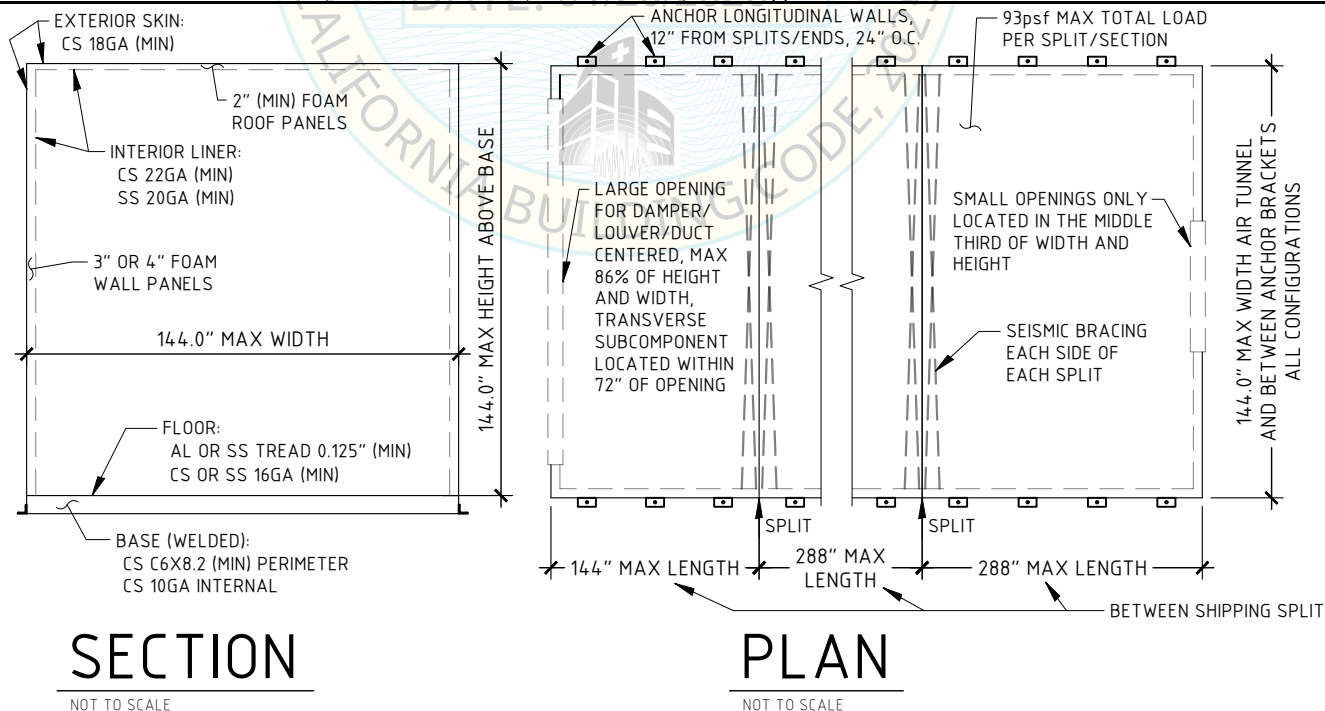


TABLE 1 continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 1 (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
York Custom YC / Miller-Picking MP Air Handling Units - Fully Enclosed						
YC/MP-30x36	36.0	36.0	36.0	1,107	123psf	EXTRAP
...	...	...	...	...		EXTRAP
YC/MP-90x96	96.0	96.0	96.0	4,988	78psf	UUT 1
Roof/Walls: 2in panels, 20GA SS skin, 20GA SS liner, fiberglass. Base: 6in frame, 0.125in SS tread floor. Curb: 14in tall.						
YC/MP-139x144	171.0	144.0	147.0	12,800	75psf	UUT 6
Roof/Walls: 3in panels, 20GA CS skin, 0.05in AL liner, foam. Base: 8in frame, 16GA CS floor.						
YC/MP-144x144	144.0	144.0	150.0	9,100	63psf	UUT 7
Roof/Walls: 4in panels, 20GA CS skin, 22GA SS liner, foam. Base: 6in frame, 16GA CS floor.						
YC/MP-138x144	96.0	144.0	144.0	9,810	102psf	UUT 2A
Roof/Walls: 4in panels, 0.04in Al skin, 20GA SS liner, mineral wool. Base: 6in frame, 12GA SS floor.						
YC/MP-144x144	171.0	144.0	152.0	21,200	124psf	UUT 5
Roof/Walls: 3in panels, 16GA SS skin, 16GA SS liner, foam. Base: 8in frame, 0.125in AL tread floor.						
YC/MP-144x144	198.0	144.0	152.0	24,300	123psf	UUT 4
Roof/Walls: 3in panels, 16GA SS skin, 22GA CS liner, foam. Base: 8in frame, 16GA SS floor.						
York Custom YC / Miller-Picking MP Air Handling Units - Inlet, Outlet, & Side Removed, With Bracing						
YC/MP-30x36	36.0	36.0	36.0	441	49psf	EXTRAP
...	...	...	...	...		EXTRAP
YC/MP-132x144	144.0	144.0	144.0	7,120	49psf	UUT 3C
Roof/Walls: 2in panels, 20GA CS skin, 22GA CS liner, foam. Base: 12in frame, 10GA CS floor.						
York Custom YC / Miller-Picking MP Air Handling Units - Inlet & Side Removed, With Bracing						
YC/MP-30x36	36.0	36.0	36.0	667	74psf	EXTRAP
...	...	...	...	...		EXTRAP
YC/MP-134x144	96.0	144.0	144.0	7,100	74psf	UUT 2C
Roof/Walls: 2in panels, 0.04in AL skin, 0.05in perf. AL liner, fiberglass/foam. Base: 10in frame, 0.125in CS floor.						
York Custom YC / Miller-Picking MP Air Handling Units - Inlet & Outlet Removed, With Bracing						
YC/MP-30x36	36.0	36.0	36.0	837	93psf	EXTRAP
...	...	...	...	...		EXTRAP
YC/MP-136x144	144.0	144.0	144.0	11,100	77psf	UUT 3B
Roof/Walls: 3in panels, 20GA CS skin, 20GA perf. CS liner, fiberglass/foam. Base: 8in frame, 10GA CS floor.						
YC/MP-143x144	288.0	144.0	151.0	26,800	93psf	UUT 13
Roof/Walls: 3in panels, 18GA CS skin, 22GA CS & 20GA SS liner, foam. Base: 8in frame, 16GA CS stitch welded floor.						
York Custom YC / Miller-Picking MP Air Handling Units - Inlet & Outlet Large Openings, No Bracing						
YC/MP-30x36	36.0	36.0	36.0	918	102psf	EXTRAP
...	...	...	...	...		EXTRAP
YC/MP-115x60	81.0	60.0	121.0	3,720	110psf	UUT 14
Roof/Walls: 2in panels, 18GA CS skin, 22GA CS liner, foam. Base: 6in frame, 16GA CS stitch welded floor.						
YC/MP-150x144	144.0	144.0	156.0	11,712	81psf	UUT 11
Roof/Walls: 3in panels, 18GA CS skin, 22GA CS liner, foam. Base: 6in frame, 16GA CS stitch welded floor.						
YC/MP-150x144	144.0	144.0	156.0	9,725	68psf	UUT 12
Roof/Walls: 3in panels, 18GA CS skin, 22GA CS liner, foam. Base: 6in frame, 16GA CS stitch welded floor.						
YC/MP-150x144	144.0	144.0	156.0	14,616	102psf	UUT 10
Roof/Walls: 3in panels, 18GA CS skin, 22GA CS liner, foam. Base: 6in frame, 16GA CS stitch welded floor.						

End of TABLE 1. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 2 (Only Used for Subcomponents)

Mounting: Base mounted rigid.	S_{DS} (g)	H_f / R_μ	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Notes: The models shown in this table are used only to qualify various subcomponents installed inside. The models are similar construction YC/MP and XT/PA AHUs. Mounting of the subcomponents is identical in the YC models listed in Table 1.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
York Custom YC / Miller-Picking MP & Solution XT / PACE Air Handling Units						
YC/MP-138x183	125.0	183.0	146.0	6,732	42psf	UUT 8
Roof/Walls: 2in panels, 20GA SS & 0.04in AL skin, 20GA SS & 20GA perf. SS & 0.05in AL & 0.05in perf. AL liner, foam & fiberglass. Base: 8in frame, 16GA CS floor.						
XT/PA-033x039	105.0	39.0	33.0	1,100	39psf	UUT XT2
Roof/Walls: 2in panels, 20GA CS skin, 20GA CS liner, foam. Base: 2in CS panels. Curb: 24-in tall.						
XT/PA-027x030	99.0	30.0	27.0	1,100	53psf	UUT XT4
Roof/Walls: 2in panels, 20GA CS skin, 20GA CS liner, foam. Base: 2in CS panels. Curb: 24-in tall.						
XT/PA-027x030-Stacked	62.0	30.0	54.0	830	64psf	UUT XT15
Roof/Walls: 2in panels, 20GA CS skin, 20GA CS liner, foam. Base: 2in CS panels.						
XT/PA-090x120	71.0	120.0	90.0	3,000	51psf	UUT XT18
Roof/Walls: 2in panels, 20GA CS skin, 20GA CS liner, foam. Base: 2in CS panels.						
XT/PA-120x114	100.0	114.0	126.0	7,030	89psf	UUT XT26
Roof/Walls: 2in panels, 20GA CS skin, 20GA CS liner, foam. Base: 6in formed, 2in CS panels.						

End of TABLE 2 (Only Used for Subcomponents). Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 3 - COILS & COOLERS

Mounting: Tunnel mounted within unit. Subcomponent is attached to the floor, ceiling, and both side walls.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Coil, Water - Mfr: Johnson Controls - Material: CU or AL fin, CU tube, CS or SS casing						
Single-7.5Hx12Wx1row	7.4	12.0	7.5	10		EXTRAP
...	...	...	...	...		EXTRAP
Single-47.5Hx127Wx12row	17.6	127.0	47.5	2,669	UUT: CU fin, CS frame	UUT 4
...	...	...	...	...		INTERP
Double-35Hx62Wx1row	7.4	62.0	35.0	149	UUT: CU fin, SS frame	UUT 1
...	...	...	...	...		INTERP
Double-78.5Hx129Wx12row	17.6	129.0	78.5	3,784	UUT: AL fin, CS frame	UUT 4
Double-78.5Hx127Wx8row	12.6	127.0	78.5	4,600		INTERP
...	...	...	...	...		INTERP
Triple-126.75Hx127Wx8row	12.6	127.0	126.8	7,429	UUT: CU fin, SS frame	UUT 5
...	...	...	...	...		INTERP
Triple-132.75Hx127Wx12row	17.6	127.0	132.8	7,341	UUT: AL fin, SS frame	UUT 13
Type: Coil, Steam - Mfr: Johnson Controls - Material: AL fin, CS casing						
Single-18Hx17.5W	5.0	17.5	18.0	41		UUT 7
...	...	...	...	...		INTERP
Single-54Hx101W	5.0	101.0	54.0	353		INTERP
Double-36Hx17.5W	5.0	17.5	36.0	82		INTERP
...	...	...	...	...		INTERP
Double-108Hx101W	5.0	101.0	108.0	706		UUT 7
Type: Coil, VRF Heat Pump - Mfr: Coilmaster - Material: AL fin, CU tube, SS casing						
Single-24Hx24Wx2row	4.5	24.0	24.0	18		EXTRAP
...	...	...	...	...		EXTRAP
Single-70Hx37Wx4row	6.5	37.0	70.0	158	UUT: Single coil (bottom of stack)	UUT 13
...	...	...	...	...		INTERP
Single-70Hx70Wx6row	6.5	70.0	70.0	451	UUT: Single coil (bottom of stack)	UUT 13
...	...	...	...	...		INTERP
Double-48Hx24Wx2row	4.5	24.0	48.0	36	2-stack (24" on 24")	INTERP
...	...	...	...	...		INTERP
Double-125Hx37Wx4row	6.5	37.0	120.0	285	UUT: 2-stack (55" on 70")	UUT 13
...	...	...	...	...		INTERP
Double-125Hx70Wx6row	6.5	70.0	125.0	810	UUT: 2-stack (55" on 70")	UUT 13

TABLE 3 - COILS & COOLERS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 3 - COILS & COOLERS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Coil, Air to Air Heat Pipe - Mfr: Colmac - Material: AL fin, CS casing						
Single-15Hx24Wx2row	2 row	24.0	15.0	49		UUT 1
...	...	...	...	...		INTERP
Single-60Hx120Wx5row	5 row	120.0	60.0	1,468		INTERP
Double-30Hx24Wx2row	2 row	24.0	30.0	98		INTERP
...	...	...	...	...		INTERP
Double-119Hx120Wx5row	5 row	120.0	119.0	2,936		UUT 2A
Type: Evaporative Cooler - Mfr: Premier Industries - Material: SS framing, GLASdek media						
24Hx24W	26.0	24.0	24.0	364		UUT 1
...	...	...	...	...		INTERP
130Hx130W	26.0	130.0	130.0	3,732		UUT 2C
Type: Humidifier - Mfr: Johnson Controls - Material: SS, see mounting note						
23Hx23W	1 row	23.0	23.0	25		EXTRAP
...	...	...	...	...		EXTRAP
23Hx126W	1 row	126.0	23.0	95		UUT 6
...	...	...	...	...		INTERP
120Hx126W	1 row	126.0	120.0	430		UUT 6

End of TABLE 3 - COILS & COOLERS. Notes, information, and seismic parameters are shown at the beginning of the table.

DATE: 01/20/2026

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 4 - HEATERS

Mounting: Tunnel mounted within unit. Subcomponent is attached to the floor, ceiling, and both side walls	S_{DS} (g)	H_f / R_μ	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Heater, Electric - Mfr: Indeeco						
30x30 - 15kW	8.0	30.0	30.0	280		EXTRAP
...	...	...	...	...	...	EXTRAP
121x101 - 78kW	8.0	121.0	101.0	2,700	UUT: 18in controller	UUT 13
...	...	...	...	...	...	INTERP
121x101 - 225kW	8.0	121.0	101.0	2,800	UUT: 36in controller	UUT 13
Type: Heater, Gas, HDA-B-CW - Mfr: Heatco						
HDA150-B-CW	62.2	30.6	21.0	210		EXTRAP
...	...	...	...	...	...	EXTRAP
HDA600-B-CW	62.2	30.6	47.0	496		EXTRAP
Type: Heater, Gas, HDB-C-CW - Mfr: Heatco						
HDB180-C-CW	95.9	21.8	28.9	165		EXTRAP
...	...	...	...	...	...	EXTRAP
HDB400-C-CW	95.9	21.8	35.4	385		UUT 12
...	...	...	...	...	...	INTERP
HDB600-C-CW	95.9	24.3	48.4	490		INTERP
Type: Heater, Gas, HDB-HHP, Stacked - Mfr: Heatco						
HDB-HHP-180-360-O	95.6	53.9	40.7	763	2 x 180 = 360	INTERP
...	...	...	...	...	...	INTERP
HDB-HHP 1250-5000-O	100.5	84.1	117.7	3,595	UUT: 4 x 1250 = 5000	UUT 10

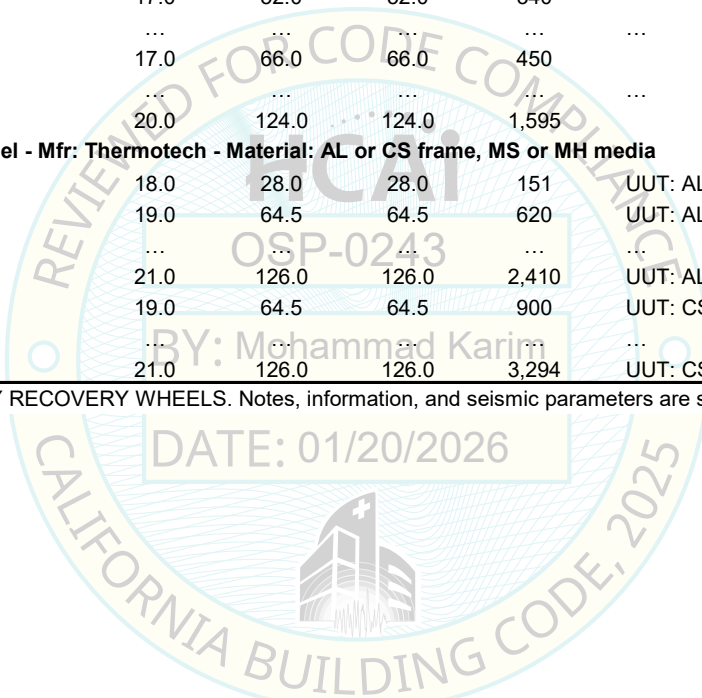
End of TABLE 4 - HEATERS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 5 - ENERGY RECOVERY WHEELS

Mounting: Tunnel mounted within unit. Subcomponent is attached to the floor, ceiling, and both side walls.	S _{DS} (g)			H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93			3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93			1.0 / 1.0					
Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.									
Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis			
	Depth	Width	Height						
Type: Energy Recovery Wheel - Mfr: Innergy Tech - Material: AL frame, MS media									
I4-MS3A-48	17.0	52.0	52.0	340		EXTRAP			
...	...	...	...	...	...	EXTRAP
I4-MS3A-62	17.0	66.0	66.0	450		UUT 13			
...	...	...	...	...	...	INTERP
I4-MS3A-120	20.0	124.0	124.0	1,595		UUT 13			
Type: Energy Recovery Wheel - Mfr: Thermotech - Material: AL or CS frame, MS or MH media									
TC-14-A	18.0	28.0	28.0	151	UUT: AL frame, MS media	UUT 1			
TF-81-A	19.0	64.5	64.5	620	UUT: AL frame	INTERP			
...	...	...	...	...	...	INTERP
TF-359-A	21.0	126.0	126.0	2,410	UUT: AL frame, MS media	UUT 12			
TF-81-S	19.0	64.5	64.5	900	UUT: CS frame, MS media	UUT 12			
...	...	...	...	...	...	INTERP
TF-359-S	21.0	126.0	126.0	3,294	UUT: CS frame, MH media	UUT 2A			

End of TABLE 5 - ENERGY RECOVERY WHEELS. Notes, information, and seismic parameters are shown at the beginning of the table.



JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 6 - UV LIGHTS & AIR FILTERS

Mounting: Tunnel mounted within unit. Subcomponent is attached to the floor, ceiling, and both side walls. See note below.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Flat Filter & UV System Mounting: Attached only to the floor and ceiling. Extrapolated widths must maintain similar construction as tested units with top/bottom connections.

HEPA/Type 8 Individual Filter Mounting: Mounted within Type 8/HEPA filter frame.

HEPA/Type 8 Individual Filter Weight: Listed weight is for an individual filter and does not include the holding frame, which is part of the filter frame.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Subcomponents weighing less than 10-lb may be substituted per CBC 1705A.14.3.1 Exception 7, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: UV Light System, V-MAX Grid - Mfr: Johnson Controls & UVDI - Material: CS or SS Frame, see mounting note						
48Hx28W	9.0	28.0	48.0	40		EXTRAP
...	...	...	...	...		EXTRAP
144Hx97W	9.0	97.0	144.0	350	UUT: SS, 61", 21" bulbs	UUT S4.1
144Hx97W	9.0	97.0	144.0	350	UUT: CS, 61", 21" bulbs	UUT S4.2
Note: Attached only to floor and ceiling. Extrapolated widths must maintain similar construction as tested units with top/bottom connections.						
Type: Filter Frame, Universal Type 8 & HEPA - Mfr: Johnson Controls - Material: CS, SS, or AL Frame						
30Hx30W	1 row	30.0	30.0	90		EXTRAP
...	...	...	...	...		EXTRAP
130Hx140W	1 row	140.0	130.0	750	UUT: Type 8 - mixed CS, SS, & AL	UUT 2C
...	...	...	...	...		INTERP
136Hx179W	1 row	179.0	136.0	790	UUT: Mixed Type 8, HEPA - CS	UUT 8
...	...	...	...	...		INTERP
130Hx140W	1 row	140.0	130.0	1,600	UUT: HEPA - mixed CS, SS	UUT 2C
Type: Filter Frame, Angle - Mfr: Johnson Controls - Material: CS or SS Frame						
27Hx30W	1 row	30.0	27.0	33		EXTRAP
...	...	...	...	...		EXTRAP
141Hx138W	1 row	138.0	141.0	650	UUT: CS	UUT 4
141Hx138W	1 row	138.0	141.0	650	UUT: SS	UUT 5
Type: Filter Frame, Flat - Mfr: Johnson Controls - Material: CS or SS Frame, see mounting note						
27Hx30W	1 row	30.0	27.0	15		EXTRAP
...	...	...	...	...		EXTRAP
130Hx58W	1 row	58.0	130.0	170	UUT: CS	UUT 2C
130Hx58W	1 row	58.0	130.0	170	UUT: SS	UUT 2C

Note: Attached only to floor and ceiling. Extrapolated widths must maintain similar construction as tested units with top/bottom connections.

TABLE 6 - UV LIGHTS & AIR FILTERS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 6 - UV LIGHTS & AIR FILTERS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Air Filter, AstroCel I/MEGAcel I HEPA - Mfr: American Air Filter						
24Hx12W	11.5	12.0	24.0	25	UUT: MEGAcel I	UUT 2C
...	...	...	...	...		INTERP
24Hx24W	11.5	24.0	24.0	40	UUT: AstroCel I, MEGAcel I	UUT 2C
Type: Air Filter, RigidAir - Mfr: American Air Filter						
24Hx12W	11.5	12.0	24.0	12		UUT 2C
...	...	...	...	...		INTERP
24Hx24W	11.5	24.0	24.0	19		UUT 2C
Type: Air Filter, Multi-Cell - Mfr: Koch Filter						
24Hx12W-SH	12.0	12.0	24.0	8	UUT: Single header	UUT 8
...	...	...	...	...		INTERP
24Hx24W-SH	12.0	24.0	24.0	10	UUT: Single header	UUT 8
24Hx12W-DH	12.0	12.0	24.0	18	UUT: Double header	UUT 8
...	...	...	...	...		INTERP
24Hx24W-DH	12.0	24.0	24.0	20	UUT: Double header	UUT 8
Type: Air Filter, BioMAX HEPA HC - Mfr: Koch Filter						
24Hx12W	12.0	12.0	24.0	40		UUT 8
...	...	...	...	...		INTERP
24Hx24W	12.0	24.0	24.0	45		UUT 8
Type: Air Filter, DuraMAX - Mfr: Koch Filter						
24Hx12W	12.0	12.0	24.0	8		UUT 8
...	...	...	...	...		INTERP
24Hx24W	12.0	24.0	24.0	10		UUT 8
Type: Air Filter, DuraPURE - Mfr: Koch Filter						
24Hx12W	12.0	12.0	24.0	32		UUT 8
...	...	...	...	...		INTERP
24Hx24W	12.0	24.0	24.0	41		UUT 8
Type: Air Filter, DuraKLEEN - Mfr: Koch Filter						
24Hx12W	12.0	12.0	24.0	32		UUT 8
...	...	...	...	...		INTERP
24Hx24W	12.0	24.0	24.0	41		UUT 8
Type: Air Filter, HMB V-Bank - Mfr: UVDI						
24Hx12W	12.0	12.0	24.0	30		UUT 8
...	...	...	...	...		INTERP
24Hx24W	12.0	24.0	24.0	30		UUT 8

End of TABLE 6 - UV LIGHTS & AIR FILTERS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 7 - FAN ARRAYS

Mounting: Tunnel mounted within unit. Subcomponent is attached to the floor, ceiling, and both side walls. See note below.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Fan Array Dimensions & Weights: Values are for a single column of the fan array. Extrapolated widths (and repeated columns) must maintain similar construction as tested units with top/bottom connections.

Individual Fan in Fan Array Dimensions & Weights: Values are for a single fan.

Individual Fan in Fan Array Mounting: The fan face attaches to fan array wall structure, and the fan rear is supported by the fan array wireway structure.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Electric motors may be substituted per CBC 1705A.14.3.1 Exception 5, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan Array - Mfr: Johnson Controls - Material: CS; see dimensions & weights note; see Table 3.1 for fans						
1-tall-30H, Size 250 Fan	10.5	22.1	27.0	184		EXTRAP
...	...	...	...	...		EXTRAP
5-tall-140H, Size 310 Fan	11.5	45.4	150.0	872	UUT: EG1R-480-310-A26/A29	UUT 11
5-tall-140H, Size 310 Fan	13.8	22.1	140.0	920	UUT: EG1R-480-310-35/135	UUT 7
5-tall-140H, Size 310 Fan	11.7	23.3	140.0	950	UUT: GR31C	UUT 7
...	...	...	...	...		INTERP
4-tall-150H, Size 500 Fan	16.7	45.4	150.0	972	UUT: EG1R-480-500-A26/A29	UUT 11
4-tall-144H, Size 500 Fan	23.9	68.4	144.0	1,137	UUT: EG1R-480-500-B26/29	UUT 13
...	...	...	...	...		INTERP
3-tall-144H, Size 560 Fan	25.2	68.6	144.0	1,105	UUT: EG1R-480-560-B26/29	UUT 13
3-tall-140H, Size 630 Fan	18.7	36.7	140.0	1,200	UUT: GR63C	UUT 7
3-tall-140H, Size 630 Fan	27.7	33.5	140.0	1,600	UUT: K3G630-AS05-01T	UUT 7
...	...	...	...	...		INTERP
3-tall-150H, Size 630 Fan	21.2	46.4	150.0	1,012	UUT: EG1R-480-630-A26/A29	UUT 11

TABLE 7 - FAN ARRAYS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 7 - FAN ARRAYS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan in Array, Cube - Mfr: EBM-Papst - Material: CS housing, AL wheel						
K3G630-AS05-01T	27.7	29.9	29.9	381		UUT 7
Type: Fan in Array, RadiPac Cube - Mfr: EBM-Papst - Material: CS housing, AL wheel						
EG1R-480-250-12/115	10.5	15.8	15.8	22	Gen 2, 1kW	EXTRAP
EG1R-480-280-12/115	11.8	15.8	15.8	30	Gen 2, 1kW	EXTRAP
EG1R-480-310-35/135	13.8	19.7	19.7	46	UUT: Gen 2, 3kW, inlet guard	UUT 7
...	...	...	...	...	Gen 2, 3kW	INTERP
EG1R-480-560-135	20.2	30.7	30.7	130	Gen 2, 3kW	INTERP
EG1R-480-310-A26/A29	11.5	19.7	19.7	61	UUT: Gen 3, 4.5kW, inlet guard	UUT 11
...	...	...	...	...	Gen 3, 4.5kW	INTERP
EG1R-480-500-A26/A29	16.7	24.8	24.8	110	UUT: Gen 3, 4.5kW, no inlet guard	UUT 11
...	...	...	...	...	Gen 3, 4.5kW	INTERP
EG1R-480-630-A26/A29	21.2	31.5	31.5	160	UUT: Gen 3, 4.5kW, inlet guard	UUT 11
EG1R-480-450-68/165	19.1	24.8	24.8	128	Gen 2, 6kW	INTERP
...	...	...	...	...	Gen 2, 6kW	INTERP
EG1R-480-560-68/165	22.9	31.5	31.5	161	Gen 2, 6kW	INTERP
EG1R-480-450-B26/29	21.3	24.8	24.8	108	Gen 3, 8kW	INTERP
EG1R-480-500-B26/29	23.9	24.8	24.8	110	UUT: Gen 3, 8kW, inlet guard	UUT 13
EG1R-480-560-B26/29	25.2	31.5	31.5	145	UUT: Gen 3, 8kW, inlet guard	UUT 13
Type: Fan in Array - Mfr: Ziehl-Abegg - Material: CS housing, AL wheel						
GR31C	11.7	18.5	18.5	44		UUT 7
GR35C	12.5	19.7	19.7	48		INTERP
GR40C	14.6	21.7	21.7	82		INTERP
GR45C	15.7	24.8	24.8	96		INTERP
GR50C	17.8	26.4	26.4	128		INTERP
GR56C	19.1	28.7	28.7	148		INTERP
GR63C	18.7	33.1	33.1	179		UUT 7

End of TABLE 7 - FAN ARRAYS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 8 - FAN STACKS ON STANDS

Mounting: Base mounted spring vibration isolated on floor or stand. Stand is base mounted rigid. Fan face attachment to wall is flexible.	S_{DS} (g)	H_f / R_{μ}	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight is for an individual fan.

Stacking Method: Fans are stacked by mounting on a structural steel tiered stand. Direct stacking is not permitted. Bottom fan mounts directly to the floor, identical to the fans in Table 9. Fans with "single" in the description/notes must only be mounted directly on the floor (not on stand).

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Electric motors may be substituted per CBC 1705A.14.3.1 Exception 5, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan in Stack on Stand, GenII DDP - Mfr: Lau - Material: AL wheel, CS housing, CS stand						
105	17.8	15.0	15.8	140	3-stack max	EXTRAP
122	19.4	17.3	17.0	149	3-stack max	EXTRAP
135	20.0	18.4	18.3	195	3-stack max	EXTRAP
150	23.0	21.0	19.8	211	3-stack max	EXTRAP
165	23.6	22.6	21.4	231	3-stack max	EXTRAP
182	26.5	24.8	23.4	422	3-stack max	EXTRAP
182	26.5	24.8	23.4	422	UUT: 3-stack, 9-blade, 120% wheel	UUT 10,11
200	27.9	27.1	25.7	440	2-stack max	INTERP
222	31.3	30.3	28.0	462	2-stack max	INTERP
245	32.0	33.0	31.0	498	2-stack max	INTERP
270	34.3	36.6	33.3	663	2-stack max	INTERP
300	39.8	40.4	36.5	789	2-stack max	INTERP
330	41.0	43.5	38.9	1,019	2-stack max	INTERP
365	43.6	47.0	42.2	1,365	2-stack max	INTERP
365	43.6	47.0	42.2	1,365	UUT: 2-stack, 9-blade, 120% wheel	UUT 11
402	45.9	50.5	46.2	1,496	Single fan only	INTERP
402	45.9	50.5	46.2	1,496	UUT: single , 9-blade, 120% wheel	UUT 11
Type: Motor, Direct Drive, TEFC - Mfr: Baldor						
EM2333T-G	23.4	12.9	12.9	270	254T frame, 15hp	UUT 10,11
EM4115T-G	30.3	17.9	16.2	648	326T frame, 50hp	UUT 11

TABLE 8 - FAN STACKS ON STANDS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 8 - FAN STACKS ON STANDS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan in Stack on Stand, EPFN/EPQN, Direct Drive Arr. 4 - Mfr: Twin City Fan - Material: AL wheel, CS housing, CS stand						
122	25.9	20.0	20.0	319	3-stack max	EXTRAP
150	27.9	22.0	22.0	348	3-stack max	EXTRAP
165	29.2	24.0	24.0	368	3-stack max	EXTRAP
182	34.1	26.0	26.0	804	UUT: 3-stack	UUT 4
200	36.6	29.0	29.0	829	2-stack max	INTERP
222	43.8	32.0	32.0	901	2-stack max	INTERP
245	45.6	34.0	34.0	951	2-stack max	INTERP
270	49.9	38.0	38.0	1,243	2-stack max	INTERP
300	52.6	42.0	42.0	1,402	2-stack max	INTERP
330	57.8	46.0	46.0	1,857	2-stack max	INTERP
365	67.4	51.0	51.0	2,671	UUT: 2-stack	UUT 5
402	70.3	56.0	56.0	2,845	Single fan only	INTERP
445	73.9	62.0	62.0	3,259	Single fan only	INTERP
490	77.4	68.0	68.0	3,481	UUT: single fan	UUT 3C
Type: Motor, Direct Drive, ODP - Mfr: Baldor						
EM2583T-4	39.7	23.8	22.7	1,455	444T frame, 100hp	UUT 3C
Type: Motor, Direct Drive, TEFC - Mfr: TECO						
NP0054G	15.8	9.4	9.2	95	184T frame, 5hp	UUT 4
NP0306G	31.2	16.5	16.3	652	326T frame, 30hp	UUT 5

End of TABLE 8 - FAN STACKS ON STANDS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 9 - SINGLE FLOOR MOUNT FANS

Mounting: Base mounted spring vibration isolated on floor (no stands or stacking). Fan face attachment to wall is flexible.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight is for an individual fan.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Electric motors may be substituted per CBC 1705A.14.3.1 Exception 5, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan, EPF/EPQ, Belt Drive Arr. 3 - Mfr: Twin City Fan - Material: AL or CS wheel, CS housing						
122	25.9	20.0	20.0	412	UUT: AL wheel	UUT 1
150	27.9	22.0	22.0	639		INTERP
165	29.2	24.0	24.0	774		INTERP
182	34.1	26.0	26.0	995		INTERP
200	36.6	29.0	29.0	1,179		INTERP
222	43.8	32.0	32.0	1,303		INTERP
245	45.6	34.0	34.0	1,351		INTERP
270	49.9	38.0	38.0	2,185		INTERP
300	52.6	42.0	42.0	2,538		INTERP
330	57.8	46.0	46.0	2,632		INTERP
365	67.4	51.0	51.0	3,033		INTERP
402	70.3	56.0	56.0	3,246		INTERP
445	73.9	62.0	62.0	3,807		INTERP
490	77.4	68.0	68.0	3,918	UUT: AL wheel in UUT 3C EPFN	INTERP
542	87.9	76.0	76.0	4,945	CS wheel only	INTERP
600	93.4	76.0	76.0	5,256	UUT: CS wheel	UUT 3B
Type: Motor, Belt Drive, ODP - Mfr: Baldor						
EM3120T	14.4	6.6	6.8	33	143T frame, 1.5hp	UUT 1
EM2558T-4	39.7	23.8	22.7	1,528	444T frame, 150hp	UUT 3B
Type: Fan, EPLFN/EPLQN, Direct Drive Arr. 4 - Mfr: Twin City Fan - Material: AL wheel, CS housing						
150	27.9	22.0	22.0	116		UUT S1.1
165	29.2	24.0	24.0	270		INTERP
182	34.1	26.0	26.0	550		INTERP
200	36.6	29.0	29.0	580		INTERP
222	43.8	32.0	32.0	640		INTERP
245	45.6	34.0	34.0	690		INTERP
270	49.9	38.0	38.0	900		INTERP
300	52.6	42.0	42.0	1,180		INTERP
330	57.8	46.0	46.0	1,340		INTERP
365	67.4	51.0	51.0	2,020		INTERP
402	70.3	56.0	56.0	2,160		INTERP
445	73.9	62.0	62.0	2,350		INTERP
490	77.4	68.0	68.0	2,450		UUT S1.2

TABLE 9 - SINGLE FLOOR MOUNT FANS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 9 - SINGLE FLOOR MOUNT FANS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan, ATLI, Belt Drive Arr. 3, Forward Curve - Mfr: Comefri - Material: CS wheel & housing						
7-7-T1/T2	11.2	17.4	13.3	222		UUT XT15
9-6 - T1/T2	14.2	16.5	16.7	221		INTERP
9-9 - T1/T2	14.2	20.1	16.7	243		INTERP
10-7 - T1/T2	15.8	18.0	18.6	237		INTERP
10-10 - T1/T2	15.8	21.4	18.6	322		INTERP
12-9 - T1/T2	18.6	20.5	21.6	336		INTERP
12-12 - T1/T2	18.6	24.8	21.6	435		INTERP
15-11 - T1/T2	21.9	23.4	25.5	462		INTERP
15-15 - T1/T2	21.9	27.9	25.5	474		INTERP
18-13 - T1/T2	26.3	27.6	30.4	501		INTERP
18-18 - T1/T2	26.3	32.5	30.4	555		INTERP
20-15 - T1/T2	29.3	32.7	36.1	913		INTERP
20-20 - T1/T2	29.3	37.7	36.1	956		INTERP
22-22 - T1/T2	33.0	42.4	40.6	1,096		INTERP
25-25 - T1/T2	36.9	46.3	45.6	1,207		INTERP
28-28 - T1/T2	41.3	51.5	51.3	1,373		INTERP
32-32 - T1/T2	46.2	56.9	57.8	1,693		INTERP
36-36 - T1/T2	51.7	62.0	64.9	1,912		INTERP
40-40 - T1/T2	56.9	67.4	71.3	2,039		UUT XT18
Type: Motor, Belt Drive, TEFC - Mfr: TECO						
GP0034	16.6	8.7	9.0	69	182T frame, 3hp	UUT XT15
NP0304	28.2	15.1	14.5	468	286T frame, 30hp	UUT XT18

End of TABLE 9 - SINGLE FLOOR MOUNT FANS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 10 - DIRECT STACK FANS

Mounting: Tunnel mounted within unit. Fan stack is base mounted rigid. Fan face is rigidly attached to internal wall.	S_{DS} (g)	H_f / R_{μ}	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight is for an individual fan.

Stacking Method: Direct stack from fan module to fan module (not on a stand).

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Electric motors may be substituted per CBC 1705A.14.3.1 Exception 5, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Fan in Direct Stack, MPQN/MPQS, Direct Drive Arr. 4 - Mfr: Twin City Fan - Material: AL wheel, CS housing						
122	25.9	20.0	20.0	275	3-stack maximum	EXTRAP
150	27.9	22.0	22.0	351	3-stack maximum	EXTRAP
165	29.2	24.0	24.0	481	3-stack maximum	EXTRAP
182	34.1	26.0	26.0	592	3-stack maximum	EXTRAP
200	36.6	29.0	29.0	714	UUT: 3-stack, Class II	UUT 14
222	43.8	32.0	32.0	796	3-stack maximum	INTERP
245	45.6	34.0	34.0	1,315	UUT: 3-stack, Class III	UUT 10
270	49.9	38.0	38.0	1,289	UUT: 2-stack	UUT XT26
Type: Motor, Direct Drive, TEFC - Mfr: TECO						
NP0254	26.7	15.1	14.5	427	284T frame, 25hp	UUT XT26
Type: Motor, Direct Drive, TEFC - Mfr: TECO						
NP0154G	23.6	13.2	12.8	291	254T frame, 15hp	UUT 14
NP0504G	31.2	16.5	16.3	567	326T frame, 50hp	UUT 10
Type: Fan in Direct Stack - Mfr: Lau - Material: AL wheel, CS housing						
10	24.6	20.0	18.8	240	UUT: 3-stack	UUT 6
12	25.8	22.7	20.9	270	3-stack maximum	INTERP
13	28.1	24.5	22.4	300	3-stack maximum	INTERP
15	30.6	26.8	24.2	340	3-stack maximum	INTERP
16	35.3	29.0	25.8	430	3-stack maximum	INTERP
18	36.8	30.4	30.0	476	3-stack maximum	INTERP
20	37.9	33.8	34.0	528	3-stack maximum	INTERP
22	39.2	37.4	37.1	815	3-stack maximum	INTERP
25	40.6	41.4	41.0	890	UUT: 3-stack	UUT 6
Type: Motor, Direct Drive, TEFC - Mfr: Baldor						
EM3610T-G	16.7	6.6	7.8	57	182T frame, 3hp	UUT 6
EM2333T-G	23.4	12.9	12.9	270	254T frame, 15hp	UUT 6

End of TABLE 10 - DIRECT STACK FANS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
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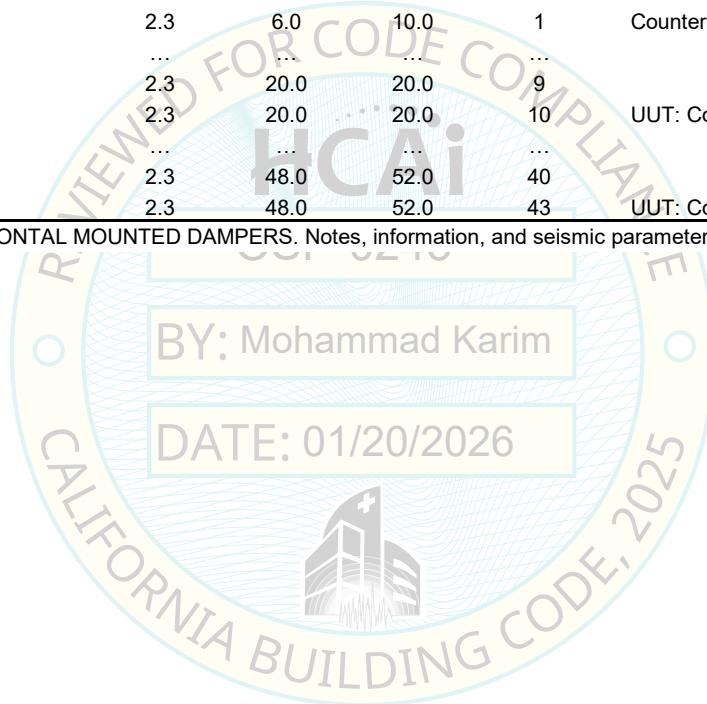
TABLE 11 - HORIZONTAL MOUNTED DAMPERS

Mounting: Mounted within unit in a horizontal plane (roof or floor).	S_{DS} (g)	H_f / R_μ	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Damper, BD6/CBD6 Heavy Duty Backdraft - Mfr: Ruskin - Material: AL						
6"w x 6"h	2.3	6.0	6.0	1	Counterbalanced	EXTRAP
6"w x 10"h	2.3	6.0	10.0	1		EXTRAP
...	...	...	...	...		EXTRAP
20"w x 20"h	2.3	20.0	20.0	9	UUT: Counterbalanced	EXTRAP
20"w x 20"h	2.3	20.0	20.0	10		UUT S3.4
...	...	...	...	...		INTERP
48"w x 52"h	2.3	48.0	52.0	40	UUT: Counterbalanced	INTERP
48"w x 52"h	2.3	48.0	52.0	43		UUT S3.3

End of TABLE 11 - HORIZONTAL MOUNTED DAMPERS. Notes, information, and seismic parameters are shown at the beginning of the table.



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York Custom YC / Miller-Picking MP Air Handling Units

TABLE 12 - WALL LOUVERS & DAMPERS

	S_{DS} (g)	H_f / R_μ	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}	I_p
Mounting: Mounted within unit in a vertical plane (wall).	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Damper, BD6/CBD6 Heavy Duty Backdraft - Mfr: Ruskin - Material: AL						
6"w x 6"h	2.3	6.0	6.0	1		EXTRAP
...	...	...	...	...		EXTRAP
20"w x 20"h	2.3	20.0	20.0	10	UUT: Counterbalanced	UUT S3.2
...	...	...	...	...		INTERP
48"w x 52"h	2.3	48.0	52.0	43	UUT: Counterbalanced	UUT S3.1
Type: Louver, EME6625 Vertical Blade - Mfr: Ruskin - Material: AL						
12"w x 12"h	6.0	12.0	12.0	10		UUT 5
...	...	...	...	...		INTERP
27"w x 27"h	6.0	27.0	27.0	51		UUT 1
...	...	...	...	...		INTERP
72"w x 48"h	6.0	72.0	48.0	240		UUT 4
Type: Damper, CBS92 Back Draft - Mfr: Ruskin - Material: CS frame, AL blade						
20"w x 20"h	9.0	20.0	20.0	78		UUT 1
...	...	...	...	...		INTERP
68"w x 68"h	9.0	68.0	68.0	899		UUT 3C
Type: Damper, CD50IF Control - Mfr: Ruskin - Material: AL						
9.5"w x 25"h	4.0	9.5	25.0	25	UUT: Control	UUT 4
...	...	...	...	...		INTERP
82"w x 38.5"h	4.0	82.0	38.5	175	UUT: Control	UUT 5
Type: Damper, CD60/SD60 Control/Smoke - Mfr: Ruskin - Material: CS						
10"w x 12"h	5.0	10.0	12.0	7	UUT: Smoke	UUT 7
...	...	...	...	...		INTERP
9.5"w x 16"h	5.0	9.5	16.0	20	UUT: Control	UUT 4
...	...	...	...	...		INTERP
24"w x 24"h	5.0	24.0	24.0	65	UUT: Smoke	UUT 1
...	...	...	...	...		INTERP
72"w x 48"h	5.0	72.0	48.0	192	UUT: Smoke	UUT 7
...	...	...	...	...		INTERP
96"w x 72"h	5.0	96.0	72.0	384	UUT: Control	UUT 8
Type: Air Measuring Station w/ Damper, AMS060 - Mfr: Ruskin - Material: AL AMS, CS damper						
16"w x 9.5"h	16.5	16.0	9.5	30		UUT 8
...	...	...	...	...		INTERP
96"w x 72"h	16.5	96.0	72.0	720		UUT 8

End of TABLE 12 - WALL LOUVERS & DAMPERS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 13 - CONTROL PANELS

	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
Mounting: Wall mounted on unit.	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight on this page is the maximum for a complete control panel, including internal subcomponents. Listed weight for enclosures on the following page is the empty weight of the enclosure.

Mounting: Internal subcomponents listed on the following pages are mounted within the control panels.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Subcomponents weighing less than 10-lb may be substituted per CBC 1705A.14.3.1 Exception 7, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Control Panel, VBII Heavy Duty Safety Switch (Knife Edge Disconnect) - Mfr: Siemens						
HNF361	2.9	5.1	8.6	12	30A, non-Fusible, NEMA 1	EXTRAP
HNF361R	2.9	5.1	8.8	13	30A, non-Fusible, NEMA 3R	EXTRAP
HF361	5.1	7.7	15.5	14	30A, Fusible, NEMA 1	EXTRAP
HF361R	5.1	7.9	15.5	15	UUT: 30A, Fusible, NEMA 3R	UUT 11
HNF362	3.2	6.1	10.1	18	60A, non-Fusible, NEMA 1	INTERP
HNF362R	3.2	6.1	10.3	19	60A, non-Fusible, NEMA 3R	INTERP
HF362	5.1	10.2	17.5	19	60A, Fusible, NEMA 1	INTERP
HF362R	5.1	10.4	17.5	20	60A, Fusible, NEMA 3R	INTERP
HNF363	5.1	7.7	12.3	23	100A, non-Fusible, NEMA 1	INTERP
HNF363R	5.1	7.9	12.3	24	100A, non-Fusible, NEMA 3R	INTERP
HF363	5.1	10.7	23.2	24	100A, Fusible, NEMA 1	INTERP
HF363R	5.1	10.9	23.2	25	100A, Fusible, NEMA 3R	INTERP
HNF364	5.1	7.7	15.5	46	200A, non-Fusible, NEMA 1	INTERP
HNF364R	5.1	7.9	15.5	47	200A, non-Fusible, NEMA 3R	INTERP
HF364	6.4	15.4	31.1	48	UUT: 200A, Fusible, NEMA 1	UUT 11
HF364R	6.4	15.9	31.1	49	UUT: 200A, Fusible, NEMA 3R	UUT 11
Type: Control Panel, Encapsulated Transformer - Mfr: Eaton						
S20N11P51P	5.2	4.5	9.3	14	NEMA 3R	UUT 12
S20N11S05N	9.9	10.4	16.0	126	NEMA 3R	UUT 10
Type: Control Panel, Heavy Duty Safety Switch (Knife Edge Disconnect) - Mfr: Eaton						
DH261FRK-CSA	8.5	9.5	17.0	20	30A, Fusible, NEMA 3R	UUT 10,12
Type: Control Panel, NEMA 3R,4,12 - Mfr: Johnson Controls - Material: CS						
CUSTOM-12x8x6	6.0	8.0	12.0	15	NEMA 3R/4/12	EXTRAP
...	...	...	...	...		EXTRAP
CUSTOM-12x12x8	8.0	12.0	12.0	22	UUT: NEMA 4	UUT S5.1
CUSTOM-16x8x7	6.5	8.0	16.0	16	UUT: NEMA 3R, 12A UV panel	UUT S4.3
CUSTOM-16x12x7	6.5	12.0	16.0	34	UUT: NEMA 3R, 48A UV panel	UUT S4.4
CUSTOM-20x16x8	8.0	16.0	20.0	42	UUT: NEMA 3R/4/12	UUT 7
CUSTOM-30x24x10	10.0	24.0	30.0	145	UUT: NEMA 3R/4/12	UUT 7
CUSTOM-30x30x12	12.0	30.0	30.0	143	UUT: NEMA 4	UUT S5.2
CUSTOM-42x30x12	12.0	30.0	42.0	165	UUT: NEMA 3R/4/12	UUT 7
CUSTOM-42x30x12	12.0	30.0	42.0	183	UUT: NEMA 3R/4/12	UUT 7
CUSTOM-48x30x10	10.0	30.0	48.0	177	UUT: NEMA 3R/4/12	UUT 7
CUSTOM-60x36x12	12.0	36.0	60.0	349	UUT: NEMA 3R/4/12	UUT S5.3

TABLE 13 - CONTROL PANELS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 13 - CONTROL PANELS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Control Panel Enclosure - Mfr: Rittal - Material: CS						
1033.500	8.0	12.0	12.0	14	UUT: NEMA 4	UUT S5.1
1034.500	8.3	12.0	15.7	18	NEMA 4	INTERP
1038.500	8.3	14.9	23.6	31	NEMA 4	INTERP
1054.500	9.8	23.6	23.6	51	NEMA 4	INTERP
1057.500	9.8	19.6	27.6	53	NEMA 4	INTERP
1073.500	12.0	30.0	30.0	88	UUT: NEMA 4	UUT S5.2
1090.500	9.8	23.6	39.4	86	NEMA 4	INTERP
1180.500	12.0	32.0	39.4	115	NEMA 4	INTERP
WM363612NC	12.0	36.0	36.0	130	NEMA 3R/4/12	INTERP
1280.500	12.0	32.0	48.0	141	NEMA 4	INTERP
WM423612NC	12.0	36.0	42.0	170	NEMA 3R/4/12	INTERP
WM483612NC	12.0	36.0	48.0	168	NEMA 3R/4/12	INTERP
WM603612NC	12.0	36.0	60.0	231	UUT: NEMA 3R/4/12	UUT S5.3
Type: Control Panel Enclosure - Mfr: Saginaw - Material: CS						
SCE-12EL1206LP	6.0	12.0	12.0	16	NEMA 3R/4/12	EXTRAP
...	...	...	...	...	...	EXTRAP
SCE-30EL2410LP	10.0	24.0	30.0	68	UUT: NEMA 3R/4/12	UUT 7
...	...	...	...	...	...	INTERP
SCE-48EL3010LP	10.0	30.0	48.0	117	UUT: NEMA 3R/4/12	UUT 7
Type: Control Panel Enclosure - Mfr: Hoffman - Material: CS						
A201608LP	8.0	16.0	20.0	29	UUT: NEMA 3R/4/12	UUT 7
...	...	...	...	...	...	INTERP
A423012LP	12.0	30.0	42.0	105	UUT: NEMA 3R/4/12	UUT 7
A423012LP	12.0	30.0	42.0	105	UUT: NEMA 3R/4/12	UUT 7

TABLE 13 - CONTROL PANELS continues on the next page.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 13 - CONTROL PANELS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Circuit Breaker, Power Defense Molded Case - Mfr: Eaton						
PDG13M0100MSAJ	3.0	3.0	5.5	2.3	3-pole, 100A	UUT 7
PDG33M0300TFAJ	4.3	5.5	10.1	11	3-pole, 300A	UUT 7
PDG33F0400TFAJ	4.3	5.5	10.1	11	3-pole, 400A	UUT 7
Type: Transformer, Industrial Control - Mfr: Eaton						
C0100E2A	3.0	3.0	3.0	4.2	Interpolated sizes	UUT 7
...	...	...	...	...		INTERP
C2000K2AFB	7.0	6.8	5.6	38		UUT 7
C3000K2A	7.5	9.0	7.6	53		UUT 7
Type: Disconnect Switch - Mfr: ABB						
OT200U03	2.8	6.7	3.9	2.9		UUT S5.2
OT600U03	4.5	10.5	6.3	11.4		INTERP
OS400J03	6.9	10.0	7.6	12.6		INTERP
OS600J03	9.2	13.5	9.1	28.7		UUT S5.3
Type: Transformer - Mfr: Siemens						
MT2000A	8.2	7.0	6.6	38		UUT S5.2,3
Type: Motor Protector - Mfr: Eaton						
XTPR004BC1	3.0	3.0	2.0	0.7	2.5-4A	UUT 7
XTPR063DC1	6.5	6.0	2.5	2.5	55-63	UUT 7
Type: Contactor - Mfr: Eaton						
XTSE012B23A	5.5	1.8	1.8	0.7	12A	UUT 7
XTCE185H22A	6.2	5.5	7.1	7.1	185A	UUT 7
Type: Power Distribution - Mfr: Eaton						
CHDB377F	2.9	1.9	4.7	0.8		UUT 7
CHDB3233	3.7	6.3	5.5	3		UUT 7
Type: Circuit Breaker - Mfr: Eaton						
FAZ-C3/2-NA	1.4	3.0	4.1	1		UUT 7
Type: Motor Protector - Mfr: ABB						
MS132-4.0	3.4	1.8	3.5	0.6		UUT 6
MS132-20	3.4	1.8	3.9	0.7		UUT 6

End of TABLE 13 - CONTROL PANELS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 14 - HARMONIC FILTERS

Mounting: Wall mounted on unit.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight is the maximum for a complete harmonic filter, including internal subcomponents.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Subcomponents weighing less than 10-lb may be substituted per CBC 1705A.14.3.1 Exception 7, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure - Mfr: TCI						
HGP0030*W3*0000-JCI-SEISMIC	13.7	33.3	32.3	144	30HP, 480V/60HZ, Type 3R	EXTRAP
...	...	...	...	...	Extrapolated models	EXTRAP
HGP0030CW3F0000-JCI-SEISMIC	13.7	33.3	32.3	228	UUT: 30HP, 600V/60HZ, Type 3R	UUT S2.5
...	...	...	...	...	Interpolated models	INTERP
HGP0075AW3F0000-JCI-SEISMIC	13.7	39.2	37.6	251	UUT: 75HP, 480V/60HZ, Type 3R	UUT S2.1
...	...	...	...	...	Interpolated models	INTERP
HGP0125CW3F0000-JCI-SEISMIC	13.7	39.2	37.6	377	UUT: 125HP, 600V/60HZ, Type 3R	UUT S2.2
Type: Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 1 Enclosure - Mfr: TCI						
HGP0030*W1*0000-JCI-SEISMIC	12.5	17.5	31.6	141	30HP, 600V/60HZ, Type 1	EXTRAP
...	...	...	...	...	Extrapolated models	EXTRAP
HGP0075CW1F0000-JCI-SEISMIC	12.5	17.5	31.6	179	UUT: 75HP, 600V/60HZ, Type 1	UUT S2.3
...	...	...	...	...	Interpolated models	INTERP
HGP0150AW1F0000-JCI-SEISMIC	16.5	17.7	56.2	363	UUT: 150HP, 480V/60HZ, Type 1	UUT S2.4

End of TABLE 14 - HARMONIC FILTERS. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 15 - VARIABLE FREQUENCY DRIVES

Mounting: Wall mounted on unit.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Weight: Listed weight is the maximum for a complete packaged VFD, including internal subcomponents.

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Subcomponents weighing less than 10-lb may be substituted per CBC 1705A.14.3.1 Exception 7, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: VFD, AYK580 Base - Mfr: ABB						
R1	8.8	4.9	14.7	10	UUT: R1 Frame, 2.1A, 460V	UUT S6.3,4
R2	9.0	4.9	18.6	15	R2 Frame, 2.7A, 575V	INTERP
R3	9.0	8.0	19.3	26	R3 Frame, 22A, 575V	INTERP
R4	10.1	8.0	25.0	42	R4 Frame, 52A, 460V	INTERP
R5	11.6	8.0	28.8	62	R5 Frame, 41A, 575V	INTERP
R6	14.5	9.9	28.6	94	R6 Frame, 124A, 460V	INTERP
R7	14.6	11.2	34.7	119	UUT: R7 Frame, 211A, 208/230V	UUT S6.1,2
Type: VFD, AYK580 Packaged - Mfr: ABB						
PF1-1	11.7	8.3	20.8	23	UUT: NEMA 1, Disconnect, Box 1	UUT S6.4
PF1-2	12.2	8.3	26.8	37	NEMA 1, Disconnect, Box 2	INTERP
PF1-3	12.0	9.0	32.5	56	NEMA 1, Disconnect, Box 3	INTERP
PF1-4	15.2	12.0	40.5	114	NEMA 1, Disconnect, Box 4	INTERP
PF1-5	17.9	12.1	43.0	165	NEMA 1, Disconnect, Box 5	INTERP
PF1-6	18.1	16.0	48.0	222	NEMA 1, Disconnect, Box 6	INTERP
CF1-1	16.0	18.0	23.0	75	NEMA 1, Bypass, Box 1	INTERP
CF1-2	16.0	18.0	26.5	93	NEMA 1, Bypass, Box 2	INTERP
CF1-3	16.0	22.0	28.5	122	NEMA 1, Bypass, Box 3	INTERP
CF1-4	18.0	31.0	40.0	247	NEMA 1, Bypass, Box 4	INTERP
CF1-5	20.5	33.0	44.0	315	NEMA 1, Bypass, Box 5	INTERP
CF1-6	20.5	33.0	45.0	349	UUT: NEMA 1, Bypass, Box 6	UUT S6.2
PF3R-1	14.4	15.2	22.4	68	NEMA 3R, Disconnect, Box 1	INTERP
PF3R-2	14.4	15.2	28.4	85	NEMA 3R, Disconnect, Box 2	INTERP
PF3R-3	14.4	18.3	31.9	113	NEMA 3R, Disconnect, Box 3	INTERP
PF3R-4	16.5	18.3	43.4	196	NEMA 3R, Disconnect, Box 4	INTERP
PF3R-5	18.5	21.5	47.5	279	NEMA 3R, Disconnect, Box 5	INTERP
PF3R-6	21.5	21.5	54.6	345	NEMA 3R, Disconnect, Box 6	INTERP
CF3R-1	17.4	18.0	20.5	83	UUT: NEMA 3R, Bypass, Box 1	UUT S6.3
CF3R-2	17.4	20.2	28.5	116	NEMA 3R, Bypass, Box 2	INTERP
CF3R-3	17.4	22.3	30.0	145	NEMA 3R, Bypass, Box 3	INTERP
CF3R-4	18.5	28.3	43.4	277	NEMA 3R, Bypass, Box 4	INTERP
CF3R-5	22.4	32.3	44.0	349	NEMA 3R, Bypass, Box 5	INTERP
CF3R-6	22.3	32.5	51.0	417	UUT: NEMA 3R, Bypass, Box 6	UUT S6.1

End of TABLE 15 - VARIABLE FREQUENCY DRIVES. Notes, information, and seismic parameters are shown at the beginning of the table.

JOHNSON CONTROLS
York Custom YC / Miller-Picking MP Air Handling Units

TABLE 16 - END DEVICES

Mounting: Mounted within unit.	S _{DS} (g)	H _f / R _μ	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}	I _p
	1.93	3.5 / 1.3	3.09	2.08	1.29	0.52	1.5
	1.93	1.0 / 1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Substitutions: Subcomponents weighing less than 10-lb may be substituted per CBC 1705A.14.3.1 Exception 7, provided they meet the five listed requirements in that section.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Air Flow Switch - Mfr: Cleveland Controls						
AFS-460	3.6	3.9	6.1	1.2		UUT 6
Type: Current Switch Device - Mfr: Johnson Controls						
CSD-SA1E1-1	1.6	2.6	2.6	0.4		UUT 6
Type: Differential Pressure Transducer - Mfr: Setra						
MR1SA	2.0	3.7	5.5	0.5		UUT 6
2671MR2WD2EA1CN	2.4	5.6	2.5	0.6		UUT 6
Type: Gas Sensor - Mfr: Danfoss						
DST-GR32	2.3	3.5	1.0	0.1		UUT 10
DST-G54B	2.3	3.5	1.0	0.1		UUT 10
Type: Expansion Valve - Mfr: Samsung						
MXD-A64K100E-Controller	1.0	15.2	10.8	1.0		UUT 13
MXD-A64K100E-EEV	1.0	3.0	10.0	1.0		UUT 13
Type: Expansion Valve - Mfr: Hitachi						
DXF-0192A1-Control Box	4.4	17.1	13.8	11.5		UUT 13
DXF-0192A1-EEV	2.4	17.2	6.6	3.7		UUT 13
Type: Light Fixture - Mfr: Johnson Controls						
386-17231-003	8.6	7.6	5.5	3.0	75 Watt	UUT XT2
Type: Light Switch - Mfr: Leviton						
1451-2I	1.1	1.3	4.2	0.1	15A, 120V	UUT XT2
Type: Electrical Outlet - Mfr: Leviton						
8599-I	1.5	1.7	4.2	0.3	15A, GFI	UUT XT2
Type: Temperature Sensor - Mfr: Johnson Controls						
A11H-4C	2.3	2.5	5.4	1.8	LTC, SPST, fixed reset, 20ft	UUT 6,XT2
TE-6300-601H-Y3	6.0	1.4	2.8	0.5	8in Probe, 1K RTD Temp	UUT 6,XT2
TE-631EH-Y3	1.9	1.9	1.8	0.9	8ft Averaging, 1k, no enclosure	UUT 6,XT2
Type: Current Switch - Mfr: Johnson Controls						
CSD-SA1E1-1	2.6	2.6	1.6	0.4	SPST relay, 1-135A, 24VAC, 1/6hp	UUT XT2
Type: Pressure Switch - Mfr: Johnson Controls						
P32DV-6C	2.2	3.3	5.6	1.0		UUT 6
Type: Pressure Switch - Mfr: Dwyer						
MINIHELIC 2-5001	2.7	3.1	3.1	0.4	Differential pressure	UUT XT2
Type: Pressure Switch - Mfr: Cleveland Controls						
AFS-460	3.6	3.9	6.1	1.2	High static pressure w/ manual reset	UUT XT2
Type: Relay - Mfr: Kele						
PAM-1-Y	1.5	1.2	0.9	0.2	SPDT, 24VAC, indicator LED	UUT 6,XT2
Type: Magnetic Proximity Sensor - Mfr: Littlefuse						
59070-020	1.5	0.3	0.3	0.2		UUT XT4

End of TABLE 16 - END DEVICES. Notes, information, and seismic parameters are shown at the beginning of the table.

ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

TESTING SUMMARY TABLE - YC

Notes: The units below are used to cover general construction and subcomponents, except for UUT 8, which is only considered for subcomponents.

UUT	Manufacturer / Model	Lab, Report, Test Date	S _{DS} (g)	H _f / R _μ	I _P
UUT 1	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-90x96	Report: 11857, tested 10-27-11	1.93	1.0 / 1.0	
UUT 2A	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-138x144	Report: 11857, tested 10-27-11	1.93	1.0 / 1.0	
UUT 2C	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-134x144	Report: 11857, tested 10-27-11	1.93	1.0 / 1.0	
UUT 3B	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-136x144	Report: 11857, tested 10-25-11	1.93	1.0 / 1.0	
UUT 3C	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-132x144	Report: 11857, tested 10-25-11	1.93	1.0 / 1.0	
UUT 4	Mfr: Johnson Controls	Lab: SEESL - University at Buffalo	1.93	3.5 / 1.3	1.5
	Model: YC/MP-144x144	Report: 20048TR1.0, tested 11-16-20	1.93	1.0 / 1.0	
UUT 5	Mfr: Johnson Controls	Lab: SEESL - University at Buffalo	1.93	3.5 / 1.3	1.5
	Model: YC/MP-144x144	Report: 20048TR1.0, tested 11-17-20	1.93	1.0 / 1.0	
UUT 6	Mfr: Johnson Controls	Lab: SEESL - University at Buffalo	1.93	3.5 / 1.3	1.5
	Model: YC/MP-139x144	Report: 20048TR1.0, tested 11-18-20	1.93	1.0 / 1.0	
UUT 7	Mfr: Johnson Controls	Lab: SEESL - University at Buffalo	1.93	3.5 / 1.3	1.5
	Model: YC/MP-144x144	Report: 1700935-TR-001 R1, tested 11-8-19	1.93	1.0 / 1.0	
UUT 8	Mfr: Johnson Controls	Lab: PEER - UC Berkeley	1.93	3.5 / 1.3	1.5
	Model: YC/MP-138x183	Report: 1700935-TR-002 R0, tested 1-14-20	1.93	1.0 / 1.0	
UUT 10	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-150x144	Report: 24028TR1.2, tested 9-11-24	2.50	1.0 / 1.0	
UUT 11	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-150x144	Report: 24028TR1.2, tested 6-25-24	2.50	1.0 / 1.0	
UUT 12	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	1.93	3.5 / 1.3	1.5
	Model: YC/MP-150x144	Report: 24028TR1.2, tested 6-26-24	2.50	1.0 / 1.0	
UUT 13	Mfr: Johnson Controls	Lab: US Army ERDC-CERL	1.93	3.5 / 1.3	1.5
	Model: YC/MP-143x144	Report: 25023TR1.0, tested 6-11-25	1.93	1.0 / 1.0	
UUT 14	Mfr: Johnson Controls	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: YC/MP-115x60	Report: 25023TR2.0, tested 9-22-25	2.00	1.0 / 1.0	

ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 1

Manufacturer: Johnson Controls
Model number: YC/MP-90x96
Unit function: Air Handling Unit
Serial number: Job # 11-84922-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
96.0	96.0	96.0	4,988	8.3	7.8	8.4

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 11857 (dated 1-1-12), tested on 10-27-11

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted curb non-isolated on 14-in tall VMC P6000S curb using (6) 4in long 3/8-in fillet welds. Each side wall (parallel to airflow) has (3) welds spaced 44-in o.c. Curb was base mounted rigid using (20) 5/8-in diameter Grade 8 bolts evenly spaced around perimeter in groups of (2).

Construction: -Configuration: Four walls in place.
-Roof/Walls: 2-in panels, 20GA stainless steel exterior skin, 20GA stainless steel interior liner, 16GA carbon steel internal wall posts, fiberglass insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 0.125-in stainless steel treadplate floor, foam insulation.

Subcomponents: Johnson Controls - Coil, Water (Double-35Hx62Wx1row), Colmac - Coil, Air to Air Heat Pipe (Single-15Hx24Wx2row), Premier Industries - Evaporative Cooler (24Hx24W), Thermotech - Energy Recovery Wheel (TC-14-A), Twin City Fan - Fan, EPF/EPQ, Belt Drive Arr. 3 (122), Baldor - Motor, Belt Drive, ODP (EM3120T), Ruskin - Louver, EME6625 Vertical Blade (27"w x 27"h), Ruskin - Damper, CBS92 Back Draft (20"w x 20"h), Ruskin - Damper, CD60/SD60 Control/Smoke (24"w x 24"h).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 2A

Manufacturer: Johnson Controls
Model number: YC/MP-138x144
Unit function: Air Handling Unit
Serial number: Job # 11-84922-02

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
96.0	144.0	144.0	9,810	4.5	4.4	4.2

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 11857 (dated 1-1-12), tested on 10-27-11

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

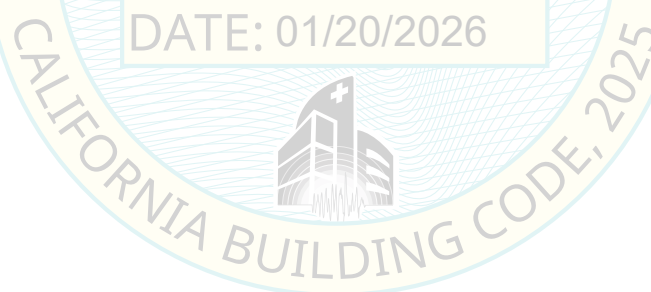
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (3) 6-in long L3x3x3/8-in brackets. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 4-in panels, 0.04-in textured aluminum exterior skin, 20GA stainless steel interior liner, 16GA carbon steel internal wall posts, mineral wool insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 12GA stainless steel floor, foam insulation.

Subcomponents: Colmac - Coil, Air to Air Heat Pipe (Double-119Hx120Wx5row), Thermotech - Energy Recovery Wheel (TF-359-S).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 2C

Manufacturer: Johnson Controls
Model number: YC/MP-134x144
Unit function: Air Handling Unit
Serial number: Job # 11-84922-04

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
96.0	144.0	144.0	7,100	5.0	5.2	5.3

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 11857 (dated 1-1-12), tested on 10-27-11

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (3) 6-in long L3x3x3/8-in brackets. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Two walls in place (inlet and one side wall removed, bracing in place on 96-in side wall).
-Roof/Walls: 2-in panels, 0.04-in textured aluminum exterior skin, 0.05-in perforated aluminum interior liner, 16GA carbon steel internal wall posts, fiberglass/foam insulation.
-Base/Floor: 10-in welded structural carbon steel frame, 0.125-in carbon steel floor, foam insulation.

Subcomponents: Premier Industries - Evaporative Cooler (130Hx130W), Johnson Controls - Material: CS, SS, or AL Frame - Filter Frame, Universal Type 8 & HEPA (130Hx140W, 130Hx140W), Johnson Controls - Filter Frame, Flat (130Hx58W, 130Hx58W), American Air Filter - Air Filter, AstroCel I/MEGAcel I HEPA (24Hx12W, 24Hx24W), American Air Filter - Air Filter, RigidAir (24Hx12W, 24Hx24W).

Testing notes: UUT 2C was tested with a side wall brace but no bracing on inlet wall and was listed as UUT 2C-2 in the test report.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 3B

Manufacturer: Johnson Controls
Model number: YC/MP-136x144
Unit function: Air Handling Unit
Serial number: Job # 11-84922-06

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	144.0	11,100	6.7	3.2	21.5

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 11857 (dated 1-1-12), tested on 10-25-11

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (16) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (4) 6-in long L3x3x3/8-in brackets. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

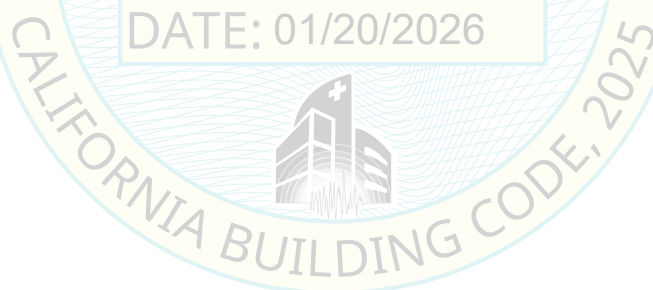
Construction: -Configuration: Two walls in place (inlet and outlet walls removed).
-Roof/Walls: 3-in panels, 20GA carbon steel exterior skin, 20GA perforated carbon steel interior liner, 16GA carbon steel internal wall posts, fiberglass/foam insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 10GA carbon steel floor, foam insulation.

Subcomponents: Twin City Fan - Fan, EPF/EPQ, Belt Drive Arr. 3 (600), Baldor - Motor, Belt Drive, ODP (EM2558T-4).

Testing notes: UUT 3B was tested without bracing and was listed as UUT 3B-2 in the test report.



DATE: 01/20/2026



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 3C

Manufacturer: Johnson Controls
Model number: YC/MP-132x144
Unit function: Air Handling Unit
Serial number: Job # 11-84922-07

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	144.0	7,120	4.2	6.4	4.2

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 11857 (dated 1-1-12), tested on 10-25-11

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

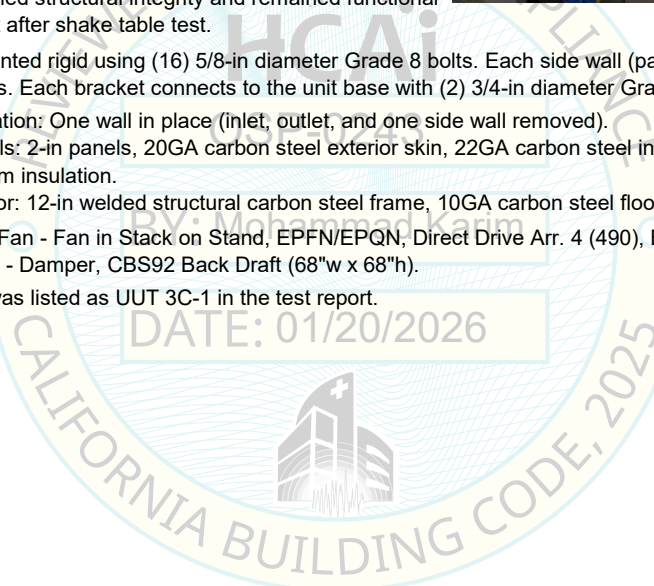
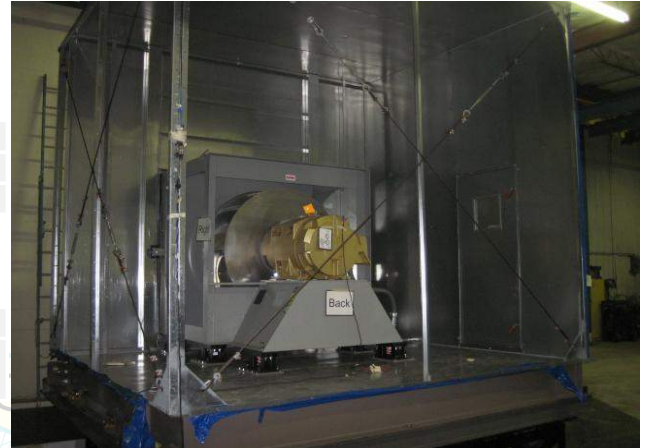
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (16) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (4) 6-in long L3x3x3/8-in brackets. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: One wall in place (inlet, outlet, and one side wall removed).
-Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 22GA carbon steel interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 12-in welded structural carbon steel frame, 10GA carbon steel floor, foam insulation.

Subcomponents: Twin City Fan - Fan in Stack on Stand, EPFN/EPQN, Direct Drive Arr. 4 (490), Baldor - Motor, Direct Drive, ODP (EM2583T-4), Ruskin - Damper, CBS92 Back Draft (68"w x 68"h).

Testing notes: UUT 3C was listed as UUT 3C-1 in the test report.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 4

Manufacturer: Johnson Controls
Model number: YC/MP-144x144
Unit function: Air Handling Unit
Serial number: COM # 249912, Order # SE-IS2020-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
198.0	144.0	152.0	24,300	5.4	7.3	7.5

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: SEESL - University at Buffalo

Report: 20048TR1.0 (dated 3-13-21), tested on 11-16-20

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (16) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (8) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 3-in panels, 16GA stainless steel exterior skin, 22GA carbon steel interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 16GA stainless steel floor, foam insulation.

Subcomponents: Johnson Controls - Coil, Water (Single-47.5Hx127Wx12row, Double-78.5Hx129Wx12row), Johnson Controls - Filter Frame, Angle (141Hx138W), Twin City Fan - Fan in Stack on Stand, EPFN/EPQN, Direct Drive Arr. 4 (182), TECO - Motor, Direct Drive, TEFC (NP0054G), Ruskin - Louver, EME6625 Vertical Blade (72"w x 48"h), Ruskin - Damper, CD50IF Control (9.5"w x 25"h), Ruskin - Damper, CD60/SD60 Control/Smoke (9.5"w x 16"h).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 5

Manufacturer: Johnson Controls
Model number: YC/MP-144x144
Unit function: Air Handling Unit
Serial number: COM # 249913, Order # SE-IS2020-02

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
171.0	144.0	152.0	21,200	3.2	2.8	5.0

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: SEESL - University at Buffalo

Report: 20048TR1.0 (dated 3-13-21), tested on 11-17-20

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

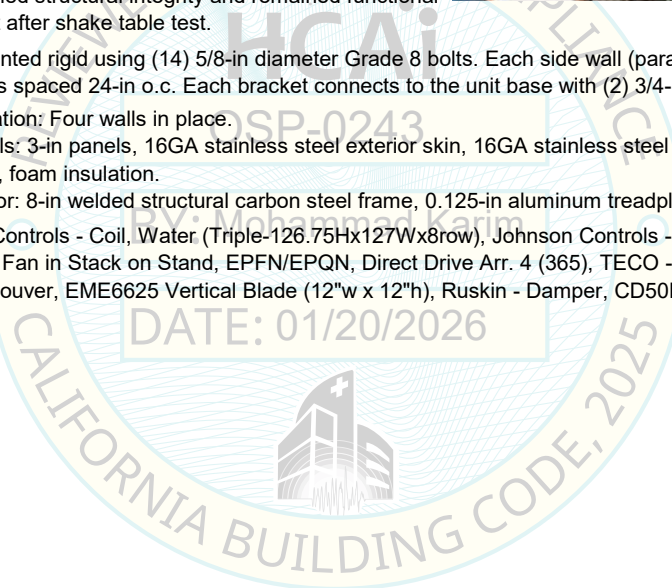
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (14) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (7) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 3-in panels, 16GA stainless steel exterior skin, 16GA stainless steel interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 0.125-in aluminum treadplate floor, foam insulation.

Subcomponents: Johnson Controls - Coil, Water (Triple-126.75Hx127Wx8row), Johnson Controls - Filter Frame, Angle (141Hx138W), Twin City Fan - Fan in Stack on Stand, EPFN/EPQN, Direct Drive Arr. 4 (365), TECO - Motor, Direct Drive, TEFC (NP0306G), Ruskin - Louver, EME6625 Vertical Blade (12"w x 12"h), Ruskin - Damper, CD50IF Control (82"w x 38.5"h).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 6

Manufacturer: Johnson Controls
Model number: YC/MP-139x144
Unit function: Air Handling Unit
Serial number: COM # 250491, Order # SE-HMLAU1-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
171.0	144.0	147.0	12,800	7.0	9.5	18.6

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: SEESL - University at Buffalo

Report: 20048TR1.0 (dated 3-13-21), tested on 11-18-20

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 5/8-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (6) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 3-in panels, 20GA carbon steel exterior skin, 0.05-in aluminum interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 16GA carbon steel floor, foam insulation.

Subcomponents: Johnson Controls - Humidifier (23Hx126W, 120Hx126W), Lau - Fan in Direct Stack (10, 25), Baldor - Motor, Direct Drive, TEFC (EM3610T-G, EM2333T-G), ABB - Motor Protector (MS132-4.0, MS132-20), Cleveland Controls - Air Flow Switch (AFS-460), Johnson Controls - Current Switch Device (CSD-SA1E1-1), Setra - Differential Pressure Transducer (MR1SA, 2671MR2WD2EA1CN), Johnson Controls - Temperature Sensor (A11H-4C, TE-6300-601H-Y3, TE-631EH-Y3), Johnson Controls - Pressure Switch (P32DV-6C), Kele - Relay (PAM-1-Y).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 7

Manufacturer: Johnson Controls
Model number: YC/MP-144x144
Unit function: Air Handling Unit
Serial number: COM # 13214, Order # SE-IS0002-01-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	150.0	9,100**	7.0	8.0	14.7

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: SEESL - University at Buffalo

Report: 1700935-TR-001 R1 (dated 3-6-20), tested on 11-8-19

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (28) 12-in long 3/8-in fillet welds. Welds are evenly spaced at 24-in o.c. around the full perimeter.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 4-in panels, 20GA carbon steel exterior skin, 22GA stainless steel interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 16GA carbon steel floor, foam insulation.

Subcomponents: Johnson Controls - Material: AL fin, CS casing - Coil, Steam (Single-18Hx17.5W, Double-108Hx101W), Johnson Controls - Fan Array (5-tall-140H, Size 310 Fan, 5-tall-140H, Size 310 Fan, 3-tall-140H, Size 630 Fan, 3-tall-140H, Size 630 Fan), EBM-Papst - Fan in Array, Cube (K3G630-AS05-01T), EBM-Papst - Fan in Array, RadiPac Cube (EG1R-480-310-35/135), Ziehl-Abegg - Fan in Array (GR31C, GR63C), Ruskin - Damper, CD60/SD60 Control/Smoke (10"w x 12"h, 72"w x 48"h), Johnson Controls - Control Panel, NEMA 3R, 4, 12 (CUSTOM-20x16x8, CUSTOM-30x24x10, CUSTOM-42x30x12, CUSTOM-42x30x12, CUSTOM-48x30x10), Saginaw - Control Panel Enclosure (SCE-30EL2410LP, SCE-48EL3010LP), Hoffman - Control Panel Enclosure (A201608LP, A423012LP, A423012LP), Eaton - Circuit Breaker, Power Defense Molded Case (PDG13M0100MSAJ, PDG33M0300TFAJ, PDG33F0400TFAJ), Eaton - Transformer, Industrial Control (C0100E2A, C2000K2AFB, C3000K2A), Eaton - Motor Protector (XTPR004BC1, XTPR063DC1), Eaton - Contactor (XTSE012B23A, XTCE185H22A), Eaton - Power Distribution (CHDB377F, CHDB3233), Eaton - Circuit Breaker (FAZ-C3/2-NA).

Testing notes: UUT 7 was listed as UUT 2 in the test report. Test report incorrectly lists 12,500-lb weight. This unit weighed 9,100-lb per factory documentation.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 8

Manufacturer: Johnson Controls
Model number: YC/MP-138x183
Unit function: Air Handling Unit
Serial number: COM # 13362, Order # SE-IS0003-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
125.0	183.0	146.0	6,732**	4.8	7.1	12.1

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: PEER - UC Berkeley

Report: 1700935-TR-002 R0 (dated 1-28-20), tested on 1-14-20

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 5/8-in diameter Grade 8 bolts and (10) 3-in long 5/16-in fillet welds. Each side wall (parallel to airflow) has (5) welds and (6) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction:
-Configuration: Four walls in place.
-Roof/Walls: 2-in panels, 20GA stainless steel & 0.04-in aluminum exterior skin, 20GA stainless steel & 20GA perforated stainless steel & 0.05-in aluminum & 0.05-in perforated aluminum interior liner, 16GA carbon steel internal wall posts, foam & fiberglass insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 16GA carbon steel floor, foam insulation.

Subcomponents: Johnson Controls - Material: CS, SS, or AL Frame - Filter Frame, Universal Type 8 & HEPA (136Hx179W), Koch Filter - Air Filter, Multi-Cell (24Hx12W-SH, 24Hx24W-SH, 24Hx12W-DH, 24Hx24W-DH), Koch Filter - Air Filter, BioMAX HEPA HC (24Hx12W, 24Hx24W), Koch Filter - Air Filter, DuraMAX (24Hx12W, 24Hx24W), Koch Filter - Air Filter, DuraPURE (24Hx12W, 24Hx24W), Koch Filter - Air Filter, DuraKLEEN (24Hx12W, 24Hx24W), UVDI - Air Filter, HMB V-Bank (24Hx12W, 24Hx24W), Ruskin - Damper, CD60/SD60 Control/Smoke (96"w x 72"h), Ruskin - Air Measuring Station w/ Damper, AMS060 (16"w x 9.5"h, 96"w x 72"h).

Testing notes: UUT 8 was listed as UUT 1 in the test report and is only considered for the listed subcomponents. The coils within UUT 8 failed during the test and are excluded from the OSP. The net weight, excluding the failed coils, is 6,732-lb.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 10

Manufacturer: Johnson Controls
Model number: YC/MP-150x144
Unit function: Air Handling Unit
Serial number: COM # 18992, Order # SE-IS2024-20

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	156.0	14,616	3.0	2.9	6.0

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 24028TR1.2 (dated 10-2-25), tested on 9-11-24

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 3/4-in diameter Grade 5 bolts. Each side wall (parallel to airflow) has (6) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place with large 125-in wide by 124-in high openings at inlet and outlet.
-Roof/Walls: 3-in panels, 18GA carbon steel exterior skin, 22GA carbon steel liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 2-in stitch welded floor panels made of 16GA carbon steel.

Subcomponents: Heatco - Heater, Gas, HDB-HHP, Stacked (HDB-HHP 1250-5000-O), Lau - Fan in Stack on Stand, GenII DDP (182), Baldor - Motor, Direct Drive, TEFC (EM2333T-G), Twin City Fan - Fan in Direct Stack, MPQN/MPQS, Direct Drive Arr. 4 (245), TECO - Motor, Direct Drive, TEFC (NP0504G), Eaton - Control Panel, Encapsulated Transformer (S20N11S05N), Eaton - Control Panel, Heavy Duty Safety Switch (Knife Edge Disconnect) (DH261FRK-CSA), Danfoss - Gas Sensor (DST-GR32, DST-G54B).

Testing notes: N/A

Additional images:



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 11

Manufacturer: Johnson Controls
Model number: YC/MP-150x144
Unit function: Air Handling Unit
Serial number: COM # 18993, Order # SE-IS2024-21

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	156.0	11,712	2.9	2.9	5.7

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 24028TR1.2 (dated 10-2-25), tested on 6-25-24

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (12) 3/4-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (6) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place with large 125-in wide by 124-in high openings at inlet and outlet.
-Roof/Walls: 3-in panels, 18GA carbon steel exterior skin, 22GA carbon steel liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 2-in stitch welded floor panels made of 16GA carbon steel.

Subcomponents: Johnson Controls - Fan Array (5-tall-140H, Size 310 Fan, 4-tall-150H, Size 500 Fan, 3-tall-150H, Size 630 Fan), EBM-Papst - Fan in Array, RadiPac Cube (EG1R-480-310-A26/A29, EG1R-480-500-A26/A29, EG1R-480-630-A26/A29), Lau - Fan in Stack on Stand, GenII DDP (182, 365, 402), Baldor - Motor, Direct Drive, TEFC (EM2333T-G, EM4115T-G), Siemens - Control Panel, VBII Heavy Duty Safety Switch (Knife Edge Disconnect) (HF361R, HF364, HF364R).

Testing notes: N/A

Additional images:



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 12

Manufacturer: Johnson Controls
Model number: YC/MP-150x144
Unit function: Air Handling Unit
Serial number: COM # 18994, Order # SE-IS2024-22

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
144.0	144.0	156.0	9,725	3.7	4.1	15.4

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 24028TR1.2 (dated 10-2-25), tested on 6-26-24

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

- Mounting:** Base mounted rigid using (12) 3/4-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (6) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.
- Construction:**
- Configuration: Four walls in place with two large 59-in wide by 124-in high openings at inlet and large 125-in wide by 112-in high opening at outlet.
 - Roof/Walls: 3-in panels, 18GA carbon steel exterior skin, 22GA carbon steel liner, 16GA carbon steel internal wall posts, foam insulation.
 - Base/Floor: 6-in welded structural carbon steel frame, 2-in stitch welded floor panels made of 16GA carbon steel.
- Subcomponents:** Heatco - Heater, Gas, HDB-C-CW (HDB400-C-CW), Thermotech - Energy Recovery Wheel (TF-359-A, TF-81-S), Eaton - Control Panel, Encapsulated Transformer (S20N11P51P), Eaton - Control Panel, Heavy Duty Safety Switch (Knife Edge Disconnect) (DH261FRK-CSA).
- Testing notes:** N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 13

Manufacturer: Johnson Controls
Model number: YC/MP-143x144
Unit function: Air Handling Unit
Serial number: COM # 19563, Order # SE-IS2024-24

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
288.0	144.0	151.0	26,800	7.7	5.9	11.9

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: US Army ERDC-CERL

Report: 25023TR1.0 (dated 10-3-25), tested on 6-11-25

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (24) 3/4-in diameter Grade 8 bolts. Each side wall (parallel to airflow) has (12) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Two walls in place (inlet and outlet removed). Cable bracing installed at inlet and outlet (carbon steel 3/8-in one end, stainless steel 7/16-in other end).
-Roof/Walls: 3-in panels, 18GA carbon steel exterior skin, half and half 22GA carbon steel and 20GA stainless steel interior liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 8-in welded structural carbon steel frame, 2-in stitch welded floor panels made of 16GA carbon steel, foam insulation.

Subcomponents: Johnson Controls - Coil, Water (Triple-132.75Hx127Wx12row), Coilmaster - Coil, VRF Heat Pump (Single-70Hx37Wx4row, Single-70Hx70Wx6row, Double-125Hx37Wx4row, Double-125Hx70Wx6row), Indeeco - Heater, Electric (121x101 - 78kW, 121x101 - 225kW), Innergy Tech - Energy Recovery Wheel (I4-MS3A-62, I4-MS3A-120), Johnson Controls - Fan Array (4-tall-144H, Size 500 Fan, 3-tall-144H, Size 560 Fan), EBM-Papst - Fan in Array, RadiPac Cube (EG1R-480-500-B26/29, EG1R-480-560-B26/29), Samsung - Expansion Valve (MXD-A64K100E-Controller, MXD-A64K100E-EEV), Hitachi - Expansion Valve (DXF-0192A1-Control Box, DXF-0192A1-EEV).

Testing notes: N/A



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 14

Manufacturer: Johnson Controls
Model number: YC/MP-115x60
Unit function: Air Handling Unit
Serial number: COM # 19814, Order # SE-IS2025-25

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
81.0	60.0	121.0	3,720	7.2	7.4	15.7

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 25023TR2.0 (dated 10-5-25), tested on 9-22-25

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.34	0.54
2.00	1.0 / 1.0				

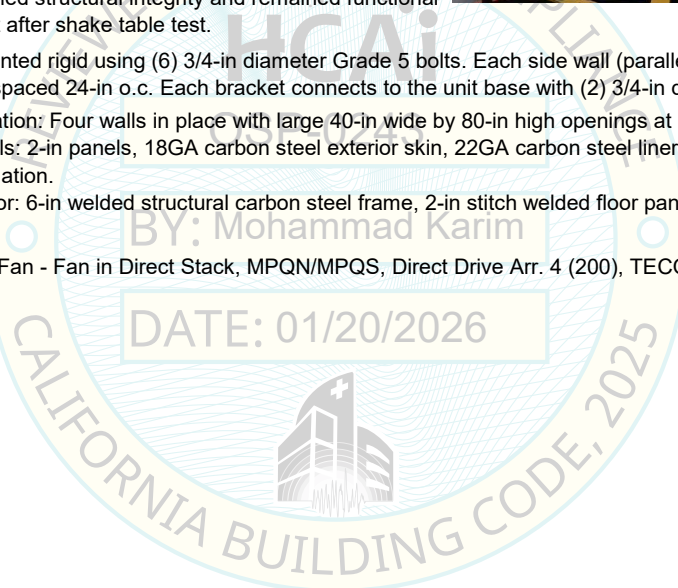
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (6) 3/4-in diameter Grade 5 bolts. Each side wall (parallel to airflow) has (3) 6-in long L3x3x3/8-in brackets spaced 24-in o.c. Each bracket connects to the unit base with (2) 3/4-in diameter Grade 5 bolts.

Construction: -Configuration: Four walls in place with large 40-in wide by 80-in high openings at inlet and outlet.
-Roof/Walls: 2-in panels, 18GA carbon steel exterior skin, 22GA carbon steel liner, 16GA carbon steel internal wall posts, foam insulation.
-Base/Floor: 6-in welded structural carbon steel frame, 2-in stitch welded floor panels made of 16GA carbon steel, foam insulation.

Subcomponents: Twin City Fan - Fan in Direct Stack, MPQN/MPQS, Direct Drive Arr. 4 (200), TECO - Motor, Direct Drive, TEFC (NP0154G).

Testing notes: N/A



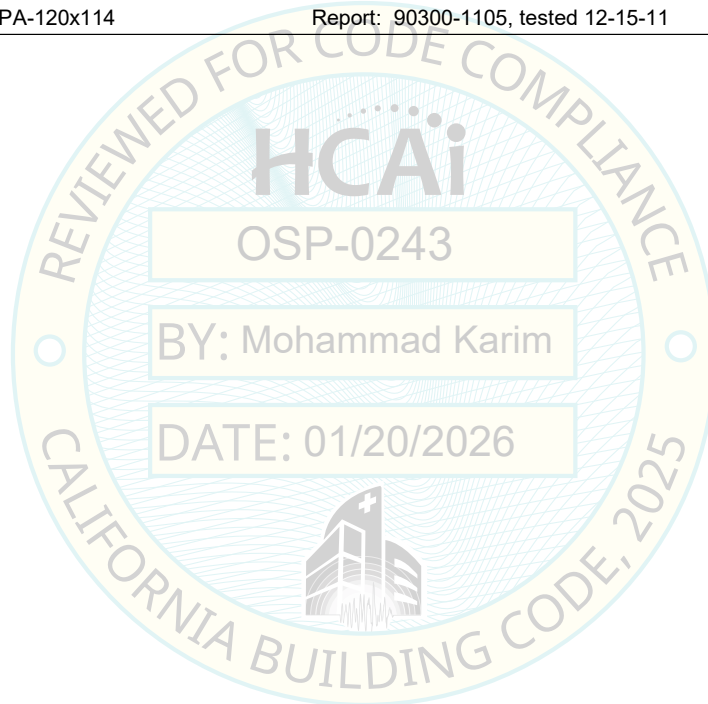
ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

TESTING SUMMARY TABLE - XT

Notes: The units below are used only to cover subcomponents. The construction is generally similar to the YC units.

UUT	Manufacturer / Model	Lab, Report, Test Date	S_{DS} (g)	H_f / R_{μ}	I_p
UUT XT2	Mfr: Johnson Controls	Lab: Dynamic Certification Laboratories	1.93	3.5 / 1.3	1.5
	Model: XT/PA-033x039	Report: 90300-1007, tested 8-27-10	1.93	1.0 / 1.0	
UUT XT4	Mfr: Johnson Controls	Lab: Dynamic Certification Laboratories	1.93	3.5 / 1.3	1.5
	Model: XT/PA-027x030	Report: 90300-1007, tested 9-2-10	1.93	1.0 / 1.0	
UUT XT15	Mfr: Johnson Controls	Lab: Dynamic Certification Laboratories	2.50	3.5 / 1.3	1.5
	Model: XT/PA-027x030-Stacked	Report: 90300-1008, tested 4-30-11	2.50	1.0 / 1.0	
UUT XT18	Mfr: Johnson Controls	Lab: Dynamic Certification Laboratories	1.93	3.5 / 1.3	1.5
	Model: XT/PA-090x120	Report: 90300-1008, tested 5-5-11	1.93	1.0 / 1.0	
UUT XT26	Mfr: Johnson Controls	Lab: Dynamic Certification Laboratories	1.93	3.5 / 1.3	1.5
	Model: XT/PA-120x114	Report: 90300-1105, tested 12-15-11	1.93	1.0 / 1.0	



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - XT

SPECIAL SEISMIC CERTIFICATION

UUT XT2

Manufacturer: Johnson Controls

Model number: XT/PA-033x039

Unit function: Air Handling Unit

Serial number: COM # 28106, Order # 10-885003-07-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
105.0	39.0	33.0	1,100	14.4	13.1	23.2

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Dynamic Certification Laboratories

Report: 90300-1007 (dated 3-16-11), tested on 8-27-10

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted curb non-isolated on 24-in tall 14GA MicroMetl curb using #12 sheet metal screws spaced at 7.5-in o.c. around the perimeter. Curb was base mounted rigid using 1/2-in diameter bolts spaced at 18-in o.c. around the perimeter.

Construction:

- Configuration: Two walls in place (inlet and outlet removed).
- Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
- Base/Floor: No structural base, 2-in floor panels made of 24GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
- Curb: 24-in tall 14GA carbon steel non-isolated curb.

Subcomponents: Johnson Controls - Light Fixture (386-17231-003), Leviton - Light Switch (1451-21), Leviton - Electrical Outlet (8599-1), Johnson Controls - Temperature Sensor (A11H-4C, TE-6300-601H-Y3, TE-631EH-Y3), Johnson Controls - Current Switch (CSD-SA1E1-1), Dwyer - Pressure Switch (MINIHELIC 2-5001), Cleveland Controls - Pressure Switch (AFS-460), Kele - Relay (PAM-1-Y).

Testing notes: UUT XT2 was listed as UUT 2 in the test report and is only considered for the listed subcomponents.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - XT

SPECIAL SEISMIC CERTIFICATION

UUT XT4

Manufacturer: Johnson Controls

Model number: XT/PA-027x030

Unit function: Air Handling Unit

Serial number: COM # 28108, Order # 10,885003-09-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
99.0	30.0	27.0	1,100	23.3	15.8	32.3

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Dynamic Certification Laboratories

Report: 90300-1007 (dated 3-16-11), tested on 9-2-10

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted curb non-isolated on 24-in tall 14GA MicroMetl curb using #12 sheet metal screws spaced at 7.5-in o.c. around the perimeter. Curb was base mounted rigid using 1/2-in diameter bolts spaced at 18-in o.c. around the perimeter.

Construction: -Configuration: Four walls in place.
-Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
-Base/Floor: No structural base, 2-in floor panels made of 24GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
-Curb: 24-in tall 14GA carbon steel non-isolated curb.

Subcomponents: Littlefuse - Magnetic Proximity Sensor (59070-020).

Testing notes: UUT XT4 was listed as UUT 4 in the test report and is only considered for the listed subcomponents.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - XT

SPECIAL SEISMIC CERTIFICATION

UUT XT15

Manufacturer: Johnson Controls
Model number: XT/PA-027x030-Stacked
Unit function: Air Handling Unit
Serial number: COM # 143700, Order # 10-885003-22-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
62.0	30.0	54.0	830	22.3	11.0	>33

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Dynamic Certification Laboratories

Report: 90300-1008 (dated 8-2-11), tested on 4-30-11

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.50	3.5 / 1.3	4.00	2.69	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using #14 sheet metal screws spaced at 7.5-in o.c. around the perimeter.

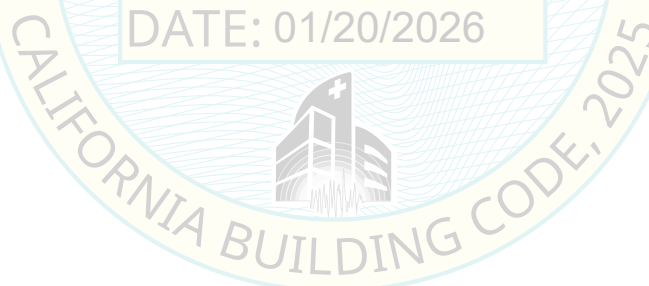
Construction: -Configuration: Three walls in place (inlet or outlet removed).
-Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
-Base/Floor: No structural base, 2-in panels, 24GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.

Subcomponents: Comefri - Fan, ATLI, Belt Drive Arr. 3, Forward Curve (7-7-T1/T2), TECO - Motor, Belt Drive, TEFC (GP0034).

Testing notes: UUT XT15 was listed as UUT 15 in the test report and is only considered for the listed subcomponents.



DATE: 01/20/2026



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - XT

SPECIAL SEISMIC CERTIFICATION

UUT XT18

Manufacturer: Johnson Controls
Model number: XT/PA-090x120
Unit function: Air Handling Unit
Serial number: COM # 141357, Order # 10-885003-17-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
71.0	120.0	90.0	3,000	4.5	6.5	17.0

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Dynamic Certification Laboratories

Report: 90300-1008 (dated 8-2-11), tested on 5-5-11

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (8) 3/8-in diameter Grade 5 bolts. Each end wall (perpendicular to airflow) has (2) brackets located near the corners.

Construction: -Configuration: Three walls in place (inlet or outlet removed).
-Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.
-Base/Floor: No structural base, 2-in panels, 24GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.

Subcomponents: Comefri - Fan, ATLI, Belt Drive Arr. 3, Forward Curve (40-40 - T1/T2), TECO - Motor, Belt Drive, TEFC (NP0304).

Testing notes: UUT XT18 was listed as UUT 18 in the test report and is only considered for the listed subcomponents.



DATE: 01/20/2026

UUT XT26

Manufacturer: Johnson Controls
Model number: XT/PA-120x114
Unit function: Air Handling Unit
Serial number: COM # 143291, Order # 10-885005-02-01

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
100.0	114.0	126.0	7,030	3.5	3.5	11.3

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Dynamic Certification Laboratories

Report: 90300-1105 (dated 2-17-12), tested on 12-15-11

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted rigid using (28) 1/2-in diameter Grade 5 bolts spaced at 16-in o.c. around the perimeter.

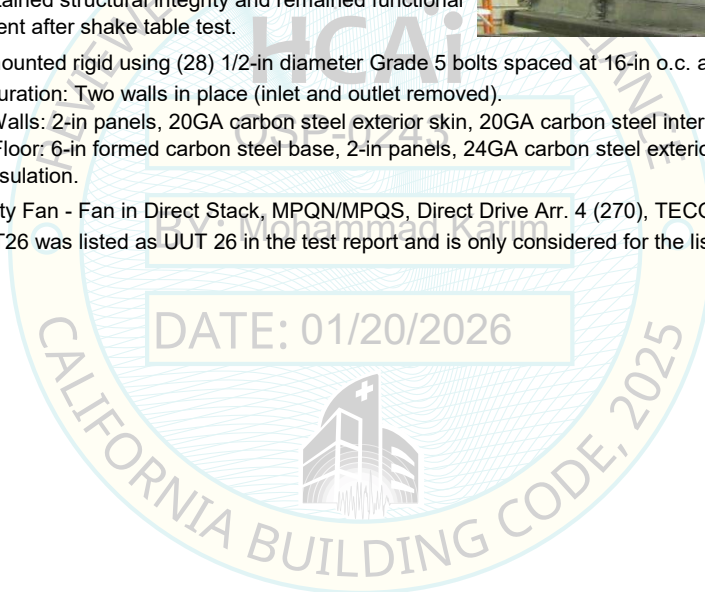
Construction: -Configuration: Two walls in place (inlet and outlet removed).

-Roof/Walls: 2-in panels, 20GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.

-Base/Floor: 6-in formed carbon steel base, 2-in panels, 24GA carbon steel exterior skin, 20GA carbon steel interior liner, foam insulation.

Subcomponents: Twin City Fan - Fan in Direct Stack, MPQN/MPQS, Direct Drive Arr. 4 (270), TECO - Motor, Direct Drive, TEFC (NP0254).

Testing notes: UUT XT26 was listed as UUT 26 in the test report and is only considered for the listed subcomponents.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

TESTING SUMMARY TABLE - SUBCOMPONENTS

Notes: The units below are subcomponents of the YC units tested outside of the Air Handling Units (tested on their own as a subcomponent or subassembly).

UUT	Manufacturer / Model	Lab, Report, Test Date	S _{DS} (g)	H _f / R _μ	I _P
UUT S1.1	Mfr: Twin City Fan	Lab: Twin City Fan - Test Laboratory	2.50	3.5 / 1.3	1.5
	Model: EPLFN 150	Report: 2012-SHAKE-02, v7.0, tested 1-21-14	2.50	1.0 / 1.0	
UUT S1.2	Mfr: Twin City Fan	Lab: Twin City Fan - Test Laboratory	2.50	3.5 / 1.3	1.5
	Model: EPLQN 490	Report: 2012-SHAKE-02, v7.0, tested 1-22-14	2.50	1.0 / 1.0	
UUT S2.1a - Isolated	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0075AW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.1b - Rigid	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0075AW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.2a - Isolated	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0125CW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.2b - Rigid	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0125CW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.3a - Isolated	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0075CW1F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.3b - Rigid	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0075CW1F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.4a - Isolated	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0150AW1F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.4b - Rigid	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0150AW1F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.5a - Isolated	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0030CW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S2.5b - Rigid	Mfr: TCI	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: HGP0030CW3F0000-JCI-SEISMIC	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.1a - Isolated	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 48"w x 52"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.1b - Rigid	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 48"w x 52"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.2a - Isolated	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 20"w x 20"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.2b - Rigid	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 20"w x 20"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.3a - Isolated	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 48"w x 52"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.3b - Rigid	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 48"w x 52"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.4a - Isolated	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 20"w x 20"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	
UUT S3.4a - Isolated	Mfr: Ruskin	Lab: Environmental Testing Laboratory	2.00	3.5 / 1.3	1.5
	Model: CBD6 20"w x 20"h	Report: 17073TR1.0, tested 10-24-17	3.20	1.0 / 1.0	

Summary continues on the next page.

ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

TESTING SUMMARY TABLE - SUBCOMPONENTS (continued)

UUT	Manufacturer / Model	Lab, Report, Test Date	S _{DS} (g)	H _f / R _μ	I _p
UUT S4.1a - Isolated	Mfr: Johnson Controls & UVDI Model: CS Grid - 97x144	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.1b - Rigid	Mfr: Johnson Controls & UVDI Model: CS Grid - 97x144	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.2a - Isolated	Mfr: Johnson Controls & UVDI Model: SS Grid - 97x144	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.2b - Rigid	Mfr: Johnson Controls & UVDI Model: SS Grid - 97x144	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.3a - Isolated	Mfr: Johnson Controls Model: CUSTOM-16x8x7	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.3b - Rigid	Mfr: Johnson Controls Model: CUSTOM-16x8x7	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.4a - Isolated	Mfr: Johnson Controls Model: CUSTOM-16x12x7	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S4.4b - Rigid	Mfr: Johnson Controls Model: CUSTOM-16x12x7	Lab: Environmental Testing Laboratory Report: 18033TR1.0, tested 11-2-18	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.1a - Isolated	Mfr: Johnson Controls Model: CUSTOM-12x12x8	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.1b - Rigid	Mfr: Johnson Controls Model: CUSTOM-12x12x8	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.2a - Isolated	Mfr: Johnson Controls Model: CUSTOM-30x30x12	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.2b - Rigid	Mfr: Johnson Controls Model: CUSTOM-30x30x12	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.3a - Isolated	Mfr: Johnson Controls Model: CUSTOM-60x36x12	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S5.3b - Rigid	Mfr: Johnson Controls Model: CUSTOM-60x36x12	Lab: Environmental Testing Laboratory Report: 15423, Rev. 1, tested 9-19-19	1.93 1.93	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.1a - Isolated	Mfr: ABB Model: CF3R-6 (AYK580-CF-211A-2+B058)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.1b - Rigid	Mfr: ABB Model: CF3R-6 (AYK580-CF-211A-2+B058)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.2a - Isolated	Mfr: ABB Model: CF1-6 (AYK580-CF-180A-4)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.2a - Isolated	Mfr: ABB Model: CF1-6 (AYK580-CF-180A-4)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.3a - Isolated	Mfr: ABB Model: CF3R-1 (AYK580-CF-02A1-4+B058)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.3b - Rigid	Mfr: ABB Model: CF3R-1 (AYK580-CF-02A1-4+B058)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.4a - Isolated	Mfr: ABB Model: PF1-1 (AYK580-PF-04A6-2)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5
UUT S6.4b - Rigid	Mfr: ABB Model: PF1-1 (AYK580-PF-04A6-2)	Lab: Environmental Testing Laboratory Report: 19081TR1.0, tested 4-13-20	2.00 2.50	3.5 / 1.3 1.0 / 1.0	1.5

ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - SUBC.

SPECIAL SEISMIC CERTIFICATION

UUT S1.1

Manufacturer: Twin City Fan

Model number: EPLFN 150

Unit function: Fan

Serial number: 20954-11-1

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
27.9	22.0	22.0	116	10.0	7.8	13.9

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Twin City Fan - Test Laboratory

Report: 2012-SHAKE-02, v7.0 (dated 5-20-14), tested on 1-21-14

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.50	3.5 / 1.3	4.00	2.69	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted spring vibration isolated using (4) VMC MSS-1C-50 spring isolators using (4) 3/8-in diameter ASTM A307 bolts per isolator.

Construction: Carbon steel housing, aluminum wheel.

Subcomponents: Twin City Fan - Fan, EPLFN/EPLQN, Direct Drive Arr. 4 (150).

Testing notes: UUT S1.1 was listed as UUT 11P in the test report. Dimensions in test report differ from what is shown above due to the way Johnson Controls defines them.



UUT S1.2

Manufacturer: Twin City Fan

Model number: EPLQN 490

Unit function: Fan

Serial number: 20944-1-1

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
77.4	68.0	68.0	2,450	4.0	4.4	6.9

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Twin City Fan - Test Laboratory

Report: 2012-SHAKE-02, v7.0 (dated 5-20-14), tested on 1-22-14

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.50	3.5 / 1.3	4.00	2.69	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base mounted spring vibration isolated using (2) VMC MSSH-1E-530N and (2) MSSH-1E-825N spring isolators using (4) 5/8-in diameter ASTM A325 bolts per isolator.

Construction: Carbon steel housing, aluminum wheel.

Subcomponents: Twin City Fan - Fan, EPLFN/EPLQN, Direct Drive Arr. 4 (490).

Testing notes: UUT S1.2 was listed as UUT 12P in the test report. Dimensions in test report differ from what is shown above due to the way Johnson Controls defines them.



UUT S2.1a - Isolated

Manufacturer: TCI
Model number: HGP0075AW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	39.2	37.6	251	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to P1000 Unistrut rails using (4) 3/8-in diameter Grade 2 bolts to P1008 Unistrut channel nuts. Unistrut rails mounted to test fixture using (2) 3/8-in diameter Grade 8 bolts per rail (2 rails, 4 bolts total). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0075AW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.1a was listed as UUT 1 in the test report.



UUT S2.1b - Rigid

Manufacturer: TCI
Model number: HGP0075AW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	39.2	37.6	251	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0075AW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.1b is UUT S2.1a with different fixture mounting. UUT S2.1b was listed as UUT 1 in the test report.



UUT S2.2a - Isolated

Manufacturer: TCI
Model number: HGP0125CW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	39.2	37.6	377	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to P1000 Unistrut rails using (4) 3/8-in diameter Grade 2 bolts to P1008 Unistrut channel nuts. Unistrut rails mounted to test fixture using (2) 3/8-in diameter Grade 8 bolts per rail (2 rails, 4 bolts total). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0125CW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.2a was listed as UUT 2 in the test report.



UUT S2.2b - Rigid

Manufacturer: TCI
Model number: HGP0125CW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	39.2	37.6	377	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0125CW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.2b is UUT S2.2a with different fixture mounting. UUT S2.2b was listed as UUT 2 in the test report.



UUT S2.3a - Isolated

Manufacturer: TCI
Model number: HGP0075CW1F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.5	17.5	31.6	179	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to P1000 Unistrut rails using (4) 3/8-in diameter Grade 2 bolts to P1008 Unistrut channel nuts. Unistrut rails mounted to test fixture using (2) 3/8-in diameter Grade 8 bolts per rail (2 rails, 4 bolts total). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel Type 1 enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 1 Enclosure (HGP0075CW1F0000-JCI-SEISMIC).

Testing notes: UUT S2.3a was listed as UUT 3 in the test report.



UUT S2.3b - Rigid

Manufacturer: TCI
Model number: HGP0075CW1F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.5	17.5	31.6	179	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel Type 1 enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 1 Enclosure (HGP0075CW1F0000-JCI-SEISMIC).

Testing notes: UUT S2.3b is UUT S2.3a with different fixture mounting. UUT S2.3b was listed as UUT 3 in the test report.



UUT S2.4a - Isolated

Manufacturer: TCI
Model number: HGP0150AW1F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
16.5	17.7	56.2	363	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to P1000 Unistrut rails using (4) 3/8-in diameter Grade 2 bolts to P1008 Unistrut channel nuts. Unistrut rails mounted to test fixture using (2) 3/8-in diameter Grade 8 bolts per rail (2 rails, 4 bolts total). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel Type 1 enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 1 Enclosure (HGP0150AW1F0000-JCI-SEISMIC).

Testing notes: UUT S2.4a was listed as UUT 4 in the test report.



UUT S2.4b - Rigid

Manufacturer: TCI
Model number: HGP0150AW1F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
16.5	17.7	56.2	363	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel Type 1 enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 1 Enclosure (HGP0150AW1F0000-JCI-SEISMIC).

Testing notes: UUT S2.4b is UUT S2.4a with different fixture mounting. UUT S2.4b was listed as UUT 4 in the test report.



UUT S2.5a - Isolated

Manufacturer: TCI
Model number: HGP0030CW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	33.3	32.3	228	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to P1000 Unistrut rails using (4) 3/8-in diameter Grade 2 bolts to P1008 Unistrut channel nuts. Unistrut rails mounted to test fixture using (2) 3/8-in diameter Grade 8 bolts per rail (2 rails, 4 bolts total). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0030CW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.5a was listed as UUT 5 in the test report.



UUT S2.5b - Rigid

Manufacturer: TCI
Model number: HGP0030CW3F0000-JCI-SEISMIC
Unit function: Harmonic Filter
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
13.7	33.3	32.3	228	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel Type 3R enclosure.

Subcomponents: TCI - Harmonic Filter, HarmonicGuard Passive (HGP) 5% in Type 3R Enclosure (HGP0030CW3F0000-JCI-SEISMIC).

Testing notes: UUT S2.5b is UUT S2.5a with different fixture mounting. UUT S2.5b was listed as UUT 5 in the test report.



UUT S3.1a - Isolated

Manufacturer: Ruskin
Model number: CBD6 48"w x 52"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	48.0	52.0	43	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (34) 1/4-in sheet metal screws (6-in o.c., all four sides). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (48"w x 52"h).

Testing notes: UUT S3.1a was listed as UUT 6 in the test report.



UUT S3.1b - Rigid

Manufacturer: Ruskin
Model number: CBD6 48"w x 52"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	48.0	52.0	43	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (48"w x 52"h).

Testing notes: UUT S3.1b is UUT S3.1a with different fixture mounting. UUT S3.1b was listed as UUT 6 in the test report.



UUT S3.2a - Isolated

Manufacturer: Ruskin
Model number: CBD6 20"w x 20"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	20.0	20.0	10	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (16) 1/4-in sheet metal screws (6-in o.c., all four sides). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (20"w x 20"h).

Testing notes: UUT S3.2a was listed as UUT 7 in the test report.



UUT S3.2b - Rigid

Manufacturer: Ruskin
Model number: CBD6 20"w x 20"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	20.0	20.0	10	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (20"w x 20"h).

Testing notes: UUT S3.2b is UUT S3.2a with different fixture mounting. UUT S3.2b was listed as UUT 7 in the test report.



UUT S3.3a - Isolated

Manufacturer: Ruskin
Model number: CBD6 48"w x 52"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	48.0	52.0	43	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Horizontal surface mounted flexible. Horizontal surface mounted using (34) 1/4-in sheet metal screws (6-in o.c., all four sides). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (48"w x 52"h).

Testing notes: UUT S3.3a was listed as UUT 8 in the test report.



UUT S3.3b - Rigid

Manufacturer: Ruskin
Model number: CBD6 48"w x 52"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	48.0	52.0	43	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Horizontal surface mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (48"w x 52"h).

Testing notes: UUT S3.3b is UUT S3.3a with different fixture mounting. UUT S3.3b was listed as UUT 8 in the test report.



UUT S3.4a - Isolated

Manufacturer: Ruskin
Model number: CBD6 20"w x 20"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	20.0	20.0	10	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Horizontal surface mounted flexible. Horizontal surface mounted using (16) 1/4-in sheet metal screws (6-in o.c., all four sides). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (20"w x 20"h).

Testing notes: UUT S3.4a was listed as UUT 9 in the test report.



UUT S3.4b - Rigid

Manufacturer: Ruskin
Model number: CBD6 20"w x 20"h
Unit function: Damper
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
2.3	20.0	20.0	10	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 17073TR1.0 (dated 10-26-17), tested on 10-24-17

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	2.14	0.86
3.20	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Horizontal surface mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Aluminum construction.

Subcomponents: Ruskin - Damper, BD6/CBD6 Heavy Duty Backdraft (20"w x 20"h).

Testing notes: UUT S3.4b is UUT S3.4a with different fixture mounting. UUT S3.4b was listed as UUT 9 in the test report.



UUT S4.1a - Isolated

Manufacturer: Johnson Controls & UVDI
Model number: CS Grid - 97x144
Unit function: UV Light System
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
9.0	97.0	144.0	350	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base/wall mounted flexible. Base/wall mounted to 16GA thick carbon steel panels using (28) 1/4-in carbon steel sheet metal screws (7 each flange of bulkhead on top and bottom, 14-in o.c. spacing, starting 2-in from end of bulkhead). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHB 1000 spring isolators.

Construction: Carbon steel support structure.

Subcomponents: Johnson Controls & UVDI - UV Light System, V-MAX Grid (144Hx97W).

Testing notes: UUT S4.1a was listed as UUT 1 in the test report. Mounting clips hold the glass of the lamps only, not the ends.



UUT S4.1b - Rigid

Manufacturer: Johnson Controls & UVDI
Model number: CS Grid - 97x144
Unit function: UV Light System
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
9.0	97.0	144.0	350	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base/wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel support structure.

Subcomponents: Johnson Controls & UVDI - UV Light System, V-MAX Grid (144Hx97W).

Testing notes: UUT S4.1b is UUT S4.1a with different fixture mounting. UUT S4.1b was listed as UUT 1 in the test report.



UUT S4.2a - Isolated

Manufacturer: Johnson Controls & UVDI
Model number: SS Grid - 97x144
Unit function: UV Light System
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
9.0	97.0	144.0	350	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base/wall mounted flexible. Base/wall mounted to 16GA thick carbon steel panels using (28) 1/4-in carbon steel sheet metal screws (7 each flange of bulkhead on top and bottom, 14-in o.c. spacing, starting 2-in from end of bulkhead). Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHB 1000 spring isolators.

Construction: Stainless steel support structure.

Subcomponents: Johnson Controls & UVDI - UV Light System, V-MAX Grid (144Hx97W).

Testing notes: UUT S4.2a was listed as UUT 2 in the test report. Mounting clips hold the glass of the lamps only, not the ends.



UUT S4.2b - Rigid

Manufacturer: Johnson Controls & UVDI
Model number: SS Grid - 97x144
Unit function: UV Light System
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
9.0	97.0	144.0	350	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Base/wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Stainless steel support structure.

Subcomponents: Johnson Controls & UVDI - UV Light System, V-MAX Grid (144Hx97W).

Testing notes: UUT S4.2b is UUT S4.2a with different fixture mounting. UUT S4.2b was listed as UUT 2 in the test report.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - SUBC.

SPECIAL SEISMIC CERTIFICATION

UUT S4.3a - Isolated

Manufacturer: Johnson Controls
Model number: CUSTOM-16x8x7
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
6.5	8.0	16.0	16	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to 16GA thick carbon steel panel using (4) 3/8-in diameter Grade 2 bolts into standard rivet nuts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHB 1000 spring isolators.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-16x8x7).

Testing notes: UUT S4.3a was listed as UUT 3 in the test report.



UUT S4.3b - Rigid

Manufacturer: Johnson Controls
Model number: CUSTOM-16x8x7
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
6.5	8.0	16.0	16	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

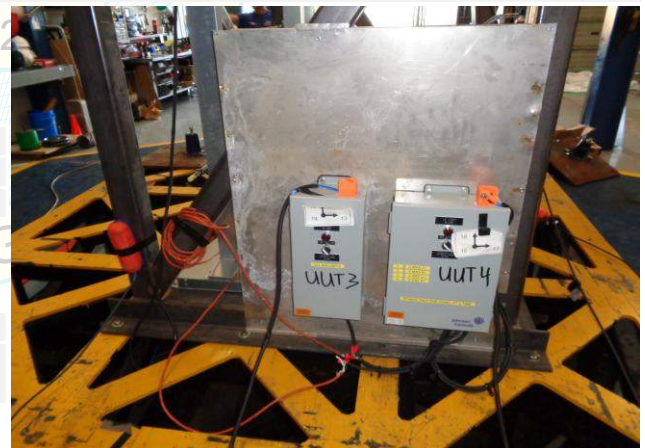
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-16x8x7).

Testing notes: UUT S4.3b is UUT S4.3a with different fixture mounting. UUT S4.3b was listed as UUT 3 in the test report.



ATTACHMENT 3: UNIT UNDER TEST SUMMARIES - SUBC.

SPECIAL SEISMIC CERTIFICATION

UUT S4.4a - Isolated

Manufacturer: Johnson Controls
Model number: CUSTOM-16x12x7
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
6.5	12.0	16.0	34	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted to 16GA thick carbon steel panel using (4) 3/8-in diameter Grade 2 bolts into standard rivet nuts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHB 1000 spring isolators.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-16x12x7).

Testing notes: UUT S4.4a was listed as UUT 4 in the test report.



UUT S4.4b - Rigid

Manufacturer: Johnson Controls
Model number: CUSTOM-16x12x7
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
6.5	12.0	16.0	34	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 18033TR1.0 (dated 5-22-19), tested on 11-2-18

S_{DS} (g)	H_f / R_μ	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

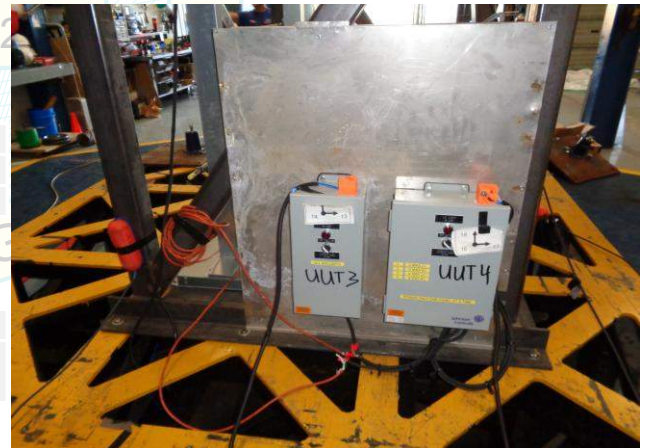
Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-16x12x7).

Testing notes: UUT S4.4b is UUT S4.4a with different fixture mounting. UUT S4.4b was listed as UUT 4 in the test report.



UUT S5.1a - Isolated

Manufacturer: Johnson Controls
Model number: CUSTOM-12x12x8
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
8.0	12.0	12.0	22	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (4) 3/8-in diameter Grade 5 bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 4 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-12x12x8), Rittal - Control Panel Enclosure (1033.500).

Testing notes: UUT S5.1a was listed as UUT 1a in the test report.



UUT S5.1b - Rigid

Manufacturer: Johnson Controls
Model number: CUSTOM-12x12x8
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
8.0	12.0	12.0	22	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 4 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-12x12x8), Rittal - Control Panel Enclosure (1033.500).

Testing notes: UUT S5.1b is UUT S5.1a with different fixture mounting. UUT S5.1b was listed as UUT 1b in the test report.



UUT S5.2a - Isolated

Manufacturer: Johnson Controls
Model number: CUSTOM-30x30x12
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.0	30.0	30.0	143	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (4) 3/8-in diameter Grade 5 bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 4 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-30x30x12), Rittal - Control Panel Enclosure (1073.500), ABB - Disconnect Switch (OT200U03), Siemens - Transformer (MT2000A).

Testing notes: UUT S5.2a was listed as UUT 2a in the test report.



UUT S5.2b - Rigid

Manufacturer: Johnson Controls
Model number: CUSTOM-30x30x12
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.0	30.0	30.0	143	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S_{DS} (g)	H_f / R_{μ}	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 4 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-30x30x12), Rittal - Control Panel Enclosure (1073.500), ABB - Disconnect Switch (OT200U03), Siemens - Transformer (MT2000A).

Testing notes: UUT S5.2b is UUT S5.2a with different fixture mounting. UUT S5.2b was listed as UUT 2b in the test report.



UUT S5.3a - Isolated

Manufacturer: Johnson Controls
Model number: CUSTOM-60x36x12
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.0	36.0	60.0	349	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (4) 3/8-in diameter Grade 5 bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 3R/4/12 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-60x36x12), Rittal - Control Panel Enclosure (WM603612NC), ABB - Disconnect Switch (OS600J03), Siemens - Transformer (MT2000A).

Testing notes: UUT S5.3a was listed as UUT 3a in the test report.



UUT S5.3b - Rigid

Manufacturer: Johnson Controls
Model number: CUSTOM-60x36x12
Unit function: Control Panel
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
12.0	36.0	60.0	349	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 15423, Rev. 1 (dated 10-22-19), tested on 9-19-19

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
1.93	3.5 / 1.3	3.09	2.08	1.29	0.52
1.93	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 3R/4/12 enclosure.

Subcomponents: Johnson Controls - Control Panel, NEMA 3R,4,12 (CUSTOM-60x36x12), Rittal - Control Panel Enclosure (WM603612NC), ABB - Disconnect Switch (OS600J03), Siemens - Transformer (MT2000A).

Testing notes: UUT S5.3b is UUT S5.3a with different fixture mounting. UUT S5.3b was listed as UUT 3b in the test report.



UUT S6.1a - Isolated

Manufacturer: ABB
Model number: CF3R-6 (AYK580-CF-211A-2+B058)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
22.3	32.5	51.0	417	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (10) 3/8-in diameter Grade 5 bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R7), ABB - VFD, AYK580 Packaged (CF3R-6).

Testing notes: UUT S6.1a was listed as UUT 1 in the test report.



UUT S6.1b - Rigid

Manufacturer: ABB
Model number: CF3R-6 (AYK580-CF-211A-2+B058)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
22.3	32.5	51.0	417	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, $I_p = 1.5$: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R7), ABB - VFD, AYK580 Packaged (CF3R-6).

Testing notes: UUT S6.1b is UUT S6.1a with different fixture mounting. UUT S6.1b was listed as UUT 1 in the test report.



UUT S6.2a - Isolated

Manufacturer: ABB
Model number: CF1-6 (AYK580-CF-180A-4)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
20.5	33.0	45.0	349	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (4) 3/8-in diameter Grade 5 bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 1 enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R7), ABB - VFD, AYK580 Packaged (CF1-6).

Testing notes: UUT S6.2a was listed as UUT 2 in the test report.



UUT S6.2b - Rigid

Manufacturer: ABB
Model number: CF1-6 (AYK580-CF-180A-4)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
20.5	33.0	45.0	349	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 1 enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R7), ABB - VFD, AYK580 Packaged (CF1-6).

Testing notes: UUT S6.2b is UUT S6.2a with different fixture mounting. UUT S6.2b was listed as UUT 2 in the test report.



UUT S6.3a - Isolated

Manufacturer: ABB
Model number: CF3R-1 (AYK580-CF-02A1-4+B058)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
17.4	18.0	20.5	83	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (6) 3/8-in diameter lag bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R1), ABB - VFD, AYK580 Packaged (CF3R-1).

Testing notes: UUT S6.3a was listed as UUT 3 in the test report.



UUT S6.3b - Rigid

Manufacturer: ABB
Model number: CF3R-1 (AYK580-CF-02A1-4+B058)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
17.4	18.0	20.5	83	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

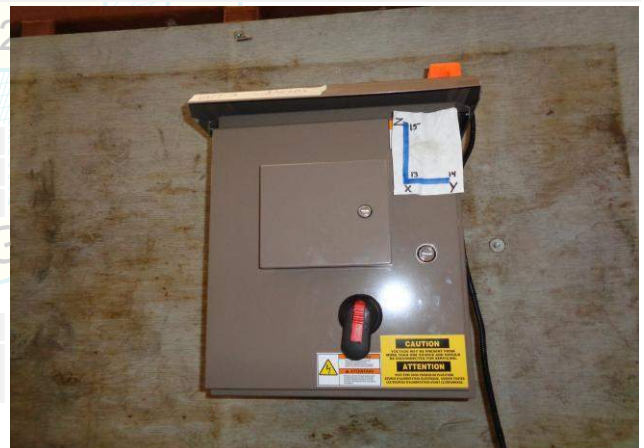
Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 3R enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R1), ABB - VFD, AYK580 Packaged (CF3R-1).

Testing notes: UUT S6.3b is UUT S6.3a with different fixture mounting. UUT S6.3b was listed as UUT 3 in the test report.



UUT S6.4a - Isolated

Manufacturer: ABB
Model number: PF1-1 (AYK580-PF-04A6-2)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
11.7	8.3	20.8	23	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted flexible. Wall mounted using (4) 3/8-in diameter lag bolts. Test fixture was base mounted spring vibration isolated using (4) Mason SSLFHC 1750 spring isolators.

Construction: Carbon steel NEMA 1 enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R1), ABB - VFD, AYK580 Packaged (PF1-1).

Testing notes: UUT S6.4a was listed as UUT 4 in the test report.



UUT S6.4b - Rigid

Manufacturer: ABB
Model number: PF1-1 (AYK580-PF-04A6-2)
Unit function: Variable Frequency Drive
Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
11.7	8.3	20.8	23	N/A	N/A	N/A

Code & criteria: 2024 IBC, 2025 CBC, ICC-ES AC156-24 (2nd Edition)

Test laboratory: Environmental Testing Laboratory

Report: 19081TR1.0 (dated 4-20-20), tested on 4-13-20

S _{DS} (g)	H _f / R _μ	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.00	3.5 / 1.3	3.20	2.15	1.68	0.68
2.50	1.0 / 1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Wall mounted rigid. Mounting was identical to above except test fixture was base mounted rigid.

Construction: Carbon steel NEMA 1 enclosure.

Subcomponents: ABB - VFD, AYK580 Base (R1), ABB - VFD, AYK580 Packaged (PF1-1).

Testing notes: UUT S6.4b is UUT S6.4a with different fixture mounting. UUT S6.4b was listed as UUT 4 in the test report.

