APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0535

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Johnson Controls, Inc.

Manufacturer's Technical Representative: Cameron Boyce

Mailing Address: 5005 York Drive, Norman, OK 73069

Telephone: 405-419-6830 Email: Cameron.w.boyce@jci.com

Product Information

Product Name: Direct Fit

Product Type: Rooftop Units – Air Conditioning Units and Heat Pumps

Product Model Number: See attachment
(List all unique product identification numbers and/or part numbers)

General Description: Air Conditioning and Heat Pump Units, 3 – 12.5 Ton cooling capacity.

Mounting Description: All Air Conditioning and Heat Pump Units may be mounted on rigid curbs. Any units or components that are certified for spring isolated curb mounting are explicitly listed in the certified product and subcomponent tables.

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John P. Giuliano, PE

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Date: 6/3/2020

Title: President Company Name: VMC Group

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

Company Name: The VMC Group

Name: Mr. Kenneth Tarlow California License Number: SE2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: ken.tarlow@thevmcgroup.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: Dynamic Certification Laboratory

Contact Name: Kelly Laplace

Mailing Address: 1315 Greg Street, Sparks, Nevada 89431

Telephone: 775-358-5085 Email: kelly@shaketest.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = Rigid: 1.50 (z/h = 1.0); 1.13 (z/h = 0); Isolated: 4.50 (z/h = 1.0); 1.88 (z/h = 0)

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 (z/h = 1) 2.5 (z/h = 0)

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0 (Rigid) 2.0 (Isolated)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1 (S_{DS} = 2.00); 0 (S_{DS} = 2.50)

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

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

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

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☐ Other(s) (Please Specify):

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: Date: July 10, 2020

Print Name: Timothy J Piland Title: SSE

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

Condition of Approval (if applicable):

Table 1 - Certified Product Matrix - Gas Powered AC Units

Model	Efficiency Rating[1]	Nominal Cooling Capacity [tons]	Length[2] [in]	Width[2] [in]	Height[2,3] [in]	Curb Heights [in]	Cabinet Material	MFR	Curb Weights[4] [lbs]	Max Operating Weight[5] [lbs]	Mounting Configuration[12]	UUT[6,7,8,9,10,11]
ZQG04	14 SEER	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	806	Rigid, Spring Isolated	1a, 1b, 1c, 1d
ZXG04	Standard	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	853	Rigid, Spring Isolated	Interpolated
ZYG04	Mid	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	865	Rigid, Spring Isolated	Interpolated
ZQG05	14 SEER	4	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	876	Rigid, Spring Isolated	Interpolated
ZXG05	Standard	4	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	890	Rigid, Spring Isolated	Interpolated
ZYG05	Mid	4	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	956	Rigid, Spring Isolated	Interpolated
ZQG06	14 SEER	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	953	Rigid, Spring Isolated	Interpolated
ZXG06	Standard	5	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	922	Rigid, Spring Isolated	Interpolated
ZYG06	Mid	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	974	Rigid, Spring Isolated	Interpolated
ZXG07	Standard	6	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	984	Rigid, Spring Isolated	Interpolated
ZYG07	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1142	Rigid, Spring Isolated	Interpolated
ZXGA7	Standard	6	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	984	Rigid, Spring Isolated	Interpolated
ZYGA7	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1142	Rigid, Spring Isolated	Interpolated
ZXG08	Standard	7.5	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1231	Rigid, Spring Isolated	Interpolated
ZYG08	Mid	7.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1318	Rigid, Spring Isolated	Interpolated
ZXG09	Standard	8.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1292	Rigid, Spring Isolated	Interpolated
ZYG09	Mid	8.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1318	Rigid, Spring Isolated	Interpolated
ZXG12	Standard	10	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1323	Rigid, Spring Isolated	Interpolated
ZYG12	Mid	10	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200 or 315	1346	Rigid, Spring Isolated	Interpolated
ZXG14	Standard	12.5	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200 or 315	1382	Rigid, Spring Isolated	4a, 4b, 4c, 4d

Notes:

1. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
2. Dimensions do not include overhang/stacked subcomponents
3. Height does not include curb height
4. Curb weight not included in Max Operating Weight
5. Max operating weights assume all of the most massive subcomponents are installed
6. All units are installed on a 3-3/4" galvanized carbon steel base rail
7. UUT Xa is the first configuration of the unit to be tested in the rigid mounting configuration
8. UUT Xb is UUT Xa but tested in the isolated mounting configuration
9. UUT Xc is the second configuration of the unit in the rigid mounting configuration
10. UUT Xd is UUT Xc but tested in the isolated mounting configuration
11. X is the UUT number, e.g. 1, 2, 3, 4, 5, 6.
12. For spring isolated mounting, only appropriate internal components for VFDs, Power Exhausts, and Low Ambient Accessory Kits may be used per the permitted mounting configurations of the respective subcomponent tables 7, 11, and 23.

Table 2a - Certified Product Matrix - Electric Powered AC Units - Rigid Mounting

Model	Efficiency Rating[1]	Nominal Cooling Capacity [tons]	Length[2] [in]	Width[2] [in]	Height[2,3] [in]	Curb Heights [in]	Cabinet Material	MFR	Curb Weights[4] [lbs]	Max Operating Weight[5] [lbs]	Mounting Configuration[12]	UUT[6,7,8,9,10,11]
ZQE04	14 SEER	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	788	Rigid	Extrapolated
ZXE04	Standard	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	807	Rigid	Extrapolated
ZYE04	Mid	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	819	Rigid	Extrapolated
ZQE05	14 SEER	4	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	825	Rigid	Extrapolated
ZXE05	Standard	4	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	836	Rigid	Extrapolated
ZYE05	Mid	4	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	200	902	Rigid	Extrapolated
ZQE06	14 SEER	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	200	904	Rigid	Extrapolated
ZXE06	Standard	5	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	200	868	Rigid	Extrapolated
ZYE06	Mid	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	200	920	Rigid	Extrapolated
ZXE07	Standard	6	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	200	930	Rigid	Extrapolated
ZYE07	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1072	Rigid	2a
ZXEA7	Standard	6	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	200	930	Rigid	Interpolated
ZYEA7	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200	1072	Rigid	Interpolated
ZXE08	Standard	7.5	87.2	61.7	40.6	14	Galvanized Carbon Steel	JCI	200	1129	Rigid	Interpolated
ZYE08	Mid	7.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200	1216	Rigid	Interpolated
ZXE09	Standard	8.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200	1190	Rigid	Interpolated
ZYE09	Mid	8.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200	1216	Rigid	Interpolated
ZXE12	Standard	10	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200	1217	Rigid	Interpolated
ZYE12	Mid	10	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200	1240	Rigid	Interpolated
ZXE14	Standard	12.5	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200	1270	Rigid	3a

Notes:

1. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
2. Dimensions do not include overhang/stacked subcomponents
3. Height does not include curb height
4. Curb weight not included in Max Operating Weight
5. Max operating weights assume all of the most massive subcomponents are installed
6. All units are installed on a 3-3/4" galvanized carbon steel base rail
7. UUT Xa is the first configuration of the unit to be tested in the rigid mounting configuration
8. UUT Xb is UUT Xa but tested in the isolated mounting configuration
9. UUT Xc is the second configuration of the unit in the rigid mounting configuration
10. UUT Xd is UUT Xc but tested in the isolated mounting configuration
11. X is the UUT number, e.g. 1, 2, 3, 4, 5, 6.

Table 2b - Certified Product Matrix - Electric Powered AC Units - Sping Isolated Mounting

Model	Efficiency Rating[1]	Nominal Cooling Capacity [tons]	Length[2] [in]	Width[2] [in]	Height[2,3] [in]	Curb Heights [in]	Cabinet Material	MFR	Curb Weights[4] [lbs]	Max Operating Weight[5] [lbs]	Mounting Configuration[12]	UUT[6,7,8,9,10,11]
ZYE07	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1072	Spring Isolated	2b

Notes:

1. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
2. Dimensions do not include overhang/stacked subcomponents
3. Height does not include curb height
4. Curb weight not included in Max Operating Weight
5. Max operating weights assume all of the most massive subcomponents are installed
6. All units are installed on a 3-3/4" galvanized carbon steel base rail
7. UUT Xa is the first configuration of the unit to be tested in the rigid mounting configuration
8. UUT Xb is UUT Xa but tested in the isolated mounting configuration
9. UUT Xc is the second configuration of the unit in the rigid mounting configuration
10. UUT Xd is UUT Xc but tested in the isolated mounting configuration
11. X is the UUT number, e.g. 1, 2, 3, 4, 5, 6.
12. For spring isolated mounting, only appropriate internal components for VFDs, Power Exhausts, and Low Ambient Accessory Kits may be used per the permitted mounting configurations

Table 3 - Certified Product Matrix - Heat Pump Units

Model	Efficiency Rating[1]	Nominal Cooling Capacity [tons]	Length[2] [in]	Width[2] [in]	Height[2,3] [in]	Curb Heights [in]	Cabinet Material	MFR	Curb Weights[4] [lbs]	Max Operating Weight[5] [lbs]	Mounting Configuration[12]	UUT[6,7,8,9,10,11]
XQE04	14 SEER	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	867	Rigid, Spring Isolated	Extrapolated
XYE04	Mid	3	74.1	48.9	32.5	14	Galvanized Carbon Steel	JCI	165 or 260	831	Rigid, Spring Isolated	5a, 5b
XQE05	14 SEER	4	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	892	Rigid, Spring Isolated	Interpolated
XYE05	Mid	4	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	952	Rigid, Spring Isolated	Interpolated
XQE06	14 SEER	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	965	Rigid, Spring Isolated	Interpolated
XYE06	Mid	5	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	991	Rigid, Spring Isolated	Interpolated
XXEA7	Standard	6	74.1	48.9	40.6	14	Galvanized Carbon Steel	JCI	165 or 260	990	Rigid, Spring Isolated	Interpolated
XYE07	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1199	Rigid, Spring Isolated	Interpolated
XYEA7	Mid	6	87.1	61.7	40.6	14	Galvanized Carbon Steel	JCI	200 or 315	1199	Rigid, Spring Isolated	Interpolated
XXE08	Standard	7.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1314	Rigid, Spring Isolated	Interpolated
XYE08	Mid	7.5	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200 or 315	1398	Rigid, Spring Isolated	Interpolated
XXE09	Standard	8.5	87.2	61.7	48.6	14	Galvanized Carbon Steel	JCI	200 or 315	1363	Rigid, Spring Isolated	Interpolated
XXE12	Standard	10	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200 or 315	1398	Rigid, Spring Isolated	Interpolated
XYE09	Mid	8.5	87.2	61.7	55.3	14	Galvanized Carbon Steel	JCI	200 or 315	1399	Rigid, Spring Isolated	6a, 6b

Notes:

1. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
2. Dimensions do not include overhang/stacked subcomponents
3. Height does not include curb height
4. Curb weight not included in Max Operating Weight
5. Max operating weights assume all of the most massive subcomponents are installed
6. All units are installed on a 3-3/4" galvanized carbon steel base rail
7. UUT Xa is the first configuration of the unit to be tested in the rigid mounting configuration
8. UUT Xb is UUT Xa but tested in the isolated mounting configuration
9. UUT Xc is the second configuration of the unit in the rigid mounting configuration
10. UUT Xd is UUT Xc but tested in the isolated mounting configuration
11. X is the UUT number, e.g. 1, 2, 3, 4, 5, 6.
12. For spring isolated mounting, only appropriate internal components for VFDs, Power Exhausts, and Low Ambient Accessory Kits may be used per the permitted mounting configurations of the respective subcomponent tables 7, 11, and 23.

Table 4 - Certified Subcomponents - Compressors

Model / Part Number	Equipment Rating [BTU/hr]	Weight [lbs]	Material	Manufacturer	Mounting Configuration	UUT
ZP31K5E	31,000	48.1	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Extrapolated
ZP31K6E	31,000	48.1	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	1a, 1b, 1c, 1d, 5a, 5b
ZP38K5E	38,000	67	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP38K6E	38,000	67	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP40K6E	40,000	67	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP42K5E	42,000	67	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP42K6E	42,000	67	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	6a[1], 6b[1]
ZP44K5E	44,000	68.2	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	6a[1], 6b[1]
ZP51K5E	51,000	71.7	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP51K6E	51,000	71.7	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP54K5E	54,000	71.6	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZPS60K5E	60,000	75.6	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	Interpolated
ZP61K5E	61,000	77.2	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	3a, 4a, 4b, 4c, 4d
ZP61KCE	61,500	88.8	Carbon Steel	Copeland	Rigid Curb, Spring Isolated Curb	2a, 2b

1. UUT 6 operates with two compressors

Table 5 - Certified Subcomponents - Outdoor Fans

Model / Part Number	Blade Diameter [in]	Permitted Pitch [Degrees]	Number of Blades	Material	Manufacturer	Mounting Configuration	UUT
1033410	22	22	3	Steel	Revcor	Rigid Curb, Spring Isolated Curb	1a, 1b 1c, 1d, 5a, 5b
291590	22	27	3	Steel	Revcor	Rigid Curb, Spring Isolated Curb	5a, 5b
267738	22	30	3	Steel	Revcor	Rigid Curb, Spring Isolated Curb	2a, 2b
8877	30	18	3	Aluminum	Revcor	Rigid Curb, Spring Isolated Curb	Interpolated
168146	30	24	3	Aluminum	Revcor	Rigid Curb, Spring Isolated Curb	4a, 4b
5163302	22	26	3	Aluminum	Lau	Rigid Curb, Spring Isolated Curb	2a, 2b
1033631	30	30	4	Aluminum	Lau	Rigid Curb, Spring Isolated Curb	3a, 4a, 4b, 4c, 4d
168146	30	24	3	Steel	Lau	Rigid Curb, Spring Isolated Curb	4c, 4d
8877	30	18	3	Steel	Lau	Rigid Curb, Spring Isolated Curb	6a, 6b

1. All fans weigh less than 5 lbs

Table 6a - Certified Subcomponents - Outdoor Fan Motors - Rigid Mounting

Model / Part Number	Voltage	Equipment Rating [HP]	Manufacturer	Weight [lbs]	Mounting Configuration	UUT
1030103	208/230	0.25	Regal Beloit - Gentec	11.9	Rigid Curb	1a, 1c
1030104	460	0.25	Regal Beloit - Gentec	11.9	Rigid Curb	Interpolated
1030105	575	0.25	Regal Beloit - Gentec	11.9	Rigid Curb	Interpolated
1030106	208/230	0.5	Regal Beloit - Gentec	14.3	Rigid Curb	5a
1030107	460	0.5	Regal Beloit - Gentec	14.3	Rigid Curb	Interpolated
1030108	575	0.5	Regal Beloit - Gentec	14.3	Rigid Curb	Interpolated
7193	208/230	1.5	A. O. Smith	41.6	Rigid Curb	4a, 4c, 6a
7194	460	1.5	A. O. Smith	41.6	Rigid Curb	Interpolated
7195	575	1.5	A. O. Smith	41.6	Rigid Curb	3a

Table 6b - Certified Subcomponents - Outdoor Fan Motors - Spring Isolated Mounting

Model / Part Number	Voltage	Equipment Rating [HP]	Manufacturer	Weight [lbs]	Mounting Configuration	UUT
1030103	208/230	0.25	Regal Beloit - Gentec	11.9	Spring Isolated Curb	1b, 1d
1030104	460	0.25	Regal Beloit - Gentec	11.9	Spring Isolated Curb	Interpolated
1030105	575	0.25	Regal Beloit - Gentec	11.9	Spring Isolated Curb	Interpolated
1030106	208/230	0.5	Regal Beloit - Gentec	14.3	Spring Isolated Curb	5b
1030107	460	0.5	Regal Beloit - Gentec	14.3	Spring Isolated Curb	Interpolated
1030108	575	0.5	Regal Beloit - Gentec	14.3	Spring Isolated Curb	Interpolated
7193	208/230	1.5	A. O. Smith	41.6	Spring Isolated Curb	4b, 4d, 6b

Table 7a - Certified Subcomponents - VFD - Rigid Mounting

Model / Part Number	Equipment Rating [HP]	Voltage	Manufacturer	Weight [lbs]	Mounting Configuration	UUT
FR-D720-070-NA	1.50	240V	Mitsubishi	3.09	Rigid Curb	6a
FR-D740-036-NA	1.50	480V	Mitsubishi	3.09	Rigid Curb	Interpolated
FR-D720-100-NA	3.00	240V	Mitsubishi	3.09	Rigid Curb	Interpolated
FR-D740-050-NA	3.00	480V	Mitsubishi	3.31	Rigid Curb	Interpolated
FR-D740-080-NA	5.00	480V	Mitsubishi	3.31	Rigid Curb	Interpolated
FR-D720-165-NA	5.00	240V	Mitsubishi	3.97	Rigid Curb	Interpolated
FR-E560-1.5K-NA	1.50	575V	Mitsubishi	4.41	Rigid Curb	Interpolated
FR-E560-2.2K-NA	3.00	575V	Mitsubishi	4.41	Rigid Curb	Interpolated
FR-E560-3.7K-NA	5.00	575V	Mitsubishi	8.38	Rigid Curb	3a

Table 7b - Certified Subcomponents - VFD - Spring Isolated Mounting

Model / Part Number	Equipment Rating [HP]	Voltage	Manufacturer	Weight [lbs]	Mounting Configuration	UUT
FR-D720-070-NA	1.50	240V	Mitsubishi	3.09	Spring Isolated Curb	6b

Table 8 - Certified Subcomponents - Direct Drive Blower Motor

Model / Part Number	Equipment Rating [HP]	Voltage	Manufacturer	Mounting Configuration	UUT
5SME39NXL070	0.75	208/230	Regal Beloit - Gentec	Rigid Curb, Spring Isolated Curb	1a, 1b
5SME39SXL069	1	208/230	Regal Beloit - Gentec	Rigid Curb, Spring Isolated Curb	5a, 5b

Table 9a - Certified Subcomponents - Belt Drive Blower Motor - Rigid Mounting

Model / Part Number	Equipment Rating [HP]	Voltage	Manufacturer	Mounting Configuration	UUT
5K49MN4855Z	1.5	575	Regal Beloit - Gentec	Rigid Curb	2a, 6a
5K39TN4851Z	2	460	Regal Beloit - Gentec	Rigid Curb	Interpolated
5K49WN4852Z	3	460	Regal Beloit - Gentec	Rigid Curb	Interpolated
5K49WN4857Z	3	575	Regal Beloit - Gentec	Rigid Curb	Interpolated
5K49QN4853Z	5	208	Regal Beloit - Gentec	Rigid Curb	4a
36P249T139G1	5.25	575	Baldor	Rigid Curb	3a

Table 9b - Certified Subcomponents - Belt Drive Blower Motor - Spring Isolated Mounting

Model / Part Number	Equipment Rating [HP]	Voltage	Manufacturer	Mounting Configuration	UUT
5K49MN4855Z	1.5	575	Regal Beloit - Gentec	Spring Isolated Curb	2b, 6b
5K39TN4851Z	2	460	Regal Beloit - Gentec	Spring Isolated Curb	Interpolated
5K49WN4852Z	3	460	Regal Beloit - Gentec	Spring Isolated Curb	Interpolated
5K49WN4857Z	3	575	Regal Beloit - Gentec	Spring Isolated Curb	Interpolated
5K49QN4853Z	5	208	Regal Beloit - Gentec	Spring Isolated Curb	4b

Table 10a - Certified Subcomponents - Filters - Rigid Mounting

Model / Part Number	Size [in]	Rating	Manufacturer	Mounting Configuration	UUT
276-160-160	16 x 16	MERV 4	Koch	Rigid Curb	Extrapolated
102-800-032	18 x 16	MERV 6	Koch	Rigid Curb	Extrapolated
116-700-925	19 x 16	MERV 7	Koch	Rigid Curb	Extrapolated
276-160-200	16 x 20	MERV 8	Koch	Rigid Curb	Extrapolated
102-800-016	18 x 20	MERV 10	Koch	Rigid Curb	Extrapolated
116-700-007	19 x 20	MERV 11	Koch	Rigid Curb	Extrapolated
274-140-200	16 x 25	MERV 12	Koch	Rigid Curb	1a
102-800-017	18 x 25	MERV 14	Koch	Rigid Curb	Interpolated
116-700-008	19 x 25	MERV 15	Koch	Rigid Curb	Interpolated
276-200-200-058	20 x 20	MERV 16	Koch	Rigid Curb	3a, 6a
102-800-019	22 x 20	MERV 18	Koch	Rigid Curb	Extrapolated
116-700-009	23 x 20	MERV 19	Koch	Rigid Curb	Extrapolated
198-488-052	17 x 16	MERV 5	American Air	Rigid Curb	Extrapolated
198-500-092	17 x 20	MERV 9	American Air	Rigid Curb	Extrapolated
198-600-092	17 x 25	MERV 13	American Air	Rigid Curb	1a
198-700-092	21 x 20	MERV 17	American Air	Rigid Curb	3a

Table 10b - Certified Subcomponents - Filters - Spring Isolated Mounting

Model / Part Number	Size [in]	Rating	Manufacturer	Mounting Configuration	UUT
276-160-160	16 x 16	MERV 4	Koch	Spring Isolated Curb	Extrapolated
102-800-032	18 x 16	MERV 6	Koch	Spring Isolated Curb	Extrapolated
116-700-925	19 x 16	MERV 7	Koch	Spring Isolated Curb	Extrapolated
276-160-200	16 x 20	MERV 8	Koch	Spring Isolated Curb	Extrapolated
102-800-016	18 x 20	MERV 10	Koch	Spring Isolated Curb	Extrapolated
116-700-007	19 x 20	MERV 11	Koch	Spring Isolated Curb	Extrapolated
274-140-200	16 x 25	MERV 12	Koch	Spring Isolated Curb	1b
102-800-017	18 x 25	MERV 14	Koch	Spring Isolated Curb	Interpolated
116-700-008	19 x 25	MERV 15	Koch	Spring Isolated Curb	Interpolated
276-200-200-058	20 x 20	MERV 16	Koch	Spring Isolated Curb	6b
102-800-019	22 x 20	MERV 18	Koch	Spring Isolated Curb	Extrapolated
116-700-009	23 x 20	MERV 19	Koch	Spring Isolated Curb	Extrapolated
198-488-052	17 x 16	MERV 5	American Air	Spring Isolated Curb	Extrapolated
198-500-092	17 x 20	MERV 9	American Air	Spring Isolated Curb	Extrapolated
198-600-092	17 x 25	MERV 13	American Air	Spring Isolated Curb	1b

Notes:

1. American Air manufacturer is bookended between Tables 10a and 10b

Table 11a - Certified Subcomponents - Power Exhaust - Rigid Mounting

Model / Part Number	Accessory Kit Number	Weight [lbs]	Voltage	Material	Manufacturer	Mounting Configuration	UUT
Power Exhaust Vertical Flow	2PE04704206	39	208/230	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	5a
Power Exhaust Vertical Flow	2PE04704225	39	208/230	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704246	39	460	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704258	39	575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704306	39	208/230	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704325	39	208/230	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704346	39	460	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
Power Exhaust Vertical Flow	2PE04704358	39	575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	3a

Table 11b - Certified Subcomponents - Power Exhaust - Spring Isolated Mounting

Model / Part Number	Accessory Kit Number	Weight [lbs]	Voltage	Material	Manufacturer	Mounting Configuration	UUT
Power Exhaust Vertical Flow	2PE04704206	39	208/230	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	5b

Table 12a - Certified Subcomponents - Economizer - Rigid Mounting

Model / Part Number	Model Number	Weight [lbs]	Voltage	Material	Manufacturer	Mounting Configuration	UUT
2EE04706724	Vertical Flow	63	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	5a
2EE04706824	Vertical Flow	96	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	3a
2EE04707024	Horizontal Flow	75	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	1a
2EE04707124	Horizontal Flow	81	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
2EE04707224	Horizontal Flow	105	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	Interpolated
2EE04707324	Horizontal Flow	102	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb	4a

Table 12b - Certified Subcomponents - Economizer - Spring Isolated Mounting

Model / Part Number	Model Number	Weight [lbs]	Voltage	Material	Manufacturer	Mounting Configuration	UUT
2EE04706724	Vertical Flow	63	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	5b
2EE04707024	Horizontal Flow	75	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	1b
2EE04707124	Horizontal Flow	81	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	Interpolated
2EE04707224	Horizontal Flow	105	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	Interpolated
2EE04707324	Horizontal Flow	102	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Spring Isolated Curb	4b

Table 13 - Certified Subcomponents - Control Systems

Model / Part Number	Description	Material	Manufacturer	Mounting Configuration	UUT
Smart Equipment	Standard	PCB	JCI	Rigid Curb, Spring Isolated Curb	1a, 1b, 1c, 1d, 2a, 2b, 3a, 4a, 4b, 4c, 4d, 5a, 5b, 6a, 6b
Surveyor	Integration	PCB	Venstar	Rigid Curb, Spring Isolated Curb	3a, 4a, 4b
ALC	Integration	PCB	EMC	Rigid Curb, Spring Isolated Curb	2a, 2b, 5a, 5b

Table 14 - Certified Subcomponents - Condenser Coils

Model / Part Number	Number of Rows	Fins per Inch	Material	Manufacturer	Mounting Configuration	UUT
5287141	2	15	Copper	JCI	Rigid Curb, Spring Isolated Curb	Extrapolated
5277792	2	17	Copper	JCI	Rigid Curb, Spring Isolated Curb	Extrapolated
5023749	2	17	Copper	JCI	Rigid Curb, Spring Isolated Curb	5a, 5b
5152963	3	13	Copper	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
5158114	3	17	Copper with ElectroFin® Coating	JCI	Rigid Curb, Spring Isolated Curb	6a, 6b

Table 15a - Certified Subcomponents - Condenser Coils (Micro Channel) - Rigid Mounting

Model / Part Number	Width [mm / in]	Tubes	Systems	Material	Manufacturer	Mounting Configuration	UUT
961356	16 / 0.063	76	1	Aluminum	Sanhua	Rigid Curb	1a, 1c
961354	20 / 0.787	74	1	Aluminum	Sanhua	Rigid Curb	Interpolated
999310	20 / 0.787	96	1	Aluminum	Sanhua	Rigid Curb	Interpolated
999491	25 / 0.984	96	1	Aluminum	Sanhua	Rigid Curb	2a
986845	25 / 0.984	96	2	Aluminum	Sanhua	Rigid Curb	Interpolated
961355	25 / 0.984	117	2	Aluminum	Sanhua	Rigid Curb	Interpolated
995635	32 / 1.260	117	2	Aluminum	Sanhua	Rigid Curb	4a
995635	32 / 1.260	117	2	Aluminum with ElectroFin® Coating	Sanhua	Rigid Curb	3a

Table 15b - Certified Subcomponents - Condenser Coils (Micro Channel) Spring Isolated Mounting

Model / Part Number	Width [mm / in]	Tubes	Systems	Material	Manufacturer	Mounting Configuration	UUT
961356	16 / 0.063	76	1	Aluminum	Sanhua	Spring Isolated Curb	1b, 1d
961354	20 / 0.787	74	1	Aluminum	Sanhua	Spring Isolated Curb	Interpolated
999310	20 / 0.787	96	1	Aluminum	Sanhua	Spring Isolated Curb	Interpolated
999491	25 / 0.984	96	1	Aluminum	Sanhua	Spring Isolated Curb	2b
986845	25 / 0.984	96	2	Aluminum	Sanhua	Spring Isolated Curb	Interpolated
961355	25 / 0.984	117	2	Aluminum	Sanhua	Spring Isolated Curb	Interpolated
995635	32 / 1.260	117	2	Aluminum	Sanhua	Spring Isolated Curb	4b

Table 16a - Certified Subcomponents - Evaporating Coils - Rigid Mounting

Model / Part Number	Number of Rows	Weight [lbs]	Fins per Inch	Material	Manufacturer	Mounting Configuration	UUT
999134	2	22	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	1a, 1c
999144	3	29	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	5a
999149	4	38	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	Interpolated
999151	3	43	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	Interpolated
999156	3	47	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	2a
999154	4	51	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	Interpolated
999157	3	65	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	Interpolated
5162718	4	77	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	Interpolated
999158	4	77	15	Copper Tubes with Aluminum Housing	Luvata	Rigid Curb	4a, 6a
999158	4	77	15	Copper with ElectroFin® Coating	Luvata	Rigid Curb	3a

Table 16b - Certified Subcomponents - Evaporating Coils - Spring Isolated Mounting

Model / Part Number	Number of Rows	Weight [lbs]	Fins per Inch	Material	Manufacturer	Mounting Configuration	UUT
999134	2	22	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	1b, 1d
999144	3	29	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	5b
999149	4	38	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	Interpolated
999151	3	43	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	Interpolated
999156	3	47	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	2b
999154	4	51	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	Interpolated
999157	3	65	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	Interpolated
5162718	4	77	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	Interpolated
999158	4	77	15	Copper Tubes with Aluminum Housing	Luvata	Spring Isolated Curb	4b, 6b

Table 17 - Certified Subcomponents - Heat Exchanger Tubes

Model / Part Number	Number of Tubes	Stage	Material	Manufacturer	Mounting Configuration	
1043666	3	1	Aluminized Carbon Steel	JCI	Rigid Curb, Spring Isolated Curb	1c, 1d
1043666	3	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043669	5	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043669	5	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045536	6	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045536	6	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043671	5	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1164373	7	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043673	7	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043675	9	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045538	10	2		JCI	Rigid Curb, Spring Isolated Curb	4c, 4d
1043665	3	1	Stainless Steel	JCI	Rigid Curb, Spring Isolated Curb	1a, 1b
1043667	3	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043667	3	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043668	5	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043670	5	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043670	5	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1164372	6	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045537	6	1		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045537	6	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043672	5	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1164374	7	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043674	7	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1043676	9	2		JCI	Rigid Curb, Spring Isolated Curb	Interpolated
1045539	10	2		JCI	Rgid Curb, Spring Isolated Curb	4a, 4b

Table 18 - Certified Subcomponents - Heat Exchanger Gas Valve

Model / Part Number	Number of Screws	Stage	Material	Manufacturer	Mounting Configuration	UUT
993801	One Screw	Single	Cast Aluminum	White Rogers	Rigid Curb, Spring Isolated Curb	1a, 1b, 1c, 1d
993802	Two Screws	Two-Stage	Cast Aluminum	White Rogers	Rigid Curb, Spring Isolated Curb	Interpolated
993803	Two Screws	Two-Stage	Cast Aluminum	White Rogers	Rigid Curb, Spring Isolated Curb	4a, 1b, 4c, 4d

Table 19 - Certified Subcomponents - Electric Heaters

Model / Part Number	Output [kW]	Voltage[1]	Manufacturer	Mounting Configuration	UUT
2EK04510625	6.5	208/230	JCI	Rigid Curb, Spring Isolated Curb	5a, 5b
2EK04510646	6	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04510725	6	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04510746	6	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511058	9.2	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511125	10.5	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511146	11.5	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511458	13.8	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511446	14	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511625	16	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511725	16	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511746	16.5	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04511758	17	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04512358	23	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04510625	6.5	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04512525	24.8	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04512646	25.5	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04512658	25.7	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04512846	27.8	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04513225	32	208/230	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04513346	33	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04513458	34	575	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04514246	41.7	460	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
2EK04514225	42.4	208/230	JCI	Rigid Curb, Spring Isolated Curb	3a, 6a, 6b

1. 208/230 units house the largest fuses and contactors as compared to the 460 & 575

Table 20 - Certified Subcomponents - Motorized Outside Air Damper

Model / Part Number	Voltages	Material	Manufacturer	Mounting Configuration	UUT
2MD04704224	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb, Spring Isolated Curb	5a, 5b
2MD04704324	208/230, 460, 575	Galvanized Carbon Steel	Ruskin Rooftop Systems	Rigid Curb, Spring Isolated Curb	2a, 2b

Table 21 - Certified Subcomponents - Enthalpy Kits

Model / Part Number	Voltages	Material	Manufacturer	Mounting Configuration	UUT
2EC0401	208/230, 460, & 575	Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	Extrapolated[1]
2EC0402	208/230, 460, & 575	Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	2a, 2b, 4a, 4b

1. Model 2EC0402 is a dual version of model 2EC0401

Table 22 - Certified Subcomponents - Natural Gas / Propane Conversion Kits[1]

Model / Part Number	Description	Material	Manufacturer	Weight [lbs]	Mounting Configuration	UUT
1HA0454	Natural Gas - High Altitude[2]	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	Extrapolated
1HA0455	Natural Gas - High Altitude[2]	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	Extrapolated
1NP0456	Propane	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	1a, 1b
1NP0457	Propane	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	4a, 4b
1HA0458	Propane High Altitude	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	1c, 1d
1HA0459	Propane High Altidude	Brass	Key Gas / White Rogers	< 5 lbs	Rigid Curb, Spring Isolated Curb	4c, 4d

1. Extrapolated subcomponents are idential to those tested in 1c & 4c with exception to the diameter of the valve orifice & the valve spring

Table 23 - Certified Subcomponents - Low Ambient Accessory Kits - Rigid Mounting

Model / Part Number	Voltage[1]	Material	Manufacturer	Mounting Configuration	UUT
2LA04704725	208/230V	Sheet Metal Bracket	JCI	Rigid Curb	1a
2LA04704746	460V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704758	575V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704825	208/230V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704846	460V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704858	575V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704946	460V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704958	575V	Sheet Metal Bracket	JCI	Rigid Curb	Interpolated
2LA04704925[1]	208/230V	Sheet Metal Bracket	JCI	Rigid Curb	3a

1. 460/575 units are depopulated versions of the 208/230 units

Table 23 - Certified Subcomponents - Low Ambient Accessory Kits - Spring Isolated Mounting

Model / Part Number	Voltage[1]	Material	Manufacturer	Mounting Configuration	UUT
2LA04704725	208/230V	Sheet Metal Bracket	JCI	Spring Isolated Curb	1b

Table 24 - Certified Subcomponents - Fault Detection and Diagnostics (FDD)

Model / Part Number	Voltage	Material	Manufacturer	Mounting Configuration	UUT
2FDD61	208/230, 460, & 575	Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	4a, 4b
2FDD62		Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	Interpolated
5126433		Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	2a, 2b
5181673		Sheet Metal Bracket	JCI	Rigid Curb, Spring Isolated Curb	6a, 6b

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-1a

98538-1701, UUT-1a

Model Line	Model Number	Manufacturer
Direct Fit	ZQG04	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Direct Drive Blower Motor: Regal Beloit - Gentec, Filters: Koch and American Air, Economizer: Ruskin Rooftop Systems, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Natural Gas and Propane Conversion Kit: Keygas and White Rogers, Low Ambient Accessory Kit: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 165lbs, 71" L x 41" W x 14" H

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
520	73	47	33	30.5	25.0	>33.3

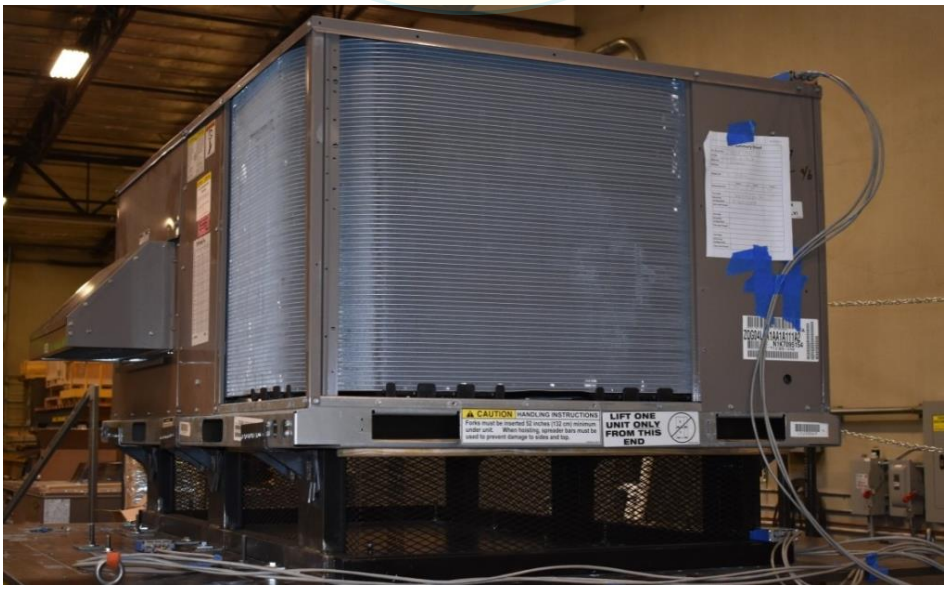
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid VMC P6000-019 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-1a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-1b

98538-1701, UUT-1b

Model Line	Model Number	Manufacturer
Direct Fit	ZQG04	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Direct Drive Blower Motor: Regal Beloit - Gentec, Filters: Koch and American Air, Economizer: Ruskin Rooftop Systems, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Natural Gas and Propane Conversion Kit: Keygas and White Rogers, Low Ambient Accessory Kit: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 260lbs, 71" L x 41" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
520	73	47	33	4.5	4.5	15.5

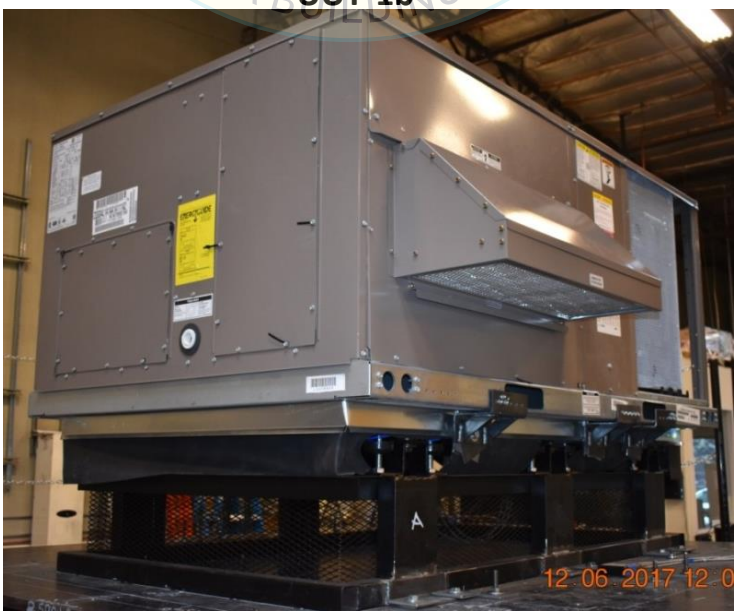
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to the Isolated VMC P6200-019 Curb Using (18) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips. Isolated VMC P6200-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-1b



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-1c

98538-1701, UUT-1c

Model Line	Model Number	Manufacturer
Direct Fit	ZQG04	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Conversion Kit: Keygas and White Rogers

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 165lbs, 71" L x 41" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
640	73	59	33	21.5	19.5	26.5

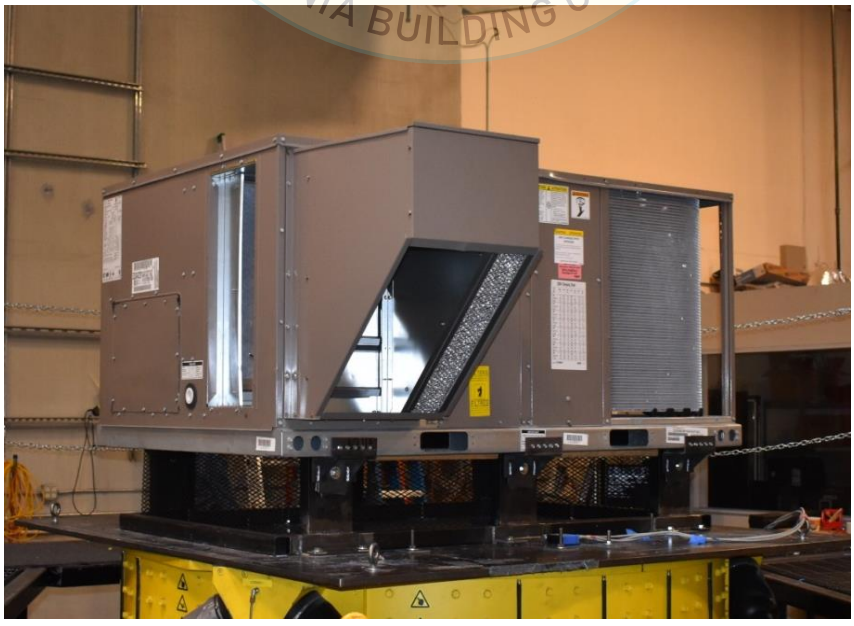
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid VMC P6000-019 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts

UUT-1c



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-1d

98538-1701, UUT-1d

Model Line	Model Number	Manufacturer
Direct Fit	ZQG04	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Conversion Kit: Keygas and White Rogers

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 260lbs, 71" L x 41" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
640	73	59	33	4.5	4.5	15.0

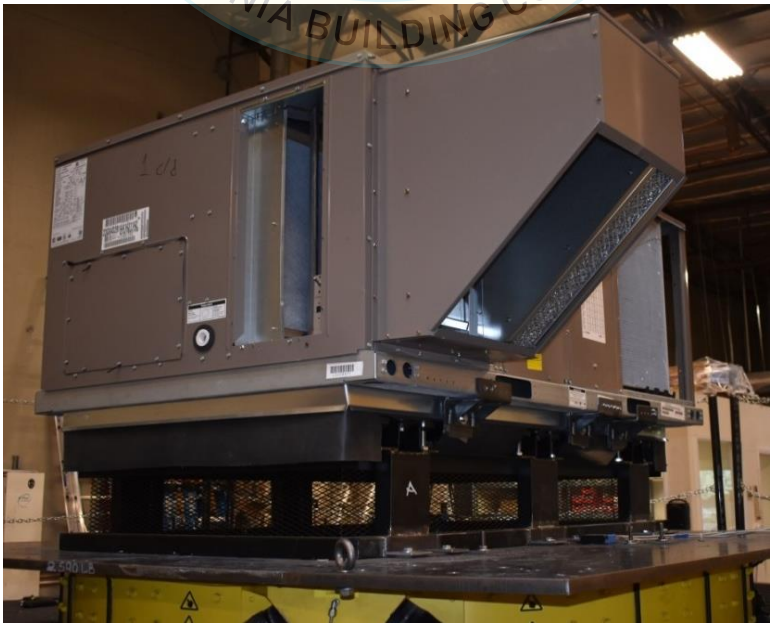
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to the Isolated VMC P6200-019 Curb Using (18) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-1d



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-1e

98538-1701, UUT-1e

Model Line	Model Number	Manufacturer
Direct Fit	ZQG04	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Sheet Metal Curb: Ruskin Rooftop Systems

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 110lbs, 71" L x 41" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
590	73	47	33	12.0	8.5	11.5

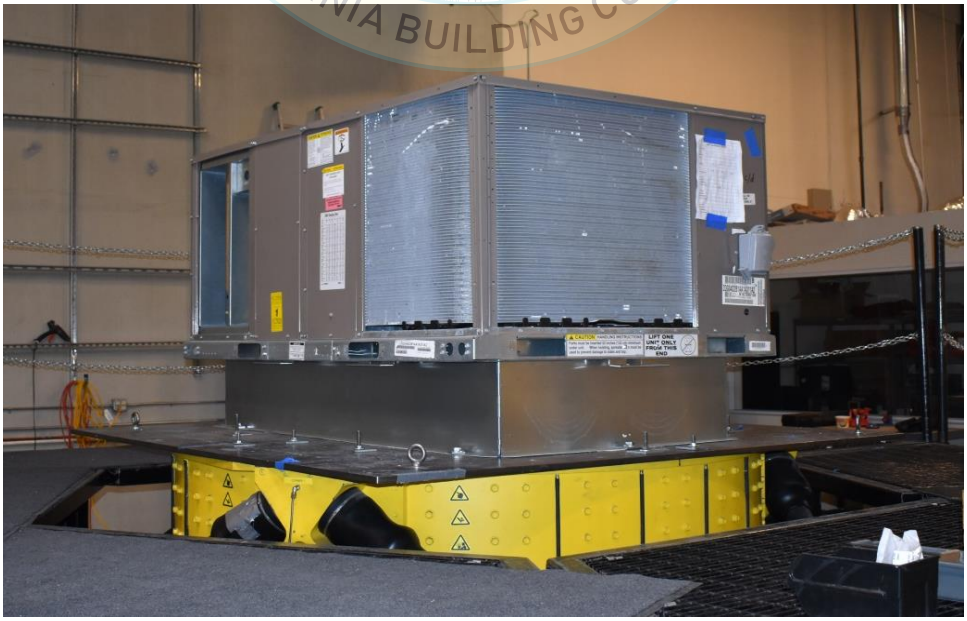
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to the Ruskin 1RC0456 Sheetmetal Curb Using (12) 1/4" TEK Screws. TEK Screws interfaced with the curb via (6) Ruskin provided clips with (4) 1/4" TEK screws each. Ruskin Sheetmetal Curb-1RC0456 is Mounted to Shake Table using (6) 5/8" Grade 5 Bolts.

UUT-1e



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-2a

98538-1701, UUT-2a

Model Line	Model Number	Manufacturer
Direct Fit	ZYE07	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 6 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Lau, Control Systmes: EMC, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Motorized Outside Air Damper: Ruskin Rooftop Systems, Entahlpy Kits: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 200lbs, 82" L x 54" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
820	87	60	49	13.5	16.5	18

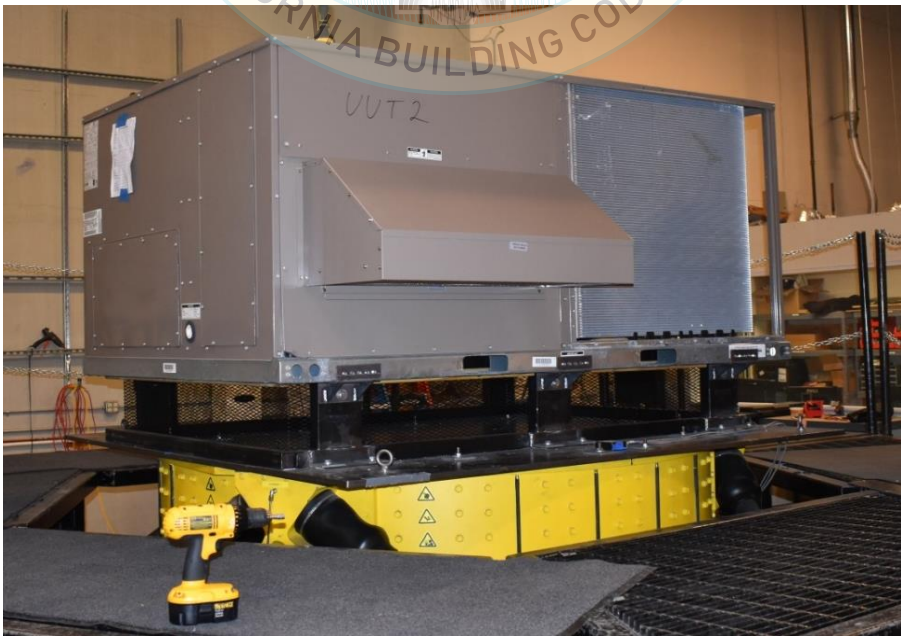
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid P6000-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-2a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-2b

98538-1701, UUT-2b

Model Line	Model Number	Manufacturer
Direct Fit	ZYE07	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit, 6 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fan: Lau, Control Systmes: EMC, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Motorized Outside Air Damper: Ruskin Rooftop Systems, Entahlpy Kits: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 315lbs, 82" L x 54" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
820	87	76	49	3.0	3.0	7

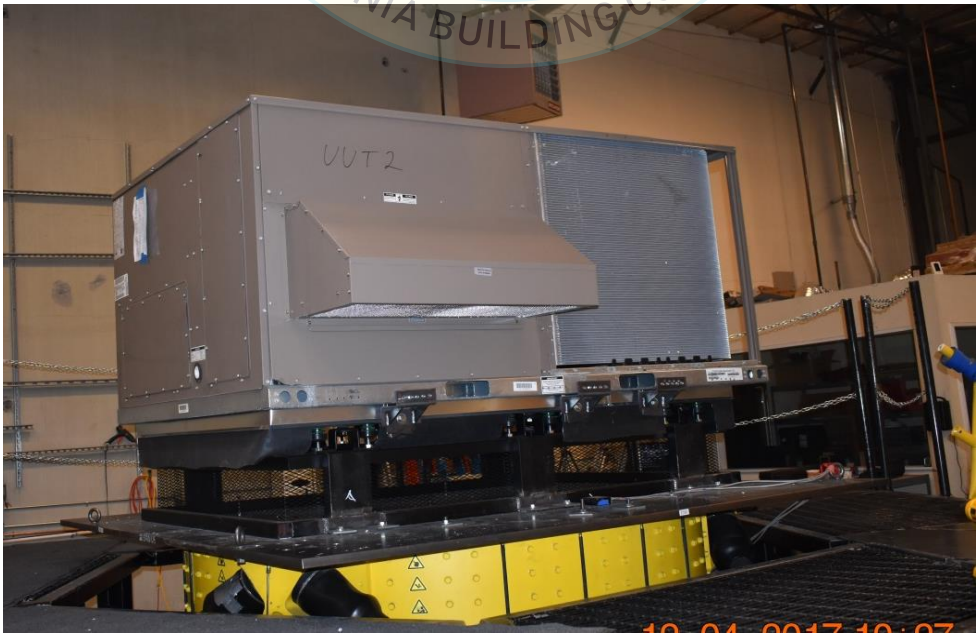
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Isolated VMC P6200-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-2b



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-3a

98538-1701, UUT-3a

Model Line	Model Number	Manufacturer
Direct Fit	ZXE14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Lau, Fan Motors: A.O. Smith, VFD: Mitsubishi, Belt Drive Blower Motor: Baldor, Filters: Koch and American Air, Economizer: Ruskin Rooftop Systems, Control Systems: Venstar, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Electric Heaters: JCI, Low Ambient Accessory Kit: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 200lbs, 82" L x 54" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,270	87	83	49	10.5	15.0	>33.3

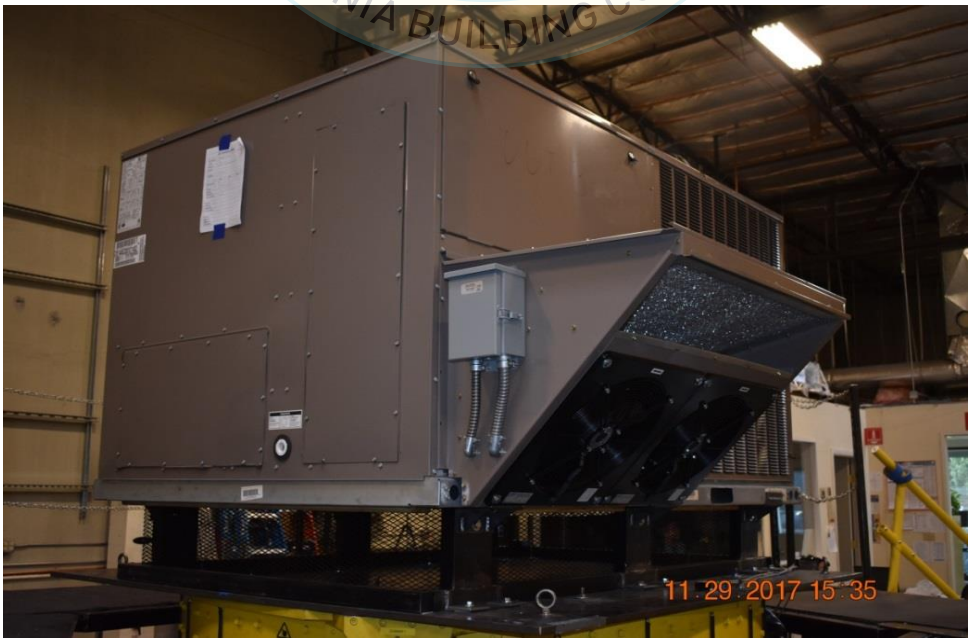
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid P6000-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-3a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-4a

98538-1701, UUT-4a

Model Line	Model Number	Manufacturer
Direct Fit	ZXG14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Revcor and Lau, Fan Motors: A.O. Smith, Belt Drive Blower Motor: Regal Beloit - Gentec, Economizer: Ruskin Rooftop Systems, Control Systems: Venstar, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Enthalpy Kits: JCI, Propane Conversion Kit: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 200lbs, 82" L x 54" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	15.0	15.0	15.0

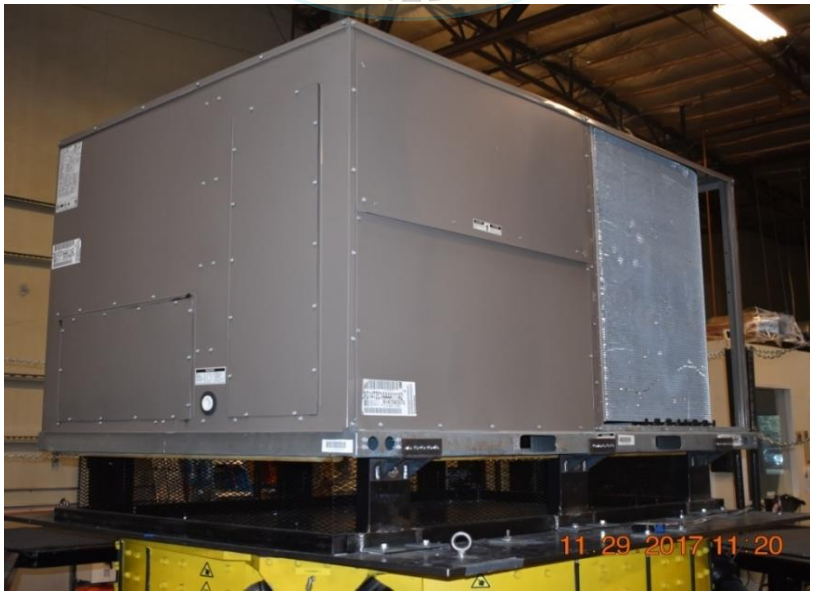
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid VMC P6000-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-4a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-4b

98538-1701, UUT-4b

Model Line	Model Number	Manufacturer
Direct Fit	ZXG14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Revcor and Lau, Fan Motors: A.O. Smith, Belt Drive Blower Motor: Regal Beloit - Gentec, Economizer: Ruskin Rooftop Systems, Control Systems: Venstar, Condensor Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Enthalpy Kits: JCI, Propane Conversion Kit: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 315lbs, 82" L x 54" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	3.0	3.0	6.0

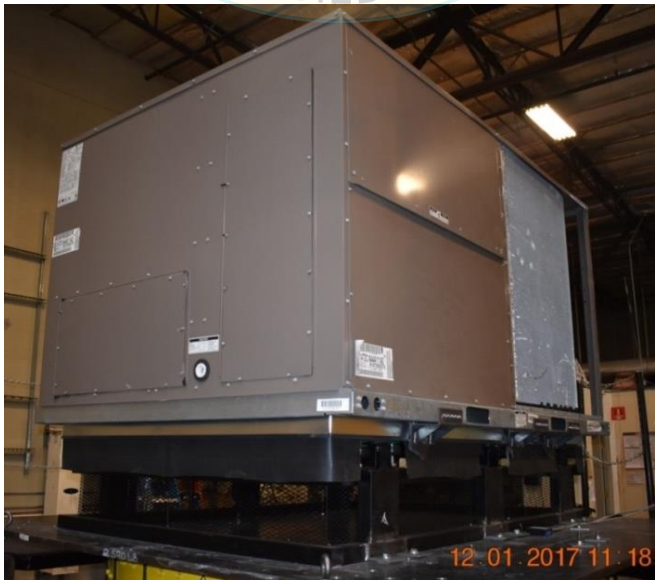
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Isolated VMC P6200-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-4b



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-4c

98538-1701, UUT-4c

Model Line	Model Number	Manufacturer
Direct Fit	ZXG14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Lau, Fan Motors: A.O. Smith, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Kit: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 200lbs, 82" L x 54" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	18.0	15.0	30.0

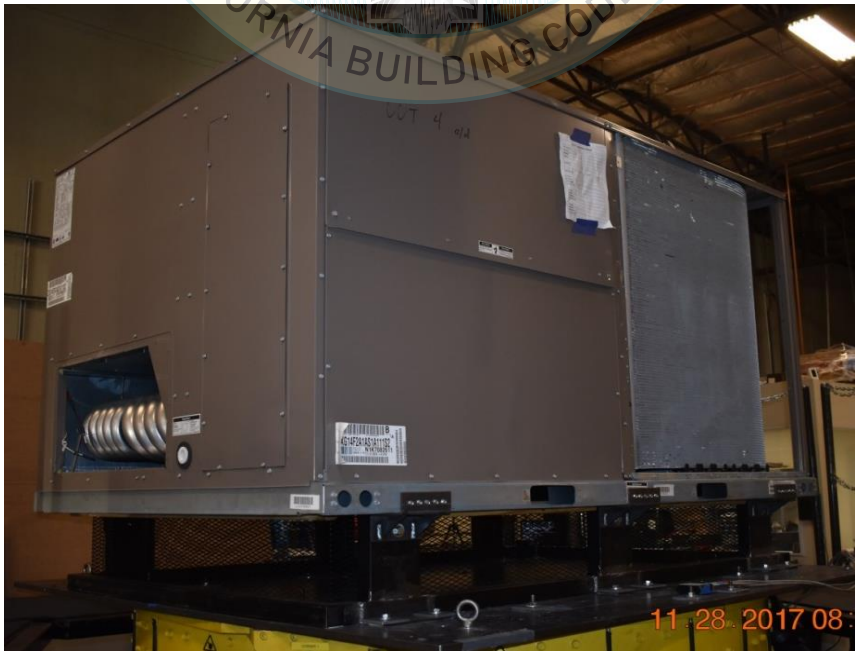
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid VMC P6000-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-4c



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-4d

98538-1701, UUT-4d

Model Line	Model Number	Manufacturer
Direct Fit	ZXG14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Lau, Fan Motors: A.O. Smith, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Kit: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 315lbs, 82" L x 54" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	6.0	5.5	11.5

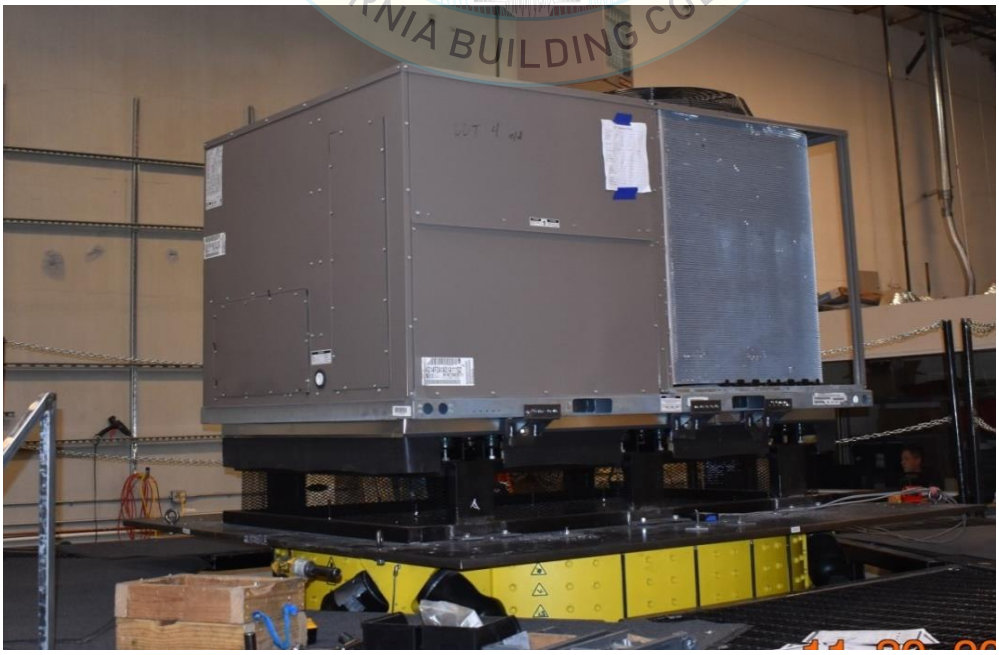
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Isolated VMC P6200-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-4d



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-4e

98538-1701, UUT-4e

Model Line	Model Number	Manufacturer
Direct Fit	ZXG14	Johnson Controls, Inc.

Product Construction Summary

Air Conditioning Unit ,12.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Sheet Metal Curb: Ruskin Rooftop Systems

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 110lbs, 82" L x 54" W x 24" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	6.0	7.0	8.5

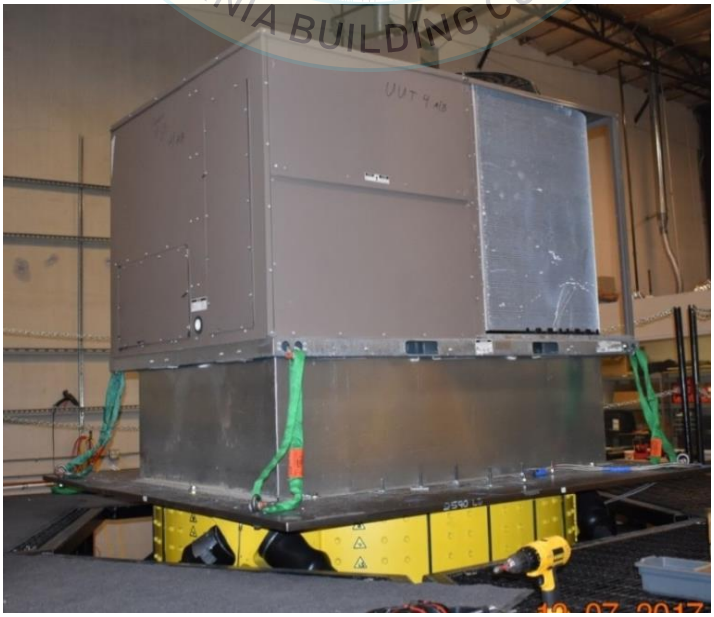
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Ruskin 1RCO457 Sheetmetal Curb Using (20) 1/4" TEK Screws. TEK Screws interfaced with the curb via (10) Ruskin provided clip9 with (4) 1/4" TEK screws each. Ruskin Sheetmetal Curb-1RC0456 is Mounted to Shake Table using (6) 5/8" Grade 5 Bolts.

UUT-4e



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-5a

98538-1701, UUT-5a

Model Line	Model Number	Manufacturer
Direct Fit	XYE04	Johnson Controls, Inc.

Product Construction Summary

Heat Pump Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Revcor, Fan Motors: Regal Beloit - Gentec, Direct Drive Blower Motor: Regal Beloit - Gentec, Economizer: Ruskin Rooftop Systems, Control Systems: EMC, Condensor Coils: JCI, Evaporating Coils: Luvata, Electric Heaters: JCI, Motorized Outside Air Damper: Ruskin Rooftop Systems

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 165lbs, 71" L x 41" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
620	74	74	33	27.0	25.0	31.5

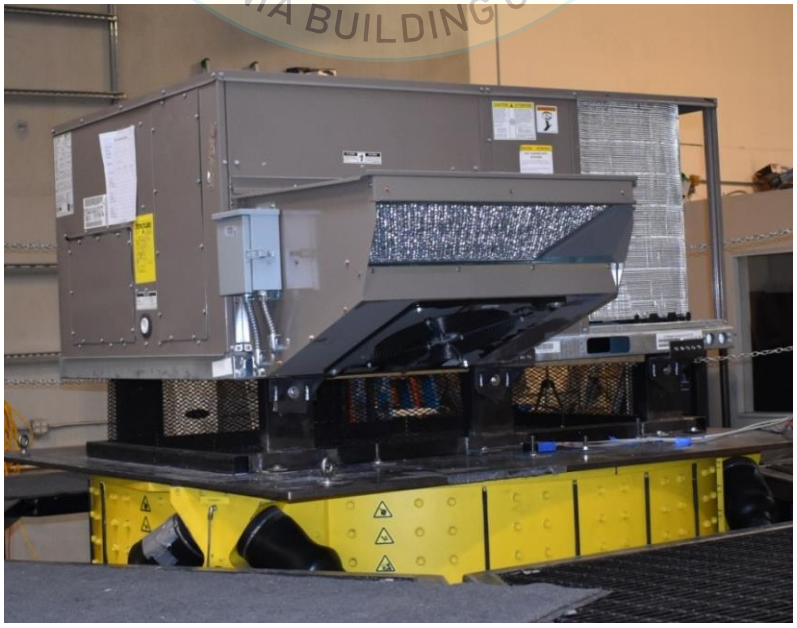
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Air Conditioning Unit is Mounted to Rigid VMC P6000-019 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-5a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-5b

98538-1701, UUT-5b

Model Line	Model Number	Manufacturer
Direct Fit	XYE04	Johnson Controls, Inc.

Product Construction Summary

Heat Pump Unit, 3 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Revcor, Fan Motors: Regal Beloit - Gentec, Direct Drive Blower Motor: Regal Beloit - Gentec, Economizer: Ruskin Rooftop Systems, Control Systems: EMC, Condensor Coils: JCI, Evaporating Coils: Luvata, Electric Heaters: JCI, Motorized Outside Air Damper: Ruskin Rooftop Systems

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 260lbs, 71" L x 41" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
620	74	74	33	5.5	5.5	11.0

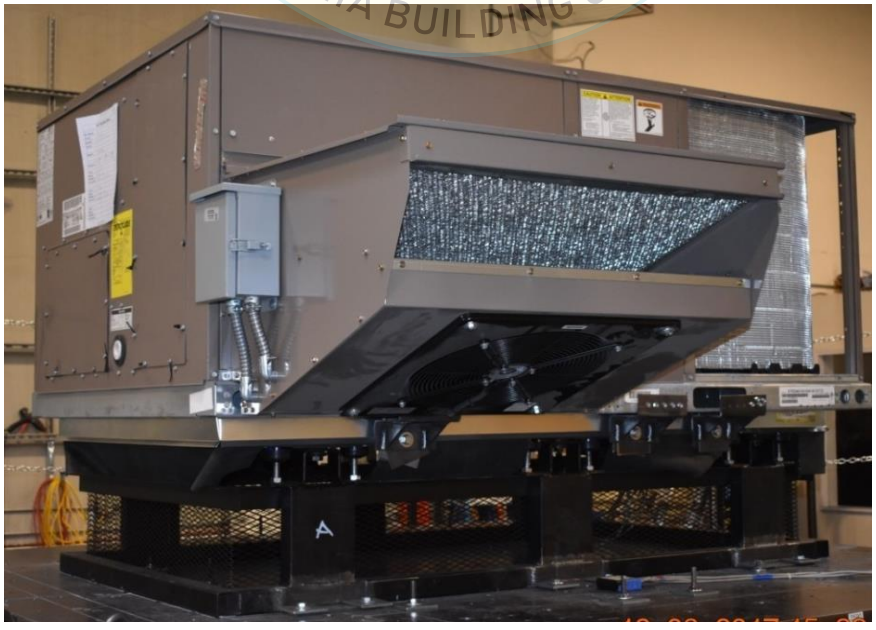
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Heat Pump Unit is Mounted to the Isolated VMC P6200-019 Curb Using (18) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-019 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-5b



All units maintained structural integrity and functionality after AC-156 test; UUT was full of content during testing

UNIT UNDER TEST (UUT)
SUMMARY SHEET

UUT-6a

98538-1701, UUT-6a

Model Line	Model Number	Manufacturer
Direct Fit	XYE09	Johnson Controls, Inc.

Product Construction Summary

Heat Pump Unit, 8.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Lau, Fan Motors: A.O. Smith, VFD: Mitsubishi, Belt Drive Blower Motor: Regal Beloit - Gentec, Filters: Koch, Condensor Coils: JCI, Evaporating Coils: Luvata, Electric Heaters: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb properties: 200lbs, 82" L x 54" W x 14" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	15.0	15.0	25.0

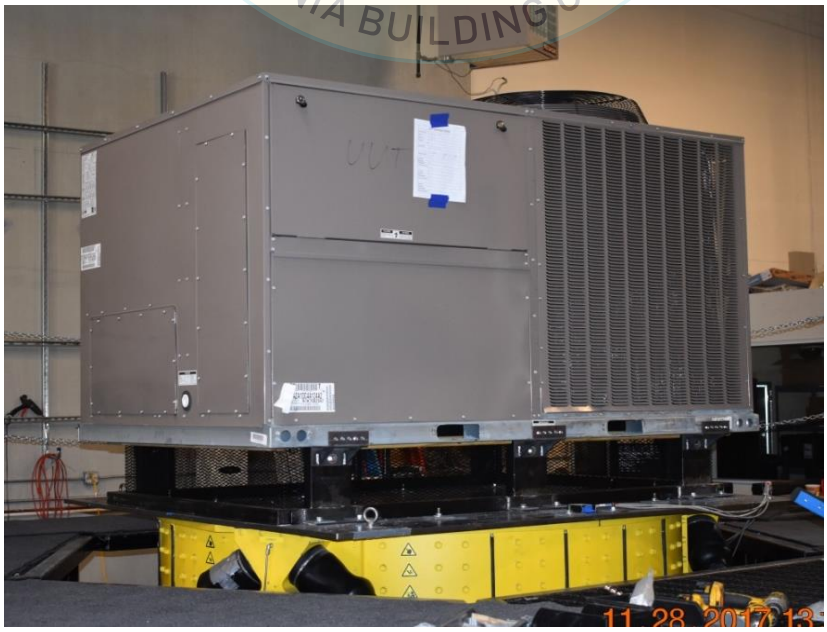
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Heat Pump Unit is Mounted to Rigid VMC P6000-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Rigid VMC P6000-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-6a



All units maintained structural integrity and functionality after AC-156 test; UUT was full of operating content during testing

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6b

98538-1701, UUT-6b

Model Line	Model Number	Manufacturer
Direct Fit	XYE09	Johnson Controls, Inc.

Product Construction Summary

Heat Pump Unit, 8.5 Ton Cooling Capacity, Galvanized Carbon Steel Cabinet and 16-Gauge Sheet Metal, Carbon Steel Base Rail

Options / Subcomponent Summary

Compressor: Copeland, Fans: Lau, Fan Motors: A.O. Smith, VFD: Mitsubishi, Belt Drive Blower Motor: Regal Beloit - Gentec, Filters: Koch, Condensor Coils: JCI, Evaporating Coils: Luvata, Electric Heaters: JCI, Fault Detection and Diagnostics: JCI

Notes: UUT dimensions and weights are measured dimensions and weights (dimensions include overhang/stacked subcomponents). Curbs are not implied nor intended to be certified. Curb Properties: 315lbs, 82" L x 54" W x 20" H.

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,120	87	60	49	3.5	3.0	7.0

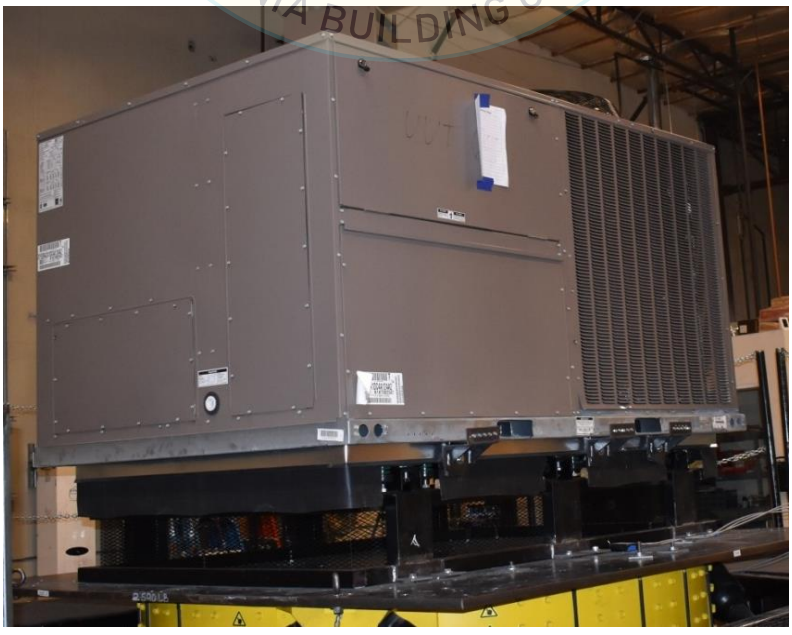
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.40	-	-
		2.50	0.00	1.50	-	-	1.67	0.67

Test Mounting Details

Heat Pump Unit is Mounted to the Isolated VMC P6200-023 Curb Using (30) 1/4" TEK Screws and (6) 1/2" Grade 5 bolts via custom made "z-clips". Isolated VMC P6200-023 Curb is Mounted to Shake Table using (12) 1/2" Grade 5 Bolts.

UUT-6b



All units maintained structural integrity and functionality after AC-156 test; UUT was full of content during testing