



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-0535

HCAI 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 Model Number(s): See attached

Product Category: Air Conditioning Units

Product Sub-Category: Heat Pump Water Heater

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

Mounting Description: All units were mounted on Rigid Curbs, and select units mounted on Spring Isolated Curbs

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: DCL Labs LLC

Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Street Suit 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: kelly.laplace@thvmcgroup.com

Title: Business Manager





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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3

Other (Please Specify): _____

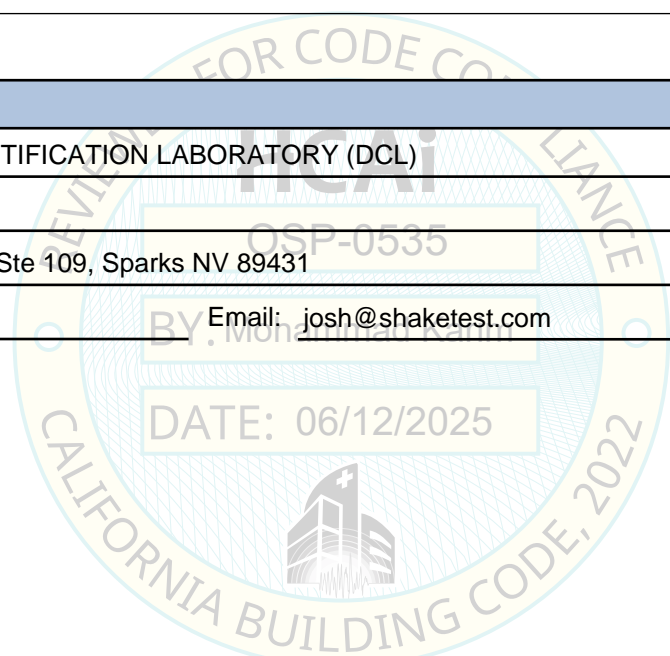
Testing Laboratory

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





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Seismic Parameters

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($z/h = 0$)

SDS (Design spectral response acceleration at short period, g) = 2.0 ($z/h = 1.0$) 2.5 ($z/h = 0.0$)

a_p (Amplification factor) = 2.5

R_p (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 ratio factor) = 1 and 0

Natural frequencies (Hz) = See attached

Overall dimensions and weight = See attached

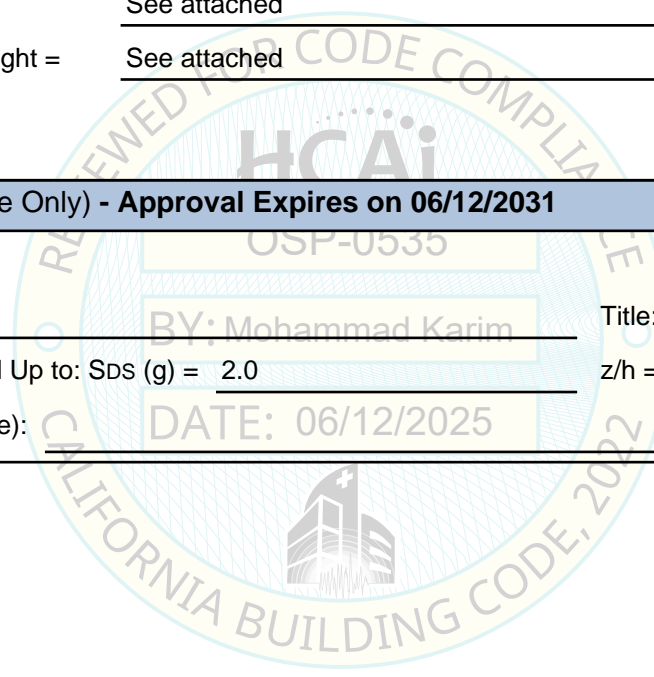
HCAI Approval (For Office Use Only) - Approval Expires on 06/12/2031

Date: 6/12/2025

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.0 z/h = 1

Condition of Approval (if applicable): DATE: 06/12/2025



Special Seismic Certification

Table 1- Certified Components - Gas Powered AC Units



DCL Project Number: 69232-2401

Manufacturer: Johnson Controls, Inc

Product Line: Direct Fit

Cabinet Material: Galvanized Carbon Steel

Mounting: Rigid Curb and Spring Isolated Curb¹

Certified Seismic Levels: Sds= 2.0 g at z/h= 1.0; and Sds= 2.5 g at z/h= 0

Model Number ²	Efficiency Rating ³	Nominal Cooling Capacity [tons]	Curb Height [in.]	Dimensions [in.] ⁴			Curb Weight [lb.] ⁶	Max Operating Weight [lb.] ⁷	Unit
				Length	Width	Height ⁵			
KQG04	14	3	14	74.1	48.9	40.6	165 or 260	515	Extrapolated
KYG04	15	3	14	74.1	48.9	32.5	165 or 260	535	Extrapolated
KQG05	14	4	14	74.1	48.9	32.5	165 or 260	552	Extrapolated
KLG04	14.1	3	14	74.1	48.9	32.5	165 or 260	563	Extrapolated
KQG06	14	5	14	74.1	48.9	40.6	165 or 260	610	Extrapolated
KLG05	15.2	4	14	74.1	48.9	32.5	165 or 260	612	Extrapolated
KYG05	15	4	14	74.1	48.9	40.6	165 or 260	628	Extrapolated
KLG06	15.2	5	14	74.1	48.9	40.6	165 or 260	643	Extrapolated
KYG06	14.5	5	14	74.1	48.9	40.6	165 or 260	646	Extrapolated
ZQG04	14 SEER	3	14	74.1	48.9	32.5	165 or 260	806	UUT1a, 1b, 1c, 1d, 1e
ZXG04	Standard	3	14	74.1	48.9	32.5	165 or 260	853	Interpolated
ZYG04	Mid	3	14	74.1	48.9	32.5	165 or 260	865	Interpolated
ZQG05	14 SEER	4	14	74.1	48.9	32.5	165 or 260	876	Interpolated
ZXG07	Standard	6	14	74.1	48.9	40.6	165 or 260	884	Interpolated
ZXG05	Standard	4	14	74.1	48.9	32.5	165 or 260	890	Interpolated
KYGA7	15	6	14	87.2	61.7	40.6	200 or 315	913	Interpolated
ZXG06	Standard	5	14	74.1	48.9	32.5	165 or 260	922	Interpolated
ZQG06	14 SEER	5	14	74.1	48.9	40.6	165 or 260	953	Interpolated
ZYG05	Mid	4	14	74.1	48.9	40.6	165 or 260	956	Interpolated
ZYG06	Mid	5	14	74.1	48.9	40.6	165 or 260	974	Interpolated
ZXGA7	Standard	6	14	74.1	48.9	40.6	165 or 260	984	Interpolated
KYG08	14.6	7.5	14	87.2	61.7	48.6	200 or 315	985	Interpolated
KYG09	14.6	8.5	14	87.2	61.7	48.6	200 or 315	995	Interpolated
KYG12	14.8	10	14	87.2	61.7	55.3	200 or 315	1026	Interpolated
KLG09	16.3	8.5	14	87.2	61.7	48.6	200 or 315	1045	Interpolated
KLG08	15.6	7.5	14	87.2	61.7	48.6	200 or 315	1055	Interpolated
KLG12	15.4	10	14	87.2	61.7	55.3	200 or 315	1068	Interpolated
KLG14	14.7	12.5	14	87.2	61.7	55.3	200 or 315	1088	Interpolated
ZYG07	Mid	6	14	87.1	61.7	40.6	200 or 315	1142	Interpolated
ZYGA7	Mid	6	14	87.1	61.7	40.6	200 or 315	1142	Interpolated
ZXG08	Standard	7.5	14	87.1	61.7	40.6	200 or 315	1231	Interpolated
ZXG09	Standard	8.5	14	87.1	61.7	40.6	200 or 315	1292	Interpolated
ZYG08	Mid	7.5	14	87.1	61.7	40.6	200 or 315	1318	Interpolated
ZYG09	Mid	8.5	14	87.1	61.7	40.6	200 or 315	1318	Interpolated
ZXG12	Standard	10	14	87.1	61.7	40.6	200 or 315	1323	Interpolated
ZYG12	Mid	10	14	87.1	61.7	55.3	200 or 315	1346	Interpolated
ZXG14	Standard	13	14	87.1	61.7	55.3	200 or 315	1382	UUT4a, 4b, 4c, 4d, 4e

Notes:

- 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
- Z units have 410A compressors and K units have 454B compressors. The new components are identical in construction to the tested components
- Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
- Dimensions do not include overhang
- Height does not include curb height
- Curb weight not included in max operating weight
- Max operating weights assume all of the most massive subcomponents are installed
- All units are installed on a 3-3/4" galvanized carbon steel base rail

Special Seismic Certification
Table 2- Certified Components - Electric Powered AC Units



DCL Project Number: 69232-2401

Manufacturer: Johnson Controls, Inc

Product Line: Direct Fit

Cabinet Material: Galvanized Carbon Steel

Mounting: Rigid Curb

Certified Seismic Levels: Sds= 2.0 g at z/h= 1.0; and Sds= 2.5 g at z/h= 0

Model Number ¹	Efficiency Rating ²	Nominal Cooling Capacity [tons]	Curb Height [in.]	Dimensions [in.] ³			Curb Weight [lb.] ⁵	Max Operating Weight [lb.] ⁶	Unit
				Length	Width	Height ⁴			
KQE04	14	3	14	74.1	48.9	40.6	165 or 260	450	Extrapolated
KQE05	14	4	14	74.1	48.9	32.5	165 or 260	487	Extrapolated
KLE04	14.1	3	14	74.1	48.9	32.5	165 or 260	489	Extrapolated
KYE04	15	3	14	74.1	48.9	32.5	165 or 260	489	Extrapolated
KQE06	14	5	14	74.1	48.9	40.6	165 or 260	561	Extrapolated
KLE05	15.2	4	14	74.1	48.9	32.5	165 or 260	574	Extrapolated
KYE05	15	4	14	74.1	48.9	40.6	165 or 260	574	Extrapolated
KYE06	14.5	5	14	74.1	48.9	40.6	165 or 260	592	Extrapolated
KLE06	15.2	5	14	74.1	48.9	40.6	165 or 260	594	Extrapolated
ZQE04	14 SEER	3	14	74.1	48.9	32.5	200	788	Extrapolated
ZXE04	Standard	3	14	74.1	48.9	32.5	200	807	Extrapolated
ZYE04	Mid	3	14	74.1	48.9	32.5	200	819	Extrapolated
ZQE05	14 SEER	4	14	74.1	48.9	32.5	200	825	Extrapolated
ZXE05	Standard	4	14	74.1	48.9	32.5	200	836	Extrapolated
KYEA7	15	6	14	87.2	61.7	40.6	200 or 315	843	Extrapolated
ZXE06	Standard	5	14	74.1	48.9	32.5	200	868	Extrapolated
KYE08	14.8	7.5	14	87.2	61.7	48.6	200 or 315	883	Extrapolated
KYE09	14.8	8.5	14	87.2	61.7	48.6	200 or 315	893	Extrapolated
ZYE05	Mid	4	14	74.1	48.9	40.6	200	902	Extrapolated
ZQE06	14 SEER	5	14	74.1	48.9	40.6	200	904	Extrapolated
ZYE06	Mid	5	14	74.1	48.9	40.6	200	920	Extrapolated
KYE12	15	10	14	87.2	61.7	55.3	200 or 315	920	Extrapolated
ZXE07	Standard	6	14	74.1	48.9	40.6	200	930	Extrapolated
ZXEA7	Standard	6	14	74.1	48.9	40.6	200	930	Extrapolated
KLE08	15.8	7.5	14	87.2	61.7	48.6	200 or 315	935	Extrapolated
KLE09	16.3	8.5	14	87.2	61.7	48.6	200 or 315	940	Extrapolated
KLE12	15.6	10	14	87.2	61.7	55.3	200 or 315	973	Extrapolated
KLE14	14.9	12.5	14	87.2	61.7	55.3	200 or 315	998	Extrapolated
ZYE07	Mid	6	14	87.1	61.7	40.6	200 or 315	1072	UUT2a
ZYEA7	Mid	6	14	87.1	61.7	40.6	200	1072	Interpolated
ZXE08	Standard	7.5	14	87.1	61.7	40.6	200	1129	Interpolated
ZXE09	Standard	8.5	14	87.1	61.7	40.6	200	1190	Interpolated
ZYE08	Mid	7.5	14	87.1	61.7	40.6	200	1216	Interpolated
ZYE09	Mid	8.5	14	87.1	61.7	40.6	200	1216	Interpolated
ZXE12	Standard	10	14	87.1	61.7	40.6	200	1217	Interpolated
ZYE12	Mid	10	14	87.1	61.7	55.3	200	1240	Interpolated
ZXE14	Standard	13	14	87.1	61.7	55.3	200	1270	UUT3a

Notes:

1. Z units have 410A compressors and K units have 454B compressors. The new components are identical in construction to the tested components
2. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
3. Dimensions do not include overhang/stacked subcomponents
4. Height does not include curb height
5. Curb weight not included in max operating weight
6. Max operating weights assume all of the most massive subcomponents are installed
7. All units are installed on a 3-3/4" galvanized carbon steel base rail

Special Seismic Certification
Table 3- Certified Components - Electric Powered AC Units



DCL Project Number: 69232-2401

Manufacturer: Johnson Controls, Inc

Product Line: Direct Fit

Cabinet Material: Galvanized Carbon Steel

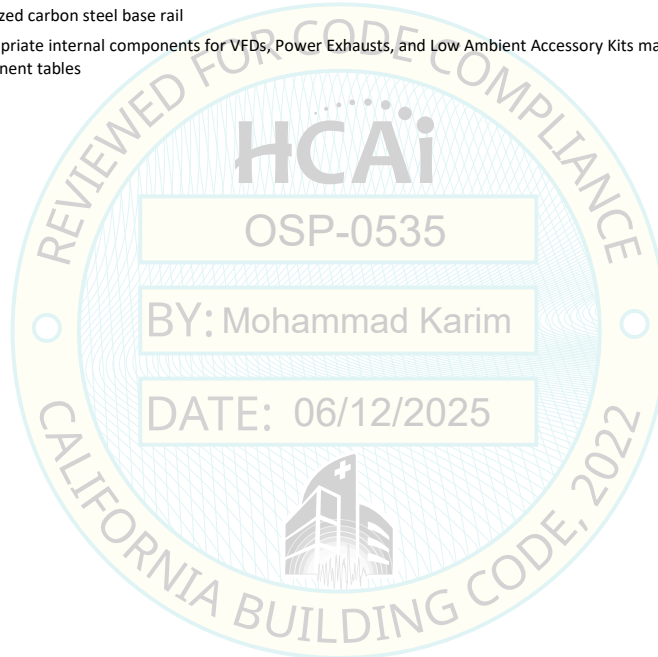
Mounting: Spring Isolated Curb

Certified Seismic Levels: Sds= 2.0 g at z/h= 1.0; and Sds= 2.5 g at z/h= 0

Model Number	Efficiency Rating ¹	Nominal Cooling Capacity [tons]	Curb Height [in.]	Dimensions [in.] ²			Curb Weight [lb.] ⁴	Max Operating Weight [lb.] ⁵	Unit
				Length	Width	Height ³			
ZYE07	Mid	6	14	87.1	61.7	40.6	200 or 315	1072	UUT2b

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. 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



Special Seismic Certification
Table 4- Certified Components - Heat Pump Units



DCL Project Number: 69232-2401

Manufacturer: Johnson Controls, Inc

Product Line: Direct Fit

Cabinet Material: Galvanized Carbon Steel

Mounting: Rigid Curb and Spring Isolated Curb

Certified Seismic Levels: Sds= 2.0 g at z/h= 1.0; and Sds= 2.5 g at z/h= 0

Model Number ¹	Efficiency Rating ²	Nominal Cooling Capacity [tons]	Curb Height [in.]	Dimensions [in.] ³			Curb Weight [lb.] ⁵	Max Operating Weight [lb.] ⁶	Unit
				Length	Width	Height ⁴			
WQE04	14	3	14	74.1	48.9	32.5	165 or 260	529	Extrapolated
WYE04	14.5	3	14	74.1	48.9	32.5	165 or 260	535	Extrapolated
WQE05	14	4	14	74.1	48.9	40.6	165 or 260	554	Extrapolated
WYE05	14.4	4	14	74.1	48.9	40.6	165 or 260	614	Extrapolated
WQE06	14	5	14	74.1	48.9	40.6	165 or 260	627	Extrapolated
WXEA7	15	6	14	74.1	48.9	40.6	165 or 260	652	Extrapolated
WYE06	14.3	5	14	74.1	48.9	40.6	165 or 260	653	Extrapolated
XYE04	Mid	3	14	74.1	48.9	32.5	165 or 260	831	UUT5a,b
XQE04	14 SEER	3	14	74.1	48.9	32.5	165 or 260	867	Interpolated
XQE05	14 SEER	4	14	74.1	48.9	40.6	165 or 260	892	Interpolated
WYEA7	17	6	14	87.1	61.7	48.6	200 or 315	898	Interpolated
XYE05	Mid	4	14	74.1	48.9	40.6	165 or 260	952	Interpolated
XQE06	14 SEER	5	14	74.1	48.9	40.6	165 or 260	965	Interpolated
WXE08	15.4	7.5	14	87.1	61.7	48.6	200 or 315	976	Interpolated
XXEA7	14 SEER	6	14	74.1	48.9	40.6	165 or 260	990	Interpolated
XYE06	Mid	5	14	74.1	48.9	40.6	165 or 260	991	Interpolated
WXE09	15.4	8.5	14	87.1	61.7	55.3	200 or 315	1040	Interpolated
WXE12	14.4	10	14	87.1	61.7	55.3	200 or 315	1060	Interpolated
WYE08	16	7.5	14	87.1	61.7	55.3	200 or 315	1060	Interpolated
XYE07	Mid	6	14	74.1	48.9	40.6	200 or 315	1199	Interpolated
XYEA7	Mid	6	14	74.1	48.9	40.6	200 or 315	1199	Interpolated
XXE08	Standard	7.5	14	87.1	61.7	48.6	200 or 315	1314	Interpolated
XXE09	Standard	8.5	14	87.1	61.7	48.6	200 or 315	1363	Interpolated
XYE08	Mid	7.5	14	87.1	61.7	55.3	200 or 315	1398	Interpolated
XXE12	Standard	10	14	87.1	61.7	55.3	200 or 315	1398	Interpolated
XYE09	Mid	8.5	14	87.1	61.7	55.3	200 or 315	1399	UUT6a,b

Notes:

1. X units have 410A compressors and W units have 454B compressors. The new components are identical in construction to the tested components
2. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
3. Dimensions do not include overhang/stacked subcomponents
4. Height does not include curb height
5. Curb weight not included in max operating weight
6. Max operating weights assume all of the most massive subcomponents are installed
7. All units are installed on a 3-3/4" galvanized carbon steel base rail
8. 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

Special Seismic Certification
Table 5 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Compressors ¹						
Model Number	Equipment Rating [BTU/hr]	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit
ZP31K5E	31000	Copeland	Carbon Steel	Rigid & Spring Isolated Curb	48	Extrapolated
ZP31K6E	31000				48	UUT1a,b,c,d & UUT5a,b
YA31K1E	31000				52	Interpolated
YAS30K1E	30000				52	Interpolated
ZP38K5E	38000				67	Interpolated
ZP38K6E	38000				67	Interpolated
ZP40K6E	40000				67	Interpolated
ZP42K5E	42000				67	UUT6a,b ²
ZP42K6E	42000				68	UUT6a,b ²
YA38K1E	38000				71	Interpolated
YA40K1E	40000				71	Interpolated
YA42K1E	42000				71	Interpolated
YA49K1E	49000				71	Interpolated
YA51K1E	51000				71	Interpolated
ZP54K5E	54000				72	Interpolated
ZP51K5E	51000				72	Interpolated
ZP51K6E	51000				72	Interpolated
YA36K1E	36000				72	Interpolated
ZPS60K5E	60000				76	Interpolated
YA42K1E	42000				77	Interpolated
YA44K1E	44000				77	Interpolated
YA49K1E	49000				77	Interpolated
YA51K1E	51000				77	Interpolated
YA54K1E	54000				77	Interpolated
ZP61K5E	61000				77	UUT3a, 4a, 4b, 4c, 4d
YA61K1E	61000				78	Interpolated
YAS49K1E	49000				78	Interpolated
YAS51K1E	51000				79	Interpolated
YAS60K1E	60000				79	Interpolated
YAS40K1E	40000				80	Interpolated
ZP61KCE	61000				89	UUT2a,b

Outdoor Fans ³							
Model Number	Blade Diameter [in]	Number of Blades	Manufacturer	Material	Mounting Configuration	Permitted Pitch [Degrees]	Unit
1033410	22	3	Revcor	Carbon Steel	Rigid & Spring Isolated Curb	22	UUT1a, 1b, 1c, 1d, 5a, 5b
291590	22	3		Carbon Steel		27	UUT5a, 5b
267738	22	3		Carbon Steel		30	UUT2a, 2b
8877	30	3		Aluminum		18	Interpolated
168146	30	3		Aluminum		24	UUT4a, 4b
5163302	22	3	Lau	Aluminum		24	UUT2a, 2b
1033631	30	4		Aluminum		30	UUT3a, 4a, 4b, 4c, 4d
168146	30	3		Carbon Steel		24	UUT4c, 4d
8877	30	3		Carbon Steel	18	UUT6a, 6b	

Notes:

- The ZP compressors operate with 410A and YA compressors operate with 454B but are identical in construction.
- UUT 6 operates with two compressors.
- All fans weigh less than 5 lbs.

Special Seismic Certification
Table 6 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Outdoor Fan Motors							
Model Number	Voltage	Equipment Rating [HP]	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit
1030103	208/230	0.25	Regal Beloit - Genteq	Carbon Steel	Rigid Curb	12	UUT1a, 1c
1030104	460	0.25		Carbon Steel		12	Interpolated
1030105	575	0.25		Carbon Steel		12	Interpolated
1030107	460	0.5		Carbon Steel		14	Interpolated
1030108	575	0.5		Carbon Steel		14	Interpolated
1030106	208/230	0.5		Carbon Steel		14	UUT5a
7193	208/230	1.5	A. O. Smith	Carbon Steel	Rigid Curb	42	UUT4a, 4c, 6a
7194	460	1.5		Carbon Steel		42	Interpolated
7195	575	1.5		Carbon Steel		42	UUT3a
1030103	208/230	0.25	Regal Beloit - Genteq	Carbon Steel	Spring Isolated Curb	12	UUT1b, 1d
1030104	460	0.25		Carbon Steel		12	Interpolated
1030105	575	0.25		Carbon Steel		12	Interpolated
1030107	460	0.5		Carbon Steel		14	Interpolated
1030108	575	0.5		Carbon Steel		14	Interpolated
1030106	208/230	0.5		Carbon Steel		14	UUT5b
7193	208/230	1.5	A. O. Smith	Carbon Steel	Rigid Curb	42	UUT4b, 4d, 6b

VFD							
Model Number	Equipment Rating [BTU/hr.]	Voltage	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit
FR-D720-070-NA	1.5	240V	Mitsubishi	Plastic, Aluminum	Rigid Curb	3	UUT6a
FR-D740-036-NA	1.5	480V		Plastic, Aluminum		3	Interpolated
FR-D720-100-NA	3	240V		Plastic, Aluminum		3	Interpolated
FR-D740-050-NA	3	480V		Plastic, Aluminum		3	Interpolated
FR-D740-080-NA	5	480V		Plastic, Aluminum		3	Interpolated
FR-D720-165-NA	5	240V		Plastic, Aluminum		4	Interpolated
FR-E560-1.5K-NA	1.5	575V		Plastic, Aluminum		4	Interpolated
FR-E560-2.2K-NA	3	575V		Plastic, Aluminum	4	Interpolated	
FR-E560-3.7K-NA	5	575V	Plastic, Aluminum	8	UUT3a		
FR-D720-070-NA	1.5	240V	Mitsubishi	Plastic, Aluminum	Spring Isolated Curb	3	UUT6b

Direct Drive Blower Motor							
Model Number	Equipment Rating [BTU/hr.]	Voltage	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit
5SME39NXL070	0.75	208/230	Regal Beloit - Genteq	Carbon Steel	Rigid & Spring Isolated Curb	16	UUT1a, 1b
5SME39SXL069	1	208/230		Carbon Steel		20	UUT5a, 5b

Belt Drive Blower Motor ¹							
Model Number	Equipment Rating [BTU/hr.]	Voltage	Manufacturer	Material	Mounting Configuration	Unit	
5K49MN4855Z	1.5	575	Regal Beloit - Genteq	Carbon Steel	Rigid & Spring Isolated Curb	UUT2a, UUT2b, UUT6a, UUT6b	
5K39TN4851Z	2	460		Carbon Steel		Interpolated	
5K49WN4852Z	3	460		Carbon Steel		Interpolated	
5K49WN4857Z	3	575		Carbon Steel		Interpolated	
5K49QN4853Z	5	208		Carbon Steel		UUT4a, UUT4b	
36P249T139G1	5.25	575	Baldor	Carbon Steel	Rigid Curb	UUT3a	

Note:

1. Genteq Belt Drive Blower Motors are bookended by equipment rating

Special Seismic Certification
Table 7 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Filters										
Model Number	Size [in]	Rating	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit			
276-160-160	16 x 16	MERV 4	Koch	Cardboard, Fiberglass	Rigid & Spring Isolated Curb	<1	Extrapolated			
102-800-032	18 x 16	MERV 6				<1	Extrapolated			
116-700-925	19 x 16	MERV 7				<1	Extrapolated			
276-160-200	16 x 20	MERV 8				<1	Extrapolated			
102-800-016	18 x 20	MERV 10				<1	Extrapolated			
116-700-007	19 x 20	MERV 11				<1	Extrapolated			
274-140-200	16 x 25	MERV 12				<1	UUT1a, 1b			
102-800-017	18 x 25	MERV 14				<1	Interpolated			
116-700-008	19 x 25	MERV 15				<1	Interpolated			
276-200-200-058	20 x 20	MERV 16				<1	UUT6a, 6b			
102-800-019	22 x 20	MERV 18				<1	Extrapolated			
116-700-009	23 x 20	MERV 19				<1	Extrapolated			
198-700-092	21 x 20	MERV 17				American Air	Cardboard, Fiberglass	Rigid Curb	<1	UUT3a
198-488-052	17 x 16	MERV 5				American Air	Cardboard, Fiberglass	Rigid & Spring Isolated Curb	<1	Interpolated
198-500-092	17 x 20	MERV 9	<1	Interpolated						
198-600-092	17 x 25	MERV 13	<1	UUT1a, 1b						
Power Exhaust										
Accessory Kit Number	Flow Type	Voltage	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit			
2PE04704206	Vertical	208/230	Ruskin Rooftop Systems	Galvanized Carbon Steel	Rigid Curb	39	UUT5a			
2PE04704225	Vertical	208/230				39	Interpolated			
2PE04704246	Vertical	460				39	Interpolated			
2PE04704258	Vertical	575				39	Interpolated			
2PE04704306	Vertical	208/230				39	Interpolated			
2PE04704325	Vertical	208/230				39	Interpolated			
2PE04704346	Vertical	460				39	Interpolated			
2PE04704358	Vertical	575				39	UUT3a			
2PE04704206	Vertical	208/230	Ruskin Rooftop Systems	Galvanized Carbon Steel	Spring Isolated Curb	39	UUT5b			
Economizer										
Model Number	Flow Type	Voltage	Manufacturer	Material	Mounting Configuration	Weight [lb.]	Unit			
2EE04706724	Vertical	208/230, 460, 575	Ruskin Rooftop Systems	Galvanized Carbon Steel	Rigid Curb	63	UUT5a			
2EE04706824	Vertical	208/230, 460, 575				96	UUT3a			
2EE04707024	Horizontal	208/230, 460, 575				75	UUT1a			
2EE04707124	Horizontal	208/230, 460, 575				81	Interpolated			
2EE04707224	Horizontal	208/230, 460, 575				105	Interpolated			
2EE04707324	Horizontal	208/230, 460, 575				102	UUT4a			
Economizer										
2EE04706724	Vertical	208/230, 460, 575	Ruskin Rooftop Systems	Galvanized Carbon Steel	Spring Isolated Curb	63	UUT5b			
2EE04707024	Horizontal	208/230, 460, 575				75	UUT1b			
2EE04707124	Horizontal	208/230, 460, 575				81	Interpolated			
2EE04707224	Horizontal	208/230, 460, 575				105	Interpolated			
2EE04707324	Horizontal	208/230, 460, 575				102	UUT4b			
Control Systems										
Model Name	Description	Manufacturer	Material	Mounting Configuration		Unit				
Smart Equipment	Standard	JCI	PCB	Rigid & Spring Isolated Curb		UUT1a, 1b, 1c, 1d, 2a, 2b, 3a, 4a, 4b, 4c, 4d, 5a, 5b, 6a, 6b				
Surveyor	Integration	Venstar	PCB			UUT3a, 4a, 4b				
ALC	Integration	EMC	PCB			UUT2a, 2b, 5a, 5b				

Special Seismic Certification
Table 8 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Condenser Coils ¹						
Model Number	Number of Rows	Fins per Inch	Manufacturer	Material	Mounting Configuration	Unit
5287141	2	15	JCI	Copper	Rigid & Spring Isolated Curb	Extrapolated
5277792	2	17	JCI	Copper		Extrapolated
5023749	2	17	JCI	Copper		5a, 5b
5152963	3	13	JCI	Copper		Interpolated
5158114	3	17	JCI	Copper with ElectroFin® Coating		6a, 6b

Condenser Coils (Micro Channel) ²							
Model Number	Width [mm / in]	Tubes	Systems	Manufacturer	Material	Mounting Configuration	Unit
961356	16 / 0.063	76	1	Sanhua	Aluminum	Rigid & Spring Isolated Curb	UUT1a, 1b, 1c, 1d
961354	20 / 0.787	74	1	Sanhua	Aluminum		Interpolated
999310	20 / 0.787	96	1	Sanhua	Aluminum		Interpolated
999491	25 / 0.984	96	1	Sanhua	Aluminum		UUT2a, 2b
986845	25 / 0.984	96	2	Sanhua	Aluminum		Interpolated
961355	25 / 0.984	117	2	Sanhua	Aluminum		Interpolated
995635	32 / 1.260	117	2	Sanhua	Aluminum	UUT4a, 4b	
995635	32 / 1.260	117	2	Sanhua	Aluminum with ElectroFin® Coating	Rigid Curb	UUT3a

Evaporating Coils								
Model Number	Number of Rows	Fins per Inch	Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit	
999134	2	15	Luvata	Copper Tubes with Aluminum Housing	22	Rigid Curb	UUT1a, 1c	
999144	3	15	Luvata		29		UUT5a	
999149	4	15	Luvata		38		Interpolated	
999151	3	15	Luvata		43		Interpolated	
999156	3	15	Luvata		47		UUT2a	
999154	4	15	Luvata		51		Interpolated	
999157	3	15	Luvata		65		Interpolated	
5162718	4	15	Luvata		77		Interpolated	
999158	4	15	Luvata		77	UUT4a, 6a		
999158	4	15	Luvata		Copper with ElectroFin® Coating	77	UUT3a	
999134	2	15	Luvata		Copper Tubes with Aluminum Housing	22	Spring Isolated Curb	UUT1b, 1d
999144	3	15	Luvata			29		UUT5b
999149	4	15	Luvata			38		Interpolated
999151	3	15	Luvata			43		Interpolated
999156	3	15	Luvata			47		UUT2b
999154	4	15	Luvata			51		Interpolated
999157	3	15	Luvata	65		Interpolated		
5162718	4	15	Luvata	77		Interpolated		
999158	4	15	Luvata	77	UUT4b, 6b			

Notes:

1. Condenser Coils are bookended by number of rows
2. Condenser Coils (Micro Channel) are bookended by number of tubes

Special Seismic Certification
Table 9 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Heat Exchanger Tubes							
Model Number	Number of Tubes	Stage	Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit
1043666	3	2	JCI	Aluminized Carbon Steel	19	Rigid & Spring Isolated Curb	UUT1c, 1d
1043666	3	1			19		Interpolated
1043669	5	2			28		Interpolated
1043669	5	1			28		Interpolated
1045536	6	2			31		Interpolated
1045536	6	2			31		Interpolated
1043671	5	2			37		Interpolated
1164373	7	2			46		Interpolated
1043673	7	2			47		Interpolated
1043675	9	2			57		Interpolated
1045538	10	1			62		UUT4c, 4d
1043665	3	1			19		UUT1a, 1b
1043667	3	2			19		Interpolated
1043667	3	1			19		Interpolated
1043668	5	1	28	Interpolated			
1043670	5	2	28	Interpolated			
1043670	5	1	28	Interpolated			
1164372	6	1	JCI	Stainless Steel	31	Interpolated	
1045537	6	2	31	Interpolated			
1045537	6	2	31	Interpolated			
1043672	5	2	37	Interpolated			
1164374	7	2	46	Interpolated			
1043674	7	2	47	Interpolated			
1043676	9	2	57	Interpolated			
1045539	10	2	62	UUT4a, 4b			

Heat Exchanger Gas Valve							
Model Number	Number of Screws	Stage	Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit
993801	One Screw	Single	White Rodgers	Cast Aluminum	2	Rigid & Spring Isolated Curb	UUT1a, 1b, 1c, 1d
993802	Two Screws	Two-Stage		Cast Aluminum	2		Interpolated
993803	Two Screws	Two-Stage		Cast Aluminum	2		UUT4a, 1b, 4c, 4d

Motorized Outside Air Damper							
Model Number	Voltages		Manufacturer	Material	Mounting Configuration		Unit
2MD04704224	208/230, 460, 575		Ruskin Rooftop Systems	Galvanized Carbon Steel	Rigid & Spring Isolated Curb		UUT5a, 5b
2MD04704324	208/230, 460, 575						UUT2a, 2b

Enthalpy Kits							
Model Number	Voltages		Manufacturer	Material	Mounting Configuration		Unit
2EC0401	208/230, 460, & 575		JCI	Sheet Metal Bracket	Rigid & Spring Isolated Curb		Extrapolated ¹
2EC0402	208/230, 460, & 575						UUT2a, 2b, 4a, 4b

Natural Gas / Propane Conversion Kits							
Model Number	Description		Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit
1HA0454	Natural Gas - High Altitude		White Rodgers	Brass	2	Rigid & Spring Isolated Curb	Extrapolated ²
1HA0455	Natural Gas - High Altitude			Brass	2		Extrapolated ²
1NP0456	Propane			Brass	2		UUT1a, 1b
1NP0457	Propane			Brass	2		UUT4a, 4b
1HA0458	Propane High Altitude			Brass	2		UUT1c, 1d
1HA0459	Propane High Altitude			Brass	2		UUT4c, 4d

Notes:

1. Enthalpy Kit 2EC0402 subcomponent is two of the Enthalpy Kit 2EC0401 subcomponents
2. Extrapolated subcomponents are identical to those tested in 1c & 4c with exception to the diameter of the valve orifice & the valve spring

Special Seismic Certification
Table 10 - Certified Subcomponents



DCL Project Number: 69232-2401

Product Line: Direct Fit

Electric Heaters ¹						
Model Number	Output [kW]	Voltage ¹	Manufacturer	Material	Mounting Configuration	Unit
2EK04510646	6	460	JCI	Carbon Steel	Rigid & Spring Isolated Curb	Extrapolated
2EK04510725	6	208/230	JCI	Carbon Steel		Extrapolated
2EK04510746	6	460	JCI	Carbon Steel		Extrapolated
2EK04510625	6.5	208/230	JCI	Carbon Steel		UUT5a, 5b
2EK04510625	6.5	208/230	JCI	Carbon Steel		Interpolated
2EK04511058	9.2	575	JCI	Carbon Steel		Interpolated
2EK04511125	10.5	208/230	JCI	Carbon Steel		Interpolated
2EK04511146	11.5	460	JCI	Carbon Steel		Interpolated
2EK04511458	13.8	575	JCI	Carbon Steel		Interpolated
2EK04511446	14	460	JCI	Carbon Steel		Interpolated
2EK04511625	16	208/230	JCI	Carbon Steel		Interpolated
2EK04511725	16	208/230	JCI	Carbon Steel		Interpolated
2EK04511746	16.5	460	JCI	Carbon Steel		Interpolated
2EK04511758	17	575	JCI	Carbon Steel		Interpolated
2EK04512358	23	575	JCI	Carbon Steel		Interpolated
2EK04512525	24.8	208/230	JCI	Carbon Steel		Interpolated
2EK04512646	25.5	460	JCI	Carbon Steel		Interpolated
2EK04512658	25.7	575	JCI	Carbon Steel		Interpolated
2EK04512846	27.8	460	JCI	Carbon Steel		Interpolated
2EK04513225	32	208/230	JCI	Carbon Steel		Interpolated
2EK04513346	33	460	JCI	Carbon Steel	Interpolated	
2EK04513458	34	575	JCI	Carbon Steel	Interpolated	
2EK04514246	41.7	460	JCI	Carbon Steel	Interpolated	
2EK04514225	42.4	208/230	JCI	Carbon Steel	UUT3a, 6a, 6b	

Low Ambient Accessory Kits ²						
Model Number	Voltage ²	Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit
2LA04704725	208/230V	JCI	Carbon Steel Bracket	1	Rigid Curb	UUT1a
2LA04704746	460V	JCI		1		Interpolated
2LA04704758	575V	JCI		1		Interpolated
2LA04704825	208/230V	JCI		1		Interpolated
2LA04704846	460V	JCI		1		Interpolated
2LA04704858	575V	JCI		1		Interpolated
2LA04704946	460V	JCI		1		Interpolated
2LA04704958	575V	JCI		1		Interpolated
2LA047049251	208/230V	JCI		1		UUT3a
2LA04704725	208/230V	JCI		Carbon Steel Bracket	1	Spring Isolated Curb

Fault Detection and Diagnostics (FDD)						
Model Number	Voltage	Manufacturer	Material	Weight [lb.]	Mounting Configuration	Unit
2FDD61	208/230, 460, & 575	JCI	Carbon Steel Bracket	1	Rigid & Spring Isolated Curb	UUT4a, 4b
2FDD62				1		Interpolated
5126433				1		UUT2a, 2b
5181673				1		UUT6a, 6b

Notes:

1. Electric Heaters are bookended by output
2. 460/575 units are depopulated versions of the 208/230 units
3. 208/230 units house the largest fuses and contactors as compared to the 460 & 575

Special Seismic Certification
Table 11- Tested Units



DCL Project Number: 69232-2401

Manufacturer: Johnson Controls, Inc

Product Line: Direct Fit

Cabinet Material: Galvanized Carbon Steel

Mounting: Rigid Curb and Spring Isolated Curb

Certified Seismic Levels: Sds= 2.0 g at z/h= 1.0; and Sds= 2.5 g at z/h= 0

Model Number	Efficiency Rating ¹	Nominal Cooling Capacity [tons]	Dimensions [in.] ²			Cabinet Material	Unit Weight with Curb [lb.]	Mounting Configuration	Unit	
			Length	Width	Height ³					
ZQG04	14 SEER	3	73.0	47.0	33.0	Galvanized Carbon Steel	685	VMC Rigid Curb	UUT1a	
XYE04	Mid	3	74.0	74.0	33.0				UUT5a	
ZQG04	14 SEER	3	73.0	59.0	33.0				UUT1c	
ZYE07	Mid	6	87.0	60.0	49.0				1020	UUT2a
XYE09	Mid	8.5	87.0	60.0	49.0				1285	UUT6a
ZXG14	Standard	12.5	87.0	60.0	49.0				1320	UUT4a
ZXG14	Standard	12.5	87.0	60.0	49.0				1320	UUT4c
ZXE14	Standard	12.5	87.0	83.0	49.0				1470	UUT3a
ZQG04	14 SEER	3	73.0	47.0	33.0	Galvanized Carbon Steel	780	VMC Spring Isolated Curb	UUT1b	
ZQG04	14 SEER	3	73.0	59.0	33.0				900	UUT1d
ZYE07	Mid	6	87.0	60.0	49.0				1135	UUT2b
XYE04	Mid	3	74.0	74.0	33.0				1380	UUT5b
XYE09	Mid	8.5	87.0	60.0	49.0				1380	UUT6b
ZXG14	Standard	12.5	87.0	60.0	49.0				1435	UUT4d
ZXG14	Standard	12.5	87.0	60.0	49.0				1435	UUT4b
ZQG04	14 SEER	3	73.0	47.0	33.0				Galvanized Carbon Steel	700
ZXG14	Standard	12.5	87.0	60.0	49.0	1230	UUT4e ⁵			

Notes:

1. Difference between efficiency ratings is length of copper piping, number of check valves, number of rows in condenser coils
2. Dimensions include overhang/stacked subcomponents
3. Height does not include curb height
4. UUT1e has the same subcomponent options as UUT1a and was tested for installation on Ruskin curb
5. UUT4e has the same subcomponent options as UUT4a and was tested for installation on Ruskin curb

UNIT UNDER TEST (UUT) Summary Sheet



UUT-1a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZQG04

Mounting: Rigid Curb Mounted

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

Options / Component 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, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Natural Gas and Propane Conversion Kit: Key gas and White Rogers, Low Ambient Accessory Kit: JCI

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-1a	520.0	685.0	73.0	47.0	33.0	30.5	25.0	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-5a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: XYE04

Mounting: Rigid Curb Mounted

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

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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-5a	620.0	785.0	74.0	74.0	33.0	27.0	25.5	31.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-1c

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZQG04

Mounting: Rigid Curb Mounted

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

Options / Component Summary: Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Conversion Kit: Key gas and White Rogers

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-1c	640.0	805.0	73.0	59.0	33.0	21.5	19.5	26.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-2a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZYE07

Mounting: Rigid Curb Mounted

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

Options / Component Summary: Compressor: Copeland, Fan: Lau, Control Systems: EMC, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Motorized Outside Air Damper: Ruskin Rooftop Systems, Enthalpy Kits: JCI, Fault Detection and Diagnostics: JCI

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-2a	820.0	1020.0	87.0	60.0	49.0	13.5	16.5	18.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-6a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: XYE09

Mounting: Rigid Curb Mounted

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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-6a	1120.0	1285.0	87.0	60.0	49.0	15.0	15.0	25.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-4a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXG14

Mounting: Rigid Curb Mounted

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 / Component 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, Condenser 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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-4a	1120.0	1320.0	87.0	60.0	49.0	15.0	15.0	15.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-4c

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXG14

Mounting: Rigid Curb Mounted

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 / Component 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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-4c	1120.0	1320.0	87.0	60.0	49.0	18.0	15.0	30.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-3a

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXE14

Mounting: Rigid Curb Mounted

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 / Component 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, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Electric Heaters: JCI, Low Ambient Accessory Kit: JCI

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-3a	1270.0	1470.0	87.0	83.0	49.0	10.5	15.0	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-1b

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZQG04

Mounting: Isolated Curb Mounted

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

Options / Component 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, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Natural Gas and Propane Conversion Kit: Key gas and White Rogers, Low Ambient Accessory Kit: JCI

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-1b	520.0	780.0	73.0	47.0	33.0	4.5	4.5	15.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-1d

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZQG04

Mounting: Isolated Curb Mounted

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

Options / Component Summary: Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Conversion Kit: Key gas and White Rogers

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-1d	640.0	900.0	73.0	59.0	33.0	4.5	4.5	15.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-2b

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZYE07

Mounting: Isolated Curb Mounted

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

Options / Component Summary: Compressor: Copeland, Fan: Lau, Control Systems: EMC, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Motorized Outside Air Damper: Ruskin Rooftop Systems, Enthalpy Kits: JCI, Fault Detection and Diagnostics: JCI

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-2b	820.0	1135.0	87.0	60.0	49.0	3.0	3.0	7.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-5b

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: XYE04

Mounting: Isolated Curb Mounted

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

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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-5b	1120.0	1380.0	74.0	74.0	33.0	5.5	5.5	11.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-6b

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: XYE04

Mounting: Isolated Curb Mounted

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

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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-6b	1120.0	1380.0	87.0	60.0	49.0	3.5	3.0	7.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-4d

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXG14

Mounting: Isolated Curb Mounted

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 / Component 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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-4d	1120.0	1435.0	87.0	60.0	49.0	6.0	5.5	11.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-4b

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXG14

Mounting: Isolated Curb Mounted

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 / Component 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, Condenser 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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-4b	1120.0	1435.0	87.0	60.0	49.0	3.0	3.0	6.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

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.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-1e

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZQG04

Mounting: Rigid Curb Mounted

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

Options / Component Summary: Compressor: Copeland, Fan: Revcor, Fan Motor: Regal Beloit-Gentec, Condenser Coils (Micro Channel): Sanhua, Evaporating Coils: Luvata, Heat Exchanger Tubes: JCI, Heat Exchanger Gas Valve: White Rogers, Propane High Altitude Conversion Kit: Key gas and White Rogers. Sheet Metal Curb: Ruskin Rooftop Systems

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-1e	590.0	700.0	73.0	47.0	33.0	12.0	8.5	11.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

Unit is mounted to the Ruskin 1RC0456 sheet-metal 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 sheet-metal curb 1RC0456 is mounted to shake table using (6) 5/8" Grade 5 bolts.



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

UNIT UNDER TEST (UUT) Summary Sheet



UUT-4e

Test Report Number: 98538-1701

Manufacturer: Johnson Controls, Inc.

Model Line: Direct Fit

Model Number: ZXG14

Mounting: Rigid Curb Mounted

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 / Component 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, Condenser 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

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)					Lowest Natural Frequency (Hz)		
	Unit Weight (lb)	Weight with Curb (lb.)	Length	Width	Height	Front-Back (Longitudinal)	Side-Side (Lateral)	Vertical
UUT-4e	1120.0	1230.0	87.0	60.0	49.0	6.0	7.0	8.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0	1.5	N/A	N/A	1.67	0.67

Unit Mounting Description:

Unit is mounted to the Ruskin 1RC0456 sheet-metal 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 sheet-metal curb 1RC0456 is mounted to shake table using (6) 5/8" Grade 5 bolts.



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