APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0742

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Johnson Controls

Manufacturer's Technical Representative: Piyush Adhav

Mailing Address: 5005 York Drive, Norman, OK 73069

Telephone: (580) 878-0570 Email: piyush.adhav@jci.com

Product Information

Product Name: Air Conditioning Units

Product Model Number(s): See attached

Product Category: Air Conditioning Units

Product Sub-Category: Air Conditioning Units - Packaged

General Description: 27.5 - 50 ton Select Packaged rooftop units

Mounting Description: Rigid Custom Curb, Floor Mounted

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

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

Contact Person: Kelly Laplace

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

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

Title: Business Manager

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: CLARK TESTING LABORATORY, INC.

Contact Person: Devon Lohr

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1001 Email: dlohr@clarktesting.com

Company Name: 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

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.05

S_{DS} (Design spectral response acceleration at short period, g) = 1.40

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6

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 Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 12/06/2030

Date: 12/6/2024

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = 1.40 z/h = 1

Condition of Approval (if applicable):

Special Seismic Certification

Table 1 - Certified Components

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Product Construction: Powder Coated Carbon Steel Enclosure

Mounting Description: Rigid Roof Curb Mounted

Certified Seismic Levels: Sds 1.4 g at z/h= 1.0 and z/h= 0

Model Number	Dimensions (inches)			Operating Weight (lb)	Nominal Cooling Capacity (Tons)	Tested Heat	Unit
	Depth	Width	Height				
YV28E3DJ5S3LGLC1G	180	90	70	5,002	27.5	Electric	UUT3
xx27xxxxxxxxxxx	180	90	70	5,002	27.5	N/A	Interpolated
YV30T3CV4K1C8TD6L	180	90	70	5,430	30	Gas	UUT1
xx30xxxxxxxxxxx	180	90	70	5430	30	N/A	Interpolated
xx35xxxxxxxxxxx	180	90	70	5430	35	N/A	Interpolated
xx40xxxxxxxxxxx	232	90	77	6,220	40	N/A	Interpolated
YH40N1DZ2Q2CGTC6A	232	90	77	6,220	40	Gas	UUT2
xx50xxxxxxxxxxx	232	90	77	6,787	50	N/A	Interpolated
YH50E1DV2R4L8LD7M	232	90	77	6,787	50	Electric	UUT4

Special Seismic Certification
Certified Options : Nomenclature Chart

DCL DYNAMIC CERTIFICATION LABORATORIES,LLC

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Sample Part Number

K	H	4	0	C	2	D	Z	2	Q	2	C	G	T	C	6	A

Character	Category	Allowable Value	Description	Justification for Interpolation/ Extrapolation	Unit
K	Package	V	JCI PACKAGE	Same as UUT1,2,3,4 (branding)	Extrapolated
		K	YORK PACKAGE	N/A	UUT1,2,3,4
		F	BRANDED PACKAGE	Same as UUT1,2,3,4 (branding)	Extrapolated
		R	TEMPMASTER PACKAGE	Same as UUT1,2,3,4 (branding)	Extrapolated
H	Efficiency	V	Standard vertical	N/A	UUT1,3
		H	Standard horizontal	N/A	UUT2,4
		X	Vertical Return, Horizontal Supply	Both types of returns/supplys tested	Extrapolated
		Y	Horizontal Return, Vertical Supply	Both types of returns/supplys tested	Extrapolated
40	Capacity	27	27.5 ton	N/A	UUT3
		30	30 ton	N/A	UUT1
		35	35 ton	Bookended by UUT1,3 and UUT2,4	Interpolated
		40	40 ton	N/A	UUT2
		50	50 ton	N/A	UUT4
C	Heat Type	C	Cooling Only	Depopulated version of UUT1,2,3,4	Extrapolated
		N	Natural Gas, Staged	N/A	UUT2
		S	Natural Gas, Staged Gas Heat with SS Heat Exchangers	Depopulated version of UUT1	Extrapolated
		E	Electric Heat	N/A	UUT3,4
		T	Natural Gas, Modulating Gas Heat with SS Heat Exchangers	N/A	UUT1
2	Heat Size	0	Cooling Only	Depopulated version of UUT1,2,3,4	Extrapolated
		1	Low Heat	N/A	UUT2,4
		2	Medium Heat	Bookended by UUT2,4, and UUT1,3	Interpolated
		3	High Heat / Mod Heat	N/A	UUT1,3
		4	Ultra High Heat	Same as UUT3	Extrapolated
D	Blower	B	Standard	Depopulated version of UUT1,2,3,4	Interpolated
		C	Medium	N/A	UUT1
		D	High	N/A	UUT2,3,4
Z	Air Volume	G	VFD/VAV 4 Stage	Depopulated version of UUT3	Interpolated
		H	VFD/VAV w/ Shaft Grounding Ring 4 Stage	Bookended by UUT2,3	Interpolated
		J	VFD/VAV w/ Bypass 4 Stage	N/A	UUT3
		K	VFD/VAV w/ Bypass / Shaft Grounding Ring 4 Stage	Bookended by UUT2,3	Interpolated
		P	IntelliSpeed 2 Stage	Depopulated version of UUT2	Interpolated
		Q	IntelliSpeed w/ Shaft Grounding Ring 2 Stage	Depopulated version of UUT2	Interpolated
		R	IntelliSpeed w/Bypass 2 Stage	Depopulated version of UUT2	Interpolated
		S	IntelliSpeed w/ Bypass /Shaft Grounding Ring 2 Stage	Depopulated version of UUT2	Interpolated
		V	Constant Volume[1]	N/A	UUT1,4
		W	IntelliSpeed 4 Stage	Depopulated version of UUT2	Interpolated
		X	IntelliSpeed w/ Shaft Grounding Ring 4 Stage	Depopulated version of UUT2	Interpolated
		Y	IntelliSpeed w/ Bypass 4 Stage	Depopulated version of UUT2	Interpolated
		Z	IntelliSpeed w/ Bypass /Shaft Grounding Ring 4 Stage	N/A	UUT2
2	Voltage	2	208/230-3-60	N/A	UUT2,4
		4	460-3-60	N/A	UUT1
		5	575-3-60	N/A	UUT3
		B	208/230-3-60 HIGH SCCR	Same as UUT2,4	Interpolated
		D	460-3-60 HIGH SCCR	Same as UUT1	Interpolated
		E	575-3-60 HIGH SCCR	Same as UUT3	Interpolated

Note:
1. Option no longer avalable

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Special Seismic Certification
Certified Options : Nomenclature Chart (Continued)

DCL DYNAMIC CERTIFICATION LABORATORIES,LLC

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Sample Part Number

K	H	4	0	C	2	D	Z	2	Q	2	C	G	T	C	6	A

Character	Category	Allowable Value	Description	Justification for Interpolation/ Extrapolation	Unit
Q	Outdoor Air	A	No Economiser	Depopulated version of UUT1,2,3, 4	Extrapolated
		B	Manual Damper	Depopulated version of UUT1,2,3, 4	Extrapolated
		C	Economiser with Baromatric Relief	Depopulated version of UUT2	Interpolated
		D	Economiser with Modulating Power Exhaust	Depopulated version of UUT1,4	Interpolated
		E	Economiser with Power Exhaust	Depopulated version of UUT3	Interpolated
		F	Economiser BAS with Barometric Relief	Depopulated version of UUT2	Interpolated
		G	Economiser BAS with Modulating Power Exhaust	Depopulated version of UUT4	Interpolated
		H	Economiser BAS with Power Exhaust	Depopulated version of UUT 3	Interpolated
		J	Economiser with Baromatric Relief, Single Enthalpy	Depopulated version of UUT1 and UUT2	Interpolated
		K	Economiser with Modulating Power Exhaust, Single Enthalpy	N/A	UUT1
		L	Economiser with Power Exhaust, Single Enthalpy	Depopulated version of UUT1 and UUT3	Interpolated
		Q	Economiser with Barometric Relief, Dual Enthalpy	N/A	UUT2
		R	Economiser with Modulating Power Exhaust, Dual Enthalpy	N/A	UUT4
		S	Economiser with Power Exhaust, Dual Enthalpy	N/A	UUT3
2	Coils	1	Standard Condenser and Evaporator Coil	N/A	UUT1
		2	Standard Condenser and ElectroFin Evaporator Coil	N/A	UUT2
		3	ElectroFin Condenser & Standard Evaporator Coil	N/A	UUT3
		4	ElectroFin Condenser & ElectroFin Evaporator Coil	N/A	UUT4
		5	Standard Condenser and Evaporator Coil with IBC / HCAI Seismic Unit Construction	Same as tested in UUT1	Same
		6	Standard Condenser and ElectroFin Evaporator Coil with IBC / HCAI Seismic Unit Construction	Same as tested in UUT2	Same
		7	ElectroFin Condenser & Standard Evaporator Coil with IBC / HCAI Seismic Unit Construction	Same as tested in UUT3	Same
		8	ElectroFin Condenser & ElectroFin Evaporator Coil with IBC / HCAI Seismic Unit Construction	Same as tested in UUT4	Same
C	Controls	A	Smart Equipment Controls	Depopulated version of UUT1,2,3, 4	Interpolated
		C	Smart Equipment with COM	N/A	UUT1,2
		J	VERASYS SINGLE ZONE	Bookended by UUT1,2 and UUT3,4	Interpolated
		K	VERASYS Change over Bypass	Bookended by UUT1,2 and UUT3,4	Interpolated
		L	VERASYS VAV	N/A	UUT3,4

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Special Seismic Certification
Certified Options : Nomenclature Chart (Continued)

DCL DYNAMIC CERTIFICATION LABORATORIES,LLC

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Sample Part Number

K	H	4	0	C	2	D	Z	2	Q	2	C	G	T	C	6	A

Character	Category	Allowable Value	Description	Justification for Interpolation/	Unit
G	Sensors	A	NO SENSORS	Depopulated version of UUT1,4	Interpolated
		B	AIR PROVING SWITCH	Depopulated version of UUT1,4	Interpolated
		C	DIRTY FILTER SWITCH	Depopulated version of UUT1,4	Interpolated
		D	SUPPLY AIR SMOKE DETECT	Depopulated version of UUT1,4	Interpolated
		E	RETURN AIR SMOKE DETECT	Depopulated version of UUT1,4	Interpolated
		F	CO2 SENSOR	Depopulated version of UUT1,4	Interpolated
		G	APS, DFS	N/A	UUT2,3
		H	APS, SSD	Depopulated version of UUT1,4	Interpolated
		J	APS, RSD	Depopulated version of UUT1,4	Interpolated
		K	APS, CO2	Depopulated version of UUT1,4	Interpolated
		L	DFS, SSD	Depopulated version of UUT1,4	Interpolated
		M	DFS, RSD	Depopulated version of UUT1,4	Interpolated
		N	DFS, CO2	Depopulated version of UUT1,4	Interpolated
		P	SSD, RSD	Depopulated version of UUT1,4	Interpolated
		Q	SSD, CO2	Depopulated version of UUT1,4	Interpolated
		R	RSD, CO2	Depopulated version of UUT1,4	Interpolated
		S	APS, DFS, SSD	Depopulated version of UUT1,4	Interpolated
		T	APS, DFS, RSD	Depopulated version of UUT1,4	Interpolated
		U	APS, DFS, CO2	Depopulated version of UUT1,4	Interpolated
		V	APS, SSD, RSD	Depopulated version of UUT1,4	Interpolated
		W	APS, SSD, CO2	Depopulated version of UUT1,4	Interpolated
		X	APS, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		Y	DFS, SSD, RSD	Depopulated version of UUT1,4	Interpolated
		Z	DFS, SSD, CO2	Depopulated version of UUT1,4	Interpolated
		1	DFS, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		2	SSD, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		3	APS, DFS, SSD, RSD	Depopulated version of UUT1,4	Interpolated
		4	APS, DFS, SSD, CO2	Depopulated version of UUT1,4	Interpolated
		5	APS, DFS, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		6	APS, SSD, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		7	DFS, SSD, RSD, CO2	Depopulated version of UUT1,4	Interpolated
		8	APS, DFS, SSD, RSD, CO2	N/A	UUT1,4
T	Service Options	A	No Service Options	No Service called	Extrapolated
		B	Phase Monitor (PHM)	Depopulated version of UUT1,2	Interpolated
		C	Non-Power Convenience Outlet (NCO)	Depopulated version of UUT3,4	Interpolated
		D	Fused Disconnect (FD)	Depopulated version of UUT3,4	Interpolated
		E	Disconnect Switch (DSC)	Depopulated version of UUT1,2	Interpolated
		F	Powered Convenience Outlet (PCO)	Depopulated version of UUT1,2	Interpolated
		G	PHM, FD	Bookended by UUT1,2,3,4	Interpolated
		H	PHM, DSC	Depopulated version of UUT1,2	Interpolated
		J	PHM, NCO	Bookended by UUT1,2,3,4	Interpolated
		K	PHM, PCO	Depopulated version of UUT1,2	Interpolated
		L	FD, NCO	N/A	UUT3,4
		M	FD, PCO	Bookended by UUT1,2,3,4	Interpolated
		N	DSC, NCO	Bookended by UUT1,2,3,4	Interpolated
		P	DSC, PCO	Depopulated version of UUT1,2	Interpolated
		Q	PHM, FD, NCO	Bookended by UUT1,2,3,4	Interpolated
		R	PHM, FD, PCO	Bookended by UUT1,2,3,4	Interpolated
		S	PHM, DSC, NCO	Bookended by UUT1,2,3,4	Interpolated
		T	PHM, DSC, PCO	N/A	UUT1,2

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Special Seismic Certification
Certified Options : Nomenclature Chart (Continued)

DCL DYNAMIC CERTIFICATION LABORATORIES,LLC

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Sample Part Number

K	H	4	0	C	2	D	Z	2	Q	2	C	G	T	C	6	A

Character	Category	Allowable Value	Description	Justification for Interpolation/	Unit
C	Refrigeration	1	Standard	Depopulated version of UUT1,2,3,4	Interpolated
		3	Low Ambient Head Pressure Control (HPC)[1]	Depopulated version of UUT2,3	Interpolated
		4	Modulating Hot Gas Reheat (HGR)	Depopulated version of UUT1,4	Interpolated
		7	Low Ambient (LA)	Depopulated version of UUT2,3	Interpolated
		A	Service Valves (SV)	Depopulated version of UUT1,2,3,4	Interpolated
		H	Low Ambient and Service Valves	Same as UUT2,3	Interpolated
		C	HPC and Service Valves	N/A	UUT2,3
		D	HGR and Service Valves	N/A	UUT1,4
6	Additional Options	1	Standard Throwaway Filter	N/A	UUT3
		2	2" Pleated Filter MERV 8	Depopulated version of UUT1,2	Interpolated
		4	4" Pleated Filter MERV 13	Depopulated version of UUT4	Interpolated
		5	Standard Filter, Coil Guard (CG)	Bookended by UUT1,2,3,4	Interpolated
		6	2" Pleated, CG	N/A	UUT1,2
		7	4" Pleated, CG	N/A	UUT4
A	Cabinet Options	A	Standard Cabinet	N/A	UUT2
		B	Hinged Access Panel (HAP)	Depopulated version of UUT3,4	Interpolated
		C	Condensate Overflow Switch (COF)	Depopulated version of UUT1,3,4	Interpolated
		D	Double Wall (DBL)	Depopulated version of UUT1	Interpolated
		E	Stainless Steel Drain Pan (SSD)	Depopulated version of UUT1,4	Interpolated
		F	HAP, SSD	Depopulated version of UUT4	Interpolated
		G	HAP, COF	N/A	UUT3
		H	SSD, COF	Depopulated version of UUT1,4	Interpolated
		J	DBL, SSD	Depopulated version of UUT1	Interpolated
		K	DBL, COF	Depopulated version of UUT1	Interpolated
		L	DBL, SSD, COF	N/A	UUT1
		M	HAP, SSD, COF	N/A	UUT4

Note:

1. Option no longer avalable

Special Seismic Certification

Table 2 - Certified Subcomponents: Refrigerant Compressor, & Blower Motors

DCL Project Number: 64237-2401

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Refrigerant Compressor

Model Number	Manufacturer	Material	Weight (lb)	Unit
DSH161A4ALC[1]	Danfoss	Carbon Steel	155	UUT1
DSH161A4ALD			155	Interpolated
DSH140A3ALD			157	Interpolated
DSH140A4ALD			157	Interpolated
DSH140A7ALC			157	Interpolated
DSH140A7ALA[1]			157	UUT3
DSH184A4ANA			159	Interpolated
DSH161A3ALD			162	Interpolated
DSH161A7ALC			162	Interpolated
DSH184A3ALD			168	Interpolated
DSH184A3ALA[1]			168	UUT2
DSH184A7ALD			168	Interpolated
DSH240B7AXC			253	Interpolated
DSH240B3AXC			256	Interpolated
DSH240A3AAC[1]			256	UUT4
DSH240B4AXC			256	Interpolated
DSH240E-3CLNA			302	Interpolated
DSH240E-4CLNA			302	Interpolated
DSH240E-7CLNA			302	Interpolated
DSH240E-3[1]			302	UUT4
YAT152K1E-TF5	Copeland[2]	Carbon Steel	186	Extrapolated
YAT152K1E-TFD			186	Extrapolated
YAT152K1E-TFE			186	Extrapolated
YAT134K1E-TFE			189	Extrapolated
YAT134K1E-TF5			189	Extrapolated
YAT134K1E-TFD			189	Extrapolated
ZPT182KCE-TF5-270			190	UUT2
YAT182K1E-TFD-270			195	Interpolated
YAT182K1E-TFE-270			195	Interpolated
YAT182K1E-TF5-270			195	Interpolated
ZPT134KCE-TFE			205	UUT3

Blower Motors

Model Number	Manufacturer	Voltage (V)	Power (HP)	Material	Weight (lb)	Unit
EM3311T-5	Baldor	575	7.5	Rolled Carbon Steel & Cast Iron	114	Extrapolated
EM3311T-5G		575	7.5		114	Extrapolated
EM3311T		230-460	7.5		115	Extrapolated
EM3311T-G		230-460	7.5		115	Extrapolated
EM3313T-5		575	10		123	Extrapolated
EM3313T-G		230-460	10		127	Extrapolated
EM3313T		230-460	10		128	UUT1
EM3313T-5G		575	10		132	Interpolated
EM2513T-G		230-460	15		210	Interpolated
EM2513T-5G		575	15		210	Interpolated
EM2513T		230-460	15		211	Interpolated
EM2515T		230-460	20		225	UUT4
EM2515T-G		230-460	20		227	UUT2
EM2515T-5		575	20		227	Interpolated
EM2515T-5G		575	20		250	Interpolated
EM2513T-5		575	15		273	UUT3

Note:

1. The marked compressors use R410A, the unmarked compressors use R454B for the Danfoss compressors, the compressors are otherwise identical
2. ZPT compressors use R410A refrigerant and YAT compressors use R454B for the Copeland compressors, the compressors are otherwise identical

Special Seismic Certification

Table 3 - Certified Subcomponents: Condenser Coils, Evaporator Coils, Reheat Coils & Service Valves

DCL Project Number: 64237-2401

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Condenser Coils

Model Number	Manufacturer	Description	Dimensions (total ft^2)	Material	Weight (lb)	Unit
X005- JC334-1	Sanhua	MC, 20MM X 47.1 X 80.7	26	Aluminum & Copper	49	Interpolated
5876471		MC EF, 20MM X 47.1 X 80.7	26		49	UUT3
X006-JC328		MC, 20MM X 51.9 X 80	29		56	UUT2
5876474		MC EF, 20MM X 51.9 X 80	29		56	Interpolated
X005- JC335-1		MC, 20MM X 56.7 X 80.7	32		60	UUT1
5876472		MC EF, 20MM X 56.7 X 80.7	32		60	Interpolated
X006-JC326		MC, 25MM X 51.9 X 80.9	29		67	Interpolated
5876476		MC EF, 25MM X 51.9 X 80.9	29		67	UUT4

Evaporator Coils

Model Number	Manufacturer	Description	Dimensions (total ft^2)	Material	Weight (lb)	Unit
5751772	JCI	ASM EVAP COIL,STD,28-30T	34	Aluminum, Carbon Steel & Copper	210	UUT3
5876477		PURCHASE LEVEL EVAP GALV 27.5/30T, EF	34		210	Interpolated
5876478		PURCHASE LEVEL EVAP GALV 35T, EF	34		280	Interpolated
5751771		ASM EVAP COIL,STD,35T	34		280	Interpolated
5751770		ASM EVAP COIL,STD,40T	39		320	Interpolated
5876524		PURCHASE LEVEL EVAP GALV 40T, EF	39		320	UUT2
5751769		ASM EVAP COIL,STD,50T	39		400	Interpolated
5876525		PURCHASE LEVEL EVAP GALV 50T, EF	39		400	Interpolated
5840184		ASM EVAP COIL,STD SS 28-30T	34	Aluminum, Stainless Steel & Copper	210	UUT1
5876526		PURCHASE LEVEL EVAP SS 27.5/30T, EF	34		210	Interpolated
5840185		ASM EVAP COIL,STD SS 35T	34		280	Interpolated
5876527		PURCHASE LEVEL EVAP SS 35T, EF	34		280	Interpolated
5840186		ASM EVAP COIL,STD SS 40T	39		320	Interpolated
5876528		PURCHASE LEVEL EVAP SS 40T, EF	39		320	Interpolated
5840187		ASM EVAP COIL,STD SS 50T	39		400	Interpolated
5876529		PURCHASE LEVEL EVAP SS 50T, EF	39		400	UUT4

Hot Gas Reheat Coils

Model Number	Manufacturer	Description	Dimensions (total ft^2)	Material	Weight (lb)	Unit
5876547	Sanhua	MC EF 20MM X 73.4 X 35.6	18	Aluminium	37	Same as UUT1[1]
X003-JC347		MC 20MM X 73.4 X 35.6	18		37	UUT1
X003-JC340		MC 20MM X 73.4 X 48.6	24		47	Same as UUT4[2]
5876548		MC EF 20MM X 73.4 X 48.6	24		47	UUT4

Service Valves

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
AP17863	Mueller	BALL VALVE 3/4	Brass & Copper	1	UUT1
AP17864C		BALL VALVE 7/8		1	UUT3
AP17865		BALL VALVE 1-1/8		2	UUT1,2,3,4
A17866		BALL VALVE 1-3/8		3	Interpolated
A17867		BALL VALVE 1-5/8		4	UUT2,4

Note:

1. Same as tested in UUT1, but with anti-corrosion coating. Coating tested in condenser and evaporator coils.
2. Same as tested in UUT4, but without anti-corrosion coating. Coating tested in UUT4.

Special Seismic Certification

Table 4 - Certified Subcomponents: Variable Frequency Drives, Gas Heaters & Filters

DCL Project Number: 64237-2401

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Variable Frequency Drives

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
131L9796	Danfoss	VFD68-3HP 200/230V	Plastic & Electronics Component	8	Extrapolated
131L9864		VFD68-3HP 460V		8	Extrapolated
131L9866		VFD68-5HP 460V		8	Extrapolated
131L9797		VFD68-5HP 200/230V		10	Extrapolated
131N0225		VFD68-3HP 575V		15	Extrapolated
134F0217		VFD68-5HP 575V		15	Extrapolated
131N0229		FC101 575V 7.5 HP VFD		15	Extrapolated
131N0231		FC101 575V 10 HP VFD		15	Extrapolated
131L9867		FC101 460V 7.5 HP VFD		16	Extrapolated
131L9868		FC101 460V 10 HP VFD		16	Extrapolated
131L9799		FC101 208V 10 HP VFD		17	Extrapolated
131L9869		FC101 460V 15 HP VFD		17	Extrapolated
131L9870		FC101 460V 20 HP VFD		17	Extrapolated
131L9798		FC101 208V 7.5 HP VFD		17	Extrapolated
131L9800		FC101 208V 15 HP VFD		21	Extrapolated
131N0233		FC101 575V 15 HP VFD		25	UUT3
131N0235		FC101 575V 20 HP VFD		25	Interpolated
131L9813		FC101 208V 25 HP VFD		54	Interpolated
131L9805		FC101 208V 20 HP VFD		54	UUT2
VFD68BHG-502C	JCI	VFD68-3HP 200/230V	Plastic & Electronics Component	3	UUT2
VFD68CHH-502C		VFD68-3HP 460V		3	Interpolated
VFD68CJJ-502C		VFD68-5HP 460V		3	Interpolated
VFD68BJK-502C		VFD68-5HP 200/230V		4	Interpolated
VFD68DHM-502C		VFD68-3HP 575V		4	Interpolated
VFD68DJN-502C		VFD68-5HP 575V		8	UUT3

Gas Heater

Model Number	Manufacturer	Description[1]	Material	Weight (lb)	Unit
5783894	JCI	ASM 5 TUBE GH, 220K, 3.25" R, AL	Aluminized Carbon Steel	105	Extrapolated
5783888		ASM 9 TUBE GH, 400K, 3.25" R, AL		155	Extrapolated
5783889		ASM 9 TUBE GH, 400K, 4" R, AL		155	Extrapolated
5783890		ASM 9 TUBE GH, 400K, 3.5" R, AL		155	UUT2
5783895		ASM 5 TUBE GH, 220K, 3.25" R, SS	Stainless Steel	105	UUT1
5783891		ASM 9 TUBE GH, 400K, 3.25" R, SS		155	Interpolated
5783892		ASM 9 TUBE GH, 400K, 4" R, SS		155	Interpolated
5783893		ASM 9 TUBE GH, 400K, 3.5" R, SS		155	Interpolated
5954946		ASM 9 TUBE MGH 400K, 4" R, SS		155	Interpolated
5954935		ASM 9 TUBE MGH 400K, 3.5" R, SS		155	Interpolated
5954934		ASM 9 TUBE MGH 400K, 3.25" R, SS		155	UUT1

Filters

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
276-200-200-058	Koch Filter Corporation	20X20X2 Disposable	Fiberglass	< 1	UUT3
276-200-250-058		20X25X2 Disposable		< 1	UUT3
102-701-019		20X20X2 Pleated, MERV 8	Polypropylene Fibers	1	UUT1,2
102-740-021		20X25X2 Pleated, MERV 8		1	UUT1,2
102-714-028		20X20X4 Pleated, MERV 13		1	UUT4
102-714-030		20X25X4 Pleated, MERV 13		2	UUT4

Note:

1. R is for restrictor plate; the dimension in inches relates to the diameter of the opening in the plate.

Special Seismic Certification

Table 5 - Certified Subcomponents: Economizer, Electric Heater & Outdoor Motors

DCL Project Number: 64237-2401

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Economizer

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
8330058B	Ruskin Rooftop Systems	Manual OA Damper, 0-100%, Small Cabinet	Galvanized Carbon Steel	85	Extrapolated
8345058H		Baro Relief HF, Factory, 28-35T		90	Extrapolated
8345059H		Baro Relief HF, Factory, 40-50T		104	UUT2
8330059B		Manual OA Damper, 0-100%, Large Cabinet		120	Interpolated
8346558H-23		Pwr Exh HF, Factory (208/230V) 28-35T		211	Interpolated
8346558H-33		Pwr Exh HF, Factory (460V) 28-35T		211	Interpolated
8346558H-43		Pwr Exh HF, Factory (575V) 28-35T		211	Interpolated
8346559H-23		Pwr Exh HF, Factory (208/230V) 40-50T		225	UUT4
8346559H-33		Pwr Exh HF, Factory (460V) 40-50T		225	Interpolated
8346559H-43		Pwr Exh HF, Factory (575V) 40-50T		225	Interpolated
8345058		Baro Relief DF, Factory, C1 (27.5-35T)		230	Interpolated
8345059		Baro Relief DF, Factory, C2		285	Interpolated
83368B58		Econ Low Leak DF,C1 (27.5-35T)		307	UUT1,3
8336858		Econ Low Leak DF, BAS,C1 (27.5-35T)		307	Interpolated
8346558-23		Pwr Exh CV, Factory (208/230V),C1 (27.5-35T)		314	Interpolated
8346558-33		Pwr Exh CV, Factory (460V),C1 (27.5-35T)		314	UUT1
8346558-43		Pwr Exh CV, Factory (575V),C1 (27.5-35T)		314	UUT3
83368B59		Econ Low Leak DF,C2 (40-50T)		359	Interpolated
8336859		Econ Low Leak DF, BAS,C2(40-50T)		359	Interpolated
8346559-23		Pwr Exh CV, Factory (208/230V),C2 (40-50T)		390	Interpolated
8346559-33		Pwr Exh CV, Factory(460V),C2 (40-50T)		390	Interpolated
8346559-43		Pwr Exh CV, Factory (575V),C2 (40-50T)		390	Interpolated
83398B58		Econ Low Leak HF w/ OA Hood,C1		398	Interpolated
8339858		Econ Low Leak HF w/ OA Hood, BAS, C1		398	Interpolated
83398B59		Econ Low Leak HF w/ OA Hood,C2		425	UUT2,4
8339859		Econ Low Leak HF w/ OA Hood, BAS, C2		425	Extrapolated

Electric Heater

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
100-490838-01	Backer EHP	ELEC. HEAT 240V 36kW	Nickel Chrome Alloy Galvanized Carbon Steel	80	Extrapolated
100-490838-03		ELEC. HEAT 480V 36kW		80	Extrapolated
100-490838-02		ELEC. HEAT 240V 54kW		90	UUT4
100-490838-04		ELEC. HEAT 480V 54kW		90	Interpolated
100-490838-05		ELEC. HEAT 480V 72kW		90	Interpolated
100-490838-06		ELEC. HEAT 480V 90kW		90	Interpolated
100-490838-07		ELEC. HEAT 480V 108kW		90	Interpolated
100-490838-08		ELEC. HEAT 600V 54kW		90	Interpolated
100-490838-09		ELEC. HEAT 600V 72kW		90	Interpolated
100-490838-10		ELEC. HEAT 600V 90kW		90	UUT3
100-490838-11		ELEC. HEAT 600V 108kW		90	Same as UUT3

Outdoor Motors

Model Number	Manufacturer	Voltage (V)	Power (HP)	Material	Weight (lb)	Unit
056T11O15586	Regal Beloit	208-230	1	Rolled Carbon Steel & Cast Iron	28	UUT2
056T11O15587		460	1		28	UUT1
056T11ORO40017A1		575	1		28	UUT3
56T11ORO40013A1		460	2		48	Interpolated
56T11ORO40014A1		575	2		48	Interpolated
56T11ORO40012A1		208-230	2		48	UUT4

Special Seismic Certification

Table 6 - Certified Subcomponents: Miscellaneous

DCL Project Number: 64237-2401

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Miscellaneous					
Model Number	**Manufacturer**	**Description**	**Material**	**Weight (lb)**	**Unit**
BBIZE-15 1/2X7/8 EQ 1/4 ODF 5'	Sporlan	Valve	Copper & Brass	2	UUT1
1135-14-3/16-10-42" B		Valve		3	UUT1,3
OZE-25 7/8X1 3/8 EQ 1/4 ODF 5'		Valve		5	Interpolated
OZE-20 7/8X1 3/8 EQ 1/4 ODF 5'		Valve		5	UUT2
1126-20-3/16-12-42" B		Valve		6	Interpolated
1126-22-3/16-12-42" B		Valve		6	UUT2
1128-28-3/16-12-48" B		Valve		9	UUT4
97647	RectorSeal	Condensate Overflow Switch 24V	Plastic	<1	UUT1
5758866	Gexpro	Condensate Overflow Switch 24V	Plastic	<1	UUT2,3,4
GS2AH130	Schneider Electric	Handle Disconnect Switch	Plastic	<1	UUT1,2,3,4
BDL36100	Schneider Electric	100A Non-Fusible Disconnect Switch	Plastic	2	Extrapolated
LK4JU3N		100A Non-Fusible Disconnect Switch		5	UUT1
LK4MU3N		200A Non Fusible Disconnect Switch		5	Interpolated
LGL36000S40X		400A Non-Fusible Disconnect Switch		14	Interpolated
LK4QU3N		400A Non-Fusible Disconnect Switch		14	UUT2
JGL36000S25	Schneider Electric	250A Fusible Disconnect Switch	Plastic	5	Extrapolated
HJL36150		150A Fusible Disconnect Switch		5	Extrapolated
JJL36250U31X		250A Fusible Disconnect Switch		5	Extrapolated
GS2JU3N		100A Fusible Disconnect Switch		6	Extrapolated
GS2MU3N		200A Fusible Disconnect Switch		8	UUT3
LJL36400U31X		400A Fusible Disconnect Switch		14	Interpolated
GS2QU3N		400A Fusible Disconnect Switch		15	UUT4
P32AF-2D	JCI	Differential Pressure Switch	Plastic	<1	UUT1,2,3,4
D4SB	System Sensor	Smoke Detector Sensor	Plastic	3	UUT1,2,3,4
1782349	Ayrshire	Furnace control, modulating	Plastic & Electronics	<1	UUT1
1217-100	United Technologies	Control spark, modulating	Plastic & Electronics	<1	UUT1
IB-G	Sporlan	I/O Board L=76.20mm W=76mm	Plastic & Electronics	<1	UUT1,4
SE-SPU2002-0	JCI	Circuit Board SSE, 2 stage, no comm.	Plastic & Electronics	<1	Extrapolated
SE-SPU2012-0		Circuit Board SSE, 2 stage, w/ comm.		<1	UUT2,3
SE-SPU1004-11		Circuit Board SSE, 4 stage add on		<1	Interpolated
SE-FDD1001-11		Economizer controller		<1	UUT1,2,3,4
1171-64	United Technologies	Direct spark ignition module	Plastic & Electronics	<1	UUT2

Special Seismic Certification
Table 7 - Tested Units

DCL Project Number: 64237-2401

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Product Construction: Powder Coated Carbon Steel Enclosure

Mounting: Rigid Roof Curb Mounted

Certified Seismic Levels: Sds 1.4 g at z/h=1 and z/h=0

Model Number	Dimensions (inches)			Operating Weight (lb)	Nominal Cooling Capacity (Tons)	Unit
	Base rail Depth	Base rail Width	Height			
YV30T3CV4K1C8TD6L	180	90	70	5,430	30	UUT1
YH40N1DZ2Q2CGTC6A	232	90	77	6,220	40	UUT2
YV28E3DJ5S3LGLC1G	180	90	70	5,002	28	UUT3
YH50E1DV2R4L8LD7M	232	90	77	6,787	50	UUT4

UNIT UNDER TEST (UUT) Summary Sheet

UUT1

Test Report Number: 35176-2001

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Model Number: YV30T3CV4K1C8TD6L

Product Construction Summary: Powder coated carbon steel enclosure

Options / Component Summary: Refrigerant compressor, blower motor, outdoor motor, condenser coil, evaporator coil, hot gas reheat coil, service valves, economizer, gas heaters, filters, flow control valve, condensate overflow switch, handle disconnect switch, nonfusible disconnect switch, differential pressure switch, smoke detector sensor, furnace control board, spark control board, I/O board, economizer controller

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)		
	Operating Weight (lb)	Depth	Width	Height	Front-Back	Side-Side	Vertical
UUT1	5,430	180	90	70	6.0	7.4	6.2

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	1.40	1.0	1.5	2.24	1.68	0.93	0.37

Unit Mounting Description:

UUT1 was mounted to a VMC P-6000S non-isolated roof curb. The curb was mounted to the shake table interface fixture with eight (8) hold-down stanchions. There were two hold-downs on the rail on one end of the unit, spaced approximately 72" on-center. There were three hold-downs on each long side of the unit, spaced approximately 60" on-center. Each hold-down was attached to the fixture with two (2) ½"-13 SAE grade 5 hex bolts, washers, and lock washers torqued to 75 ft-lb, for a total of sixteen (16) bolts. Corresponding with each hold-down location, there was a slotted lock down angle and ½"-13 SAE grade 2 hex bolt, washer and nut, attaching the unit to the curb. Each angle was field-welded to the unit overhang with a 3/8" fillet weld. The unit base rail was also welded to the curb with 3" long by 3/8" fillet welds spaced approximately 6" apart.

Pre-test Retrofit: A piece of foam insulation was added over the piping near the blower section to avoid contact between the copper tube (pipe) and sheet metal.

Overall view of UUT1

UNIT UNDER TEST (UUT) Summary Sheet

UUT2

Test Report Number: 35176-2001

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Model Number: YH40N1DZ2Q2CGTC6A

Product Construction Summary: Powder coated carbon steel enclosure

Options / Component Summary: Refrigerant compressors, blower motor, outdoor motor, condenser coil, evaporator coil, service valves, VFDs, economizer, gas heater, filters, flow control valve, condensate overflow switch, handle disconnect switch, nonfusible disconnect switch, differential pressure switch, smoke detector sensor, circuit board, economizer controller, direct spark ignition module

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)		
	Operating Weight (lb)	Depth	Width	Height	Front-Back	Side-Side	Vertical
UUT2	6,220	232	90	77	7.6	4.9	9.8

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	1.40	1.0	1.5	2.24	1.68	0.93	0.37

Unit Mounting Description:

UUT2 was mounted to a VMC P-6000S non-isolated roof curb. The curb was mounted to the shake table interface fixture with eight hold-down stanchions. There were two hold-downs on the rail on one end of the unit, spaced approximately 72" on-center. There were three hold-downs on each long side of the unit, spaced approximately 72" on-center. Two of the three hold-downs on each long side of the unit were attached to the shake table interface fixture with three 1 ½" long by 3/8" fillet welds per hold-down. The remaining 4 hold-downs were each attached to the fixture with two (2) ½"-13 SAE grade 5 hex bolts, washers, and lock washers torqued to 75 ft-lb, for a total of eight (8) bolts. Corresponding with each hold-down location, there was a slotted lock down angle and ½"-13 SAE grade 2 hex bolt, washer and nut torqued to 75 ft-lb, attaching the unit to the curb. Each angle was field-welded to the unit overhang with a 3/8" fillet weld. The unit base rail was also welded to the curb with 3" long by 3/8" fillet welds spaced approximately 6" apart.

Pre-test Retrofit: A piece of foam insulation was added over the piping near the blower section to avoid contact between the copper tube (pipe) and sheet metal.

Overall view of UUT2

UNIT UNDER TEST (UUT) Summary Sheet

UUT3

Test Report Number: 35176-2001

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Model Number: YV28E3DJ5S3LGLC1G

Product Construction Summary: Powder coated carbon steel enclosure

Options / Component Summary: Refrigerant compressors, blower motor, outdoor motor, condenser coil, evaporator coil, service valves, VFDs, economizer, gas heater, filters, flow control valve, condensate overflow switch, handle disconnect switch, nonfusible disconnect switch, differential pressure switch, smoke detector sensor, circuit board, economizer controller, direct spark ignition module

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)		
	Operating Weight (lb)	Depth	Width	Height	Front-Back	Side-Side	Vertical
UUT3	5,002	180	90	70	6.2	8.1	6.4

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	1.40	1.0	1.5	2.24	1.68	0.93	0.37

Unit Mounting Description:

UUT3 was mounted to a VMC P-6000S non-isolated roof curb. Each curb was mounted to the shake table interface fixture with eight (8) hold-down stanchions. There were two hold-downs on the rail on one end of the unit, spaced approximately 72" on-center. There were three hold-downs on each long side of the unit, spaced approximately 60" on center. Each hold-down was attached to the fixture with two (2) ½"-13 SAE grade 5 hex bolts, washers, and lock washers torqued to 75 ft-lb, for a total of sixteen (16) bolts. Corresponding with each hold-down location, there was a slotted lock down angle and ½"-13 SAE grade 2 hex bolt, washer and nut, attaching the unit to the curb. Each angle was field-welded to the unit overhang with a 3/8" fillet weld. The unit base rail was also welded to the curb with 3" long by 3/8" fillet welds spaced approximately 6" apart.

Pre-test Retrofit: A piece of foam insulation was added over the piping near the blower section to avoid contact between the copper tube (pipe) and sheet metal.

Overall view of UUT3

UNIT UNDER TEST (UUT) Summary Sheet

UUT4

Test Report Name: Report JID 20-01938 Rev1 UUT4

Manufacturer: York (Johnson Controls)

Product Line: Select / Sun Select / OmniSelect / Relia Select / Optimum Select

Model Number: YH50E1DV2R4L8LD7M

Product Construction Summary: Powder coated carbon steel enclosure

Options / Component Summary: Refrigerant compressors, blower motor, outdoor motor, condenser coil, evaporator coil, service valves, VFDs, economizer, gas heater, filters, flow control valve, condensate overflow switch, handle disconnect switch, nonfusible disconnect switch, differential pressure switch, smoke detector sensor, economizer controller, I/O board

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)		
	Operating Weight (lb)	Depth	Width	Height	Front-Back	Side-Side	Vertical
UUT4	8,800	232	90	77	13.0	5.0	8.8

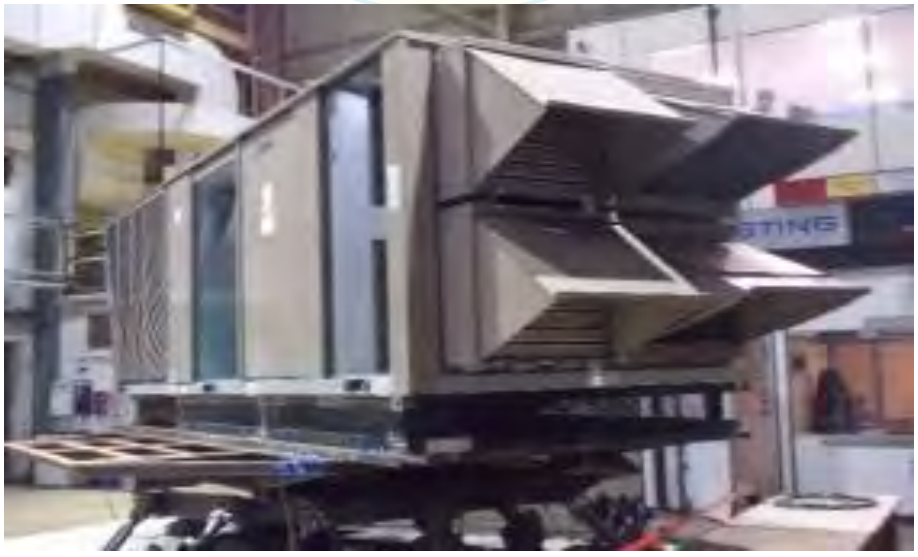
Seismic Test Parameters

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	1.40	1.0	1.5	2.24	1.68	0.93	0.37

Unit Mounting Description:

UUT4 was mounted to a VMC P-6000S non-isolated roof curb. The curb was mounted to the shake table interface fixture with eight (8) hold-down stanchions. There were two hold-downs on the rail on one end of the unit, spaced approximately 72" on-center. There were three hold-downs on each long side of the unit, spaced approximately 72" on-center. Each hold-down was attached to the fixture with two (2) ½"-13 SAE grade 5 hex bolts, washers, and lock washers torqued to 75 ft-lb, for a total of sixteen (16) bolts. Corresponding with each hold-down location, there was a slotted lock down angle and ½"-13 SAE grade 2 hex bolt, washer and nut torqued to 75 ft-lb, attaching the unit to the curb. Each angle was field-welded to the unit overhang with a 3/8" fillet weld. The unit base rail was also welded to the curb with 3" long by 3/8" fillet welds spaced approximately 6" apart.

Pre-test Retrofit: A piece of foam insulation was added over the piping near the blower section to avoid contact between the copper tube (pipe) and sheet metal.



Overall view of UUT4