

SUBMITTAL ***FOR APPROVAL***

TAG: AH_CU-2A 3A

MODEL: 38AUZA07A0A5-0A0A0_40RUAA07A2A6-0A0A0

SPLIT SYSTEM AIR HANDLER_CONDENSING UNIT

Project

66 Orland Square Dr. Landlord Renovations

Location

Orland Park, IL

Contractor

Classic Air, Inc.

Engineer

Cartland Kraus

<u>Date</u>

June 22, 2015

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AH_CU-2A 3A

Submittal Cover Sheet Unit Report Performance Summary Report Acoustic Summary Certified Drawings

Unit Report For AH_CU-2A 3A

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Indoor Unit Parameters

Unit Model:	40RUA	
Unit Size:	6 Tons	
No. of Splits:	1	
Voltage		V-Ph-Hz

Condenser Coil:Al/Cu

Outdoor Unit Parameters

	1	No. of DX Circuits:
		System Parameter
	2	System Quantity:
	PURON	Refrigerant Type:
	1	Compressor Quantity:
	Scroll	Compressor Type:
	100	Std. Capacity Steps:
°F	35.0	Std. Min. Outdoor Temp(Cooling):
	2	No. of Outdoor fans:

Outdoor Unit Dimensions and Weight

Unit Length:	4' 11.4"	
Unit Width:	3' 9.9"	
Unit Height:	3' 6.4"	
Unit Shipping Weight:		lb
Unit Operating Weight:		lb

Warranty Information (Note: for US & Canada only)

NOTE: Please see Warranty Catalog 808-218 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
Base Unit - Outdoor		
38AUZA07A0A5-0A0A0		2
	Base Unit	
	Al/Cu Condensing Coil	2
	Standard Refrigerant Options	2
	Service Options - None	2
	Electrical Options - None	2
	Packaging Options - Standard	2
	Standard Electrical Mechanical Controls	2
	Single Stage	2
Base Unit - Indoor		
40RUAA07A2A6-0A0A0		2
	Base Unit	
	Std Static, Std Eff Motor/ Medium Drive	2
	Cabinet Paint - None	2
	None- No Controller	2
Accessories		
VST2800	Venstar Commercial Programmable Thermostat	2

Indoor Unit Dimensions and Weight

Unit Length:	4' 1.0"	
Unit Width:	2' 4.2"	
Unit Height:	4' 8.1"	
Unit Shipping Weight:	399	lb
Unit Operating Weight:	399	lb

Unit Report For AH_CU-2A 3A Project: 66 Orland Square Dr. Landlord Renovations Prepared By:

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CAECOMZR001B00	Economzer - Enthalpy Controlled for Indoor Unit	2
CASUSPEN001A00	Overhead Suspension Brackets for Indoor Unit	2
CAELHEAT010A00	25.0 kW, 240-3-60 Electric Heater	2

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System:		
System Quantity:	2	
Altitude:	0.0 f	it
EER @ ARI Conditions:		
IEER:		
Suction Line Loss:		۶F
System meets the Energy Star EER rating.		

Liquid and Suction Line Sizing

Pipe Length	Liquid Line Size	Suction Line Size
0 - 25	3/8	7/8
26 - 50	3/8	7/8
51 - 75	1/2	1 1/8
76 - 100	1/2	1 1/8
101 - 125	1/2	1 1/8

Outdoor Unit Parameters

Unit Quantity: 1 PartNumber: 38AUZA07A0A5-0A0A0 Unit Model: 38AUZ Unit Size: 6 Tons Condenser Coil: Al/Cu No. of DX Circuits: 1 Voltage: 208-3-60 V-Ph-Hz Clg Ent Air DB: 95.0 °F

Outdoor Electrical Data

Unit Voltage:208-3-60V-Ph-HzTotal Compressor Power of Unit #1:NAVoltage Range Min:187VVoltage Range Max:253VCompressor Quantity:1Fan Motors Qty:2Notice:Outdoor unit elect. data is based on 208-3-60Control Panel SCCR:5kA RMS at Rated Symmetrical Voltage

Outdoor Electrical Data on Units produced on or prior to 02/08/2015

Unit#1 MCA: 27.0 Unit#1 MOCP:	Amps 45.0	Amps
Compressor RLA: Compressor LRA:	19 123	

Outdoor Electrical Data on Units produced on or after 02/09/2015

Unit#1 MCA: 28.0	Amps	
Unit#1 MOCP:	45.0	Amps
Compressor RLA:	19.6	-
Compressor LRA:	136	

Indoor Unit Parameters

PartNumber:	40RUAA	07A2A6	-0A0A0	
Unit Model:	40RUA			
Unit Size:	6 Tons			
Coil Rows:	4			
No. of Splits:	1			
Voltage:	208-3-60		V-Ph-Hz	
Actual Airflow	r: :	2400.0	CFM	
Standard Airfl	ow:	2400.0	CFM	
Total Clg Cap	.(Gross):	74.0	MBH	
Sensible Cla	Cap.(Gros	s):	57.9	MBH

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Ent Air DB: 80.0	°F		
Ent Air WB: 67.0	°F		
Ent Enthalpy: 31.44	BTU/lb		
Lvg Air DB: 57.7	°F		
Lvg Air WB: 57.3	°F		
Lvg Enthalpy: 24.59	BTU/lb		
Coil Bypass Factor:	NA		
Accessory Heating			
Heating Type: Electri	С		
Acc Htg Capacity:	64.15	MBH	
Acc Htg Ent. Air Tem	p: 60.0	°F	
Acc Htg Lvg. Air Tem	ip:	84.7	°F
Acc Heater Nominal	Voltage:	208-3-6	60
Acc Heater Nominal	kW:	25.0	kW
Acc Heater Actual Vo	oltage:	208-3-6	60
Acc Heater FLA:	52.1	amps	
Acc Stage 1 Actual k	W:	11.3	kW
Acc Stage 2 Actual k	W:	7.5	kW
Indoor Supply Fan			
Indoor Unit External	Static:	0.75	in wg
Economizer Loss:	0.07	in wg	
Grille Loss: 0.00	in wg		
Plenum Loss: 0.00	in wg		
Acc. Heating Loss:	0.06	in wg	
Total Ext Static:	0.88	in wg	

Fan Speed: 806 RPM Fan Power: 1.01 BHP Fan Motor Max: 2.40 BHP Fan Motor FLA: 6.9 Amps Motor and Medium Static Drive Required. Selected Medium Static Drive Range: 666 - 863

Indoor Electrical Data

Unit Voltage:	208-3	3-60	V-Ph-Hz	
Unit MCA:	73.8	Amps		
Unit MOCP:	80.0	Amps		
Notice: Indoo	r unit (elect. data i	s based on	208-3-60

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Outdoor Unit (dB)	Indoor Unit (dB,Ducted)
A-Weighted Total Level	84.6	86.3
63Hz	89.3	93.2
125Hz	85.0	89.2
250Hz	82.0	85.2
500Hz	82.7	84.2
1000Hz	80.2	80.2
2000Hz	75.2	78.2
4000Hz	71.0	74.2
8000Hz	66.0	NA
Sound Message	Sound for AUZ007	Sound for RUA007

Acoustic Notes:

1. 38AUZ07-12 units are in accordance with ARI 270-2008 Sound Rating of Unitary Equipment.

2. The sound data for all 38AUZ14 units are based on upon a limited amount of actual testing with the estimated sound power data being generated from this data in accordance with ARI 370-2001 for Large Outdoor Refrigerating and Air-Conditioning Equipment.

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3. The indoor duct sound power data is estimated based on the ASHRAE calculation approach from the ASHRAE handbook 1987 HVAC Systems and Applications, Chapter 52.

4. The acoustic center of the unit is located at the geometric center of the unit.

5. All estimated sound power levels, dB re 1 Pico watt should not be guaranteed or certified as being the actual sound power levels.

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Advanced Accoustics Parameters

1.0	ft
20.0	ft
5.7	ft
0.0	ft
0.0	ft
0.0	ft
	1.0 20.0 5.7 0.0 0.0 0.0



Detailed Acoustics Information

Octave Band Center Frequency, Hz	63	125	250	500	1k	2k	4k	8k	Overall
Sound Power Levels at Unit's Acoustic Center (Lw), dB	89.3	85.0	82.0	82.7	80.2	75.2	71.0	66.0	92.2
A-Wgted Sound Power Levels at Unit's Acoustic Center (LwA), dBA	63.1	68.9	73.4	79.5	80.2	76.4	72.0	64.9	84.6
Sound Press. Levels at Dist. Specified above (Lp), dB	65.0	60.7	57.7	58.4	55.9	50.9	46.7	41.7	67.9
A-Wgted Sound Press. Levels at Dist. Specified above (LpA), dBA	38.8	44.6	49.1	55.2	55.9	52.1	47.7	40.6	60.3

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

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Acoustic Summary For AH_CU-2A 3A

Project: 66 Orland Square Dr. Landlord Renovations Prepared By: 06/22/2015 12:10PM

Outdoor Unit Parameters:

Tag Name:AH_CU-2A 3A	
Unit Model:38AUZ	
Unit Size:6 Tons	
System Type:Dx Cooling Only	
Refrigerant Type: PURON	
Compressor Quantity: 1	
Compressor Type:	
Advanced Accoustics Parameters	
1. Unit height above ground:1.0	f
2. Horizontal distance from unit to receiver:	f
3. Receiver height above ground:	f
4. Height of obstruction:	f
5. Horizontal distance from obstruction to receiver: .0.0	f
6. Horizontal distance from unit to obstruction:0.0	f
Detailed Acoustics Information	



Octave Band Center Frequency, Hz	63	125	250	500	1k	2k	4k	8k	Overall
Sound Power Levels at Unit's Acoustic Center (Lw), dB	89.3	85.0	82.0	82.7	80.2	75.2	71.0	66.0	92.2
A-Wgted Sound Power Levels at Unit's Acoustic Center (LwA), dBA	63.1	68.9	73.4	79.5	80.2	76.4	72.0	64.9	84.6
Sound Press. Levels at Dist. Specified above (Lp), dB	65.0	60.7	57.7	58.4	55.9	50.9	46.7	41.7	67.9
A-Wgted Sound Press. Levels at Dist. Specified above (LpA), dBA	38.8	44.6	49.1	55.2	55.9	52.1	47.7	40.6	60.3

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

Acoustic Notes:

1. 38AUZ07-12 units are in accordance with ARI 270-2008 Sound Rating of Unitary Equipment.

2. The sound data for all 38AUZ14 units are based on upon a limited amount of actual testing with the estimated sound power data being generated from this data in accordance with ARI 370-2001 for Large Outdoor Refrigerating and Air-Conditioning Equipment.

3. The indoor duct sound power data is estimated based on the ASHRAE calculation approach from the ASHRAE handbook 1987 HVAC Systems and Applications, Chapter 52.

4. The acoustic center of the unit is located at the geometric center of the unit.

5. All estimated sound power levels, dB re 1 Pico watt should not be guaranteed or certified as being the actual sound power levels.

Indoor Unit Parameters:

Tag Name: AH_CL	J-2A 3A	
Unit Model:	.40RUA	
Unit Size:	.6 Tons	
System Type:Dx Coolii	ng Only	
External Static Pressure:	0.88	in wg
Fan Speed:	806	RPM
Fan BHP:	1 .0 1	BHP

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Total
Sound Power,dB	NA	93.2	89.2	85.2	84.2	80.2	78.2	74.2	NA	95.7
A-Weighted Sound Power, dBA	NA	67.0	73.1	76.6	81.0	80.2	79.4	75.2	NA	86.3

Notes:

1. The above estimated duct sound power levels are based upon the ASHRAE calculation approach from the ASHRAE 1987 HVAC Systems and Applications handbook, Chapter 52.

2. Since this data is calculated, these sound power levels may be different than the actual sound power levels.

Acoustic Summary For AH_CU-2A 3A Project: 66 Orland Square Dr. Landlord Renovations Prepared By:

3. The acoustic center of the units is located at the geometric center of the unit.

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														·			
UNIT	ELECTRICAL	STD. U	NIT WT.	CORN	IER A	CORN	ER B	CORM	NER C	CORN	NER D		CENTER OF GRAVITY	(UNIT HEIGHT		
38AU7-07 (NCHY)	CHARACIERISIICS	LBS.	KG.	128	KG.	LBS.	KG.	LBS.	KG.	LBS. 70	KG.	X 21 [533 4]	10 [482.61	12 [230 2]	H 42-3/8 [1076_0]		
38AU7-08 (MCHX)	208/230-3-60 460-3-60 575-3-60	353	149	120	50	12	33	65	20	78	35	21 [333.4]	23 [584 2]	13 [330.2]	42-3/8 [1076.0]		
384U7-12 (MCHX)	208/230-3-60 460-3-60 575-3-60	418	190	165	75	85	39	78	35	90	41	23 [584 2]	20 [508.0]	15 [381.0]	50-3/8 [1279 2]		
38AU7-14 (MCHX)	208/230-3-60 460-3-60 575-3-60	431	196	162	73	82	37	92	42	95	43	19 [482 6]	23 [584 2]	15 [381.0]	50-3/8 [1279.2]		
38AUD-12 (MCHX)	208/230-3-60 460-3-60 575-3-60	499	226	193	88	111	50	72	38	123	56	20 [508.0]	23 [584 2]	15 [381.0]	50-3/8 [1279.2]		
38AUD-14 (MCHX)	208/230-3-60,460-3-60,575-3-60	505	229	190	86	88	40	76	34	151	68	20 [508.0]	24 [609.6]	15 [381.0]	50-3/8 [1279.2]		
38AU7-07 (RTPF)	208/230-3-60 460-3-60 575-3-60	389	176	141	64	96	44	62	28	91	41	18 [457 2]	24 [609 6]	21 [533 4]	42-3/8 [1076.0]		
38AU7(A.B)08 (RTPF)	208/230-3-60, 460-3-60, 575-3-60	391	177	142	64	96	44	67	28	91	41	18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]		
38AU7(D.F)08 (RTPF)	208/230-3-60,460-3-60,575-3-60	430	195	142	64	96	44	76	34	111	50	18 [457.2]	24 [609.6]	21 [533,4]	42-3/8 [1076.0]		
38AUZ-12 (RTPF)	208/230-3-60.460-3-60.575-3-60	490	222	177	80	120	54	78	35	114	52	18 [457.2]	24 [609.6]	24 [609.6]	50-3/8 [1279.2]		
38AUZ-14 (RTPF)	208/230-3-60,460-3-60,575-3-60	598	271	195	88	142	64	110	50	151	68	20 [508.0]	25 [635.0]	24 [609.6]	50-3/8 [1279.2]		
38AUD-12 (RTPF)	208/230-3-60,460-3-60,575-3-60	516	234	185	84	117	53	83	38	131	59	19 [482.6]	23 [584.2]	24 [609.6]	50-3/8 [1279.2]		
38AUD-14 (RTPF)	208/230-3-60,460-3-60,575-3-60	654	297	214	97	155	70	120	54	165	75	20 [508.0]	25 [635.0]	24 [609.6]	50-3/8 [1279.2]		
38AUQ-07	208/230-3-60,460-3-60,575-3-60	444	201	134	61	97	44	90	41	123	56	22 [558.8]	25 [635.0]	13 [330.2]	42-3/8 [1076.0]		
38AUQ(A,B)08	208/230-3-60,460-3-60,575-3-60	483	219	162	74	110	50	85	39	125	57	20 [508.0]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]		
38AUQ(D,E)08	208/230-3-60,460-3-60,575-3-60	523	237	174	79	118	54	96	44	135	61	21 [533.4]	24 [609.6]	23 [584.2]	50-3/8 [1279.2]		
38AUQ-12	208/230-3-60,460-3-60,575-3-60	575	261	186	84	126	57	106	48	157	71	21 [533.4]	24 [609.6]	23 [584.2]	50-3/8 [1279.2]		
OTES: 1. MINIMUM CL A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD OPERATIO D. BETWEEN SIDE, 36 F. BETWEEN GROUNDED S 2. WITH EXCEP COIL AS ST OR BARRICA	EARANCE (LOCAL CODES O O COMBUSTIBLE SURFACES COIL, FOR PROPER AIR FI , 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES. : 60 INCHES, TO ASSURE N. UNITS: CONTROL BOX SIDI UNIT AND UNGROUNDED SUI - INCHES PER NEC. UNIT AND BLOCK OR CONCI URFACES: CONTROL BOX S TION OF THE CLEARANCE I ATED IN NOTE 1B, A REMO DE REQUIRES NO CLEARANCE	R JURI : 0 IN LOW: 3 THE S STAND PROPE E, 42 RFACES RETE W IDE, 4 FOR TH DVABLE CE.	SDICT CHES. 6 INCI IDE GI ARD CI R OUTI INCHE: CON ALLS 2 INCI E OUTI FENCI	ION MA HES ETTING LEARAN DOOR F S PER TROL E AND OT HES PE DOOR E	THE CES AN NEC. OX HER R NEC	EVAIL)	:										
3. UNITS MAY FROM WOOD	BE INSTALLED ON COMBUS OR CLASS A, B OR C ROOI	TIBLE F COVE	FLOOR: RING I	S MADE MATERI	AL.				DATE		SUPE	ERCEDES		CONDENSIN	G UNIT	28411500240	
								11/	10/14		10/3	20/11	38AUZ / 3	8AUD / 38A	UQ - 07/08/12/14	30AU300349	

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OVERHEAD SUSPENSION ACCESSORY UNIT SIZES 07-12 (FRONT) Ш DISCHARGE AIR 40RU - 4' - 7 1/2" REF (1409.7) 3/8" THREADED ROD (FIELD-SUPPLIED) TYP 4 PLACES UNIT SIZES 14-25 (FRONT) FIELD-INSTALI TYP 4 PLAC STEEL CHANNEL FIELD-SUPPLIED TYP 2 PLACES TOP OVERHEAD SUSPENSION ACCESSOR' WITH HOT WATER COL . REF · 7' 11 1 (2425 7) 3/8" THREADED ROD (FELD-SUPPLIED) TYP 4 PLACES UNIT SIZES 28, 3 (FRONT) - 8' - 9 1/2" REF (2679.7) 3/8" THREADED ROD (FIELD-SUPPLIED) TYP 4 PLACES NOTE: Dimensions in [] are millimeters.

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C09485

DIMENSIONS (cont.)

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DIMENSIONS (cont.)





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NOTE : Dimensions in [] are millimeters.

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NOTE: 1. For horizontal unit applications, economizer can be attached to end of unit opposite duct connections. 2. Dimensions in [] are millimeters.

C09488

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Venstar Programmable Thermostat T2800



STANDARD FEATURES:

- Up to 3-Occupied, 1-Unoccupied periods per day, with copy command for easy programming
- Accepts humidification/dehumidification control module (Venstar part number ACC0430)
- Auto changeover, 3-stage heat, 2-stage cool for use with gas/electric, heat pump, electric & hydronic heat
- Configurable for manual changeover, also configurable programmable or non-programmable
- Adjustable deadbands and timers
- 3 configurable outputs for maximum flexibility (MISC1, MISC2, MISC3)
- Extra 6th and 7th outputs (beyond our standard thermostat)
- Smart Fan (keeps the fan from running during unoccupied periods)
- Smart recovery
- Display shows both heating an cooling setpoints and room temperature simultaneously
- All programming and setpoints stored in non-volatile memory, and are never lost in power failure
- Service filter and service UV lamp indicators
- Red/Green LED shows whether thermostat is calling for heating or cooling
- 5-minute compressor time guard and adjustable cycle limit, both defeatable for servicing equipment
- Outdoor sensor ready with high and low temperature of the day
- Thermoglow backlit electro-luminous display and backlit color coded keys and legends
- Accepts accessory IR Remote Control system (Venstar part number ACC0431)
- Accepts accessory EZ Programmer (Venstar part number ACC0432)
- For accessory locking cover use (Venstar part number ACC0620)

MODEL:	T2800	QUANTITY:	DATE:
JOB NAME:			
LOCATION:			
BUYER:			BUYER P.O.#:
ENGINEER:			