

SUBMITTAL

Project

Highland Beach Library

<u>Date</u>

Monday, October 7, 2024

Tom Griswold

Table Of Contents

Project: Highland Beach Library	10/08/2024
Prepared By: Tom Griswold	07:29PM
Performance Summary	
Certified Drawing	•
Performance Summary	7
Certified Drawing	
Performance Summary	
Certified Drawing	

System:	38AUZ_025
No. of Circuits:	Single Circuit
System Quantity:	
Altitude:	0.0 ft
EER @ ARI Conditions:	
IEER:	10.0
Suction Line Loss:	
Condensing whit is noted in accordance with ADI 200	

Condensing unit is rated in accordance with ARI 365.

Typical Liquid and Suction Line Sizing

Pipe Length	Liquid Line Size	Suction Line Size
0 - 25	5/8	1 3/8
26 - 50	5/8	1 3/8
51 - 75	5/8	1 5/8
76 - 100	5/8	1 5/8
101 - 125	3/4	1 5/8
126 - 150	3/4	2 1/8
151 - 175	3/4	2 1/8
176 - 200	3/4	2 1/8

Refer to the 38AU installation instructions for installation specific line sizing guidance

Outdoor Unit Parameters

Unit Quantity:1	
PartNumber: 38AUZA25A0B6-0A0A0	
Unit Model:38AUZ	
Unit Size:20 Tons	
Condenser Coil: Pre Coated Al/Cu	
Voltage:460-3-60	V-Ph-Hz
Total Clg Cap.(Gross): 233.3	MBH
SDT:118.7	°F
Clg Ent Air DB:95.0	°F
Saturated Suction Temp:45.0	°F

Outdoor Electrical Data

Unit Voltage:	460-3-60	V-Ph-Hz
Unit MCA:		Amps
		Amps
Total Compressor Power of Unit:	16.90	kŴ
Voltage Range Min:		V
Voltage Range Max:		V
Compressor RLA:	16.7/16.7	
Compressor LRA:	114/114	
Compressor Quantity:	2	
Fan Motors Qty:	4	
Fan Motor FLA:		Amps
Notice: Outdoor unit elect. data is based on 460-3-60		

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

A-Weighted	Outdoor Unit (dB)	Indoor Unit (dB,Ducted)
Total Level	85.2	NA
63Hz	64.8	NA

Performance Summary For 20 Ton CU

Project: Highland Beach Library Prepared By: Tom Griswold

125Hz	68.9	NA
250Hz	71.4	NA
500Hz	82.8	NA
1000Hz	79.0	NA
2000Hz	74.2	NA
4000Hz	69.0	NA
8000Hz	61.9	NA
Sound Message	Sound for AUZ_25	

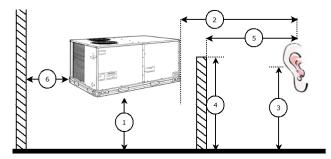
Acoustic Notes:

- 38AUZ/D/Q units sound ratings are in accordance with AHRI 270-2008 Sound Rating of Outdoor Unitary Equipment.
 The acoustic center of the unit is located at the geometric center of the unit.

Performance Summary For 20 Ton CU

Advanced Acoustics Parameters

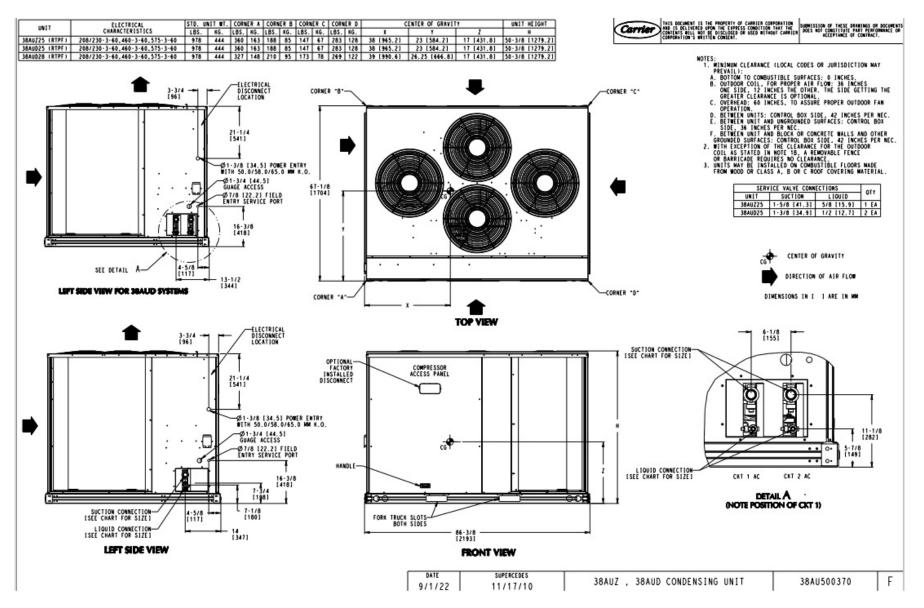
1. Unit height above ground:	1.0	ft
2. Horizontal distance from unit to receiver:	20.0	ft
3. Receiver height above ground:	5.7	ft
4. Height of obstruction:	0.0	ft
5. Horizontal dist. from obstruction to receiver:	0.0	ft
6. Horizontal dist. from unit to obstruction:	0.0	ft



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	91	85	80	86	79	73	68	63	93
A-Wgted Sound Power Levels at Unit's Acoustic Center (LwA), dBA	65	69	71	83	79	74	69	62	85
Sound Press. Levels at Dist. Specified above (Lp), dB	66	60	55	61	54	48	43	38	69
A-Wgted Sound Press. Levels at Dist. Specified above (LpA), dBA	40	44	47	58	54	50	44	37	61

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.



Commercial Split Systems Builder 1.67

System:	38AUZ_012	
No. of Circuits:		
System Quantity:	4	
Altitude:	<u>0.0</u>	ft
EER @ ARI Conditions:		
IEER:		
Suction Line Loss:		°F

Typical Liquid and Suction Line Sizing

Pipe Length	Liquid Line Size	Suction Line Size
0 - 25	1/2	7/8
26 - 50	5/8	1 1/8
51 - 75	5/8	1 1/8
76 - 100	5/8	1 3/8
101 - 125	5/8	1 3/8
126 - 150	5/8	1 3/8
151 - 175	5/8	1 3/8
176 - 200	5/8	1 3/8

Refer to the 38AU installation instructions for installation specific line sizing guidance

Outdoor Unit Parameters

Unit Quantity:	1	
PartNumber:	38AUZM12A0B6-0A0A0	
Unit Model:	38AUZ	
Unit Size:		
Condenser Coil:	Pre Coated Al/Cu	
Voltage:		V-Ph-Hz
Total Clg Cap.(Gross):		MBH
SDT:		°F
Clg Ent Air DB:		°F
Saturated Suction Temp:	45.0	°F

Outdoor Electrical Data

Unit Voltage:		V-Ph-Hz
Unit MCA:		Amps
	20.0	Amps
Total Compressor Power of Unit:		kŴ
Voltage Range Min:		V
Voltage Range Max:		V
Compressor RLA:		
Compressor LRA:		
Compressor Quantity:	1	
Fan Motors Qty:	2	
Fan Motor FLA:		Amps
Notice: Outdoor unit elect. data is based on 460-3-60		-

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

A-Weighted	Outdoor Unit (dB)	Indoor Unit (dB,Ducted)
Total Level	81.7	NA
63Hz	34.2	NA
125Hz	49.7	NA

Performance Summary For 10 Ton CU

Project: Highland Beach Library Prepared By: Tom Griswold

250Hz	68.5	NA
500Hz	73.6	NA
1000Hz	77.1	NA
2000Hz	77.0	NA
4000Hz	71.2	NA
8000Hz	63.6	NA
Sound Message	Sound for AUZ_12	

Acoustic Notes:

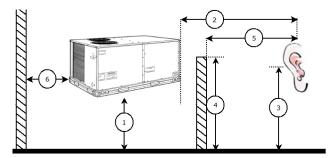
1. 38AUZ/D/Q units sound ratings are in accordance with AHRI 270-2008 - Sound Rating of Outdoor Unitary Equipment.

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

Performance Summary For 10 Ton CU

Advanced Acoustics Parameters

1. Unit height above ground:	1.0	ft
2. Horizontal distance from unit to receiver:		ft
3. Receiver height above ground:		ft
4. Height of obstruction:	0.0	ft
5. Horizontal dist. from obstruction to receiver:	0.0	ft
6. Horizontal dist. from unit to obstruction:	0.0	ft



Detailed Acoustics Information

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
Sound Power Levels at Unit's Acoustic Center (Lw), dB	83	60	66	77	77	77	76	70	65	86
A-Wgted Sound Power Levels at Unit's Acoustic Center (LwA), dBA	44	34	50	69	74	77	77	71	64	82
Sound Press. Levels at Dist. Specified above (Lp), dB	59	36	41	53	52	53	51	46	40	62
A-Wgted Sound Press. Levels at Dist. Specified above (LpA), dBA	19	10	25	44	49	53	53	47	39	57

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.

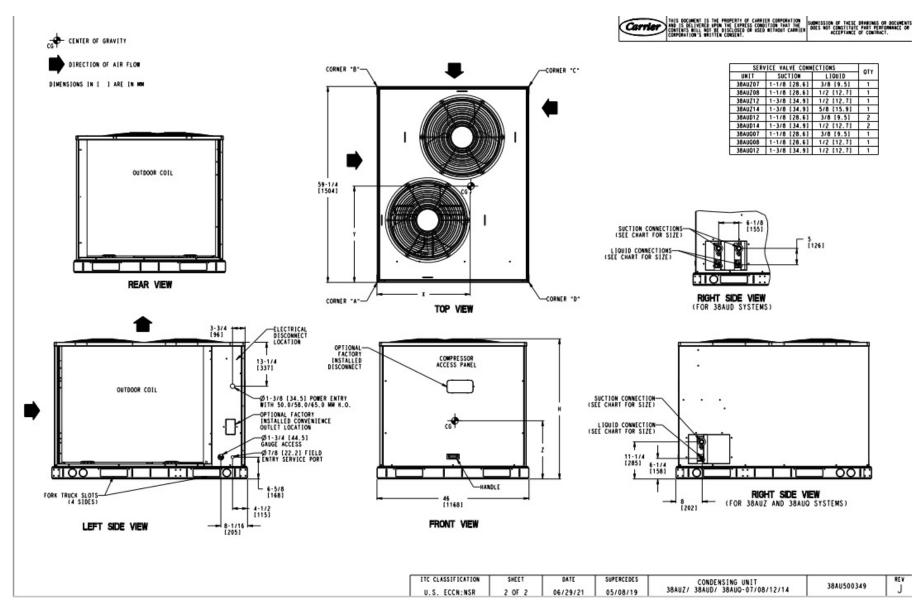
Certified Drawing for 10 Ton CU

												9	arrier AND IS CONTENT	CUMENT IS THE PROPERTY OF DELIVERED UPON THE EXPRES S WILL NOT BE DISCLOSED O TION 'S WRITTEN CONSENT.	SE USED WITHOUT CARRIE	R DOES NOT CONSTITUTE PA	CONTRACT.
UNIT	ELECTRICAL CHARACTERISTICS	STD. UNIT		ORNER A		VER B	CORNE		CORNE	R D KG,		CENTER OF GRAVITY		UNIT HEIGHT	1		
38AUZ-07 (RTPF)	208/230-3-60,460-3-60,575-3-60	LBS. KI 389 1			LBS. 96	KG. 44	LBS. 62	KG. 28	LBS. 91	41	I 18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]	1		
38AUZ(A,8108 (RTPF)	208/230-3-60,460-3-60,575-3-60		17 14	_		44	62	28	91	41	18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]	1		
38AUZ(D,E)08 (RTPF)	208/230-3-60,460-3-60,575-3-60	430 1	95 14	2 64	96	44	76	34	111	50	18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]	1		
38AUZ-12 (RTPF)	208/230-3-60,460-3-60,575-3-60	490 2	22 17	7 80	120	54	78	35	114	52	18 [457.2]	24 [609.6]	24 [609.6]	50-3/8 [1279.2]	1		
38AUZ-14 (RTPF)	208/230-3-60,460-3-60,575-3-60	598 2	71 19	5 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 2	34 18	5 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 2	_	_	155	70	120	54	165	75	20 [508.0]	25 [435.0]	24 [609.6]	50-3/8 [1279.2]			
38AUQ-07	208/230-3-60,460-3-60,575-3-60	444 2	_	-	97	44	90	41	123	56	22 [558.8]	25 [635.0]	13 [330.2]	42-3/8 [1076.0]	4		
38AUQ(A,B)08	208/230-3-60,460-3-60,575-3-60	483 2		_	110	50	85	39	125	57	20 [508.0]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]	-		
38AUQ(D.E108	208/230-3-60,460-3-60,575-3-60	523 2	_	_	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 2	61 18	6 84	126	57	106	48	157	71	21 [533.4]	24 [609.6]	23 [584.2]	50-3/8 [1279.2]	J		
A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD	EARANCE (LOCAL CODES OR O COMBUSTIBLE SURFACES: COIL, FOR PROPER AIR FL , 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES.): 60 INCHES, TO ASSURE	0 INCHE OW: 36 I THE SIDE STANDARD	S. NCHES GETTI CLEAR	ING THE RANCES		:											
1. MINIMUM CL A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD OPERATIC D. BETWEEN E. BETWEEN SIDE, 36 F. BETWEEN GROUNDED S	TO COMBUSTIBLE SURFACES: COIL, FOR PROPER AIR FL ., 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES. .: 60 INCHES, TO ASSURE N. UNITS: CONTROL BOX SIDE UNIT AND UNGROUNDED SUR INCHES PER NEC. UNIT AND BLOCK OR CONCR SURFACES: CONTROL BOX SI	0 INCHE OW: 36 I THE SIDE STANDARD PROPER C , 42 INC FACES: C ETE WALL DE, 42 I	S. NCHES GETTI CLEAF UTDOOF HES PE ONTROL S AND NCHES	ING THE RANCES R FAN ER NEC. BOX OTHER PER NE		:											
1. MINIMUM CL A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD OPERATIC D. BETWEEN E. BETWEEN SIDE, 36 F. BETWEEN GROUNDED S 2. WITH EXCEP COLL AS ST	O COMBUSTIBLE SURFACES: COIL, FOR PROPER AIR FL ., 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES. D: 60 INCHES, TO ASSURE N. UNITS: CONTROL BOX SIDE UNIT AND UNOROUNDED SUR 5 INCHES PER NEC. UNIT AND BLOCK OR CONCR	0 INCHE OW: 36 I THE SIDE STANDARD PROPER C , 42 INC FACES: C ETE WALL DE, 42 I OR THE C VABLE FE	S. NCHES GETTI CLEAR HES PE ONTROL S AND NCHES WUTDOOF	ING THE RANCES R FAN ER NEC. BOX OTHER PER NE		:											
1. MINIMUM CL A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD OPERATIC D. BETWEEN E. BETWEEN GROUNDED S 2. WITH EXCEP COIL AS ST OR BARRICA 3. UNITS MAY	O COMBUSTIBLE SURFACES: COIL, FOR PROPER AIR FL ., 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES.): 60 INCHES, TO ASSURE N. UNITS: CONTROL BOX SIDE UNIT AND UNGROUNDED SUR INCHES PER NEC. UNIT AND BLOCK OR CONCR SURFACES: CONTROL BOX SI PTION OF THE CLEARANCE F ATED IN NOTE 1B, A REMO	0 INCHE OW: 36 I THE SIDD STANDARD PROPER C , 42 INC FACES: C ETE WALL DE, 42 I OR THE C VABLE FE E. IBLE FLC	S. NCHES GETTI CLEAF UTDOOF HES PE ONTROL S AND NCHES UTDOOF NCE	ING THE RANCES R FAN ER NEC. DOX OTHER PER NE R		:											
1. MINIMUM CL A. BOTTOM T B. OUTDOOR ONE SIDE GREATER ON REMAI C. OVERHEAD OPERATIC D. BETWEEN E. BETWEEN GROUNDED S 2. WITH EXCEP COIL AS ST OR BARRICA 3. UNITS MAY	O COMBUSTIBLE SURFACES: COIL, FOR PROPER AIR FL ., 12 INCHES THE OTHER. CLEARANCE IS OPTIONAL. NING TWO SIDES.): 60 INCHES, TO ASSURE N. UNITS: CONTROL BOX SIDE UNIT AND UNGROUNDED SUR INCHES PER NEC. UNIT AND BLOCK OR CONCR UNIT AND BLOCK OR CONCR SURFACES: CONTROL BOX SI PTION OF THE CLEARANCE F ATED IN NOTE 1B, A REMO DE REQUIRES NO CLEARANC BE INSTALLED ON COMBUST	0 INCHE OW: 36 I THE SIDD STANDARD PROPER C , 42 INC FACES: C ETE WALL DE, 42 I OR THE C VABLE FE E. IBLE FLC	S. NCHES GETTI CLEAF UTDOOF HES PE ONTROL S AND NCHES UTDOOF NCE	ING THE RANCES R FAN ER NEC. DOX OTHER PER NE R		:	110.0	CLASS IF IN	CATION	Sa	EET DAT	E SUPERCEI	65	CONDENSING UN		38AU500349	

Certified Drawing for 10 Ton CU

Project: Highland Beach Library Prepared By: Tom Griswold





Performance Summary For 25 Ton AHU

System:	40RUA028	
No. of Circuits:	Dual Circuit	
System Quantity:	1	
Altitude:	0.0	ft

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Indoor Unit Parameters

PartNumber:	40RUAA28T2A6-UA0A0	
Unit Model:	40RUA	
Unit Size:	25 Lons	
Coil Rows:		
No. of Splits:		
Voltage:	460-3-60	V-Ph-Hz
Indoor Unit External Static:		in wg
Actual Airflow:		CFM
Standard Airflow:		CFM
Total Clg Cap.(Gross):		MBH
Sensible Clg Cap.(Gross):		MBH
Ent Air DB:		°F
Ent Air W/B		°F
Lvg Air DB:		°F
Lvg Air WB:		°F
Saturated Suction Temp:		°F

Accessory Heating

Heating Type:	Electric	
Acc Htg Capacity:		MBH
Acc Htg Ent. Air Temp:		°F
Acc Htg Lvg. Air Temp:		°F
Acc Heater Nominal Voltage:		
Acc Heater Nominal kW:		kW
Acc Heater Actual Voltage:		
Acc Heater FLA:		amps
Acc Stage 1 Actual kW:		kŴ

Indoor Supply Fan

Indoor Unit External Static:		in wg
Economizer Loss:		in wg
Grille Loss:		in wg
Plenum Loss:	0.00	in wg
Acc. Heating Loss:	0.16	in wg
Total Ext Static:	1.16	in wg
Fan Speed:		RPM
Fan Power:	5.94	BHP
Fan Motor Max:		BHP
Fan Motor FLA:		Amps
Alternate Motor and Medium Static Drive Required		•

Alternate Motor and Medium Static Drive Required. Selected Medium Static Drive Range: 798 - 984 RPM

Indoor Electrical Data

Unit Voltage:	460-3-60	V-Ph-Hz
Unit MCA:		Amps
Unit MOCP:	60.0	Amps
Notice: Indoor unit elect. data is based on 460-3-60		

Acoustics

Sound Power Levels, db re 10E-12 Watts

Performance Summary For 25 Ton AHU

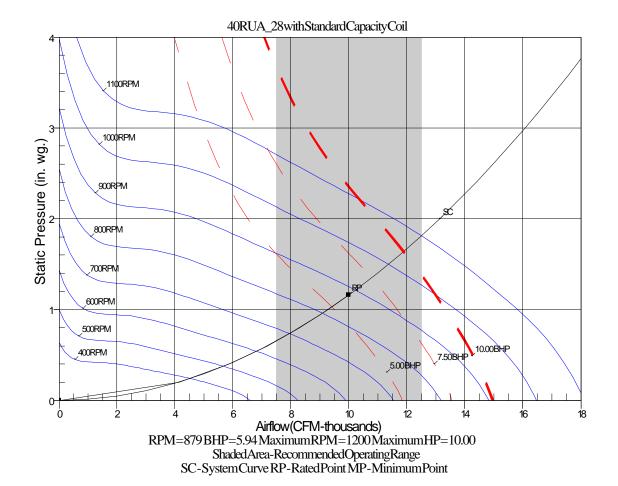
Project: Highland Beach Library Prepared By: Tom Griswold

A-Weighted	Outdoor Unit (dB)	Indoor Unit (dB,Ducted)
Total Level	NA	96.3
63Hz	NA	76.3
125Hz	NA	82.4
250Hz	NA	85.9
500Hz	NA	92.3
1000Hz	NA	89.5
2000Hz	NA	88.7
4000Hz	NA	84.5
8000Hz	NA	NA
Sound Message	Sound for RUA_28	

Acoustic Notes:

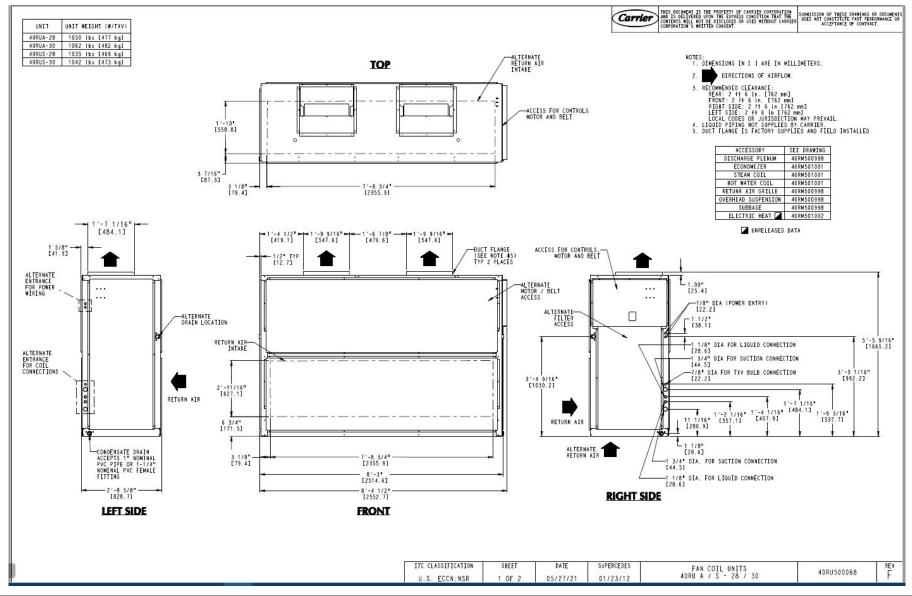
- 40RF/40RU units sound ratings are in accordance with AHSRAE 1987 HVAC Systems and Applications handbook.
 The acoustic center of the unit is located at the geometric center of the unit.

Performance Summary For 25 Ton AHU



Certified Drawing for 25 Ton AHU



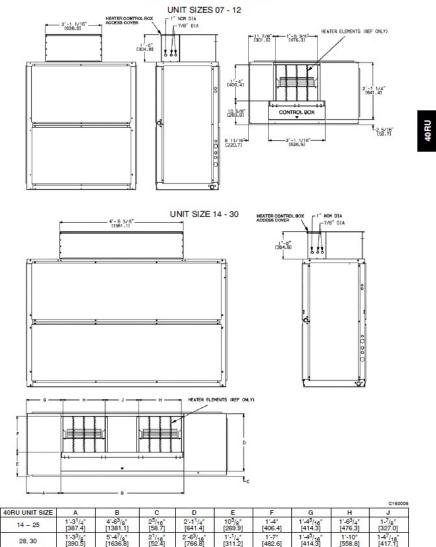


Commercial Split Systems Builder 1.67

Certified Drawing for 25 Ton AHU

Project: Highland Beach Library Prepared By: Tom Griswold

ELECTRIC HEAT ACCESSORY



NOTE: Dimensions in [] are millimeters.