

## BID REJECTION FORM

Bid number: 50-00122663

Vendor Name: All-Temp Refrigeration Service/ JH Refrigeration

Reasons for

Rejection: Vendor did not provide Non-Public Works Affidavit with bid.

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REVIEWED BY:

Buyer Name: Daphne Nelson

Date: 6/6/18

Chief Buyer: JH

Date: 6/6/18

DATE: 3/28/2018

Page: 5

BID NO.: 50-00122663

**BID FORM**  
Non Public Works

All Public Work Projects are required to use the Louisiana Uniform Public Work Bid Form

All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be applied to purchases made after the request is made.

Are you requesting an escalation provision?

YES \_\_\_\_\_ NO X

MAXIMUM ESCALATION PERCENTAGE REQUESTED \_\_\_\_\_%

INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF 6/30/18

For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed, for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

**DELIVERY: FOB JEFFERSON PARISH**

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

5 weeks from order date

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable)

59428

**THIS SECTION MUST BE COMPLETED BY BIDDER:**

FIRM NAME: All-Temp Refrigeration Services / JH Refrigeration

ADDRESS: 271 Highway 1085

CITY, STATE: Madisonville, LA ZIP: 70447

TELEPHONE: (985) 898-1967 FAX: (985) 898-2263

EMAIL ADDRESS: JNICHOLS@ALLTEMPEXPERTS.COM

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: 1 - 4/30/18

NUMBER: 2 - 5/16/18

NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

TOTAL PRICE OF ALL BID ITEMS: \$ 80,958

AUTHORIZED SIGNATURE: Ryan M. Jaeger

TITLE: President

Ryan M. Jaeger  
Printed Name

SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the BID NUMBER and BID OPENING DATE indicated on the outside of the envelope submitted to the Purchasing Department.

**BID FORM**  
Non Public Works

All Public Work Projects are required to use the Louisiana Uniform Public Work Bid Form

All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be applied to purchases made after the request is made.

Are you requesting an escalation provision?

YES \_\_\_\_\_ NO \_\_\_\_\_

MAXIMUM ESCALATION PERCENTAGE REQUESTED \_\_\_\_\_ %

INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF \_\_\_\_\_

For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed, for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

**DELIVERY: FOB JEFFERSON PARISH**

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES \_\_\_\_\_

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) \_\_\_\_\_

**THIS SECTION MUST BE COMPLETED BY BIDDER:**

FIRM NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE: (     ) \_\_\_\_\_ FAX: (     ) \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

TOTAL PRICE OF ALL BID ITEMS: \$ \_\_\_\_\_

AUTHORIZED


SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

Printed Name \_\_\_\_\_

SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the BID NUMBER and BID OPENING DATE indicated on the outside of the envelope submitted to the Purchasing Department.

📍 2525 Quail Drive, Baton Rouge, 70808 📞 (225) 765-2301 🗨 Text-To-Verify: 1 (855) 999-7896 

## Louisiana State Licensing Board for Contractors

### Contractor Information

Business Name JH REFRIGERATION, LLC  
 Mailing Address P.O. Box 6917  
 Metairie, LA 70002  
 Phone Number (888) 626-1277  
 Fax Number (985) 893-1568  
 Email Address pam@mccgroup.com  
 Website http://

### Active Licenses

License Number 59428  
 Type Commercial License  
 Status LICENSED  
 Effective 01/17/2018  
 Expiration 01/16/2021  
 First Issued 01/16/2014  
 License Number 884252  
 Type Residential License  
 Status LICENSED  
 Effective 06/26/2017  
 Expiration 06/26/2018  
 First Issued 06/26/2017

### Classifications

Class	Qualifying Party	Parishes
BUILDING CONSTRUCTION	Joseph Aryan Jaeger Jr	ALL
BUSINESS AND LAW	Joseph Aryan Jaeger Jr	ALL
BUSINESS AND LAW	Ryan M Jaeger	ALL
BUSINESS AND LAW	Joseph Aryan Jaeger Jr	ALL
ELECTRICAL WORK (STATEWIDE)	Joseph Aryan Jaeger Jr	ALL
ELECTRICAL WORK (STATEWIDE)	Ryan M Jaeger	ALL
HEAVY CONSTRUCTION	Joseph Aryan Jaeger Jr	ALL
MECHANICAL WORK (STATEWIDE)	Joseph Aryan Jaeger Jr	ALL
MECHANICAL WORK (STATEWIDE)	Ryan M Jaeger	ALL
MUNICIPAL AND PUBLIC WORKS CONSTRUCTION	Joseph Aryan Jaeger Jr	ALL
PLUMBING (STATEWIDE)	Joseph Aryan Jaeger Jr	ALL
RESIDENTIAL BUILDING CONTRACTOR	Joseph Aryan Jaeger Jr	ALL
SPECIALTY: FURNITURE, FIXTURES, AND INSTITUTIONAL & KITCHEN EQUIPMENT	Ryan M Jaeger	ALL
SPECIALTY: INSTALL REPAIR OR CLOSE UNDERGROUND STORAGE TANKS	Joseph Aryan Jaeger Jr	ALL
SPECIALTY: SOLAR ENERGY EQUIPMENT	Ryan M Jaeger	ALL

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# State of Louisiana

## State Licensing Board for Contractors

This is to Certify that

JH REFRIGERATION, LLC  
P.O. Box 6917  
Metairie, LA 70002

is duly licensed and entitled to practice the following classifications

BUILDING CONSTRUCTION; ELECTRICAL WORK (STATEWIDE); HEAVY CONSTRUCTION;  
MECHANICAL WORK (STATEWIDE); MUNICIPAL AND PUBLIC WORKS CONSTRUCTION; PLUMBING  
(STATEWIDE); SPECIALTY: FURNITURE, FIXTURES, AND INSTITUTIONAL & KITCHEN EQUIPMENT;  
SPECIALTY: INSTALL REPAIR OR CLOSE UNDERGROUND STORAGE TANKS; SPECIALTY: SOLAR  
ENERGY EQUIPMENT



Expiration Date: January 16, 2021

License No: 59428

Witness our hand and seal of the Board dated,  
Baton Rouge, LA 17th day of January 2018

William S. MacCoy  
Director

Joe Maddox  
Chairman

This License Is Not Transferable

Andy Stewart  
Treasurer



## Request for Taxpayer Identification Number and Certification

Give Form to the  
requester. Do not  
send to the IRS.

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. <b>JH Refrigeration, LLC</b>	
	2 Business name/disregarded entity name, if different from above <b>All Temp Refrigeration Services</b>	
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input checked="" type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) <b>P</b> Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶	
	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ (Applies to accounts maintained outside the U.S.)	
	5 Address (number, street, and apt. or suite no.) <b>271 Hwy 1085</b>	Requester's name and address (optional)
	6 City, state, and ZIP code <b>Madisonville, LA 70447</b>	
	7 List account number(s) here (optional)	

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number								
			-				-	
or								
Employer identification number								
4	7	-	5	6	0	6	1	7 8

### Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶ <i>Kevin J. Rogowski</i>	Date ▶ <i>1-24-17</i>
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### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at [www.irs.gov/fw9](http://www.irs.gov/fw9).

#### Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/16/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Tee & Gee Underwriting Managers, LP 8131 LBJ Freeway, Suite 750 Dallas, TX 75251	CONTACT NAME: Don Mayeux
	PHONE (A/C, No, Ext): (504) 837-8680 FAX (A/C, No):
	E-MAIL ADDRESS: donm@canalhr.com
	INSURER(S) AFFORDING COVERAGE
	INSURER A : State National Insurance Company, Inc
	INSURER B :
	INSURER C :
	INSURER D :
	INSURER E :
	INSURER F :

COVERAGES CERTIFICATE NUMBER: 41945549 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY						
	<input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR						EACH OCCURRENCE \$
							DAMAGE TO RENTED PREMISES (Ea occurrence) \$
							MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						PRODUCTS - COMP/OP AGG \$
	OTHER:						\$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS						\$
	<input type="checkbox"/> NON-OWNED AUTOS ONLY						
	UMBRELLA LIAB						EACH OCCURRENCE \$
	EXCESS LIAB						AGGREGATE \$
	<input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE						\$
	DED RETENTION \$						
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			TGW900024702	4/1/2018	4/1/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH)						E.L. EACH ACCIDENT \$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$1,000,000
							E.L. DISEASE - POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

THIS CERTIFICATE CONFERS NO ADDITIONAL INSURED RIGHTS UPON THE CERTIFICATE HOLDER.

JH Refrigeration LLC dba All Temp Refrigeration is provided workers compensation coverage only for those employees of co-employer Canal HR, Inc. pursuant to the client services agreement between JH Refrigeration LLC dba All Temp Refrigeration and Canal HR, Inc.

## CERTIFICATE HOLDER

## CANCELLATION

0969 JEFFERSON PARISH GENERAL SERVICES DEPT. 200 DERBIGNY ST SUITE 3300 GRETN LA 70053	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE Adam Goldberg

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/4/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

**PRODUCER**

Arthur J. Gallagher Risk Management Services, Inc.  
111 Veterans Boulevard, Suite 1130  
Metairie LA 70005

**CONTACT**

NAME: Edward Murphy

PHONE (A/C, No, Ext): 504-888-1100

FAX (A/C, No): 504-888-1299

E-MAIL: Edward\_Murphy@ajg.com

ADDRESS: Edward\_Murphy@ajg.com

INSURER(S) AFFORDING COVERAGE

NAIC #

INSURER A : National Trust Insurance Company

20141

INSURER B :

INSURER C :

INSURER D :

INSURER E :

INSURER F :

**INSURED**

JHREFRI-01

All Temp Refrigeration Services a division  
of J.H. Refrigeration, LLC  
P. O. Box 6917  
Metairie LA 70009

**COVERAGES**

CERTIFICATE NUMBER: 332548992

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	Y	GL0017470	1/1/2018	1/1/2019	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	CA100009184	1/1/2018	1/1/2019	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$10,000	Y	Y	UMB100021222	1/1/2018	1/1/2019	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

General Liability Deductible: \$1000.00 PD Per claim deductible

General Liability Policy includes Additional Insured-Owners, Lessees or Contractors-Automatic Status When Required in Construction Agreement with you-Ongoing Operations and Products and Completed Operations. Coverage is Primary and Non-Contributory if required by Construction Agreement - Endorsement No. CGL 084 (10-13); Blanket Waiver of Subrogation per Endorsement as agreed in a contract or See Attached...

**CERTIFICATE HOLDER****CANCELLATION**

Jefferson Parish General Services Department  
200 Derbigny Street, Suite 3300  
Gretna LA 70053

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



# **ADDITIONAL REMARKS SCHEDULE**

Page 1 of 1

AGENCY Arthur J. Gallagher Risk Management Services, Inc.		NAMED INSURED All Temp Refrigeration Services a division of J.H. Refrigeration, LLC P. O. Box 6917 Metairie LA 70009
POLICY NUMBER		
CARRIER	NAIC CODE	
EFFECTIVE DATE:		

## **ADDITIONAL REMARKS**

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,**

**FORM NUMBER: 25 FORM TITLE: CERTIFICATE OF LIABILITY INSURANCE**

agreement - No. CGL 115 (10 13), all pursuant to and subject to the policy terms, definitions, conditions and exclusions.

Automobile Liability Policy includes the following per Endorsement No. CAU 058 (01 15) Louisiana Auto First Choice Coverage Endorsement: Blanket Additional Insured; Transfer of rights of recovering all required by a written contract or agreement, pursuant to and subject to the policy terms, definitions, conditions and exclusions.

Umbrella Liability includes the following per Endorsement No. CU 00 01 (12 07) Commercial Liability Umbrella Coverage Form, pursuant to and subject to the policy terms definitions, conditions and exclusions:  
Umbrella Policy is excess of primary underlying coverage listed on the certificate of insurance.

RE: Bid 50-00121042.

Additional Insureds: The Parish of Jefferson, its Districts, Departments and Agencies under the direction of the Parish President and Parish Council are named as



# Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

## Bid Bond

### CONTRACTOR:

(Name, legal status and address)

All Temp Refrigeration Services a Division of J. H.  
Refrigeration, LLC  
3330 North Causeway Blvd., Suite 400  
Metairie, LA 70002

### OWNER:

(Name, legal status and address)

Jefferson Parish  
4420 7th St.  
Marrero, LA 70072

### SURETY:

(Name, legal status and principal place of business)

Travelers Casualty and Surety Company of America  
One Tower Square  
Hartford, CT 06183  
Mailing Address for Notices  
One Tower Square  
Hartford, CT 06183

This document has important  
legal consequences. Consultation  
with an attorney is encouraged  
with respect to its completion or  
modification.

Any singular reference to  
Contractor, Surety, Owner or  
other party shall be considered  
plural where applicable.

**BOND AMOUNT:** 5% Five Percent of Amount Bid

### PROJECT:

(Name, location or address, and Project number, if any)

Removal and Disposal of (5) existing DX air roof-top air conditioning units. Supply and install (5) new DX roof-top air conditioning units.


The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 17th day of May, 2018.

  
(Witness)

  
(Witness) Jim Brashier

All Temp Refrigeration Services a Division of J. H. Refrigeration, LLC  
(Principal) (Seal)

By:   
(Title)

Travelers Casualty and Surety Company of America  
(Surety) (Seal)

By:   
(Title) Kathleen L. Berni, Attorney-in-Fact

Countersigned: LA Resident Agent

S-0054/AS 8/10

By:   
Kathleen L. Berni, Lic 201148



**Travelers Casualty and Surety Company of America**  
**Travelers Casualty and Surety Company**  
**St. Paul Fire and Marine Insurance Company**

**POWER OF ATTORNEY**

**KNOW ALL MEN BY THESE PRESENTS:** That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Kathleen L. Berni** of Metairie, Louisiana, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, 2017.



State of Connecticut

City of Hartford ss.

By: \_\_\_\_\_

*Robert L. Raney*  
Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

**In Witness Whereof**, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, 2021



*Marie C. Tetreault*  
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **17th** day of **May**, 2018



*Kevin E. Hughes*  
Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.**  
**Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**



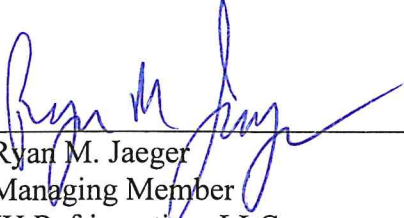
J.H. REFRIGERATION, LLC  
BLANKET RESOLUTION

I, Ryan M. Jaeger, as managing member of JH Refrigeration, LLC, doing business in Louisiana as All Temp Refrigeration, do hereby certify that the following is a true copy of a resolution adapted by the members of JH Refrigeration, LLC, at a meeting held for the purpose shown below, on December 1, 2016, with a quorum of members present and voting.

“Resolved, that Ryan Jaeger, as manager and president of JH Refrigeration, LLC, doing business in Louisiana as All Temp Refrigeration, be and is hereby authorized, directed, and empowered, to act on behalf of JH Refrigeration, LLC, for the submission, to any person, firm, corporation, governmental agency, or other institutions of whatever nature, of proposals, bids, quotations, contracts, bid bonds, construction bonds, and/or offers to perform work by this company, and that such bids, proposals, quotations, contracts, bonds, and offers to perform any be in such amounts, and upon such terms and conditions and where required, to execute any forms of proposals and/or contracts necessary thereof.

“Further, the authority granted above by this resolution shall remain full force and effect unless this authority shall specifically be rescinded or altered through another resolution.”

Attested To:

  
\_\_\_\_\_  
Ryan M. Jaeger  
Managing Member  
JH Refrigeration, LLC



## **SUBMITTAL**

### **Project**

Marrero Harvey Senior Center REV-1

### **Date**

Wednesday, May 30, 2018

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Prepared By:

05/31/2018  
09:29AM

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## RTU2

Project: Marrero Harvey Senior Center REV-1  
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## RTU2

**Tag Cover Sheet  
Unit Report  
Certified Drawing  
Performance Report  
Guide Specification  
Unit Feature Sheet  
Spec Sheet**

## Unit Report For RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

05/31/2018  
09:29AM

### Unit Parameters

Unit Model:.....50LCEA09A2M5-0A1D0  
Unit Size:.....09 (8.5 Tons)  
Volts-Phase-Hertz:.....230-3-60  
Heating Type:.....Electric  
Duct Cfg:.....Vertical Supply / Vertical Return  
Medium Electric Heat  
Three stage cooling capacity control with TXV and Humidi-  
MiZer

### Dimensions (ft. in.) & Weight (lb.) \*\*\*

Unit Length:.....9' 7.875"  
Unit Width:.....5' 3.375"  
Unit Height:.....4' 10.75"  
\*\*\* Total Operating Weight:.....1812 lb

\*\*\* Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

### Unit Configuration

Medium Electric Heat  
Medium Static Belt Drive with VFD Controller  
Al/Cu - Al/Cu - Louvered Hail Guards  
Electro Mechanical Controls  
Unpowered Convenience Outlet  
Thru-The-Base Connections  
Standard Packaging  
Humidi-MiZer™ Adaptive Dehumidification System

### Warranty Information

5-Year compressor parts (STD.)  
1-Year parts (STD.)  
Complete Unit Year 2-5 Parts & Carrier CCS Labor

**NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.**

### Ordering Information

Part Number	Description	Quantity
50LCEA09A2M5-0A1D0	Rooftop Unit	1
<b>Accessories</b>		
CRHEATER291A00	Electric Heater	1

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

Project: Marre  
Prepared By:

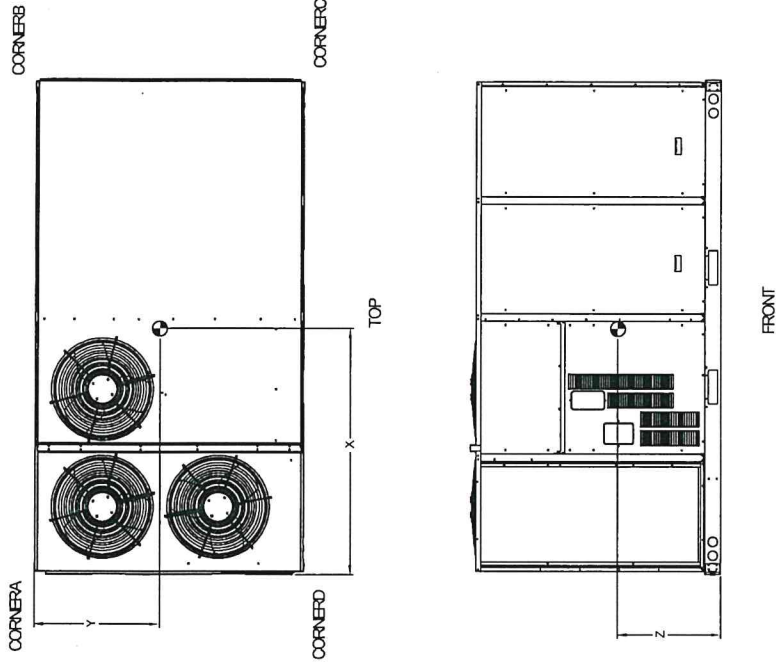
# Certified Drawing for RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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09:29AM

UNIT	STD UNIT WEIGHT LBS.	CORNER WEIGHT (A) LBS.	CORNER WEIGHT (B) LBS.	CORNER WEIGHT (C) LBS.	CORNER WEIGHT (D) LBS.	C.G.			
	KG	KG	KG	KG	KG	X	Y	Z	
50LC09	1536	697	388	174	362	172	374	171	2058 [504]
50LC12	1536	697	388	174	362	172	374	171	2058 [504]

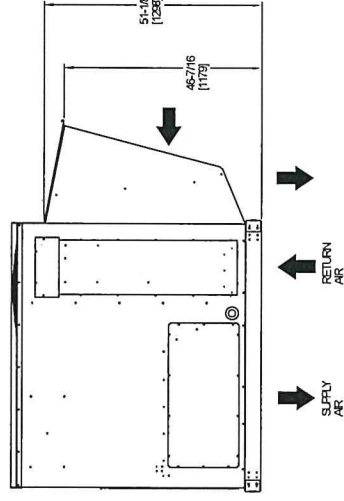
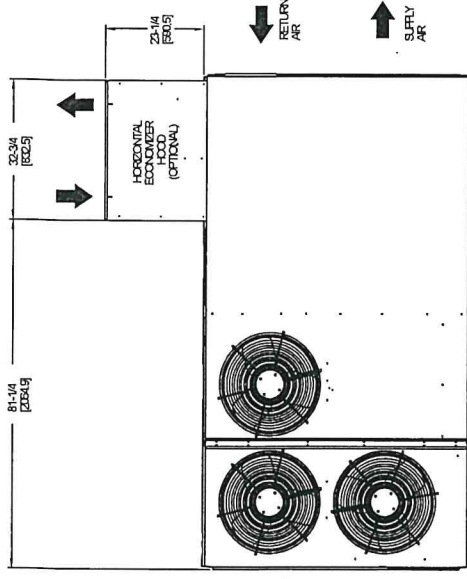
STANDARD WEIGHTS WITH ELECTRIC HEAT WITH-OUT PACKAGING.  
FOR OPTIONS ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.



UNITED TECHNOLOGIES  
CARRIER

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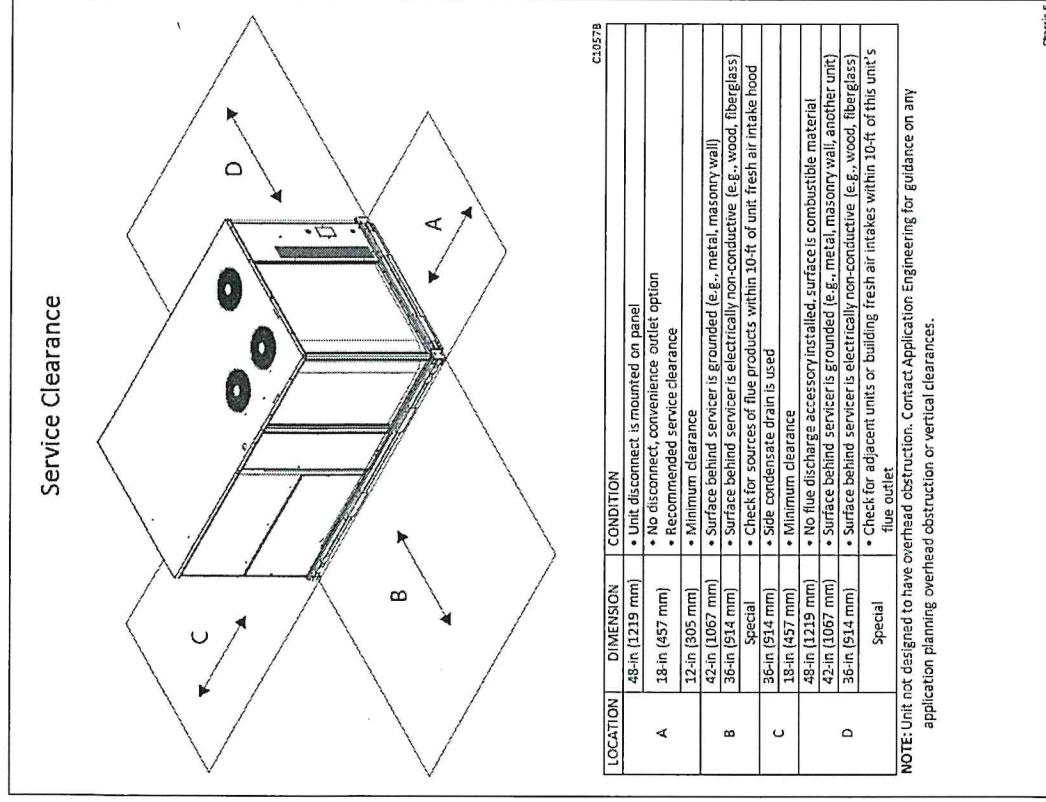


HORIZONTAL ECONOMIZER

SHEET	DATE	SUPERSEDES	50LC09-12 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	48LC500388	REV
20F2	05/08/13	-			A

## Certified Drawing for RTU2

05/31/2018  
09:29AM





## Performance Summary For RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

05/31/2018  
09:29AM

### Part Number:50LCEA09A2M5-0A1D0

ARI EER:.....13.40  
IEER (Max Cooling at Normal Cooling Design Mode):.....19.9

#### Base Unit Dimensions

Unit Length:.....115.9 in  
Unit Width:.....63.4 in  
Unit Height:.....58.8 in

#### Operating Weight

Base Unit Weight:.....1536 lb  
Medium Electric Heat:.....62 lb  
Three stage cooling capacity control with TXV and Humidi-MiZer:.....90 lb  
Medium Static Belt Drive with VFD Controller:.....45 lb  
Al/Cu - Al/Cu - Louvered Hail Guards:.....45 lb  
Unpowered Convenience Outlet:.....5 lb  
Thru-The-Base Connections:.....4 lb

#### Accessories

Electric Heater:.....25 lb

Total Operating Weight:.....1812 lb

#### Unit

Unit Voltage-Phase-Hertz:.....230-3-60  
Air Discharge:.....Vertical  
Fan Drive Type:.....Belt  
Actual Airflow:.....3400 CFM  
Site Altitude:.....0 ft

#### Cooling Performance

Condenser Entering Air DB:.....95.0 F  
Evaporator Entering Air DB:.....80.0 F  
Evaporator Entering Air WB:.....67.0 F  
Entering Air Enthalpy:.....31.44 BTU/lb  
Evaporator Leaving Air DB:.....57.9 F  
Evaporator Leaving Air WB:.....57.3 F  
Evaporator Leaving Air Enthalpy:.....24.56 BTU/lb  
Gross Cooling Capacity:.....105.24 MBH  
Gross Sensible Capacity:.....81.01 MBH  
Compressor Power Input:.....6.69 kW  
Coil Bypass Factor:.....0.025

#### Heating Performance

Heating Airflow:.....3400 CFM  
Entering Air Temp:.....70.0 F  
Leaving Air Temp:.....84.1 F  
Electric Heating Capacity:.....15.20 kW

#### Supply Fan

External Static Pressure:.....0.80 in wg  
Options / Accessories Static Pressure  
Electric Heaters:.....0.02 in wg  
Humidi-MiZer Dehumidification System:.....0.04 in wg  
Total Application Static (ESP + Unit Opts/Acc.):.....0.86 in wg  
Fan RPM:.....646  
Fan Power:.....1.44 BHP  
NOTE:.....Selected IFM RPM Range: 488 - 675

#### Electrical Data

Voltage Range:.....187 - 253

## Performance Summary For RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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Compressor #1 RLA:	13.2
Compressor #1 LRA:	88
Compressor #2 RLA:	15.9
Compressor #2 LRA:	110
Actual Electric Heater kW:	15.2
Electric Heater FLA:	39.7
Indoor Fan Motor Type:	MED
Indoor Fan Motor FLA:	5.6
Power Supply MCA:	57
Power Supply MOCP (Fuse or HACR):	60
Disconnect Size FLA:	52
Disconnect Size LRA:	227
Electrical Convenience Outlet:	None
Outdoor Fan [Qty / FLA (ea)]:	3 / 1.8
Electric Heater Number of Stages:	1

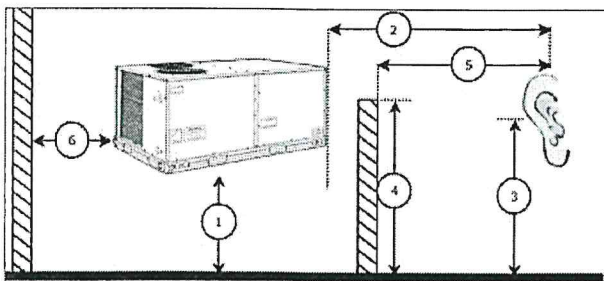
**Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage**

### Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.2	86.0	89.3
125 Hz	84.3	78.5	86.0
250 Hz	69.7	65.3	82.9
500 Hz	68.4	64.4	80.7
1000 Hz	66.3	62.5	78.5
2000 Hz	63.5	56.9	73.6
4000 Hz	64.1	54.3	69.6
8000 Hz	59.8	48.7	64.5
A-Weighted	74.0	68.6	83.0

### Advanced Acoustics



#### Advanced Acoustics Parameters

1. Unit height above ground:	30.0 ft
2. Horizontal distance from unit to receiver:	50.0 ft
3. Receiver height above ground:	5.7 ft
4. Height of obstruction:	0.0 ft
5. Horizontal distance from obstruction to receiver:	0.0 ft
6. Horizontal distance from unit to obstruction:	0.0 ft

### Detailed Acoustics Information

## Performance Summary For RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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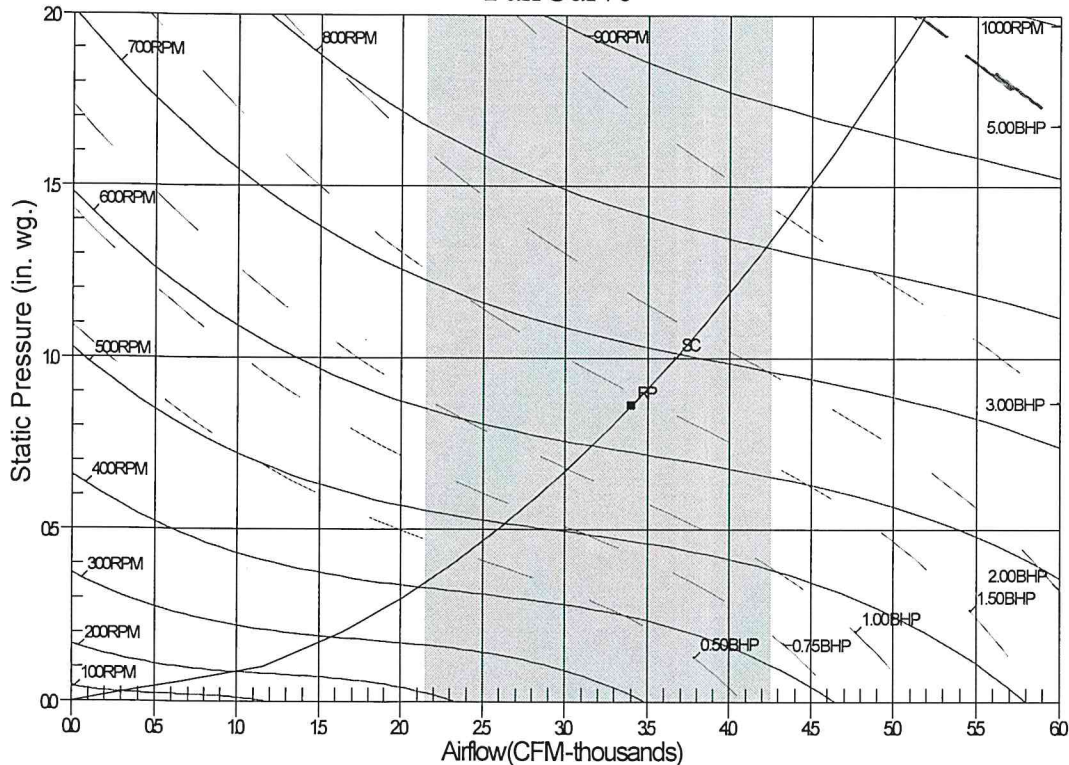
Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	89.3	86.0	82.9	80.7	78.5	73.6	69.6	64.5	92.2 Lw
B	63.1	69.9	74.3	77.5	78.5	74.8	70.6	63.4	83.2 LwA
C	56.9	53.6	50.5	48.3	46.1	41.2	37.2	32.1	59.8 Lp
D	30.7	37.5	41.9	45.1	46.1	42.4	38.2	31.0	50.8 LpA

### Legend

A Sound Power Levels at Unit's Acoustic Center, Lw  
B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA  
C Sound Pressure Levels at Specific Distance from Unit, Lp  
D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.

### FanCurve



RPM=646 BHP=1.44 Maximum RPM=1200 Maximum BHP=4.90  
Note: Please contact application engineering for selections outside the shaded region.  
SC-System Curve RP-Rated Point



## Guide Specification for RTU2

Project: Marrero Harvey Senior Center REV-1  
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### GUIDE SPECIFICATIONS – 50LCEA09A2M5-0A1D0

#### Weather Expert™ Ultra High Efficient Cooling Only/Electric Heat Packaged Rooftop

Size: 009

##### Part 1: Schedules for Decentralized HVAC Equipment

- 1.01. Rooftop unit schedule
  - A. Schedule is per the project specification requirements.

##### Part 2: HVAC Equipment Insulation

- 2.01. Evaporator fan compartment:
  - A. Interior cabinet surfaces shall be insulated with a minimum 1/2-in. thick, minimum 1 1/2 lb density aluminum foil-faced insulation on the air side.
  - B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- 2.02. Electric heat compartment:
  - A. Aluminum foil-faced fiberglass insulation shall be used.
  - B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

##### Part 3: Instrumentation and Control Devices for HVAC

###### Thermostats

- 3.01. Thermostat must
  - A. energize both "W" and "G" when calling for heat.
  - B. have capability to energize 3 different stages of cooling, and 1 and 2 different stages of heating.
  - C. include capability for occupancy scheduling.

##### Part 4: Electric DDC Control System for HVAC

- 4.01. General:
  - A. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
  - B. Shall utilize color-coded wiring.
  - C. Shall include a DDC electric control board, to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, and safety switches. Shall control all three stages of compressor logic, two or three stages of the indoor fan motor logic as well as staging of the outdoor fan motor. Shall also have a green LED indicator to indicate GO operation as well as a fault LED indicator for thermostat mis-wiring, no fan operation and safety switches..
  - D. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.
- 4.02. Safeties:
  - A. Compressor over-temperature, over current.
  - B. Low-pressure switch.
    - 1. Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer

## Guide Specification for RTU2

Project: Marrero Harvey Senior Center REV-1  
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and service technician to correctly wire and or troubleshoot the rooftop unit.

C. High-pressure switch.

1. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

D. Automatic reset, motor thermal overload protector.

### Part 5: Sequence of Operations for HVAC Controls

INSERT SEQUENCE OF OPERATION

### Part 6: Panel Air Filters

#### 6.01. Standard filter section

- A. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
- B. Unit shall use only one filter size. Multiple sizes are not acceptable.
- C. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification.

### Part 7: Self-Contained Air Conditioners

Small-Capacity Self-Contained Air Conditioners (50LC\*\*07-12)

#### 7.01. General

- A. Outdoor, rooftop mounted, DDC electrically controlled, heating and cooling unit utilizing hermetic scroll compressors for cooling duty and gas combustion for heating duty.
- B. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
- C. Unit shall use environmentally safe, Puron R refrigerant.
- D. Unit shall be installed in accordance with the manufacturer's instructions.
- E. Unit must be selected and installed in compliance with local, state, and federal codes.

#### 7.02. Quality Assurance

- A. Unit meets and exceeds ASHRAE 90.1 minimum efficiency requirements.
- B. Unit meets and exceeds Energy Star and Consortium for Energy Efficiency (CEE) requirements.
- C. Unit shall be rated in accordance with AHRI Standards 340/360.
- D. Unit shall be designed to conform to ASHRAE 15, 2001.
- E. Unit shall be ETL/UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
- F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
- H. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
- I. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001.
- J. Roof curb shall be designed to conform to NRCA Standards.
- K. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
- L. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
- M. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
- N. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
- O. High Efficient Motors listed shall meet section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).

#### 7.03. Delivery, Storage, and Handling

- A. Unit shall be stored and handled per manufacturer's recommendations.
- B. Lifted by crane requires either shipping top panel or spreader bars.
- C. Unit shall only be stored or positioned in the upright position.

#### 7.04. Project Conditions

- A. As specified in the contract.



## Guide Specification for RTU2

Project: Marrero Harvey Senior Center REV-1  
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### 7.05. Operating Characteristics

- A. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 340/360 at ± 10% voltage.
- B. Compressor with standard controls shall be capable of operation down to 40°F (4°C) ambient outdoor temperatures. For lower operation an integrated economizer shall be utilized to allow lower temperatures and accommodate indoor air quality initiatives.
- C. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
- D. Unit shall be factory configured for vertical supply & return configurations.
- E. Unit shall be field convertible from vertical to horizontal airflow on all models. No special kit required on 07 models. Field installed supply duct kit required for 08-12 model only.
- F. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

### 7.06. Electrical Requirements

- A. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

### 7.07. Unit Cabinet

- A. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
- B. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
- C. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2-in. thick, 1 lb density, aluminum foil faced fiberglass insulation, Aluminum foil-faced fiberglass insulation shall also be used in the heat compartment.
- D. Base of unit shall have a minimum of four locations for thru-the-base gas and electrical connections (factory installed or field installed), standard.
- E. Base Rail
  - 1. Unit shall have base rails on a minimum of 4 sides.
  - 2. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
  - 3. Holes shall be provided in the base rail for moving the rooftop by fork truck.
  - 4. Base rail shall be a minimum of 16 gauge thickness.
- F. Condensate pan and connections:
  - 1. Shall be an internally sloped condensate drain pan made of a non-corrosive material.
  - 2. Shall comply with ASHRAE Standard 62.
  - 3. Shall use a 3/4" - 14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
- G. Top panel:
  - 1. Shall be a single piece top panel on 07 sizes, two piece on 08-12 sizes.
- H. Electrical Connections
  - 1. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
  - 2. Thru-the-base capability
    - a. Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
    - b. Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
    - c. No basepan penetration, other than those authorized by the manufacturer, is permitted.
- I. Component access panels (standard)
  - 1. Cabinet panels shall be easily removable for servicing.
  - 2. Unit shall have one factory installed, tool-less, removable, filter access panel.
  - 3. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
  - 4. Handles shall be UV modified, composite, permanently attached, and recessed into the panel.
  - 5. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.

## Guide Specification for RTU2

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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6. Collars shall be removable and easily replaceable using manufacturer recommended parts.

### 7.08. Coils

#### A. Standard Aluminum Fin/Copper Tube Coils:

1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved 5/16" diameter copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

### 7.09. Refrigerant Components

#### A. Refrigerant circuit shall include the following control, safety, and maintenance features:

1. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
2. Refrigerant filter drier.
3. Service gauge connections on suction and discharge lines.
4. Single circuit design with tandem compressor and fully activated evaporator coil

#### B. Compressors

1. Models shall use multiple fully hermetic scroll compressors optimized for comfort staging and IEER energy savings.
2. Models shall be available with a single refrigerant circuit and three stages of cooling operation on all models.
3. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
4. Compressors shall be internally protected from high discharge temperature conditions.
5. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal, motor overload device.
6. Compressor shall be factory mounted on rubber grommets.
7. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
8. Crankcase heater shall be standard on each compressor and deactivated whenever a compressor is in operation.

### 7.10. Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

### 7.11. Evaporator Fan and Motor

#### A. Evaporator fan motor:

1. Shall have permanently lubricated bearings.
2. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
3. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
4. Shall be Variable Frequency duty to match the three stage compression logic.
5. Shall contain motor shaft grounding ring to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground.

#### B. Variable Frequency Drive (VFD). For indoor fan motor Staged Air Volume (SAV) operation:

1. Shall be installed inside the unit cabinet, mounted, wired and tested.
2. Shall contain Electromagnetic Interference (EMI) frequency protection.
3. Insulated Gate Bi-Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
4. Self diagnostics with fault and power code LED indicator. Field accessory Display Kit available for further diagnostics and special setup applications.

## Guide Specification for RTU2

Project: Marrero Harvey Senior Center REV-1  
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5. RS485 capability standard.
6. Electronic thermal overload protection.
7. 5% swinging chokes for harmonic reduction and improved power factor.
8. All printed circuit boards shall be conformal coated.
9. Shall not contain visual display to adjust internal setting. Only available as field installed kit.

C. Belt-driven Evaporator Fan:

1. Belt drive shall include an adjustable-pitch motor pulley.
2. Shall use sealed, permanently lubricated ball-bearing type.
3. Blower fan shall be double-inlet type with forward-curved blades.
4. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

7.12. Condenser Fans and Motors

A. Condenser fan motors:

1. Shall be a totally enclosed - multi speed ECM motor..
2. Shall use permanently lubricated bearings.
3. Shall have inherent thermal overload protection with an automatic reset feature.
4. Shall use a shaft-down design on 07 models and shaft-up on 08-12 models with rain shield.

B. Condenser Fans:

1. Shall be a direct-driven propeller type fan.
2. Shall have galvanized aluminum (galvalum) blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

7.13. Special Features, Options and Accessories

A. Humidi-MiZer® Adaptive Dehumidification System:

1. The Humidi-MiZer Adaptive Dehumidification System shall be factory installed, certified and tested to provide greater dehumidification of the occupied space by providing two distinct modes of dehumidification operation in addition to its normal design cooling mode:
  - a. Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil as well as reheat leaving air stream. It can provide both better cooling capacity as well as dehumidification process when both temperature and humidity in the space are not satisfied.
  - b. Hot gas reheat mode shall mix a portion of hot gas from the discharge of compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase warm refrigerant in the reheat coil which results in a neutral leaving air temperature when only humidity in the space is not satisfied.

B. Condenser Coil Hail Guard Assembly (Factory or field installed)

1. Shall protect against damage from hail.
2. Shall be louvered design.

C. Convenience Outlet:

1. Non-Powered convenience outlet.
  - a. Outlet shall be powered from a separate 115/120v power source.
  - b. A transformer shall not be included.
  - c. Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
  - d. Outlet shall include 15 amp GFI receptacles with independent fuse protection.
  - e. Outlet shall be accessible from outside the unit.
  - f. Outlet shall include a field-installed "Wet in Use" cover.

D. Electric Heat:

1. Heating Section

- a. Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
- b. Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in

## Guide Specification for RTU2

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electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.



# Unit Feature Sheet for RTU2

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WeatherExpert®

- 50LC

## PACKAGED ROOFTOP ELECTRIC COOLING/ELECTRIC HEATING UNITS 6, 7.5, 8.5 and 10 TONS



Optional Economizer Shown

### WeatherExpert® - 50LC

50LC units are ultra high-efficiency, single-packaged electric cooling, with optional electric heating units. Units utilize three stages of cooling capacity control with matching indoor fan motor speed control. All models are available with belt drive indoor fan motors with Variable Frequency Drive (VFD) speed controller and Direct Drive - ECM outdoor fan motor. Models offer standard electro mechanical controls that use Carrier's Comfort Control Logic and LED indicators.

All units are factory tested in both heating and cooling modes, and rated in accordance with AHRI Standards 340/360.



### STANDARD FEATURES INCLUDE:

- Puron® (R-410A) HFC refrigerant factory charged
- IEER's up to 21.0 and EER's up to 13.7
- ASHRAE 90.1 compliant, Energy Star qualified
- Meets or exceeds CEE tier II performance criteria
- Three stage cooling capacity control with crankcase heaters
- Single refrigerant circuit with full face activated evaporator coil.
- Belt drive indoor fan and pulley system with Variable Frequency Drive (VFD) motor controller on all models
- High efficient ECM outdoor fan motor
- Sound levels as low as 82 dB
- Precision sized TXV refrigerant metering devices
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE Standard 62, sloping design, side or center drain
- Standard ambient cooling operation down to 40°F (4°C) with lower operation range with integrated economizer. SystemVu™ controls allows operation down to 0°F (-18°C). All units operate up to and to 125°F (52°C).
- Designed in accordance with UL, Standard 1995
- High performance 5/16" diameter, internally enhanced copper tube / aluminum fin condenser and evaporator coils
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- Low pressure and high pressure switch protected.

### MAINTENANCE FEATURES:

- Access panels with easy grip handles and tool-less filter access door
- Innovative easy starting, no-strip screws on unit access panels
- Two-inch disposable return air filters

### INSTALLATION FEATURES:

- Thru-the-bottom power entry capability
- Single point electric connections
- Full perimeter base rail with built-in rigging adapters and fork slots
- Field convertible from vertical to horizontal airflow on all models. 08-12 models require an easy field installed supply duct kit.

### STANDARD LIMITED PARTS WARRANTY:

- 5-year compressor parts
- 5-year on electric heaters, 1-year parts, 3-year SystemVu™
- Many optional upgrades available

### OPTIONS/ACCY INCLUDE BUT ARE NOT LIMITED TO:

- Supply and Return air smoke detectors, high static motors
- Louvered condenser coil guards and coil coating options
- Economizer and convenience outlet options
- HACR breaker or non-fused disconnect switch
- Hinged access panels with quick turn latches and lift tabs
- Electric heaters
- Patented Humidi-Mizer® adaptive dehumidification system
- RTU Open multi-protocol DDC controller
- SystemVu Controls:
  - Large full text - multi line display
  - USB Flash Port for data transfer
  - Built in i-Vu®, CCN and BACnet®
  - Refrigerant pressure from display
  - Quick LED Status - Run, Alert, Fault
  - Conventional Stat or Sensor capabilities
  - Historical component runtime and starts

## Spec Sheet for RTU2

Project: Marrero Harvey Senior Center REV-1  
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## **RTU5**

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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## **RTU5**

**Tag Cover Sheet  
Unit Report  
Certified Drawing  
Performance Report  
Guide Specification  
Unit Feature Sheet  
Spec Sheet**

## Unit Report For RTU5

Project: Marrero Harvey Senior Center REV-1  
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### Unit Parameters

Unit Model:.....50HC-B05A2M5-0A1B0  
Unit Size:.....05 (4 Tons)  
Volts-Phase-Hertz:.....230-3-60  
Heating Type:.....Electric  
Duct Cfg:.....Vertical Supply / Vertical Return  
Single stage cooling models with Humidi-MiZer

### Dimensions (ft. in.) & Weight (lb.) \*\*\*

Unit Length:.....6' 2.375"  
Unit Width:.....3' 10.75"  
Unit Height:.....3' 5.375"  
\*\*\* Total Operating Weight:.....681 lb

\*\*\* Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

### Lines and Filters

Condensate Drain Line Size:.....3/4  
Return Air Filter Type:.....Throwaway  
Return Air Filter Quantity:.....4  
Return Air Filter Size:.....16 x 16 x 2

### Unit Configuration

Medium Static Belt Drive  
Al/Cu - Al/Cu - Louvered Hail Guards  
Base Electromechanical Controls  
Unpowered Convenience Outlet  
HACR Breaker  
Standard Packaging  
Humidi-MiZer™ Adaptive Dehumidification System

### Warranty Information

5-Year compressor parts (STD.)  
1-Year parts (STD.)  
Complete Unit Year 2-5 Parts & Carrier CCS Labor  
Complete Unit 1st Year Carrier CCS Labor

**NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.**

### Ordering Information

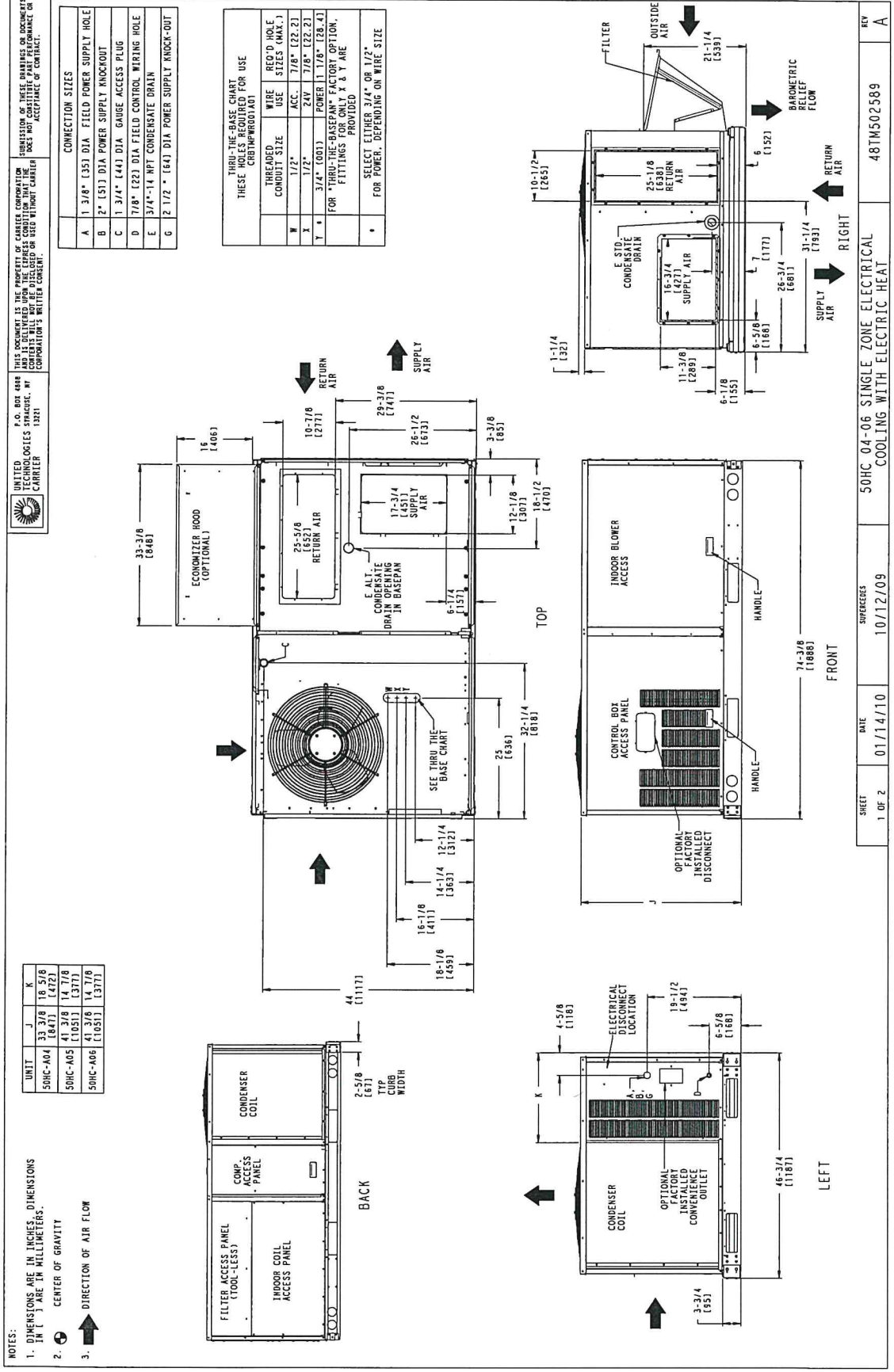
Part Number	Description	Quantity
50HC-B05A2M5-0A1B0	Rooftop Unit	1
<b>Accessories</b>		
CRHEATER104B00	7.9/9.6/10.5 kW 208/230/240-1/3-60 Volt Electric Heater	2
CRSINGLE038A00	Single Point Kit	1



# Certified Drawing for RTU5

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Prepared By:

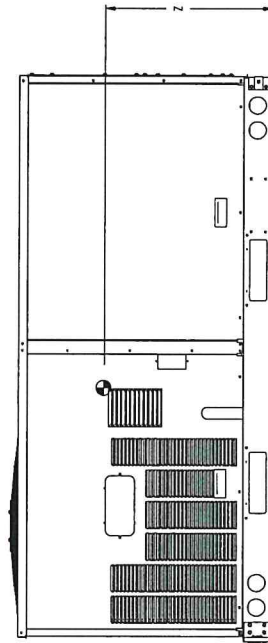
Project: Marrero Harvey Senior Center REV-1  
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CORNER B



TOP



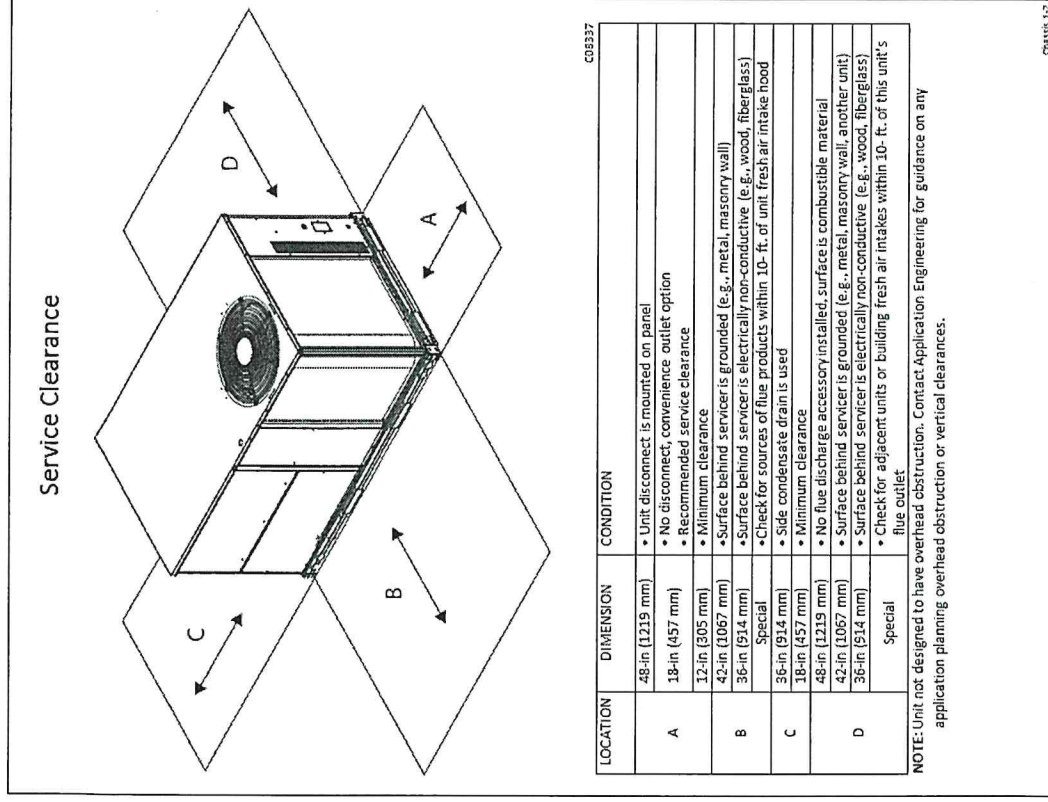
FRONT

SHEET	DATE	SUPERSEDES	REV
2 OF 2	01/14/10	50HC 04-06 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	48TM502589 A

Certified Drawing for RTU5

Project: Marrero Harvey Senior Center REV-1  
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## Performance Summary For RTU5

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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### Part Number:50HC-B05A2M5-0A1B0

ARI SEER:.....15.60

#### Base Unit Dimensions

Unit Length:.....74.4 in  
Unit Width:.....46.8 in  
Unit Height:.....41.4 in

#### Operating Weight

Base Unit Weight:.....545 lb  
Single stage cooling models with Humidi-MiZer:.....55 lb  
Medium Static Belt Drive:.....10 lb  
Al/Cu - Al/Cu - Louvered Hail Guards:.....16 lb  
Unpowered Convenience Outlet:.....5 lb  
HACR Breaker:.....10 lb

#### Accessories

7.9/9.6/10.5 kW 208/230/240-1/3-60 Volt Electric Heater:.....30 lb  
Single Point Kit:.....10 lb

Total Operating Weight:.....681 lb

#### Unit

Unit Voltage-Phase-Hertz:.....230-3-60  
Air Discharge:.....Vertical  
Fan Drive Type:.....Belt  
Actual Airflow:.....1600 CFM  
Site Altitude:.....0 ft

#### Cooling Performance

Condenser Entering Air DB:.....95.0 F  
Evaporator Entering Air DB:.....80.0 F  
Evaporator Entering Air WB:.....67.0 F  
Entering Air Enthalpy:.....31.44 BTU/lb  
Evaporator Leaving Air DB:.....58.3 F  
Evaporator Leaving Air WB:.....57.0 F  
Evaporator Leaving Air Enthalpy:.....24.37 BTU/lb  
Gross Cooling Capacity:.....50.90 MBH  
Gross Sensible Capacity:.....37.50 MBH  
Compressor Power Input:.....3.20 kW  
Coil Bypass Factor:.....0.060

#### Heating Performance

Heating Airflow:.....1600 CFM  
Entering Air Temp:.....70.0 F  
Leaving Air Temp:.....108.1 F  
Electric Heating Capacity:.....19.30 kW

#### Supply Fan

External Static Pressure:.....0.80 in wg  
Options / Accessories Static Pressure  
Electric Heaters:.....0.16 in wg  
Humidi-MiZer Dehumidification System:.....0.16 in wg  
Total Application Static (ESP + Unit Opts/Acc.):.....1.12 in wg  
Fan RPM:.....1217  
Fan Power:.....1.20 BHP  
NOTE:.....Selected IFM RPM Range: 920 - 1303

#### Electrical Data

Voltage Range:.....187 - 253  
Compressor #1 RLA:.....13.7



## Performance Summary For RTU5

Project: Marrero Harvey Senior Center REV-1  
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Compressor #1 LRA:	83
Actual Electric Heater kW:	19.3
Electric Heater FLA:	50.5
Indoor Fan Motor Type:	MED
Indoor Fan Motor FLA:	4.9
Power Supply MCA:	70
Disconnect Size FLA:	64
Disconnect Size LRA:	122
Electrical Convenience Outlet:	None
Outdoor Fan [Qty / FLA (ea)]:	1 / 1.4
Power Supply HACR:	70
Electric Heater Number of Stages:	2

### Electrical Data (Unit produced on or after May 18, 2015)

Power Supply HACR:	70
Disconnect Size FLA:	64
Disconnect Size LRA:	122

May 18th and beyond units can be identified by serial number 2115XXXXXXXXXX and higher

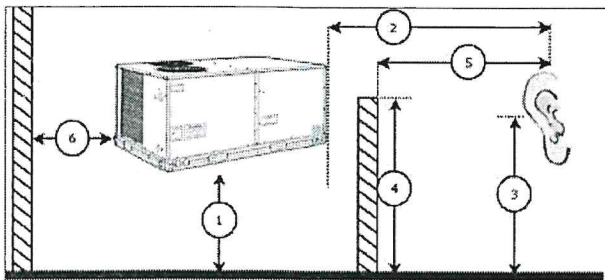
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

### Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.0	89.5	84.7
125 Hz	83.4	80.5	83.6
250 Hz	74.8	67.5	77.1
500 Hz	71.9	65.3	74.6
1000 Hz	70.8	66.8	72.3
2000 Hz	66.2	61.4	68.3
4000 Hz	67.4	56.7	64.7
8000 Hz	63.6	50.3	60.9
A-Weighted	76.6	71.6	78.0

### Advanced Acoustics



#### Advanced Acoustics Parameters

1. Unit height above ground:	30.0 ft
2. Horizontal distance from unit to receiver:	50.0 ft
3. Receiver height above ground:	5.7 ft
4. Height of obstruction:	0.0 ft
5. Horizontal distance from obstruction to receiver:	0.0 ft
6. Horizontal distance from unit to obstruction:	0.0 ft

## Performance Summary For RTU5

Project: Marrero Harvey Senior Center REV-1  
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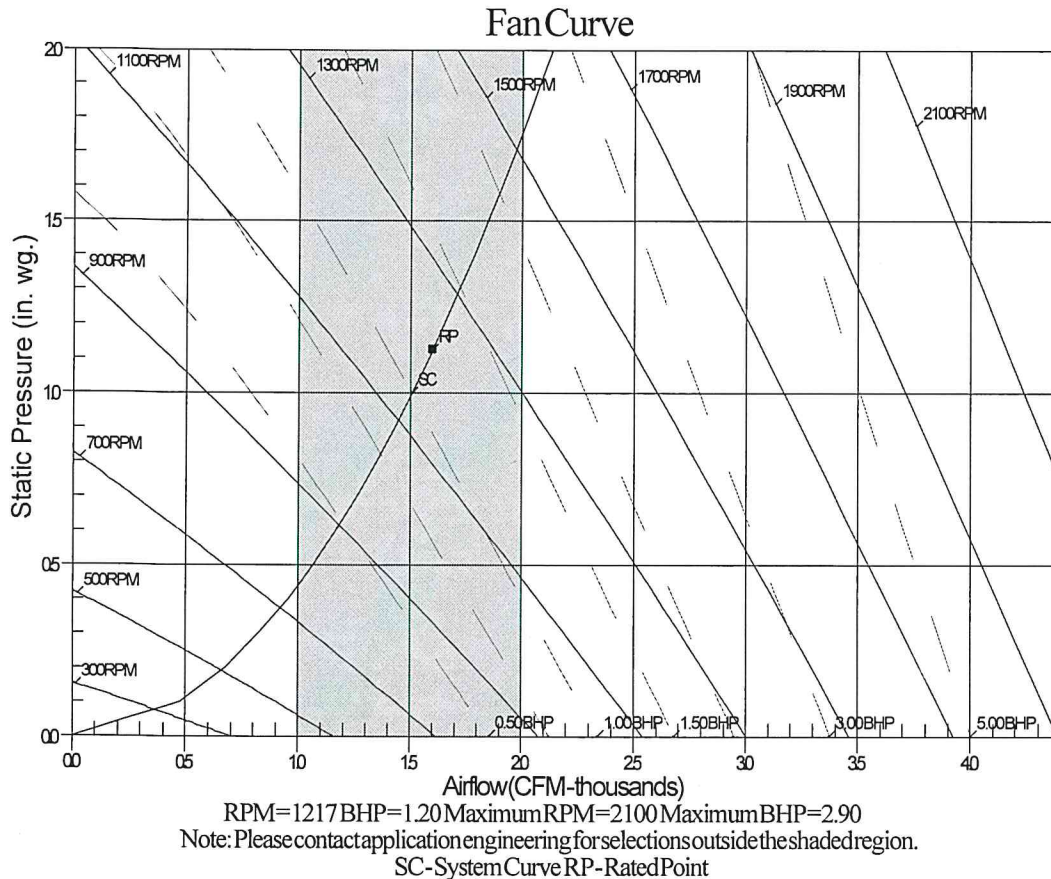
### Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	84.7	83.6	77.1	74.6	72.3	68.3	64.7	60.9	88.0 Lw
B	58.5	67.5	68.5	71.4	72.3	69.5	65.7	59.8	77.6 LwA
C	52.3	51.2	44.7	42.2	39.9	35.9	32.3	28.5	55.6 Lp
D	26.1	35.1	36.1	39.0	39.9	37.1	33.3	27.4	45.2 LpA

#### Legend

A Sound Power Levels at Unit's Acoustic Center, Lw  
B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA  
C Sound Pressure Levels at Specific Distance from Unit, Lp  
D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.



## Guide Specification for RTU5

Project: Marrero Harvey Senior Center REV-1  
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### GUIDE SPECIFICATIONS – 50HC-B05A2M5-0A1B0

#### Cooling Only/Electric Heat Packaged Rooftop

#### HVAC Guide Specifications

Size: 005

##### Part 1: Schedules for Decentralized HVAC Equipment

Decentralized Unitary HVAC Equipment Schedule

###### 1.01. Rooftop units schedule

- A. Schedule is per the project specification requirements.

##### Part 2: HVAC Equipment Insulation

Decentralized, Rooftop Units:

###### 2.01. Evaporator fan compartment:

- A. Interior cabinet surfaces shall be insulated with a minimum 1/2-in. thick, minimum 1 1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
- B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

###### 2.02. Electric heat compartment:

- A. Aluminum foil-faced fiberglass insulation shall be used.
- B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

##### Part 3: Instrumentation and Control Devices for HVAC

Sensors and Transmitters

###### 3.01. Thermostats

- A. Thermostat must
  - 1. energize both "W" and "G" when calling for heat.
  - 2. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
  - 3. include capability for occupancy scheduling.

##### Part 4: Electric and Electronic Control System for HVAC

Decentralized, Rooftop Units:

###### 4.01. General:

- A. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
- B. Shall utilize color-coded wiring.
- C. Shall include a central control terminal board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, and low and high pressure switches.
- D. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

###### 4.02. Safeties:

- A. Compressor over-temperature, over current.



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- B. Low-pressure switch.
  - 1. Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
- C. High-pressure switch.
  - 1. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

4.03. Automatic reset, motor thermal overload protector.

### Part 5: Sequence of Operations for HVAC Controls

Decentralized, Rooftop Units:

5.01. INSERT SEQUENCE OF OPERATION

### Part 6: Panel Air Filters

Decentralized, Rooftop Units:

6.01. Standard filter section

- A. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
- B. Unit shall use only one filter size. Multiple sizes are not acceptable.
- C. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification (23 81 19.13.H).

### Part 7: Self-Contained Air Conditioners

Small-Capacity Self-Contained Air Conditioners

7.01. General

- A. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty and gas combustion for heating duty.
- B. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
- C. Unit shall use environmentally safe, Puron® refrigerant.
- D. Unit shall be installed in accordance with the manufacturer's instructions.
- E. Unit must be selected and installed in compliance with local, state, and federal codes.

7.02. Quality Assurance

- A. Unit meets ASHRAE 90.1 minimum efficiency requirements.
- B. 3 phase units are Energy Star qualified.
- C. Unit shall be rated in accordance with AHRI Standards 340/360.
- D. Unit shall be designed to conform to ASHRAE 15, 2001.
- E. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
- F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
- H. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
- I. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001.
- J. Roof curb shall be designed to conform to NRCA Standards.
- K. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
- L. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
- M. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
- N. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
- O. High Efficient Motors listed shall meet section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).

7.03. Delivery, Storage, and Handling

- A. Unit shall be stored and handled per manufacturer's recommendations.



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- B. Lifted by crane requires either shipping top panel or spreader bars.
- C. Unit shall only be stored or positioned in the upright position.

### 7.04. Project Conditions

- A. As specified in the contract.

### 7.05. Project Conditions

- A. As specified in the contract.

### 7.06. Operating Characteristics

- A. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 340/360 at ± 10% voltage.
- B. Compressor with standard controls shall be capable of operation down to 35°F (2°C), ambient outdoor temperatures. Accessory low ambient kits shall be available if operation below 35°F (2°C), is required. See below for head pressure control package or winter start kit.
- C. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
- D. Unit shall be factory configured for vertical supply & return configurations.
- E. Unit shall be field convertible from vertical to horizontal airflow, no special kit required.
- F. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

### 7.07. Electrical Requirements

- A. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

### 7.08. Unit Cabinet

- A. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
- B. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
- C. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2-in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the heat compartment.
- D. Base of unit shall have a minimum of four locations for thru-the-base gas and electrical connections (factory installed or field installed), standard.
- E. Base Rail
  - 1. Unit shall have base rails on a minimum of 3 sides.
  - 2. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
  - 3. Holes shall be provided in the base rail for moving the rooftop by fork truck.
  - 4. Base rail shall be a minimum of 16 gauge thickness.
- F. Condensate pan and connections:
  - 1. Shall be an internally sloped condensate drain pan made of a non-corrosive material.
  - 2. Shall comply with ASHRAE Standard 62.
  - 3. Shall use a 3/4" - 14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
- G. Top panel:
  - 1. Shall be a single piece top panel.
- H. Electrical Connections
  - 1. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
  - 2. Thru-the-base capability
    - a. Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
    - b. Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
    - c. No basepan penetration, other than those authorized by the manufacturer, is permitted.
- I. Component access panels (standard)
  - 1. Cabinet panels shall be easily removable for servicing.

## Guide Specification for RTU5

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2. Unit shall have one factory installed, tool-less, removable, filter access panel.
3. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
4. Handles shall be UV modified, composite, permanently attached, and recessed into the panel.
5. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
6. Collars shall be removable and easily replaceable using manufacturer recommended parts.

### 7.09. Coils

#### A. Standard Aluminum Fin/Copper Tube Coils:

1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

### 7.10. Refrigerant Components

#### A. Refrigerant circuit shall include the following control, safety, and maintenance features:

1. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
2. Refrigerant filter drier.
3. Service gauge connections on suction and discharge lines.
4. Pressure gauge access through a specially designed access port in the top panel of the unit.

#### B. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug.

1. The plug shall be easy to remove and replace.
2. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
3. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
4. The plug shall be made of a leak proof, UV-resistant, composite material.

#### C. Compressors

1. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
2. Models shall be available with single compressor/single stage cooling design.
3. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
4. Compressors shall be internally protected from high discharge temperature conditions.
5. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal, motor overload device.
6. Compressor shall be factory mounted on rubber grommets.
7. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
8. Crankcase heaters shall not be required for normal operating range, unless provided by the factory.

### 7.11. Filter Section

- A. Filters access is specified in the unit cabinet section of this specification.
- B. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
- C. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
- D. Filters shall be standard, commercially available sizes.
- E. Only one size filter per unit is allowed.

### 7.12. Evaporator Fan and Motor

#### A. Evaporator fan motor:

1. Shall have permanently lubricated bearings.
2. Shall have inherent automatic-reset thermal overload protection or circuit breaker.

## Guide Specification for RTU5

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3. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
- B. Belt-driven Evaporator Fan:
  1. Belt drive shall include an adjustable-pitch motor pulley.
  2. Shall use sealed, permanently lubricated ball-bearing type.
  3. Blower fan shall be double-inlet type with forward-curved blades.
  4. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
  5. Standard on all 04-07 size and 04-06 size models with Humidi-MiZer. Optional on all 04-06 3-phase models.
- 7.13. Condenser Fans and Motors
  - A. Condenser fan motors:
    1. Shall be a totally enclosed motor.
    2. Shall use permanently lubricated bearings.
    3. Shall have inherent thermal overload protection with an automatic reset feature.
    4. Shall use a shaft-down design.
  - B. Condenser Fans:
    1. Shall be a direct-driven propeller type fan.
    2. Shall have galvalum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.
- 7.14. Special Features, Options and Accessories
  - A. Humidi-MiZer Adaptive Dehumidification System:
    1. The Humidi-MiZer Adaptive Dehumidification System shall be factory-installed and shall provide greater dehumidification of the occupied space by two modes of dehumidification operations beside its normal design cooling mode:
      - a. Subcooling mode further subcools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
      - b. Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase heat transfer in the system, resulting in a neutral leaving-air temperature when only humidity in the space is not satisfied.
      - c. Includes Head Pressure Controller.
  - B. Condenser Coil Hail Guard Assembly (Factory installed option on 3 phase models. Field installed on all 3 and 1 phase models)
    1. Shall protect against damage from hail.
    2. Shall be louvered design.
  - C. HACR Breaker
    1. These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units, with access cover to help provide environmental protection. On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.
  - D. Convenience Outlet:
    1. Non-Powered convenience outlet.
      - a. Outlet shall be powered from a separate 115/120v power source.
      - b. A transformer shall not be included.
      - c. Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
      - d. Outlet shall include 15 amp GFI receptacles with independent fuse protection.
      - e. Outlet shall be accessible from outside the unit.
      - f. Outlet shall include a field-installed "Wet in Use" cover.
  - E. Electric Heat:
    1. Heating Section
      - a. Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.

## Guide Specification for RTU5

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- b. Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.



## Unit Feature Sheet for RTU5

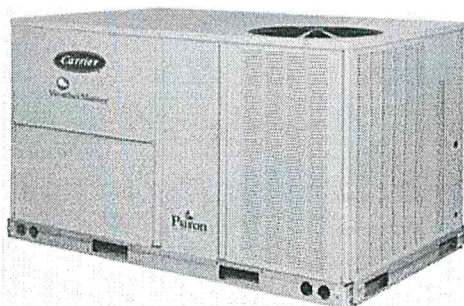
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### WeatherMaster® – 50HC

PACKAGED ROOFTOP ELECTRIC HEATING/ELECTRIC COOLING UNITS  
3, 4, 5, 6, 7.5, 8.5, 10 and 12.5 TONS



Optional Louvered Hail Guard Shown



#### WEATHERMASTER SERIES

WeatherMaster (50HC) units are high efficiency, single packaged electric heating, electric cooling units or cooling only models that are pre-wired and charged with Puron® (R-410) refrigerant. They are factory tested and rated in accordance with AHRI Standards 210/240 (04-06 sizes) and 340/360 (07-14 sizes). WeatherMaster units are designed in accordance with UL Standard 1995, and listed by UL or ETL.



-01-



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).

For a complete list of options and accessories refer to the product data catalog.

#### STANDARD FEATURES INCLUDE:

- Puron® (R-410A) HFC refrigerant charged
- ASHRAE 90.1 compliant and Energy Star qualified
- Scroll compressors with internal line break and overload protection
- Single-stage cooling capacity control on all 04-07 models
- Two-stage cooling capacity control on 07-14 models
- SEERs up to 15.6 and EERs up to 13.0
- IEERs up to 14.2 with single speed indoor fan motor
- IEERs up to 16.2 with 2-speed/VFD indoor fan motor
- TXV metering device on each independent circuit
- 04-06 models use X-13 (5 Speed/Torque) Direct Drive Motor standard
- Belt drive fan and pulley combinations – all three phase models
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE Standard 62, sloping design, side or center drain
- Standard cooling operation to 125°F (52°C) to 35°F (2°C)
- Units use high performance copper tube / aluminum fin condenser and evaporator coils
- Pre-painted exterior cabinet and primer-coated interior panels tested to 500 hours salt spray protection
- Fully insulated cabinet
- Low pressure and high pressure switch protected

#### MAINTENANCE FEATURES:

- Access panels with easy grip handles
- Innovative easy starting, no-strip screws on unit access panels
- Two-inch disposable return air filters and Tool-less filter access
- New terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement

#### INSTALLATION FEATURES:

- Thru-the-bottom power entry capability
- Single point electric connections
- Full perimeter base rail with built-in rigging adapters and fork slots
- Convertible from vertical to horizontal airflow for slab mounting
- Pre-engineered electric heaters with single point kit

#### STANDARD PARTS WARRANTY:

- 5-year parts on electric heaters
- 5-year parts on compressor
- 1-year parts
- Many optional upgrades also available

#### OPTIONS INCLUDE BUT ARE NOT LIMITED TO:

- PremierLink™ and Multi-Protocol Direct Digital Controls (DDC)
- ComfortLink controls (except on two stage 07 models and 11 size models with Humidi-MiZer)
- Supply and Return Air Smoke Detectors, high static motors
- Louvered condenser coil guards and coil coating options
- Economizer, disconnect and convenience outlet options
- Hinged access panels
- Humidi-MiZer adaptive dehumidification system
- Foil faced insulation throughout entire cabinet
- Low ambient cooling operation controls
- HACR circuit breaker
- Electric heaters
- Condensate overflow switch

## Spec Sheet for RTU5

Project: Marrero Harvey Senior Center REV-1  
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## **RTU4**

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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## **RTU4**

**Tag Cover Sheet  
Unit Report  
Certified Drawing  
Performance Report  
Guide Specification  
Unit Feature Sheet  
Spec Sheet**

## Unit Report For RTU4

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

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### Unit Parameters

Unit Model:.....50LC0A08A2M5-0A1D0  
Unit Size:.....08 (7.5 Tons)  
Volts-Phase-Hertz:.....230-3-60  
Heating Type:.....Electric  
Duct Cfg:.....Vertical Supply / Vertical Return  
Standard, No Electric Heat  
Three stage cooling capacity control with TXV and Humidi-  
MiZer

### Dimensions (ft. in.) & Weight (lb.) \*\*\*

Unit Length:.....9' 7.875"  
Unit Width:.....5' 3.375"  
Unit Height:.....4' 10.75"  
\*\*\* Total Operating Weight:.....1773 lb

\*\*\* Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

### Unit Configuration

Medium Static Belt Drive with VFD Controller  
Al/Cu - Al/Cu - Louvered Hail Guards  
Electro Mechanical Controls  
Unpowered Convenience Outlet  
Thru-The-Base Connections  
Standard Packaging  
Humidi-MiZer™ Adaptive Dehumidification System

### Warranty Information

5-Year compressor parts (STD.)  
1-Year parts (STD.)  
Complete Unit Year 2-5 Parts & Carrier CCS Labor

**NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.**

### Ordering Information

Part Number	Description	Quantity
50LC0A08A2M5-0A1D0	Rooftop Unit	1
<b>Accessories</b>		
CRHEATER294A00	Electric Heater	1
CRSINGLE049A00	Single Point Kit	1



Project: Marrero Harvey Senior Center REV-1  
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Prepared By:



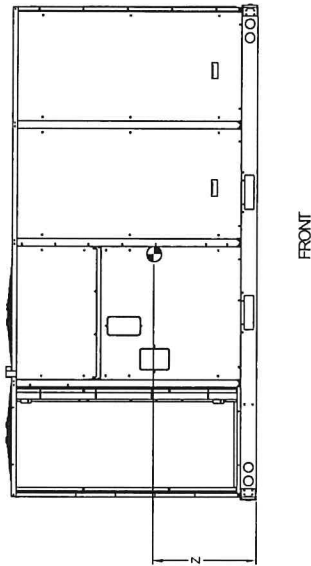
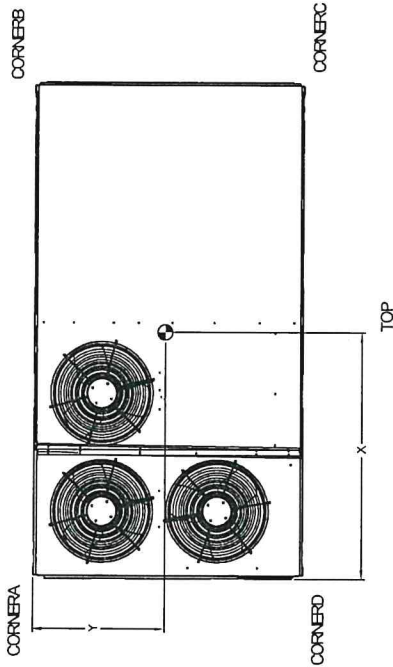
Certified Drawing for RTU4

Project: Marrero Harvey Senior Center REV-1  
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05/31/2018  
09:29AM

UNIT	STANDARD WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.	
	LES	KGS	LES	KGS	LES	KGS	LES	KGS	LES	KGS	X	Y
50LC08	1556	698	407	185	367	166	361	164	370	168	57(1448)	32(828)

STANDARD WEIGHTS WITH OUT ELECTRIC HEAT WITH OUT PACKAGING  
FOR OPTIONS ACCESSORIES REFER TO THE PRODUCT DATA LOG

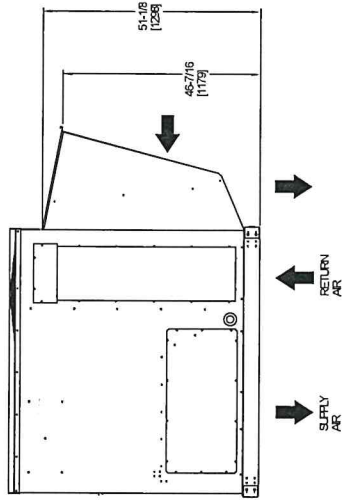
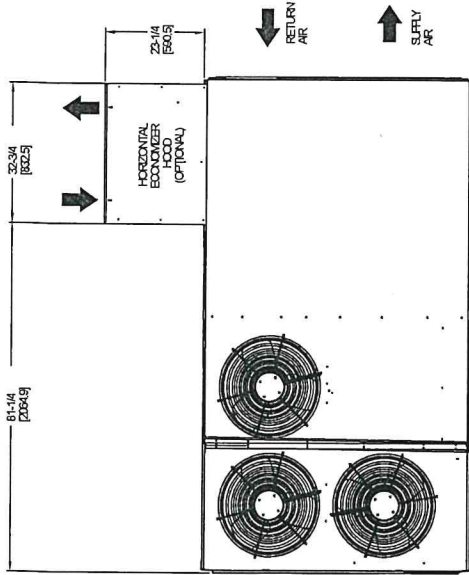


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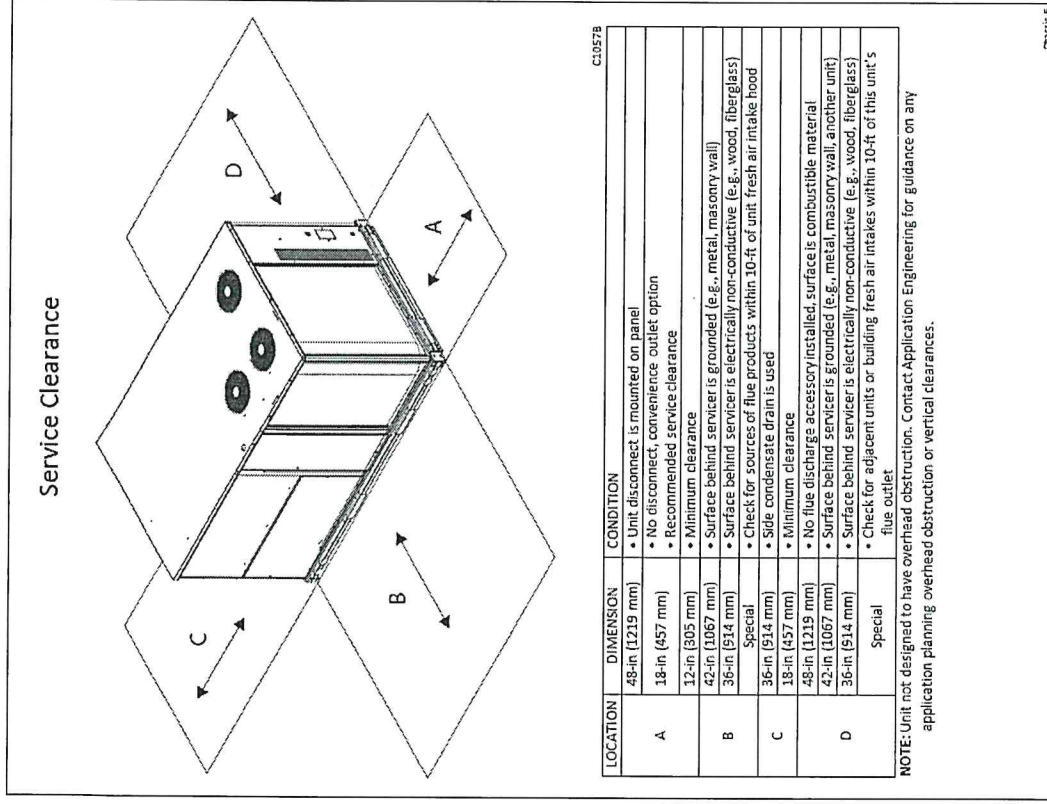


HORIZONTAL ECONOMIZER

SHEET	DATE	SUPPLIES	REV
20F2	05/08/13	-	A

## Certified Drawing for RTU4

05/31/2018  
 09:29AM



## Performance Summary For RTU4

Project: Marrero Harvey Senior Center REV-1  
Prepared By:

05/31/2018  
09:29AM

### Part Number:50LC0A08A2M5-0A1D0

ARI EER:.....13.00  
IEER (Max Cooling at Normal Cooling Design Mode):.....19.2

#### Base Unit Dimensions

Unit Length:.....115.9 in  
Unit Width:.....63.4 in  
Unit Height:.....58.8 in

#### Operating Weight

Base Unit Weight:.....1535 lb  
Three stage cooling capacity control with TXV and Humidi-MiZer:.....90 lb  
Medium Static Belt Drive with VFD Controller:.....45 lb  
Al/Cu - Al/Cu - Louvered Hail Guards:.....45 lb  
Unpowered Convenience Outlet:.....5 lb  
Thru-The-Base Connections:.....4 lb

#### Accessories

Electric Heater:.....25 lb  
Single Point Kit:.....24 lb

Total Operating Weight:.....1773 lb

#### Unit

Unit Voltage-Phase-Hertz:.....230-3-60  
Air Discharge:.....Vertical  
Fan Drive Type:.....Belt  
Actual Airflow:.....3400 CFM  
Site Altitude:.....0 ft

#### Cooling Performance

Condenser Entering Air DB:.....95.0 F  
Evaporator Entering Air DB:.....80.0 F  
Evaporator Entering Air WB:.....67.0 F  
Entering Air Enthalpy:.....31.44 BTU/lb  
Evaporator Leaving Air DB:.....59.3 F  
Evaporator Leaving Air WB:.....58.3 F  
Evaporator Leaving Air Enthalpy:.....25.21 BTU/lb  
Gross Cooling Capacity:.....95.33 MBH  
Gross Sensible Capacity:.....76.05 MBH  
Compressor Power Input:.....5.80 kW  
Coil Bypass Factor:.....0.018

#### Heating Performance

Heating Airflow:.....3400 CFM  
Entering Air Temp:.....70.0 F  
Leaving Air Temp:.....98.6 F  
Electric Heating Capacity:.....30.80 kW

#### Supply Fan

External Static Pressure:.....0.80 in wg  
Options / Accessories Static Pressure  
Electric Heaters:.....0.02 in wg  
Humidi-MiZer Dehumidification System:.....0.04 in wg  
Total Application Static (ESP + Unit Opts/Acc.):.....0.86 in wg  
Fan RPM:.....646  
Fan Power:.....1.44 BHP  
NOTE:.....Selected IFM RPM Range: 488 - 675

#### Electrical Data

Voltage Range:.....187 - 253



## Performance Summary For RTU4

Project: Marrero Harvey Senior Center REV-1  
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Compressor #1 RLA:	13.2
Compressor #1 LRA:	88
Compressor #2 RLA:	13.7
Compressor #2 LRA:	83
Actual Electric Heater kW:	30.8
Electric Heater FLA:	80.6
Indoor Fan Motor Type:	MED
Indoor Fan Motor FLA:	5.6
Power Supply MCA:	108
Power Supply MOCP (Fuse or HACR):	110
Disconnect Size FLA:	99
Disconnect Size LRA:	200
Electrical Convenience Outlet:	None
Outdoor Fan [Qty / FLA (ea)]:	3 / 1.8
Electric Heater Number of Stages:	2

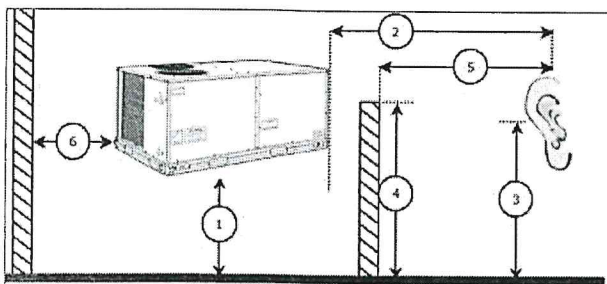
**Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage**

### Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.2	86.0	89.3
125 Hz	84.3	78.5	86.0
250 Hz	69.7	65.3	82.9
500 Hz	68.4	64.4	80.7
1000 Hz	66.3	62.5	78.5
2000 Hz	63.5	56.9	73.6
4000 Hz	64.1	54.3	69.6
8000 Hz	59.8	48.7	64.5
A-Weighted	74.0	68.6	83.0

### Advanced Acoustics



#### Advanced Acoustics Parameters

1. Unit height above ground:	30.0 ft
2. Horizontal distance from unit to receiver:	50.0 ft
3. Receiver height above ground:	5.7 ft
4. Height of obstruction:	0.0 ft
5. Horizontal distance from obstruction to receiver:	0.0 ft
6. Horizontal distance from unit to obstruction:	0.0 ft

### Detailed Acoustics Information

## Performance Summary For RTU4

Project: Marrero Harvey Senior Center REV-1  
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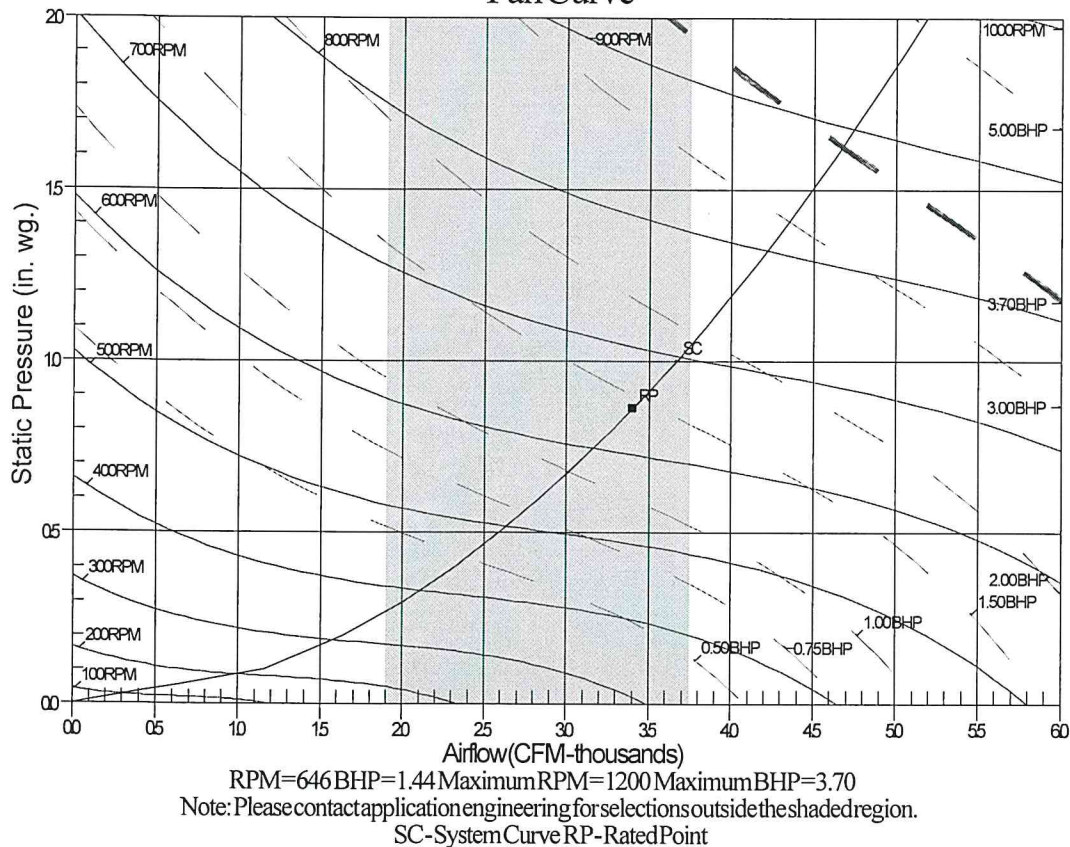
Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	89.3	86.0	82.9	80.7	78.5	73.6	69.6	64.5	92.2 Lw
B	63.1	69.9	74.3	77.5	78.5	74.8	70.6	63.4	83.2 LwA
C	56.9	53.6	50.5	48.3	46.1	41.2	37.2	32.1	59.8 Lp
D	30.7	37.5	41.9	45.1	46.1	42.4	38.2	31.0	50.8 LpA

### Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.

### FanCurve



## Guide Specification for RTU4

Project: Marrero Harvey Senior Center REV-1  
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### GUIDE SPECIFICATIONS – 50LC0A08A2M5-0A1D0

#### Weather Expert™ Ultra High Efficient Cooling Only/Electric Heat Packaged Rooftop

Size: 008

##### Part 1: Schedules for Decentralized HVAC Equipment

- 1.01. Rooftop unit schedule
  - A. Schedule is per the project specification requirements.

##### Part 2: HVAC Equipment Insulation

- 2.01. Evaporator fan compartment:
  - A. Interior cabinet surfaces shall be insulated with a minimum 1/2-in. thick, minimum 1 1/2 lb density aluminum foil-faced insulation on the air side.
  - B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- 2.02. Electric heat compartment:
  - A. Aluminum foil-faced fiberglass insulation shall be used.
  - B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

##### Part 3: Instrumentation and Control Devices for HVAC

###### Thermostats

- 3.01. Thermostat must
  - A. energize both "W" and "G" when calling for heat.
  - B. have capability to energize 3 different stages of cooling, and 1 and 2 different stages of heating.
  - C. include capability for occupancy scheduling.

##### Part 4: Electric DDC Control System for HVAC

- 4.01. General:
  - A. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
  - B. Shall utilize color-coded wiring.
  - C. Shall include a DDC electric control board, to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, and safety switches. Shall control all three stages of compressor logic, two or three stages of the indoor fan motor logic as well as staging of the outdoor fan motor. Shall also have a green LED indicator to indicate GO operation as well as a fault LED indicator for thermostat mis-wiring, no fan operation and safety switches..
  - D. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.
- 4.02. Safeties:
  - A. Compressor over-temperature, overcurrent.
  - B. Low-pressure switch.
    - 1. Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer



## Guide Specification for RTU4

Project: Marrero Harvey Senior Center REV-1  
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- and service technician to correctly wire and or troubleshoot the rooftop unit.
- C. High-pressure switch.
  - 1. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
- D. Automatic reset, motor thermal overload protector.

### Part 5: Sequence of Operations for HVAC Controls

INSERT SEQUENCE OF OPERATION

### Part 6: Panel Air Filters

- 6.01. Standard filter section
  - A. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
  - B. Unit shall use only one filter size. Multiple sizes are not acceptable.
  - C. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification.

### Part 7: Self-Contained Air Conditioners

Small-Capacity Self-Contained Air Conditioners (50LC\*\*07-12)

- 7.01. General
  - A. Outdoor, rooftop mounted, DDC electrically controlled, heating and cooling unit utilizing hermetic scroll compressors for cooling duty and gas combustion for heating duty.
  - B. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
  - C. Unit shall use environmentally safe, PuronR refrigerant.
  - D. Unit shall be installed in accordance with the manufacturer's instructions.
  - E. Unit must be selected and installed in compliance with local, state, and federal codes.
- 7.02. Quality Assurance
  - A. Unit meets and exceeds ASHRAE 90.1 minimum efficiency requirements.
  - B. Unit meets and exceeds Energy Star and Consortium for Energy Efficiency (CEE) requirements.
  - C. Unit shall be rated in accordance with AHRI Standards 340/360.
  - D. Unit shall be designed to conform to ASHRAE 15, 2001.
  - E. Unit shall be ETL/UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
  - F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
  - G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
  - H. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
  - I. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001.
  - J. Roof curb shall be designed to conform to NRCA Standards.
  - K. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
  - L. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
  - M. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
  - N. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
  - O. High Efficient Motors listed shall meet section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).
- 7.03. Delivery, Storage, and Handling
  - A. Unit shall be stored and handled per manufacturer's recommendations.
  - B. Lifted by crane requires either shipping top panel or spreader bars.
  - C. Unit shall only be stored or positioned in the upright position.
- 7.04. Project Conditions
  - A. As specified in the contract.



## Guide Specification for RTU4

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### 7.05. Operating Characteristics

- A. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 340/360 at  $\pm 10\%$  voltage.
- B. Compressor with standard controls shall be capable of operation down to 40°F (4°C) ambient outdoor temperatures. For lower operation an integrated economizer shall be utilized to allow lower temperatures and accommodate indoor air quality initiatives.
- C. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
- D. Unit shall be factory configured for vertical supply & return configurations.
- E. Unit shall be field convertible from vertical to horizontal airflow on all models. No special kit required on 07 models. Field installed supply duct kit required for 08-12 model only.
- F. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

### 7.06. Electrical Requirements

- A. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

### 7.07. Unit Cabinet

- A. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
- B. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
- C. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2-in. thick, 1 lb density, aluminum foil faced fiberglass insulation, Aluminum foil-faced fiberglass insulation shall also be used in the heat compartment.
- D. Base of unit shall have a minimum of four locations for thru-the-base gas and electrical connections (factory installed or field installed), standard.
- E. Base Rail
  - 1. Unit shall have base rails on a minimum of 4 sides.
  - 2. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
  - 3. Holes shall be provided in the base rail for moving the rooftop by fork truck.
  - 4. Base rail shall be a minimum of 16 gauge thickness.
- F. Condensate pan and connections:
  - 1. Shall be an internally sloped condensate drain pan made of a non-corrosive material.
  - 2. Shall comply with ASHRAE Standard 62.
  - 3. Shall use a 3/4" -14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
- G. Top panel:
  - 1. Shall be a single piece top panel on 07 sizes, two piece on 08-12 sizes.
- H. Electrical Connections
  - 1. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
  - 2. Thru-the-base capability
    - a. Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit base pan.
    - b. Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
    - c. No base pan penetration, other than those authorized by the manufacturer, is permitted.
- I. Component access panels (standard)
  - 1. Cabinet panels shall be easily removable for servicing.
  - 2. Unit shall have one factory installed, tool-less, removable, filter access panel.
  - 3. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
  - 4. Handles shall be UV modified, composite, permanently attached, and recessed into the panel.
  - 5. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.

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6. Collars shall be removable and easily replaceable using manufacturer recommended parts.

### 7.08. Coils

#### A. Standard Aluminum Fin/Copper Tube Coils:

1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved 5/16" diameter copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

### 7.09. Refrigerant Components

#### A. Refrigerant circuit shall include the following control, safety, and maintenance features:

1. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
2. Refrigerant filter drier.
3. Service gauge connections on suction and discharge lines.
4. Single circuit design with tandem compressor and fully activated evaporator coil

#### B. Compressors

1. Models shall use multiple fully hermetic scroll compressors optimized for comfort staging and IEER energy savings.
2. Models shall be available with a single refrigerant circuit and three stages of cooling operation on all models.
3. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
4. Compressors shall be internally protected from high discharge temperature conditions.
5. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal, motor overload device.
6. Compressor shall be factory mounted on rubber grommets.
7. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
8. Crankcase heaters shall be standard on each compressor and deactivated whenever a compressor is in operation.

### 7.10. Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

### 7.11. Evaporator Fan and Motor

#### A. Evaporator fan motor:

1. Shall have permanently lubricated bearings.
2. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
3. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
4. Shall be Variable Frequency duty to match the three stage compression logic.
5. Shall contain motor shaft grounding ring to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground.

#### B. Variable Frequency Drive (VFD). For indoor fan motor Staged Air Volume (SAV) operation:

1. Shall be installed inside the unit cabinet, mounted, wired and tested.
2. Shall contain Electromagnetic Interference (EMI) frequency protection.
3. Insulated Gate Bi-Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
4. Self diagnostics with fault and power code LED indicator. Field accessory Display Kit available for further diagnostics and special setup applications.

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5. RS485 capability standard.
6. Electronic thermal overload protection.
7. 5% swinging chokes for harmonic reduction and improved power factor.
8. All printed circuit boards shall be conformal coated.
9. Shall not contain visual display to adjust internal setting. Only available as field installed kit.

C. Belt-driven Evaporator Fan:

1. Belt drive shall include an adjustable-pitch motor pulley.
2. Shall use sealed, permanently lubricated ball-bearing type.
3. Blower fan shall be double-inlet type with forward-curved blades.
4. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

7.12. Condenser Fans and Motors

A. Condenser fan motors:

1. Shall be a totally enclosed - multi speed ECM motor..
2. Shall use permanently lubricated bearings.
3. Shall have inherent thermal overload protection with an automatic reset feature.
4. Shall use a shaft-down design on 07 models and shaft-up on 08-12 models with rain shield.

B. Condenser Fans:

1. Shall be a direct-driven propeller type fan.
2. Shall have galvanized aluminum (galvalum) blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

7.13. Special Features, Options and Accessories

A. Humidi-MiZer® Adaptive Dehumidification System:

1. The Humidi-MiZer Adaptive Dehumidification System shall be factory installed, certified and tested to provide greater dehumidification of the occupied space by providing two distinct modes of dehumidification operation in addition to its normal design cooling mode:
  - a. Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil as well as reheat leaving air stream. It can provide both better cooling capacity as well as dehumidification process when both temperature and humidity in the space are not satisfied.
  - b. Hot gas reheat mode shall mix a portion of hot gas from the discharge of compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase warm refrigerant in the reheat coil which results in a neutral leaving air temperature when only humidity in the space is not satisfied.

B. Condenser Coil Hail Guard Assembly (Factory or field installed)

1. Shall protect against damage from hail.
2. Shall be louvered design.

C. Convenience Outlet:

1. Non-Powered convenience outlet.
  - a. Outlet shall be powered from a separate 115/120v power source.
  - b. A transformer shall not be included.
  - c. Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
  - d. Outlet shall include 15 amp GFI receptacles with independent fuse protection.
  - e. Outlet shall be accessible from outside the unit.
  - f. Outlet shall include a field-installed "Wet in Use" cover.

D. Electric Heat:

1. Heating Section
  - a. Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
  - b. Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in

## Guide Specification for RTU4

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electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.



# Unit Feature Sheet for RTU4

Project: Marrero Harvey Senior Center REV-1  
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WeatherExpert®

- 50LC

## PACKAGED ROOFTOP ELECTRIC COOLING/ELECTRIC HEATING UNITS 6, 7.5, 8.5 and 10 TONS



Optional Economizer Shown

### WeatherExpert® - 50LC

50LC units are ultra high-efficiency, single-packaged electric cooling, with optional electric heating units. Units utilize three stages of cooling capacity control with matching indoor fan motors speed control. All models are available with belt drive indoor fan motors with Variable Frequency Drive (VFD) speed controller and Direct Drive - ECM outdoor fan motor. Models offer standard electro mechanical controls that use Carrier's Comfort Control Logic and LED indicators.

All units are factory tested in both heating and cooling modes, and rated in accordance with AHRI Standards 340/360.

### STANDARD FEATURES INCLUDE:

- Puron® (R-410A) HFC refrigerant factory charged
- IEER's up to 21.0 and EER's up to 13.7
- ASHRAE 90.1 compliant, Energy Star qualified
- Meets or exceeds CEE tier II performance criteria
- Three stage cooling capacity control with crankcase heaters
- Single refrigerant circuit with full face activated evaporator coil.
- Belt drive indoor fan and pulley system with Variable Frequency Drive (VFD) motor controller on all models
- High efficient ECM outdoor fan motor
- Sound levels as low as 82 dB.
- Precision sized TXV refrigerant metering devices
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE Standard 62, sloping design, side or center drain
- Standard ambient cooling operation down to 40°F (4°C) with lower operation range with integrated economizer. SystemVu™ controls allows operation down to 0°F (-18°C). All units operate up to and to 125°F (52°C).
- Designed in accordance with UL, Standard 1995
- High performance 5/16" diameter, internally enhanced copper tube / aluminum fin condenser and evaporator coils
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- Low pressure and high pressure switch protected.

### MAINTENANCE FEATURES:

- Access panels with easy grip handles and tool-less filter access door
- Innovative easy starting, no-strip screws on unit access panels
- Two-inch disposable return air filters

### INSTALLATION FEATURES:

- Thru-the-bottom power entry capability
- Single point electric connections
- Full perimeter base rail with built-in rigging adapters and fork slots
- Field convertible from vertical to horizontal airflow on all models. 08-12 models require an easy field installed supply duct kit.

### STANDARD LIMITED PARTS WARRANTY:

- 5-year compressor parts
- 5-year on electric heaters, 1-year parts, 3-year SystemVu™
- Many optional upgrades available

### OPTIONS/ACCY INCLUDE BUT ARE NOT LIMITED TO:

- Supply and Return air smoke detectors, high static motors
- Louvered condenser coil guards and coil coating options
- Economizer and convenience outlet options
- HACR breaker or non-fused disconnect switch
- Hinged access panels with quick turn latches and lift tabs
- Electric heaters
- Patented Humidi-Mizer® adaptive dehumidification system
- RTU Open multi-protocol DDC controller
- SystemVu Controls:
  - Large full text - multi line display
  - USB Flash Port for data transfer
  - Built in i-Vu®, CCN and BACnet®
  - Refrigerant pressure from display
  - Quick LED Status - Run, Alert, Fault
  - Conventional Stat or Sensor capabilities
  - Historical component runtime and starts



## Spec Sheet for RTU4

Project: Marrero Harvey Senior Center REV-1  
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## **RTU1-3**

Project: Marrero Harvey Senior Center REV-1  
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## **RTU1-3**

**Tag Cover Sheet  
Unit Report  
Certified Drawing  
Performance Report  
Guide Specification  
Unit Feature Sheet  
Spec Sheet**

## Unit Report For RTU1-3

Project: Marrero Harvey Senior Center REV-1  
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### Unit Parameters

Unit Model:.....50HC-B06A2M5-0A1B0  
Unit Size:.....06 (5 Tons)  
Volts-Phase-Hertz:.....230-3-60  
Heating Type:.....Electric  
Duct Cfg:.....Vertical Supply / Vertical Return  
Single stage cooling models with Humidi-MiZer

### Dimensions (ft. in.) & Weight (lb.) \*\*\*

Unit Length:.....6' 2.375"  
Unit Width:.....3' 10.75"  
Unit Height:.....3' 5.375"  
\*\*\* Total Operating Weight:.....686 lb

\*\*\* Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

### Lines and Filters

Condensate Drain Line Size:.....3/4  
Return Air Filter Type:.....Throwaway  
Return Air Filter Quantity:.....4  
Return Air Filter Size:.....16 x 16 x 2

### Unit Configuration

Medium Static Belt Drive  
Al/Cu - Al/Cu - Louvered Hail Guards  
Base Electromechanical Controls  
Unpowered Convenience Outlet  
HACR Breaker  
Standard Packaging  
Humidi-MiZer™ Adaptive Dehumidification System

### Warranty Information

5-Year compressor parts (STD.)  
1-Year parts (STD.)  
Complete Unit Year 2-5 Parts & Carrier CCS Labor  
Complete Unit 1st Year Carrier CCS Labor

**NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.**

### Ordering Information

Part Number	Description	Quantity
50HC-B06A2M5-0A1B0	Rooftop Unit	1
<b>Accessories</b>		
CRHEATER104B00	7.9/9.6/10.5 kW 208/230/240-1/3-60 Volt Electric Heater	2
CRSINGLE038A00	Single Point Kit	1



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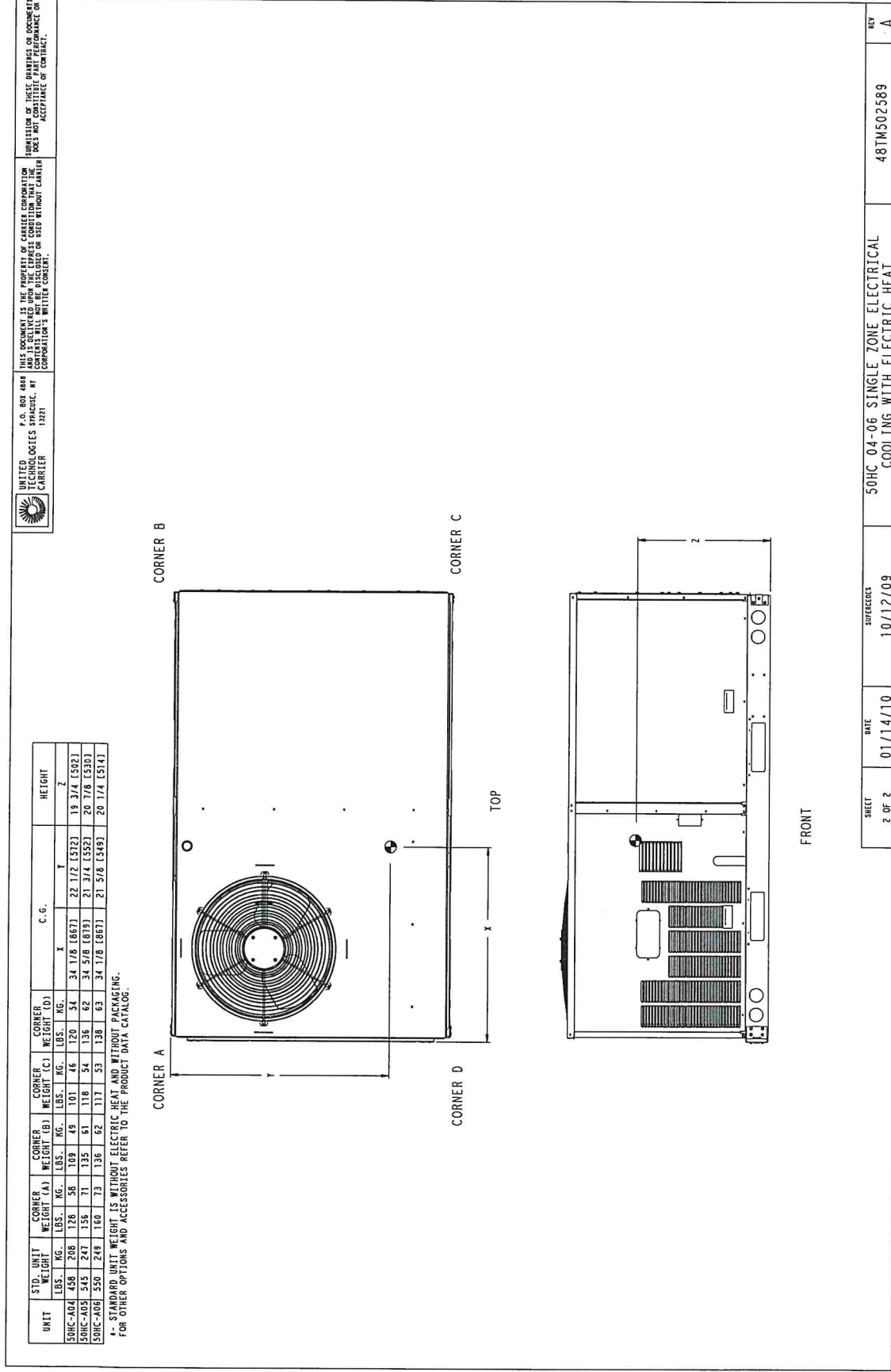
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Certified Drawing for RTU1-3

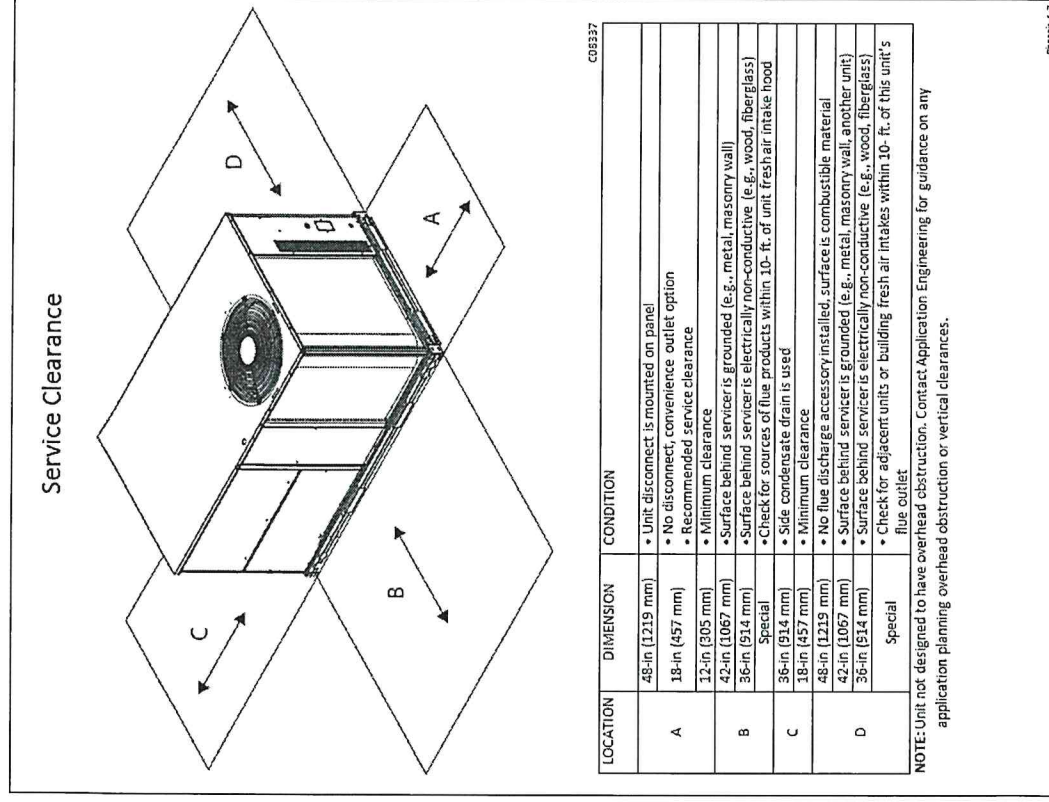
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## Certified Drawing for RTU1-3

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## Performance Summary For RTU1-3

Project: Marrero Harvey Senior Center REV-1  
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### Part Number:50HC-B06A2M5-0A1B0

ARI SEER:..... 15.20

#### Base Unit Dimensions

Unit Length:..... 74.4 in  
Unit Width:..... 46.8 in  
Unit Height:..... 41.4 in

#### Operating Weight

Base Unit Weight:..... 550 lb  
Single stage cooling models with Humidi-MiZer:..... 55 lb  
Medium Static Belt Drive:..... 10 lb  
Al/Cu - Al/Cu - Louvered Hail Guards:..... 16 lb  
Unpowered Convenience Outlet:..... 5 lb  
HACR Breaker:..... 10 lb

#### Accessories

7.9/9.6/10.5 kW 208/230/240-1/3-60 Volt Electric Heater:..... 30 lb  
Single Point Kit:..... 10 lb

Total Operating Weight:..... 686 lb

#### Unit

Unit Voltage-Phase-Hertz:..... 230-3-60  
Air Discharge:..... Vertical  
Fan Drive Type:..... Belt  
Actual Airflow:..... 2000 CFM  
Site Altitude:..... 0 ft

#### Cooling Performance

Condenser Entering Air DB:..... 95.0 F  
Evaporator Entering Air DB:..... 80.0 F  
Evaporator Entering Air WB:..... 67.0 F  
Entering Air Enthalpy:..... 31.44 BTU/lb  
Evaporator Leaving Air DB:..... 58.3 F  
Evaporator Leaving Air WB:..... 57.6 F  
Evaporator Leaving Air Enthalpy:..... 24.75 BTU/lb  
Gross Cooling Capacity:..... 60.20 MBH  
Gross Sensible Capacity:..... 46.80 MBH  
Compressor Power Input:..... 3.98 kW  
Coil Bypass Factor:..... 0.040

#### Heating Performance

Heating Airflow:..... 2000 CFM  
Entering Air Temp:..... 70.0 F  
Leaving Air Temp:..... 100.5 F  
Electric Heating Capacity:..... 19.30 kW

#### Supply Fan

External Static Pressure:..... 0.80 in wg  
Options / Accessories Static Pressure  
Electric Heaters:..... 0.17 in wg  
Humidi-MiZer Dehumidification System:..... 0.22 in wg  
Total Application Static (ESP + Unit Opts/Acc.):..... 1.20 in wg  
Fan RPM:..... 1365  
Fan Power:..... 1.77 BHP  
NOTE:..... Selected IFM RPM Range: 1035 - 1466

#### Electrical Data

Voltage Range:..... 187 - 253  
Compressor #1 RLA:..... 15.9



## Performance Summary For RTU1-3

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Compressor #1 LRA:	110
Actual Electric Heater kW:	19.3
Electric Heater FLA:	50.5
Indoor Fan Motor Type:	MED
Indoor Fan Motor FLA:	6.7
Power Supply MCA:	72
Disconnect Size FLA:	66
Disconnect Size LRA:	170
Electrical Convenience Outlet:	None
Outdoor Fan [Qty / FLA (ea)]:	1 / 1.4
Power Supply HACR:	80
Electric Heater Number of Stages:	2

### Electrical Data (Unit produced on or after May 18, 2015)

Indoor Fan Motor FLA:	8.3
Power Supply MCA:	74
Power Supply HACR:	80
Disconnect Size FLA:	68
Disconnect Size LRA:	185

May 18th and beyond units can be identified by serial number 2115XXXXXXXXXX and higher

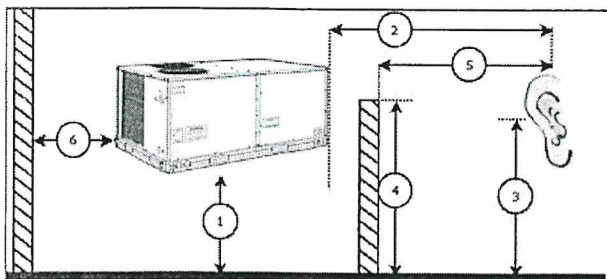
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

### Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	91.4	90.2	87.5
125 Hz	85.6	82.4	82.5
250 Hz	78.0	69.5	76.1
500 Hz	75.0	67.4	73.6
1000 Hz	74.3	69.3	71.3
2000 Hz	69.8	64.3	67.1
4000 Hz	71.2	60.0	64.1
8000 Hz	68.2	53.5	60.0
A-Weighted	79.9	73.8	77.0

### Advanced Acoustics



### Advanced Acoustics Parameters

1. Unit height above ground:	30.0 ft
2. Horizontal distance from unit to receiver:	50.0 ft
3. Receiver height above ground:	5.7 ft
4. Height of obstruction:	0.0 ft
5. Horizontal distance from obstruction to receiver:	0.0 ft
6. Horizontal distance from unit to obstruction:	0.0 ft

## Performance Summary For RTU1-3

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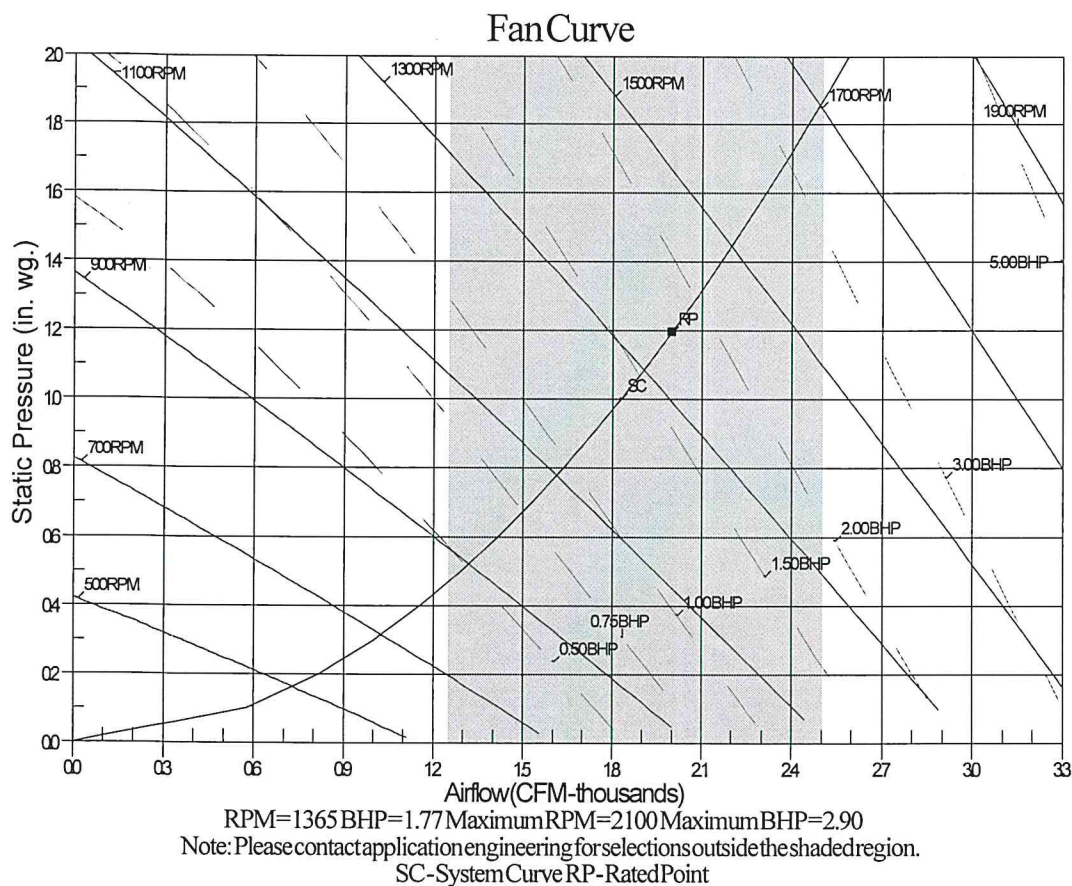
### Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0	89.2 Lw
B	61.3	66.4	67.5	70.4	71.3	68.3	65.1	58.9	76.7 LwA
C	55.1	50.1	43.7	41.2	38.9	34.7	31.7	27.6	56.8 Lp
D	28.9	34.0	35.1	38.0	38.9	35.9	32.7	26.5	44.3 LpA

#### Legend

A Sound Power Levels at Unit's Acoustic Center, Lw  
B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA  
C Sound Pressure Levels at Specific Distance from Unit, Lp  
D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.



## Guide Specification for RTU1-3

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### GUIDE SPECIFICATIONS – 50HC-B06A2M5-0A1B0

#### Cooling Only/Electric Heat Packaged Rooftop

##### HVAC Guide Specifications

Size: 006

##### Part 1: Schedules for Decentralized HVAC Equipment

Decentralized Unitary HVAC Equipment Schedule

###### 1.01. Rooftop unit schedule

- A. Schedule is per the project specification requirements.

##### Part 2: HVAC Equipment Insulation

Decentralized, Rooftop Units:

###### 2.01. Evaporator fan compartment:

- A. Interior cabinet surfaces shall be insulated with a minimum 1/2-in. thick, minimum 1 1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
- B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

###### 2.02. Electric heat compartment:

- A. Aluminum foil-faced fiberglass insulation shall be used.
- B. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

##### Part 3: Instrumentation and Control Devices for HVAC

Sensors and Transmitters

###### 3.01. Thermostats

- A. Thermostat must
  - 1. energize both "W" and "G" when calling for heat.
  - 2. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
  - 3. include capability for occupancy scheduling.

##### Part 4: Electric and Electronic Control System for HVAC

Decentralized, Rooftop Units:

###### 4.01. General:

- A. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
- B. Shall utilize color-coded wiring.
- C. Shall include a central control terminal board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, and low and high pressure switches.
- D. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

###### 4.02. Safeties:

- A. Compressor over-temperature, overcurrent.



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- B. Low-pressure switch.
  - 1. Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
- C. High-pressure switch.
  - 1. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

4.03. Automatic reset, motor thermal overload protector.

### Part 5: Sequence of Operations for HVAC Controls

Decentralized, Rooftop Units:

5.01. INSERT SEQUENCE OF OPERATION

### Part 6: Panel Air Filters

Decentralized, Rooftop Units:

6.01. Standard filter section

- A. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
- B. Unit shall use only one filter size. Multiple sizes are not acceptable.
- C. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification (23 81 19.13.H).

### Part 7: Self-Contained Air Conditioners

Small-Capacity Self-Contained Air Conditioners

7.01. General

- A. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty and gas combustion for heating duty.
- B. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
- C. Unit shall use environmentally safe, Puron® refrigerant.
- D. Unit shall be installed in accordance with the manufacturer's instructions.
- E. Unit must be selected and installed in compliance with local, state, and federal codes.

7.02. Quality Assurance

- A. Unit meets ASHRAE 90.1 minimum efficiency requirements.
- B. 3 phase units are Energy Star qualified.
- C. Unit shall be rated in accordance with AHRI Standards 340/360.
- D. Unit shall be designed to conform to ASHRAE 15, 2001.
- E. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
- F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
- H. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
- I. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001.
- J. Roof curb shall be designed to conform to NRCA Standards.
- K. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
- L. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
- M. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
- N. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
- O. High Efficient Motors listed shall meet section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).

7.03. Delivery, Storage, and Handling

- A. Unit shall be stored and handled per manufacturer's recommendations.



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- B. Lifted by crane requires either shipping top panel or spreader bars.
- C. Unit shall only be stored or positioned in the upright position.
- 7.04. Project Conditions
  - A. As specified in the contract.
- 7.05. Project Conditions
  - A. As specified in the contract.
- 7.06. Operating Characteristics
  - A. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 340/360 at ± 10% voltage.
  - B. Compressor with standard controls shall be capable of operation down to 35°F (2°C), ambient outdoor temperatures. Accessory low ambient kits shall be available if operation below 35°F (2°C), is required. See below for head pressure control package or winter start kit.
  - C. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
  - D. Unit shall be factory configured for vertical supply & return configurations.
  - E. Unit shall be field convertible from vertical to horizontal airflow, no special kit required.
  - F. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.
- 7.07. Electrical Requirements
  - A. Main power supply voltage, phase, and frequency must match those required by the manufacturer.
- 7.08. Unit Cabinet
  - A. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
  - B. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
  - C. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2-in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the heat compartment.
  - D. Base of unit shall have a minimum of four locations for thru-the-base gas and electrical connections (factory installed or field installed), standard.
  - E. Base Rail
    - 1. Unit shall have base rails on a minimum of 3 sides.
    - 2. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
    - 3. Holes shall be provided in the base rail for moving the rooftop by fork truck.
    - 4. Base rail shall be a minimum of 16 gauge thickness.
  - F. Condensate pan and connections:
    - 1. Shall be an internally sloped condensate drain pan made of a non-corrosive material.
    - 2. Shall comply with ASHRAE Standard 62.
    - 3. Shall use a 3/4" -14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
  - G. Top panel:
    - 1. Shall be a single piece top panel.
  - H. Electrical Connections
    - 1. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
    - 2. Thru-the-base capability
      - a. Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
      - b. Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
      - c. No basepan penetration, other than those authorized by the manufacturer, is permitted.
  - I. Component access panels (standard)
    - 1. Cabinet panels shall be easily removable for servicing.

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2. Unit shall have one factory installed, tool-less, removable, filter access panel.
3. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
4. Handles shall be UV modified, composite, permanently attached, and recessed into the panel.
5. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
6. Collars shall be removable and easily replaceable using manufacturer recommended parts.

### 7.09. Coils

#### A. Standard Aluminum Fin/Copper Tube Coils:

1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

### 7.10. Refrigerant Components

#### A. Refrigerant circuit shall include the following control, safety, and maintenance features:

1. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
2. Refrigerant filter drier.
3. Service gauge connections on suction and discharge lines.
4. Pressure gauge access through a specially designed access port in the top panel of the unit.

#### B. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug.

1. The plug shall be easy to remove and replace.
2. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
3. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
4. The plug shall be made of a leak proof, UV-resistant, composite material.

#### C. Compressors

1. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
2. Models shall be available with single compressor/single stage cooling design.
3. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
4. Compressors shall be internally protected from high discharge temperature conditions.
5. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal, motor overload device.
6. Compressor shall be factory mounted on rubber grommets.
7. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
8. Crankcase heaters shall not be required for normal operating range, unless provided by the factory.

### 7.11. Filter Section

- A. Filters access is specified in the unit cabinet section of this specification.
- B. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
- C. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
- D. Filters shall be standard, commercially available sizes.
- E. Only one size filter per unit is allowed.

### 7.12. Evaporator Fan and Motor

#### A. Evaporator fan motor:

1. Shall have permanently lubricated bearings.
2. Shall have inherent automatic-reset thermal overload protection or circuit breaker.

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3. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
- B. Belt-driven Evaporator Fan:
  1. Belt drive shall include an adjustable-pitch motor pulley.
  2. Shall use sealed, permanently lubricated ball-bearing type.
  3. Blower fan shall be double-inlet type with forward-curved blades.
  4. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
  5. Standard on all 04-07 size and 04-06 size models with Humidi-MiZer. Optional on all 04-06 3-phase models.
- 7.13. Condenser Fans and Motors
  - A. Condenser fan motors:
    1. Shall be a totally enclosed motor.
    2. Shall use permanently lubricated bearings.
    3. Shall have inherent thermal overload protection with an automatic reset feature.
    4. Shall use a shaft-down design.
  - B. Condenser Fans:
    1. Shall be a direct-driven propeller type fan.
    2. Shall have galvalum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.
- 7.14. Special Features, Options and Accessories
  - A. Humidi-MiZer Adaptive Dehumidification System:
    1. The Humidi-MiZer Adaptive Dehumidification System shall be factory-installed and shall provide greater dehumidification of the occupied space by two modes of dehumidification operations beside its normal design cooling mode:
      - a. Subcooling mode further subcools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
      - b. Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase heat transfer in the system, resulting in a neutral leaving-air temperature when only humidity in the space is not satisfied.
      - c. Includes Head Pressure Controller.
  - B. Condenser Coil Hail Guard Assembly (Factory installed option on 3 phase models. Field installed on all 3 and 1 phase models)
    1. Shall protect against damage from hail.
    2. Shall be louvered design.
  - C. HACR Breaker
    1. These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units, with access cover to help provide environmental protection. On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.
  - D. Convenience Outlet:
    1. Non-Powered convenience outlet.
      - a. Outlet shall be powered from a separate 115/120v power source.
      - b. A transformer shall not be included.
      - c. Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
      - d. Outlet shall include 15 amp GFI receptacles with independent fuse protection.
      - e. Outlet shall be accessible from outside the unit.
      - f. Outlet shall include a field-installed "Wet in Use" cover.
  - E. Electric Heat:
    1. Heating Section
      - a. Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.

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- b. Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.



## Unit Feature Sheet for RTU1-3

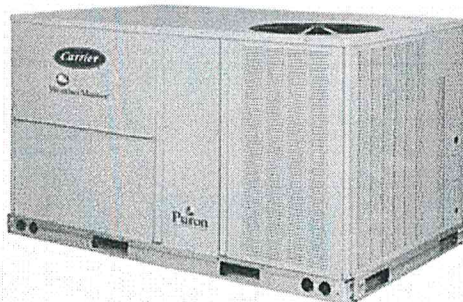
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### WeatherMaster® – 50HC

PACKAGED ROOFTOP ELECTRIC HEATING/ELECTRIC COOLING UNITS  
3, 4, 5, 6, 7.5, 8.5, 10 and 12.5 TONS



Optional Louvered Hail Guard Shown



#### WEATHERMASTER SERIES

WeatherMaster (50HC) units are high efficiency, single packaged electric heating, electric cooling units or cooling only models that are pre-wired and charged with Puron® (R-410) refrigerant. They are factory tested and rated in accordance with AHRI Standards 210/240 (04-06 sizes) and 340/360 (07-14 sizes). WeatherMaster units are designed in accordance with UL Standard 1995, and listed by UL or ETL.



-or-



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).

For a complete list of options and accessories refer to the product data catalog.

#### STANDARD FEATURES INCLUDE:

- Puron® (R-410A) HFC refrigerant charged
- ASHRAE 90.1 compliant and Energy Star qualified
- Scroll compressors with internal line break and overload protection
- Single-stage cooling capacity control on all 04-07 models
- Two-stage cooling capacity control on 07-14 models
- SEERs up to 15.6 and EERs up to 13.0
- IEERs up to 14.2 with single speed indoor fan motor
- IEERs up to 16.2 with 2-speed/VFD indoor fan motor
- TXV metering device on each independent circuit
- 04-06 models use X-13 (5 Speed/Torque) Direct Drive Motor standard
- Belt drive fan and pulley combinations – all three phase models
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE Standard 62, sloping design, side or center drain
- Standard cooling operation to 125°F (52°C) to 35°F (2°C)
- Units use high performance copper tube / aluminum fin condenser and evaporator coils
- Pre-painted exterior cabinet and primer-coated interior panels tested to 500 hours salt spray protection
- Fully insulated cabinet
- Low pressure and high pressure switch protected

#### MAINTENANCE FEATURES:

- Access panels with easy grip handles
- Innovative easy starting, no-strip screws on unit access panels
- Two-inch disposable return air filters and Tool-less filter access
- New terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement

#### INSTALLATION FEATURES:

- Thru-the-bottom power entry capability
- Single point electric connections
- Full perimeter base rail with built-in rigging adapters and fork slots
- Convertible from vertical to horizontal airflow for slab mounting
- Pre-engineered electric heaters with single point kit

#### STANDARD PARTS WARRANTY:

- 5-year parts on electric heaters
- 5-year parts on compressor
- 1-year parts
- Many optional upgrades also available

#### OPTIONS INCLUDE BUT ARE NOT LIMITED TO:

- PremierLink™ and Multi-Protocol Direct Digital Controls (DDC)
- ComfortLink controls (except on two stage 07 models and 11 size models with Humidi-MiZer)
- Supply and Return Air Smoke Detectors, high static motors
- Louvered condenser coil guards and coil coating options
- Economizer, disconnect and convenience outlet options
- Hinged access panels
- Humidi-MiZer adaptive dehumidification system
- Foil faced insulation throughout entire cabinet
- Low ambient cooling operation controls
- HACR circuit breaker
- Electric heaters
- Condensate overflow switch

## Spec Sheet for RTU1-3

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