



**INVITATION TO BID
JANUARY 16, 2018**

BID TITLE: LIBRARY CHILLER REPLACEMENT BID #: B00118
BID OPENING DATE: FRIDAY, FEBRUARY 2, 2018 at 2:00 pm.
BID/PERFORMANCE/PAYMENT BONDS REQUIRED: NO

The City of Staunton is seeking written sealed bids from qualified contractors to remove an existing Carrier Liquid Chiller, Model 30GT-070 and replace with a Carrier AquaSnap, Model 30RAP0706D-0L3H4. NO EXCEPTIONS. All work will be done at the City of Staunton Library, 1 Churchville Ave., Staunton Virginia. All work shall be in accordance with the specifications contained herein. Any questions regarding the specifications for this bid should be directed to Timothy C. Powell, Facility Services/Refuse Superintendent, at (540) 332-3882, powelltc@ci.staunton.va.us.

Please submit bid for lowest price and best delivery for items and services requested. Advise what discount, if any, will be allowed for payment within a specified time. Terms and delivery date must be specified.

Right is reserved to accept or reject bids on each item separately or as a whole, to reject any or all bids, to waive informalities or irregularities, to negotiate contract terms and options with the successful low bidder, and to contract for the bid to other than the lowest bidder in the best interest of the City of Staunton to the extent allowable by law.

The City does not discriminate against small and minority businesses or faith-based organizations.

All bids must be submitted in a sealed envelope plainly marked, Bid No. **"B00118 – LIBRARY CHILLER REMOVAL AND REPLACEMENT"**, with the name and address of the bidder in the upper left-hand corner and accompanied by complete specifications for the items offered. **E-Mail and facsimile responses are not acceptable.** No responsibility will attach the Owner or any official or employee thereof for the pre-opening of, post-opening of, or the failure to open a proposal not properly addressed and identified.

BIDS RECEIVED AFTER THE DATE AND TIME SPECIFIED WILL BE REJECTED
BIDS MUST BE SEALED, MARKED, AND DELIVERED TO:

Mail To:
City of Staunton
Cameron S. McCormick
Assistant Director of Finance
P.O. Box 58
Staunton, VA 24402-0058

Overnight To:
City of Staunton
Cameron S. McCormick
Assistant Director of Finance
116 W Beverley St., 3rd Floor
Staunton, VA 24401

Phone: (540) 332-3948

**CITY OF STAUNTON
PURCHASING DEPARTMENT
GENERAL TERMS, CONDITIONS, AND INSTRUCTIONS**

1. SUBMISSION AND RECEIPT OF BIDS:
 - (A) Bids, to receive consideration, must be received prior to the specified time and date of opening as designated in the invitation. E-mail and facsimile submittals are not acceptable.
 - (B) Unless otherwise specified, bidders must use the bid form furnished by the City. Failure to do so may cause bid to be rejected. Removal of any part of the bid form may invalidate the bid.
 - (C) Bids having any erasures, corrections, or typewriter opaquing fluid are not acceptable and will result in rejection of the bid. Prior to submission or opening, errors may be crossed out, corrections entered in ink and initialed in ink by the person signing the bid. No bid shall be altered or amended after the specified time for opening.
 - (D) All bids shall be either typewritten or filled in with ink in order to be considered. Also, all bids must be signed in ink in order to be considered.
 - (E) Bids concerning separate bid invitations must not be combined on the same form or placed in the same envelope. Bids submitted in violation of this provision may not be considered.
 - (F) When specified, each bid shall be accompanied by a bid bond with surety satisfactory to the City or a cashier's or certified check, made payable to the Treasurer, City of Staunton, in an amount equal to 5 per cent of the total bid price. In the event of default by the bidder the 5 per cent deposit shall be and represent liquidated damages to the City.
2. ANNUAL CONTRACT USAGE REQUIREMENTS: Whenever a bid is sought seeking a source of supply for an annual contract for products or services, the quantities or usage shown are estimates only. No guarantee or warranty is given or implied by the City of Staunton as to the total amount that may or may not be purchased from any resulting contracts.
3. PRICING:
 - (A) Bidder warrants by virtue of bidding that prices, terms, and conditions quoted in his bid will be firm for acceptance for a period of sixty (60) days from the date of bid opening unless otherwise stated by the City or bidder.
 - (B) Prices should be stated in units of quantity as specified in the bid form. In case of error in extension of prices in the bid, the unit price shall govern.
 - (C) Bids based on a firm price or those including a "Downward Escalator" clause for an annual contract period may be given preference over lower ones bearing an "Escalator" clause for an annual contract period.
 - (D) When an annual contract is not requested by the City, and the bid is for products or services to be delivered on a one time only or staggered basis, only firm pricing shall be given consideration. General terms such as "Price in effect at time of delivery" shall be cause for rejection of bid.
4. PERFORMANCE BOND: When requested in the bid, the City shall require the successful bidder to furnish a performance bond and labor and material payment bond with surety satisfactory to the City in the amount of contract price at the time of or prior to execution of the contract. If no bond is furnished by the successful bidder, the City reserves the right to award the contract to the next lowest responsible bidder with the next lowest responsive bid.
5. DELIVERY POINT: All items shall be delivered F.O.B. destination, and delivery costs and charges included in the bid price. Failure to do so may be cause for rejection of bid. The bidder shall assume all liability and responsibility for the delivery of merchandise in good condition to the specified delivery location(s).
6. CASH DISCOUNTS: Cash discounts will be considered in determining the award.
7. BRAND NAMES: Unless otherwise provided in the invitation for bid, the name of a certain brand, make, or manufacturer does not restrict bidders to the specific brand, make, or manufacture mentioned; it conveys the general style, type, character, and quality of the equipment desired. The City shall determine in its sole discretion equipment bid to be equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted.
8. SPECIFICATIONS: The bidders must also indicate any variances from our specification and/or conditions, NO MATTER HOW SLIGHT. If variations are not stated in the bid, it will be assumed that the product or service fully complies with our specifications. The Purchasing Department is not responsible for locating or securing any information which is not included in the bid. Accordingly, to insure that sufficient information is available, the bidder must furnish as part of his bid all descriptive material, (i.e., Catalog Cuts, illustrations, drawings, specifications, or other information) necessary for the Purchasing Department to determine whether the goods or services offered meet the salient characteristic requirements of the bid.
9. LATEST MODEL/QUALITY: Bidder shall bid on the latest model, design, etc. of this type of equipment by the manufacturer of which he represents. Equipment shall be new and unused.
10. NOTICE OF AWARD: Notice of award will be posted at <http://www.staunton.va.us/solicitation-results>.

**CITY OF STAUNTON
BID FORM**

Carrier AquaSnap, Model 30RAP0706D-0L3H4**NO EXCEPTIONS, Delivered and Installed:**

\$ _____

Removal and Disposition of Existing Chiller:

\$ _____

TOTAL:

\$ _____

Option #1, Install Shot Feeder Chill Water System

\$ _____

Guaranteed Installation Date: _____**Warranty Provided:** _____**SEE ATTACHED SPECIFICATIONS**

OFFER

To Purchasing Department:

In compliance with the bid information, the undersigned offers and agrees, if this offer is accepted within _____ calendar days (30 calendar days unless a different period is inserted by the purchaser) from the bid open date specified above, to furnish any or all items upon which prices are offered, at the price set opposite each item, delivered at the designated point(s), within the time specified.

FOB: Staunton

TERMS: _____

COMPANY NAME _____

BY: _____

PRINTED NAME

SIGNATURE

STREET ADDRESS _____

CITY AND STATE _____

STATE CONTRACTOR LICENSE NO/TYPE _____

SCC NUMBER. _____

E-MAIL. _____

PHONE: _____ FAX: _____

LIBRARY CHILLER REMOVAL AND REPLACEMENT SPECIFICATIONS

The City of Staunton is requesting sealed bids from qualified contractors to supply all material, equipment, labor, insurance and supervision to remove an existing Carrier Liquid Chiller, Model 30GT-070 and replace with a Carrier AquaSnap, Model 30RAP0706D-0L3H4. NO EXCEPTIONS. Installation shall be turn-key and bids shall include all necessary labor, parts, equipment and controls for full-system operation. Features for the equipment to be installed are included at end of this bid. Installation shall be in accordance with the manufacturer's specifications and all other specifications contained herein.

All interested contractors are required to visit the site at 1 Churchville Ave., Staunton, Virginia prior to submitting quotes. **Site visits may be arranged by contacting Tim Powell at 540-332-3882 or by e-mail at powelltc@ci.staunton.va.us. All site visits must be completed by Friday, January 26, 2018.** At the time quotes are received, each contractor will be presumed to have inspected the job site and satisfied himself as to the nature and location of the work, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, the general conditions and all other matters which in any way affect the work under this contract.

No verbal agreement or conversation with any officer, agent, or employee of the City either before or after the execution of this contract shall affect or modify any of the terms or obligations herein contained.

NOTE: New Chiller shall be completely installed and fully operational by April 30, 2018.

Technical Details:

1. New Carrier AquaSnap Chiller shall be an Air-Cooled Scroll Chiller and include the factory and field installed option listed below. See Carrier Submittal Appendix "A" at the end of this Invitation to Bid for additional information. Installation shall comply with the manufacturer's specifications and must meet all applicable local, state and national codes.

Factory and Field Installed Options:

Ordering Information

Part Number	Description	Quantity
30RAP0706D-0L3H4	Packaged Chiller, Including the Following Listed Options (*)	1
	*Base Unit, 460V - 3 Ph - 60 Hz	
	*Evaporator Heater	
	*Non-Fused Disconnect	
	*Suction Service Valves	

	*Micro Channel Condenser Coil	
	*Low Sound	
	*Low Ambient Head Pressure Control	
	*Security Grilles/Hail Guards	
	*GFI Convenience Outlet	
	*Single Point Power	
	*Fixed Speed Condenser Fan	
Field Installed Accessories		
38AP-900---005	Wind Baffle	1
30RA-900---005	Vibration Isolation Package	1

- Contractor must list guaranteed installation completion date on the bid sheet.
- Remove and discard the existing Carrier Liquid Chiller, Model 30GT-070 by best means possible.
- Contractor shall furnish all necessary materials needed for complete installation and shall be responsible for ensuring that such materials and associated installation methods meet all applicable local, state, and Federal codes.
- Option #1:** Install Chemical Shot Feeder on Chill Water System. New shot feeder shall be Vector Industries, Inc, Model FA700, 200 psi, 2 gallon feeder or equal.

Note: The City of Staunton will be responsible for disconnecting and reconnecting the existing TAC system controls as necessary for removal and replacement of the new chiller.

General Conditions:

- Contractor shall provide, with their bid submission, a listing of previous clients that may be contacted as a reference. The contractor must have a minimum experience of three (3) projects of similar size and complexity that have been completed within the last two (2) years. Include customer name, project description and telephone number.
- Contractor shall provide all warranties including equipment, material defects, appearance, workmanship and performance. Warranties must be of industry standards but not less than one (1) year and will not commence until the City has given the successful bidder written acceptance of the product and its installation.
- Following installation of the new chiller and at no additional cost to the City, the contractor shall provide on-site training for City staff and maintenance contractor in the care, cleaning, programming and maintenance of the new chiller.

4. All paperwork, including but not limited to, brochures, equipment specifications, and installation and maintenance manuals shall be provided to the City upon completion and before final payment is made.
5. The contractor shall specify environmental requirements, if any, which the City will need to meet prior to starting the work, e.g., power, water or space needs etc.
6. During the course of the work, the contractor shall cause as little inconvenience as possible to the public, City employees or scheduled activities within the building, and will maintain the work site free from any conditions that may result in danger or nuisance to the public, City employees or their daily work schedule.
7. The successful contractor must obtain, at his or her own cost, a City of Staunton business license and any required City Permits before beginning work. License and Permits may be obtained at the City Hall, 116 West Beverley Street, Staunton.
8. Bid Addenda - Prior to submitting their bid, it is the bidder's responsibility to check the City web-site for any addenda associated with this Invitation for Bid.
9. Appropriate City personnel will make payment for all completed work only after final approval and acceptance of the work completed.
10. A tax-exempt certificate will be provided to the successful contractor on request.
11. Insurance - Contractor agrees to provide the City of Staunton a copy of their General Liability, Vehicle Liability, and Worker's Compensation Insurance prior to beginning work. Insurance shall be in amounts not less than \$1,000,000, \$500,000, and \$500,000 respectively or such other insurance as is satisfactory and may be approved by the City. Insurance shall be written by companies licensed to do business in the Commonwealth of Virginia and shall list the City as an additional insured.
12. Hold Harmless: The Contractor shall indemnify, defend and hold harmless the City, its members of Council, officers, directors, agent and employees, against any and all claims, liabilities, losses, damages, costs and expenses (including reasonable attorney fees) arising out of, or resulting from any and all injuries to persons or damage to property arising out of services performed hereunder or by reason of the intentional or negligence acts or omissions of the Contractor, its employees, agents or sub-consultants, including any independent contractors. The provisions of this section of the Agreement shall survive the completion, termination or expiration of the Agreement.
13. Drug Free Workplace: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv)

include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000.00, so that the provisions will be binding upon each subcontractor or vendor.

14. Non-Discrimination

- a. During the performance of this contract, the contractor agrees as follows:
 - i. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and the applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - ii. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
 - iii. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- b. The contractor will include the provisions of the foregoing paragraphs i, ii and iii in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

15. Immigration Reform and Control Act Of 1986 – During the performance of this contract, contractor agrees that they will not, and shall not knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986. (per 2.2-4311.1)

16. Forum Selection: Any action, proceeding, or claim in any way related to this agreement or the relationship between the parties shall be filed and maintained solely in the General District Court or the Circuit Court of the City of Staunton, Virginia.

17. Prompt Payment Act: Any contract awarded as a result of this bid shall incorporate the terms and conditions of Article 4 of the Virginia Public Procurement Act with respect to Prompt Payment.

18. Negotiation with Successful Bidder: The City reserves the right to negotiate contract terms with the successful contractor for items/services other than those specifically stated in this Invitation to Bid in the best interest of the City and agreed to by the contractor in accordance with section 2.2-4318 of the Code of Virginia. Additional work of reasonable scale shall be priced consistent with proposal to allow for additions and future expansions.

19. Pursuant to Code of Virginia, §2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.



SUBMITTAL

Project

City of Staunton Library

Date

Tuesday, December 12, 2017

General Contractor

Mechanical Contractor

Mechanical Engineer

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Prepared By:

12/12/2017
01:36PM

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CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

CH-1

**Tag Cover Sheet
Unit Report
Certified Drawing
Wiring Diagram
Performance Report
Acoustic Summary
Detailed Performance Report**

Unit Report For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

Unit Information

Tag Name:.....**CH-1**
 Model Number:.....**30RAP070**
 Condenser Type:.....**Air Cooled**
 Compressor Type:.....**Scroll**
 Nameplate Voltage:.....**460-3-60** V-Ph-Hz
 Quantity:.....**1**
 Manufacturing Source:.....**Charlotte, NC USA**
 Refrigerant:.....**R410A**
 Independent Refrigerant Circuits:.....**2**
 Capacity Control Steps:.....**5**
 Minimum Capacity:.....**20.0** %
 Shipping Weight:.....**3406** lb
 Operating Weight:.....**3460** lb
 Unit Length:.....**151** in
 Unit Width:.....**88** in
 Unit Height:.....**78** in

Accessories and Installed Options

Evaporator Heater
 Non-Fused Disconnect
 Suction Service Valves
 Micro Channel
 Low Sound
 Low Ambient Head Pressure Control
 Security Grilles/Hail Guards
 GFI Convenience Outlet
 Single Point
 Fixed Speed Condenser Fan
 Wind Baffle
 Vibration Isolation Package

Chiller Warranty Information (Note: for US & Canada only)

First Year - Parts Only (Standard)
 Start-up, First Unit
 Compressor Year 2-5 Parts Only

Ordering Information

Part Number	Description	Quantity
30RAP0706D-0L3H4	Packaged Chiller	1
	Base Unit	
	Evaporator Heater	
	Non-Fused Disconnect	
	Suction Service Valves	
	Micro Channel	
	Low Sound	
	Low Ambient Head Pressure Control	
	Security Grilles/Hail Guards	
	GFI Convenience Outlet	
	Single Point	
	Fixed Speed Condenser Fan	
38AP-900---005	Wind Baffle	1
30RA-900---005	Vibration Isolation Package	1

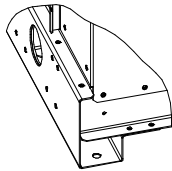
Certified Drawing for CH-1

Project: City of Staunton Library
Prepared By:

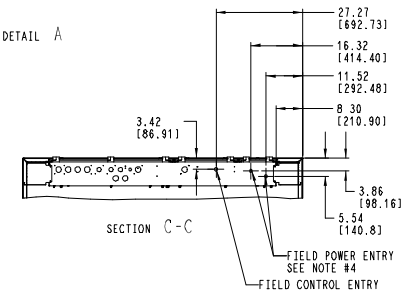
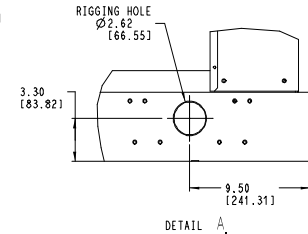
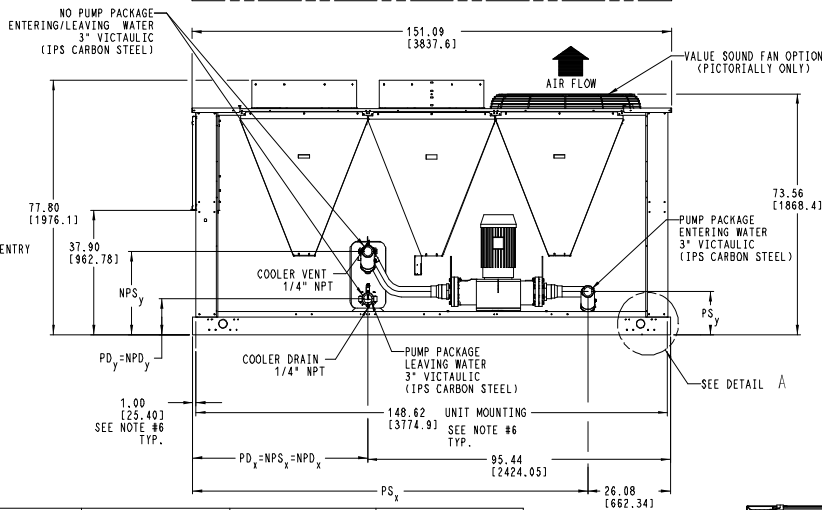
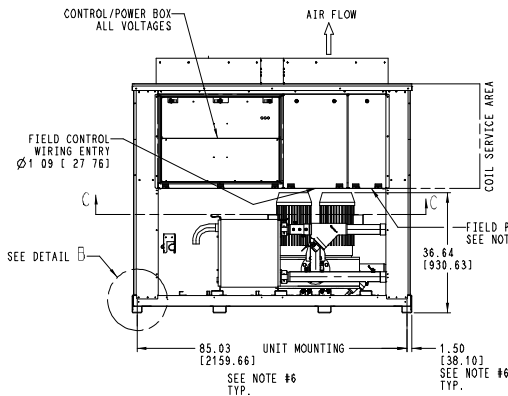
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NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:

- TOP - DO NOT RESTRICT
- SIDES AND END - 6" FROM SOLID SURFACE, FOR AIRFLOW
- SIDE - 8" REQUIRED FOR COIL SERVICE AREA
- 2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUME FOR DRAINING.
- 3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE, LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
- 4. TWO Ø7/8(22.4) PILOT HOLES PROVIDED FOR LOCATING FIELD POWER WIRING. ACTUAL HOLE REQUIRED DEPENDS ON FIELD WIRE SIZING.
- 5. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.
- 6. Ø0.524 (13.3) HOLE USED FOR MOUNTING UNITS.
- 7. VICTAULIC CONNECTION SIZING INFORMATION IS CONSISTENT WITH IPS CARBON STEEL PIPING.



DETAIL B



	WEIGHT MCHX lb/kg	MAX. WEIGHT MCHX PUMP lb/kg	WEIGHT AL-CU lb/kg	MAX. WEIGHT AL-CU PUMP lb/kg	WEIGHT CU-CU lb/kg	MAX. WEIGHT CU-CU PUMP lb/kg	CENTER OF GRAVITY		PUMP SUCTION (PS)			PUMP DISCHARGE (PD)			NOPUMP SUCTION (NPS)			NOPUMP DISCHARGE (NPD)		
							CG _x INCH (MM)	CG _y INCH (MM)	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25
30RAP-070	3356/ 1522	3991/ 1810	3705/ 1680	4340/ 1968	4305/ 1952	4940/ 2240	85 (2159)	41.5 (1054)	124.5 [3162.3]	13.1 [333.7]	2.0 [50.8]	55.2 [1401.7]	10.9 [277.1]	3.0 [76.2]	55.2 [1401.7]	25.5 [647.7]	3.0 [76.2]	55.2 [1401.7]	10.9 [277.1]	3.0 [76.2]
30RAP-080	3579/ 1623	4289/ 1945	4002/ 1815	4637/ 2103	4722/ 2141	5357/ 2429	82.5 (2096)	41.5 (1054)	124.5 [3162.3]	13.1 [333.7]	2.0 [50.8]	55.2 [1401.7]	11.0 [279.4]	3.0 [76.2]	55.2 [1401.7]	25.5 [647.7]	3.0 [76.2]	55.2 [1401.7]	11.0 [279.4]	3.0 [76.2]
30RAP-090	3605/ 1635	4310/ 1955	4028/ 1826	4663/ 2114	4748/ 2153	5383/ 2441	82.5 (2096)	41.5 (1054)	124.5 [3162.3]	13.1 [333.7]	2.0 [50.8]	55.2 [1401.7]	12.0 [305.6]	3.0 [76.2]	55.2 [1401.7]	34.4 [873.6]	3.0 [76.2]	55.2 [1401.7]	12.0 [305.6]	3.0 [76.2]



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DATE	SUPERCEDES	30RAP-70,80 AND 90 AIR COOLED CHILLERS	30RA555557	REV
02/09/15	I			J

Field Wiring Diagram for CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

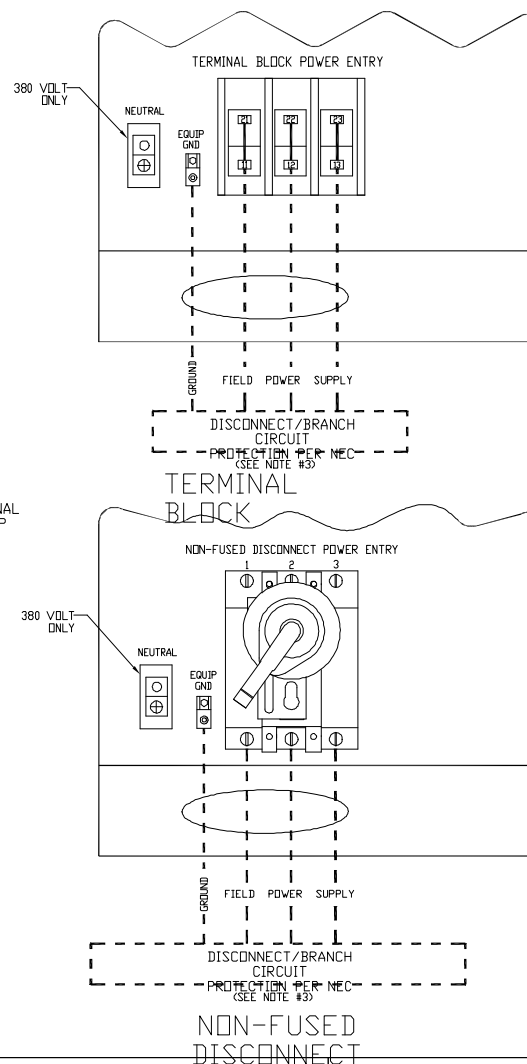
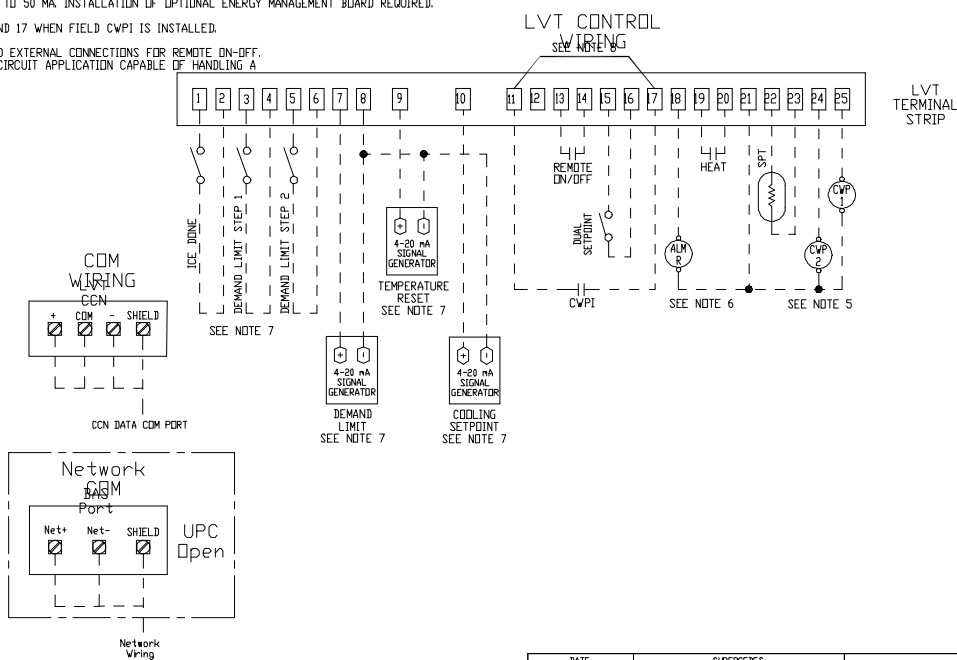
NOTES:

- FACTORY WIRING IS IN ACCORDANCE WITH UL 1995 STANDARDS. FIELD MODIFICATIONS OR ADDITIONS MUST BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
- ALL UNITS OR MODULES HAVE SINGLE POINT PRIMARY POWER CONNECTION. MAIN POWER MUST BE SUPPLIED FROM A FIELD OR FACTORY SUPPLIED DISCONNECT.
- WIRING FOR MAIN FIELD SUPPLY MUST BE RATED 75C. USE COPPER CONDUCTORS ONLY.
 - INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA UP TO 175 AMPS IS 14 AWG TO 2/0 FOR 10-60 TON CHILLERS.
 - INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA FROM 175.1 AMPS TO 335 AMPS IS 6 AWG TO 400 KCMIL FOR 10-60 TON CHILLERS.
 - INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA UP TO 420 AMPS IS 2 AWG TO 600KCMIL FOR 70-150 TON CHILLER.
 - INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA FROM 420.1 AMPS TO 760 AMPS IS 6 AWG TO 500 KCMIL (TWO OPENINGS PER POLE) FOR 70-150 TON CHILLERS.
 - INCOMING WIRE SIZE RANGE FOR NON-FUSED DISCONNECT WITH MCA UP TO 100 AMPS IS 14AWG TO 3/0.
 - INCOMING WIRE SIZE RANGE FOR NON-FUSED DISCONNECT WITH MCA FROM 100.1 AMPS TO 250 AMPS IS 6AWG TO 350 KCMIL.
 - INCOMING WIRE SIZE RANGE FOR NON FUSED DISCONNECT WITH MCA FROM 250.1 TO 600 AMPS IS 3/0 AWG TO 500KCMIL (TWO OPENINGS PER POLE)
- REFER TO CERTIFIED DIMENSIONAL DRAWINGS FOR EXACT LOCATIONS OF THE MAIN POWER AND CONTROL POWER ENTRANCE LOCATIONS.
- TERMINALS 21 AND 25 OF THE LVT ARE FOR CONTROL OF CHILLED WATER PUMP1 (CWP1) STARTER. TERMINALS 21 AND 24 OF THE LVT ARE FOR CONTROL OF CHILLED WATER PUMP2 (CWP2) STARTER. THE MAXIMUM LOAD ALLOWED FOR THE CHILLED WATER PUMP RELAY IS 5 VA SEALED, 10 VA INRUSH AT 24 V. FIELD POWER SUPPLY IS NOT REQUIRED.
- TERMINALS 18 AND 21 OF LVT ARE FOR AN ALARM RELAY. THE MAXIMUM LOAD ALLOWED FOR THE ALARM RELAY IS 5 VA SEALED, 10 VA INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED.
- MAKE APPROPRIATE CONNECTIONS TO LVT AS SHOWN FOR ENERGY MANAGEMENT BOARD OPTIONS. THE CONTACTS FOR DEMAND LIMIT AND ICE DIONE OPTIONS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA. INSTALLATION OF OPTIONAL ENERGY MANAGEMENT BOARD REQUIRED.
- REMOVE JUMPER BETWEEN TERMINALS 11 AND 17 WHEN FIELD CWP1 IS INSTALLED.
- TERMINALS 13 & 14 OF TR5 ARE FOR FIELD EXTERNAL CONNECTIONS FOR REMOTE ON-OFF. THE CONTACTS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50MA.

LEGEND:

- ALM R - ALARM RELAY (24V) 5 VA MAX
- AWG - AMERICAN WIRE GAUGE
- CWP - CHILLED WATER PUMP
- CWP1 - CHILLED WATER PUMP INTERLOCK
- EMM - ENERGY MANAGEMENT MODULE
- LVT - LOW VOLTAGE TERMINAL STRIP
- SPT - SPACE TEMPERATURE

- - - FIELD POWER WIRING
- - - FIELD CONTROL WIRING
- FACTORY INSTALLED WIRING
- FACTORY INSTALLED OPTION



UNITED
TECHNOLOGIES
CARRIER

P.O. BOX 4808
SYRACUSE, NY
13221

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DATE	SUPERCEDES	30RAP010-150 ELECTRICAL	30RA555560	REV
11/04/11	03/07/11			D

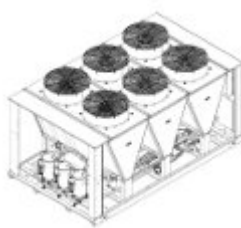
Summary Performance Report For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM



AquaSnap™ Air-Cooled Scroll Chiller



Unit Information

Tag Name:.....**CH-1**
Model Number:.....**30RAP070**
Quantity:.....**1**
Manufacturing Source:.....**Charlotte, NC USA**
ASHRAE 90.1:.....**2013/2016, 2010, 2007**
Refrigerant:.....**R-410A**
Independent Refrigerant Circuits:.....**2**
Shipping Weight:.....**3406** lb
Operating Weight:.....**3460** lb
Refrigerant Weight (Circuit A):.....**26** lb
Refrigerant Weight (Circuit B):.....**35** lb
Unit Length:.....**151** in
Unit Width:.....**88** in
Unit Height:.....**78** in
Chiller Pressure Drop*:.....**19.4** ft H₂O

*Use Chiller Pressure Drop for sizing pumps. This value includes losses due to chiller piping, fittings, 40 mesh factory supplied strainer and BPHX.

Evaporator Information

Fluid Type:.....**Fresh Water**
Fouling Factor:.....**0.000100** (hr-sqft-F)/BTU
Leaving Temperature:.....**44.00** °F
Entering Temperature:.....**54.00** °F
Fluid Flow:.....**164.8** gpm
Evaporator Pressure Drop*:.....**12.0** ft H₂O

*Refer to Chiller Pressure Drop for sizing pumps.

Condenser Information

Altitude:.....**0.000** ft
Number of Fans:.....**5**
Total Condenser Fan Air Flow:.....**48,500** CFM
Entering Air Temperature:.....**95.0** °F

Integrated Pump Information

No Pump Selected

Performance Information

Cooling Capacity:.....**68.91** Tons
Total Compressor Power:.....**75.00** kW
Total Fan Motor Power:.....**6.410** kW
Total Unit Power (without pump):.....**81.41** kW
Efficiency (without pump) (EER):.....**10.16** BTU/Wh
IPLV:..IP:.....**15.23** BTU/Wh

Accessories and Installed Options

Evaporator Heater
Non-Fused Disconnect
Suction Service Valves
Micro Channel
Low Sound
Low Ambient Head Pressure Control
Security Grilles/Hail Guards
GFI Convenience Outlet
Single Point
Fixed Speed Condenser Fan
Wind Baffle
Vibration Isolation Package

Electrical Information

Unit Voltage:.....**460-3-60** V-Ph-Hz
Connection Type:.....**Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	155.7	---
MOCP	175.0	---
ICF	301.1	---
Rec Fuse Size	175.0	---

An uncoated Novation condenser coil was selected for this product. This is based on an installed location with postal code 24401 and a non-corrosive localized environment.

Summary Performance Report For CH-1

Project: City of Staunton Library
Prepared By:

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01:36PM

Sound power measured in accordance with ANSI/AHRI Standard 370-2015.



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org.

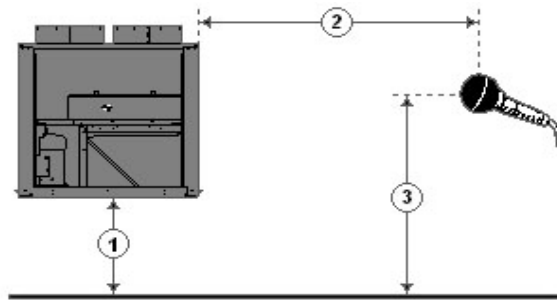
Summary Performance Report For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

Unit Parameters

Tag Name: CH-1
Model Number: 30RAP070
Condenser Type: Air Cooled
Compressor Type: Scroll
Chiller Nameplate Voltage: 460-3-60 V-Ph-Hz
Quantity: 1
Manufacturing Source: Charlotte, NC USA
Refrigerant: R-410A
Shipping Weight: 3406 lb
Operating Weight: 3460 lb
Refrigerant Weight (Circuit A): 26 lb
Refrigerant Weight (Circuit B): 35 lb
Unit Length: 151 in
Unit Width: 88 in
Unit Height: 78 in



1 - Chiller Height Above Ground
2 - Horizontal Distance From Chiller to Receiver
3 - Receiver Height Above Ground
(See Note 3)

Accessories and Installed Options

Evaporator Heater
Non-Fused Disconnect
Suction Service Valves
Micro Channel
Low Sound
Low Ambient Head Pressure Control

Security Grilles/Hail Guards
GFI Convenience Outlet
Single Point
Fixed Speed Condenser Fan
Wind Baffle
Vibration Isolation Package

Acoustic Information

Table 1. A-Weighted Sound Power Levels (dB re 1 picowatt). See note #1.

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	37	62	72	79	85	88	87	81	71	92
75% Load	37	61	72	79	85	88	87	80	71	92
50% Load	36	60	71	78	84	87	86	79	70	91
25% Load	34	59	70	77	83	85	84	78	69	90

Table 2. A-Weighted Sound Pressure Levels (dB re 20 micropascals) calculated based upon user defined input for dimensions 1, 2 and 3 as shown in above diagram. See note #2 and #3.

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	9	33	44	51	57	59	59	52	43	64
75% Load	9	33	44	51	57	59	59	52	43	64
50% Load	8	32	43	50	56	58	58	51	42	63
25% Load	6	31	42	49	54	57	56	50	40	62

Notes: (1) Measurements performed in accordance with AHRI Standard 370-2015 for air cooled Chillers.

(2) Chiller is assumed to be a point source on a reflecting plane.

(3) Without user defined input, the default dimensions used to construct Table 2 are as follows:

- 1 - Chiller Height Above Ground = 0.0 ft
- 2 - Horizontal Distance From Chiller to Receiver = 30.0 ft
- 3 - Receiver Height Above Ground = 3.0 ft

Acoustic Summary For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

**Please refer to Performance Output Summary or Detailed
Performance Report for Acoustic information**

Detailed Performance Summary For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

Unit Information

Tag Name:.....**CH-1**
 Model Number:.....**30RAP070**
 Condenser Type:.....**Air Cooled**
 Compressor Type:.....**Scroll**
 Nameplate Voltage:.....**460-3-60** V-Ph-Hz
 Quantity:.....**1**
 Manufacturing Source:.....**Charlotte, NC USA**
 ASHRAE 90.1:.....**2013/2016, 2010, 2007**
 Refrigerant:.....**R-410A**
 Capacity Control Steps:.....**5**
 Minimum Capacity:.....**20.00** %
 Shipping Weight:.....**3406** lb
 Operating Weight:.....**3460** lb
 Refrigerant Weight (Circuit A):.....**26** lb
 Refrigerant Weight (Circuit B):.....**35** lb
 Unit Length:.....**151** in
 Unit Width:.....**88** in
 Unit Height:.....**78** in
 Minimum Outdoor Operating Temp:.....**-20.0** °F
 Chiller Pressure Drop*:.....**19.4** ft H2O
 *Use Chiller Pressure Drop for sizing pumps. This value includes losses due to chiller piping, fittings, 40 mesh factory supplied strainer and BPHX.

Performance Information

Cooling Capacity:.....**68.91** Tons
 Total Compressor Power:.....**75.00** kW
 Total Fan Motor Power:.....**6.410** kW
 Total Unit Power (without pump):.....**81.41** kW
 Efficiency (without pump) (EER):.....**10.16** BTU/Wh

Evaporator Information

Fluid Type:.....**Fresh Water**
 Fouling Factor:.....**0.000100** (hr-sqft-F)/BTU
 Leaving Temperature:.....**44.00** °F
 Entering Temperature:.....**54.00** °F
 Fluid Flow:.....**164.8** gpm
 Fluid Flow Min:.....**87.00** gpm
 Fluid Flow Max:.....**310.0** gpm
 Evaporator Pressure Drop*:.....**12.0** ft H2O
 *Refer to Chiller Pressure Drop for sizing pumps.

Condenser Information

Altitude:.....**0.000** ft
 Number of Fans:.....**5**
 Total Condenser Fan Air Flow:.....**48,500** CFM
 Entering Air Temperature:.....**95.0** °F

Integrated Pump Information

No Pump Selected

Accessories and Installed Options

Evaporator Heater
 Non-Fused Disconnect
 Suction Service Valves
 Micro Channel
 Low Sound
 Low Ambient Head Pressure Control
 Security Grilles/Hail Guards
 GFI Convenience Outlet
 Single Point
 Fixed Speed Condenser Fan
 Wind Baffle
 Vibration Isolation Package

Electrical Information

Unit Voltage:.....**460-3-60** V-Ph-Hz
 Connection Type:.....**Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	155.7	---
MOCP	175.0	---
ICF	301.1	---
Rec Fuse Size	175.0	

Detailed Performance Summary For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

Integrated Part Load Value (AHRI)

IPLV:.....15.23 BTU/Wh

Unit Performance				
Percent of Full Load Capacity, %	100.00	75.00	50.00	25.00
Percent of Full Load Power, %	100.00	57.34	31.08	13.91
Unloading Sequence	A	A	A	A
Cooling Capacity, Tons	68.91	51.68	34.45	17.23
Total Unit Power, kW	81.41	46.68	25.30	11.33
Efficiency (EER), BTU/Wh	10.16	13.29	16.34	18.25
Evaporator Data				
Fluid Entering Temperature, °F	54.00	51.49	48.99	46.50
Fluid Leaving Temperature, °F	44.00	44.00	44.00	44.00
Fluid Flow Rate, gpm	164.8	164.8	164.8	164.8
Fouling Factor, (hr-sqft-F)/BTU	0.000100	0.000100	0.000100	0.000100
Condenser Data				
Entering Air Temperature, °F	95.0	80.0	65.0	55.0

For some 75% operating points, the efficiency may be calculated at a condenser inlet air operating temperature as much as 0.8 degrees higher.

An uncoated Novation condenser coil was selected for this product. This is based on an installed location with postal code 24401 and a non-corrosive localized environment.

Sound power measured in accordance with ANSI/AHRI Standard 370-2015.



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org.

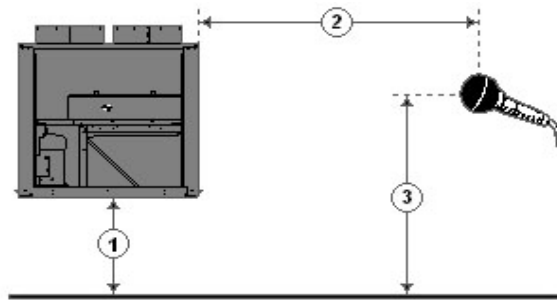
Detailed Performance Summary For CH-1

Project: City of Staunton Library
Prepared By:

12/12/2017
01:36PM

Unit Parameters

Tag Name: CH-1
Model Number: 30RAP070
Condenser Type: Air Cooled
Compressor Type: Scroll
Chiller Nameplate Voltage: 460-3-60 V-Ph-Hz
Quantity: 1
Manufacturing Source: Charlotte, NC USA
Refrigerant: R-410A
Shipping Weight: 3406 lb
Operating Weight: 3460 lb
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Unit Length: 151 in
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1 - Chiller Height Above Ground
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3 - Receiver Height Above Ground
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Accessories and Installed Options

Evaporator Heater
Non-Fused Disconnect
Suction Service Valves
Micro Channel
Low Sound
Low Ambient Head Pressure Control

Security Grilles/Hail Guards
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(2) Chiller is assumed to be a point source on a reflecting plane.

(3) Without user defined input, the default dimensions used to construct Table 2 are as follows:

- 1 - Chiller Height Above Ground = 0.0 ft
- 2 - Horizontal Distance From Chiller to Receiver = 30.0 ft
- 3 - Receiver Height Above Ground = 3.0 ft