

Issue Analysis Form



Date: 10/12/2021
Item: Replacement of Chiller and Eleven Variable Frequency Drives in the County Administration Building
Lead Department(s): General Services
Contact Person(s): Dean Simmons

Description and Current Status

The HVAC system in the County Administration Building has not been adequately cooling the building for the past two spring / summer seasons. The current unit is over 20 years old and requires R-22 refrigerant that is no longer manufactured, and very costly to obtain. The compressors are now obsolete along with circuit drivers. The current Variable Frequency drives replacement parts are obsolete and require replacement when break downs occur. When the Emergency repairs were made it was determined that a full replacement of the air cooled chiller and eleven variable frequency drives is necessary.

This repair is of an urgent nature and should be made prior to the spring of 2022.

Daikin provided pricing under cooperative Omnia contracts R200401-VA-312621 and R200401-VA-312635. A ten year warranty is recommended with this replacement.

The total pricing is \$220,610.00 and a breakdown is shown below.

Daikin Pricing - Omnia Cooperative Contract	
Item	Omnia Pricing
Chiller - AGZ180E 184 Ton	163,700.00
11 Variable Frequency Drives	29,035.00
10-Year Extended Warranty	27,875.00
Total	220,610.00

This pricing was provided on **September 22, 2021** and is good for only **30 days**. The complete proposal is provided as **Attachment A**.

There is a 21 week lead time from the time order is placed to installation.

This replacement is not budgeted, nor is it included on a CIP listing. Due to the urgent nature, it is recommended for replacement as soon as possible in order to be in place prior to the spring of 2022.

The recommended funding source is General Fund, Fund Balance.

Requested Board actions are:

Appropriation of funds from the General Fund, Fund Balance of **\$220,610**

Award of Contract to Daikin for \$220,610

A draft resolution is provided for consideration.

Government Path

- | | | |
|--|---|--|
| Does this require IDA action? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Does this require BZA action? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Does This require Planning Commission Action? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Does this require Board of Supervisors action? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Does this require a public hearing? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| If so, before what date? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Fiscal Impact Statement

Use of \$220,610 from the General Fund, Fund Balance

County Impact

The replacement of the Chiller and eleven Variable Frequency Drives in the County Administration building will ensure the HVAC system is functioning adequately.

Notes

**Proposal to Replace Air Cooled
Chiller System at the
Administration Building**

**Board of Supervisors Meeting
October 12, 2021**

**Prepared by: Dean Simmons
Director of General Services**

Summary:

The existing chiller has experienced multiple problems throughout the year requiring daily maintenance to keep the system working properly. This has required several emergency repairs. Daikin was called in to make these repairs.

The current McQuay ALS Chiller is 20 Years Old and uses Refrigerant R-22. This Refrigerant is not being manufactured any longer. Any major refrigerant leaks would lead to a very costly repair. The parts for this existing ALS Chiller are also becoming obsolete. The compressors currently have no replacement options and are also obsolete.

Daikin recommends replacing the existing McQuay ALS Chiller with a Daikin AGZ Air Cooled Chiller. The Daikin AGZ air cooled scroll chiller fits well with in the existing infrastructure and space.

The current Variable Frequency Drives are also becoming obsolete and parts for current ABB Variable Drives are requiring replacement when malfunctioning.

Daikin also recommends replacing the ABB variable frequency drives on all air handler units (total of eleven (11) variable frequency drives).

Cost Breakdown:

- Daikin AGZ Air Cooled Chiller \$163,700.00
- Eleven Variable Frequency Drives \$ 29,035.00

Total = \$192,735.00

Option 1 Extended Warranty 2nd thru 5th Year \$10,575.00
Parts/Labor/Refrigerant Warranty

Option 2 Extended Warranty 2nd thru 10th Year \$27,875.00
Parts/Labor/Refrigerant Warranty

Option Choice #1 = \$192,735.00 + \$10,575.00 = \$203,310.00

OR

Option Choice #2 = \$192,735.00 + \$27,875.00 = \$220,610.00

AG-Z-E Guards: Condenser Coil Louvers, Base Wire Grilles, Painted Base

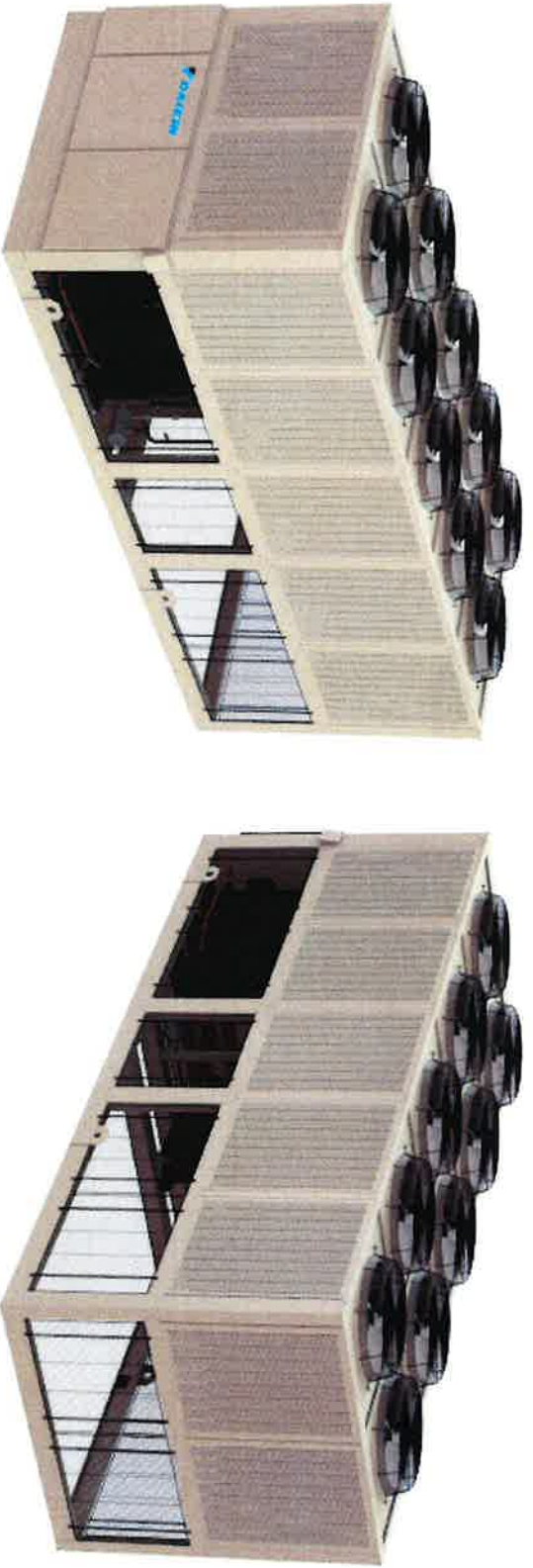


Diagram Notes
 Diagram simulates wrap, grille and louver options as selected only. Refrigeration components may vary depending on selected options.

Product Drawing	Unit Tag: DST Air Cooled Chiller 001	Sales Office: Richmond - Daikin Applied		 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 12.31
Product: Air-Cooled Scroll Chiller	Project Name: Prince George Chiller	Sales Engineer: michael poole		
Model: AG2140-180E	Sept. 22, 2021	Ver/Rev:	Sheet: 1 of 1	
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.				

DAIKIN APPLIED, OMNIA PUBLIC PROJECT PROPOSAL



Replace Air Cooled Chiller at Administration Building

Prince George Administration Building
6400 Courthouse Road
Prince George, Virginia 23875

OMNIA Certified Proposal Number: R200401-VA-312621
Proposal #: TK-MEP09242021A

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PARTNERS

Prepared for:

Dean Simmons
Supervisor of Maintenance
Prince George County
9/22/2021

Prepared by:

Michael Poole
SSR
Richmond District
Phone: 804-747-4822 Mobile: +1 8042017848
E-mail: michael.poole@daikinapplied.com



Project Overview

We have been requested by Prince George County Administration to price a replacement air cooled chiller at Prince George Administration Building. We have walked the site and gather the information on the existing equipment to properly size the replacement chiller for the customer. The current McQuay ALS chiller uses refrigerant R-22 and is not being manufactured any longer. Any major refrigerant leaks would lead to a very costly repair. The parts for the existing ALS chiller are also becoming obsolete. The screw compressors currently have no replacement options currently and are obsolete.

Daikin recommends replacing the existing McQuay ALS chiller with a Daikin AGZ air cooled chiller. The Daikin AGZ air cooled scroll chiller utilizes multiple compressor design in two circuit configurations. The AGZ Air Cooled Scroll Chiller fits well with in the existing infrastructure and space. Our selection for this chiller was referred to the original design specifications. The following benefits are for the AGZ Air Cooled Chiller option:

- Meets or exceeds ASHRAE Standard 90.1 2016 standards.
- Sound pressure ratings as low as 61 dBA, without any optional acoustic treatment.
- Trailblazer's low installed cost combined with high operating efficiency and ease of maintenance provide the lowest total cost of ownership.
- R-410A refrigerant has no ozone depletion potential and no phase-out schedule.
- Our Open Choices™ feature allows the unit controls to easily integrate with your choice of building automation system using LonTalk®, BACnet® or Modbus® open protocols.

In addition, we would like to also invite Prince George County Administration to make a visit to our Daikin chiller plant located in Staunton, VA where this chiller would be manufactured. However, with the current climate of COVID 19, we are unable to setup any visits to the plant. When the time comes with the end of COVID we would be happy to take the Prince George County Administration to the plant for a tour of the facility.

We have also provided Prince George County Administration with two warranty options over the standard first year parts, labor and refrigerant warranty to help minimize the impact to the Prince George in the future.

Option One is a 2nd thru 5th Year Parts, Labor & Refrigerant Extended Warranty.

Option Two is a 2nd thru 10th Year Parts, Labor & Refrigerant Extended Warranty.

The base (build to order) and optional pricing is provided in the pricing summary page.

Scope of Services

Daikin Applied Americas, Inc. is pleased to offer the following Project proposal for your consideration. Thank you for selecting Daikin Applied Service Group to care for your building's system. Our factory-trained service personnel have the knowledge and experience to deliver the best support available. Daikin will perform all services using factory-trained technicians who specialize in HVAC, refrigeration and electronic system maintenance and repair services. Daikin is pleased to offer this proposal for your consideration.

Scope of Work

- Coordinate all work with the customer.
- Lock and tag related electrical circuits as necessary.
- Recover refrigerant and discard as necessary out of existing chiller.
- Close appropriate chilled water valves and drain to an approved drain.
- Disconnect power to existing chiller including control points.
- Disassemble existing chiller for removal using rigging and a crane.
- Utilize rigging and a crane to install new AGZ180 Air Cooled Chiller onto existing concrete pad.
- Modify existing chilled water lines to accommodate new chiller including new pressure, temperature gauges and strainer.
- Reutilize existing rental chiller taps back into chilled water piping.
- Open chill water valves and vent air from system.
- Verify no leaks in new piping or accessories.
- Modify and/or extend existing heat tape on both chilled water lines.
- Reinsulate modified chilled water lines with matching insulation material.
- Reconnect existing electrical feed to new chiller.
- Reconnect existing control wiring to new chiller controls.
- Remove related locks and tags and restore power to new chiller.
- Clean up any generated trash and dispose of properly.
- Perform factory start up with factory authorized technicians.
- Record and verify proper chiller operation.
- Convey all warranty paperwork to the customer.
- Provide up to four (4) hours of owner training to the customer.

Note 1: Current BTO Chiller lead time is 18 to 19 weeks. Lead times are subject to change.

Note 2: Installation Warranty of One (1) year from date of startup.

Note 3: Daikin warranty One (1) year on equipment and refrigerant.

Project Specific Inclusions:

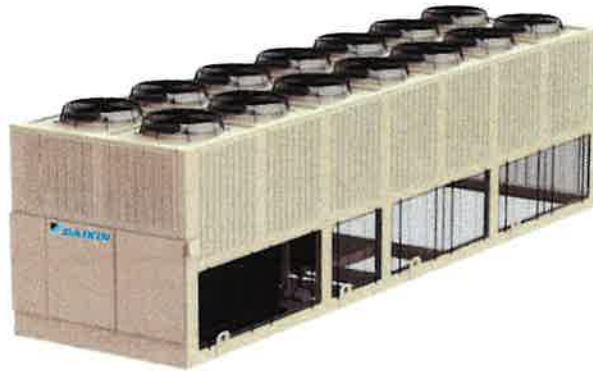
- Equipment: One (1) New AGZ180E Chiller
- Materials: Schedule 40 Steel Pipe, Pressure & Temperature Gauges
- Mechanical
- Electrical
- Insulation to match existing
- Factory startup
- Control communication card to BAS

Project Specific Exclusions:

- Water Treatment
- Painting
- Seismic Protection
- Stamped Engineered Drawings
- Permits
- CAD Drawings

The following standard items are not included:

- Engineering and/or Design
- Utility fees, such as water, power or upgrades
- Bond (If applicable, add 1.5% to our pricing)
- Off hours work or overtime, except where noted
- Expedited shipping
- Any work related to hazardous materials (such as asbestos, lead, etc.)
- Structural work (engineering, structural steel, reinforcing, lintels, etc.)
- Port-a-jons. We assume that the owner will furnish such facilities for our use
- Temporary use and/or maintenance of piping or HVAC systems



Chiller Information

Provide One (1) New Daikin Air -Cooled Chiller Model AGZ180E

The chiller will be equipped as follows:

- AGZ180E Nominal 184-ton Air-Cooled Trailblazer Chiller
- 460 Volt 60 Hertz 3 Phase
- Fantrol Head Pressure Control (32 degree minimum)
- Electronic Expansion Valve on each Circuit
- Dual refrigerant circuits (92-ton nominal each)
- R410a Refrigerant
- Single Point Power Disconnect with Circuit Protection
- Standalone MicroTech III Chiller Controller
- Daikin Factory Service Representative Commissioning
- First Year Parts, Labor, and Refrigerant Warranty
- Condenser coil louvers and base wire grilles
- Replaceable Filter Dryer with Discharge & Liquid Valves
- Micro Channel Condenser Coils

Proposal Clarifications, Exclusions, and Exceptions:

Clarifications:

1. This proposal takes precedence over any other written, verbal, or other statements of scope, schedule, and pricing.
2. Acceptance of a Notice to Proceed is not an acceptance of terms and conditions. Any Notice to Proceed will be based upon the terms and conditions contained in this proposal.
3. All working hours are estimated at regular or straight time rates. Accelerated or expedited project execution schedules and associated costs are subject to additional quotation.
4. Daikin Applied is not responsible for any delays or cost as a result of delays incurred due to limited or no access to roads, buildings or equipment required to complete the scope of work provided for in this proposal.
5. Sales taxes are not included within our pricing.
6. Costs associated with Owner directed programs or software required to fulfill project reporting, execution, safety management, and or Owner or Owner's Representative invoicing are not covered and will be invoiced in addition to the agreed proposal price.
7. Signage will not be provided or installed by Daikin Applied.
8. Staffing of onsite Safety or Security personnel during project execution or after working hours will not be provided and Daikin Applied understands this is the responsibility of the Owner or Owner's Representative.
9. Site drainage, pollution prevention plan and execution, temporary bathrooms, emergency eye-wash stations, barricades, ramps, splash-blocks, fire protection plans and systems required during construction, flagman, access controls features, trash repositories and pick services are not included. Daikin Applied understands the Owner or Owners Representative is responsible for these measures.
10. Daikin Applied understands temporary HVAC, temporary power, work site lighting, and temporary water required to perform the scope of work provided is the Owner or Owner's Representative responsibility.
11. Daikin Applied will only provide supervision for itself and its sub-contractors when we or they are on site.
12. Daikin Applied Material or Labor warranty is excluded on Owner or Owner's Representative provided equipment.

Exclusions:

1. Any labor, materials, or subcontracted service not specifically provided for in the description or scope of work.
2. Identification and remediation of existing code violations.
3. Authority Having Jurisdiction required changes are not included and will be quoted as additional work scope.
4. Painting, repair work to buildings, and/or equipment which is not specifically identified in the description or scope of work.
5. Costs associated with hazardous materials identification, removal, and/or abatement.
6. Temporary or portable HVAC equipment and connections to existing systems.
7. The creation of new Building Automation Systems graphics, monitoring, trending, analysis or any other software or labor required for implementation of these items.
8. Testing and balancing.
9. Commissioning plan development and execution.
10. Sound testing or acoustical treatments for any elements inside or external to the work site or equipment.
11. Seismic analysis and certification for all materials and equipment.
12. Permits, insurance coverages other than indicated in the attached Evidence of Insurance, and performance and payment bonds.
13. Professional services including Architectural, Mechanical, Electrical, Structural and other Engineering Disciplines.
14. Fire, Smoke and/or Security controls, equipment, repair, graphics, programming, replacement or upgrades.

OMNIA Pricing and Acceptance

Investment Amount and Billing Terms:

Investment required to implement the proposed solution

AGZ180E 184 - Ton Air Cooled Chiller

Total Base Bid: \$ 163,700.00

Option 1: Extended 2nd thru 5th Year Parts/Labor/Refrigerant Warranty \$10,575.00 _____ Initial for Acceptance

Option 2: Extended 2nd thru 10th Year Parts/Labor/Refrigerant Warranty \$27,875.00 _____ Initial for Acceptance

Total Price Including Options: \$ _____

****Price does not include applicable sales tax***

Proposal, inclusive of the pricing, is provided in accordance with Region 4 ESC Contract # R200401, available via OMNIA Partners, including the terms and conditions contained therein (<https://public.omniapartners.com/suppliers/daikin-applied/contract-documentation#c38611>) shall govern this Proposal and the corresponding scope of work as described herein which are hereby incorporated by this reference. Pricing and acceptance are subject to Daikin Applied's final credit approval.

Billing/Payment Terms*: Billed in full upon completion

*All billings are due immediately upon Receipt

This proposal will be honored by Daikin Applied for 30 days from the date on the front of the proposal. After 30 days, Daikin Applied reserves the right to evaluate cost changes (both increases and decreases) from the proposal.

Dean Simmons
Prince George Administration

Site Address:
6400 Courthouse Road
Prince George, Virginia
23875

Accepted by:

Approved by:

(Print Full Legal Name of Customer)

(Print Full Legal Name of Daikin Applied Representative)

(Signature)

(Signature)

(Title)

(Title)

Date:

Date:

Note: This Agreement is subject to final approval by Daikin Applied.



DAIKIN APPLIED, OMNIA PUBLIC SERVICE & REPAIR PROPOSAL



Replace Eleven (11) Variable Frequency Drives

Prince George Administration Building
6400 Courthouse Road
Prince George, VA 23875

OMNIA Certified Proposal Number: R200401-VA-312635
Proposal #: SR-MEP09232021B

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Prepared for:

Dean Simmons
Supervisor of Maintenance
Prince George Department of General Services
9/22/2021

Prepared by:

Michael Poole
SSR
Richmond District
Phone: 804-747-4822 Mobile: +1 8042017848
E-mail: michael.poole@daikinapplied.com



Scope of Services

Daikin Applied Americas, Inc. is pleased to offer the following Service & Repair proposal for your consideration. Thank you for selecting Daikin Applied Service Group to care for your building's system. Our factory-trained service personnel have the knowledge and experience to deliver the best support available. Daikin will perform all services using factory-trained technicians who specialize in HVAC, refrigeration and electronic system maintenance and repair services. Daikin is pleased to offer this proposal for your consideration.

Scope of Work

- Coordinate all work with the customer.
- Apply lock and tag on related electrical circuits as needed.
- Disconnect electrical and control wiring on defective variable frequency drives on air handlers (total of eleven variable frequency drives).
- Remove defective variable frequency drive and discard offsite in an appropriate manner.
- Install new ABB variable frequency drives on air handlers (total of eleven variable frequency drives).
- Reconnect power and control wiring to new variable frequency drives.
- Complete all installation details and clean up any generated trash.
- Remove lock and tag on related electrical circuits and restore power to variable frequency drives.
- Verify proper control parameters and settings in new variable frequency drives.
- Startup air handlers and verify proper variable frequency drive operation.
- Clean up all generated trash and dispose of properly.
- Upon completion Daikin will provide a complete report detailing any deficiencies found and recommendations for repair or replacement.

Personnel

Daikin will perform all services using factory-trained technicians who specialize in HVAC, refrigeration and electronic system maintenance and repair service.

Equipment Repair

Daikin will perform all services during its regular working hours unless otherwise specified. Any services requested or agreed to by Customer that are outside the Scope of Work will be performed by Company at an additional cost.

Standard Exclusions:

1. All work to be performed during "Normal Working Hours".
2. All repairs recommended/required to be quoted separately.
3. Asbestos abatement or pipe insulation is not included

OMNIA Pricing and Acceptance

Feel free to contact me if you have any questions or concerns regarding the information contained in this Service & Repair proposal. If you would like us to proceed with the solution presented above, sign the acceptance line below (including PO# if applicable) and return a copy so that we can begin to mobilize our efforts to complete services as quickly as possible. We appreciate the opportunity to provide you with this solution and look forward to working with you on this and servicing your needs in the future.

Investment Amount and Billing Terms:

Investment required to implement the proposed solution

\$29,035.00.00 Twenty-Nine Thousand, Thirty-Five dollars and Zero cents

**Price does not include applicable sales tax*

Proposal, inclusive of the pricing, is provided in accordance with Region 4 ESC Contract # R200401, available via OMNIA Partners, including the terms and conditions contained therein (<https://public.omniapartners.com/suppliers/daikin-applied/contract-documentation#c38611>) shall govern this Proposal and the corresponding scope of work as described herein which are hereby incorporated by this reference. Pricing and acceptance are subject to Daikin Applied's final credit approval.

Billing/Payment Terms*: Billed in full upon completion

*All billings are due immediately upon Receipt

This proposal will be honored by Daikin Applied for 30 days from the date on the front of the proposal. After 30 days, Daikin Applied reserves the right to evaluate cost changes (both increases and decreases) from the proposal.

Mike Mitchell
Prince George Department of General Services

Site Address:
6400 Courthouse Road
Prince George, VA 23875

Accepted by:

Approved by:

(Print Full Legal Name of Customer)

(Print Full Legal Name of Daikin Applied Representative)

(Signature)

(Signature)

(Title)

(Title)

Date:

Date:

Note: This Agreement is subject to final approval by Daikin Applied.



TRAILBLAZER® Packaged Air-Cooled Scroll Chiller

Job Information Technical Data Sheet

Job Name	Prince George Chiller Replacement
Date	9/22/2021
Submitted By	michael poole
Software Version	12.31
Unit Tag	DST Air Cooled Chiller 001



Image may not represent ordered unit

Unit Overview

Model Number	Capacity ton	Voltage	Unit Starter Type	ASHRAE 90.1	LEED Enhanced Refrigerant Management Credit
AGZ180E	184.5	460 V / 60 Hz / 3 Ph	Across the Line	'07, '10, '13 & '16	Pass

Unit

Unit Type		Platform		Unit Revision			
Air-Cooled Scroll Compressor Chiller		Packaged		0A			
Head Pressure		Tubing					
Fanrol Only (32°F Min)		Replaceable Filter Dryer with Discharge & Liquid Valves, no HGBP					
Unit Controls		Display					
Electronic Expansion Valve		On Controller only					
Refrigerant Type		Refrigerant Weight					
R410A		160 lb (per unit)					
Pump Controls							
Dual Evaporator Pumps - Dual Control Output							
Approval							
ETL/cETL, AHRI & ASHRAE 90.1							
Evaporator							
Water Volume:	18.6 gal						
Connection Hand:	Universal Connection - Facing out back						
Connection Size:	4.0 in						
Insulation:	Single Layer Insulation to Suction at each Compressor						
Entering Fluid Temperature	Leaving Fluid Temperature	Fluid Type	Fluid Flow	Fluid Flow Min / Max	Pressure Drop	Pressure Drop Min / Max	Fouling Factor
58.10 °F	45.00 °F	Water	336.8 gpm	174.6/ 727.7 gpm	12.6 ft H ₂ O	2.60 / 37.6 ft H ₂ O	0.000100 °F.ft ² .h/Btu
<i>Note: Evaporator Pressure Drop includes Field Installed Accessory Kit Strainer. Pressure drop without strainer is 8.8. Minimum flow is based on a Variable Flow Pumping System Type and applies to part load conditions only.</i>							
Condenser							
Coil Fins:	MicroChannel						
Guards:	Condenser Coil Louvers & Base Frame Wire Grilles						
Design Ambient Air Temperature		Altitude		Fan Diameter		Minimum Design Ambient Temperature	
95.0 °F		1100 ft		30.0 in		32.0 °F	

TRAILBLAZER® Packaged Air-Cooled Scroll Chiller

Unit Performance

Design			
Capacity	Input Power	Efficiency (EER)	IPLV.IP* (EER)
184.5 ton	224.9 kW	9.847 Btu/W.h	16.12 Btu/W.h

Performance Points rated at AHRI Ambient Relief

Point #	% Load	Unit			Evaporator				Condenser	
		Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop ft H ₂ O	Entering Fluid °F	Leaving Fluid °F	Ambient Air °F	Altitude ft
1	100.0	184.5	224.9	9.847	336.8	8.80	58.10	45.00	95.0	1100
2	75.0	138.4	118.0	14.08	336.8	8.80	54.80	45.00	80.0	1100
3	50.0	92.25	63.06	17.56	336.8	8.80	51.60	45.00	65.0	1100
4	25.0	46.13	28.51	19.42	336.8	8.80	48.30	45.00	55.0	1100

* IPLV reflects AHRI standard rating conditions with water and does not change with user defined conditions

Note: Evaporator Pressure Drop in this table does Not include strainer. For strainer pressure drop data see 'Evaporator' table on page 1.

Sound (without insulation)

Sound Pressure (at 30 feet)											
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
69	71	69	67	64	61	61	58	70	69	67	66

Sound Power											
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
96	98	96	94	91	88	88	85	97	96	94	93

Octave band is non 'A' weighted and overall readings are 'A' weighted. Sound data rated in accordance with AHRI Standard-370.

Physical

Unit				
Length*	Height	Width*	Shipping Weight*	Operating Weight*
238 in	99 in	88 in	7912 lb	8060 lb

*Shipping and Operating Weights include the below Option weights only and do not include the weights of any Accessories. Contact Chiller Applications for additional information.

Option Weights	
Louvers:	500 lb
Total:	500 lb

Electrical						
Unit Electrical Data						
Voltage	Starter Type	Fan Motor Quantity		LRA Fan Motor (each)	FLA Fan Motors (each)	
460 V / 60 Hz / 3 Ph	Across the Line	10		18 A	3.6 A	
Power Connection Type:	Single Point Disconnect Switch with Circuit Protection					
Short Circuit Current Rating:	5 kA					
Phase Voltage:	Phase & Under/Over Voltage Protection with LED					
Single Point Power Connection						
Minimum Circuit Ampacity (MCA):	400 A					
Recommended Overcurrent Protection Size:	450 A					
Maximum Overcurrent Protection Size(MOCP):	450 A					
Lug Connection Size:	(2) 3/0 - 500 MCM					
Compressor Electrical Data						
Compressor Type		Compressor Quantity			Starter Type	
Scroll		6			Across the Line	
Circuit #:	1		2			
Compressor #:	1	3	5	2	4	6
Rated Load Amps (RLA):	57.2 A	57.2 A	57.2 A	57.2 A	57.2 A	57.2 A
Inrush Current:	310 A	310 A	310 A	310 A	310 A	310 A

Note: Power wiring connections to the chiller may be done with either copper or aluminum wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing listed above. Please contact your local sales office for more information.

Options	
Basic Unit	
Control Box Ambient:	High Ambient with Exhaust Fans (125°F maximum)
Control	
Communication:	Modbus
Electrical	
Water Flow Indicator:	Thermal Dispersion Type

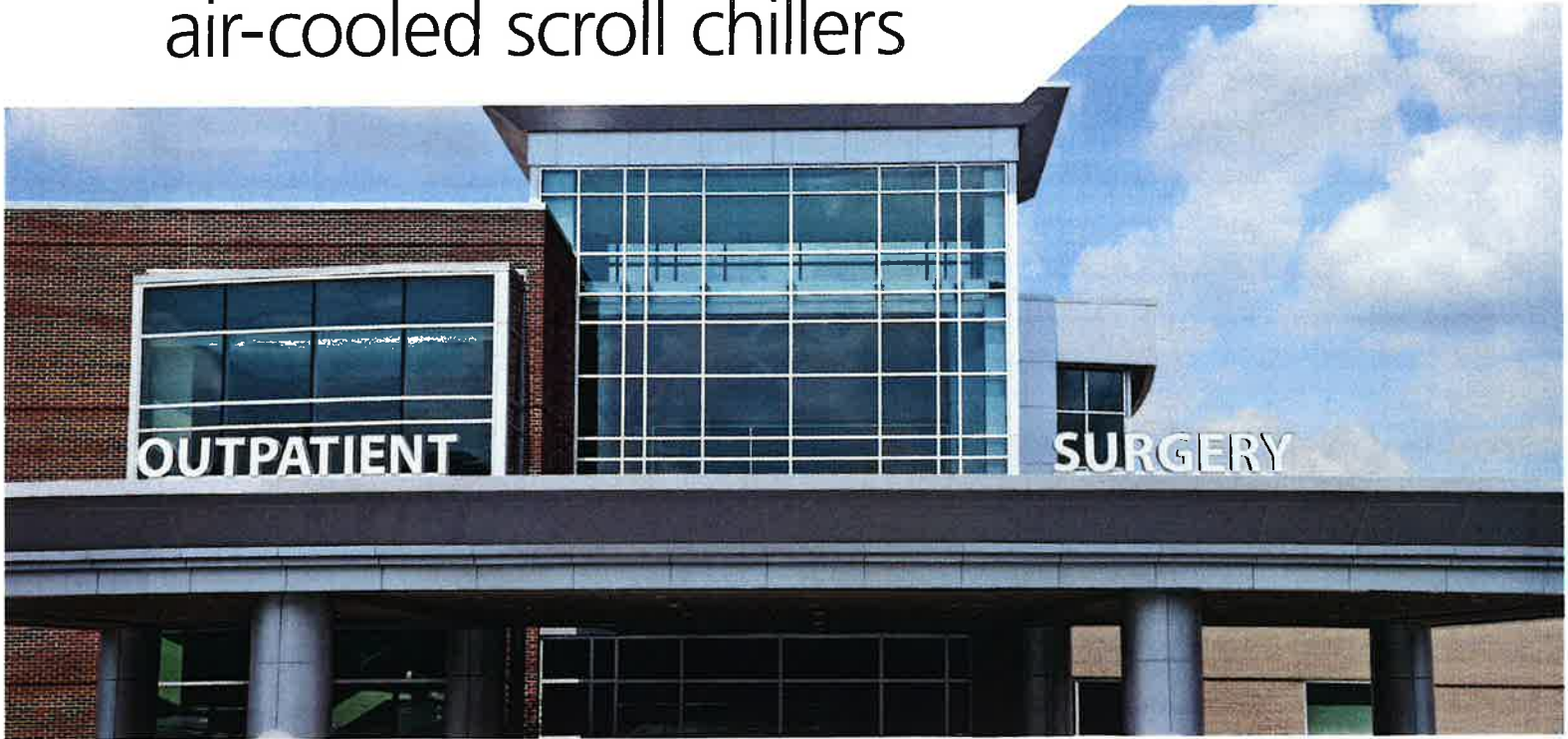
Warranty	
Unit Startup	By Others
Standard Warranty:	1st Year Entire Unit Parts & Labor
Refrigerant Warranty	1 Year Total

AHRI Certification	
	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

Accessories	
Optional	
Part Number	Description
332325113	RIS Isolator Kit; AGZ: Package, 110-180E; Single Pump 110E, 130E; Dual Pmp 110-120E
331758944	Strainer Kit; Grooved; 4", AGZ140-180E



Trailblazer® AGZ-E air-cooled scroll chillers



30 to 240 tons
with Variable Speed Condenser Fan Technology

The right features, the right value, right now

Intelligent Equipment®



Unmatched visibility to improve your HVAC performance

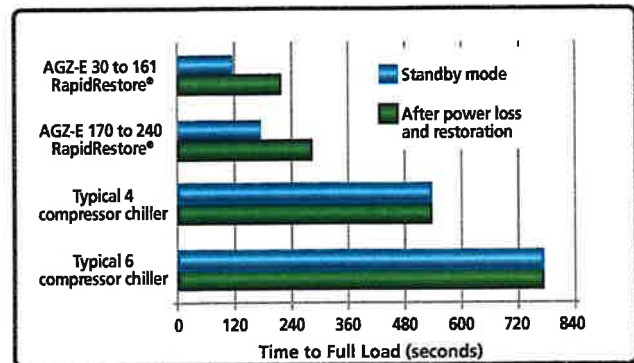
With 40% of your building's energy expenses tied to HVAC management, building owners and managers need better visibility to their unit performance. Daikin's Intelligent Equipment connects directly to your HVAC unit to monitor energy consumption at the equipment level for deeper, more accurate performance measurement.

Data and insights to help you do more with less

Only Intelligent Equipment can trend your unit's health and performance from commissioning throughout the life of the asset. It provides timely notifications for maintenance without requiring additional programming. And because all unit data is stored in the cloud, storage is unlimited. You can always track to the baseline, and you don't have to decide today what you want to track tomorrow.

Freedom and control to learn whatever you want, whenever you want

Intelligent Equipment communicates with you clearly through an engaging user interface designed to surface actionable insights, on any connected device, from anywhere in the world. You have complete access to the data, and control over who uses it; there is even a technician dashboard available through secure, role-based access. That translates quickly to smarter, proactive equipment decisions, and less time reacting to problem situations.



RapidRestore®

Trailblazer chillers will recover from loss of power to full capacity in under 4 minutes, or achieve full capacity from stand-by in less than 2 minutes for select models making it a perfect choice for mission critical applications.



Ready when you are

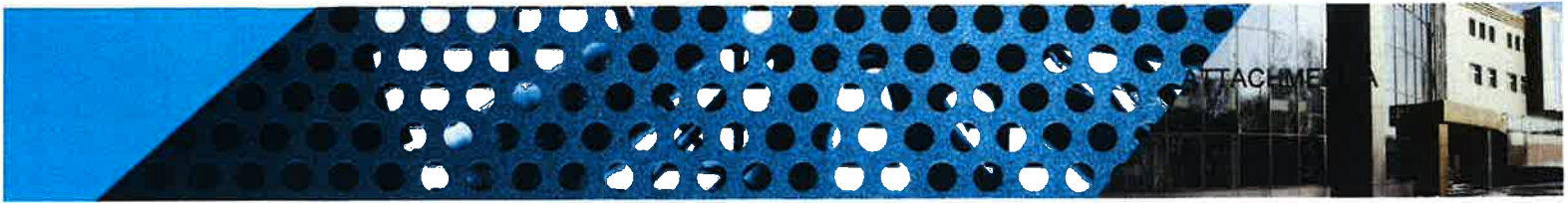
Trailblazer is available when you need it, whether build-to-order, quick ship or from stock. The Trailblazer stock chiller app allows real-time look up of stock availability. Follow the QR code at the bottom right to download this app now.

Efficiency

With full load efficiencies up to 11.2 EER and part load IPLV up to 16.7 EER, Trailblazer leads the industry in operating efficiency.

apps.daikinapplied.com/stockapp





Reliability, efficiency and low cost of ownership

Daikin Trailblazer air cooled scroll chillers are feature-rich, with industry leading performance. The 30 to 240 ton chillers provide big benefits for small to mid-sized buildings.

Reliable - Trailblazer is built on the solid foundation of reliability and robust design of Daikin's AGZ chiller product.

Efficient - Meets or exceeds ASHRAE Standard 90.1 2016 standards.

Quiet - Sound pressure ratings as low as 61 dBA, without any optional acoustic treatment. An all-VFD fan option allows reduced fan speed settings for lower noise operation, with a programmable schedule for reducing sound at strategic times.

Low cost of ownership - Trailblazer's low installed cost, combined with high operating efficiency and ease of maintenance provide the lowest total cost of ownership.

Ideal for retrofit - Compact unit footprint can save installation space & costs.

Mission critical applications - Trailblazer was designed to handle the demanding requirements of data centers and hospitals. The RapidRestore® feature along with the high evaporator leaving water temperature capability (65°F) makes Trailblazer the ideal choice.

Responsible refrigerants - R-410A refrigerant has no ozone depletion potential and no phase-out schedule.

Easy to integrate - Our Open Choices™ feature allows the unit controls to easily integrate with your choice of building automation system using LonTalk®, BACnet® or Modbus® open protocols.

LEED® points - All dual circuit models qualify for LEED EAC-4 for Enhanced Refrigerant Management worth 2 points.



Daikin Trailblazer Technical Specifications

Model AGZ	Capacity (Tons@AHRI)	Full Load (EER)	IPLV (EER)	High IPLV Option	Dimensions (LxWxH)	Refrigerant Circuits	MCA / RFS1 @ 208v	MCA / RFS1 @ 460v
30	28.3	10.3	15.1		95 × 88 × 101	2	149/175	74/80
35	35.1	10.3	15.4		95 × 88 × 101	2	163/175	77/90
40	39.2	11.4	16.5		95 × 88 × 101	2	168/200	80/90
45	42.6	11.0	16.4		95 × 88 × 101	2	228/250	90/100
50	48.3	10.6	16.0		95 × 88 × 101	2	241/250	109/125
55	51.8	10.4	15.9		95 × 88 × 101	2	251/300	118/125
60	57.0	10.5	15.8		95 × 88 × 101	2	260/300	126/150
65	58.7	10.6	15.8		95 × 88 × 101	2	268/300	129/150
70	65.1	10.1	15.8		95 × 88 × 101	2	306/350	138/150
75	72.9	10.9	15.8	17.4	147 × 88 × 99	2	338/400	149/175
80	77.2	10.8	15.8	17.3	147 × 88 × 99	2	355/400	153/175
90	84.4	10.5	15.7	17.0	147 × 88 × 99	2	384/450	168/200
100	98.4	10.3	15.5	16.3	147 × 88 × 99	2	442/500	203/250
110	107.3	10.4	15.5	16.9	192 × 88 × 99	2	490/600	227/250
120	119.4	10.3	15.5	16.8	192 × 88 × 99	2	534/600	261/300
130	125.7	10.1	15.4	16.7	192 × 88 × 99	2	569/700	284/350
140	138.9	10.6	15.7	16.8	237 × 88 × 99	2	612/700	309/350
150	146.2	10.6	15.6	16.8	237 × 88 × 99	2	640/700	328/400
161	153.7	10.3	15.6	16.4	237 × 88 × 99	2	668/800	346/400
170	160.0	9.8	16.1	16.6	237 × 88 × 99	2	734/800	355/400
180	175.8	9.7	16.1	16.5	237 × 88 × 99	2	875/1000	394/450
191	188.2	10.3	16.1	17.0	283 × 88 × 99	2	848/1000	424/500
211	195.3	10.2	16.1	17.0	283 × 88 × 99	2	890/1000	443/500
226	208.4	10.7	16.2	17.0	327 × 88 × 99	2	898/1000	459/500
241	228.1	10.2	16.2	16.9	327 × 88 × 99	2	1071/1200	525/600

1. Minimum circuit amps and recommended fuse size based on copper conductor.

Environments
High ambient kit, for operation from 105 to 125 °F (40 to 52 °C)
Low ambient kit, down to -10 °F (-23 °C)
Electrofin™ condenser coil option rated to 10,000 hours salt spray testing for enhanced durability in seacoast environments
Efficiency
Ice storage capability to reduce operating costs
Hot gas bypass for low load operation, down to 10%
Fan VFD control for enhanced part load efficiency

Quiet
Compressor sound reduction package for ultra sound-sensitive projects
Flexible Installation
Hydronic pump packages for reduced installation costs and time
Remote evaporator for keeping all chilled water piping within the building
Serviceability
Phase voltage monitor senses and avoids undesirable electrical conditions

Changing the way you think about air cooled chillers



Daikin Trailblazer air cooled scroll chillers are feature rich, with industry leading performance and a low installed cost. Combine this with high operating efficiency and ease of maintenance and these reliable 30 to 240-ton chillers provide big benefits for small to mid-sized buildings as well as mission critical applications like data centers and hospitals. With features typically found on more expensive chillers, why settle for anything but a Daikin air cooled chiller?

Ideal for a variety of applications



Trailblazer chillers utilize environmentally responsible R-410A refrigerant and meet the performance requirements of ASHRAE 90.1 2016 for efficiency. Excellent part-load performance is achieved with four or six scroll compressors. High overall efficiency equals lower annual energy costs.

Make it a complete system for optimum system performance and reliability

1

Choose a Daikin Trailblazer air cooled scroll chiller



Trailblazer® air cooled scroll chiller
30 to 240 tons

2

Add a Daikin air handler or terminal unit



Vision® semi-custom indoor air handler
900 to 100,000 cfm



Skyline® semi-custom outdoor air handler
900 to 65,000 cfm



Destiny® commercial air handler
600 to 15,000 cfm



RoofPak® applied outdoor air handler
4000 to 50,000 cfm



Unit ventilators
750 to 2000 cfm



Fan coil units
200 to 3000 cfm

The industry leader in environmental solutions

Daikin Applied is committed to sustainable practices as part of our corporate culture. We believe it is the right thing to do for our customers, our community, the environment and ourselves. As the global HVAC leader, Daikin Applied has a unique opportunity to make a difference in sustainable initiatives and to continue to lead the industry in environmental solutions.



To learn more about Trailblazer air cooled chillers, contact your local Daikin Applied sales office or visit www.DaikinApplied.com to find an office near you.

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AGZ-E Guards: Condenser Coil Louvers, Base Wire Grilles, Painted Base

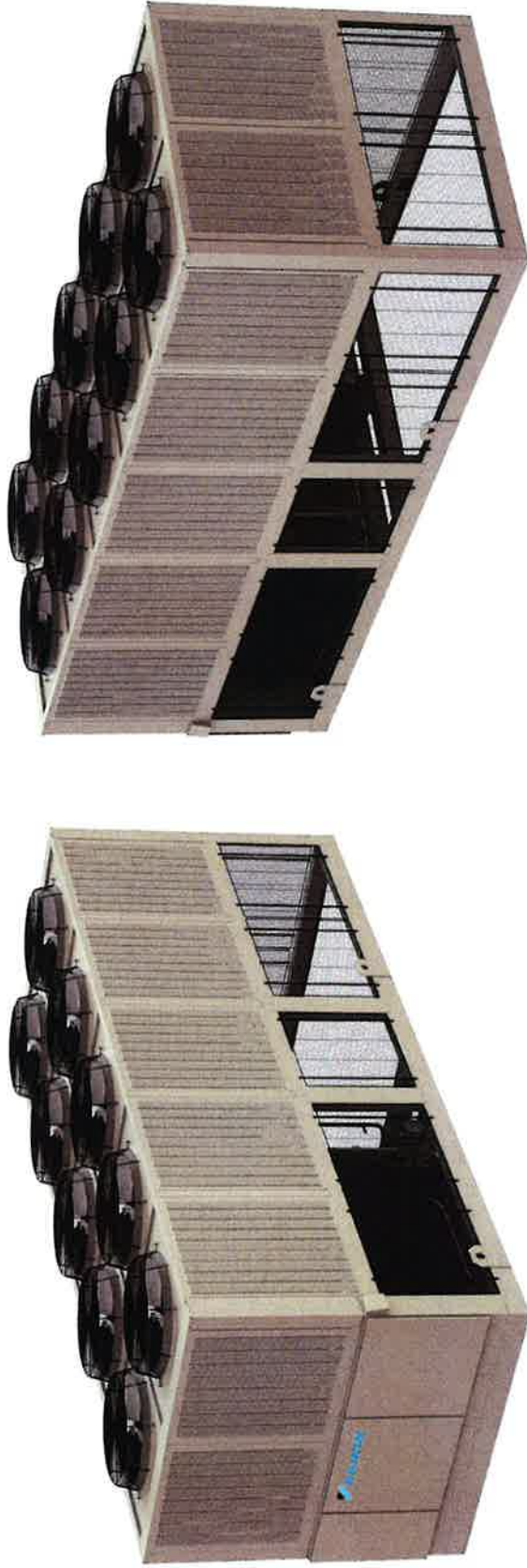


Diagram Notes

Diagram simulates wrap, grille and louver options as selected only. Refrigeration components may vary depending on selected options.

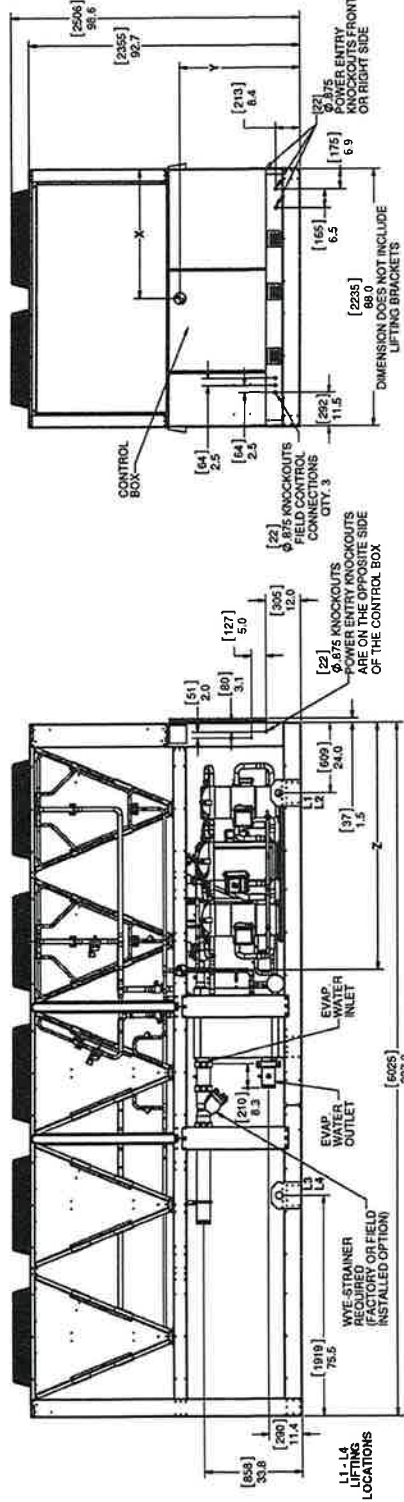
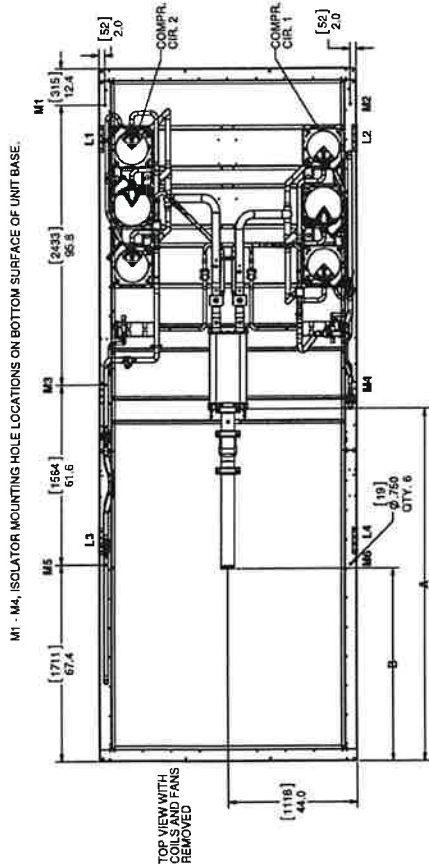
Product Drawing		Unit Tag: DST Air Cooled Chiller 001		Sales Office: Richmond - Daikin Applied	
Product: Air-Cooled Scroll Chiller	Project Name: Prince George Chiller	Sales Engineer: michael pooler		13600 Industrial Park Blvd. Minneapolis, MN 55441	
Model: AGZ140-180E	Sept. 22, 2021	Ver/Rev:	Sheet: 1 of 1	Scale: N/A	Tolerance: N/A
Dwg Units: N/A					
www.DaikinApplied.com Software Version: 12.31					
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.					



AGZ180E Packaged (Microchannel Condenser)

OA

Unit Dimensions



Unit Weight Data												
Units	Weight		Lifting Weight						Mounting Weight			
	Shipping	Operating	L1	L2	L3	L4	M1	M2	M3	M4	M5	M6
lb	7412	7560	2121	2127	1580	1584	1613	1617	1210	1214	951	954
kg	3362	3429	962	965	717	718	732	733	549	551	431	433

Unit and Center of Gravity Dimensions						
Units	A (No Strainer)	B (With Strainer)	Connection Size (Victaulic)	Center of Gravity		
				X	Y	Z
in	117.0	62.4	4.0	44.1	39.4	82.8
mm	2971	1584	102	1119	1000	2103

NOTE
IT IS RECOMMENDED THAT THE SIDE LOCATIONS BE USED FOR POWER ENTRY WIRE SIZES LARGER THAN 350 MCM.

NOTE
A water strainer must be installed at the inlet of the evaporator to protect it from damage. Please refer to the IOM for additional details.

Product Drawing	Unit Tag: DST Air Cooled Chiller 001	Sales Office: Richmond - Daikin Applied
Product: Air-Cooled Scroll Chiller	Project Name: Prince George Chiller	Sales Engineer: michael poole
Model: AGZ180E	Sept. 22, 2021 Ver/Rev: Sheet: 1 of 1	Scale: NTS Tolerance: +/- 1.0" Dwg Units: in [mm]
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.		

13600 Industrial Park Blvd. Minneapolis, MN 55441
www.DaikinApplied.com Software Version: 12.31



HVAC/Service Solutions for the Public Sector

Partners in Cooperative Contract Purchasing

Daikin—the world's number one HVAC manufacturer and OMNIA Partners—the nation's largest and most experienced cooperative purchasing organization, combine to give you streamlined and cost-effective procurement and HVAC solutions.

With the cooperative contract, awarded by Region 4 Education Service Center made available through OMNIA Partners, Daikin Applied is able to put real power behind your next purchase. Team with us to leverage over \$13 billion in purchasing power assets and draw upon the HVAC industry's most technologically advanced and innovative equipment available. We'll help you achieve your district's strategic goals and cooling/heating needs, while creating healthier learning environments for faculty and students through improved indoor air quality.

For more information on cooperative purchasing, contact Duane Rothstein, Daikin Applied Government Vertical Market Manager at:

duane.rothstein@daikinapplied.com or 952.261.9313.

For more information on the Daikin Applied contract and OMNIA Partners, visit:

<https://www.omniapartners.com/publicsector/contract/supplier-contracts/daikin-applied>



- World's number one manufacturer of HVAC equipment
- Over 90 years of experience
- Extensive creative customer solution offerings
- Contract number: **R150505**



- Lead public agency
- 7-county Texas school district in Houston, TX
- 1500+ campuses
- Serving 1.2 million students



- Largest public sector purchasing organization
- Combined National IPA & U.S. Communities to form OMNIA Partners, Public Sector
- Free/simple membership

High-performance HVAC systems and turnkey service



Daikin Service Solutions

- Turnkey service - nationwide, factory-trained installation and service support
- Energy efficiency and renewable solutions
- Energy analysis services and support
- Utility rebate assistance
- System application and design support
- Refrigerant management solutions
- Carbon credit assistance
- Chiller rentals
- Controls solutions
- Commissioning/recommissioning
- Rebuild/refurbishment
- Maintenance agreements



Daikin HVAC Solutions

- Water and air-cooled chillers
- Indoor/outdoor air handlers
- Fan coils/unit ventilators
- Water source heat pumps
- Self-contained systems
- AAF Flanders air filtration products
- Modular chiller plants
- Rooftop systems
- Cooling towers, boilers, pumps
- OEM and commodity parts
- Intelligent BAS controls



Magnitude® water-cooled chillers,
Trailblazer® air-cooled chillers



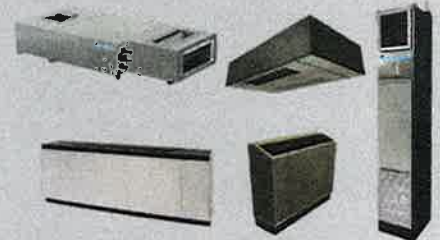
Vision®/indoor air handlers,
Skyline® outdoor air handlers



Self-Contained
packaged vertical systems



Water source heat pumps



PreciseLine®/OptiLine™ fan coils,
unit ventilators



Modular central plants



Rebel®/Maverick® II rooftop systems



AAF Flanders air filtration products

For more information on our complete line of HVAC systems and service solutions, contact your local Daikin Applied Representative or visit www.DaikinApplied.com to find an office near you.

Board of Supervisors
County of Prince George, Virginia

Resolution

At a regular meeting of the Board of Supervisors of the County of Prince George held in the Boardroom, Third Floor, County Administration Building, 6602 Courts Drive, Prince George, Virginia this ___ day of _____, 2021:

Present:

Vote:

Floyd M. Brown, Jr., Chairman
Marlene J. Waymack, Vice-Chair
Alan R. Carmichael, Jr.
Donald R. Hunter
T. J. Webb

A-__

On motion of _____, seconded by _____, which carried unanimously, the following Resolution was adopted:

RESOLUTION; AWARD OF CONTRACT AND APPROPRIATION (\$220,610 DAIKIN REPLACEMENT OF AIR COOLED CHILLER AND ELEVEN VARIABLE FREQUENCY DRIVES IN COUNTY ADMINISTRATION BUILDING)

WHEREAS, The Director of General Services has determined to make the heating and air conditioning system in the County Administration building fully functional, the air cooled chiller and eleven variable frequency drives must be replaced; and

WHEREAS, The Director of General Services received pricing from Daikin through cooperative Omnia contracts #s R200401-VA-312621 and R200401-VA-312635 in the amount of \$220,610 which includes a ten year warranty; and

WHEREAS, staff is recommending the purchase and installation of a new / replacement air cooled chiller and eleven variable frequency drives with a ten year warranty from Daikin for \$220,610; and

WHEREAS funding is not currently available in the adopted FY2022 County operating budget, an appropriation from General Fund, Fund balance is recommended as the funding source because the project is of an urgent nature and waiting to include this replacement in a Capital Improvement plan for future borrowing is not recommended; and

WHEREAS, Staff is requesting authorization for the County Administrator to enter into a contract with Daikin in the amount of \$220,610 and approval of an appropriation from General Fund, Fund Balance.

NOW, THEREFORE, BE IT RESOLVED That the Board of the Supervisors of the County of Prince George this ___ day of ____, 2021, hereby awards the Air Cooled Chiller and Variable Frequency Drives replacement contract to Daikin in the amount of \$220,610 and authorizes the County Administrator to execute a contract with Daikin.

NOW, THEREFORE, BE IT FURTHER RESOLVED That the Board of Supervisors of the County of Prince George this ___ day of ____, 2021, does hereby authorize the following increase of funds within the 2021-2022 Budget, such line items increased as follows, which monies to be expended for purposes authorized and approved by the Board of Supervisors of the County of Prince George:

<u>FUND/ORGANIZATION</u>		<u>AMOUNT</u>
GENERAL FUND (0100)		
<u>Expenditure:</u>		
0100-09-401-0917-49172	Gen Fund transfer to CIP Fund	\$220,610
<u>Revenue:</u>		
0100-40-900-8208-399999	General Fund, Fund Balance	\$220,610
CAPITAL IMPROVEMENT FUND (0311)		
<u>Expenditure:</u>		
0311-01-002-____-48120	County Admin Chiller and Variable Frequency Drives Replacement	\$220,610
<u>Revenue:</u>		
0311-90-901-8207-399100	Transfer from General Fund	\$220,610

A Copy Teste:

Percy C. Ashcraft
County Administrator