ADDENDUM # 02 Saluda Trail Middle School HVAC-Replacement ROCK HILL SCHOOL DISTRICT THREE JCS PROJECT NO: 22028 January 9th, 2022



This addendum modifies the Contract Documents only in the manner and to the extent stated herein and shown on any accompanying drawings and will become a part of the Contract Documents. Except as specified or otherwise indicated by this addendum, all work shall be in accordance with the basic requirements of the Contract Documents.

QUESTIONS:

1. Are there opportunities for work to be performed before May 27, 2023? The district is willing to work with the contractor to provide access to the site when not occupied by students or staff.

GENERAL:

- 1. MECHANICAL:
 - A. See attached mechanical unit control information.

SPECIFICATIONS:

Note: Replace the following specification sections or paragraphs with the updated specification sections or paragraphs included in this addendum or add new specifications sections or paragraphs included in this addendum.

- A. Section 01 2100, Allowances: See attached updated specification.
 - a. Added line 1.5 OSF Contingency Allowance.

DRAWINGS:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

1. ARCHITECTURAL:

- A. Sheet T103, Form F3: See attached updated sheet.
 - a. Updated Code Analysis Key Plan.
 - b. Updated area names on F3 Form, page 1.
 - c. Changed Alteration Level from "Level 1" to "Level 2", page 2.
 - d. Added "2009 International Energy Code" to Other Codes/Standards & Additions, page 1.
- B. Sheet T104, Life Safety Site Plan: See attached updated sheet.
 - a. Added Sheet T104, "Life Safety Site Plan".
- C. Sheet A202, Overall Mezzanine Plan: See attached updated sheet.
 - a. Added Mezzanine Plan General Notes.
- D. Sheet A304, Mezzanine Plan Area "A1": See attached updated sheet.
 - a. Added Mezzanine Plan General Notes.
- E. Sheet A305, Mezzanine Plan Area "B1": See attached updated sheet.
 - a. Added Mezzanine Plan General Notes.
- F. Sheet A306, Mezzanine Plan Area "C1": See attached updated sheet.
 - a. Added Mezzanine Plan General Notes.
- G. Sheet A502, Door Schedule, Door Types, Frame Types, and Details: See attached updated sheet.
 - a. Added 1 Hour Fire Rating to doors M200-M204.
- H. Sheet A701, Sections and Details: See attached updated sheet.
 - a. Updated notes on details 1/A701 and 2/A701.

ADDENDUM # 02

Saluda Trail Middle School HVAC-Replacement ROCK HILL SCHOOL DISTRICT THREE JCS PROJECT NO: 22028 January 9th, 2022



I. Sheet A801, Roof Plan: See attached updated sheet.
 a. Added existing exhaust fans to roof plan.

2. MECHANICAL:

A. See the attached from the mechanical engineer addressing mechanical items. Items are referred to on the mechanical cover page

END OF ADDENDUM # 02



CB LINE

ABB Cylon® CB Line BACnet® Field Controllers



ABB Cylon[®] CB Line Flexible building automation control

The CB Line is the most flexible family of BACnet controllers in the industry, delivering the capability to enhance building automation performance, reduce time on task and create more efficient, secure environments.

01 01 ABB Cylon® CBX Series

02 ABB Cylon® CBV-2U4-3T

03 ABB Cylon® CBV-2U4-3T-N

04 ABB Cylon® CBT-3T6-5R

05 ABB Cylon® CBT-4T4-2U1R

06 ABB Cylon® CBT-STAT

07 ABB Cylon® UCU Room Display

ABB Cylon[®] CB Line series

BACnet® field controllers feature the CBX System, CBT and CBV Series. The powerful freelyprogrammable controllers are designed to work as part of the ABB Cylon® Cylon dual-platform offering and can be used as field level BACnet/IP and BACnet MS/TP controllers for ASPECT® and INTEGRA™ building management solutions.

UniPuts™

The CB Line offers ABB Cylons patented UniPut technology, a revolutionary answer to flexible point configuration allowing points on the controller to be configured as an input or an output, maximizing flexibility relative to programming changes as well as point capacity on the controller and utilizing less space in the enclosure.

Design Flexibility

Both the CBXi Series (IP) and CBX Series (MS/TP) utilize the same form factor and I/O complement, including sharing of the same Field Level eXtension (FLX) modules. This versatility ensures flexibility in design and usability for connection to mechanical and electrical building systems.

Multi-protocol Communications Support

The CBXi Series controllers are BACnet Building Controllers (B-BC) and communicate on a Local Area Network. Additionally, the controllers support routing for BACnet MS/TP and integration support for both Modbus TCP and Modbus RTU without the use of additional gateways.

The CBX Series controllers are BTL listed, BACnet Advanced Application Controllers (B-AAC) and communicate using BACnet MS/TP over an RS-485 network. The controllers also provide support for Modbus RTU.

Powerful Engineering

The freely programmable CB Line of controllers can be tailored to meet an extensive variety of applications by creating and modifying strategies using CXproHD Engineering Software.



CBX System | Advantages

The CBX System is the most advanced BACnet controller of its kind, with on-board I/O, optional HOA, multi-protocol support and a range of FLX (Field Level eXpansion) modules, providing ABB Cylon® System Integrators with even greater control flexibility.

The CBX System provides a flexible and expandable building energy management solution for

intelligent control of HVAC equipment, lighting control and electrical systems including metering applications.

Flexibility to Expand with Modular Hardware Design

CBX and CBXi share the same form factor, I/O points are located in the same position, and FLX modules are common to both CBX and CBXi controllers making the CBX System one of the most powerful and flexible controller families available. Extending I/O or future proofing a site is quick and easy with reduced inventory requirements.

Reduced Diagnostic Time

Software-free diagnostics are included to facilitate instant visual identification of wiring faults; status LEDs for all I/O points instantaneously providing a visual diagnostic and error status for each connected system point reducing problem-solving time and associated costs.

01 ABB Cylon smart building solutions provide flexible site control applications for small to large scale building automation systems.

Efficient Commissioning and Testing

Manual over-ride of UniPuts enables easy configuration, quick commissioning and postinstallation testing without the need to connect to the **CXpro^{HD}** engineering tool. Over-ride of UniPuts can be undertaken through **CXpro^{HD}** or locally using the HOA facility where available. Hand/Off/Auto Local Over-ride function available for FLX UniPuts with '-H' variants.

Quick & Easy Installation

FLX I/O bus/power connection is achieved through a single plug connector, simplifying the installation process and eliminating the possibility of misconnection between components of a CBX system trunk.

CBX System Additional Features

- Supports Cylon's Intelligent Sensor Series
- Local micro-USB service port
- Accurate Universal Inputs support a variety of thermistors and RTDs that range from 0 to 450 kOhms as well as 0 to 10 VDC, 4 to 20 mA and pulse counting
- On-board 18 VDC power supply



CBXi Series and CBX Series The most advanced BACnet® controller of its kind

CBXi-8R8, CBXi-8R8-H, CBX-8R8 and CBX-8R8-H controllers are designed for a wide range of energy management applications for intelligent control of; HVAC equipment such as Central Plant, Boilers, Chillers, Cooling Towers, Pump Systems, Air Handling Units (Constant Volume, Variable Air Volume and Multi-zone), and Rooftop Units, Electrical systems such as lighting control, variable frequency drives and metering.



CBXi Series

4

CBXi-8R8 and CBXi-8R8-H are freely programmable IP-based BTL-Listed BACnet Building Controllers (B-BC) that support simultaneous multi-protocol communications including BACnet/IP, BACnet MS/TP, Modbus TCP, and Modbus RTU.

CBXi Series of controllers are built on an extendible platform that features 8 UniPuts with Relay and 8 Universal Inputs, the CBXi Series allows up to 96 points of control with five FLX Series extension modules.

FLX expansion modules are available in a variety of options to allow maximum flexibility in achieving the required point configuration. CBXi-8R8-H provides local Hand-Off-Auto override functionality. The CBXi Series features BACnet/IP communications with dual port Flexible wiring topoloy, daisy chain or star and support for both DHCP and Static IP.



CBX Series

CBX-8R8 and CBX-8R8-H are freely programmable BTL-Listed BACnet Advanced Application Controllers (B-AAC) that communicate on a RS-485 local area network using the BACnet MS/TP and feature support for Modbus RTU devices. Modbus allows the integration of devices into control strategies such as motor drives, meters, and other sensors.

Each feature-rich controller features 8 UniPuts with Relay and 8 Universal Inputs. The CBX-8R8-H features supervised manual override of UniPuts using local Hand-Off-Auto switches and potentiometers.

The CBX Series' 16 on-board I/O can be expanded up to 64 points using the FLX Series of Field Level eXpansion modules.



CBX SYSTEM

Field Level eXpansion (FLX) I/O modules

CBXi and CBX Series feature 16 points of control and are designed with the flexibility to expand using FLX-8R8, FLX-8R8-H, FLX-4R4, FLX-4R4-H, and FLX-16DI Field Level eXpansion modules.

Replace or Extend I/O Points Quickly and Easily

FLX modules snap together without the need for the System Integrator to prepare special cabling, however, when necessary, a cable (FLX-RMC) can be used to extend the FLX modules' range to a total distance of 100 feet (30 meters) from the CBXi or CBX controller.

Reduce Time On-Site

Pre-configuration of FLX expansion modules via the FLX dip switch addressing facility; reduces on-site installation time, simplifies setup and system checks, and reduces the skill level requirement for a hardware upgrade or expansion.

FLX MODULES

FLX-8R8

8 UniPuts with Relay 8 Universal Inputs

FLX-8R8-H

8 UniPuts with Relay 8 Universal Inputs Hand/Off/Auto Local Override Function

FLX-4R4 4 UniPuts with Relay

4 Universal Inputs

FLX-4R4-H

4 UniPuts with Relay 4 Universal Inputs Hand/Off/Auto Local Override Function

FLX-16DI

16 Digital Inputs

CBT Series and CBV Series Powerful HVAC Control

CBT Series and CBV Series provide flexible automation control and management of vital HVAC equipment and plant enabling efficient operations, optimal occupant comfort, and energy cost savings for building owners.



BACnet MS/TP Advanced Application Controller (B-AAC)

CBT-3T6-5R is a BTL Listed BACnetAdvanced Application Controller (B-AAC) with 3 UniPuts with Triac, 6 Universal Inputs and 5 Digital (Relay) Outputs.

CBT-3T6-5R is part of the CB Line and is designed for direct digital control of Rooftop HVAC units, fan coil units, heat pumps, small air handling equipment and custom unitary system control.

The **CBT-3T6-5R** terminal equipment controller offers reduced costs in terms of implementation, training, rollout, and maintenance. Along with UniPuts, the CBT-3T6-5R features high-power relays for direct connection to the equipment's electrical circuits.

Applications

CBT-3T6-5R is a 14-point Unitary BTL Listed BACnet Advanced Application Controller. This field controller is suitable for controlling a variety of small to medium-sized HVAC equipment such as:

- Rooftop Units
- Fan Coil Units
- Heat Pumps
- Unit Ventilators
- Custom Unitary Equipment

Both **CBT-3T6-5R** and **CBT-4T4-2U1R** controllers accommodate available pre-engineered strategies or can be tailored to custom applications using **CXpro^{HD}** programming software.



CBT-4T4-2U1R is a BTL Listed BACnet Advanced Application Controller (B-AAC) with 4 UniPuts with Triac capable of switching a 24 V AC load, 4 Universal Inputs, 2 UniPuts, and 1 Digital (Relay) Output, configureable as analog / digital outputs or voltage inputs.

CBT-4T4-2U1R is ideal for Fan Coils with ECM and features a high power relay for directly enabling the motor circuit without the use of an interface relay.

Applications

CBT-4T4-2U1R is an 11-point Unitary BTL Listed BACnet Advanced Application Controller. This field controller is designed for a wide range of applications for the intelligent control of a variety of unitary and small sized HVAC equipment such as:

- Fan Coils Units with ECM
- Heat Pumps
- Chilled Beams/Ceilings
 Unit Vents
- Unit Vents
 Unit Heaters
- Exhaust Fans
- Custom Unitary Equipment





CBV Series

BACnet MS/TP Advanced Application Controllers (B-AAC) CBV Series BACnet VAV Controllers are part of the CB Line.

CBV-2U4-3T and CBV-2U4-3T-N are BTL Listed BACnet Advanced Application Controllers (B-AAC) with 2 UniPuts, 4 Universal Inputs and 3 Triac Digital Outputs, and an integrated airflow sensor. CBV-2U4-3T features a Belimo actuator with a brushless DC motor.

The -N variant has a facility for connection to an external actuator. The **CBV-2U4-3T-N** can be used in retrofit building applications to help reduce cost by reusing existing actuators.

The freely programmable **CBV Series** can be tailored to meet a variety of applications using the pre-loaded and configurable application library or by creating and modifying strategies using **CXpro^{HD}** programming interface.



Applications

The **CBV Series** is suitable for controlling single duct or fan-assisted Variable Air Volume (VAV) applications.

Typical VAV zoning applications include;

- Cooling only
- Cooling with Reheat
- Cooling with Reheat and Perimeter Radiation
- Series fan VAV
- Parallel fan VAV
- Dump box
- Room pressurization

With CBV-2U4-3T and CBV-2U4-3T-N controllers you can add a demand ventilation application, and occupancy sensors or lighting control to enhance energy savings.

CXpro^{нD} Features

01 CXproHD is engineered from the ground-up to accelerate your development process and bring your smart building to market faster. **CXpro**^{HD} is a suite of software applications that allows all facets of ABB Cylon's [®] CB Line of BACnet controllers to be designed, engineered, programmed, configured, tested, commissioned and maintained with minimal engineering effort. **CXpro**^{HD} puts you in control of delivering energy efficient systems.

CXpro^{HD} empowers you to manage all aspects of controllers and sites to be designed, configured, tested, engineered, commissioned and maintained with minimal engineering effort.

Features of **CXpro^{HD}** include:

- BACnet properties support
- Equation module that allows functionality to meet the most complex of strategies
- Mass device commissioning
- Modbus TCP and RTU device integration
- Configuration of eXplore display

Application

CXpro^{HD} offers a graphical programming interface that enables you to visually assemble building blocks as necessary to create a custom control sequence for any HVAC/building automation application.

Set up and configure datalogs, alarms, and time schedules easily and quickly.

Strategy simulation allows offline development and testing, data scanning helps verify system behavior and online programming mode allows a site to be engineered in real-time and changes to become instantly effective.





01 CXproHD graphical programming makes it easy to create custom sequences, visually assembling strategy building blocks as required.

CXpro^{HD} Features

Simulation and Online Programming

Full strategy simulation features allow testing of strategies off-site, emulating the complete endto-end strategy without the need to connect to the physical controller. Simulation testing helps identify any problems or issues with strategies, allowing for more comprehensive engineering and more time effective and efficient commissioning on-site.

Export Data to ASPECT[®] and INTEGRA™

Data from **CXpro^{HD}** can be easily imported into ABB Cylon® ASPECT® or INTEGRA[™] making your project easy to engineer and deliver. All point values are automatically populated and ready for immediate use in ABB Cylon® ASPECT® -Studio or INTEGRA[™] Niagara Workbench.

BACnet Properties

BACnet properties in **CXpro^{HD}** allow you to access and modify the properties of any selected module, point or device over BACnet in real-time. With BACnet properties you can integrate and modify strategies on controllers while connected.

Equation Module

The equation module, supports Logic and IF statements that simplify the programming of the most complex strategies, by combining analog and digital values to new modules.

Ribbon Command Bar

Located at the top of the **CXpro^{HD}** User Interface, the Ribbon Command Bar, is similar to many Windows applications, and allows access to the majority of **CXpro^{HD}** features. If there are specific Ribbon feature options that you use often, you can add them to the Quick Access Toolbar where they will be accessible at all times.

Site List

The site list provides an overview of all configured sites, allowing specific controllers to be selected for configuration.

Strategy Drawing Window

View modules and points in the current strategy, and the connections between them, including live data when connected to a CB Line controller.

Page Navigation Panel

The page navigation panel gives an overview of the full controller strategy and allows you to jump directly to different parts of the Strategy. **CXpro^{HD}** also features Zoom controls for greater visibility.

Notes

Notes



 abb.com/buildings



TEAM Mechanical includes the most innovative and cost-effective building management systems available. By harnessing the power of Tridium's Niagara 4 Platform we can provide solutions that are customized directly to fit the customer's needs. We pride ourselves on being integrators and not just controller replacers.

While offering a full line of ABB, JCI FX and Carrier OPEN BACnet controllers for new installations. We also are fully trained and equipped to service the following:

Distech LON and BACnet MS/TP Distech Eclypse Vykon **Carrier CCN** Carrier i-vu Trane BACnet Trane comm 5 Trane comm 4 Trane comm 3 Honeywell Johnson Controls N2 Delta BACnet Wattmaster York YCCS **York Verasys** Many other BACnet and LON control systems.

Commercial and Industrial Mechanical Services

Professional Engineering - Energy Analysis - System Installation – System Commissioning – System Maintenance

Customer References:

<u>David Murdock</u> Senior Project Manager Mecklenburg County AFM 704-534-2047 Customer 2015-present 30+ controls jobs

Ron Hosea Facilities Manager Arramark 704-264-5255 Daily Support/Repairs for Mecklenburg County Libraries and Park/Rec sites.

<u>Mack Millen</u> Director of Maintenance Gaston College 704-616-2012 Customer 2021-present 5+ controls jobs Daily Support and Repairs.

Internet Services Ernest Jackson Facilities Manager Internet Services 704-654-1926 5+ Controls Replacement Projects Daily Support and Repairs.

Project Screen Shots:

<u>Gaston College</u>- (16) building campus integrated into a supervisor. Initial controls job consisted of the control's hardware replacement on four buildings and complete overhaul of the supervisor. Controls hardware replacement consisted of (160) VAV controllers, (11) VAV AHUs, (2) Hot/Cold Deck AHUs (2) CW Plants, and (2) HW plants. AHUs and CW/HW plants have programing for air and water reset to increase energy efficiency.

Login Screen



Campus Map- Yellow Dots are outside lights.



Outside Lighting Control Page-

The outside lights are controlled by the sun angle. This eliminates the need to constantly adjust the lighting schedule. We have schedules installed on certain lights to override them to off. This saves energy. These times include holidays and the weekends. Budgeting for the next few years to expand the lighting system and remove mechanical timeclocks.

GASTO	DN G E 58.0 °F Fair	Exterior Lights	(٤ (1)	
GCC Building Selection	AP.Safety Parking Lot On	DBC Pole Lights 1 On	Myers Center/Chiller Sidewalk Lights	on	Sun Angle Current Angle	-9.6 deg]	
AP Safety	Beam Admin Not	Pole Lights 3 On Courtyard On Wall Packs On	Noll Null Null	-	Max Sun Elev.	33.6 deg -75.7 deg		
CET Craig	CAM Null Null	Life Skills	PTI Boiler Building L Back Lot Pole L	lights On lights On				
DBC Life Skills	CET Roadway Lights On Ext Wall Packs On	LM Library Parking Lot Lights CN Entry Lights Lights ON	Rauch Pole Lights Canopy Lights	Off Qn				
LM Library LS Beam Myers	Craig Nutl	LS Beam Upper C Ballards Ughts On Upper D Wall Ughts On	RCB Wall Packs Bellards	On On				
Myers Chiller PTI Rouch	Dalpiaz Nuli	Lower Lights Ughts On	Vat Tech Entry Wall Packs L Wall Packs L	ights On ights On				
RCB VetTech Visual Arts	= Controlled by Sun A = Controlled by Sun = Controlled by med	ingle Only Angle and a schedule for off times. Click on th spaircal timer.	he blue button for the schedule					

David Belk Cannon Building Home Page

G GAST	ON GE	58.2 °F Fair	David I	Belk Cannon				
David Belk Cannon	Chillers Chiller 1 Chiller 2	Status Off 6	SWT RWT 52,50 °F 54,30 °F 58,40 °F 61,50 °F	Lights Sta Exterior O	tus Sun Spt	Sun Down -7.3 deg		
N Wing Lst Floor		And Area				and the local diversion		
N Wing 2nd Floor	Bollers	Status 1	5WT RWT	Avg Space Ter Max Space Temp 76.1	F VAV3 2			
SWing 1st Floor	Boiler 2	Off 1	23.41 'F 122.04 'F	Min Space Temp 66.6	F VAV1_16			
SWing 2nd Floor								
CW Plant	AHUS	Fan	VFD SAT	CWV MAT	Econ	MARKED IN P	NORMER	
UW Plant	AHU 1		129.19% 55.22°F	0.00% 74.36 F	10.00%	A CONTRACT OF		
· · · · · · ·	AHUS		1.93% 55.33°F	0.00% 74.76 %	10.00%	FOR ALL PROPERTY.	Contraction in	
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Old Pool DHU	Info	Timestamp	e Source	Message Text	Source State	Priority *	Ack State	Alarm Class

1st Floor South Floorplan





David Belk Cannon Chilled Water Plant

Myers Chiller Plant



<u>Mecklenburg County Aquatic Center</u>- This was a JACE replacement with integration for the first job. The second job was replacing the factory controls on a Serresco dehumidification unit as a proof of concept. The factory controls were known to have issues. We removed them and installed new BACnet MS/TP controllers.

Home Page

	Aquatic Center							OA Temp 36.0 *F 🏫 🔔 🎽 🖾 📈						
er HV	AC				Plant/Spa/Pools			1	Exhaust Fans					
	Units	Heating	Cooling	SAT	Units	Status	SWT	RWT	Fans	Status	Fans	Statu		
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an -	0H-1	false	false	68.60 °F	Boiler 2	On	149,9 °F	149.4 °F	EF-S	flo	EF-16	off		
	DH-2	true	false	95.50 °F	Towers				EF-6	0n	EF-17	Q.n		
	0H-3	false	false	76.80 °F	<u> </u>	Ûn	77.4%	85.5 *F	EF-7	Off	EF-18	07		
	0H-4	false	faise	0.00 *F	CL-5	On	77.4*F	S5.5 *F	EF-8	Off	EF-19	- 04		
	WSHP-T	19156	false	0001F	Spa	10%	80.175	00.075	EF-10 FE-11		EE-20	01		
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		0.7	0.5	CALE IF	Manu Deal	0.0%	85.7 *F	95.1 *F	EF-13	Div.	EF-23	0#		
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DH-6



<u>United Beverage Concord, NC-</u> Removed a 20yr old Trane Tracer system. Integrated the existing Comm 4 controllers into a new JACE.

VERAGES OF N		62.0 A Few) °F Clouds		H	ome	Pa	ge						2
ſ	Unit	SAT	Fan	Comp 1	Comp 2	Heat1	Heat 2	Econ	el i	Unit	Space Temp	Damper Pos	Airflow	Heat
East Floorplan	RTU-1	85.40 °F	On	Off	Off	On	Qn	50.00 %		VAV 1	74.20 °F	33.00 %	201.72 cfm	N/A
	Unit	Space Terms	SAT	Ean	Form 1	Comp 7	Heat 1	Heat 7	Econ	VAV 2	71.00 °F	49.00 %	284.55 cfm	N/A
Vest Floorplan	RTU-2	61.10 °E	61.40 T	Off	off	off	Off	off	0.00.%	VAV 3	70.30 °F	53.00 %	490.35 cfm	N/A
ehouse Floorplan	RTU-1	63.30 °F	61.40 °F	Off	Off	Dff	Off	off	0.00%	VAV 4	71.10 °F	63.00 %	1005.80 cfm	N/A
	RTU-4	63.10 °F	60.80 °F	Off	Off	Dff	off	off	0.00%	VAV 5	67.90 °F	47.00 %	254.10 cfm	N/A
	RTH-5	67.20 °E	60.80 °F	Off	off	flo	Off	off	0.00.%	VAV 6	68.30 °F	28.00 %	122.85 cfm	N/A
RTU1	RTU-6	63.40 °F	60.50 °F	Off	off	off	off	off	0.00 %	VAV 7	68,40 °F	33.00 %	160.72 cfm	N/A
DTUS	RTU-7	62.60 °F	59.10 °F	Off	Off	off	Off	off	0.00.95	VAV 8	68.60 °F	33.00 %	164.00 cfm	N/A
RIU2					1	1 1				VAV 9	67.50 °F	59.00 %	721.60 ctm	N/A
RTU 3		Unit	Command	Status		Unit	Command	Status		FB1	69.40 °F	22.00 %	253.80 cfm	Off
DTIL		Ex. Fan 1	On	On		Ex. Fan 6	On	On	6	FB2	67.00 °F	100.00 %	500.85 cfm	On
RIU4 .										FB 3	71.00 °F	28.00 %	792.00 cfm	Off
RTU 5		CERTIZA.	4			miller			-	FB 4	69.10 °F	21.00%	272.80 cfm	Off
DTUIS *	■ ⊛M	odelo		nn	1	<u></u>		10	Contraction of the local division of the loc	FB 5	67.80 °F	30.00 %	211.20 cfm	Off
RIUG	2111	oucio	ş 🕓	NU				U	irona 📕	FB 6	66.80 °F	62,00 %	410,55 cfm	Off
RTU7 :		Especial		IGH	T				vtro	FB7	67.50 °F	33.00 %	785.40 cfm	Off
				1011	1.				Allu	FB 8	67.60 °F	100.00 %	977.44 cfm	off
	-								15	FB 9	68.40 °F	38.00 %	183.68 cfm	Off
	Alarm Dv	erride								FB 10	68.50 °F	100.00 %	481.95 cfm	Off
	Time	Range V	• = @	Y D	ER 6 Shar	aTempAlarm	Tomp	orature is in	normal canre	Normal	25	19 Source(s) / 39 Alarm	(S) 💌
	U .	• 05-Jai	n-23 9:47:02	AMEST	rв 6-Spac	erempAlarm	lemp	erature is in	normal range	Normal	25.	5 0A	cked / 4 Una	cked
		05-Jai	n-23 2:30:58	AM EST	FB 3-Space	eTempAlarm	Temp	erature is in	normal range	Normal	25	5 0A	cked / 8 Una	cked
TEAM	•	ACKNI	DWLEDGE) (1	HYPERLINK		INTES					SHOW BE	CHIDDING	

Home Page

Floorplan- If the mountains are blue the RTU is cooling.



VAVs



Blue Flame Credit Union- Brand New Building.

Floorplan



- 1.0 GENERAL
- 1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract including General & Supplementary Conditions and other Division-1 specification sections, apply to work of this section.
- 1.2 SCOPE: This section describes the allowances that are to be included in the contractor's bid and entered on the Form of Proposal
- 1.3 ALLOWANCE: The following allowances to be used as directed by Architect. Any unused portion of these allowances shall be credited to the Owner at the completion of the work. These allowances shall be considered actual costs and the contractor's profit, insurance, taxes, installation cost, and protection of installed products, will be figured in the bids, except as otherwise noted.
- 1.4 HARDWARE: \$10,000.00 - including Material, S.C. Sales Tax and Installation.
- 1.5 OSF CONTINGENCY ALLOWANCE:
 \$30,000.00 including Materials, SC Sales Tax and Installation to cover existing unknown items which are not code compliant.

NOTE: Allowance money shall be used as directed by the Owner/Architect for the work list and/or other work as deemed necessary for a successful project by the Owner.

END OF SECTION



C:\Users\hstewart\Documents\Revit\22028 - RHS#3 - Saluda Trail Middle - HVAC - v20_HStewart4MWV

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Area 5

Area 5

Area 5

Area 5

Form F3 – Building Code Analysis Per IBC Chapter 16 and ASCE 7 – Structural tables may be shown on initial Structural Sheet of the drawings or on Sheet with



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Comments of data from another	A ACUDAD	00 Loomalianos	ELECTRICAL INFO	RMATION	
Summary of aata from approv sheets.	ea ASHKAE	90.1 compliance		🖾 By Utility	
MECHANICA	L INFORM	IATION	SERVICE		KVA Primary
GENERAL INFORMATION			TRAINSFORMER	□ By District	Voltage/Phas
Building Location	Rock Hill	, SC	FLECTRICAL SERVIC	F INFORMATION	(onugo) i nuo
Climate Zone	3A		Service Voltage/Phase	480/277V	4000 Amperes
	Summer	95 deg F DB	Service Entrance	EXISTING	Qty per Phase
Outdoor Design Temperature		76 deg F WB	Total Connected Load		EXISTING KVA
	****	20 deg F DB	Estimated Maximum De	emand	EXISTING KVA
	Winter deg F WB		Available Fault Current	in Symmetrical	EXISTING
	Summer	74 deg F DB	Interrupting Capacity of	EXISTING	
	Summer	55 % RH	Overcurrent Device		LAISTING
Indoor Design Temperature		70 deg F DB	(NEC 250)	EXISTING	
	Winter	% RH	EMERGENCY SERVIC	1	
OUTSIDE AIR Per ASHRA	E 62.1				45 KVA
Occupied Minimum Outside Air	10) cfm per person	Emergency Generator	🗆 no 🖾 yes	480/277V Voltage/Phase
CO2 Demand Management		□ no ⊠ ves		Fuel	EXISTING
Supervised Control System	-		Exit/Emergency Lights	Backup Power	□ Integral Battery
MECHANCIAL SYSTEMS S	FRVICE SV	STEMS &	Exit Energency Eights	Daekup I owei	Generator
EQUIPMENT	ERVICE 51	STEMB &		🖾 Manual	Addressable
Briefly describe mechanical system:		10 In 2010 To 2014	Fire Alarm System		□ Class A
Heating and Cooling is provided to th system heat pumps. Fresh Air is supp	e building thro lied through de	ugh unit ventilators and split dicated outdoor air units.		□ Automatic	Class B
			LIGHTNING PROTEC	□ no □ ves	







LIFE SAFI	ETY SITE
	CONTRACTOR
$ \begin{array}{c} \sum_{i=1}^{N} \sum_{j=1}^{N} \sum_{i=1}^{N} \sum_{i=1}^{N$	FIRE DEPARTM
	CONSTRUCTIC



OVERALL MEZZANINE PLAN |" = 30'-0"







A1	B1	
A2	B2	(









MEZZANINE PLAN - AREA "B I " |/8" = |'-0"







(\sim	$\overline{}$
Ş	-	MEZZANINE PLAN GENERA
	1. 2. 3.	NEW DOORS INSTALLED ON MEZZANINE ARE TO BE THE ONLY EXISTING MEZZANINE MECHANICAL EQUIPMENT. NEW DRYWALL INSTALLED SHALL BE FIRE RATED GWB. WHERE EXISTING FIRE DAMPERS ARE NOTED TO BE CLOSED, FIRE PARTITION".
($\overline{\mathbf{u}}$	mmm

	DOOR SCHEDULE														
DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	GLASS	GLASS	FRAME	FRAME	FRAME					
#	TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	SIZE	TYPE	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	RATHING	REMARKS
м200	D	PR 3' - 0"	4' - 0"	НМ	PAINT	-	-		НМ	PAINT	H-1	J- I	5-1	I HOUR	
M201	D	PR 3' - 0"	4' - 0"	НМ	PAINT	-	-		HM	PAINT	H-1	J- I	S-1	I HOUR	
M202	D	PR 3' - 0"	4' - 0"	НМ	PAINT	-	-		HM	PAINT	H-1	J- I	5-1	I HOUR	
M203	D	PR 3' - 0"	4' - 0"	НМ	PAINT	-	-		HM	PAINT	H-1	J- I	5-1	L HOUR	
M204	D	PR 3' - 0"	4' - 0"	HM	PAINT	-	-	I	HM	PAINT	H-1	J- I	5-1	I HOUR	
														V.V.	









HEAD & JAMB DETAILS | |/2" = |'-0"

SILL DETAILS | |/2" = |'-O"

<u>_1</u>



 EXISTING 3-5/8" METAL
 STUDS HOLLOW METAL FRAME - Caulk Continuous Each Side EXISTING 5/8" GWB

- EXISTING BOND BEAM



















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OVERALL ROOF PLAN

	0	*	

	ROOF LEGE				
	MEMBRANE ROO INSULATION AS N I/4" PER FOOT N				
	MEMBRANE ROO STRUCTURE.				
	I HOUR RATED R ASSEMBLY				
	BUILDING EXPANS				
→ • • †	ROOF DRAIN - PR TAPERED INSULA FROM DRAIN, SLO WITH POSITIVE S SUMP SHALL NO ARROWS INDICAT TYPICAL DETAIL -				
	INDICATES DIREC 1/4" PER FOOT.				
05	OVERFLOW SCUF SHEET A802 - SE				
0	MECHANICAL UNI DRAWINGS FOR S				
	EXHAUST FAN - S DRAWINGS.				
I RAH	ROOF ACCESS H (RAH) - VERIFY LO PLANS, SEE TYPIO A802. PROVIDE INSULATION TO D AROUND ACCESS				
□ RAL	ROOF ACCESS LA PADS. REFER TO EXACT LOCATION				
D.S.	4"x6" PRE-FINISH DOWNSPOUT FRO CONNECTED TO S WITH BOOT - SEE				
T.O.P.	TOP OF PARAPET				
٥	VENTILATING FAN DRAWINGS.				
	GENERAL NC				
I. WHERI ON WA ADJUS	WHERE ROOF ACCESS L ON WALL AT EXPANSION ADJUST DISTANCE OFF V TO ALLOW LADDER TO EXPANSION JOINT CURBS SEE TYPICAL ROOF DETA				
EXPAN 2. SEE T					
3. AT ALL	AOUZ. AT ALL MECHANICAL UNI				
UP-HIL AROU	LI SIDE TO DISPER: ND THE UNIT.				
4. ROOF VIEW S METAL STANE	ROOF TOP EQUIPMENT E VIEW SHALL BE PAINTED METAL PARAPET COLOR. STAND PIPES.				





DIVISION 23 - ADDENDUM NO. 2

- Date: January 9, 2023
- Project: Saluda Trail MS HVAC Renovations Rock Hill School District 3
- Arch Proj No.: 22028 MDI Proj. No.: 223807
- Submitted By: Dana Fulmer Mechanical Design, Inc. 4403 Broad River Road Columbia, S.C. 29210 (803)731-9834 Fax: (803)731-9837 justin@mdi9834.com

The following items take precedence over referenced portions of the Contract Documents for the referenced project dated 11/29/22, and, in executing a contract, shall become a part thereof.

Where any item called for in the documents is supplemented hereby, the original requirements shall remain in effect. All supplemental conditions shall be considered as added thereto.

Where any original item is amended, voided, or superseded hereby, the provision of such items not so specifically amended, voided, or superseded shall remain in effect.

QUESTIONS/GENERAL CLARIFICATIONS:

1. Please provide a list of exactly what equipment has been pre-purchased and will be provided by the owner.

Only the unit ventilators and corresponding condensing units are OFCI. All other equipment listed in the documents shall be purchased and installed by the bidding contractor. See attached for product submittal of Unit Ventilators being provided by the Owner/Daikin.

2. Please provide a list of the approved controls manufacturers that can bid the project.

Refer to specification Section 25 55 00. Accepted vendors and installers are listed under this section.

3. Please add ABB to the list of acceptable controls manufacturers.

This is acceptable, include as part of the bid package a qty. of (2) licenses for ABB configuration/programing software (CxProHD).

4. Please add TEAM Mechanical, LLC as acceptable controls installer. We will be sending over a resume in the next couple of days with references.

Acceptable, see below.

Items Pertaining to the Drawings:

- 1. M101 Thru M103 Remove the requirement for (1) of the (3) grilles to be replaced in each of the exterior classrooms.
- 2. M101 Thru M103 Added note to label all existing fire dampers that are to be closed as part of this renovation scope.
- 3. M401 Revised the Fire Damper Detail
- 4. M401 Added concrete pad detail

Items Pertaining to the Specifications:

1. Section 25 55 00, Automatic Temperature Controls: Add the following to the list of accepted Installers to bid this project provided all aspects and requirements of the specifications are met:

Controls Vendor Installer ABB Cylon (CB Line) TEAM Mechanical, LLC

END OF DIVISION 23 ADDENDUM ITEMS
Date	November 4, 2022
Hoffman & Hoffman Order #	125.352.10313
Branch Office	Charlotte, NC
Salesman	Brian Milbourne



PROJECT:	Saluda Trail Middle School Charlotte, NC
CONTRACTOR:	Charlotte, NC
ENGINEER:	Mechanical Design, Inc.
EQUIPMENT:	(51) Unit Ventilators (51) Air cooled HP Condensing Units
REVISION:	0
General Notes:	Above per the attached data and cut sheets Contractor to verify dimensions, orientation, handing, RA/FA/QA/SA duct connections.
	• We do NOT include: Condensing unit disconnect switches Line sets Refrigerant specialties Housekeeping pads Controls

SUBMITTAL

APPROVAL REQUIRED

HOFFMAN HOFFMAN, INC. HVAC Manufacturers Representative Website: www.hoffman-hoffman.com Asheville, NC (828) 252-5782 Charleston, SC (843) 884-3201 Charlotte, NC (704) 364-4700 Columbia, SC (803) 765-9360 Raleigh, NC (919) 781-8011 Greenville, SC (864) 676-1888 Wilmington, NC (910) 791-4775 Chesapeake, VA (757) 548-1700 Chattanooga, TN (423) 693-2890 Richmond, VA (804) 272-1500 Roanoke, VA (540) 725-8701 Knoxville, TN (865) 450-9770 Corporate: Greensboro, NC (336) 292-8777

We have exercised care in the preparation of this submittal. We believe it satisfies our interpretation of the designer's intent and scope. It contains the list of materials, quantities, sizes, style and the finish as we propose to furnish for this job. Please examine and check carefully that all items are exactly as required and that our interpretation of the applicable plans and/or specifications are consistent with the design. Approval by the engineer and purchaser will be required before release of this equipment for production. If any discrepancies are discovered, please notify us as soon as possible.





SUBMITTAL DATA

Job Name	Saluda Trail Middle School - Unit Vents
Job Number	125.352.10313
Sold To	Rock Hill School District
Prepared For	Kim Melander
Prepared By	Brian Milbourne - Hoffman 7 Hoffman, Inc.
Date	11/4/2022

Saluda Trail Middle School									
Indoor Unit					HP Co	ndensing Unit			
TAG	Model	Voltage	Min Circuit Amps	Max Fuse Amps	TAG	Model	Voltage	МСА	МОСР
IDHP-A-01	UAVV9H13	460/60/3	16.61	20	ODHP-A-01	DZ14SA0364	460/60/3	7.8	15
IDHP-A-02	UAHV9H15	460/60/3	21.06	25	ODHP-A-02	DZ14SA0484	460/60/3	8.6	15
IDHP-A-03	UAVV9H13	460/60/3	16.61	20	ODHP-A-03	DZ14SA0364	460/60/3	7.8	15
IDHP-A-04	UAHV9H10	460/60/3	13.60	15	ODHP-A-04	DZ4SEA2410	208/60/1	15.3	25
IDHP-A-05	UAVV9H13	460/60/3	16.61	20	ODHP-A-05	DZ14SA0364	460/60/3	7.8	15
IDHP-A-06	UAVV9H07	460/60/3	10.60	15	ODHP-A-06	DZ4SEA1810	208/60/1	12.2	20
IDHP-A-08	UAVV9H13	460/60/3	16.61	20	ODHP-A-08	DZ14SA0364	460/60/3	7.8	15
IDHP-A-09	UAHV9H13	460/60/3	16.61	20	ODHP-A-09	DZ14SA0364	460/60/3	7.8	15
IDHP-A-10	UAVV9H13	460/60/3	16.61	20	ODHP-A-10	DZ14SA0364	460/60/3	7.8	15
IDHP-A-11	UAHV9H10	460/60/3	13.60	15	ODHP-A-11	DZ4SEA2410	208/60/1	15.3	25
IDHP-A-12	UAVV9H13	460/60/3	16.61	20	ODHP-A-12	DZ14SA0364	460/60/3	7.8	15
IDHP-A-14	UAVV9H13	460/60/3	16.61	20	ODHP-A-14	DZ14SA0364	460/60/3	7.8	15
IDHP-A-15	UAHV9H07	460/60/3	10.60	15	ODHP-A-15	DZ4SEA1810	208/60/1	12.2	20
IDHP-A-16	UAVV9H13	460/60/3	16.61	20	ODHP-A-16	DZ14SA0364	460/60/3	7.8	15
IDHP-A-17	UAHV9H13	460/60/3	16.61	20	ODHP-A-17	DZ14SA0364	460/60/3	7.8	15
IDHP-A-18	UAVV9H13	460/60/3	16.61	20	ODHP-A-18	DZ14SA0364	460/60/3	7.8	15
IDHP-A-19	UAVV9H13	460/60/3	16.61	20	ODHP-A-19	DZ14SA0364	460/60/3	7.8	15
IDHP-A-20	UAHV9H15	460/60/3	21.06	25	ODHP-A-20	DZ14SA0484	460/60/3	8.6	15
IDHP-B-01	UAVV9H10	460/60/3	13.60	15	ODHP-B-01	DZ14SA0364	460/60/3	7.8	15
IDHP-B-02	UAHV9H13	460/60/3	16.61	20	ODHP-B-02	DZ14SA0364	460/60/3	7.8	15
IDHP-B-03	UAVV9H10	460/60/3	13.60	15	ODHP-B-03	DZ14SA0364	460/60/3	7.8	15
IDHP-B-04	UAVV9H07	460/60/3	10.60	15	ODHP-B-04	DZ4SEA1810	208/60/1	12.2	20
IDHP-B-06	UAVV9H10	460/60/3	13.60	15	ODHP-B-06	DZ14SA0364	460/60/3	7.8	15
IDHP-B-08	UAVV9H10	460/60/3	13.60	15	ODHP-B-08	DZ14SA0364	460/60/3	7.8	15
IDHP-B-10	UAVV9H10	460/60/3	13.60	15	ODHP-B-10	DZ14SA0364	460/60/3	7.8	15
IDHP-B-12	UAVV9H10	460/60/3	13.60	15	ODHP-B-12	DZ14SA0364	460/60/3	7.8	15
IDHP-B-13	UAHV9H15	460/60/3	21.06	25	ODHP-B-13	DZ14SA0484	460/60/3	8.6	15
IDHP-B-14	UAVV9H10	460/60/3	13.60	15	ODHP-B-14	DZ14SA0364	460/60/3	7.8	15
IDHP-B-15	UAVV9H10	460/60/3	13.60	15	ODHP-B-15	DZ14SA0364	460/60/3	7.8	15
IDHP-B-16	UAVV9H07	460/60/3	10.60	15	ODHP-B-16	DZ4SEA1810	208/60/1	12.2	20
IDHP-B-18	UAVV9H10	460/60/3	13.60	15	ODHP-B-18	DZ14SA0364	460/60/3	7.8	15
IDHP-B-19	UAHV9H13	460/60/3	16.61	20	ODHP-B-19	DZ14SA0364	460/60/3	7.8	15
IDHP-B-20	UAVV9H10	460/60/3	13.60	15	ODHP-B-20	DZ14SA0364	460/60/3	7.8	15
IDHP-C-01	UAVV9H13	460/60/3	16.61	20	ODHP-C-01	DZ14SA0364	460/60/3	7.8	15
IDHP-C-02	UAHV9H15	460/60/3	21.06	25	ODHP-C-02	DZ14SA0484	460/60/3	8.6	15
IDHP-C-03		460/60/3	13.60	15	ODHP-C-03	DZ14SA0364	460/60/3	7.8	15
IDHP-C-04		460/60/3	13.60	15	ODHP-C-04	DZ4SEA2410	208/60/1	7.0	25
IDHP-C-05		460/60/3	13.60	15		DZ145A0364	400/00/3	12.2	10
IDHP-C-08		400/00/3	13.60	15		DZ43EA1810	200/00/1	7.8	20
IDHP-C-09		400/00/3	15.00	20	ODHP-C-09	DZ14SA0364	400/00/3	7.0	15
IDHP-C-10		460/60/3	13.60	15	ODHP-C-10	DZ14SA0364	460/60/3	7.8	15
IDHP-C-11		460/60/3	13.60	15	ODHP-C-11	D74SFA2410	208/60/1	15.3	25
IDHP-C-12	UAVV9H10	460/60/3	13.60	15	ODHP-C-12	DZ14SA0364	460/60/3	7.8	15
IDHP-C-14	UAHV9H07	460/60/3	10.60	15	ODHP-C-14	DZ4SEA1810	208/60/1	12.2	20
IDHP-C-15	UAVV9H10	460/60/3	13.60	15	ODHP-C-15	DZ14SA0364	460/60/3	7.8	15
IDHP-C-16	UAVV9H10	460/60/3	13.60	15	ODHP-C-16	DZ14SA0364	460/60/3	7.8	15
IDHP-C-17	UAHV9H13	460/60/3	16.61	20	ODHP-C-17	DZ14SA0364	460/60/3	7.8	15
IDHP-C-18	UAVV9H10	460/60/3	13.60	15	ODHP-C-18	DZ14SA0364	460/60/3	7.8	15
IDHP-C-19	UAVV9H10	460/60/3	13.60	15	ODHP-C-19	DZ14SA0364	460/60/3	7.8	15
IDHP-C-20	UAHV9H15	460/60/3	21.06	25	ODHP-C-20	DZ14SA0484	460/60/3	8.6	15

Technical Data Sheet

Job Information		Technical Data Sheet
Job Name	Saluda Trail Middle Sch	ool
Date	11/4/2022	
Submitted By	Brian Milbourne	
Software Version	08.40	
Unit Tag	IDHP-A-06, IDHP-B-04, I	IDHP-B-16, IDHP-C-07

Unit Overview	

Model Number UAVV9H07	Model Ty Valve Con	rpe Coo trol DX fo	oling Coil Type or HP Operation	Heating Coil Type Electric		
Arrangement	Control T	vpe Coc	ling Coil Hand	Heating Coil Hand		
Vertical, Floor Mounted	Digital Rea w/Sensors/Actuat Controll	dy - Lefi ors/No DDC er	: Hand Cooling	Right Hand Heating		
Physical						
Unit Length	Unit Dept	h	Unit Height	Weight		
62.00 in	16.63 ii	ı	30.13 in	350 lb		
Electrical						
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size		
460/60/3 V/Hz/Phase	414 v	506 v	10.6 A	15 A		

Fan					
		Performan	ice		
Fan Motor	Speed	Air Volume CFM	External Static Pressure inH ₂ O	Motor Power HP	Fan Full Load Current A
ECM, 3-Speed	Medium	596	0.00	0.333	5.00

Direct Expansion Coil

	Performance					
Сара	acity			Air Ter	nperature	
			Ente	ring	Leav	/ing
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
22916	17187	45.0	80.0	67.0	53.4	53.4
Fluid Connections						
Suction			Liquid		Condensate	
	3/4 inch		1/4 inch		7/8 i	nch

Electric Heat						
			Performance			
Total Capacity		Air Temperature Dry Bulb		Number of Elements	Electric Heater Current	
kW		Entering °F	Leaving °F		A	
5.50		70.0	99.0	3	7.22	
Warranty						
			Туре			
	Extended:	ed: 1 Year Extended Complete Unit Parts Warranty				

Y796TO

2

Notes

Accessories	
Part Number	Description
106041190	1" End Pnl, Ant Ivory, 16-5/8"D, Solid (AV AZ)

Y796TO

Saluda Trail Middle - Unit Vent Submittal - Rev 0

UV-1000CFM

Technical Data Sheet

Job Information		Technical Data Sheet	
Job Name	Saluda Trail Middle Sch	ool	
Date	11/4/2022		
Submitted By	Brian Milbourne		
Software Version	08.40		
Unit Tag	IDHP-B-01, IDHP-C-05, I IDHP-B-03, IDHP-B-06, I	DHP-C-08, IDHP-C-10, IDHP- DHP-B-08, IDHP-B-10, IDHP-	C-12, IDHP-C-15, IDHP-C-16, IDHP-C-18, IDHP-C-19, B-12, IDHP-B-14, IDHP-B-15, IDHP-B-18, IDHP-B-20,
	IDHP-C-03		

Model Type	Cooling Coil Type	Heating Coil Type
Valve Control	DX for HP Operation	Electric
Control Type	Cooling Coil Hand	Heating Coil Hand
Digital Ready - w/Sensors/Actuators/No DDC Controller	Left Hand Cooling	Right Hand Heating
	Model Type Valve Control Control Type Digital Ready - v/Sensors/Actuators/No DDC Controller	Model TypeCooling Coil TypeValve ControlDX for HP OperationControl TypeCooling Coil HandDigital Ready -Left Hand Coolingv/Sensors/Actuators/No DDC ControllerController

Physical			
Unit Length	Unit Depth	Unit Height	Weight
74.00 in	16.63 in	30.13 in	425 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	13.6 A	15 A

Fan					
		Performan	ce		
Fan Motor	Speed	Air Volume	External Static Pressure	Motor Power	Fan Full Load Current
		CFM	InH₂O	HP	A
ECM, 3-Speed	High	1000	0.00	0.333	5.00

Direct Expansion Coil

Performance						
Сар	acity	ity Air Temperature				
			Ente	ring	Leav	ving
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
33166	24875	45.0	80.0	67.0	57.1	56.3
	Fluid Connections					
	Suction	Liquid Condensate			nsate	
	3/4 inch		1/4 inch		7/8 i	nch

Electric Heat

		Performance			
Total Capacity	Air Temperature Dry Bulb		Number of Elements	Electric Heater Current	
kW	Entering °F	Leaving °F		A	
7.40	70.0	93.3	3	9.63	

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Saluda Trail Middle School

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	Туре	
Extended: 1 Year Extended Complete Unit Parts Warranty		
	Description	
	1" End Pnl, Ant Ivory, 16-5/8"D, Solid (AV AZ)	
t	ended:	Type ended: 1 Year Extended Complete Unit Parts Warranty Description 1" End Pnl, Ant Ivory, 16-5/8"D, Solid (AV AZ)

Y796TO

Saluda Trail Middle - Unit Vent Submittal - Rev 0

UV-1250CFM

Technical Data Sheet

Job Information		Technical Data Sheet	
Job Name	Saluda Trail Middle Sch	ool	
Date	11/4/2022		
Submitted By	Brian Milbourne		
Software Version	08.40		
Unit Tag	IDHP-A-01, IDHP-A-03, IDHP-A-19, IDHP-C-01	IDHP-A-05, IDHP-A-08, IDHP-	A-10, IDHP-A-12, IDHP-A-14, IDHP-A-16, IDHP-A-18,

Unit Overview			
Model Number	Model Type	Cooling Coil Type	Heating Coil Type
UAVV9H13	Valve Control	DX for HP Operation	Electric
Arrangement	Control Type	Cooling Coil Hand	Heating Coil Hand
Vertical, Floor Mounted	Digital Ready - w/Sensors/Actuators/No DDC Controller	Left Hand Cooling	Right Hand Heating

Physical			
Unit Length	Unit Depth	Unit Height	Weight
86.00 in	16.63 in	30.13 in	495 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	16.6 A	20 A

Fan					
		Performan	ce		
Fan Motor	Speed	Air Volume	External Static Pressure	Motor Power	Fan Full Load Current
		CFM	inH₂O	HP	A
ECM, 3-Speed	High	1253	0.00	0.333	5.00

Direct Expansion Coil

Performance						
Сара	acity			Air Ter	nperature	
			Ente	Entering Leaving		
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
43416	32562	45.0	80.0	67.0	56.0	55.8
Fluid Connections						
Suction			Liquid		Condensate	
7/8 inch			3/8 inch 7/8 inc		nch	

Electric Heat

Performance						
Total Capacity	Air Temperat	ture Dry Bulb	Number of Elements	Electric Heater Current		
kW	Entering	Leaving		А		
	°F	°F				
9.20	70.0	93.1	3	12.04		

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Warranty			
		Туре	
	Extended:	1 Year Extended Complete Unit Parts Warranty	
Notes			
Accessories			
Part Number		Description	
106041190		1" End Pnl, Ant Ivory, 16-5/8"D, Solid (AV AZ)	

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Saluda Trail Middle - Unit Vent Submittal - Rev 0

Certified Drawing	AVV-DR
Daikin Applied certifies that it will furnish equipment in accordance with this drawing and specifications, and sub-	Group: Unit Ventilator
ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under	Type: Digital Ready Control
the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance by Daikin	Date: July 2019

Daikin Classroom Floor Unit Ventilator Model AVV

Digital Ready[™] – Valve Control

Digital Ready is a factory installed pre-wired package of selected Direct Digital Control (DDC) components. It facilitates the field hook up of a DDC Unit Ventilator Controller (UVC) that is compatible with these factory installed, pre-wired components, and capable of providing the standard ASHRAE II cycle. It is the responsibility of the Automatic Temperature Control supplier to ensure the controls operate correctly and protect the unit.

Digital Ready consists of the following components which are factory wired and powered:

- 1. Non-fused power interrupt switch.
- 2. Fan motor and controls have the hot line(s) protected by factory installed cartridge type fuse(s).
- Three (3) speed HIGH-MEDIUM-LOW-OFF motor fan speed switch (on units with PSC or 3-speed EC Motors). Units with Variable EC Motor will not have a speed switch.
- 75 VA 24-volt NEC Class 2 transformer for 24-volt power supply.
- 5. Three 10-pole Europa type 16 awg terminal strips rated for 10 amps at 300 volts with nickel plated connectors and zinc plated clamping screws.
- 6. Space available in left end compartment, approximately 8" x 21" (203mm x 533mm) for UVC mounting (by others).

Wired to the Terminal Strips:

- Interface with the fan motor start/stop relay (R4) on units with 3-speed fan. Units with a Variable Speed ECM will have a 0-10vdc terminal interface.
- Interface with a factory installed Low Air Temperature Limit freezestat (T6). Cuts out below 38°F±2 °F and automatically resets above 45°F±2 °F. Responds when any 15% of the capillary length senses these temperatures.

Figure 1: Component Locations – Vertical Floor Unit

Wired so that upon T6 cut out, the outside air damper closes and the hot water valve opens.

- Discharge Air Temperature Sensors 10 K ohm NTC (Negative Temperature Coefficient) and 1 K ohm PTC (Positive Temperature Coefficient). Located on the second fan housing from the right. See "Temperature Sensor Specifications" on page 2 for details.
- Room Temperature Sensors 10K ohm (NTC) and 1 K ohm (PTC). See "Temperature Sensor Specifications" on page 2 for details.
- Outdoor Air Temperature Sensors 10K ohm (NTC) and 1 K ohm (PTC). See "Temperature Sensor Specifications" on page 2 for details.
- Direct coupled, proportional control (2 to 10 VDC or 4 to 20 mA) Outdoor Air/Return Air Damper Actuator (spring return). See "Temperature Sensor Specifications" on page 2 for details.
- Interface from the terminal board with one or two End of Cycle DDC valves with spring return actuators (by others) (Not Shown) providing 24-volt power. Open/shut signal from UVC (by others).
- 14. 24-volt power wiring harness from the right to left-hand end compartment through the built-in metal wire raceway terminating at three terminal blocks.



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Temperature Sensor Specifications

A 10 K ohm Negative Temperature Coefficient (NTC) sensor and a 1 K ohm Positive Temperature Coefficient sensor is provided for the discharge air, outdoor air and room air temperature measurement. They are located next to each other in the air stream as shown in Figure 1 on page 1. Each is wired to the terminal strip separately so that the Automatic Temperature Control contractor may select the appropriate sensor for the application.

10 K ohm NTC Sensor

The 10 K ohm NTC sensor is constructed from stainless steel with an epoxy seal and twisted wire leads.

 Type:
 10K ohm @ 25°C

 Accuracy:
 ±0.2°F, 40°F to 80°F

 ±0.36°F, 32°F to 158°F

Figure 2: NTC Sensor Dimensions

UV_Combined_Drawings

Table 1: Resistance Values

Temperature (C°)	Resistance (ohms)
-40	337200
-20	97130
0	32660
20	12490
25	10000
30	8056
40	5326
50	3602
60	2489



1 K ohm NTC Sensor

The 1 K ohm sensor is a shrink-wrap encapsulated, PTC silicon sensing element with stranded, tinned copper wire leads (#22 AWG).

 Type:
 1035 ohm @ 25°C

 Accuracy:
 ±0.9°F, 5°F to 167°F

Table 2: Resistance Values

Temperature (C°)	Resistance (ohms)
-40	613
-20	727
0	855
20	997
25	1035
30	1074
40	1153
50	1237
60	1323

Figure 3: PTC Sensor Dimensions



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UV_Combined_Drawings

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H&H 125.352.10313

Saluda Trail Middle - Unit Vent Submittal - Rev 0

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Certified Drawing AVV-024J Daikin Applied certifies that it will furnish equipment in accordance with this drawing and specifications, and subject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance by Daikin Group: Unit Ventilator Type: Basic Unit Data Date: May 2018

Daikin Classroom Floor Unit Ventilator Model AVV (J Vintage)

Standard Features

- UL/cUL listed.
- AHRI Certified chilled water performance. Unit ventilation rate certified and tested per Air Conditioning, Heating and Refrigeration Institute (AHRI) standard 840.
- Institutional quality cabinet with durable, textured, charcoal bronze paint finish on top surface. Oven baked powder paint on all other exterior panels.
- Welded chassis constructed from galvanized steel.
- Two, top hinged doors for access.
- Removable bar discharge grille.
- Three individual front access panels provided for ease of maintenance and service.
- All access panels have positive positioning threaded fasteners operated with 5/32" hex wrench.
- Insulated unit back.
- Built in pipe tunnel.
- Leveling legs.
- Rigid, double wall, insulated outdoor air damper made from welded galvanized steel, with mohair end and damper seals in turned over edges.
- Galvanized steel drain pan (optional stainless steel). Connection handing is field reversible and direction of slant can be field modified.

- Room air fan shaft have oilable sleeve bearings for quietness and long life.
- Low speed room air fan constructed of injection molded polypropylene for precise, smooth, quiet performance.
- Energy efficient 1/4 H.P. permanent split capacitor (PSC) plug-in room air fan motor fits all size units. Located out of air stream.
- Available 1/3 H.P. Electrically Commutated Motor (ECM) available for applications with External Static Pressures (ESP) up to 0.45 (112 Pa).
- UL listed individual fusing of fan motor and controls.
- PSC and EC motor speed controlled by multi-tap transformer, high-medium-low-off speeds. Optional variable speed ECM.
- MicroTech® Controls (Optional) State of the art MicroTech unit controller is a stand alone microprocessor based DDC control device that is preengineered, pre-programmed, pre-tested and factory installed. It provides correct sequence of operations and the advantage of one source responsibility.
- · Steam coils equipped with vacuum breaker.
- · Manual air vent and drain plug on water coils.
- · Throwaway filter(s) factory installed in unit.
- Heating only units can be adapted for future air conditioning.

			S07 / H07 / V07	S10 / H10 / V10	S13 / H13 / V13
Nominal Ai	rflow CFM (L	/s)	750 (340)	1000 (472)	1250 (590)
	Number of Fans:		2	3	4
Fan Data	Size	Diameter - in (mm)	8.12 (206mm)	8.12 (206mm)	8.12 (206mm)
		Width- in (mm)	8.25 (210mm)	8.25 (210mm)	8.25 (210mm)
	Nominal	in	10 x 36-1/2 x 1	10 x 48-1/2 x 1	10 x 60-1/2 x 1
Filter Dete	Size	(mm)	254 x 927 x 25	254 x 1232 x 25	254 x 1537 x 25
Filter Data	Area - Ft ² (m ²)		2.54 (.24)	3.37 (.31)	4.2 (.39)
	Quantity:		1	1	1
Chipping Weight	16-5/8" Dee	ep Units	2.54 (.24) 1 350 (168) 370 (163)		495 (225)
Shipping weight	21-7/8" Deep Units		370 (163)	445 (202)	525 (238)
	1 Row Coil		0.25 (0.95)	0.31 (1.17)	0.38 (1.44)
	2 Row Coil		0.45 (1.70)	0.57 (2.16)	0.69 (2.61)
il Water Volume Gallons	3 Row Coil		0.64 (2.42)	0.82 (3.10)	1.01 (3.82)
(1000)	4 Row Coil		0.83 (3.14)	1.08 (4.09)	1.32 (5.00)
	5 Row Coil		1.03 (3.90)	1.34 (5.07)	1.64 (6.21)

Table 1: Physical Data



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1.19 (4.50) 1.57 (5.94) 1.95 (7.38)

S15 / H15 / V15 1500 (708) 4 8.12 (206mm) 10 x 36-1/2 x 1 254 x 927 x 25 5.08 (.47) 2 570 (259) 600 (272) 0.44 (1.67) 0.82 (3.10)

Y/961

Co

H&H 125.352.10313

Dimensional Data



3

2 3

AVV Unit Cross Sections

Raceway for factory wiring 1 Hot Water, Steam, Chilled Water, CW/HW (2-pipe), Direct Expansion, Electric Heat

Chi	lled Water Units	
1	Raceway for factory wi	ir
2	Hot Water	

- Steam or Electric Heat 3
 - Chilled Water

2 3

- Hot Water Direct Expansion
- Chilled Water Electric Heat or Steam



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H&H 125.352.10313

Certified Drawing	AVV-026J
Daikin Applied certifies that it will furnish equipment in accordance with this drawing and specifications, and sub-	Group: Unit Ventilator
ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under	Type: Inlet Air Arrange.
the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance by Daikin	Date: May 2018

Daikin Classroom Floor Unit Ventilator Model AVV (J Vintage) Arrangement AL – Open Pipe Tunnel

16%" (422mm) Deep Floor Unit – Dimensions



V07	02 (1575)	43 (1092)	30 (914)	4 Disconnect Switch for main power wiring.
S10, H10, V10	74 (1880)	55 (1397)	48 (1219)	 5 Fan motor. 6 Electrical connection box. 7 Slotted kickplate for return air arrangements; partially open kickplate for draftstop arrangements. 8 (4) - 7/8" (22 mm) diameter holes in back for anchoring unit to wall. 9 Accessory panels not included with unit, order separately as an accessory. 10 Control particular (Miaro Tach@ with cash)
S13, H13, V13	86 (2184)	67 (1702)	60 (1524)	
S15, H15, V15	98 (2489)	79 (2007)	72 (1829)	 11 Galvanized drain pan (optional stainless steel). X = 3.88" for units with MicroTech controls. X = 14.43" for all other control options.



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AVV-026J / Page 1 of 2

Open Pipe Tunnel, Recirculation Room Air – No Outside Air Damper (OA/RA Code 24)



Unit Sizo	Dimensions in inches (mm)	Drawing Notes (②, *, etc.)
Unit Size	А	2 Rear entry area 14" x 5" (356 mm x 127 mm).
S07, H07, V07	62 (1575)	 3 Opening between pipe tunnel & end compartment. 8 (4) - 7/8" (22 mm) diameter holes in back for anchoring unit to wall.
S10, H10, V10	74 (1880)	
S13, H13, V13	86 (2184)	
S15, H15, V15	98 (2489)	



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Certified Drawing	AVS-V-R-B-1in-051
Daikin Applied certifies that it will furnish equipment in accordance with this drawing and specifications, and sub-	Group: Unit Ventilator
ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance	Type: End Panel Dimen.
by Daikin	Date: May 2018

Daikin Classroom Floor Unit Ventilator 1" End Panel & Enclosure Application Models AVS, AVV, AVR & AVB

Available in: (Check one that applies)

Antique Ivory
000000

Putty Beige

Cupola White

□ Off White □ Soft Gray

Table 1: 1" (25 mm) End Panel Dimensions (Check one that applies)





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Technical Data Sheet

Job Information		Technical Data Sheet
Job Name	Saluda Trail Middle Sch	ool
Date	11/4/2022	
Submitted By	Brian Milbourne	
Software Version	08.40	
Unit Tag	IDHP-A-15, IDHP-C-14	

Unit Overview

Model Number	Model Type	Cooling Coil Type	Heating Coil Type
UAHV9H07	Valve Control	DX for HP Operation	Electric
Arrangement	Control Type	Cooling Coil Hand	Heating Coil Hand
Horizontal, Ceiling Mounted, Recirculation Bottom Grille Return Air, Recirculation Return Air Bottom Grille	Digital Ready - w/Sensors/Actuators/No DDC Controller	Left Hand Cooling	Right Hand Heating

Physical			
Unit Length	Unit Depth	Unit Height	Weight
36.00 in	64.00 in	16.62 in	385 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	10.6 A	15 A

Fan					
		Performan	ce		
Fan Motor	Speed	Air Volume	External Static Pressure	Motor Power	Fan Full Load Current
ECM, 3-Speed	Medium	675	0.00	0.333	5.00

Direct Expansion Coil

	Performance						
Сар	acity			Air Ter	nperature		
			Ente	ring	Lear	ving	
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
22916	17187	45.0	80.0	67.0	56.5	56.0	
	Fluid Connections						
Suction			Liquid		Condensate		
	3/4 inch		1/4 inch		7/8 i	nch	

Electric Heat

Performance						
Total Capacity	Air Temperat	ture Dry Bulb	Number of Elements	Electric Heater Current		
kW	Entering °F	Leaving °F		А		
5.50	70.0	95.6	3	7.23		

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Warranty				
		Туре		
	Extended:	1 Year Extended Complete Unit Parts Warranty		
AHRI Certification				
ALPR CERTIFIED - ave distant hypert	Certified in accordance with the AHRI Unit Ventilator Certification Program, which is based on AHRI Standar 840/841. Certified units may be found in the AHRI Directory at <u>www.ahridirectory.org</u> .			
Notos				
Notes				

Y796TO

HUV-900CFM

Technical Data Sheet

Job Information		Technical Data Sheet
Job Name	Saluda Trail Middle Scho	ol
Date	11/4/2022	
Submitted By	Brian Milbourne	
Software Version	08.40	
Unit Tag	IDHP-A-04, IDHP-A-11, II	DHP-C-04, IDHP-C-11



Unit Overview Model Number Model Type Cooling Coil Type **Heating Coil Type** DX for HP Operation UAHV9H10 Valve Control Electric Control Type **Cooling Coil Hand** Heating Coil Hand Arrangement Horizontal, Ceiling Mounted, Digital Ready -Left Hand Cooling **Right Hand Heating Recirculation Bottom Grille** w/Sensors/Actuators/No DDC Return Air, Recirculation Controller Return Air Bottom Grille

Physical			
Unit Length	Unit Depth	Unit Height	Weight
36.00 in	76.00 in	16.62 in	465 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	13.6 A	15 A

Fan					
		Performan	ice		
Fan Motor	Speed	Air Volume CFM	External Static Pressure inH ₂ O	Motor Power HP	Fan Full Load Current A
ECM, 3-Speed	Medium	890	0.00	0.333	5.00

Direct Expansion Coil

			Performance			
Сара	acity			Air Ter	nperature	
			Ente	ring	Leav	/ing
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
33166	24875	45.0	80.0	67.0	54.2	54.2
			Fluid Connections			
	Suction Liquid Condensate					nsate
	3/4 inch		1/4 inch		7/8 inch	

Electric Heat

		Performance		
Total Capacity	Air Temperature Dry Bulb		Number of Elements	Electric Heater Current
kW	Entering °E	Leaving °E		А
7.40	70.0	96.1	3	9.63
7.40	70.0	50.1	5	5.05

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Saluda Trail Middle School

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Warranty		
		Туре
	Extended:	1 Year Extended Complete Unit Parts Warranty
AHRI Certification	l i i i i i i i i i i i i i i i i i i i	
REPRESENTING	Certified in accordance with the AHRI Unit Ventilator Certification Program, which is based on AHRI Standard 840/841. Certified units may be found in the AHRI Directory at <u>www.ahridirectory.org</u> .	
Notes		

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HUV-1250CFM

Technical Data Sheet

Job Information		Technical Data Sheet
Job Name	Saluda Trail Middle Scho	ool
Date	11/4/2022	
Submitted By	Brian Milbourne	
Software Version	08.40	
Unit Tag	IDHP-A-09, IDHP-A-17, I	DHP-B-02, IDHP-B-19, IDHP-

Unit Overview

Model Number	Model Type	Cooling Coil Type	Heating Coil Type
UAHV9H13	Valve Control	DX for HP Operation	Electric
Arrangement	Control Type	Cooling Coil Hand	Heating Coil Hand
Horizontal, Ceiling Mounted, Recirculation Bottom Grille Return Air, Recirculation Return Air Bottom Grille	Digital Ready - w/Sensors/Actuators/No DDC Controller	Left Hand Cooling	Right Hand Heating

Physical			
Unit Length	Unit Depth	Unit Height	Weight
36.00 in	88.00 in	16.62 in	540 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	16.6 A	20 A

Fan					
		Performan	ice		
Fan Motor	Speed	Air Volume	External Static Pressure	Motor Power	Fan Full Load Current
ECM, 3-Speed	High	1250	0.00	0.333	5.00

Direct Expansion Coil

			Performance			
Сар	acity			Air Tei	nperature	
			Ente	ring	Lear	ving
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
43416	32562	45.0	80.0	67.0	56.0	55.7
			Fluid Connections			
Suction Liquid Condensate					nsate	
7/8 inch			3/8 inch		7/8 inch	

Electric Heat

		Performance		
Total Capacity	Air Temperature Dry Bulb		Number of Elements	Electric Heater Current
kW	Entering °F	Leaving °F		А
9.20	70.0	93.1	3	12.04

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Warranty		
		Туре
	Extended:	1 Year Extended Complete Unit Parts Warranty
AHRI Certification		
ALIRE CERTIFIED - are abrilled to year	Certified in accordance with the AHRI Unit Ventilator Certification Program, which is based on AHRI Standard 840/841. Certified units may be found in the AHRI Directory at <u>www.ahridirectory.org</u> .	
Notes		

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HUV-1500CFM

Technical Data Sheet

Job Information		Technical Data Sheet
Job Name	Saluda Trail Middle Sch	ool
Date	11/4/2022	
Submitted By	Brian Milbourne	
Software Version	08.40	
Unit Tag	IDHP-A-02, IDHP-A-20, I	DHP-B-13, IDHP-C-02, IDHP-



Unit Overview

Model Number	Model Type	Cooling Coil Type	Heating Coil Type
UAHV9H15	Valve Control	DX for HP Operation	Electric
Arrangement	Control Type	Cooling Coil Hand	Heating Coil Hand
Horizontal, Ceiling Mounted, Recirculation Bottom Grille Return Air, Recirculation Return Air Bottom Grille	Digital Ready - w/Sensors/Actuators/No DDC Controller	Left Hand Cooling	Right Hand Heating

Physical			
Unit Length	Unit Depth	Unit Height	Weight
36.00 in	100.00 in	16.62 in	620 lb

Electrical				
Voltage	Minimum Voltage	Maximum Voltage	Total Unit MCA	Maximum Fuse Size
460/60/3 V/Hz/Phase	414 v	506 v	21.1 A	25 A

Fan					
		Performan	ice		
Fan Motor	Speed	Air Volume CFM	External Static Pressure inH ₂ O	Motor Power HP	Fan Full Load Current A
ECM, 3-Speed	High	1500	0.00	0.750	9.60

Direct Expansion Coil

			Performance			
Сар	acity			Air Ter	nperature	
			Ente	ring	Leav	ving
Total Btu/hr	Sensible Btu/hr	Evap Refrigerant Temperature °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
53666	40250	45.0	80.0	67.0	55.3	55.3
			Fluid Connections			
	Suction	Liquid			Conde	nsate
	7/8 inch		3/8 inch		7/8 i	nch

Electric Heat

		Performance		
Total Capacity	Air Tempera	Number of Elements	Electric Heater Current	
kW	Entering °F	Leaving °F		А
11.00	70.0	93.1	3	14.45

Y796TO

Warranty				
		Туре		
	Extended:	1 Year Extended Complete Unit Parts Warranty		
AHRI Certification	I			
Certified in accordance with the AHRI Unit Ventilator Certification Program, which is based on AHRI Standar 840/841. Certified units may be found in the AHRI Directory at <u>www.ahridirectory.org</u> .				
Notes				

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Saluda Trail Middle - Unit Vent Submittal - Rev 0

Certified Drawing	AHV-36-152J
Daikin Applied certifies that it will furnish equipment in accordance with this drawing and specifications, and sub-	Group: Unit Ventilator
ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance	Type: Basic Unit Data
by Daikin	Date: May 2018

Daikin Classroom Model AHV 36" Deep Ceiling Unit Ventilator – Arrangements AT & AH – Front Discharge, Series H07, H10, H13, H15, V07, V10, V13, V15

Standard Features

- UL/cUL listed
- AHRI Certified chilled water performance. Unit ventilation rate certified and tested per Air Conditioning, Heating and Refrigeration Institute (AHRI) standard 840..
- Institutional quality cabinet with durable, baked alkyd enamel paint finish on exterior panels and discharge grille. (Double deflection grilles have clear anodized aluminum finish).
- Welded chassis constructed from galvanized steel
- Three bottom panels, two of which are hinged, for ease of service access and handling. Single panel access to filter and controls.
- Removable bar discharge grille (AT & FG arrangement).
- All access panels have positive positioning threaded fasteners operated with 5/32" hex wrench
- Anti blow through room air damper.
- Rigid, double wall, insulated outdoor air damper made from welded galvanized steel, with mohair end and damper seals in turned over edges.
- Standard galvanized or optional stainless steel drain pan. Drain pan connections C/L located 4"(10mm) above unit bottom. Hand of connection and direction of slope is field selectable.

- Room air fan shaft have oilable sleeve bearings for quietness and long life.
- Low speed room air fan constructed of injection molded polypropylene for precise, smooth, quiet performance.
- Electrically Commutated Motor (ECM) available for applications with External Static Pressures (ESP) up to 0.45 (112 Pa).
- UL/cUL listed individual fusing of fan motor and controls.
- EC motor controlled for 3 speeds, high-medium-low and off. Optional variable speed motor available.
- MicroTech® controls (optional) state of the art "MicroTech" unit controller is a stand alone microprocessor based DDC control device that is pre-engineered, preprogrammed, pre-tested and factory installed. It provides correct sequence of operations and the advantage of one source responsibility.
- Steam coils equipped with vacuum breaker.
- Manual air vent and drain plug on water coils.
- Throwaway filter(s) factory installed in unit.
- Heating only units can be adapted for future air conditioning.

Physical Data

Unit Series			H07 / V07	H10 / V10	H13 / V13	H15 / V15	
Nominal Airfle	ow - cfm	(L/s)		750 (354)	1000 (472)	1250 (590)	1500 (708)
		Number of F	ans	2	3	4	4
Fan Data	Sizo	Dia. in. (m	m)	8.12 (206)	8.12 (206)	8.12 (206)	8.12 (206)
	Size	Width - in.	(mm)	8.25 (210)	8.25 (210)	8.25 (210)	8.25 (210)
	(Qty)	in. (Nomina	al)	(1) 10 × 36½ × 1	(1) 10 × 48½ × 1	(1) 10 × 60½ × 1	(2) 10 × 36½ × 1
Filter Data	Size	(mm)		254 × 927 × 25	254 × 1232 × 25	254 × 1537 × 25	254 × 927 × 25
	Area	Ft. ² (m ²)		2.54 .24)	3.37 (.31)	4.2 (.39)	5.08 (.47)
*Approx. Shipping Weight Ib. (kg)	Disc Arra	harge Air Ingement	AT, AH	385 (179)	465 (211)	540 (245)	620 (281)
		1-Row Coil		.25 (0.95)	.31 (1.17)	.38 (1.44)	.44 (1.67)
Coil Water Volume Gal. (Ltrs)	2-Row Coil		.45 (1.70)	.57 (2.16)	.69 (2.61)	.82 (3.10)	
		3-Row Coil		.64 (2.42)	.82 (3.10)	1.01 (3.82)	1.19 (4.50)
		4-Row Co	il	.83 (3.14)	1.08 (4.09)	1.32 (5.00)	1.57 (5.94)
		5-Row Co	il	1.03 (3.90)	1.34 (3.90)	1.64 (6.21)	1.95 (7.38)

* Approximate weights based on Face & Bypass damper controlled unit with 4-row cooling coil, 2-row hot water coil and MicroTech® Controls.



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Daikin Classroom Model AHV 36" Deep Ceiling Unit Ventilator – Arrangements AT & AH – Front Discharge, Series H07, H10, H13, H15, V07, V10, V13, V15

Unit Cross Sections Arrangement AT - Double Deflection Grille



Valve Control

Single Coil Unit

- 1 Raceway for factory wiring (Single & two coil unit)
- (2) Hot Water, Chilled water or CW/HW (2-pipe), None
- 3 None, Steam

Two Coil Units

- 2 Hot water
- 3 Chilled water or Direct expansion
- 2 Chilled water or Direct expansion
- 3 Electric or Steam

Arrangement AH - Duct Collar



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Duct System Considerations

Duct Design for Noise and Vibration Control

Proper acoustics is often a design requirement for schools. Most of the problems that are associated with HVAC generated sound can be avoided by properly selecting and locating the components of the system. There are some general do's and don'ts:

The following suggestions are required to reduce the amount of sound and noise due to vibration that reaches the occupied room:

- Use flexible duct connections.
- Make the discharge duct the same size as the unit discharge opening for the first five feet.
- Line the first 5 feet of the supply duct.
- Make two 90-degree turns in the supply and return ducts.
- Keep duct velocity low and follow good duct design procedures.
- Mount and support the ductwork independent of the unit.
- Line the first five feet of the return duct.
- Locate the return air intake away from the unit discharge.
- Provide multiple discharges.
- Restrict use of high pressure drop flexible ducting.
- Size the outdoor air and return air ducts to handle 100% of the total cfm to accommodate economizer or morning warm-up operation.

NOTICE

If a supply air duct with improper duct work is placed too close to the unit discharge, it will result in substantial noise. Avoid such forms of connections when designing ductwork where sound attenuation is critical. The following illustrations show suggested duct considerations per SMACNA and ASHRAE.

Sound control applies to the return side of the duct design as well as the supply side. The bottom-right illustration suggests installation of a intake/return-air duct. Note the return air opening, the sizing and changes in direction of the ductwork. The outdoor air intake and insulated duct work illustration on the next page suggests installation of outside air ducting.

NOTICE

These are general suggestions and offered only to stress their importance; however, there are additional important factors that must be considered. Assistance in the design of ductwork can be found in the ASHRAE Handbook and SMACNA publications, as well as other recognized authorities.

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Discharge Air Duct Work



Intake/Return Air Duct Work



Outdoor Air Intake and Insulated Duct Work





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UV_Combined_Drawings

Certified Drawing	AHV-AH36-125J
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ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under the provisions of the ich specifications. Any change made bereen by any person whomsoever is subject to acceptance by Daikin	Type: Inlet Air Arrangement
	Date: May 2018
Deikin Classroom Ceiling Unit Ventileter	

Daikin Classroom Ceiling Unit Ventilator Model AHV – Air Arrangement AH – 36" Deep Unit Front Discharge With Duct Collar



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Duct System Considerations

Duct Design for Noise and Vibration Control

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- Keep duct velocity low and follow good duct design procedures.
- Mount and support the ductwork independent of the unit.
- · Line the first five feet of the return duct.
- · Locate the return air intake away from the unit discharge.
- Provide multiple discharges.
- Restrict use of high pressure drop flexible ducting.
- Size the outdoor air and return air ducts to handle 100% of the total cfm to accommodate economizer or morning warmup operation.

NOTICE

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Sound control applies to the return side of the duct design as well as the supply side. The top-right illustration suggests installation of a intake/return-air duct. Note the return air opening, the sizing and changes in direction of the ductwork. The outdoor air intake and insulated duct work illustration at the lower-right suggests installation of outside air ducting.

Discharge Air Duct Work



UV_Combined_Drawings

Intake/Return Air Duct Work







NOTICE

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Certified Drawing	AHV-DR
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ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under	Type: Digital Ready Control
the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance by Daikin	Date: July 2019

Daikin Classroom Floor Unit Ventilator Model AHV

Digital Ready[™] – Valve Control

Digital Ready is a factory installed pre-wired package of selected Direct Digital Control (DDC) components. It facilitates the field hook up of a DDC Unit Ventilator Controller (UVC) that is compatible with these factory installed, pre-wired components, and capable of providing the standard ASHRAE II cycle. It is the responsibility of the Automatic Temperature Control supplier to ensure the controls operate correctly and protect the unit.

Digital Ready consists of the following components which are factory wired and powered:

- 1. Non-fused power interrupt switch.
- Fan motor and controls have the hot line(s) protected by 2. factory installed cartridge type fuse(s).
- Three (3) speed HIGH-MEDIUM-LOW-OFF motor fan 3. speed switch (on units with 3-speed EC Motors). Units with variable EC Motor will not have a speed switch.
- 75 VA 24-volt NEC Class 2 transformer for 24-volt power 4 supply.
- Three 10-pole Europa type 16 awg terminal strips rated 5. for 10 amps at 300 volts with nickel plated connectors and zinc plated clamping screws.
- 6. Space available in left end compartment, approximately 8" x 21" (203mm x 533mm) for UVC mounting (by others).

Wired to the Terminal Strips:

- 7. Interface with the fan motor start/stop relay (R4) on units with 3-speed fan. Units with a Variable Speed ECM will have a 0-10vdc terminal interface.
- Interface with a factory installed Low Air Temperature 8 Limit freezestat (T6). Cuts out below 38°F±2 °F and automatically resets above 45°F±2 °F. Responds when any 15% of the capillary length senses these temperatures. Wired so that upon T6 cut out, the outside air damper closes and the hot water valve opens

- 9. Discharge Air Temperature Sensors – 10 K ohm NTC (Negative Temperature Coefficient) and 1 K ohm PTC (Positive Temperature Coefficient). Located on the second fan housing from the right. See "Temperature Sensor Specifications" on page 2 for details.
- 10. Room Temperature Sensors 10K ohm (NTC) and 1 K ohm (PTC). See "Temperature Sensor Specifications" on page 2 for details.
- 11. Outdoor Air Temperature Sensors 10K ohm (NTC) and 1 K ohm (PTC). See "Temperature Sensor Specifications" on page 2 for details.
- 12. Direct coupled, proportional control (2 to 10 VDC or 4 to 20 mA) Outdoor Air/Return Air Damper Actuator (spring return). See "Temperature Sensor Specifications" on page 2 for details.
- 13. Interface from the terminal board with one or two End of Cycle DDC valves with spring return actuators (by others) (Not Shown) providing 24-volt power. Open/shut signal from UVC (by others).
- 14. 24-volt power wiring harness from the right to left-hand end compartment through the built-in metal wire raceway terminating at three terminal blocks.(Not Shown)
- 15. (Not Available).

Figure 1: Component Locations – Horizontal Ceiling Unit

Left End View





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Temperature Sensor Specifications

A 10 K ohm Negative Temperature Coefficient (NTC) sensor and a 1 K ohm Positive Temperature Coefficient sensor is provided for the discharge air, outdoor air and room air temperature measurement. They are located next to each other in the air stream as shown in Figure 1 on page 1. Each is wired to the terminal strip separately so that the Automatic Temperature Control contractor may select the appropriate sensor for the application.

10 K ohm NTC Sensor

The 10 K ohm NTC sensor is constructed from stainless steel with an epoxy seal and twisted wire leads.

 Type:
 10K ohm @ 25°C

 Accuracy:
 ±0.2°F, 40°F to 80°F

 ±0.36°F, 32°F to 158°F

UV_Combined_Drawings

Table 1: Resistance Values

Temperature (C°)	Resistance (ohms)	
-40	337200	
-20	97130	
0	32660	
20	12490	
25	10000	
30	8056	
40	5326	
50	3602	
60	2489	



1 K ohm NTC Sensor

The 1 K ohm sensor is a shrink-wrap encapsulated, PTC silicon sensing element with stranded, tinned copper wire leads (#22 AWG).

 Type:
 1035 ohm @ 25°C

 Accuracy:
 ±0.9°F, 5°F to 167°F

Table 2: Resistance Values

Temperature (C°)	Resistance (ohms)	
-40	613	
-20	727	
0	855	
20	997	
25	1035	
30	1074	
40	1153	
50	1237	
60	1323	

Figure 3: PTC Sensor Dimensions



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HUV-600CFM

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Saluda Trail Middle - Unit Vent Submittal - Rev 0

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Certified Drawing	AHF-V-R-B-133J
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ject to its published warranty. Purchaser's approval to this drawing signifies that the equipment is acceptable under the provisions of the job specifications. Any change made hereon by any person whomsoever is subject to acceptance	Type: Basic Unit Data
by Daikin	Date: July 2018

Daikin Classroom Ceiling Unit Ventilator Model AHF, AHV, AHR and AHB Inlet Air Arrangements (Check Arrangement That Applies)

Arrangement 25 Recirculating Room Air (No Room Air/Outside Air Dampers) Return Air Return Air 4¹/₂"(114mm) , Outdoor A Outdoor Air ³/₄" (19mm) 1" (25mm) □ Arrangement 26 Return Air Bottom Grille/Outdoor Air Top Duct Collar Return Air Return Air ³/₄" (19mm) -1¼" (32mm) Outdoor Air Arrangement 27 41/2"(114mm) x A Return Air Bottom Grille/Outdoor Air Rear Duct Collar Outdoor Air Return Air Return Air 4¹/₂"(114mm) , A Outdoor Air Outdoor Air |**→**↓|**→** 1" (25mm) ³⁄₄" (19mm) ┓ Arrangment 28 \square Return Air Return Air Rear Duct Collar/Outdoor Air Top Duct Collar 41/2"(114mm) x A Return Air ŧ - 2¾" (60mm) ³⁄₄" (19mm)∙ ³/₄" (19mm) 1¼" (32mm) Outdoor Air Arrangement 29 Outdoor Air 41/2"(114mm) x A Return Air Rear Duct Collar/Outdoor Air - 4"(102mm) Rear Duct Collar 41/2"(114mm) x A - Return Air **₽** 2³⁄8" Return Air ³/₄" (19mm) (60mm) Dimensions Notes: 1. For all recessed applications (full or partial) it is necessary to carefully examine both the inlet air and Unit Series 07 10 13 15 20 the discharge air physical locations. This must be done for each location individually and in combination with each other to ensure they are compatible with the specific installation. 48 72 72 inches 36 60 Duct collars shipped loose for field installation not by Daikin Applied. A 2. 1219 1829 mm 914 1524 1829 3. It is important also to verify there is sufficient clearance to open and remove the bottom access panels and end panels for routine maintenance. 4. All dimensions approximated. DAIKIN © 2018 Daikin Applied • www.DaikinApplied.com • (800) 432-1342 AHF-V-R-B-133J / Page 1 of 2

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Duct System Considerations Duct Design for Noise and Vibration Control

Proper acoustics is often a design requirement for schools. Most of the problems that are associated with HVAC generated sound can be avoided by properly selecting and locating the components of the system. There are some general do's and don'ts:

The following suggestions are required to reduce the amount of sound and noise due to vibration that reaches the occupied room:

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- Line the first 5 feet of the supply duct.
- Make two 90-degree turns in the supply and return ducts. .
- Keep duct velocity low and follow good duct design • procedures.
- Mount and support the ductwork independent of the unit.
- Line the first five feet of the return duct.
- Locate the return air intake away from the unit discharge.
- Provide multiple discharges.
- Restrict use of high pressure drop flexible ducting.
- Size the outdoor air and return air ducts to handle 100% of the total cfm to accommodate economizer or morning warm-up operation.

NOTICE

If a supply air duct with improper duct work is placed too close to the unit discharge, it will result in substantial noise. Avoid such forms of connections when designing ductwork where sound attenuation is critical. The following illustrations show suggested duct considerations per SMACNA and ASHRAE.

Sound control applies to the return side of the duct design as well as the supply side. The top-right illustration suggests installation of a intake/return-air duct. Note the return air opening, the sizing and changes in direction of the ductwork. The outdoor air intake and insulated duct work illustration at the lower-right suggests installation of outside air ducting.

Discharge Air Duct Work



UV_Combined_Drawings

Intake/Return Air Duct Work



Outdoor Air Intake and Insulated Duct Work



NOTICE

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DAIKIN

Electronically Commutated Motor, 3-Speed

Description

Electronically commutated motors (ECM) are self-adjusting for constant torque for part load efficiency. There is almost no draw down of the unit's airflow (cfm) as static pressures increase when using an ECM. As a result, there is little need to oversize the unit to provide full air volume at high static pressures.

An ECM Fan Motor ensures the unit will maintain rated airflow within tolerances up to 0.45" external static pressure.



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UV-600CFM, UV-1000CFM, UV-1250CFM, HUV-600CFM, HUV-900CFM, HUV-1250CFM, HUV-1500CFM
DAIKIN

Stainless Steel Drain Pan

Description

All units come with a condensate drain pan that has drain connections on either end. The long-lasting, stainless steel drain pan is corrosion resistant; the drain-side connection can be changed in the field, along with the direction in which the drain pan slants.

Because we recognize that some schools may wish to add cooling at a later date, heating-only units are also shipped standard with a drain pan.



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UV-600CFM, UV-1000CFM, UV-1250CFM, HUV-600CFM, HUV-900CFM, HUV-1250CFM, HUV-1500CFM

Saluda Trail Middle School

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DAIKIN

Heavy Duty Discharge Grille

Description

The discharge grille on the top of the unit is made from extrastrength steel bar stock, promoting long life. It can be removed to facilitate cleaning of fans and fan housings. A built-in 10degree angle provides proper air throw to blanket the room for proper air circulation and comfort.

Daikin's heavy duty discharge grill is backed with 1/4" galvanized steel mesh to prevent foreign objects from entering the unit.

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DAIKIN

End Panels

Description

Daikin end panels can be used to match up Daikin unit ventilators with existing furniture or units, or with field-supplied storage, sink and water fountain cabinet offerings.

One-inch end panels are typically used to finish off stand-alone floor units. Six-inch end panels, with kick plates, can be used to provide extra space needed for piping. All end panels are individually wrapped in plastic and boxed to help prevent damage during construction.



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UV-600CFM, UV-1000CFM, UV-1250CFM

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Saluda Trail Middle School									
Indoor Unit					HP Co	ndensing Unit			
TAG	Model	Voltage	Min Circuit Amps	Max Fuse Amps	TAG	Model	Voltage	МСА	МОСР
IDHP-A-01	UAVV9H13	460/60/3	16.61	20	ODHP-A-01	DZ14SA0364	460/60/3	7.8	15
IDHP-A-02	UAHV9H15	460/60/3	21.06	25	ODHP-A-02	D714SA0484	460/60/3	8.6	15
IDHP-A-03	UAVV9H13	460/60/3	16.61	20	ODHP-A-03	D714SA0364	460/60/3	7.8	15
IDHP-A-04	UAHV9H10	460/60/3	13.60	15	ODHP-A-04	D74SFA2410	208/60/1	15.3	25
IDHP-A-05	UAVV9H13	460/60/3	16.61	20	ODHP-A-05	DZ14SA0364	460/60/3	7.8	15
IDHP-A-06	UAVV9H07	460/60/3	10.60	15	ODHP-A-06	DZ4SEA1810	208/60/1	12.2	20
IDHP-A-08	UAVV9H13	460/60/3	16.61	20	ODHP-A-08	DZ14SA0364	460/60/3	7.8	15
IDHP-A-09	UAHV9H13	460/60/3	16.61	20	ODHP-A-09	DZ14SA0364	460/60/3	7.8	15
IDHP-A-10	UAVV9H13	460/60/3	16.61	20	ODHP-A-10	DZ14SA0364	460/60/3	7.8	15
IDHP-A-11	UAHV9H10	460/60/3	13.60	15	ODHP-A-11	D74SFA2410	208/60/1	15.3	25
IDHP-A-12	UAVV9H13	460/60/3	16.61	20	ODHP-A-12	DZ14SA0364	460/60/3	7.8	15
IDHP-A-14	UAVV9H13	460/60/3	16.61	20	ODHP-A-14	DZ14SA0364	460/60/3	7.8	15
IDHP-A-15	UAHV9H07	460/60/3	10.60	15	ODHP-A-15	DZ4SEA1810	208/60/1	12.2	20
IDHP-A-16	UAVV9H13	460/60/3	16.61	20	ODHP-A-16	DZ14SA0364	460/60/3	7.8	15
IDHP-A-17	UAHV9H13	460/60/3	16.61	20	ODHP-A-17	DZ14SA0364	460/60/3	7.8	15
IDHP-A-18	UAVV9H13	460/60/3	16.61	20	ODHP-A-18	DZ14SA0364	460/60/3	7.8	15
IDHP-A-19	UAVV9H13	460/60/3	16.61	20	ODHP-A-19	DZ14SA0364	460/60/3	7.8	15
IDHP-A-20	UAHV9H15	460/60/3	21.06	25	ODHP-A-20	DZ14SA0484	460/60/3	8.6	15
IDHP-B-01	UAVV9H10	460/60/3	13.60	15	ODHP-B-01	DZ14SA0364	460/60/3	7.8	15
IDHP-B-02	UAHV9H13	460/60/3	16.61	20	ODHP-B-02	DZ14SA0364	460/60/3	7.8	15
IDHP-B-03	UAVV9H10	460/60/3	13.60	15	ODHP-B-03	DZ14SA0364	460/60/3	7.8	15
IDHP-B-04	UAVV9H07	460/60/3	10.60	15	ODHP-B-04	DZ4SEA1810	208/60/1	12.2	20
IDHP-B-06	UAVV9H10	460/60/3	13.60	15	ODHP-B-06	DZ14SA0364	460/60/3	7.8	15
IDHP-B-08	UAVV9H10	460/60/3	13.60	15	ODHP-B-08	DZ14SA0364	460/60/3	7.8	15
IDHP-B-10	UAVV9H10	460/60/3	13.60	15	ODHP-B-10	DZ14SA0364	460/60/3	7.8	15
IDHP-B-12	UAVV9H10	460/60/3	13.60	15	ODHP-B-12	DZ14SA0364	460/60/3	7.8	15
IDHP-B-13	UAHV9H15	460/60/3	21.06	25	ODHP-B-13	DZ14SA0484	460/60/3	8.6	15
IDHP-B-14	UAVV9H10	460/60/3	13.60	15	ODHP-B-14	DZ14SA0364	460/60/3	7.8	15
IDHP-B-15	UAVV9H10	460/60/3	13.60	15	ODHP-B-15	DZ14SA0364	460/60/3	7.8	15
IDHP-B-16	UAVV9H07	460/60/3	10.60	15	ODHP-B-16	DZ4SEA1810	208/60/1	12.2	20
IDHP-B-18	UAVV9H10	460/60/3	13.60	15	ODHP-B-18	DZ14SA0364	460/60/3	7.8	15
IDHP-B-19	UAHV9H13	460/60/3	16.61	20	ODHP-B-19	DZ14SA0364	460/60/3	7.8	15
IDHP-B-20	UAVV9H10	460/60/3	13.60	15	ODHP-B-20	DZ14SA0364	460/60/3	7.8	15
IDHP-C-01	UAVV9H13	460/60/3	16.61	20	ODHP-C-01	DZ14SA0364	460/60/3	7.8	15
IDHP-C-02	UAHV9H15	460/60/3	21.06	25	ODHP-C-02	DZ14SA0484	460/60/3	8.6	15
IDHP-C-03	UAVV9H10	460/60/3	13.60	15	ODHP-C-03	DZ14SA0364	460/60/3	7.8	15
IDHP-C-04	UAHV9H10	460/60/3	13.60	15	ODHP-C-04	DZ4SEA2410	208/60/1	15.3	25
IDHP-C-05	UAVV9H10	460/60/3	13.60	15	ODHP-C-05	DZ14SA0364	460/60/3	7.8	15
IDHP-C-07	UAVV9H07	460/60/3	10.60	15	ODHP-C-07	DZ4SEA1810	208/60/1	12.2	20
IDHP-C-08	UAVV9H10	460/60/3	13.60	15	ODHP-C-08	DZ14SA0364	460/60/3	7.8	15
IDHP-C-09	UAHV9H13	460/60/3	16.61	20	ODHP-C-09	DZ14SA0364	460/60/3	7.8	15
IDHP-C-10	UAVV9H10	460/60/3	13.60	15	ODHP-C-10	DZ14SA0364	460/60/3	7.8	15
IDHP-C-11	UAHV9H10	460/60/3	13.60	15	ODHP-C-11	DZ4SEA2410	208/60/1	15.3	25
IDHP-C-12	UAVV9H10	460/60/3	13.60	15	ODHP-C-12	DZ14SA0364	460/60/3	7.8	15
IDHP-C-14	UAHV9H07	460/60/3	10.60	15	ODHP-C-14	DZ4SEA1810	208/60/1	12.2	20
IDHP-C-15	UAVV9H10	460/60/3	13.60	15	ODHP-C-15	DZ14SA0364	460/60/3	7.8	15
IDHP-C-16	UAVV9H10	460/60/3	13.60	15	ODHP-C-16	DZ14SA0364	460/60/3	7.8	15
IDHP-C-17	UAHV9H13	460/60/3	16.61	20	ODHP-C-17	DZ14SA0364	460/60/3	7.8	15
IDHP-C-18	UAVV9H10	460/60/3	13.60	15	ODHP-C-18	DZ14SA0364	460/60/3	7.8	15
IDHP-C-19	UAVV9H10	460/60/3	13.60	15	ODHP-C-19	DZ14SA0364	460/60/3	7.8	15
IDHP-C-20	UAHV9H15	460/60/3	21.06	25	ODHP-C-20	DZ14SA0484	460/60/3	8.6	15



14.3 SEER2 HP, 1.5 ton - DZ4SEA1810 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-6,15,B-4,16,C-7,14

STANDARD FEATURES

- High-efficiency Copeland® scroll compressor
- Advanced Copeland® CoreSenseâ,,¢ technology
- Copper tube/enhanced aluminum fin coil 5mm diameter on 1.5-3.5T
- High density foam compressor sound blanket
- Time-delay technology to ensure quiet reliable defrost
- Factory-installed bi-flow liquid line filter drier
- Factory-installed suction line accumulator
- Factory-installed compressor crank case heater
- Factory-installed high capacity muffler
- High- and low-pressure switches
- Service valves with sweat connections and easy access to gauge ports
- Fully charged for 15' of tubing length
- AHRI Certified
- ETL Listed

CABINET FEATURES

- Removable grille-style top design compliant with UL 60335-2-40
- Custom Nickel Gray powder-paint finish
- 500-hour salt-spray tested
- Wire fan discharge grille
- Steel louver coil guard
- Rust-resistant screws
- Top and side maintenance access
- Single-panel access to controls with space provided for fieldinstalled accessories
- When properly anchored, meets the 2020 Florida Building Code unit integrity requirements for hurricane-type winds (Anchor bracket kits available.)



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14.3 SEER2 HP, 1.5 ton - DZ4SEA1810 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-6,15,B-4,16,C-7,14

PERFORMANCE COMBINATION (HSVTC)

* VALUES SHOWN ARE FOR AHRI RATED HIGH SALES VOLUME TESTED

Outdoor Unit Model No.	DZ4SEA1810	Outdoor Unit Name:	14.3 SEER2 HP, 1.5 ton
Rated Cooling Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): 47 / 43
Max/Min Cooling Capacity (Btu/hr):		Max/Min Heating Capacity (Btu/hr):	
* Rated Cooling Capacity (Btu/hr):	17,200	* Rated Heating Capacity (Btu/hr):	17,000
* EER:		* EER2:	12.00
* SEER:		* SEER2:	14.30
* HSPF:		* HSPF2:	7.5
* Heating COP:			

OUTDOOR UNIT DETAILS			
Power Supply (V/Hz/Ph):	208/230 / 60 / 1	Compressor Type:	Single Stage
Min. Circuit Amps MCA (A):	12.2	Suction Valve Connection Size (inch):	3/4
Max Overcurrent Protection (MOP) (A):	20.0	Liquid Valve Connection Size (inch):	3/8
Rated Load Amps RLA(A):	9	Sound Power (High) (dBA):	68
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	55 - 125
Holding Refrigerant Charge (ozs):	94	Heating Operation Range (°F DB):	-20 - 70
Additional Charge (lb/ft):	0.60	Max. Pipe Length (Vertical) (ft):	80
Pre-charge Piping (Length) (ft):	15	Min. Cooling Range w/Baffle (°F DB):	
Max. Pipe Length (Total) (ft):	200	Min. Heating Range w/Baffle (°F DB):	
Net Weight (lb):	164	Gross Weight (lb):	184
Dimensions (HxWxD) (in):	35.687999999999995 x 29 x 29		

Daikin City Generated Submittal Data

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14.3 SEER2 HP, 2 ton - DZ4SEA2410 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-4,11,C-4,11

STANDARD FEATURES

- High-efficiency Copeland® scroll compressor
- Advanced Copeland® CoreSenseâ,,¢ technology
- Copper tube/enhanced aluminum fin coil 5mm diameter on 1.5-3.5T
- High density foam compressor sound blanket
- Time-delay technology to ensure quiet reliable defrost
- Factory-installed bi-flow liquid line filter drier
- Factory-installed suction line accumulator
- Factory-installed compressor crank case heater
- Factory-installed high capacity muffler
- High- and low-pressure switches
- Service valves with sweat connections and easy access to gauge ports
- Fully charged for 15' of tubing length
- AHRI Certified
- ETL Listed

CABINET FEATURES

- Removable grille-style top design compliant with UL 60335-2-40
- Custom Nickel Gray powder-paint finish
- 500-hour salt-spray tested
- Wire fan discharge grille
- Steel louver coil guard
- Rust-resistant screws
- Top and side maintenance access
- Single-panel access to controls with space provided for fieldinstalled accessories
- When properly anchored, meets the 2020 Florida Building Code unit integrity requirements for hurricane-type winds (Anchor bracket kits available.)



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14.3 SEER2 HP, 2 ton - DZ4SEA2410 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-4,11,C-4,11

PERFORMANCE COMBINATION (HSVTC)

* VALUES SHOWN ARE FOR AHRI RATED HIGH SALES VOLUME TESTED

Outdoor Unit Model No.	DZ4SEA2410	Outdoor Unit Name:	14.3 SEER2 HP, 2 ton
Rated Cooling Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): 47 / 43
Max/Min Cooling Capacity (Btu/hr):		Max/Min Heating Capacity (Btu/hr):	
* Rated Cooling Capacity (Btu/hr):	22,600	* Rated Heating Capacity (Btu/hr):	22,000
* EER:		* EER2:	12.00
* SEER:		* SEER2:	14.30
* HSPF:		* HSPF2:	7.5
* Heating COP:			

OUTDOOR UNIT DETAILS			
Power Supply (V/Hz/Ph):	208/230 / 60 / 1	Compressor Type:	Single Stage
Min. Circuit Amps MCA (A):	15.3	Suction Valve Connection Size (inch):	3/4
Max Overcurrent Protection (MOP) (A):	25.0	Liquid Valve Connection Size (inch):	3/8
Rated Load Amps RLA(A):	11.5	Sound Power (High) (dBA):	72
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	55 - 125
Holding Refrigerant Charge (ozs):	86	Heating Operation Range (°F DB):	-20 - 70
Additional Charge (lb/ft):	0.60	Max. Pipe Length (Vertical) (ft):	80
Pre-charge Piping (Length) (ft):	15	Min. Cooling Range w/Baffle (°F DB):	
Max. Pipe Length (Total) (ft):	200	Min. Heating Range w/Baffle (°F DB):	
Net Weight (lb):	164	Gross Weight (lb):	181
Dimensions (HxWxD) (in):	35.687999999999995 x 29 x 29		

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3 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0364 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-1,3,5,8-10,12,14,16-19,B-1-3,6,8,10,12,14,15,18-20,C-1,3,5,8-10,12,15-19

STANDARD FEATURES

- R-410A chlorine-free refrigerant
- Energy-efficient scroll compressor
- Low-pressure switch
- Liquid refrigerant return protection
- Factory-installed, bi-flow Liquid-line filter drier
- Service valves with sweat connections and easy-access gauge ports
- Copper tube/enhanced aluminum fin coil
- Reliable time-initiated, temperature-terminated defrost control
- Contactor with lug connection
- Ground lug connection
- Units meet the performance outlined in Table 6.8.1-2 of ASHRAE Standard 90.1-2013
- AHRI Certified
- ETL Listed

CABINET FEATURES

- Innovative sound control top design
- Steel louver coil guard
- Heavy-gauge galvanized-steel cabinet
- Attractive Nickel Gray powder-paint finish
- Top and side maintenance access
- Service ports and controls are accessible while unit is operating
- When properly anchored, meets the 2010 Florida Building Code unit integrity requirements for hurricane-type winds (Anchor bracket kits available.)





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PERFORMANCE

3 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0364 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-1,3,5,8-10,12,14,16-19,B-1-3,6,8,10,12,14,15,18-20,C-1,3,5,8-10,12,15-19

* VALUES SHOWN ARE FOR AHRI RATED HIGH SALES VOLUME TESTED COMBINATION (HSVTC)

Outdoor Unit Model No.	DZ14SA0364	Outdoor Unit Name:	3 Ton HP, 14 SEER, 3 Phase 460V
Rated Cooling Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75
Max/Min Cooling Capacity (Btu/hr):		Max/Min Heating Capacity (Btu/hr):	32,800 / 19,000
* Rated Cooling Capacity (Btu/hr):	34,600	* Rated Heating Capacity (Btu/hr):	
* EER:	11.50	* EER2:	
* SEER:	14.00	* SEER2:	
* HSPF:	8.2	* HSPF2:	
* Heating COP:	3.7		

OUTDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	460 / 60 / 3	Compressor Type:	Single Stage
Min. Circuit Amps MCA (A):	7.8	Airflow Rate (High) (CFM):	1010
Max Overcurrent Protection (MOP) (A):	15	Suction Valve Connection Size (inch):	3/4
Max Starting Current MSC(A):	6.40	Liquid Valve Connection Size (inch):	3/8
Rated Load Amps RLA(A):	6.4	Sound Power (High) (dBA):	74
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	65 - 115
Holding Refrigerant Charge (ozs):	112	Heating Operation Range (°F WB):	-10 - 65
Additional Charge (lb/ft):	0.60	Max. Pipe Length (Vertical) (ft):	50
Pre-charge Piping (Length) (ft):	15	Min. Cooling Range w/Baffle (°F DB):	55
Max. Pipe Length (Total) (ft):	79	Min. Heating Range w/Baffle (°F DB):	-5
Net Weight (lb):	231	Gross Weight (Ib):	194
Dimensions (HxWxD) (in):	32-1/4 x 29 x 29		

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3 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0364 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-1,3,5,8-10,12,14,16-19,B-1-3,6,8,10,12,14,15,18-20,C-1,3,5,8-10,12,15-19

DIMENSIONAL DRAWING



Model	DIMENSIONS		
	w"	D"	н"
DZ14SA0363A*	29	29	32¼
DZ14SA0364A*	29	29	32¼
DZ14SA0483A*	29	29	34¼
DZ14SA0484A*	29	29	34¼
DZ14SA0603A*	35½	35½	34¼
DZ14SA0604A*	35½	35½	34¼

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4 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0484 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-2,20,B-13,C-2,20

STANDARD FEATURES

- R-410A chlorine-free refrigerant
- Energy-efficient scroll compressor
- Low-pressure switch
- Liquid refrigerant return protection
- Factory-installed, bi-flow Liquid-line filter drier
- Service valves with sweat connections and easy-access gauge ports
- Copper tube/enhanced aluminum fin coil
- Reliable time-initiated, temperature-terminated defrost control
- Contactor with lug connection
- Ground lug connection
- Units meet the performance outlined in Table 6.8.1-2 of ASHRAE Standard 90.1-2013
- AHRI Certified
- ETL Listed

CABINET FEATURES

- Innovative sound control top design
- Steel louver coil guard
- Heavy-gauge galvanized-steel cabinet
- Attractive Nickel Gray powder-paint finish
- Top and side maintenance access
- Service ports and controls are accessible while unit is operating
- When properly anchored, meets the 2010 Florida Building Code unit integrity requirements for hurricane-type winds (Anchor bracket kits available.)





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4 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0484 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-2,20,B-13,C-2,20

PERFORMANCE COMBINATION (HSVTC)

* VALUES SHOWN ARE FOR AHRI RATED HIGH SALES VOLUME TESTED

Outdoor Unit Model No.	DZ14SA0484	Outdoor Unit Name:	4 Ton HP, 14 SEER, 3 Phase 460V
Rated Cooling Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75
Max/Min Cooling Capacity (Btu/hr):		Max/Min Heating Capacity (Btu/hr):	44,500 / 28,000
* Rated Cooling Capacity (Btu/hr):	45,000	* Rated Heating Capacity (Btu/hr):	
* EER:	11.50	* EER2:	
* SEER:	14.00	* SEER2:	
* HSPF:	8.5	* HSPF2:	
* Heating COP:	3.9		

OUTDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	460 / 60 / 3	Compressor Type:	Single Stage
Min. Circuit Amps MCA (A):	8.6	Airflow Rate (High) (CFM):	1555
Max Overcurrent Protection (MOP) (A):	15	Suction Valve Connection Size (inch):	7/8
Max Starting Current MSC(A):	6.90	Liquid Valve Connection Size (inch):	3/8
Rated Load Amps RLA(A):	6.9	Sound Power (High) (dBA):	76
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	65 - 115
Holding Refrigerant Charge (ozs):	133	Heating Operation Range (°F WB):	-10 - 65
Additional Charge (lb/ft):	0.60	Max. Pipe Length (Vertical) (ft):	50
Pre-charge Piping (Length) (ft):	15	Min. Cooling Range w/Baffle (°F DB):	55
Max. Pipe Length (Total) (ft):	79	Min. Heating Range w/Baffle (°F DB):	-5
Net Weight (Ib):	234	Gross Weight (Ib):	190
Dimensions (HxWxD) (in):	34-1/4 x 29 x 29		

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4 Ton HP, 14 SEER, 3 Phase 460V - DZ14SA0484 Project: Saluda Trail Middle School Submitted by: Eric Creel of HOFFMAN & HOFFMAN INC - CHARLOTTE on 11/4/2022 Submitted to: No Engineer Name Specified Tags: ODHP-A-2,20,B-13,C-2,20

DIMENSIONAL DRAWING



B 4055	DIMENSIONS		
MODEL	w"	D"	н"
DZ14SA0363A*	29	29	32¼
DZ14SA0364A*	29	29	32¼
DZ14SA0483A*	29	29	34¼
DZ14SA0484A*	29	29	34¼
DZ14SA0603A*	35½	35½	34¼
DZ14SA0604A*	35½	35½	34¼

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