Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 10/10/2023
Return Request: 10/16/2023
Project: ASU Mid-South RC & UC Chiller Replacement
Supplier: Control Heating & Cooling
Manufacturer: Greenheck
Submittal: Air Terminal Units (VAV)
Submittal Number: 23 36 16-01
Drawing # and Installation: Mechanical Drawings

ARCHITECT
Witsell Evans Rasco
901 W. Third Street
Little Rock, AR 72201
501-374-5300

ENGINEER
Pettit & Pettit
201 E. Markham St. #400
Little Rock, AR 72201
501-374-3731

GENERAL CONTRACTOR
Baldwin & Shell
3725 Champion Hills Driver, Suite 1300
Memphis, TN 38125
901-755-2952

MECHANICAL SUBCONTRACTOR
Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.
23-1024
jon@comfortar.com

Control Heating & Cooling, Inc
6000 Krueger Drive
Jonesboro, AR 72401
Phone: (870) 935-3693
Fax: (870) 935-4031

Submittal Transmittal

TO: Comfort Systems, Inc.
PO Box 16620
Little Rock, AR 72231

Date:	8/28/2023
Project:	ASU Mid-South Chiller Replace
Submittal #	THREE
ATTN:	Jon Davis
RE:	Air Terminal Units

We are sending you the following: ☐ Attached ☐ Under Separate Cover

Via: ☐ 1st Class Mail ☐ Overnight ☐ Facsimile ☐ Pick-Up/Hand Deliver

Copies	Spec No.	Description
1	23 3616	VAV Box: Greenheck

Remarks: _____

_____

_____

Submittal

Project number: 10030
Project name: ASU MI-SOUTH CHILLER

Note: This submittal is based on equipment and options listed on the attachement(s) and represents our interpretation of your requirements. It is the representative's responsibility to review this submittal and verify that it meets the job specifications.

Project Information

Project name:	ASU MID-SOUTH CHILLER
Location:	WEST MEMPHIS, AR
Architect:	WER
MEP firm:	PETTIT & PETTIT
Mechanical contractor:	CONTROL HEATING & COOLING
Date:	8/25/2023

Sales Representative

Submitted by:

Approvals

Owner's representative:

Engineer of record:

Mechanical Contractor:

Project Summary

Qty	Model	Inlet Size	Casing	Tag(s)	Model Description
1	XG-FVI	14	C3	VAV-1	Parallel Fan Powered Air Terminal Unit

Product Data: Parallel Fan Powered Air Terminal Unit

Qty	Description	Model Number
1	Parallel Fan Powered Air Terminal Unit	FVI C3 5 14 10.00 C EH N N2B ZB1 D1 ZA1D ZP3 Z22 Z10 32 NIA Z02 74 Z88 Z23 82 USR 805E

Tag(s): VAV-1

Selected Options

C3	Unit Case Size : Case Size 3
14	Inlet Size : Inlet Size 14 (Min: 325 /Max: 3250 CFM)
C	Fan Voltage : 277 V
EH	Heating Type : Electric Heat
N	Volt Phase : 480-3-60
N2B	Heat Steps : SCR 2-10Vdc
ZB1	Transformer Fusing : Transformer with No Fusing
D1	Disconnect : Door Interlocking Non-Fused Line Disconnect Switch
ZA1D	Contactors : Magnetic Contactors per Step
ZP3	Electric Heating Enclosure : Standard Electric Heat Enclosure
Z22	Fan Motor : PSC Fan Motor, Permanment Split Capacitor fan motor
Z10	Casing Material : Construction- 20 Ga construction
32	Filter Rack : Filter Rack with 1" Filter
NIA	Attenuator : No Attenuator
Z02	Fan Access Door : Bottom Mount Fan Motor Acess Door, Zip Screw
74	Liner : 3/4" Foil Faced 1 1/2 lbs.
Z88	Handing : Handing- Control And Reheat(electric or water) Connections On Left
Z23	Airflow Sensor : Multi Quadrant Averaging Flow Sensor
82	Outlet : Slip and Drive Connection
USR	Control Type (Select Control Sequence Second) : Controls by Other Factory Mounted
805E	Control Sequence (Select Control Type First) : 805E - Factory Mounted Controls- Electric Heat and trans

GREENHECK
Building Value in Air.

Model
XG-FVI-C3-514

Project:	**ASU MI-SOUTH CHILLER**
Tag:	**VAV-1**
Altitude:	**0 Feet**

			Size		CFM			Static Pressure			Max NC Levels	
Qty	Model	Case	Unit	Outlet	Max	Min	Inlet	Downstream	Min Drop	Unit Drop	Rad	Dis
1	**XG-FVI**	**C3**	**14**	**16x15**	**3250**	**325**	**1.000**	**0.250**	**0.072**	**0.072**	**28**	**0**

Parallel Fan Powered Air Terminal Unit

Fan Data:

Max Fan Airflow:	Min Fan Airflow:	Motor Type:	Fan HP:	External Static Pressure:	Fan Voltage:	FLA:	MCA:	MOCP:
1169 CFM	**353** CFM	**PSC**	**1/4**	**0.25** in. H2O	**277/1**	**1.90**	**17.41**	**20.00**

Electric Heat:

Total Capacity:	Heating Airflow:	Entering Air Temp:	Leaving Air Temp:	Box Leaving Air Temp:	Volt / Phase:	Steps:
10.00 KW	**1100** CFM	**58.90** °F	**95.68** °F	**95.68** °F	**480-3**	**SCR 2-10Vdc**

Electrical Data

Min. Cir. Amps - MCA	MOCP
17.41	**20.00**

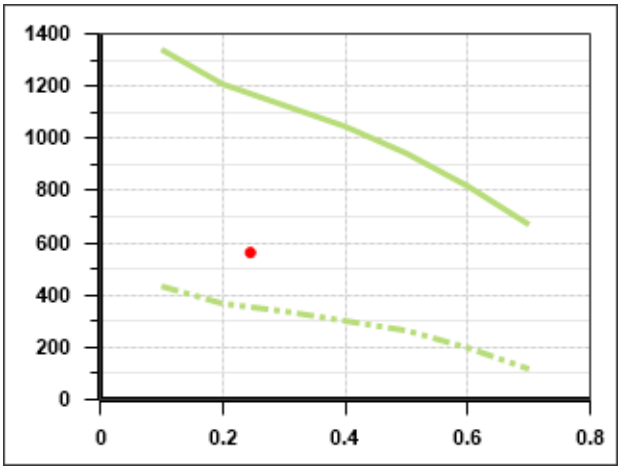
Design Air Flow

Max Primary:	**2760** CFM
Min Primary:	**830** CFM
Fan Airflow:	**550** CFM
Primary Heating Airflow:	**550** CFM

Accessories:

Heating Coil:	**EH**
Inlet:	**No Attenuator**
Outlet:	**No Attenuator**

Fan Curve



Radiated Sound Power Level (db)

Band	2	3	4	5	6	7	NC
Max Cooling	**55**	**45**	**45**	**50**	**42**	**35**	
Max Heating	**60**	**57**	**53**	**55**	**47**	**49**	
Total Attenuation	**18**	**19**	**20**	**26**	**31**	**36**	
Room Sound Level	**42**	**38**	**33**	**29**	**16**	**13**	**28**

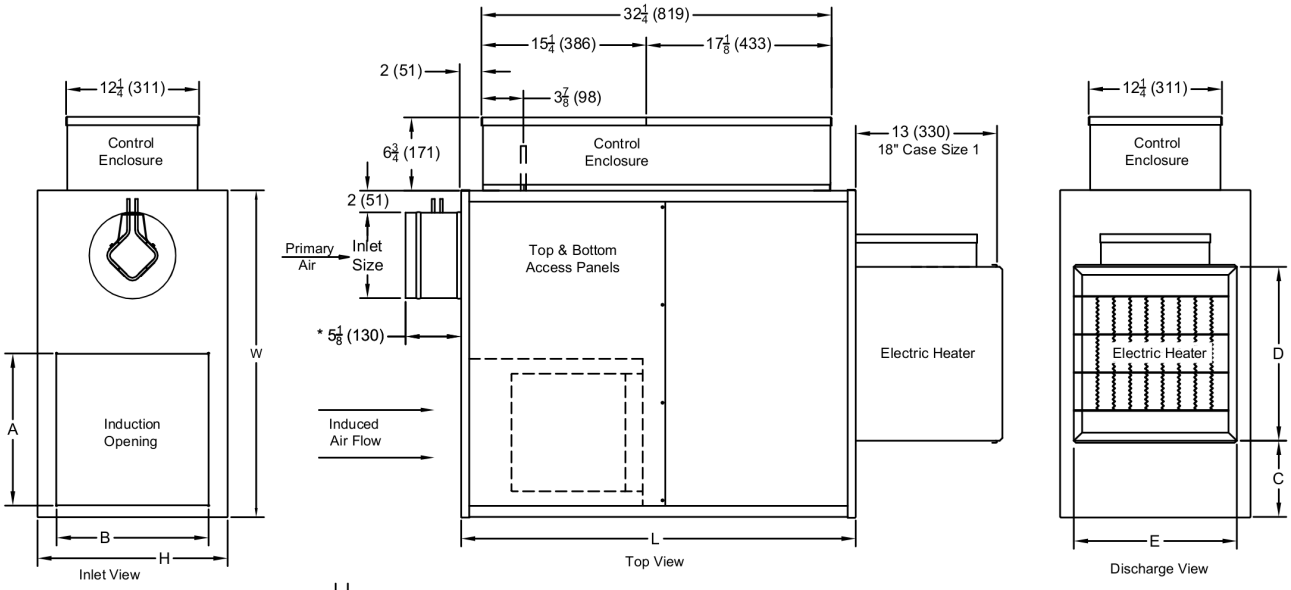
Discharge Sound Power Level (db)

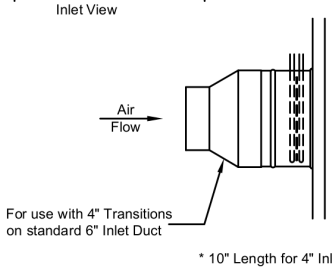
Band	2	3	4	5	6	7	NC
Max Cooling	**62**	**56**	**48**	**50**	**45**	**36**	
Max Heating	**58**	**56**	**51**	**47**	**48**	**41**	
Total Attenuation	**27**	**29**	**40**	**51**	**53**	**39**	
Room Sound Level	**31**	**27**	**11**	**0**	**0**	**2**	**< 15**

FVI500-004 - FVI with EH

Qty: 1 Tags: VAV-1

Parallel Fan Powered Air Terminal Unit With Electric Heat





The standard location for control enclosure is Left Hand. Looking in the direction of airflow, the control enclosure is on the left.

All dimensions shown in inches, parentheses () indicate millimeters.

PSC MOTOR CONFIGURATION	
Case Size	Horse Power
1	1/8
2	1/6
3	1/4
4	1/4
5	1/3
6	1/2
7	1

Case Size	Inlet Size		Unit Width	Unit Height	Unit Length	Induction		Discharge		
	Standard	Optional	W	H	L	Width A	Height B	Loc. C	Width D	Height E
1	6 (152)	4, 5, 8,10	30 (762)	17 1/2 (445)	36 (914)	16 (406)	16 (406)	7 (178)	16 (406)	15 (381)
2	8 (203)	4,5,6,10	30 (762)	17 1/2 (445)	36 (914)	16 (406)	16 (406)	7 (178)	16 (406)	15 (381)
3	10 (254)	4,5,6,8,12,14	36 (914)	17 1/2 (445)	40 (1016)	20 (508)	16 (406)	10 (254)	16 (406)	15 (381)
4	12 (305)	8,10,12,14	36 (914)	17 1/2 (445)	40 (1016)	20 (508)	16 (406)	8 (203)	20 (508)	17 1/2 (445)
5	14 (356)	10,12,16	40 (1016)	20 (508)	40 (1016)	20 (508)	20 (508)	10 (254)	20 (508)	17 1/2 (445)
6	16 (406)	10,12,14	42 (1067)	20 (508)	42 (1067)	24 (610)	20 (508)	10 (254)	20 (508)	17 1/2 (445)
7	16 (406)	12,14	42 (1067)	20 (508)	42 (1067)	24 (610)	20 (508)	6 (152)	30 (762)	20 (508)

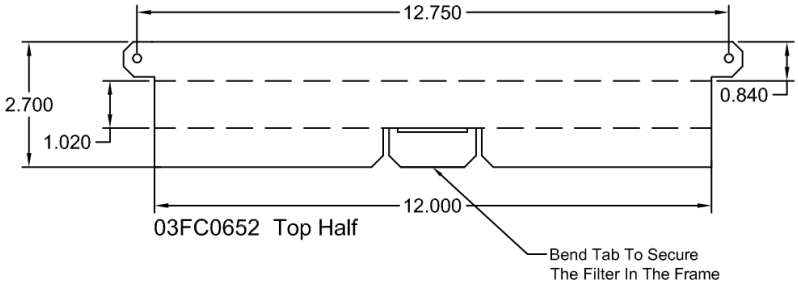
ECM MOTOR CONFIGURATION	
Case Size	Horse Power
1	1/3
2	1/3
3	1/2
4	1/2
5	1
6	1
7	1

Standard Construction

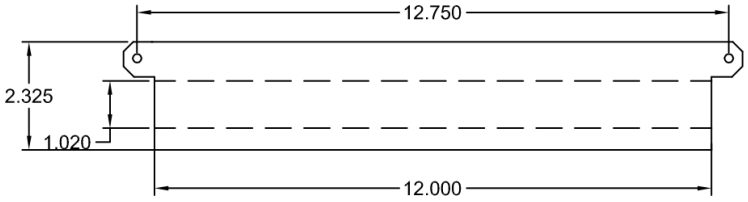
- 1" Dual Density, Coated Fiberglass
- All Insulations Meet NFPA 90A And UL 181
- All Fiberglass Insulations Have Coated Edges To Prevent Fiber Migration
- Units Are Constructed With 20 Gauge Casing, 20 Gauge Inlet Duct, and 18 Guage Discharge.
- 18 Gauge Equivalent Damper Assembly With Integral Blade Seal
- 32 x 12 Control Enclosure
- Slip & Drive Discharge Connection
- Optional HW Coil Access Door
- Optional Induction Attenuator
- Inlet Airflow Sensor

Induction Filter and Frame Option 08 and 32

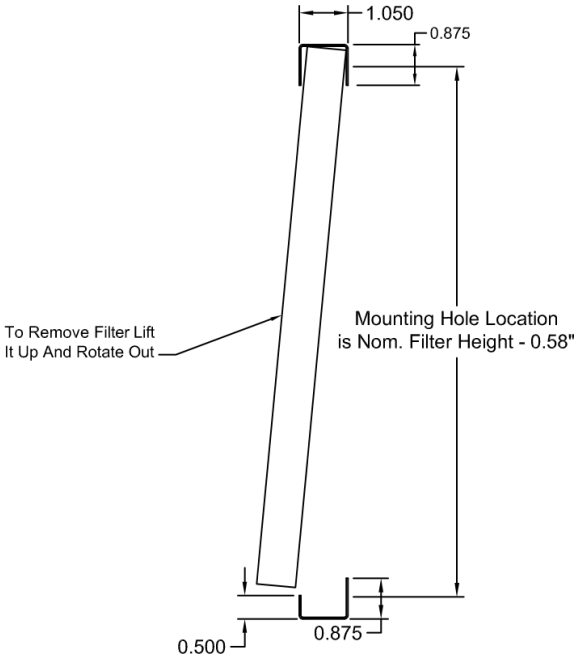
Qty: 1 Tags: VAV-1



03FC0652 Top Half



03FC0653 Bottom Half



Specification for 1,half, and three qtr in. Foil Faced Insul- Options 70, 74, 77

Qty: 1 Tags: VAV-1

FOIL FACED (FSK) 1.5 LB. DENSITY INSULATION

Specification

Description:	Foil faced(FSK) Insulation
Thickness:	1", ¾" and ½"
R-Value:	4.0-2.0 (hr.ft².ºF)Btu
Density:	1.5 lbs. / ft³
Thermal Conductance:	0.48-0.23 Btu hr. / ft² Fº
Operating Temperature:	250º F (121º C)
Maximum Air Velocity:	2500 fpm
Flame Spread:	25
Smoke Spread:	50
Air Erosion:	None
Mold Growth and Humidity:	Does not breed or promote

Applicable Codes

UL 181	Mold Growth and Humidity
UL 181	Air Erosion
ASTM E84	Flame/Smoke (25/50)
UL 723	Flame/Smoke (25/50)
NFPA 90A/90B	Fire and Smoke Spread

Mechanical Specifications

Tag(s): VAV-1

Quality, Agency, Standards

Air terminals shall be certified under the Air Conditioning, Heating and Refrigeration Institute (AHRI) Standard 880-08 Certification Program and carry the AHRI seal. All NC values shall be calculated per AHRI Standard 885-08. Units with NC values calculated per AHRI-885-90 or 98 will not be accepted. Terminal units shall be either ETL® or UL® listed as a complete assembly. Terminal electrical components, including actuators and low voltage controls shall be UL® listed. All electrical components including both line voltage and low voltage shall be mounted in a metal control enclosure. Units shall have a single point field wiring connection. Units shall be manufactured and wired per UL-1995 and in accordance with the National Electric Code.

Shipping

All terminals shall be shipped as a single unit requiring no field assembly. Accessories including hot water coils and electric heaters shall be factory mounted.

Sound Rating

The terminal manufacturer shall provide AHRI certified sound power data for radiated and discharge sound. All NC values shall be calculated per AHRI standard 885-98. Verify sound ratings for the terminal do not exceed specified value at scheduled static pressure. Sound performance shall be AHRI certified. Each individual terminal unit shall bear an AHRI label.

Fan Motor : PSC Fan Motor, Permanment Split Capacitor fan motor

Air terminals shall have a flanged connection on the discharge of the box.

Casing Material : Construction- 20 Ga construction

The terminal casing shall be constructed of minimum 20 gauge galvanized steel.

Filter Rack : Filter Rack with 1" Filter

Fan powered terminals shall have a filter rack and a 1" MERV 5-8 rated dust filter installed at the fan air intake.

Fan Access Door : Bottom Mount Fan Motor Acess Door, Zip Screw

Fan powered terminals shall have a zip screw, non-recessed, bottom mount, access door for access to the blower/motor assembly.

Liner : 3/4" Foil Faced 1 1/2 lbs.

Air Terminals shall be internally insulated with (¾") thick, 1.5 lb. /ft3 dual density fiberglass covered with scrim backed foil facing. All surfaces and edges of the insulation shall be sealed with scrim backed foil facing so that there is no exposed fiberglass in the airstream. Insulation shall comply with UL 181 and NFPA 90A.

Handing : Handing- Control And Reheat(electric or water) Connections On Left

Air terminals shall have the controls and reheat connections located on the left side when looking in the direction of the air flow.

Airflow Sensor : Multi Quadrant Averaging Flow Sensor

The inlet flow sensor shall be a multi-point quardant averaging flow sensor.

Outlet : Slip and Drive Connection

Air terminals shall have a slip and drive connection on the discharge.