



### AHU-6 Unit Rating

2420 South Yukon Ave. Tulsa, Oklahoma 74107-2728 Ph: (918) 485-2260 Fax: (918) 485-4004  
AAON/AAHVAC, Inc. 4.315 (OSN 023456)

**RN-006-8-0-FB09-122; N000-DOF-DHE-00C-ODEABBD-00-00A0000VX**  
Tag: RTU# 6

**Values do not account for changes described in SPA**

**Job Information**

Job Name:	EASTGATE AMBULATORY SURGERY	Unit Information	APPROX. CAPACITY AND PERFORMANCE DO NOT INCLUDE SPA
Job Number:	CENTER	Approx. Op./Ship Weights:	1408 / 1408 lbs. (5%)
Site Address:	Job #0010020915	Supply CFM/ESP:	2187 / 2.5 in. wg.
Refrigerant:	600 P	Plant Filter PV Qty:	246.00 fpm / 4
	R-410A	Ambient Temperature:	40°
		Returns Temperature:	89 °F DB / 75 °F WB
			71.3 °F DB / 58.6 °F WB

**Static Pressure**

Exhaust:	2.50 in. wg.
Evaporator:	0.29 in. wg.
Filters Clean:	0.09 in. wg.
Dirt Allowance:	0.05 in. wg.

**Cooling Section**

Gross Total Capacity:	63.84	Net Total Capacity:	57.84 MBH
Sensible Capacity:	52.87	Latent Capacity:	47.37 MBH
Latent Capacity:	10.47 MBH	Mixed Air Temp:	72.91 °F DB
Mixed Air Temp:	72.91 °F DB	Entering Air Temp:	79.91 °F DB
Entering Air Temp:	79.91 °F DB	Lv Air Temp (Coil):	52.77 °F DB
Lv Air Temp (Coil):	52.77 °F DB	Lv Air Temp (Unit):	55.12 °F DB
Lv Air Temp (Unit):	55.12 °F DB	Digital Comp. Capacity Ratio:	100%
Digital Comp. Capacity Ratio:	100%	Supply Air Flow:	1 x RNA185D70 @ 1.93 BHP
Supply Air Flow:	1 x RNA185D70 @ 1.93 BHP	SA Fan RPM / Width:	1939 / 3.66"
SA Fan RPM / Width:	1939 / 3.66"	Evaporator Coil:	8.5 R <sup>2</sup> / 6 Rows / 14 FPI
Evaporator Coil:	8.5 R <sup>2</sup> / 6 Rows / 14 FPI	Evaporator Face Velocity:	257.1 fpm
Evaporator Face Velocity:	257.1 fpm		

**Rating Information**

Cooling Capacity (MBH):	63.0
Cooling SEER:	14
Cooling EER:	12.2

Application EER @ Op. Conditions: 8.7

**Electrical Data**

Rating:	208/3/60
Unit FLA:	52
SCCR:	5 KAIC

**Cabinet Sound Power Levels\***

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW(dB):	86	85	88	84	76	73	71	66
Return LW(dB):	76	76	75	68	64	59	54	44

\*Sound power levels are given for informational purposes only. The actual levels are not guaranteed.

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### AHU-6 18.5" STAR Plenum

2420 South Yukon Ave. Tulsa, Oklahoma 74107-2728 Ph: (918) 485-2260 Fax: (918) 485-4004  
AAON/AAHVAC, Inc. 4.315 (OSN 023456)

**Job Information:**

Job Name:	EASTGATE AMBULATORY SURGERY	WHEEL SPECIFICATION:	Max RPM: 2,200
Job Tag:	CENTER	Frame Size:	18.5 in. x 1
Rep Firm:	RTU# 6	CFM:	2187
Date:	07/12/2021	Tip Speed:	1700
		Inertia:	5.391 FPM
			3 WR*

**OPERATING CONDITIONS:**

Air Flow:	2,187 CFM
Static Pressure:	3.25 in. Wg.
Relief Dampers DP:	0.09 in. Wg.
TSP:	3.25 in. Wg.
Site Altitude:	600.00 Ft
TSP @ Sea Level:	3.49 in. Wg.

**FAN PERFORMANCE:**

RPM:	1939
BHP:	1.93
Efficiency:	58.7%
In/Out Velocity:	1250/1310 FPM
Plenum Out Velocity:	36 FPM
Max Duct SP with Blocked Airway:	4.1 in. Wg. @ 1939 rpm

**MOTOR SELECTION:**

Rated HP / Bypass:	3 / No
Frame Size:	182T
Nominal RPM:	1700
VAC/PHHZ:	208/3/60
Efficiency:	Premium / 0.895
Enclosure Type:	ODP
Max Inertial Load:	29 WR*

**FAN SOUND POWER (Inlet/Outlet):**

Octave Band:	(Re 10 <sup>-12</sup> watts)						
1	2	3	4	5	6	7	8
86	85	88	86	79	77	75	70
86	85	88	86	79	77	75	70

**Supply Fan Model: RNA185D70 @ 1939 RPM and 99% Width**  
Design Conditions: 2187 CFM @ 3.43" SP

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### AHU-6 Unit Submittal

2420 South Yukon Ave. Tulsa, Oklahoma 74107-2728 Ph: (918) 485-2260 Fax: (918) 485-4004  
AAON/AAHVAC, Inc. 4.315 (OSN 023456)

**Job Information:**

Job Name:	EASTGATE AMBULATORY SURGERY	Unit Submittal For:	
Job Number:	CENTER	Unit Submittal Date:	December 01, 2021

**Base Option Description**

R	Series	Star Fan Unit
N	Generation	Ninth Generation
006	Unit Size	Six
8	Voltage	208V/3/60Hz/3
0	Inertial Protection	Standard
F	Refrigerant Style	R-410A VCC - Standard Efficiency
B	Unit Configuration	Air-Cooled Cond. + 8 Row Evap. Coil
0	Coil Coating	Standard
9	Coil/Heat Pump Staging	Modulating; 1 Variable Capacity Compressor
1	Heating Type	Electric Heat
2	Heating Designation	Heat 2 - 15 kW
2	Heating Stage	1 Stage

**Feature Option Description**

N	1A. RA/VA Section	Energy Energy Recovery Wheel Option Box - No Power Exhaust
C	1B. RA/VA Blower Configuration	Standard - None
0	1C. RA/VA Blower	Standard - None
0	1D. RA/VA Blower Motor	Standard - None
D	2. OA Control	Fully Modulating Actuator - Enthalpy Limit
0	3. Heat Options	Standard - All Comp. Cooling Lock-Out Through Unit Controls
F	4. Maintenance Options	115V Convenience Outlet - Field Wired + Remote Start/Stop Terminals - LVTB
D	8A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
H	8B. SA Blower	18.5" Direct Drive Backward Curved Plenum - 70% Width
E	8C. SA Motor	3.66" 1200 RPM
0	6A. Pre Filter Type	Standard - None
0	6B. Unit Filter Type	2" Pleated - 30% EFF
0	6C. Filter Options	Charged Filter Switch + Magnahelic Gauge
D	7. Refrigeration Control	Standard - All Comp. Cooling Lock-Out Through Unit Controls
D	8. Refrigeration Options	Modulating Hot Gas Reheat
E	9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
B	10. Power Options	Non-Isolated Disconnect Power Switch - 100 Amps
0	11. Safety Options	SA Safety Interlock
D	12. Controls	Phase & Break-Out Protection
D	13. Special Controls	VAV Unit Controller - VAV Cool + CV Heat
0	14A. Outside Air Configuration	Standard - None
0	14B. Preheat Blower	Standard - None
0	15. Glycol Prewarm	Water or No WSP
0	16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
A	17. Remote Cabinet Options	Standard - None
0	18. Electrical Rating	Standard - 5 KAIC
0	19. Code Options	Standard - ETL U.S.A. Listing
0	20. Coating	Standard
0	21. Water-Cooled Cond.	Standard - None
V	22. Control Vendors	VCC-X Control + Integrated BACnet MSTP
X	23. Type	Special Price Authorization + AAON Gray Paint

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### RN SERIES A - CABINET ~ ECONOMIZER, EMPTY ENERGY RECOVERY SECTION ~ 6-10 TON

**CLEARANCES**

LOCATION	MIN. CLEARANCE
OUTSIDE AIR BACK	36
CONTROLS SIDE (RIGHT)	48
LEFT SIDE	6
RIGHT SIDE	48
TOP	UNRESTRICTED

**DETAIL A** **DETAIL B** **DETAIL C**

**TOP VIEW** **FRONT VIEW** **RIGHT SIDE VIEW**

RNA-0003 NEW 10/19/09 JRL  
NOTE: ALL DIMENSIONS ARE IN INCHES

### Performance Summary For RTU-1

Part Number: 50FC-A05A2A5-0F0A0

ARI SEER: 14.00

**Base Unit Dimensions**

Unit Length:	74.4 in
Unit Width:	46.6 in
Unit Height:	33.4 in

**Operating Weight**

Base Unit Weight:	498 lb
Enthalpy Economizer with Barometric Relief:	37 lb
Accessories:	10 lb
Single Point Kit:	10 lb
Total Operating Weight:	555 lb

**Unit**

Unit Voltage-Phase-Hertz:	208-3-60
Air Discharge:	Vertical
Fan Drive Type:	Vane Axial
Actual Airflow:	2000 CFM
Site Altitude:	0 ft

**Cooling Performance**

Condenser Entering Air DB:	95.0 F
Evaporator Entering Air DB:	80.0 F
Evaporator Entering Air WB:	67.0 F
Entering Air Enthalpy:	31.44 BTU/lb
Evaporator Leaving Air DB:	62.5 F
Evaporator Leaving Air WB:	59.4 F
Evaporator Leaving Air Enthalpy:	25.97 BTU/lb
Gross Cooling Capacity:	49.24 MBH
Gross Sensible Capacity:	37.88 MBH
Compressor Power Input:	3.46 kW
Coil Bypass Factor:	0.155

**Heating Performance**

Heating Airflow:	2000 CFM
Entering Air Temp:	70.9 F
Leaving Air Temp:	92.7 F
Electric Heating Capacity:	14.40 kW

**Supply Fan**

External Static Pressure:	0.50 in wg
Options / Accessories Static Pressure:	
Electric Heaters:	0.23 in wg
Economizer:	0.12 in wg
Total Application Static (ESP + Unit Opts/Acc.):	0.85 in wg
Fan RPM:	2043
Fan Power:	0.91 BHP

NOTE: Selected IFM RPM Range: 217 - 2170

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

**Electrical Data**

Voltage Range:	187 - 253
Compressor #1 FLA:	15.7
Compressor #1 LRA:	83
Actual Electric Heater kW:	14.4

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### Performance Summary For RTU-1

Project: Eastgate Medical - Phase 1 (Perfection 10-2021) 04/18/2022 10:57AM

Electric Heater FLA: 40 MED  
Indoor Fan Motor Type: 7.1  
Power Supply MCA: 59  
Power Supply MOCP (Fuse or HACR): 60  
Disconnect Size FLA: 54  
Disconnect Size LRA: 97  
Electrical Convenience Outlet: None  
Outdoor Fan Qty / FLA (ea.): 1 / 11.5  
Electric Heater Part Number: 330A  
Electric Heater Number of Stages: 2

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

**Acoustics**

Sound Power Levels, db re 10E-12 Watts			
	Discharge	Inlet	Outdoor
63 Hz	91.8	89.0	85.6
125 Hz	82.9	79.9	84.7
250 Hz	76.9	71.6	80.5
500 Hz	73.6	65.6	76.0
1000 Hz	70.3	67.8	72.4
2000 Hz	67.7	65.1	68.0
4000 Hz	63.9	52.4	62.8
8000 Hz	60.0	48.7	59.3
A-Weighted	76.9	71.7	79.0

**Advanced Acoustics**

**Advanced Acoustics Parameters**

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

**Detailed Acoustics Information**

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3	89.2 Lw
B	59.4	68.6	71.9	72.8	72.4	69.2	63.8	58.2	78.5 LwA
C	52.2	52.3	48.1	43.9	40.0	35.9	30.4	26.9	56.8 Lp

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### Performance Summary For RTU-2, 3 & 4

Part Number: 50FC-A04A2A5-0F0A0

ARI SEER: 14.00

**Base Unit Dimensions**

Unit Length:	74.4 in
Unit Width:	46.6 in
Unit Height:	33.4 in

**Operating Weight**

Base Unit Weight:	437 lb
Enthalpy Economizer with Barometric Relief:	37 lb
Accessories:	10 lb
Single Point Kit:	10 lb
Total Operating Weight:	494 lb

**Unit**

Unit Voltage-Phase-Hertz:	208-3-60
Air Discharge:	Vertical
Fan Drive Type:	Vane Axial
Actual Airflow:	1200 CFM
Site Altitude:	0 ft

**Cooling Performance**

Condenser Entering Air DB:	95.0 F
Evaporator Entering Air DB:	80.0 F
Evaporator Entering Air WB:	67.0 F
Entering Air Enthalpy:	31.44 BTU/lb
Evaporator Leaving Air DB:	60.4 F
Evaporator Leaving Air WB:	57.9 F
Evaporator Leaving Air Enthalpy:	24.93 BTU/lb
Gross Cooling Capacity:	35.13 MBH
Gross Sensible Capacity:	25.39 MBH
Compressor Power Input:	2.90 kW
Coil Bypass Factor:	0.160

**Heating Performance**

Heating Airflow:	1200 CFM
Entering Air Temp:	70.9 F
Leaving Air Temp:	101.6 F
Electric Heating Capacity:	12.00 kW

**Supply Fan**

External Static Pressure:	0.70 in wg
Options / Accessories Static Pressure:	
Electric Heaters:	0.07 in wg
Economizer:	0.04 in wg
Total Application Static (ESP + Unit Opts/Acc.):	0.82 in wg
Fan RPM:	1802
Fan Power:	0.43 BHP

NOTE: Selected IFM RPM Range: 219 - 2190

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

**Electrical Data**

Voltage Range:	187 - 253
Compressor #1 FLA:	10.4
Compressor #1 LRA:	73
Actual Electric Heater kW:	12

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### Performance Summary For RTU-2 & 4

Part Number: 50FC-A04A2A5-0F0A0

ARI SEER: 14.00

**Base Unit Dimensions**

Unit Length:	74.4 in
Unit Width:	46.6 in
Unit Height:	33.4 in

**Operating Weight**

Base Unit Weight:	437 lb
Enthalpy Economizer with Barometric Relief:	37 lb
Accessories:	10 lb
Single Point Kit:	10 lb
Total Operating Weight:	494 lb

**Unit**

Unit Voltage-Phase-Hertz:	208-3-60
Air Discharge:	Vertical
Fan Drive Type:	Vane Axial
Actual Airflow:	1200 CFM
Site Altitude:	0 ft

**Cooling Performance**

Condenser Entering Air DB:	95.0 F
Evaporator Entering Air DB:	80.0 F
Evaporator Entering Air WB:	67.0 F
Entering Air Enthalpy:	31.44 BTU/lb
Evaporator Leaving Air DB:	60.4 F
Evaporator Leaving Air WB:	57.9 F
Evaporator Leaving Air Enthalpy:	24.93 BTU/lb
Gross Cooling Capacity:	35.13 MBH
Gross Sensible Capacity:	25.39 MBH
Compressor Power Input:	2.90 kW
Coil Bypass Factor:	0.160

**Heating Performance**

Heating Airflow:	1200 CFM
Entering Air Temp:	70.9 F
Leaving Air Temp:	101.6 F
Electric Heating Capacity:	12.00 kW

**Supply Fan**

External Static Pressure:	0.70 in wg
Options / Accessories Static Pressure:	
Electric Heaters:	0.07 in wg
Economizer:	0.04 in wg
Total Application Static (ESP + Unit Opts/Acc.):	0.82 in wg
Fan RPM:	1802
Fan Power:	0.43 BHP

NOTE: Selected IFM RPM Range: 219 - 2190

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

**Electrical Data**

Voltage Range:	187 - 253
Compressor #1 FLA:	10.4
Compressor #1 LRA:	73
Actual Electric Heater kW:	12

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DATE: 04/27/22 BY: ISSUE/REVISION: PERMIT SUBMITTAL

STATE OF OHIO  
WILLIAM JOHN ALBERT JR.  
REGISTERED PROFESSIONAL ENGINEER  
NO. 10537  
EXPIRES 12/31/2025

DATE: 04/27/22 BY: ISSUE/REVISION:

MECHANICAL ROOF PLAN  
HVAC RENOVATIONS FOR:  
MERCY HEALTH EASTGATE SURGERY CENTER  
44115 AICHOLTZ ROAD  
CINCINNATI, OHIO 45245

JOB NO.:  
SCALE: AS NOTED  
DATE: 04/27/2022  
DRAWN BY: CSL  
APPROVED BY: CSL  
DRAWING NUMBER:  
**M-4**  
REVISION NO.: 0