



Unit Rating

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 347.1

RNA-020-C-A-3-DJB0C-00000:00-0FGAJ-E00-00000-00000-VC-CB0
E-00-00-0-ANO-EB-N000-00-000-A00000-E000AB-000000B

Tag: AC-1-copy

Job Information

Job Name: PHS 30S Building
Job Number: Job #37
Site Altitude: 0 ft
Refrigerant: R-410A

Static Pressure

External: 1.65 in. w.g.
Cooling Coil: 0.37 in. w.g.
Filters Clean: 0.40 in. w.g.
Dirt Allowance: 0.50 in. w.g.

Cooling Section

	Gross	Net
Total Capacity:	243.6 MBH	227.5 MBH
Sensible Capacity:	207.6 MBH	191.5 MBH
Latent Capacity:	36.0 MBH	
Mixed Air Temp (DB/WB):	80.7 °F	64.8 °F
Entering Air Temp (DB/WB):	80.7 °F	64.8 °F
Lv Air Temp (Coil) (DB/WB):	53.0 °F	52.6 °F
Lv Air Temp (Unit) (DB/WB):	55.0 °F	53.5 °F

Supply Air Fan: 1 x 270D60 @ 5.76 BHP Ea.
SA Fan RPM / Width: 1484 RPM / 3.680 in
SA Fan FEI: 1.17

Evaporator Coil: 19.9 ft² / 6 Rows / 12 FPI
Evaporator Face Velocity: 352.4 fpm

Rating Information

Application EER @ Op. Conditions: 9.9 BTU/h-W
Application COP @ Op. Conditions: 2.87 W/W

Electrical Data

Circuit 1

Rating: 460V/3Ø/60Hz
Unit FLA: 44
SCCR: 10 KAIC

Minimum Circuit Amp: 48
Maximum Overcurrent: 60

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		460	3			14.7
Compressor 2:	1		460	3			14.8
Condenser Fan:	2	0.75	460	3	1080	1.8	
Supply Fan:	1	7.50	460	3	1760	11.0	

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW (dB):	93	91	92	93	90	88	89	85
Return LW (dB):	80	78	75	69	71	67	56	48

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

Unit Information

Approx. Op./Ship Weights: 3515 lbs / 3515 lbs (±5%)
Ambient Temperature (DB/WB): 95.0 °F / 75.0 °F
Coil Filter FV / Qty: 336.0 fpm / 6
Supply Airflow/ESP: 7000 SCFM / 1.65 in. w.g.
Outside Airflow: 2000 SCFM
Return Temperature (DB/WB): 75.0 °F / 60.0 °F

Economizer: 0.18 in. w.g.
Cabinet: 0.22 in. w.g.
Total: 3.33 in. w.g.

Heating Section

Preheat Type: Std (No Preheat)

Integrated Heat Capacity: 163.8 MBH
Primary Heat Type: Heat Pump
Total Capacity: 189.3 MBH
OA Temp (DB/WB): 35.0 °F / 34.0 °F
RA Temp (DB/WB): 70.0 °F / 55.0 °F
Entering Air Temp (DB/WB): 60.0 °F / 49.7 °F
Leaving Air Temp (DB/WB): 81.1 °F / 58.4 °F
Input (Emergency/Aux): /

Fan Temp Rise: 2.0 Δ°F
Auxiliary Heating Type: No Heat



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Job Information

Job Name: PHS 30S Building
OA CFM: 2000

Job Number: Job #37
SA CFM:

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heat Wheel Heating Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	MBH	W/W
62.0	56.2	67.7	55.4	103.9	68.1	276.4	276.4		3.97
57.0	51.6	66.3	54.1	99.6	66.2	255.3	255.3		3.82
52.0	47.1	64.9	52.9	95.6	64.4	236.0	236.0		3.67
47.0	42.6	63.4	51.7	91.8	62.7	218.1	218.1		3.52
42.0	38.0	62.0	50.6	88.3	61.0	202.8	202.8		3.39
37.0	33.5	60.6	49.6	81.5	58.2	188.4	161.8		2.83
32.0	28.8	59.1	48.7	78.9	56.9	175.2	153.1		2.76
27.0	24.3	57.7	47.7	76.3	55.7	162.8	144.4		2.68
22.0	19.7	56.3	46.8	73.7	54.4	151.4	136.0		2.59
17.0	15.0	54.9	45.9	71.2	53.2	140.8	128.1		2.50
12.0	10.4	53.4	45.0	*	*	*	*		*
7.0	5.7	52.0	44.2	*	*	*	*		*
2.0	0.1	50.6	43.3	*	*	*	*		*

*Invalid operation point - Compressor operating outside of operating envelope



27.4" STAR Plenum

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583-2266
Ecat Version: 347.1

JOB INFORMATION:

Job Name: PHS 30S Building
Job Tag: AC-1-copy
Date: 4/9/2024 12:00:00 AM

WHEEL SPECIFICATION:

Max RPM: 1800
Diameter x Qty: 27.4 in. x 1
CFM: 7000
Inertia: 16WR²

OPERATING CONDITIONS

Air Flow: 7000
Fan Energy Index (FEI): 1.17
Static Pressure: 3.33 in. Wg
Relief Dampers DP: 0 in. Wg
TSP: 3.33 in. Wg
Site Altitude: 0 ft
TSP @ Sea Level: 3.33 in. Wg

MOTOR SELECTION

Rated HP / Bypass: 7.5 x 1 / No
Frame Size: 213T
Nominal RPM: 1760
VAC/PH/HZ: 460V/3Ø/60Hz
Enclosure Type: ODP
Max Inertial Load: 0 WR²

FAN PERFORMANCE:

RPM: 1484
BHP: 5.76
Efficiency: 63.80%
Max Duct SP with Blocked Airway: 0 in. Wg @ 1484 RPM

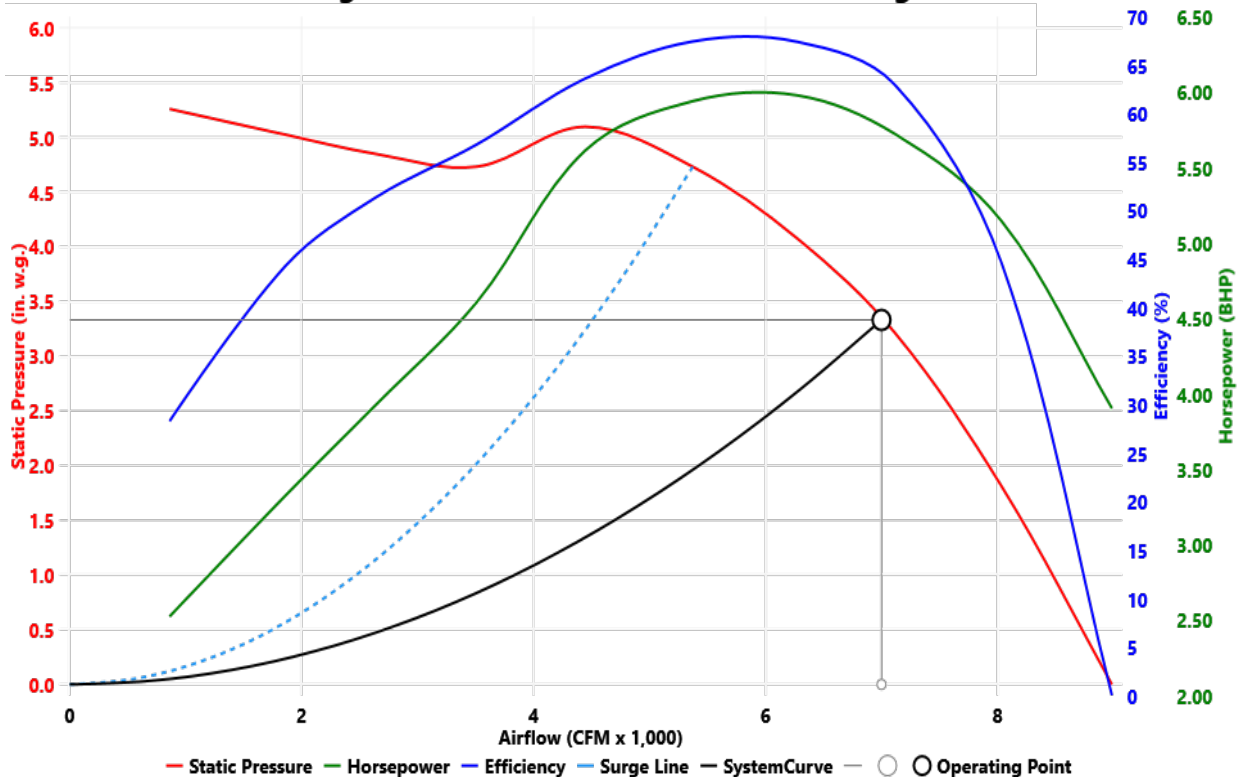
FAN SOUND POWER (Inlet/Outlet)

Octave Band:		(Re 10 ⁻¹² watts)						
1	2	3	4	5	6	7	8	
91	88	86	85	85	86	85	84	
93	91	92	94	92	91	92	88	

SOUND POWER A-Weighted: 88 dB

Max Duct SP with Blocked Airway:

Supply Fan Model: 270D60 @ 1484 RPM and 100% Width Design Conditions: 7000 CFM @ 3.33 in. w.g. SP





Unit Submittal

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Job Name: PHS 30S Building

Unit Worksheet For:

Job Number: Job #37

Unit Worksheet Date: 4/9/2024

	Base Option	Description
RN	Generation	RN Series
A	Major Revision	Major Revision A
020	Unit Size	Twenty
C	Series	C Series
A	Minor Revision	Minor Revision A
3	Voltage	460V/3φ/60Hz
D	Compressor Style	R-410A Variable Capacity Scroll Compressor
J	Condenser Style	Alpha Class - Air-Source Heat Pump
B	Indoor Coil Configuration	6 Row Evaporator
0	Cooling Heat Exchanger Construction	Standard
C	Cooling Staging	1 Variable Capacity Comp + 1 Two-Step Comp
0	Heat Type	No Heat
0	Heat Construction	Standard
0	Heat Designation	No Heat
0	Heat Staging	No Heat
0	Heat Pump Auxiliary Heating	No Auxiliary Heat

	Feature Option	Description
0	F1. Unit Orientation	Standard Access - Hinged Access Doors with Lockable Handles
0	F2. Supply & Return Locations	Bottom Supply--Bottom Return
0	F3A. Supply Fan Quantity	1 Fan
F	F3B. Supply Fan Configuration	1 Fan per VFD + Narrow Width Fan
G	F3C. Supply Fan Size	27" Direct Drive Backward Curved Aluminum
A	F3D. Supply Fan Motor Type	High Efficiency Open Motor (1,800 nominal rpm)
J	F3E. Supply Fan Motor Size	7.5 hp
E	F4A. Outside Air Section	Economizer
0	F4B. Energy Recovery Type	No Energy Recovery
0	F4C. Energy Recovery Size	No Energy Recovery
0	F5A. Return Fan Quantity	0 Return Fans
0	F5B. Return Fan Configuration	No Return Fan
0	F5C. Return Fan Size	No Return Fan
0	F5D. Return Fan Motor Type	No Return Fan
0	F5E. Return Fan Motor Size	No Return Fan
0	F6A. Exhaust Fan Quantity	0 Exhaust Fans
0	F6B. Exhaust Fan Configuration	No Exhaust Fan
0	F6C. Exhaust Fan Size	No Exhaust Fan
0	F6D. Exhaust Fan Motor Type	No Exhaust Fan
0	F6E. Exhaust Fan Motor Size	No Exhaust Fan
V	F7. Outside Air Control	Fault Detection and Diagnostics Controller (FDD) Fully Modulating Actuator - Sensible Limit
C	F8. Return and Exhaust Air Options	Standard Barometric Relief EA Dampers
C	F9A. Unit Filter Type	2" Pleated MERV 8 + 4" Pleated MERV 13
B	F9B. Unit Filter Size & Location	High Efficiency Filters in Standard Position
0	F9C. Final Filter Type	No Final Filters
E	F9D. Filter Options	Magnehelic Gauge - Unit Filters
0	F10A. Refrigeration Control A	Standard - Fixed 55°F Comp. Cooling Lock Out
0	F10B. Refrigeration Control B	Standard

	Feature Option		Decription
0	F11A.	Refrigeration Options A	None
0	F11B.	Refrigeration Options B	Standard Packaged Unit
0	F12.	Refrigeration Accessories	None
A	F13A.	Unit Disconnect Type	Single Point Power - Non-fused Disconnect Power Switch
N	F13B.	Disconnect 1 Size	100 Amps
0	F13C.	Disconnect 2 Size	Standard - None
E	F14.	Safety Options	Remote Safety Shutdown Terminals
B	F15.	Electrical Accessories	Phase & Brown Out Protection
N	F16A.	Control Sequence	Field Installed DDC Controls + Isolation Relays
0	F16B.	Control Supplier	None
0	F16C.	Control Supplier Options	None
0	F16D.	BMS Connection & Diagnostics	None
0	F17A.	Preheat Configuration	Standard - None
0	F17B.	Preheat Sizing	Standard - None
0	F18A.	Option Box Location	None
0	F18B.	Option Box Size	None
0	F18C.	Option Box Accessories	None
A	F19.	Outside Air Accessories	Outside Air Hood
0	F20.	Cabinet Options	Standard - None
0	F21.	Accessories	Standard
0	F22.	Maintenance Accessories	None
0	F23.	Code Options	Standard - ETL U.S.A. Listing
0	F24.	Shipping Splits	Standard
E	F25.	Air-Cooled Condenser Accessories	VFD Condenser Fan Head Pressure Control
0	F26.	Evap-Cooled Condenser Accessories	Standard
0	F27.	Water-Cooled Condenser Accessories	None
0	F28.	Energy Recovery Accessories	None
A	F29.	VFD Options	Shaft grounding kit on all SA, RA, EA motors
B	F30.	Miscellaneous Options	SCCR (10kA)
0	F31.	Blank	Standard
0	F32.	Blank	Standard
0	F33.	Blank	Standard
0	F34.	Blank	Standard
0	F35.	Warranty	Standard Warranty
0	F36.	Cabinet Material	Galvanized Cabinet - Double Wall + R-13 Foam Insulation
B	F37.	Specials & Paint	Premium AAON Gray Paint Exterior Paint



Terminals

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Job Name: PHS 30S Building
Job Number: Job #37

For:
Date: April 9, 2024

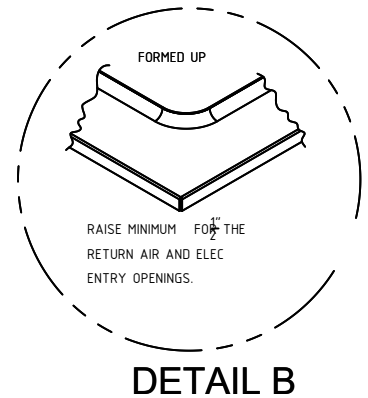
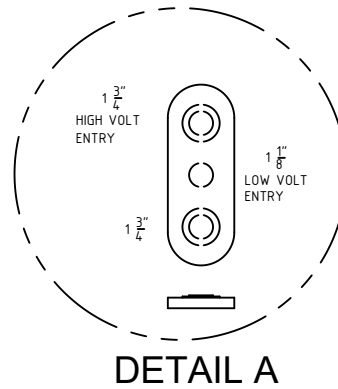
Terminals Available/Required for Controlling the Unit

Terminals	Decription
[R]	24VAC Control Voltage
[C]	Common
[G]	Supply Fan Enable + Isolation Relay
[Y1]	Cooling Stage 1 Enable + Isolation Relay
[Y2]	Cooling Stage 2 Enable + Isolation Relay
[Y1]	Cooling Stage 1 Enable/ Heat Pump - Heating Stage 1 Enable + Isolation Relay
[Y2]	Cooling Stage 2 Enable/ Heat Pump - Heating Stage 2 Enable + Isolation Relay
[DC1-] & [DC1+]	Variable Capacity Compressor 1 (1.44-5VDC) Signal
[O]	Reversing Valve (Cooling) Enable + Isolation Relay
[SP1-] & [SP1+]	Suction Pressure Sensor - Compressor 1 (0-5VDC)
[BI1] & [BI2]	Remote Safety Shutdown
[PBO1] & [PBO2]	Phase & Brown Out

RN SERIES

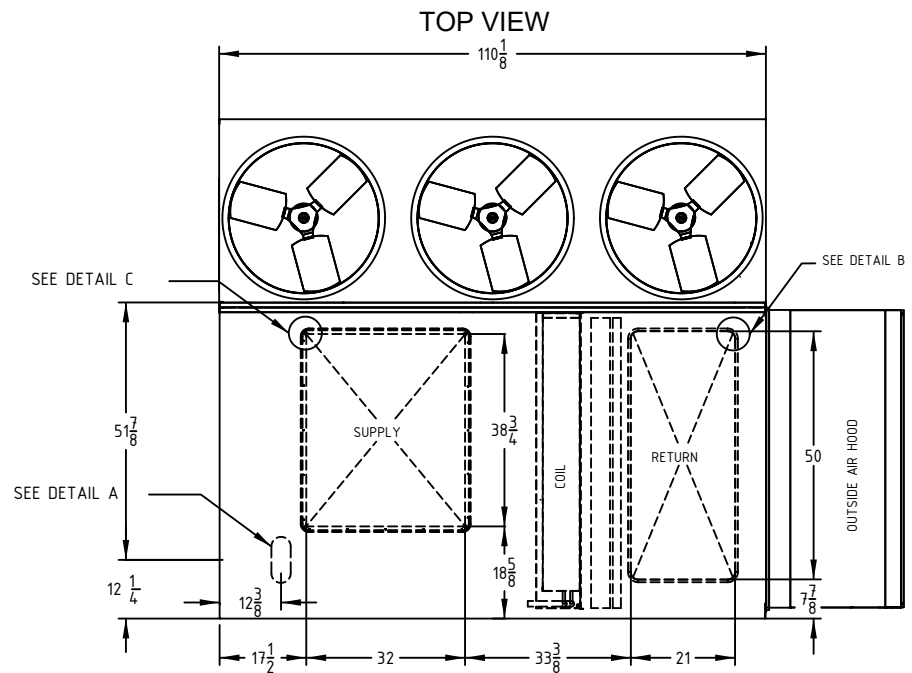
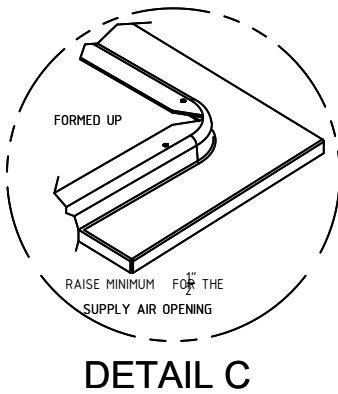
C - CABINET WITH ECONOMIZER ~ 16-30 TON

CLEARANCES	
LOCATION	• UNIT SIZE • 16 - 30 TON
OUTSIDE AIR (BACK)	48
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	60
TOP	UNOBSTRUCTED

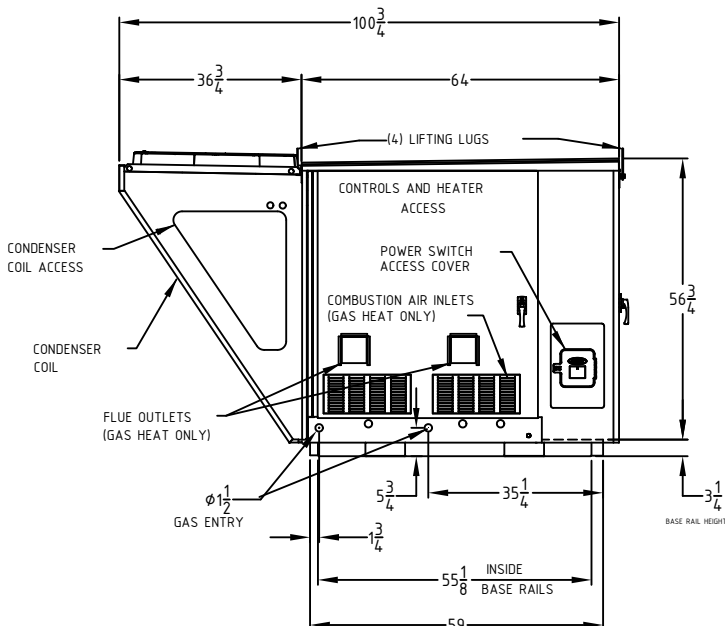


NUMBER OF CONDENSER FANS

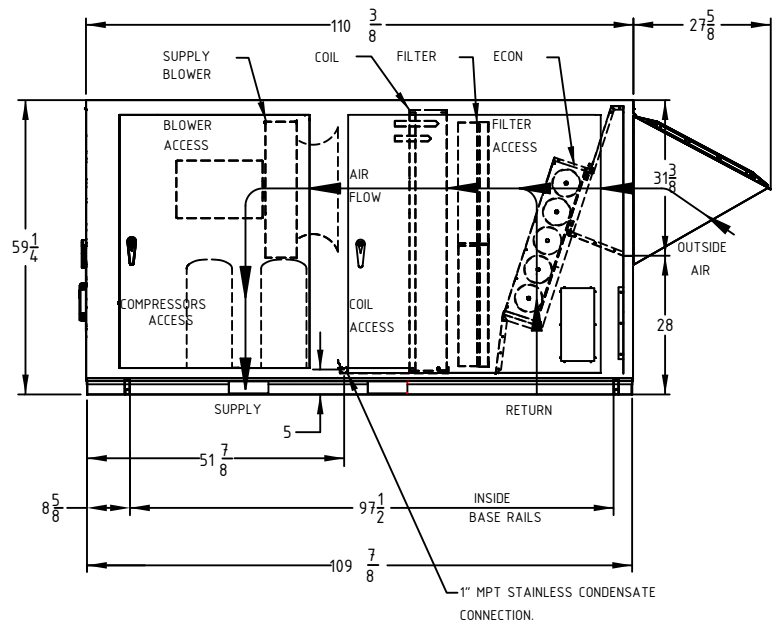
16, 18 & 20 TON - 2 FANS
25 & 30 TON - 3 FANS



FRONT VIEW



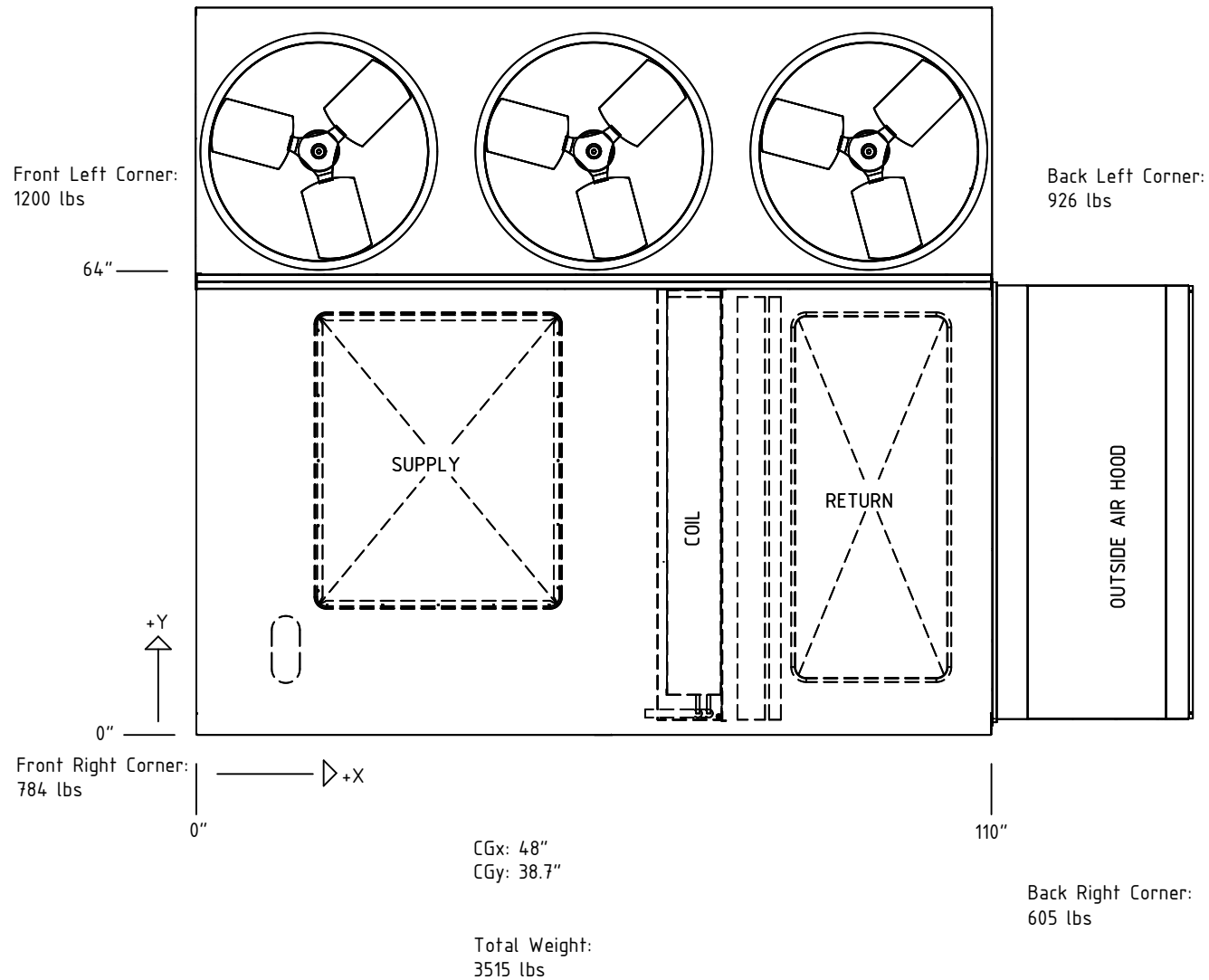
RIGHT SIDE VIEW



RNC CABINET AIR COOLED CONDENSING UNIT



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Disclaimer:
This weight estimate does not account for any SPAs.