Performance Report

Performance Specification

Project Name: **454B Stock AC Scrolls YLAA Submittals** | Unit Tag: **CH-1** | Qty.: **1** | Model: **YLAA0230HJ46XI**

Full Load - Design

Unit	
Model No.	YLAA0230HJ46XIB
Number of Compressors	6
Compressor Type	Scroll - Hermetic
Number of Compressor Circuits	2
Refrigerant	R454B
Performance Data	
Cooling Capacity [tons.R]	216.0
Total Power Input [kW]	241.6
EER [Btu/W.h]	10.73
IPLV.IP [Btu/W.h]	18.53
A-Weighted Sound Power [dB(A)]	100.0
Electrical Data	
Nominal Voltage / Voltage Limits	460/3/60 / 414-506
Compressor RLA (each circuit) [A]	67.9 / 67.9 / 67.9 / 67.9 / 67.9 / 67.9
High LRA Current (each circuit) [A]	344.0 / 344.0 / 344.0 / 344.0 / 344.0 / 344.0
Fan QTY (each circuit)	6 / 6
Fan FLA (each circuit) [A]	4.0 / 4.0
Min. Circuit Ampacity [A]	477.0
Recommended Fuse / CB Rating [A]	500.0
Max. Inverse Time CB Rating [A]	500.0
Max. Dual Element Fuse Size [A]	500.0
Unit Short Circuit Withstand [kA]	65 kA
Wires Per Phase	2 + 3
Wire Range (Lug Size)	250 - 500 kcmil + #2/0 AWG - 400 kcmil
Compressor kW	221.5

Performance Impacting Options	
Starter Type	Across the line starter
Power Factor Correction Capacitor	No Power Capacitor required
Remote Evaporator	Standard Cooler required
Sound Kit	No Acoustic Blanket required
Fan	Low Sound Fans with VSD
Weight & Dimensional Data	
Shipping Weight [lbs]	10476
Operating Weight [lbs]	10606
Refrigerant Charge [lbs]	168
Length [in]	274.8
Width [in]	88.3
Height [in]	94.2

Project Name: **454B Stock AC Scrolls YLAA Submittals** Unit Tag: **CH-1** Qty.: **1** Model: **YLAA0230HJ46XI**

Heat Exchanger Performance			
Evaporator		**Condenser (Air Cooled)**	
Heat Exchanger Type	Plate Heat Exchanger	Ambient Air Temperature* [ºF]	95.0
Entering Fluid Temperature* [ºF]	54.00	Altitude* [ft]	0.00
Leaving Fluid Temperature* [ºF]	44.00	Condensing Temperature [ºF]	122.70 / 122.70
Flow Rate [USGPM]	515.5	Number of Fans	6 / 6
Fouling Factor* [h ft2 F/Btu]	0.000100	Total Air Flow [cfm]	180000
Fluid Type*	Water	Total Fan Power [kW]	20.16
Fluid Volume [USGAL]	12.7		
Evaporating Temperature [ºF]	37.02		
Evaporator Pressure Drop [ft H2O]	18.3		
Strainer Pressure Drop [ft H2O]	6.63		
Extension Kit Pressure Drop [ft H2O]	1.78		
Total Pressure Drop [ft H2O]	26.7		
Fluid Connection Diameter [in]	5		
Minimum Flow Rate [USGPM]	230.0		
Maximum Flow Rate [USGPM]	650.0		

* Designates user specified input

Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Part Load Performance (Based on Standard AHRI Unloading)				
Percent Load	**Ambient [ºF]**	**Capacity [tons.R]**	**Power Input [kW]**	**Unit Efficiency [Btu/W.h]**
100.0	95.0	216.0	241.6	10.73
75.1	80.0	162.1	131.2	14.83
56.3	80.0	121.5	95.10	15.34
60.8	65.0	131.3	80.70	19.52
40.8	65.0	88.02	49.67	21.27
42.8	55.0	92.45	42.97	25.82
20.7	55.0	44.61	21.64	24.73

Sound Power Levels (In Accordance with AHRI 370)										
Percent Load	Ambient [ºF]	Octave Band Center Frequency [Hz]								LWA
		63	125	250	500	1000	2000	4000	8000	
100.0	95.0	101.0	100.0	96.0	99.0	94.0	91.0	87.0	84.0	100.0
75.1	80.0	97.0	96.0	92.0	96.0	91.0	88.0	84.0	81.0	97.0
56.3	80.0	95.0	94.0	90.0	94.0	90.0	87.0	83.0	79.0	95.0
60.8	65.0	95.0	94.0	90.0	94.0	90.0	87.0	83.0	79.0	95.0
40.8	65.0	90.0	88.0	84.0	91.0	87.0	84.0	80.0	76.0	92.0
42.8	55.0	90.0	88.0	84.0	91.0	87.0	84.0	80.0	76.0	92.0
20.7	55.0	87.0	85.0	81.0	88.0	84.0	81.0	77.0	73.0	89.0

Note:Unit is equipped with Low Sound Fans with VSD.

Measurement of sound pressure used to obtain the sound power data presented is based on AHRI-370.

Air-cooled chillers are rated in terms of sound power not sound pressure. Johnson Controls provides estimates of sound pressure, but this is not the rating metric.

For an air-cooled chiller, sound pressure calculated from sound power varies depending on how the chiller is assumed to behave, i.e. the radiation model. In other words, determining sound pressure from sound power requires making assumptions that result in different answers at a given distance from the chiller. The environment also influences sound pressure in the field installation. Sound pressure estimation radiation models pertaining to air-cooled chillers include the ‘traditional’ hemispherical model, parallelepiped model and equivalent hemispherical model.

Regarding sound power, Johnson Controls references tolerance limits based on ASHRAE guidelines. These are +/- 6dB in the 63Hz octave band, +/- 4dB in all other octave bands and +/- 3dB for the overall dBA.

Tolerance limits are based on uncertainties associated with:

1. Measurement Test Procedure

2. Repeatability

3. Production / Manufacturing Variability

Standard deviation associated with air-cooled chiller sound data is a measure of spread i.e. it indicates the range of probability of sound levels. Note that for operating conditions other than AHRI’s Standard Rating Condition, higher levels of uncertainty can be expected.

Lead times for factory performance testing depend on test laboratory availability. Please confirm with Johnson Controls Customer Service.

Performance at AHRI Conditions			
Evaporator		**Condenser**	
EFT [ºF]	54.00	Ambient Temp. [ºF]	95.0
LFT [ºF]	44.00	Altitude [ft]	0.00
Flow Rate [USGPM]	515.5	**Performance**	
Pressure Drop [ft H2O]	18.3	EER [Btu/W.h]	10.73
Fluid Type	Water	IPLV.IP [Btu/W.h]	18.53
Fouling Factor [h ft2 F/Btu]	0.000100	Net Cooling Capacity [tons.R]	216.0
Fluid Volume [USGAL]	12.7		

Note:Unit rated at design condition capacity.

Part Load Performance (Based on AHRI 550/590 - 2018 (IP))				
Percent Load	**Ambient [ºF]**	**Capacity [tons.R]**	**Power Input [kW]**	**Unit Efficiency [Btu/W.h]**
100.0	95.0	216.0	241.6	10.73
75.1	80.0	162.1	131.2	14.83
56.3	80.0	121.5	95.10	15.34
60.8	65.0	131.3	80.70	19.52
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20.7	55.0	44.61	21.64	24.73

Notes:

Country of Origin:Mexico

Min flow rate is for chillers using water. For glycol chillers please contact the application engineering team.

This unit does not have a coil coating selected.

Compliant with ASHRAE 90.1 - 2010,2013,2016.

Compliant with IECC - 2012,2015,2018.

Compliant with the requirements of the LEED Energy and Atmosphere Enhanced Refrigerant Management Credit (EAc4).

The product image shown is for illustrative purposes only and is not representative of selected options.

Equipment Description
Base Unit/Access. (3371)
Base Unit - YLAA0230HJ
R454B Refrigerant (Fully Charged)
Voltage Code - 460/3/60
Across the line starter
SP Circuit Breaker w/ Lockable Handle, 65kA SCWR
Control Transformer Required
Both Low/High Ambient Kit
Connected Services Ready - SC-Equip Board
English
North American Safety Code (cUL/cETL)
Service Isolation Valves
Electronic Expansion Valves
Hot Gas Bypass required - 1 circuit
Extension Kit
Dispersion Switch
ASME Pressure Vessel Codes
Aluminum MCHX Coils
No Heat Recovery
Wire/Louvered Encl Panels (factory)
No Acoustic Blanket required
Low Sound Fans with VSD
Neoprene Isolators
No Pump required

YLAA Air Cooled Scroll Chillers

AVM Report

Project Name: **454B Stock AC Scrolls YLAA Submittals**

Unit Tag: **CH-1**

Qty.: **1**

Model No.: **YLAA0230HJ46XI**

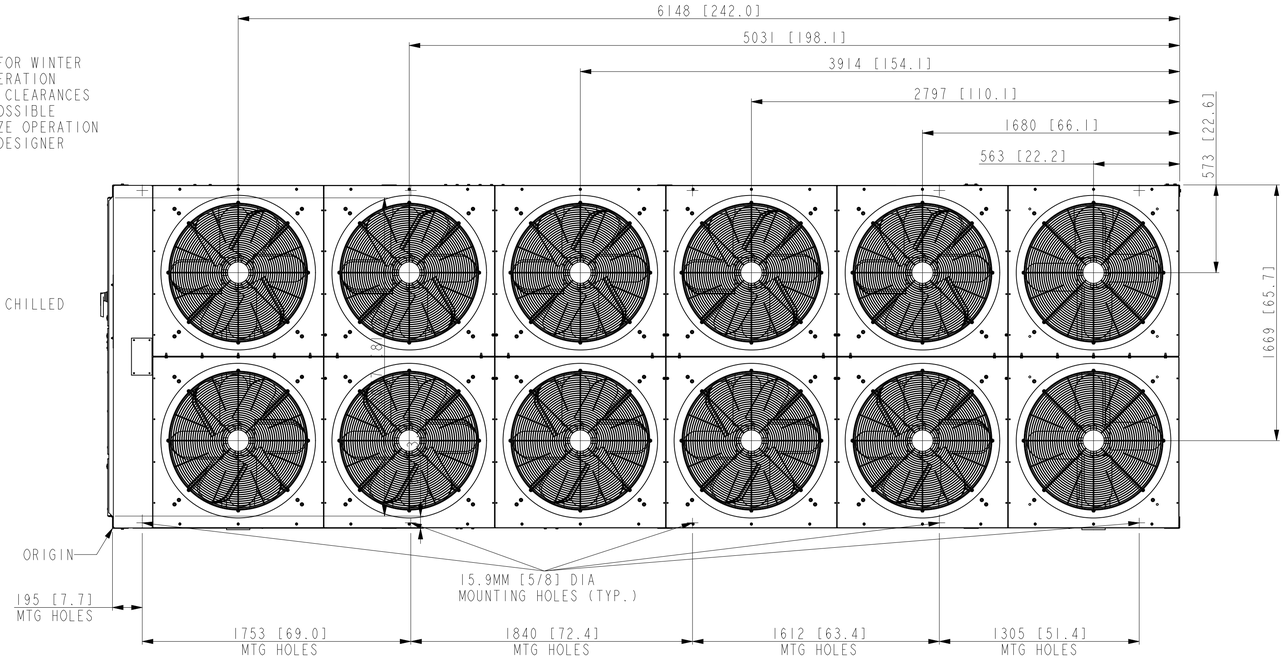
PIN								
YLAA0230HJ	46XIBBCTXA	SXBLXCXX44	SE1XXXHXXX	YAXGXXX3XX	XVXNXXXXXX			
....5...10	....5...20	....5...30	....5...40	....5...50	....5...60	....5...70	....5...80	....5...90

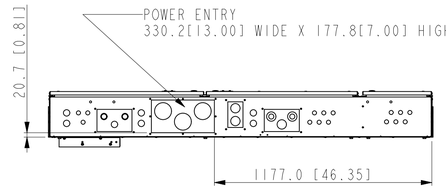
LOCATION	X Distance (in)	Y Distance (in)	JCI PART NUMBER	SAP NUMBER	COLOUR	Operating Weights (lb)
R1	7.7	1.4	029-25335-002	434004	Red	875
R2	76.7	1.4	029-25335-002	434004	Red	1346
R3	149.1	1.4	029-25335-002	434004	Red	1235
R4	212.5	1.4	029-25335-001	434002	Charcoal	440
R5	263.9	1.4	029-25335-001	434002	Charcoal	807
L1	7.7	86.9	029-25335-002	434004	Red	1075
L2	76.7	86.9	029-25335-004	434005	Charcoal	2226
L3	149.1	86.9	029-25335-002	434004	Red	1355
L4	212.5	86.9	029-25335-001	434002	Charcoal	440
L5	263.9	86.9	029-25335-001	434002	Charcoal	807

Total Weight (lb)		Centre of Gravity (in)	
Operating Weights (lb)	10606	Xg [in]	121.4
Shipping Weight [lb]	10476	Yg [in]	48.9

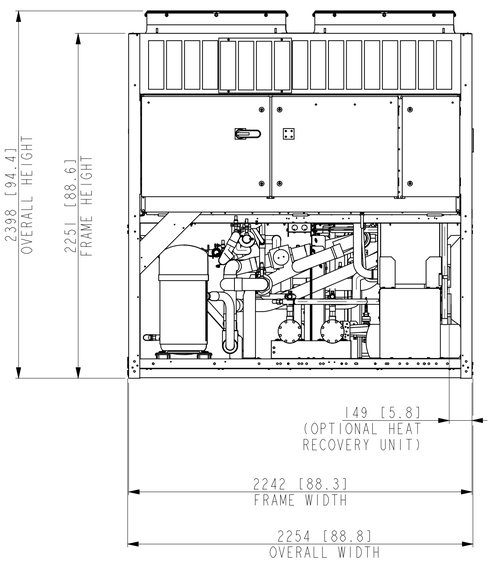
NOTE:

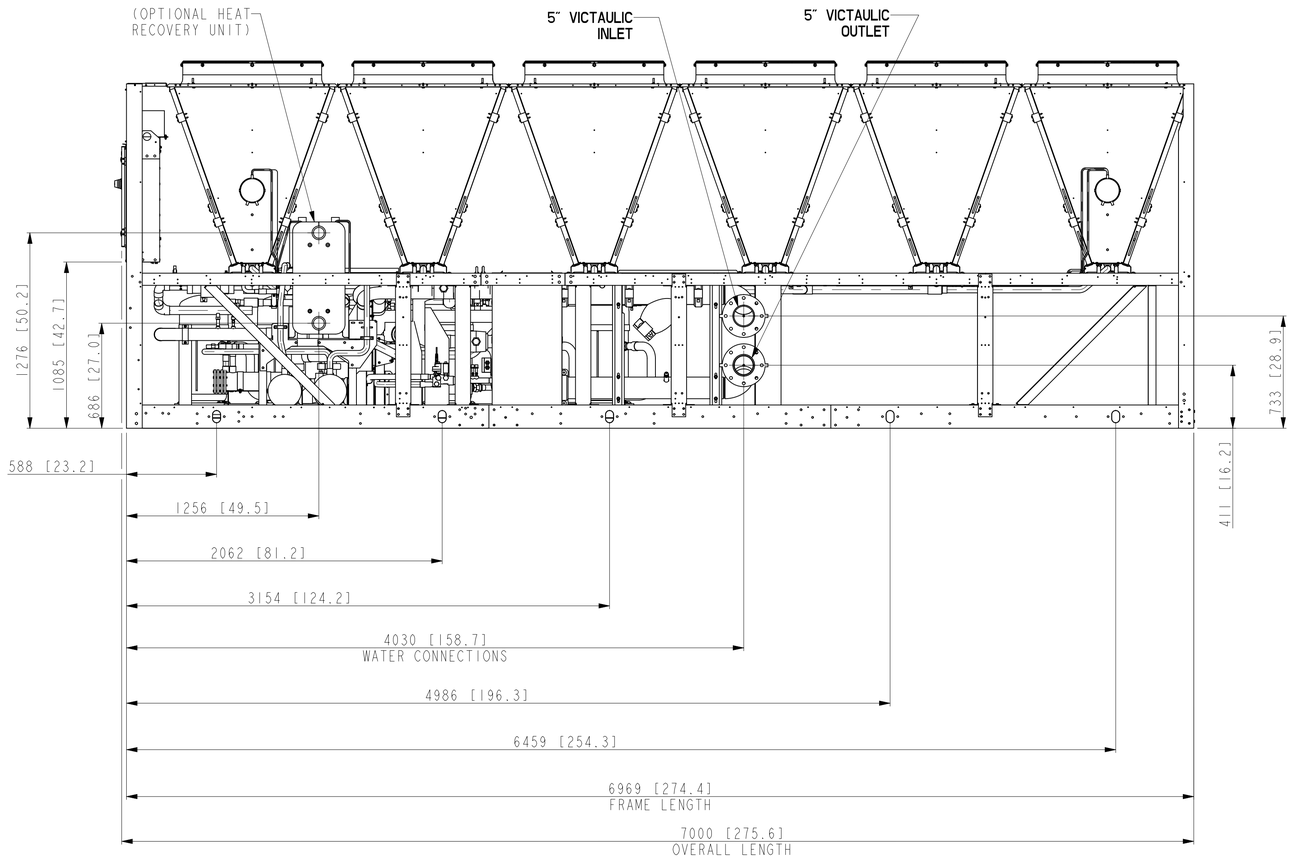
1. PLACEMENT ON A LEVEL SURFACE FREE OF OBSTRUCTIONS (INCLUDING SNOW, FOR WINTER OPERATION) OR AIR-CIRCULATION ENSURES RATE PERFORMANCE, RELIABLE OPERATION AND EASE OF MAINTENANCE. SITE RESTRICTIONS MAY COMPROMISED MINIMUM CLEARANCES INDICATED BELOW, RESULTING IN UNPREDICTABLE AIR FLOW PATTERNS AND POSSIBLE DIMINISHED PERFORMANCE. JOHNSON CONTROLS UNIT CONTROLS WILL OPTIMIZE OPERATION WITHOUT NUISANCE HIGH PRESSURE SAFETY CUTOUT. HOWEVER, THE SYSTEM DESIGNER MUST CONSIDER POTENTIAL PERFORMANCE DEGRADATION.
   1.1. RECOMMENDED MINIMUM CLEARANCES:
      1.1.1. SIDE TO WALL - 1828.8mm [72.00]
      1.1.2. REAR TO WALL - 1828.8mm [72.00]
      1.1.3. CONTROL PANEL TO WALL - 1219.2mm [48.00]
      1.1.4. TOP - NO OBSTRUCTIONS ALLOWED.
      1.1.5. DISTANCE BETWEEN ADJACENT UNITS - 3048mm [120.00]
      1.1.6. NO MORE THAT ONE ADJACENT WALL MAY BE HIGHER THAN UNIT.
2. WEIGHT AND CENTRE OF GRAVITY- REF TO AVM REPORT
3. INSTALLING CONTRACTOR MUST INCLUDE VENT AND DRAIN ACCOMMODATIONS IN CHILLED WATER PIPING NEAR EVAPORATOR.
4. NUMBER OF COMPRESSORS MAY VARY FROM DRAWING.
   4.1. REFER TO YORKWORKS REPORTS
5. FOR MONTERREY, MEXICO AND SAN ANTONIO, TEXAS BUILDS ONLY.

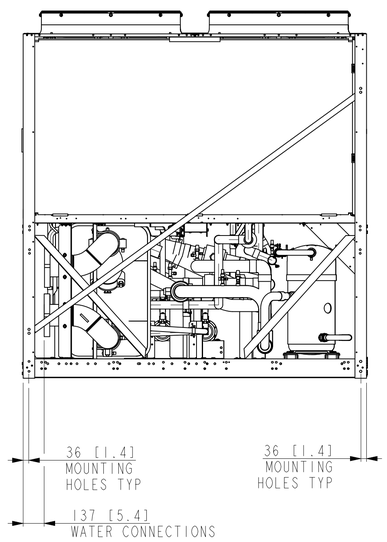




CONTROL PANEL BOTTOM DETAIL







THIS DRAWING PERTAINS TO THE FOLLOWING MODELS:		
YLAA 0200 HE		
YLAA 0230 HE		
YLAA 0200 HJ		
YLAA 0230 HJ		

REVISION

REV.	DATE	EC. NO.	DR.	CHK.	ENG.
G	09-MAY-2023	ECN23-0279	RWA	DBN	AR
UPDATE TABLE TO INCLUDE YLAA 0200/0230 "HJ" MODELS					

CONTINUED

THIRD ANGLE

Johnson Controls

JOHNSON CONTROLS - BUILDING EFFICIENCY

507 EAST MICHIGAN STREET, MILWAUKEE, WI, 53202 USA

DO NOT SCALE

YLAA 12-FAN 60HZ
0200 & 0230
WITH OPTIONAL HEAT RECOVERY

DRAWN	M.LUPTON	19-FEB-2016
MODELER	M.LUPTON	19-FEB-2016
CHKD	A.SAYCH	19-FEB-2016
ENG	A.KELLY	19-FEB-2016

SCALE: 0.050 | MASS (kg): 0.000

MATERIAL -
ENG. STD. -
PART NO. -
CUT SIZE N/A

A1 | CAGE NUMBER 66935 | DRAWING NUMBER 035-24059-014 | REVISION G | VERSION 3 | Eng Chg

ORIG. NO.: - | SHEET 1 OF 1