# Performance Report

**Performance Specification**

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

Unit Tag: **YLAA0080SJ17VSD**

Qty.: **1**

Model: **YLAA0080SJ17XF**

## Full Load - Design

| PIN | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| YLAA0080SJ | 17XFBBCTXA | SXBLXCXX44 | SE1XXXHXXX | YAXGXXX3XX | XVXNXXXXXX | | | |
| ....5...10 | ....5...20 | ....5...30 | ....5...40 | ....5...50 | ....5...60 | ....5...70 | ....5...80 | ....5...90 |


| Unit | |
|---|---|
| Model No. | YLAA0080SJ17XFB |
| Number of Compressors | 6 |
| Compressor Type | Scroll - Hermetic |
| Number of Compressor Circuits | 2 |
| Refrigerant | R454B |
| **Performance Data** | |
| Cooling Capacity [tons.R] | 76.64 |
| Total Power Input [kW] | 88.91 |
| EER [Btu/W.h] | 10.34 |
| IPLV.IP [Btu/W.h] | 17.26 |
| A-Weighted Sound Power [dB(A)] | 94.0 |
| **Electrical Data** | |
| Nominal Voltage / Voltage Limits | 200-208/3/60 / 180-220 |
| Compressor RLA (each circuit) [A] | 57.7 / 57.7 / 57.7 / 48.5 / 48.5 / 48.5 |
| High LRA Current (each circuit) [A] | 284.0 / 284.0 / 284.0 / 257.0 / 257.0 / 257.0 |
| Fan QTY (each circuit) | 2 / 2 |
| Fan FLA (each circuit) [A] | 7.6 / 7.6 |
| Min. Circuit Ampacity [A] | 373.0 |
| Recommended Fuse / CB Rating [A] | 400.0 |
| Max. Inverse Time CB Rating [A] | 400.0 |
| Max. Dual Element Fuse Size [A] | 400.0 |
| Unit Short Circuit Withstand [kA] | 65 kA |
| Wires Per Phase | 2 + 1 |
| Wire Range (Lug Size) | #3/0 AWG - 250 kcmil + 250 - 500 kcmil |
| Compressor kW | 82.19 |

| 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] | 4427 |
| Operating Weight [lbs] | 4517 |
| Refrigerant Charge [lbs] | 68 |
| Length [in] | 116.1 |
| Width [in] | 88.3 |
| Height [in] | 94.2 |

| 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] | 126.38 / 122.48 |
| Flow Rate [USGPM] | 183.0 | Number of Fans | 2 / 2 |
| Fouling Factor* [h ft2 F/Btu] | 0.000100 | Total Air Flow [cfm] | 60000 |
| Fluid Type* | Water | Total Fan Power [kW] | 6.720 |
| Fluid Volume [USGAL] | 6.7 | | |
| Evaporating Temperature [ºF] | 38.67 | | |
| Evaporator Pressure Drop [ft H2O] | 8.92 | | |
| Strainer Pressure Drop [ft H2O] | 3.35 | | |
| Extension Kit Pressure Drop [ft H2O] | 1.93 | | |
| Total Pressure Drop [ft H2O] | 14.2 | | |
| Fluid Connection Diameter [in] | 3 | | |
| Minimum Flow Rate [USGPM] | 100.0 | | |
| Maximum Flow Rate [USGPM] | 350.0 | | |

* 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 | 76.64 | 88.91 | 10.34 |
| 75.1 | 80.0 | 57.56 | 48.89 | 14.13 |
| 57.4 | 80.0 | 44.01 | 36.47 | 14.48 |
| 62.4 | 65.0 | 47.83 | 31.89 | 18.00 |
| 40.4 | 65.0 | 30.94 | 18.93 | 19.61 |
| 42.4 | 55.0 | 32.52 | 17.23 | 22.65 |
| 22.0 | 55.0 | 16.83 | 8.905 | 22.67 |

| 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 | 96.0 | 95.0 | 91.0 | 91.0 | 88.0 | 86.0 | 81.0 | 77.0 | 94.0 |
| 75.1 | 80.0 | 90.0 | 89.0 | 85.0 | 86.0 | 83.0 | 83.0 | 77.0 | 71.0 | 89.0 |
| 57.4 | 80.0 | 84.0 | 83.0 | 80.0 | 82.0 | 79.0 | 81.0 | 74.0 | 67.0 | 86.0 |
| 62.4 | 65.0 | 71.0 | 69.0 | 68.0 | 78.0 | 77.0 | 81.0 | 73.0 | 62.0 | 84.0 |
| 40.4 | 65.0 | 68.0 | 67.0 | 67.0 | 77.0 | 75.0 | 79.0 | 71.0 | 59.0 | 82.0 |
| 42.4 | 55.0 | 68.0 | 67.0 | 67.0 | 77.0 | 75.0 | 79.0 | 71.0 | 59.0 | 82.0 |
| 22.0 | 55.0 | 67.0 | 64.0 | 64.0 | 73.0 | 71.0 | 76.0 | 67.0 | 58.0 | 79.0 |

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] | 183.0 | **Performance** | |
| Pressure Drop [ft H2O] | 8.92 | EER [Btu/W.h] | 10.34 |
| Fluid Type | Water | IPLV.IP [Btu/W.h] | 17.26 |
| Fouling Factor [h ft2 F/Btu] | 0.000100 | Net Cooling Capacity [tons.R] | 76.64 |
| Fluid Volume [USGAL] | 6.7 | | |

Note:Unit rated at design condition capacity.

| Part Load Performance (Based on AHRI 550/590 - 2018 (IP)) | | | | |
|---|---|---|---|---|
| **Percent Load** | **Ambient [°F]** | **Capacity [tons.R]** | **Power Input [kW]** | **Unit Efficiency [Btu/W.h]** |
| 100.0 | 95.0 | 76.64 | 88.91 | 10.34 |
| 75.1 | 80.0 | 57.56 | 48.89 | 14.13 |
| 57.4 | 80.0 | 44.01 | 36.47 | 14.48 |
| 62.4 | 65.0 | 47.83 | 31.89 | 18.00 |
| 40.4 | 65.0 | 30.94 | 18.93 | 19.61 |
| 42.4 | 55.0 | 32.52 | 17.23 | 22.65 |
| 22.0 | 55.0 | 16.83 | 8.905 | 22.67 |

**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. (2902)** |
| Base Unit - YLAA0080SJ |
| R454B Refrigerant (Fully Charged) |
| Voltage Code - 200-208/3/60 |
| 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**

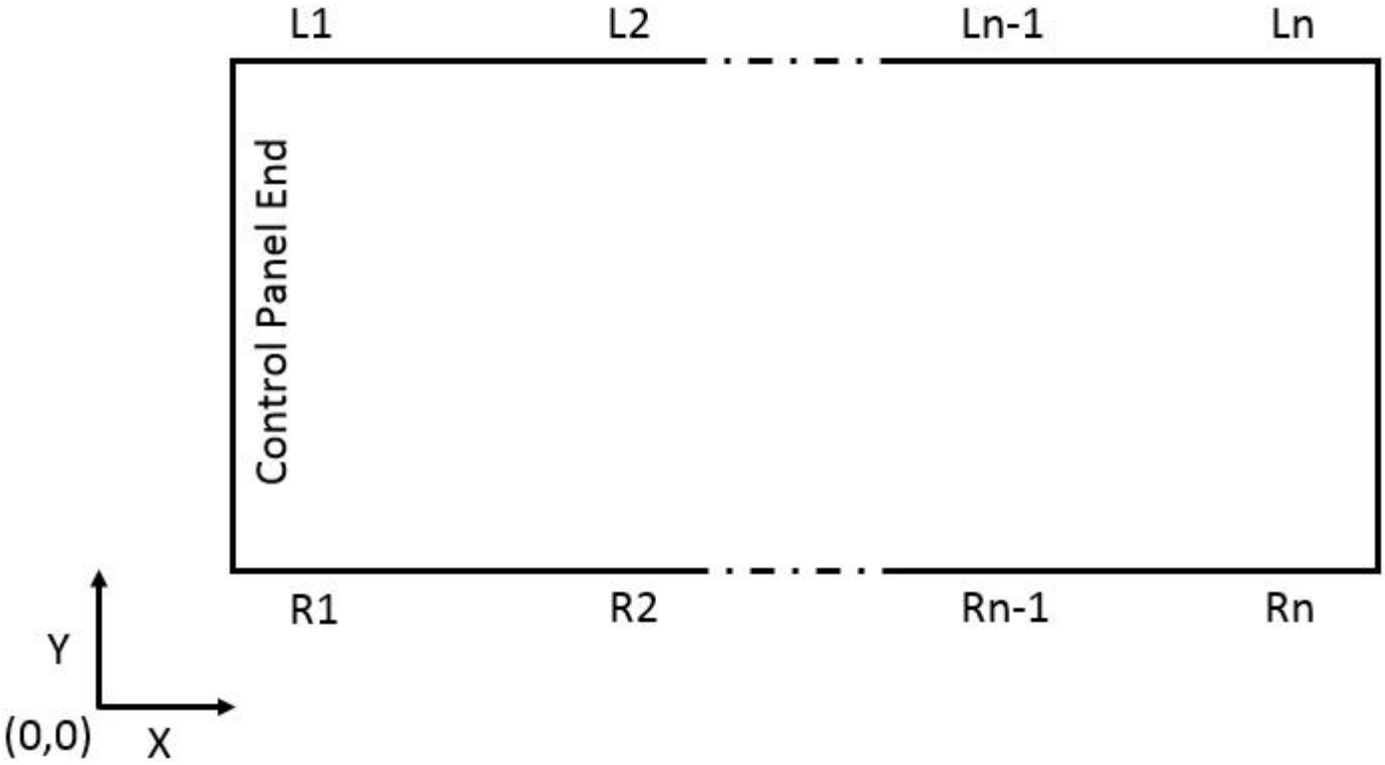
Project Name: **454B Stock AC Scrolls YLAA Submittals**

Unit Tag: **YLAA0080SJ17VSD**

Qty.: **1**

Model No.: **YLAA0080SJ17XF**

| PIN | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| YLAA0080SJ | 17XFBBCTXA | 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 | 19.5 | 1.4 | 029-25335-002 | 434004 | Red | 1023 |
| R2 | 95.1 | 1.4 | 029-25335-002 | 434004 | Red | 889 |
| L1 | 19.5 | 86.9 | 029-25335-002 | 434004 | Red | 1304 |
| L2 | 95.1 | 86.9 | 029-25335-002 | 434004 | Red | 1302 |

| Total Weight (lb) | | Centre of Gravity (in) | |
|---|---|---|---|
| Operating Weights (lb) | 4518 | Xg [in] | 56.2 |
| Shipping Weight [lb] | 4426 | Yg [in] | 50.7 |

NOTES:

1. PLACEMENT ON A LEVEL SURFACE FREE OF OBSTRUCTIONS (INCLUDING SNOW, FOR WINTER OPERATION) OR AIR RE-CIRCULATION ENSURES RATED PERFORMANCE, RELIABLE OPERATION AND EASE OF MAINTENANCE. SITE RESTRICTIONS MAY COMPROMISE 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[6']
      1.1.2. REAR TO WALL - 1828.8mm[6']
      1.1.3. CONTROL PANEL TO WALL - 1219.2mm[4']
      1.1.4. TOP - NO OBSTRUCTIONS ALLOWED.
      1.1.5. DISTANCE BETWEEN ADJACENT UNITS - 3048mm[10']
      1.1.6. NO MORE THAN ONE ADJACENT WALL MAY BE HIGHER THAN UNIT.

2. WEIGHT AND CENTER OF GRAVITY - REFER TO AVM REPORT.

3. INSTALLING CONTRACTOR MUST INCLUDE VENT AND DRAIN ACCOMMODATIONS IN CHILLED WATER PIPING NEAR THE EVAPORATOR.

4. NUMBER OF COMPRESSORS MAY VARY FROM DRAWING.
   4.1. REFER TO YORKworks REPORTS.

5. OVERALL HEIGHT OF UNIT IS 2394.6mm-[94.27"] ON MONTERREY, MEXICO AND SAN ANTONIO, TEXAS BUILDS AND EUROPEAN BUILDS (VSD FANS ONLY).

6. ON EUROPEAN BUILDS,OVERALL HEIGHT OF UNIT IS 2507.0mm-[98.70"] WITH STANDARD FANS AND IS 2541.0mm [100.04"] WITH LOW AMBIENT KIT AND WITH C FAN.

7. FOR MONTERREY, MEXICO, SAN ANTONIO, TEXAS AND EUROPEAN BUILDS ONLY.

| MODEL NUMBER | DIMENSION "A" |
|---|---|
| YLAA 0070 SE | 141 [5.6] |
| YLAA 0080 SE | 141 [5.6] |
| YLAA 0089 SE | 141 [5.6] |
| YLAA 0221 HE | 227 [8.9] |
| YLAA 0241 SE | 227 [8.9] |
| YLAA 0261 HE | 227 [8.9] |
| YLAA 0262 HE | 227 [8.9] |
| YLAA 0286 SE | 141 [5.6] |
| YLAA 0320 SE | 141 [5.6] |

| MODEL NUMBER | DIMENSION "A" |
|---|---|
| YLAA 0221 HJ | 227 [8.9] |
| YLAA 0262 HJ | 227 [8.9] |
| YLAA 0286 SJ | 141 [5.6] |
| | |
| | |
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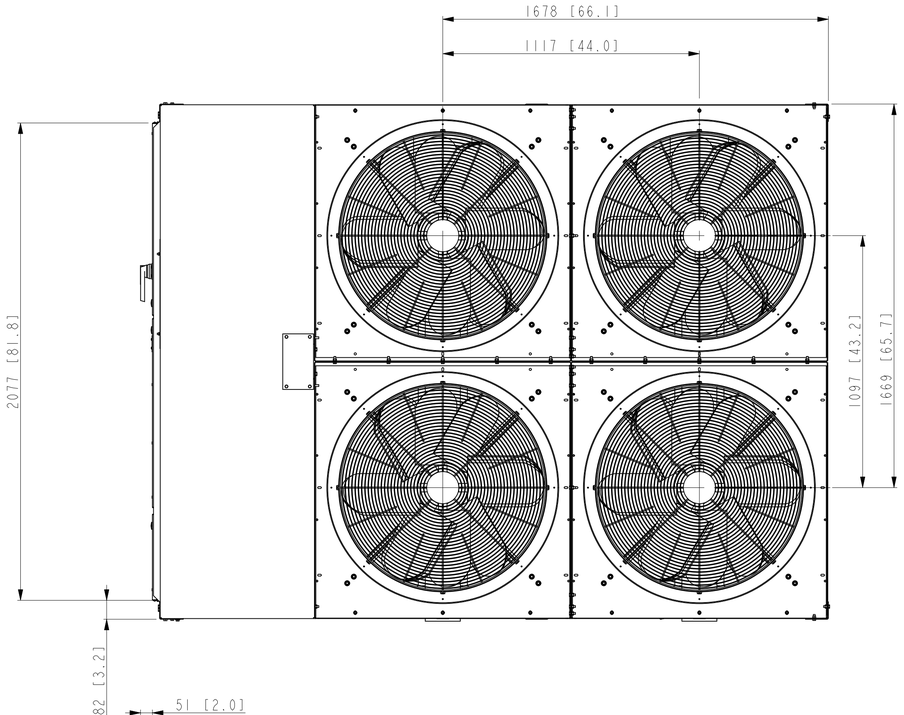
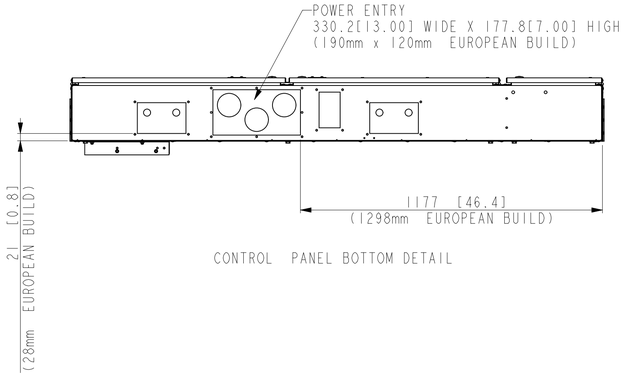
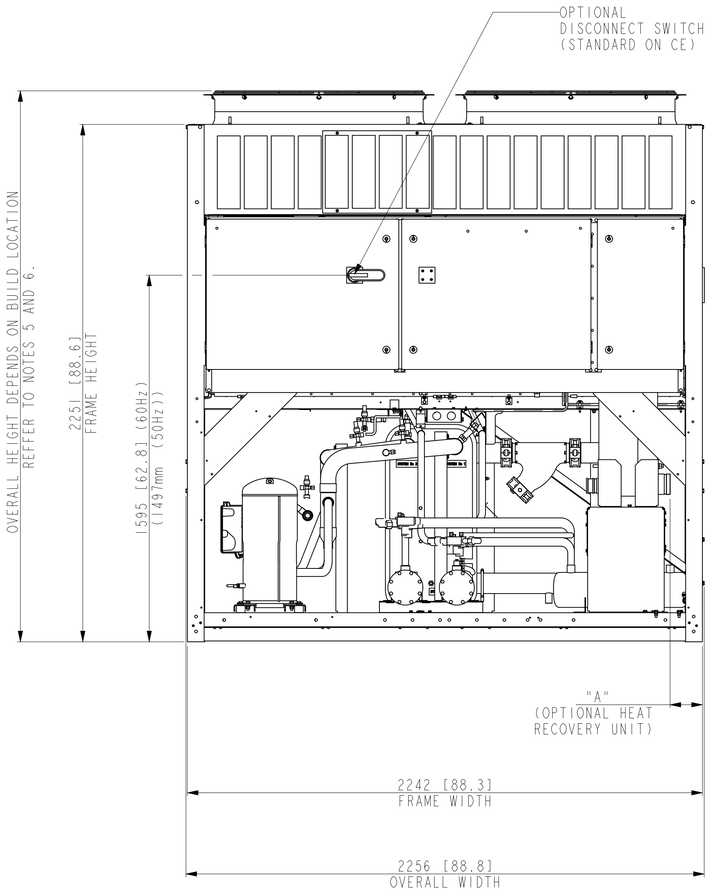
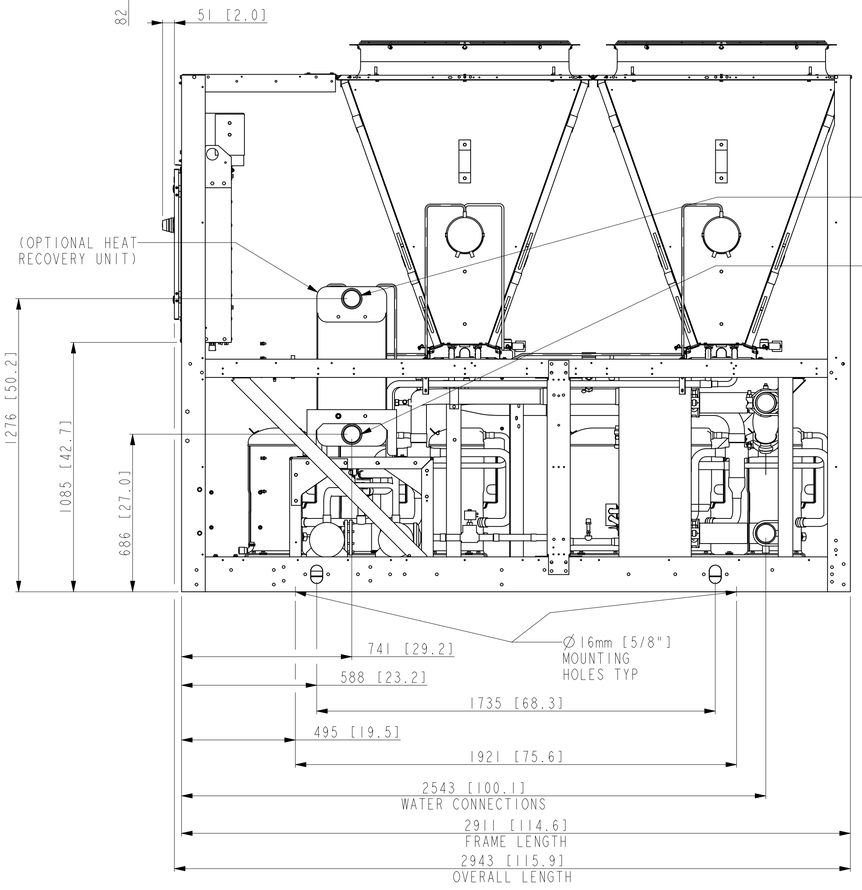
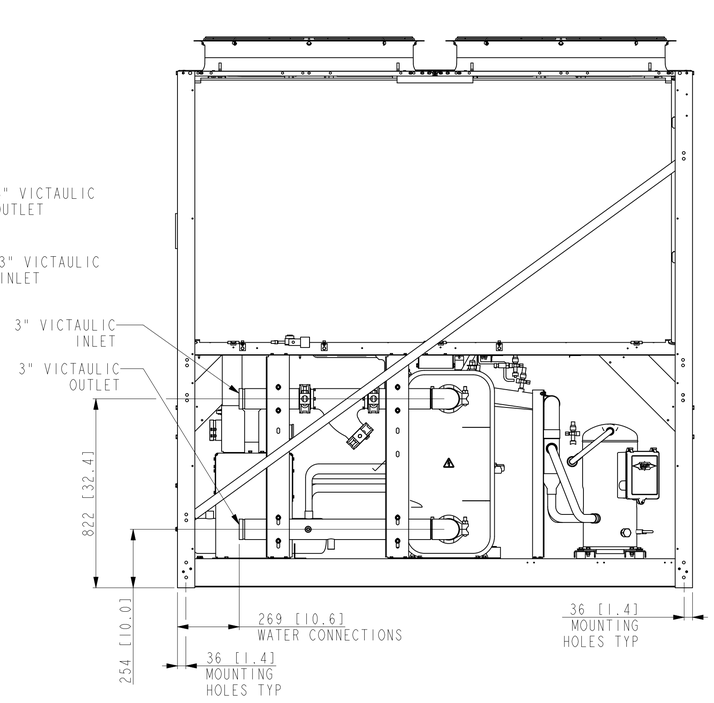



CONTROL PANEL BOTTOM DETAIL




| THIS DRAWING PERTAINS TO THE FOLLOWING MODELS: | | |
|---|---|---|
| YLAA 0070 SE | YLAA 0241 SE | YLAA 0262 HE |
| YLAA 0080 SE | YLAA 0261 HE | YLAA 0262 HJ |
| YLAA 0089 SE | YLAA 0286 SE | YLAA 0262 HJ |
| YLAA 0221 HE | YLAA 0320 SE | YLAA 0286 SJ |

REVISION

| REV. | DATE | EC. NO. | DR. | CHK. | ENG. |
|---|---|---|---|---|---|
| J | 09-JUN-2020 | ECN20-0441 | GT | AS | XW |

NOTE 6 AMENDED DIM 2541MM WAS 2535MM. FAN TERMINAL BOX 6MM HIGHER.

CONTINUED



THIRD ANGLE

Johnson Controls

JOHNSON CONTROLS - BUILDING EFFICIENCY

507 EAST MICHIGAN STREET, MILWAUKEE, WI, 53202 USA

DO NOT SCALE

YLAA 4-FAN
50HZ AND 60HZ
WITH HEAT RECOVERY

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

| | | |
|---|---|---|
| DRAWN | M.LUPTON | 06-DEC-2013 |
| MODELER | M.LUPTON | 06-DEC-2013 |
| CHKD | A.SAYCH | 06-DEC-2013 |
| ENG | | |

SCALE: 0.075 | MASS (kg): 0.000 | ORIG. NO.: | SHEET 1 OF 1

| SIZE | CAGE NUMBER | DRAWING NUMBER | REVISION | VERSION |
|---|---|---|---|---|
| A1 | 66935 | 035-24059-002 | J | 1 |

Released