



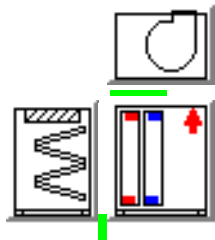
CARRIER-DSO-CHARLOTTE
 5900 Northwoods Business Pkwy
 Charlotte, NC 28269
 (P) (336) 709-0089

Equipment Submittal / Summary

| | |
|---|--------------------------------------|
| Project Name: Clyde A. Erwin Middle School | Bid Date: TBD |
| Location: Asheville, NC 28806 | Expiration Date: TBD |
| Attention: All Bidders | Proposal Number: 1219MVAR0189 |

| <u>Carrier Central Station Modular Air Handling Unit</u> | | Qty: (1) |
|--|--|----------|
| <p>Model: 39MN10</p> <p>Mark For: AHU-1</p> | <p>Carrier Indoor Mounted Modular Central Station Air Handling Unit: 5,300 CFM R-13 Foam Panel, Double Wall Construction, 4" Base Rail, Thermal Break II Insulation Pre-painted Exterior Agion with a baked enamel finish passing 500-hour salt spray test Pre-painted Interior Agion with a silver zeolite antimicrobial material registered by the US EPA Start-Up of the Air Handling Unit and 1st Year Parts and Labor Warranty By Carrier Service Air Handler to be able to break down into three pieces for installation in mechanical room</p> <p>Includes the following sections:</p> <ul style="list-style-type: none"> • Angle Filter Section / Top Return Air Entrance <ul style="list-style-type: none"> -Ruskin CD60 Premium Damper (Actuator/Control by Controls Contractor) -MERV 13, 2" Filters (Qty. 3 Sets Provided + (Qty. 1) Set of Construction Filters) -Access Door on Side Facing Mechanical Room Entrance Door • Combination Hot Water / DX Coil Section <ul style="list-style-type: none"> -Stainless Steel Drain Pan (Connections for HW Coils, Drain Pan on Far Side) -HW Coil Valve / Actuator by others (Not Provided) -DX Coil TXV's Factory Installed -Access Door on Side Facing Mechanic Room Entrance Door • Vertical Draw Thru Fan Section (208/230-3-60 Power Supply) <ul style="list-style-type: none"> -Internal Fan Spring Isolation -7.5 HP Supply Fan w/ Factory Mounted/Wired Starter/Non-Fused Disconnect -MOCP = 45 (Breaker will need to be changed in panel from MOCP = 40) -Access Door on Side Facing Mechanic Room Entrance Door <p>The following items are NOT included by Carrier: Hot Water Control Valves, Return Air Damper Actuator, Thermostats, Additional AHU Controls</p> | |
| <u>Carrier Air Conditioning Condensing Unit, 15.0 Tons</u> | | Qty: (1) |
| <p>Model: 38AUZB16</p> <p>Mark For: CU-1</p> | <p>The following items are included:</p> <ul style="list-style-type: none"> • Voltage: 208/230-3-60 Power Supply – Factory Installed Non-Fused Disconnect • Refrigerant Options: Low Ambient Head Pressure Controls • Base Unit Controls: Standard Electrical Mechanical Controls • Condenser Coil: Al Fins / Cu Tubes w/ Louvered Hail Guards (Factory Installed) • 2-Stages of Cooling Capacity Control • Start-Up of the Condensing Unit and 1st Year Parts and Labor Warranty by Carrier Service • Extended 2nd-5th Year Compressor Warranty – Parts Only • Liquid Line Solenoid Valve/Coils, Sight Glass, Filter Drier (Field Installed by Contractor) <p>The following items are NOT included: Refrigerant, Refrigerant Piping, External Isolation, BACnet/BMS Controller</p> | |

Job Name Erwin Middle School
Mark for AHU-1
Date December 20, 2019



Unit to ship assembled. Unit can be broken down in the field into (3) sections for installation if needed.

Unit Parameters

Aero Indoor Air Handler
39MN Size 10W
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Painted Exterior Panels
Interior Finish: Galvanized Pre-painted with AgION antimicrobial
Level II Thermal Break
4 inch tall Base Rail

Filter Mixing Box

User Specified Base rail break
Damper: Top Premium Parallel
2In. Angle Filter
2" Pleated MERV 13 Filter
Construction Filters
Qty (6) 16in. x 20in.
Door Right Side

Hot Water Direct Expansion Coils

Shipping Split After
304 Stainless Steel Drain Pan Left Side
Hot Water 9.93 sq.ft 2 Row 11 FPI Full Circuit
Coil Connection Left Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating
Direct Expansion 9.93 sq.ft 6 Row 11 FPI Intertwined 1/2Circuit
Coil Connection Left Side
1/2 in. Tube Diameter
AL fins Galv. Casing
No Coating
TXV(s) Factory Installed
R-410A

SUBJECT TO CHANGE WITHOUT NOTICE

Job Name Erwin Middle School
Mark for AHU-1
Date December 20, 2019

Door Right Side

Draw-Thru Supply Fan

Bottom Inlet

Fan Sled

Forward Curve A FCA12_12A

1540 fanRPM Class II

UpBlast Front Discharge

Right Side Fan Motor Location

Spring Fan Isolation

Motor

7.5 HP Premium Efficiency ODP 208-230/460 3Ph 60Hz 1800 RPM

Manufacturer - Generic

Frame Size - 213T

Motor Shaft Diameter (in.) - 1.375

Voltage Selected - 208/3/60

Full Load Amps - 20.4

MCA - 25.5

MOCP - 45

Efficiency - 91.0%

Belt Drive

1.2 Service Factor

Variable Pitch Drive

Extra Belts

1 or more belts

Drive Guard

Starter

Combination Starter & Non-fused Disconnect 208 Volts 3 Phase 60Hz

Door Right Side

Configuration Notes

Preheat coil configurations can cause freeze stat to trip if the downstream cooling coil isn't drained in heating season and/or PID valve control loop is too slow to react.

Discharge duct(s) must be gasketed and screwed directly to the discharge panel of the unit.

Weights and Dimensions

(LxWxH in ft in) 6' 0" x 6' 3" x 6' 4" **

Operating 2001 LB **

Warranty Part Number(s) (NET PRICING)

Qty 1 First 39 Series Start-up

Qty 1 1st Year Labor only 39M - Size 10 - 17

SUBJECT TO CHANGE WITHOUT NOTICE

DX Coil Performance Summary

Project: Erwin Middle School
 Tag: AHU-1

DX Cooling Application's Balance Criteria: Total Cooling

Coil Model _____
 Split Type _____
 Row / FPI / Circ _____
 Fin Thickness _____
 Fin Type _____
 Face Area Type _____
 Coil Face Area _____
 Face Velocity _____
 Fin-Casing Material _____
 Tube Diameter _____
 Tube spacing: Stf x Str _____
 Tube Wall Thickness _____
 Actual Airflow _____
 Site Altitude _____
 Total Cooling Capacity _____
 Sensible Cooling Capacity _____
 Air Friction _____
 Condensing Unit _____
 Nozzle Size _____

Carrier 28ME
Intertwined Row Split (Dual Circuit)
6 / 11 / HF
.0042 in
Sine Wave
Large
9.93 sqft
533.7 fpm
Al-Galv.
0.5 in
1.25 x 0.781 in
0.016 in
5300 CFM
0 ft
183.84 MBH
133.95 MBH
0.99 in wg
38AUZ016
G6
2
8
0.0 psig
Even
0.0 ft
R410A
46.8 F
120.7 F
1.39 Tons
95.0 F
2.7 F
13.9 kW
15.0 F
15.0 F
80.00 F
67.00 F
31.44 BTU/lb
56.89 F
55.91 F
23.7 BTU/lb

Note: Nozzles and TXVs Factory Installed

Number of TXV's _____
 TXV Tonnage _____
 Accessory PD _____
 Cond vs Evap _____
 Vertical Separation _____
 Refrigerant Type _____
 Sat. Suction Temp. _____
 Sat. Cond. Temp. _____
 Tons Per Circuit _____
 Condensing Ent. Air Temp _____
 Suction Line Loss _____
 Compressor Power _____
 Vapor Superheat _____
 Liquid Sub-Cooling _____
 Entering Air Dry Bulb _____
 Entering Air Wet Bulb _____
 Entering Air Enthalpy _____
 Leaving Air Dry Bulb _____
 Leaving Air Wet Bulb _____
 Leaving Air Enthalpy _____

LEGEND:

- Stf -- Tube spacing across coil face
- Str -- Tube spacing in direction of airflow

TXV's are factory installed. Liquid Line Solenoid Valve, Liquid Line Coil, Sight Glass, and Filter Drier will all ship loose for field installation by the mechanical contractor.

Hot Water Coil Performance Summary

Project: Erwin Middle School
 Tag: AHU-1

Heating Application's Balance Criteria: Fluid Temp Diff.

Coil Model _____
 Number of Coils _____
 Row / FPI / Circ _____
 Fin Thickness _____
 Fin Type _____
 Face Area Type _____
 Coil Face Area _____
 Face Velocity _____
 Fin-Casing Material _____
 Tube Diameter _____
 Tube spacing: Stf x Str _____
 Tube Wall Thickness _____
 Actual Airflow _____
 Site Altitude _____
 Heating Capacity _____
 Fluid Flow Rate _____
 Fluid Pressure Drop _____
 Fluid Velocity _____
 Entering Fluid Temperature _____
 Leaving Fluid Temperature _____
 Fluid Temperature Drop _____
 Entering Air Temperature _____
 Leaving Air Temperature _____
 Air Friction _____
 Brine _____
 Brine Concentration _____
 Fouling Factor _____

| | | |
|---------------------|------------------------|--|
| Carrier 28MH | 1 | |
| 2 / 11 / FL | | |
| .0042 | in | |
| Sine Wave | | |
| Large | | |
| 9.93 | sqft | |
| 533.7 | fpm | |
| Al-Galv. | | |
| 0.5 | in | |
| 1.25 x 0.781 | in | |
| 0.016 | in | |
| 5300 | CFM | |
| 0 | ft | |
| 283.51 | MBH | |
| 19.3 | gpm | |
| 1.2 | ft wg | |
| 1.5 | ft/s | |
| 180.00 | F | |
| 150.00 | F | |
| 30.0 | F | |
| 60.00 | F | |
| 108.10 | F | |
| 0.27 | in wg | |
| FW | | |
| 0 | % | |
| 0.0 | (hr-sqft-F)/BTU | |



NOTE: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory (www.ahrirectory.org).

LEGEND:

- Stf -- Tube spacing across coil face
- Str -- Tube spacing in direction of airflow

Unit Acoustics Summary

Project: Erwin Middle School
Tag: AHU-1

Unit Acoustics Sound Power Level:

| | Discharge Inlet Casing | | |
|---------------|-------------------------------|-----------|-----------|
| 63 Hz _____ | 90 | 79 | 81 |
| 125 Hz _____ | 87 | 77 | 78 |
| 250 Hz _____ | 93 | 75 | 77 |
| 500 Hz _____ | 84 | 65 | 68 |
| 1000 Hz _____ | 90 | 73 | 74 |
| 2000 Hz _____ | 84 | 67 | 68 |
| 4000 Hz _____ | 82 | 66 | 57 |
| 8000 Hz _____ | 79 | 60 | 54 |

Sound power levels for 39M units are rated in accordance with AHRI Standard 260.

Unit Acoustics A-weighted Sound Power Level:

| | Discharge Inlet Casing | | |
|---------------|-------------------------------|-----------|-----------|
| 63 Hz _____ | 64 | 53 | 55 |
| 125 Hz _____ | 71 | 61 | 62 |
| 250 Hz _____ | 84 | 66 | 68 |
| 500 Hz _____ | 81 | 62 | 65 |
| 1000 Hz _____ | 90 | 73 | 74 |
| 2000 Hz _____ | 85 | 68 | 69 |
| 4000 Hz _____ | 83 | 67 | 58 |
| 8000 Hz _____ | 78 | 59 | 53 |

Sound power levels for 39M units are rated in accordance with AHRI Standard 260.

Supply Fan Performance Summary

Project: Erwin Middle School
 Tag: AHU-1

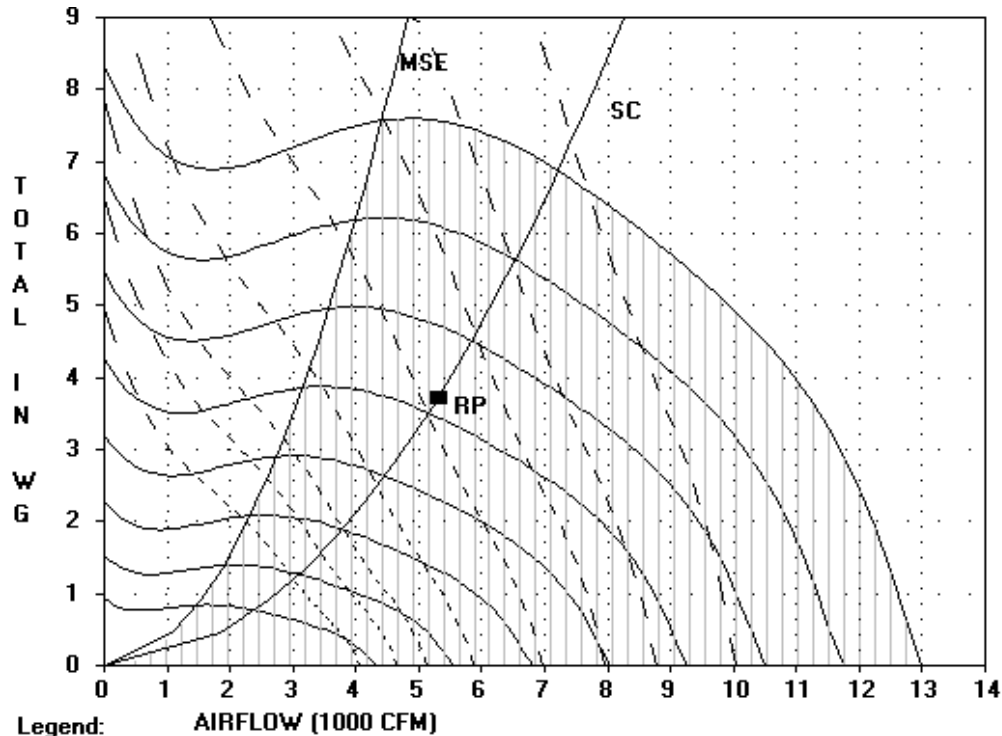
| | |
|--------------------------------|-----------------------|
| Fan Model | 39M |
| Unit Size | 10W |
| Fan Type | FORWARD CURVED |
| Fan Wheel Diameter | 12 |
| Fan Class | II |
| Fan Application | Draw Thru |
| Orientation | Vertical |
| Actual Airflow, CFM | 5300 |
| Site Altitude, ft | 0 |
| Upstream Ext. Static, in wg | 0.00 |
| Downstream Ext. Static, in wg | 2.00 |
| Cooling Coil Static, in wg | 0.99 |
| Heating Coil Static, in wg | 0.27 |
| Total Accessory Static, in wg | 0.32 |
| Total Static Pressure, in wg | 3.71 |
| Calculated Fan RPM / Motor RPM | 1540 / 1800 |
| Class II Max. RPM | 1986 |
| Static Efficiency (%) | 57 |
| Fan BHP | 5.4 |



Accessories:

- (1) Filter/Mixing Box Synthetic (2") MERV 13 [0.23]
- (1) Mixing or Exhaust Box [0.09]

NOTE: Air entering the fan section exceeds the motor maximum ambient of 104 deg F.
 Relocate heating coil downstream of the fan section.



Legend: AIRFLOW (1000 CFM)

- RPM
 - BHP
 MSE - Max. Static Eff.
 SC - System Curve
 RP - Rated Point

RPM = 1540 BHP = 5.4 CLASS II MAX. RPM = 1986
RPM's (x 100, L to R): 7. 9. 11. 13. 15. 17. 19. 21.
BHP's (L to R): 1 1.5 2 3 5 7.5 10 15

Unit width: 6'-3 9/16" (plus lifting lugs)
 2In. Angle Filter
 Qty (6) 16in. x 20in.
 Hot Water 2 Row 11 FPI Full Circuit (qty. 1)
 Direct Expansion 6 Row 11 FPI Intertwined 1/2Circuit (qty. 1)
 2 @ 0.875" diameter distributor(s)

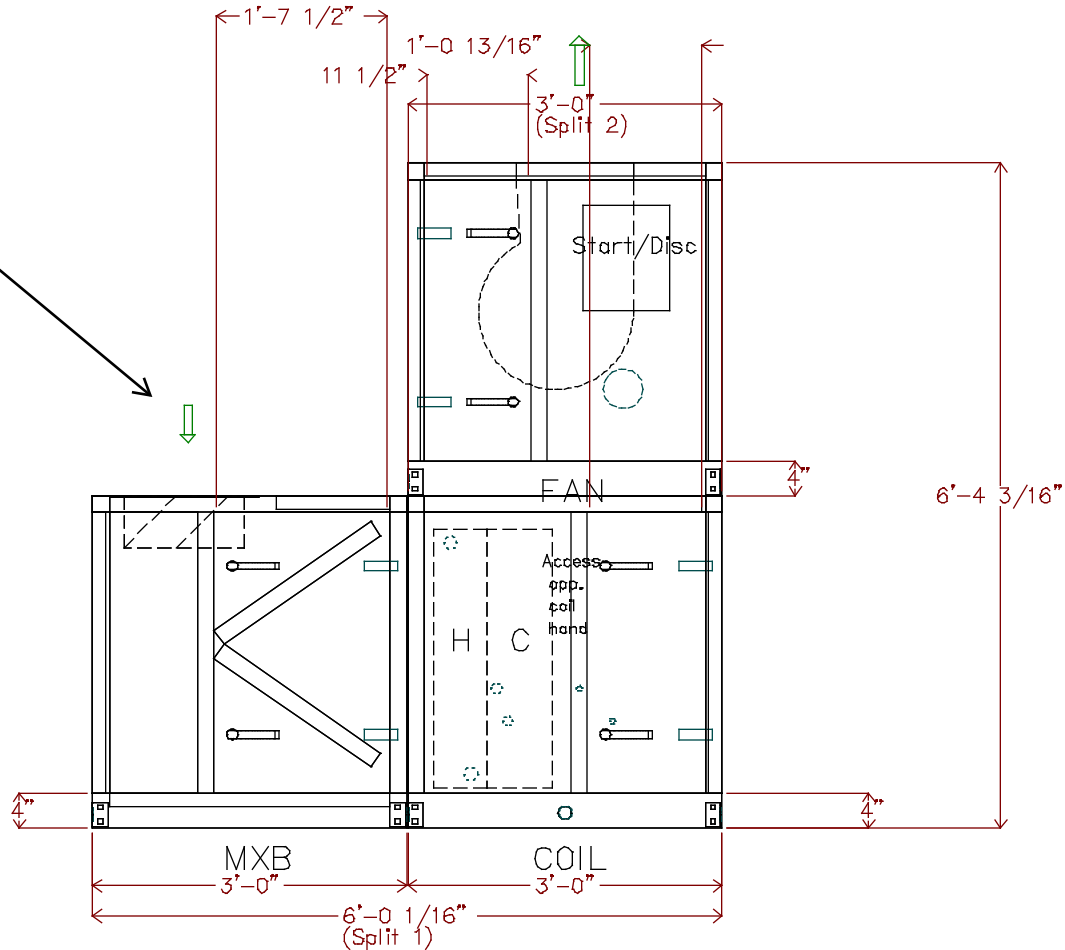
Draw-Thru Supply Fan
 7.5 HP Premium Efficiency ODP 208-230/460 3Ph 60Hz 1800 RPM
 Operating weight: 2001.0 lbs.
 Upstream Corner Weight (each): 367.0 lbs.
 Downstream Corner Weight (each): 634.0 lbs.



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| Split | Airway Length | Weight (lbs.) |
|-----------|---------------|---------------|
| (Split 1) | 6'-0 1/16" | 1052 |
| (Split 2) | 3'-0" | 950 |

Return Air Connection.
 Damper in AHU for control if
 needed. Actuator by
 controls contractor



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39MN

DATE
 12/20/2019

Configurator Ver.
 v6.68 07/01/19

39M Central Station Air-Handler, Size 10W
 Erwin Middle School: AHU-1
 Assembly Drawing

REVISION
 Side View

Unit viewed from right side of side elevation view.

Unit length: 6'-0 1/16"

2In. Angle Filter

Qty (6) 16In. x 20In.

Hot Water 2 Row 11 FPI Full Circuit (qty. 1)

Direct Expansion 6 Row 11 FPI Intertwined 1/2Circuit (qty. 1)

2 @ 0.875" diameter distributor(s)

Draw-Thru Supply Fan

7.5 HP Premium Efficiency ODP 208-230/460 3Ph 60Hz 1800 RPM

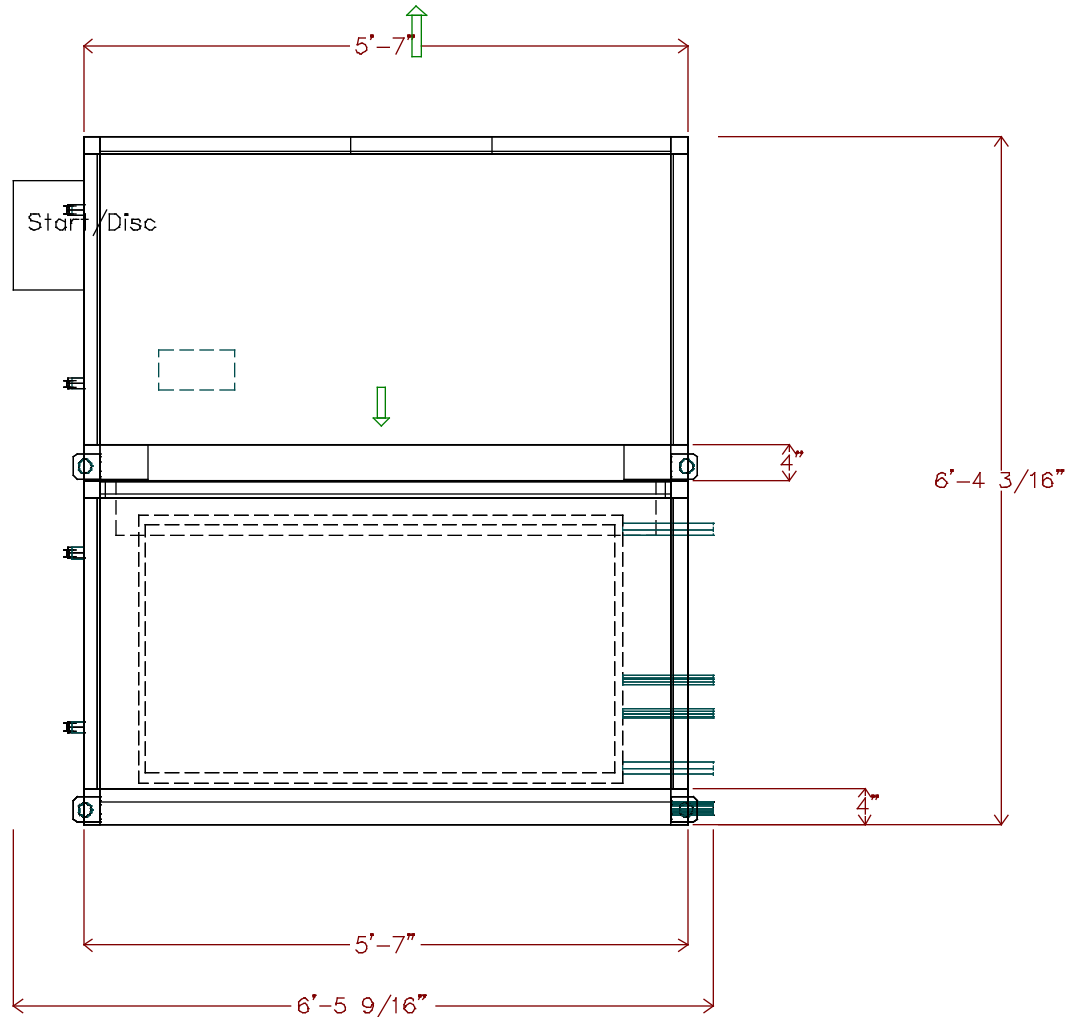
Operating weight: 2001.0 lbs.

Upstream Corner Weight (each): 367.0 lbs.

Downstream Corner Weight (each): 634.0 lbs.



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DATE
12/20/2019

Configurator Ver.
v6.68 07/01/19

39M Central Station Air-Handler, Size 10W
Erwin Middle School: AHU-1
Assembly Drawing

REVISION
End View

Unit height: 6'-4 3/16"
 2In. Angle Filter
 Qty (6) 16in. x 20in.
 Hot Water 2 Row 11 FPI Full Circuit (qty. 1)
 Direct Expansion 6 Row 11 FPI Intertwined 1/2Circuit (qty. 1)
 2 @ 0.875" diameter distributor(s)

Draw-Thru Supply Fan
 7.5 HP Premium Efficiency ODP 208-230/460 3Ph 60Hz 1800 RPM
 Operating weight: 2001.0 lbs.
 Upstream Corner Weight (each): 367.0 lbs.
 Downstream Corner Weight (each): 634.0 lbs.

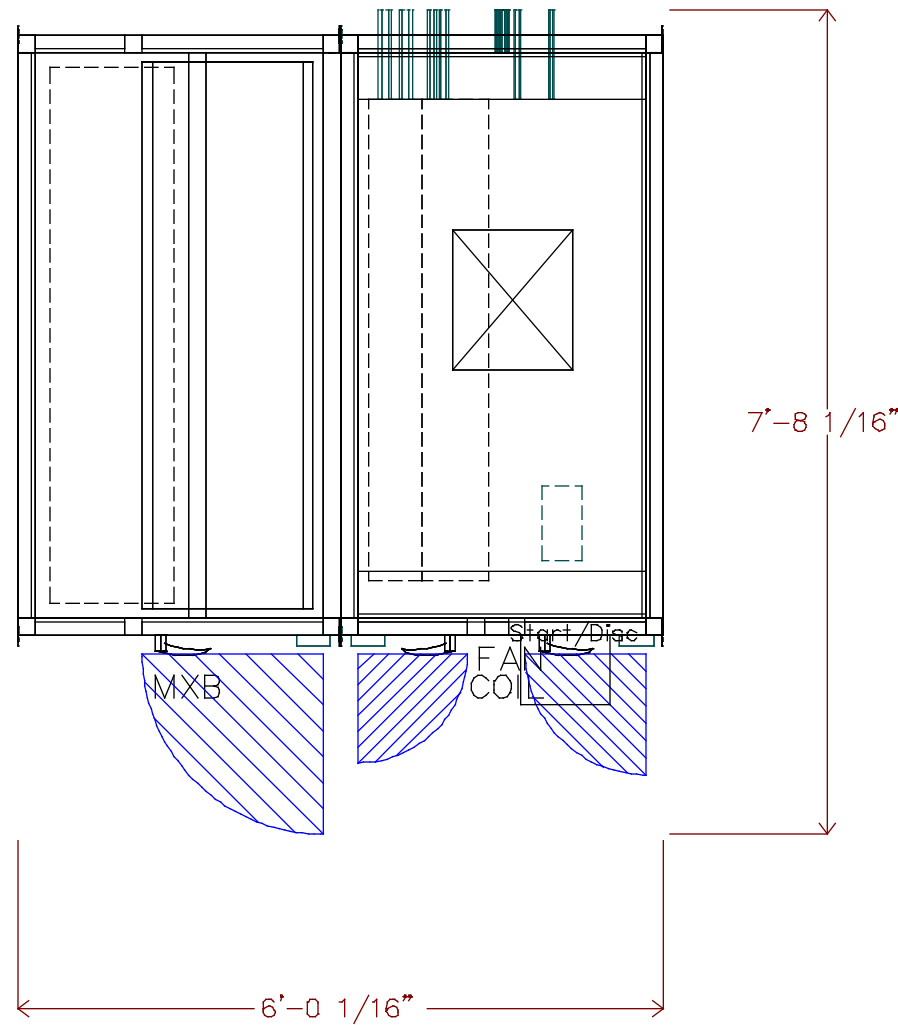


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DATE
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Configurator Ver.
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39M Central Station Air-Handler, Size 10W
 Erwin Middle School: AHU-1
 Assembly Drawing

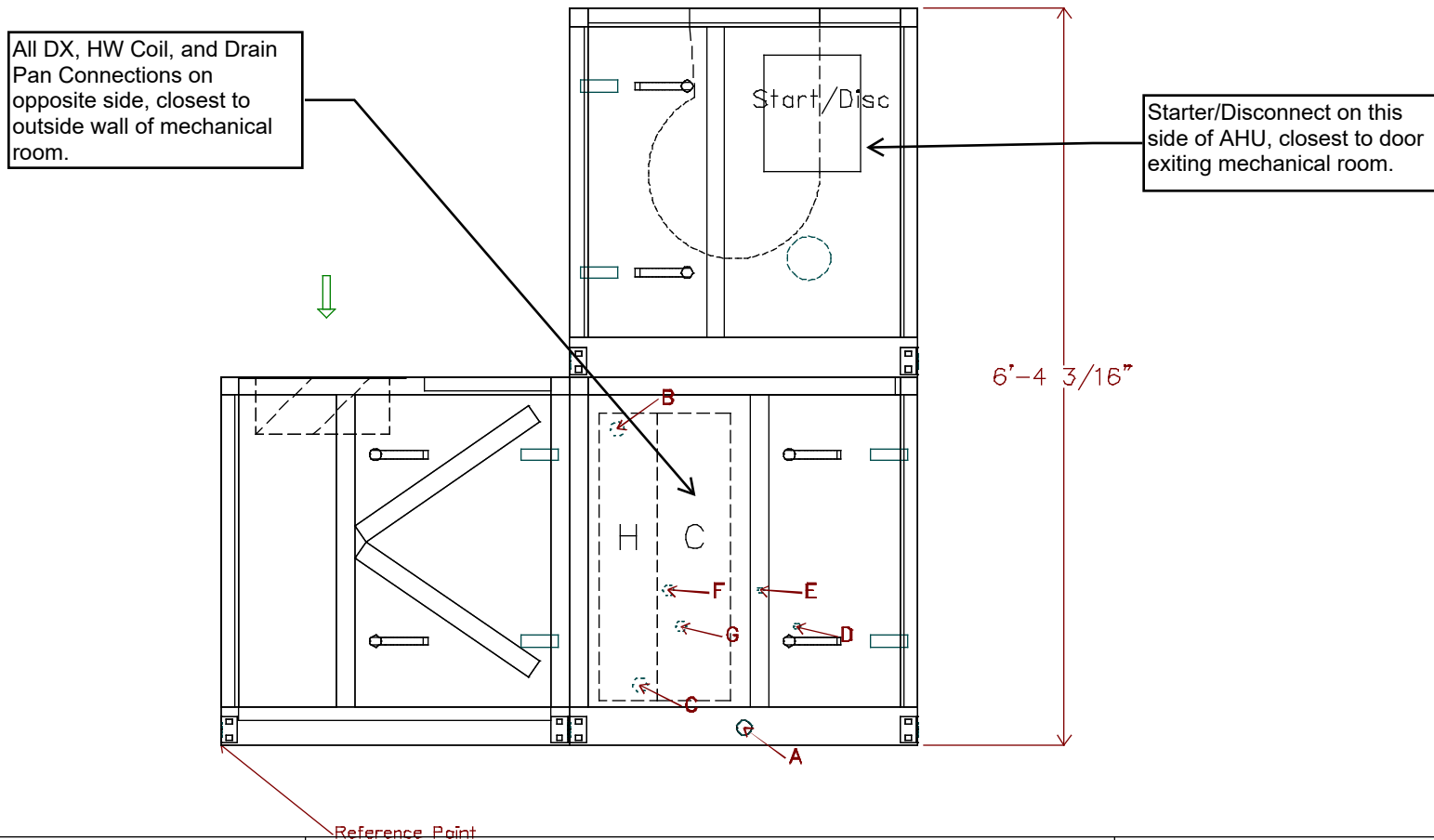
REVISION
 Top View

Hot Water 2 Row 11 FPI Full Circuit (qty. 1)
 Direct Expansion 6 Row 11 FPI Intertwined 1/2Circuit (qty. 1)
 2 @ 0.875" diameter distributor(s)



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| Pipe | x | y | diameter | Usage |
|------|-------------|-------------|----------|-------------------------------------|
| A | 4'-6 1/16" | 1' 13/16" | 1 1/2" | DrainPan |
| B | 3'-4 15/16" | 2'-8 11/16" | 1 1/2" | HW Outlet |
| C | 3'-7 5/16" | 6 3/16" | 1 1/2" | HW Inlet |
| D | 4'-11 1/2" | 1'-0 1/4" | 0 5/8" | L2: 8-ton TXV, G6 nozzle, circuit A |
| E | 4'-7 3/4" | 1'-4" | 0 5/8" | L1: 8-ton TXV, G6 nozzle, circuit A |
| F | 3'-10 1/4" | 1'-4" | 1 1/8" | S1: Suction |
| G | 3'-11 9/16" | 1'-0 1/4" | 1 1/8" | S2: Suction |



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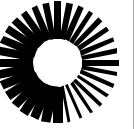
39MN

DATE
 12/20/2019

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 v6.68 07/01/19

39M Central Station Air-Handler, Size 10W
 Erwin Middle School: AHU-1
 Assembly Drawing

REVISION
 Side View



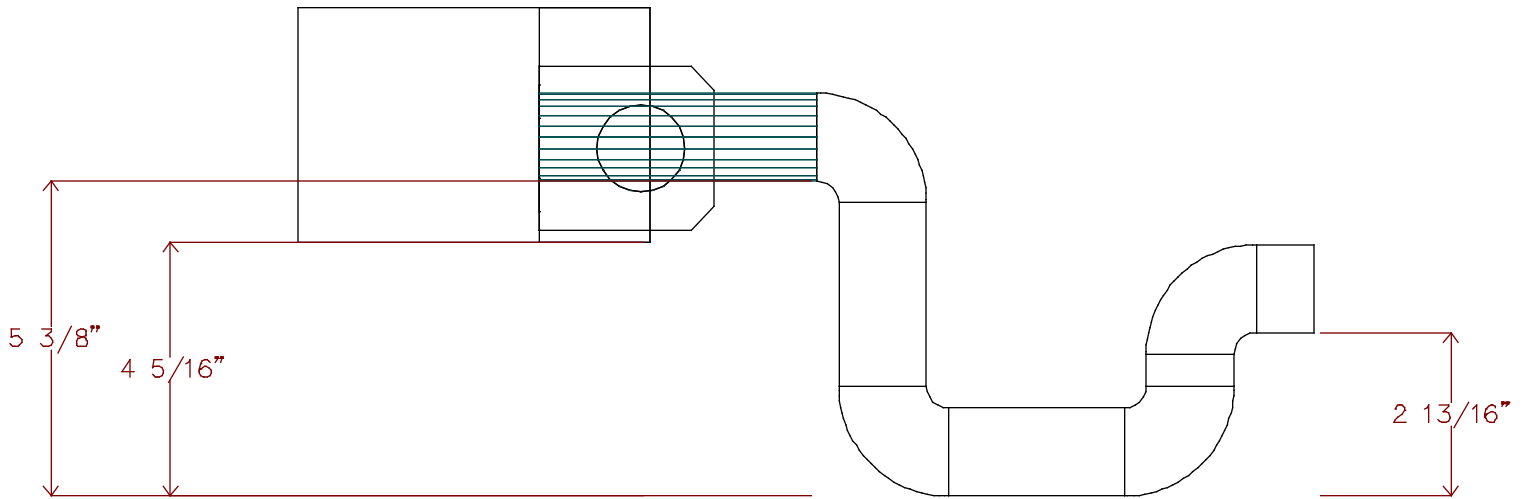
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39MN

DRAW-THRU



DATE
12/20/2019

Configurator Ver.
v6.68 07/01/19

39M Central Station Air-Handler, Size 10W
Erwin Middle School: AHU-1
Condensate Trap Dimensions

REVISION
End View



Carrier

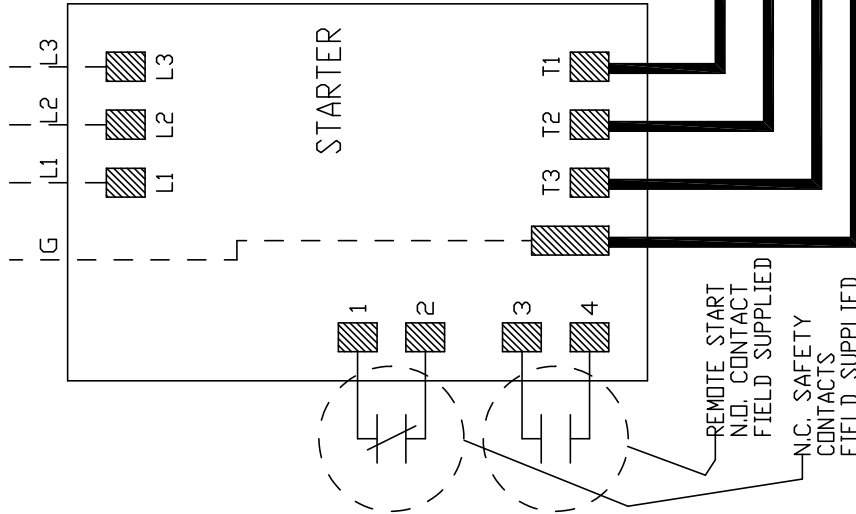
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39M

FIELD SUPPLIED WIRING PER "NEC" CODE



WIRING DIAGRAM
STARTER
3 PHASE

NOTES:

- 1) MOTOR CONNECTIONS L4 THRU L9 NOT SHOWN. CONNECT PER MOTOR MANUFACTURERS RECOMMENDATIONS AND SPECIFIED OPERATING VOLTAGE.
- 2) CHECK FOR CORRECT MOTOR ROTATION AFTER WIRING. TO REVERSE MOTOR ROTATION, REVERSE FIELD LINE VOLTAGE WIRING ON TERMINALS L1 AND L2.
- 3) REMOVE FACTORY INSTALLED JUMPER WIRE BETWEEN TERMINALS 1 AND 2 BEFORE CONNECTING SAFETY CONTACT (LTT/HPS).
- 4) FIELD WIRING MUST BE IN ACCORDANCE WITH "NEC" CODE AND LOCAL CODE REQUIREMENTS. REFER TO INSTALLATION INSTRUCTION FOR MINIMUM WIRE GAUGE REQUIREMENTS.
- 5) ALL FACTORY WIRING IS RATED FOR 90 DEGREES C, TYPE THHN. REPLACE WITH SAME SIZE AND TYPE AS ORIGINALLY SUPPLIED.

39MA51003756 -

39M Central Station Air-Handler
Three Phase Starter Wiring Detail

REVISION



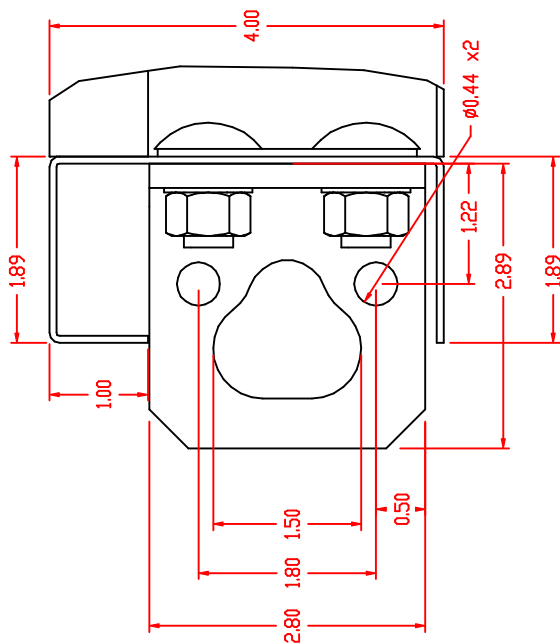
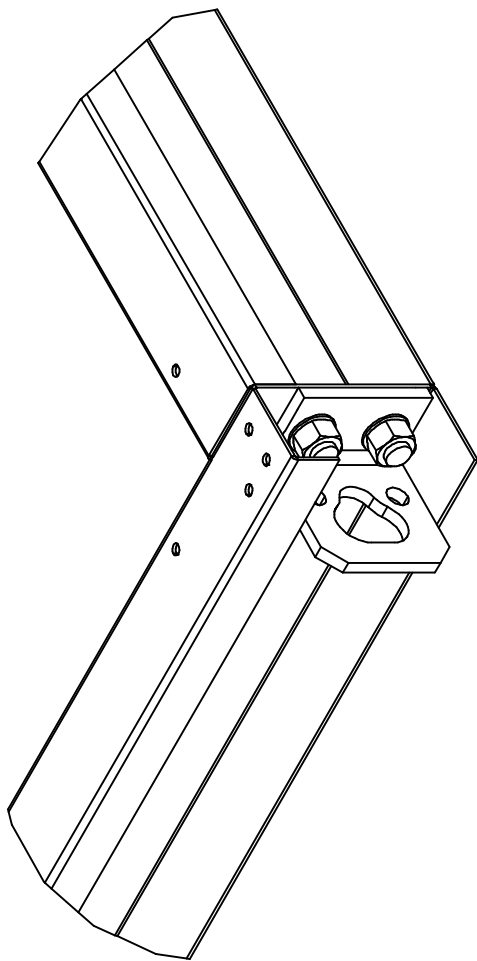
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39MN



REVISION

25

39M Central Station Air-Handler, Size: 03 -
4" Baserrail and Lifting Lug Detail

Air Filter Submittal

Project: Erwin Middle School
 Unit Tag: AHU-1

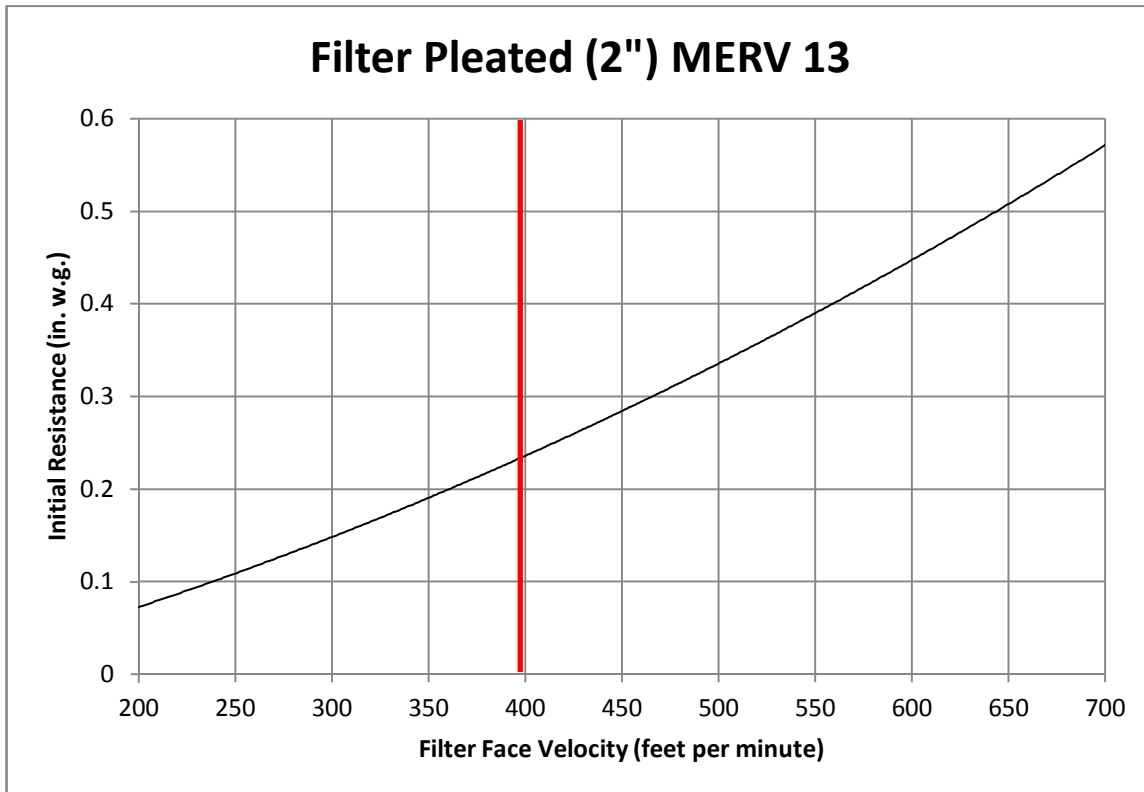
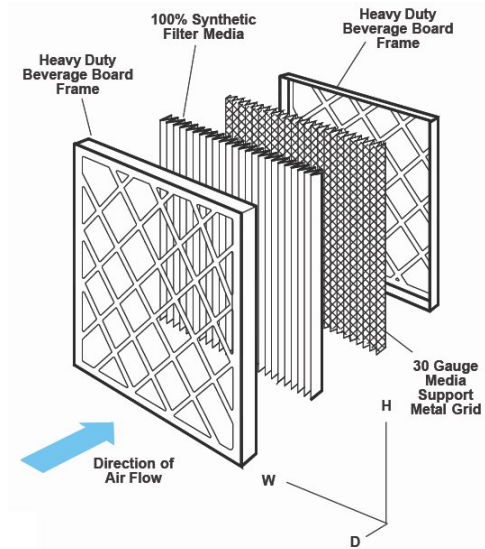
| | |
|-----------------------------------|-----------------------|
| Carrier Part Number | 31K2C0000000616203 |
| Kit Description | Filter Kit |
| Unit Airflow, CFM | 5300 |
| Filter Velocity, FPM | 398 |
| Filter Sizes and Quantities | Qty (6) 16in. x 20in. |

(Qty. 3) Sets of Filters Provided.

Quality Pleat

MERV 13 Pleated Filter

The 100% synthetic graduated density media is continuously bonded to a 30 gauge galvanized, corrosion resistant, expanded metal support grid with an effective open area of 96%. The media is resistant to a wide range of chemicals, does not absorb moisture and will not support microbial growth. The controlled pleat spacing maximizes surface area and dust holding capacity and is bonded to the enclosure frame to prevent dust bypass. The enclosure frame is constructed of high wet strength moisture resistant beverage board. The diagonal support members of the frame are bonded to the entering and exiting apexes of each pleat to prevent pleat collapse and filter bowing.



Unit Report For CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM



Outdoor Unit Parameters

Unit Quantity:.....1
 Unit Model:.....**38AUZ**
 Unit Size:.....**15 Tons**
 Voltage:.....**208-3-60** V-Ph-Hz
 Condenser Coil:**Al/Cu with Louvered Hail Guard**
 No. of Stages:.....**Dual Stage**

System Parameter

System Quantity:.....1
 Refrigerant Type:.....**PURON**
 Compressor Quantity:.....2
 Compressor Type:.....**Scroll**
 Std. Capacity Steps:.....**50,100**
 Std. Min. Outdoor Temp(Cooling):.....**-20.0** °F
 No. of Outdoor fans:.....3

Outdoor Unit Dimensions and Weight

Unit Length:.....**7' 2.4"**
 Unit Width:.....**3' 7.4"**
 Unit Height:.....**4' 2.4"**
 Unit Shipping Weight:.....**731** lb
 Unit Operating Weight:.....**731** lb

Accessories and Installed Options

Low ambient FLOP operation down to -20 F.

Warranty Information Outdoor (Note: for US & Canada only)

First Year - Parts Only (Standard)
 Start-up, First Unit for Outdoor Unit
 Complete Unit 1st Year Carrier CCS Labor for Outdoor Unit

NOTE: Please see Warranty Catalog 808-218 for explanation of policies and ordering methods.

Ordering Information

| Part Number | Description | Quantity |
|----------------------------|--|----------|
| Base Unit - Outdoor | | |
| 38AUZB16A0M5-0A0C0 | | 1 |
| | Base Unit | |
| | Al/Cu with Louvered Hail Guard Condensing Coil | 1 |
| | Low Ambient Controls Refrigerant Options | 1 |
| | Service Options - None | 1 |
| | Electrical Options - Non-Fused Disconnect | 1 |
| | Packaging Options - Standard | 1 |
| | Standard Electrical Mechanical Controls | 1 |
| | Refrig Circ/Compressor Staging - Single Circuit/Dual Stage (size 16 & 25 only) | 1 |

Unit Report For CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM

| Accessories | | |
|--------------------|---|---|
| EF680036 | Liquid Line Solenoid Valve for Outdoor Unit | 1 |
| EF680037 | Liquid Line Solenoid Valve for Outdoor Unit | 1 |
| KM680005 | Sight Glass for Outdoor Unit | 1 |
| HN61PC005 | Relay 240V 14A for Outdoor Unit | 2 |
| HT01BD202 | Transformer for Outdoor Unit | 1 |

The 38AUZ/AUD are furnished with filter drier which is factory provided (field installed). Additional filter driers can be purchased separately through RCD (Replacement Components Division). See the Product Library for Replacement Filter Drier Information for more information.

Performance Summary For CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM

System:..... **38AUZ016**
No. of Stages:..... **Dual Stage**
System Quantity:..... **1**
Altitude:..... **2100.0** ft
EER @ ARI Conditions:..... **12.5**
Linear Pipe Length:..... **15.0** ft
Suction Line Size:..... **1 3/8** in
Liquid Line Size:..... **5/8** in
Suction Line Loss:..... **1.4** °F

Suction Line and Liquid Line
Pipe Sizes

Additional support for Piping sizes in Application Bulletin 38TIP-15-01.pdf

Outdoor Unit Parameters

Unit Quantity:..... **1**
 PartNumber:..... **38AUZB16A0M5-0A0C0**
 Unit Model:..... **38AUZ**
 Unit Size:..... **15 Tons**
 Condenser Coil:..... **Al/Cu with Louvered Hail Guard**
 Voltage:..... **208-3-60** V-Ph-Hz
 Total Clg Cap.(Gross):..... **179.5** MBH
 SDT:..... **120.9** °F
 Clg Ent Air DB:..... **95.0** °F
 Saturated Suction Temp:..... **45.0** °F

Outdoor Electrical Data

Unit Voltage:..... **208-3-60** V-Ph-Hz
 Unit MCA:..... **60.8** Amps
 Unit MOCP:..... **80.0** Amps
 Total Compressor Power of Unit:..... **13.90** kW
 Voltage Range Min:..... **187** V
 Voltage Range Max:..... **253** V
 Compressor RLA:..... **25/25**
 Compressor LRA:..... **164/164**
 Compressor Quantity:..... **2**
 Fan Motors Qty:..... **3**
 Fan Motor FLA:..... **1.5** Amps

Notice: Outdoor unit elect. data is based on 208-3-60
 Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

FIOPS and Accessories Information

| FIOPS | Quantity |
|---|-----------------|
| Accessories | |
| | Quantity |
| Liquid Line Solenoid Valve for Outdoor Unit | 1 |
| Liquid Line Solenoid Valve for Outdoor Unit | 1 |
| Sight Glass for Outdoor Unit | 1 |
| Relay 240V 14A for Outdoor Unit | 2 |
| Transformer for Outdoor Unit | 1 |

MCA/MOCP, much less than
existing condensing unit.
Circuit breaker change
upstream required.

| A-Weighted | Outdoor Unit (dB) | Indoor Unit (dB,Ducted) |
|-------------|-------------------|-------------------------|
| Total Level | 82.6 | NA |
| 63Hz | 60.5 | NA |
| 125Hz | 65.1 | NA |
| 250Hz | 70.3 | NA |

Performance Summary For CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM

| | | |
|---------------|------------------|----|
| 500Hz | 77.2 | NA |
| 1000Hz | 78.0 | NA |
| 2000Hz | 75.4 | NA |
| 4000Hz | 71.2 | NA |
| 8000Hz | 63.9 | NA |
| Sound Message | Sound for AUZ016 | |

Acoustic Notes:

1. 38AUZ/D/Q units sound ratings are in accordance with AHRI 270-2008 - Sound Rating of Outdoor Unitary Equipment.
2. The acoustic center of the unit is located at the geometric center of the unit.

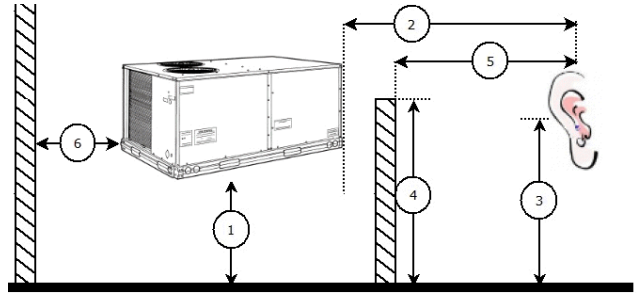
Performance Summary For CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM

Advanced Acoustics Parameters

- 1. Unit height above ground:..... **1.0** ft
- 2. Horizontal distance from unit to receiver:..... **20.0** ft
- 3. Receiver height above ground:..... **5.7** ft
- 4. Height of obstruction:..... **0.0** ft
- 5. Horizontal dist. from obstruction to receiver:..... **0.0** ft
- 6. Horizontal dist. from unit to obstruction:..... **0.0** ft



Detailed Acoustics Information

| Octave Band Center Frequency, Hz | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Overall |
|---|----|-----|-----|-----|----|----|----|----|---------|
| Sound Power Levels at Unit's Acoustic Center (L _w), dB | 87 | 81 | 79 | 80 | 78 | 74 | 70 | 65 | 89 |
| A-Wgtd Sound Power Levels at Unit's Acoustic Center (L _{wA}), dBA | 61 | 65 | 70 | 77 | 78 | 75 | 71 | 64 | 83 |
| Sound Press. Levels at Dist. Specified above (L _p), dB | 62 | 57 | 55 | 56 | 54 | 50 | 46 | 41 | 65 |
| A-Wgtd Sound Press. Levels at Dist. Specified above (L _{pA}), dBA | 36 | 41 | 46 | 53 | 54 | 51 | 47 | 40 | 58 |

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

Certified Drawing for CU-1

Project: Erwin Middle School
Prepared By:

12/20/2019
08:23AM

| UNIT | ELECTRICAL CHARACTERISTICS | STD. UNIT WT. | | CORNER A | | CORNER B | | CORNER C | | CORNER D | | CENTER OF GRAVITY | | | UNIT HEIGHT | |
|----------------|--------------------------------|---------------|-----|----------|-----|----------|-----|----------|------|----------|------|-------------------|------------|------------|-----------------|--|
| | | LBS. | KG. | LBS. | KG. | LBS. | KG. | LBS. | KG. | LBS. | KG. | X | Y | Z | H | |
| 38AUZ16 (MCHX) | 208/230-3-60,460-3-60,575-3-60 | 633 | 288 | 220 | 100 | 134 | 61 | 135 | 61.5 | 144 | 65.5 | 38 [965.2] | 19 [482.6] | 15 [381] | 50-3/8 [1279.2] | |
| 38AUD16 (MCHX) | 208/230-3-60,460-3-60,575-3-60 | 633 | 288 | 220 | 100 | 134 | 61 | 135 | 61.5 | 144 | 65.5 | 38 [965.2] | 19 [482.6] | 15 [381] | 50-3/8 [1279.2] | |
| 38AUZ16 (RTFF) | 208/230-3-60,460-3-60,575-3-60 | 731 | 332 | 237 | 107 | 172 | 78 | 135 | 61 | 186 | 84 | 38 [965.2] | 19 [482.6] | 17 [431.8] | 50-3/8 [1279.2] | |
| 38AUD16 (RTFF) | 208/230-3-60,460-3-60,575-3-60 | 731 | 332 | 237 | 107 | 172 | 78 | 135 | 61 | 186 | 84 | 38 [965.2] | 19 [482.6] | 17 [431.8] | 50-3/8 [1279.2] | |

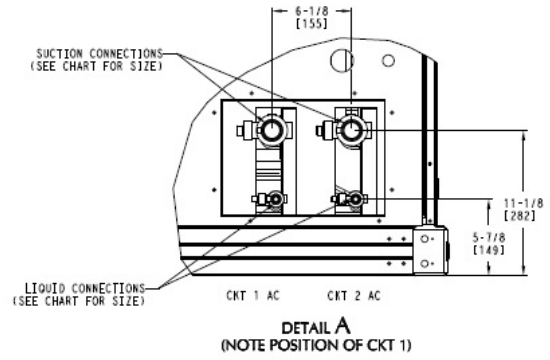
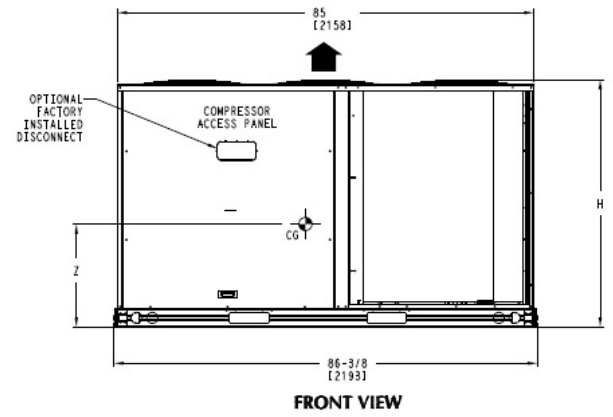
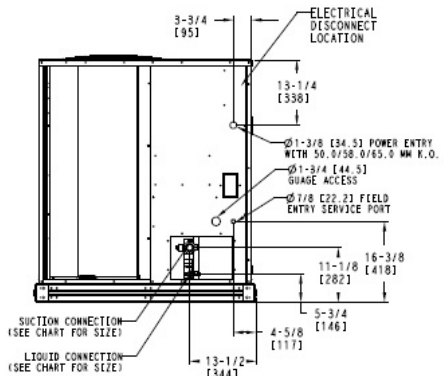
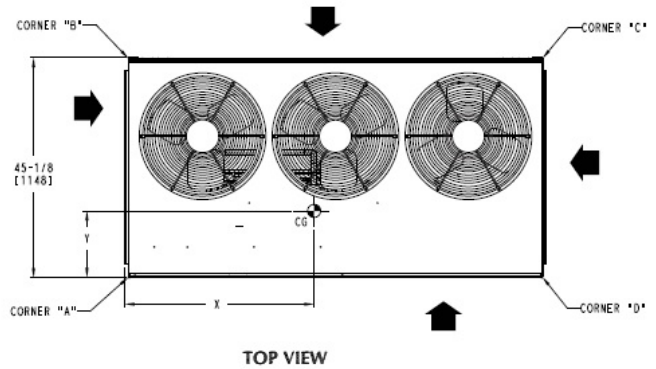
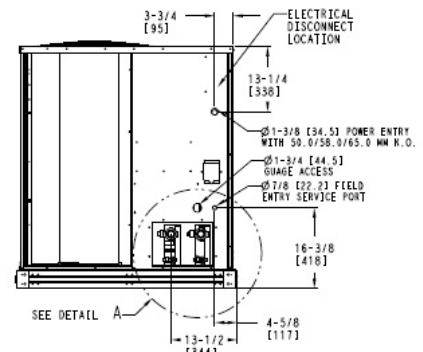
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- NOTES:
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - A. BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - B. OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER, THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - C. OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - D. BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - E. BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - F. BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

| UNIT | SUCTION | LIQUID | QTY |
|---------|--------------|------------|------|
| 38AUZ16 | 1-3/8 [34.9] | 5/8 [15.9] | 1 EA |
| 38AUD16 | 1-3/8 [34.9] | 1/2 [12.7] | 2 EA |



| DATE | SUPERCEDES | 38AUZ, 38AUD CONDENSING UNIT | 38AU500503 | REV |
|----------|------------|------------------------------|------------|-----|
| 11/17/10 | 08/04/10 | | | F |