

Performance Summary For AC 1, 5,6

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Part Number:48GEGM04A3A5-3A0A0

Refrigerant:..... **R-454B**
ARI SEER:..... **17.20**
ARI SEER2:..... **16.80**

Base Unit Dimensions

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

Operating Weight

Base Unit Weight:..... **535** lb
SystemVu Controller:..... **2** lb

Total Operating Weight:..... **537** 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:..... **58.1** F
Evaporator Leaving Air WB:..... **56.8** F
Evaporator Leaving Air Enthalpy:..... **24.24** BTU/lb
Gross Cooling Capacity:..... **38.86** MBH
Gross Sensible Capacity:..... **28.32** MBH
Compressor Power Input:..... **2.38** kW
Coil Bypass Factor:..... **0.049**

Heating Performance

Heating Airflow:..... **1200** CFM
Entering Air Temp:..... **70.0** F
Leaving Air Temp:..... **107.8** F
Gas Heating Input Capacity:..... **60.0** MBH
Gas Heating Output Capacity:..... **49.0** MBH
Temperature Rise:..... **37.8** F
Thermal Efficiency (%):..... **81.0**

Supply Fan

External Static Pressure:..... **0.50** in wg
Fan RPM:..... **1572**
Fan Power:..... **0.28** BHP
NOTE:..... **Selected IFM RPM Range: 1129 - 2490**

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

Electrical Data

Voltage Range:..... **187 - 253**
Compressor #1 RLA:..... **9.9**
Compressor #1 LRA:..... **82**
Indoor Fan Motor Type:..... **HIGH**
Indoor Fan Motor FLA (Total):..... **7.3**
Combustion Fan Motor FLA (ea):..... **0.48**

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12:32PM

Power Supply MCA:.....**23**
Power Supply MOCP (Fuse or HACR):.....**30**
Disconnect Size FLA:.....**23**
Disconnect Size LRA:.....**96**
Electrical Convenience Outlet:.....**None**
Outdoor Fan [Qty / FLA (ea)]:.....**1 / 2.6**

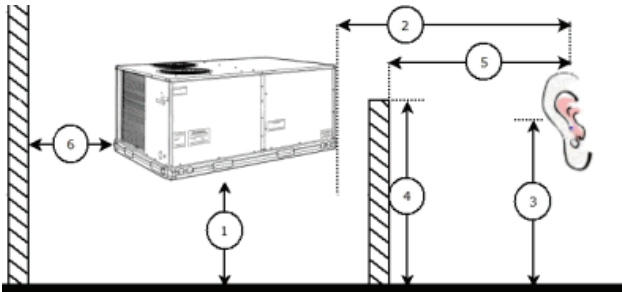
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	87.4	81.8	81.8
125 Hz	79.8	73.7	81.8
250 Hz	71.2	65.6	77.0
500 Hz	63.9	57.4	72.6
1000 Hz	60.9	58.5	69.9
2000 Hz	57.4	50.0	64.6
4000 Hz	54.4	44.2	59.3
8000 Hz	55.3	40.1	55.6
A-Weighted	69.7	64.1	75.4

Advanced Acoustics



Advanced Acoustics Parameters

- Unit height above ground:.....**30.0** ft
- Horizontal distance from unit to receiver:.....**50.0** ft
- Receiver height above ground:.....**5.7** ft
- Height of obstruction:.....**0.0** ft
- Horizontal distance from obstruction to receiver:.....**0.0** ft
- 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	81.8	81.8	77.0	72.6	69.9	64.6	59.3	55.6	85.9 Lw
B	55.6	65.7	68.4	69.4	69.9	65.8	60.3	54.5	75.4 LwA
C	49.4	49.4	44.6	40.2	37.5	32.2	26.9	23.2	53.5 Lp
D	23.2	33.3	36.0	37.0	37.5	33.4	27.9	22.1	43.0 LpA

Legend

A Sound Power Levels at Unit's Acoustic Center, Lw

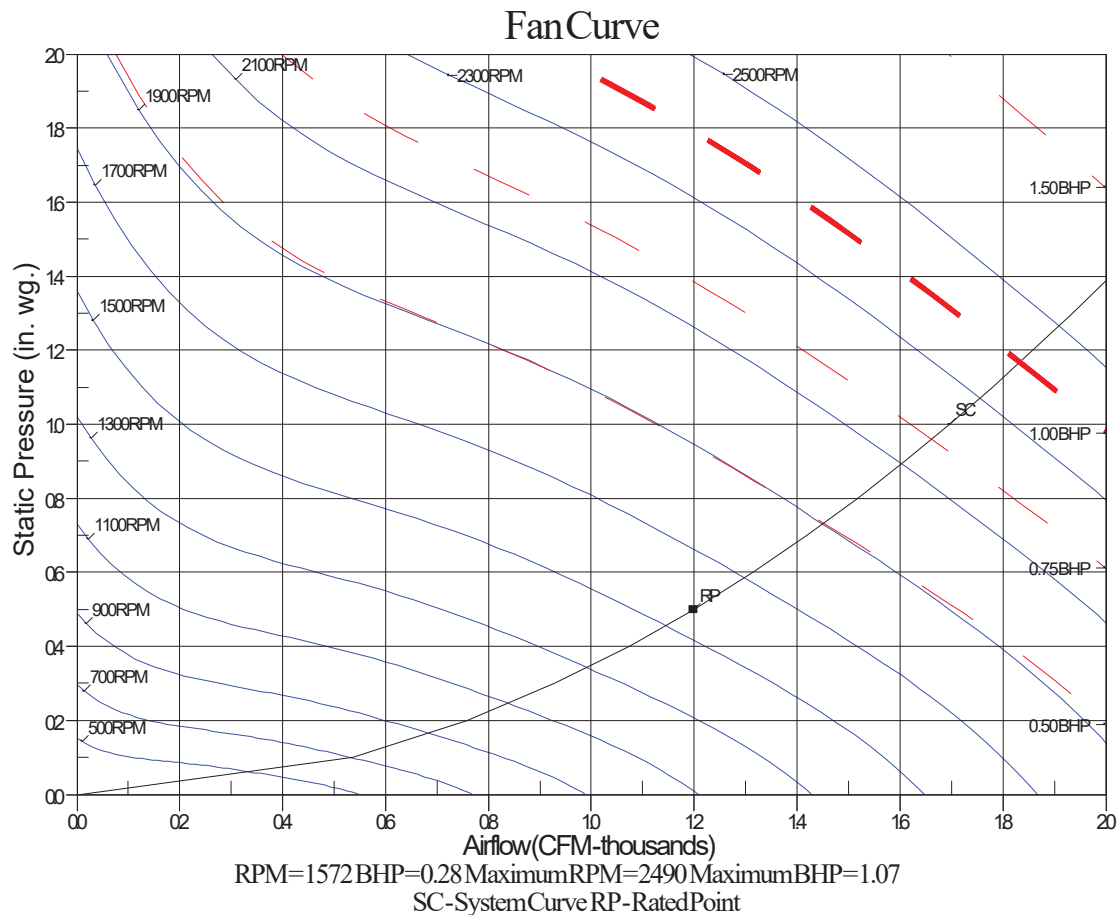
Performance Summary For AC 1, 5,6

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.



AC 4

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For AC 4

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Unit Parameters

Unit Model:.....48GEGM06A3A5-3A0A0
Unit Size:.....06 (5 Tons)
Volts-Phase-Hertz:.....208-3-60
Heating Type:.....Gas
Refrigerant:.....R-454B
Heat Control:.....Ultra Low NOx, Low Gas Heat
Duct Cfg:.....Vertical Supply / Vertical Return
DX Options:.....Two Stage Cooling, Single Circuit

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....6' 2.375"
Unit Width:.....3' 10.625"
Unit Height:.....3' 5.375"
Total Operating Weight:.....602 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....1/2
Condensate Drain Line Size:.....3/4
Return Air Filter Type:.....Throwaway
Return Air Filter Quantity:.....4
Return Air Filter Size:.....16 x 16 x 2

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Ultra Low NOx, Low Gas Heat
High Static - EcoBlue Vane Axial Fan
Al/Cu - Al/Cu
SystemVu Controller
Standard Packaging

Warranty Information

1-Year parts(std.)
5-Year compressor parts(std.)
3-Year SystemVu
10-year heat exchanger - Ultra Low NOx modles

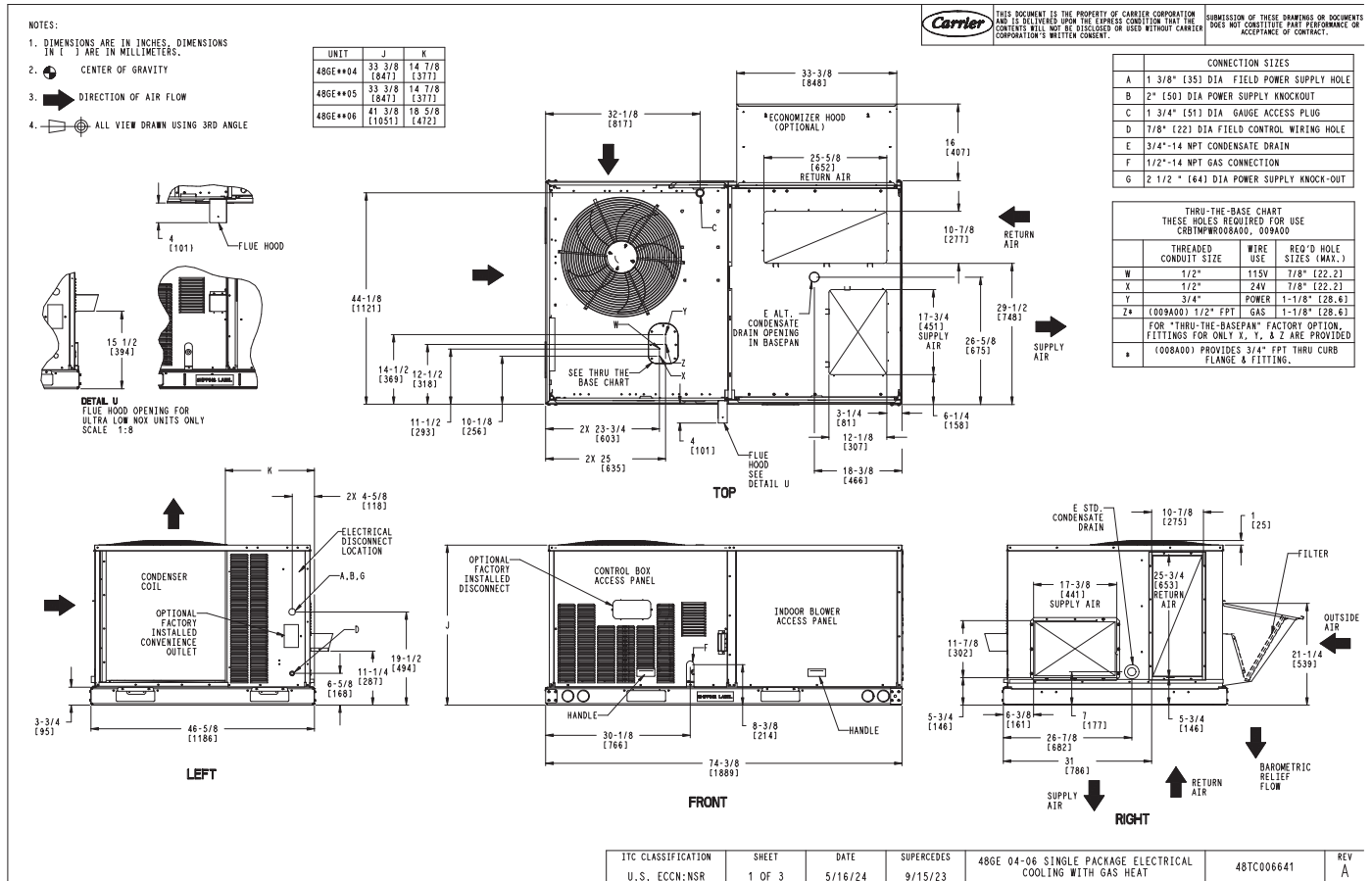
No optional warranties were selected.

Ordering Information

Part Number	Description	Quantity
48GEGM06A3A5-3A0A0	Rooftop Unit	1

Certified Drawing for AC 4

01/22/2025
12:32PM



Certified Drawing for AC 4

UNIT	STD. UNIT WEIGHT #		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	
48GE**04	555	243	129	59	128	58	138	63	139	63	37 [940]	24 1/4 [616]	18 [457]
48GE**05	555	252	142	64	137	62	135	61	141	64	36 1/2 [927]	23 1/4 [591]	18 [457]
48GE**06	600	272	161	73	151	68	140	64	149	68	36 [914]	22 1/2 [572]	19 3/8 [492]

** STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.

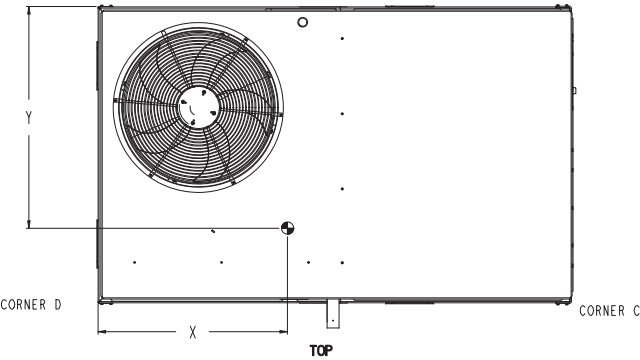
THIS TABLE IS FOR "ULTRA LOW NOX" UNITS ONLY

UNIT	STD. UNIT WEIGHT #		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	
48GEG*04	585	256	137	62	134	61	146	66	148	67	36 7/8 [937]	24 3/8 [619]	17 3/4 [451]
48GEG*05	585	266	149	68	143	65	143	65	149	68	36 3/8 [924]	23 3/8 [594]	18 [457]
48GEG*06	630	286	168	76	157	71	147	69	158	72	35 7/8 [911]	22 5/8 [575]	19 1/2 [489]

** STANDARD UNIT WEIGHT IS WITHOUT PACKAGING.
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CORNER A

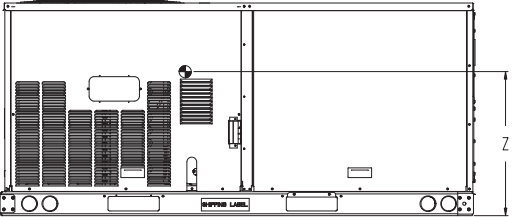
CORNER B



TOP

CORNER D

CORNER C



FRONT

ITC CLASSIFICATION

SHEET

DATE

SUPERCEDES

48GE 04-06 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT

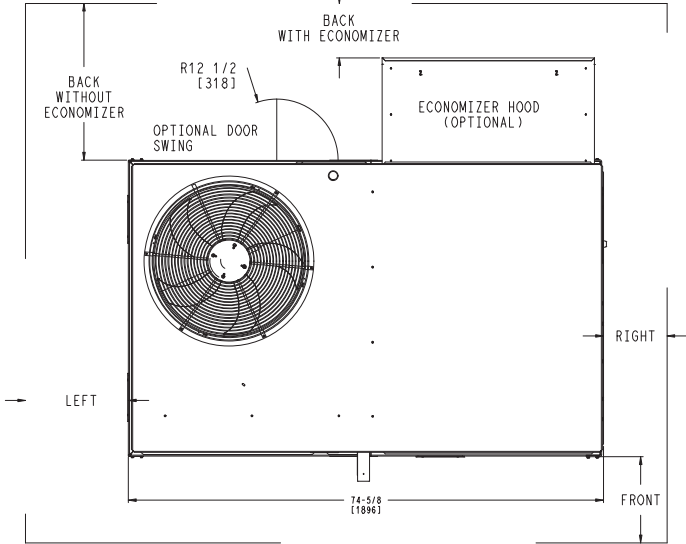
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REV

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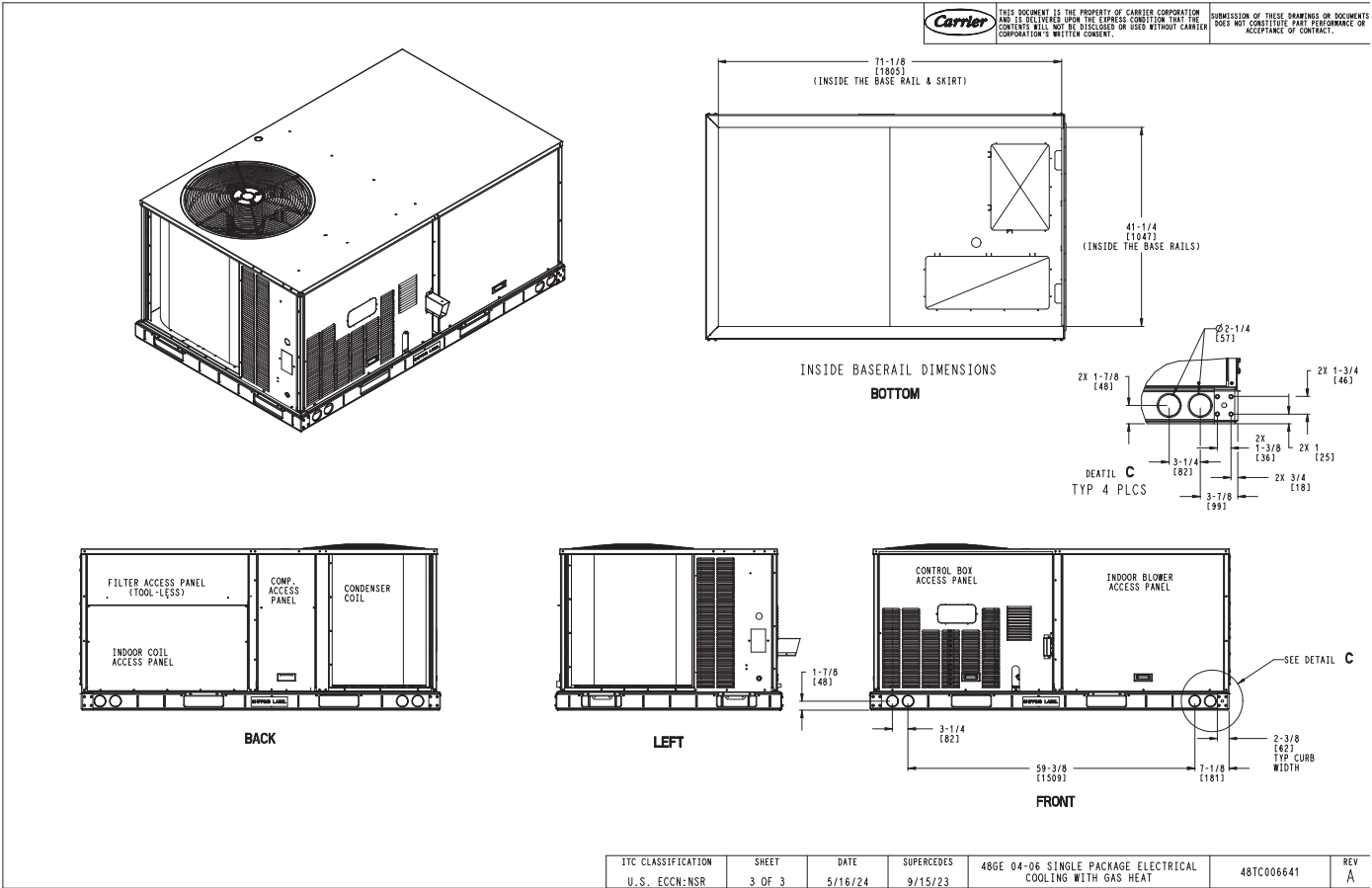
1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/O HOOD	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

Certified Drawing for AC 4

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM



Performance Summary For AC 4

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Part Number:48GEGM06A3A5-3A0A0

Refrigerant:..... **R-454B**
ARI SEER:..... **17.20**
ARI SEER2:..... **16.80**

Base Unit Dimensions

Unit Length:..... **74.4** in
Unit Width:..... **46.6** in
Unit Height:..... **41.4** in

Operating Weight

Base Unit Weight:..... **600** lb
SystemVu Controller:..... **2** lb

Total Operating Weight:..... **602** 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:..... **58.4** F
Evaporator Leaving Air WB:..... **57.2** F
Evaporator Leaving Air Enthalpy:..... **24.53** BTU/lb
Gross Cooling Capacity:..... **62.15** MBH
Gross Sensible Capacity:..... **46.71** MBH
Compressor Power Input:..... **3.89** kW
Coil Bypass Factor:..... **0.039**

Heating Performance

Heating Airflow:..... **2000** CFM
Entering Air Temp:..... **70.0** F
Leaving Air Temp:..... **92.7** F
Gas Heating Input Capacity:..... **60.0** MBH
Gas Heating Output Capacity:..... **49.0** MBH
Temperature Rise:..... **22.7** F
Thermal Efficiency (%):..... **81.0**

Supply Fan

External Static Pressure:..... **0.50** in wg
Fan RPM:..... **1813**
Fan Power:..... **0.63** BHP
NOTE:..... **Selected IFM RPM Range: 1387 - 2836**

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

Electrical Data

Voltage Range:..... **187 - 253**
Compressor #1 RLA:..... **14**
Compressor #1 LRA:..... **150**
Indoor Fan Motor Type:..... **HIGH**
Indoor Fan Motor FLA (Total):..... **6.5**
Combustion Fan Motor FLA (ea):..... **0.48**

Performance Summary For AC 4

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Power Supply MCA:.....27
Power Supply MOC (Fuse or HACR):.....40
Disconnect Size FLA:.....27
Disconnect Size LRA:.....163
Electrical Convenience Outlet:.....None
Outdoor Fan [Qty / FLA (ea)]:.....1 / 2.6

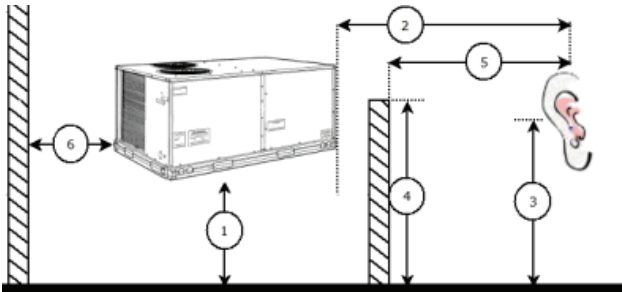
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.0	90.3	85.6
125 Hz	80.6	77.2	84.7
250 Hz	74.7	71.5	80.5
500 Hz	71.6	63.8	76.0
1000 Hz	67.8	66.3	72.4
2000 Hz	64.6	56.6	68.0
4000 Hz	62.2	51.0	62.8
8000 Hz	59.2	44.4	59.3
A-Weighted	74.6	70.8	79.0

Advanced Acoustics



Advanced Acoustics Parameters

- Unit height above ground:.....30.0 ft
- Horizontal distance from unit to receiver:.....50.0 ft
- Receiver height above ground:.....5.7 ft
- Height of obstruction:.....0.0 ft
- Horizontal distance from obstruction to receiver:.....0.0 ft
- 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	53.2	52.3	48.1	43.6	40.0	35.6	30.4	26.9	56.8 Lp
D	27.0	36.2	39.5	40.4	40.0	36.8	31.4	25.8	46.1 LpA

Legend

A Sound Power Levels at Unit's Acoustic Center, Lw

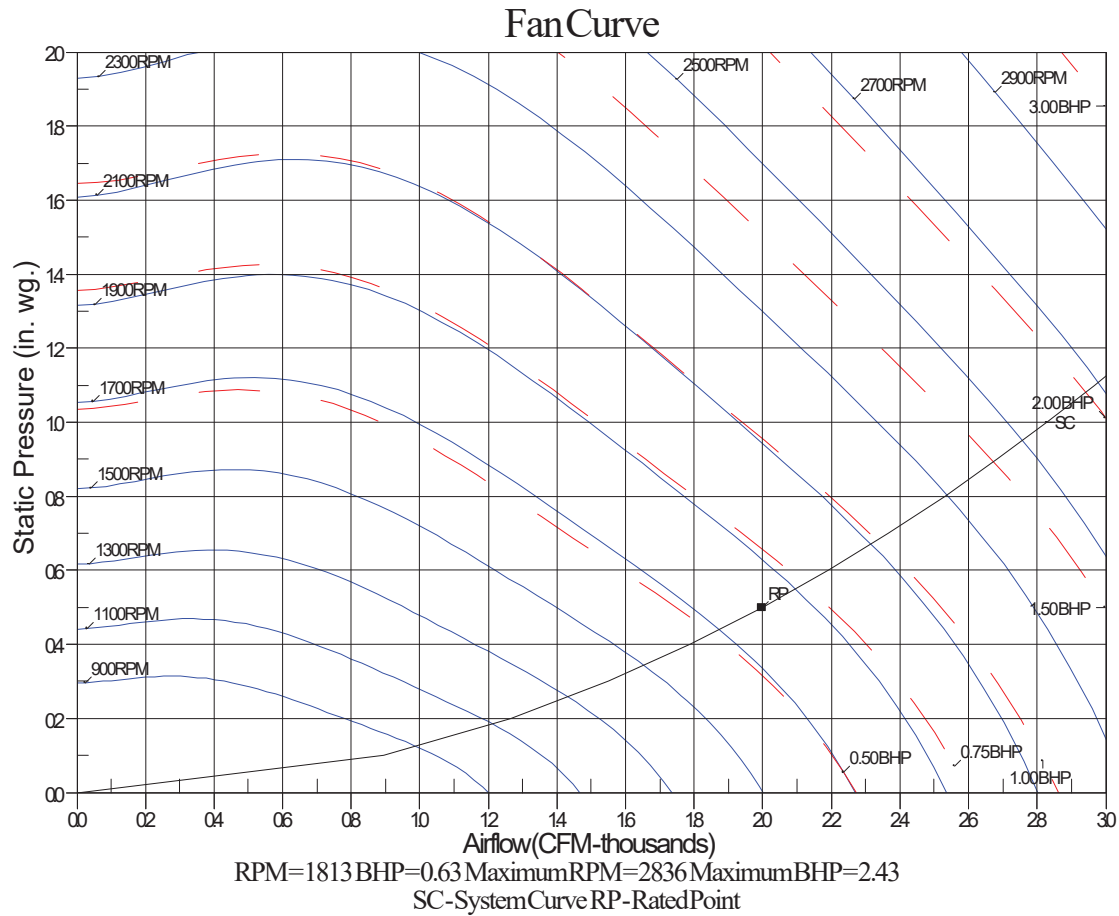
Performance Summary For AC 4

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

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- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.



AC 3

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For AC 3

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Unit Parameters

Unit Model:.....48GEGM05A3A5-3A0A0
Unit Size:.....05 (4 Tons)
Volts-Phase-Hertz:.....208-3-60
Heating Type:.....Gas
Refrigerant:.....R-454B
Heat Control:.....Ultra Low NOx, Low Gas Heat
Duct Cfg:.....Vertical Supply / Vertical Return
DX Options:.....Two Stage Cooling, Single Circuit

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....6' 2.375"
Unit Width:.....3' 10.625"
Unit Height:.....2' 9.375"
Total Operating Weight:.....557 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....1/2
Condensate Drain Line Size:.....3/4
Return Air Filter Type:.....Throwaway
Return Air Filter Quantity:.....2
Return Air Filter Size:.....16 x 25 x 2

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Ultra Low NOx, Low Gas Heat
High Static - EcoBlue Vane Axial Fan
Al/Cu - Al/Cu
SystemVu Controller
Standard Packaging

Warranty Information

1-Year parts(std.)
5-Year compressor parts(std.)
3-Year SystemVu
10-year heat exchanger - Ultra Low NOx modles

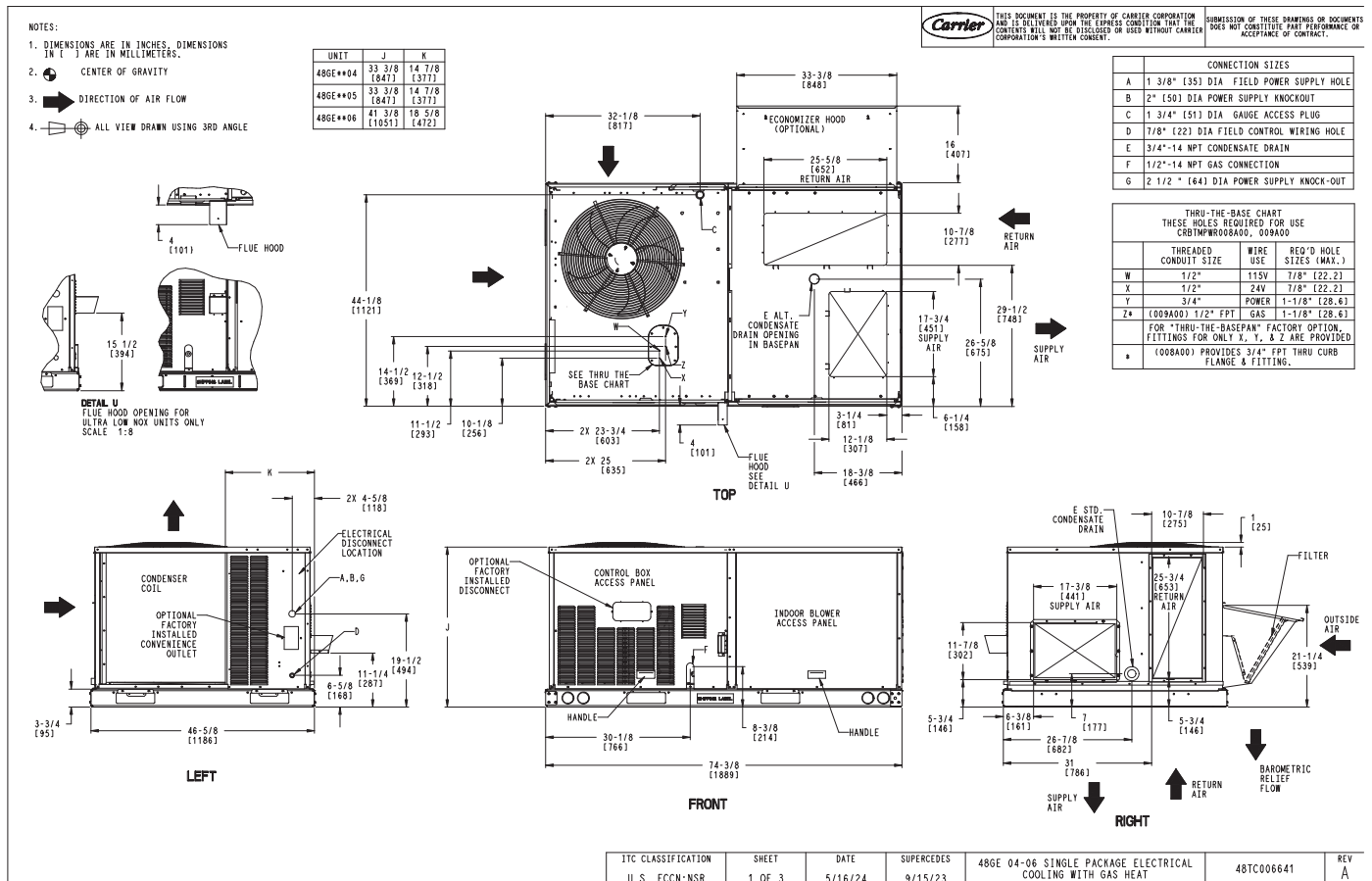
No optional warranties were selected.

Ordering Information

Part Number	Description	Quantity
48GEGM05A3A5-3A0A0	Rooftop Unit	1

Certified Drawing for AC 3

01/22/2025
12:32PM



Certified Drawing for AC 3

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

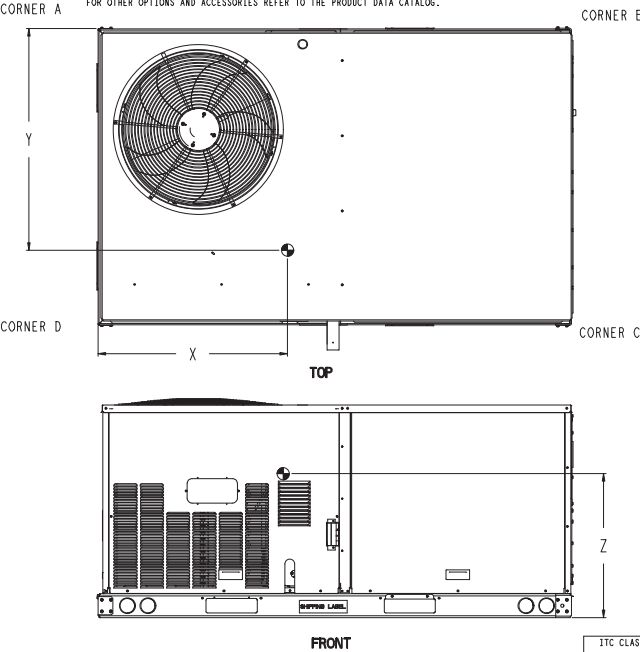
UNIT	STD. UNIT WEIGHT #		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.			HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z	
48GE**04	555	243	129	59	128	58	138	63	139	63	37 [940]	24 1/4 [616]	18 [457]	
48GE**05	555	252	142	64	137	62	135	61	141	64	36 1/2 [927]	23 1/4 [591]	18 [457]	
48GE**06	600	272	161	73	151	68	140	64	149	68	36 [914]	22 1/2 [572]	19 3/8 [492]	

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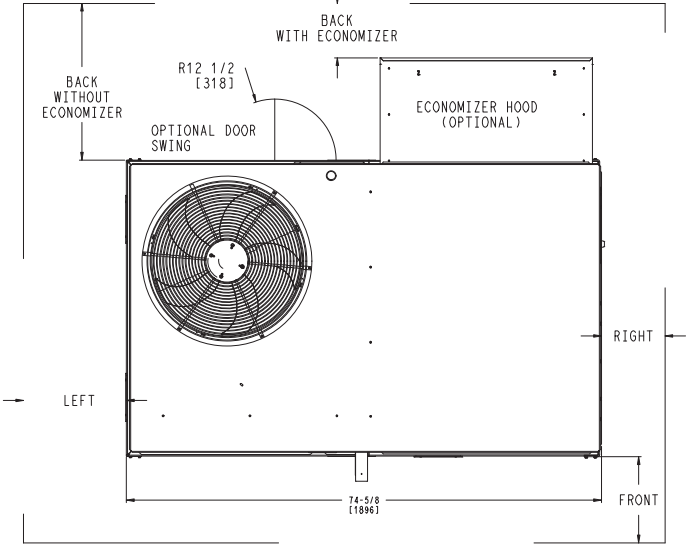
THIS TABLE IS FOR "ULTRA LOW NOX" UNITS ONLY

UNIT	STD. UNIT WEIGHT #		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.			HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z	
48GEG*04	585	256	137	62	134	61	146	66	148	67	36 7/8 [937]	24 3/8 [619]	17 3/4 [451]	
48GEG*05	585	266	149	68	143	65	143	65	149	68	36 3/8 [924]	23 3/8 [594]	18 [457]	
48GEG*06	630	286	168	76	157	71	147	69	158	72	35 7/8 [911]	22 5/8 [575]	19 1/2 [489]	

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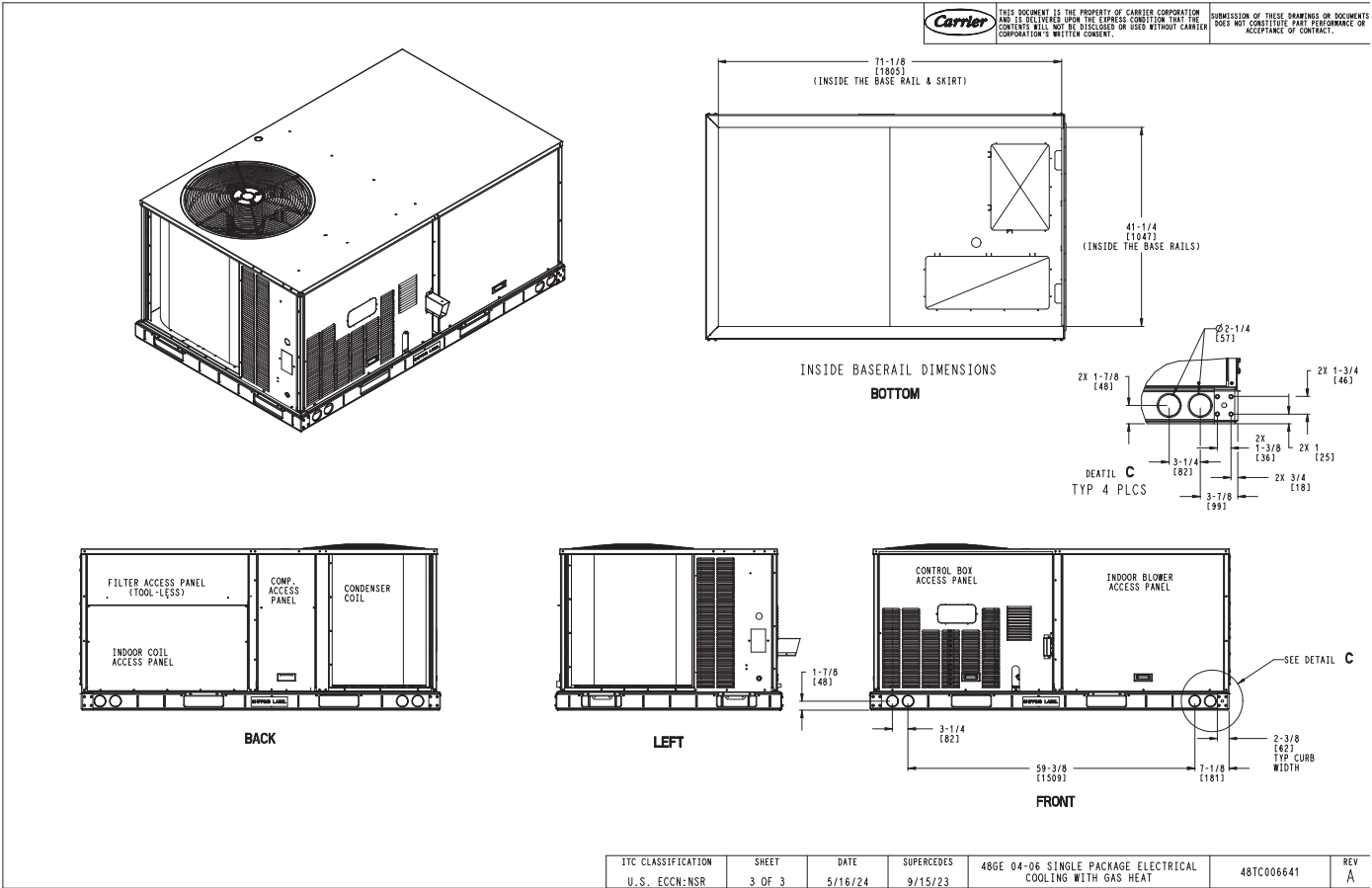


- NOTES:
1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/O HOOD	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 04-06 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT	48TC006641	REV
U.S. ECCN:NSR	2 OF 3	5/16/24	9/15/23			A

Certified Drawing for AC 3



Performance Summary For AC 3

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Part Number:48GEGM05A3A5-3A0A0

Refrigerant:..... **R-454B**
ARI SEER:..... **17.20**
ARI SEER2:..... **16.80**

Base Unit Dimensions

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

Operating Weight

Base Unit Weight:..... **555** lb
SystemVu Controller:..... **2** lb

Total Operating Weight:..... **557** 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:..... **60.0** F
Evaporator Leaving Air WB:..... **58.7** F
Evaporator Leaving Air Enthalpy:..... **25.49** BTU/lb
Gross Cooling Capacity:..... **53.54** MBH
Gross Sensible Capacity:..... **43.28** MBH
Compressor Power Input:..... **3.48** kW
Coil Bypass Factor:..... **0.090**

Heating Performance

Heating Airflow:..... **2000** CFM
Entering Air Temp:..... **70.0** F
Leaving Air Temp:..... **92.7** F
Gas Heating Input Capacity:..... **60.0** MBH
Gas Heating Output Capacity:..... **49.0** MBH
Temperature Rise:..... **22.7** F
Thermal Efficiency (%):..... **81.0**

Supply Fan

External Static Pressure:..... **0.50** in wg
Fan RPM:..... **1930**
Fan Power:..... **0.76** BHP
NOTE:..... **Selected IFM RPM Range: 1262 - 2660**

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

Electrical Data

Voltage Range:..... **187 - 253**
Compressor #1 RLA:..... **14.2**
Compressor #1 LRA:..... **112**
Indoor Fan Motor Type:..... **HIGH**
Indoor Fan Motor FLA (Total):..... **5.5**
Combustion Fan Motor FLA (ea):..... **0.48**

Performance Summary For AC 3

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Power Supply MCA:.....**26**
Power Supply MOCP (Fuse or HACR):.....**30**
Disconnect Size FLA:.....**26**
Disconnect Size LRA:.....**124**
Electrical Convenience Outlet:.....**None**
Outdoor Fan [Qty / FLA (ea)]:.....**1 / 2.6**

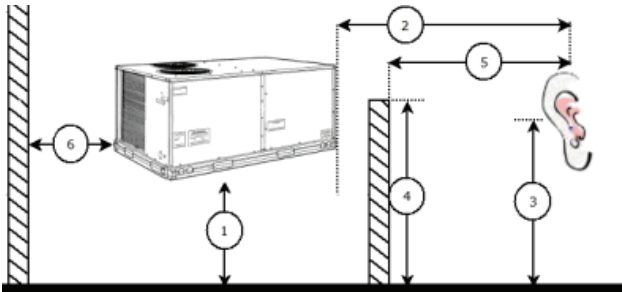
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	91.8	92.3	85.6
125 Hz	82.7	79.3	84.7
250 Hz	76.9	72.8	80.5
500 Hz	73.2	66.1	76.0
1000 Hz	69.8	68.1	72.4
2000 Hz	66.3	58.2	68.0
4000 Hz	63.8	52.9	62.8
8000 Hz	60.3	45.8	59.3
A-Weighted	76.4	72.6	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	53.2	52.3	48.1	43.6	40.0	35.6	30.4	26.9	56.8 Lp
D	27.0	36.2	39.5	40.4	40.0	36.8	31.4	25.8	46.1 LpA

Legend

A Sound Power Levels at Unit's Acoustic Center, Lw

AC-2

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For AC-2

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Unit Parameters

Unit Model:.....**48GEDM07A2A5-3A0A0**
Unit Size:.....**07 (6.0 Tons)**
Volts-Phase-Hertz:.....**208-3-60**
Heating Type:.....**Gas**
Refrigerant:.....**R-454B**
Heat Control:.....**Low Gas Heat**
Duct Cfg:.....**Vertical Supply / Vertical Return**
DX Options:.....**Two Stage Cooling, Single Circuit**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**7' 4.125"**
Unit Width:.....**4' 11.5"**
Unit Height:.....**3' 5.25"**
Total Operating Weight:.....777 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....**1/2**
Condensate Drain Line Size:.....**3/4**
Return Air Filter Type:.....**Throwaway**
Return Air Filter Quantity:.....**4**
Return Air Filter Size:.....**16 x 20 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Standard/Medium Static - EcoBlue Vane Axial Fan
Al/Cu - Al/Cu
SystemVu Controls
Standard Packaging

Warranty Information

No standard warranties.




No optional warranties were selected.

Ordering Information

Part Number	Description	Quantity
48GEDM07A2A5-3A0A0	Rooftop Unit	1

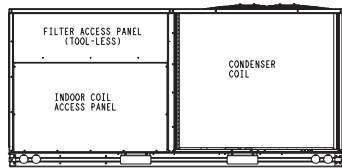
Certified Drawing for AC-2

NOTES:

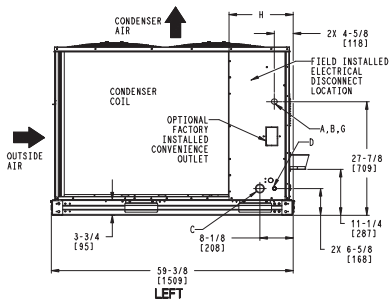
1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN () ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW
4.  ALL VIEW DRAWN USING 3RD ANGLE

UNIT	OUTDOOR COIL TYPE	J	K	H
48GE-W07	RTFF	41 1/4 (1048)	33 3/4 (857)	15 7/8 (403)
48GE-W08	RTFF	49 3/8 (1253)	36 3/8 (925)	15 7/8 (403)
48GE-W09	RTFF	49 5/8 (1257)	36 3/8 (925)	15 7/8 (403)

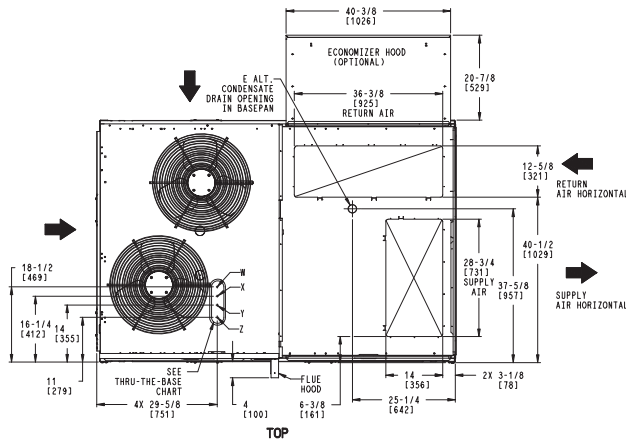
RTFF - ROUND TUBE, PLATE FIN (COPPER/ALUM)



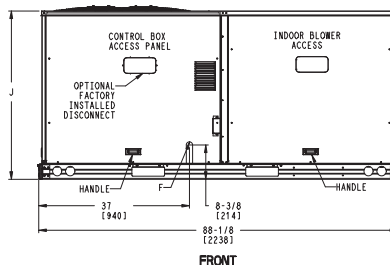
BACK



LEFT



TOP



FRONT



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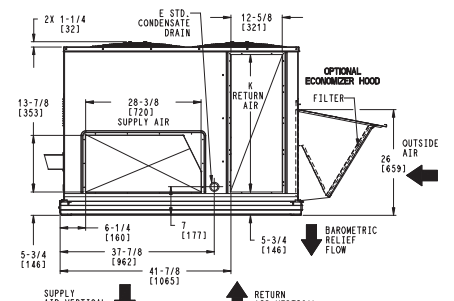
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CONNECTION SIZES			
A	1 3/8" (35)	DIA FIELD POWER SUPPLY HOLE	
B	2 1/2" (64)	DIA POWER SUPPLY KNOCKOUT	
C	1 3/4" (51)	DIA GAUGE ACCESS PLUG	
D	7/8" (22)	DIA FIELD CONTROL WIRING HOLE	
E	3/4"-14 NPT	CONDENSATE DRAIN	
F	1/2"-14 NPT	GAS CONNECTION	
G	3/4"-14 NPT	GAS CONNECTION	
H	2" (51)	DIA POWER SUPPLY KNOCK-OUT	

THRU-THE-BASE CHART (FIELD INST)			
THESE HOLES REQUIRED FOR USE WITH ACCY KITS: CRBTMPW002A01: GAS THRU CURB CRBTMPW004A01: GAS THRU BASEPAN			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)

W	1/2"	ACC.	7/8" (22.2)
X	1/2"	24V	7/8" (22.2)
Y	1 1/4" (102.004)	POWER	1 3/4" (44.4)
Z	(004) 3/4" FPT	GAS	1 3/4" (44.4)
** (002) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING. HOLE SIZE: 2" (50.8)			

THRU-THE-BASE CHART (FIP)			
FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED. **			
FOR BELOW LISTED MODELS, A FIELD SUPPLIED 1/2" ADAPTER IS REQUIRED BETWEEN BASE PAN FITTING AND GAS VALVE: 48GE, S407, 08			



RIGHT

ITC CLASSIFICATION U.S. ECCN: NSR	SHEET 1 OF 3	DATE 5/20/24	SUPERCEDES -	48GE 07-09 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM009899	REV -
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Certified Drawing for AC-2

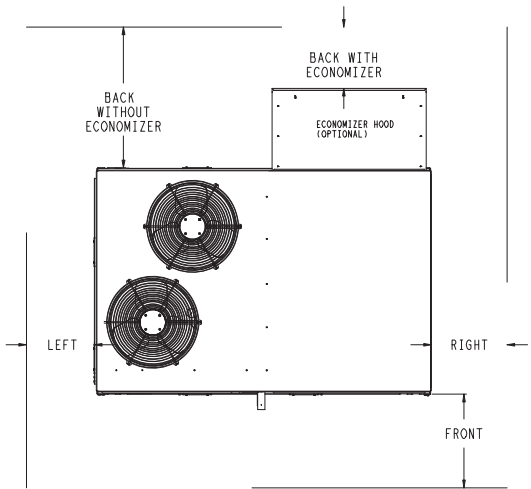
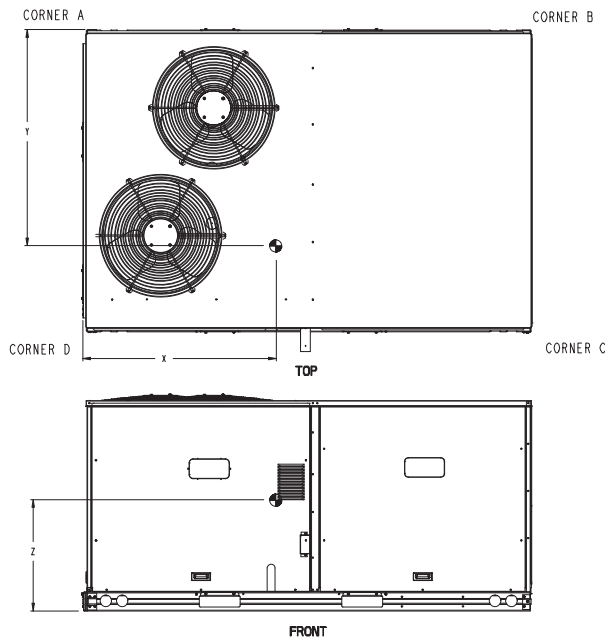
Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT ***		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48GE-M07	RTPF	775	352	187	85	159	72	198	90	232	105	40 1/2 [1029]	33 [838]	19 7/8 [505]
48GE-M08	RTPF	893	405	203	92	169	76	237	107	285	129	40 [1016]	34 3/4 [883]	18 5/8 [473]
48GE-M09	RTPF	893	405	203	92	169	76	237	107	285	129	40 [1016]	34 3/4 [883]	18 5/8 [473]

RTPF = ROUND TUBE, PLATE FIN (COPPER/ALUM)

*** STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

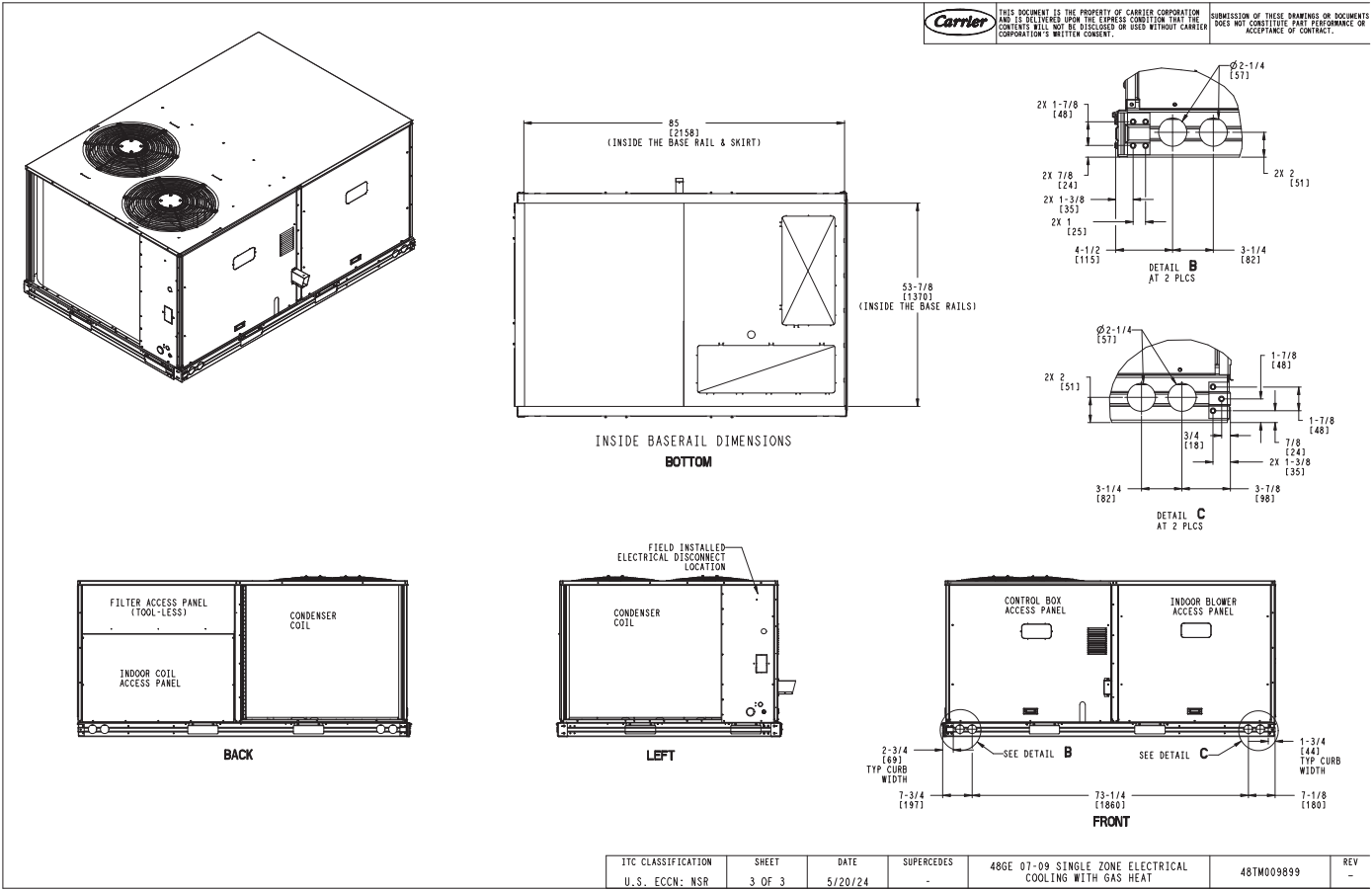


NOTE:
1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/O ECON	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/ECON	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 07-09 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM009899	REV
U.S. ECCN:NSR	2 OF 3	5/20/24	-			-

Certified Drawing for AC-2



Performance Summary For AC-2

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Part Number:48GEDM07A2A5-3A0A0

Refrigerant:..... **R-454B**
ARI EER:..... **12.20**
IEER:..... **17.5**

Base Unit Dimensions

Unit Length:..... **88.1** in
Unit Width:..... **59.5** in
Unit Height:..... **41.3** in

Operating Weight

Base Unit Weight:..... **775** lb
SystemVu Controls:..... **2** lb

Total Operating Weight:..... **777** lb

Unit

Unit Voltage-Phase-Hertz:..... **208-3-60**
Air Discharge:..... **Vertical**
Fan Drive Type:..... **Vane Axial**
Actual Airflow:..... **2400** 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:..... **57.3** F
Evaporator Leaving Air WB:..... **56.8** F
Evaporator Leaving Air Enthalpy:..... **24.29** BTU/lb
Gross Cooling Capacity:..... **77.24** MBH
Gross Sensible Capacity:..... **58.73** MBH
Compressor Power Input:..... **4.51** kW
Coil Bypass Factor:..... **0.083**

Heating Performance

Heating Airflow:..... **2400** CFM
Entering Air Temp:..... **70.0** F
Leaving Air Temp:..... **92.8** F
Gas Heating Input Capacity:..... **55.0 / 72.0** MBH
Gas Heating Output Capacity:..... **41.0 / 59.0** MBH
Temperature Rise:..... **22.8** F
Thermal Efficiency (%):..... **82.0**

Supply Fan

External Static Pressure:..... **0.50** in wg
Fan RPM:..... **1245**
Fan Power:..... **0.71** BHP
NOTE:..... **Selected IFM RPM Range: 849 - 2000**

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

Electrical Data

Voltage Range:..... **187 - 253**
Compressor #1 RLA:..... **12.8**
Compressor #1 LRA:..... **103**
Compressor #2 RLA:..... **8.3**
Compressor #2 LRA:..... **68**
Indoor Fan Motor Type:..... **MED**

Performance Summary For AC-2

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

01/22/2025
12:32PM

Indoor Fan Motor FLA (Total):	6.4
Combustion Fan Motor FLA (ea):	0.48
Power Supply MCA:	34
Power Supply MOCP (Fuse or HACR):	45
Disconnect Size FLA:	35
Disconnect Size LRA:	188
Electrical Convenience Outlet:	None
Outdoor Fan [Qty / FLA (ea)]:	2 / 1.5

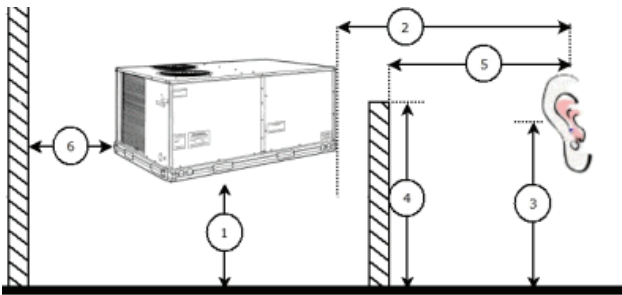
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	84.1	81.1	90.1
125 Hz	79.4	74.6	82.6
250 Hz	70.4	66.9	81.0
500 Hz	67.9	60.6	79.4
1000 Hz	68.7	60.2	77.0
2000 Hz	63.6	53.6	73.0
4000 Hz	58.3	47.3	70.4
8000 Hz	49.5	44.2	66.7
A-Weighted	72.7	65.7	82.0

Advanced Acoustics



Advanced Accoustics 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	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7	91.8 Lw
B	63.9	66.5	72.4	76.2	77.0	74.2	71.4	65.6	82.0 LwA
C	57.7	50.2	48.6	47.0	44.6	40.6	38.0	34.3	59.4 Lp
D	31.5	34.1	40.0	43.8	44.6	41.8	39.0	33.2	49.6 LpA

Performance Summary For AC-2

Project: San Bernardino Old Crime Lab
Prepared By: Ryan Walsh

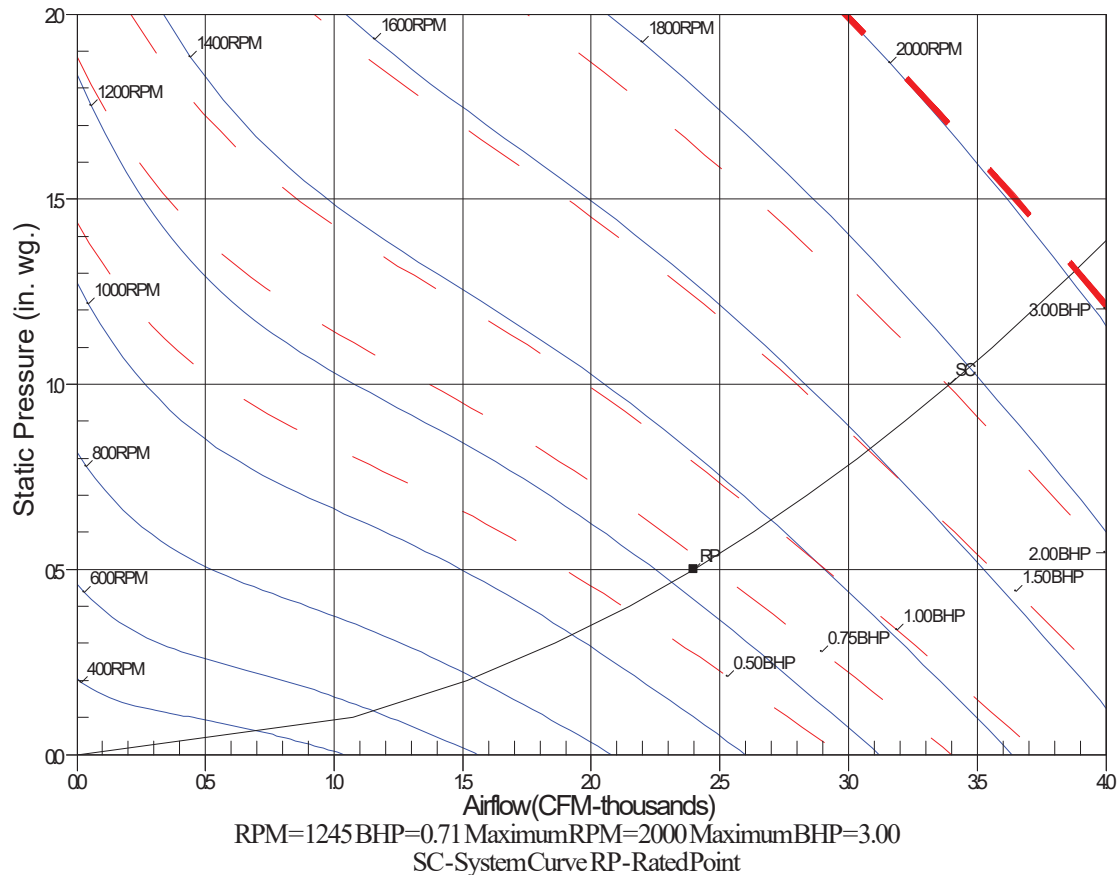
01/22/2025
12:32PM

Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

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.

Fan Curve





SUBMITTAL

Project

San Bernardino County Sherrif HQ

Date

Wednesday, January 22, 2025

Ryan Walsh

Table Of Contents

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

FC 1-3	3
Unit Report	4
Certified Drawing	5
Performance Summary	7
AC 1-2	8
Unit Report	9
Certified Drawing	10
Performance Summary	14
AC-3,4	17
Unit Report	18
Certified Drawing	19
Performance Summary	20

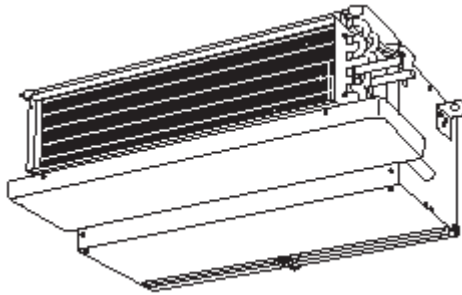
FC 1-3

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For FC 1-3

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM



Unit Parameters

Tag Name:..... **FC 1-3**
Quantity:..... **3**
Unit Model:..... **42CEA04GRJYDCYER**
Unit Type: **42CE Ceiling, Furred-In with Plenum**
Unit Size:..... **400 CFM**
Shipping Options:..... **Standard**
Fan Speed:..... **High**
Motor/Drive:..... **ECM Motor Variable Air Flow**

Coil Parameters

System Type:..... **4-Pipe Heating and Cooling**
Cooling Coil:..... **Cold Fluid Cooling**
Cooling Coil Rows:..... **4 rows**
Coil Hand:..... **Right Hand**
Hydronic Coil Test Pressure: **350 psig Coil Test Pressure**

Electrical

Motor Voltage: **208-1-60 ECM V2 Variable Airflow for 0-10VDC input**
.....V-Ph-Hz

Warranty Information

First Year - Parts Only (Standard)

Ordering Information

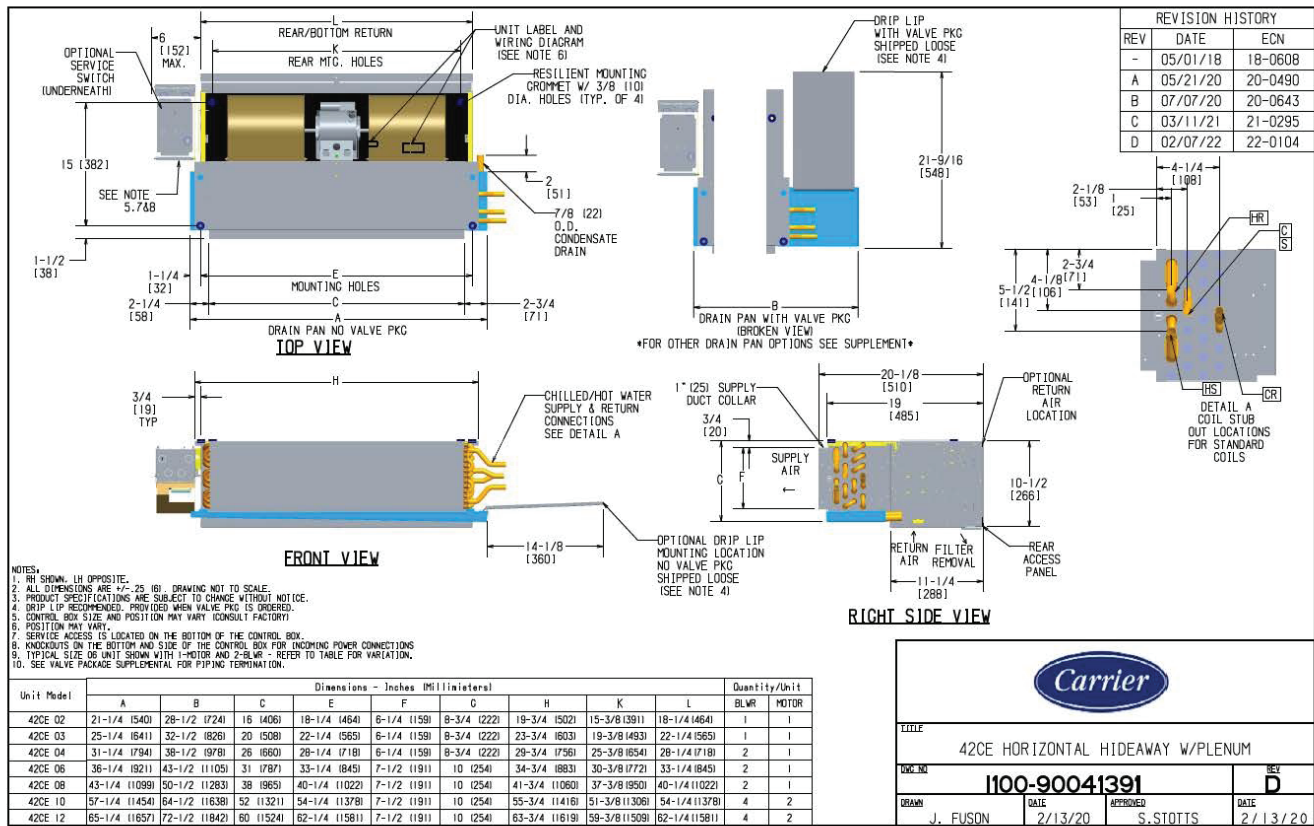
Part Number	Description	Quantity
Base Unit		
	42CEA04GRJYDCYER	3
	42CEA04:Ceiling, Furred-In with Plenum Fan Coil Unit 400 CFM Cooling 208-1-60 ECM V2 Variable Airflow for 0-10VDC input	
	1" Pleated MERV 8 filter	
	4-Row Cooling, High Capacity 4-Row plus a 1-Row Heating Coil - For a 4-1-Row Heating, Opp. end conn.	
	208-1-60 ECM V2 Variable Airflow for 0-10VDC input	
	Unit Arrangement 5 + Closed Cell Insulation	
	24V Controls by other	

Not all valve components are rated for the selected Hydronic Coil Test Pressure. Refer to the valve component cut sheets in the Product Library, under Help.

Certified Drawing for FC 1-3

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

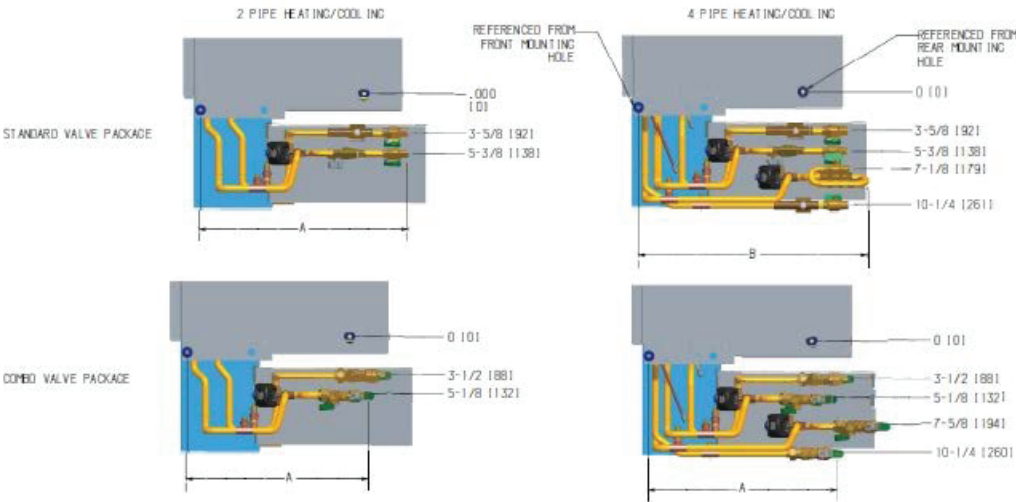


Certified Drawing for FC 1-3

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

REVISION HISTORY		
REV	DATE	ECN
-	05/01/18	18-0608



PARTIAL TOP VIEW OF 42CE/42CA UNITS

DIMENSIONS - INCHES AND (MILLIMETERS)		
	A	B
NO COMBO VALVES		
3 WAY TACO/VERTE COOL	19 1/8 (486)	
3 WAY TACO/VERTE HEAT	19 1/4 (489)	21 1/8 (537)
3 WAY MODULATING COOL	19 1/8 (486)	
3 WAY MODULATING HEAT	19 1/4 (489)	21 9/16 (548)
2 WAY TACO/VERTE COOL	19 1/8 (486)	
2 WAY TACO/VERTE HEAT	19 1/4 (489)	21 1/8 (537)
2 WAY MODULATING COOL	19 1/8 (486)	
2 WAY MODULATING HEAT	21 1/8 (537)	21 9/16 (548)
COMBO VALVES	SUPPLY/RETURN	
3 WAY TACO/VERTE COOL	17 5/16 (440) / 19 1/4 (489)	
3 WAY TACO/VERTE HEAT	20 7/8 (530) / 19 1/4 (489)	
3 WAY MODULATING COOL	19 1/8 (486) / 18 1/16 (459)	
3 WAY MODULATING HEAT	20 7/8 (530) / 20 7/8 (530)	
2 WAY TACO/VERTE COOL	18 1/4 (464) / 18 5/8 (422)	
2 WAY TACO/VERTE HEAT	21 5/8 (549) / 17 3/8 (441)	
2 WAY MODULATING COOL	19 3/16 (487) / 16 5/8 (422)	
2 WAY MODULATING HEAT	19 7/16 (494) / 18 13/16 (477)	

NOTES:
1. ALL DIMENSIONS ARE ± 1/4" (6.3 MM)

NA
COMBO VLV
CONNECTION DOES
NOT EXCEED
DISTANCE
"A"



TITLE VALVE PACKAGE SUPPLEMENT 42CE/42CA UNITS			
1100-90041802		REV -	
DESIGN J. FUSON	DATE 03/19/20	APPROVED S. STOTTS	DATE 03/19/20

Performance Summary For FC 1-3

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Unit Parameters

Tag Name: FC 1-3
Quantity: 3
Unit Model: 42CEA04GRJYDCYER
Unit Type: 42CE Ceiling, Furred-In with Plenum
Unit Size: 400 CFM
System Type: 4-Pipe Heating and Cooling
Cooling Coil: Cold Fluid Cooling
Cooling Coil Rows: 4 rows
Heating Coil: Hot Fluid Heating
Heating Coil Rows: 1 row
Coil Hand: Right Hand
Coil Wrapping: None
Shipping Options: Standard
Fan Speed: High
Motor/Drive: ECM Motor Variable Air Flow

Unit Performance

Actual Airflow: 402.0 CFM
Altitude: 0 ft
External Static Pressure: .29 in wg
Voltage: 208-1-60 ECM V2 Variable Airflow for 0-10VDC
input V-Ph-Hz

External Static Pressure includes .09 in wg for filter static.

Cooling Data

Coil Type: Cold Fluid Cooling
Coil Rows: 4 rows
Fluid Type: Fresh Water
Total Capacity: 14,304 BTU/hr
Sensible Capacity: 10,126 BTU/hr
Entering Air Dry Bulb Temperature: 80.0 F
Entering Air Wet Bulb Temperature: 67.0 F
Leaving Air Dry Bulb Temperature: 57.1 F
Leaving Air Wet Bulb Temperature: 55.6 F
Fluid Flow Rate: 2.8 gpm
Fluid Pressure Drop: 25.00 ft wg
Fluid Entering Temperature: 45.0 F
Fluid Leaving Temperature: 55.0 F

Heating Data

Coil Type: Hot Fluid Heating
Coil Rows: 1 row
Fluid Type: Fresh Water
Sensible Capacity: 17,505 BTU/hr
Entering Air Temperature: 60.0 F
Leaving Air Temperature: 99.5 F
Fluid Flow Rate: 1.8 gpm
Fluid Entering Temperature: 180.0 F
Fluid Leaving Temperature: 160.0 F
Fluid Pressure Drop: 2.10 ft wg

Electrical Data

Motor Voltage: 208-1-60 ECM V2 Variable Airflow for 0-10VDC input V-Ph-Hz
Motor FLA: 1.4
Unit MCA: 1.75
MFS: 15

Acoustical Data:

Octave Band Center Frequency, Hz	125	250	500	1k	2k	4k	8k	dBA
Sound Power Data								
Radiated Sound Power, dB	65	64	63	58	53	48	44	64
Discharge Sound Power, dB	68	59	61	58	54	47	43	63

Factory-Installed Options

Coil Connections: Opposite end
Unit Arrangement: Bottom Return / Front Supply
Filters: 1" Pleated MERV 8 filter
Drain Pans: Stainless Steel Standard Drain Pan
Coil Hand: Right Hand
AAV / Drains: Manual Air Vents only
Control Packages: 24V Controls by other
Insulation: Closed Cell Insulation
Packaging: Units shipped on treated wood pallet
Hydronic Coil Test Pressure: 350 psig Coil Test Pressure

AC 1-,2

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For AC 1-,2

Project: San Bernardino County Sherri HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Unit Parameters

Unit Model:.....**50FE-M28A2A6-3A0A0**
Unit Size:.....**28 (25.0 Tons)**
Volts-Phase-Hertz:.....**460-3-60**
Heating Type:.....**None**
Refrigerant:.....**R-454B**
Heat Control:.....**Two-Stage Cooling, Single Circuit**
Duct Cfg:.....**Vertical Supply / Vertical Return**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**11' 9.5"**
Unit Width:.....**7' 2.375"**
Unit Height:.....**3' 11.75"**
Total Operating Weight:.....2047 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Condensate Drain Line Size:.....**3/4**
Return Air Filter Type:.....**Throwaway**
Return Air Filter Quantity:.....**9**
Return Air Filter Size:.....**16 x 25 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Std / Med Static - EcoBlue Vane Axial, Vertical Supply
Al/Cu - Al/Cu
SystemVu Controller
Standard Packaging

Warranty Information

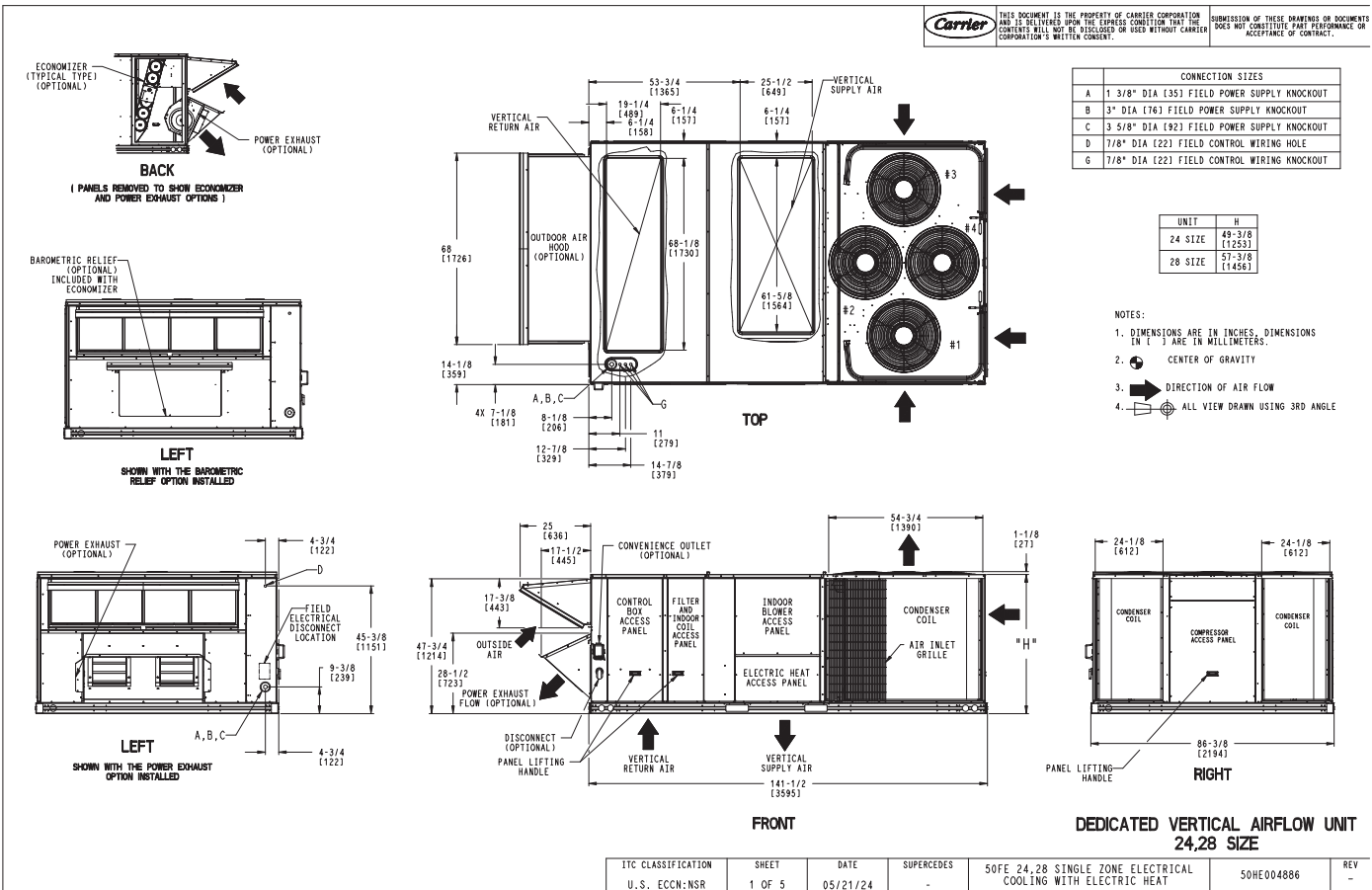
5-Year compressor parts (STD.)
1-Year parts (STD.)

No optional warranties were selected.

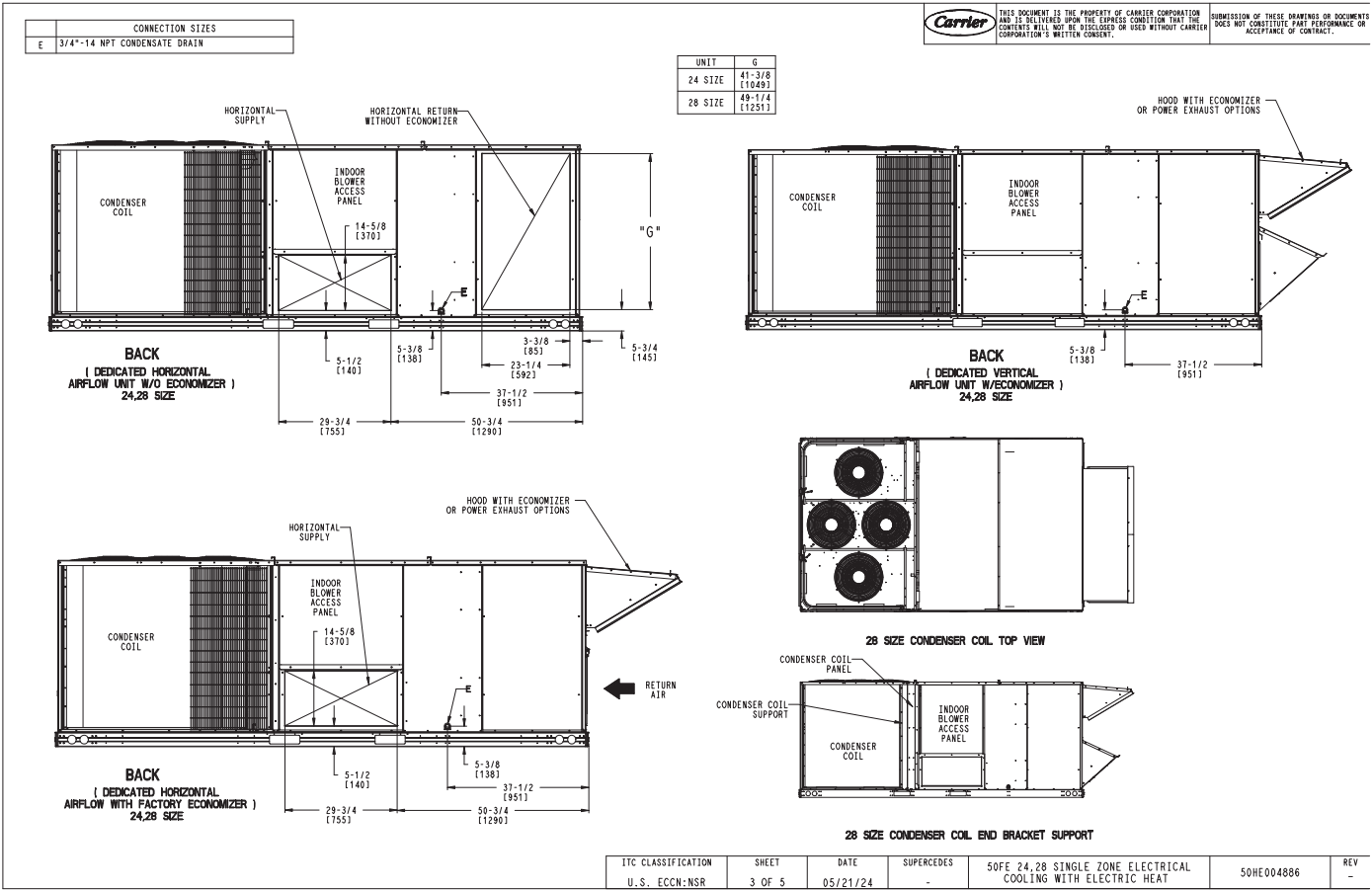
Ordering Information

Part Number	Description	Quantity
50FE-M28A2A6-3A0A0	Rooftop Unit	2

Certified Drawing for AC 1-2



Certified Drawing for AC 1-2



Certified Drawing for AC 1-2

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
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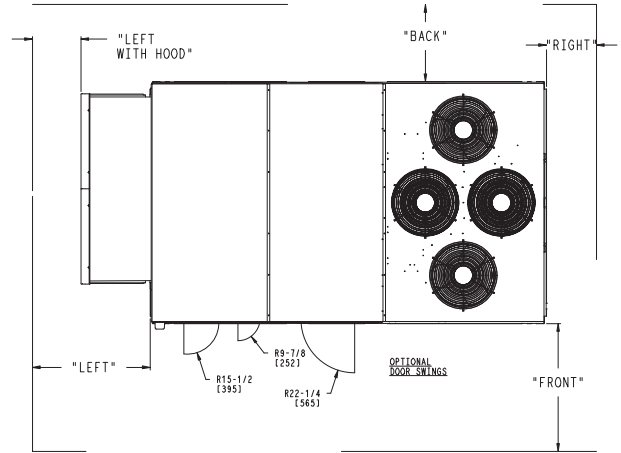
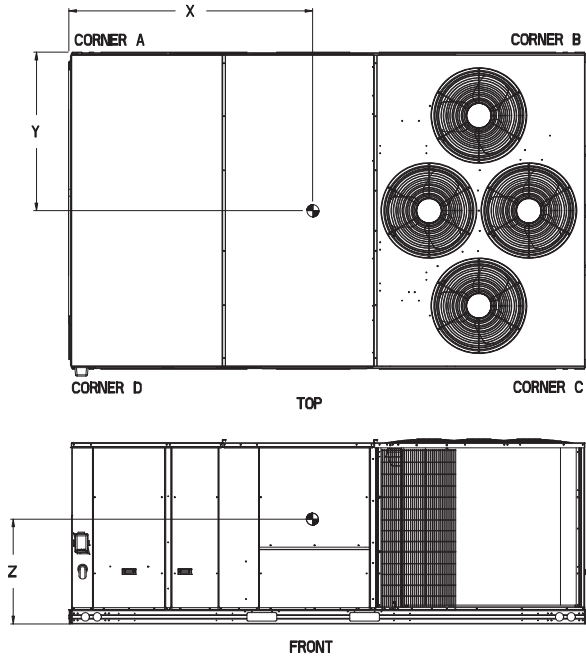
UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50FE 24	1813	850	402	182	473	215	538	244	458	208	16 1/2 [1843]	46 [1168]	16 1/2 [419]
50FE 28	2047	929	431	195	549	249	597	271	469	213	19 1/4 [2013]	45 [1143]	19 [483]



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* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



NOTES:

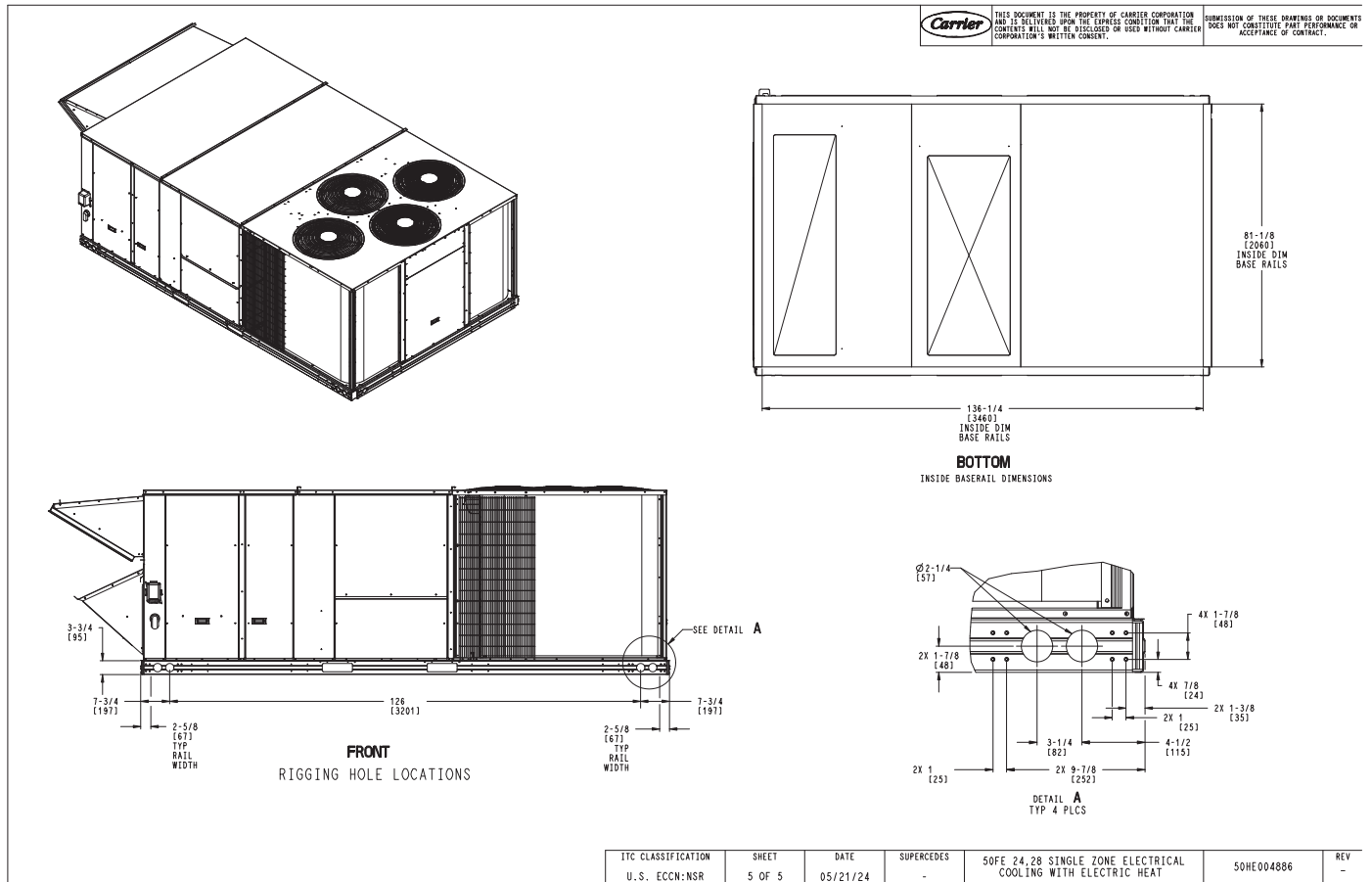
- CLEARANCE ABOVE THE UNIT TO BE 72"
- FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK	42 [1067mm]	36 [914mm]	18 [457mm]
LEFT WITH HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	50FE 24, 28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE004886	REV
U.S. ECCN:NSR	4 OF 5	05/21/24	-			-

Project: San Bernardino County Sherriif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM



Performance Summary For AC 1-,2

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Part Number:50FE-M28A2A6-3A0A0

Refrigerant:..... R-454B
ARI EER:..... 10.00
IEER:..... 14.2

Base Unit Dimensions

Unit Length:..... 141.5 in
Unit Width:..... 86.4 in
Unit Height:..... 47.8 in

Operating Weight

Base Unit Weight:..... 2047 lb

Total Operating Weight:..... 2047 lb

Unit

Unit Voltage-Phase-Hertz:..... 460-3-60
Air Discharge:..... Vertical
Fan Drive Type:..... Vane Axial
Actual Airflow:..... 10000 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:..... 58.8 F
Evaporator Leaving Air WB:..... 57.6 F
Evaporator Leaving Air Enthalpy:..... 24.77 BTU/lb
Gross Cooling Capacity:..... 300.08 MBH
Gross Sensible Capacity:..... 228.51 MBH
Compressor Power Input:..... 24.85 kW
Coil Bypass Factor:..... 0.078

Supply Fan

External Static Pressure:..... 0.50 in wg
Fan RPM:..... 1624
Fan Power:..... 4.02 BHP
NOTE:..... Selected IFM RPM Range: 1105 - 2200

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

Electrical Data

Voltage Range:..... 414 - 506
Compressor #1 RLA:..... 21.6
Compressor #1 LRA:..... 147
Compressor #2 RLA:..... 21.6
Compressor #2 LRA:..... 147
Indoor Fan Motor Type:..... MED
Indoor Fan Motor FLA (Total):..... 3.5
Power Supply MCA:..... 59
Power Supply MOCP (Fuse or HACR):..... 80
Disconnect Size FLA:..... 62
Disconnect Size LRA:..... 312
Electrical Convenience Outlet:..... None
Outdoor Fan [Qty / FLA (ea)]:..... 4 / 0.9

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Performance Summary For AC 1-2

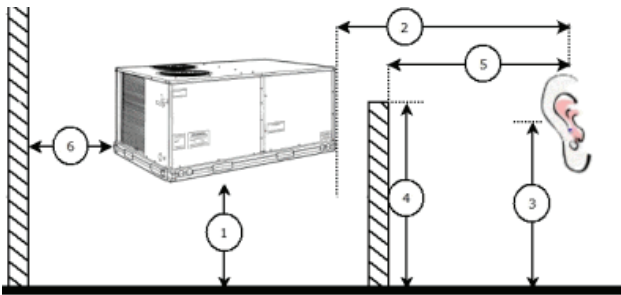
Project: San Bernardino County Sheriff HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	91.8	77.9	97.1
125 Hz	91.0	74.8	88.3
250 Hz	89.2	70.9	84.4
500 Hz	85.9	68.7	83.3
1000 Hz	81.6	69.2	80.7
2000 Hz	78.1	61.4	77.4
4000 Hz	73.5	53.0	73.4
8000 Hz	63.8	43.6	67.3
A-Weighted	87.8	72.2	85.9

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	97.1	88.3	84.4	83.3	80.7	77.4	73.4	67.3	98.1 Lw
B	70.9	72.2	75.8	80.1	80.7	78.6	74.4	66.2	85.9 LwA
C	64.7	55.9	52.0	50.9	48.3	45.0	41.0	34.9	65.7 Lp
D	38.5	39.8	43.4	47.7	48.3	46.2	42.0	33.8	53.5 LpA

Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
 B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
 C Sound Pressure Levels at Specific Distance from Unit, Lp
 D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

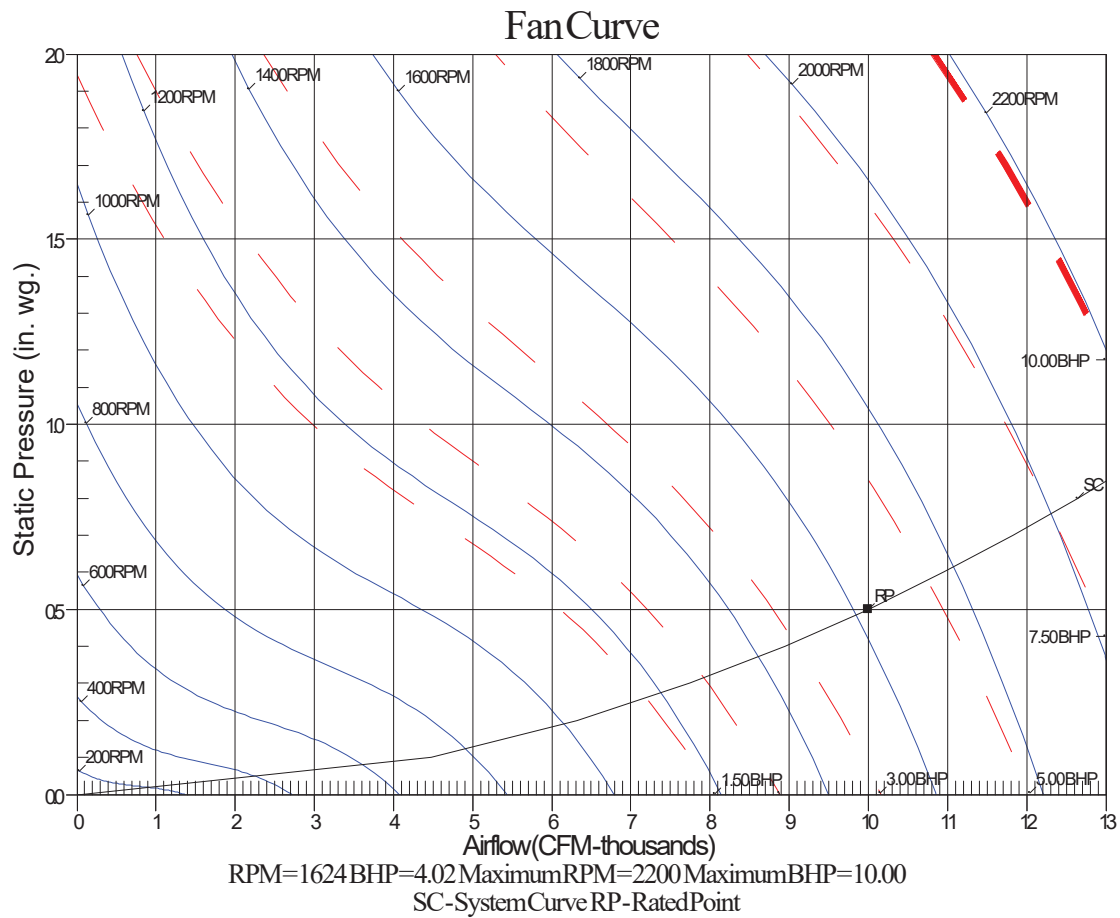
Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system 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

Performance Summary For AC 1-2

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Acoustical Engineer or a person with sound prediction expertise should be consulted.



AC-3,4

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For AC-3,4

Project: San Bernardino County Sherri HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Unit Parameters

Unit Model:.....50FE-A06A2A6-3A0A0
Unit Size:.....06 (5 Tons)
Volts-Phase-Hertz:.....460-3-60
Heating Type:.....None
Refrigerant:.....R-454B
Heat Control:One Stage Compressor Models (04-06)
Duct Cfg:.....Vertical Supply / Vertical Return

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....6' 2.375"
Unit Width:.....3' 10.625"
Unit Height:.....2' 9.375"
Total Operating Weight:.....513 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Condensate Drain Line Size:.....3/4
Return Air Filter Type:.....Throwaway
Return Air Filter Quantity:.....2
Return Air Filter Size:.....16 x 25 x 2

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Direct Drive - EcoBlue - Standard/Medium Static
Al/Cu - Al/Cu
SystemVu Controller
Standard Packaging

Warranty Information

5-Year compressor parts (STD.)
1-Year parts (STD.)




No optional warranties were selected.

Ordering Information

Part Number	Description	Quantity
50FE-A06A2A6-3A0A0	Rooftop Unit	1

Project: San Bernardino County Sherriif HQ
Prepared By: Ryan Walsh

NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW
4.  ALL VIEW DRAWN USING 3RD ANGLE

UNIT	J	K
50FE**04	33 3/8 [847]	18 5/8 [472]
50FE**05	33 3/8 [847]	14 7/8 [377]
50FE**06	33 3/8 [847]	14 7/8 [377]
50FE**07	41 3/8 [1051]	18 5/8 [472]

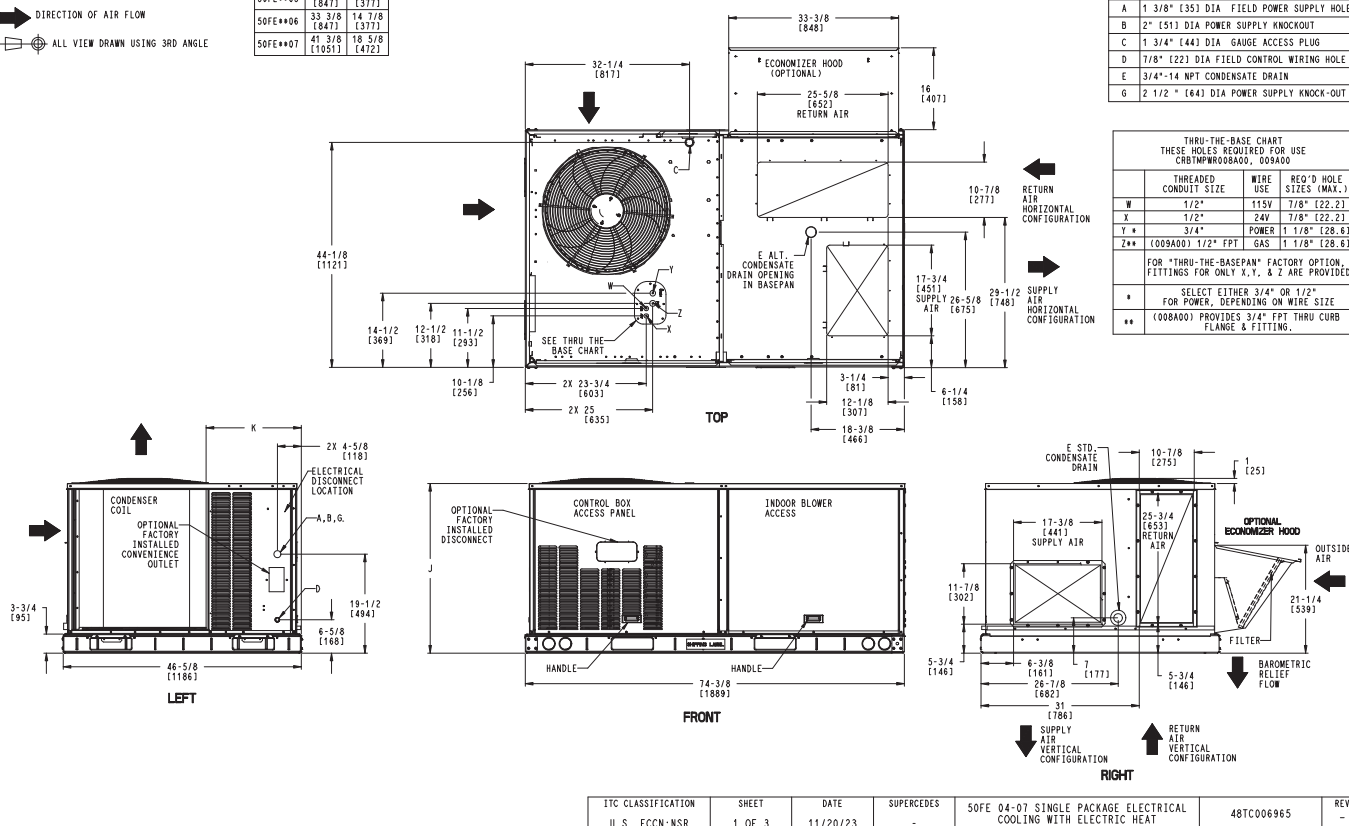


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	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2" [51] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [44] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2 1/2" [64] DIA POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE C8B1FMR008A00, 009A00			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZE (MAX.)
W	1/2"	115V	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y *	3/4"	POWER	1 1/8" [28.6]
Z **	(009A00) 1/2" FPT	GAS	1 1/8" [28.6]
FOR "THRU-THE-BASEP" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED			
*	SELECT EITHER 3/4" OR 1/2" FOR POWER, DEPENDING ON WIRE SIZE		
**	(008A00) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING.		



Performance Summary For AC-3,4

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Part Number:50FE-A06A2A6-3A0A0

Refrigerant:..... **R-454B**
ARI SEER:..... **14.00**
ARI SEER2:..... **13.40**

Base Unit Dimensions

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

Operating Weight

Base Unit Weight:..... **511** lb
SystemVu Controller:..... **2** lb

Total Operating Weight:..... **513** lb

Unit

Unit Voltage-Phase-Hertz:..... **460-3-60**
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:..... **58.6** F
Evaporator Leaving Air WB:..... **57.2** F
Evaporator Leaving Air Enthalpy:..... **24.55** BTU/lb
Gross Cooling Capacity:..... **62.01** MBH
Gross Sensible Capacity:..... **46.17** MBH
Compressor Power Input:..... **4.05** kW
Coil Bypass Factor:..... **0.129**

Supply Fan

External Static Pressure:..... **0.50** in wg
Fan RPM:..... **1725**
Fan Power:..... **0.54** BHP
NOTE:..... **Selected IFM RPM Range: 1301 - 2390**

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

Electrical Data

Voltage Range:..... **414 - 506**
Compressor #1 RLA:..... **7.8**
Compressor #1 LRA:..... **58**
Indoor Fan Motor Type:..... **MED**
Indoor Fan Motor FLA (Total):..... **2.1**
Power Supply MCA:..... **13**
Power Supply MOCP (Fuse or HACR):..... **20**
Disconnect Size FLA:..... **12**
Disconnect Size LRA:..... **63**
Electrical Convenience Outlet:..... **None**
Outdoor Fan [Qty / FLA (ea)]:..... **1 / 0.8**

Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

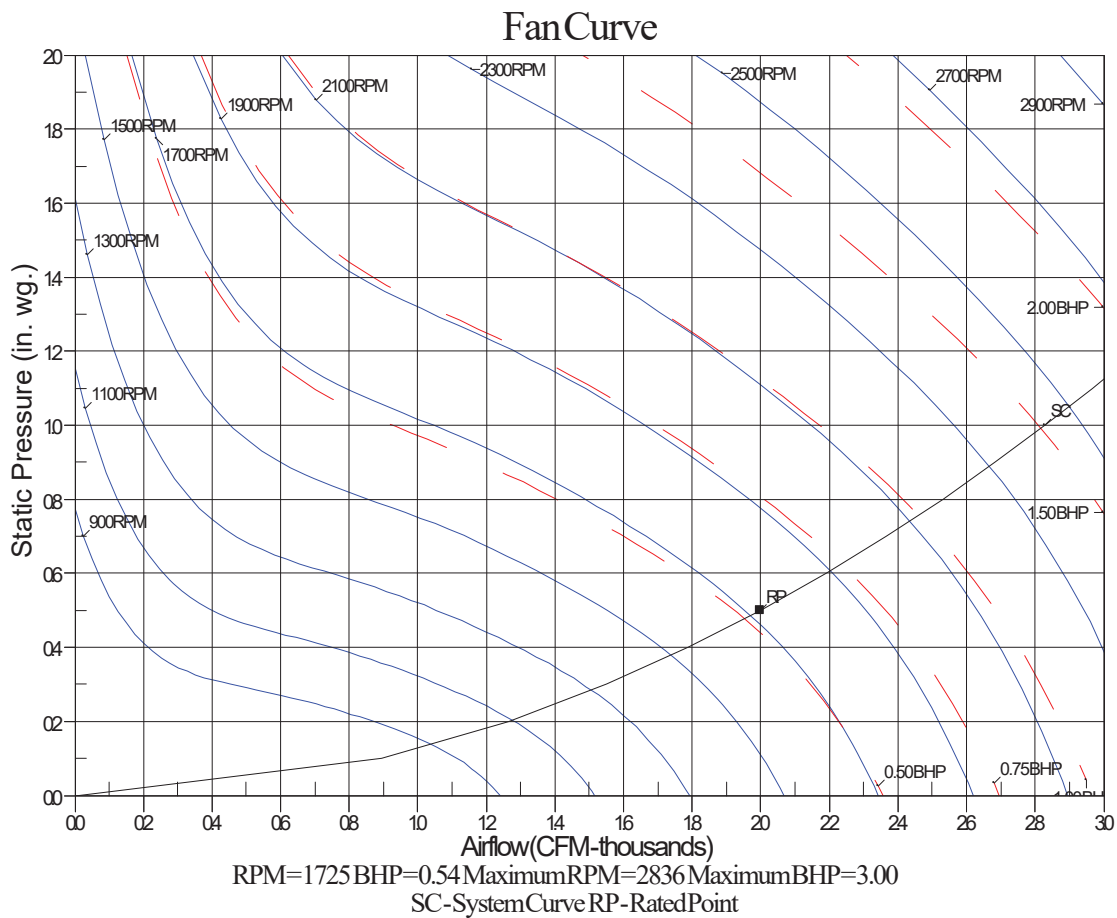
Performance Summary For AC-3,4

Project: San Bernardino County Sherrif HQ
Prepared By: Ryan Walsh

03/03/2025
10:35AM

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	88.5	88.6	NA
125 Hz	78.8	75.6	NA
250 Hz	73.0	70.4	NA
500 Hz	70.4	61.9	NA
1000 Hz	66.2	64.9	NA
2000 Hz	63.3	55.3	NA
4000 Hz	61.0	49.5	NA
8000 Hz	58.3	43.3	NA





SUBMITTAL

Project

San Bernadino County Sherriff Station AHU

Date

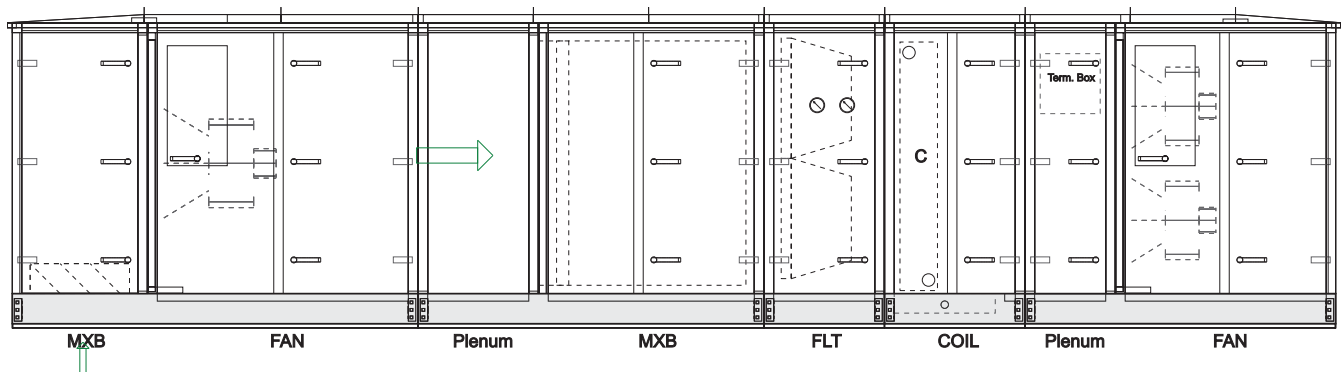
2024-12-30

Amanda Kawar

Project:	San Bernadino County Sherriff Station AHU
Unit Tag:	AH 1

Project:	San Bernadino County Sherriff Station AHU
Unit Tag:	AH 1

Unit Tag: AH 1



Unit Parameters

Aero Outdoor Air Handler

39MW Size 25W

Insulation: R-13 Double Wall Sealed Panel

Exterior Finish: Painted Exterior Panels

Interior Finish: Galvanized Interior Panels

Level II Thermal Break

6 inch tall Base Rail

Field Supplied Curb

Mixing Box

Damper: Bottom Premium Parallel

Door Right Side

Return Fan

Shipping Split After

Rear Inlet

Fan Sled

Plenum Fan B PEBM0111

Direct Drive Fans

Fan Count 3

1689 fanRPM Class II

Full Open Discharge

ECM Control Box (Standard)

Piezometer and Transducer (1 fan)

Voltage Selected - 460/3/60

Full Load Amps - 6.4 Each

FLA/MCA/MOCP 19.2/20.8/25

Return/Exhaust Fan Status (DI)

Door Right Side

Plenum

Length 24 inches

Mixing Box

Shipping Split After

Damper: Left Side Premium Opposed

Damper: Rear Premium Parallel

Mixed Air Temperature Sensor (AI)

Door Right Side

Unit Report AH 1

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Bag/Cartridge Filter

Shipping Split After
Shipping Skid
Bag/Cartridge Filter 6 - 12 IN. Side Loading
12" Cartridge w/ Header (Synthetic) MERV 14
Qty (6) 24in. x 24in.
Pre Filter : 2In. Flat Filter
2" Pleated MERV 13 Filter
Qty (6) 24in. x 24in.
Door Right Side
Minihelic Differential Pressure Gage 0-2" w.c. Right Side
Minihelic Differential Pressure Gage 0-2" w.c. Right Side

Chilled Water Coil and Plenum

Shipping Split After
Shipping Skid
Low Temperature Thermostat (DI)
304 Stainless Steel Drain Pan Right Side
Chilled Water 24.41 sq.ft 6 Row 11 FPI Full Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
Fin Thickness: 0.0060
AL fins Galv. Casing
Steel Header
No Coating
Door Right Side

Control Plenum

Length 18 inches
Unprogrammed Carrier UC Open XP Controller Located in Control Plenum
Door Right Side

Draw-Thru Supply Fan

Rear Inlet
Fan Sled
Plenum Fan B PEBM0105
Direct Drive Fans
Fan Count 4
3279 fanRPM Class III
Field Supplied Discharge
ECM Control Box (Standard)
Piezometer and Transducer (1 fan)
Voltage Selected - 460/3/60
Full Load Amps - 7.7 Each
FLA/MCA/MOCP 30.8/32.7/40
Supply Fan Status (DI)
Supply Air Temperature Sensor (AI)
Door Right Side

Weights and Dimensions

(LxWxH in ft in) 22' 3" x 7' 4" x 5' 3" **
Operating 5455 LB **

Unit Report AH 1

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Warranty Part Number(s) (NET PRICING)

39LMR-SU-FIRST Qty 1.0 First 39 Series Start-up

Configuration Notes

An Outdoor Plenum fan may not discharge through the roof of the unit.

If a bottom connection is required, use an Inlet Plenum Section.

An Outdoor Plenum fan may not discharge through the roof of the unit.

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

Warranty Part Number(s) (NET PRICING)

QTY 1.0 First 39 Series Start-up

** Weights and Dimensions are approximate. Weights include base unit weight, coils (wet & dry), fans and fan motors, and other components, but does not include filters, drives and skids. Approximate dimensions are provided primarily for shipping purposes, for exact dimensions, refer to submittal drawings. Shipping skids are not included.

All filter media efficiency ratings are for the filter media only.

Chilled Water Coil Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1



Cooling Application's Balance Criteria: Fluid Flow

Coil Model.....	28MC
Number of Coils.....	1
Row / FPI / Circ.....	6 / 11 / FL
Fin Thickness.....	.0060 in
Fin Type.....	Sine Wave
Face Area Type.....	Large
Coil Face Area.....	24.41 sqft
Face Velocity.....	544.9 fpm
Fin-Casing Material.....	Al-Galv.
Tube Diameter.....	0.5 in
Tube spacing: Stf x Str.....	1.25 x 0.781 in
Tube Wall Thickness.....	0.016 in
Actual Airflow.....	13300 CFM
Site Altitude.....	0 ft
Standard Airflow (adj. to std. dry atmosphere).....	12746 SCFM
Total Cooling Capacity.....	503.82 MBH
Sensible Cooling Capacity.....	417.64 MBH
Fluid Flow Rate.....	66.7 gpm
Fluid Pressure Drop.....	7.2 ft wg
Fluid Velocity.....	3.0 ft/s
Entering Fluid Temperature.....	43.00 F
Leaving Fluid Temperature.....	58.06 F
Fluid Temperature Rise.....	15.1 F
Entering Air Dry Bulb.....	84.30 F
Entering Air Wet Bulb.....	66.80 F
Entering Air Enthalpy.....	31.31 BTU/lb
Leaving Air Dry Bulb.....	54.47 F
Leaving Air Wet Bulb.....	53.81 F
Leaving Air Enthalpy.....	22.5 BTU/lb
Air Friction.....	0.87 in wg
Brine.....	FW
Brine Concentration.....	0 %
Fouling Factor.....	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.ahridirectory.org).

LEGEND:

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

Unit Acoustics Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Unit Acoustics Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	86	80	78
125 Hz	88	85	82
250 Hz	98	94	92
500 Hz	100	96	93
1000 Hz	100	90	88
2000 Hz	98	87	84
4000 Hz	94	88	84
8000 Hz	88	81	79

Sound power levels are rated in accordance with AMCA 300.

Unit Acoustics A-weighted Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	59	53	52
125 Hz	72	69	66
250 Hz	90	86	83
500 Hz	96	92	90
1000 Hz	100	90	88
2000 Hz	100	88	85
4000 Hz	95	89	85
8000 Hz	87	80	77

Sound power levels are rated in accordance with AMCA 300.

Sound contributed by Supply and Return Fans

Unit Acoustics PART-LOAD Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	79	75	73
125 Hz	85	83	79
250 Hz	89	86	83
500 Hz	89	82	80
1000 Hz	91	80	77
2000 Hz	88	79	75
4000 Hz	83	83	77
8000 Hz	74	68	64

Sound power levels are rated in accordance with AMCA 300.

Unit Acoustics Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Unit Acoustics PART-LOAD A-weighted Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	53	49	47
125 Hz	69	67	63
250 Hz	80	77	74
500 Hz	86	79	76
1000 Hz	91	80	77
2000 Hz	89	80	76
4000 Hz	84	84	78
8000 Hz	73	67	63

Sound power levels are rated in accordance with AMCA 300.

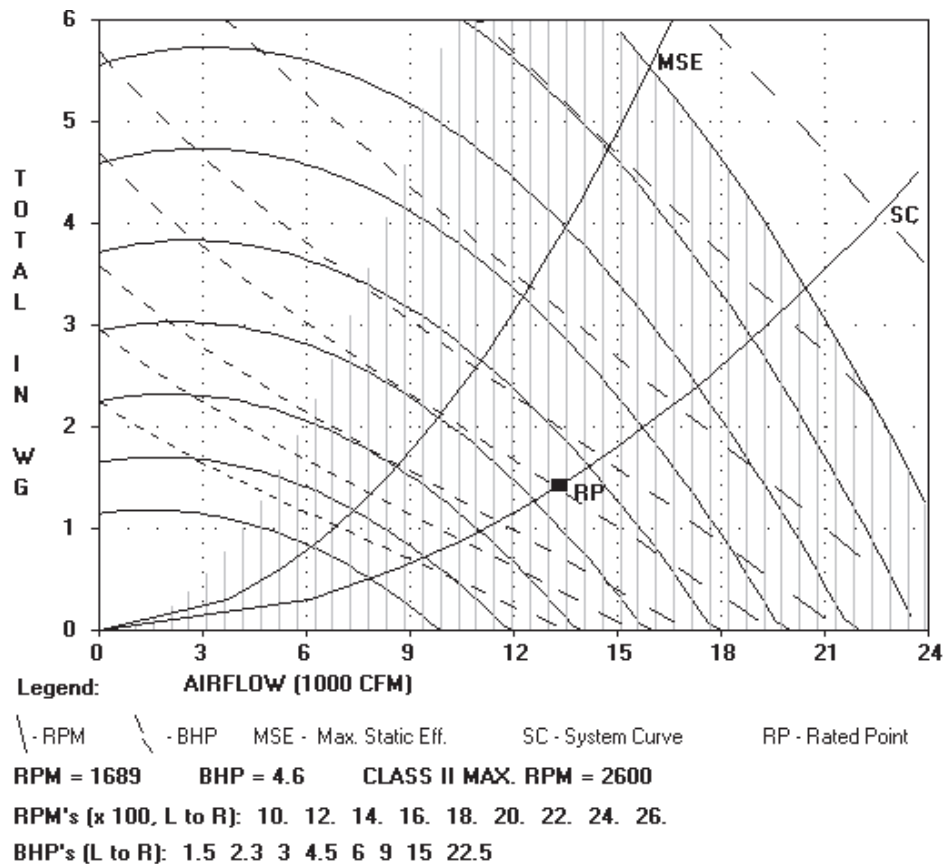
Sound contributed by Supply and Return Fans

Return Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Fan Model **NC-39M2503HP EE**
Unit Size **25W**
Fan Type **ECM**
DIRECT DRIVE PLENUM (EBM-11) (Return)
Fan Wheel Diameter **17.7**
Fan Class **II**
Static Efficiency (%) **64**
Fan Application **Return Fan**
Orientation **Horizontal**
Actual Airflow, CFM **13300**
Site Altitude, , ft **0**
Total Upstream Static Losses, in wg **1.42**
Number of Fans **3**
Fan RPM / Max RPM **1689/2600**
Each Fan BHP **1.5**
Fan Total BHP **4.6**
(n-1) Airflow, CFM **15301**
(n-1) Redundancy (%) **115**
Fan Electrical Power, kW **4.2**
ECM Setting, VDC **6.5**

Unit is outside of the scope of AHRI Standard 430/431.



Supply Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Fan Model	39M2504HPEE-U
Unit Size	25W
Fan Type	ECM DIRECT DRIVE PLENUM (EBM-05)
Fan Wheel Diameter	15.7
Fan Class	III
Fan Application	Supply Fan
Orientation	Horizontal
Actual Airflow, CFM	13300
Site Altitude, ft	0
Upstream Ext. Static, in wg	0.00
Downstream Ext. Static, in wg	5.00
Cooling Coil Static, in wg	0.87
Heating Coil Static, in wg	0.00
Total Accessory Static, in wg	0.98
Total Static Pressure, in wg	6.85
Calculated Fan RPM / Motor RPM	3279 / 0
Class III Max. RPM	3700
Static Efficiency (%)	68
Number of Fans	4
Each Fan BHP	5.3
Fan Total BHP	21.1
(n-1) Airflow, CFM	13372
(n-1) Redundancy (%)	101
Fan Electrical Power, kW	17.8
ECM Setting, VDC	8.9



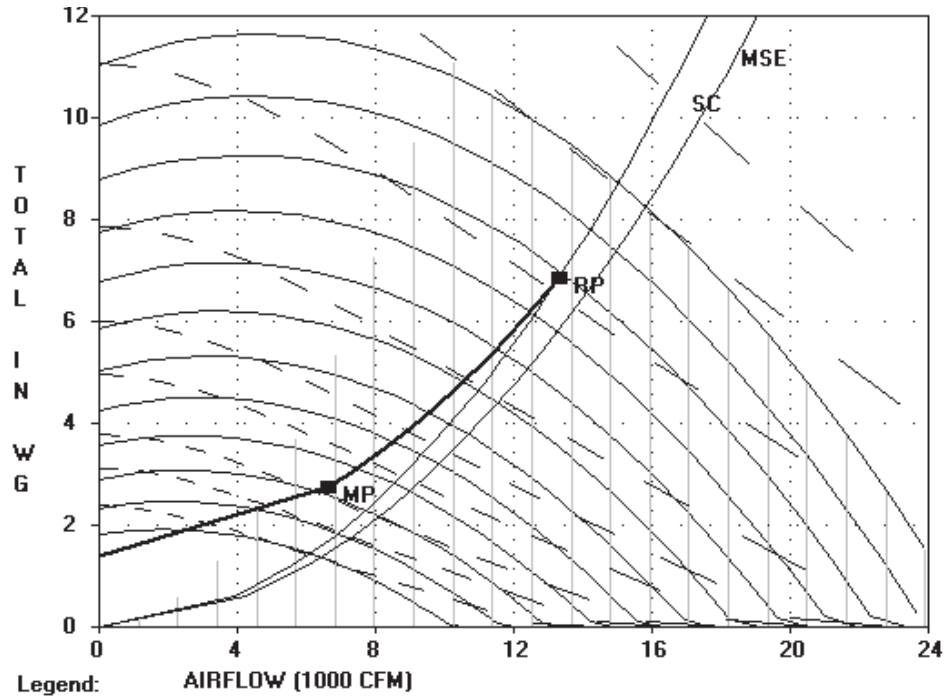
Accessories:

- (1) Flat Synthetic (2") MERV 13 [0.34]
- (1) CARTRIDGE LONG/SHORT Synthetic MERV 14 [0.52]
- (1) Side Mixing or Exhaust Box [0.12]

NOTE: Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org

Supply Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1



RPM = 3279 BHP = 21.1 CLASS III MAX. RPM = 3700

RPM's (x 100, L to R): 15. 17. 19. 21. 23. 25. 27. 29. 31. 33. 35. 37.

BHP's (L to R): 2 3 4 6 8 12 20 30 40

Sensor and Actuator Points List

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Name	AI	AO	DI	DO
Return/Exhaust Fan Status			X	
Mixed Air Temperature Sensor	X			
Low Temperature Thermostat			X	
Supply Fan Status			X	
Supply Air Temperature Sensor	X			

Controller Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Carrier Part Number OPN-UCXP
Manufacturer Carrier

I-VU® UC Open XP

Unit Controller

BACnet Support – Advanced application controller (B-AAC), as defined in BACnet 135-2001 Annex L

BACnet Communication Port – EIA-485 port for BACnet MS/TP communications (baud rate is DIP switch selectable)

Local Access Communication Port – For system start-up and troubleshooting (115.2 kbps)

Rnet Communication Port – For connecting Carrier communicating room sensors and Carrier's touchscreen user interface

Inputs – 12 inputs: Configurable for 0-10V, RTD/Thermistor/Dry contact, or 0-20mA. Inputs 1 and 2 may be used for pulse counting. All analog inputs have 12 bit A/D resolution.

Outputs – 6 binary outputs: Configured as dry contact, normally open or normally closed. All binary outputs must be powered from a Class 2 power source.

6 analog outputs: 1 and 2 are configurable for 0-10V or 0-20mA; 3-6 are 0-10V only. Analog outputs have 8 bit D/A resolution.

Protection – Incoming power and network connections are protected by non-replaceable internal solidstate polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected against voltage transient and surge events.

Real Time Clock – Battery-backed real time clock keeps track of time in event of power failure.

Battery – 10-year Lithium CR2032 battery provides a minimum of 10,000 hours of trend data & time retention during power outages.

Status Indicators – LED status of power, running, and errors. LED indicators for transmit/receive for BACnet port and for each of the 12 outputs.

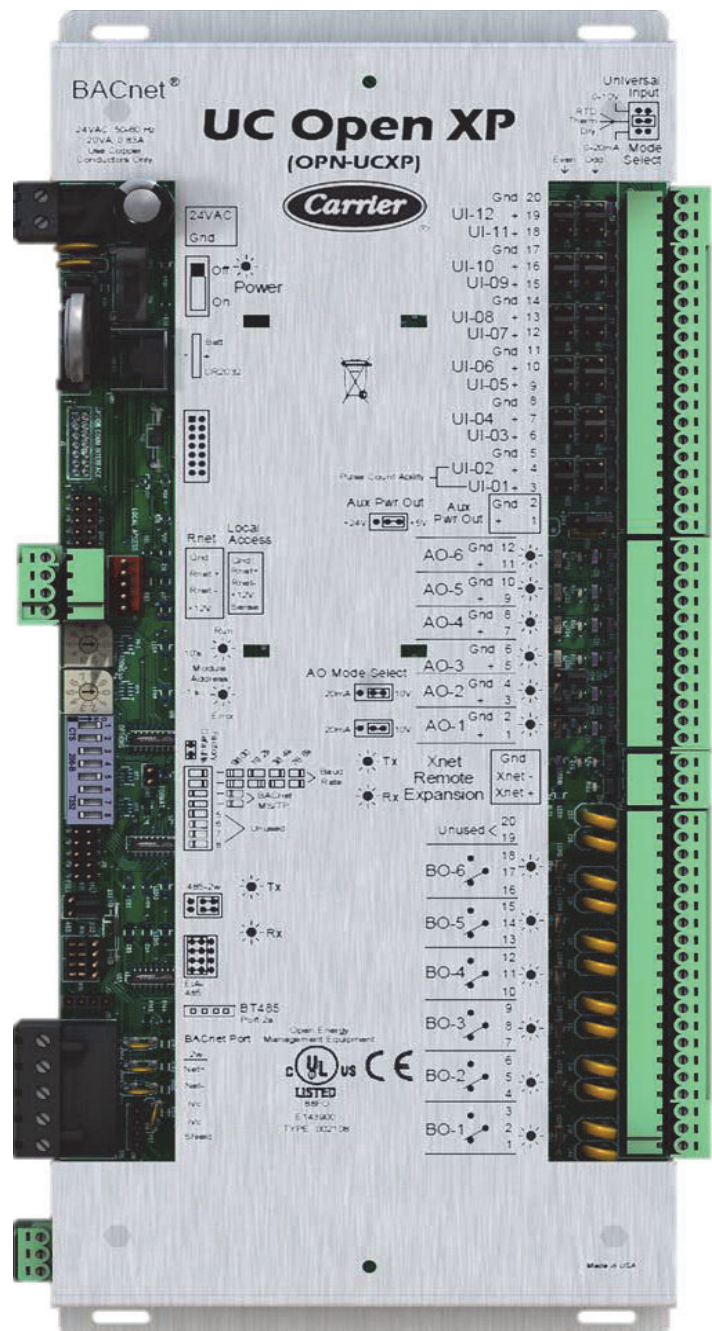
Controller Addressing – Rotary DIP switches set BACnet MS/TP MAC address of controller.

Listed By – UL-916, FCC Part 15-Subpart B- Class A, CE EN50082-1997

Operating/Storage Range – -24° to 140°F (-30° to 60°C), 10-90% relative humidity, non-condensing

Power Requirements – 24VAC +/- 10%, 50-60Hz
20VA power consumption

Single Class 2 source only, 100VA or less



Controller Expansion Board Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 1

Carrier Part Number OPN-UCXP10

Manufacturer Carrier

I-VU® UC Open XP10

Unit Controller Expansion Board

Communication Ports – Xnet Remote Expansion port:
For connecting to a UC XP Controller via the Xnet network.

Inputs – 8 binary inputs: Inputs 1-8 are binary only and support pulse counting up to 10 Hz.

8 analog inputs: Inputs 9-16 are universal inputs, jumper selectable between thermistor/dry contact and 0-5VDC. All analog inputs have 10 bit A/D resolution.

Outputs – 8 binary outputs: Configured as dry contact, normally open, and must be powered from a Class 2 power source.

Protection – Incoming power and network connections are protected by non-replaceable internal solidstate polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected.

Status Indicators – LED status of power, outputs, running and errors.

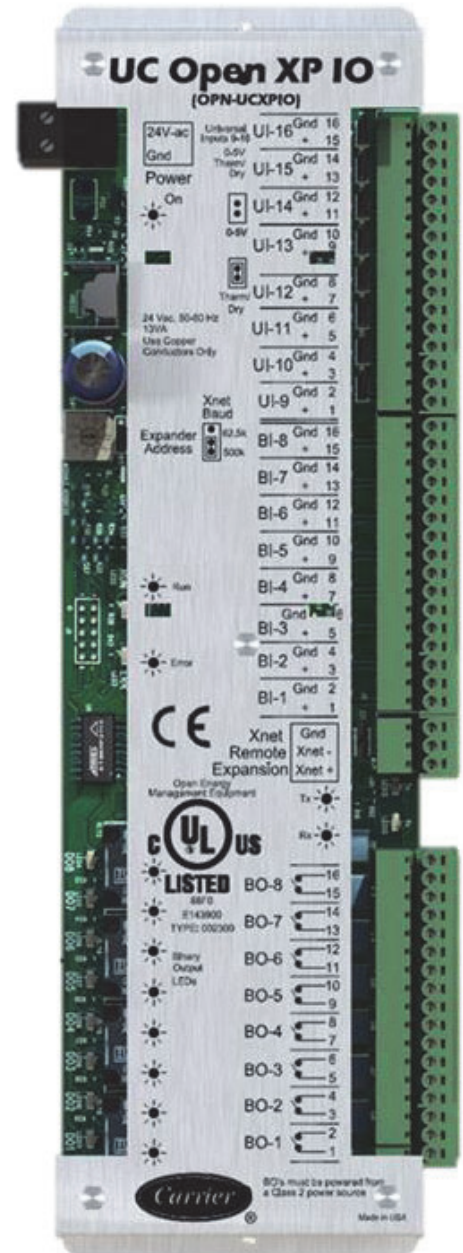
Listed By – UL916 (Canadian Std. C22.2 No. 205-M 1983), CE, FCC Part15-Subpart B - Class A

Operating/Storage Range – -20°F to 140°F (-29° to 60°C), 10-90% relative humidity, non-condensing

Power Requirements – 24VAC +/- 10%, 50-60Hz
13VA power consumption

26VDC (25V min, 30V max)

Single Class 2 source only, 100VA or less



Supply Air Temperature (SAT) Sensor Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 1

Carrier Part Number 33ZCSENSAT
Manufacturer Automation Components, Inc.
Manufacturer Part Number ACI/10K-CP-D4
Cable 1
Channel UI-2
Terminal/Signal TB2-10 / 10K Thermistor AI
Terminal/Signal TB2-12 / Signal Ground

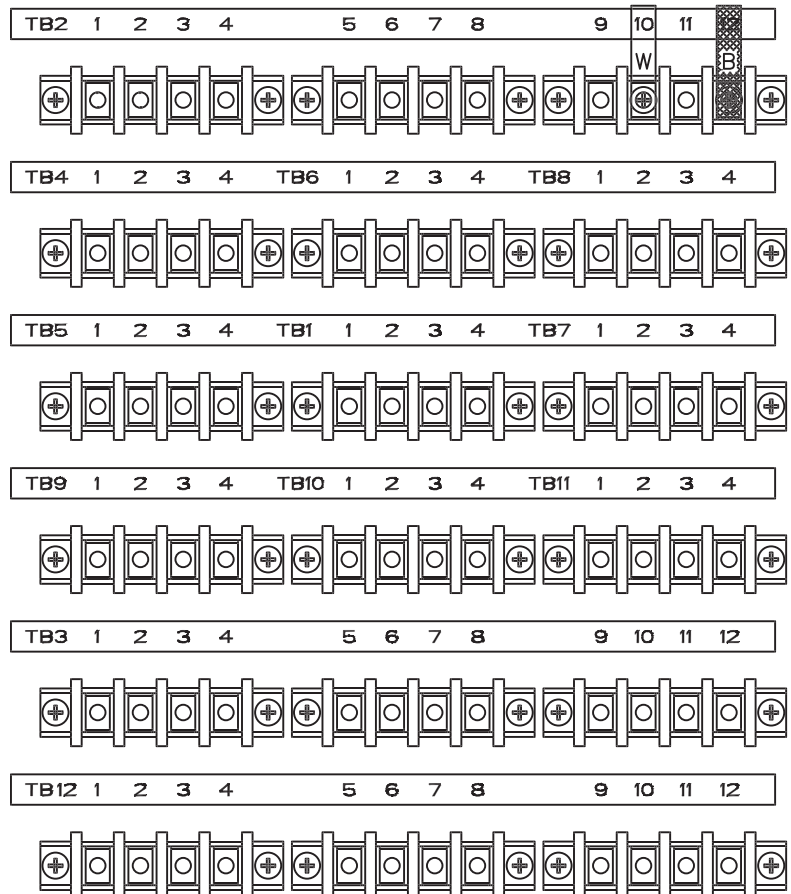


SAT Supply Air Temperature Sensor

The SAT sensor consists of a thermistor encased within a stainless steel probe.

The thermistor has a temperature range of -245° to 185° F with a nominal resistance of 10,000 ohms at 77° F.

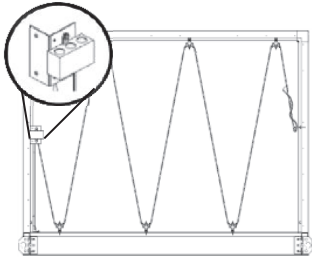
Wire Terminations



Mixed Air Temperature (MAT) Sensor Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Carrier Part Number HH79NZ041
Manufacturer Automation Components, Inc.
Manufacturer Part Number ACI/10K-CP-A24
Cable 4
Channel UI-3
Terminal/Signal TB2-7 / 10K Thermistor AI
Terminal/Signal TB2-8 / Signal Ground



MAT
Mixed Air
Temperature Sensor

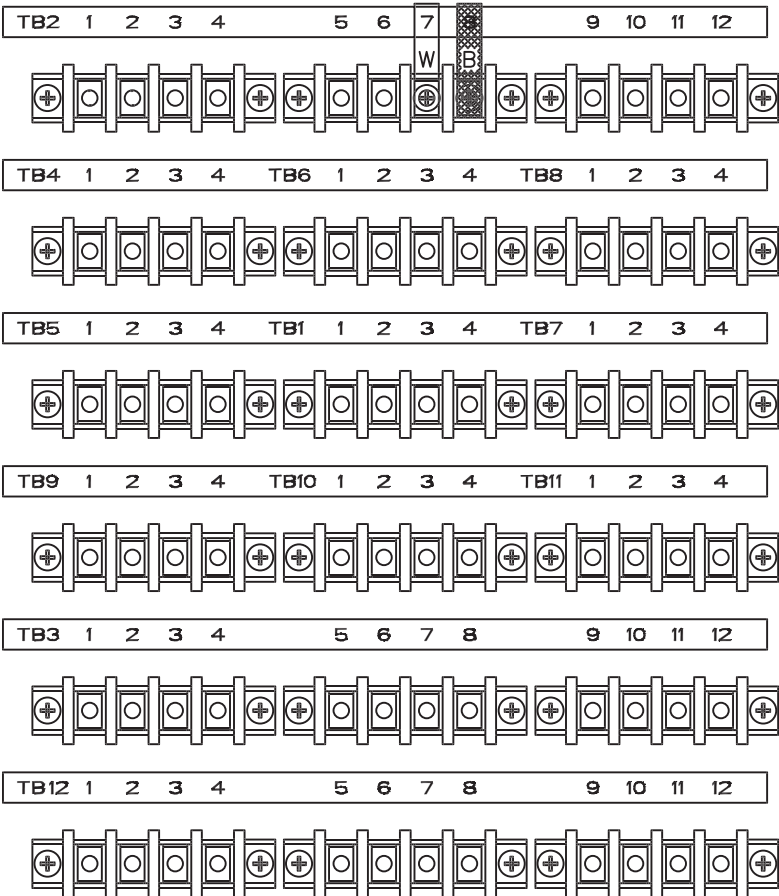
The MAT sensor consists of multiple, evenly spaced thermistors encased within a flexible copper tube.

Mechanical and electrical averaging is used to achieve the temperature measurement over the entire element length.

The MAT sensor has a range of -40° to 185° F with a nominal resistance of 10,000 ohms at 77° F.

The sensor is located in the last mixing box in the airflow.

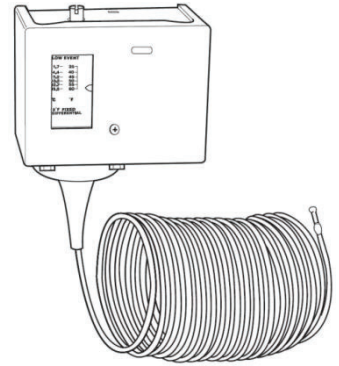
Wire Terminations



Low Temperature Thermostat Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Carrier Part Number HH22BZ001
Manufacturer Schneider Electric
Manufacturer Part Number TC-5231-702
Cable 2
Channel UI-5
Terminal/Signal TB2-4 / Dry Contact DI
Terminal/Signal TB2-3 / Signal Ground



LTT

Low Temperature Thermostat

20 ft. element senses temperature over a large area. Control responds to the coldest one-foot section of the sensor.

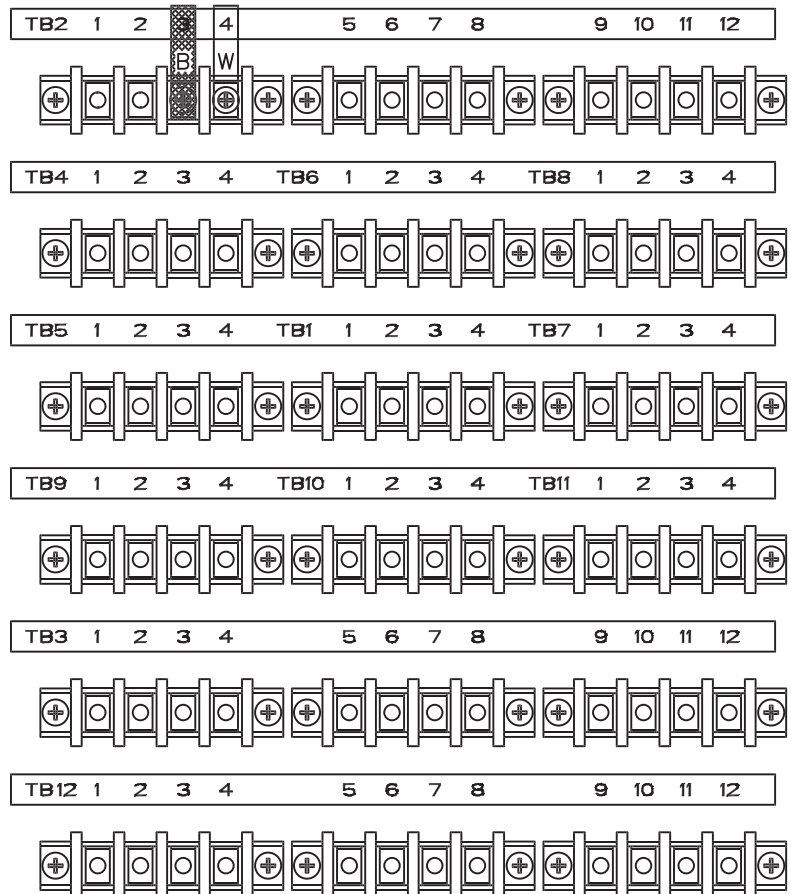
Adjustable setpoint from 35° F to 60° F with 5° F fixed differential.

Rated for use at 17 full load amps (120/208/240 Vac), 24 non-inductive amps (120/208/240 Vac), and 16 non-inductive amps (24 Vac).

Enclosure rating: NEMA Type 1.

Approvals: UL & CSA.

Wire Terminations



Supply Fan Status Sensor Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 1

Carrier Part Number 39MA51000021
 Manufacturer Automation Components, Inc.
 Manufacturer Part Number A/MCS-A
 Cable 21
 Channel UI-6
 Terminal/Signal TB3-11 / Dry Contact DI
 Terminal/Signal TB3-12 / Signal Ground



SFS

Supply Fan Status Sensor

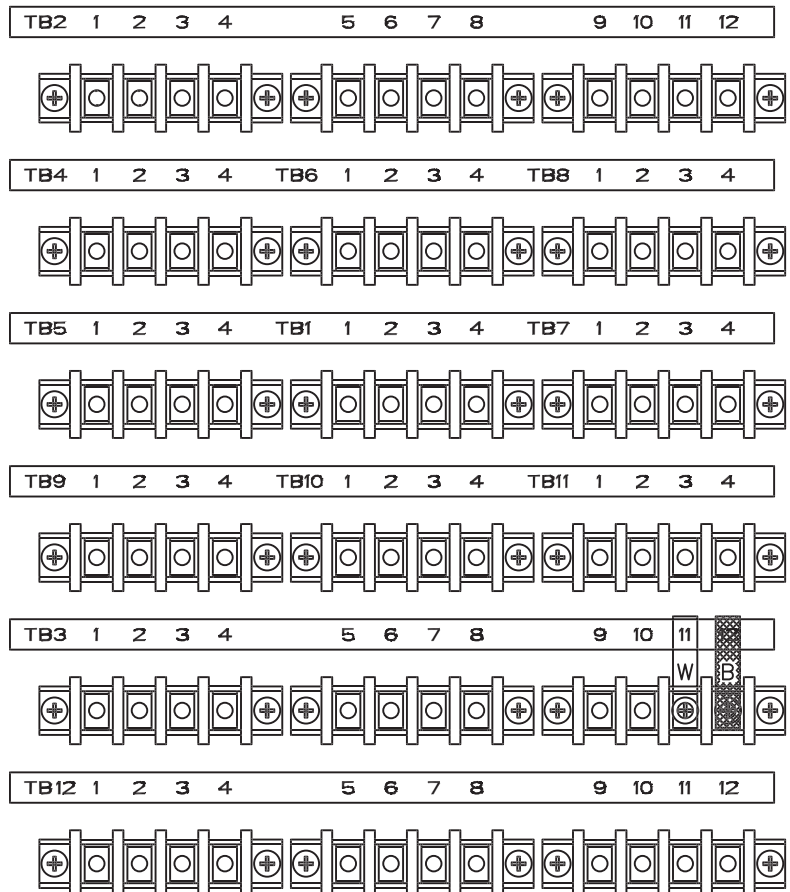
The A/MCS-A is a normally open (N/O) solid state adjustable current switch.

Outputs are non-polarity sensitive, N/O solid-state contacts for switching both AC and DC circuits up to 36 volts.

Unit includes two Status LED indicators, which signal three states:

1. Tripped on
2. Current present but below trip point
3. Current off or below the low end of the adjustable trip point range.

Wire Terminations



Return/Exhaust Fan Status Sensor Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Carrier Part Number 39MA51000021
Manufacturer Automation Components, Inc.
Manufacturer Part Number A/MCS-A
Cable 19
Channel EXIN-1
Terminal/Signal TB7-1 / Dry Contact DI
Terminal/Signal TB7-2 / Signal Ground



RFS/EFS

Return/Exhaust Fan Status Sensor

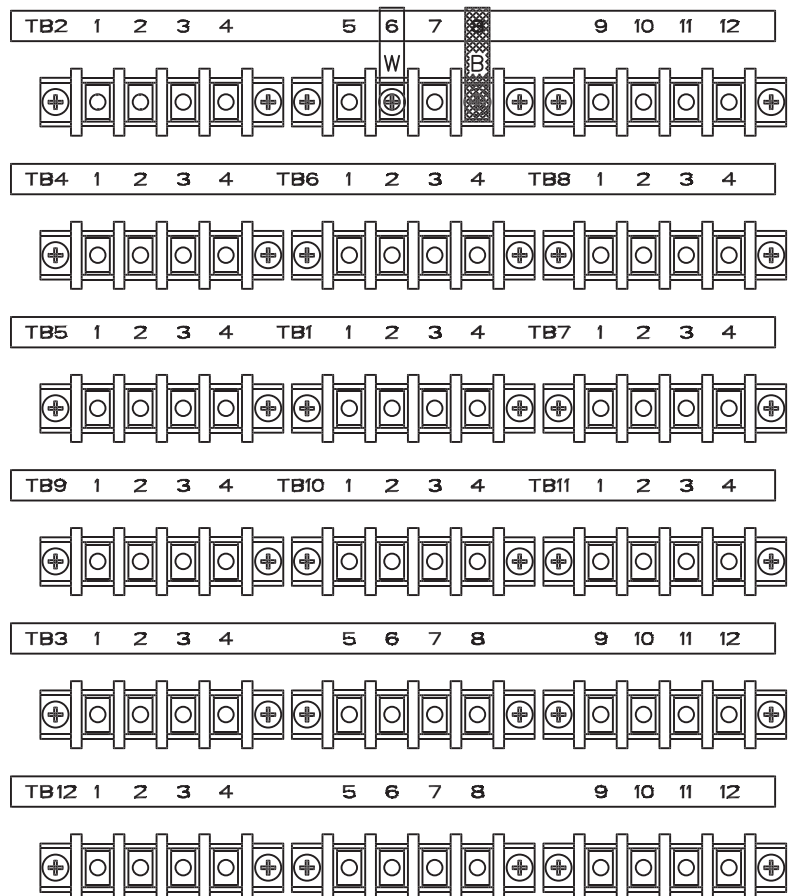
The A/MCS-A is a normally open (N/O) solid state adjustable current switch.

Outputs are non-polarity sensitive, N/O solid-state contacts for switching both AC and DC circuits up to 36 volts.

Unit includes two Status LED indicators, which signal three states:

1. Tripped on
2. Current present but below trip point
3. Current off or below the low end of the adjustable trip point range.

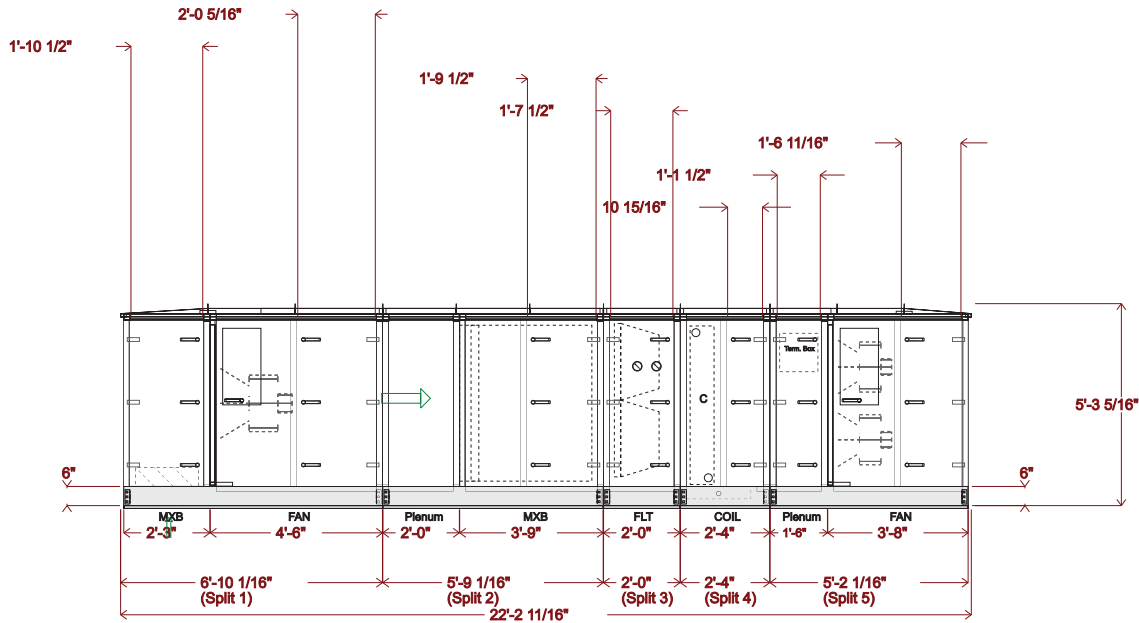
Wire Terminations



Unit width: 7'-4" (plus lifting lugs)
Return Fan
0
Bag/Cartridge Filter 6 - 12 IN. Side Loading
Qty (6) 24in. x 24in.
Pre Filter : 2In. Flat Filter
Qty (6) 24in. x 24in.

Chilled Water 6 Row 11 FPI Full Circuit (qty. 1)
Draw-Thru Supply Fan
0
Operating weight: 5456.0 lbs.
Upstream Corner Weight (each): 1294.0 lbs.
Downstream Corner Weight (each): 1434.0 lbs.

Split	Airway Length	Weight (lbs.)
(Split 1)	6'-10 1/16"	1504
(Split 2)	5'-9 1/16"	1078
(Split 3)	2'-0"	580
(Split 4)	2'-4"	1009
(Split 5)	5'-2 1/16"	1285



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39MW

DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Assembly Drawing	REVISION Side View
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39MW

Unit height: 5'-2 13/16"
Return Fan
0
Bag/Cartridge Filter 6 - 12 IN. Side Loading
Qty (6) 24in. x 24in.
Pre Filter : 2In. Flat Filter
Qty (6) 24in. x 24in.

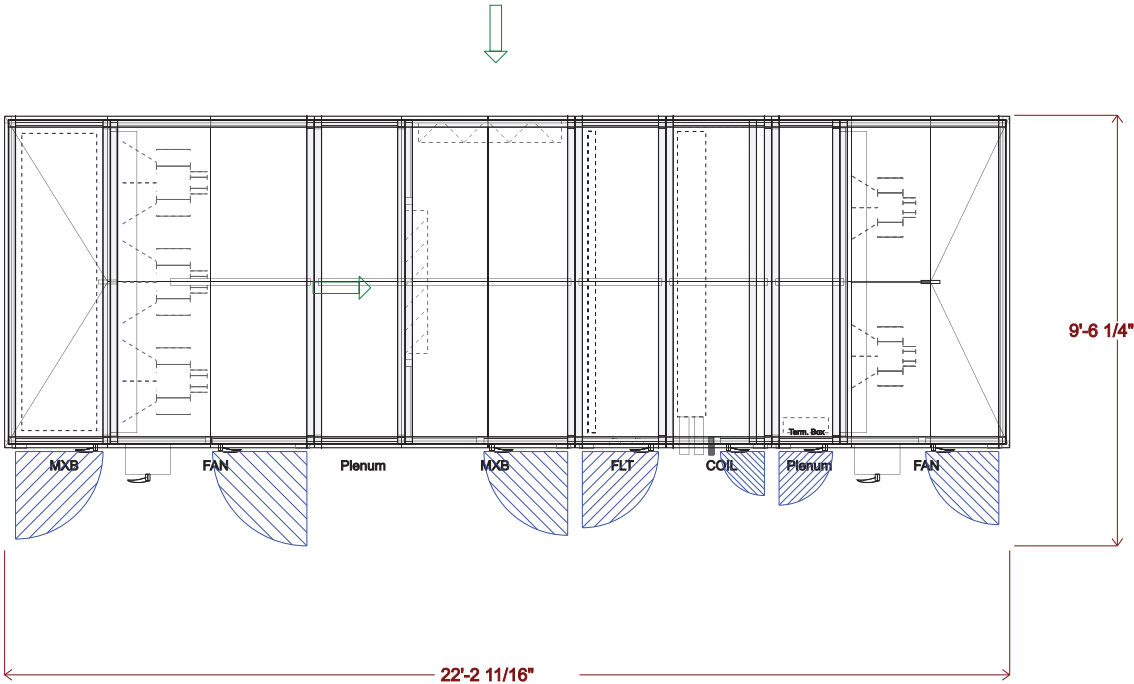
Chilled Water 6 Row 11 FPI Full Circuit (qty. 1)
Draw-Thru Supply Fan
0
Operating weight: 5456.0 lbs.
Upstream Corner Weight (each): 1294.0 lbs.
Downstream Corner Weight (each): 1434.0 lbs.



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DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Assembly Drawing	REVISION Top View
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Chilled Water 6 Row 11 FPI Full Circuit (qty. 1)

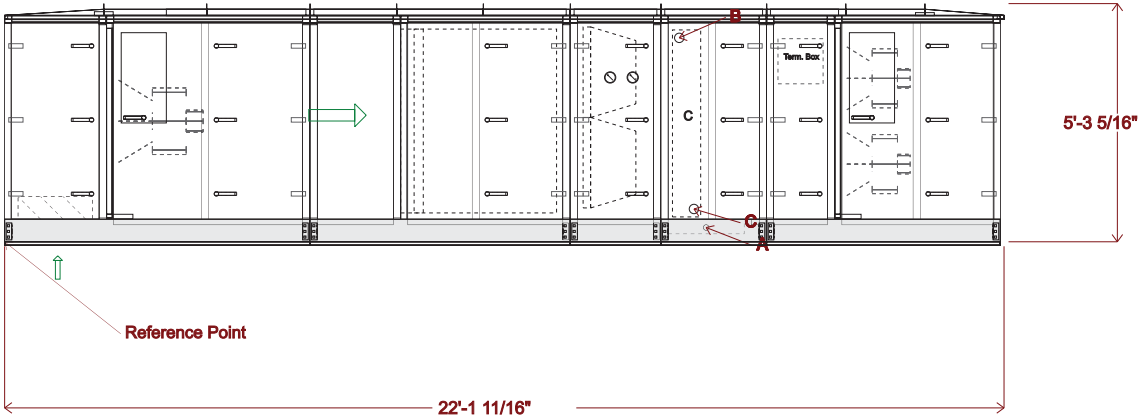


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Pipe	x	y	diameter	Usage
A	15'-6 1/2"	3 13/16"	1 1/2"	DrainPan
B	14'-11 5/16"	4'-6 3/16"	2 1/2"	CW Outlet
C	15'-3 1/4"	8 11/16"	2 1/2"	CW Inlet



DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Assembly Drawing
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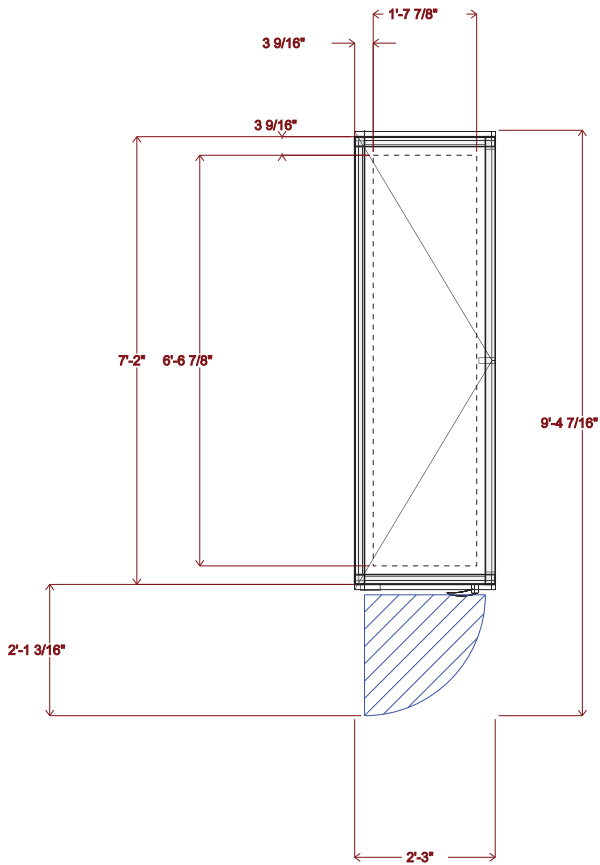
REVISION Side View



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39M Central Station Air-Handler, Size 25W
San Bernadino County Sherriff Station AHU: AH 1
Mixing Box

REVISION
Top View

DATE
12/30/2024

AHUBuilder
v7.06

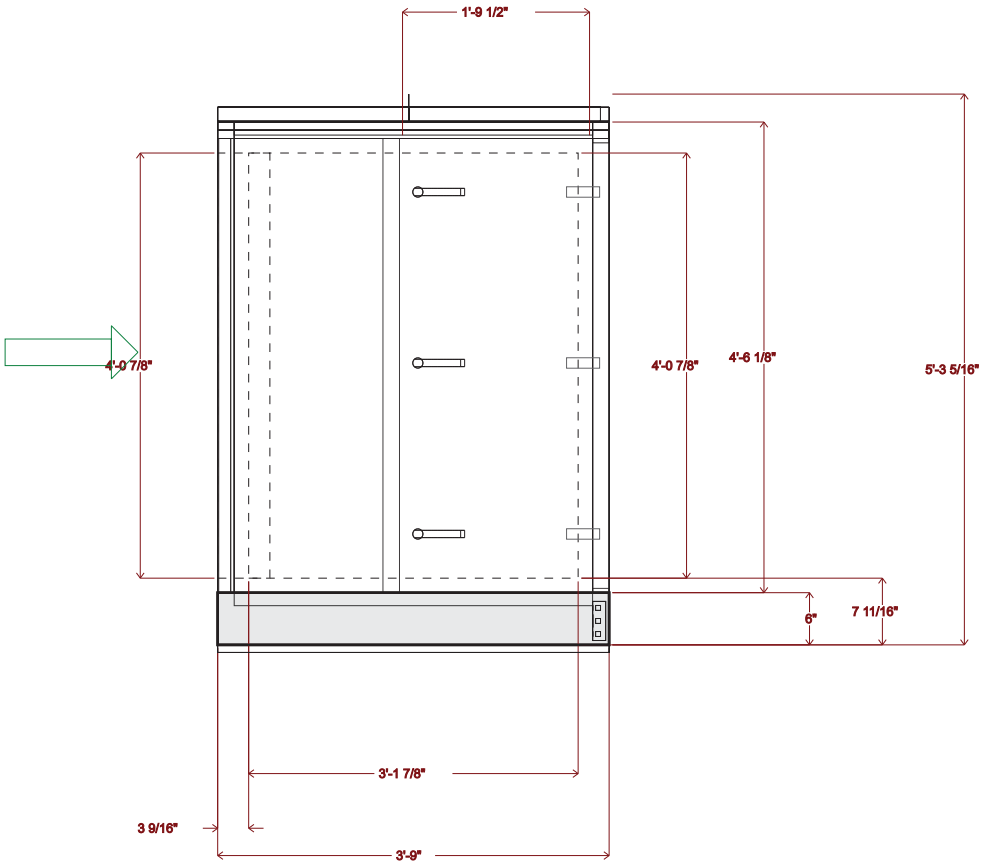
<div> <div>Unit viewed from right side of side elevation view. Return Fan 0</div> </div>				<div> </div>
<div>THIS DOCUMENT IS THE PROPERTY OF CARRIER CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE CONTENTS WILL NOT BE DISCLOSED OR USED WITHOUT CARRIER CORPORATION'S WRITTEN CONSENT</div>				<div>SUBMISSION OF THESE DRAWINGS OR DOCUMENTS DOES NOT CONSTITUTE PART PERFORMANCE OR ACCEPTANCE OF CONTRACT</div>
<div>DATE 12/30/2024</div>	<div>AHUBuilder v7.06</div>	<div>39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Return Fan</div>	<div>REVISION End View</div>	<div>39MW</div>



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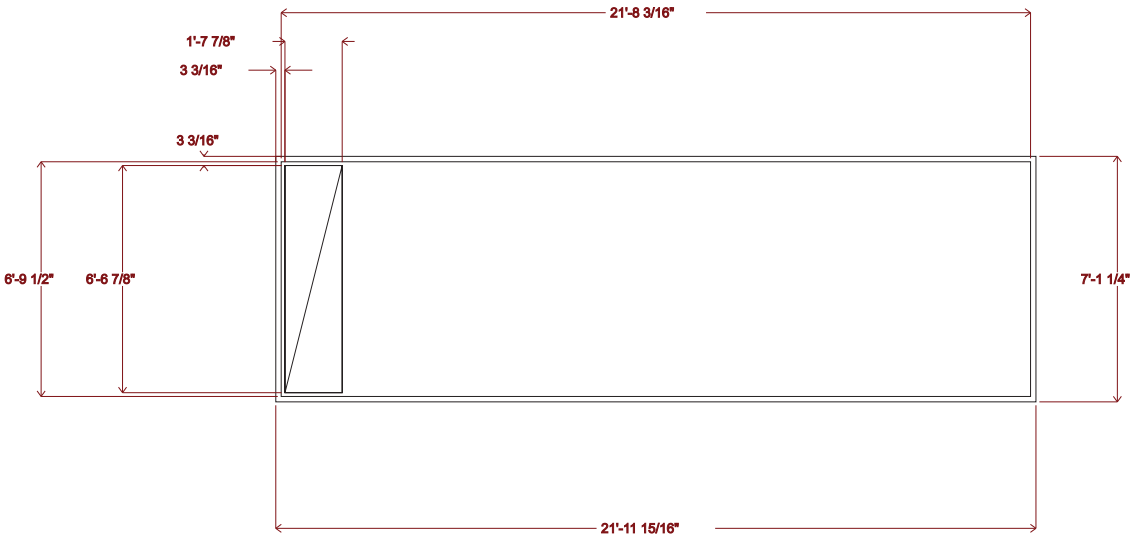
DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Mixing Box	REVISION Side View
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DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sherriff Station AHU: AH 1 Ahu Curb	REVISION Top View
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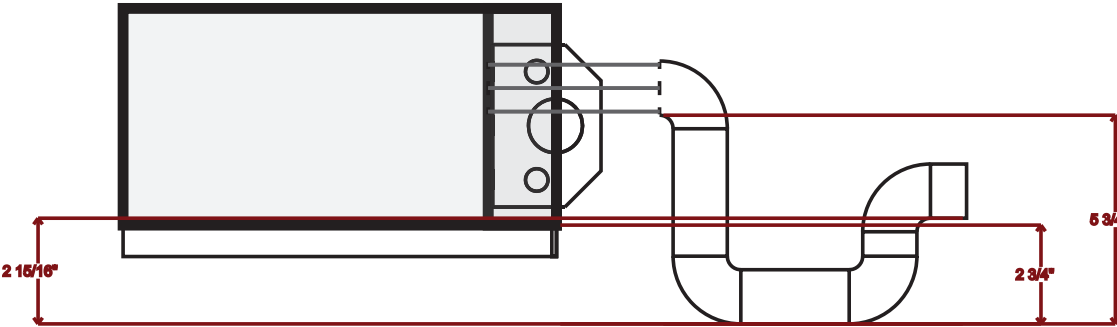


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DRAW-THRU



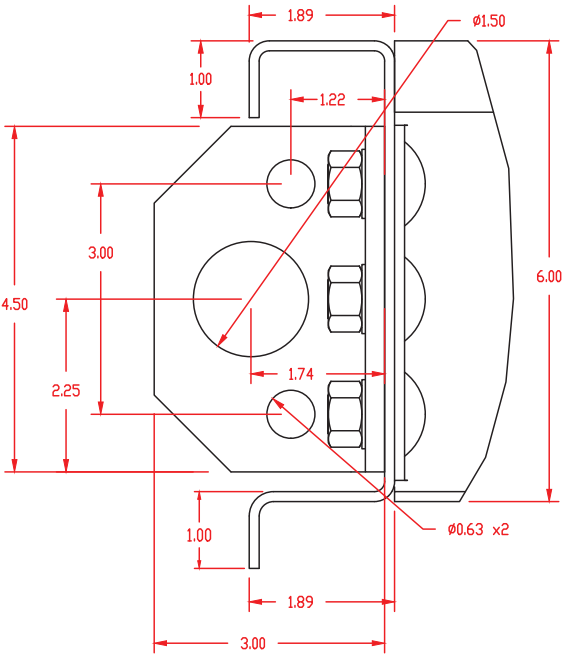
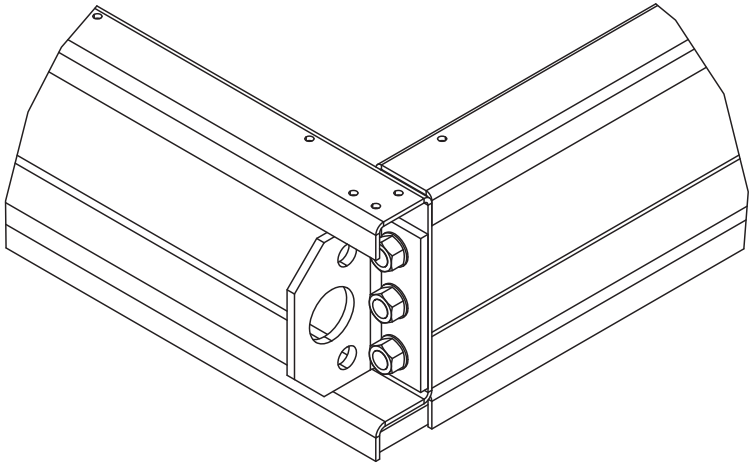
DATE 12/30/2024	AHUBuilder v7.06	39M Central Station Air-Handler, Size 25W San Bernadino County Sheriff Station AHU: AH 1 Condensate Trap Dimensions	REVISION End View
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39M W

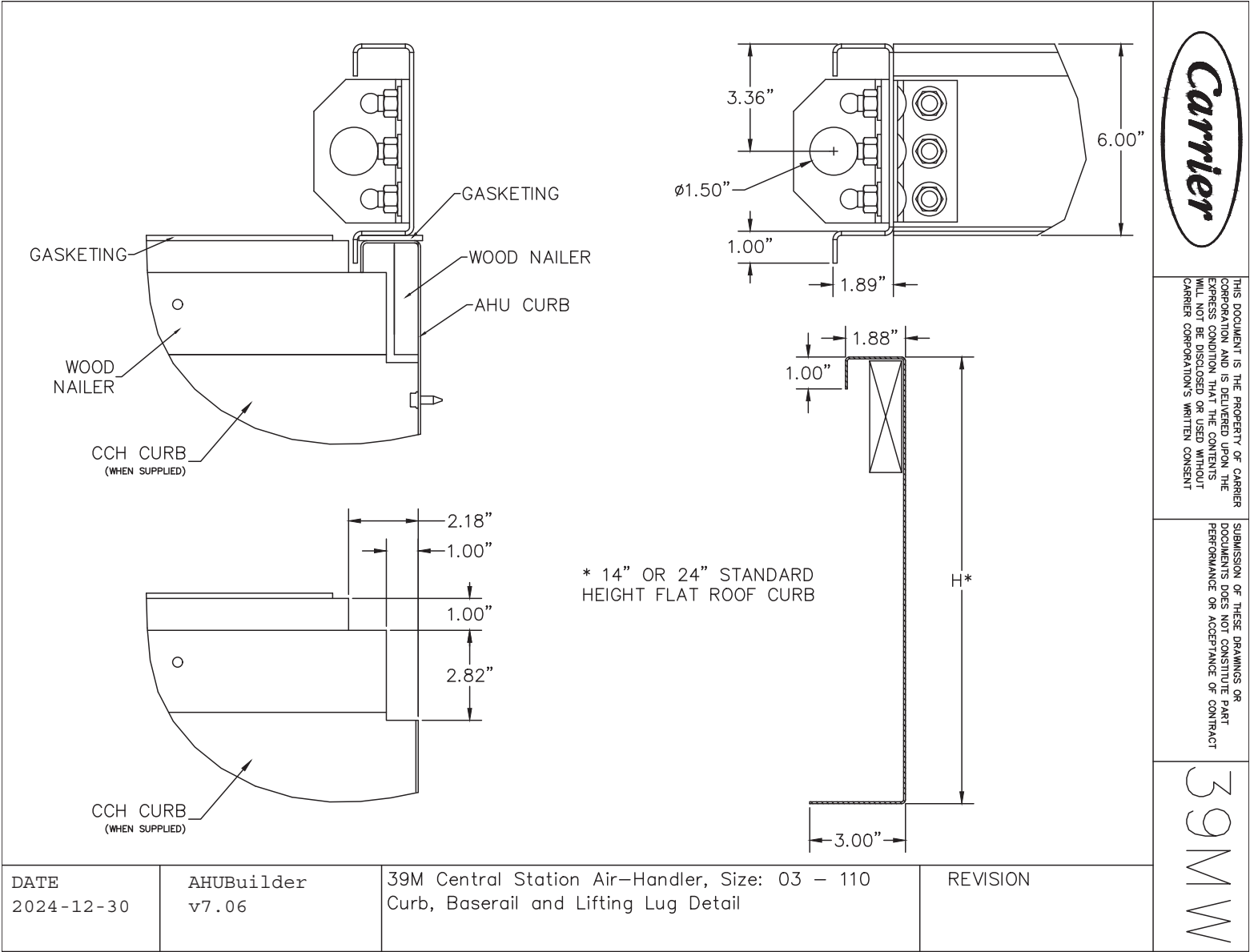


DATE
2024-12-30

AHUBuilder
v7.06

39M Central Station Air-Handler, Size: 03 - 110
6" Base rail and Lifting Lug Detail

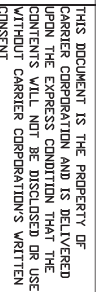
REVISION



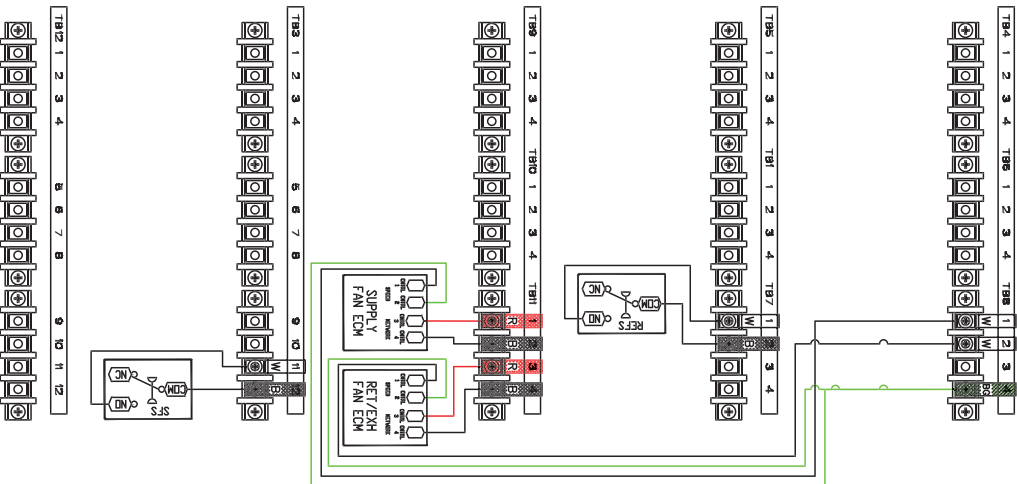
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[illegible]

LEGEND		
□	TERMINAL (WAGGED)	24VAC CONTACTOR COIL
□	TERMINAL, BLACK	COILING COIL VALVE#
□	SPLIT FIELD	COMMON FAN
□	WIRING	ELECTRIC RECIEVER
□	WRING FIELD CONTROL	ENERGY RECOVERY WHEEL
□		EXHAUST AIR DAMPER
□		FILTER STATUS SWITCH
□		FILTER STATUS SWITCH 2
□		HOT RECK TEMPERATURE
□		HUMIDIFIER EVAPILATE
□		INDOOR TEMPERATURE
□		OUTDOOR AIR TEMPERATURE
□		PRE-HEAT VALVES
□		REHEAT AIR DAMPER
□		RETURN EXHAUST FAN STATUS
□		SILICON CONTROLLED RECTIFIER
□		SUPPLY FAN
□		STATUS FAN STATUS
□		START/STOP
□		TERMINAL, BLACK
□		TERMINAL, BLOCK TERMINAL
□		TERMINAL, WHITE
□		FIELD SPLITTED

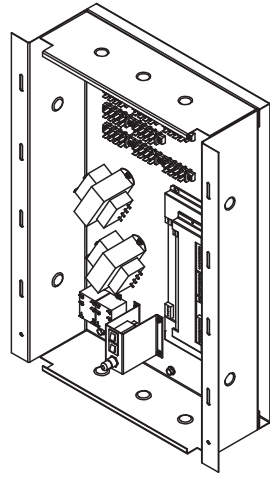
DATE 2024-12-30	AHUBuilder v7.06	39M Central Station Air Handler, Size: 03 - 110 Factory Wired Controller Wiring Diagram	REVISION	
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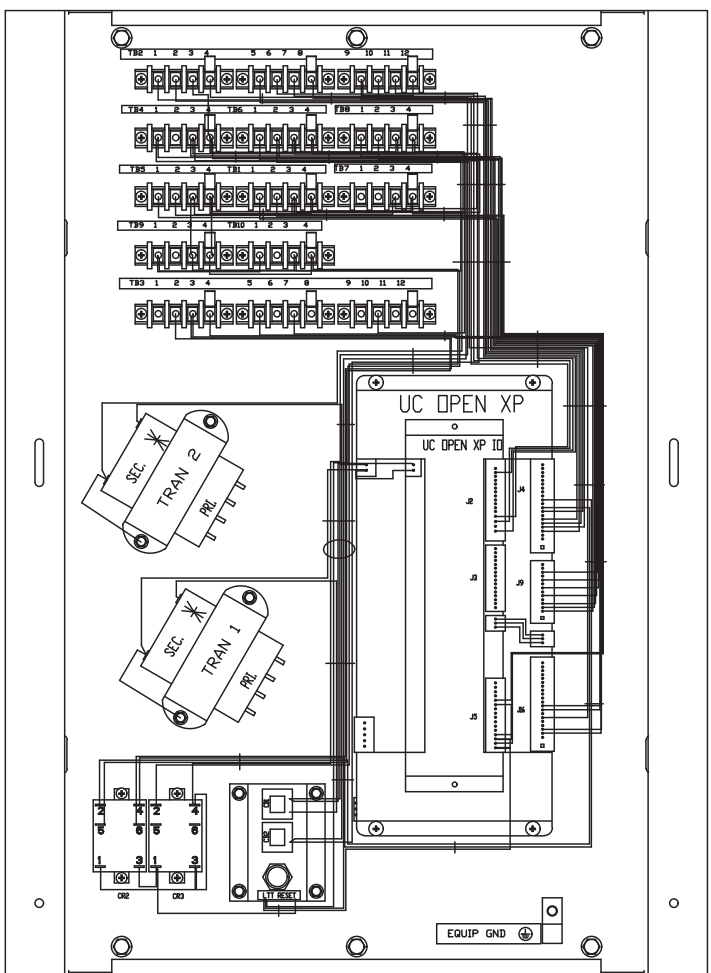
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39M



Component wiring for reference only.
When components are factory installed, wiring will be factory installed unless otherwise noted.
When components are provided by the factory for field installation, wiring is not included or installed.



SIZE 03-06 (SHOWN)

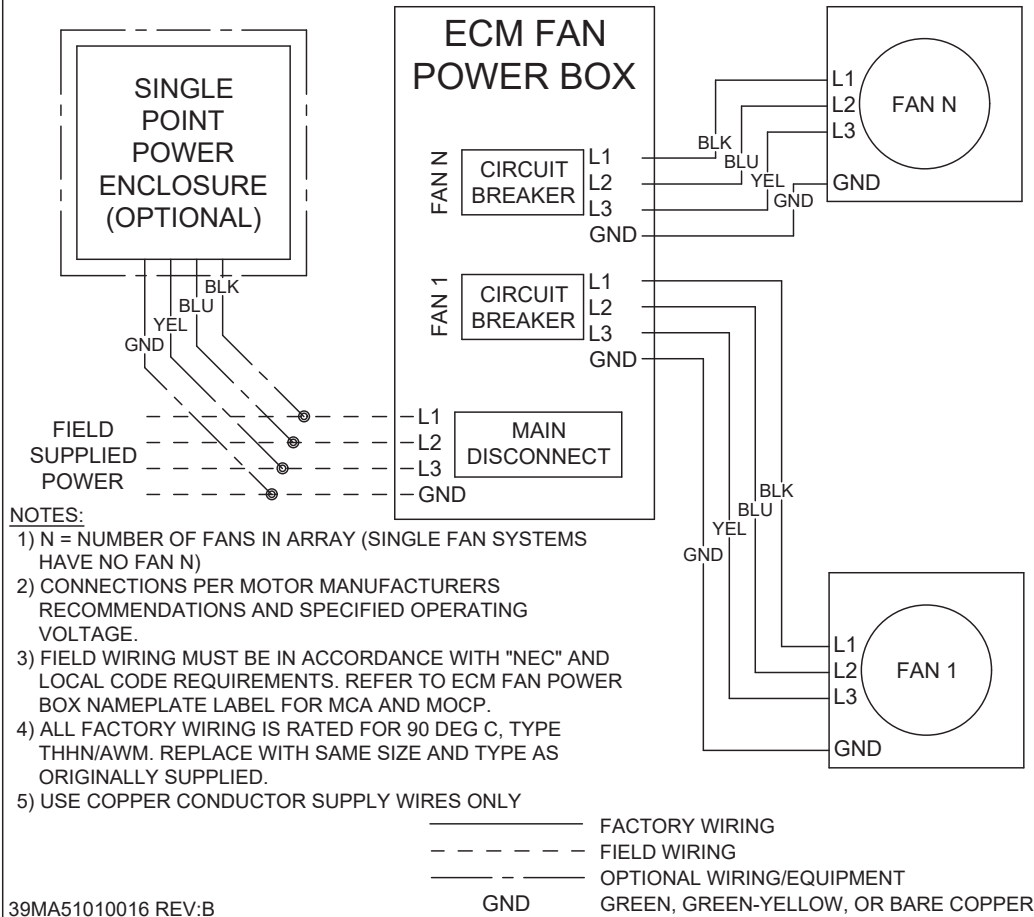
DATE
2024-12-30

AHUBuilder
v7.06

39M Central Station Air-Handler, Size: 03 - 110
Factory Wired Controller

REVISION

POWER WIRING DIAGRAM ECM FAN 3 PHASE



39MA51010016 REV:B

Component wiring for reference only.
When components are factory installed, wiring will be factory installed unless otherwise noted.
When components are provided by the factory for field installation, wiring is not included or installed.

DATE
2024-12-30

AHUBuilder
v7.06

39M Central Station Air-Handler, Size: 03 - 110
ECM Three Phase Wiring Detail

REVISION



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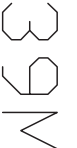
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39M

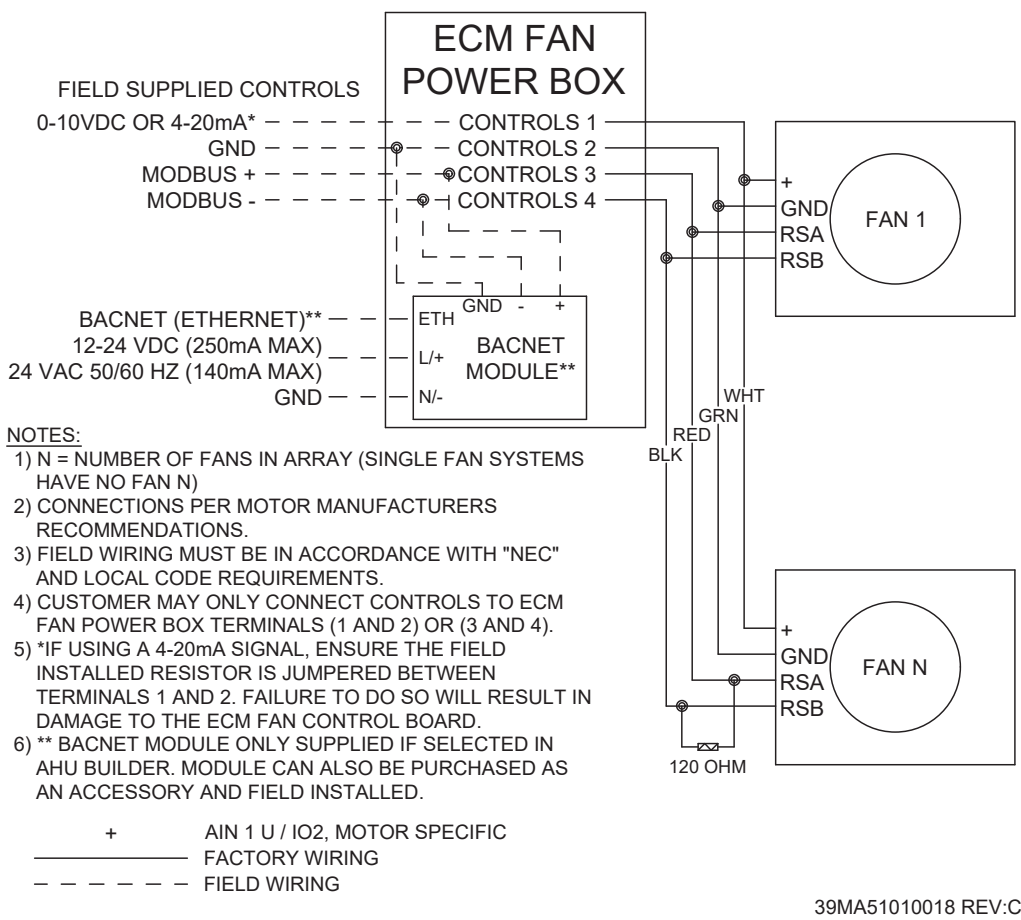


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CONTROLS WIRING DIAGRAM ECM FAN, EBM-PAPST



Component wiring for reference only.
When components are factory installed, wiring will be factory installed unless otherwise noted.
When components are provided by the factory for field installation, wiring is not included or installed.

DATE 2024-12-30	AHUBuilder v7.06	39M Central Station Air-Handler, Size: 03 - 110 ECM Controls Wiring Diagram - EBM Pakst	REVISION
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Air Filter Submittal

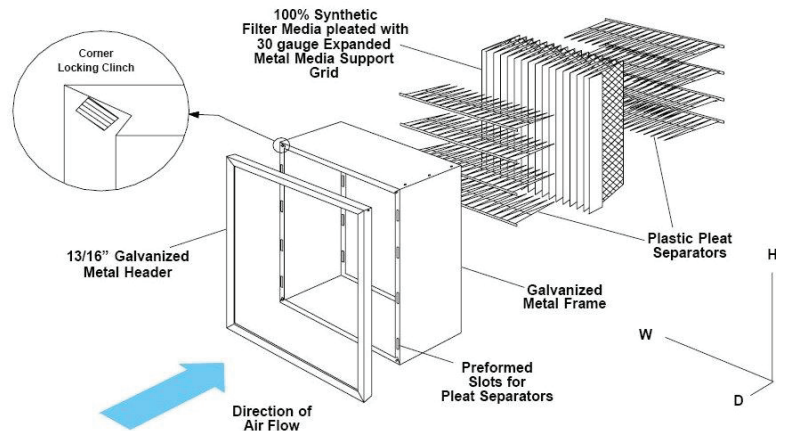
Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 1

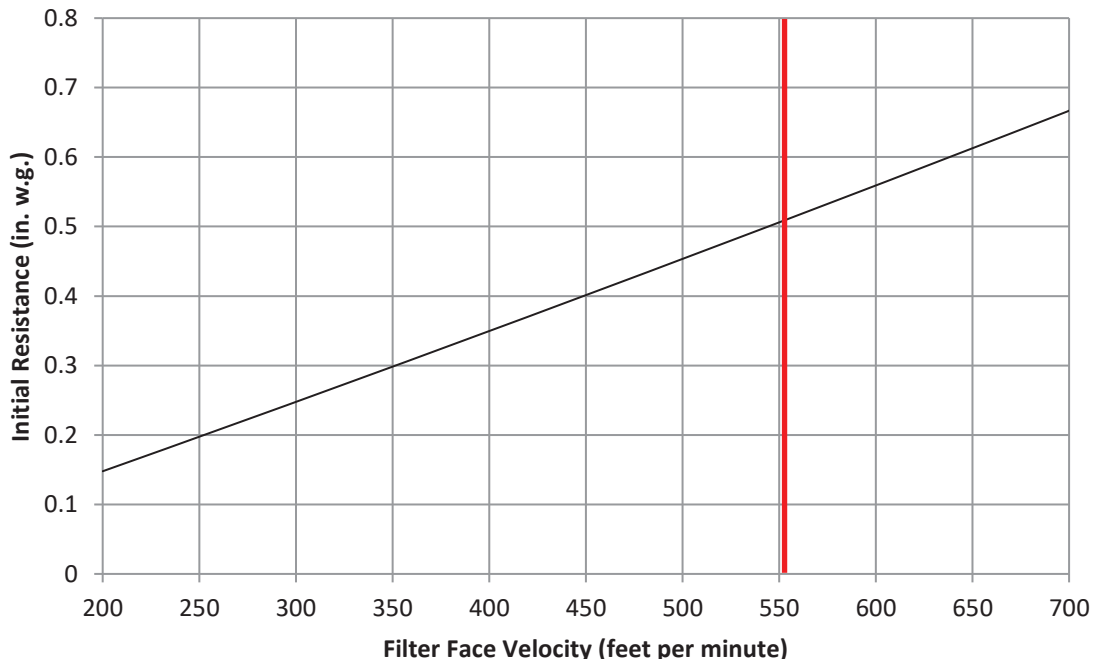
Carrier Part Number 31KB50000000624244
Kit Description Filter Kit
Unit Airflow, CFM 13300
Filter Velocity, FPM 554
Filter Sizes and Quantities Qty (6) 24in. x 24in.

DFpro Synthetic Cartridge Filter

DFpro rigid filters are designed to provide consistent high efficiency filtration in constant and variable air volume systems. Deep pleats are held firmly in place with plastic separators and expanded metal backing. Every edge of the media pack is glued inside the periphery of the frame to prevent air and dust bypass. The media and separators are 100% polypropylene to resist moisture damage, microbial growth, and puncture damage. Heavy gauge galvanized frame resists corrosion and maintains its structural integrity for extended months of service.



Cartridge Synthetic MERV 14



Air Filter Submittal

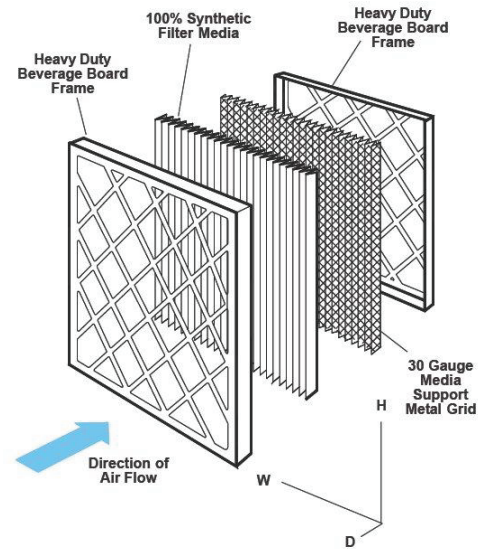
Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 1

Carrier Part Number 31K2C0000000624244
Kit Description Filter Kit
Unit Airflow, CFM 13300
Filter Velocity, FPM 554
Filter Sizes and Quantities Qty (6) 24in. x 24in.

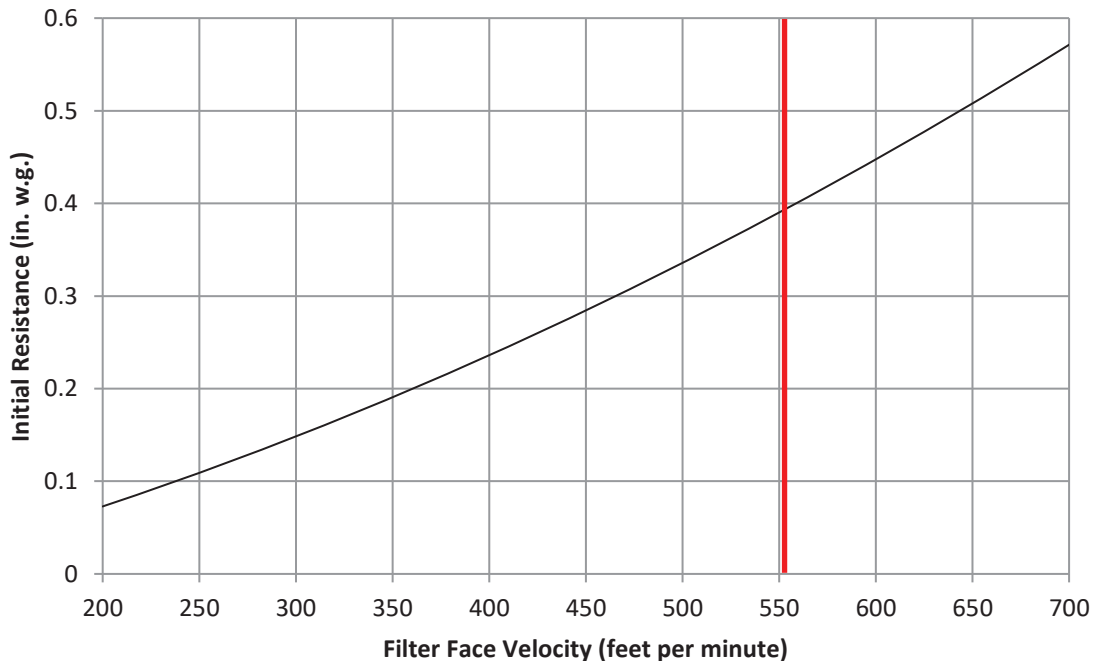
DFpro MERV 13 Pleated Filter

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.

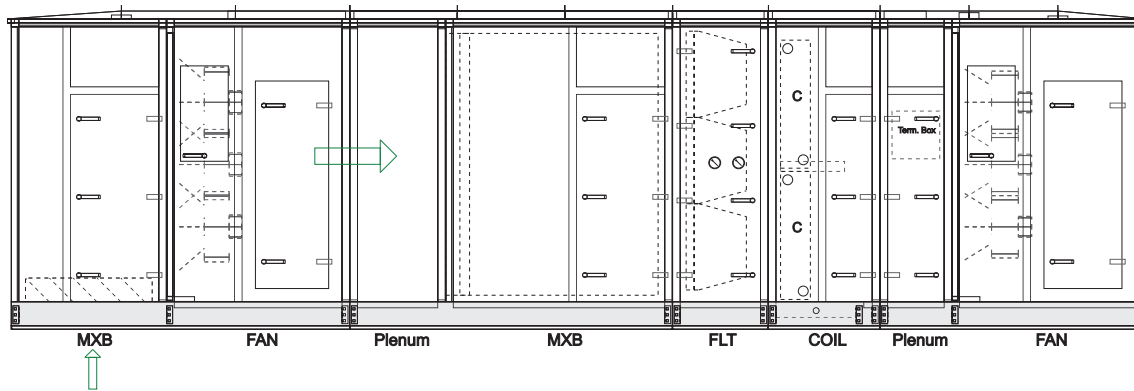


Filter Pleated (2") MERV 13



Unit Report AH 2

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2



Unit Parameters

Aero Outdoor Air Handler
39MW Size 40W
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Painted Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
6 inch tall Base Rail
Field Supplied Curb

Mixing Box

Damper: Bottom Premium Parallel
Door Right Side

Return Fan

Shipping Split After
Rear Inlet
Fan Sled
Plenum Fan B PEZA0126
Direct Drive Fans
Fan Count 5
1556 fanRPM Class II
Full Open Discharge
ECM Control Box (Standard)
Piezometer and Transducer (1 fan)
Voltage Selected - 460/3/60
Full Load Amps - 7.3 Each
FLA/MCA/MOCP 36.5/38.3/45
Return/Exhaust Fan Status (DI)
Door Right Side

Plenum

Length 24 inches

Mixing Box

Shipping Split After
Damper: Left Side Premium Opposed
Damper: Rear Premium Parallel
Mixed Air Temperature Sensor (AI)
Door Right Side

Unit Report AH 2

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Bag/Cartridge Filter

Shipping Split After
Shipping Skid
Bag/Cartridge Filter 6 - 12 IN. Side Loading
12" Cartridge w/ Header (Synthetic) MERV 14
Qty (4) 12in. x 24in.
Qty (8) 24in. x 24in.
Pre Filter : 2In. Flat Filter
2" Pleated MERV 13 Filter
Qty (4) 12in. x 24in.
Qty (8) 24in. x 24in.
Door Right Side
Minihelic Differential Pressure Gage 0-2" w.c. Right Side
Minihelic Differential Pressure Gage 0-2" w.c. Right Side

Chilled Water Coil and Plenum

Shipping Split After
Shipping Skid
Low Temperature Thermostat (DI)
304 Stainless Steel Drain Pan Right Side
Chilled Water 40.0 sq.ft 6 Row 11 FPI Double Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating
Door Right Side

Control Plenum

Length 18 inches
Unprogrammed Carrier UC Open XP Controller Located in Control Plenum
Door Right Side

Draw-Thru Supply Fan

Rear Inlet
Fan Sled
Plenum Fan B PEBM0105
Direct Drive Fans
Fan Count 5
3429 fanRPM Class III
Field Supplied Discharge
ECM Control Box (Standard)
Piezometer and Transducer (1 fan)
Voltage Selected - 460/3/60
Full Load Amps - 7.7 Each
FLA/MCA/MOCP 38.5/40.4/45
Supply Fan Status (DI)
Supply Air Temperature Sensor (AI)
Door Right Side

Weights and Dimensions

(LxWxH in ft in) 23' 11" x 9' 3" x 6' 8" **

Unit Report AH 2

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Operating 8130 LB **

Warranty Part Number(s) (NET PRICING)

39LMR-SU-FIRST Qty 1.0 First 39 Series Start-up

Configuration Notes

An Outdoor Plenum fan may not discharge through the roof of the unit.

If a bottom connection is required, use an Inlet Plenum Section.

An Outdoor Plenum fan may not discharge through the roof of the unit.

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

Warranty Part Number(s) (NET PRICING)

QTY 1.0 First 39 Series Start-up

** Weights and Dimensions are approximate. Weights include base unit weight, coils (wet & dry), fans and fan motors, and other components, but does not include filters, drives and skids. Approximate dimensions are provided primarily for shipping purposes, for exact dimensions, refer to submittal drawings. Shipping skids are not included.

All filter media efficiency ratings are for the filter media only.

Chilled Water Coil Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2



Cooling Application's Balance Criteria: Fluid Flow

Coil Model.....	28MC
Number of Coils.....	2
Row / FPI / Circ.....	6 / 11 / DB
Fin Thickness.....	.0042 in
Fin Type.....	Sine Wave
Face Area Type.....	Large
Coil Face Area.....	40.00 sqft
Face Velocity.....	490.0 fpm
Fin-Casing Material.....	Al-Galv.
Tube Diameter.....	0.5 in
Tube spacing: Stf x Str.....	1.25 x 0.781 in
Tube Wall Thickness.....	0.016 in
Actual Airflow.....	19600 CFM
Site Altitude.....	0 ft
Standard Airflow (adj. to std. dry atmosphere).....	18809 SCFM
Total Cooling Capacity.....	680.13 MBH
Sensible Cooling Capacity.....	597.07 MBH
Fluid Flow Rate.....	89.8 gpm
Fluid Pressure Drop.....	3.1 ft wg
Fluid Velocity.....	2.1 ft/s
Entering Fluid Temperature.....	43.00 F
Leaving Fluid Temperature.....	58.15 F
Fluid Temperature Rise.....	15.1 F
Entering Air Dry Bulb.....	83.90 F
Entering Air Wet Bulb.....	66.10 F
Entering Air Enthalpy.....	30.76 BTU/lb
Leaving Air Dry Bulb.....	54.51 F
Leaving Air Wet Bulb.....	54.29 F
Leaving Air Enthalpy.....	22.7 BTU/lb
Air Friction.....	0.68 in wg
Brine.....	FW
Brine Concentration.....	0 %
Fouling Factor.....	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.ahridirectory.org).

LEGEND:

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

Unit Acoustics Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Unit Acoustics Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	87	84	81
125 Hz	89	86	83
250 Hz	98	93	90
500 Hz	102	96	94
1000 Hz	102	93	91
2000 Hz	101	89	86
4000 Hz	96	90	87
8000 Hz	91	83	81

Sound power levels are rated in accordance with AMCA 300.

Unit Acoustics A-weighted Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	61	58	55
125 Hz	73	70	66
250 Hz	90	84	82
500 Hz	99	93	91
1000 Hz	102	93	91
2000 Hz	102	90	87
4000 Hz	97	91	88
8000 Hz	90	82	80

Sound power levels are rated in accordance with AMCA 300.

Sound contributed by Supply and Return Fans

Unit Acoustics PART-LOAD Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	81	83	79
125 Hz	87	85	80
250 Hz	88	86	81
500 Hz	87	84	80
1000 Hz	87	79	75
2000 Hz	83	77	72
4000 Hz	82	80	74
8000 Hz	76	75	70

Sound power levels are rated in accordance with AMCA 300.

Unit Acoustics Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Unit Acoustics PART-LOAD A-weighted Sound Power Level:

	Discharge	Inlet	Casing
63 Hz	55	57	53
125 Hz	71	69	64
250 Hz	80	77	72
500 Hz	84	81	77
1000 Hz	87	79	75
2000 Hz	85	79	74
4000 Hz	83	81	75
8000 Hz	75	74	69

Sound power levels are rated in accordance with AMCA 300.

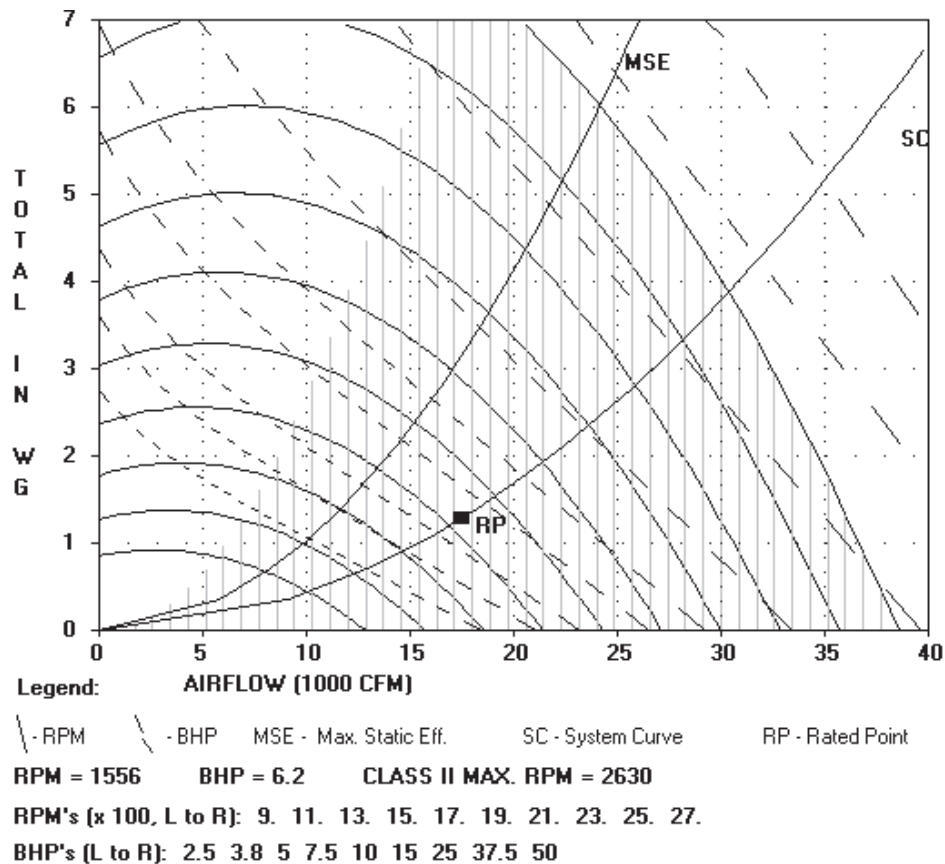
Sound contributed by Supply and Return Fans

Return Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Fan Model **NC-39M4005HPEZ**
Unit Size **40W**
Fan Type **ECM**
DIRECT DRIVE PLENUM (ZA-26) (Return)
Fan Wheel Diameter **17.7**
Fan Class **II**
Static Efficiency (%) **58**
Fan Application **Return Fan**
Orientation **Horizontal**
Actual Airflow, CFM **17500**
Site Altitude, , ft **0**
Total Upstream Static Losses, in wg **1.29**
Number of Fans **5**
Fan RPM / Max RPM **1556/2630**
Each Fan BHP **1.2**
Fan Total BHP **6.2**
(n-1) Airflow, CFM **25513**
(n-1) Redundancy (%) **146**
Fan Electrical Power, kW **5.7**
ECM Setting, VDC **5.9**

Unit is outside of the scope of AHRI Standard 430/431.



Supply Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Fan Model	39M4005HPEE-U
Unit Size	40W
Fan Type	ECM DIRECT DRIVE PLENUM (EBM-05)
Fan Wheel Diameter	15.7
Fan Class	III
Fan Application	Supply Fan
Orientation	Horizontal
Actual Airflow, CFM	19600
Site Altitude, ft	0
Upstream Ext. Static, in wg	0.00
Downstream Ext. Static, in wg	5.00
Cooling Coil Static, in wg	0.68
Heating Coil Static, in wg	0.00
Total Accessory Static, in wg	0.80
Total Static Pressure, in wg	6.48
Calculated Fan RPM / Motor RPM	3429 / 0
Class III Max. RPM	3700
Static Efficiency (%)	68
Number of Fans	5
Each Fan BHP	5.9
Fan Total BHP	29.4
(n-1) Airflow, CFM	18964
(n-1) Redundancy (%)	97
Fan Electrical Power, kW	24.8
ECM Setting, VDC	9.3



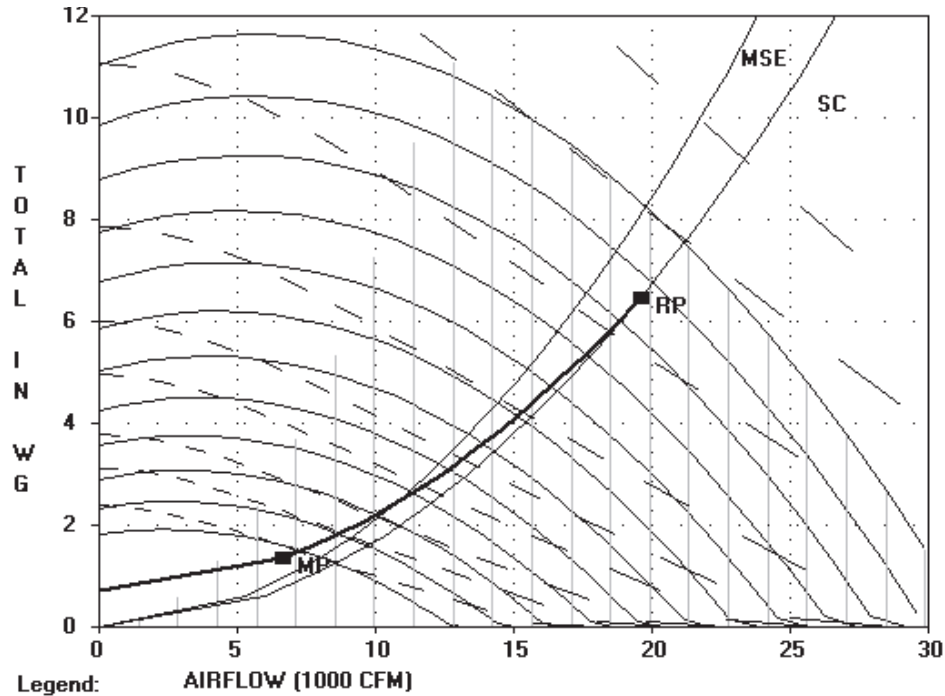
Accessories:

- (1) Flat Synthetic (2") MERV 13 [0.27]
- (1) CARTRIDGE LONG/SHORT Synthetic MERV 14 [0.45]
- (1) Side Mixing or Exhaust Box [0.08]

NOTE: Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org

Supply Fan Performance Summary

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2



RPM = 3429 BHP = 29.4 CLASS III MAX. RPM = 3700

RPM's (x 100, L to R): 15. 17. 19. 21. 23. 25. 27. 29. 31. 33. 35. 37.

BHP's (L to R): 2.5 3.8 5 7.5 10 15 25 37.5 50

Sensor and Actuator Points List

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Name	AI	AO	DI	DO
Return/Exhaust Fan Status			X	
Mixed Air Temperature Sensor	X			
Low Temperature Thermostat			X	
Supply Fan Status			X	
Supply Air Temperature Sensor	X			

Controller Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Carrier Part Number OPN-UCXP
Manufacturer Carrier

I-VU® UC Open XP

Unit Controller

BACnet Support – Advanced application controller (B-AAC), as defined in BACnet 135-2001 Annex L

BACnet Communication Port – EIA-485 port for BACnet MS/TP communications (baud rate is DIP switch selectable)

Local Access Communication Port – For system start-up and troubleshooting (115.2 kbps)

Rnet Communication Port – For connecting Carrier communicating room sensors and Carrier's touchscreen user interface

Inputs – 12 inputs: Configurable for 0-10V, RTD/Thermistor/Dry contact, or 0-20mA. Inputs 1 and 2 may be used for pulse counting. All analog inputs have 12 bit A/D resolution.

Outputs – 6 binary outputs: Configured as dry contact, normally open or normally closed. All binary outputs must be powered from a Class 2 power source.

6 analog outputs: 1 and 2 are configurable for 0-10V or 0-20mA; 3-6 are 0-10V only. Analog outputs have 8 bit D/A resolution.

Protection – Incoming power and network connections are protected by non-replaceable internal solidstate polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected against voltage transient and surge events.

Real Time Clock – Battery-backed real time clock keeps track of time in event of power failure.

Battery – 10-year Lithium CR2032 battery provides a minimum of 10,000 hours of trend data & time retention during power outages.

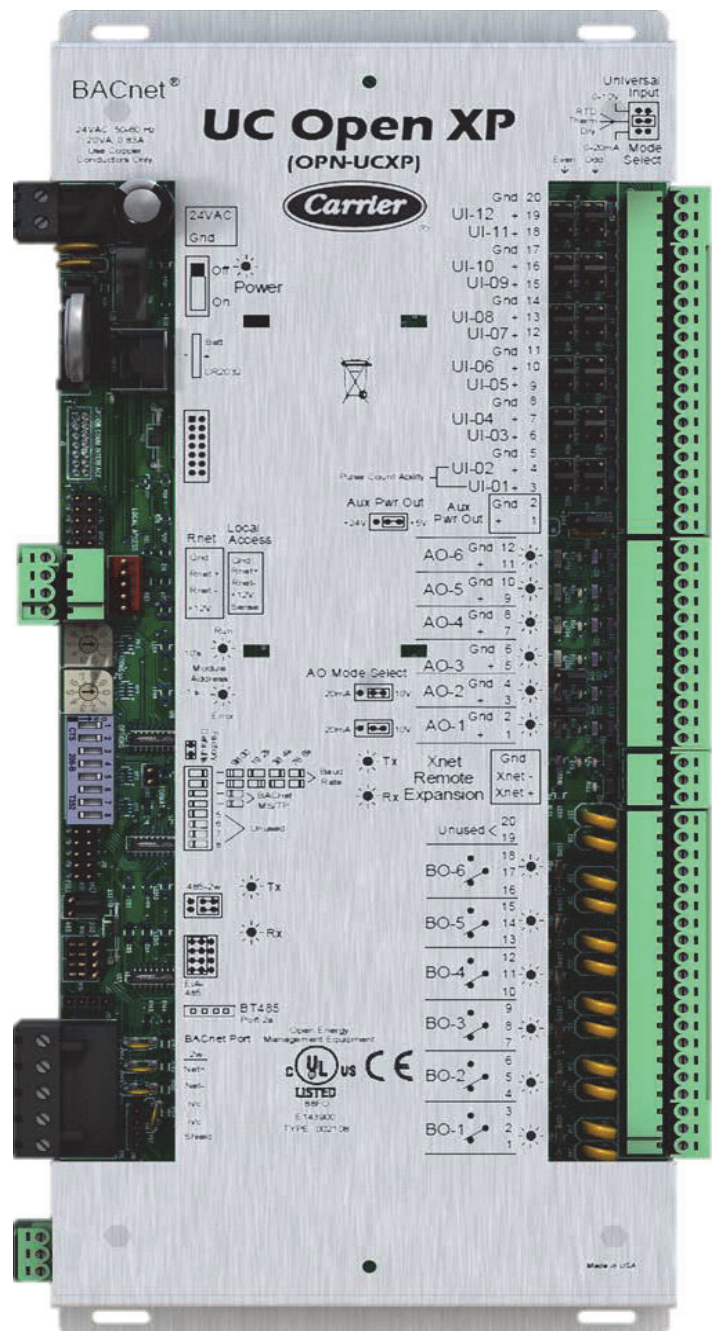
Status Indicators – LED status of power, running, and errors. LED indicators for transmit/receive for BACnet port and for each of the 12 outputs.

Controller Addressing – Rotary DIP switches set BACnet MS/TP MAC address of controller.

Listed By – UL-916, FCC Part 15-Subpart B- Class A, CE EN50082-1997

Operating/Storage Range – -24° to 140°F (-30° to 60°C), 10-90% relative humidity, non-condensing

Power Requirements – 24VAC +/- 10%, 50-60Hz
20VA power consumption
Single Class 2 source only, 100VA or less



Controller Expansion Board Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 2

Carrier Part Number OPN-UCXP10

Manufacturer Carrier

I-VU® UC Open XP10

Unit Controller Expansion Board

Communication Ports – Xnet Remote Expansion port:
For connecting to a UC XP Controller via the Xnet network.

Inputs – 8 binary inputs: Inputs 1-8 are binary only and support pulse counting up to 10 Hz.

8 analog inputs: Inputs 9-16 are universal inputs, jumper selectable between thermistor/dry contact and 0-5VDC. All analog inputs have 10 bit A/D resolution.

Outputs – 8 binary outputs: Configured as dry contact, normally open, and must be powered from a Class 2 power source.

Protection – Incoming power and network connections are protected by non-replaceable internal solidstate polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected.

Status Indicators – LED status of power, outputs, running and errors.

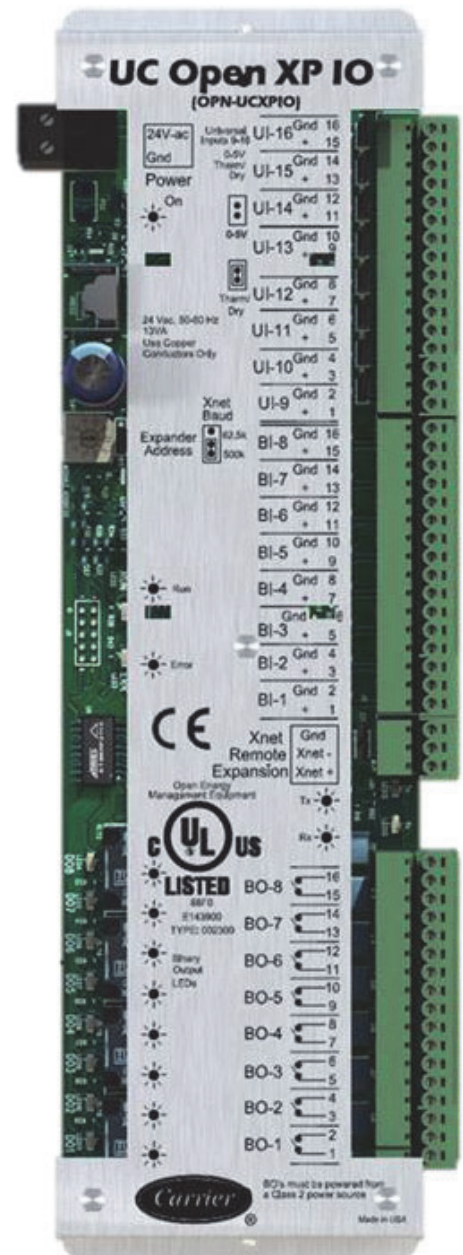
Listed By – UL916 (Canadian Std. C22.2 No. 205-M 1983), CE, FCC Part15-Subpart B - Class A

Operating/Storage Range – -20°F to 140°F (-29° to 60°C), 10-90% relative humidity, non-condensing

Power Requirements – 24VAC +/- 10%, 50-60Hz
13VA power consumption

26VDC (25V min, 30V max)

Single Class 2 source only, 100VA or less



Supply Air Temperature (SAT) Sensor Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 2

Carrier Part Number 33ZCSENSAT
 Manufacturer Automation Components, Inc.
 Manufacturer Part Number ACI/10K-CP-D4
 Cable 1
 Channel UI-2
 Terminal/Signal TB2-10 / 10K Thermistor AI
 Terminal/Signal TB2-12 / Signal Ground

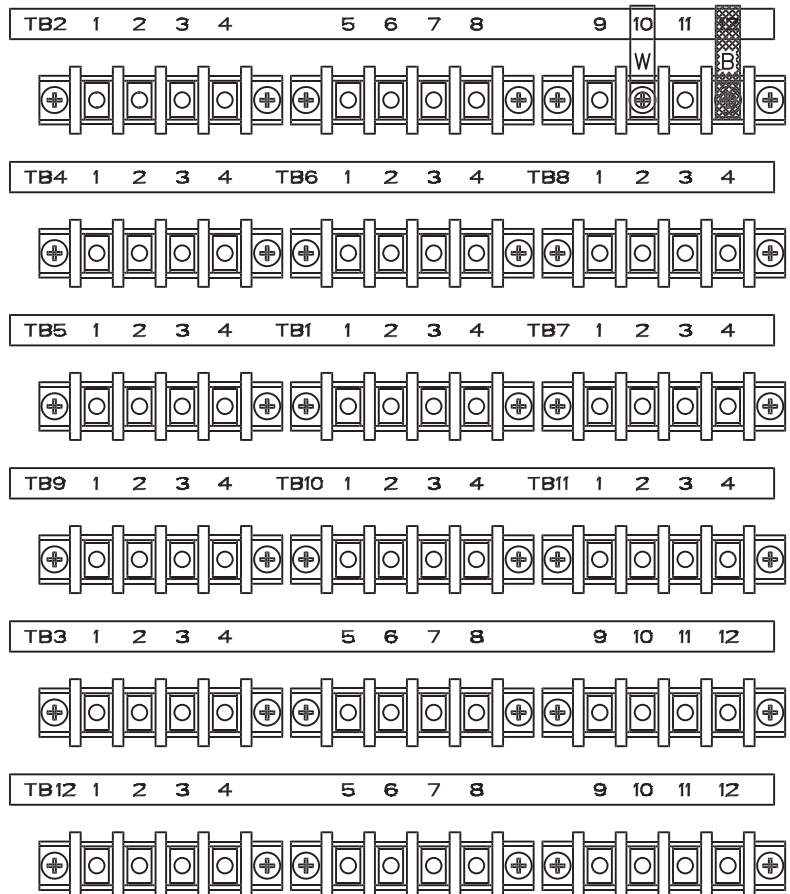


SAT Supply Air Temperature Sensor

The SAT sensor consists of a thermistor encased within a stainless steel probe.

The thermistor has a temperature range of -245° to 185° F with a nominal resistance of 10,000 ohms at 77° F.

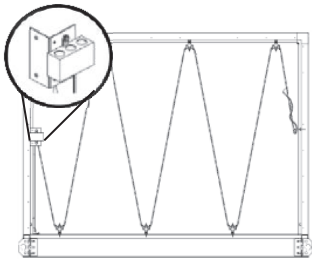
Wire Terminations



Mixed Air Temperature (MAT) Sensor Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Carrier Part Number HH79NZ041
Manufacturer Automation Components, Inc.
Manufacturer Part Number ACI/10K-CP-A24
Cable 4
Channel UI-3
Terminal/Signal TB2-7 / 10K Thermistor AI
Terminal/Signal TB2-8 / Signal Ground



MAT
Mixed Air
Temperature Sensor

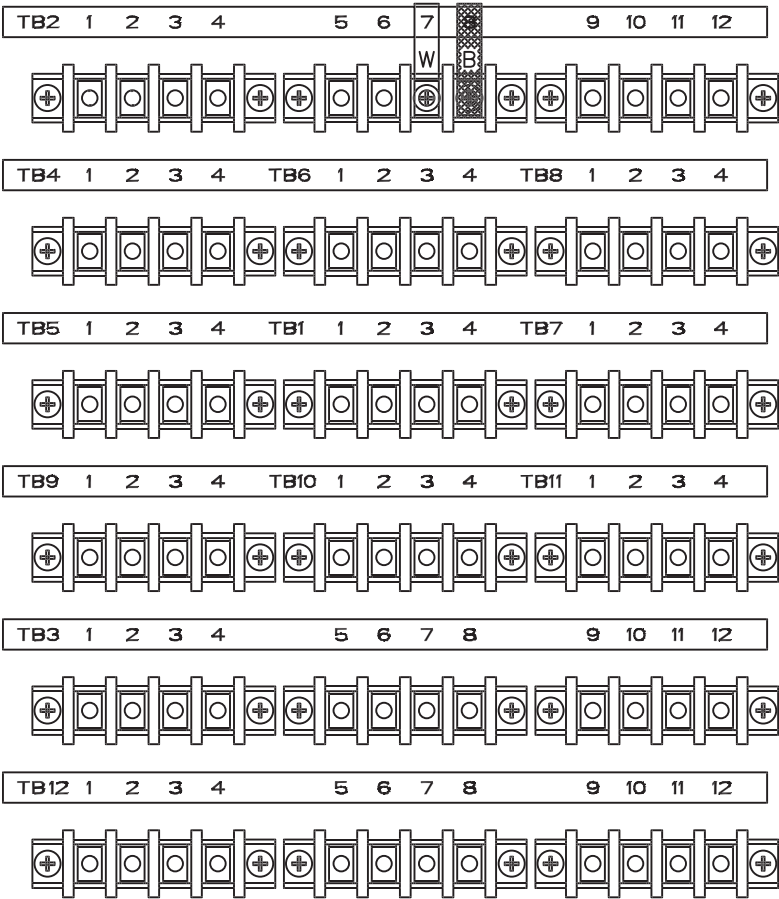
The MAT sensor consists of multiple, evenly spaced thermistors encased within a flexible copper tube.

Mechanical and electrical averaging is used to achieve the temperature measurement over the entire element length.

The MAT sensor has a range of -40° to 185° F with a nominal resistance of 10,000 ohms at 77° F.

The sensor is located in the last mixing box in the airflow.

Wire Terminations

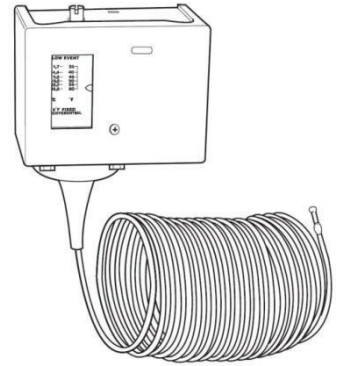


Low Temperature Thermostat Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 2

Carrier Part Number HH22BZ001
 Manufacturer Schneider Electric
 Manufacturer Part Number TC-5231-702
 Cable 2
 Channel UI-5
 Terminal/Signal TB2-4 / Dry Contact DI
 Terminal/Signal TB2-3 / Signal Ground



LTT

Low Temperature Thermostat

20 ft. element senses temperature over a large area. Control responds to the coldest one-foot section of the sensor.

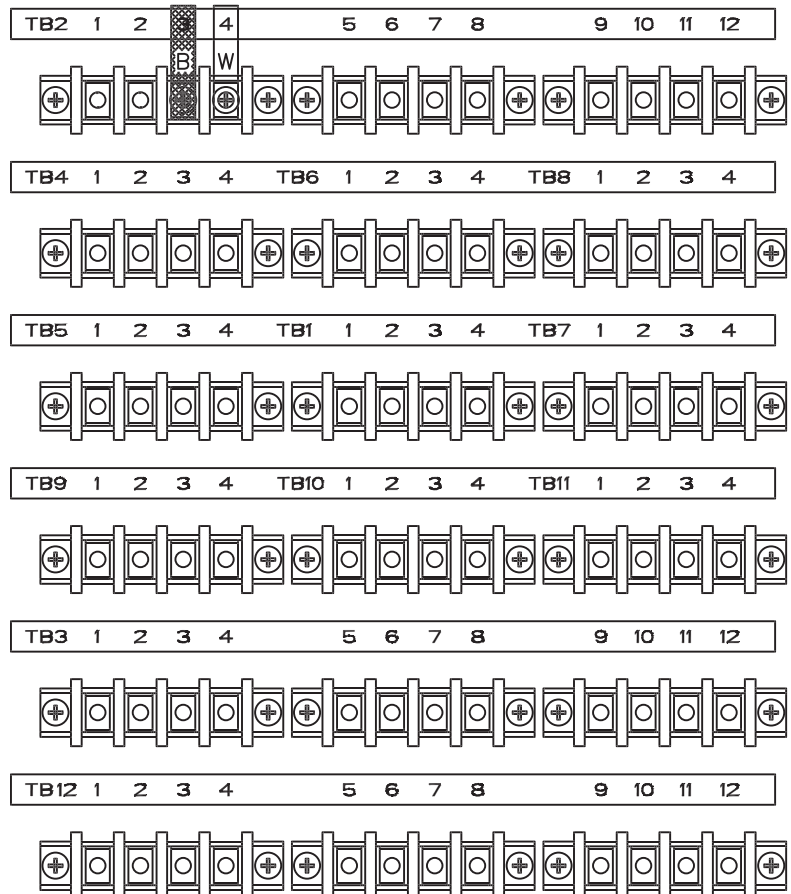
Adjustable setpoint from 35° F to 60° F with 5° F fixed differential.

Rated for use at 17 full load amps (120/208/240 Vac), 24 non-inductive amps (120/208/240 Vac), and 16 non-inductive amps (24 Vac).

Enclosure rating: NEMA Type 1.

Approvals: UL & CSA.

Wire Terminations



Supply Fan Status Sensor Submittal

Project: San Bernadino County Sherriff Station AHU

Unit Tag: AH 2

Carrier Part Number 39MA51000021
 Manufacturer Automation Components, Inc.
 Manufacturer Part Number A/MCS-A
 Cable 21
 Channel UI-6
 Terminal/Signal TB3-11 / Dry Contact DI
 Terminal/Signal TB3-12 / Signal Ground



SFS

Supply Fan Status Sensor

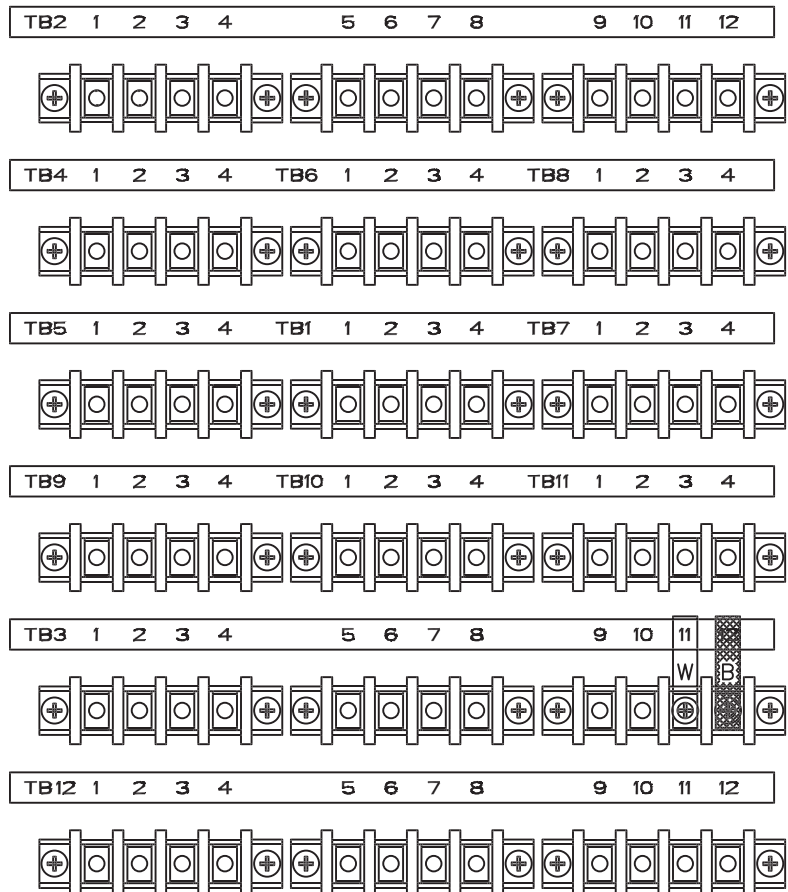
The A/MCS-A is a normally open (N/O) solid state adjustable current switch.

Outputs are non-polarity sensitive, N/O solid-state contacts for switching both AC and DC circuits up to 36 volts.

Unit includes two Status LED indicators, which signal three states:

1. Tripped on
2. Current present but below trip point
3. Current off or below the low end of the adjustable trip point range.

Wire Terminations



Return/Exhaust Fan Status Sensor Submittal

Project: San Bernadino County Sherriff Station AHU
Unit Tag: AH 2

Carrier Part Number 39MA51000021
Manufacturer Automation Components, Inc.
Manufacturer Part Number A/MCS-A
Cable 19
Channel EXIN-1
Terminal/Signal TB7-1 / Dry Contact DI
Terminal/Signal TB7-2 / Signal Ground



RFS/EFS

Return/Exhaust Fan Status Sensor

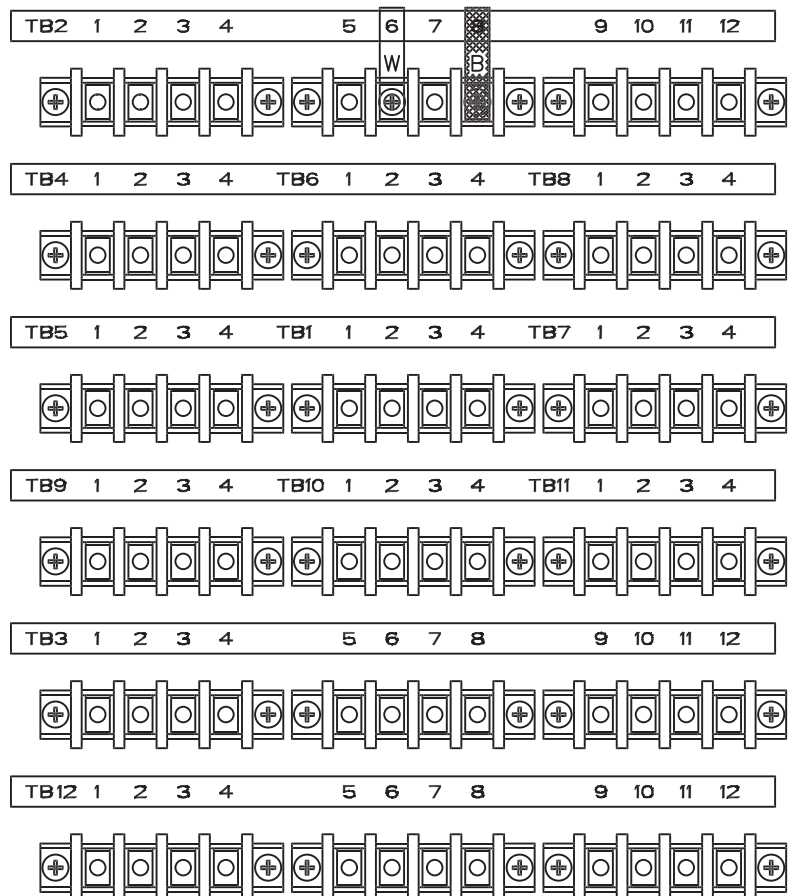
The A/MCS-A is a normally open (N/O) solid state adjustable current switch.

Outputs are non-polarity sensitive, N/O solid-state contacts for switching both AC and DC circuits up to 36 volts.

Unit includes two Status LED indicators, which signal three states:

1. Tripped on
2. Current present but below trip point
3. Current off or below the low end of the adjustable trip point range.

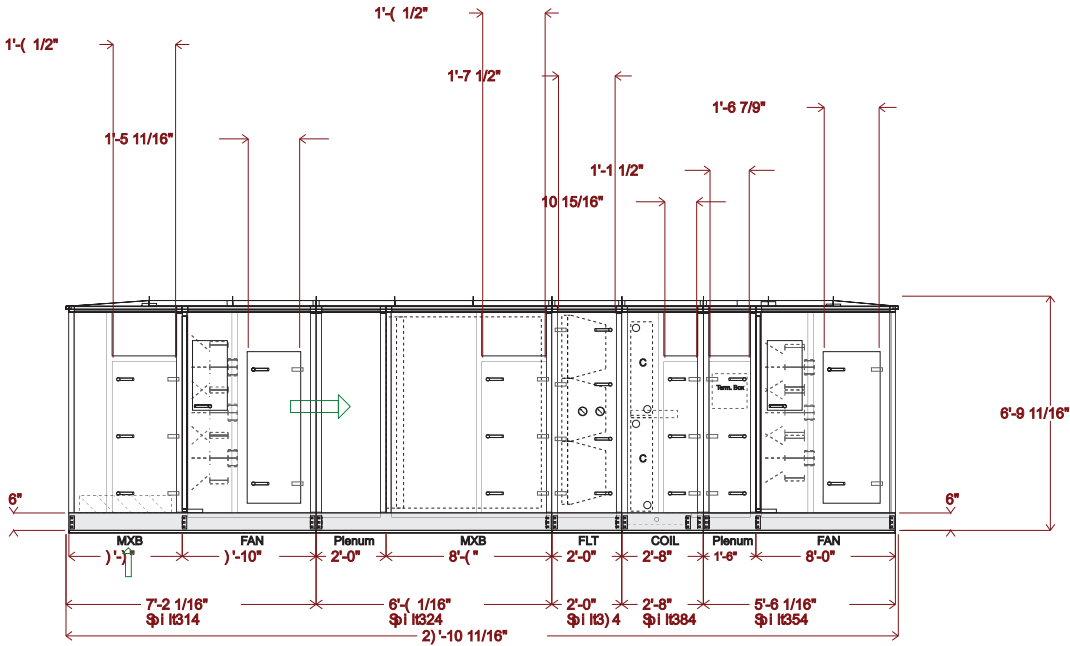
Wire Terminations



Unit Width: (1) * 81.5 in. long
Return Fan
0
Bag/Catch Filter 6 - 12 IN. plate Loading
Q3 8412 in. x 28 in.
Q3 8428 in. x 28 in.
Pre Filter: 2 in. Flat Filter
Q3 8412 in. x 28 in.

Q3 8428 in. x 28 in.
Chilled Water 6 Row 11 FPI Double Circuit Q3 24
Draw-Thru pulley Fan
0
Oil draining weight 391 0.0 lbs.
UL Steam Corner Weight 394 1 (08.0 lbs.
Downstream Corner Weight 394 2161.0 lbs.

pl 113	Airway Length	Weight 394
pl 11314	7'-2 1/16"	21(7
pl 11324	6'-1 1/16"	1682
pl 1134	2'-0"	982
pl 11384	2'-8"	1596
pl 11354	5'-6 1/16"	196



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DATE 12/0/2028	AHUButlder v7.06	(M Cen3al p33on Atr-Handler, ptze 80W pan Bernadno Coun3y pherrtf p33on AHU: AH 2 Assembly Drawtng	REVipION ptde Vtew
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