Unit Report For RTU 1-4

Project: Project Kona
Prepared By: Tammy Turnbill

10/29/2024
01:36PM

Unit Parameters

Unit Model: **48FEEM20B3A6-8M0A0**
Unit Size: **20 (17.5 Tons)**
Volts-Phase-Hertz: **460-3-60**
Heating Type: **Gas**
Heat Control: **Medium Heat**
Duct Cfg: **Vertical Supply / Vertical Return**
DX Options: **Two Stage Cooling, Single Circuit**

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

Unit Length: **10' 7.875"**
Unit Width: **7' 2.375"**
Unit Height: **3' 11.75"**
Total Operating Weight: **1731** 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: **3/4**
Condensate Drain Line Size: **3/4**
Return Air Filter Type: **Throwaway**
Return Air Filter Quantity: **6**
Return Air Filter Size: **20 x 25 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Medium Heat
RA Smoke Detector
High Static Option - Vertical Supply
Al/Cu - Al/Cu
Electro-mechanical Controls with POL224 (includes FDD)
Ultra Low Leak Enthalpy Economizer with Barometric Relief and CO2 Sensor
Standard Packaging

Warranty Information

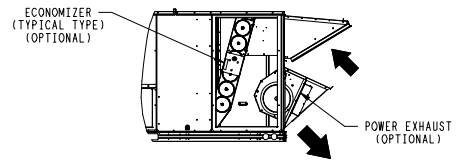
1-Year parts(std.)
5-Year compressor parts(std.)
10-Year heat exchanger - Aluminized(std.)

No optional warranties were selected.

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

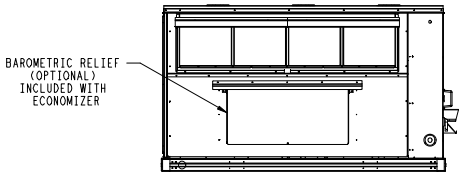
Ordering Information

Part Number	Description	Quantity
48FEEM20B3A6-8M0A0	Rooftop Unit	1



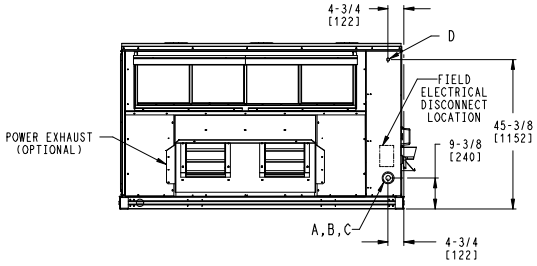
BACK

(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



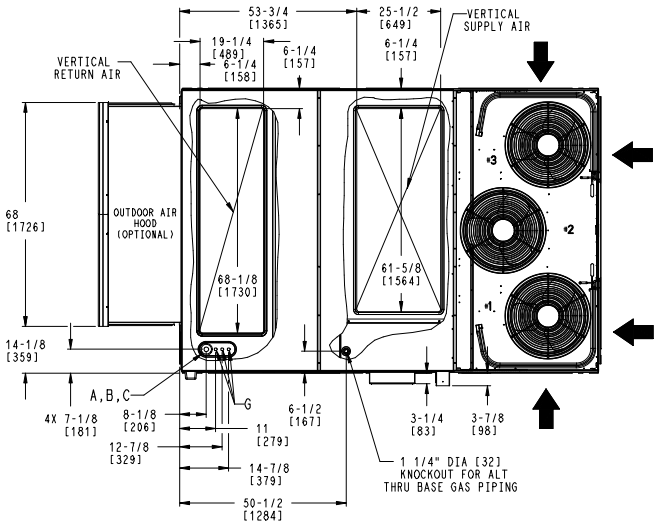
LEFT

SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED



LEFT

SHOWN WITH THE POWER EXHAUST OPTION INSTALLED

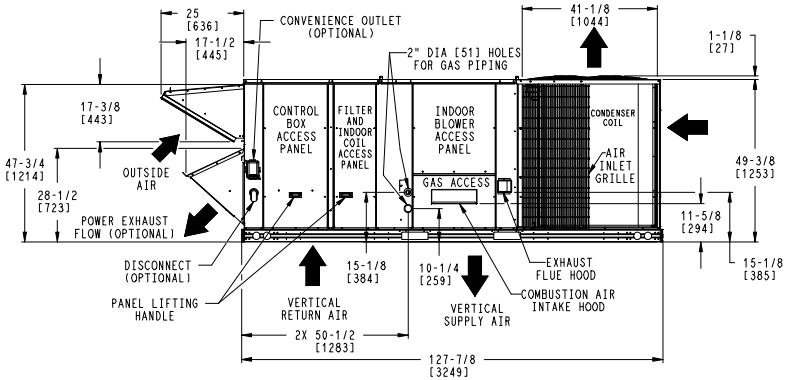


TOP

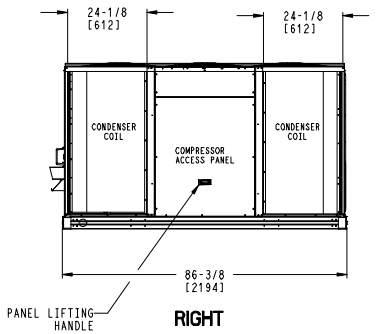
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



FRONT

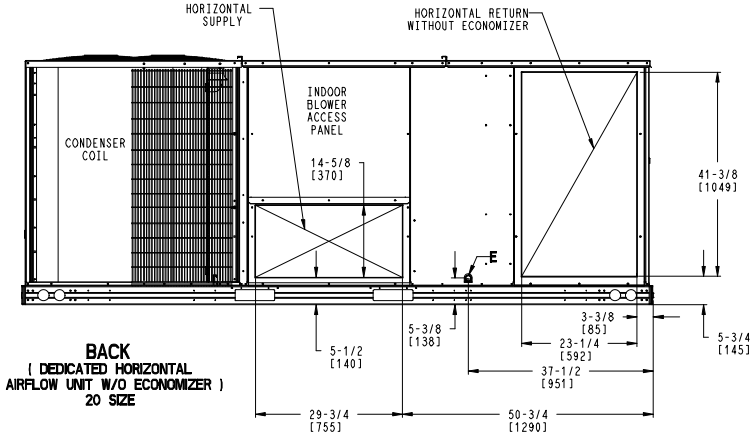


RIGHT

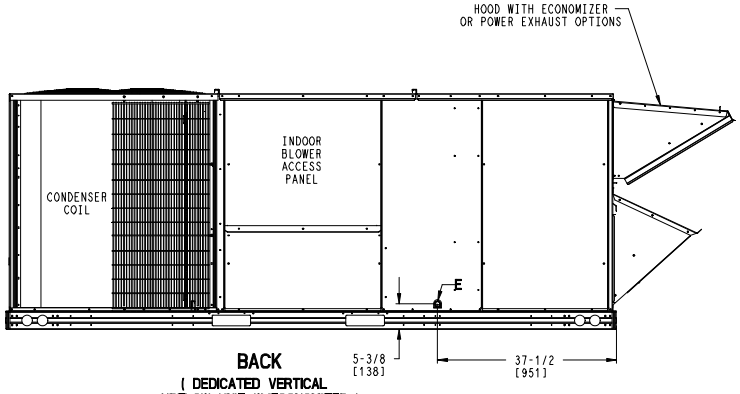
DEDICATED VERTICAL AIRFLOW UNIT 20 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

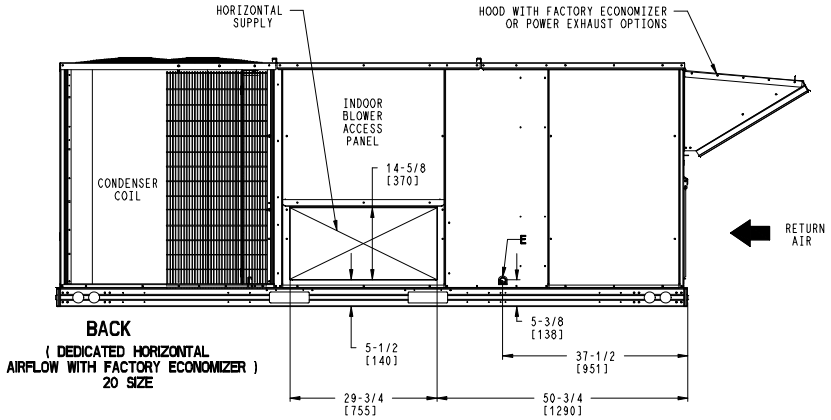
	CONNECTION SIZES
E	3/4"-14 NPT CONDENSATE DRAIN



BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT W/O ECONOMIZER)
20 SIZE



BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
20 SIZE

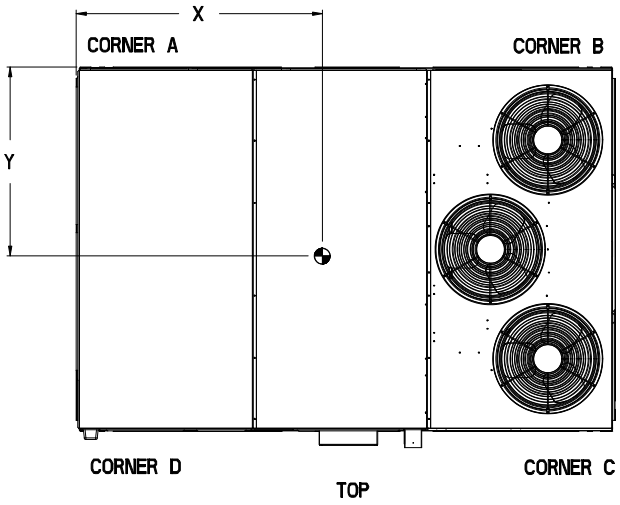


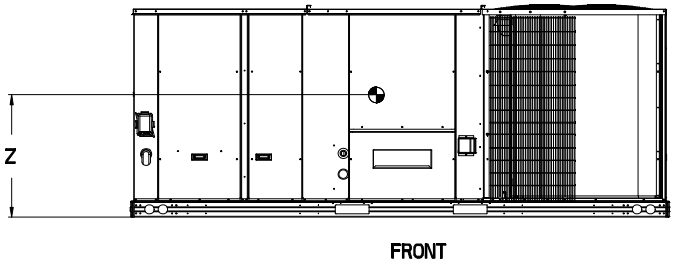
BACK
(DEDICATED HORIZONTAL AIRFLOW WITH FACTORY ECONOMIZER)
20 SIZE

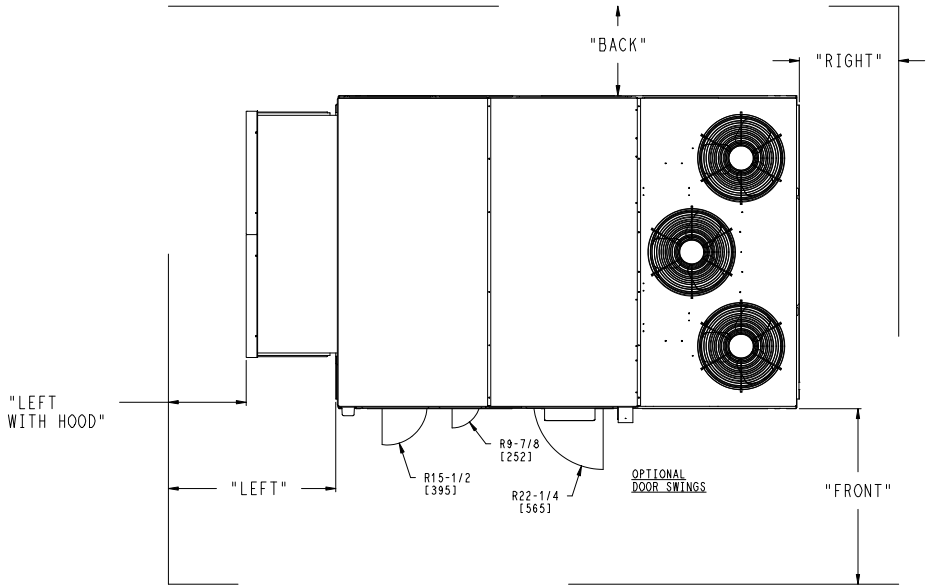
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

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
48FE 20	1800	816	383	174	479	217	521	236	417	189	71 [1803]	45 [1143]	16 1/2 [419]

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





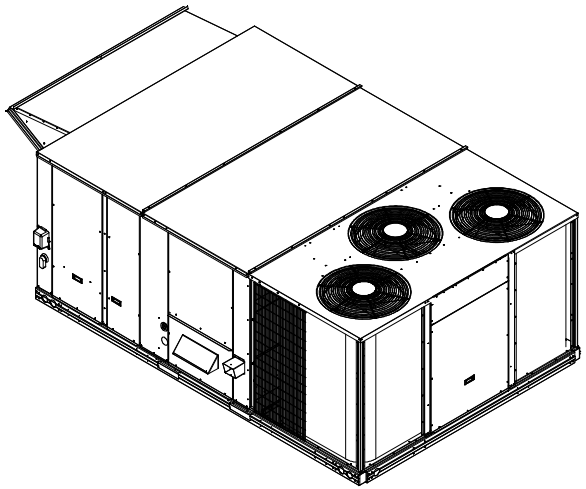


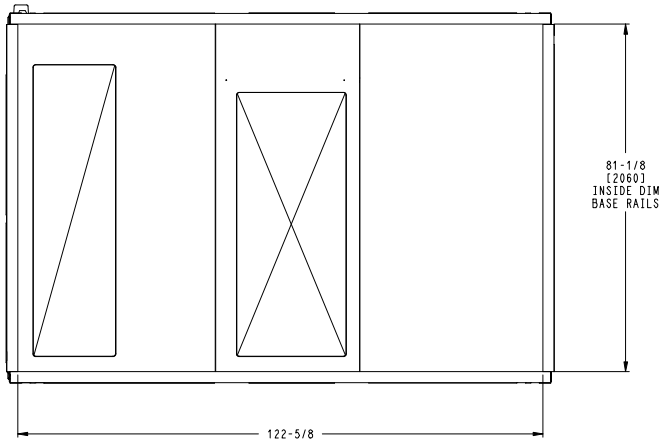
NOTES:

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

CLEARANCE			
	SERVICE WITH:	SERVICE WITH:	OPERATING
SURFACE	CONDUCTIVE BARRIER	NONCONDUCTIVE BARRIER	CLEARANCE
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]

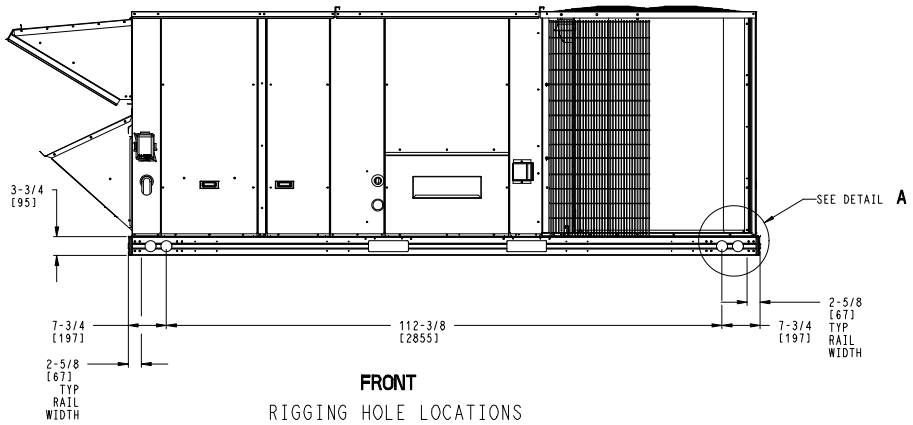
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-





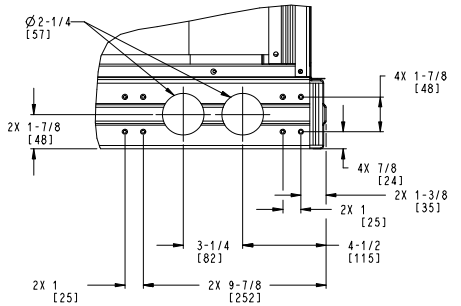
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

RIGGING HOLE LOCATIONS



DETAIL A

TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

Performance Summary For RTU 1-4

Project: Project Kona 10/29/2024
Prepared By: Tammy Turnbill 01:36PM

Part Number:48FEEM20B3A6-8M0A0

Refrigerant:	**R454B**	
ARI EER:	**10.80**	
IEER:	**14.5**	

Base Unit Dimensions

Unit Length:	**127.9**	in
Unit Width:	**86.4**	in
Unit Height:	**47.8**	in

Operating Weight

Base Unit Weight:	**1673**	lb
Medium Heat:	**21**	lb
RA Smoke Detector:	**7**	lb
High Static Option - Vertical Supply:	**30**	lb
Total Operating Weight:	**1731**	lb

Unit

Unit Voltage-Phase-Hertz:	**460-3-60**	
Air Discharge:	**Vertical**	
Fan Drive Type:	**Vane Axial**	
Actual Airflow:	**7000**	CFM
Site Altitude:	**1004**	ft

Cooling Performance

Condenser Entering Air DB:	**90.0**	F
Evaporator Entering Air DB:	**78.8**	F
Evaporator Entering Air WB:	**66.2**	F
Entering Air Enthalpy:	**31.37**	BTU/lb
Evaporator Leaving Air DB:	**57.1**	F
Evaporator Leaving Air WB:	**55.6**	F
Evaporator Leaving Air Enthalpy:	**23.90**	BTU/lb
Gross Cooling Capacity:	**227.04**	MBH
Gross Sensible Capacity:	**158.15**	MBH
Compressor Power Input:	**16.27**	kW
Coil Bypass Factor:	**0.137**	

Mixed Air

Outdoor Air Airflow:	**1400**	CFM
Outdoor Air DB:	**90.0**	F
Outdoor Air WB:	**74.0**	F
Outdoor Air Htg. Temp.:	**-1.0**	F
Return Air DB:	**76.0**	F
Return Air WB:	**64.0**	F
Return Air Htg. Temp.:	**70.0**	F

Heating Performance

Heating Airflow:	**7000**	CFM
Entering Air Temp:	**55.8**	F
Leaving Air Temp:	**90.2**	F
Gas Heating Input Capacity:	**248.0 / 310.0**	MBH
Gas Heating Output Capacity:	**200.0 / 251.0**	MBH
Temperature Rise:	**34.4**	F
Thermal Efficiency (%):	**81.0**	

Supply Fan

External Static Pressure:	**1.00**	in wg
Options / Accessories Static Pressure		
Economizer:	**0.07**	in wg

Application External Static (ESP + Unit Opts/Acc.):	**1.07**	in wg
Fan RPM:	**1768**	
Fan Power:	**3.95**	BHP
NOTE:	**Selected IFM RPM Range: 250 - 2020**	

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:	**15**
Compressor #1 LRA:	**123**
Compressor #2 RLA:	**13.9**
Compressor #2 LRA:	**100**
Indoor Fan Motor Type:	**HIGH**
Indoor Fan Motor FLA (Total):	**3.5**
Combustion Fan Motor FLA (ea):	**0.3**
Power Supply MCA:	**42.4**
Power Supply MOCP (Fuse or HACR):	**50**
Disconnect Size FLA:	**44**
Disconnect Size LRA:	**239**
Electrical Convenience Outlet:	**None**
Outdoor Fan [Qty / FLA (ea)]:	**3 / 0.9**

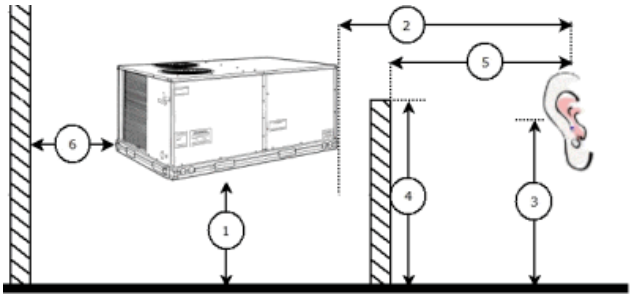
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	92.0	79.1	92.2
125 Hz	90.5	74.9	83.9
250 Hz	88.3	70.0	80.4
500 Hz	81.3	66.8	81.8
1000 Hz	80.2	67.4	78.7
2000 Hz	77.8	61.2	76.5
4000 Hz	73.7	52.0	72.2
8000 Hz	63.6	43.5	65.4
A-Weighted	86.1	70.8	84.1

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

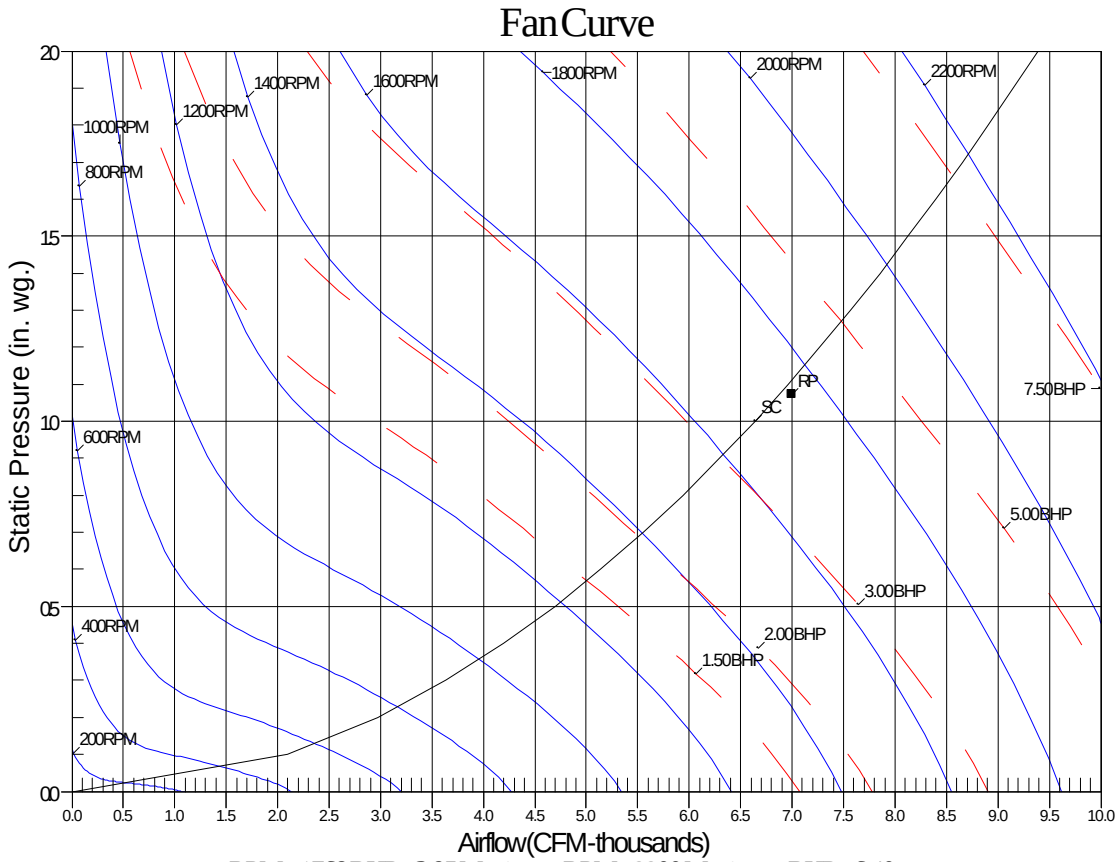
6. Horizontal distance from unit to obstruction:.....**0.0** ft

Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	92.2	83.9	80.4	81.8	78.7	76.5	72.2	65.4	93.6 Lw
B	66.0	67.8	71.8	78.6	78.7	77.7	73.2	64.3	84.1 LwA
C	59.8	51.5	48.0	49.4	46.3	44.1	39.8	33.0	61.2 Lp
D	33.6	35.4	39.4	46.2	46.3	45.3	40.8	31.9	51.7 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

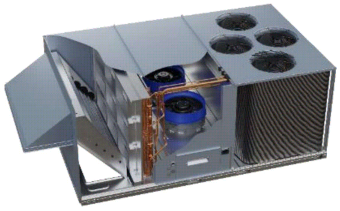
Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system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



WeatherMaker with ecoblue technology

PURON ADVANCE™ PACKAGED ROOFTOP GAS HEATING/ELECTRIC COOLING UNITS WITH ECOBLUE TECHNOLOGY – 17.5, 20, 25, 27.5 TONS

48FE units are single-packaged electric cooling, gas heating rooftops. All units are prewired and pre-charged with Carrier's new, low global warming potential Puron Advance™ (R-454B) refrigerant. Puron Advance represents a 75% reduction in refrigerant GWP over legacy Puron™ (R-410A) models. All units are factory tested in both heating and cooling modes and use two stage cooling capacity control



ASHRAE 90.1 COMPLIANT

c UL us

AHRI CERTIFIED

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Puron ADVANCE™

PERFORMANCE FEATURES

- Puron Advance (R-454B) refrigerant
- Two-stage cooling capacity control on all models
- IEERs up to 14.5
- New - A2L leak detection and dissipation system factory installed standard
- Leak system ensures unit and occupant safety during operation and includes an alarm relay for optional use
- Onboard recallable leak detection history for easier troubleshooting and service
- Direct Drive – EcoBlue™ Technology Indoor fan system uses Vane Axial fan design and electronically commutated motor
- New Unit Control Board with intuitive quick fan speed adjustment
- ASHRAE 90.1 and IECC code compliant
- Sound levels as low as 79 dB
- Exclusive non-corrosive composite condensate pans in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- AFUE Gas efficiencies up to 81%
- Induced draft combustion design
- Redundant gas valve, with up to 2 stages of heating
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- TXV refrigerant metering system on all models
- Exclusive IGC solid-state control for on-board diagnostics with LED error code designation, burner control logic and energy saving indoor fan motor delay

PERFORMANCE FEATURES (continued)

- Standard cooling operating range up to 115°F (46°C), and down to 40°F (4°C). Low Ambient kits allows cooling operation down to -20°F (-29°C).
- Rated in accordance with AHRI Standards 340/360
- Designed in accordance with Underwriters' Laboratories Standard UL 60335-1 and UL 60335-2-40
- Listed by UL and CUL-Canada

MAINTENANCE FEATURES

- Large access panels with easy grip handles
- Innovative, easy starting, no-strip screw feature on unit access panels
- Two-inch disposable return air filters
- Tool-less filter access door
- New Vane Axial evaporator-fan system has no fan belts, pullies, blower shaft, and blower bearings with side out design.
- Unit control board facilitates simple safety circuit troubleshooting and simplified control box arrangement.

INSTALLATION FEATURES

- Dedicated vertical and horizontal airflow models available ordered as factory option. No special kits required
- Provisions for thru-the-bottom power entry capability
- Single point gas and electric connections
- Full perimeter base rail with built-in rigging adapters and fork truck slots

STANDARD LIMITED PARTS WARRANTY

- 10-year heat exchanger - Aluminized
- 15-year heat exchanger - Stainless Steel
- 5-year compressor parts
- 3-year SystemVu™ controller
- 1-year parts

AVAILABLE OPTIONS:

- Patented Humidi-MiZer® adaptive dehumidification system. This option also includes Low Ambient controls
- Field installed low ambient head pressure controller available
- Through the base connections for gas and electric available as option
- Stainless steel gas heat exchanger includes tubes, vestibule plate and collector box.
- Disconnect and convenience outlet options
- High static motor options
- Smoke detector, supply and/or return air
- Corrosion resistant options for evaporator and condenser coils
- CO2 Sensor
- Phase Monitor Protection
- 4" MERV-13 Filters
- 2-position damper
- Hinged access panels
- Integrated economizer system. Low and ULTRA Low Leak versions.
- Condensate overflow switch
- SystemVu Controls

Unit Report For RTU 5-8

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Unit Parameters

Unit Model:	**48FEEM20B2A6-8M0A0**
Unit Size:	**20 (17.5 Tons)**
Volts-Phase-Hertz:	**460-3-60**
Heating Type:	**Gas**
Heat Control:	**Medium Heat**
Duct Cfg:	**Vertical Supply / Vertical Return**
DX Options:	**Two Stage Cooling, Single Circuit**

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

Unit Length:	**10' 7.875"**
Unit Width:	**7' 2.375"**
Unit Height:	**3' 11.75"**
Total Operating Weight:	**1701** 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:	**3/4**
Condensate Drain Line Size:	**3/4**
Return Air Filter Type:	**Throwaway**
Return Air Filter Quantity:	**6**
Return Air Filter Size:	**20 x 25 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

Medium Heat
RA Smoke Detector
Std/Medium Static Option - Vertical Supply
Al/Cu - Al/Cu
Electro-mechanical Controls with POL224 (includes FDD)
Ultra Low Leak Enthalpy Economizer with Barometric Relief and CO2 Sensor
Standard Packaging

Warranty Information

1-Year parts(std.)
5-Year compressor parts(std.)
10-Year heat exchanger - Aluminized(std.)

No optional warranties were selected.

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
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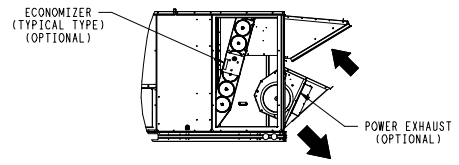

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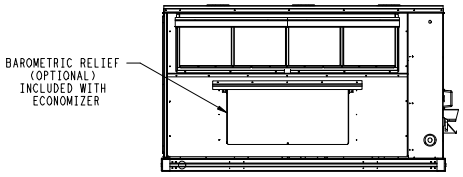
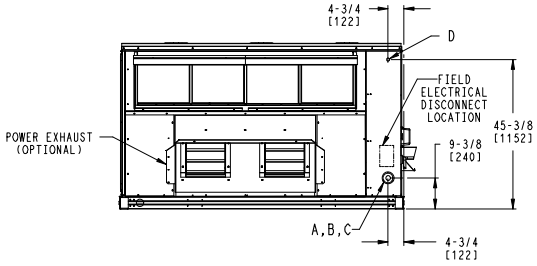
(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



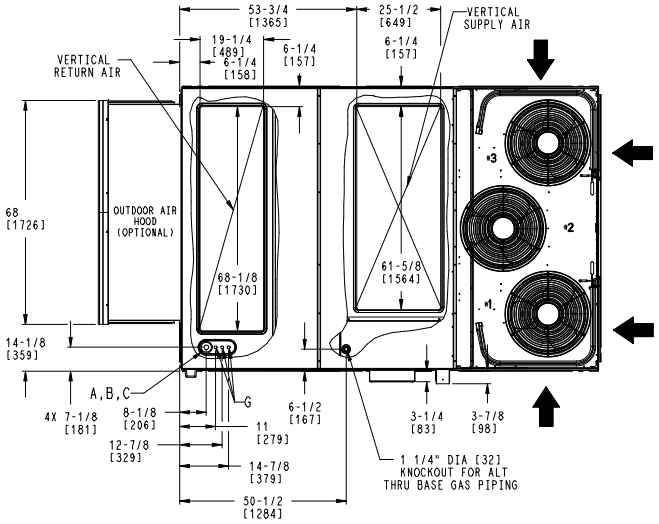
LEFT

SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED



LEFT

SHOWN WITH THE POWER EXHAUST OPTION INSTALLED

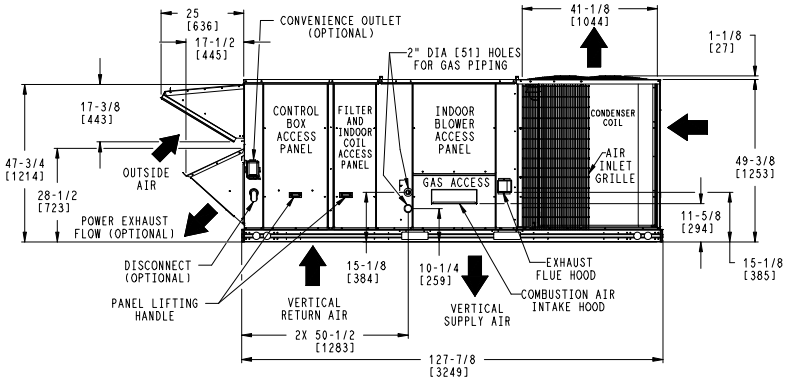


TOP

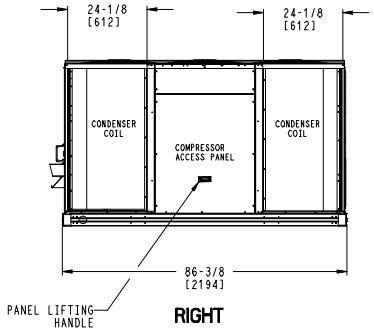
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



FRONT

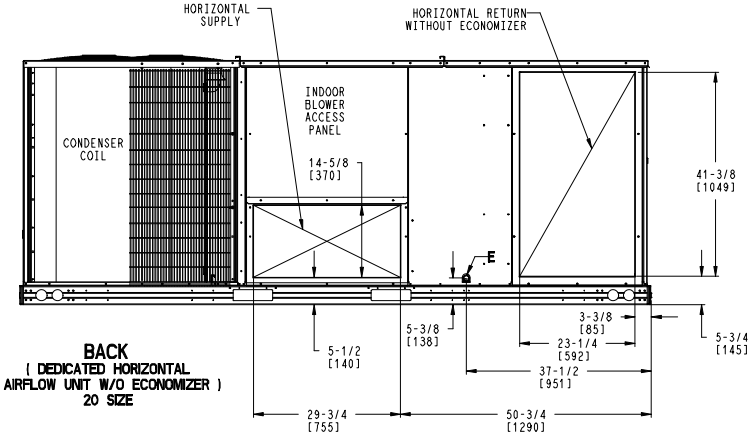


RIGHT

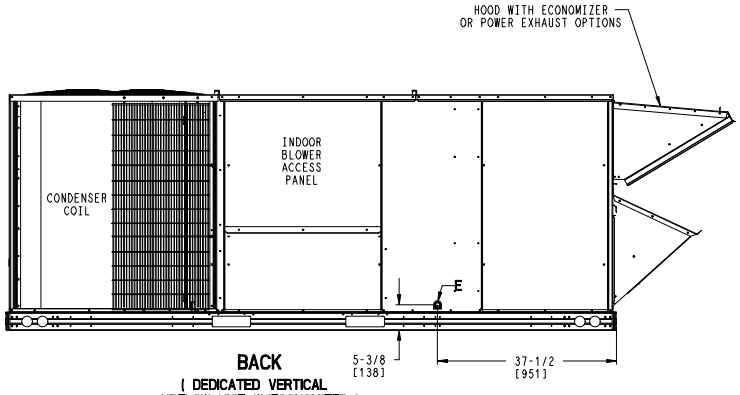
DEDICATED VERTICAL AIRFLOW UNIT 20 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

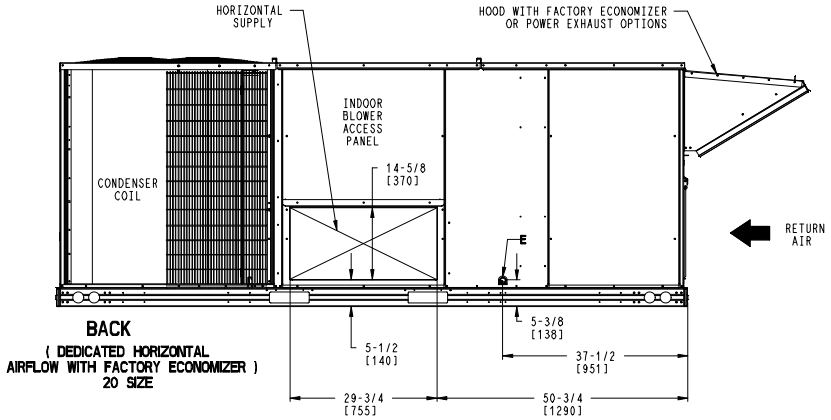
	CONNECTION SIZES
E	3/4"-14 NPT CONDENSATE DRAIN



BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT W/O ECONOMIZER)
20 SIZE



BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
20 SIZE

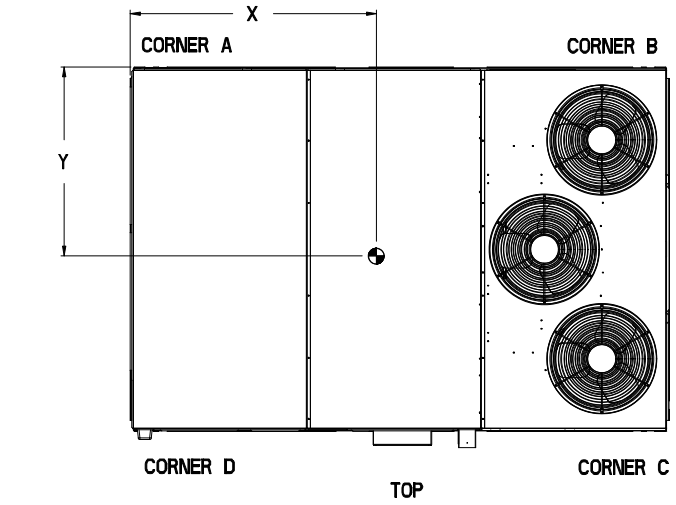


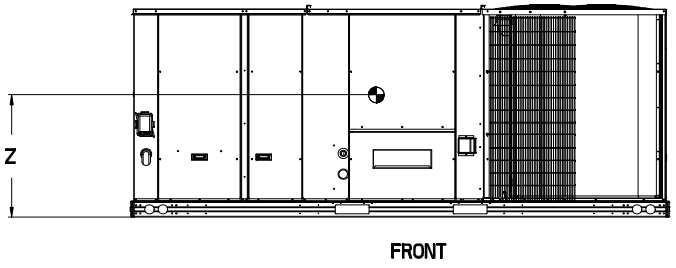
BACK
(DEDICATED HORIZONTAL AIRFLOW WITH FACTORY ECONOMIZER)
20 SIZE

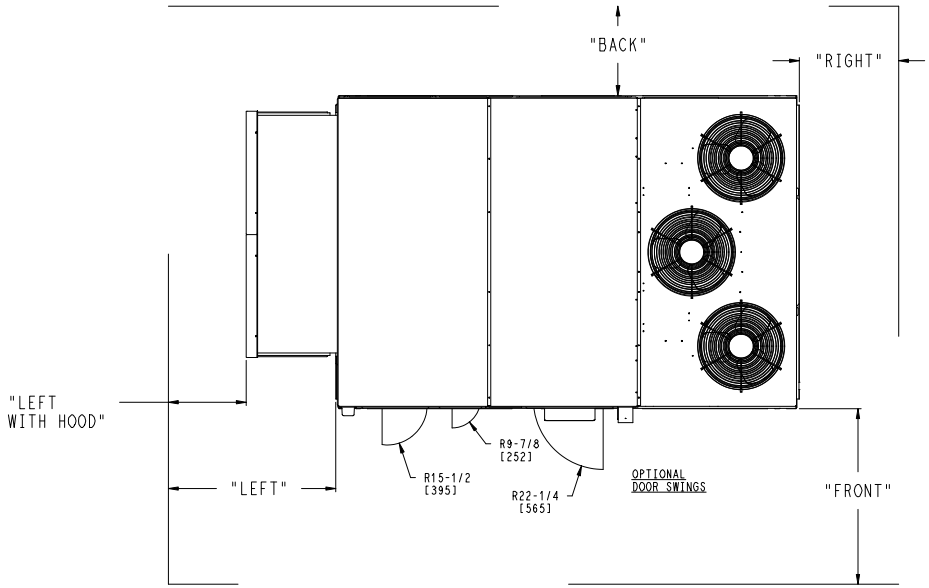
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

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
48FE 20	1800	816	383	174	479	217	521	236	417	189	71 [1803]	45 [1143]	16 1/2 [419]

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





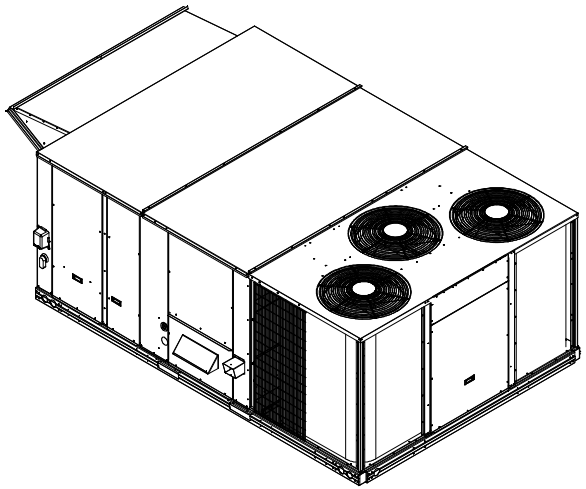


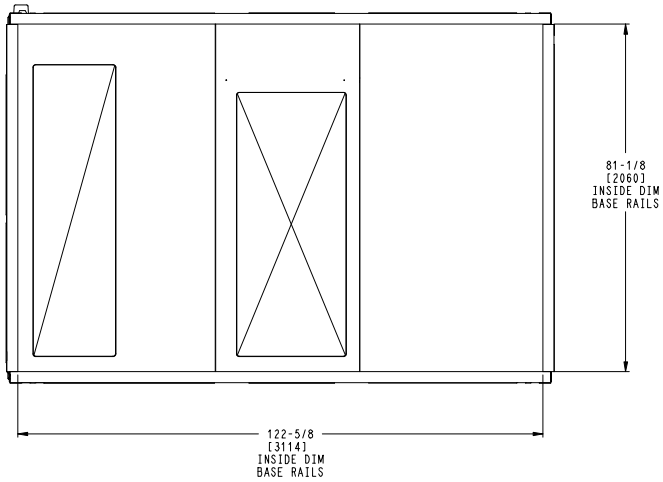
NOTES:

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

	CLEARANCE		
	SERVICE WITH:	SERVICE WITH:	OPERATING
SURFACE	CONDUCTIVE BARRIER	NONCONDUCTIVE BARRIER	CLEARANCE
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]

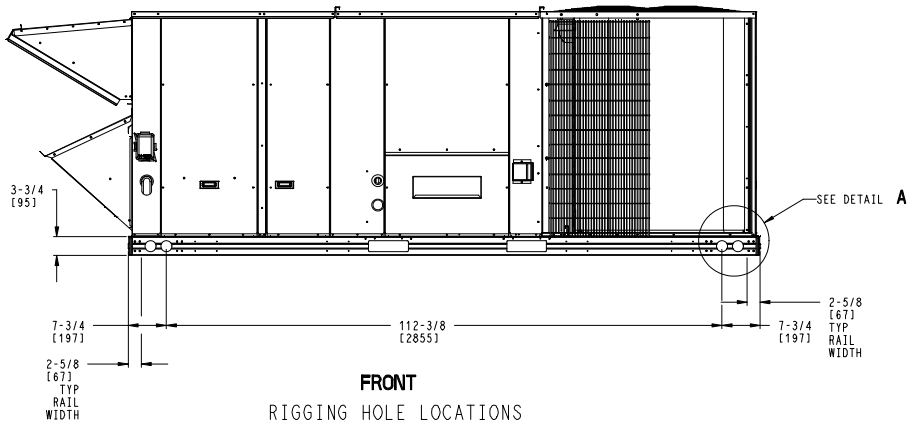
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-





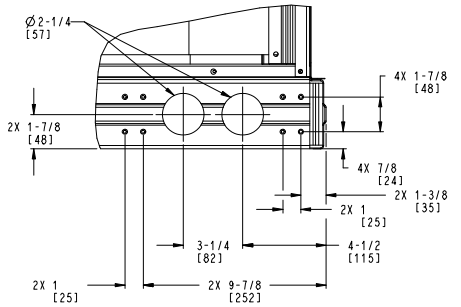
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

RIGGING HOLE LOCATIONS



DETAIL A

TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	05/21/24	-	48FE 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE004883	-

Part Number:48FEEM20B2A6-8M0A0

Refrigerant:	**R454B**	
ARI EER:	**10.80**	
IEER:	**14.5**	

Base Unit Dimensions

Unit Length:	**127.9**	in
Unit Width:	**86.4**	in
Unit Height:	**47.8**	in

Operating Weight

Base Unit Weight:	**1673**	lb
Medium Heat:	**21**	lb
RA Smoke Detector:	**7**	lb
Total Operating Weight:	**1701**	lb

Unit

Unit Voltage-Phase-Hertz:	**460-3-60**	
Air Discharge:	**Vertical**	
Fan Drive Type:	**Vane Axial**	
Actual Airflow:	**7000**	CFM
Site Altitude:	**1004**	ft

Cooling Performance

Condenser Entering Air DB:	**90.0**	F
Evaporator Entering Air DB:	**78.8**	F
Evaporator Entering Air WB:	**66.2**	F
Entering Air Enthalpy:	**31.37**	BTU/lb
Evaporator Leaving Air DB:	**57.1**	F
Evaporator Leaving Air WB:	**55.6**	F
Evaporator Leaving Air Enthalpy:	**23.90**	BTU/lb
Gross Cooling Capacity:	**227.04**	MBH
Gross Sensible Capacity:	**158.15**	MBH
Compressor Power Input:	**16.27**	kW
Coil Bypass Factor:	**0.137**	

Mixed Air

Outdoor Air Airflow:	**1400**	CFM
Outdoor Air DB:	**90.0**	F
Outdoor Air WB:	**74.0**	F
Outdoor Air Htg. Temp.:	**-1.0**	F
Return Air DB:	**76.0**	F
Return Air WB:	**64.0**	F
Return Air Htg. Temp.:	**70.0**	F

Heating Performance

Heating Airflow:	**7000**	CFM
Entering Air Temp:	**55.8**	F
Leaving Air Temp:	**90.2**	F
Gas Heating Input Capacity:	**248.0 / 310.0**	MBH
Gas Heating Output Capacity:	**200.0 / 251.0**	MBH
Temperature Rise:	**34.4**	F
Thermal Efficiency (%):	**81.0**	

Supply Fan

External Static Pressure:	**1.00**	in wg
Options / Accessories Static Pressure		
Economizer:	**0.07**	in wg
Application External Static (ESP + Unit Opts/Acc.):	**1.07**	in wg

Fan RPM: **1768**
Fan Power: **3.95** BHP
NOTE: **Selected IFM RPM Range: 250 - 1930**

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: **15**
Compressor #1 LRA: **123**
Compressor #2 RLA: **13.9**
Compressor #2 LRA: **100**
Indoor Fan Motor Type: **MED**
Indoor Fan Motor FLA (Total): **3**
Combustion Fan Motor FLA (ea): **0.3**
Power Supply MCA: **41.4**
Power Supply MOCP (Fuse or HACR): **50**
Disconnect Size FLA: **43**
Disconnect Size LRA: **237**
Electrical Convenience Outlet: **None**
Outdoor Fan [Qty / FLA (ea)]: **3 / 0.9**

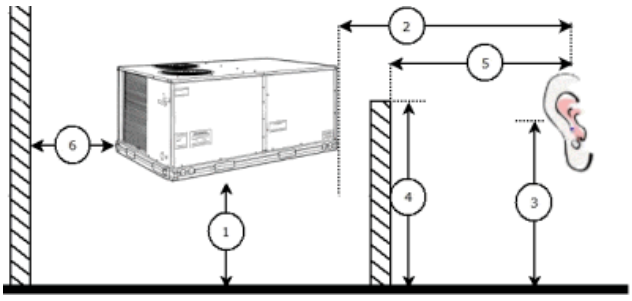
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	92.0	79.1	92.2
125 Hz	90.5	74.9	83.9
250 Hz	88.3	70.0	80.4
500 Hz	81.3	66.8	81.8
1000 Hz	80.2	67.4	78.7
2000 Hz	77.8	61.2	76.5
4000 Hz	73.7	52.0	72.2
8000 Hz	63.6	43.5	65.4
A-Weighted	86.1	70.8	84.1

Advanced Acoustics



Advanced Accoustics Parameters

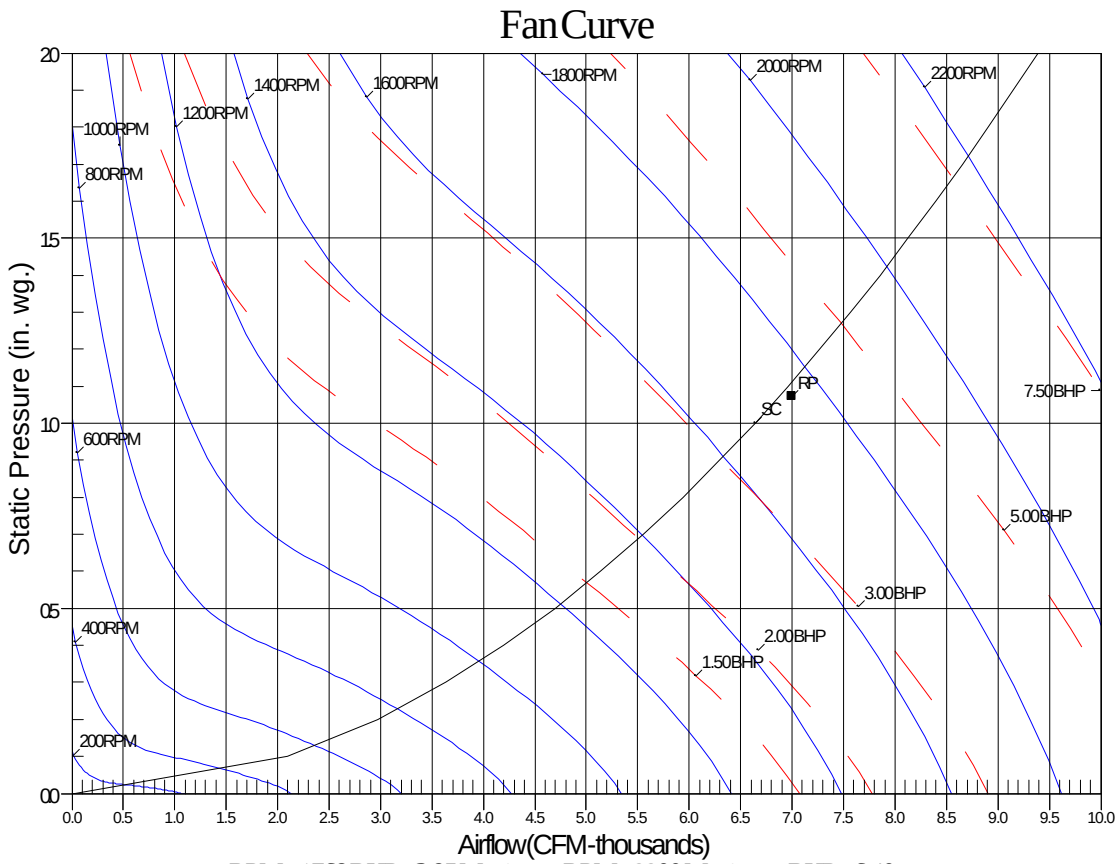
1. Unit height above ground: **30.0** ft
2. Horizontal distance from unit to receiver: **50.0** ft
3. Receiver height above ground: **5.7** ft
4. Height of obstruction: **0.0** ft
5. Horizontal distance from obstruction to receiver: **0.0** ft
6. Horizontal distance from unit to obstruction: **0.0** ft

Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	92.2	83.9	80.4	81.8	78.7	76.5	72.2	65.4	93.6 Lw
B	66.0	67.8	71.8	78.6	78.7	77.7	73.2	64.3	84.1 LwA
C	59.8	51.5	48.0	49.4	46.3	44.1	39.8	33.0	61.2 Lp
D	33.6	35.4	39.4	46.2	46.3	45.3	40.8	31.9	51.7 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 Acoustical Engineer or a person with sound prediction expertise should be consulted.

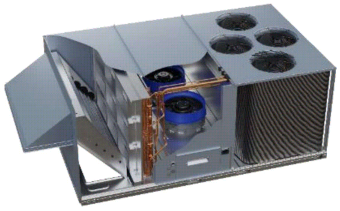


RPM=1768 BHP=3.95 Maximum RPM=2200 Maximum BHP=6.40
SC-System Curve RP-Rated Point

WeatherMaker with ecoblue technology

PURON ADVANCE™ PACKAGED ROOFTOP GAS HEATING/ELECTRIC COOLING UNITS WITH ECOBLUE TECHNOLOGY – 17.5, 20, 25, 27.5 TONS

48FE units are single-packaged electric cooling, gas heating rooftops. All units are prewired and pre-charged with Carrier's new, low global warming potential Puron Advance™ (R-454B) refrigerant. Puron Advance represents a 75% reduction in refrigerant GWP over legacy Puron™ (R-410A) models. All units are factory tested in both heating and cooling modes and use two stage cooling capacity control



ASHRAE 90.1 COMPLIANT

c UL us

AHRI CERTIFIED

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Puron ADVANCE™

PERFORMANCE FEATURES

- Puron Advance (R-454B) refrigerant
- Two-stage cooling capacity control on all models
- IEERs up to 14.5
- New - A2L leak detection and dissipation system factory installed standard
- Leak system ensures unit and occupant safety during operation and includes an alarm relay for optional use
- Onboard recallable leak detection history for easier troubleshooting and service
- Direct Drive – EcoBlue™ Technology Indoor fan system uses Vane Axial fan design and electronically commutated motor
- New Unit Control Board with intuitive quick fan speed adjustment
- ASHRAE 90.1 and IECC code compliant
- Sound levels as low as 79 dB
- Exclusive non-corrosive composite condensate pans in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- AFUE Gas efficiencies up to 81%
- Induced draft combustion design
- Redundant gas valve, with up to 2 stages of heating
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- TXV refrigerant metering system on all models
- Exclusive IGC solid-state control for on-board diagnostics with LED error code designation, burner control logic and energy saving indoor fan motor delay

PERFORMANCE FEATURES (continued)

- Standard cooling operating range up to 115°F (46°C), and down to 40°F (4°C). Low Ambient kits allows cooling operation down to -20°F (-29°C).
- Rated in accordance with AHRI Standards 340/360
- Designed in accordance with Underwriters' Laboratories Standard UL 60335-1 and UL 60335-2-40
- Listed by UL and CUL-Canada

MAINTENANCE FEATURES

- Large access panels with easy grip handles
- Innovative, easy starting, no-strip screw feature on unit access panels
- Two-inch disposable return air filters
- Tool-less filter access door
- New Vane Axial evaporator-fan system has no fan belts, pullies, blower shaft, and blower bearings with side out design.
- Unit control board facilitates simple safety circuit troubleshooting and simplified control box arrangement.

INSTALLATION FEATURES

- Dedicated vertical and horizontal airflow models available ordered as factory option. No special kits required
- Provisions for thru-the-bottom power entry capability
- Single point gas and electric connections
- Full perimeter base rail with built-in rigging adapters and fork truck slots

STANDARD LIMITED PARTS WARRANTY

- 10-year heat exchanger - Aluminized
- 15-year heat exchanger - Stainless Steel
- 5-year compressor parts
- 3-year SystemVu™ controller
- 1-year parts

AVAILABLE OPTIONS:

- Patented Humidi-MiZer® adaptive dehumidification system. This option also includes Low Ambient controls
- Field installed low ambient head pressure controller available
- Through the base connections for gas and electric available as option
- Stainless steel gas heat exchanger includes tubes, vestibule plate and collector box.
- Disconnect and convenience outlet options
- High static motor options
- Smoke detector, supply and/or return air
- Corrosion resistant options for evaporator and condenser coils
- CO2 Sensor
- Phase Monitor Protection
- 4" MERV-13 Filters
- 2-position damper
- Hinged access panels
- Integrated economizer system. Low and ULTRA Low Leak versions.
- Condensate overflow switch
- SystemVu Controls