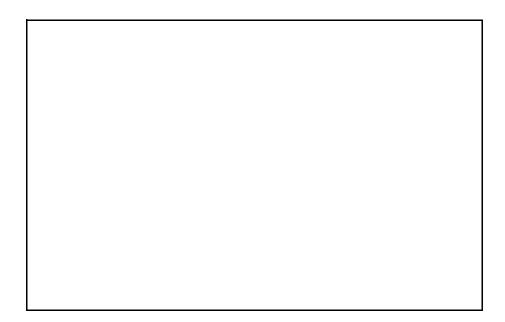


## 48FC 08-16 WEATHERMAKER® SERIES WITH ECOBLUE™ TECHNOLOGY SINGLE PACKAGE ROOFTOP GAS HEAT/ELECTRIC COOLING UNITS



- PERFORMANCE DATA
- CERTIFIED DIMENSION PRINTS
- CERTIFIED ROOF CURB DETAILS



JOB NAME:	LOCATION:	
BUYER:	BUYER PO #:	CARRIER#:
UNIT NUMBER:	MODEL NUMBER:	

### PERFORMANCE DATA CERTIFIED BY:

### DESCRIPTION

48FC 08-16 size units are single-packaged electric cooling, gas heating units that are pre-wired and pre-charged with Puron® (R-410A) HFC refrigerant. The units are factory tested in both heating and cooling modes. These units meet the upcoming DOE-2023 (Department of Energy) and ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1 IEER minimum efficiency requirements. Models use Carrier's leading Ecoblue<sup>TM</sup> Vane Axial Indoor Fan System with built in speed control and no fan belts or pullies. All models have two-stage cooling and single circuit full active evaporator coil design to provide maximum efficiency and comfort control.

### **FEATURES**

### Standard Base Unit

- Puron (R-410A) HFC refrigerant
- Two-stage/one-circuit cooling capacity control on all models
- 2023 DOE, ASHRAE 90.1 and IECC IEER energy compliant
- Rated in accordance with AHRI Standard 340/360
- Designed in accordance with Underwriters Laboratories standard 60335-2-40
- Listed by ETL and ETL-Canada
- Non-corrosive composite sloping design; side or center drain condensate pan. Meets ASHRAE Standard 62
- Standard cooling operating range from 40°F up to 125°F (except 115°F on 14 size models) (4°C up to 52°C). Field installable accessory extends the minimum down to -20°F (-29°C).
- Field convertible from vertical to horizontal airflow for slab mounting. Size 16 requires fiel-supplied duct kit.
- Two-inch disposable return air filters
- Thru-the-bottom power and gas entry capability
- Single point gas and electric connections
- 24-volt control circuit protected with resettable circuit breaker and 75-VA transformer
- Direct Drive EcoBlue<sup>TM</sup> indoor fan system uses vane axial fan design and electronically commutated motor:
  - Shall have inherent automatic-reset thermal overload protection
  - Shall require no fan/motor belts for operation, adjustments, and/or initial fan speed setup
  - Shall be internally protected from electrical phase reversal and loss
  - Shall have slow ramp up to speed control capabilities to help reduce sound and comfort issues
  - Shall be a slide-out design with simple screw removal
  - Shall not require VFD fan speed control
- Centralized terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement
- New unit control board with intuitive quick fan speed adjustment
- Totally enclosed condenser motors with permanently lubricated bearings
- Low-pressure and high-pressure switches
- Mixed air temperature protection

- Low return air temperature protection switch
- Full perimeter base rail with built-in rigging adapters and fork truck slots
- Central Terminal Board for component and unit wiring connections.
- Access panels with easy grip handles and NO-STRIP screw collars
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- Fully insulated cabinet
- Tool-less filter access door

### Refrigerant System

- TXV refrigerant metering system
- Liquid line filter drier
- Tandem Scroll compressors with internal line-break overload protection
- Copper tube, aluminum fin evaporator coils
- Round Tube/Plate Fin (RTPF) condenser coils on all model sizes

### Gas Heat

- IGC solid-state gas heat exchanger control for on-board diagnostics, anti-cycle protection, LED error code designation, burner control logic and energy saving indoor fan motor delay
- Gas efficiencies up to 82%
- Designed in accordance with ANSI Z21.47 (design and test standard for gas furnaces) and ANSI Z233.1 (National Fuel Gas code relating to appliance installation requirements)
- Induced negative draft combustion system
- Redundant gas valve, with up to 2 stages of heating
- Flame roll-out safety protector
- Solid-state electronic direct spark ignition system

### Standard Limited Parts Warranty

- 15-year limited on all gas heat exchanger parts -Stainless Steel
- 10-year limited on all gas heat exchanger parts -Aluminized
- 5-year limited on all compressor parts
- 5-year parts on Factory Installed Ultra Low Leak Economizer
- 3-year limited on SystemVu controller
- 1-year limited on all parts

PERFORMANCE DATA				
Unit Operating Weightlb	Curb Weightlb			
COOLING	HEATING (GAS)			
Gross Total Capacity Btuh	Heating Capacity:			
at Condenser Air Temperature °F	Stage 1Btuh			
Gross Sensible CapacityBtuh	Stage 2Btuh			
Compressor Power InputkW	Heating Capacity Total Btuh			
Indoor Entering: db°F / wb°F	Stage 1kW			
Airflow CFM External Static Pressure in. wg	Stage 2 kW			
Indoor Fan Motor Size HP	Heating Capacity Total kW			
Exhaust Fan Motor Size HP				
Indoor Fan Motor SettingVdc				
Power Supply to Unit Volts	Hz			
SUBMITT	AL DATA			
Job Name	<del></del>			
Architect				
Engineer				
Contractor				
Unit Designation				









### FACTORY-INSTALLED OPTIONS

## ☐ Economizer with DRY BULB Sensing and Barometric Relief

Low Leak Air Dampers —

- Models with W7220 controller meet California Title 24-2016 (Section 120.2) for Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er X system).
- Models with SystemVu controller meet California Title 24-2016 (Section 120.2) Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er 2 system).

## ☐ Economizer with ENTHALPY Sensing and Barometric Relief

Low Leak Air Dampers —

- Models with W7220 controller meet California Title 24-2016 (Section 120.2) Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er X system).
- Models with SystemVu controller meet California Title 24-2016 (Section 120.2) Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er 2 system).

## ☐ Economizer with DRY BULB Sensing and Barometric Relief

ULTRA LOW LEAK Air Dampers —

- Models with W7220 controller meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.), and mandatory section 120.2.i for Fault Detection and Diagnostic controls. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. For outside air, return, and relief air damper leakage requirements economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.
  - NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.
  - Outside air, return air, and relief air (volume) dampers are AMCA rated plus 5 year limited parts warranty (EconoMi\$er X system).
- O Models with SystemVu meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.) and mandatory section 120.2.i for Fault Detection and Diagnostic requirements. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12.

Economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 for outside air, return air, and relief air damper leakage requirements and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated — plus 5 year limited parts warranty (EconoMi\$er 2 system).

## ☐ Economizer with ENTHALPY Sensing and Barometric Relief

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- Models with W7220 controller meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.), and mandatory section 120.2.i for Fault Detection and Diagnostic controls. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. For outside air, return, and relief air damper leakage requirements economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.
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  - Outside air, return air, and relief air (volume) dampers are AMCA rated plus 5 year limited parts warranty (EconoMi\$er X system).
- Models with SystemVu meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.) and mandatory section 120.2.i for Fault Detection and Diagnostic requirements. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. Economizers meet IECC 2012 section and, 2015 C402.4.5.2 **IECC** sections C403.2.4.3 and C403.3.3.5 for outside air, return air, and relief air damper leakage requirements and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements. NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must

be ordered separately.

Outside air, return air, and relief air (volume)

Outside air, return air, and relief air (volume) dampers are AMCA rated — plus 5 year limited parts warranty (EconoMi\$er 2 system).

NOTE: Production of single phase voltage models has been discontinued per DOE regulations. Single phase 48FC models are only available until current inventories are exhausted.

## FACTORY-INSTALLED OPTIONS (CONT) Standard Base Unit (United States Models) ☐ Powered 115-volt convenience outlet **Factory Options** ☐ Non-powered 115-volt convenience outlet ☐ High static evaporator fan motor SystemVu<sup>TM</sup> controls that include: ☐ Return Air smoke detector – Large full text - multi line display ☐ Supply Air smoke detector - USB Flash Port for data transfer ☐ CO<sub>2</sub> sensor - Built in i-Vu®, CCN and BACnet1 ☐ Condenser hail guard-louvered style - Refrigerant pressure from display ☐ Special coating protection for evaporator and condenser coils - Quick LED Status - Run, Alert, Fault ☐ Hinged access doors - Conventional stat or sensor capabilities ☐ Condensate overflow switch - Historical component runtime and starts ☐ MERV-13 4 in. filters - Supply air tempering ☐ High SCCR Protection - Equipment Touch<sup>TM</sup>/ System Touch<sup>TM</sup> compatibility ☐ Phase Monitor/Protection - Demand limiting and ZS sensor compatibility ☐ Through the base connectors for gas and electric **Optional Warranties** conduit/piping ☐ Stainless steel gas heat exchanger (includes tubes, ☐ Complete unit parts only, up to 5 years vestibule plate and collector box) ☐ Complete unit parts and labor, up to 5 years ☐ Humidi-MiZer® adaptive dehumidification system Many other optional warranties are available. See the ☐ Non-fused disconnect Commercial Start-Up and Optional Extended Warranty Price pages for further information. 1. BACnet is a trademark of ASHRAE.

### FIELD-INSTALLED ACCESSORIES

## ☐ Economizer with DRY BULB Sensing and Barometric Relief

Standard Leak Air Dampers —

- Models with W7212 controller provide standard non-diagnostic control. EconoMi\$er® IV.
- Models with W7220 controller meet California Title 24-2016 Section 120.2.i for Fault Detection and Diagnostic (FDD) requirements. EconoMi\$er X.
- Models with SystemVu controller meet California Title 24-2016 Section 120.2.i Fault Detection and Diagnostic (FDD) requirements. EconoMi\$er 2.

## ☐ Economizer with ENTHALPY Sensing and Barometric Relief

Standard Leak Air Dampers —

- Models with W7212 controller provide standard non-diagnostic control. EconoMi\$er IV.
- Models with W7220 controller meet California Title 24-2016 Section 120.2.i Fault Detection and Diagnostic (FDD) requirements. EconoMi\$er X.
- Models with SystemVu controller meet California Title 24-2016 Section 120.2.i Fault Detection and Diagnostic (FDD) requirements. EconoMi\$er 2.

## ☐ Economizer with DRY BULB Sensing and Barometric Relief

ULTRA LOW LEAK Air Dampers —

O Models with W7220 controller meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.), and mandatory section 120.2.i for Fault Detection and controls. Economizers Diagnostic ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. For outside air, return, and relief air damper leakage requirements economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated.

Models with SystemVu meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.) and mandatory section 120.2.i for Fault Detection and Diagrequirements. Economizers ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. meet IECC Economizers 2012 **IECC** 2015 C402.4.5.2 and, sections C403.2.4.3 and C403.3.3.5 for outside air, return air, and relief air damper leakage requirements and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements. NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

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Outside air, return air, and relief air (volume) dampers are AMCA rated.

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NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated.

FIELD-INSTALLED ACCESSORIES (CONT)		
□ Prop fan power exhaust □ Two-position motorized outdoor air damper □ Manual outside air damper 50% □ Manual outside air damper 50% □ Roof Curb — 14 inch (356 mm) tall □ Rhru-the-bottom connections (electrical only) □ Thru-the-bottom connections (electrical and gas) □ Condenser hail guard (louvered style) □ Flue shield □ Flue discharge deflector □ Liquid propane (LP) conversion kit □ Winter start kit, down to 25°F (-4°C) □ Phase monitor (loss of phase/phase reversal) □ Low ambient head pressure controller, down to 0°F (-18°C) □ UVC high output lights □ MERV-13 filter kits □ MERV-13 filter kits	4 in. filter racks   Time Guard II compressor anti-cycle protection   Thermostats and Sensors   Condensate overflow switch   Non-powered 115-volt (20 amp) convenience outlet   Side access hinged filter door kit   Horn/strobe annunciator   Size 16 Only   Disconnect switch bracket   Supply duct cover   Economizer Sensors   Single Dry bulb control   Differential Dry bulb control   Single enthalpy control   Differential enthalpy control   CO₂ — wall mounted   CO₂ — duct mounted   CO₂ — unit mounted   CO₂ — unit mounted   CO₂ — the control   CO₂ = the control	

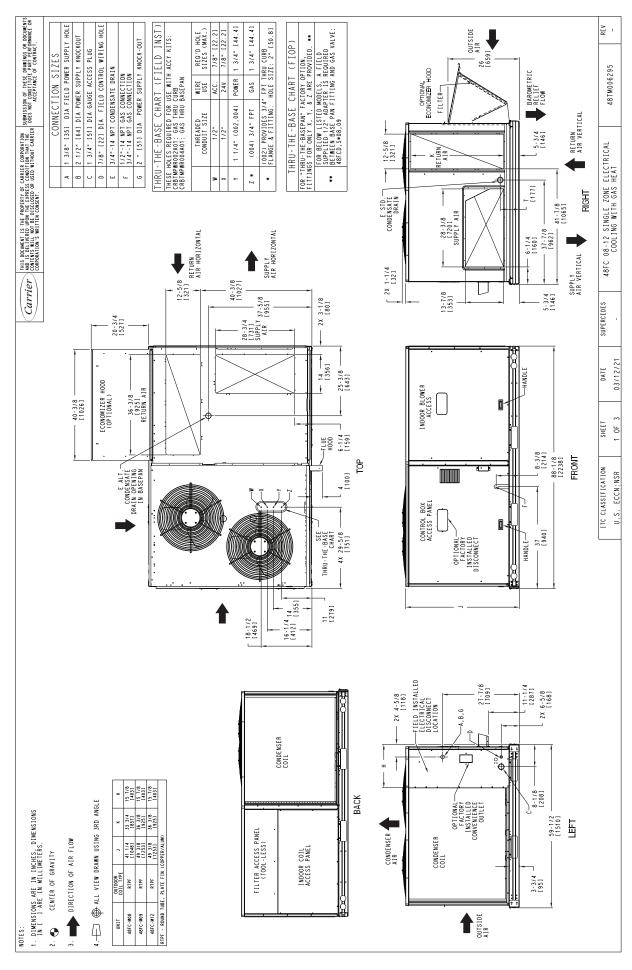


Fig. 1 — Unit Dimensional Drawing – Sizes 08, 09, 12

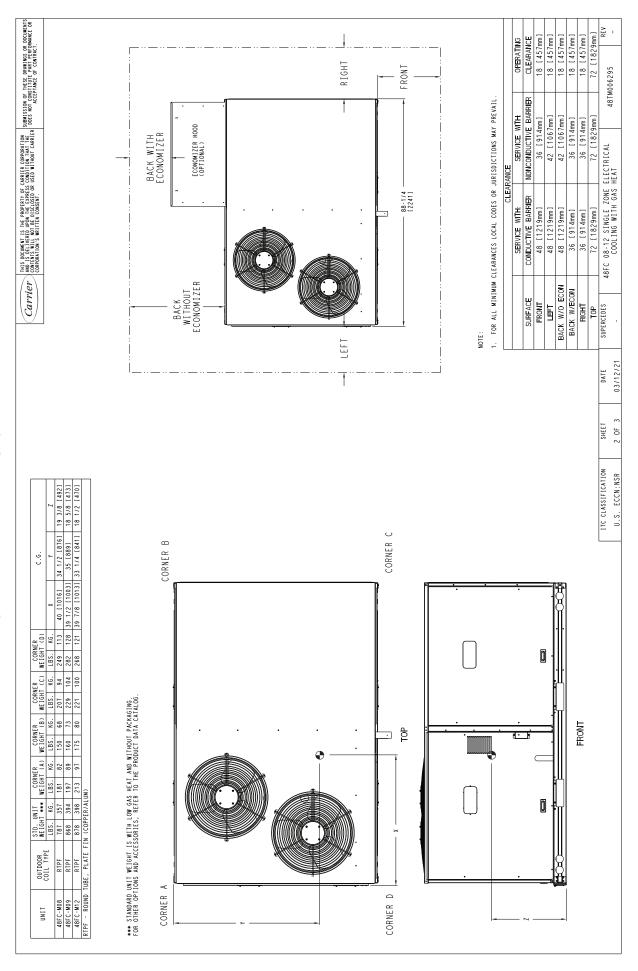


Fig. 1 — Unit Dimensional Drawing – Sizes 08, 09, 12 (cont)

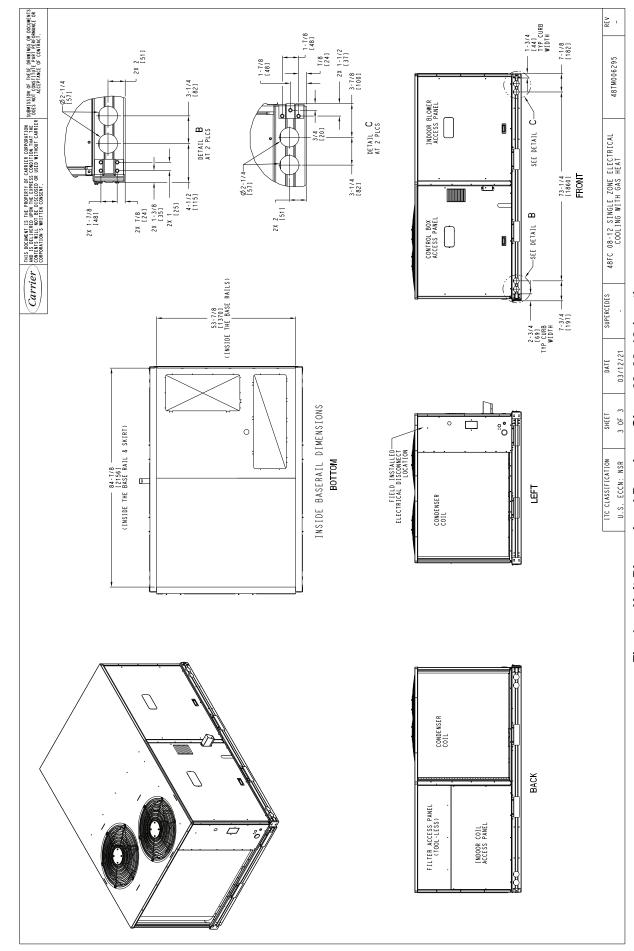


Fig. 1 — Unit Dimensional Drawing – Sizes 08, 09, 12 (cont)

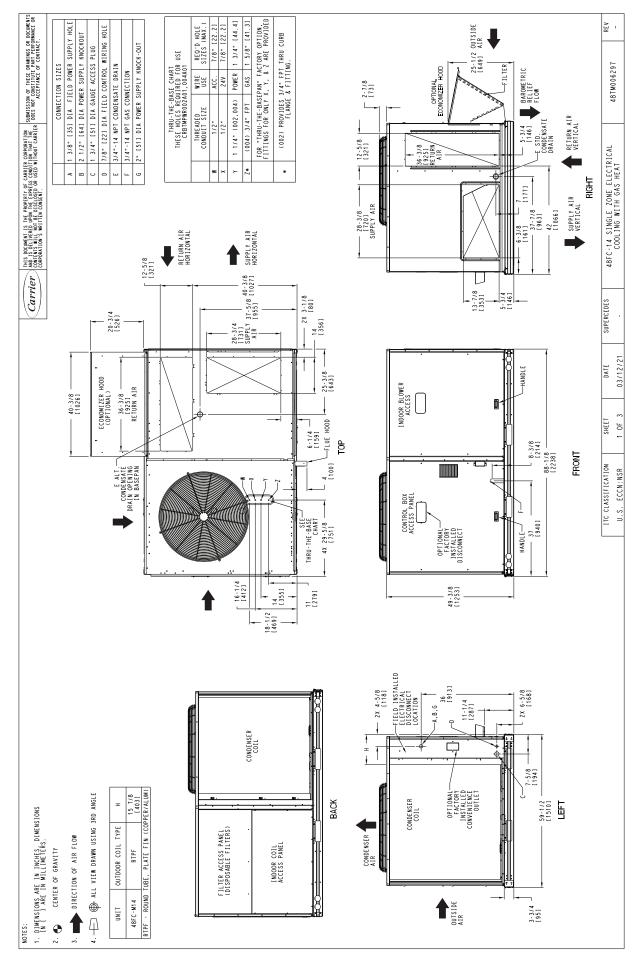


Fig. 2 — Unit Dimensional Drawing – Sizes 14

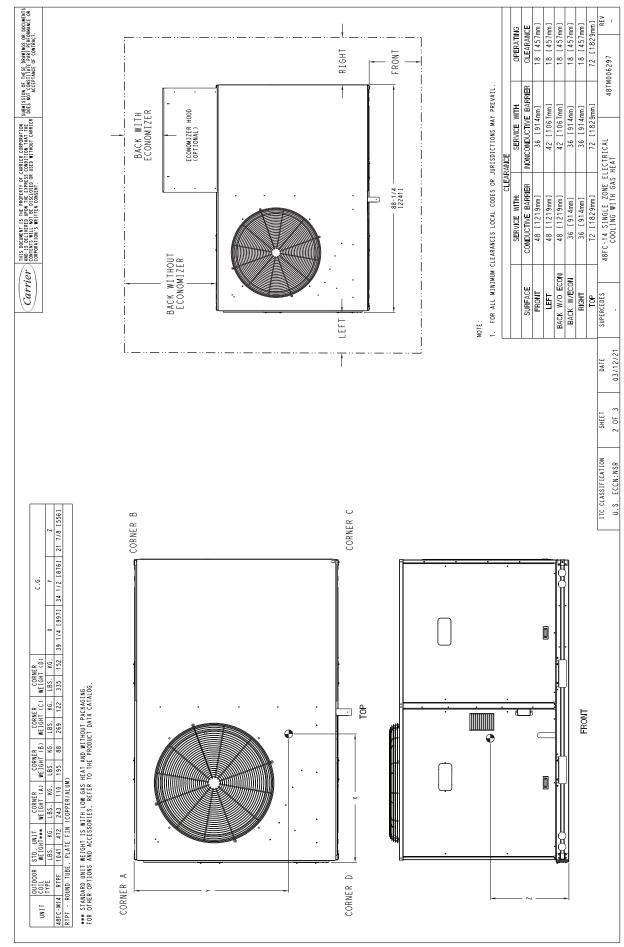


Fig. 2 — Unit Dimensional Drawing – Sizes 14 (cont)

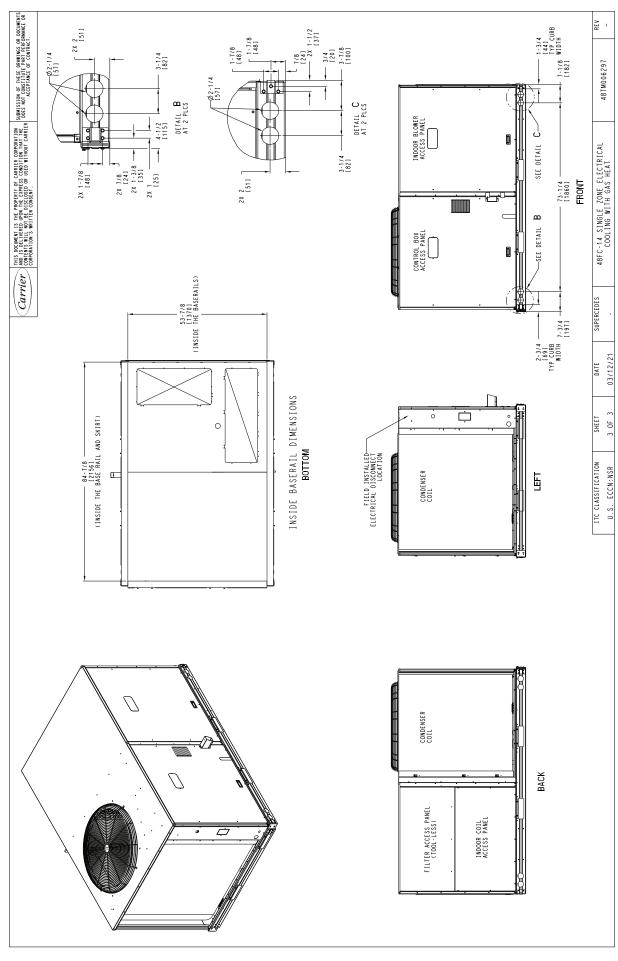


Fig. 2 — Unit Dimensional Drawing – Sizes 14 (cont)

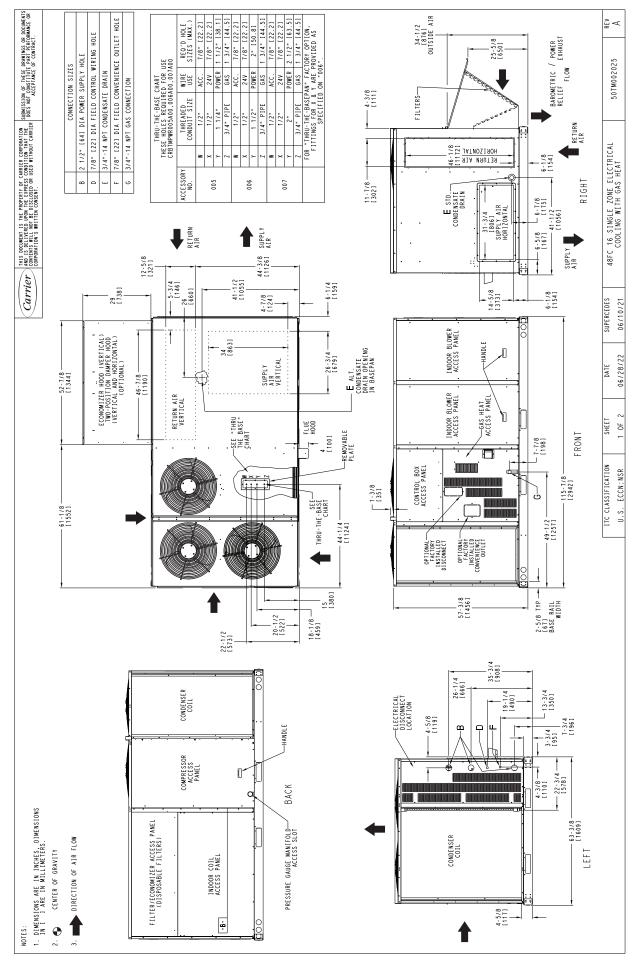


Fig. 3 — 48FC\*\*16 Unit Dimensional Drawing

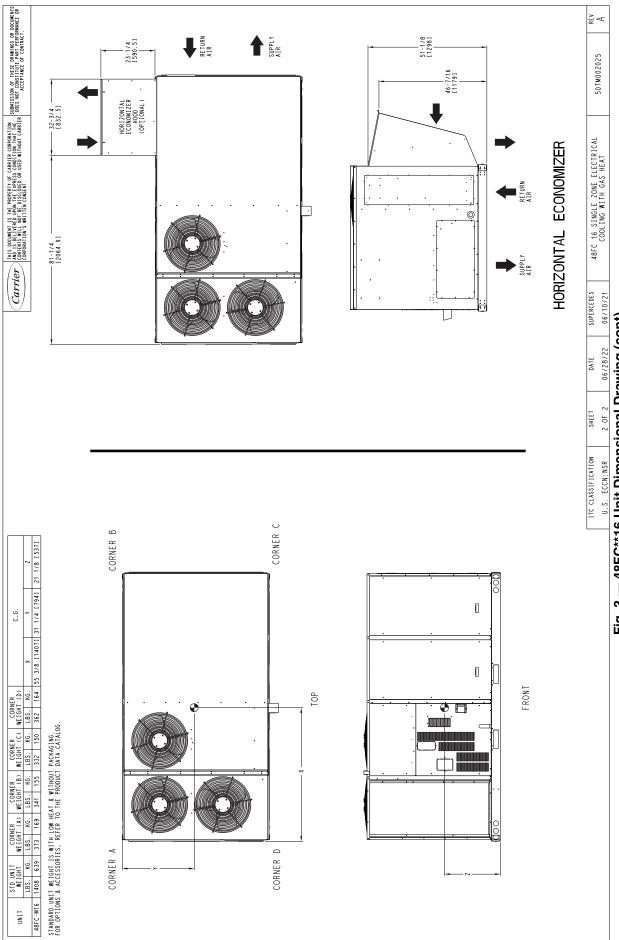


Fig. 3 — 48FC\*\*16 Unit Dimensional Drawing (cont)

# **CERTIFIED ROOF CURB DETAILS**

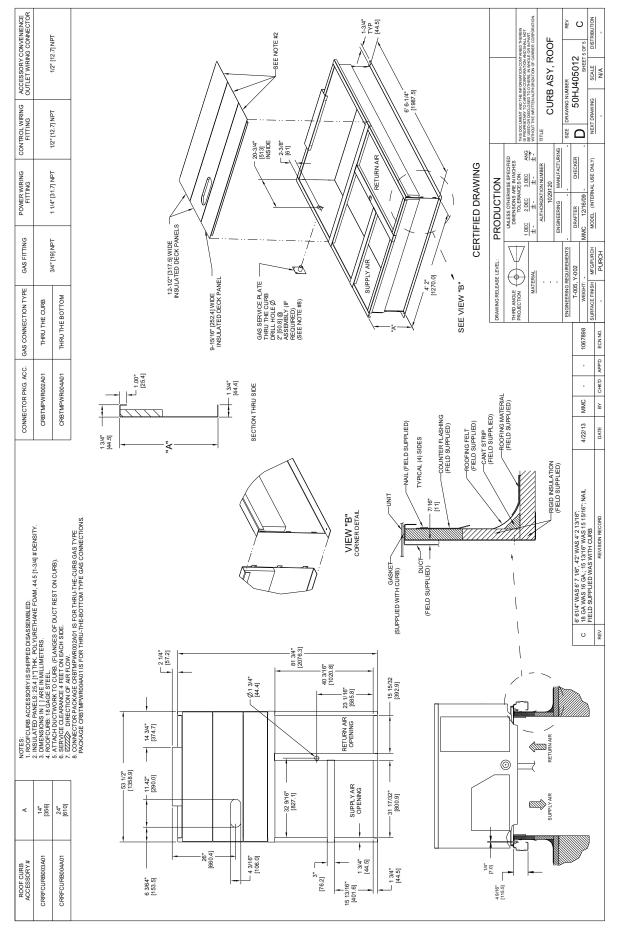


Fig. 4 — 48FC\*\*08-14 Roof Curb Details

# **CERTIFIED ROOF CURB DETAILS**

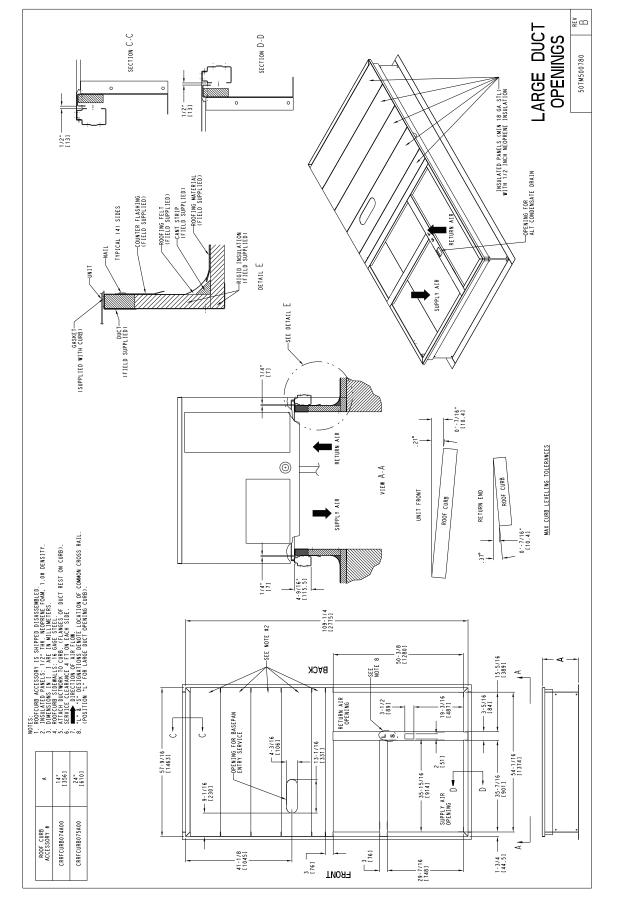


Fig. 5 — 48FC\*\*16 Roof Curb Details

