Submittal Data

— PERFORMANCE DATA
— CERTIFIED DIMENSION PRINTS
— CERTIFIED ROOF CURB DIMENSION PRINTS
DESCRIPTION

48LC*B units are ultra-high efficiency, Multi-Zone Variable Air Volume (MZ-VAV) single-packaged electric cooling, gas heating units. Units utilize three stages of cooling capacity control with full activated evaporator coil for optimum part load performance and humidity removal. Indoor fan motors are high efficient belt drive with Variable Frequency Drive (VFD) speed control. Motor speed is controlled by the factory furnished duct static pressure sensor. Outdoor fan motors are Direct Dive - ECM to further help part load performance. The VAV-RTU Open controller provides all unit operation and requires the use of Carrier Open VAV on all system air terminals for optimum integrated system solution. All units are factory tested in both heating and cooling modes and rated in accordance with AHRI Standards 340/360.

STANDARD FEATURES

Base Unit
- Puron® (R-410A) HFC refrigerant
- IEER’s up to 20.8 with with EER’s up to 13.5
- ASHRAE 90.1 compliant and Energy Star qualified
- Meets or exceeds CEE tier II performance criteria
- Rated in accordance with AHRI Standards 340/360
- Designed in accordance with Underwriters’ Laboratories Std 1995. Listed by ETL.
- VAV-RTU Open controller provides all unit operation and requires the use of Carrier Open VAV on all system air terminal units for a total system comfort solution.
- Supply air sensor controls the cooling capacity sequencing and return air sensor is furnished for monitoring capabilities
- Supply air tempering
- Morning warm-up and occupied heating capabilities
- Duct static pressure sensor (provided for field installation)
- 3-stage cooling capacity control with crankcase heaters
- Proven Multi Staged Scroll compressors with internal line-break overload protection
- Single refrigerant circuit design with full face activated evaporator coil
- Belt drive high efficient indoor fan and pulley system with Variable Frequency Drive (VFD) controller
- High efficient ECM outdoor fan motor
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- Standard ambient cooling operation down to 45°F (7°C) with lower operation with integrated economizer. All units operate up to 125°F (52°C)
- Field convertible from vertical to horizontal airflow on all models. 08-12 models require an easy field installed supply duct kit.
- Two-inch disposable return air filters
- Provisions for thru-the-bottom power entry capability as standard

Cabinet
- Innovative, easy starting, no-stripe screw feature on unit access panels
- Access panels with easy grip handles and tool-less filter access door
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- Fully insulated cabinet with foil faced insulation

Refrigerant System
- Precision sized TXV refrigerant metering devices
- High capacity liquid line filter drier
- High performance internally enhanced copper tube, aluminum fin coils with optional corrosion resistant coils
- Evaporator freeze protection

Gas Heat
- Exclusive 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%
- Inducted draft gas heat combustion
- Redundant gas valves with up to two stages of heating
- Flame roll-out safety protector
- Solid-state electronic direct spark ignition system
- Supply air tempering capabilities
Standard Limited Parts Warranty
- 15-year gas heat exchanger parts - Stainless Steel
- 10-year gas heat exchanger parts - Aluminized
- 5-year compressor parts
- 1-year parts

**PERFORMANCE DATA**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Unit Operating Weight</td>
<td>lb</td>
</tr>
<tr>
<td>Curb Weight</td>
<td>lb</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td></td>
</tr>
<tr>
<td>Gross Total Capacity</td>
<td>Btuh</td>
</tr>
<tr>
<td>at Condenser Air Temperature</td>
<td>°F</td>
</tr>
<tr>
<td>Gross Sensible Capacity</td>
<td>Btuh</td>
</tr>
<tr>
<td>Compressor Power Input</td>
<td>kW</td>
</tr>
<tr>
<td>Indoor Entering db</td>
<td>°F</td>
</tr>
<tr>
<td>wb</td>
<td>°F</td>
</tr>
<tr>
<td>Airflow</td>
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</tr>
<tr>
<td>External Static Pressure</td>
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<tr>
<td>Indoor Fan Motor Size</td>
<td>Hp</td>
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<tr>
<td>Exhaust Fan Motor Size</td>
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**Heating**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Total Heating Capacity:</th>
<th>Btuh</th>
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<tbody>
<tr>
<td>Stage 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td></td>
<td></td>
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</tbody>
</table>

OUTPUT

<table>
<thead>
<tr>
<th>Stage</th>
<th>kW</th>
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<tbody>
<tr>
<td>Stage 1</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td></td>
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</table>

Thermal Efficiency State

**ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>Power Supply to Unit</th>
<th>Volts</th>
<th>Phase</th>
<th>Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Circuit Amps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Overcurrent Protection</td>
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**SUBMITTAL DATA**

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Architect</th>
<th>Engineer</th>
<th>Contractor</th>
<th>Unit Designation</th>
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</thead>
</table>

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.
REQUIRED FACTORY-INSTALLED OPTIONS (FIOPs)

To provide high efficient operation and comfort control thought out unit operating range, an economizer is required on each unit.

- **Economizer with Dry Bulb sensing and barometric relief.**
  - Standard Low Leak Dampers —
    - Models with VAV-RTU Open controller meets California Title 24 (section 120.2) Fault Detection and Diagnostic (FDD) requirements. EconoMi$er 2.

- **Economizer with Enthalpy sensing and barometric relief.**
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    - Models with VAV-RTU Open controller meets California Title 24 (section 120.2) Fault Detection and Diagnostic (FDD) requirements. EconoMi$er 2.

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  - ULTRA LOW LEAK Air Dampers —
    - Models with VAV-RTU Open controller meets California Title 24 (section 120.2) Fault Detection and Diagnostic (FDD) requirements, has return, outside air and relief damper leakage that meets Title 24 (section 140.4 and ASHRAE 90.1) requirements - plus 5 year limited parts warranty. EconoMi$er 2.

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FACTORY-INSTALLED OPTIONS (FIOPs)

- Through the base connectors for gas and electric
- Stainless steel gas heat exchanger (includes tubes, vestibule plate and collector box)
- Non-fused disconnect
- Fan motors and drives
- HACR Breaker
- Powered 115-volt convenience outlet
- Non-powered 115-volt convenience outlet
- Return Air smoke detector
- Supply Air smoke detector
- CO₂ sensor
- Condenser hail guard - louvered style
- Special coating protection for evaporator and condenser coils
- Hinged access panels
- Alternate motor and drives
- LTL packaging

OPTIONAL EXTENDED WARRANTIES

- Complete Unit Parts only up to 5 years
- Complete Unit Parts and Labor up to 5 years

Many other optional warranties are available. See the Commercial Start-Up and Optional Extended Warranty Price price pages for further information.
FIELD INSTALLED ACCESSORIES

- Display Kit for Variable Frequency Drive (VFD). Allows additional set up and diagnostics of the VFD controller. Kit includes display and cable. Kit can be used on size 07 thru 26 LC units.
- Power exhaust - prop fan design
- Roof curb - 14 inch (356mm) tall
- Roof curb - 24 inch (610mm) tall
- Thru-the-bottom connections-electrical only
- Thru-the-bottom connections-electrical and gas
- Condenser hail guard - louvered style
- Flue shield (07 size only)
- Flue discharge deflector
- Liquid propane (LP) conversion kit
- High altitude conversion kit
- Phase monitor (loss of phase/phase reversal)
- Disconnect switch bracket, 08-12 only
- Supply duct cover, 08-12 only

Economizer Sensors
- Single Dry bulb control
- Single enthalpy control
- Differential enthalpy control
- CO₂ - wall mounted
- CO₂ - duct mounted
- CO₂ - unit mounted

ZONE TERMINALS AND SENSORS

Many Carrier zone terminal sensors and controller are available with capabilities of combining:
- Space temperature sensing
- Sensors with communication ports
- Sensors with CO₂ sensing
- Sensors with LCD display
- Sensors with local override and indicating light

- **i-Vu® Equipment Touch;** Carrier brand 4.3” color touch screen zone sensor and local user interface for a single Open (BACnet® MS/TP) equipment controller. Includes built-in temperature sensor.

- **i-Vu® System Touch;** Carrier brand 4.3” color touch screen user interface connects to a network of up to 60 Open (BACnet® MS/TP) equipment controllers. Includes built-in temperature sensor.

Carrier Zone Sensors

To provide optimum comfort control, Carrier’s i-Vu VAV Open Zone single duct and fan terminals are required. These include:
- 35E – Single Duct Air Terminals
- 45J – Series Fan Powered Air Terminals
- 45K – Quiet Series Fan Powered Air Terminals
- 45M – Parallel Fan Powered Air Terminals
- 45N – Quiet Parallel Fan Powered Air Terminals
- 45Q – Low Profile Series Fan Powered Air Terminals
- 45R – Low Profile Parallel Fan Powered Air Terminals
- 35J – Single Duct Retrofit Air Terminals
CERTIFIED DIMENSION 48LC*B07

NOTES:
1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW

BACK

CONNECTION SIZES

THRU-THE-BASE CHART (FIELD INST)

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:

THRU-THE-BASE CHART (F/OP)

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CERTIFIED DIMENSION 48LC*B07

<table>
<thead>
<tr>
<th>UNIT</th>
<th>OUTDOOR COIL TYPE</th>
<th>3 TO 5 UNIT WEIGHT</th>
<th>CORNER A WEIGHT (A)</th>
<th>CORNER B WEIGHT (B)</th>
<th>CORNER C WEIGHT (C)</th>
<th>CORNER D WEIGHT (D)</th>
<th>C.G.</th>
</tr>
</thead>
<tbody>
<tr>
<td>48LC</td>
<td>RTPF</td>
<td>1032</td>
<td>468</td>
<td>226</td>
<td>102</td>
<td>92</td>
<td>144</td>
</tr>
</tbody>
</table>

OUTDOOR COIL TYPE:

- 48LC: Outdoor coil type

WEIGHT:

- Corner A: 468 lbs. (209.7 kg)
- Corner B: 226 lbs. (102.5 kg)
- Corner C: 102 lbs. (46 kg)
- Corner D: 92 lbs. (41.7 kg)
- C.G.: 144 lbs. (65.5 kg)

FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

UNIT 48LC07 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT 48LC500391
# CERTIFIED DIMENSION 48LC*B09-12

## Dimensions

<table>
<thead>
<tr>
<th>Unit</th>
<th>STD Unit Weight</th>
<th>CORNER A</th>
<th>CORNER B</th>
<th>CORNER C</th>
<th>CORNER D</th>
<th>C.G.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB</td>
<td>KG</td>
<td>LBS</td>
<td>KG</td>
<td>LBS</td>
<td>KG</td>
<td></td>
</tr>
<tr>
<td>48LC 09</td>
<td>804.8</td>
<td>127.7</td>
<td>55.3</td>
<td>130.9</td>
<td>65.4</td>
<td>8.1</td>
</tr>
<tr>
<td>48LC 12</td>
<td>804.8</td>
<td>127.7</td>
<td>55.3</td>
<td>130.9</td>
<td>65.4</td>
<td>8.1</td>
</tr>
</tbody>
</table>

## Notes

- Standard unit weight is with low gas heat & without packaging.
- For options & accessories, refer to the product data catalog.

## Diagram

- Horizontal Economizer Hood (Optional)
- Supply Air
- Return Air

## Dimensions Overview

- HORIZONTAL ECONOMIZER HOOD (OPTIONAL)
- RETURN AIR
- SUPPLY AIR

## Specifications

- 48LC 09-12 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT
- 48LC500390

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48LC*B
NOTES:
1. ROOF CURB ACCESSORY IS SHIPPED ASSEMBLED.
2. ISOLATED PANELS: 25.4 (1") THK. POLYURETHANE FOAM, 44.5 [1-3/4"] # DENSITY.
3. DIMENSION (N[]) ARE IN MILLIMETERS.
4. ROOF CURB: 18 GAUGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE: 3 FT. ON EACH SIDE.
7. DIRECTION OF AIR FLOW...
8. CONNECTOR PACKAGE CRBTMPWR004A01 IS FOR THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

CONNECTOR PNG. ACC.
CRRFCURB004A01 THRU-THE-BOTTOM
CRRFCURB003A01 14" [356]
24" [610]
CRBTMPWR004A01
CRBTMPWR004A01 THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

CONNECTOR PNG. ACC.
CRRFCURB004A01 THRU-THE-BOTTOM
CRRFCURB003A01 14" [356]
24" [610]
CRBTMPWR004A01
CRBTMPWR004A01 THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

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CRRFCURB004A01 THRU-THE-BOTTOM
CRRFCURB003A01 14" [356]
24" [610]
CRBTMPWR004A01
CRBTMPWR004A01 THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

CONNECTOR PNG. ACC.
CRRFCURB004A01 THRU-THE-BOTTOM
CRRFCURB003A01 14" [356]
24" [610]
CRBTMPWR004A01
CRBTMPWR004A01 THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

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CRRFCURB004A01 THRU-THE-BOTTOM
CRRFCURB003A01 14" [356]
24" [610]
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