# ComfortStar®

Air Conditioning & Heating Products

## FREEDOM SERIES

# CRT7-TT

## COMMERCIAL PACKAGE

Rooftop Air Conditioners

7.5 - 12 Tons

UP TO **11.6 EER** HIGH EFFICIENCY


R454B

AHRI CERTIFIED

FREEDOM SERIES

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# Choose **COMFORTSTAR** and support a greener future for generations to come.

With over **50 years of combined experience**, our research and development team is dedicated to delivering **high-performance commercial rooftop air conditioners** that maximize efficiency while minimizing environmental impact.

The HVAC industry is moving beyond traditional R-410A and transcritical $CO_2$ refrigerants toward the next generation: **R454B**. This advanced refrigerant offers **lower toxicity, reduced flammability, and a dramatically smaller global warming potential** compared to conventional options.

We are proud to bring this innovation to our **R454B rooftop air conditioning line**, marking a significant step forward in sustainable, **energy-efficient, and environmentally responsible commercial cooling solutions.**

ComfortStar®
Air Conditioning & Heating Products

# CRT7-TT SERIES

## Rooftop Air Conditioners

Cooling capacity: 90K-146 K BTU/h

## FEATURES

- **Multi-Stage Cooling Control**
  Four cooling capacity levels (100% /75% / 50% / 25%) optimize energy efficiency while maintaining precise comfort control.
- **All-DC Outdoor Fan Motor**
  Advanced DC fan motor with 10-speed modulation improves efficiency, enhances reliability, and delivers superior performance in low-ambient conditions.
- **Wide Operating Temperature Range**
  Designed to operate from 0°F to 125°F ambient. Optional ultra-low ambient cooling solutions available for extreme conditions.
- **Eco-Friendly Refrigerant**
  Uses R454B refrigerant with low Global Warming Potential (GWP), meeting modern environmental and regulatory standards.
- **Extended Heat Exchanger Warrant**
  5-year warranty on the microchannel heat exchanger for long-term reliability and peace of mind.
- **Direct Replacement Capability**
  Engineered to directly replace competitor rooftop package units, minimizing installation time and retrofit costs.
- **Service-Friendly Cabinet Design**
  Independent, removable indoor and outdoor top panels provide easier access and faster maintenance.
- **Tool-Free Bottom Plate Access**
  Removable bottom plate allows servicing without lifting equipment, reducing labor time and installation complexity.
- **Flexible Air Discharge Configuration**
  Bottom discharge can be easily converted to side discharge, offering greater installation flexibility without forklifts.
- **Simplified Refrigerant Piping Service**
  Gas piping assembly can slide out along guide rails, enabling faster and safer maintenance.
- **High-Capacity Filtration Standard**
  All models include four 20”×20”×2” filters for improved air quality and easy replacement.

# CRT7-TT SERIES

## 208~230V | 90K~146K

FREEDOM SERIES

| (TON) | | | 7.5 | 8.5 | 10 | 12.5 |
|---|---|---|---|---|---|---|
| MODEL | | | CRT7-90TT | CRT7-102TT | CRT7-120TT | CRT7-150TT |
| Power Supply | | | 208/230V~60HZ,3Ph | | | |
| Cooling Capacity | | KBtu/h | 86 | 104 | 114 | 140 |
| | | kW | 25.2 | 30.5 | 33.4 | 41.0 |
| Power Input | | kW | 7.41 | 9.29 | 10.18 | 12.73 |
| EER | | Btu/h/W | 11.6 | 11.2 | 11.2 | 11 |
| Max. Input Consumption | | W | 8,600 | 11,100 | 12,800 | 15,200 |
| Max. Current | | A | 28 | 37 | 43 | 50 |
| Indoor Fan Air Flow | | CFM | 3,000 | 3,500 | 3,600 | 4,000 |
| ESP | | in.wg/Pa | 0-250 | 0-250 | 0-250 | 0-250 |
| Outdoor Sound Rating (BELS) | | | 8.4 | 8.4 | 8.2 | 8.7 |
| Compressor | Type | | Scroll | Scroll | Scroll | Scroll |
| | Quantity | | 2 | 2 | 2 | 2 |
| Indoor Coil | | | Microchannel | | | |
| Outdoor Coil | | | Microchannel | | | |
| Indoor Fan | Type | | Centrifugal | Centrifugal | Centrifugal | Centrifugal |
| | Drive Type | | Belt | Belt | Belt | Belt |
| | Quantity | | 1 | 1 | 1 | 1 |
| Outdoor fan | Type | | Axial | Axial | Axial | Axial |
| | Drive Type | | Direct | Direct | Direct | Direct |
| | Quantity | | 2 | 2 | 2 | 2 |
| Refrigerant Type | | | R454B | | | |
| Refrigerant Volume | Circle A/B | lbs | 3.75/3.09 | 4.30/3.86 | 5.07/4.41 | 6.83/5.07 |
| Filters | **Type Furnished** | | **Disposable** | **Disposable** | **Disposable** | **Disposable** |
| | Number Size Recommended | | (4)20*20*2 | (4)20*20*2 | (4)20*20*2 | (4)20*20*2 |
| Operation Ambient Temperature | | °F | 0-125 | 0-125 | 0-125 | 0-125 |
| | | °C | -17.8-52 | -17.8-52 | -17.8-52 | -17.8-52 |
| Net Dimensions (W×H×D) | | inch | 88.6×48.8×59.1 | | | |
| Packing Dimensions (W×H×D) | | inch | 89.4×50.2×59.6 | | | |
| Loading Quantity per 20GP/40GP/40HC | | | 3/7/14 | | | |
| Motor (weight) | | | | | | |
| Unit weight (lb) | | | 917 | 955 | 985 | 1065 |
| Shipping Weight (lb) | | | 979 | 1016 | 1047 | 1127 |

**NOTE:** For two-stage heaters (input or output rated), the first stage provides reduced heating capacity, while the second stage provides 100% of the total heating capacity.

# PROPER AIR FLOW

## (Units with Belt Drive Indoor Fan)

System performance and reliability depend heavily on providing proper airflow to both the conditioned space and across the evaporator coil.

Indoor fan speed is adjusted by opening or closing the adjustable motor sheave.

Before initiating the SERVICE TEST, set the economizer minimum position to 0% using the setpoint potentiometer located on the Economizer Control (ECA), if equipped..

| | Airflow (CFM) | ESP (in.$H_2O$) | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.5 Ton | 2400 | Power (BHP) | -- | 0.85 | 0.93 | 1.00 | 1.12 | 1.19 | 1.27 | 1.36 | 1.46 | 1.52 | 1.59 | 1.66 | 1.76 | 1.94 | 2.05 | 2.15 | 2.27 | 2.37 | 2.48 | 2.58 |
| | 2700 | | 0.96 | 0.99 | 1.13 | 1.17 | 1.27 | 1.35 | 1.44 | 1.55 | 1.63 | 1.71 | 1.77 | 1.93 | 2.03 | 2.15 | 2.26 | 2.38 | 2.49 | 2.60 | 2.69 | 2.80 |
| | 3000 | | 1.11 | 1.26 | 1.32 | 1.40 | 1.50 | 1.60 | 1.73 | 1.71 | 1.94 | 1.96 | 2.03 | 2.14 | 2.25 | 2.37 | 2.47 | 2.58 | 2.69 | 2.79 | 2.90 | 3.01 |
| | 3300 | | 1.32 | 1.39 | 1.55 | 1.57 | 1.68 | 1.82 | 1.85 | 1.88 | 1.90 | 2.08 | 2.34 | 2.47 | 2.59 | 2.70 | 2.81 | 2.90 | 3.02 | -- | -- | -- |
| 8.5 Ton | 2700 | Power (BHP) | 0.96 | 0.99 | 1.13 | 1.17 | 1.23 | 1.28 | 1.28 | 1.27 | 1.37 | 1.50 | 1.82 | 2.07 | 2.15 | 2.27 | 2.40 | 2.52 | 2.64 | 2.77 | 2.89 | 3.00 |
| | 3050 | | 1.17 | 1.26 | 1.20 | 1.36 | 1.34 | 1.45 | 1.55 | 1.58 | 1.73 | 1.75 | 2.19 | 2.33 | 2.43 | 2.54 | 2.66 | 2.76 | 2.84 | 2.93 | 3.01 | 3.08 |
| | 3400 | | 1.32 | 1.41 | 1.47 | 1.59 | 1.62 | 1.75 | 1.78 | 1.94 | 2.02 | 2.06 | 2.59 | 2.70 | 2.80 | 2.89 | 2.99 | 3.08 | 3.17 | 3.24 | 3.32 | 3.42 |
| | 3750 | | 1.65 | 1.64 | 1.76 | 1.90 | 1.94 | 2.11 | 2.12 | 2.26 | 2.30 | 2.51 | 2.99 | 3.09 | 3.19 | 3.29 | 3.39 | 3.47 | 3.57 | 3.65 | 3.75 | 3.81 |
| 10 Ton | 3200 | Power (BHP) | -- | 1.25 | 1.37 | 1.47 | 1.46 | 1.60 | 1.59 | 1.75 | 1.78 | 1.80 | 1.89 | 1.94 | 2.11 | 2.28 | 2.35 | 2.43 | 2.53 | 2.64 | 2.68 | 2.73 |
| | 3600 | | 1.50 | 1.64 | 1.71 | 1.83 | 1.73 | 1.91 | 1.95 | 1.98 | 2.20 | 2.24 | 2.39 | 2.49 | 2.58 | 2.67 | 2.78 | 2.89 | 2.95 | 3.00 | 3.17 | 3.34 |
| | 4000 | | 1.84 | 1.98 | 2.01 | 2.07 | 2.21 | 2.30 | 2.36 | 2.55 | 2.63 | 2.70 | 2.80 | 2.88 | 3.00 | 3.11 | 3.19 | 3.27 | 3.43 | 3.59 | 3.74 | 3.86 |
| | 4400 | | 2.16 | 2.34 | 2.38 | 2.45 | 2.67 | 2.73 | 2.80 | 2.88 | 3.08 | 3.20 | 3.42 | 3.50 | 3.57 | 3.49 | 3.66 | 3.85 | 3.99 | 4.14 | 4.30 | 4.43 |
| 12.5 Ton | 4000 | Power (BHP) | 1.80 | 1.89 | 2.06 | 2.12 | 2.26 | 2.35 | 2.41 | 2.61 | 2.69 | 2.76 | 2.80 | 2.88 | 3.00 | 3.11 | 3.19 | 3.27 | 3.43 | 3.59 | 3.74 | 3.86 |
| | 4500 | | 2.30 | 2.46 | 5.69 | 2.61 | 2.81 | 2.89 | 2.97 | 3.03 | 3.08 | 3.38 | 3.60 | 3.68 | 3.85 | 3.75 | 3.93 | 4.11 | 4.28 | 4.44 | 4.61 | 4.77 |
| | 5000 | | 2.87 | 3.08 | 3.34 | 3.41 | 3.46 | 3.77 | 3.96 | 4.08 | 4.25 | 4.43 | 4.63 | 4.49 | 4.67 | 4.83 | 4.99 | 4.89 | 5.11 | -- | -- | -- |
| | 5500 | | 3.86 | 3.97 | 4.07 | 4.34 | 4.49 | 4.65 | 4.83 | 5.01 | 2.27 | 5.54 | 5.48 | 5.69 | 5.55 | 5.71 | -- | -- | -- | -- | -- | -- |

Standard Motor

High Motor

FREEDOM SERIES

# CRT7-TT SERIES

| TONS | Unit Model Number | Total (a) | | No.of Stages | Stage 1 | | Stage 2 | |
|---|---|---|---|---|---|---|---|---|
| | | Kw | MBh | | Kw | MBh | Kw | MBh |
| | | Input(b) | Output | | Input | Output | Input | Output |
| 7.5 | EHK-10C(UL)-CRT7 | 10.4 | 35.49 | 1 | 10.4 | 35.49 | | · |
| | EHK-15C(UL)-CRT7 | 16 | 54.59 | 1 | 16 | 54.59 | - | · |
| | EHK-25C(UL)-CRT7 | 25 | 85.30 | 1 | 25 | 85.30 | | · |
| | EHK-32C(UL)-CRT7 | 32 | 109.19 | 2 | 16 | 54.59 | 16 | 54.59 |
| | EHK-41C(UL)-CRT7 | 41 | 139.90 | 2 | 25 | 85.30 | 16 | 54.59 |
| 8.5 | EHK-10C(UL)-CRT7 | 10.4 | 35.49 | 1 | 10.4 | 35.49 | | |
| | EHK-15C(UL)-CRT7 | 16 | 54.59 | 1 | 16 | 54.59 | | |
| | EHK-25C(UL)-CRT7 | 25 | 85.30 | 1 | 25 | 85.30 | | · |
| | EHK-32C(UL)-CRT7 | 32 | 109.19 | 2 | 16 | 54.59 | 16 | 54.59 |
| | EHK41C(UL)-CRT7 | 41 | 139.90 | 2 | 25 | 85.30 | 16 | 54.59 |
| 10 | EHK-10C(UL)-CRT7 | 10.4 | 35.49 | 1 | 10.4 | 35.49 | | |
| | EHK-15C(UL)-CRT7 | 16 | 54.59 | 1 | 16 | 54.59 | | |
| | EHK-32C(UL)-CRT7 | 32 | 109.19 | 2 | 16 | 54.59 | 16 | 54.59 |
| | EHK-41C(UL)-CRT7 | 41 | 139.90 | 2 | 25 | 85.30 | 16 | 54.59 |
| | EHK-50C(UL)-CRT7 | 50 | 170.61 | 2 | 25 | 85.30 | 25 | 85.30 |
| 12.5 | EHK-10C(UL)-CRT7 | 10.4 | 35.49 | 1 | 10.4 | 35.49 | | · |
| | EHK-15C(UL)-CRT7 | 16 | 54.59 | 1 | 16 | 54.59 | | |
| | EHK-32C(UL)-CRT7 | 32 | 109.19 | 2 | 16 | 54.59 | 16 | 54.59 |
| | EHK-41C(UL)-CRT7 | 41 | 139.90 | 2 | 25 | 85.30 | 16 | 54.59 |
| | EHK-50C(UL)-CRT7 | 50 | 170.61 | 2 | 25 | 85.30 | 25 | 85.30 |

**NOTE:** (a) Heaters are rated at 240V, 480V, and 600V. For voltages other than the rated value, capacity is calculated as: Capacity = (Actual Voltage / Rated Voltage)$^2$ × Rated Capacity.
(b) For all input/output ratings, fan power and fan heat are not included.

# DIMENTIONAL DATA

Figure 2. Electric Units - Overview

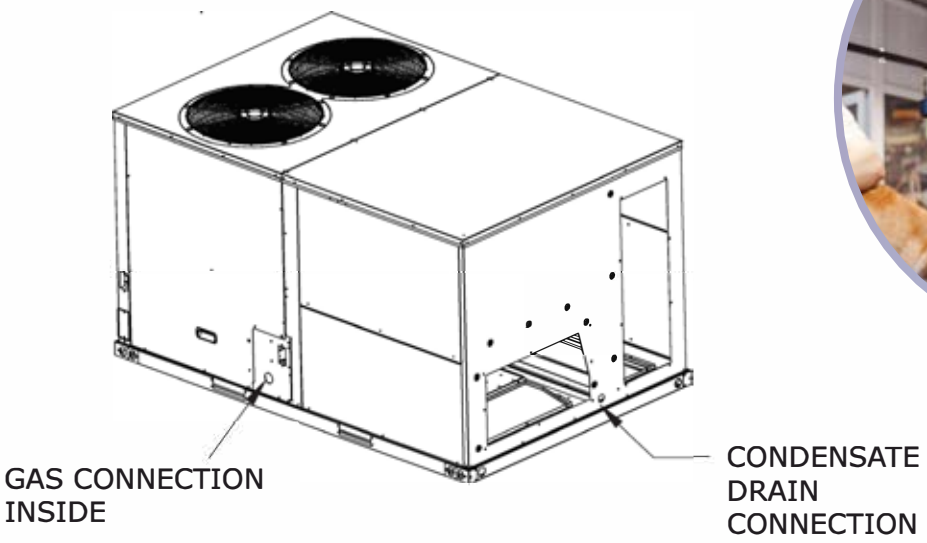
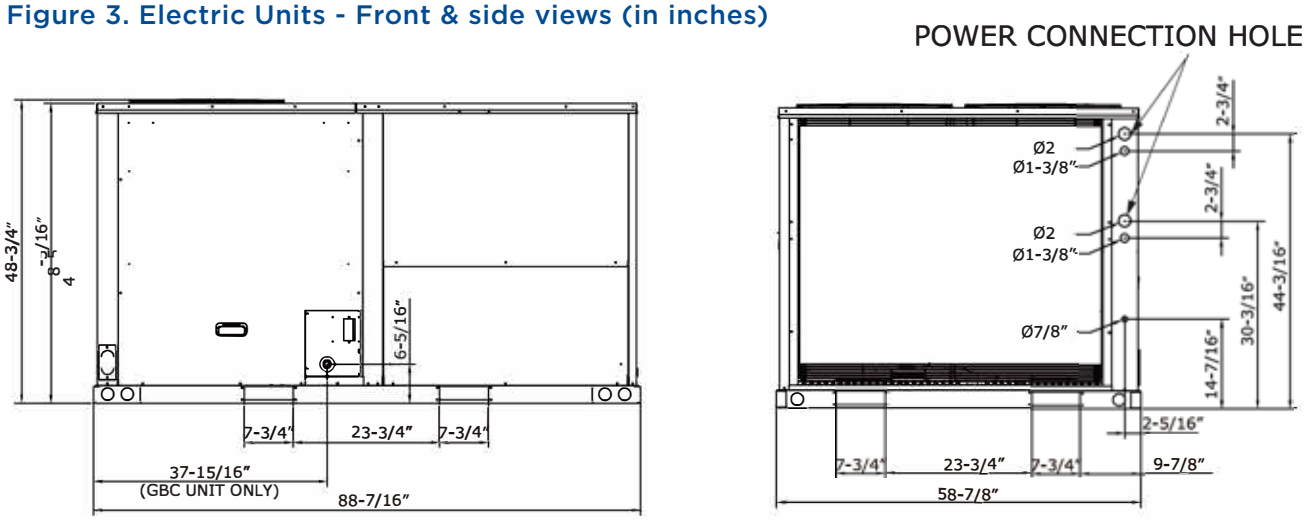


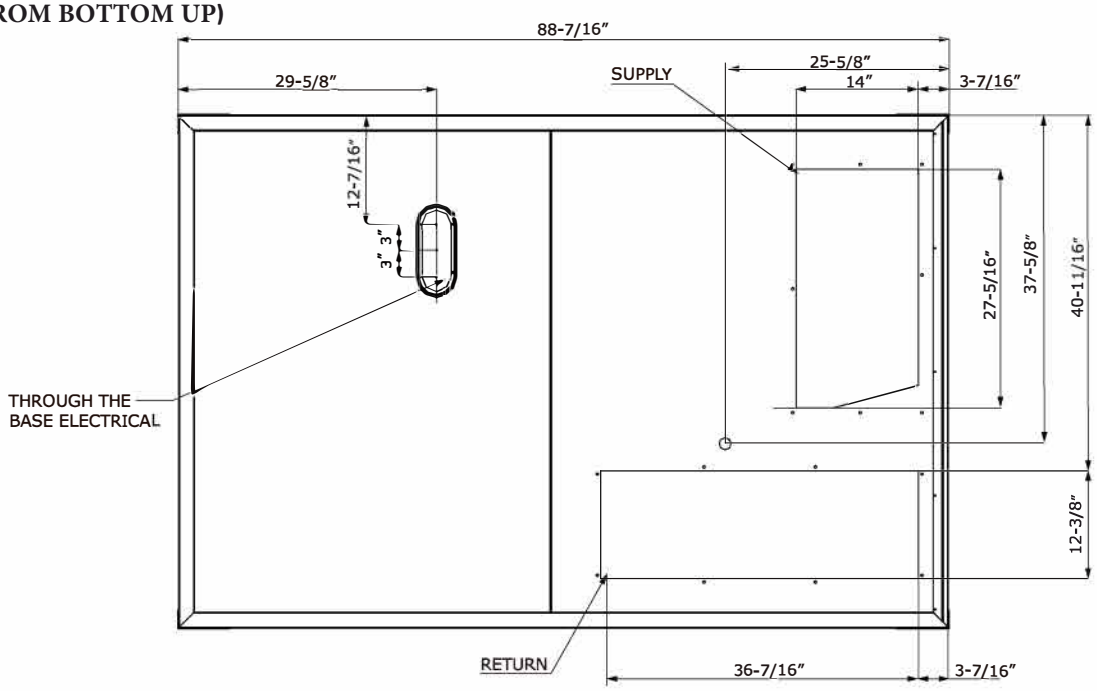

Figure 3. Electric Units - Front & side views (in inches)



# DIMENTIONAL DATA

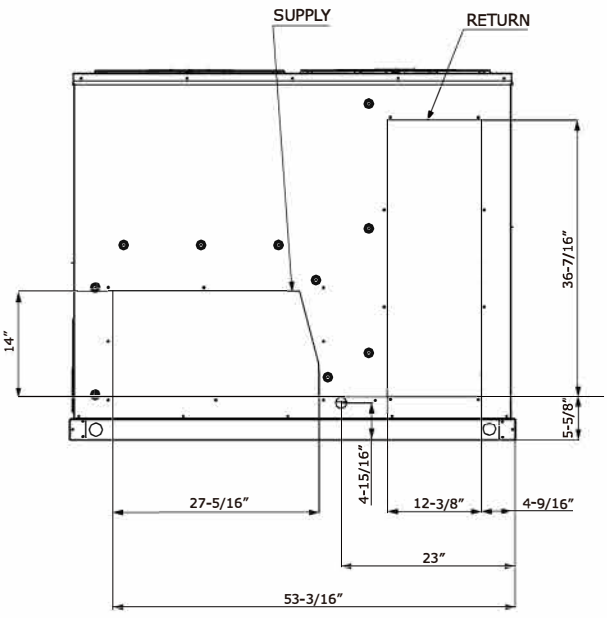
FREEDOM SERIES

**SUPPLY AND RETURN DIMENSIONS FOR DOWNFLOW APPLICATIONS (VIEW FROM BOTTOM UP)**




NOTES:
1.THROUGH THE BASE GAS AND ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2.VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.

Figure 5. Supply and Return dimensions for horizontal applications



# INSTALLATION

The figure below illustrates the minimum operating and service clearances required for both single-unit and multiple-unit installations. These clearances represent the minimum distances necessary to ensure proper service access, rated unit capacity,and peak operating efficiency.

Failure to maintain the recommended clearances may result in condenser coil air starvation, shortcircuiting of exhaust and economizer airflow, or recirculation of hot condenser discharge air.

**⚠ WARNING ⚠**

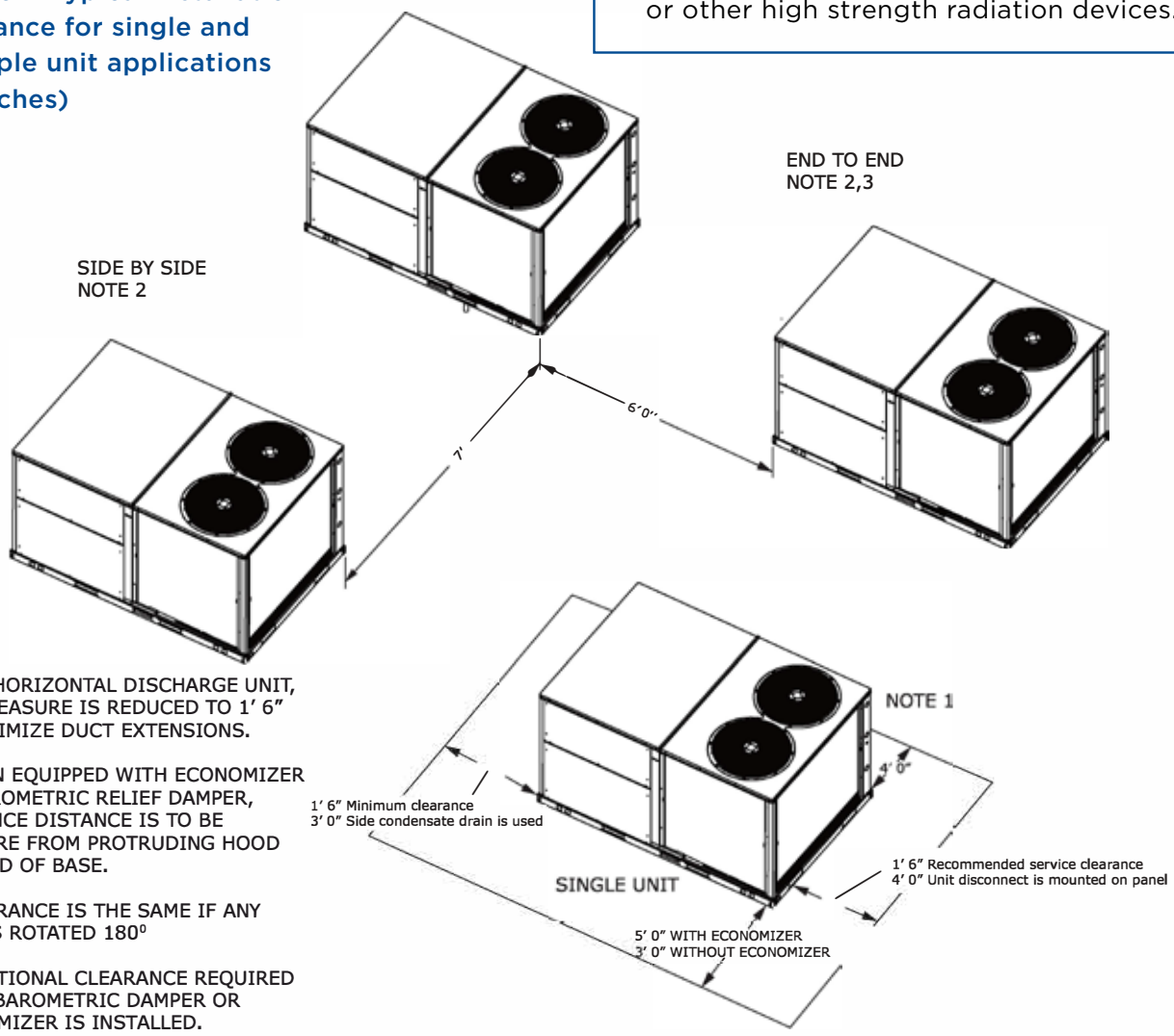
**PERSONAL INJURY / PROPERTY DAMAGE HAZARD**

Only use this unit in well-ventilated spaces and ensure that there are no obstructions that could impede the airflow into and out of the unit.

**Do not use this unit in the following locations:**

- Locations with mineral oil.
- Locations with saline atmospheres, such as seaside locations.
- Locations with sulphurous atmospheres, such as near natural hot springs.
- Where high voltage electricity is present, such as in certain industrial locations.
- On vehicles or vessels, such as trucks or ferry boats.
- Where exposure to oily or very humid air may occur, such as kitchens.
- In proximity to sources of electromagnetic radiation, such as high-frequency transmitters or other high strength radiation devices.

**Figure 1. Typical installation clearance for single and multiple unit applications (in inches)**




NOTES:
1.FOR HORIZONTAL DISCHARGE UNIT, THIS MEASURE IS REDUCED TO 1' 6" TO MINIMIZE DUCT EXTENSIONS.

2.WHEN EQUIPPED WITH ECONOMIZER OR BAROMETRIC RELIEF DAMPER, CLERANCE DISTANCE IS TO BE MEASURE FROM PROTRUDING HOOD INSTEAD OF BASE.

3.CLEARANCE IS THE SAME IF ANY UNIT IS ROTATED 180⁰

3.ADDITIONAL CLEARANCE REQUIRED WHEN BAROMETRIC DAMPER OR ECONOMIZER IS INSTALLED.

Figure 6. Roof curb (in inches)

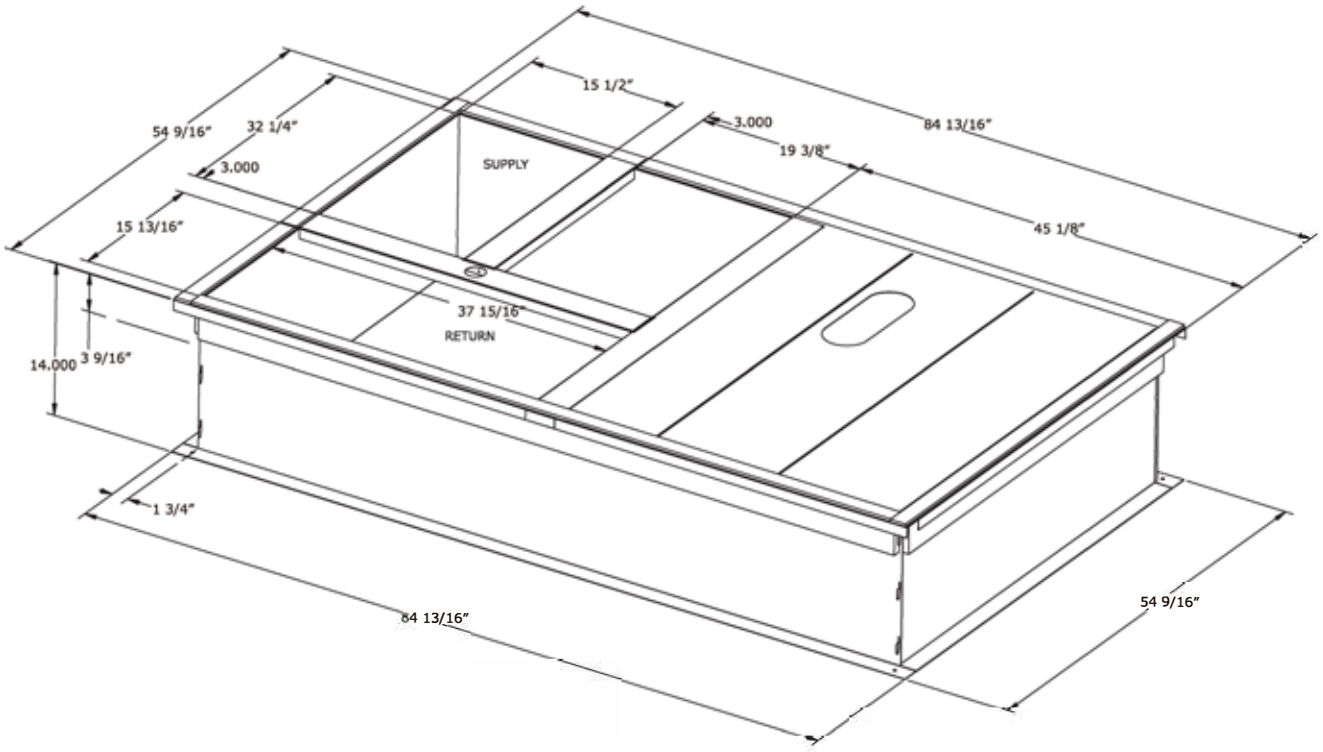
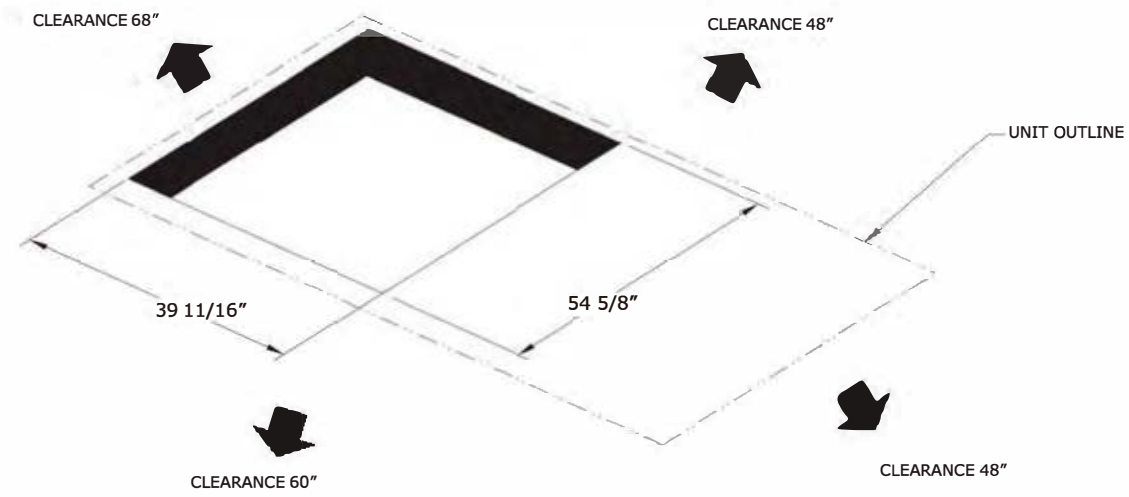



Figure 7. Downflow unit clearance (in inches)



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Air Conditioning & Heating Products

# CRT7-TT COMMERCIAL PACKAGE

## Rooftop Air Conditioners | 7.5 - 12 Tons

FREEDOM SERIES


R454B

AHRI CERTIFIED

CRT7-TT-Catalog-2026

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