PACKAGED HEAT PUMP

# TH

## T-CLASS™ ROOFTOP UNITS
## 60HZ

ENGINEERING DATA

Bulletin No. THA090-102-120-150 (08/09)

ASHRAE 90.1 COMPLIANT

ENERGY STAR

**7.5 to 12.5 Tons**
**Net Cooling Capacity - 89,000 - 138,000 Btuh**
**Optional Electric Heat - 7.5 to 60 kW**

## MODEL NUMBER IDENTIFICATION

**T H A 090 S 2 B E 1 Y**

**Brand/Family**
**T** = Product Line

**Unit Type**
H = Packaged Heat Pump

**Major Design Sequence**
A = 1st Generation
B = 2nd Generation
C = 3rd Generation
E = 4th Generation

**Nominal Cooling Capacity - Tons**
090 = 7.5 Tons
102 = 8.5 Tons
120 = 10 Tons
150 = 12.5 Tons

**Cooling Efficiency**
S = Standard Efficiency

**Refrigerant Type**
2 = R-22

**Blower Type**
B = Belt Drive

**Factory Installed Electric Heat**
N = None
C = 7.5 kW
E = 15 kW
G = 22.5 kW
J = 30 kW
K = 45 kW
L = 60 kW

**Minor Design Sequence**
1 = 1st Revision
2 = 2nd Revision
3 = 3rd Revision

**Voltage**
Y = 208/230V-3 phase-60hz
G = 460V-3 phase-60hz
J = 575V-3 phase-60hz

## FEATURES AND BENEFITS



### CERTIFICATIONS

ETL and CSA listed. Components bonded for grounding to meet safety standards for servicing required by UL, CSA and National and Canadian Electrical Codes. Gas efficiency ratings verified by CSA. Cooling performance certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2000.

ENERGY STAR® certified units are designed to use less energy, help save money on utility bills,

ISO 9001 Registered Manufacturing Quality System.

### WARRANTY

Limited five years on compressors. Limited one year all other covered components.

### COOLING / HEATING SYSTEM

Designed to maximize sensible and latent cooling performance at design conditions. Two efficiency levels provide flexibility. System can operate from 30°F to 125°F without any additional controls.

**1 Compressors**

Resiliently mounted on rubber grommets for quiet operation.

Scroll compressors on all models for high performance, reliability and quiet operation.

**Compressor Crankcase Heaters**

Protects against refrigerant migration that can occur during low ambient operation.

**Thermal Expansion Valves**

Assures optimal performance throughout the application range.

Removable element head.

**Filter/Driers**

High capacity filter/driers protect the system from dirt and moisture.

**Freezestats**

Protects the evaporator coil from damaging ice build-up due to conditions such as low/no air flow, or low/no refrigerant charge.

**2 Coil Construction**

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested.

**Evaporator Coil**

Face split with separate circuits. Each circuit has its separate expansion valve, compressor and refrigerant charge. Enhanced aluminum fins and copper tube coils with cross row circuiting optimizes both sensible and latent cooling capacity.

**Condenser Coil**

Formed type on all models. Ripple-edged, enhanced aluminum fin and copper tube construction maximizes heat transfer capability.

**Condensate Drain Pan**

Painted, galvanized pan with positive slope.

Drain connection extends outside unit.

**Outdoor Coil Fan Motors**

Thermal overload protected, totally enclosed, permanently lubricated ball bearings, shaft up, independent motor mount.

**Outdoor Coil Fan**

PVC coated fan guard furnished.

**Defrost Control**

Provides a defrost cycle, if needed, every 30 or 60 or 90 minutes (adjustable) of compressor "on" time at outdoor coil temperature below 35°F.

Pressure switch mounted on outdoor coil vapor line terminates defrost cycle.

**3 Reversing Valves**

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

#### REQUIRED SELECTIONS

**Cooling Capacity**

Specify the nominal cooling capacity of the unit.

**Cooling Efficiency**

Specify either standard or high efficiency.

#### OPTIONS/ACCESSORIES

**Field Installed**

**Condensate Drain Trap**

Available in copper or PVC.

**High Pressure Switches**

Protects the compressor from overload conditions such as dirty condenser coils, blocked refrigerant flow, or loss of outdoor fan operation. Manual reset.

**Low Ambient Kit**

Cycles the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F.

### 4 BLOWER

Supply air fan provides a wide range of air flow capability. Special order high and low static motor and drive options are available offering an even wider range of capability.

**Supply Air Motor**

Overload protected with permanently lubricated ball bearings ensures durable operation. Belt drive motors that meet EPACT efficiency requirements maximize air performance and save energy. Special order high and low static motors provide a higher level of air performance for demanding applications.

**Supply Air Blower**

A double inlet wheel with forward curve blades provide maximum air performance and quiet operation. Dynamically balanced with permanently lubricated ball bearings assure long, reliable operation. Adjustable pulleys allow air to be precisely tuned to the needs of the application.

#### REQUIRED SELECTIONS

**Supply Air Blower**

Specify Blower motor and drive kit (See Blower Data Table for specifications).

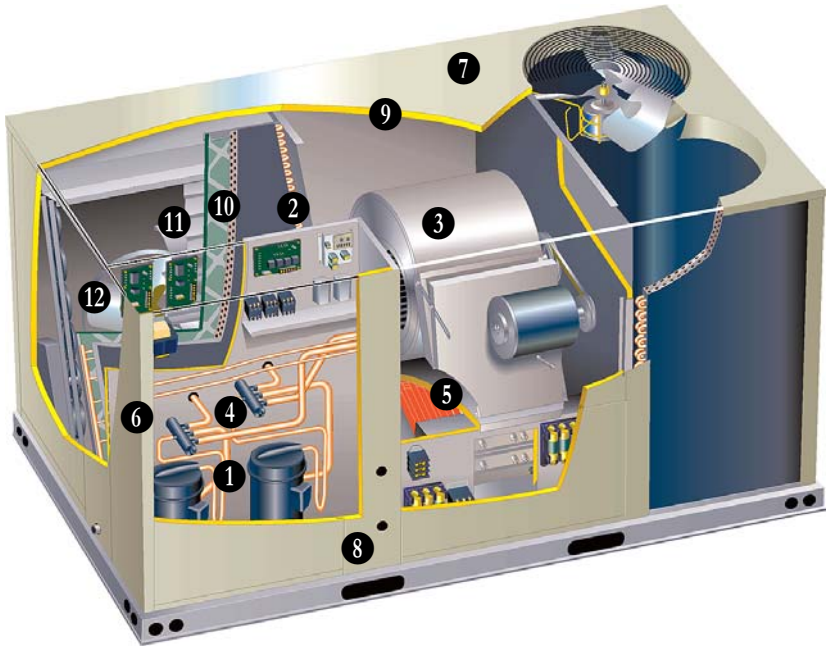
#### OPTIONS/ACCESSORIES

**Factory Installed**

**High and Low Static Supply Fan**

Extends air flow external static range.

## FEATURES AND BENEFITS




## CONTROLS

**Unit Controller**

Solid-state microprocessor-based control board that provides flexible control of cooling functions. All control voltage is provided via a 24V (secondary) transformer with built-in circuit breaker protection. Built-in functions include:

**Blower On/Off Delay** - Time delay between blower on and off cycles provides a more even supply air temperature during heating.

**Built-in Control Parameters** - Saves installation time as no programming is required.

**Minimum Compressor Run Time** - Ensures proper oil return to the compressor.

**Night Setback Mode** - Saves energy by closing outdoor air dampers and operating supply fan on thermostat demand only.

**Heat/Cool Staging** - Capable of up to 2 heat / 2 cool staging with a third party DDC control system or compatible thermostat.

**Thermostat Bounce Delay** - Protects compressor from short cycling when a mechanical thermostat is used.

## OPTIONS/ACCESSORIES

**Field Installed**

**Blower Proving Switch**

Uses a static pressure sensor to monitors blower operation and shuts down unit if blower fails.

**Dirty Filter Switch**

Senses static pressure increase indicating dirty filter condition.

**Smoke Detector**

Photoelectric type, installed in supply air section or return air section or both sections

## ELECTRICAL

### REQUIRED SELECTIONS

**Voltage Choice**

Specify 208/230V, 460V or 575V 3-phase-60hz when ordering base unit.

### OPTIONS/ACCESSORIES

**Factory or Field Installed**

5 **Electric Heat**

Helix wound nichrome elements, individual element limit controls, wiring harness. Unit Fuse Block must be ordered extra. See Electrical/Electric Heat tables for ordering information, Pages 17-19.

**GFI Service Outlets (2)**

115v ground fault circuit interrupter (GFCI) type, field wired.

**Field Installed**

6 **Circuit Breakers up to 175 Amp**

HACR circuit breaker without power distribution lugs. Accessible from outside of unit, spring-loaded weatherproof cover furnished. Main power to the unit is field connected to the circuit breaker which allows all power to be shutoff for service. Circuit breaker is sized to the unit maximum overcurrent protection (MOCP) size.

**Disconnect Switch up to 250 Amp**

Accessible from outside of unit, spring loaded weatherproof cover furnished. Main power to the unit is field connected to the disconnect which allows all power to be shut off for service.

## FEATURES AND BENEFITS

### CABINET

**7 Construction**

Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation. Base rails have rigging holes. Three sides of the base rail have fork slots. Raised edges around duct and power entry openings in the bottom of the unit provide additional protection against water entering the building.

**Air-Flow Choice**

Units are available in down-flow (vertical) or horizontal air flow configuration with optional field installed Horizontal Conversion Kit.

**Duct Flanges**

Horizontal supply duct flange is standard on all units.

**8 Power Entry**

Electrical lines can be brought through the unit base or through horizontal access knock-outs.

**Exterior Panels**

Constructed of heavy-gauge, galvanized steel with a two-layer enamel paint finish. Large removable panels provide service access.

**9 Insulation**

All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation. Unit base is fully insulated. The insulation also serves as an air seal to the roof curb, eliminating the need to add a seal during installation.

**Access Panels**

Access panels are provided for the economizer/filter section, blower section, heating section and the compressor/controls section.

### REQUIRED SELECTIONS

**Air Flow Configuration**

Specify horizontal or down-flow (vertical).

### OPTIONS/ACCESSORIES

**Factory Installed**

**Corrosion Protection**

A completely flexible immersed coating with an electrodeposited dry film process. (AST ElectroFin E-Coat) Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing, ASTM 1153 Standard Specification for Methyl Isobutyl Ketone.

**Hinged Access Panels**

Large access panels are hinged and have quarter-turn latches for quick and easy access to maintenance areas (economizer / filter, compressor / controls, heating / blower).

**Field Installed**

**Coil Guards**

Painted, galvanized steel wire guards to protect outdoor coil. Not used with Hail Guards.

**Hail Guards**

Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coils from hail damage. Not used with Coil Guards.

**Horizontal Return Air Panel Kit**

Required for horizontal applications with Horizontal Roof Curb, contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit, see dimension drawings.

### INDOOR AIR QUALITY

**10 Air Filters**

Disposable 2 inch filters furnished as standard.

### OPTIONS/ACCESSORIES

**Field Installed**

**Indoor Air Quality ($CO_2$) Sensor**

Monitors $CO_2$ levels.

### SERVICEABILITY

Designed to streamline general maintenance and decrease troubleshooting time.

**Marked & Color-Coded Wiring**

All electrical wiring is color-coded and marked to identify which components it is connecting.

**Electrical Plugs**

Positive connection electrical plugs are used to connect common accessories or maintenance parts for easy removal or installation.

**Access Panels**

Large access panels are provided for quick and easy access to maintenance areas.

**Blower Access**

Blower assembly slides out of the unit for easy access.

**TXV Access**

Thermal expansion valves are located near the perimeter of the unit for easier access.

**Thermal Expansion Valves**

Removable element head allows change out of element and bulb without removing the TXV.

**Coil Cleaning**

Independently formed condenser coils allow separation for easier cleaning.

**Standard Components**

A large number of common maintenance parts are standard throughout the entire range of sizes (7.5 - 12.5 tons), reducing the need to carry a lot of different parts to the job or in inventory.

**Compressor Access**

Compressors are located near the perimeter of the unit for easier access.

**Compressor Compartment**

Compressors are isolated from the condenser air flow allowing system operation checks to be done without changing the air flow across the outdoor coils.

## OPTIONS / ACCESSORIES

### ECONOMIZER/OUTDOOR AIR/EXHAUST ACCESSORIES

**Factory or Field Installed**

⓫ **Economizer**

Parallel, gear-driven action return air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24 volt, spring return motor, adjustable minimum damper position, damper assembly slides in unit, outdoor air hood must be ordered separately, choice of economizer controls. Economizer modulates dampers to maintain a 55°F discharge air temperature.

**Economizer Enthalpy Control**

Senses outdoor air enthalpy and enables economizer if the enthalpy is less than the setpoint of the control.

**Down-Flow Barometric Relief Dampers**

Allows relief of excess return air static when economizer is near full open. Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle. Bird screen furnished.

**Outdoor Air Damper Section**

25% Manual Outdoor Air Dampers - Parallel blade dampers are manually adjustable to a fixed position.

25% Automatic Outdoor Air Damper - Parallel blade, gear-driven dampers are automatically adjusted with a two-position damper motor.

**Economizer and Outdoor Air Damper Application Note** - Minimum mixed air temperature in heating mode 30°F

Maximum mixed air temperature in cooling mode: 90°F

⓬ **Power Exhaust Fans**

Installs internal to unit for down-flow applications with economizer option. Provides exhaust air pressure relief. Interlocked to run when supply air blower is operating. Fan runs when outdoor air dampers are 50% open (adjustable). Motor is overload protected. Galvanized steel cabinet and hood painted to match unit. Total air volume is 4200 cfm at 0 in. wg. 1/3 hp motor. 300 Watts total input.

See Power Exhaust Blower Tables.

**Field Installed**

**Economizer Control**

**Sensible Control** - Senses outdoor air temperature and enables the economizer if the temperature is less than the set point of the control.

**Differential Sensible Control** - Two temperature sensors allow the control to select between outdoor air or return air, whichever has lower temperature.

**Enthalpy Control** - Senses outdoor air enthalpy and enables economizer if the enthalpy is less than the setpoint of the control.

**Differential Enthalpy Control** - Two solid-state enthalpy sensors allow the control to select between outdoor air or return air, whichever has lower enthalpy.

**Economizer Modulating Sensor Kit** - Sensor that allows the economizer damper to modulate to maintain 55°F discharge air temperature, while in free-cooling.

**Outdoor Air Hood**

Required with Economizer, Outdoor Air Damper Sections, cleanable aluminum mesh fresh air filters furnished.

**Down-Flow Barometric Relief Damper Hood**

Protects exhaust air from recirculating into outdoor air stream.

**Horizontal Barometric Relief Dampers**

Allows relief of excess air when economizer is near full open. Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle. Field installed in return air duct. Bird screen furnished.

### CEILING DIFFUSERS

#### OPTIONS/ACCESSORIES

**Field Installed**

**Ceiling Diffusers**

Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings.

**Transitions (Supply and Return)** - Used with diffusers, installs in roof curb, galvanized steel construction, flanges furnished for duct connection to diffusers, fully insulated.

### ROOF CURBS

#### OPTIONS/ACCESSORIES

**Field Installed**

Nailer strip furnished, mates to unit, US National Roofing Contractors Approved, shipped knocked down. Available in 8, 14, 18, and 24 inch heights.

Cliplock curbs use interlocking tabs to fasten together. No tools required.

Standard roof curb corners fasten together with furnished hardware.

## OPTIONS / ACCESSORIES

| Item | | Catalog No. | 090 | 102 | 120 | 150 |
|---|---|---|---|---|---|---|
| **COOLING / HEATING SYSTEM** | | | | | | |
| Condensate Drain Trap | PVC - LTACDKP09-36 | **37K90** | **x** | **x** | **x** | **x** |
| | Copper - LTACDKC09-36 | **48K14** | **x** | **x** | **x** | **x** |
| Corrosion Protection | | | ○ | ○ | ○ | ○ |
| Efficiency | | Standard | ○ | ○ | ○ | ○ |
| High Pressure Switch | T1SNSR11B-2 | **42W97** | **x** | **x** | **x** | **x** |
| Low Ambient Kit | T1SNSR13B-2 | **42W99** | **x** | **x** | **x** | **x** |
| Refrigerant Type | | R-22 | ○ | ○ | ○ | ○ |
| **BLOWER - SUPPLY AIR** | | | | | | |
| Constant Air Volume | 2 hp Standard or High Efficiency | | ○ | ○ | ○ | |
| | 3 hp Standard Efficiency | | ○ | ○ | ○ | ○ |
| | 3 hp High Efficiency | | ○ | ○ | ○ | ○ |
| | 5 hp Standard or High Efficiency | | | | ○ | ○ |
| **CABINET** | | | | | | |
| Coil Guards | TACGKGC10/15 | **69M44** | **x** | **x** | **x** | **x** |
| Hail Guards | TAHGKGC10/15 | **69M45** | **x** | **x** | **x** | **x** |
| Hinged Access Panels | | | ○ | ○ | ○ | ○ |
| Horizontal Discharge Conversion Kit | LTHSDKGC10/15 | **56K53** | **x** | **x** | **x** | **x** |
| **CONTROLS** | | | | | | |
| Blower Proving Switch | C0SWCH01AE1- | **30K49** | **x** | **x** | **x** | **x** |
| Dirty Filter Switch | C0SWCH00AE1- | **30K48** | **x** | **x** | **x** | **x** |
| Smoke Detector - Supply | L1SNSR42BD1 | **53W26** | **x** | **x** | **x** | **x** |
| Smoke Detector - Return | L1SNSR41BD1 | **53W25** | **x** | **x** | **x** | **x** |
| **ECONOMIZER** | | | | | | |
| **Economizer** | | | | | | |
| Economizer - Order LAOAH Hood Separately | TAREMD10/15 | **94M02** | ⊗ | ⊗ | ⊗ | ⊗ |
| **Economizer Controls** | | | | | | |
| Differential Enthalpy (dual) | C1SNSR07AE | **86M33** | **x** | **x** | **x** | **x** |
| Sensible (order two kits for Differential) | TASEK10/15 | **76M37** | ⊗ | ⊗ | ⊗ | ⊗ |
| Single Outdoor Enthalpy | C1SNSR06AE | **86M32** | **x** | **x** | **x** | **x** |
| **Barometric Relief** | | | | | | |
| Down-Flow Barometric Relief Dampers - Order Hood Separately | LAGED10/15 | **53K03** | ⊗ | ⊗ | ⊗ | ⊗ |
| Hood for Down-Flow LAGED | LAGEH09/15 | **88K79** | **x** | **x** | **x** | **x** |
| Horizontal Barometric Relief Dampers Hood Furnished | LAGEDH03/15 | **53K04** | **x** | **x** | **x** | **x** |
| **OUTDOOR AIR** | | | | | | |
| **Outdoor Air Dampers** | | | | | | |
| Damper Section (down-flow) Order Hood Separately | Motorized - TAOADM10/15 | **73M74** | ⊗ | ⊗ | ⊗ | ⊗ |
| | Manual - LAOAD10/15 | **66K69** | ⊗ | ⊗ | ⊗ | ⊗ |
| **Outdoor Air Hoods for Economizers and Outdoor Air Dampers** | | | | | | |
| Outdoor Air Hood (2 each) 16 x 25 x 1 in. | LAOAH10/15 | **53K05** | ⊗ | ⊗ | ⊗ | ⊗ |
| **POWER EXHAUST FANS** | | | | | | |
| Standard Static | 208/230V - LAPEF10/15 | **73M32** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 460V - LAPEF10/15 | **73M33** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 575V - LAPEF10/15 | **73M35** | ⊗ | ⊗ | ⊗ | ⊗ |

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## OPTIONS / ACCESSORIES

| Item | | Catalog No. | 090 | 102 | 120 | 150 |
|---|---|---|---|---|---|---|
| **ELECTRICAL** | | | | | | |
| Voltage 60 hz | 208/230V - 3 phase | | ○ | ○ | ○ | ○ |
| | 460V - 3 phase | | ○ | ○ | ○ | ○ |
| | 575V - 3 phase | | ○ | ○ | ○ | ○ |
| HACR Circuit Breakers | 25 to 80 Amp size available | | x | x | x | x |
| Disconnect Switch | See Electrical/Electric Heat Tables for selection | | x | x | x | x |
| GFI Service Outlets | LTAGFIK10/15 | **74M70** | ⊗ | ⊗ | ⊗ | ⊗ |
| **ELECTRIC HEAT** | | | | | | |
| 7.5 kW | EHA102-7.5 - 208/230V-3ph | **99J01** | ⊗ | ⊗ | | |
| | 460V-3ph | **99J02** | ⊗ | ⊗ | | |
| | 575V-3ph | **99J03** | ⊗ | ⊗ | | |
| 15 kW | EHA150-15 - 208/230V-3ph | **99J04** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 460V-3ph | **99J05** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 575V-3ph | **99J06** | ⊗ | ⊗ | ⊗ | ⊗ |
| 22.5 kW | EHA360-22.5 - 208/230V-3ph | **99J28** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 460V-3ph | **99J29** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 575V-3ph | **99J30** | ⊗ | ⊗ | ⊗ | ⊗ |
| 30 kW | EHA150-30 - 208/230V-3ph | **99J07** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 460V-3ph | **99J08** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 575V-3ph | **99J09** | ⊗ | ⊗ | ⊗ | ⊗ |
| 45 kW | EHA150-45 - 208/230V-3ph | **99J10** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 460V-3ph | **99J11** | ⊗ | ⊗ | ⊗ | ⊗ |
| | 575V-3ph | **99J12** | ⊗ | ⊗ | ⊗ | ⊗ |
| 60 kW | EHA150-60 - 208/230V-3ph | **99J13** | | | ⊗ | ⊗ |
| | 460V-3ph | **99J14** | | | ⊗ | ⊗ |
| | 575V-3ph | **99J15** | | | ⊗ | ⊗ |
| **ELECTRIC HEAT ACCESSORIES/OPTIONS** - See Electrical/Electric Heat Tables for selection | | | | | | |
| LTB2 Terminal Block | LTB2-175 | **30K75** | ⊗ | ⊗ | ⊗ | ⊗ |
| | LTB2-335 | **30K76** | ⊗ | ⊗ | ⊗ | ⊗ |
| [1] Electric Heat Control Module | TAEK10/15 | **73M79** | ⊗ | ⊗ | ⊗ | ⊗ |
| Unit Fuse Block | | | ⊗ | ⊗ | ⊗ | ⊗ |
| **INDOOR AIR QUALITY** | | | | | | |
| **Indoor Air Quality ($CO_2$) Sensors** | | | | | | |
| $CO_2$ Sensor Duct Mounting Kit | C0MISC19AE1- | **85L43** | x | x | x | x |
| Sensor - white case $CO_2$ display | C0SNSR50AS1L | **77N39** | x | x | x | x |
| Sensor - white case no display | C0SNSR52AS1L | **87N53** | x | x | x | x |
| Sensor - black case $CO_2$ display | C0SNSR51AS1L | **87N52** | x | x | x | x |
| Sensor - black case, no display | C0SNSR53AS1L | **87N54** | x | x | x | x |
| Aspiration Box for duct mounting | C0MISC16AE1- | **90N43** | x | x | x | x |
| Handheld $CO_2$ Monitor | LTAIAQSHM03/36 | **70N93** | x | x | x | x |

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[1] Required with all models.

## OPTIONS / ACCESSORIES

| Item | Item | Catalog No. | 090 | 102 | 120 | 150 |
|---|---|---|---|---|---|---|
| **CEILING DIFFUSERS** | | | | | | |
| Step-Down<br>Order one | RTD11-95 | **29G04** | **x** | | | |
| | RTD11-135 | **29G05** | | **x** | **x** | |
| | RTD11-185 | **29G06** | | | | **x** |
| | (Canada Only) RTD11-150/180S | **13K63** | | | | **x** |
| Flush<br>Order one | FD11-95 | **29G08** | **x** | | | |
| | FD11-135 | **29G09** | | **x** | **x** | |
| | FD11-185 | **29G10** | | | | **x** |
| | (Canada Only) FD11-150/180S | **13K58** | | | | **x** |
| Transitions (Supply and Return)<br>Order one | LASRT10/12 | **49K55** | **x** | **x** | **x** | |
| | LASRT15 | **49K56** | | | | **x** |
| **ROOF CURBS - CLIPLOCK 1000** | | | | | | |
| **Down-Flow** | | | | | | |
| 8 in. height | C1CURB40B | **26W31** | **x** | **x** | **x** | **x** |
| 14 in. height | LARMF10/15S-14 | **65K34** | **x** | **x** | **x** | **x** |
| 18 in. height | LARMF10/15S-18 | **65K35** | **x** | **x** | **x** | **x** |
| 24 in. height | LARMF10/15S-24 | **65K36** | **x** | **x** | **x** | **x** |
| **ROOF CURBS - STANDARD** | | | | | | |
| **Down-Flow** | | | | | | |
| 14 in. height | LARMF10/15-14 | **53K50** | **x** | **x** | **x** | **x** |
| 24 in. height | LARMF10/15-24 | **49K54** | **x** | **x** | **x** | **x** |

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## SPECIFICATIONS

| General Data | | | 7.5 Ton | 8.5 Ton | 10 Ton | 12.5 Ton |
|---|---|---|---|---|---|---|
| | Nominal Tonnage | | 7.5 Ton | 8.5 Ton | 10 Ton | 12.5 Ton |
| | Model No. | | THA090S2B | THA102S2B | THA120S2B | THA150S2B |
| | Efficiency Type | | Standard | Standard | Standard | Standard |
| **Cooling Performance** | Gross Cooling Capacity - Btuh | | 93,000 | 104,000 | 126,000 | 145,000 |
| | [1]Net Cooling Capacity - Btuh | | 89,000 | 100,000 | 118,000 | 138,000 |
| | ARI Rated Airflow - cfm | | 3000 | 3500 | 4200 | 4400 |
| | Total Unit Power | | 8.8 | 9.9 | 11.8 | 14.8 |
| | [1] EER (Btuh/Watt) | | 10.1 | 10.1 | 10.1 | 9.3 |
| | [2] Integrated Part Load Value (Btuh/Watt) | | 10.5 | 10.5 | 10.5 | 10.5 |
| | Refrigerant Charge Furnished (HCFC-22) | Circuit 1 | 12 lbs. 0 oz. | 11 lbs. 0 oz. | 12 lbs. 8 oz. | 11 lbs. 8 oz. |
| | | Circuit 2 | 10 lbs. 10 oz. | 11 lbs. 0 oz. | 12 lbs. 8 oz. | 11 lbs. 8 oz. |
| **[3] Sound Rating Number (dB)** | | | 88 | 88 | 88 | 88 |
| **Heating Performance** | [1] Total High Heating Capacity - Btuh | | 90,000 | 102,000 | 120,000 | 136,000 |
| | Total Unit Power | | 8.3 | 9.3 | 11.0 | 13.2 |
| | [1] C.O.P. | | 3.2 | 3.2 | 3.2 | 3.1 |
| | [1] Total Low Heating Capacity - Btuh | | 52,000 | 56,000 | 72,000 | 80,000 |
| | Total Unit Power | | 7.1 | 7.5 | 9.5 | 11.7 |
| | [1] C.O.P. | | 2.2 | 2.2 | 2.2 | 2.0 |
| **Compressor -** Number & Type | | | (2) Scroll | (2) Scroll | (2) Scroll | (2) Scroll |
| **Outdoor Coil** | Net face area - sq. ft. | | 29.3 total | 29.3 total | 29.3 total | 29.3 total |
| | Tube diameter - in. | | 3/8 | 3/8 | 3/8 | 3/8 |
| | Number of rows | | 2 | 2 | 2 | 2 |
| | Fins per inch | | 20 | 20 | 20 | 20 |
| **Outdoor Coil Fans** | Motor horsepower | | (2) 1/3 | (2) 1/3 | (2) 1/3 | (2) 1/2 |
| | Motor rpm | | 1075 | 1075 | 1075 | 1075 |
| | Total Motor watts | | 700 | 700 | 700 | 1050 |
| | Diameter - in. - no. of blades | | (2) 24 - 3 | (2) 24 - 3 | (2) 24 - 3 | (2) 24 - 3 |
| | Total air volume - cfm | | 8000 | 8000 | 8000 | 10,000 |
| **Indoor Coil** | Net face area - sq. ft. | | 10.5 total | 10.5 total | 10.5 total | 10.5 total |
| | Tube diameter - in. | | 3/8 | 3/8 | 3/8 | 3/8 |
| | Number of rows | | 3 | 3 | 4 | 4 |
| | Fins per inch | | 14 | 14 | 14 | 14 |
| | Drain Connection - no. & size | | (1) 1 in. NPT cplg | (1) 1 in. NPT cplg | (1) 1 in. NPT cplg | (1) 1 in. NPT cplg |
| | Expansion device type | | Balanced Port Thermostatic Expansion Valve, removeable power head | | | |
| **Standard Indoor Blower and Drive** | [4] Belt Drive - Nominal motor output | | 2 hp | 2 hp | 3 hp | 5 hp |
| | Maximum usable output (US Only) | | 2.3 hp | 2.3 hp | 3.45 hp | 5.75 hp |
| | Drive kit | | kit #1<br>680 - 925 rpm | kit #1<br>680 - 925 rpm | kit #3<br>895 - 1120 rpm | kit #6<br>1100 - 1395 rpm |
| | Wheel nominal diameter x width - in. | | (1) 15 x 15 | (1) 15 x 15 | (1) 15 x 15 | (1) 15 x 15 |
| **Filters** | Type of filter | | Disposable | | | |
| | Number and size - in. | | (4) 18 x 24 x 2 | (4) 18 x 24 x 2 | (4) 18 x 24 x 2 | (4) 18 x 24 x 2 |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | | | |

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

1 Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360.
**Cooling Ratings -** 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.
**High Temperature Heating Ratings -** 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.
**Low Temperature Heating Ratings -** 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

2 Integrated Part Load Value rated at 80°F outdoor air temperature, 80°F db/67°F wb indoor air temperature.

3 Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

4 Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 7.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ONE COMPRESSOR OPERATING THA090S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 65°F (18°C) | | | | | | 75°F (24°C) | | | | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 2400 | 1135 | 47.1 | 13.8 | 2.47 | .67 | .81 | .95 | 45.8 | 13.4 | 2.80 | .68 | .83 | .97 | 44.3 | 13.0 | 3.17 | .69 | .84 | .98 | 42.8 | 12.5 | 3.58 | .70 | .86 | .99 |
| | 3000 | 1415 | 49.0 | 14.4 | 2.49 | .72 | .89 | 1.00 | 47.6 | 14.0 | 2.81 | .73 | .91 | 1.00 | 46.1 | 13.5 | 3.17 | .75 | .92 | 1.00 | 44.5 | 13.0 | 3.59 | .76 | .94 | 1.00 |
| | 3600 | 1700 | 50.5 | 14.8 | 2.50 | .78 | .96 | 1.00 | 49.1 | 14.4 | 2.82 | .79 | .97 | 1.00 | 47.5 | 13.9 | 3.18 | .81 | .98 | 1.00 | 46.0 | 13.5 | 3.60 | .82 | 1.00 | 1.00 |
| 67°F (19°C) | 2400 | 1135 | 50.2 | 14.7 | 2.49 | .53 | .65 | .78 | 48.7 | 14.3 | 2.82 | .53 | .66 | .79 | 47.2 | 13.8 | 3.18 | .54 | .66 | .80 | 45.5 | 13.3 | 3.60 | .54 | .68 | .82 |
| | 3000 | 1415 | 51.9 | 15.2 | 2.50 | .56 | .70 | .85 | 50.3 | 14.7 | 2.83 | .56 | .71 | .87 | 48.7 | 14.3 | 3.19 | .57 | .72 | .89 | 47.0 | 13.8 | 3.60 | .57 | .73 | .91 |
| | 3600 | 1700 | 53.0 | 15.5 | 2.51 | .58 | .75 | .93 | 51.4 | 15.1 | 2.83 | .59 | .77 | .94 | 49.8 | 14.6 | 3.20 | .60 | .78 | .96 | 48.0 | 14.1 | 3.61 | .61 | .80 | .97 |
| 71°F (22°C) | 2400 | 1135 | 53.6 | 15.7 | 2.51 | .40 | .51 | .62 | 52.0 | 15.2 | 2.84 | .40 | .52 | .63 | 50.4 | 14.8 | 3.20 | .40 | .52 | .64 | 48.6 | 14.2 | 3.62 | .41 | .53 | .65 |
| | 3000 | 1415 | 55.2 | 16.2 | 2.53 | .41 | .54 | .67 | 53.6 | 15.7 | 2.85 | .41 | .55 | .68 | 51.8 | 15.2 | 3.21 | .41 | .55 | .70 | 50.0 | 14.7 | 3.62 | .42 | .56 | .71 |
| | 3600 | 1700 | 56.4 | 16.5 | 2.54 | .42 | .57 | .73 | 54.6 | 16.0 | 2.86 | .42 | .58 | .74 | 52.8 | 15.5 | 3.22 | .43 | .59 | .76 | 51.0 | 14.9 | 3.63 | .43 | .60 | .77 |

## 7.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING THA090S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | | 105°F (41°C) | | | | | | 115°F (46°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 2400 | 1135 | 87.1 | 25.5 | 6.24 | .70 | .84 | .97 | 84.1 | 24.6 | 7.06 | .71 | .86 | .99 | 80.9 | 23.7 | 7.97 | .72 | .88 | 1.00 | 77.4 | 22.7 | 9.02 | .74 | .90 | 1.00 |
| | 3000 | 1415 | 90.6 | 26.6 | 6.26 | .75 | .92 | 1.00 | 87.4 | 25.6 | 7.08 | .77 | .94 | 1.00 | 84.1 | 24.6 | 7.99 | .78 | .96 | 1.00 | 80.7 | 23.7 | 9.04 | .80 | .97 | 1.00 |
| | 3600 | 1700 | 93.4 | 27.4 | 6.28 | .81 | .98 | 1.00 | 90.4 | 26.5 | 7.10 | .82 | .99 | 1.00 | 87.1 | 25.5 | 8.01 | .84 | 1.00 | 1.00 | 83.9 | 24.6 | 9.07 | .87 | 1.00 | 1.00 |
| 67°F (19°C) | 2400 | 1135 | 92.8 | 27.2 | 6.27 | .55 | .68 | .81 | 89.5 | 26.2 | 7.09 | .55 | .69 | .82 | 86.1 | 25.2 | 8.01 | .56 | .70 | .84 | 82.4 | 24.1 | 9.06 | .57 | .71 | .86 |
| | 3000 | 1415 | 95.8 | 28.1 | 6.29 | .58 | .73 | .88 | 92.4 | 27.1 | 7.11 | .58 | .74 | .90 | 88.7 | 26.0 | 8.03 | .59 | .76 | .92 | 84.9 | 24.9 | 9.08 | .60 | .78 | .94 |
| | 3600 | 1700 | 97.9 | 28.7 | 6.31 | .61 | .78 | .95 | 94.4 | 27.7 | 7.12 | .62 | .80 | .97 | 90.7 | 26.6 | 8.05 | .63 | .82 | .98 | 86.7 | 25.4 | 9.09 | .64 | .84 | 1.00 |
| 71°F (22°C) | 2400 | 1135 | 99.1 | 29.0 | 6.31 | .41 | .53 | .65 | 95.6 | 28.0 | 7.14 | .41 | .54 | .66 | 92.0 | 27.0 | 8.05 | .42 | .54 | .67 | 88.1 | 25.8 | 9.10 | .42 | .55 | .69 |
| | 3000 | 1415 | 102.0 | 29.9 | 6.33 | .42 | .56 | .70 | 98.4 | 28.8 | 7.15 | .42 | .57 | .72 | 94.6 | 27.7 | 8.08 | .43 | .58 | .73 | 90.5 | 26.5 | 9.12 | .43 | .59 | .75 |
| | 3600 | 1700 | 104.0 | 30.5 | 6.35 | .43 | .60 | .76 | 100.3 | 29.4 | 7.16 | .44 | .61 | .78 | 96.4 | 28.3 | 8.09 | .44 | .62 | .80 | 92.1 | 27.0 | 9.14 | .45 | .63 | .82 |

## 7.5 TON STANDARD EFFICIENCY - HEATING CAPACITY THA090S

| Indoor Coil Air Volume 70°F db (21°C db) | | Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65°F (18°C) | | | 45°F (7°C) | | | 25°F (-4°C) | | | 5°F (-15°C) | | | -15°F (-26°C) | | |
| | | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input |
| cfm | L/s | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | |
| 2400 | 1135 | 111.2 | 32.6 | 8.26 | 84.4 | 24.7 | 7.15 | 56.6 | 16.6 | 6.03 | 36.9 | 10.8 | 4.97 | 18.6 | 5.5 | 3.89 |
| 3000 | 1415 | 112.8 | 33.1 | 7.66 | 86.0 | 25.2 | 6.55 | 58.2 | 17.1 | 5.43 | 38.5 | 11.3 | 4.37 | 20.2 | 5.9 | 3.29 |
| 3600 | 1700 | 114.4 | 33.5 | 7.36 | 87.6 | 25.7 | 6.25 | 59.8 | 17.5 | 5.13 | 40.1 | 11.8 | 4.07 | 21.8 | 6.4 | 2.99 |

### 7.5 TON STANDARD EFFICIENCY - THA090S - HEATING PERFORMANCE at 3000 cfm (1415 L/s) Indoor Coil Air Volume

| *Outdoor Temperature | | Compressor Motor kW Input | Total Output | |
|---|---|---|---|---|
| °F | °C | | kBtuh | kW |
| 65 | 18 | 7.66 | 112.8 | 33.1 |
| 60 | 16 | 7.39 | 106.5 | 31.2 |
| 55 | 13 | 7.11 | 100.1 | 29.3 |
| 50 | 10 | 6.84 | 93.8 | 27.5 |
| 47 | 8 | 6.67 | 90.0 | 26.4 |
| 45 | 7 | 6.55 | 86.0 | 25.2 |
| 40 | 4 | 6.25 | 76.0 | 22.3 |
| 35 | 2 | 5.94 | 66.0 | 19.3 |
| 30 | -1 | 5.69 | 62.1 | 18.2 |
| 25 | -4 | 5.43 | 58.2 | 17.1 |
| 20 | -7 | 5.18 | 54.3 | 15.9 |
| 17 | -8 | 5.02 | 52.0 | 15.2 |
| 15 | -9 | 4.91 | 49.5 | 14.5 |
| 10 | -12 | 4.64 | 43.1 | 12.6 |
| 5 | -15 | 4.37 | 38.5 | 11.3 |
| 0 | -18 | 4.10 | 34.0 | 10.0 |
| -5 | -21 | 3.83 | 29.4 | 8.6 |
| -10 | -23 | 3.56 | 24.8 | 7.3 |
| -15 | -26 | 3.29 | 20.2 | 5.9 |
| -20 | -29 | 3.01 | 15.6 | 4.6 |

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F (21°C).

NOTE - For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 8.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ONE COMPRESSOR OPERATING THA102S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 65°F (18°C) | | | | | | 75°F (24°C) | | | | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 2720 | 1285 | 51.6 | 15.1 | 2.76 | .65 | .80 | .95 | 50.0 | 14.7 | 3.11 | .65 | .81 | .97 | 48.4 | 14.2 | 3.51 | .66 | .83 | .98 | 46.6 | 13.7 | 3.96 | .67 | .85 | 1.00 |
| | 3400 | 1605 | 53.5 | 15.7 | 2.78 | .70 | .88 | 1.00 | 51.9 | 15.2 | 3.14 | .71 | .90 | 1.00 | 50.2 | 14.7 | 3.53 | .72 | .92 | 1.00 | 48.4 | 14.2 | 3.98 | .74 | .94 | 1.00 |
| | 4080 | 1925 | 55.1 | 16.1 | 2.80 | .76 | .96 | 1.00 | 53.4 | 15.6 | 3.16 | .77 | .97 | 1.00 | 51.7 | 15.2 | 3.55 | .79 | .99 | 1.00 | 50.0 | 14.7 | 4.01 | .81 | 1.00 | 1.00 |
| 67°F (19°C) | 2720 | 1285 | 54.8 | 16.1 | 2.80 | .51 | .62 | .76 | 53.1 | 15.6 | 3.15 | .51 | .63 | .77 | 51.3 | 15.0 | 3.55 | .52 | .64 | .79 | 49.4 | 14.5 | 4.01 | .52 | .65 | .81 |
| | 3400 | 1605 | 56.5 | 16.6 | 2.82 | .53 | .67 | .84 | 54.7 | 16.0 | 3.18 | .54 | .68 | .86 | 52.8 | 15.5 | 3.58 | .55 | .70 | .88 | 50.8 | 14.9 | 4.03 | .55 | .72 | .91 |
| | 4080 | 1925 | 57.7 | 16.9 | 2.84 | .56 | .73 | .92 | 55.8 | 16.4 | 3.19 | .57 | .75 | .94 | 53.9 | 15.8 | 3.59 | .58 | .77 | .96 | 51.9 | 15.2 | 4.04 | .59 | .78 | .98 |
| 71°F (22°C) | 2720 | 1285 | 58.3 | 17.1 | 2.84 | .38 | .49 | .60 | 56.5 | 16.6 | 3.20 | .38 | .50 | .61 | 54.6 | 16.0 | 3.60 | .39 | .50 | .62 | 52.6 | 15.4 | 4.06 | .39 | .51 | .63 |
| | 3400 | 1605 | 60.0 | 17.6 | 2.87 | .39 | .52 | .65 | 58.1 | 17.0 | 3.23 | .39 | .53 | .66 | 56.1 | 16.4 | 3.63 | .40 | .53 | .67 | 54.0 | 15.8 | 4.08 | .40 | .54 | .69 |
| | 4080 | 1925 | 61.2 | 17.9 | 2.89 | .40 | .55 | .70 | 59.2 | 17.3 | 3.24 | .41 | .56 | .72 | 57.1 | 16.7 | 3.64 | .41 | .57 | .74 | 54.9 | 16.1 | 4.10 | .41 | .58 | .76 |

## 8.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING THA102S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | | 105°F (41°C) | | | | | | 115°F (46°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 2720 | 1285 | 98.6 | 28.9 | 6.95 | .69 | .84 | .98 | 95.0 | 27.8 | 7.84 | .70 | .86 | .99 | 91.3 | 26.8 | 8.87 | .71 | .88 | 1.00 | 87.2 | 25.6 | 10.06 | .73 | .90 | 1.00 |
| | 3500 | 1650 | 102.6 | 30.1 | 7.00 | .75 | .93 | 1.00 | 99.0 | 29.0 | 7.90 | .77 | .95 | 1.00 | 95.1 | 27.9 | 8.94 | .79 | .97 | 1.00 | 91.2 | 26.7 | 10.11 | .81 | .99 | 1.00 |
| | 4280 | 2020 | 106.2 | 31.1 | 7.05 | .82 | .99 | 1.00 | 102.6 | 30.1 | 7.96 | .84 | 1.00 | 1.00 | 98.8 | 29.0 | 8.99 | .86 | 1.00 | 1.00 | 94.8 | 27.8 | 10.18 | .88 | 1.00 | 1.00 |
| 67°F (19°C) | 2720 | 1285 | 104.5 | 30.6 | 7.03 | .54 | .67 | .80 | 100.7 | 29.5 | 7.94 | .55 | .68 | .82 | 96.6 | 28.3 | 8.96 | .55 | .69 | .84 | 92.3 | 27.1 | 10.15 | .56 | .71 | .87 |
| | 3500 | 1650 | 108.0 | 31.7 | 7.09 | .58 | .73 | .90 | 104.0 | 30.5 | 7.99 | .58 | .74 | .92 | 99.7 | 29.2 | 9.00 | .59 | .76 | .94 | 95.1 | 27.9 | 10.19 | .61 | .78 | .96 |
| | 4280 | 2020 | 110.5 | 32.4 | 7.12 | .61 | .80 | .97 | 106.3 | 31.2 | 8.02 | .62 | .82 | .99 | 101.9 | 29.9 | 9.05 | .63 | .84 | 1.00 | 97.2 | 28.5 | 10.24 | .65 | .86 | 1.00 |
| 71°F (22°C) | 2720 | 1285 | 111.3 | 32.6 | 7.13 | .41 | .53 | .65 | 107.2 | 31.4 | 8.04 | .41 | .53 | .66 | 102.9 | 30.2 | 9.07 | .41 | .54 | .67 | 98.3 | 28.8 | 10.24 | .41 | .55 | .68 |
| | 3500 | 1650 | 114.6 | 33.6 | 7.19 | .42 | .56 | .71 | 110.3 | 32.3 | 8.09 | .42 | .57 | .72 | 105.8 | 31.0 | 9.12 | .43 | .58 | .74 | 101.0 | 29.6 | 10.30 | .43 | .60 | .76 |
| | 4280 | 2020 | 116.9 | 34.3 | 7.22 | .43 | .60 | .77 | 112.5 | 33.0 | 8.12 | .44 | .61 | .79 | 107.7 | 31.6 | 9.16 | .44 | .63 | .82 | 102.7 | 30.1 | 10.32 | .45 | .64 | .84 |

## 8.5 TON STANDARD EFFICIENCY - HEATING CAPACITY THA102S

| Indoor Coil Air Volume 70°F db (21°C db) | | Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65°F (18°C) | | | 45°F (7°C) | | | 25°F (-4°C) | | | 5°F (-15°C) | | | -15°F (-26°C) | | |
| | | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input |
| cfm | L/s | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | |
| 2720 | 1285 | 128.5 | 37.7 | 6.85 | 95.3 | 27.9 | 5.54 | 61.0 | 17.9 | 4.17 | 37.1 | 10.9 | 3.27 | 19.1 | 5.6 | 2.10 |
| 3400 | 1605 | 130.2 | 38.2 | 8.30 | 97.0 | 28.4 | 6.99 | 62.7 | 18.4 | 5.62 | 38.8 | 11.4 | 4.72 | 20.8 | 6.1 | 3.55 |
| 4080 | 1925 | 133.0 | 39.0 | 9.74 | 99.8 | 29.2 | 8.43 | 65.5 | 19.2 | 7.06 | 41.6 | 12.2 | 6.16 | 23.6 | 6.9 | 4.99 |

## 8.5 TON STANDARD EFFICIENCY - THA102S - HEATING PERFORMANCE at 3400 cfm (1605 L/s) Indoor Coil Air Volume

| *Outdoor Temperature | | Compressor Motor kW Input | Total Output | |
|---|---|---|---|---|
| °F | °C | | kBtuh | kW |
| 65 | 18 | 8.30 | 130.2 | 38.2 |
| 60 | 16 | 8.00 | 122.3 | 35.8 |
| 55 | 13 | 7.70 | 114.4 | 33.5 |
| 50 | 10 | 7.40 | 106.5 | 31.2 |
| 47 | 8 | 7.22 | 101.8 | 29.8 |
| 45 | 7 | 6.99 | 97.0 | 28.4 |
| 40 | 4 | 6.42 | 85.0 | 24.9 |
| 35 | 2 | 5.85 | 73.0 | 21.4 |
| 30 | -1 | 5.74 | 67.8 | 19.9 |
| 25 | -4 | 5.62 | 62.7 | 18.4 |
| 20 | -7 | 5.50 | 57.5 | 16.9 |
| 17 | -8 | 5.43 | 54.4 | 15.9 |
| 15 | -9 | 5.31 | 51.2 | 15.0 |
| 10 | -12 | 5.01 | 43.3 | 12.7 |
| 5 | -15 | 4.72 | 38.8 | 11.4 |
| 0 | -18 | 4.43 | 34.3 | 10.1 |
| -5 | -21 | 4.14 | 29.8 | 8.7 |
| -10 | -23 | 3.85 | 25.3 | 7.4 |
| -15 | -26 | 3.55 | 20.8 | 6.1 |
| -20 | -29 | 3.26 | 16.3 | 4.8 |

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F (21°C).

NOTE - For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 10 TON STANDARD EFFICIENCY - COOLING CAPACITY - ONE COMPRESSOR OPERATING THA120S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 65°F (18°C) | | | | | | 75°F (24°C) | | | | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 3200 | 1510 | 63.4 | 18.6 | 3.17 | .66 | .81 | .96 | 61.6 | 18.1 | 3.56 | .67 | .83 | .97 | 59.6 | 17.5 | 4.02 | .68 | .84 | .99 | 57.5 | 16.9 | 4.54 | .69 | .86 | 1.00 |
| | 4000 | 1890 | 66.0 | 19.3 | 3.19 | .72 | .90 | 1.00 | 64.0 | 18.8 | 3.58 | .73 | .91 | 1.00 | 62.0 | 18.2 | 4.04 | .74 | .93 | 1.00 | 59.8 | 17.5 | 4.56 | .76 | .95 | 1.00 |
| | 4800 | 2265 | 68.1 | 20.0 | 3.21 | .78 | .97 | 1.00 | 66.1 | 19.4 | 3.60 | .79 | .98 | 1.00 | 64.1 | 18.8 | 4.06 | .81 | .99 | 1.00 | 61.9 | 18.1 | 4.59 | .83 | 1.00 | 1.00 |
| 67°F (19°C) | 3200 | 1510 | 67.4 | 19.8 | 3.20 | .52 | .64 | .77 | 65.4 | 19.2 | 3.60 | .53 | .65 | .79 | 63.3 | 18.6 | 4.06 | .53 | .66 | .80 | 61.0 | 17.9 | 4.58 | .54 | .67 | .82 |
| | 4000 | 1890 | 69.6 | 20.4 | 3.23 | .55 | .69 | .86 | 67.5 | 19.8 | 3.62 | .56 | .70 | .88 | 65.3 | 19.1 | 4.07 | .56 | .72 | .90 | 62.9 | 18.4 | 4.60 | .57 | .73 | .92 |
| | 4800 | 2265 | 71.2 | 20.9 | 3.24 | .58 | .75 | .94 | 69.1 | 20.3 | 3.63 | .59 | .77 | .96 | 66.7 | 19.5 | 4.09 | .60 | .79 | .97 | 64.2 | 18.8 | 4.62 | .61 | .81 | .99 |
| 71°F (22°C) | 3200 | 1510 | 71.9 | 21.1 | 3.25 | .39 | .51 | .62 | 69.8 | 20.5 | 3.64 | .39 | .51 | .63 | 67.5 | 19.8 | 4.10 | .40 | .52 | .64 | 65.0 | 19.0 | 4.63 | .40 | .52 | .65 |
| | 4000 | 1890 | 74.1 | 21.7 | 3.27 | .40 | .54 | .67 | 71.8 | 21.0 | 3.67 | .41 | .54 | .68 | 69.4 | 20.3 | 4.12 | .41 | .55 | .69 | 66.8 | 19.6 | 4.65 | .41 | .56 | .71 |
| | 4800 | 2265 | 75.6 | 22.2 | 3.29 | .41 | .57 | .73 | 73.2 | 21.5 | 3.68 | .42 | .58 | .74 | 70.7 | 20.7 | 4.14 | .42 | .59 | .76 | 68.0 | 19.9 | 4.67 | .43 | .60 | .78 |

## 10 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING THA120S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | | 105°F (41°C) | | | | | | 115°F (46°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 3200 | 1510 | 117.4 | 34.4 | 7.94 | .70 | .85 | .98 | 113.2 | 33.2 | 8.98 | .71 | .86 | .99 | 108.7 | 31.9 | 10.15 | .72 | .88 | 1.00 | 104.0 | 30.5 | 11.50 | .73 | .91 | 1.00 |
| | 4000 | 1890 | 122.1 | 35.8 | 7.99 | .75 | .93 | 1.00 | 117.7 | 34.5 | 9.02 | .77 | .95 | 1.00 | 113.1 | 33.1 | 10.21 | .78 | .97 | 1.00 | 108.4 | 31.8 | 11.56 | .81 | .99 | 1.00 |
| | 4800 | 2265 | 126.1 | 37.0 | 8.03 | .81 | .99 | 1.00 | 121.8 | 35.7 | 9.07 | .83 | 1.00 | 1.00 | 117.4 | 34.4 | 10.27 | .85 | 1.00 | 1.00 | 112.8 | 33.1 | 11.62 | .88 | 1.00 | 1.00 |
| 67°F (19°C) | 3200 | 1510 | 124.7 | 36.5 | 8.02 | .55 | .67 | .81 | 120.2 | 35.2 | 9.06 | .55 | .68 | .82 | 115.3 | 33.8 | 10.25 | .56 | .70 | .84 | 110.3 | 32.3 | 11.59 | .57 | .71 | .87 |
| | 4000 | 1890 | 128.7 | 37.7 | 8.06 | .58 | .73 | .89 | 124.0 | 36.3 | 9.10 | .58 | .74 | .91 | 118.8 | 34.8 | 10.29 | .59 | .76 | .94 | 113.5 | 33.3 | 11.66 | .61 | .78 | .96 |
| | 4800 | 2265 | 131.5 | 38.5 | 8.09 | .61 | .79 | .96 | 126.6 | 37.1 | 9.14 | .62 | .81 | .98 | 121.4 | 35.6 | 10.33 | .63 | .83 | .99 | 115.9 | 34.0 | 11.69 | .64 | .85 | 1.00 |
| 71°F (22°C) | 3200 | 1510 | 133.0 | 39.0 | 8.11 | .41 | .53 | .65 | 128.1 | 37.5 | 9.16 | .41 | .54 | .66 | 122.9 | 36.0 | 10.34 | .41 | .54 | .67 | 117.6 | 34.5 | 11.70 | .42 | .55 | .69 |
| | 4000 | 1890 | 136.8 | 40.1 | 8.16 | .42 | .56 | .71 | 131.7 | 38.6 | 9.21 | .42 | .57 | .72 | 126.3 | 37.0 | 10.40 | .43 | .58 | .74 | 120.6 | 35.3 | 11.75 | .43 | .59 | .76 |
| | 4800 | 2265 | 139.4 | 40.9 | 8.19 | .43 | .60 | .77 | 134.1 | 39.3 | 9.24 | .44 | .61 | .79 | 128.5 | 37.7 | 10.44 | .44 | .62 | .81 | 122.7 | 36.0 | 11.78 | .45 | .64 | .83 |

## 10 TON STANDARD EFFICIENCY - HEATING CAPACITY THA120S

| Indoor Coil Air Volume 70°F db (21°C db) | | Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65°F (18°C) | | | 45°F (7°C) | | | 25°F (-4°C) | | | 5°F (-15°C) | | | -15°F (-26°C) | | |
| | | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input |
| cfm | L/s | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | |
| 3200 | 1510 | 145.7 | 42.7 | 10.23 | 112.2 | 32.9 | 9.17 | 77.2 | 22.6 | 8.12 | 53.0 | 15.5 | 6.87 | 26.7 | 7.8 | 5.29 |
| 4000 | 1890 | 147.2 | 43.1 | 9.45 | 113.7 | 33.3 | 8.39 | 78.7 | 23.1 | 7.34 | 54.5 | 16.0 | 6.09 | 28.2 | 8.3 | 4.51 |
| 4800 | 2265 | 150.7 | 44.2 | 9.03 | 117.2 | 34.3 | 7.97 | 82.2 | 24.1 | 6.92 | 58.0 | 17.0 | 5.67 | 31.7 | 9.3 | 4.09 |

## 10 TON STANDARD EFFICIENCY - THA120S - HEATING PERFORMANCE at 4000 cfm (1890 L/s) Indoor Coil Air Volume

| *Outdoor Temperature | | Compressor Motor kW Input | Total Output | |
|---|---|---|---|---|
| °F | °C | | kBtuh | kW |
| 65 | 18 | 9.45 | 147.2 | 43.1 |
| 60 | 16 | 9.18 | 139.4 | 40.9 |
| 55 | 13 | 8.91 | 131.5 | 38.5 |
| 50 | 10 | 8.64 | 123.7 | 36.3 |
| 47 | 8 | 8.48 | 119.0 | 34.9 |
| 45 | 7 | 8.39 | 113.7 | 33.3 |
| 40 | 4 | 8.16 | 100.3 | 29.4 |
| 35 | 2 | 7.93 | 87.0 | 25.5 |
| 30 | -1 | 7.64 | 82.8 | 24.3 |
| 25 | -4 | 7.34 | 78.7 | 23.1 |
| 20 | -7 | 7.04 | 74.5 | 21.8 |
| 17 | -8 | 6.86 | 72.0 | 21.1 |
| 15 | -9 | 6.75 | 68.9 | 20.2 |
| 10 | -12 | 6.48 | 61.0 | 17.9 |
| 5 | -15 | 6.09 | 54.5 | 16.0 |
| 0 | -18 | 5.70 | 47.9 | 14.0 |
| -5 | -21 | 5.30 | 41.3 | 12.1 |
| -10 | -23 | 4.91 | 34.7 | 10.2 |
| -15 | -26 | 4.51 | 28.2 | 8.3 |
| -20 | -29 | 4.12 | 21.6 | 6.3 |

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F (21°C).

NOTE - For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 12.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ONE COMPRESSOR OPERATING THA150S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 65°F (18°C) | | | | | | 75°F (24°C) | | | | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 3800 | 1795 | 69.4 | 20.3 | 4.97 | .61 | .77 | .93 | 67.2 | 19.7 | 5.59 | .61 | .79 | .95 | 65.0 | 19.0 | 6.26 | .62 | .80 | .97 | 62.7 | 18.4 | 6.99 | .63 | .82 | .99 |
| | 4400 | 2075 | 71.1 | 20.8 | 5.01 | .64 | .83 | .99 | 68.9 | 20.2 | 5.63 | .65 | .85 | 1.00 | 66.6 | 19.5 | 6.30 | .67 | .87 | 1.00 | 64.3 | 18.8 | 7.03 | .68 | .89 | 1.00 |
| | 5000 | 2360 | 72.6 | 21.3 | 5.04 | .68 | .89 | 1.00 | 70.4 | 20.6 | 5.67 | .69 | .90 | 1.00 | 68.1 | 20.0 | 6.33 | .71 | .93 | 1.00 | 65.7 | 19.3 | 7.07 | .73 | .95 | 1.00 |
| 67°F (19°C) | 3800 | 1795 | 73.6 | 21.6 | 5.05 | .48 | .58 | .72 | 71.3 | 20.9 | 5.68 | .48 | .59 | .74 | 68.9 | 20.2 | 6.36 | .48 | .60 | .76 | 66.4 | 19.5 | 7.10 | .49 | .61 | .78 |
| | 4400 | 2075 | 75.2 | 22.0 | 5.08 | .49 | .61 | .78 | 72.7 | 21.3 | 5.71 | .50 | .62 | .80 | 70.3 | 20.6 | 6.39 | .50 | .64 | .83 | 67.7 | 19.8 | 7.14 | .51 | .65 | .85 |
| | 5000 | 2360 | 76.4 | 22.4 | 5.10 | .51 | .65 | .84 | 73.9 | 21.7 | 5.74 | .51 | .67 | .86 | 71.4 | 20.9 | 6.43 | .52 | .68 | .89 | 68.7 | 20.1 | 7.17 | .53 | .70 | .91 |
| 71°F (22°C) | 3800 | 1795 | 78.3 | 22.9 | 5.14 | .36 | .46 | .56 | 75.8 | 22.2 | 5.78 | .36 | .47 | .57 | 73.3 | 21.5 | 6.47 | .36 | .47 | .58 | 70.6 | 20.7 | 7.22 | .36 | .48 | .59 |
| | 4400 | 2075 | 79.9 | 23.4 | 5.17 | .36 | .48 | .59 | 77.2 | 22.6 | 5.81 | .37 | .48 | .60 | 74.6 | 21.9 | 6.51 | .37 | .49 | .61 | 71.8 | 21.0 | 7.27 | .37 | .50 | .62 |
| | 5000 | 2360 | 81.0 | 23.7 | 5.19 | .37 | .50 | .62 | 78.4 | 23.0 | 5.84 | .37 | .50 | .64 | 75.6 | 22.2 | 6.54 | .38 | .51 | .65 | 72.8 | 21.3 | 7.30 | .38 | .52 | .67 |

## 12.5 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING THA150S

| Entering Wet Bulb Temperature | Total Air Volume | | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 85°F (29°C) | | | | | | 95°F (35°C) | | | | | | 105°F (41°C) | | | | | | 115°F (46°C) | | | | | |
| | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cooling Capacity | | Comp Motor kW Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | L/s | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C | kBtuh | kW | | 75°F 24°C | 80°F 27°C | 85°F 29°C |
| 63°F (17°C) | 3800 | 1795 | 139.1 | 40.8 | 10.24 | .66 | .81 | .96 | 134.4 | 39.4 | 11.44 | .67 | .83 | .98 | 129.3 | 37.9 | 12.79 | .68 | .85 | .99 | 123.7 | 36.3 | 14.34 | .69 | .87 | 1.00 |
| | 4400 | 2075 | 142.7 | 41.8 | 10.30 | .69 | .87 | 1.00 | 137.8 | 40.4 | 11.51 | .70 | .89 | 1.00 | 132.5 | 38.8 | 12.87 | .72 | .91 | 1.00 | 126.7 | 37.1 | 14.42 | .74 | .94 | 1.00 |
| | 5000 | 2360 | 145.6 | 42.7 | 10.37 | .73 | .92 | 1.00 | 140.7 | 41.2 | 11.57 | .75 | .94 | 1.00 | 135.3 | 39.7 | 12.94 | .76 | .96 | 1.00 | 129.7 | 38.0 | 14.49 | .79 | .98 | 1.00 |
| 67°F (19°C) | 3800 | 1795 | 147.5 | 43.2 | 10.40 | .52 | .63 | .77 | 142.3 | 41.7 | 11.61 | .52 | .64 | .79 | 136.7 | 40.1 | 12.98 | .53 | .65 | .81 | 130.8 | 38.3 | 14.53 | .53 | .67 | .83 |
| | 4400 | 2075 | 150.5 | 44.1 | 10.46 | .53 | .67 | .83 | 145.2 | 42.6 | 11.68 | .54 | .68 | .85 | 139.4 | 40.9 | 13.05 | .55 | .69 | .87 | 133.3 | 39.1 | 14.61 | .56 | .71 | .90 |
| | 5000 | 2360 | 152.9 | 44.8 | 10.51 | .55 | .70 | .88 | 147.5 | 43.2 | 11.73 | .56 | .72 | .91 | 141.6 | 41.5 | 13.11 | .57 | .74 | .93 | 135.4 | 39.7 | 14.66 | .58 | .76 | .95 |
| 71°F (22°C) | 3800 | 1795 | 157.0 | 46.0 | 10.58 | .39 | .50 | .61 | 151.4 | 44.4 | 11.81 | .39 | .51 | .62 | 145.4 | 42.6 | 13.20 | .39 | .51 | .63 | 139.1 | 40.8 | 14.77 | .39 | .52 | .65 |
| | 4400 | 2075 | 159.9 | 46.9 | 10.64 | .39 | .52 | .64 | 154.1 | 45.2 | 11.89 | .40 | .53 | .66 | 148.1 | 43.4 | 13.28 | .40 | .53 | .67 | 141.4 | 41.4 | 14.84 | .40 | .54 | .69 |
| | 5000 | 2360 | 162.2 | 47.5 | 10.69 | .40 | .54 | .68 | 156.4 | 45.8 | 11.93 | .40 | .55 | .69 | 150.1 | 44.0 | 13.32 | .41 | .56 | .71 | 143.2 | 42.0 | 14.90 | .41 | .57 | .74 |

## 12.5 TON STANDARD EFFICIENCY - HEATING CAPACITY THA150S

| Indoor Coil Air Volume 70°F db (21°C db) | | Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65°F (18°C) | | | 45°F (7°C) | | | 25°F (-4°C) | | | 5°F (-15°C) | | | -15°F (-26°C) | | |
| | | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input | Total Heating Capacity | | Comp. Motor kW Input |
| cfm | L/s | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | | kBtuh | kW | |
| 3800 | 1795 | 167.6 | 49.1 | 10.89 | 127.3 | 37.3 | 10.10 | 85.1 | 24.9 | 9.29 | 57.8 | 16.9 | 8.27 | 29.2 | 8.6 | 6.16 |
| 4400 | 2075 | 169.6 | 49.7 | 10.39 | 129.3 | 37.9 | 9.60 | 87.1 | 25.5 | 8.79 | 59.8 | 17.5 | 7.77 | 31.2 | 9.1 | 5.66 |
| 5000 | 2360 | 172.8 | 50.6 | 9.97 | 132.5 | 38.8 | 9.18 | 90.3 | 26.5 | 8.37 | 63.0 | 18.5 | 7.35 | 34.4 | 10.1 | 5.24 |

## 12.5 TON STANDARD EFFICIENCY - THA150S - HEATING PERFORMANCE at 4400 cfm (2075 L/s) Indoor Coil Air Volume

| *Outdoor Temperature | | Compressor Motor kW Input | Total Output | |
|---|---|---|---|---|
| °F | °C | | kBtuh | kW |
| 65 | 18 | 10.39 | 169.6 | 49.7 |
| 60 | 16 | 10.20 | 160.3 | 47.0 |
| 55 | 13 | 10.01 | 150.9 | 44.2 |
| 50 | 10 | 9.82 | 141.6 | 41.5 |
| 47 | 8 | 9.70 | 136.0 | 39.9 |
| 45 | 7 | 9.60 | 129.3 | 37.9 |
| 40 | 4 | 9.34 | 112.7 | 33.0 |
| 35 | 2 | 9.07 | 96.0 | 28.1 |
| 30 | -1 | 8.93 | 91.6 | 26.8 |
| 25 | -4 | 8.79 | 87.1 | 25.5 |
| 20 | -7 | 8.65 | 82.7 | 24.2 |
| 17 | -8 | 8.56 | 80.0 | 23.4 |
| 15 | -9 | 8.49 | 76.3 | 22.4 |
| 10 | -12 | 8.30 | 66.9 | 19.6 |
| 5 | -15 | 7.77 | 59.8 | 17.5 |
| 0 | -18 | 7.24 | 52.6 | 15.4 |
| -5 | -21 | 6.72 | 45.5 | 13.3 |
| -10 | -23 | 6.19 | 38.3 | 11.2 |
| -15 | -26 | 5.66 | 31.2 | 9.1 |
| -20 | -29 | 5.14 | 24.0 | 7.0 |

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F (21°C).

## BLOWER DATA

### BELT DRIVE BLOWER - BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:**

1 - Wet indoor coil air resistance of selected unit.
2 - Any factory installed options air resistance (heat section, economizer, etc.)
3 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output and drive required.

See below for blower motors and drives. See page NO TAG for wet coil and option/accessory air resistance data.

**MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT**

3000 cfm (1415 L/s) minimum air with electric heat for THA090/102 models.
4000 cfm (1890 L/s) minimum air with electric heat for THA120/150 models.

**BOLD INDICATES FIELD FURNISHED DRIVE.**

| Air Volume cfm (L/s) | Total Static Pressure - in. w.g. (Pa) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | .20 (50) | | .40 (100) | | .60 (150) | | .80 (200) | | 1.00 (250) | | 1.20 (300) | | 1.40 (350) | | 1.60 (400) | | 1.80 (450) | | 2.00 (495) | | 2.20 (545) | | 2.40 (595) | | 2.60 (645) | |
| | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) | RPM | BHP (kW) |
| 2250 (1060) | **455** | **0.30 (0.22)** | **555** | **0.45 (0.34)** | **640** | **0.60 (0.45)** | 720 | 0.80 (0.60) | 790 | 1.00 (0.75) | 855 | 1.20 (0.90) | 915 | 1.40 (1.04) | 975 | 1.60 (1.19) | 1030 | 1.85 (1.38) | 1080 | 2.05 (1.53) | 1130 | 2.30 (1.72) | 1175 | 2.55 (1.90) | 1220 | 2.80 (2.09) |
| 2500 (1180) | **475** | **0.40 (0.30)** | **575** | **0.55 (0.41)** | **660** | **0.70 (0.52)** | 735 | 0.90 (0.67) | 805 | 1.10 (0.82) | 870 | 1.30 (0.97) | 930 | 1.55 (1.16) | 985 | 1.75 (1.31) | 1040 | 2.00 (1.49) | 1090 | 2.25 (1.68) | 1140 | 2.50 (1.87) | 1185 | 2.75 (2.05) | 1230 | 3.00 (2.24) |
| 2750 (1300) | **495** | **0.45 (0.34)** | **595** | **0.65 (0.48)** | **675** | **0.85 (0.63)** | 750 | 1.05 (0.78) | 820 | 1.25 (0.93) | 885 | 1.45 (1.08) | 940 | 1.70 (1.27) | 995 | 1.90 (1.42) | 1050 | 2.20 (1.64) | 1100 | 2.45 (1.83) | 1145 | 2.65 (1.98) | 1195 | 2.95 (2.20) | 1240 | 3.25 (2.42) |
| 3000 (1415) | **525** | **0.55 (0.41)** | **615** | **0.75 (0.56)** | 695 | 0.95 (0.71) | 770 | 1.20 (0.90) | 835 | 1.40 (1.04) | 895 | 1.60 (1.19) | 955 | 1.85 (1.38) | 1010 | 2.10 (1.57) | 1060 | 2.35 (1.75) | 1110 | 2.65 (1.98) | 1160 | 2.90 (2.16) | 1205 | 3.20 (2.39) | 1250 | 3.45 (2.57) |
| 3250 (1535) | **550** | **0.65 (0.48)** | **640** | **0.90 (0.67)** | 715 | 1.10 (0.82) | 790 | 1.35 (1.01) | 855 | 1.60 (1.19) | 915 | 1.80 (1.34) | 970 | 2.05 (1.53) | 1025 | 2.35 (1.75) | 1075 | 2.60 (1.94) | 1125 | 2.85 (2.13) | 1170 | 3.15 (2.35) | 1215 | 3.40 (2.54) | 1260 | 3.70 (2.76) |
| 3500 (1650) | **580** | **0.80 (0.60)** | **665** | **1.05 (0.78)** | 740 | 1.25 (0.93) | 810 | 1.50 (1.12) | 870 | 1.75 (1.31) | 930 | 2.00 (1.49) | 985 | 2.25 (1.68) | 1040 | 2.55 (1.90) | 1090 | 2.85 (2.13) | 1135 | 3.10 (2.31) | 1185 | 3.40 (2.54) | 1230 | 3.70 (2.76) | 1270 | 4.00 (2.98) |
| 3750 (1770) | **605** | **0.95 (0.71)** | 690 | 1.20 (0.90) | 760 | 1.45 (1.08) | 830 | 1.70 (1.27) | 890 | 1.95 (1.45) | 950 | 2.25 (1.68) | 1005 | 2.50 (1.87) | 1055 | 2.80 (2.09) | 1105 | 3.10 (2.31) | 1150 | 3.35 (2.50) | 1195 | 3.65 (2.72) | 1240 | 3.95 (2.95) | 1285 | 4.30 (3.21) |
| 4000 (1890) | **635** | **1.10 (0.82)** | 715 | 1.40 (1.04) | 785 | 1.65 (1.23) | 850 | 1.90 (1.42) | 910 | 2.20 (1.64) | 965 | 2.45 (1.83) | 1020 | 2.75 (2.05) | 1070 | 3.05 (2.28) | 1120 | 3.35 (2.50) | 1165 | 3.65 (2.72) | 1210 | 3.95 (2.95) | 1255 | 4.30 (3.21) | 1295 | 4.60 (3.43) |
| 4250 (2005) | **665** | **1.30 (0.97)** | 740 | 1.60 (1.19) | 810 | 1.85 (1.38) | 870 | 2.15 (1.60) | 930 | 2.45 (1.83) | 985 | 2.75 (2.05) | 1040 | 3.05 (2.28) | 1090 | 3.35 (2.50) | 1135 | 3.65 (2.72) | 1185 | 4.00 (2.98) | 1225 | 4.30 (3.21) | 1270 | 4.65 (3.47) | 1310 | 4.95 (3.69) |
| 4500 (2125) | 695 | 1.50 (1.12) | 770 | 1.80 (1.34) | 835 | 2.10 (1.57) | 895 | 2.40 (1.79) | 955 | 2.70 (2.01) | 1005 | 3.00 (2.24) | 1060 | 3.35 (2.50) | 1105 | 3.65 (2.72) | 1155 | 4.00 (2.98) | 1200 | 4.30 (3.21) | 1245 | 4.65 (3.47) | 1285 | 5.00 (3.73) | 1325 | 5.30 (3.95) |
| 4750 (2240) | 725 | 1.75 (1.31) | 795 | 2.05 (1.53) | 860 | 2.40 (1.79) | 920 | 2.70 (2.01) | 975 | 3.00 (2.24) | 1030 | 3.35 (2.50) | 1080 | 3.65 (2.72) | 1125 | 3.95 (2.95) | 1175 | 4.35 (3.25) | 1215 | 4.65 (3.47) | 1260 | 5.00 (3.73) | 1300 | 5.35 (3.99) | 1340 | 5.70 (4.25) |
| 5000 (2360) | 760 | 2.05 (1.53) | 825 | 2.35 (1.75) | 885 | 2.65 (1.98) | 945 | 3.00 (2.24) | 1000 | 3.35 (2.50) | 1050 | 3.65 (2.72) | 1100 | 4.00 (2.98) | 1145 | 4.35 (3.25) | 1190 | 4.70 (3.51) | 1235 | 5.05 (3.77) | 1280 | 5.45 (4.07) | - - - | | - - - | |
| 5250 (2475) | 790 | 2.30 (1.72) | 855 | 2.65 (1.98) | 910 | 2.95 (2.20) | 970 | 3.35 (2.50) | 1020 | 3.65 (2.72) | 1070 | 4.00 (2.98) | 1120 | 4.35 (3.25) | 1165 | 4.70 (3.51) | 1210 | 5.10 (3.80) | 1255 | 5.45 (4.07) | - - - | | - - - | | - - - | |
| 5500 (2595) | 820 | 2.60 (1.94) | 880 | 2.95 (2.20) | 940 | 3.30 (2.46) | 995 | 3.70 (2.76) | 1045 | 4.05 (3.02) | 1095 | 4.40 (3.28) | 1145 | 4.80 (3.58) | 1190 | 5.15 (3.84) | 1230 | 5.50 (4.10) | - - - | | - - - | | - - - | | - - - | |
| 5750 (2715) | 850 | 2.95 (2.20) | 910 | 3.30 (2.46) | 965 | 3.70 (2.76) | 1020 | 4.05 (3.02) | 1070 | 4.45 (3.32) | 1120 | 4.80 (3.58) | 1165 | 5.20 (3.88) | 1210 | 5.60 (4.18) | - - - | | - - - | | - - - | | - - - | | - - - | |
| 6000 (2830) | 885 | 3.35 (2.50) | 940 | 3.70 (2.76) | 995 | 4.10 (3.06) | 1045 | 4.45 (3.32) | 1095 | 4.85 (3.62) | 1145 | 5.25 (3.92) | 1190 | 5.65 (4.21) | - - - | | - - - | | - - - | | - - - | | - - - | | - - - | |

### FACTORY INSTALLED DRIVE KIT SPECIFICATIONS

| Motor Outputs | | RPM Range | | | | |
|---|---|---|---|---|---|---|
| Nominal hp | Maximum hp | Drive 1 | Drive 3 | Drive 4 | Drive 5 | Drive 6 |
| 2 | 2.3 | 680 - 925 | 895 - 1120 | - - - | - - - | - - - |
| 3 | 3.45 | 680 - 925 | 895 - 1120 | - - - | 1110 - 1395 | - - - |
| 5 | 5.75 | - - - | - - - | 895 - 1120 | - - - | 1110 - 1395 |

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished by Lennox are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

## BLOWER DATA

**OPTIONS / ACCESSORY AIR RESISTANCE - in. w.g.**

| Air Volume cfm | Wet Indoor Coil | | Electric Heat | Economizer |
|---|---|---|---|---|
| | 090/102 | 120/150 | | |
| 2250 | 0.06 | 0.10 | 0.01 | 0.035 |
| 2500 | 0.08 | 0.12 | 0.01 | 0.04 |
| 2750 | 0.09 | 0.14 | 0.01 | 0.045 |
| 3000 | 0.10 | 0.16 | 0.02 | 0.05 |
| 3250 | 0.11 | 0.19 | 0.02 | 0.06 |
| 3500 | 0.13 | 0.21 | 0.03 | 0.07 |
| 3750 | 0.14 | 0.23 | 0.03 | 0.075 |
| 4000 | 0.16 | 0.26 | 0.04 | 0.08 |
| 4250 | 0.17 | 0.28 | 0.04 | 0.09 |
| 4500 | 0.18 | 0.31 | 0.05 | 0.10 |
| 4750 | 0.20 | 0.33 | 0.05 | 0.11 |
| 5000 | 0.22 | 0.36 | 0.06 | 0.12 |
| 5250 | 0.24 | 0.39 | 0.06 | 0.13 |
| 5500 | 0.26 | 0.42 | 0.07 | 0.14 |
| 5750 | 0.28 | 0.45 | 0.07 | 0.15 |
| 6000 | 0.30 | 0.48 | 0.08 | 0.16 |

**AIR RESISTANCE - CEILING DIFFUSERS - in. w.g.**

| Unit Size | Air Volume - cfm | RTD11 Step-Down Diffuser | | | FD11 Flush Diffuser |
|---|---|---|---|---|---|
| | | 2 Ends Open | 1 Side, 2 Ends Open | All Ends & Sides Open | |
| 090 Models | 2400 | 0.21 | 0.18 | 0.15 | 0.14 |
| | 2600 | 0.24 | 0.21 | 0.18 | 0.17 |
| | 2800 | 0.27 | 0.24 | 0.21 | 0.20 |
| | 3000 | 0.32 | 0.29 | 0.25 | 0.25 |
| | 3200 | 0.41 | 0.37 | 0.32 | 0.31 |
| | 3400 | 0.50 | 0.45 | 0.39 | 0.37 |
| | 3600 | 0.61 | 0.54 | 0.48 | 0.44 |
| | 3800 | 0.73 | 0.63 | 0.57 | 0.51 |
| 102 & 120 Models | 3600 | 0.36 | 0.28 | 0.23 | 0.15 |
| | 3800 | 0.40 | 0.32 | 0.26 | 0.18 |
| | 4000 | 0.44 | 0.36 | 0.29 | 0.21 |
| | 4200 | 0.49 | 0.40 | 0.33 | 0.24 |
| | 4400 | 0.54 | 0.44 | 0.37 | 0.27 |
| | 4600 | 0.60 | 0.49 | 0.42 | 0.31 |
| | 4800 | 0.65 | 0.53 | 0.46 | 0.35 |
| | 5000 | 0.69 | 0.58 | 0.50 | 0.39 |
| | 5200 | 0.75 | 0.62 | 0.54 | 0.43 |
| 150 Models | 4200 | 0.22 | 0.19 | 0.16 | 0.10 |
| | 4400 | 0.28 | 0.24 | 0.20 | 0.12 |
| | 4600 | 0.34 | 0.29 | 0.24 | 0.15 |
| | 4800 | 0.40 | 0.34 | 0.29 | 0.19 |
| | 5000 | 0.46 | 0.39 | 0.34 | 0.23 |
| | 5200 | 0.52 | 0.44 | 0.39 | 0.27 |
| | 5400 | 0.58 | 0.49 | 0.43 | 0.31 |
| | 5600 | 0.64 | 0.54 | 0.47 | 0.35 |
| | 5800 | 0.70 | 0.59 | 0.51 | 0.39 |

## BLOWER DATA

**CEILING DIFFUSER AIR THROW DATA - ft.**

| Model No. | Air Volume cfm | [1]Effective Throw Range | |
|---|---|---|---|
| | | RTD11 Step-Down | FD11 Flush |
| 090 | 2600 | 24 - 29 | 19 - 24 |
| | 2800 | 25 - 30 | 20 - 28 |
| | 3000 | 27 - 33 | 21 - 29 |
| | 3200 | 28 - 35 | 22 - 29 |
| | 3400 | 30 - 37 | 22 - 30 |
| 102<br>120 | 3600 | 25 - 33 | 22 - 29 |
| | 3800 | 27 - 35 | 22 - 30 |
| | 4000 | 29- 37 | 24 - 33 |
| | 4200 | 32 - 40 | 26 - 35 |
| | 4400 | 34 - 42 | 28 - 37 |
| 150 | 5600 | 39 - 49 | 28 - 37 |
| | 5800 | 42 - 51 | 29 - 38 |
| | 6000 | 44 - 54 | 40 - 50 |
| | 6200 | 45 - 55 | 42 - 51 |
| | 6400 | 46 - 55 | 43 - 52 |
| | 6600 | 47 - 56 | 45 - 56 |

[1] Throw is the horizontal or vertical distance an air stream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

**POWER EXHAUST FANS PERFORMANCE**

| Return Air System Static Pressure - in. w.g. | Air Volume Exhausted - cfm |
|---|---|
| 0 | 4200 |
| 0.05 | 3970 |
| 0.10 | 3750 |
| 0.15 | 3520 |
| 0.20 | 3300 |
| 0.25 | 3080 |
| 0.30 | 2860 |
| 0.35 | 2640 |

## ELECTRICAL/ELECTRIC HEAT DATA

**7.5 TON HIGH EFFICIENCY (R-22)** **THA090S**

| **Voltage - 60hz - 3 phase** | | | **208/230V-3ph** | | **460V-3ph** | | **575V-3ph** | |
|---|---|---|---|---|---|---|---|---|
| **Compressors (2)** | Rated Load Amps (total) | | 12.4 (24.9) | | 6.4 (12.8) | | 4.8 (9.6) | |
| | Locked Rotor Amps (total) | | 88 (176) | | 44 (88) | | 34 (68) | |
| **Outdoor Fan Motors** (2) | Full Load Amps (total) | | 2.4 (4.8) | | 1.3 (2.6) | | 1.0 (2.0) | |
| | Locked Rotor Amps (total) | | 4.7 (9.4) | | 2.4 (4.8) | | 1.9 (3.8) | |
| **Optional Power Exhaust Fan** | (Number) Horsepower | | (1) 1/3 | | (1) 1/3 | | (1) 1/3 | |
| | Full load amps | | 2.4 | | 1.3 | | 1.0 | |
| | Locked rotor amps | | 4.7 | | 2.4 | | 1.9 | |
| **Service Outlet (2) 115 volt GFCI (amp rating)** | | | 15 | | 15 | | 15 | |
| **Indoor Blower Motor** | Horsepower | | **2** | **3** | **2** | **3** | **2** | **3** |
| | Rated Load Amps | | 7.5 | 10.6 | 3.4 | 4.8 | 2.7 | 3.9 |
| | Locked Rotor Amps | | 46.9 | 66 | 20.4 | 26.8 | 16.2 | 23.4 |
| **[1] Minimum Circuit Ampacity** | Unit Only | | 41 | 44 | 21 | 22 | 16 | 17 |
| | with power exhaust | **0 kW** | 43 | 46 | 22 | 24 | 17 | 18 |
| | | **7.5 kW** | 66 | 69 | 33 | 35 | 26 | 27 |
| | | **15 kW** | 88 | 91 | 45 | 46 | 35 | 36 |
| | | **22.5 kW** | 111 | 114 | 56 | 57 | 44 | 45 |
| | | **30 kW** | 133 | 136 | 67 | 69 | 53 | 54 |
| | | **45 kW** | 178 | 182 | 90 | 71 | 71 | 72 |
| **[2] Maximum Overcurrent Protection** | Unit Only | | 50 | 50 | 25 | 25 | 20 | 20 |
| | with power exhaust | **0 kW** | 50 | 50 | 25 | 25 | 20 | 20 |
| | | **7.5 kW** | 70 | 70 | 35 | 35 | 30 | 30 |
| | | **15 kW** | 90 | 100 | 45 | 50 | 35 | 40 |
| | | **22.5 kW** | 125 | 125 | 60 | 60 | 45 | 45 |
| | | **30 kW** | 150 | 150 | 70 | 70 | 60 | 60 |
| | | **45 kW** | 200 | 200 | 100 | 100 | 80 | 80 |
| **Unit Fuse Block** | Unit Only | | **56K93** | **56K93** | **56K52** | **56K52** | **56K51** | **56K51** |
| | with power exhaust | | **56K93** | **56K93** | **56K52** | **56K52** | **56K51** | **56K51** |
| **Disconnect** | **0-15 kW** | | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | **22.5 kW** | | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | **30-45 kW** | | **Factory** | **Factory** | **84M13** | **84M13** | **84M13** | **84M13** |
| **Terminal Block** | | | LTB2-175 | | LTB2-175 | | LTB2-175 | |

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

1 HACR type breaker or fuse.

2 Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## ELECTRICAL/ELECTRIC HEAT DATA

**8.5 TON HIGH EFFICIENCY (R-22)** **THA102S**

| **Voltage - 60hz - 3 phase** | | | **208/230V-3ph** | | **460V-3ph** | | **575V-3ph** | |
|---|---|---|---|---|---|---|---|---|
| **Compressors (2)** | Rated Load Amps (total) | | 14.7 (29.4) | | 7.1 (14.2) | | 5.1 (10.2) | |
| | Locked Rotor Amps (total) | | 91 (182) | | 50 (100) | | 37 (74) | |
| **Outdoor Fan Motors** (2) | Full Load Amps (total) | | 2.4 (4.8) | | 1.3 (2.6) | | 1.0 (2.0) | |
| | Locked Rotor Amps (total) | | 4.7 (9.4) | | 2.4 (4.8) | | 1.9 (3.8) | |
| **Optional Power Exhaust Fan** | (Number) Horsepower | | (1) 1/3 | | (1) 1/3 | | (1) 1/3 | |
| | Full load amps | | 2.4 | | 1.3 | | 1.0 | |
| | Locked rotor amps | | 4.7 | | 2.4 | | 1.9 | |
| **Service Outlet (2) 115 volt GFCI (amp rating)** | | | 15 | | 15 | | 15 | |
| **Indoor Blower Motor** | Horsepower | | **2** | **3** | **2** | **3** | **2** | **3** |
| | Rated Load Amps | | 7.5 | 10.6 | 3.4 | 4.8 | 2.7 | 3.9 |
| | Locked Rotor Amps | | 46.9 | 66 | 20.4 | 26.8 | 16.2 | 23.4 |
| **[1] Maximum Overcurrent Protection** | Unit Only | | 60 | 60 | 25 | 30 | 20 | 20 |
| | with power exhaust | **0 kW** | 60 | 60 | 30 | 30 | 20 | 20 |
| | | **7.5 kW** | 80 | 80 | 35 | 40 | 30 | 30 |
| | | **15 kW** | 100 | 100 | 50 | 50 | 40 | 40 |
| | | **22.5 kW** | 125 | 125 | 60 | 60 | 45 | 50 |
| | | **30 kW** | 150 | 150 | 70 | 70 | 60 | 60 |
| | | **45 kW** | 200 | 200 | 100 | 100 | 80 | 80 |
| **[2] Minimum Circuit Ampacity** | Unit Only | | 46 | 49 | 22 | 24 | 17 | 18 |
| | with power exhaust | **0 kW** | 48 | 51 | 24 | 25 | 18 | 19 |
| | | **7.5 kW** | 71 | 74 | 35 | 36 | 27 | 28 |
| | | **15 kW** | 93 | 96 | 46 | 48 | 36 | 37 |
| | | **22.5 kW** | 116 | 119 | 58 | 59 | 45 | 46 |
| | | **30 kW** | 138 | 4142 | 69 | 70 | 54 | 55 |
| | | **45 kW** | 184 | 187 | 91 | 93 | 72 | 73 |
| **Unit Fuse Block** | Unit Only | | **56K94** | **56K94** | **56K52** | **25K08** | **56K51** | **56K51** |
| | with power exhaust | | **56K94** | **56K94** | **25K08** | **25K08** | **56K51** | **56K52** |
| **Disconnect** | | **0-15 kW** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **22.5 kW** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **30-45 kW** | **Factory** | **Factory** | **84M13** | **84M13** | **84M13** | **84M13** |
| **Terminal Block** | | | LTB2-175 | | LTB2-175 | | LTB2-175 | |

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

[1] HACR type breaker or fuse.

[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## ELECTRICAL/ELECTRIC HEAT DATA

**10 TON HIGH EFFICIENCY (R-22)** **THA120S**

| **Voltage - 60hz - 3 phase** | | | **208/230V-3ph** | | | **460V-3ph** | | | **575V-3ph** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Compressors (2)** | Rated Load Amps (total) | | 17.3 (34.6) | | | 9.0 (18.0) | | | 7.1 (14.2) | | |
| | Locked Rotor Amps (total) | | 123 (246) | | | 62 (124) | | | 50 (100) | | |
| **Outdoor Fan Motors (2)** | Full Load Amps (total) | | 2.4 (4.8) | | | 1.3 (2.6) | | | 1.0 (2.0) | | |
| | Locked Rotor Amps (total) | | 4.7 (9.4) | | | 2.4 (4.8) | | | 1.9 (3.8) | | |
| **Optional Power Exhaust Fan** | (Number) Horsepower | | (1) 1/3 | | | (1) 1/3 | | | (1) 1/3 | | |
| | Full load amps | | 2.4 | | | 1.3 | | | 1.0 | | |
| | Locked rotor amps | | 4.7 | | | 2.4 | | | 1.9 | | |
| **Service Outlet (2) 115 volt GFCI (amp rating)** | | | 15 | 15 | | 15 | 15 | | 15 | 15 | |
| **Indoor Blower Motor** | Horsepower | | **2** | **3** | **5** | **2** | **3** | **5** | **2** | **3** | **5** |
| | Rated Load Amps | | 7.5 | 10.6 | 16.7 | 3.4 | 4.8 | 7.6 | 2.7 | 3.9 | 6.1 |
| | Locked Rotor Amps | | 46.9 | 66 | 105 | 20.4 | 26.88 | 45.6 | 16.2 | 23.4 | 36.6 |
| **[1] Maximum Overcurrent Protection** | Unit Only | | 60 | 70 | 70 | 35 | 35 | 35 | 25 | 25 | 30 |
| | with power exhaust | **0 kW** | 70 | 70 | 80 | 35 | 35 | 40 | 25 | 25 | 30 |
| | | **15 kW** | 100 | 110 | 110 | 60 | 60 | 60 | 40 | 45 | 45 |
| | | **22.5 kW** | 125 | 125 | 150 | 70 | 70 | 70 | 50 | 50 | 60 |
| | | **30 kW** | 150 | 150 | 175 | 80 | 80 | 80 | 60 | 60 | 70 |
| | | **45 kW** | 200 | 200 | 200 | 100 | 100 | 100 | 80 | 80 | 80 |
| | | **60 kW** | 200 | 225 | 225 | 100 | 110 | 110 | 80 | 90 | 90 |
| **[2] Minimum Circuit Ampacity** | Unit Only | | 52 | 55 | 61 | 27 | 28 | 31 | 21 | 22 | 25 |
| | with power exhaust | **0 kW** | 54 | 57 | 63 | 28 | 29 | 32 | 22 | 23 | 26 |
| | | **15 kW** | 99 | 102 | 108 | 51 | 52 | 55 | 40 | 41 | 44 |
| | | **22.5 kW** | 122 | 125 | 131 | 62 | 63 | 66 | 49 | 50 | 53 |
| | | **30 kW** | 144 | 147 | 154 | 73 | 75 | 77 | 58 | 59 | 62 |
| | | **45 kW** | 189 | 193 | 199 | 96 | 97 | 100 | 76 | 78 | 80 |
| | | **60 kW** | 198 | 202 | 208 | 100 | 102 | 104 | 80 | 81 | 83 |
| **Unit Fuse Block** | Unit Only | | **56K94** | **56K94** | **56K95** | **25K08** | **25K08** | **25K08** | **56K51** | **56K52** | **56K52** |
| | with power exhaust | | **56K94** | **56K94** | **56K95** | **25K08** | **25K08** | **25K09** | **56K51** | **56K52** | **56K52** |
| **Disconnect** | | **0 kW** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **15-22.5 kW** | **Factory** | **Factory** | **Factory** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **30 kW** | **Factory** | **Factory** | **N/A** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **45 kW** | **N/A** | **N/A** | **N/A** | **Factory** | **Factory** | **Factory** | **84M13** | **84M13** | **84M13** |
| | | **60 kW** | **N/A** | **N/A** | **N/A** | **Factory** | **Factory** | **Factory** | **Factory** | **Factory** | **Factory** |
| **Terminal Block** | | **15-45 kW** | LTB2-175 | | | LTB2-175 | | | LTB2-175 | | |
| | | **60 kW** | LTB2-335 | | | LTB2-175 | | | LTB2-175 | | |

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

1 HACR type breaker or fuse.

2 Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## ELECTRICAL/ELECTRIC HEAT DATA

**12.5 TON STANDARD EFFICIENCY (R-22)** **THA150S2**

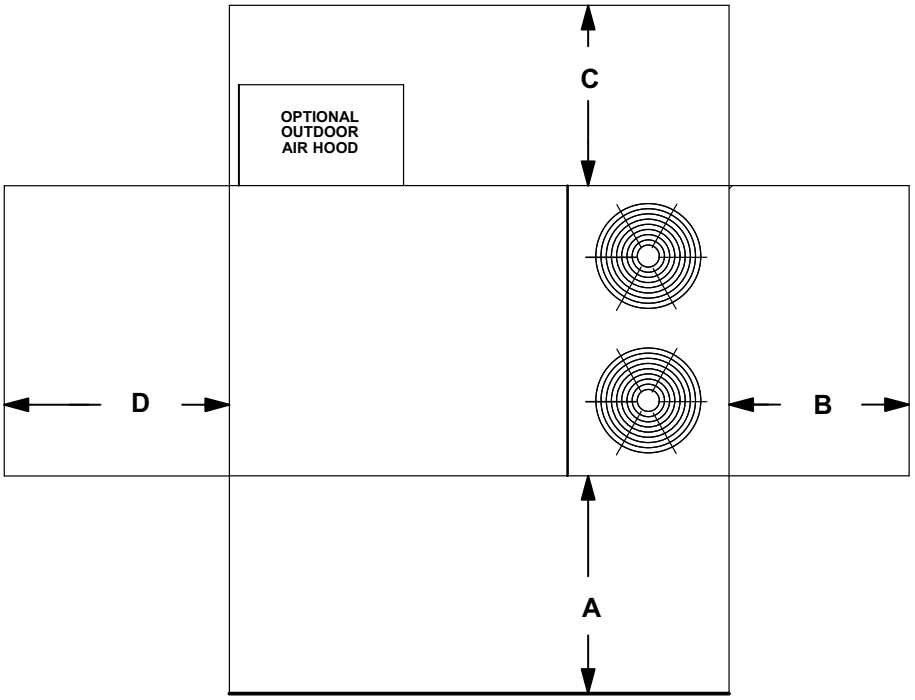
| **Voltage - 60hz - 3 phase** | | | **208/230V-3ph** | | **460V-3ph** | | **575V-3ph** | |
|---|---|---|---|---|---|---|---|---|
| **Compressors (2)** | Rated Load Amps (total) | | 19.3 (38.6) | | 9.0 (18.0) | | 7.4 (14.8) | |
| | Locked Rotor Amps (total) | | 156 (312) | | 75 (150) | | 54 (108) | |
| **Outdoor Fan Motors** (2) | Full Load Amps (total) | | 2.4 (4.8) | | 1.3 (2.6) | | 1.0 (2.0) | |
| | Locked Rotor Amps (total) | | 4.7 (9.4) | | 2.4 (4.8) | | 1.9 (3.8) | |
| **Optional Power Exhaust Fan** | (Number) Horsepower | | (1) 1/3 | | (1) 1/3 | | (1) 1/3 | |
| | Full load amps | | 2.4 | | 1.3 | | 1.0 | |
| | Locked rotor amps | | 4.7 | | 2.4 | | 1.9 | |
| **Service Outlet (2) 115 volt GFCI (amp rating)** | | | 15 | | 15 | | 15 | |
| **Indoor Blower Motor** | Horsepower | | **3** | **5** | **3** | **5** | **3** | **5** |
| | Rated Load Amps | | 10.6 | 16.7 | 4.8 | 7.6 | 3.9 | 6.1 |
| | Locked Rotor Amps | | 66 | 105 | 26.8 | 45.6 | 23.4 | 36.6 |
| **[1] Maximum Overcurrent Protection** | Unit Only | | 70 | 80 | 35 | 35 | 25 | 30 |
| | with power exhaust | **0 kW** | 110 | 125 | 35 | 60 | 45 | 45 |
| | | **15 kW** | 110 | 125 | 60 | 60 | 45 | 45 |
| | | **22.5 kW** | 150 | 150 | 70 | 70 | 60 | 60 |
| | | **30 kW** | 175 | 175 | 80 | 80 | 70 | 70 |
| | | **45 kW** | 200 | 225 | 100 | 110 | 80 | 90 |
| | | **60 kW** | 225 | 225 | 110 | 110 | 90 | 90 |
| **[2] Minimum Circuit Ampacity** | Unit Only | | 59 | 65 | 28 | 31 | 23 | 25 |
| | with power exhaust | **0 kW** | 109 | 115 | 31 | 56 | 43 | 45 |
| | | **15 kW** | 109 | 115 | 54 | 56 | 43 | 45 |
| | | **22.5 kW** | 131 | 137 | 65 | 68 | 52 | 54 |
| | | **30 kW** | 154 | 160 | 76 | 79 | 61 | 63 |
| | | **45 kW** | 199 | 205 | 99 | 101 | 79 | 81 |
| | | **60 kW** | 208 | 214 | 103 | 106 | 83 | 85 |
| **Unit Fuse Block** | Unit Only | | **56K95** | **56K96** | **25K09** | **25K09** | **56K52** | **25K08** |
| | with power exhaust | | **56K95** | **56K96** | **25K09** | **25K10** | **25K08** | **25K08** |
| **Disconnect** | | **0 kW** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **15-22.5 kW** | **Factory** | **Factory** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **30 kW** | **Factory** | **N/A** | **84M13** | **84M13** | **84M13** | **84M13** |
| | | **45 kW** | **N/A** | **N/A** | **Factory** | **Factory** | **84M13** | **84M13** |
| | | **60 kW** | **N/A** | **N/A** | **Factory** | **Factory** | **Factory** | **Factory** |
| **Terminal Block** | | **15-45 kW** | LTB2-175 | | LTB2-175 | | LTB2-175 | |
| | | **60 kW** | LTB2-335 | | LTB2-175 | | LTB2-175 | |

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

1 HACR type breaker or fuse.

2 Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## UNIT CLEARANCES - INCHES (MM)




| [1] Unit Clearance | A | | B | | C | | D | | Top Clearance |
|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | in. | mm | |
| **Service Clearance** | 60 | 1524 | 36 | 914 | 36 | 914 | 36 | 914 | **Unobstructed** |
| **Minimum Operation Clearance** | 36 | 914 | 36 | 914 | 36 | 914 | 36 | 914 | |

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

1 **Service Clearance** - Required for removal of serviceable parts.
**Minimum Operation Clearance** - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

| Unit Model No. | Operating Mode | Octave Band Sound Power Levels dBA, re $10^{-12}$ Watts Center Frequency - HZ | | | | | | | [1] Sound Rating Number (dB) |
|---|---|---|---|---|---|---|---|---|---|
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| THA090, THA102, THA120, and THA150 | Cooling | 70 | 75 | 80 | 80 | 76 | 71 | 64 | 88 |
| | Heating | 69 | 77 | 81 | 82 | 78 | 72 | 65 | 88 |

Note - The octave sound power data does not include tonal corrections.

1 Tested according to ARI Standard 270-95 test conditions.

## WEIGHT DATA

| Model Number | Net | | Shipping | |
|---|---|---|---|---|
| | lbs. | kg | lbs. | kg |
| 090/102 Base Unit | 1220 | 553 | 1305 | 592 |
| 090/102 Max. Unit | 1450 | 658 | 1335 | 696 |
| 120 Base Unit | 1275 | 578 | 1360 | 617 |
| 120 Max. Unit | 1495 | 678 | 1580 | 717 |
| 150 Base Unit | 1310 | 594 | 1395 | 633 |
| 150 Max. Unit | 1530 | 694 | 1615 | 733 |

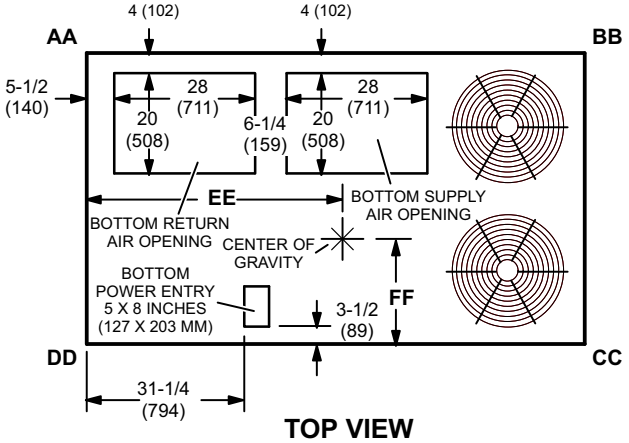
## OPTIONS / ACCESSORIES

| | | Weight | |
|---|---|---|---|
| | | lbs. | kg. |
| **CEILING DIFFUSERS** | | | |
| Step-Down | RTD11-95 | 88 | 40 |
| | RTD11-135 | 205 | 93 |
| | RTD11-185 | 392 | 178 |
| Flush | FD11-95 | 75 | 34 |
| | FD11-135 | 174 | 79 |
| | FD11-185 | 289 | 131 |
| Transitions | LASRT08/10 | 30 | 14 |
| | LASRT10/12 | 32 | 15 |
| | LASRT15 | 36 | 16 |
| **ECONOMIZER / OUTDOOR AIR / EXHAUST** | | | |
| **Economizer** | LAREMD10/15 | 47 | 21 |
| **Barometric Relief** | | | |
| Down-Flow Barometric Relief Dampers | LAGED10/15 | 8 | 4 |
| Horizontal Barometric Relief Dampers | LAGEDH18/24 | 20 | 9 |
| **Outdoor Air Dampers** | | | |
| Damper Section (down-flow) - Automatic | LAOADM10/15 | 31 | 14 |
| Damper Section (down-flow) - Manual | LAOAD10/15 | 26 | 12 |
| Outdoor Air Hood (down-flow) | LAOAH10/15 | 11 | 5 |
| **Power Exhaust** | LAPEF10/15 | 28 | 13 |
| **PACKAGING** | | | |
| LTL Packaging (less than truck load) | | 105 | 48 |
| **ROOF CURBS - STANDARD** | | | |
| **Down-Flow** | | | |
| 14 in. height | LARMF10/15-14 | 126 | 57 |
| 24 in. height | LARMF10/15-24 | 174 | 79 |
| **ROOF CURBS - CLIPLOCK 1000** | | | |
| **Down-Flow** | | | |
| 14 in. height | LARMF10/15S-14 | 115 | 52 |
| 18 in. height | LARMF10/15S-28 | 156 | 71 |
| 24 in. height | LARMF10/15S-24 | 189 | 86 |
| **ELECTRIC HEAT** | | | |
| 7.5 to 15 kW | | 31 | 14 |
| 22.5 to 30 kW | | 38 | 17 |
| 45 kW | | 42 | 19 |
| 60 kW | | 49 | 22 |

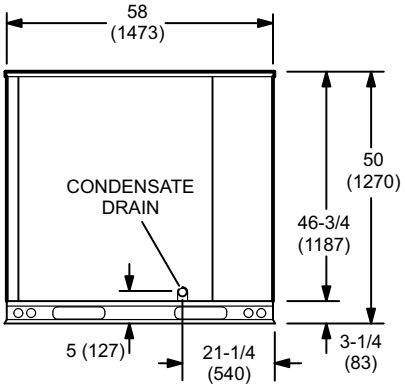
Base Unit - The unit with low fire heat exchanger NO OPTIONS.
Max. Unit - The unit with ALL OPTIONS Installed. (High Input Heat Exchanger, Economizer, Power Exhaust Fans, Controls)

## DIMENSIONS - INCHES (MM)

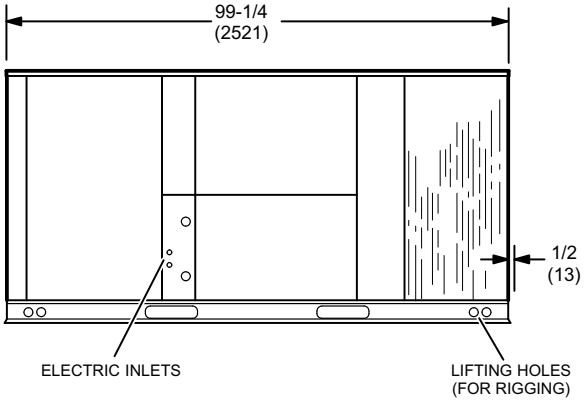
| Model Number | CORNER WEIGHTS | | | | | | | | CENTER OF GRAVITY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AA | | BB | | CC | | DD | | EE | | FF | |
| | lbs. | kg | lbs. | kg | lbs. | kg | lbs. | kg | inch | mm | inch | mm |
| 090/102 Base Unit | 302 | 137 | 278 | 126 | 316 | 143 | 354 | 161 | 47 | 1194 | 21-1/2 | 546 |
| 090/102 Max. Unit | 358 | 162 | 329 | 149 | 374 | 170 | 419 | 190 | 47 | 1194 | 21-1/2 | 546 |
| 120 Base Unit | 319 | 145 | 286 | 130 | 324 | 147 | 376 | 171 | 46 | 1168 | 21-1/2 | 546 |
| 120 Max. Unit | 373 | 169 | 334 | 152 | 379 | 172 | 439 | 199 | 46 | 1168 | 21-1/2 | 546 |
| 150 Base Unit | 314 | 142 | 299 | 136 | 337 | 153 | 359 | 163 | 48-1/2 | 1232 | 22-1/2 | 572 |
| 150 Max. Unit | 382 | 173 | 344 | 156 | 377 | 171 | 427 | 194 | 46-1/2 | 1181 | 24 | 610 |



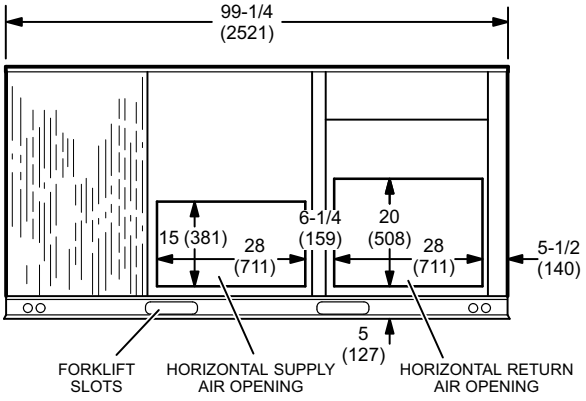

**TOP VIEW**
**Base Section**




**END VIEW**



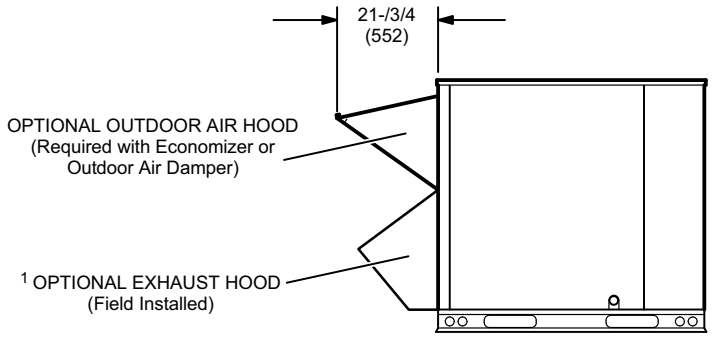

**SIDE VIEW**




**SIDE VIEW**
**(Horizontal Openings)**

## ACCESSORY DIMENSIONS - INCHES (MM)

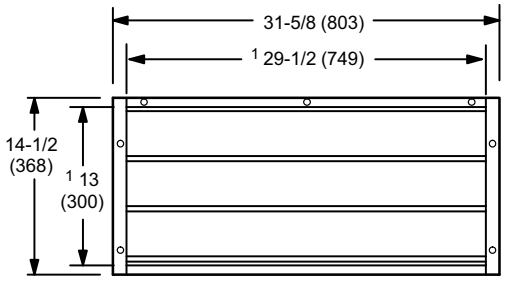
### OPTIONAL OUTDOOR AIR HOOD DETAIL



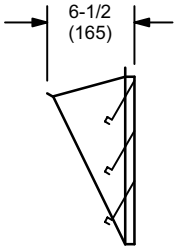

[1] NOTE — Field Installed in Return Air Duct for Horizontal Applications.

### HORIZONTAL BAROMETRIC RELIEF DAMPERS

(Field installed in horizontal return air duct adjacent to unit)




**FRONT VIEW**

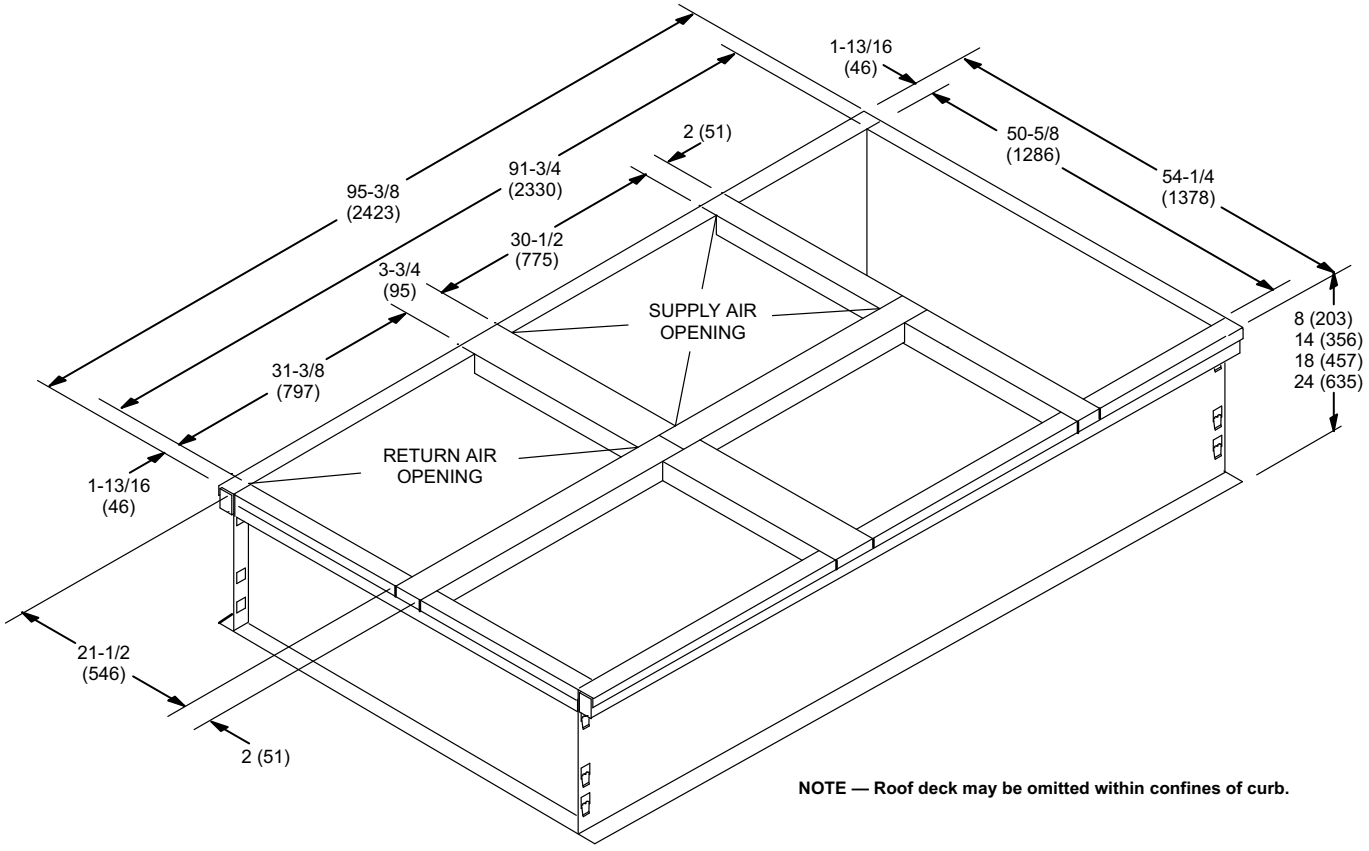



**SIDE VIEW**

[1] NOTE - Opening size required in return air duct.

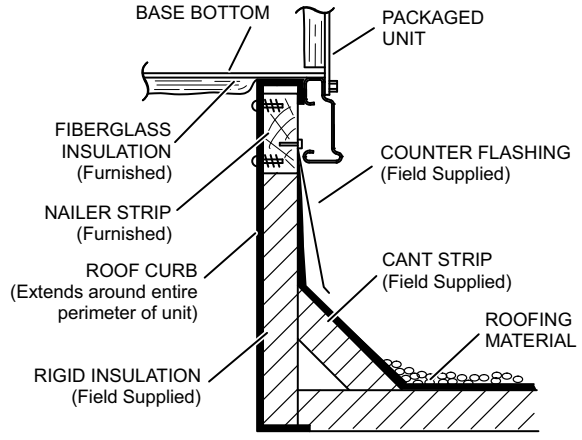
## ACCESSORY DIMENSIONS - INCHES (MM)

### CLIPLOCK 1000 ROOF CURBS - DOUBLE DUCT OPENING

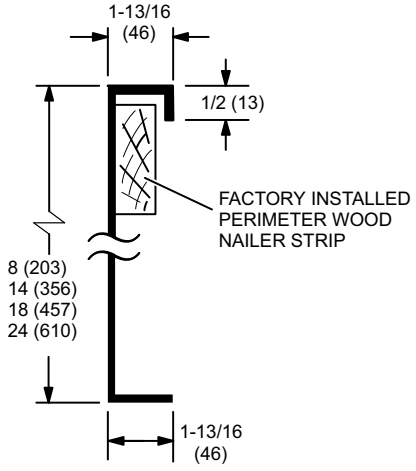



**NOTE — Roof deck may be omitted within confines of curb.**

### TYPICAL FLASHING DETAIL FOR ROOF CURB

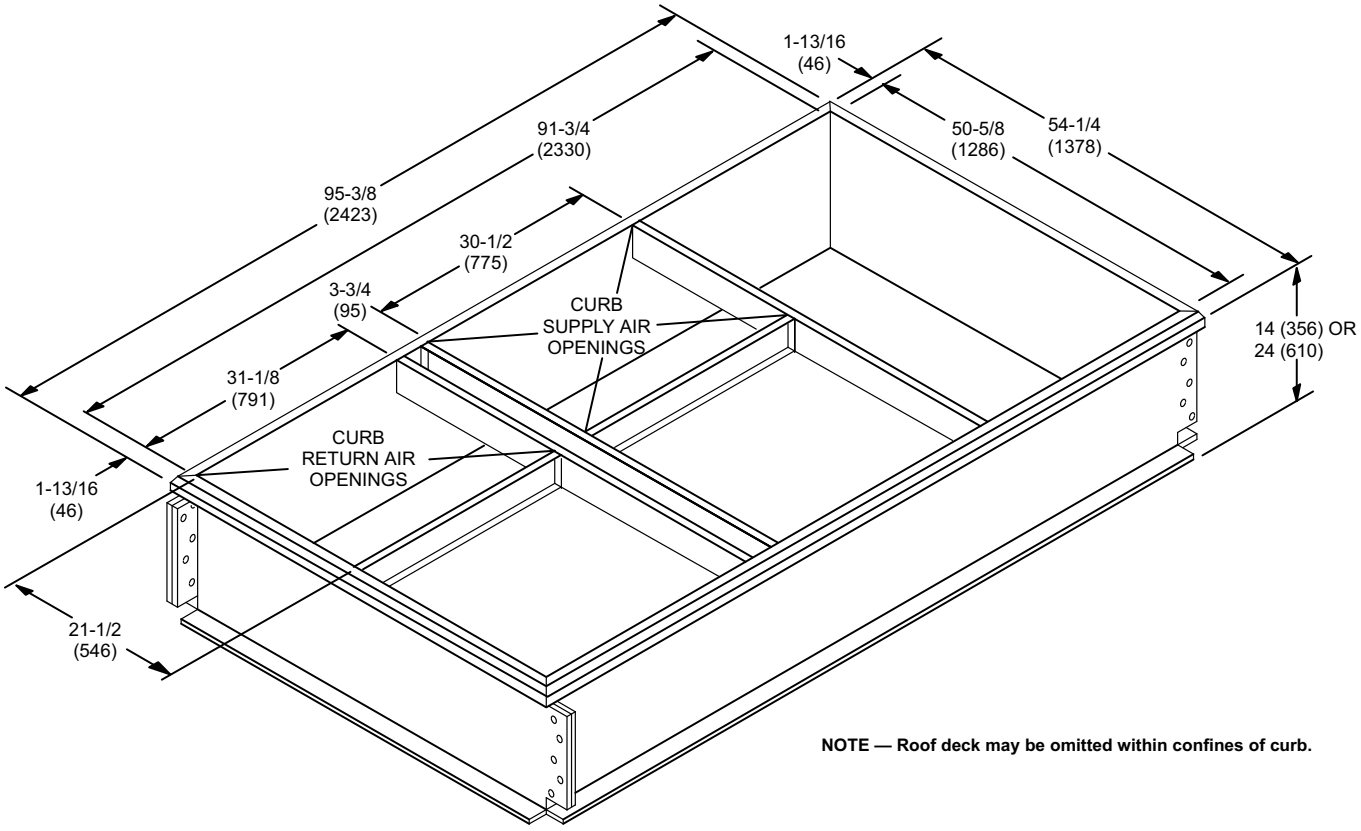



### DETAIL ROOF CURB



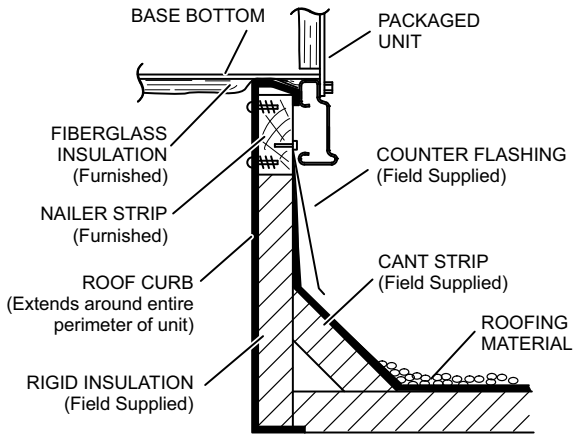
## ACCESSORY DIMENSIONS - INCHES (MM)

### STANDARD ROOF CURBS - DOUBLE DUCT OPENING

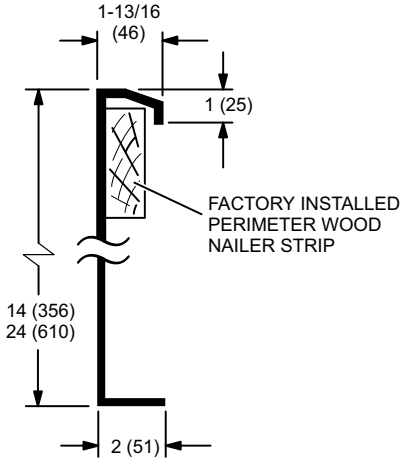



**NOTE — Roof deck may be omitted within confines of curb.**

### TYPICAL FLASHING DETAIL FOR ROOF CURB

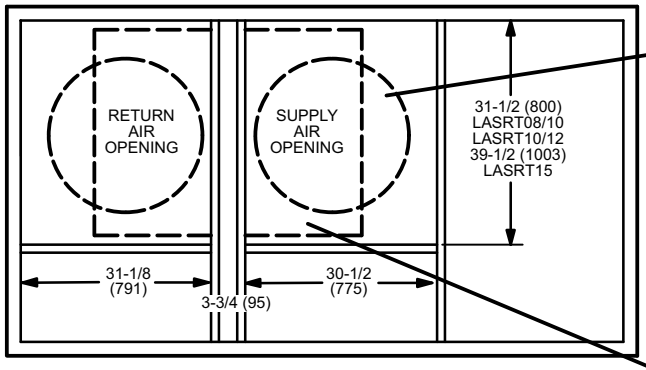



### DETAIL ROOF CURB



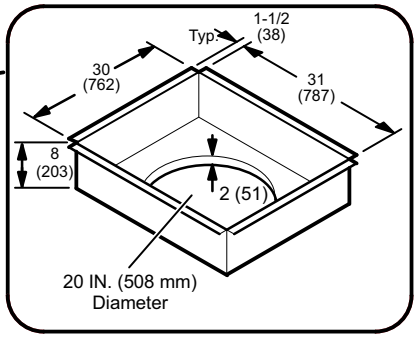
## ACCESSORY DIMENSIONS - INCHES (MM)

### ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS

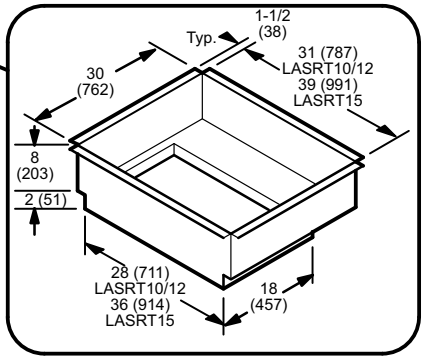



**TOP VIEW**

**LASRT08/10 ROUND TRANSITIONS**
**(for 090 models with FD11-95, RTD11-95 Diffusers)**



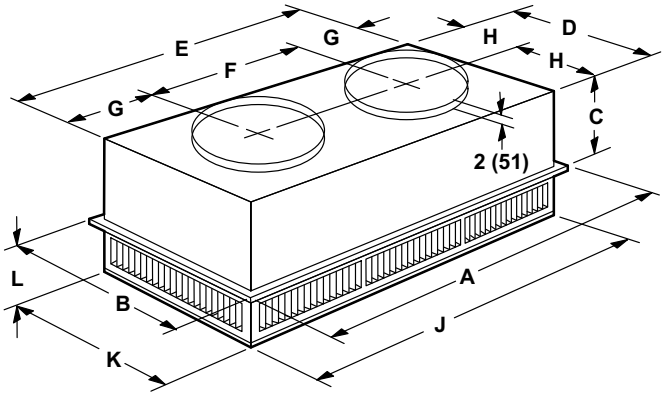

**LASRT10/12 & LASRT15 RECTANGULAR TRANSITIONS**
**(for 102 thru 150 models with FD11-135-185, RTD11-135-185 Diffusers)**



## ACCESSORY DIMENSIONS - INCHES (MM)

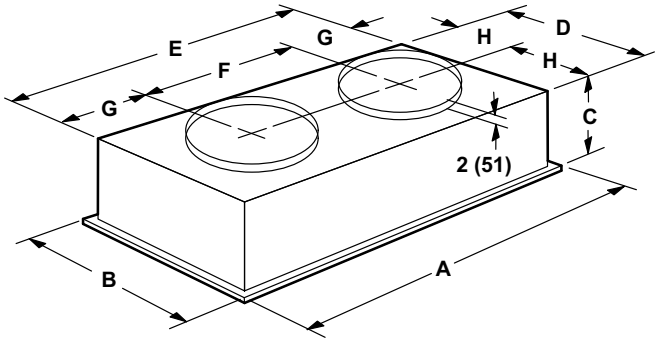
### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

**STEP-DOWN CEILING DIFFUSER**




| Model Number | | RTD11-95 |
|---|---|---|
| A | in. | 47-5/8 |
| | mm | 1159 |
| B | in. | 29-5/8 |
| | mm | 752 |
| C | in. | 14-3/8 |
| | mm | 365 |
| D | in. | 27-1/2 |
| | mm | 699 |
| E | in. | 45-1/2 |
| | mm | 1158 |
| F | in. | 22-1/2 |
| | mm | 572 |
| G | in. | 11-1/2 |
| | mm | 292 |
| H | in. | 13-3/4 |
| | mm | 349 |
| J | in. | 45-1/2 |
| | mm | 1156 |
| K | in. | 27-1/2 |
| | mm | 699 |
| L | in. | 8-1/8 |
| | mm | 206 |
| Duct Size | in. | 20 round |
| | mm | 508 round |

**FLUSH CEILING DIFFUSER**

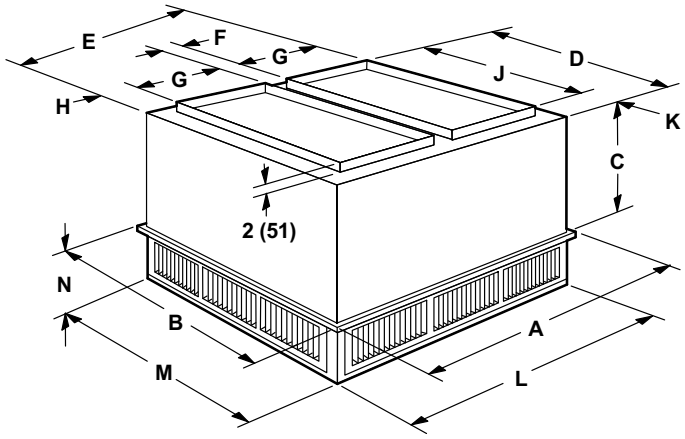



| Model Number | | FD11-95 |
|---|---|---|
| A | in. | 47-5/8 |
| | mm | 1159 |
| B | in. | 29-5/8 |
| | mm | 752 |
| C | in. | 16-5/8 |
| | mm | 422 |
| D | in. | 27 |
| | mm | 686 |
| E | in. | 45 |
| | mm | 1143 |
| F | in. | 22-1/2 |
| | mm | 572 |
| G | in. | 11-1/4 |
| | mm | 286 |
| H | in. | 13-1/2 |
| | mm | 343 |
| Duct Size | in. | 20 round |
| | mm | 508 round |

## ACCESSORY DIMENSIONS - INCHES (MM)

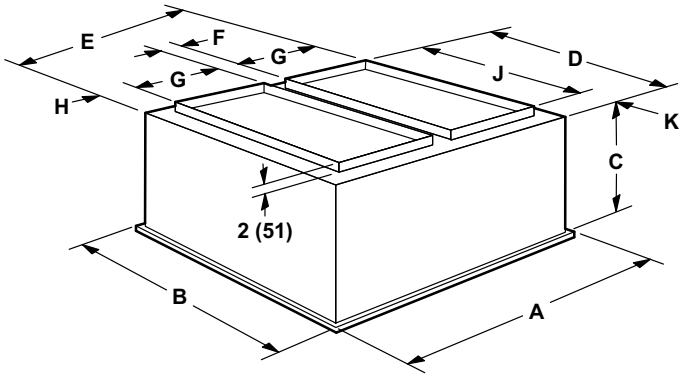
### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

**STEP-DOWN CEILING DIFFUSER**




| Model Number | | RTD11-135 | RTD11-185 |
|---|---|---|---|
| A | in. | 47-5/8 | 47-5/8 |
| | mm | 1210 | 1210 |
| B | in. | 35-5/8 | 47-5/8 |
| | mm | 905 | 1210 |
| C | in. | 20-5/8 | 24-5/8 |
| | mm | 524 | 625 |
| D | in. | 33-1/2 | 45-1/2 |
| | mm | 851 | 1156 |
| E | in. | 45-1/2 | 45-1/2 |
| | mm | 1156 | 1156 |
| F | in. | 4-1/2 | 4-1/2 |
| | mm | 114 | 114 |
| G | in. | 18 | 18 |
| | mm | 457 | 457 |
| H | in. | 2-1/2 | 2-1/2 |
| | mm | 64 | 64 |
| J | in. | 28 | 36 |
| | mm | 711 | 914 |
| K | in. | 2-3/4 | 4-3/4 |
| | mm | 70 | 121 |
| L | in. | 45-1/2 | 45-1/2 |
| | mm | 1156 | 1156 |
| M | in. | 33-1/2 | 45-1/2 |
| | mm | 851 | 1156 |
| N | in. | 9-1/8 | 10-1/8 |
| | mm | 232 | 257 |
| Duct Size | in. | 18 x 28 | 18 x 36 |
| | mm | 457 x 711 | 457 x 914 |

**FLUSH CEILING DIFFUSER**




| Model Number | | FD11-135 | FD11-185 |
|---|---|---|---|
| A | in. | 47-5/8 | 47-5/8 |
| | mm | 1210 | 1210 |
| B | in. | 35-5/8 | 47-5/8 |
| | mm | 905 | 1210 |
| C | in. | 23-1/4 | 29-1/4 |
| | mm | 591 | 743 |
| D | in. | 33 | 45 |
| | mm | 838 | 1143 |
| E | in. | 45 | 45 |
| | mm | 1143 | 1143 |
| F | in. | 4-1/2 | 4-1/2 |
| | mm | 114 | 114 |
| G | in. | 18 | 18 |
| | mm | 457 | 457 |
| H | in. | 2-1/4 | 2-1/4 |
| | mm | 57 | 57 |
| J | in. | 28 | 36 |
| | mm | 711 | 914 |
| K | in. | 2-1/2 | 4-1/2 |
| | mm | 64 | 114 |
| Duct Size | in. | 18 x 28 | 18 x 36 |
| | mm | 457 x 711 | 457 x 914 |

## REVISIONS

| Sections | Description of Change |
|---|---|
| Optional Accessories | Updated Information - Smoke Detectors. |





ALLIED Commercial

NOTE - Due to our ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.