PACKAGED HEAT PUMP

# LHT

## E-SERIES ROOFTOP UNITS

**High Efficiency | Intelli-Guide™ 2.0 Controller | R-454B | 60Hz**

**COMMERCIAL**
**PRODUCT SPECIFICATIONS (EHB)**

**25 Tons**
**Net Cooling Capacity – 274,000 Btuh**
**Net Heating Capacity - 270,000 Btuh**
**Optional Electric Heat - 30 to 90 kW**

ASHRAE Standard 90.1

## MODEL NUMBER IDENTIFICATION

**L H T 302 H 5 M N 1 Y**

**Brand**
L = Allied®

**Unit Type**
H= Heat Pump Unit

**Family**
T = E-Series™ Series

**Nominal Cooling Capacity - Tons**
302 = 25 Tons

**Cooling Efficiency**
H = High Efficiency

**Refrigerant Type**
5 = R-454B

**Blower Type**
M = Single Zone VAV Supply Fan, Belt Drive

**Factory Installed Electric Heat**
N = No Heat
J = 30 kW Electric Heat
K = 45 kW Electric Heat
L = 60 kW Electric Heat
P = 90 kW Electric Heat

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

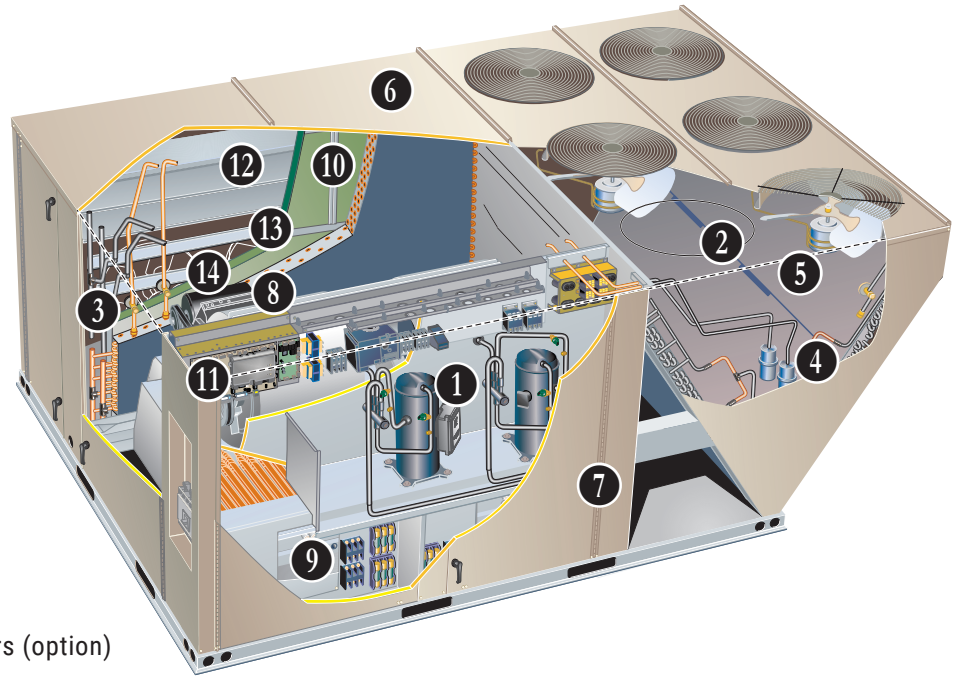
**Voltage**
Y = 208/230V-3 phase-60Hz
G = 460V-3 phase-60Hz
J = 575V-3 phase-60Hz

Form Number 311121 | January 2025
Supersedes all previous versions

## FEATURE HIGHLIGHTS

E-Series™ rooftop units featuring the Intelli-Guide™ 2.0 Control System create a bright future through a highly energy-efficient and environmentally sustainable design. Comprehensive configurations meet a wide range of applications, making it the most flexible product line Allied has to offer.

1. Scroll Compressors
2. Copper Tube Outdoor Coil
3. Thermal Expansion Valves
4. Filters/Driers
5. Outdoor Coil Fan Motors
6. Heavy Gauge Steel Cabinet
7. Hinged Access Panels
8. Single Zone VAV Supply Fan Blower
9. Electric Heat (option)
10. Air Filters
11. Intelli-Guide™2.0 Control System
12. Economizer (option)
13. Downflow Barometric Relief Dampers (option)
14. Power Exhaust




## CONTENTS

## APPROVALS AND WARRANTY

### APPROVALS

- Tested at conditions included in AHRI Standard 340/360-2023
- ETL and CSA listed
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- All models are ASHRAE 90.1 compliant
- All models meet DOE 2023 energy efficiency standards and UL 60335-2-40 Refrigerant Detector Requirements
- Single Zone VAV Supply Fan models meet California Code of Regulations, Title 24 and ASHRAE 90.1-2022 Section 6.4.3.10 requirements for staged airflow
- ISO 9001 Registered Manufacturing Quality System

### WARRANTY

- Compressors - Limited five years
- Intelli-Guide™2.0 Unit Controller - Limited three years
- Variable-Frequency Drive (VFD) - Limited five years
- High Performance Economizers (optional) - Limited five year
- All other covered components - Limited one year

## FEATURES AND BENEFITS

### COOLING/HEATING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- Mechanical cooling operates from 0°F to 125°F
- Mechanical heating operates at ambient temperatures above -15°F

**NOTE** - When a call for heating is initiated at ambient temperatures above -4°F, unit will attempt to satisfy demand with mechanical heating down to -15°F ambient.

If a call for heating is initiated at or below -4°F, the unit will lockout mechanical heating (compressors) and use optional electrical heat to satisfy demand.

R-454B Refrigerant

- Low GWP (Global Warming Potential)
- Zero ODP (Ozone Depletion Potential)
- Low Toxicity/Lower Flammability - A2L
- Unit is factory pre-charged

1 Scroll Compressors

- System consists of one two-stage compressor and one single-stage scroll compressor
- Resiliently mounted on rubber grommets for quiet operation

Compressor Crankcase Heaters

- Protects against refrigerant migration that can occur during low ambient operation or during extended off cycles

2 Coil Construction

- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction
- Factory leak tested

Evaporator Coil

- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction
- Factory leak tested
- Cross-row circuiting with rifled tubing

3 Thermal Expansion Valves

- Ensures optimal performance throughout the application range
- Removable element head

4 Filter/Driers

- High capacity filter/drier protects the system from dirt and moisture

5 Reversing Valve

- 4-way interchange reversing valve rapidly changes the direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa

High Pressure Switches

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

Low Pressure Switches

- Protects the compressors from low pressure conditions such as low refrigerant charge or low/no airflow

## FEATURES AND BENEFITS

### COOLING SYSTEM (continued)

Indoor Coil Freeze Protection
- Protects the indoor coil from damaging ice build-up due to conditions such as low/no airflow, or low refrigerant charge

Antimicrobial Condensate Drain Pan
- Composite pan, sloped to meet drainage requirements per ASHRAE 62.1
- Antimicrobial additive prevents growth of mold and mildew, which improves indoor air quality and reduces drain line blockage
- Side drain connections

**NOTE** - Stainless steel drain pan available as a factory installed option.

6 Outdoor Coil Fan Motors
- Thermal overload protected
- Totally enclosed
- Permanently lubricated ball bearings
- Shaft up
- Wire basket mount

Outdoor Coil Fans
- PVC coated fan guard furnished

#### Required Selections

Cooling Capacity
- Specify nominal cooling capacity

#### Options/Accessories

**Factory or Field Installed**

Drain Pan Overflow Switch
- Monitors condensate level in drain pan
- Shuts down unit if drain becomes clogged

Stainless Steel Drain Pan
- Non-corrosive drain pan

**Field Installed**

Condensate Drain Trap
- Available in copper or PVC

### LOW GWP REFRIGERANT DETECTION SYSTEM (RDS)
- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Factory installed on all units
- Consists of a refrigerant detection sensor(s) and a mitigation control
- Ensures safe operation for systems equipped with R-454B refrigerant
- Sensor(s) monitors indoor coil area for R-454B refrigerant
- If R-454B refrigerant is detected the refrigerant detection system will prevent compressor and heating operation until R-454B refrigerant is no longer detected
- Refrigeration detection system energizes blower if any R-454B refrigerant is detected to mitigate any concentrations of refrigerant from the unit and the system

### CABINET

7 Construction
- Heavy-gauge steel panels
- Full perimeter heavy-gauge galvanized steel base rail
- Base rails have rigging holes
- Three sides of the base rail have forklift slots
- Raised edges around duct and power entry openings in the bottom of the unit for water protection

Airflow Choice
- Units are shipped in downflow (vertical) return air flow configuration

**NOTE** - Units can be field converted to horizontal air flow with optional Horizontal Return Air Panel Kit and Horizontal Roof Curb.

Power Entry
- Electrical lines can be routed through the unit base or through horizontal access knock-outs

Exterior Panels
- Constructed of heavy-gauge, galvanized steel
- Textured pre-paint with polyurethane finish
- Cyclic salt fog and UV exposure up to 1,680 hours per ASTM D5894

Insulation
- Fully insulated with non-hygroscopic fiberglass insulation (conditioned areas)
- Unit base is fully insulated
- Base insulation serves as an air seal to the roof curb, eliminating the need to add a seal during installation

8 Hinged Access Panels
- Filter section
- Blower section
- Heating section
- Compressor/controls section
- Panel seals and quarter-turn latching handles provide a tight air and water seal

#### Options/Accessories

**Factory Installed**

Corrosion Protection
- Completely flexible immersed coating
- Electrodeposited dry film process
- AST ElectroFin E-Coat
- Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing
- Indoor Corrosion Protection:
  - Coated coil
  - Painted blower housing
  - Painted base
- Outdoor Corrosion Protection:
  - Coated coil
  - Painted outdoor base

## CABINET (continued)

### Options/Accessories

**Factory or Field Installed**

Combination Coil/Hail Guards
- Heavy gauge steel frame
- Painted to match cabinet
- Expanded metal mesh protects outdoor coil

**Field Installed**

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

## BLOWER

- A wide selection of supply air blower options are available to meet a variety of airflow requirements

Motor
- Overload protected
- Ball bearings
- Belt drive motors are offered on all models and are available in several different sizes to maximize air performance

**NOTE** - All blower motors 5 hp and above meet minimum energy efficiency standards in accordance with the Energy Independence and Security Act (EISA).of 2007

9 Supply Air Blower
- Forward curved blades
- Double inlet
- Blower wheel statically and dynamically balanced
- Ball bearings
- Adjustable pulley (allows speed change)
- Blower assembly slides out of unit for servicing
- Grease fittings furnished

Blower Proving Switch
- Monitors blower operation, shuts down unit if blower fails

Single Zone VAV
- Single Zone VAV stages the amount of airflow according to compressor stages, heating demand, ventilation demand or smoke alarm
  - Utilizes a Variable Frequency Drive (VFD) to stage the supply air blower airflow
  - VFD alters the frequency and voltage of the power supply to the blower to control blower speed
- The amount of airflow for each stage can be set according to a parameter in the Intelli-Guide™2.0 Unit Controller
  - Unit is shipped from the factory with preset airflows
  - If equipped with the optional Bypass Control the Single Zone VAV features automatic electronic bypass control of the VFD
  - In case of a VFD malfunction, a VFD alarm is generated by the Intelli-Guide™ 2.0 Unit controller
  - Unit controller will automatically switch to full blower speed if a VFD alarm is generated

**NOTE** - Units equipped a Variable Frequency Drive (VFD) are designed to operate on balanced, three-phase power. Operating units on unbalanced three-phase power will reduce the reliability of all electrical components in the unit. Unbalanced power is a result of the power delivery system supplied by the local utility company. Factory-installed inverters are sized to drive blower motors with an equivalent current rating using balanced three-phase power. If unbalanced three-phase power is supplied; the installer must replace the existing factory-installed inverter with an inverter that has a higher current rating to allow for the imbalance. Refer to the installation instructions for additional information and replacement information.

Ordering Information
- Specify motor horsepower and drive kit number when base unit is ordered

### Options/Accessories

**Factory Installed**

Supply VFD Blower Bypass Control
- Allows unit to operate as a constant air volume (CAV) unit in case of variable frequency drive (VFD) failure

**NOTE** - Supply VFD Blower Bypass Control is not available with High Static Power Exhaust.

## FEATURES AND BENEFITS

### ELECTRICAL

**NOTE** - All units include terminal block and fuse block in power entry junction box for single power entry application.

WireRight™ System
- Keyed and color-coded wiring connectors prevent miswiring
- Wire coloring scheme is standardized across all models
- Each connection is intuitively labeled to make troubleshooting and servicing quick and easy

Electrical Plugs
- Positive connection electrical plugs connect common accessories or maintenance parts for easy removal or installation

Phase/Voltage Detection
- Monitors power supply to assure phase is correct at unit start-up
- If phase is incorrect, the unit will not start and an alarm code is reported to the unit controller
- Protects unit from being started with incorrect phasing which could lead to issues such as compressors running backwards
- Voltage detection monitors power supply voltage to assure proper voltage
- If voltage is not correct (over/under voltage conditions) the unit will not start and an alarm code is reported to the unit controller

#### Required Selections

Voltage Choice
- Specify when ordering base unit

#### Options/Accessories

**Factory Installed**

Circuit Breakers
- HACR type
- Overload and short circuit protection
- Factory wired and mounted in the power entry panel
- Current sensitive and temperature activated
- Manual reset

Short-Circuit Current Rating (SCCR)
- Higher short-circuit protection up to 100kA

**NOTE** - Disconnect Switch not available with higher SCCR option. SCCR option only available with factory installed electric heat.

**Factory or Field Installed**

Disconnect Switch
- Accessible outside of unit
- Spring loaded weatherproof cover furnished

10 Electric Heat
- Helix wound nichrome elements
- Individual element limit controls
- Wiring harness
- Unit fuse block
- See Options/Accessories tables for ordering information

GFI Service Outlets (2)
- 115V ground fault circuit interrupter (GFCI) type options:
  - Factory installed and wired, unit powered
  - Factory installed, non-powered, field wired
  - Field installed, non-powered, field wired

**Field Installed**

GFI Weatherproof Cover
- Single-gang cover
- Heavy-duty UV-resistant polycarbonate case construction
- Hinged base cover with gasket

## FEATURES AND BENEFITS

### INDOOR AIR QUALITY

11 Air Filters
- Disposable 2 inch MERV 4 filters furnished as standard

Options/Accessories

**Factory or Field Installed**

High Efficiency Air Filters
- Disposable MERV 8 or MERV 13 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency 2-inch pleated filters
- Replacement Filter Media Kit With Frame
- Replaces existing pleated filter media
- Includes washable metal mesh screen and metal frame with clip for holding replaceable non-pleated filter

**Field Installed**

Indoor Air Quality ($CO_2$) Sensors
- Monitors $CO_2$ levels
- Reports to the Intelli-Guide™2.0 Control, which adjusts economizer dampers as needed

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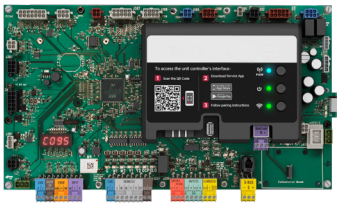
## CONTROL SYSTEM

### INTELLI-GUIDE™ 2.0 CONTROL SYSTEM



The Intelli-Guide™ 2.0 Control System is designed to accelerate equipment install and service. Standard with all E-Series™ rooftop units, control system integrates key technologies that lower installation costs, drive system efficiency, and protect your investments.

The Intelli-Guide™ 2.0 Unit Controller is a microprocessor-based controller that provides flexible control of all unit functions.

Mobile Service App

- Guided Setup with progress indicators, detailed help, and exportable summaries to manage simple, trouble-free setup, reducing commissioning times
- Enhanced Test Functionality provides real-time sensor readings, trending, and reports that enable easy troubleshooting
- Ability to set and configure parameters of the Control System to manage sequence of operation
- Economizer test function ensures economizer is operating correctly

Additional Features:

- Built-In 7-Segment Display shows Unit Status and active alarms for easy troubleshooting
- Buttons for test and clearing delays
- SmartWire™ System with keyed and removable screw terminals ensure correct field wiring
- Built-in BACnet MS/TP and IP allow open integration to building management systems.
- Two-port Ethernet Switch enables daisy chaining for BACnet IP and automatic firmware updates

**NOTE** - Unit Internet Connection required.

- Profile setup copies key settings between units with the same configuration to reduce setup time
- USB port allows a technician to download and transfer unit information to help verify service was performed
- USB software updates on the Intelli-Guide™ 2.0 Unit Controller enhance functionality without the need to change components
- Unit Controller Software

Configurable Built-In Functions

- Discharge Air Cooling Control
- Up to three distinct Cooling Airflows in Thermostat Mode
- Programmable independent heating, ventilation and cooling blower speeds
- Discharge Air Heating Control
- Economizer Control Options (See Economizer / Exhaust Air / Outdoor Air sections)
- Exhaust Fan Control Modes for fresh air damper position
- Configurable Morning Warm-up
- Night Setback Mode
- Fresh Air Tempering for Improved Ventilation
- Demand Control Ventilation
- Low Ambient Controls for operation down to 0°F
- Dehumidification Operation
- Enhanced Dehumidification (Latent Demand Control without hot gas reheat)

Component Protection / Unit Safeguards:

- Compressor Time-Off Delay
- Adjustable Blower On/Off Delay
- Return Air Temperature Limit Control
- Safety Switch Input allows Controller to respond to a external safety switch trip
- Service Relay Output
- Thermostat Bounce Delay
- Smoke Alarm Mode has four choices (unit off, positive pressure, negative pressure, purge)
- “Strike Three” Protection
- Gas Valve Time Delay Between First and Second Stage
- Minimum Compressor Run Time

Control Methods / Interfaces:

- DDC and 24V Thermostat
- BACnet MS/TP and IP
- LONTalk (Factory and Field Option)
- S-BUS
- Zone Temperature Sensor Input
- Dehumidistat and Humidity Sensor Inputs
- Indoor Air Quality Inputs (2)
- Built-in Control Parameter Defaults
- Permanent Diagnostic Code Storage
- Field Adjustable Control Parameters (Over 200 settings)
- Multiple Configurable Digital Inputs
- LED Indicators

**NOTE** - Intelli-Guide™ 2.0 Control System features vary with the type of rooftop unit in which the control is installed.

## CONTROL SYSTEM

### INTELLI-GUIDE™ 2.0 CONTROL SYSTEM (continued)

Controls Options

**Factory or Field Installed**

Dirty Filter Switch
- Senses static pressure increase and issues alarm if necessary

Smoke Detector
- Photoelectric type
- Installed in supply air section, return air section or both sections
- Available with power board and single sensor (supply or return) or power board and two sensors (supply and return)
- Power board located in unit control compartment


- Control system and thermostat options, see page 13


## OPTIONS / ACCESSORIES

**ECONOMIZER**

- Economizer operation is set and controlled by the Intelli-Guide™ 2.0 unit controller
- Simple plug-in connections from economizer to unit controller for easy installation
- All E-Series™ rooftop units are equipped with factory installed CEC Title 24 approved sensors for outside, return and discharge air temperature monitoring

**NOTE** - Optional sensors may be used instead of unit sensors to determine whether outdoor air is suitable for free cooling. See Options/Accessories table.

**Factory or Field Installed**

13 High Performance Economizer
- Approved for California Title 24 building standards
- Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 CFM per sq. ft. leakage at 1 in. w.g.
- ASHRAE 90.1 and IECC compliant
- Outdoor Air Hood with mist elimination is included when economizer is factory installed and is furnished with economizer when ordered for field installation

**NOTE** - Downflow or horizontal economizer applications require optional Downflow or Horizontal Barometric Relief Dampers with Exhaust Hood.

- Linked damper action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit

**NOTE** - High Performance Economizers are not approved for use with enthalpy controls in Title 24 applications.

**NOTE** - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 “Prescriptive Requirements for Space Conditioning Systems” of the California Energy Commission’s 2022 Building Energy Efficiency Standards.

**NOTE** - Refer to Installation Instructions for complete setup information.

## ECONOMIZER (continued)

Differential Sensible Control
- Factory setting
- Uses outdoor air and return air sensors that are furnished with the unit
- The Intelli-Guide™ 2.0 unit controller compares outdoor air temperature with return air
- When the outdoor air is below the configured setpoint and cooler than return air, the controller activates the economizer

**NOTE** - Differential Sensible Control can be configured in the field to provide Offset Differential Sensible Control or Single Sensible Control.

**NOTE** - In Offset Differential Sensible Control mode, the economizer is enabled if the temperature differential (offset) between outdoor air and return air reaches the configured setpoint.
In Single Sensible Control mode, the economizer is enabled when outdoor air temperature falls below the configured setpoint.

Global Control
- The unit controller communicates with a DDC system with one global sensor (enthalpy or sensible)
- Determines whether outside air is suitable for free cooling on all units connected to the control system
- Sensor must be field provided

**NOTE** - Global control with enthalpy is not approved for Title 24 applications.

### Factory or Field Installed

Single Enthalpy Temperature Control (Not for Title 24)
- Outdoor air enthalpy sensor enables Economizer if the outdoor enthalpy is less than the setpoint of the control

Differential Enthalpy Control (Not for Title 24)
- Order two Single Enthalpy Controls
- One is field installed in the return air section
- One is installed in the outdoor air section
- Allows the economizer control to select between outdoor air or return air, whichever has lower enthalpy

### Field Installed

Outdoor Air CFM Control
- Maintains constant outdoor air volume levels on the supply air fan and varying unit airflows
- Velocity sensor located in the rooftop unit outdoor air section, the Intelli-Guide™ 2.0 unit controller changes the Economizer position to help minimize the effect of supply fan speed changes on outdoor air volume levels
- Setpoint for outdoor air volume is established by field testing

**NOTE** - Not available with Demand Control Ventilation ($CO_2$ Sensor) or Building Pressure Control.

Building Pressure Control
- Maintains constant building pressure level
- Includes a static pressure transducer and outdoor static pressure assembly

Using differential pressure information between the outdoor air and the building air, the Intelli-Guide™ 2.0 unit controller changes the Economizer position to help maintain a constant building pressure

**NOTE** - Not available with Demand Control Ventilation ($CO_2$ Sensor) or Outdoor Air CFM Control.

## EXHAUST

### Factory or Field Installed

14 Downflow Barometric Relief Dampers
- Allow relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Exhaust hood is factory installed when dampers are factory installed with economizer
- Exhaust hood is furnished with dampers when ordered for field installation
- Bird screen furnished

Horizontal Barometric Relief Dampers
- For use when unit is configured for horizontal applications requiring an economizer
- Allows relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Field installed in return air duct
- Bird screen and hood furnished

**NOTE** - Horizontal Economizer Conversion kit is available for field installation.

## OPTIONS / ACCESSORIES

### EXHAUST (continued)

**Factory or Field Installed**

15 Standard Static Power Exhaust

- Fans install internal to unit for downflow applications only with economizer option
- Provides exhaust air pressure relief
- Interlocked to run when return air dampers are closed and supply air blower is operating
- Fans run based on air damper position (adjustable)
- Three 1/3 HP motors
- 20 in. diameter propeller-type fans
- Five blades
- Total power input of 1125 Watts
- Total air volume of 12,800 cfm at 0 in. w.g.
- Motor is inherently protected
- Totally enclosed
- Steel cabinet and hood painted to match unit

**NOTE** - Requires optional Downflow Economizer Barometric Relief Dampers. Also see Standard Static Power Exhaust Blower Tables.

**Field Installed**

High Static Power Exhaust

- Centrifugal-type power exhaust blowers
- Overload and sub-fuse protected
- Ball bearings
- Forward curved blades
- Blower wheel is statically and dynamically balanced
- Adjustable pulleys for speed adjustments

**NOTE** - High Static Power Exhaust (with VFD) features a solid-state analog pressure transducer control which senses differential pressure between conditioned space and outdoor air to regulate exhaust blower speed. Also see High Static Power Exhaust Blower Tables.

**NOTE** - High Static Power Exhaust is field installed but must be ordered at the same time as the rooftop unit so the unit can be factory configured for this option.

#### Control Choices

Damper Position Control

- For Standard Static Power Exhaust without VFD
- Intelli-Guide™ Pro unit controller controls the power exhaust based on economizer damper position

**Field Installed**

Differential Pressure Transducer Control

- For Standard Static Power Exhaust or High Static Power Exhaust with VFDIntelli-Guide™ Pro unit controller controls the power exhaust system based on a 0-10VDC signal from a differential pressure transducer, which compares atmospheric pressure to conditioned space static pressure

### OUTDOOR AIR

**Factory or Field Installed**

Motorized Outdoor Air Dampers

- Linked mechanical dampers
- Fully modulating spring return damper motor with plug-in connection
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Outdoor air hood with bird screen included

**NOTE** - Outdoor Air Hood is shipped separately in the unit with factory installed dampers for field installation.

**Field Installed**

Manual Outdoor Air Damper

- Adjustable slide damper
- Installed in unit
- Outdoor air hood with bird screen included

## OPTIONS / ACCESSORIES

### ROOF CURBS

- Nailer strip furnished (downflow only)
- Mates to unit
- US National Roofing Contractors Approved
- Shipped knocked down

**Downflow**

Hybrid Roof Curbs

- Interlocking tabs fasten corners together
- No tools required for assembly
- Can also be fastened together with furnished hardware
- Available in 14, 18, and 24 inch heights

**Horizontal**

- Converts unit from downflow to horizontal (side) air flow
- Return air is on unit
- Supply air is on curb
- Available in 37 inch and 41 inch heights.
- See dimension drawings

**NOTE** - Requires Horizontal Return Air Panel Kit.

**NOTE** - Optional Insulation Kit is available to help prevent sweating.

### CEILING DIFFUSERS

**Field Installed**

Ceiling Diffusers
(Flush or Step-Down)

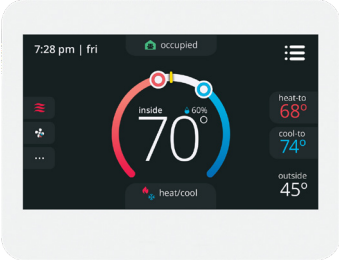
- White powder coat finish on diffuser face and grilles
- Insulated UL listed duct liner
- Diffuser box has collars for duct connection
- Step-down diffusers have double deflection blades
- Flush diffusers have fixed blades
- Provisions for suspending
- Internally sealed to prevent recirculation
- Removable return air grille
- 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

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### CS8500 Commercial 7-Day Programmable Thermostat

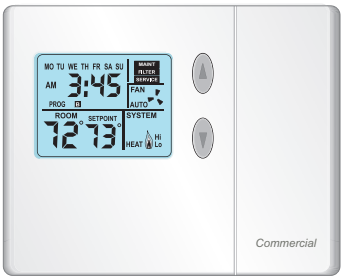



- Fully Communicating Sensor
- Full Color Touchscreen Interface
- Variable Speed System Control (On Compatible Units)
- Up To 4 Heat / 4 Cool
- Built-In Sensors For Temperature, Humidity And Optional $CO_2$
- Remote Sensor Options For Occupancy, Temperature
- BACnet Capable Options
- 5-2 or 7-Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-Changeover
- Four-Wire Installation
- FDD, ASHRAE, IECC Compliant

### CS7500 Commercial 7-Day Programmable Thermostat


- Premium Universal Thermostat
- Full Color Touchscreen Interface
- Up To 4 Heat / 3 Cool
- Built-In Sensors For Temperature and Humidity
- Remote Sensors Options For Temperature, Discharge Air, Outdoor Air
- 5-2 or 7-Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-Changeover
- FDD, ASHRAE, IECC Compliant

### CS3000 Commercial 5-2 Day Programmable Thermostat




- Conventional Multi-Stage Thermostat
- Intuitive Display
- Push-Button Operation
- Up To 2 Heat / 2 Cool
- Built-In Temperature Sensor
- Remote Temperature Sensing
- Up to 5-2 Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-changeover

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

| Description | | Order Number |
|---|---|---|
| **CS8500 Commercial 7 Day Programmable Thermostat** | | |
| CS8500 7-Day Thermostat | No $CO_2$ Sensing | **24K55** |
| | With $CO_2$ Sensing | **24K53** |
| Sensors/Accessories | [1] Remote non-adjustable wall-mount 10k | **47W37** |
| | [1] Remote non-adjustable wall-mount 11k | **94L61** |
| **Sysbus Network Cable (Yellow) for CS8500 and LCS-5030 Wired Room Sensor** | | |
| Twisted pair 100% shielded communication cable, Red and Black 22 AWG, yellow jacket, rated at 75°C, 300V, Plenum rated Insulation - Low smoke PVC, NEC, CMP | 500 ft. box | **27M19** |
| | 1000 ft. box | **94L63** |
| | 2500 ft. roll | **68M25** |
| **CS7500 Commercial 7-Day Programmable Thermostat** | | |
| CS7500 7-Day Thermostat | | **24K41** |
| Sensors/Accessories | [2] Remote non-adjustable wall-mount 20k | **47W36** |
| | [2] Remote non-adjustable wall-mount 10k | **47W37** |
| | Remote non-adjustable discharge air (duct mount) | **19L22** |
| | Outdoor temperature sensor | **X2658** |
| **CS3000 Commercial 5-2 Day Programmable Thermostat** | | |
| CS3000 5-2 Day Thermostat | | **11Y05** |
| Sensors/Accessories | Remote non-adjustable wall mount 10k averaging | **47W37** |
| | Thermostat wall mounting plate | **X2659** |
| **Universal Thermostat Guard with Lock (clear)** | | |
| | Inside Dimensions (H x W x D) 5-7/8 x 8-3/8 x 3 in. | **39P21** |

Up to nine of the same type remote temperature sensors can be connected in parallel.

Remote wall-mount sensors can be applied in any of the following combinations:

One Sensor - (1) 47W36, Two Sensors - (2) 47W37, Three Sensors - (2) 47W36 and (1) 47W37
Four Sensors - (4) 47W36, Five Sensors - (3) 47W36 and (2) 47W37

**Objective:** Outline the unit functions as a result of room thermostat or zone sensor demands.

**Given:** When economizer is present, it will function as an integral part of the unit cooling system. When not present, unit will function as if economizer is present but outdoor ambient is high and sensed as not suitable.

**UNIT OPERATION WITH 2-STAGE THERMOSTAT (2 COOL AND 2 HEAT STAGES, Y1, Y2, W1, W2)**

**SUPPLY AIR BLOWER SPEED**

Unit has following supply air blower speed setting:

- Ventilation speed
- Cooling Speed - Low
- Cooling Speed - High
- Heating speed
- Smoke speed (Used only in smoke removal option - not discussed)

**COOLING**

**[1] Unit Features An Economizer And Outdoor Air Is Suitable**

**Thermostat Mode (Y1, Y2)**

**Y1 Demand:**

All compressors are off, supply air blower is on low cooling speed to minimize blower power consumption, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

All compressors are off, supply air blower is on high cooling speed providing higher cooling capacity, and economizer modulates to maintain 55°F supply air temperature. If economizer stays at maximum open for 3 minutes, compressor 1 is energized while supply air blower stays on high cooling speed providing maximum cooling capacity.

*[1] Outdoor air suitability is determined by the energy state of outdoor ambient (enthalpy or sensible) and its ability to achieve the desired free cooling effects. Outdoor air suitability can also be determined by a third party controller and provided to the rooftop unit via a network connection.*

**Unit Does Not Feature An Economizer Or Outdoor Air Is Not Suitable**

**Thermostat Mode (Y1, Y2)**

**Y1 Demand:**

Compressor 1 operates, and supply air blower operates at low cooling speed.

**Y2 Demand:**

All compressors operate and supply air blower operates at high cooling speed.

## UNIT OPERATION WITH 3-STAGE THERMOSTAT OR ZONE SENSOR (3 COOL AND 2 HEAT STAGES, Y1, Y2, Y3 AND W1, W2)

### SUPPLY AIR BLOWER SPEED

Unit has following supply air blower speed setting:

- Ventilation speed
- Cooling Speed - Low
- Cooling Speed - Medium
- Cooling Speed - High
- Heating speed
- Smoke speed (Used only in smoke removal option - not discussed)

### COOLING

**[1] Unit Features An Economizer And Outdoor Air Is Suitable**

**Thermostat or Zone Sensor Mode (Y1, Y2, Y3)**

**Y1 Demand:**

All compressors are off, supply air blower is on low cooling speed to minimize blower power consumption, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

All compressors are off, supply air blower is on high cooling speed providing higher cooling capacity, and economizer modulates to maintain 55°F supply air temperature. If economizer stays at maximum open for 3 minutes, compressor 1 is energized while supply air blower stays on high cooling speed providing maximum cooling capacity. After compressors are energized the economizer stays at maximum open.

**Y3 Demand:**

Compressors 1 and 2 are energized while supply air blower stays on high cooling speed.

*[1] Outdoor air suitability is determined by the energy state of outdoor ambient (enthalpy or sensible) and its ability to achieve the desired free cooling effects. Outdoor air suitability can also be determined by a third party controller and provided to the rooftop unit via a network connection.*

**Unit Does Not Feature An Economizer or Outdoor Air Is Not Suitable**

**Thermostat or Zone Sensor Mode (Y1, Y2, Y3)**

**Y1 Demand:**

Compressor 1 operates at part load and supply air blower operates at low cooling speed.

**Y2 Demand:**

Compressor 1 operates at part load with compressor 2 ON, and supply air blower operates at medium cooling speed.

**Y3 Demand:**

All compressors operate and supply air blower operates at high cooling speed.

## UNIT OPERATION WITH ZONE SENSOR (4 COOL AND 2 HEAT STAGES, Y1, Y2, Y3, Y4 AND W1, W2)

### SUPPLY AIR BLOWER SPEED

Unit has following supply air blower speed setting:

- Ventilation speed
- Cooling speed - Low
- Cooling speed - Medium-Low
- Cooling speed - Medium-High
- Cooling speed - High
- Heating speed
- Smoke speed (Used only in smoke removal option - not discussed)

### COOLING

**[1] Unit Features An Economizer And Outdoor Air Is Suitable**

**Y1 Demand:**

All compressors are off, supply air blower is on low cooling speed to minimize blower power consumption, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

All compressors are off, supply air blower is on high cooling speed providing higher cooling capacity, and economizer modulates to maintain 55°F supply air temperature.

If economizer stays at maximum open for 3 minutes, compressor 1 is energized while supply air blower stays on high cooling speed. After compressor 1 is energized the economizer stays at maximum open.

**Y3 Demand:**

Compressor 1 and 2 are energized while supply air blower is on high cooling speed providing even higher cooling capacity.

**Y4 Demand:**

All compressors are energized while supply air blower is on high cooling speed providing maximum cooling capacity.

*[1] Outdoor air suitability is determined by the energy state of outdoor ambient (enthalpy or sensible) and its ability to achieve the desired free cooling effects. Outdoor air suitability can also be determined by a third party controller and provided to the RTU via a network connection.*

**Unit Does Not Feature An Economizer Or Outdoor Air Is Not Suitable**

**Y1 Demand:**

Compressor 1 operates at part load and supply air blower operates at low cooling speed.

**Y2 Demand:**

Compressors 2 operates and supply air blower operates at medium-low cooling speed.

**Y3 Demand:**

Compressor 1 operates at part load with compressor 2 ON and supply air blower operates at medium-high cooling speed.

**Y4 Demand:**

All compressors operate and supply air blower operates at high cooling speed.

**DEFROST**

Coil Sensors (RT48 - Circuit 1 and RT49 - Circuit 2) and Ambient Sensor (RT17) provides input to the Intelli-Guide™ 2.0 Unit Controller to initiate a defrost cycle if needed.

Coil sensors are located on a return bend for each circuit on the front of the outdoor coil.

Ambient sensor is located on the inside of the corner mullion on the back of the outdoor coil section.

If a coil sensor measures a temperature below 35°F during mechanical heating mode, defrost logic is enabled. The system will constantly monitor coil and ambient temperatures and will initiate a defrost cycle if the controller determines that the target temperature difference between the coil and ambient temperature has been satisfied, or when the accumulated run time with coil temperature below 35°F reaches 6 hours.

Defrost will not be activated on more than one circuit at the time.

If the ambient sensor fails, or the circuit is in uncalibrated state, the controller will switch to time/temperature defrost operation.

Electric heat is energized during a defrost cycle to maintain discharge air temperature.

**HEATING**

**Thermostat or Zone Sensor**

**W1/H1 Demand:**

A first-stage heating demand (W1/H1) will energize compressors 1 and 2 and the outdoor fans.

*NOTE – L1 & L2 reversing valves are de-energized in the heating mode.*

**Units With Optional Electric Heat:**

An increased heating demand (W2/H2) will energize electric heat.

*NOTE – Compressors 1 and 2 stay energized.*

**Units With Optional Two-Stage Electric Heat and Zone Sensor mode:**

An increased heating demand (H2) will energize 1st stage of electric heat.

An increased heating demand (H3) will energize 2nd stage of electric heat.

*NOTE – Compressors 1 and 2 stay energized.*

All Electric heat modules are energized during the defrost cycle (W1).

**ACCESSORIES**

**Modulating Outdoor Air Damper**

The minimum damper position for “occupied low blower” and “occupied high blower” is adjusted during unit setup to provide minimum fresh air requirements per ASHRAE 62.1 at the corresponding supply air blower speeds.

- When supply air blower is off or the unit is in unoccupied mode, the outdoor air damper is closed.
- When unit is in occupied mode and supply air blower is operating at a speed below the “midpoint” blower speed, the outdoor air damper is at minimum “low blower” position.
- When unit is in occupied mode and supply air blower is operating at a speed equal to or above the “midpoint” blower speed, the outdoor air damper is at minimum “high blower” position.

*NOTE - The “midpoint” blower speed is an average of the minimum and maximum blower speed (minimum speed + maximum speed divided by 2).*

**Power Exhaust Operation**

*NOTE - POWER EXHAUST OPERATION IS THE SAME FOR ALL CONTROL OPTIONS*

Single Zone VAV models are equipped with 2-stage power exhaust fans. Power exhaust fans operate when economizer outdoor air dampers are 50% open (adjustable). Power exhaust operates in 1st stage (one fan) up to 70% of supply air blower speed. 2nd stage power exhaust fans (both fans) operate when supply air blower speed is above 70% (adjustable) of full speed.

## OPTIONS / ACCESSORIES

| Item Description | | Order Number | Size 302 |
|---|---|---|---|
| **COOLING SYSTEM** | | | |
| Condensate Drain Trap | PVC | **22H54** | X |
| | Copper | **76W27** | X |
| Drain Pan Overflow Switch | | **21Z07** | OX |
| Stainless Steel Condensate Drain Pan | | **83W42** | OX |
| **BLOWER - SUPPLY AIR** | | | |
| Motors | Belt Drive (standard efficiency) - 5 hp | Factory | O |
| | Belt Drive (standard efficiency) - 7.5 hp | Factory | O |
| | Belt Drive (standard efficiency) - 10 hp | Factory | O |
| | Supply VFD Blower Bypass | Factory | O |
| Drive Kits<br>See Blower Data Tables for usage and selection | Kit #1 740-895 rpm | Factory | O |
| | Kit #2 870-1045 rpm | Factory | O |
| | Kit #3 715-880 rpm | Factory | O |
| | Kit #4 770-965 rpm | Factory | O |
| | Kit #5 660-810 rpm | Factory | O |
| | Kit #6 770-965 rpm | Factory | O |
| | Kit #7 570-720 rpm | Factory | O |
| | Kit #8 480-630 rpm | Factory | O |
| | Kit #9 410-535 rpm | Factory | O |
| **CABINET** | | | |
| Combination Coil/Hail Guards | | **13T16** | OX |
| Corrosion Protection | | Factory | O |
| Horizontal Return Air Panel Kit | | **38K48** | X |
| **CONTROLS** | | | |
| Commercial Controls | LonTalk® Module | **54W27** | OX |
| | Novar® LSE | Factory | O |
| Dirty Filter Switch | | **53W68** | OX |
| Fresh Air Tempering | | **21Z08** | OX |
| Smoke Detector - Supply or Return (Power board and one sensor) | | **37G73** | OX |
| Smoke Detector - Supply and Return (Power board and two sensors) | | **37G74** | OX |

NOTE - Order numbers shown are for ordering field installed accessories.

OX - Configure To Order (Factory Installed) or Field Installed

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

| Item Description | | Order Number | Size 302 |
|---|---|---|---|
| **INDOOR AIR QUALITY** | | | |
| **Air Filters** | | | |
| High Efficiency Air Filters | MERV 8 | **54W21** | OX |
| 20 x 20 x 2 - order 12 per unit | MERV 13 | **52W39** | OX |
| Replaceable Media Filter with Metal Mesh Frame (includes Non-Pleated Filter Media) 20 x 20 x 2- order 12 per unit | | **44N60** | X |
| **Indoor Air Quality ($CO_2$) Sensors** | | | |
| Sensor - Wall-mount, off-white plastic cover with LCD display | | **77N39** | X |
| Sensor - Wall-mount, off-white plastic cover, no display | | **23V86** | X |
| Sensor - Black plastic case, LCD display, rated for plenum mounting | | **87N52** | X |
| Sensor - Black plastic case, no display, rated for plenum mounting | | **23V87** | X |
| $CO_2$ Sensor Duct Mounting Kit - for downflow applications | | **23Y47** | X |
| Aspiration Box - for duct mounting non-plenum rated $CO_2$ sensors (**77N39**) | | **90N43** | X |
| **ELECTRICAL** | | | |
| Voltage 60 Hz | 208/230V - 3 phase | Factory | O |
| | 460V - 3 phase | Factory | O |
| | 575V - 3 phase | Factory | O |
| [2] Short-Circuit Current Rating (SCCR) of 100kA (includes Phase/Voltage Detection) | | Factory | O |
| HACR Circuit Breakers | | Factory | O |
| Disconnect Switch - See Electrical Accessories Tables on page 31 for selection | 80 amp | **54W85** | OX |
| | 150 amp | **54W86** | OX |
| | 250 amp | **54W87** | OX |
| GFI Service Outlets | 15 amp non-powered, field-wired (208/230V, 460V only) | **74M70** | OX |
| | [6] 20 amp non-powered, field-wired (208/230V, 460V, 575V) | **67E01** | X |
| Weatherproof Cover for GFI | | **10C89** | X |
| Phase/Voltage Detection | | Factory | O |
| **ELECTRIC HEAT** | | | |
| 30 kW | 208/230V-3ph | **30U68** | OX |
| | 460V-3ph | **30U69** | OX |
| | 575V-3ph | **30U70** | OX |
| 45 kW | 208/230V-3ph | **30U74** | OX |
| | 460V-3ph | **30U75** | OX |
| | 575V-3ph | **30U76** | OX |
| 60 kW | 208/230V-3ph | **30U80** | OX |
| | 460V-3ph | **30U81** | OX |
| | 575V-3ph | **30U82** | OX |
| 90 kW | 208/230V-3ph | **30U83** | OX |
| | 460V-3ph | **30U84** | OX |
| | 575V-3ph | **30U85** | OX |

[2] SCCR option is only available with factory installed electric heat or no electric heat.
SCCR option is not available if the MOCP of the configured unit is greater than 200A.

[3] Disconnect Switch is furnished and factory installed with SCCR option

[4] If a factory installed disconnect switch is ordered with a factory installed GFI, the default disconnect size is 150 amps.

Unit powered GFI Service Outlets are not available with SCCR option.

Disconnect Switch or Circuit Breaker is required with unit powered GFI Service Outlets.

[6] Canada requires a minimum 20 amp circuit. Select 20 amp, non-powered, field wired GFI.

NOTE - Order numbers shown are for ordering field installed accessories.

OX - Configure To Order (Factory Installed) or Field Installed

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

| Item Description | | Order Number | Size 302 |
|---|---|---|---|
| **ECONOMIZER** | | | |
| **High Performance Economizer (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)** | | | |
| High Performance Economizer (Downflow or Horizontal)<br>Includes Economizer Dampers with Outdoor Air Hood<br>Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately<br>Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately | | **18X87** | OX |
| **Economizer Controls** | | | |
| Differential Enthalpy (Not for Title 24) | Order 2 | **21Z09** | OX |
| Sensible Control | Sensor is Furnished | Factory | O |
| Single Enthalpy (Not for Title 24) | | **21Z09** | OX |
| Global | Sensor Field Provided | Factory | O |
| Building Pressure Control | | **13J77** | X |
| Differential Sensible | Sensor is Furnished | Factory | O |
| Outdoor Air CFM Control | | **13J76** | OX |
| **Barometric Relief Dampers With Exhaust Hood** | | | |
| Downflow Barometric Relief Dampers | | **76W17** | OX |
| Horizontal Barometric Relief Dampers | | **33K78** | OX |
| **OUTDOOR AIR** | | | |
| **Outdoor Air Dampers With Outdoor Air Hood** | | | |
| Motorized | | **18X89** | OX |
| Manual | | **18X88** | X |
| **POWER EXHAUST** | | | |
| Standard Static, SCCR Rated | 208/230V | **74W21** | OX |
| | 460V | **74W22** | OX |
| | 575V | **74W23** | OX |
| High Static with VFD<br>2 hp (731-932 rpm) | 208/230V | **83M89** | X |
| | 460V | **83M90** | X |
| | 575V | **83M91** | X |
| **Power Exhaust Control** | | | |
| Pressure Transducer Control | | **13J77** | X |

NOTE - Order numbers shown are for ordering field installed accessories.

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## OPTIONS / ACCESSORIES

| Item Description | | Order Number | Size 302 |
|---|---|---|---|
| **ROOF CURBS** | | | |
| **Hybrid Roof Curbs, Downflow** | | | |
| 14 in. height | | **11F62** | X |
| 18 in. height | | **11F63** | X |
| 24 in. height | | **11F64** | X |
| **Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit** | | | |
| 30 in. height - slab applications | | **11T90** | X |
| 41 in. height - rooftop applications | | **11T97** | X |
| **Horizontal Return Air Panel Kit** | | | |
| Required for Horizontal Applications with Roof Curb | | **38K48** | X |
| **Insulation Kit For Standard Horizontal Curbs** | | | |
| For 30 in. Curb | | **73K33** | X |
| For 41 in. Curb | | **73K35** | X |
| **CEILING DIFFUSERS** | | | |
| Step-Down - Order one | LARTD30/36S | **45K74** | X |
| Flush - Order one | LAFD30/36S | **45K75** | X |
| Transitions (Supply and Return) - Order one | LASRT30/36 | **33K80** | X |

NOTE - Order numbers shown are for ordering field installed accessories.
OX - Configure To Order (Factory Installed) or Field Installed
O = Configure To Order (Factory Installed)
X = Field Installed

## SPECIFICATIONS

| Model | | LHT302H5M |
|---|---|---|
| **Nominal Tonnage** | | 25 Ton |
| **Efficiency Type** | | High |
| **Blower Type** | | Single Zone VAV Supply Fan |
| **Cooling Performance** | Gross Cooling Capacity - Btuh | 285,000 |
| | [1] Net Cooling Capacity (Btuh) | 274,000 |
| | [1] AHRI Rated Air Flow (cfm) | 8500 |
| | Total Unit Power - kW | 25.9 |
| | [1] IEER (Btuh/Watt) | 14.8 |
| | [1] EER (Btuh/Watt) | 10.5 |
| **Heating Performance** | [1] Total High Heat Capacity - Btuh | 270,000 |
| | [1] C.O.P. | 3.3 |
| | Total Unit Power - kW | 23.6 |
| | [1] Total Low Heat Capacity - Btuh | 154,000 |
| | [1] C.O.P. | 2.1 |
| | Total Unit Power - kW | 21.3 |
| **Sound Rating Number** | dBA | 95 |
| **Refrigerant Charge** | Refrigerant Type | R-454B |
| | Circuit 1 | 29 lbs. 0 oz. |
| | Circuit 2 | 28 lbs. 0 oz. |
| **Electric Heat Available** | | See page 30 |
| **Compressor Type (number)** | | Two-Stage Scroll (1), Single-Stage Scroll (1) |
| **Outdoor Coils** | Net face area - ft.² (total) | 68.3 |
| | Number of rows | 2 |
| | Fins - in. | 14 |
| **Outdoor Coil Fans** | Motor HP (number and type) | 1/2 (6 PSC) |
| | Rpm | 1075 |
| | Watts (total) | 3000 |
| | Diameter (Number) - in. | (6) 24 |
| | Blades | 3 |
| | Total Air volume - cfm | 21,500 |
| **Indoor Coils** | Net face area - ft.² (total) | 31.40 |
| | Tube diameter - in. | 3/8 |
| | Rows | 4 |
| | Fins - in. | 14 |
| | Condensate drain size (NPT) - in. | (1) 1 in. |
| | Expansion device type | Balanced Port Thermostatic Expansion Valve |
| [3] **Indoor Blower and Kit Selection** | Nominal motor HP | 5, 7.5, 10 |
| | Maximum usable motor output (US Only) | 5.75, 8.63, 11.5 |
| | Motor - Drive kit number | 5 HP<br>Kit 5 660-810 rpm<br>Kit 6 770-965 rpm<br>Kit 7 570-720 rpm<br>Kit 8 480-630 rpm<br>Kit 9 410-535 rpm<br>7.5 HP<br>Kit 3 715-880 rpm<br>Kit 4 770-965 rpm<br>10 HP<br>Kit 1 740-895 rpm<br>Kit 2 870-1045 rpm |
| | Wheel (Number) diameter x width - in. | (2) 18 x 15 |
| **Filters** | Type of filter | Fiberglass, disposable |
| | Number and size - in. | (12) 20 x 20 x 2 |
| **Line voltage data (Volts-Phase-Hz)** | | 208/230-3-60<br>460-3-60<br>575-3-60 |

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

[1] Tested at conditions included in with AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.
**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] 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 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.

## RATINGS

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

### 25 TON HIGH EFFICIENCY LHT302H5M (1 COMPRESSOR - PART LOAD) - SINGLE ZONE VAV SUPPLY FAN

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65°F | | | | | 75°F | | | | | 85°F | | | | | 95°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F |
| 63°F | 4000 | 125.4 | 5.27 | 0.79 | 0.95 | 1 | 118.5 | 6.11 | 0.81 | 0.96 | 1 | 109.6 | 7.09 | 0.82 | 0.98 | 1 | 101.1 | 8.21 | 0.85 | 1 | 1 |
| | 5000 | 131.9 | 5.27 | 0.86 | 0.99 | 1 | 124 | 6.1 | 0.88 | 1 | 1 | 116.3 | 7.07 | 0.9 | 1 | 1 | 108.4 | 8.19 | 0.93 | 1 | 1 |
| | 6000 | 137 | 5.28 | 0.92 | 1 | 1 | 130.2 | 6.1 | 0.93 | 1 | 1 | 122.6 | 7.06 | 0.95 | 1 | 1 | 114.2 | 8.17 | 0.98 | 1 | 1 |
| 67°F | 4000 | 133.2 | 5.27 | 0.59 | 0.76 | 0.92 | 126.1 | 6.1 | 0.59 | 0.77 | 0.94 | 117.3 | 7.07 | 0.6 | 0.8 | 0.95 | 108.4 | 8.19 | 0.61 | 0.82 | 0.98 |
| | 5000 | 138.7 | 5.28 | 0.63 | 0.83 | 0.97 | 131.1 | 6.1 | 0.64 | 0.85 | 0.99 | 122.6 | 7.06 | 0.65 | 0.88 | 1 | 113.1 | 8.17 | 0.66 | 0.91 | 1 |
| | 6000 | 143.1 | 5.29 | 0.67 | 0.89 | 1 | 135 | 6.11 | 0.68 | 0.92 | 1 | 126.3 | 7.06 | 0.7 | 0.94 | 1 | 116.7 | 8.17 | 0.72 | 0.96 | 1 |
| 71°F | 4000 | 142.3 | 5.29 | 0.4 | 0.57 | 0.73 | 134.6 | 6.1 | 0.4 | 0.58 | 0.74 | 126.3 | 7.06 | 0.39 | 0.58 | 0.76 | 117 | 8.17 | 0.39 | 0.59 | 0.79 |
| | 5000 | 147.4 | 5.3 | 0.41 | 0.61 | 0.8 | 139.8 | 6.11 | 0.41 | 0.62 | 0.82 | 130.6 | 7.06 | 0.41 | 0.63 | 0.85 | 120.8 | 8.17 | 0.41 | 0.65 | 0.88 |
| | 6000 | 151.1 | 5.32 | 0.43 | 0.65 | 0.87 | 143 | 6.12 | 0.43 | 0.67 | 0.9 | 133.9 | 7.06 | 0.43 | 0.69 | 0.92 | 124.2 | 8.16 | 0.43 | 0.71 | 0.95 |

### 25 TON HIGH EFFICIENCY LHT302H5M (2 COMPRESSORS - PART LOAD / FULL LOAD) - SINGLE ZONE VAV SUPPLY FAN

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 85°F | | | | | 95°F | | | | | 105°F | | | | | 115°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F |
| 63°F | 6000 | 225.2 | 14.18 | 0.71 | 0.85 | 0.99 | 208.5 | 16.2 | 0.72 | 0.87 | 1 | 191.7 | 18.44 | 0.73 | 0.9 | 1 | 173.9 | 20.9 | 0.75 | 0.94 | 1 |
| | 8000 | 241.7 | 14.22 | 0.78 | 0.96 | 1 | 224.7 | 16.24 | 0.8 | 0.98 | 1 | 207.7 | 18.48 | 0.83 | 1 | 1 | 191.1 | 20.95 | 0.86 | 1 | 1 |
| | 10000 | 257.3 | 14.26 | 0.86 | 1 | 1 | 241.3 | 16.29 | 0.89 | 1 | 1 | 224.6 | 18.54 | 0.92 | 1 | 1 | 207 | 21.01 | 0.95 | 1 | 1 |
| 67°F | 6000 | 243.5 | 14.23 | 0.55 | 0.68 | 0.82 | 225.4 | 16.24 | 0.55 | 0.69 | 0.84 | 207.4 | 18.49 | 0.55 | 0.71 | 0.86 | 188.7 | 20.96 | 0.55 | 0.73 | 0.89 |
| | 8000 | 258.8 | 14.27 | 0.59 | 0.76 | 0.92 | 240.8 | 16.3 | 0.6 | 0.78 | 0.95 | 221.8 | 18.55 | 0.61 | 0.8 | 0.98 | 201.6 | 21 | 0.62 | 0.83 | 1 |
| | 10000 | 270.6 | 14.31 | 0.64 | 0.84 | 1 | 251.1 | 16.34 | 0.65 | 0.86 | 1 | 231 | 18.57 | 0.67 | 0.9 | 1 | 209.8 | 21.03 | 0.69 | 0.93 | 1 |
| 71°F | 6000 | 260 | 14.26 | 0.41 | 0.53 | 0.66 | 242.8 | 16.3 | 0.4 | 0.53 | 0.67 | 224.7 | 18.55 | 0.39 | 0.54 | 0.68 | 203.3 | 21.01 | 0.38 | 0.54 | 0.7 |
| | 8000 | 278.3 | 14.34 | 0.43 | 0.58 | 0.74 | 259.4 | 16.36 | 0.42 | 0.59 | 0.76 | 238.3 | 18.6 | 0.42 | 0.6 | 0.78 | 218.2 | 21.06 | 0.41 | 0.61 | 0.81 |
| | 10000 | 288 | 14.39 | 0.45 | 0.63 | 0.82 | 269.4 | 16.41 | 0.45 | 0.65 | 0.84 | 247.2 | 18.64 | 0.45 | 0.66 | 0.87 | 225.9 | 21.1 | 0.45 | 0.68 | 0.91 |

### 25 TON HIGH EFFICIENCY LHT302H5M (2 COMPRESSORS - FULL LOAD) - SINGLE ZONE VAV SUPPLY FAN

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 85°F | | | | | 95°F | | | | | 105°F | | | | | 115°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | cfm | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F | kBtuh | kW | 75°F | 80°F | 85°F |
| 63°F | 8000 | 278.2 | 17.98 | 0.74 | 0.89 | 1 | 259.6 | 20.16 | 0.75 | 0.91 | 1 | 241.4 | 22.56 | 0.76 | 0.93 | 1 | 222.2 | 25.17 | 0.78 | 0.96 | 1 |
| | 10000 | 292.3 | 18.14 | 0.8 | 0.96 | 1 | 273.3 | 20.33 | 0.81 | 0.98 | 1 | 255.9 | 22.77 | 0.84 | 1 | 1 | 237.7 | 25.4 | 0.87 | 1 | 1 |
| | 12000 | 305.3 | 18.28 | 0.86 | 1 | 1 | 287.8 | 20.52 | 0.88 | 1 | 1 | 270.4 | 22.94 | 0.91 | 1 | 1 | 251.7 | 25.61 | 0.94 | 1 | 1 |
| 67°F | 8000 | 296.5 | 18.19 | 0.57 | 0.71 | 0.85 | 278.2 | 20.39 | 0.57 | 0.73 | 0.87 | 259.9 | 22.81 | 0.58 | 0.74 | 0.9 | 239.3 | 25.43 | 0.58 | 0.76 | 0.93 |
| | 10000 | 311.7 | 18.36 | 0.61 | 0.78 | 0.94 | 291 | 20.56 | 0.62 | 0.79 | 0.96 | 270.5 | 22.95 | 0.63 | 0.82 | 0.98 | 249.7 | 25.59 | 0.63 | 0.84 | 1 |
| | 12000 | 320.3 | 18.46 | 0.65 | 0.84 | 0.99 | 300.4 | 20.67 | 0.66 | 0.86 | 1 | 278.1 | 23.06 | 0.67 | 0.89 | 1 | 256.5 | 25.68 | 0.69 | 0.92 | 1 |
| 71°F | 8000 | 316.7 | 18.41 | 0.42 | 0.56 | 0.69 | 297.8 | 20.63 | 0.42 | 0.56 | 0.7 | 278.2 | 23.05 | 0.41 | 0.57 | 0.72 | 256.3 | 25.67 | 0.4 | 0.57 | 0.74 |
| | 10000 | 331 | 18.59 | 0.44 | 0.6 | 0.75 | 310.2 | 20.8 | 0.44 | 0.61 | 0.77 | 289.7 | 23.21 | 0.43 | 0.62 | 0.79 | 267.7 | 25.83 | 0.43 | 0.63 | 0.82 |
| | 12000 | 341.5 | 18.71 | 0.46 | 0.64 | 0.82 | 320.5 | 20.94 | 0.46 | 0.65 | 0.84 | 298.2 | 23.33 | 0.46 | 0.66 | 0.87 | 274.8 | 25.91 | 0.45 | 0.68 | 0.9 |

### 25 TON - HEATING LHT320H5M

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW |
| 8000 | 362 | 19 | 265.4 | 17.11 | 185.9 | 15.2 | 121.2 | 13.7 | 79 | 11.93 |
| 10000 | 367.4 | 17.55 | 269.2 | 16.09 | 186.4 | 14.5 | 122.8 | 13.5 | 79.2 | 11.82 |
| 12000 | 370.6 | 16.63 | 270.1 | 15.46 | 187.2 | 14.16 | 122.9 | 13.42 | 79.3 | 11.8 |

## BLOWER DATA

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL & AIR FILTERS IN PLACE
FOR ALL UNITS ADD:

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

Then determine from blower table blower motor output and drive required.
See page 26 for wet coil and option/accessory air resistance data.
See page 26 for factory installed drive kit specifications.

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

All units require 10,500 cfm minimum air with electric heat.

| Air Volume cfm | TOTAL STATIC PRESSURE - In. w.g. | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.20 | | 0.40 | | 0.60 | | 0.80 | | 1.00 | | 1.20 | | 1.40 | | 1.60 | | 1.80 | | 2.00 | | 2.20 | | 2.40 | | 2.60 | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 4000 | 372 | 0.26 | 433 | 0.65 | 497 | 0.99 | 565 | 1.27 | 630 | 1.54 | 687 | 1.79 | 738 | 2.04 | 784 | 2.30 | 824 | 2.56 | 861 | 2.82 | 897 | 3.10 | 932 | 3.40 | - - - | - - - |
| 4500 | 382 | 0.41 | 441 | 0.79 | 506 | 1.12 | 574 | 1.41 | 638 | 1.69 | 694 | 1.95 | 744 | 2.22 | 790 | 2.50 | 831 | 2.77 | 868 | 3.05 | 903 | 3.35 | 938 | 3.66 | 974 | 4.01 |
| 5000 | 392 | 0.56 | 451 | 0.93 | 516 | 1.25 | 584 | 1.55 | 646 | 1.85 | 702 | 2.12 | 751 | 2.41 | 796 | 2.70 | 837 | 3.00 | 874 | 3.30 | 909 | 3.61 | 944 | 3.93 | 980 | 4.30 |
| 5500 | 402 | 0.73 | 462 | 1.08 | 527 | 1.40 | 594 | 1.72 | 655 | 2.02 | 710 | 2.31 | 758 | 2.61 | 802 | 2.92 | 843 | 3.24 | 880 | 3.56 | 916 | 3.88 | 951 | 4.22 | 987 | 4.60 |
| 6000 | 414 | 0.89 | 473 | 1.24 | 539 | 1.56 | 605 | 1.90 | 665 | 2.21 | 718 | 2.51 | 766 | 2.83 | 809 | 3.16 | 850 | 3.51 | 887 | 3.84 | 922 | 4.18 | 957 | 4.52 | 994 | 4.91 |
| 6500 | 426 | 1.07 | 486 | 1.41 | 551 | 1.74 | 616 | 2.10 | 675 | 2.42 | 727 | 2.73 | 774 | 3.07 | 817 | 3.43 | 857 | 3.80 | 894 | 4.15 | 929 | 4.49 | 964 | 4.85 | 1001 | 5.24 |
| 7000 | 439 | 1.26 | 499 | 1.60 | 565 | 1.93 | 628 | 2.31 | 685 | 2.64 | 737 | 2.97 | 782 | 3.34 | 825 | 3.72 | 864 | 4.11 | 901 | 4.48 | 937 | 4.83 | 971 | 5.19 | 1008 | 5.59 |
| 7500 | 453 | 1.46 | 513 | 1.79 | 579 | 2.14 | 641 | 2.55 | 696 | 2.88 | 747 | 3.24 | 792 | 3.63 | 833 | 4.04 | 872 | 4.45 | 909 | 4.83 | 945 | 5.20 | 979 | 5.56 | 1016 | 5.97 |
| 8000 | 467 | 1.66 | 528 | 2.00 | 593 | 2.38 | 653 | 2.81 | 708 | 3.15 | 757 | 3.53 | 801 | 3.95 | 843 | 4.39 | 881 | 4.82 | 918 | 5.22 | 953 | 5.59 | 988 | 5.96 | 1025 | 6.37 |
| 8500 | 483 | 1.88 | 544 | 2.22 | 608 | 2.65 | 667 | 3.10 | 720 | 3.44 | 768 | 3.85 | 812 | 4.30 | 852 | 4.78 | 890 | 5.22 | 927 | 5.63 | 962 | 6.01 | 997 | 6.39 | 1034 | 6.81 |
| 9000 | 499 | 2.11 | 561 | 2.47 | 624 | 2.95 | 681 | 3.41 | 733 | 3.76 | 780 | 4.20 | 823 | 4.69 | 862 | 5.19 | 900 | 5.65 | 936 | 6.07 | 972 | 6.46 | 1007 | 6.85 | 1044 | 7.28 |
| 9500 | 516 | 2.36 | 578 | 2.75 | 640 | 3.26 | 696 | 3.73 | 746 | 4.10 | 792 | 4.58 | 834 | 5.11 | 873 | 5.64 | 910 | 6.12 | 946 | 6.54 | 982 | 6.93 | 1018 | 7.34 | 1055 | 7.78 |
| 10,000 | 534 | 2.64 | 596 | 3.06 | 657 | 3.60 | 711 | 4.07 | 760 | 4.48 | 805 | 5.00 | 845 | 5.57 | 884 | 6.12 | 921 | 6.61 | 957 | 7.03 | 992 | 7.43 | 1028 | 7.86 | 1066 | 8.32 |
| 10,500 | 553 | 2.93 | 615 | 3.39 | 674 | 3.95 | 727 | 4.44 | 775 | 4.90 | 817 | 5.46 | 857 | 6.06 | 895 | 6.62 | 932 | 7.12 | 967 | 7.55 | 1003 | 7.96 | 1039 | 8.40 | 1077 | 8.89 |
| 11,000 | 572 | 3.24 | 634 | 3.74 | 692 | 4.31 | 744 | 4.83 | 789 | 5.35 | 830 | 5.95 | 869 | 6.58 | 907 | 7.16 | 943 | 7.65 | 978 | 8.09 | 1013 | 8.51 | 1050 | 8.98 | 1089 | 9.49 |
| 11,500 | 592 | 3.58 | 653 | 4.12 | 711 | 4.70 | 760 | 5.27 | 803 | 5.85 | 843 | 6.49 | 881 | 7.13 | 918 | 7.71 | 954 | 8.21 | 989 | 8.65 | 1025 | 9.10 | 1062 | 9.59 | 1101 | 10.12 |
| 12,000 | 613 | 3.95 | 674 | 4.53 | 729 | 5.14 | 776 | 5.75 | 818 | 6.39 | 857 | 7.06 | 894 | 7.71 | 930 | 8.30 | 965 | 8.80 | 1000 | 9.25 | 1036 | 9.71 | 1073 | 10.22 | - - - | - - - |
| 12,500 | 635 | 4.37 | 695 | 4.98 | 748 | 5.62 | 792 | 6.29 | 832 | 6.98 | 870 | 7.67 | 906 | 8.33 | 941 | 8.91 | 976 | 9.42 | 1011 | 9.87 | 1048 | 10.35 | - - - | - - - | - - - | - - - |

## BLOWER DATA

### DRIVE KIT SPECIFICATIONS

| Motor Efficiency | Nominal hp | Maximum hp | Drive Kit Number | RPM Range |
|---|---|---|---|---|
| Standard | 5 | 5.75 | 5 | 660 - 810 |
| Standard | 5 | 5.75 | 6 | 770 - 965 |
| Standard | 5 | 5.75 | 7 | 570 - 720 |
| Standard | 5 | 5.75 | 8 | 480 - 630 |
| Standard | 5 | 5.75 | 9 | 410 - 535 |
| Standard | 7.5 | 8.63 | 3 | 715 - 880 |
| Standard | 7.5 | 8.63 | 4 | 770 - 965 |
| Standard | 10 | 11.50 | 1 | 740 - 895 |
| Standard | 10 | 11.50 | 2 | 870 - 1045 |

NOTES

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 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.

For VFD applications, nominal motor output is also maximum usable motor output.

### FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE

| Air Volume cfm | Wet Indoor Coil | Electric Heat | Economizer | Filters | | Horizontal Roof Curb |
|---|---|---|---|---|---|---|
| | | | | MERV 8 | MERV 13 | |
| | in. w.g. | in. w.g. | in. w.g. | in. w.g. | in. w.g. | in. w.g. |
| 4000 | 0.04 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 |
| 4500 | 0.04 | 0.01 | 0.00 | 0.00 | 0.00 | 0.05 |
| 5000 | 0.05 | 0.01 | 0.00 | 0.00 | 0.00 | 0.06 |
| 5500 | 0.06 | 0.02 | 0.01 | 0.00 | 0.01 | 0.07 |
| 6000 | 0.07 | 0.02 | 0.01 | 0.00 | 0.02 | 0.08 |
| 6500 | 0.08 | 0.02 | 0.01 | 0.01 | 0.02 | 0.09 |
| 7000 | 0.09 | 0.03 | 0.02 | 0.01 | 0.03 | 0.10 |
| 7500 | 0.10 | 0.03 | 0.02 | 0.01 | 0.04 | 0.11 |
| 8000 | 0.11 | 0.03 | 0.02 | 0.01 | 0.04 | 0.13 |
| 8500 | 0.12 | 0.04 | 0.03 | 0.01 | 0.04 | 0.15 |
| 9000 | 0.13 | 0.04 | 0.04 | 0.01 | 0.04 | 0.17 |
| 9500 | 0.14 | 0.05 | 0.04 | 0.02 | 0.06 | 0.19 |
| 10,000 | 0.15 | 0.05 | 0.05 | 0.02 | 0.06 | 0.21 |
| 10,500 | 0.16 | 0.06 | 0.06 | 0.02 | 0.06 | 0.24 |
| 11,000 | 0.18 | 0.06 | 0.07 | 0.02 | 0.07 | 0.27 |
| 11,500 | 0.19 | 0.07 | 0.08 | 0.02 | 0.08 | 0.30 |
| 12,000 | 0.20 | 0.07 | 0.10 | 0.02 | 0.08 | 0.33 |
| 12,500 | 0.21 | 0.08 | 0.11 | 0.03 | 0.10 | 0.37 |

## BLOWER DATA

### POWER EXHAUST PERFORMANCE - STANDARD STATIC

| Return Duct Negative Static Pressure | Air Volume Exhausted |
|---|---|
| in. w.g. | cfm |
| 0.00 | 12,800 |
| 0.05 | 12,200 |
| 0.10 | 11,500 |
| 0.15 | 10,800 |
| 0.20 | 9900 |
| 0.25 | 9000 |
| 0.30 | 7900 |
| 0.35 | 6750 |
| 0.40 | 5450 |
| 0.45 | 4150 |
| 0.50 | 2900 |

### POWER EXHAUST - HIGH STATIC

| Air Volume cfm | Return Duct Negative Static Pressure - In. w.g. | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | 0.10 | | 0.20 | | 0.30 | | 0.40 | | 0.50 | | 0.60 | | 0.70 | | 0.80 | | 0.90 | | 1.0 | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 8500 | 487 | 0.43 | 501 | 0.44 | 521 | 0.46 | 548 | 0.49 | 584 | 0.53 | 625 | 0.58 | 667 | 0.64 | 708 | 0.70 | 746 | 0.75 | 783 | 0.81 | 818 | 0.87 |
| 9000 | 515 | 0.51 | 528 | 0.52 | 547 | 0.54 | 570 | 0.57 | 601 | 0.61 | 638 | 0.66 | 678 | 0.71 | 717 | 0.77 | 755 | 0.83 | 791 | 0.90 | 826 | 0.96 |
| 9500 | 544 | 0.60 | 556 | 0.61 | 573 | 0.63 | 594 | 0.66 | 620 | 0.69 | 652 | 0.74 | 689 | 0.80 | 727 | 0.86 | 765 | 0.93 | 800 | 0.99 | 834 | 1.05 |
| 10,000 | 572 | 0.70 | 584 | 0.71 | 599 | 0.73 | 618 | 0.76 | 641 | 0.79 | 669 | 0.83 | 702 | 0.89 | 738 | 0.95 | 774 | 1.02 | 810 | 1.09 | 843 | 1.15 |
| 10,500 | 601 | 0.81 | 612 | 0.82 | 626 | 0.84 | 643 | 0.87 | 663 | 0.90 | 688 | 0.94 | 718 | 0.99 | 750 | 1.05 | 785 | 1.12 | 819 | 1.19 | 853 | 1.27 |
| 11,000 | 629 | 0.93 | 640 | 0.95 | 653 | 0.97 | 668 | 0.99 | 687 | 1.02 | 709 | 1.06 | 735 | 1.11 | 764 | 1.16 | 796 | 1.23 | 830 | 1.31 | 862 | 1.38 |
| 11,500 | 658 | 1.06 | 668 | 1.08 | 680 | 1.10 | 694 | 1.12 | 711 | 1.15 | 731 | 1.19 | 754 | 1.24 | 780 | 1.29 | 810 | 1.36 | 841 | 1.43 | 872 | 1.50 |
| 12,000 | 686 | 1.21 | 696 | 1.22 | 707 | 1.24 | 721 | 1.27 | 736 | 1.30 | 754 | 1.34 | 774 | 1.38 | 798 | 1.43 | 825 | 1.49 | 853 | 1.56 | 883 | 1.64 |

## BLOWER DATA

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

| Air Volume cfm | Step-Down Diffuser | | | Flush Diffuser |
|---|---|---|---|---|
| | LARTD30/36S | | | LAFD30/36S |
| | 2 Ends Open | 1 Side/2 Ends Open | All Ends & Sides Open | |
| 7500 | 0.37 | 0.31 | 0.25 | 0.29 |
| 8000 | 0.42 | 0.36 | 0.29 | 0.34 |
| 8500 | 0.48 | 0.41 | 0.34 | 0.39 |
| 9000 | 0.55 | 0.47 | 0.39 | 0.44 |
| 9500 | 0.62 | 0.53 | 0.45 | 0.51 |
| 10,000 | 0.70 | 0.60 | 0.51 | 0.57 |
| 10,500 | 0.78 | 0.68 | 0.58 | 0.65 |
| 11,000 | 0.87 | 0.76 | 0.65 | 0.72 |
| 11,500 | 0.97 | 0.85 | 0.73 | 0.81 |
| 12,000 | 1.08 | 0.94 | 0.82 | 0.9 |

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

| Air Volume cfm | [1] Effective Throw Range - ft. | |
|---|---|---|
| | Step-Down | Flush |
| 9000 | 40 - 47 | 29 - 35 |
| 9500 | 43 - 50 | 33 - 41 |
| 10,000 | 46 - 54 | 37 - 46 |
| 10,500 | 50 - 58 | 42 - 51 |
| 11,000 | 53 - 61 | 46 - 56 |
| 11,500 | 55 - 64 | 50 - 61 |
| 12,000 | 58 - 67 | 54 - 66 |

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

## ELECTRICAL DATA

| Model | | LHT302H5M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Compressor 1 | Rated Load Amps | 46.5 | | | 21.2 | | | 16.9 | | |
| | Locked Rotor Amps | 335.5 | | | 141 | | | 109 | | |
| Compressor 2 | Rated Load Amps | 31.8 | | | 15 | | | 11.9 | | |
| | Locked Rotor Amps | 255 | | | 123 | | | 93.7 | | |
| Outdoor Fan Motors (6) | Full Load Amps (6 Non-ECM) | 3 | | | 1.5 | | | 1.2 | | |
| | Total | 18 | | | 9 | | | 7.2 | | |
| Standard Power Exhaust (3) 0.33 HP | Full Load Amps | 2.4 | | | 1.3 | | | 1 | | |
| | Total | 7.2 | | | 3.9 | | | 3 | | |
| High Static Power Exhaust (3) 2 HP | Full Load Amps | 7.5 | | | 3.4 | | | 2.7 | | |
| | Total | 22.5 | | | 10.2 | | | 8.1 | | |
| Service Outlet 115V GFI (amps) | | 15 | | | 15 | | | 20 | | |
| Indoor Blower Motor | HP | 5 | 7.5 | 10 | 5 | 7.5 | 10 | 5 | 7.5 | 10 |
| | Full Load Amps | 16.7 | 24.2 | 30.8 | 7.6 | 11 | 14 | 6.1 | 9 | 11 |
| [2] Maximum Overcurrent Protection (MOCP) | Unit Only | 150 | 175 | 175 | 70 | 80 | 80 | 60 | 60 | 60 |
| | With (3) 0.33 HP Standard Power Exhaust | 175 | 175 | 175 | 80 | 80 | 80 | 60 | 60 | 70 |
| | With High Static Power Exhaust (3) 2 HP | 175 | 200 | 200 | 80 | 90 | 90 | 70 | 70 | 70 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 125 | 133 | 139 | 59 | 62 | 65 | 47 | 50 | 52 |
| | With (3) 0.33 HP Standard Power Exhaust | 132 | 140 | 146 | 62 | 66 | 69 | 50 | 53 | 55 |
| | With High Static Power Exhaust (3) 2 HP | 148 | 155 | 162 | 69 | 72 | 75 | 55 | 58 | 60 |

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

## ELECTRIC HEAT DATA

| Model | | | LHT302H5M | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | | 208/230V - 3 Ph | | | | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Indoor Blower Motor - HP | | | 5 | | 7.5 | | 10 | | 5 | 7.5 | 10 | 5 | 7.5 | 10 |
| | Electric Heat Voltage | | 208V | 240V | 208V | 240V | 208V | 240V | 480V | 480V | 480V | 600V | 600V | 600V |
| [2] Maximum Overcurrent Protection (MOCP) | Unit+ Electric Heat | 30 kW | 225 | 225 | [4] 225 | 250 | [4] 225 | 250 | 110 | 110 | 110 | 90 | 90 | 90 |
| | | 45 kW | [4] 250 | [4] 300 | [4] 250 | [4] 300 | 300 | [4] 300 | 150 | 150 | 150 | 110 | 110 | 110 |
| | | 60 kW | [4] 250 | [4] 300 | 300 | [4] 300 | 300 | [4] 300 | 150 | 150 | 150 | 110 | 110 | 125 |
| | | 90 kW | 350 | [4] 350 | 350 | [4] 350 | [4] 350 | [4] 400 | 175 | 175 | 175 | 150 | 150 | 150 |
| [3] Minimum Circuit Ampacity (MCA) | Unit+ Electric Heat | 30 kW | 203 | 215 | 211 | 223 | 217 | 229 | 104 | 107 | 110 | 83 | 86 | 88 |
| | | 45 kW | 242 | 260 | 250 | 268 | 256 | 275 | 126 | 130 | 133 | 101 | 104 | 106 |
| | | 60 kW | 250 | 269 | 258 | 277 | 264 | 284 | 131 | 134 | 137 | 105 | 107 | 109 |
| | | 90 kW | 313 | 342 | 320 | 349 | 327 | 356 | 167 | 170 | 173 | 133 | 136 | 138 |
| [2] Maximum Overcurrent Protection (MOCP) | Unit+ Electric Heat and Standard Power Exhaust (3) 0.33 HP | 30 kW | [4] 225 | 250 | [4] 225 | 250 | 250 | 250 | 110 | 125 | 125 | 90 | 90 | 100 |
| | | 45 kW | [4] 250 | [4] 300 | 300 | [4] 300 | 300 | [4] 300 | 150 | 150 | 150 | 110 | 110 | 110 |
| | | 60 kW | 300 | [4] 300 | 300 | [4] 300 | 300 | [4] 300 | 150 | 150 | 150 | 110 | 125 | 125 |
| | | 90 kW | 350 | [4] 350 | [4] 350 | [4] 400 | [4] 350 | [4] 400 | 175 | 175 | 200 | 150 | 150 | 150 |
| [3] Minimum Circuit Ampacity (MCA) | Unit+ Electric Heat and Standard Power Exhaust (3) 0.33 HP | 30 kW | 211 | 223 | 218 | 230 | 225 | 237 | 108 | 111 | 114 | 86 | 89 | 91 |
| | | 45 kW | 250 | 268 | 257 | 275 | 264 | 282 | 130 | 134 | 137 | 104 | 107 | 109 |
| | | 60 kW | 257 | 277 | 265 | 284 | 272 | 291 | 135 | 138 | 141 | 108 | 110 | 112 |
| | | 90 kW | 320 | 349 | 327 | 356 | 334 | 363 | 171 | 174 | 177 | 136 | 139 | 141 |
| [2] Maximum Overcurrent Protection (MOCP) | Unit+ Electric Heat and High Static Power Exhaust (3) 2 HP | 30 kW | 250 | 250 | 250 | 250 | [4] 250 | [4] 300 | 125 | 125 | 125 | 100 | 100 | 100 |
| | | 45 kW | 300 | [4] 300 | 300 | [4] 300 | 300 | [4] 300 | 150 | 150 | 150 | 110 | 125 | 125 |
| | | 60 kW | 300 | [4] 300 | 300 | [4] 300 | [4] 300 | [4] 350 | 150 | 150 | 150 | 125 | 125 | 125 |
| | | 90 kW | [4] 350 | [4] 400 | 4 350 | [4] 400 | [4] 350 | [4] 400 | 200 | 200 | 200 | 150 | 150 | 150 |
| [3] Minimum Circuit Ampacity (MCA) | Unit+ Electric Heat and High Static Power Exhaust (3) 2 HP | 30 kW | 226 | 238 | 233 | 245 | 240 | 252 | 114 | 117 | 120 | 91 | 94 | 96 |
| | | 45 kW | 265 | 283 | 272 | 290 | 279 | 297 | 136 | 140 | 143 | 109 | 112 | 114 |
| | | 60 kW | 273 | 292 | 280 | 299 | 287 | 306 | 141 | 144 | 147 | 113 | 116 | 118 |
| | | 90 kW | 335 | 364 | 343 | 372 | 349 | 378 | 177 | 180 | 183 | 142 | 144 | 146 |

[1] Extremes of operating range are plus and minus 10% of line voltage.
[2] HACR type breaker or fuse.
[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.
[4] Factory installed circuit breaker not available.

## ELECTRIC HEAT CAPACITIES

| Volts Input | 30 kW | | | 45 kW | | | 60 kW | | | 90 kW | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages |
| 208 | 22.5 | 76,800 | 1 | 33.8 | 115,300 | 2 | 45.0 | 153,600 | 2 | 67.6 | 230,700 | 2 |
| 220 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 2 | 50.4 | 172,000 | 2 | 75.6 | 258,000 | 2 |
| 230 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 2 | 55.1 | 188,000 | 2 | 82.7 | 282,200 | 2 |
| 240 | 30.0 | 102,400 | 1 | 45.0 | 153,600 | 2 | 60.0 | 204,800 | 2 | 90.0 | 307,100 | 2 |
| 440 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 2 | 50.4 | 172,000 | 2 | 75.6 | 258,000 | 2 |
| 460 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 2 | 55.1 | 188,000 | 2 | 82.7 | 282,200 | 2 |
| 480 | 30.0 | 102,400 | 1 | 45.0 | 153,600 | 2 | 60.0 | 204,800 | 2 | 90.0 | 307,100 | 2 |
| 550 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 2 | 50.4 | 172,000 | 2 | 75.6 | 258,000 | 2 |
| 575 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 2 | 55.1 | 188,000 | 2 | 82.7 | 282,200 | 2 |
| 600 | 30.0 | 102,400 | 1 | 45.0 | 153,600 | 2 | 60.0 | 204,800 | 2 | 90.0 | 307,100 | 2 |

## ELECTRICAL ACCESSORIES — 25 TON

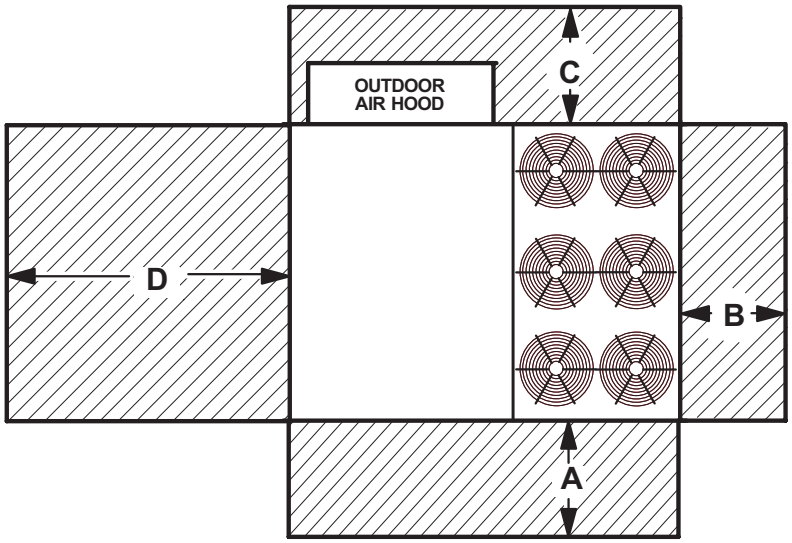
| Model | | | LHT302H5 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage - 60Hz - 3 phase | | | 208/230V | | | 460V | | | 575V | | |
| Indoor Blower Motor | | HP | 5 | 7.5 | 10 | 5 | 7.5 | 10 | 5 | 7.5 | 10 |
| Disconnect | | Unit Only | 54W86 | 54W87 | 54W87 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 |
| | Unit+ Electric Heat and Standard Power Exhaust (3) 0.33 HP | 0 kW | 54W86 | 54W87 | 54W87 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 |
| | | 30 kW | 54W86 | 54W87 | 54W87 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 | 54W85 |
| | | 45 kW | 54W87 | 54W87 | 54W87 | 54W85 | 54W85 | 54W86 | 54W85 | 54W85 | 54W85 |
| | | 60 kW | 54W87 | 54W87 | 54W87 | 54W86 | 54W86 | 54W86 | 54W85 | 54W86 | 54W86 |
| | | 90 kW | N/A | N/A | N/A | 54W86 | 54W86 | 54W86 | 54W86 | 54W86 | 54W86 |
| | Unit+ Electric Heat and High Static Power Exhaust (3) 2 HP | 0 kW | 54W87 | 54W87 | 54W87 | 54W85 | 54W86 | 54W86 | 54W85 | 54W85 | 54W85 |
| | | 30 kW | 54W87 | 54W87 | 54W87 | 54W85 | 54W86 | 54W86 | 54W85 | 54W85 | 54W85 |
| | | 45 kW | 54W87 | 54W87 | 54W87 | 54W86 | 54W86 | 54W86 | 54W85 | 54W85 | 54W85 |
| | | 60 kW | 54W87 | 54W87 | 54W87 | 54W86 | 54W86 | 54W86 | 54W86 | 54W86 | 54W86 |
| | | 90 kW | N/A | N/A | N/A | 54W86 | 54W86 | 54W87 | 54W86 | 54W86 | 54W86 |

**Disconnects - 54W85** - 80A
**54W86** - 150A
**54W87** - 250A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

## UNIT CLEARANCES

### Unit With Economizer

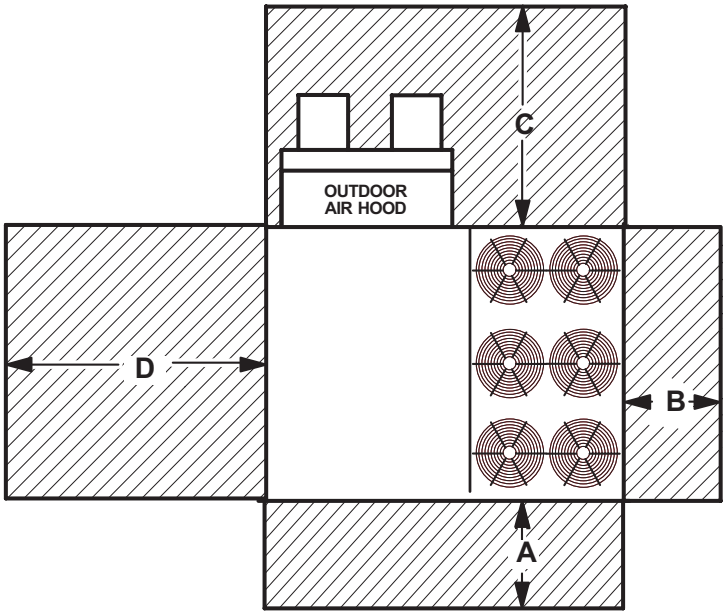



| [1] Unit Clearance | A | | B | | C | | D | | Top Clearance |
|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | in. | mm | |
| **Service Clearance** | 60 | 1524 | 36 | 914 | 36 | 914 | 66 | 1676 | Unobstructed |
| **Minimum Operation Clearance** | 45 | 1143 | 36 | 914 | 36 | 914 | 41 | 1041 | |

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.

### Unit With High Static Power Exhaust Fans




| [1] Unit Clearance | A | | B | | C | | D | | Top Clearance |
|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | in. | mm | |
| **Service Clearance** | 60 | 1524 | 36 | 914 | 80 | 2032 | 66 | 1676 | Unobstructed |
| **Minimum Operation Clearance** | 45 | 1143 | 36 | 914 | 80 | 2032 | 41 | 1041 | |

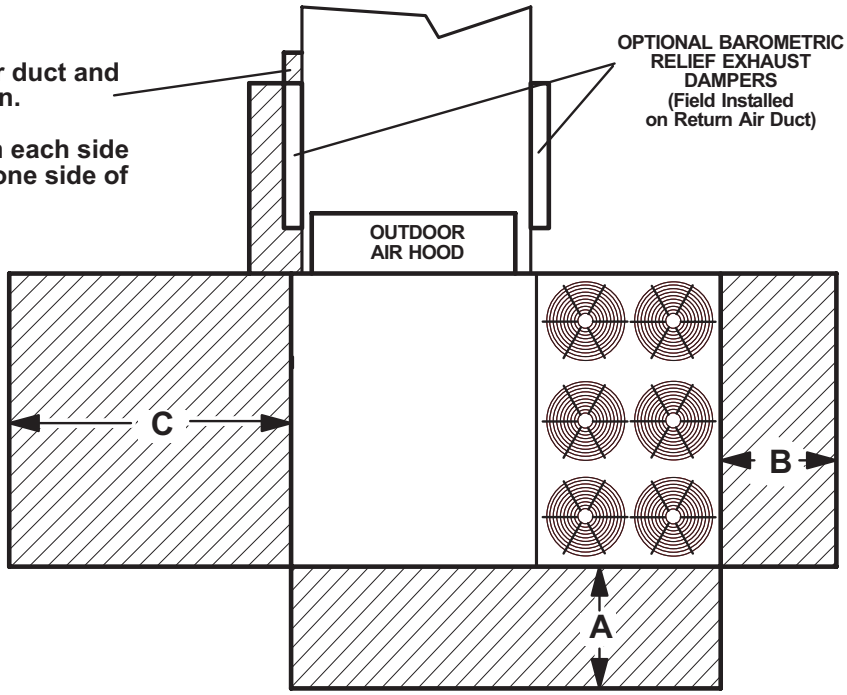
NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

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

## Unit With Horizontal Barometric Relief Dampers

**NOTE Allow adequate clearance for duct and barometric relief damper installation.**

**NOTE Dampers may be installed on each side of return air duct or end to end on one side of return air duct.**




| [1] Unit Clearance | A | | B | | C | | Top Clearance |
|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | |
| **Service Clearance** | 60 | 1524 | 36 | 914 | 66 | 1676 | Unobstructed |
| **Minimum Operation Clearance** | 45 | 1143 | 36 | 914 | 41 | 1041 | |

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

| Size | Octave Band Sound Power Levels dBA, re $10^{-12}$ Watts - Center Frequency - Hz | | | | | | | [1] Sound Rating Number (dBA) |
|---|---|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| 302 | 84 | 85 | 90 | 90 | 85 | 80 | 72 | 95 |

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

[1] Tested according to AHRI Standard 370-2001 test conditions (includes pure tone penalty).
Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

## WEIGHT DATA

| Size | Net | | Shipping | |
|---|---|---|---|---|
| | lbs. | kg | lbs. | kg |
| 302 Base Unit | 2997 | 1359 | 3207 | 1455 |
| 302 Max. Unit | 3509 | 1592 | 3719 | 1687 |

## FACTORY / FIELD INSTALLED OPTIONS AND ACCESSORIES - NET WEIGHTS

| Description | | lbs. | kg |
|---|---|---|---|
| **ECONOMIZER / OUTDOOR AIR / EXHAUST** | | | |
| **Economizer** | | 138 | 63 |
| **Barometric Relief** | | | |
| Downflow Barometric Relief Dampers | | 45 | 20 |
| Horizontal Barometric Relief Dampers | | 20 | 9 |
| **Outdoor Air Dampers** | | | |
| Damper Section (downflow) | Motorized | 72 | 33 |
| Damper Section (downflow) | Manual | 68 | 31 |
| **Outdoor Air Hood (downflow)** | | 76 | 34 |
| **Power Exhaust** | | | |
| | Standard Static | 99 | 45 |
| | High Static with or without VFD | 525 | 238 |
| **ELECTRIC HEAT** | | | |
| 30 KW | | 59 | 27 |
| 45 KW | | 76 | 34 |
| 60 KW | | 76 | 34 |
| 90 KW | | 84 | 38 |
| **COMBINATION COIL/HAIL GUARDS** | | | |
| All models | | 63 | 29 |
| **ROOF CURBS** | | | |
| **Hybrid Roof Curbs, Downflow** | | | |
| 14 in. height | | 205 | 93 |
| 18 in. height | | 235 | 107 |
| 24 in. height | | 270 | 123 |
| **Standard Curbs, Horizontal** | | | |
| 30 in. height | | 495 | 225 |
| 41 in. height | | 575 | 261 |
| **Insulation Kit for Horizontal Curbs** | | | |
| 30 in. height | | 45 | 21 |
| 41 in. height | | 55 | 25 |
| **CEILING DIFFUSERS** | | | |
| Step-Down | LARTD30/36S | 625 | 283 |
| Flush | LAFD30/36S | 625 | 283 |
| Transitions | LASRT30/36 | 85 | 39 |

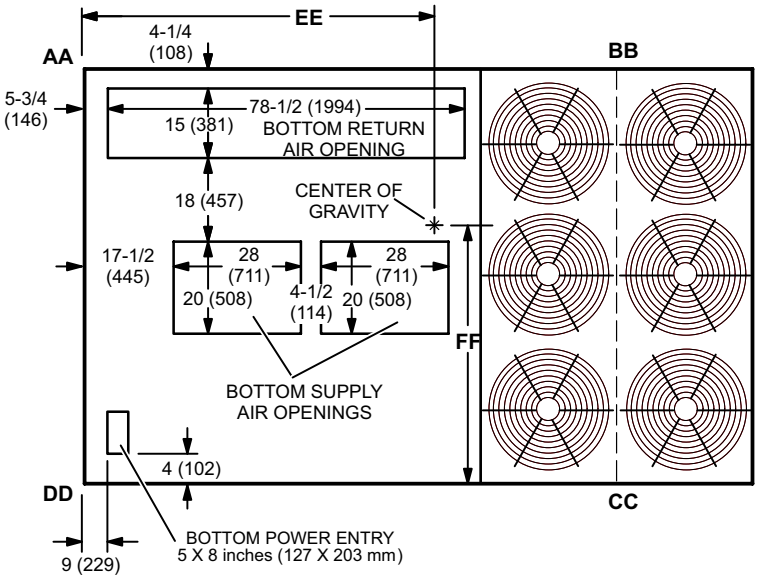
## DIMENSIONS — UNIT

### CORNER WEIGHTS / CENTER OF GRAVITY

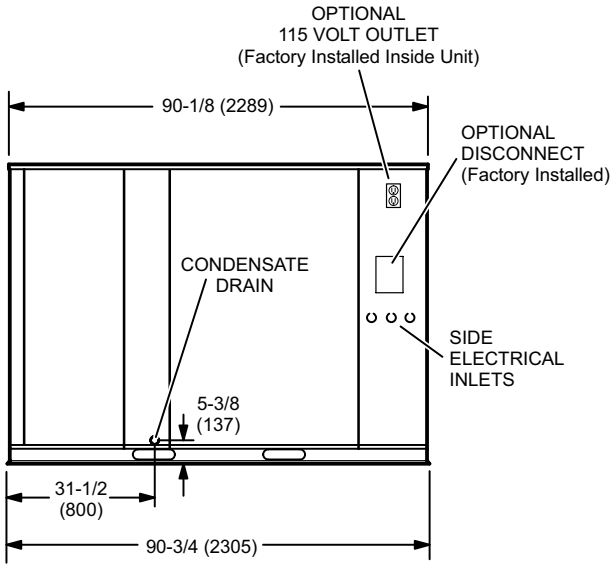
| Model | AA | | BB | | CC | | DD | | EE | | FF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lbs. | kg | lbs. | kg | lbs. | kg | lbs. | kg | in. | mm | in. | mm |
| LHT302 Base Unit | 610 | 277 | 612 | 278 | 880 | 399 | 895 | 406 | 60 | 1524 | 37 | 940 |
| LHT302 Max. Unit | 693 | 315 | 696 | 316 | 1001 | 454 | 1018 | 462 | 60 | 1524 | 37 | 940 |

Base Unit - The unit with NO INTERNAL OPTIONS.

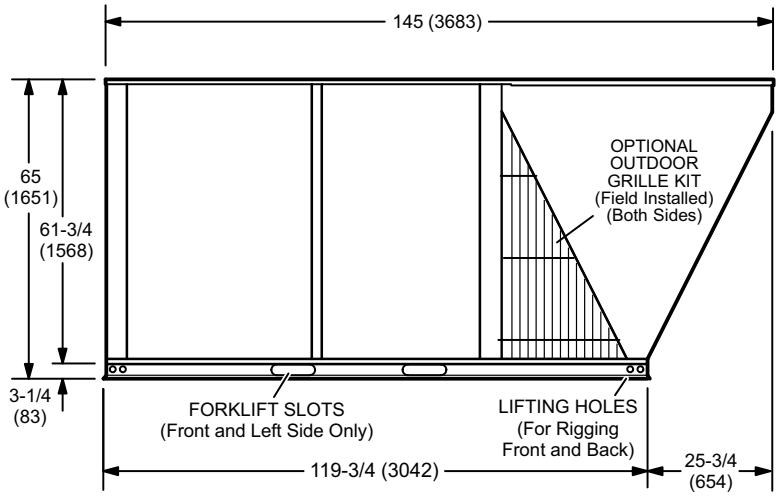
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust, Controls, etc.). Does not include accessories external to unit or high static power exhaust.




**TOP VIEW**

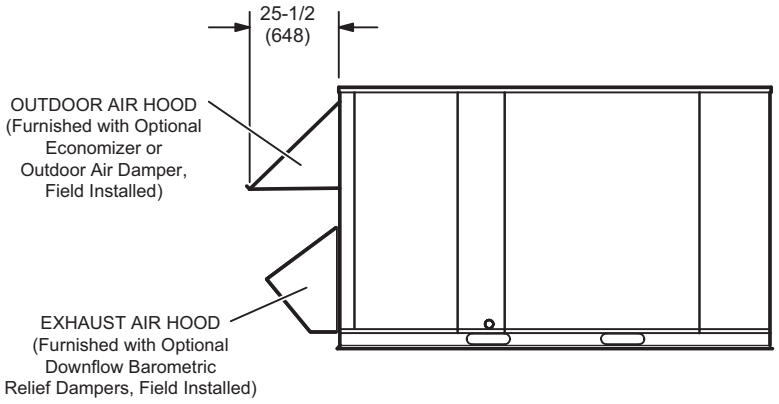



**END VIEW**

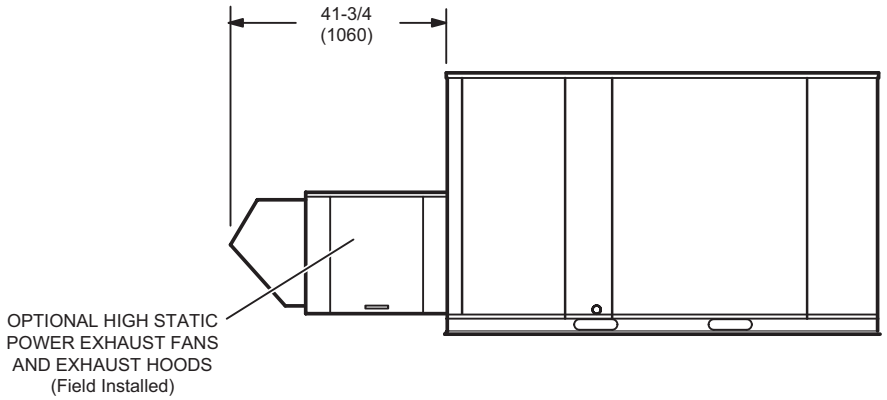



**SIDE VIEW**

## OUTDOOR AIR HOOD DETAIL

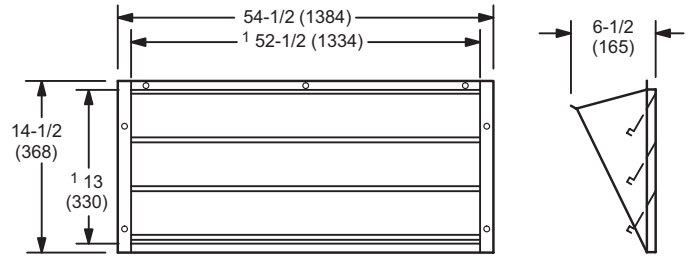



## OPTIONAL HIGH STATIC POWER EXHAUST FANS DETAIL



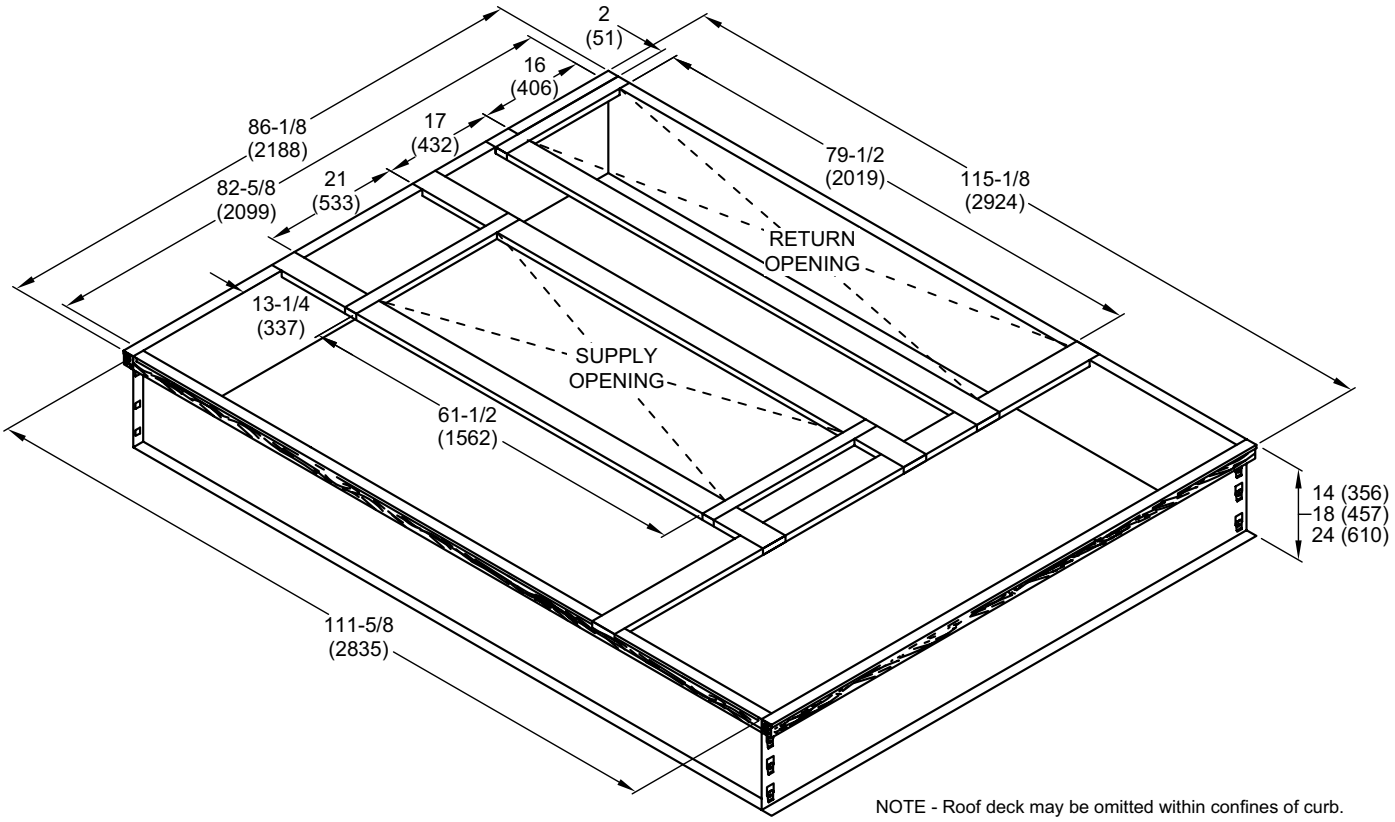

## OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD

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



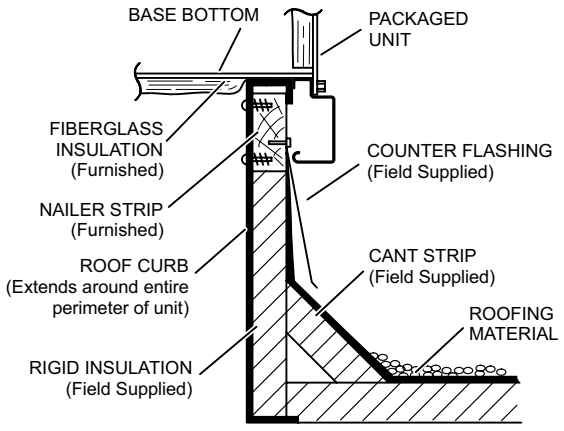

NOTE - Two furnished per order no.
[1] NOTE - Opening size required in return air duct.

### HYBRID ROOF CURBS - DOUBLE DUCT OPENING

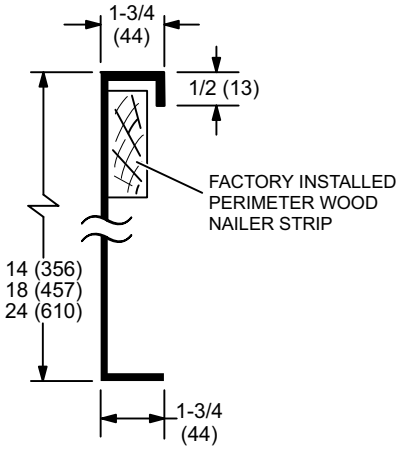



NOTE - Roof deck may be omitted within confines of curb.

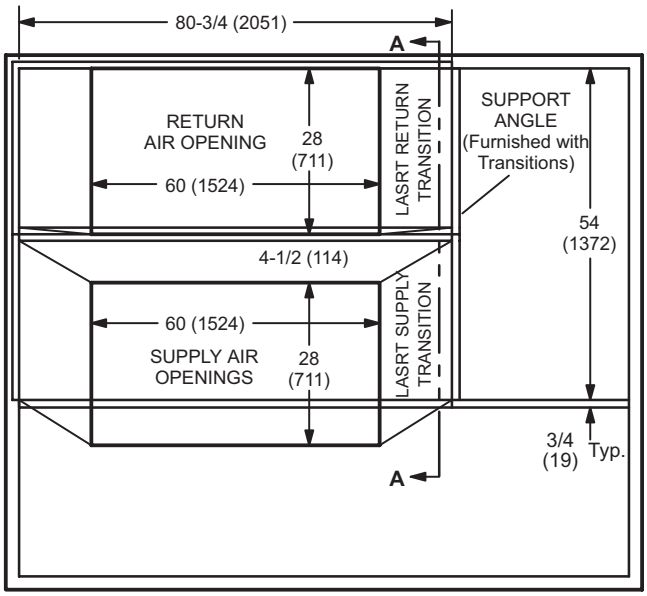
### TYPICAL FLASHING DETAIL FOR ROOF CURB




### DETAIL ROOF CURB

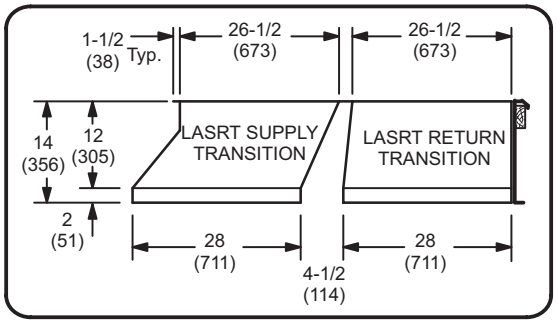


## ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS



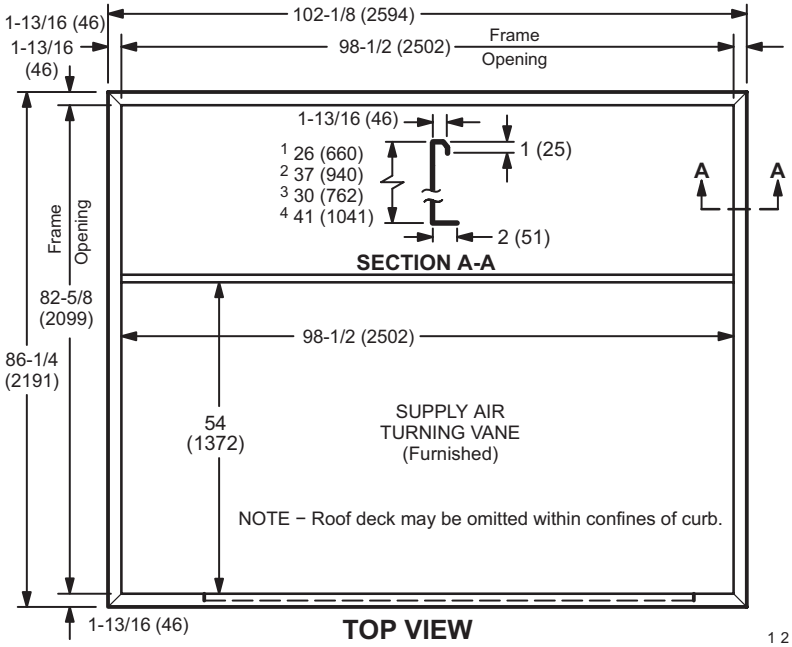

TOP VIEW

### TRANSITION DETAIL




SECTION B-B

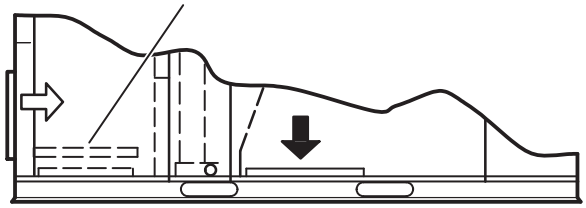
## HORIZONTAL ROOF CURBS − Requires Optional Horizontal Return Air Panel Kit



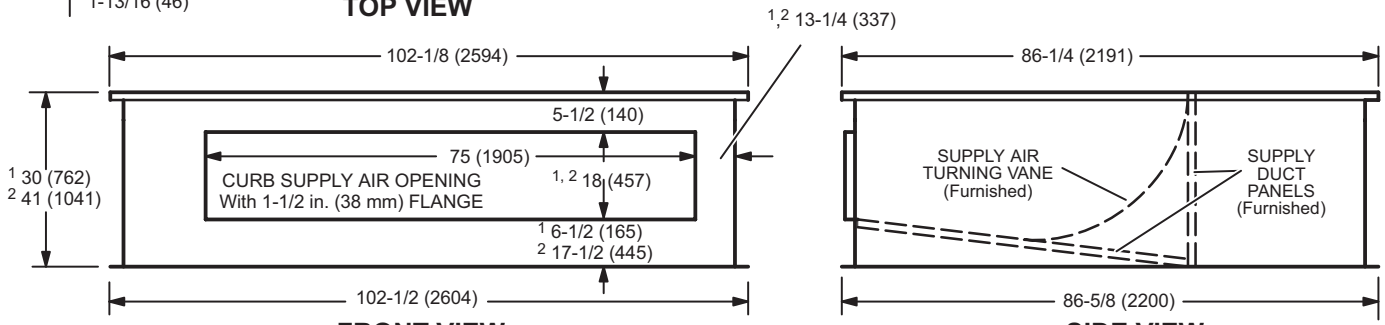

TOP VIEW

NOTE - 30 in. (762 mm) height Curb is designed for horizontal discharge when unit is mounted on a slab.
41 in. (1041 mm) height Curb is designed for horizontal discharge when unit is mounted on a rooftop.

PANEL TO COVER RETURN AIR OPENING IN BOTTOM OF UNIT
(Furnished With Optional Horizontal Return Air Panel Kit)



**SIDE VIEW**
**(PACKAGED UNIT)**

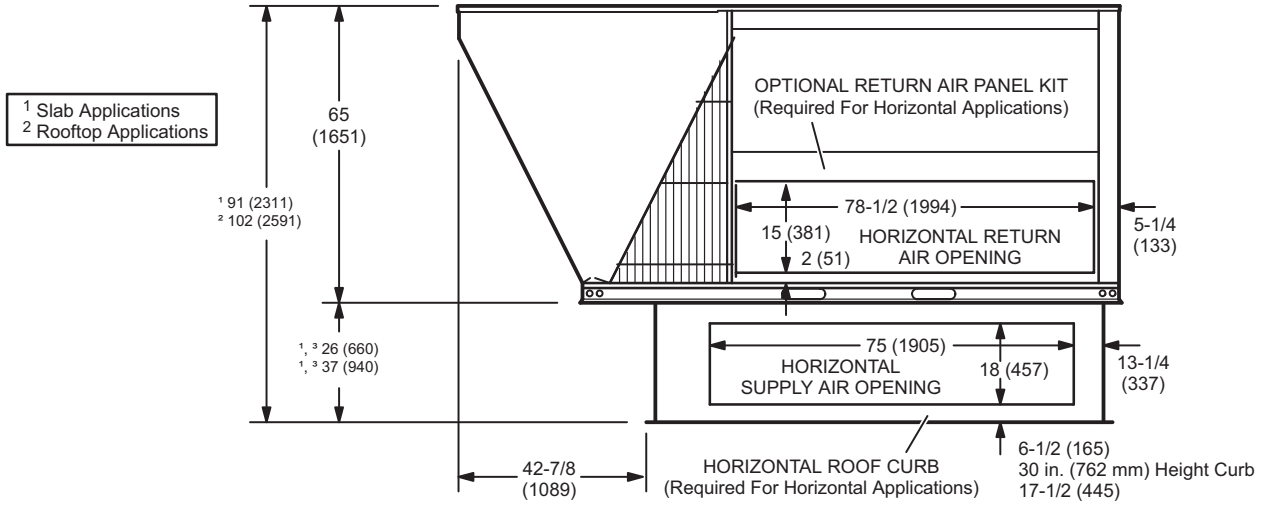



FRONT VIEW

SIDE VIEW

1 Slab Applications 2 Rooftop Applications

## HORIZONTAL SUPPLY AND RETURN AIR OPENINGS
## ROOFTOP UNIT WITH HORIZONTAL ROOF CURB

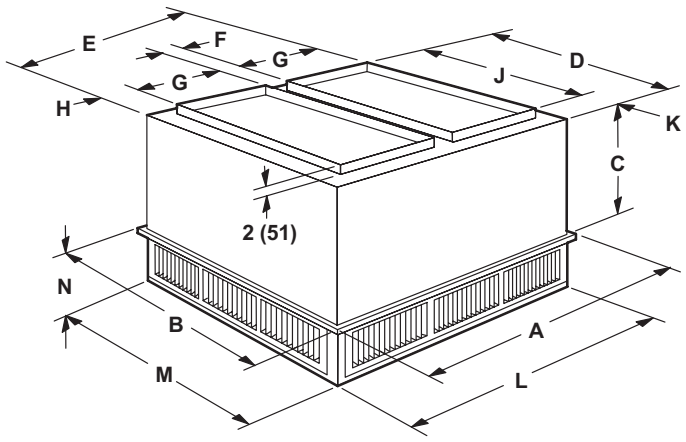



3 NOTE − Top of Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical Flashing Detail.

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

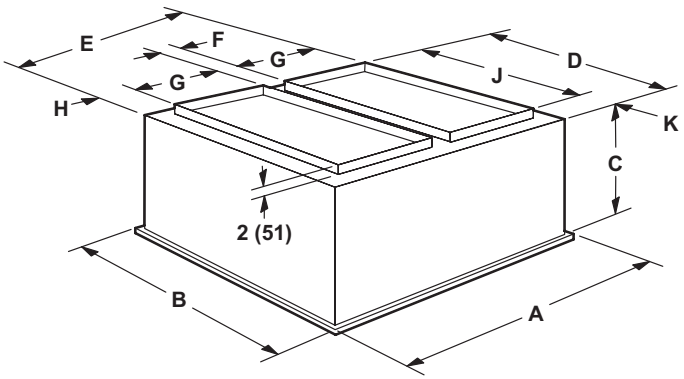
## COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

### STEP-DOWN CEILING DIFFUSER




| Model | | LARTD30/36S |
|---|---|---|
| A | in. | 65-5/8 |
| | mm | 1667 |
| B | in. | 65-5/8 |
| | mm | 1667 |
| C | in. | 40-1/2 |
| | mm | 1029 |
| D | in. | 63-1/2 |
| | mm | 1613 |
| E | in. | 63-1/2 |
| | mm | 1613 |
| F | in. | 4-1/2 |
| | mm | 114 |
| G | in. | 28 |
| | mm | 711 |
| H | in. | 1-1/2 |
| | mm | 38 |
| J | in. | 60 |
| | mm | 1524 |
| K | in. | 1-3/4 |
| | mm | 44 |
| L | in. | 63-1/2 |
| | mm | 1613 |
| M | in. | 63-1/2 |
| | mm | 1613 |
| N | in. | 12-1/8 |
| | mm | 308 |
| Duct Size | in. | 28 x 60 |
| | mm | 711 x 1524 |

### FLUSH CEILING DIFFUSER




| Model | | LAFD30/36S |
|---|---|---|
| A | in. | 65-5/8 |
| | mm | 1667 |
| B | in. | 65-5/8 |
| | mm | 1667 |
| C | in. | 40 |
| | mm | 1016 |
| D | in. | 63-1/2 |
| | mm | 1613 |
| E | in. | 63-1/2 |
| | mm | 1613 |
| F | in. | 4-1/4 |
| | mm | 108 |
| G | in. | 28 |
| | mm | 711 |
| H | in. | 1-5/8 |
| | mm | 32 |
| J | in. | 60 |
| | mm | 1524 |
| K | in. | 1-3/4 |
| | mm | 44 |
| Duct Size | in. | 28 x 60 |
| | mm | 711 x 1524 |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