



LCT

Enlight™ Rooftop Units
Standard and High Efficiency - 60 Hz

**COMMERCIAL
PRODUCT SPECIFICATIONS**

Bulletin No. 210976
January 2024
Supersedes September 2023



ENLIGHT



**ASHRAE 90.1
COMPLIANT**

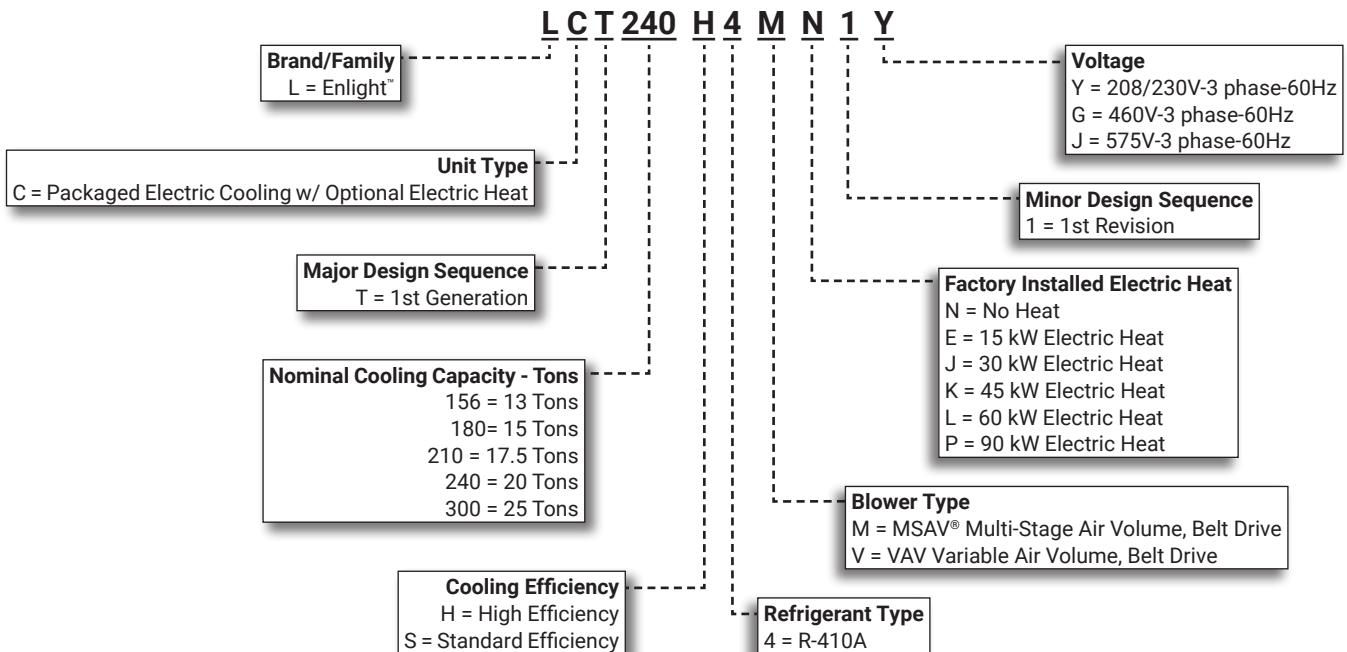
SMARTWIRE™ SYSTEM

13 to 25 Tons

Net Cooling Capacity - 150,000 to 270,000 Btuh

Optional Electric Heat - 15 to 90 kW

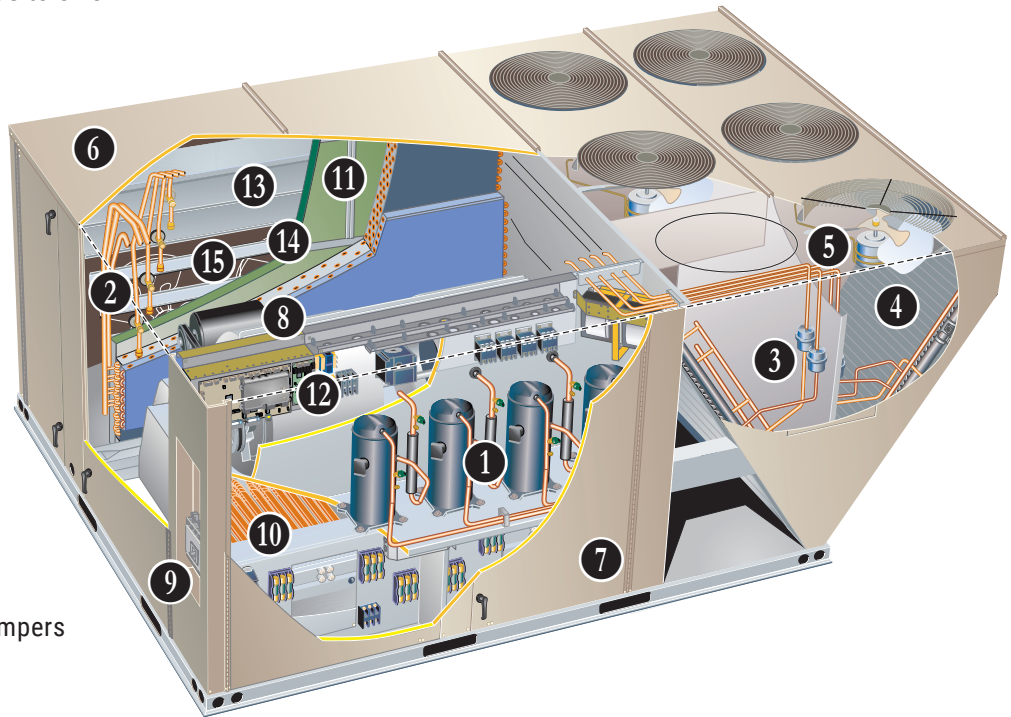
MODEL NUMBER IDENTIFICATION



FEATURE HIGHLIGHTS

Enlight™ rooftop units featuring the Lennox® CORE 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 Lennox has to offer.

1. Scroll Compressors
2. Thermal Expansion Valves
3. Filter/Driers
4. Environ™ Coil System
5. Outdoor Coil Fan Motors
6. Heavy Gauge Steel Cabinet
7. Hinged Access Panels
8. MSAV® Multi-Stage Air Volume or VAV Variable Air Volume Blower
9. Disconnect Switch (option)
10. Electric Heat (option)
11. Air Filters
12. Lennox® CORE Control System
13. Economizer (option)
14. Downflow Barometric Relief Dampers (option)
15. Power Exhaust Fans (option)



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Standard 340/360 certified
- ETL and CSA listed
- CSA certified energy ratings
- Unit and components ETL, NEC, and CEC bonded for grounding to meet safety standards for servicing
- All models are ASHRAE 90.1 energy efficiency compliant and meet or exceed requirements of Section 6.8
- All models meet DOE 2023 energy efficiency standards
- All models meet California Code of Regulations, Title 24 and ASHRAE 90.1 Section 6.4.3.10 requirements for staged airflow
- ISO 9001 Registered Manufacturing Quality System

WARRANTY

- Compressors - Limited five years
- Environ™ Coil System - Limited three years
- Lennox® CORE Unit Controller - Limited three years
- Variable Frequency Drive (VFD) (optional) - Limited five years
- High Performance Economizers (optional) - Limited five years
- All other covered components - Limited one year

FEATURES AND BENEFITS

COOLING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- System can operate from 0°F to 125°F without any additional controls

R-410A Refrigerant

- Non-chlorine based
- Ozone friendly

1 Compressor System

- Scroll compressor on all models for high performance, reliability, and quiet operation
- Resiliently mounted on rubber grommets for quiet operation

Compressor Crankcase Heaters

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

2 Thermal Expansion Valves

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

3 Filter/Driers

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

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

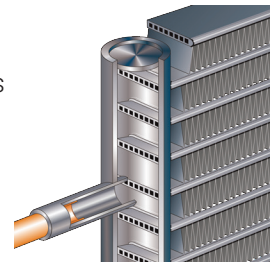
- Protects the compressors from low pressure conditions such as low refrigerant charge or low/no airflow

Indoor Coil Freeze Protection

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

4 Condenser Coil - Environ™ Coil System

- Lightweight, all aluminum brazed fin construction
- Constructed of three components
 - A flat extrusion tube
 - Fins in-between the flat extrusion tube
 - Two refrigerant manifolds



Environ™ Coil System Features:

- Improved heat transfer performance due to high primary surface area (flat tubes) versus secondary surface (fins)
- Smaller internal volume (reduced refrigerant charge)
- High durability
- All aluminum construction
- Fewer brazed joints
- Compact design
- Reduced unit weight
- Easy maintenance/cleaning
- Mounting brackets with rubber inserts secure coil to unit providing vibration dampening and corrosion protection
- Angled cabinet design protects coil from damage

FEATURES AND BENEFITS

COOLING SYSTEM (continued)

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
- Full-face, intertwined coil construction

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 or bottom drain connections

5 Outdoor Coil Fan Motors

- (1) ECM and (2) PSC (156 models)
- (2) ECM and (2) PSC (180 and 210 models)
- (2) ECM and (4) PSC (240 and 300 models)
- Thermal overload protected
- Fan speed is directly controlled by the Lennox® CORE Unit Controller
- 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

Field Installed

Condensate Drain Trap

- Available in copper or PVC

CABINET

6 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

7 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

Required Selections

Airflow Configuration

- Specify downflow or horizontal

FEATURES AND BENEFITS

CABINET (continued)

Factory Installed

Corrosion Protection

- Completely flexible immersed coating
- Electrodeposited dry film process (AST ElectroFin E-Coat)
- ASTM B117 / DIN 53167 Salt Spray - 15,000+ hours
- ASTM G85 Annex A3 SWAAT Modified Salt Spray - 3,000 hours
- VA Master Construction Specification Division 23 for High Humidity Installations
- CID AA-52474A (GSA)
- Indoor Corrosion Protection:
 - Coated coil
 - Coated reheat coil
 - Painted blower housing
 - Painted base
- Outdoor Corrosion Protection:
 - Coated coil
 - Painted outdoor base

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

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

8 Supply Air Blower

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

Supply Static Pressure Transducer (VAV Models Only)

- Sends information to the Lennox® CORE unit controller to control VFD blower speed
- Shipped with the unit for remote field installation in the supply duct

Required Selections

Select VAV Variable Air Volume or MSAV® Multi-Stage Air Volume

- VAV Variable Air Volume variable frequency drive (VFD) varies the air volume to maintain a constant duct static pressure
- MSAV® Multi-Stage Air Volume models stage 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 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 Lennox® CORE Unit Controller
- Unit is shipped from the factory with preset airflow
- MSAV® Multi-Stage Air Volume can be ordered with or without an Electronic Bypass Control
- If equipped with the bypass control the MSAV® Multi-Stage Air Volume features manual (default) or automatic electronic bypass control of the VFD
- In case of a VFD malfunction, a VFD alarm is generated by the Lennox® CORE Unit controller
- VFD can be manually bypassed to continue unit operation at full blower speed or the unit controller can be set to automatically switch to full blower speed if a VFD alarm is generated
- VFD has an operational range of -40 to 125°F outdoor air ambient temperature
- Lower operating costs are obtained when the blower is operated on lower speeds

FEATURES AND BENEFITS

BLOWER (continued)

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

Field Installed

Blower Belt Auto-Tensioner

- Provides proper tension to belt drive blower belt without the need for regular adjustments
- Maintains airflow and proper performance

ELECTRICAL

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

SmartWire™ 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 ensure correct phase at unit start-up
 - If phase is incorrect, the unit will not start and an alarm code reports to the unit controller
- Prevents unit start-up if the unit is the incorrect phase; unit start-ups in the wrong phase could lead to issues such as compressors functioning in reverse
- Monitors power supply voltage to ensure proper voltage
 - If voltage is not correct (over/under voltage conditions) the unit will not start and an alarm code reports 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

9 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, powered and wired
 - 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

Healthy Climate® 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

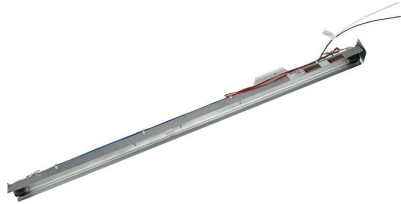
- Replaces existing pleated filter media
- Includes washable metal mesh screen and metal frame with clip for holding replaceable non-pleated filter

Field Installed

Healthy Climate® High Efficiency MERV 16 Air Filters

- Disposable MERV 16 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency
- 2 inch pleated filters

Healthy Climate® UVC Germicidal Light Kit



- Germicidal lamps emit ultra-violet (UV-C) energy, which has been proven to be effective in reducing microbes such as viruses, bacteria, yeasts, and molds
- UV-C energy greatly reduces the growth and proliferation of mold and other bioaerosols (bacteria and viruses) on illuminated surfaces (particularly coil and drain pan)
- Destroys the organism or controls its ability to reproduce
- Field installed in the blower/evaporator coil section
- Magnetic safety interlock terminates power when access panels are removed
- All necessary hardware for installation is included
- Lamps operate on 110/230V-1ph power supply

NOTE - Step-down transformer may be ordered separately for 460V and 575V units.

- Approved by ETL

Indoor Air Quality (CO₂) Sensors

- Monitors CO₂ levels
- Reports to the Lennox® CORE Control, which adjusts economizer dampers as needed

Needlepoint Bipolar Ionization (NPBI) Kit

- NPBI technology integrates with system controls for effective air treatment
- Ionization has been shown to effectively reduce harmful pathogens, pollutants and odors

NOTE - Please visit www.sciencedirect.com for additional information.

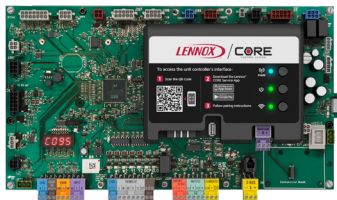
- Brush-type ionizer introduces a high concentration of both positive and negative ions into the airstream
- The bipolar ions are then dispersed into the occupied space through the duct system proactively reducing the airborne contaminants
- Ions travel within the building air stream and attach to particles, pathogens, and gas molecules, making them larger and easier to capture in the filtration system
- UL 2998 certified for zero ozone emission

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

CONTROL SYSTEM

LENNOX® CORE CONTROL SYSTEM



12 The Lennox® CORE Control System is designed to accelerate equipment install and service. Standard with all Enlight™ rooftop units, control system integrates key technologies that lower installation costs, drive system efficiency, and protect your investments.

The Lennox® CORE Unit Controller is a microprocessor-based controller that provides flexible control of all unit functions.

CORE 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 CORE 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 Lennox® CORE 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
- Humiditrol™ Operation
- Enhanced Dehumidification (Latent Demand Control without 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)
- Lennox S-BUS
- Compatibility with Lennox Wireless Room Sensors
- 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
- PC Interface connects the Lennox® CORE Unit Controller to a PC with the Lennox Unit Controller Software

NOTE - Lennox® CORE Control System features vary with the type of rooftop unit in which the control is installed.

CONTROL SYSTEM

LENNOX® CORE CONTROL SYSTEM (continued)

Controls Options

Factory or Field Installed

Blower Proving Switch

- Monitors blower operation, shuts down unit if blower fails

Dirty Filter Switch

- Senses static pressure increase and issues alarm if necessary

Fresh Air Tempering

- Used in applications with high outside air requirements
- Controller energizes the first stage heat as needed to maintain a minimum supply air temperature for comfort, regardless of the thermostat demand
- When ordered as a factory option, sensor ships with the unit for field installation

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

Interoperability via BACnet® or LonTalk® Protocols

- Communication compatible with third-party automation systems that support the BACnet Application Specific Controller device profile, LonMark® Space Comfort Controller functional profile, or LonMark Discharge Air Controller functional profile

Commercial Control Systems

Field Installed

Thermostats

- Control system and thermostat options, see page 15

OPTIONS / ACCESSORIES

ECONOMIZER

- Economizer operation is set and controlled by the Lennox® CORE unit controller
- Simple plug-in connections from Economizer to unit controller for easy installation
- All Enlight™ 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
- Downflow or Horizontal with Outdoor Air Hood
- 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 2019 Building Energy Efficiency Standards.

NOTE - Refer to Installation Instructions for complete setup information.

Differential Sensible Control

- Factory setting
- Uses outdoor air and return air sensors that are furnished with the unit
- The Lennox® CORE 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

OPTIONS / ACCESSORIES

ECONOMIZER (continued)

Factory or Field Installed

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

- 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

Single Enthalpy 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 Lennox® CORE 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 (CO₂ 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 Lennox® CORE unit controller changes the Economizer position to help maintain a constant building pressure

NOTE - Not available with Demand Control Ventilation (CO₂ 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

15 Power Exhaust Fans

- Install internal to unit for downflow applications only with Economizer option
- Provides exhaust air pressure relief
- Interlocked to run when supply air blower is operating
- Fans run when outdoor air dampers are 50% open (adjustable)
- Motor is overload protected
- Dual propeller type fans are 20 in. diameter
- Five blades
- Two 1/3 hp motors
- SCCR rated

NOTE - Requires Economizer with furnished Outdoor Air Hood and Downflow Barometric Relief Dampers.

NOTE - All models are equipped with 2-stage power exhaust fans. Power exhaust operates in 1st stage (one fan) up to 70% of supply air blower speed. Both exhaust fans operate in 2nd stage when supply air blower speed is above 70% (adjustable) of full speed.

Field Installed

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

OPTIONS / ACCESSORIES

OUTDOOR AIR OPTIONS

Factory or Field Installed

Outdoor Air Damper

- Downflow or Horizontal
- Linked mechanical dampers
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Includes outdoor air hood
- Motorized model features fully modulating spring return damper motor with plug-in connection
- Manual model features parallel blade, gear-driven dampers with adjustable fixed position

NOTE - Manual Outdoor Air Damper is a field installed option only.

NOTE - Outdoor Air Hood is included when motorized damper is factory installed. Outdoor Air Hood is furnished with motorized or manual damper when ordered for field installation.

ROOF CURBS

Field Installed

- 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 8, 14, 18, and 24 inch heights

Adjustable Pitch Curb

- Fully adjustable pitch curbs (3/4 in. per foot in any direction) provide a level platform for rooftop units allowing flexible installations on roofs with uneven or sloped angles
- Interlocking tabs fasten corners together
- No tools required for assembly
- Hardware is furnished to connect upper curb with lower curb
- Available in 14 inch height

Horizontal

- Meet National Roofing Code requirements
- Converts unit from downflow to horizontal (side) air flow
- Return air is on unit
- Supply air is on curb
- See dimension drawings
- Available in 26, 30, 37, and 41 inch heights

NOTE - Requires Horizontal Return Air Panel Kit.

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

Adaptor Curbs (not shown)

- Curbs are regionally sourced
- Dimensions vary based upon the source

NOTE - Contact your local sales representative for a detailed cut sheet with applicable dimensions.

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

HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

OVERVIEW

NOTE - Humiditrol® Dehumidification System Only
Available for MSAV® Multi-Stage Air Volume
Models

- Factory installed option designed to control humidity
- Provides dehumidification on demand using ASHRAE 90.1 recommended method for comfort conditioning humidity control
- Unit comes equipped with one row reheat coil, solenoid valve

NOTE - A dehumidification demand from a relative humidity sensor, dehumidistat, a DDC controller or building automation system is required to control humidity.

BENEFITS

- Improves indoor air quality
- Helps prevent damage due to high humidity levels
- Improves comfort levels by reducing space humidity levels

OPERATION

No Dehumidification Demand

- The unit will operate conventionally whenever there is a demand for cooling or heating and no dehumidification demand
- Free cooling is only permitted when there is no demand for dehumidification

Dehumidification Demand Only

- The Unit Controller is factory set at 60% relative humidity setpoint and can be adjusted at the Unit Controller or with optional Unit Controller Software

NOTE - Controls are not furnished and must be ordered extra.

- Reheat operation will initiate on a dehumidification demand and does not require a cooling demand
- Unit will operate in the dehumidification mode until the relative humidity of the conditioned space is below the setpoint
- Reheat coil is sized to provide 68°F to 75°F supply air during reheat operation
- This reduces sensible cooling capacity and extends compressor run time to control humidity when the cooling load is low
- A solenoid valve diverts hot gas from the compressor to the reheat coil
- Cooled and dehumidified air from the evaporator is reheated as it passes through the reheat coil
- De-superheated and partially condensed refrigerant continues to the outdoor condenser coil where condensing is completed
- Unit will continue to operate in this mode until the dehumidification demand is satisfied

Dehumidification and Cooling Demand (Thermostat/ Room Sensor Application)

- If both a dehumidification and a full cooling load demand occur, the system will operate in cooling until the cooling demand is satisfied
- Then the system will energize the dehumidification mode

Options/Accessories

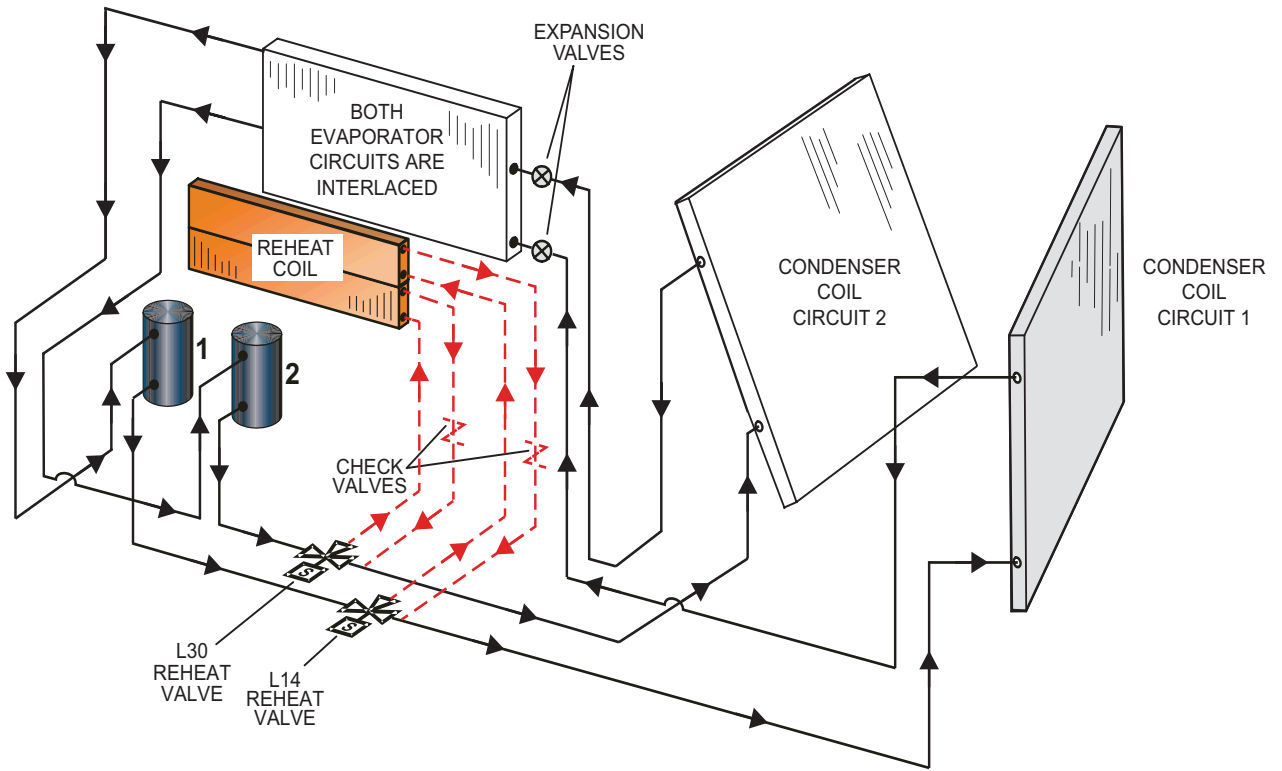
Humidity Sensor Kit

- Remote Mounted Humidity sensor required with factory installed Humiditrol® Dehumidification Option or Supermarket reheat field selectable option

HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

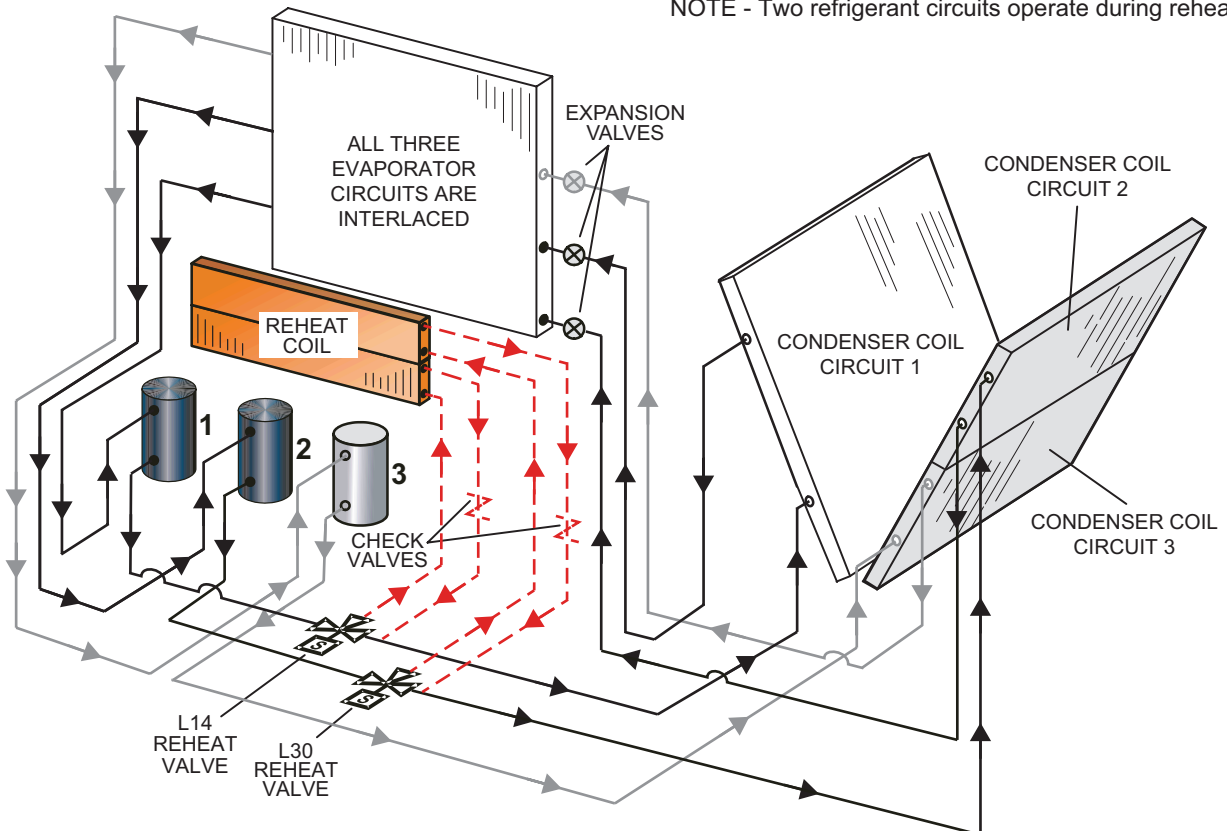
REFRIGERANT SCHEMATIC (156 MODEL ONLY)

NOTE - Two refrigerant circuits operate during reheat.



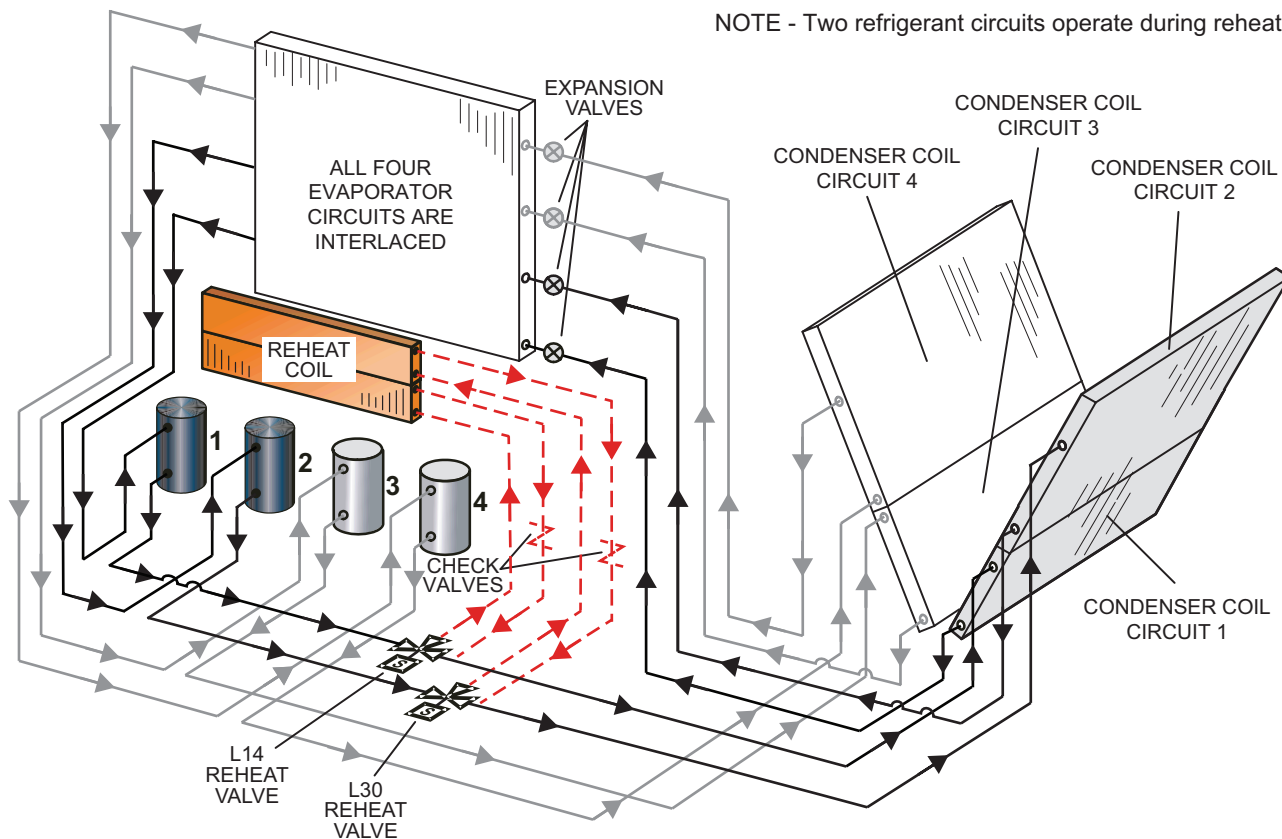
REFRIGERANT SCHEMATIC (180 MODEL ONLY)

NOTE - Two refrigerant circuits operate during reheat.



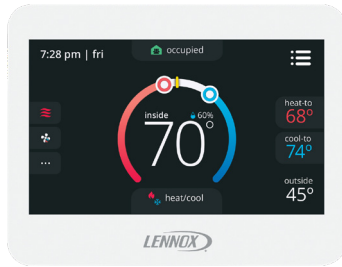
REFRIGERANT SCHEMATIC (210, 240 and 300 MODELS ONLY)

NOTE - Two refrigerant circuits operate during reheat.



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 CO₂
- 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

Wireless/Wired Temperature/Humidity Room Sensor (LCS-5030)



- Simple Push-Button Override
- Variable Speed System Control (On Compatible Units)
- Up To 4 Heat / 4 Cool
- AA Battery / 24VAC Powered
- Bluetooth™ Mesh Operation
- SBUS Wired Operation
- Automatic Sensor Averaging
- Locking Hex Screw

Wireless Repeater for LCS-5030



- Extends Effective Range of Wireless Sensor (LCS-5030)
- 24VAC Only
- Locking Hex Screw

NOTE - Wireless only.

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Wired Temperature/Humidity Room Sensor (Non-Communicating)



- Terminal blocks for wiring connections
- Five-wire sensor connection
- Off-white plastic enclosure
- Non-adjustable
- Relative humidity range: 0 -100%
- +/- 3% Accuracy

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Description	Catalog No.
CS8500 Commercial 7 Day Programmable Thermostat	
CS8500 7-Day Thermostat	No CO ₂ Sensing 17G75
	With CO ₂ Sensing 17G76
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	500 ft. box 27M19
22 AWG, yellow jacket, rated at 75°C, 300V, Plenum rated	1000 ft. box 94L63
Insulation - Low smoke PVC, NEC, CMP	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
Temperature/Humidity Room Sensors	
LCS-5030 Wireless/Wired Temperature/Humidity Room Sensor	21L07
Wireless Repeater for LCS-5030	21L09
A335MT13AE1 Wired Temperature/Humidity Room Sensor (Non-Communicating)	21W06

¹ Up to nine of the same type remote temperature sensors can be connected in parallel.

² 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.

156 MODELS (2 COMPRESSORS)

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)

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 at full cooling capacity 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

Y1 Demand:

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

Y2 Demand:

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

Dehumidification Mode

If a unit with Humiditrol® Dehumidification Option receives a call for dehumidification, economizer free cooling is locked out.

Call For Dehumidification, No Y1, Y2 demand:

1st and 2nd stage compressor operate at max cooling capacity, supply air blower operates at low cooling speed, and the reheat valves 1,2 are energized.

Y1 Demand With A Call For Dehumidification:

All compressors operate at max cooling capacity, supply air blower operates at high cooling speed, reheat valve 1 is energized, reheat valve 2 is deenergized.

Y2 Demand With A Call For Dehumidification:

All compressors operate at max cooling capacity, supply air blower operates at high cooling speed, and the reheat valves 1,2 are deenergized.

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

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)

¹ Unit Features An Economizer And Outdoor Air Is Suitable

Cooling - Thermostat or Zone Sensor Mode (Y1, Y2, Y3)

Y1 Demand:

All compressors are off, supply air blower is on medium 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 at part load capacity 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 is energized at full capacity while supply air blower stays on high cooling speed, economizer stays at maximum open.

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**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 at full capacity and supply air blower operates at high cooling speed.

Dehumidification Mode

If a unit with Humiditrol® Dehumidification Option receives a call for dehumidification, economizer free cooling is locked out.

Call For Dehumidification, No Y1, Y2 Demand:

Compressor 1,2 operates at full cooling capacity, supply air blower operates at low cooling speed, and the reheat valves 1,2 are energized.

Y1 Demand With A Call For Dehumidification:

Compressor 1,2 operates at full cooling capacity, supply air blower operates at low cooling speed and the reheat valve 1 is energized, reheat valve 2 is deenergized.

Y2 Demand With A Call For Dehumidification:

Compressor 1,2 operates at full cooling capacity, supply air blower operates at high cooling speed and the reheat valve 1 is energized, reheat valve 2 is deenergized.

Y3 Demand With A Call For Dehumidification:

Compressor 1,2 operates at full cooling capacity, supply air blower operates at high cooling speed, and the reheat valves 1,2 are deenergized.

180/210/240/300 MODELS (3 AND 4 COMPRESSORS)**UNIT OPERATION WITH 2-STAGE THERMOSTAT (2 COOLING STAGES, Y1, Y2)****SUPPLY AIR BLOWER SPEED**

Unit has the following supply air blower speed settings:

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

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, 1st stage compressors (compressor 1 and 2) are 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 RTU via a network connection.

Unit Does Not Feature An Economizer Or Outdoor Air Is Not Suitable**Y1 Demand:**

1st stage compressors operate and supply air blower operates at low cooling speed.

Y2 Demand:

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

Dehumidification Mode

If a unit with Humiditrol® Dehumidification Option receives a call for dehumidification, economizer free cooling is locked out.

Call For Dehumidification, No Y1, Y2 Demand:

1st stage compressors (1 & 2) operate, supply air blower operates at low cooling speed, and the reheat valves are energized.

Y1 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed and the reheat valves are energized.

Y2 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed, and the reheat valves are de-energized.

180/210/240/300 MODELS (3 AND 4 COMPRESSORS)**UNIT WITH 3-STAGE THERMOSTAT (3 COOLING STAGES, Y1, Y2, Y3) OR 3 COMPRESSORS MODELS - ZONE SENSOR (4 COOLING STAGES, Y1, Y2, Y3, Y4)****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)

¹ Unit Features An Economizer And Outdoor Air Is Suitable**3 Compressor Units****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, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

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

Y3 Demand:

Compressors 1 and 2 are energized while supply air blower stays on high cooling speed. After compressors are energized the economizer stays at maximum.

Y4 (Zone Sensor Only) Demand:

All compressors are energized and supply air blower stays on high cooling speed.

4 Compressor Units**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, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

If economizer stays at maximum open for 3 minutes then compressors 1 and 2 are energized while supply air blower stays on high cooling speed. After compressors are energized the economizer stays at maximum open.

Y3 Demand:

Compressors 1, 2 and 3 are energized and 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 RTU via a network connection.

**180/210/240/300 MODELS (3 AND 4 COMPRESSORS) (CONTINUED)
UNIT WITH 3-STAGE THERMOSTAT (3 COOLING STAGES, Y1, Y2, Y3) OR 3 COMPRESSORS MODELS - ZONE
SENSOR (4 COOLING STAGES, Y1, Y2, Y3, Y4)**

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

3 Compressor Units

Y1 Demand:

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

Y2 Demand:

Compressors 1 and 2 operate and supply air blower operates at medium cooling speed.

Y3 or Y4 (Zone Sensor Only) Demand:

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

4 Compressor Units

Y1 Demand:

Compressors 1 and 2 operate and supply air blower operates at low cooling speed.

Y2 Demand:

Compressors 1, 2, and 3 operate and supply air blower operates at medium cooling speed.

Y3 Demand:

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

Dehumidification Mode

If a unit with Humiditrol® Dehumidification Option receives a call for dehumidification, economizer free cooling is locked out.

Call For Dehumidification, No Y1, Y2, Y3 Demand:

Compressor 1 and 2 operate, supply air blower operates at low cooling speed, and both reheat valves are energized.

Y1 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed and both reheat valves are energized.

Y2 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed, and the reheat valve of refrigeration circuit 1 is energized while the reheat valve of refrigeration circuit 2 is de-energized.

Y3 or Y4 (Zone Sensor Only) Demand:

All compressors operate, supply air blower operates at high cooling speed, and both reheat valves are de-energized.

210/240/300 MODELS (4 COMPRESSORS)**UNIT WITH ZONE SENSOR (4 COOLING STAGES, Y1, Y2, Y3, Y4)****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)

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 and supply air blower operates at low cooling speed.

Y2 Demand:

Compressors 1 and 2 operate and supply air blower operates at medium-low cooling speed.

Y3 Demand:

Compressors 1, 2, and 3 operate and supply air blower operates at medium-high cooling speed.

Y4 Demand:

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

210/240/300 MODELS (4 COMPRESSORS) (CONTINUED)
UNIT WITH ZONE SENSOR (4 COOLING STAGES, Y1, Y2, Y3, Y4)**Dehumidification Mode**

If a unit with Humiditrol® Dehumidification Option receives a call for dehumidification, economizer free cooling is locked out.

Call For Dehumidification, No Y1, Y2, Y3, Y4 Demand:

Compressors 1 and 2 operate, supply air blower operates at high cooling speed, and both reheat valves are energized.

Y1 Demand With A Call For Dehumidification:

Compressors 1, 2, and 3 operate, supply air blower operates at high cooling speed and both reheat valves are energized.

Y2 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed, and both reheat valves are energized.

Y3 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed, and the reheat valve of compressor 1 is energized while the reheat valve of compressor 2 is de-energized.

Y4 Demand With A Call For Dehumidification:

All compressors operate, supply air blower operates at high cooling speed, and the reheat valves are de-energized.

Heating Mode (Electric Heat)

NOTE - HEATING MODE IS THE SAME FOR ALL CONTROL OPTIONS.

W1 Demand:

1st stage electric heat is energized and the supply air blower operates at heating speed.

W2 Demand:

2nd stage electric heat is energized and the supply air blower operates at heating speed (45, 60 or 90 kW electric heat option only).

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

MSAV® 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.

156 MODELS (2 COMPRESSORS)**UNITS IN ZONING APPLICATIONS OPERATING WITH DISCHARGE AIR CONTROL (2 HEAT / 3 COOL)****SUPPLY AIR BLOWER SPEED**

Unit has the following supply air blower speed settings:

- Ventilation Speed
- Cooling Speed - Fully modular based on supply duct static pressure
- Heating Speed
- Smoke Speed (Used only in smoke removal option - not discussed)

Cooling Mode (3 Cool)

- Discharge air temperature (DAT) can be used to control unit staging.
- DAT default setpoint = 55°F. Unit will stage compressors as required to maintain the setpoint when provided with Y1 thermostat demand.
- Increasing compressor stages provides more cooling capacity while decreasing compressor stages provides less cooling capacity.

¹ Unit Features An Economizer And Outdoor Air Is Suitable**Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, 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 operates to maintain duct static pressure, and economizer modulates to maintain 55°F supply air temperature. If economizer stays at maximum open for 3 minutes, compressor 1 is energized at part load capacity supply air blower operates to maintain duct static pressure. Economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

Y3 Demand:

Compressor 1 is energized at full capacity, supply air blower operates to maintain duct static pressure. Economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

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**Y1 Demand:**

- Compressor 1 operates at part load and supply air blower operates to maintain duct static pressure.

Y2 Demand:

Compressors 1 operates at part load with compressor 2 ON and supply air blower operates to maintain duct static pressure.

Y3 Demand:

All compressors operate at full capacity and supply air blower operates to maintain duct static pressure.

180 MODELS (3 COMPRESSORS)**VAV UNITS IN ZONING APPLICATIONS OPERATING WITH DISCHARGE AIR CONTROL (4 HEAT / 3 COOL)****SUPPLY AIR BLOWER SPEED**

Unit has the following supply air blower speed settings:

- Ventilation Speed
- Cooling Speed - Fully modular based on supply duct static pressure
- Heating Speed
- Smoke Speed (Used only in smoke removal option - not discussed)

Cooling Mode (3 Cool)

- Discharge air temperature (DAT) can be used to control unit staging.
- DAT default setpoint = 55°F. Unit will stage compressors as required to maintain the setpoint when provided with Y1 thermostat demand.
- Increasing compressor stages provides more cooling capacity while decreasing compressor stages provides less cooling capacity.

¹ Unit Features An Economizer And Outdoor Air Is Suitable**Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, 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 operates to maintain duct static pressure, 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 operates to maintain duct static pressure. After compressor 1 is energized, the economizer stays at maximum open.

Y3 Demand:

Compressor 1 and 2 are energized while supply air blower operates to maintain duct static pressure.

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 and supply air blower operates to maintain duct static pressure.

Y2 Demand:

Compressors 1 and 2 operate and supply air blower operates to maintain duct static pressure.

Y3 Demand:

Compressors 1, 2, and 3 operate and supply air blower operates to maintain duct static pressure.

Heating Mode (4 Heat)

- Room sensors (when connected to S-Bus) or Discharge air temperature (DAT) can be used to control up to four stages of electric heat.
- DAT default setpoint = 110°F. Unit will stage heating as required to maintain the setpoint when provided with W1 demand.
- Room sensor occupied setpoint default = 70°F. Unit will stage heating as required to maintain the setpoint.
- Increasing heat stages provides more heating capacity while decreasing heat stages provides less heating capacity.
- Blower set to Heating Speed for all stages.

210/240/300 MODELS (4 COMPRESSORS)**VAV UNITS IN ZONING APPLICATIONS OPERATING WITH DISCHARGE AIR CONTROL (4 HEAT / 4 COOL)****SUPPLY AIR BLOWER SPEED**

Unit has the following supply air blower speed settings:

- Ventilation Speed
- Cooling Speed - Fully modular based on supply duct static pressure
- Heating Speed
- Smoke Speed (Used only in smoke removal option - not discussed)

Cooling Mode (4 Cool)

- Discharge air temperature (DAT) can be used to control unit staging.
- DAT default setpoint = 55°F. Unit will stage compressors as required to maintain the setpoint when provided with Y1 thermostat demand.
- Increasing compressor stages provides more cooling capacity while decreasing compressor stages provides less cooling capacity.

¹ Unit Features An Economizer And Outdoor Air Is Suitable**Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, 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 operates to maintain duct static pressure, 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 operates to maintain duct static pressure. After compressor 1 is energized, the economizer stays at maximum open.

Y3 Demand:

Compressor 1 and 2 are energized while supply air blower operates to maintain duct static pressure.

Y4 Demand:

All compressors are energized while supply air blower operates to maintain duct static pressure.

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 and supply air blower operates to maintain duct static pressure.

Y2 Demand:

Compressors 1 and 2 operate and supply air blower operates to maintain duct static pressure.

Y3 Demand:

Compressors 1, 2, and 3 operate and supply air blower operates to maintain duct static pressure.

Y4 Demand:

All compressors operate and supply air blower operates to maintain duct static pressure.

**VAV UNITS IN ZONING APPLICATIONS OPERATING WITH DISCHARGE AIR CONTROL (4 HEAT / 4 COOL)
(CONTINUED)****Heating Mode (4 Heat)**

- Room sensors (when connected to S-Bus) or Discharge air temperature (DAT) can be used to control up to four stages of electric heat.
- DAT default setpoint = 110°F. Unit will stage heating as required to maintain the setpoint when provided with W1 demand.
- Room sensor occupied setpoint default = 70°F. Unit will stage heating as required to maintain the setpoint.
- Increasing heat stages provides more heating capacity while decreasing heat stages provides less heating capacity.
- Blower set to Heating Speed for all stages.

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).

OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No					
		156	180	210	240	300	
COOLING SYSTEM							
Condensate Drain Trap	PVC	22H54	X	X	X	X	X
	Copper	76W27	X	X	X	X	X
Drain Pan Overflow Switch		21Z07	OX	OX	OX	OX	OX
BLOWER - SUPPLY AIR							
Blower Option	VAV Variable Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (With VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
Motors	Belt Drive - 3 hp	Factory	O	O	O		
	Belt Drive - 5 hp	Factory	O	O	O	O	O
	Belt Drive - 7.5 hp	Factory		O	O	O	O
	Belt Drive - 10 hp	Factory				O	O
Drive Kits See Blower Data Tables for usage and selection	Kit #1 535-725 rpm	Factory	O	O	O		
	Kit #2 710-965 rpm	Factory	O	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	O	O
	Kit #4 850-1045 rpm	Factory	O	O	O	O	O
	Kit #5 945-1185 rpm	Factory	O	O	O	O	O
	Kit #6 850-1045 rpm	Factory		O	O	O	O
	Kit #7 945-1185 rpm	Factory		O	O	O	O
	Kit #8 1045-1285 rpm	Factory		O	O	O	O
	Kit #10 1045-1285 rpm	Factory				O	O
	Kit #11 1135-1365 rpm	Factory				O	O
	Blower Belt Auto-Tensioner	24B80	X	X	X	X	X
CABINET							
Combination Coil/Hail Guards		23U69	OX				
		23U71		OX	OX	OX	OX
Corrosion Protection		Factory	O	O	O	O	O
CONTROLS							
Blower Proving Switch		21Z10	OX	OX	OX	OX	OX
Commercial Controls	CPC Einstein Integration	Factory	O	O	O	O	O
	LonTalk® Module	54W27	OX	OX	OX	OX	OX
	Noval® LSE	Factory	O	O	O	O	O
Dirty Filter Switch		53W68	OX	OX	OX	OX	OX
Fresh Air Tempering		21Z08	OX	OX	OX	OX	OX
Smoke Detector - Supply or Return (Power board and one sensor)		22H56	OX	OX	OX	OX	OX
Smoke Detector - Supply and Return (Power board and two sensors)		22H57	OX	OX	OX	OX	OX

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

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OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No					
		156	180	210	240	300	
INDOOR AIR QUALITY							
Air Filters							
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 (Order 6 per unit)	MERV 8	54W67	OX	OX	OX	OX	OX
	MERV 13	52W40	OX	OX	OX	OX	OX
	MERV 16	21U42	X	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)		44N61	X	X	X	X	X
Indoor Air Quality (CO₂) Sensors							
Sensor - Wall-mount, off-white plastic cover with LCD display		77N39	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		23V86	X	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting		87N52	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting		87N54	X	X	X	X	X
CO ₂ Sensor Duct Mounting Kit - for downflow applications		85L43	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO ₂ sensors (77N39)		90N43	X	X	X	X	X
Needlepoint Bipolar Ionization (NPBI)							
Needlepoint Bipolar Ionization (NPBI) Kit		21U37	X	X	X		
		21U38				X	
		21U39					X
UVC Germicidal Light Kit							
¹ Healthy Climate® UVC Light Kit (110/230v-1ph)		21A94	X	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	10H20	X	X	X	X	X
	575V primary, 230V secondary	10H21	X	X	X	X	X
ELECTRICAL							
Voltage 60 Hz	208/230V - 3 phase	Factory	O	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O	O
HACR Circuit Breakers		Factory	O	O	O	O	O
² Short-Circuit Current Rating (SCCR) of 100kA (includes Phase/Voltage Detection)		Factory	O	O	O	O	O
³ Disconnect Switch (see Disconnect Table for usage, page 53)	80 amp	54W85	OX	OX	OX	OX	OX
	⁴ 150 amp	54W86	OX	OX	OX	OX	OX
	250 amp	54W87					OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V)	74M70	OX	OX	OX	OX	OX
	^{4, 5} 15 amp factory-wired and powered (208/230V, 460V)	Factory	O	O	O	O	O
	⁶ 20 amp non-powered, field-wired (208/230V, 460V, 575V)	67E01	X	X	X	X	X
	⁶ 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O	O
Weatherproof Cover for GFI		10C89	X	X	X	X	X

¹ Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V units. Alternately, 110V power supply may be used to directly power the UVC ballast(s).

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 not available with the SCCR option.

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

⁵ 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 - Catalog numbers shown are for ordering field installed accessories.

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OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No					
		156	180	210	240	300	
ELECTRIC HEAT							
15 kW	208/240V-3ph	22H66	OX	OX	OX	OX	OX
	460V-3ph	22H67	OX	OX	OX	OX	OX
	575V-3ph	22V35	OX	OX	OX	OX	OX
30 kW	208/240V-3ph	22H68	OX	OX	OX	OX	OX
	460V-3ph	22H69	OX	OX	OX	OX	OX
	575V-3ph	22V36	OX	OX	OX	OX	OX
45 kW	208/240V-3ph	22H72	OX	OX	OX	OX	OX
	460V-3ph	22H73	OX	OX	OX	OX	OX
	575V-3ph	22V38	OX	OX	OX	OX	OX
60 kW	208/240V-3ph	22H76	OX	OX	OX	OX	OX
	460V-3ph	22H77	OX	OX	OX	OX	OX
	575V-3ph	22V40	OX	OX	OX	OX	OX
90 kW	208/240V-3ph	22H80			OX	OX	OX
	460V-3ph	22H81			OX	OX	OX
	575V-3ph	22V42			OX	OX	OX

ECONOMIZER

High Performance Economizer (Approved for California Title 24 Building Standards AMCA Class 1A Certified)

High Performance Economizer (Downflow or Horizontal)	22J18	OX	OX	OX	OX	OX
Includes Economizer Dampers with Outdoor Air Hood						
Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately						
Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately						

Economizer Controls

Differential Enthalpy (Not for Title 24)	Order 2	21Z09	OX	OX	OX	OX	OX
Sensible Control	Sensor is Furnished	Factory	O	O	O	O	O
Single Enthalpy (Not for Title 24)		21Z09	OX	OX	OX	OX	OX
Global Control	Sensor Field Provided	Factory	O	O	O	O	O
Building Pressure Control		13J77	X	X	X	X	X
Outdoor Air CFM Control		13J76	X	X	X	X	X

Barometric Relief Dampers With Exhaust Hood

Downflow Barometric Relief Dampers	54W78	OX	OX	OX	OX	OX
Horizontal Barometric Relief Dampers	16K99	X	X	X	X	X

OUTDOOR AIR

Outdoor Air Dampers With Outdoor Air Hood

Motorized	22J27	OX	OX	OX	OX	OX
Manual	13U05	X	X	X	X	X

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OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No					
		156	180	210	240	300	
1 POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)							
Standard Static, SCCR Rated	208/230V	22H90	OX	OX	OX	OX	OX
	460V	22H91	OX	OX	OX	OX	OX
	575V	22V34	OX	OX	OX	OX	OX
HUMIDITROL® CONDENSER REHEAT OPTION - MSAV® MODELS ONLY							
Humiditrol Dehumidification Option	Factory		O	O	O	O	O
Humidity Sensor Kit, Remote mounted	17M50	X	X	X	X	X	X
<small>¹ Field installed Power Exhaust requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers with Exhaust Hood. Must be ordered separately.</small>							
ROOF CURBS							
Hybrid Roof Curbs, Downflow							
8 in. height	11F58	X	X	X	X	X	
14 in. height	11F59	X	X	X	X	X	
18 in. height	11F60	X	X	X	X	X	
24 in. height	11F61	X	X	X	X	X	
Adjustable Pitch Curb							
14 in. height	43W26	X	X	X	X	X	
Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit							
26 in. height - slab applications	11T89	X	X	X	X		
30 in. height - slab applications	11T90					X	
37 in. height - rooftop applications	11T96	X	X	X	X		
41 in. height - rooftop applications	11T97					X	
Insulation Kit For Standard Horizontal Roof Curbs							
For 26 in. Curb	73K32	X	X	X	X		
For 30 in. Curb	73K33					X	
For 37 in. Curb	73K34	X	X	X	X		
For 41 in. Curb	73K35					X	
Horizontal Return Air Panel Kit							
Required for Horizontal Applications with Roof Curb	87M00	X	X	X	X	X	
CEILING DIFFUSERS							
Step-Down - Order one	RTD11-185S	13K63	X	X			
	RTD11-275S	13K64			X	X	
Flush - Order one	FD11-185S	13K58	X	X			
	FD11-275S	13K59			X	X	
Transitions (Supply and Return) - Order one	C1DIFF33C-1	12X68	X	X			
	C1DIFF34C-1	12X70			X	X	

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

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O = Configure To Order (Factory Installed)

X = Field Installed

SPECIFICATIONS
13 TON

General Data		Nominal Tonnage	13 Ton	13 Ton
		Model Number	LCT156H4M	LCT156H4V
		Efficiency Type	High	High
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity - Btuh		152,000	152,000
	¹ Net Cooling Capacity - Btuh		148,000	148,000
	¹ AHRI Rated Air Flow - cfm		6000	6000
	Total Unit Power - kW		12.3	12.3
	¹ IEER (Btuh/Watt)		15.7	15.2
	¹ EER (Btuh/Watt)		12.0	12.0
Refrigerant Charge	Refrigerant Type		R-410A	R-410A
	Without Reheat Option	Circuit 1	10 lbs. 7 oz.	10 lbs. 7 oz.
		Circuit 2	8 lbs. 15 oz.	8 lbs. 15 oz.
	With Reheat Option	Circuit 1	10 lbs. 7 oz.	- - -
		Circuit 2	8 lbs. 15 oz.	- - -
Electric Heat (kW) Available - See page 30			15, 30, 45, 60 kW	
Compressor Type (number)			(1) Two-Stage Scroll, (1) Single-Stage Scroll	
Outdoor Coils	Net face area (total) - sq. ft.		41.4	41.4
	Number of rows		1	1
	Fins per inch		23	23
	Motor - horsepower		1/3	1/3
Outdoor Coil Fans	Motor Type		(1) ECM (2) PSC	(1) ECM (2) PSC
	Motor rpm		1075	1075
	Total Motor watts		1100	1100
	Diameter - (No.) in.		3 (24)	3 (24)
	Number of blades		3	3
	Total Air volume - cfm		12,000	12,000
	Total Motor watts		1100	1100
Indoor Coils	Net face area (total) - sq. ft.		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Number of rows		3	3
	Fins per inch		14	14
	Drain connection - No. and size		(1) 1in. FPT	(1) 1 in. FPT
	Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)	
³ Indoor Blower and Drive Selection	Nominal motor output		3 hp, 5 hp	
	Max. usable motor output (US)		3.45 hp, 5.75 hp	
	Motor - Drive kit number		3 hp Kit 1 535-725 rpm Kit 2 710-965 rpm	
			5 hp Kit 3 - 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm	
	Blower wheel nominal D x W - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 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 AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

² Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

³ 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.

NOTE - All units are limited to a motor service factor of 1.0.

SPECIFICATIONS
15 TON

General Data		Nominal Tonnage	15 Ton	15 Ton	
		Model Number	LCT180H4M	LCT180H4V	
		Efficiency Type	High	High	
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
Cooling Performance	Gross Cooling Capacity - Btuh		176,000	176,000	
	¹ Net Cooling Capacity - Btuh		172,000	172,000	
	¹ AHRI Rated Air Flow - cfm		5250	5250	
	Total Unit Power - kW		14.3	14.3	
	¹ IEER (Btuh/Watt)		15.2	15.2	
	¹ EER (Btuh/Watt)		12.0	12.0	
Refrigerant Charge	Refrigerant Type		R-410A	R-410A	
	Without Reheat Option	Circuit 1	6 lbs. 8 oz.	6 lbs.8 oz.	
		Circuit 2	6 lbs. 5 oz.	6 lbs. 5 oz.	
		Circuit 3	5 lbs. 8 oz.	5 lbs. 8 oz.	
	With Reheat Option	Circuit 1	6 lbs. 10 oz.	---	
		Circuit 2	6 lbs. 12 oz.	---	
		Circuit 3	5 lbs. 12 oz.	---	
Electric Heat (kW) Available - See page 30			15, 30, 45, 60 kW		
Compressor Type (number)			Scroll (3)	Scroll (3)	
Outdoor Coils	Net face area (total) - sq. ft.		55.2	55.2	
	Number of rows		1	1	
	Fins per inch		23	23	
Outdoor Coil Fans	Motor - horsepower		1/3	1/3	
	Motor Type		(2) ECM (2) PSC	(2) ECM (2) PSC	
	Motor rpm		1075	1075	
	Total Motor watts		1500	1500	
	Diameter - (No.) in.		(4) 24	(4) 24	
	Number of blades		3	3	
	Total Air volume - cfm		16,000	16,000	
Indoor Coils	Net face area (total) - sq. ft.		21.4	21.4	
	Tube diameter - in.		3/8	3/8	
	Number of rows		3	3	
	Fins per inch		14	14	
	Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT	
	Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)		
² Indoor Blower and Drive Selection	Nominal motor output		3 hp, 5 hp, 7.5 hp		
	Max. usable motor output (US)		3.45 hp, 5.75 hp, 8.62 hp		
	Motor - Drive kit number		3 hp Kit 1 535-725 rpm Kit 2 710-965 rpm		
			5 hp Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm		
			7.5 hp Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm		
	Blower wheel nominal D x W - in.		(2) 15 x 15	(2) 15 x 15	
	Filters	Type of filter		MERV 4, Disposable	
		Number and size - in.		(6) 24 x 24 x 2	
	Electrical characteristics			208/230V, 460V or 575V - 60 Hz - 3 phase	

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

¹ AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

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.

NOTE – All units are limited to a motor service factor of 1.0.

SPECIFICATIONS **17.5 TON**

General Data		Nominal Tonnage	17.5 Ton	17.5 Ton	
		Model Number	LCT210H4M	LCT210H4V	
		Efficiency Type	High	High	
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
Cooling Performance	Gross Cooling Capacity - Btuh		206,000	206,000	
	¹ Net Cooling Capacity - Btuh		200,000	200,000	
	¹ AHRI Rated Air Flow - cfm		6125	6125	
	Total Unit Power - kW		16.6	16.6	
	¹ IEER (Btuh/Watt)		16.2	15.7	
	¹ EER (Btuh/Watt)		12.0	12.0	
Refrigerant Charge	Refrigerant Type		R-410A	R-410A	
	Without Reheat Option	Circuit 1	6 lbs. 9 oz.	6 lbs. 9 oz.	
		Circuit 2	7 lbs. 3 oz.	7 lbs. 3 oz.	
		Circuit 3	5 lbs. 11 oz.	5 lbs. 11 oz.	
		Circuit 4	6 lbs. 2 oz.	6 lbs. 2 oz.	
	With Reheat Option	Circuit 1	7 lbs. 1 oz.	---	
		Circuit 2	8 lbs. 15 oz.	---	
		Circuit 3	5 lbs. 14 oz.	---	
Circuit 4		6 lbs. 7 oz.	---		
Electric Heat (kW) Available - See page 30			15, 30, 45, 60, 90 kW		
Compressor Type (number)			Scroll (4)	Scroll (4)	
Outdoor Coils	Net face area (total) - sq. ft.		55.2	55.2	
	Number of rows		1	1	
	Fins per inch		23	23	
Outdoor Coil Fans	Motor - horsepower		1/3	1/3	
	Motor Type		(2) ECM (2) PSC	(2) ECM (2) PSC	
	Motor rpm		1075	1075	
	Total Motor watts		1500	1500	
	Diameter - (No.) in.		(4) 24	(4) 24	
	Number of blades		3	3	
	Total Air volume - cfm		16,000	16,000	
	Indoor Coils	Net face area (total) - sq. ft.		21.4	21.4
Tube diameter - in.		3/8	3/8		
Number of rows		4	3		
Fins per inch		14	14		
Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT		
Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)			
² Indoor Blower and Drive Selection	Nominal motor output		3 hp, 5 hp, 7.5 hp		
	Max. usable motor output (US)		3.45 hp, 5.75 hp, 8.62 hp		
	Motor - Drive kit number		3 hp		
			Kit 1 535-725 rpm		
			Kit 2 710-965 rpm		
			5 hp		
			Kit 3 685-856 rpm		
			Kit 4 850-1045 rpm		
			Kit 5 945-1185 rpm		
			7.5 hp		
		Kit 6 850-1045 rpm			
		Kit 7 945-1185 rpm			
		Kit 8 1045-1285 rpm			
Blower wheel nominal D x W - in.		(2) 15 x 15	(2) 15 x 15		
Filters	Type of filter		MERV 4, Disposable		
	Number and size - in.		(6) 24 x 24 x 2		
Electrical characteristics		208/230V, 460V or 575V - 60 Hz - 3 phase			

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

¹ AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

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.

NOTE - All units are limited to a motor service factor of 1.0.

SPECIFICATIONS

20 TON

General Data		Nominal Tonnage	20 Ton	20 Ton
		Model Number	LCT240H4M	LCT240H4V
		Efficiency Type	High	High
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity - Btuh		236,000	236,000
	¹ Net Cooling Capacity - Btuh		228,000	228,000
	¹ AHRI Rated Air Flow - cfm		6400	6400
	Total Unit Power - kW		19.0	19.0
	¹ IEER (Btuh/Watt)		15.9	15.4
	¹ EER (Btuh/Watt)		12.0	12.0
Refrigerant Charge	Refrigerant Type		R-410A	R-410A
	Without Reheat Option	Circuit 1	6 lbs. 9 oz.	6 lbs. 9 oz.
		Circuit 2	6 lbs. 13 oz.	6 lbs. 13 oz.
		Circuit 3	5 lbs. 15 oz.	5 lbs. 15 oz.
		Circuit 4	6 lbs. 2 oz.	6 lbs. 2 oz.
	With Reheat Option	Circuit 1	6 lbs. 8 oz.	---
		Circuit 2	7 lbs. 15 oz.	---
		Circuit 3	6 lbs. 2 oz.	---
		Circuit 4	6 lbs. 11 oz.	---
	Electric Heat (kW) Available - See page 30			15, 30, 45, 60, 90 kW
Compressor Type (number)			Scroll (4)	Scroll (4)
Outdoor Coils	Net face area (total) - sq. ft.		55.2	55.2
	Number of rows		1	1
	Fins per inch		23	23
Outdoor Coil Fans	Motor - horsepower		1/3	1/3
	Motor Type		(2) ECM (4) PSC	(2) ECM (4) PSC
	Motor rpm		1075	1075
	Total Motor watts		1075 - 1950	1075 - 1950
	Diameter - (No.) in.		(6) 24	(6) 24
	Number of blades		3	3
	Total Air volume - cfm		20,000	20,000
	Indoor Coils	Net face area (total) - sq. ft.		21.4
Tube diameter - in.		3/8	3/8	
Number of rows		4	4	
Fins per inch		14	14	
Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT	
Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)		
³ Indoor Blower and Drive Selection		Nominal motor output		5 hp, 7.5 hp, 10 hp
	Max. usable motor output (US)		5.75 hp, 8.62 hp, 11.5 hp	
	Motor - Drive kit number		5 hp	
			Kit 3 685-856 rpm	
			Kit 4 850-1045 rpm	
			Kit 5 945-1185 rpm	
			7.5 hp	
			Kit 6 850-1045 rpm	
			Kit 7 945-1185 rpm	
			Kit 8 1045-1285 rpm	
		10 hp		
		Kit 7 945-1185 rpm		
		Kit 10 1045-1285 rpm		
		Kit 11 1135-1365 rpm		
Blower wheel nominal D x W - in.		(2) 15 x 15		
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Electrical characteristics			208/230V, 460V or 575V - 60 Hz - 3 phase	

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

¹ AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

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.

NOTE - All units are limited to a motor service factor of 1.0.

SPECIFICATIONS

25 TON

General Data		Nominal Tonnage	25 Ton	25 Ton	
		Model Number	LCT300S4M	LCT300S4V	
		Efficiency Type	Standard	Standard	
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
Cooling Performance	Gross Cooling Capacity - Btuh		281,000	281,000	
	¹ Net Cooling Capacity - Btuh		270,000	270,000	
	¹ AHRI Rated Air Flow - cfm		7500	7500	
	Total Unit Power - kW		26.2	26.2	
	¹ IEER (Btuh/Watt)		14.5	14.0	
	¹ EER (Btuh/Watt)		10.5	10.5	
Refrigerant Charge	Refrigerant Type		R-410A	R-410A	
	Without Reheat Option	Circuit 1	7 lbs. 13 oz.	7 lbs. 13 oz.	
		Circuit 2	6 lbs. 8 oz.	6 lbs. 8 oz.	
		Circuit 3	5 lbs. 12 oz.	5 lbs. 12 oz.	
		Circuit 4	5 lbs. 12 oz.	5 lbs. 12 oz.	
	With Reheat Option	Circuit 1	7 lbs. 7 oz.	---	
		Circuit 2	7 lbs. 2 oz.	---	
		Circuit 3	5 lbs. 15 oz.	---	
		Circuit 4	6 lbs. 1 oz.	---	
	Electric Heat (kW) Available - See page 30			15, 30, 45, 60, 90 kW	
Compressor Type (number)			Scroll (4)	Scroll (4)	
Outdoor Coils	Net face area (total) - sq. ft.		55.2	55.2	
	Number of rows		1	1	
	Fins per inch		23	23	
Outdoor Coil Fans	Motor - horsepower		1/3	1/3	
	Motor Type		(2) ECM (4) PSC	(2) ECM (4) PSC	
	Motor rpm		1075	1075	
	Total Motor watts		1075 - 1950	1075 - 1950	
	Diameter - (No.) in.		(6) 24	(6) 24	
	Number of blades		3	3	
	Total Air volume - cfm		20000	20000	
Indoor Coils	Net face area (total) - sq. ft.		21.40	21.40	
	Tube diameter - in.		3/8	3/8	
	Number of rows		4	4	
	Fins per inch		14	14	
	Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT	
	Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)		
² Indoor Blower and Drive Selection	Nominal motor output		5 hp, 7.5 hp, 10 hp		
	Max. usable motor output (US)		5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number		5 hp		
			Kit 3 685-856 rpm		
			Kit 4 850-1045 rpm		
			Kit 5 945-1185 rpm		
			7.5 hp		
			Kit 6 850-1045 rpm		
			Kit 7 945-1185 rpm		
			Kit 8 1045-1285 rpm		
		10 hp			
		Kit 7 945-1185 rpm			
		Kit 10 1045-1285 rpm			
		Kit 11 1135-1365 rpm			
Blower wheel nominal D x W - in.		(2) 15 x 15			
Filters	Type of filter		MERV 4, Disposable		
	Number and size - in.		(6) 24 x 24 x 2		
Electrical characteristics		208/230V, 460V or 575V - 60 Hz - 3 phase			

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

¹ AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

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.

NOTE - All units are limited to a motor service factor of 1.0.

RATINGS

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

13 TON - HIGH EFFICIENCY LCT156H4M/V (1 COMPRESSOR - PART LOAD)

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
63°F	1500	54.8	1.91	.78	.90	.98	52.1	2.21	.78	.91	1.00	49.2	2.55	.79	.92	1.00	45.6	2.94	.80	.93	1.00
	1800	57.7	1.90	.82	.94	1.00	55.0	2.20	.83	.95	1.00	51.9	2.54	.84	.96	1.00	48.1	2.93	.85	.98	1.00
	2100	60.1	1.89	.85	.97	1.00	57.4	2.20	.86	.99	1.00	54.3	2.53	.87	1.00	1.00	51.1	2.91	.89	1.00	1.00
67°F	1500	58.2	1.90	.61	.76	.87	55.5	2.20	.61	.76	.88	52.4	2.53	.61	.77	.89	48.9	2.92	.61	.78	.91
	1800	61.7	1.89	.64	.80	.91	58.8	2.19	.64	.80	.92	55.3	2.52	.64	.82	.94	51.5	2.91	.65	.83	.96
	2100	64.4	1.88	.67	.84	.95	61.3	2.18	.67	.84	.96	57.6	2.51	.68	.86	.98	53.9	2.90	.69	.87	1.00
71°F	1500	62.2	1.89	.47	.60	.73	59.3	2.19	.46	.60	.74	56.0	2.52	.45	.60	.74	52.3	2.91	.44	.60	.75
	1800	65.8	1.87	.48	.63	.77	62.7	2.18	.47	.63	.78	59.1	2.50	.46	.63	.79	55.1	2.89	.46	.64	.81
	2100	68.6	1.86	.49	.66	.81	65.3	2.16	.48	.66	.83	61.4	2.49	.48	.67	.84	57.5	2.88	.48	.68	.85

13 TON - HIGH EFFICIENCY LCT156H4M/V (2 COMPRESSORS - PART LOAD / FULL LOAD)

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
63°F	3000	118.1	7.21	.68	.82	.93	111.2	8.14	.68	.82	.95	103.4	9.21	.69	.84	.97	94.9	10.44	.70	.87	1.00
	4000	127.1	7.25	.73	.91	1.00	119.9	8.18	.76	.92	1.00	111.5	9.24	.76	.95	1.00	103.0	10.48	.78	.97	1.00
	5000	135.0	7.30	.81	.98	1.00	126.7	8.21	.83	1.00	1.00	119.1	9.28	.85	1.00	1.00	111.1	10.52	.86	1.00	1.00
67°F	3000	126.8	7.24	.53	.66	.77	119.0	8.16	.54	.66	.79	110.8	9.22	.53	.67	.81	101.8	10.45	.54	.68	.83
	4000	135.9	7.28	.57	.72	.87	127.5	8.20	.57	.73	.90	119.1	9.27	.58	.74	.91	109.1	10.47	.59	.77	.94
	5000	142.4	7.32	.62	.78	.95	133.3	8.23	.62	.80	.98	124.0	9.29	.63	.82	1.00	116.4	10.49	.64	.86	1.00
71°F	3000	133.4	7.25	.40	.52	.64	126.2	8.18	.39	.53	.63	117.6	9.23	.37	.52	.65	108.9	10.45	.37	.53	.66
	4000	144.6	7.31	.42	.57	.70	135.7	8.23	.41	.57	.71	126.8	9.29	.41	.56	.73	117.2	10.49	.39	.57	.74
	5000	150.5	7.34	.42	.61	.76	141.8	8.27	.42	.61	.78	132.3	9.33	.43	.62	.81	125.5	10.53	.41	.61	.82

13 TON - HIGH EFFICIENCY LCT156H4M (2 COMPRESSORS - FULL LOAD)

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
63°F	4160	144.1	8.33	.72	.86	.99	136.3	9.35	.73	.88	1.00	127.4	10.48	.74	.90	1.00	118.2	11.79	.76	.93	1.00
	5200	152.4	8.42	.77	.94	1.00	143.4	9.42	.79	.96	1.00	134.5	10.56	.81	.99	1.00	125.0	11.84	.83	1.00	1.00
	6240	158.6	8.49	.83	1.00	1.00	150.1	9.49	.85	1.00	1.00	141.1	10.62	.88	1.00	1.00	131.4	11.91	.91	1.00	1.00
67°F	4160	153.0	8.42	.57	.70	.84	144.5	9.42	.57	.71	.85	135.1	10.56	.58	.73	.87	124.8	11.84	.57	.73	.90
	5200	160.6	8.50	.60	.76	.91	150.5	9.48	.60	.78	.93	141.1	10.61	.60	.79	.96	129.8	11.88	.61	.83	.99
	6240	165.3	8.54	.64	.81	.98	155.4	9.53	.64	.85	1.00	144.5	10.64	.65	.87	1.00	133.8	11.92	.66	.91	1.00
71°F	4160	162.1	8.50	.42	.55	.67	152.1	9.50	.42	.56	.69	142.5	10.63	.42	.55	.70	132.8	11.91	.40	.56	.71
	5200	169.6	8.59	.44	.59	.74	159.6	9.58	.44	.59	.76	149.0	10.70	.44	.60	.78	137.9	11.96	.44	.62	.79
	6240	175.4	8.65	.46	.62	.79	164.3	9.63	.45	.65	.81	153.5	10.75	.45	.66	.83	142.6	12.02	.45	.67	.87

RATINGS

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

15 TON - HIGH EFFICIENCY LCT180H4M/V (1 COMPRESSOR - PART LOAD)

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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
cfm	kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW				
63°F	1600	57.9	2.66	.59	.74	.87	55.9	2.74	.60	.75	.89	53.2	3.13	.61	.77	.91	51.1	3.54	.62	.78	.93
	2000	61.4	2.42	.62	.79	.93	58.9	2.74	.63	.80	.95	56.3	3.13	.65	.82	.97	53.6	3.82	.66	.84	.99
	2400	63.8	2.40	.66	.84	.98	61.3	2.75	.67	.85	1.00	58.6	3.13	.68	.87	1.00	55.9	3.83	.70	.90	1.00
67°F	1600	60.6	2.41	.40	.55	.69	58.1	2.74	.40	.56	.70	55.8	3.13	.40	.56	.71	53.1	3.82	.40	.57	.73
	2000	63.9	2.40	.41	.58	.74	61.5	2.75	.42	.59	.76	58.9	3.13	.42	.60	.77	55.9	3.83	.43	.62	.80
	2400	66.4	2.40	.43	.62	.79	63.9	2.76	.44	.63	.81	60.9	3.13	.44	.65	.83	58.0	3.83	.45	.67	.86
71°F	1600	63.3	2.40	.21	.36	.51	60.9	2.75	.21	.36	.51	58.4	3.13	.20	.36	.52	55.8	3.83	.19	.37	.53
	2000	66.6	2.40	.20	.38	.54	64.2	2.76	.20	.38	.55	61.2	3.13	.20	.39	.56	58.4	3.83	.19	.39	.58
	2400	69.2	2.41	.21	.40	.58	66.7	3.04	.20	.41	.59	63.4	3.14	.20	.41	.61	60.9	3.84	.20	.42	.62

15 TON - HIGH EFFICIENCY LCT180H4M/V (2 COMPRESSORS - PART LOAD)

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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
cfm	kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW				
63°F	3200	111.1	6.56	0.72	0.85	0.97	105.4	7.67	0.74	0.87	0.98	99.7	8.32	0.75	0.89	0.99	93.8	9.37	0.76	0.91	1
	4000	117.1	6.58	0.77	0.91	1	111.2	7.7	0.78	0.93	1	104.9	8.34	0.8	0.96	1	98.5	9.38	0.82	0.98	1
	4800	121.4	6.6	0.81	0.97	1	115.3	7.72	0.83	0.98	1	109.8	8.36	0.85	0.99	1	103.1	9.4	0.87	1	1
67°F	3200	117.5	6.58	0.58	0.7	0.82	111.9	7.7	0.58	0.71	0.84	105.2	8.34	0.59	0.72	0.86	98.8	9.38	0.6	0.74	0.88
	4000	123.2	6.6	0.6	0.75	0.88	117.5	7.73	0.61	0.76	0.91	110.6	8.36	0.62	0.78	0.93	103.6	9.4	0.63	0.8	0.95
	4800	127.7	6.63	0.63	0.79	0.94	121.6	7.75	0.64	0.81	0.96	114.3	8.38	0.65	0.83	0.98	107.2	9.42	0.66	0.85	0.99
71°F	3200	122.4	6.6	0.43	0.56	0.68	116.9	7.73	0.43	0.57	0.69	110.4	8.36	0.44	0.57	0.71	104	9.4	0.44	0.58	0.72
	4000	129	6.63	0.45	0.59	0.72	123	7.76	0.45	0.6	0.74	116.4	8.39	0.45	0.61	0.76	109.4	9.42	0.46	0.62	0.78
	4800	134.1	6.66	0.45	0.62	0.77	127.8	7.78	0.46	0.63	0.79	120.5	8.41	0.46	0.64	0.81	112.6	9.44	0.47	0.66	0.83

15 TON - HIGH EFFICIENCY LCT180H4M/V (3 COMPRESSORS - FULL LOAD)

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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
cfm	kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW				
63°F	4800	175	10.34	0.72	0.84	0.95	166.4	11.33	0.72	0.85	0.97	157.6	12.73	0.74	0.87	0.99	148	14.32	0.76	0.89	1
	6000	181.8	10.39	0.76	0.9	1	174.4	11.37	0.78	0.92	1	164.7	12.77	0.79	0.94	1	154.5	14.35	0.81	0.96	1
	7200	189.8	10.14	0.81	0.95	1	180.5	11.41	0.82	0.97	1	170.9	12.8	0.84	0.99	1	161.1	14.38	0.87	1	1
67°F	4800	182.7	10.37	0.57	0.69	0.81	173.2	11.36	0.57	0.7	0.82	163.9	12.76	0.58	0.73	0.84	154.1	14.33	0.58	0.73	0.86
	6000	190.5	10.13	0.59	0.74	0.87	181.5	11.4	0.61	0.75	0.89	171.3	12.8	0.62	0.77	0.91	160.8	14.36	0.63	0.79	0.94
	7200	197.3	10.18	0.64	0.78	0.93	187.8	11.74	0.64	0.8	0.95	176.7	12.82	0.64	0.82	0.97	166.4	14.4	0.67	0.84	0.99
71°F	4800	192.3	10.15	0.43	0.56	0.67	182.5	11.41	0.43	0.57	0.68	172.9	12.81	0.43	0.57	0.7	162.2	14.37	0.43	0.59	0.72
	6000	200.5	10.2	0.45	0.59	0.72	191.1	11.76	0.45	0.6	0.74	180.2	12.85	0.44	0.61	0.76	169	14.41	0.45	0.61	0.78
	7200	206.7	10.24	0.46	0.62	0.77	196.1	11.79	0.46	0.63	0.79	185.2	12.87	0.45	0.65	0.81	173.4	14.43	0.47	0.67	0.83

RATINGS

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

20 TON - HIGH EFFICIENCY LCT240H4M/V (1 COMPRESSOR- PART LOAD)

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
63°F	1600	57.8	2.54	.76	.88	.96	55.4	2.91	.77	.89	.96	53.1	3.30	.78	.90	.97	50.5	3.73	.79	.91	.98
	2000	60.9	2.56	.80	.91	.98	58.4	2.91	.81	.92	.99	55.8	3.31	.81	.93	.99	52.8	3.73	.82	.94	1.00
	2400	64.3	2.79	.83	.94	.99	60.8	2.92	.83	.95	1.00	58.1	3.31	.84	.96	1.00	55.0	3.74	.86	.97	1.00
67°F	1600	60.2	2.55	.52	.71	.85	58.0	2.92	.51	.71	.86	55.4	3.31	.51	.72	.87	52.8	3.73	.51	.73	.88
	2000	64.4	2.79	.53	.75	.89	61.0	2.92	.53	.76	.89	58.4	3.31	.53	.78	.90	55.3	3.74	.54	.79	.92
	2400	66.8	2.80	.55	.79	.92	63.5	2.94	.56	.81	.93	60.3	3.32	.56	.82	.94	57.3	3.75	.57	.83	.95
71°F	1600	61.9	2.79	.27	.46	.65	60.6	2.92	.26	.47	.66	58.1	3.31	.25	.46	.67	55.3	3.74	.24	.47	.68
	2000	67.1	2.80	.26	.48	.70	63.9	2.94	.25	.49	.71	60.7	3.32	.25	.50	.72	58.0	3.75	.24	.50	.74
	2400	69.7	2.82	.26	.51	.76	66.3	2.95	.25	.52	.76	63.2	3.34	.25	.52	.78	59.8	3.76	.24	.53	.80

20 TON - HIGH EFFICIENCY LCT240H4M/V (2 COMPRESSORS - PART LOAD)

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
63°F	3200	122.2	5.09	.70	.82	.93	117.3	5.83	.71	.83	.95	111.7	6.60	.72	.85	.96	105.8	7.45	.73	.86	.98
	4000	130.6	5.59	.74	.87	.99	123.6	5.84	.75	.89	.99	117.8	6.62	.76	.91	1.00	110.9	7.46	.77	.93	1.00
	4800	135.2	5.61	.77	.92	1.00	128.3	5.87	.78	.94	1.00	121.7	6.64	.80	.96	1.00	115.5	7.48	.82	.98	1.00
67°F	3200	128.3	5.59	.57	.68	.79	123.6	5.84	.57	.69	.80	118.2	6.62	.57	.69	.81	112.0	7.47	.58	.70	.83
	4000	137.4	5.62	.59	.72	.84	130.7	5.88	.59	.73	.86	124.2	6.65	.60	.74	.87	117.7	7.49	.60	.75	.90
	4800	141.4	5.18	.61	.76	.90	135.5	5.91	.61	.76	.91	128.6	6.67	.62	.78	.93	121.9	7.51	.63	.80	.95
71°F	3200	135.6	5.61	.44	.55	.66	129.4	5.87	.43	.55	.67	123.3	6.64	.43	.56	.67	116.8	7.49	.43	.56	.68
	4000	142.6	5.19	.44	.57	.70	136.7	5.91	.44	.58	.71	130.0	6.68	.44	.59	.72	123.5	7.52	.44	.59	.73
	4800	148.2	5.22	.45	.60	.73	141.7	5.95	.45	.60	.75	135.3	6.70	.45	.61	.76	127.9	7.54	.45	.62	.78

20 TON - HIGH EFFICIENCY LCT240H4M/V (3 COMPRESSORS - PART LOAD)

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
63°F	4800	172.2	9.99	.65	.79	.91	163.0	11.27	.65	.83	.93	154.7	12.69	.67	.84	.95	145.4	14.29	.67	.85	.96
	6000	181.7	10.04	.68	.86	.97	172.8	11.31	.70	.88	.98	163.5	12.72	.72	.89	1.00	154.2	14.32	.74	.91	1.00
	7200	190.1	10.08	.76	.91	1.00	180.2	11.34	.77	.93	1.00	170.3	12.75	.79	.94	1.00	159.8	14.34	.83	.96	1.00
67°F	4800	182.8	10.04	.48	.61	.74	172.9	11.31	.47	.63	.76	162.9	12.71	.48	.63	.81	152.6	14.31	.48	.64	.83
	6000	190.1	10.08	.50	.66	.84	180.2	11.35	.49	.68	.84	169.7	12.75	.51	.70	.87	158.0	14.33	.53	.70	.89
	7200	195.9	10.11	.52	.71	.88	185.1	11.37	.53	.73	.90	174.3	12.77	.53	.76	.92	162.6	14.35	.56	.79	.94
71°F	4800	193.5	10.09	.31	.45	.58	183.0	11.36	.31	.46	.60	172.8	12.76	.30	.45	.60	161.8	14.35	.30	.47	.62
	6000	201.3	10.14	.31	.48	.63	190.9	11.40	.31	.49	.64	179.3	12.79	.31	.49	.66	167.8	14.38	.33	.51	.68
	7200	206.9	10.17	.32	.51	.69	195.9	11.43	.33	.52	.70	184.4	12.82	.32	.53	.73	172.4	14.39	.34	.55	.76

20 TON - HIGH EFFICIENCY LCT240H4M/V (4 COMPRESSORS - FULL LOAD)

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
63°F	6400	237.2	13.38	.71	.84	.94	225.4	15.07	.72	.85	.96	212.6	16.96	.73	.87	.97	199.8	19.09	.75	.88	.99
	8000	250.1	13.44	.76	.89	.99	237.5	15.13	.79	.91	1.00	223.1	16.99	.79	.93	1.00	209.6	19.12	.81	.95	1.00
	9600	258.9	13.49	.81	.94	1.00	245.9	15.17	.83	.96	1.00	231.7	17.04	.85	.98	1.00	218.1	19.16	.86	1.00	1.00
67°F	6400	248.2	13.43	.56	.69	.81	235.4	15.12	.55	.70	.82	221.5	16.99	.57	.71	.84	207.1	19.11	.56	.72	.86
	8000	259.3	13.49	.58	.73	.87	244.5	15.17	.59	.77	.88	230.8	17.03	.60	.78	.90	216.1	19.16	.60	.81	.92
	9600	267.0	13.53	.61	.80	.92	252.5	15.21	.62	.82	.94	238.4	17.08	.63	.82	.96	223.3	19.18	.64	.84	.98
71°F	6400	262.9	13.51	.41	.54	.66	249.3	15.19	.41	.55	.67	235.4	17.06	.41	.55	.69	219.9	19.17	.40	.56	.70
	8000	274.0	13.57	.43	.57	.72	259.6	15.25	.41	.58	.73	244.7	17.11	.42	.58	.77	228.4	19.21	.42	.59	.78
	9600	281.3	13.62	.44	.61	.77	266.5	15.29	.42	.63	.79	250.9	17.14	.43	.62	.81	233.9	19.23	.43	.63	.83

HUMIDITROL® DEHUMIDIFICATION SYSTEM RATINGS

25 TON - STANDARD EFFICIENCY LCT300S4 WITH HUMIDITROL® OPERATING (2 COMPRESSORS - PART LOAD)

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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
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	235.19	13.81	0.60	0.81	0.99	206.01	15.30	0.59	0.87	1.00	176.97	16.92	0.55	0.90	1.00	147.76	18.69	0.48	0.94	1.00
	9500	244.37	13.95	0.64	0.89	1.00	213.73	15.45	0.61	0.95	1.00	183.23	17.07	0.59	1.00	1.00	152.71	18.85	0.51	1.00	1.00
	11000	251.28	14.07	0.66	0.95	1.00	219.80	15.58	0.67	1.00	1.00	188.49	17.20	0.65	1.00	1.00	157.15	18.98	0.59	1.00	1.00
67°F	8000	251.30	13.99	0.33	0.56	0.75	220.78	15.47	0.28	0.57	0.79	190.93	17.10	0.21	0.56	0.82	161.40	18.90	0.08	0.49	0.87
	9500	258.84	14.12	0.34	0.61	0.83	227.83	15.62	0.33	0.63	0.89	197.35	17.26	0.22	0.58	0.93	165.10	19.03	0.08	0.56	0.98
	11000	266.98	14.25	0.36	0.63	0.89	234.13	15.75	0.33	0.64	0.96	201.16	17.36	0.24	0.64	1.00	167.92	19.15	0.13	0.64	1.00
71°F	8000	265.20	14.15	0.10	0.32	0.51	236.21	15.67	0.05	0.31	0.53	206.99	17.31	-0.08	0.22	0.53	174.66	19.09	-0.26	0.15	0.50
	9500	276.86	14.33	0.12	0.34	0.58	244.69	15.83	0.05	0.30	0.58	209.92	17.42	-0.08	0.28	0.59	177.52	19.22	-0.32	0.17	0.53
	11000	281.73	14.41	0.11	0.36	0.60	246.97	15.90	0.02	0.34	0.60	213.31	17.53	-0.11	0.27	0.61	178.48	19.31	-0.48	0.17	0.60

25 TON - STANDARD EFFICIENCY LCT300S4 WITH HUMIDITROL® OPERATING (4 COMPRESSORS - FULL LOAD)

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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
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	93.89	6.43	0.56	0.74	0.90	74.95	7.13	0.51	0.72	0.91	56.88	7.87	0.41	0.68	0.92	39.74	8.68	0.22	0.62	0.94
	4750	95.40	6.50	0.60	0.79	0.96	75.30	7.21	0.55	0.78	0.98	56.53	7.96	0.45	0.76	0.99	38.88	8.77	0.28	0.72	1.00
	5500	95.60	6.56	0.64	0.84	1.00	74.78	7.27	0.58	0.84	1.00	55.41	8.03	0.51	0.83	1.00	37.48	8.84	0.34	0.82	1.00
67°F	4000	105.89	6.53	0.37	0.55	0.71	85.85	7.24	0.30	0.51	0.69	66.59	7.98	0.19	0.44	0.67	48.31	8.80	-0.03	0.30	0.62
	4750	106.55	6.60	0.41	0.60	0.77	85.53	7.31	0.33	0.55	0.75	65.07	8.06	0.21	0.48	0.73	46.23	8.88	-0.02	0.37	0.71
	5500	106.38	6.64	0.43	0.63	0.81	83.68	7.36	0.36	0.59	0.81	63.10	8.12	0.23	0.54	0.80	44.26	8.95	0.00	0.43	0.79
71°F	4000	117.81	6.64	0.21	0.38	0.54	96.54	7.35	0.10	0.33	0.50	77.27	8.12	-0.01	0.23	0.45	57.67	8.93	-0.25	0.10	0.37
	4750	118.49	6.71	0.23	0.41	0.59	96.20	7.42	0.13	0.36	0.55	75.35	8.19	-0.01	0.28	0.50	55.54	9.01	-0.25	0.12	0.41
	5500	117.77	6.76	0.25	0.45	0.63	94.61	7.48	0.15	0.39	0.59	72.95	8.25	-0.02	0.30	0.54	53.29	9.09	-0.32	0.16	0.48

BLOWER DATA

FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Nominal hp	Maximum hp	Drive Kit Number	RPM Range
3	3.45	1	535 - 725
3	3.45	2	710 - 965
5	5.75	3	685 - 856
5	5.75	4	850 - 1045
5	5.75	5	945 - 1185
7.5	8.63	6	850 - 1045
7.5	8.63	7	945 - 1185
7.5	8.63	8	1045 - 1285
10	11.50	7	945 - 1185
10	11.50	10	1045 - 1285
10	11.50	11	1135 - 1365

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 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 - All units are limited to a motor service factor of 1.0.

FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE

Air Volume cfm	Wet Indoor Coil		Reheat Coil	Electric Heat	Economizer	Filters			Horizontal Roof Curb	
	156 180	210 240 300				MERV 8	MERV 13	MERV 16	156 thru 240	300
	in. w.g.	in. w.g.							in. w.g.	in. w.g.
2750	.01	.02	.01	---	---	.01	.03	.06	.03	-
3000	.01	.02	.01	---	---	.01	.03	.06	.04	-
3250	.01	.03	.01	---	---	.01	.04	.07	.04	.01
3500	.01	.03	.02	---	---	.01	.04	.08	.05	.01
3750	.01	.03	.02	---	---	.01	.04	.08	.05	.01
4000	.02	.04	.02	---	---	.01	.04	.09	.06	.02
4250	.02	.04	.02	---	---	.01	.05	.10	.07	.02
4500	.02	.05	.02	---	---	.01	.05	.10	.07	.02
4750	.02	.05	.02	---	---	.02	.05	.11	.08	.03
5000	.02	.05	.02	---	---	.02	.06	.12	.08	.03
5250	.02	.06	.03	---	---	.02	.06	.12	.09	.04
5500	.02	.07	.03	---	---	.02	.06	.13	.10	.04
5750	.03	.07	.03	---	---	.02	.07	.14	.11	.05
6000	.03	.08	.03	.01	---	.03	.07	.14	.11	.06
6250	.03	.08	.03	.01	.01	.03	.07	.15	.12	.07
6500	.03	.09	.04	.01	.02	.03	.08	.16	.13	.08
6750	.04	.10	.04	.01	.03	.03	.08	.17	.14	.08
7000	.04	.10	.04	.01	.04	.04	.08	.17	.15	.09
7250	.04	.11	.04	.01	.05	.04	.09	.18	.16	.10
7500	.05	.12	.05	.01	.06	.04	.09	.19	.17	.11
8000	.05	.13	.05	.02	.09	.05	.10	.21	.19	.13
8500	.06	.15	.05	.02	.11	.05	.10	.22	.21	.15
9000	.07	.16	.06	.04	.14	.06	.11	.24	.24	.17
9500	.08	.18	.07	.05	.16	.07	.12	.25	.26	.19
10,000	.08	.20	.07	.06	.19	.07	.12	.27	.29	.21
10,500	.09	.22	.08	.09	.22	.08	.13	.29	.31	.24
11,000	.11	.24	.08	.11	.25	.09	.14	.30	.34	.27

BLOWER DATA

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT

Electric Heat kW	Minimum cfm
15	5200
30	5200
45	5200
60	5200
90	6000

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure	Air Volume Exhausted
in. w.g.	cfm
0.00	8630
0.05	8210
0.10	7725
0.15	7110
0.20	6470
0.25	5790
0.30	5060
0.35	4300
0.40	3510
0.45	2690
0.50	1840

CEILING DIFFUSER AIR RESISTANCE - in. w.g.

Air Volume cfm	Step-Down Diffuser						Flush Diffuser	
	RTD11-185S			RTD11-275S			FD11-185S	FD11-275S
	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open		
5000	.51	.44	.39	---	---	---	.27	---
5200	.56	.48	.42	---	---	---	.30	---
5400	.61	.52	.45	---	---	---	.33	---
5600	.66	.56	.48	---	---	---	.36	---
5800	.71	.59	.51	---	---	---	.39	---
6000	.76	.63	.55	.36	.31	.27	.42	.29
6200	.80	.68	.59	---	---	---	.46	---
6400	.86	.72	.63	---	---	---	.50	---
6500	---	---	---	.42	.36	.31	---	.34
6600	.92	.77	.67	---	---	---	.54	---
6800	.99	.83	.72	---	---	---	.58	---
7000	1.03	.87	.76	.49	.41	.36	.62	.40
7200	1.09	.92	.80	---	---	---	.66	---
7400	1.15	.97	.84	---	---	---	.70	---
7500	---	---	---	.51	.46	.41	---	.45
7600	1.20	1.02	.88	---	---	---	.74	---
8000	---	---	---	.59	.49	.43	---	.50
8500	---	---	---	.69	.58	.50	---	.57
9000	---	---	---	.79	.67	.58	---	.66
9500	---	---	---	.89	.75	.65	---	.74
10,000	---	---	---	1.00	.84	.73	---	.81
10,500	---	---	---	1.10	.92	.80	---	.89
11,000	---	---	---	1.21	1.01	.88	---	.96

CEILING DIFFUSER AIR THROW DATA - ft.

Model No.	Air Volume cfm	¹ Effective Throw Range - ft.		Model No.	Air Volume cfm	¹ Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush			RTD11-275S Step-Down	FD11-275S Flush
156 180	5600	39 - 49	28 - 37	210 240 300	7200	33 - 38	26 - 35
	5800	42 - 51	29 - 38		7400	35 - 40	28 - 37
	6000	44 - 54	40 - 50		7600	36 - 41	29 - 38
	6200	45 - 55	42 - 51		7800	38 - 43	40 - 50
	6400	46 - 55	43 - 52		8000	39 - 44	42 - 51
	6600	47 - 56	45 - 56		8200	41 - 46	43 - 52
					8400	43 - 49	44 - 54
					8600	44 - 50	46 - 57
					8800	47 - 55	48 - 59

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/ELECTRIC HEAT DATA

13 TON

Model No.		LCT156H4					
¹ Voltage - 60Hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor 1 (Non-Inverter)	Rated Load Amps	17.6		8.5		6.3	
	Locked Rotor Amps	136		66.1		55.3	
Compressor 2 (Non-Inverter)	Rated Load Amps	22.4		10.6		7.7	
	Locked Rotor Amps	149		75		54	
Outdoor Fan Motors (3)	Full Load Amps (1 ECM)	2.8		1.4		1.1	
	Full Load Amps (2 Non-ECM)	2.4		1.3		1	
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4		1.3		1	
	Total	4.8		2.6		2	
Service Outlet 115V GFI (amps)		15		15		20	
Indoor Blower Motor	Horsepower	3	5	3	5	3	5
	Full Load Amps	10.6	16.7	4.8	7.6	3.9	6.1
² Maximum Overcurrent Protection (MOCP)	Unit Only	80	90	40	40	30	30
	With (2) 0.33 HP Power Exhaust	90	90	40	45	30	30
³ Minimum Circuit Ampacity (MCA)	Unit Only	64	70	31	34	23	26
	With (2) 0.33 HP Power Exhaust	69	75	34	36	25	28

ELECTRIC HEAT DATA

Electric Heat Voltage		208	240	208	240	480	480	600	600	
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW	80	80	90	90	40	40	30	30
		30 kW	⁴ 100	110	⁴ 100	125	60	60	45	45
		45 kW	150	150	⁴ 150	175	80	80	60	70
		60 kW	⁴ 150	175	⁴ 150	175	80	90	70	70
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW	64	64	70	70	31	34	23	26
		30 kW	92	104	100	112	52	55	41	44
		45 kW	131	149	139	157	74	78	60	62
		60 kW	139	158	146	166	79	82	63	66
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	90	90	90	90	40	45	30	30
		30 kW	⁴ 100	110	⁴ 110	125	60	60	45	50
		45 kW	⁴ 150	175	⁴ 150	175	80	90	70	70
		60 kW	⁴ 150	175	175	175	90	90	70	70
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	69	69	75	75	34	36	26	29
		30 kW	98	110	106	118	55	58	44	47
		45 kW	137	155	145	163	77	81	62	65
		60 kW	145	164	152	172	82	85	66	68

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

15 TON

Model No.		LCT180H4								
¹ Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
	Total	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	4.8			2.6			2		
	Total	15			15			20		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
² Maximum Overcurrent Protection (MOCP)	Unit Only	70	80	100	35	40	45	25	30	35
	With (2) 0.33 HP Power Exhaust	80	90	100	35	40	50	30	30	40
³ Minimum Circuit Ampacity (MCA)	Unit Only	64	71	81	31	34	39	25	27	31
	With (2) 0.33 HP Power Exhaust	69	76	86	34	37	41	27	29	33

ELECTRIC HEAT DATA

		Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW		70	70	80	80	100	100	35	40	45	25	30	35
		30 kW	⁴ 100	110	⁴ 100	125	⁴ 110	125	60	60	60	45	45	50	
		45 kW	150	150	⁴ 150	175	⁴ 150	175	80	80	90	60	70	70	
		60 kW	⁴ 150	175	⁴ 150	175	175	175	80	90	90	70	70	70	
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW		64	64	71	71	81	81	31	34	39	25	27	31
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48	
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66	
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69	
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW		80	80	90	90	100	100	35	40	50	30	30	40
		30 kW	⁴ 100	110	⁴ 110	125	⁴ 125	150	60	60	70	45	50	50	
		45 kW	⁴ 150	175	⁴ 150	175	175	175	80	90	90	70	70	70	
		60 kW	⁴ 150	175	175	175	⁴ 175	200	90	90	90	70	70	80	
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW		69	69	76	76	86	86	34	37	41	27	29	33
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50	
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68	
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72	

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

17.5 TON

Model No.		LCT210H4								
¹ Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
² Maximum Overcurrent Protection (MOCP)	Unit Only	90	100	110	40	45	50	35	40	45
	With (2) 0.33 HP Power Exhaust	100	110	125	45	50	50	40	40	50
³ Minimum Circuit Ampacity (MCA)	Unit Only	83	90	99	37	41	45	34	36	40
	With (2) 0.33 HP Power Exhaust	88	95	104	40	43	47	36	38	42

ELECTRIC HEAT DATA

		Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V		
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW		90	90	100	100	110	110	40	45	50	35	40	45		
		30 kW	⁴	100	110	⁴	100	125	⁴	110	125	60	60	60	45	45	50
		45 kW		150	150	⁴	150	175	⁴	150	175	80	80	90	60	70	70
		60 kW	⁴	150	175	⁴	150	175	175	175	80	90	90	70	70	70	70
		90 kW	⁴	225	250	⁴	225	250	⁴	225	250	125	125	125	100	100	100
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW		83	83	90	90	99	99	37	41	45	34	36	40		
		30 kW		92	104	100	112	109	121	52	55	59	41	44	48		
		45 kW		131	149	139	157	148	166	74	78	82	60	62	66		
		60 kW		139	158	146	166	156	175	79	82	86	63	66	69		
		90 kW		201	230	209	238	218	247	115	118	123	92	95	98		
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW		100	100	110	110	125	125	45	50	50	40	40	50		
		30 kW	⁴	100	110	⁴	110	125	⁴	125	150	60	60	70	45	50	50
		45 kW	⁴	150	175	⁴	150	175	175	175	80	90	90	70	70	70	
		60 kW	⁴	150	175	175	175	⁴	175	200	90	90	90	70	70	80	
		90 kW	⁴	225	250	⁴	225	250	⁴	225	⁴	300	125	125	150	100	100
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW		88	88	95	95	104	104	40	43	47	36	38	42		
		30 kW		98	110	106	118	115	127	55	58	63	44	47	50		
		45 kW		137	155	145	163	154	172	77	81	85	62	65	68		
		60 kW		145	164	152	172	162	181	82	85	90	66	68	72		
		90 kW		207	236	215	244	224	253	118	122	126	94	97	101		

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

20 TON

Model No.		LCT240H4								
¹ Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	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	100	110	125	50	50	60	35	45	50
	With (2) 0.33 HP Power Exhaust	110	125	125	50	60	60	40	45	50
³ Minimum Circuit Ampacity (MCA)	Unit Only	89	99	107	43	47	51	34	38	40
	With (2) 0.33 HP Power Exhaust	94	104	112	46	50	54	36	40	42

ELECTRIC HEAT DATA

		Electric Heat Voltage												
		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V	
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW	100	100	110	110	125	125	50	50	60	35	45	50
		30 kW	⁴ 100	125	⁴ 110	125	⁴ 125	150	60	60	70	45	50	50
		45 kW	⁴ 150	175	⁴ 150	175	175	175	80	90	90	70	70	70
		60 kW	⁴ 150	175	175	175	⁴ 175	200	90	90	90	70	70	80
		90 kW	⁴ 225	250	⁴ 225	250	⁴ 250	⁴ 300	125	125	150	100	100	110
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW	89	89	99	99	107	107	43	47	51	34	38	40
		30 kW	100	112	109	121	117	129	55	59	63	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	110	110	125	125	125	125	50	60	60	40	45	50
		30 kW	⁴ 110	125	⁴ 125	150	⁴ 125	150	60	70	70	50	50	60
		45 kW	⁴ 150	175	175	175	⁴ 175	200	90	90	90	70	70	80
		60 kW	175	175	⁴ 175	200	⁴ 175	200	90	90	100	70	80	80
		90 kW	⁴ 225	250	⁴ 225	⁴ 300	⁴ 250	⁴ 300	125	150	150	100	110	110
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	94	94	104	104	112	112	46	50	54	36	40	42
		30 kW	106	118	115	127	123	135	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

25 TON

Model No.		LCT300S4								
¹ Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3 (Non-Inverter)	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 4 (Non-Inverter)	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	15			15			20		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	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	125	150	150	60	70	70	50	50	50
	With (2) 0.33 HP Power Exhaust	150	150	150	60	70	70	50	50	60
³ Minimum Circuit Ampacity (MCA)	Unit Only	122	130	138	56	60	64	43	47	49
	With (2) 0.33 HP Power Exhaust	127	135	143	59	62	66	45	49	51

ELECTRIC HEAT DATA

		Electric Heat Voltage	208	240	208	240	208	240	480	480	480	600	600	600
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW	125	125	150	150	150	150	60	70	70	50	50	50
		30 kW	125	125	150	150	150	150	60	70	70	50	50	50
		45 kW	⁴ 150	175	⁴ 150	175	175	175	80	90	90	70	70	70
		60 kW	⁴ 150	175	175	175	⁴ 175	200	90	90	90	70	70	80
		90 kW	⁴ 225	250	⁴ 225	250	⁴ 250	⁴ 300	125	125	150	100	100	110
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW	122	122	130	130	138	138	56	60	64	43	47	49
		30 kW	122	122	130	130	138	138	56	60	64	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
² Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	150	150	150	150	150	150	60	70	70	50	50	60
		30 kW	150	150	150	150	150	150	60	70	70	50	50	60
		45 kW	⁴ 150	175	175	175	⁴ 175	200	90	90	90	70	70	80
		60 kW	175	175	⁴ 175	200	⁴ 175	200	90	90	100	70	80	80
		90 kW	⁴ 225	250	⁴ 225	⁴ 300	⁴ 250	⁴ 300	125	150	150	100	110	110
³ Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	127	127	135	135	143	143	59	62	66	45	49	51
		30 kW	127	127	135	135	143	143	59	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL ACCESSORIES - DISCONNECTS

13 TON | LCT156H4

Motor Horsepower	3		5		3	5	3	5	
	Electric Heat Voltage		208V	240V	208V	240V	480V		600V
Unit Only	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W86	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W86	54W86	54W85	54W85	54W85

15 TON | LCT180H4

Motor Horsepower	3		5		7.5		3	5	7.5	3	5	7.5	
	Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V			600V	
Unit Only	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	

17.5 TON | LCT210H4

Motor Horsepower	3		5		7.5		3	5	7.5	3	5	7.5	
	Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V			600V	
Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W86	54W85	54W85	
+ Electric Heat 90 kW	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	54W86	54W86	54W86	54W86	54W86	54W86	
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W86	54W85	54W85	54W85	54W85	54W85	
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W86	54W85	54W85	
+ Power Exhaust + Elec. Heat 90 kW	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	54W86	54W86	54W86	54W86	54W86	54W86	

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

¹ Disconnect must be field furnished.

ELECTRICAL ACCESSORIES - DISCONNECTS

20 TON | LCT240H4

Motor Horsepower	5		7.5		10		5	7.5	10	5	7.5	10
	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
+ Electric Heat 90 kW	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	54W86	54W86	54W86	54W86	54W86	54W86
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W86	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
+ Power Exhaust + Elec. Heat 90 kW	NA	NA	NA	NA	NA	NA	54W86	54W86	54W86	54W86	54W86	54W86

25 TON | LCT300S4

Motor Horsepower	5		7.5		10		5	7.5	10	5	7.5	10
	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
+ Electric Heat 90 kW	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	54W86	54W86	54W86	54W86	54W86	54W86
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W86	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
+ Power Exhaust + Elec. Heat 90 kW	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	¹ NA	54W86	54W86	54W86	54W86	54W86	54W86

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

¹ Disconnect must be field furnished.

FIELD WIRING NOTES

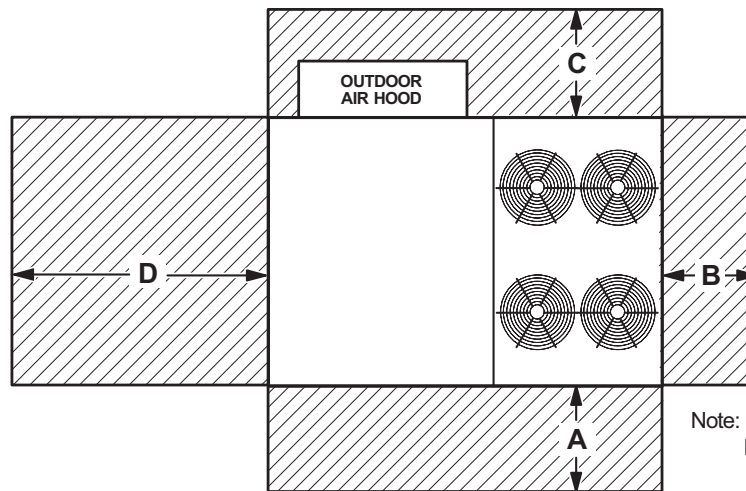
- For use with copper wiring only
- Field wiring not furnished
- All wiring must conform to NEC or CEC and local electrical codes
- For specific wiring information, please refer to the installation instructions

ELECTRIC HEAT CAPACITIES

Volts Input	15 kW			30 kW			45 kW			60 kW			90 kW		
	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages
208	11.3	38,600	1	22.5	76,800	1	33.8	115,300	2	45.0	153,600	2	67.6	230,700	2
220	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
230	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
240	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
440	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
460	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
480	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
550	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
575	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
600	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2

UNIT CLEARANCES

Unit With Economizer



Note: Models with four outdoor fans shown. Dimension clearances are for all sizes.

¹ Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	36	934	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.

OUTDOOR SOUND DATA

Unit Model Number	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	
156	71	78	81	81	76	71	63	86
180	80	83	87	88	84	80	71	93
210, 240, 300	79	84	88	89	85	82	73	94

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

¹ Sound Rating Number according to AHRI Standard 370-2001 (includes pure tone penalty).

Sound Rating Number is the overall A-Weighted Sound Power Level (L_{WA}), dBA (100 Hz to 10,000 Hz).

WEIGHT DATA				UNIT
Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
156 Base Unit	1864	845	2064	936
156 Max. Unit	2144	973	2344	1063
180 Base Unit	1978	897	2178	988
180 Max. Unit	2263	1026	2463	1117
210 Base Unit	2424	1100	2624	1190
210 Max. Unit	2709	1229	2909	1319
240 Base Unit	2456	1114	2656	1205
240 Max. Unit	2741	1243	2941	1334
300 Base Unit	2506	1137	2706	1227
300 Max. Unit	2791	1266	2991	1357

NOTE - Max. Unit is the unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories EXTERNAL to unit.

WEIGHT DATA	OPTIONS / ACCESSORIES		
	Shipping Weight		
	lbs.	kg	
ECONOMIZER / OUTDOOR AIR / EXHAUST			
Economizer			
Economizer Dampers (with Outdoor Air Hood)	167	76	
Barometric Relief Dampers (downflow)	30	14	
Barometric Relief Dampers (horizontal)	20	9	
Outdoor Air Dampers with Hood (downflow)			
Motorized	39	18	
Manual	22	10	
Power Exhaust	62	28	
ELECTRIC HEAT			
15 kW	59	27	
30 kW	59	27	
45 kW	76	34	
60 kW	76	34	
90 kW	84	38	
COMBINATION COIL/HAIL GUARDS			
156	30	13	
180/300	36	16	
ROOF CURBS			
Hybrid Roof Curbs, Downflow			
8 in. height	136	62	
14 in. height	169	77	
18 in. height	191	87	
24 in. height	224	102	
Adjustable Pitch Curb, Downflow			
14 in. height	224	102	
Horizontal, Standard			
26 in. height			
37 in. height			
30 in. height	495	225	
41 in. height	575	261	
CEILING DIFFUSERS			
Step-Down	RTD11-185S	168	76
	RTD11-275S	238	108
Flush	FD11-185S	168	76
	FD11-275S	238	108
Transitions	C1DIFF33C-1	80	36
	C1DIFF34C-1	75	34
HUMIDITROL® DEHUMIDIFICATION SYSTEM			
Humiditrol® Dehumidification Option	50	23	

DIMENSIONS

156

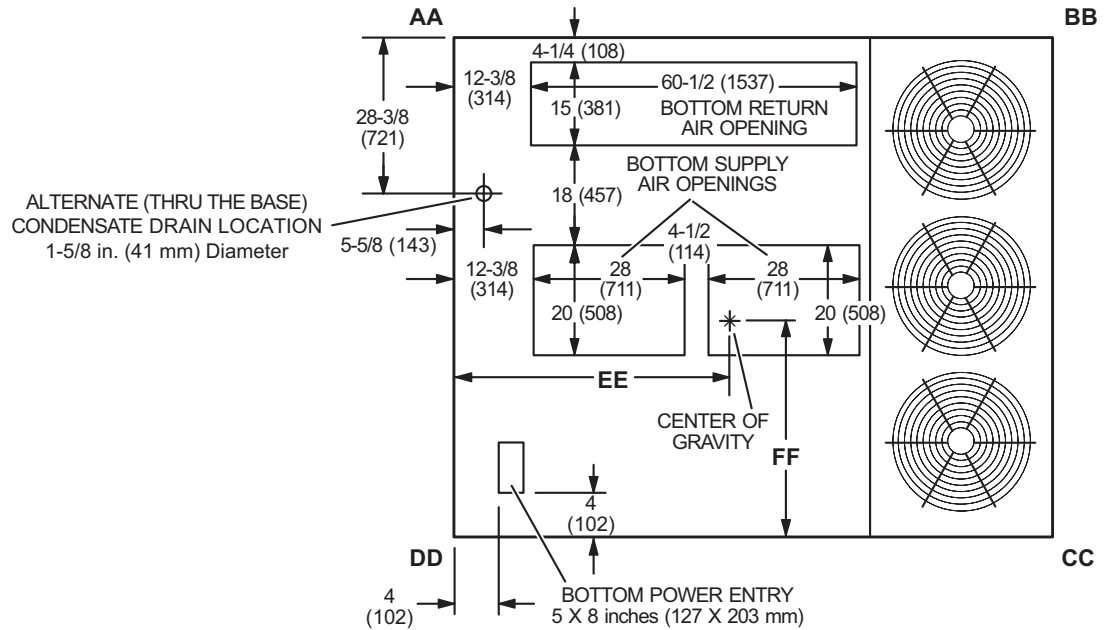
CORNER WEIGHTS

CENTER OF GRAVITY

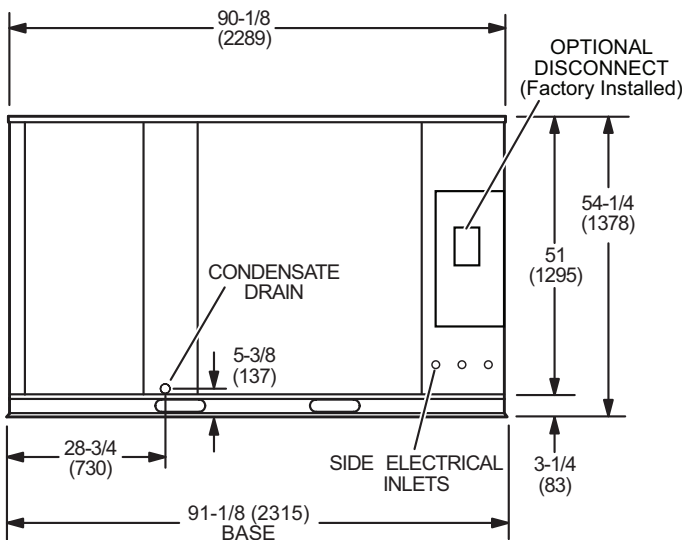
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCT156 Base Unit	435	198	379	172	489	222	561	255	50-1/8	1274	39-3/4	1011
LCT156 Max. Unit	423	192	359	163	625	284	736	335	49-1/2	1257	33-1/4	845

Base Unit - The unit with NO INTERNAL OPTIONS.

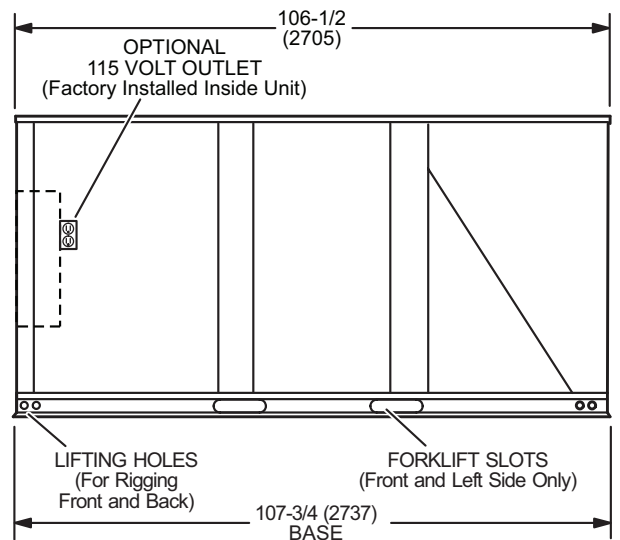
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW



END VIEW



SIDE VIEW

DIMENSIONS

180 | 210

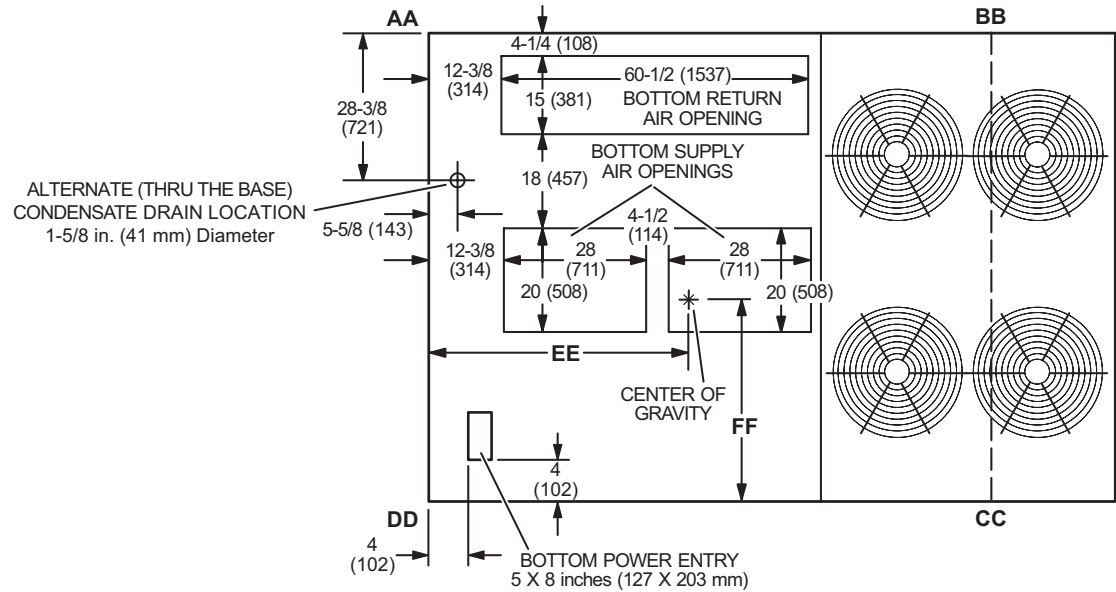
CORNER WEIGHTS

CENTER OF GRAVITY

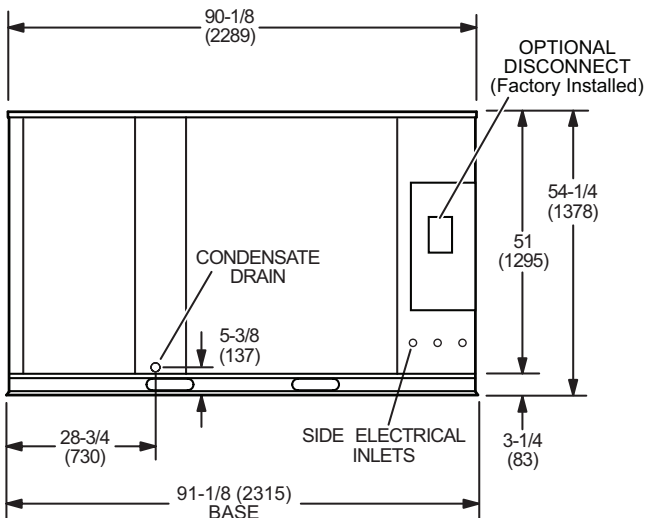
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCT180 Base Unit	439	199	415	188	547	248	578	263	52-3/8	1330	39-3/8	998
LCT180 Max. Unit	546	248	499	227	582	265	637	290	51-1/2	1307	42	1068
LCT210 Base	469	213	601	273	760	346	594	270	60-1/2	1537	40-1/4	1022
LCT210 Max.	573	261	692	315	789	359	654	297	59	1497	42-5/8	1081

Base Unit - The unit with NO INTERNAL OPTIONS.

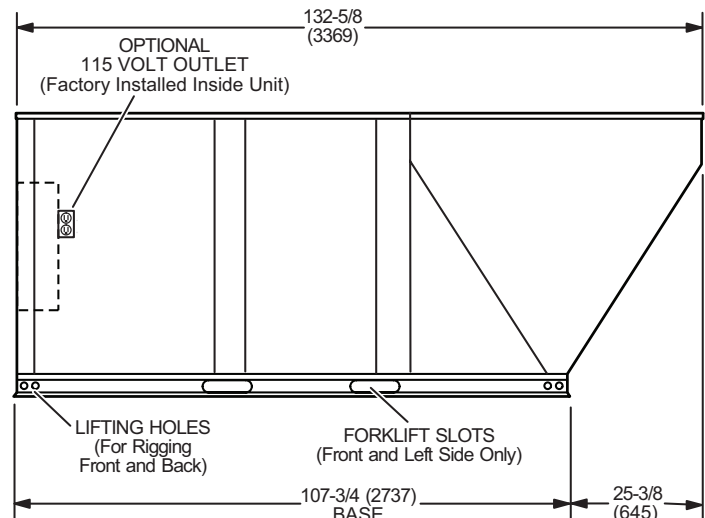
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW



END VIEW



SIDE VIEW

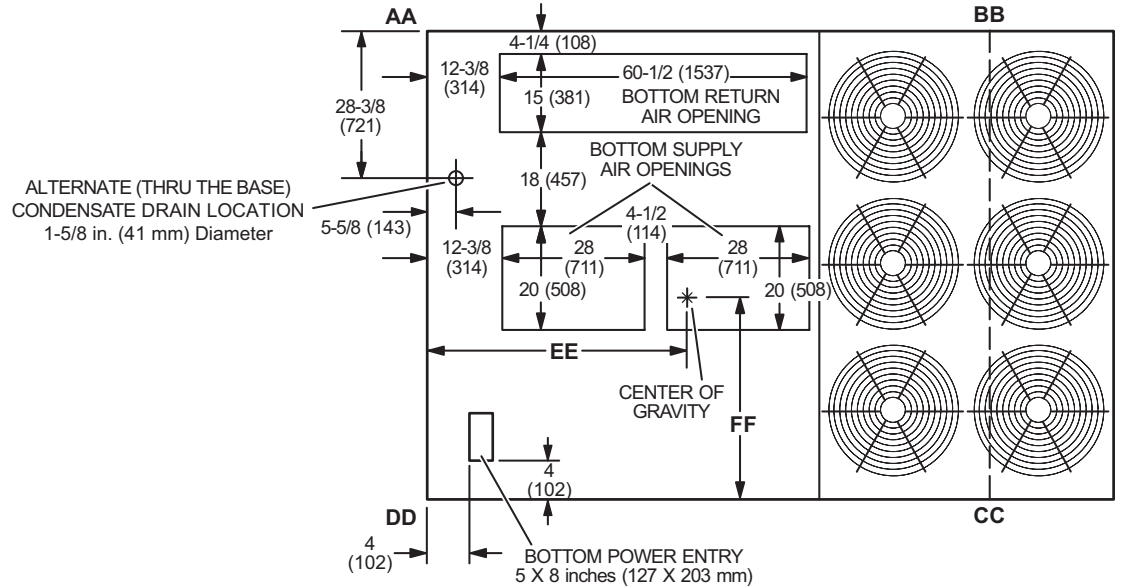
DIMENSIONS

240 | 300

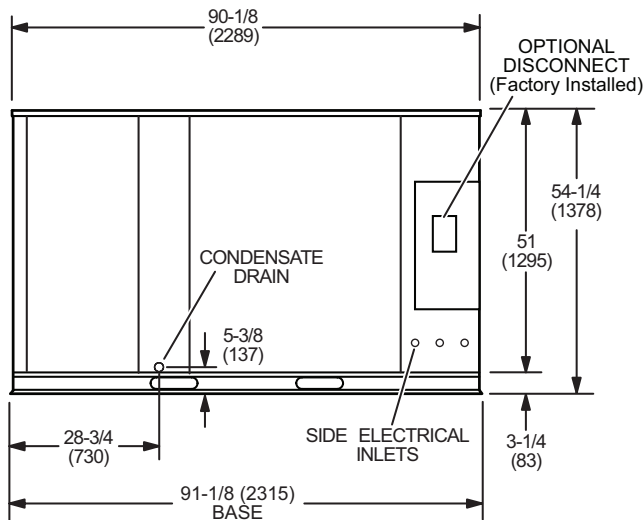
CORNER WEIGHTS									CENTER OF GRAVITY			
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCT240 Base Unit	474	215	594	270	773	351	616	280	60	1523	39-5/8	1006
LCT240 Max. Unit	578	263	686	312	801	364	676	307	58-1/2	1485	42	1067
LCT300 Base Unit	479	218	579	263	793	360	655	298	59	1499	38-1/2	977
LCT300 Max. Unit	584	265	671	305	822	373	715	325	57-5/8	1463	41	1040

Base Unit - The unit with NO INTERNAL OPTIONS.

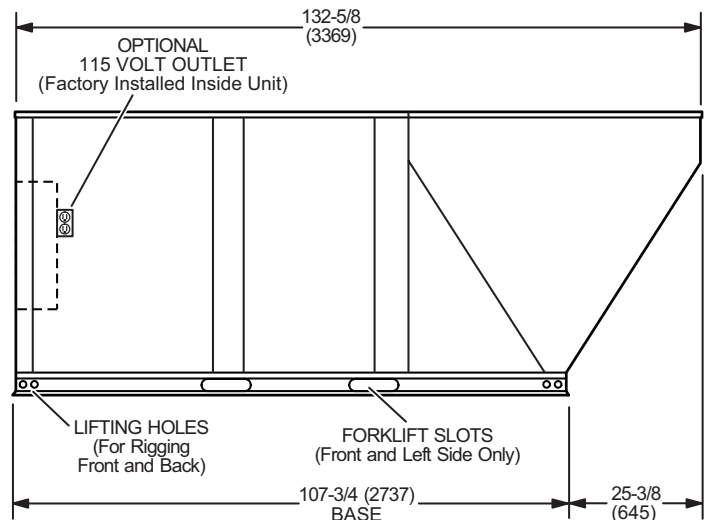
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW

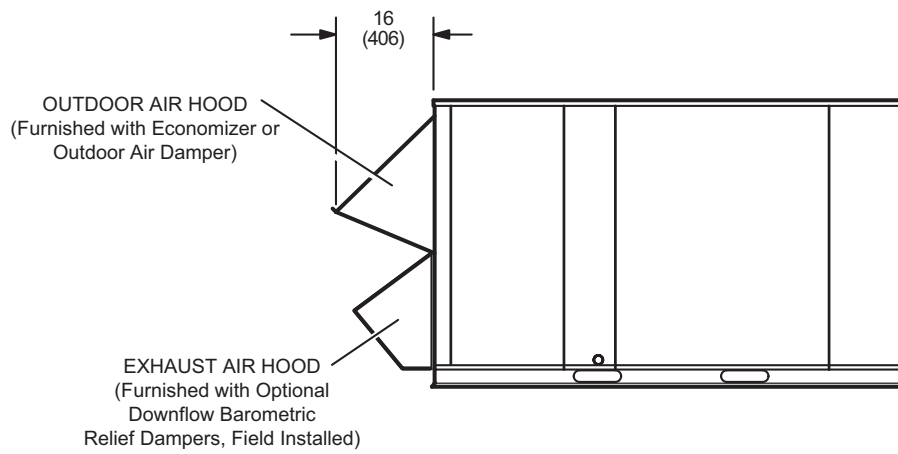


END VIEW



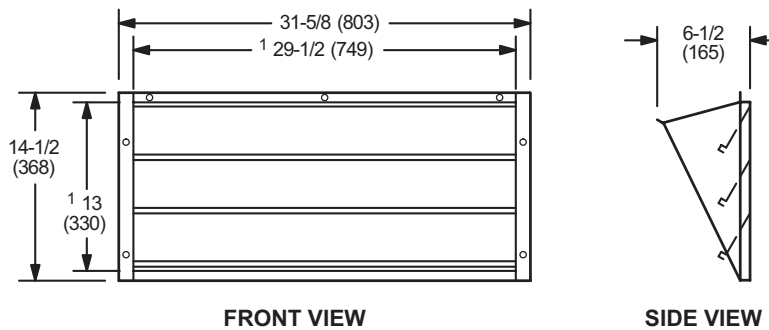
SIDE VIEW

OUTDOOR AIR HOOD DETAIL



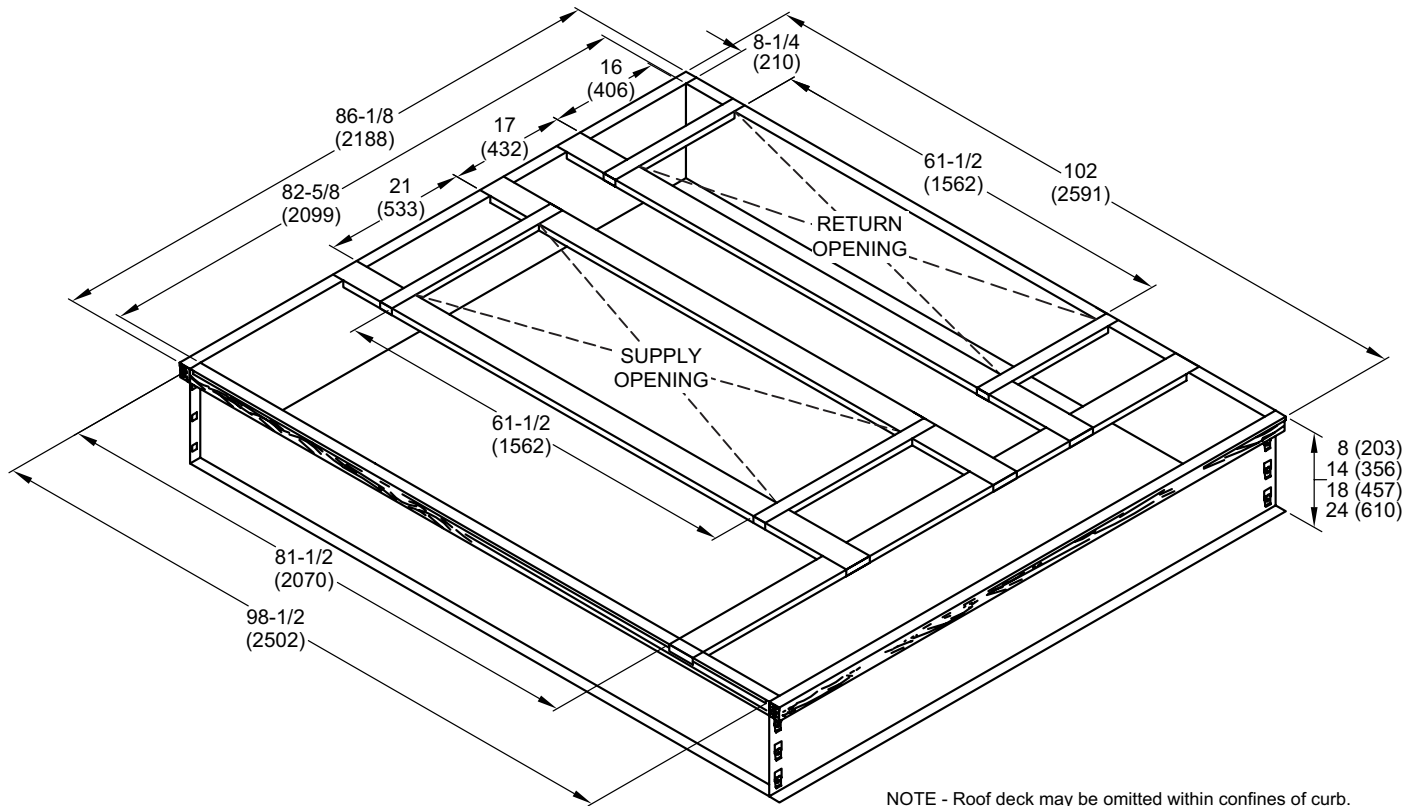
OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD

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

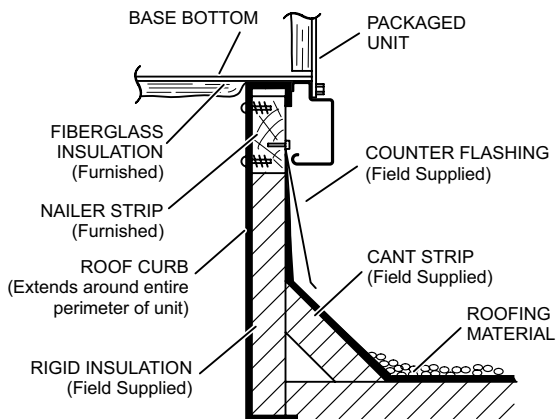


NOTE - Two furnished per order no.
¹ NOTE - Opening size required in return air duct.

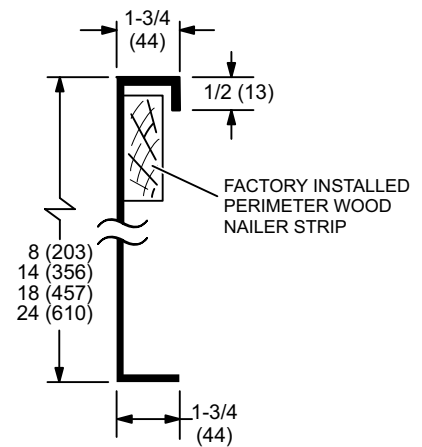
HYBRID ROOF CURBS - DOUBLE DUCT OPENING



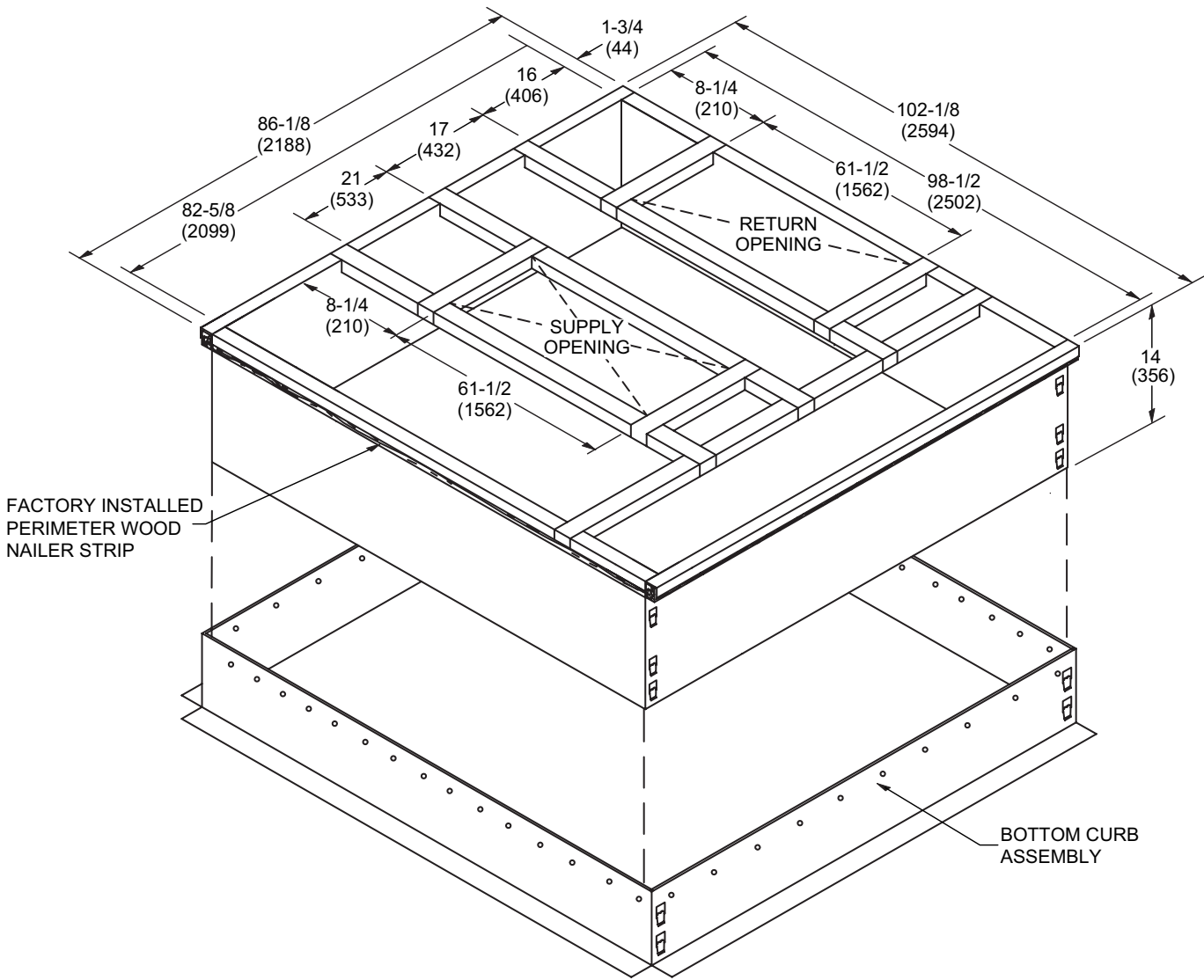
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

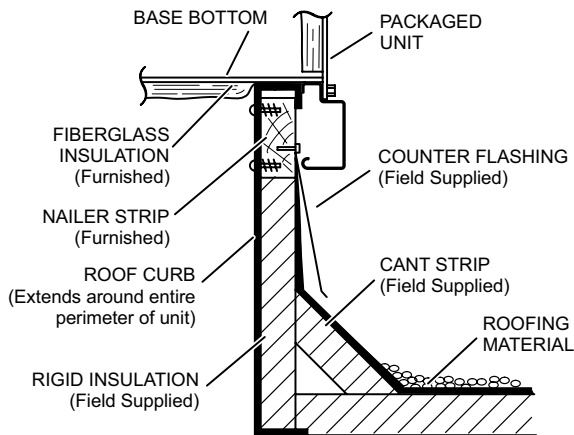


ADJUSTABLE PITCH CURB - DOUBLE DUCT OPENING

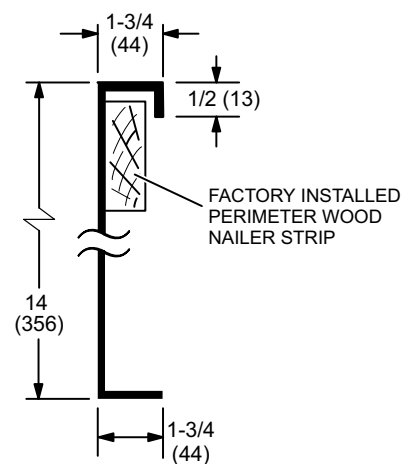


NOTE - Maximum slope pitch is 3/4 in. per 1 foot (19 mm per 305 mm) in any one direction.

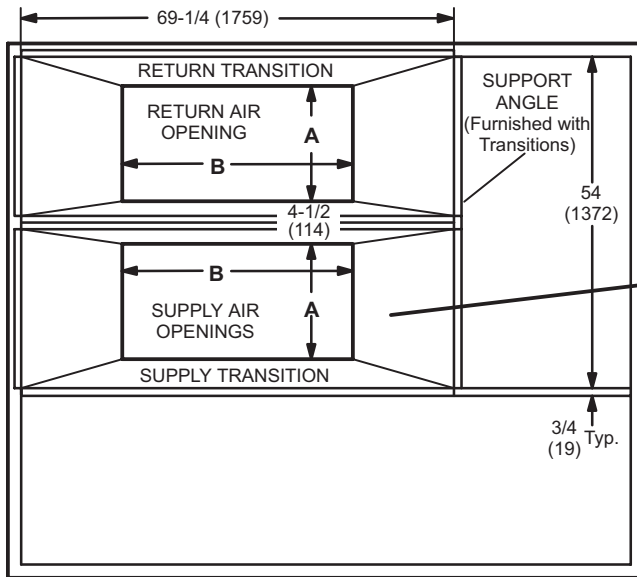
TYPICAL FLASHING DETAIL FOR ROOF CURB



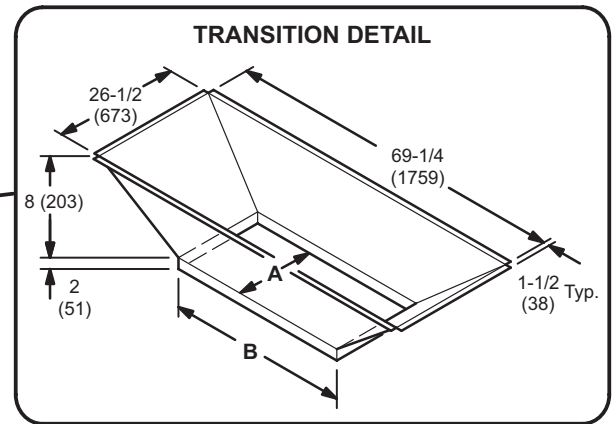
DETAIL ROOF CURB



ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS



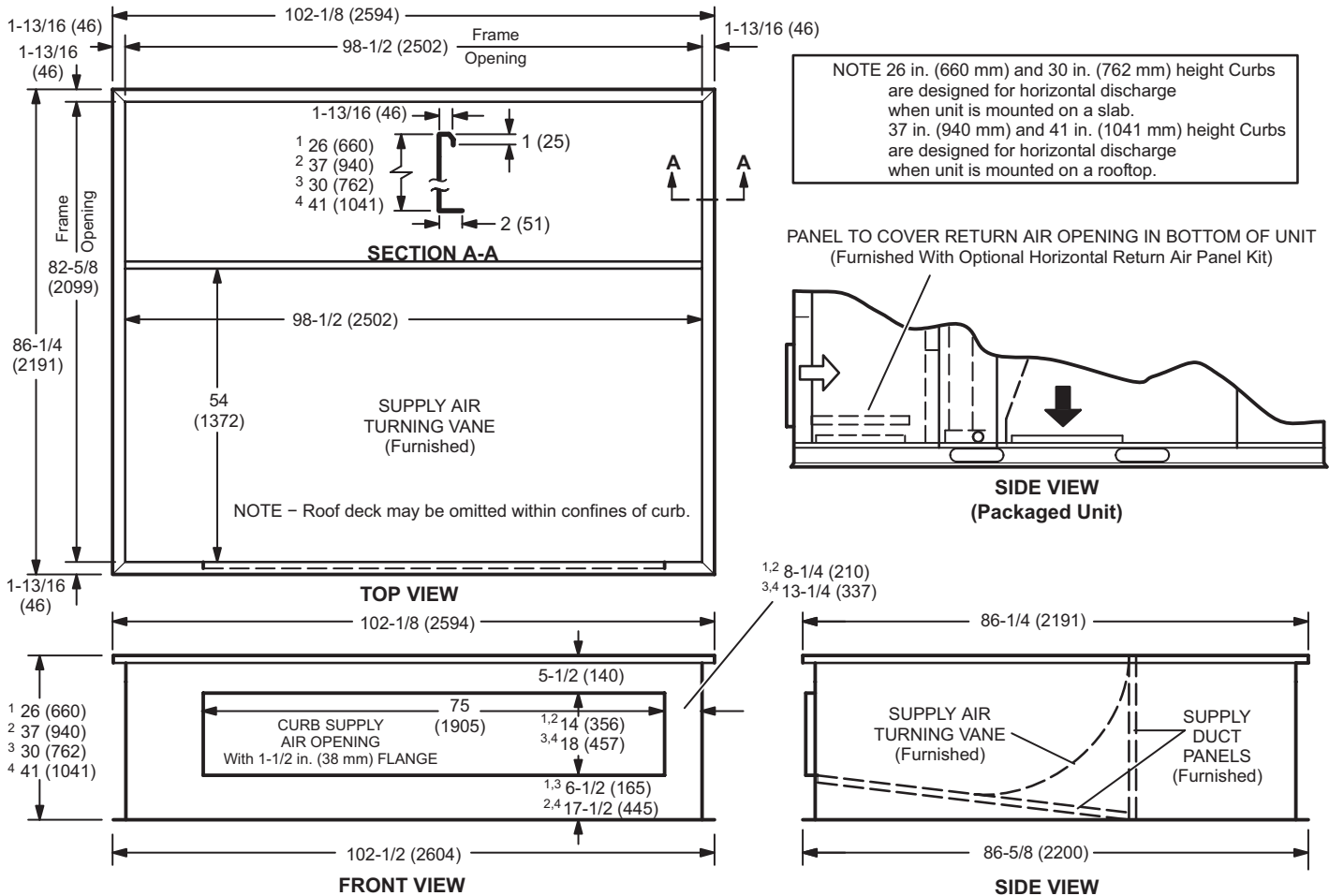
TOP VIEW



TRANSITION OPENING SIZES

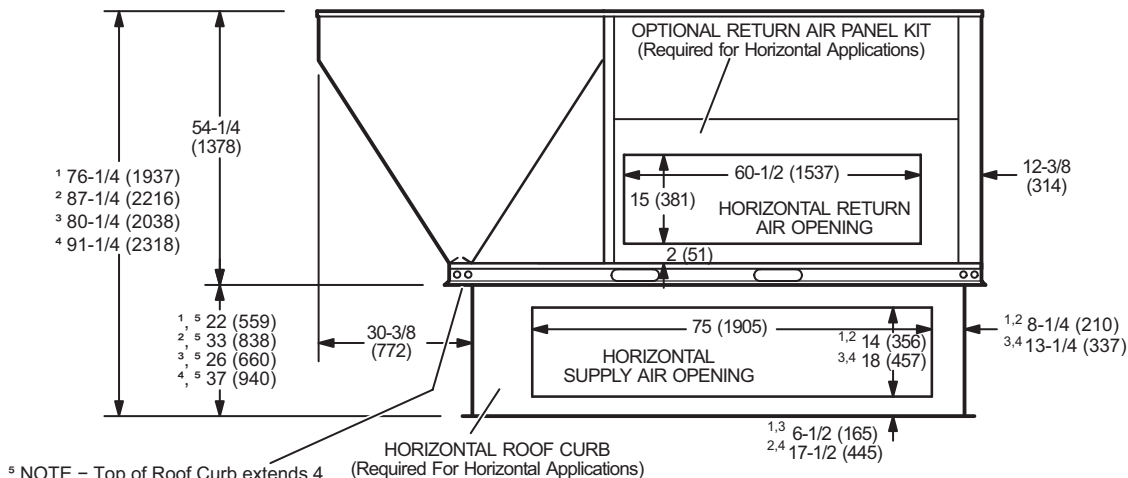
Model Number	A		B	
	inch	mm	inch	mm
C1DIFF33C-1	18	457	36	914
C1DIFF34C-1	24	610	48	1219

HORIZONTAL ROOF CURBS – Requires Optional Horizontal Return Air Panel Kit



¹ Slab Applications ² Rooftop Applications ³ Slab Applications (used with 300S) ⁴ Rooftop Applications (used with 300S)

HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB

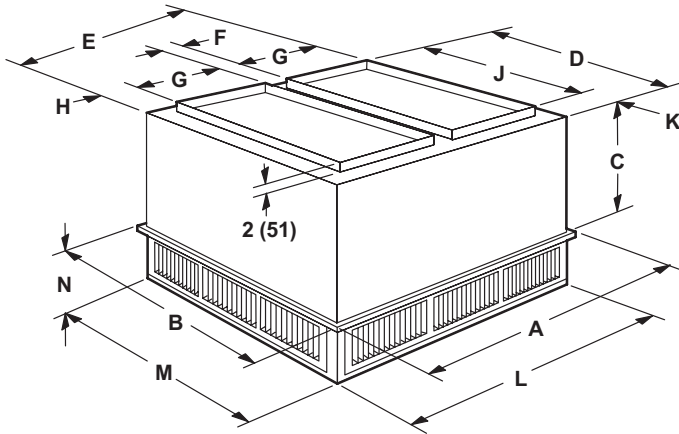


⁵ NOTE – Top of Roof Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical flashing detail.

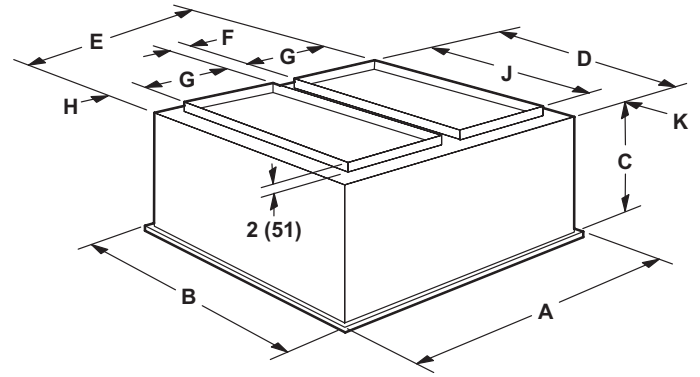
¹ Slab Applications
² Rooftop Applications
³ Slab Applications (used with 300S Models Only)
⁴ Rooftop Applications (used with 300S Models Only)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



FLUSH CEILING DIFFUSER



Model Number		RTD11-185S	RTD11-275S
A	in.	47-5/8	59-5/8
	mm	1210	1514
B	in.	47-5/8	59-5/8
	mm	1210	1514
C	in.	24-5/8	30-5/8
	mm	625	778
D	in.	45-1/2	57-1/2
	mm	1156	1461
E	in.	45-1/2	57-1/2
	mm	1156	1461
F	in.	4-1/2	4-1/2
	mm	114	114
G	in.	18	24
	mm	457	610
H	in.	2-1/2	2-1/2
	mm	64	64
J	in.	36	48
	mm	914	1219
K	in.	4-3/4	4-3/4
	mm	121	121
L	in.	45-1/2	57-1/2
	mm	1156	1461
M	in.	45-1/2	57-1/2
	mm	1156	1461
N	in.	10-1/8	11-1/8
	mm	257	283
Duct Size	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

Model Number		FD11-185S	FD11-275S
A	in.	47-5/8	59-5/8
	mm	1210	1514
B	in.	47-5/8	59-5/8
	mm	1210	1514
C	in.	29-1/4	35-1/4
	mm	743	895
D	in.	45	57
	mm	1143	1148
E	in.	45	57
	mm	1143	1448
F	in.	4-1/2	4-1/2
	mm	114	114
G	in.	18	24
	mm	457	610
H	in.	2-1/4	2-1/4
	mm	57	57
J	in.	36	48
	mm	914	1219
K	in.	4-1/2	4-1/2
	mm	114	114
Duct Size	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

REVISIONS

Sections	Description of Change
Electrical/Electric Heat Data	Updated data



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Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' 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.

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