LCX

XION™ ROOFTOP UNITS

Standard Efficiency | Lennox® CORE Lite Controller | Environ™ Coil | R-454B | 60Hz

COMMERCIAL
PRODUCT SPECIFICATIONS (EHB)

15 to 25 Tons
Net Cooling Capacity – 172,000 to 270,000 Btuh
Optional Electric Heat - 15 to 90 kW

XION

CORE LITE



Environ™ Coil System

MSAV™ MULTI-STAGE AIR VOLUME

ASHRAE Standard 90.1

MODEL NUMBER IDENTIFICATION

L C X 240 S 5 M N 1 Y

Brand
L = Lennox® Product Line

Unit Type
C = Packaged Electric Cooling w/ optional Electric Heat

Family
X = Xion™ Series

Nominal Cooling Capacity - Tons
180 = 15 Tons
210 = 17.5 Tons
240 = 20 Tons
300 = 25 Tons

Cooling Efficiency
S = Standard Efficiency

Refrigerant Type
5 = R-454B

Blower Type
M = MSAV® Multi-Stage Air Volume, Belt Drive

Factory Installed Electric Heat
N = No Heat

Minor Design Sequence
1 = 1st Revision

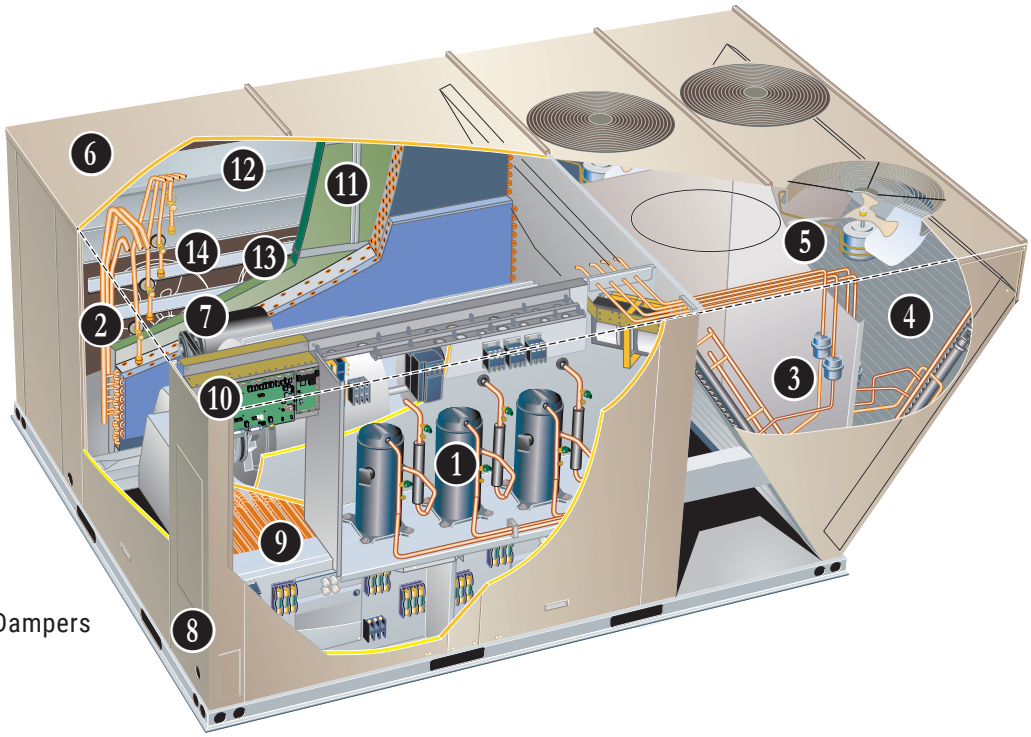
Voltage
Y = 208/230V-3 phase-60Hz
G = 460V-3 phase-60Hz
J = 575V-3 phase-60Hz

Form Number 211124 | January 2025
Supersedes all previous versions

FEATURE HIGHLIGHTS

Xion™ rooftop units are engineered with the right technologies and options to meet standard efficiency requirements while delivering reliable performance and year-round comfort.

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



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Standard 340/360-2023 certified
- ETL and CSA listed
- Unit and components are 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 and UL 60335-2-40 Refrigerant Detector Requirements
- All models have HCAI (formerly OSHPD) OSP and Special Seismic Certification (Number: OSP-0596), and meet 2021 International Building Code (IBC), 2022 California Building Code (CBC) ASCE 7, and ICC-ES AC156
- 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 Lite Unit Controller - Limited three years
- Variable-Frequency Drive (VFD)- 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 45°F to 125°F without any additional controls

R-454B Refrigerant

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

1 Scroll Compressors

- Scroll compressors 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 or during extended off cycles

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

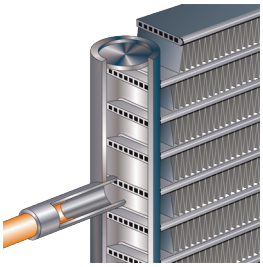
- Protects the compressors from low pressure conditions such as low refrigerant charge or low/no airflow

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

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

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

Outdoor Coil Fans
- PVC coated fan guard furnished

Required Selections

Cooling Capacity
- Specify nominal cooling capacity

Options/Accessories

Field Installed

Condensate Drain Trap
- Available in copper or PVC

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

Low Ambient Controls (0°F)
- Units operate satisfactorily down to 45°F outdoor air temperature without any additional controls
- Allows unit operation down to 0°F without evaporator coil icing
- Head pressure speed control reduces outdoor fan operation during low ambient conditions unit head pressure rises to the setpoint
- Pressure transducers are mounted on the liquid lines
- Liquid line pressure switches and temperature switches are provided for field installation
- Wiring harnesses are furnished for simple plug-in wiring to fans and controller

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

FEATURES AND BENEFITS

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

Access Panels
- Economizer/Filter section
- Heating/Blower section
- Compressor/Controls section

Options/Accessories

Factory Installed

Hinged Access Panels
- Tool-less access
- Filter section
- Heating/Blower section
- Compressor/Controls section
- Panel seals and quarter-turn latching handles provide a tight air and water seal

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

FEATURES AND BENEFITS

BLOWER

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

Motor
- Overload protected
- Ball bearings

7 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

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

MSAV® Multi-Stage Air Volume Operation
- MSAV® Multi-Stage Air Volume stages the amount of airflow according to compressor stages, heating demand, ventilation demand or smoke alarm
- Units utilize a Variable Frequency Drive (VFD) to stage the supply air blower airflow
- VFD alters the frequency and voltage of the power supply to the blower to control blower speed
- The amount of airflow for each stage can be set according to a parameter in the Lennox® CORE Unit Controller
- Unit is shipped from the factory we preset airflow
- 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.

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

VFD Automatic Bypass Kit
- Bypass Kit can be used to automatically bypass the VFD and operate the unit in single speed (CAV) blower mode if the inverter needs to be serviced or replaced
- VFD Automatic Bypass Control must be enabled by Config ID on the unit controller

FEATURES AND BENEFITS

ELECTRICAL

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 state and an alarm code reports to the unit controller
- Prevents unit start-up if the unit is in the incorrect phase; unit start-ups in the wrong phase could lead to issues such as compressors functioning in reverse
- Monitors power supple 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 or Field Installed

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

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

Field Installed

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

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

INDOOR AIR QUALITY

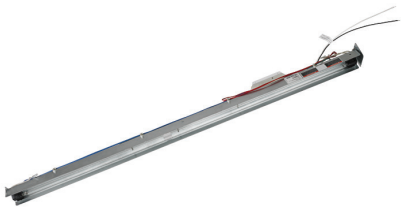
10 Air Filters
- Disposable 2 inch MERV 4 filters furnished as standard

Options/Accessories

Field Installed

Healthy Climate® High Efficiency Air Filters
- Disposable MERV 8, MERV 13, or MERV 16 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency
- 2 inch pleated filters

Healthy Climate® UVC Germicidal Lamps



- 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

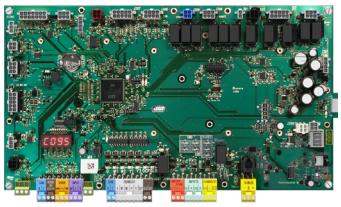
Needlepoint Bipolar Ionization (NPBI) Kit
- NPBI technology has been shown to effectively reduce harmful pathogens, pollutants, and odors
- Brush-type ionizer introduces a high concentration of both positive and negative ions into the air stream
- These bipolar ions are then dispersed into the occupied 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

Indoor Air Quality (CO_2) Sensors
- Monitors CO_2 levels
- Reports to the Lennox® CORE Lite Unit Controller, which adjusts economizer dampers as needed

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 LITE CONTROL SYSTEM



11 The Lennox® CORE Lite 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 Lite 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

Download on the App Store | ANDROID APP ON Google play

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.
- 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 Lite Unit Controller enhance functionality without the need to change components

Configurable Built-In Functions

- Up to three distinct Cooling Airflows in Thermostat Mode
- Programmable independent heating, ventilation and cooling blower speeds
- 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
- Demand Control Ventilation
- Humiditrol® Operation

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 (Field Option)
- Lennox S-BUS
- Zone Temperature Sensor Input
- Dehumidistat and Humidity Sensor Inputs
- Indoor Air Quality Inputs (2)
- Built-in Control Parameter Defaults
- Permanent Diagnostic Code Storage
- Field Adjustable Control Parameters (Over 200 settings)
- Multiple Configurable Digital Inputs
- LED Indicators

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

CONTROL SYSTEM

LENNOX® CORE LITE CONTROL SYSTEM (continued)

Controls Options

Field Installed

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

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

OPTIONS / ACCESSORIES

ECONOMIZER

- Economizer operation is set and controlled by the Lennox® CORE Lite Unit Controller
- Simple plug-in connections from Economizer to unit controller for easy installation
- All Xion™ 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

12 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 Lite 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

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.

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

Field Installed

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

EXHAUST

Factory or Field Installed

13 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

Field Installed

14 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.

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

Field Installed

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

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

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

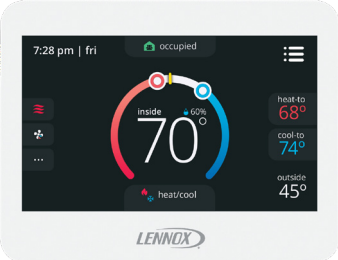
Field Installed

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

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

CS8500 Commercial 7-Day Programmable Thermostat



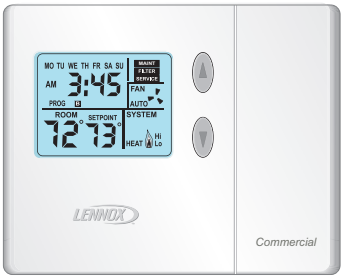
- Fully Communicating Sensor
- Full Color Touchscreen Interface
- Variable Speed System Control (On Compatible Units)
- Up To 4 Heat / 4 Cool
- Built-In Sensors For Temperature, Humidity And Optional CO_2
- Remote Sensor Options For Occupancy, Temperature
- BACnet Capable Options
- 5-2 or 7-Day Scheduling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

CS7500 Commercial 7-Day Programmable Thermostat



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

CS3000 Commercial 5-2 Day Programmable Thermostat



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

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

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 following supply air blower speed setting:

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

[1] Unit Features and 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 rooftop unit via a network connection.

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

Y1 Demand:

1st stage compressors 1 & 2 operate and supply air blower operates at low cooling speed.

Y2 Demand:

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

180/210/240/300 MODELS (3 AND 4 COMPRESSORS)

ZONE SENSOR

SUPPLY AIR BLOWER SPEED

Unit has following supply air blower speed setting:

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

[1] Unit Features and 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 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.

Y4 Demand:

All compressors 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 rooftop unit via a network connection.

Heating Mode (Electric Heat)

NOTE - HEATING MODE IS THE SAME FOR ALL CONTROL OPTIONS

W1 Demand:

1st stage elect 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).

ACCESSORIES

Modulating Outdoor Air Damper

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

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

NOTE - The “midpoint” blower speed is an average or 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.

OPTIONS / ACCESSORIES

Item Description		Order Number	Size 180	210	240	300
COOLING SYSTEM						
Condensate Drain Trap	PVC	**22H54**	X	X	X	X
	Copper	**76W27**	X	X	X	X
Drain Pan Overflow Switch		**21Z07**	X	X	X	X
Low Ambient Kits (0°F)		**37G59**	X	X		
		37G60			X	
		37G63				X
BLOWER - SUPPLY AIR						
Blower Motors	Belt Drive - 3 HP	Factory	O	O		
	Belt Drive - 5 HP	Factory	O	O	O	O
	Belt Drive 7.5 HP	Factory	O	O	O	O
	Belt Drive 10 HP	Factory			O	O
VFD Bypass Kit	3, 5, 7.5 HP - No Overload	**37G64**	X	X	X	X
	10 HP - With Overload	**37G65**			X	X
Drive Kits See Blower Data Tables for usage and selection	Kit #1 535-725 rpm	Factory	O	O		
	Kit #2 710-965 rpm	Factory	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	O
	Kit #4 850-1045 rpm	Factory	O	O	O	O
	Kit #5 945-1185 rpm	Factory	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 1135-1330 rpm	Factory			O	O
	Blower Belt Auto-Tensioner	**24B80**	X	X	X	X
CABINET						
Combination Coil/Hail Guards		**23U69**	OX	OX		
		23U71			OX	OX
Hinged Access Panels		Factory	O	O	O	O
CONTROLS						
BACnet® MS/TP Module		**38B35**	X	X	X	X
Dirty Filter Switch		**53W68**	X	X	X	X
Smoke Detector - Supply or Return (Power board and one sensor)		**37G73**	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)		**37G74**	X	X	X	X

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

OPTIONS / ACCESSORIES

Item Description		Order Number	Size 180	210	240	300
ELECTRICAL						
Voltage 60 Hz	208/230V - 3 phase	Factory	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O
Disconnect Switch (see Electric Heat Tables for usage)	80 amp	**54W85**	OX	OX	OX	OX
	150 amp	**54W86**	OX	OX	OX	OX
	250 amp	**54W87**	OX	OX	OX	OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only)	**74M70**	OX	OX	OX	OX
	[1] 20 amp non-powered, field-wired (208/230V, 460V, 575V)	**67E01**	X	X	X	X
	[1] 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O
Weatherproof Cover for GFI		**10C89**	X	X	X	X
ELECTRIC HEAT						
15 kW	208/240V-3ph	**30U62**	X	X	X	X
	460V-3ph	**30U63**	X	X	X	X
	575V-3ph	**30U64**	X	X	X	X
30 kW	208/240V-3ph	**30U65**	X	X	X	X
	460V-3ph	**30U66**	X	X	X	X
	575V-3ph	**30U67**	X	X	X	X
45 kW	208/240V-3ph	**30U71**	X	X	X	X
	460V-3ph	**30U72**	X	X	X	X
	575V-3ph	**30U73**	X	X	X	X
60 kW	208/240V-3ph	**30U77**	X	X	X	X
	460V-3ph	**30U78**	X	X	X	X
	575V-3ph	**30U79**	X	X	X	X
90 kW	208/240V-3ph	**30U83**		X	X	X
	460V-3ph	**30U84**		X	X	X
	575V-3ph	**30U85**		X	X	X

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

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

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OPTIONS / ACCESSORIES

Item Description		Order Number	Size 180	210	240	300
INDOOR AIR QUALITY						
Air Filters						
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 in. (Order 6 per unit)	MERV 8	**54W67**	X	X	X	X
	MERV 13	**52W40**	X	X	X	X
	MERV 16	**21U42**	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)		**44N61**	X	X	X	X
Indoor Air Quality (CO_2) Sensors						
Sensor - Wall-mount, off-white plastic cover with LCD display		**77N39**	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		**23V86**	X	X	X	X
Sensor - Black plastic case, LCD display, rated for plenum mounting		**87N52**	X	X	X	X
Sensor - Black plastic case, no display, rated for plenum mounting		**23V87**	X	X	X	X
CO_2 Sensor Duct Mounting Kit - for downflow applications		**23Y47**	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO_2 sensors (**77N39**)		**90N43**	X	X	X	X
UVC Germicidal Light Kit						
[2] Healthy Climate® UVC Light Kit (110/230V-1ph)		**21A94**	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	**10H20**	X	X	X	X
	575V primary, 230V secondary	**10H21**	X	X	X	X
Needlepoint Bipolar Ionization (NPBI)						
Needlepoint Bipolar Ionization (NPBI) Kits		**21U37**	X	X		
		21U38			X	
		21U39				X
ECONOMIZER						
High Performance Economizer (Approved for California Title 24 Building Standards AMCA Class 1A Certified)						
High Performance Economizer (Downflow or Horizontal) 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		**22J18**	OX	OX	OX	OX
Economizer Controls						
Differential Enthalpy (Not for Title 24)	Order 2	**21Z09**	X	X	X	X
Sensible Control	Sensor is Furnished	Factory	O	O	O	O
Single Enthalpy (Not for Title 24)		**21Z09**	OX	OX	OX	OX
Barometric Relief Dampers With Exhaust Hood						
Downflow Barometric Relief Dampers		**54W78**	OX	OX	OX	OX
Horizontal Barometric Relief Dampers		**16K99**	X	X	X	X

[2] 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).

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

OPTIONS / ACCESSORIES

Item Description		Order Number	Size 180	210	240	300
OUTDOOR AIR						
Outdoor Air Dampers With Outdoor Air Hood						
Motorized		**22J27**	X	X	X	X
Manual		**13U05**	X	X	X	X
[3] POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)						
Standard Static, SCCR Rated	208/230V	**22H90**	X	X	X	X
	460V	**22H91**	X	X	X	X
	575V	**22V34**	X	X	X	X
ROOF CURBS						
Hybrid Roof Curbs, Downflow						
8 in. height		**11F58**	X	X	X	X
14 in. height		**11F59**	X	X	X	X
18 in. height		**11F60**	X	X	X	X
24 in. height		**11F61**	X	X	X	X
Adjustable Pitch Curb						
14 in. height		**43W26**	X	X	X	X
Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit						
26 in. height - slab applications		**11T89**	X	X	X	
30 in. height - slab applications		**11T90**				X
37 in. height - rooftop applications		**11T96**	X	X	X	
41 in. height - rooftop applications		**11T97**				X
Insulation Kit For Standard Horizontal Curbs						
For 26 in. Curb		**73K32**	X	X	X	
For 30 in. Curb		**73K33**				X
For 37 in. Curb		**73K34**	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
CEILING DIFFUSERS						
Step-Down - Order one		**13K63**	X			
		13K64		X	X	X
Flush - Order one		**13K58**	X			
		13K59		X	X	X
Transitions (Supply and Return) - Order one		**12X68**	X			
		12X70		X	X	X

[3] Field installed Power Exhaust requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers with Exhaust Hood. Must be ordered separately.

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

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X = Field Installed

SPECIFICATIONS

Model			LCX180S5M	LCX210S5M	LCX240S5M	LCX300S5M
Nominal Tonnage			15 Ton	17.5 Ton	20 Ton	25 Ton
Efficiency Type			Standard	Standard	Standard	Standard
Blower Type			MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume
Cooling Performance	Gross Cooling Capacity - Btuh		178,000	206,000	236,000	282,000
	[1] Net Cooling Capacity - Btuh		172,000	200,000	228,000	270,000
	[1] AHRI Rated Air Flow - cfm		7200	6150	7100	7450
	Total Unit Power - kW		15.6	18.2	20.7	27
	[1] IEER (Btuh/Watt)		14.2	14.2	14.2	13.2
	[1] EER (Btuh/Watt)		11.0	11.0	11.0	10.0
Sound Rating Number		dBA	86	86	93	94
Refrigerant Charge	Refrigerant Type		R-454B	R-454B	R-454B	R-454B
	Without Reheat Option	Circuit 1	6 lbs. 11 oz.	6 lbs. 6 oz.	7 lbs. 4 oz.	5 lbs. 15 oz.
		Circuit 2	5 lbs. 3 oz.	6 lbs. 2 oz.	7 lbs. 2 oz.	5 lbs. 8 oz.
		Circuit 3	5 lbs. 5 oz.	7 lbs. 13 oz.	6 lbs. 15 oz.	5 lbs. 5 oz.
		Circuit 4	- - -	- - -	- - -	5 lbs. 6 oz.
Electric Heat Available, see page 18			15-30-45-60 kW	15-30-45-60-90 kW		
Compressor Type (number)			Scroll (3)	Scroll (3)	Scroll (3)	Scroll (4)
Outdoor Coils	Net face area - ft.² (total)		41.1	41.1	55.0	55.0
	Rows		1	1	1	1
	Fins - in.		23	23	23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (3 PSC)	1/3 (3 PSC)	1/3 (4 PSC)	1/3 (6 PSC)
	Rpm		1075	1075	1075	1075
	Watts		1100	1100	1665	1950
	Diameter - (No.) in.		(3) 24	(3) 24	(4) 24	(6) 24
	Blades		3	3	3	3
	Total Air volume - cfm		12,000	12,000	16,000	20,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Rows		3	4	4	4
	Fins - in.		14	14	14	14
	Condensate drain size (NPT) - in.		(1) 1	(1) 1	(1) 1	(1) 1
	Expansion device type		Balanced Port Thermostatic Expansion Valve, removable element head			
[2] **Indoor Blower and Drive Selection**	Nominal motor HP		3, 5, 7.5		5, 7.5, 10	
	Maximum usable motor HP (US)		3.45, 5.75, 8.62		5.75, 8.62, 11.5	
	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		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 1135-1330 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15			
Filters	Type of filter		MERV 4, Disposable			
	Number and size - in.		(6) 24 x 24 x 2			
Line voltage data (Volts-Phase-Hz)			208/230-3-60 460-3-60 575-3-60			

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 – Motor service factor limit - 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.

15 TON - LCX180S5M (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	85°F
63°F	3500	120.2	4.95	0.76	0.85	0.95	113.2	5.79	0.77	0.86	0.96	106.7	6.65	0.77	0.87	0.97	100.3	7.55	0.77	0.88	0.97
	4000	124.1	4.96	0.78	0.88	0.97	117.6	5.81	0.78	0.89	0.98	111	6.66	0.79	0.9	0.98	104.2	7.57	0.79	0.91	0.99
	4500	128	4.98	0.8	0.9	0.98	121.4	5.82	0.8	0.91	0.99	114.5	6.67	0.81	0.93	1	107.5	7.58	0.81	0.94	1
67°F	3500	125.7	4.97	0.66	0.75	0.83	119.3	5.82	0.65	0.75	0.83	112.8	6.67	0.65	0.75	0.84	105.7	7.57	0.65	0.75	0.86
	4000	130.6	4.98	0.67	0.76	0.85	124	5.83	0.66	0.77	0.86	117.1	6.68	0.66	0.77	0.88	109.3	7.58	0.66	0.78	0.88
	4500	134.5	4.99	0.68	0.78	0.88	127.7	5.84	0.68	0.79	0.89	120.6	6.69	0.67	0.79	0.9	112.8	7.6	0.67	0.8	0.92
71°F	3500	132.2	4.99	0.55	0.64	0.73	125.7	5.83	0.54	0.64	0.73	118.9	6.69	0.53	0.64	0.74	111.7	7.59	0.53	0.64	0.74
	4000	136.9	5	0.55	0.66	0.75	130.1	5.85	0.55	0.66	0.75	122.9	6.7	0.54	0.65	0.76	115	7.61	0.54	0.65	0.76
	4500	140.7	5.01	0.56	0.67	0.77	134	5.86	0.56	0.67	0.77	126.3	6.71	0.55	0.67	0.78	119.6	7.62	0.54	0.66	0.78

15 TON - LCX180S5M (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	85°F
63°F	4800	169.2	9.86	0.71	0.86	0.99	158.5	11.19	0.72	0.87	1	146.9	12.64	0.73	0.89	1	134.6	14.29	0.74	0.92	1
	6000	178.3	9.9	0.77	0.93	1	166.2	11.22	0.78	0.95	1	154.2	12.67	0.79	0.98	1	142.6	14.33	0.81	1	1
	7200	185.8	9.92	0.82	0.99	1	174.2	11.25	0.83	1	1	162.8	12.71	0.86	1	1	150.9	14.36	0.88	1	1
67°F	4800	181	9.91	0.55	0.69	0.82	169.1	11.23	0.55	0.7	0.84	157.5	12.69	0.55	0.7	0.86	144.9	14.34	0.55	0.72	0.88
	6000	189.9	9.94	0.59	0.74	0.9	177.9	11.27	0.59	0.76	0.92	165.1	12.72	0.59	0.77	0.94	152.1	14.36	0.59	0.79	0.97
	7200	196.7	9.96	0.62	0.8	0.96	183.6	11.29	0.62	0.82	0.99	170.5	12.74	0.63	0.84	1	156.6	14.38	0.64	0.86	1
71°F	4800	192.4	9.95	0.41	0.54	0.67	180.7	11.28	0.4	0.54	0.67	167.5	12.73	0.39	0.54	0.68	154.9	14.37	0.37	0.54	0.7
	6000	201.5	9.98	0.42	0.58	0.72	189	11.31	0.41	0.58	0.74	176.2	12.76	0.4	0.58	0.75	162.3	14.4	0.4	0.59	0.77
	7200	208.3	10	0.43	0.61	0.78	195.4	11.33	0.43	0.62	0.8	181.7	12.78	0.42	0.63	0.82	167.8	14.42	0.42	0.64	0.84

17.5 TON - LCX210S5M (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	85°F
63°F	4000	153.4	6.42	0.79	0.87	0.96	146.7	7.31	0.79	0.88	0.97	140.1	8.31	0.8	0.89	0.97	131.8	9.41	0.8	0.9	0.98
	4750	160.5	6.49	0.81	0.9	0.98	153.3	7.39	0.81	0.91	0.99	145.3	8.37	0.82	0.93	0.99	138	9.49	0.83	0.94	1
	5500	165.9	6.55	0.83	0.94	1	158.6	7.45	0.84	0.95	1	150.2	8.44	0.84	0.96	1	142.3	9.55	0.86	0.97	1
67°F	4000	161.7	6.51	0.69	0.77	0.85	154.7	7.41	0.69	0.77	0.86	147.2	8.4	0.69	0.78	0.87	139.1	9.51	0.69	0.79	0.88
	4750	169	6.59	0.7	0.79	0.88	161.4	7.49	0.7	0.8	0.89	153.4	8.48	0.7	0.8	0.91	144.8	9.59	0.71	0.81	0.92
	5500	174.7	6.65	0.71	0.81	0.91	165.9	7.54	0.72	0.82	0.93	158.3	8.55	0.72	0.83	0.94	149.4	9.66	0.72	0.84	0.96
71°F	4000	169.5	6.59	0.59	0.68	0.75	162.5	7.5	0.59	0.68	0.76	154	8.49	0.59	0.68	0.76	146	9.61	0.58	0.68	0.77
	4750	177.3	6.68	0.6	0.69	0.78	168.7	7.58	0.6	0.69	0.78	160.7	8.58	0.59	0.69	0.79	152.6	9.71	0.59	0.7	0.8
	5500	182.7	6.75	0.6	0.7	0.8	174.1	7.65	0.6	0.71	0.81	165.5	8.65	0.6	0.71	0.82	156.7	9.77	0.6	0.72	0.83

17.5 TON - LCX210S5M (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	85°F
63°F	5600	210.4	12.57	0.72	0.86	0.99	200	14.27	0.72	0.87	1	186.4	16.17	0.74	0.9	1	174.5	18.41	0.75	0.92	1
	7000	221	12.73	0.77	0.94	1	209.3	14.41	0.78	0.95	1	196.1	16.33	0.8	0.98	1	183.9	18.58	0.82	1	1
	8400	231.1	12.88	0.83	0.99	1	218.5	14.56	0.84	1	1	206.5	16.51	0.87	1	1	193.7	18.76	0.89	1	1
67°F	5600	224.8	12.78	0.56	0.69	0.82	212.7	14.47	0.56	0.7	0.84	199.6	16.38	0.57	0.71	0.86	186.4	18.62	0.57	0.73	0.89
	7000	234.4	12.93	0.59	0.75	0.9	222	14.62	0.6	0.76	0.93	208.4	16.54	0.61	0.78	0.95	193.8	18.76	0.61	0.8	0.98
	8400	242.1	13.05	0.63	0.81	0.97	228.4	14.73	0.64	0.83	0.99	214.1	16.65	0.65	0.85	1	199.3	18.85	0.66	0.87	1
71°F	5600	238.7	12.99	0.42	0.55	0.67	226.3	14.69	0.41	0.55	0.68	212.3	16.61	0.41	0.55	0.69	198.3	18.83	0.4	0.56	0.71
	7000	248.9	13.16	0.43	0.59	0.73	235.3	14.85	0.43	0.59	0.74	221.1	16.77	0.43	0.6	0.76	206.5	18.99	0.43	0.61	0.78
	8400	256.4	13.28	0.45	0.62	0.79	242.5	14.97	0.45	0.63	0.81	227.9	16.89	0.45	0.64	0.83	211.9	19.08	0.45	0.65	0.85

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 - LCX240S5M (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	85°F
63°F	4500	171	6.96	0.79	0.87	0.96	163.6	8.06	0.79	0.88	0.97	156.5	9.23	0.8	0.89	0.98	149.5	10.51	0.8	0.9	0.98
	5500	179.9	6.96	0.81	0.91	0.99	172.1	8.08	0.82	0.92	0.99	163.9	9.27	0.82	0.94	1	156.4	10.56	0.83	0.95	1
	6500	186.6	6.95	0.84	0.95	1	178.5	8.09	0.85	0.96	1	170.2	9.3	0.85	0.97	1	161.7	10.6	0.87	0.98	1
67°F	4500	180.3	6.96	0.69	0.77	0.85	172.9	8.08	0.69	0.77	0.86	164.8	9.28	0.69	0.78	0.87	157.5	10.57	0.69	0.79	0.88
	5500	189.8	6.95	0.7	0.79	0.89	181.8	8.1	0.7	0.8	0.9	172.7	9.32	0.71	0.81	0.91	164.4	10.63	0.71	0.82	0.92
	6500	196.7	6.94	0.72	0.82	0.92	187.8	8.11	0.72	0.83	0.94	179	9.34	0.73	0.84	0.95	169.9	10.66	0.73	0.85	0.96
71°F	4500	189.2	6.95	0.59	0.67	0.75	181.6	8.1	0.58	0.68	0.76	173.1	9.32	0.59	0.68	0.76	165.4	10.64	0.58	0.68	0.77
	5500	199.3	6.94	0.6	0.69	0.78	191	8.11	0.6	0.69	0.79	181.5	9.35	0.6	0.7	0.79	172.7	10.68	0.6	0.7	0.8
	6500	206.1	6.92	0.61	0.71	0.8	197.2	8.12	0.61	0.71	0.81	188.5	9.38	0.61	0.72	0.82	178.9	10.73	0.61	0.72	0.83

20 TON - LCX240S5M (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	85°F
63°F	6400	238.6	14.89	0.71	0.85	0.98	225.8	16.88	0.72	0.87	1	213.7	19.09	0.73	0.89	1	200.8	21.55	0.75	0.91	1
	8000	250.9	14.97	0.77	0.93	1	237.4	17	0.78	0.95	1	224.1	19.22	0.8	0.97	1	211	21.69	0.82	0.99	1
	9600	260.2	15.04	0.82	0.99	1	247.4	17.1	0.84	1	1	235.4	19.36	0.86	1	1	222	21.85	0.88	1	1
67°F	6400	254.3	15	0.56	0.69	0.82	241.8	17.04	0.56	0.7	0.84	228.9	19.28	0.56	0.71	0.86	213.9	21.74	0.57	0.72	0.88
	8000	265.9	15.08	0.59	0.74	0.9	252.1	17.14	0.6	0.76	0.92	238.4	19.39	0.6	0.77	0.94	223.5	21.87	0.61	0.79	0.97
	9600	274.1	15.13	0.62	0.8	0.97	260	17.22	0.63	0.82	0.98	244.7	19.47	0.64	0.84	1	228.9	21.94	0.65	0.86	1
71°F	6400	270.3	15.11	0.42	0.54	0.67	256.8	17.19	0.41	0.54	0.68	243.1	19.45	0.41	0.55	0.69	228.2	21.93	0.4	0.56	0.7
	8000	282	15.18	0.43	0.58	0.72	268.1	17.29	0.43	0.58	0.74	253.4	19.56	0.43	0.59	0.75	237.6	22.05	0.43	0.6	0.77
	9600	290.4	15.24	0.44	0.61	0.78	275.4	17.35	0.44	0.62	0.8	260.3	19.63	0.45	0.63	0.82	243.7	22.12	0.45	0.65	0.84

25 TON - LCX300S5M (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	85°F
63°F	5750	166.6	6.25	0.77	0.92	1	159	7.15	0.78	0.94	1	150.9	8.15	0.79	0.95	1	142.4	9.28	0.8	0.97	1
	6750	172.5	6.29	0.81	0.97	1	164.7	7.2	0.82	0.98	1	156.3	8.2	0.84	0.99	1	148.1	9.33	0.85	1	1
	7750	177.4	6.33	0.84	0.99	1	169.8	7.24	0.86	1	1	161.2	8.25	0.88	1	1	152.6	9.38	0.9	1	1
67°F	5750	176.7	6.32	0.6	0.75	0.89	168.5	7.23	0.61	0.76	0.91	158.9	8.22	0.61	0.78	0.93	149.9	9.35	0.62	0.79	0.95
	6750	181.2	6.36	0.63	0.79	0.94	172.6	7.27	0.63	0.8	0.96	163.1	8.26	0.64	0.82	0.98	153.9	9.4	0.65	0.83	0.99
	7750	185	6.38	0.65	0.83	0.98	175.6	7.29	0.66	0.84	0.99	166.3	8.29	0.66	0.86	1	156.6	9.43	0.67	0.88	1
71°F	5750	185.1	6.38	0.45	0.59	0.73	176	7.29	0.45	0.6	0.74	167.2	8.3	0.45	0.61	0.76	158.2	9.44	0.44	0.61	0.77
	6750	190.4	6.43	0.46	0.62	0.77	181.2	7.34	0.46	0.63	0.78	172.2	8.35	0.46	0.63	0.8	162.4	9.49	0.46	0.64	0.82
	7750	194.9	6.47	0.48	0.64	0.81	185.1	7.38	0.47	0.65	0.82	175.6	8.39	0.47	0.66	0.84	165.2	9.53	0.47	0.67	0.86

25 TON - LCX300S5M (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	85°F
63°F	8000	294.6	17.45	0.7	0.83	0.94	278.2	19.93	0.71	0.85	0.95	262.2	22.71	0.72	0.85	0.97	243.7	25.97	0.73	0.87	0.99
	9500	307.6	17.53	0.75	0.87	0.98	290.3	19.94	0.76	0.89	0.99	272.8	22.69	0.78	0.91	1	254.7	25.91	0.78	0.92	1
	11000	317.2	17.58	0.79	0.91	1	298.8	20.02	0.79	0.93	1	281.3	22.78	0.81	0.95	1	263.6	26.03	0.82	0.97	1
67°F	8000	309.2	17.64	0.53	0.68	0.81	291	19.91	0.54	0.68	0.82	273.3	22.7	0.53	0.69	0.83	254.3	26.19	0.54	0.7	0.84
	9500	319.2	17.69	0.57	0.72	0.85	301.7	20.16	0.57	0.73	0.86	283	22.76	0.57	0.75	0.88	262.5	25.98	0.55	0.77	0.9
	11000	328.7	17.74	0.57	0.76	0.89	309.9	20.19	0.58	0.78	0.91	290.4	22.86	0.58	0.8	0.93	271.1	26.07	0.59	0.8	0.95
71°F	8000	329.8	17.77	0.39	0.52	0.65	311.8	20.21	0.38	0.52	0.65	292.3	22.89	0.38	0.53	0.67	271.7	26.07	0.37	0.52	0.69
	9500	340.7	17.82	0.4	0.55	0.69	321.5	20.31	0.39	0.56	0.71	301.3	23.03	0.39	0.55	0.72	280	26.16	0.39	0.56	0.74
	11000	348.5	17.79	0.41	0.57	0.74	329	20.37	0.41	0.57	0.75	307.9	23.09	0.4	0.58	0.78	285.2	26.22	0.39	0.59	0.79

BLOWER DATA

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

FOR ALL UNITS ADD:

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

Then determine from blower table blower motor output and drive required.
See page 25 for wet coil, option/accessory air resistance data, and factory installed drive kit specifications.
See page 26 for minimum air volume required for use with optional electric heat.

Air Volume cfm	TOTAL STATIC PRESSURE - Inches Water Gauge (Pa)																									
	0.20		0.40		0.60		0.80		1.00		1.20		1.40		1.60		1.80		2.00		2.20		2.40		2.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2750	385	0.30	505	0.50	600	0.70	680	0.90	755	1.10	820	1.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3000	395	0.35	515	0.55	610	0.75	685	1.00	760	1.20	825	1.45	885	1.70	---	---	---	---	---	---	---	---	---	---	---	---
3250	405	0.40	520	0.60	615	0.85	695	1.10	765	1.30	830	1.60	890	1.85	950	2.10	---	---	---	---	---	---	---	---	---	---
3500	415	0.45	530	0.70	620	0.95	700	1.20	775	1.45	840	1.70	900	2.00	955	2.25	1005	2.55	---	---	---	---	---	---	---	---
3750	425	0.50	540	0.75	630	1.05	710	1.30	780	1.60	845	1.85	905	2.15	960	2.45	1010	2.70	1060	3.00	1110	3.30	---	---	---	---
4000	435	0.55	545	0.85	635	1.10	715	1.40	785	1.70	850	2.00	910	2.30	965	2.60	1020	2.90	1070	3.25	1115	3.55	1160	3.85	1205	4.15
4250	445	0.60	555	0.90	645	1.25	725	1.55	795	1.85	855	2.15	915	2.45	970	2.80	1025	3.10	1075	3.45	1120	3.75	1165	4.10	1210	4.45
4500	455	0.70	565	1.00	655	1.35	730	1.65	800	2.00	865	2.35	925	2.65	980	3.00	1030	3.30	1080	3.65	1130	4.05	1175	4.35	1215	4.70
4750	470	0.75	575	1.10	660	1.45	740	1.80	810	2.15	870	2.50	930	2.85	985	3.20	1040	3.55	1085	3.90	1135	4.25	1180	4.65	1225	5.00
5000	480	0.85	585	1.25	670	1.60	750	1.95	815	2.30	880	2.70	940	3.05	995	3.40	1045	3.80	1095	4.15	1140	4.50	1185	4.90	1230	5.30
5250	495	0.95	595	1.35	680	1.70	755	2.10	825	2.50	890	2.90	945	3.25	1000	3.65	1050	4.00	1100	4.40	1150	4.80	1195	5.20	1235	5.60
5500	505	1.05	605	1.45	690	1.85	765	2.25	835	2.65	895	3.05	955	3.45	1010	3.85	1060	4.25	1110	4.70	1155	5.10	1200	5.50	1240	5.90
5750	520	1.15	615	1.60	700	2.00	775	2.45	840	2.85	905	3.25	960	3.65	1015	4.10	1065	4.50	1115	4.95	1160	5.35	1205	5.80	1250	6.25
6000	530	1.30	630	1.75	710	2.15	785	2.60	850	3.05	910	3.45	970	3.90	1025	4.35	1075	4.80	1120	5.20	1170	5.65	1215	6.10	1255	6.55
6250	545	1.40	640	1.90	720	2.35	795	2.80	860	3.25	920	3.70	975	4.15	1030	4.60	1080	5.05	1130	5.50	1175	5.95	1220	6.45	1265	6.90
6500	560	1.55	650	2.05	730	2.50	805	3.00	870	3.45	930	3.95	985	4.40	1040	4.85	1090	5.35	1140	5.85	1185	6.30	1225	6.75	1270	7.25
6750	570	1.70	665	2.20	745	2.70	815	3.20	880	3.70	940	4.20	995	4.65	1045	5.10	1095	5.60	1145	6.10	1190	6.60	1235	7.10	1275	7.60
7000	585	1.85	675	2.35	755	2.90	825	3.40	890	3.95	950	4.45	1005	4.95	1055	5.40	1105	5.95	1155	6.45	1200	6.95	1240	7.45	1285	8.00
7250	600	2.00	690	2.60	765	3.10	835	3.65	900	4.15	955	4.65	1015	5.25	1065	5.75	1115	6.25	1160	6.75	1205	7.30	1250	7.85	1290	8.35
7500	615	2.20	700	2.75	775	3.30	845	3.85	910	4.45	965	4.95	1020	5.50	1075	6.05	1125	6.60	1170	7.15	1215	7.65	1260	8.25	1300	8.75
7750	630	2.40	715	3.00	790	3.55	855	4.10	920	4.70	975	5.25	1030	5.80	1080	6.35	1130	6.90	1180	7.50	1225	8.05	1265	8.60	1305	9.15
8000	640	2.55	725	3.20	800	3.80	865	4.35	930	4.95	985	5.50	1040	6.10	1090	6.70	1140	7.25	1185	7.85	1230	8.40	1275	9.00	1315	9.60
8250	655	2.80	740	3.40	810	4.00	880	4.65	940	5.25	995	5.85	1050	6.45	1100	7.05	1150	7.65	1195	8.25	1240	8.85	1280	9.40	1325	10.05
8500	670	3.00	750	3.65	825	4.30	890	4.90	950	5.55	1005	6.15	1060	6.80	1110	7.40	1160	8.05	1205	8.65	1250	9.25	1290	9.85	1330	10.45
8750	685	3.25	765	3.90	835	4.55	900	5.20	960	5.85	1015	6.45	1070	7.15	1120	7.75	1165	8.35	1215	9.05	1255	9.65	1300	10.30	---	---
9000	700	3.50	780	4.20	850	4.85	910	5.50	970	6.15	1025	6.80	1080	7.50	1130	8.15	1175	8.75	1220	9.40	1265	10.10	1310	10.80	---	---
9250	715	3.75	790	4.45	860	5.15	925	5.85	985	6.55	1040	7.20	1090	7.85	1140	8.55	1185	9.20	1230	9.85	1275	10.55	1315	11.20	---	---
9500	730	4.00	805	4.75	875	5.45	935	6.15	995	6.90	1050	7.60	1100	8.25	1150	8.95	1195	9.60	1240	10.30	1285	11.05	---	---	---	---
9750	745	4.30	820	5.05	885	5.75	950	6.55	1005	7.20	1060	7.95	1110	8.65	1160	9.40	1205	10.05	1250	10.80	1295	11.50	---	---	---	---
10,000	760	4.60	835	5.40	900	6.15	960	6.85	1015	7.60	1070	8.35	1120	9.05	1170	9.80	1215	10.50	1260	11.25	---	---	---	---	---	---
10,250	775	4.90	845	5.65	910	6.45	970	7.20	1030	8.00	1080	8.75	1135	9.55	1180	10.25	1225	11.00	---	---	---	---	---	---	---	---
10,500	790	5.20	860	6.00	925	6.85	985	7.65	1040	8.40	1095	9.20	1145	10.00	1190	10.70	1235	11.45	---	---	---	---	---	---	---	---
10,750	805	5.55	875	6.40	940	7.25	1000	8.05	1055	8.85	1105	9.65	1155	10.45	1200	11.20	---	---	---	---	---	---	---	---	---	---
11,000	820	5.90	890	6.80	950	7.60	1010	8.45	1065	9.30	1115	10.05	1165	10.90	---	---	---	---	---	---	---	---	---	---	---	---

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 - 1330

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 – Motor service factor limit - 1.0.

FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE - in w.g.

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

Size	Air Volume cfm	[1] Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush
180	5600	39 - 49	28 - 37
	5800	42 - 51	29 - 38
	6000	44 - 54	40 - 50
	6200	45 - 55	42 - 51
	6400	46 - 55	43 - 52
	6600	47 - 56	45 - 56

Size	Air Volume cfm	[1] Effective Throw Range - ft.	
		RTD11-275S Step-Down	FD11-275S Flush
210 240 300	7200	33 - 38	26 - 35
	7400	35 - 40	28 - 37
	7600	36 - 41	29 - 38
	7800	38 - 43	40 - 50
	8000	39 - 44	42 - 51
	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 — 15 TON

Model		LCX180S5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (3)	Full Load Amps (3 Non-ECM)	2.4			1.3			1		
	Total	7.2			3.9			3		
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	HP	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	70	80	100	35	40	50	25	30	35
[3] Minimum Circuit Ampacity (MCA)	Unit Only	61	68	77	31	34	38	23	26	29
	With (2) 0.33 HP Power Exhaust	66	73	82	33	36	41	25	28	31

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	100	110	100	125	110	125	60	60	60	45	45	50
		45 kW	150	150	150	175	150	175	80	80	90	60	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	61	61	68	68	77	77	31	34	38	23	26	30
		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**	70	70	80	80	100	100	35	40	50	30	30	35
		30 kW	100	110	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	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**	66	66	73	73	82	82	33	36	41	26	29	32
		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.

ELECTRICAL/ELECTRIC HEAT DATA — 17.5 TON

Model		LCX210S5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 2 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 3 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Outdoor Fan Motors (3)	Full Load Amps (3 Non-ECM)	2.4			1.3			1		
	Total	7.2			3.9			3		
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	HP	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	100	110	125	45	50	50	35	40	45
	With (2) 0.33 HP Power Exhaust	110	110	125	45	50	50	40	40	45
[3] Minimum Circuit Ampacity	Unit Only	87	93	102	39	42	45	32	35	38
	With (2) 0.33 HP Power Exhaust	92	98	106	41	44	48	34	37	40

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	45	50	50	35	40	45
		30 kW	100	110	110	125	125	125	60	60	60	45	45	50
		45 kW	150	150	150	175	150	175	80	80	90	60	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
		90 kW	225	250	225	250	225	250	125	125	125	100	100	100
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	87	87	93	93	102	102	39	42	45	32	35	38
		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**	110	110	110	110	125	125	45	50	50	40	40	45
		30 kW	110	110	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	225	300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	92	92	98	98	106	106	41	44	48	34	37	40
		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.

ELECTRICAL/ELECTRIC HEAT DATA — 20 TON

Model		LCX240S5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 2 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 3 (Non-Inverter)	Rated Load Amps	24.4			11.9			9.4		
	Locked Rotor Amps	210			103			78		
Outdoor Fan Motors (4)	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
	Total	9.6			5.2			4		
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	HP	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	125	125	125	50	60	60	45	45	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	60	60	45	50	50
[3] Minimum Circuit Ampacity (MCA)	Unit Only	102	110	118	46	50	53	37	40	42
	With (2) 0.33 HP Power Exhaust	107	114	123	49	52	56	39	42	44

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**	125	125	125	125	125	125	50	60	60	45	45	50
		30 kW	125	125	125	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	250	300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	102	102	110	110	118	118	46	50	53	37	40	42
		30 kW	102	112	110	121	118	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**	125	125	125	125	150	150	60	60	60	45	50	50
		30 kW	125	125	125	150	150	150	60	70	70	50	50	60
		45 kW	150	175	175	175	175	200	90	90	90	70	70	80
		60 kW	175	175	175	200	175	200	90	90	100	70	80	80
		90 kW	225	250	225	4 300	250	300	125	150	150	100	110	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	107	107	114	114	123	123	49	52	56	39	42	44
		30 kW	107	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.

ELECTRICAL/ELECTRIC HEAT DATA — 25 TON

Model		LCX300S5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 2 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 3 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 4 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Outdoor Fan Motors (6)	Full Load Amps (6 Non-ECM)	2.4			1.3			1		
	Total	14.4			7.8			6		
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	HP	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	125	150	150	60	60	70	50	50	60
	With (2) 0.33 HP Power Exhaust	150	150	175	60	70	70	50	50	60
[3] Minimum Circuit Ampacity (MCA)	Unit Only	124	132	141	55	58	62	44	48	50
	With (2) 0.33 HP Power Exhaust	129	137	145	57	61	65	46	50	52

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**	125	125	150	150	150	150	60	60	70	50	50	60
		30 kW	125	125	150	150	150	150	60	60	70	50	50	60
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	250	300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	124	124	132	132	141	141	55	58	62	44	48	50
		30 kW	124	124	132	132	141	141	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**	150	150	150	150	175	175	60	70	70	50	50	60
		30 kW	150	150	150	150	175	175	60	70	70	50	50	60
		45 kW	150	175	175	175	175	200	90	90	90	70	70	80
		60 kW	175	175	175	200	175	200	90	90	100	70	80	80
		90 kW	225	250	225	300	250	300	125	150	150	100	110	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	129	129	137	137	145	145	57	61	65	46	50	52
		30 kW	129	129	137	137	145	145	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.

ELECTRICAL ACCESSORIES - DISCONNECTS

15 TON | LCX180S5

Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W85	54W85	54W85	54W85	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 | LCX210S5

Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W85	54W85	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	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	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
+ 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 | LCX240S5

Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
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	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86

25 TON | LCX300S5

Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
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

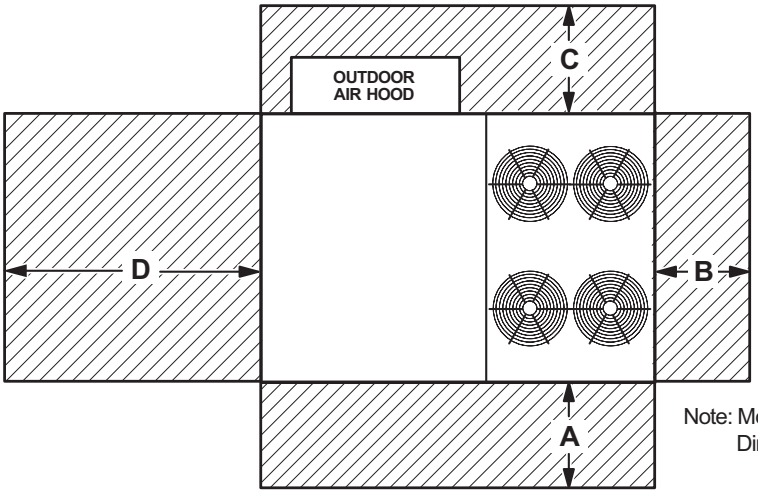
- For use with copper wiring only
- Field wiring not furnished
- All wiring must conform to NEC or CEC and local electrical codes
- For specific wiring information, please refer to the installation instructions

ELECTRIC HEAT CAPACITIES

Volts Input	15 kW			30 kW			45 kW			60 kW			90 kW		
	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	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	914	66	1676	Unobstructed
Minimum Operation Clearance	45	1143	36	914	36	914	41	1041	

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

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

OUTDOOR SOUND DATA

Size	Octave Band Sound Power Levels dBA, re 10^{-12} Watts - Center Frequency - Hz							[1] Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
180, 210	71	78	81	81	76	71	63	86
240	80	83	87	88	84	80	71	93
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 270-95 (includes pure tone penalty). Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dBA (100 Hz to 10,000 Hz).

WEIGHT DATA

Size	Net		Shipping	
	lbs.	kg	lbs.	kg
180S Base Unit	1724	782	1924	873
180S Max. Unit	2044	927	2244	1018
210S Base Unit	1884	855	2084	945
210S Max. Unit	2214	1004	2414	1095
240S Base Unit	2056	933	2256	1023
240S Max. Unit	2386	1082	2586	1173
300S Base Unit	2300	1043	2500	1134
300S Max. Unit	2590	1175	2790	1266

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.

FACTORY / FIELD INSTALLED OPTIONS AND ACCESSORIES - NET WEIGHTS

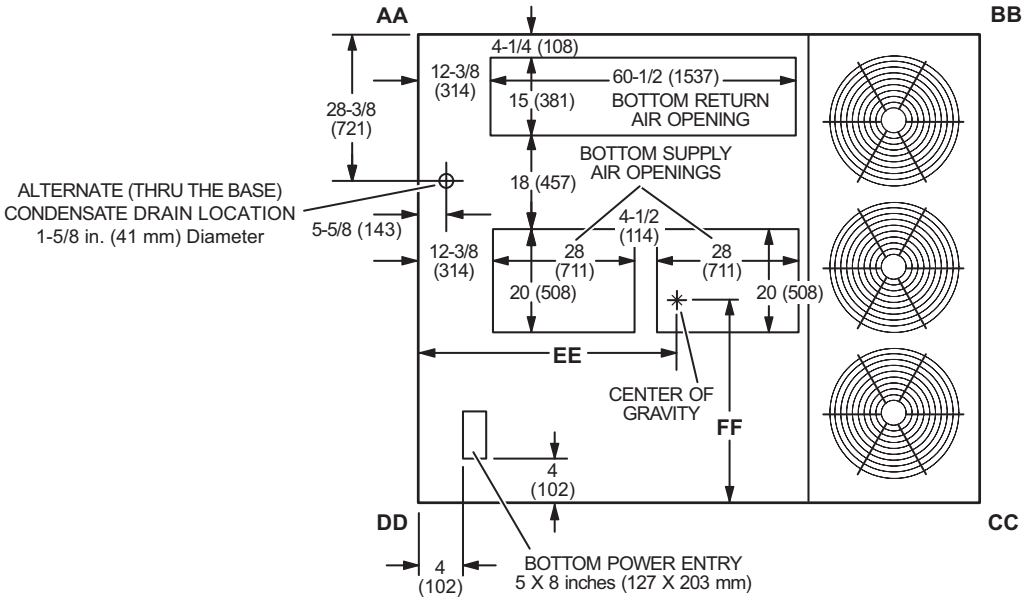
Description		lbs.	kg
ECONOMIZER / OUTDOOR AIR / EXHAUST			
Economizer			
Economizer Dampers (with Outdoor Air Hood)		102	46
Barometric Relief Dampers (downflow)		30	14
Barometric Relief Dampers (horizontal)		20	9
Outdoor Air Dampers With Hood (Downflow)			
Motorized		39	18
Manual		22	10
Power Exhaust		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			
180/210		30	13
240/300		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 Roof Curbs, Standard			
26 in. height		450	204
37 in. height		540	245
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

CORNER WEIGHTS | **CENTER OF GRAVITY**

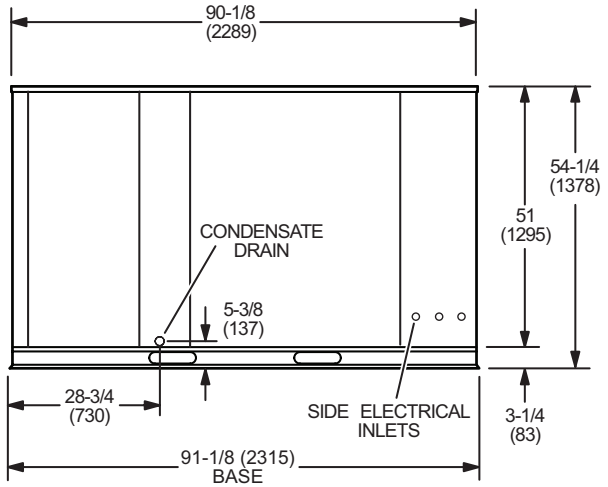
Model	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCX180S Base Unit	393	179	346	157	461	210	523	238	50-1/2	1282	39	993
LCX180S Max. Unit	507	231	414	188	505	229	618	281	48-3/8	1230	41	1043
LCX210S Base Uni	431	196	381	173	503	229	569	259	50-1/2	1284	39-1/4	998
LCX210S Max. Unit	555	252	469	213	545	248	645	293	49-3/8	1254	42.14	1071

Base Unit - The unit with NO INTERNAL OPTIONS.

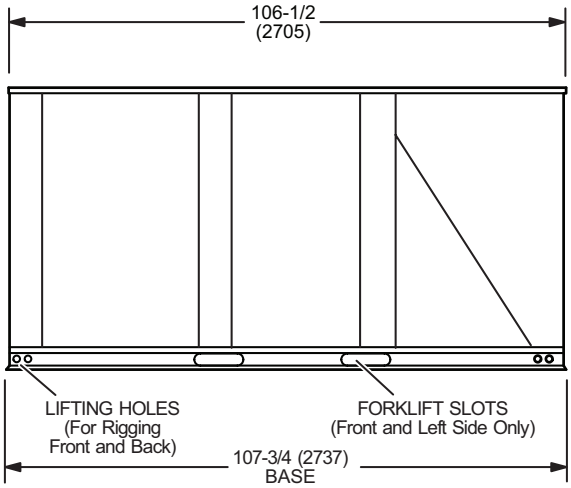
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW



END VIEW



SIDE VIEW

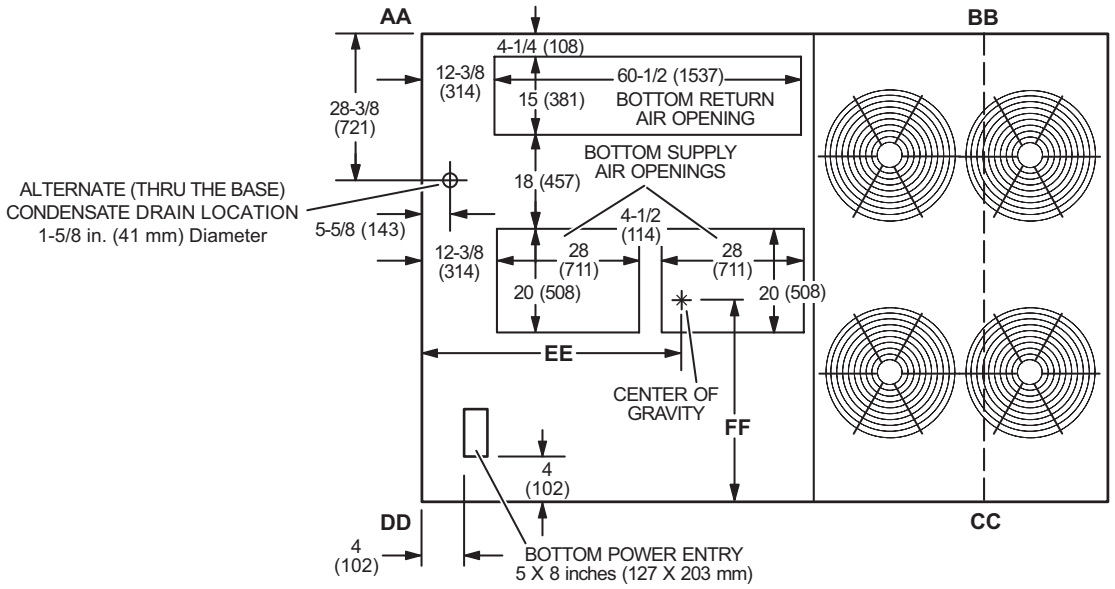
DIMENSIONS - UNIT LCX240

CORNER WEIGHTS | **CENTER OF GRAVITY**

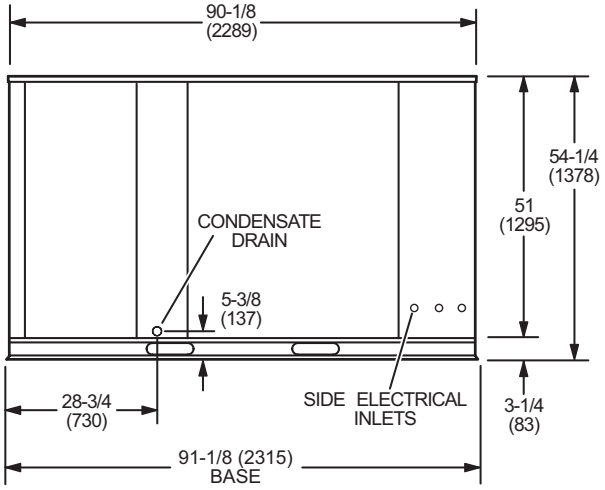
Model	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCX240S Base Unit	459	209	423	192	563	256	611	278	51-3/4	1313	39-1/8	993
LCX240S Max. Unit	579	263	522	237	610	277	675	307	51-1/8	1298	42	1068

Base Unit - The unit with NO INTERNAL OPTIONS.

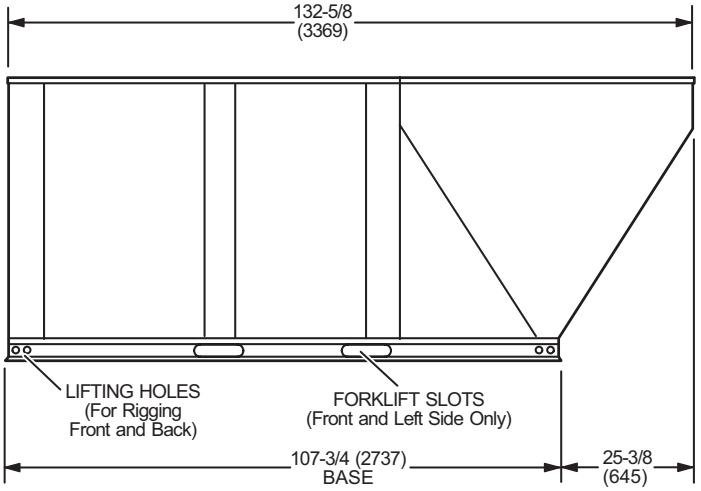
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW



END VIEW



SIDE VIEW

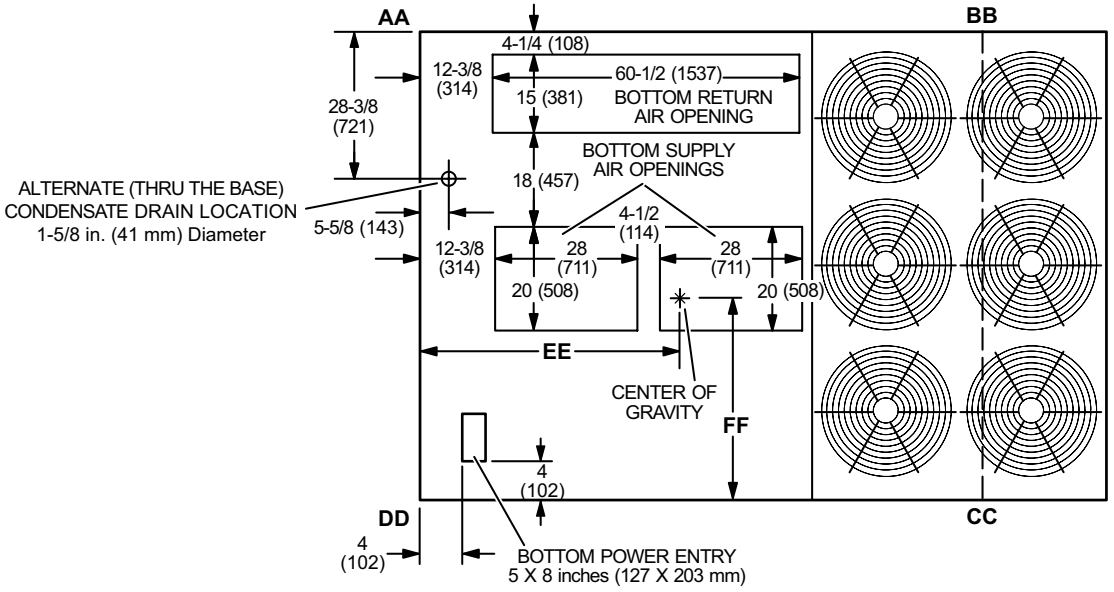
DIMENSIONS - UNIT LCX300

CORNER WEIGHTS | **CENTER OF GRAVITY**

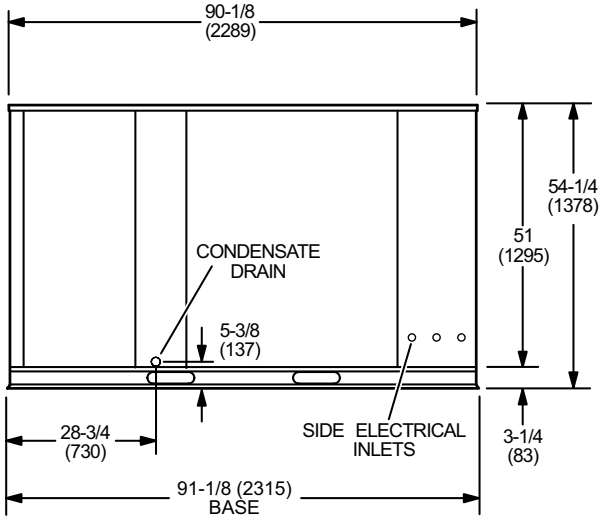
Model	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LCX300S Base Unit	457	208	477	217	697	317	669	304	55	1397	37	940
LCX300S Max. Unit	553	251	556	253	742	337	739	336	54	1372	39	991

Base Unit - The unit with NO INTERNAL OPTIONS.

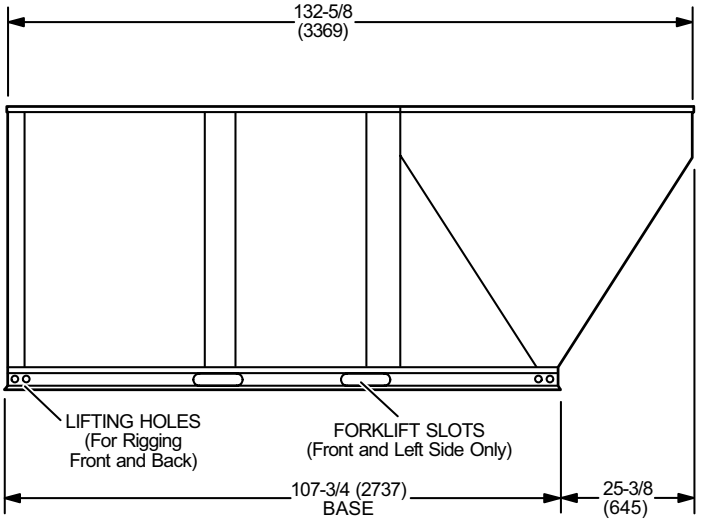
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW

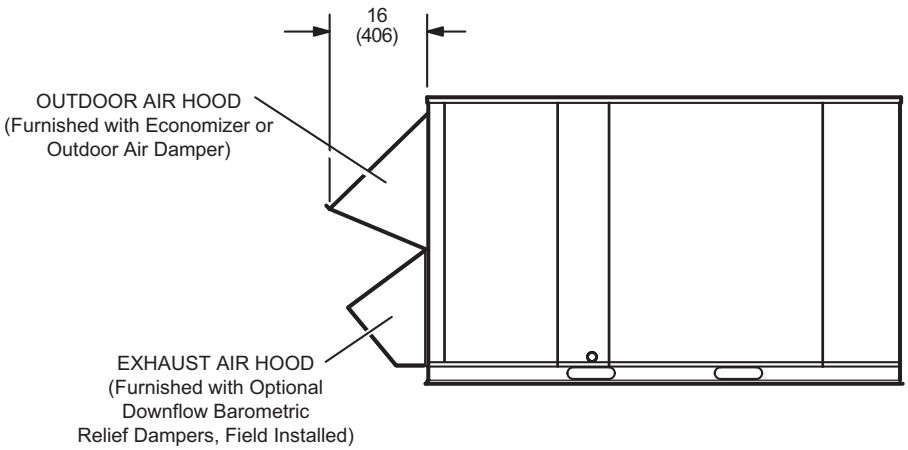


END VIEW



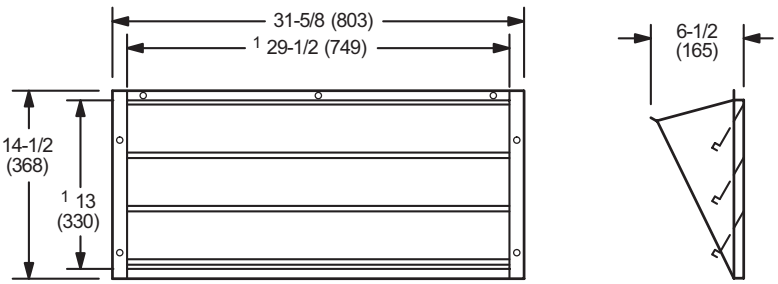
SIDE VIEW

OUTDOOR AIR HOOD DETAIL



OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD

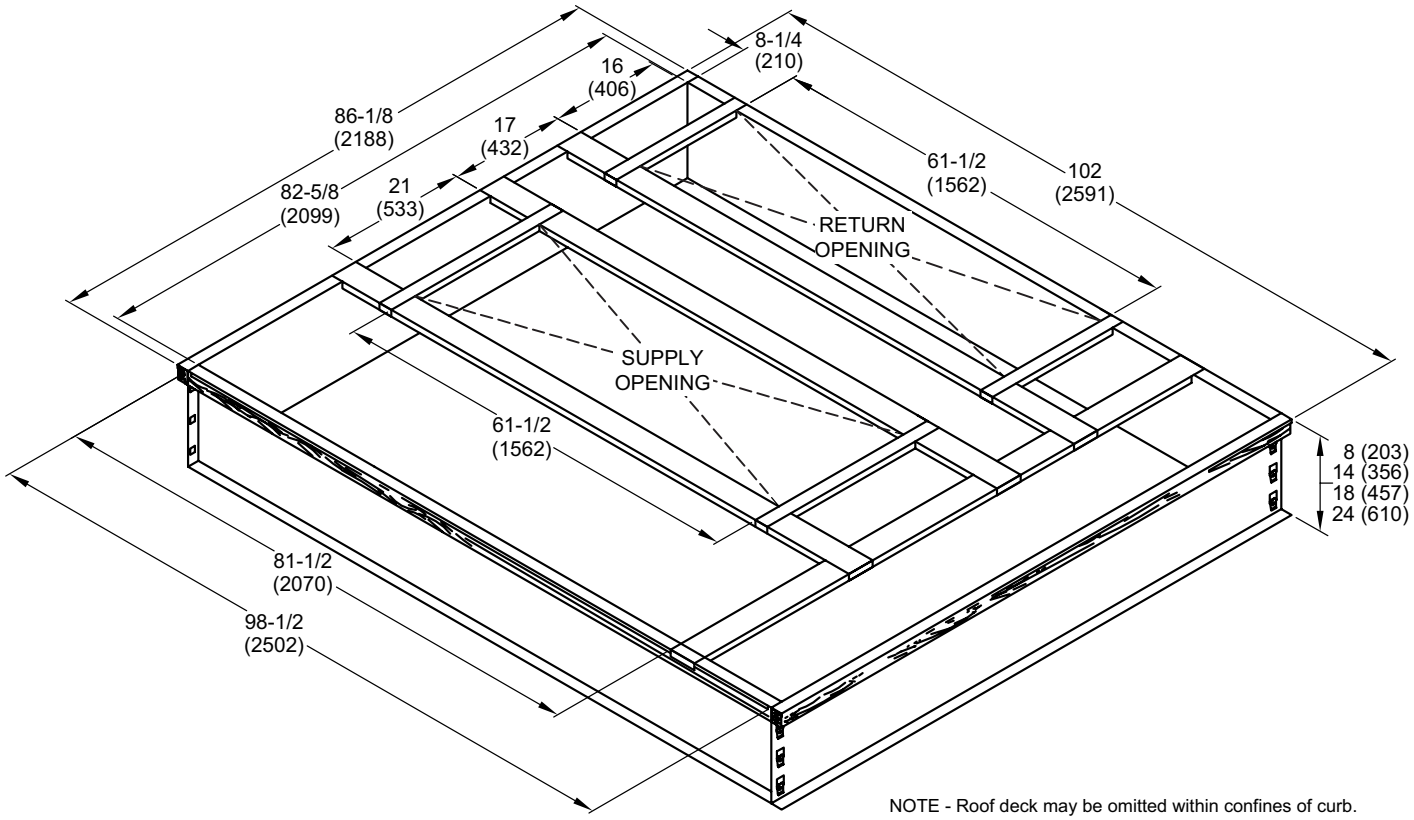
(Field installed in horizontal return air duct adjacent to unit)



FRONT VIEW **SIDE VIEW**

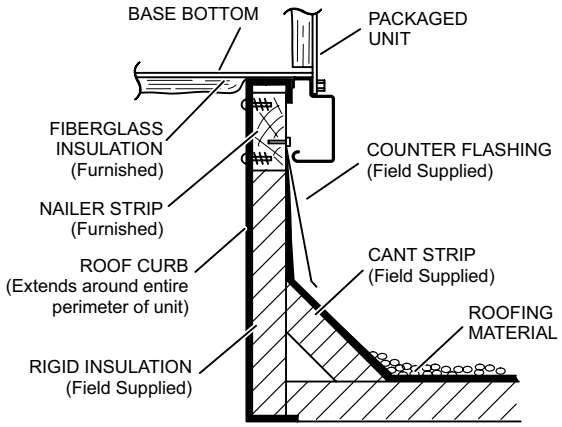
NOTE - Two furnished per order no.
[1] NOTE - Opening size required in return air duct.

HYBRID ROOF CURBS - DOUBLE DUCT OPENING

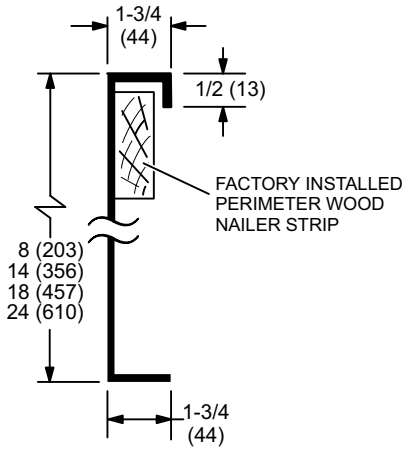


NOTE - Roof deck may be omitted within confines of curb.

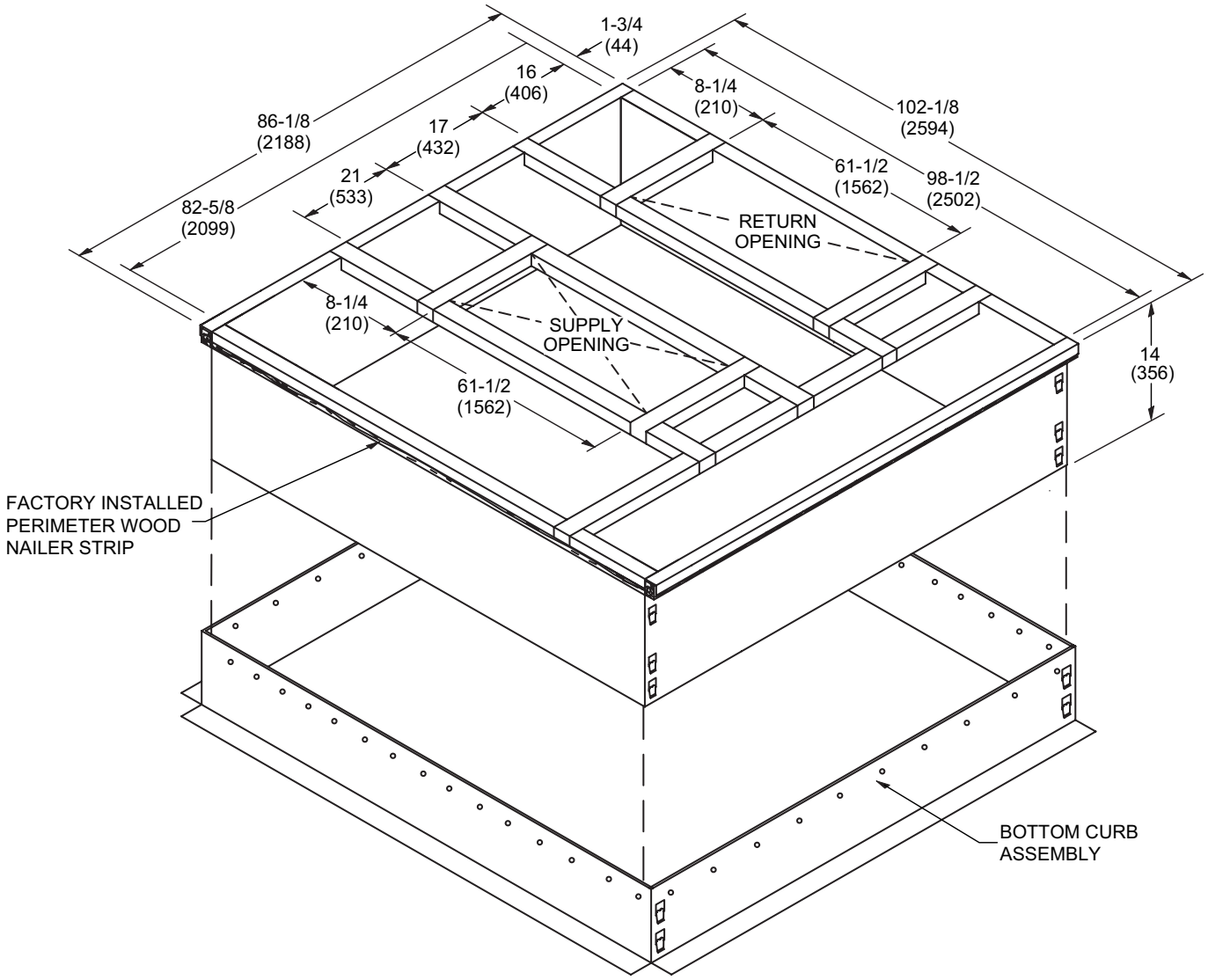
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

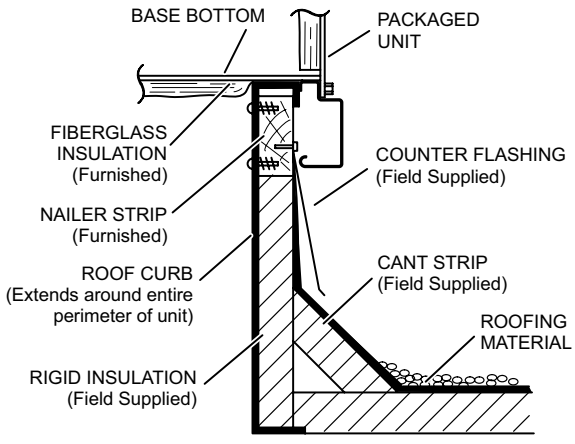


ADJUSTABLE PITCH CURB - DOUBLE DUCT OPENING

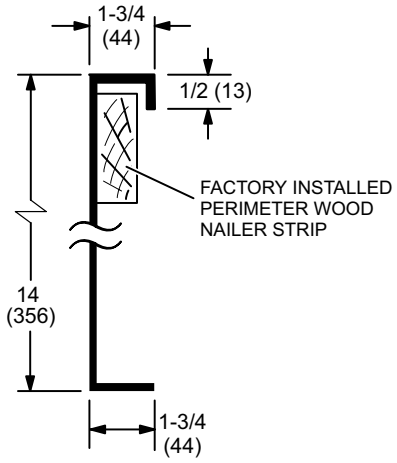


NOTE - Maximum slope pitch is 3/4 in. per 1 foot (19 mm per 305 mm) in any one direction.

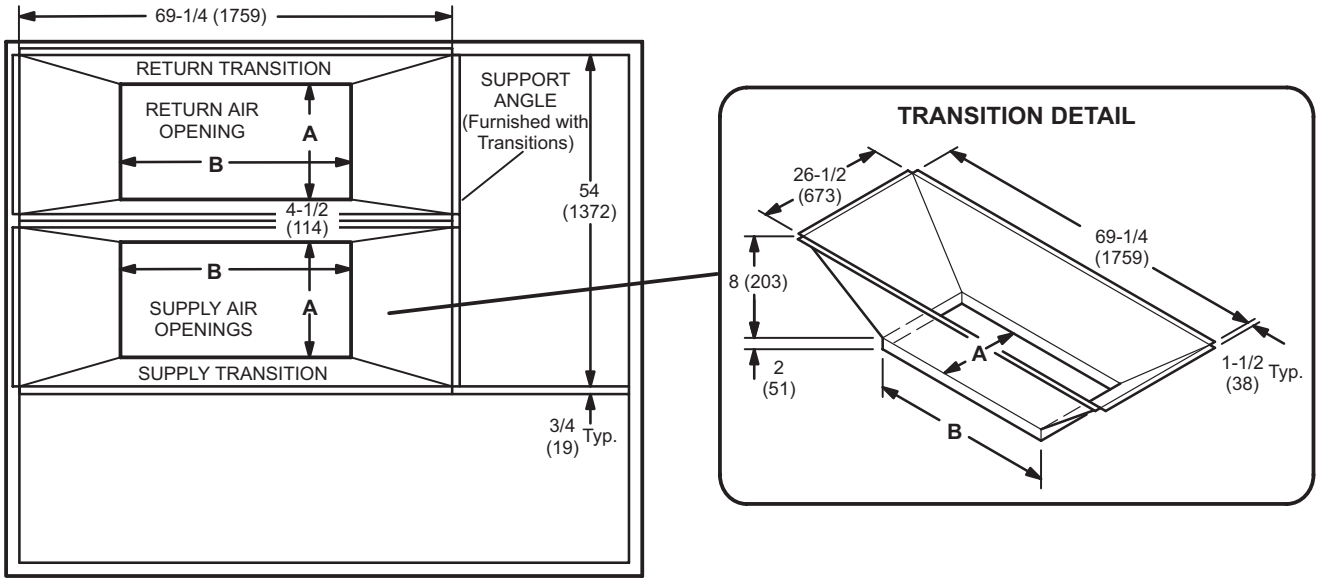
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB



ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS

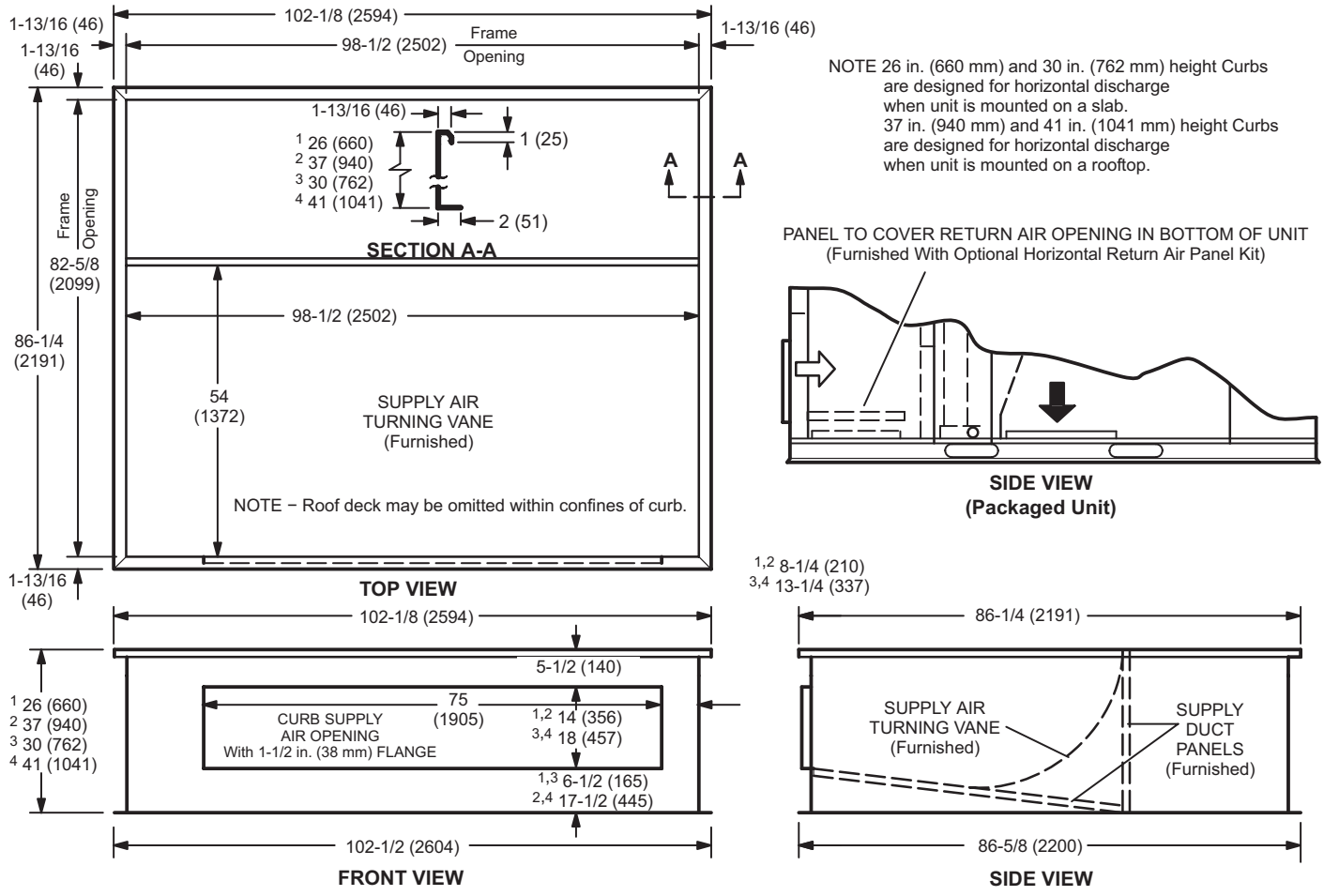


TOP VIEW

TRANSITION OPENING SIZES

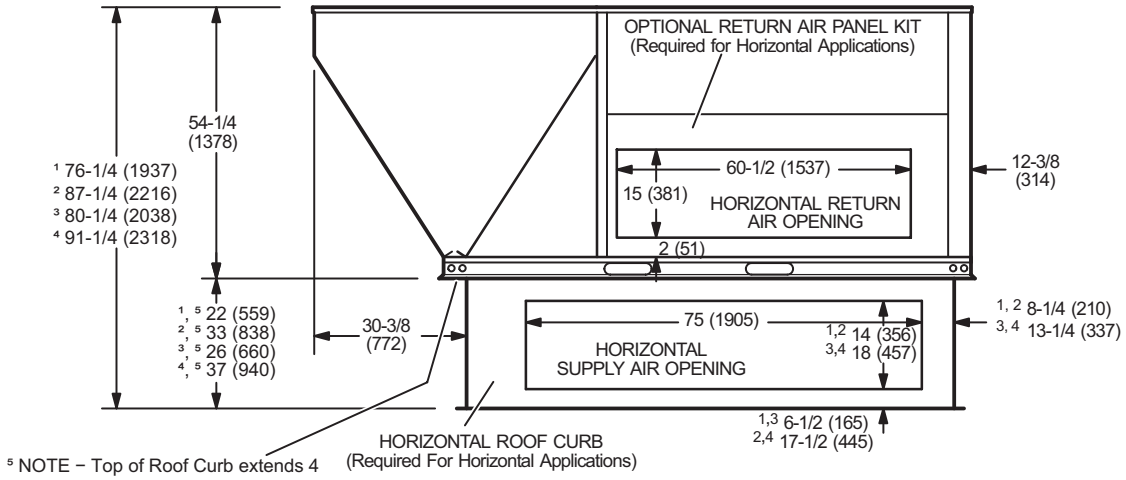
Model Number	A		B	
	inch	mm	inch	mm
C1DIFF33C-1	18	457	36	914
C1DIFF34C-1	24	610	48	1219

HORIZONTAL ROOF CURBS − Requires Optional Horizontal Return Air Panel Kit



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

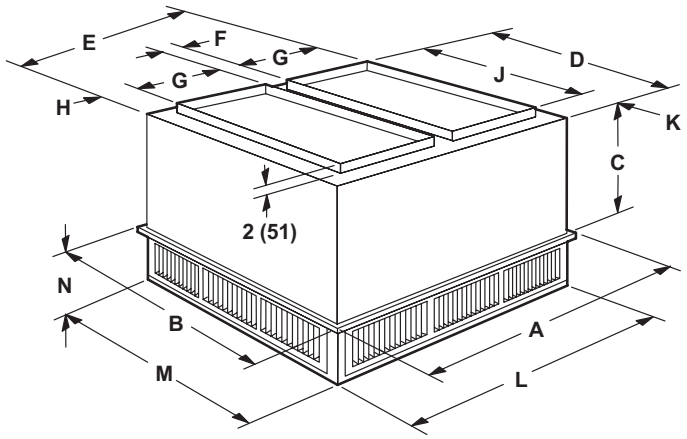
HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB



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

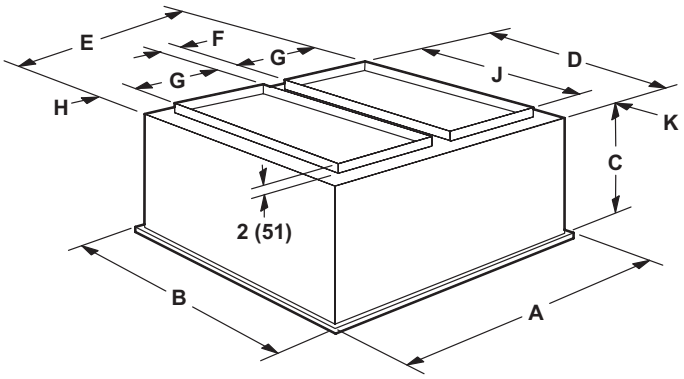
COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



Model		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

FLUSH CEILING DIFFUSER



Model		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
Sequence of Operation	Added Sequence of Operation







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