



**LGT**

**Enlight™ Rooftop Units**  
Standard and High Efficiency - 60 Hz

**COMMERCIAL  
PRODUCT SPECIFICATIONS**

Bulletin No. 210980  
April 2024  
Supersedes All previous versions



**ENLIGHT**

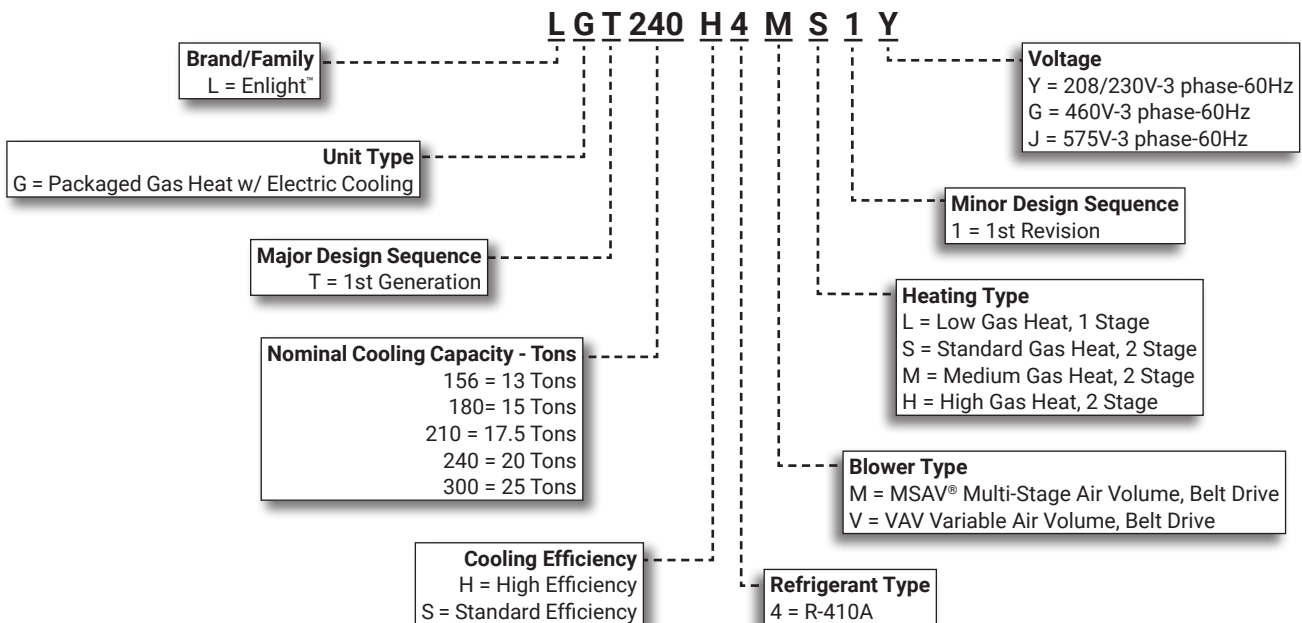


**ASHRAE 90.1  
COMPLIANT**

**SMARTWIRE™ SYSTEM**

**13 to 25 Tons**  
**Net Cooling Capacity - 148,000 to 270,000 Btuh**  
**Gas Input Heat Capacity - 169,000 to 480,000 Btuh**

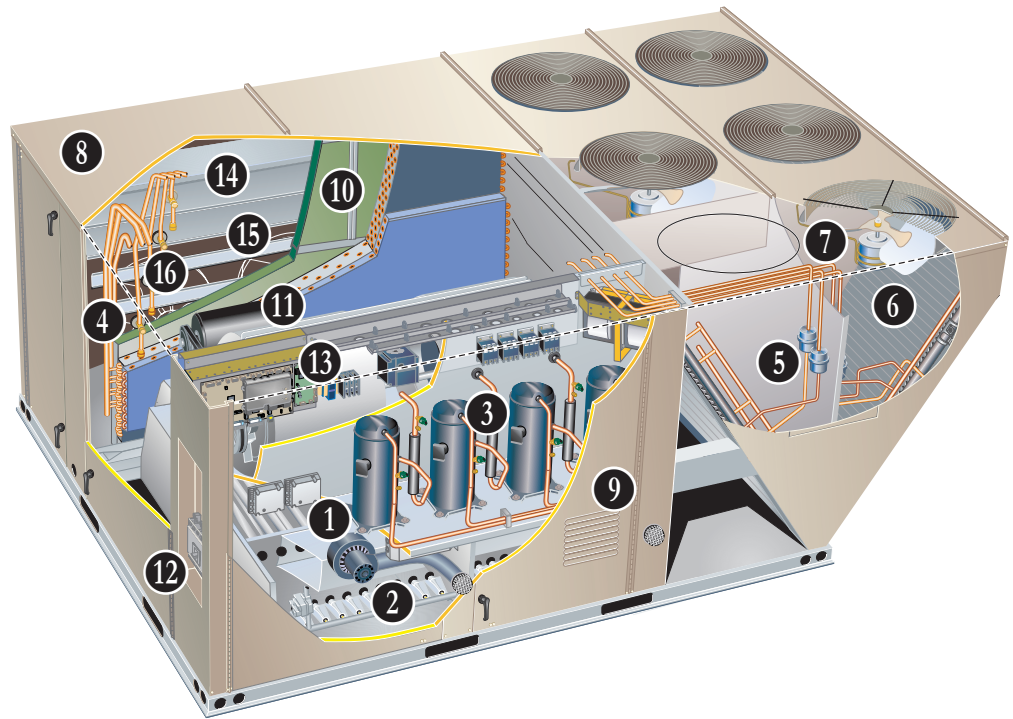
**MODEL NUMBER IDENTIFICATION**



## FEATURE HIGHLIGHTS

Enlight™ rooftop units featuring the Lennox® CORE Control System create a bright future through a highly energy-efficient and environmentally sustainable design. Comprehensive configurations meet a wide range of applications, making it the most flexible product line Lennox has to offer.

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



## CONTENTS

Approvals And Warranty . . . . .	3
Blower Data . . . . .	48
Control System . . . . .	9
Dimensions . . . . .	57
- 156 . . . . .	57
- 180   210 . . . . .	58
- 240   300 . . . . .	59
- Accessories . . . . .	60
Electrical Accessories . . . . .	54
Electrical Data . . . . .	51
Features And Benefits . . . . .	3
High Altitude Derate . . . . .	39
Humiditrol® Dehumidification System Option . . . . .	13
Humiditrol® Dehumidification System Ratings . . . . .	45
Installation Clearances . . . . .	55
Model Number Identification . . . . .	1
Optional Conventional Temperature Control Systems . . . . .	16
Options / Accessories . . . . .	30
Outdoor Sound Data . . . . .	55
Ratings . . . . .	40
Sequence Of Operation . . . . .	18
Specifications . . . . .	34
- 13 Ton . . . . .	34
- 15 Ton . . . . .	35
- 17.5 Ton . . . . .	36
- 20 Ton . . . . .	37
- 25 Ton . . . . .	38
- Gas Heat . . . . .	39
Weight Data . . . . .	56
- Options / Accessories . . . . .	56
- Unit . . . . .	56

## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Standard 340/360 certified
- ETL and CSA listed
- CSA certified energy ratings
- Unit and components ETL, NEC, and CEC bonded for grounding to meet safety standards for servicing
- All models are ASHRAE 90.1 energy efficiency compliant and meet or exceed requirements of Section 6.8
- All models meet DOE 2023 energy efficiency standards
- MSAV® 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

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

## FEATURES AND BENEFITS

### HEATING SYSTEM

#### 1 Heat Exchanger

- Tubular construction, aluminized steel
- Life-cycle tested

**NOTE** - Optional Stainless Steel Heat Exchanger is required if mixed air temperature is below 45°F.

#### 2

- Aluminized steel inshot burners
- Direct spark ignition
- Electronic flame sensor
- Combustion air inducer
- Redundant automatic dual stage gas valve with manual shut-off

#### Electronic Pilot Ignition

- Electronic spark igniter provides positive direct ignition of burners on each operating cycle
- Permits main gas valve to stay open only when the burners are proven to be lit
- If loss of flame occurs, gas valve closes, shutting off the gas to the burners
- LED indicates status and aids in troubleshooting
- Factory installed in the control section

#### Limit Controls

- Redundant limit controls with fixed temperature setting
- Protects heat exchanger and other components from overheating

#### Safety Switches

- Flame roll-out switch
- Flame sensor

- Combustion air inducer proving switch
- Protects system operation

### Required Selections

#### Gas Input Choice - Order one:

- Low Gas Heat, 1 Stage (169,000 Btuh)
- Standard Gas Heat, 2 Stage (85,000/260,000 Btuh)
- Medium Gas Heat, 2 Stage (117,000/360,000 Btuh)
- High Gas Heat, 2 Stage (156,000/480,000 Btuh)

**NOTE** – Two-stage heat models can be operated with four stages of gas heating when controlled in either zone sensor, Discharge Air Control, or fresh air tempering mode on the Lennox® CORE unit controller (available when using the CS8500 thermostat or when connected to Building Automation Systems using BACnet, LonTalk, or S-Bus protocols). See Gas Heating Specifications table.

### Options/Accessories

#### Factory Installed

##### Stainless Steel Heat Exchanger

- Required if mixed air temperature is below 45°F

#### Field Installed

##### Bottom Gas Piping Kit

- Allows bottom gas entry
- Factory installed kit is furnished with the unit for field installation

## FEATURES AND BENEFITS

### HEATING SYSTEM (continued)

#### Options/Accessories

##### Combustion Air Intake Extensions

- Recommended for use with existing flue extension kits in areas where high snow areas can block intake air
- Order two kits

##### Low Temperature Vestibule Heater

- Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°F
- CSA certified to allow operation of unit down to -60°F

##### LPG/Propane Kits

- Conversion kit to field change over units from Natural Gas to LPG/Propane
- Order two kits

##### Vertical Vent Extension Kit

- Use to exhaust flue gases vertically above unit
- Required when unit vent is too close to fresh air intakes per building codes
- Also prevents ice formation on intake louvers
- Kit contains vent transition, vent tee, drain cap, and installation hardware
- Order two kits.

**NOTE** - Straight vent pipes (4 in. B-Vent) and caps are not furnished and must be field supplied. Refer to kit instructions for additional information.

### COOLING SYSTEM

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

##### R-410A Refrigerant

- Non-chlorine based
- Ozone-friendly

#### 3 Compressor System

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

##### Compressor Crankcase Heaters

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

#### 4 Thermal Expansion Valves

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

#### 5 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

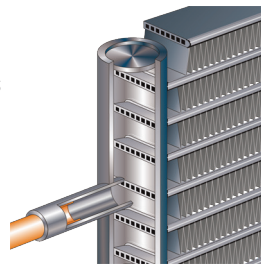
- Protects the compressors from low pressure conditions such as low refrigerant charge or low/no airflow

##### 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

#### 6 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

##### Evaporator Coil

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

##### Antimicrobial Condensate Drain Pan

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

## FEATURES AND BENEFITS

### **COOLING SYSTEM (continued)**

- 7 Outdoor Coil Fan Motors**
- (1) ECM and (2) PSC (156 models)
  - (2) ECM and (2) PSC (180 and 210 models)
  - (2) ECM and (4) PSC (240 and 300 models)
  - Thermal overload protected
  - Fan speed is directly controlled by the Lennox® CORE Unit Controller
  - Totally enclosed
  - Permanently lubricated ball bearings
  - Shaft up
  - Wire basket mount

#### **Outdoor Coil Fans**

- PVC coated fan guard furnished

#### **Required Selections**

#### **Cooling Capacity**

- Specify nominal cooling capacity

#### **Options/Accessories**

#### **Factory or Field Installed**

##### **Drain Pan Overflow Switch**

- Monitors condensate level in drain pan
- Shuts down unit if drain becomes clogged

##### **Field Installed**

##### **Condensate Drain Trap**

- Available in copper or PVC

### **CABINET**

- 8 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/Gas Entry**

- Electrical and gas 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

**9 Hinged Access Panels**

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

#### **Required Selections**

#### **Airflow Configuration**

- Specify downflow or horizontal

#### **Options/Accessories**

#### **Factory Installed**

##### **Corrosion Protection**

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

##### **Factory or Field Installed**

##### **Combination Coil/Hail Guards**

- Heavy gauge steel frame
- Painted to match cabinet
- Expanded metal mesh protects outdoor coil

## FEATURES AND BENEFITS

### CABINET (continued)

#### Options/Accessories

#### Field Installed

##### Horizontal Return Air Panel Kit

- Required for horizontal applications with Horizontal Roof Curb
- Contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit
- See dimension drawings

#### BLOWER

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

##### Motor

- Overload protected
- Ball bearings

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

#### **10** Supply Air Blower

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

##### Supply Static Pressure Transducer (VAV Models Only)

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

#### Required Selections

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

- VAV Variable Air Volume, variable frequency drive (VFD) varies the air volume to maintain a constant duct static pressure
- MSAV models stage the amount of airflow according to compressor stages, heating demand, ventilation demand or smoke alarm
- Utilizes a Variable Frequency Drive (VFD) to stage the supply blower airflow
- VFD alters the frequency and voltage of the power supply to the blower to control blower speed

#### Required Selections

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

#### Ordering Information

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

**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

## 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 (continued)**

#### Electrical Plugs

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

#### Phase/Voltage Detection

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

### **Required Selections**

#### Voltage Choice

- Specify when ordering base unit

### **Options/Accessories**

#### **Factory Installed**

##### Circuit Breakers

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

##### Short-Circuit Current Rating (SCCR)

- Higher short circuit protection up to 100kA

**NOTE** - Disconnect Switch is furnished and factory installed with High SCCR option.

#### **Factory or Field Installed**

##### **11** Disconnect Switch

- Accessible outside of unit
- Spring loaded weatherproof cover furnished

##### GFI Service Outlets (2)

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

#### **Field Installed**

##### GFI Weatherproof Cover

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

## FEATURES AND BENEFITS

### **INDOOR AIR QUALITY**

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

#### Options/Accessories

#### **Factory or Field Installed**

##### **Healthy Climate® High Efficiency Air Filters**

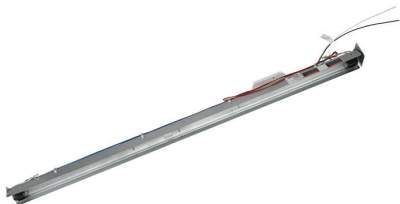
- Disposable MERV 8 or MERV 13 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency
- 2 inch pleated filters

#### **Field Installed**

##### **Healthy Climate® High Efficiency MERV 16 Air Filters**

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

##### **Healthy Climate® UVC Germicidal Light Kit**



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

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

- Approved by ETL

##### **Needlepoint Bipolar Ionization (NPBI) Kit**

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

**NOTE** - Please visit [www.sciencedirect.com](http://www.sciencedirect.com) for additional information.

- Brush-type ionizer introduces a high concentration of both positive and negative ions into the airstream
- 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<sub>2</sub>) Sensors**

- Monitors CO<sub>2</sub> levels
- Reports to the Lennox® CORE Control, which adjusts economizer dampers as needed

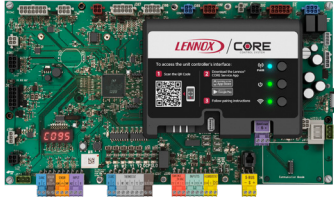
##### **Replacement Filter Media Kit With Frame**

- 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 CONTROL SYSTEM



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

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

#### CORE Mobile Service App

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



#### Additional Features:

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

**NOTE** - Unit Internet Connection required.

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

#### Configurable Built-In Functions

- Discharge Air Cooling Control
- Up to three distinct Cooling Airflows in Thermostat Mode
- Programmable independent heating, ventilation and cooling blower speeds

- Discharge Air Heating Control
- Economizer Control Options (See Economizer / Exhaust Air / Outdoor Air sections)
- Exhaust Fan Control Modes for fresh air damper position
- Configurable Morning Warm-up
- Night Setback Mode
- Fresh Air Tempering for Improved Ventilation
- Demand Control Ventilation
- Low Ambient Controls for operation down to 0°F
- Humiditrol™ Operation
- Enhanced Dehumidification (Latent Demand Control without reheat)

#### Component Protection / Unit Safeguards:

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

#### Control Methods / Interfaces:

- DDC and 24V Thermostat
- BACnet MS/TP and IP
- LONTalk (Factory and Field Option)
- Lennox S-BUS
- Compatibility with Lennox Wireless Zone Sensors
- Zone Temperature Sensor Input
- Dehumidistat and Humidity Sensor Inputs
- Indoor Air Quality Inputs (2)
- Built-in Control Parameter Defaults
- Permanent Diagnostic Code Storage
- Field Adjustable Control Parameters (Over 200 settings)
- Multiple Configurable Digital Inputs
- LED Indicators
- PC Interface connects the Lennox® CORE Unit Controller to a PC with the Lennox Unit Controller Software

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

## CONTROL SYSTEM

### LENNOX® CORE CONTROL SYSTEM (continued)

#### Controls Options

##### Factory or Field Installed

###### Blower Proving Switch

- Monitors blower operation, shuts down unit if blower fails

###### Dirty Filter Switch

- Senses static pressure increase and issues alarm if necessary

###### Fresh Air Tempering

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

###### Smoke Detector

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

###### Interoperability via BACnet® or LonTalk® Protocols

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

### Commercial Control Systems

#### Field Installed

##### Thermostats

- Control system and thermostat options, see page 16

## OPTIONS / ACCESSORIES

### ECONOMIZER

- Economizer operation is set and controlled by the Lennox® CORE Unit Controller
- Simple plug-in connections from Economizer to unit controller for easy installation
- All Enlight™ rooftop units are equipped with factory installed CEC Title 24 approved sensors for outside, return and discharge air temperature monitoring

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

#### Factory or Field Installed

##### **14** High Performance Economizer

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

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

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

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

**NOTE** - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2019 Building Energy Efficiency Standards.

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

#### Differential Sensible Control

- Factory setting
- Uses outdoor air and return air sensors that are furnished with the unit
- The Lennox® CORE Unit Controller compares outdoor air temperature with return air
- When the outdoor air is below the configured setpoint and cooler than return air, the controller activates the Economizer

## OPTIONS / ACCESSORIES

### **ECONOMIZER (continued)**

#### **Factory or Field Installed**

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

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

#### **Global Control**

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

#### **Single Enthalpy Control (Not for Title 24)**

- Outdoor air enthalpy sensor enables Economizer if the outdoor enthalpy is less than the setpoint of the control

#### **Differential Enthalpy Control (Not for Title 24)**

- Order two Single Enthalpy Controls
- One is field installed in the return air section
- One is installed in the outdoor air section
- Allows the Economizer control to select between outdoor air or return air, whichever has lower enthalpy

#### **Field Installed**

##### **Outdoor Air CFM Control**

- Maintains constant outdoor air volume levels on the supply air fan and varying unit airflows
- Velocity sensor located in the rooftop unit outdoor air section, the Lennox® CORE Unit Controller changes the Economizer position to help minimize the effect of supply fan speed changes on outdoor air volume levels
- Setpoint for outdoor air volume is established by field testing

**NOTE** - Not available with Demand Control Ventilation (CO<sub>2</sub> Sensor) or Building Pressure Control.

##### **Building Pressure Control**

- Maintains constant building pressure level
- Includes a static pressure transducer and outdoor static pressure assembly
- Using differential pressure information between the outdoor air and the building air, the Lennox® CORE Unit Controller changes the Economizer position to help maintain a constant building pressure

**NOTE** - Not available with Demand Control Ventilation (CO<sub>2</sub> Sensor) or Outdoor Air CFM Control.

### **EXHAUST**

#### **Factory or Field Installed**

##### **15 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

##### **16 Power Exhaust Fans**

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

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

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

#### **Field Installed**

##### **Horizontal Barometric Relief Dampers**

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

## OPTIONS / ACCESSORIES

### **OUTDOOR AIR OPTIONS**

#### **Factory or Field Installed**

##### **Outdoor Air Damper**

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

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

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

#### **ROOF CURBS**

##### **Field Installed**

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

##### **Downflow**

##### **Hybrid Roof Curbs**

- Interlocking tabs fasten corners together
- No tools required for assembly
- Can also be fastened together with furnished hardware
- Available in 8, 14, 18, and 24 inch heights

##### **Adjustable Pitch Curb**

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

##### **Horizontal**

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

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

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

##### **Adaptor Curbs (not shown)**

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

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

### **CEILING DIFFUSERS**

#### **Field Installed**

##### **Ceiling Diffusers (Flush or Step-Down)**

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

##### **Transitions (Supply and Return)**

- Used with diffusers
- Installs in roof curb
- Galvanized steel construction
- Flanges furnished for duct connection to diffusers
- Fully insulated

## HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

### OVERVIEW

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

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

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

### BENEFITS

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

### OPERATION

#### No Dehumidification Demand

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

#### Dehumidification Demand Only

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

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

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

#### Dehumidification and Cooling Demand (Thermostat/ Room Sensor Application)

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

### Options/Accessories

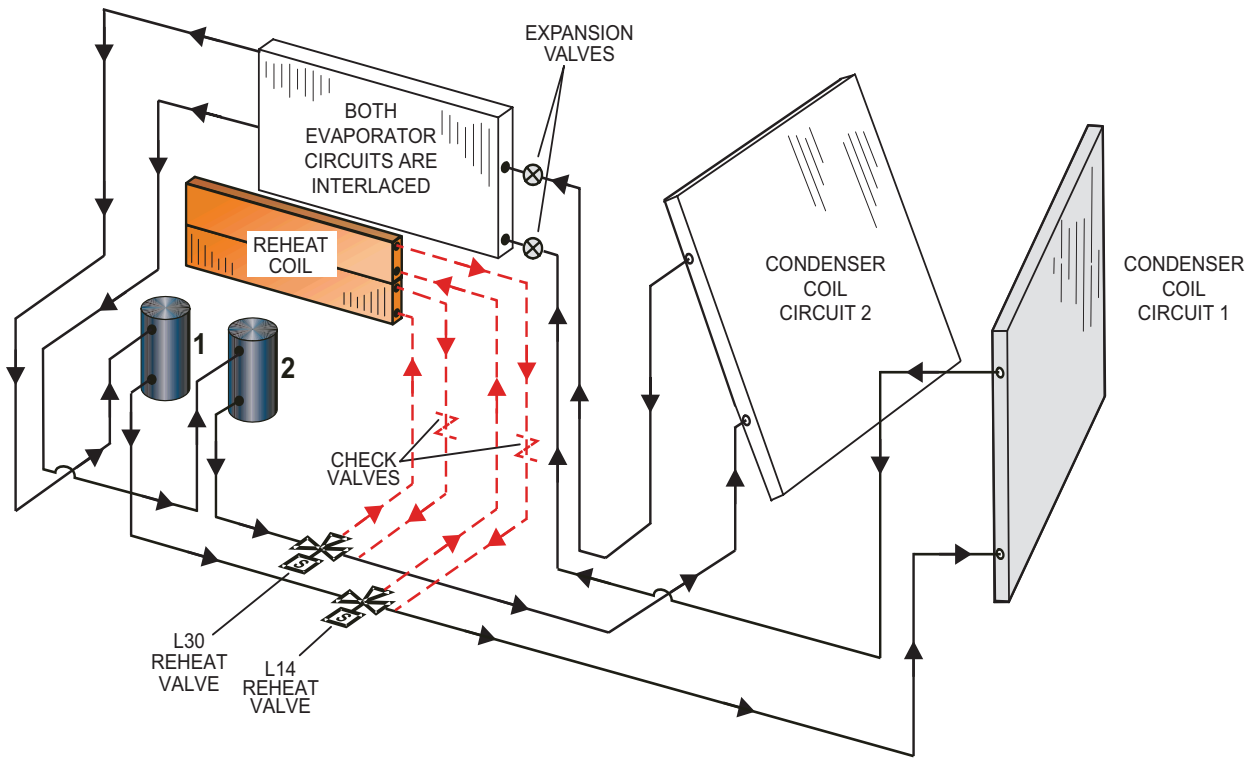
#### Humidity Sensor Kit

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

# HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

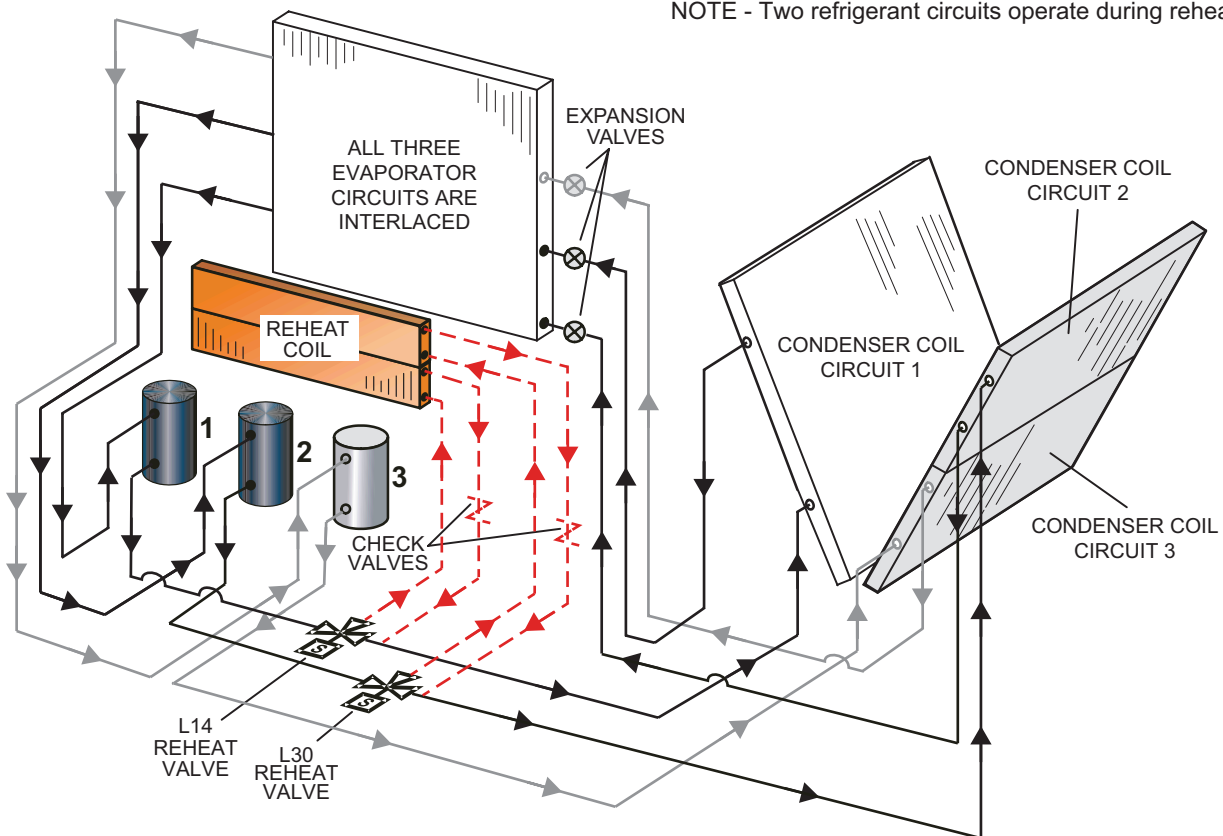
## REFRIGERANT SCHEMATIC (156 MODEL ONLY)

NOTE - Two refrigerant circuits operate during reheat.



## REFRIGERANT SCHEMATIC (180 MODEL ONLY)

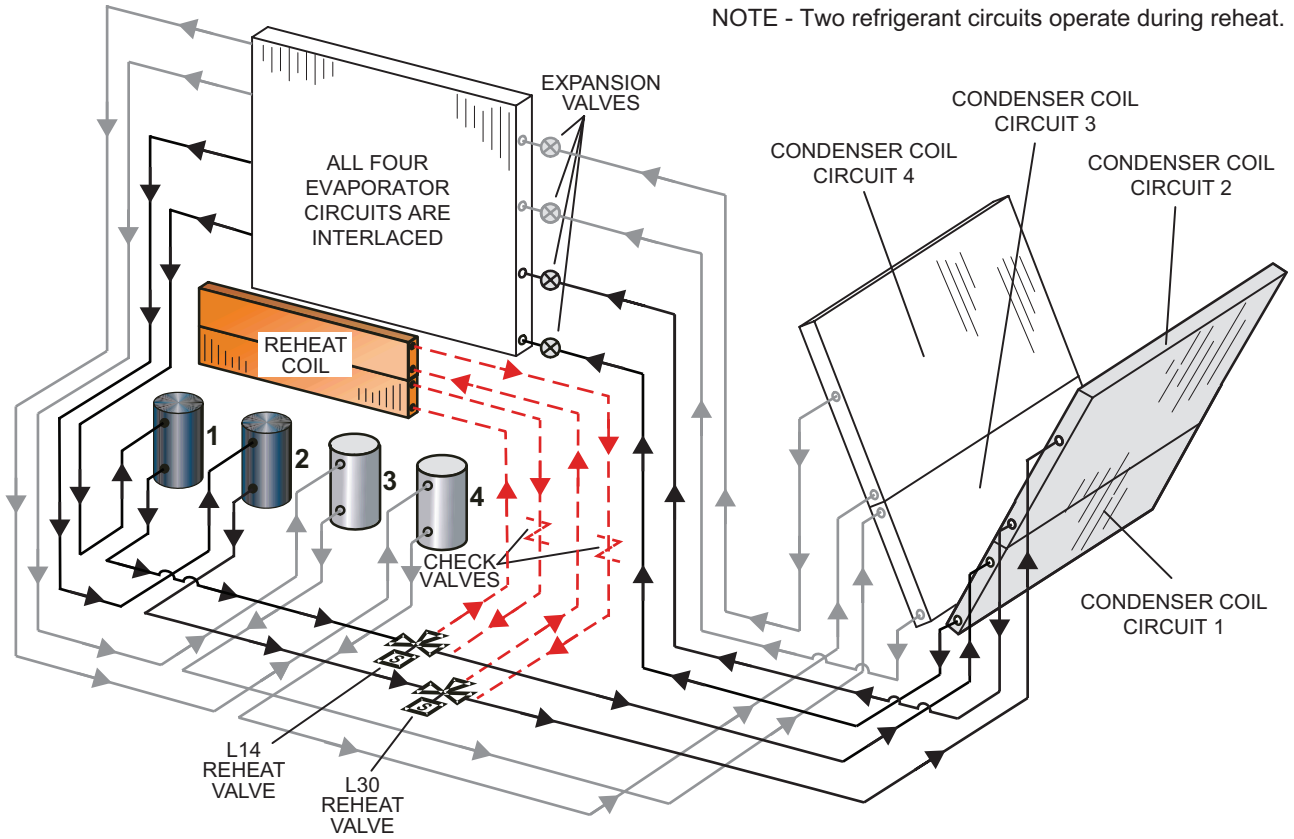
NOTE - Two refrigerant circuits operate during reheat.



# HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

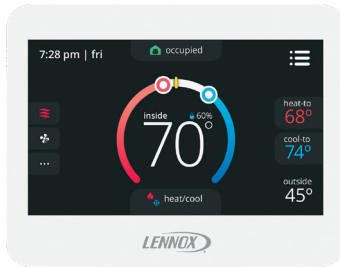
## REFRIGERANT SCHEMATIC (210, 240 and 300 MODELS ONLY)

NOTE - Two refrigerant circuits operate during reheat.



## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### CS8500 Commercial 7-Day Programmable Thermostat



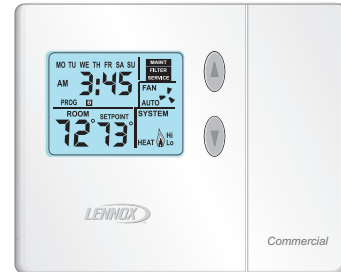
- Fully Communicating Sensor
- Full Color Touchscreen Interface
- Variable Speed System Control (On Compatible Units)
- Up To 4 Heat / 4 Cool
- Built-In Sensors For Temperature, Humidity And Optional CO<sub>2</sub>
- Remote Sensor Options For Occupancy, Temperature
- BACnet Capable Options
- 5-2 or 7-Day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

### CS7500 Commercial 7-Day Programmable Thermostat



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

### CS3000 Commercial 5-2 Day Programmable Thermostat



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

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



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

### Wireless Repeater for LCS-5030



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

**NOTE** - Wireless only.



## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### Wired Temperature/Humidity Room Sensor (Non-Communicating)



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

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Description	Catalog No.
<b>CS8500 Commercial 7 Day Programmable Thermostat</b>	
CS8500 7-Day Thermostat	No CO <sub>2</sub> Sensing <b>17G75</b>
	With CO <sub>2</sub> Sensing <b>17G76</b>
Sensors/Accessories	<sup>1</sup> Remote non-adjustable wall-mount 10k <b>47W37</b>
	<sup>1</sup> Remote non-adjustable wall-mount 11k <b>94L61</b>
<b>Sysbus Network Cable (Yellow) for CS8500 and LCS-5030 Wired Room Sensor</b>	
Twisted pair 100% shielded communication cable, Red and Black	500 ft. box <b>27M19</b>
22 AWG, yellow jacket, rated at 75°C, 300V, Plenum rated	1000 ft. box <b>94L63</b>
Insulation - Low smoke PVC, NEC, CMP	2500 ft. roll <b>68M25</b>
<b>CS7500 Commercial 7-Day Programmable Thermostat</b>	
CS7500 7-Day Thermostat	<b>24K41</b>
Sensors/Accessories	<sup>2</sup> Remote non-adjustable wall-mount 20k <b>47W36</b>
	<sup>2</sup> Remote non-adjustable wall-mount 10k <b>47W37</b>
	Remote non-adjustable discharge air (duct mount) <b>19L22</b>
	Outdoor temperature sensor <b>X2658</b>
<b>CS3000 Commercial 5-2 Day Programmable Thermostat</b>	
CS3000 5-2 Day Thermostat	<b>11Y05</b>
Sensors/Accessories	Remote non-adjustable wall mount 10k averaging <b>47W37</b>
	Thermostat wall mounting plate <b>X2659</b>
<b>Universal Thermostat Guard with Lock (clear)</b>	
	Inside Dimensions (H x W x D) 5-7/8 x 8-3/8 x 3 in. <b>39P21</b>
<b>Temperature/Humidity Room Sensors</b>	
LCS-5030 Wireless/Wired Temperature/Humidity Room Sensor	<b>21L07</b>
Wireless Repeater for LCS-5030	<b>21L09</b>
A335MT13AE1 Wired Temperature/Humidity Room Sensor (Non-Communicating)	<b>21W06</b>

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

<sup>2</sup> Remote wall-mount sensors can be applied in any of the following combinations:  
One Sensor - (1) 47W36, Two Sensors - (2) 47W37, Three Sensors - (2) 47W36 and (1) 47W37  
Four Sensors - (4) 47W36, Five Sensors - (3) 47W36 and (2) 47W37

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

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

### **156 MODELS (2 COMPRESSORS)**

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

##### **SUPPLY AIR BLOWER SPEED**

Unit has following supply air blower speed setting:

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

##### **<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable**

###### **Y1 Demand:**

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

###### **Y2 Demand:**

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

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

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

###### **Y1 Demand:**

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

###### **Y2 Demand:**

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

##### **Dehumidification Mode**

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

###### **Call For Dehumidification, No Y1, Y2 demand:**

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

###### **Y1 Demand With A Call For Dehumidification:**

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

###### **Y2 Demand With A Call For Dehumidification:**

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

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

Unit has following supply air blower speed setting:

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable**

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

**Y1 Demand:**

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

**Y2 Demand:**

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

**Y3 Demand:**

Compressors 1 is energized at full capacity while supply air blower stays on high cooling speed, economizer stays at maximum open.

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

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

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

**Y2 Demand:**

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

**Y3 Demand:**

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

**Dehumidification Mode**

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

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

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

**Y1 Demand With A Call For Dehumidification:**

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

**Y2 Demand With A Call For Dehumidification:**

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

**Y3 Demand With A Call For Dehumidification:**

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

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

Unit has the following supply air blower speed settings:

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****Y1 Demand:**

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

**Y2 Demand:**

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

If economizer stays at maximum open for 3 minutes, 1st stage compressors (compressor 1 and 2) are energized while supply air blower stays on high cooling speed providing maximum cooling capacity.

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

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

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

**Y2 Demand:**

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

**Dehumidification Mode**

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

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

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

**Y1 Demand With A Call For Dehumidification:**

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

**Y2 Demand With A Call For Dehumidification:**

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

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

Unit has following supply air blower speed setting:

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****3 Compressor Units****Y1 Demand:**

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

**Y2 Demand:**

All compressors are off, supply air blower is on high cooling speed providing higher cooling capacity, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

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

**Y3 Demand:**

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

**Y4 (Zone Sensor Only) Demand:**

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

**4 Compressor Units****Y1 Demand:**

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

**Y2 Demand:**

All compressors are off, supply air blower is on high cooling speed providing higher cooling capacity, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

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

**Y3 Demand:**

Compressors 1, 2 and 3 are energized and supply air blower stays on high cooling speed.

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

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

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

**3 Compressor Units**

**Y1 Demand:**

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

**Y2 Demand:**

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

**Y3 or Y4 (Zone Sensor Only) Demand:**

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

**4 Compressor Units**

**Y1 Demand:**

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

**Y2 Demand:**

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

**Y3 Demand:**

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

**Dehumidification Mode**

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

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

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

**Y1 Demand With A Call For Dehumidification:**

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

**Y2 Demand With A Call For Dehumidification:**

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

**Y3 or Y4 (Zone Sensor Only) Demand:**

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

**Heating Mode**

*NOTE – HEATING MODE CAN BE SET TO TWO-STAGE IN THERMOSTAT MODE OR AT FOUR-STAGE IN ROOM SENSOR MODE CONTROL OPTIONS.*

**Two-Stage Operation (Thermostat Mode)****W1 Demand:**

Both gas valves are open on Low Fire (stage 1 on units with 2-stage gas valves) and supply air blower operates at heating speed

**W2 Demand:**

Both gas valves are open on High Fire (stage 2 on units with 2-stage gas valves) and supply air blower operates at heating speed

**Four-Stage Operation (Room Sensor Mode)****W1 Demand:**

Left heat exchanger gas valve is open on Low Fire (stage 1 on units with 4-stage gas valves) and supply air blower operates at heating speed.

**W2 Demand:**

Both gas valves are open on Low Fire (stage 2 on units with 4-stage gas valves) and supply air blower operates at heating speed.

**W3 Demand:**

Left heat exchanger gas valve will open on High Fire and the right heat exchanger will remain open on Low Fire (stage 3 on units with 4-stage gas valves) and supply air blower operates at heating speed.

**W4 Demand:**

Both gas valves are open on High Fire (stage 4 on units with 4-stage gas valves) and supply air blower operates at heating speed.

**Modulating Outdoor Air Damper**

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

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

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

**Power Exhaust Operation**

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

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

**210/240/300 MODELS (4 COMPRESSORS)****VAV UNITS WITH ZONE SENSOR (4 COOLING STAGES, Y1, Y2, Y3, Y4)****SUPPLY AIR BLOWER SPEED**

Unit has following supply air blower speed setting:

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****Y1 Demand:**

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

**Y2 Demand:**

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

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

**Y3 Demand:**

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

**Y4 Demand:**

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

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

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

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

**Y2 Demand:**

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

**Y3 Demand:**

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

**Y4 Demand:**

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



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

**Dehumidification Mode**

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

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

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

**Y1 Demand With A Call For Dehumidification:**

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

**Y2 Demand With A Call For Dehumidification:**

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

**Y3 Demand With A Call For Dehumidification:**

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

**Y4 Demand With A Call For Dehumidification:**

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

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

Unit has the following supply air blower speed settings:

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

**Cooling Mode (3 Cool)**

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

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

**Y3 Demand:**

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

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

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

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

**Y2 Demand:**

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

**Y3 Demand:**

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

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

Unit has the following supply air blower speed settings:

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

**Cooling Mode (3 Cool)**

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, and economizer modulates to maintain 55°F supply air temperature. If economizer stays at maximum open for 3 minutes, compressor 1 is energized while supply air blower operates to maintain duct static pressure. After compressor 1 is energized, the economizer stays at maximum open.

**Y3 Demand:**

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

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

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

Compressor 1 operates and supply air blower operates to maintain duct static pressure.

**Y2 Demand:**

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

**Y3 Demand:**

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

**Heating Mode (4 Heat)**

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

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

Unit has the following supply air blower speed settings:

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

**Cooling Mode (4 Cool)**

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

**<sup>1</sup> Unit Features An Economizer And Outdoor Air Is Suitable****Y1 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, economizer modulates (minimum to maximum open position) to maintain 55°F supply air temperature (default unit controller setting).

**Y2 Demand:**

All compressors are off, supply air blower operates to maintain duct static pressure, and economizer modulates to maintain 55°F supply air temperature. If economizer stays at maximum open for 3 minutes, compressor 1 is energized while supply air blower operates to maintain duct static pressure. After compressor 1 is energized, the economizer stays at maximum open.

**Y3 Demand:**

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

**Y4 Demand:**

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

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

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

Compressor 1 operates and supply air blower operates to maintain duct static pressure.

**Y2 Demand:**

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

**Y3 Demand:**

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

**Y4 Demand:**

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

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

**Discharge air temperature (DAT) can be used to control unit staging.**

- DAT default setpoint = 110°F. Unit will stage heating as required to maintain the setpoint when provided with W1 demand.
- Increasing heat stages provides more heating capacity while decreasing heat stages provides less heating capacity.
- Blower set to Heating Speed for all stages.
- Heating Stage 1 -The first stage of mechanical heat is activated; gas valve one is in low fire mode. This is ~33% of heating capacity.
- Heating Stage 2 - The first and second stages of mechanical heat are activated; gas valves one and two are in low fire mode. This is ~66% of heating capacity.

**Heating Stage 3**

- Gas valve one is in high fire mode; gas valve two is in low fire mode. This is ~83% of heating capacity.

**Heating Stage 4**

- Gas valves one and two are in high fire mode. This is 100% of heating capacity.

**Modulating Outdoor Air Damper**

The minimum damper position for “occupied low blower” and “occupied high blower” is adjusted during unit setup to provide minimum fresh air requirements per ASHRAE 62.1 at the corresponding supply air blower speeds. When supply air blower is off or the unit is in unoccupied mode, the outdoor air damper is closed.

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

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

## OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No					
		156	180	210	240	300	
<b>COOLING SYSTEM</b>							
Condensate Drain Trap	PVC	<b>22H54</b>	X	X	X	X	X
	Copper	<b>76W27</b>	X	X	X	X	X
Drain Pan Overflow Switch		<b>21Z07</b>	OX	OX	OX	OX	OX
<b>HEATING SYSTEM</b>							
Bottom Gas Piping Kit		<b>85M31</b>	X	X	X	X	X
Combustion Air Intake Extensions (order two)		<b>89L97</b>	X	X	X	X	X
Gas Heat Input	Low - 169,000 Btuh	Factory	O	O	O		
	Standard - 260,000 Btuh	Factory	O	O	O	O	O
	Medium - 360,000 Btuh	Factory	O	O	O	O	O
	High - 480,000 Btuh	Factory		O	O	O	O
Low Temperature Vestibule Heater	208/230V-3ph	<b>22H58</b>	X	X	X	X	X
	460V-3ph	<b>22H59</b>	X	X	X	X	X
	575V-3ph	<b>22V43</b>	X	X	X	X	X
LPG/Propane Conversion Kits (Order 2 kits)	Low Heat	<b>14N28</b>	X	X	X		
	Standard Heat	<b>14N28</b>	X	X	X	X	X
	Medium Heat	<b>14N29</b>	X	X	X	X	X
	High Heat	<b>14N30</b>		X	X	X	X
Stainless Steel Heat Exchanger		Factory	O	O	O	O	O
Vertical Vent Extension Kit (Order two kits)		<b>42W16</b>	X	X	X	X	X
<b>BLOWER - SUPPLY AIR</b>							
Blower Option	VAV Variable Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (With VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
Motors	Belt Drive - 3 hp	Factory	O	O	O		
	Belt Drive - 5 hp	Factory	O	O	O	O	O
	Belt Drive - 7.5 hp	Factory		O	O	O	O
	Belt Drive - 10 hp	Factory				O	O
Drive Kits	Kit #1 535-725 rpm	Factory	O	O	O		
See Blower Data Tables for usage and selection	Kit #2 710-965 rpm	Factory	O	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	O	O
	Kit #4 850-1045 rpm	Factory	O	O	O	O	O
	Kit #5 945-1185 rpm	Factory	O	O	O	O	O
	Kit #6 850-1045 rpm	Factory		O	O	O	O
	Kit #7 945-1185 rpm	Factory		O	O	O	O
	Kit #8 1045-1285 rpm	Factory		O	O	O	O
	Kit #10 1045-1285 rpm	Factory				O	O
	Kit #11 1135-1365 rpm	Factory				O	O
	Blower Belt Auto-Tensioner	<b>24B80</b>	X	X	X	X	X
<b>CABINET</b>							
Combination Coil/Hail Guards		<b>23U69</b>	OX				
		<b>23U71</b>		OX	OX	OX	OX
Corrosion Protection		Factory	O	O	O	O	O

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## OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No				
		156	180	210	240	300
<b>CONTROLS</b>						
Blower Proving Switch	<b>21Z10</b>	OX	OX	OX	OX	OX
Commercial Controls	CPC Einstein Integration	Factory	O	O	O	O
	LonTalk® Module	<b>54W27</b>	OX	OX	OX	OX
	Novar® LSE	Factory	O	O	O	O
Dirty Filter Switch	<b>53W68</b>	OX	OX	OX	OX	OX
Fresh Air Tempering	<b>21Z08</b>	OX	OX	OX	OX	OX
Smoke Detector - Supply or Return (Power board and one sensor)	<b>22H56</b>	OX	OX	OX	OX	OX
Smoke Detector - Supply and Return (Power board and two sensors)	<b>22H57</b>	OX	OX	OX	OX	OX
<b>INDOOR AIR QUALITY</b>						
<b>Air Filters</b>						
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 (Order 6 per unit)	MERV 8	<b>54W67</b>	OX	OX	OX	OX
	MERV 13	<b>52W40</b>	OX	OX	OX	OX
	MERV 16	<b>21U42</b>	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)		<b>44N61</b>	X	X	X	X
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>						
Sensor - Wall-mount, off-white plastic cover with LCD display		<b>77N39</b>	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		<b>23V86</b>	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting		<b>87N52</b>	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting		<b>87N54</b>	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications		<b>85L43</b>	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors ( <b>77N39</b> )		<b>90N43</b>	X	X	X	X
<b>Needlepoint Bipolar Ionization (NPBI)</b>						
Needlepoint Bipolar Ionization (NPBI) Kit		<b>21U37</b>	X	X	X	
		<b>21U38</b>				X
		<b>21U39</b>				X
<b>UVC Germicidal Light Kit</b>						
<sup>1</sup> Healthy Climate® UVC Light Kit (110/230V-1ph)		<b>21A94</b>	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	<b>10H20</b>	X	X	X	X
	575V primary, 230V secondary	<b>10H21</b>	X	X	X	X
<b>ELECTRICAL</b>						
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
HACR Circuit Breakers		Factory	O	O	O	O
<sup>2</sup> Short-Circuit Current Rating (SCCR) of 100kA (includes Phase/Voltage Detection)		Factory	O	O	O	O
<sup>2</sup> Disconnect Switch (see Disconnect Table for usage, page 54)	80 amp	<b>54W88</b>	OX	OX	OX	OX
	150 amp	<b>54W89</b>	OX	OX	OX	OX
	250 amp	<b>90W82</b>				OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only)	<b>74M70</b>	OX	OX	OX	OX
	<sup>3</sup> 15 amp factory-wired and powered (208/230V, 460V only)	Factory	O	O	O	O
	<sup>4</sup> 20 amp non-powered, field-wired (208/230V, 460V, 575V)	<b>67E01</b>	OX	OX	OX	OX
	<sup>4</sup> 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O
Weatherproof Cover for GFI		<b>10C89</b>	X	X	X	X
Phase/Voltage Detection		Factory	O	O	O	O

<sup>1</sup> 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).

<sup>2</sup> Disconnect Switch is furnished and factory installed with SCCR option.

<sup>3</sup> Unit powered GFI Service Outlets are not available with SCCR option.

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

<sup>4</sup> Canada requires a minimum 20 amp circuit. Select 20 amp, non-powered, field wired GFI.

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## OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No				
		156	180	210	240	300
<b>ECONOMIZER</b>						
<b>High Performance Economizer (Approved for California Title 24 Building Standards AMCA Class 1A Certified)</b>						
High Performance Economizer (Downflow or Horizontal)	22J18	OX	OX	OX	OX	OX
Includes Economizer Dampers with Outdoor Air Hood						
Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately						
Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately						
<b>Economizer Controls</b>						
Differential Enthalpy (Not for Title 24)	Order 2 21Z09	OX	OX	OX	OX	OX
Sensible Control	Sensor is Furnished Factory	O	O	O	O	O
Single Enthalpy (Not for Title 24)	21Z09	OX	OX	OX	OX	OX
Global Control	Sensor Field Provided Factory	O	O	O	O	O
Building Pressure Control	13J77	X	X	X	X	X
Outdoor Air CFM Control	13J76	X	X	X	X	X
<b>Barometric Relief Dampers With Exhaust Hood</b>						
Downflow Barometric Relief Dampers	54W78	OX	OX	OX	OX	OX
Horizontal Barometric Relief Dampers	16K99	X	X	X	X	X
<b>OUTDOOR AIR</b>						
<b>Outdoor Air Dampers With Outdoor Air Hood</b>						
Motorized	22J27	OX	OX	OX	OX	OX
Manual	13U05	X	X	X	X	X
<b><sup>1</sup> POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)</b>						
Standard Static, SCCR Rated	208/230V 22H90	OX	OX	OX	OX	OX
	460V 22H91	OX	OX	OX	OX	OX
	575V 22V34	OX	OX	OX	OX	OX
<b>HUMIDITROL® CONDENSER REHEAT OPTION (MSAV®) MODELS ONLY</b>						
Humiditrol Dehumidification Option	Factory	O	O	O	O	O
Humidity Sensor Kit, Remote mounted	17M50	X	X	X	X	X

<sup>1</sup> Field installed Power Exhaust requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers with Exhaust Hood. Must be ordered separately.

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## OPTIONS / ACCESSORIES

Item Description	Catalog Number	Unit Model No				
		156	180	210	240	300
<b>ROOF CURBS</b>						
<b>Hybrid Roof Curbs, Downflow</b>						
8 in. height	11F58	X	X	X	X	X
14 in. height	11F59	X	X	X	X	X
18 in. height	11F60	X	X	X	X	X
24 in. height	11F61	X	X	X	X	X
<b>Adjustable Pitch Curb</b>						
14 in. height	43W26	X	X	X	X	X
<b>Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit</b>						
26 in. height - slab applications	11T89	X	X	X	X	
30 in. height - slab applications	11T90					X
37 in. height - rooftop applications	11T96	X	X	X	X	
41 in. height - rooftop applications	11T97					X
<b>Insulation Kit For Standard Horizontal Roof Curbs</b>						
For 26 in. Curb	73K32	X	X	X	X	
For 30 in. Curb	73K33					X
For 37 in. Curb	73K34	X	X	X	X	
For 41 in. Curb	73K35					X
<b>Horizontal Return Air Panel Kit</b>						
Required for Horizontal Applications with Roof Curb	87M00	X	X	X	X	X
<b>CEILING DIFFUSERS</b>						
Step-Down - Order one	RTD11-185S	13K63	X	X		
	RTD11-275S	13K64			X	X
Flush - Order one	FD11-185S	13K58	X	X		
	FD11-275S	13K59			X	X
Transitions (Supply and Return) - Order one	C1DIFF33C-1	12X68	X	X		
	C1DIFF34C-1	12X70			X	X

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**SPECIFICATIONS**
**13 TON**

General Data		Nominal Tonnage	13 Ton	13 Ton
		Model Number	LGT156H4M	LGT156H4V
		Efficiency Type	High	High
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		152,000	152,000
	<sup>1</sup> Net Cooling Capacity - Btuh		148,000	148,000
	<sup>1</sup> AHRI Rated Air Flow - cfm		5800	5800
	Total Unit Power - kW		12.3	12.3
	<sup>1</sup> IEER (Btuh/Watt)		15.5	15.0
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0
<b>Refrigerant Charge</b>	Refrigerant Type		R-410A	R-410A
	Without Reheat Option	Circuit 1	10 lbs. 7 oz.	10 lbs. 7 oz.
		Circuit 2	8 lbs. 15 oz.	8 lbs. 15 oz.
	With Reheat Option	Circuit 1	10 lbs. 7 oz.	- - -
		Circuit 2	8 lbs. 15 oz.	- - -
<b>Gas Heating Options Available</b>		See page 39		
<b>Compressor Type (number)</b>		(1) Two-Stage Scroll, (1) Single-Stage Scroll		
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		41.4	41.4
	Number of rows		1	1
	Fins per inch		23	23
<b>Outdoor Coil Fans</b>	Motor - horsepower		1/3	1/3
	Motor Type		(1) ECM (2) PSC	(1) ECM (2) PSC
	Motor rpm		1075	1075
	Total Motor watts		1100	1100
	Diameter - (No.) in.		(3) 24	(3) 24
	Number of blades		3	3
	Total Air volume - cfm		12000	12000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.40	21.40
	Tube diameter - in.		3/8	3/8
	Number of rows		3	3
	Fins per inch		14	14
	Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT
	Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)	
<b><sup>2</sup> Indoor Blower and Drive Selection</b>	Nominal motor output		3 hp, 5 hp	
	Max. usable motor output (US)		3.45 hp, 5.75 hp	
	Motor - Drive kit number		3 hp	
			Kit 1 535-725 rpm	
			Kit 2 710-965 rpm	
			5 hp	
Kit 3 685-856 rpm				
		Kit 4 850-1045 rpm		
		Kit 5 945-1185 rpm		
Blower wheel nominal D x W - in.		(2) 15 x 15 in.		
<b>Filters</b>	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
<b>Electrical characteristics</b>		208/230V, 460V or 575V - 60 hertz - 3 phase		

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

<sup>1</sup> 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.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

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

SPECIFICATIONS		15 TON		
<b>General Data</b>	<b>Nominal Tonnage</b>	<b>15 Ton</b>	<b>15 Ton</b>	
	<b>Model Number</b>	<b>LGT180H4M</b>	<b>LGT180H4V</b>	
	<b>Efficiency Type</b>	<b>High</b>	<b>High</b>	
	<b>Blower Type</b>	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh	176,000	176,000	
	<sup>1</sup> Net Cooling Capacity - Btuh	172,000	172,000	
	<sup>1</sup> AHRI Rated Air Flow - cfm	5250	5250	
	Total Unit Power - kW	14.3	14.3	
	<sup>1</sup> IEER (Btuh/Watt)	15.0	15.0	
	<sup>1</sup> EER (Btuh/Watt)	12.0	12.0	
<b>Refrigerant Charge</b>	<b>Refrigerant Type</b>		R-410A	
	Without Reheat Option	Circuit 1	6 lbs. 8 oz.	6 lbs.8 oz.
		Circuit 2	6 lbs. 5 oz.	6 lbs. 5 oz.
		Circuit 3	5 lbs. 8 oz.	5 lbs. 8 oz.
	With Reheat Option	Circuit 1	6 lbs. 10 oz.	---
		Circuit 2	6 lbs. 12 oz.	---
		Circuit 3	5 lbs. 12 oz.	---
<b>Gas Heating Options Available</b>		See page 39		
<b>Compressor Type (number)</b>		Scroll (3)	Scroll (3)	
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.	55.2	55.2	
	Number of rows	1	1	
	Fins per inch	23	23	
<b>Outdoor Coil Fans</b>	Motor - horsepower	1/3	1/3	
	Motor Type	(2) ECM (2) PSC	(2) ECM (2) PSC	
	Motor rpm	1075	1075	
	Total Motor watts	1500	1500	
	Diameter - (No.) in.	24 (4)	24 (4)	
	Number of blades	3	3	
	Total Air volume - cfm	16000	16000	
	<b>Indoor Coils</b>			
Net face area (total) - sq. ft.	21.40	21.4		
Tube diameter - in.	3/8	3/8		
Number of rows	3	3		
Fins per inch	14	14		
Drain connection - No. and size	(1) 1in. FPT	(1) 1in. FPT		
Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)		
<sup>2</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	3 hp, 5 hp, 7.5 hp		
	Max. usable motor output (US)	3.45 hp, 5.75 hp, 8.62 hp		
	Motor - Drive kit number	3 hp		
		Kit 1 535-725 rpm		
		Kit 2 710-965 rpm		
		5 hp		
		Kit 3 685-856 rpm		
		Kit 4 850-1045 rpm		
		Kit 5 945-1185 rpm		
		7.5 hp		
Kit 6 850-1045 rpm				
Kit 7 945-1185 rpm				
Kit 8 1045-1285 rpm				
Blower wheel nominal D x W - in.	(2) 15 x 15			
<b>Filters</b>	Type of filter	MERV 4, Disposable		
	Number and size - in.	(6) 24 x 24 x 2		
<b>Electrical characteristics</b>		208/230V, 460V or 575V - 60 hertz - 3 phase		

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

<sup>1</sup> 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.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

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

**SPECIFICATIONS**

**17.5 TON**

General Data		Nominal Tonnage	17.5 Ton	17.5 Ton
		Model Number	LGT210H4M	LGT210H4V
		Efficiency Type	High	High
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity - Btuh		206,000	206,000
	<sup>1</sup> Net Cooling Capacity - Btuh		200,000	200,000
	<sup>1</sup> AHRI Rated Air Flow - cfm		6125	6125
	Total Unit Power - kW		16.6	16.6
	<sup>1</sup> IEER (Btuh/Watt)		16.0	15.5
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0
Refrigerant Charge	Refrigerant Type		R-410A	R-410A
	Without Reheat Option	Circuit 1	6 lbs. 9 oz.	6 lbs. 9 oz.
		Circuit 2	7 lbs. 3 oz.	7 lbs. 3 oz.
		Circuit 3	5 lbs. 11 oz.	5 lbs. 11 oz.
		Circuit 4	6 lbs. 2 oz.	6 lbs. 2 oz.
	With Reheat Option	Circuit 1	7 lbs. 1 oz.	---
		Circuit 2	8 lbs. 15 oz.	---
		Circuit 3	5 lbs. 14 oz.	---
		Circuit 4	6 lbs. 7 oz.	---
	Gas Heating Options Available		See page 39	
Compressor Type (number)		Scroll (4)	Scroll (4)	
Outdoor Coils	Net face area (total) - sq. ft.	55.2	55.2	
	Number of rows	1	1	
	Fins per inch	23	23	
Outdoor Coil Fans	Motor - horsepower	1/3	1/3	
	Motor Type	(2) ECM (2) PSC	(2) ECM (2) PSC	
	Motor rpm	1075	1075	
	Total Motor watts	1500	1500	
	Diameter - (No.) in.	24 (4)	(4) 24	
	Number of blades	3	3	
	Total Air volume - cfm	16000	16,000	
	Indoor Coils		Net face area (total) - sq. ft.	21.40
		Tube diameter - in.	3/8	3/8
		Number of rows	4	4
		Fins per inch	14	14
		Drain connection - No. and size	(1) 1in. FPT	(1) 1in. FPT
		Expansion device type	Balanced Port Thermostatic Expansion Valve (removable element head)	
<sup>2</sup> Indoor Blower and Drive Selection	Nominal motor output		3 hp, 5 hp, 7.5 hp	
	Max. usable motor output (US)		3.45 hp, 5.75 hp, 8.62 hp	
	Motor - Drive kit number		3 hp	
			Kit 1 535-725 rpm	
			Kit 2 710-965 rpm	
			5 hp	
			Kit 3 685-856 rpm	
			Kit 4 850-1045 rpm	
			Kit 5 945-1185 rpm	
			7.5 hp	
		Kit 6 850-1045 rpm		
		Kit 7 945-1185 rpm		
		Kit 8 1045-1285 rpm		
		Blower wheel nominal D x W - in.		(2) 15 x 15
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Electrical characteristics		208/230V, 460V or 575V - 60 hertz - 3 phase		

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

<sup>1</sup> 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.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

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

**SPECIFICATIONS**

**20 TON**

General Data		Nominal Tonnage	20 Ton	20 Ton	
		Model Number	LGT240H4M	LGT240H4V	
		Efficiency Type	High	High	
		Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
Cooling Performance	Gross Cooling Capacity - Btuh		236,000	236,000	
	<sup>1</sup> Net Cooling Capacity - Btuh		228,000	228,000	
	<sup>1</sup> AHRI Rated Air Flow - cfm		6400	6400	
	Total Unit Power - kW		19.0	19.0	
	<sup>1</sup> IEER (Btuh/Watt)		15.7	15.2	
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0	
Refrigerant Charge	Refrigerant Type		R-410A	R-410A	
	Without Reheat Option	Circuit 1	6 lbs. 9 oz.	6 lbs. 9 oz.	
		Circuit 2	6 lbs. 13 oz.	6 lbs. 13 oz.	
		Circuit 3	5 lbs. 15 oz.	5 lbs. 15 oz.	
		Circuit 4	6 lbs. 2 oz.	6 lbs. 2 oz.	
	With Reheat Option	Circuit 1	6 lbs. 8 oz.	---	
		Circuit 2	7 lbs. 15 oz.	---	
		Circuit 3	6 lbs. 2 oz.	---	
		Circuit 4	6 lbs. 11 oz.	---	
	<b>Gas Heating Options Available</b>		See page 39		
<b>Compressor Type (number)</b>		Scroll (4)	Scroll (4)	Scroll (4)	
Outdoor Coils	Net face area (total) - sq. ft.		55.2	55.2	
	Number of rows		1	1	
	Fins per inch		23	23	
Outdoor Coil Fans	Motor - horsepower		1/3	1/3	
	Motor Type		(2) ECM (4) PSC	(2) ECM (4) PSC	
	Motor rpm		1075	1075	
	Total Motor watts		1075 - 1950	1075 - 1950	
	Diameter - (No.) in.		(6) 24	(6) 24	
	Number of blades		3	3	
	Total Air volume - cfm		20,000	20,000	
Indoor Coils	Net face area (total) - sq. ft.		21.40	21.40	
	Tube diameter - in.		3/8	3/8	
	Number of rows		4	4	
	Fins per inch		14	14	
	Drain connection - No. and size		(1) 1in. FPT	(1) 1in. FPT	
	Expansion device type		Balanced Port Thermostatic Expansion Valve (removable element head)		
<sup>2</sup> Indoor Blower and Drive Selection	Nominal motor output		5 hp, 7.5 hp, 10 hp		
	Max. usable motor output (US)		5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number		5 hp		
			Kit 3 685-856 rpm		
			Kit 4 850-1045 rpm		
			Kit 5 945-1185 rpm		
			7.5 hp		
			Kit 6 850-1045 rpm		
			Kit 7 945-1185 rpm		
			Kit 8 1045-1285 rpm		
		10 hp			
		Kit 7 945-1185 rpm			
		Kit 10 1045-1285 rpm			
		Kit 11 1135-1365 rpm			
Blower wheel nominal D x W - in.		(2) 15 x 15			
Filters	Type of filter		MERV 4, Disposable		
	Number and size - in.		(6) 24 x 24 x 2		
<b>Electrical characteristics</b>		208/230V, 460V or 575V - 60 hertz - 3 phase			

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

<sup>1</sup> 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.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

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

SPECIFICATIONS		25 TON		
General Data	Nominal Tonnage	25 Ton	25 Ton	
	Model Number	LGT300S4M	LGT300S4V	
	Efficiency Type	Standard	Standard	
	Blower Type	MSAV® Multi-Stage Air Volume	VAV Variable Air Volume	
Cooling Performance	Gross Cooling Capacity - Btuh	281,000	281,000	
	<sup>1</sup> Net Cooling Capacity - Btuh	270,000	270,000	
	<sup>1</sup> AHRI Rated Air Flow - cfm	7500	7500	
	Total Unit Power - kW	26.2	26.5	
	<sup>1</sup> IEER (Btuh/Watt)	14.5	14.0	
	<sup>1</sup> EER (Btuh/Watt)	10.3	10.3	
Refrigerant Charge	Refrigerant Type	R-410A	R-410A	
	Without Reheat Option	Circuit 1	7 lbs. 13 oz.	7 lbs. 13 oz.
		Circuit 2	6 lbs. 8 oz.	6 lbs. 8 oz.
		Circuit 3	5 lbs. 12 oz.	5 lbs. 12 oz.
		Circuit 4	5 lbs. 12 oz.	5 lbs. 12 oz.
	With Reheat Option	Circuit 1	7 lbs. 7 oz.	---
		Circuit 2	7 lbs. 2 oz.	---
		Circuit 3	5 lbs. 15 oz.	---
		Circuit 4	6 lbs. 1 oz.	---
	Gas Heating Options Available		See page 39	
Compressor Type (number)		Scroll (4)	Scroll (4)	
Outdoor Coils	Net face area (total) - sq. ft.	55.2	55.2	
	Number of rows	1	1	
	Fins per inch	23	23	
Outdoor Coil Fans	Motor - horsepower	1/3	1/3	
	Motor Type	(2) ECM (4) PSC	(2) ECM (4) PSC	
	Motor rpm	1075	1075	
	Total Motor watts	1075 - 1950	1075 - 1950	
	Diameter - (No.) in.	(6) 24	(6) 24	
	Number of blades	3	3	
	Total Air volume - cfm	20000	20000	
Indoor Coils	Net face area (total) - sq. ft.	21.40	21.40	
	Tube diameter - in.	3/8	3/8	
	Number of rows	4	4	
	Fins per inch	14	14	
	Drain connection - No. and size	(1) 1in. FPT	(1) 1in. FPT	
	Expansion device type	Balanced Port Thermostatic Expansion Valve (removable element head)		
<sup>2</sup> Indoor Blower and Drive Selection	Nominal motor output	5 hp, 7.5 hp, 10 hp		
	Max. usable motor output (US)	5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number	5 hp		
		Kit 3 685-856 rpm		
		Kit 4 850-1045 rpm		
	7.5 hp	Kit 5 945-1185 rpm		
		Kit 6 850-1045 rpm		
		Kit 7 945-1185 rpm		
	10 hp	Kit 8 1045-1285 rpm		
		Kit 7 945-1185 rpm		
Kit 10 1045-1285 rpm				
Blower wheel nominal D x W - in.	Kit 11 1135-1365 rpm (2) 15 x 15			
Filters	Type of filter	MERV 4, Disposable		
	Number and size - in.	(6) 24 x 24 x 2		
Electrical characteristics		208/230V, 460V or 575V - 60 hertz - 3 phase		

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

<sup>1</sup> 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.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

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

## SPECIFICATIONS

## GAS HEAT

Usage Data		Model Number	LGT156 LGT180 LGT210	LGT156 LGT180 LGT210 LGT240 LGT300	LGT180 LGT210 LGT240 LGT300	
Heat Input Type			<b>Low (L)</b>	<b>Standard (S)</b>	<b>Medium (M)</b>	<b>High (H)</b>
Number of Gas Heat Stages			One	<sup>1</sup> Two	<sup>1</sup> Two	<sup>1</sup> Two
<b><sup>1</sup> Gas Heating Performance</b>	Input - Btuh	First Stage	169,000	85,000	117,000	156,000
		Second Stage	---	169,000	234,000	312,000
		Third Stage	---	214,000	297,000	396,000
		Fourth Stage	---	260,000	360,000	480,000
	Output - Btuh	First Stage	135,000	---	---	---
		Second Stage	---	---	---	---
		Third Stage	---	---	---	---
		Fourth Stage	---	211,000	292,000	389,000
Temperature Rise Range - °F	First Stage	15-45	15-45	30-60	40-70	
	Second Stage	---	---	---	---	
Minimum Air Volume - cfm			4500	4500	4500	5125
Thermal Efficiency			80%	81%	81%	81%
Gas Supply Connections			1 in. NPT	1 in. NPT	1 in. NPT	1 in. NPT
Recommended Gas Supply Pressure - in. w.g.	Natural		7	7	7	7
	LPG/Propane		11	11	11	11
Gas Supply Pressure Range	Min./Max. (Natural)	4.7 - 10.5 in. w.g.				
	Min./Max. (LPG)	10.8 - 13.5 in.w.g.				

<sup>1</sup> Two-stage heat models can be operated with four stages of gas heating when controlled in either zone sensor, Discharge Air Control, or fresh air tempering mode on the Lennox® CORE unit controller (available when using the CS8500 thermostat or when connected to Building Automation Systems using BACnet, LonTalk, or S-Bus protocols).

## HIGH ALTITUDE DERATE

**NOTE** - Units may be installed at altitudes up to 2000 feet above sea level without any modification.

At altitudes above 2000 feet, units must be derated to match gas manifold pressures shown in table below.

At altitudes above 4500 feet units must be derated 4% for each 1000 feet above sea level.

**NOTE** - This is the only permissible derate for these units.

Refer to the Installation Instructions for more detailed information.

### ONE STAGE HEAT

**No Adjustment Required**

### TWO STAGE HEAT

Heat Input Type	Altitude Feet	Gas Manifold Pressure - in. w.g.		Input Rate (Btuh)	
		Natural Gas	LPG/Propane Gas	First Stage	Second Stage
Standard (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	169,000	239,000
Medium (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	234,000	331,000
High (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	312,000	442,000

### FOUR STAGE HEAT

<sup>1</sup> Heat Input Type	Altitude Feet	Gas Manifold Pressure - in. w.g.		Input Rate (Btuh)			
		Natural Gas	LPG/Propane Gas	First Stage	Second Stage	Third Stage	Fourth Stage
Standard (4 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	85,000	169,000	204,000	239,000
Medium (4 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	117,000	234,000	283,000	331,000
High (4 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	156,000	312,000	377,000	442,000

<sup>1</sup> Four-Stage Gas Heating is field configured.

# RATINGS

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

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

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

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

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	3000	118.1	7.21	.68	.82	.93	111.2	8.14	.68	.82	.95	103.4	9.21	.69	.84	.97	94.9	10.44	.70	.87	1.00
	4000	127.1	7.25	.73	.91	1.00	119.9	8.18	.76	.92	1.00	111.5	9.24	.76	.95	1.00	103.0	10.48	.78	.97	1.00
	5000	135.0	7.30	.81	.98	1.00	126.7	8.21	.83	1.00	1.00	119.1	9.28	.85	1.00	1.00	111.1	10.52	.86	1.00	1.00
67°F	3000	126.8	7.24	.53	.66	.77	119.0	8.16	.54	.66	.79	110.8	9.22	.53	.67	.81	101.8	10.45	.54	.68	.83
	4000	135.9	7.28	.57	.72	.87	127.5	8.20	.57	.73	.90	119.1	9.27	.58	.74	.91	109.1	10.47	.59	.77	.94
	5000	142.4	7.32	.62	.78	.95	133.3	8.23	.62	.80	.98	124.0	9.29	.63	.82	1.00	116.4	10.49	.64	.86	1.00
71°F	3000	133.4	7.25	.40	.52	.64	126.2	8.18	.39	.53	.63	117.6	9.23	.37	.52	.65	108.9	10.45	.37	.53	.66
	4000	144.6	7.31	.42	.57	.70	135.7	8.23	.41	.57	.71	126.8	9.29	.41	.56	.73	117.2	10.49	.39	.57	.74
	5000	150.5	7.34	.42	.61	.76	141.8	8.27	.42	.61	.78	132.3	9.33	.43	.62	.81	125.5	10.53	.41	.61	.82

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

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	4160	144.1	8.33	.72	.86	.99	136.3	9.35	.73	.88	1.00	127.4	10.48	.74	.90	1.00	118.2	11.79	.76	.93	1.00
	5200	152.4	8.42	.77	.94	1.00	143.4	9.42	.79	.96	1.00	134.5	10.56	.81	.99	1.00	125.0	11.84	.83	1.00	1.00
	6240	158.6	8.49	.83	1.00	1.00	150.1	9.49	.85	1.00	1.00	141.1	10.62	.88	1.00	1.00	131.4	11.91	.91	1.00	1.00
67°F	4160	153.0	8.42	.57	.70	.84	144.5	9.42	.57	.71	.85	135.1	10.56	.58	.73	.87	124.8	11.84	.57	.73	.90
	5200	160.6	8.50	.60	.76	.91	150.5	9.48	.60	.78	.93	141.1	10.61	.60	.79	.96	129.8	11.88	.61	.83	.99
	6240	165.3	8.54	.64	.81	.98	155.4	9.53	.64	.85	1.00	144.5	10.64	.65	.87	1.00	133.8	11.92	.66	.91	1.00
71°F	4160	162.1	8.50	.42	.55	.67	152.1	9.50	.42	.56	.69	142.5	10.63	.42	.55	.70	132.8	11.91	.40	.56	.71
	5200	169.6	8.59	.44	.59	.74	159.6	9.58	.44	.59	.76	149.0	10.70	.44	.60	.78	137.9	11.96	.44	.62	.79
	6240	175.4	8.65	.46	.62	.79	164.3	9.63	.45	.65	.81	153.5	10.75	.45	.66	.83	142.6	12.02	.45	.67	.87



# RATINGS

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

## 15 TON - HIGH EFFICIENCY LGT180H4M/V (1 COMPRESSOR - PART LOAD)

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

## 15 TON - HIGH EFFICIENCY LGT180H4M/V (2 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	3200	111.1	6.56	0.72	0.85	0.97	105.4	7.67	0.74	0.87	0.98	99.7	8.32	0.75	0.89	0.99	93.8	9.37	0.76	0.91	1
	4000	117.1	6.58	0.77	0.91	1	111.2	7.7	0.78	0.93	1	104.9	8.34	0.8	0.96	1	98.5	9.38	0.82	0.98	1
	4800	121.4	6.6	0.81	0.97	1	115.3	7.72	0.83	0.98	1	109.8	8.36	0.85	0.99	1	103.1	9.4	0.87	1	1
67°F	3200	117.5	6.58	0.58	0.7	0.82	111.9	7.7	0.58	0.71	0.84	105.2	8.34	0.59	0.72	0.86	98.8	9.38	0.6	0.74	0.88
	4000	123.2	6.6	0.6	0.75	0.88	117.5	7.73	0.61	0.76	0.91	110.6	8.36	0.62	0.78	0.93	103.6	9.4	0.63	0.8	0.95
	4800	127.7	6.63	0.63	0.79	0.94	121.6	7.75	0.64	0.81	0.96	114.3	8.38	0.65	0.83	0.98	107.2	9.42	0.66	0.85	0.99
71°F	3200	122.4	6.6	0.43	0.56	0.68	116.9	7.73	0.43	0.57	0.69	110.4	8.36	0.44	0.57	0.71	104	9.4	0.44	0.58	0.72
	4000	129	6.63	0.45	0.59	0.72	123	7.76	0.45	0.6	0.74	116.4	8.39	0.45	0.61	0.76	109.4	9.42	0.46	0.62	0.78
	4800	134.1	6.66	0.45	0.62	0.77	127.8	7.78	0.46	0.63	0.79	120.5	8.41	0.46	0.64	0.81	112.6	9.44	0.47	0.66	0.83

## 15 TON - HIGH EFFICIENCY LGT180H4M/V (3 COMPRESSORS - FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	175	10.34	0.72	0.84	0.95	166.4	11.33	0.72	0.85	0.97	157.6	12.73	0.74	0.87	0.99	148	14.32	0.76	0.89	1
	6000	181.8	10.39	0.76	0.9	1	174.4	11.37	0.78	0.92	1	164.7	12.77	0.79	0.94	1	154.5	14.35	0.81	0.96	1
	7200	189.8	10.14	0.81	0.95	1	180.5	11.41	0.82	0.97	1	170.9	12.8	0.84	0.99	1	161.1	14.38	0.87	1	1
67°F	4800	182.7	10.37	0.57	0.69	0.81	173.2	11.36	0.57	0.7	0.82	163.9	12.76	0.58	0.73	0.84	154.1	14.33	0.58	0.73	0.86
	6000	190.5	10.13	0.59	0.74	0.87	181.5	11.4	0.61	0.75	0.89	171.3	12.8	0.62	0.77	0.91	160.8	14.36	0.63	0.79	0.94
	7200	197.3	10.18	0.64	0.78	0.93	187.8	11.74	0.64	0.8	0.95	176.7	12.82	0.64	0.82	0.97	166.4	14.4	0.67	0.84	0.99
71°F	4800	192.3	10.15	0.43	0.56	0.67	182.5	11.41	0.43	0.57	0.68	172.9	12.81	0.43	0.57	0.7	162.2	14.37	0.43	0.59	0.72
	6000	200.5	10.2	0.45	0.59	0.72	191.1	11.76	0.45	0.6	0.74	180.2	12.85	0.44	0.61	0.76	169	14.41	0.45	0.61	0.78
	7200	206.7	10.24	0.46	0.62	0.77	196.1	11.79	0.46	0.63	0.79	185.2	12.87	0.45	0.65	0.81	173.4	14.43	0.47	0.67	0.83

# RATINGS

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

## 17.5 TON - HIGH EFFICIENCY LGT210H4M/V (1 COMPRESSOR- PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	1600	51.8	2.23	.77	.91	.98	49.6	2.55	.78	.91	.98	47.2	2.91	.79	.92	.99	45.0	3.30	.80	.93	.99
	2000	54.4	2.23	.82	.94	1.00	52.3	2.57	.83	.95	1.00	49.7	2.92	.84	.95	1.00	47.1	3.31	.85	.96	1.00
	2400	56.5	2.24	.85	.96	1.00	54.3	2.57	.86	.97	1.00	51.4	2.93	.87	.98	1.00	49.0	3.32	.88	.98	1.00
67°F	1600	54.1	2.23	.51	.72	.88	52.0	2.56	.51	.73	.88	49.5	2.92	.51	.74	.89	47.1	3.31	.51	.75	.91
	2000	56.9	2.24	.54	.78	.91	54.6	2.58	.54	.79	.92	52.0	2.93	.54	.80	.93	49.5	3.33	.55	.82	.94
	2400	59.0	2.25	.56	.83	.94	56.3	2.58	.57	.84	.95	54.0	2.94	.58	.85	.96	50.9	3.33	.59	.86	.97
71°F	1600	56.7	2.24	.26	.47	.67	54.6	2.57	.25	.47	.68	52.0	2.93	.23	.47	.68	49.6	3.33	.22	.47	.70
	2000	59.5	2.25	.25	.50	.73	56.9	2.58	.24	.50	.74	54.6	2.95	.23	.50	.76	51.6	3.34	.22	.51	.77
	2400	61.6	2.26	.26	.53	.78	58.8	2.59	.25	.54	.80	56.2	2.95	.25	.55	.82	53.2	3.35	.24	.56	.83

## 17.5 TON - HIGH EFFICIENCY LGT210H4M/V (2 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	2800	108.9	4.46	.71	.83	.94	104.3	5.12	.71	.84	.96	99.6	5.83	.72	.85	.97	94.5	6.61	.73	.87	.98
	3500	114.8	4.48	.75	.89	.99	110.1	5.14	.75	.90	.99	104.3	5.85	.76	.92	1.00	99.4	6.64	.78	.93	1.00
	4200	119.3	4.49	.78	.94	1.00	114.6	5.16	.80	.95	1.00	109.1	5.88	.81	.97	1.00	103.6	6.66	.82	.98	1.00
67°F	2800	114.7	4.48	.57	.69	.80	110.2	5.14	.57	.69	.81	105.0	5.86	.57	.70	.82	99.7	6.64	.58	.71	.84
	3500	121.4	4.50	.59	.72	.85	116.6	5.17	.60	.73	.87	111.1	5.89	.60	.74	.89	104.9	6.67	.60	.76	.91
	4200	126.2	4.51	.61	.76	.91	120.7	5.19	.62	.78	.93	115.0	5.91	.63	.79	.94	109.0	6.69	.63	.80	.96
71°F	2800	120.1	4.49	.43	.55	.66	115.5	5.16	.43	.56	.67	110.3	5.88	.42	.56	.68	104.6	6.67	.42	.57	.69
	3500	127.4	4.52	.44	.58	.70	122.0	5.19	.44	.58	.71	116.1	5.91	.44	.59	.72	110.4	6.70	.44	.59	.74
	4200	132.5	4.54	.45	.60	.74	126.8	5.21	.45	.61	.75	120.8	5.93	.45	.62	.77	114.8	6.73	.45	.62	.79

## 17.5 TON - HIGH EFFICIENCY LGT210H4M/V (3 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	4200	152.4	8.77	.74	.88	.95	144.7	9.95	.76	.90	.96	136.8	11.26	.76	.91	.97	128.1	12.74	.77	.91	.98
	5250	161.5	8.82	.80	.92	.98	153.4	10.00	.79	.93	.99	144.9	11.31	.81	.94	1.00	135.9	12.78	.84	.95	1.00
	6300	168.5	8.85	.84	.95	1.00	160.3	10.04	.84	.96	1.00	151.1	11.34	.88	.97	1.00	141.2	12.82	.89	.98	1.00
67°F	4200	161.7	8.82	.54	.71	.84	153.5	9.99	.53	.72	.86	143.9	11.30	.54	.72	.88	134.5	12.77	.56	.74	.90
	5250	168.9	8.85	.57	.76	.90	159.1	10.02	.58	.78	.91	149.6	11.33	.59	.79	.92	139.8	12.80	.59	.81	.94
	6300	173.5	8.87	.62	.80	.93	164.0	10.05	.62	.82	.94	154.3	11.36	.62	.85	.96	144.3	12.83	.62	.87	.97
71°F	4200	171.2	8.86	.34	.52	.67	162.7	10.04	.33	.51	.69	153.2	11.35	.33	.52	.68	143.2	12.82	.32	.52	.70
	5250	178.7	8.90	.35	.56	.73	169.5	10.08	.36	.55	.73	159.4	11.39	.35	.57	.75	148.8	12.86	.36	.57	.77
	6300	184.1	8.93	.38	.60	.78	174.4	10.11	.36	.59	.79	163.7	11.42	.38	.61	.82	152.7	12.88	.38	.61	.86

## 17.5 TON - HIGH EFFICIENCY LGT210H4M/V (4 COMPRESSORS - FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	205.0	11.74	.71	.84	.94	194.3	13.30	.73	.85	.96	183.3	15.05	.73	.87	.98	171.3	17.02	.74	.88	.99
	7000	216.0	11.79	.77	.90	1.00	204.4	13.36	.79	.91	1.00	192.9	15.11	.79	.93	1.00	180.6	17.07	.81	.95	1.00
	8400	224.2	11.83	.82	.95	1.00	212.6	13.41	.82	.97	1.00	201.1	15.16	.84	.99	1.00	188.1	17.12	.86	1.00	1.00
67°F	5600	214.7	11.78	.55	.68	.81	202.4	13.35	.56	.70	.82	190.8	15.09	.56	.71	.84	177.7	17.05	.55	.73	.86
	7000	223.7	11.83	.58	.75	.87	211.5	13.40	.58	.77	.89	199.1	15.14	.58	.79	.90	186.1	17.10	.60	.81	.93
	8400	230.8	11.86	.60	.81	.93	218.8	13.44	.60	.82	.94	206.0	15.19	.62	.82	.97	192.7	17.15	.63	.84	.99
71°F	5600	227.8	11.85	.41	.53	.66	215.8	13.42	.40	.54	.67	203.1	15.17	.39	.53	.69	189.5	17.12	.39	.54	.71
	7000	237.5	11.90	.41	.57	.71	224.3	13.47	.40	.58	.74	210.9	15.22	.41	.58	.75	196.6	17.18	.39	.58	.77
	8400	243.9	11.93	.42	.60	.78	230.7	13.51	.44	.61	.80	216.7	15.25	.43	.62	.81	201.0	17.20	.42	.62	.83

# RATINGS

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

## 20 TON - HIGH EFFICIENCY LGT240H4M/V (1 COMPRESSOR- PART LOAD)

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

## 20 TON - HIGH EFFICIENCY LGT240H4M/V (2 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	3200	122.2	5.09	.70	.82	.93	117.3	5.83	.71	.83	.95	111.7	6.60	.72	.85	.96	105.8	7.45	.73	.86	.98
	4000	130.6	5.59	.74	.87	.99	123.6	5.84	.75	.89	.99	117.8	6.62	.76	.91	1.00	110.9	7.46	.77	.93	1.00
	4800	135.2	5.61	.77	.92	1.00	128.3	5.87	.78	.94	1.00	121.7	6.64	.80	.96	1.00	115.5	7.48	.82	.98	1.00
67°F	3200	128.3	5.59	.57	.68	.79	123.6	5.84	.57	.69	.80	118.2	6.62	.57	.69	.81	112.0	7.47	.58	.70	.83
	4000	137.4	5.62	.59	.72	.84	130.7	5.88	.59	.73	.86	124.2	6.65	.60	.74	.87	117.7	7.49	.60	.75	.90
	4800	141.4	5.18	.61	.76	.90	135.5	5.91	.61	.76	.91	128.6	6.67	.62	.78	.93	121.9	7.51	.63	.80	.95
71°F	3200	135.6	5.61	.44	.55	.66	129.4	5.87	.43	.55	.67	123.3	6.64	.43	.56	.67	116.8	7.49	.43	.56	.68
	4000	142.6	5.19	.44	.57	.70	136.7	5.91	.44	.58	.71	130.0	6.68	.44	.59	.72	123.5	7.52	.44	.59	.73
	4800	148.2	5.22	.45	.60	.73	141.7	5.95	.45	.60	.75	135.3	6.70	.45	.61	.76	127.9	7.54	.45	.62	.78

## 20 TON - HIGH EFFICIENCY LGT240H4M/V (3 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	172.2	9.99	.65	.79	.91	163.0	11.27	.65	.83	.93	154.7	12.69	.67	.84	.95	145.4	14.29	.67	.85	.96
	6000	181.7	10.04	.68	.86	.97	172.8	11.31	.70	.88	.98	163.5	12.72	.72	.89	1.00	154.2	14.32	.74	.91	1.00
	7200	190.1	10.08	.76	.91	1.00	180.2	11.34	.77	.93	1.00	170.3	12.75	.79	.94	1.00	159.8	14.34	.83	.96	1.00
67°F	4800	182.8	10.04	.48	.61	.74	172.9	11.31	.47	.63	.76	162.9	12.71	.48	.63	.81	152.6	14.31	.48	.64	.83
	6000	190.1	10.08	.50	.66	.84	180.2	11.35	.49	.68	.84	169.7	12.75	.51	.70	.87	158.0	14.33	.53	.70	.89
	7200	195.9	10.11	.52	.71	.88	185.1	11.37	.53	.73	.90	174.3	12.77	.53	.76	.92	162.6	14.35	.56	.79	.94
71°F	4800	193.5	10.09	.31	.45	.58	183.0	11.36	.31	.46	.60	172.8	12.76	.30	.45	.60	161.8	14.35	.30	.47	.62
	6000	201.3	10.14	.31	.48	.63	190.9	11.40	.31	.49	.64	179.3	12.79	.31	.49	.66	167.8	14.38	.33	.51	.68
	7200	206.9	10.17	.32	.51	.69	195.9	11.43	.33	.52	.70	184.4	12.82	.32	.53	.73	172.4	14.39	.34	.55	.76

## 20 TON - HIGH EFFICIENCY LGT240H4M/V (4 COMPRESSORS - FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	237.2	13.38	.71	.84	.94	225.4	15.07	.72	.85	.96	212.6	16.96	.73	.87	.97	199.8	19.09	.75	.88	.99
	8000	250.1	13.44	.76	.89	.99	237.5	15.13	.79	.91	1.00	223.1	16.99	.79	.93	1.00	209.6	19.12	.81	.95	1.00
	9600	258.9	13.49	.81	.94	1.00	245.9	15.17	.83	.96	1.00	231.7	17.04	.85	.98	1.00	218.1	19.16	.86	1.00	1.00
67°F	6400	248.2	13.43	.56	.69	.81	235.4	15.12	.55	.70	.82	221.5	16.99	.57	.71	.84	207.1	19.11	.56	.72	.86
	8000	259.3	13.49	.58	.73	.87	244.5	15.17	.59	.77	.88	230.8	17.03	.60	.78	.90	216.1	19.16	.60	.81	.92
	9600	267.0	13.53	.61	.80	.92	252.5	15.21	.62	.82	.94	238.4	17.08	.63	.82	.96	223.3	19.18	.64	.84	.98
71°F	6400	262.9	13.51	.41	.54	.66	249.3	15.19	.41	.55	.67	235.4	17.06	.41	.55	.69	219.9	19.17	.40	.56	.70
	8000	274.0	13.57	.43	.57	.72	259.6	15.25	.41	.58	.73	244.7	17.11	.42	.58	.77	228.4	19.21	.42	.59	.78
	9600	281.3	13.62	.44	.61	.77	266.5	15.29	.42	.63	.79	250.9	17.14	.43	.62	.81	233.9	19.23	.43	.63	.83

# RATINGS

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

## 25 TON - HIGH EFFICIENCY LGT300H4M/V (1 COMPRESSOR- PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	2000	70.0	3.16	.78	.91	.97	67.3	3.58	.79	.91	.98	64.5	4.05	.80	.92	.98	62.1	4.59	.82	.93	.99
	2500	73.2	3.19	.83	.93	.99	70.9	3.62	.83	.94	.99	67.8	4.09	.84	.95	1.00	64.9	4.63	.85	.96	1.00
	3000	76.0	3.21	.85	.95	1.00	73.3	3.64	.86	.96	1.00	70.4	4.12	.87	.97	1.00	67.3	4.65	.88	.98	1.00
67°F	2000	72.6	3.18	.52	.73	.88	70.0	3.61	.52	.74	.89	67.2	4.08	.52	.75	.89	64.5	4.62	.53	.77	.91
	2500	76.3	3.22	.54	.78	.91	73.6	3.65	.55	.79	.92	70.8	4.12	.55	.80	.93	67.3	4.65	.56	.83	.94
	3000	79.1	3.25	.56	.82	.94	75.9	3.67	.57	.83	.94	72.9	4.15	.58	.85	.95	69.6	4.68	.59	.86	.96
71°F	2000	75.5	3.21	.26	.47	.67	73.0	3.64	.25	.47	.68	70.3	4.12	.25	.48	.69	67.0	4.65	.24	.49	.71
	2500	79.4	3.25	.25	.50	.72	76.3	3.67	.25	.50	.73	73.3	4.15	.25	.51	.75	70.4	4.69	.25	.52	.77
	3000	82.0	3.27	.26	.52	.77	79.2	3.71	.25	.53	.79	76.1	4.19	.25	.54	.81	72.4	4.72	.25	.56	.83

## 25 TON - HIGH EFFICIENCY LGT300H4M/V (2 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	146.8	6.46	.72	.84	.95	141.6	7.32	.73	.85	.97	135.8	8.29	.74	.87	.98	129.2	9.36	.75	.89	.99
	5000	154.1	6.53	.76	.90	.99	148.0	7.39	.77	.91	1.00	141.9	8.36	.78	.93	1.00	134.9	9.43	.80	.95	1.00
	6000	159.4	6.58	.80	.95	1.00	152.8	7.44	.81	.96	1.00	146.7	8.41	.82	.98	1.00	140.1	9.50	.84	.99	1.00
67°F	4000	154.3	6.53	.58	.70	.81	148.6	7.40	.59	.71	.82	142.4	8.36	.59	.72	.84	135.8	9.44	.60	.73	.85
	5000	162.3	6.60	.60	.74	.87	155.8	7.48	.61	.75	.88	149.0	8.44	.62	.76	.90	142.1	9.53	.63	.78	.92
	6000	167.8	6.66	.62	.78	.92	160.8	7.54	.63	.79	.94	153.7	8.50	.64	.81	.96	146.6	9.59	.65	.82	.97
71°F	4000	160.9	6.59	.44	.56	.68	155.3	7.47	.45	.57	.69	148.5	8.43	.45	.58	.70	142.2	9.53	.45	.59	.71
	5000	169.6	6.68	.45	.59	.72	162.5	7.55	.46	.60	.73	156.1	8.53	.46	.60	.74	148.8	9.62	.46	.62	.76
	6000	175.3	6.74	.47	.61	.76	168.3	7.63	.47	.62	.77	161.3	8.60	.47	.63	.79	153.6	9.68	.47	.64	.81

## 25 TON - HIGH EFFICIENCY LGT300H4M/V (3 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6000	197.9	13.04	.69	.83	.93	189.1	14.68	.68	.85	.95	179.8	16.53	.71	.87	.96	170.0	18.69	.73	.88	.98
	7500	208.4	13.21	.73	.88	.97	199.7	14.85	.73	.90	.99	189.0	16.69	.76	.92	1.00	178.6	18.84	.78	.93	1.00
	9000	216.5	13.35	.78	.93	1.00	206.6	14.96	.79	.94	1.00	196.3	16.83	.84	.96	1.00	185.1	18.95	.85	.97	1.00
67°F	6000	209.1	13.22	.49	.65	.78	198.9	14.83	.51	.66	.82	187.9	16.68	.51	.68	.84	176.4	18.80	.51	.69	.85
	7500	217.0	13.35	.52	.69	.85	205.6	14.95	.54	.71	.87	194.3	16.79	.54	.73	.89	183.1	18.93	.55	.76	.91
	9000	221.9	13.44	.55	.74	.91	211.0	15.05	.56	.76	.92	199.5	16.89	.57	.81	.94	188.1	19.02	.59	.83	.96
71°F	6000	220.4	13.41	.33	.47	.61	210.0	15.03	.33	.49	.62	198.8	16.88	.32	.49	.65	186.8	18.99	.33	.50	.66
	7500	228.5	13.55	.33	.50	.67	217.2	15.16	.35	.51	.68	205.4	17.00	.35	.52	.70	193.6	19.12	.35	.52	.71
	9000	234.1	13.65	.34	.53	.71	222.2	15.26	.36	.55	.74	210.5	17.10	.35	.57	.76	197.2	19.21	.36	.57	.81

## 25 TON - HIGH EFFICIENCY LGT300H4M/V (4 COMPRESSORS - FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
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	285.6	18.12	.73	.85	.95	273.1	20.31	.75	.86	.97	258.8	22.80	.76	.88	.99	243.7	25.67	.78	.90	1.00
	9500	295.8	18.28	.76	.89	.99	282.9	20.48	.79	.91	1.00	268.8	22.99	.80	.93	1.00	251.9	25.83	.81	.95	1.00
	11000	304.6	18.43	.80	.93	1.00	290.5	20.62	.82	.95	1.00	275.7	23.11	.84	.97	1.00	259.0	25.97	.85	.99	1.00
67°F	8000	297.8	18.32	.56	.70	.83	283.4	20.50	.57	.71	.84	268.7	23.00	.58	.73	.86	252.6	25.86	.58	.76	.88
	9500	305.7	18.47	.59	.75	.87	291.6	20.67	.60	.77	.88	276.2	23.15	.60	.78	.90	259.5	26.01	.61	.81	.92
	11000	313.8	18.62	.61	.79	.91	298.5	20.80	.61	.81	.93	282.4	23.28	.63	.84	.95	266.1	26.13	.64	.83	.97
71°F	8000	314.1	18.61	.43	.56	.68	299.4	20.81	.43	.57	.69	283.7	23.29	.43	.57	.71	266.3	26.14	.42	.58	.74
	9500	323.6	18.79	.43	.58	.72	307.4	20.96	.43	.58	.73	290.6	23.43	.42	.60	.77	273.9	26.30	.43	.60	.78
	11000	330.2	18.92	.43	.60	.77	313.8	21.10	.43	.61	.78	296.9	23.57	.43	.61	.80	278.8	26.40	.43	.63	.83





# HUMIDITROL® DEHUMIDIFICATION SYSTEM RATINGS

## 25 TON - STANDARD EFFICIENCY LGT300S4 WITH HUMIDITROL® OPERATING (2 COMPRESSORS - PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	235.19	13.81	0.60	0.81	0.99	206.01	15.30	0.59	0.87	1.00	176.97	16.92	0.55	0.90	1.00	147.76	18.69	0.48	0.94	1.00
	9500	244.37	13.95	0.64	0.89	1.00	213.73	15.45	0.61	0.95	1.00	183.23	17.07	0.59	1.00	1.00	152.71	18.85	0.51	1.00	1.00
	11000	251.28	14.07	0.66	0.95	1.00	219.80	15.58	0.67	1.00	1.00	188.49	17.20	0.65	1.00	1.00	157.15	18.98	0.59	1.00	1.00
67°F	8000	251.30	13.99	0.33	0.56	0.75	220.78	15.47	0.28	0.57	0.79	190.93	17.10	0.21	0.56	0.82	161.40	18.90	0.08	0.49	0.87
	9500	258.84	14.12	0.34	0.61	0.83	227.83	15.62	0.33	0.63	0.89	197.35	17.26	0.22	0.58	0.93	165.10	19.03	0.08	0.56	0.98
	11000	266.98	14.25	0.36	0.63	0.89	234.13	15.75	0.33	0.64	0.96	201.16	17.36	0.24	0.64	1.00	167.92	19.15	0.13	0.64	1.00
71°F	8000	265.20	14.15	0.10	0.32	0.51	236.21	15.67	0.05	0.31	0.53	206.99	17.31	-0.08	0.22	0.53	174.66	19.09	-0.26	0.15	0.50
	9500	276.86	14.33	0.12	0.34	0.58	244.69	15.83	0.05	0.30	0.58	209.92	17.42	-0.08	0.28	0.59	177.52	19.22	-0.32	0.17	0.53
	11000	281.73	14.41	0.11	0.36	0.60	246.97	15.90	0.02	0.34	0.60	213.31	17.53	-0.11	0.27	0.61	178.48	19.31	-0.48	0.17	0.60

## 25 TON - STANDARD EFFICIENCY LGT300S4 WITH HUMIDITROL® OPERATING (4 COMPRESSORS - FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4000	93.89	6.43	0.56	0.74	0.90	74.95	7.13	0.51	0.72	0.91	56.88	7.87	0.41	0.68	0.92	39.74	8.68	0.22	0.62	0.94
	4750	95.40	6.50	0.60	0.79	0.96	75.30	7.21	0.55	0.78	0.98	56.53	7.96	0.45	0.76	0.99	38.88	8.77	0.28	0.72	1.00
	5500	95.60	6.56	0.64	0.84	1.00	74.78	7.27	0.58	0.84	1.00	55.41	8.03	0.51	0.83	1.00	37.48	8.84	0.34	0.82	1.00
67°F	4000	105.89	6.53	0.37	0.55	0.71	85.85	7.24	0.30	0.51	0.69	66.59	7.98	0.19	0.44	0.67	48.31	8.80	-0.03	0.30	0.62
	4750	106.55	6.60	0.41	0.60	0.77	85.53	7.31	0.33	0.55	0.75	65.07	8.06	0.21	0.48	0.73	46.23	8.88	-0.02	0.37	0.71
	5500	106.38	6.64	0.43	0.63	0.81	83.68	7.36	0.36	0.59	0.81	63.10	8.12	0.23	0.54	0.80	44.26	8.95	0.00	0.43	0.79
71°F	4000	117.81	6.64	0.21	0.38	0.54	96.54	7.35	0.10	0.33	0.50	77.27	8.12	-0.01	0.23	0.45	57.67	8.93	-0.25	0.10	0.37
	4750	118.49	6.71	0.23	0.41	0.59	96.20	7.42	0.13	0.36	0.55	75.35	8.19	-0.01	0.28	0.50	55.54	9.01	-0.25	0.12	0.41
	5500	117.77	6.76	0.25	0.45	0.63	94.61	7.48	0.15	0.39	0.59	72.95	8.25	-0.02	0.30	0.54	53.29	9.09	-0.32	0.16	0.48





## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

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

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

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

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

Air Volume cfm	Wet Indoor Coil		Humiditrol® Reheat Coil	Gas Heat Exchanger			Economizer	Filters			Horizontal Roof Curb	
	156, 180	210, 240, 300		Low/Standard Heat	Medium Heat	High Heat		MERV 8	MERV 13	MERV 16	156 thru 240	300
	in. w.g.	in. w.g.	in. w.g.	in. w.g.	in. w.g.	in. w.g.	in. w.g.				in. w.g.	in. w.g.
2750	.01	.02	.01	.02	.04	.05	---	.01	.03	.06	.03	-
3000	.01	.02	.01	.03	.04	.05	---	.01	.03	.06	.04	-
3250	.01	.03	.01	.03	.05	.06	---	.01	.04	.07	.04	.01
3500	.01	.03	.02	.03	.05	.06	---	.01	.04	.08	.05	.01
3750	.01	.03	.02	.04	.06	.07	---	.01	.04	.08	.05	.01
4000	.02	.04	.02	.04	.06	.07	---	.01	.04	.09	.06	.02
4250	.02	.04	.02	.04	.06	.08	---	.01	.05	.10	.07	.02
4500	.02	.05	.02	.05	.07	.09	---	.01	.05	.10	.07	.02
4750	.02	.05	.02	.05	.08	.10	---	.02	.05	.11	.08	.03
5000	.02	.05	.02	.05	.09	.11	---	.02	.06	.12	.08	.03
5250	.02	.06	.03	.06	.10	.12	---	.02	.06	.12	.09	.04
5500	.02	.07	.03	.06	.10	.13	---	.02	.06	.13	.10	.04
5750	.03	.07	.03	.06	.11	.14	---	.02	.07	.14	.11	.05
6000	.03	.08	.03	.07	.12	.15	---	.03	.07	.14	.11	.06
6250	.03	.08	.03	.07	.12	.16	.01	.03	.07	.15	.12	.07
6500	.03	.09	.04	.08	.13	.17	.02	.03	.08	.16	.13	.08
6750	.04	.10	.04	.08	.14	.18	.03	.03	.08	.17	.14	.08
7000	.04	.10	.04	.09	.15	.19	.04	.04	.08	.17	.15	.09
7250	.04	.11	.04	.09	.16	.20	.05	.04	.09	.18	.16	.10
7500	.05	.12	.05	.10	.17	.21	.06	.04	.09	.19	.17	.11
8000	.05	.13	.05	.11	.19	.24	.09	.05	.10	.21	.19	.13
8500	.06	.15	.05	.12	.20	.26	.11	.05	.10	.22	.21	.15
9000	.07	.16	.06	.13	.23	.29	.14	.06	.11	.24	.24	.17
9500	.08	.18	.07	.14	.25	.32	.16	.07	.12	.25	.26	.19
10,000	.08	.20	.07	.16	.27	.35	.19	.07	.12	.27	.29	.21
10,500	.09	.22	.08	.17	.30	.38	.22	.08	.13	.29	.31	.24
11,000	.11	.24	.08	.18	.31	.40	.25	.09	.14	.30	.34	.27

## BLOWER DATA

### POWER EXHAUST FAN PERFORMANCE

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

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

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

### CEILING DIFFUSER AIR THROW DATA - ft.

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

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

**ELECTRICAL DATA**

**13 TON**

Model No.		LGT156H4					
<sup>1</sup> Voltage - 60Hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor 1 (Non-Inverter)	Rated Load Amps	17.6		8.5		6.3	
	Locked Rotor Amps	136		66.1		55.3	
Compressor 2 (Non-Inverter)	Rated Load Amps	22.4		10.6		7.7	
	Locked Rotor Amps	149		75		54	
Outdoor Fan Motors (3)	Full Load Amps (1 ECM)	2.8		1.4		1.1	
	Full Load Amps (2 Non-ECM)	2.4		1.3		1	
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4		1.3		1	
	Total	4.8		2.6		2	
Service Outlet 115V GFI (amps)		15		15		20	
Indoor Blower Motor	Horsepower	3	5	3	5	3	5
	Full Load Amps	10.6	16.7	4.8	7.6	3.9	6.1
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	80	90	40	40	30	30
	With (2) 0.33 HP Power Exhaust	90	90	40	45	30	30
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	64	70	31	34	23	26
	With (2) 0.33 HP Power Exhaust	69	75	34	36	25	28

**ELECTRICAL DATA**

**15 TON**

Model No.		LGT180H4								
<sup>1</sup> Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	70	80	100	35	40	45	25	30	35
	With (2) 0.33 HP Power Exhaust	80	90	110	35	40	50	30	30	40
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	64	71	81	31	34	39	25	27	31
	With (2) 0.33 HP Power Exhaust	69	76	86	34	37	41	27	29	33

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Factory installed circuit breaker not available.

**ELECTRICAL DATA**
**17.5 TON**

Model No.		LGT210H4								
<sup>1</sup> Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	14.5			6.3			6		
	Locked Rotor Amps	98			55			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	90	100	110	40	45	50	35	40	45
	With (2) 0.33 HP Power Exhaust	100	110	125	45	50	50	40	40	50
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	83	90	99	37	41	45	34	36	40
	With (2) 0.33 HP Power Exhaust	88	95	104	40	43	47	36	38	42

**ELECTRICAL DATA**
**20 TON**

Model No.		LGT240H4								
<sup>1</sup> Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	100	110	125	50	50	60	35	45	50
	With (2) 0.33 HP Power Exhaust	110	125	125	50	60	60	40	45	50
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	89	99	107	43	47	51	34	38	40
	With (2) 0.33 HP Power Exhaust	94	104	112	46	50	54	36	40	42

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Factory installed circuit breaker not available.

**ELECTRICAL DATA**

**25 TON**

Model No.		LGT300S4								
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
<sup>1</sup> Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3 (Non-Inverter)	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 4	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	125	150	150	60	70	70	50	50	50
	With (2) 0.33 HP Power Exhaust	150	150	150	60	70	70	50	50	60
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	122	130	138	56	60	64	43	47	49
	With (2) 0.33 HP Power Exhaust	127	135	143	59	62	66	45	49	51

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Factory installed circuit breaker not available.

## ELECTRICAL ACCESSORIES

### DISCONNECTS

Voltage	208V	240V	208V	240V	208V	240V	460V			575V				
Model No.	LGT156H4													
Blower Motor HP	3		5		---		3	5	---		3	5	---	
Unit Only	54W88	54W88	54W88	54W88	---	---	54W88	54W88	---	54W88	54W88	---	---	---
Unit w/ Power Exhaust	54W88	54W88	54W89	54W89	---	---	54W88	54W88	---	54W88	54W88	---	---	---
Model No.	LGT180H4													
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5	---	---
Unit Only	54W88	54W88	54W88	54W88	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Unit w/ Power Exhaust	54W88	54W88	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Model No.	LGT210H4													
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5	---	---
Unit Only	54W89	54W89	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Unit w/ Power Exhaust	54W89	54W89	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Model No.	LGT240H4													
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10	---	---
Unit Only	54W89	54W89	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Unit w/ Power Exhaust	54W89	54W89	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Model No.	LGT300S4													
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10	---	---
Unit Only	54W89	54W89	54W89	54W89	54W89	54W89	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88
Unit w/ Power Exhaust	54W89	54W89	54W89	54W89	90W82	90W82	54W88	54W88	54W88	54W88	54W88	54W88	54W88	54W88

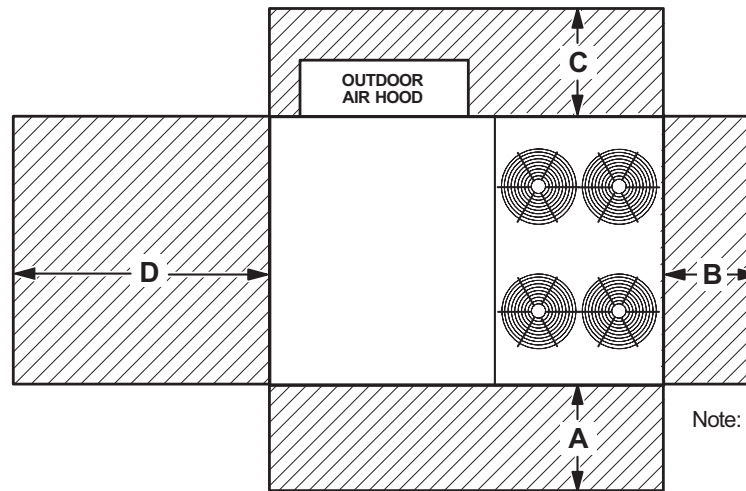
Disconnects - 54W88 - 80A  
 54W89 - 150A  
 90W82 - 250A

#### 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

## INSTALLATION 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	
<b>Service Clearance</b>	60	1524	36	914	36	934	66	1676	Unobstructed
<b>Clearance to Combustibles</b>	36	914	1	25	1	25	1	25	
<b>Minimum Operation Clearance</b>	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.

**Clearance to Combustibles** - Required clearance to combustible material.

**Minimum Operation Clearance** - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							¹ Sound Rating Number (dBA)
	125	250	500	1000	2000	4000	8000	
156	71	78	81	81	76	71	63	86
180	80	83	87	88	84	80	71	93
210, 240, 300	79	84	88	89	85	82	73	94

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

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

WEIGHT DATA				UNIT
Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
156 Base Unit	2014	914	2214	1005
156 Max. Unit	2299	1044	2499	1135
180 Base Unit	2128	966	2328	1057
180 Max. Unit	2413	1096	2613	1186
210 Base Unit	2569	1166	2769	1257
210 Max. Unit	2854	1296	3054	1386
240 Base Unit	2601	1181	2801	1271
240 Max. Unit	2886	1310	3086	1400
300 Base Unit	2651	1204	2851	1294
300 Max. Unit	2936	1333	3136	1424

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

WEIGHT DATA	OPTIONS / ACCESSORIES		
	Shipping Weight		
	lbs.	kg	
<b>ECONOMIZER / OUTDOOR AIR / EXHAUST</b>			
<b>Economizer</b>			
Economizer Dampers (with Outdoor Air Hood)	167	76	
Barometric Relief Dampers (downflow)	30	14	
Barometric Relief Dampers (horizontal)	20	9	
<b>Outdoor Air Dampers with Hood (downflow)</b>			
Motorized	39	18	
Manual	22	10	
<b>Power Exhaust</b>	62	28	
<b>GAS HEAT EXCHANGER (NET WEIGHT)</b>			
Medium Heat (adder over standard heat)	18	8	
High Heat (adder over standard heat)	64	29	
<b>COMBINATION COIL/HAIL GUARDS</b>			
156	30	13	
180/300	36	16	
<b>ROOF CURBS</b>			
<b>Hybrid Roof Curbs, Downflow</b>			
8 in. height	136	62	
14 in. height	169	77	
18 in. height	191	87	
24 in. height	224	102	
<b>Adjustable Pitch Curb, Downflow</b>			
14 in. height	224	102	
<b>Horizontal, Standard</b>			
26 in. height			
37 in. height			
30 in. height	495	225	
41 in. height	575	261	
<b>CEILING DIFFUSERS</b>			
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
<b>HUMIDITROL® DEHUMIDIFICATION SYSTEM</b>			
Humiditrol® Dehumidification Option	50	23	



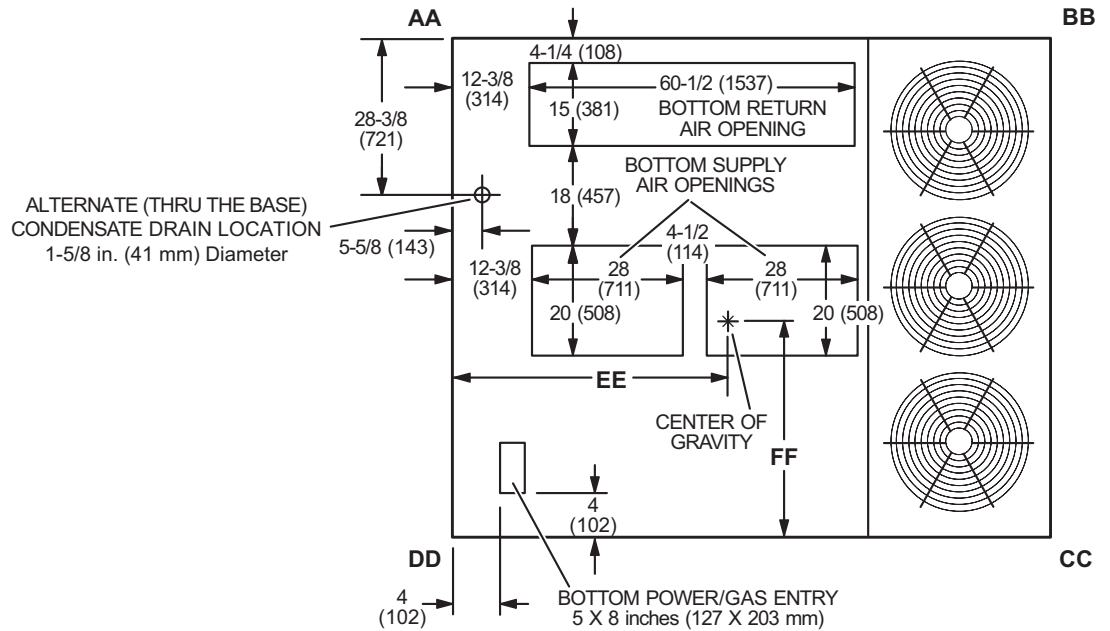
# DIMENSIONS

156

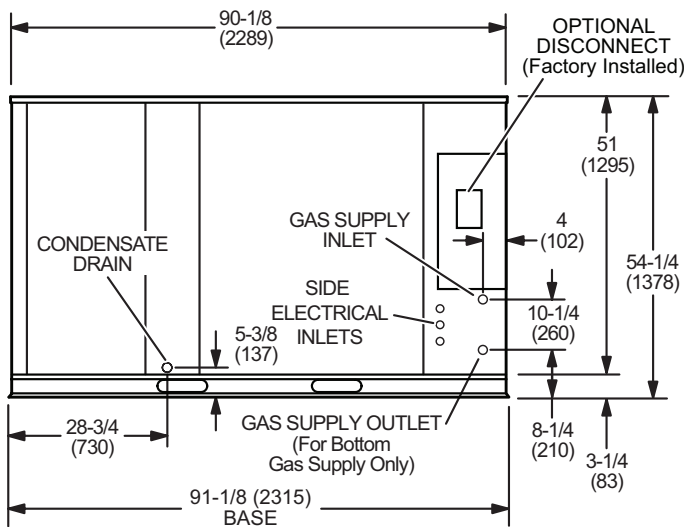
CORNER WEIGHTS									CENTER OF GRAVITY			
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LGT156 Base Unit	481	219	399	181	514	234	620	282	48-7/8	1241	39-3/4	1011
LGT156 Max. Unit	596	271	487	221	547	248	669	304	48-1/2	1230	43	1090

Base Unit - The unit with NO INTERNAL OPTIONS.

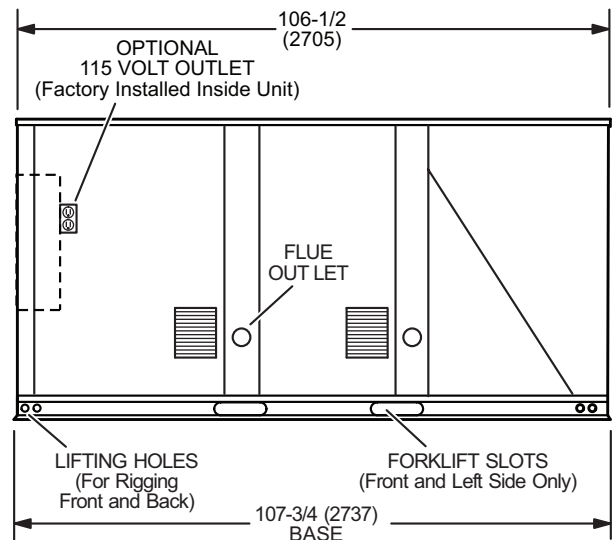
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

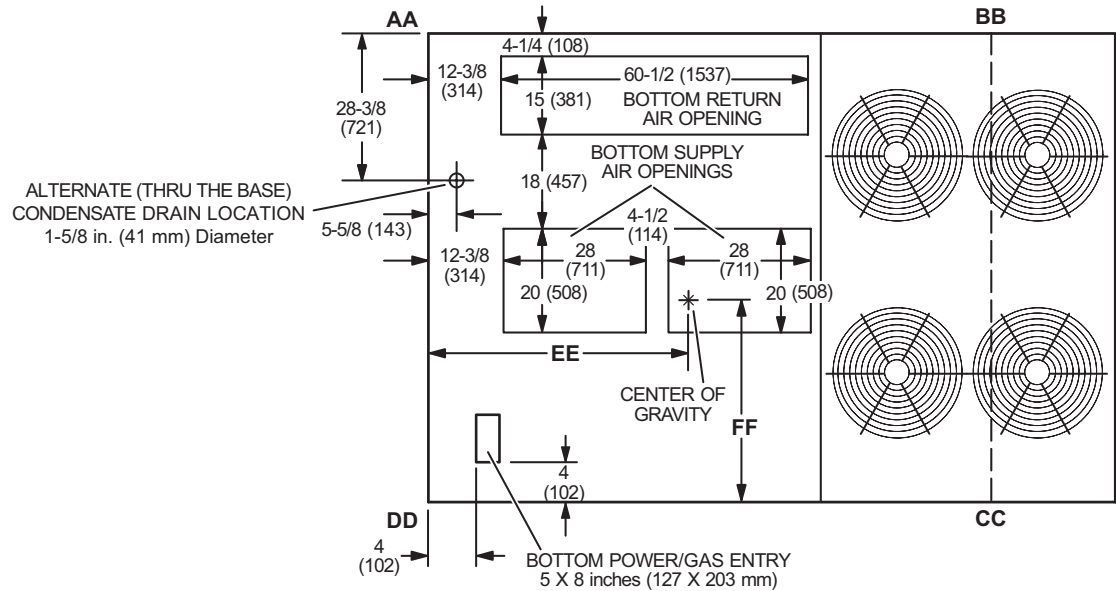
**CORNER WEIGHTS**

**CENTER OF GRAVITY**

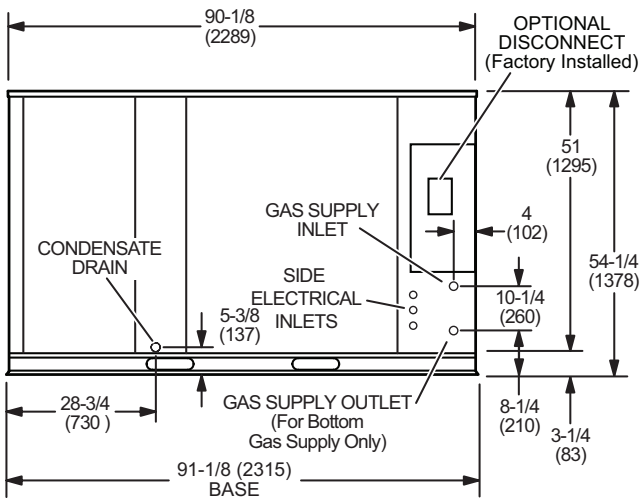
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LGT180 Base Unit	483	219	435	198	574	261	636	289	51	1298	39-1/4	998
LGT180 Max. Unit	596	271	517	235	604	275	696	316	50	1272	42	1068
LGT210 Base Unit	512	233	620	282	787	358	650	296	59	1498	40-1/8	1020
LGT210 Max. Unit	624	283	709	322	809	368	712	324	57-3/8	1456	42-1/2	1081

Base Unit - The unit with NO INTERNAL OPTIONS.

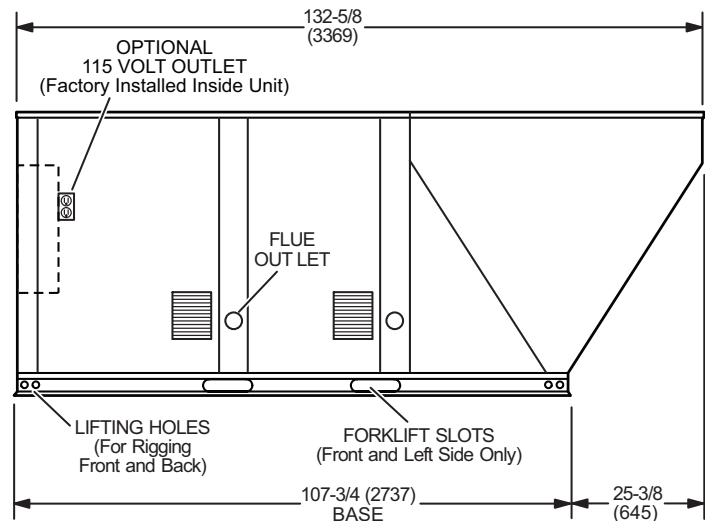
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**

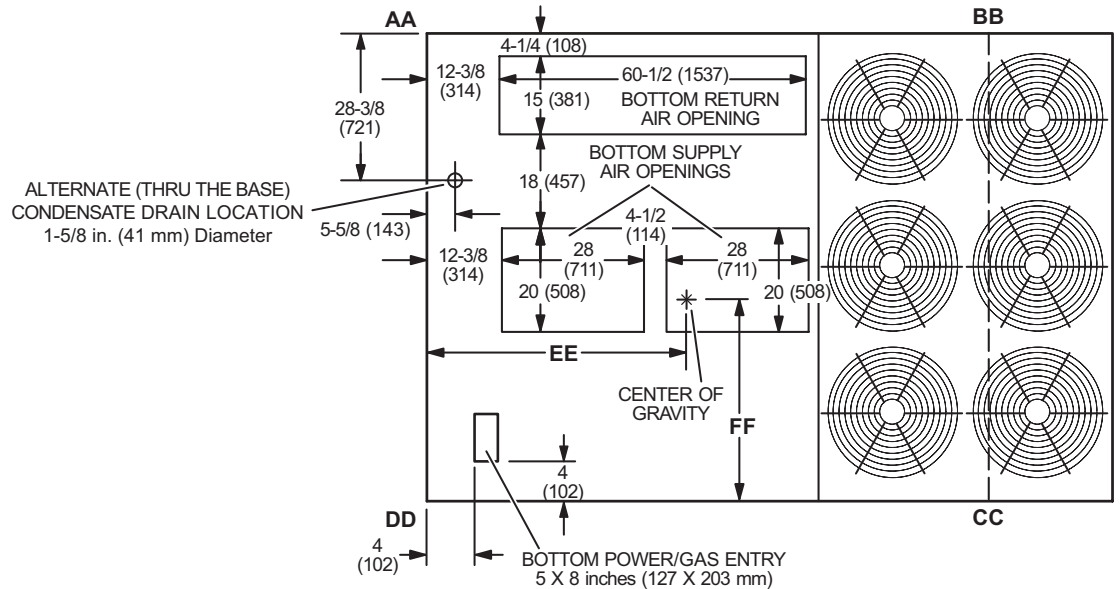


**SIDE VIEW**

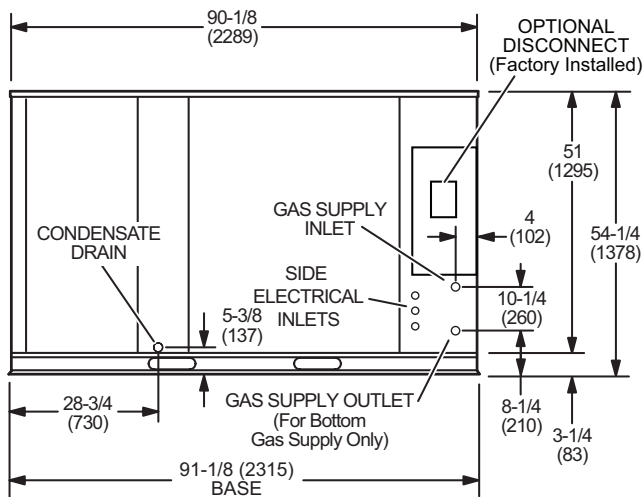
Model No.	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
LGT240 Base Unit	519	236	611	278	796	362	676	307	58-1/4	1480	39-1/2	1005
LGT240 Max. Unit	628	286	702	319	821	373	735	334	56-7/8	1444	42	1067
LGT300 Base Unit	526	239	598	272	812	369	714	325	57-3/8	1456	38-5/8	982
LGT300 Max. Unit	633	288	686	312	841	382	776	353	56	1423	41	1040

Base Unit - The unit with NO INTERNAL OPTIONS.

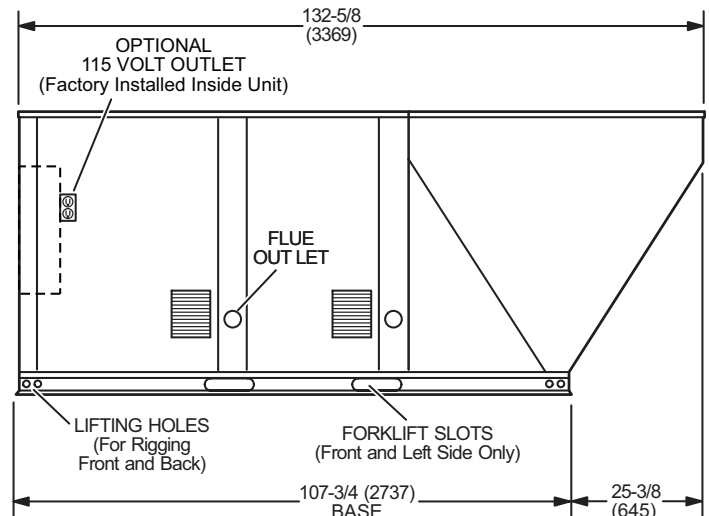
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**

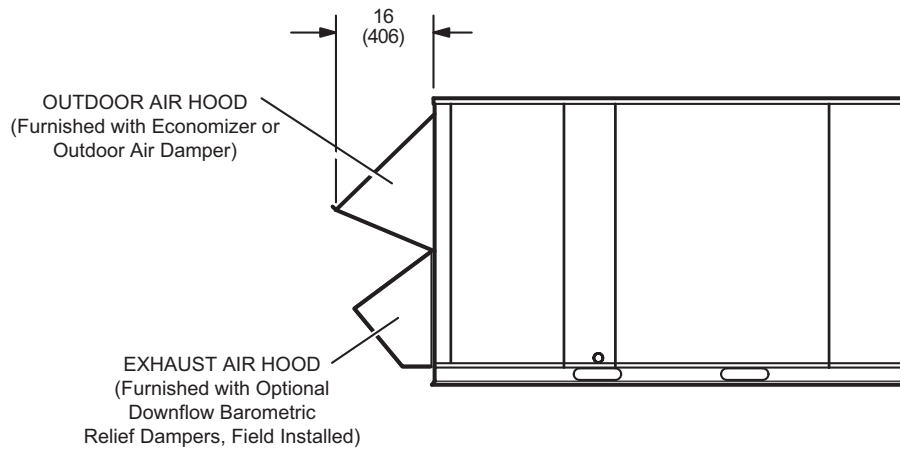


**END VIEW**



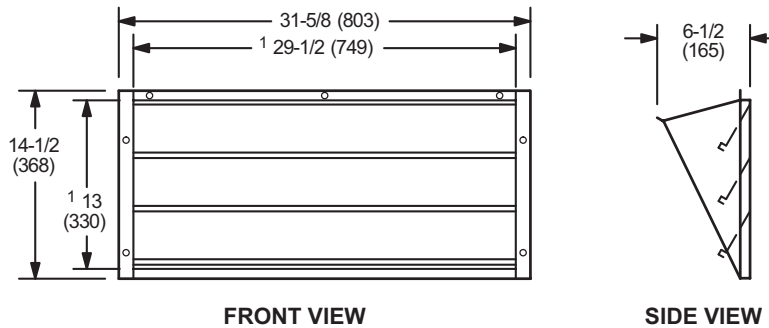
**SIDE VIEW**

**OUTDOOR AIR HOOD DETAIL**



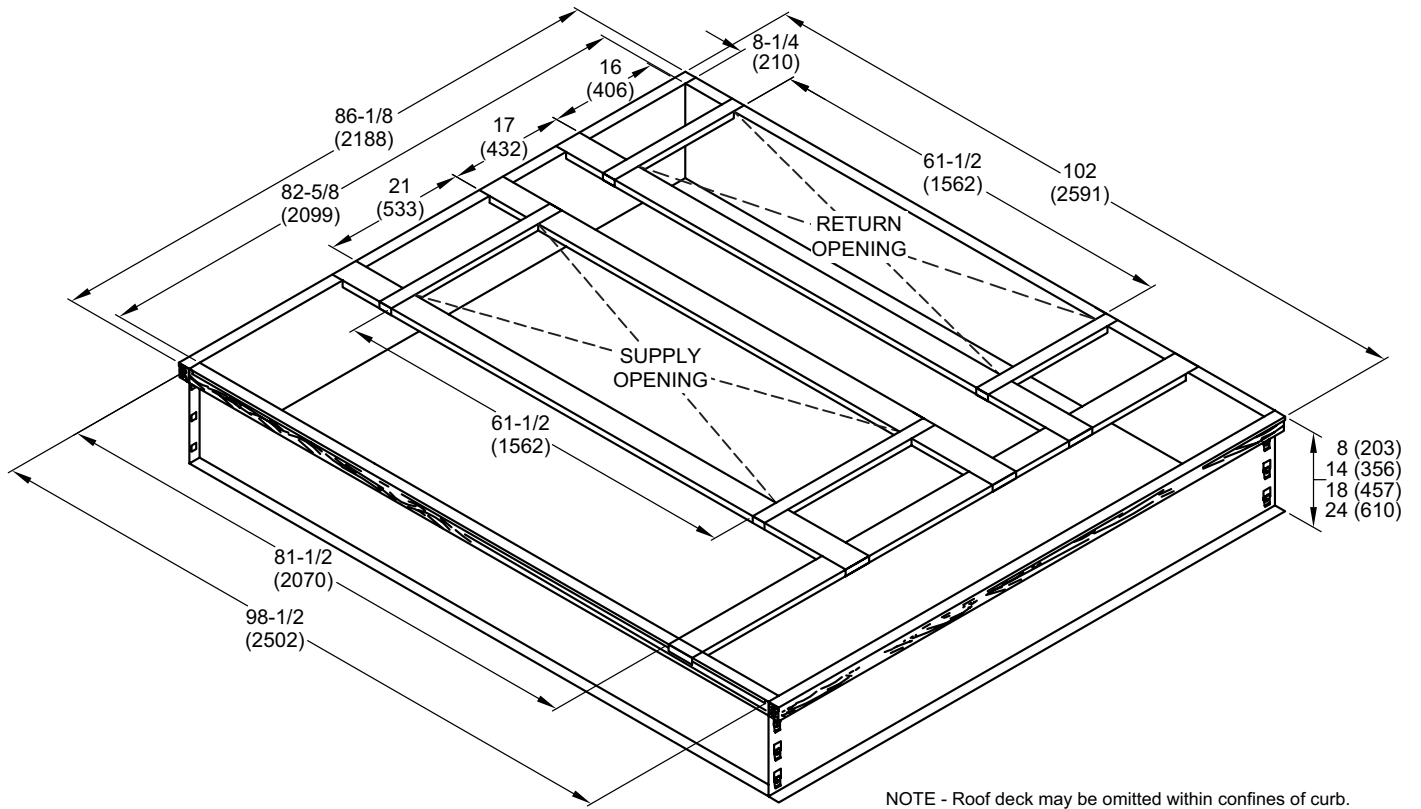
**OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD**

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

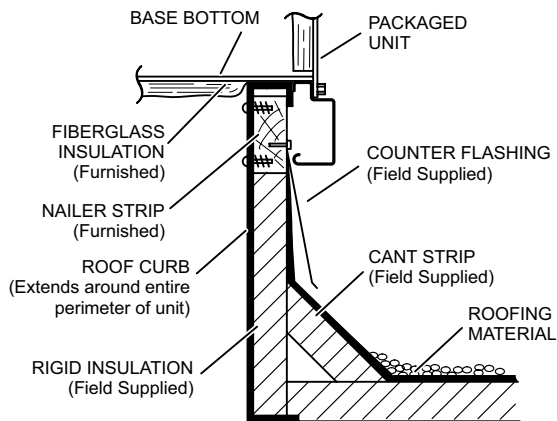


NOTE - Two furnished per order no.  
<sup>1</sup> NOTE - Opening size required in return air duct.

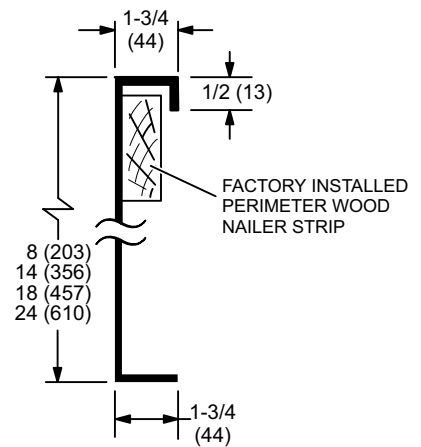
**HYBRID ROOF CURBS - DOUBLE DUCT OPENING**



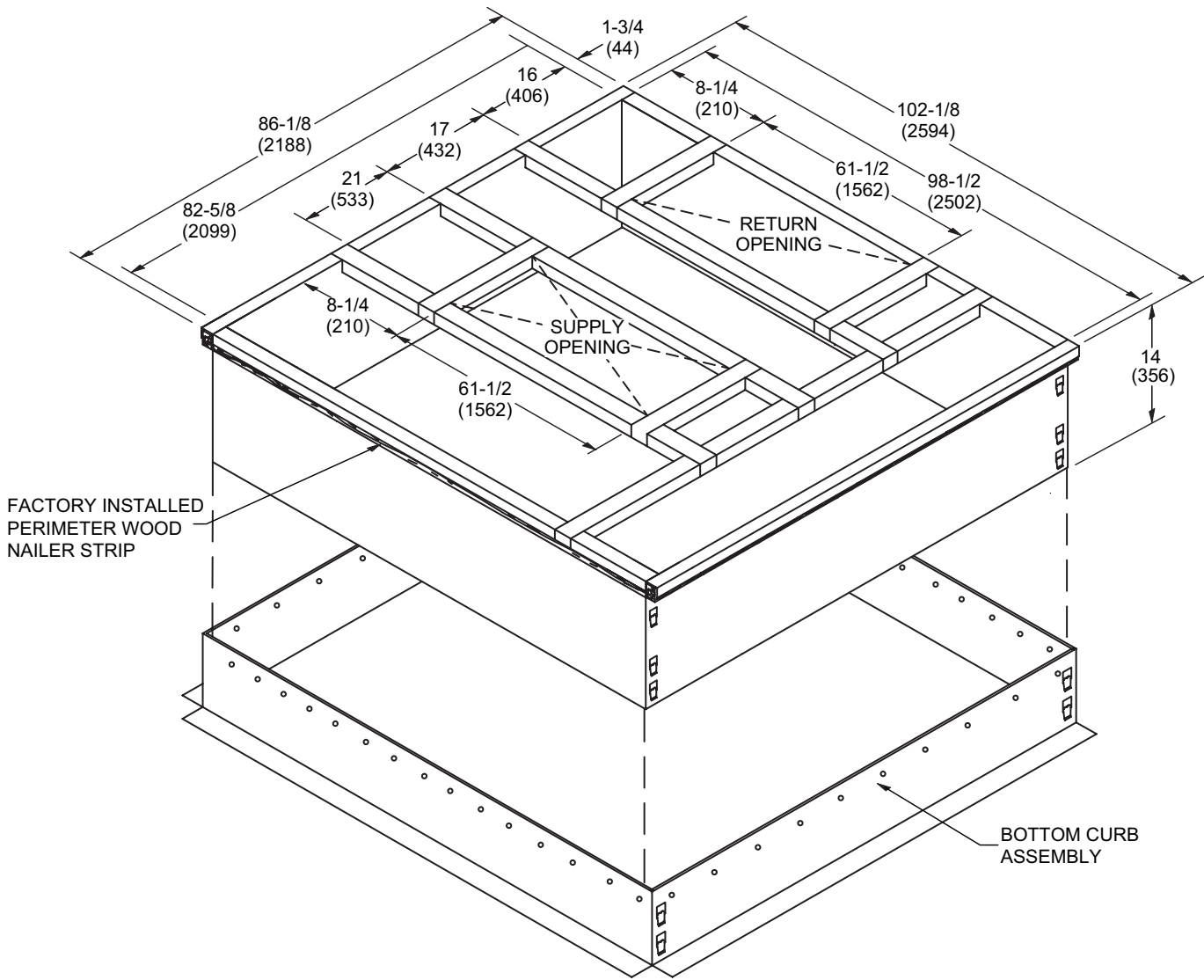
**TYPICAL FLASHING DETAIL FOR ROOF CURB**



**DETAIL ROOF CURB**

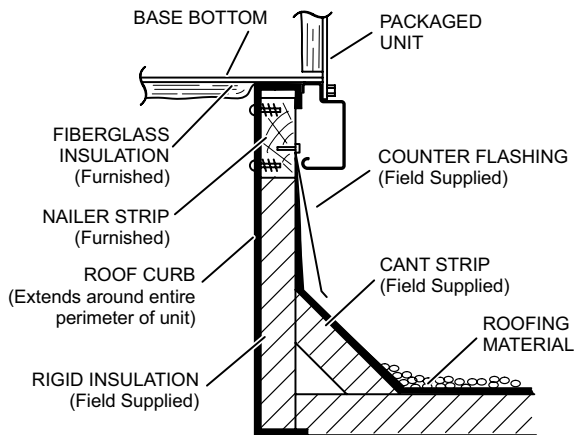


**ADJUSTABLE PITCH CURB - DOUBLE DUCT OPENING**

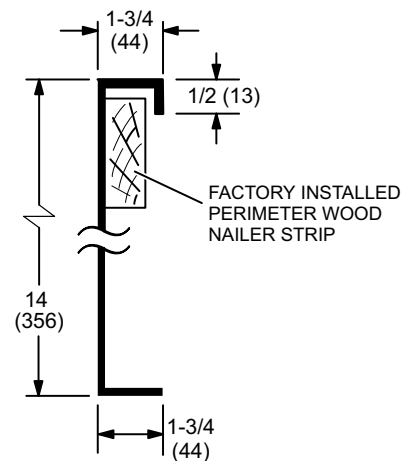


NOTE - Maximum slope pitch is 3/4 in. per 1 foot (19 mm per 305 mm) in any one direction.

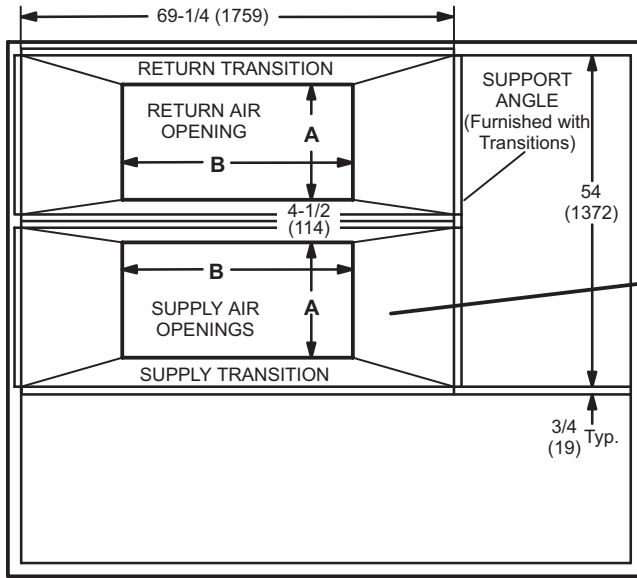
**TYPICAL FLASHING DETAIL FOR ROOF CURB**



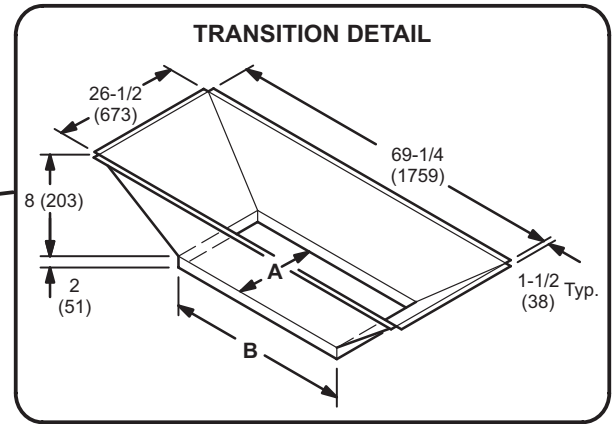
**DETAIL ROOF CURB**



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



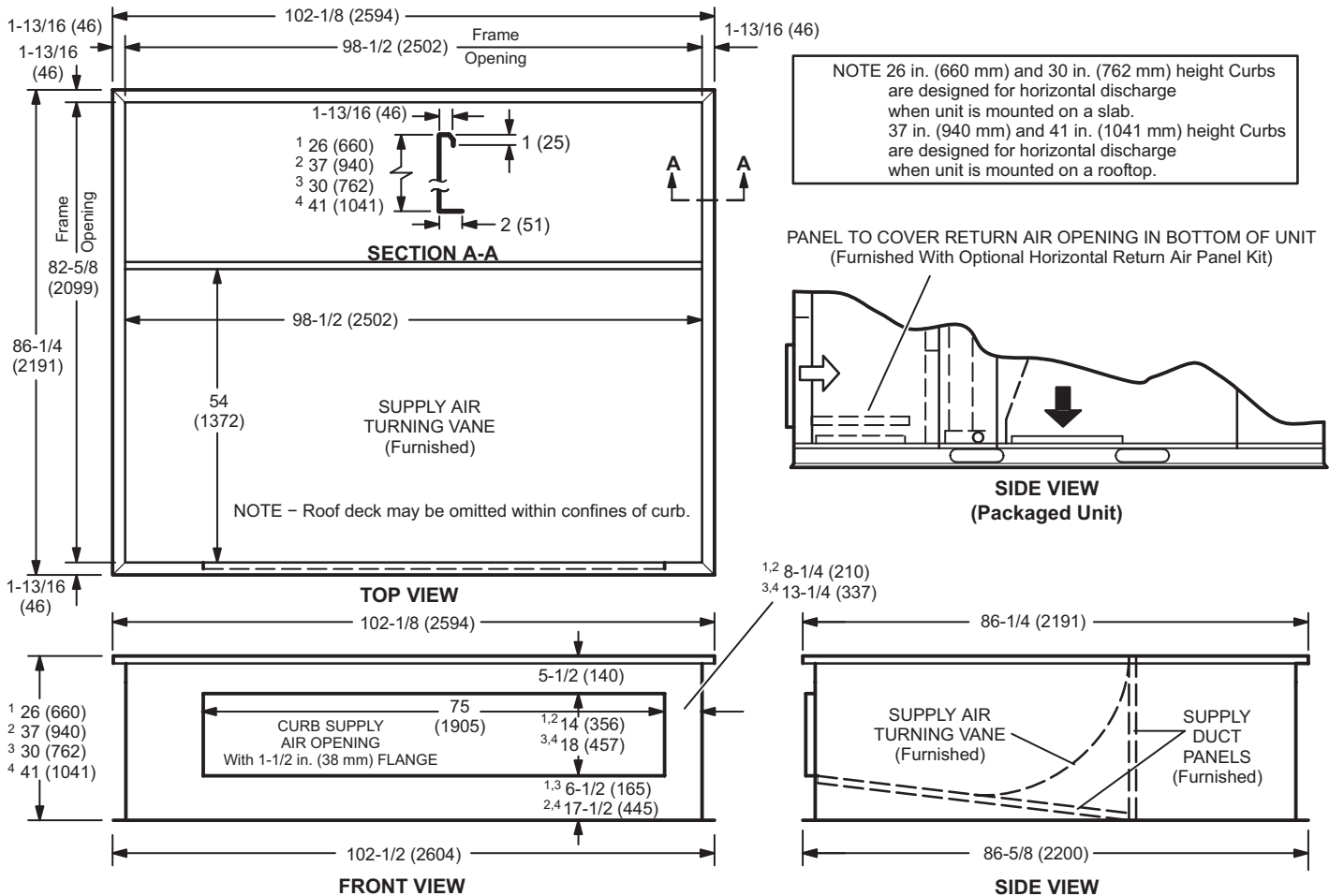
**TOP VIEW**



**TRANSITION OPENING SIZES**

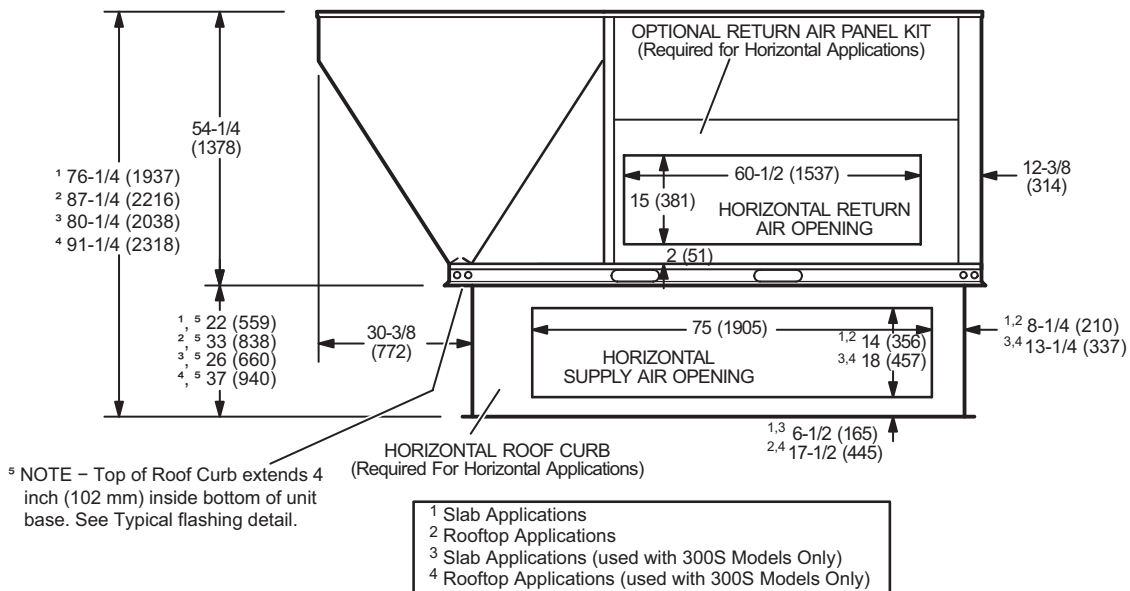
Model Number	A		B	
	inch	mm	inch	mm
C1DIFF33C-1	18	457	36	914
C1DIFF34C-1	24	610	48	1219

**HORIZONTAL ROOF CURBS – Requires Optional Horizontal Return Air Panel Kit**



<sup>1</sup> Slab Applications    <sup>2</sup> Rooftop Applications    <sup>3</sup> Slab Applications (used with 300S)    <sup>4</sup> Rooftop Applications (used with 300S)

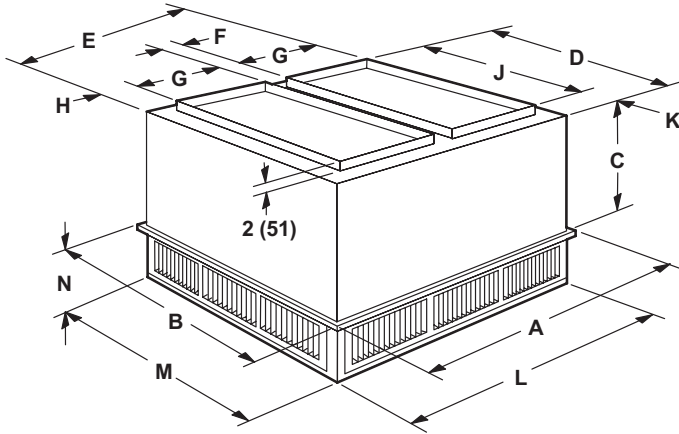
**HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB**



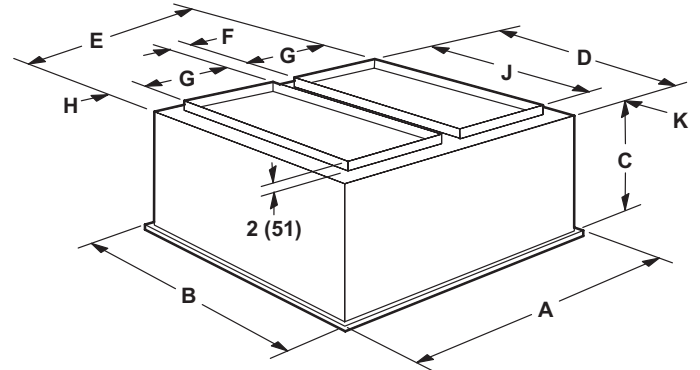


**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



**FLUSH CEILING DIFFUSER**



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

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

## REVISIONS

Sections	Description of Change
Sewquence of Operation	Updated.



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