

PACKAGED HEAT PUMP



SHH

STRATEGOS® ROOFTOP UNITS

Ultra-High Efficiency | Lennox® CORE Controller | **R-454B** | 60Hz

**COMMERCIAL
PRODUCT SPECIFICATIONS (EHB)**

3 to 20 Tons

Net Cooling Capacity - 36,000 to 230,000 Btuh

Net Heating Capacity - 34,000 to 230,000 Btuh

Optional Electric Heat - 7.5 to 60 kW



SHH036 (3 Ton)
SHH060 (5 Ton)



SHH092 (7.5 Ton)
SHH120 (10 Ton)



SMARTWIRE™ SYSTEM



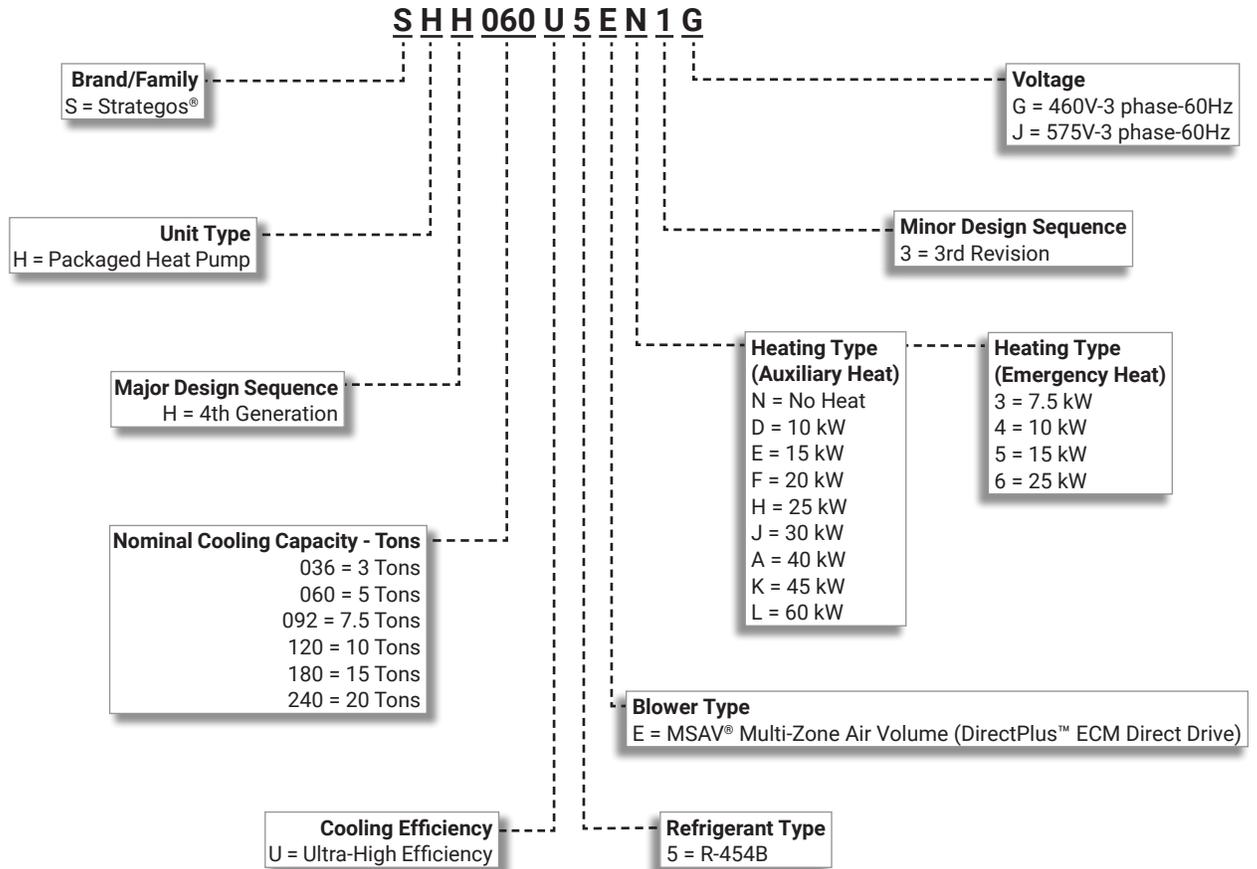
ASHRAE
Standard
90.1



SHH180 (15 Ton)
SHH240 (20 Ton)



MODEL NUMBER IDENTIFICATION

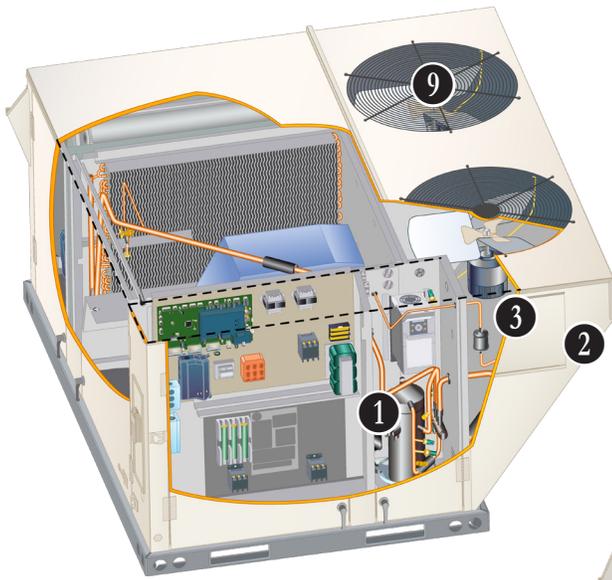


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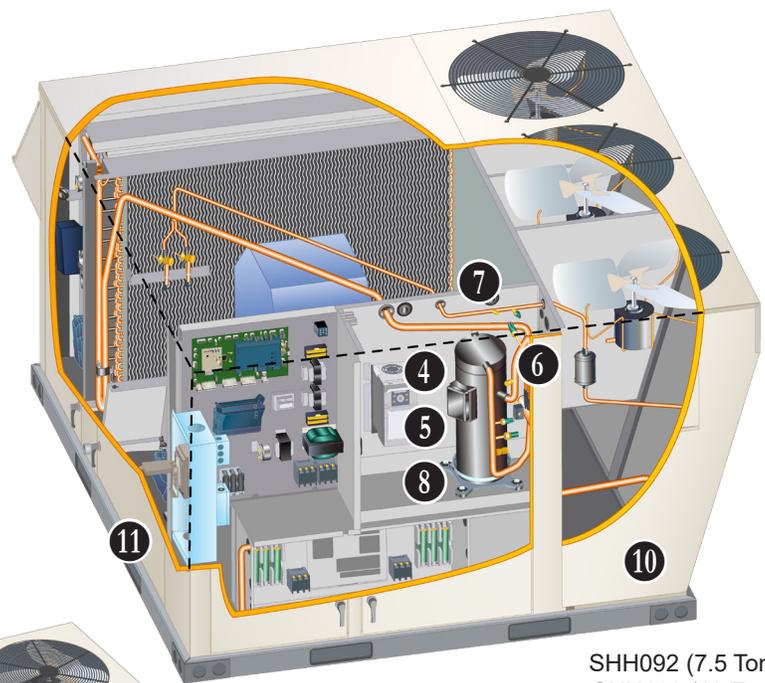
FEATURE HIGHLIGHTS

Lennox' Strategos® packaged rooftop unit product line was created to save energy with intelligence by offering some of the highest energy efficiency ratings available with a powerful, easy to use unit controller. This makes Strategos® rooftop units perfect for business owners looking for an HVAC product with the lowest total cost of ownership



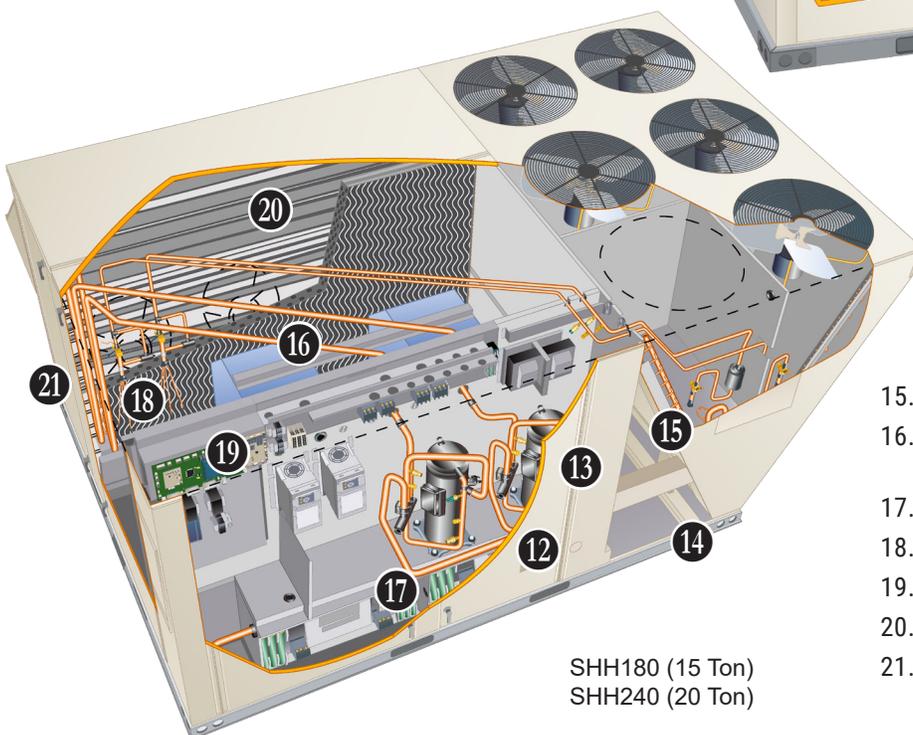
SHH036 (3 Ton)
SHH060 (5 Ton)

1. Variable-Speed Scroll Compressor
2. Thermal Check/Expansion Valve
3. Filter/Drier
4. High Pressure Switch
5. High Pressure Transducer
6. Low Pressure Transducer
7. Liquid Pressure Transducer
8. Discharge Line Thermistor



SHH092 (7.5 Ton)
SHH120 (10 Ton)

9. Variable Speed ECM Outdoor Coil Fan Motors
10. Heavy Gauge Steel Cabinet
11. Power Entry
12. Access Panel
13. Hinged Access Panels
14. Fully Insulated



SHH180 (15 Ton)
SHH240 (20 Ton)

15. Grille Guards
16. MSAV® Multi-Zone Air Volume (DirectPlus™ ECM Direct Drive)
17. Electric Heat (option)
18. Air Filters
19. Lennox® CORE Unit Controller
20. Economizer (option)
21. Power Exhaust Fans (option)

APPROVALS AND WARRANTY

APPROVALS

- All 3 and 5 ton models are AHRI Standard 210/240-2023 certified
- All 7.5-20 ton models are AHRI Standard 340/360-2023 certified
- All models are ENERGY STAR® certified
- ETL and CSA listed
- All models are ASHRAE 90.1-2022 compliant
- All models meet DOE 2023 energy efficiency standards
- All models are listed to UL 60335-1 & 60335-2-40 and meet the Refrigerant Detection and Dissipation Requirements
- Components are bonded for grounding to meet safety standards for servicing required by ETL, NEC and CEC
- ISO 9001 Registered Manufacturing Quality System
- All 7.5- 20 ton models meet California Code of Regulations, Title 24 and ASHRAE 90.1-2022 Section 6.4.3.10 requirements for staged airflow
- All models have FSA approval and are compliant with standard ASCE 7-22 (ASD) and the Florida Building Code Eighth Edition (2023)
- All models are fully charged and run tested to verify unit operation and functionality

WARRANTY

- Compressors - Limited five years
- Lennox® CORE Unit Controller - Limited three years
- Optional High Performance Economizers - Limited five years
- All other covered components - Limited one year

FEATURES AND BENEFITS

COOLING/HEATING SYSTEM

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

NOTE - When a call for heating is initiated at ambient temperatures above 0°F, unit will attempt to satisfy demand with mechanical heating down to 0°F ambient.

If a call for heating is initiated at or below 0°F, the unit will lockout mechanical heating (compressors) and use optional electrical heat to satisfy demand.

R-454B Refrigerant

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

Scroll Compressors

- Cooling system consists of variable capacity scroll compressors (one for 036, 060, 092 and 120 models, two for 180-240 models)

1 Variable-Speed Scroll Compressor

- High performance, reliability and quiet operation
- Operates on a variable-frequency determined to vary capacity based on the cooling load required

Compressor Operation

- Two involute spiral scrolls matched together to generate a series of crescent shaped gas pockets between them
- During compression, one scroll remains stationary while the other scroll orbits around it
- Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates
- As the spiral movement continues, gas pockets are pushed to the center of the scrolls
- Volume between the pockets is simultaneously reduced
- When the pocket reaches the center, gas is now at high pressure and is forced out of a port located in the center of the fixed scrolls
- During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle
- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency
- Compressor is tolerant to the effects of slugging and contaminants
- If this occurs, scrolls separate, allowing liquid or contaminants to be worked toward the center and discharged

Compressor Crankcase Heater

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

FEATURES AND BENEFITS

COOLING/HEATING SYSTEM (continued)

DC Inverter Control

- Converts AC line voltage into filtered variable DC voltage
- Provides continuous compressor operation, while adjusting the capacity according to discharge air temperature
- Adjusts compressor output in increments as small as 1%
- Prevents frequent changes in capacity and ensures efficient, economical operation
- Two LEDs (red and green) indicate inverter operating status and aid in troubleshooting
- External noise filter reduces unwanted electromagnetic interference (EMI)

2 Thermal Check/Expansion Valves

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

Reversing Valve

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

3 Filter/Drier

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

4 High Pressure Switch

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

5 High Pressure Transducer

- Monitors the compressor discharge pressures and protects from abnormal conditions

6 Low Pressure Transducer

- Monitors the suction pressures and protects from abnormal conditions

7 Liquid Pressure Transducer

- Monitors the liquid pressures and protects from abnormal conditions

8 Discharge Line Thermistor

- Monitors and protects the compressor from excessive temperatures

Outdoor Coil

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

Indoor Coil

- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction for improved heat transfer
- Factory leak tested
- Row-split coils on multi-stage air volume models
- Cross row circuiting with rifled tubing optimizes both sensible and latent cooling capacity

Antimicrobial Condensate Drain Pan

- Composite pan, sloped to meet drainage requirements per ASHRAE 62.1
- Anti-Microbial additive prevents growth of mold and mildew, which improves indoor air quality and reduces drain line blockage
- Drain connection extends outside unit

Condensate Drain Trap

- EPDM high density rubber material

9 Variable-Speed ECM Outdoor Coil Fan Motors

- Fan speed is controlled by the Lennox® CORE unit controller
- Thermal overload protected
- Totally enclosed
- Permanently lubricated ball bearings
- Shaft up
- Wire basket mount

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

LOW GWP REFRIGERANT DETECTION SYSTEM (RDS)

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

FEATURES AND BENEFITS

CABINET

- 10 **Construction**
 - Heavy-gauge steel panels
 - Full perimeter heavy-gauge galvanized steel base rail (provides structural integrity for transportation, handling, and installation)
 - Base rails have rigging holes
 - Fork slots (two sides on the 3 and 5 ton models, three sides on the 7.5 through 20 ton models)
 - Raised edges around duct and power entry openings in the bottom of the unit for water protection

Airflow

- Units are shipped in downflow (vertical) configuration

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

- 12 **Exterior Panels**
 - Constructed of heavy-gauge, galvanized steel
 - Textured pre-paint with polyurethane finish
 - Cyclic salt fog and UV exposure up to 1680 hours per ASTM D5894

- 13 **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

- 14 **Hinged Access Panels**
 - Economizer/filter section
 - Blower section
 - Compressor/controls/heat section
 - Hinges are constructed of galvanized-steel
 - Panel seals and quarter-turn latching handles provide a tight air and water seal

- 15 **Grille Guards**
 - Protects space between outdoor coils and main cabinet

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 - 3000 hours
- VA Master Construction Specification Division 23 for High Humidity Installations
- CID AA-52474A (GSA)

Option 1:

- Coated indoor and outdoor coil assemblies (including tube sheets)
- Painted cabinet interior

Option 2:

- Coated outdoor coil assembly (including tube sheets)

Field Installed

Combination Coil/Hail Guards

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

BLOWER

16 **DirectPlus™ ECM Direct Drive Blower System with MSAV®**

- High-efficiency, variable-speed ECM (electronically commutated) motor
- Eliminates the need for a separate variable-frequency drive
- MSAV® Multi-Stage Air Volume control modulates the amount of supply blower airflow according to cooling demand, heating demand, ventilation demand or smoke alarm
- 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 airflows
- Fully variable speed motor modulates to maximize system efficiency
- Dual blowers on 180/240 models
- Combines the motor and electronics into one unit
- Aerodynamically optimized impeller
- Backward curved blades mounted directly onto the rotor



- Air inlet grill reduces indoor sound levels without affecting air performance

Blower Proving

- Monitors blower operation
- Shuts down unit if blower stops

FEATURES AND BENEFITS

ELECTRICAL

SmartWire™ System

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

Circuit Breakers

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

Electrical Plugs

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

GFI Service Outlets (2)

- 115V ground fault circuit interrupter (GFCI) type
- 20 amp non-powered, field-wired (all voltages)

Short-Circuit Current Rating (SCCR)

- Higher short circuit protection up to 35kA

Required Selections

Voltage Choice

- Specify when ordering base unit

Options/Accessories

17 Electric Heat

- Helix wound nichrome elements
- Time delay for element staging
- Individual element limit controls
- Wiring harness
- May be four-stage controlled in zone sensor mode
- All required components are included

Auxiliary Heat

- Mechanical Heating and Electric Heat operates at the same time to supplement heating demand

Emergency Heat

- Only Electric Heat operates (no mechanical heat)

NOTE - See page 24 for details on amount of power needed to operate.

Requires Components

Field Installed

GFI Weatherproof Cover

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

INDOOR AIR QUALITY

Options/Accessories

Factory or Field Installed

18 Standard Air Filters

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

Healthy Climate® MERV 13 High Efficiency Air Filters

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

Indoor Air Quality (CO₂) Sensor

- Monitors CO₂ levels and reports to unit controller which adjusts economizer dampers as needed
- MSAV (multi-stage air volume) units with an economizer require a CO₂ sensor to modulate the economizer damper and maintain the desired minimum amount of fresh outdoor air
- CO₂ sensor can be installed in either the occupied zone or the return air duct

Field Installed

Replacement Filter Media Kit With Frame (180-240 Models)

- Replaces existing pleated filter media
- Includes washable metal mesh screen and metal frame
- Clip holds replaceable non-pleated filter

CONTROL SYSTEM

LENNOX® CORE CONTROL SYSTEM



- 19 The Lennox® CORE Control System is designed to accelerate equipment install and service. Standard with all Strategos® 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
- Two Defrost Control Methods (demand and timed - heat pumps only)

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

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

CONTROL SYSTEM

LENNOX® CORE CONTROL SYSTEM (continued)

Control Options

Factory Installed

Dirty Filter Switch

- Senses static pressure increase indicating dirty filter condition

Factory or Field Installed

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

OPTIONS / ACCESSORIES

20 **ECONOMIZER**

Factory or Field Installed

- Economizer operation is set and controlled by the Lennox® CORE Unit Controller
- Simple plug-in connections from economizer to unit controller
- All Strategos 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.

High Performance Economizer Features

- Outdoor air hood is furnished
- 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 90.1-2010 compliant
- Linked damper action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit

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

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

NOTE - Refer to Installation Instructions for complete setup information.

Options / Accessories

Factory or Field Installed

Differential Enthalpy Control (Not for Title 24)

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

Field Installed

Global Control (Not for Title 24)

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

EXHAUST AIR

Factory Installed

- 21** Power Exhaust Fan(s) (092 through 240 Models)
- Installs external on 092-120 models with economizer option
 - Installs internal to 180-240 models with economizer option
 - Provides exhaust air pressure relief
 - Interlocked to run when supply air blower is operating
 - Fan runs when outdoor air dampers are 50% open (adjustable)
 - Fan motor is overload protected
 - 092-120 models include steel cabinet and hood painted to match unit

092-120 Model

- One, 1/2 hp motor
- Five fan blades
- Total power input - 300 Watts
- Total air volume of 4085 cfm at 0.05 in. w.g.

180-240 Model

- Three, 1/3 hp motors
- 20 in. diameter, five fan blades
- Total power input - 1200 Watts
- Total air volume of 10,200 cfm at 0 in. w.g.

Barometric Relief Dampers

- Allows relief of excess air
- Dampers prevent blow back and outdoor air infiltration during off cycle
- Outdoor air hood is furnished with field installed barometric relief dampers for 120-240 models with Power Exhaust
- See Options/Accessories table

OUTDOOR AIR

Factory Installed

Motorized Outdoor Air Dampers (180-240 Models)

- Linked mechanical dampers
- Fully modulating spring return damper motor
- Installed in unit
- Outdoor air hood with bird screen included

Manual Outdoor Air Dampers (180-240 Models)

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

ROOF CURBS

Factory Installed

Curb Alignment (180-240 Models)

- Adapter plate mates new unit to existing roof curb for easy replacement of older SCE240 models

Field Installed

Hybrid Roof Curbs, Downflow

- Interlocking tabs fasten corners together
- No tools required for assembly
- Can also be fastened together with furnished hardware
- Available in 14 and 24 inch heights
- See Options/Accessories table

OPTIONS / ACCESSORIES

Item Description	Order Number	Size						
		036	060	092	120	180	240	
COOLING SYSTEM								
Corrosion Protection	Coated indoor/outdoor coil assemblies, painted cabinet interior	Factory	O	O	O	O	O	O
	Coated outdoor coil assembly	Factory	O	O	O	O	O	O
Drain Pan Overflow Switch		21Z07	OX	OX	OX	OX	OX	OX
CABINET								
Combination Coil/Hail Guards		19H54	X	X				
		19H55			X	X		
		13T16					X	X
CONTROLS								
Commercial Controls	LonTalk® Module	Factory	O	O	O	O	O	O
Dirty Filter Switch		Factory	OX	OX	OX	OX	OX	OX
1 Smoke Detectors	Supply or Return (Power board and one sensor)	10B40	OX	OX				
		10B42			OX	OX	OX	OX
	Supply and Return (Power board and two sensors)	10B41	OX	OX				
		10B43			OX	OX	OX	OX
ELECTRICAL								
Voltage 60 Hz	460V - 3 phase	Factory	O	O	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O	O	O
Weatherproof Cover for GFI Service Outlets		10C89	X	X	X	X	X	X
ELECTRIC HEAT								
7.5 kW	460V-3ph	Factory	O					
10 kW	460V-3ph	Factory	O	O				
15 kW	460V or 575V-3ph	Factory	O	O	O	O		
20 kW	460V-3ph	Factory		O	O	O		
25 kW	460V or 575V-3ph	Factory					O	O
30 kW	460V or 575V-3ph	Factory		O	O	O		
40 kW	460V-3ph	Factory					O	O
45 kW	460V or 575V-3ph	Factory			O	O		
60 kW	460V or 575V-3ph	Factory					O	O

¹ Factory installed smoke detectors must be ordered for use with either 115V or 24V external power supply only.

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

OPTIONS / ACCESSORIES

Item Description	Order Number	Size					
		036	060	092	120	180	240
INDOOR AIR QUALITY							
Air Filters							
Standard Air Filters	MERV 8 (16 x 20 x 2 - Order 4 per unit)	54W20	OX	OX			
	MERV 8 (20 x 25 x 2 - Order 4 per unit)	50W61			OX	OX	
	MERV 8 (20 x 20 x 2 - Order 12 per unit)	54W21					OX OX
Healthy Climate® High Efficiency Air Filters	MERV 13 (16 x 20 x 2 - Order 4 per unit)	52W37	OX	OX			
	MERV 13 (20 x 25 x 2 - Order 4 per unit)	52W41			OX	OX	
	MERV 13 (20 x 20 x 2 - Order 12 per unit)	52W39					OX OX
Replacement Media Filter With Metal Mesh Frame 20 x 20 x 2 Order 12 per unit (includes non-pleated filter media)		44N60					X X
Indoor Air Quality (CO₂) Sensors							
Sensor - Wall-mount, off-white plastic cover with LCD display		77N39	X	X	X	X	X X
Sensor - Wall-mount, off-white plastic cover, no display		87N53	X	X	X	X	X X
Sensor - Black plastic case, LCD display, rated for plenum mounting		87N52	X	X	X	X	X X
Sensor - Black plastic case, no display, rated for plenum mounting		87N54	X	X	X	X	X X
CO ₂ Sensor Duct Mounting Kit - for downflow applications		23Y47	X	X	X	X	X X
Aspiration Box - for duct mounting non-plenum rated CO ₂ sensors (77N39)		90N43	X	X	X	X	X X
ECONOMIZER							
High Performance Economizer (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)							
Ultra-Low Leak Performance Economizer - Includes Outdoor Air Hood (Global Sensor, field provided, order Barometric Relief Dampers separately)	Factory		O	O	O	O	
	18X87						OX OX
Economizer Controls							
Differential Enthalpy	Order 2	21Z09	OX	OX	OX	OX	OX OX
Global Control	Sensor Field Provided	Factory	O	O	O	O	O O
Barometric Relief Dampers							
Barometric Relief Dampers (No Hood)	Factory		O	O			
Barometric Relief Dampers With Power Exhaust Fans (Hood Furnished)	Factory				O	O	
Barometric Relief Dampers Without Power Exhaust Fans (No Hood)	Factory				O	O	
Barometric Relief Dampers Without Power Exhaust Fans (Hood Furnished)	Factory						O O
POWER EXHAUST							
Standard Static	Factory				O	O	O O
OUTDOOR AIR							
Motorized Outdoor Air Dampers with Outdoor Air Hood and Bird Screen		18X89					X X
Manual Outdoor Air Damper with Outdoor Air Hood and Bird Screen		18X88					X X
ROOF CURBS							
Hybrid Roof Curbs, Downflow, 14 in. height		11F70	X	X			
		11F72			X	X	
	Full Perimeter	11F74					X X
Hybrid Roof Curbs, Downflow 24 in. height		11F71	X	X			
		11F73			X	X	
	Full Perimeter	11F75					X X
Curb Alignment (Adapter plate mates new unit to existing roof curb for replacement of LCE240)	Factory						O

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

SPECIFICATIONS		3 TON 5 TON	
Model		SHH036U5E	SHH060U5E
Nominal Tonnage		3	5
Efficiency Type		Ultra-High	Ultra-High
Blower Type		DirectPlus™ ECM Direct Drive with MSAV®	DirectPlus™ ECM Direct Drive with MSAV®
Cooling Performance	Gross Cooling Capacity (Btuh)	37,000	60,000
	¹ Net Cooling Capacity (Btuh)	35,000	57,000
	¹ AHRI Rated Air Flow (cfm-high/low)	1400/1030	1800/900
	¹ SEER2 (Btuh/Watt)	17.0	17.0
	¹ EER2 (Btuh/Watt)	12.1	11.2
	Total Unit Power (kW)	2.9	5.1
Heating Performance	¹ Total High Heating Capacity (Btuh)	34,000	56,000
	¹ AHRI Rated Air Flow (cfm)	1500	1900
	¹ HSPF2 (Region IV)	7.6	7.6
	HSPF2 (Region V)	6.1	6.4
	¹ COP	3.3	3.2
	Total Unit Power (kW)	3.0	5.1
	¹ Total Low Heating Capacity (Btuh)	28,000	41,000
	¹ COP	1.8	2.2
Refrigerant	Refrigerant Type	R-454B	R-454B
	Charge furnished	19 lbs. 4 oz.	16 lbs. 9 oz.
Electric Heat Available		See page 11	
² Sound Rating Number	dBa	80	85
Compressor Type (number)		Variable Speed Scroll (1)	Variable Speed Scroll (1)
Outdoor Coils	Net face area - ft. ²	19.0	19.0
	Rows	3	3
	Fins - in.	20	20
Outdoor Coil Fans	Motor HP (number and type)	(2) 1/3 (ECM)	(2) 1/3 (ECM)
	Rpm	235-685	440-880
	Watts	70-240	80-440
	Diameter (Number) - in.	(2) 24	(2) 24
	Blades	3	3
	Total Air volume - cfm	5030	6300
Indoor Coils	Net face area - ft. ²	7.8	7.8
	Tube diameter - in.	3/8	3/8
	Rows	4	4
	Fins - in.	14	14
	Condensate drain size (NPT) - in.	(1) 1 NPT	(1) 1 NPT
	Expansion device type	Balance Port TXV, non-removable head	
³ Indoor Blower	Nominal motor HP	1.5 (ECM)	1.5 (ECM)
	Blower wheel diameter x width - in.	(1) 14 x 5	(1) 14 x 5
Filters	Type of filter	MERV 8 or equivalent	
	Number and size - in.	(4) 16 x 20 x 2	(4) 16 x 20 x 2
Line voltage data (Volts-Phase-Hz)		460-3-60, 575-3-60	

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

¹ AHRI Certified to AHRI Standard 210/240:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270-95.

SPECIFICATIONS		7.5 TON 10 TON	
Model		SHH092U5E	SHH120U5E
Nominal Tonnage		7.5	10
Efficiency Type		Ultra-High	Ultra-High
Blower Type		DirectPlus™ ECM Direct Drive with MSAV®	DirectPlus™ ECM Direct Drive with MSAV®
Cooling Performance	Gross Cooling Capacity (Btuh)	94,500	123,000
	¹ Net Cooling Capacity (Btuh)	89,000	116,000
	¹ AHRI Rated Air Flow (cfm-high/low)	3400	4000
	¹ IEER (Btuh/Watt)	21.5	21.0
	¹ EER (Btuh/Watt)	12.1	12.1
	Total Unit Power (kW)	7.3	9.6
Heating Performance	¹ Total High Heating Capacity (Btuh)	85,000	114,000
	¹ AHRI Rated Air Flow (cfm)	3400	4600
	¹ COP	3.6	3.5
	Total Unit Power (kW)	6.7	9.6
	¹ Total Low Heating Capacity (Btuh)	51,500	72,000
	¹ COP	2.4	2.4
Refrigerant	Refrigerant Type	R-454B	R-454B
	Circuit 1	26 lbs. 3 oz.	24 lbs. 0 oz.
Electric Heat Available		See page 11	
² Sound Rating Number	dBA	89	89
Compressor Type (number)		Variable Speed Scroll (1)	Variable Speed Scroll (1)
Outdoor Coils	Net face area - ft. ²	23.5	23.5
	Rows	3	3
	Fins - in.	20	20
Outdoor Coil Fans	Motor HP (number and type)	(3) 1/3 (ECM)	(3) 1/3 (ECM)
	Rpm	500-945	500-945
	Watts	184-1030	184-1030
	Diameter (Number) - in.	(3) 24	(3) 24
	Blades	3	3
	Total Air volume - cfm	4400	4400
Indoor Coils	Net face area - ft. ²	13.5	13.5
	Tube diameter - in.	3/8	3/8
	Rows	4	4
	Fins - in.	14	14
	Condensate drain size (NPT) - in.	(1) 1 NPT	(1) 1 NPT
	Expansion device type	Balance Port TXV, non-removable head	
³ Indoor Blower	Nominal motor HP	3.75 (ECM)	3.75 (ECM)
	Blower wheel diameter x width - in.	(1) 22 x 9	(1) 22 x 9
Filters	Type of filter	MERV 8 or equivalent	
	Number and size - in.	(4) 20 x 25 x 2	(4) 20 x 25 x 2
Line voltage data (Volts-Phase-Hz)		460-3-60, 575-3-60	

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

¹ AHRI Certified to AHRI Standard 340/360:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270-95.

SPECIFICATIONS		15 TON 20 TON	
Model		SHH180U5E	SHH240U5E
Nominal Tonnage		15	20
Efficiency Type		Ultra-High	Ultra-High
Blower Type		DirectPlus™ ECM Direct Drive with MSAV®	DirectPlus™ ECM Direct Drive with MSAV®
Cooling Performance	Gross Cooling Capacity (Btuh)	176,000	236,000
	¹ Net Cooling Capacity (Btuh)	170,000	230,000
	¹ AHRI Rated Air Flow (cfm-high/low)	5600	7100
	¹ IEER (Btuh/Watt)	21.0	20.0
	¹ EER (Btuh/Watt)	12.1	11.1
	Total Unit Power (kW)	14.2	20.6
Heating Performance	¹ Total High Heating Capacity (Btuh)	172,000	230,000
	¹ AHRI Rated Air Flow (cfm)	5600	7500
	¹ COP	3.4	3.4
	Total Unit Power (kW)	15.0	20.0
	¹ Total Low Heating Capacity (Btuh)	100,000	132,000
	¹ COP	2.1	2.1
Refrigerant	Total Unit Power (kW)	13.6	17.8
	Refrigerant Type	R-454B	R-454B
	Circuit 1	25 lbs. 8 oz.	28 lbs. 0 oz.
	Circuit 2	24 lbs. 0 oz.	26 lbs. 8 oz.
Electric Heat Available		See page 11	
² Sound Rating Number	dBA	90	90
Compressor Type (number)		Variable Speed Scroll (2)	Variable Speed Scroll (2)
Outdoor Coils	Net face area - ft. ²	55.1	55.1
	Rows	2	2
	Fins - in.	20	20
Outdoor Coil Fans	Motor HP (number and type)	(6) 1/3 (ECM)	(6) 1/3 (ECM)
	Rpm	176-947	176-947
	Watts	222-2400	222-2400
	Diameter (Number) - in.	(6) 24	(6) 24
	Blades	3	3
	Total Air volume - cfm	24300	24300
Indoor Coils	Net face area - ft. ²	26.0	26.0
	Tube diameter - in.	3/8	3/8
	Rows	4	4
	Fins - in.	14	14
	Condensate drain size (NPT) - in.	(1) 1 NPT	(1) 1 NPT
	Expansion device type	Balance Port TXV, non-removable head	
³ Indoor Blower	Nominal motor HP	(2) 5 (ECM)	(2) 5 (ECM)
	Blower wheel diameter x width - in.	(2) 22 x 9	(2) 22 x 9
Filters	Type of filter	MERV 8 or equivalent	
	Number and size - in.	(12) 20 x 20 x 2	(12) 20 x 20 x 2
Line voltage data (Volts-Phase-Hz)		460-3-60, 575-3-60	

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

¹ AHRI Certified to AHRI Standard 340/360:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270-95.

COOLING / HEATING RATINGS

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

3 TON COOLING SHH036U5E (1 COMPRESSOR)

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	960	33.4	1.98	.67	.83	.99	30.4	2.28	.67	.85	1.00	27.5	2.60	.68	.87	1.00	24.3	2.95	.69	.90	1.00				
	1200	36.1	1.97	.74	.93	1.00	32.9	2.29	.75	.96	1.00	29.5	2.62	.77	1.00	1.00	26.3	2.97	.79	1.00	1.00				
	1440	38.2	1.97	.82	1.00	1.00	34.9	2.29	.84	1.00	1.00	31.8	2.63	.87	1.00	1.00	28.6	3.00	.91	1.00	1.00				
67°F	960	36.7	1.97	.53	.66	.79	33.5	2.29	.52	.66	.81	30.3	2.62	.51	.66	.83	26.7	2.98	.50	.67	.86				
	1200	39.1	1.97	.58	.72	.90	35.5	2.29	.57	.74	.93	32.1	2.63	.57	.76	.96	28.7	3.00	.57	.78	1.00				
	1440	40.6	1.96	.62	.80	1.00	37.2	2.29	.62	.82	1.00	33.7	2.64	.63	.86	1.00	30.1	3.01	.63	.89	1.00				
71°F	960	39.8	1.96	.41	.52	.64	36.6	2.29	.39	.52	.65	33.2	2.64	.37	.51	.65	29.8	3.01	.34	.50	.66				
	1200	42.4	1.95	.44	.57	.71	38.9	2.29	.42	.57	.72	35.5	2.65	.41	.57	.74	31.7	3.02	.39	.57	.76				
	1440	44.2	1.95	.46	.62	.79	40.6	2.29	.46	.63	.81	37.0	2.65	.44	.63	.84	33.1	3.03	.43	.64	.88				

3 TON HEATING SHH036U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
960	27.1	1.1	26.8	1.4	23.6	1.9	22.5	2.6	20.6	3.4
1200	31.8	1.3	33.8	1.8	29.1	2.4	27.2	3.3	20.6	3.4
1440	38.8	1.6	38.8	2.1	35.3	3.1	30.6	3.8	20.6	3.4

5 TON COOLING SHH060U5E (1 COMPRESSOR)

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	1600	57.3	3.49	.68	.83	.99	53.5	3.97	.69	.85	1.00	49.0	4.47	.70	.88	1.00	45.0	5.03	.71	.91	1.00				
	2000	60.8	3.52	.74	.94	1.00	56.9	4.00	.76	.97	1.00	52.4	4.52	.78	1.00	1.00	48.0	5.08	.81	1.00	1.00				
	2400	63.8	3.53	.82	1.00	1.00	60.0	4.03	.84	1.00	1.00	55.6	4.57	.87	1.00	1.00	51.6	5.15	.91	1.00	1.00				
67°F	1600	61.9	3.52	.54	.66	.80	57.7	4.01	.54	.67	.82	53.4	4.54	.54	.68	.84	48.6	5.09	.54	.69	.88				
	2000	65.3	3.54	.58	.72	.90	60.7	4.04	.59	.74	.93	56.2	4.57	.59	.76	.97	51.3	5.14	.60	.79	1.00				
	2400	67.5	3.55	.62	.80	1.00	63.0	4.06	.63	.82	1.00	58.4	4.60	.64	.85	1.00	53.4	5.18	.65	.90	1.00				
71°F	1600	66.8	3.55	.42	.54	.65	62.3	4.05	.42	.54	.66	57.8	4.60	.41	.54	.66	53.1	5.17	.40	.54	.68				
	2000	70.5	3.56	.45	.58	.71	65.8	4.08	.45	.58	.72	61.0	4.63	.44	.59	.74	56.0	5.22	.44	.60	.77				
	2400	73.2	3.57	.47	.62	.78	68.4	4.10	.47	.63	.80	63.1	4.66	.47	.64	.84	57.9	5.25	.47	.66	.88				

5 TON HEATING SHH060U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
1600	44.2	2.0	45.4	3.3	39.5	3.3	36.4	4.4	32.2	5.3
2000	54.1	2.5	56.6	4.0	49.3	4.4	46.7	5.8	32.2	5.2
2400	63.6	3.2	65.3	3.3	56.6	5.2	48.1	5.9	32.2	5.2

COOLING / HEATING RATINGS

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

7.5 TON COOLING SHH092U5E (1 COMPRESSOR)

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	2400	83.9	4.53	.71	.87	1.00	80.3	5.20	.72	.91	1.00	77.4	5.93	.74	.93	1.00	73.8	6.72	.75	.97	1.00
	3000	87.9	4.55	.77	1.00	1.00	84.6	5.25	.79	1.00	1.00	81.0	5.99	.82	1.00	1.00	77.6	6.80	.86	1.00	1.00
	3600	91.9	4.58	.86	1.00	1.00	88.7	5.30	.89	1.00	1.00	85.1	6.07	.93	1.00	1.00	81.8	6.89	.97	1.00	1.00
67°F	2400	89.1	4.56	.57	.69	.83	85.6	5.26	.57	.70	.86	82.0	6.01	.58	.72	.89	78.2	6.81	.59	.73	.92
	3000	93.3	4.60	.60	.75	.96	89.8	5.31	.62	.77	.99	85.3	6.07	.63	.80	1.00	81.5	6.88	.64	.83	1.00
	3600	96.0	4.62	.64	.83	1.00	92.0	5.34	.66	.87	1.00	88.2	6.11	.67	.90	1.00	84.0	6.94	.69	.94	1.00
71°F	2400	94.6	4.61	.44	.55	.67	91.0	5.33	.44	.56	.68	87.3	6.10	.45	.57	.70	83.5	6.92	.45	.58	.71
	3000	99.1	4.64	.47	.60	.72	95.1	5.38	.47	.61	.75	91.0	6.17	.47	.62	.76	86.5	7.00	.48	.64	.80
	3600	102.3	4.67	.48	.65	.81	98.1	5.42	.49	.65	.84	93.4	6.20	.50	.67	.87	88.9	7.05	.51	.68	.92

7.5 TON HEATING SHH092U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
2400	66.3	2.7	65.7	3.4	59.2	5.0	53.9	7.2	43.8	8.8
3000	81.9	3.4	82.9	4.5	72.9	6.7	65.7	9.6	43.9	8.7
3600	96.8	4.2	97.3	5.5	84.3	8.4	66.1	9.4	43.9	8.7

10 TON COOLING SHH120U5E (1 COMPRESSOR)

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	112.7	6.50	.68	.85	1.00	109.1	7.37	.70	.87	1.00	104.2	8.31	.71	.91	1.00	99.2	9.35	.73	.95	1.00
	4000	118.0	6.54	.74	.98	1.00	113.7	7.42	.76	1.00	1.00	109.0	8.37	.79	1.00	1.00	104.1	9.44	.83	1.00	1.00
	4800	122.5	6.58	.83	1.00	1.00	119.0	7.48	.85	1.00	1.00	113.9	8.45	.89	1.00	1.00	109.3	9.53	.93	1.00	1.00
67°F	3200	119.2	6.55	.55	.66	.80	114.9	7.44	.56	.67	.83	110.4	8.40	.56	.70	.86	105.2	9.45	.58	.71	.90
	4000	124.7	6.60	.58	.72	.93	120.0	7.49	.60	.74	.97	115.0	8.46	.60	.76	1.00	109.7	9.53	.62	.80	1.00
	4800	128.9	6.63	.62	.80	1.00	123.8	7.53	.64	.83	1.00	118.5	8.50	.65	.87	1.00	111.9	9.56	.66	.92	1.00
71°F	3200	126.4	6.61	.43	.54	.65	121.8	7.51	.44	.55	.66	117.0	8.48	.44	.56	.67	111.6	9.56	.44	.58	.70
	4000	132.2	6.66	.44	.58	.71	126.2	7.55	.45	.59	.72	120.7	8.53	.46	.60	.74	115.0	9.61	.47	.62	.78
	4800	135.2	6.68	.46	.62	.78	129.7	7.58	.48	.64	.81	123.9	8.57	.50	.65	.85	117.8	9.66	.50	.65	.89

10 TON HEATING SHH120U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
3200	87.1	3.6	86.0	4.6	78.1	6.9	76.2	11.0	65.3	13.3
4000	110.6	5.0	112.0	6.4	98.2	9.5	93.9	14.4	65.0	13.2
4800	134.1	6.5	133.5	8.1	117.5	12.6	95.3	14.5	65.1	13.2

COOLING / HEATING RATINGS

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

15 TON COOLING SHH180U5E (2 COMPRESSORS)

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	4480	164.8	8.84	.74	.89	1.00	157.6	10.15	.75	.91	1.00	150.9	11.55	.77	.93	1.00	143.1	13.07	.79	.95	1.00
	5600	172.8	8.87	.80	.97	1.00	165.4	10.20	.82	.99	1.00	158.8	11.63	.84	1.00	1.00	152.1	13.20	.86	1.00	1.00
	6720	181.2	8.88	.86	1.00	1.00	174.6	10.25	.88	1.00	1.00	167.7	11.71	.90	1.00	1.00	160.8	13.30	.93	1.00	1.00
67°F	4480	176.2	8.87	.58	.71	.85	168.4	10.22	.59	.73	.87	160.9	11.65	.59	.74	.89	153.3	13.21	.61	.76	.91
	5600	184.0	8.89	.61	.77	.93	176.2	10.26	.62	.79	.95	168.4	11.72	.63	.81	.98	160.0	13.30	.65	.83	1.00
	6720	189.7	8.89	.65	.84	1.00	181.7	10.28	.66	.85	1.00	173.1	11.76	.68	.88	1.00	164.6	13.35	.69	.90	1.00
71°F	4480	187.1	8.89	.43	.56	.69	179.4	10.27	.44	.57	.70	171.7	11.75	.44	.58	.72	163.7	13.34	.44	.59	.74
	5600	195.7	8.90	.45	.60	.75	187.5	10.31	.45	.61	.77	179.4	11.82	.46	.62	.79	170.7	13.44	.46	.64	.81
	6720	201.5	8.91	.46	.64	.81	193.0	10.35	.47	.65	.83	184.3	11.87	.47	.67	.85	175.3	13.49	.48	.68	.88

15 TON HEATING SHH180U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
cfm	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
4480	118.9	4.7	120.7	6.6	107.6	9.8	109.0	15.5	88.7	16.8
5600	151.1	6.1	151.3	8.8	130.9	12.8	127.1	19.3	88.9	16.1
6720	182.3	7.8	175.3	10.6	157.0	16.9	129.7	18.6	89.0	15.7

20 TON COOLING SHH240U5E (2 COMPRESSORS)

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	5680	219.1	14.49	.71	.85	.97	210.5	16.28	.73	.86	.99	199.8	18.27	.74	.89	1.00	190.3	20.51	.76	.91	1.00
	7100	229.2	14.59	.77	.92	1.00	219.9	16.45	.78	.94	1.00	209.5	18.41	.80	.96	1.00	198.2	20.66	.82	.99	1.00
	8520	236.8	14.65	.82	.99	1.00	227.6	16.52	.84	1.00	1.00	218.4	18.56	.86	1.00	1.00	208.7	20.84	.88	1.00	1.00
67°F	5680	232.3	14.62	.56	.69	.81	222.4	16.47	.57	.70	.83	212.9	18.48	.58	.72	.85	202.5	20.73	.59	.73	.87
	7100	243.5	14.71	.59	.74	.89	233.5	16.59	.60	.76	.91	222.0	18.65	.61	.78	.93	210.3	20.86	.63	.80	.96
	8520	250.4	14.76	.63	.80	.95	239.4	16.65	.64	.81	.98	228.0	18.73	.65	.84	1.00	215.7	20.96	.67	.86	1.00
71°F	5680	246.1	14.73	.43	.55	.66	236.3	16.61	.43	.55	.68	225.0	18.69	.43	.56	.69	214.5	20.93	.44	.57	.71
	7100	257.6	14.81	.44	.58	.72	246.7	16.72	.44	.59	.73	234.9	18.82	.45	.60	.75	222.2	21.10	.45	.62	.77
	8520	265.2	14.87	.45	.61	.77	253.7	16.79	.46	.63	.79	241.6	18.90	.46	.64	.82	228.1	21.19	.47	.66	.84

20 TON HEATING SHH240U5E

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
cfm	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
5680	158.6	6.4	153.4	8.6	143.3	13.3	140.5	19.3	132.6	24.9
7100	190.0	7.8	198.1	11.9	183.7	18.7	179.6	26.6	128.3	24.1
8520	219.5	9.2	220.5	13.4	221.7	24.7	188.2	27.6	126.9	23.8

BLOWER DATA

3 TON | 5 TON

SHH036J5E / SHH060J5E BLOWER PERFORMANCE

NOTE - Blower Table Includes Resistance For Base Unit With Electric Heat, Wet Indoor Coil And Air Filters In Place.

See page 22 for Factory Installed Options/Accessory Air Resistance Data.

See page 23 for Minimum Air Volume Required For Use With Optional Electric Heat.

EXTERNAL STATIC PRESSURE - In. w.g.

Air Volume cfm	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	Watts																		
	900	1163	129	1253	148	1341	165	1428	181	1512	191	1587	206	1653	232	1714	266	1775	301	1835
1000	1315	129	1396	152	1475	174	1552	195	1626	216	1692	242	1752	277	1810	316	1870	351	1928	382
1100	1463	131	1531	164	1599	197	1666	229	1730	261	1791	295	1850	331	1907	367	1964	400	2021	432
1200	1576	173	1640	210	1705	247	1769	283	1832	319	1893	353	1952	387	2010	420	2067	452	2124	485
1300	1683	225	1749	263	1814	300	1878	337	1941	372	2002	407	2061	441	2119	474	2176	507	2235	538
1400	1796	279	1862	317	1927	354	1991	391	2054	427	2114	463	2173	497	2231	530	2289	563	2345	595
1500	1912	332	1977	371	2042	409	2105	446	2168	482	2228	517	2287	552	2345	585	2401	618	2453	652
1600	2037	368	2100	410	2163	452	2224	492	2284	532	2343	570	2399	607	2454	643	2507	679	2553	716
1700	2161	403	2221	453	2280	502	2338	548	2393	594	2445	637	2496	678	2545	718	2592	757	2633	798
1800	2271	463	2329	519	2384	574	2437	625	2487	674	2533	721	2578	765	2621	808	2663	851	2701	892
1900	2372	545	2429	602	2482	657	2533	709	2579	758	2623	805	2665	850	2705	893	2745	936	2782	977
2000	2475	631	2530	687	2582	741	2631	792	2676	840	2718	886	2758	930	2797	973	2836	1015	2872	1056
2100	2582	719	2635	774	2684	827	2731	876	2774	923	2814	968	2853	1011	2892	1054	2928	1095	2964	1136
2200	2694	811	2742	863	2789	914	2833	962	2874	1007	2913	1051	2951	1094	2987	1136	3023	1176	3058	1216
2300	2807	904	2852	954	2896	1002	2937	1048	2976	1093	3013	1136	3050	1177	3085	1218	3119	1258	3153	1298
2400	2921	998	2963	1045	3003	1091	3042	1136	3079	1179	3114	1220	3149	1261	3183	1301	3216	1341	3249	1379
Air Volume cfm	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	Watts																		
	900	1892	364	1946	393	1997	422	2047	449	2095	476	2141	501	2186	524	2229	546	2271	569	2313
1000	1983	413	2036	442	2086	471	2136	498	2184	525	2232	550	2278	575	2322	600	2364	625	2403	653
1100	2076	462	2128	492	2179	521	2229	549	2279	576	2328	603	2375	630	2418	659	2456	689	2489	721
1200	2180	516	2233	546	2285	575	2336	604	2386	632	2434	660	2477	690	2515	721	2547	755	2574	791
1300	2291	569	2343	600	2392	632	2437	663	2482	694	2524	726	2562	759	2595	793	2623	829	2648	866
1400	2397	628	2440	663	2477	701	2511	739	2549	775	2585	810	2619	845	2651	880	2680	916	2709	952
1500	2496	690	2529	732	2554	776	2580	820	2614	858	2648	895	2682	931	2715	965	2747	1000	2779	1034
1600	2589	758	2616	803	2638	851	2662	895	2696	932	2735	958	2775	977	2814	996	2852	1018	2887	1046
1700	2667	841	2694	886	2720	931	2747	974	2782	1008	2825	1022	2870	1026	2913	1035	2951	1056	2982	1096
1800	2736	933	2769	974	2801	1014	2833	1054	2869	1087	2911	1102	2952	1115	2988	1143	3015	1195	3031	1277
1900	2818	1017	2852	1055	2887	1094	2921	1132	2955	1167	2991	1197	3023	1238	3045	1303	3055	1400	3053	1529
2000	2907	1095	2942	1134	2976	1173	3010	1211	3043	1248	3072	1295	3092	1366	3100	1469	3094	1608	3076	1780
2100	2999	1175	3033	1214	3067	1252	3100	1290	3132	1330	3155	1394	3163	1494	3156	1635	3134	1817	3100	2032
2200	3092	1255	3125	1294	3158	1331	3191	1369	3222	1411	3238	1492	3235	1622	3213	1801	3175	2026	3124	2283
2300	3186	1336	3218	1373	3250	1411	3283	1448	3312	1493	3321	1590	3307	1750	3270	1967	3215	2234	3147	2535
2400	3280	1417	3311	1453	3342	1490	3374	1526	3402	1574	3405	1689	3379	1878	3327	2134	3256	2443	3171	2787

BLOWER DATA

SHH092U5E / SHH120U5E BLOWER PERFORMANCE

NOTE - Blower Table Includes Resistance For Base Unit With Electric Heat, Wet Indoor Coil And Air Filters In Place.
 See page 22 for Factory Installed Options/Accessory Air Resistance Data.
 See page 23 for Minimum Air Volume Required For Use With Optional Electric Heat.

Air Volume cfm	EXTERNAL STATIC PRESSURE - In. w.g.													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts
2000	731	241	775	292	820	342	865	392	910	443	954	494	998	547
2200	772	289	818	342	863	395	908	447	953	500	996	554	1038	610
2400	819	344	865	398	910	453	955	508	998	563	1040	620	1081	679
2600	871	403	916	460	960	516	1003	574	1046	632	1086	692	1125	755
2800	926	466	969	525	1012	584	1054	645	1095	706	1134	770	1171	836
3000	982	534	1024	596	1066	659	1106	723	1145	788	1182	856	1218	926
3200	1040	610	1081	676	1121	743	1159	811	1197	881	1232	953	1267	1026
3400	1099	697	1138	767	1177	838	1214	911	1249	985	1283	1061	1316	1138
3600	1158	796	1196	870	1233	946	1268	1023	1302	1101	1334	1180	1365	1261
3800	1219	908	1255	986	1290	1065	1323	1146	1355	1228	1385	1311	1415	1395
4000	1280	1034	1314	1114	1346	1196	1377	1280	1407	1365	1436	1451	1464	1539
4200	1340	1171	1372	1254	1402	1339	1431	1425	1459	1513	1486	1602	1512	1693
4400	1400	1318	1429	1404	1457	1491	1484	1580	1509	1670	1534	1762	1559	1854
4600	1457	1473	1484	1562	1509	1652	1534	1743	1558	1835	1582	1927	1605	2020
4800	1511	1635	1536	1726	1559	1818	1582	1910	1605	2002	1628	2095	1651	2186
Air Volume cfm	0.8		0.9		1.0		1.1		1.2		1.3			
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts		
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts		
2000	1040	602	1080	660	1119	720	1156	782	1192	844	1227	904		
2200	1079	668	1118	730	1155	794	1191	859	1226	924	1260	988		
2400	1120	741	1158	807	1193	875	1228	943	1261	1010	1294	1077		
2600	1163	820	1199	889	1233	959	1267	1030	1299	1101	1330	1171		
2800	1207	905	1242	976	1275	1050	1307	1123	1338	1198	1369	1272		
3000	1253	998	1286	1072	1318	1148	1348	1225	1379	1303	1408	1381		
3200	1300	1102	1331	1179	1362	1258	1391	1338	1421	1419	1449	1501		
3400	1347	1217	1377	1298	1407	1380	1435	1463	1464	1548	1491	1634		
3600	1395	1343	1424	1427	1452	1513	1480	1599	1507	1688	1533	1778		
3800	1443	1480	1470	1567	1497	1656	1524	1746	1550	1838	1575	1930		
4000	1490	1628	1516	1718	1542	1809	1567	1902	1592	1995	1617	2088		
4200	1537	1784	1562	1876	1587	1969	1611	2062	1636	2155	1660	2248		
4400	1583	1947	1607	2040	1631	2132	1655	2225	1679	2316	1703	2407		
4600	1629	2112	1652	2204	1676	2296	1699	2386	1723	2475	1747	2564		
4800	1674	2277	1698	2367	1721	2457	1745	2545	1768	2632	1791	2719		

BLOWER DATA

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

036, 060 Size

Air Volume cfm	Humiditrol Dehumidification Coil	Electric Heat	Economizer	Filters MERV 13
800	0.00	0.01	0.04	0.05
1000	0.00	0.03	0.04	0.07
1200	0.01	0.06	0.04	0.07
1400	0.02	0.09	0.04	0.07
1600	0.03	0.12	0.04	0.07
1800	0.04	0.15	0.05	0.07
2000	0.04	0.18	0.05	0.08

092, 120 Size

Air Volume cfm	Humiditrol Dehumidification Coil	Electric Heat	Economizer	Filters MERV 13
2000	0.03	0.03	0.06	0.03
2500	0.04	0.03	0.11	0.05
3000	0.05	0.02	0.13	0.06
3500	0.06	0.05	0.15	0.07
4000	0.08	0.05	0.19	0.08
4500	0.10	0.10	0.22	0.09
5000	0.12	0.10	0.29	0.10
5500	0.14	0.16	0.34	0.12
6000	0.15	0.21	0.52	0.13

180, 240 Size

Air Volume cfm	Humiditrol Dehumidification Coil	Electric Heat	Economizer	Filters MERV 13
3000	0.02	0.01	0.00	0.00
3500	0.04	0.01	0.00	0.00
4000	0.04	0.01	0.00	0.00
4500	0.04	0.02	0.00	0.00
5000	0.04	0.03	0.00	0.00
5500	0.06	0.03	0.01	0.01
6000	0.06	0.03	0.01	0.02
6500	0.08	0.04	0.01	0.02
7000	0.08	0.04	0.02	0.03
7500	0.10	0.05	0.02	0.04
8000	0.10	0.05	0.02	0.04
8500	0.10	0.06	0.03	0.04
9000	0.12	0.07	0.04	0.04
9500	0.14	0.08	0.04	0.06

BLOWER DATA

POWER EXHAUST FANS STANDARD STATIC PERFORMANCE

092, 120 Model		180, 240 Model	
Return Air System Static Pressure	Air Volume Exhausted	Return Air System Static Pressure	Air Volume Exhausted
in. w.g.	cfm	in. w.g.	cfm
0.05	4085	0	10,200
0.10	3685	0.05	9700
0.15	3280	0.10	9200
0.20	2880	0.15	8600
0.25	2475	0.20	8100
---	---	0.25	7600
---	---	0.30	6900
---	---	0.35	6000
---	---	0.40	5000
---	---	0.45	4150

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT

Size	Electric Heat kW	Minimum cfm
036	7.5	700
	10	950
	15	1375
060	10	950
	15	1375
	20	1425
	30	1550
092, 120	15	1300
	20	2600
	30	2600
	45	2600
180, 240	25	3300
	40	5200
	60	6000

ELECTRICAL/ELECTRIC HEAT DATA
3 TON | 5 TON

Model		SHH036U5E		SHH060U5E	
		460V-3ph	575V-3ph	460V-3ph	575V-3ph
¹ Voltage - 60Hz					
Compressor (Inverter)	Rated Load Amps	6.5	5.2	7.8	6.2
	Locked Rotor Amps	23	18	23	18
Outdoor Fan Motor (2)	Full Load Amps (2 ECM)	1.2	1.2	1.2	1.2
	Total	2.4	2.4	2.4	2.4
Service Outlet 115V GFI (Amps)		20	20	20	20
Indoor Blower Motor	HP	1.5	1.5	1.5	1.5
	Type	Direct (ECM)	Direct (ECM)	Direct (ECM)	Direct (ECM)
	Full Load Amps	2.3	2.3	2.3	2.3
² Maximum Overcurrent Protection (MOCP) Unit Only		15	15	15	15
³ Minimum Circuit Ampacity (MCA) Unit Only		13	12	15	13

ELECTRIC HEAT DATA

Electric Heat Voltage			480V	575V	480V	575V
² Maximum Overcurrent Protection (MOCP)	Unit Blower + Emergency Heat	7.5 kW	15	---	---	---
		10 kW	---	---	20	---
	Unit + Auxiliary Heat	10 kW	30	---	30	---
		15 kW	40	30	40	35
		20 kW	---	---	45	---
	30 kW	---	---	60	50	
³ Minimum Circuit Ampacity (MCA)	Unit Blower + Emergency Heat	7.5 kW	15	---	---	---
		10 kW	---	---	18	---
	Unit + Auxiliary Heat	10 kW	28	---	30	---
		15 kW	36	30	38	31
		20 kW	---	---	45	---
	30 kW	---	---	60	49	

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 35kA.

¹ NOTE - Extremes of operating range are plus and minus 10% of line voltage.

² HACR type breaker or fuse.

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

ELECTRICAL/ELECTRIC HEAT DATA
7.5 TON | 10 TON

Model		SHH092U5E		SHH0120U5E	
		460V-3ph	575V-3ph	460V-3ph	575V-3ph
¹ Voltage - 60Hz					
Compressor (Inverter)	Rated Load Amps	12.3	9.8	14.9	11.9
	Locked Rotor Amps	23	18	31	27
Outdoor Fan Motors (3)	Full Load Amps (3 ECM)	1.36	1.36	1.36	1.36
	Total	4.1	4.1	4.1	4.1
Power Exhaust (1) 0.50 HP	Full Load Amps	1.5	1.2	1.5	1.2
Service Outlet 115V GFI (Amps)		20	20	20	20
Indoor Blower Motor	HP	3.75	3.75	3.75	3.75
	Type	Direct (ECM)	Direct (ECM)	Direct (ECM)	Direct (ECM)
	Full Load Amps	4.2	3.6	4.2	3.6
² Maximum Overcurrent Protection (MOCP)	Unit Only	25	20	30	25
	With (1) 0.50 HP Power Exhaust	30	25	35	25
³ Minimum Circuit Ampacity (MCA)	Unit Only	24	20	27	23
	With (1) 0.50 HP Power Exhaust	26	22	29	24

ELECTRIC HEAT DATA

Electric Heat Voltage			480V	575V	480V	575V	
² Maximum Overcurrent Protection (MOCP)	Unit Blower + Emergency Heat	15 kW	30	25	30	25	
		Unit + Auxiliary Heat	15 kW	50	40	50	45
		20 kW	60	---	60	---	
		30 kW	70	60	80	60	
		45 kW	100	80	100	80	
³ Minimum Circuit Ampacity (MCA)	Unit Blower + Emergency Heat	15 kW	28	23	28	23	
		Unit + Auxiliary Heat	15 kW	47	38	50	41
		20 kW	54	---	57	---	
		30 kW	69	57	73	59	
		45 kW	92	75	95	77	
² Maximum Overcurrent Protection (MOCP)	Unit Blower + Emergency Heat and (1) 0.50 HP Power Exhaust	15 kW	30	25	35	25	
		Unit + Auxiliary Heat and (1) 0.50 HP Power Exhaust	15 kW	50	40	60	45
		20 kW	60	---	60	---	
		30 kW	80	60	80	60	
		45 kW	100	80	100	80	
³ Minimum Circuit Ampacity (MCA)	Unit Blower + Emergency Heat and (1) 0.50 HP Power Exhaust	15 kW	30	25	30	25	
		Unit + Auxiliary Heat and (1) 0.50 HP Power Exhaust	15 kW	48	40	51	42
		20 kW	56	---	59	---	
		30 kW	71	58	74	60	
		45 kW	93	76	97	78	

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 35kA.

¹ NOTE - Extremes of operating range are plus and minus 10% of line voltage.

² HACR type breaker or fuse.

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

ELECTRICAL/ELECTRIC HEAT DATA **15 TON | 20 TON**

Model		SHH180U5E		SHH240U5E	
		460V-3ph	575V-3ph	460V-3ph	575V-3ph
¹ Voltage - 60Hz					
Compressor 1 (Inverter)	Rated Load Amps	11.0	8.8	16.0	11.9
	Locked Rotor Amps	23	18	31	27
Compressor 2 (Inverter)	Rated Load Amps	11.0	8.8	16.0	11.9
	Locked Rotor Amps	23	18	31	27
Outdoor Fan Motors (6)	Full Load Amps (6 Non-ECM)	1.36	1.36	1.36	1.36
	Total	8.2	8.2	8.2	8.2
Power Exhaust (3) 0.33 HP	Full Load Amps	1.3	1	1.3	1
	Total	3.9	3	3.9	3
Service Outlet 115V GFI (Amps)		20	20	20	20
Indoor Blower Motor	HP (Total)	5	5	5	5
	Type	Direct (ECM)	Direct (ECM)	Direct (ECM)	Direct (ECM)
	Full Load Amps (Total)	5	4	5	4
² Maximum Overcurrent Protection (MOCP)	Unit Only	40	35	50	40
	With (3) 0.33 HP Power Exhaust	45	35	60	45
³ Minimum Circuit Ampacity (MCA)	Unit Only	38	32	50	39
	With (3) 0.33 HP Power Exhaust	42	35	54	42

ELECTRIC HEAT DATA

Electric Heat Voltage			480V	600V	480V	600V
² Maximum Overcurrent Protection (MOCP)	Unit Blower + Emergency Heat	25 kW	45	40	50	40
	Unit + Auxiliary Heat	25 kW	80	70	90	70
		40 kW	100	---	110	---
		60 kW	125	90	125	100
³ Minimum Circuit Ampacity (MCA)	Unit Blower + Emergency Heat	25 kW	44	36	50	39
	Unit + Auxiliary Heat	25 kW	76	63	87	70
		40 kW	99	---	110	---
		60 kW	111	90	122	97
² Maximum Overcurrent Protection (MOCP)	Unit Blower + Emergency Heat and (3) 0.33 HP Power Exhaust	25 kW	50	40	60	45
	Unit + Auxiliary Heat and (3) 0.33 HP Power Exhaust	25 kW	80	70	100	80
		40 kW	110	---	125	---
		60 kW	125	100	150	100
³ Minimum Circuit Ampacity (MCA)	Unit Blower + Emergency Heat and (3) 0.33 HP Power Exhaust	25 kW	49	39	54	42
	Unit + Auxiliary Heat and (3) 0.33 HP Power Exhaust	25 kW	80	66	91	73
		40 kW	102	---	114	---
		60 kW	114	93	126	100

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 35kA.

¹ NOTE - Extremes of operating range are plus and minus 10% of line voltage.

² HACR type breaker or fuse.

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

ELECTRIC HEAT CAPACITIES

Volts Input	7.5 kW			10 kW			15 kW			20 kW			25 kW		
	kW Input	Btuh Output	Stages												
440	6.3	21,500	1	8.4	28,700	1	12.6	43,000	1	18.3	62,600	2	21.0	71,700	2
460	6.9	23,600	1	9.2	31,400	1	13.8	47,100	1	19.2	65,400	2	23.0	78,400	2
480	7.5	25,600	1	10.0	34,200	1	15.0	51,200	1	20.0	68,200	2	25.0	85,400	2
550	---	---	---	---	---	---	12.6	43,000	1	---	---	---	21.0	71,700	2
575	---	---	---	---	---	---	13.8	47,100	1	---	---	---	23.0	78,400	2
600	---	---	---	---	---	---	15.0	51,200	1	---	---	---	25.0	85,400	2

ELECTRIC HEAT CAPACITIES

Volts Input	30 kW			40 kW			45 kW			60 kW		
	kW Input	Btuh Output	Stages									
440	25.2	86,000	2	32.8	112,000	2	37.8	129,000	2	50.4	172,000	2
460	27.5	93,900	2	35.9	122,400	2	41.3	141,000	2	55.1	188,000	2
480	30.0	102,400	2	39	133,200	2	45.0	153,600	2	60.0	204,800	2
550	25.2	86,000	2	---	---	---	37.8	129,000	2	50.4	172,000	2
575	27.5	93,900	2	---	---	---	41.3	141,000	2	55.1	188,000	2
600	30.0	102,400	2	---	---	---	45.0	153,600	2	60.0	204,800	2

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

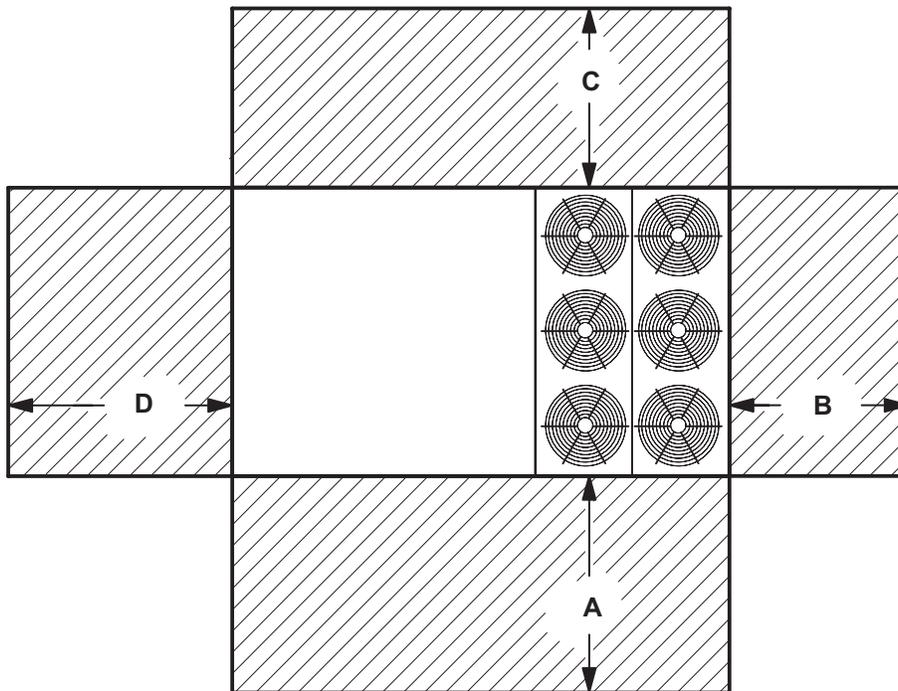
OUTDOOR SOUND DATA

Size	Octave Band Sound Power Levels dBA, re 10 ⁻¹² Watts Center Frequency - HZ							¹ Sound Rating Number dBA
	125	250	500	1000	2000	4000	8000	
036	72	75	76	69	65	60	65	80
060	61	72	76	74	71	71	65	85
092	72	80	85	84	79	74	67	89
120	72	80	85	84	79	74	67	89
180	73	81	86	84	78	73	67	90
240	73	81	86	84	78	73	67	90

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

¹ Sound Rating Number according to AHRI Standard 270-95 or AHRI Standard 370-2001 (includes pure tone penalty). Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

UNIT CLEARANCES



¹ Unit Clearance		A		B		C		D		Top Clearance	
		in.	mm	in.	mm	in.	mm	in.	mm		
Service Clearance	036, 060	48	1219	36	914	60	1524	60	1524	Unobstructed	
	092, 120	60	1524	36	914	60	1524	60	1524	Unobstructed	
	180, 240	72	1829	36	914	60	1524	96	2438	Unobstructed	
Minimum Operation Clearance		All	36	914	36	914	36	914	36	914	Unobstructed

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.

WEIGHT DATA

Model	Net		Shipping	
	lbs.	kg	lbs.	kg
SHH036 Base Unit	992	450	1039	471
SHH036 Max Unit	1097	498	1144	519
SHH060 Base Unit	990	449	1037	470
SHH060 Max Unit	1094	496	1141	518
SHH092 Base Unit	1575	714	1622	736
SHH092 Max Unit	1630	739	1677	761
SHH120 Base Unit	1573	714	1620	735
SHH120 Max Unit	1628	738	1675	760
SHH180 Base Unit	2627	1192	2677	1214
SHH180 Max Unit	3008	1364	3058	1387
SHH240 Base Unit	2633	1194	2683	1217
SHH240 Max Unit	3004	1363	3054	1385

NOTE - Base Unit is with Standard Gas Heat, NO OPTIONS.

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

FACTORY / FIELD INSTALLED OPTIONS AND ACCESSORIES - NET WEIGHTS

Description		lbs.	kg
CABINET			
Combination Coil/Hail Guards	036 or 060	24	11
	120	25	11
	240	50	23
ECONOMIZER / OUTDOOR AIR / EXHAUST			
Economizer	036 or 060	50	23
	120	70	32
	240	138	63
Outdoor Air Dampers	240	68	31
Power Exhaust	120	28	13
	240	99	45
ELECTRIC HEAT			
Electric Heat	7.5 kW (036 models)	31	14
	10 kW (036-060 models)	31	14
	15 kW (036-060-092-120 models)	31	14
	20 kW (060-092-120 models)	38	17
	30 kW (060-092-120 models)	38	17
	45 kW (092-120 models)	42	19
	60 kW (092-120 models)	49	22
	25 kW (180-240 models)	62	28
	40 kW (180-240 models)	76	34
	60 kW (180-240 models)	76	34
ROOF CURBS			
Hybrid Roof Curbs, Downflow 14 in. height	036 or 060	70	32
	120	80	36
	240 (full perimeter)	115	52
Hybrid Roof Curbs, Downflow 24 in. height	036 or 060	105	48
	120	120	54
	240 (full perimeter)	170	77

DIMENSIONS - UNIT

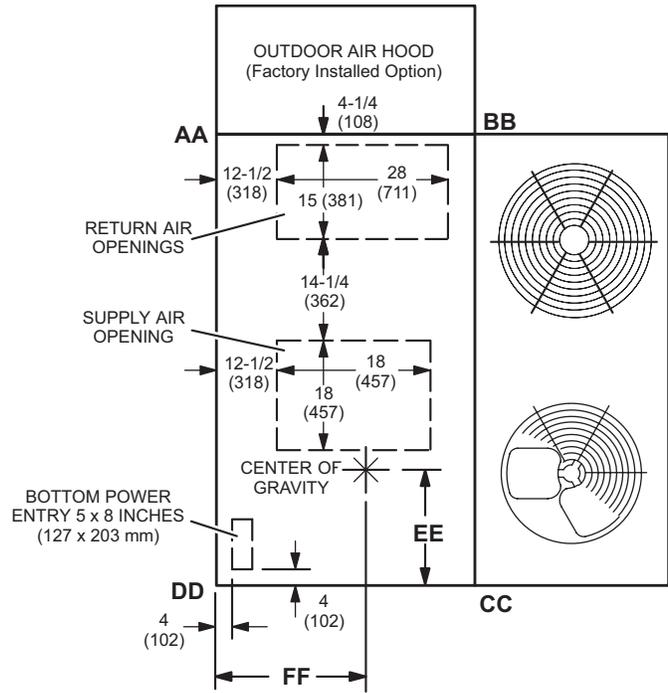
SHH036U | SHH060U

CORNER WEIGHTS

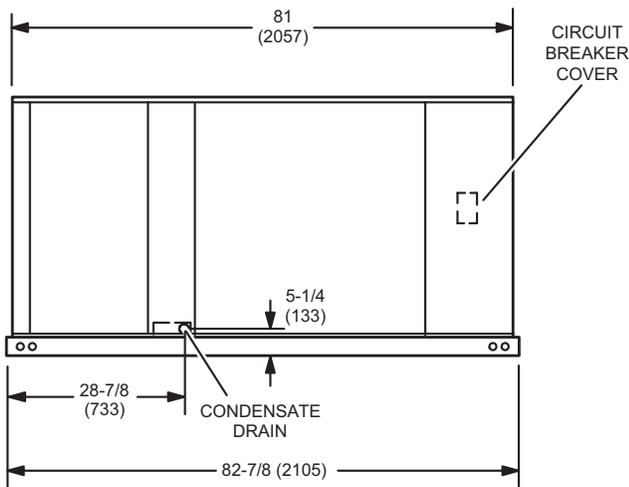
CENTER OF GRAVITY

Model	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
SHH036U Base Unit	176	80	292	132	338	153	203	92	38.25	972	33.25	845
SHH036U Max. Unit	194	88	322	146	373	169	224	102	38.25	972	33.25	845
SHH060U Base Unit	175	79	291	132	337	153	203	92	38.25	972	33.25	845
SHH060U Max. Unit	196	89	326	148	377	171	227	103	38.25	972	33.25	845

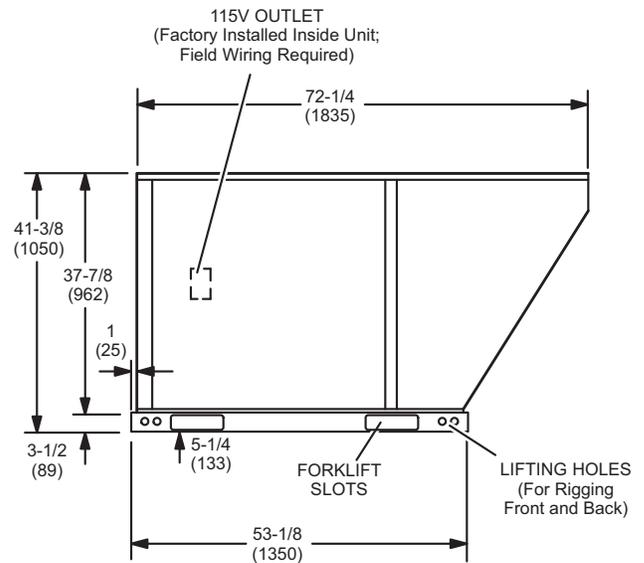
Max. Unit - The Base Unit with ALL OPTIONS Installed. (Economizer and controls)



TOP VIEW



SIDE VIEW



FRONT VIEW

DIMENSIONS - UNIT

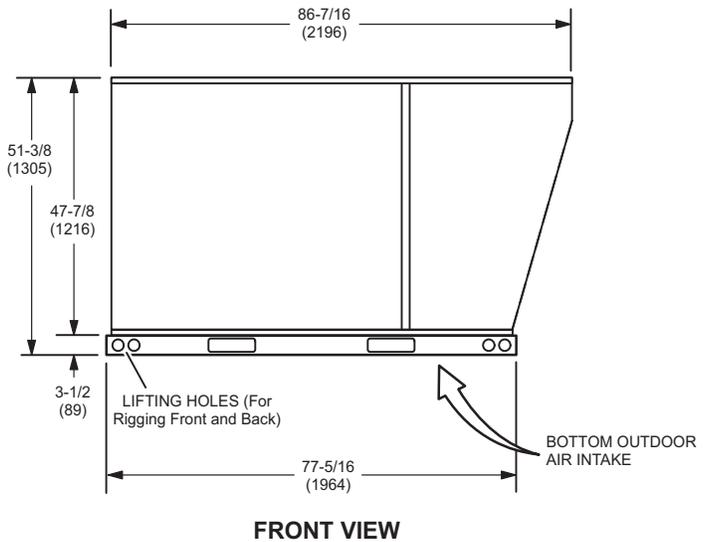
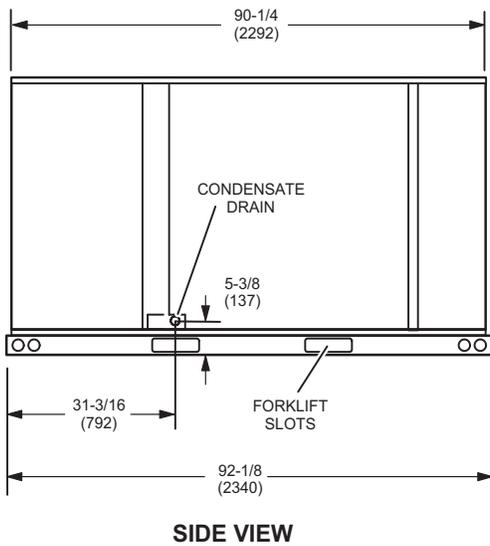
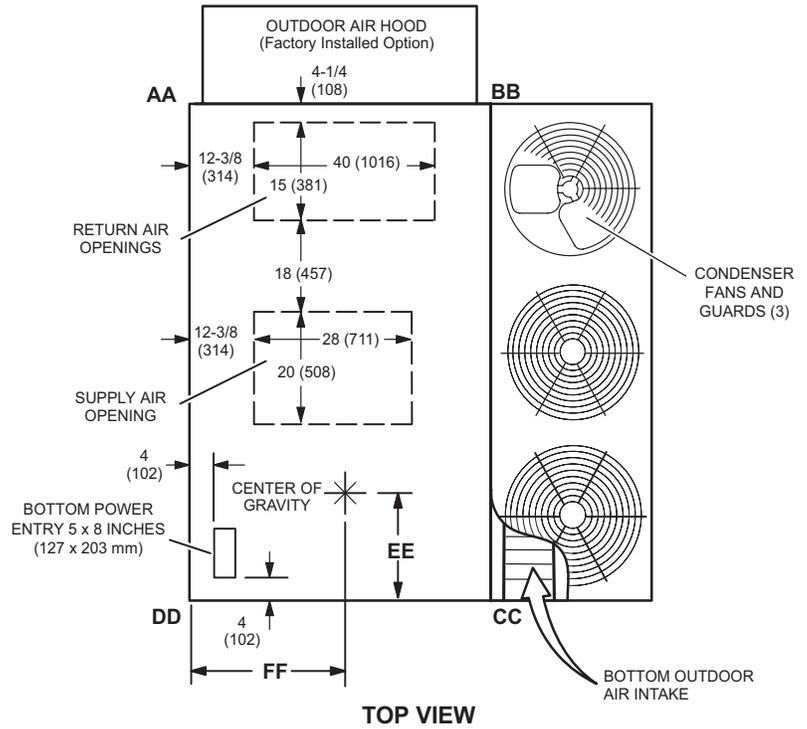
SHH092U | SHH120U

CORNER WEIGHTS

CENTER OF GRAVITY

Model	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
SHH092U Base Unit	394	179	372	169	441	200	413	187	42.25	1073	40	1016
SHH092U Max. Unit	361	164	385	175	456	207	428	194	42.25	1073	40	1016
SHH120U Base Unit	349	158	372	169	440	200	413	187	42.25	1073	40	1016
SHH120U Max. Unit	361	164	385	175	455	206	427	194	42.25	1073	40	1016

Max. Unit - The Base Unit with ALL OPTIONS Installed. (Economizer and controls)



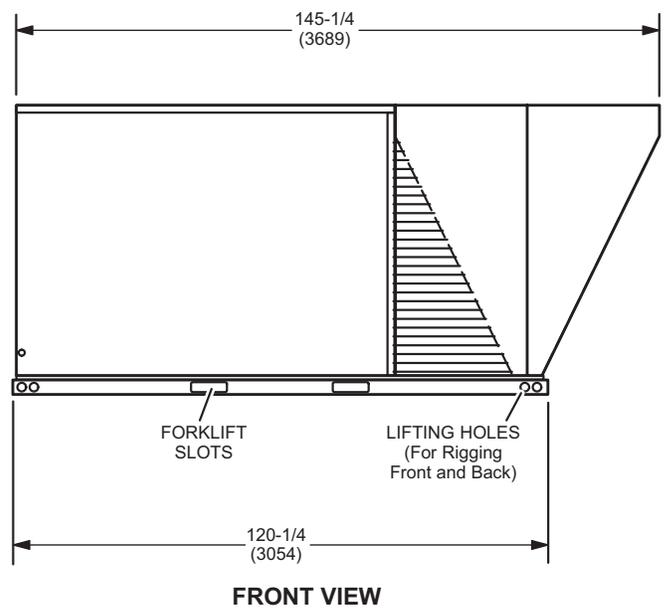
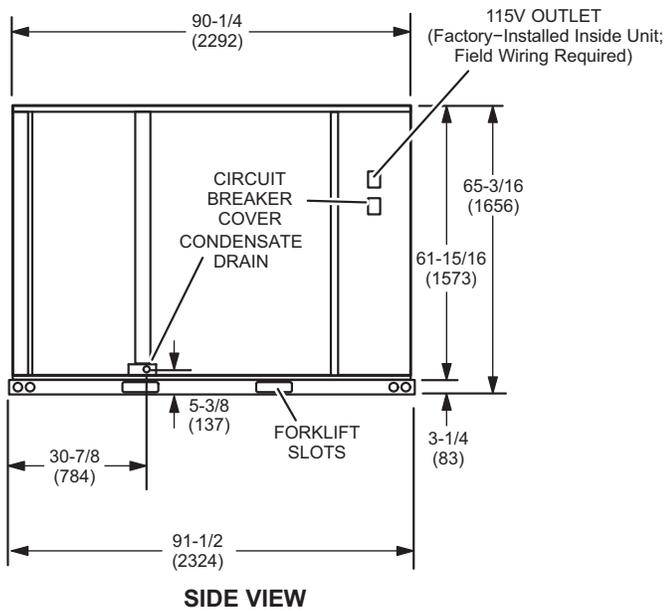
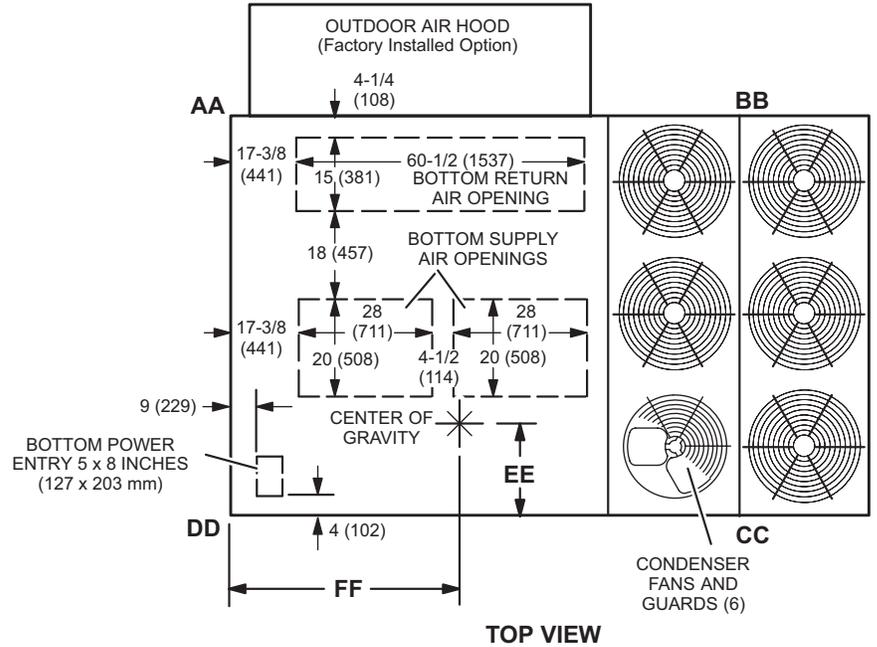
DIMENSIONS - UNIT

SHH180U | SHH240U

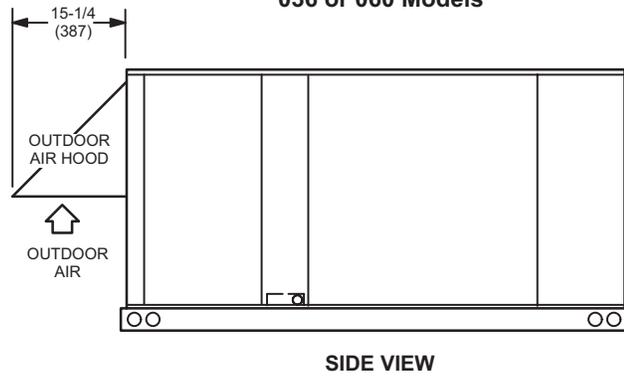
CORNER WEIGHTS

Model	CENTER OF GRAVITY											
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
SHH180U Base Unit	537	244	604	274	786	357	700	317	39.75	1010	63.75	1619
SHH180U Max. Unit	615	279	691	314	900	408	801	363	39.75	1010	63.75	1619
SHH240U Base Unit	539	244	605	274	788	357	701	318	39.75	1010	63.75	1619
SHH240U Max. Unit	615	279	690	313	899	408	800	363	39.75	1010	63.75	1619

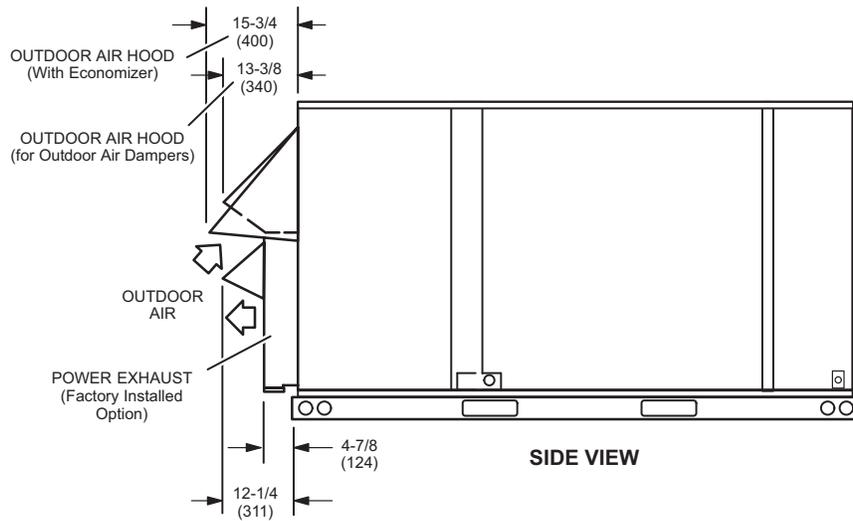
Max. Unit - The Base Unit with ALL OPTIONS Installed. (Economizer and controls)



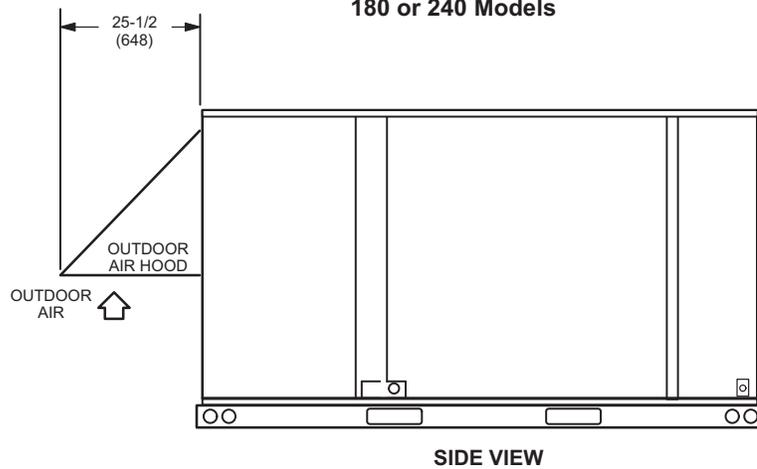
**OPTIONAL OUTDOOR AIR HOOD DETAIL
036 or 060 Models**



**OPTIONAL OUTDOOR AIR HOOD DETAIL
OPTIONAL POWER EXHAUST DETAIL
092 or 120 Models**

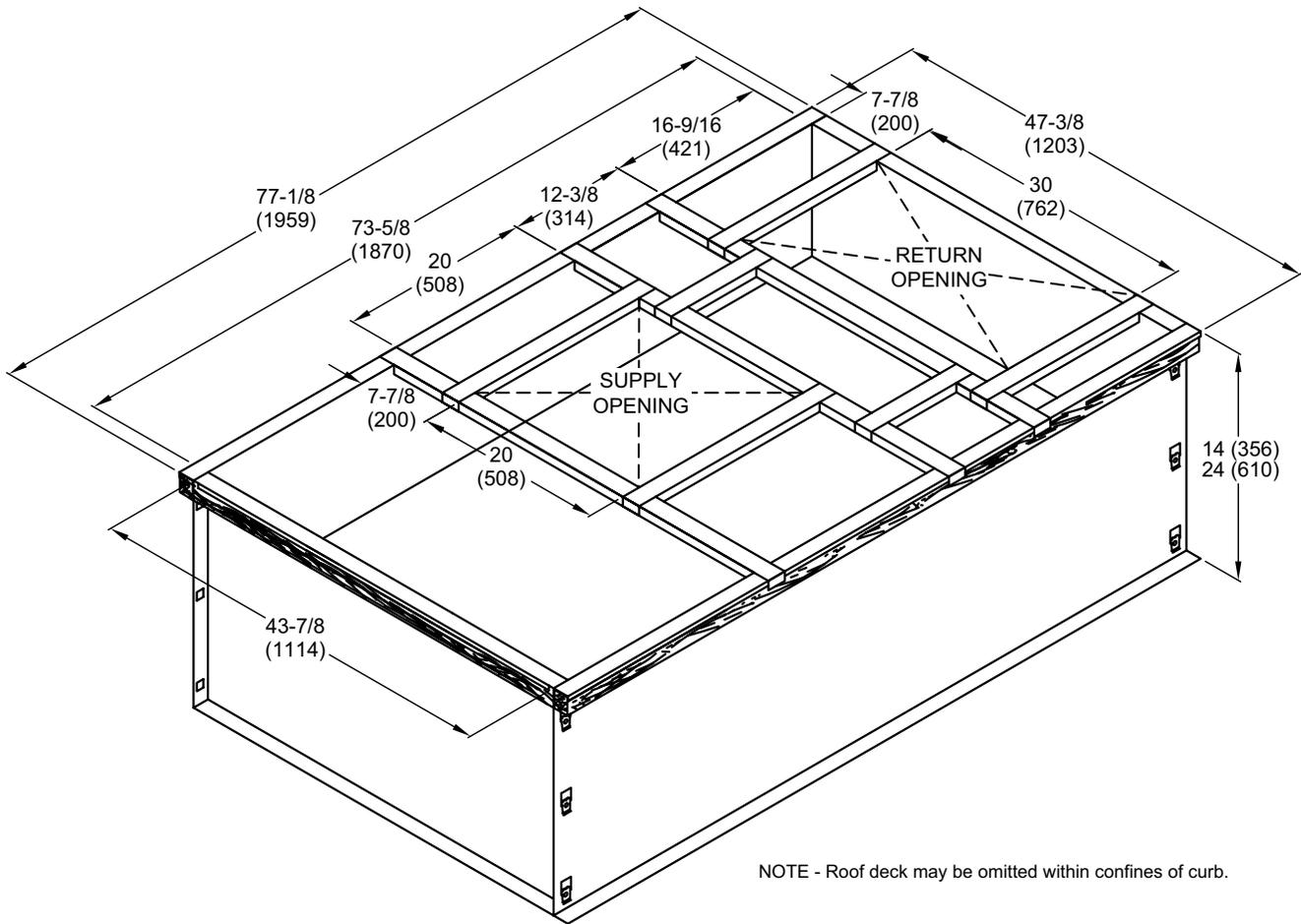


**OPTIONAL OUTDOOR AIR HOOD DETAIL
180 or 240 Models**

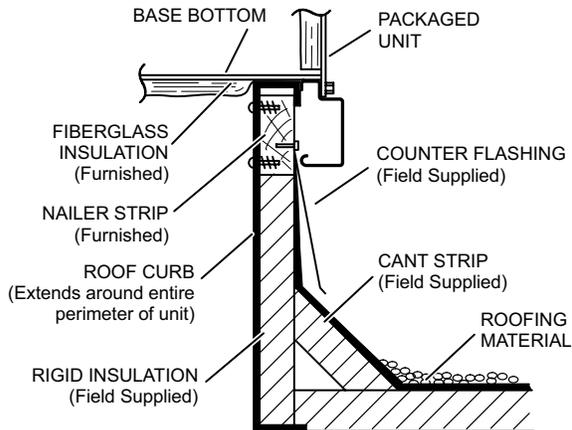


DIMENSIONS - ACCESSORIES

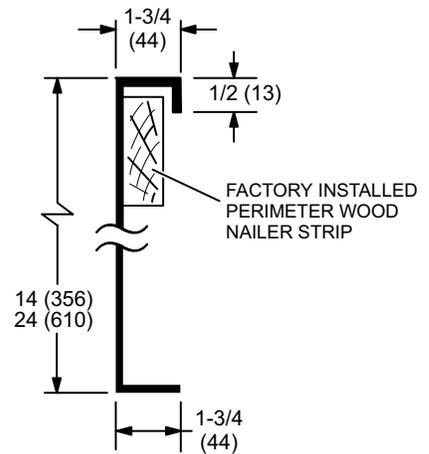
HYBRID ROOF CURBS - 036-060 MODELS - DOUBLE DUCT OPENING



TYPICAL FLASHING DETAIL FOR ROOF CURB

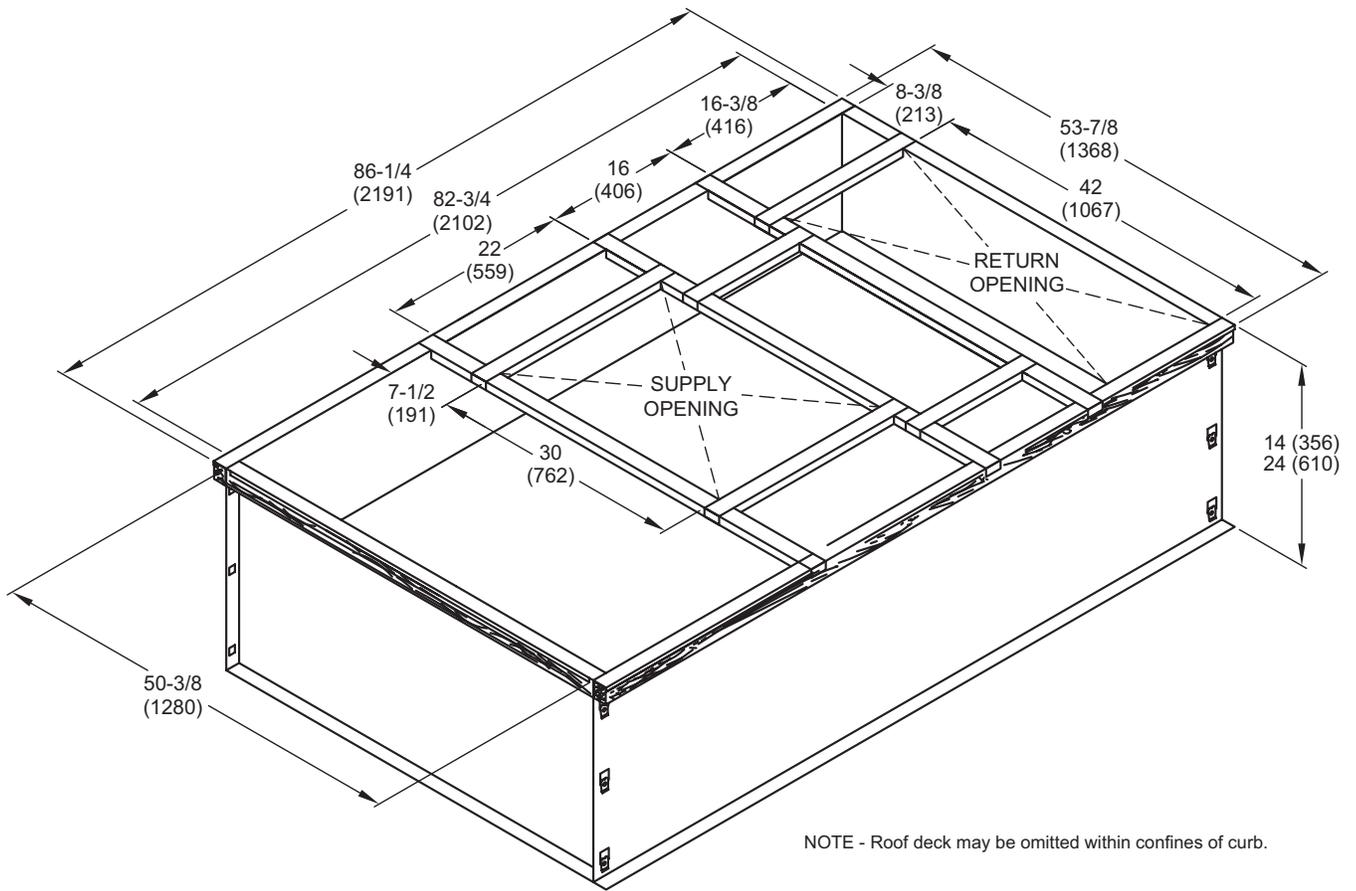


DETAIL ROOF CURB

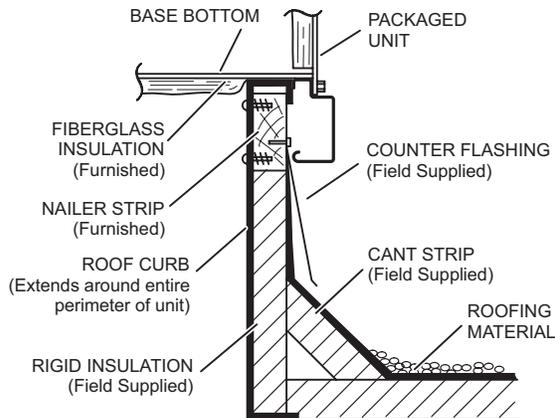


DIMENSIONS - ACCESSORIES

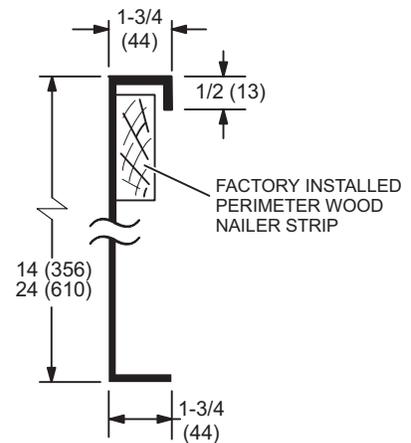
HYBRID ROOF CURBS - 092 AND 120 MODELS - DOUBLE DUCT OPENING



TYPICAL FLASHING DETAIL FOR ROOF CURB

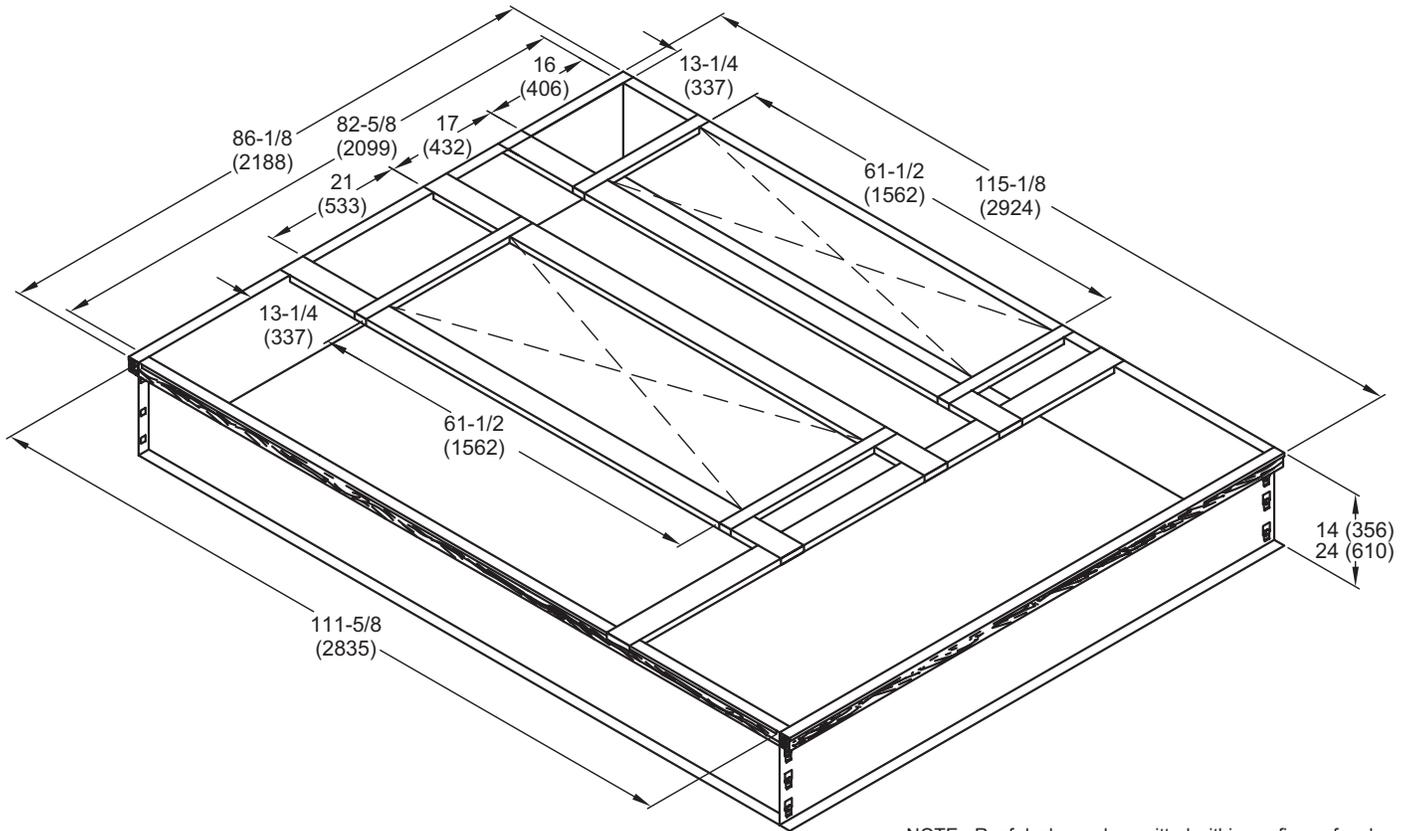


DETAIL ROOF CURB



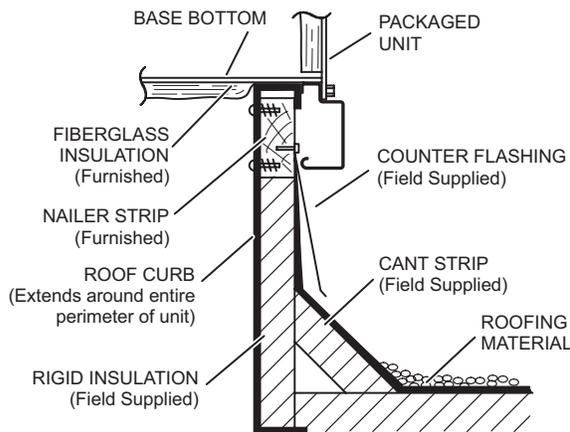
DIMENSIONS - ACCESSORIES

HYBRID ROOF CURBS - 180 AND 240 MODELS - FULL PERIMETER - DOUBLE DUCT OPENING

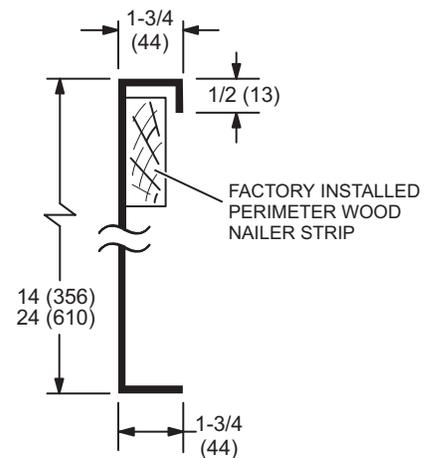


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB



REVISIONS

Sections	Description of Change
Options / Accessories	Updated CO ₂ Sensor Catalog Numbers.



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