



## S-CLASS™

Commercial Packaged  
Rooftop Units



### **35- To 50-Ton Models**

Superior comfort and performance

**LENNOX**  
*Innovation never felt so good.™*

# EXCEPTIONALLY HIGH EFFICIENCY AND RELIABLE PERFORMANCE

## S-Class™ rooftop units at a glance:

Verification of efficiency ratings by an independent third party

Environmentally friendlier R-410A refrigerant on select models

Humiditrol® dehumidification system for excellent control over indoor air quality (IAQ)

Low cabinet height for increased placement flexibility and reduced building construction cost

Greater capacity and reduced energy usage achieved with factory-installed integral energy recovery wheel

More than 200 Integrated Modular Controller (IMC) functions for digital accuracy and enhanced performance

Optional cleanable, double-wall surfaces to protect IAQ

Optional high-static power exhaust fans for powerful, precise building-static pressure control

Reduced noise and vibration with spring isolation options

## Efficiency Rating

Up to 10.8 Energy Efficiency Rating (EER) and up to 13.2 Integrated Part Load Value (IPLV)

## Warranty

**15-Year Limited Warranty** on stainless steel heat exchanger

**10-Year Limited Warranty** on aluminized steel gas heat exchanger

**5-Year Limited Warranty** on compressor

**3-Year Limited Warranty** on integrated modular controller

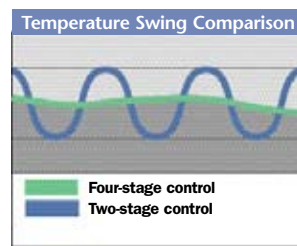
**1-Year Limited Warranty** on remaining covered components

See actual warranty certificate for details.

Lennox is committed to enhanced comfort and efficiency in all of their products. The S-Class™ rooftop unit product line is an excellent example of Lennox' tradition of leading-edge innovation, quality engineering and reliable performance.

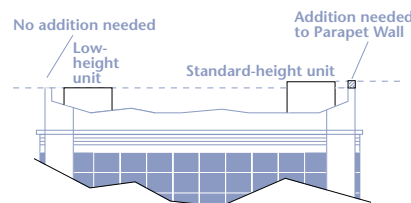
## Protecting health and profits

S-Class units were specially designed to protect businesses from problems with productivity and indoor air quality (IAQ). Options such as the Humiditrol® dehumidification system help control humidity and the spread of mold while four-stage heating and cooling control helps eliminate temperature swings and create a comfortable environment. These factors help lead to a healthier and more productive environment.



## Designed for application solutions

S-Class units are available with a broad selection of options and accessories to meet a variety of application solutions. A low unit height increases placement flexibility and even helps save on building construction cost.



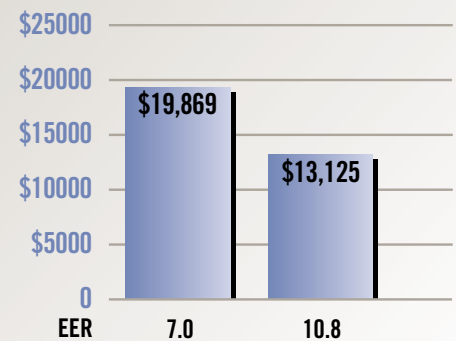
	Standard-height unit	Low-height unit	Low-height unit savings
Unit height	6' 8"	5' 8"	1'
Parapet wall height	7'	6'	1'
Parapet wall length	800'	800'	0'
Parapet wall total sq. ft.	5,600'	4,800'	800'
Parapet wall cost per sq. ft.	\$30.00	\$30.00	\$0.00
Total parapet wall cost	\$168,000	\$144,000	\$24,000

Information based on a 40,000-sq.-ft. office building (200' x 200') with a moderately priced parapet wall. Actual cost savings will vary depending on parapet wall design, dimensions and cost per sq. ft.

## Designed to save money

Saving money is about more than the price of a rooftop unit. S-Class units were designed to achieve a low total cost of ownership by offering exceptionally high energy-efficiency ratings, reliable operation and faster, easier installation and maintenance. This will reduce spending now and for years to come.

## 3-Year Cooling and Heating Costs



## Lennox' S-Class™ rooftop unit

Illustrates the low 3-year cooling costs you can expect from a 40-ton S-Class gas/electric rooftop unit versus a unit with lower efficiency ratings. Actual savings may vary depending on system settings, equipment maintenance, local weather, actual construction, installation of equipment, duct system, hours of operation, local fuel rates and other factors.

**Utility rate source:** U.S. Department of Energy national average commercial energy rates for August 2007

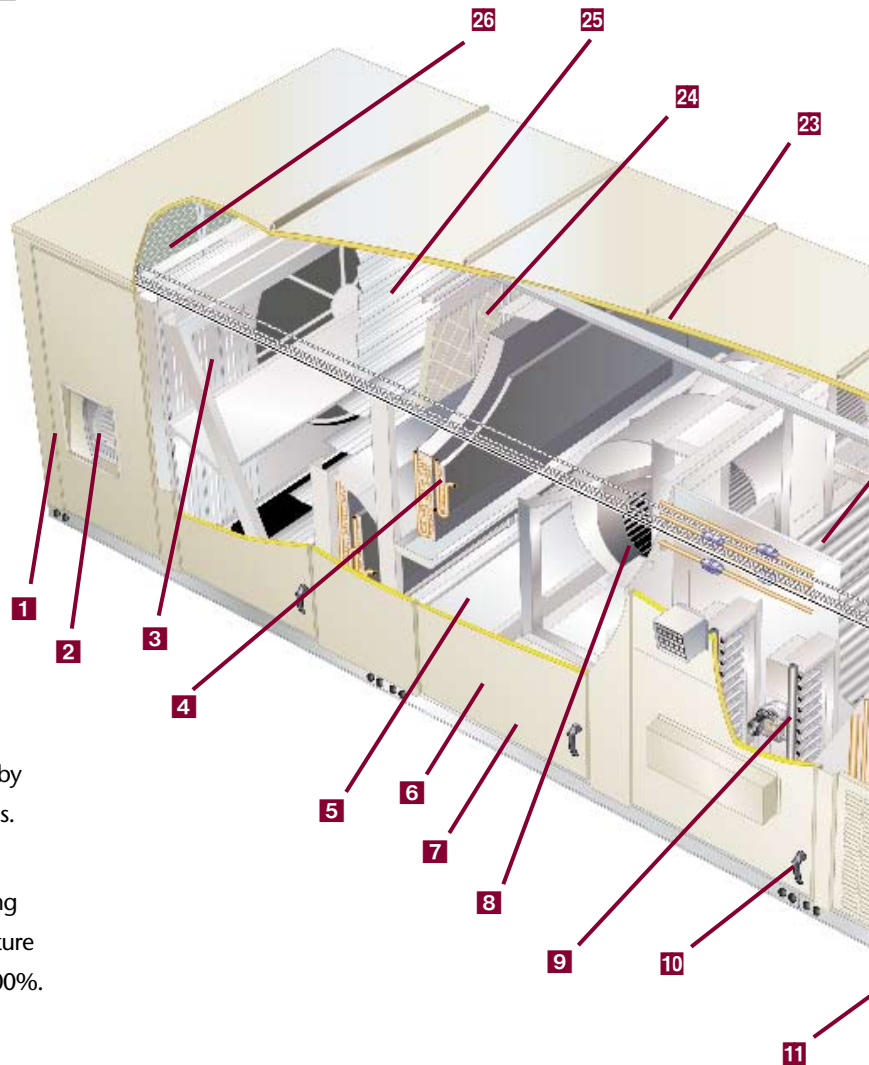
**Building type:** Office building, occupied Monday through Friday from 7 am to 6 pm

**City:** Kansas City

**Software:** Lennox Total Cost of Ownership™ Calculator, version 1.0.3

# SUPERIOR DESIGNED ROOFTOP UNIT

- 1 Optional High-Static Power Exhaust Fan Spring Isolation**—Helps reduce noise by isolating components using two-inch vibration isolation springs.
- 2 Optional Integral Power Exhaust Fan**—Standard or high-static power exhaust fans and modulating capability provide powerful and precise building static control.
- 3 Optional Integral Energy Recovery Wheel**—Saves energy and reduces unit size needed for outdoor air ventilation.
- 4 Optional Humiditrol® Dehumidification System**—Improves IAQ through an innovative dehumidification system capable of removing moisture based on actual humidity levels.
- 5 Removable Drain Pan**—Improves cleanability and IAQ.
- 6 Enhanced Panel Design**—Provides rain, wind and hail protection of internal components.
- 7 Step-in Blower Compartment**—Improves access and reduces maintenance time.
- 8 Optional Supply Fan Spring Isolation**—Helps reduce noise by isolating components using two-inch vibration isolation springs.
- 9 Heating Section**—Multiple gas valves and electric heating elements (not shown) allow unit to provide up to four heating stages. Optional modulating gas provides excellent temperature control with a gas heat operating range between 25% and 100%.
- 10 Hinged Toolless Access Panels**—Provide quick access to components and protect panels and roof from damage during servicing.
- 11 Coil Cleaning Access Door**—Improves internal coil access for better cleaning.
- 12 Slab Condenser Coil**—Permits faster, more thorough coil cleaning.
- 13 Full-Perimeter Base Rail**—Provides greater structural integrity, so the unit is easier to handle when rigging and transporting.
- 14 Optional Compressor Spring Isolation**—Helps reduce noise by isolating components using two-inch vibration isolation springs.
- 15 Optional Hot Gas Bypass**—Allows unit operation in low airflow applications.
- 16 Multiple Compressors**—Allow the unit to provide efficient performance and even temperatures with four cooling stages.
- 17 Optional Phase Monitor**—Prevents damage to electrical components from single phasing, phase reversal and low-voltage conditions.



- 18 Louvered Grille**—Protects coil from damage during installation, high wind and hail.
- 19 Integrated Modular Controller**—Digital accuracy and enhanced unit performance with over 200 unit control functions. Impressive diagnostic capability provides simple troubleshooting to reduce operation and service cost.
- 20 Corrosion-Resistant Cabinet**—Galvanized steel cabinet under a two-layer surface protects against rust and corrosion.
- 21 Independent Motor Mount**—Allows for easy, efficient access without removing top panel.

## IT'S A TRULY MODULAR SYSTEM

The IMC is a powerful controller that enhances the standard features on premium Lennox® rooftop units. Yet with application-specific add-on modules, the IMC provides even more powerful control for specific, customized applications.



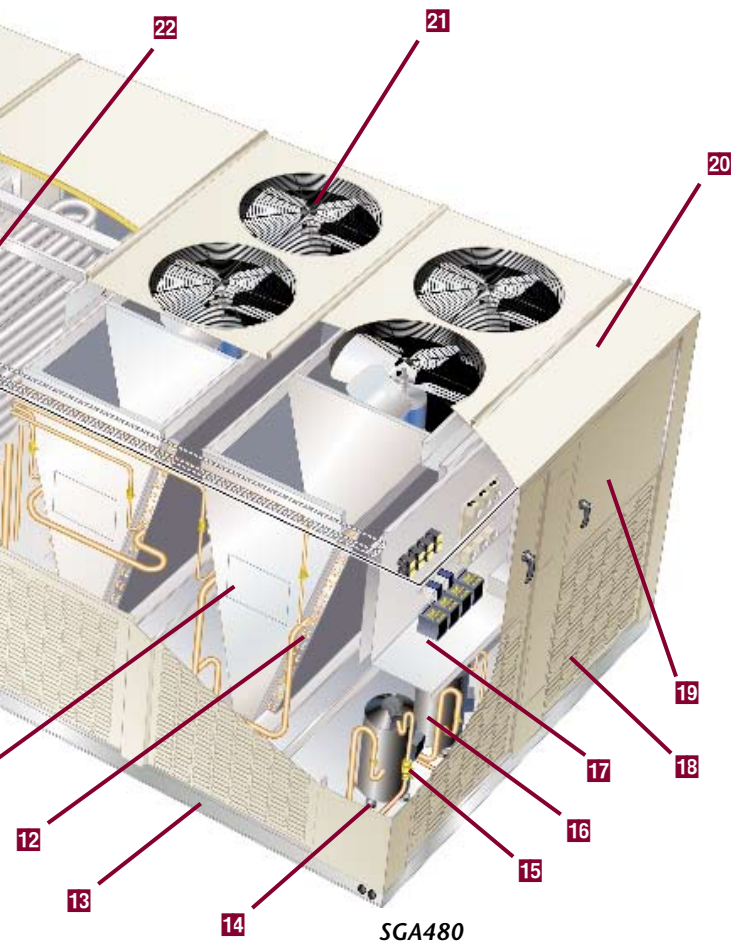
**Integrated Modular Controller**

*Add-on modules allow configuration, control, feedback and diagnostics for:*

- Outdoor air motorized dampers or economizers with power exhaust control, including demand control ventilation
  - Now it's possible to bring in sufficient outside air for a comfortable, healthy environment without exceeding energy budgets.
- Constant-volume bypass or variable-volume rooftop control
  - Count on zoning that meets your terms by using a premium L Series® rooftop unit with variable-frequency drive to minimize lifecycle costs, or a constant-volume unit with bypass to keep initial equipment costs in check.
- Humiditrol hot gas reheat
  - Dramatically reduce humidity by subcooling air, then recycle hot refrigerant gas from a compressor to reheat dry air to a comfortable supply temperature.
- Four-stage control inputs from third-party DDC controllers or thermostats
  - Allow a thermostat or third-party DDC controller to individually control up to four separate compressors and heating stages.\*
- Interoperability via BACnet® or LonTalk® protocols
  - Communicate using the BACnet Application Specific Controller device profile, LonMark® Space Comfort Controller functional profile or LonMark Discharge Air Controller functional profile.
- Additional compressors, gas valves, electric heat and fans in large units
- Reversing valves in heat pump units

\*Thermostat or controller must provide individual staging commands. Not required to achieve four stages when IMC is configured for zone sensor or discharge air control.

LonTalk and LonMark are registered trademarks of the Echelon Corporation.  
BACnet is a registered trademark of the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE).



**SGA480**

- 22 Stainless Steel Heat Exchanger**—Provides application flexibility and allows operation at low outdoor air temperatures.
- 23 Optional Double-Wall Construction**—Improves cleanability of internal surfaces for better IAQ.
- 24 Optional High-Efficiency Filters**—Improve air filtration for better IAQ.
- 25 Optional Integral Economizer**—Saves energy by using outdoor air for cooling when suitable.
- 26 Optional Outdoor Air CFM Control**—Helps maintain outdoor air volume for variable air volume units.

# OPTIONS AND ACCESSORIES

## Factory-Installed Options for Fast Installation

With their extensive list of factory-installed options, S-Class™ 35- to 50-ton rooftop units can be built and tested at the factory to your exact specification.

- R-410A environmentally friendlier refrigerant
- Humiditrol® dehumidification system
- Capacity staging down to 25%
- Refrigerant service valves
- Variable-frequency drives on supply fan
- Economizer
- Barometric relief dampers
- Standard power exhaust fans (50% and 100%)
- High-static power exhaust fans (50% and 100%, optional modulating capability)
- Manual or motorized fresh air dampers
- Liquefied propane gas ready (gas/electric units only)
- Stainless steel heat exchanger (gas/electric units only)
- Blower proving switch
- Dirty-filter switch
- Supply and/or return air smoke detector
- Non-powered GFI
- Powered GFI (factory-wired)
- Non-fused disconnect
- Coil corrosion protection
- Double-wall construction
- Integral energy recovery wheel
- MERV 8, 11 and 15 filters
- Stainless steel drain pan
- Third-party DDC options
- Spring vibration isolation, compressors
- Spring vibration isolation, supply fan
- Spring vibration isolation, high-static power exhaust fans
- Phase monitor
- Export packaging
- Horizontal discharge
- 30-180 KW Electric Heat (electric/ electric units only)
- 500 and 800 kBtuh Gas Heat (gas/ electric units only)
- Modulating gas (500 or 800 kBtuh gas/electric units only)
- Hot gas bypass
- Outdoor air CFM control

## S-CLASS™ ROOFTOP UNIT PERFORMANCE SPECIFICATIONS

		COOLING DATA			HEATING INPUT		AIR SUPPLY RANGE		PHYSICAL DATA		
		Gross Cap. [Btuh]	Full Load [EER]	Part Load [IPLV]	Standard [Btuh]	High [Btuh]	CFM	Static [in wc]	Dimensions H x W x L [inches]	Ship Wt. [lbs.]	
Nominal Tonnage	Model										
		GAS/ELECTRIC UNITS									
35	SGA420S2B	440,000	10.5	10.8	500,000	800,000	9800-15750	.25-4.0	68 x 90 x 286	6345-8205	
35	SGA420S2V	440,000	10.5	12.6	500,000	800,000	4200-15750	.25-4.0	68 x 90 x 286	6345-8205	
40	SGA480S2B	485,000	10.0	10.8	500,000	800,000	11200-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SGA480S2V	470,000	10.0	12.6	500,000	800,000	4800-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SGA480H4B	495,000	10.8	11.8	500,000	800,000	11200-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SGA480H4V	480,000	10.6	13.2	500,000	800,000	4800-18000	.25-4.0	68 x 90 x 286	6345-8205	
45	SGA540S2B	550,000	9.5	10.0	500,000	800,000	12600-20250	.25-4.0	68 x 90 x 286	6345-8205	
45	SGA540S2V	540,000	9.5	11.2	500,000	800,000	5400-20250	.25-4.0	68 x 90 x 286	6345-8205	
50	SGA600S2B	600,000	9.5	10.0	500,000	800,000	14000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SGA600S2V	590,000	9.5	11.2	500,000	800,000	6000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SGA600S4B	600,000	9.5	9.8	500,000	800,000	14000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SGA600S4V	590,000	9.5	11.0	500,000	800,000	6000-22500	.25-4.0	68 x 90 x 286	6345-8205	
					KW Range						
		ELEC./ELEC. UNITS									
35	SCA420S2B	440,000	10.5	10.8	30-120		9800-15750	.25-4.0	68 x 90 x 286	6345-8205	
35	SCA420S2V	440,000	10.5	12.6	30-120		4200-15750	.25-4.0	68 x 90 x 286	6345-8205	
40	SCA480S2B	485,000	10.0	10.8	30-150		11200-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SCA480S2V	470,000	10.0	12.6	30-150		4800-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SCA480H4B	495,000	10.8	11.8	30-150		11200-18000	.25-4.0	68 x 90 x 286	6345-8205	
40	SCA480H4V	480,000	10.6	13.2	30-150		4800-18000	.25-4.0	68 x 90 x 286	6345-8205	
45	SCA540S2B	550,000	9.5	10.0	45-165		12600-20250	.25-4.0	68 x 90 x 286	6345-8205	
45	SCA540S2V	540,000	9.5	11.2	45-165		5400-20250	.25-4.0	68 x 90 x 286	6345-8205	
50	SCA600S2B	600,000	9.5	10.0	45-180		14000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SCA600S2V	590,000	9.5	11.2	45-180		6000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SCA600S4B	600,000	9.5	9.8	45-180		14000-22500	.25-4.0	68 x 90 x 286	6345-8205	
50	SCA600S4V	590,000	9.5	11.0	45-180		6000-22500	.25-4.0	68 x 90 x 286	6345-8205	

Units with variable-frequency drives (labeled "V" in the model number) have a minimum low airflow rating of 120 CFM per nominal ton during cooling-only operation.

Note: Due to Lennox' ongoing commitment to quality, all specifications, ratings and dimensions are subject to change.



S-Class™ RTUs are available with R-410A environmentally friendlier refrigerant.

# SOLUTIONS FOR CUSTOMIZED COMFORT



Don't just choose a Lennox® product...choose a Lennox Commercial Comfort System. These complete packages of HVAC solutions provide tools to create a healthier and more comfortable environment.

## Packaged Units

- Strategos™ Rooftop Units
- S-Class™ Rooftop Units
- Landmark™ Rooftop Units
- L Series® Rooftop Units
- T-Class™ Rooftop Units

## Split Systems

- S-Class Air Conditioners/Heat Pumps
- T-Class Air Conditioners/Heat Pumps
- Air Conditioners/Heat Pumps
- Air Handlers
- Indoor Coils

## Heating

- T-Class Unit Heaters
- Unit Heaters
- Duct Furnaces
- Furnaces

## Commercial Controls

- L Connection® Network
- System Integration Solutions
- Commercial Thermostats

## Indoor Air Quality

- Humiditrol® Dehumidification System
- Demand Control Ventilation
- Energy Recovery Ventilators/Systems
- Air Filters
- UVC Lamps



**LENNOX**

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