

ENERGENCE™
Saving Energy with Intelligence

Commercial Packaged Rooftop Units
3- to 50-Ton LC/LG Models

Up to 18.0 SEER,
Up to 12.8 EER
and 14.5 IEER



LENNOX
Innovation never felt so good.®



SAVING ENERGY WITH INTELLIGENCE™

Designed to intelligently achieve the lowest total cost of ownership

The Energence® rooftop unit product line represents Lennox' ongoing commitment to innovative light commercial rooftop units. Delivering the industry's lowest total cost of ownership, the Energence unit's ultra-efficient design helps reduce energy costs while being extremely cost-effective to service and maintain. Built on the Lennox legacy of advanced technology, Energence rooftop units set the standard for premium rooftop units.

Optimum energy efficiency

The most energy-efficient light commercial rooftop unit* in its class and the first to break the 17.0 SEER barrier, Lennox' Energence rooftop unit line achieves efficiency ratings up to 30% higher than U.S. Department of Energy minimum standards. The Energence line delivers exceptional peak load and overall energy usage reductions for commercial buildings. The line offers the most models that surpass the Consortium

for Energy Efficiency's (CEE) Tier 2 EER levels for rebates (the highest currently available).

Available features minimize blower power during free-cooling mode and the optional blower belt auto tensioner can maintain proper tension of the blower belt, increasing system reliability. The system can also self-monitor and verify performance of the unit in real time, providing confirmation that the unit is operating efficiently.

Energence® rooftop units at a glance:

The most energy-efficient light commercial rooftop unit*

Lowest total cost of ownership without compromising comfort

Exceeds ASHRAE 90.1-2010 minimum standards by more than 30%

The most models in a light commercial rooftop product line that qualify for the highest level of energy rebates**

Prodigy® unit controller intelligently verifies service, operation, and required setup and configuration

Unique SmartWire™ system helps ensure the most accurate setup and the least service time

Improve comfort with patented Humiditrol® dehumidification system

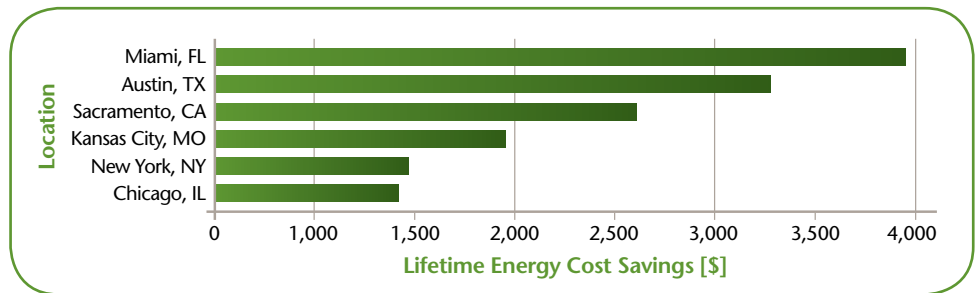
Helps buildings qualify for the most LEED® points



Energence rooftop units are ENERGY STAR® qualified products, helping to reduce energy spending and conserve natural resources. In addition to Energence units, Lennox has developed a wide range of products that meet ENERGY STAR guidelines for energy efficiency.

The higher the SEER, the lower the energy cost.

Compare the annual energy costs for a system with 17 SEER with the annual energy costs for a system with 13 SEER and notice how fast the savings add up. As you can see, the higher the SEER, the lower the energy bill. From Sacramento to Miami, energy savings can range from 19% to 27% a year. Over the lifetime of the system, you can save thousands of dollars with a 17 SEER system versus a 13 SEER system.†



*Commercial gas/electric or electric/electric single-packaged rooftop units, 3- to 5-ton units. Claim pertains to 17.0 SEER rating for LGH060H4 unit. Established through review of competitive literature available to the general public in November 2010.

**Commercial gas/electric single-packaged rooftop units, 3- to 20-ton unit range, based on Consortium of Energy Efficiency's Tier 2 EER rebate levels. Established through review of competitive literature available to the general public in November 2010.

†Calculations based on Lennox' Total Cost of Ownership™ calculator, comparing 5-ton 17 SEER (12.7 EER) unit to a 5-ton 13 SEER (11 EER) unit at a retail facility (under 25,000 square feet) and a 10:00 a.m. to 10:00 p.m. operating schedule. Lifetime energy cost savings are calculated by multiplying annual energy costs by 15 years. Actual savings may vary depending on system settings, equipment maintenance, local weather, construction, installation of equipment, duct system, hours of operation, local fuel rates and other factors. This information is intended as an example for comparison purposes only.

Efficiency Rating

Up to 17.0 SEER and up to 12.8 EER

Warranty

15-Year Limited Warranty on stainless steel gas heat exchanger

10-Year Limited Warranty on aluminized gas heat exchanger

5-Year Limited Warranty on compressor

3-Year Limited Warranty on Prodigy unit controller

1-Year Limited Warranty on covered components

See warranty certificate for actual details.

FAST AND ACCURATE SETUP WHILE MINIMIZING SERVICE TIME

Standard on every Energence® rooftop unit, the Prodigy® control system* makes setup, troubleshooting and servicing easier than ever. Each unit tracks the runtime of every major component and records the date and time when service or maintenance is performed. The system intelligently operates the rooftop unit to help ensure reliability, maximum efficiency and comfort.

Through a patent-pending USB service port, the unit generates service reports that can be downloaded to a USB flash drive. Reports help provide service verification with encrypted time/date stamp, unit serial number, alarm code log and critical runtime information.

A self-test mode can test the operation of individual components or operating modes.

Each critical component's test will activate only that component and return either a status message or a sensor reading to ensure proper operations. By reducing maintenance and service time, the self-test function may help contractors get to more job sites per day, increasing productivity.



Patent-pending USB port downloads service reports to a standard USB flash drive, making transferring and recording information easier than any other light commercial control system in the industry.

Advanced user-friendly and intuitive interface eases setup and diagnostics.

Verification when and where you need it

The Prodigy® control service report:

- Validates effectiveness of service and maintenance work
- Makes service versus replacement decisions based on component runtime
- Speeds up maintenance and service jobs by quickly identifying problem areas
- Alarm and status log provides quick view of past issues
- Trends service and unit operation over time with time/date-stamped reports
- Verifies service technicians are on the roof and at the unit on time
- Helps assure correct unit operation after maintenance with sensor readings

USB Service Report Example

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=====
USB SERVICE REPORT
=====
Service Date      1/1/2010
Service Time     12:00:00
Serial No.       160980002
MC Version       7.02.00
D01Version       1.02.00
Unit No.         1
Buss Address     2
Buss Address     2
CAB No.          2
MODEL NO.       L602488811
Status           RESTART
=====
Runtime Data
=====
Total Power On  1832 HRS
Before Recall  286 HRS
Misc           3040 HRS
Blower         1863 HRS
Compressor 1   1162 HRS
Compressor 2   66 HRS
Compressor 3   14 HRS
Compressor 4   0 HRS
Outdoor Fan 1  14 HRS
Outdoor Fan 2  0 HRS
Outdoor Fan 3  0 HRS
Outdoor Fan 4  0 HRS
Outdoor Fan 5  0 HRS
Outdoor Fan 6  0 HRS
Heat Stage 1   96 HRS
Heat Stage 2   0 HRS
Reheat         96 HRS
Free Cooling   0 HRS
UV Lamp        42 HRS
=====
Sensor Data
=====
DWT : 80 degF
MWT : 70 degF
DWT : 69 degF
SAT : 59 degF
RH : 24 %
CO2 : 413 ppm
=====
Alarm/Status Log
=====
( 88) 12-14-2009 12:07:15 REAT 1 NO PROOF GAS VALVE OVI
( 82) 12-14-2009 12:03:24 EMERGENCY REMIDTROL SETTINGS
( 92) 12-09-2009 19:34:07 CONTROLER RESETE
(120) 12-09-2009 18:32:54 OFFTING HAVE CHANGED
=====
END OF REPORT
=====

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*Prodigy® system is comprised of the Prodigy unit controller and the SmartWire™ system.

COMFORTABLE. INNOVATIVE. EARTH FRIENDLY.

Improving a building's indoor air quality creates a better indoor environment, and a better indoor environment helps protect a company's productivity and profitability. Lennox' patented Humiditrol® dehumidification system removes moisture based on humidity requirements rather than temperature, making it easy and efficient to create a better indoor environment.

Already the most efficient hot-gas reheat system, an advanced Humiditrol system that is up to 20% more efficient is also available for 3- to 5-ton Energence® units.

The advanced system reduces power consumption in dehumidification mode by:

- Lowering the indoor airflow while increasing latent capacity
- Lowering the outdoor fan speed



Green design with LEED®

Every Energence rooftop unit is designed to reduce your business' carbon footprint. With an efficiency rating 30% above LEED minimum for EAC1.3, Energence rooftop units are the industry's leading efficiency units. Energence units can also be equipped with factory options that can help qualify for additional LEED credits. Energence rooftop units are the perfect choice for sustainable green building design.



Lennox is a committed member of the U.S. and Canada Green Building Councils.



Solar HVAC technology goes commercial

Lennox proudly introduces the SunSource® Commercial Energy System—the first and only solar system to integrate directly with HVAC. The SunSource system integrates with Energence units to deliver efficiency ratings up to 34 SEER* and beyond.

Simple, scalable and easy to install, the SunSource system allows building owners to qualify for tax credits, rebates, government subsidies and grants, which can significantly reduce the first cost of the system. By reducing a building's dependence on the energy grid, the SunSource system can also translate into substantial energy savings.

- Can help meet ASHRAE Green Standard 189.1 requirement to be solar-ready and LEED EAC2 On-Site Renewable Energy credit
- Each Energence unit can accommodate 6–21 solar panels
- Microinverter technology allows for simple solar system design and installation with no changes to the building's electrical infrastructure

*Equipment performance estimates are based on the U.S. Department of Energy (DOE) annual performance factor (APF) method for heat pumps (10CFR part 430). Estimates of annual solar energy production are calculated for a centrally located city in each DOE heating region, using National Renewable Energy Laboratory's (NREL) PVWatts, Version 1. The annual solar energy production is solely an estimate for that region and is based upon a fixed-tilt south-facing array free of shading, with a module tilt angle equal to the local latitude of the installation. The annual solar energy production is included in the APF calculation as a reduction of the annual equipment power consumption.

Environmental impact—carbon emissions

The average vehicle emits 4.8 metric tons of CO₂ each year. With a 20-ton Energence® unit replacing a 9 EER/9.5 IPLV unit, the efficiency would eliminate the generation of over 10 metric tons of CO₂ per year—the equivalent of taking two vehicles off the road.*

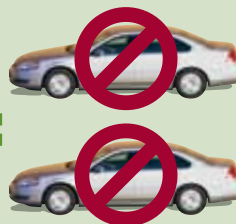


12 EER

REPLACES



9 EER



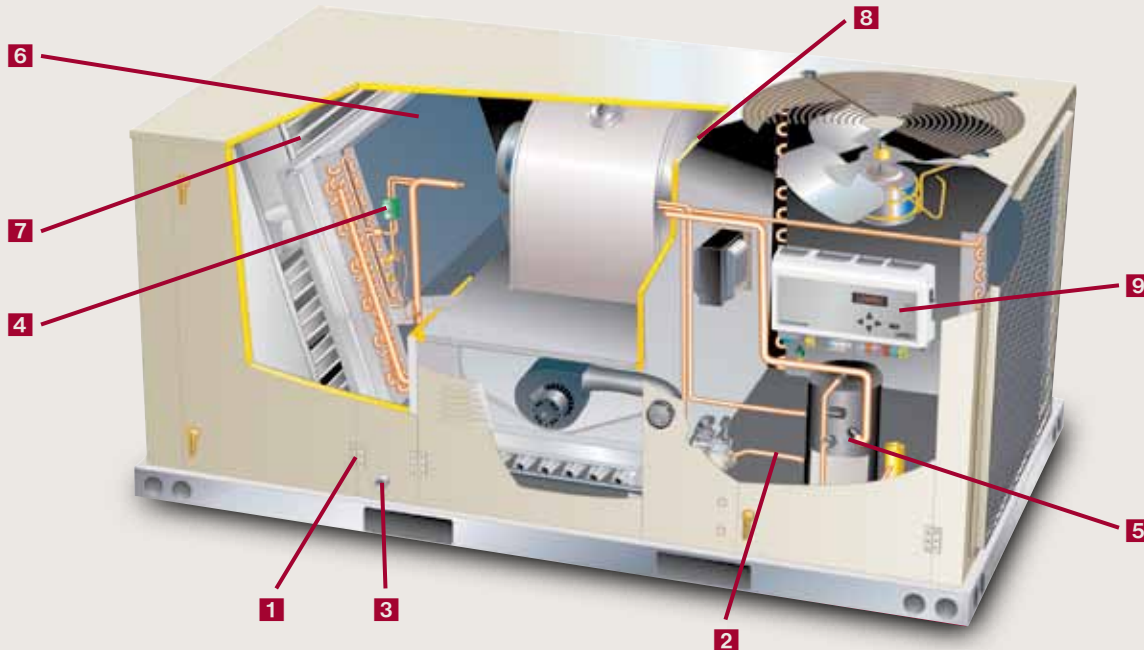
*Based on Lennox' Total Cost of Ownership™ calculator, with a 20-ton Energence rooftop unit replacing an existing 20-ton rooftop unit at 8.5 EER and 9.0 IPLV, resulting in carbon emissions savings of 10.3 metric tons based on an operating schedule of 10:00 a.m. to 10:00 p.m., 7 days per week, in Austin, Texas. Assumes an average vehicle generates 4.8 metric tons of carbon dioxide each year.

ROOFTOP UNIT PERFORMANCE SPECIFICATIONS

		COOLING DATA		HEATING DATA				PHYSICAL DATA			
Nom Ton.	Model	EER	SEER or IEER	Low	Std.	Med.	High	Dimensions H x W x L [inches]	Ship Wt. [lbs.]		
GAS/ELECTRIC UNITS	3	LGH036S4T	11.6	15.0	—	65	105	—	39 x 47 x 86	629	
	3	LGH036H4E	12.5	18.0	—	65	105	—	39 x 47 x 86	629	
	4	LGH048S4T	12.5	15.0	—	65	105	150	39 x 47 x 86	659	
	4	LGH048H4E	12.8	17.6	—	65	105	150	39 x 47 x 86	659	
	5	LGH060S4T	12.5	15.5	—	65	105	150	47 x 47 x 86	746	
	5	LGH060H4E	12.7	17.1	—	65	105	150	47 x 47 x 86	746	
	6	LGH072H4B	12.0	13.5	—	65	105	150	47 x 47 x 86	823	
	7.5	LGH092H4B/M	12.5	12.9/14.0	—	130	180	240	47 x 61 x 102	1,230	
	8.5	LGH102H4B/M	12.2	12.9/14.0	—	130	180	240	47 x 61 x 102	1,237	
	10	LGH120H4B/M	12.0	13.0/13.8	—	130	180	240	47 x 61 x 102	1,272	
	12.5	LGH150S4B/M	10.8	11.0/13.1	—	130	180	240	47 x 61 x 102	1,312	
	13	LGH156H4B/M	12.0	13.6/14.1	169	260	360	—	55 x 91 x 108	2,200	
	15	LGH180H4B/M	12.0	13.5/13.7	169	260	360	480	55 x 91 x 133	2,420	
	17.5	LGH210H4B/M	12.0	13.0/14.0	169	260	360	480	55 x 91 x 133	2,530	
	20	LGH240H4B/M	12.0	13.2/14.5	—	260	360	480	55 x 91 x 133	2,630	
	25	LGH300S4B/M	10.5	10.9/13.8	—	260	360	480	55 x 91 x 133	2,695	
	35	LGH420S4B/V	9.8/10.0	10.2/11.0	—	500	—	800	68 x 90 x 286	6,345–8,600	
	35	LGH420H4B/V	10.8/10.8	11.3/12.5	—	500	—	800	68 x 90 x 286	6,345–8,600	
	40	LGH480S4B/V	9.8/9.8	10.1/11.0	—	500	—	800	68 x 90 x 286	6,345–8,600	
	40	LGH480H4B/V	11.0/10.8	12.0/13.0	—	500	—	800	68 x 90 x 286	6,345–8,600	
45	LGH540S4B/V	9.8/10.0	10.5/11.7	—	500	—	800	68 x 90 x 286	6,345–8,600		
50	LGH600S4B/V	9.8/9.8	10.3/11.0	—	500	—	800	68 x 90 x 286	6,345–8,600		
				KW RANGE							
ELECTRIC/ELECTRIC UNITS	3	LCH036S4T	11.6	15.0	7.5	15	—	—	39 x 47 x 86	593	
	3	LCH036H4E	12.5	18.0	7.5	15	—	—	39 x 47 x 86	593	
	4	LCH048S4T	12.5	15.0	7.5	15	—	—	39 x 47 x 86	623	
	4	LCH048H4E	12.8	17.6	7.5	15	—	—	39 x 47 x 86	623	
	5	LCH060S4T	12.5	15.5	7.5	15	22.5	—	47 x 47 x 86	710	
	5	LCH060H4E	12.7	17.1	7.5	15	22.5	—	47 x 47 x 86	710	
	6	LCH072H4B	12.0	13.5	7.5	15	22.5	30	47 x 47 x 86	787	
	7.5	LCH092H4B/M	12.7	12.9/14.0	7.5	15	22.5	30	45	47 x 61 x 102	1,205
	8.5	LCH102H4B/M	12.4	12.9/14.0	7.5	15	22.5	30	45	47 x 61 x 102	1,212
	10	LCH120H4B/M	12.2	13.2/13.8	15	22.5	30	45	60	47 x 61 x 102	1,247
	12.5	LCH150S4B/M	11.0	11.0/13.1	15	22.5	30	45	60	47 x 61 x 102	1,287
	13	LCH156H4B/M	12.0	13.6/14.1	15	30	45	60	—	55 x 91 x 108	2,145
	15	LCH180H4B/M	12.0	13.5/13.7	15	30	45	60	—	55 x 91 x 133	2,365
	17.5	LCH210H4B/M	12.0	13.0/14.0	15	30	45	60	90	55 x 91 x 133	2,475
	20	LCH240H4B/M	12.0	13.2/14.5	15	30	45	60	90	55 x 91 x 133	2,575
	25	LCH300S4B/M	10.5	10.9/13.8	15	30	45	60	90	55 x 91 x 133	2,640
	35	LCH420S4B/V	10.0/10.0	10.2/11.0	30–120				68 x 90 x 286	6,345–8,600	
	35	LCH420H4B/V	10.8/10.8	11.3/12.5	30–120				68 x 90 x 286	6,345–8,600	
	40	LCH480S4B/V	10.0/10.0	10.1/11.0	30–150				68 x 90 x 286	6,345–8,600	
	40	LCH480H4B/V	11.0/10.8	12.0/13.0	30–150				68 x 90 x 286	6,345–8,600	
45	LCH540S4B/V	10.0/10.0	10.5/11.7	45–165				68 x 90 x 286	6,345–8,600		
50	LCH600S4B/V	10.0/10.0	10.3/11.0	45–180				68 x 90 x 286	6,345–8,600		

Note: Due to Lennox' ongoing commitment to quality, all specifications, ratings and dimensions are subject to change. All ratings shown are for the highest-rated model in the tonnage size.

INSIDE THE INTELLIGENT ROOFTOP UNIT



Quality components built for performance

- 1 Hinged Access Panels**—Provide quick access to components and protect panels and roof from damage during servicing.
- 2 Isolated Compressor Compartment**—Allows performance check during normal compressor operation without disrupting airflow.
- 3 Corrosion-Resistant, Removable, Double-Sloped Drain Pan**—Provides application flexibility, durability and improved serviceability.
- 4 Thermostatic Expansion Valves**—Provide peak cooling performance across the entire application range.
- 5 Scroll Compressor**—Standard on all units for reliable, long-term operation.
- 6 Humiditrol® Dehumidification System**—Patented system allows for independent control of temperature and humidity, providing enhanced comfort control.
- 7 MERV 13 Filters**—Available as factory or field option, provide an enhanced level of indoor air quality, and can help the building qualify for additional LEED® credits.
- 8 Foil-Faced Insulation**—On all internal surfaces that contact airflow, helps minimize airborne fibers and improve IAQ.
- 9 Prodigy® Control System**—Standard on every Energence® rooftop unit, the Prodigy control system is the heart of the Lennox® controls offering.

Blower Belt Auto Tensioner—Factory option ensures blower is delivering the proper airflow for comfort, while maximizing efficiency and belt life (not shown).

Options and accessories to maximize your savings

Factory-Installed Options

- HACR circuit breakers
- Direct-drive blower motor
- Belt-drive blower motor
- Drive kits
- Corrosion protection
- Novar® LSM
- Phase monitor
- Humiditrol® dehumidification system
- Gas heat input
- Stainless steel heat exchanger

Factory- or Field-Installed Options

- Condensate drain trap
- Blower proving switch
- BACnet® module
- LonTalk® module
- Dirty filter switch
- Fresh air tempering
- Smoke detector (return and/or supply)
- Disconnect switch
- GFI service outlets
- Economizer
- Outdoor air dampers
- High-efficiency air filters
- UVC light kit
- Barometric relief dampers
- Low-temperature vestibule heater

Field-Installed Options

- Coil guards
- Hail guards
- L Connection® Network
- Horizontal economizer control kit
- Humidity sensor kit
- CO₂ sensor
- LGP/propane conversion kit



- 1 Push-Buttons**—Provide easy navigation during setup and diagnostics and allow intuitive setup steps without DIP switches.
- 2 Scrolling Display**—Improves communication with clearly displayed text instead of codes. High contrast ratio improves readability in varied environments.
- 3 USB Port** (*Patent Pending*)
- 4 Integrated Controls and Terminal Boards**—Improve reliability and flexibility with fewer add-on boards.
- 5 Guided Menu Setup**—Reduces complexity of start-up and commissioning and helps to ensure the system is set up properly per design specifications.
- 6 Time Clock with Runtime Information for System Components, including:**
 - Compressors
 - Blower
 - Condensing fans
 - Free cooling
 - Heating
 - Power exhaust
 - Dehumidification mode
 - Date/time-stamped alarm codes

- 7 BACnet® and LonTalk® Open Protocols Integration**—Assures easy integration with other devices using either open protocol. The Prodigy® unit controller is both a BTL-listed device and a LonMark-certified device.



- 8 SmartWire™ System** (*Patent Pending*)—The SmartWire™ system is designed to simplify field sensor and thermostat installation. Through advanced connectors that are keyed and color-coded, the SmartWire system helps prevent miswiring and ensure the unit and components are installed properly. The wire-coloring scheme is standardized across all models, and each connection is intuitively labeled to make troubleshooting and servicing quick and easy.

SMARTWIRE™ SYSTEM

Languages—Available in English, Spanish and French.

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 healthy and comfortable environment.

Packaged Units

- Strategos® Rooftop Units
- Emergence® Rooftop Units
- Landmark® Rooftop Units

Split Systems

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

Heating

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

Commercial Controls

- Prodigy® Control System
- L Connection® Network
- Systems Integration Solutions
- Commercial Thermostats

Indoor Air Quality

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

LENNOX
Innovation never felt so good.™

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