HVAC for Schools

A Comprehensive Look at Products for a Clean, Comfortable Learning Environment
Why Schools Choose Lennox

Even as resources for schools continue to be constrained, education leaders and administrators still must achieve success for their students and communities. This begins with keeping students and staff comfortable through indoor air quality and temperature control.

Lennox’ team of education specialists can develop solutions that address your school’s needs while reducing monthly energy costs.

With high-performance systems providing industry-leading efficiency, and some of the best warranties in the industry, Lennox helps create an environment where learning and success are continual parts of the classroom experience.

Solar technology for exceptional efficiency

Lennox’ SunSource® Commercial Energy System is the first and only commercial HVAC system that integrates directly with solar power. Designed to integrate with 3- to 6-ton solar-ready Energence® rooftop units, which already provide efficiencies of up to 18 SEER, the SunSource system can provide effective efficiency levels of 34 SEER and beyond.¹ When not operating, the SunSource system converts solar energy to supply other electric devices. Surplus power can even be sent back to the power grid, possibly earning a credit on monthly utility bills.

¹Effective SEER estimates for the SunSource® air conditioning system are based on the U.S. Department of Energy (DOE) annual performance factor (APF) method for heat pumps and air conditioners (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 cooling season power consumption. In this example, the air conditioning unit is an Energence® LGH060H4ES1P (5 Ton/17 SEER) located in Region IV (represented by Omaha, NE at 41° N. latitude) and with six solar modules rated 175 dc Watts each.
Saving Energy with Intelligence®

Our Energence® rooftop unit helps save energy and reduce operating costs. With efficiency ratings up to 18 SEER, Energence units are up to 38% more efficient when compared to a 13 SEER unit. And it’s engineered with intelligent features like the Prodigy® control system, that make service and maintenance extremely cost effective.

- Exceptional efficiency with ratings up to 18 SEER, 12.8 EER and 15.5 IEER
- A low total cost of ownership
- Up to 75% fan power savings with optional MSAV²
- Unmatched intelligence with the Prodigy® controller that provides fast, accurate setup and simplified operation
- Offers unique customization with configured-to-order units
- Better reliability and sustainability with the Environ™ coil system that uses up to 52% less refrigerant than typical units

Extensive warranties for added peace of mind

- 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
- 3-year limited warranty on Environ coil system
- 1-year limited warranty on covered components

Indoor air that lets everyone breathe

All Energence® rooftop units can be equipped with Lennox’ patented Humiditrol® dehumidification system that removes moisture based on humidity levels, not on the thermostat. An advanced system that reduces power consumption in dehumidification mode is available for 3- to 25-ton high-efficiency models.

²Based on AHRI conditions, 95°F outdoor, 80/67 indoor, 400 cfm/ton nominal, at 55% airflow.
Performance Marked by Flexibility™

When it comes to reliable and efficient performance, Landmark® rooftop units have always been a standout for schools. Now we’ve built more flexibility in the line, making Landmark an excellent choice for any school.

• Product flexibility with over 100 field-installed options
• Gas/electric, electric/electric and heat pump configurations
• Provides easy serviceability with over 30 features designed to reduce installation and service time
• Standard- and high-efficiency options
• Up to 61% supply fan power savings with optional MSAV³

Value Without Compromise™

With the Raider™ rooftop unit, Lennox delivers value and convenience, without compromising on quality.

• Proven reliability since it’s built in Lennox’ award-winning factory and receives over 200 quality checkpoints per unit
• Replacement compatibility that can save up to $1,500 per unit on many replacement jobs⁴
• Popular curb size that can eliminate the need for an adaptor curb
• Up to 20% lighter unit weight helps prevent structural engineering costs
• Immediate availability through 100% of Lennox’ commercial distribution facilities

³Part load, IEER improvement. Comparing standard 11.2 IEER system to optional MSAV 14 IEER system.
⁴$1,500 savings is calculated in replacement jobs where the Raider™ units matches the footprint eliminating the use of an adaptor curb and moving electrical and plumbing connections.
Reliable, cost-effective, large split systems

Lennox’ T-Class™ large split system units are ideally suited for school systems, providing excellent comfort control along with low operational costs. These split systems are available in a variety of tonnage sizes to meet a wide range of school applications.

Air conditioners and heat pumps
Made from high-quality, durable components to ensure years of reliable performance.
- Units are easy to service and maintain, helping reduce maintenance expenses for schools needing to be cost-conscious over the long term
- Dual independent refrigeration circuits provide part-load cooling capability for better comfort

Air handlers
Designed to match the large AC/HP units to provide optimum performance and indoor air quality.
- Low-maintenance blower belt auto tensioner provides longer belt life and quick belt replacement
- Industry-leading accessories such as MERV 16 filtration and bacteria-killing UVC germicidal lamps provide top-notch indoor air quality

High efficiency combined with excellent temperature and humidity control

Maximum energy efficiency
S-Class® split systems from Lennox offer efficiencies up to 16.7 SEER and 9.5 HSPF, and are ENERGY STAR® qualified, which can help significantly reduce utility bills.

Lennox’ SLP98V variable-capacity heating system is designed to save energy and reduce energy costs for schools. By automatically adjusting variables in small increments, the SLP98V delivers peak efficiency in the short term and over the life of the unit.

Combined, the S-Class split system and SLP98V furnace can increase energy efficiency for years to come.

Improve humidity control
Available as a field-installed accessory on the S-Class split system, the Humiditrol® enhanced dehumidification accessory provides independent humidity and temperature control in one easy-to-use device. As an added benefit, installation and operation require no additional control boards or sensors, which reduces the cost of parts, installation and maintenance for a lower total cost of ownership.
Penthouse MultiZone HVAC System

Every Penthouse MultiZone HVAC System is individually designed and built to match specific demands. Each unit contains multiple split systems designed for highly efficient, reliable performance in schools. Multiple economizers, fans, cooling coils and heating sections condition independent zones without the complexity, lack of redundancy and energy waste found in other zoning systems. The result is exceptional comfort, low operating costs and the most energy-efficient multi-zone unit available.

- Up to 98% AFUE gas heating (two stages)
- Up to 16.5 SEER/12.5 EER condensing units
- Multiple-speed DC inverted fan motors
- Modulating economizers
- Individual zone control
- Energy management options

**Ideal flexibility**

Each unit is custom-built to meet design requirements with one to 18 control zones, nine to 45 tons of cooling and 165 to 792 MBH of heating output. Unit base and duct connections are built to match existing or new roof curbs. Heating is available in natural gas, electric, hot water, heat pump and dual fuel. Cooling is available in direct expansion and chilled water.

---

According to the U.S. Environmental Protection Agency, the annual energy bill to run America’s primary and secondary schools is a staggering $6 billion — more than is spent on textbooks and computers combined. Approximately 40-60% of that cost can be attributed to heating, cooling and ventilation.
Pulse Unit Ventilator

Designed to improve classroom environment by reducing drafts, the Pulse Unit Ventilator uses a variable speed motor to reduce airflow when in ventilation mode. This ventilates the space while minimizing drafts, producing comfort for teachers and students.

- Up to 98% AFUE gas heating (two stages)
- Up to 21.0 SEER condensing units
- Enthalpy economizers
- Individual zone control
- Energy management options

Single Room Unit

The Single Room Units are specifically designed for portable classrooms to match that application’s unique needs. Available either as a gas-fired two-stage furnace or an electric appliance, the SRU delivers efficient, reliable performance. Each unit is equipped with an economizer and a condenser with a high-efficiency evaporator coil for maximum energy savings as well as comfort and control.

- Up to 98% AFUE gas heating (two stages)
- Up to 21.0 SEER condensing units
- Modulating economizers
- Energy management options

For increased flexibility, PUVs and SRUs are available custom-built in gas/electric, electric/electric, heat pump, dual fuel, geothermal, hot/chilled water and steam.
Poor indoor air quality can impact the comfort and health of students and staff, which in turn can affect concentration, attendance and student performance.

SOURCE: U.S. Environmental Protection Agency, IAQ Tools for Schools
“Step-by-step guidance to improving the air quality in our nation’s schools.”