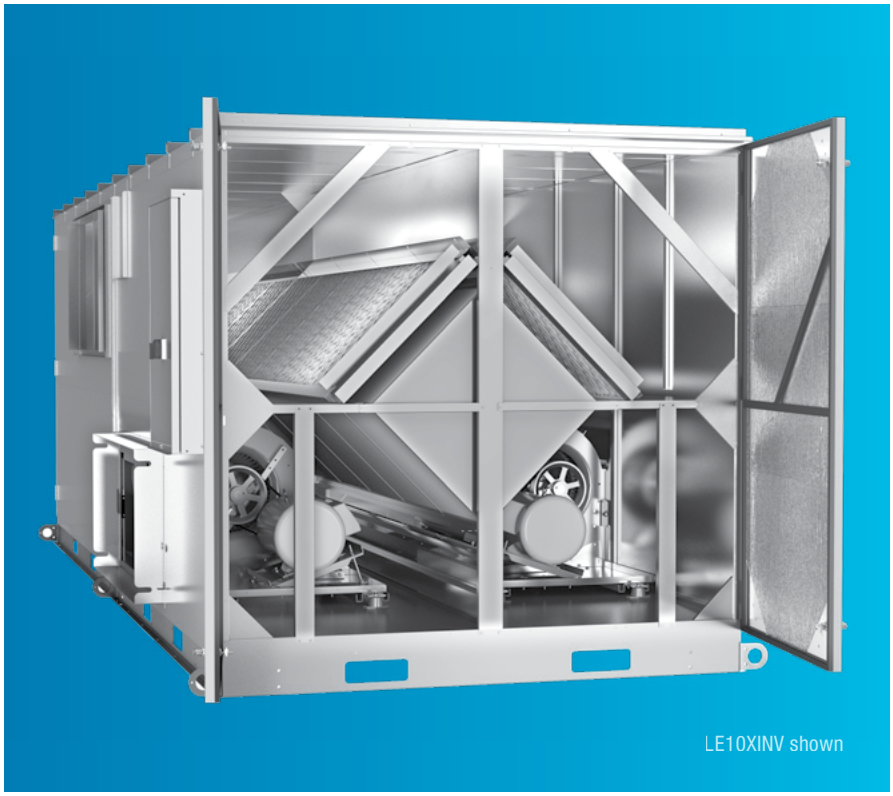
RenewAire®
Energy Recovery Ventilation

LE SERIES ERVs

COMMERCIAL ENERGY RECOVERY VENTILATORS



LE10XINV shown

- Packaged static-plate total energy recovery ventilator
- 1,500-11,000 CFM
- Single-point connection, TEFC standard premium efficiency motors
- Modular design
- Options and accessories: integrated programmable controls, VFDs, double wall, Class 1 low-leakage dampers, MERV 13 filters

AHRI CERTIFIED® www.ahridirectory.org
Globally Recognized. Industry Respected.

ETL Listed c US Intertek

VENTILATION SOLUTIONS FOR EVERY APPLICATION

LE SERIES PACKAGED ENERGY RECOVERY VENTILATORS

DEFICIENT INDOOR AIR QUALITY IS A THREAT

As **buildings get tighter to seal weather out, they seal in contaminants**, causing deficient indoor air quality (IAQ). Typical contaminants include off-gassing from carpeting, furniture and building materials, excess humidity and mold, odors, cooking and cleaning fumes, CO2, hair and fibers, to name a few.

Deficient IAQ is a threat since it can harm occupant health and cognitive function, damage structures and hurt the bottom line. It's especially concerning since people spend about 90% of their time indoors, and indoor air can be two to five times—and up to 100 times—more polluted than outdoor air. The EPA ranks indoor air pollution as a top-five health risk.[1]

ADVERSE EFFECTS OF DEFICIENT IAQ

HEALTH PROBLEMS

Deficient IAQ can cause allergies, headaches, coughs, asthma, skin irritations and breathing difficulties, as well as cancer, liver disease, kidney damage and nervous-system failure.

COGNITIVE IMPAIRMENT

Harvard and Berkeley Lab found that CO2—a constituent of exhaled breath—negatively impacts thinking and decision-making at levels commonly found indoors.[2]

REDUCED PRODUCTIVITY

Berkeley Lab found that deficient IAQ can cost $200 billion in debilitated worker performance and $58 billion in lost sick time.[3]

RENEWAIRE VENTILATION SOLUTIONS IMPROVE HEALTH & WELLNESS

[1] "Why Indoor Air Quality is Important to Schools," United States Environmental Protection Agency (EPA), https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools.

[2] Joe Romm, "Exclusive: Elevated CO2 Levels Directly Affect Human Cognition, New Harvard Study Shows," Climate Progress, October 26, 2015, http://thinkprogress.org/climate/2015/10/26/3714853/carbon-dioxide-impair-brain/.

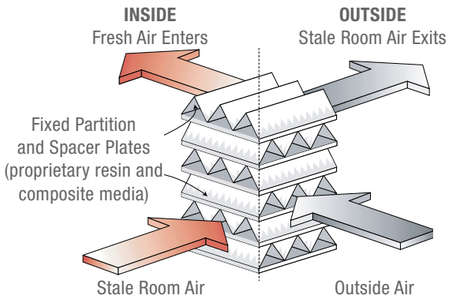
[3] Leon Alevantis, (Department of Health Services), Adam Berman (Capital E), Evan Mills (Lawrence Berkeley National Laboratory), Jeff Perlman (Capital E), "The Costs and Financial Benefits of Green Buildings," U.S. Green Building Council (USGBC), October 2003, https://noharm-uscanada.org/sites/default/files/documents-files/34/Building_Green_Costs_Benefits.pdf.

HIGHEST-QUALITY INDOOR AIR VIA VENTILATION

The solution to pollution is dilution achieved via **increased and balanced ventilation**, which is the most effective way to realize cleaner and healthier indoor air. With enough controlled fresh and filtered outdoor air coming in to replace equal parts of stale indoor air via balanced design, IAQ will be enhanced.

This can be done energy-efficiently, cost-effectively and sustainably with RenewAire's energy recovery ventilation solutions, which reuse otherwise-wasted total energy from the exhaust airstream to condition incoming outdoor air. The results are improved IAQ, greater ventilation efficiency and major energy cost savings.

AIRSTREAMS DO NOT MIX & POLLUTANTS ARE NOT TRANSFERRED ACROSS PARTITION PLATES



ASHRAE BUILDING CODES & STANDARDS

With the goal of building sustainably and creating healthy environments for all, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has written several standards and guidelines. By enhancing IAQ and saving energy, RenewAire technologies provide the means to meet and exceed all ASHRAE standards and guidelines. Following these parameters leads to greener structures and healthier occupants.

- **ASHRAE Standard 62.1:** "Ventilation for Acceptable Indoor Air Quality" is the recognized standard for designing ventilation systems to achieve acceptable IAQ. ERVs play a key role by creating cleaner and healthier indoor air while optimizing energy efficiency.
- **ASHRAE Standard 90.1:** "Energy Standard for Buildings Except Low-Rise Residential Buildings" is a benchmark for commercial building energy codes in the U.S. and across the world. ERVs are required in several instances based on climate zone and percent of outdoor air at full design airflow rate.

RENEWAIRE CORE TECHNOLOGY

CERTIFICATION

- Certified by the Air Conditioning, Heating and Refrigeration Institute (AHRI) for an industry-leading, low-to-zero Exhaust Air Transfer Ratio (EATR) at typical static pressure differentials
- Superior core flammability performance; passes UL-723 and UL-1812

MAINTENANCE

- RenewAire cores are easy to clean without removing them from the unit, and they never require washing

INNOVATIVE CONSTRUCTION

- Core exchanger material is cellulosic-based and doesn't contain or use halogenated flame retardants or PVCs
- Manufactured with a galvanized steel frame

RELIABILITY

- An industry-leading 10-year structural and performance warranty for the static-plate core, two-year warranty for commercial products and five-year warranty for residential products

EXCEPTIONAL PERFORMANCE

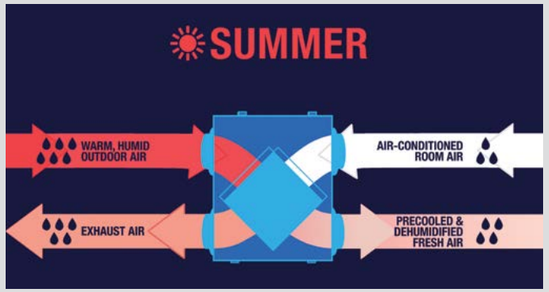
- Moderates heat and humidity via total energy recovery to maintain a comfortable indoor environment
- No need for frost protection or condensate pans
- Laminar airflow ensures that particulates do not accumulate in the core

REDUCED COSTS

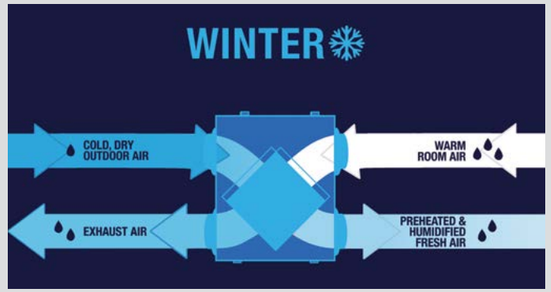
- Optimized energy efficiency via core energy transfer decreases ventilation energy requirements, which can result in smaller air conditioning and heating needs

RENEWAIRE ERVs TEMPER THE AIR

Our ERVs moderate the extremes of outdoor supply-air temperature and humidity year-round, providing a sustainable ventilation solution for every climate.



IN SUMMER, THE WARM, HUMID OUTSIDE AIR IS PRECOOLED AND DEHUMIDIFIED BY THE OUTGOING COOL INTERIOR AIR



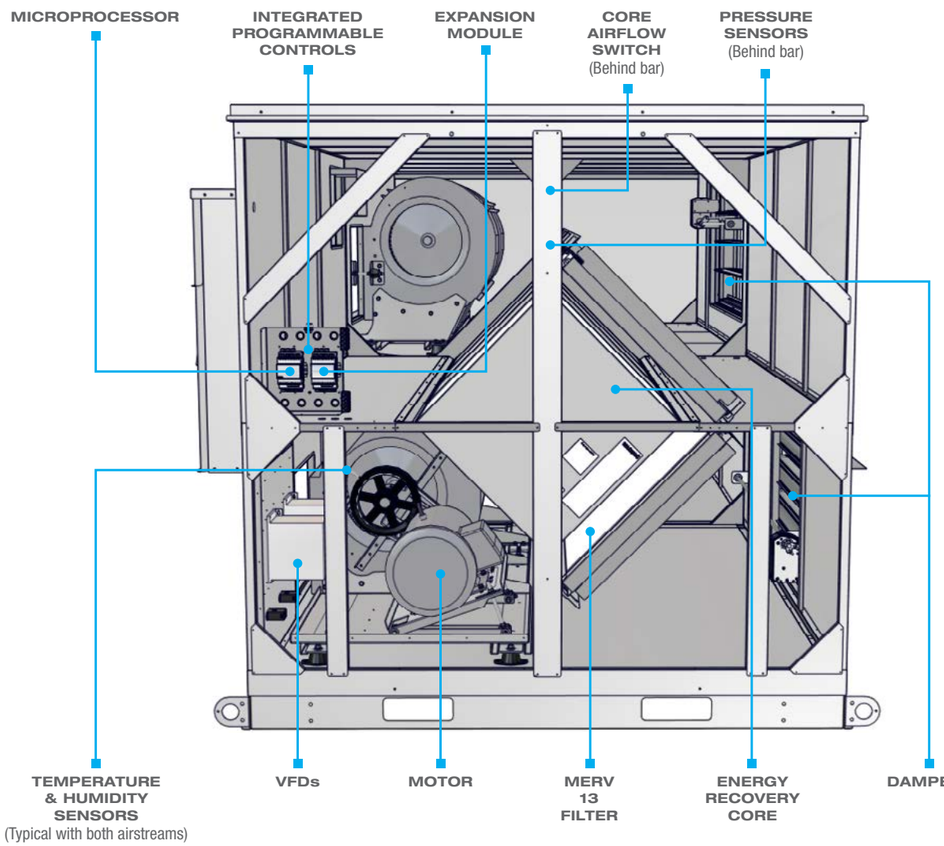
IN WINTER, THE COLD, DRY OUTSIDE AIR IS PREHEATED AND HUMIDIFIED BY THE OUTGOING WARM INTERIOR AIR

A CLOSER LOOK

LE SERIES

As part of our robust commercial ERV line, the innovative LE Series bolsters flexibility, reliability and efficiency for large-capacity applications. With both indoor and outdoor units available, as well as an extensive airflow range of 1,500-11,000 CFM, the LE Series provides the optimal **solution for every commercial job**. Utilizing our LE Series ERVs can **enhance IAQ, downsize HVAC equipment and reduce costs**.

LE8XINH
shown



MAINTENANCE IS SIMPLE

Disposable filters should be checked and replaced as needed. Additionally, once a year, vacuum the four core faces using a soft brush. The RenewAire core does not need to be washed as particulates do not accumulate in the core.

RENEWAIRE ERVs ARE THE SUSTAINABLE VENTILATION SOLUTION

RenewAire in Action

CASE STUDY: HVAC LOAD REDUCTION & HEALTHY IAQ AT GRAND CANYON UNIVERSITY

- HVAC loads reduced by 40%
- Annual HVAC costs reduced by 40% every year for the life of the ERVs
- ERVs excel in small spaces due to downsized HVAC equipment
- ERVs work within limiting parameters of existing HVAC infrastructure

Read our case study, RenewAire ERVs Reduce University's Annual HVAC Cost by 40% Compared to Conventional Equipment: http://bit.ly/2JpAft5

RENEWAIRE VENTILATION SOLUTIONS INCREASE MONETARY BENEFITS

GREEN BUILDING TRENDS

Trends in high-performance green buildings up the ante with stricter standards. Their guidelines not only place an emphasis on energy reduction, but also call for increased ventilation that aims to improve health, wellness, IAQ and indoor environmental quality (IEQ). **Sustainable design** initiatives like ASHRAE Standard 189.1, LEED® certification, the 2030 Challenge, the Living Building Challenge and the WELL Building Standard have grown in popularity among architects, contractors and building owners alike.

Our ventilation technologies create healthier and more comfortable indoor environments while optimizing energy efficiency by reusing otherwise-wasted total energy from exhaust air. The results are exceptional IAQ, IEQ and energy savings are critical components to **earning the distinction of being a "high-performance green building."**

RenewAire supports the

PILLARS OF SUSTAINABILITY

PEOPLE

Reduce acute and chronic health problems

Improve alertness and cognitive function

Boost productivity

PLANET

Committed to green manufacturing since 1982

Protect the environment with less energy use

Achieve a green structure with greater energy efficiency

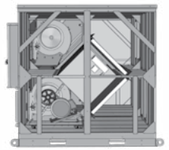
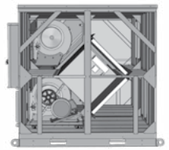
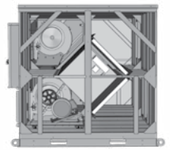
PROFIT

Can benefit from a short payback period

Realize annual energy savings

Trouble-free operations and maintenance

LE MODELS AT A GLANCE

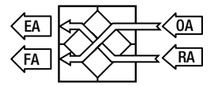
		LE6X	LE8X	LE10X
UNIT	Airflow Range	1,500-6,600 CFM	2,000-8,800 CFM	2,500-11,000 CFM
	Indoor & Outdoor Installation Location	✓	✓	✓
	Non-Fused (standard) & Fused (optional) Unit Disconnect	✓	✓	✓
	Energy Recovery Static Plate, Heat & Humidity Transfer	✓	✓	✓
CABINET	Single & Double Wall (optional) Construction	✓	✓	✓
	1" Foil-Faced Insulation	✓	✓	✓
	2,500-Hour Salt Spray Rated in White & Custom (optional) Painted Cabinets	✓	✓	✓
	Class 1 Low-Leakage Isolation Dampers - OA, RA or Both Airstreams	✓	✓	✓
SUPPLY/EXHAUST FAN	Forward Curved Centrifugal Supply/Exhaust Blower	✓	✓	✓
	Belt-Driven Supply/Exhaust Fan Type	✓	✓	✓
	Supply/Exhaust Fan Speed Control with VFD	✓	✓	✓
	Supply/Exhaust Fan Vibration Isolation	Rubber-in-Shear, Spring Isolators (optional)	Rubber-in-Shear, Spring Isolators (optional)	Rubber-in-Shear, Spring Isolators (optional)
	Supply/Exhaust Fan Motor Voltage at 60 Hz — 208-230V 1P	✓	✓	✓
	Supply/Exhaust Fan Motor Voltage at 60 Hz — 208-230V 3P	✓	✓	✓
	Supply/Exhaust Fan Motor Voltage at 60 Hz — 460V 3P	✓	✓	✓
	Supply/Exhaust Fan Motor Voltage at 60 Hz — 575V 3P	✓	✓	✓
	Supply/Exhaust Fan Motor Voltage at 60 Hz — VFD	✓	✓	✓
	Unit ESP	0-2 in. w.g.	0-2 in. w.g.	0-2 in. w.g.
CONTROLS	Integrated Programmable Controls - Enhanced, Premium (optional)	✓	✓	✓
	Optional Communications	BACnet, Modbus RTU or TCP	BACnet, Modbus RTU or TCP	BACnet, Modbus RTU or TCP
ACCESSORIES	Roof Curbs	✓	✓	✓
	MERV 8 Filters (standard)	✓	✓	✓
	MERV 13 Filters (optional)	✓	✓	✓
CERT.	Certifications	AHRI CERTIFIED, ETL Intertek	AHRI CERTIFIED, ETL Intertek	AHRI CERTIFIED, ETL Intertek

AIRFLOW ORIENTATIONS

INDOOR

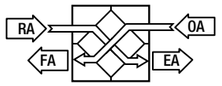
INH

LE6X
LE8X
LE10X



INV

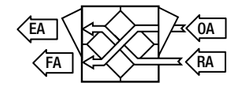
LE6X
LE8X
LE10X



OUTDOOR

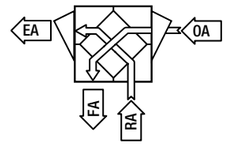
RTH

LE6X
LE8X
LE10X



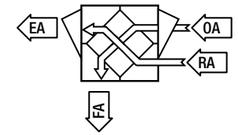
RTV

LE6X
LE8X
LE10X



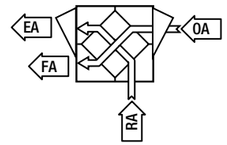
RTF

LE6X
LE8X
LE10X



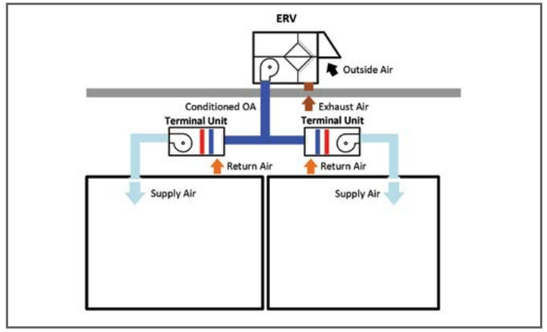
RTR

LE6X
LE8X
LE10X



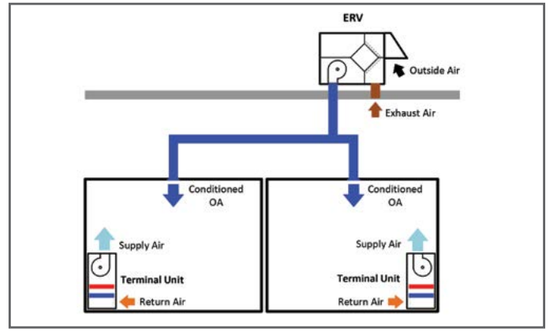
APPLICATION STRATEGIES*

AIR SUPPLIED TO INTAKES OF TERMINAL UNITS



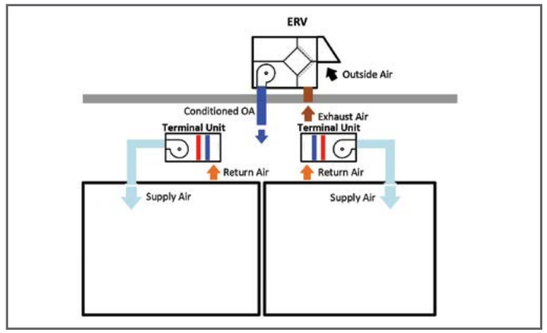
- Variable refrigerant flow/volume
- Active chilled beam
- Fan coils

DIRECT-TO-ZONE WITH TERMINAL UNITS



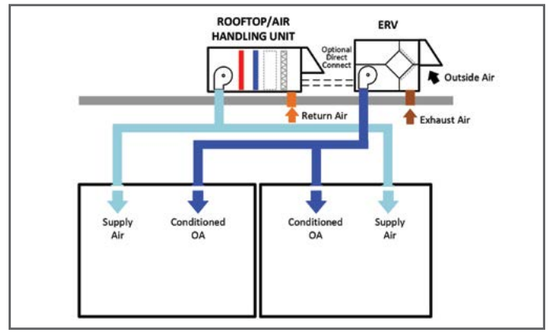
- Variable refrigerant flow/volume
- Chilled beam
- Fan coils
- Heat pumps
- Radiant floor heating and cooling
- Packaged terminal air conditioning

SUPPLY AIR TO MIXING BOXES FOR INDOOR TERMINAL UNITS OR ROOFTOPS



- Variable refrigerant flow/volume
- Chilled beam
- Fan coils

DIRECT-TO-ZONE WITH ROOFTOP OR ALTERNATIVELY TO MIXING BOX OF ROOFTOP UNITS (See dotted line)



*Rooftop applications shown, configurations can be applied to indoor units

EXPAND FUNCTIONALITY

ACCESSORIES

FILTERS

2" or 4" MERV 8, 13 Filters

HEATERS

EK Series Electric Duct Heater
(for indoor units only)

GH Series Indirect Gas-Fired Duct Furnace

DAMPERS

Automatic Balancing Damper 4", 5" & 6"

CONTROLS

CO2 Sensor Wall Mount

IAQ Sensor Wall Mount

CO2 Sensor Duct Mount

IAQ Sensor Duct Mount

Temperature Sensor Duct Mount

BACnet Factory Activation

Occupancy Sensor Ceiling Mount

Occupancy Sensor Wall Mount

Duct Static Pressure Sensor Wall/Duct Mount without Display

Duct Static Pressure Sensor Wall/Duct Mount with Display

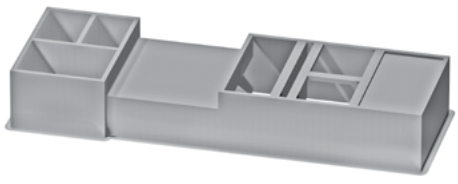
Smoke Detector Duct Mount

Remote Display Handheld or Wall Mount

Digital Time Clock Wall Mount

Digital Time Clock Exterior Enclosure

ENGINEERED COMBO CURBS



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