

# LENNOX®



## FLEXY EC

**HIGH EFFICIENCY  
ROOFTOP**

**AIR COOLED  
COOLING ONLY/HEAT PUMP/ GAS/  
DUAL FUEL**

**85 - 234 kW**



# Energy savings through innovations

## Guaranteed sustainable performance with eDrive

With a rooftop, the major contributor to annual energy consumption is the blower fan motor. **eDrive** is Lennox's solution for direct transmission variable speed drives to save energy.

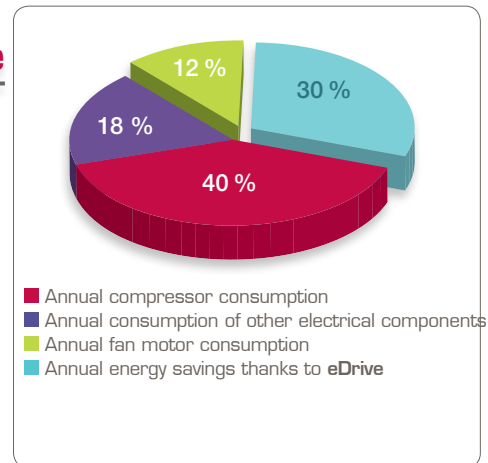
### ● Variable speed drive



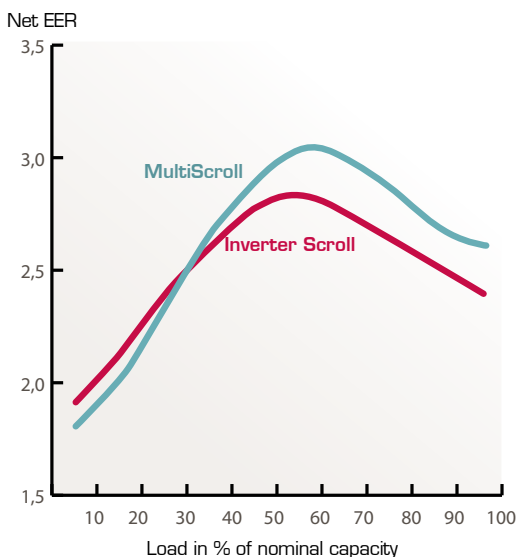
- Airflow reduction during part load operation and dead zone.
- Very high efficiency « EC » technology fan motor.
- Power factor correction to reduce current.
- Soft starter to limit inrush current during start-up.
- Easy airflow adjustment during commissioning.

### ● Direct drive transmission

- No friction means better efficiency even at full speed.
- No efficiency reduction due to loose or worn-out belts.
- Maintenance free fan.



▮ **eDrive** : 70 % energy savings on the fan or 30 % reduction of the total unit annual energy consumption. ▮



▮ "Multiscroll" compressor technology allows energy consumption reduction when compared to "Inverter" solutions. ▮

## Advanced refrigeration circuit

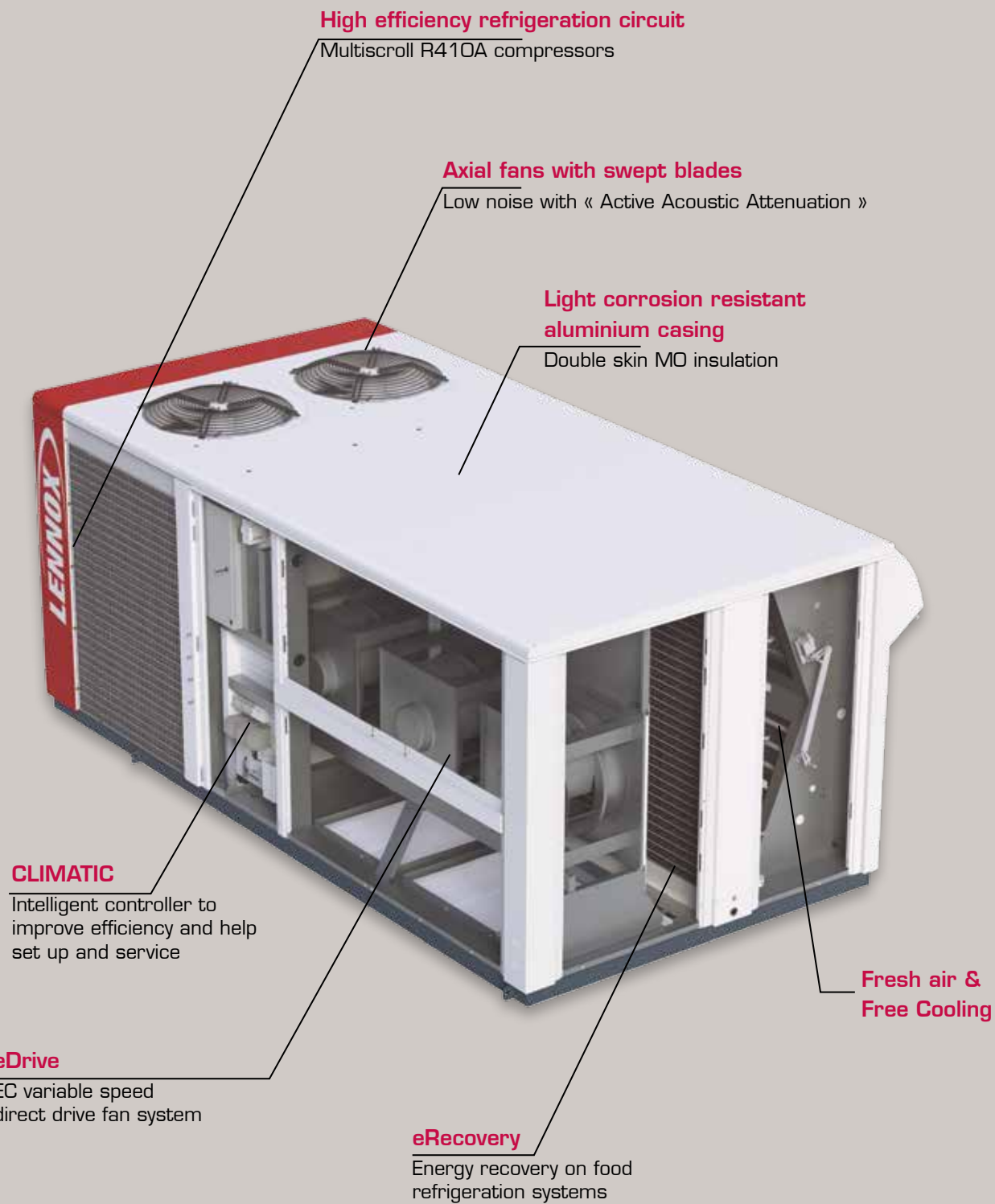
**FLEXY EC** features high efficiency, environmentally friendly refrigeration circuits with Multiscroll R410A compressors.

### ● R410A, environmentally friendly refrigerant with the highest efficiency

- Pressure drop reduction improves COP and EER.
- Compressor isentropic efficiency improvement.
- Higher efficiency compared to other HFC refrigerants.
- Contains no chlorine = Zero Ozone Depletion Potential.
- Low charge limits environmental impact of the refrigerant.
- Refrigerant charge can be completed if needed.

### ● High performance Multiscroll compressors designed for best energy efficiency year round

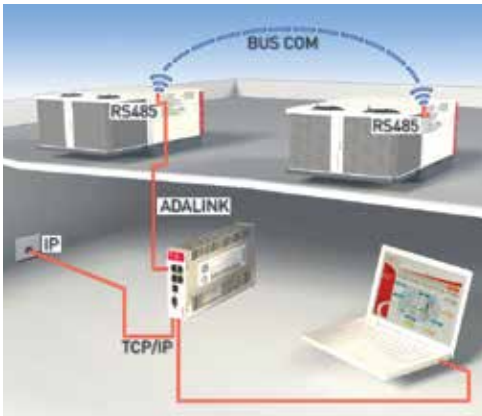
- Part load efficiency improvement.
- Increased heat exchange surface area during part load operation.
- Reliable « Compliant » scroll technology.
- No electronics for speed variation control.
- Alternate defrost algorithm as standard.



FLEXY EC		85	100	120	150	170	200	230
Cooling capacity <sup>(1)</sup>	kW	85,2	105	119	148	170	197	234
Net EER		3,0	2,9	2,8	3,1	2,8	3,1	2,7
Heating Capacity <sup>(1)</sup>	kW	82,9	103	117	142	168	188	226
Net COP		3,3	3,2	3,2	3,4	3,2	3,4	3,2

<sup>(1)</sup> Performances are given at Eurovent nominal conditions according to EN-14511.

## CLIMATIC advanced controller



**CLIMATIC** controller intelligently improves efficiency and helps set up and service operations to guarantee long lasting performance.

- **Optimized operation and setup save energy**

- ▮ Provides the best possible energy efficiency throughout unit's life cycle.
- ▮ Reliable operation with user friendly interfaces.
- ▮ Energy metering with data available on Bus.

- **A unit designed to communicate with its environment**

- ▮ Master / Slave with back up control as standard.
- ▮ Remote monitoring and supervision ModBus, LonWork®, Backnet®.
- ▮ Adalink and Adalink Service for remote unit management.

## Intelligent fresh air and free cooling control

- **Intelligent fresh air management**

Fresh air input is mandatory to maintain comfort in buildings.

- ▮ Automatic fresh air damper calibration with patented algorithm.
- ▮ No over-consumption due to excessive fresh air input and improved air quality.

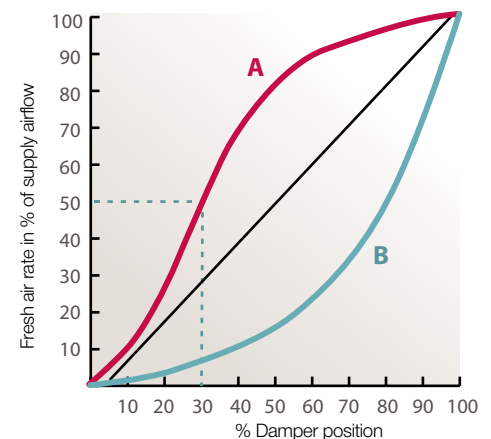
- **Free cooling**

Buildings that comply with new thermal regulations have good insulation and require more cooling even when outside temperature is low.

- ▮ Thermodynamic cooling can be replaced by free cooling by introducing cool outside air into the building.

Energy savings with automatic calibration of fresh air

- ▮ 20 % extra fresh air on a FLEXY 170 kW = 1300 €/year (airflow 30000 m<sup>3</sup>/h in Paris 0.07 €/kWh, summer set point 26 °C Winter 20 °C)



**Curve A**  $\Delta P$  return ducts > Fresh air: Too much fresh air

**Curve B**  $\Delta P$  return ducts < Fresh air: Not enough fresh air

## Energy recovery solutions

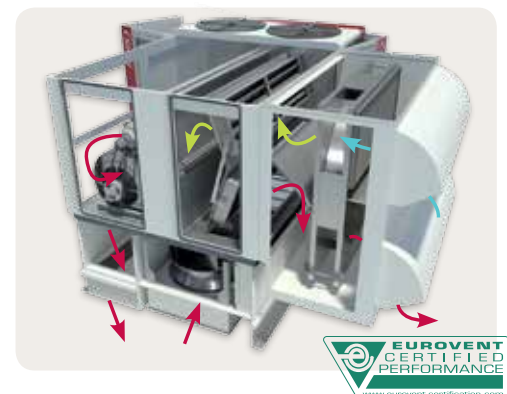
- **eRecovery**

Food refrigeration heat recovery is the most advanced and flexible heat transfer and recovery solution on the market.

50% of supermarket annual energy consumption is used to cool food in display cases and cold rooms.

- ▮ **eRecovery** transfers « free » thermal energy produced by the food refrigeration systems to the sales area.
- ▮ **eRecovery** can cover 100 % of the heating needs.
- ▮ The most flexible heat recovery solution : Thermodynamic or auxiliary heating available on top of heat recovery.

▮ *eRecovery reduces annual energy bill and improves environmental impact by recovering energy wasted by the food refrigeration system. ▮*



- **Energy Recovery from exhaust air**

*Adiabatic energy recovery from exhaust air through enthalpy wheel allows total heat recovery (Sensible + Latent)*

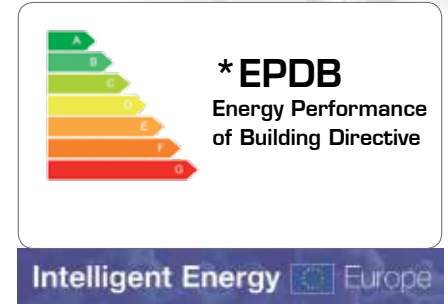
- ▮ The only Eurovent certified heat recovery system.
- ▮ Efficiencies up to 90 %.
- ▮ Reliable system : No coolant, no compressor, no pump.

## Be prepared for sustainable energy development challenges

Faced with challenges relating to competitiveness and climate change, Europe has launched several initiatives for an intelligent energy strategy.

New regulations reflect the European Union's commitments on climate change and its determination to reach 20% efficiency improvement in buildings by 2020 : This will be achieved through projects and initiatives such as **EPBD\***, or regional policies to promote energy efficiency and performance certification for HVAC systems.

One of the major requirements of the new **EPBD** is to set Energy Certificates for buildings which grade the energy efficiency based on the building annual energy consumption. Soon companies will have to display their energy certificates to the public.



## The experience & commitment of the European leader to drive continuous energy savings

As a major player in the European HVAC market, Lennox is a reference in sustainable development and has been assembling its products in **ISO-14001** certified factories since 2007.

┌ *eComfort* Label illustrates our commitment towards energy efficient and environmentally friendly solutions. ─

Lennox contribution to **combat rising energy costs and global** warming is to design innovative, efficient and dependable products, while providing best comfort and air quality.

With new eComfort, product lines such as **FLEXY EC**, Lennox supports its customers in tackling environmental issues and global energy efficiency in buildings.



## FLEXY EC the Best Life Cycle Cost in the market

For more than 10 years **FLEXY** has been the reference in terms of sustainable energy efficiency and performance.

┌ *FLEXY EC* provides the best life cycle cost thanks to high energy efficiency and reduced set up time and maintenance costs. ─



### Low energy consumption

- ┌ For a packaged air conditioner, 90 % of the CO<sub>2</sub> emissions are indirect emissions caused by the energy consumption.
- ┌ 35 % energy savings with **FLEXY EC** when compared to a standard rooftop installed on a typical retail building.



### Reduced maintenance costs

- ┌ Factory tested packaged system.
- ┌ **eDrive** zero maintenance ventilation system.
- ┌ **CLIMATIC** with remote management and supervision through GPRS Adalink service.



### Better recycling management

- ┌ ISO 14001 certified since 2007.
- ┌ Light weight aluminium casing 100 % recycled.
- ┌ R410A reduces refrigerant charge and material usage (copper, aluminium...)



**LENNOX**  
*Innovation never felt so good.*<sup>®</sup>

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