



Advanced Rooftop FLEXY™ II

The packaged Air Handling Unit solution



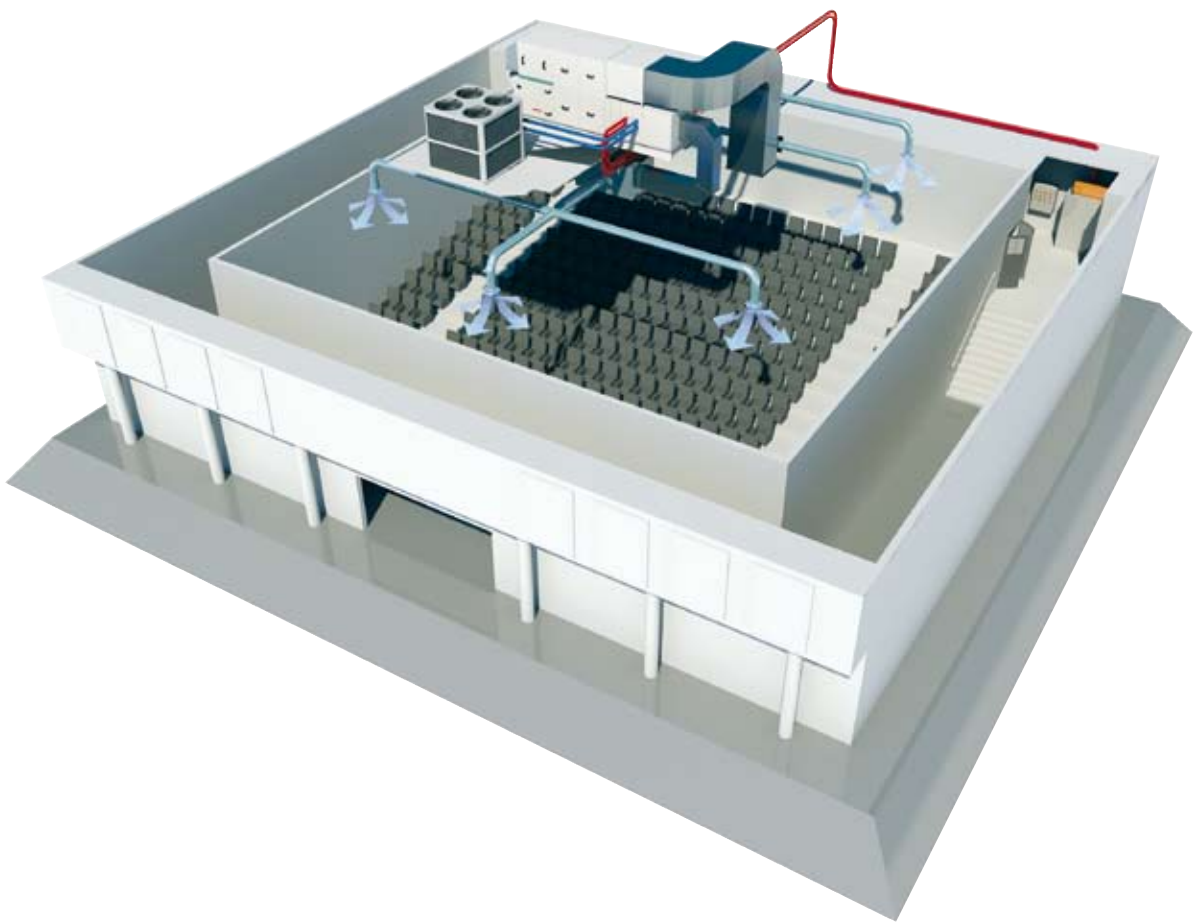
- **Providing indoor climate comfort**



We have the solution

• We help you to choose the easiest system:

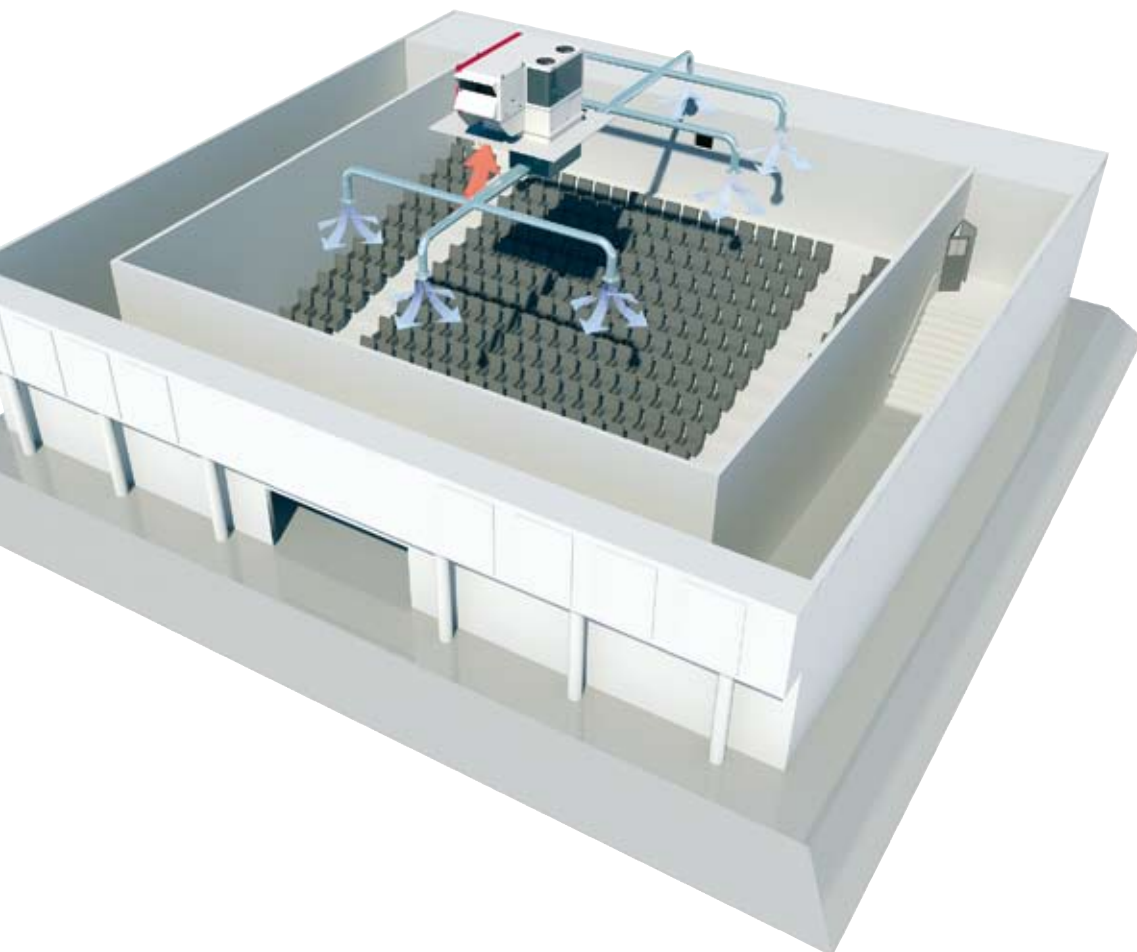
- Whatever the nature of the building to air-condition, Lennox proposes optimized and homogeneous systems to you ensuring an easy response to your problems.
- The choice of a solution depends on many criteria, for this reason Lennox proposes this guide intended to you to help you to choose one of the main components of the system.
- The technical choice of the air-condition system, is today very wide but some solutions are more easy to put in place than others



● The LENNOX solution: packaged, compact and easy

Compared to a standard solution with the system Chiller/AHU (including additional components such as, control, piping, and boiler), The Lennox Rooftop solution propose a packaged, compact and easy solution:

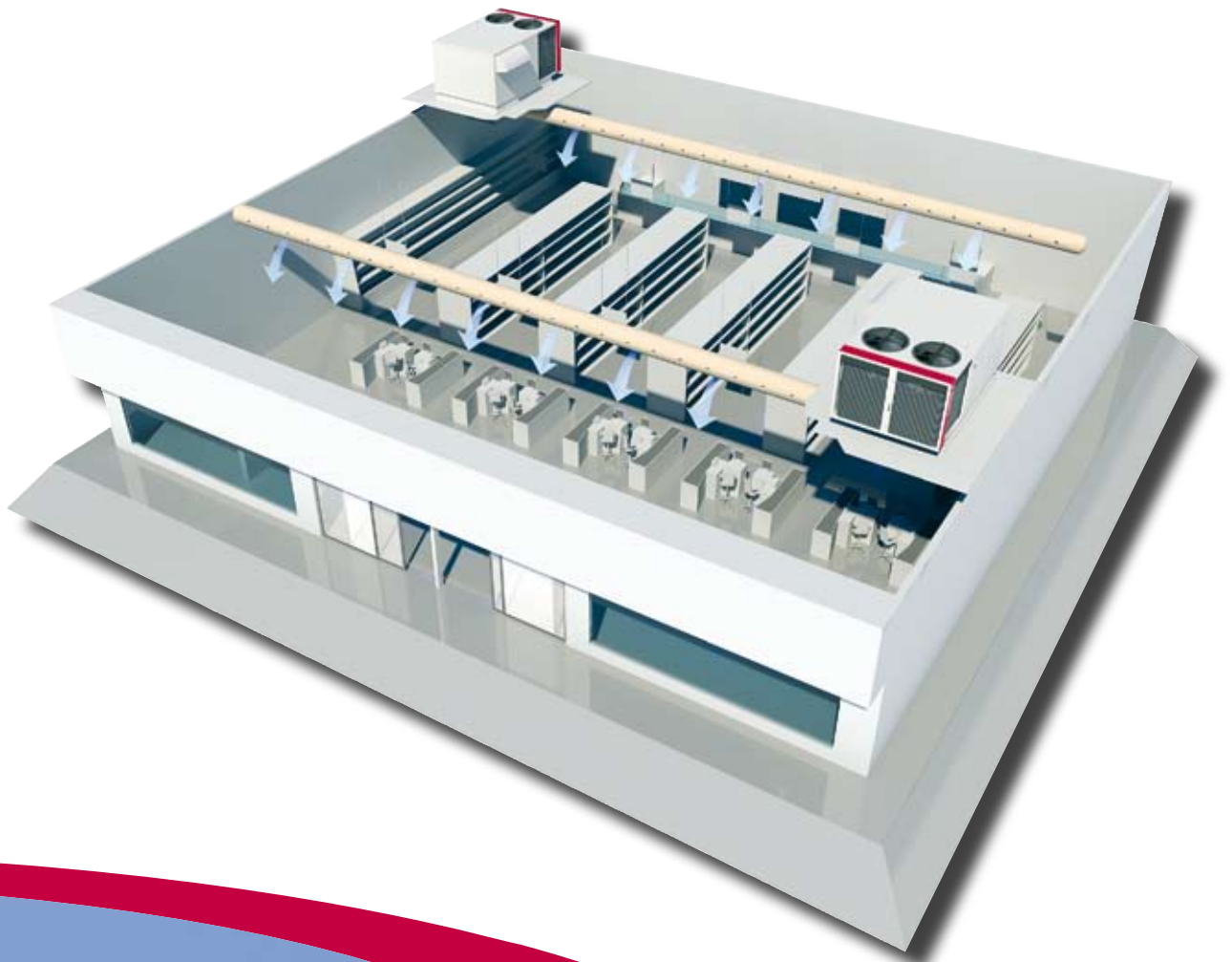
- Only one product
- **A cost effective solution:** the installation of the FLEXY™ is in general 30% less expensive, due to the monobloc and plug and play design.
- **An optimized solution:** all the components are designed to work together
- The full system is factory tested; the components are factory assembled and tested
- **Simple installation and servicing:** after positioning the unit it is ready to be connected to the ducts.
- **Quality of the installation:** the package is made from weatherproof materials which, together with its appealing design and minimum environmental impact, make the unit perfectly suitable for any installation location.
- **Only one contact for all the system:** Lennox take the entire responsibility of the system. Lennox Service engineers do the commissioning of the units.
- **Light weight of installation:** the monobloc design and the single exchange bring compactness and lightness.



In numerous case of application Lennox Rooftops

• Retail / Airports:

- Easy installation
- All in one product
- Patented fresh air management control
- Multiple heating options "Heat pump, Gas, Hot water"
- Heat recovery module
- Wireless solutions
- ADALINK™ monitoring system
- Perfect for retrofit



can replace AHU:

• Offices:

- Management of fresh air for terminals units (chilled beam, fan coils)
- Heat recovery module
- High COP solution
- High AESP up to 600 Pa
- Plug and play
- Foot print
- Integrated IAQ system



• Industry Comfort / Logistic centre:

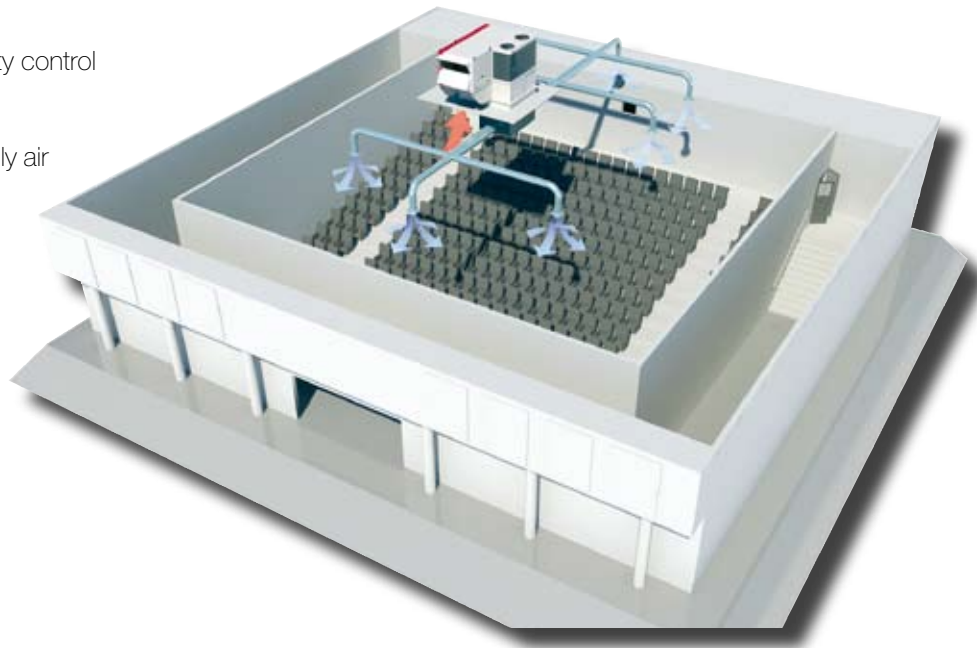
- Management of fresh air
- Autonomous units by area
- End User friendly display
- Average temperature control
- Plug and play
- Easy installation
- Temperature control down to 17°C



In numerous case of application Lennox Rooftops can replace AHU:

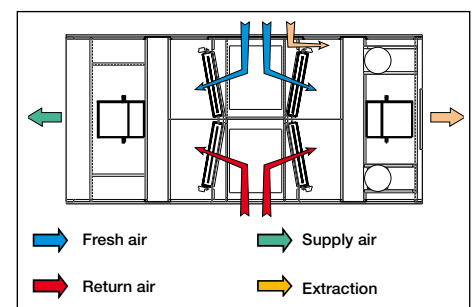
• Cinema / Theatre / Fitness centre:

- Management of fresh air by CO² air quality control
- Autonomous unit by screen
- Plug and play
- Patented modulating Gas burner for supply air control
- Air socks control
- Centrifugal extraction fan
- ADALINK™ monitoring system



In addition of the standard range, the FX “4 dampers” air to air heat pump are particularly intended for the heating and cooling facilities requiring variable quantity of fresh air which are building where the adaptation of the fresh air flow to the minimum requirement is a key saving factor.

FX principle sketch



• Fast Foods / Restaurants:

- Easy installation
 - All in one product
 - Perfect for retrofit
 - Possibility to use recuperation system from the kitchen air
 - Foot print
 - End User friendly display

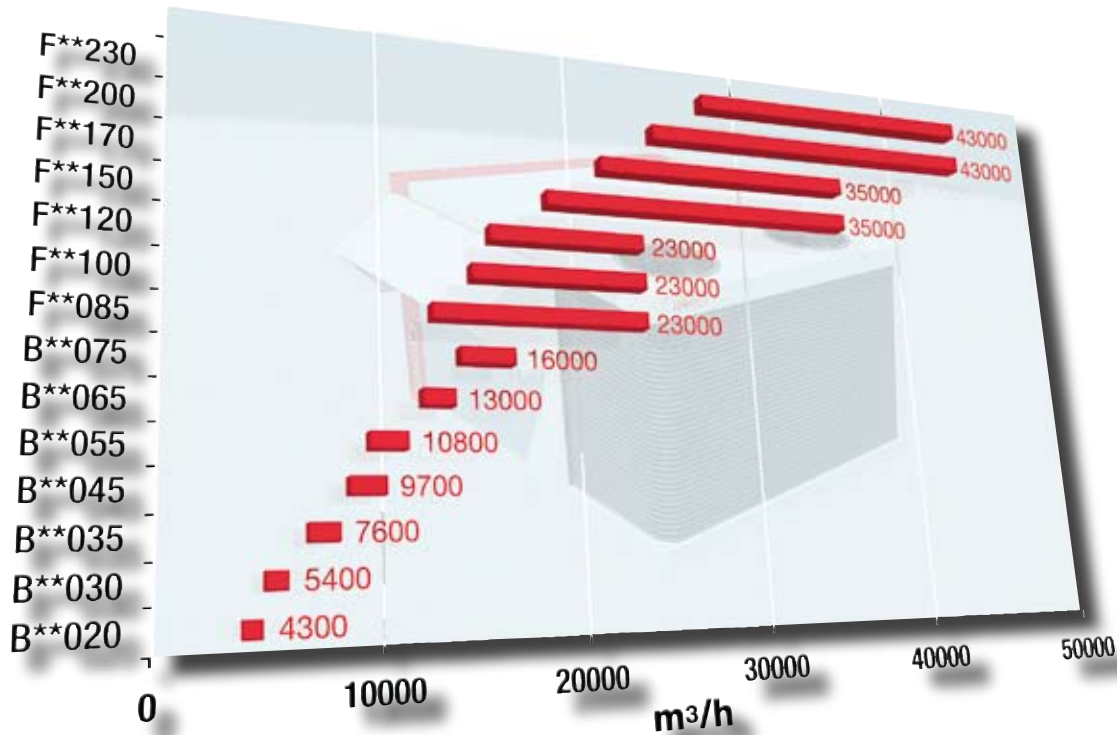


Our solution is flexible

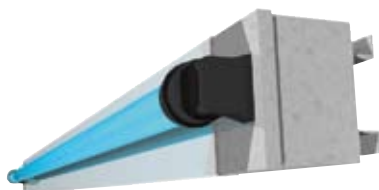


• The Lennox Rooftops have the same characteristics than the AHU:

- A wide range of air flow from 3600 to 43000 m³/h and cooling capacities from 20 to 230 kW



- Aluminium panels, **double skin**, 25 mm rockwool, M0, 65 m³/kg (no fibber in the duct, better insulation)
- Multiple choice of filtration level G3 to G4+F7
- **Removable drain pan in standard** (allows the easy cleaning to prevent bacteria development)
- Economiser with CO₂ sensor (improves air quality and oxygen level in the building)
- Numerous Indoor Air Quality options
- **Indoor Air Quality kit:**
 - F6 filter (remove small particles from the air)
 - UV lamps (kill viruses and bacteria in the air)
 - Cooling coil treatment (sustain same pressure drop across the coil and save energy)
 - Drain pan protection (prevent bacteria and mould development)



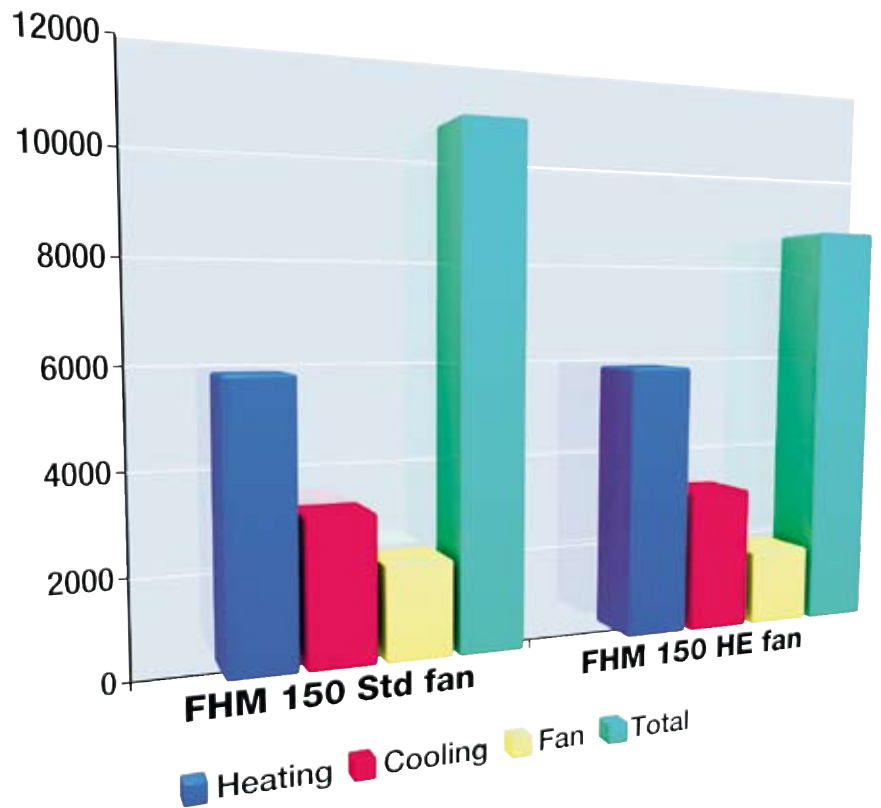
Environment and customer friendly

● Environment friendly solution

As a package unit, all the components are designed to reach the highest efficiency possible. In addition to that Lennox offers a large possibility of options, to increase the efficiency of the system.

- Free-cooling management: LENNOX patented a special fresh air calibration, to adjust exactly the fresh air percentage to heat/cool exactly the right amount needed and avoid unexpected fresh air .
- R410A for better efficiency, less refrigerant charge, less pressure drop for the supply fan.
- High efficiency EC Fans, it's means Electronically Commuted motor, the magnetic field is created by permanent magnets. The commutation is done electronically, so without any wearing. With this technology it's easy to have speed variation and the highest possible motor efficiency (90 %) in the whole range of speed. It's give the opportunity to manage the supply air flow with accuracy and have a minimum air flow in dead zone. Due the high efficiency of this type of fan and the air flow management in dead zone, this solution is able to create an average of 20% of saving on the energy consumption of the ventilation.

**20%
saving**



- Recovery system option: Lennox Rooftops are able to offer recovery systems, Plate heat exchanger for the BALTIC™, recovery wheel for the FLEXY™ II.



- More and more, the environment impact of the outdoor units, Lennox has design the FLEXY™ II with the help of Design office. The result of this project is a very compact and a brand new design for this type of units.
- The FLEXY™ II offer also a low noise version, with a reduction of 3 dB(A) of the noise level, comparable to the lowest chiller noise level on the market.



-3 dB(A)

Intelligent controls for buildings

● In-house advanced control

In Addition, the FLEXY™ II is equipped with one of the most advanced control called the CLIMATIC™ 50. LENNOX use the latest hardware technology available on the market, enhanced with a 16 bit processor at 14 Mhz and a 2 Megabytes memory. We developed a software specially designed for rooftop applications, maximising the efficiency and performance of our units. CLIMATIC™ 50 has been designed to save energy and to extend the operational life of the FLEXY™ II product range.

The CLIMATIC™ 50 is able to offer in addition to the standard control of the unit:

- User friendly remote control
- Management of speed control of supply fan
- Advance capacity control
- Tandem compressor management for part load efficiency
- Alternate and dynamic defrost
- Accurate percentage of fresh air
- Communication protocol; Modbus, LON, BACnet ...
- Humidity control
- Default management and storage
- Wireless applications (Picture)
- Remote Monitoring system ADALINK™



● Zonelink™

- **ZONELINK™** configures constant volume single zone HVAC equipment and a series of dampers to maintain the desired temperature for up to 10 separate zones per rooftop unit (RTU). Each zone is capable of having an adjustable set point, a programmable time-of-day schedule for each day of the week, and an independent unoccupied override input. The system meets the space temperature set points by first reading the space temperature deviation from set point for each zone, and then energizing the heating or cooling in the HVAC unit and controlling the position of a supply damper ducted to each zone. Individual **ZONELINK™** dampers open and close based on the zone temperature compared with the set point and the temperature of the RTU discharge air (heating or cooling).

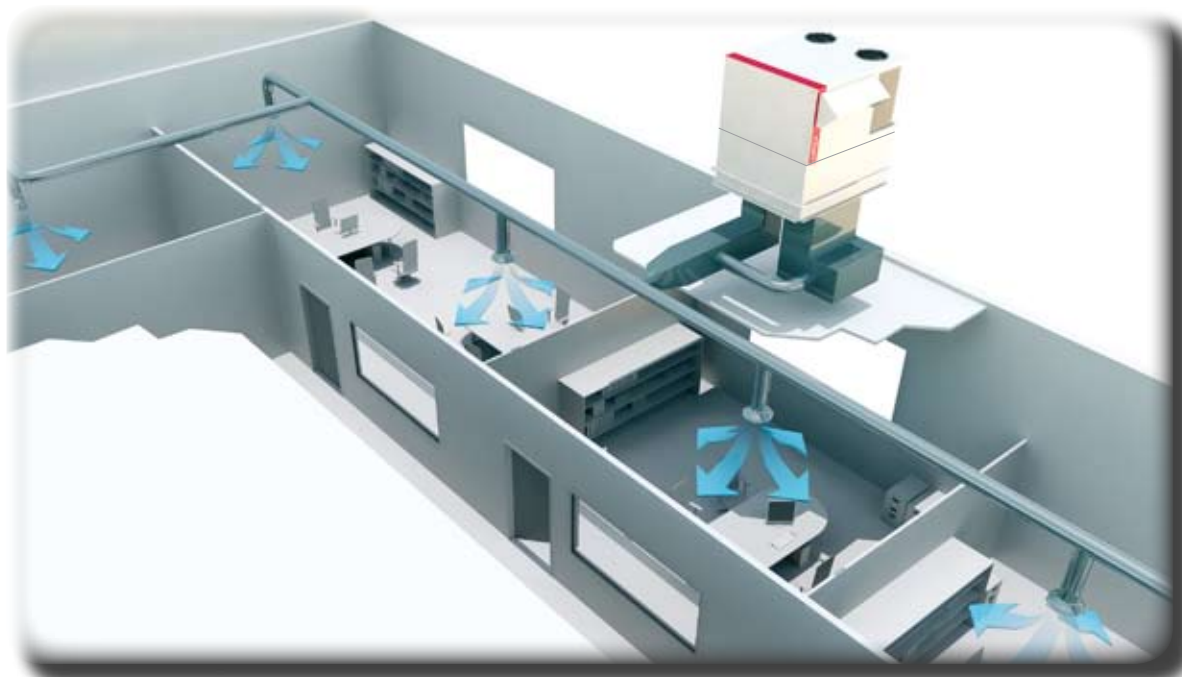
- **ZONELINK™** controls the static pressures in the supply duct by actuating a bypass damper that channels air from the supply duct directly into the return air duct or return air plenum. When static pressure increases above the adjustable set point (due to the closing of individual zone dampers), the bypass damper opens to re-route the supply air and decrease the static pressure.

- **ZONELINK™** can be used in a variety of buildings. The most common use of the system is for buildings where a constant volume HVAC unit is applied to maintain temperature in various areas, each with different load conditions.

Providing indoor climate comfort



- **ZONELINK™** monitors zone space temperature deviation from set point for zones 1 to 10 and, depending on the total demand from the zones, energizes heating or cooling. Individual dampers modulate open or closed to allow more or less of the conditioned air into the space. For example, if a particular zone requires heating and the unit is in the cooling mode, the zone damper modulates closed (or to its minimum position) depending on the space conditions or how the system is configured. When the minimum time in mode expires, the unit changes over to heating and satisfies any and all zones needing heat. ZONELINK™ sets minimum on, off and interstage time delays to ensure equipment protection.



• We help you to choose the right solution

L3C
life cycle cost
calculator

- The Life Cycle Cost Comparator is a unique software program developed by LENNOX Europe.
- Life Cycle Costs are Initial- (unit price and installing costs), Service- and Running costs.
- With the **L3C** program we are able to assist our customers in making the right choice of units and options required for a new project.
- This unique software program can be used during the development of a project; it is able to predict the running costs of the unit during its life cycle.
- The **L3C** program compares different Lennox units, in order to make the best decision. It assists the choice of optimum economical options in the units based on life cycle costs.
- For example, with our EC fan technology in the FLEXY™ II units you will have a return of investment within 18 months. That means you will save money after only 1½ years !
- Our sales engineers are more than willing to assist you in your choice based on the best suitable solution calculated by our **L3C** program.



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Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.

Installation and service must be performed by a qualified installer and servicing agency.