

Water systems



- Providing indoor climate comfort

HYDROLINK™*, the coherence of a water system

*Availability during 2008

• Only one interlocutor for all the control loop:

- Hydrolink is a system consisting of a chiller or a heat pump, fan coil units and complete controls including the management system.
- All the elements were developed to work together. This solution avoids the risks of discrepancy between the various elements of the loop.
- It obtains a perfectly configured system which requires only the connection of water and electrical connections.



• A centralized management:

- Control of changes over heat pump according to the request of the fan coil units.
- Visible alarms on the graphic interface, and also all the setting points.
- Various algorithms of the chiller control gives priority to comfort and energy saving.

• All advantages of a water system:

- The Hydrolink solution from LENNOX constitutes an ecological alternative to systems VRV and VRF. The use of water to transfer energy from refrigeration or heating reduces the costs of installation and maintenance compared to direct expansion systems with a refrigeration circuit.
 - The implementation of the Lennox system results in an economic installation. Additional options, in particular of user interface of the fan coils complete the system and make it the ideal solution for small offices or modular buildings.
 - Hydrolink offers a total flexibility to combine the fan coil units in order to fulfill the requirements of your application.



● Energy saving control:

- An adaptation of the water range of the chiller according to the load
- A centralization of the standard periods/Economy
- A centralized management of the power consumption

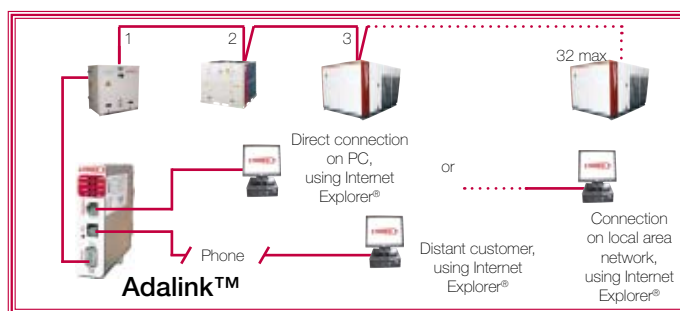
● An individual comfort:

- Hydrolink proposes several types of user interface for fan coils; Wall mounted, integrated in the unit.
- Each zone or terminal is controlled by an individual user interface.



ADALINK™*

ADALINK™ is the LENNOX solution for HVAC installation monitoring. It can control up to 32 units on the same site. Real gateway to the unit, **ADALINK™** can be used locally, via LAN network or directly plugged. It can also be used remotely via an internal modem. **ADALINK™** can be connect to different units of the Lennox range, rooftops and chillers **ECOLEAN™**, **NEOSYS™**, **HYDROLEAN™**.



ADALINK™ can show the whole site map showing status of the different units, zoom on each unit and allow the user to graphically change set point, access alarm list, look at trend curves. It is the ideal tools for maintenance specialist with an expert mode giving access to all the parameters and set point of the unit. Finally, yearly scheduling is possible with a very smart and user-friendly drag and drop system.

LENNOXVISION™

LENNOX presents **LennoxVision™**, a new solution for supervision and telemaintenance. It can be connected to all the Lennox units and external components up to 750. Real BMS system you gives you access to the variables of all the units and carries out monitoring, scheduling and energy management. The **LennoxVision™** software gives you access to different pages in order to fully manage the different units on the site; unit page, service, alarm, curves and scheduling pages. The system includes remote connection via modem (options), communication with other BMS, management of alert messages by SMS or Email and lighting management.

LennoxVision™ can be used as a local system with mouse, keyboard and monitor, or as a monitoring system with access from a remote workstation via modem or network. **LennoxVision™** includes a complete pre-configured version of software running on dedicated hardware, and features all the communication ports required to best exploit its Web Server and installation supervision functions



HYDROLEAN™, Water/water chiller and heat-pump

● Unmatched low noise Solution

$L_p < 45 \text{ dB(A)}^*$

Lennox water-cooled chillers are the ideal solution when there are severe noise constraints. When packaged with dry-coolers or air-cooled condensers with very low speed fan, HYDROLEAN can offer unbeatable low-noise level solution vs. air-cooled chillers. The HYDROLEAN has been designed with a sound proofing compressor casing and is available with compressor jackets. The independent compressor chassis mounted with anti-vibration mounts associated with orbital movement of scroll compressors generates low vibrations and thus low noise to the unit.

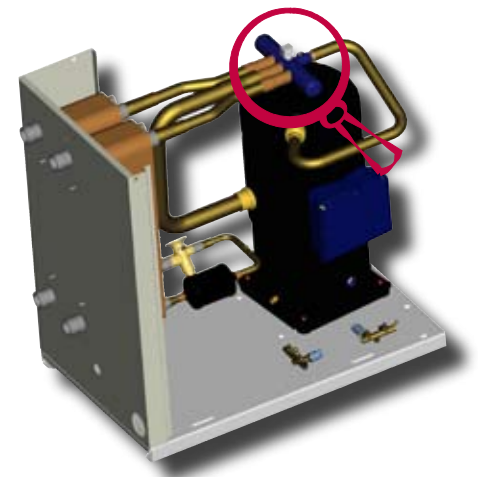
* Outdoor sound pressure level at 10 m. Dry-cooler with 430 or 320 rpm low speed fans.



● A true thermodynamic Heat-Pump up to 180 kW

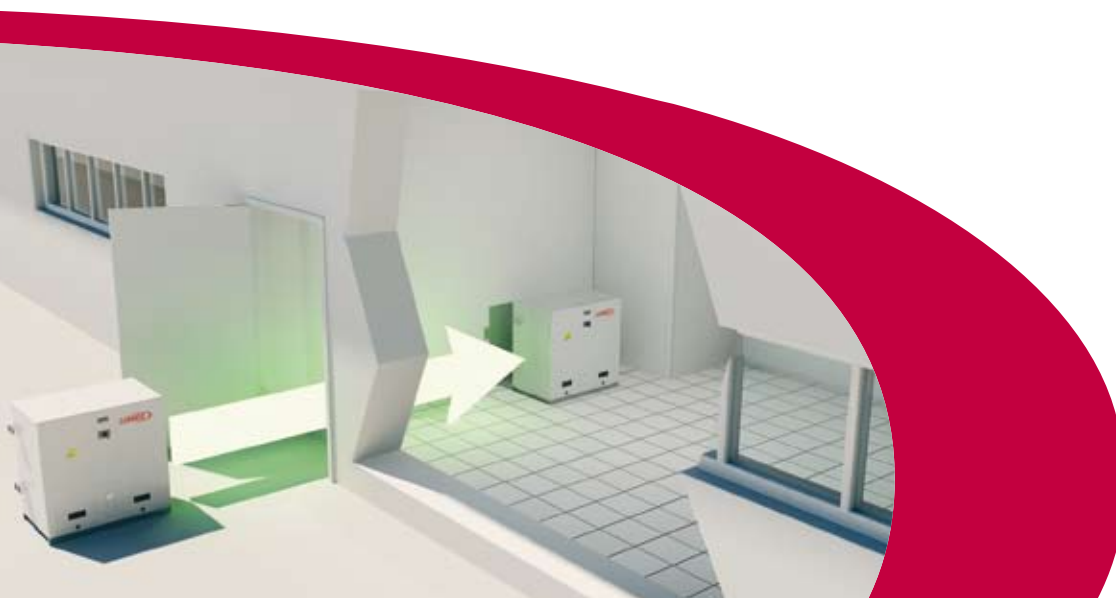
HYDROLEAN can be used as a geothermal heat-pump in heating mode only (SWC version).

HYDROLEAN is also available as a reversible heat-pump to heat and cool. No need for complex hydraulic installation to switch water flow circuits to operate in heating mode. HYDROLEAN is fitted with a built-in four-way valve (SWH version).



● A unit designed for indoor installation

The reduced dimensions of the HYDROLEAN range make it easy to install into a technical room in any situation. A height of just 1705 mm and a width of just 645 mm is sufficient for a cooling capacity of 165 kW. This makes HYDROLEAN the most compact unit on the market. You need more space? Two HYDROLEAN units can be mounted on top of each other. The chiller footprint in the plant room area is reduced, freeing up space for other equipment and maintenance.

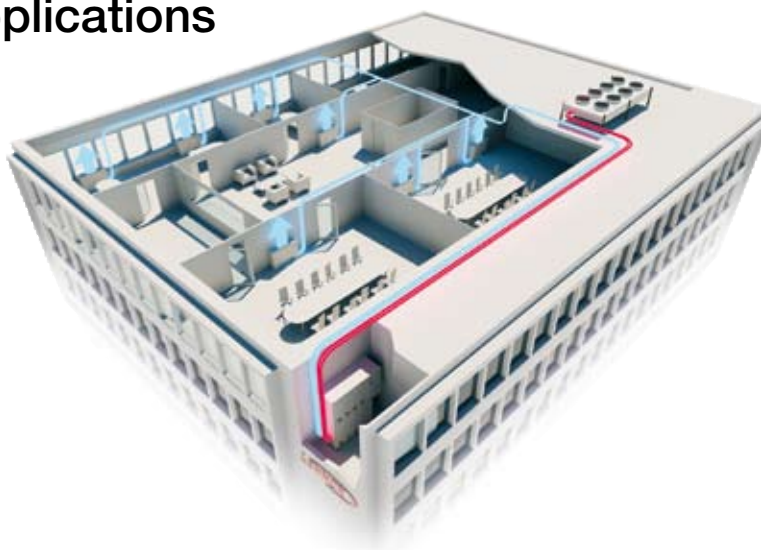


0,86 m²
=
180 kW

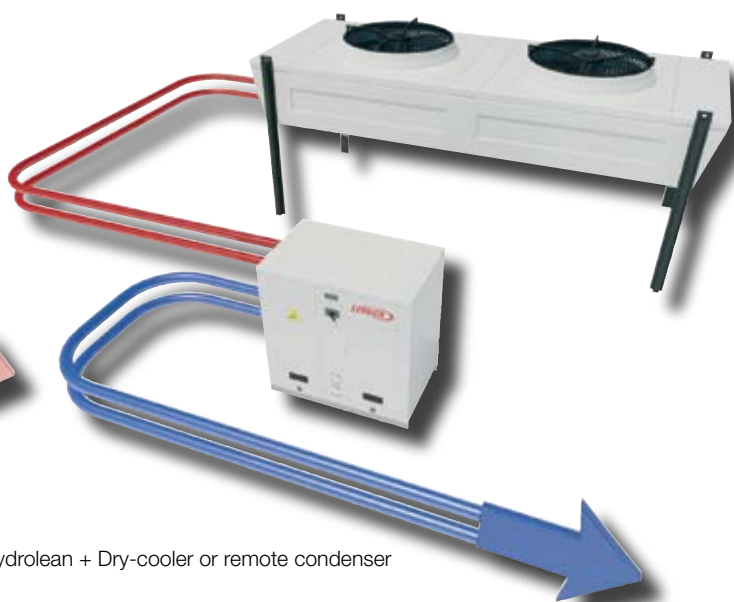
● **A wide range of applications**

HYDROLEAN is available in many versions to suit various applications:

- Cooling or heating only unit (SWC version)
- Remote condenser (SWR version)
- True thermodynamic heat-pump (SWH version)



Geothermal heatpump



Hydrolean + Dry-cooler or remote condenser

● **Eurovent certified performances: the best guarantee for peace-of-mind**



Both the HYDROLEAN chilled water units and LFC dry-coolers are Eurovent certified. Our customers can verify the conformance between test results and data published by Lennox. Eurovent certification is an important guarantee for consultants and installers. They can be sure that our product will operate in conformance with the specifications and satisfy customer requirements.



ECOLEAN™, Air to water chiller and heat-pump

- The most compact unit on the market

5,2 m²
=
180 kW

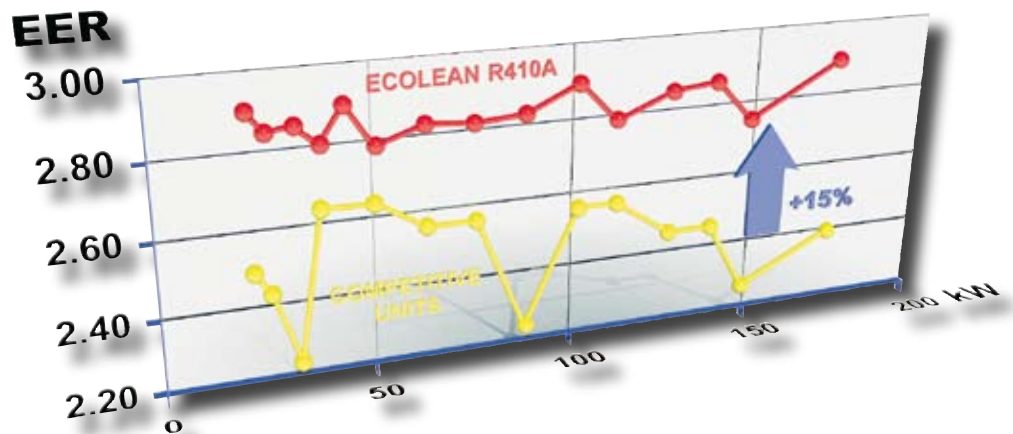
Its compactness makes it the perfect solution for outdoor installation on the roof or inside buildings, freeing space for other equipment and maintenance. When benchmarking versus competition, the ECOLEAN liquid chiller range offers between 30% and 60% less surface than competition. A footprint of just 5,2 m² is sufficient for a cooling and heating capacity of 180 kW. This makes ECOLEAN the most compact unit on the market.



- Unmatched energy efficiency thanks to R410A

Starting with packaged roof-top units, Lennox has decided to use the non-ozone-depleting chlorine-free refrigerant R410A. For the first time in its ECOLEAN chiller and heat-pump commercial range, Lennox is now using R410A. This refrigerant is now becoming established and is showing particularly efficient thermodynamic properties.

+15%



The cooling efficiency of our ECOLEAN range is now 2,8 EER which is 15% above our competition that is still using R407C in that capacity range. With R410A the ECOLEAN chillers and heat-pumps offer reduced power consumption at all load -not just full load- (ESSER* up to 4) contributing to a reduction in the electricity bill and a reduction in the global warming effect caused by CO₂ emission during electricity production.

*ESEER: European Seasonal Energy Efficiency Ratio – Refer to the Eurovent web site to get ESEER values.



● Silent operation

The ECOLEAN keeps the noise level at a strict minimum. The use of R410A scroll compressors allows a pulsation-free operation. Additional compressor noise insulation by sound-proofing jackets, 2 speed fan* with low speed activation during night or unoccupied period have contributed to achieve very low sound level.

*From EAC/R 251-812, proportional fan speed regulation. From EAC/R 1003 to1804, 2-speed fan regulation



● Ready to start

ECOLEAN is the solution to minimize extra job on work sites. With the integrated pump(s) and built-in buffer tank ECOLEAN offers stable water outlet temperature and avoids continuous start and stop of the unit. Thanks to the built-in buffer tank, ECOLEAN heat-pumps can be factory fitted with supplementary buffer tank electric heaters to match all heating requirements.



Pump + buffer tank with electric heaters

NEOSYS™, Air to water chiller and heat-pump

- Flat top and low profile for best architectural integration

The NEOSYS™ design is minded to be perfectly integrated into urban or residential environments.

The state of the art design of NEOSYS™ includes a painted casing with rounded side panels, a flat top that hides the fans, aesthetic protection grilles.

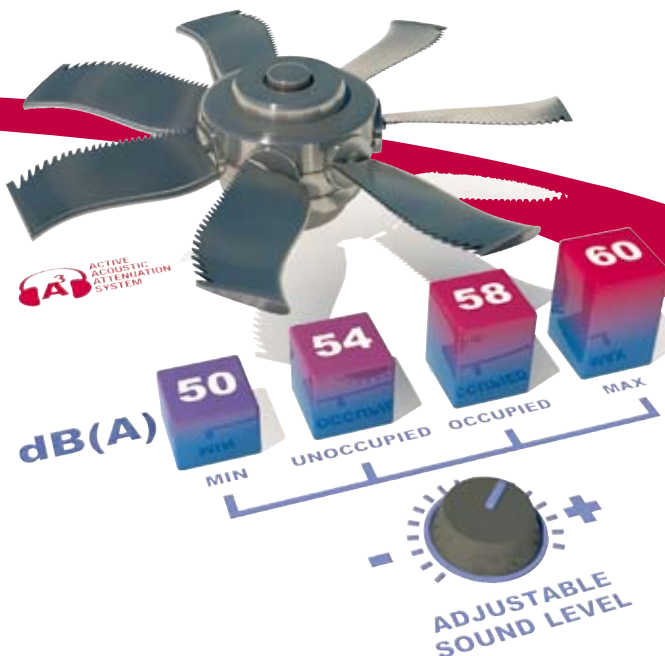
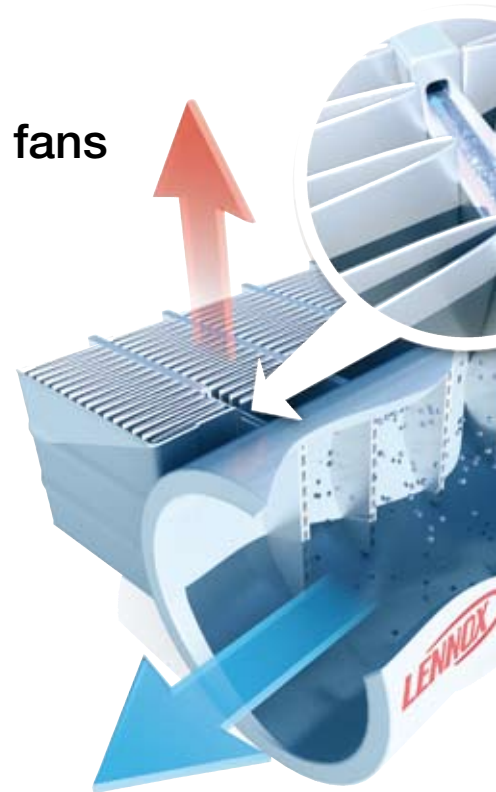
The very low unit height less than two meters makes easier for architects and design engineers to integrate the unit on a roof. Many interviewed customers confirm that the state of the art design of NEOSYS™ will replace any requirement of costly cladding solutions around the unit.



- Smarts acoustics with variable speed driven fans

No more need to make a choice between a high efficiency version, a low noise or an ultra low noise version. NEOSYS™ can adapt all situations with only one version. NEOSYS™ is fitted in standard with the Active Acoustic Attenuation System™ that is using an electronic control associated with variable speed fans. NEOSYS™ can change automatically the speed of all the fans – from 0% to 100% of the nominal air flow – to meet the building load requirements while respecting maximum authorised noise level in the time zone.

NEOSYS™ is surely achieving the best acoustic signature of the market thanks to the latest generation of shark high performance aluminium fan blades and noiseless ceramic bearings.



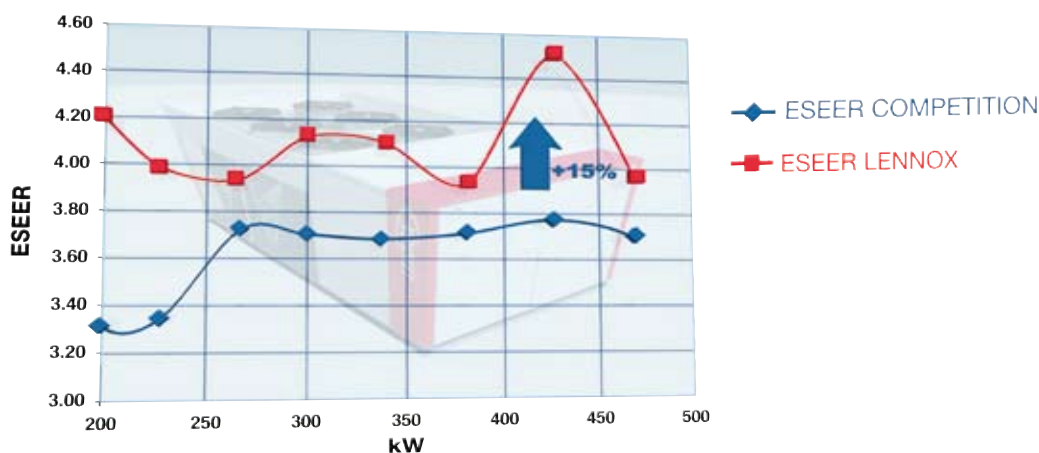
Start-up and service performance

NEOSYS™ is pre-factory fitted in standard with protection grilles, a complete hydraulic module that includes low pressure or high pressure single or twin pumps, a regulating valve, Victaulic couplings, filter and all necessary hydraulic devices. Our customers just need to connect the water piping and the power supply and turn on the main switch. NEOSYS™ design includes an air spring powered Butterfly™ Electrical Panel with top opening minded to provide protection to service engineers against rain or snow during commissioning and maintenance operations.



High energy performances

By using R410A refrigerant associated with high efficiency micro channel coils and variable speed fans NEOSYS™ is contributing to a very low energy consumption all year around with an average energy efficiency ratio (ESEER)* in cooling mode above 4,0. NEOSYS™ Heat-pumps are also achieving very high performances in cooling and heating mode (COP* up to 3,2).



Sustainable performances

NEOSYS™ has been through extended qualification tests (vibration tests, run tests, field tests) to ensure superior reliability.



Quality makes the difference*

Our choice is to use only reputable components. First of all, the latest Copeland scroll-compliant compressors are well-known for their solidity thanks to both axial and radial compliance. NEOSYS™ is also using a specific and exclusive fan motor design with hybrid ceramic bearings to extend the service life of motors. Furthermore NEOSYS™ is making a particularly strong impact with the use of fully aluminium coils in cooling versions so that units can be installed in light corrosive or seacoast environments without any need for additional pre-treated fins or coil coating.

Trusting in its quality, LENNOX is offering a 3 year warranty* for free on these parts.

Inside, Lennox adapts to the architectural needs

LENNOX provides different types of terminal units to use with its chillers for comfort applications such as office buildings, shops, hotels, hospitals and light commercial air conditioning.

● Vertical wall mounted or Horizontal ceiling mounted

- The Vertical wall mounted or Horizontal ceiling mounted - HC fan coils with or without cabinet, with a modern sober design allows an easy integration.
- An economic and flexible solution, with easy installation.



● Hi Wall



- The hi wall fan coils - HD, are the perfect solution for a hotel application.
- A quality system at a good price
- Easy aesthetic integration
- An optimized air diffusion and individual comfort (Remote control IR).

● Cassette Fan coil

- The cassette fan coils - CWC, for the applications where space is limited. Discrete and flexible, this unit is integrated with all the interior decorations.
- For fan coil cassettes Lennox offers the possibility of 2 diffuser's: a plastic diffuser and a metal diffuser for coanda purpose.
- A design particularly suited for commercial areas, restaurants, or "Open Space" offices.



● Coanda diffusion cassette

- The coanda cassette CoandAir fits perfectly into false ceiling, due to his perfect aesthetics, very low noise level and modular dimensions (600x600 or 600x1200 mm)
- The coanda nozzle allows a perfect homogenization of the air stream and temperature.



Coanda effect



● Ductable fan coils

- Ductable fan coils with pressure available - QMLC, their flexibility and their low noise level make it possible to obtain a space free interior of very forced aesthetic and acoustic.
- The positioning of the fan coils in corridors offers an optimum solution for comfort, acoustics, regulation and maintenance.
- This unit creates a pleasant and comfortable environment in many types of applications like hotels, offices and stores.



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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.