eNeRGy

High efficiency packaged air treatment unit

Application guide

LENNOX participates in the ECP programme for RT.
Check ongoing validity of certificate :
www.eurovent-certification.com

eNeRGy-AGU-2020.11-EN

eNeRGy

APPLICATION GUIDE

Ref : eNeRGy-AGU-2020.11-EN

ECODESIGN INFORMATION	**2**
GENERAL DESCRIPTION	**4**
OPTIONS	**13**
GENERAL DATA	**19**
ACCESSORIES PRESSURE DROPS	**28**
HEAT RECOVERY SOLUTIONS PERFORMANCES	
Thermodynamic heat recovery	**30**
eRecovery	**31**
Hot / Cold water coils	**33**
ELECTRICAL HEATERS AND ELECTRICAL PRE-HEATERS	**39**
GAS BURNER PERFORMANCES	**41**
ELECTRICAL DATA	**42**
DIMENSIONAL DATA	**45**

Our company's products comply with European standards*

LENNOX participates in the ECP programme for RT. Check ongoing validity of certificate : www.eurovent-certification.com

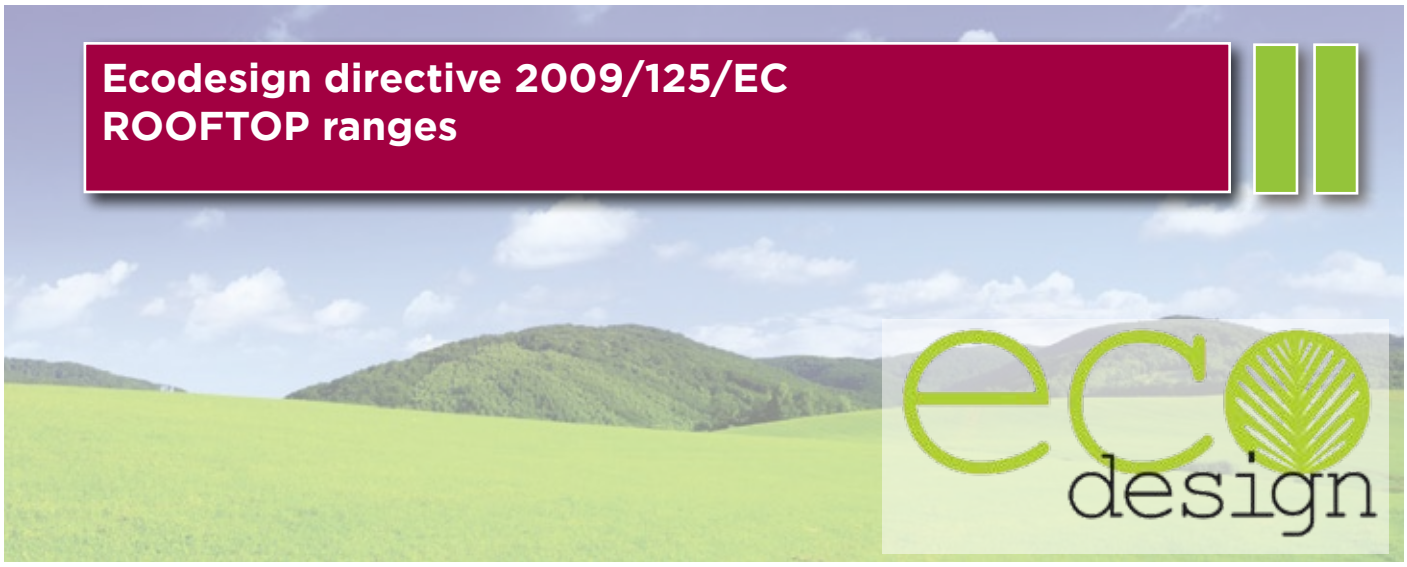
Product designed and manufactured under :
- Quality management system : **ISO 9001**
- Environmental management system : **ISO 14001**.
- Occupational health and safety management systems : **OHSAS 18001**

All the technical and technological information contained in this manual, including any drawing and technical descriptions provided by us, remain the property of Lennox and must not be utilised (except in the operation of this product), reproduced, issued to or made available to third parties without the prior written agreement of Lennox.

The specifications and technical characteristics in this booklet are given for information purposes. The manufacturer reserves the right to modify them without prior notice or obligation to modify in a similar manner, the equipments previously supplied.

* For out of EEC countries, non CE marked, and non EUROVENT certified units are available on request, please consult us.

Ecodesign directive 2009/125/EC
ROOFTOP ranges



1st January 2017

Ecodesign: origins & perspectives

- KYOTO (1997), COP21 (Paris 2015) and COP 22 (Marrackech 2016) define the targets to restrict the global warming to 1,5°C.
- Ecodesign directive 2009/125/EC define a framework for all energy-consuming equipments. It is mandatory for all products sold and used in European Union.
- The regulations resulting from Ecodesign define, for each product family, minimum efficiencies to achieve in 2 steps.

Rules

The regulation ensue from Ecodesign are mandatory to apply, even if the local governments don't implement them into national regulations or decrees:

- **Electric motors EC 640/2009:**
  1st tier: 16th june 2011 . . . . . motors IE2
  2nd tier: 1st january 2015 . . . motors IE3 if P>7.5 kW
  3rd tier: 1st january 2017 . . . moteurs IE3
- **Fans EU 327/2011:**
  1st tier: 1st january 2013
  2nd tier: 1st january 2015
- **Air conditioners (P<12kW) and comfort fans EU 206/2012:**
  1st tier: 1st january 2013
  2nd tier: 1st january 2014
- **Ventilation units EU 1253/2014:**
  1st tier: 1st january 2016
  2nd tier: 1st january 2018
- **Space heaters and combination heaters EU 813/2013:**
  1st tier: 26th september 2015
  2nd tier: 26th september 2017
- **Low temperature process chillers and condensing units EU 2015/1095 (dedicated to industrial application and/or refrigeration):**
  1st tier: 1st July 2016
  2nd tier: 1st january 2018
- **Air heating products, cooling products high temperature process chillers and fan coil units EU 2016/2281:**
  1st tier: 1st July 2018
  2nd tier: 1st january 2021

The following directive are not connected to Ecodesign, but they are also directives and European regulations:

- F gaz (517/2014/EU) Fluorinated greenhouse gases used,
- DESP (2014/68/EU) for pressure equipment,
- DEEE (2012/19/EU) for waste electrical and electronic equipment,
- Machinery directive (2006/42/EC),
- Low voltage directive (2014/35/EU),
- Electromagnetic compatibility (2014/30/EU)....

Rules EU 2016/2281

Which ROOFTOP range products are concerned by regulation EU 2016/2281 ?

Are concerned since 1st January 2018:

- **All the air to air rooftop units,**
- **All the water to air rooftop units**

Are not concerned:

- The units sold without condenser

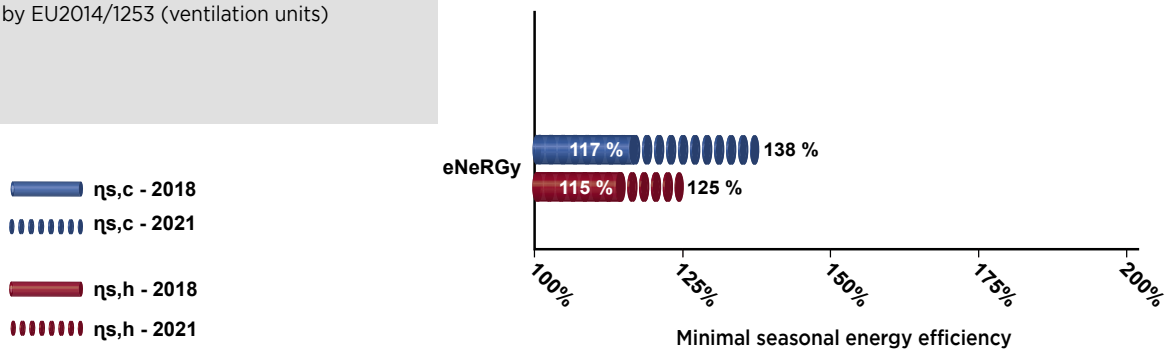
The units equipped with « gas burner » option are not considered as “warm air heaters using fuels” but only as “rooftop air conditioners” or “rooftop heat pumps”.

It means that:

The minimum performances to achieve are summed up in the following graph:

ENERGY without condenser

Range concerned by EU2014/1253 (ventilation units)



A new document

From the 1st of January 2018, each unit is delivered with a datasheet as defined in EU 2281/2016.

Nominal capacity

Seasonal efficiency

Sound power level Outdoor/Indoor

Model(s):	
Outdoor side heat exchanger of heat pump:	
Indoor side heat exchanger of heat pump:	
Indication if the heater is equipped with a supplementary heater	
If applicable: driver of compressor	

Item	Symbol	Item	Symbol
Rated heating capacity (*)	$P_{rated,h}$	Seasonal space heating energy efficiency	η_s
Declared heating capacity for part load at indoor temperature 20°C and outdoor tei		Declared coefficient of performance or gas utilisation efficiency/auxiliary energy fa temperature Tj	
Tj = – 7 °C	Pdh	Tj = – 7 °C	COPd
Tj = + 2 °C	Pdh	Tj = + 2 °C	COPd
Tj = + 7 °C	Pdh	Tj = + 7 °C	COPd
Tj = + 12 °C	Pdh	Tj = + 12 °C	COPd
T_{biv} = bivalente temperature ºC	Pdh	T_{biv} = bivalente temperature ºC	COPd
T_{OL} = opeation limit °C	Pdh	T_{OL} = opeation limit °C	COPd
For air-to-water heat pumps: Tj = – 15 °C (si TOL < – 20 °C)	Pdh	For air-to-water heat pumps: Tj = – 15 °C (si TOL < – 20 °C)	COPd
Bivalent temperature	Tbiv	For water-to-air heat pumps: Operation limit temeprature	T_{OL}
Degration coefficent heat pumps (**)	Cdh		
Power consumption in modes other than "active r		Supplementary heater	
Off mode	P_{OFF}	Back up heating capcity (*)	elbu
Thermostat-off mode	P_{TO}	Type of enerrgy input	
Crankcase heater mode	P_{CK}	Stanby mode	P_{SB}
Other items			
Capacity control		For air-to-air heat pumps: air flow rate, outdoor measured	
Sound power level indoor/outdoor measured	L_{WA}	For water/brine-to-air heat pumps: Rated brine or water flow rate, outdoor side heat exchanger	
Emission of nitrogen oxides (if applicable)	NOx(***) input GCV		
GWP of the refrigerant	GWP_{CO_2}		
Contact details			

MODEL NUMBER DESCRIPTION

EXAMPLE :

E 0 1 4 A H 8 5 F

- **E** eNeRGy
- Airflow x 1000 m^3/h
- **A** Air cooled condensation
- **H** Heat pump
- **N** No condensing unit
- Cooling capacity in kW
- **F** Standard scroll compressor

eNeRGy

KEY FEATURES

eNeRGy range constitutes a plug and play packaged solution, easy to deliver and quick to install on the roof.

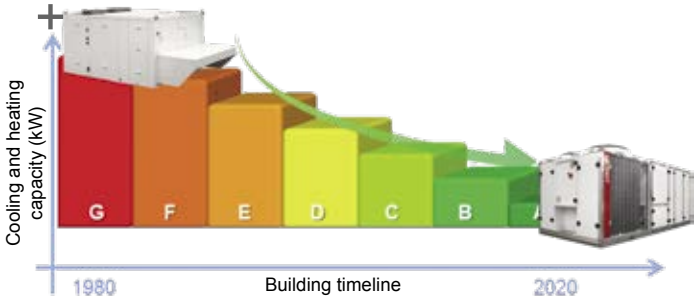
Lennox eNeRGy solution combines the highest efficiency in the market, together with the flexibility and adaptability of a packaged solution.

eNeRGy range has been designed to achieve Class A Efficiency. With this range Lennox offers a high efficiency, compliant with EcoDesign directive.

This new concept of unit, with an inline design, has been designed to meet the requirements of the EPBD directive, as well as the Eco Design Directive.

Operating range shall be between 48°C and minus 12°C.

All units are factory assembled, internally wired, fully charged with refrigerant, and 100% run-tested before leaving the factory.



MODULARITY CONCEPT

Nowadays, buildings are taking advantage of the best construction techniques, and the different improvements in isolation and lighting technologies contribute to decrease the cooling or heating demands.

eNeRGy packaged units are fully adapted to this new trend and can offer different combinations of thermodynamic refrigerant circuits with the same indoor airflow, giving different cooling or heating capacities.

In this way, eNeRGy units adapt perfectly to the building needs and save energy in those applications that do not have so high demands of cooling or heating.

Indoor section will satisfy the main ventilation requirements, while the different capacity platforms will cover the exact cooling or heating needs.

The combination of the indoor unit together with different thermodynamic platforms, allows eNeRGy range to :

- Offer a stable air quality and airflow.
- Respect ventilation and filtration standards.
- Adapt to the exact cooling and heating requirements of the building.
- Contribute to save energy.

INDOOR AIR QUALITY

Filters

All Lennox products have the indoor air quality as a priority, and eNeRGy is specifically designed to ensure the best indoor standards. That is is why eNeRGy range offers high filtration levels for all the range, ensuring the minimum pressure drop in all the cases. eNeRGy is fitted with G4 filters as standard and can offer as well two higher levels of filtration as an option :

- G4+F7 filter option / efficiency > 85% / ePM1
- G4+F7+F9 filter option / efficiency > 95% / ePM1

Free cooling

Buildings that comply with new thermal regulations have better insulation and require more cooling even when outside temperature is low. The thermodynamic cooling through compressors can be replaced by the freecooling,which introduces outdoor cold air into the building, saving energy. The air intake damper is automatically calibrated to ensure that the % of fresh air is enough for cooling the installation, but not excessive, which could lead to energy wasting.

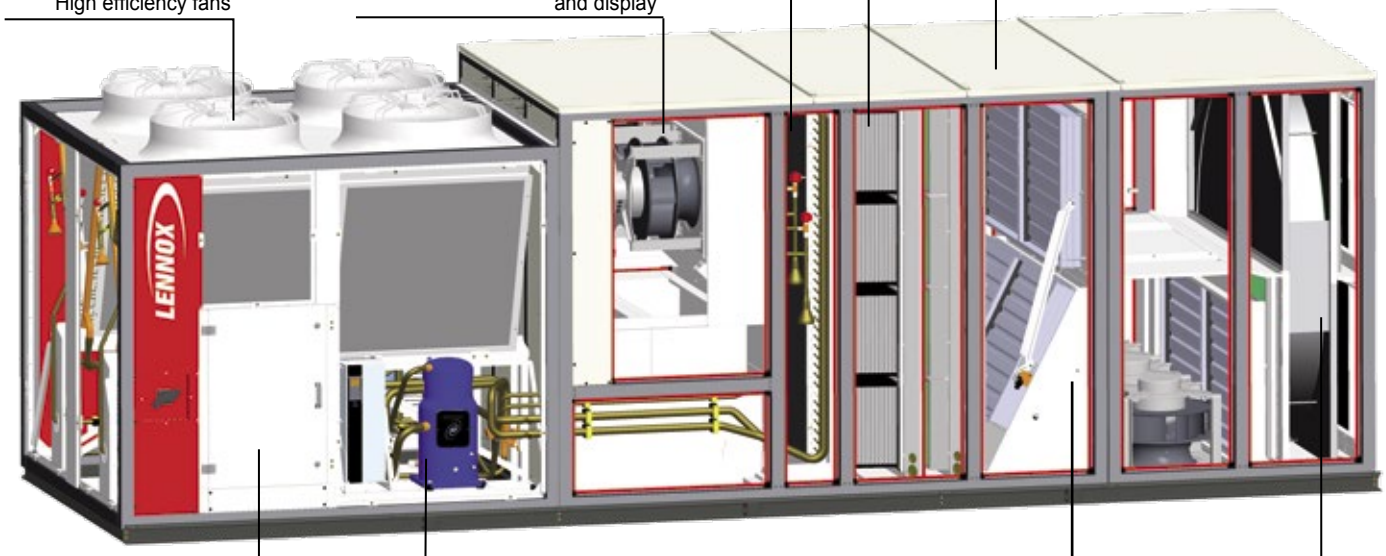
As an option, freecooling opening can be fitted with CO_2 sensors to ensure air renovation, and with an advanced control pack to control the enthalpy on top of the temperature.

HEAT RECOVERY SOLUTIONS

eNerGy range includes fully integrated modules to recover the energy from the installation. Regarding the extraction air, eNeRGy offers two energy recovery options :

- Rotary wheel
- Thermodynamic heat recovery circuit

Additionnaly, eNeRGy offers eRecovery option, to recover by the hot water coil, the energy released by refrigeration equipments on the roof, called eRecovery.



CASING

eNeRGy Indoor section is built in an aluminum structure with double skin panels mounted with a special locking system to reduce air leakages to the minimum.
Double skin doors, panels, corners and roof offer a double-wall construction with 50 mm Rockwool insulation to provide an increased thermal resistance versus current ranges.
With a fire class A2 s1 d0 (M0), this construction provides an increased thermal resistance (R=1, 43).

REFRIGERANT CIRCUIT

eNeRGy presents one of the highest efficiencies in the market.This is achieved by increasing up to 30 % the surface of the heat exchangers, using the multiscroll R410A compressor technology and having as standard electronic expansion valves.

HIGH SURFACE EXCHANGERS

Specially designed by Lennox for R410A operation, these copper tube and aluminium fins exchangers have been tested to give the best heat transfer and the highest seasonal efficiency of the market

MULTISCROLL COMPRESSOR TECHNOLOGY

eNeRGy units are provided with tandem compressors, to profit from the multiscroll compressor technology and give the highest seasonal performance and the best SEER/SCOP coefficients.

VARIABLE SPEED COMPRESSOR TECHNOLOGY

eNeRGy+ units are equipped with inverter compressors, to profit from full variable capacity load and provide high accuracy supply temperature.

ELECTRONIC EXPANSION VALVES

The new electronic expansion valves are directly driven by the eCLIMATIC and optimize the performances in both cooling and heating mode and provide reliable and accurate operation in all conditions all year round.

This model of electronic expansion valve ensures also smooth and precise control at low capacities for improved part load performances.

EC FANS

EC plug fan technology offers the maximum efficiency together with the minimum power consumption. That's why eNeRGy provides EC fans both in indoor and exhaust section.

For both supply and exhaust, the units can be configured up to 1000 Pa external static pressure (ESP).

This will help to answer requirements for applications with high pressure drop in the ductworks (long or complex ductworks when the unit is located far from the target area).

The EC plug-fan technology allows:

- Adapting airflow at commissioning
- Varying airflow during unit operation providing progressive inflation of smooth /textile ductworks
- Easy maintenance operations,as there is no belt and pulley regulation

eCLIMATIC profits about this EC technology by:

- Monitoring the airflow in the service terminal
- Compensating the airflow if the filters are dirty
- Regulating the airflow to arrive to the desired setpoint temperature
- Reducing the airflow to achieve the most adequate sound level.

NEW CONTROL eCLIMATIC

Our eNeRGy range includes our new generation of eCLIMATIC controller. Main technical features of this control are :

- Plastic cover to protect the circuit board from water entry and humidity
- All terminals clearly identified in the plastic cover.
- Two independent buses, one for display and sensors connection and another one for internal components.
- Possibility of storing all parameterized conditions before an alarm is produced.

eCLIMATIC is designed to provide the best energy efficiency throughout unit's lifecycle while ensuring reliable and consistent operation with user friendly interfaces. eCLIMATIC monitores more parameters than ever to improve operation and maximize energy efficiency and reliability of the unit.

eCLIMATIC offers three different platforms of display:

- End customer display (DC) : with basic configurations, set points, main temperature readings and alarms.
- Multiple display (DM) : graphic customer display with basic configuration of the end customer display plus schedule programming and set of fresh air %.
- Service display (DS) : Specially focused to maintenance experts and installers, with full access to every parameter and configuration.

eCLIMATIC provides the following functions as standard :

Refrigeration circuit efficiency management

The new PI algorithm of the eCLIMATIC controls the supply air temperature and a temperature difference between supply and return. It is able to optimize the refrigeration circuit operation to match perfectly the required cooling or heating load maximizing efficiency and comfort thanks to multiscroll compressor staging and electronic expansion valves.
It will also improve reliability with features such as compressor operating limits monitoring, (High and Low refrigerant pressure and temperature now measured and displayed on DS service display and Bus) refrigerant leak detection or compressor operating time equalization and protection against excessive short cycling.

Dynamic defrost:

It is a standard feature of all Lennox heat pumps. It limits the number and the duration of the defrost cycles in winter to maximize COP.

Intelligent fresh air management:

With accurate percentage of fresh air the dampers are regularly calibrated to introduce just the required amount of fresh air in the building to reduce annual energy consumption. The fresh air ratio can also be controlled using the indoor CO2 level as an input.

Intelligent heating priority optimization:

This unique feature on the market, allows the user to program the priority between the different heating elements (thermodynamic, electric pre-heaters or auxiliary heating). This is particularly interesting on units with gas burner or electrical pre-heater. This feature maximizes energy efficiency by optimizing heat pump operation depending on the outdoor temperature.

1 Indoor air temperature (humidity and CO2 levels as an option)

2 Outdoor air temperature (outdoor humidity as an option)

3 Return and supply air temperature

4 Filter pressure drop

5 Airflow rate with eFlow

6 Refrigerant pressures, temperatures & compressor monitoring

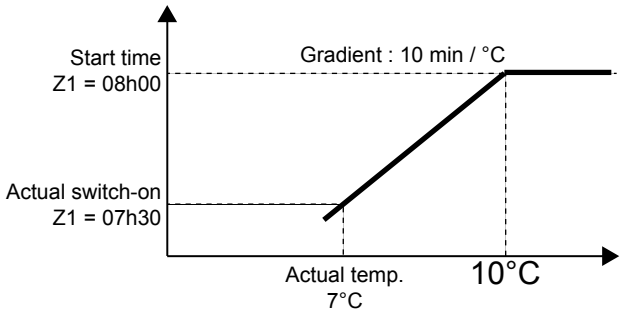
7 Power energy metering (option)

Staggered start feature

If there is a power shortage, units will not restart at the same time. To make this feature available, units have to be addressed with a different number between 1 and 12. The unit will start a number of minutes after power return depending on its address (Address * 10 seconds).
Example: unit number 3 will start 30 seconds after power is back. This is a very important feature to avoid current peaks during start up.

Morning anticipation and dynamic set point

The unit can be programmed to switch-on in the morning to reach the occupied zone temperature set point just in time.
The unit will start heating the building at a different time in the morning depending on the outdoor temperature: The lower the outdoor temperature is, the earlier the unit would start to ensure that the set point is reached by the time the first occupied zone (Z1) is starting. This avoids early start when outdoor temperature is mild.
Example for a unit programmed to anticipate morning switch-on if outdoor temperature is below 10°C at a rate of 10 minutes/°C.



Dynamic set point can be used in summer to offset the ambient temperature set point according to the outdoor temperature. This is to avoid large temperature difference between indoor and outdoor. The indoor temperature set point would then increase with the outdoor temperature improving comfort and saving large amount of energy.

Communication and unit interlink

Master/slave or cascade control is a standard feature of the eNeRGy range. It can be used to connect up to 24 units. The units can then be programmed to optimize efficiency and improve reliability following 6 different strategies:

1: Master Slave «total»:
The master gives the ventilation order, its set point and its room temperature/humidity/CO_2 to all other units.

2: Master Slave «temperature»:
The master gives the ventilation order and its room temperature/humidity/CO_2 to all other units, but each have its own set point.

3: Master Slave «average»:
The master gives the ventilation order. The room temperature/humidity/CO_2 used by all units is the average of all units, each one has its own set point.

4: Master Slave «cooling/heating»:
All units are stand-alone but the slaves have to have the same running mode as the master (Cooling or heating).

5: Master Slave "Back-up":
One unit is the back-up one and will operate if any of the other unit is stopped due to a major problem.

6: Rolling Back-up mode:
Same as above, except the «back-up» unit will change once a week on Tuesday.

Note that, the outside temperature/humidity/CO2 given to all units can either be the average of all units connected or the external humidity/temperature of the master, allowing the use of a single «weather station» for the whole site.

Faults and alarms

eCLIMATIC manages more than 90 different faults and alarms codes and can store the last 32 with time and date. The stored faults and alarms can then be displayed on the DS service display and on the communication bus with the full text detail.

Scheduling

In order to ensure the unit perfectly matches the requirements of the most difficult applications in terms of occupation and varying internal loads, the new eCLIMATIC offers now up to 7 time zones per day (Z0 to Z6) adjustable by steps of 10 minutes.
Each time zone can be programmed to follow one of four possible operating modes:

1 Unoccupied mode

2 Day mode

3 Day1 additionnal mode

4 Day2 additionnal mode

CONSTRUCTION, INSTALLATION AND SERVICE

UNIT CONSTRUCTION

eNeRGy by Lennox is assembled with the highests standards of quality and the eco Design normative.
ENeRGy units comply with the PED 97-23 and EN 60204 standard. All eNeRGy units are manufactured in ISO 9001 and ISO 14001 factories.
Modularity construction and aluminum panels guarantee a high corrosion resistance and lower the weight impact, also ensuring that the air leakages are reduced to the minimum. To improve the resistance to anticorrosion, the panels are prepainted in RAL 9003.

TRANSPORT AND HANDLING

To facilitate handling of the unit and minimize the risk of damage, eNeRGy units are provided with lifting lugs located in the base frame of the unit.

For transport and handling, the units are wrapped in a retractable plastic protection.

Condenser coils are fitted as standard with grills that protect against vandalism or handling damages.

PLUG AND PLAY SYSTEM

All options are factory installed in the unit, which means that they are ready for use, optimizing the time spent on site for the installation.To make installation easier, eNeRGy units power supply does not require neutral connection. It is powered by 400V -3Ph-50 Hz.

All the electrical elements are factory tested and follow the highest quality standards.

Circuit breakers

To improve safety and extend life time, circuit breakers protect against over-loading, over current and a disconnected supply phase. Maintenance is also improved as there is no requirement to change fuses. The electrical panel is manufactured in accordance with EN60204 electrical directive.

Numbered wires

All wires and connectors are numbered as shown on the electrical drawing to facilitate maintenance and diagnostic.

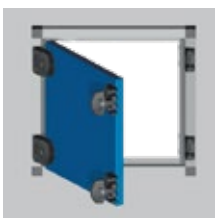
Main disconnect switch

The main switch is used as an emergency cut off.
It is mandatory to guarantee a proper accessibility to this switch. Specific footbridges must be installed if the machine environment is requiring it.
Main disconnect switch is lockable to increase safety around the unit.
Switching off the unit with the disconnect switch will reset all.
Disconnect switch will be sized accordingly to the options picked with the unit.

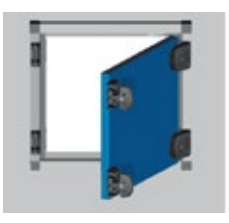
EASY ACCESS TO THE UNITS

With the new easy lock system integrated in eNeRGy, we can have different possibilities of panel opening, making maintenance operations easier.

Panels can be opened rightwards, leftwards and they can also be dismounted completely, by removing all the lockers.



Right opening



Left opening

Panel removing

INDOOR AIR QUALITY

eNeRGy by Lennox has all the elements necessary to ensure the highest standards of indoor air quality :

BUILDING AIR QUALITY

According to the EN 13779 the filtration level should be in accordance with the application and the environment.

The outdoor air is categorized in 3 levels, from ODA 1 where the air is pure except for temporary pollution such as pollen, up to ODA 3 with high concentrations of both gases and particles.
The indoor air is also categorized in 4 levels (IDA1 is not applicable for rooftop ranges).

For rooftop applications :

IDA2: Offices, University, Retirement houses, Hotel lobbies, Museums, Pools

IDA3: Commercial buildings, cinemas, Theatres, Restaurants, Bars, Sport halls…

IDA4: Low Air Quality such as Industrial Buildings

		Indoor air quality		
		IDA2	IDA3	IDA4
		Medium	Moderate	Low
		CO_2 (ppm)		
		400-600	600-1000	> 1000
		Rate of outdoor air (m^3/h/person) Non-smoking area		
		36-54	22-36	< 22
Outdoor air quality	ODA1	F8	F7	M5
	ODA2	M6/F8	M5/F7	M5/M6
	ODA3	F7/GF*/F9	M5/F7	M5/M6

* GF = Gas filter

FILTERS EFFICIENCY CORRESPONDANCE

Standards correspondance EN779:2012/ISO16890

		ISO16890		
	Class	ePM1	ePM2,5	ePM10
EN779:2012	M5	< 20%	< 40%	> 50%
	M6	< 40%	50-60%	> 60%
	F7	50-75%	> 70%	> 80%
	F8	70-85%	> 80%	> 90%
	F9	> 85%	> 90%	> 95%

Not compliant to minimum 50% efficiency

Compliant to minimum 50% efficiency

Exceed the minimum efficiency

eNeRGy options:

- G4 with 50 mm depth metallic frame
- F7-ePM1 with 100 mm depth
- F9-ePM1 with 292 mm depth (rigid bag filter).

With the new 100 mm F7 filter, the pressure drop is reduced by up to 50% compared to the previous 50 mm version. Lower pressure drop gives more available pressure for the customer and lower fan running costs. It also takes 4 times longer to get plugged with dirt reducing maintenance costs.

F9 (ePM1) rigid bag filter has an very extended life cycle

F7-ePM1 filter

F9-ePM1 filter

FIREPROOF INSULATION

eNeRGy air treatment section is provided with A2 s1 d0 (M0) 50 mm insulation, mechanically fitted between two panels, improving the safety of the unit against fire.

DOUBLE SKIN PANEL

Double skin construction prevents the insulation material particles from being carried away with the supplied air.

EC FANS VENTILATION SYSTEM

eNeRGy is fitted with EC fans as standard. This technology, in comparison with traditional pulley and belts system, ensures that no belt particles can be carried away into building. This ventilation system is compliant with EN 13977 air quality norm.

ANALOGUE FILTER DETECTION

As standard ,the unit is fitted with air differential pressure sensors that measure the pressure drop across the evaporator coil and filters. If this pressure drop is above 50 Pa, the unit is considered to be operating. If the pressure drop is below, there should be a problem of ventilation. When values are over 250 Pa (default value from factory), a signal is sent to the terminal to indicate filters must be changed, and after one week, unit stops. This value can be adjusted during the commissioning.

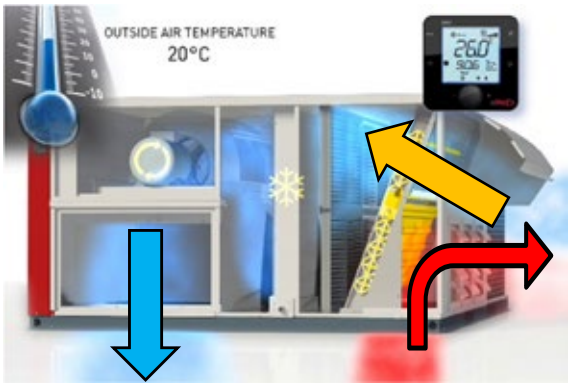
REMOVABLE ALUMINIUM DRAIN PAN

All units are equipped with a sloped removable drain pan in Aluminum which can be taken out for maintenance, preventing the growth of bacteria and algae in the drain pan.

FRESH AIR / FREECOOLING

Freecooling system is a standard feature for all the eNeRGy range, with two motorized dampers made in aluminum, and connected with a proportional servomotor commanded by the control eCLIMATIC.
Buildings complying with EPBD will have good thermal insulation with high internal loads and will require cooling even when outdoor temperatures are low. Managing fresh air is mandatory in a building to control CO2 level and comfort.

Fresh air management and Free Cooling are standard features of new ENERGY that can reduce annual energy consumption.



SAVING ENERGY WITH FRESH AIR & FREE COOLING

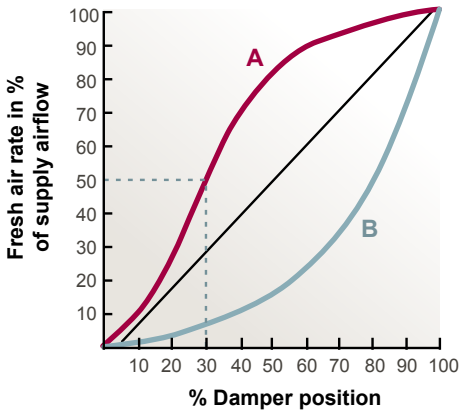
- Thermodynamic cooling can be replaced by Free Cooling when outdoor temperature is below the building set point saving up to 15% on annual energy consumption.
- Introducing just the required amount of Fresh Air in a building can reduce energy consumption.

Because a fresh air damper curve is not linear, it is not accurate to assume that the percentage of opening of the damper is equal to the percentage of fresh air entering the building. However, this linear control of a damper is by far the most used in the industry.

With Indoor air quality and running cost of a building being more important to our customer, ENERGY can manage the percentage of fresh air more accurately.

If the pressure drop in return air duct is high, the amount of fresh actually introduced in the building can be higher than required. This extra fresh air will have to be cooled in summer and heated in winter, increasing energy consumption of the system.

eNeRGy will periodically recalibrates fresh air dampers to ensure just the required amount of fresh air is introduced in the building. This recalibration is achieved using the return air, outdoor air and supply air sensors.



Curve A : ΔP return ducts > Fresh air: Too much fresh air

Curve B : ΔP return ducts < Fresh air: Not enough fresh air

ELECTROMAGNETIC COMPATIBILITY (EMC)

All eNeRGy units manufactured by Lennox , respect the normative CEP 20004/108/CE and can be labelled CE according this directive , being allowed to be used in residential, commercial and industrial installations.

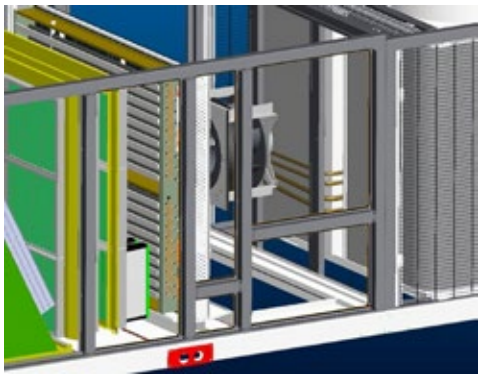
eNeRGy units will follow the EMC normative according the following values :

EMISSION EN 6100-6-3 EDITION 2007 + A1 ed 2011			
PERTURBING AGENT	**FREQUENCY RANGE**	**NORME**	**CONFORMITY**
Conductive emissions	150 kHz - 30 MHz	EN 55016-2-1 Ed 2009 + A1 2011 + A2 2013	Satisfactory
Radiated emissions	30 MHz - 1000 MHz	EN 55016-2-3 Ed Ed 2010 + A1 2010	Satisfactory
Harmonics	0 kHz - 2 kHz	EN 61000-3-12 Ed 2012	Satisfactory
Flicker	-	EN 61000-3-11 Ed 200	Satisfactory

IMMUNITY EN 6100-6-2-ed 2007			
PERTURBING AGENT	**FREQUENCY RANGE**	**NORME**	**CONFORMITY**
D.E.S	4 kV (contact) 8 kV (air)	EN 61000-4-2 Ed 2009 Criteria B	Satisfactory
Electrical fields	80 to 2700 MHz 10V/m MA 1 kHz 80%	EN 61000-4-3 Ed 2006 + A1 2008 + A2 2010 Criteria A	Satisfactory
T .E.R/S	2k V : Alimentation	EN 61000-4-4 Ed 2004 + A1 2010 Criteria B	Satisfactory
Conductive perturbations induced by an electromagnetic field	10 V 150 kHz - 230 MHz AM : 80% - 1 kHz	EN 61000-4-6 Ed 2009 Criteria A	Satisfactory
Shock wave	±1 k V MD ± 2 k V MC	EN 61000-4-5 Ed 2006 Critère B	Satisfactory
Voltage drops and short interruptions	0% -> 20 ms 60% -> 200 ms 30% -> 500 ms 0% -> 5 s	EN 61000-4-11 (2004) Critères B & C	

AUXILIARY COOLING AND HEATING OPTIONS

Electrical heater and electrical pre-heater



Made of welded blinded elements, all electrical heaters in eNeRGy are provided with two safety switches to prevent overloading.
Heaters are offered in two different sizes: one standard with one stage of regulation and a higher capacity modulating size.
A preheater version can be installed to pre-heat fresh air depending on outdoor conditions.

Preheater electrical devices are single stage in standard size modulating in high capacity version.

Electrical heater and preheater capacities

ELECTRICAL HEATER AND PRE-HEATER CAPACITIES

014AH-55 to 019AH-124	Standard	One stage	36 kW
	Medium	Modulating	90 kW
	High heat	Modulating	108 kW

022AH-77 to 027AH-180	Standard	One stage	54 kW
	Medium	Modulating	108 kW
	High heat	Modulating	144 kW

Cooling and heating water coils

Different sizes of water coils made of copper pipes and aluminum fins can be installed to answer cooling and heating requirements. These coils can be connected to a boiler, a chiller or a heat pump. Two sizes of water coils are offered to cope with the cooling and heating requirements. All of them are equipped with a proportional 3 way valve.

To check the different capacities of the water coils, please refer to the coil water section of this application guide.

Condensing gas burner

This condensing gas burner is developed to reach condensing behavior, allowing both very high efficiency and high modulating ratios.

Efficiency level reaches 108%. This gas burner has been designed to guarantee a level of NOx emissions < 30 ppm, no CO emissions.

This gas burner uses Venturi air/gas valve as an additional safety. When there isn't air suction in the combustion chamber, there will be not gas intake on the chamber.

This gas burner includes a pre-installed gas pilot that allows safety start-up cycles independently from different gas supply conditions that may vary from country to country and also from one period to another. It is possible to regulate the OFF-SET ratio in order to optimize combustion, although already fixed in factory assembly.

The system is completely pre-regulated and tested in the production line with high efficiency valves, safety devices and emission values certified on each single case.

Finally, this range of burners comply with LOT 21 as well as all Eco design EU requirements, starting 2018 & 2021.

GAS BURNER CAPACITY

Size		**Model**	**Capacity**
014AH 016AH 019AH	Standard	PCH 80	16-82 kW
	High heat	PCH 105	18-100 kW
022AH 024AH 027AH	Standard	PCH 105	18-100 kW
	High heat	PCH 120	18-200 kW

ENERGY RECOVERY OPTIONS

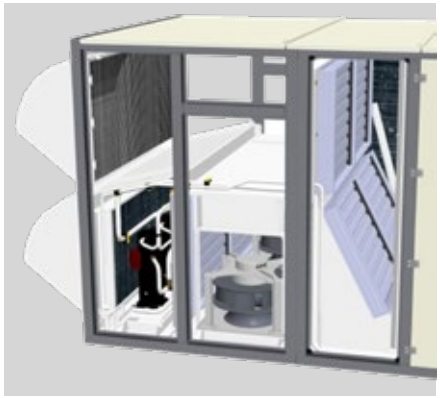
To match Lennox commitment to a greener planet and to generate energy savings, eNeRGy by Lennox can be equipped with three integrated systems to recover energy :

Energy recovery on exhaust air

Heat recovery wheel

This system, that recovers the heat from the extracted air through a rotary wheel, is ideal for climates in which the difference between the outdoor temperature and the extraction air temperature is high; giving performances over 70%.This new hybrid rotary wheel will generate very high sensible but also latent transfer.
Fresh air entry is provided with G4 filter.

Thermodynamic heat recovery system



This system recovers the heat from the extraction air through a refrigerant system, and is ideal for climates in which the average outdoor temperature is mild. This option consists on an additional thermodynamic circuit equipped with a pre-treatment coil before the standard treatment coil, a coil on the exhaust air, a compressor and a 4-way valve. This module is able to recover sensible and latent energy and can offer an efficiency up to 80%.

Fresh air entry is provided with M5 filter.

Energy recovery for food refrigeration systems

In some installations, there are food refrigeration systems that reject heat. This heat can be taken to cover other heating needs instead of rejecting it to the environment.

eRecovery

This option consists of a water coil placed as a pre-heating element to recover energy through an intermediate exchanger that receives the rejected heat from the refrigerant food chambers. This hot water coil is provided with a proportional 3 way valve regulated by the eCLIMATIC.

ELECTRICAL OPTIONS

eNeRGy by Lennox offers different electrical options to guarantee the safety of the installation and to make electrical wiring easier.

Fire detector

This option consists of a thermostat that provides a signal to switch off the unit, closes the fresh air damper and opens the return damper when the temperature in the return air stream is above an adjustable set point (Factory setting: 70°C).

Smoke detector

Located downstream of the filter, the optical head of the smoke detector can detect any type of smoke. When this occurs the unit will stop operating, the return air damper will be fully closed and the fresh air damper will fully open while sending an alarm signal to the unit.
In accordance with the European norm, it is also compliant with the French regulation on public buildings.

Energy meter

The energy meter option is a device that measures and displays the following parameters:

- Average, total and maximum current, voltage and frequency for each phase.
- Active & reactive power.
- Power factor (Cosφ).
- Total active & reactive energy consumption in Wh.

Values for energy, current and absorbed power can be reset with password.

Some of these data will be collected by the controller and made available in the BMS tables for Modbus, BACnet and Trend protocols (not available for LonWorks).

Three-phase control

This phase control device offers the guarantee of the correct phase connection, together with an overvoltage and under voltage protection

Aluminium wires adaptor

This special adaptation kit is offered in those installations in which power supply differs from the standard copper wiring.

CONTROL OPTIONS

Control terminals

eNeRGy by Lennox offers 3 different platforms of control, depending on the level of accessibility and the competences required.

DC Comfort Display

This is a remote controller for non-technical customer. It is designed to fit aesthetically inside a room and be very easy to use. It has a 24V supply to be connected to the unit and can be installed at maximum 30 meters away from the unit.

The graphical display gives information such as running mode of the unit, status of the fan, set point, % of fresh air, outside air temperature.
Customer can set the temperature set point for a given time zone, switch the unit “ON” or “OFF” and adjust the clock. DC can display fault codes with a reset possibility, ambient, supply and outdoor temperature, fresh air damper position (%), time zone and operating mode pictogram, heating or cooling status.
It is also able to display supply fan airflow rate (0-33-66-100%) and component status for compressors, defrost, condenser fans and auxiliary heaters.
DC comfort display is equipped with a temperature sensor that can be used as room temperature sensor.

DM Multi-units Display

This display gives access to more functionality than the DC and allows managing up to 8 units on a single Bus-wire. Customer will be able to change the operating time zone and mode. The units can be connected to operate on a Master/Slave principle. Installation up to 1000 m from the unit.

DS Service Display

This plug and play service display and controller allows service personal to set up to read and modify all unit parameters (Unit settings, operating time and number of compressor starts, low and high pressure reading, airflow rate of supply fan, and read the history of last 32 faults...).
This controller has been designed to be very user friendly, with 6 different keys and graphic display. It includes scrolling menus and full text (no codes) explanation. It is available in English or another alternate language.

Dry Contact board

This board has been developed for any customer who wants to take over the control of the unit using Digital or analogue input signal.
With this dry contact board option the customer can set:

- 4 digital inputs (On/Off, clear faults, various component unloading, heating priority modifications, thermostat orders....)
- 4 digital Outputs (alarms reporting, components status, scheduling time zone and operating mode status, cooling, heating, defrost and auxiliary heating status...)
- Up to 4 analogue inputs (external temperature humidity probes, fresh air input signal, force fan speed and temperature setpoint offset).
- 1 analogue output (Humidifier)

Note that eCLIMATIC controller always stays in charge of all safety algorithms, defrost operation and free cooling.
This option is required to control the unit with a “universal thermostat”.

COMMUNICATION OPTIONS

Modbus interface / Modbus TCP IP

The eCLIMATIC ModBus interface is required to connect the unit to a BMS using «ModBus protocol». No other hardware than this board is required to have ModBus communication. One board required per unit. The ModBus interface is available in two versions to be connected with RS485 or TCP/IP.
This board is also mandatory for any connection between the unit and a Lennox ADALINK system.

LonWorks® interface

This board is a LonWorks® interface, needed for any BMS with “Lon protocol” and RS485 connection to communicate with the ENERGY. No other hardware than this board is required to have LonWorks® dialog. One board required per unit. Variable list is available in the control manual.

BACnet interface

The eCLIMATIC BACnet interface is required to connect the unit to a BMS using BACnet protocol. No other hardware than this board is required to have BACnet communication. One board required per unit. The BACnet interface is available in two versions to be connected with RS485 or TCP/IP depending on site requirements.

ADALINK II

ADALINK II is Lennox’s simplest solution for HVAC installation supervision to better control the system and improve reliability and energy efficiency. One ADALINK II can control up to 16 Lennox units on the same site (unit using CLIMATIC II, CLIMATIC 50, CLIMATIC 60 controllers and eCLIMATIC). It displays a site picture with the status of each unit and allows the user to change set points, access alarm history and plot charts. It is the ideal tool to save time and money on maintenance with an expert mode giving access to all the parameters and set point of the unit.

- Easy local management of important settings
- Easy scheduling by unit or by zone
- Preventive maintenance to reduce downtime and improve comfort and energy efficiency at all time.
- Remote connection via LAN
- Plug and Play to customer network

FRESH AIR OPTIONS

As managing fresh air is becoming mandatory in most buildings economiser is now fi tted as standard with the eNeRGy.

Advanced control pack

Where a higher level of controllability is required to make the eNeRGy even more flexible, LENNOX have compiled a pack that includes two advanced control features.

- «Enthalpy control on economiser»

  The eCLIMATIC and its humidity sensors (return air and fresh air) ensures that the economiser does not use 100% fresh air if the outside air has a higher enthalpy than the return air.

  This feature is relevant in regions where the relative humidity is high or when the desired room air condition is very dry.

- «Humidity control»

  The eCLIMATIC and its humidity sensors, analyze dry and wet bulb temperatures to control dehumidifi cation. Humidity control is only available if ambient temperature is in cooling or dead zone. The dehumidifi cation algorithm can dry the air by passing it through the coil in cooling mode.

  A specific function in the program can be activated to control the minimum supply air temperature, by maintaining it equal to the heating set point, using auxiliary heaters (Electric, Hot water coil or gas burner).

  A proportional 0-10V contact is also available to control an external humidifier.

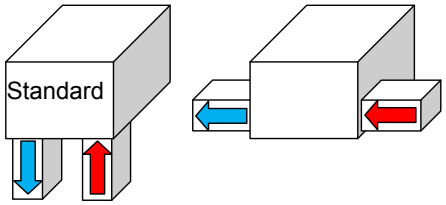
Indoor air quality sensor

Indoor air quality is controlled from the eCLIMATIC main controller. A VOC (Volatile Organic Component) sensor detects the amount of CO2 in the ambient air between 0 and 2000PPM. (This obviously varies depending upon space occupancy levels). The VOC sensor sends a proportional signal (0-20mA) to the eCLIMATIC controller which will then modulate the fresh air.

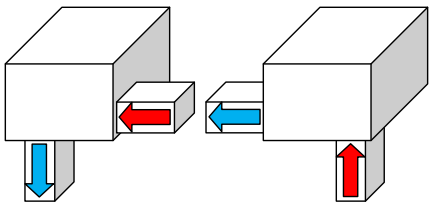
AIRFLOW CONFIGURATION OPTIONS AND ROOFCURBS

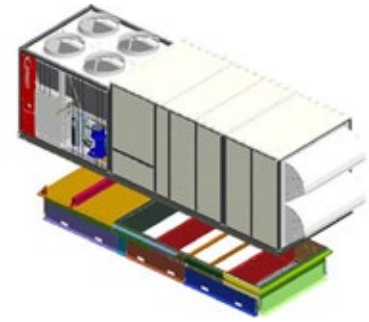
Basic airflow configuration

Unless specified when ordered, eNeRGy unit will be shipped with downflow supply and return configuration. Units can be configured before shipment, with horizontal supply and horizontal return.



Adjustable assembled roofcurb

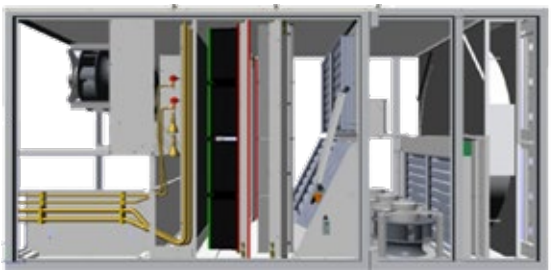




The adjustable roofcurb are made of galvanized steel with 2.5 mm thick mounting flanges. This adjustable roofcurb is designed to be installed on roofs with slopes up to 4 to 5% in all directions enabling the eNeRGy to be compatible with most roof profiles. Downflow roof curbs are the easiest and cheapest way to install packaged air-conditioning systems to a single volume building.
The frame can be secured directly to the roof structure thanks to its built-in adjustable flanges and sealing liner returns.

EXTRACTION OPTIONS

In this unit, the extraction section is integrated in the indoor section of the unit. This configuration makes easier the mounting and does not require extra casing for installing the extraction fans.The roofcurb will be required only when the installation requires this structure.



OTHER OPTIONS

eNeRGy by Lennox has complementary options to integrate the unit in different environements, and to take into account also external factors as noise level, aggressive atmospheres and leaks. For all this the unit can be fitted with the following options :

Low noise option

As these units are often installed in a noise sensitive area, Lennox proposes a low noise option on eNeRGy. To achieve low noise levels, eNeRGy will integrate in the condensing section, the new generation of EC fans. A compressor jacket is also available as an option.

Refrigerant leak detection

The refrigerant leak detection enables the customer to check if the refrigerant charge has variations during the life cycle of the unit, through sensors placed in the refrigerant pipes.

These sensors will inform the customer, through the eClimatic, about the status of the refrigerant circuit, preventing from undesirable stops and making maintenance easier.

Anticorrosion protection

When the units are installed in potentially aggressive environments like coastal environments or industrial environments, eNeRGy offers the possibility of a protection treatment in all the coils. This anticorrosion system is available for condensers, evaporators and also for all the options (hot water coils, e recovery system and thermodynamic recovery system)

Nominal thermal performances

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Cooling capacity (1)	kW	52,3	65,2	72,7	84,0	102,0	67,7	76,7	86,9	107,8	111,8
EER (1)		3,53	3,35	3,18	3,30	3,15	3,17	3,19	3,23	3,18	2,94
Heating capacity (2)	kW	48,2	63,0	68,4	80,9	97,7	66,8	76,6	87,0	106,8	107,2
COP (2)		4,35	3,78	3,81	3,73	3,41	3,94	4,04	3,84	3,45	3,54
Nominal airflow rate	m^3/h	13500			15500		18900				

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Cooling capacity (1)	kW	75,3	86,1	106,9	132,0	79,0	89,8	111,9	122,4	137,5	154,7	165,7
EER (1)		3,09	3,18	3,14	3,12	3,21	3,29	3,24	3,31	3,15	3,01	2,81
Heating capacity (2)	kW	75,8	87,7	107,6	129,1	76,9	89,3	109,9	121,0	135,9	148,3	178,5
COP (2)		4,01	3,88	3,53	3,41	4,18	4,05	3,75	3,94	3,46	3,57	3,18
Nominal airflow rate	m^3/h	21600				24300					27000	

(1) **Cooling mode :**
Outdoor temperature 35°C DB
Indoor temperature 27°C DB / 19°C WB

(2) **Heating mode :**
Outdoor temperature 7°C DB / 6°C WB
Indoor temperature 20°C DB

(1) & (2) According to **EN14511** nominal conditions
Cooling and heating modes

Seasonal efficiencies

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Seasonal Energy Efficiency Ratio **SEER** (1)		4.63	4.62	4.93	4.48	4.26	4.42	4.28	4.30	4.31	4.21
Seasonal energy efficiency **ηs,c** (2)	%	182	182	194	176	167	174	168	169	169	165
EUROVENT energy class		**B**	B	B	B	B	B	B	B	B	B
Seasonal Coefficient of Performance **SCOP** (3)		3.66	3.52	3.52	3.41	3.25	3.64	3.39	3.32	3.28	3.32
Seasonal energy efficiency **ηs,h** (4)	%	143	138	138	133	127	143	132	130	128	130
EUROVENT energy class		B	B	B	B	B	B	B	B	B	B

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Seasonal Energy Efficiency Ratio **SEER** (1)		4.22	4.28	4.28	3.95	4.38	4.43	4.41	4.43	4.35	4.02	4,00
Seasonal energy efficiency **ηs,c** (2)	%	166	168	168	155	172	174	173	174	171	158	157
EUROVENT energy class		B	B	B	B	B	B	B	B	B	B	B
Seasonal Coefficient of Performance **SCOP** (3)		3.40	3.38	3.35	3.34	3.51	3.50	3.51	3.49	3.29	3.30	3.28
Seasonal energy efficiency **ηs,h** (4)	%	133	132	131	130	137	137	137	137	129	129	128
EUROVENT energy class		B	B	B	B	B	B	B	B	B	B	B

(1) SEER in accordance with standard EN14825.

(2) Space cooling energy efficiency following Ecodesign regulation EU 2016/2281

(3) SCOP in accordance with standard EN14825 (average climate).

(4) Space heating energy efficiency following Ecodesign regulation EU 2016/2281.

Airflow data

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Air treatment unit											
Minimum airflow rate	m^3/h	9500	9500	9500	10500	10500	13000	13000	13000	13000	13000
Maximum airflow rate	m^3/h	16000	24000	24000	24000	24000	20000	24000	24000	24000	24000
Maximum available static pressure	Pa	1000									
Condensing unit											
Nominal airflow rate	m^3/h	21797	38412	28160	42370	52347	38412	28160	42370	52347	52347

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Air treatment unit												
Minimum airflow rate	m^3/h	15000	15000	15000	15000	17000	17000	17000	17000	17000	18500	18500
Maximum airflow rate	m^3/h	24000	24000	24000	24000	28000	28000	32000	32000	32000	32000	32000
Maximum available static pressure	Pa	1000										
Condensing unit												
Nominal airflow rate	m^3/h	28160	42370	52347	76824	28160	42370	52347	52516	76824	76824	92806

Acoustic data

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Sound power level Outdoor unit	dB(A)	76,4	77,8	76,5	79,1	80,9	81,9	81,4	82,0	83,0	82,7
Sound power level Indoor unit (1)	dB(A)	78,9	78,9	78,9	82,5	82,5	90,0	90,0	90,0	90,0	87,6

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Sound power level Outdoor unit	dB(A)	83,8	84,2	84,8	85,1	79,7	80,6	81,9	81,3	82,2	83,6	84,9
Sound power level Indoor unit (1)	dB(A)	90,5	90,6	90,6	90,9	85,3	85,5	85,5	85,9	85,9	88,8	88,8

(1) Supply duct

Electrical data

/!\ Values for standard units only

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Voltage	V	400									
Frequency	Hz	50									
Maximum current	A	135,8	124,4	148,8	171,4	183,7	124,4	148,8	171,4	183,7	187,9
Starting current	A	49,1	61,4	77,0	88,9	76,8	61,4	77,0	88,9	76,8	82,4
Short circuit current	kA	10									

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Voltage	V	400										
Frequency	Hz	50										
Maximum current	A	148,8	171,4	183,7	239,3	154,9	177,5	189,8	193,6	245,4	264,6	317,0
Starting current	A	77,0	88,9	76,8	106,6	83,1	95,0	82,9	88,1	112,7	131,9	149,3
Short circuit current	kA	10										

Refrigeration circuit

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Number of circuits/Number of compressors		2/3	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4
Refrigerant		R410A									
Total refrigerant load	kg	18,0	18,0	33,8	33,8	34,2	20,0	33,0	33,0	32,8	33,7

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Number of circuits/Number of compressors		2/2	2/2	2/4	2/4	2/2	2/2	2/4	2/4	2/4	2/4	2/4
Refrigerant		R410A										
Total refrigerant load	kg	31,9	32,1	32,7	43,6	27,7	27,9	28,2	42,6	43,4	44,2	44,2

Gaz burners

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Maximum net heating capacity Standard/High	kW	80 / 97,2									
Maximum thermal efficiency Standard/High	%	98 / 97									
Gas flow (for natural gas at 20 mbar and 15 °C) Standard/High	m^3/h	7,9 / 9,6									

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Maximum net heating capacity Standard/High	kW	97,2 / 193,3										
Maximum thermal efficiency Standard/High	%	97 / 97										
Gas flow (for natural gas at 20 mbar and 15 °C) Standard/High	m^3/h	9,6 / 19,2										

OPERATING LIMITS

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Operating limits - Cooling mode (1)											
Maxi. outdoor temperature (Indoor temp. 27°C DB / 19°C WB)	°C	48									
Maxi. outdoor temperature (Min indoor temp.DB / 47%HR)	°C	48									
Maxi. outdoor temperature with unloading	°C	49,5	51	48	50	50	48,5	44,5	48	49,5	46,5
Min. outdoor temperature (Indoor temp. 20°C DB (2))	°C	-5	-3	12	14,5	14,5	-5	10	13,5	13,5	13
Min. outdoor temperature (Max indoor temp. 23°C DB / 47%HR)	°C	12	14	13	15	29	13	11	14	14	13
Max. entering air temperature (Outdoor air Temp. 38°C DB)	°C	35	40	39	41	55	31	29	32	48	48
Max. entering indoor air temperature (Max outdoor air temp. 48°C DB / 40%HR)	°C	28	31	31	31	31	27	28	30	31	31
Min. entering indoor air temperature (outdoor air temp. 35°C DB)	°C	14									
Min. entering indoor air temperature (Max outdoor air temp. 48°C DB / 40%HR)	°C	14	14	15	16	19	14	14	14	16	17
Max. Relative air humidity	°C	75									
Operating limits - Heating mode (1)											
Min. outdoor temperature (Indoor temp. 20°C DB)	°C	-15									
Min. outdoor temperature (Min indoor temp. 5°C DB/ 59%HR)	°C	14	3	5	2	-2	15	16	10	2	0
Min. entering indoor air temperature	°C	5	5	5	5	5	5	9,5	7	5	5
Max. entering indoor air temperature	°C	25									
Maxi. outdoor temperature (Max indoor temp. 25°C DB / 59%HR)	°C	24	23	24	23	24	23	24	23	25	29
Min. outdoor temperature (indoor temp. 20°C DB / 100%fresh air / with standard electrical pre-heater	°C	2,3	0	1	0	5	4	5	3	5	5
Min. outdoor temperature (indoor temp. 20°C DB / 100%fresh air / with high electrical pre-heater)	°C	-8	-10	-9	-8	2	-3,5	-2	-4	-6	-7

(1) Cooling and heating operating limits are given for steady state running condition with noted temperature condition

(2) Below this value, «Low ambient kit» option is required

OPERATING LIMITS

eNeRGy		022AH				024AH					027AH	
		077	087	107	140	078	088	108	126	141	160	180
Operating limits - Cooling mode (1)												
Maxi. outdoor temperature (Indoor temp. 27°C DB / 19°C WB)	°C	48										
Maxi. outdoor temperature (Min indoor temp.DB / 47%HR)	°C	48										
Maxi. outdoor temperature with unloading	°C	52	53	49,5	51,5	51,5	52,5	49	49	51	49,5	49,5
Min. outdoor temperature (Indoor temp. 20°C DB (2))	°C	12,5	6,5	13,5	16	12	6	12,5	12,5	15	7	7
Min. outdoor temperature (Max indoor temp. 23°C DB / 47%HR)	°C	14	7	14	29	13	8	13	13	9	7	20
Max. entering air temperature (Outdoor air Temp. 38°C DB)	°C	35	34	46,5	37,5	29,5	28,5	44	44	36,5	41	36,5
Max. entering indoor air temperature (Max outdoor air temp. 48°C DB / 40%HR)	°C	31	28	31	31	30	28	31	31	31	31	31
Min. entering indoor air temperature (outdoor air temp. 35°C DB)	°C	14										
Min. entering indoor air temperature (Max outdoor air temp. 48°C DB / 40%HR)	°C	14	14	16	20	18	19	14	14	17	17	19
Max. Relative air humidity	°C	75										
Operating limits - Heating mode (1)												
Min. outdoor temperature (Indoor temp. 20°C DB)	°C	-15										
Min. outdoor temperature (Min indoor temp. 5°C DB/ 59%HR)	°C	-	-3	5	-15	-	2	12	8	-15	-15	-15
Min. entering indoor air temperature	°C	13	5	5	5	14	5	7	5	5	5	5
Max. entering indoor air temperature	°C	25										
Maxi. outdoor temperature (Max indoor temp. 25°C DB / 59%HR)	°C	29	23	29	23	26	24	30	29	23	24	24
Min. outdoor temperature (indoor temp. 20°C DB / 100%fresh air / with standard electrical pre-heater	°C	6	5	1	5	8	0	3	2	5	5	5
Min. outdoor temperature (indoor temp. 20°C DB / 100%fresh air / with high electrical pre-heater)	°C	-4	5	-8	4	-2	-9	-5	-6	5	5	5

(1) Cooling and heating operating limits are given for steady state running condition with noted temperature condition

(2) Below this value, «Low ambient kit» option is required

eNeRGy				014AH			016AH		019AH				
				055	065	75	085	105	066	076	086	06	124
Nominal airflow rate			m^3/h	13500	13500	13500	15500	15500	18900	18900	18900	18900	18900
Electric heater and electrical pre heater													
Type of modulation	Heater		S	1 stage									
	Pre heater		S	0/10V Triac									
			M	0/10V Triac									
			H	0/10V Triac									
Available heating capacity		S	kW	36									
		M	kW	90									
		H	kW	108									
Nominal current		S	A	52									
		M	A	129,9									
		H	A	155,9									
Heating water coil													
Available gross heating capacity (1)		S	kW	69,6	69,6	69,6	74,5	74,5	81,9	81,9	81,9	81,9	81,9
		H	kW	122,2	122,2	122,2	132,0	132,0	146,9	146,9	146,9	146,9	146,9
Cooling water coil													
Available gross cooling capacity (1)			kW	18,7	18,7	18,7	20,0	20,0	22,0	22,0	22,0	22,0	22,0
			kW	32,8	32,8	32,8	35,4	35,4	39,4	39,4	39,4	39,4	39,4
eRecovery on refrigeration													
Available gross heating capacity (5)			kW	81,2	81,2	81,2	87,8	87,8	97,8	97,8	97,8	97,8	97,8
Heat recovery module													
Type of exchanger				All seasons heat recovery wheel									
Wheel diameter			mm	1980									
Length (vertical return)			mm	1549									
Length (horizontal return)			mm	2177									
Height			mm	2275									
Width			mm	2270									
Filter EN 779:2002 Class				M5									
Number of filters Supply section				6									
Number of filters Exhaust section				4									
Filter size			mm	490 x 592 x 48									
Heating recovery capacity (4)			kW	63,7	63,7	63,7	70,6	70,6	81,2	81,2	81,2	81,2	81,2
Cooling recovery capacity (5)			kW	55,6	55,6	55,6	61,8	61,8	71,5	71,5	71,5	71,5	71,5

S	Standard size
M	Medium size
H	High size
(1)	Standard and high sizes : Entering water temperature 90°C Leaving water temperature 70°C Entering air temperature 20°C
(2)	Standard and high sizes : Entering water temperature 7°C Leaving water temperature 12°C Entering air temperature 27°C
(3)	Entering water temperature 40°C Leaving water temperature 35°C Entering air temperature 0°C
(4)	100 % fresh air Outdoor air temperature 7°C Indoor air temperature 20°C
(5)	100 % fresh air Outdoor air temperature 35°C Indoor air temperature 27°C

eNeRGy		014AH			016AH		019AH				
		055	065	075	085	105	066	076	086	106	124
Nominal airflow rate	m^3/h	13500			15500		18900				
Thermodynamic recovery (TRMO)											
Number of circuits		1									
Type of compressor		Single									
Number of thermostatic expansion valves		1									
Refrigerant charge	kg	5									
Cooling capacity (6)	kW	29,5			29,9		30,3				
Absorbed power	kW	7,19			7,25		7,30				
EER		4,10			4,12		4,15				
Heating capacity (7)	kW	29,6			29,8		30,1				
Absorbed power	kW	5,33			5,22		5,07				
COP		5,55			5,71		5,94				
Minimum available fresh air %		25%			25%		25%				
Length (vertical return)	mm	1549									
Length (horizontal return)		2177									
Height		1869	1869	2024	2024	2024	1869	2024	2024	2024	2024
Width		2270									
G4+F7 (ePM1) + F9 (ePM1) filtration											
G4 Gravimetric efficiency - EN 779:2002		Am≤90%/G4									
F7 Opacimetric efficiency - EN 779:2002 ePM1 - ISO16890		80≤Em<90%/F7 50-75%									
F9 Opacimetric efficiency - EN 779:2002 Class ePM1 - ISO16890		Em≤95%/F9 > 85%									
Number of filters		9									
G4 Filter Size	mm	490 x 592 x 48									
F7 (ePM1) filter size		490 x 592 x 98									
F9 (ePM1) filter size		490 x 592 x 292									
Fire class		M1/A2									
Acoustic data											
Outdoor sound power With compressor acoustic insulation option (8)	dB(A)	71	76	78	73	76	78	75	78	79	79
Outdoor sound power With low ambient condition EC condenser fan (option) (8)		77	79	81	77	79	82	79	82	82	82
Outdoor sound power With compressor acoustic insulation + low ambient condition EC condenser fan (options) (8)		74	77	79	74	77	78	76	78	80	80

(6) 50 % fresh air
Outdoor air temperature 35°C
Indoor air temperature 27°C

(7) 50 % fresh air
Outdoor air temperature 7°C
Indoor air temperature 20°C

(8) All data are at Eurovent conditions (400V/3Ph/50Hz - Nominal airflow rate - Nominal external static pressure)

eNeRGy				022AH				024AH					027AH	
				077	087	107	085	078	088	108	126	141	160	180
Nominal airflow rate			m^3/h	21600	21600	21600	21600	24300	24300	24300	24300	24300	27000	27000
Electric heater and electrical pre heater														
Type of modulation	Heater		S	1 stage										
	Pre heater		S	0/10V Triac										
		M	M	0/10V Triac										
		H	H	0/10V Triac										
Available heating capacity		S	kW	54										
		M	kW	108										
		H	kW	144										
Nominal current		S	A	77,9										
		M	A	155,9										
		H	A	207,8										
Heating water coil														
Available gross heating capacity (1)		S	kW	111,4	111,4	111,4	111,4	117,9	117,9	117,9	117,9	117,9	123,9	123,9
		H	kW	176,5	176,5	176,5	176,5	188,0	188,0	188,0	188,0	188,0	198,6	198,6
Cooling water coil														
Available gross cooling capacity (1)			kW	29,9	29,9	29,9	29,9	31,6	31,6	31,6	31,6	31,6	33,2	33,2
			kW	47,4	47,4	47,4	47,4	50,4	50,4	50,4	50,4	50,4	53,2	53,2
eRecovery on refrigeration														
Available gross heating capacity (5)			kW	117,5	117,5	117,5	117,5	125,2	125,2	125,2	125,2	125,2	132,3	132,3
Heat recovery module														
Type of exchanger				All seasons heat recovery wheel										
Wheel diameter			mm	1980										
Length (vertical return)			mm	1549										
Length (horizontal return)			mm	2177										
Height			mm	2275										
Width			mm	2270										
Filter EN 779:2002 Class				M5										
Number of filters Supply section				6										
Number of filters Exhaust section				6										
Filter size			mm	490 x 592 x 48										
Heating recovery capacity (4)			kW	88,7	88,7	88,7	88,7	95,4	95,4	95,4	95,4	95,4	101,5	101,5
Cooling recovery capacity (5)			kW	78,4	78,4	78,4	78,4	84,7	84,7	84,7	84,7	84,7	90,4	90,4

S	Standard size
M	Medium size
H	High size
(1)	Standard and high sizes : Entering water temperature 90°C Leaving water temperature 70°C Entering air temperature 20°C
(2)	Standard and high sizes : Entering water temperature 7°C Leaving water temperature 12°C Entering air temperature 27°C

(3)	Entering water temperature 40°C Leaving water temperature 35°C Entering air temperature 0°C
(4)	100 % fresh air Outdoor air temperature 7°C Indoor air temperature 20°C
(5)	100 % fresh air Outdoor air temperature 35°C Indoor air temperature 27°C

eNeRGy		022AH				024AH					027AH	
		077	087	107	085	078	088	108	126	141	160	180
Nominal airflow rate	m^3/h	21600	21600	21600	21600	24300	24300	24300	24300	24300	27000	27000
Thermodynamic recovery (TRMO)												
Number of circuits		1										
Type of compressor		Tandem										
Number of thermostatic expansion valves		1										
Refrigerant charge	kg	7										
Cooling capacity (6)	kW	51,2				52,1					52,6	
Absorbed power	kW	16,07	16,07	16,07	16,12	16,17	16,17	16,17	16,18	16,18	16,33	16,33
EER		3,19	3,19	3,19	3,18	3,22	3,22	3,22	3,21	3,21	3,22	3,22
Heating capacity (7)	kW	51,5	51,5	51,5	51,6	51,7	51,7	51,7	51,8	51,8	52,1	52,1
Absorbed power	kW	12,63	12,63	12,63	12,64	12,26	12,26	12,26	12,30	12,30	12,02	12,02
COP		4,08	4,08	4,08	4,08	4,22	4,22	4,22	4,21	4,21	4,33	4,33
Minimum available fresh air %		35%				35%					35%	
Length (vertical return)	mm	1549										
Length (horizontal return)		2177										
Height		2275										
Width		2270										
G4+F7 (ePM1) + F9 (ePM1) filtration												
G4 Gravimetric efficiency - EN 779:2002		Am≤90%/G4										
F7 Opacimetric efficiency - EN 779:2002 ePM1 - ISO16890		Em≤95%/F9 > 85%										
F9 Opacimetric efficiency - EN 779:2002 Class ePM1 - ISO16890		Em≤95%/F9 > 85%										
Number of filters		12										
G4 Filter Size	mm	490 x 592 x 48										
F7 (ePM1) filter size		490 x 592 x 98										
F9 (ePM1) filter size		490 x 592 x 292										
Fire Class		M1/A2										
Acoustic data												
Outdoor sound power With compressor acoustic insulation option (8)	dB(A)	77	78	80	79	80	81	74	76	79	79	82
Outdoor sound power With low ambient condition EC condenser fan (option) (8)		80	80	83	82	83	83	78	81	82	82	85
Outdoor sound power With compressor acoustic insulation + low ambient condition EC condenser fan (options) (8)		78	79	81	79	80	82	75	77	80	80	83

(6) 50 % fresh air
Outdoor air temperature 35°C
Indoor air temperature 27°C

(7) 50 % fresh air
Outdoor air temperature 7°C
Indoor air temperature 20°C

(8) All data are at Eurovent conditions (400V/3Ph/50Hz - Nominal airflow rate - Nominal external static pressure).

ACCESSORIES PRESSURE DROP

To be added to pressure drops of basic unit

eNeRGy	Airflow rate (m^3/h)	G4 + F7 (ePM1) (1) (clean filters)	G4 + F7 (ePM1) + F9 (ePM1) (1) (clean filters)	Cooling & Heating Water coil Standard	Cooling & Heating Water coil High	Electrical pre-heater Standard	Electrical pre-heater High	Electrical heater Standard	Electrical heater Medium	Electrical heater High
014AH	9500	40,0	65,4	4,8	9,3	5,0	5,0	5,0	9,9	14,9
	13500	80,8	132,1	9,6	18,9	10,0	10,0	10,0	20,0	30,0
	24000	255,3	417,6	30,5	59,6	31,6	31,6	31,6	63,2	94,8
016AH	10500	44,2	72,0	5,6	11,1	6,0	6,0	6,0	12,1	18,1
	15500	96,2	157,0	12,2	24,1	13,2	13,2	13,2	26,4	39,5
	24000	230,7	376,3	29,2	57,8	31,6	31,6	31,6	63,2	94,8
019AH	13000	59,0	95,7	8,1	16,3	9,3	9,3	9,3	18,5	27,8
	18900	124,6	202,3	17,2	34,5	19,6	19,6	19,6	39,2	58,8
	24000	200,9	326,2	27,7	55,7	31,6	31,6	31,6	63,2	94,8
022AH	15000	49,1	80,0	8,0	13,8	4,8	4,8	4,8	9,6	14,5
	21600	101,9	166,0	16,5	28,5	10,0	10,0	10,0	20,0	30,0
	24000	125,8	204,9	20,4	35,2	12,3	12,3	12,3	24,7	37,0
024AH	17000	58,1	94,4	9,5	17,2	6,2	6,2	6,2	12,4	18,6
	24300	118,8	193,0	19,4	35,1	12,7	12,7	12,7	25,3	38,0
	32000	206,0	334,6	33,7	60,8	21,9	21,9	21,9	43,9	65,8
027AH	18500	64,1	103,9	10,6	19,9	7,3	7,3	7,3	14,7	22,0
	27000	136,6	221,3	22,5	42,3	15,6	15,6	15,6	31,3	46,9
	32000	191,9	310,9	31,7	59,5	21,9	21,9	21,9	43,9	65,8

(1) : Filters pressure drops indicated for clean filters.

ACCESSORIES PRESSURE DROP

To be added to pressure drops of basic unit

eNeRGy	Airflow rate (m^3/h)	Condensing gas burner Standard - Vertical	Condensing gas burner Standard - Horizontal	Condensing gas burner High - Vertical	Condensing gas burner High - Horizontal	Rotary wheel with filters (clean filters)	Thermodynamic heat recovery on horizontal exhaust air	Thermodynamic heat recovery on horizontal exhaust air (outdoor coil Press.drops)	eRecovery
014AH	**9500**	50,8	50,8	38,6	38,6	72,9	2,0	35,7	9,3
	13500	102,7	102,7	77,9	77,9	147,3	4,0	72,0	18,9
	24000	324,5	324,5	246,1	246,1	465,5	12,6	227,6	59,6
016AH	**10500**	60,9	60,9	45,1	45,1	79,1	2,3	40,8	11,1
	15500	132,7	132,7	98,3	98,3	172,3	5,0	89,0	24,1
	24000	318,2	318,2	235,6	235,6	413,1	12,0	213,4	57,8
019AH	**13000**	91,1	91,1	65,4	65,4	102,6	3,3	56,8	16,3
	18900	192,5	192,5	138,2	138,2	216,8	7,0	120,0	34,5
	24000	310,4	310,4	222,9	222,9	349,6	11,3	193,5	55,7
022AH	**15000**	84,2	84,2	11,3	26,0	122,4	2,9	38,1	13,8
	21600	174,6	174,6	23,5	53,9	253,9	6,0	79,0	28,5
	24000	215,6	215,6	29,0	66,6	313,4	7,4	97,5	35,2
024AH	**17000**	105,3	105,3	15,0	32,0	143,1	3,4	46,5	17,2
	24300	215,2	215,2	30,7	65,4	292,4	7,0	95,0	35,1
	32000	373,2	373,2	53,3	113,4	507,1	12,1	164,7	60,8
027AH	**18500**	122,1	122,1	18,3	36,6	156,1	3,8	52,6	19,9
	27000	260,0	260,0	38,9	77,9	332,5	8,0	112,0	42,3
	32000	365,2	365,2	54,6	109,4	467,0	11,2	157,3	59,5

THERMODYNAMIC HEAT RECOVERY

Cooling capacity

Data according to Eurovent standard conditions

eNeRGy	Fresh air %	Indoor temperature Wet bulb	Indoor temperature Dry bulb	Outdoor air temperature 27 °C PT	PS	PA
014AH 016AH 022AH	50	20 °C	26 °C	28,9	23,7	7,1
	70			29,9	24,1	6,6
	90			30,4	24,3	6,4
	100			30,6	24,4	6,3
	130			31,1	24,5	6,1
022AH 024AH 027AH	50	20 °C	26 °C	51,4	37,0	14,8
	70			52,1	37,3	14,4
	90			53,3	37,8	13,7
	100			53,8	38,0	13,5
	130			54,7	38,2	13,0

THERMODYNAMIC HEAT RECOVERY

Heating capacity

Data according to Eurovent standard conditions

eNeRGy	Fresh air %	Indoor temperature Dry bulb	Outdoor air temperature 27 °C PT	PA
014AH 016AH 022AH	50	23 °C	26,1	5,8
	70		27,3	5,9
	90		28,0	6,0
	100		28,3	6,0
	130		29,0	6,0
022AH 024AH 027AH	50	23 °C	45,5	14,0
	70		47,6	14,3
	90		48,9	14,4
	100		49,4	14,5
	130		50,5	14,7

PT :	Gross total cooling/heating capacity in kW
PS :	Sensible heating capacity in kW
PA :	Compressor absorbed power

eRecovery WATER COIL PERFORMANCES

Return air temperature : 0°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 45 - 40 Fluid : Glycol 30%				40 - 35 Fluid : Glycol 30%				35 - 30 Fluid : Glycol 30%			
		Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	75,3	80,8	22,0	13,0	66,0	62,8	19,3	11,4	56,7	47,0	16,6	9,8
	13500	92,8	121,5	19,1	16,0	81,2	94,2	16,7	14,0	69,7	70,3	14,3	12,0
	24000	-	-	-	-	110,7	172,6	12,8	19,1	94,9	128,4	11,0	16,3
016AH	10500	80,0	91,0	21,2	13,8	70,1	70,7	18,5	12,1	60,2	52,8	15,9	10,4
	15500	100,3	141,6	18,0	17,3	87,8	109,7	15,7	15,1	75,3	81,8	13,5	13,0
	24000	-	-	-	-	110,7	172,6	12,8	19,1	94,9	128,4	11,0	16,3
019AH	13000	90,8	116,5	19,4	15,6	79,5	90,3	17,0	13,7	68,2	67,4	14,6	11,8
	18900	111,8	175,0	16,4	19,2	97,8	135,5	14,4	16,8	83,9	100,9	12,3	14,4
	24000	-	-	-	-	110,7	172,6	12,8	19,1	94,9	128,4	11,0	16,3
022AH	15000	109,1	155,0	20,2	18,8	95,6	119,9	17,7	16,5	82,1	89,2	15,2	14,1
	21600	134,2	233,1	17,2	23,1	117,5	180,0	15,1	20,2	100,8	133,6	13,0	17,4
	24000	142,1	260,9	16,4	24,5	124,4	201,3	14,4	21,4	106,6	149,4	12,3	18,4
024AH	17000	117,3	178,9	19,2	20,2	102,8	138,3	16,8	17,7	88,2	102,8	14,4	15,2
	24300	143,0	264,3	16,3	24,6	125,2	203,9	14,3	21,6	107,3	151,3	12,3	18,5
	32000	-	-	-	-	144,3	269,8	12,5	24,8	123,6	199,9	10,7	21,3
027AH	18500	123,1	196,8	18,5	21,2	107,8	152,0	16,2	18,6	92,5	112,9	13,9	15,9
	27000	-	-	-	-	132,3	227,4	13,6	22,8	113,4	168,6	11,7	19,5
	32000	-	-	-	-	144,3	269,8	12,5	24,8	123,6	199,9	10,7	21,3

eRecovery WATER COIL PERFORMANCES

Return air temperature : 10°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 45 - 40 Fluid : Glycol 30%				40 - 35 Fluid : Glycol 30%				35 - 30 Fluid : Glycol 30%			
		Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	55,8	45,1	17,0	9,6	46,7	32,1	14,2	8,1	37,7	21,3	11,4	6,5
	13500	68,8	67,8	14,7	11,8	57,5	48,1	12,3	9,9	46,3	31,8	9,9	8,0
	24000	93,9	124,6	11,3	16,2	78,4	88,1	9,4	13,5	62,9	57,9	7,6	10,9
016AH	10500	59,3	50,8	16,3	10,2	49,7	36,2	13,7	8,6	40,0	23,9	11,0	6,9
	15500	74,4	79,0	13,8	12,8	62,2	56,0	11,6	10,7	50,0	36,9	9,3	8,6
	24000	93,9	124,6	11,3	16,2	78,4	88,1	9,4	13,5	62,9	57,9	7,6	10,9
019AH	13000	67,3	65,0	14,9	11,6	56,3	46,2	12,5	9,7	45,3	30,5	10,1	7,8
	18900	82,9	97,6	12,7	14,3	69,2	69,2	10,6	11,9	55,6	45,5	8,5	9,6
	24000	93,9	124,6	11,3	16,2	78,4	88,1	9,4	13,5	62,9	57,9	7,6	10,9
022AH	15000	80,9	86,1	15,6	13,9	67,7	60,9	13,0	11,7	54,5	40,1	10,5	9,4
	21600	99,5	129,5	13,3	17,1	83,2	91,4	11,1	14,3	66,8	59,9	8,9	11,5
	24000	105,3	144,9	12,7	18,1	88,0	102,2	10,6	15,2	70,7	66,9	8,5	12,2
024AH	17000	87,0	99,4	14,8	15,0	72,8	70,3	12,4	12,5	58,5	46,2	9,9	10,1
	24300	106,1	146,8	12,6	18,3	88,6	103,6	10,5	15,3	71,2	67,8	8,5	12,3
	32000	122,3	194,5	11,0	21,1	102,1	136,9	9,2	17,6	81,9	89,4	7,4	14,2
027AH	18500	91,3	109,3	14,2	15,7	76,3	77,2	11,9	13,2	61,4	50,7	9,6	10,6
	27000	112,1	163,8	12,0	19,3	93,6	115,5	10,0	16,1	75,2	75,5	8,0	13,0
	32000	122,3	194,5	11,0	21,1	102,1	136,9	9,2	17,6	81,9	89,4	7,4	14,2

eRecovery WATER COIL PERFORMANCES

Return air temperature : 20°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		45 - 40				40 - 35				35 - 30			
		Fluid : Glycol 30%				Fluid : Glycol 30%				Fluid : Glycol 30%			
		Heating capacity	Total pressure drop	□ Air temperature	Water flow rate	Heating capacity	Total pressure drop	□ Air temperature	Water flow rate	Heating capacity	Total pressure drop	□ Air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	37,2	20,6	11,8	6,4	28,3	12,1	9,0	4,9	19,5	5,9	6,2	3,4
	13500	45,8	30,8	10,2	7,9	34,8	18,1	7,7	6,0	23,8	8,7	5,3	4,1
	24000	62,4	56,4	7,8	10,8	47,2	32,8	5,9	8,1	32,1	15,7	4,0	5,6
016AH	10500	39,5	23,1	11,3	6,8	30,1	13,6	8,6	5,2	20,6	6,6	5,9	3,6
	15500	49,5	35,9	9,6	8,5	37,6	21,0	7,3	6,5	25,7	10,1	5,0	4,4
	24000	62,4	56,4	7,8	10,8	47,2	32,8	5,9	8,1	32,1	15,7	4,0	5,6
019AH	13000	44,8	29,5	10,4	7,7	34,0	17,3	7,9	5,9	23,3	8,4	5,4	4,0
	18900	55,1	44,3	8,8	9,5	41,8	25,8	6,6	7,2	28,5	12,4	4,5	4,9
	24000	62,4	56,4	7,8	10,8	47,2	32,8	5,9	8,1	32,1	15,7	4,0	5,6
022AH	15000	53,9	38,9	10,8	9,3	41,0	22,7	8,2	7,1	28,1	10,9	5,6	4,8
	21600	66,2	58,4	9,2	11,4	50,2	33,9	7,0	8,6	34,3	16,2	4,8	5,9
	24000	70,1	65,3	8,8	12,1	53,1	37,8	6,7	9,1	36,2	18,0	4,5	6,3
024AH	17000	57,9	44,9	10,2	10,0	44,0	26,1	7,8	7,6	30,1	12,5	5,3	5,2
	24300	70,6	66,1	8,7	12,2	53,5	38,3	6,6	9,2	36,4	18,2	4,5	6,3
	32000	81,3	87,5	7,6	14,0	61,5	50,5	5,8	10,6	41,8	23,9	3,9	7,2
027AH	18500	60,8	49,3	9,9	10,5	46,1	28,7	7,5	7,9	31,5	13,7	5,1	5,4
	27000	74,6	73,8	8,3	12,9	56,5	42,7	6,3	9,7	38,5	20,3	4,3	6,6
	32000	81,3	87,5	7,6	14,0	61,5	50,5	5,8	10,6	41,8	23,9	3,9	7,2

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY COLD WATER COIL
Return air temperature : 22°C

eNeRGy	Airflow rate	water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature	Water flow rate	Cooling capacity	Total pressure drop	Air temperature	Water flow rate	Cooling capacity	Total pressure drop	Air temperature	Water flow rate
	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	17000	7,7	5,6	2,4	1,3	10,7	10,5	3,4	1,8	11,2	15,3	3,5	2,1
	24300	9,2	7,8	2,0	1,6	12,7	14,8	2,8	2,2	12,6	18,8	2,8	2,4
	32000	11,8	12,8	1,5	2,0	16,6	24,7	2,1	2,9	14,8	25,2	1,8	2,8
016AH	17000	8,1	6,1	2,3	1,4	11,2	11,6	3,2	1,9	11,6	16,3	3,3	2,2
	24300	9,7	8,8	1,9	1,7	13,6	16,8	2,6	2,3	13,1	20,2	2,5	2,5
	32000	11,8	12,8	1,5	2,0	16,6	24,7	2,1	2,9	14,8	25,2	1,8	2,8
019AH	18500	9,0	7,5	2,1	1,6	12,5	14,3	2,9	2,2	12,4	18,4	2,9	2,4
	27000	10,7	10,4	1,7	1,8	14,9	20,1	2,4	2,6	13,9	22,4	2,2	2,6
	32000	11,8	12,8	1,5	2,0	16,6	24,7	2,1	2,9	14,8	25,2	1,8	2,8
022AH	9500	12,2	12,7	2,4	2,1	16,9	24,2	3,4	2,9	16,4	29,4	3,3	3,1
	13500	14,5	17,7	2,0	2,5	20,2	34,3	2,8	3,5	18,3	36,3	2,5	3,5
	24000	15,2	19,5	1,9	2,6	21,2	37,8	2,6	3,7	18,9	38,2	2,4	3,6
024AH	17000	13,0	14,3	2,3	2,2	18,0	27,3	3,2	3,1	17,1	31,8	3,0	3,3
	24300	15,3	19,7	1,9	2,6	21,4	38,2	2,6	3,7	18,9	38,5	2,3	3,6
	32000	17,3	25,0	1,6	3,0	24,2	48,8	2,3	4,2	20,5	44,7	1,9	3,9
027AH	18500	13,5	15,4	2,2	2,3	18,8	29,6	3,0	3,2	17,5	33,1	2,8	3,3
	27000	16,0	21,6	1,8	2,8	22,4	42,0	2,5	3,9	19,4	40,3	2,2	3,7
	32000	17,3	25,0	1,6	3,0	24,2	48,8	2,3	4,2	20,5	44,7	1,9	3,9

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY COLD WATER COIL
Return air temperature : 27°C

eNeRGy	Airflow rate	water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature	Water flow rate	Cooling capacity	Total pressure drop	Air temperature	Water flow rate	Cooling capacity	Total pressure drop	Air temperature	Water flow rate
	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	12,7	14,8	4,1	2,2	15,7	22,2	5,0	2,7	14,6	24,5	4,7	2,8
	13500	15,2	20,9	3,4	2,6	18,7	31,5	4,2	3,2	16,9	32,3	3,8	3,2
	24000	19,8	35,3	2,5	3,4	24,5	53,4	3,1	4,2	27,8	91,4	3,5	5,3
016AH	10500	13,4	16,3	3,9	2,3	16,5	24,6	4,8	2,8	15,1	26,1	4,4	2,9
	15500	16,2	23,8	3,2	2,8	20,0	35,9	3,9	3,5	18,4	41,1	3,6	3,5
	24000	19,8	35,3	2,5	3,4	24,5	53,4	3,1	4,2	27,8	91,4	3,5	5,3
019AH	13000	14,9	20,1	3,5	2,6	18,4	30,3	4,3	3,2	16,6	31,2	3,9	3,2
	18900	17,8	28,6	2,9	3,1	22,0	43,2	3,5	3,8	23,5	66,4	3,8	4,5
	24000	19,8	35,3	2,5	3,4	24,5	53,4	3,1	4,2	27,8	91,4	3,5	5,3
022AH	15000	20,2	34,2	4,1	3,5	24,9	51,7	5,0	4,3	22,8	57,8	4,6	4,3
	21600	24,2	48,9	3,4	4,2	29,9	74,0	4,2	5,1	33,2	120,8	4,7	6,3
	24000	25,4	53,9	3,2	4,4	31,4	81,7	4,0	5,4	35,6	138,4	4,5	6,8
024AH	17000	21,5	38,8	3,8	3,7	26,5	58,6	4,7	4,6	26,2	75,8	4,7	5,0
	24300	25,6	54,6	3,2	4,4	31,6	82,7	4,0	5,4	35,9	140,5	4,5	6,8
	32000	29,0	69,9	2,8	5,0	35,8	106,2	3,4	6,2	42,2	193,2	4,0	8,0
027AH	18500	22,4	42,1	3,7	3,9	27,7	63,7	4,6	4,8	29,2	93,9	4,8	5,6
	27000	26,9	60,1	3,0	4,6	33,2	91,1	3,7	5,7	38,4	160,5	4,3	7,3
	32000	29,0	69,9	2,8	5,0	35,8	106,2	3,4	6,2	42,2	193,2	4,0	8,0

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY COLD WATER COIL

Return air temperature : 35°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	20,6	37,9	6,8	3,6	23,5	49,2	7,7	4,1	24,9	73,8	8,2	4,7
	13500	24,6	53,6	5,7	4,2	28,2	70,3	6,5	4,9	31,2	114,3	7,2	5,9
	24000	32,4	91,7	4,2	5,6	37,1	120,7	4,8	6,4	42,3	208,5	5,5	8,1
016AH	10500	21,7	42,0	6,4	3,7	24,8	54,5	7,4	4,3	26,7	84,9	7,9	5,1
	15500	26,4	61,3	5,3	4,5	30,2	80,4	6,1	5,2	33,7	133,1	6,8	6,4
	24000	32,4	91,7	4,2	5,6	37,1	120,7	4,8	6,4	42,3	208,5	5,5	8,1
019AH	13000	24,2	51,6	5,8	4,2	27,6	67,7	6,6	4,8	30,5	109,5	7,3	5,8
	18900	29,0	73,9	4,8	5,0	33,2	97,1	5,5	5,7	37,6	165,2	6,2	7,1
	24000	32,4	91,7	4,2	5,6	37,1	120,7	4,8	6,4	42,3	208,5	5,5	8,1
022AH	15000	32,8	89,1	6,8	5,7	37,4	115,7	7,8	6,5	41,6	187,7	8,7	7,9
	21600	39,4	127,2	5,7	6,8	45,0	167,2	6,5	7,8	51,2	283,2	7,4	9,7
	24000	41,5	140,7	5,4	7,1	47,4	185,1	6,2	8,2	54,1	315,6	7,0	10,3
024AH	17000	34,9	100,3	6,4	6,0	39,9	131,7	7,3	6,9	44,8	216,6	8,2	8,5
	24300	41,7	142,4	5,4	7,2	47,7	187,3	6,1	8,2	54,5	319,6	7,0	10,4
	32000	47,4	183,6	4,6	8,2	54,3	241,9	5,3	9,4	62,5	418,1	6,1	11,9
027AH	18500	36,5	109,2	6,1	6,3	41,7	143,4	7,0	7,2	47,1	240,2	7,9	9,0
	27000	43,9	157,2	5,1	7,6	50,2	206,9	5,8	8,7	57,5	355,0	6,6	10,9
	32000	47,4	183,6	4,6	8,2	54,3	241,9	5,3	9,4	62,5	418,1	6,1	11,9

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY COLD WATER COIL

Return air temperature : 22°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	13,4	5,9	4,2	2,3	18,5	11,2	5,8	3,2	20,3	17,7	6,4	3,8
	13500	16,3	8,7	3,6	2,8	22,5	16,5	5,0	3,9	23,2	22,7	5,1	4,4
	24000	21,8	15,4	2,7	3,8	30,2	29,3	3,8	5,2	28,0	32,0	3,5	5,3
016AH	10500	14,2	6,6	4,0	2,5	19,6	12,5	5,6	3,4	21,1	19,0	6,0	4,0
	15500	17,5	10,0	3,4	3,0	24,2	18,9	4,7	4,2	24,4	25,0	4,7	4,6
	24000	21,8	15,4	2,7	3,8	30,2	29,3	3,8	5,2	28,0	32,0	3,5	5,3
019AH	13000	16,0	8,3	3,7	2,8	22,1	15,8	5,1	3,8	22,9	22,1	5,3	4,3
	18900	19,4	12,2	3,1	3,3	26,9	23,2	4,3	4,6	26,0	28,0	4,1	4,9
	24000	21,8	15,4	2,7	3,8	30,2	29,3	3,8	5,2	28,0	32,0	3,5	5,3
022AH	15000	19,3	11,5	3,8	3,3	26,6	21,7	5,3	4,6	28,1	31,3	5,6	5,3
	21600	23,4	16,8	3,2	4,0	32,3	31,8	4,5	5,6	31,9	40,0	4,4	6,1
	24000	24,6	18,7	3,1	4,3	34,1	35,4	4,3	5,9	33,1	42,7	4,1	6,3
024AH	17000	20,6	13,1	3,6	3,6	28,5	24,9	5,0	4,9	29,4	34,3	5,2	5,6
	24300	24,8	18,9	3,1	4,3	34,4	35,9	4,2	5,9	33,2	43,1	4,1	6,3
	32000	28,3	24,6	2,6	4,9	39,4	47,0	3,7	6,8	36,1	50,5	3,4	6,9
027AH	18500	21,6	14,3	3,5	3,7	29,8	27,3	4,8	5,2	30,3	36,3	4,9	5,8
	27000	26,1	20,9	2,9	4,5	36,2	39,9	4,0	6,2	34,3	46,1	3,8	6,5
	32000	28,3	24,6	2,6	4,9	39,4	47,0	3,7	6,8	36,1	50,5	3,4	6,9

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY COLD WATER COIL

Return air temperature : 27°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	21,8	15,4	7,0	3,8	26,8	23,0	8,6	4,6	26,2	28,4	8,4	5,0
	13500	26,7	22,9	6,0	4,6	32,8	34,4	7,4	5,7	30,2	37,1	6,8	5,7
	24000	36,1	41,5	4,6	6,2	44,5	62,7	5,6	7,7	48,0	96,4	6,1	9,1
016AH	10500	23,2	17,3	6,7	4,0	28,4	25,9	8,2	4,9	27,3	30,7	7,9	5,2
	15500	28,8	26,6	5,7	5,0	35,4	40,0	7,0	6,1	31,7	40,8	6,2	6,0
	24000	36,1	41,5	4,6	6,2	44,5	62,7	5,6	7,7	48,0	96,4	6,1	9,1
019AH	13000	26,2	22,0	6,1	4,5	32,2	33,0	7,5	5,5	29,7	36,0	7,0	5,6
	18900	32,0	32,7	5,2	5,5	39,4	49,3	6,3	6,8	36,1	55,1	5,8	6,9
	24000	36,1	41,5	4,6	6,2	44,5	62,7	5,6	7,7	48,0	96,4	6,1	9,1
022AH	15000	31,5	30,2	6,4	5,4	38,7	45,4	7,8	6,7	36,4	51,6	7,4	6,9
	21600	38,5	45,0	5,4	6,6	47,4	67,8	6,7	8,2	43,0	71,0	6,1	8,2
	24000	40,7	50,2	5,2	7,0	50,1	75,7	6,4	8,6	45,9	83,4	5,8	8,7
024AH	17000	33,8	34,8	6,0	5,8	41,6	52,3	7,4	7,2	38,2	56,5	6,8	7,3
	24300	40,9	50,8	5,1	7,1	50,4	76,7	6,3	8,7	46,3	85,0	5,8	8,8
	32000	47,0	66,9	4,5	8,1	58,0	101,2	5,5	10,0	63,6	159,4	6,0	12,1
027AH	18500	35,4	38,1	5,8	6,1	43,6	57,4	7,2	7,5	39,5	60,0	6,5	7,5
	27000	43,2	56,6	4,9	7,5	53,2	85,4	6,0	9,2	53,1	111,7	6,0	10,1
	32000	47,0	66,9	4,5	8,1	58,0	101,2	5,5	10,0	63,6	159,4	6,0	12,1

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY COLD WATER COIL

Return air temperature : 30°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		10 - 15 °C				7 - 12 °C				0 - 5 °C			
		Fluid : water				Fluid : water				Fluid : Glycol 30%			
		Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate	Cooling capacity	Total pressure drop	Air temperature □	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	26,8	23,0	8,7	4,6	31,7	32,3	10,3	5,5	29,8	36,2	9,6	5,7
	13500	32,9	34,4	7,5	5,7	39,0	48,1	8,9	6,7	36,3	55,7	8,3	6,9
	24000	44,6	62,7	5,7	7,7	53,0	88,2	6,8	9,1	59,7	147,7	7,6	11,3
016AH	10500	28,4	25,8	8,3	4,9	33,7	36,4	9,9	5,8	31,1	39,2	9,1	5,9
	15500	35,5	40,0	7,0	6,1	42,1	56,0	8,3	7,2	42,4	75,8	8,4	8,1
	24000	44,6	62,7	5,7	7,7	53,0	88,2	6,8	9,1	59,7	147,7	7,6	11,3
019AH	13000	32,2	32,9	7,6	5,5	38,1	46,1	9,0	6,6	35,5	53,3	8,4	6,7
	18900	39,5	49,3	6,4	6,8	46,8	69,2	7,6	8,1	50,9	108,4	8,3	9,7
	24000	44,6	62,7	5,7	7,7	53,0	88,2	6,8	9,1	59,7	147,7	7,6	11,3
022AH	15000	38,7	45,3	7,9	6,7	45,9	64,1	9,4	7,9	42,2	68,3	8,6	8,0
	21600	47,4	67,8	6,7	8,2	56,3	95,2	8,0	9,7	59,3	139,0	8,4	11,3
	24000	50,2	75,8	6,4	8,6	59,5	106,4	7,6	10,3	64,7	164,9	8,3	12,3
024AH	17000	41,6	52,2	7,5	7,2	49,3	73,2	8,9	8,5	45,9	83,4	8,3	8,7
	24300	50,5	76,8	6,4	8,7	59,9	107,8	7,6	10,3	65,3	167,8	8,2	12,4
	32000	58,1	101,4	5,6	10,0	69,0	142,6	6,6	11,9	78,4	240,9	7,5	14,9
027AH	18500	43,6	57,4	7,2	7,5	51,7	80,4	8,6	8,9	48,5	93,0	8,0	9,2
	27000	53,3	85,5	6,1	9,2	63,3	120,2	7,2	10,9	70,2	193,4	8,0	13,3
	32000	58,1	101,4	5,6	10,0	69,0	142,6	6,6	11,9	78,4	240,9	7,5	14,9

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY HOT WATER COIL

Return air temperature : 0°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 90 - 70 Fluid : water				80 - 60 Fluid : water				70 - 50 Fluid : water			
		Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	82,1	35,9	24,0	3,5	70,8	27,1	20,7	3,1	59,4	19,2	17,3	2,6
	13500	98,3	51,2	20,2	4,2	84,6	38,1	17,4	3,6	71,0	27,2	14,6	3,1
	24000	128,9	87,3	14,9	5,6	110,8	64,8	12,8	4,8	92,8	46,0	10,7	4,0
016AH	10500	86,5	39,8	22,8	3,7	74,5	29,7	19,7	3,2	62,6	21,2	16,5	2,7
	15500	105,2	58,5	18,8	4,5	90,5	43,5	16,2	3,9	75,9	31,0	13,6	3,3
	24000	128,9	87,3	14,9	5,6	110,8	64,8	12,8	4,8	92,8	46,0	10,7	4,0
019AH	13000	96,4	49,3	20,6	4,2	83,0	36,8	17,7	3,6	69,7	26,2	14,9	3,0
	18900	115,5	70,5	17,0	5,0	99,4	52,4	14,6	4,3	83,3	37,2	12,2	3,6
	24000	128,9	87,3	14,9	5,6	110,8	64,8	12,8	4,8	92,8	46,0	10,7	4,0
022AH	15000	131,0	86,2	24,2	5,6	112,9	64,6	20,9	4,9	94,7	45,5	17,5	4,1
	21600	157,3	123,9	20,2	6,8	135,3	91,8	17,4	5,8	113,4	65,0	14,6	4,9
	24000	165,5	137,0	19,1	7,1	142,3	101,4	16,4	6,1	119,2	71,8	13,8	5,1
024AH	17000	139,7	97,9	22,8	6,0	120,2	72,6	19,6	5,2	100,8	51,5	16,4	4,3
	24300	166,4	138,6	19,0	7,2	143,2	102,6	16,3	6,2	119,9	72,6	13,7	5,2
	32000	189,0	178,3	16,4	8,2	162,5	131,8	14,1	7,0	135,9	93,1	11,8	5,9
027AH	18500	145,7	106,5	21,8	6,3	125,4	79,0	18,8	5,4	105,2	56,0	15,8	4,5
	27000	174,9	152,9	18,0	7,5	150,4	113,1	15,4	6,5	125,9	80,0	12,9	5,4
	32000	189,0	178,3	16,4	8,2	162,5	131,8	14,1	7,0	135,9	93,1	11,8	5,9

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY HOT WATER COIL

Return air temperature : 10°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 90 - 70 Fluid : water				80 - 60 Fluid : water				70 - 50 Fluid : water			
		Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate	Heating capacity	Total pressure drop	Air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	69,9	26,3	21,2	3,0	58,8	18,7	17,8	2,5	47,7	12,5	14,4	2,1
	13500	83,7	37,5	17,8	3,6	70,3	26,5	15,0	3,0	57,0	17,7	12,1	2,5
	24000	109,8	63,4	13,1	4,7	92,1	45,1	11,0	4,0	74,4	29,9	8,9	3,2
016AH	10500	73,7	29,1	20,2	3,2	61,9	20,7	17,0	2,7	50,2	13,8	13,8	2,2
	15500	89,6	42,8	16,6	3,9	75,2	30,3	14,0	3,2	60,9	20,2	11,3	2,6
	24000	109,8	63,4	13,1	4,7	92,1	45,1	11,0	4,0	74,4	29,9	8,9	3,2
019AH	13000	82,2	36,1	18,2	3,6	69,0	25,6	15,3	3,0	55,9	17,1	12,4	2,4
	18900	98,4	51,1	15,0	4,2	82,6	36,5	12,6	3,6	66,8	24,2	10,2	2,9
	24000	109,8	63,4	13,1	4,7	92,1	45,1	11,0	4,0	74,4	29,9	8,9	3,2
022AH	15000	111,5	62,9	21,4	4,8	93,7	44,4	18,0	4,0	75,9	29,5	14,6	3,3
	21600	134,0	90,5	17,8	5,8	112,5	63,7	15,0	4,8	91,0	42,2	12,1	3,9
	24000	141,0	100,0	16,9	6,1	118,3	70,4	14,2	5,1	95,6	46,5	11,5	4,1
024AH	17000	119,0	71,4	20,1	5,1	99,9	50,4	16,9	4,3	80,9	33,4	13,7	3,5
	24300	141,8	101,2	16,8	6,1	119,0	71,2	14,1	5,1	96,2	47,1	11,4	4,1
	32000	161,0	129,1	14,5	6,9	135,0	91,5	12,1	5,8	109,0	60,3	9,8	4,7
027AH	18500	124,1	77,7	19,3	5,4	104,2	54,8	16,2	4,5	84,4	36,3	13,1	3,6
	27000	149,1	111,7	15,9	6,4	125,0	78,5	13,3	5,4	101,0	51,9	10,8	4,4
	32000	161,0	129,1	14,5	6,9	135,0	91,5	12,1	5,8	109,0	60,3	9,8	4,7

COOLING AND HEATING AUXILIARIES - STANDARD CAPACITY HOT WATER COIL

Return air temperature : 20°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 90 - 70 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h	80 - 60 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h	70 - 50 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h
014AH	9500	58,1	18,2	18,2	2,5	47,3	12,2	14,8	2,0	36,4	7,3	11,4	1,6
	13500	69,6	25,9	15,3	3,0	56,6	17,3	12,5	2,4	43,4	10,3	9,6	1,9
	24000	91,4	44,2	11,3	3,9	74,1	29,5	9,2	3,2	56,6	17,4	7,0	2,4
016AH	10500	61,3	20,1	17,4	2,6	49,8	13,5	14,1	2,1	38,3	8,1	10,9	1,6
	15500	74,5	29,6	14,3	3,2	60,5	19,8	11,6	2,6	46,4	11,8	8,9	2,0
	24000	91,4	44,2	11,3	3,9	74,1	29,5	9,2	3,2	56,6	17,4	7,0	2,4
019AH	13000	68,3	25,0	15,6	2,9	55,5	16,7	12,7	2,4	42,6	10,0	9,8	1,8
	18900	81,9	35,7	12,9	3,5	66,5	23,8	10,5	2,9	50,9	14,1	8,0	2,2
	24000	91,4	44,2	11,3	3,9	74,1	29,5	9,2	3,2	56,6	17,4	7,0	2,4
022AH	15000	92,7	43,3	18,4	4,0	75,4	28,9	14,9	3,2	57,8	17,2	11,5	2,5
	21600	111,4	62,4	15,4	4,8	90,4	41,5	12,5	3,9	69,2	24,5	9,5	3,0
	24000	117,2	69,0	14,5	5,0	95,1	45,8	11,8	4,1	72,7	27,0	9,0	3,1
024AH	17000	98,9	49,2	17,3	4,3	80,3	32,8	14,1	3,5	61,6	19,5	10,8	2,7
	24300	117,9	69,8	14,4	5,1	95,6	46,4	11,7	4,1	73,1	27,3	9,0	3,2
	32000	134,0	89,9	12,5	5,8	108,5	59,6	10,1	4,7	82,9	35,0	7,7	3,6
027AH	18500	103,2	53,6	16,6	4,4	83,8	35,7	13,5	3,6	64,2	21,1	10,3	2,8
	27000	123,9	77,0	13,7	5,3	100,5	51,1	11,1	4,3	76,8	30,1	8,5	3,3
	32000	134,0	89,9	12,5	5,8	108,5	59,6	10,1	4,7	82,9	35,0	7,7	3,6

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY HOT WATER COIL

Return air temperature : 0°C

eNeRGy	Airflow rate m³/h	water temperature (°C) 90 - 70 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h	80 - 60 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h	70 - 50 Fluid : water Heating capacity kW	Total pressure drop kPa	Air temperature °C	Water flow rate m³/h
014AH	9500	140,5	38,0	41,0	6,1	121,5	28,7	35,5	5,2	102,4	20,4	29,9	4,4
	13500	172,5	57,0	35,4	7,4	149,0	42,9	30,6	6,4	125,3	30,4	25,7	5,4
	24000	234,3	104,4	27,1	10,1	202,0	78,3	23,3	8,7	169,3	55,1	19,6	7,3
016AH	10500	149,2	42,7	39,4	6,4	129,0	32,2	34,1	5,6	108,6	22,9	28,7	4,7
	15500	186,3	66,3	33,3	8,0	160,8	49,9	28,8	6,9	135,1	35,3	24,2	5,8
	24000	234,3	104,4	27,1	10,1	202,0	78,3	23,3	8,7	169,3	55,1	19,6	7,3
019AH	13000	168,9	54,6	36,0	7,3	145,9	41,1	31,1	6,3	122,6	29,2	26,2	5,3
	18900	207,3	81,9	30,4	8,9	178,8	61,6	26,2	7,7	150,0	43,4	22,0	6,5
	24000	234,3	104,4	27,1	10,1	202,0	78,3	23,3	8,7	169,3	55,1	19,6	7,3
022AH	15000	203,2	76,2	37,6	8,8	175,6	57,3	32,5	7,6	147,7	40,5	27,3	6,4
	21600	249,1	114,2	32,0	10,7	215,0	85,6	27,6	9,3	180,5	60,3	23,2	7,8
	24000	263,5	127,7	30,4	11,4	227,3	95,7	26,3	9,8	190,7	67,3	22,0	8,2
024AH	17000	218,3	87,8	35,6	9,4	188,5	66,0	30,7	8,1	158,5	46,6	25,8	6,8
	24300	265,2	129,3	30,3	11,4	228,8	96,9	26,1	9,9	192,0	68,2	21,9	8,3
	32000	305,2	170,9	26,4	13,2	263,0	127,8	22,8	11,4	220,4	89,7	19,1	9,5
027AH	18500	228,9	96,5	34,3	9,9	197,6	72,4	29,6	8,5	166,0	51,1	24,9	7,1
	27000	280,1	144,2	28,8	12,1	241,5	108,0	24,8	10,4	202,6	75,9	20,8	8,7
	32000	305,2	170,9	26,4	13,2	263,0	127,8	22,8	11,4	220,4	89,7	19,1	9,5

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY HOT WATER COIL

Return air temperature : 10°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		90 - 70				80 - 60				70 - 50			
		Fluid : water				Fluid : water				Fluid : water			
		Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate	Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate	Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	119,6	27,7	36,2	5,2	101,0	19,8	30,6	4,3	82,3	13,3	24,9	3,5
	13500	146,9	41,6	31,3	6,3	123,8	29,6	26,4	5,3	100,6	19,8	21,4	4,3
	24000	199,7	76,3	23,9	8,6	167,8	54,0	20,1	7,2	135,9	35,8	16,3	5,9
016AH	10500	127,0	31,2	34,8	5,5	107,1	22,2	29,3	4,6	87,3	14,9	23,9	3,8
	15500	158,7	48,4	29,4	6,8	133,6	34,4	24,8	5,8	108,5	23,0	20,1	4,7
	24000	199,7	76,3	23,9	8,6	167,8	54,0	20,1	7,2	135,9	35,8	16,3	5,9
019AH	13000	143,8	39,8	31,8	6,2	121,2	28,4	26,8	5,2	98,5	19,0	21,8	4,2
	18900	176,6	59,8	26,9	7,6	148,5	42,4	22,6	6,4	120,5	28,2	18,3	5,2
	24000	199,7	76,3	23,9	8,6	167,8	54,0	20,1	7,2	135,9	35,8	16,3	5,9
022AH	15000	173,0	55,5	33,1	7,5	145,8	39,4	27,9	6,3	118,7	26,3	22,7	5,1
	21600	212,2	83,2	28,2	9,2	178,6	58,9	23,8	7,7	145,0	39,2	19,3	6,2
	24000	224,5	93,1	26,9	9,7	188,8	65,8	22,6	8,1	153,2	43,7	18,3	6,6
024AH	17000	185,9	64,0	31,4	8,0	156,6	45,4	26,5	6,7	127,3	30,3	21,5	5,5
	24300	225,9	94,3	26,7	9,8	190,0	66,7	22,5	8,2	154,2	44,2	18,2	6,6
	32000	260,1	124,7	23,4	11,2	218,5	88,0	19,6	9,4	177,0	58,2	15,9	7,6
027AH	18500	194,9	70,3	30,3	8,4	164,1	49,9	25,5	7,1	133,4	33,2	20,7	5,7
	27000	238,7	105,1	25,4	10,3	200,7	74,3	21,4	8,6	162,7	49,2	17,3	7,0
	32000	260,1	124,7	23,4	11,2	218,5	88,0	19,6	9,4	177,0	58,2	15,9	7,6

COOLING AND HEATING AUXILIARIES - HIGH CAPACITY HOT WATER COIL

Return air temperature : 20°C

eNeRGy	Airflow rate m³/h	□ water temperature (°C)											
		90 - 70				80 - 60				70 - 50			
		Fluid : water				Fluid : water				Fluid : water			
		Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate	Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate	Heating capacity	Pressure drop (1)	□ air temperature	Water flow rate
		kW	kPa	°C	m³/h	kW	kPa	°C	m³/h	kW	kPa	°C	m³/h
014AH	9500	99,5	19,2	31,2	4,3	81,3	12,9	25,5	3,5	63,0	7,9	19,7	2,7
	13500	122,2	28,7	26,9	5,3	99,7	19,3	22,0	4,3	76,9	11,6	16,9	3,3
	24000	166,1	52,7	20,6	7,2	135,0	35,2	16,7	5,8	103,6	20,9	12,8	4,5
016AH	10500	105,7	21,6	30,0	4,5	86,3	14,5	24,5	3,7	66,8	8,9	18,9	2,9
	15500	132,0	33,5	25,3	5,7	107,5	22,5	20,6	4,6	82,8	13,4	15,9	3,6
	24000	166,1	52,7	20,6	7,2	135,0	35,2	16,7	5,8	103,6	20,9	12,8	4,5
019AH	13000	119,6	27,6	27,4	5,2	97,6	18,5	22,3	4,2	75,3	11,1	17,2	3,2
	18900	146,9	41,3	23,1	6,3	119,5	27,7	18,8	5,2	91,9	16,5	14,5	4,0
	24000	166,1	52,7	20,6	7,2	135,0	35,2	16,7	5,8	103,6	20,9	12,8	4,5
022AH	15000	143,9	38,3	28,6	6,2	117,4	25,7	23,3	5,1	90,8	15,6	18,0	3,9
	21600	176,5	57,5	24,3	7,6	143,7	38,4	19,8	6,2	110,6	22,9	15,2	4,8
	24000	186,7	64,3	23,2	8,0	151,9	42,9	18,8	6,5	116,8	25,5	14,5	5,0
024AH	17000	154,6	44,2	27,1	6,7	126,1	29,6	22,1	5,4	97,4	17,9	17,0	4,2
	24300	188,0	65,1	23,0	8,1	152,9	43,4	18,7	6,6	117,6	25,8	14,4	5,1
	32000	216,4	86,1	20,1	9,3	175,8	57,3	16,3	7,6	134,8	33,9	12,5	5,8
027AH	18500	162,2	48,5	26,1	7,0	132,1	32,5	21,3	5,7	101,8	19,4	16,4	4,4
	27000	198,6	72,6	21,9	8,5	161,5	48,4	17,8	7,0	124,0	28,7	13,7	5,3
	32000	216,4	86,1	20,1	9,3	175,8	57,3	16,3	7,6	134,8	33,9	12,5	5,8

Electrical heaters

eNeRGy	Nominal airflow rate	Type	Heating capacity	Nominal current	Type of modulation		Air temperature rise (inculding heat gain from supply fan)
	m^3/h		kW	A			°C
014AH	13500	S	36	52,0	1 stage		7,8
		M	90	129,9	0/10V Triac	50% -->	9,7
						100% -->	19,2
		H	108	155,9		50% -->	11,6
						100% -->	23,0
016AH	15500	S	36	52,0	1 stage		6,9
		M	90	129,9	0/10V Triac	50% -->	8,6
						100% -->	16,8
		H	108	155,9		50% -->	10,2
						100% -->	20,2
019AH	18900	S	36	52,0	1 stage		5,8
		M	90	129,9	0/10V Triac	50% -->	7,2
						100% -->	14,0
		H	108	155,9		50% -->	8,5
						100% -->	16,7
022AH	21600	S	54	77,9	1 stage		7,5
		M	108	155,9	0/10V Triac	50% -->	7,5
						100% -->	14,7
		H	144	207,8		50% -->	9,9
						100% -->	19,4
024AH	24300	S	54	77,9	1 stage		6,7
		M	108	155,9	0/10V Triac	50% -->	6,7
						100% -->	13,0
		H	144	207,8		50% -->	8,8
						100% -->	17,2
027AH	27000	S	54	77,9	1 stage		6,1
		M	108	155,9	0/10V Triac	50% -->	6,1
						100% -->	11,8
		H	144	207,8		50% -->	8,0
						100% -->	15,6
019AN	13500	S	36	52,0			7,8
		M	90	129,9		50% -->	9,7
						100% -->	19,2
		H	108	155,9		50% -->	11,6
						100% -->	23,0

Air inlet temperature = 7°C (Eurovent condition at 100% fresh air)

Electrical pre-heaters

eNeRGy	Nominal airflow rate m³/h	Type	Heating capacity kW	Nominal current A	Type of modulation		Temperature rise due to pre-heater only °C
014AH	13500	S	36	52,0	0/10V Triac	50% -->	3,8
						100% -->	7,6
		M	90	129,9		50% -->	9,5
						100% -->	18,9
		H	108	155,9		50% -->	11,3
						100% -->	22,7
016AH	15500	S	36	52,0	0/10V Triac	50% -->	3,3
						100% -->	6,6
		M	90	129,9		50% -->	8,2
						100% -->	16,5
		H	108	155,9		50% -->	9,9
						100% -->	19,8
019AH	18900	S	36	52,0	0/10V Triac	50% -->	2,7
						100% -->	5,4
		M	90	129,9		50% -->	6,8
						100% -->	13,5
		H	108	155,9		50% -->	8,1
						100% -->	16,2
022AH	21600	S	54	77,9	0/10V Triac	50% -->	3,5
						100% -->	7,1
		M	108	155,9		50% -->	7,1
						100% -->	14,2
		H	144	207,8		50% -->	9,5
						100% -->	18,9
024AH	24300	S	54	77,9	0/10V Triac	50% -->	3,2
						100% -->	6,3
		M	108	155,9		50% -->	6,3
						100% -->	12,6
		H	144	207,8		50% -->	8,4
						100% -->	16,8
027AH	27000	S	54	77,9	0/10V Triac	50% -->	2,8
						100% -->	5,7
		M	108	155,9		50% -->	5,7
						100% -->	11,3
		H	144	207,8		50% -->	7,6
						100% -->	15,1

Air inlet temperature = 7°C / HR = 59%

GAZ BURNER

Vertical configuration			014AH - 016AH - 019AH		022AH - 024AH - 027AH	
			S*	H*	S*	H*
Minimum airflow rate of the gas module		m^3/h	4200	5400	5400	10800
Gas burner gross capacity	Mini	kW	16,4	18,0	18,0	18,0
	30% maxi		24,6	30,0	30,0	60,0
	Maxi		82,0	100,0	100,0	200,0
Gas burner absorbed power		kW	0,12	0,13	0,13	0,26
Gas burner efficiency	At min. capacity	%	108	109	109	109
	At 30% of max. capacity		107	106	106	105
	At max. capacity		98	97	97	97
NOX		mg/kWh	34	45	45	45

Horizontal configuration			014AH - 016AH - 019AH		022AH - 024AH - 027AH	
			S	H	S	H
Minimum airflow rate of the gas module		m^3/h	4200	5400	5400	10800
Gas burner gross capacity	Mini	kW	16,4	18,0	18,0	18,0
	30% maxi		24,6	30,0	30,0	60,0
	Maxi		82,0	100,0	100,0	200,0
Gas burner absorbed power		kW	0,12	0,13	0,13	0,26
Gas burner efficiency	At min. capacity	%	108	109	109	109
	At 30% of max. capacity		107	106	106	105
	At max. capacity		98	97	97	97
NOX		mg/kWh	34	45	45	45

CO at minimum efficiency = 2 ppm
CO at maxmum efficiency = 0 ppm
External static pressure at chimney = 120 Pa

***S** = Small capacity gas burner
***H** = High capacity gas burner

eNeRGy		014AH-055			014AH-065			014AH-075			016AH-085		
		P	I	Id	P	I	Id	P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00
Compressor		19,38	32,67	119,38	25,64	42,52	105,45	27,8	60,8	132,6	30,72	70,0	152,5
Condenser fan		1,20	2,40	5,20	3,68	7,80	16,90	1,68	3,48	6,74	3,68	7,80	16,90
Condenser fan + low noise option		1,94	3,20	3,20	3,70	5,70	5,70	1,86	3,00	3,00	3,70	5,70	5,70
Low pressure indoor supply kit		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20
High pressure indoor supply kit		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Electrical heater	S	36,0	51,96	51,96	36,0	51,96	51,96	36,0	51,96	51,96	36,0	51,96	51,96
	M	90,0	129,9	129,9	90,0	129,9	129,9	90,0	129,9	129,9	90,0	129,9	129,9
	H	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88
Gas module	Standard Vertical	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53
	Standard Horizontal	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53
	High Vertical	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57
	High Horizontal	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84
Vertical power axial fan		1,02	1,83	5,10	1,02	1,83	5,10	1,02	1,83	5,10	1,02	1,83	5,10
Low pressure extraction fan		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,2
High pressure extraction fan		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32
Thermodynamic heat recovery on exhaust air		9,96	17,19	128,0	9,96	17,19	128,0	9,96	17,19	128,0	9,96	17,19	128,0

eNeRGy		016AH-105			019AH-066			019AH-076			019AH-086		
		P	I	Id	P	I	Id	P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00
Compressor		32,32	57,20	164,10	25,64	42,52	105,45	27,80	60,80	132,60	30,72	70,00	152,50
Variable speed compressor option		33,56	56,49	163,39	-	-	-	-	-	-	-	-	-
Condenser fan		4,96	10,30	23,75	3,68	7,80	16,90	1,68	3,48	6,74	3,68	7,80	16,90
Condenser fan + low noise option		4,20	6,40	6,40	3,70	5,70	5,70	1,86	3,00	3,00	3,70	5,70	5,70
Low pressure indoor supply kit		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20
High pressure indoor supply kit		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Electrical heater	S	36,0	51,96	51,96	36,0	51,96	51,96	36,0	51,96	51,96	36,0	51,96	51,96
	M	90,0	129,9	129,9	90,0	129,9	129,9	90,0	129,9	129,9	90,0	129,9	129,9
	H	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88
Gas module	Standard Vertical	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53
	Standard Horizontal	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53	0,12	0,53	0,53
	High Vertical	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57
	High Horizontal	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84
Vertical power axial fan		1,02	1,83	5,10	1,02	1,83	5,10	1,02	1,83	5,10	1,02	1,83	5,10
Low pressure extraction fan		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20
High pressure extraction fan		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32
Thermodynamic heat recovery on exhaust air		9,96	17,19	128,0	9,96	17,19	128,0	9,96	17,19	128,0	9,96	17,19	128,0

P Absorbed power
I Current
Id Start-up current

S Standard
M Medium
H High

eNeRGy		019AH-106			019AH-124			022AH-077			022AH-087		
		P	I	Id	P	I	Id	P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00
Compressor		32,32	57,20	164,10	36,68	62,80	168,30	18,34	31,40	136,90	31,10	50,58	183,29
Variable speed compressor option		-	-	-	41,19	68,03	173,53	-	-	-	-	-	-
Condenser fan		4,96	10,30	23,75	4,96	10,30	23,75	1,68	3,48	6,74	3,68	7,80	16,90
Condenser fan + low noise option		4,20	6,40	6,40	4,20	6,40	6,40	1,86	3,00	3,00	3,70	5,70	5,70
Low pressure indoor supply kit		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20
High pressure indoor supply kit		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Electrical heater	S	36,0	51,96	51,96	36,0	51,96	51,96	54,0	77,94	77,94	54,0	77,94	77,94
	M	90,0	129,9	129,9	90,0	129,9	129,9	108,0	155,88	155,88	108,0	155,88	155,88
	H	108,0	155,88	155,88	108,0	155,8	155,8	144,0	207,85	207,85	144,0	207,85	207,85
Gas module	Standard Vertical	0,12	0,53	0,53	0,12	0,53	0,53	0,13	0,57	0,57	0,13	0,57	0,57
	Standard Horizontal	0,12	0,53	0,53	0,12	0,53	0,53	0,19	0,84	0,84	0,19	0,84	0,84
	High Vertical	0,13	0,57	0,57	0,13	0,57	0,57	0,26	1,13	1,13	0,26	1,13	1,13
	High Horizontal	0,19	0,84	0,84	0,19	0,84	0,84	0,26	1,13	1,13	0,26	1,13	1,13
Vertical power axial fan		1,02	1,83	5,10	1,02	1,83	5,10	1,62	3,08	13,00	1,62	3,08	13,00
Low pressure extraction fan		7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20	7,60	12,20	12,20
High pressure extraction fan		10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20	10,80	17,20	17,20
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32
Thermodynamic heat recovery on exhaust air		9,96	17,19	128,0	9,96	17,19	128,0	19,92	34,38	145,19	19,92	34,38	145,19

eNeRGy		022AH-107			022AH-140			024AH-078			024AH-088		
		P	I	Id	P	I	Id	P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00
Compressor		32,32	57,20	164,10	49,44	81,98	214,69	18,34	31,40	136,90	31,10	50,58	183,29
Condenser fan		4,96	10,30	23,75	7,36	15,60	33,80	1,68	3,48	6,74	3,68	7,80	16,90
Condenser fan + low noise option		4,20	6,40	6,40	7,40	11,40	11,40	1,86	3,00	3,00	3,70	5,70	5,70
Low pressure indoor supply kit		7,60	12,20	12,20	7,60	12,20	12,20	11,40	18,30	18,30	11,40	18,30	18,30
High pressure indoor supply kit		10,80	17,20	17,20	10,80	17,20	17,20	16,20	25,80	25,80	16,20	25,80	25,80
Electrical heater	S	54,0	77,94	77,94	54,0	77,94	77,94	54,0	77,94	77,94	54,0	77,9	77,9
	M	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88	108,0	155,88	155,88
	H	144,0	207,85	207,85	144,00	207,85	207,85	144,0	207,85	207,85	144,0	207,85	207,85
Gas module	Standard Vertical	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57	0,13	0,57	0,57
	Standard Horizontal	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84	0,19	0,84	0,84
	High Vertical	0,26	1,13	1,13	0,26	1,13	1,13	0,26	1,13	1,13	0,26	1,13	1,13
	High Horizontal	0,26	1,13	1,13	0,26	1,13	1,13	0,26	1,13	1,13	0,26	1,13	1,13
Vertical power axial fan		1,62	3,08	13,00	1,62	3,08	13,00	1,62	3,08	13,00	1,62	3,08	13,00
Low pressure extraction fan		7,60	12,20	12,20	7,60	12,20	12,20	11,40	18,30	18,30	11,40	18,30	18,30
High pressure extraction fan		10,80	17,20	17,20	10,80	17,20	17,20	16,20	25,80	25,80	16,20	25,80	25,80
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32	0,18	0,58	2,32
Thermodynamic heat recovery on exhaust air		19,92	34,38	145,19	19,92	34,38	145,19	19,92	34,38	145,19	19,92	34,38	145,19

P Absorbed power
I Current
Id Start-up current

S Standard
M Medium
H High

eNeRGy		024AH-108			024AH-126			024AH-141		
		P	I	Id	P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00	0,40	1,00	1,00
Compressor		32,32	57,20	164,10	36,68	62,80	168,30	49,44	81,98	214,69
Condenser fan		4,96	10,30	23,75	3,36	6,96	13,48	7,36	15,60	33,80
Condenser fan + low noise option		4,20	6,40	6,40	3,72	6,00	6,00	7,40	11,40	11,40
Low pressure indoor supply kit		11,40	18,30	18,30	11,40	18,30	18,30	11,40	18,30	18,30
High pressure indoor supply kit		16,20	25,80	25,80	16,20	25,80	25,80	16,20	25,80	25,80
Electrical heater	S	54,0	77,94	77,94	54,0	77,94	77,94	54,00	77,94	77,94
	M	108,0	155,88	155,88	108,0	155,88	155,88	108,00	155,88	155,88
	H	144,0	207,85	207,85	144,0	207,85	207,85	144,00	207,85	207,85
Gas module	Standard Vertical	0,13	0,57	0,57	0,13	0,57	0,57	54,00	77,94	77,94
	Standard Horizontal	0,19	0,84	0,84	0,19	0,84	0,84	108,00	155,88	155,88
	High Vertical	0,26	1,13	1,13	0,26	1,13	1,13	144,00	207,85	207,85
	High Horizontal	0,26	1,13	1,13	0,26	1,13	1,13	0,13	0,57	0,57
Vertical power axial fan		1,62	3,08	13,00	1,62	3,08	13,00	0,19	0,84	0,84
Low pressure extraction fan		11,40	18,30	18,30	11,40	18,30	18,30	0,26	1,13	1,13
High pressure extraction fan		16,20	25,80	25,80	16,20	25,80	25,80	0,26	1,13	1,13
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32	1,62	3,08	13,00
Thermodynamic heat recovery on exhaust air		19,92	34,38	145,19	19,92	34,38	145,19	11,40	18,30	18,30

eNeRGy		027AH-160			027AH-180		
		P	I	Id	P	I	Id
Transformer		0,40	1,00	1,00	0,40	1,00	1,00
Compressor		62,20	101,16	233,87	69,52	117,20	284,90
Variable speed compressor option		64,55	102,99	235,70	-	-	-
Condenser fan		7,36	15,60	33,80	9,92	20,60	47,50
Condenser fan + low noise option		7,40	11,40	11,40	8,40	12,80	12,80
Low pressure indoor supply kit		11,40	18,30	18,30	11,40	18,30	18,30
High pressure indoor supply kit		16,20	25,80	25,80	16,20	25,80	25,80
Electrical heater	S	54,0	77,94	77,94	54,0	77,94	77,94
	M	108,0	155,88	155,88	108,0	155,88	155,88
	H	144,0	207,85	207,85	144,0	207,85	207,85
Gas module	Standard Vertical	0,13	0,57	0,57	0,13	0,57	0,57
	Standard Horizontal	0,19	0,84	0,84	0,19	0,84	0,84
	High Vertical	0,26	1,13	1,13	0,26	1,13	1,13
	High Horizontal	0,26	1,13	1,13	0,26	1,13	1,13
Vertical power axial fan		1,62	3,08	13,00	1,62	3,08	13,00
Low pressure extraction fan		7,60	12,20	12,20	7,60	12,20	12,20
High pressure extraction fan		10,80	17,20	17,20	10,80	17,20	17,20
Rotary wheel on exhaust air		0,18	0,58	2,32	0,18	0,58	2,32
Thermodynamic heat recovery on exhaust air		19,92	34,38	145,19	19,92	34,38	145,19

P Absorbed power
I Current
Id Start-up current

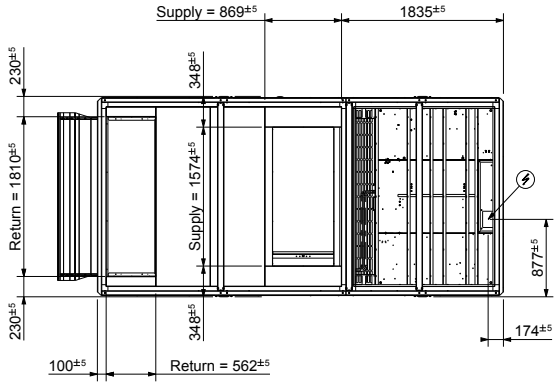
S Standard
M Medium
H High

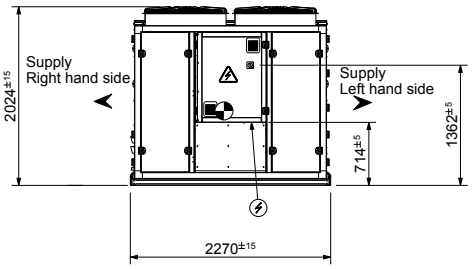
eNeRGy

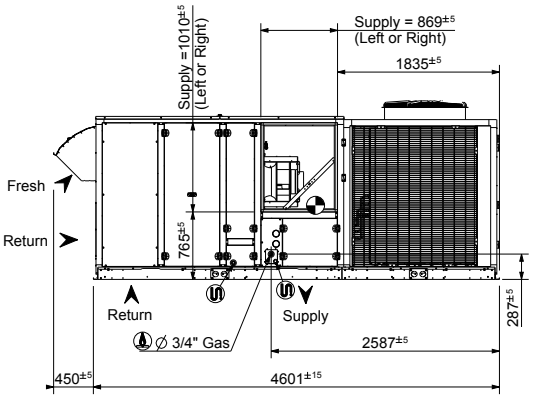
014AH - 019AH

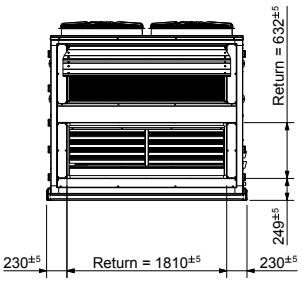
PACKAGED UNIT

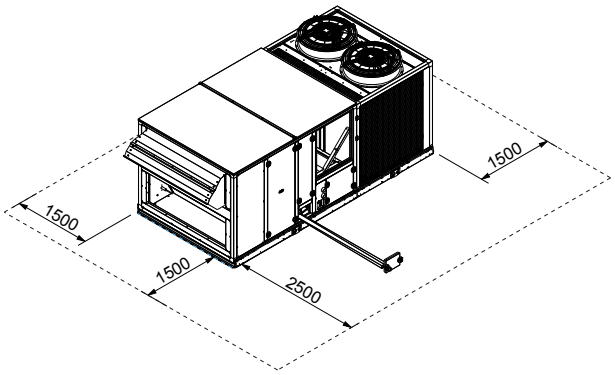
All data in mm











Electrical connection

Condensate draining

Gas supplying

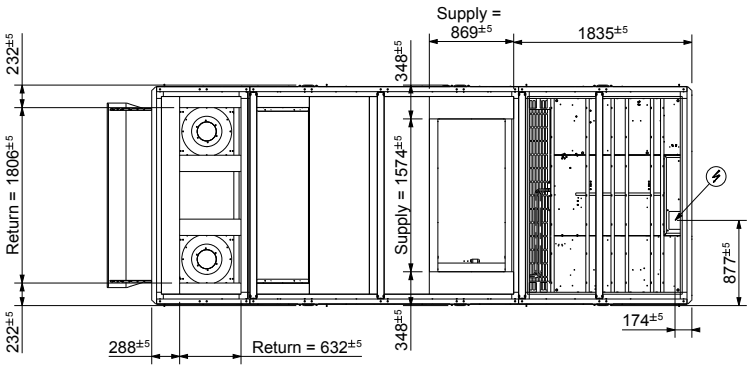
Centre of gravity

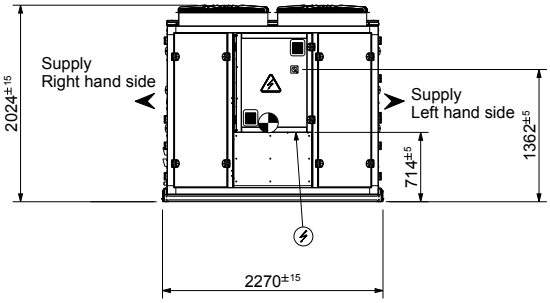
eNeRGy

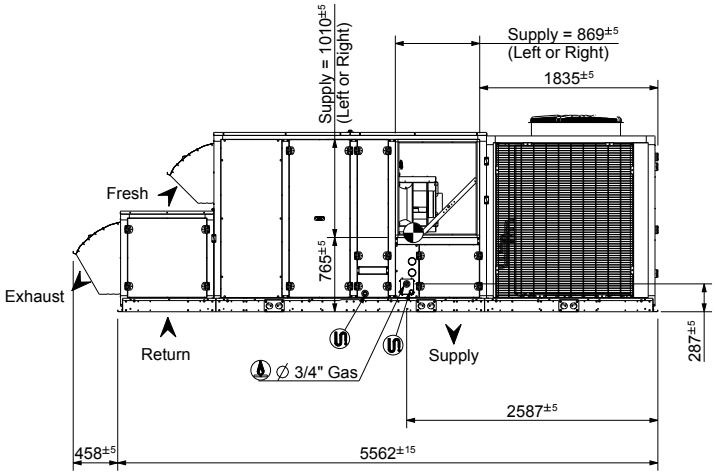
014AH - 019AH

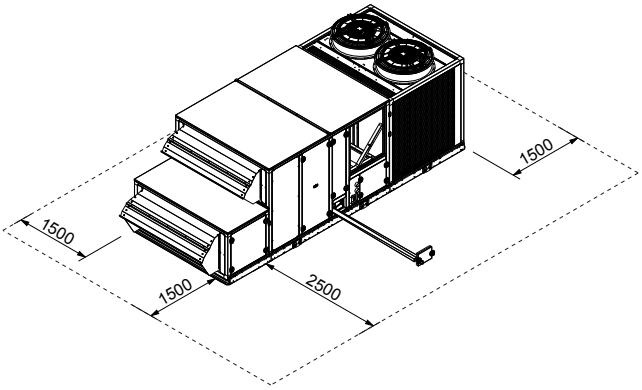
PACKAGED UNIT + EXTRACTION MODULE

All data in mm









Electrical connection

Condensate draining

Gas supplying

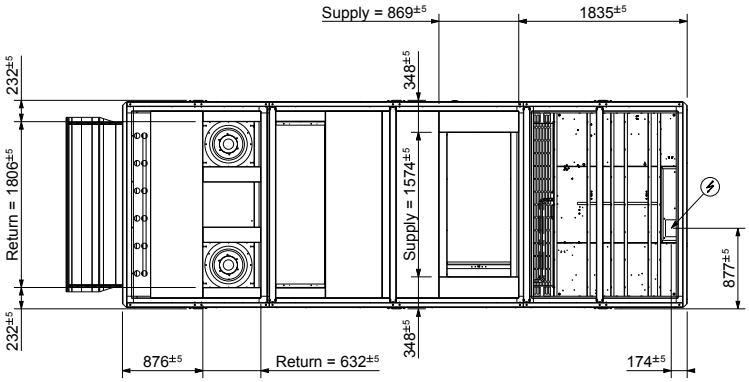
Centre of gravity

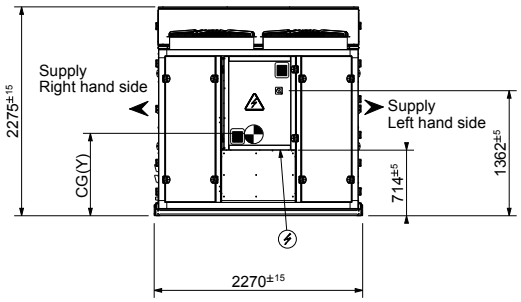
eNeRGy

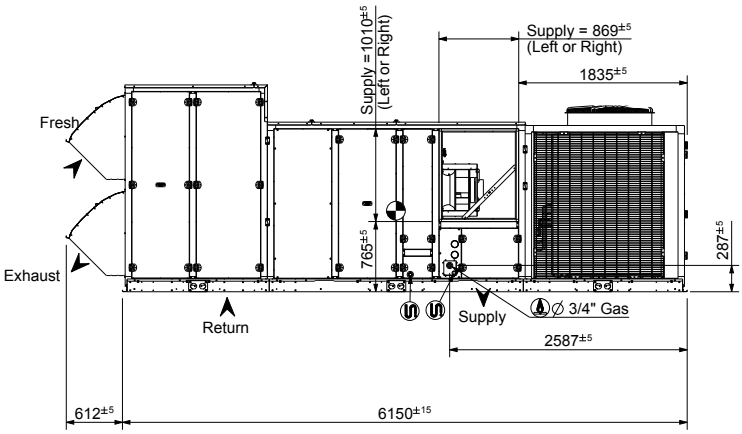
All data in mm

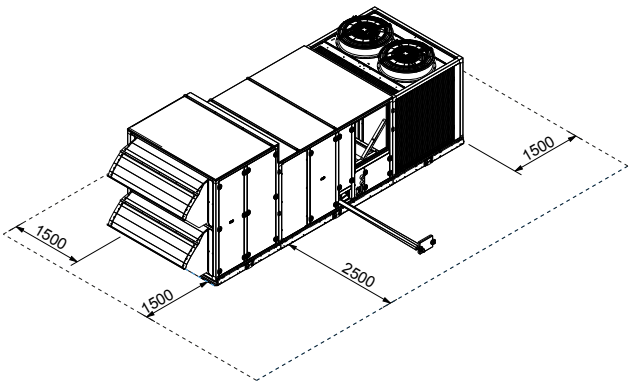
014AH - 019AH

PACKAGED UNIT + HEAT RECOVERY WHEEL









Electrical connection

Condensate draining

Gas supplying

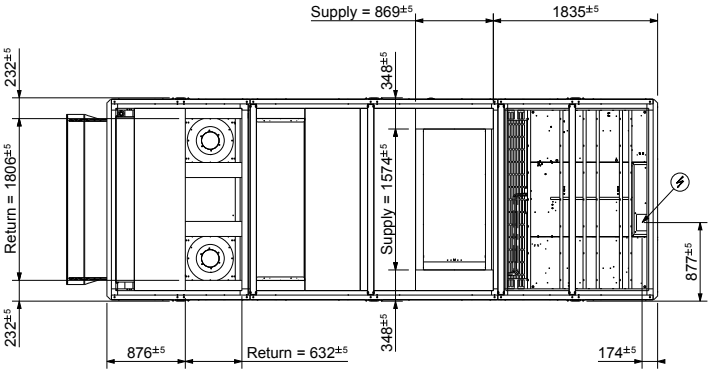
Centre of gravity

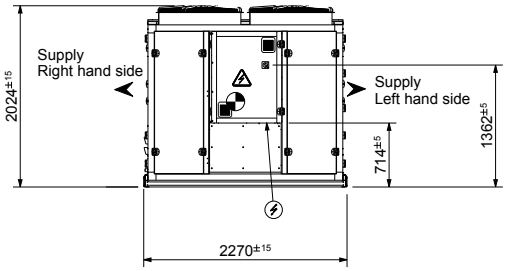
eNeRGy

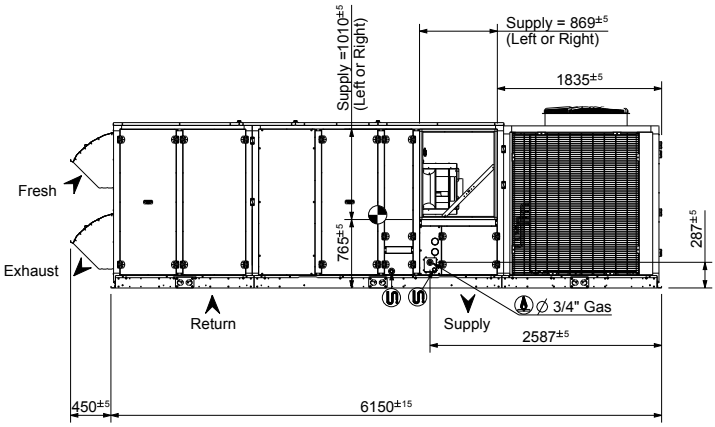
All data in mm

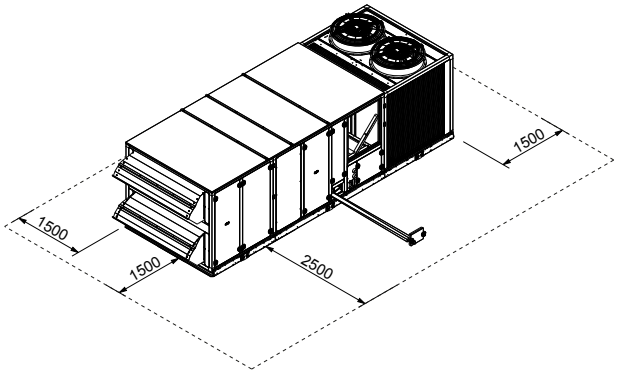
014AH - 019AH

PACKAGED UNIT + EXTRACTION MODULE + THERMODYNAMIC HEAT RECOVERY MODULE









Electrical connection

Condensate draining

Gas supplying

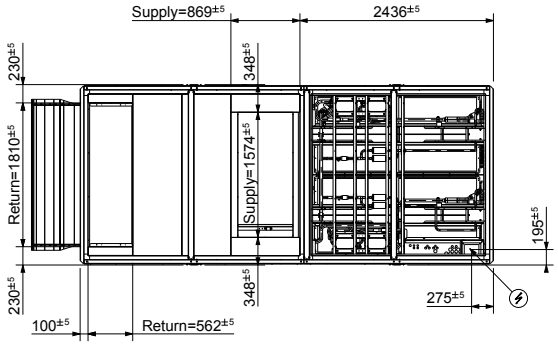
Centre of gravity

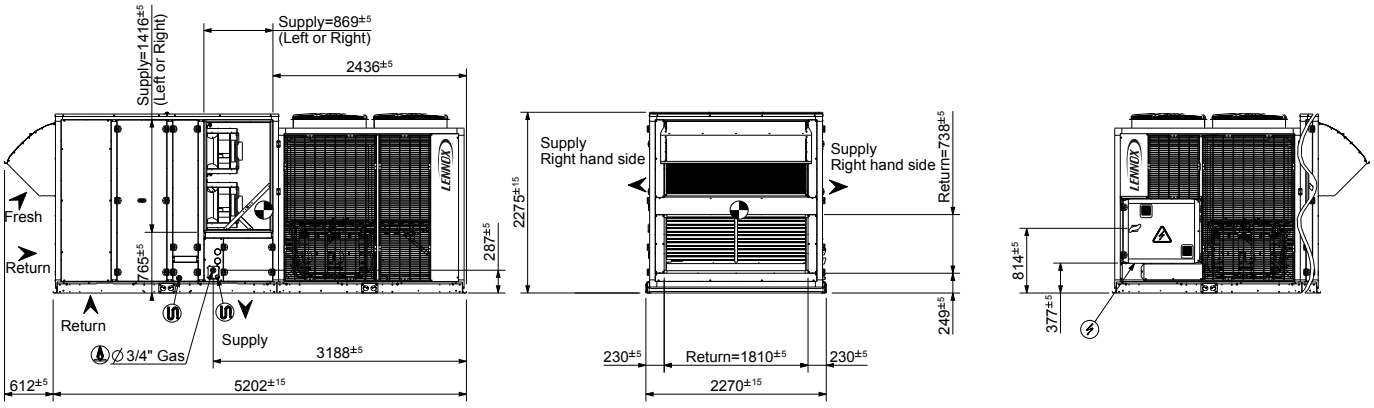
eNeRGy

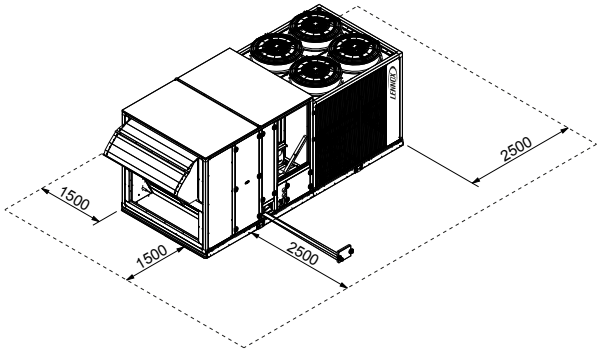
022AH - 027AH

PACKAGED UNIT

All data in mm







Electrical connection

Condensate draining

Gas supplying

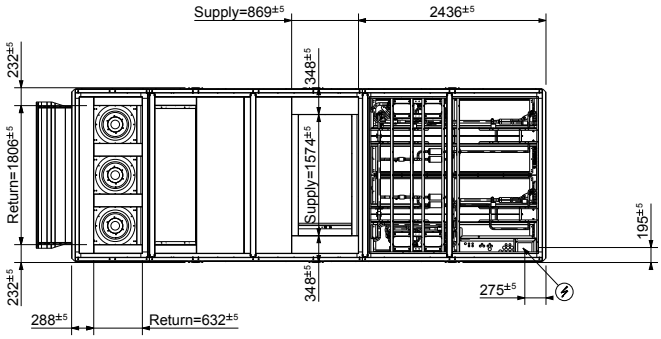
Centre of gravity

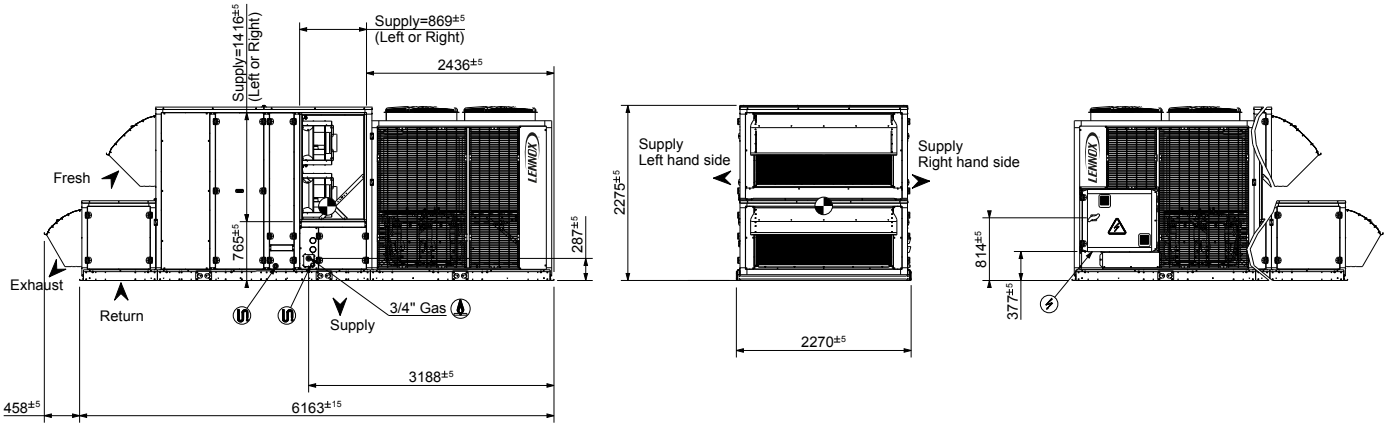
eNeRGy

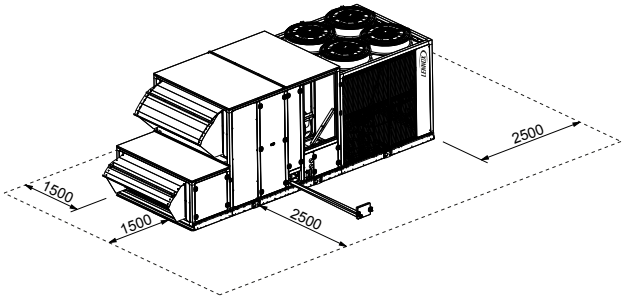
All data in mm

022AH - 027AH

PACKAGED UNIT + EXTRACTION MODULE







Electrical connection

Condensate draining

Gas supplying

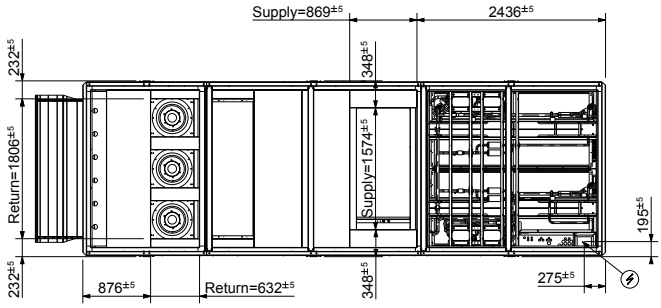
Centre of gravity

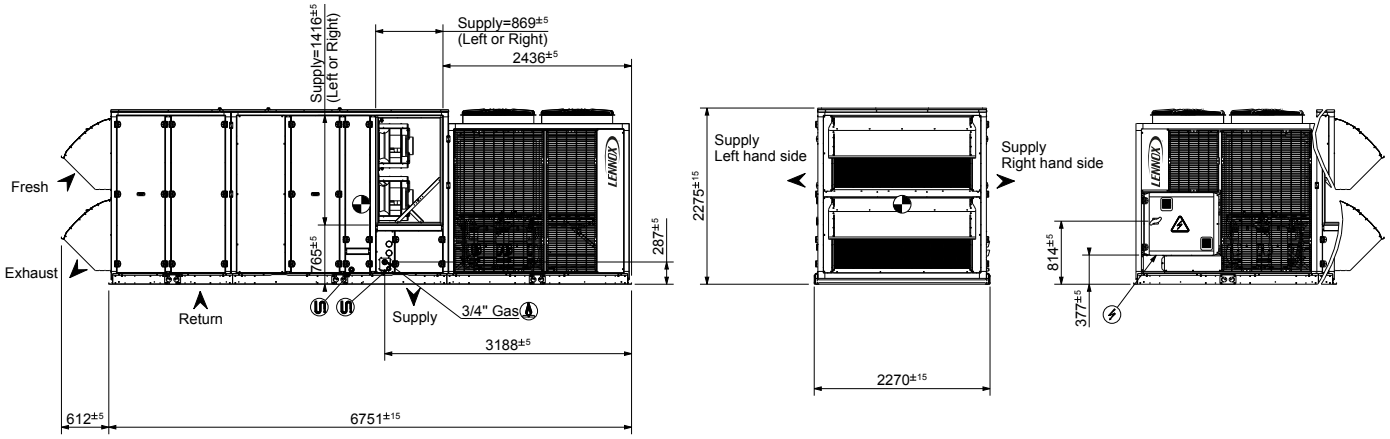
eNeRGy

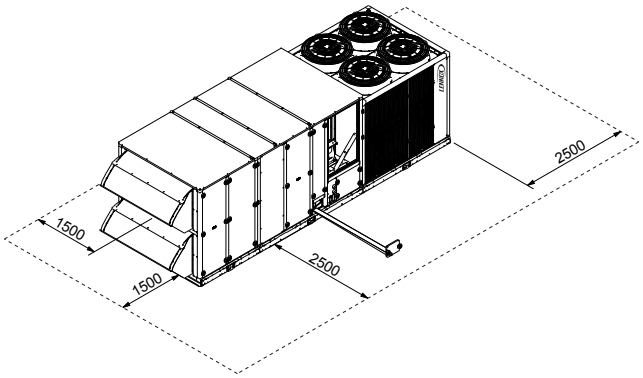
022AH - 027AH

All data in mm

PACKAGED UNIT + EXTRACTION MODULE + HEAT RECOVERY MODULE







Electrical connection

Condensate draining

Gas supplying

Centre of gravity

Due to LENNOX EMEA ongoing commitment to quality, the specifications, ratings and dimensions are subject to change without notice and without incurring liability.
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.

brand of LENNOX EMEA

Headquarters LENNOX EMEA
7 rue des Albatros - Z.I. Les Meurières, 69780 Mions - France
+33 (0) 810 502 502
www.lennoxemea.com