GreenEnergy

ExoAir®
ExoAir® Polaris

SWEDEN'S LEADING AIR SOURCE HEAT PUMP

BEST IN TEST

THE SWEDISH ENERGY COUNCIL RECENTLY SCORED THE **EURONOM AIR SOURCE HEAT PUMP** AS THE LEADING PRODUCT OF ITS TYPE ACROSS MULTIPLE CATEGORIES.

MANUFACTURED IN STAINLESS STEEL FOR DURABILITY!

FLIK: 9-1204-382

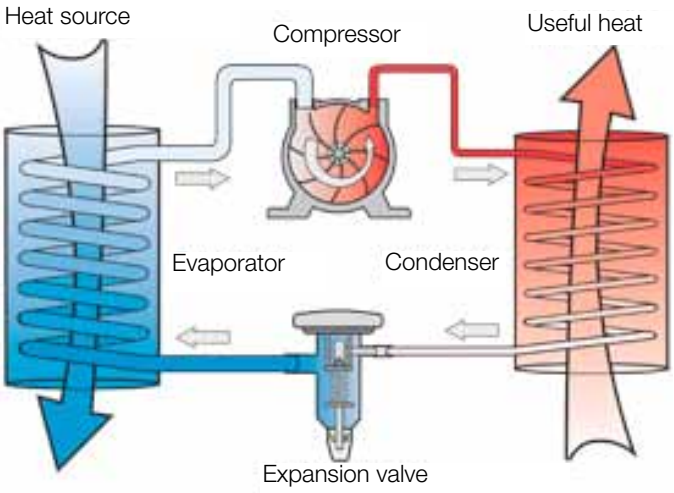
ExoAir – Our award winning air source heat pump

Our award winning air source heat pump extracts heat from the outside air and pumps it into the accumulator tank - ExoTank VPS. It can provide both hot water and heating to either radiators or under floor heating.

Heat pumps are three times more environmentally friendly than traditional heating systems. They do require a small amount of electricity to run, but for every one unit of electricity consumed you should expect to receive about three to four units of heating in output.

Whereas most traditional boilers produce less than one unit of heating for every one unit of energy put in.

It is a renewable energy system that provides heating and hot water using free solar energy from the air.



HOW AN AIR TO WATER HEAT PUMP WORKS

An air source heat pump extracts heat from the outside air using a vapour compression cycle in the same way that a fridge extracts heat.

Like in a refrigerator, a compressor, condenser, expansion valve and evaporator are used to change the state of the refrigerant between a cold liquid and a hot gas.

HOW TO MEASURE THE EFFICIENCY

The efficiency of an air source heat pump is measured by the Coefficient of Performance (COP). A COP of 3 means that the heat pump produces 3 units of heat in output for every 1 unit of electricity it consumes.

In mild weather, the COP of an air source heat pump can be up to 4. However, on a very cold winter's day, it takes more work to move the same amount of heat indoors than on a mild day.

In comparison, most traditional boilers produce less than one unit of heating output for every one unit of energy put in.

Heat pumps are three times more environmentally friendly than traditional heating systems

THE HEAT PUMP CYCLE WORKS AS FOLLOWS:

- Air is drawn in by the fan. The heat from the air is absorbed into a refrigerant fluid. When the liquid refrigerant, at a low temperature, passes through the evaporator heat exchanger coils (also referred to as a vaporizer), ambient heat causes the liquid to boil.
- The vapour is then drawn into the scroll compressor where its temperature and pressure is increased.
- The hot vapour enters the condenser heat exchanger coils where energy is transferred to the heating and hot water circuits of the house. During this process the refrigerant is turned from a high pressure vapour into a high pressure liquid.
- This liquid refrigerant passes through an expansion valve that lowers its pressure and temperature and allows the refrigerant to re-enter the evaporator to begin a new cycle to collect new heat.

Why should I choose a Euronom air source heat pump?

Euronom is one of Sweden's leading heating companies. Founded in 1939, Euronom is highly regarded for its high quality renewable energy heating systems. Euronom has vast experience of developing and making good quality heat pumps. The company's first air source heat pump was introduced in 1977 when the concept of heat pumps was little known around the world. Since then we have had plenty of time to develop and further refine our product.

1. It has an extra large evaporator/ vaporizer. The bigger the evaporator, the more efficient the heat pump.

2. It is manufactured fully in stainless steel to allow it to withstand very corrosive environments, such as coastal areas.

3. It contains extra sound insulation both on the compressor and in front of the fan to reduce the noise levels to a bare minimum.

WHY SHOULD I HAVE A HEAT PUMP? WHAT ARE THE BENEFITS?

Air source heat pumps:

- could drastically reduce your fuel bills, especially if you are replacing conventional heating
- can both heat your home and provide hot water
- could dramatically lower your home's carbon emissions as it does not use any combustion process to generate heat. It simply extracts the existing heat present in the outside air and pumps it inside to heat your home
- don't need fuel deliveries or space for fuel storage
- are more efficient than traditional boilers with a higher coefficient of performance (COP)
- are easy to install and operate
- need little maintenance - they are built to last
- can be combined with a range of different heat sources
- could qualify for government subsidies as home owners are encouraged to switch from fossil based heating systems to renewable energy systems

THE EURONOM FLEXI FUEL HEAT PUMP SYSTEM

The Euronom FlexiFuel heat pump system provides one of the world's most flexible heating systems.

As the world is experiencing ever more volatile energy prices, Euronom has developed the FlexiFuel System; a range of products that allows the customer to choose between energy sources depending on how they fluctuate in price.

At the centre of this system is the ExoTank VPS, an advanced accumulator tank, that can be connected to a range of environmentally friendly sources.

FlexiFuel

Product models and sizes

Euronom offers two different air source heat pumps. The first one, ExoAir, is able to absorb energy from the outside air in temperatures down to -15°C. The second, ExoAir Polaris, was the world's first air source heat pump able to absorb energy from the air in temperatures as low as -25°C.

Each of these products are available in three different sizes measured by output (ExoAir in 7.5kW, 10.5kW and 16.0kW and ExoAir Polaris in 10.0kW, 14.0kW and 20.0kW) to cater for different heating requirements.

Your local Euronom dealer will be able to help you find the best product combination for you.

4. The aluminium plates inside the evaporator are extra durable as they are dipped in several coats of epoxy resin to make sure that they don't oxidize and break. This makes the product suitable even for corrosive coastal areas.

5. An automatic defrost function comes as standard which gives longer total operating times and reduces the amount of energy required from other additional energy sources.

6. It uses a highly efficient scroll compressor that allows for uninterrupted operation, even on very cold days. This is the reason why Euronom has the first heat pump certified to operate at temperatures as low as -25°C.

7. It has a specially designed fan that cuts through the air better and reduces the noise levels further.

8. It uses a condenser with double thermal length which increases the efficiency of the heat pump.

9. It comes fitted with an advanced control and monitoring system.

10. It is fitted with adjustable feet of stainless steel to make installation easier and faster.

ExoTank VPS – Our flexible accumulator tank

The ExoTank VPS is a flexible accumulator tank that can be linked with the ExoAir heat pump to produce an environmentally friendly heating system.

It is possible to connect up to six additional energy sources apart from the heat pump making this a very flexible and complex heating system.

The tank, manufactured in pressure vessel steel, is able to produce enough hot water for both taps and radiators/ under floor heating required by a large home with high energy consumption thanks to its clever design.

The ExoTank VPS shown together with the control unit ExoTrol. The wiring and the multipin plugs are supplied for quick and safe installation. Motor with switch is already installed on the BIV mixing valve.

HOW THE TANK WORKS

- The tap water is heated inside a copper coil.
- The inlet pipe from the heat pump connects to a diffuser. This diffuser distributes the hot water from the heat pump to the appropriate area of the accumulator tank depending on the temperature of the incoming water.
- The tank is equipped with a BIV mixing valve which, in the first instance, distributes water heated by the heat pump around the heating circuit (water from the centre of the tank).
- However, if the temperature of this water falls below what is required by the heating system, the BIV mixing valve will mix in water from the top of the accumulator tank as that is hotter.
- Only on very cold winter's days may the system need to call for water heated by the electric immersion heaters. This enables you to get the very best possible energy savings from your heating system.

The ExoTank VPS comes fitted with two electric immersion heaters of either 9kW or 12kW in total. It also comes complete with automatic legionella control.

The ExoTank VPS provides you with the option of connecting additional energy sources, such as solar panels, wood boilers, gas boilers, pellets boilers, wood cassettes etc up to a maximum of six.

Should your domestic hot water requirement be greater than average then it is possible to connect additional hot water storage buffer tanks to the system to cater for that.

ExoTank VPS with ExoAir Flexifuel

ExoAir heat pump

ExoTank VPX 300 – Our compact accumulator tank

The ExoTank VPX is a compact accumulator tank. It has been specifically designed with the UK market in mind as it is small enough to fit into most standard UK hot water cylinder cupboards whilst producing sufficient hot water to meet the needs of an average family home. This makes it an ideal product for existing dwellings with space limitations.

The tank uses a slightly different technique to the ExoTank VPS in terms of how the water is heated. This allows the customer to continously extract more hot water from its circuits compared to the ExoTank VPS.

However, the draw back is that the ExoTank VPX offers less flexibility in terms of how many additional energy sources you can connect to it. The ExoTank VPX only lends itself to one further energy source apart from the heat pump. This being solar panels.

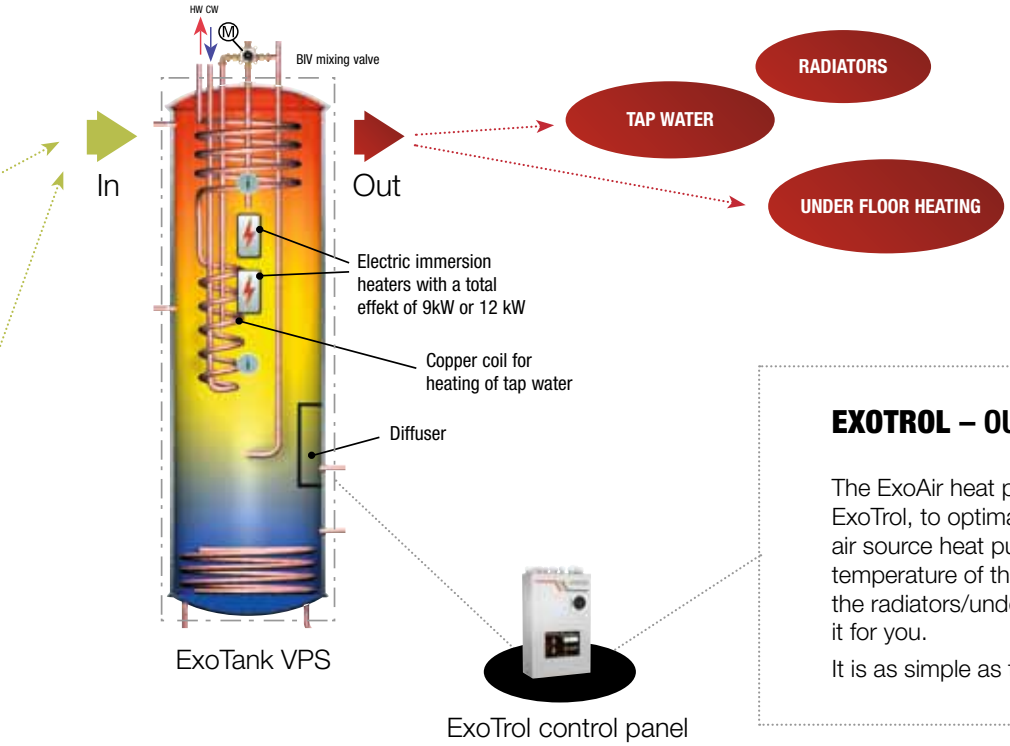
Your local Euronom dealer will be able to advise you which accumulator tank is the best one for your requirements.

The ExoTank VPX with a 35mm thick polyurethan insulation. The tank allows connections upwards, downwards or to the side.

DIMENSION TABLE (mm)

	Height	Width	Depth	Weight (kg)
VPS 300	1530	600	600	128
VPS 500	1660	700	700	160
VPX 300	1725	600	790	195

The ExoTank VPS is made in two different sizes - 300 and 500 litres, whilst the ExoTank VPX is only made in 300 litres.



EXOTROL – OUR EASY TO USE CONTROL PANEL

The ExoAir heat pump uses a complex control system, ExoTrol, to optimally control the various components of the air source heat pump system. With the ExoTrol you set the temperature of the hot water required from the taps and for the radiators/under floor heating and the ExoTrol maintains it for you.

It is as simple as that.

EXPERIENCE THE FREEDOM WITH GREEN HEATING FROM EURONOM

INNOVATIVE SUPPLIER OF EFFICIENT HEATING SYSTEMS

With a Euronom heat pump system you will be able to extract free energy from the air. What can be more environmentally friendly than that!

Even at sub zero temperatures, ambient air contains heat that can be extracted using a Euronom air source heat pump. Thanks to the very advanced control system used, a Euronom heat pump can easily provide all the hot water and heating your property requires.

ENVIRONMENT AGENCY

THE EUROPEAN DIRECTIVE TO REDUCE CARBON EMMISSIONS

The EU is imposing compulsory targets on it's 27 member states. By 2020 each member state needs to show that no less than 20% of it's energy consumption comes from renewable energy sources. Most countries are still far from reaching this target.

By installing a Euronom renewable heat pump system you will do your bit to help reduce carbon emissions.

You may also qualify for government subsidies so this could be the ideal time to swap over to a new heating system!

EXOAIR - TECHNICAL DESCRIPTION

ExoAir is an air to water heat pump designed for private developments. The heat pump is delivered as a complete unit that only requires external connections for water and electricity.

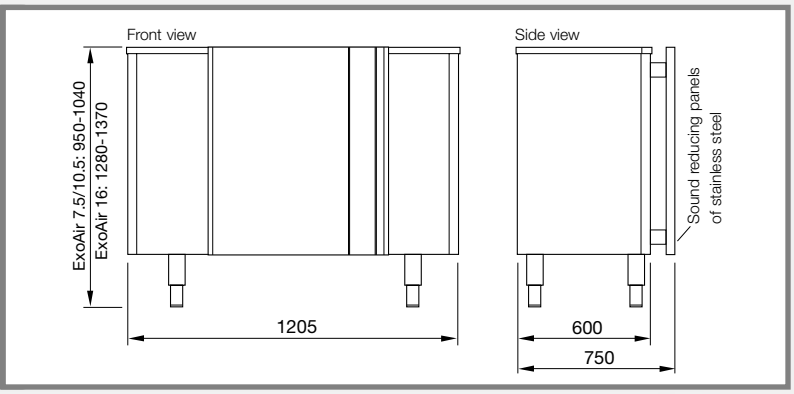
The unit fulfils current regulations for cooling equipment, electric installations, pressure vessels and CE marking.

The refrigerant supplied is R407C.

ExoAir has a strong frame of stainless steel. It is well insulated and is covered with sound reducing panels of stainelss steel. Inside is a hermetic scroll compressor, a condenser of stainless, acid proof steel using a unique design resulting in double thermal length.

Two speed fan with specially designed blades, thermostatic expansion valve, service connection, pressure switches, starting equipment and motor protection are also included.

DIMENSIONS



TECHNICAL DATA EXOAIR

Futher data - EXOAIR			
Product size	**7,5**	**10,5**	**16**
Cooling agent	R407C	R407C	R407C
Compressor Scroll			
Voltage	3x400 V	3x400 V	3x400 V
Max operational current	6,5 A	8,5 A	13 A
Soft start relay	Optional extra	Optional extra	Optional extra
Starting current	38 A	48 A	70 A
Fan			
Air flow	3000 m³/h	3000 m³/h	5000 m³/h
Voltage	230 V	230 V	230 V
Max operational current	0,8 A	0,8 A	1,6 A
Condenser			
Nom. water flow	900 l/h	1200 l/h	1600 l/h
Weight	135 kg	140 kg	185 kg
Outer dimensions			
Width	1205 mm	1205 mm	1205 mm
Height	882-952 mm	882-952 mm	1212-1282 mm
Depth	750 mm	750 mm	750 mm

EXOTROL – CONTROL UNIT FOR EXOAIR AND EXOTANK VPS

The ExoTrol advanced control system operating the heat pump and the ExoTank VPS needs to be mounted close to the ExoTank VPS. It is connected to the ExoAir and ExoTank VPS using 3x400 V, N and earth 20A, 4 mm² with multi pin plugs. The electrical installation is fast, simple and safe as the plugs fit the corresponding sockets on the ExoAir and ExoTank VPS and cannot be mixed up.

ExoTrol controls the operation of the compressor, the circulation pump on the cold side, the circulation pump on the warm side, the two electric immersion heaters and the BIV mixing valve.

The display shows:

- times, current values, desired values and operational information
- room sensor LED that flashes if errors occur
- the error alarm states the reason and rememdy
- two switches for manual override of the electric immersion heaters and the BIV mixing valve

The ExoTrol pack contains the connections and the motor protection for the electric immersion heaters and the compressor, the automatic fuses: 3x10A, the circuit board with the processor, display panel with push buttons, switch for the electric immersion heaters and temperature sensors.

Temperature sensors for:

- water temperature inside the middle part of the ExoTank VPS
- water temperature inside the upper part of the ExoTank VPS
- the hot gas sensor (measured inside the pipe to the condenser)
- the temperature of the water to the radiators/under floor heating
- the outside air temperature

Solo – a simpler control system

The ExoAir can also be operated using a simpler control unit called Solo. It is particularly useful if you are adding on a Euronom heat pump to an existing heating system.

TEST RESULTS

Water temperature 35°												
Product size	**7,5 kW**				**10,5kW**				**16kW**			
Return temp °C	30	30	30	30	30	30	30	30	30	30	30	30
Outside temp °C	+7/6	+2/1	-7/-8	-15/-	+7/6	+2/1	-7/-8	-15/-	+7/6	+2/1	-7/-8	-15/-
Heating efficiency W	7569	6254	5120	3840	11050	9120	7560	5730	16200	13500	11050	8500
Supplied electrical efficiency W	1644	1572	1450	1428	2460	2390	2320	2220	3530	3430	3330	3200
Supplied efficiency fan/pump	180	180	180	180	190	190	190	190	320	320	320	320
COP compressor W/W	4,60	3,97	3,53	2,69	4,49	3,82	3,26	2,58	4,59	3,93	3,32	2,66
COP total W/W	4,15	3,57	3,14	2,39	4,19	3,55	3,02	2,38	4,21	3,60	3,03	2,41
Water temperature 45°												
Return temp °C	40	40	40	40	40	40	40	40	40	40	40	40
Outside temp °C	+7/6	+2/1	-7/-8	-15/-	+7/6	+2/1	-7/-8	-15/-	+7/6	+2/1	-7/-8	-15/-
Heating efficiency kW	7162	6280	4910	3821	10400	9120	7150	5600	15300	13450	10300	7900
Supplied electrical efficiency W	2024	1952	1867	1738	2930	2870	2740	2600	4190	4100	3920	3600
Supplied efficiency fan/pump	180	180	180	180	190	190	190	190	320	320	320	320
COP compressor W/W	3,54	3,21	2,63	2,20	3,55	3,18	2,60	2,15	3,65	3,28	2,63	2,19
COP total W/W	3,25	2,95	2,40	1,99	3,34	2,99	2,45	2,01	3,39	3,04	2,43	2,02

EURONOM IS A MEMBER OF THE FOLLOWING TRADE ASSOCIATIONS:

SVEP SVENSKA VÄRMEPUMP FÖRENINGEN

SUSTAINABLE Sweden Southeast AB

SVENSK SOLENERGI

SBBA Swedish Heating Boilers and Burners Association

EXOAIR POLARIS - TECHNICAL DESCRIPTION

ExoAir Polaris is an air to water heat pump designed for private developments. The heat pump is delivered as a complete unit that only requires external connections for water and electricity.

The unit fulfils current regulations for cooling equipment, electric installations, pressure vessels and CE marking.

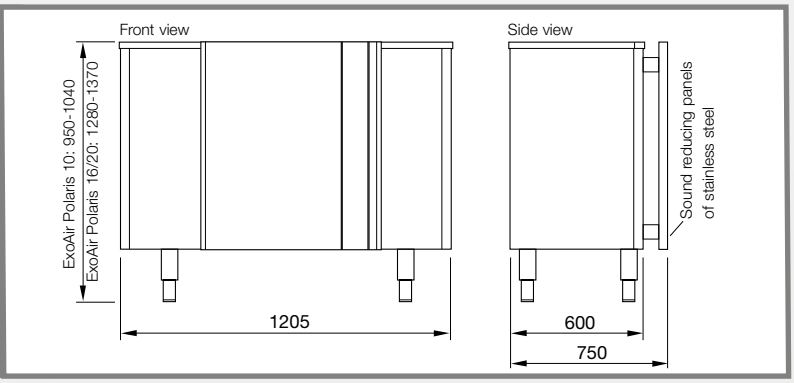
The refrigerant supplied is R404A.

Exo Air Polaris has a strong frame of stainless steel. It is well insulated and is covered with sound reducing panels of stainelss steel.

Inside is a hermetic scroll compressor, a condenser of stainless, acid proof steel using a unique design resulting in double thermal length.

Two speed fan with specially designed blades, thermostatic expansion valve, service connection, pressure switches, starting equipment and motor protection are also included.

DIMENSIONS



TECHNICAL DATA EXOAIR POLARIS

Further data - EXOAIR POLARIS

Product size	**10kW**	**14kW**	**20kW**
Cooling agent	R404A / 2,4 kg	R404A / 3,8 kg	R404A / 3,8 kg
Compressor Scroll			
Voltage	3 x 400 V	3 x 400 V	3 x 400 V
Max operational current	7,8 A	10 A	14 A
Soft start relay	Optional extra	Optional extra	Optional extra
Starting current	40 A	60 A	70 A
Fuse	10 A	10 A	16 A
Fan			
Air flow	3000 m³/h	5000 m³/h	5000 m³/h
Voltage	230 V	230 V	230 V
Condenser			
Nom. water flow	900 l/h	1200 l/h	1700 l/h
Outer dimensions			
Width	1205 mm	1205 mm	1205 mm
Height	882-952 mm	1212-1282 mm	1212-1282 mm
Depth	750 mm	750 mm	750 mm
Weight	140 kg	185 kg	190 kg

EXOTROL – CONTROL UNIT FOR EXOAIR AND EXOTANK VPS

The ExoTrol advanced control system operating the heat pump and the ExoTank VPS needs to be mounted close to the ExoTank VPS. It is connected to the ExoAir Polaris and ExoTank VPS using 3x400 V, N and earth 20A, 4 mm² with multi pin plugs. The electrical installation is fast, simple and safe as the plugs fit the corresponding sockets on the ExoAir Polaris and ExoTank VPS and cannot be mixed up.

ExoTrol controls the operation of the compressor, the circulation pump on the cold side, the circulation pump on the warm side, the two electric immersion heaters and the BIV mixing valve.

The display shows:

- times, current values, desired values and operational information
- room sensor LED that flashes if errors occur
- the error alarm states the reason and rememdy
- two switches for manual override of the electric immersion heaters and the BIV mixing valve

The ExoTrol pack contains the connections and the motor protection for the electric immersion heaters and the compressor, the automatic fuses: 3x10A, the circuit board with the processor, display panel with push buttons, switch for the electric immersion heaters and temperature sensors.

Temperature sensors for:

- water temperature inside the middle part of the tank
- water temperature inside the upper part of the tank
- the hot gas sensor (measured inside the pipe to the condenser)
- the temperature of the water to the radiators/under floor heating.
- the outside air temperature

TEST RESULTS

Water temperature 35°																
Product size	**10kW**					**14kW**					**20kW**					
Return temp °C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
Outside temp °C	+7/6	+2/1	-7/-8	-15/-	-25/-	+7/6	+2/1	-7/-8	-15/-	-25/-	+7/6	+2/1	-7/-8	-15/-	-25/-	
Heating efficiency W	9850	8400	6850	5565	4400	12850	11500	9780	8200	6200	20200	17800	15100	12100	9600	
Supplied electrical efficiency W	2380	2300	2110	2020	1920	3080	3050	2980	2880	2600	4880	4750	4580	4400	4100	
Supplied efficiency fan/pump	180	180	180	180	180	320	320	320	320	320	340	340	340	340	340	
COP compressor W/W	4,13	3,65	3,25	2,75	2,29	4,17	3,77	3,28	2,85	2,38	4,14	3,75	3,29	2,75	2,34	
COP total W/W	3,85	3,39	2,99	2,53	2,10	3,78	3,38	3,09	2,56	2,12	3,88	3,51	3,08	2,56	2,17	
Water temperature 45°																
Return temp °C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	4 0	
Outside temp °C	+7/6	+2/1	-7/-8	-15/-	-25/-	+7/6	+2/1	-7/-8	-15/-	-25/-	+7/6	+2/1	-7/-8	-15/-	-25/-	
Heating efficiency W	9700	8860	7200	6300	5100	12980	11700	10200	8800	7300	19900	17600	15500	13100	10900	
Supplied electrical efficiency W	2950	2970	2810	2770	2520	4130	4080	3830	3930	3750	6080	5900	5750	5600	5350	
Supplied efficiency fan/pump	180	180	180	180	180	320	320	320	320	320	340	340	340	340	340	
COP compressor W/W	3,29	2,98	2,56	2,27	2,02	3,14	2,87	2,66	2,24	1,95	3,27	2,98	2,70	2,33	2,03	
COP total W/W	3,01	2,81	2,41	2,14	1,89	2,92	2,66	2,46	2,07	1,80	3,10	2,83	2,56	2,21	1,92	

FLIK: 9-1204-382

EURONOM®
Franska vägen 12 SE 393 56 Kalmar SWEDEN
Telephone +46 480 221 20 Telefax +46 480 870 17
www.euronom.se info@euronom.se

DISTRIBUTOR: