

CYGNUS TECH



Air cooled water chillers, heat pumps and condensing units featuring hermetic scroll compressors.

Cooling capacity **14 -78 kW**

heating capacity **15 -80 kW**

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



Benefits

- Extremely low noise levels;
- High EER/COP values and seasonal performance indices;
- Ideally suited to commercial and domestic chilled water air-conditioning applications;
- Extended operating limits;
- Optimisation of heat pump defrosting cycles thanks to the exclusive Frost Detecting System (FDS) (Minimum ambient temperature in heat pump mode = -10°C);
- Self-adaptive temperature control (SAC) for efficient operation with installations having low water contents;
- Designed for installation in confined spaces;
- Easy to use thanks to a controller with icon-based dual display;
- Easy installation and simple access to all chiller components.

Main Options

- Configuration without storage tank;
- High/low head pressure pump;
- Anti-freeze heaters on evaporator, pump and tank;
- Remote user interface;
- RS485 ModBus interface for connection to supervisor systems;
- xWEB300D for local or remote (GPRS) monitoring plus data filing based on WEB server technology;
- Antivibration mountings;
- Condenser filters;
- Soft starter;
- Thermostat (condensing and reversible condensing unit).

Standard Features

- Scroll compressors (051-121) tandem Scroll compressors (181-301);
- Integral hydronic kit complete with pump, tank, expansion vessel, filling/drain valve, pressure gauge, and automatic bleed valve;
- Hydraulic threaded connections directly accessible from the exterior of the unit;
- Brazed stainless steel plate evaporator;
- Axial fans with sickle shaped blades and electronic speed control;
- Heat pumps with 2nd thermostatic valve for performance optimisation in all operating conditions (models 121 to 301);
- Factory charged with refrigerant and non-freezing oil (MC versions excluded);
- Protection grade IPX4;
- Inspections and tests performed in factory as per all MTA products and components;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Phase monitor against phase reversal;
- Compressor crankcase heater.

Versions

- **CY** - Cooling only;
- **HCY** - Reversible heat pump;
- **MCCY** - Condensing unit;
- **MCHCY** - Reversible condensing unit.

Microprocessor controller with dual icon-based display.



Higher energy efficiency and quieter operation thanks to the use of scroll compressors.



Built-in pumping module with or without storage tank.



Remote control.



Low noise operation of technical systems is essential for continuously occupied premises such as homes, offices and light-commercial buildings, where air conditioning units are usually placed in close proximity to the users. In order to satisfy the specific comfort requirements of these type of premises, without compromising performance in all operating conditions, **PST** has developed the Cygnus Tech series of minichillers and reversible heat pumps with environmentally friendly refrigerant R410A. The already very low noise levels have been further reduced by installing electronic fan speed controls, which run at lower speeds as cooling or heating demands decrease. Seasonal efficiency levels are even more evident in heat pump operation, with clear benefits in terms of climatic comfort, thanks to the integral storage tank and Frost Deteting System (FDS), designed to detect the quantity of ice accumulating on the external coil, so that defrost cycles are performed only when appropriate, thereby minimising the power consumption.

| Model CY | | 051 | 071 | 091 | 101 | 121 | 181 | 201 | 241 | 271 | 301 |
|--------------------------------|-------------------|---------------------------|------|------|------|------|------|------|------|------|------|
| Cooling capacity (1) | kW | 14.05 | 18.8 | 23.3 | 27.5 | 29.9 | 46.4 | 52.8 | 60 | 69.8 | 78 |
| Cooling capacity (1) | TR | 4 | 5.3 | 6.6 | 7.8 | 8.5 | 13 | 15 | 17 | 20 | 22 |
| Total absorbed power | kW | 4.3 | 5.6 | 7.1 | 8.2 | 9.1 | 14.1 | 16.9 | 18.2 | 21.9 | 25.9 |
| EER | - | 3.27 | 3.35 | 3.26 | 3.37 | 3.28 | 3.28 | 3.13 | 3.30 | 3.19 | 3.01 |
| Max external air temperature | °C | 52 | 51 | 49 | 49 | 48 | 50 | 49 | 51 | 49 | 47 |
| EXCHANGERS | | | | | | | | | | | |
| Evaporator pressure drops | kPa | 8 | 7 | 35 | 36 | 35 | 35 | 36 | 37 | 41 | 43 |
| Water flow | m ³ /h | 2.41 | 3.23 | 4 | 4.72 | 5.14 | 8 | 9.1 | 10.3 | 12 | 13.4 |
| GENERAL DATA | | | | | | | | | | | |
| Refrigerant | - | R410A | | | | | | | | | |
| Circuits / Compressors | N° | 1/1 | | | | | 1/2 | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N - PE / 50 | | | | | | | | | |
| Protection class | - | IP54 | | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | | |
| Noise pressure (2) | dB(A) | 43 | 43 | 43.5 | 43.5 | 44 | 46 | 46 | 48.5 | 49 | 49 |
| SIZE AND WEIGHT | | | | | | | | | | | |
| Depth | mm | 1605 | 1605 | 1950 | 1950 | 1950 | 2505 | 2505 | 2505 | 2505 | 2505 |
| Width | mm | 742 | 742 | 800 | 800 | 800 | 1108 | 1108 | 1108 | 1108 | 1108 |
| Height | mm | 1425 | 1425 | 1238 | 1238 | 1238 | 1710 | 1710 | 1710 | 1710 | 1710 |
| Weight (without tank and pump) | kg | 182 | 184 | 344 | 361 | 374 | 607 | 613 | 638 | 654 | 660 |
| Weight (with tank and pump) | kg | 313 | 315 | 556 | 574 | 587 | 824 | 830 | 854 | 871 | 877 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB: dimensions for lower noise and/or higher efficiency versions may differ.)

TAURUS TECH



Air cooled water chillers, heat pumps and condensing units
with hermetic scroll compressors and R410A refrigerant gas.

Cooling capacity **81 - 189 kW**

Heating capacity **84 - 199 kW**

Cooling capacity condensing units **81 - 189 kW**

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



Taurus Tech chillers and heat pumps represent the optimal solution for centralised hydronic conditioning of medium sized applications and with the wide range of accessories it is possible to satisfy the installation and start-up unit needs. The parametric microprocessor control, through an user friendly interface allows to modify the unit operating parameters in a simple way. In the heat pumps, the defrosting cycles are automatically and continuously manages with DDS logic (Dynamic Defrosting System) that, unlike commonly adopted solutions, operates only when effectively necessary, optimising defrosting duration and frequency, to the benefit of ambient comfort and operating economy.



Respect of Environment

The eco-friendly refrigerant R410A (ODP=0) with outstanding heat conductivity, coupled with the low absorbed power level of the scroll compressors, reduce the environment impact, minimizing the energy waste. Recyclable and high quality materials ensure respect of environment, and reduces the carbon footprint.

Dynamic Defrosting System

DDS (Dynamic Defrosting System) function in heat pumps dynamically manages defrost cycles according to environmental conditions and real operating needs. It allows to achieve a greater energy efficiency of the system and a greater ambient comfort in comparison with the conventional defrosting logics.

Electronic Expansion Valve

The electronic expansion valve allows an improvement of performance and an operating range wider than thermostatic expansion valves. The continuous calibrations system represents the best solution for all application characterized by several thermal load changes.

EC Fans

The EC electronic switching technology, thanks to a continuous and efficient regulation of the fans speed at partial loads, allows the reduction of noise levels together with a decrease of the consumption, increasing reliability and energy efficiency of the system.

R410A



Benefits

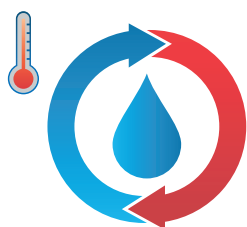
- Refrigerant R410A is an environmentally friendly fluid (zero ozone depletion potential) and provides high performances thanks its outstanding heat conductivity;
- 8 base models that perfectly match each specific system requirements;
- 2 acoustic versions (HE, SHE) with high efficiency
- Scroll compressors ensure high efficiency, excellent performance and elevated energy savings;
- Plug-in solution with integrated pump and tank allows a simple installation;
- Extended operating limits: Taurus Tech standardly accepts inlet water temperatures up to 25°C and outlet water temperature down to 0°C; HTaurus Tech working with ambient temperature up to 47°C in cooling mode; outlet water temperature up to 55°C and ambient temperature down to -10°C in heating mode.
- Optimisation of performance also in heating mode thanks to hot gas injection and the DDS defrosting system;
- Comprehensive safety equipment, including phase monitor, pressure switches, differential pressure switch, crankcase heaters;
- Extensive range of accessories and kits, allow each unit to match the specific customer requirements.

Standard features

- Refrigerant R410A;
- 2 Hermetic Scroll compressors in 1 circuit configuration;
- shell & tube evaporator
- AC Axial fans with die-cast aluminum blades, developed on the basis of bionic principles
- Air-cooled condensers (copper tubes/aluminium fins) with longitudinal "V" formation;
- High and low refrigerant pressure switches;
- Refrigerant pressure gauges;
- Parametric microprocessor control IC208CX;
- IP54 protection class;
- Phase monitor against phase loss and phase reversal;
- Compressor crankcase heater.

Heat recovery

The integrated partial or total heat recovery systems are able to provide useful heat, that would otherwise be lost, for other purposes thus reducing the overall energy bill and CO₂ emissions.



IC208CX microprocessor control

Taurus Tech features a new advanced microprocessor control technology, with all models fitted with a unique IC208CX digital control. A comprehensive digital display keeps the user fully informed concerning the correct operation of the unit, warnings and alarms. IC208CX also allows remote control due to VICX620 LED display and semi-graphic LCD display VG1890.



Main options

- Protection of the hydraulic group by means of panels or metallic mesh;
- Coils protection by means of filters or metallic mesh;
- Soft starter: are installed on each compressor and allow an average reduction of 30% of the start-up current compared to the direct start;
- Shut-off valves on suction side and discharge line of each pair of compressors;
- Total heat recovery (available for TAT only);
- Partial heat recovery (available for TAT and HTAT only);
- Pump options: P15, P2, double P15+P15 or P2+P2 with or without storage tank;
- Anti-freeze heater on heat exchangers and hydraulic kit (if present);
- High efficiency EC axial fans with inverter technology and integrated speed regulation or fan speed controller
- Electronic expansion valve
- Condenser coils designed for aggressive atmosphere;
- -20 °C option: it allows the units to operate in cooling mode down to -20 °C ambient temperature;
- Anti-vibration mounts;
- Thermostatic valves kit for condensing units;
- Remote control kit: VICX620 display LED, VG1890 display LCD semi-graphic (max 150 m);
- Gateway Modbus/Trend Kit;
- Supervisor kits: RS485 ModBus, xWEB300D.

Versions

- **Taurus Tech** - cooling only version;
- **HTaurus Tech** - reversible heat pumps with outlet water temperature up to 55 °C;
- **MCTaurus Tech** - condensing units.

High energy efficiency versions:

- **HE** - High energy efficiency and basic acoustic configuration;
- **SHE** - High energy efficiency and low noise acoustic configuration.

Supervisor systems

Taurus Tech can be linked to various external Supervisor systems:

- RS485 serial connection to an external Supervisor system (MODBUS and other leading systems);
- xWEB300D Supervisor kit, operating via Internet;
- xWEB300D + modem GPRS for connection directly to a smartphone and tablet.



Factory test

All models are individually tested in order to check correct operation, and also undergo refrigerant charge and leakage controls, and microprocessor and safety device setting verifications. Leading brand components are used throughout, ensuring long term reliability.

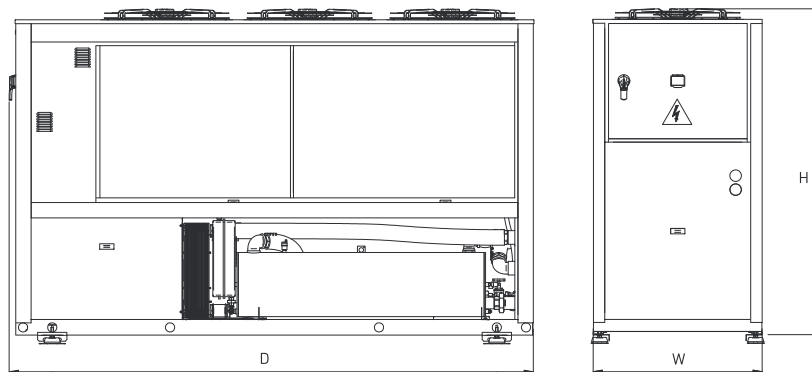


| Model TAT (HE) | | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 701 |
|--|-------------------|-------------------------|------|-------|------|-------|-------|------|------|
| Cooling capacity (1) | kW | 84 | 94 | 106.2 | 130 | 139.8 | 154.8 | 171 | 189 |
| Cooling capacity (1) | TR | 24 | 26.7 | 30 | 37 | 40 | 44 | 49 | 54 |
| Total absorbed power | kW | 26 | 29.4 | 32.3 | 40 | 43.2 | 46.6 | 53.8 | 62.3 |
| EER | - | 3.23 | 3.20 | 3.29 | 3.25 | 3.23 | 3.32 | 3.18 | 3.03 |
| Max external air temperature | °C | 52 | 50 | 49 | 51 | 50 | 50 | 48 | 47 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops (plate) | kPa | 20 | 23 | 24 | 26 | 31 | 29 | 35 | 40 |
| Evaporator pressure drops (Shell Tube) | kPa | 22 | 33 | 22 | 28 | 32 | 34 | 42 | 31 |
| Water flow | m ³ /h | 14.4 | 16.1 | 18.2 | 22.3 | 24 | 26.6 | 29.4 | 32.5 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R410A | | | | | | | |
| Circuits / Compressors | N° | 1/2 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 56 | 56 | 58 | 58 | 58 | 59 | 59 | 60 |
| Noise power | dB(A) | 88 | 88 | 90 | 90 | 90 | 91 | 91 | 92 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 2800 | 2800 | 2800 | 3810 | 3810 | 3810 | 3810 | 3810 |
| Width | mm | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 |
| Height | mm | 2170 | 2170 | 2170 | 2170 | 2170 | 2170 | 2170 | 2170 |
| Weight | kg | 913 | 988 | 1120 | 1322 | 1396 | 1472 | 1510 | 1522 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

(3) Dimensions and operating weights are referred to Taurus Tech cooling only version without options.

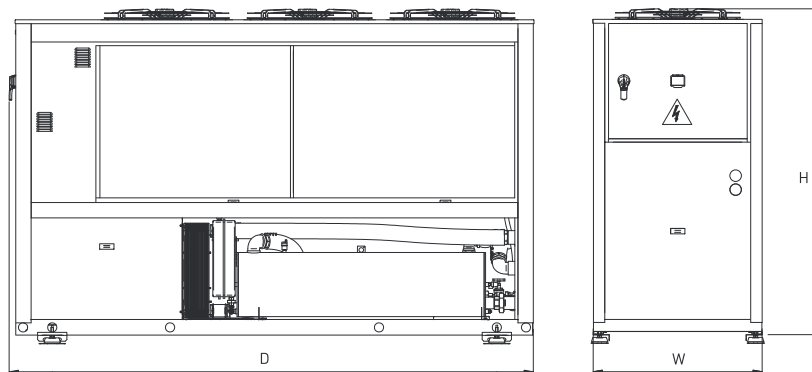


| Model TAT (SHE) | | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 701 |
|--|-------------------|-------------------------|------|-------|-------|-------|-------|------|-----|
| Cooling capacity (1) | kW | 81 | 92.9 | 107.4 | 128.5 | 138.1 | 149.8 | 164 | - |
| Cooling capacity (1) | TR | 23 | 26.4 | 30.5 | 36.5 | 39 | 42.6 | 46.6 | - |
| Total absorbed power | kW | 25.8 | 28.9 | 31.7 | 38.8 | 42.3 | 47 | 54.8 | - |
| EER | - | 3.13 | 3.22 | 3.39 | 3.31 | 3.26 | 3.19 | 2.99 | - |
| Max external air temperature | °C | 50 | 48 | 51 | 49 | 48 | 47 | 45 | - |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops (plate) | kPa | 24 | 23 | 24 | 25 | 30 | 28 | 35 | - |
| Evaporator pressure drops (Shell Tube) | kPa | 20 | 32 | 23 | 28 | 32 | 32 | 38 | - |
| Waterflow | m ³ /h | 13.9 | 16 | 18.4 | 22.1 | 23.7 | 25.7 | 28.2 | - |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R410A | | | | | | | |
| Circuits / Compressors | N° | 1/2 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 48 | 48 | 50 | 50 | 50 | 51 | 51 | - |
| Noise power | dB(A) | 80 | 80 | 82 | 82 | 82 | 83 | 83 | - |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 2800 | 2800 | 2800 | 3810 | 3810 | 3810 | 3810 | - |
| Width | mm | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | - |
| Height | mm | 2170 | 2170 | 2170 | 2170 | 2170 | 2170 | 2170 | - |
| Weight | kg | 913 | 1025 | 1352 | 1373 | 1377 | 1472 | 1510 | - |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

(3) Dimensions and operating weights are referred to Taurus Tech cooling only version without options.



ARIES TECH



Air cooled water chillers and heat pumps with R410A
Featuring hermetic scroll compressors
Cooling capacity 164 - 340 kw
Heating capacity 167 - 343 kw

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



The evolution of commercial chillers.

The air-cooled water chillers ARIES Tech have evolved to fulfil the present and future needs of commercial air conditioning systems. They are extremely customizable to guarantee an easy installation for any plant solution.

The ARIES Tech range is the example of targeted design, essential to obtain a reduced operating cost for air conditioning of medium and large residential or commercial spaces without excluding reliability the environment protection.



Respect of Environment

The eco-friendly refrigerant R410A (ODP=0) with outstanding heat conductivity, coupled with the low absorbed power level of the scroll compressors, reduce the environment impact, minimizing the energy waste. Recyclable and high quality materials ensure respect of environment, and reduces the carbon footprint.

Supervisor Systems

Aries Tech can be linked to various external Supervisor systems:

- RS485 serial connection to an external Supervisor system (MODBUS and other leading systems);
- xWEB300D Supervisor kit, operating via Internet;
- xWEB300D + modem GPRS for connection directly to a smartphone and tablet.

Electronic Expansion Valve

The electronic expansion valve allows an improvement of performance and an operating range wider than thermostatic expansion valves. The continuous calibrations system represents the best solution for all application characterized by several thermal load changes.

Factory Test

All models are individually tested in order to check correct operation, and also undergo refrigerant charge and leakage controls, and microprocessor and safety device setting verifications. Leading brand components are used throughout, ensuring long term reliability.

R410A



Benefits

- HE version, Class A ;
- SHE version with super low noise levels;
- High efficiency performances at full load (EER);
- Wide operating limits for starting up and functioning even in the worst conditions;
- Wide range of options and kits for easy installation;
- Easy access to all components;
- Advanced electronic control with integrated web server.

Main options

- Single or double water pump (one in stand-by) with low or medium head pressure;
- Water accumulation tank;
- High efficiency Brushless EC condenser fans; or fan speed controller
- Protection coating for condenser coils, suitable for installation in aggressive environments;
- Antifreeze heaters for evaporator pump/s and tank;
- Metallic mesh filters for condenser coil protection;
- Soft starters to reduce by 20% the units starting current.
- Electronic expansion valves;

Standard features

- Environment friendly refrigerant R410A;
- 4 scroll compressors in parallel on two independent refrigerant circuits;
- Crankcase heater and phase-monitor;
- Shell and tube evaporator;
- Axial fans, developed on the basis of bionic principles that allow to achieve high performance with low noise emissions;
- Electrical panel protection rating IP54;
- xDRIVE electronic microprocessor controller with high computing capacity and an easy to use graphical interface;
- Refrigerant charge, non-freezing oil and tests performed in the factory;
- Modbus RS485 serial output for connection to supervision systems;
- Ethernet port with HTML supervision pages preloaded for viewing and modifying the machine parameters to corporate or internet network;
- Serial connection to supervision systems;
- MTA xCONNECT Supervision based on internal web pages;
- Modularity Hub / web interconnection.
- IN/OUT compressors valves;

Sales kit

- Replicated remote user terminal kit;
- Modularity kit for xDRIVE;
- Condensers air filter kit;
- Antivibration mountings kit;
- Packaging kit for transportation by container.

Semigraphic user terminal with multifunctional buttons and dynamic display icons.



shell and tube evaporator (only for AST).



Pump section with or without storage tank.



High efficiency EC inverter fans.



| Model AST (HE) | | 060 | 070 | 080 | 090 | 100 | 110 | 120 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 166 | 187.6 | 209.2 | 241.4 | 285.8 | 306.4 | 340 |
| Cooling capacity (1) | TR | 47 | 53 | 59.5 | 69 | 81 | 87 | 97 |
| Total absorbed power | kW | 52 | 58.8 | 64.1 | 72.7 | 84.8 | 93.2 | 107.6 |
| EER | - | 3.19 | 3.19 | 3.26 | 3.32 | 3.37 | 3.29 | 3.16 |
| Max external air temperature | °C | 52 | 50 | 50 | 52 | 51 | 50 | 49 |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 39 | 44 | 54 | 55 | 23 | 27 | 31 |
| Water flow | m ³ /h | 28.5 | 32.2 | 35.9 | 41.4 | 49.1 | 52.6 | 58.4 |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/4 | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 60 | 60 | 61 | 61 | 62 | 63 | 63 |
| Noise power | dB(A) | 92 | 92 | 93 | 93 | 94 | 95 | 95 |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 3570 | 3570 | 3570 | 3570 | 4300 | 4300 | 4300 |
| Width | mm | 2192 | 2192 | 2192 | 2192 | 2192 | 2192 | 2192 |
| Height | mm | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 |
| Weight | kg | 1962 | 2016 | 2143 | 2642 | 2985 | 2985 | 3156 |

(1) Evaporator water inlet-outlet temperature 12-7°C , external air temperature 35°C.

(2) Sound pressure at 10 m: Average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance +/- 2. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump. The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

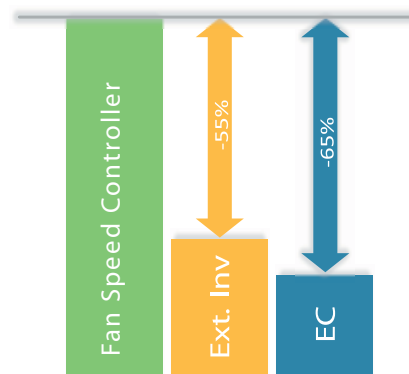
EC fans

Features

- Synchronous electric motors with permanent magnets;
- EC motors means: Electronically Commutated motors;
- Wide operating range: stepless rotation from 5% to 100%;
- High precision in condensation pressure control;
- Fast installation;

Benefits

- Seasonal energy saving -20%;
- Pays off in few months;



EC fans replace external electronic speed control option

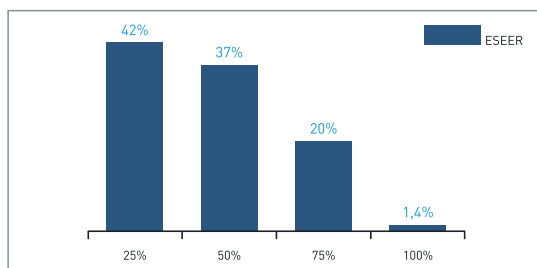


-20%
Seasonal
energy saving

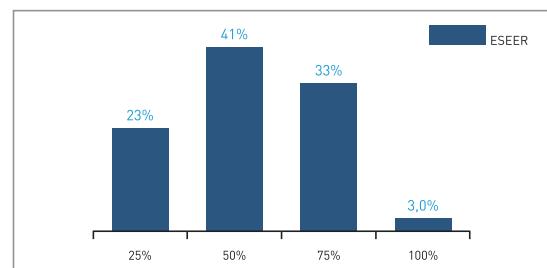
| Model AST (SHE) | | 060 | 070 | 080 | 090 | 100 | 110 | 120 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 164 | 185.4 | 203.2 | 235.6 | 277.8 | 296.4 | 328 |
| Cooling capacity (1) | TR | 47 | 53 | 58 | 67 | 79 | 84 | 93 |
| Total absorbed power | kW | 50.5 | 57.4 | 64.7 | 71.7 | 84.7 | 93.7 | 109.2 |
| EER | - | 3.24 | 3.23 | 3.14 | 3.28 | 3.28 | 3.16 | 3.00 |
| Max external air temperature | °C | 49 | 48 | 46 | 50 | 48 | 47 | 45 |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 38 | 43 | 51 | 53 | 22 | 25 | 29 |
| Water flow | m ³ /h | 28.1 | 31.8 | 34.9 | 40.4 | 47.7 | 50.9 | 56.3 |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/4 | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 52 | 52 | 53 | 54 | 55 | 55 | 56 |
| Noise power | dB(A) | 84 | 84 | 85 | 86 | 87 | 87 | 88 |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 3570 | 3570 | 3570 | 3570 | 4300 | 4300 | 4300 |
| Width | mm | 2192 | 2192 | 2192 | 2192 | 2192 | 2192 | 2192 |
| Height | mm | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 |
| Weight | kg | 2036 | 2091 | 2143 | 2642 | 2985 | 2985 | 3156 |

(1) Evaporator water inlet-outlet temperature 12-7°C , external air temperature 35°C.

(2) Sound pressure at 10 m: Average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance +/- 2. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump. The listed noise levels, weights and dimensions refer to base chillers with no options fitted.



ESEER operating time percentages



ESEER energy weights

GALAXY TECH



Air cooled water chillers with R410A
With hermetic scroll compressors
Cooling capacity 342-872 kw

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



The energy efficiency and the reliability.

Operation at partial loads corresponds to the largest portion of the working life of a unit dedicated to air conditioning applications: typically thermal loads vary widely both during the year and throughout each 24 hour period. The subdivision of the total cooling capacity over a large number of capacity steps, rendered possible thanks to the implementation of multi-scroll technology and environmentally friendly refrigerant R410A, ensure maximised performance at partial loads, resulting in seasonal energy savings of more than 16% with respect to conventional solutions. The multi-scroll configuration offers a lightweight solution, and permits the volume reduction of the storage tank with the associated dispersal of cooling energy, thus further reducing the static loading on the unit supports. Progressive stopping of the compressors and fans means that Galaxy Tech is extremely quiet in operation, rendering it ideal for installation in noise-sensitive surroundings.



Respect of Environment

The eco-friendly refrigerant R410A (ODP=0) with outstanding heat conductivity, coupled with the low absorbed power level of the scroll compressors, reduce the environment impact, minimizing the energy waste. Recyclable and high quality materials ensure respect of environment, and reduces the carbon footprint.

Supervisor systems

Galaxy Tech can be linked to various external Supervisor systems:

- RS485 serial connection to an external Supervisor system (MODBUS and other leading systems);
- xWEB300D Supervisor kit, operating via Internet;
- xWEB300D + modem GPRS for connection directly to a smartphone and tablet.

Electronic expansion valve

The electronic expansion valve allows an improvement of performance and an operating range wider than thermostatic expansion valves. The continuous calibrations system represents the best solution for all application characterized by several thermal load changes.

Factory test

All models are individually tested in order to check correct operation, and also undergo refrigerant charge and leakage controls, and microprocessor and safety device setting verifications. Leading brand components are used throughout, ensuring long term reliability.

R410A



Benefits

- Reduced noise levels, thanks also to the availability of differing acoustic versions;
- High EER/COP levels, especially at partial loads;
- Ideal for large hydronic air conditioning installations in public and private surroundings;
- Allows start-up and operation in even the most severe conditions;
- Easy installation with direct access to the water connections and the applications of victaulic connections;
- Simple to install and maintain, easily accessible components;
- User friendly controller with multifunctional buttons and dynamic display icons.

Main options

- 1 or 2 pumps and water pressure gauge;
- Storage tank;
- Condenser coils designed for aggressive atmospheres;
- Metal mesh filters for condenser coil protection;
- High efficiency EC axial fans with inverter technology and integrated speed regulation; or fan speed controller
- Antifreeze heater on evaporator, pumps and tank;
- Antivibration dampers;
- Serial connection to supervisor systems;
- MTA xCONNECT supervision based on internal web pages;
- Modularity / web interconnection hub;
- Replicated remote user terminal;
- Soft starter: are installed on each compressor and allow a reduction from 10 to 20% (depending by the model) of the start-up current compared to the direct start;
- Victaulic connections;
- Simple remote control;
- Special execution with partial or total heat recovery exchangers;
- Special execution for water temperatures down to -10°C ;

Standard features

- Multiple scroll compressors (4 to 8 depending on the model) connected in parallel (tandem or trio) on 2 or 4 independent refrigeration circuits;
- Shut-off valve and solenoid valve on the liquid line in each refrigeration circuit;
- xDRIVE is a microprocessor electronic controller with high computing capacity and user friendly graphic interface;
- Compressor suction and discharge valves;
- xDRIVE features the ModBUS-RTU communication protocol as standard, allowing connection with the most widely utilised Building Management Systems (BMS). It also features an Ethernet port as standard, with HTML supervision pages preloaded for connection to a company intranet or the Internet. The xDRIVE can manage in master/slave mode up to 8 units;
- Phase monitor against phase loss and phase reversal and checks the operating voltage limits;
- AC axial fans with die-cast aluminum blades, developed on the basis of bionic principles with progressive starting for condensing pressure control;
- Electronic expansion valve;
- High and low pressure transducer;
- Water differential pressure switch, air bleed valve and water drain valve;
- Factory tested and supplied with refrigerant charge and antifreeze oil;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- All the compressors are equipped with crankcase heaters.
- Compressor housings for acoustic insulation;
- Special execution with shell and tube evaporator.

Versions

- **Low ambient air temperature** - down to -20°C in cooling mode;

High energy efficiency versions:

- **HE** - High energy efficiency and basic acoustic configuration;
- **SHE** - High energy efficiency and low noise acoustic configuration.

Semi-graphic user terminal with multifunction keys and dynamic icons.



Pump section with or without storage tank.



Optimisation of performance thanks to the multiscroll logic.



High efficiency EC axial fans with inverter technology.



| Model GLT (HE) | | 120 | 140 | 160 | 170 | 180 | 200 | 220 |
|------------------------------|-------------------|-------------------------|-------|-------|------|-------|-------|-------|
| Cooling capacity (1) | kW | 352 | 396 | 438 | 477 | 522 | 565 | 617 |
| Cooling capacity (1) | TR | 100 | 113 | 124.5 | 136 | 148 | 161 | 175 |
| Total absorbed power | kW | 107.1 | 120.2 | 135.4 | 148 | 160.1 | 176.1 | 187.9 |
| EER | - | 3.29 | 3.29 | 3.23 | 3.22 | 3.26 | 3.21 | 3.28 |
| Max external air temperature | °C | 51 | 50 | 49 | 49 | 51 | 50 | 50 |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 23 | 29 | 32 | 36 | 42 | 55 | 57 |
| Water flow | m ³ /h | 60.4 | 68 | 75.2 | 81.9 | 89.6 | 97 | 105.9 |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/4 | | | 2/5 | 2/6 | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 65 | 65 | 65 | 65 | 65 | 65 | 66 |
| Noise power | dB(A) | 97 | 97 | 97 | 97 | 98 | 98 | 99 |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 4490 | 4490 | 4490 | 5490 | 6490 | 6490 | 6490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 3802 | 3982 | 4006 | 4765 | 5523 | 5607 | 5865 |

| Model GLT (HE) | | 230 | 240 | 260 | 280 | 300 | 320 | - |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|---|
| Cooling capacity (1) | kW | 634 | 654 | 735 | 792 | 826 | 872 | - |
| Cooling capacity (1) | TR | 180 | 186 | 209 | 225 | 235 | 248 | - |
| Total absorbed power | kW | 195.5 | 203.1 | 229.5 | 240.4 | 255.6 | 270.8 | - |
| EER | - | 3.24 | 3.22 | 3.20 | 3.29 | 3.23 | 3.22 | - |
| Max external air temperature | °C | 49 | 49 | 50 | 50 | 49 | 49 | - |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 60 | 60 | 55 | 61 | 43 | 29 | - |
| Water flow | m ³ /h | 108.8 | 112.3 | 126.2 | 135.9 | 141.8 | 149.7 | - |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/6 | | | 4/8 | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 66 | 66 | 66 | 67 | 67 | 67 | - |
| Noise power | dB(A) | 99 | 99 | 99 | 100 | 100 | 100 | - |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 6490 | 6490 | 8490 | 8490 | 8490 | 8490 | - |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | - |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | - |
| Weight | kg | 5877 | 5889 | 7529 | 7865 | 8149 | 8173 | - |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB : dimensions for lower noise and/or higher efficiency versions may differ.)

| Model GLT (SHE) | | 120 | 140 | 160 | 170 | 180 | 200 | 220 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 342 | 384 | 424 | 463 | 507 | 556 | 597 |
| Cooling capacity (1) | TR | 97 | 109 | 120.5 | 132 | 144 | 158 | 170 |
| Total absorbed power | kW | 106.6 | 120.5 | 137.5 | 148.6 | 159.9 | 172.6 | 189 |
| EER | - | 3.21 | 3.19 | 3.08 | 3.12 | 3.17 | 3.22 | 3.16 |
| Max external air temperature | °C | 49 | 47 | 46 | 46 | 49 | 48 | 47 |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 22 | 27 | 30 | 33 | 40 | 53 | 53 |
| Water flow | m ³ /h | 58.7 | 65.9 | 72.8 | 79.5 | 87 | 95.4 | 102.5 |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/4 | | | 2/5 | | 2/6 | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 57 | 57 | 57 | 57 | 57 | 57 | 58 |
| Noise power | dB(A) | 89 | 89 | 89 | 89 | 90 | 90 | 91 |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 4490 | 4490 | 4490 | 5490 | 6490 | 6490 | 6490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 3802 | 3982 | 4006 | 4765 | 5523 | 5841 | 5865 |

| Model GLT (SHE) | | 230 | 240 | 260 | 280 | 300 | 320 | - |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|---|
| Cooling capacity (1) | kW | 613.5 | 633 | 726 | 770 | 803 | 848 | - |
| Cooling capacity (1) | TR | 174.5 | 180 | 206 | 219 | 228 | 241 | - |
| Total absorbed power | kW | 197.3 | 206.2 | 224.3 | 240.5 | 257.3 | 275.7 | - |
| EER | - | 3.11 | 3.07 | 3.24 | 3.20 | 3.12 | 3.08 | - |
| Max external air temperature | °C | 46 | 46 | 47 | 47 | 46 | 46 | - |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | kPa | 56 | 57 | 59 | 58 | 40 | 26 | - |
| Water flow | m ³ /h | 105.3 | 108.6 | 124.6 | 132.2 | 137.8 | 145.6 | - |
| GENERAL DATA | | | | | | | | |
| Refrigerant | - | R410A | | | | | | |
| Circuits / Compressors | N° | 2/6 | | | 4/8 | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure (2) | dB(A) | 58 | 58 | 58 | 59 | 59 | 59 | - |
| Noise power | dB(A) | 91 | 91 | 91 | 92 | 92 | 92 | - |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | mm | 6490 | 6490 | 8490 | 8490 | 8490 | 8490 | - |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | - |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | - |
| Weight | kg | 5877 | 5889 | 7840 | 7865 | 8149 | 8382 | - |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted . (NB : dimensions for lower noise and/or higher efficiency versions may differ .)

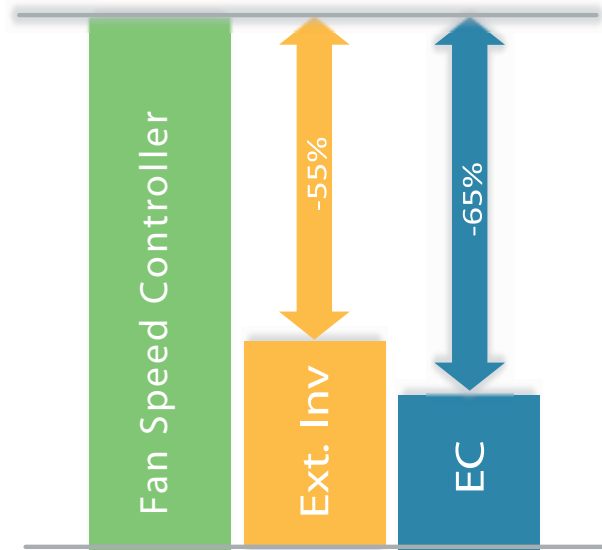
EC fans

Features

- Synchronous electric motors with permanent magnets;
- EC motors means: Electronically Commutated motors;
- Wide operating range: stepless rotation from 5% to 100%;
- High precision in condensation pressure control;
- Fast installation;

Benefits

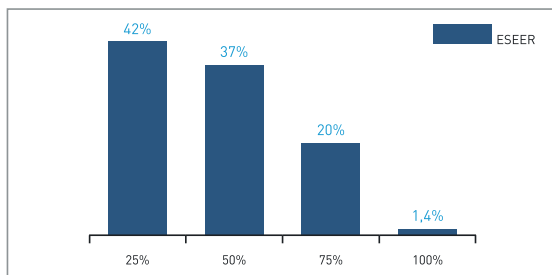
- Seasonal energy saving -20%;
- Pays off in few months;



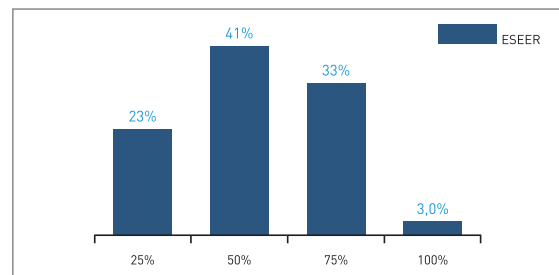
EC fans replace external electronic speed control option



-20%
Seasonal
energy saving



ESEER operating time percentages



ESEER energy weights

PHOENIX PLUS



Air cooled water chillers with R134a
equipped with semi-hermetic twin screw compressors.
Cooling capacity 304-1484 kw

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



The PHOENIX Plus range of chillers has been specifically designed to optimize the benefits of refrigerant R134a; their maximum advantage is achieved in those installations where the chiller operates below its design load conditions for most of the year.

Thanks to unique technical solutions and **Smart Stepless** regulation according to the exact effective cooling load requested by the system, PHOENIX Plus achieves market leading ESEER seasonal performance ratios, as well as nominal load EER ratios which are well above the minimum limit of the Class A energy efficiency category.



Respect of Environment

High energy efficiency of the units Phoenix Plus coupled with R134a non-ozone depleting refrigerants, reduce the environment impact minimizing the energy waste. Recyclable and high quality materials ensure the respect of environment and reduces carbon footprint.

Energy Efficiency

Smart Stepless cooling capacity regulation, electronic expansion valves and high efficiency heat exchangers with integrated heat recovery systems, contributes to obtain high performance both at full load and at partial load with exceptional ESEER values.

Supervisor Systems

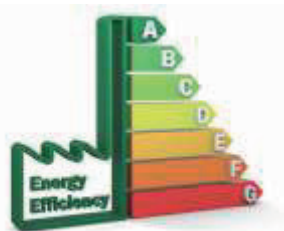
Phoenix Plus can be linked to various external Supervisor systems:

- RS485 serial connection to an external Supervisor system (MODBUS and other leading systems);
- xWEB300D Supervisor kit, operating via Internet;
- xWEB300D + modem GPRS for connection directly to a smartphone and tablet.

Factory Test

All models are individually tested in order to check correct operation, and also undergo refrigerant charge and leakage controls, and microprocessor and safety device setting verifications. Leading brand components are used throughout, ensuring long term reliability.

R134a 



Benefits

- High energy efficiency both at full load and at partial load (A Class);
- High seasonal energy efficiency
- The controller provides maximum flexibility to adapt to any operating condition, thanks to the Smart Stepless algorithm specifically developed by PST.
- High reliability and continuity of operation (up to 4 screw compressors and "Smart Stepless" algorithm);
- Wide operating range (ambient temperature from -20°C to +50°C);
- Comprehensive safety equipment, including phase monitor, pressure switches, differential pressure switch, crankcase heaters, compressors operating envelope and oil level;
- Wide range of accessories and kits for custom solutions;
- Integration with AQUAFree free-cooling modules.

Main options

- High efficiency EC axial fans with inverter technology and integrated speed regulation; or fan speed controller .
- Condenser coils with anticorrosion treatment;
- Soft starter;
- Antivibration dampers;
- Special applications with partial or total heat recovery;
- Special applications for water temperatures down to -10°C;
- Special very high efficiency applications;
- Antifreeze heater;
- Metal mesh filters for condenser coil protection;
- Replicated remote user terminal;
- Simple remote control;
- Serial connection to supervision systems;
- PST xCONNECT Supervision based on internal web pages;
- Modularity / web interconnection hub.

Standard features

- Environmentally friendly R134a refrigerant.
- High efficiency screw compressors with stepless regulation optimized for R134a refrigerant gas.
- Compressor crankcase heater.
- Compressor housings .
- Air-cooled condensers (copper tubes/aluminium fins) with transverse "V" formation;
- AC Axial fans with die-cast aluminum blades, developed on the basis of bionic principles;
- Check valve on compressor discharge and shut-off valves on discharge and suction lines;
- Electronic expansion valves;
- Single pass shell & tubes evaporator optimized for R134a refrigerant gas;
- The Electrical panel is made up of IP 54 cabinet with forced ventilation, inside which are installed contactors and circuit breakers; the protection from the phase loss and from the phase reversal is assured by the phase monitor device;
- xDRIVE controller programmed with software specifically developed by PST; high computing capacity and user friendly graphic interface; connectivity and supervision via Ethernet, USB, RS485 Modbus.

Versions

- Low ambient air temperature version - down to -20°C in cooling mode. with EC axial fans

Standard energy efficiency versions:

- INVERTER - variable-speed inverter technology with excellent efficiency at full and partial loads

High energy efficiency versions:

- HE - basic acoustic configuration optimized for full load operation
- SHE - low noise acoustic configuration optimized for part load operation
- HHE - high ambient temperature and basic acoustic configuration optimized for full load operation.

Semigraphic user interface with multifunctional buttons and dynamic display icons.



High efficiency EC axial fans with inverter technology.



Maximum accessibility to compressors



Electronic expansion valves as standard and single pass shell & tubes evaporator.



| Model PNP (HE) | | 140 | 150 | 160 | 170 | 180 | 200 | 220 | 235 |
|------------------------------|---------|-------------------------|-------|-------|-------|-------|-------|------|-------|
| Cooling capacity (1) | kW | 313.3 | 363.5 | 379.6 | 404.8 | 436 | 464 | 498 | 529 |
| Cooling capacity (1) | TR | 89 | 103 | 108 | 115 | 124 | 132 | 142 | 150.5 |
| Total absorbed power | kW | 97 | 109.7 | 117.5 | 124.8 | 132.8 | 143.2 | 154 | 162.5 |
| EER | - | 3.23 | 3.31 | 3.23 | 3.24 | 3.28 | 3.24 | 3.23 | 3.25 |
| Max external air temperature | °C | 51 | 51 | 48 | 48 | 47 | 46 | 46 | 46 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | kPa | 36 | 31 | 30 | 34 | 21 | 23 | 32 | 36 |
| Water flow | m³/h | 53.8 | 62.4 | 65.2 | 69.5 | 74.8 | 79.6 | 85.5 | 90.8 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | |
| Circuits / Compressors | N° | 2/2 | | | | | | | |
| Capacity control | % | 12.5~100 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 66 | 66 | 66 | 67 | 67 | 67 | 68 | 68 |
| Noise power | dB(A) | 98 | 98 | 98 | 99 | 99 | 99 | 100 | 100 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 4490 | 4490 | 4490 | 4490 | 4490 | 4490 | 4490 | 5490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 4159 | 4440 | 5060 | 5138 | 5393 | 5403 | 5648 | 6263 |

| Model PNP (HE) | | 250 | 265 | 280 | 300 | 320 | 360 | 375 | 405 | |
|------------------------------|---------|-------------------------|-------|-------|-------|-------|---------|-------|-------|--|
| Cooling capacity (1) | kW | 566 | 602 | 646 | 701 | 764 | 809 | 849 | 923 | |
| Cooling capacity (1) | TR | 161 | 171 | 184 | 199 | 217 | 230 | 241.5 | 262.5 | |
| Total absorbed power | kW | 171.7 | 181.9 | 193.1 | 210.7 | 228.9 | 248.1 | 257.5 | 277.9 | |
| EER | - | 3.30 | 3.31 | 3.35 | 3.33 | 3.34 | 3.26 | 3.30 | 3.32 | |
| Max external air temperature | °C | 48 | 48 | 48 | 48 | 48 | 46 | 48 | 48 | |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | kPa | 40 | 45 | 44 | 51 | 43 | 54 | 42 | 49 | |
| Water flow | m³/h | 97.1 | 103.3 | 110.9 | 120.3 | 131.1 | 138.9 | 145.7 | 158.4 | |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | | |
| Circuits / Compressors | N° | 2/2 | | | | | 3/3 | | | |
| Capacity control | % | 12.5~100 | | | | | 8.3~100 | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | | |
| Protection class | - | IP54 | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure (2) | dB(A) | 68 | 68 | 68 | 68 | 68 | 69 | 69 | 70 | |
| Noise power | dB(A) | 100 | 101 | 101 | 101 | 101 | 102 | 102 | 103 | |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | mm | 6490 | 6490 | 6490 | 7490 | 8490 | 8490 | 9490 | 9490 | |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | |
| Weight | kg | 6877 | 7004 | 7131 | 7667 | 8202 | 9837 | 10012 | 10266 | |

| Model PNP (HE) | | 420 | 440 | 460 | 480 | 530 | 560 | 600 | 620 | 640 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|---------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 966 | 1022 | 1078 | 1146 | 1204 | 1292 | 1382 | 1427 | 1484 |
| Cooling capacity (1) | TR | 275 | 291 | 307 | 326 | 342.5 | 367.5 | 393 | 406 | 422 |
| Total absorbed power | kW | 289.6 | 307.2 | 324.8 | 343.3 | 363.8 | 386.2 | 422.4 | 440.5 | 460.6 |
| EER | - | 3.34 | 3.33 | 3.32 | 3.34 | 3.31 | 3.35 | 3.27 | 3.24 | 3.22 |
| Max external air temperature | °C | 48 | 48 | 48 | 48 | 48 | 48 | 46 | 46 | 46 |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | kPa | 54 | 61 | 43 | 43 | 44 | 46 | 52 | 56 | 45 |
| Water flow | m ³ /h | 165.8 | 175.4 | 185 | 196.7 | 206.7 | 221.8 | 237.2 | 244.9 | 254.7 |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | | |
| Circuits / Compressors | N° | 3/3 | | | | 4/4 | | | | |
| Capacity control | % | 8.3~100 | | | | 6.3~100 | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | | |
| Protection class | - | IP54 | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure (2) | dB(A) | 70 | 70 | 70 | 70 | 71 | 71 | 71 | 71 | 71 |
| Noise power | dB(A) | 103 | 103 | 103 | 103 | 104 | 104 | 104 | 104 | 104 |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | mm | 9490 | 10490 | 11490 | 12490 | 12490 | 12490 | 12490 | 12490 | 12490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 10737 | 11273 | 11808 | 12780 | 13927 | 14539 | 15359 | 15769 | 16179 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB: dimensions for lower noise and/or higher efficiency versions may differ.)

| Model PNP (SHE) | | 140 | 150 | 160 | 170 | 180 | 200 | 220 | 235 |
|------------------------------|---------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 304.1 | 352.2 | 367.8 | 391.9 | 420 | 445 | 474 | 509 |
| Cooling capacity (1) | TR | 86.5 | 100 | 105 | 111.5 | 119.5 | 126.5 | 135 | 145 |
| Total absorbed power | kW | 95.8 | 109.2 | 118 | 126 | 134.4 | 146 | 158.2 | 164.7 |
| EER | - | 3.17 | 3.23 | 3.12 | 3.11 | 3.12 | 3.05 | 3.00 | 3.09 |
| Max external air temperature | °C | 49 | 48 | 45 | 45 | 45 | 43 | 43 | 43 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | kPa | 34 | 29 | 28 | 32 | 30 | 33 | 29 | 34 |
| Water flow | m³/h | 52.2 | 60.5 | 63.1 | 67.3 | 72.1 | 76.4 | 81.4 | 87.4 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | |
| Circuits / Compressors | N° | 2/2 | | | | | | | |
| Capacity control | % | 12.5~100 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 58 | 58 | 58 | 59 | 59 | 59 | 60 | 60 |
| Noise power | dB(A) | 90 | 90 | 90 | 91 | 91 | 91 | 92 | 92 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 4490 | 4490 | 4490 | 4490 | 4490 | 4490 | 4490 | 5490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 4159 | 4440 | 5060 | 5138 | 5393 | 5403 | 5648 | 6263 |

| Model PNP (SHE) | | 250 | 265 | 280 | 300 | 320 | 360 | 375 | 405 | |
|------------------------------|---------|-------------------------|-------|-------|-------|-------|---------|-------|-------|--|
| Cooling capacity (1) | kW | 550 | 583 | 622 | 677 | 738 | 782 | 825 | 891 | |
| Cooling capacity (1) | TR | 156.5 | 166 | 177 | 192.5 | 210 | 222.5 | 235 | 253 | |
| Total absorbed power | kW | 171.8 | 183 | 195 | 211.5 | 229.3 | 250.4 | 257.8 | 280.1 | |
| EER | - | 3.20 | 3.19 | 3.19 | 3.20 | 3.22 | 3.12 | 3.20 | 3.18 | |
| Max external air temperature | °C | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | kPa | 38 | 42 | 41 | 48 | 40 | 51 | 40 | 46 | |
| Water flow | m³/h | 94.4 | 100.1 | 106.8 | 116.2 | 126.7 | 134.2 | 141.6 | 152.9 | |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | | |
| Circuits / Compressors | N° | 2/2 | | | | | 3/3 | | | |
| Capacity control | % | 12.5~100 | | | | | 8.3~100 | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | | |
| Protection class | - | IP54 | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure (2) | dB(A) | 60 | 60 | 60 | 60 | 60 | 61 | 61 | 62 | |
| Noise power | dB(A) | 92 | 93 | 93 | 93 | 93 | 94 | 94 | 95 | |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | mm | 6490 | 6490 | 6490 | 7490 | 8490 | 8490 | 9490 | 9490 | |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | |
| Weight | kg | 6877 | 7004 | 7131 | 7667 | 8202 | 9837 | 10012 | 10266 | |

| Model PNP (SHE) | | 420 | 440 | 460 | 480 | 530 | 560 | 600 | 620 | 640 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|---------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 933 | 988 | 1043 | 1110 | 1166 | 1244 | 1324 | 1364 | 1420 |
| Cooling capacity (1) | TR | 265 | 281 | 297 | 316 | 332 | 354 | 376.5 | 388 | 404 |
| Total absorbed power | kW | 292.5 | 309 | 325.6 | 343.4 | 366 | 390 | 430 | 450 | 471.6 |
| EER | - | 3.19 | 3.20 | 3.20 | 3.23 | 3.19 | 3.19 | 3.08 | 3.03 | 3.01 |
| Max external air temperature | °C | 45 | 45 | 45 | 45 | 45 | 45 | 43 | 43 | 43 |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | kPa | 51 | 57 | 40 | 44 | 49 | 43 | 48 | 51 | 46 |
| Water flow | m ³ /h | 160.1 | 169.6 | 179 | 190.5 | 200.1 | 213.5 | 227.3 | 234.1 | 243.7 |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | | |
| Circuits / Compressors | N° | 3/3 | | | | 4/4 | | | | |
| Capacity control | % | 8.3~100 | | | | 6.3~100 | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | | |
| Protection class | - | IP54 | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure (2) | dB(A) | 62 | 62 | 62 | 62 | 63 | 63 | 63 | 63 | 63 |
| Noisepower | dB(A) | 95 | 95 | 95 | 95 | 96 | 96 | 96 | 96 | 96 |
| SIZE ANDWEIGHT | | | | | | | | | | |
| Depth | mm | 9490 | 10490 | 11490 | 12490 | 12490 | 12490 | 12490 | 12490 | 12490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 10737 | 11273 | 11808 | 12780 | 13927 | 14539 | 15359 | 15769 | 16179 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.(NB:dimensions for lower noise and/or higher efficiency versions may differ.)

| Model PNP (HHE) | | | 150 | 160 | 170 | 180 | 250 | 265 | 280 |
|------------------------------|-----|-------------------|-------------------------|-------|-------|-------|-------|------|-------|
| Cooling capacity | (1) | kW | 322.1 | 371.4 | 398.7 | 428 | 458 | 490 | 528 |
| Cooling capacity | (1) | TR | 92 | 106 | 113 | 122 | 130 | 139 | 150 |
| Total absorbed power | | kW | 97.7 | 113.2 | 118.9 | 124.7 | 133.7 | 142 | 150.9 |
| EER | | - | 3.30 | 3.28 | 3.35 | 3.43 | 3.43 | 3.45 | 3.50 |
| Max external air temperature | | °C | 52 | 52 | 52 | 53 | 52 | 52 | 52 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | | kPa | 26 | 38 | 44 | 34 | 29 | 33 | 33 |
| Water flow | | m ³ /h | 55.3 | 63.7 | 68.4 | 73.5 | 78.6 | 84.1 | 90.6 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | | - | R134a | | | | | | |
| Circuits / Compressors | | N° | 2/2 | | | | | | |
| Capacity control | | % | 12.5~100 | | | | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure | (2) | dB(A) | 66 | 66 | 67 | 67 | 67 | 67 | 68 |
| Noise power | | dB(A) | 98 | 98 | 99 | 99 | 99 | 99 | 100 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | | mm | 5490 | 6490 | 6490 | 6490 | 6490 | 6490 | 6490 |
| Width | | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | | kg | 4360 | 4685 | 4807 | 5106 | 5756 | 5886 | 6251 |

| Model PNP (HHE) | | | 300 | 320 | 340 | 360 | 405 | 420 | 480 | |
|------------------------------|-----|-------------------|-------------------------|------|-------|-------|---------|-------|-------|--|
| Cooling capacity | (1) | kW | 550 | 578 | 623 | 676 | 751 | 792 | 867 | |
| Cooling capacity | (1) | TR | 156 | 164 | 177 | 192 | 214 | 225 | 247 | |
| Total absorbed power | | kW | 160.7 | 171 | 181.9 | 193.8 | 217.1 | 226.3 | 256.6 | |
| EER | | - | 3.42 | 3.38 | 3.42 | 3.49 | 3.46 | 3.50 | 3.38 | |
| Max external air temperature | | °C | 52 | 53 | 53 | 53 | 52 | 52 | 53 | |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | | kPa | 35 | 40 | 47 | 38 | 48 | 42 | 41 | |
| Water flow | | m ³ /h | 94.4 | 99.2 | 106.9 | 116 | 128.9 | 135.9 | 148.8 | |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | | - | R134a | | | | | | | |
| Circuits / Compressors | | N° | 2/2 | | | | 3/3 | | | |
| Capacity control | | % | 12.5~100 | | | | 8.3~100 | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure | (2) | dB(A) | 68 | 68 | 68 | 68 | 68 | 68 | 69 | |
| Noise power | | dB(A) | 100 | 100 | 101 | 101 | 101 | 101 | 102 | |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | | mm | 7490 | 8490 | 8490 | 8490 | 9490 | 9490 | 12490 | |
| Width | | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | |
| Height | | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | |
| Weight | | kg | 6809 | 7131 | 7711 | 8291 | 10034 | 10393 | 10746 | |

| Model PNP (HHE) | | 530 | 560 | 600 | 640 | 720 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 980 | 1056 | 1100 | 1156 | 1352 |
| Cooling capacity (1) | TR | 279 | 300 | 313 | 329 | 384.5 |
| Total absorbed power | kW | 284 | 301.8 | 321.4 | 342.1 | 387.6 |
| EER | - | 3.45 | 3.50 | 3.42 | 3.38 | 3.49 |
| Max external air temperature | °C | 52 | 52 | 52 | 53 | 53 |
| EXCHANGERS | | | | | | |
| Evaporator pressure drops | kPa | 53 | 41 | 45 | 50 | 40 |
| Water flow | m ³ /h | 168.2 | 181.3 | 188.8 | 198.4 | 232.1 |
| GENERAL DATA | | | | | | |
| Refrigerant | - | R134a | | | | |
| Circuits / Compressors | N° | 4/4 | | | | |
| Capacity control | % | 6.3~100 | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | |
| Protection class | - | IP54 | | | | |
| NOISE LEVEL | | | | | | |
| Noise pressure (2) | dB(A) | 69 | 70 | 70 | 70 | 71 |
| Noise power | dB(A) | 102 | 103 | 103 | 103 | 104 |
| SIZE AND WEIGHT | | | | | | |
| Depth | mm | 12490 | 12490 | 14490 | 16490 | 16490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 13511 | 13771 | 14006 | 14716 | 17329 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB: dimensions for lower noise and/or higher efficiency versions may differ.)

inverter

| Model PNP-I(HE) | | 205 | 215 | 235 | 250 | 285 | 320 | 360 | 400 |
|----------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 477.8 | 510 | 542 | 596 | 672 | 762 | 843 | 938 |
| Cooling capacity (1) | TR | 136 | 145 | 154 | 169.5 | 191 | 217 | 240 | 267 |
| Total absorbed power | kW | 149.1 | 157.3 | 168.1 | 183.1 | 207.4 | 233.5 | 263 | 294.4 |
| EER | - | 3.20 | 3.24 | 3.22 | 3.25 | 3.24 | 3.26 | 3.20 | 3.19 |
| Max external aitemperature | °C | 47 | 47 | 46 | 47 | 47 | 47 | 47 | 48 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | kPa | 50 | 39 | 32 | 32 | 40 | 38 | 46 | 49 |
| Water flow | m ³ /h | 82.1 | 87.5 | 93 | 102.3 | 115.3 | 130.8 | 144.7 | 161 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | |
| Circuits / Compressors | N° | 2/(1+i) | | | | 2/2i | | | |
| Capacity control | % | 12.5~100 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 67 | 67 | 68 | 68 | 68 | 68 | 68 | 69 |
| Noise power | dB(A) | 99 | 99 | 100 | 100 | 101 | 101 | 101 | 102 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 5490 | 5490 | 5490 | 6490 | 7490 | 8490 | 9490 | 10490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 5640 | 5898 | 6143 | 6197 | 6450 | 6702 | 6955 | 7208 |

| | | | |
|------------------------------|-------------------|-------------------------|-------|
| Model PNP-I(HE) | | 440 | 480 |
| Cooling capacity (1) | kW | 1079 | 1244 |
| Cooling capacity (1) | TR | 307 | 354 |
| Total absorbed power | kW | 336.8 | 382.4 |
| EER | - | 3.20 | 3.25 |
| Max external air temperature | °C | 46 | 46 |
| EXCHANGERS | | | |
| Evaporator pressure drops | kPa | 40 | 49 |
| Water flow | m ³ /h | 185.2 | 213.5 |
| GENERAL DATA | | | |
| Refrigerant | - | R134a | |
| Circuits / Compressors | N° | 2/2i | |
| Capacity control | % | 12.5~100 | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | |
| Protection class | - | IP54 | |
| NOISELEVEL | | | |
| Noise pressure (2) | dB(A) | 71 | 72 |
| Noise power | dB(A) | 104 | 105 |
| SIZE AND WEIGHT | | | |
| Depth | mm | 11490 | 12490 |
| Width | mm | 2194 | 2194 |
| Height | mm | 2670 | 2670 |
| Weight | kg | 7830 | 8453 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.(NB:dimensions for lower noise and/or higher efficiency versions may differ.)

inverter

| Model PNP-I(SHE) | | 205 | 215 | 235 | 250 | 285 | 320 | 360 | 400 |
|------------------------------|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 471.2 | 497 | 526 | 588 | 664 | 754 | 828 | 912 |
| Cooling capacity (1) | TR | 134 | 141 | 150 | 167 | 189 | 214.5 | 235.5 | 259 |
| Total absorbed power | kW | 146.3 | 156.4 | 168.5 | 180 | 203.2 | 228.1 | 260.4 | 294.2 |
| EER | - | 3.22 | 3.18 | 3.12 | 3.27 | 3.27 | 3.31 | 3.18 | 3.10 |
| Max external air temperature | °C | 46 | 45 | 43 | 46 | 46 | 46 | 45 | 45 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | kPa | 49 | 37 | 30 | 31 | 40 | 38 | 45 | 50 |
| Water flow | m ³ /h | 80.9 | 85.3 | 90.3 | 100.9 | 114 | 129.4 | 142.1 | 156.5 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | - | R134a | | | | | | | |
| Circuits / Compressors | N° | +1 /2i) | | | | 2/2i | | | |
| Capacity control | % | 12.5~100 | | | | | | | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure (2) | dB(A) | 62 | 62 | 63 | 63 | 63 | 63 | 63 | 64 |
| Noise power | dB(A) | 94 | 94 | 95 | 95 | 96 | 96 | 96 | 97 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | mm | 5490 | 5490 | 5490 | 6490 | 7490 | 8490 | 9490 | 10490 |
| Width | mm | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 | 2194 |
| Height | mm | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 | 2670 |
| Weight | kg | 5835 | 6015 | 6260 | 6431 | 6723 | 7014 | 7111 | 7208 |

| Model PNPI (SHE) | | 440 | 480 |
|------------------------------|-------------------|-------------------------|-------|
| Cooling capacity (1) | kW | 1058 | 1230 |
| Cooling capacity (1) | TR | 301 | 350 |
| Total absorbed power | kW | 333.2 | 374.8 |
| EER | - | 3.18 | 3.28 |
| Max external air temperature | °C | 45 | 45 |
| EXCHANGERS | | | |
| Evaporator pressure drops | kPa | 39 | 48 |
| Water flow | m ³ /h | 181.6 | 211.1 |
| GENERAL DATA | | | |
| Refrigerant | - | R134a | |
| Circuits / Compressors | N° | 2/2i | |
| Capacity control | % | 12.5~100 | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | |
| Protection class | - | IP54 | |
| NOISELEVEL | | | |
| Noise pressure (2) | dB(A) | 66 | 67 |
| Noise power | dB(A) | 99 | 100 |
| SIZE AND WEIGHT | | | |
| Depth | mm | 11490 | 12490 |
| Width | mm | 2194 | 2194 |
| Height | mm | 2670 | 2670 |
| Weight | kg | 8064 | 8921 |

(1) External ambient temperature: 35°C; evaporator IN/OUT: 7/12°C

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.(NB:dimensions for lower noise and/or higher efficiency versions may differ.)

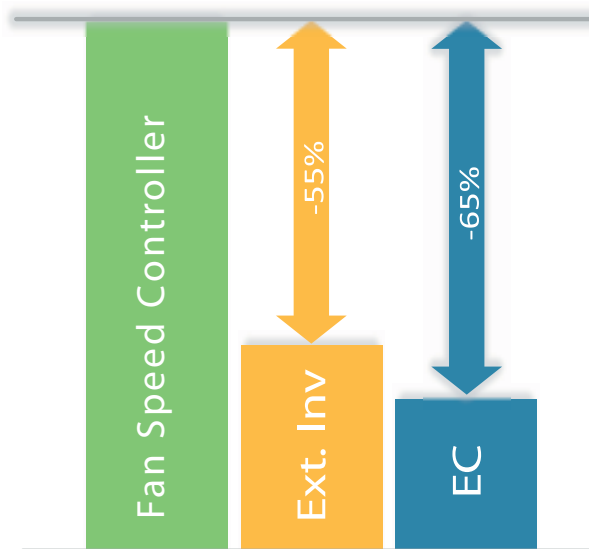
EC fans

Features

- Synchronous electric motors with permanent magnets;
- EC motors means: Electronically Commutated motors;
- Wide operating range: stepless rotation from 5% to 100%;
- High precision in condensation pressure control;
- Fast installation;

Benefits

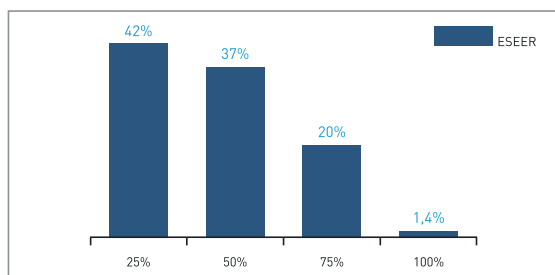
- Seasonal energy saving -20%;
- Pays off in few months;



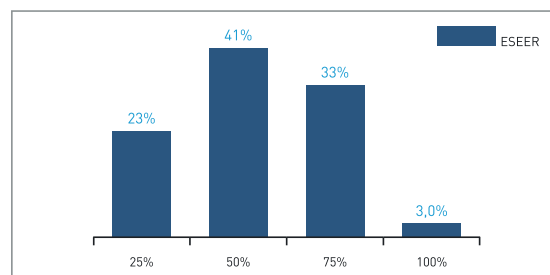
EC fans replace external electronic speed control option



-20%
Seasonal
energy saving



ESEER operating time percentages



ESEER energy weights

NEPTUNE TECH

Water-cooled water chillers, heat pumps and condenserless units
featuring hermetic scroll compressors.

Cooling capacity 189-570 kW

heating capacity 230-667 kW

PST



PROCESS COOLING
SOLUTIONS



AIR CONDITIONING
SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



Benefits

- Up to 6 compressors offer high efficiency and reliability;
- High energy efficiency levels, especially at partial loads;
- Extremely compact, even passes through a domestic door;
- Operates with water outlet temperatures from 0°C to 25°C;
- Unloading function allowing operation even in extreme conditions;
- Self Adapting Control (SAC) with dynamic set point, for increased precision with low thermal inertias;
- Robust design with high quality components from renowned suppliers, fruit of PST's industrial background;
- Reduced noise levels, thanks also to the availability of two differing acoustic versions;
- Flexibility of use, sized for operation with either tower or well water;
- Energy efficient total heat recovery and desuperheater options;
- Easy installation and access to all components;
- Allows both inlet and outlet water control, with a PID control logic;
- Generous ambient limits (-10°C to +45°C);
- Easy to use intuitive controller with dual icon display.

Versions

- **NET** - Cooling only / Heat pump (with inversion on the water side);
- **NET Silent** - Low noise;
- **NET / ME** - Condenserless unit combinable with remote condenser.

Standard Features

- 2 to 6 hermetic scroll compressors, positioned in parallel in one or two circuits;
- Shell & tube evaporator and condenser;
- Shut-off valve and solenoid valve on the liquid line;
- Extensive inspections and tests performed on all units;
- Factory charged with non-freezing oil and refrigerant (except ME);
- IP54 electrical protection rating;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- All the scroll compressors are equipped with crankcase heaters as standard;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal.

Main Options

- Noise reducing compressor housing;
- Modulating condensing pressure control valves;
- Antivibration dampers;
- Soft starter;
- Desuperheater (20% heat recovery);
- Total heat recovery (100% heat recovery only chiller);
- Antifreeze heater for exchangers;
- Remote user interface;
- RS485 MODBUS interface for connection to supervisor systems;
- xWEB300D remote supervision, allowing local or remote monitoring via web server or GPRS;
- Matching cooling towers or dry coolers available on request;
- Remote condensers for integration with ME units available on request.

Microprocessor controller with dual icon-based display.

Optimised performance thanks to multiscroll logic.

Ideal for air conditioning of civil, public and private buildings.



| Model NET | | | 060 | 070 | 080 | 090 | 100 | 110 | 120 |
|---------------------------|-----|-------------------|-------------------------|------|------|------|------|------|------|
| Cooling capacity | (1) | kW | 189 | 215 | 239 | 264 | 290 | 338 | 382 |
| Cooling capacity | (1) | TR | 54 | 61 | 68 | 75 | 82.5 | 96 | 109 |
| Total absorbed power | | kW | 41 | 46.3 | 52.6 | 56.6 | 63.6 | 72.6 | 82 |
| EER | | - | 4.61 | 4.64 | 4.54 | 4.66 | 4.56 | 4.66 | 4.66 |
| EXCHANGERS | | | | | | | | | |
| Evaporator pressure drops | | kPa | 51 | 37 | 54 | 22 | 27 | 30 | 43 |
| Water flow | | m ³ /h | 32.4 | 36.9 | 41 | 45.3 | 49.8 | 58 | 65.6 |
| GENERAL DATA | | | | | | | | | |
| Refrigerant | | - | R410A | | | | | | |
| Circuits / Compressors | | N° | 1/2 | | | 2/4 | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | |
| Protection class | | - | IP54 | | | | | | |
| NOISE LEVEL | | | | | | | | | |
| Noise pressure basic | (2) | dB(A) | 57 | 57 | 58 | 58.5 | 58.5 | 59.5 | 60 |
| Noise pressure silent | (2) | dB(A) | 51 | 51 | 52 | 52.5 | 52.5 | 53.5 | 54 |
| SIZE AND WEIGHT | | | | | | | | | |
| Depth | | mm | 2900 | 2900 | 2900 | 2900 | 2900 | 2900 | 2900 |
| Width | | mm | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 |
| Height | | mm | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Weight | | kg | 936 | 968 | 1000 | 1192 | 1192 | 1470 | 1657 |

| Model NET | | | 130 | 140 | 150 | 160 | 170 | 180 |
|---------------------------|-----|-------------------|-------------------------|------|-------|-------|-------|------|
| Cooling capacity | (1) | kW | 404 | 429 | 449.5 | 478 | 519.5 | 570 |
| Cooling capacity | (1) | TR | 115 | 122 | 128 | 136 | 148 | 162 |
| Total absorbed power | | kW | 87.3 | 92.6 | 98.7 | 105.2 | 114.1 | 123 |
| EER | | - | 4.63 | 4.63 | 4.55 | 4.54 | 4.55 | 4.63 |
| EXCHANGERS | | | | | | | | |
| Evaporator pressure drops | | kPa | 48 | 34 | 37 | 38 | 45 | 47 |
| Water flow | | m ³ /h | 69.3 | 73.6 | 77.2 | 82 | 89.2 | 97.8 |
| GENERAL DATA | | | | | | | | |
| Refrigerant | | - | R410A | | | | | |
| Circuits / Compressors | | N° | 2/4 | | | 2/5 | 2/6 | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | |
| Protection class | | - | IP54 | | | | | |
| NOISE LEVEL | | | | | | | | |
| Noise pressure basic | (2) | dB(A) | 60 | 60 | 60.5 | 61 | 61.5 | 62 |
| Noise pressure silent | (2) | dB(A) | 54 | 54 | 54.5 | 55 | 55.5 | 56 |
| SIZE AND WEIGHT | | | | | | | | |
| Depth | | mm | 2900 | 2900 | 2900 | 3400 | 3400 | 3700 |
| Width | | mm | 1300 | 1300 | 1300 | 1300 | 1300 | 1300 |
| Height | | mm | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Weight | | kg | 1669 | 1806 | 1818 | 1880 | 2023 | 2266 |

(1) Evaporator IN/OUT: 12/7°C ; condenser IN/OUT : 35/30°C;

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB: dimensions for lower noise and/ or higher efficiency versions may differ.)

AQUARIUS PLUS

High efficiency water cooled chillers, heat pumps and evaporating units with screw compressors and R134a refrigerant gas.

Cooling capacity 358-1544 kW

Heating capacity 405 - 1735 kW

Cooling capacity evaporating units 328 - 1429 kW

PST



PROCESS COOLING SOLUTIONS



AIR CONDITIONING SYSTEMS

Conditioning Your ambient,
maximising Your comfort.



The Aquarius Plus water cooled screw chillers are the best solution for commercial and industrial applications when requirements are reliability and performances. They are designed to meet market requirements in terms of versatility and energy efficiency. Stepless cooling capacity regulation, electronic expansion valves and high efficiency heat exchangers with integrated heat recovery systems, contributes to obtain high performance both at full load and at partial load with exceptional ESEER value.



Screw Compressors

Aquarius Plus are equipped with high efficiency screw compressors designed and optimized for R134a refrigerant gas. The stepless cooling capacity regulation ensures the delivery of the exact power according to the real needs of the system, obtaining the maximum energy efficiency in all operating conditions.

Smart Stepless Partialization

Thanks to the new **Smart Stepless** algorithm it is possible to obtain an high precision and adaptability in the cooling capacity regulation. The control dynamically manages the speed of the partialization based on the thermal load of the system.

Respect of Enviroment

High energy efficiency of the units Aquarius Plus coupled with R134a non-ozone depleting refrigerants, reduce the environment impact minimizing the energy waste. Recyclable and high quality materials ensure the respect of environment and reduces carbon footprint.

Electronic Expansion Valve

The electronic expansion valve allows an improvement of performance and an operating range wider than thermostatic expansion valves. The continuous calibrations system represents the best solution for all applications characterized by several thermal load changes.



25÷100%

R134a



Benefits

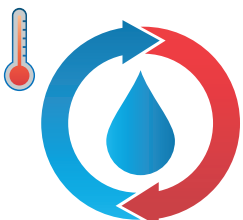
- 21 base models that perfectly match each specific system requirements;
- High energy efficiency both at full load and at partial load
- Stepless cooling capacity regulation with self-adaptive control;
- High precision and adaptability in cooling capacity regulation;
- Compressors minimum partialization step 25%;
- Heat exchangers with low water side pressure drops in order to save pumping costs;
- Low sound levels, thanks also to the availability of two different acoustic versions;
- Easy access to all components;
- Fully bundled heat recovery solutions;
- Condenser outlet water temperature up to 60°C.

Standard features

- Environmentally friendly refrigerant R134a with zero ozone depletion potential;
- High efficiency screw compressors with stepless regulation optimized for R134a refrigerant gas;
- Automatic circuit breakers for compressors;
- Compressor crankcase heaters;
- Check valve and shut-off valve on discharge line;
- Electronic expansion valves;
- Single pass shell & tubes heat exchangers optimized for R134a refrigerant gas;
- Electrical panel with numbered wires, forced ventilation and IP54 protection class;
- Phase monitor which provides protection against phase loss and phase reversal;
- Microprocessor electronic control xDRIVE with high computing capacity and user friendly interface, suitable for connection with supervisor system;
- RS485 interface for connection to ModBus supervisor systems;
- Ethernet connection featuring pre-programmed HTML supervision pages, allowing local or internet based visualization and modification of the operating parameters.

Heat Recovery

The integrated partial or total heat recovery systems are able to provide useful heat, that would otherwise be lost, for other purposes thus reducing the overall energy bill and CO₂ emissions.



Energy Efficiency

Stepless cooling capacity regulation, electronic expansion valves and high efficiency heat exchangers with integrated heat recovery systems, contributes to obtain high performance both at full load and at partial load with exceptional ESEER values.



Main options

- Partial or total heat recovery;
- Compressors acoustical enclosure (super silent acoustic configuration);
- Shut-off valves on suction line;
- Soft starter device allows a reduction in start-up current reducing the mechanical stress for compressors;
- Capacitors for compressors;
- Condensing control kit (with servo-driven modulating valves or pressure control valves);
- Flanges kit on evaporator;
- Flanges kit or Victaulic kit on condenser and total heat recovery;
- Anti-vibration dampers kit;
- Remote control with LCD display VGIP;
- xWEB300D supervisor kit;
- Cooling tower or dry cooler available on request;
- Remote condenser available on request for condenserless version (ME).

Versions

- **CH** - Cooling only version;
- **HP** - Heat pump with hydraulic system reversing and outlet water temperature up to 60°C;
- **ME** - Condenserless version;
- **LWT** - Low Water Temperature (down to -8°C);

Acoustic configurations

- **Basic acoustic configuration:** compressors directly accessible;
- **Super silent acoustic configuration:** this configuration is optimised for very low noise operation: compressors are housed in a metal compartment insulated with a sound absorbing layer of open-cell expanded polyurethane and a sheet of sound deadening material (noise reduction -6 db(A) in comparison with basic).

xDRIVE Microprocessor Controller

Control and management of the unit are provided by the microprocessor electronic controller xDRIVE. Thanks to the high computing capacity and the simple user interface, it allows an easy management. The units can be remotely controlled with supervisory systems through the standard RS485 port or xWEB300D kit.



Factory Test

All models are individually tested in order to check correct operation, and also undergo refrigerant charge and leakage controls, and microprocessor and safety device setting verifications. Leading brand components are used throughout, ensuring long term reliability.



| Model AQP | | | 1402 | 1502 | 1602 | 1702 | 1802 | 2002 | 2202 | 2352 |
|---------------------------|-----|-------------------|-------------------------|-------|------|------|-------|-------|-------|-------|
| Cooling capacity | (1) | kW | 357.8 | 388.9 | 428 | 458 | 494 | 534 | 584 | 613 |
| Cooling capacity | (1) | TR | 102 | 110.5 | 122 | 130 | 140.5 | 152 | 166 | 174 |
| Total absorbed power | | kW | 70.8 | 78.3 | 86.2 | 92.1 | 98.4 | 104.8 | 111.6 | 118.4 |
| EER | | - | 5.05 | 4.97 | 4.97 | 4.97 | 5.02 | 5.10 | 5.23 | 5.18 |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | | kPa | 38 | 45 | 27 | 31 | 33 | 38 | 34 | 37 |
| Water flow | | m ³ /h | 61.4 | 66.7 | 73.5 | 78.6 | 84.8 | 91.7 | 100.2 | 105.2 |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | | - | R134a | | | | | | | |
| Circuits / Compressors | | N° | 2/2 | | | | | | | |
| Capacity control | | % | 12.5~100 | | | | | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure basic | (2) | dB(A) | 68 | 68 | 69 | 69 | 69 | 70 | 70 | 70 |
| Noise pressure silent | (2) | dB(A) | 62 | 62 | 63 | 63 | 63 | 64 | 64 | 64 |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | | mm | 4150 | 4150 | 4300 | 4300 | 4300 | 4300 | 4300 | 4300 |
| Width | | mm | 1460 | 1460 | 1460 | 1460 | 1460 | 1460 | 1460 | 1460 |
| Height | | mm | 1640 | 1640 | 1640 | 1725 | 1725 | 1725 | 1725 | 1770 |
| Weight | | kg | 2118 | 2497 | 2942 | 2972 | 3132 | 3142 | 3185 | 3341 |

| Model AQP | | | 2502 | 2652 | 2802 | 3002 | 3202 | 3402 | 3602 | 3902 |
|---------------------------|-----|-------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity | (1) | kW | 644 | 686 | 732 | 792 | 868 | 930 | 1004 | 1071 |
| Cooling capacity | (1) | TR | 183 | 195 | 208 | 225 | 247 | 264 | 285.5 | 304.5 |
| Total absorbed power | | kW | 125.4 | 133.9 | 143 | 155.5 | 167.4 | 179.3 | 191.6 | 205 |
| EER | | - | 5.14 | 5.12 | 5.12 | 5.09 | 5.19 | 5.19 | 5.24 | 5.22 |
| EXCHANGERS | | | | | | | | | | |
| Evaporator pressure drops | | kPa | 36 | 40 | 37 | 56 | 43 | 49 | 31 | 35 |
| Water flow | | m ³ /h | 110.5 | 117.7 | 125.6 | 135.9 | 149 | 159.6 | 172.3 | 183.8 |
| GENERAL DATA | | | | | | | | | | |
| Refrigerant | | - | R134a | | | | | | | |
| Circuits / Compressors | | N° | 2/2 | | | | | | | |
| Capacity control | | % | 12.5~100 | | | | | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | | | | |
| Protection class | | - | IP54 | | | | | | | |
| NOISE LEVEL | | | | | | | | | | |
| Noise pressure basic | (2) | dB(A) | 70 | 70.5 | 70.5 | 70.5 | 71 | 71 | 71 | 71.5 |
| Noise pressure silent | (2) | dB(A) | 64 | 64.5 | 64.5 | 64.5 | 65 | 65 | 65 | 65.5 |
| SIZE AND WEIGHT | | | | | | | | | | |
| Depth | | mm | 4300 | 4300 | 4300 | 4920 | 4920 | 4920 | 4920 | 4920 |
| Width | | mm | 1460 | 1390 | 1390 | 1390 | 1390 | 1390 | 1390 | 1390 |
| Height | | mm | 1770 | 2132 | 2132 | 2132 | 2132 | 2165 | 2165 | 2278 |
| Weight | | kg | 3677 | 3687 | 3932 | 4372 | 4852 | 4862 | 5195 | 5345 |

| Model AQP | | | 4202 | 4502 | 4802 | 5602 | 6402 |
|---------------------------|-----|-------------------|-------------------------|-------|-------|-------|-------|
| Cooling capacity | (1) | kW | 1144 | 1213 | 1302 | 1416 | 1544 |
| Cooling capacity | (1) | TR | 325 | 345 | 370 | 403 | 439 |
| Total absorbed power | | kW | 218.6 | 233 | 247.2 | 282.4 | 302.8 |
| EER | | - | 5.23 | 5.21 | 5.27 | 5.01 | 5.10 |
| EXCHANGERS | | | | | | | |
| Evaporator pressure drops | | kPa | 41 | 45 | 49 | 56 | 50 |
| Water flow | | m ³ /h | 196.4 | 208.2 | 223.5 | 243.1 | 265 |
| GENERAL DATA | | | | | | | |
| Refrigerant | | - | R134a | | | | |
| Circuits / Compressors | | N° | 2/2 | | | | |
| Capacity control | | % | 12.5~100 | | | | |
| Power supply | | V/Ph/Hz | 400 ± 10% / 3+N-PE / 50 | | | | |
| Protection class | | - | IP54 | | | | |
| NOISE LEVEL | | | | | | | |
| Noise pressurebasic | (2) | dB(A) | 72 | 72 | 72.5 | 72.5 | 73 |
| Noise pressuresilent | (2) | dB(A) | 66 | 66 | 66.5 | 66.5 | 67 |
| SIZE AND WEIGHT | | | | | | | |
| Depth | | mm | 4920 | 4920 | 4920 | 4970 | 4970 |
| Width | | mm | 1390 | 1390 | 1390 | 1390 | 1390 |
| Height | | mm | 2278 | 2287 | 2287 | 2287 | 2287 |
| Weight | | kg | 5495 | 5565 | 6046 | 6276 | 6586 |

(1) Evaporator IN/OUT: 12/7°C ; condenser IN/OUT : 35/30°C;

(2) Sound pressure at 10 m: average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted. (NB: dimensions for lower noise and / or higher efficiency versions may differ.)

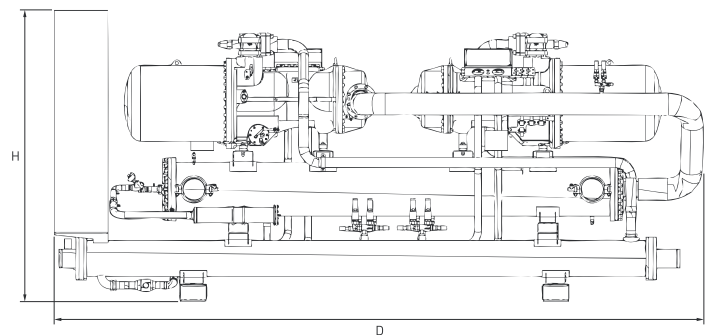
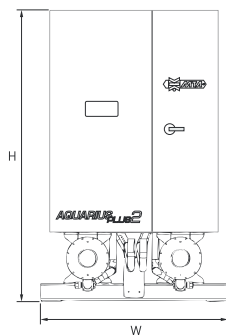
Acoustic configuration



BASIC ACOUSTIC CONFIGURATION



SUPER SILENT ACOUSTIC CONFIGURATION



FAN COIL UNIT

PST is a cutting edge product in terms of design, performance, silent operation, low power consumption and practicality.

PST is available for mounting on walls, floors or ceilings, either exposed or recessed, with a highly versatile range that is suitable for every requirement.

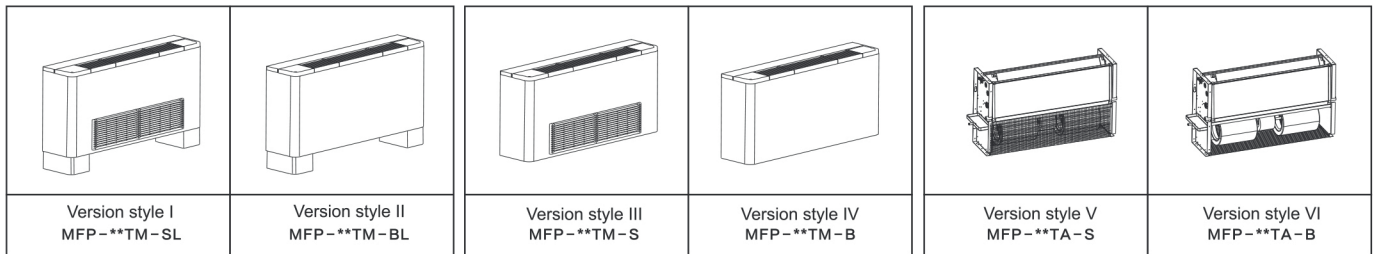
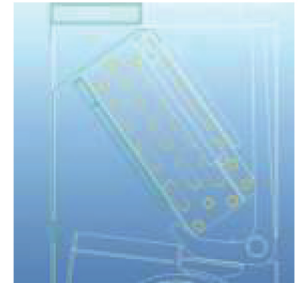


Universal type fan coil unit

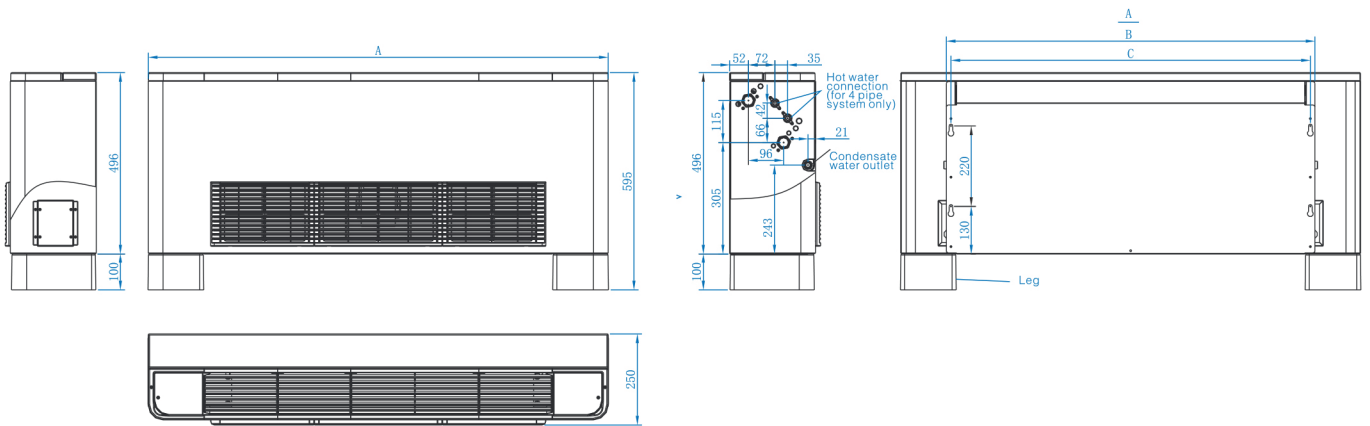


➤ Characteristic

1. Universal design, the unit can be installed by vertical or horizontal.
2. Classical elegant design.
3. Use PVC drain pan with 2 water outlet, hollow structure design can enhance the thermal insulation properties, at the same time to prevent from leaking.
4. Left-Right water pipe connection can be changed freely.
5. 6 kind of air distribution solution is optional ;



➤ Installing dimension



Unit: mm

| MODEL | EA-34TM | EA-51TM | EA-68TM | EA-85TM | EA-102TM | EA-136TM | EA-170TM | EA-204TM | EA-238TM |
|--------------|---------|---------|---------|---------|----------|----------|----------|----------|----------|
| A | 858 | 908 | 1058 | 1208 | 1258 | 1608 | 1758 | 1908 | 2058 |
| B | 608 | 658 | 808 | 958 | 1008 | 1358 | 1508 | 1658 | 1808 |
| C | 583 | 633 | 783 | 933 | 983 | 1333 | 1483 | 1633 | 1783 |
| Qty of fan | 1 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 |
| Qty of motor | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |

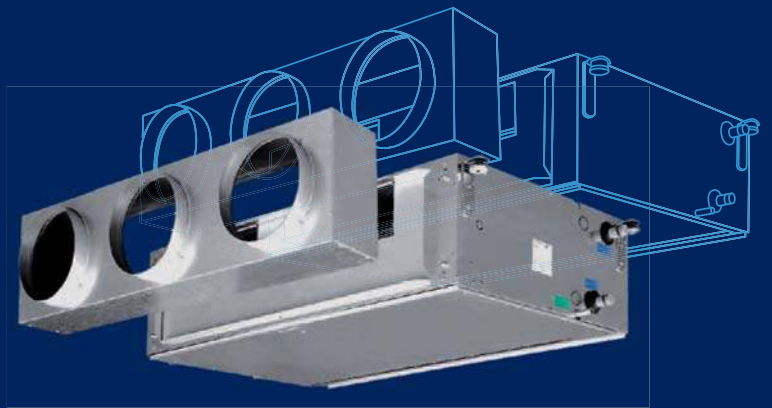
> Universal type fan coil unit (2-tube system)

| Model | | EA-34TM | EA-51TM | EA-68TM | EA-85TM | EA-102TM | EA-136TM | EA-170TM | EA-204TM | EA-238TM | | |
|-----------------------------------|------------|--|---------|------------|---------|----------|----------|----------|----------|----------|-------|-------|
| Power supply | | 220V,50Hz,1Ph | | | | | | | | | | |
| Air volume | H | m ³ /h | 340 | 510 | 680 | 850 | 1020 | 1360 | 1700 | 2040 | 2380 | |
| | M | | 260 | 390 | 510 | 640 | 770 | 1020 | 1280 | 1530 | 1790 | |
| | L | | 170 | 260 | 340 | 430 | 510 | 680 | 850 | 1020 | 1190 | |
| Cooling capacity | TH | H | W | 1800 | 2700 | 3600 | 4500 | 5400 | 7200 | 9000 | 10800 | 12600 |
| | | | BTU/h | 6142 | 9212 | 12283 | 15354 | 18425 | 24566 | 30708 | 36850 | 42991 |
| | | | W | 1368 | 2052 | 2736 | 3420 | 4103 | 5471 | 6839 | 8207 | 9575 |
| | SH | M | BTU/h | 4668 | 7001 | 9335 | 11669 | 13999 | 18667 | 23335 | 28002 | 32670 |
| | | | W | 1494 | 2242 | 2989 | 3736 | 4483 | 5978 | 7472 | 8967 | 10461 |
| | | | W | 1181 | 1771 | 2362 | 2952 | 3541 | 4722 | 5903 | 7084 | 8265 |
| | TH | L | W | 1162 | 1744 | 2325 | 2906 | 3487 | 4649 | 5812 | 6974 | 8136 |
| | | | W | 953 | 1430 | 1907 | 2383 | 2860 | 3813 | 4765 | 5718 | 6672 |
| | | | W | 2700 | 4050 | 5400 | 6750 | 8100 | 10800 | 13500 | 16200 | 18900 |
| Heating capacity | M | W | 2131 | 3197 | 4262 | 5328 | 6393 | 8524 | 10655 | 12786 | 14917 | |
| | | | L | 1675 | 2511 | 3349 | 4186 | 5024 | 6697 | 8372 | 10046 | 11721 |
| | | | Noise | High speed | dB(A) | 37 | 39 | 41 | 43 | 45 | 46 | 48 |
| Power input | High speed | W | 37 | 52 | 62 | 76 | 96 | 134 | 152 | 189 | 228 | |
| Waterflow volume | High speed | m ³ /h | 0.31 | 0.46 | 0.62 | 0.77 | 0.93 | 1.23 | 1.54 | 1.85 | 2.16 | |
| Pressure dropping | | kPa | 7 | 15 | 18 | 23 | 28 | 30 | 22 | 30 | 36 | |
| Water tube connection(inlet) | | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | | |
| Water tube connection(outlet) | | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | | |
| Coil | Type | high efficient copper pipe to wear Hydrophilic aluminum coil | | | | | | | | | | |
| Maximum working pressure | MPa | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | | |
| Condensation pipe size (diameter) | mm | ø 16 | | | | | | | | | | |

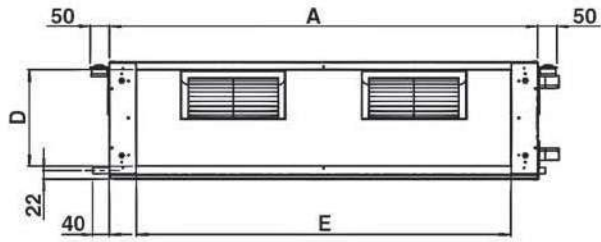
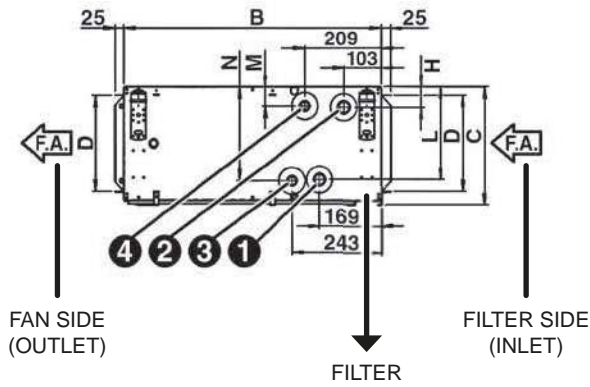
> Universal type fan coil unit (4-tube system)

| Model | | EA-34TM4 | EA-51TM4 | EA-68TM4 | EA-85TM4 | EA-102TM4 | EA-136TM4 | EA-170TM4 | EA-204TM4 | EA-238TM4 | | |
|-----------------------------------|--------------|--|--------------|------------|----------|-----------|-----------|-----------|-----------|-----------|-------|-------|
| Power supply | | 220V,50Hz,1Ph | | | | | | | | | | |
| Air volume | H | m ³ /h | 340 | 510 | 680 | 850 | 1020 | 1360 | 1700 | 2040 | 2380 | |
| | M | | 260 | 390 | 510 | 640 | 770 | 1020 | 1280 | 1530 | 1790 | |
| | L | | 170 | 260 | 340 | 430 | 510 | 680 | 850 | 1020 | 1190 | |
| Cooling capacity | TH | H | W | 1800 | 2700 | 3600 | 4500 | 5400 | 7200 | 9000 | 10800 | 12600 |
| | | | BTU/h | 6142 | 9212 | 12283 | 15354 | 18425 | 24566 | 30708 | 36850 | 42991 |
| | | | W | 1368 | 2052 | 2736 | 3420 | 4103 | 5471 | 6839 | 8207 | 9575 |
| | SH | M | BTU/h | 4668 | 7001 | 9335 | 11669 | 13999 | 18667 | 23335 | 28002 | 32670 |
| | | | W | 1494 | 2242 | 2989 | 3736 | 4483 | 5978 | 7472 | 8967 | 10461 |
| | | | W | 1181 | 1771 | 2362 | 2952 | 3541 | 4722 | 5903 | 7084 | 8265 |
| | TH | L | W | 1162 | 1744 | 2325 | 2906 | 3487 | 4649 | 5812 | 6974 | 8136 |
| | | | W | 953 | 1430 | 1907 | 2383 | 2860 | 3813 | 4765 | 5718 | 6672 |
| | | | W | 1300 | 1940 | 2590 | 3240 | 3890 | 5180 | 6480 | 7780 | 9070 |
| Heating capacity | M | W | 1020 | 1530 | 2040 | 2550 | 3060 | 4070 | 5090 | 6110 | 7130 | |
| | | | L | 820 | 1230 | 1630 | 2040 | 2450 | 3270 | 4080 | 4900 | 5720 |
| | | | Noise | High speed | dB(A) | 37 | 39 | 41 | 43 | 45 | 46 | 48 |
| Power input | High speed | W | 37 | 52 | 62 | 76 | 96 | 134 | 152 | 189 | 228 | |
| Waterflow volume | High speed | m ³ /h | Cooling tube | 0.31 | 0.46 | 0.62 | 0.77 | 0.93 | 1.23 | 1.54 | 1.85 | 2.16 |
| | | | Heating tube | 0.11 | 0.17 | 0.22 | 0.28 | 0.34 | 0.45 | 0.56 | 0.67 | 0.78 |
| Water Pressure dropping | Cooling tube | kPa | 7 | 15 | 18 | 23 | 28 | 30 | 22 | 30 | 36 | |
| | | | Heating tube | 2.8 | 6 | 7.2 | 9.2 | 11.2 | 12 | 8.8 | 12 | 14.4 |
| Water tube connection(inlet) | | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | ZG3/4" | | |
| Water tube connection(outlet) | | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | ZG1/2" | | |
| Coil | Type | high efficient copper pipe to wear Hydrophilic aluminum coil | | | | | | | | | | |
| Maximum working pressure | MPa | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | | |
| Condensation pipe size (diameter) | mm | ø 16 | | | | | | | | | | |

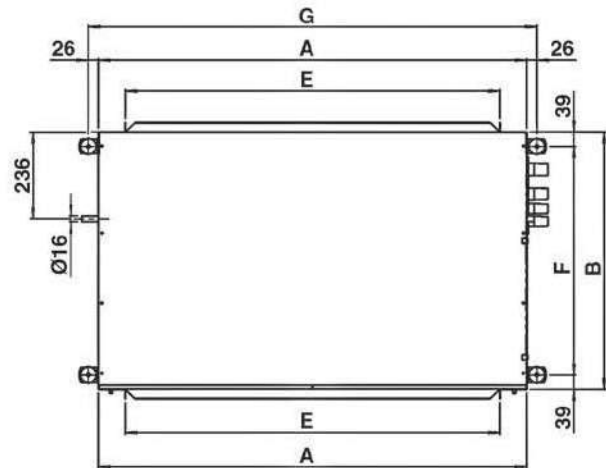
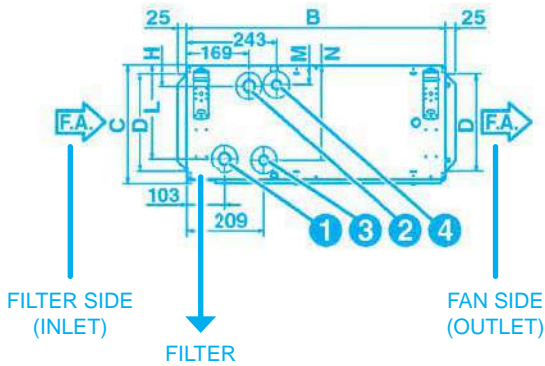
NEW
Including
sizes 6 and 7



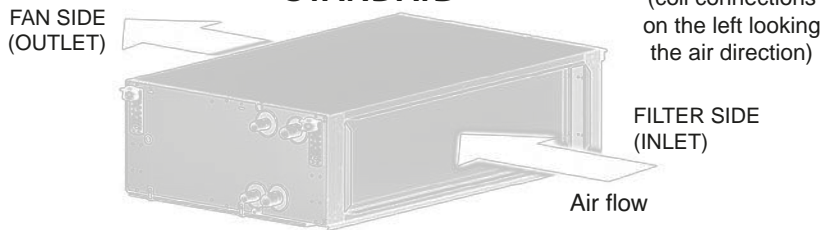
Left connections (standard)



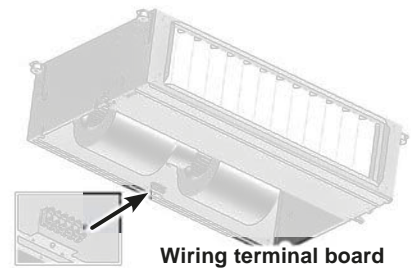
Right connections (on request)



STANDARD



(coil connections on the left looking the air direction)



| MODEL | Dimensions (mm) | | | | | | | | | | | Coil | | | |
|-------|-----------------|-----|-----|-----|------|-----|------|----|-----|----|-----|--------|--------|------------|-------|
| | A | B | C | D | E | F | G | H | L | M | N | Main | | Additional | |
| | | | | | | | | | | | | ① IN | ② OUT | ③ IN | ④ OUT |
| MTO 1 | 1133 | 698 | 310 | 255 | 991 | 620 | 1185 | 54 | 245 | 50 | 249 | 3/4" | 3/4" | 3/4" | 3/4" |
| MTO 2 | 1133 | 698 | 310 | 255 | 991 | 620 | 1185 | 54 | 245 | 50 | 249 | 1" | 1" | 3/4" | 3/4" |
| MTO 3 | 1133 | 698 | 360 | 305 | 991 | 620 | 1185 | 54 | 295 | 50 | 299 | 1" | 1" | 3/4" | 3/4" |
| MTO 4 | 1445 | 853 | 380 | 293 | 1302 | 775 | 1497 | 58 | 291 | 54 | 295 | 1 1/4" | 1 1/4" | 1" | 1" |
| MTO 5 | 1445 | 853 | 435 | 368 | 1302 | 775 | 1497 | 58 | 367 | 54 | 370 | 1 1/4" | 1 1/4" | 1" | 1" |

| MODEL | Weight without packaging (kg) | | | | | | Weight with packaging (kg) | | | | | | Water content (l) | | | |
|-------|-------------------------------|------|------|----|------|------|----------------------------|------|------|----|------|------|-------------------|-----|-----|-----|
| | 3R | 1+3R | 2+3R | 4R | 1+4R | 2+4R | 3R | 1+3R | 2+3R | 4R | 1+4R | 2+4R | 3R | 4R | 1R | 2R |
| MTO 1 | 45 | 48 | 50 | 47 | 50 | 51 | 48 | 51 | 53 | 50 | 53 | 54 | 2,0 | 2,6 | 0,9 | 1,5 |
| MTO 2 | 46 | 50 | 52 | 48 | 51 | 53 | 49 | 53 | 55 | 51 | 54 | 56 | 2,9 | 3,7 | 1,1 | 1,8 |
| MTO 3 | 54 | 58 | 60 | 56 | 60 | 62 | 57 | 61 | 63 | 59 | 63 | 65 | 3,5 | 4,6 | 1,4 | 2,4 |
| MTO 4 | 75 | 80 | 83 | 78 | 83 | 86 | 79 | 84 | 87 | 82 | 87 | 90 | 4,7 | 6,0 | 2,0 | 3,2 |
| MTO 5 | 85 | 90 | 94 | 88 | 94 | 98 | 89 | 94 | 98 | 92 | 98 | 102 | 5,7 | 7,1 | 2,7 | 4,1 |

2 pipe units.

The following standard rating conditions are used:

COOLING (summer mode)

Entering air temperature +°27C d.b. +°19C w.b.
Water temperature + °7C E.W.T. +°12C L.W.T.

HEATING (winter mode)

Entering air temperature +°20C
Water temperature +°60C E.W.T. +°50C L.W.T.

AVAILABLE PRESSURE: 0 Pa

MTO UNITS WITH 3 ROW COIL

| MODEL | MTO 13 | | | | | MTO 23 | | | | | MTO 33 | | | | | |
|---------------------------|--------|------|------|------|-------|--------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | |
| Speed | | | | | | | | | | | | | | | | |
| Air flow | m³/h | 995 | 1140 | 1340 | 1640 | 1925 | 855 | 1165 | 1550 | 2060 | 2510 | 1815 | 2080 | 2300 | 2590 | 2790 |
| Cooling total emission | kW | 4,19 | 4,53 | 4,95 | 5,53 | 6,02 | 4,50 | 5,44 | 6,41 | 7,50 | 8,31 | 7,82 | 8,43 | 8,91 | 9,51 | 9,89 |
| Cooling sensible emission | kW | 3,55 | 3,93 | 4,41 | 5,11 | 5,73 | 3,47 | 4,36 | 5,36 | 6,56 | 7,53 | 6,41 | 7,05 | 7,57 | 8,24 | 8,68 |
| Heating | kW | 7,91 | 8,71 | 9,73 | 11,13 | 12,33 | 7,75 | 9,74 | 11,92 | 14,45 | 16,44 | 14,27 | 15,69 | 16,80 | 18,19 | 19,10 |
| Dp Cooling | kPa | 7,0 | 8,1 | 9,6 | 11,6 | 13,7 | 8,7 | 12,4 | 16,9 | 22,5 | 27,4 | 18,7 | 21,5 | 23,8 | 26,8 | 28,8 |
| Dp Heating | kPa | 4,8 | 5,8 | 7,1 | 9,1 | 11,0 | 5,1 | 7,8 | 11,4 | 16,4 | 20,9 | 12,3 | 14,6 | 16,6 | 19,3 | 21,1 |
| Fan | W | 136 | 154 | 175 | 210 | 240 | 180 | 225 | 273 | 334 | 412 | 390 | 430 | 470 | 509 | 523 |
| Sound power Lw | dB(A) | 49 | 52 | 56 | 60 | 63 | 47 | 53 | 59 | 64 | 68 | 60 | 62 | 64 | 66 | 68 |
| Sound pressure (*) | dB(A) | 40 | 43 | 47 | 51 | 54 | 38 | 44 | 50 | 55 | 59 | 51 | 53 | 55 | 57 | 59 |

| MODEL | MTO 43 | | | | | MTO 53 | | | | | |
|---------------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | |
| Speed | | | | | | | | | | | |
| Air flow | m³/h | 2265 | 2585 | 2855 | 3130 | 3400 | 2905 | 3275 | 3540 | 3975 | 4400 |
| Cooling total emission | kW | 10,08 | 10,86 | 11,48 | 12,07 | 12,62 | 13,21 | 14,13 | 14,77 | 15,77 | 16,67 |
| Cooling sensible emission | kW | 8,16 | 8,96 | 9,61 | 10,26 | 10,87 | 10,85 | 11,84 | 12,53 | 13,63 | 14,67 |
| Heating | kW | 18,06 | 19,82 | 21,21 | 22,56 | 23,85 | 23,64 | 25,71 | 27,14 | 29,35 | 31,42 |
| Dp Cooling | kPa | 18,0 | 21,0 | 23,0 | 26,0 | 28,0 | 17,2 | 19,6 | 21,2 | 23,9 | 26,5 |
| Dp Heating | kPa | 9,0 | 11,0 | 12,0 | 14,0 | 15,0 | 10,9 | 12,7 | 14,1 | 16,3 | 18,4 |
| Fan | W | 453 | 516 | 563 | 615 | 703 | 541 | 622 | 703 | 782 | 885 |
| Sound power Lw | dB(A) | 63 | 65 | 67 | 69 | 72 | 66 | 69 | 71 | 73 | 75 |
| Sound pressure (*) | dB(A) | 54 | 56 | 58 | 60 | 63 | 57 | 60 | 62 | 64 | 66 |

MTO UNITS WITH 4 ROW COIL

| MODEL | MTO 14 | | | | | MTO 24 | | | | | MTO 34 | | | | | |
|---------------------------|--------|------|------|-------|-------|--------|------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | |
| Speed | | | | | | | | | | | | | | | | |
| Air flow | m³/h | 940 | 1115 | 1315 | 1575 | 1835 | 855 | 1160 | 1535 | 2005 | 2360 | 1795 | 2060 | 2265 | 2550 | 2745 |
| Cooling total emission | kW | 4,80 | 5,33 | 5,88 | 6,53 | 7,07 | 5,22 | 6,40 | 7,63 | 8,92 | 9,77 | 9,32 | 10,13 | 10,70 | 11,46 | 11,95 |
| Cooling sensible emission | kW | 3,85 | 4,38 | 4,96 | 5,67 | 6,33 | 3,88 | 4,92 | 6,08 | 7,40 | 8,33 | 7,28 | 8,06 | 8,63 | 9,41 | 9,92 |
| Heating | kW | 8,76 | 9,95 | 11,22 | 12,77 | 14,20 | 8,77 | 11,13 | 13,76 | 16,69 | 18,71 | 16,43 | 18,20 | 19,50 | 21,22 | 22,36 |
| Dp Cooling | kPa | 6,0 | 7,3 | 8,8 | 10,6 | 12,4 | 6,7 | 9,8 | 13,5 | 18,1 | 21,4 | 16,3 | 19,0 | 21,0 | 23,9 | 25,8 |
| Dp Heating | kPa | 3,9 | 4,9 | 6,1 | 7,8 | 9,5 | 3,7 | 5,8 | 8,6 | 12,3 | 15,2 | 9,9 | 12,0 | 13,7 | 16,1 | 17,7 |
| Fan | W | 130 | 151 | 173 | 204 | 232 | 180 | 222 | 268 | 322 | 380 | 380 | 426 | 464 | 505 | 520 |
| Sound power Lw | dB(A) | 49 | 52 | 56 | 60 | 63 | 47 | 53 | 59 | 64 | 68 | 60 | 62 | 64 | 66 | 68 |
| Sound pressure (*) | dB(A) | 40 | 43 | 47 | 51 | 54 | 38 | 44 | 50 | 55 | 59 | 51 | 53 | 55 | 57 | 59 |

| MODEL | MTO 44 | | | | | MTO 54 | | | | | |
|---------------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | |
| Speed | | | | | | | | | | | |
| Air flow | m³/h | 2245 | 2560 | 2820 | 3085 | 3340 | 2885 | 3240 | 3505 | 3920 | 4330 |
| Cooling total emission | kW | 11,92 | 12,91 | 13,67 | 14,42 | 15,07 | 15,53 | 16,68 | 17,49 | 18,71 | 19,80 |
| Cooling sensible emission | kW | 9,24 | 10,18 | 10,93 | 11,68 | 12,36 | 12,17 | 13,29 | 14,10 | 15,34 | 16,50 |
| Heating | kW | 20,86 | 23,02 | 24,69 | 26,36 | 27,91 | 27,08 | 29,56 | 31,31 | 33,96 | 36,49 |
| Dp Cooling | kPa | 15,0 | 17,0 | 19,0 | 21,0 | 23,0 | 13,5 | 15,4 | 16,8 | 19,0 | 21,2 |
| Dp Heating | kPa | 9,0 | 11,0 | 12,0 | 14,0 | 15,0 | 8,0 | 9,5 | 10,6 | 12,3 | 14,0 |
| Fan | W | 447 | 508 | 551 | 606 | 684 | 536 | 612 | 689 | 766 | 868 |
| Sound power Lw | dB(A) | 63 | 65 | 67 | 69 | 72 | 66 | 69 | 71 | 73 | 75 |
| Sound pressure (*) | dB(A) | 54 | 56 | 58 | 60 | 63 | 57 | 60 | 62 | 64 | 66 |

(*) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

Air flow (m³/h) depending on speed and requested available pressure with 4 row coil

| MOD. | Speed | | Available pressure (Pa) | | | | | | | | | | |
|-------|-------|-----|-------------------------|------|------|------|------|------|------|------|------|------|------|
| | | | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| MTO 1 | 5 | MAX | 1835 | 1745 | 1640 | 1530 | 1400 | 1225 | 995 | – | – | – | – |
| | 4 | | 1575 | 1480 | 1390 | 1290 | 1175 | 1020 | 815 | – | – | – | – |
| | 3 | MED | 1315 | 1250 | 1175 | 1075 | 940 | 795 | – | – | – | – | – |
| | 2 | | 1115 | 1025 | 940 | 840 | 740 | 625 | – | – | – | – | – |
| | 1 | MIN | 940 | 825 | 730 | 645 | 560 | – | – | – | – | – | – |
| MTO 2 | 5 | MAX | 2360 | 2240 | 2120 | 2000 | 1860 | 1700 | 1480 | 1150 | – | – | – |
| | 4 | | 2005 | 1920 | 1835 | 1735 | 1620 | 1480 | 1275 | – | – | – | – |
| | 3 | MED | 1535 | 1495 | 1445 | 1380 | 1300 | 1190 | 1010 | – | – | – | – |
| | 2 | | 1160 | 1150 | 1135 | 1105 | 1065 | 1015 | 925 | – | – | – | – |
| | 1 | MIN | 855 | 835 | 815 | 790 | 755 | 700 | – | – | – | – | – |
| MTO 3 | 5 | MAX | 2745 | 2670 | 2590 | 2500 | 2390 | 2270 | 2135 | 1980 | 1800 | 1620 | – |
| | 4 | | 2550 | 2470 | 2380 | 2280 | 2175 | 2045 | 1900 | 1750 | 1595 | 1425 | – |
| | 3 | MED | 2265 | 2200 | 2120 | 2040 | 1945 | 1840 | 1720 | 1590 | 1440 | 1280 | – |
| | 2 | | 2060 | 2005 | 1945 | 1875 | 1790 | 1695 | 1575 | 1445 | 1300 | – | – |
| | 1 | MIN | 1795 | 1745 | 1690 | 1625 | 1545 | 1460 | 1355 | 1235 | 1105 | – | – |
| MTO 4 | 5 | MAX | 3340 | 3250 | 3150 | 3040 | 2900 | 2760 | 2610 | 2440 | 2225 | 2000 | 1780 |
| | 4 | | 3085 | 3005 | 2920 | 2820 | 2700 | 2575 | 2405 | 2225 | 2025 | 1800 | – |
| | 3 | MED | 2820 | 2740 | 2650 | 2550 | 2440 | 2300 | 2150 | 1970 | 1765 | 1575 | – |
| | 2 | | 2560 | 2480 | 2400 | 2305 | 2200 | 2050 | 1905 | 1745 | 1575 | – | – |
| | 1 | MIN | 2245 | 2175 | 2100 | 2020 | 1925 | 1800 | 1670 | 1525 | 1400 | – | – |
| MTO 5 | 5 | MAX | 4330 | 4330 | 4205 | 4075 | 3935 | 3785 | 3630 | 3450 | 3250 | 3005 | 2705 |
| | 4 | | 3920 | 3820 | 3715 | 3595 | 3465 | 3315 | 3145 | 2940 | 2680 | 2350 | – |
| | 3 | MED | 3505 | 3425 | 3340 | 3245 | 3130 | 3000 | 2845 | 2650 | 2400 | 2080 | – |
| | 2 | | 3240 | 3140 | 3040 | 2930 | 2810 | 2675 | 2530 | 2350 | 2130 | 1850 | – |
| | 1 | MIN | 2885 | 2805 | 2715 | 2610 | 2495 | 2350 | 2175 | 1965 | 1710 | – | – |

Power absorption (Watt) depending on air flow and available pressure

| MOD. | Speed | | Available pressure (Pa) | | | | | | | | | | |
|-------|-------|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| MTO 1 | 5 | MAX | 231 | 223 | 213 | 202 | 190 | 174 | 154 | – | – | – | – |
| | 4 | | 204 | 194 | 184 | 174 | 162 | 148 | 130 | – | – | – | – |
| | 3 | MED | 173 | 167 | 159 | 150 | 137 | 124 | – | – | – | – | – |
| | 2 | | 151 | 142 | 134 | 125 | 116 | 106 | – | – | – | – | – |
| | 1 | MIN | 130 | 118 | 109 | 102 | 95 | – | – | – | – | – | – |
| MTO 2 | 5 | MAX | 380 | 356 | 333 | 312 | 288 | 263 | 232 | 193 | – | – | – |
| | 4 | | 323 | 304 | 284 | 263 | 240 | 217 | 191 | – | – | – | – |
| | 3 | MED | 268 | 254 | 239 | 222 | 204 | 184 | 158 | – | – | – | – |
| | 2 | | 221 | 215 | 206 | 191 | 177 | 165 | 151 | – | – | – | – |
| | 1 | MIN | 179 | 167 | 158 | 148 | 137 | 126 | – | – | – | – | – |
| MTO 3 | 5 | MAX | 519 | 510 | 498 | 481 | 460 | 438 | 415 | 393 | 372 | 352 | – |
| | 4 | | 505 | 492 | 473 | 450 | 427 | 400 | 376 | 357 | 340 | 323 | – |
| | 3 | MED | 464 | 450 | 431 | 411 | 389 | 368 | 349 | 332 | 317 | 301 | – |
| | 2 | | 426 | 413 | 398 | 381 | 362 | 344 | 326 | 310 | 295 | – | – |
| | 1 | MIN | 380 | 362 | 345 | 330 | 316 | 305 | 294 | 283 | 270 | – | – |
| MTO 4 | 5 | MAX | 684 | 657 | 627 | 597 | 562 | 532 | 504 | 476 | 447 | 419 | 393 |
| | 4 | | 606 | 587 | 566 | 541 | 512 | 485 | 453 | 427 | 402 | 378 | – |
| | 3 | MED | 551 | 527 | 503 | 481 | 459 | 436 | 413 | 389 | 362 | 338 | – |
| | 2 | | 508 | 482 | 460 | 437 | 415 | 389 | 369 | 349 | 329 | – | – |
| | 1 | MIN | 447 | 425 | 405 | 387 | 368 | 348 | 331 | 314 | 299 | – | – |
| MTO 5 | 5 | MAX | 867 | 867 | 836 | 806 | 777 | 747 | 719 | 688 | 657 | 622 | 583 |
| | 4 | | 766 | 739 | 713 | 686 | 659 | 630 | 601 | 569 | 533 | 492 | – |
| | 3 | MED | 689 | 660 | 634 | 607 | 580 | 554 | 528 | 501 | 471 | 435 | – |
| | 2 | | 612 | 587 | 563 | 540 | 517 | 493 | 470 | 444 | 416 | 384 | – |
| | 1 | MIN | 536 | 516 | 496 | 475 | 454 | 431 | 406 | 380 | 353 | – | – |

Correction factors for Total cooling emission

| Mod. | Speed | | Available pressure (Pa) | | | | | | | | | | |
|-------|-------|-----|-------------------------|------|------|------|------|------|------|------|------|------|------|
| | | | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| MTO 1 | 5 | MAX | 1,00 | 0,97 | 0,94 | 0,91 | 0,86 | 0,79 | 0,70 | – | – | – | – |
| | 4 | | 1,00 | 0,97 | 0,94 | 0,90 | 0,85 | 0,78 | 0,67 | – | – | – | – |
| | 3 | MED | 1,00 | 0,97 | 0,94 | 0,90 | 0,83 | 0,75 | – | – | – | – | – |
| | 2 | | 1,00 | 0,96 | 0,91 | 0,86 | 0,79 | 0,71 | – | – | – | – | – |
| | 1 | MIN | 1,00 | 0,93 | 0,87 | 0,81 | 0,74 | – | – | – | – | – | – |
| MTO 2 | 5 | MAX | 1,00 | 0,97 | 0,94 | 0,92 | 0,88 | 0,83 | 0,76 | 0,12 | – | – | – |
| | 4 | | 1,00 | 0,98 | 0,95 | 0,93 | 0,89 | 0,85 | 0,77 | – | – | – | – |
| | 3 | MED | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,87 | 0,79 | – | – | – | – |
| | 2 | | 1,00 | 0,99 | 0,99 | 0,97 | 0,96 | 0,93 | 0,88 | – | – | – | – |
| | 1 | MIN | 1,00 | 0,99 | 0,97 | 0,96 | 0,94 | 0,90 | – | – | – | – | – |
| MTO 3 | 5 | MAX | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,87 | 0,83 | 0,79 | 0,74 | – |
| | 4 | | 1,00 | 0,98 | 0,96 | 0,94 | 0,92 | 0,89 | 0,85 | 0,81 | 0,76 | 0,71 | – |
| | 3 | MED | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,89 | 0,86 | 0,82 | 0,77 | 0,71 | – |
| | 2 | | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,86 | 0,82 | 0,77 | – | – |
| | 1 | MIN | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,89 | 0,86 | 0,81 | 0,76 | – | – |
| MTO 4 | 5 | MAX | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,87 | 0,84 | 0,79 | 0,74 | 0,69 |
| | 4 | | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,91 | 0,87 | 0,83 | 0,79 | 0,73 | – |
| | 3 | MED | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,86 | 0,82 | 0,76 | 0,71 | – |
| | 2 | | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,89 | 0,85 | 0,81 | 0,76 | – | – |
| | 1 | MIN | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,89 | 0,85 | 0,80 | 0,76 | – | – |
| MTO 5 | 5 | MAX | 1,00 | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,91 | 0,88 | 0,85 | 0,81 | 0,76 |
| | 4 | | 1,00 | 0,99 | 0,97 | 0,96 | 0,94 | 0,91 | 0,89 | 0,85 | 0,81 | 0,74 | – |
| | 3 | MED | 1,00 | 0,99 | 0,97 | 0,96 | 0,94 | 0,92 | 0,89 | 0,86 | 0,81 | 0,74 | – |
| | 2 | | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,87 | 0,84 | 0,79 | 0,72 | – |
| | 1 | MIN | 1,00 | 0,98 | 0,97 | 0,95 | 0,93 | 0,90 | 0,86 | 0,80 | 0,74 | – | – |

Correction factors for Sensible cooling emission and Heating emission

| Mod. | Speed | | Available pressure (Pa) | | | | | | | | | | |
|-------|-------|-----|-------------------------|------|------|------|------|------|------|------|------|------|------|
| | | | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| MTO 1 | 5 | MAX | 1,00 | 0,96 | 0,92 | 0,88 | 0,82 | 0,75 | 0,64 | – | – | – | – |
| | 4 | | 1,00 | 0,96 | 0,92 | 0,87 | 0,81 | 0,73 | 0,61 | – | – | – | – |
| | 3 | MED | 1,00 | 0,96 | 0,92 | 0,87 | 0,79 | 0,69 | – | – | – | – | – |
| | 2 | | 1,00 | 0,94 | 0,89 | 0,82 | 0,74 | 0,65 | – | – | – | – | – |
| | 1 | MIN | 1,00 | 0,91 | 0,83 | 0,76 | 0,68 | – | – | – | – | – | – |
| MTO 2 | 5 | MAX | 1,00 | 0,96 | 0,93 | 0,89 | 0,84 | 0,79 | 0,71 | 0,07 | – | – | – |
| | 4 | | 1,00 | 0,97 | 0,94 | 0,90 | 0,86 | 0,80 | 0,72 | – | – | – | – |
| | 3 | MED | 1,00 | 0,98 | 0,96 | 0,93 | 0,89 | 0,83 | 0,74 | – | – | – | – |
| | 2 | | 1,00 | 0,99 | 0,98 | 0,97 | 0,94 | 0,91 | 0,85 | – | – | – | – |
| | 1 | MIN | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,87 | – | – | – | – | – |
| MTO 3 | 5 | MAX | 1,00 | 0,98 | 0,96 | 0,94 | 0,91 | 0,87 | 0,84 | 0,79 | 0,74 | 0,68 | – |
| | 4 | | 1,00 | 0,98 | 0,95 | 0,92 | 0,89 | 0,85 | 0,81 | 0,76 | 0,71 | 0,65 | – |
| | 3 | MED | 1,00 | 0,98 | 0,95 | 0,93 | 0,90 | 0,86 | 0,82 | 0,77 | 0,72 | 0,66 | – |
| | 2 | | 1,00 | 0,98 | 0,96 | 0,94 | 0,91 | 0,87 | 0,83 | 0,77 | 0,71 | – | – |
| | 1 | MIN | 1,00 | 0,98 | 0,96 | 0,93 | 0,90 | 0,86 | 0,82 | 0,76 | 0,70 | – | – |
| MTO 4 | 5 | MAX | 1,00 | 0,98 | 0,96 | 0,94 | 0,91 | 0,87 | 0,84 | 0,80 | 0,74 | 0,69 | 0,63 |
| | 4 | | 1,00 | 0,98 | 0,96 | 0,94 | 0,91 | 0,88 | 0,84 | 0,79 | 0,74 | 0,67 | – |
| | 3 | MED | 1,00 | 0,98 | 0,96 | 0,93 | 0,90 | 0,87 | 0,82 | 0,77 | 0,71 | 0,65 | – |
| | 2 | | 1,00 | 0,98 | 0,96 | 0,93 | 0,90 | 0,85 | 0,81 | 0,76 | 0,70 | – | – |
| | 1 | MIN | 1,00 | 0,98 | 0,95 | 0,93 | 0,90 | 0,85 | 0,81 | 0,76 | 0,71 | – | – |
| MTO 5 | 5 | MAX | 1,00 | 1,00 | 0,98 | 0,96 | 0,93 | 0,91 | 0,88 | 0,85 | 0,81 | 0,77 | 0,71 |
| | 4 | | 1,00 | 0,98 | 0,96 | 0,94 | 0,92 | 0,89 | 0,85 | 0,81 | 0,76 | 0,69 | – |
| | 3 | MED | 1,00 | 0,98 | 0,97 | 0,95 | 0,92 | 0,90 | 0,86 | 0,82 | 0,76 | 0,68 | – |
| | 2 | | 1,00 | 0,98 | 0,96 | 0,93 | 0,90 | 0,87 | 0,84 | 0,79 | 0,74 | 0,66 | – |
| | 1 | MIN | 1,00 | 0,98 | 0,96 | 0,93 | 0,90 | 0,86 | 0,82 | 0,76 | 0,68 | – | – |



PST Floor-Standing Condensing Boiler

The big boiler that's small enough to fit anywhere

PST



The 'little' modular high-efficiency

With its brand-new PST-FCB 80-3000, PST is delivering a high-quality, 100% customised product with an output ranging from 80 kW to over 3 mW in combination with proven technology and new state-of-the-art electronics. PST's floor-standing high-efficiency boilers set the bar in the higher-output segment.

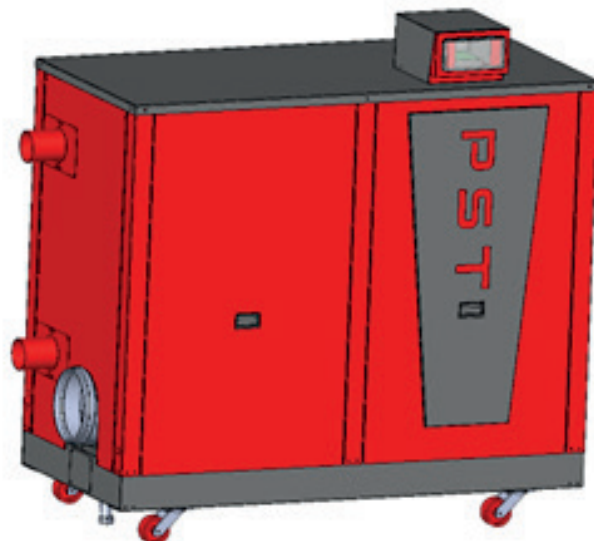
With its exceptional performance and ability to adapt to different applications, the PST-FCB 80-990 has been specifically developed with high output in mind. Aside from its outstanding performance, the boiler can easily be adapted to different applications. Each boiler is supplied fully assembled, pre-configured and tested, as well as fully prepared for optimal transport and installation.

Due to its extremely compact dimensions and low weight, the boiler is easy to transport and install. The boiler is 72-86 cm wide and fits through any standard doorway.

The modern PST Comfort Master control system, with its LCD display, ensures flexible integration into any installation. A great deal of attention has been paid to ease and flexibility of installation, and the boiler's serviceability is exemplary. The number of components has been kept to a minimum, and despite the exceptionally compact design, each one is conveniently placed and can easily be accessed, operated and serviced (if necessary).

The boiler modules are fitted with a non-return valve as standard, making it possible to use overpressure in the combined flue gas discharge pipe without any extra investment. This allows for the required pipe diameter to be reduced, which not only increases application options, but results in significant cost savings as well.

From its inception, the boiler has been designed for customisation with one or more extras, to make it capable of meeting any set of requirements. Thanks to the way the boiler's production line has been set up, each PST-FCB 80-990 can be tailored to the customer's requirements on request (left or right-hand version and different accessories).



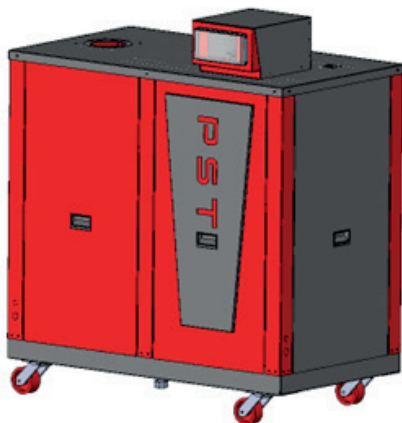
High-efficiency boiler that's big on performance

PST-FCB 80-990

The PST-FCB 80-990 is comprised of a left module and a right module. The flue gas discharge, air supply (if required) and casing elements of each of these modules are combined. The boiler offers optimum flexibility when it comes to installation: each boiler module has its own controls, and can be connected separately to the hydraulics and gas. The flue gas collector is capable of rotating, enabling both vertical and horizontal flue gas connection.

Delivery and installation

The PST-FCB 80-990 is supplied fully assembled and packaged. The PST-FCB 80-990 packaging is 72-86 cm wide and 1488-1800 cm high, and its length is 1290-1804 cm. The boiler measures 72-86 cm wide, meaning it will fit through all standard doorways. The boiler is mounted on a set of castors so that it can be easily manoeuvred once the packaging has been removed. The packaging cover can be used to negotiate obstacles such as doorsteps.



The facts in brief

- Heat exchanger made from corrosion-resistant cast aluminium parts
- Premix combustion technology with gas/air ratio control
- Each boiler is supplied fully pre-configured and assembled
- Fitted with castors as standard
- Extremely compact
- Low weight
- Adjustable feet
- Modern control panel with the option of installing weather-compensated boiler control system
- Low electricity consumption
- Open (conventionally flued) and closed (room-sealed) versions available
- All control and safety equipment is contained within the casing
- Quiet operation
- Fitted with the PST Comfort Master, an advanced self-regulating boiler control system that provides a reliable heat supply
- Left or right-hand versions available
- Delivered in packaging with loading/unloading ramp

Product range

- PST-FCB 80
- PST-FCB 120
- PST-FCB 160
- PST-FCB 200
- PST-FCB 240
- PST-FCB 280
- PST-FCB 360
- PST-FCB 450
- PST-FCB 540
- PST-FCB 630
- PST-FCB 720
- PST-FCB 810
- PST-FCB 990

Electrical panel

Siemens Electrical board LMS14 are digital boiler management units (BMUs) for use with gas-fired appliances equipped with premix burners. They are used for startup, control and supervision of premix burners with capacities from 80 kW to 1 MW in intermittent operation with direct ignition of the main flame.

The Siemens Electrical board LMS14 provide all supervisory and control functions required for burner operation, space heating and DHW heating. They also offer modular system extensions in the form of integrated communication interfaces. Output modulation is performed via a PWM-controlled fan with pneumatic gas-air ratio control.

Cascade System

All consumers in the cascade master can still be used. In addition, consumers can be used in the cascade slave. All requests for heat are forwarded to the cascade master. Functions only used with individual device address (buffer storage tank, system pump/primary controller) are only available with the cascade master.

Control Option

The PST-FCB 80-990 can be controlled in the following ways:

- As a single boiler or in a cascade with modulating controllers based on room and/or outside temperature
- With on/off controllers, using the boiler's internal heating curve if necessary (in combination with outside temperature sensor)
- Analogue signals (0–10 V) for control based on output or flow temperature

Technical specifications

| PST-FCB 80-280 | | Unit | 80 | 120 | 160 | 200 | 240 | 280 |
|--------------------------------------|--------|------------------------------|--------|--------|--------|--------|--------|--------|
| Input control | | Modulating, on/off, 0 – 10 V | | | | | | |
| Nominal output, CH operation 80/60°C | | kW | 77.9 | 112.9 | 155.8 | 196.8 | 236.2 | 275.5 |
| Nominal output, CH operation 50/30°C | | kW | 82.2 | 119.1 | 164.5 | 207.8 | 249.4 | 290.9 |
| Nominal input, CH operation (Hi) | | kW | 80 | 115.9 | 160 | 200 | 240 | 280 |
| Weight (excl. water) | | kg | 250 | 270 | 290 | 320 | 340 | 360 |
| Dimensions | Length | mm | 1290 | 1290 | 1290 | 1290 | 1290 | 1290 |
| | Width | mm | 717 | 717 | 717 | 717 | 717 | 717 |
| | Height | mm | 1488 | 1488 | 1488 | 1488 | 1488 | 1488 |
| Flue gas discharge connection | | mm | Ø 150 | Ø 150 | Ø 150 | Ø 150 | Ø 150 | Ø 150 |
| Supply and return connection | | mm | DN 60 | DN 60 | DN 60 | DN 60 | DN 60 | DN 60 |
| Maximum operating temperature | | °C | 90 | 90 | 90 | 90 | 90 | 90 |
| Water operating pressure (min.–max.) | | bar | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 |
| Mains voltage | | V/Hz | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 |
| Sound power level, indoors | | dB | 67 | 67 | 67 | 67 | 67 | 67 |

| PST-FCB 360-990 | | Unit | 360 | 450 | 540 | 630 | 720 | 810 | 990 |
|--------------------------------------|--------|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Input control | | Modulating, on/off, 0 – 10 V | | | | | | | |
| Nominal output, CH operation 80/60°C | | kW | 349.2 | 436.5 | 523.8 | 611.1 | 698.4 | 785.7 | 960.3 |
| Nominal output, CH operation 50/30°C | | kW | 378 | 472.5 | 567 | 661.5 | 756 | 850.5 | 1039.5 |
| Nominal input, CH operation (Hi) | | kW | 360 | 450 | 540 | 630 | 720 | 810 | 990 |
| Weight (excl. water) | | kg | 440 | 470 | 500 | 530 | 560 | 600 | 470 |
| Dimensions | Length | mm | 1804 | 1804 | 1804 | 1804 | 1804 | 1804 | 1804 |
| | Width | mm | 855 | 855 | 855 | 855 | 855 | 855 | 855 |
| | Height | mm | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Flue gas discharge connection | | mm | Ø 250 | Ø 250 | Ø 250 | Ø 250 | Ø 250 | Ø 250 | Ø 250 |
| Supply and return connection | | mm | DN 100 | DN 100 | DN 100 | DN 100 | DN 100 | DN 100 | DN 100 |
| Maximum operating temperature | | °C | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Water operating pressure (min.–max.) | | bar | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 | 0.8-6 |
| Mains voltage | | V/Hz | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 |
| Sound power level, indoors | | dB | 68 | 68 | 68 | 68 | 68 | 68 | 68 |

The flow temperature can be increased to maximum 95°C provided that water pressure is at least 1,5 bar and provided that ΔT at maximum load is ≤ 20 K and ΔT at minimum load is $\Delta T \leq 30$ K.

In case anti-freeze is used, the flow temperature can be increased to maximum 95°C provided that water pressure is at least 2,0 bar and provided that ΔT at maximum load is ≤ 15 K and ΔT at minimum load is $\Delta T \leq 25$.

In case of open vented systems, the minimum operating pressure is 0,2 bar and the maximum flow temperature is limited to 75°C.

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