rcgroup.it

1 9 6 3 2 0 1 3

fifty cool years

IT cooling 2014

start here

rcgroupairconditioning

Please register on our web site www.rcgroup.it
for the download of all technical and commercial documentation.

ISO 9001:2008 CERTIFICATION

RC Group has been the first Italian company in its segment to get the ISO 9001 in October 13th, 1991 with certificate ICIM 0018: all the processes are certified to assure products and services in compliance with the corporate policy.

Certifications for RC GROUP SpA production plants:
Valle Salimbene (PV) e Zeccone (PV) - Italy

Certifications for RC GROUP SpA production plants:
Foshan, Guangzhou - People Republic of China (PRC)

ISO 14001:2004 CERTIFICATION

RC Group chose to establish, implement, maintain and improve its environmental management system. Its organization is certified according to UNI EN ISO 14001:2004.

Certifications for RC GROUP SpA production plants:
Valle Salimbene (PV) e Zeccone (PV) - Italy

Certifications for RC GROUP SpA production plants:
Foshan, Guangzhou - People Republic of China (PRC)

EUROVENT CERTIFICATION

RC GROUP SpA participates in the EUROVENT program for: LCP and HP (Liquid Chilling Packages and Heat Pumps).

Check ongoing validity of certification on-line:
www.eurovent-certification.com

Eurovent is an international organization of manufacturers that working to improve the standards of products for air-conditioning and refrigeration systems throughout the European market.
The members of this organization voluntarily submit their products to a network of independent laboratories approved for testing and evaluation in accordance with European and international standards.
The participation in this certification program ensure that the specifications of the products presented by RCGroup in its commercial and technical literature are clear and transparent.

GOST CERTIFICATION

RC GROUP S.p.A. participates in the GOST certification program, valid for the russian market.

Logos, Trade Marks and Companies Name are property of respective Owners

TIME

RC Group started its activity in 1963, devoting itself to the then emerging technologies for data center cooling technology, telecommunication, metrology labs, etc. ...

Only a short time later RC Group opens a new universe with a wide range of refrigeration, heat pump and multifunction units able to satisfy every possible demand for comfort and to satisfy several industrial cooling processes.

Since 2011, RC Group joins DeLclima SpA, the holding company of De' Longhi group, mainly devoted to the production and sale of equipment for air conditioning.

www.del-clima.com
www.rcgroup.it

QUALITY & ENVIRONMENT

Through the originality of its projects, RC Group demonstrates its prompt ability to address and meet new and different demands by continuing to develop innovative responses.

The assurance of the quality of all products from RC Group factory is determined by rigorous tests carried out in the laboratories and in the numerous test benches, where each device is electrically and hydraulically connected to carry out functional calibrations according to the specific requirements of each single customer.

All the design, production and test procedures are in accordance with ISO 9001 norms. In the respect of the environmental protection RC Group is certified in accordance with ISO14001 norms.

SATISFACTION

Time, space, technological evolution, quality and environment, tailor-made solutions all together can only focus to the achievement of our main aim: the full customer satisfaction, either for properly tested products or for the capillary presence of skilled technicians and the of the thick service network on the territory, providing for the units maintenance.

Over against the newest overview in continuous change, the proposal of complete solutions conceived for the efficiency and functionality only can supply the right response to the market.

This is the today's strategy that is giving big satisfaction results to the end-users, buyers and RC Group.

TAILOR-MADE SOLUTIONS

Always, RC Group raises challenges, facing new application realities within a market in continuous evolution and offering tailor-made solutions meeting with accurate precision the single customer needs.

In several cases, thanks to its experience linked to innovation, RC Group has proposed and realized efficient and dedicated solutions also in the most critical contexts.
Instruments to speed-up the process for the realization of its projects, increasing the customer satisfaction degree.

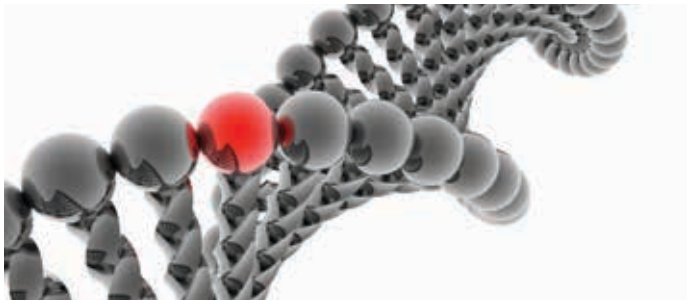
Nowadays, RC Group is facing the market as supplier of several products: air conditioners and liquid chillers, covering a range of cooling capacities from 5 to over 2000 kW per unit to satisfy any kind of needs.

TECHNOLOGICAL EVOLUTION

RC Group products are the result of a technological growth based on the experiences gained in over fifty years of activity in the air conditioning for data centers applications, metrology labs, telecommunication and comfort, besides all several and specific equipment for refrigeration and water heating of small, medium and large capacity.

The company designs and produces through sophisticated computerized systems that allow to obtain perfect and high quality equipment in respect of the current European and Worldwide regulations.
Tridimensional CAD, thermodynamic and acoustical simulators for machines and plants design ….. and RC World.

A unique commercial software at disposal of the sales network, able to manage all RC Group “World” through few links: from the comparison of the technical data to the product selection, up to the commercial offer and order processing.



SPACE

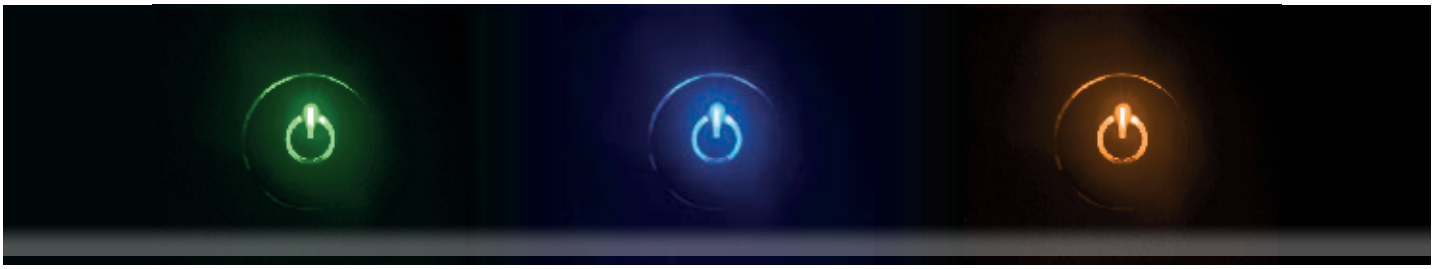
The character of the company and its philosophy of research and development, design and production, were quickly recognized and appreciated by the market, first in Italy and then in the World.

RC Group manufactures air conditioners and small, medium and large capacity liquid chillers at its three plants in Pavia (Italy).

A fourth production unit, only for precision air conditioning equipment manufacture is located in Foshan (China) to give a quick and economically competitive response to all requests from the Far East.

The commercial and service widespread coverage is made up of a number of agencies and service centers in Italy as well as many product distribution and service companies in the rest of the World, always being in the middle of the action. Wherever you are, RC Group is always at your side.

THREE PRODUCTION SECTORS IN ONE ONLY SOLUTION



IT cooling | **Chillers** | **Heat Pumps & Multifunction**

IT cooling
Precision air conditioners designed for data centers, telephone exchanges, shelters.

Chillers
Liquid chillers for food, textile, pharmaceutical and electronic big industries.

Heat pumps & Multifunction
Multifunction liquid chillers and heat pumps suitable for installation in supermarkets and business centers, banks, public offices, airports, hospitals.

Since over fifty years, RC Group supplies reliable and flexible solutions and it is today considered market leading company in precision air conditioning and refrigeration with high-tech content.

Legenda

Symbols used
in the catalogue.

AIR CONDITIONERS LEGENDA

New product

Only cooling

Only heating

Scroll compressor

Rotary compressor

Inverter driven compressor

R410A Refrigerant charge

R134a Refrigerant charge

R407c Refrigerant charge

Chilled water feeding

Direct free-cooling system

Plug fan with brushless type EC electric motor

Plug fan with AC motor

Upflow air delivery

Downflow air delivery

Frontal air delivery

Displacement air delivery

Indoor installation

Outdoor installation

Split-system machine

LIQUID CHILLERS LEGENDA

New product

A Energy Class Machine

Only cooling

Scroll type compressor

Rotary type compressor

Oil free centrifugal compressor

Inverter driven compressor

Compressor without oil lubrication system

R410A Refrigerant charge

R134a Refrigerant charge

Direct free-cooling system

Axial fans with brushless type EC electric motor

Axial fans with AC electric motor

Plug fan with brushless type EC electric motor

Plug fan with AC electric motor

Microchannel type condensing coil

Plate type evaporator

Shell and tube type evaporator

Flooded shell and tube evaporator

Indoor installation

Outdoor installation

Split-system machine

AIR COOLED LIQUID CHILLERS WITH FREE-COOLING SYSTEM WITH AXIAL FANS

MAXIMO

Air cooled liquid chillers with free-cooling system equipped with scroll compressors and axial fans.

pg:91

EAGLE FREE

Air cooled liquid chillers with free-cooling system equipped with scroll compressors and axial fans.

pg:107

GLIDER EVO FREE

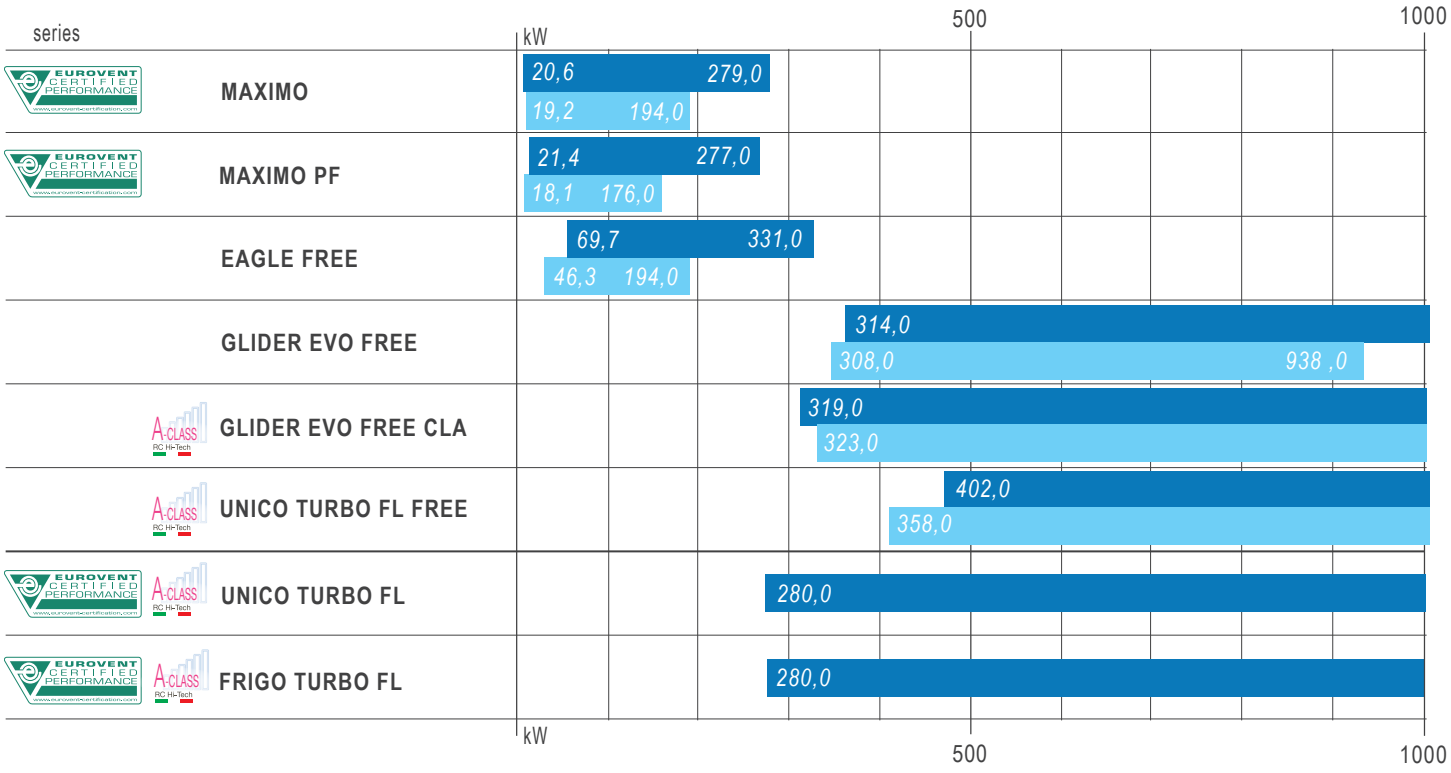
Air cooled liquid chillers with free-cooling system equipped with screw compressors and axial fans.

pg:113

GLIDER EVO FREE CLA

Air cooled liquid chillers in A-class energy efficiency with free-cooling system equipped with screw compressors and axial fans.

pg:121



AIR COOLED LIQUID CHILLERS WITH FREE-COOLING SYSTEM WITH PLUG FANS

MAXIMO PF

Air cooled liquid chillers with free-cooling system equipped with scroll compressors and plug fans.

pg:99

AIR COOLED LIQUID CHILLERS WITH FREE-COOLING SYSTEM WITH AXIAL FANS AND CENTRIFUGAL OIL-FREE COMPRESSORS

INVERTER

A-CLASS

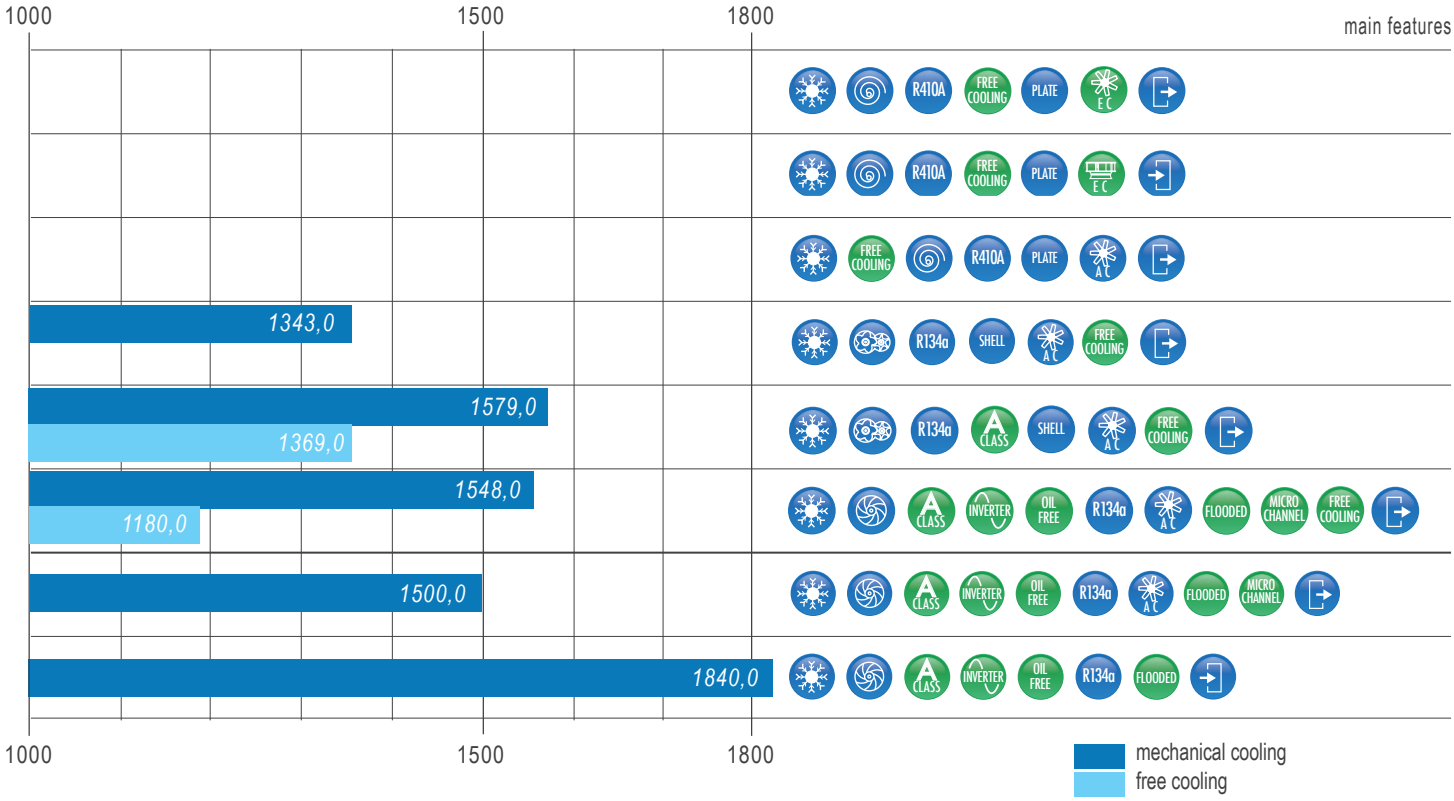
FREE COOLING

LOW NOISE

UNICO TURBO FL FREE

Air cooled liquid chillers in A-class energy efficiency equipped with oil-free centrifugal compressors with magnetic levitation bearings, flooded evaporator and microchannel condensing coils.

pg:129



AIR COOLED LIQUID CHILLERS WITH FREE-COOLING SYSTEM WITH AXIAL FANS

INVERTER

A-CLASS

LOW NOISE

UNICO TURBO FL

Air cooled liquid chillers in A-class energy efficiency equipped with oil-free centrifugal compressors with magnetic levitation bearings, flooded evaporator and microchannel condensing coils.

pg:135

INVERTER

A-CLASS

LOW NOISE

FRIGO TURBO FL

Water cooled liquid chillers equipped with A-class energy efficiency equipped with oil-free centrifugal compressors with magnetic levitation bearings and flooded evaporator.

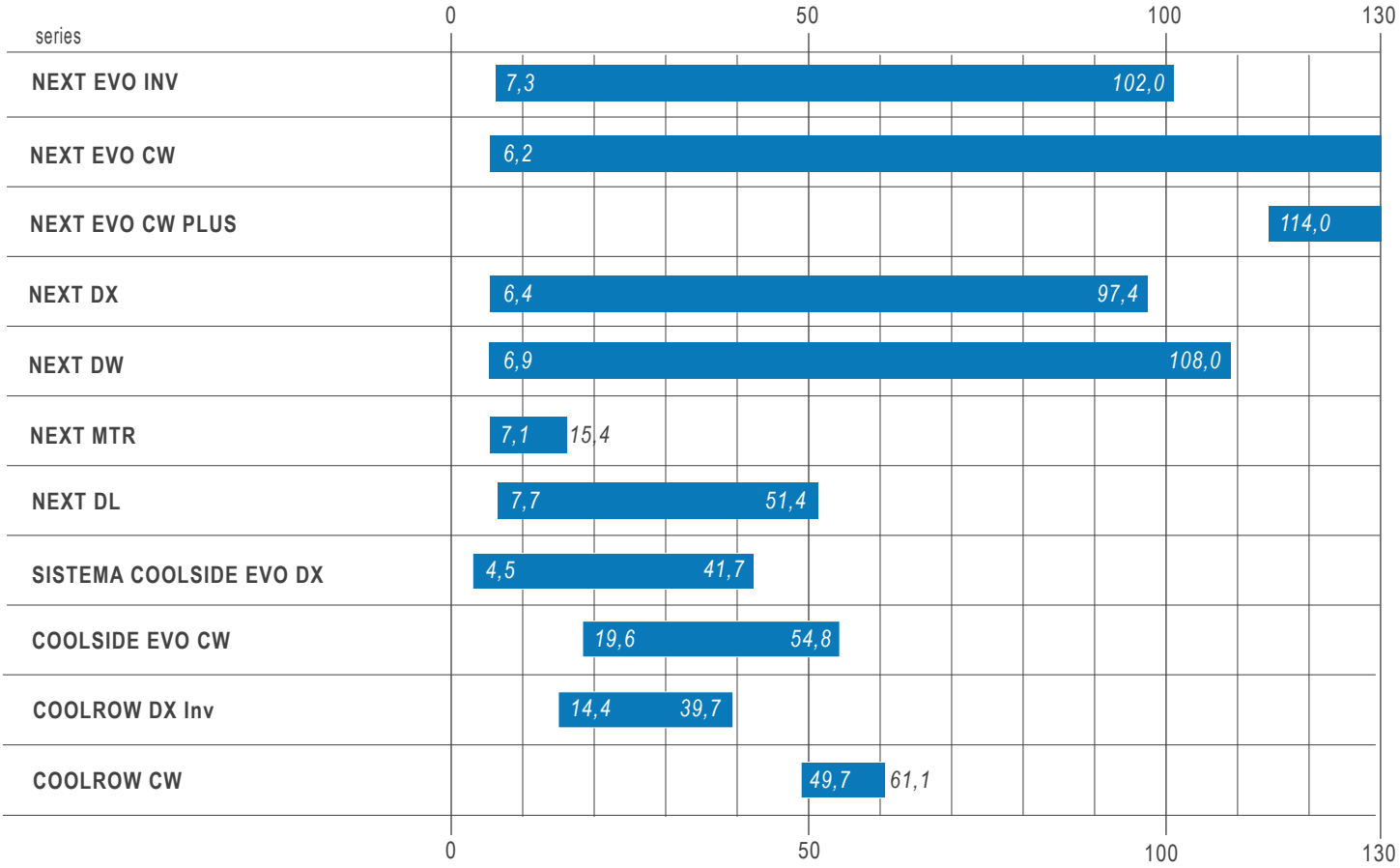
pg:141

AIR CONDITIONERS FOR DATA CENTER FOR PERIMETRAL INSTALLATION

NEXT EVO INV
Under/Over versions
Close control air conditioners equipped with BLDC scroll compressors.
pg:25

NEXT EVO CW
Under/Over versions
Close control air conditioners for chilled water feeding.
pg:33

NEXT EVO CW PLUS
Under version
Close control air conditioners for chilled water feeding with separate fan section.
pg:33



AIR CONDITIONERS FOR DATA CENTER FOR IN ROW, IN RACK INSTALLATION

COOLSIDE EVO DX SYSTEM
in row/in rack versions
Direct expansion air conditioning system for high density rack and blade servers.
pg:65

COOLSIDE EVO CW
in row/in rack versions
Chilled water air conditioners for high density rack and blade servers.
pg:69

COOLROW DX Inv
in row version
Direct expansion air conditioners for high density rack and blade servers.
pg:61

COOLROW CW
in row version
Chilled water air conditioners for high density rack and blade servers.
pg:61

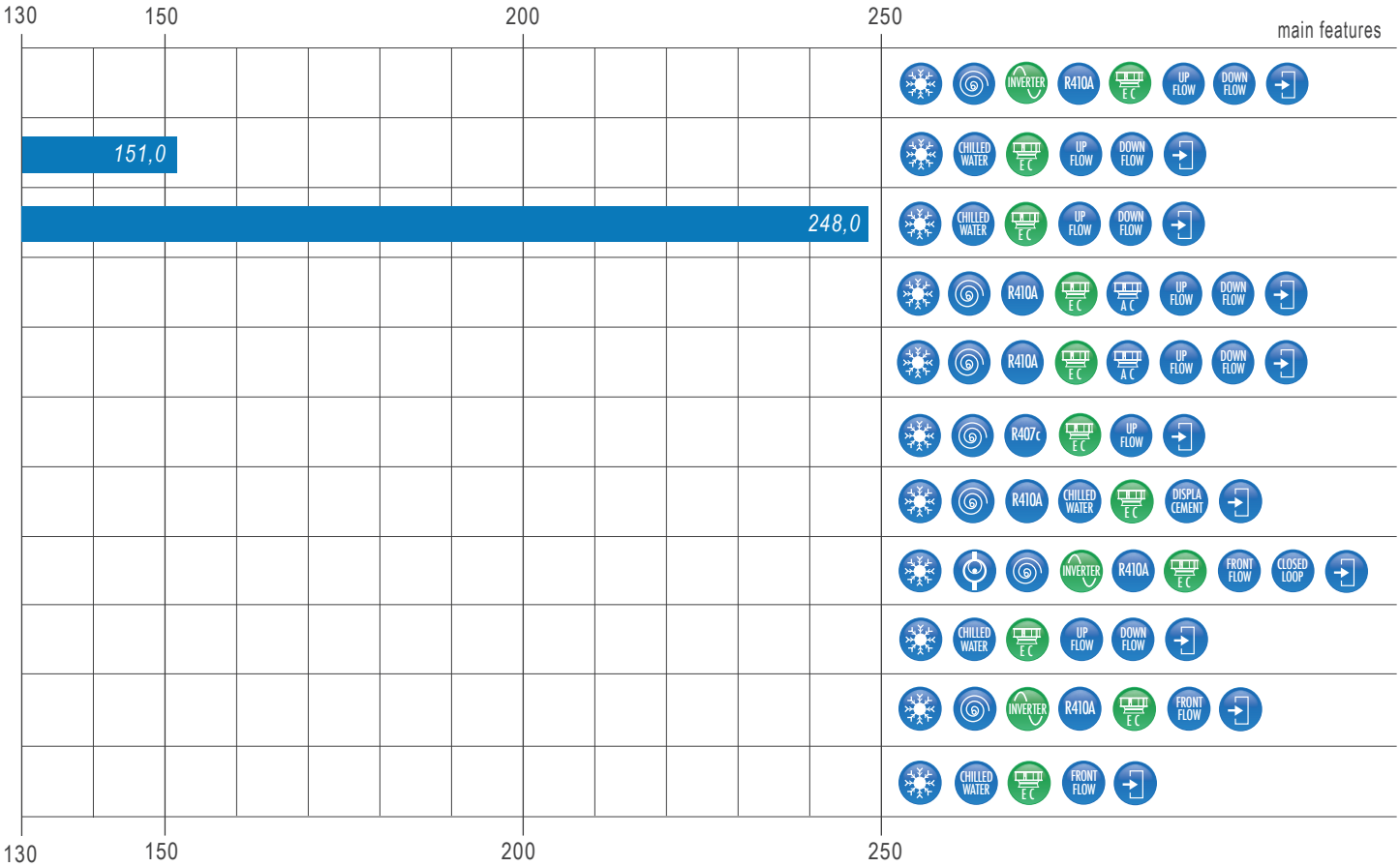
AIR CONDITIONERS FOR DATA CENTER FOR PERIMETRAL INSTALLATION

NEXT DX
Under/Over versions
Close control air conditioners equipped with scroll compressors.
pg:39

NEXT DW
Under/Over versions
Close control air conditioners equipped with scroll compressors.
pg:45

NEXT MTR
Over version
Air conditioners for metrology labs.
pg:57

NEXT DL
Displacement air delivery version
Close control air conditioners with displacement air delivery.
pg:51



AIR COOLED CONDENSERS

TEAM MATE
12,1 ÷ 307,0 kW
Air cooled condensers equipped with axial fans.
pg:145

TEAM MATE PF
12,1 ÷ 154,0 kW
Air cooled condensers equipped with plug fans.
pg:149

DRY COOLERS

DRY COOLER
8,3 ÷ 172,0 kW
Dry coolers equipped with axial fans.
pg:153

DRY COOLER PF
8,8 ÷ 89,0 kW
Dry coolers equipped with plug fans.
pg:155

AIR CONDITIONERS FOR TELECOMMUNICATION

ENERGY SPLIT

Horizontal or vertical air flow

Split system air conditioners with free-cooling system.

pg:75

MINIPAC

Horizontal air delivery

Packaged air conditioners with free-cooling system for outdoor installation.

pg:79

ENERTEL

Under/Over versions

Packaged air conditioners with free-cooling system for indoor installation.

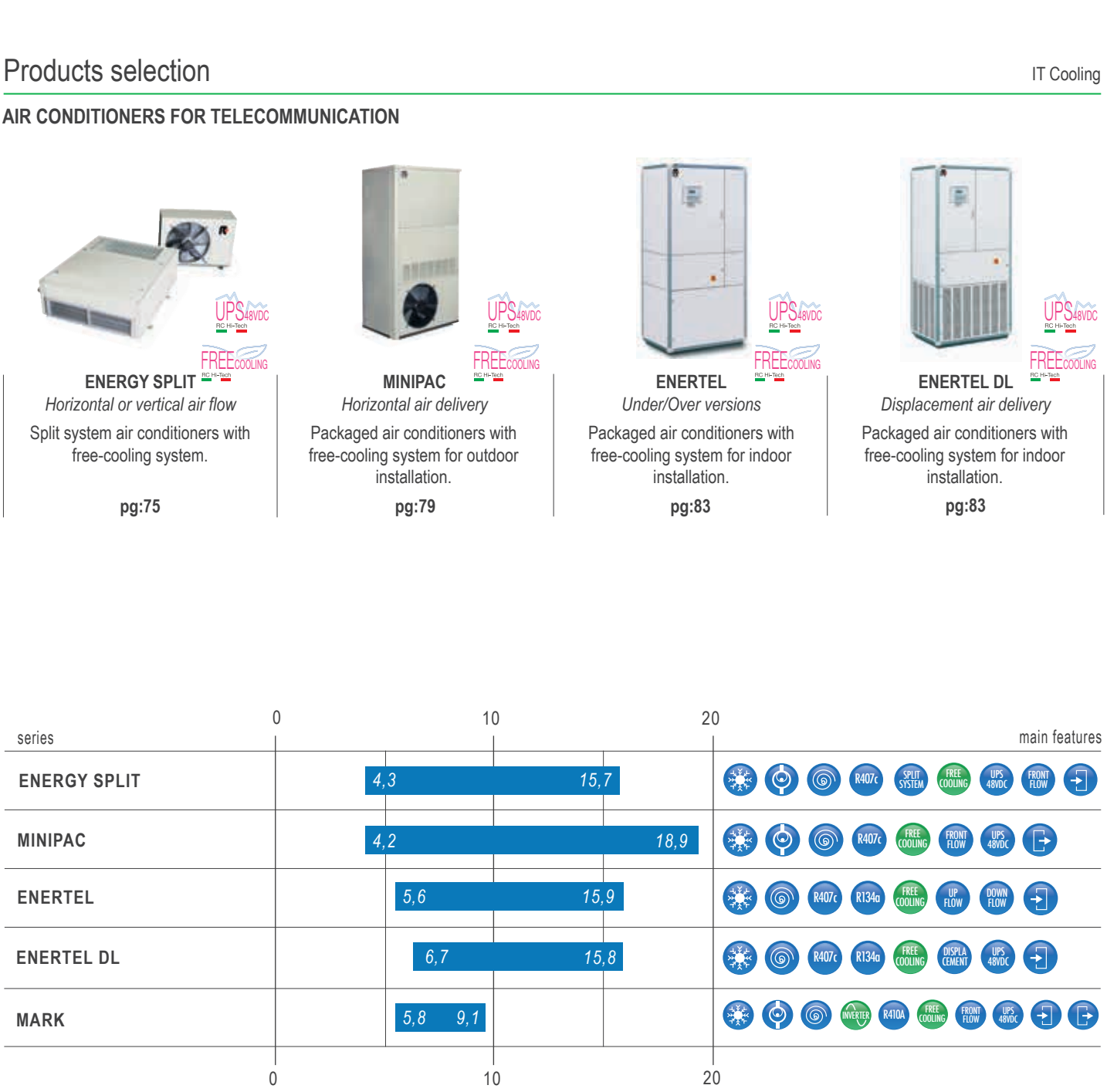
pg:83

ENERTEL DL

Displacement air delivery

Packaged air conditioners with free-cooling system for indoor installation.

pg:83

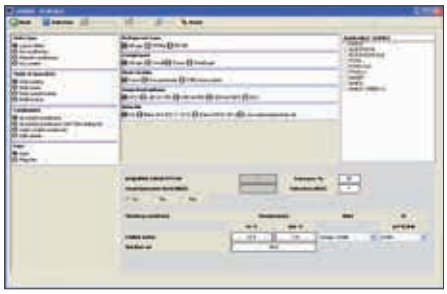


MARK

Horizontal air delivery

Packaged air conditioners with free-cooling system for outdoor or indoor installation.

pg:87



RC WORLD

RC GROUP products selection software.

pg:159

SPECTRUM

RC GROUP energy performance estimation software for chillers and heat pumps

pg:160

SEQUENCER

Sequencer for chillers, heat pumps and multifuncion units

pg:161

RILHEVA

Performance and quality remote monitoring.
GPRS solution for unattended monitoring.

pg:162

Web & Social Media

RC GROUP WEB

http://www.rcgroup.it/EN/

YOU TUBE CHANNEL

http://www.youtube.com/user/RCGroupSpA1

LINKEDIN

http://www.linkedin.com/company/rc-group

EFFICIENT ENERGY USE

One of the main features of RC Group air conditioning series is the high energy efficiency both in design conditions as in partial load conditions that are variable conditions during the year.

BLDC INVERTER SCROLL COMPRESSORS

The compressor driven by an inverter varies the load continuously and the regulation of the refrigerant circuit can be easily adapted, without oscillations and transients, to the operating conditions required.
The system is highly efficient since it is supplying the energy necessary to satisfy the required thermal load only; furthermore it is possible to supply thermal or cooling energy even in case of overload conditions of the system. The working range of scroll compressors in comparison to the nominal values of cooling and thermal capacity output, varies on average from 35% to 120%, for centrifugal compressors varies instead on average from 20% to 110%. The possibility to follow regularly and progressively the refrigeration load, excluding on-off sequences of the compressor, allows to realize the heating/cooling hydronic plant even without the use of the inertial tank.

INVERTER
RC Hi-Tech

FEATURES
- Capacity modulation
- No need for power factor correction
- Minimum starting current (LRA)
- Able to follow punctually and progressively the thermal load

BENEFITS
- More Energy Efficiency (eliminating start/stop cycles)
- Minimum energy consumption
- High efficiency at partial thermal loads
- High performances, Higher EER and ESEER
- Essential feature to achieve the A, A+ energy class
- Total absence of electromagnetic noise.
- Quieter than standard compressor

MICROPROCESSOR CONTROL SYSTEM

Microprocessor control system for the management and monitoring of the working and alarm statuses. The system includes:

- Voltage free contact for general alarm.
- Main components hour meter, with programmed maintenance intervention.
- "Data logger" integrated function for the events and alarms recording.
- "Flash" memory for the data storage in case of lack of power supply.
- Menu management with protection password.

TOUCH SCREEN GRAPHIC DISPLAY FOR MICROPROCESSOR CONTROLLER (only for TURBO FL series).
7" touch screen graphic display

MAIN BENEFITS
- Easier, attractive and self explaining human interface
- Improved ease of use

ELECTRONIC EXPANSION VALVES

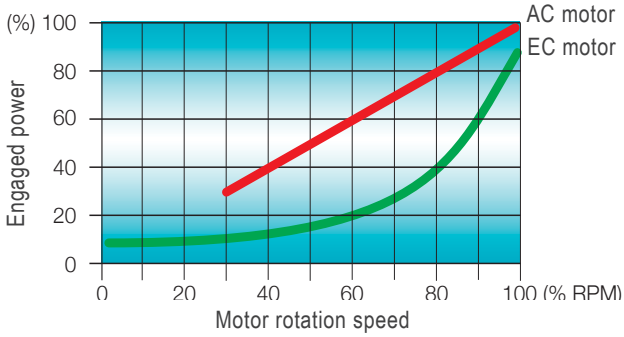
The electronic expansion valves have many benefits. They grant a higher energy efficiency combined to a better stability of the system.

FEATURES
- High capacity modulation
- Precision control
- Wide range of operation
- Able to follow punctually plant demand and environmental condition change
- Better use of compressors
- Bi-directional flow

BENEFITS
- Energy saving
- Better stability of the system, combined to inverter driven compressors
- Replace the operation of two traditional expansion valves in reverse cycle heat pumps

FANS WITH BRUSHLESS TYPE EC MOTOR

The fans electric motors are the brushless type with built-in electronic commutation system (EC) which yield high energy savings during operation in reduced air flow.
These electric motors are ensuring high performances, minimum energy consumption and total absence of electromagnetic noise.



EC MOTORS FEATURES
- Synchronous brushless motor
- Integrated electronic commutated system
- High efficiency (83-86%)
- Minimum power input
- Stepless rotation speed control with 0-10VDC proportional signal
- No electromagnetic noise

PLUG FANS FEATURES
- High discharge head centrifugal fans installed on chillers for indoor installation
- Impeller in composite material, PA6 plastic reinforced with glass-fibre, exempt from rust formation.

BENEFITS
- Dramatic reduction in power required
- The power required decreases with the reduction of power motor revolutions
- More efficient than traditional motor
- Average energy saving of 30%
- Longer lifetime (no brush and commutation erosion)
- Reduction of electromagnetic interference
- Minimal noise emission

AVAILABLE VERSIONS

RC Group air conditioners are available in Over, Under and Displacement versions

UP-FLOW AIR DELIVERY (OVER)

The air distribution is from the top of the unit directly in to the room.
The air flow in each area is predetermined during the design stage and it is not dependent on the actual state of the load to be dissipated.
The system is normally applied in Comfort plants and in those plants having a defined low/medium room thermal loads density.

DOWN-FLOW AIR DELIVERY (UNDER)

The air distribution is from the bottom by means of the plenum between the building floor and the raised floor.
This solution is usually applied in Hi-Tech room air conditioning and it is most favourable when load is uniformly distributed in all areas of the room.

DISPLACEMENT AIR DELIVERY (DL)

The air-conditioning system with displacement air delivery is based on the principle that the air is distributed at a very low speed, while enabling a cooling effect by convection.
Every electronic equipment will “absorb” the amount of cold required to maintain a correct temperature level inside, through a natural convection effect. The greater the load inside the electronic equipment, the greater this effect.
Therefore, every electronic equipment uses only the amount required to dissipate its own thermal load, which is generated by maximising the result and the energy efficiency of the system.

HORIZONTAL AIR DELIVERY

Cooling system for rows of racks (hot / cold aisle or in-row).
Units are placed in the rows of racks that are arranged so as to obtain alternate cold and hot aisles.
Electronic equipments contained in racks independently provide to aspire the necessary air for cooling.

Cooling system for shelter.

The units distribute the air inside the shelter cooling the electronic equipment directly.
Different kind of air conditioners with air delivery in the upper part of shelter, ceiling level, or in the lower part of the shelter, floor level are available.

FREE COOLING

The free-cooling system is an important accessory that allows you to maximize energy savings of air conditioning plant.

The microprocessor controls a dual source free-cooling system: direct free-cooling with direct introduction into the room of ambient air, or water indirect free-cooling with a dedicated heat exchanger.

According to the set-point and the energy saving logic the controller activates the free-cooling system more affordable.

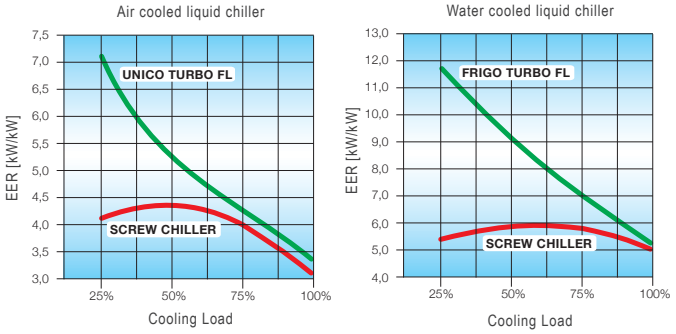
FEATURES
- Free cooling is a cooling technique that allows the shutdown of the compressors when the outside temperatures are low, producing a considerable reduction in electric consumption for the air conditioning system.
- The indirect free cooling system consists in the partial or complete cooling of the chilled water of the existing cooling system with the outside air.
- The direct free cooling system consists in the direct entry of the outside air into the room, if the outside air has a lower temperature than indoor air.

BENEFITS
- Energy saving.
- The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

mobile telecommunication air conditioner’s direct free-cooling damper

AN EFFICIENT ENERGY USE

One of the most important characteristics of TURBO FL chillers is their high energy efficiency and consequently high ESEER values, both at design and at the various operating conditions experienced during the year.
The diagram compare the EER curves of TURBO FL with centrifugal compressors vs. screw compressors.
The considerable improvement of the centrifugal unit under all load conditions is well illustrated.
The following charts have been prepared in accordance with EUROVENT standards. Therefore, the air and water temperatures specified by these standards have been considered at partial load.



MAGNETIC LEVITATION CENTRIFUGAL COMPRESSOR DIRECTLY DRIVEN BY BUILT-IN INVERTER

The TURBO FL liquid chillers are equipped with two-stage centrifugal compressor with variable speed, which is able to follow punctually plant demands, obtaining values of energy efficiency ratio (EER) growing in a narrowing of the cooling load.
The compressors of the TURBO FL liquid chillers are equipped with magnetic levitation oil-free bearings which compared to traditional ball bearings, completely eliminate all the maintenance procedures of lubrication.

INVERTER
RC Hi-Tech

NO NEED OF POWER FACTOR CORRECTION

The power factor of the centrifugal compressor (cos-φ) is always close to unity under all load conditions. This does not require the use of any power factor correction capacitors.

MINIMUM STARTING CURRENT (LRA)

The compressors built-in inverter system is able to limit the starting current for each compressor to 5 Ampere.
Other types of compressors having the same capacity can produce starting currents up to hundreds of Ampere. This low inrush current prevents any voltage fluctuation on the mains.
Start-up transients are negligible and without any negative effect on the connected equipment (lighting systems, computer, electric- medical instruments etc.).

INVERTER SYSTEM

The compressor driven by an inverter varies the load continuously and the regulation of the refrigerant circuit can be easily adapted, without oscillations and transients, the operating conditions required.
The system is highly efficient since it is supplying the energy necessary to satisfy the required thermal load only; furthermore it is possible to supply thermal or cooling energy even in case of overload conditions of the system.
The working range, in comparison to the nominal values of cooling capacity output, varies on average from 20% to 110%.

QUIET OPERATION

TURBO FL machines are also extremely quiet.
This promotes their use in noise sensitive locations such as old city centres, hotels, offices and residential buildings.

RELIABILITY

With their reliable operation the TURBO FL series is well suited for every application from comfort cooling, through the high-tech industrial sector and especially mission critical strategic applications (like hospitals, clean rooms, web farms, data centres, telecommunication exchanges, air-traffic control centres).
Their operating reliability is guaranteed 24 hours/day for 365 days/year.

FLOODED EVAPORATOR

The TURBO FL liquid chillers are equipped with flooded evaporator, where the refrigerant in the evaporation phase is outside of the tube bundle. This heat exchange solution allows to obtain a greater energy efficiency of the system because it reduces the differential between the refrigerant expansion temperature and the liquid cooled temperature.

Moreover the circulation of the liquid inside the tubes of the heat exchanger can be varied considerably in relation to the cooling load, reducing the energy engaged by the pumping system.

A CLASS ENERGY EFFICIENCY

The best and most accurate components applied to the chillers grants high energy efficiency with EER higher than 3,1 for air cooled units and even higher than 5,05 for water cooled units.
This values satisfy the Eurovent conditions to join the energy efficiency A class.

A-CLASS
RC Hi-Tech

GLYCOL FREE SYSTEM

The accessory allows to use pure water instead of antifreeze solutions in the hydraulic circuit of the plant. This accessory is factory assembled and it don't modify the machine dimensions.
An intermediate heat exchanger divides the hydraulic circuit into two parts; one part includes the chiller with the Glycol-Free hydraulic circuit with Free-Cooling coils and the centrifugal pump.
The other part includes the evaporator and the plant hydraulic circuit.

GLYCOL FREE
RC Hi-Tech

The Glycol-Free hydraulic system (free-cooling coil and centrifugal pump) must be filled with an antifreeze solution having a concentration suitable to the operation conditions of the machine, while the plant hydraulic system will be filled with pure water.

LOW NOISE EMISSIONS

RC Group allows to select the units, not only for the required cooling capacity, but even for the units' environmental acoustic impact.
This allows to answer to the law requirements against noise.
Two kits for the reduction of the noise emissions are available:

- LNO kit, for a noise reduction
- ELN kit, for an extreme noise reduction

LOW NOISE
RC Hi-Tech

PUMPING GROUPS

RC Group propose a complete sets of optional accessories for chilled water pumping.
To satisfy different plant needs are available pumping groups with one, two, three pumps with low, medium and high discharge heads.

RC GROUP PRECISION AIR CONDITIONING FOR GREEN DATA CENTER

Data Center represents the main and most widespread precision air conditioning application. The last forty years of history have seen the progressive raise of data processing and the relative growth of data center dimensions and energy consumption. The financial and the consequential economic crisis of the end of the first decade of the 21st century have dramatically highlighted the energy efficiency and the ambient sustainability issues. The current Data Center's managers show great awareness towards such matter and transmit their needs to the suppliers.
The message has been acknowledged by all the industry: the precision air conditioning industry has been able to found the best and more appropriate answer to the request of system with continuously raising energy efficiency coming from technician, designer and managers of contemporary Data Center.
These page want to inform and update the reader about the technology state of art, want to furnish detail about methods, indexes, classification and certification institute and to offer a view of RC Group high efficiency Data Center product and systems range.

DATA CENTER MAIN PARAMETERS

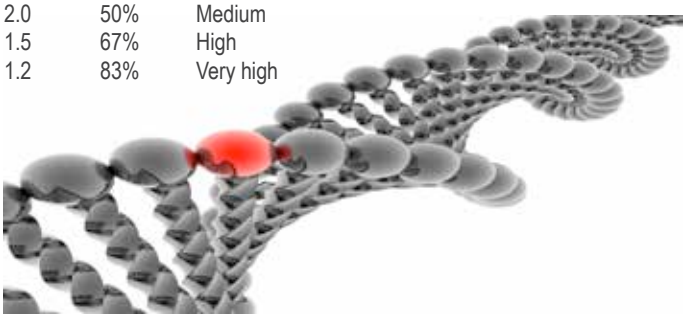
Energy efficiency
Data Center Energy efficiency is defined through PUE/DCiE index that compare the total infrastructure installed power (IT systems, cooling, protection, backup, miscellaneous) with the power used by the IT systems for the data processing only and vice versa.

PUE (Power Usage Effectiveness) = Energy usage efficiency = Infrastructure total power/IT systems power [kW/kW, absolute value]

DCiE (Data Center Infrastructure = IT equipment power / Infrastructure total power [kW/kW, percentage]

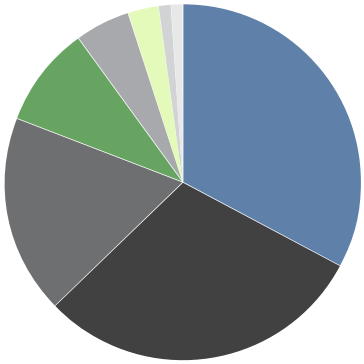
The PUE/DCiE starting value represents an index for energy efficiency and identifies a test ambient for the repeating of further measurements.
By comparing of the initial values with the final ones, the data centers' managers can measure the results of possible initiatives aimed to improve the energy efficiency and evaluate the energy indexes in specific operative conditions (partial PUE/DCIE). Anytime is in fact possible made the comparison between the IT system engaged power and the total power used by the infrastructure.

PUE	DCiE	Efficiency level
3.0	33%	Very low
2.5	40%	Low
2.0	50%	Medium
1.5	67%	High
1.2	83%	Very high



The cooling systems represents over 40% of the data centers energy consumption and have an incisive impact on the efficiency level of data centers.

Energy consumption
- Chiller 33%
- Humidifier 3%
- CRAC 9%
- IT Equipment 30%
- PDU 5%
- UPS 18%
- Switchgear/generator 1%
- Lighting 1%



PUE/DCiE indexes have been defined by Green Grid (http://www.thegreengrid.org/), a consortium of over 175 associates IT companies from all over the World that combines the efforts of the global industry to reach the measurement system, processes, methods and new technologies standardization to increase the data centers and business computing ecosystems energy efficiency.

The mission of Green Grid, a no profit organization, is to become the major Worldwide authority in the field of efficient energy use working closely to the final users, technology providers and government from all over the World. Among the highlighted methods used to reach that goal are the data collection and analysis, the emerging technologies evaluation, the development of procedures for the operators.

Nowadays still many are the companies not having a documented strategy to reduce the data center energy consumption, even if many agree on the fact that the data centers energy consumption data represent a growing source of concern.

Green Grid makes a forum available to all, where IT operators can meet to discuss about the different existing options to improve resource efficiency. The solutions and the recommendation produced in this forum are regularly published and some decisions of the forum are nowadays a sector standard.

In addition to PUE/DCiE, Green Grid is developing other indexes as:
• Carbon Usage Effectiveness (CUE TM),
• Water Usage Effectiveness (WUE TM)
• Data Center Productivity (DCP).

DATA CENTER AVAILABILITY AND RELIABILITY

The functional and design features of the data center infrastructure are uniquely defined by TIER classification. TIER classification has been developed by Uptime Institute (http://uptimeinstitute.com/) and represents nowadays an international standard.

There are four TIER classes:

TIER I: Data Center with single distribution line/network, respectively one for power input and one for cooling; no redundant component. Availability: 99,671% (8731.18 h/year of uninterrupted operation; down time: 28.82 h/year).

TIER II: Data Center with single distribution line/network, respectively one for power input, one for cooling, with only one of these active; redundant components make possible the maintenance during operation. Availability: 99.741% (8737.31 h/year of uninterrupted operation; down time 28.69 h/year)

TIER III: Data Center with multiple distribution line/network, respectively for power input and for cooling, with only one of these active; redundant components make possible the maintenance during operation. Availability: 99.982% (8758.42h/year of uninterrupted operation; down time 1,58h/year)

TIER IV: Data Center with multiple distribution line/network respectively for power input and for cooling, all active and with redundant components. Possibility of maintenance during operation, fault tolerance. All the cooling systems, chillers and HVAC have double power supply. Availability: 99.995% (8758.42h/year of uninterrupted operation; down time 0,44 h/year)

UPTIME INSTITUTE

Uptime Institute, founded in 1993, has been a pioneer in creating and promoting the formation of an end users community that have provided their own knowledge to improve the reliability and the h24 availability in Data Center and in IT organization. Nowadays the 100 and more Uptime Institute's members exchanges each other information and suggestions and with Uptime Institute too, during conferences, sites visits, etc..., that are strictly reserved to the members.

Among the main activities that Uptime Institute addressed to Data Centers operating companies and professionals are: education, publications, seminars, certifications, technical consultancy and others.

Uptime Institute has experienced and continues to develop numbers of innovations that were then adopted as Data Center standards:

- hot/cold isle layout
- energy calculation parameters
- cost analysis models
- double power input specifications
- TIER classifications for the reliability evaluation

TECHNOLOGY STATE OF ART

In the last years the industry has provided the air conditioning and liquid chillers manufacturers with a new generation of components taking full advantage electronic and the new heat exchange technologies to maximize the energy efficiency.
Nowadays all the RC GROUP data center air conditioning system extensively use that components, in detail:

- Plug fans with EC brushless motors.
- Axial fans with EC brushless motors.
- Scroll compressors with BLDC inverter motors.
- Oil free magnetic levitation centrifugal compressors.
- Air/gas microchannel coil heat exchangers.
- Electronic expansion valves.
- Two-way STD or PICCV chilled water valves.
- PID microprocessor control systems.
- Load sharing.

A NEW STAND-BY CONCEPT

The availability of new technologies of fans with EC brushless motors and magnetic levitation oil free compressors with high energy efficiency at partial loads revolutionised the concept of stand-by in full compliance with project TIER class: no more some units in function at 100% and some units in stand-by but all the units in function at partial loads. The benefit in terms of global efficiency of the system is very important and can achieve, as final result, a reduction of the PUE index.

CLASS	TIER I	TIER II	TIER III	TIER IV
Active components to support the IT load; Redundancy	*N=needed; only the active components required to support the IT load, no redundancy*	*N+1=needed +1 active component in addition to those required to support the IT load, 1 redundant component.*	*N+1=needed +1 component in addition to those required to support the IT load, 1 redundant component.*	*N after any failure = availability of all active components necessary to support the IT load after any fault*
Networks / distribution systems for power and cooling	*Single network/system*	*Single network/system*	*Dual network / system, one active and the second in standby*	*Dual network / system both active*
Maintenance during operation	*No*	*No*	*Yes*	*Yes*
Single fault tolerance	*No*	*No*	*No*	*Yes*
Partitioning	*No*	*No*	*No*	*Yes*
Continuous cooling	*According to the thermal load*	*According to the thermal load*	*According to the thermal load*	*Yes (A Class)*
Availability	*99,671% (8.731.18 h / year of operation without interruptions)*	*99,741% (8.737.31 h / year of operation without interruptions)*	*99,982% (8.758.42 h / year of operation without interruptions)*	*99,995% (8.759.56 h / year of operation without interruptions)*
Stop time	*28.82 h/year*	*28.69 h/year*	*1.58 h/year*	*0.44 h/year*

Sources: Uptime institute, *http://uptimeinstitute.com/* - Green Grid, *http://www.thegreengrid.org/*

RC GROUP FOR GREEN DATA CENTER

The following pages show the RC Group Green Data Center solutions:
- "LARGE AND EXTRA LARGE" DATA CENTER
- "SMALL AND MEDIUM" DATA CENTER
- DATA CENTER WITH "HOT SPOTS"

"LARGE ED EXTRA LARGE" DATA CENTER

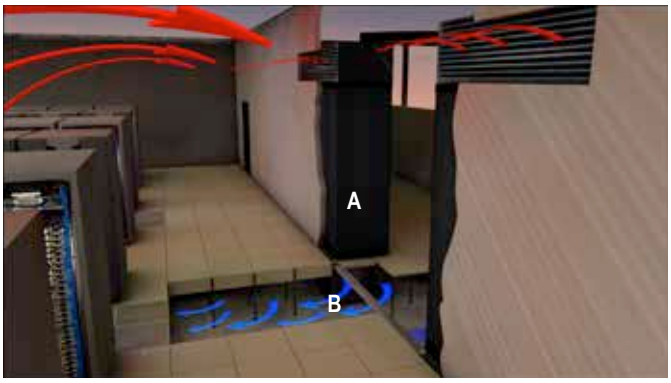
The solution that grants the highest energy efficiency is represented by a chilled water system made by:

A) **NEXT EVO CW PLUS** precision air conditioners, with:

- EC fans in separate plenum (PLUS units) located under the floor
- Two-way chilled water valve
- Temperature sensor on chilled water delivery and return

B) **UNICO TURBO FL** liquid chillers equipped with magnetic levitation oil free centrifugal compressors in conventional version or with free-cooling section, **UNICO TURBO FL FREE**.

HIGH COOLING DENSITY up to 72,0 kW/m^2



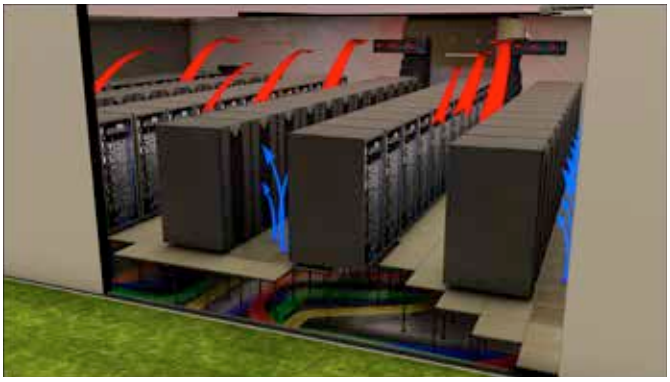
NEXT EVO CW PLUS precision air conditioners, thanks to an optimization work on components and optional accessories, grant an high density of cooling in those situations where the space management is a fundamental design target as important as performance is.

The air conditioning unit is divided in two sections: the upper part (A part in the picture) includes the high efficiency air filters and the air handling section with a cooling coil available in 4,6,8 rows version; the lower part (B part in the figure) can be installed in an underfloor compartment and includes the plug-fan section.

The lower section can be supplied with adjustable floor-stand (optional accessory) that allows the adjustment of the frame height to reach the floor level.

NEXT EVO CW
Versione Under/Over

NEXT EVO CW PLUS
Versione Under



THE RC GROUP TECHNICAL SYNERGY IN ENERGY CLASS "A"

RC Group proposes itself as the sole supplier of offering both the air conditioning units and the liquid chillers.

The synergy includes the air conditioners **NEXT EVO CW** and the air-cooled liquid chillers series **UNICO TURBO FL** or the free-cooling liquid chillers **GLIDER EVO FREE**.

UNICO TURBO FL liquid chillers in conventional version are equipped with oil-free two stage centrifugal compressors with magnetic levitation bearings, flooded shall and tube evaporator and micro-channel type condensing coil.

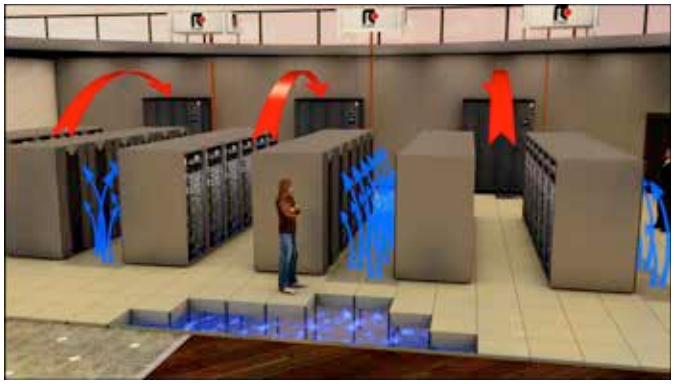
A-CLASS
RC Hi-Tech

UNICO TURBO FL

UNICO TURBO FL FREE free-cooling liquid chillers are equipped with oil-free two stage centrifugal compressors with magnetic levitation bearings, flooded shall and tube evaporator, micro-channel type condensing coil and Cu/Al free-cooling coil.

FREECOOLING
RC Hi-Tech

UNICO TURBO FL FREE



The propose solutions is a direct expansion system formed by:

1) **NEXT EVO INV DX** precision air conditioners equipped with EC fans and BLDC inverter scroll compressors matched with **TEAM MATE** and **TEAM MATE PF** remote condensers.

2) **NEXT EVO INV DW** precision air conditioners with built in water cooled condenser, equipped with EC fans, scroll BLDC inverter compressor, free-cooling coil matched with **DRY COOLER** and **DRY COOLER PF**.

NEXT EVO INV
Under/Over Version

One of the main features of NEXT EVO INV DX series is the high energy efficiency both at design conditions and at partial load conditions that are variable during the year.

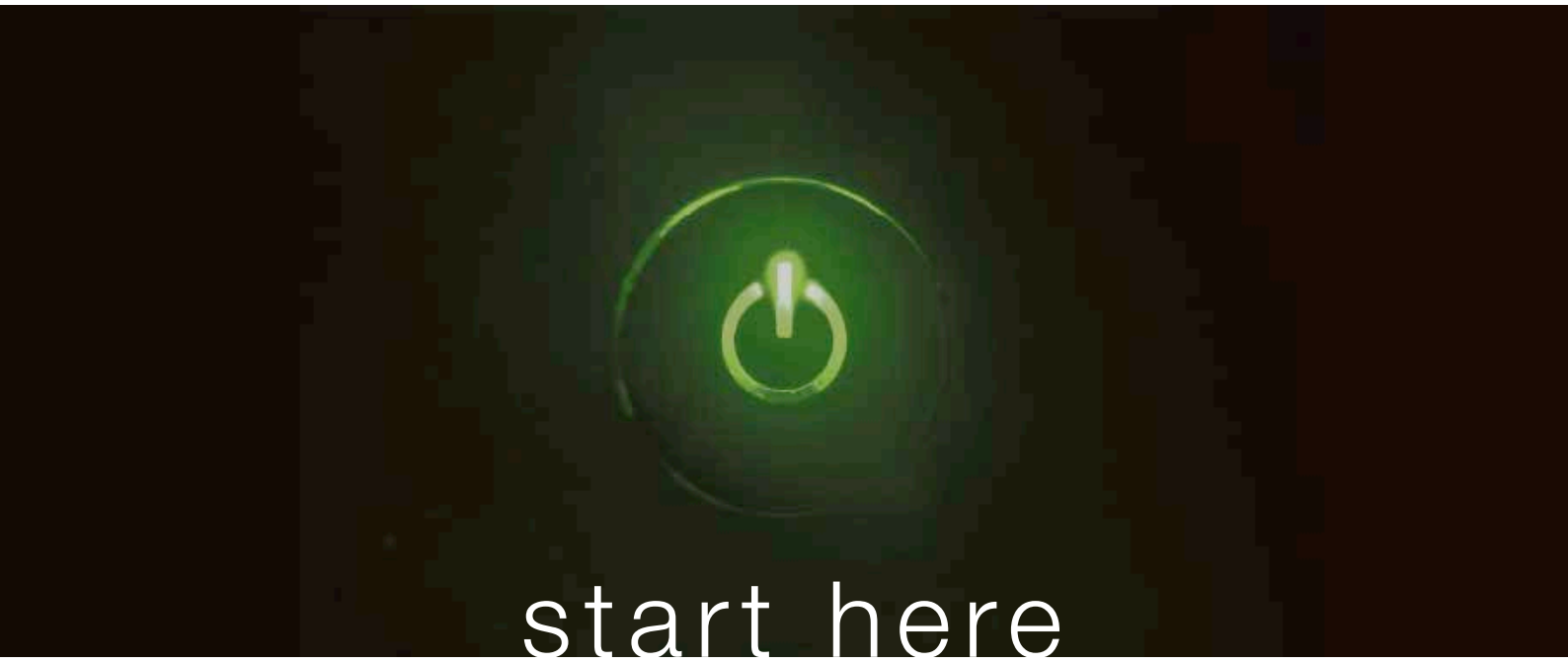
The units are equipped with inverter driven scroll compressors granting a proportional control on supplied cooling power, while the fans are matched to EC brushless type (BLDC) electric motors with built-in electronic commutation system.

These motors grant high performances with minimum energy consumption and total absence of electromagnetic noise.

The propose solution is represented by **COOLSIDE EVO DX SYSTEM** formed by:

- Indoor evaporating unit with EC plug fan available in “in row” version (for application with hot/cold aisle) or in “in rack” version for a close loop air delivery/discharge all inside the rack.
- **MCAI** motocondensing unit with inverter driven scroll compressor, EC axial fans, microchannel condensing coils.

IT cooling



NEXT EVO INV: Close control air conditioners, equipped with BLDC inverter scroll compressors.

Cooling Capacity: **7,3 ÷ 102,0 kW**

INVERTER
RC Hi-Tech

rcgroupairconditioning

MAIN FEATURES
- Direct expansion precision air conditioner.
- 13 models available, 2 versions for a wide selection opportunity.
- Modulating cooling capacity control.
- EER up to 4,74.
- BLCD inverter and on/off scroll compressors.
- Single and double refrigerant circuit.
- R410A Refrigerant charge.
- EC plug-fans.
- OVER and UNDER versions.
- Suitable for indoor installation.

MAIN BENEFITS
- Units with single and double refrigerant circuits.
- Availability of remote condensers with axial fans (TEAM MATE series) and with plug fans (TEAM MATE PF series).
- High EER.
- High efficiency at partial load.
- Availability of electric heater.
- Availability of steam humidifier.
- Availability of hot water heating coil.
- Availability of extra circuit heating coil.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

REMOTE CONDENSER
The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

WORKING LIMITS
Room air temperature:
14°C minimum temperature with wet bulb.
24°C maximum temperature with wet bulb.
35°C maximum temperature with dry bulb.

Room air humidity:
20%RH minimum relative humidity.
75%RH maximum relative humidity.

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Base in aluminium extrusion, painted with epoxy powders.
- Frame in galvanized steel sheet.
- Galvanized steel sheet panels painted with epoxy powders, internally insulated with noise absorption material and seals to ensure air tight with the panels.
  Hinged front panels with quick release removal system.
  Total front access for routine maintenance.
  Removable lateral and back side panels.
- Colour: RAL 9005 for base and frame (black)
  RAL7016 for panels (anthracite gray)
- OVER version
  - Air intake from the front through honeycomb type grille and air delivery from the top.
  - Washable air pre-filters with G2 efficiency, with cells in synthetic fibre (size E0 excluded).
- UNDER version
  Machine size E0
  - Air intake from the front through honeycomb type grille and air delivery from the bottom.

  Machine size E1, E2, E3, E4, E5, E6, E7, E8, E9
  - Air intake from the top and air delivery from the bottom.

INVERTER DRIVEN COMPRESSORS
- scroll compressor BLDC inverter with spiral profile optimized for R410A refrigerant.
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Rubber supports.
- Soundproof cap.

ON / OFF COMPRESSORS
- scroll compressors with spiral profile optimized for R410A refrigerant.
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Rubber supports.
- Soundproof cap.

FILTER SECTION
- Machine size E0
  Washable air filters with G2 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).
- Machines size E1, E2, E3, E4, E5, E6, E7, E8, E9
  Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Finned pack with hydrophilic treatment that assure the condensate water drop, high thermal conductivity and does not favour the growth of micro-organisms.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

FANS SECTION
- Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
  - Impeller in composite material, PA6 plastic reinforced with glass-fibre, exempt from rust formation.
  - Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.

  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the signal coming from the microprocessor control.
- Fans control through ModBus.
- Temperature sensors on air intake and air delivery with control, regulation and limitation functions.
- Fan guard with rubber support (UNDER version)

REFRIGERANT CIRCUIT
Components for each refrigerant circuit:
- Electronic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Liquid receiver with accessories.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge and lubricant oil type PVE (Polyvinyl ether).
- Valves on gas delivery and liquid return for coupling to remote air cooled condenser.
- 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.
- Oil separator on gas discharge.

ELECTRICAL PANEL
In accordance with EN60204-1 norms complete with:
- Main switch with door lock safety.
- Magnetothermic switches for fans.
- Magnetothermic switches for compressors.
- Contactors for each load. The inverter driven compressors and the EC fans don't require contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals:
  OUTLETS
  - Voltage free deviating contact for General Alarm 1
  - Voltage free contact for machine operating status.

  INLETS
  - Emergency unit stop with signalling on display (external alarm).
  - External enabling.
- Power supply 400/3/50+N

CONTROL SYSTEM
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Predisposition for connectivity board housing (RCcom MBUS/JBUS, LON, BACnet for Ethernet (SNMP- TCP/IP), BACnet for MS/TP).
  - Main components hour-meter.
  - Nonvolatile "Flash" memory for data storage in case of power supply faulty and for alarms status recording (2MB).
  - Menu with protection password.
  - LAN connection.

COMMON OPTIONAL ACCESSORIES

NEXT EVO INV	007 S M1	010 S M1	016 S M1	020 S M1	028 S M1	034 S M2	040 S M2	053 S M3	057 S M3	040 D M11	065 D M11	080 D M22	100 D M22
SIZE	E0	E1	E2	E3	E4	E4	E5	E5	E6	E5	E7	E8	E9
TEAM MATE remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
TEAM MATE PF remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
213 - Team Mate electrical power supply by internal unit	-	-	-	-	●	●	●	●	●	-	-	-	-
848 - Condensate discharge system (kit)	●	●	●	●	-	-	-	-	-	-	-	-	-
849 - Condensate discharge system	-	-	-	-	●	●	●	●	●	●	●	●	●
405 - Extra-Circuit system	-	●	●	●	●	●	●	●	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
812 - Floor stand Hmax=510 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
808 - Sandwich panels	●	●	●	●	●	●	●	●	●	●	●	●	●
843 - Motorized damper with frame	-	●	●	●	●	●	●	●	●	●	●	●	●
832 - Air supply plenum with F6 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
833 - Air supply plenum with F7 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
835 - Air supply plenum with F9 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
836 - Air supply plenum with sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●
945 -Air return plenum with Free Cooling damper	-	●	●	●	●	●	●	●	●	●	●	●	●
321 - Steam humidifier	●	●	●	●	●	●	●	●	●	●	●	●	●
773 - Dehumidification system	●	●	●	●	●	●	●	●	●	●	●	●	●
310 - Electric heater	●	●	●	●	●	●	●	●	●	●	●	●	●
514 - Water heater + 2 way valve	●	●	●	●	●	●	●	●	●	●	●	●	●
508 - Automatic S/W operation	●	●	●	●	●	●	●	●	●	●	●	●	●
606 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●	●
81 - Phases sequence control relay	●	●	●	●	●	●	●	●	●	●	●	●	●
204 - Pressure control under the raised floor.	●	●	●	●	●	●	●	●	●	●	●	●	●
215 - Disposal F5 efficiency air filter	-	●	●	●	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●	●
860 - T/rH sensor on air return	●	●	●	●	●	●	●	●	●	●	●	●	●
866 - T/rH external sensor	●	●	●	●	●	●	●	●	●	●	●	●	●
867 - T/rH remote sensor	●	●	●	●	●	●	●	●	●	●	●	●	●
863 - Remote terminal shared	●	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
MBUS RS485/JBUS + BACnet for Ethernet - SNMP - TCP/IP double serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
MBUS RS485/JBUS + BACnet per MS/TP double serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
958 - Temporary power microprocessor	●	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES - OVER VERSION ONLY

NEXT EVO INV	007 S M1	010 S M1	016 S M1	020 S M1	028 S M1	034 S M2	040 S M2	053 S M3	057 S M3	040 D M11	065 D M11	080 D M22	100 D M22
SIZE	E0	E1	E2	E3	E4	E4	E5	E5	E6	E5	E7	E8	E9
862 - Acoustic panel	-	●	●	●	●	●	●	●	●	●	●	●	●
830 - Air discharge plenum with grilles	●	●	●	●	●	●	●	●	●	●	●	●	●
831 - Plenum with frontal grille and sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●
807 - Blind frontal panel	-	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TO BE MATCHED WITH REMOTE CONDENSER

The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE

pg:145

TEAM MATE PF

pg:149

AN EFFICIENT ENERGY USE

The project NEXT EVO INV uses the current best technologies aimed at energy saving for an extremely efficient use of energy as scroll compressors BLDC inverter and EC supply fans. In detail:

COOLING SECTION

Units are equipped with scroll compressors BLDC inverter that allow a modulating cooling capacity.

The scroll compressor BLDC Inverter can change the load continuously and the regulation of the refrigerant circuit can be easily adapted, without oscillations and transients, to the operating conditions required.

The system is highly efficient because it is supplying only the energy necessary to satisfy the required thermal load; furthermore the system can supply cooling capacity even in case of overload conditions.

Models with double refrigerant circuit (D version) are equipped with one scroll compressor BLDC inverter for each refrigerant circuit. This solution ensures extreme precision in the delivery of the cooling capacity required, together with a drastic reduction of power input from the compressors.

The exchanger finned coils of large surface is provided with fins with hydrophilic treatment that guarantees optimum falling water of condensation, high thermal conductivity and prevents the development of micro-organisms.

Models with double refrigerant circuit (D version) are equipped with interlaced finned coil that maximizes the heat exchange in the operating condition with a single cooling circuit, cancelling the by-pass effect on the exchanger.

FAN SECTION

The Plug fans of the air handling section of the NEXT EVO INV series are directly coupled to brushless type electric motors with built-in electronic commutation system (EC) and driven by microprocessor control via MODBus; this allows a unit operation with variable air flow.

These EC electric motors ensuring high performances, minimum energy consumption and total absence of electromagnetic noise.

The management software of the machine, specifically developed by RC Group for their precision air conditioners, allowing the better management of the system machine with a modulating logic of ventilation, cooling performances and the accessory system of direct free-cooling.

CONTROL LOGIC AND OPERATION

The logic PID of the microprocessor enables simultaneous control of cooling performances as a function of air delivery temperature and the air flow as a function of air return temperature or pressure in the underfloor / duct. Are therefore possible following two control logics

LOGIC 1

Cooling performance control as a function of air delivery temperature and of the air flow as a function of the return temperature.

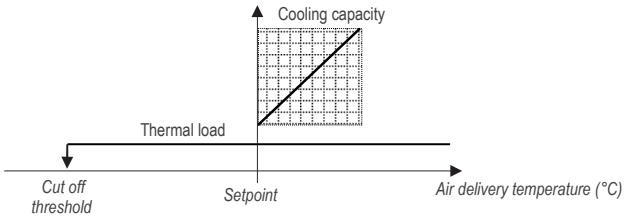
LOGIC 2

Cooling performance control as a function of the air delivery temperature and the air flow as a function of the underfloor / duct pressure.

Follow the detailed description of the control logic.

CONTROL OF THE COOLING CAPACITY ACCORDING TO AIR DELIVERY TEMPERATURE

The cooling capacity control is made on the air delivery temperature.



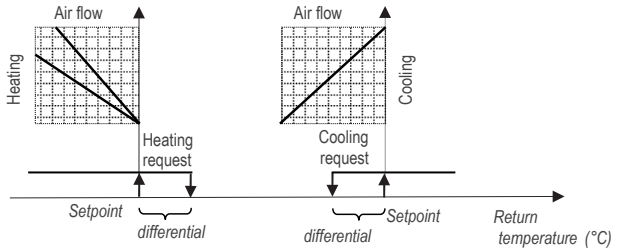
AIR FLOW CONTROL ACCORDING TO AIR RETURN TEMPERATURE

The EC plug fans modulate the air flow using as variable the distance from the temperature set point.

It's possible to define the minimum and maximum air flow through dedicated parameters in order to adjusting the operation of the unit to the needs of the plant.

In addition to the probe positioned on the machine, you can install the accessory remote probe to be placed in the environment to influence the most critical point of the system

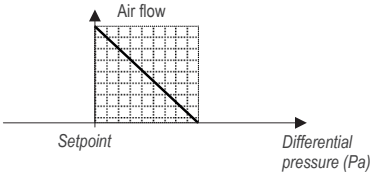
In case of no demand of cooling / heating, the control logic provides that the fans ensure a minimum air flow necessary to the probes to obtain a correct reading of the ambient temperature. Moreover in only dehumidification demand condition, the microprocessor control reduce the air flow to obtain the maximum dehumidification effect.



AIR FLOW CONTROL AS FUNCTION OF THE UNDERFLOOR OR DUCTING PRESSURE (optional accessory)

The EC plug fans modulate the air flow using as variable the distance of a signal from the set point, coming from a differential pressure transmitter (optional) with pressure outlet via plastic tubing, to install underfloor or in the duct.

It's possible to define the minimum and maximum air flow through dedicated parameters in order to adjusting the operation of the unit to the needs of the plant.



DIRECT FREE-COOLING SYSTEM (optional accessory)

The control system also manages the operation of the air conditioner equipped with a plenum for DIRECT FREE-COOLING (optional), that allows free cooling in the environment to be conditioned, directly entering outdoor air. The accessory is fully modulating and ensures a drastic reduction of power consumption of the machine, avoiding the start of the compressors.

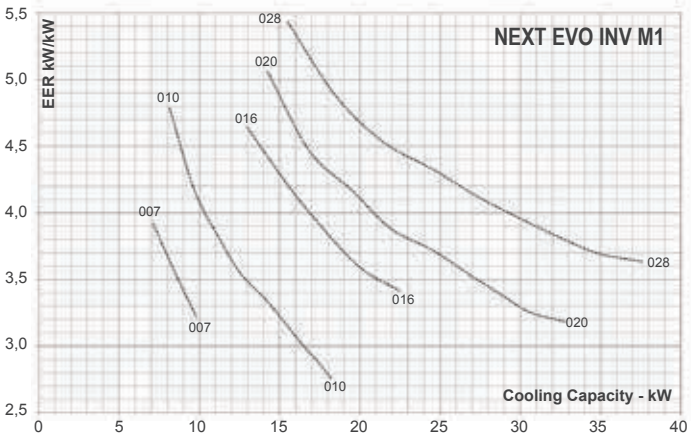
The use of this accessory includes the installation of an overpressure damper into the room to allow for the expulsion of excess air.

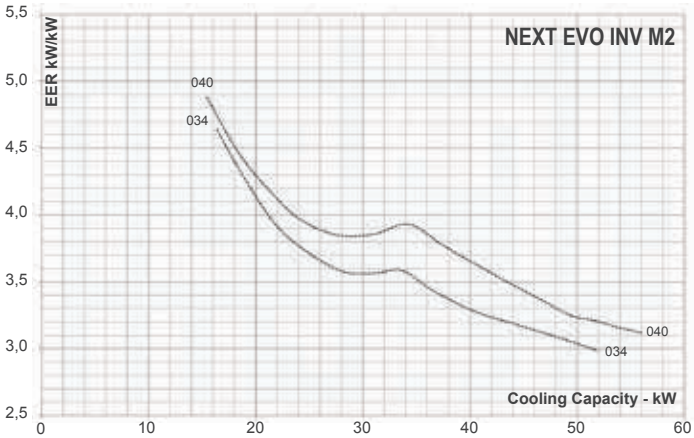
GRAPHIC FOR UNITS SELECTION

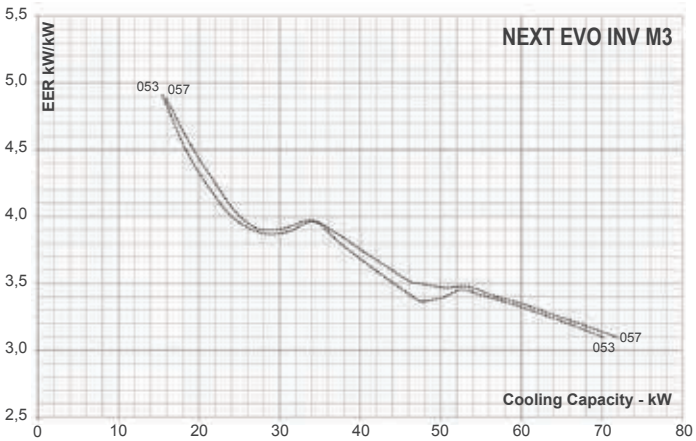
This graph allows you to select the model as a function of cooling capacity and its EER.
The EER values include the remote condenser series TEAM MATE.

Characteristic referred to entering air at 24°C-50%rH; condensing temperature 50°C

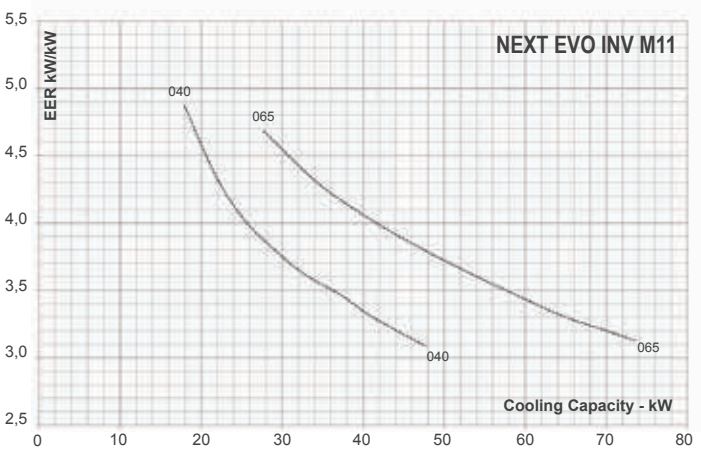
SINGLE REFRIGERANT CIRCUIT

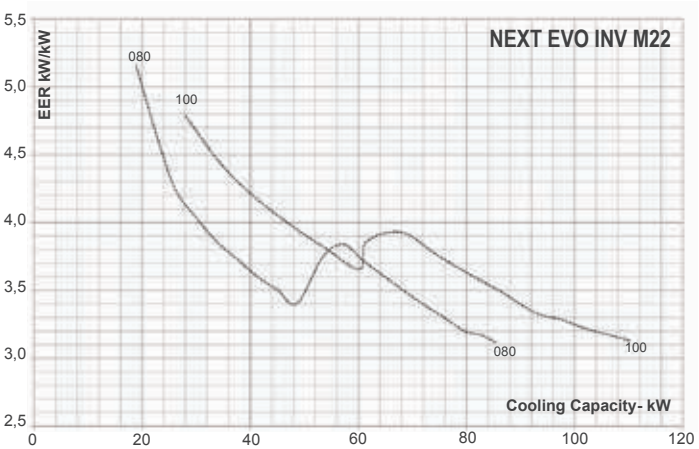






DOUBLE REFRIGERANT CIRCUIT





TECHNICAL DATA

MODEL		007 S M1			010 S M1			016 S M1			020 S M1		
SIZE		E0			E1			E2			E3		
COOLING CAPACITY (1)		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max
Total	**kW**	**7,30**	**8,52**	**9,50**	**8,73**	**11,60**	**17,30**	**13,50**	**18,00**	**21,30**	**15,20**	**22,50**	**31,00**
Sensible	**kW**	**6,46**	**7,03**	**7,57**	**8,73**	**10,30**	**13,30**	**13,40**	**16,40**	**18,10**	**15,20**	**21,30**	**26,60**
SHR	kW/kW	0,88	0,83	0,80	1,00	0,89	0,77	0,99	0,91	0,85	1,00	0,95	0,86
Unit power input Over (*)	kW	1,98	2,69	3,45	2,18	3,45	8,02	3,67	6,00	8,37	3,63	6,74	12,78
Unit power input Under (*)	kW	1,98	2,69	3,45	2,17	3,44	8,01	3,63	5,94	8,31	3,57	6,67	12,71
Supply fans	n.	1	1	1	1	1	1	1	1	1	1	1	1
Air flow	m3/h	1800	1800	1800	2700	2700	2700	4000	4475	4475	5500	6000	6600
Nominal external static pressure Over	Pa	50	50	50	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20	20	20
Fans max external static pressure	Pa	80	80	80	52	52	52	175	175	175	628	628	628
Scroll compressors													
BLCD inverter type	n.		1			1			1			1	
On/Off type	n.		--			--			--			--	
Cooling capacity control			Mod.			Mod.			Mod.			Mod.	
Air filters	n.		1			1			1			2	
Efficiency			G2			G4			G4			G4	
Refrigerant			R410A			R410A			R410A			R410A	
Refrigerant charge (2)	kg		2,5			2,8			3,1			3,7	
Gas circuits	n.		1			1			1			1	
Power supply (**)			400/3/50+N			400/3/50+N			400/3/50+N			400/3/50+N	
Max operating current (FLA) (*)	A		8,03			18,90			12,40			29,98	
Unit starting current (LRA)	A		4,23			5,20			5,70			8,18	
Energy efficiency indexes (1)													
EER (*)	kW/kW	3,69	3,17	2,75	4,00	3,36	2,16	3,68	3,00	2,54	4,19	3,34	2,43
Sound pressure level - ISO 3744 (3)													
On air delivery Over	dB(A)	51,0	51,0	51,0	58,4	58,4	58,4	61,1	63,3	63,3	61,1	62,9	64,9
On air delivery Under	dB(A)	51,0	51,0	51,0	58,2	58,2	58,2	60,6	63,0	63,0	60,8	62,6	64,7
On air intake Over	dB(A)	45,1	45,1	45,1	47,3	47,3	47,3	49,5	51,1	51,1	49,5	50,8	52,3
Irradiated Over	dB(A)	35,0	35,0	35,0	40,3	40,3	40,3	43,0	45,2	45,2	43,0	44,8	46,8
On air intake Under	dB(A)	45,1	45,1	45,1	49,9	49,9	49,9	52,3	54,5	54,5	52,4	54,2	56,1
On front side Under	dB(A)	35,0	35,0	35,0	40,5	40,5	40,5	42,9	45,1	45,1	43,0	44,8	46,7
Net weight Over	kg		170			230			270			310	
Net weight Under	kg		180			240			280			330	
Remote condenser (4)													
TEAM MATE	n. x Mod.		1xM11			1xM20			1xM25			1xM35	
Refrigerant connections													
Gas delivery	ODS Ø		12			12			16			16	
Liquid return	ODS Ø		12			12			12			16	

MODEL		028 S M1			034 S M2			040 S M2			053 S M3		
SIZE		E4			E4			E5			E5		
COOLING CAPACITY (1)		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max
Total	**kW**	**16,70**	**28,10**	**37,00**	**16,90**	**35,00**	**50,20**	**16,80**	**40,80**	**52,90**	**17,00**	**54,20**	**69,10**
Sensible	**kW**	**16,70**	**28,10**	**37,00**	**16,90**	**35,00**	**45,50**	**16,80**	**40,80**	**52,70**	**17,00**	**53,00**	**60,30**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00	0,91	1,00	1,00	1,00	1,00	0,98	0,87
Unit power input Over (*)	kW	3,80	8,18	13,74	4,03	9,96	19,54	3,71	11,94	20,22	4,13	15,93	24,43
Unit power input Under (*)	kW	3,64	7,94	13,35	3,87	9,64	19,15	3,63	11,81	20,06	4,05	15,77	24,27
Supply fans	n.	1	1	1	1	1	1	2	2	2	2	2	2
Air flow	m3/h	7500	9500	12200	7500	11000	12200	6500	12500	15500	6500	15500	15500
Nominal external static pressure Over	Pa	50	50	50	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20	20	20
Fans max external static pressure	Pa	131	131	131	258	258	258	775	775	775	520	520	520
Scroll compressors													
BLCD inverter type	n.		1			1			1			1	
On/Off type	n.		--			1			1			2	
Cooling capacity control			Mod.			Mod.			M			M	
Air filters	n.		3			3			3			3	
Efficiency			G4			G4			G4			G4	
Refrigerant			R410A			R410A			R410A			R410A	
Refrigerant charge (2)	kg		4,9			5,2			7,5			7,6	
Gas circuits	n.		1			1			1			1	
Power supply (**)			400/3/50+N			400/3/50+N			400/3/50+N			400/3/50+N	
Max operating current (FLA) (*)	A		30,80			46,00			50,06			65,96	
Unit starting current (LRA)	A		8,30			67,10			71,16			84,26	
Energy efficiency indexes (1)													
EER (*)	kW/kW	4,39	3,44	2,69	4,19	3,51	2,57	4,53	3,42	2,62	4,12	3,40	2,83
Sound pressure level - ISO 3744 (3)													
On air delivery Over	dB(A)	59,4	64,1	69,3	59,4	67,1	69,3	53,0	66,1	70,7	53,0	70,7	70,7
On air delivery Under	dB(A)	57,7	62,8	68,2	57,7	65,9	68,2	52,1	66,0	70,6	52,1	70,6	70,6
On air intake Over	dB(A)	48,5	51,7	56,2	49,6	54,5	56,3	47,8	53,7	57,6	48,7	57,7	57,7
Irradiated Over	dB(A)	41,3	46,0	51,2	41,5	49,0	51,2	37,0	48,0	52,6	37,5	52,6	52,6
On air intake Under	dB(A)	49,7	54,3	59,6	50,0	57,5	59,6	46,3	57,5	62,0	46,8	62,0	62,0
On front side Under	dB(A)	40,3	44,9	50,2	40,7	48,0	50,2	37,2	48,1	52,6	37,7	52,6	52,6
Net weight Over	kg		420			460			540			590	
Net weight Under	kg		430			470			550			600	
Remote condenser (4)													
TEAM MATE	n. x Mod.		1xM45			1xM60			1 x M 60			1 x M 95	
Refrigerant connections													
Gas delivery	ODS Ø		16			18			18			18	
Liquid return	ODS Ø		16			16			18			18	

TECHNICAL DATA

MODEL		057 S M3			040 D M11			065 D M11			080 D M22		
SIZE			E6			E5			E7			E8	
COOLING CAPACITY (1)		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max
Total	**kW**	**17,70**	**60,60**	**71,40**	**19,00**	**38,20**	**42,80**	**29,60**	**62,50**	**69,30**	**58,50**	**77,10**	**81,30**
Sensible	**kW**	**17,70**	**59,70**	**65,30**	**19,00**	**38,20**	**42,80**	**28,60**	**62,50**	**69,30**	**58,40**	**77,10**	**80,20**
SHR	kW/kW	1,00	0,99	0,91	1,00	1,00	1,00	0,97	1,00	1,00	1,00	1,00	0,99
Unit power input Over (*)	kW	4,22	18,39	24,99	4,07	14,29	18,69	6,24	21,80	27,30	15,83	27,55	30,85
Unit power input Under (*)	kW	4,13	18,21	24,81	3,99	14,16	18,54	6,14	21,58	27,07	15,65	27,30	30,60
Supply fans	n.	2	2	2	2	2	2	2	2	2	3	3	3
Air flow	m3/h	8000	18000	18000	6500	12500	14500	8000	20000	21100	17000	24200	24200
Nominal external static pressure Over	Pa	50	50	50	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20	20	20
Fans max external static pressure	Pa	511	511	511	775	775	775	375	375	375	475	475	475
Scroll compressors													
BLCD inverter type	n.		1			2			2			2	
On/Off type	n.		2			--			--			2	
Cooling capacity control			M			M			M			M	
Air filters	n.		4			3			4			5	
Efficiency			G4			G4			G4			G4	
Refrigerant			R410A			R410A			R410A			R410A	
Refrigerant charge (2)	kg		8,2			8,2			10,0			14,0	
Gas circuits	n.		1			2			2			2	
Power supply (**)			400/3/50+N			400/3/50+N			400/3/50+N			400/3/50+N	
Max operating current (FLA) (*)	A		66,46			44,36			64,20			76,94	
Unit starting current (LRA)	A		84,76			14,36			16,60			147,34	
Energy efficiency indexes (1)													
EER (*)	kW/kW	4,19	3,30	2,86	4,67	2,67	2,29	4,74	2,87	2,54	3,70	2,80	2,64
Sound pressure level - ISO 3744 (3)													
On air delivery Over	dB(A)	50,8	67,8	67,8	53,0	66,1	69,3	49,8	67,2	68,3	65,7	73,3	73,3
On air delivery Under	dB(A)	50,3	67,9	67,9	52,1	66,0	69,2	47,8	67,0	68,2	65,6	73,2	73,2
On air intake Over	dB(A)	48,5	55,3	55,3	47,4	53,6	56,3	48,4	54,7	55,7	53,8	60,1	60,1
Irradiated Over	dB(A)	36,7	49,7	49,7	36,7	48,0	51,2	36,4	49,1	50,2	47,6	55,2	55,2
On air intake Under	dB(A)	46,1	59,3	59,3	46,8	57,5	60,6	45,4	58,5	59,6	57,2	64,6	64,6
On front side Under	dB(A)	37,0	49,9	49,9	37,7	48,1	51,2	36,4	49,1	50,2	47,8	55,1	55,1
Net weight Over	kg		630			565			650			835	
Net weight Under	kg		640			575			705			895	
Remote condenser (4)													
TEAM MATE	n. x Mod.		1 x M 95			2 x M 20			2 x M 35			2 x M 45	
Refrigerant connections													
Gas delivery	ODS Ø		18			16			18			22	
Liquid return	ODS Ø		18			12			16			18	

MODEL		100 D M22		
SIZE			E9	
COOLING CAPACITY (1)		Min	Nom	Max
Total	**kW**	**69,50**	**96,80**	**102,00**
Sensible	**kW**	**68,00**	**96,10**	**99,50**
SHR	kW/kW	0,98	0,99	0,98
Unit power input Over (*)	kW	18,82	36,22	41,32
Unit power input Under (*)	kW	18,61	35,93	41,03
Supply fans	n.	3	3	3
Air flow	m3/h	20000	28680	28680
Nominal external static pressure Over	Pa	50	50	50
Nominal external static pressure Under	Pa	20	20	20
Fans max external static pressure	Pa	450	450	450
Scroll compressors				
BLCD inverter type	n.		2	
On/Off type	n.		2	
Cooling capacity control			M	
Air filters	n.		6	
Efficiency			G4	
Refrigerant			R410A	
Refrigerant charge (2)	kg		15,1	
Gas circuits	n.		2	
Power supply (**)			400/3/50+N	
Max operating current (FLA) (*)	A		99,29	
Unit starting current (LRA)	A		164,29	
Energy efficiency indexes (1)				
EER (*)	kW/kW	3,69	2,67	2,47
Sound pressure level - ISO 3744 (3)				
On air delivery Over	dB(A)	63,1	70,9	70,9
On air delivery Under	dB(A)	63,1	71,0	71,0
On air intake Over	dB(A)	52,9	58,2	58,2
Irradiated Over	dB(A)	45,1	52,8	52,8
On air intake Under	dB(A)	55,1	62,4	62,4
On front side Under	dB(A)	45,7	53,0	53,0
Net weight Over	kg		910	
Net weight Under	kg		985	
Remote condenser (4)				
TEAM MATE	n. x Mod.		2 x M 50	
Refrigerant connections				
Gas delivery	ODS Ø		22	
Liquid return	ODS Ø		18	

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. Noise level at 1 meter in free field (external static pressure at nominal conditions)
4. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser shown in the table.
(**) The remote condenser has separated power supply

TECHNICAL DATA - OPTIONAL ACCESSORIES

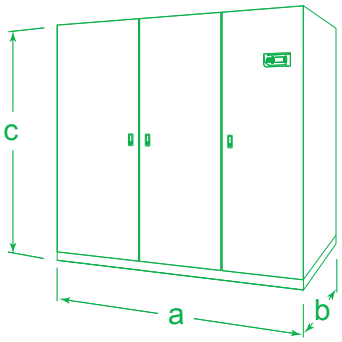
NEXT EVO INV		007 S M1	010 S M1	016 S M1	020 S M1	028 S M1	034 S M2	040 S M2	053 S M3	057 S M3	040 D M11	065 D M11	080 D M22	100 D M22
SIZE		E0	E1	E2	E3	E4	E4	E5	E5	E6	E5	E7	E8	E9
Electric heater														
Capacity	**kW**	**2,5**	**5,1**	**5,1**	**6,0**	**9,0**	**9,0**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**18,0**	**18,0**
Capacity steps	n.	1	1	1	2	3	3	3	3	3	3	3	3	3
Humidifier														
Steam capacity	kg/h	2	3	3	3	8	8	8	8	8	8	15	15	15
Power input	kW	1,4	2,3	2,3	2,3	6,0	6,0	6,0	6,0	6,0	6,0	11,3	11,3	11,3
Extra circuit coil (1)														
Total cooling capacity	**kW**	**-**	**11,0**	**18,1**	**24,7**	**39,0**	**43,3**	**55,4**	**64,2**	**69,5**	**63,3**	**94,2**	**117,0**	**135,0**
Sensible cooling capacity	**kW**	**-**	**10,0**	**16,5**	**22,4**	**35,4**	**39,4**	**49,7**	**59,0**	**63,3**	**52,5**	**80,0**	**98,3**	**115,0**
Heating coil (2)														
Heating capacity	**kW**	**12,6**	**24,1**	**36,2**	**50,5**	**81,4**	**89,8**	**109,0**	**126,0**	**148,0**	**109,0**	**160,0**	**193,0**	**232,0**

THE COOLING/HEATING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
Accessories technical data are referred to nominal conditions.

1. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7/12,5 °C and 0% glycol
2. Characteristics referred to entering air at 20°C with hot water at 75/60°C

DIMENSIONS (mm)

SIZE	a	b	c
E0	655	445	1680
E1	650	675	1925
E2	785	675	1925
E3	1085	775	1925
E4	1305	930	1980
E5	1630	930	1980
E6	1875	930	1980
E7	2175	930	1980
E8	2499	930	1980
E9	2899	930	1980



NEXT EVO CW: Close control air conditioners for chilled water feeding with upflow or downflow air delivery

Cooling Capacity: **6,2 ÷ 248,0 kW**

next evo cw

rcgroupairconditioning

CHILLED WATER | EC | UP FLOW | DOWN FLOW

MAIN FEATURES
- Chilled water feeding precision air conditioner.
- 15 models available, 6 versions for a wide selection opportunity.
- Chilled water feeding.
- Two-way chilled water valves.
- EC plug-fans.
- 4R, 6R, 8R versions, upflow (OVER) or downflow (UNDER) air delivery.
- Suitable for indoor installation.

MAIN BENEFITS
- Technical synergy with RC Group liquid chillers.
- Availability of electric heater.
- Availability of steam humidifier.
- Availability of hot water heating coil.
- Availability of extra circuit heating coil (only for 4R version).
- Availability of units with separate fan section, PLUS.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

WORKING LIMITS
Room air temperature:

14°C	minimum temperature with wet bulb.
24°C	maximum temperature with wet bulb.
35°C	maximum temperature with dry bulb.

Room air humidity:

20%RH	minimum relative humidity.
75%RH	maximum relative humidity.

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base in aluminium extrusion, painted with epoxy powders.
- Frame in galvanized steel sheet.
- Galvanized steel sheet panels painted with epoxy powders, internally insulated with noise absorption material and seals to ensure air tight with the panels.
  Hinged front panels with quick release removal system.
- Total front access for routine maintenance.
- Removable lateral and back side panels.
- Colour: RAL 9005 for base and frame (black)
  RAL7016 for panels (anthracite gray)
- OVER version
  - Air intake from the front through honeycomb type grille and air delivery from the top.
  - Washable air pre-filters with G2 efficiency, with cells in synthetic fibre (size E0 excluded).
- UNDER version
  Machine size E0:
  - Air intake from the front through honeycomb type grille and air delivery from the bottom.

  Machine size E1, E2, E3, E3P, E4, E5, E6, E7, E8, E9 and all PLUS series:
  - Air intake from the top and air delivery from the bottom.

FILTER SECTION

- Size E0:
  - Washable air filters with G2 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).
- Size E1, E2, E3, E3P, E4, E5, E6, E7, E8, E9 and all PLUS series:
  - Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

COOLING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
  The heat exchanger is available in 4R, 6R or 8R version. The choice must be made when ordering.
  The heat exchangers in 6R or 8R version are not available for size E0 units.
- 2-way motorized valve for water flow regulation with 0÷10 VDC control actuator and emergency manual control. Nominal operating pressure up to 1600 kPa and closing pressure (Δps) of 1400 kPa.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

FANS SECTION

NEXT EVO CW OVER / UNDER

The fan section is contained within the machine and includes:

- The fan section is contained within the machine and includes Centrifugal fans with backward aerofoil curved blades, single suction and without scroll housings (Plug-fans), directly coupled to electric motor.
- Brushless type synchronous EC electric motor with external rotor with integrated electronic commutated system and continuous variation of the rotation speed.
  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor through serial communication between electric motor interface and microprocessor control.
- Temperature sensors on air intake and delivery.
- Fan guard with rubber support (UNDER version)

NEXT EVO CW PLUS

The fan section is separated and is designed to be fixed under the machine.
The fan section provides the air discharge from the front and can be installed in the raised floor void or directly on the floor for downflow air delivery.
It is possible to provide the air flow towards the rear of the machine by moving the panels and the fan guard.
The fans section includes:

- Height adjusting rubber holders.
- The fan section is contained within the machine and includes Centrifugal fans with backward aerfoil curved blades, single suction and without scroll housings (Plug-fans), directly coupled to electric motor.
- Brushless type synchronous EC electric motor with external rotor with integrated electronic commutated system and continuous variation of the rotation speed.
  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor through serial communication between electric motor interface and microprocessor control.
- Temperature sensors on air intake and delivery.
- Fan guard with rubber support on air intake and delivery

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:

- Main switch with door lock safety.
- Magnetothermic switches for fans.
  Contactors for each load. The supply fans equipped with EC electric motor and don't require contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals:
  OUTLETS
  - Voltage free deviating contact for General Alarm 1
  - Voltage free contact for supply fans status.

  INLETS
  - Emergency unit stop with signalling on display (external alarm).
  - External enabling.
- Power supply 230/1/50 for size E0.
- Power supply 400/3/50+N for other size.

CONTROL SYSTEM

- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Predisposition for connectivity board housing (RCcom MBUS/JBUS, LON, BACnet for Ethernet (SNMP- TCP/IP), BACnet for MS/TP).
  - Main components hour-meter.
  - Nonvolatile "Flash" memory for data storage in case of power supply faulty and for alarms status recording (2MB).
  - Menu with protection password.
  - LAN connection.

COMMON OPTIONAL ACCESSORIES

NEXT EVO CW	006	015	023	033	050	060	082	098	116	128	148	140	160	190	240
SIZE	E0	E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9	E7 PLUS	E8 PLUS	E9 PLUS	E10 PLUS
848 - Condensate discharge system (kit)	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-
849 - Condensate discharge system	-	-	-	-	●	●	●	●	●	●	●	-	-	-	●
935 - H2O deviation valve (3 way)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●	●	●	●	●	●	●	-	-	-	-
811 - Floor stand Hmax=450 mm	●	●	●	●	●	●	●	●	●	●	●	-	-	-	-
812 - Floor stand Hmax=510 mm	●	●	●	●	●	●	●	●	●	●	●	-	-	-	-
808 - Sandwich panels	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
832 - Air supply plenum with F6 filters	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
833 - Air supply plenum with F7 filters	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
835 - Air supply plenum with F9 filters	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
843 - Motorized damper with frame	-	●	●	●	●	●	●	●	●	●	●	-	-	-	-
945 -Air return plenum with Free Cooling damper	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
321 - Steam humidifier	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
310 - Electric heater	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
204 - Pressure control under the raised floor.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
508 - Automatic S/W operation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
215 - Disposal F5 efficiency air filter	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
860 - T/rH sensor on air return	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
866 - T/rH external sensor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
867 - T/rH remote sensor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MBUS RS485/JBUS + BACnet for Ethernet - SNMP - TCP/IP double serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MBUS RS485/JBUS + BACnet per MS/TP double serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
958 - Temporary power microprocessor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
863 - Remote terminal shared	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - 4R VERSION ONLY

NEXT EVO CW	006	015	023	033	050	060	082	098	116	128	148	140	160	190	240
SIZE	E0	E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9	E7 PLUS	E8 PLUS	E9 PLUS	E10 PLUS
405 - Extra-Circuit system	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●
773 - Dehumidification system	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
514 - Water heater + 2 way valve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - OVER VERSION ONLY

NEXT EVO CW	006	015	023	033	050	060	082	098	116	128	148	140	160	190	240
SIZE	E0	E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9	E7 PLUS	E8 PLUS	E9 PLUS	E10 PLUS
862 - Acoustic panel	-	●	●	●	●	●	●	●	●	●	●	-	-	-	-
830 - Air discharge plenum with grilles	●	●	●	●	●	●	●	●	●	●	●	-	-	-	-
831 - Plenum with frontal grille and sound absorber	-	●	●	●	●	●	●	●	●	●	●	-	-	-	-
836 - Air supply plenum with sound absorber	-	●	●	●	●	●	●	●	●	●	●	-	-	-	-
807 - Blind frontal panel	-	●	●	●	●	●	●	●	●	●	●	-	-	-	-
Temperature sensor on chilled water inlet / outlet.	●	●	●	●	●	●	●	●	●	●	●	-	-	-	-

OPTIONAL ACCESSORIES - UNDER VERSION ONLY

NEXT EVO CW	006	015	023	033	050	060	082	098	116	128	148	140	160	190	240
SIZE	E0	E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9	E7 PLUS	E8 PLUS	E9 PLUS	E10 PLUS
843 - Motorized damper with frame	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Temperature probe on chilled water inlet/outlet.	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA - NEXT EVO CW - 4R VERSION

MODEL		006	015	023	033	050	060	082	098	116	128	148
SIZE		E0	E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9
VERSION		4R	4R	4R	4R	4R	4R	4R	4R	4R	4R	4R
COOLING CAPACITY (1)												
Total	**kW**	**6,2**	**11,8**	**19,1**	**27,8**	**38,8**	**49,3**	**67,7**	**73,7**	**89,3**	**106,0**	**123,0**
Sensible	**kW**	**5,8**	**10,6**	**17,4**	**25,4**	**35,2**	**44,8**	**61,1**	**66,8**	**81,5**	**95,5**	**112,0**
SHR	kW/kW	0,94	0,90	0,91	0,91	0,91	0,91	0,90	0,91	0,91	0,90	0,91
Power input Over	kW	0,10	0,30	0,73	1,05	1,41	1,90	2,54	2,80	2,94	4,09	4,66
Power input Under	kW	0,10	0,29	0,67	0,98	1,32	1,77	2,38	2,62	2,71	3,84	4,37
Supply fans	n.	1	1	1	1	1	1	2	2	2	3	3
Air flow	m^3/h	1800	2700	4475	6600	9000	12200	15500	18000	21100	24200	28680
Nominal external static pressure Over	Pa	20	30	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20	20
Max external static pressure	Pa	80	52	175	474	505	131	344	510	610	295	458
Cooling coil												
Water flow rate	m^3/h	1,1	2,0	3,3	4,8	6,7	8,5	11,6	12,6	15,3	18,2	21,1
Pressure drop - coil + valve	kPa	46	25	66	53	72	50	70	46	70	71	63
Air filters	n.	1	1	1	2	2	3	3	4	4	5	6
Efficiency		G2	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	1,23	2,20	1,70	4,18	4,80	4,30	8,36	8,86	8,60	12,54	13,29
Sound level - ISO 3744 (2)												
On air delivery Over	dB(A)	51,0	58,4	63,3	64,9	64,8	68,2	70,7	67,8	68,3	73,3	70,9
On air delivery Under	dB(A)	51,0	58,4	63,3	64,7	64,7	68,2	70,6	67,9	68,2	73,2	71,0
On air intake Over	dB(A)	39,8	44,9	49,8	51,4	51,3	54,7	57,2	54,3	54,8	59,8	57,4
Irradiated Over	dB(A)	32,9	40,3	45,2	46,8	46,7	50,1	52,6	49,7	50,2	55,2	52,8
On air intake Under	dB(A)	39,8	49,5	54,3	56,0	56,2	59,5	62,0	59,2	59,5	64,5	62,3
On front side Under	dB(A)	32,9	40,1	44,9	46,6	46,8	50,1	52,5	49,8	50,1	55,1	52,9
Net weight Over	kg	150	196	230	290	312	332	410	465	515	578	656
Net weight Under	kg	150	209	248	313	320	366	452	513	569	640	730
Connections												
Chilled water inlet/outlet	M Ø	3/4"	1"	1"	1+1/4"	1+1/4"	1+1/2"	2"	2"	2+1/2"	2+1/2"	3"

TECHNICAL DATA - NEXT EVO CW - 6R VERSION

MODEL		015	023	033	050	060	082	098	116	128	148
SIZE		E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9
VERSION		6R	6R	6R	6R	6R	6R	6R	6R	6R	6R
COOLING CAPACITY (1)											
Total	**kW**	**15,2**	**23,3**	**34,1**	**50,0**	**60,9**	**82,8**	**98,9**	**110,0**	**130,0**	**151,0**
Sensible	**kW**	**12,4**	**19,7**	**28,8**	**41,1**	**52,2**	**69,2**	**81,7**	**92,8**	**109,0**	**127,0**
SHR	kW/kW	0,82	0,85	0,84	0,82	0,86	0,84	0,83	0,84	0,84	0,84
Power input Over	kW	0,35	0,86	1,23	1,61	2,25	2,94	3,25	3,53	4,70	5,37
Power input Under	kW	0,34	0,80	1,15	1,52	2,11	2,78	3,06	3,29	4,44	5,07
Supply fans	n.	1	1	1	1	1	2	2	2	3	3
Air flow	m^3/h	2700	4475	6600	9000	12200	15500	18000	21100	24200	28680
Nominal external static pressure Over	Pa	30	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20
Max external static pressure	Pa	32	104	554	440	140	447	439	250	403	386
Cooling coil											
Water flow rate	m^3/h	2,6	4,0	5,8	8,6	10,4	14,2	17,0	18,9	22,4	25,9
Pressure drop - coil + valve	kPa	35	65	56	68	58	65	70	45	66	66
Air filters	n.										
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	2,20	1,70	4,18	4,80	4,30	8,36	8,86	8,60	12,54	13,29
Sound level - ISO 3744 (2)											
On air delivery Over	dB(A)	59,2	64,2	65,4	64,9	68,4	71,0	67,9	68,8	73,5	70,9
On air delivery Under	dB(A)	59,0	63,8	65,2	64,8	68,3	70,8	67,9	68,6	73,4	70,9
On air intake Over	dB(A)	45,7	50,7	51,9	51,4	54,9	57,5	54,4	55,3	60	57,4
Irradiated Over	dB(A)	41,1	46,1	47,3	46,8	50,3	52,9	49,8	50,7	55,4	52,8
On air intake Under	dB(A)	50,3	55,2	56,5	56,2	59,7	62,2	59,2	59,9	64,7	62,3
On front side Under	dB(A)	40,9	45,7	47,1	46,8	50,2	52,7	49,8	50,5	55,3	52,8
Net weight Over	kg	196	230	290	332	332	410	465	515	578	656
Net weight Under	kg	209	248	313	340	366	452	513	569	640	730
Connections											
Chilled water inlet/outlet	M Ø	1"	1+1/4"	1+1/2"	1+1/4"	2"	2"	2+1/2"	2+1/2"	3"	3"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH with chilled water temperature 7-12°C - 0% glycol.
2. Noise level at 1 meter in free field.

TECHNICAL DATA - NEXT EVO CW - 8R VERSION

MODEL		015	023	033	050	060	082	098	116	128	148
SIZE		E1	E2	E3	E3P	E4	E5	E6	E7	E8	E9
VERSION		8R	8R	8R	8R	8R	8R	8R	8R	8R	8R
COOLING CAPACITY (1)											
Total	**kW**	**10,5**	**16,8**	**25,2**	**35,9**	**44,2**	**60,7**	**71,6**	**81,4**	**95,1**	**108,0**
Sensible	**kW**	**9,7**	**16,1**	**23,9**	**33,2**	**42,3**	**56,8**	**66,3**	**76,8**	**88,8**	**103,0**
SHR	kW/kW	0,92	0,96	0,95	0,92	0,96	0,94	0,93	0,94	0,93	0,95
Power input Over	kW	0,35	0,97	1,41	1,81	2,27	3,35	3,71	4,16	5,32	6,09
Power input Under	kW	0,34	0,94	1,33	1,71	2,13	3,18	3,51	3,90	5,05	5,78
Supply fans	n.	1	1	1	1	1	2	2	2	3	3
Air flow	m3/h	2575	4450	6600	9000	11700	15500	18000	21100	24200	28680
Nominal external static pressure Over	Pa	30	50	50	50	50	50	50	50	50	50
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20
Max external static pressure	Pa	30	50	485	380	135	375	368	175	330	315
Cooling coil											
Water flow rate	m^3/h	1,8	2,9	4,3	6,2	7,6	10,4	12,3	14,0	16,3	18,5
Pressure drop - coil + valve	kPa	18	27	26	28	28	29	27	20	29	28
Air filters	n.										
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	2,20	1,70	4,18	4,80	4,30	8,36	8,86	8,60	12,54	13,29
Sound level - ISO 3744 (2)											
On air delivery Over	dB(A)	59,1	64,9	66,0	65,1	67,8	71,3	68,1	69,4	73,8	71,0
On air delivery Under	dB(A)	58,9	64,8	65,8	61,0	67,7	71,2	68,0	69,1	73,6	71,0
On air intake Over	dB(A)	45,6	51,4	52,5	51,6	54,3	57,8	54,6	55,9	60,3	57,5
Irradiated Over	dB(A)	41,0	46,8	47,9	47,0	49,7	53,2	50,0	51,3	55,7	52,9
On air intake Under	dB(A)	50,2	56,1	57,1	56,3	59,0	62,5	59,4	60,5	65,0	62,3
On front side Under	dB(A)	40,8	46,7	47,7	46,9	49,6	53,1	49,9	51,0	55,5	52,9
Net weight Over	kg	214	252	321	352	385	475	542	602	680	780
Net weight Under	kg	218	258	330	360	393	485	552	612	692	794
Connections											
Chilled water inlet/outlet	M Ø	1"	1+1/4"	1+1/2"	1+1/2"	2"	2"	2+1/2"	2+1/2"	3"	3"

TECHNICAL DATA - NEXT EVO CW PLUS

MODEL		140	160	190	240	140	160	190	240	140	160	190	240
SIZE		E7	E8	E9	E10	E7	E8	E9	E10	E7	E8	E9	E10
		PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS
VERSION		4R	4R	4R	4R	6R	6R	6R	6R	8R	8R	8R	8R
COOLING CAPACITY (1)		(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)				
Total	**kW**	**114,0**	**136,0**	**157,0**	**202,0**	**141,0**	**167,0**	**193,0**	**248,0**	**104,0**	**122,0**	**139,0**	**180,0**
Sensible	**kW**	**104,0**	**122,0**	**143,0**	**181,0**	**119,0**	**139,0**	**162,0**	**206,0**	**98,3**	**114,0**	**130,0**	**167,0**
SHR	kW/kW	0,91	0,90	0,91	0,90	0,84	0,83	0,84	0,83	0,95	0,93	0,94	0,93
Power input Under	kW	4,68	4,96	5,08	6,01	5,43	5,78	6,00	7,28	6,21	6,54	6,37	8,55
Supply fans	n.	3	3	3	4	3	3	3	4	3	3	3	4
Air flow	m^3/h	27000	30950	36700	45500	27000	30950	36700	45500	27000	30950	35600	45500
Nominal external static pressure Under	Pa	20	20	20	20	20	20	20	20	20	20	20	20
Max external static pressure	Pa	330	382	237	285	248	303	165	208	164	232	135	135
Cooling coil													
Water flow rate	m^3/h	19,6	23,3	27,0	34,6	24,2	28,6	33,1	42,5	17,9	20,9	23,8	30,9
Pressure drop - coil + valve	kPa	56	84	80	83	59	86	41	73	28	39	17	30
Air filters	n.	8	10	12	12	8	10	12	12	8	10	12	12
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	12,54	13,29	12,90	17,20	12,54	13,29	12,90	17,20	12,54	13,29	12,90	17,20
Sound level - ISO 3744 (2)													
On air delivery Under	dB(A)	75,5	72,8	73,0	72,7	75,6	72,6	73,1	72,9	75,8	72,6	72,7	73,3
On air intake Under	dB(A)	66,8	64,1	64,4	64,1	66,9	63,9	64,4	64,3	67,1	63,9	64,0	64,7
On front side Under	dB(A)	57,4	54,7	54,9	54,6	57,5	54,5	55,0	54,8	57,7	54,5	54,6	55,2
Net weight Under	kg	495	555	635	755	495	555	635	755	550	620	710	850
Net weight - Separate fan section	kg	200	240	275	348	200	240	275	348	200	240	275	348
Connections													
Chilled water inlet/outlet	M Ø	2+1/2"	3"	3"	3"	2+1/2"	3"	3"	3"	2+1/2"	3"	3"	3"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH with chilled water temperature 10-15°C - 0% glycol.

(*). Characteristics referred to entering air at 24°C-50%RH with chilled water temperature 7-12°C - 0% glycol.

2. Noise level at 1 meter in free field.

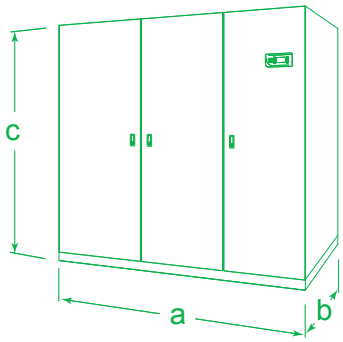
TECHNICAL DATA - OPTIONAL ACCESSORIES

NEXT EVO CW		006	015	023	033	050	060	082	098	116	128	148	140	160	190	240
SIZE		E0 -	E1 -	E2 -	E3 -	E3P -	E4 -	E5 -	E6 -	E7 -	E8 -	E9 -	E7 PLUS	E8 PLUS	E9 PLUS	E10 PLUS
Electric heater																
Capacity	**kW**	**2,6**	**5,1**	**5,1**	**6,0**	**6,0**	**9,0**	**13,5**	**13,5**	**13,5**	**18,0**	**18,0**	**18,0**	**18,0**	**27,0**	**27,0**
Capacity steps	n.	1	1	1	2	2	3	3	3	3	3	3	3	3	3	3
Humidifier																
Steam capacity	kg/h	2	3	3	3	3	8	8	8	15	15	15	15	15	15	15
Power input	kW	1,4	2,3	2,3	2,3	2,3	6,0	6,0	6,0	11,3	11,3	11,3	11,3	11,3	11,3	11,3
Extra circuit coil (1)																
Total cooling capacity	**kW**	**-**	**11,0**	**18,1**	**26,4**	**36,8**	**46,5**	**64,2**	**69,5**	**84,7**	**101,0**	**117,0**	**109,0**	**129,0**	**150,0**	**193,0**
Sensible cooling capacity	**kW**	**-**	**10,0**	**16,5**	**24,0**	**33,4**	**42,5**	**59,0**	**63,3**	**76,9**	**92,6**	**106,0**	**98,8**	**118,0**	**136,0**	**176,0**
Heating coil (2)																
Heating capacity	**kW**	**12,6**	**24,1**	**36,2**	**53,8**	**75,3**	**95,1**	**126,0**	**148,0**	**166,0**	**193,0**	**232,0**	**212,0**	**247,0**	**297,0**	**-**

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7-12,5 °C and 0% glycol
2. Characteristics referred to entering air at 20°C with hot water at 75-60°C

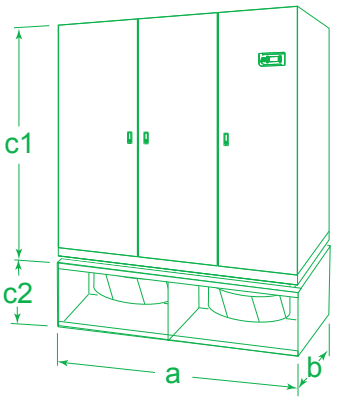
NEXT EVO CW DIMENSIONS (mm)

SIZE	a	b	c
E0	655	445	1680
E1	650	675	1925
E2	785	675	1925
E3	1085	775	1925
E4	1305	930	1980
E5	1630	930	1980
E6	1875	930	1980
E7	2175	930	1980
E8	2499	930	1980
E9	2899	930	1980



NEXT EVO CW PLUS DIMENSIONS (mm)

SIZE	a	b	c1	c2
E7 PLUS	2175	930	1980	600
E8 PLUS	2499	930	1980	600
E9 PLUS	2899	930	1980	600
E10 PLUS	3510	930	1980	600



NEXT DX: Direct expansion close control air conditioners equipped with scroll compressors and Plug-fans.

Cooling Capacity: **6,4 ÷ 97,4 kW**

rcgroupairconditioning

R410A EC AC UP FLOW DOWN FLOW

MAIN FEATURES
- Precision air conditioner.
- 44 models available, 2 versions for a wide selection opportunity.
- EER up to 3,37.
- On/off scroll compressors.
- Single and double refrigerant circuit.
- R410A Refrigerant charge.
- EC plug-fans (size H0, H1, H2, H3).
- AC plug-fans (size H4, H5, H6, H7).
- OVER and UNDER versions.
- Suitable for indoor installation.

MAIN BENEFITS
- Units with single and double refrigerant circuits.
- Availability of remote condensers with axial fans (TEAM MATE series) and with plug fans (TEAM MATE PF series).
- High EER.
- High efficiency at partial load.
- Availability of electric heater.
- Availability of steam humidifier.
- Availability of hot water heating coil.
- Availability of extra circuit heating coil.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

REMOTE CONDENSER
The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

WORKING LIMITS
Room air temperature:

14°C	minimum temperature with wet bulb.
24°C	maximum temperature with wet bulb.
35°C	maximum temperature with dry bulb.

Room air humidity:

20%RH	minimum relative humidity.
75%RH	maximum relative humidity.

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base in aluminium extrusion, painted with epoxy powders.
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals to ensure air tight with the panels.
- Galvanized steel sheet panels externally coated with PVC film and internally insulated with noise absorption material.

The panels are fixed to the frame with non visible mounting system.

- Electric board in separate technical compartment on the machine front (Size H0, H1, H2, H3).
- Separate technical compartment on machine front for electric board, refrigerant and hydraulic connections and control and regulation devices (size H4, H5, H6, H7)
- Colour: RAL 9005 for base and frame
  Similar to RAL7015 for panels, with hammered finish
- OVER version
  - Air intake from the front through honeycomb type grille and air delivery from the top.
  - Washable air pre-filters with G2 efficiency, with cells in synthetic fibre (size H0 excluded).
- UNDER version
  Machine size H0
  - Air intake from the front through honeycomb type grille and air delivery from the bottom.

  Machine size H1, H2, H3, H4, H5, H6, H7
  - Air intake from the top and air delivery from the bottom.

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

FILTER SECTION

- Size H0
  Washable air filters with G3 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).
- Size H1, H2, H3, H4, H5, H6, H7
  Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
  - With single refrigerant circuit for S version machines.
  - With double refrigerant circuit for DC version machines.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
  - Size H0, H1, H2, H3:
    Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.
    The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
  - Size H4, H5, H6, H7:
    Fans with AC type electric motor fed through an autotransformer that allows the manual selection of 7 rotation speed.
- Temperature sensors on air intake.
- Fan guard with rubber support (UNDER version)

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Liquid receiver with accessories.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.
- Valves on gas delivery and liquid return for coupling to remote air cooled condenser.
- 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:

- Main switch with door lock safety.
- Magnetothermic switch for each compressor.
- Magnetothermic switches for fans.
- Contactors for each load.
  The supply fans equipped with EC electric motor are not supplied with contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply:
  - 230/1/50 for model 006 P1 S H0.
  - 400/3/50 for the other models.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

TO BE MATCHED WITH REMOTE CONDENSER

The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE

pg:145

TEAM MATE PF

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COMMON OPTIONAL ACCESSORIES

SIZE	H0	H1	H2	H3	H4	H5	H5	H5	H5	H6	H6	H7	H7
VERSION	S	S	S	S	S	S	S	S	DC	S	DC	S	DC
TEAM MATE remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
TEAM MATE PF remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
213 -TEAM MATE electrical power supply by internal unit	●	●	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	-	-	-	-	●	●	●	●	●	●	●	●	●
220 - Electronic expansion valve	●	●	●	●	●	●	●	●	●	●	●	●	●
260 - Liquid solenoid valve	●	●	●	●	●	●	●	●	●	●	●	●	●
321 - Steam humidifier	●	●	●	●	●	●	●	●	●	●	●	●	●
322 - Dehumidification system	●	●	●	●	●	●	●	●	●	●	●	●	●
405 - Extra-Circuit system	-	●	●	●	●	●	●	●	●	●	●	●	●
310 - Electric heater	●	●	●	●	●	●	●	●	●	●	●	●	●
505 - ON-OFF Hot gas reh.system	-	●	●	●	●	●	●	●	●	●	●	●	●
509 - Hot water heating coil + 3 way valve	●	●	●	●	●	●	●	●	●	●	●	●	●
211 - Capacity control	●	●	●	●	●	●	●	●	●	-	●	-	●
606 - Compr. power factor capacitor - 0,9	-	●	●	●	●	●	●	●	●	●	●	●	●
865 - Phase control relay	-	●	●	●	●	●	●	●	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●	●	●	●	●	●	●	●	●
215 - Disposal F5 efficiency air filter	-	●	●	●	●	●	●	●	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
812 - Floor stand Hmax=510 mm	-	●	●	●	●	●	●	●	●	●	●	●	●
849 - Condensate discharge system	-	-	-	-	●	●	●	●	●	●	●	●	●
848 - Condensate discharge system (kit)	●	●	●	●	-	-	-	-	-	-	-	-	-
808 - Sandwich panels	-	●	●	●	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
910 - Air flow loss alarm	-	-	-	-	●	●	●	●	●	●	●	●	●
912 - Air flow loss alarm EC Fan	●	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●	●
904 - Temperature/Humidity sensor on delivery	●	●	●	●	●	●	●	●	●	●	●	●	●
906 - Outlet air temperature indication	●	●	●	●	●	●	●	●	●	●	●	●	●
843 - Motorized damper with frame	-	●	●	●	●	●	●	●	●	●	●	●	●
832 - Air supply plenum with F6 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
833 - Air supply plenum with F7 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
835 - Air supply plenum with F9 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
836 - Air supply plenum with sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●
945 -Air return plenum with Free Cooling damper	-	●	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●	●	●
907 - Current indication	●	●	●	●	●	●	●	●	●	●	●	●	●
908 - Voltage indication	●	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●	●	●
922 - Driver card	●	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - OVER VERSION ONLY

SIZE	H0	H1	H2	H3	H4	H5	H5	H5	H5	H6	H6	H7	H7
VERSION	S	S	S	S	S	S	S	S	DC	S	DC	S	DC
807 - Blind frontal panel	-	●	●	●	●	●	●	●	●	●	●	●	●
805 - Bottom panel	-	●	●	●	●	●	●	●	●	●	●	●	●
830 - Air discharge plenum with grilles	●	●	●	●	●	●	●	●	●	●	●	●	●
831 - Plenum with frontal grille and sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA

MODEL		006 P1 S	008 P1 S	010 P1 S	007 P1 S	009 P1 S	011 P1 S	013 P1 S	014.P1 S	015.P1 S	017.P1 S	019.P1 S
SIZE		H0	H0	H0	H1	H1	H1	H1	H2	H2	H2	H3
COOLING CAPACITY (1)												
Total	**kW**	**6,4**	**7,4**	**8,8**	**7,1**	**8,2**	**9,7**	**10,8**	**11,7**	**14,0**	**16,4**	**17,4**
Sensible	**kW**	**5,6**	**6,4**	**7,3**	**6,7**	**7,8**	**9,1**	**9,5**	**11,2**	**13,3**	**14,6**	**16,6**
SHR	kW/kW	0,88	0,86	0,83	0,95	0,95	0,94	0,88	0,96	0,95	0,89	0,95
Unit power input (*)	kW	2,1	2,4	3,1	2,1	2,6	3,1	3,6	3,7	4,5	5,2	5,3
Supply fans	n.	1	1	1	1	1	1	1	1	1	1	1
Air flow	m^3/h	1580	1800	2000	2273	2653	2653	2653	3955	3955	3955	5460
Nominal external static pressure	Pa	30	30	30	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	186	110	32	215	118	118	118	282	282	282	600
Compressors												
Quantity	n.	1	1	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	1
Air filters	n.	1	1	1	1	1	1	1	1	1	1	2
Efficiency		G3	G3	G3	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	2,3	2,3	2,3	4,5	4,5	4,5	4,5	5,4	5,4	5,4	6,8
Gas circuits	n.	1	1	1	1	1	1	1	1	1	1	1
Power supply (**)		230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	15,3	8,5	9,5	8,1	9,4	10,4	11,4	11,1	13,4	15,5	19,0
Unit starting current (LRA)	A	61,3	39,3	47,3	30,2	40,2	48,2	45,2	44,9	53,9	65,9	68,3
Energy efficiency indexes (1)												
EER (*)	kW/kW	3,10	3,05	2,88	3,34	3,11	3,17	3,03	3,13	3,08	3,16	3,27
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	55,7	58,3	60,4	56,7	59,7	59,7	59,7	64,7	64,7	64,7	65,2
On air intake Over	dB(A)	50,7	52,5	54,6	49,7	50,6	51,9	51,9	53,9	53,9	55,5	55,7
Irradiated Over	dB(A)	39,5	41,5	43,6	39,7	41,9	42,4	42,4	46,6	46,6	46,8	47,2
On air intake Under	dB(A)	50,7	52,5	54,6	49,7	51,9	51,9	52,4	56,5	56,5	56,9	57,3
On front side Under	dB(A)	50,7	50,7	50,7	40,4	42,6	42,6	43,1	47,1	47,1	47,6	48,0
Net weight Over	kg	160	160	160	186	189	190	191	244	246	247	303
Net weight Under	kg	160	160	160	192	196	197	198	254	256	258	314
Remote condenser (4)	n.	1	1	1	1	1	1	1	1	1	1	1
TEAM MATE	Mod.	M 11	M 11	M 11	M 11	M 11	M 14	M 14	M 14	M 17	M 20	M 25
Refrigerant connections												
Gas delivery	ODS Ø	12	12	12	12	12	12	12	16	16	16	16
Liquid return	ODS Ø	12	12	12	12	12	12	12	12	12	12	16

MODEL		021.P1 S	023.P1 S	025.P1 S	029.P1 S	033.P1 S	038.P1 S	040.P1 S	045.P1 S	049.P1 S	026.P2 DC	028.P2 DC
SIZE		H3	H3	H4	H4	H4	H5	H5	H5	H5	H5	H5
COOLING CAPACITY (1)												
Total	**kW**	**19,0**	**21,7**	**24,5**	**27,7**	**32,8**	**34,5**	**37,1**	**40,9**	**47,4**	**22,9**	**29,7**
Sensible	**kW**	**18,2**	**19,4**	**23,4**	**25,7**	**28,3**	**32,9**	**35,3**	**36,9**	**38,6**	**21,6**	**28,4**
SHR	kW/kW	0,96	0,89	0,96	0,93	0,86	0,95	0,95	0,90	0,81	0,94	0,96
Unit power input (*)	kW	6,3	6,8	8,1	8,9	10,1	11,0	12,3	13,5	15,7	7,7	10,3
Supply fans	n.	1	1	1	1	1	1	1	1	1	1	1
Air flow	m^3/h	5460	5460	7160	7440	7440	10440	10440	10440	10440	7110	10440
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	600	600	95	50	50	136	136	136	136	172	136
Compressors												
Quantity	n.	1	1	1	1	1	1	1	1	1	2	2
Capacity steps	n.	1	1	1	1	1	1	1	1	1	2	2
Air filters	n.	2	2	2	2	2	2	2	2	2	2	2
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	6,8	6,8	8,3	8,3	8,3	14	14,1	14,2	14,3	8,8	9,1
Gas circuits	n.	1	1	1	1	1	1	1	1	1	2	2
Power supply (**)		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	22,2	22,2	21,5	26,4	28,1	29,8	32,8	40,9	43,9	19,8	26,6
Unit starting current (LRA)	A	79,3	105,3	97,6	113,5	120,5	122,2	122,2	144,2	178,2	53,6	66,2
Energy efficiency indexes (1)												
EER (*)	kW/kW	3,00	3,20	3,02	3,12	3,26	3,15	3,01	3,04	3,01	2,97	2,87
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	65,2	65,2	69,2	72,2	72,2	74,9	74,9	74,9	74,9	69,1	74,9
On air intake Over	dB(A)	58,4	56,3	58,1	60,7	60,7	62,6	62,9	63,2	63,5	57,7	62,6
Irradiated Over	dB(A)	48,2	47,4	51,1	54,1	54,1	56,8	56,8	56,8	56,8	51,0	56,8
On air intake Under	dB(A)	58,2	57,5	61,0	62,6	62,6	66,4	66,5	66,5	67,2	61,1	66,5
On front side Under	dB(A)	49,0	48,2	51,6	53,3	53,3	57,0	57,1	57,2	57,8	51,8	57,0
Net weight Over	kg	306	307	421	421	422	476	476	476	484	455	457
Net weight Under	kg	317	318	441	441	442	492	492	492	500	471	473
Remote condenser (4)	n.	1	1	1	1	1	1	1	1	1	2	2
TEAM MATE	Mod.	M 25	M 30	M 30	M 35	M 45	M 45	M 45	M 50	M 60	M 14	M 20
Refrigerant connections												
Gas delivery	ODS Ø	16	16	22	22	22	22	22	22	22	2x16	2x16
Liquid return	ODS Ø	16	16	16	16	16	22	22	22	22	2x12	2x12

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser shown in the table.
(**) The remote condenser has separated power supply

TECHNICAL DATA

MODEL		032.P2 S	032.P2 DC	036.P2 S	036.P2 DC	042.P2 S	042.P2 DC	048.P2 S	048.P2 DC	052.P2 S	052.P2 DC	060.P2 S
SIZE		H5	H5	H5	H5	H6	H6	H6	H6	H6	H6	H6
COOLING CAPACITY (1)												
Total	**kW**	**32,9**	**32,3**	**38,2**	**37,6**	**40,5**	**39,8**	**44,8**	**45,9**	**49,3**	**49,6**	**56,7**
Sensible	**kW**	**31,4**	**30,9**	**35,8**	**35,6**	**38,7**	**38,1**	**41,0**	**41,4**	**46,9**	**47,0**	**51,7**
SHR	kW/kW	0,95	0,96	0,94	0,95	0,96	0,96	0,92	0,90	0,95	0,95	0,91
Unit power input (*)	kW	11,2	11,6	13,1	13,4	13,0	13,4	14,9	14,3	16,2	16,1	17,9
Supply fans	n.	1	1	1	1	2	2	2	2	2	2	2
Air flow	m³/h	10440	10440	10440	10440	11310	11310	11310	11310	13480	13480	14500
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	136	136	136	136	313	313	313	313	170	170	94
Compressors												
Quantity	n.	2	2	2	2	2	2	2	2	2	2	2
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2
Air filters	n.	2	2	2	2	3	3	3	3	3	3	3
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	9,6	9,6	9,8	9,8	18,4	18,4	18,4	18,4	18,9	18,9	19,2
Gas circuits	n.	1	2	1	2	1	2	1	2	1	2	1
Power supply (**)		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	31,4	29,6	39,9	37,1	40,9	38,1	40,9	38,1	42,9	40,1	52,9
Unit starting current (LRA)	A	80,2	80,2	94,2	94,2	95,2	95,2	121,2	121,2	116,2	116,2	137,2
Energy efficiency indexes (1)												
EER (*)	kW/kW	2,93	2,79	2,91	2,80	3,11	2,97	3,00	3,21	3,05	3,09	3,17
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	74,9	74,9	74,9	74,9	67,3	67,3	67,3	67,3	70,8	70,8	72,5
On air intake Over	dB(A)	62,6	62,6	64,0	64,0	61,3	61,3	59,0	59,0	60,3	60,3	62,2
Irradiated Over	dB(A)	56,8	56,8	57,0	57,0	52,4	52,4	50,7	50,7	53,0	53,0	54,8
On air intake Under	dB(A)	66,6	66,6	67,1	67,1	62,0	62,0	60,6	60,6	63,1	63,1	66,6
On front side Under	dB(A)	57,2	57,2	57,8	57,8	53,0	53,0	51,5	51,5	53,9	53,9	57,3
Net weight Over	kg	457	457	460	460	563	563	565	565	668	668	668
Net weight Under	kg	473	473	476	476	589	589	591	591	694	694	694
Remote condenser (4)	n.	1	2	1	2	1	2	1	2	1	2	1
TEAM MATE	Mod.	M 45	M 20	M 50	M 25	M 50	M 25	M 50	M 30	M 60	M 30	M 70
Refrigerant connections												
Gas delivery	ODS Ø	22	2x16	22	2x16	22	2x16	22	2x16	28	2x22	28
Liquid return	ODS Ø	16	2x12	16	2x12	22	2x16	22	2x16	22	2x16	22

MODEL		060.P2 DC	064.P2 S	064.P2 DC	072.P2 S	072.P2 DC	082.P2 S	082.P2 DC	092.P2 S	092.P2 DC	100.P2 S	100.P2 DC
SIZE		H6	H6	H6	H7	H7	H7	H7	H7	H7	H7	H7
COOLING CAPACITY (1)												
Total	**kW**	**56,8**	**58,8**	**58,9**	**70,6**	**70,1**	**77,8**	**79,2**	**86,1**	**86,2**	**98,3**	**97,4**
Sensible	**kW**	**51,7**	**56,1**	**56,2**	**65,1**	**64,9**	**74,2**	**74,9**	**79,9**	**79,9**	**81,1**	**80,8**
SHR	kW/kW	0,91	0,95	0,95	0,92	0,93	0,95	0,95	0,93	0,93	0,83	0,83
Unit power input (*)	kW	17,8	18,0	17,9	20,9	21,1	24,5	24,5	26,7	27,2	31,2	31,6
Supply fans	n.	2	2	2	2	2	2	2	2	2	2	2
Air flow	m³/h	14500	16000	16000	17610	17610	20870	20870	22040	22040	22040	22040
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	94	50	50	346	346	136	136	50	50	50	50
Compressors												
Quantity	n.	2	2	2	2	2	2	2	2	2	2	2
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2
Air filters	n.	3	3	3	4	4	4	4	4	4	4	4
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	19,2	19,8	19,8	26,1	26,1	26,1	26,1	26,1	26,1	26,3	26,3
Gas circuits	n.	2	1	2	1	2	1	2	1	2	1	2
Power supply (**)		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	50,1	52,9	50,1	60,9	56,0	66,9	64,1	78,9	76,1	87,8	82,1
Unit starting current (LRA)	A	137,2	137,2	137,2	148,4	148,4	151,4	151,4	179,4	179,4	216,4	216,4
Energy efficiency indexes (1)												
EER (*)	kW/kW	3,19	3,26	3,29	3,37	3,33	3,17	3,23	3,22	3,17	3,15	3,08
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	72,5	75,4	75,4	73,1	73,1	77,9	77,9	79,7	79,7	79,7	79,7
On air intake Over	dB(A)	62,2	63,8	63,8	62,5	62,5	65,9	65,9	67,5	67,5	67,7	67,7
Irradiated Over	dB(A)	54,8	57,3	57,3	55,3	55,3	59,8	59,8	61,6	61,6	61,6	61,6
On air intake Under	dB(A)	66,6	67,3	67,3	65,4	65,4	69,7	69,7	71,4	71,4	71,5	71,5
On front side Under	dB(A)	57,3	58,0	58,0	56,1	56,1	60,3	60,3	62,0	62,0	62,1	62,1
Net weight Over	kg	668	683	683	770	770	776	776	783	783	812	812
Net weight Under	kg	694	709	709	803	803	810	810	816	816	845	845
Remote condenser (4)	n.	2	1	2	1	2	1	2	1	2	1	2
TEAM MATE	Mod.	M 35	M 70	M 35	M 95	M 45	M 95	M 50	M 110	M 50	M 130	M 60
Refrigerant connections												
Gas delivery	ODS Ø	2x22	28	2x22	28	2x22	28	2x22	35	2x22	35	2x22
Liquid return	ODS Ø	2x16	22	2x16	22	2x22	22	2x22	28	2x22	28	2x22

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser shown in the table.
(**) The remote condenser has separated power supply

TECHNICAL DATA - OPTIONAL ACCESSORIES

NEXT DX		006 P1 S	008 P1 S	010 P1 S	007 P1 S	009 P1 S	011 P1 S	013 P1 S	014.P1 S	015.P1 S	017.P1 S	019.P1 S	021.P1 S	023.P1 S	025.P1 S	029.P1 S
SIZE		H0	H0	H0	H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H4	H4
Hot gas reheating system		-	-	-	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	**kW**	**-**	**-**	**-**	**5,4**	**6,6**	**8,3**	**9,9**	**9,6**	**12,6**	**14,4**	**14,0**	**16,5**	**19,7**	**20,8**	**24,3**
Electric heater																
Capacity	kW	**2,6**	**2,6**	**2,6**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**9**	**9**
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Humidifier																
Steam capacity	kg/h	2	2	2	3	3	3	3	3	3	3	3	3	3	8	8
Power input	kW	1,4	1,4	1,4	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	6,0	6,0
Extra circuit coil (1)																
Total cooling capacity	**kW**	**-**	**-**	**-**	**9,4**	**10,6**	**10,6**	**10,6**	**15,0**	**15,0**	**15,0**	**22,8**	**22,8**	**22,8**	**29,2**	**30,0**
Sensible cooling capacity	**kW**	**-**	**-**	**-**	**8,3**	**9,2**	**9,2**	**9,2**	**13,1**	**13,1**	**13,1**	**20,1**	**20,1**	**20,1**	**25,5**	**26,2**
Heating coil (2)																
Heating capacity	kW	**10,3**	**11,1**	**12,2**	**16,6**	**18,3**	**18,3**	**18,3**	**25,1**	**25,1**	**26,9**	**39,1**	**39,1**	**39,1**	**49,5**	**50,7**

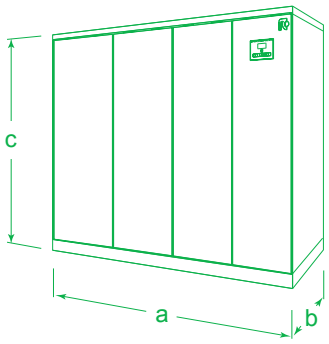
NEXT DX		033.P1 S	038.P1 S	040.P1 S	045.P1 S	049.P1 S	026.P2 DC	028.P2 DC	032.P2 S	032.P2 DC	036.P2 S	036.P2 DC	042.P2 S	042.P2 DC	048.P2 S	048.P2 DC
SIZE		H4	H5	H5	H5	H5	H5	H5	H5	H5	H5	H5	H6	H6	H6	H6
Hot gas reheating system		ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	**kW**	**28,2**	**28,0**	**32,0**	**36,1**	**42,1**	**14,5**	**14,5**	**14,5**	**14,5**	**16,5**	**16,5**	**16,3**	**16,3**	**18,8**	**18,8**
Electric heater																
Capacity	**kW**	**9,0**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Humidifier																
Steam capacity	kg/h	8	8	8	8	8	8	8	8	8	8	8	15	15	15	15
Power input	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	11,3	11,3	11,3	11,3
Extra circuit coil (1)																
Total cooling capacity	**kW**	**30,0**	**40,4**	**40,4**	**40,4**	**40,4**	**30,5**	**40,4**	**40,4**	**40,4**	**40,4**	**40,4**	**48,9**	**48,9**	**49,2**	**49,2**
Sensible cooling capacity	**kW**	**26,2**	**35,3**	**35,3**	**35,3**	**35,3**	**26,8**	**35,3**	**35,3**	**35,3**	**35,3**	**35,3**	**42,8**	**42,8**	**43,0**	**43,0**
Heating coil (2)																
Heating capacity	**kW**	**50,7**	**72,3**	**72,3**	**72,3**	**72,3**	**56,2**	**72,1**	**72,3**	**72,3**	**72,3**	**72,3**	**91**	**91**	**91,4**	**91,4**

NEXT DX		052.P2 S	052.P2 DC	060.P2 S	060.P2 DC	064.P2 S	064.P2 DC	072.P2 S	072.P2 DC	082.P2 S	082.P2 DC	092.P2 S	092.P2 DC	100.P2 S	100.P2 DC
SIZE		H6	H6	H6	H6	H6	H6	H7	H7	H7	H7	H7	H7	H7	H7
Hot gas reheating system		ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	**kW**	**20,7**	**20,7**	**24,3**	**24,3**	**23,8**	**23,8**	**27,7**	**27,7**	**31,3**	**31,3**	**35,5**	**35,5**	**42,2**	**42,2**
Electric heater															
Capacity	**kW**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Humidifier															
Steam capacity	kg/h	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Power input	kW	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3
Extra circuit coil (1)															
Total cooling capacity	**kW**	**55,7**	**55,7**	**58,7**	**58,7**	**62,9**	**62,9**	**80,4**	**80,4**	**90,9**	**90,9**	**94,4**	**94,4**	**94,4**	**94,4**
Sensible cooling capacity	**kW**	**48,6**	**48,6**	**51,3**	**51,3**	**55,0**	**55,0**	**69,0**	**69,0**	**79,3**	**79,3**	**82,8**	**82,8**	**82,8**	**82,8**
Heating coil (2)															
Heating capacity	**kW**	**102**	**102**	**107**	**107**	**114**	**114**	**131**	**131**	**146**	**146**	**152**	**152**	**152**	**152**

1. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7/12,5 °C and 0% glycol
2. Characteristics referred to entering air at 20°C with hot water at 75/60°C

NEXT DX DIMENSIONS (mm)

SIZE	a	b	c
H0	655	420	1680
H1	650	650	1925
H2	785	650	1925
H3	1085	750	1925
H4	1320	860	1980
H5	1620	860	1980
H6	2155	860	1980
H7	2690	860	1980



NEXT DW: Direct expansion close control air conditioners with built-in water cooled condenser equipped with scroll compressors and Plug-fans.
Cooling Capacity: **6,9 ÷ 108,0 kW**

rcgroupairconditioning

R410A EC AC UP FLOW DOWN FLOW

MAIN FEATURES
- Precision air conditioner.
- 44 models available, 2 versions for a wide selection opportunity.
- EER up to 4,89.
- On/off scroll compressors.
- Single and double refrigerant circuit.
- Built in water cooled condenser.
- R410A Refrigerant charge.
- EC plug-fans (size H0, H1, H2, H3).
- AC plug-fans (size H4, H5, H6, H7).
- OVER and UNDER versions.
- Suitable for indoor installation.

MAIN BENEFITS
- Units with single and double refrigerant circuits.
- High EER.
- High efficiency at partial load.
- Availability of electric heater.
- Availability of steam humidifier.
- Availability of hot water heating coil.
- Availability of extra circuit heating coil.
- Availability of indirect Free Cooling system.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

WORKING LIMITS
Room air temperature:
14°C minimum temperature with wet bulb.
24°C maximum temperature with wet bulb.
35°C maximum temperature with dry bulb.

Room air humidity:
20%RH minimum relative humidity.
75%RH maximum relative humidity.

Water cooled condenser:
Water temperature:
30/50°C Outlet temperature range.

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base in aluminium extrusion, painted with epoxy powders.
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals to ensure air tight with the panels.
- Galvanized steel sheet panels externally coated with PVC film and internally insulated with noise absorption material.
  The panels are fixed to the frame with non visible mounting system.
- Electric board in separate technical compartment on the machine front (Size H0, H1, H2, H3).
- Separate technical compartment on machine front for electric board, refrigerant and hydraulic connections and control and regulation devices (size H4, H5, H6, H7)
- Colour: RAL 9005 for base and frame
  Similar to RAL7015 for panels, with hammered finish
- OVER version
  - Air intake from the front through honeycomb type grille and air delivery from the top.
  - Washable air pre-filters with G2 efficiency, with cells in synthetic fibre (size H0 excluded).
- UNDER version
  Machine size H0
  - Air intake from the front through honeycomb type grille and air delivery from the bottom.

  Machine size H1, H2, H3, H4, H5, H6, H7
  - Air intake from the top and air delivery from the bottom.

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

FILTER SECTION

- Size H0
  Washable air filters with G3 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).
- Size H1, H2, H3, H4, H5, H6, H7
  Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
  - With single refrigerant circuit for S version machines.
  - With double refrigerant circuit for DC version machines.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

CONDENSING SECTION

- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel.
- 0÷10V proportional signal to manage the condensing control system of the 2-way motorized valve. The valve is an optional accessory.

FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
  - Size H0, H1, H2, H3:
    Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
  - Size H4, H5, H6, H7:
    Fans fed through an autotransformer that allows the manual selection of 7 rotation speed.
- Temperature sensors on air intake.
- Fan guard with rubber support (UNDER version)

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Liquid receiver with accessories.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:

- Main switch with door lock safety.
- Magnetothermic switch for each compressor.
- Magnetothermic switches for fans.
- Contactors for each load.
  The supply fans equipped with EC electric motor are not supplied with contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply:
  - 230/1/50 for model 006 P1 S H0.
  - 400/3/50 for the other models.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

COMMON OPTIONAL ACCESSORIES

SIZE	H0	H1	H2	H3	H4	H5	H5	H5	H5	H6	H6	H7	H7
VERSION	S	S	S	S	S	S	S	S	DC	S	DC	S	DC
TEAM MATE remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
TEAM MATE PF remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●
213 -TEAM MATE electrical power supply by internal unit	●	●	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	-	-	-	-	●	●	●	●	●	●	●	●	●
220 - Electronic expansion valve	●	●	●	●	●	●	●	●	●	●	●	●	●
260 - Liquid solenoid valve	●	●	●	●	●	●	●	●	●	●	●	●	●
321 - Steam humidifier	●	●	●	●	●	●	●	●	●	●	●	●	●
322 - Dehumidification system	●	●	●	●	●	●	●	●	●	●	●	●	●
405 - Extra-Circuit system	-	●	●	●	●	●	●	●	●	●	●	●	●
409 - FC Free Cooling system	-	●	●	●	●	●	●	●	●	●	●	●	●
310 - Electric heater	●	●	●	●	●	●	●	●	●	●	●	●	●
505 - ON-OFF Hot gas reh.system	-	●	●	●	●	●	●	●	●	●	●	●	●
509 - Hot water heating coil + 3 way valve	●	●	●	●	●	●	●	●	●	●	●	●	●
211 - Capacity control	●	●	●	●	●	●	●	●	●	-	●	-	●
606 - Compr. power factor capacitor - 0,9	-	●	●	●	●	●	●	●	●	●	●	●	●
865 - Phase control relay	-	●	●	●	●	●	●	●	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●	●	●	●	●	●	●	●	●
512 - Water regulating valve	●	●	●	●	●	●	●	●	●	●	●	●	●
215 - Disposal F5 efficiency air filter	-	●	●	●	●	●	●	●	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
812 - Floor stand Hmax=510 mm	-	●	●	●	●	●	●	●	●	●	●	●	●
849 - Condensate discharge system	-	-	-	-	●	●	●	●	●	●	●	●	●
848 - Condensate discharge system (kit)	●	●	●	●	-	-	-	-	-	-	-	-	-
808 - Sandwich panels	-	●	●	●	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
910 - Air flow loss alarm	-	-	-	-	●	●	●	●	●	●	●	●	●
912 - Air flow loss alarm EC Fan	●	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●	●
904 - Temperature/Humidity sensor on delivery	●	●	●	●	●	●	●	●	●	●	●	●	●
906 - Outlet air temperature indication	●	●	●	●	●	●	●	●	●	●	●	●	●
843 - Motorized damper with frame	-	●	●	●	●	●	●	●	●	●	●	●	●
832 - Air supply plenum with F6 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
833 - Air supply plenum with F7 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
835 - Air supply plenum with F9 filters	-	●	●	●	●	●	●	●	●	●	●	●	●
836 - Air supply plenum with sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●
945 -Air return plenum with Free Cooling damper	-	●	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●	●	●
907 - Current indication	●	●	●	●	●	●	●	●	●	●	●	●	●
908 - Voltage indication	●	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●	●	●
922 - Driver card	●	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - OVER VERSION ONLY

SIZE	H0	H1	H2	H3	H4	H5	H5	H5	H5	H6	H6	H7	H7
VERSION	S	S	S	S	S	S	S	S	DC	S	DC	S	DC
807 - Blind frontal panel	-	●	●	●	●	●	●	●	●	●	●	●	●
805 - Bottom panel	-	●	●	●	●	●	●	●	●	●	●	●	●
830 - Air discharge plenum with grilles	●	●	●	●	●	●	●	●	●	●	●	●	●
831 - Plenum with frontal grille and sound absorber	-	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA

MODEL		006.P1 S	008.P1 S	010.P1 S	007.P1 S	009.P1 S	011.P1 S	013.P1 S	014.P1 S	015.P1 S	017.P1 S	019.P1 S
SIZE		H0	H0	H0	H1	H1	H1	H1	H2	H2	H2	H3
COOLING CAPACITY (1)												
Total	**kW**	**6,9**	**8,2**	**9,9**	**7,6**	**9,0**	**10,6**	**12,0**	**13,1**	**15,8**	**18,4**	**18,4**
Sensible	**kW**	**5,8**	**6,7**	**7,7**	**7,2**	**8,6**	**9,4**	**10,0**	**12,5**	**14,0**	**15,3**	**17,4**
SHR	kW/kW	0,85	0,81	0,79	0,96	0,96	0,89	0,83	0,95	0,88	0,83	0,95
Unit power input	kW	1,5	1,8	2,2	1,6	1,9	2,3	2,6	2,7	3,3	3,8	4,3
Condenser water flow rate	m³/h	1,2	1,4	1,7	1,3	1,5	1,8	2,1	2,2	2,7	3,1	3,2
Condenser pressure drop	kPa	13	17	14	15	20	16	21	18	26	34	8
Supply fans	n.	1	1	1	1	1	1	1	1	1	1	1
Air flow	m³/h	1580	1800	2000	2273	2653	2653	2653	3955	3955	3955	5460
Nominal external static pressure	Pa	30	30	30	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	186	110	32	215	118	118	118	282	282	282	600
Compressors												
Quantity	n.	1	1	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	1
Air filters	n.	1	1	1	1	1	1	1	1	1	1	2
Efficiency		G3	G3	G3	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	2,6	2,6	2,6	4,8	4,8	4,8	4,8	5,9	5,9	5,9	7,5
Gas circuits	n.	1	1	1	1	1	1	1	1	1	1	1
Power supply		230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	14,1	7,3	8,3	6,9	8,2	9,2	10,2	9,9	12,2	13,7	16,1
Unit starting current (LRA)	A	61,3	39,3	47,3	30,2	40,2	48,2	45,2	44,9	53,9	65,9	68,3
Energy efficiency indexes (1)												
EER	kW/kW	4,49	4,60	4,49	4,89	4,65	4,57	4,56	4,85	4,77	4,83	4,30
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	55,7	58,3	60,4	56,7	59,7	59,7	59,7	64,7	64,7	64,7	65,2
On air intake Over	dB(A)	50,7	52,5	54,6	49,7	50,6	51,9	51,9	53,9	53,9	55,5	55,7
Irradiated Over	dB(A)	39,5	41,5	43,6	39,7	41,9	42,4	42,4	46,6	46,6	46,8	47,2
On air intake Under	dB(A)	50,7	52,5	54,6	49,7	51,9	51,9	52,4	56,5	56,5	56,9	57,3
On front side Under	dB(A)	50,7	52,5	54,6	40,4	42,6	42,6	43,1	47,1	47,1	47,6	48
Net weight Over	kg	161	161	161	187	190	191	192	245	247	248	304
Net weight Under	kg	161	161	161	193	197	198	199	255	257	259	315
Connections - ISO 228/1 G												
Condenser water inlet/outlet	M Ø	1"	1"	1"	1"	1"	1"	1"	1+1/2"	1+1/2"	1+1/2"	1+1/2"

MODEL		021.P1 S	023.P1 S	025.P1 S	029.P1 S	033.P1 S	038.P1 S	040.P1 S	045.P1 S	049.P1 S	026.P2 DC	028.P2 DC
SIZE		H3	H3	H4	H4	H4	H5	H5	H5	H5	H5	H5
COOLING CAPACITY (1)												
Total	**kW**	**20,1**	**22,4**	**27,2**	**30,7**	**35,9**	**37,7**	**41,4**	**45,1**	**52,5**	**25,7**	**32,7**
Sensible	**kW**	**18,7**	**19,6**	**24,9**	**26,7**	**29,4**	**35,5**	**37,0**	**38,4**	**40,5**	**23,8**	**31,1**
SHR	kW/kW	0,93	0,88	0,93	0,89	0,84	0,94	0,89	0,85	0,77	0,92	0,95
Unit power input	kW	5,2	5,9	6,2	6,8	7,7	8,5	9,4	10,5	12,2	5,7	7,9
Condenser water flow rate	m³/h	3,5	4,0	4,5	5,1	5,9	6,3	7,0	7,7	9,0	4,4	5,5
Condenser pressure drop	kPa	9	11	8	9	12	16	19	23	21	11	17
Supply fans	n.	1	1	1	1	1	1	1	1	1	1	1
Air flow	m³/h	5460	5460	7160	7440	7440	10440	10440	10440	10440	7110	10440
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	600	600	95	50	50	136	136	136	136	172	136
Compressors												
Quantity	n.	1	1	1	1	1	1	1	1	1	2	2
Capacity steps	n.	1	1	1	1	1	1	1	1	1	2	2
Air filters	n.	2	2	2	2	2	2	2	2	2	2	2
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	7,5	7,5	9,3	9,3	9,3	15,3	15,4	15,5	15,9	9,9	10,2
Gas circuits	n.	1	1	1	1	1	1	1	1	1	2	2
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	19,3	19,3	18,6	23,5	24,5	26,2	29,2	35,2	38,2	18,6	24,8
Unit starting current (LRA)	A	79,3	105,3	97,6	113,5	120,5	122,2	122,2	144,2	178,2	53,6	66,2
Energy efficiency indexes (1)												
EER	kW/kW	3,90	3,82	4,37	4,49	4,67	4,41	4,39	4,31	4,31	4,52	4,14
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	65,2	65,2	69,2	72,2	72,2	74,9	74,9	74,9	74,9	69,1	74,9
On air intake Over	dB(A)	58,4	56,3	58,1	60,7	60,7	62,6	62,9	63,2	63,5	57,7	62,6
Irradiated Over	dB(A)	48,2	47,4	51,1	54,1	54,1	56,8	56,8	56,8	56,8	51	56,8
On air intake Under	dB(A)	58,2	57,5	61	62,6	62,6	66,4	66,5	66,5	67,2	61,1	66,5
On front side Under	dB(A)	49	48,2	51,6	53,3	53,3	57	57,1	57,2	57,8	51,8	57
Net weight Over	kg	307	308	422	422	423	478	478	478	486	456	458
Net weight Under	kg	318	319	442	45	443	494	494	494	502	472	474
Connections - ISO 228/1 G												
Condenser water inlet/outlet	M Ø	1+1/2"	1+1/2"	1+1/2"	1+1/2"	1+1/2"	2"	2"	2"	2"	1+1/2"	1+1/2"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; water to the condenser 30-36°C
2. Unit refrigerant charge optional excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7/12,5 °C and 0% glycol
5. Characteristics referred to entering air at 20°C with hot water at 75/60°C

TECHNICAL DATA

MODEL		032.P2 S	032.P2 DC	036.P2 S	036.P2 DC	042.P2 S	042.P2 DC	048.P2 S	048.P2 DC	052.P2 S	052.P2 DC	060.P2 S
SIZE		H5	H5	H5	H5	H6	H6	H6	H6	H6	H6	H6
COOLING CAPACITY (1)												
Total	**kW**	**35,7**	**35,7**	**41,6**	**41,7**	**44,7**	**44,9**	**50,0**	**50,2**	**54,7**	**55,0**	**62,6**
Sensible	**kW**	**33,5**	**33,5**	**37,1**	**37,1**	**40,9**	**40,9**	**42,9**	**43,0**	**48,8**	**48,9**	**53,8**
SHR	kW/kW	0,93	0,94	0,89	0,88	0,91	0,91	0,86	0,86	0,90	0,90	0,87
Unit power input	kW	8,9	8,9	10,3	10,2	10,0	9,9	11,2	11,1	12,7	12,6	13,9
Condenser water flow rate	m^3/h	6,1	6,1	7,1	7,2	7,6	7,6	8,5	8,5	9,3	9,3	10,5
Condenser pressure drop	kPa	26	21	35	29	23	18	28	22	33	26	27
Supply fans	n.	1	1	1	1	2	2	2	2	2	2	2
Air flow	m^3/h	10440	10440	10440	10440	11310	11310	11310	11310	13480	13480	14500
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	136	136	136	136	313	313	313	313	170	170	94
Compressors												
Quantity	n.	2	2	2	2	2	2	2	2	2	2	2
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2
Air filters	n.	2	2	2	2	3	3	3	3	3	3	3
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	10,6	10,7	10,8	10,9	19,7	19,9	19,7	19,9	20,2	20,4	20,8
Gas circuits	n.	1	2	1	2	1	2	1	2	1	2	1
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	27,8	27,8	34,2	34,2	35,2	35,2	35,2	35,2	37,2	37,2	47,2
Unit starting current (LRA)	A	80,2	80,2	94,2	94,2	95,2	95,2	121,2	121,2	116,2	116,2	137,2
Energy efficiency indexes (1)												
EER	kW/kW	4,00	4,01	4,05	4,07	4,48	4,54	4,47	4,52	4,31	4,37	4,50
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	74,9	74,9	74,9	74,9	67,3	67,3	67,3	67,3	70,8	70,8	72,5
On air intake Over	dB(A)	62,6	62,6	64	64	61,3	61,3	59	59	60,3	60,3	62,2
Irradiated Over	dB(A)	56,8	56,8	57	57	52,4	52,4	50,7	50,7	53	53	54,8
On air intake Under	dB(A)	66,6	66,6	67,1	67,1	62	62	60,6	60,6	63,1	63,1	66,6
On front side Under	dB(A)	57,2	57,2	57,8	57,8	53	53	51,5	51,5	53,9	53,9	57,3
Net weight Over	kg	458	458	461	461	565	565	567	567	670	670	670
Net weight Under	kg	474	474	477	477	591	591	593	593	696	696	696
Connections - ISO 228/1 G												
Condenser water inlet/outlet	M Ø	1+1/2"	1+1/2"	1+1/2"	1+1/2"	2"	2"	2"	2"	2"	2"	2"

MODEL		060.P2 DC	064.P2 S	064.P2 DC	072.P2 S	072.P2 DC	082.P2 S	082.P2 DC	092.P2 S	092.P2 DC	100.P2 S	100.P2 DC
SIZE		H6	H6	H6	H7	H7	H7	H7	H7	H7	H7	H7
COOLING CAPACITY (1)												
Total	**kW**	**62,7**	**64,4**	**65,2**	**76,6**	**76,8**	**86,9**	**87,3**	**95,9**	**96,1**	**108,0**	**108,0**
Sensible	**kW**	**53,8**	**59,3**	**58,9**	**67,3**	**67,3**	**77,7**	**77,8**	**83,4**	**83,5**	**84,6**	**84,7**
SHR	kW/kW	0,87	0,91	0,91	0,88	0,88	0,90	0,89	0,87	0,88	0,80	0,80
Unit power input	kW	13,9	14,0	13,9	16,6	16,5	19,1	18,9	21,0	21,0	24,7	24,5
Condenser water flow rate	m^3/h	10,5	10,9	10,9	12,9	12,9	14,5	14,6	16,1	16,1	18,2	18,2
Condenser pressure drop	kPa	24	29	26	40	36	35	20	25	24	32	31
Supply fans	n.	2	2	2	2	2	2	2	2	2	2	2
Air flow	m^3/h	14500	16000	16000	17610	17610	20870	20870	22040	22040	22040	22040
Nominal external static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Fans max external static pressure	Pa	94	50	50	346	346	136	136	50	50	50	50
Compressors												
Quantity	n.	2	2	2	2	2	2	2	2	2	2	2
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2
Air filters	n.	3	3	3	4	4	4	4	4	4	4	4
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	20,9	21,4	21,5	27,7	27,8	28	28,7	28,6	28,7	28,8	28,9
Gas circuits	n.	2	1	2	1	2	1	2	1	2	1	2
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	47,2	47,2	47,2	52,4	52,4	58,4	58,4	70,4	70,4	76,4	76,4
Unit starting current (LRA)	A	137,2	137,2	137,2	148,4	148,4	151,4	151,4	179,4	179,4	216,4	216,4
Energy efficiency indexes (1)												
EER	kW/kW	4,50	4,59	4,68	4,62	4,66	4,55	4,62	4,56	4,57	4,38	4,40
Sound pressure level - ISO 3744 (3)												
On air delivery Under/Over	dB(A)	72,5	75,4	75,4	73,1	73,1	77,9	77,9	79,7	79,7	79,7	79,7
On air intake Over	dB(A)	62,2	63,8	63,8	62,5	62,5	65,9	65,9	67,5	67,5	67,7	67,7
Irradiated Over	dB(A)	54,8	57,3	57,3	55,3	55,3	59,8	59,8	61,6	61,6	61,6	61,6
On air intake Under	dB(A)	66,6	67,3	67,3	65,4	65,4	69,7	69,7	71,4	71,4	71,5	71,5
On front side Under	dB(A)	57,3	58	58	56,1	56,1	60,3	60,3	62	62	62,1	62,1
Net weight Over	kg	670	685	685	772	772	778	779	786	786	815	815
Net weight Under	kg	696	711	711	805	805	812	813	819	819	848	848
Connections - ISO 228/1 G												
Condenser water inlet/outlet	M Ø	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; water to the condenser 30-36°C
2. Unit refrigerant charge optional excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7/12,5 °C and 0% glycol
5. Characteristics referred to entering air at 20°C with hot water at 75/60°C

TECHNICAL DATA - OPTIONAL ACCESSORIES

NEXT DW		006.P1 S	008.P1 S	010.P1 S	007.P1 S	009.P1 S	011.P1 S	013.P1 S	014.P1 S	015.P1 S	017.P1 S	019.P1 S	021.P1 S	023.P1 S	025.P1 S	029.P1 S
SIZE		H0	H0	H0	H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H4	H4
Hot gas reheating system		-	-	-	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	**kW**	**-**	**-**	**-**	**5,4**	**6,6**	**8,3**	**9,9**	**9,6**	**12,6**	**14,4**	**14**	**16,5**	**19,7**	**20,8**	**24,3**
Electric heater																
Capacity	**kW**	**2,6**	**2,6**	**2,6**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**9**	**9**
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Humidifier																
Steam capacity	kg/h	2	2	2	3	3	3	3	3	3	3	3	3	3	8	8
Power input	kW	1,4	1,4	1,4	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	6,0	6,0
Extra circuit coil (1)																
Total cooling capacity	**kW**	**-**	**-**	**-**	**9,4**	**10,6**	**10,6**	**10,6**	**15,0**	**15,0**	**15,0**	**22,8**	**22,8**	**22,8**	**29,2**	**30,0**
Sensible cooling capacity	**kW**	**-**	**-**	**-**	**8,3**	**9,2**	**9,2**	**9,2**	**13,1**	**13,1**	**13,1**	**20,1**	**20,1**	**20,1**	**25,5**	**26,2**
Heating coil (2)																
Heating capacity	**kW**	**10,3**	**11,1**	**11,9**	**16,6**	**18,3**	**18,3**	**18,3**	**25,1**	**25,1**	**26,9**	**39,1**	**39,1**	**39,1**	**49,5**	**50,7**

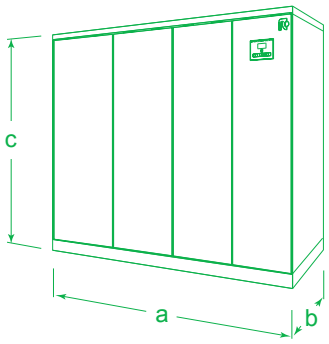
NEXT DW		033.P1 S	038.P1 S	040.P1 S	045.P1 S	049.P1 S	026.P2 DC	028.P2 DC	032.P2 S	032.P2 DC	036.P2 S	036.P2 DC	042.P2 S	042.P2 DC	048.P2 S	048.P2 DC
SIZE		H4	H5	H5	H5	H5	H5	H5	H5	H5	H5	H5	H6	H6	H6	H6
Hot gas reheating system		ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	kW	**28,2**	**28,0**	**32,0**	**36,1**	**42,1**	**14,5**	**14,5**	**14,5**	**14,5**	**16,5**	**16,5**	**16,3**	**16,3**	**18,8**	**18,8**
Electric heater																
Capacity	kW	**9,0**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Humidifier																
Steam capacity	kg/h	8	8	8	8	8	8	8	8	8	8	8	15	15	15	15
Power input	kW	6	6	6	6	6	6	6	6	6	6	6	11,3	11,3	11,3	11,3
Extra circuit coil (1)																
Total cooling capacity	kW	**30,0**	**40,4**	**40,4**	**40,4**	**40,4**	**30,5**	**40,4**	**40,4**	**40,4**	**40,4**	**40,4**	**48,9**	**48,9**	**49,2**	**49,2**
Sensible cooling capacity	kW	**26,2**	**35,3**	**35,3**	**35,3**	**35,3**	**26,8**	**35,3**	**35,3**	**35,3**	**35,3**	**35,3**	**42,8**	**42,8**	**43,0**	**43,0**
Heating coil (2)																
Heating capacity	**kW**	**50,7**	**72,3**	**72,3**	**72,3**	**72,3**	**56,2**	**72,1**	**72,3**	**72,3**	**72,3**	**72,3**	**91,0**	**91,0**	**91,4**	**91,4**

NEXT DW		052.P2 S	052.P2 DC	060.P2 S	060.P2 DC	064.P2 S	064.P2 DC	072.P2 S	072.P2 DC	082.P2 S	082.P2 DC	092.P2 S	092.P2 DC	100.P2 S	100.P2 DC
SIZE		H6	H6	H6	H6	H6	H6	H7	H7	H7	H7	H7	H7	H7	H7
Hot gas reheating system		ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF	ON-OFF
Heating capacity	kW	**20,7**	**20,7**	**24,3**	**24,3**	**23,8**	**23,8**	**27,7**	**27,7**	**31,3**	**31,3**	**35,5**	**35,5**	**42,2**	**42,2**
Electric heater															
Capacity	kW	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**	**13,5**
Capacity steps	n.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Humidifier															
Steam capacity	kg/h	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Power input	kW	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3	11,3
Extra circuit coil (1)															
Total cooling capacity	kW	**55,7**	**55,7**	**58,7**	**58,7**	**62,9**	**62,9**	**80,4**	**80,4**	**90,9**	**90,9**	**94,4**	**94,4**	**94,4**	**94,4**
Sensible cooling capacity	kW	**48,6**	**48,6**	**51,3**	**51,3**	**55,0**	**55,0**	**69,0**	**69,0**	**79,3**	**79,3**	**82,8**	**82,8**	**82,8**	**82,8**
Heating coil (2)															
Heating capacity	**kW**	**102,0**	**102,0**	**107,0**	**107,0**	**114,0**	**114,0**	**131,0**	**131,0**	**146,0**	**146,0**	**152,0**	**152,0**	**152,0**	**152,0**

1. Characteristics referred to entering air at 24°C 50%RH with chiller water at 7/12,5 °C and 0% glycol
2. Characteristics referred to entering air at 20°C with hot water at 75/60°C

NEXT DW DIMENSIONS (mm)

SIZE	a	b	c
H0	655	420	1680
H1	650	650	1925
H2	785	650	1925
H3	1085	750	1925
H4	1320	860	1980
H5	1620	860	1980
H6	2155	860	1980
H7	2690	860	1980



NEXT DL: Close control air conditioners with displacement air delivery with remote condenser, or built in water cooled condenser or for chilled water feeding
Cooling capacity: **7,7 ÷ 51,4 kW**

rcgroupairconditioning

R410A CHILLED WATER EC DISPLACEMENT

MAIN FEATURES
- Precision air conditioner.
- Displacement air delivery (DL).
- 35 models available, 3 versions for a wide selection opportunity.
- Available in three versions: for matching with remote air cooled condenser (DX), with built-in water cooled condenser (DW), for chilled water feeding (CW).
- EC plug fans.
- Suitable for indoor installation
- DX Version:
  - EER up to 3,74.
  - On/off scroll compressors
  - Single refrigerant circuit.
  - R410A refrigerant charge.
- DW Version:
  - EER up to 5,25.
  - On/off scroll compressors
  - Single refrigerant circuit.
  - R410A refrigerant charge.
  - Built in water cooled condenser
- CW Version:
  - Chilled water feeding
  - Two way chilled water valve

MAIN BENEFITS
- Wide selection opportunity.
- High EER
- High efficiency at partial load.
- Availability of electric heater.
- Availability of steam humidifier.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

WORKING LIMITS
Room air temperature:
14°C minimum temperature with wet bulb.
24°C maximum temperature with wet bulb.
35°C maximum temperature with dry bulb.

Room air humidity:
20%RH minimum relative humidity.
75%RH maximum relative humidity.

Water cooled condenser:
Water temperature:
30/50°C Outlet temperature range.

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1 9 6 3 2 0 1 3
fifty cool years

NEXT DX DL / NEXT DW DL MAIN COMPONENTS

FRAMEWORK
- Base in aluminium extrusion, painted with epoxy powders.
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals to ensure air tight with the panels.
- Galvanized steel sheet panels externally coated with PVC film and internally insulated with noise absorption material.
  The panels are fixed to the frame with non visible mounting system.
- Electric board in separate technical compartment on the machine front.
- Colour: RAL 9005 for base and frame

Similar to RAL7015 for panels, with hammered finish
- Air intake from the top and air delivery from the front (displacement).

COMPRESSORS
- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

FILTER SECTION
- Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Single refrigerant circuit.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

FANS SECTION
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.
  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Temperature sensors on air intake.
- Temperature sensor on air delivery.

REFRIGERANT CIRCUIT
- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Liquid receiver with accessories.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

- NEXT DX DL:
  - Valves on gas delivery and liquid return for coupling to remote air cooled condenser.
  - 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.
- NEXT DW DL:
  - Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel.
  - 0÷10V proportional signal to manage the condensing control system of the 2-way motorized valve.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:
- Main switch with door lock safety.
- Magnetothermic switch for each compressor.
- Magnetothermic switches for fans.
- Contactors for each load.

The supply fans equipped with EC electric motor are not supplied with contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50+N

CONTROL SYSTEM
- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

TO BE MATCHED WITH REMOTE CONDENSER

The NEXT DX DL are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE

pg:145

TEAM MATE PF

pg:149

NEXT CW DL MAIN COMPONENTS

FRAMEWORK
- Base in aluminium extrusion, painted with epoxy powders.
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals to ensure air tight with the panels.
- Galvanized steel sheet panels externally coated with PVC film and internally insulated with noise absorption material.
  The panels are fixed to the frame with non visible mounting system.
- Electric board in separate technical compartment on the machine front.
- Colour: RAL 9005 for base and frame
  Similar to RAL7015 for panels, with hammered finish
- Air intake from the top and air delivery from the front (displacement).

FILTER SECTION
- Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

COOLING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- 3-way motorized valve for water flow regulation and emergency manual control.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

FANS SECTION
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.
  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Temperature sensors on air intake.
- Temperature sensor on air delivery.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:
- Main switch with door lock safety.
- Magnetothermic switches for fans.
  Contactors for each load. The supply fans equipped with EC electric motor are not supplied with contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50+N

CONTROL SYSTEM
- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

COMMON OPTIONAL ACCESSORIES

MODEL	008 P1	009 P1	011 P1	012 P1	016 P1	018 P1	020 P1	021 P1	023 P1	026 P1	029 P1	034 P1	037 P1	043 P1	046 P1
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
SIZE	H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H3	H3S	H3S	H3L	H3L
220 - Electronic expansion valve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
260 - Liquid solenoid valve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
321 - Steam humidifier	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
310 - Electric heater	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
606 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
865 - Phase control relay	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
215 - Disposal F5 efficiency air filter	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
812 - Floor stand Hmax=510 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
849 - Condensate discharge system	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
808 - Sandwich panels	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
912 - Air flow loss alarm EC Fan	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
904 - Temperature/Humidity sensor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
945 - Air return plenum with Free Cooling damper	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
939 - Fresh air kit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - NEXT DX DL

NEXT DX DL	008 P1	009 P1	011 P1	012 P1	016 P1	018 P1	020 P1	021 P1	023 P1	026 P1	029 P1	034 P1	037 P1	043 P1	046 P1
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
SIZE	H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H3	H3S	H3S	H3L	H3L
TEAM MATE remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TEAM MATE PF remote condenser	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
213 - Team Mate electrical power supply by internal unit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - NEXT DW DL

NEXT DW DL	008 P1	009 P1	011 P1	012 P1	016 P1	018 P1	020 P1	021 P1	023 P1	026 P1	029 P1	034 P1	037 P1	043 P1	046 P1
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
SIZE	H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H3	H3S	H3S	H3L	H3L
512 - Water regulating valve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - NEXT CW DL

NEXT CW DL	014	020	028	036	049
SIZE	H1	H2	H3	H3S	H3L
321 - Steam humidifier	●	●	●	●	●
310 - Electric heater	●	●	●	●	●
215 - Disposal F5 efficiency air filter	●	●	●	●	●
810 - Floor stand Hmax=350 mm	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●
812 - Floor stand Hmax=510 mm	●	●	●	●	●
849 - Condensate discharge system	●	●	●	●	●
808 - Sandwich panels	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●
912 -Air flow loss alarm EC Fan	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●
903 - IN/OUT chilled water temp. Indication	●	●	●	●	●
904 - Temperature/Humidity sensor	●	●	●	●	●
945 -Air return plenum with Free Cooling damper	●	●	●	●	●
939 - Fresh air kit	●	●	●	●	●
919 - Clock card	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●
943 - Data Logger	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA - NEXT DX DL

MODEL		008 P1 S	009 P1 S	011 P1 S	012 P1 S	016 P1 S	018 P1 S	020 P1 S	021 P1 S	023 P1 S	026 P1 S
SIZE		H1	H1	H1	H1	H2	H2	H2	H3	H3	H3
COOLING CAPACITY (1)											
Total	**kW**	**7,7**	**9,0**	**10,5**	**11,5**	**15,4**	**17,0**	**19,2**	**21,2**	**23,2**	**25,2**
Sensible	**kW**	**7,4**	**8,6**	**10,0**	**10,6**	**14,7**	**15,6**	**17,0**	**20,2**	**21,9**	**22,9**
SHR	kW/kW	0,95	0,96	0,95	0,92	0,95	0,92	0,89	0,95	0,94	0,91
Unit power input (*)	kW	2,1	2,6	3,0	3,5	4,5	5,0	6,0	5,8	6,7	7,3
Supply fans	n.	1	1	1	1	1	1	1	1	1	1
Air flow	m^3/h	2150	2500	2500	2500	3700	3700	3700	5100	5100	5100
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1
Air filters	n.	1	1	1	1	1	1	1	2	2	2
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	2,6	2,6	2,7	2,7	2,9	3,0	3,2	3,5	3,5	4,0
Gas circuits	n.	1	1	1	1	1	1	1	1	1	1
Power supply (**)		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	8,1	9,4	10,4	11,4	13,7	16,3	19,5	21,8	21,8	22,8
Unit starting current (LRA)	A	31,4	41,4	49,4	46,4	54,9	68,5	79,5	81,8	107,8	101,8
Energy efficiency indexes (1)											
EER (*)	kW/kW	3,74	3,50	3,50	3,28	3,46	3,41	3,19	3,64	3,48	3,45
Sound pressure level - ISO 3744 (3)											
On air intake	dB(A)	49,0	52,0	52,0	52,0	54,0	54,0	54,0	55,0	55,0	55,0
On front side	dB(A)	54,0	58,0	58,0	58,0	60,0	60,0	60,0	60,0	60,0	60,0
Net weight	kg	187	191	192	193	246	248	252	302	303	307
Remote condenser (4)	n.	1	1	1	1	1	1	1	1	1	1
TEAM MATE	Mod.	M 11	M 11	M 14	M 14	M 20	M 25	M 25	M 30	M 30	M 30
Refrigerant connections											
Gas delivery	ODS Ø	12	12	12	12	18	18	18	18	18	22
Liquid return	ODS Ø	12	12	12	12	12	12	16	16	16	16

MODEL		029 P1 S	034 P1 S	037 P1 S	043 P1 S	046 P1 S
SIZE		H3	H3S	H3S	H3L	H3L
COOLING CAPACITY (1)						
Total	**kW**	**28,3**	**34,4**	**37,0**	**40,8**	**43,8**
Sensible	**kW**	**24,3**	**30,9**	**32,0**	**39,0**	**40,5**
SHR	kW/kW	0,86	0,90	0,86	0,96	0,92
Unit power input (*)	kW	8,0	9,4	10,8	11,0	12,3
Supply fans	n.	1	2	2	2	2
Air flow	m^3/h	5100	7000	7000	9500	9500
Compressors		scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1
Air filters	n.	2	2	2	2	2
Efficiency		G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	4,1	4,4	4,4	7,2	7,2
Gas circuits	n.	1	1	1	1	1
Power supply (**)		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA) (*)	A	27,8	28,8	31,8	38,5	44,5
Unit starting current (LRA)	A	117,8	124,8	124,8	131,5	153,5
Energy efficiency indexes (1)						
EER (*)	kW/kW	3,52	3,65	3,43	3,71	3,55
Sound pressure level - ISO 3744 (3)						
On air intake	dB(A)	55,0	56,0	56,0	56,0	56,0
On front side	dB(A)	60,0	62,0	62,0	62,0	62,0
Net weight	kg	311	364	364	440	445
Remote condenser (4)	n.	1	1	1	1	1
TEAM MATE	Mod.	M 35	M 45	M 45	M 50	M 50
Refrigerant connections						
Gas delivery	ODS Ø	22	22	28	28	28
Liquid return	ODS Ø	16	18	18	18	18

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 28°C-40%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser as shown in the table.
(**) The remote condenser has separated power supply

TECHNICAL DATA - OPTIONAL ACCESSORIES - NEXT DX DL

NEXT DX DL		008 P1 S	009 P1 S	011 P1 S	012 P1 S	016 P1 S	018 P1 S	020 P1 S	021 P1 S	023 P1 S	026 P1 S	029 P1 S	034 P1 S	037 P1 S	043 P1 S	046 P1 S
SIZE		H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H3	H3S	H3S	H3L	H3L
Electric heater																
Capacity	**kW**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Humidifier																
Steam capacity	kg/h	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Power input	kW	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3

TECHNICAL DATA - NEXT DW DL

MODEL		008 P1	009 P1	011 P1	012 P1	016 P1	018 P1	020 P1	021 P1	023 P1	026 P1
		S	S	S	S	S	S	S	S	S	S
SIZE		H1	H1	H1	H1	H2	H2	H2	H3	H3	H3
COOLING CAPACITY (1)											
Total	**kW**	**8,4**	**9,9**	**12,0**	**13,6**	**17,4**	**18,1**	**21,7**	**22,5**	**24,1**	**29,7**
Sensible	**kW**	**7,3**	**8,5**	**9,2**	**9,8**	**14,7**	**14,0**	**15,4**	**18,1**	**19,6**	**21,2**
SHR	kW/kW	0,87	0,85	0,77	0,72	0,84	0,77	0,71	0,80	0,81	0,71
Unit power input	kW	1,6	2,0	2,5	2,8	4,1	4,4	5,3	5,5	5,5	6,0
Condenser water flow rate	m³/h	1,4	1,7	2,0	2,3	3,0	3,1	3,8	3,9	4,2	5,0
Condenser pressure drop	kPa	17	23	20	25	7	8	11	11	40	15
Supply fans	n.	1	1	1	1	1	1	1	1	1	1
Air flow	m3/h	2150	2500	2500	2500	3700	3700	3700	5100	5100	5100
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1
Air filters	n.	1	1	1	1	1	1	1	2	2	2
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	2,8	2,8	2,9	2,9	3,8	3,8	4,1	4,4	4,8	5,3
Gas circuits	n.	1	1	1	1	1	1	1	1	1	1
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	6,9	8,2	9,2	10,2	11,9	13,4	16,6	18,9	18,9	19,9
Unit starting current (LRA)	A	30,2	40,2	48,2	45,2	53,1	65,6	76,6	78,9	104,9	98,9
Energy efficiency indexes (1)											
EER	kW/kW	5,64	5,46	5,38	5,35	4,72	4,57	4,46	4,49	4,78	5,46
Sound pressure level - ISO 3744 (3)											
On air intake	dB(A)	49,0	52,0	52,0	52,0	54,0	54,0	54,0	55,0	55,0	55,0
On front side	dB(A)	54,0	58,0	58,0	58,0	60,0	60,0	60,0	60,0	60,0	60,0
Net weight	kg	206	211	213	216	261	265	272	324	324	333
Hydraulic connections											
Condenser water inlet/outlet	Ø	1"	1"	1"	1"	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2

MODEL		029 P1	034 P1	037 P1	043 P1	046 P1
		S	S	S	S	S
SIZE		H3	H3S	H3S	H3L	H3L
COOLING CAPACITY (1)						
Total	**kW**	**31,0**	**40,2**	**43,9**	**47,2**	**51,4**
Sensible	**kW**	**22,3**	**28,5**	**29,9**	**35,7**	**37,3**
SHR	kW/kW	0,72	0,71	0,68	0,76	0,73
Unit power input	kW	6,8	7,7	8,6	9,0	10,1
Condenser water flow rate	m³/h	5,3	6,7	7,4	7,9	8,6
Condenser pressure drop	kPa	6	11	13	14	17
Supply fans	n.	1	2	2	2	2
Air flow	m3/h	5100	7000	7000	9500	9500
Compressors		scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1
Air filters	n.	2	2	2	2	2
Efficiency		G4	G4	G4	G4	G4
Refrigerant		R410A	R410A	R410A	R410A	R410A
Refrigerant charge (2)	kg	5,8	6,6	6,6	9,4	9,4
Gas circuits	n.	1	1	1	1	1
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	24,9	25,2	28,2	32,8	38,8
Unit starting current (LRA)	A	114,9	121,2	121,2	125,8	147,8
Energy efficiency indexes (1)						
EER	kW/kW	4,91	5,76	5,59	5,81	5,58
Sound pressure level - ISO 3744 (3)						
On air intake	dB(A)	55,0	56,0	56,0	56,0	56,0
On front side	dB(A)	60,0	62,0	62,0	62,0	62,0
Net weight	kg	337	396	396	480	485
Hydraulic connections						
Condenser water inlet/outlet	Ø	1" 1/2	2"	2"	2"	2"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 28°C-50%RH; water to the condenser 30-36°C
2. Unit refrigerant charge optional excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)

TECHNICAL DATA - OPTIONAL ACCESSORIES - NEXT DW DL

NEXT DW DL		008 P1	009 P1	011 P1	012 P1	016 P1	018 P1	020 P1	021 P1	023 P1	026 P1	029 P1	034 P1	037 P1	043 P1	046 P1
		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
SIZE		H1	H1	H1	H1	H2	H2	H2	H3	H3	H3	H3	H3S	H3S	H3L	H3L
Electric heater																
Capacity	**kW**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**5,1**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**
Capacity steps	n.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Humidifier																
Steam capacity	kg/h	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Power input	kW	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3

TECHNICAL DATA - NEXT CW DL

MODEL		014	020	028	036	049
SIZE		H1	H2	H3	H3S	H3L
COOLING CAPACITY (1)						
Total	**kW**	**14,1**	**19,9**	**29,2**	**36,8**	**49,2**
Sensible	**kW**	**13,4**	**19,2**	**27,9**	**35,4**	**47,6**
SHR	kW/kW	0,95	0,96	0,96	0,96	0,97
Unit power input	kW	0,2	0,29	0,42	0,57	0,77
Supply fans	n.	1	1	1	2	2
Air flow	m^3/h	2500	3700	5100	7000	9500
Air filters	n.	1	1	2	2	2
Efficiency		G4	G4	G4	G4	G4
Power supply		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	2,2	1,6	3,9	3,2	7,8
Sound level - ISO 3744 (2)						
On air intake	dB(A)	58,2	60,2	60,9	62,6	66,2
On front side	dB(A)	55,0	57,0	57,7	59,4	63,0
Net weight	kg	166	204	257	295	360
Connections						
Chilled water inlet/outlet	Ø	1"	1"	1" 1/4	1 1/2"	1 1/2"

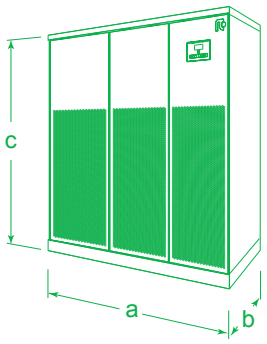
THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 24°C-40%RH with chilled water temperature 7-12°C - 0% glycol.
2. Noise level at 1 meter in free field.

TECHNICAL DATA - OPTIONAL ACCESSORIES - NEXT CW DL

NEXT CW DL		014	020	028	036	049
SIZE		H1	H2	H3	H3S	H3L
Electric heater						
Capacity	**kW**	**5,1**	**5,1**	**6,0**	**6,0**	**6,0**
Capacity steps	n.	1	1	1	1	1
Humidifier						
Steam capacity	kg/h	3	3	3	3	3
Power input	kW	2,3	2,3	2,3	2,3	2,3

NEXT DL DIMENSIONS (mm)

SIZE	a	b	c
H1	650	650	1925
H2	785	650	1925
H3	1085	750	1925
H3S	1295	750	1925
H3L	1620	750	1925



NEXT MTR: Air conditioners for Metrology Labs with upflow air delivery
for matching with remote air cooled condenser (DX) or with built-in water cooled condenser (DW)

Cooling capacity: **7,1 ÷ 15,4 kW**

rcgroupairconditioning

R407c EC UP FLOW

MAIN FEATURES
- Precision air conditioner for metrology labs.
- 10 models available, 2 versions for a wide selection opportunity.
- Available in two versions: for matching with remote air cooled condenser (DX) or with built-in water cooled condenser (DW)
- On/off scroll compressors
- Single refrigerant circuit.
- R407C refrigerant charge.
- EC plug fans.
- Steam humidifier.
- Dehumidification system with automatic air flow reduction.
- 3 working steps electric heater.
- Upflow air delivery, Over version.
- Suitable for indoor installation
- DX version:
- EER up to 3,92.
- DW version:
- EER up to 5,30
- Built in water cooled condenser..

MAIN BENEFITS
- Wide selection opportunity.
- High precision in maintaining the characteristics of temperature-humidity of the air conditioned room.
- Humidifier, De-Humidifier, Electric heater supplied as standard.
- High EER.
- High efficiency at partial load.
- Complete set of optional accessories: filters, plenum, panels, stand.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

WORKING RANGE
The machines are designed to maintain a room temperature between 20 and 26 °C (±0.5°C) with a relative humidity between 45 and 55% RH (± 3%).
The room has to be closed and with a good thermal insulation as clean rooms, metrology labs, etc.
It is possible to extend the operating range from a minimum of 16°C up to a maximum of 32°C with relative humidity from 40 to 60% RH.
CAUTION:
In these operating conditions precision and accuracy of the control are reduced:
- Temperature: ± 1°C
- Humidity: ± 5%rH.

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Base in aluminium extrusion, painted with epoxy powders.
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals to ensure air tight with the panels.
- Galvanized steel sheet panels externally coated with PVC film and internally insulated with noise absorption material.
  The panels are fixed to the frame with non visible mounting system.
- Electric board in separate technical compartment on the machine front.
- Colour: RAL 9005 for base and frame
  Similar to RAL7015 for panels, with hammered finish
- Air intake from the front through honeycomb type grille and air delivery from the top.
- Washable air pre-filters with G2 efficiency, with cells in synthetic fibre .

COMPRESSORS
- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R407C refrigerant.
- Continuous control of the cooling capacity by hot gas by-pass.
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

FILTER SECTION
- Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Cooling capacity control.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

HEATING SECTION
- 3 working steps electric heater consisting of aluminium armoured elements with integral fins and safety thermostat (binary control logic).
- Modulating type hot gas reheating system.

HUMIDIFICATION SECTION
- Proportional controlled steam humidifier with immersed electrodes fitted with safety and running accessories.

DEHUMIDIFICATION SECTION
- Dehumidification system with automatic air flow reduction.

FANS SECTION
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor. Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Temperature/humidity sensors on air intake.

REFRIGERANT CIRCUIT
- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Safety valve.
- Liquid receiver with accessories.
- 3-way modulating valve for hot gas re-heating system.
- Check valve for hot gas re-heating system.
- Hot gas injection valve for capacity control.
- Balancing valve for hot gas capacity control.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R407C refrigerant charge.
- NEXT MTR DX:
  - Valves on gas delivery and liquid return for coupling to remote air cooled condenser.
  - 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.
- NEXT MTR DW:
  - Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel.
  - 0÷10V proportional signal to manage the condensing control system of the 2-way motorized valve.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:
- Main switch with door lock safety.
- Magnetothermic switch for supply fan, compressor, electric heaters and humidifier.
- Contactors for each load.
  The supply fans equipped with EC electric motor are not supplied with contactors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply: 400/3/50.

CONTROL SYSTEM
- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

TO BE MATCHED WITH REMOTE CONDENSER

The DX units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE

pg:145

TEAM MATE PF

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NEXT MTR DX OPTIONAL ACCESSORIES

NEXT MTR DX	007 Z1	009 Z1	011 Z1	013 Z1	015 Z1
	S	S	S	S	S
SIZE	H2	H2	H2	H3	H3
TEAM MATE remote condenser	●	●	●	●	●
TEAM MATE PF remote condenser	●	●	●	●	●
260 - Liquid solenoid valve	●	●	●	●	●

● available accessory; - not available accessory

COMMON OPTIONAL ACCESSORIES

NEXT MTR	007 Z1	009 Z1	011 Z1	013 Z1	015 Z1
	S	S	S	S	S
SIZE	H2	H2	H2	H3	H3
220 - Electronic expansion valve	●	●	●	●	●
606 - Compr. power factor capacitor - 0,9	●	●	●	●	●
865 - Phase control relay	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●
215 - Disposal F5 efficiency air filter	●	●	●	●	●
811 - Floor stand Hmax=450 mm	●	●	●	●	●
848 - Condensate discharge system (kit)	●	●	●	●	●
808 - Sandwich panels	●	●	●	●	●
807 - Blind frontal pannel	●	●	●	●	●
805 - Bottom panel	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●
912 -Air flow loss alarm EC Fan	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●
843 - Motorized damper with frame	●	●	●	●	●
830 - Air discharge plenum with grilles	●	●	●	●	●
831 - Plenum with frontal grille and sound absorber	●	●	●	●	●
832 - Air supply plenum with F6 filters	●	●	●	●	●
833 - Air supply plenum with F7 filters	●	●	●	●	●
835 - Air supply plenum with F9 filters	●	●	●	●	●
836 - Air supply plenum with sound absorber	●	●	●	●	●
906 - Outlet air temperature indication	●	●	●	●	●
919 - Clock card	●	●	●	●	●
907 - Current indication	●	●	●	●	●
908 - Voltage indication	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●
943 - Data Logger	●	●	●	●	●
922 - Driver card	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●

TECHNICAL DATA - NEXT MTR DX

NEXT MTR DX		007 Z1	009 Z1	011 Z1	013 Z1	015 Z1
		S	S	S	S	S
SIZE		H2	H2	H2	H3	H3
Cooling capacity (1)						
Total	**kW**	**6,7**	**8,8**	**9,9**	**11,5**	**14,3**
Sensible	**kW**	**6,7**	**8,8**	**9,9**	**11,5**	**14,3**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00
Unit power input (*)	kW	1,78	2,23	2,72	3,21	4,45
Supply fans	n.	1	1	1	1	1
Air flow	m^3/h	2300	3000	3300	4000	5500
Nominal external static pressure	Pa	50	50	50	50	50
Max external static pressure	Pa	625	530	480	600	640
Compressors		scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1
Capacity steps	n.	Modulating	Modulating	Modulating	Modulating	Modulating
Air filters	n.	1	1	1	1	1
Efficiency		G4	G4	G4	G4	G4
Refrigerant		R407C	R407C	R407C	R407C	R407C
Refrigerant charge (2)	kg	5,4	5,4	5,4	6,8	6,8
Gas circuits	n.	1	1	1	1	1
Power supply (**)	V/Ph/Hz	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	7,2	8,1	9,3	12,5	16,1
Unit starting current (LRA)	A	25,9	33,9	41,9	50,3	54,3
EER (1) (*)	kW/kW	3,78	3,92	3,65	3,58	3,21
Sound pressure – ISO 3744 (3)						
On air delivery	dB(A)	55,0	59,8	61,6	59,3	65,6
On air intake	dB(A)	54,4	54,8	55,1	55,9	57,1
Net weight	kg	235	242	249	300	312
Remote condenser (4)	n.	1	1	1	1	1
TEAM MATE STD series	Mod.	M 11	M 17	M 17	M 17	M 20
Hot gas reheating system		Modulating	Modulating	Modulating	Modulating	Modulating
Heating capacity	**kW**	**7,7**	**8,4**	**9,0**	**10,6**	**11,9**
Electric heater						
Capacity	**kW**	**5,1**	**5,1**	**5,1**	**6,0**	**6,0**
Capacity steps	n.	2	2	2	2	2
Humidifier						
Steam capacity	kg/h	3	3	3	3	3
Power input	kW	2,3	2,3	2,3	2,3	2,3
Refrigerant connections						
Gas delivery	ODS Ø	16	16	16	18	18
Liquid return	ODS Ø	12	12	12	16	16
Connections						
Humidifier filling	F Ø	3/4"	3/4"	3/4"	3/4"	3/4"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)
4. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser as shown in the table.
(**) The remote condenser has separated power supply

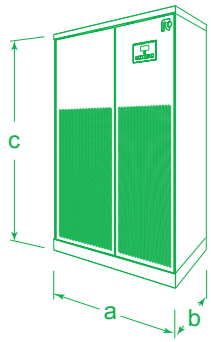
TECHNICAL DATA - NEXT MTR DW

MODEL MTR DW		007 Z1	009 Z1	011 Z1	013 Z1	015 Z1
		S	S	S	S	S
SIZE		H2	H2	H2	H3	H3
Cooling capacity (1)						
Total	**kW**	**7,1**	**9,0**	**10,3**	**12,4**	**15,4**
Sensible	**kW**	**7,1**	**9,0**	**10,3**	**12,4**	**15,4**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00
Unit power input	kW	1,33	1,81	2,20	2,52	3,33
Condenser water flow rate	m^3/h	1,2	1,5	1,8	2,1	2,6
Condenser pressure drop	kPa	19	24	23	21	15
Supply fans	n.	1	1	1	1	1
Air flow	m^3/h	2300	3000	3300	4000	5500
Nominal external static pressure	Pa	50	50	50	50	50
Max external static pressure	Pa	625	530	480	600	640
Compressors		Scroll	Scroll	Scroll	Scroll	Scroll
Quantity	n.	1	1	1	1	1
Capacity steps	n.	Modulating	Modulating	Modulating	Modulating	Modulating
Air filters	n.	1	1	1	1	1
Efficiency		G4	G4	G4	G4	G4
Refrigerant		R407C	R407C	R407C	R407C	R407C
Refrigerant charge (2)	kg	5,8	5,8	5,8	7,5	7,5
Gas circuits	n.	1	1	1	1	1
Power supply	V/Ph/Hz	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	6,1	7,0	8,2	11,3	14,3
Unit starting current (LRA)	A	25,9	33,9	41,9	50,3	54,3
Energy efficiency indexes (1)						
EER – Energy Efficiency Ratio	kW/kW	5,30	4,99	4,68	4,92	4,62
Sound pressure – ISO 3744 (3)						
On air delivery	dB(A)	55,0	59,8	61,6	59,3	65,6
On air intake	dB(A)	54,4	54,8	55,1	55,9	57,1
Net weight	kg	239	242	249	300	312
Hot gas reheating system		Modulating	Modulating	Modulating	Modulating	Modulating
Heating capacity	**kW**	**7,7**	**8,4**	**9,0**	**10,6**	**11,9**
Electric heater						
Capacity	**kW**	**5,1**	**5,1**	**5,1**	**6,0**	**6,0**
Capacity steps	n.	2	2	2	2	2
Humidifier						
Steam capacity	kg/h	3	3	3	3	3
Power input	kW	2,3	2,3	2,3	2,3	2,3
Connections ISO 228/1-G						
Condenser water inlet/outlet	M Ø	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Humidifier filling	F Ø	3/4"	3/4"	3/4"	3/4"	3/4"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 24°C-50%RH; water to the condenser 30-36°C
2. Unit refrigerant charge optional excluded.
3. Noise level at 1 meter in free field (external static pressure 50 Pa)

NEXT MTR DIMENSIONS (mm)

SIZE	a	b	c
H2	785	650	1925
H3	1085	750	1925



COOL ROW: Direct expansion or chilled water air conditioners for high density racks and blade servers.
Cooling Capacity: **14,4 ÷ 61,1 kW**

NEW!!
RC Hi-Tech

INVERTER
RC Hi-Tech

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INVERTER R410A CHILLED WATER EC FRONT FLOW

MAIN FEATURES
- Direct expansion or chilled water feeding air conditioner for high density racks and blade servers.
- 4 models, 2 versions available for a wide selection opportunity.
- Plug-fan EC.
- Frontal air delivery.
- Suitable for indoor installation.

DX VERSION:
- BLDC inverter scroll compressor.
- R410A refrigerant charge.
- EER up to 5,78.
- Designed for matching with TEAM MATE, TEAM MATE PF remote condensers.

CW VERSION:
- Chilled water feeding.
- Two-way chilled water valve.
- Designed for matching with RC Group liquid chillers

MAIN BENEFITS
- Suitable for cooling system for rows of racks (hot/cold aisle or in-row).
- High EER.
- BLDC Inverter compressors and plug-fan EC for a higher energy efficiency.
- Availability of connection on the top or on the bottom of the unit.
- Availability of PICCV, pressure independent characterized control valve, (CW version).
- Availability of extra-circuit coil.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

REMOTE CONDENSER
The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

WORKING LIMITS
INDOOR UNIT
Room air temperature:

14°C	minimum temperature with wet bulb
26°C	minimum temperature with wet bulb.
40°C	maximum temperature with dry bulb.

Room air humidity:

20%rH	minimum relative humidity.
70%rH	maximum relative humidity.

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Framework in galvanized steel sheet externally painted with epoxy powders.
- Panels in galvanized steel sheet externally painted with epoxy powders and internal thermal insulation.
- Access doors. The doors are equipped with handle with security lock.
- Holders for unit height adjusting.
- Colour RAL 7016 (anthracite grey) textured.
- Air flow for cooling system for rows of racks with air intake from the back side through honeycomb type grille and frontal air delivery through honeycomb type grille.

FILTER SECTION
- Washable air filters with G2 efficiency, with cells in synthetic fibre, on air suction panel.

FANS SECTION
- Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
  - Impeller in composite material, PA6 plastic reinforced with glass-fibre, exempt from rust formation.
  - Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the signal coming from the microprocessor control.
- Fans control through ModBus.
- Temperature sensor on air delivery.
- Temperature sensor on air intake.
- Current detector for loss of air flow alarm through ModBus.
- Fans quick installation system for a fast replacement.
- Fan guard IP20

COOLING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Condensate tray in peraluman with connection (external diameter Ø16) for a discharge tube or for a pump for condensate drain (option).

INVERTER DRIVEN COMPRESSOR (series COOLROW DX)
- scroll compressor BLDC inverter with spiral profile optimized for R410A refrigerant.
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Rubber supports.
- Soundproof cap.

REFRIGERANT CIRCUIT (series COOLROW DX)
- Electronic expansion valve.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant temperature sensor for expansion valve.
- Filter dryer on liquid line.
- Oil separator on gas discharge.
- Refrigerant circuit with copper tubing with anticondensate insulation.
- Rotalock valves on liquid and suction line placed on bottom side of the unit for coupling to remote condenser unit.
- 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.
- R410A refrigerant charge and lubricant oil type PVE (Polyvinyl ether).

COOLING SECTION (Series COOLROW CW)
- 2-way motorized valve for water flow regulation with 0÷10 VDC control actuator and emergency manual control. Nominal operating pressure up to 1600 kPa and closing pressure (Δps) of 1400 kPa.

ELECTRICAL PANEL
Electrical panel, in accordance with EN60204-1 norms, complete with:
- Magnetothermic switch on power supply
- Magnetothermic switches for fans.
- Magnetothermic switch for compressor (DX version).
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals for external enabling, external alarm, general alarm and LAN connection.
- Power supply: 230/1/50.

CONTROL SYSTEM
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Predisposition for connectivity board housing (RCcom MBUS/JBUS, LON, BACnet for Ethernet (SNMP- TCP/IP), BACnet for MS/TP).
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage in case of power supply faulty and for alarms status recording (2MB – up to 100 alarms).
  - Menu with protection password.
  - LAN connection.

TO BE MATCHED WITH REMOTE CONDENSER

The DX units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE
pg:145

TEAM MATE PF
pg:149

OPTIONAL ACCESSORIES - COOLROW DX Inv

MODEL SIZE	25 B6 F	40 B6 F
TEAM MATE remote condenser	●	●
TEAM MATE PF remote condenser	●	●
213 -TEAM MATE electrical power supply by internal unit	●	●
Unit handling Kit (wheels+baseboard)	●	●
310 - Electric heater	●	●
321 - Steam humidifier	●	●
Adiabatic humidifier	●	●
773 - Dehumidification system	●	●
405 - Extra-Circuit system	●	●
850 - Condensate discharge pump	●	●
G4 Filters	●	●
Refrigerant connection from the top	●	●
Double serial interface	●	●
863 - Remote terminal shared	●	●
851 - Dual power supply	●	●
909 - Clogged filters alarm	●	●
911 - Water presence alarm	●	●
913 - Additional water sensor (kit)	●	●
860 - T/rH sensor on air return	●	●
867 - T/rH remote sensor	●	●
Differential air pressure control	●	●
Temporary microprocessor supply	●	●
Emergency button	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●
926 - LON Serial board	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●
932 - BACnet MS/TP Serial board	●	●
962 - Kit modem GSM	●	●
957 - Plantwatch without modem	●	●
930 - Remote graphic terminal kit	●	●

OPTIONAL ACCESSORIES - COOLROW CW

MODEL SIZE	50 B6 F	60 B6 F
Unit handling Kit (wheels+baseboard)	●	●
310 - Electric heater	●	●
321 - Steam humidifier	●	●
Adiabatic humidifier	●	●
773 - Dehumidification system	●	●
405 - Extra-Circuit system	●	-
850 - Condensate discharge pump	●	●
G4 Filters	●	●
Chilled water connections from the top	●	●
Flexible joint with adapter pipe (solder type)	●	●
501 - Three-way valve	●	●
PICCV - Two-way valve	●	●
Double serial interface	●	●
863 - Remote terminal shared	●	●
851 - Dual power supply	●	●
909 - Clogged filters alarm	●	●
911 - Water presence alarm	●	●
913 - Additional water sensor (kit)	●	●
860 - T/rH sensor on air return	●	●
867 - T/rH remote sensor	●	●
Differential air pressure control	●	●
Temporary microprocessor supply	●	●
Emergency button	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●
926 - LON Serial board	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●
932 - BACnet MS/TP Serial board	●	●
Power supply with cable (3m) and IP44 IEC 309 plug	●	●
962 - Kit modem GSM	●	●
957 - Plantwatch without modem	●	●
930 - Remote graphic terminal kit	●	●

● available accessory; - not available accessory

TECHNICAL DATA - COOL ROW DX Inv

COOLROW DX Inv		25			40		
SIZE		B6 BF			B6 BF		
COOLING CAPACITY (1)		Min	Nom	Max	Min	Nom	Max
Total	**kW**	**14,4**	**23,1**	**28,5**	**18**	**36,5**	**39,7**
Sensible	**kW**	**14,4**	**23,1**	**28,5**	**18**	**36,5**	**39,7**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00	1,00
Unit power input (*)	kW	2,5	5,3	7,9	3,4	10,7	13,0
Supply fans	n.	4	4	4	4	4	4
Air flow	m^3/h	3450	5800	7400	4400	9400	9400
Compressors			scroll			scroll	
Quantity	n.		1			1	
Capacity steps	n.		MOD			MOD	
Air filters	n.		1			1	
Efficiency			G2			G2	
Refrigerant			R410a			R410a	
Refrigerant charge (2)	kg		4,5			4,6	
Gas circuits	n.		1			1	
Power supply (**)	V/Ph/Hz		400/3/50+N			400/3/50+N	
Max operating current (FLA) (*)	A		20,1			30,9	
Unit starting current (LRA)	A		5,0			6,4	
Energy efficiency indexes (1)							
Energy Efficiency Ratio - EER (3) (*)	kW/kW	5,78	4,34	3,6	5,29	3,4	3,06
Sound pressure level - ISO 3744 (4)							
On front side	dB(A)	43,6	54,9	60,2	48,9	65,4	65,4
Net weight	kg		290			290	
Remote condenser (5)	n.		1			1	
TEAM MATE	n. x Mod.		M 35			M 45	
Refrigerant connections							
Gas delivery	ODS Ø		16			18	
Liquid return	ODS Ø		16			16	

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. The Energy Efficiency Index consider also the remote air cooled condenser as shown in the table.
4. Noise level at 1 meter in free field (external static pressure at nominal conditions)
5. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser
(**) The remote condenser has separated power supply

TECHNICAL DATA - COOL ROW CW

MODEL SIZE		50 B6 BF	60 B6 BF
COOLING CAPACITY (1)			
Total	**kW**	**49,7**	**61,1**
Sensible	**kW**	**49,7**	**61,1**
SHR	kW/kW	1,00	1,00
Unit power input	kW		
Supply fans	n.	4	4
Air flow	m^3/h	10000	10000
Cooling coil			
Water flow rate	m^3/h	8,5	10,5
Pressure drop - coil + valve	kPa	33	33
Air filters	n.	1	1
Efficiency		G2	G2
Power supply (**)	V/Ph/Hz	230/1/50	230/1/50
Max operating current (FLA) (*)	A		
Sound pressure level - ISO 3744 (2)			
On front side	dB(A)	66,7	67,5
Net weight	kg	246	262
Connection			
Chilled water inlet/outlet	M Ø	1+1/2"	2"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 35°C-25%RH with chilled water temperature 10-15°C - 0% glycol.
2. Noise level at 1 meter in free field.

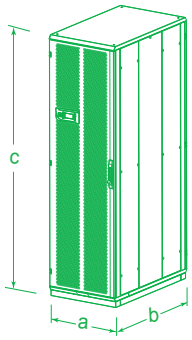
TECHNICAL DATA - OPTIONAL ACCESSORIES COOL ROW

COOL ROW SIZE		25 B6 BF	40 B6 BF	50 B6 BF	60 B6 BF
Humidifier					
Steam capacity	kg/h	2	2	**2**	**2**
Power input	kW	1,4	1,4	1,4	1,4
Extra circuit coil (1)					
Total cooling capacity	**kW**	**47,5**	**47,5**	**47,5**	**-**
Sensible cooling capacity	**kW**	**47,5**	**47,5**	**47,5**	**-**

1. Characteristics referred to entering air at 35°C-25%RH with chilled water temperature 10-15°C - 0% glycol.

DIMENSIONS (mm)

SIZE	a	b	c
B6 L	600	1200	2000



coolside evo dx system

COOLSIDE EVO DX SYSTEM: Direct expansion air conditioning system for high density racks and blade servers.
Cooling Capacity: **4,5 ÷ 41,7 kW**

INVERTER
RC Hi-Tech

coolside evo dx

rcgroupairconditioning

INVERTER R410A EC FRONT FLOW CLOSED LOOP

MAIN FEATURES
- Direct expansion air conditioning system for high density racks and blade servers.
- 6 models, 2 versions available for a wide selection opportunity.
- 6 combinations (in-room unit-outdoor unit) available.
- EER up to 4,45.
- Rotary or Scroll BLDC Inverter compressors.
- R410A refrigerant charge.
- EC Plug-fans.
- "F" Version, frontal air delivery, "L" version, side air delivery.
- Evaporating unit suitable for indoor installation.
- Motocondensing unit MCAI, suitable for outdoor installation.
- Microchannel condensing coil.

MAIN BENEFITS
- High EER.
- Suitable for direct cooling system (close loops) or cooling system for rows of racks (hot/cold aisle).
- BLDC Inverter compressors and plug-fan EC for a higher energy efficiency.
- High energy efficiency at partial loads.
- Availability of connection on the top or on the bottom of the unit.
- Availability of dual power supply.
- Availability of box-server rack.
- Easily of maintenance.

WORKING LIMITS
INDOOR UNIT
Room air temperature:
14°C minimum temperature with wet bulb
26°C minimum temperature with wet bulb.
40°C maximum temperature with dry bulb.

Room air humidity:
20%rH minimum relative humidity.
70%rH maximum relative humidity.

OUTDOOR UNIT - AIR COOLED MOTOCONDENSING UNIT
Ambient air temperature:
-30°C minimum temperature
45°C maximum temperature.

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1 9 6 3 2 0 1 3
fifty cool years

COMPONENTS - INDOOR UNIT - COOLSIDE EVO DX

FRAMEWORK

- Framework in galvanized steel sheet externally painted with epoxy powders.
- Panels in galvanized steel sheet externally painted with epoxy powders and internally insulated with noise absorption material.
- Access doors. The doors are equipped with handle with security lock.
- Holders for unit height adjusting.
- Colour RAL 7016 (anthracite grey) textured.
- Air flow:
  - Cooling system for rows of racks (in-row) COOLSIDE EVO "F":
    - o Air intake from the back side through honeycomb type grille and frontal air delivery through honeycomb type grille.
  - Direct cooling system of racks (in-rack) COOLSIDE EVO "L":
    - o Air intake from side through honeycomb type grille and air delivery from side through honeycomb type grille.

FILTER SECTION – COOLSIDE EVO "F"

The filter section is not supplied for COOLSIDE EVO "L" unit.

- Washable air filters with G2 efficiency, with cells in synthetic fibre, on air suction panel.
- Differential pressure switch on the air side for clogged filters signal.

EVAPORATING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Condensate tray in peraluman with connection (external diameter Ø16) for a discharge tube or for a pump for condensate drain (option).

FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Fans quick installation system for a fast replacement.
- #2 temperature sensors on air delivery.
- Temperature sensor on air intake.
- Current detector for loss of air flow alarm.

REFRIGERANT CIRCUIT

- Electronic expansion valve.
- Refrigerant pressure transducer for expansion valve.
- Refrigerant temperature sensor for expansion valve.
- Filter dryer on liquid line.
- Refrigerant circuit with copper tubing with anticondensate insulation.
- Rotalock valves on liquid and suction line placed on bottom side of the unit for coupling to remote motocondensing unit.
  The COOLSIDE EVO DX 040 (size A6 / B6) is equipped with one Rotalock valve on liquid line and two Rotalock valves on suction lines. The refrigerant connection foresee a single liquid line and a double suction line to ensure the lubricant oil return to the compressor.
- R 410A refrigerant charge.

ELECTRICAL PANEL

Extractable electrical panel, in accordance with EN60204-1 norms, complete with:

- Power supply with 10A plugs.
- Magnetothermic switch on power supply
- Terminals for external enabling, smoke/fire alarm, general alarm and LAN connection.
- Power supply: 230/1/50.

CONTROL SYSTEM

- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile "Flash" memory for data storage.
  - Menu with protection password.
  - LAN connection.

COMPONENTS - OUTDOOR UNIT - MCAI MOTOCONDENSING UNIT

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSOR

Motocondensing unit model MCAI 10:

- Twin rotary hermetic compressors "BLDC inverter" type optimized for R410A refrigerant.

Motocondensing unit models MCAI 20 / MCAI 40:

- Orbiting spiral (SCROLL) hermetic compressors "BLDC inverter" type with spiral profile optimized for R410A refrigerant.

Common characteristics:

- Inverter driven brushless type electric motor.
- Modulating capacity control.
- Crankcase heater.
- Terminal box with IP54 enclosure class.
- Rubber supports.

CONDENSING COIL

- All-aluminium microchannel heat exchanger coil, specifically developed to provide high heat transfer and lower pressure drops. Moreover microchannel technology reduces the weight of the component and the refrigerant charge.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

- Liquid separator on suction line.
- Oil separator on delivery line with oil recovery capillary hose.
- Check valve on gas delivery.
- Liquid receiver.
- Filter dryer on liquid line.
- Sight glass.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Rotalock valves for coupling to indoor units:
  - MCAI 10: Rotalock valves for connection to 1 indoor unit
  - MCAI 20: Rotalock valves for connection to 2 indoor units
  - MCAI 40: Rotalock valves for connection to 3 indoor units. In case of connection to a single COOLSIDE EVO DX 040 unit, are available as option the indoor evaporating unit #2 "suction line collectors" for a single suction line realization.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, IP54 enclosure class, complete with:

- Main switch with door lock safety
- Inverter to drive the compressor motor.
- Magnetothermic switch for fans motor protection
- Magnetothermic switch for inverter protection
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals for external enabling and smoke/fire alarm.
- RJ45 connector for microprocessor terminal connection (the microprocessor terminal is not installed on the unit).
- Power supply:
  - 230/1/50 for model MCAI 10
  - 400/3/50+N for models MCAI 20 and MCAI 40

CONTROL SYSTEM

- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

OPTIONAL ACCESSORIES - COOLSIDE EVO DX

COOLSIDE EVO DX SIZE	10 A3 F	10 A3 L	10 B3 F	10 B3 L	20 A3 F	20 A3 L	20 B3 F	20 B3 L	40 A6 F	40 A6 L	40 B6 F	40 B6 L
214 - BOX-server rack	-	●	-	●	-	●	-	●	-	-	-	-
215 - Kit BOX 8 connections cabling	●	●	●	●	●	●	●	●	-	-	-	-
216 - Kit BOX 16 connections cabling	●	●	●	●	●	●	●	●	●	●	●	●
Baseboard for machine holders	●	●	●	●	●	●	●	●	●	●	●	●
850 - Condensate discharge pump	●	●	●	●	●	●	●	●	●	●	●	●
905 - Remote temperature sensor	●	●	●	●	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●	●	●	●	●
202 - Timed stop button kit	●	●	●	●	●	●	●	●	●	●	●	●
854 - Connections from the top COOLSIDE EVO DX	●	●	●	●	●	●	●	●	●	●	●	●
263 - Kit single suction	-	-	-	-	-	-	-	-	●	●	●	●
852 - COOLSIDE humidifier kit	●	●	●	●	●	●	●	●	-	-	-	-
851 - Dual power supply	●	●	●	●	●	●	●	●	●	●	●	●

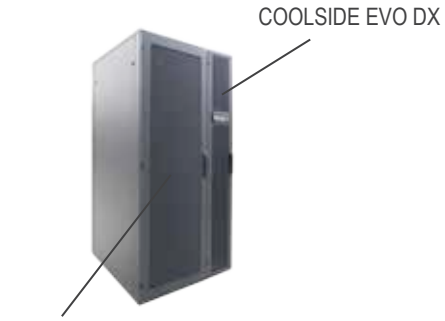
OPTIONAL ACCESSORIES - MCAI

MCAI	10	20	40
856 - Kit MCAI low temperature	●	●	●
857 - MCAI double power supply	●	●	●
923 - RC-Com MBUS/JBUS serial board	●	●	●
931 - BACnet for Ethernet - SNMP - TCP/IP serial board	●	●	●
932 - BACnet for MS/TP serial board	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES - BOX - Server Rack
Standard 19" server rack to match to COOLSIDE EVO DX 10 "L", COOLSIDE EVO DX 20 "L".

The system sucks hot air directly from the rear side of the racks, and, once cooled, enters it in the front side of the rack.
Thanks to the "closed" cooling system the electronic equipment contained in racks do not require fans for air circulation.



FRAMEWORK
- The rack is a 19" standard type (482,6 mm) - 42U (1,75 inch = 44,45 mm) in galvanized steel sheet externally painted with epoxy powders.
- Galvanized steel sheet panels externally painted with epoxy powders and internally insulated with noise absorption material.
- Colour: RAL 7016 (anthracite grey) textured.
- The server - rack is in compliance with IEC 60 297-1/2 norms
- Maximum load capacity for internal installation 1000 kg.
- Access doors. The doors are equipped with handle with security lock.
  - Front door is made of safety glass that allows direct control of the internal equipment
  - Back door in galvanized steel sheet

OPTIONAL ACCESSORIES
- Bus bar with maximum load of 96 A (7 modules 2 x 3 x 16A) and power supply cord.

POSSIBLE CONFIGURATIONS

IN-ROW

COOLSIDE EVO DX "F"
Frontal air delivery

IN-RACK

COOLSIDE EVO DX "L"
Side air delivery

COOLING SYSTEM FOR ROWS OF RACKS (IN ROW).
COOLSIDE EVO DX "F"
COOLSIDE EVO units and the racks are placed in rows that are arranged so as to obtain alternate cold and hot aisles.
Electronic equipments contained in racks independently provide to aspire the necessary air for cooling.

DIRECT COOLING SYSTEM (IN RACK).
COOLSIDE EVO DX "L"
The system sucks hot air directly from the rear side of the racks, and, once cooled, enters it in the front side of the rack.
Thanks to the "closed" cooling system the electronic equipment contained in racks do not require fans for air circulation.

TECHNICAL DATA - COOLSIDE EVO DX

MODEL		10				20				40			
SIZE		A3 - B3				A3 - B3				A6 – B6			
		Nominale	Ridotto	Medio	Massimo	Nominale	Ridotto	Medio	Massimo	Nominale	Ridotto	Medio	Massimo
Cooling Capacity (1)													
Total	**kW**	**10,1**	**4,5**	**8,1**	**11,1**	**20,3**	**10,0**	**15,0**	**22,5**	**41,1**	**20,0**	**28,0**	**41,7**
Sensible	**kW**	**10,1**	**4,5**	**8,1**	**11,1**	**20,3**	**10,0**	**15,0**	**22,5**	**41,1**	**20,0**	**28,0**	**41,7**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fans	n.	3	3	3	3	5	5	5	5	10	10	10	10
Total air flow rate	m³/h	2800	1300	2100	2900	4700	2200	3500	4850	9400	4300	7000	9700
Air filters	n.	1				1				1			
Efficiency		G2				G2				G2			
Refrigerant		R410A				R410A				R410A			
Evaporating coil volume	l	2				2,8				5,8			
Gas circuits	n.	1				1				1			
Power supply	V/Ph/Hz	230/1/50				230/1/50				230/1/50			
Max operating current (FLA)	A	2,2				3,6				7,1			
Sound pressure level (2)													
On air delivery COOLSIDE EVO “F”	dB(A)	67,6	51	61,2	68,3	69,8	53,3	63,4	70,4	72,3	55,4	65,9	72,9
Irradiated COOLSIDE EVO “L”	dB(A)	60,9	44,3	54,5	61,6	63,1	46,6	56,7	63,7	65,6	48,7	59,2	66,2
Net weight													
COOLSIDE EVO “F”	kg	A3 = 165 / B3 = 175				A3 = 170 / B3 = 180				A6 = 224 / B6 = 237			
COOLSIDE EVO “L”	kg	A3 = 163 / B3 = 173				A3 = 168 / B3 = 178				A6 = 222 / B6 = 235			
Refrigerant connections													
Liquid line	ODS Ø	12				12				16			
Suction line	ODS Ø	16				22				2 x 22			

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

1. Gross value - Characteristics referred to entering air at 35°C d.b. (20.1°C w.b.) - unit coupled to a MCAI motocondensing unit operating at nominal conditions with equivalent length of refrigerant pipes connecting 3m.
2. Sound pressure level at 1 meter in free field (ISO EN 3744).

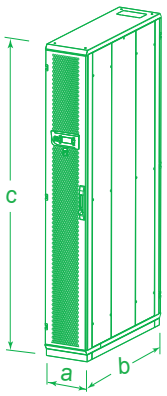
TECHNICAL DATA - MCAI

MODEL		MCAI 10	MCAI 20	MCAI 20	MCAI 40	MCAI 40	MCAI 40
Connected COOLSIDE EVO DX units	n x modello	**1 x 010**	**1 x 020**	**2 x 010**	**3 x 010**	**2 x 020**	**1 x 040**
Cooling capacity (1)	**kW**	**10,1**	**20,3**	**21,6**	**39,9**	**40,6**	**41,1**
Unit power input	KW	2,3	5,6	5,7	11,9	11,9	11,5
Compressor		Twin Rotary	Scroll	Scroll	Scroll	Scroll	Scroll
Quantity	n.	1	1	1	1	1	1
Modulating power control	%	30÷100	30÷100	30÷100	30÷100	30÷100	30÷100
Axial fans	n.	1	2	2	2	2	2
Total air flow rate	m³/h	5500	11000	11000	19000	19000	19000
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A
Total refrigerant charge (2)	kg	3,5	5	5	6	6	6
Gas circuit	n.	1	1	1	1	1	1
Power supply	V/Ph/Hz	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)	A	26,3	24,0	24,0	38,5	39,1	38,2
Energy efficiency index							
EER - Energy Efficiency Ratio	kW/kW	4,45	3,64	3,82	3,36	3,42	3,58
Sound level							
Sound power level [Lw] (3)	dB(A)	86,2	89,2	89,2	87,9	87,9	87,9
Average sound pressure level [LPm]							
[Lpm]1 meter far (4)	dB(A)	70,4	73,4	73,4	71,8	71,8	71,8
[Lpm] 5 meters far (4)	dB(A)	60,1	63,1	63,1	61,7	61,7	61,7
[Lpm]10 meters far (4)	dB(A)	54,7	57,7	57,7	56,4	56,4	56,4
Net weight	kg	96	178	178	228	228	228
Refrigerant connections							
Liquid line	n x ODS Ø	1 x 12	2 x 12	2 x 12	3 x 12	3 x 12	3 x 12
Suction line	n x ODS Ø	1 x 16	2 x 22	2 x 22	3 x 22	3 x 22	3 x 22

1. Characteristics referred to ambient temperature at 35°C with indoor units operating at nominal conditions with equivalent length of refrigerant pipes connecting 3m for each unit.
2. Unit refrigerant charge, connection pipes excluded.
3. Sound power level [Lw] according to ISO EN 9614 - 2
4. Average sound pressure level [Lpm] 1 meter far according to ISO EN 3744

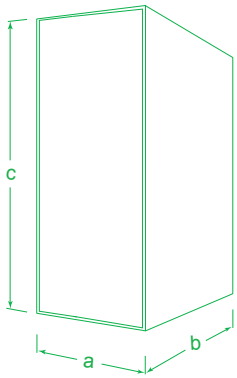
DIMENSIONS - COOLSIDE EVO DX (mm)

SIDE	a	b	c
10 A3	300	1000	2000
10 B3	300	1200	2000
20 A3	300	1000	2000
20 B3	300	1200	2000
40 A6	600	1000	2000
40 B6	600	1200	2000



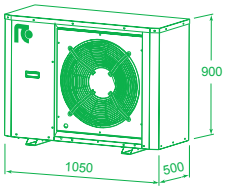
DIMENSIONS - BOX, SERVER-RACK (mm)

SIDE	a	b	c
BOX A	600	1000	2000
BOX B	600	1200	2000

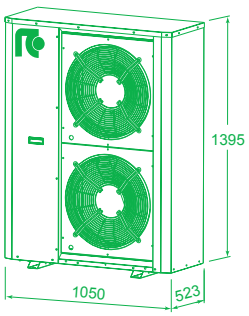


DIMENSIONS (mm)

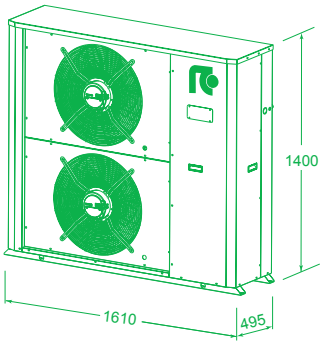
MCAI 10



MCAI 20



MCAI 40



COOLSIDE EVO CW: Chilled water air conditioners for high density racks and blade servers.

Cooling Capacity: **19,6 ÷ 54,8 kW**

rcgroupairconditioning

CHILLED WATER · EC · FRONT FLOW · CLOSED LOOP

MAIN FEATURES
- Chilled water air conditioners for high density racks and blade servers.
- 4 models, 2 versions available for a wide selection opportunity.
- Synergy with RC Group liquid chillers.
- Chilled water feeding.
- EC Plug-fans.
- "F" Version, frontal air delivery, "L" version, side air delivery.
- Suitable for indoor installation.

MAIN BENEFITS
- Suitable for direct cooling system (close loops) or cooling system for rows of racks (hot/cold aisle).
- Plug-fan EC for a higher energy efficiency.
- Availability of refrigerant connections on the top or on the bottom of the unit.
- Availability of dual power supply.
- Availability of box-server rack.
- Easily of maintenance.

WORKING LIMITS
INDOOR UNIT
Room air temperature:
14°C minimum temperature with wet bulb
26°C minimum temperature with wet bulb.
40°C maximum temperature with dry bulb.

Room air humidity:
20%rH minimum relative humidity.
70%rH maximum relative humidity.

rcgroup.it
1 9 6 3 2 0 1 3
fifty**cool**years

COMPONENTS

FRAMEWORK

- Framework in galvanized steel sheet externally painted with epoxy powders.
- Panels in galvanized steel sheet externally painted with epoxy powders and internally insulated with noise absorption material.
- Access doors. The doors are equipped with handle with security lock.
- Holders for unit height adjusting.
- Colour:
  - RAL 7016 (anthracite grey) textured.
- Air flow:
  - A3 / A6 size – Cooling system for rows of racks (in-row):
    - o Air intake from the back side through honeycomb type grille and frontal air delivery through honeycomb type grille.
  - B3 / B6 size – Direct cooling system of racks (in-racks):
    - o Air intake from side through honeycomb type grille and air delivery from side through honeycomb type grille.

FILTER SECTION – COOLSIDE EVO "F"

The filter section is not supplied for COOLSIDE EVO "L" unit.

- Washable air filters with G2 efficiency, with cells in synthetic fibre, on air suction panel.
- Differential pressure switch on the air side for clogged filters signal.

COOLING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- 2-way modulating valve for water flow regulation with 0÷10V servomotor and emergency manual control.
- Hydraulic connections arranged for connection from bottom side of the unit.
- Condensate tray in peraluman with connection (external diameter Ø16) for a discharge tube or for a pump for condensate drain (option).

FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Fans quick installation system for a fast replacement.
- #2 temperature sensors on air delivery.
- Temperature sensor on air intake.
- Current detector for loss of air flow alarm.

ELECTRICAL PANEL

Extractable electrical panel, in accordance with EN60204-1 norms, complete with:

- Power supply with 10A plugs.
- Magnetothermic switch on power supply
- Terminals for external enabling, smoke/fire alarm, general alarm and LAN connection.
- Power supply: 230/1/50

CONTROL SYSTEM

- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Non-volatile "Flash" memory for data storage.
  - Menu with protection password.
  - LAN connection.

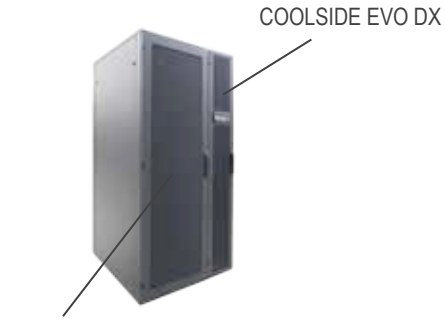
OPTIONAL ACCESSORIES - COOLSIDE EVO CW

MODEL SIZE	20 A3 F	20 A3 L	20 B3 F	20 B3 L	40 A6 F	40 A6 L	40 B6 F	40 B6 L
214 - BOX-server rack	-	●	-	●	-	-	-	-
215 - Kit BOX 8 connections cabling	●	●	●	●	-	-	-	-
216 - Kit BOX 16 connections cabling	●	●	●	●	-	-	-	-
Baseboard for machine holders	●	●	●	●	●	●	●	●
850 - Condensate discharge pump	●	●	●	●	●	●	●	●
911 - Water presence alarm	●	●	●	●	●	●	●	●
913 - Additional water sensor (kit)	●	●	●	●	●	●	●	●
905 - Remote temperature sensor	●	●	●	●	●	●	●	●
202 - Timed stop button kit	●	●	●	●	●	●	●	●
501 - Three-way valve	●	●	●	●	●	●	●	●
858 - Connections from the top COOLSIDE EVO CW	●	●	●	●	●	●	●	●
852 - COOLSIDE humidifier kit	●	●	●	●	●	●	●	●
851 - Dual power supply	●	●	●	●	●	●	●	●
Remote shared terminal	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES - BOX - Server Rack
Standard 19" server rack to match to COOLSIDE EVO CW 20 "L".

The system sucks hot air directly from the rear side of the racks, and, once cooled, enters it in the front side of the rack.
Thanks to the "closed" cooling system the electronic equipment contained in racks do not require fans for air circulation.



FRAMEWORK
- The rack is a 19" standard type (482,6 mm) - 42U (1,75 inch = 44,45 mm) in galvanized steel sheet externally painted with epoxy powders.
- Galvanized steel sheet panels externally painted with epoxy powders and internally insulated with noise absorption material.
- Colour: RAL 7016 (anthracite grey) textured.
- The server - rack is in compliance with IEC 60 297-1/2 norms
- Maximum load capacity for internal installation 1000 kg.
- Access doors. The doors are equipped with handle with security lock.
  - Front door is made of safety glass that allows direct control of the internal equipment
  - Back door in galvanized steel sheet

OPTIONAL ACCESSORIES
- Bus bar with maximum load of 96 A (7 modules 2 x 3 x 16A) and power supply cord.

POSSIBLE CONFIGURATIONS

LIQUID CHILLER

FREE-COOLING LIQUID CHILLER

IN-ROW

COOLSIDE EVO CW "F"
Frontal air delivery

COOLING SYSTEM FOR ROWS OF RACKS (IN ROW).
COOLSIDE EVO CW "F"
COOLSIDE EVO units and the racks are placed in rows that are arranged so as to obtain alternate cold and hot aisles.
Electronic equipments contained in racks independently provide to aspire the necessary air for cooling.

IN-RACK

COOLSIDE EVO CW "L"
Side air delivery

DIRECT COOLING SYSTEM (IN RACK).
COOLSIDE EVO CW "L"
The system sucks hot air directly from the rear side of the racks, and, once cooled, enters it in the front side of the rack.
Thanks to the "closed" cooling system the electronic equipment contained in racks do not require fans for air circulation.

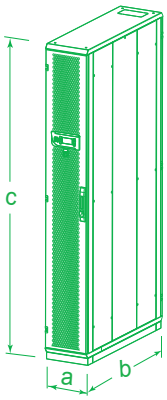
TECHNICAL DATA - COOLSIDE EVO CW

Model		20			40		
Size		A3 – B3			A6 – B6		
		Nom	Med	Max	Nom	Med	Max
Cooling Capacity (1)							
Total	**kW**	**25,0**	**19,6**	**25,5**	**53,4**	**41,7**	**54,8**
Sensible	**kW**	**25,0**	**19,6**	**25,5**	**53,4**	**41,7**	**54,8**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00	1,00
Fans	n.	5	5	5	10	10	10
Total air flow rate	m^3/h	4700	3500	4850	9400	7000	9700
Cooling coil							
Water flow rate	m^3/h	4,29	3,37	4,40	9,17	7,15	9,42
Pressure drop - coil + valve	kPa	42,0	26,6	44,0	58,0	36,5	60,6
Air filters	n.		1			1	
Efficiency			G2			G2	
Power supply	V/Ph/Hz		230/1/50			230/1/50	
Max operating current (FLA)	A		3,6			7,1	
Sound pressure level (2)							
On air delivery COOLSIDE EVO "F"	dB(A)	69,8	63,4	70,4	72,3	65,9	72,9
Irradiated COOLSIDE EVO "L"	dB(A)	63,1	56,7	63,7	65,6	59,2	66,2
Net weight							
COOLSIDE EVO "F"	kg		A3 = 168 / B3 = 178			A6 = 219 / B6 = 232	
COOLSIDE EVO "L"	kg		A3 = 166 / B3 = 176			A6 = 217 / B6 = 230	
Connections - ISO 228/1-B							
Chilled water inlet / outlet	M Ø		1"			1 ½"	

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 35°C d.b. (20.1°C w.b.) - chilled water temperature 7/12°C - 0% glycol.
2. Noise pressure level at 1 meter in free field (ISO EN 3744).

COOLSIDE EVO CW - DIMENSIONS (mm)

SIZE	a	b	c
20 A3	300	1000	2000
20 B3	300	1200	2000
40 A6	600	1000	2000
40 B6	600	1200	2000



ENERGY SPLIT: Split system air conditioners with free-cooling system.

Cooling Capacity: **4,2 ÷ 15,6 kW**

UPS 48VDC RC Hi-Tech

FREE COOLING RC Hi-Tech

rcgroupairconditioning

R407c | SPLIT SYSTEM | FREE COOLING | UPS 48VDC | FRONT FLOW

MAIN FEATURES
- Telecommunication split-system air conditioners.
- Proportional automatic free-cooling system. Three working mode.
- 8 models available for a wide selection opportunity.
- Average step of 1,5kW.
- Rotary or scroll compressor.
- R407c refrigerant charge.
- Supply fans directly coupled to brushless type electric motors.
- Horizontal or Vertical air flow.
- Double power supply (Network + 48VDC UPS)
- Evaporating unit suitable for indoor installation.
- Moto-condensing unit suitable for outdoor installation.

MAIN BENEFITS
- The proprietary software foresees unit working with the lowest noise emission during the night.
- Working continuity even during black-out periods.
- Automatic restart of the unit.
- Availability of electric heater.
- Easily of maintenance.

PROPORTIONAL FREE-COOLING SYSTEM
The cooling system is totally proportional and allows three working modes:
- total free-cooling: only fresh air is used to cool the ambient;
- partial free-cooling: the fresh air is used for a pre-cooling and the compressor or the chilled water are used to balance the load;
- mechanical cooling: the compressor or the chilled water are used to cool the ambient

DOUBLE POWER SUPPLY
(Network + 48VDC UPC)

WORKING LIMITS
Room humidity from 20 up to 75% rH
Room temperature from 16 up to 35°C
Ambient temperature from -30 up to 45°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

INDOOR UNIT

FRAMEWORK
- Frame in galvanized steel sheet, painted with epoxy powders.
- Galvanized steel sheet panels painted with epoxy powders, internally insulated with noise absorption material and seals to ensure air tight with the panels.
- Colour RAL 9002
- The frame can be installed on the ceiling (horizontal air flow) or wall mounting installation (vertical air flow).

FILTER SECTION
- Washable air filters with G3 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

REFRIGERANT CIRCUIT
- Thermostatic expansion valve.
- Pressure transducer with indication, control and protection functions, on high pressure.
- Low pressure safety switch.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Refrigerant connection valves on liquid line and suction line.
- R407C refrigerant charge.

SUPPLY FANS SECTION
Power supply 48VDC from UPS
- Double suction centrifugal fans with forward curved vanes directly coupled to external rotor electric motor.
- Brushless type electric motor with continuous variation of the rotation speed. The motor rotation control is obtained by signal coming from the microprocessor control.
- Temperature sensor on room air intake
- Temperature sensor on room air delivery.
- Grille on room air suction.
- Double row adjustable grille on air delivery.
- System for air flow loss alarm

DIRECT FREE-COOLING SECTION
Power supply 48VDC from UPS
- Deviating damper on ambient air.
- Proportional servomotor directly driven by microprocessor control.
- Grille on ambient air suction.
- Temperature sensor on ambient air.

ELECTRICAL PANEL
In accordance with EN60204-1 norms complete with:
- Double power supply, from network and from UPS 48VDC
  Models 4 R1, 5 R1, 6 Z1, 7 Z1, 8 Z1:
  - 230/1/50 power supply for compressor, condenser fan and eventual electric heater.

  Models 10 Z1, 13 Z1, 15 Z1:
  - 400/3/50+N power supply for compressor, condenser fan and eventual electric heater.

  For all models:
  - 48 VDC power supply from UPS for supply fans, free-cooling damper servomotor, auxiliary circuit and microprocessor control.
- Magnetothermic switch for 230/1/50 power supply line (from network)
- Magnetothermic switch for 48VDC power supply line (from UPS)
- Auxiliary circuit 48VDC (from UPS).
- Contactor for compressor
- Phases monitoring relay (only models 10.Z1, 13.Z1, 15.Z1)
- Terminals for General Alarm 1
- Terminals for General Alarm 2
- Wall mounting remote terminal kit that includes containing box, terminal, telephone cable for connection to the unit (length 10m).

CONTROL SYSTEM
Power supply 48VDC from UPS
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Main components hour-meter.
  - Menu with protection password.
  - LAN connection.
  - LN function to obtain a low noise unit running. The system works proportionally to the load on the fan rotation speed either of the condenser fan or the supply fan. The system allows a low noise unit running during night time anyway according to the programmed sets.
  - Automatic restart of the unit in case of power failure

OUTDOOR UNIT

FRAMEWORK
- Base and frame in galvanized steel sheet, painted with epoxy powders.
- Colour RAL 9002

ON / OFF COMPRESSOR
- Rotary compressor with rotary vane (model R1) optimized for R407C refrigerant.
- Scroll compressor (model Z1) with spiral profile optimized for R410A refrigerant.
- Electric motor with direct on line starting.
- Rubber supports.

REFRIGERANT CIRCUIT
- Sight glass.
- Filter dryer on liquid line.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Refrigerant connection valves on liquid line and suction line.
- R407C refrigerant charge and lubricant oil.

CONDENSING COIL
- Heat exchanger coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.

CONDENSER FAN SECTION
- Axial fan with sickle-shaped blade, fan guard and optimized for low noise levels.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.
- IP54 enclosure class.

ELECTRICAL PANEL
In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Main switch with door lock safety and remote signalling for open/close switch
- Terminals for compressor and condenser fan power supply

OPTIONAL ACCESSORIES

ENERGY SPLIT MODEL SIZE	04 R1 S0 XS	05 R1 S1 XS	06 Z1 S1 XS	08 Z1 S1/S XS	09 Z1 S1/S XS	11 Z1 S2 XS	13 Z1 S2 XS	16 Z1 S3 XS
311 - Electric heater	●	●	●	●	●	●	●	●
408 - FC system removal detraction	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●
925 - Terminal removal detraction	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●
939 - Fresh air kit	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA

ENERGY SPLIT Model Size		04 R1 S0 XS	05 R1 S0 XS	06 Z1 S0 XS	07 Z1 S1 XS	08 Z1 S1 XS	10 Z1 S1 XS	13 Z1 S2 XS	15 Z1 S2 XS
Cooling capacity(1)									
Total	**kW**	**4,2**	**5,3**	**6,0**	**7,0**	**9,6**	**11,4**	**12,8**	**15,6**
Sensible	**kW**	**3,9**	**4,9**	**5,4**	**6,2**	**8,3**	**9,9**	**12,0**	**14,2**
SHR	kW/kW	0,93	0,93	0,90	0,89	0,87	0,87	0,94	0,91
Unit power input									
48VDC power supply from UPS	kW	0,31	0,31	0,34	0,44	0,58	0,61	0,65	0,90
Power supply from network	kW	0,91	1,39	1,83	1,82	2,12	2,46	3,02	3,78
Treatment fans	n.	2	2	2	2	2	2	2	2
Air flow	m^3/h	1400	1400	1400	2000	2400	2800	3500	3900
Nominal external static pressure	Pa	30	30	30	30	30	30	30	30
Compressors		Rotary	Rotary	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Quantity	n.	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1
Condenser fans	n.	1	1	1	1	1	1	1	1
Air flow	m^3/h	1800	1800	2600	2600	3250	3450	3450	4400
Air filter	n.	1	1	1	1	1	1	1	1
Efficiency		G3	G3	G3	G3	G3	G3	G3	G3
Refrigerant		R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C
Total refrigerant charge	kg	2,0	2,0	2,0	2,0	2,0	2,9	3,1	3,1
Gas circuits	n.	1	1	1	1	1	1	1	1
Power supply - in-room unit	V/Ph/Hz	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC
Power supply - outdoor unit	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N
Max operating current (FLA)									
48VDC power supply from UPS	A	5,5	5,5	5,5	7,5	10,3	11,0	11,7	15,0
Power supply from network	A	7,1	10,1	12,1	12,1	15,5	6,9	7,7	9,2
Starting current (LRA)									
48VDC power supply from UPS	A	6,0	6,0	6,0	8,0	10,8	11,5	12,2	15,5
Power supply from network	A	23,6	33,6	47,7	47,7	61,7	40,7	46,7	50,2
EER (1)	kW/kW	3,42	3,11	2,75	3,08	3,56	3,71	3,49	3,33
Sound pressure - Indoor unit - ISO 3744 (2)	dB(A)	55,0	55,0	55,0	54,0	57,5	61,0	63,0	65,0
Sound pressure - Outdoor unit - ISO 3744 (2)	dB(A)	55,0	55,0	53,0	53,0	57,0	57,0	57,0	58,0
Net weight - Indoor unit	kg	42	45	45	80	80	80	103	103
Net weight - Outdoor unit	kg	55	65	70	70	75	95	98	105
Refrigerant connections									
Liquid line - SAE Flare	Ø	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Suction line - SAE Flare	Ø	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"
Hydraulic connections									
Condensate discharge	Ø	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

(1) Referred to entering air at 28°C with 40% RH and outdoor air temperature 35°C

(2) Sound pressure 1m far in free field according to ISO3744 norm.

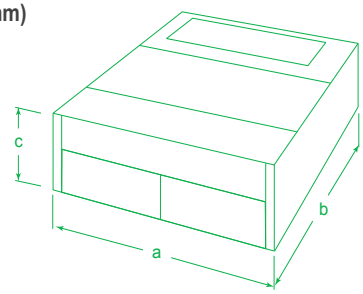
TECHNICAL DATA - OPTIONAL ACCESSORIES

ENERGY SPLIT MODEL SIZE		04 R1 S0 XS	05 R1 S0 XS	06 Z1 S0 XS	07 Z1 S1 XS	08 Z1 S1 XS	10 Z1 S1 XS	13 Z1 S2 XS	15 Z1 S2 XS
Electric heater									
Heating capacity	**kW**	**1,0**	**1,0**	**1,0**	**3,0**	**3,0**	**3,0**	**3,0**	**3,0**
Capacity steps	n.	1	1	1	1	1	1	1	1

DIMENSIONS - INDOOR EVAPORATING UNIT (mm)

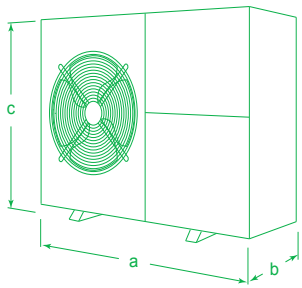
DIMENSIONS - INDOOR EVAPORATING UNIT (mm)

SIZE	a	b	c
S0	784	1171	294
S1	980	1293	361
S2	1380	1349	392



DIMENSIONS - OUTDOOR MOTO-CONDENSING UNIT (mm)

SIZE	a	b	c
4R1 ÷ 5R1	805	326	669
6Z1 ÷ 8Z1	1048	415	841
10Z1 ÷ 15Z1	1307	535	890



MINIPAC: Telecommunication packaged air conditioners with free-cooling system for outdoor installation.

Cooling Capacity: **4,2 ÷ 18,9 kW**

UPS 48VDC
RC Hi-Tech

FREE COOLING
RC Hi-Tech

rcgroupairconditioning

R407c | FREE COOLING | FRONT FLOW | UPS 48VDC

MAIN FEATURES
- Telecommunication packaged air conditioners.
- Proportional automatic free-cooling system. Three working mode.
- 9 models available for a wide selection opportunity.
- Average step of 1,5kW.
- Rotary or scroll compressor.
- R407c refrigerant charge.
- Supply fans directly coupled to brushless type electric motors.
- Horizontal air flow.
- Double power supply (Network + 48VDC UPS)
- Suitable for outdoor installation.

MAIN BENEFITS
- The proprietary software foresees unit working with the lowest noise emission during the night.
- Working continuity even during black-out periods.
- Automatic restart of the unit.
- Availability of electric heater.
- Full frontal inspection.
- Easily of maintenance.

PROPORTIONAL FREE-COOLING SYSTEM
The cooling system is totally proportional and allows three working modes:
- total free-cooling: only fresh air is used to cool the ambient;
- partial free-cooling: the fresh air is used for a pre-cooling and the compressor or the chilled water are used to balance the load;
- mechanical cooling: the compressor or the chilled water are used to cool the ambient

DOUBLE POWER SUPPLY
(Network + 48VDC UPC)

WORKING LIMITS
Room humidity from 20 up to 75% rH
Room temperature from 16 up to 35°C
Ambient temperature from -30 up to 45°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Base and frame in galvanized steel sheet, painted with epoxy powders.
- Galvanized steel sheet panels painted with epoxy powders, internally insulated with noise absorption material and seals to ensure air tight with the panels.
- Panels fixed with safety screws.
- Total front access for routine maintenance.
- Colour RAL 9002

ON / OFF COMPRESSOR
- Rotary compressor with rotary vane (model R1) optimized for R407C refrigerant.
- Scroll compressor (model Z1) with spiral profile optimized for R410A refrigerant.
- Electric motor with direct on line starting.
- Rubber supports.

FILTER SECTION
- Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

SUPPLY FANS SECTION
Power supply 48VDC from UPS
- Axial fans with sickle-shaped blade and fan guard, directly coupled to external rotor electric motor (units size S0, S1, S1S).
- Double suction centrifugal fans with forward curved vanes directly coupled to external rotor electric motor (units size S2, S3).
- Brushless type electric motor with continuous variation of the rotation speed. The motor rotation control is obtained by signal coming from the microprocessor control.
- Temperature sensor on room air intake
- Temperature sensor on room air delivery.
- Grille on room air suction.
- Double row adjustable grille on air delivery.
- System for air flow loss alarm

REFRIGERANT CIRCUIT
- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducer with indication, control and protection functions, on high pressure.
- Low pressure safety switch.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- R407C refrigerant charge and lubricant oil.

CONDENSING COIL
- Heat exchanger coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Grille on air suction/discharge.

CONDENSER FANS SECTION
- Axial fan with sickle-shaped blade, fan guard and optimized for low noise levels.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.
- IP54 enclosure class.

DIRECT FREE-COOLING SECTION
Power supply 48VDC from UPS
- Deviating damper on ambient air.
- Proportional servomotor directly driven by microprocessor control.
- Grille on ambient air suction.
- Temperature sensor on ambient air.

ELECTRICAL PANEL
In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Double power supply, from network and from UPS 48VDC
  Units size S0, S1, S1S:
  - 230/1/50 power supply for compressor, condenser fan and eventual electric heater.

  Units size S2, S3:
  - 400/3/50+N power supply for compressor, condenser fan and eventual electric heater.

  For all units:
  - 48 VDC power supply from UPS for supply fans, free-cooling damper servomotor, auxiliary circuit and microprocessor control.
- Magnetothermic switch for 230/1/50 or 400/3/50+N power supply line (from network)
- Magnetothermic switch for 48VDC power supply line (from UPS)
- Contactor on compressor.
- Phases monitoring relay (only S2, S3 units)
- Auxiliary circuit 48VDC (from UPS).
- Terminals for General Alarm 1
- Terminals for General Alarm 2

CONTROL SYSTEM
Power supply 48VDC from UPS
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Main components hour-meter.
  - Menu with protection password.
  - LAN connection.
  - LN function to obtain a low noise unit running. The system works proportionally to the load on the fan rotation speed either of the condenser fan or the supply fan. The system allows a low noise unit running during night time anyway according to the programmed sets.
  - Automatic restart of the unit in case of power failure

OPTIONAL ACCESSORIES

MINIPAC MODEL SIZE	04 R1 S0 XS	05 R1 S1 XS	06 Z1 S1 XS	08 Z1 S1/S XS	09 Z1 S1/S XS	11 Z1 S2 XS	13 Z1 S2 XS	16 Z1 S3 XS	20 Z1 S3 XS
169 - Mounting brackets	●	●	●	●	●	●	●	●	●
311 - Electric heater	●	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA

MINIPAC MODEL SIZE		04 R1 S0 XS	05 R1 S1 XS	06 Z1 S1 XS	08 Z1 S1/S XS	09 Z1 S1/S XS	11 Z1 S2 XS	13 Z1 S2 XS	16 Z1 S3 XS	20 Z1 S3 XS
Cooling capacity(1)										
Total	**kW**	**4,2**	**5,6**	**6,3**	**8,6**	**9,3**	**11,6**	**12,4**	**16,5**	**18,9**
Sensible	**kW**	**4,2**	**5,5**	**6,3**	**8,2**	**9,3**	**11,3**	**12,4**	**16,1**	**18,9**
SHR	kW/kW	1,00	0,99	1,00	0,96	1,00	0,97	1,00	0,98	1,00
Unit power input										
48VDC power supply from UPS	kW	0,11	0,22	0,22	0,39	0,39	0,48	0,63	0,67	1,09
Power supply from network	kW	1,18	1,43	1,88	2,21	2,79	3,00	4,00	4,81	6,50
Treatment fans	n.	2	2	2	2	2	2	2	2	2
Air flow	m^3/h	1100	1750	1750	2200	2200	3200	3700	4300	5000
Nominal external static pressure	Pa	20	20	20	20	20	30	30	30	30
Compressors		rotary	rotary	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1
Condenser fans	n.	1	1	1	1	1	1	1	1	1
Air flow	m^3/h	1600	1400	1900	2750	3600	4400	4400	4400	6200
Air filter	n.	1	1	1	1	1	1	1	2	2
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4
Refrigerant		R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C
Total refrigerant charge	kg	1,3	1,6	1,6	1,7	1,7	3,0	3,3	4,0	4,5
Gas circuits	n.	1	1	1	1	1	1	1	1	1
Power supply	V/Ph/Hz	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	230/1/50+48VDC	400/3/50+48VDC	400/3/50+48VDC	400/3/50+48VDC	400/3/50+48VDC
Max operating current (FLA)										
48VDC power supply from UPS	A	3,7	6,0	6,0	9,7	9,7	11,5	14,6	15,5	24,0
Power supply from network	A	8,6	9,9	12,1	15,5	18,8	8,2	9,2	13,6	19,0
Starting current (LRA)										
48VDC power supply from UPS	A	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Power supply from network	A	32,6	33,4	47,7	61,7	77,5	47,2	53,2	67,2	104,0
EER (1)	kW/kW	3,29	3,36	3,00	3,30	2,91	3,33	2,68	3,01	2,49
Sound pressure - ISO 3744 (2)										
On air intake	dB(A)	63,0	55,0	55,0	60,0	60,0	64,0	67,0	69,0	71,5
On front side	dB(A)	54,0	52,0	57,0	57,0	62,0	58,0	58,0	58,0	64,0
Net weight	kg	135	155	165	195	200	220	235	270	290

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

(1) Referred to entering air at 28°C with 40% RH and outdoor air temperature 35°C

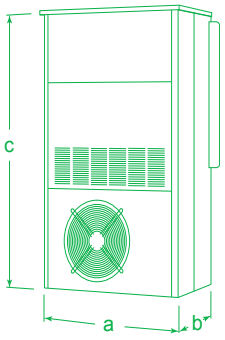
(2) Sound pressure 1m far in free field according to ISO3744 norm.

TECHNICAL DATA - OPTIONAL ACCESSORIES

MINIPAC MODEL SIZE		04 R1 S0 XS	05 R1 S1 XS	06 Z1 S1 XS	08 Z1 S1/S XS	09 Z1 S1/S XS	11 Z1 S2 XS	13 Z1 S2 XS	16 Z1 S3 XS	20 Z1 S3 XS
Electric heater										
Heating capacity	**kW**	**1,0**	**1,5**	**1,5**	**1,5**	**1,5**	**4,5**	**4,5**	**4,5**	**4,5**
Capacity steps	n.	1	1	1	1	1	1	1	1	1

DIMENSIONS (mm)

SIZE	a	b	c
S0	660	500	1303
S1	831	535	1500
S1S	903	620	1760
S2	1000	700	2004
S3	1000	700	2352



ENERTEL: Telecommunication packaged air conditioners with free-cooling system for indoor installation.

Cooling Capacity: **5,4 ÷ 15,4 kW**

UPS 48VDC RC Hi-Tech

FREE COOLING RC Hi-Tech

rcgroupairconditioning

R407c R134a FREE COOLING UP FLOW DOWN FLOW DISPLACEMENT UPS 48VDC

MAIN FEATURES
- Telecommunication packaged air conditioners.
- Proportional automatic free-cooling system. Three working mode.
- 22 models, 3 versions available for a wide selection opportunity.
- Average step of 1,5kW.
- Scroll compressor.
- R407c refrigerant charge, Over version.
- R134a refrigerant charge, Under version and DL version.
- Supply centrifugal fans directly coupled to the electric motors.
- Upflow air delivery (Over version), Downflow air delivery (Under version), Displacement air delivery (DL version).
- Double power supply (Network + 48VDC UPS)
- Suitable for indoor installation.

MAIN BENEFITS
- The proprietary software foresees unit working with the lowest noise emission during the night.
- Working continuity even during black-out periods.
- Automatic restart of the unit.
- Availability of electric heater.
- Full frontal inspection.
- Easily of maintenance.

PROPORTIONAL FREE-COOLING SYSTEM.
The cooling system is totally proportional and allows three working modes:
- total free-cooling: only fresh air is used to cool the ambient;
- partial free-cooling: the fresh air is used for a pre-cooling and the compressor or the chilled water are used to balance the load;
- mechanical cooling: the compressor or the chilled water are used to cool the ambient

DOUBLE POWER SUPPLY
(Network + 48VDC UPC)

WORKING LIMITS
Room humidity from 20 up to 75% rH
Room temperature from 16 up to 35°C
Ambient temperature from -30 up to 45°C

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Galvanized steel sheet base externally painted with epoxy powders.
- Housing consisting of aluminium profile frame, jointed with reinforced PVC corners and galvanized steel sheet panels externally coated with PVC film.
- Panels internally insulated by noise absorption material fixed by special PVC gasket, granting also the panels air tightness. The panels are fixed by stainless steel screws contained in a small cage not projecting from the housing.
- Total front access for routine maintenance.

ON / OFF COMPRESSOR
- Scroll compressor.
- Electric motor with direct on line starting.
- Rubber supports.

FILTER SECTION
- Washable air filters with G3 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

SUPPLY FANS SECTION
Power supply 48VDC from UPS
ENERTEL O (Over)
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fan), directly coupled to external rotor electric motor.

ENERTEL U (Under) ENERTEL DL (Displacement)
- Double suction centrifugal fans with forward curved vanes directly coupled to external rotor electric motor.

FOR ALL SERIES
- Brushless type electric motor with continuous variation of the rotation speed. The motor rotation control is obtained by signal coming from the microprocessor control.
- Temperature sensor on room air intake
- Temperature sensor on room air delivery.
- Grille on room air suction.
- Double row adjustable grille on air delivery (ENERTEL O).
- System for air flow loss alarm
- Air delivery:

o ENERTEL U: Downflow air delivery for raised floor
o ENERTEL O. Frontal air delivery or upflow air delivery
o ENERTEL DL: Displacement air delivery

REFRIGERANT CIRCUIT
- Thermostatic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducer with indication, control and protection functions, on high pressure.
- Low pressure safety switch.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.

ENERTEL O (Over)
- R407C refrigerant charge and lubricant oil.

ENERTEL U (Under) ENERTEL DL (Displacement)
- R134a refrigerant charge and lubricant oil.

CONDENSING COIL
- Heat exchanger coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:

- Maximum capacity relative to the size of the exchanger.
- Minimum charge of refrigerant.
- Reduction of the air flow required for the heat exchange.

- Frame in galvanized steel.
- Grille on air suction/discharge.

CONDENSER FANS SECTION
- Double suction centrifugal fans with forward curved vanes directly coupled to external rotor electric motor.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.

DIRECT FREE-COOLING SECTION
Power supply 48VDC from UPS
- Deviating damper on ambient air.
- Proportional servomotor directly driven by microprocessor control.
- Grille on ambient air suction.
- Temperature sensor on ambient air.

ELECTRICAL PANEL
In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Double power supply, from network and from UPS 48VDC

Units size S1:
- 230/1/50 power supply for compressor, condenser fan and eventual electric heater.

Units size S2, S3:
- 400/3/50+N power supply for compressor, condenser fan and eventual electric heater.

For all units:
- 48 VDC power supply from UPS for supply fans, free-cooling damper servomotor, auxiliary circuit and microprocessor control.
- Magnetothermic switch for 230/1/50 or 400/3/50+N power supply line (from network)
- Magnetothermic switch for 48VDC power supply line (from UPS)
- Contactor on compressor.
- Phases monitoring relay (only S2, S3 units)
- Auxiliary circuit 48VDC (from UPS).
- Terminals for General Alarm 1
- Terminals for General Alarm 2

CONTROL SYSTEM
Power supply 48VDC from UPS
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:

- Real time clock.
- Main components hour-meter.
- Menu with protection password.
- LAN connection.
- LN function to obtain a low noise unit running. The system works proportionally to the load on the fan rotation speed either of the condenser fan or the supply fan. The system allows a low noise unit running during night time anyway according to the programmed sets.
- Automatic restart of the unit in case of power failure

OPTIONAL ACCESSORIES - ENERTEL O

ENERTEL O MODEL SIZE	05 Z1 S1 XS	06 Z1 S1 XS	07 Z1 S1 XS	08 Z1 S2 XS	10 Z1 S2 XS	11 Z1 S2 XS	13 Z1 S3 XS	15 Z1 S3 XS
311 - Electric heater	●	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●
939 - Fresh air kit	●	●	●	●	●	●	●	●
940 - Fresh air kit with plenum	●	●	●	●	●	●	●	●

OPTIONAL ACCESSORIES - ENERTEL U / DL

ENERTEL U/DL MODEL SIZE	06 Q1 S1 XS	07 Q1 S1 XS	08 Q1 S1 XS	09 Q1 S2 XS	10 Q1 S2 XS	13 Q1 S3 XS	15 Q1 S3 XS
311 - Electric heater	●	●	●	●	●	●	●
909 - Clogged filters alarm	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●
939 - Fresh air kit	●	●	●	●	●	●	●
940 - Fresh air kit with plenum	-	-	-	●	●	●	●
941 - Horizontal discharge	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA - ENERTEL O

ENERTEL O MODEL SIZE		05 Z1 S1 XS	06 Z1 S1 XS	07 Z1 S1 XS	08 Z1 S2 XS	10 Z1 S2 XS	11 Z1 S2 XS	13 Z1 S3 XS	15 Z1 S3 XS
Cooling capacity(1)									
Total	**kW**	**5,4**	**6,1**	**7,0**	**10,0**	**11,0**	**12,2**	**14,4**	**15,4**
Sensible	**kW**	**5,4**	**6,1**	**7,0**	**9,4**	**10,4**	**11,5**	**14,3**	**15,2**
SHR	kW/kW	1,00	1,00	1,00	0,94	0,95	0,94	0,99	0,99
Unit power input									
48VDC power supply from UPS	kW	0,12	0,12	0,12	0,24	0,24	0,23	0,23	0,23
Power supply from network	kW	1,80	2,18	2,76	2,87	3,35	3,74	4,52	5,47
Treatment fans	n.	1	1	1	2	2	2	2	2
Air flow	m^3/h	1700	1700	1700	3000	3000	3000	3400	3400
Fans max external static pressure	Pa	0	0	0	0	0	0	0	0
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1
Condenser fans	n.	1	1	1	2	2	2	2	2
Air flow	m^3/h	2200	2200	2200	4000	4000	3900	4200	4200
Max external static pressure	Pa	200	200	200	200	200	200	200	200
Air filter	n.	1	1	1	2	2	2	2	2
Efficiency		G3	G3	G3	G3	G3	G3	G3	G3
Refrigerant									
Total refrigerant charge	kg	R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C
Gas circuits	n.	2,2	2,2	2,2	3,5	3,5	3,7	5,0	5,0
Power supply		1	1	1	1	1	1	1	1
Max operating current (FLA)									
48VDC power supply from UPS	A	4,0	4,0	4,0	6,5	6,5	6,5	6,5	6,5
Power supply from network	A	11,0	14,0	17,4	10,1	11,2	12,0	13,2	17,6
Starting current (LRA)									
48VDC power supply from UPS	A	1,0	1,0	1,0	3,0	2,0	2,0	2,0	2,0
Power supply from network	A	37,6	49,6	63,6	37,0	45,0	51,0	57,2	71,2
EER (1)	kW/kW	2,83	2,63	2,42	3,21	3,06	3,07	3,03	2,70
Sound pressure - ISO 3744 (2)									
On air intake	dB(A)	62,0	62,0	62,0	65,0	65,0	65,0	65,0	65,0
On front side	dB(A)	65,0	65,0	65,0	68,0	68,0	68,0	68,0	68,0
Net weight	kg	215	220	235	320	330	340	390	400

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

(1) Referred to entering air at 28°C with 40% RH and outdoor air temperature 35°C

(2) Sound pressure 1m far in free field according to ISO3744 norm.

TECHNICAL DATA - ENERTEL O - OPTIONAL ACCESSORIES

ENERTEL O MODEL SIZE		05 Z1 S1 XS	06 Z1 S1 XS	07 Z1 S1 XS	08 Z1 S2 XS	10 Z1 S2 XS	11 Z1 S2 XS	13 Z1 S3 XS	15 Z1 S3 XS
Electric heater									
Heating capacity	**kW**	**1,7**	**1,7**	**1,7**	**4,5**	**4,5**	**4,5**	**4,5**	**4,5**
Capacity steps	n.	1	1	1	1	1	1	1	1

TECHNICAL DATA - ENERTEL U/DL

ENERTEL U/DL MODEL SIZE		06 Q1 S1 XS	07 Q1 S1 XS	08 Q1 S1 XS	10 Q1 S2 XS	11 Q1 S2 XS	13 Q1 S3 XS	15 Q1 S3 XS
Cooling capacity(1)								
Total	**kW**	**6,5**	**7,3**	**7,8**	**9,9**	**10,8**	**14,7**	**15,4**
Sensible	**kW**	**6,0**	**6,7**	**7,2**	**9,1**	**10,3**	**13,7**	**14,6**
SHR	kW/kW	0,92	0,92	0,93	0,92	0,95	0,93	0,95
Unit power input								
48VDC power supply from UPS	kW	0,3	0,3	0,3	0,3	0,3	0,6	0,6
Power supply from network	kW	1,9	2,2	2,6	3,0	3,7	4,5	5,0
Treatment fans	n.	1	1	1	2	2	2	2
Air flow	m3/h	1850	1850	1850	2400	2400	3800	3800
Fans max external static pressure	Pa	50	50	50	50	50	50	50
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1
Condenser fans	n.	1	1	1	1	1	2	2
Air flow	m^3/h	2100	2100	2100	2500	2500	4000	4000
Max external static pressure	Pa	200	200	200	150	150	200	200
Air filter	n.	1	1	1	2	2	2	2
Efficiency		G3	G3	G3	G3	G3	G3	G3
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a
Total refrigerant charge	kg	2,2	2,2	2,2	3,5	3,5	5,0	5,0
Gas circuits	n.	1	1	1	1	1	1	1
Power supply								
Max operating current (FLA)								
48VDC power supply from UPS	A	7,7	7,7	7,7	8,5	8,5	15,0	15,0
Power supply from network	A	17,4	19,9	25,7	10,8	15,2	18,5	21,0
Starting current (LRA)								
48VDC power supply from UPS	A	1,0	1,0	1,0	2,0	2,0	2,0	2,0
Power supply from network	A	63,6	78,6	102,6	51,8	68,8	79,0	106,0
EER	kW/kW	3,00	2,97	2,67	2,93	2,67	2,90	2,73
Sound pressure - ISO 3744 (2)								
On air intake	dB(A)	51,0	54,0	54,0	55,0	55,0	57,0	57,0
On front side	dB(A)	63,0	65,0	65,0	65,0	65,0	68,0	68,0
Net weight	kg	215	230	240	320	320	380	390

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

(1) Referred to entering air at 28°C with 40% RH and outdoor air temperature 35°C

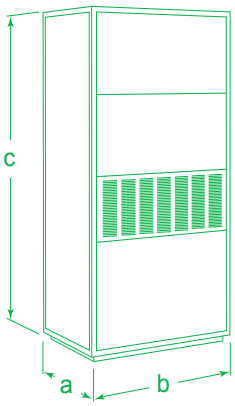
(2) Sound pressure 1m far in free field according to ISO3744 norm.

TECHNICAL DATA - ENERTEL U/DL - OPTIONAL ACCESSORIES

ENERTEL U/DL MODEL SIZE		06 Q1 S1 XS	07 Q1 S1 XS	08 Q1 S1 XS	10 Q1 S2 XS	11 Q1 S2 XS	13 Q1 S3 XS	15 Q1 S3 XS
Electric heater								
Heating capacity	**kW**	**3,0**	**3,0**	**3,0**	**3,0**	**3,0**	**4,5**	**4,5**
Capacity steps	n.	1	1	1	1	1	1	1

DIMENSIONS - ENERTEL O (mm)

SIZE	a	b	c
S1	650	650	2000
S2	990	650	2000
S3	1190	650	2000



DIMENSIONS - ENERTEL DL, ENERTEL U (mm)

SIZE	a	b	c
S1	750	625	2250
S2	950	625	2250
S3	1200	625	2250

MARK: Telecommunication packaged air conditioners with free-cooling system for indoor or outdoor installation.
Cooling Capacity: **5,8 ÷ 9,1 kW**

NEW RC Hi-Tech

UPS 48VDC RC Hi-Tech

INVERTER RC Hi-Tech

FREE COOLING RC Hi-Tech

rcgroupairconditioning

INVERTER · R410A · FREE COOLING · FRONT FLOW · UPS 48VDC

MAIN FEATURES
- Telecommunication packaged air conditioners.
- Proportional automatic free-cooling system. Three working mode.
- 3 models available for a wide selection opportunity.
- Modulating cooling capacity control.
- Rotary or On/off or BLDC scroll compressor.
- EER up to 4,3.
- R410A refrigerant charge.
- EC plug-fans.
- Horizontal air flow.
- Double power supply (Network + 48VDC UPS)
- Suitable for indoor or outdoor installation.

MAIN BENEFITS
- The proprietary software foresees unit working with the lowest noise emission during the night.
- Working continuity even during black-out periods.
- Automatic restart of the unit.
- BLDC Inverter scroll compressor and EC plug-fans for a higher energy efficiency.
- Availability of electric heater.
- Choice between indoor and outdoor installation.
- Free-cooling operation with +45% of air flow compared to the mechanical cooling operation. This allows to transfer more cooling power to the air conditioned room, maximizing energy savings.
- Easily of maintenance.

SUITABLE FOR INDOOR OR OUTDOOR INSTALLATION

FREE-COOLING SYSTEM
- Proportional free-cooling system
- The free-cooling system does not require the installation of overpressure damper or air expulsion system, into the room. The layout of the unit allows the expulsion of air injected with the free-cooling system directly from the machine.

DOUBLE POWER SUPPLY
(Network + 48VDC UPC)

WORKING LIMITS
Room humidity from 20 up to 75% rH
Room temperature from 10 up to 42°C
Ambient temperature from -20 up to 42°C

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fifty**cool**years

MAIN COMPONENTS

FRAMEWORK
- Base and frame in galvanized steel sheet, painted with epoxy powders.
- Galvanized steel sheet panels painted with epoxy powders, internally insulated with noise absorption material and seals to ensure air tight with the panels.
- Panels fixed with safety screws.
- Total front access for routine maintenance.
- Brackets for unit wall mounting.
- Colour RAL 9002

ON / OFF COMPRESSOR
MARK 06
- Rotary compressor with rotary vane optimized for R410A refrigerant.
- Electric motor with direct on line starting.
- Rubber supports.

MARK 09
- Scroll compressor with spiral profile optimized for R410A refrigerant.
- Electric motor with direct on line starting.
- Rubber supports.

INVERTER DRIVEN COMPRESSOR
MARK 10 INV
- scroll compressor BLDC inverter with spiral profile optimized for R410A refrigerant.
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Rubber supports.
- Soundproof cap.

FILTER SECTION
- Washable air filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002).

EVAPORATING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel.
- Condensate tray in peraluman with PVC flexible discharge pipe.

SUPPLY FANS SECTION
Power supply 48VDC from UPS
- Centrifugal fans with backward curved blade, single suction and without scroll housings (Plug-fan), directly coupled to external rotor electric motor.
  - Impeller in aluminium exempt from rust formation.
  - Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.

  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the signal coming from the microprocessor control.
- Temperature sensor on room air intake
- Temperature sensor on room air delivery.
- Grille on room air suction.
- Grille on room air delivery.
- System for air flow loss alarm

REFRIGERANT CIRCUIT
- Thermostatic expansion valve for models MARK 06 and MARK 09.
- Electronic expansion valve for model MARK 10 INV
- Sight glass.
- Filter dryer on liquid line.
- Pressure transducer with indication, control, protection and limit functions on high pressure.
- Pressure transducer with indication, control and protection functions on low pressure.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- R410A refrigerant charge and lubricant oil

CONDENSING COIL
- Heat exchanger coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Grille on air suction/discharge.

CONDENSER FANS SECTION
Power supply 48VDC from UPS
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fan), directly coupled to external rotor electric motor.
  - Impeller in aluminium exempt from rust formation.
  - Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.

  The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the signal coming from the microprocessor control.

DIRECT FREE-COOLING SECTION
Power supply 48VDC from UPS
- Deviating damper on ambient air.
- Proportional servomotor directly driven by microprocessor control.
- Grille on ambient air suction.
- Temperature sensor on ambient air.

The free-cooling system does not require the installation of overpressure damper or air expulsion system, into the room.

ELECTRICAL PANEL
In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Double power supply, from network and from UPS 48VDC
  MARK 06 – MARK 10 INV:
  - 230/1/50 power supply for compressor and eventual electric heater.

  MARK 09:
  - 400/3/50 power supply for compressor and eventual electric heater.

  For all units:
  - 48 VDC power supply from UPS for supply fan, condenser fan, free-cooling damper servomotor, auxiliary circuit and microprocessor control.
- Magnetothermic switch for 230/1/50 or 400/3/50 power supply line (from network)
- Magnetothermic switch for 48VDC power supply line (from UPS)
- Contactor on compressor (models MARK 06 and MARK 09)
- Phases monitoring relay (model MARK 09)
- Auxiliary circuit 48VDC (from UPS).
- Terminals for General Alarm

CONTROL SYSTEM

Power supply 48VDC from UPS

- Microprocessor system for control and monitor of operating and alarms status. The system includes:
  - 8-line remote display with keyboard. The display is supplied with a cable for connection to the controller and integrated magnetic plate. IP65 class protection.
  - Real time clock.
  - Main components hour-meter.
  - Menu with protection password.
  - Integrated RS485 serial line port.
  - Integrated Ethernet port
  - LAN connection.
  - Automatic restart of the unit in case of power failure
  - LN function to obtain a low noise unit running. The system works proportionally to the load on the fan rotation speed either of the condenser fan or the supply fan. The system allows a low noise unit running during night time anyway according to the programmed sets.
  - AIO (All In One) function of the Free-Cooling system. During free-cooling operation are used at the same time the supply fan and the condenser fan at higher speeds (+45% of air flow) compared to the mechanical cooling operation. This allows to transfer more cooling power to the air conditioned room, maximizing energy savings.
    The layout of the unit allows the expulsion of air injected with the free-cooling system directly from the machine avoiding the installation of overpressure damper.
  - NBC (No Break Cooling) function to ensure continuity of cooling in alarm condition. The free-cooling system automatically activates the case of alarm / lock of the compressor or black-out of the electricity grid.

OPTIONAL ACCESSORIES - MARK

MARK MODEL	06	09	10 INV
311 - Electric heater	●	●	●
909 - Clogged filters alarm	●	●	●
911 - Water presence alarm	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA

Model Cooling capacity(1)		06	09	10 INV min	10 INV nom	10 INV max
Total	**kW**	**5,8**	**9,0**	**4,3**	**7,1**	**9,1**
Sensible	**kW**	**5,8**	**9,0**	**4,3**	**7,1**	**9,1**
SHR	kW/kW	1,0	1,0	1,0	1,0	1,0
Unit power input	kW	1,9	3,2	1,0	1,9	3,4
Treatment fans	n.	1	1	1	1	1
Air flow	m³/h	1200	2000	2000	2000	2000
Compressors		rotary	scroll	scoll inverter	scroll inverter	scroll inverter
Quantity	n.	1	1	1	1	1
Capacity steps	n.	1	1	MOD	MOD	MOD
Condenser fans	n.	1	1	1	1	1
Air flow	m³/h	2000	3200	3200	3200	3200
Refrigerant		R410A	R410A	R410A	R410A	R410A
Total refrigerant charge	Kg	1,7	1,7	1,7	1,7	1,7
Gas circuits	n.	1	1	1	1	1
Power supply	V/Ph/Hz	230-1-50 + 48 VDC	400-3-50 + 48 VDC	230-1-50 + 48 VDC	230-1-50 + 48 VDC	230-1-50 + 48 VDC
Max operating current (FLA)		26,8	28,2	43,2	43,2	43,2
Starting current (LRA)		74,0	67,2	24,2	24,2	24,2
EER (1)	kW/kW	3,06	2,79	4,3	3,65	2,64
Sound pressure - ISO 3744 (2)						
In-room side	dB(A)	42,8	52,6	52,6	52,6	52,6
Ambient side	dB(A)	53,7	62,3	62,3	62,3	62,3
Net weight	Kg	196	200	187	187	187

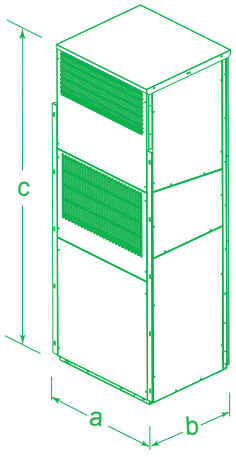
THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FANS MOTOR THERMAL LOAD

(1) Referred to entering air at 30°C with 35% RH and outdoor air temperature 35°C

(2) Sound pressure 1m far in free field according to ISO3744 norm.

DIMENSIONS (mm)

SIZE	a	b	c
MARK	750	660	1995



MAXIMO: Packaged air cooled liquid chillers with free-cooling system for outdoor installation, equipped with scroll compressors and axial fans
Cooling Capacity: **20,6 ÷ 279 kW**
Free-Cooling Capacity: **19,2 ÷ 194 kW**

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

FREE COOLING
RC Hi-Tech

maximo

rcgroupairconditioning

R410A · FREE COOLING · PLATE · EC

MAIN FEATURES

- Air cooled liquid chiller with free-cooling system.
- 29 models available, for a wide selection opportunity.
- Average step of 12,5kW.
- EER up to 3,05.
- ESEER up to 3,80.
- Scroll compressors.
- R410A Refrigerant charge.
- Single or double refrigerant circuit.
- Plate type heat exchangers.
- EC Axial fans.
- Single air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS

- Units equipped with two scroll compressors for refrigerant circuit to reach a high efficiency.
- Units with single and double refrigerant circuits.
- Indirect free cooling system.
- High EER and ESEER.
- EC axial fans for a high efficiency.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Easily of maintenance.
- Complete set of components dedicated to the safety of the unity.
- Eurovent Certification.

INDIRECT FREE COOLING SYSTEM

Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

FANS WITH BRUSHLESS TYPE EC MOTOR

These electric motors are ensuring high performances, minimum energy consumption and total absence of electromagnetic noise

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: 4÷15°C
Ambient temperature: -10÷45°C

WORKING LIMITS IN FREE-COOLING MODE

Minimum chilled water outlet temperature: -15°C
Minimum ambient temperature: -20°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Phase sequence electronic relay.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Rubber supports.

EVAPORATOR

- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
  - With single refrigerant circuit for S version machines.
  - With double refrigerant circuit for D version machines.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Differential water pressure switch for water flow control.
- Antifreeze heater.

CONDENSING COIL

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Sub-cooling circuit to allow a significant increase in cooling capacity.
- Frame in galvanized steel.

FREE-COOLING COIL

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Maintenance-free bearings
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Thermostatic expansion valve up to model 76 P2 C3 D included.
- Electronic expansion valve from model 98 P2 C4 S included. The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure. The electronic expansion valve exclude the installation of the electromagnetic valve on liquid line.
- Sight glass.
- Liquid receiver.
- Electromagnetic valve on liquid line. The electromagnetic valve is not installed when the electronic expansion valve is present.
- Filter dryer on liquid line.
- Service valves on liquid line and gas discharge.
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety.
- Magnetothermic switch or fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply: 400/3/50.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS

- The heat exchangers’ threaded hydraulic connections are available up to a diameter of 3” included, and correspond to ISO 228/1 – G M.
- The pipes’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

MAXIMO	21 P1 S	24 P1 S	28 P1 S	30 P1 S	34 P1 S	40 P1 S	50 P1 S	52 P2 S	52 P2 D	58 P2 S	58 P2 D
SIZE	C1	C1	C1	C1	C2	C2	C2	C2	C2	C3	C3
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	-	-	-	-	-	-	-	-	-	●	●
768 - Chilled water storage tank	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	-	-	-	-	-	-	-	-	-	●	●
Evaporator flexible joint with adapter for flange connection	-	-	-	-	-	-	-	-	-	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
NNN - Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

MAXIMO	62 P1 S	65 P2 S	65 P2 D	76 P2 S	76 P2 D	98 P2 S	98 P2 D	124 P2 S	124 P2 D	158 P2 S	158 P2 D
SIZE	C3	C3	C3	C3	C3	C4	C4	C4	C4	C4	C4
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	●	●	●	●	●	●	●	●	●	●	●
768 - Chilled water storage tank	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
NNN - Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES

MAXIMO SIZE	180 P2 S C5	180 P2 D C5	197 P2 S C5	197 P2 D C5	230 P3 S C5	240 P4 D C5H	270 P4 D C5H
739 - Pumping group (1 pump)	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	●	●	●	●	●	●	●
768 - Chilled water storage tank	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●
NNN - Expansion valve energy reserve module	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA MAXIMO

	MAXIMO		21 P1 S	24 P1 S	28 P1 S	30 P1 S	34 P1 S	40 P1 S	50 P1 S	52 P2 S
	SIZE		C1	C1	C1	C1	C2	C2	C2	C2
STANDARD	**Cooling capacity (1)**	**kW**	**20,6**	**23,2**	**27,4**	**30,1**	**36,2**	**40,8**	**50,1**	**52,0**
	Unit power input	kW	7,2	8,4	10,0	11,5	11,9	14,5	19,3	20,2
	Free-Cooling capacity (2)	**kW**	**19,2**	**20,1**	**24,3**	**25,1**	**32,5**	**36,7**	**43,8**	**44,2**
	Total water flow rate	m³/h	3,8	4,3	5,1	5,6	6,7	7,5	9,2	9,6
	Total pressure drop	kPa	73	91	109	105	103	113	109	117
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	1	1	1	1	1	1	1	2
	Capacity steps	n.	1	1	1	1	1	1	1	2
	Axial fans EC	n.	1	1	1	1	2	2	2	2
	Total air flow	m³/h	7500	7500	9650	9650	12000	14000	17300	17300
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	11,3	11,3	11,3	11,5	13,7	13,7	15,0	15,3
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	17,5	22,5	23,6	26,6	34,0	37,0	43,2	47,2
	Unit starting current (LRA)	A	96,5	112,5	119,6	119,6	143,0	177,0	228,2	143,2
	EER (1)	kW/kW	2,88	2,77	2,74	2,61	3,05	2,82	2,59	2,57
	ESEER		3,31	3,20	3,18	3,07	3,52	3,22	3,00	3,13
	Sound power level [Lw] (3)	dB(A)	80,8	81,2	82,6	81,8	83,6	86,6	89,8	87,2
	Average sound pressure level [LPm] (4)	dB(A)	64,2	64,6	66,0	65,2	66,4	69,4	72,5	70,0
	Net weight	kg	430	440	440	440	600	600	740	700
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"
	Evaporator IN/OUT - OD (5)	Ø mm	-	-	-	-	-	-	-	-
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**7,1**	**8,0**	**9,4**	**10,4**	**12,5**	**14,0**	**17,2**	**17,9**
	Pumping group									
	1 pump - 2 poles electric motor	kW	1,1	1,1	1,1	1,1	1,5	1,5	1,5	1,5
	2 pump - 2 poles electric motor	kW	-	-	-	-	-	-	-	-
	Water tank - volume	l	130	130	130	130	210	210	210	210
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**20,6**	**23,2**	**27,4**	**30,1**	**36,2**	**40,8**	**50,1**	**52,0**
	Unit power input	kW	6,8	7,9	9,4	10,9	11,2	13,7	18,5	19,3
	Free-Cooling capacity (2)	kW	19,2	20,1	24,3	25,1	32,5	36,7	43,8	44,2
	Total air flow	m³/h	7500	7500	9650	9650	12000	14000	17300	17300
	EER (1)	kW/kW	2,88	2,77	2,74	2,61	3,05	2,82	2,59	2,57
	Sound power level [Lw] (3)	dB(A)	80,3	80,4	82,1	81,1	83,0	86,2	88,4	87,0
	Average sound pressure level [LPm] (4)	dB(A)	63,7	63,8	65,5	64,5	65,8	69,0	71,2	69,8
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**20,1**	**22,6**	**26,7**	**29,1**	**35,3**	**39,7**	**48,8**	**50,4**
	Unit power input	kW	6,9	8,1	9,4	11,1	11,5	13,8	18,5	19,5
	Free-Cooling capacity (2)	kW	19,0	19,9	24,1	24,8	32,2	36,4	43,4	43,9
	Total air flow	m³/h	6375	6375	8203	8203	10200	11900	14705	14705
	EER (1)	kW/kW	2,79	2,66	2,67	2,49	2,91	2,73	2,52	2,47
	Sound power level [Lw] (3)	dB(A)	76,7	76,9	78,5	77,6	79,4	82,5	85,2	83,2
	Average sound pressure level [LPm] (4)	dB(A)	60,1	60,3	61,9	61,0	62,2	65,3	68,0	66,0
ELN KIT	**Cooling capacity (1)**	**kW**	**19,4**	**21,6**	**25,6**	**27,7**	**33,8**	**38,2**	**46,9**	**48,1**
	Unit power input	kW	7,1	8,4	9,8	11,6	11,9	14,2	19,1	20,3
	Free-Cooling capacity (2)	kW	18,7	19,6	23,7	24,4	31,8	35,9	42,9	43,3
	Total air flow		5250	5250	6755	6755	8400	9800	12110	12110
	EER (1)	kW/kW	2,61	2,45	2,49	2,28	2,70	2,56	2,36	2,28
	Sound power level [Lw] (3)	dB(A)	72,8	73,3	74,6	73,9	75,7	78,5	82,3	79,0
	Average sound pressure level [LPm] (4)	dB(A)	56,2	56,8	58,0	57,3	58,5	61,3	65,1	61,8

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C.
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA MAXIMO

	MAXIMO		52 P2 D	58 P2 S	58 P2 D	62 P1 S	65 P2 S	65 P2 D	76 P2 S	76 P2 D
	SIZE		C2	C3	C3	C3	C3	C3	C3	C3
STANDARD	**Cooling capacity (1)**	**kW**	**51,9**	**60,5**	**60,7**	**64,3**	**68,0**	**67,8**	**77,8**	**77,4**
	Unit power input	kW	20,2	21,6	21,4	23,4	24,6	24,3	29,8	29,7
	Free-Cooling capacity (2)	**kW**	**44,2**	**55,4**	**55,5**	**57,9**	**60,4**	**60,3**	**66,8**	**66,7**
	Total water flow rate	m³/h	9,6	11,2	11,2	11,8	12,5	12,5	14,3	14,3
	Total pressure drop	kPa	94	107	80	103	118	95	114	94
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	1	2	2	2	2
	Capacity steps	n.	2	2	2	1	2	2	2	2
	Axial fans EC	n.	2	3	3	3	3	3	3	3
	Total air flow	m³/h	17300	21000	21000	22000	23000	23000	25750	25750
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	16,0	21,7	19,3	18,9	22,1	19,6	28,6	25,5
	Gas circuits	n.	2	1	2	1	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	47,2	54,5	54,5	53,0	66,5	66,5	72,8	72,8
	Unit starting current (LRA)	A	143,2	147,5	147,5	276,5	175,5	175,5	212,8	212,8
	EER (1)	kW/kW	2,57	2,80	2,84	2,75	2,76	2,79	2,61	2,61
	ESEER		3,55	3,44	3,80	3,16	3,34	3,68	3,09	3,47
	Sound power level [Lw] (3)	dB(A)	87,2	88,2	88,2	93,0	88,1	88,1	87,3	87,3
	Average sound pressure level [L_{Pm}] (4)	dB(A)	70,0	70,3	70,3	75,1	70,2	70,2	69,4	69,4
	Net weight	kg	700	930	920	970	940	930	1000	1000
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	2"	-	-	-	-	-	-	-
	Evaporator IN/OUT - OD (5)	Ø mm	-	76,1	76,1	76,1	76,1	76,1	76,1	76,1
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**17,8**	**20,8**	**20,9**	**22,1**	**23,4**	**23,3**	**26,8**	**26,6**
	Pumping group									
	1 pump - 2 poles electric motor	kW	1,5	3,0	3,0	3,0	3,0	3,0	3,0	3,0
	2 pump - 2 poles electric motor	kW	-	3,0	3,0	3,0	3,0	3,0	3,0	3,0
	Water tank - volume	l	210	360	360	360	360	360	360	360
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**51,9**	**60,5**	**60,7**	**64,3**	**68,0**	**67,8**	**77,8**	**77,4**
	Unit power input	kW	19,4	20,6	20,6	22,4	23,5	23,4	28,6	28,6
	Free-Cooling capacity (2)	kW	44,2	55,4	55,5	57,9	60,4	60,3	66,8	66,7
	Total air flow	m³/h	17300	21000	21000	22000	23000	23000	25750	25750
	EER (1)	kW/kW	2,57	2,80	2,84	2,75	2,76	2,79	2,61	2,61
	Sound power level [Lw] (3)	dB(A)	87,0	87,9	87,9	91,5	87,9	87,9	87,0	87,0
	Average sound pressure level [L_{Pm}] (4)	dB(A)	69,8	70,0	70,0	73,6	70,0	70,0	69,2	69,2
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**50,2**	**58,8**	**58,9**	**62,6**	**66,0**	**65,8**	**75,6**	**75,2**
	Unit power input	kW	19,5	20,9	20,8	22,6	23,6	23,5	28,7	28,6
	Free-Cooling capacity (2)	kW	43,8	54,9	55,0	57,5	59,8	59,8	66,2	66,1
	Total air flow	m³/h	14705	17850	17850	18700	19550	19550	21888	21888
	EER (1)	kW/kW	2,47	2,69	2,73	2,66	2,67	2,69	2,53	2,54
	Sound power level [Lw] (3)	dB(A)	83,2	84,2	84,2	88,4	84,1	84,1	83,3	83,3
	Average sound pressure level [L_{Pm}] (4)	dB(A)	66,0	66,3	66,3	70,5	66,2	66,2	65,4	65,4
ELN KIT	**Cooling capacity (1)**	**kW**	**47,9**	**56,4**	**56,5**	**60,2**	**63,2**	**63,0**	**72,4**	**72,0**
	Unit power input	kW	20,3	21,7	21,6	23,3	24,4	24,3	29,4	29,4
	Free-Cooling capacity (2)	kW	43,2	54,2	54,2	56,8	59,1	59,0	65,4	65,3
	Total air flow		12110	14700	14700	15400	16100	16100	18025	18025
	EER (1)	kW/kW	2,28	2,50	2,53	2,49	2,49	2,50	2,37	2,37
	Sound power level [Lw] (3)	dB(A)	79,0	79,9	79,9	85,6	79,8	79,8	79,1	79,1
	Average sound pressure level [L_{Pm}] (4)	dB(A)	61,8	62,0	62,0	67,7	61,9	61,9	61,2	61,2

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA MAXIMO

	MAXIMO		98 P2 S	98 P2 D	124 P2 S	124 P2 D	158 P2 S	158 P2 D	180 P2 S	180 P2 D
	SIZE		C4	C4	C4	C4	C4	C4	C5	C5
STANDARD	**Cooling capacity (1)**	**kW**	**101,0**	**99,8**	**124,0**	**122,0**	**159,0**	**161,0**	**183,0**	**184,0**
	Unit power input	kW	37,0	36,6	48,4	48,4	65,2	65,2	70,4	70,8
	Free-Cooling capacity (2)	**kW**	**85,7**	**85,3**	**101,0**	**101,0**	**116,0**	**116,0**	**136,0**	**137,0**
	Total water flow rate	m³/h	18,6	18,4	22,9	22,5	29,4	29,8	33,7	33,9
	Total pressure drop	kPa	94	78	86	75	95	84	77	80
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2
	Axial fans EC	n.	4	4	4	4	4	4	5	5
	Total air flow	m³/h	35000	35000	42000	42000	46800	46800	53000	53000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	33,9	31,3	38,6	42,1	50,9	42,9	73,7	65,8
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	86,4	86,4	108,4	108,4	142,2	142,2	161,7	161,7
	Unit starting current (LRA)	A	271,4	271,4	331,9	331,9	386,8	386,8	473,7	473,7
	EER (1)	kW/kW	2,73	2,73	2,56	2,52	2,44	2,47	2,60	2,60
	ESEER		3,25	3,64	3,01	3,41	2,96	3,30	3,12	3,51
	Sound power level [Lw] (3)	dB(A)	87,0	87,0	90,9	90,9	93,0	93,0	93,3	93,3
	Average sound pressure level [LPm] (4)	dB(A)	68,4	68,4	72,3	72,3	74,4	74,4	74,1	74,1
	Net weight	kg	1470	1470	1610	1610	1660	1640	2240	2210
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	-	-	-	-	-	-	-	-
	Evaporator IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**34,8**	**34,3**	**42,6**	**42,0**	**54,8**	**55,5**	**62,9**	**63,3**
	Pumping group									
	1 pump - 2 poles electric motor	kW	3,0	3,0	3,0	3,0	3,0	3,0	5,5	5,5
	2 pump - 2 poles electric motor	kW	4,0	4,0	4,0	4,0	4,0	4,0	7,5	7,5
	Water tank - volume	l	520	520	520	520	520	520	720	720
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**101,0**	**99,8**	**124,0**	**122,0**	**159,0**	**161,0**	**183,0**	**184,0**
	Unit power input	kW	35,7	35,5	47,2	47,2	63,3	63,6	68,8	69,0
	Free-Cooling capacity (2)	kW	85,7	85,3	101,0	101,0	116,0	116,0	136,0	137,0
	Total air flow	m³/h	35000	35000	42000	42000	46800	46800	53000	53000
	EER (1)	kW/kW	2,73	2,73	2,56	2,52	2,44	2,47	2,60	2,60
	Sound power level [Lw] (3)	dB(A)	86,2	86,2	90,6	90,6	92,8	92,8	93,2	93,2
	Average sound pressure level [LPm] (4)	dB(A)	67,6	67,6	72,0	72,0	74,2	74,2	73,9	73,9
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**98,4**	**97,2**	**120,0**	**119,0**	**154,0**	**156,0**	**177,0**	**178,0**
	Unit power input	kW	36,0	35,8	47,1	47,1	63,1	63,4	69,1	69,3
	Free-Cooling capacity (2)	kW	84,9	84,5	100,0	99,6	115,0	115,0	135,0	135,0
	Total air flow	m³/h	29750	29750	35700	35700	39780	39780	45050	45050
	EER (1)	kW/kW	2,65	2,64	2,48	2,46	2,38	2,40	2,51	2,51
	Sound power level [Lw] (3)	dB(A)	82,7	82,7	86,8	86,8	89,0	89,0	89,4	89,4
	Average sound pressure level [LPm] (4)	dB(A)	64,1	64,1	68,2	68,2	70,4	70,4	70,1	70,1
ELN KIT	**Cooling capacity (1)**	**kW**	**94,7**	**93,6**	**115,0**	**114,0**	**146,0**	**148,0**	**169,0**	**170,0**
	Unit power input	kW	37,2	37,0	48,3	48,2	65,0	65,4	71,6	71,9
	Free-Cooling capacity (2)	kW	83,7	83,3	98,7	98,2	113,0	113,0	132,0	132,0
	Total air flow		24500	24500	29400	29400	32760	32760	37100	37100
	EER (1)	kW/kW	2,47	2,46	2,32	2,31	2,19	2,22	2,31	2,32
	Sound power level [Lw] (3)	dB(A)	79,2	79,2	82,7	82,7	84,6	84,6	85,0	85,0
	Average sound pressure level [LPm] (4)	dB(A)	60,6	60,6	64,1	64,1	66,0	66,0	65,7	65,7

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

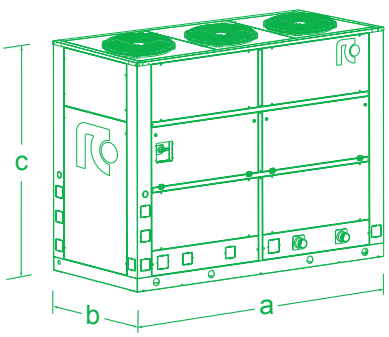
TECHNICAL DATA MAXIMO

	MAXIMO		197 P2 S	197 P2 D	230 P3 S	240 P4 D	270 P4 D
	SIZE		C5	C5	C5	C5H	C5H
STANDARD	**Cooling capacity (1)**	**kW**	**201,0**	**198,0**	**226,0**	**251,0**	**279,0**
	Unit power input	kW	80,4	80,8	99,1	97,3	114,8
	Free-Cooling capacity (2)	**kW**	**148,0**	**148,0**	**156,0**	**168,0**	**194,0**
	Total water flow rate	m³/h	37,0	36,6	41,8	46,3	51,5
	Total pressure drop	kPa	103	95	113	111	117
	Compressors		scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	3	4	4
	Capacity steps	n.	2	2	3	4	4
	Axial fans EC	n.	5	5	5	5	5
	Total air flow	m³/h	54000	54000	56300	69000	69000
	Air circuits	n.	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	83,1	102,2	83,7	127,0	126,6
	Gas circuits	n.	1	2	1	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	178,3	178,3	210,5	208,3	242,1
	Unit starting current (LRA)	A	490,3	490,3	455,1	431,8	486,7
	EER (1)	kW/kW	2,50	2,45	2,28	2,58	2,43
	ESEER		2,96	3,43	3,52	3,66	3,64
	Sound power level [Lw] (3)	dB(A)	93,7	93,7	94,7	93,4	93,4
	Average sound pressure level [LPm] (4)	dB(A)	74,4	74,4	75,4	74,1	74,1
	Net weight	kg	2220	2230	2370	2510	2510
	Hydraulic connections						
	Evaporator IN/OUT - ISO 7/1 – R	Ø	-	-	-	-	-
	Evaporator IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)						
	Heating capacity	**kW**	**69,0**	**68,2**	**77,7**	**86,4**	**96,1**
	Pumping group						
	1 pump - 2 poles electric motor	kW	5,5	5,5	5,5	5,5	5,5
	2 pump - 2 poles electric motor	kW	7,5	7,5	7,5	7,5	7,5
	Water tank - volume	l	720	720	720	720	720
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**201,0**	**198,0**	**226,0**	**251,0**	**279,0**
	Unit power input	kW	78,2	78,8	96,5	94,4	111,1
	Free-Cooling capacity (2)	kW	148,0	148,0	156,0	168,0	194,0
	Total air flow	m³/h	54000	54000	56300	69000	69000
	EER (1)	kW/kW	2,50	2,45	2,28	2,58	2,43
	Sound power level [Lw] (3)	dB(A)	93,6	93,6	94,5	93,0	93,0
	Average sound pressure level [LPm] (4)	dB(A)	74,3	74,3	75,2	73,8	73,8
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**194,0**	**191,0**	**217,0**	**243,0**	**268,0**
	Unit power input	kW	79,2	79,8	98,2	94,9	112,6
	Free-Cooling capacity (2)	kW	147,0	147,0	155,0	167,0	192,0
	Total air flow	m³/h	45900	45900	47855	58650	58650
	EER (1)	kW/kW	2,38	2,33	2,15	2,49	2,31
	Sound power level [Lw] (3)	dB(A)	89,8	89,8	90,7	89,3	89,3
	Average sound pressure level [LPm] (4)	dB(A)	70,5	70,5	71,4	70,0	70,0
ELN KIT	**Cooling capacity (1)**	**kW**	**183,0**	**181,0**	**203,0**	**231,0**	**252,0**
	Unit power input	kW	83,2	83,9	102,8	98,3	118,1
	Free-Cooling capacity (2)	kW	145,0	144,0	153,0	165,0	190,0
	Total air flow		37800	37800	39410	48300	48300
	EER (1)	kW/kW	2,15	2,11	1,93	2,29	2,08
	Sound power level [Lw] (3)	dB(A)	85,4	85,4	86,3	85,2	85,2
	Average sound pressure level [LPm] (4)	dB(A)	66,1	66,1	67,1	65,9	65,9

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE C	a	b	c
C1	1250	890	2010
C2	1800	1040	2060
C3	2600	1200	2060
C4	3700	1260	2050
C5	4950	1260	2090
C5H	4950	1260	2090



MAXIMO PF: Packaged air cooled liquid chillers with free-cooling system for indoor installation, equipped with scroll compressors and plug fan
Cooling Capacity: **21,4 ÷ 277 kW**
Free-Cooling Capacity: **18,1 ÷ 176 kW**

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

FREE COOLING
RC Hi-Tech

maximo pf

rcgroupairconditioning

R410A | FREE COOLING | PLATE | EC

MAIN FEATURES
- Air cooled liquid chiller with free-cooling system.
- 29 models available, for a wide selection opportunity.
- Average step of 12,5kW.
- EER up to 2,82.
- ESEER up to 3,47.
- Scroll compressors.
- R410A Refrigerant charge.
- Single or double refrigerant circuit.
- Plate type heat exchangers.
- EC Plug fan.
- Single air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS
- Units equipped with two scroll compressors for refrigerant circuit to reach a high efficiency.
- Units with single and double refrigerant circuits.
- Indirect free cooling system.
- High ESEER.
- EC Plug fan for a high efficiency.
- Availability of kit for the reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Easily of maintenance.
- Components dedicated to the safety of the unity.
- Eurovent Certification.

INDIRECT FREE COOLING SYSTEM
Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

INDOOR INSTALLATION
The machines are designed for indoor installation and ducting for air suction and discharge. For outdoor installation the use of the dedicated optional kit is mandatory. The machine must be installed under a cover or anyway protected against atmospherics agent.

WORKING LIMITS IN COOLING MODE
Chilled water outlet temperature: 4÷15°C
Ambient temperature: -10÷45°C

WORKING LIMITS IN FREE-COOLING MODE
Minimum chilled water outlet temperature: -15°C
Minimum ambient temperature: -20°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS
- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Phase sequence electronic relay.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Rubber supports.

EVAPORATOR
- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
  - With single refrigerant circuit for S version machines.
  - With double refrigerant circuit for D version machines.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Differential water pressure switch for water flow control.
- Antifreeze heater.

CONDENSING COIL
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Sub-cooling circuit to allow a significant increase in cooling capacity.
- Frame in galvanized steel.

FREE-COOLING COIL
- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION
- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fan).
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Maintenance-free bearings
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:
- Thermostatic expansion valve up to model 85 P2 C3 D included.
- Electronic expansion valve from model 107 P2 C3 D included. The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure. The electronic expansion valve exclude the installation of the electromagnetic valve on liquid line.
- Sight glass.
- Electromagnetic valve on liquid line. The electromagnetic valve is not installed when the electronic expansion valve is present.
- Filter dryer on liquid line.
- Service valves on liquid line and gas discharge.
- Safety valve on low pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms complete with:
- Main switch with door lock safety.
- Magnetothermic switch or fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply: 400/3/50.

CONTROL SYSTEM
- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS
- The heat exchangers’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 228/1 – G M.
- The pipes’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

MAXIMO PF	22 P1	24 P1	28 P1	32 P1	36 P1	42 P1	53 P1	67 P1	55 P2	55 P2	62 P2
	S	S	S	S	S	S	S	S	S	D	S
SIZE	C1	C1	C1	C1	C1	C1	C2	C2	C2	C2	C2
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	-	-	-	-	-	-	-	-	-	-	-
768 - Chilled water storage tank	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	-	-	-	-	-	-	-	-	-	-	-
Evaporator flexible joint with adapter for flange connection	-	-	-	-	-	-	-	-	-	-	-
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
460 - Kit for outdoor installation	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

MAXIMO PF	62 P2	71 P2	71 P2	85 P2	85 P2	107 P2	107 P2	135 P2	135 P2	170 P2	170 P2
	D	S	D	S	D	S	D	S	D	S	D
SIZE	C2	C2	C2	C3	C3	C3	C3	C4	C4	C4	C4
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	-	-	-	●	●	●	●	●	●	●	●
768 - Chilled water storage tank	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	-	-	-	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	-	-	-	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
460 - Kit for outdoor installation	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES

MAXIMO PF	195 P2	195 P2	220 P2	220 P2	250 P3	265 P4	290 P4
	S	D	S	D	S	D	D
SIZE	C4	C4	C5	C5	C5	C5	C5
739 - Pumping group (1 pump)	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	●	●	●	●	●	●	●
768 - Chilled water storage tank	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●
351 - Coils with pre-painted fins	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●
160 - Discharge air plenum with sound attenuators	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●
Expansion valve energy reserve module	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●
460 - Kit for outdoor installation	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA MAXIMO PF

	MAXIMO PF		22 P1 S	24 P1 S	28 P1 S	32 P1 S	36 P1 S	42 P1 S	53 P1 S	67 P1 S
	SIZE		C1	C1	C1	C1	C1	C1	C2	C2
STANDARD	**Cooling capacity (1)**	**kW**	**21,4**	**23,9**	**27,9**	**31,6**	**35,2**	**39,6**	**51,4**	**64,4**
	Unit power input	kW	7,6	8,9	10,8	11,6	14,0	17,0	20,6	25,6
	Free-Cooling capacity (2)	**kW**	**18,1**	**19,5**	**22,9**	**26,0**	**28,2**	**29,9**	**42,3**	**52,1**
	Total water flow rate	m³/h	4,0	4,4	5,2	5,8	6,5	7,3	9,5	11,9
	Total pressure drop	kPa	75	95	111	113	109	122	113	139
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	1	1	1	1	1	1	1	1
	Capacity steps	n.	1	1	1	1	1	1	1	1
	Centrifugal fans EC	n.	1	1	1	1	1	1	2	2
	Total air flow	m³/h	6500	7000	8500	10000	11000	11500	16000	21000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	11,3	11,3	11,3	11,5	11,6	11,6	18	18,5
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	20,3	25,3	26,3	29,9	35,9	38,9	48,6	56,9
	Unit starting current (LRA)	A	99,3	115,3	122,3	122,9	144,9	178,9	233,6	280,4
	EER (1)	kW/kW	2,82	2,69	2,58	2,72	2,51	2,33	2,50	2,52
	ESEER		3,24	3,10	3,01	3,21	2,92	2,66	2,90	3,04
	Sound power level [Lw] (3)	dB(A)	87,3	88,9	93,0	92,1	94,5	95,5	95,0	97,2
	Average sound pressure level [Lpm] (4)	dB(A)	70,7	72,3	76,4	75,5	77,9	78,9	77,8	76,4
	Net weight	kg	450	460	460	470	470	480	750	790
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
	Evaporator IN/OUT - OD (5)	Ø mm	--	--	--	--	--	--	--	--
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**7,4**	**8,2**	**9,6**	**10,9**	**12,1**	**13,6**	**17,7**	**22,2**
	Pumping group									
	1 pump - 2 poles electric motor	kW	1,1	1,1	1,1	1,1	1,1	1,1	1,5	1,5
	2 pump - 2 poles electric motor	kW	-	-	-	-	-	-	-	-
	Water tank - volume	l	130	130	130	130	130	130	210	210
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**21,4**	**23,9**	**27,9**	**31,6**	**35,2**	**39,6**	**51,4**	**64,4**
	Unit power input	kW	7,2	8,4	10,2	10,9	13,3	16,1	19,6	24,3
	Free-Cooling capacity (2)	kW	18,1	19,5	22,9	26,0	28,2	29,9	42,3	52,1
	Total air flow	m³/h	6500	7000	8500	10000	11000	11500	16000	21000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,82	2,69	2,58	2,72	2,51	2,33	2,50	2,52
	Sound power level [Lw] (3)	dB(A)	87,1	88,7	92,8	92,1	94,1	96,0	94,6	96,4
	Average sound pressure level [Lpm] (4)	dB(A)	70,5	72,1	76,2	75,5	77,5	79,4	77,4	75,9
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**20,8**	**23,2**	**27,0**	**30,6**	**34,0**	**38,2**	**50,0**	**62,6**
	Unit power input	kW	7,3	8,5	10,1	11,1	13,1	15,9	19,5	24,3
	Free-Cooling capacity (2)	kW	17,9	19,4	22,7	25,7	28,0	29,6	41,9	51,7
	Total air flow	m³/h	5525	5950	7225	8500	9350	9775	13600	17850
	External static pressure	Pa	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,72	2,59	2,52	2,62	2,48	2,29	2,45	2,45
	Sound power level [Lw] (3)	dB(A)	83,6	85,2	89,3	88,2	90,6	92,5	91,2	93,0
	Average sound pressure level [Lpm] (4)	dB(A)	67,0	68,6	72,7	71,6	74,0	75,9	74,0	72,4
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**19,9**	**22,1**	**25,8**	**29,2**	**32,5**	**36,3**	**47,9**	**59,9**
	Unit power input	kW	7,6	8,8	10,4	11,6	13,2	16,2	20,1	25,1
	Free-Cooling capacity (2)	kW	17,6	19,1	22,3	25,3	27,6	29,2	41,5	51,1
	Total air flow	m³/h	4550	4900	5950	7000	7700	8050	11200	14700
	External static pressure	Pa	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,51	2,39	2,35	2,40	2,34	2,14	2,29	2,28
	Sound power level [Lw] (3)	dB(A)	80,4	82,0	86,1	83,6	87,4	89,3	88,2	90,1
	Average sound pressure level [Lpm] (4)	dB(A)	63,8	65,4	69,5	67,1	70,8	72,7	71,0	69,2

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C.
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA MAXIMO PF

	MAXIMO PF		55 P2 S	55 P2 D	62 P2 S	62 P2 D	71 P2 S	71 P2 D	85 P2 S	85 P2 D
	SIZE		C2	C2	C2	C2	C2	C2	C3	C3
STANDARD	**Cooling capacity (1)**	**kW**	**54,1**	**54,2**	**60,7**	**60,9**	**68,4**	**68,3**	**80,5**	**80,1**
	Unit power input	kW	21,8	21,6	24,0	23,8	28,3	28,1	31,1	30,8
	Free-Cooling capacity (2)	**kW**	**45,7**	**45,7**	**50,6**	**50,6**	**55,6**	**55,5**	**67,1**	**67,0**
	Total water flow rate	m³/h	10,0	10,0	11,2	11,2	12,6	12,6	14,9	14,8
	Total pressure drop	kPa	124	100	139	112	157	135	120	98
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2
	Centrifugal fans EC	n.	2	2	2	2	2	2	3	3
	Total air flow	m³/h	18000	18000	20500	20500	23000	23000	25500	25500
	External static pressure	Pa	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	18,3	16	18,3	16	18,7	16,2	28,7	25,5
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	53,8	53,8	58,4	58,4	70,4	70,4	82,7	82,7
	Unit starting current (LRA)	A	149,8	149,8	151,4	151,4	179,4	179,4	222,7	222,7
	EER (1)	kW/kW	2,48	2,51	2,53	2,56	2,42	2,43	2,59	2,60
	ESEER		3,35	3,08	3,40	2,90	2,89	3,16	3,08	3,42
	Sound power level [Lw] (3)	dB(A)	93,6	93,6	87,5	87,5	89,8	89,8	94,4	94,4
	Average sound pressure level [Lpm] (4)	dB(A)	76,4	70,3	70,3	80,0	72,6	72,6	76,5	76,5
	Net weight	kg	740	740	810	810	820	820	1050	1050
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	2"	2"	2"	2"	2"	2"	--	--
	Evaporator IN/OUT - OD (5)	Ø mm	--	--	--	--	--	--	76,1	76,1
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**18,6**	**18,6**	**20,9**	**21,0**	**23,5**	**23,5**	**27,7**	**27,6**
	Pumping group									
	1 pump - 2 poles electric motor	kW	1,5	1,5	1,5	1,5	1,5	1,5	3,0	3,0
	2 pump - 2 poles electric motor	kW	-	-	-	-	-	-	3,0	3,0
	Water tank - volume	l	210	210	210	210	210	210	360	360
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**54,1**	**54,2**	**60,7**	**60,9**	**68,4**	**68,3**	**80,5**	**80,1**
	Unit power input	kW	20,8	20,7	22,8	22,8	26,9	26,8	29,7	29,7
	Free-Cooling capacity (2)	kW	45,7	45,7	50,6	50,6	55,6	55,5	67,1	67,0
	Total air flow	m³/h	18000	18000	20500	20500	23000	23000	25500	25500
	External static pressure	Pa	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,48	2,51	2,53	2,56	2,42	2,43	2,59	2,60
	Sound power level [Lw] (3)	dB(A)	93,1	93,1	86,5	86,5	89,0	89,0	93,7	93,7
	Average sound pressure level [Lpm] (4)	dB(A)	75,9	69,3	69,3	79,2	71,8	71,8	75,8	75,8
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**52,5**	**52,6**	**58,9**	**59,0**	**66,3**	**66,2**	**78,2**	**77,8**
	Unit power input	kW	20,6	20,5	22,5	22,6	26,2	26,1	29,6	29,5
	Free-Cooling capacity (2)	kW	45,3	45,4	50,2	50,2	55,1	55,1	66,5	66,4
	Total air flow	m³/h	15300	15300	17425	17425	19550	19550	21675	21675
	External static pressure	Pa	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,43	2,46	2,49	2,50	2,41	2,42	2,54	2,54
	Sound power level [Lw] (3)	dB(A)	89,6	89,6	83,1	83,1	85,5	85,5	90,3	90,3
	Average sound pressure level [Lpm] (4)	dB(A)	72,4	65,9	65,9	75,8	68,3	68,3	72,4	72,4
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**50,2**	**50,3**	**56,3**	**56,4**	**63,3**	**63,2**	**74,9**	**74,5**
	Unit power input	kW	21,3	21,1	23,1	23,1	26,6	26,5	30,2	30,2
	Free-Cooling capacity (2)	kW	44,8	44,8	49,6	49,6	54,4	54,4	65,8	65,7
	Total air flow	m³/h	12600	12600	14350	14350	16100	16100	17850	17850
	External static pressure	Pa	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,26	2,30	2,33	2,35	2,27	2,29	2,39	2,39
	Sound power level [Lw] (3)	dB(A)	86,4	86,4	80,2	80,2	82,5	82,5	87,2	87,2
	Average sound pressure level [Lpm] (4)	dB(A)	69,2	63,0	63,0	72,9	65,3	65,3	69,3	69,3

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA MAXIMO PF

	MAXIMO PF		107 P2 S	107 P2 D	135 P2 S	135 P2 D	170 P2 S	170 P2 D	195 P2 S	195 P2 D
	SIZE		C3	C3	C4	C4	C4	C4	C4	C4
STANDARD	**Cooling capacity (1)**	**kW**	**103,0**	**102,0**	**128,0**	**126,0**	**166,0**	**164,0**	**182,0**	**185,0**
	Unit power input	kW	41,9	41,6	49,8	49,8	67,2	67,2	69,2	79,7
	Free-Cooling capacity (2)	**kW**	**81,1**	**80,9**	**99,5**	**99,0**	**124,0**	**123,0**	**127,0**	**127,0**
	Total water flow rate	m³/h	19,1	18,9	23,5	23,2	30,6	30,2	33,6	34,2
	Total pressure drop	kPa	155	139	88	77	107	101	123	117
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2
	Centrifugal fans EC	n.	3	3	4	4	4	4	4	4
	Total air flow	m³/h	32000	32000	40000	40000	52000	52000	52000	52000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	32	29,3	35,1	38,6	50,9	42,6	51,9	44
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	94,7	94,7	113,8	113,8	147,6	147,6	164,2	164,2
	Unit starting current (LRA)	A	279,7	279,7	337,3	337,3	392,2	392,2	456,2	456,2
	EER (1)	kW/kW	2,46	2,45	2,57	2,53	2,47	2,44	2,63	2,32
	ESEER		2,88	3,15	3,03	3,47	2,90	3,21	2,78	3,44
	Sound power level [Lw] (3)	dB(A)	99,2	99,2	92,7	92,7	96,2	96,2	96,2	96,2
	Average sound pressure level [Lpm] (4)	dB(A)	81,3	81,3	74,1	74,1	77,6	77,6	77,6	77,6
	Net weight	kg	1240	1240	1690	1690	1800	1780	1850	1820
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	--	--	--	--	--	--	--	--
	Evaporator IN/OUT - OD (5)	Ø mm	76,1	76,1	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**35,6**	**35,2**	**43,9**	**43,2**	**57,2**	**56,3**	**62,6**	**63,7**
	Pumping group									
	1 pump - 2 poles electric motor	kW	3,0	3,0	3,0	3,0	3,0	3,0	3,0	3,0
	2 pump - 2 poles electric motor	kW	3,0	3,0	4,0	4,0	4,0	4,0	4,0	4,0
	Water tank - volume	l	360	360	520	520	520	520	520	520
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**103,0**	**102,0**	**128,0**	**126,0**	**166,0**	**164,0**	**182,0**	**185,0**
	Unit power input	kW	40,0	39,9	48,4	48,4	65,2	65,2	66,7	77,2
	Free-Cooling capacity (2)	kW	81,1	80,9	99,5	99,0	124,0	123,0	127,0	127,0
	Total air flow	m³/h	32000	32000	40000	40000	52000	52000	52000	52000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,46	2,45	2,57	2,53	2,47	2,44	2,63	2,32
	Sound power level [Lw] (3)	dB(A)	98,5	98,5	90,2	90,2	95,0	95,0	95,7	95,7
	Average sound pressure level [Lpm] (4)	dB(A)	80,6	80,6	71,6	71,6	76,4	76,4	77,1	77,1
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**101,0**	**99,4**	**124,0**	**122,0**	**161,0**	**159,0**	**176,0**	**179,0**
	Unit power input	kW	39,2	39,2	48,4	48,3	63,7	63,7	65,3	76,3
	Free-Cooling capacity (2)	kW	80,6	80,3	98,6	98,1	123,0	122,0	126,0	126,0
	Total air flow	m³/h	27200	27200	34000	34000	44200	44200	44200	44200
	External static pressure	Pa	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,46	2,44	2,49	2,46	2,45	2,43	2,61	2,28
	Sound power level [Lw] (3)	dB(A)	95,1	95,1	87,8	87,8	91,9	91,9	92,6	92,6
	Average sound pressure level [Lpm] (4)	dB(A)	77,2	77,2	69,2	69,2	73,3	73,3	74,0	74,0
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**96,5**	**95,5**	**118,0**	**117,0**	**155,0**	**153,0**	**167,0**	**170,0**
	Unit power input	kW	40,0	39,9	49,8	49,7	64,4	64,3	66,4	78,3
	Free-Cooling capacity (2)	kW	79,7	79,5	97,3	96,8	121,0	121,0	124,0	125,0
	Total air flow	m³/h	22400	22400	28000	28000	36400	36400	36400	36400
	External static pressure	Pa	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,32	2,31	2,31	2,30	2,34	2,32	2,44	2,12
	Sound power level [Lw] (3)	dB(A)	92,0	92,0	86,9	86,9	89,7	89,7	90,3	90,3
	Average sound pressure level [Lpm] (4)	dB(A)	74,1	74,1	68,3	68,3	71,1	71,1	71,7	71,7

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

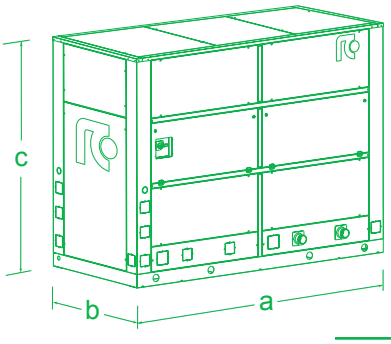
TECHNICAL DATA MAXIMO PF

	MAXIMO PF		220 P2 S	220 P2 D	250 P3 S	265 P4 D	290 P4 D
	SIZE		C5	C5	C5	C5	C5
STANDARD	**Cooling capacity (1)**	**kW**	**210,0**	**214,0**	**240,0**	**253,0**	**277,0**
	Unit power input	kW	84,0	84,3	103,0	106,8	125,3
	Free-Cooling capacity (2)	**kW**	**163,0**	**163,0**	**171,0**	**173,0**	**176,0**
	Total water flow rate	m³/h	38,8	39,4	44,4	46,7	51,3
	Total pressure drop	kPa	112	106	124	131	148
	Compressors		scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	3	4	4
	Capacity steps	n.	2	2	3	4	4
	Centrifugal fans EC	n.	5	5	5	5	5
	Total air flow	m³/h	62500	62500	64000	64000	64000
	External static pressure	Pa	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	83,1	102,2	83,7	113,3	113,2
	Gas circuits	n.	1	2	1	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	185	185	217,2	215	315,8
	Unit starting current (LRA)	A	477,0	477,0	461,8	438,5	607,8
	EER (1)	kW/kW	2,50	2,54	2,33	2,37	2,21
	ESEER		3,02	3,28	3,42	3,39	3,36
	Sound power level [Lw] (3)	dB(A)	96,8	96,8	97,2	97,3	97,3
	Average sound pressure level [Lpm] (4)	dB(A)	77,6	77,6	77,9	78,0	78,0
	Net weight	kg	2320	2330	2490	2670	2720
	Hydraulic connections						
	Evaporator IN/OUT - ISO 7/1 – R	Ø	--	--	--	--	--
	Evaporator IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)						
	Heating capacity	**kW**	**72,3**	**73,5**	**82,7**	**87,0**	**95,4**
	Pumping group						
	1 pump - 2 poles electric motor	kW	5,5	5,5	5,5	5,5	5,5
	2 pump - 2 poles electric motor	kW	7,5	7,5	7,5	7,5	7,5
	Water tank - volume	l	720	720	720	720	720
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**210,0**	**214,0**	**240,0**	**253,0**	**277,0**
	Unit power input	kW	81,5	81,8	99,7	103,0	121,0
	Free-Cooling capacity (2)	kW	163,0	163,0	171,0	173,0	176,0
	Total air flow	m³/h	62500	62500	64000	64000	64000
	External static pressure	Pa	50	50	50	50	50
	EER (1)	kW/kW	2,50	2,54	2,33	2,37	2,21
	Sound power level [Lw] (3)	dB(A)	95,3	95,3	95,8	96,4	96,4
	Average sound pressure level [Lpm] (4)	dB(A)	76,1	76,1	76,5	77,1	77,1
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**204,0**	**207,0**	**232,0**	**244,0**	**266,0**
	Unit power input	kW	80,3	80,7	99,3	102,5	122,0
	Free-Cooling capacity (2)	kW	161,0	162,0	169,0	171,0	175,0
	Total air flow	m³/h	53125	53125	54400	54400	54400
	External static pressure	Pa	36	36	36	36	36
	EER (1)	kW/kW	2,47	2,49	2,27	2,31	2,11
	Sound power level [Lw] (3)	dB(A)	92,4	92,4	92,8	93,3	93,3
	Average sound pressure level [Lpm] (4)	dB(A)	73,1	73,1	73,5	74,0	74,0
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**195,0**	**198,0**	**220,0**	**231,0**	**248,0**
	Unit power input	kW	82,2	82,7	102,5	105,5	127,5
	Free-Cooling capacity (2)	kW	159,0	160,0	167,0	169,0	172,0
	Total air flow	m³/h	43750	43750	44800	44800	44800
	External static pressure	Pa	25	25	25	25	25
	EER (1)	kW/kW	2,31	2,33	2,09	2,13	1,89
	Sound power level [Lw] (3)	dB(A)	90,5	90,5	90,8	91,2	91,2
	Average sound pressure level [Lpm] (4)	dB(A)	71,2	71,2	71,5	71,9	71,9

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE C	a	b	c
C1	1250	1010	1950
C2	1800	1180	2000
C3	2600	1340	2000
C4	3700	1490	2000
C5	4950	1500	2040



EAGLE FREE: Packaged air cooled liquid chillers with free-cooling system for outdoor installation, equipped with scroll compressors and axial fans
Cooling Capacity: **69,7 ÷ 331 kW**
Free-Cooling Capacity: **47,5 ÷ 194 kW**

FREE COOLING
RC Hi-Tech

eagle free

rcgroupairconditioning

FREE COOLING · R410A · PLATE

MAIN FEATURES
- Air cooled liquid chiller with free-cooling system.
- 17 models available, for a wide selection opportunity.
- Average step of 20kW.
- EER up to 2,96.
- ESEER up to 3,85.
- Scroll compressors.
- R410A Refrigerant charge.
- Single or double refrigerant circuit.
- Plate type heat exchangers.
- AC Axial fans.
- Single air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS
- Units equipped with two scroll compressors for refrigerant circuit to reach a high efficiency.
- Units with single and double refrigerant circuits.
- Indirect free cooling system.
- Availability of EC axial fans for a high efficiency.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Easily of maintenance.
- Components dedicated to the safety of the unity.
- Eurovent Certification.

INDIRECT FREE COOLING SYSTEM
Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

ELECTRONIC EXPANSION VALVE
The electronic expansion valves are synonymous of an higher energy efficiency and stability of the system.

WORKING LIMITS IN COOLING MODE
Chilled water outlet temperature: 4÷15°C
Ambient temperature: -10÷45°C

WORKING LIMITS IN FREE-COOLING MODE
Minimum chilled water outlet temperature: -15°C
Minimum ambient temperature: -20°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Compressors compartment.
- Colour: RAL 9002

COMPRESSORS
- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Phase sequence electronic relay.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Rubber supports.

EVAPORATOR
- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
  - With single refrigerant circuit for S version machines.
  - With double refrigerant circuit for D version machines.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Water flow safety switch.
- Antifreeze heater.

CONDENSING AND FREE-COOLING COIL
- Heat exchangers contained in single coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION
- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor.
- Stepless variable speed with phase-cut electronic controller for condensing pressure control.
- Stepless variable speed with phase-cut electronic controller for free-cooling control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:
- Electronic expansion valve. The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure.
- Sight glass.
- Filter dryer on liquid line.
- Service valves on liquid line and gas discharge.
- Liquid receiver with safety valve.
- Safety valve on low pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Main switch with door lock safety.
- Magnetothermic switch or fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM
- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.
  - Additional module with the following inlets / outlets:

    INLETS
    - o External alarm 1
    - o External alarm 2
    - o Line current indication.
    - o Line voltage indication / Compensation
    - o Ambient air temperature

    OUTLETS
    - o External alarm 1
    - o External alarm 2
    - o General alarm 2
    - o General alarm 3
- Driver for the additional module.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS
- The heat exchangers’ threaded hydraulic connections are available up to a diameter of 3” included, and correspond to ISO 228/1 – G M.
- The pipes’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

EAGLE FREE	T 60 P2	T 60 P2	T 70 P2	T 70 P2	T 90 P2	T 90 P2	T 120 P2	T 120 P2	T 135 P2	T 150 P2	T 150 P2
	S	D	S	D	S	D	S	D	S	S	D
SIZE	N6	N6	N6	N6	N7	N7	N7	N7	N7	N8	N8
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	-	-	-	-	-	-	-	-	-	-	-
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	-	-	-	-	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	-	-	-	-	●	●	●	●	●	●	●
450 - Desuperheater	●	-	●	-	●	-	●	-	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

EAGLE FREE	T 190 P4	T 200 P2	T 200 P2	T 240 P4	T 270 P4	T 300 P4
	D	S	D	D	D	D
SIZE	N9	N8	N8	N9	N10	N10
739 - Pumping group (1 pump)	●	●	●	●	●	●
740 - Pumping group (2 pumps)	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	-	-	-	-	●	●
172 - Rubber support (kit)	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●
Expansion valve energy reserve module	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA EAGLE FREE

	EAGLE FREE		T 60 P2 S	T 60 P2 D	T 70 P2 S	T 70 P2 D	T 90 P2 S	T 90 P2 D	T 120 P2 S	T 120 P2 D
	SIZE		N6	N6	N6	N6	N7	N7	N7	N7
STANDARD	**Cooling capacity (1)**	**kW**	**69,7**	**69,7**	**79,8**	**79,6**	**104,0**	**103,0**	**126,0**	**124,0**
	Unit power input	kW	23,7	23,5	28,2	27,9	36,5	36,3	47,0	46,6
	Free-Cooling capacity (2)	**kW**	**47,5**	**47,5**	**51,4**	**51,4**	**64,2**	**63,9**	**71,3**	**71,0**
	Total water flow rate	m³/h	12,8	12,8	14,7	14,7	19,1	18,9	23,3	22,9
	Total pressure drop	kPa	132	108	153	130	110	94	135	122
	Compressors									
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2
	Axial fans	n.	6	6	6	6	2	2	2	2
	Total air flow	m³/h	30000	30000	33000	33000	44000	44000	48000	48000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	31,6	34,6	32,0	35,6	42,0	40,8	42,9	41,4
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	64,4	64,4	70,4	70,4	87,8	87,8	104,8	104,8
	Unit starting current (LRA)	A	173,4	173,4	209,4	209,4	272,8	272,8	328,3	328,3
	EER (1)	kW/kW	2,94	2,96	2,83	2,85	2,85	2,84	2,68	2,66
	ESEER		3,78	3,49	3,68	3,31	3,58	3,31	3,53	3,15
	Sound power level [Lw] (3)	dB(A)	83,3	83,3	83,8	83,8	92,3	92,3	92,5	92,5
	Average sound pressure level [Lpm] (4)	dB(A)	66,3	66,3	66,4	66,4	74,2	74,2	74,4	74,4
	Net weight	kg	830	810	870	850	1170	1150	1280	1270
	Hydraulic connections									
	Evaporator IN/OUT - ISO 7/1 – R	Ø	2"	2"	2"	2"	--	--	--	--
	Evaporator IN/OUT - OD (5)	Ø mm	--	--	--	--	76,1	76,1	76,1	76,1
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	**kW**	**24,0**	**--**	**27,5**	**--**	**35,7**	**--**	**43,4**	**--**
	Pumping group									
	Power input	kW	1,1	1,1	2,2	2,2	2,2	2,2	2,2	2,2
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**69,7**	**69,7**	**79,8**	**79,6**	**104,0**	**103,0**	**126,0**	**124,0**
	Unit power input	kW	22,5	22,5	26,8	26,7	35,1	35,0	45,0	44,8
	Free-Cooling capacity (2)	kW	47,5	47,5	51,4	51,4	64,2	63,9	71,3	71,0
	Total air flow	m³/h	30000	30000	33000	33000	44000	44000	48000	48000
	EER (1)	kW/kW	2,94	2,96	2,83	2,85	2,85	2,84	2,68	2,66
	Sound power level [Lw] (3)	dB(A)	83,2	83,2	83,7	83,7	92,2	92,2	92,3	92,3
	Average sound pressure level [Lpm] (4)	dB(A)	66,2	66,2	66,2	66,2	74,1	74,1	74,2	74,2
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**68,3**	**68,3**	**78,1**	**78,0**	**102,0**	**101,0**	**123,0**	**122,0**
	Unit power input	kW	22,9	22,9	27,3	27,3	35,6	35,5	46,0	45,8
	Free-Cooling capacity (2)	kW	47,2	47,2	51,1	51,1	63,7	63,4	70,8	70,5
	Total air flow	m³/h	25500	25500	28050	28050	37400	37400	40800	40800
	EER (1)	kW/kW	2,84	2,86	2,73	2,73	2,76	2,75	2,57	2,57
	Sound power level [Lw] (3)	dB(A)	79,9	79,9	80,3	80,3	88,8	88,8	89,0	89,0
	Average sound pressure level [Lpm] (4)	dB(A)	62,8	62,8	62,9	62,9	70,7	70,7	70,9	70,9
ELN KIT	**Cooling capacity (1)**	**kW**	**66,3**	**66,3**	**75,7**	**75,6**	**98,8**	**97,7**	**119,0**	**117,0**
	Unit power input	kW	23,7	23,7	28,3	28,2	36,6	36,5	47,6	47,4
	Free-Cooling capacity (2)	kW	46,8	46,8	50,7	50,7	63,0	62,7	70,0	69,7
	Total air flow	m³/h	21000	21000	23100	23100	30800	30800	33600	33600
	EER (1)	kW/kW	2,67	2,69	2,56	2,57	2,61	2,59	2,41	2,39
	Sound power level [Lw] (3)	dB(A)	76,1	76,1	76,7	76,7	84,9	84,9	85,3	85,3
	Average sound pressure level [Lpm] (4)	dB(A)	59,0	59,0	59,2	59,2	66,8	66,8	67,2	67,2

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

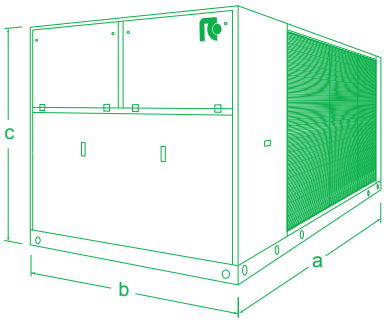
TECHNICAL DATA EAGLE FREE

	EAGLE FREE		T 135 P2 S	T 150 P2 S	T 150 P2 D	T 190 P4 D	T 200 P2 S	T 200 P2 D	T 240 P4 D	T 270 P4 D	T 300 P4 D
	SIZE		N7	N8	N8	N9	N8	N8	N9	N10	N10
STANDARD	**Cooling capacity (1)**	**kW**	**141,0**	**168,0**	**171,0**	**202,0**	**203,0**	**208,0**	**247,0**	**292,0**	**331,0**
	Unit power input	kW	54,7	59,6	59,8	75,4	78,1	79,4	98,0	110,6	124,0
	Free-Cooling capacity (2)	**kW**	**73,8**	**108,0**	**109,0**	**117,0**	**118,0**	**119,0**	**132,0**	**176,0**	**194,0**
	Total water flow rate	m³/h	26,1	31,0	31,4	37,3	37,4	38,4	45,6	53,9	60,9
	Total pressure drop	kPa	156	132	120	106	136	133	142	164	190
	Compressors										
	Quantity	n.	2	2	2	4	2	2	4	4	4
	Capacity steps	n.	2	2	2	4	2	2	4	4	4
	Axial fans	n.	2	3	3	3	3	4	4	6	6
	Total air flow	m³/h	50000	66000	66000	72000	72000	76000	88000	108000	126000
	Air circuits	n.	1	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	43,6	62,6	64,6	68,4	66,4	67,0	68,0	94,2	95,8
	Gas circuits	n.	1	1	2	2	1	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	121,7	142,5	142,5	171,7	175,7	179,6	209,6	251,2	285,0
	Unit starting current (LRA)	A	366,3	387,1	387,1	356,7	477,7	481,6	433,1	495,8	529,6
	EER (1)	kW/kW	2,58	2,82	2,86	2,68	2,60	2,62	2,52	2,64	2,67
	ESEER		3,47	3,60	3,33	3,85	3,49	3,09	3,64	3,64	3,74
	Sound power level [Lw] (3)	dB(A)	93,5	95,4	95,4	94,8	94,8	94,8	100,0	101,8	101,8
	Average sound pressure level [Lpm] (4)	dB(A)	75,4	76,0	76,0	75,4	75,4	75,4	80,2	81,5	81,5
	Net weight	kg	1350	1560	1580	1840	1710	1730	1850	2260	2710
	Hydraulic connections										
	Evaporator IN/OUT - ISO 7/1 – R	Ø	--	--	--	--	--	--	--	--	--
	Evaporator IN/OUT - OD (5)	Ø mm	76,1	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)										
	Heating capacity	**kW**	**48,6**	**57,8**	**58,7**	**69,6**	**69,8**	**71,7**	**85,0**	**101,0**	**114,0**
	Pumping group										
	Power input	kW	2,2	4,0	4,0	4,0	4,0	4,0	4,0	5,5	7,5
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**141,0**	**168,0**	**171,0**	**202,0**	**203,0**	**208,0**	**247,0**	**292,0**	**331,0**
	Unit power input	kW	52,2	57,2	57,5	73,1	75,1	76,4	94,2	105,9	118,2
	Free-Cooling capacity (2)	kW	73,8	108,0	109,0	117,0	118,0	119,0	132,0	176,0	194,0
	Total air flow	m³/h	50000	66000	66000	72000	72000	76000	88000	108000	126000
	EER (1)	kW/kW	2,58	2,82	2,86	2,68	2,60	2,62	2,52	2,64	2,67
	Sound power level [Lw] (3)	dB(A)	93,3	95,2	95,2	94,6	94,6	94,6	96,3	97,5	97,5
	Average sound pressure level [Lpm] (4)	dB(A)	75,2	75,8	75,8	75,3	75,3	75,3	76,5	77,2	77,2
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**138,0**	**164,0**	**167,0**	**197,0**	**198,0**	**203,0**	**240,0**	**285,0**	**323,0**
	Unit power input	kW	53,6	58,2	58,5	75,0	76,7	77,8	96,6	107,9	120,7
	Free-Cooling capacity (2)	kW	73,3	108,0	108,0	117,0	118,0	118,0	131,0	175,0	193,0
	Total air flow	m³/h	42500	56100	56100	61200	61200	64600	74800	91800	107100
	EER (1)	kW/kW	2,47	2,71	2,75	2,55	2,49	2,52	2,40	2,54	2,56
	Sound power level [Lw] (3)	dB(A)	90,0	91,9	91,9	91,3	91,3	91,3	93,3	94,6	94,6
	Average sound pressure level [Lpm] (4)	dB(A)	71,9	72,5	72,5	71,9	71,9	71,9	73,5	74,2	74,2
ELN KIT	**Cooling capacity (1)**	**kW**	**132,0**	**159,0**	**161,0**	**190,0**	**190,0**	**195,0**	**231,0**	**275,0**	**311,0**
	Unit power input	kW	55,9	60,1	60,4	78,3	79,6	80,2	100,4	111,1	124,1
	Free-Cooling capacity (2)	kW	72,4	107,0	107,0	115,0	116,0	117,0	130,0	174,0	192,0
	Total air flow	m³/h	35000	46200	46200	50400	50400	53200	61600	75600	88200
	EER (1)	kW/kW	2,27	2,56	2,58	2,36	2,31	2,36	2,23	2,38	2,40
	Sound power level [Lw] (3)	dB(A)	86,3	88,0	88,0	87,6	87,6	87,6	90,2	91,7	91,7
	Average sound pressure level [Lpm] (4)	dB(A)	68,2	68,6	68,6	68,3	68,3	68,3	70,4	71,4	71,4

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE N	a	b	c
N6	2580	1200	1630
N7	3020	1200	1950
N8	4400	1800	1190
N9	3600	2290	2250
N10	4600	2290	2250



GLIDER EVO FREE: Packaged air cooled liquid chillers with free-cooling system for outdoor installation, equipped with screw compressors and axial fans
Cooling Capacity: **314 ÷ 1343 kW**
Free-Cooling Capacity: **308 ÷ 938 kW**

GLYCOL FREE
RC Hi-Tech

FREE COOLING
RC Hi-Tech

glider evo free

rcgroupairconditioning

R134a SHELL A C FREE COOLING

MAIN FEATURES

- Air cooled liquid chiller with free-cooling system.
- 21 models available, for a wide selection opportunity.
- Average step of 50 kW
- EER up to 2,73
- ESEER up to 3,25
- Twin-Screw compressors.
- R134a Refrigerant charge.
- Double refrigerant circuit.
- Shell and tube evaporator.
- AC Axial fans.
- Double air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS

- Indirect free cooling system.
- Availability of Glycol Free system.
- Low footprint.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Availability of EC axial fans for a higher efficiency.
- Complete set of components dedicated to the safety of the unity.

INDIRECT FREE COOLING SYSTEM

Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: -10÷15°C
Ambient temperature: -20÷45°C

WORKING LIMITS IN FREE-COOLING MODE

Minimum chilled water outlet temperature: -15°C
Minimum ambient temperature: -20°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS

- Twin screw semi-hermetic compressors with highly efficient screw profile and high peripheral speed, optimized for R134a refrigerant.
- Integrated discharge check valve.
- Flanged-on oil separator.
- Integrated safety relief valve (overpressure inner valve).
- Replaceable cartridge type oil filter.
- Valves for oil filling and discharge.
- Oil sight glass.
- Electronic protection device that includes:
  - Electric motor thermal protection via internal winding temperature sensors.
  - Phase sequence electronic relay
  - Sensor on refrigerant discharge for temperature monitoring,
- 2-pole 3-phase electric motor with Part-Winding starting from model 290 V2 F06 to model 470 V2 F08 included.
- 2-pole 3-phase electric motor with Star / Delta starting from model 520 V2 F08 to model 1220 V2 F16 included.
- Stepless capacity control, 50÷100% for each compressor.
- Crankcase heater.
- Terminal box with IP54 enclosure class.
- Rubber supports.

EVAPORATOR

- Single pass type shell and tube evaporator optimized for R134a refrigerant.
- Tubes with a helical rifled internal surface.
- Intermediate baffles positioned to ensure optimum speed of the fluid and low pressure drops.
- Single circuit on water side and independent circuits, one for each compressor, on refrigerant side.
- Shell, header, tube sheets, made of carbon steel, tubes in Cu.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Hydraulic connections with grooved end arranged for flexible joint (the flexible joint and the adapter pipe are optional accessories).

CONDENSING AND FREE-COOLING COIL

- Heat exchangers contained in single coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor.
- Stepless variable speed with phase-cut electronic controller for condensing pressure control.
- Stepless variable speed with phase-cut electronic controller for free-cooling control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Component for each refrigerant circuit:

- Electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure.
- Energy reserve module for the electronic expansion valve to allow the closure of the valve in the event of lack of power supply.
- Sight glass.
- Filter dryer on liquid line.
- Service valves on liquid line.
- Service valves on compressor gas discharge.
- Double safety valve (only one in function) on high and low pressure side. The system include two safety valves with manual changeover system.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure and oil pressure.
- High pressure safety switch with manual reset.
- Pressure gauge on high and low pressure.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R134a refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety.
- Fuses for each compressor.
- Magnetothermic switches for fans.
- Fuses for water pumps (if scheduled).
- Contactors for each load.
- Compressor Part-Winding starting system from model 290 V2 F06 to model 470 V2 F08 included.
- Compressor Star / Delta starting system from model 520 V2 F08 to model 1220 V2 F16 included.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.
- Additional module “1” for ambient air temperature inlet.
- Driver for the additional module “1”.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS

- Heat exchangers threaded hydraulic connections ISO 228/1 – G M, available up to a diameter of 3” included.
- Pipes threaded hydraulic connections ISO 7/1 – R, available up to a diameter of 3” included.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

GLIDER EVO FREE SIZE	290 V2 F06	310 V2 F06	330 V2 F06	350 V2 F06	370 V2 F06	410 V2 F08	440 V2 F08	470 V2 F08	520 V2 F08	550 V2 F08	610 V2 F08
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●
769 - Pumping group (1+1stby)	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	-	-	-	-	-	-	-	-	-	-	-
770 - Pumping group (2+1stby)	-	-	-	-	-	-	-	-	-	-	-
1004 - Antifreezing heater for pumping group	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●
Condensing pressure / free cooling control system	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●
Analog flowmeter	●	●	●	●	●	●	●	●	●	●	●
143 - Glycol free	●	●	●	●	●	●	●	●	●	●	●
650 - Compressor thermal relay	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●
Supply network control relay	●	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●	●
550 - Stop valve on compressor suction line	●	●	●	●	●	●	●	●	●	●	●
1005- Safety oil flow switch	●	●	●	●	●	●	●	●	●	●	●
85 - Demand limit	●	●	●	●	●	●	●	●	●	●	●
88 - Analog set point compensation	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES

GLIDER EVO FREE SIZE	670 V2 F10	720 V2 F10	770 V2 F10	810 V2 F10	870 V2 F12	930 V2 F12	980 V2 F12	1030 V2 F12	1130 V2 F14	1220 V2 F16
739 - Pumping group (1 pump)	●	●	●	●	●	●	-	-	-	-
769 - Pumping group (1+1stby)	●	●	●	●	●	●	-	-	-	-
740 - Pumping group (2 pumps)	-	-	-	-	-	-	●	●	●	●
770 - Pumping group (2+1stby)	-	-	-	-	-	-	●	●	●	●
1004 - Antifreezing heater for pumping group	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●
Condensing pressure / free cooling control system	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●
251 - Coils protection nets	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●
Analog flowmeter	●	●	●	●	●	●	●	●	●	●
143 - Glycol free	●	●	●	●	●	●	●	●	●	●
650 - Compressor thermal relay	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●
Supply network control relay	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●
550 - Stop valve on compressor suction line	●	●	●	●	●	●	●	●	●	●
1005- Safety oil flow switch	●	●	●	●	●	●	●	●	●	●
85 - Demand limit	●	●	●	●	●	●	●	●	●	●
88 - Analog set point compensation	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA GLIDER EVO FREE

	GLIDER EVO FREE SIZE		290 V2 F06	310 V2 F06	330 V2 F06	350 V2 F06	370 V2 F06	410 V2 F08	440 V2 F08	470 V2 F08
STANDARD	**Cooling capacity (1)**	**kW**	**314**	**340**	**365**	**387**	**409**	**452**	**481**	**510**
	Unit power input	kW	115,0	124,5	135,2	144,9	154,3	169,9	181,5	195,4
	Free-Cooling capacity (2)	**kW**	**308**	**315**	**321**	**326**	**330**	**439**	**446**	**452**
	Total water flow rate	m³/h	56,3	61	65,5	69,4	73,3	81,1	86,3	91,6
	Total pressure drop	kPa	103	89	98	83	91	121	111	124
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity control	%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%
	Axial fans	n.	6	6	6	6	6	8	8	8
	Total air flow	m³/h	119280	119280	119280	119280	119280	163168	163168	163168
	Air circuits	n.	2	2	2	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	146	146	146	146	146	145	145	145
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	225,4	239,4	254,4	267,4	281,4	310,2	332,2	263,2
	Unit starting current (LRA)	A	414,4	474,4	488,4	561,4	575,4	573,2	627,2	650,2
	EER (1)	kW/kW	2,73	2,73	2,70	2,67	2,65	2,66	2,65	2,61
	ESEER		3,04	3,09	3,08	3,10	3,10	3,07	3,08	3,08
	Sound power level [Lw] (3)	dB(A)	91,4	91,6	91,7	91,7	91,8	92,1	94,5	96,1
	Average sound pressure level [Lpm] (4)	dB(A)	71,7	71,8	71,9	72,0	72,0	71,9	74,3	75,9
	Net weight	kg	5751	5891	5906	5926	5931	7131	7158	7173
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	139,7	139,7	139,7	139,7	139,7	139,7	139,7	139,7
OPTIONAL	Glycol free system (2)									
	Cooling capacity	**kW**	**230**	**235**	**240**	**244**	**247**	**328**	**333**	**338**
	Glycol free water pump power input	kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	Partial heat recovery (6)									
	Heating capacity	**kW**	**61,9**	**67**	**71,9**	**76,2**	**80,5**	**89,1**	**94,8**	**101**
	Pumping group									
	Power input	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**314**	**340**	**365**	**387**	**409**	**452**	**481**	**510**
	Unit power input	kW	115,0	124,5	135,2	144,9	154,3	169,9	181,5	195,4
	Free-Cooling capacity (2)	**kW**	**308**	**315**	**321**	**326**	**330**	**439**	**446**	**452**
	Total air flow	m³/h	119280	119280	119280	119280	119280	163168	163168	163168
	EER (1)	kW/kW	2,73	2,73	2,70	2,67	2,65	2,66	2,65	2,61
	Sound power level [Lw] (3)	dB(A)	89,4	89,6	89,7	89,7	89,8	90,1	92,5	94,1
	Average sound pressure level [Lpm] (4)	dB(A)	69,7	69,8	69,9	70,0	70,0	69,9	72,3	73,9
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**308**	**333**	**357**	**377**	**398**	**443**	**470**	**497**
	Unit power input	kW	115,8	125,7	136,8	147,8	157,9	171,7	185,0	198,8
	Free-Cooling capacity (2)	**kW**	**306**	**313**	**320**	**324**	**328**	**437**	**443**	**449**
	Total air flow	m³/h	101388	101388	101388	101388	101388	138693	138693	138693
	EER (1)	kW/kW	2,66	2,65	2,61	2,55	2,52	2,58	2,54	2,50
	Sound power level [Lw] (3)	dB(A)	88,4	88,6	88,7	88,7	88,8	89,1	91,5	93,1
	Average sound pressure level [Lpm] (4)	dB(A)	68,7	68,8	68,9	69,0	69,0	68,9	71,3	72,9
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**299**	**322**	**345**	**363**	**382**	**430**	**455**	**479**
	Unit power input	kW	118,7	129,3	142,0	152,5	163,9	176,2	191,2	205,6
	Free-Cooling capacity (2)	**kW**	**303**	**310**	**317**	**321**	**325**	**433**	**440**	**446**
	Total air flow	m³/h	83496	83496	83496	83496	83496	114218	114218	114218
	EER (1)	kW/kW	2,52	2,49	2,43	2,38	2,33	2,44	2,38	2,33
	Sound power level [Lw] (3)	dB(A)	85,4	85,6	85,7	85,7	85,8	86,1	88,5	90,1
	Average sound pressure level [Lpm] (4)	dB(A)	65,7	65,8	65,9	66,0	66,0	65,9	68,3	69,9
ELN KIT	**Cooling capacity (1)**	**kW**	**299**	**322**	**345**	**363**	**382**	**430**	**455**	**479**
	Unit power input	kW	118,7	129,3	142,0	152,5	163,9	176,2	191,2	205,6
	Free-Cooling capacity (2)	**kW**	**303**	**310**	**317**	**321**	**325**	**433**	**440**	**446**
	Total air flow		83496	83496	83496	83496	83496	114217	114217	114217
	EER (1)	kW/kW	2,52	2,49	2,43	2,38	2,33	2,44	2,38	2,33
	Sound power level [Lw] (3)	dB(A)	82,4	82,6	82,7	82,7	82,8	83,1	85,5	87,1
	Average sound pressure level [Lpm] (4)	dB(A)	62,7	62,8	62,9	63,0	63,0	62,9	65,3	66,9

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C.
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA GLIDER EVO FREE

	GLIDER EVO FREE		520 V2	550 V2	610 V2	670 V2	720 V2	770 V2	810 V2	870 V2
	SIZE		F08	F08	F08	F10	F10	F10	F10	F12
STANDARD	**Cooling capacity (1)**	**kW**	**572**	**600**	**674**	**736**	**796**	**845**	**887**	**952**
	Unit power input	kW	221,7	235,3	255,3	278,8	300,4	320,1	334,7	366,2
	Free-Cooling capacity (2)	**kW**	**455**	**460**	**469**	**590**	**598**	**593**	**572**	**693**
	Total water flow rate	m³/h	103	108	121	132	143	152	159	171
	Total pressure drop	kPa	131	141	167	202	229	257	89	106
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity control	%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%	25...100%
	Axial fans	n.	8	8	8	10	10	10	10	12
	Total air flow	m³/h	159040	159040	159040	203960	203960	198800	198800	244752
	Air circuits	n.	2	2	2	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	194	194	194	181	181	241	241	217
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	396,2	421,2	445,2	478,0	503,0	526,0	549,0	603,8
	Unit starting current (LRA)	A	776,2	793,2	817,2	682,0	707,0	736,0	759,0	887,8
	EER (1)	kW/kW	2,58	2,55	2,64	2,64	2,65	2,64	2,65	2,60
	ESEER		3,05	3,05	3,19	3,18	3,25	3,21	3,22	3,17
	Sound power level [Lw] (3)	dB(A)	96,1	97,5	98,6	99,3	99,9	99,8	99,6	100,0
	Average sound pressure level [Lpm] (4)	dB(A)	75,9	77,3	78,4	78,7	79,2	79,1	79,0	79,0
	Net weight	kg	7637	7647	7657	8924	9344	9664	9674	10664
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	139,7	139,7	139,7	168,3	168,3	168,3	168,3	168,3
OPTIONAL	Glycol free system (2)									
	Cooling capacity	**kW**	**341**	**344**	**351**	**442**	**448**	**444**	**428**	**519**
	Glycol free water pump power input	kW	7,5	7,5	15,0	15,0	15,0	15,0	15,0	15,0
	Partial heat recovery (6)									
	Heating capacity	**kW**	**113**	**118**	**133**	**145**	**157**	**166**	**175**	**187**
	Pumping group									
	Power input	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**572**	**600**	**674**	**736**	**796**	**845**	**887**	**952**
	Unit power input	kW	221,7	235,3	255,3	278,8	300,4	320,1	334,7	366,2
	Free-Cooling capacity (2)	**kW**	**455**	**460**	**469**	**590**	**598**	**593**	**572**	**693**
	Total air flow	m³/h	159040	159040	159040	203960	203960	198800	198800	244752
	EER (1)	kW/kW	2,58	2,55	2,64	2,64	2,65	2,64	2,65	2,60
	Sound power level [Lw] (3)	dB(A)	94,1	95,5	96,6	97,3	97,9	97,8	97,6	98,0
	Average sound pressure level [Lpm] (4)	dB(A)	73,9	75,3	76,4	76,7	77,2	77,1	77,0	77,0
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**556**	**583**	**653**	**715**	**770**	**817**	**856**	**923**
	Unit power input	kW	227,9	241,9	263,3	286,0	308,0	329,4	345,2	375,2
	Free-Cooling capacity (2)	**kW**	**453**	**457**	**467**	**587**	**595**	**590**	**568**	**689**
	Total air flow	m³/h	135184	135184	135184	173366	173366	168980	168980	208039
	EER (1)	kW/kW	2,44	2,41	2,48	2,50	2,50	2,48	2,48	2,46
	Sound power level [Lw] (3)	dB(A)	93,1	94,5	95,6	96,3	96,9	96,8	96,6	97,0
	Average sound pressure level [Lpm] (4)	dB(A)	72,9	74,3	75,4	75,7	76,2	76,1	76,0	76,0
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**534**	**558**	**623**	**685**	**735**	**779**	**813**	**883**
	Unit power input	kW	237,3	253,6	276,9	297,8	321,0	343,2	361,3	392,4
	Free-Cooling capacity (2)	**kW**	**450**	**454**	**463**	**583**	**590**	**586**	**563**	**684**
	Total air flow	m³/h	111328	111328	111328	142772	142772	139160	139160	171326
	EER (1)	kW/kW	2,25	2,20	2,25	2,30	2,29	2,27	2,25	2,25
	Sound power level [Lw] (3)	dB(A)	90,1	91,5	92,6	93,3	93,9	93,8	93,6	94,0
	Average sound pressure level [Lpm] (4)	dB(A)	69,9	71,3	72,4	72,7	73,2	73,1	73,0	73,0
ELN KIT	**Cooling capacity (1)**	**kW**	**534**	**558**	**623**	**685**	**735**	**779**	**813**	**883**
	Unit power input	kW	237,3	253,6	276,9	297,8	321,0	343,2	361,3	392,4
	Free-Cooling capacity (2)	**kW**	**450**	**454**	**463**	**583**	**590**	**586**	**563**	**684**
	Total air flow		111328	111328	111328	142772	142772	139160	139160	171326
	EER (1)	kW/kW	2,25	2,20	2,25	2,30	2,29	2,27	2,25	2,25
	Sound power level [Lw] (3)	dB(A)	87,1	88,5	89,6	90,3	90,9	90,8	90,6	91,0
	Average sound pressure level [Lpm] (4)	dB(A)	66,9	68,3	69,4	69,7	70,2	70,1	70,0	70,0

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

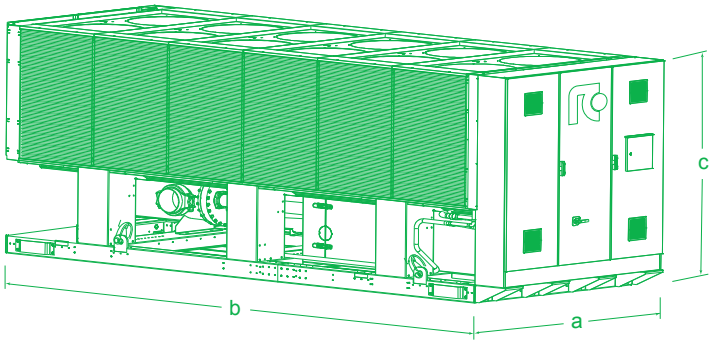
TECHNICAL DATA GLIDER EVO FREE

	GLIDER EVO FREE		930 V2	980 V2	1030 V2	1130 V2	1220 V2
	SIZE		F12	F12	F12	F14	F16
STANDARD	**Cooling capacity (1)**	**kW**	**1017**	**1071**	**1128**	**1238**	**1343**
	Unit power input	kW	394,2	416,7	438,9	470,7	512,6
	Free-Cooling capacity (2)	**kW**	**702**	**709**	**703**	**819**	**938**
	Total water flow rate	m³/h	183	193	203	220	241
	Total pressure drop	kPa	114	123	139	130	172
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2
	Capacity control	%	25...100%	25...100%	25...100%	25...100%	25...100%
	Axial fans	n.	12	12	12	14	16
	Total air flow	m³/h	244752	244752	238560	278320	318080
	Air circuits	n.	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	217	217	289	337	389
	Gas circuits	n.	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	650,8	689,8	728,8	820,6	896,4
	Unit starting current (LRA)	A	934,8	998,8	1037,8	1242,6	1396,4
	EER (1)	kW/kW	2,58	2,57	2,57	2,63	2,62
	ESEER		3,19	3,21	3,16	3,24	3,13
	Sound power level [Lw] (3)	dB(A)	99,2	100,9	102,1	102,1	102,4
	Average sound pressure level [Lpm] (4)	dB(A)	78,2	79,8	81,0	80,7	80,6
	Net weight	kg	10734	10774	11146	12126	13636
	Hydraulic connections						
	Evaporator IN/OUT - OD (5)	Ø mm	168,3	168,3	168,3	168,3	168,3
OPTIONAL	Glycol free system (2)						
	Cooling capacity	**kW**	**525**	**530**	**526**	**613**	**702**
	Glycol free water pump power input	kW	15,0	15,0	15,0	15,0	15,0
	Partial heat recovery (6)						
	Heating capacity	**kW**	**200**	**211**	**222**	**244**	**265**
	Pumping group						
	Power input	kW	7,5	15,0	15,0	15,0	15,0
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**1017**	**1071**	**1128**	**1238**	**1343**
	Unit power input	kW	394,2	416,7	438,9	470,7	512,6
	Free-Cooling capacity (2)	**kW**	**702**	**709**	**703**	**819**	**938**
	Total air flow	m³/h	244752	244752	238560	278320	318080
	EER (1)	kW/kW	2,58	2,57	2,57	2,63	2,62
	Sound power level [Lw] (3)	dB(A)	97,2	98,9	100,1	100,1	100,4
	Average sound pressure level [Lpm] (4)	dB(A)	76,2	77,8	79,0	78,7	78,6
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**984**	**1034**	**1089**	**1197**	**1303**
	Unit power input	kW	404,9	430,8	453,8	486,6	527,5
	Free-Cooling capacity (2)	**kW**	**698**	**705**	**699**	**816**	**933**
	Total air flow	m³/h	208039	208039	202776	236572	270368
	EER (1)	kW/kW	2,43	2,40	2,40	2,46	2,47
	Sound power level [Lw] (3)	dB(A)	96,2	97,9	99,1	99,1	99,4
	Average sound pressure level [Lpm] (4)	dB(A)	75,2	76,8	78,0	77,7	77,6
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**938**	**982**	**1033**	**1138**	**1246**
	Unit power input	kW	424,4	452,5	480,5	510,3	551,3
	Free-Cooling capacity (2)	**kW**	**692**	**699**	**693**	**810**	**927**
	Total air flow	m³/h	171326	171326	166992	194824	222656
	EER (1)	kW/kW	2,21	2,17	2,15	2,23	2,26
	Sound power level [Lw] (3)	dB(A)	93,2	94,9	96,1	96,1	96,4
	Average sound pressure level [Lpm] (4)	dB(A)	72,2	73,8	75,0	74,7	74,6
ELN KIT	**Cooling capacity (1)**	**kW**	**938**	**982**	**1033**	**1138**	**1246**
	Unit power input	kW	424,4	452,5	480,5	510,3	551,3
	Free-Cooling capacity (2)	**kW**	**692**	**699**	**693**	**810**	**927**
	Total air flow		171326	171326	166992	194824	222656
	EER (1)	kW/kW	2,21	2,17	2,15	2,23	2,26
	Sound power level [Lw] (3)	dB(A)	90,2	91,9	93,1	93,1	93,4
	Average sound pressure level [Lpm] (4)	dB(A)	69,2	70,8	72,0	71,7	71,6

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C.
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE F	a	b	c
F06	3640	2260	2550
F08	4610	2260	2550
F10	5580	2260	2550
F12	6550	2260	2550
F14	7520	2260	2550
F16	8720	2260	2250



GLIDER EVO FREE CLA: Packaged air cooled liquid chillers with free-cooling system in “A” class energy efficiency, for outdoor installation, equipped with screw compressors and axial fans

Cooling Capacity: **319 ÷ 1583 kW**

Free-Cooling Capacity: **323 ÷ 1369 kW**

A-CLASS RC Hi-Tech

GLYCOL FREE RC Hi-Tech

FREE COOLING RC Hi-Tech

glider evo free cla

rcgroupairconditioning

R134a · A CLASS · SHELL · A C · FREE COOLING

MAIN FEATURES

- Air cooled liquid chiller with free-cooling system in A class energy efficiency.
- 24 models available, for a wide selection opportunity.
- Average step of 50kW.
- EER up to 3,34.
- ESEER up to 3,83.
- Twin-Screw compressors.
- R134a Refrigerant charge.
- Double refrigerant circuit.
- Shell and tube evaporator.
- AC Axial fans.
- Double air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS

- Indirect free cooling system.
- Availability of Glycol Free system.
- High EER and ESEER, A class energy efficiency.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Availability of EC axial fans for a higher efficiency.
- Complete set of components dedicated to the safety of the unity.

INDIRECT FREE COOLING SYSTEM: Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

GLYCOL FREE: The accessory allows to use pure water instead of antifreeze solutions in the hydraulic circuit of the plant.

A CLASS ENERGY EFFICIENCY: The best and most accurate components applied to the chillers.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: -10÷15°C

Ambient temperature: -20÷45°C

WORKING LIMITS IN FREE-COOLING MODE

Minimum chilled water outlet temperature: -15°C

Minimum ambient temperature: -20°C

rcgroup.it

1 9 6 3 2 0 1 3

fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS

- Twin screw semi-hermetic compressors with highly efficient screw profile and high peripheral speed, optimized for R134a refrigerant.
- Integrated discharge check valve.
- Flanged-on oil separator.
- Integrated safety relief valve (overpressure inner valve).
- Replaceable cartridge type oil filter.
- Valves for oil filling and discharge.
- Oil sight glass.
- Electronic protection device that includes:
  - Electric motor thermal protection via internal winding temperature sensors.
  - Phase sequence electronic relay
  - Sensor on refrigerant discharge for temperature monitoring,
- 2-pole 3-phase electric motor with Part-Winding starting from model 290 V2 F06 to model 590 V2 F10 included.
- 2-pole 3-phase electric motor with Star / Delta starting from model 630 V2 F12 to model 1450 V2 F24 included.
- Stepless capacity control, 50÷100% for each compressor.
- Crankcase heater.
- Terminal box with IP54 enclosure class.
- Rubber supports.

EVAPORATOR

- Single pass type shell and tube evaporator optimized for R134a refrigerant.
- Tubes with a helical rifled internal surface.
- Intermediate baffles positioned to ensure optimum speed of the fluid and low pressure drops.
- Single circuit on water side and independent circuits, one for each compressor, on refrigerant side.
- Shell, header, tube sheets, made of carbon steel, tubes in Cu.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Hydraulic connections with grooved end arranged for flexible joint (the flexible joint and the adapter pipe are optional accessories).

CONDENSING AND FREE-COOLING COIL

- Heat exchangers contained in single coil with high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor.
- Stepless variable speed with phase-cut electronic controller for condensing pressure control.
- Stepless variable speed with phase-cut electronic controller for free-cooling control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Component for each refrigerant circuit:

- Electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure.
- Energy reserve module for the electronic expansion valve to allow the closure of the valve in the event of lack of power supply.
- Sight glass.
- Filter dryer on liquid line.
- Service valves on liquid line.
- Service valves on compressor gas discharge.
- Double safety valve (only one in function) on high and low pressure side. The system include two safety valves with manual changeover system.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure and oil pressure.
- High pressure safety switch with manual reset.
- Pressure gauge on high and low pressure.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R134a refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety.
- Fuses for each compressor.
- Magnetothermic switches for fans.
- Fuses for water pumps (if scheduled).
- Contactors for each load.
- Compressor Part-Winding starting system from model 290 V2 F06 to model 590 V2 F10 included.
- Compressor Star / Delta starting system from model 630 V2 F12 to model 1450 V2 F24 included.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.
  - LAN connection.
- Additional module “1” for ambient air temperature inlet.
- Driver for the additional module “1”.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS

- Heat exchangers threaded hydraulic connections ISO 228/1 – G M, available up to a diameter of 3” included.
- Pipes threaded hydraulic connections ISO 7/1 – R, available up to a diameter of 3” included.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

GLIDER EVO FREE CLA SIZE	290 V2 F06	310 V2 F06	330 V2 F08	360 V2 F08	380 V2 F08	420 V2 F08	460 V2 F10	490 V2 F10	540 V2 F10	590 V2 F10	630 V2 F12	680 V2 F14
739 - Pumping group (1 pump)	●	●	●	●	●	●	●	●	●	●	●	●
769 - Pumping group (1+1stby)	●	●	●	●	●	●	●	●	●	●	●	●
740 - Pumping group (2 pumps)	-	-	-	-	-	-	-	-	-	-	-	-
770 - Pumping group (2+1stby)	-	-	-	-	-	-	-	-	-	-	-	-
1004 - Antifreezing heater for pumping group	●	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●	●
Condensing pressure / free cooling control system	●	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●	●
250 - Coils protection nets (kit)	●	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●	●
Analog flowmeter	●	●	●	●	●	●	●	●	●	●	●	●
143 - Glycol free	●	●	●	●	●	●	●	●	●	●	●	●
650 - Compressor thermal relay	●	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●
Supply network control relay	●	●	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●	●	●
550 - Stop valve on compressor suction line	●	●	●	●	●	●	●	●	●	●	●	●
1005 - Oil flow-switch	●	●	●	●	●	●	●	●	●	●	●	●
85 - Demand limit	●	●	●	●	●	●	●	●	●	●	●	●
88 - Analog set point compensation	●	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES

GLIDER EVO FREE CLA SIZE	720 V2 F14	790 V2 F16	860 V2 F16	910 V2 F16	960 V2 F16	1050 V2 F16	1110 V2 F18	1170 V2 F20	1240 V2 F20	1310 V2 F20	1380 V2 F22	1450 V2 F24
739 - Pumping group (1 pump)	●	-	-	-	-	-	-	-	-	-	-	-
769 - Pumping group (1+1stby)	●	-	-	-	-	-	-	-	-	-	-	-
740 - Pumping group (2 pumps)	-	●	●	●	●	●	●	●	●	●	●	●
770 - Pumping group (2+1stby)	-	●	●	●	●	●	●	●	●	●	●	●
1004 - Antifreezing heater for pumping group	●	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A	●	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B	●	●	●	●	●	●	●	●	●	●	●	●
79 - Electrical panel heating system	●	●	●	●	●	●	●	●	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	-	-	●	●
151 - ELN kit (extremely noise reduction)	●	●	●	●	●	●	●	●	●	●	●	●
170 - Spring antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●	●
Condensing pressure / free cooling control system	●	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter pipe (solder type)	●	●	●	●	●	●	●	●	●	●	●	●
Evaporator flexible joint with adapter for flange connection	●	●	●	●	●	●	●	●	●	●	●	●
450 - Desuperheater	●	●	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●	●	●
Condensing coil in special execution	●	●	●	●	●	●	●	●	●	●	●	●
250 - Coils protection nets (kit)	●	●	●	●	●	●	●	●	●	●	●	●
731 - Safety water flow switch	●	●	●	●	●	●	●	●	●	●	●	●
Analog flowmeter	●	●	●	●	●	●	●	●	●	●	●	●
143 - Glycol free	●	●	●	●	●	●	-	-	-	-	-	-
650 - Compressor thermal relay	●	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●
Supply network control relay	●	●	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●	●	●
550 - Stop valve on compressor suction line	●	●	●	●	●	●	●	●	●	●	●	●
1005 - Oil flow-switch												
85 - Demand limit	●	●	●	●	●	●	●	●	●	●	●	●
88 - Analog set point compensation	●	●	●	●	●	●	●	●	●	●	●	●
919 - Clock card	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
934 - MP.COM expansion card	●	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●	●
943 - Data Logger	●	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA GLIDER EVO FREE CLA

	GLIDER EVO FREE CLA		290 V2	310 V2	330 V2	360 V2	380 V2	420 V2	460 V2	490 V2
	SIZE		F06	F06	F08	F08	F08	F08	F10	F10
STANDARD	**Cooling capacity (1)**	**kW**	**319**	**335**	**361**	**386**	**409**	**451**	**501**	**532**
	Unit power input	kW	95,5	100,9	109,1	117,7	124,7	138,3	154,6	165,7
	Free-Cooling capacity (2)	**kW**	**323**	**325**	**397**	**435**	**438**	**452**	**558**	**568**
	Evaporator water flow rate	m³/h	57,2	60	64,6	69,2	73,2	80,8	89,8	95,2
	Evaporator pressure drop	kPa	54	53	67	74	76	89	125	147
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity control	%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%
	Axial fans	n.	6	6	7	8	8	8	10	10
	Total air flow	m³/h	122336	119280	142772	163168	159040	159040	198800	198800
	Air circuits	n.	2	2	2	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	110	146	145	145	194	194	241	241
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	186,8	202,6	217,8	233,0	236,2	266,8	308,6	327,2
	Unit starting current (LRA)	A	374,1	380,0	419,9	435,1	413,7	500,0	668,8	678,1
	EER (1)	kW/kW	3,34	3,32	3,31	3,28	3,28	3,26	3,24	3,21
	ESEER		3,78	3,77	3,78	3,74	3,76	3,77	3,74	3,75
	Sound power level [Lw] (3)	dB(A)	92,1	92,5	92,7	92,9	91,5	91,9	92,1	96,2
	Average sound pressure level [Lpm] (4)	dB(A)	72,4	72,8	72,5	72,7	71,3	71,7	71,4	75,6
	Net weight	kg	5330	5923	6633	6638	6857	6895	8018	8030
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	168,3	168,3	168,3	168,3	168,3	219,1	219,1	219,1
OPTIONAL	Glycol free system (2)									
	Cooling capacity	**kW**	**241**	**243**	**297**	**325**	**327**	**338**	**418**	**425**
	Glycol free water pump power input	kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	Partial heat recovery (6)									
	Heating capacity	**kW**	**62,8**	**65,9**	**71,0**	**76,0**	**80,5**	**88,8**	**98,6**	**105,0**
	Pumping group									
	Power input	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**319**	**335**	**361**	**386**	**409**	**451**	**501**	**532**
	Unit power input	kW	95,5	100,9	109,1	117,7	124,7	138,3	154,6	165,7
	Free-Cooling capacity (2)	**kW**	**323**	**325**	**397**	**435**	**438**	**452**	**559**	**568**
	Total air flow	m³/h	122376	119280	142772	163168	159040	159040	198800	198800
	EER (1)	kW/kW	3,34	3,32	3,31	3,28	3,28	3,26	3,24	3,21
	Sound power level [Lw] (3)	dB(A)	90,1	90,5	90,7	90,9	89,5	89,9	90,1	94,2
	Average sound pressure level [Lpm] (4)	dB(A)	70,4	70,8	70,5	70,7	69,3	69,7	69,4	73,6
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**313**	**330**	**356**	**382**	**404**	**445**	**496**	**522**
	Unit power input	kW	95,4	102,5	110,2	117,9	125,1	140,8	155,0	167,3
	Free-Cooling capacity (2)	**kW**	**321**	**323**	**395**	**433**	**436**	**451**	**557**	**566**
	Total air flow	m³/h	104019	101388	121356	138692	135184	135184	168980	168980
	EER (1)	kW/kW	3,28	3,22	3,23	3,24	3,23	3,16	3,2	3,12
	Sound power level [Lw] (3)	dB(A)	89,1	89,5	89,7	89,9	88,5	88,9	89,1	93,2
	Average sound pressure level [Lpm] (4)	dB(A)	69,4	69,8	69,5	69,7	68,3	68,7	68,4	72,6
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**305**	**322**	**349**	**375**	**397**	**436**	**487**	**509**
	Unit power input	kW	96,5	106,3	112,2	120,2	128,5	144,4	158,6	172,0
	Free-Cooling capacity (2)	**kW**	**318**	**321**	**393**	**431**	**434**	**448**	**554**	**562**
	Total air flow	m³/h	85663	83496	99940	114218	111328	111328	139160	139160
	EER (1)	kW/kW	3,16	3,03	3,11	3,12	3,09	3,02	3,07	2,96
	Sound power level [Lw] (3)	dB(A)	86,1	86,5	86,7	86,9	85,5	85,9	86,1	90,2
	Average sound pressure level [Lpm] (4)	dB(A)	66,4	66,8	66,5	66,7	65,3	65,7	65,4	69,6
ELN KIT	**Cooling capacity (1)**	**kW**	**305**	**322**	**349**	**375**	**397**	**436**	**487**	**509**
	Unit power input	kW	96,5	106,3	112,2	120,2	128,5	144,4	158,6	172,0
	Free-Cooling capacity (2)	**kW**	**318**	**321**	**393**	**431**	**434**	**448**	**554**	**562**
	Total air flow		85663	83496	99940	114218	111328	111328	139160	139160
	EER (1)	kW/kW	3,16	3,03	3,11	3,12	3,09	3,02	3,07	2,96
	Sound power level [Lw] (3)	dB(A)	83,1	83,5	83,7	83,9	82,5	82,9	83,1	87,2
	Average sound pressure level [Lpm] (4)	dB(A)	63,4	63,8	63,5	63,7	62,3	62,7	62,4	66,6

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA GLIDER EVO FREE CLA

	GLIDER EVO FREE CLA		540 V2	590 V2	630 V2	680 V2	720 V2	790 V2	860 V2	910 V2
	SIZE		F10	F10	F12	F14	F14	F16	F16	F16
STANDARD	**Cooling capacity (1)**	**kW**	**584**	**638**	**691**	**735**	**781**	**863**	**943**	**993**
	Unit power input	kW	183,1	200,6	210,7	227,6	244,1	266,4	291,0	308,4
	Free-Cooling capacity (2)	**kW**	**584**	**597**	**655**	**734**	**773**	**867**	**917**	**930**
	Evaporator water flow rate	m³/h	105	114	124	132	140	155	169	178
	Evaporator pressure drop	kPa	163	181	92	105	113	110	125	135
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity control	%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%
	Axial fans	n.	10	10	12	13	14	15	16	16
	Total air flow	m³/h	198800	198800	238560	261794	278320	302070	318080	318080
	Air circuits	n.	2	2	2	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	241	241	289	294,5	337	339,5	389	389
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	348,3	369,4	413,6	441,1	468,6	502,6	536,6	567,4
	Unit starting current (LRA)	A	829,1	850,2	591,2	595,1	622,6	639,5	673,5	752,5
	EER (1)	kW/kW	3,23	3,24	3,24	3,20	3,18	3,24	3,24	3,22
	ESEER		3,75	3,75	3,71	3,72	3,77	3,74	3,72	3,71
	Sound power level [Lw] (3)	dB(A)	96,5	96,7	97,7	99,3	100,4	101,1	101,7	101,6
	Average sound pressure level [Lpm] (4)	dB(A)	75,8	76	76,7	77,9	79	79,3	79,9	79,8
	Net weight	kg	8182	8304	9086	9669	9872	11754	12233	12267
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	219,1	219,1	219,1	219,1	219,1	219,1	219,1	273
OPTIONAL	Glycol free system (2)									
	Cooling capacity	**kW**	**437**	**447**	**490**	**549**	**578**	**649**	**686**	**696**
	Glycol free water pump power input	kW	5,5	7,5	7,5	7,5	7,5	15,0	15,0	15,0
	Partial heat recovery (6)									
	Heating capacity	**kW**	**115,0**	**125,0**	**136,0**	**144,0**	**153,0**	**170,0**	**186,0**	**196,0**
	Pumping group									
	Power input	kW	7,5	7,5	7,5	7,5	7,5	15,0	15,0	15,0
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**583**	**637**	**689**	**733**	**779**	**861**	**943**	**993**
	Unit power input	kW	176,9	192,9	208,0	224,0	239,2	261,1	291,0	308,4
	Free-Cooling capacity (2)	**kW**	**584**	**597**	**655**	**734**	**773**	**867**	**917**	**930**
	Total air flow	m³/h	198800	198800	238560	261794	278320	302070	318080	318080
	EER (1)	kW/kW	3,23	3,24	3,24	3,20	3,18	3,24	3,24	3,22
	Sound power level [Lw] (3)	dB(A)	94,5	94,7	95,7	97,3	98,4	99,1	99,7	99,6
	Average sound pressure level [Lpm] (4)	dB(A)	73,8	74,0	74,7	75,9	77,0	77,3	77,9	77,8
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**573**	**626**	**679**	**721**	**765**	**848**	**929**	**976**
	Unit power input	kW	179,7	195,7	210,3	226,9	242,8	264,4	294,9	312,8
	Free-Cooling capacity (2)	**kW**	**582**	**594**	**652**	**731**	**769**	**864**	**913**	**926**
	Total air flow	m³/h	168980	168980	202776	222524	236572	256759	270368	270368
	EER (1)	kW/kW	3,13	3,14	3,16	3,11	3,08	3,15	3,15	3,12
	Sound power level [Lw] (3)	dB(A)	93,5	93,7	94,7	96,3	97,4	98,1	98,7	98,6
	Average sound pressure level [Lpm] (4)	dB(A)	72,8	73,0	73,7	74,9	76,0	76,3	76,9	76,8
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**558**	**609**	**663**	**703**	**746**	**828**	**907**	**952**
	Unit power input	kW	185,6	202,6	216,5	232,9	248,5	270,8	293,5	311,1
	Free-Cooling capacity (2)	**kW**	**578**	**591**	**648**	**726**	**764**	**859**	**908**	**921**
	Total air flow	m³/h	139160	139160	166992	183256	194824	211449	222656	222656
	EER (1)	kW/kW	2,96	2,96	3,00	2,96	2,94	3,01	3,09	3,06
	Sound power level [Lw] (3)	dB(A)	90,5	90,7	91,7	93,3	94,4	95,1	95,7	95,6
	Average sound pressure level [Lpm] (4)	dB(A)	69,8	70,0	70,7	71,9	73,0	73,3	73,9	73,8
ELN KIT	**Cooling capacity (1)**	**kW**	**558**	**609**	**663**	**703**	**746**	**828**	**907**	**952**
	Unit power input	kW	185,6	202,6	216,5	232,9	248,5	270,8	293,5	311,1
	Free-Cooling capacity (2)	**kW**	**578**	**591**	**648**	**726**	**764**	**859**	**908**	**921**
	Total air flow		139160	139160	166992	183256	194824	211449	222656	222656
	EER (1)	kW/kW	2,96	2,96	3,00	2,96	2,94	3,01	3,09	3,06
	Sound power level [Lw] (3)	dB(A)	87,5	87,7	88,7	90,3	91,4	92,1	92,7	92,6
	Average sound pressure level [Lpm] (4)	dB(A)	66,8	67,0	67,7	68,9	70,0	70,3	70,9	70,8

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

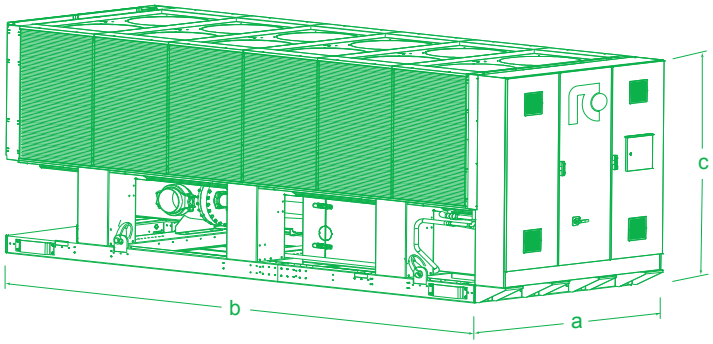
TECHNICAL DATA GLIDER EVO FREE CLA

	GLIDER EVO FREE CLA		960 V2	1050 V2	1110 V2	1170 V2	1240 V2	1310 V2	1380 V2	1450 V2
	SIZE		F16	F16	F18	F20	F20	F20	F22	F24
STANDARD	**Cooling capacity (1)**	**kW**	**1043**	**1146**	**1215**	**1285**	**1361**	**1438**	**1508**	**1583**
	Unit power input	kW	324,9	358,1	379,7	404,1	429,3	455,1	480,3	488,6
	Free-Cooling capacity (2)	**kW**	**943**	**965**	**1055**	**1198**	**1213**	**1228**	**1315**	**1369**
	Evaporator water flow rate	m³/h	187	205	218	230	244	258	270	284
	Evaporator pressure drop	kPa	147	133	148	189	206	203	223	91
	Compressors		twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw	twin-screw
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity control	%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%	25... 100%
	Axial fans	n.	16	16	18	20	20	20	22	24
	Total air flow	m³/h	318080	318080	357840	397600	397600	397600	437360	477120
	Air circuits	n.	2	2	2	2	2	2	2	2
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	389	389	436	482	482	482	530	578
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	598,2	677,8	732,7	787,6	831,6	875,6	932,6	989,6
	Unit starting current (LRA)	A	783,3	889,1	1080,9	1135,8	1215,8	1259,8	1360,6	1417,6
	EER (1)	kW/kW	3,21	3,20	3,20	3,18	3,17	3,16	3,14	3,24
	ESEER		3,72	3,83	3,79	3,77	3,78	3,83	3,81	3,79
	Sound power level [Lw] (3)	dB(A)	101,4	99,9	101,7	103,9	103,9	103,9	104,1	104,2
	Average sound pressure level [Lpm] (4)	dB(A)	79,6	78,1	79,5	81,5	81,5	81,5	81,4	81,3
	Net weight	kg	12277	12376	13934	15142	15402	15422	16101	16780
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	273	273	273	273	323,9	323,9	323,9	323,9
OPTIONAL	Glycol free system (2)									
	Cooling capacity	**kW**	**705**	**722**	**790**	**897**	**909**	**920**	**985**	**1024**
	Glycol free water pump power input	kW	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
	Partial heat recovery (6)									
	Heating capacity	**kW**	**206,0**	**225,0**	**239,0**	**253,0**	**267,0**	**283,0**	**296,0**	**311,0**
	Pumping group									
	Power input	kW	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**1043**	**1146**	**1215**	**1285**	**1361**	**1438**	**1508**	**1583**
	Unit power input	kW	324,9	358,1	379,7	404,1	429,3	455,1	480,3	488,6
	Free-Cooling capacity (2)	**kW**	**943**	**965**	**1056**	**1198**	**1214**	**1229**	**1316**	**1370**
	Total air flow	m³/h	318080	318080	357840	397600	397600	397600	437360	477120
	EER (1)	kW/kW	3,21	3,2	3,2	3,18	3,17	3,16	3,14	3,24
	Sound power level [Lw] (3)	dB(A)	99,4	97,9	99,7	101,9	101,9	101,9	102,1	102,2
	Average sound pressure level [Lpm] (4)	dB(A)	77,6	76,1	77,5	79,5	79,5	79,5	79,4	79,3
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**1025**	**1124**	**1193**	**1262**	**1334**	**1407**	**1477**	**1553**
	Unit power input	kW	330,6	367,3	386,1	409,7	435,9	465,9	489,1	497,8
	Free-Cooling capacity (2)	**kW**	**939**	**961**	**1052**	**1194**	**1209**	**1224**	**1311**	**1364**
	Total air flow	m³/h	270368	270368	304164	337960	337960	337960	371756	405552
	EER (1)	kW/kW	3,1	3,06	3,09	3,08	3,06	3,02	3,02	3,12
	Sound power level [Lw] (3)	dB(A)	98,4	96,9	98,7	100,9	100,9	100,9	101,1	101,2
	Average sound pressure level [Lpm] (4)	dB(A)	76,6	75,1	76,5	78,5	78,5	78,5	78,4	78,3
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**997**	**1091**	**1159**	**1227**	**1294**	**1362**	**1432**	**1509**
	Unit power input	kW	329,0	382,8	399,7	421,6	450,9	483,0	506,0	515,0
	Free-Cooling capacity (2)	**kW**	**933**	**956**	**1046**	**1187**	**1202**	**1217**	**1303**	**1354**
	Total air flow	m³/h	222656	222656	250488	278320	278320	278320	306152	333984
	EER (1)	kW/kW	3,03	2,85	2,9	2,91	2,87	2,82	2,83	2,93
	Sound power level [Lw] (3)	dB(A)	95,4	93,9	95,7	97,9	97,9	97,9	98,1	98,2
	Average sound pressure level [Lpm] (4)	dB(A)	73,6	72,1	73,5	75,5	75,5	75,5	75,4	75,3
ELN KIT	**Cooling capacity (1)**	**kW**	**997**	**1091**	**1159**	**1227**	**1294**	**1362**	**1432**	**1509**
	Unit power input	kW	329,0	382,8	399,7	421,6	450,9	483,0	506,0	515,0
	Free-Cooling capacity (2)	**kW**	**933**	**956**	**1046**	**1187**	**1202**	**1217**	**1303**	**1354**
	Total air flow		222656	222656	250488	278320	278320	278320	306152	333984
	EER (1)	kW/kW	3,03	2,85	2,9	2,91	2,87	2,82	2,83	2,93
	Sound power level [Lw] (3)	dB(A)	92,4	90,9	92,7	94,9	94,9	94,9	95,1	95,2
	Average sound pressure level [Lpm] (4)	dB(A)	70,6	69,1	70,5	72,5	72,5	72,5	72,4	72,3

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE F	a	b	c
F06	3520	2260	2550
F08	4490	2260	2550
F10	5460	2260	2550
F12	6430	2260	2550
F14	7400	2260	2550
F16	8720	2260	2550
F18	9690	2260	2550
F20	10660	2260	2550
F22	11630	2260	2550
F24	12600	2260	2550



unico turbo FL free

UNICO TURBO FL FREE: Packaged air cooled liquid chillers with free-cooling system in "A" class energy efficiency for outdoor installation, equipped with oil-free centrifugal compressors with magnetic levitation bearings, flooded evaporator and microchannel condensing coils

Cooling Capacity: **402 ÷ 1548 kW**

Free-Cooling Capacity: **358 ÷ 1180 kW**

A-CLASS RC Hi-Tech

INVERTER RC Hi-Tech

FREECOOLING RC Hi-Tech

LOW NOISE RC Hi-Tech

unico turbo FL free

rcgroupairconditioning

CLASS A · INVERTER · OIL FREE · R134a · AC · FLOODED · MICRO CHANNEL · FREE COOLING

MAIN FEATURES

- Air cooled liquid chiller with free-cooling system in A class energy efficiency.
- 15 models available, for a wide selection opportunity.
- Average step of 100kW.
- EER up to 3,60.
- ESEER up to 5,76.
- Oil-free centrifugal compressors with magnetic levitation bearings driven by built-in inverter.
- R134a Refrigerant charge.
- Single refrigerant circuit.
- AC Axial fans.
- Flooded evaporator.
- Microchannel condensing coils in aluminium.
- Electronic expansion valve.
- Single air circuit.
- Modular construction.
- Suitable for outdoor installation.

MAIN BENEFITS

- Up to four centrifugal compressors with magnetic levitation bearings on the refrigerant circuit for an high efficiency.
- No need of power factor correction.
- Minimum starting current (LRA)
- Low refrigerant charge.
- Very high EER and ESEER. A Class energy efficiency.
- Quiet operation.
- Availability of kit for further reduction of the noise.
- Availability of EC fans for a higher efficiency.
- Microprocessor control system with 7" touch screen display.
- Extremely easily of maintenance.
- Complete set of components dedicated to the safety of the unity.

INDIRECT FREE COOLING SYSTEM: Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

A CLASS ENERGY EFFICIENCY: The best and most accurate components applied to the chillers.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: -10÷15°C

Ambient temperature: -10÷43°C

WORKING LIMITS IN FREE-COOLING MODE

Minimum chilled water outlet temperature: -15°C

Minimum ambient temperature: -20°C

rcgroup.it

1 9 6 3 2 0 1 3

fifty cool years

COMPONENTS

FRAMEWORK
- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002 textured.

COMPRESSORS
- Twin-turbine centrifugal compressor, oil-free type, optimized for R134a refrigerant. The term “oil-free” refers to the total absence of lubricating oil within the compressor
- Magnetic levitation bearings.
- Manometric compression ratio: 1.5 ÷ 5.0
- Stepless capacity control trough integrated inverter.
- High efficiency permanent-magnet synchronous motor with integrated Soft-Start system (starting current limited to 5A).
- Power factor motor cosφ > 0.9 for a large part of the operating range
- Motor and electronic power section cooling by liquid refrigerant injection into the integrated cooling circuit.
- Electric motor thermal protection via internal winding temperature sensors.
- Electronic integrated control for operation and alarms status.
- Sensor on refrigerant discharge for temperature monitoring.
- Inner sensors for electronic components and inverter temperature control.
- Security system to protect the crankshaft and magnetic bearings in the event of failure of power supply.
- Installation with walls sound attenuators
- Degree of protection: IP54.
- Electric resistance of the suction pipe, together with activated antifreeze evaporator, to prevent the migration of refrigerant inside the compressor.

EVAPORATOR
- Flooded shell and tube evaporator, optimized for R134a refrigerant.
- Version two passes, characterized by low pressure losses on the water side.
- Water tubes with a helical rifled internal surface.
- Integrated liquid drop separator.
- Shell, header, tube sheets made of carbon steel, tubes in Cu.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Water flow switch for water flow control.
- Large liquid level indicator
- Antifreeze heater.

CONDENSING COIL
- Microchannel condensing coil in aluminium.
- Single row
- Low air side pressure drop
- High efficiency of heat exchange.
- Special protective surface treatment - acrylic painting TK-PRO that achieves a high resistance to atmospheric agents, while maintaining the same conditions of heat exchange capacity. (contact the Commercial RC GROUP).
- Reduced internal volume capable of containing the total refrigerant charge.
- High performance also in low noise structure,in combination of the fans listed below.
- Frame in galvanized steel.

FREE-COOLING COIL
- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION
- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:
- Electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure.
- Valve by-pass for start-up.
- Electronic by-pass valve for compressor start.
- Non return valve on by-pass line for compressor start.
- Economizer for model 560 T2E, 810 T2E, 1070 T4E, 1120 T4E, 1200 T3E, 1500 T4E.

  The system includes:
  - Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel.
  - Anticondensate insulation made of polyurethane.
  - Intermediate electronic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Service valve on liquid line.
- Service valve on gas discharge.
- Non return valve on gas discharge.
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection and cooling line of the compressor
- R134a refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Main switch with door lock safety.
- Fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM
- Microprocessor system with “Touch Screen” graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Integrated “Data logger” function for the recording of events and alarms.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS
- The heat exchangers’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 228/1 – G M.
- The pipes’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are supplied as standard with counter flange.
- The hydraulic connections with grooved end are supplied as standard with flexible joint and adapter pipe.

OPTIONAL ACCESSORIES

UNICO TURBO FL FREE SIZE	410 T2 VT4	490 T2 VT4	560 T2E VT5	680 T2 VT6	740 T3 VT6	810 T2E VT7	820 T3 VT7	900 T3 VT8	980 T4 VT8	1070 T4E VT9	1120 T4E VT10
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
Active filters for containment of the harmonic distortion	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●
79 - Heating system for electrical panel	●	●	●	●	●	●	●	●	●	●	●
351 - Free cooling coils with pre-painted fins	●	●	●	●	●	●	●	●	●	●	●
1005 - Power supply analyzer	●	●	●	●	●	●	●	●	●	●	●
1003 - Analogic flowmeter	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

UNICO TURBO FL FREE SIZE	1200 T3E VT10	1360 T4 VT11	1380 T4 VT12	1500 T4E VT12
150 - LNO kit (noise reduction)	●	●	●	●
Active filters for containment of the harmonic distortion	●	●	●	●
172 - Rubber support (kit)	●	●	●	●
101 - EC fan	●	●	●	●
79 - Heating system for electrical panel	●	●	●	●
351 - Free cooling coils with pre-painted fins	●	●	●	●
1005 - Power supply analyzer	●	●	●	●
1003 - Analogic flowmeter	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●
926 - LON Serial board	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●
962 - Kit modem GSM	●	●	●	●
957 - Plantwatch without modem	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA UNICO TURBO FL FREE

	UNICO TURBO FL FREE SIZE		410 T2 VT4	490 T2 VT4	560 T2E VT5	680 T2 VT6	740 T3 VT6	810 T2E VT7	820 T3 VT7	900 T3 VT8
STANDARD	**Cooling capacity (1)**	**kW**	**402**	**510**	**597**	**716**	**852**	**771**	**856**	**929**
	Unit power input	kW	111,7	153,6	177,7	219,0	263,0	215,4	253,3	261,0
	Free-Cooling capacity (2)	**kW**	**358**	**392**	**479**	**575**	**675**	**589**	**676**	**758**
	Total water flow rate	m³/h	71,9	91,3	107,0	128,0	152,0	138,0	153,0	166,0
	Total pressure drop	kPa	92	144	128	128	132	146	134	120
	Compressors		centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal
	Quantity	n.	2	2	2	2	3	2	3	3
	Cooling capacity control	%	37...100%	33...100%	28...100%	30...100%	25...100%	26...100%	23...100%	22...100%
	Axial fans	n.	8	8	10	12	12	14	14	16
	Total air flow	m³/h	170360	170360	212950	255540	298130	255540	298130	340720
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	123	143	149	208	215	208	215	332
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	310,2	310,2	318	466,8	464,8	474,6	472,6	692,4
	Unit starting current (LRA)	A	41,2	41,2	49	56,8	61,8	64,6	69,6	77,4
	EER (1)	kW/kW	3,60	3,32	3,36	3,27	3,24	3,58	3,38	3,56
	ESEER		5,07	5,05	5,15	5,35	5,47	5,34	5,03	5,23
	Sound power level [Lw] (3)	dB(A)	94,8	94,8	95,6	96,4	97,0	96,5	97,1	97,8
	Average sound pressure level [L_{Pm}] (4)	dB(A)	74,8	74,8	75,1	75,4	75,6	75,5	75,7	76,1
	Net weight	kg	3768	4063	4705	5681	5866	6341	6471	7602
	Hydraulic connections									
	Evaporator IN/OUT - OD (5)	Ø mm	168,3	168,3	168,3	168,3	168,3	168,3	168,3	168,3
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**402**	**510**	**597**	**716**	**852**	**771**	**856**	**929**
	Unit power input	kW	111,7	153,6	177,7	219,0	263,0	215,4	253,3	261,0
	Free-Cooling capacity (2)	**kW**	**358**	**392**	**479**	**575**	**675**	**589**	**676**	**758**
	Total air flow	m³/h	170360	170360	212950	255540	298130	255540	298130	340720
	EER (1)	kW/kW	3,60	3,32	3,36	3,27	3,24	3,58	3,38	3,56
	Sound power level [Lw] (3)	dB(A)	93,7	93,7	94,5	95,3	95,9	95,4	96,0	96,7
	Average sound pressure level [L_{Pm}] (4)	dB(A)	73,7	73,7	74,0	74,3	74,5	74,4	74,6	75,0
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**376**	**484**	**562**	**683**	**805**	**770**	**813**	**883**
	Unit power input	kW	105,9	151,3	172,4	211,5	263,1	227,8	247,9	266,0
	Free-Cooling capacity (2)	**kW**	**348**	**385**	**468**	**565**	**661**	**589**	**664**	**744**
	Total air flow	m³/h	144806	144806	181007	217209	253410	217209	253410	289612
	EER (1)	kW/kW	3,55	3,20	3,26	3,23	3,06	3,38	3,28	3,32
	Sound power level [Lw] (3)	dB(A)	92,6	92,6	93,4	94,2	94,8	94,3	94,9	95,6
	Average sound pressure level [L_{Pm}] (4)	dB(A)	72,6	72,6	72,9	73,2	73,4	73,3	73,5	73,9
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**380**	**446**	**520**	**626**	**737**	**713**	**754**	**796**
	Unit power input	kW	109,8	142,0	162,5	195,0	233,2	216,1	233,4	249,5
	Free-Cooling capacity (2)	**kW**	**349**	**374**	**454**	**546**	**639**	**574**	**645**	**713**
	Total air flow	m³/h	119252	119252	149065	178878	208691	178878	208691	238504
	EER (1)	kW/kW	3,46	3,14	3,20	3,21	3,16	3,30	3,23	3,19
	Sound power level [Lw] (3)	dB(A)	90,9	90,9	91,7	92,5	93,1	92,6	93,2	93,9
	Average sound pressure level [L_{Pm}] (4)	dB(A)	70,9	70,9	71,2	71,5	71,7	71,6	71,8	72,2

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

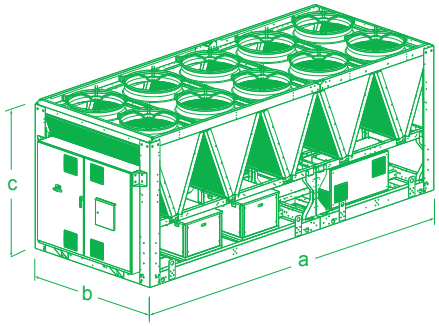
TECHNICAL DATA UNICO TURBO FL FREE

	UNICO TURBO FL FREE SIZE		980 T4 VT8	1070 T4E VT9	1120 T4E VT10	1200 T3E VT10	1360 T4 VT11	1380 T4 VT12	1500 T4E VT12
STANDARD	**Cooling capacity (1)**	**kW**	**1261**	**1021**	**1125**	**1194**	**1429**	**1453**	**1548**
	Unit power input	kW	390,4	308,5	337,8	351,2	438,3	426,1	463,5
	Free-Cooling capacity (2)	**kW**	**976**	**784**	**876**	**958**	**1084**	**1155**	**1180**
	Total water flow rate	m³/h	226,0	183,0	201,0	214,0	256,0	260,0	277,0
	Total pressure drop	kPa	142	144	138	128	150	130	148
	Compressors		centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal
	Quantity	n.	4	4	4	3	4	4	4
	Cooling capacity control	%	16...100%	15...100%	14...100%	18...100%	15...100%	15...100%	14...100%
	Axial fans	n.	16	18	20	20	22	24	24
	Total air flow	m³/h	425900	340720	383310	425900	468490	511080	511080
	Air circuits	n.	1	1	1	1	1	1	1
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	378	365	371	378	396	402	402
	Gas circuits	n.	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	619,4	627,2	634	708	925,8	933,6	933,6
	Unit starting current (LRA)	A	82,4	90,2	98	93	105,8	113,6	113,6
	EER (1)	kW/kW	3,23	3,31	3,33	3,40	3,26	3,41	3,34
	ESEER		5,35	5,20	5,27	5,31	5,56	5,76	5,60
	Sound power level [Lw] (3)	dB(A)	98,6	97,8	98,2	98,6	99,1	99,5	99,5
	Average sound pressure level [L_{Pm}] (4)	dB(A)	76,2	76,1	76,1	76,2	76,4	76,5	76,5
	Net weight	kg	7895	8584	9189	9056	10062	10667	10777
	Hydraulic connections								
	Evaporator IN/OUT - OD (5)	Ø mm	219,1	219,1	219,1	219,1	219,1	219,1	219,1
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**1261**	**1021**	**1125**	**1194**	**1429**	**1457**	**1548**
	Unit power input	kW	390,4	308,5	337,8	351,2	438,3	421,1	463,5
	Free-Cooling capacity (2)	**kW**	**976**	**784**	**876**	**958**	**1084**	**1156**	**1180**
	Total air flow	m³/h	425900	340720	383310	425900	468490	511080	511080
	EER (1)	kW/kW	3,23	3,31	3,33	3,40	3,26	3,46	3,34
	Sound power level [Lw] (3)	dB(A)	97,5	96,7	97,1	97,5	98,0	98,4	98,4
	Average sound pressure level [L_{Pm}] (4)	dB(A)	75,1	75,0	75,0	75,1	75,3	75,4	75,4
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**1189**	**966**	**1064**	**1122**	**1359**	**1378**	**1468**
	Unit power input	kW	386,0	302,8	332,5	340,0	423,4	412,6	454,5
	Free-Cooling capacity (2)	**kW**	**956**	**769**	**859**	**936**	**1066**	**1133**	**1159**
	Total air flow	m³/h	362015	289612	325813	362015	398216	434418	434418
	EER (1)	kW/kW	3,08	3,19	3,20	3,30	3,21	3,34	3,23
	Sound power level [Lw] (3)	dB(A)	96,4	95,6	96,0	96,4	96,9	97,3	97,3
	Average sound pressure level [L_{Pm}] (4)	dB(A)	74,0	73,9	73,9	74,0	74,2	74,3	74,3
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**1082**	**892**	**976**	**1037**	**1243**	**1273**	**1330**
	Unit power input	kW	347,9	284,1	310,8	319,1	376,7	381,1	446,3
	Free-Cooling capacity (2)	**kW**	**923**	**747**	**831**	**907**	**1032**	**1099**	**1118**
	Total air flow	m³/h	298130	238504	268317	298130	327943	357756	357756
	EER (1)	kW/kW	3,11	3,14	3,14	3,25	3,30	3,34	2,98
	Sound power level [Lw] (3)	dB(A)	94,7	93,9	94,3	94,7	95,2	95,6	95,6
	Average sound pressure level [L_{Pm}] (4)	dB(A)	72,3	72,2	72,2	72,3	72,5	72,6	72,6

1. Referred to chiller water temperature 15/10°C; 20% Ethylene glycol solution; ambient temperature 35°C,
2. Referred to chiller water inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

DIMENSIONS (mm)

SIZE VT	a	b	c
VT3	3530	2260	2304
VT4	4650	2260	2304
VT5	5770	2260	2304
VT6	6890	2260	2304
VT7	8010	2260	2304
VT8	9130	2260	2304
VT9	10250	2260	2304
VT10	11370	2260	2304
VT11	12490	2260	2304
VT12	13610	2260	2304



UNICO TURBO FL: Packaged air cooled liquid chillers in “A” class energy efficiency for outdoor installation, equipped with oil-free centrifugal compressors with magnetic levitation bearings, flooded evaporator and microchannel condensing coils.
Cooling Capacity: **280 ÷ 1500 kW**

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

A-CLASS RC Hi-Tech

INVERTER RC Hi-Tech

LOW NOISE RC Hi-Tech

unico turbo FL

rcgroupairconditioning

A CLASS · INVERTER · OIL FREE · R134a · FLOODED · MICRO CHANNEL

MAIN FEATURES
- Air cooled liquid chiller in A class energy efficiency.
- 17 models available, for a wide selection opportunity.
- Average step of 70kW.
- EER up to 3,48.
- ESEER up to 5,88.
- Oil-free centrifugal compressors with magnetic levitation bearings driven by built-in inverter.
- R134a Refrigerant charge.
- Single refrigerant circuit.
- AC Axial fans.
- Flooded evaporator.
- Microchannel condensing coils in aluminium.
- Electronic expansion valve.
- Single air circuit.
- Modular construction.
- Suitable for outdoor installation.

MAIN BENEFITS
- Up to four centrifugal compressors with magnetic levitation bearings on the refrigerant circuit for an high efficiency.
- No need of power factor correction.
- Minimum starting current (LRA)
- Low refrigerant charge.
- Very high EER and ESEER. A Class energy efficiency.
- Quiet operation.
- Availability of kit for further reduction of the noise.
- Availability of EC fans for a higher efficiency.
- Availability of pumping groups.
- Microprocessor control system with 7” touch screen display.
- Extremely easily of maintenance.
- Complete set of components dedicated to the safety of the unity.
- Eurovent Certification.

MAGNETIC LEVITATION CENTRIFUGAL COMPRESSOR
The TURBO FL liquid chillers are equipped with two-stage centrifugal compressor with variable speed, which is able to follow punctually plant demands, obtaining values of energy efficiency ratio (EER) growing in a narrowing of the cooling load. The compressors are equipped with magnetic levitation oil-free bearings which compared to traditional ball bearings, completely eliminate all the maintenance procedures of lubrication.

A CLASS ENERGY EFFICIENCY
The best and most accurate components applied to the chillers.

WORKING LIMITS IN COOLING MODE
Chilled water outlet temperature: 4÷15°C
Ambient temperature: -10÷45°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

COMPONENTS

FRAMEWORK
- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002 textured.

COMPRESSORS
- Twin-turbine centrifugal compressor, oil-free type, optimized for R134a refrigerant. The term “oil-free” refers to the total absence of lubricating oil within the compressor
- Magnetic levitation bearings.
- Manometric compression ratio: 1.5 ÷ 5.0
- Stepless capacity control trough integrated inverter.
- High efficiency permanent-magnet synchronous motor with integrated Soft-Start system (starting current limited to 5A).
- Power factor motor cosφ > 0.9 for a large part of the operating range
- Motor and electronic power section cooling by liquid refrigerant injection into the integrated cooling circuit.
- Electric motor thermal protection via internal winding temperature sensors.
- Electronic integrated control for operation and alarms status.
- Sensor on refrigerant discharge for temperature monitoring.
- Inner sensors for electronic components and inverter temperature control.
- Security system to protect the crankshaft and magnetic bearings in the event of failure of power supply.
- Installation with walls sound attenuators
- Degree of protection: IP54.
- Electric resistance of the suction pipe, together with activated antifreeze evaporator, to prevent the migration of refrigerant inside the compressor.

EVAPORATOR
- Flooded shell and tube evaporator, optimized for R134a refrigerant.
- Version two passes, characterized by low pressure losses on the water side.
- Water tubes with a helical rifled internal surface.
- Integrated liquid drop separator.
- Shell, header, tube sheets made of carbon steel, tubes in Cu.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Water flow switch for water flow control.
- Large liquid level indicator
- Antifreeze heater.

CONDENSING COIL
- Microchannel condensing coil in aluminium.
- Single row
- Low air side pressure drop
- High efficiency of heat exchange.
- Reduced internal volume capable of containing the total refrigerant charge.
- High performance also in low noise structure,in combination of the fans listed below.
- Frame in galvanized steel.

FANS SECTION
- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:
- Electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure.
- valve by-pass for start-up.
- Electronic by-pass valve for compressor start.
- Non return valve on by-pass line for compressor start.
- Economizer for model 280 T1E, 560 T2E, 810 T2E, 1070 T4E, 1120 T4E, 1200 T3E, 1500 T4E. The system includes:
  - Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel.
  - Anticondensate insulation made of polyurethane.
  - Intermediate electronic expansion valve.
- Sight glass.
- Filter dryer on liquid line.
- Service valve on liquid line.
- Service valve on gas discharge.
- Non return valve on gas discharge.
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection and cooling line of the compressor
- R134a refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:
- Main switch with door lock safety.
- Fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM
- Microprocessor system with “Touch Screen” graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Integrated “Data logger” function for the recording of events and alarms.
  - Nonvolatile “Flash” memory for data storage.
  - Menu with protection password.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS
- The heat exchangers’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 228/1 – G M.
- The pipes’ threaded hydraulic connections are available up to a diameter of 3 “ included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are supplied as standard with counter flange.
- The hydraulic connections with grooved end are supplied as standard with flexible joint and adapter pipe.

OPTIONAL ACCESSORIES

UNICO TURBO FL SIZE	280 T1E VT3	340 T1 VT3	410 T2 VT4	490 T2 VT4	560 T2E VT5	680 T2 VT6	810 T2E VT7	740 T3 VT6	820 T3 VT7	900 T3 VT8	1200 T3E VT10
739 - Pumping group (1 pump)	-	-	●	●	●	●	-	●	-	-	-
769 - Pumping group (1+1stby)	-	-	●	●	●	●	-	●	-	-	-
740 - Pumping group (2 pumps)	-	-	-	-	-	-	●	-	●	●	●
770 - Pumping group (2+1stby)	-	-	-	-	-	-	●	-	●	●	●
756 - Pumping group LN (1 pump)	-	-	●	●	●	●	●	●	●	●	-
771 - Pumping group LN (1+1stby)	-	-	●	●	●	●	●	●	●	●	-
757 - Pumping group LN (2 pumps)	-	-	-	-	-	-	-	-	-	-	●
772 - Pumping group LN (2+1stby)	-	-	-	-	-	-	-	-	-	-	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●	●	●	●	●	●
Active filters for containment of the harmonic distortion	●	●	●	●	●	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
179 - Double refrigerant circuit	-	-	-	-	-	-	-	-	-	-	-
101 - EC fan	●	●	●	●	●	●	●	●	●	●	●
350 - Kit TK PRO corrosion resistant painting treatment	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

UNICO TURBO FL SIZE	980 T4 VT8	1070 T4E VT9	1120 T4E VT10	1360 T4 VT11	1380 T4 VT12	1500 T4E VT12
739 - Pumping group (1 pump)	-	-	-	-	-	-
769 - Pumping group (1+1stby)	-	-	-	-	-	-
740 - Pumping group (2 pumps)	●	●	●	●	●	●
770 - Pumping group (2+1stby)	●	●	●	●	●	●
756 - Pumping group LN (1 pump)	●	●	-	-	-	-
771 - Pumping group LN (1+1stby)	●	●	-	-	-	-
757 - Pumping group LN (2 pumps)	-	-	●	●	●	●
772 - Pumping group LN (2+1stby)	-	-	●	●	●	●
150 - LNO kit (noise reduction)	●	●	●	●	●	●
Active filters for containment of the harmonic distortion	●	●	●	●	●	●
172 - Rubber support (kit)	●	●	●	●	●	●
179 - Double refrigerant circuit	●	●	●	●	●	●
101 - EC fan	●	●	●	●	●	●
350 - Kit TK PRO corrosion resistant painting treatment	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA UNICO TURBO FL

	UNICO TURBO FL SIZE		280 T1E VT3	340 T1 VT3	410 T2 VT4	490 T2 VT4	560 T2E VT5	680 T2 VT6	810 T2E VT7	740 T3 VT6
STANDARD	**Cooling capacity (1)**	**kW**	**280**	**340**	**410**	**490**	**560**	**680**	**810**	**740**
	Unit power input	kW	81,2	99,7	121,3	152,2	171,3	204,2	252,3	212,6
	Evaporator water flow rate	m³/h	48,2	58,5	70,5	84,3	96,3	117,0	139,0	127,0
	Evaporator pressure drop	kPa	25	24	34	25	31	22	31	25
	Compressors		centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal
	Quantity	n.	1	1	2	2	2	2	2	3
	Cooling capacity control	%	55...100%	60...100%	37...100%	33...100%	28...100%	30...100%	26...100%	25...100%
	Axial fans	n.	6	6	8	8	10	12	14	12
	Total air flow	m³/h	145500	145500	194000	194000	242500	291000	339500	291000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	130	117	123	143	149	208	215	208
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	162,4	233,4	309,2	309,2	317,0	466,8	474,6	463,8
	Unit starting current (LRA)	A	28,4	28,4	41,2	41,2	49,0	56,8	64,6	61,8
	EER (1)	kW/kW	3,45	3,41	3,38	3,22	3,27	3,33	3,21	3,48
	ESEER		4,95	5,38	5,10	5,32	5,39	5,29	5,51	5,88
	Sound power level [Lw] (2)	dB(A)	93,3	93,4	94,8	94,8	95,6	96,4	97,0	96,5
	Average sound pressure level [L_{Pm}] (3)	dB(A)	73,8	73,9	74,8	74,8	75,1	75,4	75,6	75,5
	Net weight	kg	2559	2626	3378	3658	4203	5056	5614	5241
	Hydraulic connections									
	Evaporator IN/OUT - OD (4)	Ø mm	114,3	114,3	114,3	141,3	141,3	141,3	168,3	168,3
OPT	Pumping group									
	2 poles motor - Power input	kW	--	--	5,5	5,5	5,5	11,0	11,0	11,0
	4 poles motor - Power input	kW	--	--	5,5	5,5	5,5	11,0	11,0	11,0
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**280**	**340**	**410**	**490**	**560**	**680**	**810**	**740**
	Unit power input	kW	80,3	98,7	119,8	150,8	169,3	202,7	250,2	210,7
	Total air flow	m³/h	145500	145500	194000	194000	242500	291000	339500	291000
	EER (1)	kW/kW	3,45	3,41	3,38	3,22	3,27	3,33	3,21	3,48
	Sound power level [Lw] (2)	dB(A)	92,2	92,3	93,7	93,7	94,5	95,3	95,9	95,4
	Average sound pressure level [L_{Pm}] (3)	dB(A)	72,7	72,8	73,7	73,7	74,0	74,3	74,5	74,4
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**268**	**324**	**380**	**465**	**532**	**650**	**765**	**740**
	Unit power input	kW	73,2	89,2	117,3	138,3	154,4	185,4	226,5	202,4
	Total air flow	m³/h	123675	123675	164900	164900	206125	247350	288575	247350
	EER (1)	kW/kW	3,62	3,59	3,21	3,33	3,41	3,48	3,35	3,62
	Sound power level [Lw] (2)	dB(A)	91,1	91,2	92,6	92,6	93,4	94,2	94,8	94,3
	Average sound pressure level [L_{Pm}] (3)	dB(A)	71,6	71,7	72,6	72,6	72,9	73,2	73,4	73,3
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**253**	**300**	**368**	**432**	**495**	**600**	**708**	**690**
	Unit power input	kW	65,8	80,1	109,2	124,2	139,0	164,8	201,6	182,8
	Total air flow		101850	101850	135800	135800	169750	203700	237650	203700
	EER (1)	kW/kW	3,80	3,71	3,33	3,45	3,53	3,61	3,48	3,74
	Sound power level [Lw] (2)	dB(A)	89,4	89,5	90,9	90,9	91,7	92,5	93,1	92,6
	Average sound pressure level [L_{Pm}] (3)	dB(A)	69,9	70,0	70,9	70,9	71,2	71,5	71,7	71,6

1. Referred to chilled water temperature 12/7°C and 35°C ambient air temperature according to Eurovent standard
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

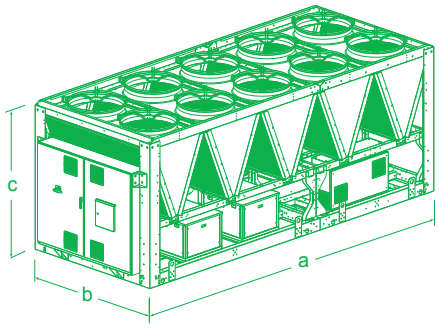
TECHNICAL DATA UNICO TURBO FL

	UNICO TURBO FL SIZE		820 T3 VT7	900 T3 VT8	1200 T3E VT10	980 T4 VT8	1070 T4E VT9	1120 T4E VT10	1360 T4 VT11	1380 T4 VT12	1500 T4E VT12
STANDARD	**Cooling capacity (1)**	**kW**	**820**	**900**	**1200**	**980**	**1070**	**1120**	**1360**	**1380**	**1500**
	Unit power input	kW	250,8	262,4	376,2	305,3	329,2	341,5	415,9	408,3	461,5
	Evaporator water flow rate	m³/h	141,0	155,0	206,0	169,0	184,0	193,0	234,0	237,0	258,0
	Evaporator pressure drop	kPa	32	37	38	26	31	34	37	38	44
	Compressors		centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal
	Quantity	n.	3	3	3	4	4	4	4	4	4
	Cooling capacity control	%	23...100%	22...100%	18...100%	16...100%	15...100%	14...100%	15...100%	15...100%	14...100%
	Axial fans	n.	14	16	20	16	18	20	22	24	24
	Total air flow	m³/h	339500	388000	485000	388000	436500	485000	533500	582000	582000
	Air circuits	n.	1	1	1	1	1	1	1	1	1
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	215	332	378	365	371	378	396	402	402
	Gas circuits	n.	1	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	471,6	692,4	708,0	618,4	626,2	634,0	925,8	933,6	933,6
	Unit starting current (LRA)	A	69,6	77,4	93,0	82,4	90,2	98,0	105,8	113,6	113,6
	EER (1)	kW/kW	3,27	3,43	3,19	3,21	3,25	3,28	3,27	3,38	3,25
	ESEER		5,17	5,62	5,65	5,41	5,32	5,39	5,29	5,56	5,58
	Sound power level [Lw] (2)	dB(A)	97,1	97,8	98,6	97,8	98,2	98,6	99,1	99,5	99,5
	Average sound pressure level [L_{Pm}] (3)	dB(A)	75,7	76,1	76,2	76,1	76,1	76,2	76,4	76,5	76,5
	Net weight	kg	5743	6772	8021	7065	7652	8154	8925	9427	9537
	Hydraulic connections										
	Evaporator IN/OUT - OD (4)	Ø mm	168,3	168,3	168,3	168,3	168,3	168,3	168,3	168,3	168,3
OPT	Pumping group										
	2 poles motor - Power input	kW	11,0	11,0	22,0	11,0	22,0	22,0	22,0	22,0	22,0
	4 poles motor - Power input	kW	11,0	11,0	15,0	11,0	11,0	15,0	15,0	15,0	15,0
LNO KIT 100%	**Cooling capacity (1)**	**kW**	**820**	**900**	**1200**	**980**	**1070**	**1120**	**1360**	**1380**	**1500**
	Unit power input	kW	248,2	259,7	371,6	302,7	326,1	337,6	411,0	403,5	456,5
	Total air flow	m³/h	339500	388000	485000	388000	436500	485000	533500	582000	582000
	EER (1)	kW/kW	3,27	3,43	3,19	3,21	3,25	3,28	3,27	3,38	3,25
	Sound power level [Lw] (2)	dB(A)	96,0	96,7	97,5	96,7	97,1	97,5	98,0	98,4	98,4
	Average sound pressure level [L_{Pm}] (3)	dB(A)	74,6	75,0	75,1	75,0	75,0	75,1	75,3	75,4	75,4
LNO KIT 85%	**Cooling capacity (1)**	**kW**	**780**	**848**	**1133**	**929**	**1010**	**1062**	**1295**	**1311**	**1404**
	Unit power input	kW	227,5	236,6	336,7	277,6	296,6	308,7	373,8	366,9	413,9
	Total air flow	m³/h	288575	329800	412250	329800	371025	412250	453475	494700	494700
	EER (1)	kW/kW	3,40	3,55	3,33	3,32	3,37	3,41	3,43	3,54	3,35
	Sound power level [Lw] (2)	dB(A)	94,9	95,6	96,4	95,6	96,0	96,4	96,9	97,3	97,3
	Average sound pressure level [L_{Pm}] (3)	dB(A)	73,5	73,9	74,0	73,9	73,9	74,0	74,2	74,3	74,3
LNO KIT 70%	**Cooling capacity (1)**	**kW**	**727**	**766**	**1041**	**863**	**932**	**987**	**1196**	**1214**	**1279**
	Unit power input	kW	204,6	211,4	299,1	249,4	265,2	276,1	331,9	326,7	366,7
	Total air flow		237650	271600	339500	271600	305550	339500	373450	407400	407400
	EER (1)	kW/kW	3,52	3,59	3,45	3,44	3,49	3,54	3,57	3,68	3,45
	Sound power level [Lw] (2)	dB(A)	93,2	93,9	94,7	93,9	94,3	94,7	95,2	95,6	95,6
	Average sound pressure level [L_{Pm}] (3)	dB(A)	71,8	72,2	72,3	72,2	72,2	72,3	72,5	72,6	72,6

1. Referred to chilled water temperature 12/7°C and 35°C ambient air temperature according to Eurovent standard
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

DIMENSIONS (mm)

SIZE VT	a	b	c
VT3	3530	2260	2304
VT4	4650	2260	2304
VT5	5770	2260	2304
VT6	6890	2260	2304
VT7	8010	2260	2304
VT8	9130	2260	2304
VT9	10250	2260	2304
VT10	11370	2260	2304
VT11	12490	2260	2304
VT12	13610	2260	2304



FRIGO TURBO FL: Packaged water cooled liquid chillers in “A” class energy efficiency for indoor installation, equipped with oil-free centrifugal compressors with magnetic levitation bearings, flooded evaporator and shall and tube condenser.
Cooling Capacity: **280 ÷ 1840 kW**

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

A-CLASS
RC Hi-Tech

LOW NOISE
RC Hi-Tech

INVERTER
RC Hi-Tech

frigo turbo FL

rcgroupairconditioning

A CLASS · INVERTER · OIL FREE · R134a · FLOODED

MAIN FEATURES

- Water cooled liquid chiller in A class energy efficiency.
- 11 models available, for a wide selection opportunity.
- Average step of 150kW.
- EER up to 5,24.
- ESEER up to 8,91.
- Oil-free centrifugal compressors with magnetic levitation bearings.
- Inverter driven.
- R134a Refrigerant charge.
- Single refrigerant circuit.
- Electronic expansion valve.
- Shell and tube condenser.
- Flooded evaporator.
- Suitable for indoor installation.

MAIN BENEFITS

- Up to four centrifugal compressors with magnetic levitation bearings on the refrigerant circuit for an high efficiency.
- No need of power factor correction.
- Minimum starting current (LRA)
- High EER and ESEER. A Class energy efficiency.
- Quiet operation.
- Microprocessor control system with 7” touch screen display.
- Extremely easily of maintenance.
- Complete set of components dedicated to the safety of the unity.
- Eurovent Certification.

INDOOR INSTALLATION

The machines are designed for indoor installation.

MAGNETIC LEVITATION CENTRIFUGAL COMPRESSOR

The TURBO FL liquid chillers are equipped with two-stage centrifugal compressor with variable speed, which is able to follow punctually plant demands, obtaining values of energy efficiency ratio (EER) growing in a narrowing of the cooling load. The compressors of the TURBO FL liquid chillers are equipped with magnetic levitation oil-free bearings which compared to traditional ball bearings, completely eliminate all the maintenance procedures of lubrication.

A CLASS ENERGY EFFICIENCY

The best and most accurate components applied to the chillers.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: 4÷18°C
Condenser outlet water temperature: 20÷52°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty**cool**years

COMPONENTS

FRAMEWORK
- Base and self supporting frame in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS
- Twin-turbine centrifugal compressor, oil-free type, optimized for R134a refrigerant. The term “oil-free” refers to the total absence of lubricating oil within the compressor
- Magnetic levitation bearings.
- Manometric compression ratio: 1.5 ÷ 5.0
- Stepless capacity control trough integrated inverter.
- High efficiency permanent-magnet synchronous motor with integrated Soft-Start system (starting current limited to 5A).
- Power factor motor cosφ > 0.9 for a large part of the operating range
- Motor and electronic power section cooling by liquid refrigerant injection into the integrated cooling circuit.
- Electric motor thermal protection via internal winding temperature sensors.
- Electronic integrated control for operation and alarms status.
- Sensor on refrigerant discharge for temperature monitoring.
- Inner sensors for electronic components and inverter temperature control.
- Security system to protect the crankshaft and magnetic bearings in the event of failure of power supply.
- Degree of protection: IP54.

EVAPORATOR
- Flooded shell and tube evaporator, optimized for R134a refrigerant.
- Version two passes, characterized by low pressure losses on the water side.
- Water tubes with a helical rifled internal surface.
- Integrated liquid drop separator.
- Shell, header, tube sheets made of carbon steel, tubes in Cu.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Water flow switch for water flow control.
- Large liquid level indicator

CONDENSER
- Shell and tube 2-passes condenser optimized for R134a refrigerant.
  - Machine type P4: 4-passes condenser.
- Shell, header, tube sheets made of carbon steel, tubes in Cu.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:
- Capacitive level sensor connected to the driver of the expansion valve.
- Electronic expansion valve that allows high performance and system efficiency and for the refrigerant level control in the evaporator. Double electronic expansion valve from model 1140 T3 included up to model 1840 T4.
- Electronic by-pass valve for compressor start.
- Non return valve on by-pass line for compressor start.
- Sight glass.
- Filter dryer on liquid line.
- Service valve on liquid line.
- Service valve on gas discharge.
- Non return valve on gas discharge.
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line for models 280 T1, 560 T2, 840 T3.
- Refrigerant circuit with steel tubing with anticondensate insulation of the suction line for models 380 T1, 460 T1, 760 T2, 920 T2, 1140 T3, 1380 T3, 1520 T4, 1840 T4..
- Plastic capillary hoses for pressure sensors connection.
- R134a refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for indoor installation, complete with:
- Main switch with door lock safety.
- Fuses for compressors.
- Contactors for compressors.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply 400/3/50.

CONTROL SYSTEM
- Microprocessor system with “Touch Screen” graphic display for control and monitor of operating and alarms status. The system includes:
  - Voltage free contact for remote general alarm.
  - Main components hour-meter.
  - Integrated “Data logger” function for the recording of events and alarms.
  - Non-volatile “Flash” memory for data storage.
  - Menu with protection password.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

FRIGO TURBO FL	280 T1	380 T1	460 T1	560 T2	760 T2	840 T3	920 T2	1140 T3	1380 T3	1520 T4	1840 T4
172 - Rubber support (kit)	●	●	●	●	●	●	●	●	●	●	●
611 - Noise absorption cap	●	●	●	●	●	●	●	●	●	●	●
Service valve on compressor group suction	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●
942 - Serial card for GSM Modem	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA FRIGO TURBO FL (*)

	FRIGO TURBO FL		280 T1	380 T1	460 T1	560 T2	760 T2	840 T3	920 T2	1140 T3
STANDARD	**Cooling capacity (1)**	**kW**	**280**	**380**	**460**	**560**	**760**	**840**	**920**	**1140**
	Unit power input	kW	55,4	75,2	90,7	110,9	149,0	166,0	179,0	218,0
	Evaporator water flow rate	m³/h	48,2	65,4	79,1	96,3	131,0	144,0	158,0	196,0
	Evaporator pressure drop	kPa	37	29	27	31	27	32	57	35
	Condenser water flow rate	m³/h	57,7	78,3	94,7	115,0	156,0	173,0	189,0	234,0
	Condenser pressure drop	kPa	13	22	21	19	22	26	22	29
	Compressors		centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal	centrifugal
	Quantity	n.	1	1	1	2	2	3	2	3
	Capacity control	%	44...100%	42...100%	34...100%	22...100%	23...100%	20...100%	18...100%	13...100%
	Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	125	165	120	160	240	268	250	400
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	139	210	172	279	420	418	344	630
	Unit starting current (LRA)	A	5	5	5	10	10	15	10	15
	EER (1)	kW/kW	5,05	5,05	5,07	5,05	5,10	5,06	5,14	5,23
	ESEER		8,41	8,36	8,53	8,59	8,69	8,45	8,54	8,65
	Sound power level [Lw] (2)	dB(A)	92,5	92,9	94,7	94,7	94,9	95,7	96,8	96,6
	Average sound pressure level [Lpm] (3)	dB(A)	73,9	74,3	76,1	76,1	76,3	77,1	77,8	77,1
	Net weight	kg	1800	1871	2111	2573	2939	3771	3077	4628
	Hydraulic connections									
	Evaporator IN/OUT - OD (4)	Ø mm	114,3	168,3	168,3	168,3	168,3	168,3	168,3	219,1

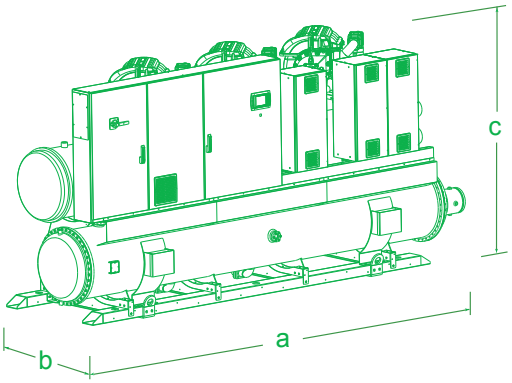
	FRIGO TURBO FL		1380 T3	1520 T4	1840 T4
STANDARD	**Cooling capacity (1)**	**kW**	**1380**	**1520**	**1840**
	Unit power input	kW	270,1	290,1	358,0
	Evaporator water flow rate	m³/h	237,0	261,0	316,0
	Evaporator pressure drop	kPa	38	28	36
	Condenser water flow rate	m³/h	284,0	311,0	378,0
	Condenser pressure drop	kPa	30	25	36
	Compressors		centrifugal	centrifugal	centrifugal
	Quantity	n.	3	4	4
	Capacity control	%	11...100%	11...100%	11...100%
	Refrigerant		R134a	R134a	R134a
	Total refrigerant charge (optional excluded)	kg	406	400	415
	Gas circuits	n.	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	517	840	689
	Unit starting current (LRA)	A	15	20	20
	EER (1)	kW/kW	5,11	5,24	5,14
	ESEER		8,54	8,91	8,72
	Sound power level [Lw] (2)	dB(A)	97,2	97,5	99,0
	Average sound pressure level [Lpm] (3)	dB(A)	77,7	78,0	79,5
	Net weight	kg	4749	5787	6674
	Hydraulic connections				
	Evaporator IN/OUT - OD (4)	Ø mm	219,1	219,1	219,1

1. Referred to chilled water temperature 12/7°C and condenser water temperature 30/35°C according to Eurovent standard
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

(*) Technical data refer to units equipped with 2-passes condenser.

DIMENSIONS (mm)

FRIGO TURBO FL	a	b	c
280 T1	3050	1320	1870
380 T1	3050	1320	1870
460 T1	3050	1320	1870
560 T2	3050	1320	2040
760 T2	3050	1355	2040
840 T3	4500	1406	2090
920 T2	3820	1406	2040
1140 T3	4500	1406	2090
1380 T3	4500	1406	2090
1520 T4	4990	1406	2090
1840 T4	4990	1406	2090



TEAM MATE: Air cooled condensers equipped with axial fans

Capacity: **11,7 ÷ 307,0 kW**

team mate

rcgroupairconditioning

R410A R407c R134a A C SPLIT SYSTEM

MAIN FEATURES
- Air cooled condensers.
- 19 models available, for a wide selection opportunity.
- Average step of 15kW.
- Multi-refrigerant charge.
- Supplied with seal charge.
- AC Axial fans.
- Horizontal air flow.
- Suitable for outdoor installation.

MAIN BENEFITS
- Designed for the perfect match with RC Group motoevaporating units.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of support leg for vertical air flow.
- Easily of maintenance.

OUTDOOR INSTALLATION
The machines are made with weather resistant materials and suitable for outdoor installation.

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

FANS SECTION – TEAM MATE

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor electric motor, AC type, with stepless variable speed for condensing pressure control.
  The motor rotation control is obtained according to the 0÷10V proportional signal coming from the internal unit microprocessor control.
- IP54 enclosure class.

AIR/GAS HEAT EXCHANGERS

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.

REFRIGERANT CIRCUIT

- Valves on gas and liquid line for coupling to refrigerant pipe. The valves are supplied not installed. The condenser is supplied with nitrogen seal.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, IP54 enclosure class, complete with:

- Terminals for power supply (from network).
  - 400/3/50+N for models “T”
  - 230/1/50 for models “M”.
- Terminals for 0÷10V signal for condensing control system (connect to indoor machine).
- Terminals for alarm signal (connect to indoor machine).
- Fans speed regulator for condensing control.

OPTIONAL ACCESSORY

- Support legs for vertical air flow.

TECHNICAL DATA TEAM MATE

	TEAM MATE		M 11	M 14	M 17	M 20	M 25	M 30	M 35	M 45
STANDARD	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**12,1**	**14,7**	**18,4**	**20,7**	**24,2**	**32,7**	**37,4**	**47,6**
	With refrigerant charge R407C	**kW**	**12,0**	**14,7**	**18,2**	**20,4**	**24,2**	**32,3**	**37,1**	**47,1**
	With refrigerant charge R134a	**kW**	**11,7**	**14,4**	**17,9**	**20,0**	**23,7**	**31,7**	**36,6**	**46,5**
	Unit power input	kW	0,3	0,3	0,3	0,4	0,5	0,5	0,5	0,8
	Axial fans	n.	1	1	1	1	1	1	1	2
	Total air flow	m³/h	4900	4500	5200	6400	9600	9500	9100	12000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Total refrigerant charge (optional excluded)	kg	0,8	1,2	1,7	1,7	2,0	3,0	4,0	4,7
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
	Max unit operating current (FLA)	A	1,2	1,2	1,2	1,8	2,9	2,9	2,9	3,6
	Sound power level [Lw] (2)	dB(A)	76,8	76,8	77,1	79,1	81,8	81,8	81,8	82,4
	Average sound pressure level [Lpm] (3)	dB(A)	63,0	63,0	63,0	65,0	67,0	67,0	67,0	67,4
	Net weight	kg	51	55	66	72	102	111	120	153
	Refrigerant connections									
	Liquid line – ODS	Ø mm	12	12	12	12	16	16	16	16
	Gas line – ODS	Ø mm	16	16	16	16	18	18	18	18
TEAM MATE LNO	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**10,9**	**13,1**	**16,4**	**18,5**	**21,8**	**29,1**	**32,9**	**42,0**
	With refrigerant charge R407C	**kW**	**10,8**	**13,1**	**16,2**	**18,2**	**21,8**	**28,7**	**32,6**	**41,6**
	With refrigerant charge R134a	**kW**	**10,6**	**12,9**	**15,9**	**17,9**	**21,3**	**28,3**	**32,3**	**41,1**
	Unit power input	kW	0,2	0,2	0,2	0,3	0,5	0,5	0,5	0,7
	Total air flow	m³/h	4165	3825	4420	5440	8160	8075	7735	10200
	Sound power level [Lw] (2)	dB(A)	72,9	72,9	73,2	75,2	77,9	77,9	77,9	78,5
	Average sound pressure level [Lpm] (3)	dB(A)	59,1	59,1	59,1	61,1	63,1	63,1	63,1	63,6
TEAM MATE ELN	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**9,6**	**11,4**	**14,1**	**16,1**	**19,2**	**25,2**	**28,2**	**36,1**
	With refrigerant charge R407C	**kW**	**9,5**	**11,4**	**14,0**	**15,8**	**19,2**	**24,9**	**27,9**	**35,7**
	With refrigerant charge R134a	**kW**	**9,3**	**11,2**	**13,8**	**15,6**	**18,8**	**24,5**	**27,6**	**35,3**
	Unit power input	kW	0,2	0,2	0,2	0,3	0,4	0,4	0,4	0,6
	Total air flow	m³/h	3430	3150	3640	4480	6720	6650	6370	8400
	Sound power level [Lw] (2)	dB(A)	68,2	68,2	68,6	70,6	73,3	73,3	73,3	73,9
	Average sound pressure level [Lpm] (3)	dB(A)	54,5	54,5	54,5	56,5	58,5	58,5	58,5	58,9

1. Referred to condensation temperature 50°C; ambient temperature 35°C.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.

TECHNICAL DATA TEAM MATE

	TEAM MATE		M 50	M 60	M 70	M 95	M 110	M 130	M 140	T 185
STANDARD	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**56,1**	**62,6**	**74,0**	**99,4**	**111,0**	**133,0**	**151,0**	**201,0**
	With refrigerant charge R407C	**kW**	**55,5**	**62,0**	**73,3**	**98,3**	**110,0**	**132,0**	**150,0**	**198,0**
	With refrigerant charge R134a	**kW**	**54,8**	**61,2**	**72,4**	**97,0**	**109,0**	**130,0**	**149,0**	**195,0**
	Unit power input	kW	1,1	1,1	1,1	1,6	1,6	2,1	2,1	3,2
	Axial fans	n.	2	2	2	3	3	4	4	6
	Total air flow	m³/h	17000	16000	18000	28200	27200	37800	36000	56000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Total refrigerant charge (optional excluded)	kg	4,1	5,5	7,7	8,7	11,6	11,6	15,4	20,8
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50+N
	Max unit operating current (FLA)	A	5,7	5,7	5,7	8,5	8,5	11,4	11,4	17,1
	Sound power level [Lw] (2)	dB(A)	84,5	84,5	85,0	86,9	86,9	88,1	88,1	88,8
	Average sound pressure level [Lpm] (3)	dB(A)	69,4	69,4	69,4	70,5	70,5	71,1	71,1	71,5
	Net weight	kg	175	188	214	240	270	320	350	470
	Refrigerant connections									
	Liquid line – ODS	Ø mm	18	18	18	22	22	28	28	35
	Gas line – ODS	Ø mm	22	22	22	35	35	35	35	42
TEAM MATE LNO	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**50,1**	**55,3**	**65,1**	**88,3**	**97,7**	**118,0**	**133,0**	**179,0**
	With refrigerant charge R407C	**kW**	**49,6**	**54,8**	**64,6**	**87,4**	**97,3**	**117,0**	**132,0**	**176,0**
	With refrigerant charge R134a	**kW**	**48,9**	**54,2**	**63,8**	**86,3**	**96,2**	**116,0**	**131,0**	**174,0**
	Unit power input	kW	0,9	0,9	0,9	1,4	1,4	1,8	1,8	2,7
	Total air flow	m³/h	14450	13600	15300	23970	23120	32130	30600	47600
	Sound power level [Lw] (2)	dB(A)	80,7	80,7	81,1	83,0	83,0	84,2	84,2	84,9
	Average sound pressure level [Lpm] (3)	dB(A)	65,5	65,5	65,5	66,6	66,6	67,2	67,2	67,7
TEAM MATE ELN	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**43,5**	**47,6**	**55,8**	**76,4**	**83,7**	**102,0**	**114,0**	**155,0**
	With refrigerant charge R407C	**kW**	**43,1**	**47,2**	**55,3**	**75,7**	**83,3**	**101,0**	**113,0**	**153,0**
	With refrigerant charge R134a	**kW**	**42,6**	**46,7**	**54,7**	**74,8**	**82,5**	**100,0**	**112,0**	**151,0**
	Unit power input	kW	0,8	0,8	0,8	1,1	1,1	1,5	1,5	1,5
	Total air flow	m³/h	11900	11200	12600	19740	19040	26460	25200	39200
	Sound power level [Lw] (2)	dB(A)	76,0	76,0	76,5	78,4	78,4	79,6	79,6	80,3
	Average sound pressure level [Lpm] (3)	dB(A)	60,8	60,8	60,8	61,9	61,9	62,5	62,5	63,0

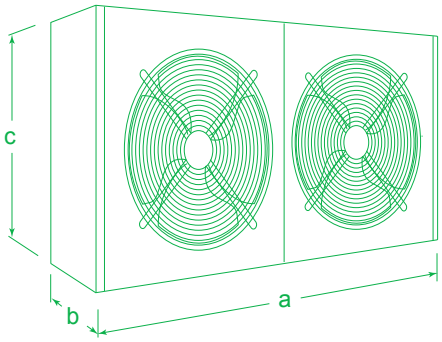
	TEAM MATE		T 210	T 250	T 280
STANDARD	**Capacity (1)**				
	With refrigerant charge R410A	**kW**	**232,0**	**276,0**	**307,0**
	With refrigerant charge R407C	**kW**	**231,0**	**273,0**	**304,0**
	With refrigerant charge R134a	**kW**	**228,0**	**270,0**	**301,0**
	Unit power input	kW	3,2	4,2	4,2
	Axial fans	n.	6	8	8
	Total air flow	m³/h	54000	74600	72000
	Air circuits	n.	1	1	1
	Total refrigerant charge (optional excluded)	kg	27,7	27,7	37,0
	Gas circuits	n.	1	1	1
	Power supply	V/Ph/Hz	400/3/50+N	400/3/50+N	400/3/50+N
	Max unit operating current (FLA)	A	17,1	22,8	22,8
	Sound power level [Lw] (2)	dB(A)	88,8	90,1	90,1
	Average sound pressure level [Lpm] (3)	dB(A)	71,5	72,2	72,2
	Net weight	kg	520	630	690
	Refrigerant connections				
	Liquid line – ODS	Ø mm	35	42	42
	Gas line – ODS	Ø mm	42	54	54
TEAM MATE LNO	**Capacity (1)**				
	With refrigerant charge R410A	**kW**	**205,0**	**245,0**	**270,0**
	With refrigerant charge R407C	**kW**	**203,0**	**243,0**	**268,0**
	With refrigerant charge R134a	**kW**	**201,0**	**240,0**	**265,0**
	Unit power input	kW	2,7	3,6	3,6
	Total air flow	m³/h	45900	63410	61200
	Sound power level [Lw] (2)	dB(A)	84,9	86,2	86,2
	Average sound pressure level [Lpm] (3)	dB(A)	67,7	68,3	68,3
TEAM MATE ELN	**Capacity (1)**				
	With refrigerant charge R410A	**kW**	**175,0**	**212,0**	**231,0**
	With refrigerant charge R407C	**kW**	**173,0**	**210,0**	**229,0**
	With refrigerant charge R134a	**kW**	**172,0**	**208,0**	**227,0**
	Unit power input	kW	2,2	2,2	3,0
	Total air flow	m³/h	37800	52220	50400
	Sound power level [Lw] (2)	dB(A)	80,3	81,5	81,5
	Average sound pressure level [Lpm] (3)	dB(A)	63,0	63,7	63,7

1. Referred to condensation temperature 50°C; ambient temperature 35°C.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.

DIMENSIONS (mm)

TEAM MATE	a	b	c
M 11	875	540	727
M 14	875	540	727
M 17	1200	540	727
M 20	1200	540	727
M 25	1400	665	1027
M 30	1400	665	1027
M 35	1400	665	1027
M 45	1600	665	1027
M 50	1850	665	1027
M 60	1850	665	1027
M 70	2320	665	1140
M 95	3490	665	1150
M 110	3490	665	1150
M 130	4540	665	1150
M 140	4540	665	1150
T 185	3490	665	2200
T 210	3490	665	2200
T 250	4540	665	2200
T 280	4540	665	2200

(*) please refer to technical catalogues for further information about connections dimensions



TEAM MATE PF: Air cooled condensers equipped with plug fan

Capacity: **11,7 ÷ 154,0 kW**

team mate pf

R410A R407c R134a EC SPLIT SYSTEM

MAIN FEATURES
- Air cooled condensers.
- 14 models available, for a wide selection opportunity.
- Average step of 10kW.
- Multi-refrigerant charge.
- Supplied with seal charge.
- EC Plug-fan.
- Horizontal/Vertical air flow.
- Suitable for indoor installation.

MAIN BENEFITS
- Designed for the perfect match with RC Group motoevaporating units.
- EC Plug fan for a high efficiency.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of horizontal and vertical air delivery. To change air delivery mode it's simply required the change of position of a single panel.
- Easily of maintenance.

FANS WITH BRUSHLESS TYPE EC MOTOR
The fans electric motors are the brushless type with built-in electronic commutation system (EC) which yield high energy savings during operation in reduced air flow.
These electric motors are ensuring high performances, minimum energy consumption and total absence of electromagnetic noise

INDOOR INSTALLATION
The machines are designed for indoor installation and ducting for air suction and discharge.
For outdoor installation the use of the dedicated optional kit is mandatory.
The machine must be installed under a cover or anyway protected against atmospherics agent.

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

FANS SECTION – TEAM MATE

- Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fan).
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the internal unit microprocessor control.
- Maintenance-free bearings
- IP54 enclosure class.

AIR/GAS HEAT EXCHANGERS

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Minimum charge of refrigerant.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.

REFRIGERANT CIRCUIT

- Valves on gas and liquid line for coupling to refrigerant pipe. The valves are supplied not installed. The condenser is supplied with nitrogen seal.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, IP54 enclosure class, complete with:

- Terminals for power supply (from network).
  - 380-480/3/50-60 for models “T”
- Terminals for 0÷10V signal for condensing control system (connect to indoor machine).
- Terminals for alarm signal (connect to indoor machine).

TECHNICAL DATA TEAM MATE PF

	TEAM MATE PF		T 11	T 14	T 17	T 21	T 24	T 33	T 38	T 44
STANDARD	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**12,1**	**15,6**	**18,2**	**21,6**	**25,0**	**35,1**	**39,8**	**46,5**
	With refrigerant charge R407C	**kW**	**12,0**	**15,6**	**18,2**	**21,6**	**25,0**	**35,1**	**39,8**	**46,5**
	With refrigerant charge R134a	**kW**	**11,7**	**15,3**	**17,9**	**21,3**	**24,7**	**34,7**	**39,3**	**46,0**
	Unit power input	kW	0,4	0,4	0,5	0,5	0,6	1,3	1,1	1,2
	Plug-fans	n.	1	1	1	1	1	1	1	1
	Total air flow	m³/h	4900	4900	4900	4900	6400	8000	10000	10000
	Available static pressure	Pa	50	50	50	50	50	50	50	50
	Max available static pressure	Pa	375	350	332	290	748	474	298	268
	Air circuits	n.	1	1	1	1	1	1	1	1
	Total refrigerant charge (optional excluded)	kg	0,8	1,2	1,7	2,6	2,5	3,8	4,3	6,4
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
	Max unit operating current (FLA)	A	1,6	1,6	1,6	1,6	4,3	4,3	3,6	3,6
	Sound power level [Lw] (2)	dB(A)	76,2	76,2	76,1	76,1	82,5	87,4	86,6	86,8
	Average sound pressure level [Lpm] (3)	dB(A)	61,6	61,6	61,5	61,5	67,1	72,0	71,1	71,3
	Net weight	kg	143	148	153	163	210	222	284	310
	Refrigerant connections									
	Liquid line – ODS	Ø mm	12	12	12	12	16	16	16	16
	Gas line – ODS	Ø mm	16	16	16	16	18	18	18	18
TEAM MATE PF LNO	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**10,8**	**13,7**	**15,9**	**18,8**	**21,6**	**30,2**	**34,5**	**40,1**
	With refrigerant charge R407C	**kW**	**10,5**	**13,7**	**15,9**	**18,8**	**21,6**	**30,2**	**34,5**	**40,1**
	With refrigerant charge R134a	**kW**	**10,2**	**13,3**	**15,5**	**18,4**	**21,0**	**29,4**	**33,7**	**39,3**
	Unit power input	kW	0,3	0,3	0,3	0,3	0,4	0,8	0,7	0,8
	Total air flow	m³/h	4165	4165	4165	4165	5440	6800	8500	8500
	Available static pressure	Pa	36	36	36	36	36	36	36	36
	Sound power level [Lw] (2)	dB(A)	72,3	72,3	72,2	72,2	78,6	83,5	82,7	82,9
	Average sound pressure level [Lpm] (3)	dB(A)	57,7	57,7	57,6	57,6	63,2	68,1	67,2	67,4
TEAM MATE PF ELN	**Capacity (1)**									
	With refrigerant charge R410A	**kW**	**9,5**	**11,9**	**13,7**	**16,0**	**18,7**	**25,8**	**29,7**	**34,0**
	With refrigerant charge R407C	**kW**	**9,3**	**11,9**	**13,7**	**16,0**	**18,7**	**25,8**	**29,7**	**34,0**
	With refrigerant charge R134a	**kW**	**9,1**	**11,6**	**13,4**	**15,7**	**18,2**	**25,2**	**29,1**	**33,5**
	Unit power input	kW	0,2	0,2	0,2	0,2	0,3	0,5	0,5	0,5
	Total air flow	m³/h	3430	3430	3430	3430	4480	6800	8500	8500
	Available static pressure	Pa	25	25	25	25	25	25	25	25
	Sound power level [Lw] (2)	dB(A)	67,6	67,6	67,5	67,5	73,9	78,8	78,1	78,3
	Average sound pressure level [Lpm] (3)	dB(A)	53,1	53,1	53,0	53,0	58,6	63,5	62,6	62,8

1. Referred to condensation temperature 50°C; ambient temperature 35°C.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.

TECHNICAL DATA TEAM MATE PF

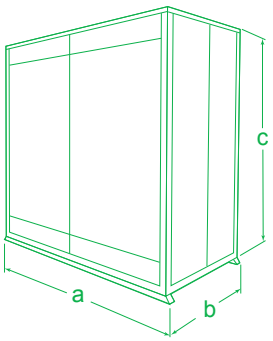
	TEAM MATE PF		T 58	T 69	T 86	T108	T114	T144
STANDARD	**Capacity (1)**							
	With refrigerant charge R410A	**kW**	**62,0**	**73,1**	**91,0**	**113,0**	**122,0**	**154,0**
	With refrigerant charge R407C	**kW**	**62,0**	**73,1**	**91,0**	**113,0**	**122,0**	**154,0**
	With refrigerant charge R134a	**kW**	**61,2**	**72,4**	**89,9**	**111,0**	**121,0**	**152,0**
	Unit power input	kW	2,2	2,4	3,3	4,7	5,6	7,4
	Plug-fans	n.	2	2	3	3	3	4
	Total air flow	m³/h	16000	16000	24000	32000	28000	36000
	Available static pressure	Pa	50	50	50	50	50	50
	Max available static pressure	Pa	552	512	542	515	204	237
	Air circuits	n.	1	1	1	1	1	1
	Total refrigerant charge (optional excluded)	kg	5,9	8,8	10,2	9,4	10,3	14
	Gas circuits	n.	1	1	1	1	1	1
	Power supply	V/Ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
	Max unit operating current (FLA)	A	8,6	8,6	12,9	17,2	12,9	17,2
	Sound power level [Lw] (2)	dB(A)	93,4	93,5	96,9	98,7	100,3	101,4
	Average sound pressure level [Lpm] (3)	dB(A)	77,3	77,4	80,3	81,8	83,7	84,5
	Net weight	kg	387	421	515	625	557	673
	Refrigerant connections							
	Liquid line – ODS	Ø mm	18	18	18	22	22	28
	Gas line – ODS	Ø mm	22	22	22	28	28	35
TEAM MATE PF LNC	**Capacity (1)**							
	With refrigerant charge R410A	**kW**	**53,4**	**62,7**	**78,6**	**98,9**	**105,0**	**131,0**
	With refrigerant charge R407C	**kW**	**53,4**	**62,7**	**78,6**	**98,9**	**105,0**	**131,0**
	With refrigerant charge R134a	**kW**	**51,8**	**61,3**	**76,2**	**96,2**	**102,0**	**127,0**
	Unit power input	kW	1,4	1,5	2,2	3,0	3,6	4,7
	Total air flow	m³/h	13600	13600	20400	27200	23800	30600
	Available static pressure	Pa	36	36	36	36	36	36
	Sound power level [Lw] (2)	dB(A)	89,5	89,6	93,0	94,8	96,4	97,5
	Average sound pressure level [Lpm] (3)	dB(A)	73,4	73,5	76,4	77,9	79,8	80,6
TEAM MATE PF LN	**Capacity (1)**							
	With refrigerant charge R410A	**kW**	**46,2**	**53,4**	**68,1**	**85,9**	**89,8**	**113,0**
	With refrigerant charge R407C	**kW**	**46,2**	**53,4**	**68,1**	**85,9**	**89,8**	**113,0**
	With refrigerant charge R134a	**kW**	**45,0**	**52,4**	**66,4**	**83,8**	**87,9**	**110,0**
	Unit power input	kW	0,8	0,9	1,3	1,8	2,1	2,8
	Total air flow	m³/h	13600	13600	20400	27200	23800	30600
	Available static pressure	Pa	25	25	25	25	25	25
	Sound power level [Lw] (2)	dB(A)	84,8	84,9	88,3	90,2	91,7	92,9
	Average sound pressure level [Lpm] (3)	dB(A)	68,8	68,9	71,8	73,3	75,2	76,0

1. Referred to condensation temperature 50°C; ambient temperature 35°C.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.

DIMENSIONS (mm)

TEAM MATE PF	a	b	c
T 11	890	880	900
T 14	890	880	900
T 17	890	880	900
T 21	890	880	900
T 24	1190	880	900
T 33	1190	880	900
T 38	1390	880	1300
T 44	1390	880	1300
T 58	1840	880	1300
T 69	1840	880	1300
T 86	2290	880	1300
T108	1840	880	1800
T114	2290	880	1300
T144	1840	880	1800

(*) please refer to technical catalogues for further information about connections dimensions



DRY COOLER: Dry coolers equipped with axial fans

Capacity: **8,3 ÷ 172,0 kW**

dry cooler

rcgroupairconditioning

MAIN FEATURES
- Dry coolers.
- 10 models available, for a wide selection opportunity.
- Average step of 15kW.
- Water feeding.
- AC Axial fans.
- Horizontal air flow.
- Suitable for outdoor installation.

MAIN BENEFITS
- Designed for the perfect match with RC Group water cooled liquid chillers.
- Availability of kit for the reduction of the noise.
- Availability of support leg for vertical air flow.
- Easily of maintenance.

OUTDOOR INSTALLATION
The machines are made with weather resistant materials and suitable for outdoor installation.

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1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor electric motor, AC type, with stepless variable speed for condensing pressure control.
  The motor rotation control is obtained according to the 0÷10V proportional signal coming from the internal unit microprocessor control.
- IP54 enclosure class.

DISSIPATIVE COIL

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
  The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, IP54 enclosure class, complete with:

- Terminals for power supply (from network).
  - 400/3/50+N for models "T"
  - 230/1/50 for models "M".
- Terminals for 0÷10V signal for fan speed control (connect to indoor machine).
- Terminals for alarm signal (connect to indoor machine).
- Fans speed regulator for fan speed control.

OPTIONAL ACCESSORY

- Support legs for vertical air flow

TECHNICAL DATA DRY COOLER

	DRY COOLER		M 14	M 20	M 35	M 45	M 60	M 70	M 110	M 140	T 210	T 280
STANDARD	**Capacity (1)**	**kW**	**8,3**	**11,7**	**22,6**	**26,4**	**31,8**	**40,2**	**62,2**	**86,1**	**124,0**	**172,0**
	Unit power input	kW	0,3	0,4	0,5	0,8	1,1	1,1	1,6	2,1	3,2	4,2
	Axial fans	n.	1	1	1	2	2	2	3	4	6	8
	Total air flow	m³/h	4500	6400	9100	12000	16000	18000	27200	36000	54000	72000
	Air circuits	n.	1	1	1	1	1	1	1	1	1	1
	Water flow	m³/h	1,5	2,1	4,0	4,7	5,7	7,2	11,1	15,4	22,1	30,8
	Pressure drops	kPa	24	21	26	16	8	12	17	40	17	40
	Water content	l	4,0	5,7	15,7	15,2	17,9	25,1	37,7	72,8	75,3	100,4
	Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50+N(*)	400/3/50+N(*)
	Max unit operating current (FLA)	A	0,7	1,8	2,9	3,6	5,7	5,7	8,5	11,4	17,1	22,8
	Sound power level [Lw] (2)	dB(A)	76,8	79,1	81,8	82,4	84,5	85,0	86,9	88,1	88,8	90,1
	Average sound pressure level [Lpm] (3)	dB(A)	63,0	65,0	67,0	67,4	69,4	69,4	70,5	71,1	71,5	72,2
	Net weight	kg	56	73	122	156	191	219	227	359	533	708
	Hydraulic connections											
	Inlet/outlet – ISO 7/1 – R	Ø	1 1/4"	1 1/4"	1 1/2"	1 1/2"	2"	2"	2"	2"	2 1/2"	3"
LNO 85%	**Capacity (1)**	**kW**	**7,3**	**10,4**	**19,8**	**23,3**	**28,0**	**35,3**	**54,8**	**75,9**	**109,0**	**152,0**
	Unit power input	kW	0,3	0,4	0,5	0,8	1,1	0,9	1,4	1,8	2,7	3,6
	Total air flow	m³/h	3825	5440	7735	10200	13600	18000	27200	36000	54000	72000
	Water flow	m³/h	1,3	1,9	3,5	4,2	5,0	6,3	9,8	13,6	19,5	27,1
	Pressure drops	kPa	19	17	21	13	6	10	14	32	14	32
	Sound power level [Lw] (2)	dB(A)	72,9	75,2	77,9	78,5	80,7	81,1	83,0	84,2	84,9	86,2
	Average sound pressure level [Lpm] (3)	dB(A)	59,1	61,1	63,1	63,6	65,5	65,5	66,6	67,2	67,7	68,3
LNO 70%	**Capacity (1)**	**kW**	**6,4**	**9,0**	**16,9**	**19,9**	**23,8**	**40,2**	**62,2**	**86,1**	**124,0**	**172,0**
	Unit power input	kW	0,2	0,3	0,4	0,6	0,8	0,8	1,1	1,5	2,2	3,0
	Total air flow	m³/h	3150	4480	6370	8400	11200	12600	19040	25200	37800	50400
	Water flow	m³/h	1,1	1,6	3,0	3,6	4,3	5,4	8,4	11,6	16,7	23,3
	Pressure drops	kPa	15	13	16	10	5	7	11	25	10	25
	Sound power level [Lw] (2)	dB(A)	68,2	70,6	73,3	73,9	76,0	76,5	78,4	79,6	80,3	81,5
	Average sound pressure level [Lpm] (3)	dB(A)	54,5	56,5	58,5	58,9	60,8	60,8	61,9	62,5	63,0	63,7

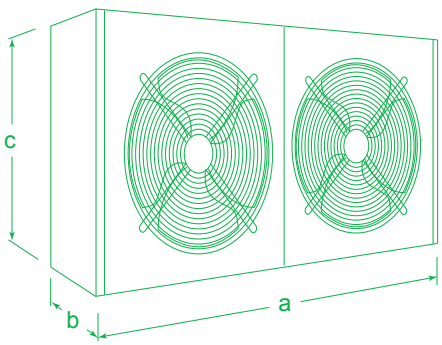
1. Characteristics referred to entering air at 35°C with hot water inlet temperature 45°C – 20% glycol.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.

(*) Available also with 230/1/50 power supply. Refer to the wiring diagram of the unit.

DIMENSIONS (mm)

DRY COOLER	a	b	c
M 14	875	540	727
M 20	1200	540	727
M 35	1400	665	1027
M 45	1600	665	1027
M 60	1850	665	1027
M 70	2320	665	1140
M 110	3490	665	1150
M 140	4540	665	1150
T 210	3490	665	2200
T 280	4540	665	2200

(*) please refer to technical catalogues for further information about connections dimensions



DRY COOLER PF: Dry coolers equipped with plug fan

Capacity: **8,8 ÷ 89,0 kW**

dry cooler pf

rcgroupairconditioning

MAIN FEATURES
- Dry coolers.
- 13 models available, for a wide selection opportunity.
- Average step of 6kW.
- Water feeding.
- EC Plug-fan.
- Horizontal/Vertical air flow.
- Suitable for indoor installation.

MAIN BENEFITS
- Designed for the perfect match with RC Group water cooled liquid chillers.
- EC Plug fan for a high efficiency.
- Availability of kit for the reduction of the noise.
- Availability of horizontal and vertical air delivery. To change air delivery mode it's simply required the change of position of a single panel.
- Easily of maintenance.

PLUG FANS WITH BRUSHLESS TYPE EC MOTOR
The fans electric motors are the brushless type with built-in electronic commutation system (EC) which yield high energy savings during operation in reduced air flow.
These electric motors are ensuring high performances, minimum energy consumption and total absence of electromagnetic noise

INDOOR INSTALLATION
The machines are designed for indoor installation and ducting for air suction and discharge.
For outdoor installation the use of the dedicated optional kit is mandatory.
The machine must be installed under a cover or anyway protected against atmospherics agent.

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1 9 6 3 2 0 1 3
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MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

FANS SECTION – TEAM MATE

- Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fan).
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the internal unit microprocessor control.
- Maintenance-free bearings
- IP54 enclosure class.

DISSIPATIVE COIL

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
  - Maximum capacity relative to the size of the exchanger.
  - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, IP54 enclosure class, complete with:

- Terminals for power supply (from network).
  - 380-480/3/50-60 for models “T”
- Terminals for 0÷10V signal for fan speed control (connect to indoor machine).
- Terminals for alarm signal (connect to indoor machine).

TECHNICAL DATA DRY COOLER PF

	DRY COOLER PF		T 14	T 17	T 21	T 24	T 33	T 38	T 44	T 58
STANDARD	**Capacity (1)**	**kW**	**8,8**	**10,5**	**12,6**	**13,7**	**20,6**	**24,3**	**28**	**31,8**
	Unit power input	kW	0,4	0,5	0,5	0,6	1,3	1,1	1,2	2,2
	Axial fans	n.	1	1	1	1	1	1	1	2
	Total air flow	m³/h	4900	4900	4900	6400	8000	10000	10000	16000
	Available static pressure	Pa	50	50	50	50	50	50	50	50
	Max available static pressure	Pa	350	332	290	748	474	298	268	552
	Air circuits	n.	1	1	1	1	1	1	1	1
	Water flow	m³/h	1,6	1,9	2,3	2,4	3,7	4,3	5,0	5,7
	Pressure drops	kPa	26	24	15	15	26	30	29	8
	Water content	l	3,9	5,2	7,8	7,4	11,1	12,7	19,1	17,5
	Power supply	V/Ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
	Max unit operating current (FLA)	A	1,6	1,6	1,6	4,3	4,3	3,6	3,6	8,6
	Sound power level [Lw] (2)	dB(A)	76,2	76,1	76,1	82,5	87,4	86,6	86,8	93,4
	Average sound pressure level [Lpm] (3)	dB(A)	61,6	61,5	61,5	67,1	72,0	71,1	71,3	77,3
	Net weight	kg	149	154	165	209	224	287	314	391
	Hydraulic connections									
	Inlet/outlet – ISO 7/1 – R	Ø	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"
LNO 85%	**Capacity (1)**	**kW**	**7,8**	**9,2**	**11,0**	**12,1**	**18,0**	**24,3**	**28,0**	**31,8**
	Unit power input	kW	0,3	0,3	0,3	0,4	0,8	1,1	1,2	2,2
	Total air flow	m³/h	4165	4165	4165	5440	6800	10000	10000	16000
	Water flow	m³/h	1,4	1,7	2,0	2,2	3,2	3,8	4,4	5,0
	Pressure drops	kPa	21	19	11	12	21	24	23	6
	Sound power level [Lw] (2)	dB(A)	72,3	72,2	72,2	78,6	83,5	82,7	82,9	89,5
	Average sound pressure level [Lpm] (3)	dB(A)	57,7	57,6	57,6	63,2	68,1	67,2	67,4	73,4
LNO 70%	**Capacity (1)**	**kW**	**6,8**	**8,0**	**9,3**	**10,3**	**15,4**	**24,3**	**28,0**	**31,8**
	Unit power input	kW	0,2	0,2	0,2	0,3	0,5	0,5	0,5	0,8
	Total air flow	m³/h	3430	3430	3430	4480	5600	7000	7000	11200
	Water flow	m³/h	1,2	1,4	1,7	1,9	2,8	3,3	3,7	4,3
	Pressure drops	kPa	17	15	9	9	16	18	17	5
	Sound power level [Lw] (2)	dB(A)	67,6	67,5	67,5	73,9	78,8	78,1	78,3	84,8
	Average sound pressure level [Lpm] (3)	dB(A)	53,1	53,0	53,0	58,6	63,5	62,6	62,8	68,8

	DRY COOLER PF		T 69	T 86	T108	T114	T144
STANDARD	**Capacity (1)**	**kW**	**41,9**	**50**	**60,3**	**68,8**	**89**
	Unit power input	kW	2,4	3,3	4,7	5,6	7,4
	Axial fans	n.	2	3	4	3	4
	Total air flow	m³/h	16000	24000	32000	28000	36000
	Available static pressure	Pa	50	50	50	50	50
	Max available static pressure	Pa	512	542	515	204	237
	Air circuits	n.	1	1	1	1	1
	Water flow	m³/h	7,5	9,0	10,8	12,3	15,9
	Pressure drops	kPa	18	18	10	15	31
	Water content	l	26,2	24,5	28,0	36,7	41,9
	Power supply	V/Ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
	Max unit operating current (FLA)	A	8,6	12,9	17,2	12,9	17,2
	Sound power level [Lw] (2)	dB(A)	93,5	96,9	98,7	100,3	101,4
	Average sound pressure level [Lpm] (3)	dB(A)	77,4	80,3	81,8	83,7	84,5
	Net weight	kg	427	520	631	565	682
	Hydraulic connections						
	Inlet/outlet – ISO 7/1 – R	Ø	2"	2"	2"	2"	2"
LNO 85%	**Capacity (1)**	**kW**	**41,9**	**50,0**	**60,3**	**68,8**	**89,0**
	Unit power input	kW	2,4	3,3	4,7	5,6	7,4
	Total air flow	m³/h	16000	24000	32000	28000	36000
	Water flow	m³/h	6,6	7,9	9,5	10,8	14,0
	Pressure drops	kPa	14	14	8	12	24
	Sound power level [Lw] (2)	dB(A)	89,6	93,0	94,8	96,4	97,5
	Average sound pressure level [Lpm] (3)	dB(A)	73,5	76,4	77,9	79,8	80,6
LNO 70%	**Capacity (1)**	**kW**	**41,9**	**50,0**	**60,3**	**68,8**	**89,0**
	Unit power input	kW	0,9	1,3	1,8	2,1	2,8
	Total air flow	m³/h	11200	16800	22400	19600	25200
	Water flow	m³/h	5,6	6,8	8,2	9,2	12,0
	Pressure drops	kPa	11	11	6	9	19
	Sound power level [Lw] (2)	dB(A)	84,9	88,3	90,2	91,7	92,9
	Average sound pressure level [Lpm] (3)	dB(A)	68,9	71,8	73,3	75,2	76,0

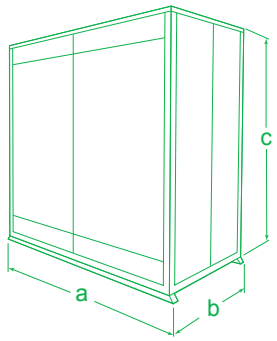
1. Characteristics referred to entering air at 35°C with hot water inlet temperature 45°C – 20% glycol.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.

(*) Available also with 230/1/50 power supply. Refer to the wiring diagram of the unit.

DIMENSIONS (mm)

DRY COOLER PF	a	b	c
T 14	890	880	900
T 17	890	880	900
T 21	890	880	900
T 24	1190	880	900
T 33	1190	880	900
T 38	1390	880	1300
T 44	1390	880	1300
T 58	1840	880	1300
T 69	1840	880	1300
T 86	2290	880	1300
T108	1840	880	1800
T114	2290	880	1300
T144	1840	880	1800

(*) please refer to technical catalogues for further information about connections dimensions



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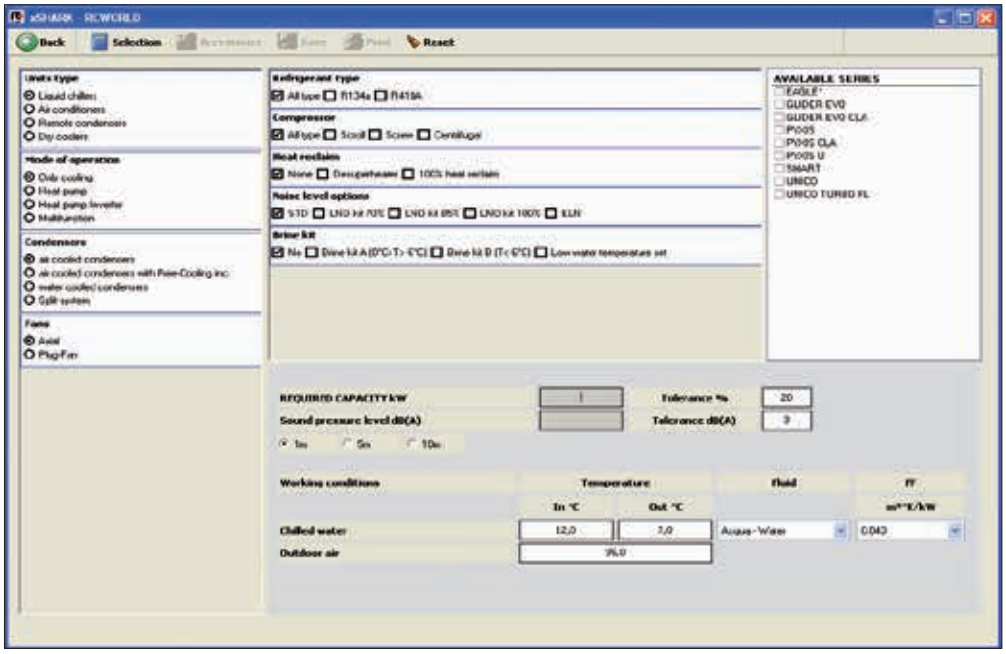
RC Hi-Tech

RC WORLD: RC Group products selection software



rc world

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MAIN FEATURES

5 applications:
- Products selection.
- Unit performances.
- Price list.
- Offer management.
- Orders management.

8 languages:
- Deutsch
- English
- Espanol
- Francais
- Italiano
- Norsk
- Polski
- Suomi

MAIN BENEFITS
- RC World calculate the performance of all the RC Group product range at every admitted working conditions.
- RC World shows the descriptions and the technical drawings of the units.
- RC World shows the optional accessory of the units.

RC WORLD 8.0 MAIN NEW FEATURES
- Introduction of the 2014 product range.
- Improved unit selection mode.

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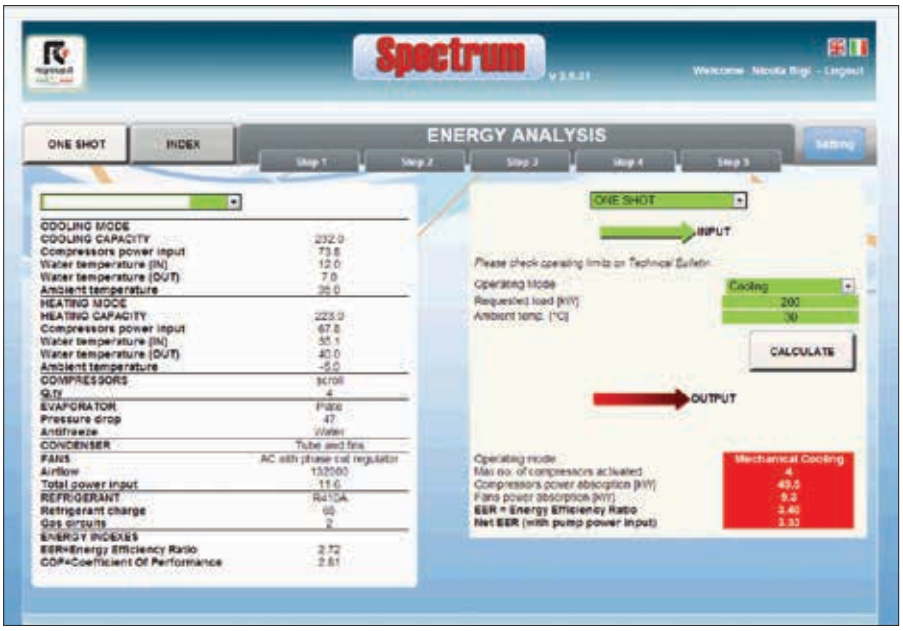
SPECTRUM
RC Hi-Tech

SPECTRUM: Energy performance estimation software for chillers, heat pumps and multifunctions produced by RC Group

Free application, available at the website www.rcspectrum.it
Requires only:
- *RC WORLD (electronic catalogue)*
- *registration*

Allows:
- *step-by-step user friendly interface*
- *graphical outputs in PDF format and numerical outputs in XLSX format*
- *Periodic update of database and mathematical models*



spectrum
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MAIN FEATURES
WEB application able to predict the Energy performance of the units (chillers and heat pumps) and to conduct a comprehensive energy analysis.

Energy performance of whatever unit in a specific operating condition ("ONE SHOT" mode):
- gross and net EER (chillers)
- TER (chillers with heat recovery)
- gross and net COP (heat pumps, with estimation of defrost for air-to-water units)

Evaluation of standard indexes:
- ESEER, IPLV
- SEER
- SCOP

Energy analysis (one year-based estimation):
- single machine
- multiple configuration of a single model, with parallel or sequential mode of insertion
- comparison of different models on the same application
- complex layout, with machines of different models and size, with sequencing rules in accordance to SEQ functions

MAIN BENEFITS
For planners:
- aid in the choice of machines and their conduction.
- analysis of return on investment.
- easy integration of results into project documentation.

For Energy Managers:
- tool to verify predicted performances.
- integration with BMS/SEQ to optimize operational logic.

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SEQUENCER: Sequencer for chillers, heat pumps and multifunction units

SEQUENCER
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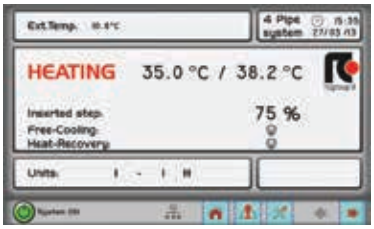

sequencer

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MAIN FEATURES

The sequencer SEQ is designed as a master unit in a network of different machines connected in a single hydronic network for the production of chilled or heated water

- 2-pipes, 4-pipes, 6-pipes plants
- Machines different for type and size (with a maximum of 12 units)
- Management of units made by others

Designed to work alone or in combination with a supervisor (BMS)

MAIN BENEFITS

Active control:

- Automatic activation / deactivation of the units depending on changeover, alarms, temperature control, limit conditions, special events (e.g. restart after power failure)
- Plant temperature precision control
- Improvement and control of system energy efficiency
- Pumps control
- “plant management” functions:
- Acoustic limiting, by the definition of reduced thresholds for fan speed
- Demand limiting (limitation of electrical power absorption)
- Time scheduling
- Changeover, with the goal of equalize the working hours of all devices
- Antifreeze function integration

Passive control:

- Collection of all signal alarms coming from the units
- Report of faults and events
- Request of pre-programmed maintenance activities

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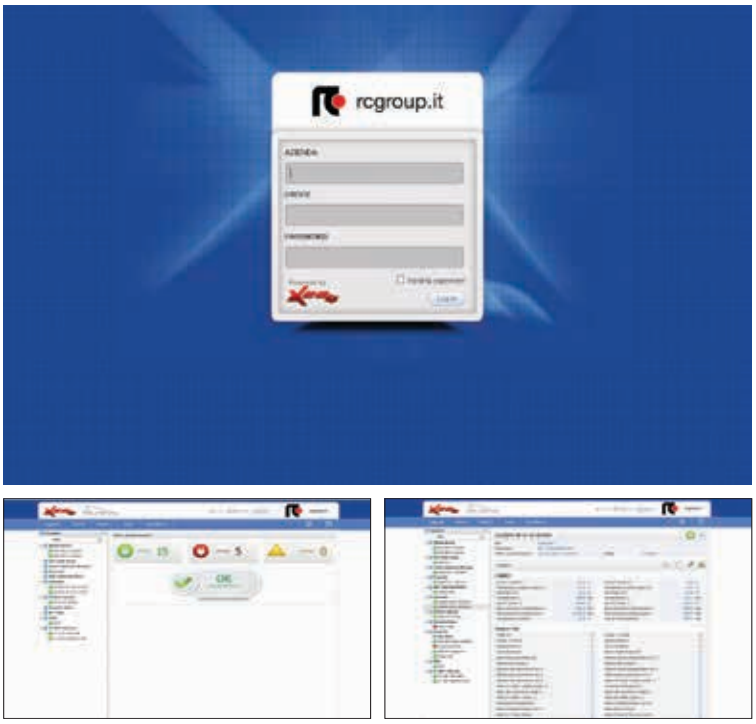
Powered by

RILHEVA: Performance and quality remote monitoring.
GPRS solution for unattended monitoring.



rilheva

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MAIN FEATURES

RC Rilheva System is the most advanced solution in unattended monitoring and remote management for an air conditioning plant.
Rilheva is able to analyse any physical quantity variation through RTU Modbus protocol on RS485 network and transmits the data detected to a control server. Each device can manage up to 31 units (a/c units/chillers) for a total of 400 Modbus Registers
Thanks to a simple web access (PC, Tablet or Smartphone), has an interface available that allows him to directly operate on the field

MAIN FUNCTIONS

- Check of the plants status in real time
- Analysis in real time of each unit data
- Possibility to receive, for each single set parameter, specific warnings in the preferred technology: SMS, Mail, Speech Synthesis, FAX and push notification on APP (Android and iOS)
- Creation and export of charts with historical data
- Data monitoring directly on a geographical map
- Control transmission to the unit (start/stop, set point modification, alarms reset)
- Integration of different peripheral units in the system (pumps, movie camera, etc.)

MAIN BENEFITS FOR THE END USERS

- Constant monitoring of the plant
- The system has the function to prevent a possible unit stop.
- Reception of warning signal in case of crossing of some critical parameters

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IT cooling 2014

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RC GROUP SpA

Via Roma 5, 27010 Valle Salimbene (PV) Italy · +39 0382 433811 · www.rcgroup.it · info@rcgroup.it

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LRQA Business Assurance ISO 9001 · Cert. QAC6004599 ISO 14001 · Cert. QAC6004599/A Factory based in P.R.C.

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