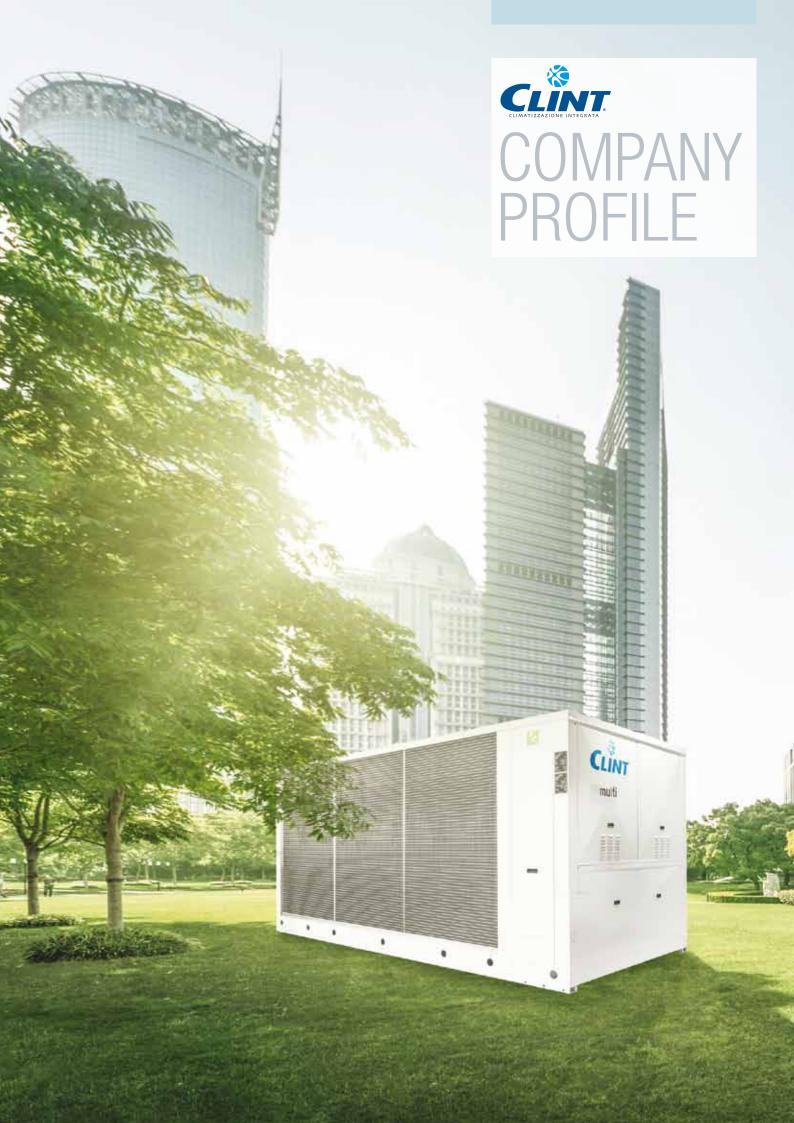


# PRODUCT G U I D E











#### 2020 New Climatic Chamber

#### 2018

New sales office in Russia

#### 2017

New G.I. HOLDING headquarters and manufacturing plant

#### 2017

Strategic Collaboration with FUJITSU GENERAL LIMITED

#### 2016

GIMEK new plant start-up

#### 2015

G.I. MIDDLE EAST start-up

#### 2013

G.I. INDUSTRIAL ASIA HOLDING start-up

#### 2009

MONTAIR acquisition

#### 2009

GIMEK acquisition

#### 2004

CLINT brand launch

#### 2003

NOVAIR acquisition

#### 2002

KTK KLIMATECHNIK acquisition

#### 2000

G.I. HOLDING Group start-up

#### 1976

Oldest acquired Company start-up

# The key hystorical milestones

# 45 YEARS OF EXPERIENCE IN AIR CONDITIONING, PROCESS COOLING, CLOSE CONTROL AND AIR TREATMENT

### **COOLING FOR 45 YEARS**

With a deep background of 45 years of experience, the Global Company **G.I. INDUSTRIAL HOLDING** manufactures and markets a complete range of solutions for comfort and industrial cooling: air conditioning and air handling systems in commercial or industrial buildings, cooling systems for server rooms and industrial process.

G.I. INDUSTRIAL HOLDING, a Company of the multinational **G.I. HOLDING Group**, has grown by the acquisition of historic Companies operating for decades in the different fields of air conditioning and industrial cooling and is continuously expanding internationally over the years with a wide manufacturing and distributive network.

In 2017 the G.I. HOLDING Group signed a Strategic Collaboration Agreement with the multinational **FUJITSU GENERAL LIMITED**, for joint development of dedicated product ranges of residential and commercial air conditioners.





G.I. HOLDING Showroom





G.I. INDUSTRIAL HOLDING Large liquid Chillers Manufacturing Plant



A wide sales network.









# A WIDE GLOBAL GROUP ANSWERING TO ANY SPECIFIC MARKET NEED.

The international Company G.I. INDUSTRIAL HOLDING SpA is present all around the World with its wide manufacturing and distributive network.

G.I. INDUSTRIAL HOLDING's production is totally focused in four European plants: Latisana (Italy), Rivignano Teor (Italy), Piove di Sacco (Italy) and Biatorbágy (Gimek Zrt - Hungary).

The new G.I. HOLDING Headquarters are located on a new facility in Latisana (Italy) with a 1.500 m<sup>2</sup> **Showroom** for exhibition of units manufactured on all the Group's plants and the **Cooling Academy**: a training room equipped for technical coaching of consultants, business professionals, engineers, designers and contractors, with rooms for units' functioning simulation.

The Latisana facility also hosts a newly built manufacturing plant dedicated to small & medium liquid Chillers and the Sales & Marketing Depts.

The network of G.I. HOLDING Group also includes the Hungarian manufacturing Company **GIMEK Zrt**, G.I. INDUSTRIAL ASIA HOLDING Sdn Bhd, manufacturing and trading Company based in Malaysia and **G.I. MIDDLE EAST Fze**, the trading Company based in the United Arab Emirates.

Domestic and international sales are supported by a network of 30 Italian Sales Representatives and over 70 worldwide Distributors coordinated by 4 Sales Offices based in Italy, Russia, United Arab Emirates and Malaysia.

#### **SALES OFFICES:**

- Latisana ITALY. Group Headquarters, Europe and North & South Africa Regional Office.
- Moscow RUSSIA. Russia & other C.I.S. Countries Regional Office.
- Dubai UNITED ARAB EMIRATES (G.I. MIDDLE EAST Fze). Middle-East & Central Africa Regional Office.
- Klang MALAYSIA (G.I. INDUSTRIAL ASIA HOLDING Sdn Bhd). Asia Pacific Regional Office.

The Group Structure



















Rivignano Teor - ITALY. Production Plant.

Piove di Sacco - ITALY. Close Control Business Unit and Production Plant.

Biatorbágy – HUNGARY (GIMEK Zrt). Production Plant.



# **PRODUCTION PLANTS**

#### **LATISANA**

Small & medium liquid Chillers Manufacturing Plant.

#### **RIVIGNANO TEOR**

Large liquid Chillers Manufacturing Plant.

#### **PIOVE DI SACCO**

Close Control Business Unit and Manufacturing Plant.

#### **BIATORBÁGY (GIMEK Zrt)**

Manufacturing Plant of Packaged Roof Top units, Air Handling Units, Dry-Coolers as well as Fan Coil units.

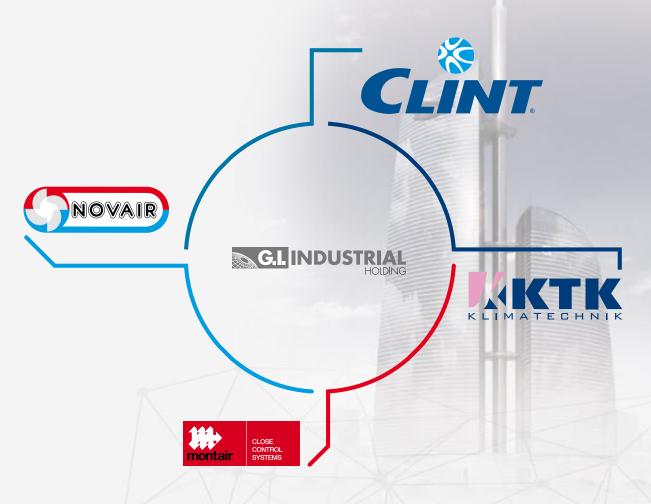


# **CLIMATIC CHAMBER**

In Rivignano Teor (Italy), in addition to the production plant for large Liquid Chillers, is located the newly born Climatic Chamber that allows the Company to perform witness tests in the presence of the Customer to prove the perfect functionality and performance of its Units under a huge variety of operating conditions.

This allows a wide array of tests that can be carried out from -20°C to +50°C outdoor air temperature.





# A MULTI-BRAND COMPANY FOR THE WIDEST PRODUCT RANGE.

Four hystorical brands form the portfolio of G.I. INDUSTRIAL HOLDING SpA, each dedicated to a specific branch of the HVAC business.

**CLINT** brand is focused on the segment of liquid Chillers, Packaged Roof Top units and Fan Coil units. **KTK** trademark is focused on applications for Industrial Process Cooling and special Air Conditioning systems. **MONTAIR** is the trademark dedicated to cooling systems for Data Centres and Telecom Applications. **NOVAIR** is a leading brand in the Air Treatment and Ventilation sectors.

# **Product Overview:**



**Liquid Chillers** 



Packaged Roof Top units



Fan Coil units



**Dry-Coolers** 



Close Control units



**Air Handling Units** 





## TOTAL QUALITY.

TOTAL QUALITY is the philosophy of all our activities, monitoring all phases in product-life cycle from product development, supplying, assembly and service. The whole production process is subject to thorough checks and controls, both at the end than at intermediate steps. Each unit must go through strict testing, simulating operational conditions on the Customer's site even in the most demanding situations. Pressure, temperature, sound level, vibrations: everything is checked to make sure it complies with the set parameters.

The Service Network, relying on very skilled Professionals, is available to carry out unit's start-up on Customer's premises to ensure the perfect unit's functioning.

Our quality mission is to capture expectations, preferences and aversions from the "Voice of the Customer". Both qualitative and quantitative researches are conducted at the beginning of any new product, process, or service design initiative in order to better understand the Customer's wants and needs.

# A FULLY CERTIFIED SYSTEM.

**EUROVENT.** Attesting the reliability of Company data on product performance, it is a guarantee of the actual quality of CLINT's products and their characteristics.



G.I. INDUSTRIAL HOLDING S.p.A. participates in the ECC programme for LCP-HP, FCU and AHU. Check on-going validity of certificate: <a href="https://www.eurovent-certification.com">www.certiflash.com</a>

CLINT product ranges are compliant to ErP European Regulations.

#### • ErP 2018 SCOP.

The EU Regulation n. 813/2013 fixing precise efficiency standards for heat pump units.

#### • ErP 2021 SEER.

A wide range of units for comfort cooling application reaches the seasonal energy efficiency standards required from 2021 (EU Regulation n°2016/2281).

#### ErP 2021 SEPR.

A wide range of units for process cooling application reaches the seasonal energy efficiency standards required from 2021 (EU Regulation n°2016/2281).









• **CE.** It certifies that every unit leaving our production lines is built in accordance with the standards required by the European Union.

adhere to the programme in 1999, proving circuits in units with compressors. the special attention dedicated to the correct management of the industrial process.

• UNI EN ISO 9001. G.I. INDUSTRIAL • P.E.D. Certification for pressurised HOLDING (former KTK KLIMATECHNIK) was fluids which guarantees the correct imthe first Italian Company in the sector to plementation of cooling and hydraulic

## CUSTOMER FOCUS.

CLINT offers targeted, customized answers to very specific needs, especially for large installations.

#### **Specific product ranges tailor-made to every market.**

CLINT is able to enter the different international markets with specific ranges, as dedicated products designed to efficiently operate at high ambient temperature up to 52°C for Africa and Middle East. To better satisfy any market requirement in terms of power supply, it is also available a dedicated range with 60Hz frequency.

#### **Engineering & Service Support.**

Offering an highly skilled Sales Engineering support, the Company is able to set jointly with the Customer the best solution for any specific need and to offer full tailor-made solutions to the Customer's request. A complete Service Network, geographically spread worldwide, is able to give support on startups and to ensure immediate reaction in case of any problems.

#### Fast reaction.

An highly flexible organization and a quick decision process & short manufacturing lead-time allow the Company to promptly react to Customer's needs.

## THE HIGHEST EFFICIENCY.

The highest today's challenge in HVAC business is ensuring maximum comfort with the lowest energy consumption. Thanks to its continuous research in new technical solutions, CLINT offers its newest and widest high efficiency range characterized by A CLASS energy efficiency with the highest SEER/SEPR/IPLV/SCOP, including models with Rotary, Scroll, Screw and Turbocor compressors.





# LOW GWP REFRIGERANT: HFO-R1234ze, R452B, R454B AND R513A.

CLINT is also able to provide the widest offer of liquid Chillers operating with low GWP refrigerants. The latest generation refrigerant **HFO-R1234ze**, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant in the market. CLINT provides two ranges of Aircooled or Watercooled liquid Chillers both with Turbocor or Screw compressors specially designed for HFO-R1234ze refrigerant.

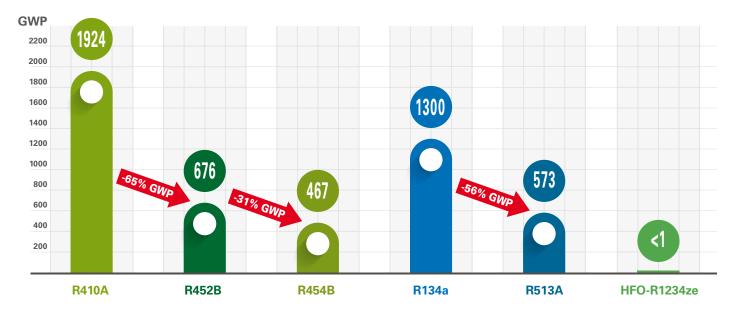












GWP<sub>100AR5</sub> = Global Warming Potential calculated over a 100-years period according to 5<sup>th</sup> Assessment Report (2014) of IPCC Institute.











#### >> SHOPPING MALLS, CONFERENCE CENTRES & ENTERTAINMENT.

LE GRU Shopping Mall, Turin, Italy Rivoli Castel, Rivoli, Italy

- REGGIA DI VENARIA REALE Museum, Turin, Italy 01
- EXPO 2015 Russian Pavillion, Milan, Italy

FIERA MILANO Exhibition Centre, Milan, Italy DECATHLON Shopping Malls, several locations, Italy ZARZUELA Theatre, Madrid, Spain GUCCI Atelier, Paris, France DIOR Atelier, Courchevel, France Galeria INNO, Brussels, Belgium TÄBY CENTRUM Shopping Mall, Täby, Sweden ARKADIA Shopping Mall, Tallin, Estonia SKARZYSKO KAMIENNA Shopping Mall, Skarzysko, Poland BREDA OPAVA Shopping Mall, Opava, Czech Rep. CYPRUS CONFERENCE CENTRE, Nicosia, Cyprus LEOPOLIS KING CROSS Shopping Mall, Lviv, Ukraine

- VDNH Russian Permanent Expo. COSMOS PAVILION, 03 Moscow, Russia
- YAMSKAYA CENTRE Shopping Mall, Moscow, Russia 04 REAL Shopping Mall, Rostov on Don, Russia GIPPO Shopping Mall, Minsk, Belarus
- RINGS ISTANBUL Shopping Mall, Istanbul, Turkey WOW HOTEL Congress Centre, Istanbul, Turkey MEREY Shopping Mall, Karaganda, Kazakhstan MARSA AL SEEF Cultural and Multifunctional Centre, Dubai, U.A.E. OZONE ENTERTAINMENT CENTRE, Sitra, Bahrain CULTURAL VILLAGE, Doha, Qatar MARJANE Shopping Mall, Marrakech, Morocco

#### 06 IKEA Store, Zenata, Morocco

BAGATELLE Shopping Mall, Port Louis, Mauritius CIRCUS TRIANGLE Shopping Mall, Mthatha, South Africa SAVANNAH Shopping Mall, Polokwane, South Africa TAI KWUN CENTRE FOR HERITAGE & ART - former CENTRAL POLICE STATION, Sheung Wan, Hong Kong HOI LAI Shopping Mall, Lai Chi Kok, Hong Kong

07 CAIRNS Aquarium, Cairns, Australia

> WESTFIELD MIRANDA Shopping Mall, Miranda, Australia CORSO NORTH LAKES Leisure Centre, North Lakes, Australia WOOLWORTHS Shopping Malls, several locations, Australia

#### >> AIRPORTS, HARBOURS & STATIONS.

LINATE Airport - Cogeneration Energy Plant, Milan, Italy TRIESTE Airport, Ronchi dei Legionari, Italy CASELLE Airport, Turin, Italy TRIESTE Harbour, Trieste, Italy OSLO GARDERMOEN Airport Warehouse, Oslo, Norway PLOCE Harbour, Ploce, Croatia SKOPJE Airport, Skopje, Macedonia LIMASSOL Harbour, Limassol, Cyprus TARAZ Airport, Taraz, Kazakhstan

#### >> OFFICE BUILDINGS & PLANTS.

PIAGGIO Factory, Pontedera, Italy DANIELI Headquarters, Buttrio, Italy

GUCCI Headquarters, Scandicci, Italy 80

> ALENIA AERMACCHI - FINMECCANICA GROUP, Caselle, Italy EXPEDITORS, Amsterdam, Netherlands BAWELSE PARK Multifunctional Centre, Breda, Netherlands



CEA CADARACHE Office Building, Cadarache, France

09 BRYN EIENDOM - ØSTENSJØVEIEN 34 Business Centre, Oslo, Norway

VOLKSWAGEN Plant, Bratislava, Slovakia 10

> OPERA Business Centre, Bucarest, Romania SEALYNX Car Components Factory, Darmanesti, Romania BAT YVA Plant, Moscow, Russia

> FEDERATION TOWERS Business Centre, Moscow, Russia

VEREYSKAYA PLAZA III Business Centre, Moscow, Russia TUPRAS - TURKISH PETROLEUM REFINERIES, Kırıkkale, Turkey KOLUMAN OTOMOTIV - MERCEDES BENZ, Tarsus, Turkey UZBAT British American Tobacco, Tashkent, Uzbekistan

QPD - QATAR PETROLEUM DEVELOPMENT Offshore Platform, Qatar

ROWAD National Plastic Factory, Hail Industrial City, Saudi Arabia

NITROKIM Chemical, Tunis, Tunisia SARL AMOUDA ENGINEERING Cement Factory, El Beida, Algeria BARROW OXFORD & GLENHOVE Business Centre, Johannesburg, South Africa AGGREKO Offshore Platform, Singapore GREEN SMART SHIRTS Garment Company, Gazipur - Dhaka, Bangladesh WANG CHEONG Building, Sheung Shui, Hong Kong

LSG SKY CHEF - Lufthansa Catering Services,

Chep Lap Kok, Hong Kong

LINDT CHOCOLATE Plant, Sidney, Australia

#### >> INSTITUTIONS AND PUBLIC BUILDINGS.

FLORENCE CHAMBER OF COMMERCE, Florence, Italy NATO Military Base, Capodichino, Italy

WEDEKIND PALACE - INPS Headquarters, Rome, Italy

MINISTRY OF TREASURY, Rome, Italy PALACE OF JUSTICE, Pristina, Kosovo UZBEKISTAN OLYMPIC COMMITTEE, Tashkent, Uzbekistan MINISTRY OF FINANCE, Baku, Azerbaijian ESCWA - United Nations Economic and Social Commission for Western Asia, Beirut, Lebanon

NORTH KWAI CUSTOMHOUSE, Sheung Wan, Hong Kong HO MAN TIN Government Offices, Sheung Shui, Hong Kong

13 NORTH POINT Government Offices, Kowloon, Hong Kong NETHERLANDS EMBASSY, Camberra, Australia MAROOCHYDORE POLICE STATION, Maroochydore, Australia





















# **MOSE**

Venice, Italy

MOSE is one of the greatest engineering projects in the World. It is a system of mobile barriers for the defence of Venice and its lagoon from high tides.

The works have been managed by the Italian Ministry of Infrastructure and Transport – Consorzio Venezia Nuova.

MOSE is an integrated system consisting of 4 rows made of 78 mobile gates installed at lagoon inlets that are able to isolate the Venetian Lagoon temporarily from the Adriatic Sea during high tides. The mobile barriers are connected to concrete housing structures with hinges that constrain the gates to the housing structures and allow them to move. They are located below sea level, lying on the seabed.

The installation is completed with a net of submarine tunnels, service rooms and technological systems for the management of barriers opening and of the whole project overall, that need to be kept at controlled levels of temperature and humidity for their right functioning and protection from salt corrosion.

**G.I. INDUSTRIAL HOLDING SpA** is providing the units for air conditioning and dehumidification of underwater galleries and technological systems, in partnership with the multinational Company **SIRAM SpA – VEOLIA Group**, responsible for design and execution of the whole HVAC system.

#### The units provided under CLINT and NOVAIR brands are:

- 89 Heat Pumps and 60 Fan Coil units: 11.000 kW total cooling power
- 128 Air Handling Units: 870.000 m<sup>3</sup>/h total air flow.

All units feature special technical solutions and dedicated materials, specifically developed for long resistance in salty environment.







#### >> SCHOOLS AND UNIVERSITIES.

UNIVERSITA' DEGLI STUDI DI MILANO, Milan, Italy JAUME I University, Valencia-Castellón, Spain PARIS X University, Nanterre, France MILLGATE School, Leicester, United Kingdom KOC College, Istanbul, Turkey

- 14 AUB AMERICAN UNIVERSITY BEIRUT, Beirut, Lebanon
  WITS University NEW SCIENCE Centre, Johannesburg, South Africa
  UKZN University, Durban, South Africa
  BRITISH COLUMBIA University, Vancouver, Canada
  NANYANG POLYTECHNIC, Nanyang, Singapore
- 15 THE HONG KONG POLYTECHNIC University, Kowloon, Hong Kong SUNSHINE COAST INSTITUTE OF TAFE, Maroochydore, Australia

#### >> SPORT & WELLNESS BUILDINGS.

FRANCHI Stadium, Florence, Italy PURE GYM, Bristol, United Kingdom CATEZ Thermal Centre, Brežice, Slovenja

- 16 DAGÁLY Swimming Centre 2017 FINA SWIMMING WORLD CHAMPIONSHIP, Budapest, Hungary
- 17 BIALYSTOK Stadium, Bialystok, Poland
- **18** FIFA WORLD CUP 2018 FOOTBALL Stadium, Ekaterinburg & Volgograd, Russia

VIVA GYM FOURWAYS, Johannesburg, South Africa HONG KONG COLISEUM Leisure & Cultural Services, Kowloon, Hong Kong TONSLEY PARK, Adelaide, Australia

**19** SIDNEY UNIVERSITY SPORTS & AQUATIC CENTRE, Sidney, Australia

















Discover all our references on:

www.clint.it

#### >> HOSPITALS, HOTELS & RESTAURANTS.

GEMELLI Hospital, Rome, Italy
UMBERTO I General Hospital, Rome, Italy
Baggiovara Hospital, Baggiovara, Italy
DOMUS SESSORIANA Hotel, Rome, Italy
BAZA Hospital, Baza, Spain
VASTRA VAGEN 48 Hospital, Gavle, Sweden

- 20 ALSIK Hotel, Sønderborg, Denmark
  HILTON Hotel, Tallin, Estonia
  NUCLEAR MEDICINE CENTRE, Riga, Latvia
  RADISSON BLU BÉKE Hotel, Budapest, Hungary
- 21 DOURO ELEGANCE, SERENITY, EMERALD RADIANCE Cruises GK MARINE Shipyard, Piraeus, Greece
  IKOS ARIA Hotel, Kos, Greece
  MARRIOT Hotel, Voronezh, Russia
  TAKSIM ILK YARDIM HASTAHANESI Hospital, Istanbul, Turkey
  DEDEMAN Hotel, Bostanci, Turkey
- **22** OASIS Hospital, Dubai, U.A.E. HILTON SALWA BEACH Resort, Qatar
- 23 CMH COMBINED MILITARY HOSPITAL, Rawalpindi, Pakistan
  BIZERTE Hospital, Bizerte, Tunisia
  ONE&ONLY LE SAINT GÉRAN Resort, Port Louis, Mauritius
  BENIN ROYAL Hotel, Cotonou, Benin
  RICHARDS BAY Oncology Hospital, Richards Bay, South Africa
  JASMINE PALACE Hotel, Yangon, Myanmar
  NGHE ANH Hospital, Ho Chi Minh, Vietnam
  EASTERN Hospital, Kowloon, Hong Kong
  SHATIN Hospital, Ma On Shan, Hong Kong
  DISTINCTION Hotel, Cristchurch & Dunedin, New Zealand

#### >> LABORATORIES, LIBRARIES & MUSEUMS.

Roman National Museum, Rome, Italy LABORATOIRE DE GLACIOLOGIE ET GÉOPHYSIQUE DE L'ENVIRONNEMENT, Saint-Martin d'Hères Cedex, France CITY MUSEUM, Zenice, Bosnia and Herzegovina

24 NATIONAL ART GALLERY, Sofia, Bulgaria
UWC Metrology Laboratories, Johannesburg, South Africa
KAZNU University Scientific Library, Karaganda, Kazakhstan

#### >> INDUSTRIAL PROCESS COOLING.

- 25 STIGE Printing Company, San Mauro Torinese, Italy
  CEDACRI Data Centre, Castellazzo Bormida, Italy
  TELECOM Data Centres, various locations, Italy
  MESOESTETIC Pharmaceutical, Barcelona, Spain
  ASPLA-PLÁSTICOS ESPAÑOLES Plastic Factory, Torrelavega, Spain
  SOLVAY Plant, Manchester, United Kingdom
  EGGER HEXHAM Lamination Plant, Hexham, United Kingdom
  AGROETANOL Plant, Lantmannen, Sweden
  MAN DIESEL & TURBO Plant, Copenhagen, Denmark
- 26 EUROPEAN BATTERIES Plant, Varkhaus, Finland
  MICHELIN Plant, Olsztyn, Poland
  IMPERIAL TOBACCO POLSKA, Tarnowo Podgórne, Poland
- Budapest, Hungary
  BRIDGESTONE Plant, Tatabanya-Kornye, Hungary
  CONTINENTAL Plant, Kaluga, Russia

RGK VI - PHARMAFABRIK RICHTER GEDEON Pharmaceutical,

ISTANBUL STOCK EXCHANGE Data Centre, Istanbul, Turkey TURKUVAZ MATBAACILIK Printing Company, Istanbul, Turkey PETROFAC OIL & GAS PROVIDER Plant, Ashagabat, Turkmenistan AL KHAMEES Plant, Doha, Qatar

28 SOHAR STEEL, Sohar Industrial Port, Oman
STERIPHARMA Pharmaceutical, Casablanca, Morocco
M&J GROUP-COLUMBIA WASHING PLANT, Glazipur, Bangladesh
NOVARTIS PHARMA Pharmaceutical, Sidney, Australia

#### >> FOOD & BEVERAGE PROCESS COOLING.

CANTINE LIZZANO Winery, Lizzano, Italy ENOAGRIMM Winery, San Severo, Italy

29 AGROLIO Winery, Andria, Italy

27

VOESTALPINE AUTOMOTIVE COMPONENTS, Schmölln, Germany GASCON VERMUYTEN Food Industry, Vitoria-Gasteiz, Spain BODEGAS ALTOSA Distillery, Tomelloso, Spain BODEGAS SANDEVID Winery, Daimiel, Spain MORE HOLSTEIN Cow Breeding Farm, Bétera, Spain CHEMOURS Chemical, Dordrecht, Netherlands CORBION Biochemical, Gorinchem, Netherands J. HOLT Brewery, Manchester, United Kingdom VILLANYI BOROK HAZA Winery, Villány, Hungary

PHILIP MORRIS IZHORA Cigarette Factory, St. Petersburg,
Russian Federation
PERFETTI VAN MELLE Candies Manufacturing, Esenyurt, Turkey
SNACKWORKS Sweet Industry, Durban, South Africa
COCA COLA Plant, Salthani, Laos

HENKEL Chemical industry, Belgrade, Serbia



30

























# RODUCT RANGE

Most of the product ranges are compliant to ErP European Regulations.

- ErP 2018 SCOP. The EU Regulation n. 813/2013 fixing precise efficiency standards for heat pump units.
- ErP 2021 SEER. The range of units for comfort cooling application reaches the seasonal energy efficiency standards required from 2021 (EU Regulation n°2016/2281).
- ErP 2021 SEPR. The range of units for process cooling application reaches the seasonal energy efficiency standards required from 2021 (EU Regulation n°2016/2281).









## LIQUID CHILLERS.



COMPACT LINE: The CompactLine liquid Chillers and Heat Pumps range is the ideal solution for residential or small commercial areas. Compactness and low energy consumption are the key benefits of this range, available in DOUBLE A CLASS energy efficiency with Inverter Scroll compressor.



THERMICA SYSTEM: Thermica System line includes monoblock dedicated heat pumps and indoor units for room heating, cooling and domestic hot water production up to 55 °C. A CLASS energy efficiency reversible Heat Pumps feature Inverter Rotary compressor and plate exchanger.



MIDYLINE MIDY LINE: The Heat Pumps of MidyLine series are dedicated to environment heating and domestic hot water production, providing hot water up to 60°C, as well as air conditioning during summertime. The range features A CLASS energy efficiency and AquaLogik technology with built-in hydronic kit and variable speed circulating pumps, making the use of inertial tank unnecessary.



**AQUA AQUA PLUS:** The AquaPlus aircooled, watercooled and condenserless liquid Chillers and Heat Pumps range is dedicated to small and medium areas in commercial or industrial buildings, up to 180 kW. Compactness and easy installation are the key benefits of this range. Dedicated models can also feature the additional AquaLogik technology with built-in hydronic kit and variable speed circulating pumps, making the use of inertial tank unnecessary. AquaPlus range is available in several variants, up to DOUBLE A CLASS energy efficiency, featuring Inverter technology on Scroll compressors and, as option, on fans and circulating pumps. Units with R452B and R454B refrigerants are also available.



**MULTI POWER:** The MultiPower liquid Chillers and Heat Pumps range is based on multi-Scroll design for high efficiency at part loads, with up to 12 compressors on double cooling circuit, also in DOUBLE A CLASS energy efficiency with Inverter technology. The family includes both aircooled and watercooled models with a capacity range up to 1250 kW. Units with R452B and R454B refrigerants are also available.



**ENERGY POWER:** The aircooled Multifunctional units of EnergyPower line are able to provide cooling, heating and domestic hot water at the same time and with the same unit. Those Multifunctional units, with capacity up to 1130 kW, are dedicated to 4-Pipe systems and are ideal for buildings with simultaneous need of ambient heating, cooling and domestic hot water, such as hotels and multifunctional buildings with service and residential users. The range includes models with both Scroll or Screw compressors. Units with R452B, R454B or R513A refrigerant are also available.







MAXI POWER: The MaxiPower aircooled, watercooled and condenserless liquid Chillers with Screw compressors cover capacities up to 2350 kW. Dedicated models feature Inverter technology on compressors, pumps and fans for an higher efficiency even at part load. MaxiPower range is available in several variants up to DOUBLE A CLASS. The new environmentally friendly models feature the innovative **HFO-R1234ze** refrigerant, with GWP<1 (Global Warming Potential), in order to meet the strictest international environmental regulations. Units with R513A refrigerant are also available.





TURBOLINE: The TurboLine range, equipped with Turbocor Magnetic Levitation compressors, TURBOLINE reaches an extremely high efficiency (A CLASS) with the highest EER and SEER / SEPR / IPLV in the market and a low starting current, in addition to maximum reliability and an extra silent operation. The range includes aircooled and watercooled models with a wide capacity range up to 3900 kW, also with R513A or HFO-R1234ze refrigerant.



# DRY-COOLERS, REMOTE CONDENSERS AND HYDRONIC MODULES.

A comprehensive range of Dry-Coolers and Remote Condensers with air flow up to 127 m<sup>3</sup>/s and different noise levels and a full range of remote Hydronic Modules up to 2500 lt. is available to complete the liquid Chillers range.



## PACKAGED ROOF TOP UNITS.



*《CAIRPLUS* AIR PLUS: The Packaged Roof Top units of AirPlus series feature Single Skin and EC Inverter Plug-Fans. The units may feature additional Mixing Box, Free-Cooling sections and Thermodynamic Coil-Boost Heat Recovery.





AIR MAXI: The Double Skin Packaged Roof Top units of AirMaxi series feature radial fans or **EC** Inverter Plug-Fans, also with Inverter Scroll compressor.

> The units may feature additional Mixing Box, Free-Cooling and Heat Recovery Sections, with different technologies: Cross-Flow type, Wheel type or Thermodynamic Coil-Boost type.



## CONDENSING UNITS.

A comprehensive range of condensing units from 4 to 190 kW with different technical solutions and noise levels is available to complete the CLINT product range.



# FAN COIL UNITS.

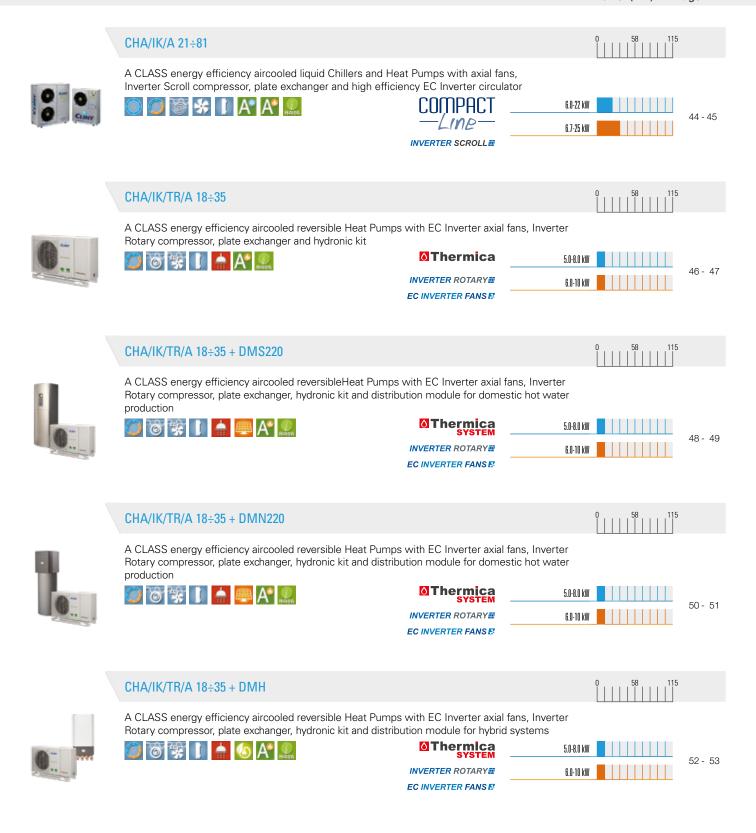
FAN COIL UNITS WITH CABINET AND FOR BUILT-IN INSTALLATION: Fan Coil units for floor, ceiling or built-in installation, with several air flow configurations and capacity up to 7,3 kW, available both with 3-Speed or EC Inverter fans. A wide range with high static pressure is also available for built-in installation.



#### WALL MOUNTED, WATER CASSETTE AND DUCTABLE FAN COIL

UNITS: Wall mounted units up to 5,4 kW, Water Cassette up to 11 kW and Modular Ductable Fan Coil units up to 43 kW, available with 3-Speed or EC Inverter fans.

#### AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR RESIDENTIAL & LIGHT COMMERCIAL APPLICATION



# **CHAPTER**

#### AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR RESIDENTIAL & LIGHT COMMERCIAL APPLICATION

Power (kW)

Page

CHA/ML/ST 41÷71



A CLASS energy efficiency aircooled dedicated Heat Pumps with domestic hot water production, axial fans, Scroll compressor, plate exchanger and hydronic kit

MIDYLINE 11-23 kW **AQUALOGIK** 54 - 55 7.3-16 kW

CHA/ML/ST 91÷151



A CLASS energy efficiency aircooled dedicated Heat Pumps with domestic hot water production, axial fans, Scroll compressor, plate exchanger and hydronic kit

**★** 1 ♠ **6** A\* MOTO MIDYLINE

30-53 kW 56 - 57 **AQUALOGIK** 20-37 kW

CHA/ML/ST 182-P÷302-P



A CLASS energy efficiency aircooled dedicated Heat Pumps with domestic hot water production, axial fans, Scroll compressors, plate exchanger and hydronic kit

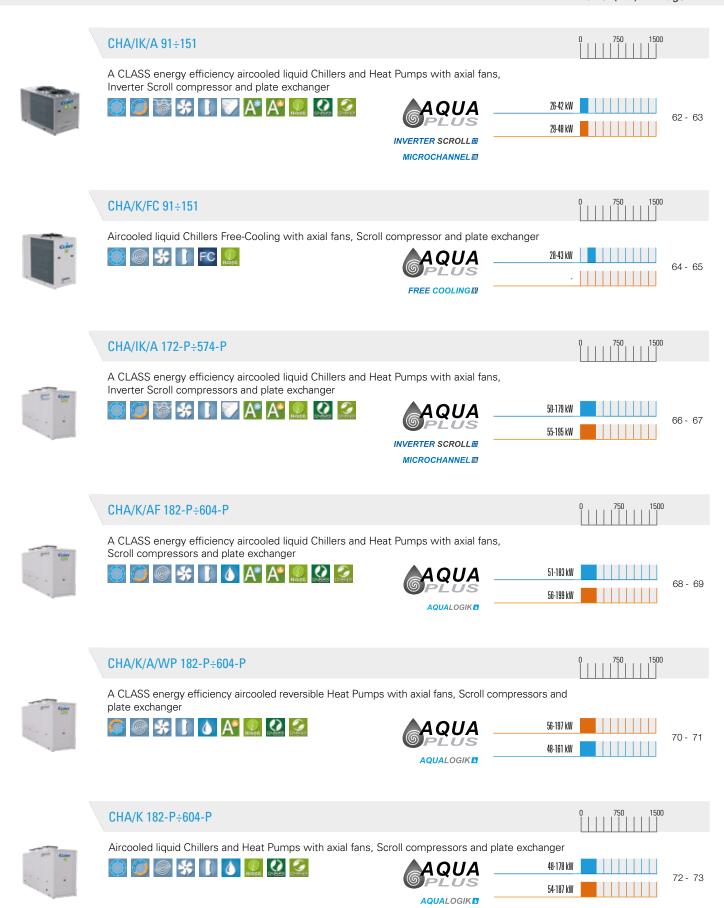
**MIDYLINE** 

56-114 kW **AQUALOGIK** 58 - 59 44-101 kW

#### **LEGENDA** Version Fan Solution Compressor Exchanger Refrigerant R410A Inverter Rotary EC Inverter Axial Plate 4-Pipe system Cooling only Heating only Shell and Tube Web Monitoring R452B R454B Cooling & Heating EC Inverter Radial Flooded Shell and Tube Silenced Inverter Scroll l o Scroll . Radial Microchannel Super silenced R134a R513A Inverter Screw High ESP Radial Single Skin Solution FC R1234ze Screw EC Inverter Tangential Free-Cooling Double Skin R407C Turbocor EC Inverter Plug-Fan Domestic Hot Water Mixing Box AquaLogik Economizer $H_2O$ Hybrid System Management Economizer and Thermodynamic Coil-Boost Heat Recovery Economizer and Cross-flow Heat Recovery Integration Economizer and Wheel Heat Recovery A Class Cooling

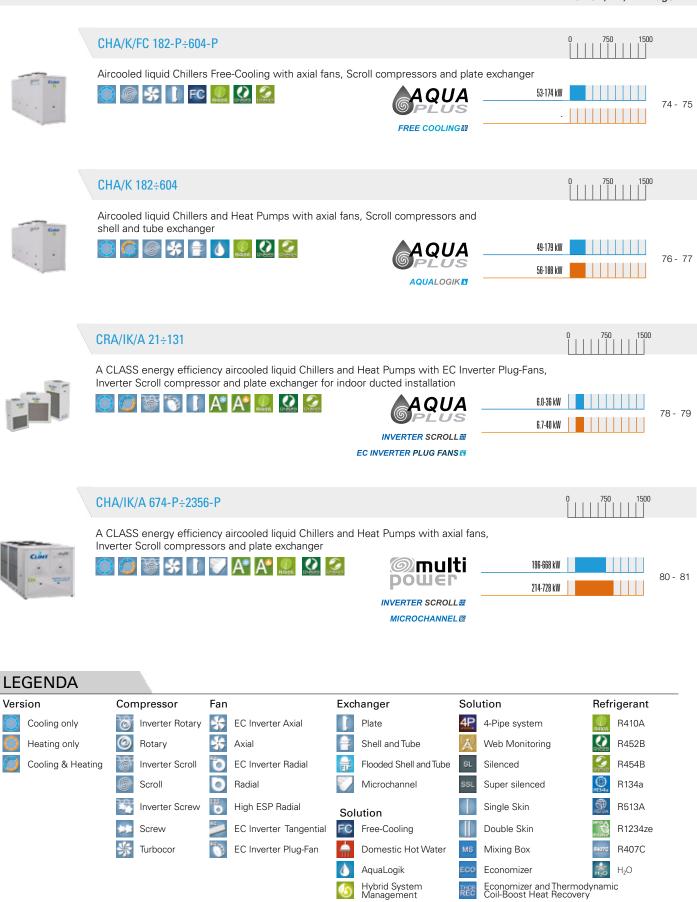
A Class Heating

# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION



# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

Power (kW) Page



Integration

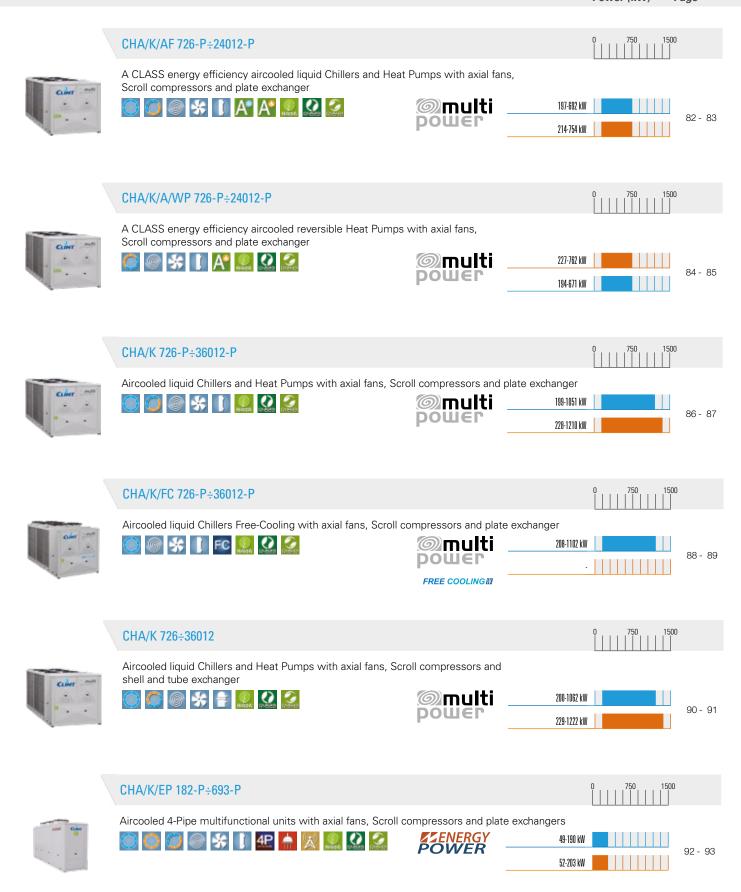
A Class Cooling

A Class Heating

Economizer and Cross-flow Heat Recovery

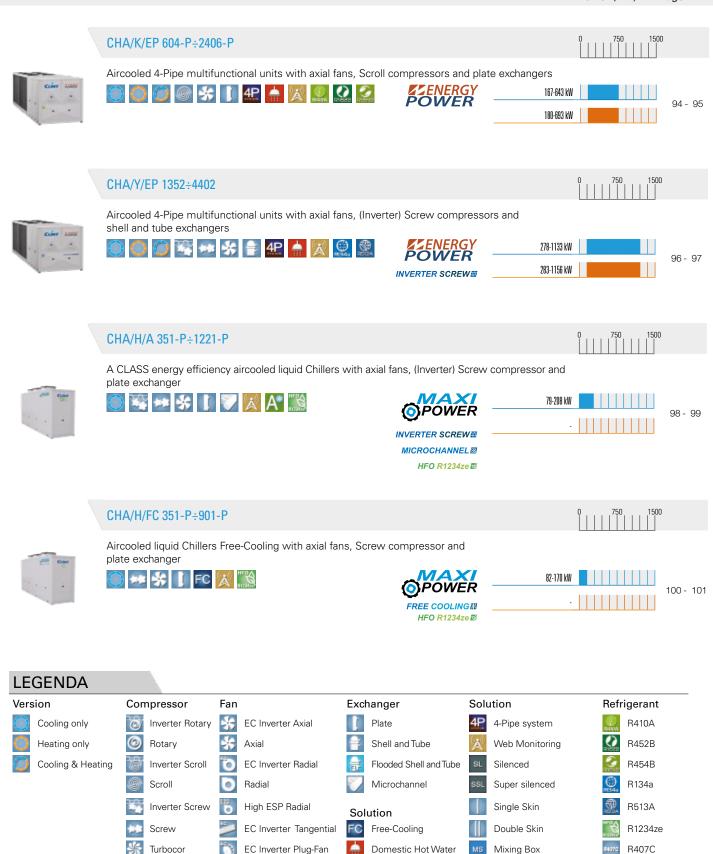
Economizer and Wheel Heat Recovery

# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION



# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

Power (kW) Page



AquaLogik

Integration

Hybrid System Management

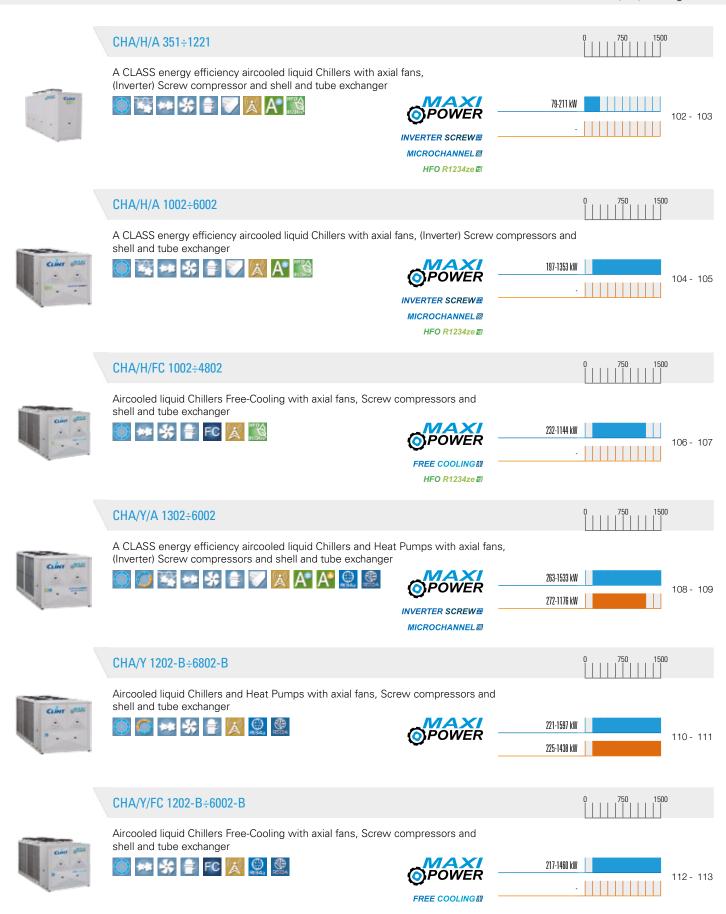
A Class Cooling
A Class Heating

Economizer

Economizer and Thermodynamic Coil-Boost Heat Recovery Economizer and Cross-flow Heat Recovery

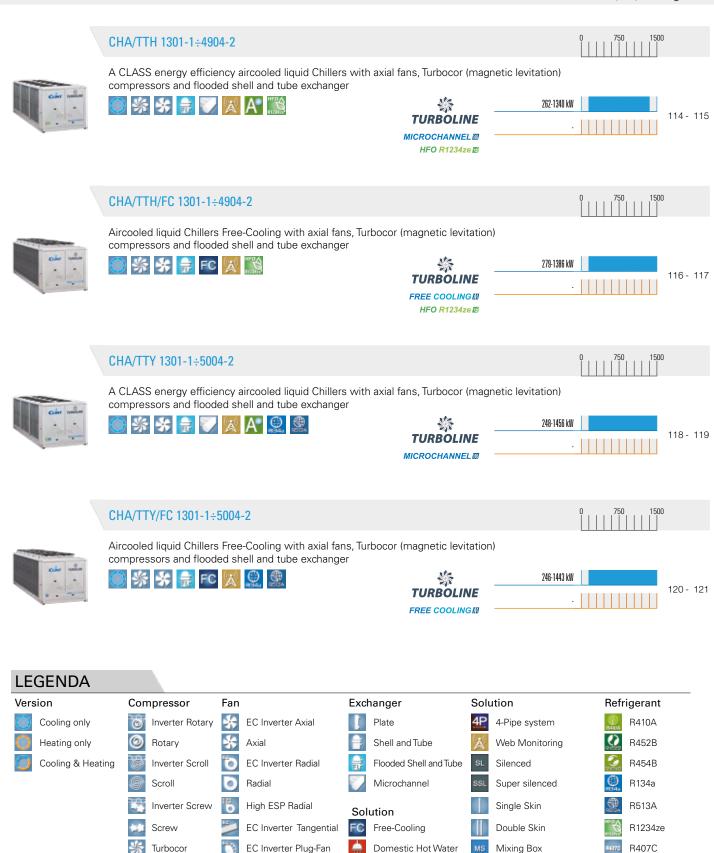
Economizer and Wheel Heat Recovery  $H_2O$ 

# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION



# AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

Power (kW) Page



AquaLogik

Integration

Hybrid System Management

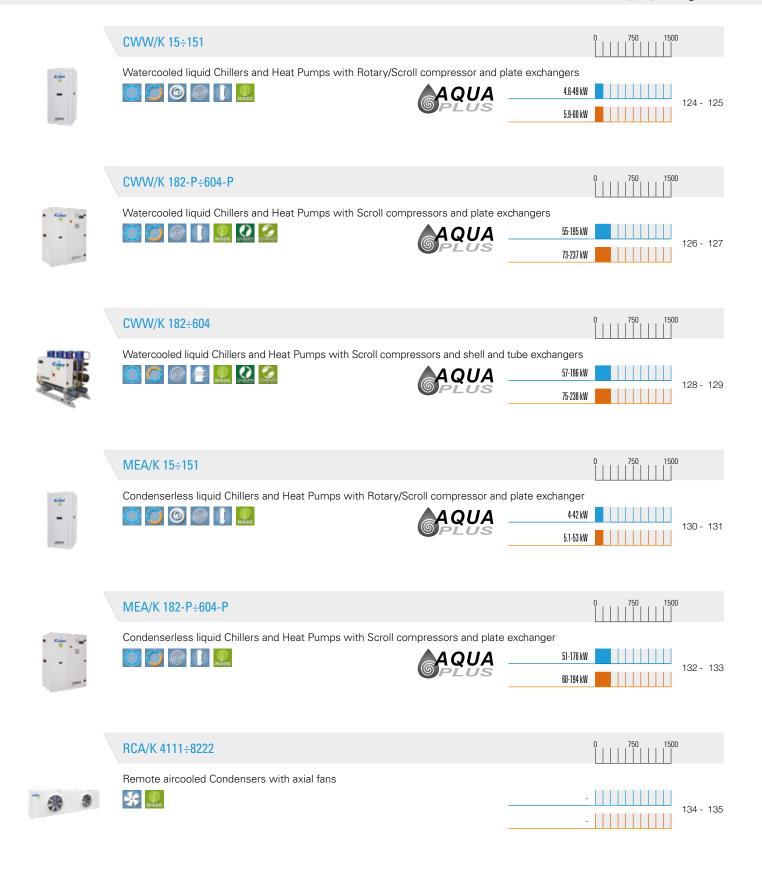
A Class Cooling
A Class Heating

Economizer

Economizer and Thermodynamic Coil-Boost Heat Recovery Economizer and Cross-flow Heat Recovery

Economizer and Wheel Heat Recovery  $H_2O$ 

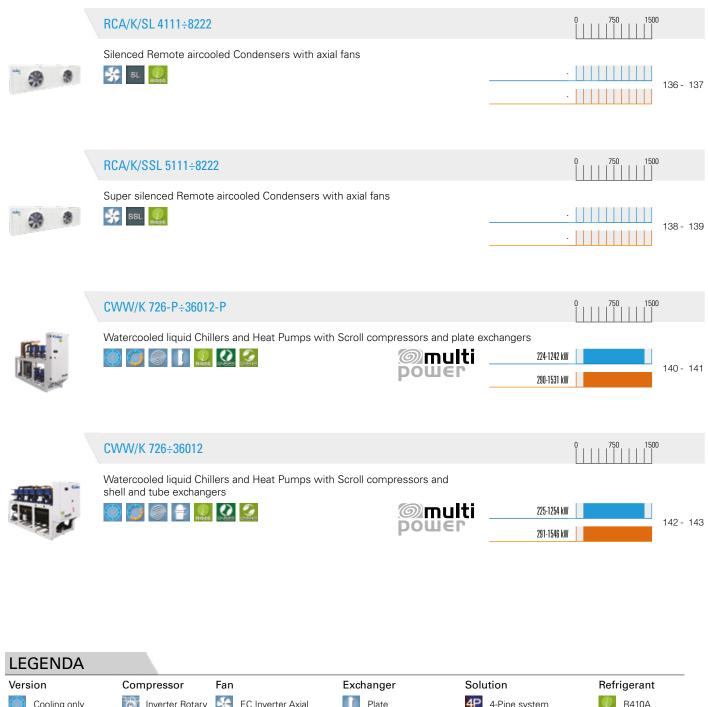
WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. REMOTE CONDENSERS



# **CHAPTER 3**

WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. REMOTE CONDENSERS

Power (kW) Page

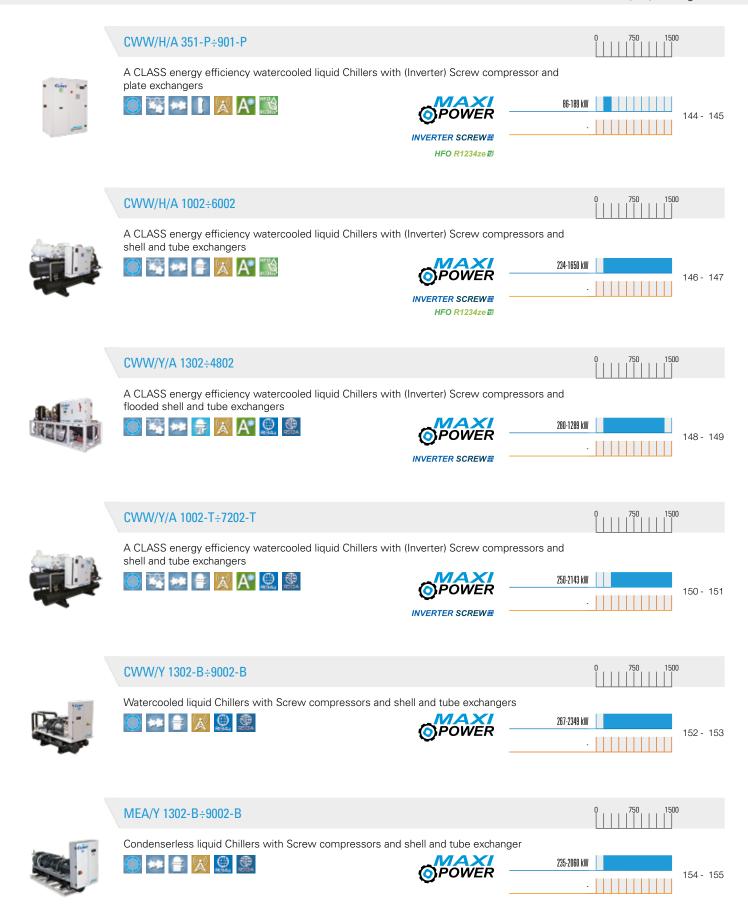


Version		Compressor		Fan		Exchanger		Solution		Refrigerant	
	Cooling only	<b>6</b>	Inverter Rotary	米	EC Inverter Axial		Plate	4P	4-Pipe system	BAROA	R410A
0	Heating only	0	Rotary	*	Axial		Shell and Tube	*	Web Monitoring	() RVDEB	R452B
	Cooling & Heating		Inverter Scroll	Ö	EC Inverter Radial	=	Flooded Shell and Tube	SL	Silenced	S.	R454B
		9	Scroll	0	Radial	3	Microchannel	SSL	Super silenced	<b>Q</b>	R134a
		*	Inverter Screw	О	High ESP Radial	Solution	ution		Single Skin	<b>®</b>	R513A
		嬔	Screw		EC Inverter Tangential	FC	Free-Cooling		Double Skin	₽"	R1234ze
		尜	Turbocor		EC Inverter Plug-Fan	<b>_</b>	Domestic Hot Water	мѕ	Mixing Box	84976	R407C
							AquaLogik	ECO	Economizer	i i	H <sub>2</sub> O
					<b>6</b>	Hybrid System Management	REE	Economizer and Thermodynamic Coil-Boost Heat Recovery		ic	
						<b>#</b>	Integration	REC	Economizer and Cross-flow Heat Recovery	У	<u></u>
						A*	A Class Cooling	REC	Economizer and Wheel Heat Recovery		I INT

A Class Heating

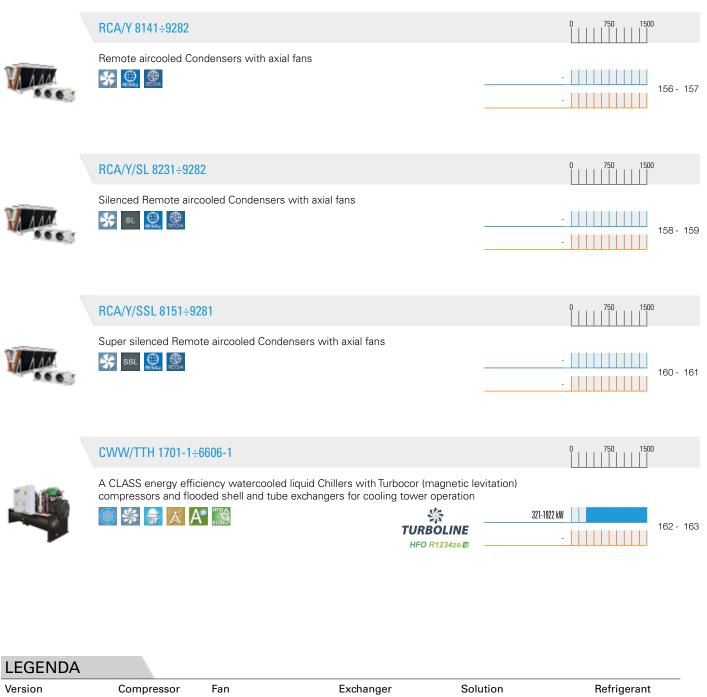
# **CHAPTER 3**

WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. REMOTE CONDENSERS



# **CHAPTER**

WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. REMOTE CONDENSERS





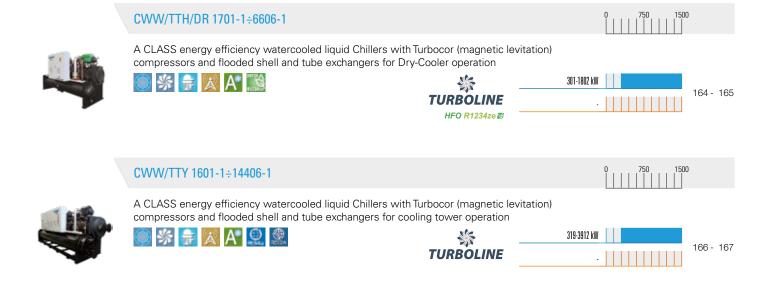
Cooling

Heating

# **CHAPTER**

WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. **REMOTE CONDENSERS** 

> Power (kW) Page





A CLASS energy efficiency watercooled liquid Chillers with Turbocor (magnetic levitation) compressors and flooded shell and tube exchangers for Dry-Cooler operation







CWW/TTY/DR 1601-1÷6204-1





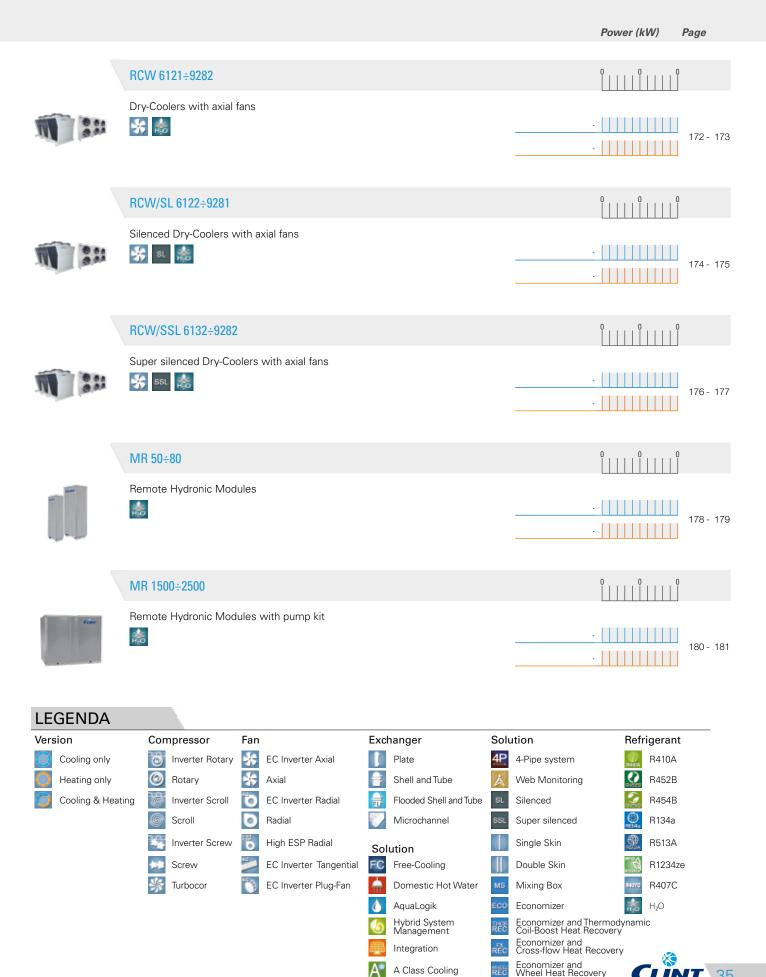








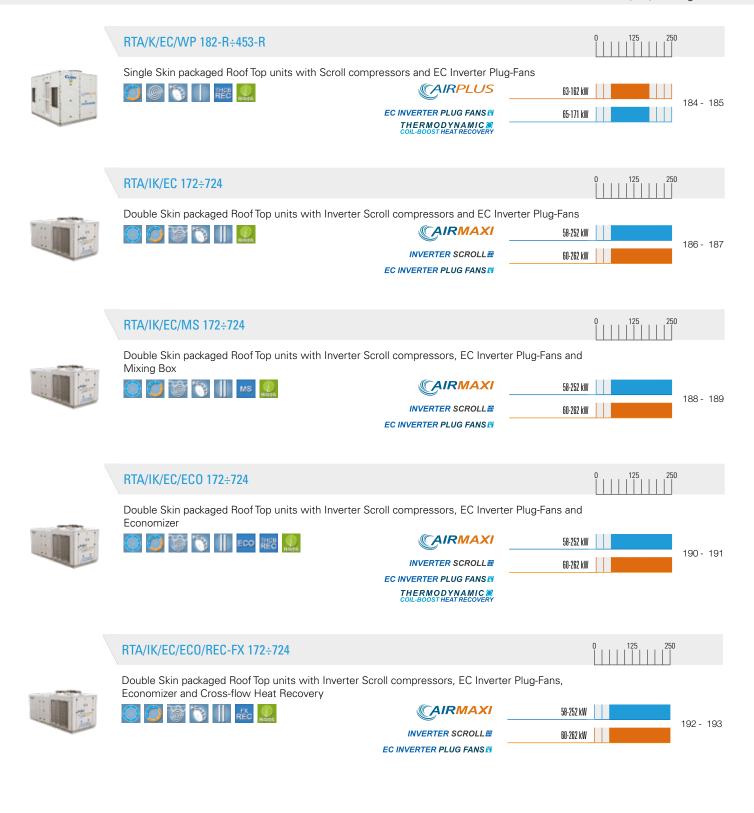
#### DRY-COOLERS AND HYDRONIC MODULES



A Class Cooling A Class Heating

#### PACKAGED ROOFTOP UNITS

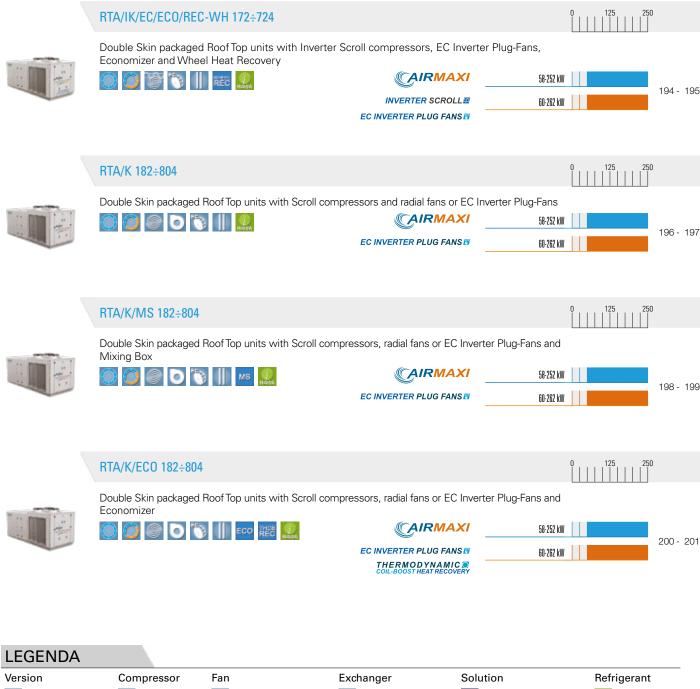
Power (kW) Page



#### PACKAGED ROOF TOP UNITS

Power (kW)

Page



#### Plate R410A Inverter Rotary EC Inverter Axial 4-Pipe system Cooling only Heating only Shell and Tube Web Monitoring R452B Flooded Shell and Tube R454B Cooling & Heating EC Inverter Radial Silenced Inverter Scroll l o Scroll . Radial Microchannel Super silenced R134a R513A Inverter Screw High ESP Radial Single Skin Solution FC R1234ze Screw EC Inverter Tangential Free-Cooling Double Skin R407C Turbocor EC Inverter Plug-Fan Domestic Hot Water Mixing Box AquaLogik Economizer $H_2O$ Hybrid System Management Economizer and Thermodynamic Coil-Boost Heat Recovery Economizer and Cross-flow Heat Recovery Integration Economizer and Wheel Heat Recovery A Class Cooling A Class Heating

#### PACKAGED ROOFTOP UNITS

Power (kW) Page

#### RTA/K/ECO/REC-FX 182÷804







Double Skin packaged Roof Top units with Scroll compressors, radial fans or EC Inverter Plug-Fans, Economizer and Cross-flow Heat Recovery

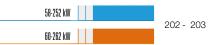












RTA/K/ECO/REC-WH 182÷804



Double Skin packaged Roof Top units with Scroll compressors, radial fans or EC Inverter Plug-Fans, Economizer and Wheel Heat Recovery













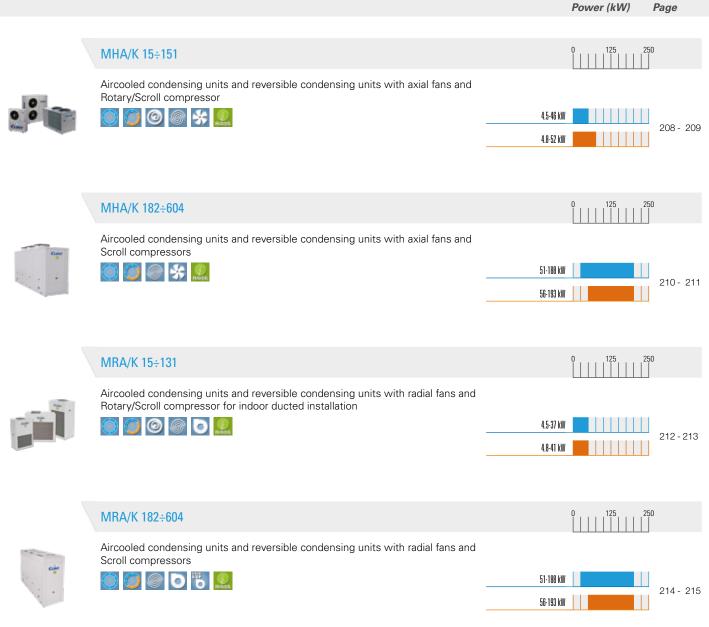


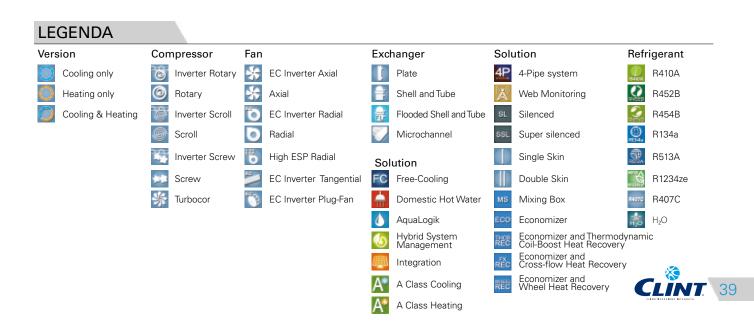


204 - 205

**CONDENSING UNITS** 

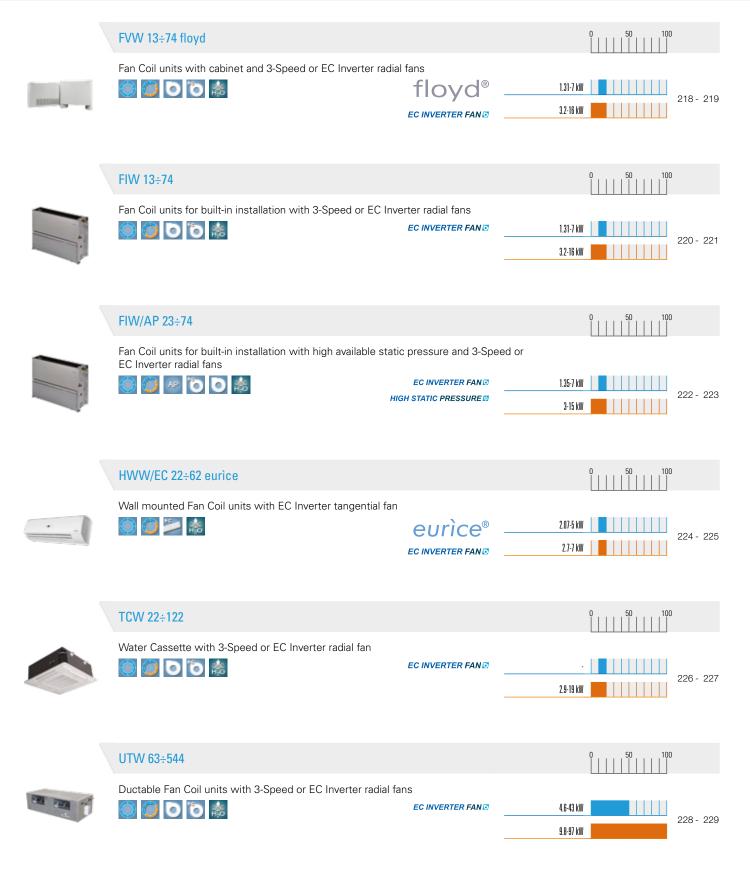
Power (kW)





FAN COIL LINITS





# Focus on ErP Regulations

EUROPEAN UNION Regulations (ErP - ECODESIGN)

ErP: UE 2016/2281

ErP: UE 813/2013

aimed at setting precise <u>Minimum Energy Efficiency Standards</u> for Electric Related Products (ErP). Mandatory compliance to standards of key components (fans, pumps, motors) and entire unit (Chiller / Heat Pump / Packaged Roof Top units).

The new minimum energy efficiency standards required by ErP Directive EU N. 2016/2281 came into force on 1st January 2021. These new requirements have a significant impact on existing product range.

#### **Products covered by the Regulation**









**Liquid Chillers** 

Comfort

**Process** 

**Packaged Roof Top units** 

**Cooling only** 

**Heat Pumps** 

Condensing units and condenserless units are excluded from ErP Regulation.

The intended use of liquid Chillers, that is **comfort (SEER)** or **process (SEPR)**, must be specified.

The compliance with ErP Directive is a key requirement to mark products with the CE logo.

Units without CE are saleable outside Europe only. These latter units, however, comply with all directives foreseen by CE Declaration: Machinery Directive 2006/42/EC, Pressure Equipment (PED) Directive 2014/68/EU, Low Voltage Directive (LVD) 2014/35/EU, Electromagnetic Compatibility (EMC) Directive 2014/30/EU, RoHS Directive 2011/65/EU and RAEE Directive 2012/19/EU.



AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR RESIDENTIAL & LIGHT COMMERCIAL APPLICATION

UNIT	Page
CHA/IK/A 21÷81	44 - 45
CHA/IK/TR/A 18÷35	46 - 47
CHA/IK/TR/A 18÷35 + DMS220	48 - 49
CHA/IK/TR/A 18÷35 + DMN220	50 - 51
CHA/IK/TR/A 18÷35 + DMH	<i>52 - 53</i>
CHA/ML/ST 41÷71	54 - 55
CHA/ML/ST 91÷151	<i>56 - 57</i>
CHA/ML/ST 182-P÷302-P	58 - 59

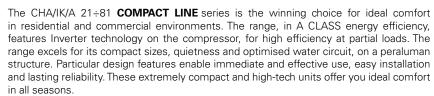
# **CHA/IK/A 21÷81**

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSOR, PLATE EXCHANGER AND HIGH EFFICIENCY EC INVERTER CIRCULATOR.









The unit features high efficiency integrated circulator with EC Inverter brushless electronic motor. The Heat Pump version is designed for **hot water production up to 55 °C.** 

The units are compliant to the ErP Regulation.



<b>VERSI</b>	ON	
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CHA/IK/A	CHA/IK/A/WP
Cooling only	Reversible Heat Pump

#### **FEATURES**

- · Structure with supporting frame, in peraluman, galvanized sheet and with rubber shock absorbers on the frame.
- DC INVERTER Scroll compressor with internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser in copper tubes and aluminium finned coil complete with drain pan for WP version only.
- Evaporator AISI 316 stainless steel braze welded type, complete with water differential pressure switch. On the Heat Pump units it is always
  installed an antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Water circuit includes: water differential pressure switch, high efficiency EC Inverter circulator, safety valve and expansion vessel.
- High efficiency circulator with EC Inverter brushless electronic motor with 3 speeds selectable by the user.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

TX Coil with pre-coated fins
FE Antifreeze heater for evaporator

#### LOOSE ACCESSORIES

CR Remote control panel

IS Modbus RTU protocol, RS485

serial interface

RP Coils protection metallic guards









MODEL			21	31	41	51	61	71	81
	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.7	19.0	22.4
Cooling	Absorbed power (1)	kW	1.8	2.4	3.0	3.8	4.9	6.0	7.2
	EER (1)		3.33	3.17	3.10	3.26	3.20	3.17	3.11
	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.6	18.9	22.5
	Absorbed power (1)	kW	1.8	2.4	3.0	3.8	4.9	6.0	7.2
Cooling (EN14511)	EER (1)		3.33	3.17	3.10	3.26	3.18	3.15	3.13
	SEER (2)		4.12	4.11	4.10	4.68	4.74	4.71	4.72
	Energy Efficiency (2)	%	162	161	161	184	187	185	186
	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8
Heating	Absorbed power (3)	kW	1.9	2.5	3.2	4.0	4.9	5.9	7.0
-	COP (3)		3.53	3.52	3.41	3.53	3.57	3.54	3.54
	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8
	Absorbed power (3)	kW	1.9	2.5	3.2	4.0	4.9	5.9	7.0
II+: /FNI14F11\	COP (3)		3.53	3.52	3.41	3.53	3.57	3.54	3.54
Heating (EN14511)	SCOP (4)		3.49	3.34	3.45	3.42	3.56	3.60	3.85
	Energy Efficiency (4)	%	136	131	135	134	139	141	151
	Energy Class (5)		A+	A+	A+	A+	A+	A+	A++
Compressor	Quantity	n°	1	1	1	1	1	1	1
Electrical	Power supply	V/Ph/Hz		230/1/50			400/3	+N/50	
	Max. running current	А	16	16	16	13	13	15	18
characteristics	Max. starting current	А	10	10	10	8	8	9	10
	Water flow	l/s	0.29	0.36	0.44	0.59	0.75	0.91	1.07
Water circuit	Pump available static pressure	kPa	53	56	52	76	82	70	60
	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
Sound pressure (6)		dB(A)	51	52	55	57	58	59	60
Majahta	Transport weight	Kg	101	113	123	195	197	199	201
Weights	Operating weight	Kg	126	138	148	245	247	249	251

DIMENSION	NS		21	31	41	51	61	71	81
L	STD	mm	870	870	870	1160	1160	1160	1160
W	STD	mm	320	320	320	500	500	500	500
Н	STD	mm	1100	1100	1100	1270	1270	1270	1270

#### **CLEARANCE AREA**

CHA/IK/A 21÷41 200 200 800 200 CHA/IK/A 51÷81 200 200 800 200





- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of WP version are specified on technical brochure.

# **CHA/IK/TR/A 18÷35**

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH EC INVERTER AXIAL FANS, INVERTER ROTARY COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.





INVERTER ROTARY

EC INVERTER FANS 

€



The reversible Heat Pumps CHA/IK/TR/A 18÷35, in A CLASS energy efficiency, are designed for small domestic or service sector environments. Equipped with R410A refrigerant, Inverter Rotary compressor with DC BRUSHLESS motor and EC INVERTER axial fans, they are extremely functional and reliable units. The Inverter device controls and continuously modulates the compressor speed, keeping the temperature of the water delivered to the system stable and constant and adapting it perfectly to the thermal load of the places where terminal units it feeds are installed. This obtains high energy efficiencies and SCOP values higher than conventional units, and a reduction of compressor starting peak currents, thus considerably reducing the risk of malfunctioning or breakages. The EC Inverter axial fans vary their speed according to the required thermal load, with consequent benefits in terms of energy efficiency and silent operation.

The units are designed for hot water production up to 55 °C.

The units are compliant to the ErP Regulation.

#### **VERSION**

CHA/IK/TR/A

Reversible Heat Pump

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Rotary compressor, with DC BRUSHLESS motor, complete with overload protection.
- EC INVERTER axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- · Condenser with copper tube and aluminium finned coil, complete with drain pan and protection guards.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20 °C.
- Functioning in heating mode with outside air temperature down to -20 °C.
- · Water circuit includes: circulator with high efficiency DC BRUSHLESS motor, flow switch, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system.
- Communication with Modbus RTU protocol through RS485 serial interface.

#### **ACCESSORIES**

#### **LOOSE ACCESSORIES**

CD Remote control panel with ambient thermostat

CDT Remote control panel with Touch Screen room thermostat

AG Rubber shock absorbers

### CHA/IK/TR/A 18÷35

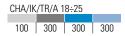




MODEL			18	25	35
	Heating capacity (1)	kW	5.18	6.05	8.16
	Absorbed power (1)	kW	1.56	1.95	2.56
la akina	COP (1)		3.32	3.11	3.19
leating	Heating capacity (2)	kW	6.10	7.36	9.82
	Absorbed power (2)	kW	1.47	1.97	2.52
	COP (2)		4.15	3.74	3.90
	Heating capacity (1)	kW	5.14	5.98	8.03
	Absorbed power (1)	kW	1.48	1.87	2.45
	COP (1)		3.48	3.20	3.28
	Heating capacity (2)	kW	6.05	7.23	9.71
	Absorbed power (2)	kW	1.39	1.85	2.42
(51)	COP (2)		4.35	3.90	4.02
eating (EN14511)	SCOP (3)		4.50	4.34	3.96
	Energy Efficiency (3)	%	177	171	155
	Energy Class (4)		A+++	A++	A++
	SCOP (5)		3.23	3.13	2.93
	Energy Efficiency (5)	%	126	122	114
	Energy Class (6)		A++	A+	A+
	Cooling capacity (7)	kW	4.72	5.46	8.34
	Absorbed power (7)	kW	1.73	2.12	3.05
	EER (7)		2.73	2.58	2.73
ooling	Cooling capacity (8)	kW	4.90	5.96	8.98
	Absorbed power (8)	kW	1.34	1.68	2.40
	EER (8)		3.66	3.55	3.74
	Cooling capacity (7)	kW	4.76	5.58	8.42
	Absorbed power (7)	kW	1.66	2.04	2.92
	EER (7)		2.86	2.74	2.88
(514.554)	Cooling capacity (8)	kW	5.00	6.03	9.10
ooling (EN14511)	Absorbed power (8)	kW	1.26	1.58	2.27
	EER (8)		3.96	3.81	4.01
	SEER (9)		5.59	4.82	5.61
	Energy Efficiency (9)	%	221	190	221
	Power supply	V/Ph/Hz		230/1/50	
lectrical	Max. running current	A	14	19	20
haracteristics	Max. starting current	A	7	10	10
ompressor	Quantity	n°	1	1	1
•	Water flow	l/s	0.29	0.35	0.46
Vater circuit	Pump available static pressure	kPa	67	60	53
	Water connections	"G	1"	1"	1"
ound pressure (10	)	dB(A)	50	55	55
	Transport weight	Kg	78	79	103
Weights	Operating weight	Kg	70	71	94

DIMENSION	NS		18	25	35
L	STD	mm	1050	1050	1160
W	STD	mm	290	290	330
Н	STD	mm	685	685	890

#### **CLEARANCE AREA**









- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
  Seasonal energy efficiency of heating at medium temperature with
- average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at medium temperature with average climatic conditions. According to EU Regulation
- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According
- to EU Regulation n. 2016/2281. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

FROM 6,1 KW TO 9,8 KW.

# CHA/IK/TR/A 18÷35 + DMS220

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH EC INVERTER AXIAL FANS, INVERTER ROTARY COMPRESSOR, PLATE EXCHANGER, HYDRONIC KIT AND DISTRIBUTION MODULE FOR DOMESTIC HOT WATER PRODUCTION.



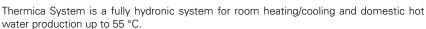












The system consists of a monoblock air/water heat pump with built-in hydronic module and an indoor unit with 220 I tank, hydraulically connected to each other. It is ideal for floor heating, medium and low temperature radiators, fan coil units and domestic hot water production, in new housing or in buildings with low energy demand. The interior distribution module contains all hydraulic and electric components to facilitate installation and maintenance procedures, which thus become very simple.

The Stylish Version, finished in every detail, can be installed on sight and, thanks to its current design, it lends itself to any type of location.

Through the easy-to-use Touch Screen user interface, it is possible to control the operating parameters of the Heat Pump, as well as of the entire system.

The units are compliant to the ErP Regulation.



INVERTER ROTARY

#### **VERSION**

CHA/IK/TR/A 18÷35 + DMS220

Reversible Heat Pump and Distribution Module Stylish Version

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Rotary compressor, with DC BRUSHLESS motor, complete with overload protection.
- EC INVERTER axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- · Condenser with copper tube and aluminium finned coil, complete with drain pan and protection guards.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20 °C.
- Functioning in heating mode with outside air temperature down to -20 °C.
- · Water circuit includes: circulator with high efficiency DC BRUSHLESS motor, flow switch, safety valve, gauge and expansion vessel.
- Distribution module for domestic hot water production complete with 220 I DHW tank, 3 kW supplementary electric heater predisposition, 3-way DHW/system diverter valve, non-return valve, hydraulic separator, medium temperature zone flow rate calibration valve, pressure gauge, expansion vessel, pump and mixing valve for low temperature zone, automatic air vent valve, safety valve and water drain, domestic hot water flow switch, thermostatic domestic hot water mixer.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### LOOSE ACCESSORIES

EHM Supplementary electrical heater for distribution module

AG Rubber shock absorbers

### CHA/IK/TR/A 18÷35 + DMS220

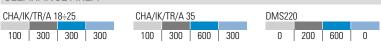




MODEL			18	25	35
	Heating capacity (1)	kW	5.18	6.05	8.16
Room heating	Absorbed power (1)	kW	1.56	1.94	2.56
	COP (1)		3.32	3.12	3.19
	Heating capacity (1)	kW	5.14	5.98	8.03
	Absorbed power (1)	kW	1.48	1.86	2.45
	COP (1)		3.48	3.21	3.28
	Heating capacity (2)	kW	6.05	7.23	9.71
	Absorbed power (2)	kW	1.39	1.85	2.42
Room heating	COP (2)		4.35	3.90	4.02
EN14511)	SCOP (3)		4.5	4.34	3.96
LIVIIOIII	Energy Efficiency (3)	%	177	170.6	155.4
	Energy Class (4)		A+++	A++	A++
	SCOP (5)		3.23	3.13	2.93
	Energy Efficiency (5)	%	126	122	114
	Energy Class (6)		A++	A+	A+
lot water heating	Declared load profile		L	L	L
	Energy Efficiency	%	54	52	52
EN14511)	Energy Class	1	Ä	A	Ā
	Cooling capacity (7)	kW	4.72	5.46	8.34
Room cooling	Absorbed power (7)	kW	1.73	2.12	3.05
.com coomig	EER (7)		2.73	2.58	2.73
	Cooling capacity (7)	kW	4.76	5.58	8.42
	Absorbed power (7)	kW	1.66	2.04	2.92
	EER (7)		2.86	2.74	2.88
Room cooling	Cooling capacity (8)	kW	5	6.03	9.10
EN14511)	Absorbed power (8)	kW	1.26	1.58	2.27
LINITOTII	EER (8)		3.96	3.81	4.01
	SEER (9)		5.59	4.82	5.61
	Energy Efficiency (9)	%	221	190	221
	Power supply	V/Ph/Hz		230/1/50	
	Max. running current	A	14	19	20
	Max. starting current	A	7	10	10
	Water flow	I/s	0.29	0.35	0.46
	Pump nominal power	kW	0.075	0.075	0.075
ndoor unit	Pump available static pressure	kPa	67	60	53
	Water connection	"G	1"	1"	1"
	Sound pressure (10)	dB(A)	50	55	 55
	Transport weight	Kg	78	79	103
	Operation weight	Kg	70	71	94
	DHW tank volume	T i	220	220	220
	Power input	kW	0.14	0.14	0.14
	Pump nominal power	kW	0.075	0.075	0.075
	Power supply	A	230/1/50	230/1/50	230/1/50
	Supplementary electrical heater	kW	3	3	3
	DHW tank water connections	"G	3/4"	3/4"	3/4"
	Heat Pump water connections	"G	1"	1"	1"
utdoor unit	Low temperature system water				
DMS220)	connection	"G	1"	1"	1"
DIVIOZZUJ	Medium temperature system water				
	connection	"G	3/4"	3/4"	3/4"
	Inertial tank water connections	"G	1"	1"	1"
	Thermal solar water connection	"G	3/4"	3/4"	3/4"
	THEITIGI SUIGI WATEL CUITIECTION	dB(A)	28	28	28
	Sound pressure (10) Transport weight	Kg	148	148	148

DIMENSION	IS		18	25	35
1	STD	mm	1050	1050	1160
L	DMS	mm	640	640	640
W	STD	mm	290	290	330
VV	DMS	mm	665	665	665
11	STD	mm	685	685	890
П	DMS	mm	1980	1980	1980

#### **CLEARANCE AREA**









- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation
- Seasonal energy efficiency of heating at medium temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at medium temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Chilled water from 23 to 18 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature.
- According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

FROM 6,1 KW TO 9,8 KW.

# CHA/IK/TR/A 18÷35 + DMN220

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH EC INVERTER AXIAL FANS, INVERTER ROTARY COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.

















Thermica System is a fully hydronic system for room heating/cooling and domestic hot water production up to  $55\,^{\circ}\text{C}$ .

The system consists of a monoblock air/water heat pump with built-in hydronic module and an indoor unit with 220 I tank, hydraulically connected to each other. It is ideal for floor heating, medium and low temperature radiators, fan coil units and domestic hot water production, in new housing or in buildings with low energy demand. The interior distribution module contains all hydraulic and electric components to facilitate installation and maintenance procedures, which thus become very simple.

Through the easy-to-use Touch Screen user interface, it is possible to control the operating parameters of the Heat Pump, as well as of the entire system.

The units are compliant to the ErP Regulation.



INVERTER ROTARY

#### **VERSION**

CHA/IK/TR/A 18÷35 + DMN220

Reversible Heat Pump and Distribution Module All in One Version

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Rotary compressor, with DC BRUSHLESS motor, complete with overload protection.
- EC INVERTER axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- · Condenser with copper tube and aluminium finned coil, complete with drain pan and protection guards.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20 °C.
- Functioning in heating mode with outside air temperature down to -20 °C.
- · Water circuit includes: circulator with high efficiency DC BRUSHLESS motor, flow switch, safety valve, gauge and expansion vessel.
- Distribution module for domestic hot water production complete with 220 I DHW tank, 3 kW supplementary electric heater predisposition, 3-way DHW/system diverter valve, non-return valve, hydraulic separator, medium temperature zone flow rate calibration valve, pressure gauge, expansion vessel, pump and mixing valve for low temperature zone, automatic air vent valve, safety valve and water drain, domestic hot water flow switch, thermostatic domestic hot water mixer.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **LOOSE ACCESSORIES**

EHM Supplementary electrical heater for distribution module

AG Rubber shock absorbers

### CHA/IK/TR/A 18÷35 + DMN220

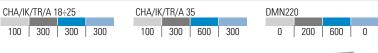




MODEL			18	25	35
	Heating capacity (1)	kW	5.18	6.05	8.16
oom heating	Absorbed power (1)	kW	1.56	1.94	2.56
oom nouting	COP (1)		3.32	3.12	3.19
	Heating capacity (1)	kW	5.14	5.98	8.03
	Absorbed power (1)	kW	1.48	1.86	2.45
	COP (1)		3.48	3.21	3.28
	Heating capacity (2)	kW	6.05	7.23	9.71
	Absorbed power (2)	kW	1.39	1.85	2.42
	COP (2)		4.35	3.9	4.02
oom heating	Pdesign (3)		3.90	5.39	6.40
N14511)	SCOP (3)		4.50	4.34	3.96
14170111	Energy Efficiency (3)	%	177	170.6	155.4
	Energy Class (4)		A+++	A++	A++
	Pdesign (5)		3.80	4.50	5.49
	SCOP (5)		3.23	3.13	2.93
	Energy Efficiency (5)	%	126	122	114
	Energy Class (6)	· · ·	A++	A+	A+
st water beating	Declared load profile		L	Ĺ	L
t water heating	Energy Efficiency	%	54	52	52
N14511)	Energy Class	,,,	A	A	A
	Cooling capacity (7)	kW	4.72	5.46	8.34
om cooling	Absorbed power (7)	kW	1.73	2.12	3.05
Join cooming	EER (7)	NVV	2.73	2.58	2.73
	Cooling capacity (7)	kW	4.76	5.58	8.42
	Absorbed power (7)	kW	1.66	2.04	2.92
	EER (7)	KVV	2.86	2.74	2.88
om cooling	Cooling capacity (8)	kW	5.00	6.03	9.10
N14511)	Absorbed power (8)	kW	1.26	1.58	2.27
N14511)	EER (8)	KVV	3.96	3.81	4.01
	SEER (9)		5.59	4.82	5.61
	Energy Efficiency (9)	%	221	190	221
	Power supply	V/Ph/Hz	221	230/1/50	221
	Max. running current	A A	14	19	20
	Max. starting current	A	7	10	10
	Water flow	I/s	0.29	0.35	0.46
	Pump nominal power	kW	0.23	0.075	0.40
door unit	Pump available static pressure	kPa	67	60	53
	Water connection	"G	1"	1"	
	Sound pressure (10)	dB(A)	50	55	
	Transport weight	Kg	78	79	103
	Operation weight	Kg	70	73	94
	DHW tank volume	l Ny	220	220	220
	Power input	kW	0.14	0.14	0.14
	Pump nominal power	kW	0.075	0.075	0.075
	Power supply	A	230/1/50	230/1/50	230/1/50
	Supplementary electrical heater	kW	3	3	3
	DHW tank water connections	"G	3/4"	3/4"	3/4"
	Heat Pump water connections	"G	1"	1"	1"
tdoor unit	Low temperature system water		·	·	· · · · · · · · · · · · · · · · · · ·
		"G	1"	1"	1"
MN220)	Connection				
	Medium temperature system water	"G	3/4"	3/4"	3/4"
	connection	· ·	·	· · · · · · · · · · · · · · · · · · ·	
	Inertial tank water connections	"G	1"	1"	1"
	Thermal solar water connection	"G	3/4"	3/4"	3/4"
	Sound pressure (10)	dB(A)	28	28	28
	Transport weight	Kg	99	99	99
	Operating weight	Kg	321	321	321

DIMENSION	NS		18	25	35
1	STD	mm	1050	1050	1160
L	DMN	mm	620	620	620
W	STD	mm	290	290	330
VV	DMN	mm	640	640	640
11	STD	mm	685	685	890
П	DMN	mm	1995	1995	1995

#### **CLEARANCE AREA**









- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation
- Seasonal energy efficiency of heating at medium temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at medium temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Chilled water from 23 to 18 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature.
- According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

### CHA/IK/TR/A 18÷35 + DMH

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH EC INVERTER AXIAL FANS, INVERTER ROTARY COMPRESSOR, PLATE EXCHANGER, HYDRONIC KIT AND DISTRIBUTION MODULE FOR HYBRID SYSTEMS.





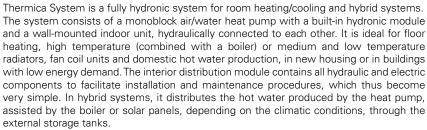












The DMH distribution module has been designed with a deep attention to space requirements and it can be easily insertable in the most varied living contexts.

Through the easy-to-use Touch Screen user interface, it is possible to control the operating parameters of the Heat Pump, as well as of the entire system.

The units are compliant to the ErP Regulation.



INVERTER ROTARY®

EC INVERTER FANS &

#### **VERSION**

CHA/IK/TR/A 18÷35 + DMH

Reversible Heat Pump and Distribution Module Hybrid Version

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Rotary compressor, with DC BRUSHLESS motor, complete with overload protection.
- EC INVERTER axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- · Condenser with copper tube and aluminium finned coil, complete with drain pan and protection guards.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20 °C.
- Functioning in heating mode with outside air temperature down to -20 °C.
- · Water circuit includes: circulator with high efficiency DC BRUSHLESS motor, flow switch, safety valve, gauge and expansion vessel.
- Distribution module for hybrid systems complete with 3-way DHW/system diverter valve, diverter valve for integration boiler, pressure gauge, manual air vent valve.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **LOOSE ACCESSORIES**

CD Remote control panel with ambient thermostat

AG Rubber shock absorbers

### CHA/IK/TR/A 18÷35 + DMH





MODEL			18	25	35
	Heating capacity (1)	kW	5.18	6.05	8.16
Room heating	Absorbed power (1)	kW	1.56	1.94	2.56
J	COP (1)		3.32	3.12	3.19
	Heating capacity (1)	kW	5.14	5.98	8.03
	Absorbed power (1)	kW	1.48	1.86	2.45
	COP (1)		3.48	3.21	3.28
	Heating capacity (2)	kW	6.05	7.23	9.71
	Absorbed power (2)	kW	1.39	1.85	2.42
	COP (2)		4.35	3.90	4.02
Room heating	Pdesign (3)		3.90	5.39	6.4
(EN14511)	SCOP (3)		4.50	4.34	3.96
,,	Energy Efficiency (3)	%	177	170.6	155.4
	Energy Class (4)		A+++	A++	A++
	Pdesign (5)		3.80	4.50	5.49
	SCOP (5)		3.23	3.13	2.93
	Energy Efficiency (5)	%	126	122	114
	Energy Class (6)		A++	A+	A+
	Cooling capacity (7)	kW	4.72	5.46	8.34
Room cooling	Absorbed power (7)	kW	1.73	2.12	3.05
J J	EER (7)		2.73	2.58	2.73
	Cooling capacity (7)	kW	4.76	5.58	8.42
	Absorbed power (7)	kW	1.66	2.04	2.92
	EER (7)		2.86	2.74	2.88
Room cooling	Cooling capacity (8)	kW	5.00	6.03	9.10
(EN14511)	Absorbed power (8)	kW	1.26	1.58	2.27
,	EER (8)		3.96	3.81	4.01
	SEER (9)		5.59	4.82	5.61
	Energy Efficiency (9)	%	221	190	221
	Power supply	V/Ph/Hz		230/1/50	
	Max. running current	A	14	19	20
	Max. starting current	A	7	10	10
	Water flow	I/s	0.29	0.35	0.46
Indoor unit	Pump nominal power	kW	0.075	0.075	0.075
muuu uilli	Pump available static pressure	kPa	67	60	53
	Water connection	"G	1"	1"	1"
	Sound pressure (10)	dB(A)	50	55	55
	Transport weight	Kg	78	79	103
	Operation weight	Kg	70	71	94
	Power input	kW	0.03	0.03	0.03
	Power supply	A	230/1/50	230/1/50	230/1/50
	DHW tank water connections	"G	1"	1"	1"
Outdoor unit	Heat Pump water connections	"G	1"	1"	1"
(DMH)	Inertial tank water connections	"G	1"	1"	1"
	Boiler water connections	"G	1"	1"	1"
	Transport weight	Kg	40	40	40
	Operation weight	Kg	42	42	42

<b>DIMENSION</b>	IS		18	25	35
L	STD	mm	1050	1050	1160
	DMH	mm	450	450	450
W	STD	mm	290	290	330
VV	DMH	mm	250	250	250
Н	STD	mm	685	685	890
	DMH	mm	1000	1000	1000

#### **CLEARANCE AREA**



#### NOTE

- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- n. 813/2013.

  Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

  Seasonal energy efficiency of heating at medium temperature with average climatic conditions. According to EU Regulation
- n. 813/2013. Seasonal energy efficiency class of heating at medium temperature
- with average climatic conditions. According to EU Regulation n. 811/2013.

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.







### CHA/ML/ST 41÷71

A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.

















MIDYLINE is the line of Heat Pumps dedicated to **hot water production up to 60 °C** and operations up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic kit. The unit, featuring A CLASS energy efficiency, is designed to singly handle winter heating, summer air conditioning and the production of high temperature hot water, making use of the electrical energy and heat accumulated in the clean air source, free and infinite, which can also transfer heat to homes. Flexibility is the main feature of the MIDYLINE series, which is also combined with heating units and managed by the innovative, intelligent AQUALOGIK control system, optimizing the water setpoint and regulating power supply voltage to the pump and fans, making use of an inertial tank unnecessary. This results in performance with elevated energy efficiency, silent functioning, optimized dimensions and costs. MIDYLINE is also able to operate in extreme conditions where the external air temperature is very low, as well as intelligently managing integrated elements such as furnaces and electrical heaters. Based on the external air sensor, the microprocessor activates the single integration elements in the system.

The units are compliant to the ErP Regulation.

#### **VERSION**

CHA/ML/ST

CHA/ML/WP/ST

Heat Pump with AQUALOGIK technology

Reversible Heat Pump with AQUALOGIK technology

#### **FEATURES**

- Structure with supporting frame, in peraluman, galvanized sheet and with rubber shock absorbers on the frame.
- Scroll compressor with internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tube and aluminium finned coil, complete with drain pan.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with water differential pressure switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door lock device, fuses and compressor remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: variable speed circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

EH Supplementary electrical heater KC Gas burner integration Kit TX Coil with pre-coated fins

#### **LOOSE ACCESSORIES**

HW Storage tank for domestic hot water production

CR Remote control panel

IS Modbus RTU protocol, RS485

serial interface

RP Coil protection metallic guards

### CHA/ML/ST 41÷71





MODEL			41*	51*	41**	51**	71
	Heating capacity (1)	kW	11.5	16.0	11.5	16.0	22.5
Heating	Absorbed power (1)	kW	3.2	4.6	3.2	4.6	6.5
	COP (1)		3.59	3.48	3.59	3.48	3.46
Teating	Heating capacity (2)	kW	11.3	15.8	11.3	15.8	22.4
	Absorbed power (2)	kW	2.7	3.8	2.7	3.8	5.4
	COP (2)		4.19	4.16	4.19	4.16	4.15
	Heating capacity (1)	kW	11.9	16.4	11.9	16.4	23.0
	Absorbed power (1)	kW	3.2	4.6	3.2	4.6	6.5
Heating (EN14511)	COP (1)		3.72	3.57	3.72	3.57	3.54
realing (EN 14511)	SCOP (3)		4.71	4.95	4.71	4.95	5.12
	Energy Efficiency (3)	%	185	195	185	195	202
	Energy Class (4)		A++	A++	A++	A++	A+
	Cooling capacity (5)	kW	7.3	10.5	7.3	10.5	16.0
	Absorbed power (5)	kW	2.5	3.6	2.5	3.6	5.2
Cooling	EER (5)		2.92	2.92	2.92	2.92	3.08
Journal	Cooling capacity (6)	kW	10.8	15.5	10.8	15.5	21.2
	Absorbed power (6)	kW	2.7	4.0	2.7	4.0	6.1
	EER (6)		4.00	3.88	4.00	3.88	3.48
	Cooling capacity (5)	kW	7.0	10.2	7.0	10.2	15.6
Cooling (EN14511)	Absorbed power (5)	kW	2.8	3.9	2.8	3.9	5.6
	EER (5)		2.50	2.62	2.50	2.62	2.79
Compressor	Quantity	n°	1	1	1	1	1
	Power supply	V/Ph/Hz 230/1/50					
Supplementary	Heating capacity	kW	4/6	4/6	4/6	4/6	4/6
electrical heater	Absorbed current	A	18/26	18/26	18/26	18/26	18/26
	Steps	n°	2	2	2	2	2
Electrical	Power supply	V/Ph/Hz	230,	/1/50		400/3+N/50	
characteristics	Max. running current	A	26	35	13	15	19
Haracteristics	Max. starting current	A	102	165	45	69	106
	Water flow	l/s	0.54	0.75	0.54	0.75	1.07
Vater circuit	Pump available static pressure	kPa	231	185	231	185	156
	Water connections	"G	1"	1"	1"	1"	1"
Sound pressure (7)		dB(A)	52	52	52	52	52
Maiabta	Transport weight	Kg	205	208	205	208	210
Weights	Operating weight	Kg	209	212	209	212	214

DIMENSION	NS .		41*	51*	41**	51**	71
L	STD	mm	1160	1160	1160	1160	1160
W	STD	mm	500	500	500	500	500
Н	STD	mm	1270	1270	1270	1270	1270

#### **CLEARANCE AREA**

CHA/ML/ST 41\*÷71

200 200 800 200



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
   Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   N.B. Weights of WP version are specified on technical brochure.
- \* = Single phase \*\* = Three phase





# CHA/ML/ST 91÷151

A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.





















MIDYLINE, featuring A CLASS energy efficiency, is the innovative series of Heat Pumps dedicated to hot water production up to 60 °C and operation up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic unit. The unit, designed to originate and control - throughout the year - the best comfort conditions in rooms with a high rate of daily attendance, such as enclosed areas destined to the activities of the service sector, autonomously handles winter heating, summer air conditioning and the production of high temperature sanitary hot water. The MIDYLINE series, designed with an extremely compact structure for simple installation operations, uses only the electric energy and the heat accumulated in the air, to transfer heat to the rooms, thus allowing considerable energy savings, a high rate of reliability and the shortest start-up times. Flexibility is the main feature of the MIDYLINE series, which is indeed combined with Fan Coil units and managed by the innovative, intelligent AQUALOGIK control and optimization system, which makes the use of an inertial tank unnecessary and guarantees performances with elevated energy efficiency and silent functioning.

The units are compliant to the ErP Regulation.

#### **VERSION**

CHA/ML/WP/ST CHA/ML/ST

Heat Pump with AQUALOGIK technology

Reversible Heat Pump with AQUALOGIK technology

#### **FEATURES**

- Structure with supporting frame, in peraluman and galvanized sheet.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with water differential pressure switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door lock device, fuses and compressor remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: variable speed circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

FΗ Supplementary electrical heater KC Gas burner integration Kit TX Coil with pre-coated fins

#### **LOOSE ACCESSORIES**

HWStorage tank for domestic hot water production CR Remote control panel

Modbus RTU protocol, RS485 IS

serial interface

RP Coil protection metallic guards AG Rubber shock absorbers



### CHA/ML/ST 91÷151





MODEL			91	101	151
	Heating capacity (1)	kW	30.7	40.2	52.6
Heating	Absorbed power (1)	kW	8.0	10.9	13.6
	COP (1)		3.84	3.69	3.87
	Heating capacity (2)	kW	29.8	40.0	50.2
	Absorbed power (2)	kW	6.7	9.2	11.4
	COP (2)		4.45	4.35	4.40
	Heating capacity (1)	kW	31.4	41.1	53.5
	Absorbed power (1)	kW	8.0	10.9	13.6
looting /FNI14E11\	COP (1)		3.93	3.77	3.93
Heating (EN14511)	SCOP (3)		4.42	4.32	4.27
	Energy Efficiency (3)	%	174	170	168
	Energy Class (4)		A++	A++	A++
	Cooling capacity (5)	kW	20.4	28.9	37.3
	Absorbed power (5)	kW	6.6	9.3	11.7
Cooling	EER (5)		3.09	3.11	3.19
Journa	Cooling capacity (6)	kW	27.6	39.3	47.8
	Absorbed power (6)	kW	7.7	10.7	12.8
	EER (6)		3.58	3.67	3.73
	Cooling capacity (5)	kW	19.8	28.2	36.5
Cooling (EN14511)	Absorbed power (5)	kW	7.2	10.0	12.5
	EER (5)		2.75	2.82	2.92
Compressor	Quantity	n°	1	1	1
	Power supply	V/Ph/Hz		400/3/50	
Supplementary	Heating capacity	kW	6/10	6/10	6/10
electrical heater	Absorbed current	A	26/43	26/43	26/43
	Steps	n°	2	2	2
lectrical	Power supply	V/Ph/Hz		400/3+N/50	
characteristics	Max. running current	A	28	36	42
maracteristics	Max. starting current	A	109	139	179
	Water flow	I/s	1.47	1.92	2.51
Water circuit	Pump available static pressure	kPa	230	227	195
	Water connections	"G	2"	2"	2"
Sound pressure (7)		dB(A)	61	62	64
Λ/=:-l-+-	Transport weight	Kg	220	235	265
Weights	Operating weight	Kg	224	239	269

DIMENSIONS			91	101	151
L	STD	mm	1850	1850	1850
W	STD	mm	1000	1000	1000
Н	STD	mm	1300	1300	1300

#### **CLEARANCE AREA**

CHA/ML/ST 91÷151

500 800 800 800



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013. Seasonal energy efficiency class of heating at low temperature with
- average climatic conditions. According to EU Regulation n. 811/2013.

- 1.8 11/2013.
  5. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  6. Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  7. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
  N.B. Weights of WP version are specified on technical brochure.

# CHA/ML/ST 182-P+302-P

A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSORS, PLATE EXCHANGER AND HYDRONIC KIT.























MIDYLINE, featuring A CLASS energy efficiency, is the innovative series of Heat Pumps dedicated to hot water production up to 60 °C and operation up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic unit. The unit, designed to originate and control - throughout the year - the best comfort conditions in rooms with a high rate of daily attendance, such as enclosed areas destined to the activities of the service sector, autonomously handles winter heating, summer air conditioning and the production of high temperature sanitary hot water. The MIDYLINE series, designed with an extremely compact structure for simple installation operations, uses only the electric energy and the heat accumulated in the air, to transfer heat to the rooms, thus allowing considerable energy savings, a high rate of reliability and the shortest start-up times. Flexibility is the main feature of the MIDYLINE series, which is indeed combined with Fan Coil units and managed by the innovative, intelligent AQUALOGIK control and optimization system, which makes the use of an inertial tank unnecessary and guarantees performances with elevated energy efficiency and silent functioning.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The units are compliant to the ErP Regulation.

VERSION	
CHA/ML/ST	CHA/ML/WP/ST
Heat Pump with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/ML/SSL/ST	CHA/ML/WP/SSL/ST
Super silenced Heat Pump with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with flow switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and pump and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM Automatic circuit breakers SL Unit silencement

**RFM** Cooling circuit shut-off valve on

discharge line

RFI Cooling circuit shut-off valve on

liquid line

EC EC Inverter fans **ECH** EC Inverter fans with high available static pressure

DS Desuperheater

IS

KC Gas burner integration Kit

SS Soft start ΤX Coil with pre-coated fins

> Modbus RTU protocol, RS485 serial interface

#### LOOSE ACCESSORIES

AΜ

Storage tank for domestic hot HW water production

MNHigh and low pressure gauges

CR Remote control panel RP Coil protection metallic guards AG Rubber shock absorbers

Spring shock absorbers



### CHA/ML/ST 182-P÷302-P





MODEL			182-P	202-P	262-P	302-P	
	Heating capacity (1)	kW	57.2	78.3	92.7	114	
Heating	Absorbed power (1)	kW	16.3	20.8	25.7	33.7	
	COP (1)		3.51	3.76	3.61	3.38	
	Heating capacity (2)	kW	55.7	74.4	91.1	112	
	Absorbed power (2)	kW	13.7	17.4	21.5	27.1	
	COP (2)		4.07	4.28	4.24	4.13	
	Heating capacity (1)	kW	58.0	79.2	93.6	116	
	Absorbed power (1)	kW	16.3	20.8	25.7	33.7	
+:/FN 14F11\	COP (1)		3.56	3.81	3.64	3.43	
Heating (EN14511)	SCOP (3)		4.92	5.52	5.11	4.80	
	Energy Efficiency (3)	%	194	218	201	189	
	Energy Class (4)		A++	A++	A++	A++	
	Cooling capacity (5)	kW	44.3	60.4	78.6	101	
	Absorbed power (5)	kW	16.4	23.6	34.8	39.1	
o 1:	EER (5)		2.70	2.56	2.26	2.58	
Cooling	Cooling capacity (6)	kW	60.3	81.8	101	130	
	Absorbed power (6)	kW	18.7	27.5	37.6	42.2	
	EER (6)		3.22	2.97	2.69	3.08	
	Cooling capacity (5)	kW	43.6	59.6	77.7	99.7	
Cooling (EN14511)	Absorbed power (5)	kW	17.1	24.4	35.7	40.4	
J. ,	EER (5)		2.55	2.44	2.18	2.47	
	Quantity	n°	2	2	2	2	
Compressor	Refrigerant circuits	n°	2	2	2	2	
	Capacity steps	n°		2			
Electrical	Power supply	V/Ph/Hz	400/3/50				
	Max. running current	A	44	56	68	84	
characteristics	Max. starting current	А	125	159	205	246	
	Water flow	l/s	2.73	3.74	4.43	5.46	
Water circuit	Pump available static pressure	kPa	165	145	130	110	
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	
ECH fan available	ST versions	Pa	90	80	100	100	
static pressure	SSL/ST versions	Pa	90	90	80	85	
·	STD version (7)	dB(A)	60	61	62	64	
Sound pressure	With SL accessory (7)	dB(A)	58	59	60	62	
oodiia piossaie	SSL version (7)	dB(A)	56	57	58	60	
Maiabta	Transport weight	Kg	746	837	856	913	
Weights	Operating weight	Kg	755	855	875	935	

DIMENSION	IS		182-P	202-P	262-P	302-P
1	STD	mm	2350	2350	2350	2350
L	SSL	mm	2350	2350	2350	3550
W	STD/SSL	mm	1100	1100	1100	1100
11	STD	mm	1920	2220	2220	2220
П	SSL	mm	2220	2220	2220	2220

### **CLEARANCE AREA**

CHA/ML/ST 182-P÷302-P

300 800 800 1800



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013. Seasonal energy efficiency class of heating at low temperature with
- average climatic conditions. According to EU Regulation n. 811/2013.

- n. 811/2013.
  Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
  Weights of SSL and WP versions are specified on technical brochure.



AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

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# CHA/IK/A 91÷151

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSOR AND PLATE EXCHANGER.

























The liquid Chillers and Heat Pumps of the CHA/IK/A 91÷151 series, with R410A refrigerant, are designed to satisfy the needs of small and medium domestic and service sector environments. With a peraluman structure corrosion-resistant over time, these units can be combined with terminal units or with intermediate heat exchangers for process cooling applications. All Fan Coil feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/SCOP). The Microchannel condensing coil, available on the dedicated version, ensures an even higher efficiency (high EER), having a better heat exchange than traditional coils.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

The Heat Pump version is designed for hot water production up to 55 °C.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/IG/A 91÷151) or R454B (CHA/IL/A 91÷151) refrigerant.

#### **VERSION**

CHA/IK/A	CHA/IK/A/MC	CHA/IK/A/WP
Cooling only	Cooling only with MICROCHANNEL condensing coil	Reversible Heat Pump

#### **FEATURES**

- Structure with supporting frame, in peraluman and galvanized sheet.
- DC INVERTER Scroll compressor with oil sight glass, internal overheat protection and crankcase heater.
- · Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant. On request R452B or R454B refrigerant.
- · Electrical board includes: main switch with door lock device, fuses and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

ВТ Low water temperature kit TX Coil with pre-coated fins **TXB** Coil with epoxy treatment PS Single circulating pump FE Antifreeze heater for evaporator

#### **LOOSE ACCESSORIES**

CR Remote control panel IS Modbus RTU protocol, RS485

serial interface

RP Coils protection metallic guards AG Rubber shock absorbers

### CHA/IK/A 91÷151







MODEL			91	101	131	151
Cooling CTD	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
Cooling STD versions	Absorbed power (1)	kW	8.0	9.5	11.3	13.4
	EER (1)		3.23	3.21	3.18	3.16
	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
Cooling STD	Absorbed power (1)	kW	8.1	9.7	11.5	13.6
ersions	EER (1)		3.16	3.12	3.10	3.10
EN14511)	SEER (2)		4.42	4.16	4.21	4.22
	Energy Efficiency (2)	%	174	163	165	166
Cooling MC	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
ersions	Absorbed power (1)	kW	7.9	9.4	11.2	13.3
ersions	EER (1)		3.27	3.24	3.21	3.18
	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
ooling MC	Absorbed power (1)	kW	8.0	9.6	11.4	13.5
ersions	EER (1)		3.20	3.16	3.13	3.12
EN14511)	SEER (2)		4.48	4.21	4.26	4.27
,	Energy Efficiency (2)	%	176	165	167	168
Heating STD	Heating capacity (3)	kW	28.7	34.3	40.4	48.0
ersions	Absorbed power (3)	kW	8.1	9.9	11.8	14.0
61210112	COP (3)		3.54	3.46	3.42	3.43
	Heating capacity (3)	kW	28.9	34.5	40.7	48.3
leating STD	Absorbed power (3)	kW	8.3	10.1	12.0	14.3
ersions	COP (3)		3.48	3.42	3.39	3.38
	SCOP (4)		3.34	3.23	3.33	3.41
EN14511)	Energy Efficiency (4)	%	131	126	130	133
	Energy Class (5)		A+	A+	A+	A+
Compressor	Quantity	n°	1	1	1	1
	Water flow	I/s	1.23	1.46	1.72	2.02
vaporator	Pressure drops	kPa	20	29	31	31
	Water connections	"G	1 ¼"	1 ¼"	1 ¼"	1 1/4"
lectrical	Power supply	V/Ph/Hz			+N/50	
haracteristics	Max. running current	A	21	24	27	34
naractenstics	Max. starting current	A	11	14	15	18
Init with pump	Pump available static pressure	kPa	140	115	150	105
mit with pullp	Water connections	"G	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Sound pressure	STD versions (6)	dB(A)	60	61	62	62
ounu pressule	MC versions (6)	dB(A)	59	60	61	61
Majahta	Transport weight	Kg	224	239	269	283
Weights	Operating weight	Kg	229	244	275	289

DIMENSION	NS		91	101	131	151
L	STD/MC	mm	1850	1850	1850	1850
W	STD/MC	mm	1000	1000	1000	1000
Н	STD/MC	mm	1300	1300	1300	1300

#### **CLEARANCE AREA**

CHA/IK/A 91÷151

500 800 800 800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Data of MC version are specified on technical brochure.

  N.B. Weights of WP version are specified on technical brochure.



# CHA/K/FC 91÷151

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSOR AND PLATE EXCHANGER.





The liquid Chillers of the CHA/K/FC 91÷151 series, with R410A refrigerant, offer innovative technology to meet the needs of systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round.

During the cold months, in the **FREE-COOLING** operation mode, the return liquid of the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Scroll compressors. A 3-way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.

The units are compliant to the ErP 2021 Regulation for process cooling application.



#### **VERSION**

CHA/K/FC	CHA/K/FC/SP
Cooling only	Cooling only with tank and pump

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tubes and aluminium finned coil combined with FREE-COOLING coil.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch.
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- · Water circuit for SP version includes: insulated tank, circulating pump, safety valve, gauge and expansion vessel.
- · Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

BT Low water temperature kit TX Coil with pre-coated fins PS Single circulating pump

#### LOOSE ACCESSORIES

CR Remote control panel
IS Modbus RTU protocol, RS485

serial interface

RP Coils protection metallic guards AG Rubber shock absorbers



### CHA/K/FC 91÷151



MODEL			91	101	131	151			
	Cooling capacity (1)	kW	27.9	31.4	37.3	42.8			
Cooling	Absorbed power (1)	kW	9.5	11.0	13.9	15.6			
	EER (1)		2.94	2.85	2.68	2.74			
	Cooling capacity (1)	kW	27.5	30.9	36.7	42.1			
Cooling (EN14511)	Absorbed power (1)	kW	9.9	11.5	14.5	16.3			
6001111g (EIN 14511)	EER (1)		2.78	2.69	2.53	2.58			
	SEPR (2)		5.61	5.62	5.21	5.22			
Fran Caaling avala	Air temperature (3)	°C	-1.7	-2.7	0.5	-1.2			
Free-Cooling cycle	Absorbed power (3)	kW	0.98	0.98	1.96	1.96			
Compressor	essor Quantity		1	1	1	1			
·	Water flow	I/s	1.55	1.74	2.07	2.37			
Water circuit	Pressure drops	kPa	117	142	132	141			
	Water connections	"G	1"	1"	1"	1"			
Electrical	Power supply	V/Ph/Hz	400/3+N/50						
	Max. running current	A	20	22	29	32			
characteristics	Max. starting current	А	kW         9.5         11.0         13.9           2.94         2.85         2.68           kW         27.5         30.9         36.7           kW         9.9         11.5         14.5           2.78         2.69         2.53           5.61         5.62         5.21           °C         -1.7         -2.7         0.5           kW         0.98         0.98         1.96           n°         1         1         1           I/s         1.55         1.74         2.07           kPa         117         142         132           "G         1"         1"         1"           I/Ph/Hz         400/3+N/50         400/3+N/50	162	201				
	Water flow	l/s	1.55	1.74	2.07	2.37			
Jnit SP version	Pump available static pressure	kPa	109	152	150	129			
JIIII OF VEISIOII	Tank water volume	I	100	100	100	100			
	Water connections	"G	1"	1"	1"	1"			
Sound pressure	STD/SP version (4)	dB(A)	60	61	61	61			
N/=:= -+=	Transport weight (5)	Kg	415	430	470	485			
Weights	Operating weight (5)		437	452	499	515			

DIMENSIONS			91	101	131	151
L	STD/SP	mm	1850	1850	1850	1850
W	STD/SP	mm	900	900	900	900
Н	STD/SP	mm	1840	1840	1840	1840

#### **CLEARANCE AREA**

CHA/K/FC 91÷151

7117 (710) 10 01 . 101											
500	800	800	800								



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.









### CHA/IK/A 172-P+574-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSORS AND PLATE EXCHANGER.



















The A CLASS energy efficiency liquid Chillers and Heat Pumps of CHA/IK/A 172-P÷574-P series, with R410A refrigerant, are designed to satisfy the needs of medium-sized service sector or industrial ambients.

They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.

They are equipped with axial fans, Inverter Scroll compressors and plate exchanger, even in the super silent version. All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/ SCOP). The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. Furthermore, Inverter control is also available on circulating pump and fans (EC Inverter) for a further efficiency improvement. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The Heat Pump versions are designed for hot water production up to 55 °C.

The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/IG/A 172-P÷574-P) or R454B (CHA/ IL/A 172-P+574-P) refrigerant.

VENSION		
CHA/IK/A	CHA/IK/A/MC	CHA/IK/A/WP
Cooling only	Cooling only with MICROCHANNEL condensing coil	Reversible Heat Pump
CHA/IK/A/SSL	CHA/IK/A/MC/SSL	CHA/IK/A/WP/SSL
Super silenced cooling only	Super silenced cooling only with	Super silenced reversible Heat Pump

### **FEATURES**

VEDCION

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.

MICROCHANNEL condensing coil

- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coil or aluminium MICROCHANNEL coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 172-P÷372-P models; with two independent circuits on the refrigerant side and one on the water side in 484-P÷574-P models, complete with water differential pressure switch. On the Heat Pump units is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

FAC1	TORY FITTED ACCESSORIES				
IM	Automatic circuit breakers	DS	Desuperheater	ISB	BACnet MSTP protocol, RS485
SL	Unit silencement	RT	Total heat recovery		serial interface
RFM	Cooling circuit shut-off valve on	TX	Coil with pre-coated fins	ISBT	BACnet TCP/IP protocol, Ethernet
	discharge line	TXB	Coil with epoxy treatment		port
RFL	Cooling circuit shut-off valve on	PS	Single circulating pump	ISL	LonWorks protocol, FTT-10 serial
	liquid line	PSI	Inverter single circulating pump		interface
BT	Low water temperature kit	PD	Double circulating pump	ISS	SNMP protocol, Ethernet port
EC	EC Inverter fans	PDI	Inverter double circulating pump		
ECH	EC Inverter fans with high available	FE	Antifreeze heater for evaporator	LOOSE	ACCESSORIES
	static pressure	IS	Modbus RTU protocol, RS485	MN	High and low pressure gauges

serial interface

Modbus TCP/IP protocol, Ethernet

IST



Remote control panel

AM Spring shock absorbers

CR

### CHA/IK/A 172-P÷574-P







MODEL			172-P	192-P	212-P	232-P	272-P	302-P	352-P	372-P	484-P	574-P
CII CTD	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
Cooling STD	Absorbed power (1)	kW	15.6	18.1	20.4	23.6	27.0	30.3	35.0	40.5	47.2	55.6
versions	EER (1)		3.20	3.19	3.22	3.17	3.18	3.22	3.20	3.21	3.22	3.22
	Cooling capacity (1)	kW	49.6	57.4	65.4	74.4	85.4	97.2	112	129	151	178
Cooling STD	Absorbed power (1)	kW	15.9	18.4	20.7	24.0	27.5	30.8	35.6	41.1	47.8	56.2
versions	EER (1)		3.12	3.12	3.16	3.10	3.11	3.16	3.15	3.14	3.16	3.17
(EN14511)	SEER (2)		4.41	4.55	4.41	4.39	4.42	4.43	4.49	4.39	4.40	4.34
,	Energy Efficiency (2)	%	173	179	173	173	174	174	177	173	173	171
Cooling MC	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
U	Absorbed power (1)	kW	15.4	17.9	20.2	23.4	26.7	30.0	34.7	40.1	46.7	55.0
versions	EER (1)		3.24	3.22	3.25	3.20	3.22	3.26	3.23	3.24	3.25	3.25
	Cooling capacity (1)	kW	49.6	57.4	65.4	74.4	85.4	97.2	112	129	151	178
Cooling MC	Absorbed power (1)	kW	15.7	18.2	20.5	23.8	27.2	30.5	35.2	40.7	47.3	55.6
versions	EER (1)		3.16	3.15	3.19	3.13	3.14	3.19	3.18	3.17	3.19	3.20
(EN14511)	SEER (2)		4.45	4.60	4.45	4.43	4.46	4.47	4.53	4.43	4.44	4.38
	Energy Efficiency (2)	%	175	181	175	174	175	176	178	174	175	172
Heating STD	Heating capacity (3)	kW	53.7	62.2	71.0	80.7	92.6	105	121	140	164	193
versions	Absorbed power (3)	kW	16.2	18.7	21.2	24.5	28.0	31.4	36.4	41.8	49.0	57.7
versions	COP (3)		3.31	3.33	3.35	3.29	3.31	3.34	3.32	3.35	3.35	3.34
	Heating capacity (3)	kW	54.1	62.6	71.4	81.2	93.2	106	122	141	165	194
Heating STD	Absorbed power (3)	kW	16.6	19.2	21.6	25.1	28.8	32.2	37.2	43.0	50.0	58.8
versions	COP (3)		3.26	3.26	3.31	3.24	3.24	3.30	3.28	3.27	3.30	3.30
(EN14511)	SCOP (4)		3.47	3.43	3.42	3.58	3.60	3.46	3.52	3.49	3.44	3.43
(EN14311)	Energy Efficiency (4)	%	136	134	134	140	141	135	138	137	135	134
	Energy Class (5)		A+	A+	A+	A+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	2	2	2	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°						oless				
	Water flow	l/s	2.38	2.76	3.14	3.57	4.10	4.67	5.35	6.21	7.26	8.55
Evaporator	Pressure drops	kPa	41	40	32	39	47	40	35	44	33	30
	Water connections	"G	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical	Power supply	V/Ph/Hz						3/50				
characteristics	Max. running current	Α	45	45	54	54	63	69	89	89	112	129
	Max. starting current	А	128	128	176	176	187	237	230	230	245	297
Unit with pump	Pump available static pressure	kPa	140	135	140	125	130	180	175	160	160	145
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
E011.6 11.1.1	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
ECH fan available	SSL versions	Pa	70	60	95	90	80	80	80	80		
static pressure	MC versions	Pa	60	65	95	80	80	75	75	75	75	75
	MC/SSL versions	Pa	60	65	95	80	80	75	75	75		
	STD versions (6)	dB(A)	63	65	66	66	67	68	68	69	68	68
	STD versions with SL accessory (6)	dB(A)	61	62	64	64	65	66	66	67	66	66
Sound pressure	SSL versions (6)	dB(A)	58	60	61	61	62	62	62	63		
	MC versions (6)	dB(A)	62	64	65	65	66	67	67	68	67	67
	MC versions with SL accessory (6)	dB(A)	60	61	63	63	64	65	65	66	65	65
	MC/SSL versions (6)	dB(A)	57	59	60	60	61	61	61	62		
Weights	Transport weight	Kg	614	688	747	756	765	857	1086	1095	1449	1494
3	Operating weight	Kg	620	695	755	765	775	870	1100	1110	1470	1520

DIMENSIONS		172-P	192-P	212-P	232-P	272-P	302-P	352-P	372-P	484-P	574-P	
	STD-MC	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
L	SSL-MC/SSL	mm	2350	2350	2350	3550	3550	3550	4700	4700		
W	STD-SSL-MC-MC/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
11	STD-MC	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
П	SSL-MC/SSL	mm	1920	2220	2220	1920	1920	2220	2220	2220		

#### **CLEARANCE AREA**

CHA/IK/A 172-P÷574-P

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744. Weights of SSL and WP versions are specified on technical
- brochure.

  N.B. Data of MC versions are specified on technical brochure.





### CHA/K/AF 182-P+604-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



















The liquid Chillers and Heat Pumps of the CHA/K/AF 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients and feature A CLASS energy efficiency.

They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.

Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.

The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The Heat Pump versions are designed for hot water production up to 55 °C.

The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G/AF 182-P+604-P) or R454B (CHA/L/ AF 182-P+604-P) refrigerant.

CHA/K/AF/WP	CHA/K/AF/SSL
Reversible Heat Pump	Super silenced cooling only
CHA/K/AF/ST	CHA/K/AF/WP/ST
Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/AF/WP/SSL/ST	
Super silenced reversible Heat Pump with AQUALOGIK technology	
	Reversible Heat Pump  CHA/K/AF/ST  Cooling only with AQUALOGIK technology  CHA/K/AF/WP/SSL/ST  Super silenced reversible Heat Pump with

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- · Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

#### **ACCESSORIES**

FACTO	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	BT	Low water temperature kit	FA	Antifreeze heater for tank
SL	Unit silencement	EC	EC Inverter fans	SS	Soft start
RFM	Cooling circuit shut-off valve on discharge line	ECH	EC Inverter fans with high available static pressure	IS	Modbus RTU protocol, RS485 serial interface
RFL	Cooling circuit shut-off valve on	DS	Desuperheater		
	liquid line	RT	Total heat recovery	LOOSI	EACCESSORIES
CT	Condensing control down to 0 °C	TX	Coil with pre-coated fins	MN	High and low pressure gauges
CC	Condensing control down to -20 °C	SI	Inertial tank	CR	Remote control panel
		PS	Single circulating pump	RP	Coils protection metallic guards
		PD	Double circulating pump	AG	Rubber shock absorbers
Ci	INT	FE	Antifreeze heater for evaporator	AM	Spring shock absorbers

### CHA/K/AF 182-P÷604-P







MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	Cooling capacity (1)	kW	51.1	59.1	67.2	76.6	87.9	100	115	133	156	183
Cooling	Absorbed power (1)	kW	16.0	18.5	20.9	24.2	27.6	31.0	35.8	41.5	48.3	56.9
-	EER (1)		3.19	3.19	3.22	3.17	3.18	3.23	3.21	3.20	3.23	3.22
	Cooling capacity (1)	kW	50.8	58.7	66.9	76.2	87.4	99.5	114	132	155	182
	Absorbed power (1)	kW	16.3	18.9	21.2	24.6	28.1	31.5	36.3	42.2	48.9	57.5
Cooling (EN14511)	EER (1)		3.12	3.11	3.16	3.10	3.11	3.16	3.14	3.13	3.17	3.17
	SEER (2)		4.17	4.21	4.20	4.19	4.19	4.22	4.25	4.16	4.16	4.18
	Energy Efficiency (2)	%	164	165	165	165	165	166	167	163	163	164
	Heating capacity (3)	kW	55.4	64.1	72.9	83.1	95.3	109	124	144	169	198
Heating	Absorbed power (3)	kW	16.8	19.4	22.0	25.4	28.8	32.5	37.7	43.4	51.0	59,7
-	COP (3)		3.30	3.30	3.31	3.27	3.31	3.35	3.29	3.32	3.31	3.32
	Heating capacity (3)	kW	55.8	64.5	73.3	83.6	95.9	110	125	145	170	199
	Absorbed power (3)	kW	17.3	19.9	22.5	26.1	29.7	33.4	38.6	44.7	52.1	61.2
Hosting (ENITAE11)	COP (3)		3.23	3.24	3.26	3.20	3.23	3.29	3.24	3.24	3.26	3.25
Heating (EN14511)	SCOP (4)		3.36	3.32	3.31	3.43	3.45	3.35	3.37	3.34	3.33	3.32
	Energy Efficiency (4)	%	131	130	129	134	135	131	132	131	130	130
	Energy Class (5)		A+	A+	A+	A+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	4
	Water flow	I/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
Evaporator	Pressure drops	kPa	43	42	33	41	49	42	37	46	35	31
	Water connections	"G	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical	Power supply V/Ph/Hz 400/3/50											
characteristics	Max. running current	Α	38	44	51	57	68	73	85	102	113	136
Tilalacteriotics	Max. starting current	A	132	142	148	172	212	169	200	246	229	280
Electrical	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	42	48	54	60	71	78	90	106	118	140
31 versions)	Max. starting current	A	135	145	152	176	215	173	204	250	233	284
Init with tank and	Pump available static pressure	kPa	140	135	135	120	125	175	175	155	155	140
	Tank water volume	1	400	400	400	400	400	400	400	400	600	600
characteristics (ST versions)  Unit with tank and pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Water flow	I/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
Unit ST versions	Pump available static pressure	kPa	135	130	135	115	100	140	140	125	125	115
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
ECH fan available	SSL versions	Pa	70	60	95	90	80	80	80	80		
static pressure	ST versions	Pa	70	60	100	80	75	80	80	80	75	65
	SSL/ST versions	Pa	70	60	95	90	80	80	80	80		
	STD and ST versions (6)	dB(A)	63	63	66	66	66	66	67	68	68	68
Sound pressure	With SL accessory (6)	dB(A)	61	61	64	64	64	64	65	66	66	66
	SSL and SSL/ST versions (6)	dB(A)	58	58	61	61	61	61	61	61		
Weights	Transport weight (7)	Kg	574	606	625	679	728	836	973	1015	1305	1367
-	Operating weight (7)	Kg	578	610	630	685	734	843	982	1024	1320	1387
Weights	Transport weight	Kg	589	621	640	694	743	856	993	1035	1325	1387
(ST versions)	Operating weight	Kg	593	625	645	700	749	863	1002	1044	1340	1407

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	STD-ST	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
L	SSL-SSL/ST	mm	2350	2350	2350	3550	3550	3550	4700	4700		
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
11	STD-SSL-ST-SSL/ST	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
П	SSL-SSL/ST	mm	1920	2220	2220	1920	1920	2220	2220	2220		

#### **CLEARANCE AREA**

CHA/K/AF 182-P÷604-P

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.
  Weights of SSL and WP versions are specified on technical brochure.

# CHA/K/A/WP 182-P+604-P

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.







The reversible Heat Pumps of the CHA/K/A/WP 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients and feature A CLASS energy efficiency.

They are used, combined with terminal units, for the heating or air conditioning of the rooms and are supplied with Modbus RTU protocol through RS485 serial interface.

Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.

The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

Units are designed for hot water production up to 55 °C.

The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G/A/WP 182-P÷604-P) or R454B (CHA/L/A/WP 182-P÷604-P) refrigerant.

VERSION	
CHA/K/A/WP	CHA/K/A/WP/SSL
Reversible Heat Pump	Super silenced reversible Heat Pump
CHA/K/A/WP/ST	CHA/K/A/WP/SSL/ST
Reversible Heat Pump with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B or R454B refrigerant
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

IS

#### **ACCESSORIES**

FACTO	RY FITTED ACCESSORIES			LOOS	E ACCESSORIES
IM	Automatic circuit breakers	EC	EC Inverter fans	MN	High and low pressure gauges
SL	Unit silencement	ECH	EC Inverter fans with high available	CR	Remote control panel
RFM	Cooling circuit shut-off valve on		static pressure	RP	Coils protection metallic guards
	discharge line	DS	Desuperheater	AG	Rubber shock absorbers
RFL	Cooling circuit shut-off valve on	RT	Total heat recovery	AM	Spring shock absorbers
	liquid line	TX	Coil with pre-coated fins		
CT	Condensing control down to 0 °C	SI	Inertial tank		
CC	Condensing control down to -20 °C	PS	Single circulating pump		
ВТ	Low water temperature kit	PD	Double circulating pump		
		FA	Antifreeze heater for tank		
		SS	Soft start		

serial interface

Modbus RTU protocol, RS485



### CHA/K/A/WP 182-P÷604-P





MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	Heating capacity (1)	kW	55.7	63.6	71.4	81.6	94.2	109	124	142	163	197
Heating	Absorbed power (1)	kW	16.9	19.5	21.8	24.4	28.2	33.3	37.2	43.2	49.9	59.0
	COP (1)		3.30	3.26	3.28	3.34	3.34	3.27	3.33	3.29	3.27	3.34
	Heating capacity (1)	kW	56.0	63.9	71.7	81.9	94.6	109	124	143	164	198
	Absorbed power (1)	kW	17.1	19.8	22.2	24.8	28.6	33.7	37.8	44.1	50.9	60.2
Heating (EN14511)	COP (1)		3.27	3.23	3.23	3.30	3.31	3.23	3.28	3.24	3.22	3.29
neating (EIV14511)	SCOP (2)		3.43	3.39	3.38	3.50	3.52	3.42	3.44	3.41	3.40	3.39
	Energy Efficiency (2)	%	134	133	132	137	138	134	135	133	133	133
	Energy Class (3)		A+	A+	A+	A+	-	-	-	-	-	-
	Cooling capacity (4)	kW	48.2	54.9	62.5	71.9	82.3	94.5	108	125	139	161
Cooling	Absorbed power (4)	kW	15.8	18.7	20.7	23.7	28.5	32.0	35.6	41.8	48.0	56.7
Ü	EER (4)		3.05	2.94	3.02	3.03	2.89	2.95	3.03	2.99	2.90	2.84
	Cooling capacity (4)	kW	48.0	54.6	62.2	71.6	82.0	94.2	108	124	138	160
Cooling (EN14511)	Absorbed power (4)	kW	16.0	19.0	21.0	24.0	28.8	32.3	36.0	42.4	48.6	57.4
,	EER (4)		3.00	2.87	2.96	2.98	2.85	2.92	3.00	2.92	2.84	2.79
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3			4
	Water flow	I/s	2.30	2.62	2.99	3.44	3.93	4.52	5.16	5.97	6.64	7.69
Evaporator	Pressure drops	kPa	28	30	31	28	28	23	29	39	38	37
	Water connections	"G	1 ½"	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Power supply	V/Ph/Hz	. , .	. , .				3/50		- /-		
Electrical	Max. running current	A A	35	41	48	54	65	72	81	102	109	132
characteristics	Max. starting current	A	130	140	144	169	209	169	197	246	225	276
Electrical	Power supply	V/Ph/Hz										270
characteristics	Max. running current	A A	39	45	51	57	68	77	86	106	114	136
(ST versions)	Max. starting current	A	133	143	148	173	212	173	201	250	229	280
	Pump available static pressure	kPa	155	150	140	135	150	195	185	165	160	150
Unit with tank and	Tank water volume	I	400	400	400	400	400	400	400	400	600	600
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Water flow	I/s	2.30	2.62	2.99	3.44	3.93	4.52	5.16	5.97	6.64	7.69
Unit ST versions	Pump available static pressure	kPa	155	145	140	135	125	165	150	135	130	120
Offic of versions	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	STD versions	Pa	70	60	100	100	100	95	60	65	60	65
ECH fan available	SSL versions	Pa	70	60	65	60	60	95	60	60	60	60
static pressure	ST versions	Pa	70	60	100	100	100	95	60	65	60	65
static pressure	SSL/ST versions	Pa	70	60	65	60	60	95	60	60	60	60
	STD and ST versions (5)	dB(A)	62	62	65	65	65	66	68	68	69	70
Sound pressure	With SL accessory (5)	dB(A)	60	60	63	63	63	64	66	66	67	68
oouliu piessuit	SSL and SSL/ST versions (5)	dB(A)	58	58	61	61	60	60	63	63	64	66
	Transport weight (6)	Kg	635	644	693	760	807	926	1076	1126	1235	1414
Weights	Operating weight (6)	Kg	640	650	700	770	820	940	1090	1140	1250	1430
Maiahta	Transport weight		650	659	700	775	820	940	1090	1140	1255	1430
Weights (ST versions)	Operating weight	Kg	655	665	715	785	830	946	1110	1160	1255	1450
(21 46(2)0(12)	operating weight	Kg	ככט	כסס	/15	/80	830	90U	1110	וטטוו	12/0	1400

DIMENSIONS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P	
L	STD-ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	3550
	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	3550	3550	4700	4700	4700
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	2220	2220	2220	2220	2220	2220	2220

#### **CLEARANCE AREA**

CHA/K/A/WP 182-P÷604-P

300 800 800 1800



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C wb. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.

  Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.
- 6. Unit without tank and pump.
  N.B. Weights of SSL versions are specified on technical brochure.

## CHA/K 182-P+604-P

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.























The liquid Chillers and Heat Pumps of the CHA/K 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients.

They are used, combined with Fan Coil units, for the air conditioning of the rooms or to remove the heat developed during industrial processes. They can be supplied with Modbus RTU protocol through RS485 serial interface.

Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.

The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

Heat pump units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G 182-P+604-P) or R454B (CHA/L 182-P+604-P) refrigerant.

VERSION	182-P÷604-P) retrigerant.	
CHA/K	CHA/K/WP	CHA/K/SSL
Cooling only	Reversible Heat Pump	Super silenced cooling only
CHA/K/WP/SSL	CHA/K/ST	CHA/K/WP/ST
Super silenced reversible Heat Pump	Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/SSL/ST	CHA/K/WP/SSL/ST	
Super silenced cooling only with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology	

## **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with
  outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed
  controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.

Modbus RTU protocol, RS485 serial

Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

IS

### **ACCESSORIES**

FACTO	RY FITTED ACCESSORIES			LOOS	E ACCESSORIES
IM	Automatic circuit breakers	ECH	EC Inverter fans with high available	MN	High and low pressure gauges
SL	Unit silencement		static pressure	CR	Remote control panel
RFM	Cooling circuit shut-off valve on	DS	Desuperheater	RP	Coils protection metallic guards
	discharge line	RT	Total heat recovery	AG	Rubber shock absorbers
RFL	Cooling circuit shut-off valve on	TX	Coil with pre-coated fins	AM	Spring shock absorbers
	liquid line	SI	Inertial tank		opg
CT	Condensing control down to 0 °C	PS	Single circulating pump		
CC	Condensing control down to -20 °C	PD	Double circulating pump		
BT	Low water temperature kit	FE	Antifreeze heater for evaporator		
EC	EC Inverter fans	FA	Antifreeze heater for tank		
	·	SS	Soft start		

interface

## CHA/K 182-P÷604-P







MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P	
	Cooling capacity (1)	kW	47.6	54.9	63.5	72.9	83.4	95.9	110	127	147	178	
Cooling	Absorbed power (1)	kW	16.1	18.8	21.8	25.0	28.3	31.6	37.9	43.3	50.1	58.2	
Ü	EER (1)		2.96	2.92	2.91	2.92	2.95	3.03	2.90	2.93	2.93	3.06	
	Cooling capacity (1)	kW	47.3	54.5	63.1	72.4	82.9	95.3	110	126	147	177	
	Absorbed power (1)	kW	16.4	19.2	22.2	25.4	28.7	32.3	38.5	43.9	50.9	59.2	
	EER (1)		2.88	2.84	2.84	2.85	2.89	2.95	2.85	2.87	2.88	2.99	
Cooling (FN14E11)	SEER (2)		3.93	3.95	3.99	3.96	3.95	3.93	3.92	3.98	3.91	3.92	
Cooling (EN14511)	Energy Efficiency (2)	%	154	155	157	155	155	154	154	156	153	154	
	SEER with EC or ECH accessory (2)		4.11	4.11	4.14	4.11	4.16	4.13	4.12	4.18	4.21	4.27	
	Energy Efficiency with EC or ECH		161	161	163	161	163	162	162	164	165	168	
	accessory (2) Heating capacity (3)	kW	54.1	61.8	71.4	80.3	90.4	106	120	135	154	187	
Heating	Absorbed power (3)	kW	17.3	19.6	23.1	25.4	28.8	33.4	38.5	43.8	50.5	60.4	
Heating	COP (3)	KVV	3.13	3.15	3.09	3.16	3.14	3.16	3.12	3.08	3.06	3.10	
		kW	54.5	62.3	71.9	80.9	90.9	107	121	136	155	188	
	Heating capacity (3) Absorbed power (3)	kW	17.8	20.2	23.7	26.1	29.5	34.6	39.5	45.1	51.8	62.0	
	COP (3)	KVV	3.06	3.08	3.03	3.10	3.08	34.6	39.5	3.02	2.99	3.03	
Heating (EN14511)	SCOP (4)		3.23	3.20	3.03	3.10	3.29	3.28	3.20	3.02	3.24	3.25	
	Energy Efficiency (4)	%	126	125	125	128	129	128	125	127	127	127	
	Energy Class (5)	/0	A+	A+	A+	A+	-	-	- 123	-	- 127	- 127	
	Quantity	n°	2	2	2	2	2	3	3	3	4	4	
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	
Compressor	Capacity steps	n°	1	- 1	2	ı	ı	'	3	ı		4	
	Water flow	I/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49	
Evaporator	Pressure drops	kPa	45	48	43	48	43	58	46	53	48	48	
Lvaporator	Water connections	"G	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	
	Power supply	V/Ph/Hz									Z 72	Z 72	
Electrical	Max. running current	A A	35	41	48	54	65	69	81	98	105	132	
characteristics	Max. starting current	A	130	140	144	169	209	166	197	242	221	276	
Electrical	Power supply	V/Ph/Hz	130	140	400/3/5				100 101 212 221				
characteristics	Max. running current	A A	39	45	51	57	68	73	86	102	110	136	
(ST versions)	Max. starting current	A	133	143	148	173	212	170	201	246	226	280	
(01 1010101)	Pump available static pressure	kPa	140	130	130	115	135	160	165	150	145	130	
Unit with tank and	Tank water volume	N a	400	400	400	400	400	400	400	400	600	600	
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	
	Water flow	I/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49	
Unit ST versions	Pump available static pressure	kPa	135	130	125	115	110	130	135	120	115	100	
OHIL ST VEISIONS	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	
	STD versions	Pa	90	80	100	100	100	80	95	75	60	60	
ECH fan available	SSL versions	Pa	85	85	75	75	70	50	70	60	60		
static pressure	ST versions	Pa	90	80	100	100	100	80	95	75	60	60	
static pressure	SSL/ST versions	Pa	90	90	80	80	85	50	70	55	50		
	STD and ST versions (6)	dB(A)	61	61	64	64	65	66	67	67	67	67	
Sound pressure	With SL accessory (6)	dB(A)	59	59	62	62	63	64	65	65	65	65	
oounu pressure	SSL and SSL/ST versions (6)	dB(A)	57	57	60	60	61	62	63	63	63		
	Transport weight (7)	Kg	595	624	663	682	791	878	927	1036	1135	1374	
Weights	Operating weight (7)	Kg	600	630	670	690	800	890	940	1050	1150	1374	
Weights	Transport weight	Kg	610	639	678	697	806	898	940	1056	1155	1394	
(ST versions)	Operating weight	Kg	615	645	685	705	815	910	960	1070	1170	1410	
(OT VELSIONS)	Operating weight	l va	010	045	000	/ / //	010	טופ	300	10/0	1170	1410	

DIME	ENSIONS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
L	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	1920	2220	2220	2220	2220	2220	2220

## **CLEARANCE AREA**

CHA/K 182-P÷604-P

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.
  Weights of SSL and WP versions are specified on technical brochure.

## CHA/K/FC 182-P+604-P

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



















The liquid Chillers of the CHA/K/FC 182-P÷604-P series, with R410A refrigerant, offer innovative technology for both domestic as well as industrial applications requiring the production of cooled water continuously year-round.

During the cold months, in the FREE-COOLING operation mode, the return liquid of the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Scroll compressors. A 3-way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for ducted installation.

The units are compliant to the ErP 2021 Regulation for process cooling application.

On request, units can be supplied with R452B (CHA/G/FC 182-P÷604-P) or R454B (CHA/L/ FC 182-P÷604-P) refrigerant.

### **VERSION**

CHA/K/FC

Cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil combined with FREE-COOLING coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

## ACCESSORIES

FACTOR	Y FITTED ACCESSORIES
IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
SI	Inertial tank

PS	Single circulating pump
PD	Double circulating pump
SS	Soft start
IS	Modbus RTU protocol, R

IS RS485 serial interface IST Modbus TCP/IP protocol, Ethernet

ISB BACnet MSTP protocol, RS485

serial interface **ISBT** BACnet TCP/IP protocol, Ethernet port

ISL LonWorks protocol, FTT-10 serial interface

ISS SNMP protocol, Ethernet port

### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers



## CHA/K/FC 182-P÷604-P



MODEL				202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	Cooling capacity (1)	kW	52.7	59.5	68.1	76.7	85.7	99.1	114	130	151	174
Cooling	Absorbed power (1)	kW	18.1	20.3	23.3	26.1	29.3	36.8	42.2	48.4	54.4	64.9
-	EER (1)		2.91	2.93	2.92	2.94	2.92	2.69	2.70	2.69	2.78	2.68
	Cooling capacity (1)	kW	52.0	58.8	67.3	75.9	84.9	98.2	113	129	150	172
Cooling (EN14E11)	Absorbed power (1)	kW	18.8	21.0	24.1	26.9	30.1	37.7	43.5	49.9	55.7	66.4
Cooling (EN14511)	EER (1)		2.77	2.80	2.79	2.82	2.82	2.60	2.60	2.59	2.69	2.59
	SERP (2)		5.11	5.13	5.12	5.14	5.12	5.11	5.09	5.08	5.15	5.14
Fron Cooling avala	Air temperature (3)	°C	2.1	1.3	0.0	-2.4	-3.5	1.0	0.0	-1.1	-3.0	-4.8
Free-Cooling cycle	Absorbed power (3)	kW	2	2	2	2	2	6	6	6	8	8
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°		2					3		4	
	Water flow	I/s	2.72	3.07	3.52	3.96	4.43	5.09	5.88	6.70	7.78	8.93
Water circuit	Pressure drops	kPa	115	105	120	100	100	100	135	145	102	106
	Water connections	"G	2"	2"	2"	2"	2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	Α	35	41	48	54	65	76	85	102	113	136
characteristics	Max. starting current	А	130	140	144	169	209	173	201	246	229	280
Unit with tank and	Pump available static pressure	kPa	120	125	100	115	100	190	145	125	150	125
	Tank water volume	I	400	400	400	400	400	400	400	400	600	600
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure Pa		Pa	110	110	110	105	105	60	60	60	65	65
Cound procesure	STD version (4)	dB(A)	63	63	63	63	64	65	66	66	67	67
Sound pressure	With SL accessory (4)	dB(A)	61	61	60	60	62	63	64	64	65	65
Maighta	Transport weight (5)	Kg	923	932	951	980	999	1308	1317	1350	1472	1510
Weights	Operating weight (5)	Kg	970	980	1000	1030	1050	1390	1400	1435	1560	1600

DIMENSION	NS .		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
L	STD	mm	3550	3550	3550	3550	3550	4700	4700	4700	4700	4700
W	STD	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD	mm	2220	2220	2220	2220	2220	2235	2235	2235	2235	2235

## **CLEARANCE AREA**

CHA/K/FC 182-P÷604-P

300 800 800 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in paint (1) is proched.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

# CHA/K 182÷604

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGER.























The liquid Chillers and Heat Pumps of the CHA/K 182÷604 series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients.

They are used, combined with Fan Coil units, for the air conditioning of the rooms or to remove the heat developed during industrial processes. They can be supplied with Modbus RTU protocol through RS485 serial interface.

Equipped with axial fans, Scroll compressors and shell and tube exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.

The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

Heat pump units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G 182+604) or R454B (CHA/L 182÷604) refrigerant.

## **VFRSION**

CHA/K	CHA/K/WP	CHA/K/SSL
Cooling only	Reversible Heat Pump	Super silenced cooling only
CHA/K/WP/SSL	CHA/K/ST	CHA/K/WP/ST
Super silenced reversible Heat Pump	Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/SSL/ST	CHA/K/WP/SSL/ST	
Super silenced cooling only with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology	

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Shell and tube type evaporator with one circuit on the refrigerant side and one on the water side in 182÷453 models; with two independent circuits on the refrigerant side and one on the water side in 524÷604 models, complete with water differential pressure switch.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.

ECH

- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

## **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on
	discharge line
RFL	Cooling circuit shut-off valve on
	liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature kit
EC	EC Inverter fans

	Static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PD	Double circulating pump
SPU	Inertial tank and single circulating
	pump
SPD	Inertial tank and double circulating

amug

EC Inverter fans with high available static pressure Desuperheater Total heat recovery in series Total heat recovery in parallel	FE FB SS IS	Antifreeze heater for evaporator Antifreeze heater for evaporator/tank Soft start Modbus RTU protocol, RS485 serial interface
Coil with pre-coated fins External water connections	LOOS	E ACCESSORIES

LOOSE	ACCESSORIES
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

## CHA/K 182÷604







MODEL			182	202	242	262	302	363	393	453	524	604
	Cooling capacity (1)	kW	49.0	55.0	62.4	73.3	84.3	95.2	109	129	149	179
Cooling	Absorbed power (1)	kW	16.6	18.8	21.5	25.3	28.6	31.6	37.5	43.7	50.7	58.8
-	EER (1)		2.95	2.93	2.90	2.90	2.95	3.01	2.91	2.95	2.94	3.04
	Cooling capacity (1)	kW	48.8	54.7	62.0	72.8	83.9	94.7	108	128	148	178
	Absorbed power (1)	kW	16.8	19.1	21.9	25.8	29.0	32.1	38.1	44.3	51.4	59.5
	EER (1)		2.90	2.86	2.83	2.82	2.89	2.95	2.83	2.89	2.88	2.99
Cooling (EN14511)	SEER (2)		3.95	3.97	3.91	3.92	3.98	3.98	3.86	3.98	4.01	4.02
Cooling (LIVI4311)	Energy Efficiency (2)	%	155	156	153	154	156	156	151	156	157	158
	SEER with EC or ECH accessory (2)		4.14	4.14	4.13	4.10.	4.16	4.13	4.10	4.20	4.21	4.27
	Energy Efficiency with EC or ECH accessory (2)		163	163	162	161	163	162	161	165	165	168
	Heating capacity (3)	kW	55.7	61.9	70.2	80.7	91.4	105	119	137	156	188
Heating	Absorbed power (3)	kW	17.8	19.6	22.8	25.7	29.1	33.4	38.1	44.2	51.1	61.0
-	COP (3)		3.13	3.16	3.08	3.14	3.14	3.14	3.12	3.10	3.05	3.08
	Heating capacity (3)	kW	56.0	62.2	70.7	81.3	91.9	106	120	138	157	189
	Absorbed power (3)	kW	18.0	20.0	23.5	26.6	29.8	34.2	39.1	45.1	52.3	62.3
Heating (EN14511)	COP (3)		3.11	3.11	3.01	3.06	3.08	3.10	3.07	3.06	3.00	3.03
riedling (Livi4311)	SCOP (4)		3.28	3.23	3.21	3.24	3.29	3.29	3.21	3.29	3.25	3.25
	Energy Efficiency (4)	%	128	126	125	127	129	129	125	129	127	127
	Energy Class (5)		A+	A+	A+	A+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3			4
_	Water flow	l/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
Evaporator	Pressure drops	kPa	22	29	50	55	40	39	45	36	43	38
	Water connections	"G	1 ½"	1 ½"	2"	2"	2 ½"	2 ½"	2 ½"	3"	3"	3"
Electrical	Power supply	V/Ph/Hz						3/50				
characteristics	Max. running current	A	35	41	48	54	65	69	81	98	105	132
	Max. starting current	A	130	140	144	169	209	166	197	242	221	276
Electrical	Power supply	V/Ph/Hz					400/			100	440	100
characteristics	Max. running current	A	39	45	51	57	68	73	86	102	110	136
(ST versions)	Max. starting current	A	133	143 150	148 125	173	212 140	170	201	246	226	280 140
Unit with tank and	Pump available static pressure	kPa	160		_	110	470	180	170	170	150	
pump	Tank water volume	"G	470 2 ½"	470 2 ½"	470 2 ½"	470 2 ½"	2 ½"	470 2 ½"	470 2 ½"	470 2 ½"	660 2 ½"	660 2 ½"
	Water connections Water flow	I/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
Unit ST versions	Pump available static pressure	kPa	160	150	120	105	110	145	135	140	120	110
OHIL ST VEISIONS	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	STD versions	Pa	90	80	100	100	100	80	95	75	60	60
ECH fan available	SSL versions	Pa	85	85	75	75	70	50	70	60	60	
static pressure	ST versions	Pa	90	80	100	100	100	80	95	75	60	60
static pressure	SSL/ST versions	Pa	90	90	80	80	85	50	70	55	50	
	STD and ST versions (6)	dB(A)	61	61	64	64	65	66	67	67	67	67
Sound pressure	With SL accessory (6)	dB(A)	59	59	62	62	63	64	65	65	65	65
oounu prossure	SSL and SSL/ST versions (6)	dB(A)	57	57	60	60	61	62	63	63	63	
	Transport weight (7)	Kg	641	661	701	719	844	931	971	1112	1192	1428
	nanaport weight (/)		660	680	720	740	870	960	1000	1150	1230	1470
Weights	Onerating weight (7)											
Weights Weights	Operating weight (7) Transport weight	Kg Kg	655	675	715	735	860	950	990	1130	1210	1450

DIN	MENSIONS		182	202	242	262	302	363	393	453	524	604
$\overline{}$	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
L	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	1920	2220	2220	2220	2220	2220	2220

## **CLEARANCE AREA**

CHA/K 182÷604

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.
  Weights of SSL and WP versions are specified on technical brochure.

## CRA/IK/A 21÷131

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH EC INVERTER PLUG-FANS, INVERTER SCROLL COMPRESSOR AND PLATE EXCHANGER FOR INDOOR DUCTED INSTALLATION.























The A CLASS indoor liquid Chillers of the CRA/IK/A 21÷131 series, with R410A refrigerant and EC Inverter Plug-Fans, are designed for small and medium domestic or service sector systems with particular difficulty in positioning units outside the building.

With a prepainted plate structure, these units can be combined with Fan Coil units or with intermediate heat exchangers for process cooling applications.

These units are equipped with particular technical and design adjustments that enable an immediate and efficient use, in addition to remarkably quiet operation and a significant useful head of the fan

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

The Heat Pump version is designed for hot water production up to 55 °C.

#### The units are compliant to the ErP Regulation.

On request, the models 91÷131 can be supplied with R452B (CRA/IG/A 91÷131) or R454B (CRA/IL/A 91÷131) refrigerant.

### **VERSION**

CRA/IK/A	CRA/IK/A/WP
Cooling only	Reversible Heat Pump

### **FEATURES**

- Self-supporting prepainted steel frame.
- DC INVERTER Scroll compressor with internal overheat protection and crankcase heater.
- High efficiency reverse blade EC INVERTER PLUG-FAN, with electronic speed control.
- · Condenser in copper tubes and aluminium finned coil, complete with drain pan for WP version only.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch. On the Heat Pump units it is
  always installed an antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant. On request R452B or R454B refrigerant.
- · Electrical board includes: main switch with door lock device, fuses, compressor (21÷81) and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### FACTORY FITTED ACCESSORIES L

BT Low water temperature kit
TX Coil with pre-coated fins
PS Single circulating pump

FE Antifreeze heater for evaporator

#### **LOOSE ACCESSORIES**

CR Remote control panel

IS Modbus RTU protocol, RS485 serial

interface

RP Coils protection metallic guards

AG Rubber shock absorbers

## CRA/IK/A 21÷131







MODEL			21	31	41	51	61	71	81	91	101	131
	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.7	19.0	22.4	25.8	30.5	35.9
Cooling	Absorbed power (1)	kW	1.9	2.5	3.1	4.3	5.4	6.5	7.7	9.3	10.3	12.1
_	EER (1)		3.16	3.04	3.00	2.88	2.91	2.92	2.91	2.77	2.96	2.97
	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.6	18.9	22.5	25.6	30.3	35.7
	Absorbed power (1)	kW	1.9	2.5	3.1	4.3	5.4	6.5	7.7	9.4	10.5	12.3
Cooling (EN14511)	EER (1)		3.16	3.04	3.00	2.88	2.89	2.91	2.92	2.72	2.89	2.90
	SEER (2)		4.12	4.11	4.10	4.32	4.30	4.23	4.33	4.32	4.10	4.12
	Energy Efficiency (2)	%	162	161	161	170	169	166	170	170	161	162
	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8	28.7	34.3	40.4
Heating	Absorbed power (3)	kW	2.0	2.6	3.3	4.5	5.4	6.4	7.5	9.4	10.7	12.6
-	COP (3)		3.35	3.38	3.30	3.13	3.24	3.27	3.31	3.05	3.21	3.21
	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8	28.9	34.5	40.7
	Absorbed power (3)	kW	2.0	2.6	3.3	4.5	5.4	6.4	7.5	9.6	10.9	12.8
II+: (FNI14F11)	COP (3)		3.35	3.38	3.30	3.13	3.24	3.27	3.31	3.01	3.17	3.18
Heating (EN14511)	SCOP (4)		3.38	3.27	3.41	3.30	3.43	3.49	3.77	3.21	3.23	3.22
	Energy Efficiency (4)	%	132	128	133	129	134	137	148	125	126	126
	Energy Class (5)		A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
Compressor	Quantity	n°	1	1	1	1	1	1	1	1	1	1
	Water flow	I/s	0.29	0.36	0.44	0.59	0.75	0.91	1.07	1.23	1.46	1.72
Evaporator	Pressure drops	kPa	18	14	18	25	20	29	30	20	29	31
	Water connections	"G	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Fan available station	pressure	Pa	80	80	80	115	115	115	115	150	150	150
Electrical	Power supply	V/Ph/Hz		230/1/50					400/3+N/5	Ö		
	Max. running current	А	17	17	17	14	14	16	19	22	22	25
characteristics	Max. starting current	А	11	11	11	9	9	10	11	12	12	13
Unit with numn	Pump available static pressure	kPa	53	56	52	76	82	70	60	140	115	150
Unit with pump	Water connections	"G	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Sound pressure (6)		dB(A)	52	53	54	58	58	59	60	62	63	63
	Transport weight	Kg	131	136	143	203	213	215	217	353	359	374
Weights	Operating weight	Kg	132	137	144	205	215	217	219	356	362	377

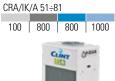
DIMENSION	NS		21	31	41	51	61	71	81	91	101	131
L	STD	mm	900	900	900	900	900	900	900	1500	1500	1500
W	STD	mm	550	550	550	690	690	690	690	800	800	800
Н	STD	mm	1500	1500	1500	1750	1750	1750	1750	1600	1600	1600

CRA/IK/A 91÷131

## **CLEARANCE AREA**

## CRA/IK/A 21÷41 100 800 800 800









1200 800 800 100

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low
- temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.



## CHA/IK/A 674-P+2356-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSORS AND **PLATE EXCHANGER** 





**INVERTER SCROLL MICROCHANNEL** 



The A CLASS energy efficiency liquid Chillers and Heat Pumps of the CHA/IK/A 674-P÷2356-P series, with R410A refrigerant, are designed to satisfy the needs of medium and wide-sized service sector or industrial ambients.

They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.

All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/SCOP). The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. Furthermore, Inverter control is also available on circulating pumps and fans (EC Inverter) for a further efficiency improvement.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. The Heat Pump versions are designed for hot water production up to 55 °C.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/IG/A 674-P÷2356-P) or R454B (CHA/ IL/A 674-P÷2356-P) refrigerant

AM

Spring shock absorbers

VERSION	in the second se	
CHA/IK/A	CHA/IK/A/MC	CHA/IK/A/WP
Cooling only	Cooling only with MICROCHANNEL condensing coils	Reversible Heat Pump
CHA/IK/A/SSL	CHA/IK/A/MC/SSL	CHA/IK/A/WP/SSL
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils	Super silenced reversible Heat Pump

## **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1004-P÷2356-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	TX	Coil with pre-coated fins	ISL	LonWorks protocol, FTT-10 serial
SL	Unit silencement	TXB	Coil with epoxy treatment		interface
RFM	Cooling circuit shut-off valve on	EW	External water connections	ISS	SNMP protocol, Ethernet port
	discharge line	PS	Single circulating pump	IAV	Remote set-point, 0-10 V signal
RFL	Cooling circuit shut-off valve on liquid	PSI	Inverter single circulating pump	IAA	Remote set-point, 4-20 mA signal
	line	PD	Double circulating pump	IAS	Remote signal for second set-point
BT	Low water temperature kit	PDI	Inverter double circulating pump		activation
EC	EC Inverter fans	FE	Antifreeze heater for evaporator	IDL	Demand limit from digital input
ECH	EC Inverter fans with high available	IS	Modbus RTU protocol, RS485		
	static pressure		serial interface	LOOSE	ACCESSORIES
DS	Desuperheater	IST	Modbus TCP/IP protocol, Ethernet	MN	High and low pressure gauges
RT	Total heat recovery		port		
	A CONTRACTOR OF THE CONTRACTOR	ISB	BACnet MSTP protocol, RS485 serial	CR	Remote control panel
			interface	RP	Coils protection metallic guards
LCL	IN I.	ISBT	BACnet TCP/IP protocol, Ethernet port	AG	Rubber shock absorbers

## CHA/IK/A 674-P÷2356-P







MODEL			674-P	784-P	1004-P	1054-P	1154-P	1256-P	1456-P	1606-P	1756-P	2356-P
Cooling CTD	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
Cooling STD	Absorbed power (1)	kW	61	73	90	98	109	120	133	144	163	211
versions	EER (1)		3.21	3.21	3.19	3.22	3.20	3.19	3.17	3.18	3.16	3.17
	Cooling capacity (1)	kW	195	233	286	315	348	382	421	457	514	666
Cooling STD	Absorbed power (1)	kW	62	74	91	99	110	121	134	145	164	213
versions	EER (1)		3.15	3.15	3.14	3.18	3.16	3.16	3.14	3.15	3.13	3.13
(EN14511)	SEER (2)		4.39	4.40	4.44	4.45	4.41	4.55	4.67	4.70	4.68	4.67
, ,	Energy Efficiency (2)	%	173	173	175	175	173	179	184	185	184	184
CI: MC	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
Cooling MC	Absorbed power (1)	kW	60	72	89	97	108	119	132	143	161	209
versions	EER (1)		3.27	3.25	3.22	3.26	3.23	3.22	3.20	3.20	3.20	3.20
	Cooling capacity (1)	kW	195	233	286	315	348	382	421	457	514	666
Cooling MC	Absorbed power (1)	kW	61	73	90	98	109	120	133	144	162	211
versions	EER (1)		3.20	3.19	3.18	3.21	3.19	3.18	3.17	3.17	3.17	3.16
(EN14511)	SEER (2)		175	175	177	177	175	181	186	187	187	186
(2.77.101.1)	Energy Efficiency (2)	%	212	253	311	343	379	417	458	497	559	724
	Heating capacity (3)	kW	63	75	93	102	112	124	137	148	169	218
Heating STD	Absorbed power (3)	kW	3.37	3.37	3.34	3.36	3.38	3.36	3.34	3.36	3.31	3.32
versions	COP (3)		213	254	312	344	380	418	459	499	561	726
	Heating capacity (3)	kW	65	77	95	104	115	127	140	151	172	223
Heating STD	Absorbed power (3)	kW	3.28	3.30	3.28	3.31	3.30	3.29	3.28	3.30	3.26	3.26
versions	COP (3)		3.67	3.57	3.60	3.52	3.61	3.52	3.53	3.48	3.54	3.53
(EN14511)	SCOP (4)		144	140	141	138	141	138	138	136	139	138
(21111011)	Energy Efficiency (4)	%	2+2	2+2	2+2	2+2	2+2	3+3	3+3	3+3	3+3	3+3
	Quantity	n°	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
00p. 0000.	Capacity steps	n°	_	_			Ster		_	_		
	Water flow	I/s	9.36	11.18	13.71	15.10	16.67	18.30	20.16	21.88	24.61	31.92
Evaporator	Pressure drops	kPa	38	36	35	37	40	32	33	36	32	37
_ rapo.aco.	Water connections	DN	80	80	80	80	80	150	150	150	150	150
	Power supply	V/Ph/Hz					400/		100	100	100	1.00
Electrical	Max. running current	Α Α	137	156	194	211	173	250	202	320	355	460
characteristics	Max. starting current	A	305	334	407	424	386	428	415	534	617	800
	Pump available static pressure	kPa	160	140	170	185	170	165	145	185	175	145
Unit with pump	Water connections	DN	100	100	100	100	100	150	150	150	150	150
	STD versions (5)	dB(A)	71	73	75	74	74	74	75	75	76	77
	STD versions with SL accessory (5)	dB(A)	68	69	71	71	71	71	72	72	73	74
	SSL versions (5)	dB(A)	65	66	68	67	68	68	69	70	71	
Sound pressure	MC versions (5)	dB(A)	70	72	74	73	73	73	74	74	75	76
	MC versions with SL accessory (5)	dB(A)	67	68	70	70	70	70	71	71	72	73
	MC/SSL versions (5)	dB(A)	64	65	67	66	67	67	68	69	70	
	Transport weight	Kg	2251	2384	2511	2791	2851	3186	3248	3658	3836	4392
Weights	Operating weight	Kg	2270	2410	2550	2830	2890	3230	3300	3710	3900	4470

DIN	IENSIONS		674-P	784-P	1004-P	1054-P	1154-P	1256-P	1456-P	1606-P	1756-P	2356-P
	STD-MC	mm	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200
L	SSL-MC/SSL	mm	5000	5000	5000	6200	6200	6200	6200	7200	7200	
W	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD-SSL-MC-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

## **CLEARANCE AREA**

CHA/IK/A 674-P÷2356-P

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average
- climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.

  N.B. Data of MC versions are specified on technical brochure.
- Data of MC versions are specified on technical brochure.

## CHA/K/AF 726-P+24012-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.























The CHA/K/AF 726-P÷24012-P liquid Chillers and Heat Pumps are characterized by A CLASS energy efficiency.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. The Heat Pump versions are designed for hot water production up to 55 °C.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G/AF 726-P+24012-P) or R454B (CHA/L/AF 726-P+24012-P) refrigerant.

### **VERSION**

CHA/K/AF	CHA/K/AF/WP
Cooling only	Reversible Heat Pump
CHA/K/AF/SSL	CHA/K/AF/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- · Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

170101	THE ACCEPTANCE		
IM	Automatic circuit breakers	PSI	Inverter single circulating pump
SL	Unit silencement	PD	Double circulating pump
RFM	Cooling circuit shut-off valve on	PDI	Inverter double circulating pump
	discharge line	FE	Antifreeze heater for evaporator
RFL	Cooling circuit shut-off valve on	SS	Soft start
	liquid line	IS	Modbus RTU protocol, RS485
CT	Condensing control down to 0 °C		serial interface
CC	Condensing control down to -20 °C	IST	Modbus TCP/IP protocol, Ethernet
BT	Low water temperature kit		port
EC	EC Inverter fans	ISB	BACnet MSTP protocol, RS485
ECH	EC Inverter fans with high available		serial interface
	static pressure	ISBT	BACnet TCP/IP protocol, Ethernet
DS	Desuperheater		port
RT	Total heat recovery	ISL	LonWorks protocol, FTT-10 serial
TX	Coil with pre-coated fins		interface
EW	External water connections	ISS	SNMP protocol, Ethernet port
PS	Single circulating pump	IAV	Remote set-point, 0-10 V signal

IAA Remote set-point, 4-20 mA signal IAS Remote signal for second set-point activation

IDL Demand limit from digital input

#### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers









MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P
	Cooling capacity (1)	kW	197	220	245	271	300	329	361
Cooling	Absorbed power (1)	kW	62	69	76	83	95	105	111
	EER (1)		3.18	3.19	3.22	3.27	3.16	3.13	3.25
	Cooling capacity (1)	kW	196	219	244	270	299	328	360
	Absorbed power (1)	kW	63	70	77	84	96	105	112
Cooling (EN14511)	EER (1)		3.11	3.13	3.17	3.21	3.11	3.12	3.21
0009 (2.11.101.1)	SEER (2)		4.18	4.19	4.23	4.24	4.20	4.20	4.21
	Energy Efficiency (2)	%	164	165	166	167	165	165	165
	Heating capacity (3)	kW	214	239	266	295	325	359	391
Heating	Absorbed power (3)	kW	65	73	81	88	99	109	119
ricating	COP (3)	NVV	3.29	3.27	3.28	3.35	3.28	3.29	3.29
		kW	215	240	267	296	3.20	360	393
	Heating capacity (3)	kW				90	102		122
(FNI44544)	Absorbed power (3)	KVV	67	75	83	90		112	
Heating (EN14511)	COP (3)		3.21	3.20	3.22	3.29	3.21	3.21	3.22
	SCOP (4)	0/	3.35	3.42	3.35	3.34	3.37	3.34	3.35
	Energy Efficiency (4)	%	131	134	131	131	132	131	131
_	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°		6				8	
	Water flow	I/s	9.41	10.51	11.71	12.95	14.33	15.72	17.25
Evaporator	Pressure drops	kPa	45	49	44	42	50	39	46
	Water connections	DN	80	80	80	80	80	80	80
Electrical	Power supply	V/Ph/Hz				400/3/50			
Electrical	Max. running current	A	152	166	187	199	224	241	258
characteristics	Max. starting current	A	276	299	354	367	357	409	426
	Pump available static pressure	kPa	155	135	205	185	180	185	170
Unit with pump	Water connections	DN	100	100	100	100	100	100	100
					74	74		74	74
Sound pressure	STD version (5)	dB(A)	72 69	73 70	74 71		74	71	74
	With SL accessory (5)	dB(A)				71	71		
	SSL version (5)	dB(A)	66	66	67	68	67	68	68
Weights	Transport weight	Kg	1854	2171	2289	2317	2437	2680	2690
. roiginto	Operating weight	Kg	1870	2190	2310	2340	2460	2710	2720
MODEL			13010-P	15010-P	1681	2-P 18	3012-P	21012-P	24012-P
	Cooling capacity (1)	kW	396	435	485	,	538	609	692
Cooling	Absorbed power (1)	kW	124	137	154		169	192	220
Cooning		KVV	3.19	3.18				3.17	
	EER (1)	12/4/			3.1		3.18		3.15
	Cooling capacity (1)	kW	394	433	484		536	607	690
O1: /FN/4 4F44	Absorbed power (1)	kW	126	139	155		171	194	222
Cooling (EN14511)	EER (1)		3.13	3.12	3.1:		3.13	3.13	3.11
ļ	SEER (2)		4.48	4.56	4.5		4.57	4.56	4.60
	Energy Efficiency (2)	%	176	179	181		180	179	181
	Heating capacity (3)	kW	431	473	526		586	663	754
Heating	Absorbed power (3)	kW	129	143	162		176	202	231
Ĭ	COP (3)		3.34	3.31	3.2		3.33	3.28	3.26
	Heating capacity (3)	kW	433	475	528		588	665	756
	Absorbed power (3)	kW	133	147	165		181	206	236
Heating (EN14511)	COP (3)		3.26	3.23	3.20		3.25	3.23	3.20
nealing (EIV14511)	SCOP (4)	+	3.36	3.32	3.3		3.31	3.33	3.43
	Energy Efficiency (4)	%	131	130	131		129	130	134
	Quantity	n°	5+5	5+5	6+6		6+6	6+6	6+6
Compressor	Refrigerant circuits	n°	2	2	2	,	2	2	2
		n°		8 Z			10	L	
	Capacity steps		10.00		20.4	7		20.10	22.00
	Water flow	I/s	18.92	20.78	23.1		25.70	29.10	33.06
Evaporator	Pressure drops	kPa	49	49	33		41	34	32
	Water connections	DN	80	80	150		150	150	150
Electrical	Power supply	V/Ph/Hz				400/3/50			
	Max. running current	A	274	324	358		391	446	500
characteristics	Max. starting current	Α	407	492	525		558	623	678
Ulada dala	Pump available static pressure	kPa	155	125	185		170	160	145
Unit with pump	Water connections	DN	100	100	100		100	150	150
		211							100

DIMENSION	IS		726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-F	<sup>2</sup> 18012-P	21012-P	24012-P
1	STD	mm	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
L	SSL	mm	5000	5000	5000	5000	6200	6200	6200	6200	6200	7200	7200		
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

76 73 69

75 72 69

### **CLEARANCE AREA**

Sound pressure

Weights

Water connections

Transport weight
Operating weight

STD version (5) With SL accessory (5) SSL version (5)

CHA/K/AF 726-P÷24012-P

500 | 1800 | 1000 | 1800



dB(A)

dB(A) dB(A)

Kg Kg

76 73 69

2869

### NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation

150 77

4420

77 74

4458

Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.

76 73 70

- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Weights of SSL and WP versions are specified on technical brochure.



## CHA/K/A/WP 726-P+24012-P

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi



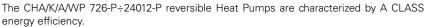












The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. Units are designed for hot water production up to 55 °C.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G/A/WP 726-P+24012-P) or R454B (CHA/L/A/WP 726-P+24012-P) refrigerant.

### **VERSION**

CHA/K/A/WP	CHA/K/A/WP/SSL
Reversible Heat Pump	Super silenced reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.

Single circulating numn

- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES** IM Automatic circuit breakers

	7 later ratio en eart breakers	1 0	origic circulating partip
SL	Unit silencement	PSI	Inverter single circulating pump
RFM	Cooling circuit shut-off valve on	PD	Double circulating pump
	discharge line	PDI	Inverter double circulating pump
RFL	Cooling circuit shut-off valve on	SS	Soft start
	liquid line	IS	Modbus RTU protocol, RS485
CT	Condensing control down to 0 °C		serial interface
CC	Condensing control down to -20 °C	IST	Modbus TCP/IP protocol, Ethernet
BT	Low water temperature kit		port
EC	EC Inverter fans	ISB	BACnet MSTP protocol, RS485
ECH	EC Inverter fans with high available		serial interface
	static pressure	ISBT	BACnet TCP/IP protocol, Ethernet
DS	Desuperheater		port
RT	Total heat recovery	ISL	LonWorks protocol, FTT-10 serial
TX	Coil with pre-coated fins		interface
EW	External water connections	ISS	SNMP protocol, Ethernet port

PS

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-poin activation
IDI	Demand limit from digital input

LOOSE ACCESSORIES								
MN	High and low pressure gauges							
CR	Remote control panel							
RP	Coils protection metallic guards							
AG	Rubber shock absorbers							
AM	Spring shock absorbers							









MODEL			726-P	786-P	826-P	906-P	1048-F	1128-P	1208-P
	Heating capacity (1)	kW	227	256	272	294	342	369	389
Heating	Absorbed power (1)	kW	66	75	81	85	102	106	112
Ü	COP (1)		3.44	3.41	3.36	3.46	3.35	3.48	3.47
	Heating capacity (1)	kW	228	257	273	295	343	370	390
	Absorbed power (1)	kW	68	77	83	87	105	108	115
Heating (EN14511)	COP (1)		3.35	3.34	3.29	3.39	3.27	3.43	3.39
3, 3,	SCOP (2)		3.40	3.47	3.40	3.39	3.42	3.39	3.40
	Energy Efficiency (2)	%	133	136	133	133	134	133	133
	Cooling capacity (3)	kW	194	217	239	259	294	322	339
Cooling	Absorbed power (3)	kW	68	75	78	85	100	107	113
3	EER (3)		2.85	2.89	3.06	3.05	2.94	3.01	3.00
	Cooling capacity (3)	kW	193	216	238	258	293	321	338
	Absorbed power (3)	kW	69	76	79	86	101	108	114
Cooling (EN14511)			2.80	2.84	3.01	3.00	2.90	2.97	2.96
3, ,	SEER (4)		4.05	4.06	4.10	4.11	4.07	4.07	4.08
	Energy Efficiency (4)	%	159	159	161	161	160	160	160
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°		E	)			8	
	Water flow	I/s	9.27	10.37	11.42	12.37	14.05	15.38	16.20
Evaporator	Pressure drops	kPa	44	55	42	38	49	37	41
	Water connections	DN	80	80	80	80	80	80	80
Fl4-:I	Power supply	V/Ph/Hz				400/3/50			
Electrical	Max. running current	A	152	166	187	199	224	241	258
characteristics	Max. starting current	Α	276	299	354	367	357	409	426
11.26 20	Pump available static pressure	kPa	155	130	205	190	180	185	175
Unit with pump	Water connections	DN	100	100	100	100	100	100	100
	STD version (5)	dB(A)	72	71	71	72	72	73	74
Sound pressure	With SL accessory (5)	dB(A)	69	68	68	69	69	70	71
	SSL version (5)	dB(A)	65	65	65	66	66	67	67
\A( : 1 :	Transport weight	Kg	1954	2291	2409	2437	2567	2820	2830
Weights	Operating weight	Kg	1970	2310	2430	2460	2590	2850	2860
MODEL			13010-P	15010-F	P 1681	2-P 1	8012-P	21012-P	24012-P
	Heating capacity (1)	kW	420	476	533	2	566	677	762
Handina.	Absorbed power (1)	kW	125	141	15		169	202	226
Heating									
Heating	COP (1)	KVV	3.36	3.38	3.3		3.35	3.35	3.37

MODEL			13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
	Heating capacity (1)	kW	420	476	532	566	677	762
Heating	Absorbed power (1)	kW	125	141	157	169	202	226
-	COP (1)		3.36	3.38	3.39	3.35	3.35	3.37
	Heating capacity (1)	kW	422	478	533	568	679	764
	Absorbed power (1)	kW	128	144	160	172	206	230
Heating (EN14511)	COP (1)		3.30	3.32	3.33	3.30	3.30	3.32
<b>.</b>	SCOP (2)		3.41	3.37	3.41	3.36	3.38	3.48
	Energy Efficiency (2)	%	133	132	133	131	132	136
	Cooling capacity (3)	kW	359	421	475	512	597	671
Cooling	Absorbed power (3)	kW	127	144	162	172	207	241
Ü	EER (3)		2.83	2.92	2.93	2.98	2.88	2.78
	Cooling capacity (3)	kW	358	419	474	510	595	669
	Absorbed power (3)	kW	128	146	163	174	209	243
Cooling (EN14511)	EER (3)		2.80	2.87	2.91	2.93	2.85	2.75
3, ,	SEER (4)		4.35	4.42	4.45	4.55	4.55	4.55
	Energy Efficiency (4)	%	171	174	175	179	179	179
	Quantity	n°	5+5	5+5	6+6	6+6	6+6	6+6
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2
·	Capacity steps	n°		8		1	0	
	Water flow	l/s	17.15	20.11	22.69	24.46	28.52	32.06
Evaporator	Pressure drops	kPa	46	46	32	37	33	30
	Water connections	DN	80	80	150	150	150	150
Electrical	Power supply	V/Ph/Hz			400/	3/50		
	Max. running current	Α	274	324	358	391	446	500
characteristics	Max. starting current	Α	407	492	525	558	623	678
Unit with pump	Pump available static pressure	kPa	160	130	185	175	160	145
	Water connections	DN	100	100	100	100	150	150
	STD version (5)	dB(A)	74	76	76	76	76	77
Sound pressure	With SL accessory (5)	dB(A)	71	73	73	73	73	74
	SSL version (5)	dB(A)	67	68	69	70		
Maighta	Transport weight	Kg	3019	3164	3702	3832	4660	4698
Weights	Operating weight	Kg	3050	3200	3750	3880	4720	4770

<b>DIMENSION</b>	IS		726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-F	18012-F	21012-P	24012-P
1	STD	mm	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200	7200
L	SSL	mm	4000	4000	5000	5000	5000	5000	5000	5000	6200	6200	7200		
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

#### **CLEARANCE AREA**

CHA/K/A/WP 726-P÷24012-P

500 1800 1000 1800



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.

  Chilled water from 12 to 7 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2/81
- Regulation n. 2016/2281.
- Sound pressure level measured in free field conditions at 1 m from the unit. According
- N.B. Weights of SSL version are specified on technical brochure.



## CHA/K 726-P÷36012-P

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.





















The liquid Chillers and Heat Pumps of the CHA/K 726-P÷36012-P series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

Heat pump models 726-P÷13010-P are compliant to the ErP Regulation; models 15010-P÷36012-P are compliant if provided with EC or ECH accessory (EC Inverter fans).

On request, units can be supplied with R452B (CHA/G 726-P÷36012-P) pr R454B (CHA/L 726-P÷36012-P) refrigerant.

## **VERSION**

CHA/K	CHA/K/WP
Cooling only	Reversible Heat Pump
CHA/K/SSL	CHA/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

## **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- · Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

## **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	PS	Single circulating pump
SL	Unit silencement	PSI	Inverter single circulating pump
RFM	Cooling circuit shut-off valve on	PD	Double circulating pump
	discharge line	PDI	Inverter double circulating pump
RFL	Cooling circuit shut-off valve on	FE	Antifreeze heater for evaporator
	liquid line	SS	Soft start
CT	Condensing control down to 0 °C	IS	Modbus RTU protocol, RS485
CC	Condensing control down to -20 °C		serial interface
BT	Low water temperature kit	IST	Modbus TCP/IP protocol, Ethernet
EC	EC Inverter fans		port
ECH	EC Inverter fans with high available	ISB	BACnet MSTP protocol, RS485
	static pressure		serial interface
DS	Desuperheater	ISBT	BACnet TCP/IP protocol, Ethernet
RT	Total heat recovery		port
TX	Coil with pre-coated fins	ISL	LonWorks protocol, FTT-10 serial
EW	External water connections		interface
	_	ISS	SNMP protocol, Ethernet port

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation
IDL	Demand limit from digital input

### LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers









MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
	Cooling capacity (1)	kW	199	226	251	276	304	335	367	403	444
Cooling	Absorbed power (1)	kW	69	80	85	94	104	113	122	132	155
	EER (1)	11147	2.88	2.83	2.95	2.94	2.92	2.96	3.01	3.05	2.86
	Cooling capacity (1) Absorbed power (1)	kW kW	198 70	225 81	250 86	275 95	303 105	334 115	365 124	402 134	442 157
	EER (1)	KVV	2.84	2.78	2.89	2.89	2.87	2.91	2.95	3.00	2.81
	SEER (2)		3.82	3.86	3.99	4.00	3.87	3.96	4.09	4.28	4.33
Cooling (EN14511)	Energy Efficiency (2)	%	150	151	157	157	152	155	161	168	170
	SEER with EC or ECH accessory (2)		4.13	4.11	4.17	4.22	4.15	4.23	4.34	4.55	4.56
	Energy Efficiency with EC or ECH	%	162	161	164	166	163	166	171	179	179
	accessory (2)										
	Heating capacity (3)	kW	228	255	283	310	338	369	401	441	510
Heating	Absorbed power (3)	kW	73	83	90	103	108	121	132	141	164
	COP (3)	134/	3.12	3.07	3.14	3.01	3.13	3.05	3.04	3.13	3.11
	Heating capacity (3) Absorbed power (3)	kW kW	228 73	255 83	283 90	311 103	338 108	370 122	402 133	442 142	511 165
Heating (EN14511)	COP (3)	N V V	3.12	3.07	3.14	3.01	3.12	3.04	3.03	3.12	3.10
ricating (LIVI+311)	SCOP (4)		3.20	3.21	3.22	3.21	3.22	3.21	3.22	3.21	3.22
	Energy Efficiency (4)	%	125	125	126	125	126	125	126	125	126
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
· .	Capacity steps	n°		6					8		
_	Water flow	l/s	9.51	10.80	11.99	13.19	14.52	16.01	17.53	19.25	21.21
Evaporator	Pressure drops	kPa	40	51	62	54	50	49	59	47	59
	Water connections	DN	80	80	80	80	80	80	80	80	80
Electrical	Power supply  May rupping current	V/Ph/Hz	150	100	170		400/3/50	222	250	274	210
characteristics	Max. running current Max. starting current	A A	152 276	166 299	179 347	191 359	216 349	233 401	418	274 407	316 484
	Pump available static pressure	kPa	155	130	175	160	180	170	145	140	110
Unit with pump	Water connections	DN	100	100	100	100	100	100	100	100	100
	STD version (5)	dB(A)	70	70	70	72	72	72	73	73	72
Sound pressure	With SL accessory (5)	dB(A)	67	67	67	69	69	69	69	70	69
	SSL version (5)	dB(A)	64	64	64	66	65	65	67	66	66
Weights	Transport weight	Kg	1654	1674	1763	1961	2199	2457	2566	2610	3179
vveigilis	Operating weight	Kg	1670	1690	1780	1980	2220	2480	2590	2640	3210
MODEL			16812-P	18012-P	21012-	P 24012	-P 270	12-P 30	0012-P	33012-P	36012-P
WIODEL	Cooling capacity (1)	kW	495	546	602	671	7:		845	942	1051
Cooling	Absorbed power (1)	kW	170	184	211	243		75	303	336	365
ooomig	EER (1)		2.91	2.97	2.85	2.76	2.		2.79	2.80	2.88
	Cooling capacity (1)	kW	493	544	599	669	74	19	842	939	1047
	Absorbed power (1)	kW								333	
Γ	Absorbed power (1)	KVV	172	186	214	246	2	77	306	339	369
	EER (1)	KVV	2.87	186 2.92	214 2.81	2.72	2.	70	306 2.75	339 2.77	369 2.84
Cooling (FN14511)	EER (1) SEER (2)		2.87 4.30	186 2.92 4.32	214 2.81 4.39	2.72 4.32	2. 4.	70 34	306 2.75 4.33	339 2.77 4.34	369 2.84 4.33
Cooling (EN14511)	EER (1) SEER (2) Energy Efficiency (2)	%	2.87 4.30 169	186 2.92 4.32 170	214 2.81 4.39 173	2.72 4.32 170	2. 4.	70 34 71	306 2.75 4.33 170	339 2.77 4.34 171	369 2.84 4.33 170
Cooling (EN14511)	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2)		2.87 4.30	186 2.92 4.32	214 2.81 4.39	2.72 4.32	2. 4.	70 34 71	306 2.75 4.33	339 2.77 4.34	369 2.84 4.33
	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH		2.87 4.30 169	186 2.92 4.32 170	214 2.81 4.39 173	2.72 4.32 170	2. 4.	70 34 71 55	306 2.75 4.33 170	339 2.77 4.34 171	369 2.84 4.33 170
	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2)	%	2.87 4.30 169 4.55	186 2.92 4.32 170 4.55	214 2.81 4.39 173 4.55	2.72 4.32 170 4.56	2. 4. 17 4.	70 34 71 55 79	306 2.75 4.33 170 4.56	339 2.77 4.34 171 4.55 179	369 2.84 4.33 170 4.55
	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3)	% % kW	2.87 4.30 169 4.55 179 564	186 2.92 4.32 170 4.55 179 620	214 2.81 4.39 173 4.55 179 684	2.72 4.32 170 4.56 179	2. 4. 17 4.	70 34 71 55 79	306 2.75 4.33 170 4.56 179	339 2.77 4.34 171 4.55 179	369 2.84 4.33 170 4.55 179
	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3)	%	2.87 4.30 169 4.55 179 564 182	186 2.92 4.32 170 4.55 179 620 202	214 2.81 4.39 173 4.55 179 684 223	2.72 4.32 170 4.56 179 776 249	2. 4. 17 4. 17	70 34 71 55 79 61 32	306 2.75 4.33 170 4.56 179 962 312	339 2.77 4.34 171 4.55 179 1078 349	369 2.84 4.33 170 4.55 179 1210 383
	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3)	% % kW kW	2.87 4.30 169 4.55 179 564 182 3.10	186 2.92 4.32 170 4.55 179 620 202 3.07	214 2.81 4.39 173 4.55 179 684 223 3.07	2.72 4.32 170 4.56 179 776 249 3.12	2. 4. 1. 4. 1. 80 20 3.	70 34 71 555 79 61 32	306 2.75 4.33 170 4.56 179 962 312 3.08	339 2.77 4.34 171 4.55 179 1078 349 3.09	369 2.84 4.33 170 4.55 179 1210 383 3.16
Heating	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3)	% % kW	2.87 4.30 169 4.55 179 564 182	186 2.92 4.32 170 4.55 179 620 202	214 2.81 4.39 173 4.55 179 684 223	2.72 4.32 170 4.56 179 776 249	2. 4. 17. 4. 17. 88 24 3. 88	70 34 71 55 79 61 32	306 2.75 4.33 170 4.56 179 962 312	339 2.77 4.34 171 4.55 179 1078 349	369 2.84 4.33 170 4.55 179 1210 383
Heating	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3)	% % kW kW	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09	186 2.92 4.32 170 4.55 179 620 202 3.07 621	214 2.81 4.39 173 4.55 179 684 223 3.07 685	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11	2. 4. 11. 4. 12. 88 21. 3. 88 22. 3. 3.	70 34 71 55 79 61 32 05 62 33 05	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15
Heating	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (6) SCOP (4)	% kW kW kW	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19	2. 4. 1. 4. 1. 88 20 3. 81 21 3. 3.	70 34 71 55 79 61 32 05 62 33 05 19	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 9.08 9.08	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19
Heating	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (6) COP (1) Energy Efficiency (4)	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19	2. 4. 17. 4. 17. 88 24 25 3. 88 3. 3. 3. 12.	70 34 71 55 79 61 32 05 62 33 05 19 25	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19 125	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19
Heating Heating (EN14511)	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6	2. 4. 17. 4. 17. 88 2.4 3. 3. 3. 11. 6-	70 34 71 555 79 61 32 05 62 33 05 19 25 66	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125 6+6	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6
Heating	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19	2. 4. 11. 4. 17. 88 24 24 3. 3. 3. 3. 17. 6. 6. 2. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	70 34 71 55 79 61 32 05 62 33 05 19 25	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19 125	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19
Heating Heating (EN14511)	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6	2. 4. 1: 4. 1: 88 2: 3. 3. 3. 3. 3. 1: 6. 5. 7. 10	70 34 71 555 79 61 52 52 52 53 53 54 55 56 66 62	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2
Heating Heating (EN14511) Compressor	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2	2. 4. 1: 4. 1: 88 24 3. 3. 3. 3. 3. 1: 66 6. 10 35	70 34 71 71 555 81 82 99 90 81 82 90 90 90 90 90 90 90 90 90 90	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6 2	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2
Heating Heating (EN14511)	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2	2. 4. 11. 4. 11. 88 21. 3. 3. 88 22. 22. 3. 3. 11. 66 3. 3. 3. 4. 3. 3. 4. 3. 3. 4. 3. 3. 3. 4. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	70 34 71 555 79 61 632 52 533 555 66 62 88 1	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125 6+6 2	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2
Heating Heating (EN14511) Compressor Evaporator	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	% kW kW kW  kW  n° n° n° L/s kPa DN	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2	2. 4. 11. 4. 11. 88 21. 3. 3. 88 21. 21. 3. 3. 3. 11. 10. 35. 4. 11. 11. 11. 11. 11. 11. 11. 11. 11.	70 34 71 71 555 81 82 99 90 81 82 90 90 90 90 90 90 90 90 90 90	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2	339 2.77 4.34 171 4.55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6 2	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2
Heating Heating (EN14511) Compressor Evaporator Electrical	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2	2. 4. 1. 1. 4. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	70 34 71 555 79 81 82 95 95 95 95 95 95 95 95 95 95	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2
Heating Heating (EN14511) Compressor Evaporator	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	% kW kW kW  kW  N°  N°  N°  N°  J/s  kPa  DN  V/Ph/Hz	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2	2. 4. 1: 4. 1: 88 2: 3. 88 2: 3. 3. 3. 3. 1: 6. 6. 4 400/3/50 5. 5.	70 34 71 555 79 61 632 52 533 555 66 62 88 1	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125 6+6 2	339 2,77 4,34 171 4,55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6 2 45.01 42 150	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150
Heating Heating (EN14511) Compressor Evaporator Electrical characteristics	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	% kW kW kW  % n° n° h° N° L/s kPa DN V/Ph/Hz A A	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.07 3.19 125 6+6 2	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150	2. 4. 11. 4. 12. 88 21. 3. 88 22. 3. 10. 10. 35 44 400/3/50 5- 77.	70 34 34 71 555 79 61 32 055 62 33 055 66 62 2	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 313 3.08 3.19 125 6+6 2 40.37 51 150	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007
Heating Heating (EN14511) Compressor Evaporator Electrical	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections	% kW kW kW  kW  n° n° L/s kPa DN  V/Ph/Hz A A A RPa DN	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 485 662 125 150	2. 4. 1. 1. 4. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	70	306 2.75 4.33 170 4.56 179 962 312 3.08 963 3.13 3.08 3.19 125 6+6 2 40.37 51 150	339 2,77 4,34 171 4,55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6 2 45.01 42 150 676 938 130 150	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 1000 150
Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with pump	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5)	% kW kW kW  *  *  *  *  *  *  *  *  *  *  *  *  *	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 485 662 125	2. 4. 1: 4. 1: 4. 1: 4. 3. 3. 3. 3. 3. 3. 4. 1: 400/3/50 5. 7: 7: 111 1: 1: 7. 7: 7. 1: 111 7. 7. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	70 34 71 71 555 79 9 31 32 20 55 52 33 30 55 66 22 45 56 56 56 56 56 56 56 56 56 5	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76	339 2,77 4,34 171 4,55 179 1078 349 3.09 1079 350 3.08 3.19 125 6+6 2 45.01 42 150 676 938 130 76	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77
Heating Heating (EN14511) Compressor Evaporator Electrical characteristics	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5) With SL accessory (5)	%	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 73	2.72 4.32 170 4.56 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 485 662 125 566 76	2. 4. 4. 17. 88 22. 3. 88 22. 3. 10. 66 400/3/50 77. 11. 11. 7	70 34 37 171 555 579 561 572 575 579 579 570 570 570 570 570 570 570 570 570 570	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,18 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77
Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with pump	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5) With SL accessory (5) SSL version (5)	% kW kW kW  % n° n° 1/s kPa DN  V/Ph/Hz A kPa DN  dB(A) dB(A)	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 73	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 485 662 125 150 76	2. 4. 11. 4. 11. 81 21. 3. 81 22. 3. 11. 6. 10 35 44 400/3/50 5. 77. 11. 11. 77	70 34 34 71 555 79 61 61 62 62 88 88 1 60 655 66 66 63 79 9	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74
Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with pump	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight	% kW kW kW kW  % n° n° n° b° l/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A) Kg	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 70 3517	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 150 76 73 70 3682	2. 4. 11. 4. 12. 88 21. 3. 88 22. 3. 3. 11. 6. 10. 355 44 400/3/50 5. 71. 11. 77 77 66 422	70 34 37 11 555 79 31 32 55 32 55 32 55 35 35 36 55 46 56 56 66 37 99 60 60	306 2.75 4.33 170 4.56 179 962 312 3.08 963 3.13 3.08 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73  4918	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74 5044
Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump  Sound pressure  Weights	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight	% kW kW kW  % n° n° 1/s kPa DN V/Ph/Hz A kPa DN dB(A) dB(A) Kg Kg	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67 3294 3330	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463 3500	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 73 70 3517 3560	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 1.13.19 125 6+6 2 32.06 49 150 485 662 125 150 76 73 70 3682 3730	2. 4. 17. 4. 17. 88 21. 3. 3. 88 22. 3. 3. 17. 66 27. 77. 77. 66 422. 42. 42.	70 34 34 71 555 79 61 61 322 552 33 62 62 88 88 1 60 60 60 60	306 2.75 4.33 170 4.56 179 962 3.12 3.08 963 3.13 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518 4580	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73 4918 4990	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74 5044 5120
Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump  Sound pressure  Weights  DIMENSIONS	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Pump available static pressure Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight  726-P 786-P 826-P 906-P	% kW kW kW kW  % n° n° n° L/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A) Kg Kg 1048-P	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67 3294 3330	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463 3500	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 28.76 600 135 150 76 73 70 3517 3560	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 76 73 70 3682 3730	2. 4. 4. 17. 88   2.1 3. 3. 88   2.2 3. 3. 3. 17. 66   2.3 3. 17. 77   6.4 42   42   42   42   42   42   42   42	70 34 34 71 555 79 61 61 32 52 53 33 505 66 6 7 7 7 7 8 8 8 8 8 1 1 50 1 1 50 1 1 50 1 1 50 1 1 50 1 1 50 1 1 50 1 50 1 50 6 6 6 6 7 9 9 0 0 6 6 6 6 7 2 2 4 6 7 2 4 7 8 8 8 8 8 8 8 8 8 8 8 8 9 9 0 0 0 6 6 6 6 7 2 2 4 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	306 2.75 4.33 170 4.56 179 962 312 3.08 963 3.13 3.08 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518 4580 27012-P 30	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73 4918 4990	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 777 74 5044 5120 2-P 36012-P
Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump  Sound pressure  Weights  DIMENSIONS  STD mm	EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight  726-P 786-P 826-P 906-P 1 2800 2800 2800 2800 2800	% kW kW kW kW  % n° n° n° b° l/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A) dB(A) Kg Kg	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67 3294 3330 1128-P 1208 4000 4000	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463 3500 69 3463 3500 69 4000	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 73 70 3517 3560	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 76 73 70 3682 3730 8812-P 18012	2. 4. 4. 17. 44. 17. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18	70   34   71   384   71   374   374   71   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374	306 2.75 4.33 170 4.56 179 962 312 3.08 963 3.13 3.08 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518 4580 2 7012-P 30 6200	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73 4918 4990 0012-P 33012 6200 7200	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74 5044 5120 2-P 36012-P 0 7200
Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump  Sound pressure  Weights  DIMENSIONS  L STD mr SSL mm	EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections  STD version (5)  With SL accessory (5)  SSL version (5)  Transport weight  Operating weight  726-P 786-P 826-P 906-P  n 2800 2800 2800 2800 2800	% kW kW kW kW  % n° n° l/s kPa DN dB(A) dB(A) dB(A) Kg Kg 1048-P 4000 4000	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67 3294 3330  128-P 1208 4000 4000 4000 4000	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463 3500 69 3463 3500 69 4000 0 4000	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2  28.76 58 80  422 600 135 150 76 73 70 3517 3560	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 485 662 125 150 76 73 70 3682 3730 8812-P 18012	2. 4. 4. 17. 88 22. 3. 8. 88 22. 3. 3. 11. 6. 27. 10 35 40/3/50 77. 11. 77 6. 402 422 422 42 6) 5000 5000	70 34 34 71 55 79 86 81 82 88 1 90 85 86 88 1 90 90 60 60 60 60 60 60 60 60 60 60 60 60 60	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518 4580  27012-P 30 6200 7200	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73 4918 4990 0012-P 33012 6200 7200	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74 5044 5120 2-P 36012-P 0 7200
Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump  Sound pressure  Weights  DIMENSIONS  STD mm	EER (1)   SEER (2)   EER (2)	% kW kW kW kW kW www. kW www. kW www. kW www. kPa DN www. kPa DN www. kPa DN dB(A) dB(A) dB(A) kg www. kg want. kg wat. kg wat	2.87 4.30 169 4.55 179 564 182 3.10 565 183 3.09 3.19 125 6+6 2 23.65 49 80 350 518 165 100 73 70 67 3294 3330 1128-P 1208 4000 4000	186 2.92 4.32 170 4.55 179 620 202 3.07 621 203 3.07 3.19 125 6+6 2 26.09 60 80 375 543 145 100 75 72 69 3463 3500 1-P 13010-P 0 4000 0 4000 0 2200	214 2.81 4.39 173 4.55 179 684 223 3.07 685 224 3.06 3.19 125 6+6 2 28.76 58 80 422 600 135 150 76 73 70 3517 3560 15010-P 16 5000 2200	2.72 4.32 170 4.56 179 776 249 3.12 777 250 3.11 3.19 125 6+6 2 32.06 49 150 76 73 70 3682 3730 8812-P 18012	2. 4. 4. 17. 88 22. 3. 8. 80 21. 3. 17. 6. 18. 400/3/50 77. 11. 77 6. 422 422 425 0 5000 0 5000 0 2200	70   34   71   384   71   374   374   71   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374   374	306 2.75 4.33 170 4.56 179 962 312 3.08 963 313 3.08 963 3.19 125 6+6 2 40.37 51 150 598 812 140 150 76 73 70 4518 4580 27012-P 36 6200 7200 2200	339 2,77 4,34 171 4,55 179 1078 349 3,09 1079 350 3,08 3,19 125 6+6 2 45,01 42 150 676 938 130 150 76 73 4918 4990 0012-P 33012 6200 7200	369 2.84 4.33 170 4.55 179 1210 383 3.16 1211 384 3.15 3.19 125 6+6 2 50.21 52 150 746 1007 100 150 77 74 5044 5120 2-P 36012-P 0 7200 0 7200

### **CLEARANCE AREA**

CHA/K 726-P÷36012-P

500 1800 1000 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.



# CHA/K/FC 726-P+36012-P

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.





FREE COOLINGING



The liquid Chillers of the CHA/K/FC 726-P÷36012-P series, with R410A refrigerant, provide advanced technology, flexible and reliable, through an intelligent control module which optimizes the operating times and the powers delivered by the Scroll compressors, according to the needs of the systems, both civil and industrial, where the production of chilled water is required in continuous service throughout the year. During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly, by way of the forced convection of outside air through the condensing coil, thus reducing the energy required for the Scroll compressors operation that the units are equipped with. A system of 3-way valves, controlled by the electronic microprocessor controller that manages the entire unit, can, depending on outside air temperature, operate in CHILLER, FREE-COOLING or MIXED (CHILLER and FREE-COOLING at the same time) mode. CHA/K/FC 726-P÷36012-P allows the reduction of inrush currents generated, the elimination of inertial accumulation tanks and an excellent silent functioning, as the fans adjust their speed to the actual load of the system, providing great benefits especially at night. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are compliant to the ErP 2021 Regulation for process cooling application.

On request, units can be supplied with R452B (CHA/G/FC 726-P÷36012-P) or R454B (CHA/L/FC 726-P÷36012-P) refrigerant.

### **VERSION**

CHA/K/FC

Cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTO	RY FITTED ACCESSORIES
IM	Automatic circuit breakers

IIVI	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PS	Single circulating pump
PSI	Inverter single circulating pump

PD	Double circulating pump
PDI	Inverter double circulating pump
SS	Soft start
IS	Modbus RTU protocol, RS485
	serial interface
IST	Modbus TCP/IP protocol, Ethernet
	port
ISB	BACnet MSTP protocol, RS485
	serial interface
ISBT	BACnet TCP/IP protocol, Ethernet

	P 0. C
ISB	BACnet MSTP protocol, RS485
	serial interface
ISBT	BACnet TCP/IP protocol, Ethernet
	port
ISL	LonWorks protocol, FTT-10 serial
	interface
ISS	SNMP protocol, Ethernet port

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation
IDL	Demand limit from digital input

#### **LOOSE ACCESSORIES**

LOOSE	ACCESSORIES
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

## CHA/K/FC 726-P÷36012-P



MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
	Cooling capacity (1)	kW	208	236	263	290	328	365	401	441	483
Cooling	Absorbed power (1)	kW	76	87	88	98	108	123	132	147	163
	EER (1)		2.74	2.71	2.99	2.96	3.04	2.97	3.04	3.00	2.96
	Cooling capacity (1)	kW	206	234	260	287	325	362	398	438	479
0 1: (ENIATEAA)	Absorbed power (1)	kW	78	89	91	101	111	126	135	150	167
Cooling (EN14511)	EER (1)		2.64	2.63	2.86	2.84	2.93	2.87	2.95	2.92	2.87
	SEPR (2)		5.04	5.03	5.02	5.05	5.01	5.06	5.02	5.51	5.53
- O !! !	Air temperature (3)	°C	-2.0	-2.8	-2.5	-0.2	-2.7	-3.5	-1.0	-2.0	-1.0
Free-Cooling cycle	Absorbed power (3)	kW	7.0	7.0	10.5	10.5	14.0	14.0	14.0	14.0	17.5
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°				4					6
	Water flow	I/s	11.02	12.38	13.87	15.31	17.32	19.34	21.21	23.33	25.52
Water circuit	Pressure drops	kPa	102	126	165	124	112	106	115	100	120
Trator on oan	Water connections	DN	100	100	100	100	100	100	100	100	100
Electrical	Power supply	V/Ph/Hz					400/3/50			1	
	Max. running current	Α	152	166	187	199	232	249	266	282	332
characteristics	Max. starting current	A	276	299	354	367	365	417	433	415	500
11.24 241	Pump available static pressure	kPa	150	115	70	100	95	80	105	115	85
Unit with pump	Water connections	DN	100	100	100	100	100	100	100	100	100
0 1	STD version (4)	dB(A)	70	70	71	73	73	73	74	75	74
Sound pressure	With SL accessory (4)	dB(A)	68	67	68	70	70	70	71	72	71
\A/ : I :	Transport weight	Kg	2175	2185	2360	2435	2990	3020	3220	3510	3920
Weights	Operating weight	Kg	2310	2320	2500	2630	3190	3220	3470	3770	4250
MODEL			16812-P	18012-F	21012	-P 2401	2-P 270	12-P 30	0012-P	33012-P	36012-P
	Cooling capacity (1)	kW	536	590	CCE	7.0	0 0				
Cooling					l hhh	1 /3	K   }	127	920	1014	1102
oooning	Absorbed nower (1)	kW			665	73		127 105	920 340	1014 368	1102 412
	Absorbed power (1)	kW	179	199	230	26	6 3	05	340	368	412
	EER (1)		179 2.99	199 2.96	230	26	6 3 7 2	.71	340 2.71	368 2.76	412 2.67
	EER (1) Cooling capacity (1)	kW	179 2.99 532	199 2.96 585	230 2.89 659	26 2.7 73	6 3 7 2 1 8	.71 118	340 2.71 911	368 2.76 1004	412 2.67 1102
Cooling (EN14511)	EER (1) Cooling capacity (1) Absorbed power (1)		179 2.99 532 183	199 2.96 585 204	230 2.89 659 236	26 2.7 73 27	6 3 7 2 1 8 3 3	.71 .118 .114	340 2.71 911 349	368 2.76 1004 378	412 2.67 1102 412
Cooling (EN14511)	EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW	179 2.99 532 183 2.91	199 2.96 585 204 2.87	230 2.89 659 236 2.79	26 2.7 73 27 2.6	6 3 7 2 1 8 3 3 8 2	.71 .18 .14 .61	340 2.71 911 349 2.61	368 2.76 1004 378 2.66	412 2.67 1102 412 2.67
	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2)	kW kW	179 2.99 532 183 2.91 5.52	199 2.96 585 204 2.87 5.54	230 2.89 659 236 2.79 5.56	26 2.7 73 27 2.6 5.5	6 3 7 2 1 8 3 3 8 2 8 5	05 .71 !18 !14 .61	340 2.71 911 349 2.61 5.53	368 2.76 1004 378 2.66 5.52	412 2.67 1102 412 2.67 5.51
Cooling (EN14511)  Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3)	kW kW	179 2.99 532 183 2.91 5.52 -2.2	199 2.96 585 204 2.87 5.54 -2.7	230 2.89 659 236 2.79 5.56	26 2.7 73 27: 2.6 5.5	6 3 7 2 1 8 3 3 8 2 8 5 5 -	.71 .71 .18 .14 .61 .55	340 2.71 911 349 2.61 5.53 -0.1	368 2.76 1004 378 2.66 5.52 0.1	412 2.67 1102 412 2.67 5.51 -0.4
	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3)	kW kW	179 2.99 532 183 2.91 5.52 -2.2 17.5	199 2.96 585 204 2.87 5.54 -2.7 17.5	230 2.89 659 236 2.79 5.56 -3.0	26 2.7 73 27 2.6 5.5 -3.	6 3 7 2 1 8 3 3 8 2 8 5 5 -	.71 .71 .118 .114 .61 .55 2.5 4.5	340 2.71 911 349 2.61 5.53 -0.1 28.0	368 2.76 1004 378 2.66 5.52 0.1 31.5	412 2.67 1102 412 2.67 5.51 -0.4 31.5
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity	kW kW °C kW n°	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6	26i 2.7 73 27i 2.6 5.5 -3. 21.	6 3 7 2 1 8 3 3 8 2 8 5 5 -	105 171 118 114 1.61 1.55 2.5 4.5	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6
	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits	kW kW °C kW n°	179 2.99 532 183 2.91 5.52 -2.2 17.5	199 2.96 585 204 2.87 5.54 -2.7 17.5	230 2.89 659 236 2.79 5.56 -3.0	26 2.7 73 27 2.6 5.5 -3.	6 3 7 2 1 8 3 3 8 2 8 5 5 - 0 2 6 6	.71 .71 .118 .114 .61 .55 2.5 4.5	340 2.71 911 349 2.61 5.53 -0.1 28.0	368 2.76 1004 378 2.66 5.52 0.1 31.5	412 2.67 1102 412 2.67 5.51 -0.4 31.5
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps	kW kW °C kW n° n°	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2	26 2.7 73 27: 2.6 5.5 -3. 21. 6+	66 3 77 2 11 8 33 3 88 2 88 5 5 -	1005 171 118 114 161 1.55 2.5 4.5 4.5 4.5	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2
Free-Cooling cycle Compressor	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow	kW kW °C kW n° n°	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2	26 2.7 73 27; 2.6 5.5 -3. 21. 6+1 2	6 3 7 2 1 8 3 3 8 2 8 5 5 - 0 2 6 6 6	1005 171 118 114 161 155 22.5 44.5 146 2	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW °C kW n° n° 1/s	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2	260 2.7 73 27: 2.6 5.5 -3. 21. 6+1 2	66 377 271	1005 1.71 118 114 1.61 1.55 2.5 4.5 1.46 2	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Ouantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	kW kW °C kW n° n° l/s	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2	26 2.7 73 27; 2.6 5.5 -3. 21. 6+1 2	66 377 22 1 8 8 28 55 - 0 26 6 6 8 8 8 9 44 9 2 1 1 0 1 1 0 0 1 1	1005 171 118 114 161 155 22.5 44.5 146 2	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2
Free-Cooling cycle Compressor Water circuit Electrical	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	kW kW °C kW n° n° l/s kPa DN V/Ph/Hz	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2 35.11 148 125	260 2.77 73 277 2.66 5.5 -3. 211. 6++ 2 38.8 15.	66 377 271 873 33 33 88 22 88 55 - 00 26 66 66 88 89 43 22 11 400/3/50	1005 1.71 118 118 1.61 1.55 2.5 4.5 1.61 1.55 2.5 4.5 1.61 1.72 1.72 1.72 1.72 1.72 1.72 1.72	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	kW kW °C kW n° n° l/s kPa DN V/Ph/Hz	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 236 2.79 5.56 -3.0 17.5 6+6 2 35.11 148 125	260 2.77 73 277: 2.66 5.5 -3. 21. 6+1 2 38.8 15:	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	.71	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150
Free-Cooling cycle Compressor Water circuit Electrical characteristics	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW °C kW n° n° l/s kPa DN V/Ph/Hz A	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 236 2.79 5.56 -3.0 17.55 6+6 2 35.11 148 125	260 2.7 73 27: 2.6 5.5 -3. 21. 6+1 2 38.8 15: 150 67:	77 22 77 22 71 8 33 3 3 33 8 8 2 8 8 5 5 6 6 8 8 8 99 4 400/3/50 0 5 1 400/3/50 0 5 8 7 7	005 .71 .71 .71 .71 .71 .71 .72 .73 .74 .74	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150	368 2.76 1004 378 2.66 5.52 0.1 31.5 646 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150
Free-Cooling cycle Compressor Water circuit Electrical	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW kW °C kW n° n° n° l/s kPa DN V/Ph/Hz A A kPa	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125 365 533 110	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 236 2.79 5.56 -3.0 17.5 646 2 35.11 148 125	260 2.77 73 277 2.6 5.5 -3. 211. 6++ 2 38.8 155 150 674	66 377 2277 2777 2777 2777 2777 2777 277	005 .71 .71 .71 .71 .71 .71 .71 .72 .72 .72 .72 .72 .72 .72 .72	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150 622 835 125	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150
Free-Cooling cycle Compressor Water circuit Electrical characteristics Unit with pump	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections	kW kW °C kW n° n° 1/s kPa DN V/Ph/Hz A A A BDN	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 2366 2.79 5.56 -3.0 17.5 64 35.11 148 125 438 615 60 0	260 2.77 73 27: 2.66 5.5 -3. 21. 6+ 2 38.6 15: 15:	66 377 227 1 86 33 33 33 33 88 22 66 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	.005 .71 .71 .118 .114 .6.61 .55 .2.5 .2.5 .4.5 .4.5 .4.5 .4.5 .55 .50 .64 .77 .72 .50	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150
Free-Cooling cycle Compressor Water circuit Electrical characteristics	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (4)	kW kW °C kW n° n° n° 1/s kPa DN V/Ph/Hz A kPa DN dB(A)	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125 74	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125 391 558 90 125 76	230 2.89 659 23.6 2.79 5.56 -3.0 17.5 6+6 2 35.11 148 125 438 615 60 1255 78	260 2.77 73 27: 2.66 5.5 -3. 21. 6+ 4 2 38.6 15: 150 67: 160 67:	3	1005	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150 78	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150 769 1031 110 150 79
Free-Cooling cycle Compressor Water circuit Electrical characteristics Unit with pump	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections	kW kW °C kW n° n° 1/s kPa DN V/Ph/Hz A A A BDN	179 2.99 532 183 2.91 5.52 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125	199 2.96 585 204 2.87 5.54 -2.7 17.5 6+6 2 31.09 132 125	230 2.89 659 2366 2.79 5.56 -3.0 17.5 64 35.11 148 125 438 615 60 0	260 2.7 73 27: 2.6 5.5 -3. 21. 6+  2 38.8 15: 150 67: 160 175 78	77 22 77 22 71 8 83 3 3 3 3 3 3 8 8 8 2 8 8 5 5 - 0 0 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	.005 .71 .71 .118 .114 .6.61 .55 .2.5 .2.5 .4.5 .4.5 .4.5 .4.5 .55 .50 .64 .77 .72 .50	340 2.71 911 349 2.61 5.53 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150	368 2.76 1004 378 2.66 5.52 0.1 31.5 6+6 2 53.51 162 150	412 2.67 1102 412 2.67 5.51 -0.4 31.5 6+6 2 58.13 173 150

DIMENSIONS		726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	
L	STD	mm	4000	4000	4000	4000	5000	5000	5000	5000	6200
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360

<b>DIMENSION</b>	IS		16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
L	STD	mm	6200	6200	7200	7200	8400	9600	10600	10600
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360

### **CLEARANCE AREA**

CHA/K/FC 726-P÷36012-P

500 1800 1000 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature.

  According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from the unit According to ISO 3744.
- the unit. According to ISO 3744.



## CHA/K 726÷36012

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGER.



















The liquid Chillers and Heat Pumps of the CHA/K 726÷36012 series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

Heat pump models 726+13010 are compliant to the ErP Regulation; models 15010÷36012 are compliant if provided with EC or ECH accessory (EC Inverter fans).

On request, units can be supplied with R452B (CHA/G 726÷36012) or R454B (CHA/L **726÷36012)** refrigerant.

VERSION	J
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CHA/K	CHA/K/WP
Cooling only	Reversible Heat Pump
CHA/K/SSL	CHA/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- · Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048÷36012 models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.

SNMP protocol, Ethernet port

Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	EW	External water connections
SL	Unit silencement	PU	Single circulating pump
RFM	Cooling circuit shut-off valve on	PUI	Inverter single circulating pump
	discharge line	PD	Double circulating pump
RFL	Cooling circuit shut-off valve on	PDI	Inverter double circulating pump
	liquid line	FE	Antifreeze heater for evaporator
CT	Condensing control down to 0 °C	SS	Soft start
CC	Condensing control down to -20 °C	IS	Modbus RTU protocol, RS485
BT	Low water temperature kit		serial interface
EC	EC Inverter fans	IST	Modbus TCP/IP protocol, Ethernet
ECH	EC Inverter fans with high available		port
	static pressure	ISB	BACnet MSTP protocol, RS485
HR	Desuperheater		serial interface
HRT/S	Total heat recovery in series	ISBT	BACnet TCP/IP protocol, Ethernet
HRT/P	Total heat recovery in parallel		port
TX	Coil with pre-coated fins	ISL	LonWorks protocol, FTT-10 serial
			interface

ISS

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

#### LOOSE ACCESSORIES

	100200011120
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch









MODEL			726	786	826	906	1048	1128	1208	13010	15010
	Cooling capacity (1)	kW	200	224	248	270	302	328	367	404	445
Cooling [	Absorbed power (1)	kW	70	80	86	97	105	115	121	136	158
	EER (1)		2.86	2.80	2.88	2.78	2.88	2.85	3.03	2.97	2.82
	Cooling capacity (1)	kW	199	223	247	269	301	326	365	403	444
	Absorbed power (1)	kW	71	81	87	98	106	117	123	137	159
	EER (1)		2.80	2.75	2.84	2.74	2.84	2.79	2.97	2.94	2.79
Cooling (EN14511)	SEER (2)	0/	3.80	3.83	3.96	3.99	3.85	3.96	4.07	4.27	4.31
Cooling (LIVI 4311)	Energy Efficiency (2)	%	149	150	155	157	151	155	160	168	169
	SEER with EC or ECH accessory (2)		4.13	4.11	4.17	4.22	4.15	4.23	4.34	4.56	4.56
	Energy Efficiency with EC or ECH	%	162	161	164	166	163	166	171	179	179
	accessory (2)										
	Heating capacity (3)	kW	229	252	280	304	336	362	401	442	512
Heating [	Absorbed power (3)	kW	74	83	91	106	109	123	130	145	167
	COP (3)		3.09	3.04	3.08	2.87	3.08	2.94	3.08	3.05	3.07
	Heating capacity (3)	kW	229	252	280	305	336	363	402	443	513
	Absorbed power (3)	kW	74	83	91	107	109	124	131	146	168
Heating (EN14511)	COP (3)		3.09	3.04	3.08	2.86	3.07	2.93	3.07	3.04	3.06
	SCOP (4)		3.22	3.20	3.21	3.22	3.21	3.22	3.23	3.21	3.20
	Energy Efficiency (4)	%	126	125	125	126	125	126	126	125	125
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°		6					8		
	Water flow	l/s	9.44	10.58	11.71	12.75	14.26	15.49	17.33	19.08	21.01
Evaporator	Pressure drops	kPa	45	42	45	50	48	56	55	45	33
	Water connections	DN	100	100	100	100	100	100	100	125	125
Electrical	Power supply	V/Ph/Hz					400/3/50				
	Max. running current	Α	152	166	179	191	216	233	250	274	316
characteristics	Max. starting current	Α	276	299	347	359	349	401	418	407	484
Unit with pump	Pump available static pressure	kPa	150	140	195	170	180	165	150	140	135
Offic With pullip	Water connections	DN	100	100	100	100	100	100	100	100	100
	STD version (5)	dB(A)	70	70	70	72	72	72	73	73	72
Sound pressure [	With SL accessory (5)	dB(A)	67	67	67	69	69	69	69	70	69
·	SSL version (5)	dB(A)	64	64	64	66	65	65	67	66	66
Weights	Transport weight	Kg	1703	1723	1813	2003	2253	2532	2642	2691	3283
vveigints	Operating weight	Kg	1750	1770	1860	2050	2310	2600	2710	2780	3380
MODEL			16812	18012	21012	2 240	12 27	7012	30012	33012	36012
MODEL	Cooling capacity (1)	kW									
	Cooling capacity (1) Absorbed power (1)	kW kW	510	551	614	68	4	766	862	961	1062
	Absorbed power (1)	kW kW	510 174	551 186	614 214	68	0 2	766 281	862 307	961 340	1062 369
	Absorbed power (1) EER (1)	kW	510 174 2.93	551 186 2.96	614 214 2.87	68 25 2.7	0 2 74 2	766 281 2.73	862 307 2.81	961 340 2.83	1062 369 2.88
	Absorbed power (1) EER (1) Cooling capacity (1)	kW kW	510 174 2.93 508	551 186 2.96 549	614 214 2.87 611	68 25 2.7 68	4 0 2 74 2	766 281 2.73 763	862 307 2.81 858	961 340 2.83 958	1062 369 2.88 1058
	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1)	kW	510 174 2.93 508 176	551 186 2.96 549 188	614 214 2.87 611 217	68 25 2.7 68 25	4 0 2 74 2 2 2	766 281 2.73 763 284	862 307 2.81 858 311	961 340 2.83 958 343	1062 369 2.88 1058 373
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW kW	510 174 2.93 508 176 2.89	551 186 2.96 549 188 2.92	614 214 2.87 611 217 2.82	68 25 2.7 68 25 2.7	4 0 2 74 2 2 2 2 71 2	766 281 2.73 763 284 2.69	862 307 2.81 858 311 2.76	961 340 2.83 958 343 2.79	1062 369 2.88 1058 373 2.84
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)	kW kW kW	510 174 2.93 508 176 2.89 4.29	551 186 2.96 549 188 2.92 4.31	614 214 2.87 611 217 2.82 4.39	68 25 2.7 68 25 2.7 4.3	4	766 281 2.73 763 284 2.69	862 307 2.81 858 311 2.76 4.31	961 340 2.83 958 343 2.79 4.34	1062 369 2.88 1058 373 2.84 4.32
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2)	kW kW	510 174 2.93 508 176 2.89 4.29	551 186 2.96 549 188 2.92 4.31	614 214 2.87 611 217 2.82 4.39 173	68 25 2.7 68 25 2.7 4.3	4	766 281 2.73 763 284 2.69 1.33	862 307 2.81 858 311 2.76 4.31 169	961 340 2.83 958 343 2.79 4.34 171	1062 369 2.88 1058 373 2.84 4.32
Cooling	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)	kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55	551 186 2.96 549 188 2.92 4.31 169 4.55	614 214 2.87 611 217 2.82 4.39 173 4.55	68 25 2.7 68 25 2.7 4.3 17 4.5	4	766   281   2.73   763   284   2.69   3.33   170   1.55	862 307 2.81 858 311 2.76 4.31 169 4.56	961 340 2.83 958 343 2.79 4.34 171 4.55	1062 369 2.88 1058 373 2.84 4.32 170 4.55
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH	kW kW kW	510 174 2.93 508 176 2.89 4.29	551 186 2.96 549 188 2.92 4.31	614 214 2.87 611 217 2.82 4.39 173	68 25 2.7 68 25 2.7 4.3	4	766 281 2.73 763 284 2.69 1.33	862 307 2.81 858 311 2.76 4.31 169	961 340 2.83 958 343 2.79 4.34 171	1062 369 2.88 1058 373 2.84 4.32
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2)	kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55	551 186 2.96 549 188 2.92 4.31 169 4.55	614 214 2.87 611 217 2.82 4.39 173 4.55	68 25 2.7 68 25 2.7 4.3 177 4.5	4	766 281 2.73 763 284 2.69 3.33 170 1.55	862 307 2.81 858 311 2.76 4.31 169 4.56	961 340 2.83 958 343 2.79 4.34 171 4.55	1062 369 2.88 1058 373 2.84 4.32 170 4.55
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3)	kW kW kW %	510 174 2.93 508 176 2.89 4.29 169 4.55 179	551 186 2.96 549 188 2.92 4.31 169 4.55 179	614 214 2.87 611 217 2.82 4.39 173 4.55 179	68 25 2.7 68 25 2.7 4.3 17 4.5	4	766 281 73 763 284 69 33 170 55	862 307 2.81 858 311 2.76 4.31 169 4.56 179	961 340 2.83 958 343 2.79 4.34 171 4.55 179	1062 369 2.88 1058 373 2.84 4.32 170 4.55
Cooling Cooling (EN14511)	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)	kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226	68 25 2.7 68 25 2.7 4.3 17 4.5 17	4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	766   281  73  73  73	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316	961 340 2.83 958 343 2.79 4.34 171 4.55 179	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3)	kW kW kW % kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25	4	766   281   2.73   763   2.63   2.69   2.69   2.33   2.70   2.55   2.55   2.79   3.78   2.88   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05   2.05	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3)	kW kW kW % kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0	4	766 281 2.73 63 284 2.69 2.33 70 2.55 1.79 378 8288 8.05	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12	1062 369 2.88 1058 3.73 2.84 4.32 170 4.55 179 1222 388 3.15 1223
Cooling Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3)	kW kW kW % kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79	4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	766 281 273 284 284 289 284 289 284 289 289 280 280 280 280 280 280 280 280 280 280	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389
Cooling Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3)	kW kW kW % kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25	4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	766 281 2.73 63 284 2.69 2.33 2.770 2.555 2.779 378 288 288 288 288 289 2.04	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14
Cooling Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (1) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (6)	kW kW kW % kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.19	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.0	4	766 281 7.73 763 884 8.69 8.133 8.170 8.555 179 8.888 8.005 8.89 8.004 8.119	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19
Cooling Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (1) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4)	kW kW kW % kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.1	4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	766 281 273 284 284 269 284 269 277 288 277 288 279 289 289 289 289 280 280 280 280 280 280 280 280 280 280	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity	kW kW kW % kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6	68 25 2.7. 68 25 2.7. 4.3. 17 4.5. 17 79 25 3.0. 79 25 3.1. 12 6+	4	766 281 273 284 284 269 284 269 284 269 284 269 277 288 288 288 289 289 289 289 289 289 289	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) Energy Efficiency (4) Quantity Refrigerant circuits	kW kW kW % kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.1	4	766 281 273 284 284 269 284 269 277 288 277 288 279 289 289 289 289 280 280 280 280 280 280 280 280 280 280	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps	kW kW kW % kW kW kW	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.0 3.1 12 6+	4	766 281 27.73 763 2763 284 2.69 2.55 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (1) EER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow	kW kW kW % kW kW kW n° n° n°	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.1 12 6+	4	766 281 281 273 263 284 2669 270 270 270 270 270 270 270 270 270 270	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops	kW kW kW % kW kW kW loo no no no no l/s kPa	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 227 3.08 3.19 125 6+6 2	68 25 2.7, 68 25 2.7, 4.3 17, 4.5 17, 79 25, 3.0, 79 25 3.0, 4, 4, 4, 5, 4, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	4	766 281 273 284 284 269 284 269 284 269 288 284 269 277 288 288 288 289 289 289 289 289 289 289	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections	kW kW kW % kW kW kW loor no no no l/s kPa DN	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.1 12 6+	4	766 281 281 273 263 284 2669 270 270 270 270 270 270 270 270 270 270	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply	kW k	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 3.1 12 6+ 2 2	4	766 281 27.73 763 284 2.69 2.170 2.55 2.88 2.88 2.05 2.89 2.179 2.88 2.199 2.125 2.199 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.1	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current	kW kW kW  %  kW kW kW  kW  construction  from no no no no no no no N/Ph/Hz  kPa  DN  V/Ph/Hz  A	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.06 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 79 25 3.1 40 3.1 12 6+ 2	4	766 281 27.73 763 284 2.69 2.170 2.55 2.88 2.88 2.05 2.89 2.179 2.88 2.199 2.125 2.199 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.179 2.1	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.11 3.19 125 6+6 2	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Energy Efficiency (4)  Uauntity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current	kW kW kW kW kW kW ho no	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.13 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.13 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.12 3.13 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2	68 25 2.7 68 25 2.7 4.3 17 4.5 3.0 79 25 3.0 3.1 12 6+ 2	4	766 281 281 273 63 284 669 333 770 2.55 179 288 2.05 279 289 2.04 2.19 2.25 3.46 2.2 5.45 5.55 5.55 5.55 6.77 6.79 6.75 6.75 6.75 6.75 6.75 6.75 6.75 6.75	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure	kW k	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 518 165	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2 26.02 54 125	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 422 600 130	68 25 2.7 68 25 2.7 4.3 17 4.5 3.0 79 25 3.0 3.1 12 6+ 2 46 15	4	766 281 27.73 763 284 2.69 2.33 284 2.69 2.55 2.77 2.78 2.78 2.88 2.05 2.79 2.89 2.04 2.19 2.19 2.19 2.19 2.19 2.19 2.19 2.19	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections	kW kW kW  %  kW kW kW kW  kW  N°  n°  n°  N°  L/s kPa DN  V/Ph/Hz A A A kPa DN	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 518 125 518 105 105 105 105 105 105 105 105	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2 26.02 54 125 543 150 100	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 422 600 130 150	68 25 2.7 68 25 2.7 4.3 17 4.5 17 79 25 3.0 3.1 12 6+ 2 46 15	4	766 281 27.73 763 284 2.69 2.69 2.55 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150 598 812 125 150	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150 676 938 125 150	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95 150
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections  Vater connections  STD version (5)	kW kPa DN V/Ph/Hz A A kPa DN dB(A)	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 518 125 518 100 73	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2 26.02 54 125 543 150 170 170 170 170 170 170 170 17	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 422 600 130 150 76	68 25 2.7 68 25 2.7 4.3 17 4.5 3.0 79 25 3.0 3.1 12 6+ 2 32.4 48 66 13 15	4	766 281 281 273 263 284 2669 275 277 288 277 288 277 288 277 277 278 278	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150 598 812 125 150 76	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150 676 938 125 150 76	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95 150 77
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (4)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections  STD version (5)  With SL accessory (5)	kW kW kW  %  kW kW kW  kW kW  N°  n°  n°  L/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A)	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 518 165 100 73 70	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 626 2 26.02 54 125 375 543 150 100 75 72	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 600 130 150 76 76	68 25 27, 68 25 27, 4.3 17, 4.5 17, 25 3.0 79, 25 3.0 3.1 12 6+ 2 44, 15	4	766 281 281 273 763 284 2.69 2.69 2.79 2.79 2.79 2.79 2.79 2.79 2.79 2.7	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150 598 812 125 150 76 73	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150 676 938 125 150 76 73	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95 150 77
characteristics Unit with pump Sound pressure	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections  STD version (5)  With SL accessory (5)  SSL version (5)	kW k	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 350 518 165 100 73 70 67	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 6+6 2 26.02 54 125 375 543 150 100 75 72 69	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 600 130 150 76 73 70	68 25 27, 68 25 27, 4.3 17, 4.5 3.0 79 25 3.0 3.1 12 6+ 22 46 15 15 76 77	4	766 281 27.73 763 284 2.69 2.33 284 2.69 2.55 2.77 2.78 2.88 2.05 2.79 2.17 2.79 2.79 2.79 2.79 2.79 2.79 2.79 2.7	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150 598 812 125 150 76 73 70	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150 676 938 125 150 76 73	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95 150 77 74
Cooling  Cooling (EN14511)  Heating  Heating (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump	Absorbed power (1)  EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEER (2)  Energy Efficiency (2)  SEER with EC or ECH accessory (2)  Energy Efficiency with EC or ECH accessory (2)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (3)  COP (3)  Heating capacity (3)  Absorbed power (4)  COP (3)  SCOP (4)  Energy Efficiency (4)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections  STD version (5)  With SL accessory (5)	kW kW kW  %  kW kW kW  kW kW  N°  n°  n°  L/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A)	510 174 2.93 508 176 2.89 4.29 169 4.55 179 581 186 3.12 582 187 3.12 3.19 125 6+6 2 24.08 43 125 518 165 100 73 70	551 186 2.96 549 188 2.92 4.31 169 4.55 179 626 204 3.07 627 205 3.06 3.19 125 626 2 26.02 54 125 375 543 150 100 75 72	614 214 2.87 611 217 2.82 4.39 173 4.55 179 698 226 3.09 699 227 3.08 3.19 125 6+6 2 28.99 59 125 600 130 150 76 76 77	68 25 27, 68 25 27, 4.3 17, 4.5 17, 25 3.0 79, 25 3.0 3.1 12 6+ 2 44, 15	4	766 281 281 273 763 284 2.69 2.69 2.79 2.79 2.79 2.79 2.79 2.79 2.79 2.7	862 307 2.81 858 311 2.76 4.31 169 4.56 179 981 316 3.10 982 317 3.10 3.19 125 6+6 2 40.71 62 150 598 812 125 150 76 73	961 340 2.83 958 343 2.79 4.34 171 4.55 179 1100 353 3.12 1101 354 3.11 3.19 125 6+6 2 45.38 47 150 676 938 125 150 76 73	1062 369 2.88 1058 373 2.84 4.32 170 4.55 179 1222 388 3.15 1223 389 3.14 3.19 125 6+6 2 50.15 52 150 746 1007 95 150 77

DIME	ENSIONS		726	786	826	906	1048	1128	1208	13010	15010	16812	18012	21012	24012	27012	30012	33012	36012
	STD	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
L	SSL	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	7200	7200		
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

### **CLEARANCE AREA**

CHA/K 726÷36012

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of SSL and WP versions are specified on technical brochure.



# CHA/K/EP 182-P+693-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.























**ENERGYPOWER** is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 182-P÷693-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/SCOP energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

Units are designed for hot water production up to 55 °C.

The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CHA/G/EP 182-P+693-P) or R454B (CHA/L/EP 182-P÷693-P) refrigerant.

### **VERSION**

CHA/K/EP CHA/K/EP/SSL Multifunctional unit Super silenced multifunctional unit

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.

IST

- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coil.
- Condenser AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side. On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

#### ACCESSORIES

.,	0111 111 125 7100200011120		
IM	Automatic circuit breakers	PSIH	Inverter single circulating pump
SL	Unit silencement		heating side
RFM	Cooling circuit shut-off valve on discharge line	PDH	Double circulating pump heating side
RFL	Cooling circuit shut-off valve on liquid line	PDIH	Inverter double circulating pump heating side
BT	Low water temperature kit	FGC	Antifreeze heater for single pum
EC	EC Inverter fans		and pipes cooling side
ECH	EC Inverter fans with high available	FMC	Antifreeze heater for double pun
	static pressure		and pipes cooling side
TX	Coil with pre-coated fins	FGH	Antifreeze heater for single pum
PSC	Single circulating pump cooling side		and pipes heating side
PSIC	Inverter single circulating pump	FMH	Antifreeze heater for double pun
	cooling side		and pipes heating side
PDC	Double circulating pump cooling side	SS	Soft start
PDIC	Inverter double circulating pump	TS	Touch screen Interface
	cooling side	WM	Web Monitoring - Wireless remo
PSH	Single circulating pump heating side		monitoring (GPRS/EDGE/3G/TCF
		IS	Modbus RTU protocol, RS485

PDH	Double circulating pump heating side
PDIH	Inverter double circulating pump heating side
FGC	Antifreeze heater for single pump and pipes cooling side
FMC	Antifreeze heater for double pump and pipes cooling side
FGH	Antifreeze heater for single pump and pipes heating side
FMH	Antifreeze heater for double pump and pipes heating side
SS	Soft start
TS	Touch screen Interface
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485

Modbus TCP/IP protocol, Ethernet

serial interface

ISB	BACnet MSTP protocol, RS485 serial interface
ISBT ISL	BACINETTCP/IP protocol, Ethernet port LonWorks protocol, FTT-10 serial interface
ISS IAV IAA IAS	SNMP protocol, Ethernet port Remote set-point, 0-10 V signal Remote set-point, 4-20 mA signal Remote signal for second set-point
IDL CP	activation Demand limit from digital input Potential free contacts

LOOSE ACCESSORIES							
MN	High and low pressure gauges						
CR	Remote control panel						
RP	Coils protection metallic guards						
AG	Rubber shock absorbers						
AM	Spring shock absorbers						



## CHA/K/EP 182-P÷693-P





MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
	Cooling capacity (1)	kW	48.6	55.9	63.2	72.2	81.8	92.7	105	118	134	159	190
Cooling only	Absorbed power (1)	kW	16.8	19.3	21.9	24.4	27.9	32.5	38.0	42.3	46.5	57.4	68.5
σ,	EER (1)		2.89	2.90	2.89	2.96	2.93	2.85	2.76	2.79	2.88	2.77	2.77
	Cooling capacity (1)	kW	48.3	55.5	62.8	71.7	81.3	92.2	105	117	133	158	189
Cooling only	Absorbed power (1)	kW	17.1	19.6	22.3	24.9	28.4	33.1	38.5	42.9	47.2	58.3	69.5
0 ,	EER (1)		2.82	2.83	2.82	2.88	2.86	2.79	2.73	2.73	2.82	2.71	2.72
(EN14511)	SEER (2)		4.17	4.18	4.17	4.2	4.19	4.16	4.14	4.14	4.17	4.13	4.13
	Energy Efficiency (2)	%	164	164	164	165	165	163	163	163	164	162	162
	Heating capacity (3)	kW	52.2	59.7	67.0	75.5	86.0	98.4	111	127	142	171	203
Heating only	Absorbed power (3)	kW	16.0	18.7	21.2	23.4	26.5	30.0	35.1	39.5	42.8	52.5	61.2
	COP (3)		3.26	3.19	3.16	3.23	3.25	3.28	3.16	3.22	3.32	3.26	3.32
	Heating capacity (3)	kW	52.5	60.0	67.4	75.9	86.4	98.8	112	128	143	172	204
	Absorbed power (3)	kW	16.3	19.0	21.6	23.9	27.0	30.5	35.7	40.3	43.9	53.7	62.7
Heating only	COP (3)		3.22	3.16	3.12	3.18	3.20	3.24	3.14	3.18	3.26	3.20	3.25
(EN14511)	SCOP (4)		3.49	3.46	3.36	3.36	3.38	3.93	3.58	3.53	3.73	3.73	3.75
	Energy Efficiency (4)	%	137	135	131	131	132	154	140	138	146	146	147
	Energy Class (5)		A+	A+	A+	A+							
	Cooling capacity (6)	kW	49.6	56.5	62.9	71.8	83.3	94.0	110	126	140	168	203
Cooling + Heating	Heating capacity (6)	kW	64.9	73.9	82.5	94.1	109	123	143	163	181	217	261
Cooling + ricating	Absorbed power (6)	kW	15.3	17.4	19.6	22.3	25.2	29.4	32.6	37.2	40.7	49.0	58.4
	TER (6)		7.48	7.49	7.42	7.44	7.63	7.38	7.76	7.77	7.89	7.86	7.95
	Cooling capacity (6)	kW	49.3	56.2	62.5	71.3	82.8	93.4	109	125	139	167	202
Cooling + Heating	Heating capacity (6)	kW	65.2	74.3	82.9	94.6	110	124	144	164	182	218	262
(EN14511)	Absorbed power (6)	kW	15.6	17.7	20.0	22.8	25.7	30.0	33.1	37.8	41.4	49.8	59.3
	TER (6)		7.34	7.37	7.27	7.28	7.50	7.25	7.64	7.65	7.75	7.73	7.82
_	Quantity	n°	2	2	2	2	2	3	3	3	2	3	3
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1	1	1
	Capacity steps	n°			2				3		2		3
Evaporator -	Water flow	l/s	2.32	2.67	3.02	3.45	3.91	4.43	5.02	5.64	6.40	7.60	9.08
cooling side	Pressure drops	kPa	35	41	53	50	49	51	38	46	50	52	52
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
Condenser -	Water flow	l/s	2.49	2.85	3.20	3.61	4.11	4.70	5.30	6.07	6.78	8.17	9.70
heating side	Pressure drops	kPa	31	35	38	42	40	35	34	42	48	43	45
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
Electrical	Power supply	V/Ph/Hz						400/3/50					
characteristics	Max. running current	A	40	46	54	59	66	77	84	95	100	128	151
	Max. starting current	A	164	166	178	191	234	201	217	263	314	304	359
Unit with pump -	Pump available static pressure	kPa	150	140	120	115	130	115	115	95	150	135	115
cooling side	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3″	3"
Unit with pump -	Pump available static pressure	kPa	150	140	130	120	135	125	115	160	150	135	115
heating side	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
ECH fan available	STD version	Pa	95 70	100 85	95 70	95 70	95 70	100 90	60 50	50 50	60 60	50 50	50 50
static pressure	SSL version	Pa	63	64	64	65		90 66	68	68	69	70	70
C	STD version (7)	dB(A)					65						
Sound pressure	With SL accessory (7)	dB(A)	61	62	62	63	63	64	66	66	67	68	68
	SSL version (7)	dB(A)	58	59	59	60	60	61	63	63	64	65	65
Weights	Transport weight	Kg	750	760	815	905	925	1030	1055	1085	1295	1500	1545
3	Operating weight	Kg	765	775	830	925	950	1060	1085	1115	1335	1545	1595

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
	STD	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550	3550
L	SSL	mm	2350	2350	2350	2350	2350	3550	3550	3550	3550	4700	4700
W	STD/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD/SSL	mm	1920	1920	1920	2220	2220	2220	2220	2220	2220	2220	2220

## **CLEARANCE AREA**

CHA/K/EP 182-P÷693-P

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 6. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
  7. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.

# CHA/K/EP 604-P+2406-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.

























**ENERGYPOWER** is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 604-P÷2406-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/SCOP energy values. The units are characterized by double cooling circuit. Thanks to the advanced control system, ENERGYPOWER units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. Units are designed for **hot water production up to 55 °C**.

The models 604-P+1506-P are compliant to the ErP Regulation. The models 1806-P+2406-P are compliant to the ErP 2021 Regulation for comfort cooling application if provided with EC or ECH accessory (EC Inverter fans).

On request, units can be supplied with R452B (CHA/G/EP 604-P+2406-P) or R454B (CHA/L/EP 604-P+2406-P) refrigerant.

### **VERSION**

CHA/K/EP	CHA/K/EP/SSL
Multifunctional unit	Super silenced multifunctional unit

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- · Copper tube and aluminum finned coils.
- Condenser AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side.
   On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.

IST

· Microprocessor control and regulation system.

#### **ACCESSORIES**

## FACTORY FITTED ACCESSORIES

IM SL	Automatic circuit breakers Unit silencement	PSIH	Inverter single circulating pump heating side	ISB	BACnet MSTP protocol, RS485 serial interface
RFM	Cooling circuit shut-off valve on	PDH	Double circulating pump heating side	ISBT	BACnet TCP/IP protocol, Ethernet
DEL	discharge line	PDIH	Inverter double circulating pump	101	port
RFL	Cooling circuit shut-off valve on	500	heating side	ISL	LonWorks protocol, FTT-10 serial
	liquid line	FGC	Antifreeze heater for single pump		interface
BT	Low water temperature kit		and pipes cooling side	ISS	SNMP protocol, Ethernet port
EC	EC Inverter fans	FMC	Antifreeze heater for double pump	IAV	Remote set-point, 0-10 V signal
ECH	EC Inverter fans with high available		and pipes cooling side	IAA	Remote set-point, 4-20 mA signal
	static pressure	FGH	Antifreeze heater for single pump	IAS	Remote signal for second set-point
TX	Coil with pre-coated fins		and pipes heating side		activation
PSC	Single circulating pump cooling side	FMH	Antifreeze heater for double pump	IDL	Demand limit from digital input
PSIC	Inverter single circulating pump		and pipes heating side	CP	Potential free contacts
	cooling side	SS	Soft start		
PDC	Double circulating pump cooling side	TS	Touch screen Interface	LOOSE	ACCESSORIES
PDIC	Inverter double circulating pump	WM	Web Monitoring - Wireless remote	MN	High and low pressure gauges
	cooling side		monitoring (GPRS/EDGE/3G/TCP-IP)	CR	Remote control panel
PSH	Single circulating pump heating side	IS	Modbus RTU protocol, RS485	RP	Coils protection metallic guards
			serial interface	AG	Rubber shock absorbers

Modbus TCP/IP protocol, Ethernet

AM

Spring shock absorbers

## CHA/K/EP 604-P÷2406-P







MODEL			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
	Cooling capacity (1)	kW	167	190	216	241	264	301	339	395	459	522	583	643
Cooling only	Absorbed power (1)	kW	57	69	75	85	93	104	114	140	169	193	210	225
0 ,	EER (1)		2.93	2.75	2.88	2.84	2.84	2.89	2.97	2.82	2.72	2.70	2.78	2.86
	Cooling capacity (1)	kW	166	189	215	240	263	300	338	394	457	520	581	641
	Absorbed power (1)	kW	58	70	76	85	94	105	115	141	171	195	212	227
	EER (1)		2.86	2.70	2.83	2.82	2.80	2.86	2.94	2.79	2.67	2.67	2.74	2.82
Cooling only	SEER (2)		4.14	4.22	4.18	4.17	4.22	4.19	4.20	4.26	4.31	4.34	4.39	4.30
(EN14511)	Energy Efficiency (2)	%	163	166	164	164	166	165	165	167	169	171	173	169
	SEER with EC or ECH accessory (2)		4.44	4.38	4.43	4.42	4.42	4.44	4.47	4.49	4.56	4.56	4.55	4.55
	Energy Efficiency with EC or ECH accessory (2)	%	175	172	174	174	174	175	176	177	179	179	179	179
	Heating capacity (3)	kW	180	204	231	257	281	318	361	427	515	570	632	693
Heating only	Absorbed power (3)	kW	55	64	72	79	86	97	109	128	159	168	195	208
· .	COP (3)		3.25	3.20	3.22	3.25	3.28	3.28	3.31	3.34	3.24	3.39	3.24	3.33
	Heating capacity (3)	kW	181	205	232	258	282	319	362	429	517	572	634	696
Handina ank	Absorbed power (3)	kW	56	65	73	80	87	98	111	131	162	172	200	214
Heating only	COP (3)		3.23	3.15	3.18	3.23	3.24	3.26	3.26	3.27	3.19	3.33	3.17	3.25
(EN14511)	SCOP (4)		3.52	3.36	3.65	3.58	3.43	3.63	3.68	3.51	3.51	3.80	3.56	3.53
	Energy Efficiency (4)	%	138	131	143	140	134	142	144	137	137	149	139	138
	Cooling capacity (5)	kW	170	195	214	243	270	303	334	405	465	543	594	652
Cooling + Heating	Heating capacity (5)	kW	220	255	281	318	351	396	436	527	613	712	777	849
Cooling + Heating	Absorbed power (5)	kW	50	60	67	75	81	93	102	122	148	169	183	197
	TER (5)		7.80	7.50	7.39	7.48	7.67	7.52	7.55	7.64	7.28	7.43	7.49	7.62
	Cooling capacity (5)	kW	169	194	213	242	269	302	333	404	463	541	592	650
Cooling + Heating	Heating capacity (5)	kW	221	256	282	319	352	397	438	529	615	715	780	852
(EN14511)	Absorbed power (5)	kW	51	61	68	76	82	94	103	123	150	171	185	199
	TER (5)		7.65	7.38	7.28	7.38	7.57	7.44	7.49	7.59	7.19	7.35	7.42	7.55
	Quantity	n°	4	4	4	4	4	4	6	6	6	6	6	6
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°				4						6		
Evaporator -	Water flow	l/s	7.98	9.08	10.32	11.51	12.61	14.38	16.20	18.87	21.93	24.94	27.85	30.72
cooling side	Pressure drops	kPa	34	33	36	35	42	36	45	44	53	43	34	40
cooling side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Condenser -	Water flow (5)	l/s	8.60	9.75	11.04	12.28	13.43	15.19	17.25	20.40	24.61	27.23	30.20	33.11
heating side	Pressure drops (5)	kPa	35	36	39	30	37	33	43	43	42	49	48	54
	Water connections (5)	DN	100	100	100	100	100	100	100	100	125	150	150	150
Electrical	Power supply	V/Ph/Hz						400/						
characteristics	Max. running current	А	133	151	171	186	201	227	255	301	386	416	453	483
	Max. starting current	А	301	328	347	400	415	488	432	515	647	755	792	822
Unit with pump -	Pump available static pressure	kPa	175	170	160	150	130	145	125	160	125	165	165	145
cooling side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Unit with pump -	Pump available static pressure	kPa	170	165	150	145	125	140	120	150	110	150	140	120
heating side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
	STD version (6)	dB(A)	70	70	71	71	71	72	74	74	76	77	78	79
Sound pressure	With SL accessory (6)	dB(A)	67	67	68	68	68	69	71	71	73	74	75	76
	SSL version (6)	dB(A)	64	64	65	65	65	66	67	67	70	70	71	72
Weights	Transport weight	Kg	2200	2230	2350	2390	2420	3180	3420	3530	4530	4600	5320	5350
* voiginto	Operating weight	Kg	2300	2330	2450	2500	2530	3310	3560	3680	4730	4840	5630	5670

DIMENSIONS			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
	STD	mm	3350	3350	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200
L	SSL	mm	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200	7200	7200
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

## **CLEARANCE AREA**

CHA/K/EP 604-P÷2406-P

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation
- Chilled water from 12 to 7 °C, heated water from 40 to 45 °C. Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.

## CHA/Y/EP 1352÷4402

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE **EXCHANGERS.** 

























**ENERGYPOWER** is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/Y/EP 1352÷4402 ENERGYPOWER, with R134a refrigerant, are provided with latest generation Screw compressors, to reach high EER/COP/TER and SEER energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs. Furthermore, accessories as the Inverter control on one or both Screw compressors, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The models 1352÷1802 are compliant to the ErP Regulation. The models 1952÷4402 are compliant to the ErP 2021 Regulation for comfort cooling application if provided with EC or ECH accessory (EC Inverter fans) and ID accessory (Inverter on all compressors).

On request, units can be supplied with R513A refrigerant (CHA/J/EP 1352÷4402).

### **VERSION**

CHA/Y/EP CHA/Y/EP/SSL

Multifunctional unit Super silenced multifunctional unit

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coils.
- Shell and tube type condenser, with two independent circuits on the refrigerant side and one on the water side.
- Shell and tube evaporator, with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

FACT	OKY	HIII	ED A	CE	550	KIES

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available
	static pressure
TX	Coil with pre-coated fins
PUC	Single circulating pump cooling side
PUIC	Inverter single circulating pump
	cooling side
PDC	Double circulating pump cooling side
PDIC	Inverter double circulating pump
	cooling side
FI	Antifreeze heater for evaporator
	and condenser

FNC	Antifreeze heater for pipes cooling
	side
ENIH	Antifragge heater for nines heating

**FNH** Antifreeze heater for pipes heating side FGC Antifreeze heater for single pump

and pipes cooling side **FMC** Antifreeze heater for double pump and pipes cooling side

Ш Inverter on one compressor and soft start ID Inverter on all compressors

SS Soft start TS Touch screen Interface WM

serial interface

IS

ISB

monitoring (GPRS/EDGE/3G/TCP-IP) Modbus RTU protocol, RS485 serial interface

Modbus TCP/IP protocol, Ethernet IST port

Web Monitoring - Wireless remote BACnet MSTP protocol, RS485

CP

ISBI	BAChet ICP/IP protocol, Ethernet
	port
ISL	LonWorks protocol, FTT-10 serial
	interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation
IDL	Demand limit from digital input

#### LOOSE ACCESSORIES

LOUGLA	COLOGOTILO
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FI	Flow switch

Potential free contacts

## CHA/Y/EP 1352÷4402







MODEL			1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
	Cooling capacity (1)	kW	278	312	366	423	484	564	676	822	978	1133
Cooling only	Absorbed power (1)	kW	89	100	116	133	484         564         676         822           153         177         210         258           3.16         3.19         3.22         3.19           482         562         674         819           155         179         212         261           3.11         3.14         3.18         3.14           3.91         3.92         3.92         3.90           153         154         154         153           4.74         4.75         4.78         4.75           187         187         188         187           490         572         672         838           139         159         190         231           3.53         3.60         3.54         3.63           3491         574         674         840           141         162         193         235           3.39         3.69         3.63         3.71           133         145         142         145           492         575         686         834           621         726         865         1054           130         152 <t< td=""><td>258</td><td>315</td><td>365</td></t<>	258	315	365		
	EER (1)		3.12	3.12	3.16	3.18	3.16		3.22		3.10	3.10
	Cooling capacity (1)	kW	277	311	364	421	482	562	674	819	974	1128
	Absorbed power (1)	kW	90	101	118	135	155	179	212	261	319	370
	EER (1)		3.08	3.08	3.08	3.12					3.05	3.05
	SEER (2)		3.93	3.93							3.88	3.88
(EN14511)	Energy Efficiency (2)	%	154						154			152
	SEER with EC or ECH and ID accessory (2)		4.73	4.73	4.73	4.75	4.74	4.75	4.78	4.75	4.72	4.72
		%	186	186	186	187	187	187	188	187	186	186
		kW	283	320	375	431	490	572	672	838	990	1156
Heating only												313
	COP (3)			3.52					676         822           210         258           3.22         3.19           674         819           212         261           3.18         3.14           3.92         3.90           154         153           4.78         4.75           188         187           672         838           190         231           3.54         3.63           674         840           193         235           3.49         3.57           3.63         3.71           142         145           686         834           865         1054           179         220           8.66         8.58           684         831           867         1057           181         223           32.30         39.27           48         47           150         150           32.11         40.04           48         20           150         150           445         580           534         785		3.69	
		kW										1159
												319
	COP (3)											3.63
(EN14511)	SCOP (4)											4.00
Cooling only (EN14511)  Heating only (EN14511)  Cooling + Heating (EN14511)  Compressor  Evaporator - cooling side  Condenser - heating side  Electrical characteristics		%										157
										834		1181
												1495
Cooling + Heating												314
	TER (5)											8.52
	. ,	kW			-							1176
Cooling + Heating												1499
	Note   Note				319							
(LIVI IOTI)									564         676         822         9           177         210         258         3           3.19         3.22         3.19         3           562         674         819         9           179         212         261         3           3.14         3.18         3.14         3           3.92         3.92         3.90         3           154         154         153         1           4.75         4.78         4.75         4           4.75         4.78         4.75         4           187         188         187         1           572         672         838         9           159         190         231         2           3.60         3.54         3.63         3           574         674         840         9           162         193         235         2           3.54         3.63         3.71         3           3.69         3.63         3.71         3           3.69         3.63         3.71         3           369         26         865         1054		8.39	
	Quantity	n°					-			-		2
Heating only Heating only EN14511)  Cooling + Heating EN14511)  Compressor  Evaporator - cooling side  Condenser - heating side  Electrical characteristics											2	2
00p. 0000.	0	n°						less	_	822 258 3.19 819 261 3.14 3.90 153 4.75 187 838 231 3.63 840 235 3.57 3.71 145 834 1054 220 8.58 831 1057 223 8.47 2 2 39.27 47 150 40.04 20 150 580 785 135 150 80 76 72 9340		
-			13.28	14.91	17.49	20.21			32.30	39.27	46.73	54.13
												64
cooling side				100	125				150	150		200
0 1	Water flow (5)											55.23
Heating only  Heating only (EN14511)  Cooling + Heating (EN14511)  Compressor  Evaporator - cooling side  Condenser - heating side  Electrical characteristics							-					20
heating side										822         978           258         315           3.19         3.10           819         974           261         319           3.14         3.05           3.90         3.88           153         152           4.75         4.72           187         186           838         990           231         271           3.63         3.65           840         992           235         276           3.57         3.59           145         153           834         996           1054         1261           220         265           8.58         8.52           831         992           1057         1264           223         269           8.47         8.39           2         2           2         2           39.27         46.73           47         52           150         150           40.04         47.30           47         52           150         150		200
Cooling only (EN14511)   Ener   SEEF   Ener   acce   Heating only (EN14511)   Ener   SEEF   Ener   acce   Heating only (EN14511)   Ener   Absc   COP   SCOI   Ener   Cool   Heating only (EN14511)   Absc   TER   Cool   Heating only (EN14511)   Absc   TER   Cool   Cooling + Heating   Heating (EN14511)   Absc   TER   Cool   Cooling side   Condenser - heating side   Pres: Watt   Condenser - heating side   Pres: Watt   Condenser - heating side   Pow   Cooling side   Cool	Power supply				1.20	1.20						
			237	237	269	301			445	580	664	720
characteristics	Max. starting current											855
11. 25 24.												145
Unit with pump	Water connections											200
	STD version (6)											81
Sound pressure												77
Country procession	SSL version (6)	- 1 /							676         822         978           210         258         315           3.22         3.19         3.10           674         819         974           212         261         319           3.18         3.14         3.05           3.92         3.90         3.88           154         153         152           4.78         4.75         4.72           188         187         186           672         838         990           190         231         271           3.54         3.63         3.65           674         840         992           193         235         276           3.49         3.57         3.59           3.49         3.57         3.59           3.63         3.71         3.90           142         145         153           686         834         996           865         1054         1261           179         220         265           8.66         8.58         8.52           684         831         992           32.30         39.		72	
	1.7											10430
Weights												11800

<b>DIMENSION</b>	NS .		1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
	STD	mm	5550	5550	6700	7750	8900	8900	10050	11100	11100	11100
L	SSL	mm	6700	6700	7750	7750	8900	10050	11100	12250	12250	12250
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
П	STD	mm	2100	2100	2100	2100	2100	2500	2500	2500	2500	2500
п	SSL	mm	2100	2100	2100	2100	2500	2500	2500	2500	2500	2500

### **CLEARANCE AREA**

CHA/Y/EP 1352÷4402

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C. Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.

## CHA/H/A 351-P÷1221-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSOR AND PLATE EXCHANGER.







The CHA/H/A 351-P÷1221-P units, in A CLASS energy efficiency, with HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

The innovative heat exchangers, traditional or Microchannel, the Screw compressor and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on Screw compressor, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load. The super silenced versions, obtained through acoustic insulation on compressor and on whole structure and wider exchangers, are particularly suitable for installations where extremely quiet operations are essential for the ideal execution of the system.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

VERSION	
CHA/H/A	CHA/H/A/MC
Cooling only	Cooling only with MICROCHANNEL condensing coils
CHA/H/A/SSL	CHA/H/A/MC/SSL
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressor with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relay for compressor and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.

Antifreeze heater for evaporator

Microprocessor control and regulation system.

Automatic circuit breakers

### **ACCESSORIES**

IM

**FACTORY FITTED ACCESSORIES** 

#### SI FΑ Unit silencement Antifreeze heater for tank CC Condensing control down to -20 °C IQ Inverter on one compressor BT Low water temperature kit SS Soft start EC Inverter fans FC WM Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP) **FCH** EC Inverter fans with high available IS Modbus RTU protocol, RS485 serial static pressure RT Total heat recovery IST Modbus TCP/IP protocol, Ethernet TX Coil with pre-coated fins TXR Coil with enoxy treatment 5 SI PS

FΕ

.,	oon with opony troutmont		•
SI	Inertial tank	ISB	BACnet MSTP protocol, RS485
PS	Single circulating pump		serial interface
PSI	Inverter single circulating pump	ISBT	BACnet TCP/IP protocol, Ethernet

Double circulating pump Inverter double circulating pump	ISL	port LonWorks protocol, FTT-10 serial interface
		interface

SNMP protocol, Ethernet port

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation
IDL	Demand limit from digital input
CP	Potential free contacts

#### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers



PD

PDI

## CHA/H/A 351-P÷1221-P





MODEL			351-P	601-P	801-P	901-P	1221-P
01: OTD	Cooling capacity (1)	kW	78.6	101	130	163	208
Cooling STD	Absorbed power (1)	kW	23.9	32.3	39.7	49.6	66.6
version .	EER (1)		3.29	3.13	3.27	3.29	3.12
	Cooling capacity (1)	kW	78.5	101	130	163	208
	Absorbed power (1)	kW	23.9	32.4	39.8	49.8	66.9
	EER (1)		3.28	3.12	3.27	3.27	3.11
Cooling STD	SEER (2)		4.09	3.95	3.93	4.06	4.02
version (EN14511)	Energy Efficiency (2)	%	161	155	154	159	158
	SEER with EC or ECH accessory (2)		4.68	4.42	4.47	4.52	4.47
	Energy Efficiency with EC or ECH accessory (2)	%	184	174	176	178	176
2 1: 140	Cooling capacity (1)	kW	78.6	101	130	163	208
U	Absorbed power (1)	kW	23.5	31.8	39.1	48.9	65.9
Cooling STD version  Cooling STD version (EN14511)  Cooling MC version  Cooling MC version  Cooling MC version  Cooling MC version  Evaporator  Evaporator  Evaporator  Electrical characteristics  Unit with tank and pump	EER (1)		3.34	3.18	3.32	3.33	3.16
	Cooling capacity (1)	kW	78.5	101	130	163	208
	Absorbed power (1)	kW	23.5	31.9	39.2	49.1	66.2
	EER (1)		3.34	3.17	3.32	3.32	3.14
Cooling MC	SEER (2)		4.10	3.97	3.93	4.06	4.02
ersion (EN14511)	Energy Efficiency (2)	%	161	156	154	159	158
	SEER with EC or ECH accessory (2)		4.69	4.43	4.48	4.53	4.48
	Energy Efficiency with EC or ECH accessory (2)	%	185	174	176	178	176
	Quantity	n°	1	1	1	1	1
Compressor	Refrigerant circuits	n°	1	1	1	1	1
•	Capacity steps	n°			Stepless		
	Water flow	I/s	3.76	4.83	6.21	7.79	9.94
vaporator	Pressure drops	kPa	9	11	11	12	12
•	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
1	Power supply	V/Ph/Hz			400/3/50		
	Max. running current	А	101	100	133	152	214
naracteristics	Max. starting current	А	180	190	279	328	435
	Pump available static pressure	kPa	145	205	190	180	150
	Tank water volume	1	600	600	600	600	600
iump	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	STD versions	Pa	110	110	110	110	110
CH fan available	SSL versions	Pa	110	110	110	110	110
tatic pressure	MC versions	Pa	110	110	110	110	110
P	MC/SSL versions	Pa	110	110	110	110	110
	STD version (3)	dB(A)	74	74	75	75	76
ound pressure	With SL accessory (3)	dB(A)	71	71	72	72	73
Sound pressure	SSL version (3)	dB(A)	66	66	67	68	69
****	Transport weight (4)	Kg	1281	1441	1888	1998	2189
Weights	Operating weight (4)	Kg	1300	1480	1930	2050	2260

DIME	NSIONS		351-P	601-P	801-P	901-P	1221-P
L	STD-SSL-MC-MC/SSL	mm	3550	3550	4700	4700	4700
W	STD-SSL-MC-MC/SSL	mm	1100	1100	1100	1100	1100
Н	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200

### SPAZI DI RISPETTO

CHA/H/A 351-P÷1221-P





- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  Unit without tank and pump.
- N.B. Weights of SSL versions are specified on technical brochure.
  N.B. Data of MC versions are specified on technical brochure.

# CHA/H/FC 351-P÷901-P

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, (INVERTER) SCREW COMPRESSOR AND PLATE EXCHANGER.







The liquid Chillers of the CHA/H/FC 351-P÷901-P series, with HFO-R1234ze refrigerant, offer innovative technology to meet the needs of large systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Screw compressor. A 3-Way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The units are compliant to the ErP 2021 Regulation for process cooling application.

### **VERSION**

CHA/H/FC

Cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressor with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relay for compressor and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTOR	Y FITTED ACCESSORIES		
IM	Automatic circuit breakers	IS	Modbus RTU protocol, RS485 serial
SL	Unit silencement		interface
BT	Low water temperature kit	IST	Modbus TCP/IP protocol, Ethernet
EC	EC Inverter fans		port
ECH	EC Inverter fans with high available	ISB	BACnet MSTP protocol, RS485
	static pressure		serial interface
RT	Total heat recovery	ISBT	BACnet TCP/IP protocol, Ethernet
TX	Coil with pre-coated fins		port
SI	Inertial tank	ISL	LonWorks protocol, FTT-10 serial
PS	Single circulating pump		interface
PSI	Inverter single circulating pump	ISS	SNMP protocol, Ethernet port
PD	Double circulating pump	IAV	Remote set-point, 0-10 V signal
PDI	Inverter double circulating pump	IAA	Remote set-point, 4-20 mA signal
IQ	Inverter on one compressor	IAS	Remote signal for second set-point
SS	Soft start		activation
WM	Web Monitoring - Wireless remote	IDL	Demand limit from digital input
	monitoring (GPRS/EDGE/3G/TCP-IP)	CP	Potential free contacts

#### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
	· -



## CHA/H/FC 351-P÷901-P

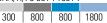


MODEL			351-P	601-P	801-P	901-P			
	Cooling capacity (1)	kW	81.7	110	140	170			
Cooling	Absorbed power (1)	kW	26.8	36.3	44.1	53.5			
	EER (1)		3.05	3.03	3.17	3.18			
	Cooling capacity (1)	kW	81.5	110	140	171			
Cooling (FN14F11)	Absorbed power (1)	kW	27.1	36.5	44.8	53.8			
Cooling (EN14511)	EER (1)		3.01	3.01	3.13	3.18			
	SERP (2)		6.86	7.33	6.89	6.58			
Fran Caaling avala	Air temperature (3)	°C	1	-2	0	-3			
Free-Cooling cycle	Absorbed power (3)	kW	6	6	8	8			
	Quantity	n°	1	1	1	1			
Compressor	Refrigerant circuits	n°	1	1	1	1			
	Capacity steps	n°	Stepless						
	Water flow	l/s	4.44	6.20	7.60	8.53			
Water circuit	Pressure drops	kPa	36	108	80	113			
	Water connections	DN	2 1/2"	2 1/2"	2 1/2"	2 1/2"			
Electrical	Power supply	V/Ph/Hz		400/3/50					
characteristics	Max. running current	A	105	109	137	156			
characteristics	Max. starting current	A	184	200	285	334			
Unit with tank and	Pump available static pressure	kPa	180	110	125	80			
	Tank water volume	I	400	400	400	400			
pump	Water connections	DN	2 1/2"	2 1/2"	2 1/2"	2 1/2"			
ECH fan available s	static pressure	Pa	110	110	110	105			
Cound procesur-	STD version (4)	dB(A)	74	74	75	75			
Sound pressure	With SL accessory (4)	dB(A)	71	71	72	72			
Majahta	Transport weight (5)	Kg	1503	1677	2093	2222			
Weights	Operating weight (5)	Kg	1550	1760	2180	2320			

DIMENSIONS		351-P	601-P	801-P	901-P	
L	STD	mm	3550	4700	4700	4700
W	STD	mm	1100	1100	1100	1100
Н	STD	mm	2200	2200	2200	2200

## CLEARANCE AREA

CHA/H/FC 351-P÷901-P





- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

## CHA/H/A 351÷1221

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSOR AND SHELL AND TUBE EXCHANGER.



















Flow switch

The CHA/H/A 351 ÷ 1221 units in A CLASS energy efficiency, with HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

The innovative heat exchangers, traditional or Microchannel, the Screw compressor and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on Screw compressor, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load. The super silenced versions, obtained through acoustic insulation on compressor and on whole structure and wider exchangers, are particularly suitable for installations where extremely quiet operations are essential for the ideal execution of the system.

Are available as option the new EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.

The units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).

MAXI	INVERTER SCREW
( POWER	MICROCHANNEL ES
	HFO R1234ze

VERSION	
CHA/H/A	CHA/H/A/MC
Cooling only	Cooling only with MICROCHANNEL condensing coils
CHA/H/A/SSL	CHA/H/A/MC/SSL
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils

### **FEATURES**

VEDOLONI

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressor with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Shell and tube evaporator with one independent circuit on the refrigerant side and one onthe water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relay for compressor and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.

BACnet MSTP protocol, RS485

serial interface

FL

• Microprocessor control and regulation system.

## **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	SPU	Inertial tank and single circulating	ISBT	BACnetTCP/IP protocol, Ethernet port
SL	Unit silencement		pump	ISL	LonWorks protocol, FTT-10 serial
CC	Condensing control down to -20 °C	SPUI	Inertial tank and Inverter single		interface
BT	Low water temperature kit		circulating pump	ISS	SNMP protocol, Ethernet port
EC	EC Inverter fans	SPD	Inertial tank and double circulating	IAV	Remote set-point, 0-10 V signal
ECH	EC Inverter fans with high available		pump	IAA	Remote set-point, 4-20 mA signal
	static pressure	SPDI	Inertial tank and Inverter double	IAS	Remote signal for second set-point
HRT/S	Total heat recovery in series		circulating pump		activation
HRT/P	Total heat recovery in parallel	FE	Antifreeze heater for evaporator	IDL	Demand limit from digital input
TX	Coil with pre-coated fins	FB	Antifreeze heater for evaporator/tank	CP	Potential free contacts
TXB	Coil with epoxy treatment	IQ	Inverter on one compressor		
EW	External water connections	SS	Soft start	LOOSE	ACCESSORIES
SP	Inertial tank	WM	Web Monitoring - Wireless remote	MN	High and low pressure gauges
PU	Single circulating pump		monitoring (GPRS/EDGE/3G/TCP-IP)		
PUI	Inverter single circulating pump	IS	Modbus RTU protocol, RS485 serial	CR	Remote control panel
PD	Double circulating pump		interface	RP	Coils protection metallic guards
PDI	Inverter double circulating pump	IST	Modbus TCP/IP protocol, Ethernet	AG	Rubber shock absorbers
FUI	inverter double circulating pump		port	AM	Spring shock absorbers

ISB

## CHA/H/A 351÷1221





MODEL			351	1202	801	901	1802
0 I: OTD	Cooling capacity (1)	kW	78.7	99.0	129	165	211
Cooling STD version	Absorbed power (1)	kW	23.6	30.8	39.0	48.9	66.7
	EER (1)		3.33	3.21	3.31	3.37	3.16
	Cooling capacity (1)	kW	78.8	98.9	129	164	211
	Absorbed power (1)	kW	23.4	31.0	39.3	49.6	67.3
	EER (1)		3.37	3.19	3.28	3.31	3.14
Cooling STD	SEER (2)		4.15	4.02	3.97	4.15	4.07
version (EN14511)	Energy Efficiency (2)	%	163	158	156	163	160
	SEER with EC or ECH accessory (2)		4.73	4.53	4.53	4.63	4.53
	Energy Efficiency with EC or ECH accessory (2)	%	186	178	178	182	178
Caaling MC	Cooling capacity (1)	kW	78.7	99.0	129	165	211
Cooling MC	Absorbed power (1)	kW	23.2	30.3	38.4	48.2	66.0
version	EER (1)		3.39	3.27	3.36	3.42	3.20
	Cooling capacity (1)	kW	78.8	98.9	129	164	211
	Absorbed power (1)	kW	23.0	30.5	38.7	48.9	66.6
	EER (1)		3.43	3.24	3.33	3.35	3.17
Cooling MC	SEER (2)		4.16	4.03	3.97	4.15	4.07
version (EN14511)	Energy Efficiency (2)	%	163	158	156	163	160
	SEER with EC or ECH accessory (2)		4.74	4.54	4.54	4.64	4.54
	Energy Efficiency with EC or ECH accessory (2)	%	187	179	179	183	179
	Quantity	n°	1	1	1	1	1
Compressor	Refrigerant circuits	n°	1	1	1	1	1
	Capacity steps	n°			Stepless		•
	Water flow	I/s	3.76	4.73	6.16	7.88	10.08
Evaporator	Pressure drops	kPa	21	20	23	44	31
·	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
14-11	Power supply	V/Ph/Hz			400/3/50		•
Electrical	Max. running current	Α	101	100	133	152	214
characteristics	Max. starting current	Α	180	190	279	328	435
Jnit with tank and	Pump available static pressure	kPa	140	200	180	150	130
	Tank water volume	I	660	660	660	660	660
pump	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	STD versions	Pa	110	110	110	110	110
ECH fan available	SSL versions	Pa	110	110	110	110	110
static pressure	MC versions	Pa	110	110	110	110	110
'	MC/SSL versions	Pa	110	110	110	110	110
	STD version (3)	dB(A)	74	74	75	75	76
Sound pressure	With SL accessory (3)	dB(A)	71	71	72	72	73
- P	SSL version (3)	dB(A)	66	66	67	68	69
NA / 1 /	Transport weight (4)	Kg	1361	1465	2005	2073	2367
Weights	Operating weight (4)	Kg	1380	1490	2040	2120	2420

DIN	MENSIONS		351	1202	801	901	1802
L	STD-SSL-MC-MC/SSL	mm	3550	3550	4700	4700	4700
W	STD-SSL-MC-MC/SSL	mm	1100	1100	1100	1100	1100
H	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200

## **CLEARANCE AREA**

CHA/H/A 351÷1221

300 800 800 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
  Unit without tank and pump.
- N.B. Weights of SSL versions are specified on technical brochure.
- N.B. Data of MC versions are specified on technical brochure.

# CHA/H/A 1002÷6002

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.





**INVERTER SCREW MICROCHANNEL** ##

HFO R1234ze ₩



The CHA/H/A 1002÷6002 units, in A CLASS energy efficiency, with HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

The innovative heat exchangers, traditional or Microchannel, the Screw compressors and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on one or both Screw compressors, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load. The super silenced versions, obtained through acoustic insulation on compressors and on whole structure and wider exchangers, are particularly suitable for installations where extremely quiet operations are essential for the ideal execution of the system. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The models 1002+1602 are compliant to the ErP 2021 Regulation for process cooling application; the models 1802+6002 are compliant with EC or ECH accessory (EC Inverter fans).

The units are compliant to the ErP 2021 Regulation for comfort cooling application with EC or ECH accessory (EC Inverter fans).

١,	D	S	NI
V	П	$\circ$	ıv

CHA/H/A	CHA/H/A/MC
Cooling only	Cooling only with MICROCHANNEL condensing coils
CHA/H/A/SSL	CHA/H/A/MC/SSL
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	SPD	Inertial tank and doul
SL	Unit silencement		pump
CC	Condensing control down to -20 °C	SPDI	Inertial tank and Inve
BT	Low water temperature kit		circulating pump
EC	EC Inverter fans	FE	Antifreeze heater for
ECH	EC Inverter fans with high available	FX	Antifreeze heater for
	static pressure		pipes
HR	Desuperheater	FB	Antifreeze heater for
HRT/S	Total heat recovery in series	FQ	Antifreeze heater on
HRT/P	Total heat recovery in parallel		and pipes
TX	Coil with pre-coated fins	FZ	Antifreeze heater for
TXB	Coil with epoxy treatment		pump and pipes
EW	External water connections	FH	Antifreeze heater for
SP	Inertial tank		pump and pipes
PU	Single circulating pump	FU	Antifreeze heater for e
PUI	Inverter single circulating pump		single pump and pipe
PD	Double circulating pump	FD	Antifreeze heater for e
PDI	Inverter double circulating pump		double pump and pip
SPU	Inertial tank and single circulating pump	II	Inverter on one comp
SPUI	Inertial tank and Inverter single		start
	circulating pump	ID	Inverter on all compr

PD	Inertial tank and double circulating
	pump
PDI	Inertial tank and Inverter double
	Africa de Africa de Companyo

	circulating pump
FE	Antifreeze heater for evaporator
FΧ	Antifreeze heater for evaporator and
	pipes

	pipes
В	Antifreeze heater for evaporator/tank
$\circ$	Antifreeze heater on evaporator/tank
	and pipes
7	Antifreeze heater for evanorator, single

_	, with 10020 floator for ovaporator, origin
	pump and pipes
-H	Antifreeze heater for evaporator, double
	numn and nines

	harring arrest large and
J	Antifreeze heater for evaporator/tank,
	single pump and pipes
)	Antifreeze heater for evaporator/tank,

	double pump and pipes
	Inverter on one compressor and soft
	start

ID	Inverter on all compressors
CC	Coft otart

SS	Soft start
WM	Web Monitoring - Wireless remote
	monitoring (GPRS/EDGE/3G/TCP-IP

S	Modbus RTU protocol, RS485
	corial interface

	36Hallitterlace
IST	Modbus TCP/IP protocol, Ethernet port
ISB	BACnet MSTP protocol, RS485 serial
	interface

ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial

ISL	LonWorks protocol, FTT-10 serial
	interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
ΙΔΔ	Remote set-point 4-20 mA signal

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation

IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES		
MN	High and low pressure gauges	
CR	Remote control panel	
RP	Coils protection metallic guards	
AG	Rubber shock absorbers	
AM	Spring shock absorbers	
FL	Flow switch	







		1002	1202	1402	1602	1802	2202	2502
Cooling capacity (1)	kW	197	261	309	366	406	464	548
Absorbed power (1) FER (1)	kW	63	83 3.14	98	116 3.16	129	147 3.16	168 3.26
	kW	197	260	308				547
Absorbed power (1)	kW	63	84	99	117	130	149	169
EER (1)		3.13	3.10	3.11	3.12			3.24
From Efficiency (2)	0/_				3.89			4.11 161
SEER with EC or ECH accessory (2)	/0							4.57
Energy Efficiency with EC or ECH	0/							180
accessory (2)								
Cooling capacity (1)		197		309	366			548
Absorbed power (1)	KVV						3 22	165 3.32
	kW	197	260					547
Absorbed power (1)	kW	62	82	97	115	127	146	166
EER (1)		3.18	3.17	3.18			3.17	3.30 4.12
	0/			3.95			4.04	4.12 162
SFFR with FC or FCH accessory (2)	/0	4 22	4 25	4 43	4 30	4 55	4 55	4.61
Energy Efficiency with EC or ECH	0/							
accessory (2)	%					1/9		181
Quantity	n°	2				2		2
Refrigerant circuits		2	2	2		2	2	2
		0./1	12 //7	14.76		10.40	22 17	26.18
	kPa	39	37	32	34	31	28	37
Water connections	DN	125	125	150	150	150	150	150
Power supply		200	075		400/3/50	440	407	F40
Max. running current		203	275	319	355	413	467	512
Pumn available static pressure		155			155			783 160
Tank water volume		2000	2000	2000	2000	2000	2000	2000
Water connections	DN	100	100	100	100	125	125	150
STD version (3)		75	76					78
With SL accessory (3)		67	/3 60	73	/4 60	74	75	75 70
							4625	5165
Operating weight (4)	Kg	2790	3300	3670	4180	4280	4820	5430
		2002	2202	2602	4602	4902	E402	6002
								1353
	kVV	189	223	249	300	333	3/9	422 3.21
	ν\Λ/						1224	1348
Absorbed power (1)								427
EER (1)		3.17	3.17					3.16
			4.16	4.13	4.15	4.13	4.16	4.18
Energy Efficiency (2)	%							164
SEER with EC or ECH accessory (2)		4.56	4.57	4.5/	4.58	4.55	4.55	4.55
accesson (2)	%	179	180	180	180	179	179	179
	kW	608	717	809	980	1064	1228	1353
								414
EER (1)		3.29	3.27	3.32	3.33	3.26	3.31	3.27
	kW	606	714	806	978	1061	1224	1348
	<u>kW</u>		221	246	296		375	418
CEER (2)								3.22 4.19
Fneray Efficiency (2)	0/2							165
	//	4.60						4.55
Energy Efficiency with EC or ECH	0/							179
accessory (2)								
								2
		<u> </u>	Z	<u>Z</u>	Stopless	<u> </u>	<u>Z</u>	2
		29 05	34 26	38.65		50.84	58 67	64.64
							47	54
Water connections	DN	150	200	200	200	200	250	250
Power supply	V/Ph/Hz				400/3/50			
Max. running current	A	597		731				1039
								1494 155
	Krä I							155
Water connections	DN	150	150	150	-	-	-	-
STD version (3)	dB(A)	78	80	81	82	82	84	84
With SL accessory (3)	dB(A)	75	77	78	79	79	81	81
SSL version (3)	dB(A)	70	72	73	74	74	76	76
Transport weight (4)	Kg Kg	5260	6240	7460	8995	9435	11230	11560
	ı Ku	5520	6570	7880	9500	9910	11800	12190
Operating weight (4)	l Kg	•						
Operating weight (4)		1602 1802	2202	2502 2802	3302	3602 4602	4802 5	402 6002
Operating weight (4)	1402		<b>2202</b> 6700	<b>2502 2802</b> 6700 6700		3602     4602       10050     11100		
Operating weight (4)  1002 1202	<b>1402</b> 5000	1602 1802			8900			3400 13400
Operating weight (4)  1002 1202  mm 4400 5000	1402 5000 5550	1602 1802 5550 5550	6700	6700 6700	8900 1 10050 2200	10050 11100	12250 1 13400 2200 2	3400 13400
	EER (1) SEER (2) SEER with EC or ECH accessory (2) SEER with EC or ECH accessory (2) SEER with EC or ECH accessory (2) Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency with EC or ECH accessory (2) Guantity Refrigerant circuits Capacity steps Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (2) Energy Efficiency (2) SEER with EC or ECH accessory (3) SEER (2) Energy Efficiency (4) SEER (5) Energy Efficiency (6) SEER (7) Energy Efficiency (7) EACCENTANT OF TANK O	Cooling capacity (1)	Cooling capacity (1)	Cooling capacity (1)	Cooling capacity (1)	Cooling capacity (1)	Cooling capacity (1)	Cooling capacity (1)  Absorbed power (1)  WW B3  B4  B9  117  130  143  BER with Exp exp (1)  SER with Exp (1)  SER with Exp (1)  SER with Exp (1)  SER with Exp exp (1)  SER wi

### **CLEARANCE AREA**

CHA/H/A 1002÷6002

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.
- N.B. Weights of SSL versions are specified on technical brochure.
  N.B. Data of MC versions are specified on technical brochure.



# CHA/H/FC 1002÷4802

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.





FREE COOLING

HFO R1234ze ₩







international environmental regulations.







The liquid Chillers of the CHA/H/FC 1002÷4802 series, with HFO-R1234ze refrigerant, offer innovative technology to meet the needs of large systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest

During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Screw compressors. A 3-Way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are compliant to the ErP 2021 Regulation for process cooling application if provided with EC or ECH accessory (EC Inverter fans).

### **VERSION**

CHA/H/FC

Cooling only

#### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.

serial interface

Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

Automatic circuit breakers	SPUI	Inertial tank and Inverter single
Unit silencement		circulating pump
Low water temperature kit	SPD	Inertial tank and double circulating
EC Inverter fans		pump
EC Inverter fans with high available	SPDI	Inertial tank and Inverter double
static pressure		circulating pump
Total heat recovery in parallel	II	Inverter on one compressor and
Coil with pre-coated fins		soft start
Inertial tank	ID	Inverter on all compressors
Single circulating pump	SS	Soft start
Inverter single circulating pump	WM	Web Monitoring - Wireless remote
Double circulating pump		monitoring (GPRS/EDGE/3G/TCP-IP)
Inverter double circulating pump	IS	Modbus RTU protocol, RS485
Inertial tank and single circulating		serial interface
	IST	Modbus TCP/IP protocol, Ethernet
l=l=		port
	ISB	BACnet MSTP protocol, RS485
	Unit silencement Low water temperature kit EC Inverter fans EC Inverter fans with high available static pressure Total heat recovery in parallel Coil with pre-coated fins Inertial tank Single circulating pump Inverter single circulating pump Double circulating pump	Unit silencement Low water temperature kit EC Inverter fans EC Inverter fans with high available static pressure Total heat recovery in parallel Coil with pre-coated fins Inertial tank Single circulating pump Double circulating pump Inverter double circulating pump Inertial tank and single circulating pump IS Inertial tank and single circulating pump IS Inertial tank and single circulating pump IST

ISBT	BACnet TCP/IP protocol, Ethernet
	port
ISL	LonWorks protocol, FTT-10 serial

	interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAC	Pomoto signal for assend not pair

IAS	Remote signal for second set-point
	activation
IDI	Demand limit from digital input

IDL	Demand limit from digital inpu
CP	Potential free contacts

### **LOOSE ACCESSORIES**

FL

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

Flow switch



## CHA/H/FC 1002÷4802



MODEL			1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802	
	Cooling capacity (1)	kW	232	297	350	404	444	519	604	684	801	891	1044	1144	
Cooling	Absorbed power (1)	kW	67	87	107	125	142	158	187	205	239	271	338	362	
-	EER (1)		3.46	3.41	3.27	3.23	3.13	3.28	3.23	3.34	3.35	3.29	3.09	3.16	
	Cooling capacity (1)	kW	231	295	346	401	440	516	600	678	796	885	1035	1132	
Cooling /ENI1/E11	Absorbed power (1)	kW	68	89	111	128	146	161	191	211	244	277	347	374	
Cooling (EN14511)	EER (1)		3.40	3.31	3.12	3.13	3.01	3.20	3.14	3.21	3.26	3.19	2.98	3.03	
	SEPR with EC or ECH accessory (2)		5.59	5.57	5.52	5.63	5.5	5.67	5.63	5.66	5.71	5.74	5.50	5.50	
Free-Cooling cycle	Air temperature (3)	°C	2.0	0.0	1.3	1.0	-0.5	-0.5	0.5	-1.0	-0.5	-0.5	-1.0	0.0	
riee-cooling cycle	Absorbed power (3)	kW	10.8	10.8	14.4	14.4	14.4	18.0	21.6	21.6	21.6	25.2	28.8	32.4	
	Quantity	n°	2	2	2	2	2	2	2	2	2	2	2	2	
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2	
	Capacity steps n° Steple									less					
	Water flow	I/s	11.6	14.9	17.5	20.2	22.2	25.9	30.2	34.2	40.1	44.6	52.2	57.2	
Water circuit	Pressure drops	kPa	77	96	143	118	132	77	104	124	98	108	138	169	
	Water connections	DN	100	100	100	125	125	125	150	150	150	150	200	200	
Electrical	Power supply	V/Ph/Hz	400/3/50												
characteristics	Max. running current	Α	211	275	327	355	413	467	520	605	670	731	764	831	
Cildiduteristics	Max. starting current	A	299	417	496	586	642	723	791	904	947	1091	1206	1244	
Unit with tank and	Pump available static pressure	kPa	148	114	117	137	158	193	146	106	162	132	112	111	
	Tank water volume	- 1	2000	2000	2000	2000	2000	2000	2000	2000	3000	-	-	-	
pump	Water connections	DN	100	100	100	125	125	125	150	150	150	150	200	200	
C	STD version (4)	dB(A)	75	76	76	77	77	78	78	78	80	81	82	82	
Sound pressure	With SL accessory (4)	dB(A)	72	73	73	74	74	75	75	75	77	78	79	79	
Weights	Transport weight (5)	Kg	3150	3420	4020	4410	4560	5440	6800	7280	8420	8900	10690	11570	
vveigitts	Operating weight (5)	Kg	3390	3720	4400	4850	5040	6010	7420	7980	9420	10000	11890	12940	

DIMENSION	NS .		1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802
L	STD	mm	4400	4400	5550	5550	5550	6700	10050	10050	10050	10050	12250	13400
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2750	2750	2750	2750

## **CLEARANCE AREA**

CHA/H/FC 1002÷4802

500 | 1800 | 1000 | 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

# CHA/Y/A 1302÷6002

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.





INVERTER SCREW **MICROCHANNEL** 

















Flow switch

FL





The CHA/Y/A 1302÷6002 units, in A CLASS energy efficiency, have extremely high efficiency levels due to reduced electrical absorption and a high efficiency of the compressor-exchanger combination.

The latest generation Screw compressors and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on Screw compressors, on circulating pumps and EC Inverter on fans are also available for getting the highest efficiency at part load. The super silenced version, obtained through acoustic insulation on compressors and wider exchangers, is particularly suitable for installations where extremely quiet operations are essential for the ideal execution of the system.

The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. The Heat Pump versions are designed for hot water production up to 55 °C.

Cooling only models 1302+1702 are compliant to the ErP 2021 Regulation. Cooling only models 1902÷6002 are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant with EC or ECH accessory (EC Inverter fans).

Heat pump models 1302+2002 are compliant to the ErP Regulation; models 2602÷6002 are compliant if provided with EC or ECH accessory (EC Inverter fans).

VERSION	On request, units can be supplied w	On request, units can be supplied with R513A refrigerant (CHA/J/A 1302÷6002).				
CHA/Y/A	CHA/Y/A/MC	CHA/Y/A/WP				
Cooling only	Cooling only with MICROCHANNEL condensing coils	Reversible Heat Pump				
CHA/Y/A/SSL	CHA/Y/A/MC/SSL	CHA/Y/A/WP/SSL				
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils	Super silenced reversible Heat Pump				

### **FEATURES**

Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.

- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.

  Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -10 °C
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTO IM	RY FITTED ACCESSORIES Automatic circuit breakers	SPUI	Inertial tank and Inverter single circulating pump	IS	Modbus RTU protocol, RS485 serial interface
SL	Unit silencement	SPD	Inertial tank and double circulating pump	IST	Modbus TCP/IP protocol, Ethernet port
CC BT	Condensing control down to -20 °C Low water temperature kit	SPDI	Inertial tank and Inverter double circulating pump	ISB	BACnet MSTP protocol, RS485 serial interface
EC	EC Inverter fans	FE	Antifreeze heater for evaporator	ISBT	BACnet TCP/IP protocol, Ethernet port
ECH	EC Inverter fans with high available static	FX	Antifreeze heater for evaporator	ISL	LonWorks protocol, FTT-10 serial interface
	pressure		and pipes	ISS	SNMP protocol, Ethernet port
HR	Desuperheater	FB	Antifreeze heater for evaporator/tank	IAV	Remote set-point, 0-10 V signal
HRT/S	Total heat recovery in series	FQ	Antifreeze heater on evaporator/tank	IAA	Remote set-point, 4-20 mA signal
HRT/P	Total heat recovery in parallel		and pipes	IAS	Remote signal for second set-point
TX	Coil with pre-coated fins	FZ	Antifreeze heater for evaporator, single		activation
TXB	Coil with epoxy treatment		pump and pipes	IDL	Demand limit from digital input
EW	External water connections	FH	Antifreeze heater for evaporator, double	CP	Potential free contacts
SP	Inertial tank		pump and pipes		
PU	Single circulating pump	FU	Antifreeze heater for evaporator/tank,		
PUI	Inverter single circulating pump	FD	single pump and pipes	LOOS	SE ACCESSORIES
PD	Double circulating pump	FD	Antifreeze heater for evaporator/tank, double pump and pipes	MN	High and low pressure gauges
PDI	Inverter double circulating pump	11		CR	Remote control panel
SPU	Inertial tank and single circulating pump	II	Inverter on one compressor and soft start	RP	Coils protection metallic quards
		ID	Inverter on all compressors		, ,
	INIT	SS	Soft start	AG	Rubber shock absorbers
	LIIN I.	WM	Web Monitoring - Wireless remote	AM	Spring shock absorbers

monitoring (GPRS/EDGE/3G/TCP-IP)

### CHA/Y/A 1302÷6002







MODEL			1302	1502	1702	1902	2002	2602	3002	3602	4202	4802	5002	5402	6002
Cooling STD	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136	1264	1398	1533
	Absorbed power (1)	kW	82	96	114	131	146	179	219	256	305	352	380	440	480
versions	EER (1)		3.21	3.26	3.15	3.15	3.18	3.21	3.18	3.28	3.14	3.23	3.33	3.18	3.19
	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132	1263	1397	1532
	Absorbed power (1)	kW	83	97	115	132	147	180	221	258	308	356	383	444	485
Cooling STD	EER (1)		3.16	3.22	3.11	3.12	3.15	3.18	3.14	3.24	3.10	3.18	3.3	3.15	3.16
١	SEER (2)		4.13	4.25	4.22	4.14	4.18	4.19	4.11	4.25	4.30	4.23	4.24	4.17	4.22
versions	Energy Efficiency (2)	%	162	167	166	163	164	165	161	167	169	166	167	164	166
(EN14511)	SEER with EC or ECH accessory (2)		4.63	4.76	4.73	4.73	4.74	4.77	4.65	4.86	4.85	4.69	4.74	4.71	4.73
	Energy Efficienc with EC or ECH	0/	100	107			107		100	101	101			105	
	accessory (2)	%	182	187	186	186	187	188	183	191	191	185	187	185	186
Cooling MC	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136	1264	1398	1533
٠	Absorbed power (1)	kW	80	94	112	128	143	175	215	251	299	345	372	431	470
versions	EER (1)		3.29	3.33	3.21	3.23	3.24	3.28	3.24	3.34	3.21	3.29	3.4	3.24	3.26
	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132	1263	1397	1532
	Absorbed power (1)	kW	81	95	113	129	144	176	217	253	302	349	375	435	475
Cooling MC	EER (1)		3.23	3.28	3.17	3.19	3.22	3.26	3.20	3.31	3.17	3.24	3.37	3.21	3.23
١	SEER (2)		4.14	4.26	4.23	4.15	4.19	4.19	4.12	4.25	4.31	4.25	4.24	4.17	4.23
versions	Energy Efficiency (2)	%	163	167	166	163	165	165	162	167	169	167	167	164	166
(EN14511)	SEER with EC or ECH accessory (2)		4.64	4.77	4.74	4.74	4.75	4.78	4.66	4.87	4.86	4.7	4.75	4.72	4.74
	Energy Efficienc with EC or ECH	%	100	100	187	107	187	100	100	100	101	185	107	100	107
	accessory (2)	%	183	188		187	187	188	183	192	191	185	187	186	187
Heating STD	Heating capacity (3)	kW	272	324	372	428	480	594	721	869	993	1176			
١	Absorbed power (3)	kW	81	95	113	130	144	177	217	253	302	348			
versions	COP (3)		3.36	3.41	3.29	3.29	3.33	3.36	3.32	3.43	3.29	3.38			
	Heating capacity (3)	kW	273	325	373	430	482	596	723	872	996	1180			
Heating STD	Absorbed power (3)	kW	83	97	116	133	147	181	222	259	309	356			
versions	COP (3)		3.29	3.34	3.23	3.23	3.27	3.29	3.26	3.36	3.22	3.31			
(EN14511)	SCOP (4)		3.20	3.32	3.34	3.33	3.32	3.34	3.32	3.36	3.32	3.36			
(2.11.1011)	Energy Efficiency (4)	%	125	130	131	130	130	131	130	131	130	131			
	Quantity	n°	2	2	2	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2	2
'	Capacity steps	n°							Stepless						
	Water flow	I/s	12.57	14.95	17.15	19.73	22.17	27.42	33.25	40.09	45.82	54.28	60.39	66.79	73.24
Evaporator	Pressure drops	kPa	30	26	49	44	34	28	42	34	39	48	38	46	59
· '	Water connections	DN	125	125	150	150	150	150	150	200	200	200	250	250	250
Electrical	Power supply	V/Ph/Hz							400/3/50	)					
	Max. running current	A	201	237	261	301	337	393	485	580	664	720	922	876	1002
characteristics	Max. starting current	Α	263	281	337	361	405	504	596	785	827	855	1267	1261	1379
Hade order and one	Pump available static pressure	kPa	130	150	155	140	175	160	165	145	120	160	140	95	180
Unit with tank and	Tank water volume	1	2000	2000	2000	2000	2000	2000	3000	3000					
pump	Water connections	DN	100	100	100	125	125	150	150	150	200	200	200	200	200
	STD versions (5)	dB(A)	76	76	76	76	77	76	77	77	77	78	79	79	80
	STD versions with SL accessory (5)	dB(A)	73	73	73	73	74	73	74	74	74	75	76	76	77
	SSL versions (5)	dB(A)	66	66	66	65	66	66	67	68	68	69			
Sound pressure	MC versions (5)	dB(A)	75	75	75	75	76	75	76	76	76	77	78	78	79
	MC versions with SL accessory (5)	dB(A)	72	72	72	72	73	72	73	73	73	74	75	75	76
	MC/SSL versions (5)	dB(A)	65	65	65	64	65	65	66	67	67	68			
															10800
Weights	Transport weight (6)	Kg	3562	3609	3708	4207	4782	5202	6496	7430	7484	8773	9640	10380	I IUOUII

DIN	IENSIONS		1302	1502	1702	1902	2002	2602	3002	3602	4202	4802	5002	5402	6002
	STD-MC	mm	4400	4400	5000	5550	6200	6700	8900	11100	11100	11100	13400	13400	13400
	SSL-MC/SSL	mm	5550	5550	5550	6700	8900	8900	11100	11100	11100	13400			
L	WP	mm	5550	5550	5550	7750	7750	8900	10050	13400	13400	13400			
	WP/SSL	mm	7750	7750	7750	8900	10050	10050	13400	13400	13400				
W	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
VV	WP-WP/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200			
	STD-MC	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500
ш	SSL-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500			
11	WP	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500			
	WP/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500				

### **CLEARANCE AREA**

CHA/Y/A 1302÷6002

500 1800 1000 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.

  Weights of SSL and WP versions are specified on technical brochure.

  Data of MC versions are specified on technical brochure.

# CHA/Y 1202-B÷6802-B

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.



















CHA/Y 1202-B÷6802-B series liquid Chillers and Heat Pumps, with R134a refrigerant, are designed for large service sector or industrial-type ambients.

They are used, together with terminal units, for air conditioning of rooms, or to remove the heat created during industrial processes. Equipped with axial fans, Screw compressors and shell and tube exchanger, even in the super silent version, they can be completed with a hydraulic circuit with tank, pump, or tank and pump. The use of large condensing coils and high efficiency fans, as well as optimisation of the hydraulic and cooling circuit and the use of latest generation Screw compressors, combined with a adequate sizing of the user system, ensure high operating efficiency with a considerably reduction in energy consumption.

A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

#### The units are not compliant to ErP Regulations.

On request, units can be supplied with R513A refrigerant (CHA/J 1202-B+6802-B).

VEHOIOIN	
CHA/Y	CHA/Y/WP
Cooling only	Reversible Heat Pump
CHA/Y/SSL	CHA/Y/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

### **FEATURES**

VERSION

Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.

SPDI

- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.

Inertial tank and double circulating pump

Inertial tank and Inverter double

· Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available
	static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump

	Static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single
	circulating pump

	circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FB	Antifreeze heater for evaporator/tank
FQ	Antifreeze heater on evaporator/tank and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
FU	Antifreeze heater for evaporator/tank single pump and pipes
FD	Antifreeze heater for evaporator/tank double pump and pipes
П	Inverter on one compressor and soft start
ID	Inverter on all compressors
~ ~	

FQ	Antifreeze heater on evaporator/tank
	and pipes
FZ	Antifreeze heater for evaporator, single
	pump and pipes
FH	Antifreeze heater for evaporator, double
	pump and pipes
FU	Antifreeze heater for evaporator/tank,
	single pump and pipes
FD	Antifreeze heater for evaporator/tank,
	double pump and pipes
П	Inverter on one compressor and soft
	start
ID	Inverter on all compressors
SS	Soft start
\\/\\/	Web Monitoring - Wireless remote

ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP
IS	Modbus RTU protocol, RS485 serial interface

131	port
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet
1301	port protocol, Ethernet
ISL	LonWorks protocol, FTT-10 serial interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation

Demand limit from digital input

Modbus TCP/IP protocol Ethernet

ICT

IDL

CP

LOOSE	ACCESSORIES
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

Potential free contacts

### CHA/Y 1202-B÷6802-B



MODEL			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B
	Cooling capacity (1)	kW	221	262	302	348	393	453	549	684
Cooling	Absorbed power (1)	kW	80	88	112	137	156	167	197	231
-	EER (1)		2.76	2.98	2.70	2.54	2.52	2.71	2.79	2.96
	Cooling capacity (1)	kW	220	261	301	347	391	451	547	681
O 1: (ENIA 4544)	Absorbed power (1)	kW	81	89	113	139	158	168	199	234
Cooling (EN14511)			2.71	2.93	2.67	2.50	2.48	2.68	2.75	2.91
	SEER (2)	0/	3.80	3.88	4.00	4.02	4.04	4.15	4.10	4.10
	Energy Efficiency (2)	%	149	152	157	158	159	163 457	161	161
Hooting	Heating capacity (3) Absorbed power (3)	kW kW	225 75	255 78	289 91	338 105	390 120	138	536 160	662 191
Heating	COP (3)	KVV	3.00	3.27	3.18	3.22	3.25	3.31	3.35	3.47
	Heating capacity (3)	kW	225	255	289	338	390	457	536	665
	Absorbed power (3)	kW	75	78	91	106	121	143	161	197
Heating (EN14511)	COP (3)	KVV	3.00	3.27	3.18	3.19	3.22	3.20	3.33	3.38
riodting (Ert i io i i)	SCOP (4)		3.20	3.21	3.30	3.30	3.49	3.20	3.23	3.49
	Energy Efficiency (4)	%	125	125	129	129	137	125	126	137
	Quantity	n°	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°				Step	less			
	Water flow	l/s	10.56	12.52	14.43	16.63	18.78	21.64	26.23	32.68
Evaporator	Pressure drops	kPa	50	49	38	50	53	43	54	57
	Water connections	DN	100	100	125	125	125	125	150	150
Electrical	Power supply	V/Ph/Hz				400/	3/50			
characteristics	Max. running current	A	194	194	230	254	286	321	377	421
CHARACTORISTICS	Max. starting current	A	256	256	274	330	346	389	488	510
Unit with tank and	Pump available static pressure	kPa	135	180	185	160	140	165	135	100
pump	Tank water volume	DN	1100 100	1100	1100 100	1100	1100 125	2000	2000	2000 150
pamp	Water connections STD version (5)	dB(A)	77	100 77	77	100 77	76	125 76	150 77	77
Sound pressure	With SL accessory (5)	dB(A)	74	74	74	74	73	73	74	74
Sound pressure	SSL version (5)	dB(A)	67	67	67	66	67	67	67	68
	Transport weight	Kg	2640	2730	2780	2920	3120	3800	4070	5270
Weights	Operating weight	Kg	2740	2820	2920	3060	3250	3930	4330	5500
MODEL										
WODLL			3602-B	4202-B	4802-	B 540	2-B 6	002-B	6302-B	6802-B
MODEL	Cooling capacity (1)	kW			4802- 1089				6302-B	
	Cooling capacity (1) Absorbed power (1)	kW kW	806	954 334		12	18 13	1347 494	1475	1597
Cooling				954 334 2.86	1089		18 13	1347 494		
	Absorbed power (1) EER (1) Cooling capacity (1)	kW	806 284 2.84 803	954 334 2.86 950	1089 402 2.71 1084	12 44 2.7 12	18 43 75 13	1347 494 2.73 1342	1475 531 2.78 1469	1597 554 2.88 1589
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1)	kW	806 284 2.84 803 287	954 334 2.86 950 338	1089 402 2.71 1084 407	12 44 2.7 12	18 43 75 13	1347 494 2.73 1342 499	1475 531 2.78 1469 537	1597 554 2.88 1589 562
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW	806 284 2.84 803 287 2.80	954 334 2.86 950 338 2.82	1089 402 2.71 1084 407 2.67	12 44 2.7 12 44 2.7	18 43 75 13 48 71	1347 494 2.73 1342 499 2.69	1475 531 2.78 1469 537 2.74	1597 554 2.88 1589 562 2.83
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)	kW kW kW	806 284 2.84 803 287 2.80 4.12	954 334 2.86 950 338 2.82 4.13	1089 402 2.71 1084 407 2.67 4.14	12 44 2.1 12 44 2.1 4.1	18 43 75 13 48 71	1347 494 2.73 1342 499 2.69 4.15	1475 531 2.78 1469 537 2.74 4.36	1597 554 2.88 1589 562 2.83 4.36
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2)	kW kW kW	806 284 2.84 803 287 2.80 4.12	954 334 2.86 950 338 2.82 4.13	1089 402 2.71 1084 407 2.67 4.14	12 44 2.7 122 44 2.1 4.1	18 43 75 13 48 71 14 63	1347 494 2.73 1342 499 2.69 4.15 163	1475 531 2.78 1469 537 2.74 4.36 171	1597 554 2.88 1589 562 2.83 4.36 171
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3)	kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767	954 334 2.86 950 338 2.82 4.13 162 850	1089 402 2.71 1084 407 2.67 4.14 163	12 44 2.7 12 44 2.7 4.1 16	18 43 75 13 48 71 14 63 72	1347 494 2.73 1342 499 2.69 4.15 163 1306	1475 531 2.78 1469 537 2.74 4.36 171 1438	1597 554 2.88 1589 562 2.83 4.36 171
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3)	kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225	954 334 2.86 950 338 2.82 4.13 162 850 260	1089 402 2.71 1084 407 2.67 4.14 163 1044 318	12 44 2.: 12 44 2.: 4.: 18 111	18 13 75 13 18 71 14 63 72	1347 494 2.73 1342 499 2.69 4.15 163 1306 395	1475 531 2.78 1469 537 2.74 4.36 171 1438 418	1597 554 2.88 1589 562 2.83 4.36 171
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3)	kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28	12 44 2.: 12 44 2.: 4. 11 35 3.3	18 13 75 13 18 71 14 53 77 50 33 35	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44	1597 554 2.88 1589 562 2.83 4.36 171
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3)	kW kW kW % kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28	12 44 2.1 12 44 2.1 16 11 38 3.3	18 43 75 13 18 71 14 53 72 50 50 50 57 6	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443	1597 554 2.88 1589 562 2.83 4.36 171
Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3)	kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.28	12 44 2 12 44 2 4 18 11 33 3.3	18 13 75 13 18 18 71 14 53 72 50 35 76 50	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431	1597 554 2.88 1589 562 2.83 4.36 171
Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3)	kW kW kW % kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.28 3.28	12 44 2 12 44 2 4 11 35 3.3 3.3	18 13 75 13 18 18 71 14 53 72 50 35 76 50 27	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35	1597 554 2.88 1589 562 2.83 4.36 171 
Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4)	kW kW kW % kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.28	12 44 2 12 44 2 4 16 111 35 3.3 3.3	18 13 75 13 18 18 71 14 53 72 50 35 76 50	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431	1597 554 2.88 1589 562 2.83 4.36 171
Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4)	kW kW kW % kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.28	12 44 2.1 12 44 2.7 4. 16 11 33 3.3 111	18 43 75 13 18 71 14 14 33 72 50 33 57 6 60 27	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35	1597 554 2.88 1589 562 2.83 4.36 171 
Cooling (EN14511) Heating Heating (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity	kW kW kW kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21	1089 402 2.71 1084 407 2.67 4.14 163 31044 318 3.28 1048 3.28 3.20	12 44 2 12 44 2 4 18 11 38 3.3. 3.3.	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 -	1597 554 2.88 1589 562 2.83 4.36 171     2
Cooling (EN14511) Heating	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) Energy Efficiency (4) Duantity Refrigerant circuits	kW kW kW % kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.28	12 44 2.: 12 44 2.: 4.: 11: 35 3.3 3.3 3.3	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35	1597 554 2.88 1589 562 2.83 4.36 171 
Cooling (EN14511) Heating Heating (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity	kW kW kW kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21	1089 402 2.71 1084 407 2.67 4.14 163 31044 318 3.28 1048 3.28 3.20	12 44 2 12 44 2 4 16 111 35 3 3 11 2	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 -	1597 554 2.88 1589 562 2.83 4.36 171     2
Cooling (EN14511) Heating Heating (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps	kW kW kW kW kW kW kW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27  2 2 45.58 53	1089 402 2.71 1084 407 2.67 4.14 163 308 3.28 1048 3.28 3.20 	12 44 2 44 2 4 10 11 35 3.3 3.3 5 2 2 2 8 8 8 9 9	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - 2 2 2 64.36 55	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 3.35 - - 2 2	1597 554 2.88 1589 562 2.83 4.36 171    2 2
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3) Energy Efficiency (4) Uantity Refrigerant circuits Capacity steps Water flow	kW kW kW kW kW kW kW kW Do no no no no l/s kPa DN	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - 2 2	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - - - 2	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.20 - - 2 2	12 44 2 44 2 4 16 111 38 3 3 2 2 2 Step 58.	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - 2 2	1597 554 2.88 1589 562 2.83 4.36 171    2 2
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	kW   kW   kW   kW   kW   kW   kW   kW	806 284 2.84 803 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 38.51 55 200	954 334 2.86 950 338 2.82 4.13 162 260 3.27 853 266 3.21 - - 2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.29 2 2 52.03 62 200	12 44 2 44 2 4 16 111 38 3 2 2 2 5 Step 58 5 400/	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200	1597 554 2.88 1589 562 2.83 4.36 171    2 2 76.30 82 250
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3) Energy Efficiency (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	kW kW kW kW kW kW kW n° n° n° n° l/s kPa DN V/Ph/Hz	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 38.51 55 200	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - 2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 318 3.28 1044 328 3.20 - - 2 2 2 200	12 44 2 44 2 4 11 38 3 3 2 2 2 2 5 8 5 9 400/7	18	1347 494 2.73 1342 499 2.69 4.15 163 1336 395 3.31 1311 406 3.23 - - 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200	1597 554 2.88 1589 562 2.83 4.36 171    2 2 76.30 82 250
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3) Energy Efficiency (4) Unantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW kW kW kW look look look look lo	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 3 3.51 55 200	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27  2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 318 3.28 1048 328 3.20 - - 2 2 2 2 200	12 44 2 44 2 4 10 11 35 3 3 2 2 2 2 5tep 58 8 5 20 400/7/7/7/8	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - 2 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 3.35 - - 2 2 70.47 60 200	1597 554 2.88 1589 562 2.83 4.36 171    2 2 76.30 82 250
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) Fersion (3) COP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW kW kW kW kW kW kW n° n° n° n° l/s kPa DN V/Ph/Hz	806 284 284 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 38.51 55 200	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - - 2 2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 318 3.28 1044 328 3.20 - - 2 2 2 200	12 44 2 44 2 4 10 11 35 3 3 2 2 2 2 5tep 58 8 5 20 400/7/7/7/8	18	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200	1597 554 2.88 1589 562 2.83 4.36 171    2 2 76.30 82 250
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with tank and	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume	kW kW kW kW kW kW kW kW kV A A A kPa I	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 38.51 55 200 549 754 130 2000	954 334 2.86 950 338 2.82 4.13 162 260 3.27 853 266 3.21 - - 2 2 45.58 53 200 641 804 105 2000	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.29 2 2 2 200 705 840 155	12 44 2 4. 4. 16 111 35 3.3 3.3 5 2 2 2 Step 58, 5 2 400/ 70 84	18 13 175 13 18 18 171 14 14 133 172 150 135 160 172 172 172 172 172 173 174 175 175 177 177 177 177 177 177 177 177	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200 896 1541 190 	1597 554 2.88 1589 562 2.83 4.36 171   2.2 76.30 82 250 912 1557 150 
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections	kW kW kW kW kW kW kW kW APA APA APA BPA BN KPA BN K	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 38.51 55 200 549 754 130 2000 150	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - 2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 3.20 2 2 2 200 705 840 155 200	12 44 2 44 2 4 18 11 38 3 2 2 2 2 5 5 5 400/ 70 84 13	18 13 13 175 113 18 18 71 14 14 153 37 72 50 27 17 18 20 20 20 20 20 20 20 20 20 20 20 20 20	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - 2 2 2 70.47 60 200 896 1541 190  200	1597 554 2.88 1589 562 2.83 4.36 171 2 2 76.30 82 250 912 1557 150 200
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with tank and pump	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5)	kW kW kW kW kW kW kW kW look kW kW kW kW kW look kW kW kW kW look kPa DN kPa DN kPa Look kPa	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 3 3.51 55 200 549 754 130 2000 150 77	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - - 2 2 2 45.58 53 200	1089 402 2.71 1084 407 2.67 4.14 163 318 3.28 3.20 2 2 2 200 705 840 155 200 78	12 44 2 4 4 1 1 3 3 3 2 2 2	18 13 13 175 18 18 175 18 18 171 14 14 15 16 17 17 17 18 18 17 19 17 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200 873 1665 210             	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 3.35 - - 2 2 70.47 60 200 886 1541 190  200 80	1597 554 2.88 1589 562 2.83 4.36 171 2 2 76.30 82 250 912 1557 150 200 80
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with tank and	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5)	KW   KW   KW   KW   KW   KW   KW   KW	806 284 284 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 3 3.51 55 500 549 754 130 2000 150 77 74	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - - 2 2 2 2 45.58 53 200 641 804 105 2000 200 78 75	1089 402 2.71 1084 407 2.67 4.14 163 3.28 3.28 3.20 20 52.03 62 200 705 840 155 200 78 75	12 44 2 44 2 4 16 111 38 3.3.3 3.3 5.3 5.5 5.8 5.5 20 400/ 70 844 13	18 13 13 175 18 18 18 175 11 14 16 16 17 17 17 18 18 17 11 14 16 16 17 17 18 18 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200 873 1665 210  200 79 76	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200 896 1541 190  200 80 77	1597 554 2.88 1589 562 2.83 4.36 171 2 2 76.30 82 250 912 1557 150 200 80 77
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with tank and pump Sound pressure	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5) SSL version (5)	KW   KW   KW   KW   KW   KW   KW   KW	806 284 2.84 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 2 38.51 55 200 549 754 130 2000 150 77 74 69	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 2 2 45.58 53 200 641 804 105 2000 78 75 69	1089 402 2.71 1084 407 2.67 4.14 163 1044 318 3.28 1048 3.29 2 2 2 200 705 840 155 200 78 75 70	12 44 2 4 4 16 111 38 3 2 2 5 8 5 5 8 400/ 70 84 13 13 14 15 16 11 11 12 12 12 14 14 15 11 11 11 11 11 11 11 11 11 11 11 11	18 13 13 175 13 18 171 14 14 133 772 150 135 160 172 172 172 172 172 173 175 175 175 175 175 175 175 175 175 175	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200 873 1665 210  200 79 76 70	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200 896 1541 190 80 77 70	1597 554 2.88 1589 562 2.83 4.36 171 2.2 76.30 82 250 912 1557 150 200 80 77
Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Electrical characteristics Unit with tank and pump	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5)	KW   KW   KW   KW   KW   KW   KW   KW	806 284 284 803 287 2.80 4.12 162 767 225 3.41 770 231 3.33 - - 2 2 3 3.51 55 500 549 754 130 2000 150 77 74	954 334 2.86 950 338 2.82 4.13 162 850 260 3.27 853 266 3.21 - - 2 2 2 2 45.58 53 200 641 804 105 2000 200 78 75	1089 402 2.71 1084 407 2.67 4.14 163 3.28 3.28 3.20 20 52.03 62 200 705 840 155 200 78 75	12 44 2 4. 4. 2 4. 11 38 3.3. 3.3. 2. 2. 2. 2. 5. 8. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	18 13 13 175 113 18 18 71 14 14 15 35 76 50 27 2 2 2 3/50 3/50 3/50 3/50 3/50 3/50 3/50 3/50	1347 494 2.73 1342 499 2.69 4.15 163 1306 395 3.31 1311 406 3.23 - - 2 2 2 64.36 55 200 873 1665 210  200 79 76	1475 531 2.78 1469 537 2.74 4.36 171 1438 418 3.44 1443 431 3.35 - - 2 2 70.47 60 200 896 1541 190  200 80 77	1597 554 2.88 1589 562 2.83 4.36 171 2 2 76.30 82 250 912 1557 150 200 80 77

DIN	IENSIONS		1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B	3602-B	4202-B	4802-B	5402-B	6002-B	6302-B	6802-B
	STD	mm	3350	3350	3350	3350	4400	5550	5550	6700	6700	7750	10050	10050	10050	11100	13400
1	SSL	mm	3350	3350	3350	4400	4400	5550	6700	7750	7750	10050	10050	11100	13400	13400	
L	WP	mm	4400	4400	4400	4400	5550	6700	6700	7750	7750	8900	12250	12250	13400	13400	
	WP/SSL	mm	4400	4400	4400	5550	5550	6700	6700	7750	8900	11100	13400	13400			
W	STD-SSL-WP-WP/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
11	STD/WP	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500
П	SSL-WP/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500	

### **CLEARANCE AREA**

CHA/Y 1202-B÷6802-B

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions.
- According to EU Regulation n. 811/2013.
   Sound pressure level measured in free field conditions at 1 m from the unit.
   According to ISO 3744.
   N.B. Weights of SSL and WP versions are specified on technical brochure.



# CHA/Y/FC 1202-B+6002-B

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.





FREE COOLING















The liquid Chillers of the CHA/Y/FC 1202-B÷6002-B series, with R134a refrigerant, offer innovative technology to meet the needs of large systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round. During the cold months, in FREE-COOLING operating mode, the liquid returning from the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Screw compressors. A 3-Way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The models 1202-B÷1702-B are compliant to the ErP 2021 Regulation for process cooling application with EC or ECH accessory (EC Inverter fans). The models 1902-B÷6002-B are compliant to the ErP 2021 Regulation for process cooling application with EC or ECH accessory (EC Inverter fans) and ID accessory (Inverter on all compressors).

On request, units can be supplied with R513A refrigerant (CHA/J/FC 1202-B+6002-B).

### **VERSION**

CHA/Y/FC

Cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.

LonWorks protocol, FTT-10 serial

interface

Microprocessor control and regulation system.

### **ACCESSORIES**

<b>FACTORY</b>	<b>FITTED</b>	<b>ACCESSORIES</b>
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IM	Automatic circuit breakers	SPD	Inertial tank and double circulating
SL	Unit silencement		pump
BT	Low water temperature kit	SPDI	Inertial tank and Inverter double
EC	EC Inverter fans		circulating pump
ECH	EC Inverter fans with high available static pressure	II	Inverter on one compressor and soft start
HRT/P	Total heat recovery in parallel	ID	Inverter on all compressors
TX	Coil with pre-coated fins	SS	Soft start
SP	Inertial tank	WM	Web Monitoring - Wireless remote
PU	Single circulating pump		monitoring (GPRS/EDGE/3G/TCP-IP)
PUI	Inverter single circulating pump	IS	Modbus RTU protocol, RS485
PD	Double circulating pump		serial interface
PDI	Inverter double circulating pump	IST	Modbus TCP/IP protocol, Ethernet
SPU	Inertial tank and single circulating		port
	pump	ISB	BACnet MSTP protocol, RS485
SPUI	Inertial tank and Inverter single		serial interface
	circulating pump	ISBT	BACnet TCP/IP protocol, Ethernet

ISI

ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point
	activation
IDL	Demand limit from digital input
CP	Potential free contacts

#### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



### CHA/Y/FC 1202-B÷6002-B



MODEL			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B
	Cooling capacity (1)	kW	217	258	315	375	418	473	569
Cooling	Absorbed power (1)	kW	83	97	114	148	157	184	210
-	EER (1)		2.61	2.66	2.76	2.53	2.66	2.57	2.71
	Cooling capacity (1)	kW	215	255	311	371	413	469	565
	Absorbed power (1)	kW	85	100	118	152	162	188	215
Cooling (EN14511)	EER (1)		2.53	2.55	2.64	2.44	2.55	2.49	2.63
_	SEPR with EC or ECH accessory (2)		5.00	5.04	5.03	5.03	5.30	5.20	5.4
	SEPR with EC or ECH and ID accessory (2)		5.35	5.39	5.38	5.38	5.64	5.57	5.76
Free-Cooling cycle	Air temperature (3)	°C	-2.5	-2.0	-2.0	-4.5	-3.7	-4.0	-3.5
Tree-Cooling Cycle	Absorbed power (3)	kW	8	12	12	12	12	16	20
	Quantity	n°	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°				Stepless			
	Water flow	l/s	11.22	13.34	16.29	19.38	21.61	24.45	29.42
Water circuit	Pressure drops	kPa	125	170	180	168	191	130	115
	Water connections	DN	100	100	100	125	125	125	150
Electrical	Power supply	V/Ph/Hz				400/3/50			
characteristics	Max. running current	Α	194	201	237	261	293	337	393
Characteristics	Max. starting current	Α	256	263	281	337	353	405	504
Unit with tank and	Pump available static pressure	kPa	125	105	130	105	100	140	105
pump	Tank water volume		1100	1100	1100	1100	1100	1100	2000
pump	Water connections	DN	100	100	100	125	125	125	150
Sound pressure	STD version (4)	dB(A)	75	75	76	76	76	77	77
Count procedio	With SL accessory (4)	dB(A)	72	72	73	73	73	74	74
Weights	Transport weight (5)	Kg	3250	3320	3620	3805	4180	4510	5310
	Operating weight (5)	Kg	3450	3520	3870	4060	4530	4850	5700
MODEL			3002-B	3602-E	3 4202	2-B 4	302-B	5402-B	6002-B
	Cooling capacity (1)	kW	709	847	99	4	1139	1288	1460
Cooling	Absorbed power (1)	kW	263	316	37	370		490	541
Ü	EER (1)		2.70	2.68	2.6	9	2.62	2.63	2.70
	Cooling capacity (1)	kW	702	838	98	4	1126	1272	1436
	Absorbed power (1)	kW	270	325	38	380		507	565
Cooling (EN14511)	EER (1)		2.60	2.58	2.5	9	2.52	2.51	2.54
-	SEPR with EC or ECH accessory (2)		5.40	5.20	5.2	0	5.20	5.30	5.30
	SEPR with EC or ECH and ID accessory (2)		5.74	5.5	5.5	7	5.5	5.62	5.64
Free-Cooling cycle	Air temperature (3)	°C	-4.3	-4.3	-4.	6	-4.7	-4.1	-3.9
rree-cooning cycle	Absorbed power (3)	kW	20	22	22	2	25	29	36
	Quantity	n°	2	2	2		2	2	2
Compressor	Refrigerant circuits	n°	2	2	2		2	2	2
	Capacity steps	n°				Stepless			
	Water flow	l/s	36.65	43.79	51.3		58.88	66.58	75.47
Water circuit	Pressure drops	kPa	160	164	16		200	225	300
	Water connections	DN	150	150	20	-	200	200	200
Electrical	Power supply	V/Ph/Hz				400/3/50			
characteristics	Max. running current	Α	437	565	64		713	720	896
Unaracteristics	Max. starting current	Α	526	770	81		848	855	1688
Unit with tank and	Pump available static pressure	kPa	115	130	14		170	120	115
	Tank water volume		2000	2000	200	-			
pump	Mater connections	DNI	150	150	20	0	200	200	200

DIMENSION	NS .		1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B	3602-B	4202-B	4802-B	5402-B	6002-B
L	STD	mm	4400	4400	4400	4400	5550	5550	6700	10050	10050	10050	10050	11100	13400
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360	2750	2750	2750	2750

### **CLEARANCE AREA**

pump

Weights

Sound pressure

CHA/Y/FC 1202-B÷6002-B

500 1800 1000 1800



DN

dB(A)

dB(A)

Kg

Kg

150

77

74

6820

7420

150

79

76

7710

8350

### NOTES

200

79

76

8605

9410

200

79

76

9590

10550

200

79

76

10070

10900

200

80

77

11750

12970

- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C. Seasonal energy efficiency of process cooling at high temperature.
- According to EU Regulation n. 2016/2281.
- Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.

Water connections

With SL accessory (4)

Transport weight (5)

Operating weight (5)

STD version (4)

# CHA/TTH 1301-1÷4904-2

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.















The innovative CHA/TTH 1301-1 ÷4904-2 TURBOLINE units, with HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight.

The use of TURBOCOR dynamic partial-load oil-free magnetic levitation compressors managed by the TURBOSOFT self-adaptive electronic control, of flooded shell and tube evaporator and innovative heat exchangers, traditional or Microchannel, results in a high energy efficiency with unequalled SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional units, equipped with Screw compressors, TURBOLINE units have low operational costs during their entire operating period, even lower than 50%. Besides, the units are equipped with a WEB MONITORING system for the monitoring and remote management of the units through the GPRS/ EDGE/3G/TCP-IP communication protocol. Users enabled to the use of this service can, by a dedicated Web page, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

### The units are compliant to the ErP 2021 Regulation.

### **VERSION**

TURROLINE

**MICROCHANNEL** ##

HFO R1234ze ₺

CHA/TTH CHA/TTH/MC Cooling only Cooling only with MICROCHANNEL coils

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available
	static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
PU	Single circulating pump
PD	Double circulating pump

FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator
	and pipes
FZ	Antifreeze heater for evaporator,
	single pump and pipes
FH	Antifreeze heater for evaporator,
	double pump and pipes
TS	Touch screen Interface

	and pipes
Z	Antifreeze heater for evaporator,
	single pump and pipes
Н	Antifreeze heater for evaporator,
	double pump and pipes
S	Touch screen Interface
ST	Modbus TCP/IP protocol, Ethernet
	port
SB	BACnet MSTP protocol, RS485
	serial interface
CDT	DAC+TCD/ID

IST	Modbus TCP/IP protocol, Ethern
	port
ISB	BACnet MSTP protocol, RS485
	serial interface
ISBT	BACnet TCP/IP protocol, Etherne
	port
ISL	LonWorks protocol, FTT-10 seria
	interface

ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-poin
	activation

nt IDL Demand limit from digital input Potential free contacts

CP

LOOSE ACCESSORIES						
MN	High and low pressure gauges					
CR	Remote control panel					
RP	Coils protection metallic guards					
AG	Rubber shock absorbers					
AM	Spring shock absorbers					
FI	Flow switch					

## CHA/TTH 1301-1:4904-2





MODEL			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
Cooling STD	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
U	Absorbed power (1)	kW	76	94	154	191	228	280	377	154	193	381
version	EER (1)		3.45	3.56	3.40	3.51	3.41	3.57	3.55	3.40	3.51	3.55
	Cooling capacity (1)	kW	261	334	522	668	774	997	1336	523	668	1335
Cooling STD	Absorbed power (1)	kW	77	95	156	193	231	283	381	155	195	386
version (EN14511)	EER (1)		3.39	3.52	3.35	3.46	3.35	3.52	3.51	3.37	3.46	3.51
Version (EIV14511)	SEER (2)		5.50	5.73	5.52	5.70	5.60	5.88	5.86	5.52	5.70	5.59
	Energy Efficiency (2)	%	217	226	218	225	221	232	232	218	225	221
Cooling MC	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
U	Absorbed power (1)	kW	72	89	145	181	216	264	356	145	183	360
version	EER		3.64	3.76	3.59	3.70	3.60	3.79	3.76	3.59	3.70	3.76
	Cooling capacity (1)	kW	259	334	518	668	774	997	1336	519	668	1335
Cooling MC	Absorbed power (1)	kW	73	90	147	183	219	267	360	146	185	365
U	EER (1)		3.55	3.71	3.52	3.65	3.53	3.73	3.71	3.55	3.65	3.71
version (EN14511)	SEER (2)		5.55	5.79	5.58	5.76	5.65	5.94	5.93	5.58	5.76	5.65
	Energy Efficiency (2)	%	219	229	220	227	223	235	234	220	227	223
	Quantity	n°	1	1	2	2	3	3	4	2	2	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	Stepless									
	Water flow	I/s	12.52	16.01	25.04	32.01	37.12	47.78	64.02	25.04	32.01	64.02
Evaporator	Pressure drops	kPa	40	47	47	50	40	43	32	47	50	32
	Water connections	DN	100	100	125	125	150	150	150	125	125	150
Electrical	Power supply	V/Ph/Hz					400/	3/50				
	Max. running current	А	173	173	339	347	505	520	678	339	347	678
characteristics	Max. starting current	А	25	25	191	199	357	372	530	191	199	530
Unit with pump	Pump available static pressure	kPa	140	120	110	125	105	120	145	110	125	145
Offic With pullip	Water connections	DN	100	100	150	150	150	150	200	150	150	200
Sound pressure	STD version (3)	dB(A)	70	70	71	71	71	71	72	71	71	72
Souria pressure	MC version (3)	dB(A)	69	69	70	70	70	70	71	70	70	71
Weights	Transport weight	Kg	2610	3000	4050	4460	6050	6820	8100	4290	4700	8400
vveignts	Operating weight	Kg	2670	3070	4150	4580	6210	7010	8400	4390	4820	8700

DIMENSION	NS .		1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
L	STD/MC	mm	4000	5000	6200	7200	8400	10050	11700	6200	7200	11700
W	STD/MC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/MC	mm	2100	2100	2100	2100	2500	2500	2500	2100	2100	2500

### CLEARANCE AREA

CHA/TTH 1301-1÷4904-2

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Data of MC version are specified on technical brochure.

# CHA/TTH/FC 1301-1÷4904-2

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.





HFO R1234ze ₺













The innovative CHA/TTH/FC 1301-1÷4904-2 **TURBOLINE** units, with **HFO-R1234ze** refrigerant and FREE-COOLING technology, are designed to provide an effective solution to installation requirements of large areas, both commercial and industrial, where the production of chilled water is required in continuous service throughout the year. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight. The unit, designed with specific attention to every aspect of construction and combined with the use of TURBOCOR dynamic partialization oil-free magnetic levitation compressors - managed by the TURBOSOFT self-adaptive electronic control - and with the use of flooded shell and tube evaporator, achieves a high rate of energy efficiency, with unequalled SEPR values, with minimum water content, and an excellent silent functioning. Depending on outside air temperature, the microprocessor controller manages the functioning in CHILLER, FREE-COOLING or MIXED (both CHILLER and FREE-COOLING) mode. The units are also equipped with a WEB MONITORING system for the monitoring and remote management of the units through the communication protocol GPRS/EDGE/3G/TCP-IP. Users enabled to the use of this service can, by using a specific Web page, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are compliant to the ErP 2021 Regulation for process cooling application.

### **VERSION**

CHA/TTH/FC

Cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

activation

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM EC	Automatic circuit breakers EC Inverter fans	IST	Modbus TCP/IP protocol, Ethernet port
ECH	EC Inverter fans with high available static pressure	ISB	BACnet MSTP protocol, RS485 serial interface
HRT/P	Total heat recovery in parallel	ISBT	BACnet TCP/IP protocol, Ethernet
TX	Coil with pre-coated fins		port
PU	Single circulating pump	ISL	LonWorks protocol, FTT-10 serial
PD	Double circulating pump		interface
TS	Touch screen Interface	ISS	SNMP protocol, Ethernet port
		IAV	Remote set-point, 0-10 V signal
		IAA	Remote set-point, 4-20 mA signal
		IAS	Remote signal for second set-point

IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE	ACCESSORIES
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CHA/TTH/FC 1301-1:4904-2



MODEL			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
	Cooling capacity (1)	kW	279	348	554	698	837	1040	1386	554	698	1386
Cooling	Absorbed power (1)	kW	75	95	160	193	242	283	387	160	193	387
	EER (1)		3.72	3.66	3.46	3.62	3.46	3.67	3.58	3.46	3.62	3.58
	Cooling capacity (1)	kW	277	345	551	694	831	1031	1366	551	694	1366
Cooling (EN14511)	Absorbed power (1)	kW	77	98	163	198	248	292	407	163	198	407
Cooling (EN 14511)	EER (1)		3.60	3.52	3.38	3.51	3.35	3.53	3.36	3.38	3.51	3.36
	SEPR (2)		7.35	7.30	7.13	7.25	7.42	7.43	7.43	7.13	7.25	7.45
Fran Caaling avala	Air temperature (3)	°C	3.0	2.5	1.5	-1.0	0.0	0.5	-1.0	1.5	-1.0	-1.0
Free-Cooling cycle	Absorbed power (3)	kW	10.8	14.4	21.6	21.6	25.2	32.4	36.0	21.6	21.6	36.0
	Quantity	n°	1	1	2	2	3	3	4	2	2	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	Stepless									
	Water flow	I/s	14.42	17.98	28.63	36.07	43.26	53.75	71.63	28.63	36.07	71.63
Water circuit	Pressure drops	kPa	88	103	78	94	101	142	253	78	94	253
	Water connections	DN	100	100	125	125	150	150	150	125	125	150
Electrical	Power supply	V/Ph/Hz	Hz 400/3/50									
	Max. running current	A	173	181	347	347	505	520	678	347	347	678
characteristics	Max. starting current	А	25	33	199	199	357	372	530	199	199	530
Unit with numa	Pump available static pressure	kPa	140	125	110	180	150	150	160	110	180	160
Unit with pump	Water connections	DN	100	100	150	150	150	150	200	150	150	200
Sound pressure (4)		dB(A)	69	70	71	71	71	71	72	71	71	72
Maighta	Transport weight	Kg	3620	3730	5560	5640	7890	8910	10800	5740	5820	11000
Weights	Operating weight	Kg	3900	4030	6040	6160	8610	9810	11840	6220	6340	12040

DIMENSION	NS		1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
L	STD	mm	5000	5000	7200	7200	8400	10050	11700	7200	7200	11700
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2750	2750	2750	2360	2360	2750

### **CLEARANCE AREA**

CHA/TTH/FC 1301-1÷4904-2

500 | 1800 | 1000 | 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at wich the cooling capacity indicated in point (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

# CHA/TTY 1301-1÷5004-2

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



















The innovative CHA/TTY 1301-1÷5004-2 TURBOLINE units, with R134a refrigerant, are designed to provide an effective solution to highly selective system needs. Efficiency at partial loads, low inrush currents, an excellent silent functioning, reduced weight and the specific design and handling of every manufacturing aspect make the TURBOLINE series the top unit of the range.

The use of TURBOCOR dynamic partial-load oil-free magnetic levitation compressors managed by the TURBOSOFT self-adaptive electronic control, of flooded shell and tube evaporator and innovative heat exchangers, traditional or Microchannel, results in a high energy efficiency with unequalled SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional units, equipped with Screw compressors, TURBOLINE units have low operational costs during their entire operating period, even lower than 50%. Besides, the units are equipped with a WEB MONITORING system for the monitoring and remote management of the units through the GPRS/ EDGE/3G/TCP-IP communication protocol. Users enabled to the use of this service can, by a dedicated Web page, have access to Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

#### The units are compliant to the ErP 2021 Regulation.

On request, units can be supplied with R513A refrigerant (CHA/TTJ 1301-1÷5004-2).

### **VERSION**

TURROLINE

**MICROCHANNEL** ##

CHA/TTY CHA/TTY/MC

Cooling only with MICROCHANNEL coils Cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

SNMP protocol, Ethernet port

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	FX	Antifreeze heater for evaporator
EC	EC Inverter fans		and pipes
ECH	EC Inverter fans with high available	FZ	Antifreeze heater for evaporator,
	static pressure		single pump and pipes
HR	Desuperheater	FH	Antifreeze heater for evaporator,
HRT/S	Total heat recovery in series		double pump and pipes
HRT/P	Total heat recovery in parallel	TS	Touch screen Interface
TX	Coil with pre-coated fins	IST	Modbus TCP/IP protocol, Etherne
TXB	Coil with epoxy treatment		port
EW	External water connections	ISB	BACnet MSTP protocol, RS485
PU	Single circulating pump		serial interface
PD	Double circulating pump	ISBT	BACnet TCP/IP protocol, Etherne
FE	Antifreeze heater for evaporator		port
	·	ISL	LonWorks protocol, FTT-10 serial
			interface

ISS

aporator,
l, Ethernet
RS485
, Ethernet
-10 serial

IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE	ACCESSORIES
MN	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CHA/TTY 1301-1÷5004-2





MODEL			1301-1	1401-1	1701-1	2201-1	2602-1	3302-1	4002-1	4302-1	4603-1
Cooling STD	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
U	Absorbed power (1)	kW	73	81	97	116	145	185	221	274	311
version	EER (1)		3.40	3.48	3.45	3.47	3.51	3.39	3.48	3.39	3.46
	Cooling capacity (1)	kW	247	281	334	402	507	624	767	925	1072
Cooling STD	Absorbed power (1)	kW	74	82	98	117	147	188	224	278	315
version (EN14511)	EER (1)		3.32	3.43	3.40	3.42	3.46	3.33	3.43	3.32	3.41
version (LIV14311)	SEER (2)		4.88	5.06	5.07	5.18	5.14	5.16	5.34	5.29	5.36
	Energy Efficiency (2)	%	192	199	200	204	203	203	211	209	211
Cooling MC	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
version	Absorbed power (1)	kW	64	73	86	106	132	163	198	243	281
VE131011	EER		3.88	3.86	3.90	3.80	3.86	3.85	3.89	3.82	3.83
	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
Cooling MC	Absorbed power (1)	kW	64	73	86	106	132	163	198	243	281
version (EN14511)	EER (1)		3.88	3.86	3.90	3.80	3.86	3.85	3.89	3.82	3.83
VOISIOII (LIVI TOTT)	SEER (2)		4.93	5.11	5.12	5.23	5.19	5.22	5.40	5.34	5.41
	Energy Efficiency (2)	%	194	201	202	206	205	206	213	211	213
	Quantity	n°	1	1	1	1	2	2	2	2	3
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1
	Capacity steps	n°		40 :-	40.71	40	Stepless	00	00 ==		
	Water flow	I/s	11.85	13.47	16.01	19.25	24.32	29.96	36.79	44.39	51.36
Evaporator	Pressure drops	kPa	64	40	40	35	44	56	46	68	46
	Water connections	DN	100	100	100	125	125	150	150	150	150
Electrical	Power supply	V/Ph/Hz	400	400	400	000	400/3/50	007	F00	E47	700
characteristics	Max. running current	A	168	168	168	262	329	337	509	517	763
Characteristics	Max. starting current	A	25	25	25	33	186	194	280	288	534
Unit with pump	Pump available static pressure	kPa	150	200	195	165	175	145	155	120	170
	Water connections	DN	100	100	100	125	125	150	150	150	150
Sound pressure	STD version (3)	dB(A)	69	69	69	69	70	70	70	69	70
	MC version (3)	dB(A)	68	68	68	68	69	69	69	68	69
Weights	Transport weight	Kg	2440	2440	2770	2790	3685	4020	4055	5710	6460
Ü	Operating weight	Kg	2510	2510	2900	2920	3825	4170	4225	5910	6680
MODEL			4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
Cooling CTD	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
Cooling STD	Absorbed power (1)	kW	362	433	145	185	221	274	309	362	433
version	EER (1)		3.48	3.36	3.51	3.39	3.48	3.39	3.48	3.48	3.36
	Cooling capacity (1)	kW	1256	1450	507	624	767	925	1072	1256	1450
Cooling STD	Absorbed power (1)	kW	366	439	147	188	224	278	312	366	439
O .	FFR (1)		3.43	3.31	3.46	3.33	3.43	3.32	3.43	3.43	3.31
version (EN14511)	SEER (2)		5.40	5.25	5.14	5.16	5.34	5.29	5.36	5.40	5.25
	Energy Efficiency (2)	%	213	207	203	203	211	209	211	213	207
Cooling MC	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
•	Absorbed power (1)	kW	328	381	132	163	198	243	279	328	381
version	EER		020		132	105			2/3	J 320	
			3.84	3.82	3.86	3.85	3.89	3.82	3.85	3.84	3.82
	Cooling capacity (1)	kW							3.85 1075		3.82 1456
Cooling MC		kW kW	3.84 1260 328	3.82 1456 381	3.86 509 132	3.85 627 163	3.89 770 198	3.82 929 243	3.85 1075 279	3.84 1260 328	3.82 1456 381
•	Cooling capacity (1)		3.84 1260	3.82 1456	3.86 509	3.85 627	3.89 770	3.82 929	3.85 1075	3.84 1260	3.82 1456
•	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)		3.84 1260 328	3.82 1456 381	3.86 509 132	3.85 627 163	3.89 770 198	3.82 929 243	3.85 1075 279	3.84 1260 328	3.82 1456 381
Cooling MC version (EN14511)	Cooling capacity (1) Absorbed power (1) EER (1)		3.84 1260 328 3.84	3.82 1456 381 3.82	3.86 509 132 3.86	3.85 627 163 3.85	3.89 770 198 3.89	3.82 929 243 3.82	3.85 1075 279 3.85	3.84 1260 328 3.84	3.82 1456 381 3.82
•	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)	kW	3.84 1260 328 3.84 5.46	3.82 1456 381 3.82 5.31	3.86 509 132 3.86 5.19 205	3.85 627 163 3.85 5.22	3.89 770 198 3.89 5.4 213	3.82 929 243 3.82 5.34	3.85 1075 279 3.85 5.41 213	3.84 1260 328 3.84 5.46	3.82 1456 381 3.82 5.31 209 4
version (EN14511)	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2)	kW %	3.84 1260 328 3.84 5.46 215	3.82 1456 381 3.82 5.31 209	3.86 509 132 3.86 5.19 205	3.85 627 163 3.85 5.22 206	3.89 770 198 3.89 5.4 213	3.82 929 243 3.82 5.34 211	3.85 1075 279 3.85 5.41 213	3.84 1260 328 3.84 5.46 215	3.82 1456 381 3.82 5.31 209
version (EN14511)	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps	kW % n°	3.84 1260 328 3.84 5.46 215 4	3.82 1456 381 3.82 5.31 209 4	3.86 509 132 3.86 5.19 205 2	3.85 627 163 3.85 5.22 206 2	3.89 770 198 3.89 5.4 213 2 2 Stepless	3.82 929 243 3.82 5.34 211 2	3.85 1075 279 3.85 5.41 213 4	3.84 1260 328 3.84 5.46 215 4	3.82 1456 381 3.82 5.31 209 4
version (EN14511)	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits	kW % n° n°	3.84 1260 328 3.84 5.46 215	3.82 1456 381 3.82 5.31 209 4	3.86 509 132 3.86 5.19 205	3.85 627 163 3.85 5.22 206 2	3.89 770 198 3.89 5.4 213 2	3.82 929 243 3.82 5.34 211	3.85 1075 279 3.85 5.41 213	3.84 1260 328 3.84 5.46 215 4	3.82 1456 381 3.82 5.31 209 4
version (EN14511)  Compressor	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	% n° n° n° l/s kPa	3.84 1260 328 3.84 5.46 215 4 1	3.82 1456 381 3.82 5.31 209 4 1	3.86 509 132 3.86 5.19 205 2 2 24.32 44	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46	3.82 929 243 3.82 5.34 211 2 2 44.39 68	3.85 1075 279 3.85 5.41 213 4 2 51.36 41	3.84 1260 328 3.84 5.46 215 4 2	3.82 1456 381 3.82 5.31 209 4 2
version (EN14511)  Compressor	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	% n° n° n° l/s kPa DN	3.84 1260 328 3.84 5.46 215 4 1	3.82 1456 381 3.82 5.31 209 4	3.86 509 132 3.86 5.19 205 2 2	3.85 627 163 3.85 5.22 206 2 2	3.89 770 198 3.89 5.4 213 2 2 Stepless 36.79 46 150	3.82 929 243 3.82 5.34 211 2 2	3.85 1075 279 3.85 5.41 213 4 2	3.84 1260 328 3.84 5.46 215 4	3.82 1456 381 3.82 5.31 209 4
version (EN14511)  Compressor  Evaporator	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	% n° n° l/s kPa DN V/Ph/Hz	3.84 1260 328 3.84 5.46 215 4 1 60.20 50	3.82 1456 381 3.82 5.31 209 4 1	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125	3.85 627 163 3.85 5.22 206 2 2 29.96 56 150	3.89 770 198 3.89 5.4 213 2 2 Stepless 36.79 46 150 400/3/50	3.82 929 243 3.82 5.34 211 2 2 44.39 68	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150	3.84 1260 328 3.84 5.46 215 4 2	3.82 1456 381 3.82 5.31 209 4 2
version (EN14511)  Compressor  Evaporator  Electrical	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	kW  % n° n° n° l/s kPa DN V/Ph/Hz A	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 1 69.56 59 200	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200
version (EN14511)  Compressor  Evaporator  Electrical	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	kW  % n° n° n° l/s kPa DN V/Ph/Hz A	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 1 1 69.56 59 200	3.86 509 132 3.86 5.19 205 2 2 2 24.32 44 125 329 186	3.85 627 163 3.85 5.22 206 2 2 29.96 56 150	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509 280	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200
version (EN14511)  Compressor  Evaporator  Electrical characteristics	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW  % n° n° n° skPa DN V/Ph/Hz A kPa	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 1 69.56 59 200	3.86 509 132 3.86 5.19 205 2 2 2 24.32 44 125 329 186 175	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150	3.89 770 198 3.89 5.4 213 2 2 Stepless 36.79 46 150 400/3/50 509 280 155	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150 517 288 120	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200
version (EN14511)  Compressor  Evaporator  Electrical characteristics	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections	kW  % n° n° n° l/s kPa DN V/Ph/Hz A A kPa DN	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200 658 515 220 200	3.82 1456 381 3.82 5.31 209 4 1 1 69.56 59 200 1002 773 185 200	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125 329 186 175 125	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150 337 194 145 150	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509 280 155	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150 517 288 120 150	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150 650 507 170 150	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200 658 515 220 200	3.82 1456 381 3.82 5.31 209 4 2 2 69.56 59 200 1002 773 185 200
version (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (3)	kW  % n° n° n° l/s kPa DN V/Ph/Hz A A A kPa DN dB(A)	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200 658 515 220 200 71	3.82 1456 381 3.82 5.31 209 4 1 1 69.56 59 200 1002 773 185 200 71	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125 329 186 175 125 70	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150 337 194 145 150 70	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509 280 155 150 70	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150 517 288 120 150 69	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150 650 507 170 150 70	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200 658 515 220 200 71	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200 1002 773 185 200 71
version (EN14511)  Compressor  Evaporator  Electrical characteristics  Unit with pump	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (3) MC version (3)	kW  % n° n° n° l/s kPa DN V/Ph/Hz A A kPa DN	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200 658 515 220 200 71 70	3.82 1456 381 3.82 5.31 209 4 1 1 69.56 59 200 1002 773 185 200 71 70	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125 329 186 175 125 70 69	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150 337 194 145 150 70 69	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509 280 155 150 70 69	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150 517 288 120 150 69 68	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150 650 507 170 150 70 69	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200 658 515 220 200 71 70	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200 1002 773 185 200 71
•	Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (3)	kW  % n° n° n° l/s kPa DN V/Ph/Hz A A A kPa DN dB(A)	3.84 1260 328 3.84 5.46 215 4 1 60.20 50 200 658 515 220 200 71	3.82 1456 381 3.82 5.31 209 4 1 1 69.56 59 200 1002 773 185 200 71	3.86 509 132 3.86 5.19 205 2 2 24.32 44 125 329 186 175 125 70	3.85 627 163 3.85 5.22 206 2 2 2 29.96 56 150 337 194 145 150 70	3.89 770 198 3.89 5.4 213 2 Stepless 36.79 46 150 400/3/50 509 280 155 150 70	3.82 929 243 3.82 5.34 211 2 2 44.39 68 150 517 288 120 150 69	3.85 1075 279 3.85 5.41 213 4 2 51.36 41 150 650 507 170 150 70	3.84 1260 328 3.84 5.46 215 4 2 60.20 50 200 658 515 220 200 71	3.82 1456 381 3.82 5.31 209 4 2 69.56 59 200 773 185 200 71

DI	MENSIC	NS	1301-1	1401-1	1701-1	2201-1	2602-1	3302-1	4002-1	4302-1	4603-1	4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
L	STD/MC	mm	4000	4000	5000	5000	6200	7200	7200	8400	10050	11100	11100	6200	7200	7200	8400	10050	11100	11100
W	STD/MC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/MC	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500	2100	2100	2100	2500	2500	2500	2500

### **CLEARANCE AREA**

CHA/TTY 1301-1÷5004-2

500 | 1800 | 1000 | 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Data of MC version are specified on technical brochure.

# CHA/TTY/FC 1301-1÷5004-2

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



















The innovative CHA/TTY/FC 1301-1÷5004-2 TURBOLINE units, with R134a refrigerant and FREE-COOLING technology, are designed to provide an effective solution to installation requirements of large areas, both commercial and industrial, where the production of chilled water is required in continuous service throughout the year. The unit, designed with specific attention to every aspect of construction and combined with the use of TURBOCOR dynamic partialization oil-free magnetic levitation compressors - managed by the TURBOSOFT selfadaptive electronic control - and with the use of flooded shell and tube evaporator, achieves a high rate of energy efficiency, with unequalled SEPR values, with minimum water content, and an excellent silent functioning. Depending on outside air temperature, the microprocessor controller manages the functioning in CHILLER, FREE-COOLING or MIXED (both CHILLER and FREE-COOLING) mode. The units are also equipped with a WEB MONITORING system for the monitoring and remote management of the units through the communication protocol GPRS/EDGE/3G/TCP-IP. Users enabled to the use of this service can, by using a specific Web page, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are compliant to the ErP 2021 Regulation for process cooling application.

On request, units can be supplied with R513A refrigerant (CHA/TTJ/FC 1301-1÷5004-2).

### **VERSION**

CHA/TTY/FC

Cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.

**ISBT** 

IAV

IAA

IAS

- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

FACTOR	I FILLED ACCESSORIES
IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available
	static pressure
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
PU	Single circulating pump
PD	Double circulating pump
TS	Touch screen Interface
IST	Modbus TCP/IP protocol, Ethernet
	port

#### BACnet MSTP protocol, RS485 ISB serial interface

ISL LonWorks protocol, FTT-10 serial interface ISS

SNMP protocol, Ethernet port Remote set-point, 0-10 V signal Remote set-point, 4-20 mA signal Remote signal for second set-point

BACnet TCP/IP protocol, Ethernet

IDL Demand limit from digital input CP Potential free contacts

#### **LOOSE ACCESSORIES**

High and low pressure gauges MN CR Remote control panel RP Coils protection metallic guards Rubber shock absorbers AG AM Spring shock absorbers FΙ Flow switch



## CHA/TTY/FC 1301-1÷5004-2



MODEL			1301-1	1401-1	1701-1	2201-1	2602-1	3302-1	4002-1	4302-1	4603-1
	Cooling capacity (1)	kW	246	281	333	400	495	588	696	869	1046
Cooling	Absorbed power (1)	kW	71	80	94	116	143	171	204	257	307
J	EER (1)		3.46	3.51	3.54	3.45	3.46	3.44	3.41	3.38	3.41
	Cooling capacity (1)	kW	244	279	331	397	491	582	690	861	1033
O 1: (ENIA 4544)	Absorbed power (1)	kW	73	82	96	119	147	177	210	265	321
Cooling (EN14511)	EER (1)		3.34	3.40	3.45	3.34	3.34	3.29	3.29	3.25	3.22
	SEPR (2)		7.29	7.38	7.07	7.02	7.40	7.19	7.04	7.23	7.04
- O !! !	Air temperature (3)	°C	-2.5	0.5	-2.9	0.0	-2.8	-2.3	-0.5	-0.2	1.0
Free-Cooling cycle	Absorbed power (3)	kW	10.8	10.8	10.8	14.4	18.0	21.6	21.6	25.2	32.4
	Quantity	n°	1	1	1	1	2	2	2	2	3
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1
oomproood:	Capacity steps	n°					Stepless				
	Water flow	I/s	12.69	14.50	17.18	20.64	25.54	30.34	35.91	44.84	53.97
Water circuit	Pressure drops	kPa	92	97	88	105	115	155	125	144	220
· · ator on our	Water connections	DN	100	100	100	125	125	150	150	150	150
	Power supply	V/Ph/Hz	100	100	100	120	400/3/50	100	100	100	100
Electrical	Max. running current	Α Α	168	168	168	262	329	337	509	517	763
characteristics	Max. starting current	A	25	25	25	33	186	194	280	288	534
	Pump available static pressure	kPa	135	125	115	110	150	140	155	105	160
Unit with pump	Water connections	DN	100	100	100	125	125	150	150	150	150
Cound proceure (4)	water connections	dB(A)	68	68	69	69	69	70	70	69	70
Sound pressure (4)	Transport weight	· ' '	3040	3200	3600	3700	4620	5150	5500	7700	8800
Weights	Operating weight	Kg	3180	3360	3810	3930	4850	5400	5810	8080	9250
	Operating weight	Kg	3100	3300	3010	3330	4000	3400	3010	0000	3230
MODEL			4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
	Cooling capacity (1)	kW	1229	1443	495	588	696	869	981	1229	1443
Cooling	Absorbed power (1)	kW	357								1770
Ü		17.4.4	337	425	143	171	204	257	280	357	425
	EER (1)	KVV	3.44	425 3.40	143 3.46	171 3.44	204 3.41	257 3.38			
		kW							280	357	425
O 1: (ENIA (EAA)	EER (1) Cooling capacity (1)		3.44 1211	3.40 1421	3.46 491	3.44 582	3.41 690	3.38 861	280 3.50 970	357 3.44 1211	425 3.40 1421
Cooling (EN14511)	EER (1) Cooling capacity (1) Absorbed power (1)	kW	3.44 1211 375	3.40 1421 447	3.46	3.44 582 177	3.41	3.38	280 3.50 970 291	357 3.44 1211 375	425 3.40 1421 447
Cooling (EN14511)	EER (1) Cooling capacity (1)	kW	3.44 1211 375 3.23	3.40 1421	3.46 491 147	3.44 582	3.41 690 210	3.38 861 265 3.25	280 3.50 970	357 3.44 1211	425 3.40 1421
	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2)	kW	3.44 1211 375 3.23 7.23	3.40 1421 447 3.18 7.22	3.46 491 147 3.34 7.40	3.44 582 177 3.29 7.19	3.41 690 210 3.29 7.04	3.38 861 265 3.25 7.23	280 3.50 970 291 3.33 7.04	357 3.44 1211 375 3.23 7.23	425 3.40 1421 447 3.18 7.22
-	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3)	kW kW	3.44 1211 375 3.23 7.23 1.0	3.40 1421 447 3.18 7.22 1.0	3.46 491 147 3.34 7.40 -2.8	3.44 582 177 3.29 7.19 -2.3	3.41 690 210 3.29 7.04 -0.5	3.38 861 265 3.25 7.23 -0.2	280 3.50 970 291 3.33 7.04 1.5	357 3.44 1211 375 3.23 7.23 1.0	425 3.40 1421 447 3.18 7.22 1.0
	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3)	kW kW	3.44 1211 375 3.23 7.23	3.40 1421 447 3.18 7.22	3.46 491 147 3.34 7.40 -2.8 18.0	3.44 582 177 3.29 7.19 -2.3 21.6	3.41 690 210 3.29 7.04 -0.5 21.6	3.38 861 265 3.25 7.23 -0.2 25.2	280 3.50 970 291 3.33 7.04	357 3.44 1211 375 3.23 7.23	425 3.40 1421 447 3.18 7.22
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity	kW kW °C kW	3.44 1211 375 3.23 7.23 1.0 36.0	3.40 1421 447 3.18 7.22 1.0 36.0	3.46 491 147 3.34 7.40 -2.8 18.0	3.44 582 177 3.29 7.19 -2.3 21.6	3.41 690 210 3.29 7.04 -0.5 21.6	3.38 861 265 3.25 7.23 -0.2 25.2 2	280 3.50 970 291 3.33 7.04 1.5 32.4 4	357 3.44 1211 375 3.23 7.23 1.0 36.0 4	425 3.40 1421 447 3.18 7.22 1.0 36.0 4
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits	kW kW °C kW n° n°	3.44 1211 375 3.23 7.23 1.0 36.0 4	3.40 1421 447 3.18 7.22 1.0 36.0	3.46 491 147 3.34 7.40 -2.8 18.0	3.44 582 177 3.29 7.19 -2.3 21.6	3.41 690 210 3.29 7.04 -0.5 21.6 2	3.38 861 265 3.25 7.23 -0.2 25.2	280 3.50 970 291 3.33 7.04 1.5 32.4	357 3.44 1211 375 3.23 7.23 1.0 36.0	425 3.40 1421 447 3.18 7.22 1.0 36.0
Free-Cooling cycle	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps	kW kW c kW n° n° n°	3.44 1211 375 3.23 7.23 1.0 36.0 4	3.40 1421 447 3.18 7.22 1.0 36.0 4	3.46 491 147 3.34 7.40 -2.8 18.0 2	3.44 582 177 3.29 7.19 -2.3 21.6 2	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless	3.38 861 265 3.25 7.23 -0.2 25.2 2	280 3.50 970 291 3.33 7.04 1.5 32.4 4	357 3.44 1211 375 3.23 7.23 1.0 36.0 4	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2
Free-Cooling cycle Compressor	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow	kW kW °C kW n° n°	3.44 1211 375 3.23 7.23 1.0 36.0 4 1	3.40 1421 447 3.18 7.22 1.0 36.0 4 1	3.46 491 147 3.34 7.40 -2.8 18.0 2 2	3.44 582 177 3.29 7.19 -2.3 21.6 2 2	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91	3.38 861 265 3.25 7.23 -0.2 25.2 2 44.84	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2
Free-Cooling cycle Compressor	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW control	3.44 1211 375 3.23 7.23 1.0 36.0 4 1	3.40 1421 447 3.18 7.22 1.0 36.0 4 1	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	kW kW °C kW n° n° l/s kPa DN	3.44 1211 375 3.23 7.23 1.0 36.0 4 1	3.40 1421 447 3.18 7.22 1.0 36.0 4 1	3.46 491 147 3.34 7.40 -2.8 18.0 2 2	3.44 582 177 3.29 7.19 -2.3 21.6 2 2	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125 150	3.38 861 265 3.25 7.23 -0.2 25.2 2 44.84	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	kW kW c°C kW n° n° l/s kPa DN V/Ph/Hz	3.44 1211 375 3.23 7.23 1.0 36.0 4 1	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 2 25.54 115 125	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125 150 400/3/50	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144 150	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	kW kW °C kW n° n° l/s kPa DN V/Ph/Hz	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 63.42 256 200	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 2 25.54 115 125	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125 150 400/3/50 509	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144 150	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200	3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200
Free-Cooling cycle Compressor Water circuit	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW °C kW n° n° l/s kPa DN V/Ph/Hz A	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 1 63.42 256 200	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54 115 125 329 186	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150 337 194	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125 400/3/50 509 280	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144 150 517 288	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150 650 507	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200
Free-Cooling cycle Compressor Water circuit Electrical characteristics	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW kW c c c c c c c c c c c c c c c c c	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 63.42 256 200 658 515 205	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200 1002 773 145	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54 115 125 329 186 150	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150 337 194 140	3.41 690 210 3.29 7.04 -0.5 21.6 2 Stepless 35.91 125 150 400/3/50 509 280	3.38 861 265 3.25 7.23 -0.2 25.2 2 44.84 144 150 517 288 105	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150 650 507 200	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200 658 515 205	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200
Free-Cooling cycle Compressor Water circuit Electrical characteristics Unit with pump	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW or of control	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 63.42 256 200 658 515 205	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200 1002 773 145 200	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54 115 125 329 186 150 125	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150 337 194 140 150	3.41 690 210 3.29 7.04 -0.5 2 2 Stepless 35.91 125 150 400/3/50 509 280 155 150	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144 150 517 288 105 150	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150 650 507 200 150	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200 658 515 205 200	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200 1002 773 145 200
Free-Cooling cycle Compressor Water circuit Electrical characteristics Unit with pump	EER (1)  Cooling capacity (1)  Absorbed power (1)  EER (1)  SEPR (2)  Air temperature (3)  Absorbed power (3)  Quantity  Refrigerant circuits  Capacity steps  Water flow  Pressure drops  Water connections  Power supply  Max. running current  Max. starting current  Pump available static pressure  Water connections	kW kW kW c c c c c c c c c c c c c c c c	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 63.42 256 200 658 515 205 200 70	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200 1002 773 145 200 70	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54 115 125 329 186 150 125 69	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 2 30.34 155 150 337 194 140 150 70	3.41 690 210 3.29 7.04 -0.5 21.6 2 2 Stepless 35.91 125 150 400/3/50 509 280 155 150 70	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 2 44.84 144 150 517 288 105 150 69	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150 650 507 200 150 70	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200 658 515 205 200 70	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200 1002 773 145 200 70
Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical characteristics  Unit with pump  Sound pressure (4)  Weights	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEPR (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW kW kW or of control	3.44 1211 375 3.23 7.23 1.0 36.0 4 1 63.42 256 200 658 515 205	3.40 1421 447 3.18 7.22 1.0 36.0 4 1 74.46 275 200 1002 773 145 200	3.46 491 147 3.34 7.40 -2.8 18.0 2 2 25.54 115 125 329 186 150 125	3.44 582 177 3.29 7.19 -2.3 21.6 2 2 30.34 155 150 337 194 140 150	3.41 690 210 3.29 7.04 -0.5 2 2 Stepless 35.91 125 150 400/3/50 509 280 155 150	3.38 861 265 3.25 7.23 -0.2 25.2 2 2 44.84 144 150 517 288 105 150	280 3.50 970 291 3.33 7.04 1.5 32.4 4 2 50.62 188 150 650 507 200 150	357 3.44 1211 375 3.23 7.23 1.0 36.0 4 2 63.42 256 200 658 515 205 200	425 3.40 1421 447 3.18 7.22 1.0 36.0 4 2 74.46 275 200 1002 773 145 200

DIMENSION	IS		1301-1	1401-1	1701-1	2201-1	2602-1	3302-1	4002-1	4302-1	4603-1
L	STD	mm	4000	4000	5000	5000	6200	7200	7200	8400	10050
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2750	2750
DIMENSION	IS		4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
L	STD	mm	11100	11100	6200	7200	7200	8400	10050	11100	11100
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2750	2750	2360	2360	2360	2750	2750	2750	2750

### **CLEARANCE AREA**

CHA/TTY/FC 1301-1÷5004-2

500 | 1800 | 1000 | 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at wich the cooling capacity indicated in seasons.
- point (1) is reached.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.



# **CHAPTER 3**

WATERCOOLED & CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION. REMOTE CONDENSERS

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# CWW/K 15÷151

WATERCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH ROTARY/ SCROLL COMPRESSOR AND PLATE EXCHANGERS.







The CWW/K 15÷151 liquid Chillers and Heat Pumps, with R410A refrigerant, are designed for small and medium domestic or industrial systems which require medium-low power, space-saving units and quiet operation. These units are ideal for indoor installation and, equipped with a self-contained structure, they reduce the overall dimensions to a minimum while making installation and maintenance operations easier.

These units can be combined with Fan Coil units or with intermediate heat exchangers for process cooling applications.

Equipped with prepainted plate structure, Rotary/Scroll compressor and plate exchangers, these units have cooling and hydraulic circuits complete with everything necessary for quick installation and high energy efficiency, even in tank and pump version.

A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

The cooling only units are not compliant to the ErP Regulation. Heat Pump units are compliant to the ErP Regulation.

VERSION	
CWW/K	CWW/K/WP
Cooling only	Reversible Heat Pump
CWW/K/SP	CWW/K/WP/SP
Cooling only with tank and pump	Reversible Heat Pump with tank and pump

### **FEATURES**

- Self-supporting prepainted steel frame.
- Rotary/Scroll compressor with internal overheat protection and crankcase heater, if needed.
- Condenser AISI 316 stainless steel braze welded plates type, with pressostatic valve.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch.
- R410A refrigerant.
- Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Water circuit for SP version includes: insulated tank, circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system.

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

BT Low water temperature kit
PS Single circulating pump
FE Antifreeze heater for evaporator
FA Antifreeze heater for tank
VV Pressure valve and solenoid valve

(for WP versions)

### **LOOSE ACCESSORIES**

CR Remote control panel IS Modbus RTU protocol, RS485

serial interface

AG Rubber shock absorbers

## CWW/K 15÷151





MODEL			15	18	21	25	31	41	51
	Cooling capacity (1)	kW	4.6	5.8	7.1	8.3	9.6	11.6	14.3
Cooling	Absorbed power (1)	kW	1.1	1.4	1.8	2.0	2.3	2.9	3.4
	EER (1)		4.18	4.14	3.94	4.15	4.17	4.00	4.21
	Cooling capacity (1)	kW	4.6	5.7	7.0	8.2	9.5	11.5	14.2
Cooling (EN14511)	Absorbed power (1)	kW	1.2	1.5	2.0	2.2	2.5	3.2	3.7
	EER (1)		3.83	3.70	3.47	3.80	3.78	3.58	3.80
	Heating capacity (2)	kW	5.9	7.2	8.8	10.4	12.5	14.9	17.5
Heating	Absorbed power (2)	kW	1.4	1.7	2.2	2.5	3.0	3.5	4.3
-	COP (2)		4.21	4.24	4.00	4.16	4.17	4.26	4.07
	Heating capacity (2)	kW	5.1	6.7	8.4	9.8	11.9	13.7	17.1
	Absorbed power (2)	kW	1.5	1.8	2.5	2.8	3.7	3.9	4.5
Heating /FNI1/E11	COP (2)		3.38	3.64	3.31	3.51	3.25	3.56	3.81
Heating (EN14511)	SCOP (3)		4.20	4.15	3.85	4.18	4.31	4.38	4.34
	Energy Efficiency (3)	%	160	158	146	159	164	167	166
	Energy Class (4)		A++	A++	A+	A++	A++	A++	A++
0	Type				tary	'		Scroll	
Compressor	Quantity	n°	1	1	1	1	1	1	1
	Water flow	I/s	0.22	0.28	0.34	0.40	0.46	0.55	0.68
Evaporator	Pressure drops	kPa	21	30	44	26	30	45	42
	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
	Water flow	I/s	0.07	0.09	0.11	0.12	0.14	0.17	0.21
Condenser	Pressure drops	kPa	3	4	5	6	8	10	5
00110011001	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
EL	Power supply	V/Ph/Hz	<u>'</u>	· ·		/1/50	· · · · · · · · · · · · · · · · · · ·		400/3+N/50
Electrical	Max. running current	A A	8	10	13	14	16	22	9
characteristics	Max. starting current	A	37	43	62	62	75	86	50
	Water flow	I/s	0.22	0.28	0.34	0.40	0.46	0.55	0.68
		kPa	40	33	38		50	35	
Unit SP version	Pump available static pressure	Kra	50	50		55 50			128
	Tank water volume	"G	50 1"	1"	50 1"	1"	50 1"	50 1"	50 1"
0 1	Water connections								
Sound pressure	STD/SP version (5)	dB(A)	39	39	39	39	41	43	43
Weights	Transport weight (6)	Kg	77	78	80	84	87	90	93
Weights	Transport weight (6) Operating weight (6)	Kg Kg	77 78	78 79	80	85	88	91	95
Weights				79 <b>71</b>	81 <b>81</b>	85 91	101	91	95 <b>151</b>
J	Operating weight (6)		78	79	81	85	88	91	95
MODEL		Kg	78 <b>61</b>	79 <b>71</b>	81 <b>81</b>	85 91	101	91	95 <b>151</b>
MODEL	Operating weight (6)  Cooling capacity (1)	Kg kW	78 <b>61</b> 17.1	79 <b>71</b> 20.0	81 81 23.0	85 91 27.7 6.8	88 101 33.6 7.9	91 131 39.7 9.3	95 <b>151</b> 49.2
MODEL	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1)	Kg kW	78 <b>61</b> 17.1 4.1	79 71 20.0 4.8	81 81 23.0 5.5	91 27.7	88 101 33.6 7.9 4.25	91 131 39.7	95 151 49.2 11.5
MODEL Cooling	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1)	kW kW kW	78 61 17.1 4.1 4.17 17.0	79 71 20.0 4.8 4.17 19.8	81 23.0 5.5 4.18 22.8	85 91 27.7 6.8 4.07 27.5	88 101 33.6 7.9 4.25 33.3	91 131 39.7 9.3 4.27 39.4	95 151 49.2 11.5 4.28 48.8
J	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1)	kW kW	78 61 17.1 4.1 4.17 17.0 4.4	79 71 20.0 4.8 4.17 19.8 5.2	81 81 23.0 5.5 4.18 22.8 6.0	85 91 27.7 6.8 4.07 27.5 7.4	88 101 33.6 7.9 4.25 33.3 8.7	91 131 39.7 9.3 4.27 39.4 10.1	95 151 49.2 11.5 4.28 48.8 12.1
MODEL Cooling	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86	79 71 20.0 4.8 4.17 19.8 5.2 3.79	81 23.0 5.5 4.18 22.8 6.0 3.79	85 91 27.7 6.8 4.07 27.5 7.4 3.72	88 101 33.6 7.9 4.25 33.3 8.7 3.83	91 131 39.7 9.3 4.27 39.4 10.1 3.92	95 151 49.2 11.5 4.28 48.8 12.1 4.03
MODEL Cooling Cooling (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2)	kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0	95 151 49.2 11.5 4.28 48.8 12.1 4.03 59.5
MODEL Cooling Cooling (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2)	kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1	91 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7	95 151 49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4
MODEL Cooling Cooling (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02	95 151 49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13
MODEL Cooling Cooling (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2)	kW kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5	95  151  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4
MODEL Cooling Cooling (EN14511) Heating	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2)	kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4	95  151  49.2  11.5  4.28  48.8  12.1  4.03  59.5  14.4  4.13  56.4  15.2
MODEL Cooling Cooling (EN14511) Heating	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2)	kW kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58	95  151  49.2  11.5  4.28  48.8  12.1  4.03  59.5  14.4  4.13  56.4  15.2  3.71
MODEL Cooling Cooling (EN14511) Heating	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3)	kW kW kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50 3.94	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28
MODEL Cooling Cooling (EN14511) Heating	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3)	kW kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18	95  151  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163
MODEL Cooling	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Energy Efficiency (3) Energy Class (4)	kW kW kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++	88 101 33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50 3.94	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28
MODEL Cooling Cooling (EN14511) Heating	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Energy Efficiency (3) Energy Efficiency (3) Type	kW kW kW kW kW kW	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18	95  151  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Class (4) Type Quantity	kW kW kW kW kW kW kW n°	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll	88  101  33.6  7.9  4.25  33.3  8.7  3.83  9.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+	91 131 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18 159 A++	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Each (2) COP (3) Energy Efficiency (3) Energy Class (4) Type Ouantity Water flow	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++	81 81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+	91 39.7 9.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18 159 A++	95  151  49.2  11.5  4.28  48.8  12.1  4.03  59.5  14.4  4.13  56.4  15.2  3.71  4.28  163  A++
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511)	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Feating capacity (2) Absorbed power (2) COP (2) Feating capacity (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+ 1 0.82 29	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++	81 81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+	91 131 39.7 39.3 4.27 39.4 10.1 3.92 47.0 11.7 4.02 44.5 12.4 3.58 4.18 159 A++	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1"	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++	81 81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1"	88  101  33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50 3.94 150 A+	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41	88  101  33.6  7.9  4.25  33.3  8.7  3.83  9.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+  1  1.61  60  1"  0.50	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58	95  151  49.2  11.5  4.28  48.8  12.1  4.03  59.5  14.4  4.13  56.4  15.2  3.71  4.28  163  A++  1  2.35  54  1"  0.73
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8	79  71  20.0  4.8  4.17  19.8  5.2  3.79  24.3  6.1  3.98  22.5  6.3  3.59  4.05  154  A++  1  0.96  40  1"  0.30  10	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  A+  1 1.61  60  1"  0.50  21	91  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58  22	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Energy Efficiency (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Water connections	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1"	88  101  33.6  7.9  4.25  33.3  8.7  3.83  9.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+  1  1.61  60  1"  0.50	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58	95  151  49.2  11.5  4.28  48.8  12.1  4.03  59.5  14.4  4.13  56.4  15.2  3.71  4.28  163  A++  1  2.35  54  1"  0.73
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water connections Power supply	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1"	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30 10 1"	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+  1  1.61  60  1"  0.50  21  1"	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58  22  1"	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1"
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Efficiency (3) Type Quantity Water flow Pressure drops Water connections Water connections Water connections Power supply Max. running current	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1"	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30 10 1"	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+  1  1.61  60  1"  0.50  21  1"	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  1.24  3.58  4.18  159  A++  1  1.90  49  1"  0.58  22  1"	95  151  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1"
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) COP (2) Eering capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1"	79  71  20.0  4.8  4.17  19.8  5.2  3.79  24.3  6.1  3.98  22.5  6.3  3.59  4.05  154  A++  1  0.96  40  1"  0.30  10  1"	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  A+  150  A+  1  1.61  60  1"  0.50  21  1"	91  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58  22  1"	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1"
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Efficiency (3) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Max. starting current Water flow	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30 10 1"	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142 1.32	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  10.8  3.50  3.94  150  A+  1  1  1  1  1  20  142  1.61	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  0.58  22  1"  23  147  1.90	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 0.73 22 1" 29 197 2.35
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical characteristics	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Water flow Pump available static pressure	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82 131	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30 10 1"	81 23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1" 15 74 1.10 93	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142 1.32 1.87	88  101  33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50 3.94 150 A+  1 1.61 60 1" 0.50 21 1" 20 142 1.61 160	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  0.58  22  1"  23  147  1.90  131	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1"
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Efficiency (3) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Max. starting current Water flow	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82 131	79  71  20.0  4.8  4.17  19.8  5.2  3.79  24.3  6.1  3.98  22.5  6.3  3.59  4.05  154  A++  1  0.96  40  1"  0.30  10  1"  14  74  0.96  100  50	81  81  23.0  5.5  4.18  22.8  6.0  3.79  28.4  7.0  4.06  26.3  7.2  3.67  4.05  154  A++  1  1.10  47  1"  0.34  13  1"  15  74  1.10  93  50	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142 1.32	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  10.8  3.50  3.94  150  A+  1  1  1  1  1  20  142  1.61	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  0.58  22  1"  23  147  1.90	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 0.73 22 1" 29 197 2.35
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical characteristics	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Efficiency (3) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Wax starting current Tank water volume	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82	79 71 20.0 4.8 4.17 19.8 5.2 3.79 24.3 6.1 3.98 22.5 6.3 3.59 4.05 154 A++  1 0.96 40 1" 0.30 10 1"	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142 1.32 1.87	88  101  33.6 7.9 4.25 33.3 8.7 3.83 39.8 10.1 3.94 37.9 10.8 3.50 3.94 150 A+  1 1.61 60 1" 0.50 21 1" 20 142 1.61 160	91  131  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  0.58  22  1"  23  147  1.90  131	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1" 29 197 2.35 155
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical characteristics Unit SP version	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Water flow Pump available static pressure	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82 131 50 1"	79  71  20.0  4.8  4.17  19.8  5.2  3.79  24.3  6.1  3.98  22.5  6.3  3.59  4.05  154  A++  1  0.96  40  1"  0.30  10  1"  14  74  0.96  100  50  1"	81  23.0 5.5 4.18 22.8 6.0 3.79 28.4 7.0 4.06 26.3 7.2 3.67 4.05 154 A++  1 1.10 47 1" 0.34 13 1" 15 74 1.10 93 50 1"	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 400/3+N/50 18 142 1.32 187 100 1"	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  A+  150  A+  1  1,61  60  1"  0.50  21  1"  20  142  1,61  160  100  1"	91  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  1.90  49  1"  0.58  22  1"  23  147  1.90  131  100  1"	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1" 29 197 2.35 155 100 1"
MODEL Cooling Cooling (EN14511) Heating Heating (EN14511) Compressor Evaporator Condenser Electrical characteristics	Operating weight (6)  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2) Heating capacity (2) Absorbed power (2) COP (2) SCOP (3) Energy Efficiency (3) Energy Efficiency (3) Energy Class (4) Type Quantity Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Water flow Pump available static pressure Tank water volume Water connections	kW k	78 61 17.1 4.1 4.17 17.0 4.4 3.86 20.8 5.4 3.85 19.7 5.6 3.50 3.95 150 A+  1 0.82 29 1" 0.25 8 1" 11 71 0.82 131 50	79  71  20.0  4.8  4.17  19.8  5.2  3.79  24.3  6.1  3.98  22.5  6.3  3.59  4.05  154  A++  1  0.96  40  1"  0.30  10  1"  14  74  0.96  100  50	81  81  23.0  5.5  4.18  22.8  6.0  3.79  28.4  7.0  4.06  26.3  7.2  3.67  4.05  154  A++  1  1.10  47  1"  0.34  13  1"  15  74  1.10  93  50	85 91 27.7 6.8 4.07 27.5 7.4 3.72 33.8 8.2 4.12 31.8 8.9 3.56 4.31 164 A++ Scroll 1 1.32 48 1" 0.41 20 1" 400/3+N/50 18 142 1.32 187	88  101  33.6  7.9  4.25  33.3  8.7  3.83  39.8  10.1  3.94  37.9  10.8  3.50  3.94  150  A+  1  1.61  60  1"  0.50  21  1"  20  142  1.61  160  100	91  39.7  9.3  4.27  39.4  10.1  3.92  47.0  11.7  4.02  44.5  12.4  3.58  4.18  159  A++  1  1.90  49  1"  0.58  22  1"  23  147  1.90  100	95  49.2 11.5 4.28 48.8 12.1 4.03 59.5 14.4 4.13 56.4 15.2 3.71 4.28 163 A++  1 2.35 54 1" 0.73 22 1" 29 197 2.35 155 100

<b>DIMENSION</b>	IS		15	18	21	25	31	41	51	61	71	81	91	101	131	151
1	STD	mm	550	550	550	550	550	550	550	550	550	550	550	550	550	550
L	SP	mm	550	550	550	550	550	550	550	550	550	550	1100	1100	1100	1100
W	STD/SP	mm	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Н	STD/SP	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200

### **CLEARANCE AREA**

CWW/K 15÷151 200 | 500 | 800 | 500





500 800 800 800

CWW/K/SP 91÷151

- Chilled water from 12 to 7 °C, water temperature at the condenser from 15 to 35 °C. Heated water from 40 to 45 °C, water temperature at the evaporator from 15 to 10 °C. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

  5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  6. Unit without tank and pump.

  N.B. Weights of WP versions are specified on technical brochure.



# CWW/K 182-P+604-P

WATERCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH SCROLL COMPRESSORS AND PLATE EXCHANGERS.



















The CWW/K 182-P÷604-P liquid Chillers and Heat Pumps, with R410A refrigerant, are designed for medium-sized domestic or industrial systems which require medium power, space-saving units and quiet operation. This range is ideal for indoor installation and, equipped with a self-contained structure, it reduces the overall dimensions to a minimum while at the same time making installation and maintenance operations easier. These units are used to remove the heat developed during industrial processes or, combined with Fan Coil units, for the air conditioning of the rooms. They can be supplied with Modbus RTU protocol through RS485 serial interface. Equipped with polyester powder plate painting structure, Scroll compressors and plate-type exchangers, these units have cooling and hydraulic circuits complete with everything necessary for quick installation and high energy efficiency, even in the version with tank and pump; and a series of accessories, factory fitted or supplied separately, like desuperheater and total heat recovery, rounds off the variety of equipment in this product range.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CWW/G 182-P÷604-P) or R454B (CWW/L 182-P+604-P) refrigerant.

### **VERSION**

CWW/K	CWW/K/WP
Cooling only	Reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors, interface relay and terminals for external connections.
- Microprocessor control and regulation system.

Modbus RTU protocol, RS485

serial interface

### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES	LOOSE	ACCESSORIES
IM	Automatic circuit breakers	MN	High and low pressure gauges
SL	Unit silencement	CR	Remote control panel
RFM	Cooling circuit shut-off valve on	SPU	Inertial tank and single circulating
	discharge line		pump
RFL	Cooling circuit shut-off valve on	SPD	Inertial tank and double circulating
	liquid line		pump
BT	Low water temperature kit	PV2	2-Way electronic pressostatic valve
DS	Desuperheater	PV3	3-Way electronic pressostatic valve
RT	Total heat recovery	AG	Rubber shock absorbers
FE	Antifreeze heater for evaporator	AM	Spring shock absorbers
FA	Antifreeze heater for tank		
SS	Soft start		

IS

### CWW/K 182-P÷604-P







MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	Cooling capacity (1)	kW	55.4	62.5	72.1	82.5	97.2	112	130	149	170	195
Cooling	Absorbed power (1)	kW	12.8	14.3	16.6	18.7	21.8	25.7	28.5	32.8	37.7	43.7
-	EER (1)		4.33	4.37	4.34	4.41	4.46	4.36	4.56	4.54	4.51	4.46
	Cooling capacity (1)	kW	55.0	62.1	71.6	82.0	96.7	111	129	148	169	194
	Absorbed power (1)	kW	13.6	15.3	17.6	19.9	22.9	27.3	29.9	34.3	39.3	45.6
Cooling (EN14511)	EER (1)		4.04	4.06	4.06	4.13	4.22	4.08	4.33	4.32	4.31	4.26
-	SEER (2)		5.28	5.21	5.22	5.21	5.64	5.20	5.72	6.17	5.78	6.16
	Energy Efficiency (2)	%	203	200	201	200	218	200	221	239	223	238
	Heating capacity (3)	kW	72.5	80.1	93.3	105	121	140	159	180	205	237
Heating	Absorbed power (3)	kW	18.0	20.0	23.2	25.7	28.8	33.2	38.4	42.7	51.7	56.7
Ü	COP		4.03	4.01	4.02	4.09	4.20	4.22	4.14	4.22	3.97	4.18
	Heating capacity (3)	kW	72.8	80.6	93.4	105	122	141	159	180	205	237
	Absorbed power (3)	kW	18.3	20.5	23.3	26.1	29.4	33.9	38.5	42.8	51.8	56.9
Heating (EN14511)	COP (3)		3.98	3.94	4.01	4.04	4.14	4.15	4.13	4.21	3.96	4.17
<u>.</u>	SCOP (4)		4.29	4.03	4.77	5.15	5.11	5.05	5.37	5.31	4.76	4.76
E	Energy Efficiency (4)	%	164	153	183	198	196	194	207	204	182	182
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	1
	Water flow	I/s	2.65	2.99	3.44	3.94	4.64	5.38	6.23	7.14	8.12	9.33
Evaporator	Pressure drops	kPa	54	48	49	51	44	57	53	59	49	48
	Water connections	"G	1 1/4"	1 1/4"	1 1/4"	1 ¼"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Water flow	I/s	3.26	3.67	4.24	4.84	5.69	6.60	7.59	8.71	9.92	11.41
Condenser	Pressure drops	kPa	47	51	52	43	46	54	36	39	43	48
	Water connections	"G	1 1/4"	1 1/4"	1 1/4"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical	Power supply	V/Ph/Hz					400/	3/50				
characteristics	Max. running current	Α	33	39	43	49	60	64	73	90	98	120
characteristics	Max. starting current	Α	128	137	139	164	204	161	189	234	213	264
Unit with tank and	Pump available static pressure	kPa	100	100	90	130	115	120	105	75	110	65
	Tank water volume	I	300	300	300	300	300	300	300	300	300	300
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Cound property	STD version (5)	dB(A)	59	59	60	60	62	61	61	63	64	64
Sound pressure	With SL accessory (5)	dB(A)	56	56	57	57	59	58	58	60	61	61
Moighto	Transport weight (6)	Kg	384	393	411	423	453	622	658	681	767	803
Weights	Operating weight (6)	Kg	390	400	420	435	470	640	680	705	790	830

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	L	mm	1200	1200	1200	1200	1200	2285	2285	2285	2285	2285
UNIT	W	mm	680	680	680	680	680	680	680	680	680	680
	Н	mm	1520	1520	1520	1520	1520	1520	1520	1520	1520	1520
	L	mm	2310	2310	2310	2310	2310	3395	3395	3395	3395	3395
UNIT + SPU/SPD	W	mm	680	680	680	680	680	680	680	680	680	680
	Н	mm	1520	1520	1520	1520	1520	1520	1520	1520	1520	1520

### **CLEARANCE AREA**

CWW/K 182-P÷604-P

0 300 800 300



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Heated water from 40 to 45 °C, water temperature at the evaporator from 15 to 10 °C.
- evaporator from 15 to 10 °C.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013. Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.
- 6. Unit without tank and pump.
  N.B. Weights of WP version are specified on technical brochure.





# CWW/K 182+604

WATERCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGERS.















The CWW/K 182÷604 liquid Chillers and Heat Pumps, with R410A refrigerant, are designed for medium-sized domestic or industrial systems which require medium power, spacesaving units and quiet operation. This range is ideal for indoor installation and, equipped with a self-contained structure, it reduces the overall dimensions to a minimum while at the same time making installation and maintenance operations easier. These units are used to remove the heat developed during industrial processes or, combined with Fan Coil units, for the air conditioning of the rooms. They can be supplied with Modbus RTU protocol through RS485 serial interface. Equipped with Scroll compressors and shell and tube exchangers, these units have cooling and hydraulic circuits complete with everything necessary for quick installation and high energy efficiency, even in the version with tank and pump; a series of accessories, factory fitted or supplied separately, like desuperheater and total heat recovery, rounds off the variety of equipment in this product range.

#### The units are compliant to the ErP Regulation.

On request, units can be supplied with R452B (CWW/G 182÷604) or R454B (CWW/L 182÷604) refrigerant.

VERSION	
CWW/K	CWW/K/WP
Cooling only	Reversible Heat Pump
CWW/K/SSL	CWW/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- · Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Shell and tube type condenser with one circuit on the refrigerant side and one on the water side in 182÷453 models; with two independent circuits on the refrigerant side and one on the water side in 524÷604 models.
- Shell and tube type evaporator with one circuit on the refrigerant side and one on the water side in 182÷453 models; with two independent circuits on the refrigerant side and one on the water side in 524÷604 models, complete with water differential pressure switch.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors, interface relay and terminals for external connections.
- Microprocessor control and regulation system.

### **ACCESSORIES**

IM Automatic circuit breakers Unit silencement SI

**RFM** Cooling circuit shut-off valve on

discharge line

**RFL** Cooling circuit shut-off valve on

liquid line

ВТ Low water temperature kit

HR Desuperheater Total heat recovery **HRT** SP

Inertial tank

SPU Inertial tank and single circulating

pump

SPD Inertial tank and double circulating

FE Antifreeze heater for evaporator FR Antifreeze heater for evaporator and tank

Soft start

SS IS

Modbus RTU protocol, RS485 serial interface

**LOOSE ACCESSORIES** 

High and low pressure gauges MN

CR Remote control panel

PV2 2-Way electronic pressostatic valve

PV3 3-Way electronic pressostatic valve

AG Rubber shock absorbers ΑM Spring shock absorbers

FΙ Flow switch



## CWW/K 182÷604







MODEL		182	202	242	262	302	363	393	453	524	604	
	Cooling capacity (1)	kW	57.0	62.6	70.9	82.9	98.3	111	129	151	172	196
Cooling	Absorbed power (1)	kW	13.2	14.3	16.4	18.9	22.0	25.7	28.2	33.1	38.2	44.1
-	EER (1)		4.32	4.38	4.32	4.39	4.47	4.32	4.57	4.56	4.50	4.44
	Cooling capacity (1)	kW	56.7	62.2	70.4	82.2	97.6	110	128	150	171	195
	Absorbed power (1)	kW	13.7	14.9	17.2	19.9	23.1	26.9	29.4	34.5	39.7	45.7
Cooling (EN14511)			4.14	4.17	4.10	4.14	4.23	4.10	4.36	4.36	4.31	4.27
	SEER (2)		5.21	5.22	5.21	5.22	5.71	5.22	5.74	6.21	5.83	6.19
ooling (EN14511) EI S EI S EI H H A A C C S EI	Energy Efficiency (2)	%	200	201	200	201	220	201	222	240	225	240
	Heating capacity (3)	kW	74.6	80.3	91.7	106	122	139	158	182	208	238
Heating	Absorbed power (3)	kW	18.6	20.0	22.9	26.0	29.1	33.2	38.0	43.1	52.3	57.3
-	COP		4.01	4.02	4.00	4.08	4.19	4.19	4.16	4.22	3.98	4.15
	Heating capacity (3)	kW	75.1	80.9	92.5	106	123	140	159	183	210	239
	Absorbed power (3)	kW	19.3	20.9	24.0	27.1	30.6	34.8	39.6	44.8	54.4	59.4
Heating (EN14511)	COP (3)		3.89	3.88	3.86	3.92	4.03	4.03	4.02	4.08	3.85	4.03
	SCOP (4)		4.16	4.39	4.39	4.53	4.62	4.57	4.85	4.64	4.72	4.84
	Energy Efficiency (4)	%	158	168	168	173	177	175	186	178	181	186
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°	2						3		4	4
	Water flow	I/s	2.72	2.99	3.39	3.96	4.70	5.30	6.16	7.21	8.22	9.36
Evaporator	Pressure drops	kPa	32	42	55	74	62	55	57	49	63	49
	Water connections	"G	1 ½"	1 ½"	2"	2"	2"	2 ½"	2 ½"	3"	3"	3"
	Water flow	I/s	3.35	3.67	4.17	4.86	5.75	6.53	7.51	8.80	10.04	11.47
Condenser	Pressure drops	kPa	15	17	18	20	27	33	23	30	20	27
	Water connections	"G	2 ½"	2 1/2"	2 1/2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical	Power supply	V/Ph/Hz					400/	3/50				
	Max. running current	Α	33	39	43	49	60	64	73	90	98	120
characteristics	Max. starting current	А	128	137	139	164	204	161	189	234	213	264
Unit with tank and	Pump available static pressure	kPa	150	145	130	140	110	165	165	140	135	105
	Tank water volume	1	470	470	470	470	470	470	470	470	660	660
pump	Water connections	"G	2"	2"	2"	2"	2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	STD version (5)	dB(A)	59	59	61	60	62	62	63	65	65	65
Sound pressure	With SL accessory (5)	dB(A)	56	56	58	57	58	59	60	62	62	62
	SSL version (5)	dB(A)	54	54	56	56	57	57	59	60	60	60
	OUT ACISIOII (O)	uD(///	0 1									
Weights	Transport weight (6)	Kg	465	470	478	488	504	590	606	657	840	856

DIMENSION	NS		182	202	242	262	302	363	393	453	524	604
L	STD/SSL	mm	2100	2100	2300	2100	2700	2400	2400	2400	2400	2600
W	STD/SSL	mm	830	830	830	830	830	830	830	830	830	830
Н	STD/SSL	mm	1300	1300	1300	1300	1300	1300	1300	1300	1450	1450

### **CLEARANCE AREA**

CWW/K 182÷604

500 500 800 1500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Heated water from 40 to 45 °C, water temperature at the evaporator from 15 to 10 °C.
- evaporator from 15 to 10 °C.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013. Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.
- Unit without tank and pump.
  Weights of SSL and WP versions are specified on technical brochure.



# MEA/K 15÷151

CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS WITH ROTARY/ SCROLL COMPRESSOR AND PLATE EXCHANGER.

















installation and maintenance operations easier. Equipped with prepainted plate structure, Rotary/Scroll compressor and plate-type exchanger, these units have cooling and hydraulic circuits designed for quick installation and high energy efficiency, even in the version with tank and pump.

A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

AQ	UA
(SPL	US

### **VERSION**

MEA/K	MEA/K/WP
Cooling only	Reversible Heat Pump
MEA/K/SP	MEA/K/WP/SP
Cooling only with tank and pump	Reversible Heat Pump with tank and pump

### **FEATURES**

- Self-supporting prepainted steel frame.
- Rotary/Scroll compressor with internal overheat protection and crankcase heater, if needed.
- · Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch.
- Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Water circuit for SP version includes: insulated tank, circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

BT Low water temperature kit PS Single circulating pump

RL Liquid receiver

FΕ Antifreeze heater for evaporator FΑ Antifreeze heater for tank

#### **LOOSE ACCESSORIES**

CR Remote control panel IS

Modbus RTU protocol, RS485

serial interface

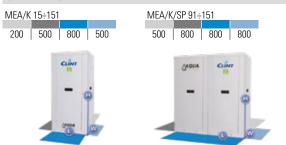
AG Rubber shock absorbers

## MEA/K 15÷151

MODEL			15	18	21	25	31	41	51
Cooling	Cooling capacity (1)	kW	4.0	5.1	6.2	7.3	8.5	10.1	12.1
Cooling	Absorbed power (1)	kW	1.4	1.8	2.1	3.0	3.3	3.7	3.3
Heating	Heating capacity (2)	kW	5.1	6.4	8.2	9.4	10.7	13.2	15.5
Heating	Absorbed power (2)	kW	1.5	1.9	2.4	2.7	3.0	4.2	4.5
Compressor	Туре			Ro	tary			Scroll	
Compressor	Quantity	n°	1	1	1	1	1	1	1
	Water flow	I/s	0.19	0.24	0.30	0.35	0.41	0.48	0.58
Evaporator	Pressure drops	kPa	15	15	20	18	20	25	35
	Water connections	"G	1″	1"	1"	1"	1"	1"	1"
Connections	Delivery line	Ø mm	12	12	12	12	12	12	16
Connections	Liquid line	Ø mm	10	10	10	10	10	10	12
Electrical	Power supply	V/Ph/Hz				/1/50			400/3+N/50
characteristics	Max. running current	A	8	10	13	14	16	22	9
Cildiacteristics	Max. starting current	A	37	43	62	62	75	86	50
	Water flow	I/s	0.19	0.24	0.30	0.35	0.41	0.48	0.58
Unit SP version	Pump available static pressure	kPa	50	45	75	70	70	60	180
Offic of Version	Tank water volume	I	50	50	50	50	50	50	50
	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
Sound pressure	STD/SP version (3)	dB(A)	39	39	39	39	41	43	43
Weights	Transport weight (4)	Kg	74	75	77	81	84	87	86
vveigitts	Operating weight (4)	Kg	75	76	78	82	85	88	88
MODEL			61	71	81	91	101	131	151
Cli	Cooling capacity (1)	kW	14.5	17.0	20.0	24.1	28.8	33.9	41.5
Cooling	Absorbed power (1)	kW	5.2	6.0	7.1	7.8	9.3	10.9	13.3
H4i	Heating capacity (2)	kW	18.5	22.0	25.9	30.4	36.4	43.0	53.2
Heating	Absorbed power (2)	kW	5.5	6.5	7.7	8.3	10.1	11.7	14.2
Compressor	Туре			•		Scroll			•
Compressor	Quantity	n°	1	1	1	1	1	1	1
	Water flow	I/s	0.69	0.81	0.96	1.15	1.38	1.62	1.98
Evaporator	Pressure drops	kPa	28	35	39	40	45	40	40
	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
Connections	Delivery line	Ø mm	16	16	16	22	22	22	22
Connections	Liquid line	Ø mm	12	12	12	12	12	12	16
Electrical	Power supply	V/Ph/Hz				400/3+N/50			
	Max. running current	A	11	14	15	18	20	23	29
characteristics	Max. starting current	А	71	74	74	142	142	147	197
	Water flow	I/s	0.69	0.81	0.96	1.15	1.38	1.62	1.98
Unit SP version	Pump available static pressure	kPa	170	140	110	215	130	155	235
OHIL SE VELZION	Tank water volume	I	50	50	50	100	100	100	100
	Water connections	"G	1"	1"	1"	1"	1"	1"	1"
Sound pressure	STD/SP version (3)	dB(A)	44	45	47	49	49	50	50
Weights	Transport weight (4)	Kg	89	91	93	183	189	195	206
vveignis	Operating weight (4)	Kg	91	93	95	186	192	198	209

<b>DIMENSION</b>	IS		15	18	21	25	31	41	51	61	71	81	91	101	131	151
	STD	mm	550	550	550	550	550	550	550	550	550	550	550	550	550	550
L	SP	mm	550	550	550	550	550	550	550	550	550	550	1100	1100	1100	1100
W	STD/SP	mm	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Н	STD/SP	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200

### CLEARANCE AREA



- Chilled water from 12 to 7 °C, condensing temperature 50 °C. Heated water from 40 to 45 °C, evaporating temperature 0 °C. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744. Unit without tank and pump.
- N.B. Weights of WP versions are specified on technical brochure.

# MEA/K 182-P+604-P

CONDENSERLESS LIQUID CHILLERS AND HEAT PUMPS WITH SCROLL COMPRESSORS AND PLATE EXCHANGER.













MEA/K 182-P÷604-P series liquid Chillers and Heat Pumps for remote condensation, with R410A refrigerant, are designed to meet the needs of residential or industrial-type systems requiring high power together with space-saving and quiet operation. These units are ideal for indoor installation and, equipped with a self-contained structure, minimise overall dimensions while also facilitating installation and maintenance operations. Equipped with polyester plate powder painting structure, Scroll compressors and plate-type exchanger they have refrigerant and hydraulic circuits, even in the version with tank, with pump or tank and pump, complete with everything necessary for quick installation operations and for high energy efficiencies. A number of accessories, factory fitted or supplied separately, such as the desuperheater or the total heat recovery, enhance and complete the equipment of this range.

### **VERSION**

MEA/K	MEA/K/WP
Cooling only	Reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors, interface relay and terminals
  for external connections.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM Automatic circuit breakersSL Unit silencement

RFM Cooling circuit shut-off valve on

discharge line

RFL Cooling circuit shut-off valve on

liquid line

BT Low water temperature kit

DS Desuperheater RT Total heat recovery

FE Antifreeze heater for evaporator

FA Antifreeze heater for tank

SS Soft start

IS Modbus RTU protocol, RS485

serial interface

#### **LOOSE ACCESSORIES**

MN High and low pressure gauges

CR Remote control panel

SPU Inertial tank and single circulating

pump

SPD Inertial tank and double circulating

pump

AG Rubber shock absorbers
AM Spring shock absorbers



## MEA/K 182-P÷604-P

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
Cooling	Cooling capacity (1)	kW	50.8	57.1	64.3	73.6	87.1	98.8	114	134	149	176
Cooling	Absorbed power (1)	kW	15.4	17.3	19.0	21.6	25.8	29.4	32.9	38.7	43.5	51.5
Heating	Heating capacity (2)	kW	59.5	65.8	74.3	84.7	96.5	107	122	148	157	194
пеанну	Absorbed power (2)	kW	18.0	20.0	22.3	24.7	27.8	32.8	37.2	41.1	50.8	56.5
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3			4
	Water flow	I/s	2.43	2.73	3.07	3.52	4.16	4.72	5.42	6.41	7.10	8.41
Evaporator	Pressure drops	kPa	47	42	41	42	40	48	44	51	41	40
'	Water connections	"G	1 1/4"	1 1/4"	1 1/4"	1 1/4"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Connections	Delivery line	Ø mm	28	28	28	28	28	28	28	28	2 x 28	2 x 28
Connections	Liquid line	Ø mm	22	22	22	22	22	22	22	22	2 x 22	2 x 22
Electrical	Power supply	V/Ph/Hz					400/	3/50				
	Max. running current	А	33	39	43	49	60	64	73	90	98	120
characteristics	Max. starting current	А	128	137	139	164	204	161	189	234	213	264
Unit with tank and	Pump available static pressure	kPa	105	110	100	135	120	130	120	110	120	100
	Tank water volume	I	300	300	300	300	300	300	300	300	300	300
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Cound procesure	STD version (3)	dB(A)	59	59	60	60	62	61	61	63	64	64
Sound pressure	With SL accessory (3)	dB(A)	56	56	57	57	59	58	58	60	61	61
Weights	Transport weight (4)	Kg	347	357	376	386	397	562	581	595	669	708
vveigiits	Operating weight (4)	Kg	350	360	380	390	405	570	590	605	680	720

<b>DIMENSIONS</b>			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	L	mm	1200	1200	1200	1200	1200	2285	2285	2285	2285	2285
UNIT	W	mm	680	680	680	680	680	680	680	680	680	680
	Н	mm	1520	1520	1520	1520	1520	1520	1520	1520	1520	1520
	L	mm	2310	2310	2310	2310	2310	3395	3395	3395	3395	3395
UNIT + SPU/SPD	W	mm	680	680	680	680	680	680	680	680	680	680
	Н	mm	1520	1520	1520	1520	1520	1520	1520	1520	1520	1520

### CLEARANCE AREA

MEA/K 182-P÷604-P 0 300 800 300



- Chilled water from 12 to 7 °C, condensing temperature 50 °C. Heated water from 40 to 45 °C, evaporating temperature 0 °C. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744. Unit without tank and pump.
- N.B. Weights of WP version are specified on technical brochure.

# RCA/K 4111÷8222

### REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.







The Remote aircooled Condensers with axial fans of the RCA/K series are designed to be combined with evaporating units with R410A refrigerant (MEA/K).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

RCA/K

Base unit

### **FEATURES**

- Frame in oven painted with a polyurethane resin and galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the
  best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/K	15	18	21	25	31	41	51	61	71	81
RCA/K	4111	4111	4111	4111	4111	4112	5111	5111	5112	5113
MEA/K	91	101	131	151						
RCA/K	6111	6112	6113	5121						
MEA/K	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
RCA/K	6114	6121	6122	6123	6124	6125	6131	6132	8221	8222

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

SD Wiring integrated in branch

circuit box

FR Fan speed control

**LOOSE ACCESSORIES** 

SVV Supports for vertical air flow versions



## RCA/K 4111÷8222

MODEL			4111	4112	5111	5112	5113	5121	6111	6112	6113	6114
Fan	Quantity	n°	1	1	1	1	1	1	1	1	1	1
Connections	In	Ø mm	22	28	22	28	28	35	28	28	28	35
Connections	Out	Ø mm	18	18	18	18	18	28	22	22	22	28
Electrical	Power supply	V/Ph/Hz	230/	1/50				400/	/3/50			
characteristics	Absorbed power	kW	0.22	0.22	0.83	0.83	0.83	1.90	0.63	1.90	1.90	1.90
CHALACTELISTICS	Absorbed current	Α	0.97	0.97	1.45	1.45	1.45	3.2	1.25	3.20	3.20	3.20
Sound pressure	STD version (1)	dB(A)	43	43	51	51	51	58	46	58	58	58
	Transport weight	Kg	89	89	89	94	94	169	158	158	158	178
vveigilis	Operating weight	Kg	90	91	90	96	96	174	161	163	164	184

MODEL			6121	6122	6123	6124	6125	6131	6132	8221	8222
Fan	Quantity	n°	2	2	2	2	2	3	3	4	4
Connections	In	Ø mm	35	42	35	42	42	42	54	2x35	2x35
Connections	Out	Ø mm	28	35	28	35	35	35	35	2x28	2x28
Electrical	Power supply	V/Ph/Hz					400/3/50				
characteristics	Absorbed power	kW	1.26	1.26	3.80	3.80	3.80	5.70	5.70	5.76	7.20
CHARACTERISTICS	Absorbed current	Α	2.50	2.50	6.40	6.40	6.40	9.60	9.60	11.60	15.20
Sound pressure	STD version (1)	dB(A)	48	48	60	60	60	62	62	54	55
Maighta	Transport weight	Kg	178	198	178	198	218	304	322	555	555
V/Vαιαhte —	Operating weight	Kg	184	207	184	207	230	313	336	573	569

<b>DIMENSION</b>	IS		4111	4112	5111	5112	5113	5121	6111	6112	6113	6114	6121	6122	6123	6124	6125	6131	6132	8221	8222
L	STD	mm	1130	1130	1130	1130	1130	1910	1490	1490	1490	1490	2630	2630	2630	2630	2630	3770	3770	3230	3230
W	STD	mm	900	900	900	900	900	900	1260	1260	1260	1260	1260	1260	1260	1260	1260	1260	1260	2400	2400
Н	STD	mm	980	980	980	980	980	990	990	990	990	990	990	990	990	990	990	990	990	1565	1565

### CLEARANCE AREA

RCA/K 4111÷8222



- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.
   N.B. Combinations are made at condensing temperature 50 °C, ambient air temperature 35 °C.
   N.B. Clearance areas are specified on installation, use and maintenance manual.







# RCA/K/SL 4111+8222

SILENCED REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.









The Remote aircooled Condensers with axial fans of the RCA/K/SL series are designed to be combined with evaporating units with R410A refrigerant (MEA/K).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

RCA/K/SL

Silenced unit

### **FEATURES**

- Frame in oven painted with a polyurethane resin and galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/K	15	18	21	25	31	41	51	61	71	81
RCA/K/SL	4111	4111	4111	4112	4113	5111	5112	5113	5121	6111
1 4 T 1 //	0.4	404	404							
MEA/K	91	101	131	151						
RCA/K/SL	6111	6111	6112	6120						
MEA/K	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
RCA/K/SL	6121	6122	6123	6124	6131	6132	6133	6134	8221	8222

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

Wiring integrated in branch circuit box

FR Fan speed control

**LOOSE ACCESSORIES** 

SVV Supports for vertical air flow versions



SD

## RCA/K/SL 4111÷8222

MODEL			4111	4112	4113	5111	5112	5113	5121	6111	6112	6120
Fan	Quantity	n°	1	1	1	1	1	1	2	1	1	2
Connections	In	Ø mm	22	22	22	22	22	28	28	35	35	28
Connections	Out	Ø mm	18	18	18	18	18	18	22	28	28	22
Electrical	Power supply	V/Ph/Hz		230/	/1/50				400/	3/50		
characteristics	Absorbed power	kW	0.22	0.22	0.22	0.22	0.55	0.55	0.55	1.35	1.35	1.15
characteristics	Absorbed current	Α	0.97	0.97	0.97	0.97	0.97	0.97	0.97	2.20	2.20	2.20
Sound pressure	SL version (1)	dB(A)	43	43	43	43	43	43	43	52	52	42
Maiabta	Transport weight	Kg	89	89	89	89	89	94	99	158	169	215
Weights	Operating weight	Kg	90	91	92	90	90	96	105	161	174	221
MODEL			6121	6122	6123	6124	6131	6132	6133	6134	8221	8222
Fan	Quantity	n°	2	2	2	2	3	3	3	3	4	4
Connections	In	Ø mm	35	42	35	42	42	42	54	54	2x35	2x42
Connections	Out	Ø mm	28	35	28	35	35	35	35	35	2x28	2x35
Electrical	Power supply	V/Ph/Hz					400/	/3/50	•			•
	Absorbed power	kW	0.88	0.88	2.70	2.70	1.89	4.05	4.05	4.05	4.60	4.60
characteristics	Absorbed current	Α	1.46	1.46	4.40	4.40	3.75	6.60	6.60	6.60	8.80	8.80
Sound pressure	SL version (1)	dB(A)	43	43	54	54	50	56	56	56	48	48
Maiabta	Transport weight	Kg	178	198	178	198	304	304	322	351	555	603
Weights	Operating weight	Kg	184	207	184	207	313	313	336	369	569	625

DIMENSION	IS		4111	4112	4113	5111	5112	5113	5121	6111	6112	6120
L	SL	mm	1130	1130	1130	1130	1130	1130	1910	1490	1490	2630
W	SL	mm	900	900	900	900	900	900	900	1260	1260	1260
Н	SL	mm	980	980	980	980	980	980	980	990	990	990
DIMENSION	IC .		0404	0400	0400				0400	0404	0004	0000
DIIVILIVOIOI	13		6121	6122	6123	6124	6131	6132	6133	6134	8221	8222
L	SL	mm	2630	2630	2630	2630	<b>6131</b> 3770	6132 3770	3770	3770	3230	3230
L W	ÇI.	mm mm										

### CLEARANCE AREA

RCA/K/SL 4111÷8222



- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.
   N.B. Combinations are made at condensing temperature 50 °C, ambient air temperature 35 °C.
   N.B. Clearance areas are specified on installation, use and maintenance manual.

# RCA/K/SSL 5111÷8222

SUPER SILENCED REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.









The Remote aircooled Condensers with axial fans of the RCA/K/SSL series are designed to be combined with evaporating units with R410A refrigerant (MEA/K).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

RCA/K/SSL

Super silenced unit

### **FEATURES**

- Frame in oven painted with a polyurethane resin and galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the
  best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/K	15	18	21	25	31	41	51	61	71	81
RCA/K/SSL	5111	5111	5111	5111	5111	5112	6111	6111	6111	6111
MEA/K	91	101	131	151						
RCA/K/SSL		6121	6121	6121						
RCA/K/SSL	6112	0121	0121	0121						
MEA/K	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
RCA/K/SSL	6124	6131	6132	6133	6141	8121	8131	8132	8221	8222

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

Wiring integrated in branch

circuit box

SD

FR Fan speed control

LOOSE ACCESSORIES

SVV Supports for vertical air flow versions



## RCA/K/SSL 5111÷8222

MODEL			5111	5112	6111	6112	6121	6124	6131	6132
Fan	Quantity	n°	1	1	1	1	2	2	3	3
Connections	In	Ø mm	22	28	28	35	35	42	42	42
Connections	Out	Ø mm	18	18	22	28	28	35	35	35
Electrical	Power supply	V/Ph/Hz	230/	1/50			400/	3/50		
characteristics	Absorbed power	kW	0.13	0.94	0.24	0.24	0.47	0.47	0.42	0.71
characteristics	Absorbed current	Α	0.59	1.60	0.55	0.55	1.10	1.10	0.81	1.65
Sound pressure	SSL version (1)	dB(A)	34	22	41	41	43	43	39	45
Weights	Transport weight	Kg	48	79	158	178	178	198	304	304
vveigins	Operating weight	Kg	49	81	161	181	184	207	313	313

MODEL			6133	6141	8121	8131	8132	8221	8222
Fan	Quantity	n°	3	4	2	3	3	4	4
Connections	In	Ø mm	54	35	42	42	54	2x35	2x35
Connections	Out	Ø mm	35	28	35	35	42	2x28	2x28
Electrical	Power supply	V/Ph/Hz				400/3/50			
characteristics	Absorbed power	kW	0.71	0.94	1.78	2.67	2.67	3.56	3.56
characteristics	Absorbed current	Α	1.65	2.20	4.44	6.66	6.66	8.88	8.88
Sound pressure	SSL version (1)	dB(A)	45	46	46	48	48	49	49
Weights	Transport weight	Kg	322	407	434	545	586	555	603
vveigilis	Operating weight	Kg	336	419	450	557	604	569	625

<b>DIMENSION</b>	NS		5111	5112	6111	6112	6121	6124	6131	6132	6133	6141	8121	8131	8132	8221	8222
L	SSL	mm	1130	1130	1490	1490	2630	2630	3770	3770	3770	4910	3230	4580	4580	3230	3230
W	SSL	mm	900	900	1260	1260	1260	1260	1260	1260	1260	1260	1380	1380	1380	2400	2400
Н	SSL	mm	980	980	990	990	990	990	990	990	990	990	1565	1565	1565	1565	1565

### CLEARANCE AREA

RCA/K/SSL 5111÷8222



- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.
   N.B. Combinations are made at condensing temperature 50 °C, ambient air temperature 35 °C.
   N.B. Clearance areas are specified on installation, use and maintenance manual.

# CWW/K 726-P+36012-P

WATERCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH SCROLL COMPRESSORS AND PLATE EXCHANGERS.



















The CWW/K 726-P÷36012-P series liquid Chillers and Heat Pumps, with R410A refrigerant, are designed for medium and large domestic or industrial systems which require medium-high power, space-saving units and quiet operation. These units are ideal for indoor installation and, equipped with a self contained structure, they reduce the overall dimensions to a minimum while at the same time making installation and maintenance operations easier. The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of a high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

The units 726-P $\div$ 1128-P are compliant to the ErP Regulation; the units 1208-P $\div$ 36012-P are not compliant to the ErP Regulation.

On request, units can be supplied with R452B (CWW/G 726-P÷36012-P) or R454B (CWW/L 726-P÷36012-P) refrigerant.

LOOGE AGGEGGGBIEG

### **VERSION**

CWW/K	CWW/K/WP
Cooling only	Reversible Heat Pump
CWW/K/SSL	CWW/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors, interface relay and terminals for external connections.
- · Microprocessor control and regulation system.

### **ACCESSORIES**

#### EACTORY FITTED ACCESSORIES

FACTO	RY FITTED ACCESSORIES			LOOSE ACCESSORIES				
IM	Automatic circuit breakers	ISB	BACnet MSTP protocol, RS485	MN	High and low pressure gauges			
SL	Unit silencement		serial interface	CR	Remote control panel			
RFM	Cooling circuit shut-off valve on	ISBT	BACnet TCP/IP protocol, Ethernet	PV2	2-Way electronic pressostatic valve			
	discharge line		port	PV3	3-Way electronic pressostatic valve			
RFL	Cooling circuit shut-off valve on	ISL	LonWorks protocol, FTT-10 serial	AG	Rubber shock absorbers			
	liquid line		interface	AM	Spring shock absorbers			
BT	Low water temperature kit	ISS	SNMP protocol, Ethernet port					
DS	Desuperheater	IAV	Remote set-point, 0-10 V signal					
RT	Total heat recovery	IAA	Remote set-point, 4-20 mA signal					
FE	Antifreeze heater for evaporator	IAS	Remote signal for second set-point					
SS	Soft start		activation					
IS	Modbus RTU protocol, RS485	IDL	Demand limit from digital input					
	serial interface							
IST	Modbus TCP/IP protocol, Ethernet							

port

### CWW/K 726-P÷36012-P







MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	
	Cooling capacity (1)	kW	224	250	274	308	345	383	422	462	509
Cooling	Absorbed power (1)	kW	52	57	63	70	78	86	95	104	115
	EER (1)		4.31	4.39	4.35	4.40	4.42	4.45	4.44	4.44	4.43
	Cooling capacity (1)	kW	223	249	273	307	343	382	420	460	507
	Absorbed power (1)	kW	55	60	66	74	82	90	99	109	121
0 11 (5114.5544)	EER (1)		4.08	4.16	4.11	4.17	4.20	4.26	4.23	4.21	4.20
Cooling (EN14511)	ESEÉR CL		5.16	5.27	5.25	5.45	5.26	5.51	5.57	5.23	5.57
	EUROVENT Class		D	D	D	D	D	C	D 000	D 000	D 0.14
	SEER (2)	0/	5.27	5.52	5.56	5.87	5.61	5.99	6.08	6.08	6.14
	Energy Efficiency (2)	% kW	203	213	214	227	216	232	235	235	238
Heating	Heating capacity (3) Absorbed power (3)		290	320	349	394	437	484	534	584	640 144
Heating	Absorbed power (3)	kW	66	74	80	88	101	111	119	135	4.44
	COP (3)	kW	4.39	4.32 321	4.36 350	4.48 396	4.33	4.36	4.49	4.33	642
	Heating capacity (3) Absorbed power (3)	kW	291 68	78	81	90	438 102	485 112	536 121	585 136	146
	COP (3)	KVV	4.31	4.14	4.30	4.41	4.29	4.33	4.44	4.29	4.39
Heating (EN14511)	EUROVENT Class		4.31 D	4.14 D	D D	C 4.41	D 4.29	H.33	C 4.44	4.23 D	C C
	SCOP (4)		5.23	5.36	5.49	5.50	5.77	5.71	5.78	5.78	5.74
	Energy Efficiency (4)	%	201	206	212	212	223	220	223	223	222
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
Compressor	Capacity steps	n°		6					8		
	Water flow	I/s	10.70	11.94	13.09	14.72	16.48	18.30	20.16	22.07	24.32
Evaporator	Pressure drops	kPa	54	51	56	56	60	47	52	60	57
Εναμυτατοι	Water connections	DN	80	80	80	80	80	80	80	80	80
	Water flow	I/s	13.19	14.67	16.10	18.06	20.21	22.41	24.70	27.04	29.81
Condenser	Pressure drops	kPa	70	74	81	76	67	59	65	75	76
Ounderiser	Water connections	DN	80	80	80	80	80	80	80	80	80
EL	Power supply	V/Ph/Hz	00	00	00		400/3/50	- 00	1 00		1 00
Electrical	Max. running current	A	136	151	163	176	201	218	234	251	293
characteristics	Max. starting current	A	261	284	331	344	334	385	402	384	461
	STD version (5)	dB(A)	62	64	65	65	65	66	66	66	67
Sound pressure	With SL accessory (5)	dB(A)	58	60	61	61	61	62	62	62	63
	SSL version (5)	dB(A)	55	56	57	57	57	58	58	58	59
	Transport weight	Kg	1047	1103	1123	1159	1352	1422	1442	1642	1730
Weights	Operating weight	Kg	1080	1140	1160	1200	1400	1480	1500	1700	1800
MODEL			16812-P	18012-F	21012-	-P 2401	2-P 270	12-P 3	0012-P	33012-P	36012-P
	Cooling capacity (1)	kW	562	622	696	78	6 8	195	1015	1129	1242
Cooling	Absorbed power (1)	kW	129	144	157	17	6 2	:04	230	261	287
	EER (1)		4.36	4.32	4.43	4.4	7 4	.39	4.41	4.33	4.33
	Cooling capacity (1)	kW	559 135	619	693	78		191	1011	1124	1236
	Absorbed power (1)	kW	135	151	164	18		13	239	273	301
	EER (1)		4.13	4.11	4.24	4.2		.18	4.22	4.12	4.11
Cooling (EN14511)	ESEER		5.30	5.38	4.56	4.7		.39	4.49	4.26	4.10
-	EUROVENT Class		D	D	D	C		D	D	D	D
	SEER (2)		5.95	5.96	5.91	6.2	2 6	.08	6.16	6.03	6.03
	Energy Efficiency (2)	%	230	230	228	24		35	238	233	233
	Heating capacity (3)	kW	710	783	874	98	6 1	113	1255	1391	1531
Heating	Absorbed power (3)	kW	164	181	203	22		:59	289	321	357
	COP (3)		4.33	4.33	4.31	4.4		.30	4.34	4.33	4.29
	Heating capacity (3)	kW	713	787	875	98		114	1257	1393	1533
	Absorbed power (3)	kW	167	185	204	22	5 2	160	291	323	359
Heating (EN14511)	COP (3)		4.28	4.26	4.29	4.3		.28	4.32	4.31	4.27
riodaling (Ervi ioi i)	EUROVENT Class		D	D	D	C		D _	D	D	D
									-	-	-
	SCOP (4)		-	-	-	-		-			
	Energy Efficiency (4)	%	-	-	-	-		-	-	-	
	Energy Efficiency (4) Quantity	n°	- - 6+6	6+6	- 6+6	- 6+	6 6	- i+6	- 6+6	6+6	6+6
Compressor	Energy Efficiency (4) Quantity Refrigerant circuits	n° n°	-	-	-	-	6 6	-	-		6+6 2
Compressor	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps	n° n° n°	- - 6+6 2	6+6 2	6+6 2	6+ 2	6 6	- i+6 2	- 6+6 2	6+6 2	2
	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow	n° n° n° l/s	- 6+6 2 26.85	6+6 2	6+6 2	6+ 2	6 6 10 55 42	- 6+6 2	6+6 2 48.49	6+6 2 53.94	2 59.34
Compressor  Evaporator	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	n° n° n° I/s kPa	6+6 2 26.85	6+6 2 29.72 59	6+6 2 33.25 60	37.1 53	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	- i+6 2 2.76 66	6+6 2 48.49 61	6+6 2 53.94 70	59.34 79
	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	n° n° n° I/s kPa DN	6+6 2 26.85 70 80	59 80	33.25 60 150	37.1 53 15	6 6 6 6 6 5 5 42 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2.76 566 50	- 6+6 2 48.49 61 150	53.94 70 150	59.34 79 150
Evaporator	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow	n° n° n° l/s kPa DN l/s	- 6+6 2 26.85 70 80 33.01	- 6+6 2 29.72 59 80 36.60	33.25 60 150 40.75	37.1 53 15 45.1	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2.76 66 50 2.51	6+6 2 48.49 61 150 59.48	6+6 2 53.94 70 150 66.41	59.34 79 150 73.05
	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops	n° n° n° I/s kPa DN I/s kPa	- 6+6 2 26.85 70 80 33.01 70	59 80 36.60 77	33.25 60 150 40.75 60	37.1 50 15 45.1 50	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2.76 666 50 2.51	- 6+6 2 48.49 61 150 59.48 61	53.94 70 150 66.41 70	59.34 79 150 73.05 78
Evaporator Condenser	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Water connections	n° n° n° I/s kPa DN I/s kPa	- 6+6 2 26.85 70 80 33.01	- 6+6 2 29.72 59 80 36.60	33.25 60 150 40.75	37.1 53 15 45.1	6 6 6 6 6 6 7 10 5 5 42 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.76 66 50 2.51	6+6 2 48.49 61 150 59.48	6+6 2 53.94 70 150 66.41	59.34 79 150 73.05
Evaporator	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply	n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz	- 6+6 2 26.85 70 80 33.01 70	59 80 36.60 77 80	33.25 60 150 40.75 60	50 37.4 50 15 45.4 50	10 55 42 3 1 0 1 98 52 3 0 1 400/3/50	2.76 666 50 2.51 65 50	- 6+6 2 48.49 61 150 59.48 61 150	6+6 2 53.94 70 150 66.41 70 150	2 59.34 79 150 73.05 78 150
Evaporator Condenser	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Water connections Pressure drops Water connections Power supply Max. running current	n° n° n° l/s kPa DN l/s kPa DN l/s A	- 6+6 2 26.85 70 80 33.01 70 80	59 80 36.60 77 80	33.25 60 150 40.75 60 150	537.4 537.4 545.4 545.4 545.4 545.4 545.4 545.4	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2.76   2.51   2.51   2.51   2.51   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.50   3.	6+6 2 48.49 61 150 59.48 61 150	53.94 70 150 66.41 70 150	2 59.34 79 150 73.05 78 150
Evaporator  Condenser  Electrical	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A	- 6+6 2 26.85 70 80 33.01 70 80	29.72 59 80 36.60 77 80 352 519	33.25 60 150 40.75 60 150 399 576		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2.76   2.76   50   2.51   50   50   50   50   50   50   50	6+6 2 48.49 61 150 59.48 61 150 559 773	53.94 70 150 66.41 70 150 629 891	2 59.34 79 150 73.05 78 150 699 961
Evaporator  Condenser  Electrical characteristics	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (5)	n° n° n° 1/s kPa DN 1/s kPa DN V/Ph/Hz A A dB(A)		29.72 59 80 36.60 77 80 352 519 68	33.25 60 150 40.75 60 150 399 576		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	- 6+6 2 2 2.76 66 50 2.51 65 50 50 606 620 73	6+6 2 48.49 61 150 59.48 61 150 559 773 73	6+6 2 53.94 70 150 66.41 70 150 629 891 74	2 59.34 79 150 73.05 78 150 699 961 74
Evaporator  Condenser  Electrical	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (5) With SL accessory (5)	n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A A dB(A) dB(A)		59 80 36.60 80 519 68 63	33.25 60 150 40.75 60 150 150 71 60 71 67		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	- H-6 2 2 2 2.76 66 50 2.51 65 50 606 606 606 606 606 606 606 606 6	6+6 2 48.49 61 150 59.48 61 150 559 773 73 69	53.94 70 150 66.41 70 150 68.9 891 74 70	2 59.34 79 150 73.05 78 150 699 961 74 70
Evaporator  Condenser  Electrical characteristics  Sound pressure	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Water connections Power supply Max. running current Max. starting current STD version (5) With SL accessory (5) SSL version (5)	n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A A dB(A) dB(A)	26.85 70 80 33.01 70 80 326 494 67 63 59	59 80 352 519 68 63 59	33.25 60 150 40.75 60 150 399 576 71 67 63	37.4 55. 15. 45.5 15. 45.6 63. 72. 68.	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	- H6 2 2 2 2 7 6 6 6 6 5 0 5 0 6 5 0 6 6 5 0 6 6 6 5 0 6 6 6 5 0 6 6 6 6	6+6 2 48.49 61 150 59.48 61 150 559 773 73 69 65	6+6 2 53.94 70 150 66.41 70 150 629 891 74 70 66	2 59.34 79 150 73.05 78 150 699 961 74 70 66
Evaporator  Condenser  Electrical characteristics	Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (5) With SL accessory (5)	n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A A dB(A) dB(A)		59 80 36.60 80 519 68 63	33.25 60 150 40.75 60 150 150 71 60 71 67		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	- H-6 2 2 2 2.76 66 50 2.51 65 50 606 606 606 606 606 606 606 606 6	6+6 2 48.49 61 150 59.48 61 150 559 773 73 69	53.94 70 150 66.41 70 150 68.9 891 74 70	2 59.34 79 150 73.05 78 150 699 961 74 70

DI	MENSIO	NS	726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
L	STD/SSL	mm	2500	2500	2500	2500	3000	3000	3000	3550	3550	4000	4000	4650	4650	4650	4650	4650	4650
W	STD/SSL	mm	800	800	800	800	800	800	800	800	800	800	800	1350	1350	1350	1350	1350	1350
Н	STD/SSL	mm	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900

### **CLEARANCE AREA**

CWW/K 726-P÷36012-P

, , , , , , ,	. , 20	000121	
500	500	800	500



### NOTES

- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

- Seasonal energy efficiency of cooling at low temperature at the evaporator FU SE Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281. Heated water from 40 to 45 °C, water temperature at the evaporator from 15 to 10 °C. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Weights of SSL and WP versions are specified on technical brochure.



# CWW/K 726+36012

WATERCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGERS.



















The CWW/K 726÷36012 series liquid Chillers and Heat Pumps, with R410A refrigerant, are designed for medium and large domestic or industrial systems which require medium-high power, space-saving units and quiet operation. These units are ideal for indoor installation and, equipped with a self contained structure, they reduce the overall dimensions to a minimum while at the same time making installation and maintenance operations easier. The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of a high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

The units 726-P $\pm$ 1128-P are compliant to the ErP Regulation; the units 1208-P $\pm$ 36012-P are not compliant to the ErP Regulation.

On request, units can be supplied with R452B (CWW/G 726÷36012) or R454B (CWW/L 726÷36012) refrigerant.

### **VERSION**

CWW/K	CWW/K/WP
Cooling only	Reversible Heat Pump
CWW/K/SSL	CWW/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Shell and tube type condenser with two independent circuits on the refrigerant side and one on the water side.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048÷36012 models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors, interface relay and terminals for external connections.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

FACIO	RY FITTED ACCESSORIES		
IM	Automatic circuit breakers	IST	Modbus TCP/IP protocol, Ethernet
SL	Unit silencement		port
RFM	Cooling circuit shut-off valve on discharge line	ISB	BACnet MSTP protocol, RS485 serial interface
RFL	Cooling circuit shut-off valve on liquid line	ISBT	BACnet TCP/IP protocol, Ethernet port
BT	Low water temperature kit	ISL	LonWorks protocol, FTT-10 serial
HR	Desuperheater		interface
HRT	Total heat recovery	ISS	SNMP protocol, Ethernet port
FE	Antifreeze heater for evaporator	IAV	Remote set-point, 0-10 V signal
SS	Soft start	IAA	Remote set-point, 4-20 mA signal
IS	Modbus RTU protocol, RS485 serial interface	IAS	Remote signal for second set-point activation
		IDI	Demand limit from digital input

### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
PV2	2-Way electronic pressostatic valve
PV3	3-Way electronic pressostatic valve
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch









			726	786	826	906	1048	1128	1208	13010	15010
	Cooling capacity (1)	kW	225	248	271	302	343	375	422	464	511
	Absorbed power (1)	kW	53	57	64	72	79	88	94	107	117
	EER (1)		4.25	4.35	4.23	4.19	4.34	4.26	4.49	4.34	4.37
	Cooling capacity (1)	kW	225	248	271	302	343	375	422	464	511
	Absorbed power (1)	kW	53	57	64	72	79	88	94	107	117
0 " (51)	EER (1)		4.25	4.35	4.23	4.19	4.34	4.26	4.49	4.34	4.37
	ESEER OL		5.22	5.30	5.40	5.46	5.38	5.50	5.92	5.35	5.71
	EUROVENT Class		D	C	D	D	C	<u>C</u>	C	C	C
	SEER (2)	0/	5.31	5.52	5.52	5.67	5.58	5.81	6.26	6.03	6.19
	Energy Efficiency (2) Heating capacity (3)	% kW	204 291	213 317	213 345	219 386	215 434	224 474	242 534	233 586	240 642
Heating	Absorbed power (3)	kW	67	74	81	91	102	113	118	139	147
Ticating	COP (3)	KVV	4.34	4.28	4.26	4.24	4.25	4.19	4.53	4.22	4.37
	Heating capacity (3)	kW	293	319	346	387	436	476	536	589	644
	Absorbed power (3)	kW	69	77	83	93	105	116	121	143	151
Hooting /EN1/E11)	COP (3)		4.25	4.14	4.17	4.16	4.15	4.10	4.43	4.12	4.26
٠, ١	EURÓVENT Class		В	С	В	В	С	С	В	С	В
	SCOP (4)		4.93	5.20	5.13	4.97	5.26	5.04	5.28	5.31	5.16
	Energy Efficiency (4)	%	189	200	197	191	202	194	203	204	198
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	10.75	11.85	12.95	14.43	16.39	17.92	20.16	22.17	24.41
	Water flow Pressure drops	I/s kPa	38	38	24	27	31	17.92 25	20.16	36	31
	Water connections	DN	125	125	150	150	150	150	150	150	150
	Water flow	I/s	13.28	14.57	16.01	17.87	20.16	22.12	24.65	27.28	30.00
	Pressure drops	kPa	31	28	31	36	35	36	31	35	44
	Water connections	DN	65	65	65	65	65	65	65	80	80
	Power supply	V/Ph/Hz		'			400/3/50			'	
Liectrical	Max. running current	Á	136	151	163	176	201	218	234	251	293
	Max. starting current	Α	261	284	331	344	334	385	402	384	461
	STD version (5)	dB(A)	62	64	65	65	65	66	66	66	67
Sound pressure	With SL accessory (5)	dB(A)	58	60	61	61	61	62	62	62	63
	SSL version (5)	dB(A)	55	56	57	57	57	58	58	58	59
	Transport weight	Kg	1370	1399	1544	1554	1819	2024	2076	2449	2493
,	Operating weight	Kg	1470	1500	1680	1690	1950	2230	2280	2650	2700
MODEL			16812	18012	21012				30012	33012	36012
	Cooling capacity (1)	kW	579	628	710	801		13	1035	1152	1254
	Absorbed power (1)	kW	132	146	159	18′		80	233	264	290
	EER (1)	1347	4.39	4.30	4.47	4.4		39	4.44	4.36	4.32
-	Cooling capacity (1) Absorbed power (1)	kW kW	579 132	628 146	710 160	80° 182		13 08	1035 233	1152	1254
	EER (1)	KVV	4.39	4.30	4.44	4.4		39	4.44		201
Cooling (EN14511)	ECH (1) ESEER		4.33	4.30	4.44	1 4.4		งฮ		265	291
Cooling (LIVI4311)	LULLII		5 50	5.61		5.2	8 5	10	1 96	4.35	4.31
	FLIROVENT Class		5.59 C	5.61	5.81	5.2		19 C	4.96	4.35 5.08	4.31 4.97
	EUROVENT Class		С	С	5.81 C	С		C	4.96 C	4.35 5.08 C	4.31 4.97 C
	EUROVENT Class SEER (2)	%	C 6.11	C 6.04	5.81 C 6.02	6.2	5 6	C 22	4.96 C 6.29	4.35 5.08 C 6.22	4.31 4.97 C 6.16
Ī	EUROVENT Class SEER (2) Energy Efficiency (2)	% kW	6.11 236	6.04 234	5.81 C 6.02 233	С	5 6 2 2	C 22 41	4.96 C 6.29 244	4.35 5.08 C 6.22 241	4.31 4.97 C 6.16 238
Heating	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3)	% kW kW	C 6.11 236 731 168	C 6.04 234 791 183	5.81 C 6.02	6.2 242	5 6 2 2 5 1	C 22	4.96 C 6.29 244 1280 292	4.35 5.08 C 6.22 241 1419	4.31 4.97 C 6.16 238 1546 361
Heating	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3)	kW kW	C 6.11 236 731 168 4.35	C 6.04 234 791 183 4.32	5.81 C 6.02 233 891 206 4.33	C 6.2 242 100 23 4.3	5 6 2 2 5 1 1 2 5 4	C 22 41 35 64 30	4.96 C 6.29 244 1280 292 4.38	4.35 5.08 C 6.22 241 1419 325 4.37	4.31 4.97 C 6.16 238 1546 361 4.28
Heating	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3)	kW kW	C 6.11 236 731 168 4.35 734	C 6.04 234 791 183 4.32 794	5.81 C 6.02 233 891 206 4.33 894	C 6.2 242 100 23 4.3 100	5 6 2 2 5 11 1 2 5 4 9 11	C 22 41 35 64 30 40	4.96 C 6.29 244 1280 292 4.38 1287	4.35 5.08 C 6.22 241 1419 325 4.37 1425	4.31 4.97 C 6.16 238 1546 361 4.28 1554
Heating	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3)	kW kW	C 6.11 236 731 168 4.35 734 173	C 6.04 234 791 183 4.32 794 189	5.81 C 6.02 233 891 206 4.33 894 212	C 6.2 242 100 23 4.3 100 238	5 6 2 2 5 1' 1 2 5 4 9 1' 3 2	C 22 41 35 64 30 40 73	4.96 C 6.29 244 1280 292 4.38 1287 303	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373
Heating [FN14511]	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) COP (3)	kW kW	C 6.11 236 731 168 4.35 734 173 4.24	C 6.04 234 791 183 4.32 794 189 4.20	5.81 C 6.02 233 891 206 4.33 894 212	C 6.2 <sup>1</sup> 242 100 23 <sup>1</sup> 4.3 100 238 4.2	5 6 2 2 2 5 11 1 2 5 4 9 11 3 2 4 4	C 22 41 35 64 30 40 73 18	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17
Heating Heating (EN14511)	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class	kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.2 <sup>1</sup> 242 100 233 4.3 100 238 4.2 B	5 6 2 2 2 5 1' 1 2 5 4 9 1' 3 2 4 4 4	C 22 41 35 64 30 40 73 18 B	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373
Heating Heating (EN14511)	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4)	kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.2' 24' 100 23' 4.3' 100 23( 4.2' B	5 6 2 2 2 5 1' 1 2 5 4 9 1' 3 2 4 4 4	C 22 41 35 64 30 40 73 18	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17
Heating Heating (EN14511)	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4)	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.2' 242' 100 23' 4.3' 100 238' 4.2 B	5 6 2 2 2 5 11 1 2 5 4 9 11 3 2 4 4	C 22 41 35 64 30 40 773 18 B	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B
Heating Heating (EN14511)	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.22 244 1000 233 4.31 100 236 4.22 B	5 6 2 2 2 2 5 11 1 2 2 5 4 9 11 3 2 4 4 4 6 6 6 6	C 22 41 35 64 30 40 773 18 B + 6 +6	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B
Heating (EN14511)	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.2' 242' 100 23' 4.3' 100 238' 4.2 B	5 6 2 2 2 5 11 1 2 5 5 4 9 11 3 2 4 4 4	C 22 41 35 64 30 40 773 18 B	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B
Heating Heating (EN14511) Compressor	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B	C 6.04 234 791 183 4.32 794 189 4.20 B - - 6+6	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B -	C 6.2: 244: 1000 233: 4.3: 100 238: 4.2: B - - - 6+6:	5 6 2 2 5 11 1 2 5 4 9 11 3 2 4 4 6 6	C 22 41 35 64 30 40 773 18 8 +6 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2
Heating Heating (EN14511) Compressor	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B - - 6+6 2	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B	C 6.22 244 1000 233 4.3: 1000 238 4.2. B B	5 6 2 2 2 5 1: 1 2 5 4 9 1: 3 2 4 4 4 4	C 22 41 335 664 330 40 773 18 B + +6 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - 6+6 2	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - - 6+6 2
Heating Heating (EN14511) Compressor Evaporator	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW kW kW	C 6.11 236 731 168 4.35 734 173 4.24 B - 6+6 2	C 6.04 234 791 183 4.32 794 189 4.20 B - 6+6 2	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2	C 6.22 2442 1000 233 4.33 1000 238 4.22 B 6 6+6 2	5 6 2 2 2 5 1: 1 2 5 5 4 9 1: 3 2 4 4 6 6	C 22 41 335 664 330 440 773 118 B + + 6 2 2 662 88	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2
Heating (EN14511)  Compressor  Evaporator	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	kW kW kW kW % n° n° n° l/s kPa DN	C 6.11 236 731 168 4.35 734 173 4.24 B - - 6+6 2	C 6.04 234 791 183 4.32 794 189 4.20 B	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150	C 6.2: 244: 1000 233: 4.3: 1000 238: 4.2: B - - - - - - 38.2: 38.2: 38.2: 46.5:	5 6 6 2 2 2 5 1 1 2 5 4 9 1 1 3 2 4 4 4 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	C 22 41 335 664 330 40 773 18 B + +6 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2
Heating Heating (EN14511) Compressor Evaporator	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW kW kW % n° n° l/s kPa DN l/s kPa	C 6.11 236 731 168 4.35 734 173 4.24 B - - 6+6 2 27.66 34 150 33.97 42	C 6.04 234 791 183 4.32 794 189 4.20 8 6+6 2 30.00 34 150 36.98 47	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150 41.52	C 6.22 244 1000 233 4.3: 1000 238 4.2: B	5 6 6 2 2 2 2 5 3 1 1 2 5 3 4 4 4 4 4 4 4 5 6 6 6 6 6 7 10 2 7 4 3 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65 35	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2 59.91 53 200 73.77 40
Heating Heating (EN14511) Compressor Evaporator Condenser	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water flow Pressure drops Water connections Water connections	kW kW kW kW % n° n° n° l/s kPa DN l/s kPa	C 6.11 236 731 168 4.35 734 173 4.24 B - 6+6 2 27.66 34 150 33.97	C 6.04 234 791 183 4.32 794 189 4.20 B - - - - - - 30.00 34 150 36.98	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150	C 6.2: 244: 1000 233: 4.3: 1000 238: 4.2: B - - - - - - 38.2: 38.2: 38.2: 46.5:	5 6 6 2 2 2 5 5 1 1 1 2 5 5 4 9 1 1 3 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 6 6 6 6	C 22 41 41 335 664 30 40 773 118 B +662 88 00 0.566	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - - 6+6 2 49.45 59 200 60.58	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2 59.91 53 200 73.77
Heating (EN14511)  Compressor  Evaporator  Condenser	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water connections Power supply	kW kW kW kW % n° n° l/s kPa DN l/s kPa	C 6.11 236 731 168 4.35 734 173 4.24 B - - 6+6 2 27.66 34 150 33.97 42 80	C 6.04 234 791 183 4.32 794 189 4.20 B - 6+6 2 30.00 34 150 36.98 47	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 27 150 41.52 49	C 6.22 2442 1000 233 4.33 1000 238 4.2: B 6+6 2 38.2 38.2 38.8 150 46.9	5 6 2 2 2 5 1: 1 2 5 5 4 9 1: 3 2 4 4 4 6 6 10 27 43 10 2 12 53 12 53 14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B - 6+6 2 55.04 45 200 67.65 35 100	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - - 6+6 2 59.91 53 200 73.77 40
Heating  Heating (EN14511)  Compressor  Evaporator  Condenser  Electrical	EUROVENT Class SEER (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water connections Water connections Power supply Max. running current	kW kW kW kW % n° n° n° n° 1/s kPa DN 1/s kPa DN V/Ph/Hz A	C 6.11 236 731 168 4.35 734 173 4.24 B - - - - - - - - - - - - - - - - - -	C 6.04 234 791 183 4.32 794 189 4.20 8 6+6 2 30.00 34 150 36.98 47 80	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150 41.52 49 80	C 6.22 244: 1000 233 4.3: 1000 238 4.2: B	5 6 6 2 2 2 5 1 1 2 5 4 9 1 1 3 2 4 4 4 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	C 22 41 41 335 64 42 30 42 40 773 18 8 8 46 22 88 000 000 000 5.56 55 50 00 66	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - - 6+6 2 49.45 59 200 60.58 30 100	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65 35 100	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2 59.91 53 200 73.77 40 100
Heating  Heating (EN14511)  Compressor  Evaporator  Condenser  Electrical characteristics	EUROVENT Class SEER (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW kW % n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A	C 6.11 236 731 168 4.35 734 173 4.24 B - - 6+6 2 27.66 34 150 33.97 42 80	C 6.04 234 791 183 4.32 794 189 4.20 8	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150 41.52 49 80	C 6.22 2442 1000 233 4.33 1000 2236 4.22 B S 5.46 4.2 38.2 38.2 45.6 63.6 63.6 63.6 66.6 66.6 66.6 66.6 6	5 6 6 2 2 2 2 5 1 1 2 5 3 4 4 4 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30 100	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - 6+6 2 55.04 45 200 67.65 35 100	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - 6+6 2 59.91 53 200 73.77 40 100
Heating  Heating (EN14511)  Compressor  Evaporator  Condenser  Electrical characteristics	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water flow Pressure drops Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (5)	kW kW kW kW % n° n° 1/s kPa DN 1/s kPa DN V/Ph/Hz A A dB(A)	C 6.11 236 731 168 4.35 734 173 4.24 B - 6+6 2 27.66 34 150 33.97 42 80	C 6.04 234 791 183 4.32 794 189 4.20 B 6+6 2 30.00 34 150 36.98 47 80	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150 41.52 49 80	C 6.22 2442 1000 233 4.33 4.33 4.22 8 8 -	5 6 6 2 2 2 5 5 1: 1 2 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30 100	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65 35 100	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - - - 6+6 2 59.91 53 200 73.77 40 100
Heating (EN14511)  Compressor  Evaporator  Condenser  Electrical characteristics  Sound pressure	EUROVENT Class SEER (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Water supply Max. running current Max. starting current STD version (5) With SL accessory (5)	kW kW kW kW % n° n° n° 1/s kPa DN 1/s kPa DN 1/s kPa dB(A)	C 6.11 236 731 168 4.35 734 173 4.24 B - 6+6 2 27.66 34 150 33.97 42 80	C 6.04 234 791 183 4.32 794 189 4.20 B - 6+6 2 30.00 34 150 36.98 47 80 519 68 63	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 27 150 41.52 49 80	C 6.22 2442 1000 233 4.33 1000 238 4.22 B 6.46 2 38.2 38.8 150 46.9 43 80 454 633 722 68	5 6 2 2 5 1: 1 2 5 4 9 1: 3 2 4 4 4 6 6 10 17 43 10 17 43 10 17 43 17 43 18 2 19 3 10 2 10 3 10 3 1	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30 100	4.35 5.08 C C 6.22 241 1419 325 4.37 1425 335 4.25 B 6+6 2 55.04 45 200 67.65 35 100 629 891 74 70	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - - 6+6 2 59.91 53 200 73.77 40 100
Heating  Heating (EN14511)  Compressor  Evaporator  Condenser  Electrical characteristics  Sound pressure	EUROVENT Class SEER (2) Energy Efficiency (2) Heating capacity (3) Absorbed power (3) COP (3) Heating capacity (3) Absorbed power (3) COP (3) EUROVENT Class SCOP (4) Energy Efficiency (4) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water flow Pressure drops Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (5)	kW kW kW kW % n° n° 1/s kPa DN 1/s kPa DN V/Ph/Hz A A dB(A)	C 6.11 236 731 168 4.35 734 173 4.24 B - 6+6 2 27.66 34 150 33.97 42 80	C 6.04 234 791 183 4.32 794 189 4.20 B 6+6 2 30.00 34 150 36.98 47 80	5.81 C 6.02 233 891 206 4.33 894 212 4.22 B - - - 6+6 2 33.92 27 150 41.52 49 80	C 6.22 2442 1000 233 4.33 4.33 4.22 8 8 -	5 6 6 2 2 2 5 1: 1 2 5 4 9 1: 1 3 2 4 4 4 4 5 5 10 2 2 12 5 3 4 4 5 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1	C 22	4.96 C 6.29 244 1280 292 4.38 1287 303 4.25 B - 6+6 2 49.45 59 200 60.58 30 100	4.35 5.08 C 6.22 241 1419 325 4.37 1425 335 4.25 B - - 6+6 2 55.04 45 200 67.65 35 100	4.31 4.97 C 6.16 238 1546 361 4.28 1554 373 4.17 B - - - 6+6 2 59.91 53 200 73.77 40 100

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L		STD/SSL	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3300	3300	3300	4000	4000	4000	4000	4000
١	٧	STD/SSL	mm	800	800	800	800	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
F	1	STD/SSL	mm	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900

### **CLEARANCE AREA**

CWW/K 726÷36012

500 500 800 500



### NOTES

- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation
- n. 2016/2281.
- Heated water from 40 to 45 °C, water temperature at the evaporator from 15 to 10 °C.
- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.



# CWW/H/A 351-P÷901-P

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH (INVERTER) SCREW COMPRESSOR AND PLATE EXCHANGERS.





**INVERTER SCREW** 

HFO R1234ze ₩



The liquid Chillers of the CWW/H/A 351-P÷901-P series, with A CLASS energy efficiency and **HFO-R1234ze** refrigerant, are designed to satisfy the needs of the service sector or industrial systems requiring high power.

The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

Equipped with latest generation Screw compressor and plate exchangers, these units have a series of accessories which are factory fitted or supplied separately. Designed and produced to optimize the layout of each component so as to make any necessary maintenance operations more convenient, these units have an essential and compact structure intended for indoor installation. Furthermore, accessories as the Inverter control on one compressor is also available for getting the highest efficiency at part load and a significant reduction of starting current.

LOOSE ACCESSORIES

The units are compliant to the ErP 2021 Regulation.

### **VERSION**

CWW/H/A	CWW/H/A/SSL
Cooling only	Super silenced cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- · Screw compressor with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Condenser AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses, thermal protection relay for compressor.
- Microprocessor control and regulation system.

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

IACIO	II III IED ACCESSONIES			LOUGI	ACCESSOTILS
IM	Automatic circuit breakers	IST	Modbus TCP/IP protocol, Ethernet	MN	High and low pressure gauges
BT	Low water temperature kit		port	CR	Remote control panel
RT	Total heat recovery	ISB	BACnet MSTP protocol, RS485	SPU	Inertial tank and single circulating
FE	Antifreeze heater for evaporator		serial interface		pump
FA	Antifreeze heater for tank	ISBT	BACnet TCP/IP protocol, Ethernet	SPD	Inertial tank and double circulating
IQ	Inverter on one compressor		port		pump
SS	Soft start	ISL	LonWorks protocol, FTT-10 serial	PV2	2-Way electronic pressostatic valve
DP	Device for heat pump operation		interface	PV3	3-Way electronic pressostatic valve
HTW	Device for high temperature hot	ISS	SNMP protocol, Ethernet port	AG	Rubber shock absorbers
	water production.	IAV	Remote set-point, 0-10 V signal	AM	Spring shock absorbers
WM	Web Monitoring - Wireless remote	IAA	Remote set-point, 4-20 mA signal		
	monitoring (GPRS/EDGE/3G/TCP-IP)	IAS	Remote signal for second set-point		
IS	Modbus RTU protocol, RS485 serial		activation		
	interface	IDL	Demand limit from digital input		
		CP	Potential free contacts		

## CWW/H/A 351-P÷901-P





MODEL			351-P	601-P	801-P	901-P		
	Cooling capacity (1)	kW	86.4	115	152	189		
Cooling	Absorbed power (1)	kW	16.8	21.7	28.9	35.2		
Cooming	EER (1)		5.14	5.30	5.26	5.37		
	Cooling capacity (1)	kW	86.3	115	152	189		
	Absorbed power (1)	kW	17.0	22.0	29.3	36.0		
Cooling (EN14511)	EER (1)		5.08	5.23	5.19	5.25		
-	SEER (2)		5.51	5.49	5.55	5.60		
	Energy Efficiency (2)	%	212	212	214	214		
	Quantity	n°	1	1	1	1		
Compressor	Refrigerant circuits	n°	1	1	1	1		
	Capacity steps	n°		Ste	epless			
	Water flow	l/s	4.13	5.49	7.26	9.03		
Evaporator	Pressure drops	kPa	13	14	13	15		
	Water connections	"G	2 ½"	2 ½"	3"	3"		
	Water flow	l/s	4.93	6.52	8.60	10.66		
Condenser	Pressure drops	kPa	12	11	12	19		
	Water connections	"G	2 ½"	2 ½"	3"	3"		
Electrical	Power supply	V/Ph/Hz	400/3/50					
Electrical	Max. running current	А	93	92	122	141		
characteristics	Max. starting current	А	172	183	268	317		
Unit with tank and	Pump available static pressure	kPa	165	125	125	80		
	Tank water volume	I	300	300	300	300		
pump	Water connections	"G	2 ½"	2 ½"	3"	3"		
Cound procesure	STD version (3)	dB(A)	74	75	75	76		
Sound pressure	SSL version (3)	dB(A)	70	71	71	72		
\\/-:-b+-	Transport weight (4)	Kg	922	1189	1390	1506		
Weights	Operating weight (4)	Kg	960	1280	1490	1610		

DIME	ENSIONS		351-P	601-P	801-P	901-P
1	UNIT	mm	2800	2800	2800	2800
L	UNIT + SPU/SPD	mm	3910	3910	3910	3910
W	UNIT	mm	730	730	730	730
VV	UNIT + SPU/SPD	mm	730	730	730	730
	UNIT	mm	1620	1620	1620	1620
П	UNIT + SPU/SPD	mm	1620	1620	1620	1620

### **CLEARANCE AREA**

CWW/H/A 351-P÷901-P

0 300 800 300



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

- Unit without tank and pump.
   N.B. Weights of SSL version are specified on technical brochure.

# CWW/H/A 1002÷6002

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGERS.





**INVERTER SCREW** 

HFO R1234ze ₩













The liquid Chillers of the CWW/H/A 1002÷6002 series, with A CLASS energy efficiency and HFO-R1234ze refrigerant, are designed to satisfy the needs of the service sector or industrial systems requiring high power.

The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.

Equipped with latest generation Screw compressors, shell and tube exchangers and connections for condensation with cooling tower water or well water or with a Dry-Cooler, these units have a series of accessories which are factory fitted or supplied separately. Designed and produced to optimize the layout of each component so as to make any necessary maintenance operations more convenient, these units have an essential and compact structure intended for indoor installation. Furthermore, accessories as the Inverter control on one Screw compressor or both is also available for getting the highest efficiency at part load and a significant reduction of starting current.

The models 1002+1402 are compliant to the ErP 2021 Regulation. The models 1602÷6002 are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with ID accessory (Inverter on all compressors).

### **VFRSION**

CWW/H/A	CWW/H/A/SSL
Cooling only	Super silenced cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- · Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations. Each cooling circuit is supplied with an independent condenser. Water connections for cooling tower and Dry-Cooler operation; on request for well water.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors.
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTO	<b>DRY FITTED ACCESSORIES</b>
IM	Automatic circuit breakers
DT	Lauringtor topoporative l

BT	Low water temperature kit
HR	Desuperheater
HRT	Total heat recovery
FE	Antifreeze heater for evaporator
II	Inverter on one compressor and
	soft start
ID	Inverter on all compressors
SS	Soft start
DP	Device for heat pump operation
WM	Web Monitoring - Wireless remote
	monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485
	serial interface

IST	Modbus TCP/IP protocol, Etherne
	port

BACnet MSTP protocol, RS485 ISB serial interface

**ISBT** BACnet TCP/IP protocol, Ethernet

ISL LonWorks protocol, FTT-10

serial interface ISS SNMP protocol, Ethernet port IAV Remote set-point, 0-10 V signal IAA Remote set-point, 4-20 mA signal Remote signal for second set-point IAS activation

IDI Demand limit from digital input Potential free contacts CP

### **LOOSE ACCESSORIES**

IVIIV	High and low pressure gauges
CR	Remote control panel
PV3	3-Way electronic pressostatic valve
AG	Rubber shock absorbers
AM	Spring shock absorbers
FI	Flow switch



## CWW/H/A 1002÷6002





MODEL			1002	1202	1402	1602	1802	2202	2502
	Cooling capacity (1)	kW	234	310	375	437	488	558	655
Cooling	Absorbed power (1)	kW	44	57	66	80	89	100	117
-	EER (1)		5.32	5.44	5.68	5.46	5.48	5.58	5.60
	Cooling capacity (1)	kW	233	309	373	436	487	557	653
	Absorbed power (1)	kW	45	59	68	83	92	103	121
	EER (1)		5.18	5.23	5.46	5.27	5.32	5.39	5.42
Cooling (EN14511)	SEER (2)		5.68	5.84	5.93	5.88	5.90	5.91	5.95
, ,	Energy Efficiency (2)	%	219	226	229	227	228	228	230
	SEER with ID accessory (2)		6.53	6.71	6.81	6.76	6.79	6.80	6.84
	Energy Efficiency with ID accessory (2)	%	253	260	264	262	264	264	266
	Quantity	n°	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°		_		Stepless			
	Water flow	I/s	11.18	14.81	17.92	20.88	23.32	26.66	31.29
Evaporator	Pressure drops	kPa	36	37	42	39	32	31	35
Liapolatoi	Water connections	DN	125	150	150	150	200	200	200
	Water flow	I/s	13.28	17.53	21.07	24.70	27.57	31.44	36.88
Condenser	Pressure drops	kPa	17.20	28	34	36	36	35	32
OUTUUTIOU	Water connections	DN	80	80	80	80	80	80	100
	Power supply	V/Ph/Hz	00	1 00	1 00	400/3/50	00	1 00	100
Electrical	Max. running current	A A	144	190	220	260	290	334	384
characteristics	Max. starting current	A	199	257	318	373	420	504	492
	STD version (3)	dB(A)	76	76	76	76	76	76	76
Sound pressure	SSL version (3)	dB(A)	76	70	76	70	76	70	70
•	. ,		2140	2445	2640	2860	3090	3230	4180
Weights	Transport weight	Kg		2660	2840	3100	3090		4180
-	Operating weight	Kg	2300	2000	2840	3100	3420	3550	4590
MODEL			2802	3302	3602	4602	4802	5402	6002
	Cooling capacity (1)	kW	736	868	980	1160	1278	1475	1650
Cooling	Absorbed power (1)	kW	131	154	174	222	242	275	304
	EER (1)		5.62	5.64	5.63	5.23	5.28	5.36	5.43
	Cooling capacity (1)	kW	734	866	977	1157	1274	1469	1644
	Absorbed power (1)	kW	135	159	180	229	250	285	314
	EER (1)		5.42	5.45	5.44	5.06	5.10	5.16	5.23
Cooling (EN14511)	SEER (2)		6.02	6.11	6.07	6.14	6.21	6.33	6.33
	Energy Efficiency (2)	%	233	236	235	238	240	245	245
}	SEER with ID accessory (2)	,,,	6.92	7.02	6.98	7.06	7.14	7.28	7.28
}	Energy Efficiency with ID accessory (2)	%	269	273	271	274	278	283	283
	Quantity	n°	2	2	2	2	2	2	200
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
001110100001	Capacity steps	n°				Stepless			
	Water flow	I/s	35.16	41.47	46.82	55.42	61.06	70.47	78.83
Evaporator	Pressure drops	kPa	45	39	38	39	49	57	54
_ναμυιαιύ!	Water connections	DN	200	200	250	250	250	250	250
	Water flow	I/s	41.42	48.83	55.14	66.03	72.62	83.61	93.36
Condenser	Pressure drops	kPa	34	37	37	37	37	35	32
Condenser		DN	100	100	100	125	125	125	150
	Water connections		100	100	100	400/3/50	125	120	100
Electrical	Power supply  May rupping ourrent	V/Ph/Hz	436	489	549		761	873	961
characteristics	Max. running current	A				701			
	Max. starting current	A	576	692	782	1144	1174	1372	1416
Sound pressure	STD version (3)	dB(A)	77	78	79	80	80	81	82
	SSL version (3)	dB(A)	73	74	75	76	76	77	78
Maiabta	Transport weight	Kg	4560	5205	5670	6950	7080	9060	1005
Weights	Operating weight	Kg	5110	5880	6470	7220	7880	10030	11230

DIMENSION	IS		1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802	5402	6002
L	STD/SSL	mm	3700	3700	3700	3800	3900	3900	3900	4900	4900	4900	5300	5300	5550	5550
W	STD	mm	1000	1100	1100	1150	1200	1200	1200	1200	1300	1300	1400	1400	2000	2000
VV	SSL	mm	1200	1250	1250	1350	1350	1350	1400	1400	1450	1450	1550	1550	2150	2150
П	STD	mm	1800	1800	1900	1950	2000	2050	2150	2150	2250	2300	2450	2450	2500	2550
11	SSL	mm	1800	1950	2050	2100	2150	2200	2300	2300	2400	2450	2600	2600	2650	2700

### **CLEARANCE AREA**

CWW/H/A 1002÷6002

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.



## CWW/Y/A 1302÷4802

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH (INVERTER) SCREW COMPRESSORS AND FLOODED SHELL AND TUBE **EXCHANGERS.** 





















The A CLASS liquid Chillers of the CWW/Y/A 1302÷4802 series, with R134a refrigerant, are designed to satisfy the needs of the service sector or industrial systems requiring high power. These units are characterized by an high efficiency (EER) and are equipped with latest generation Screw compressors, flooded shell and tube exchangers and connections for condensation with cooling tower water or well water or with a Dry-Cooler. Furthermore, they have a series of accessories which are factory fitted or supplied separately such as desuperheater, total heat recovery and, if neccessary, a device for operating a Heat Pump. Designed and produced to optimize the layout of each component so as to make any necessary maintenance operations more convenient, these units have an essential and compact structure intended for indoor installation. The units can be equipped with Inverter control on one or on both the Screw compressors, to significantly reduce the inrush current of the unit. The solution with double Inverter allows, in addition to the above described, to increase the power efficiency of the unit in the same size, adapting to the different needs and solutions.

#### The units are compliant to the ErP 2021 Regulation.

On request, units can be supplied with R513A refrigerant (CWW/J/A 1302÷4802).

## **VERSION**

CWW/Y/A	CWW/Y/A/SSL
Cooling only	Super silenced cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with suction filter, oil sight glass, thermal protection and stepless capacity steps. Oil separator and crankcase heater installed on cooling circuit.
- · Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations. Water connections for cooling tower and Dry-Cooler operation; on request for well water.
- High efficiency flooded shell and tube type evaporator, with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors.
- Microprocessor control and regulation system.

### **ACCESSORIES**

FACTORY F	FITTED ACC	CESSORIES
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IM	Automatic circuit breakers	IST	Modbus TCP/IP protocol, Ethernet
BT	Low water temperature kit		port
HR	Desuperheater	ISB	BACnet MSTP protocol, RS485
HRT	Total heat recovery		serial interface
FE	Antifreeze heater for evaporator	ISBT	BACnet TCP/IP protocol, Ethernet
П	Inverter on one compressor and		port
	soft start	ISL	LonWorks protocol, FTT-10 serial
ID	Inverter on all compressors		interface
SS	Soft start	ISS	SNMP protocol, Ethernet port
DP	Device for heat pump operation	IAV	Remote set-point, 0-10 V signal
WM	Web Monitoring - Wireless remote	IAA	Remote set-point, 4-20 mA signal
	monitoring (GPRS/EDGE/3G/TCP-IP)	IAS	Remote signal for second set-point
IS	Modbus RTU protocol, RS485		activation
	serial interface	IDL	Demand limit from digital input
		CP	Potential free contacts

### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
PV3	3-Way electronic pressostatic valve
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CWW/Y/A 1302÷4802





MODEL			1302	1502	1702	1902	2002	2602	2802	3002	3602	4202	4802
	Cooling capacity (1)	kW	280	341	392	448	507	626	711	792	961	1126	1289
Cooling	Absorbed power (1)	kW	50	60	69	79	88	108	121	132	160	188	217
	EER (1)		5.60	5.68	5.68	5.67	5.76	5.80	5.88	6.00	6.01	5.99	5.94
	Cooling capacity (1)	kW	279	340	391	446	505	623	708	789	957	1122	1284
	Absorbed power (1)	kW	51	61	70	81	90	111	124	135	164	192	222
Cooling (EN14511)	EER (1)		5.47	5.57	5.59	5.51	5.61	5.61	5.71	5.84	5.84	5.84	5.78
	SEER (2)		7.03	7.20	7.25	7.11	7.27	7.34	7.46	7.63	7.66	7.67	7.62
	Energy Efficiency (2)	%	273	280	282	276	283	286	290	297	298	299	297
	Cooling capacity (1)	kW	329	401	459	527	595	734	833	928	1125	1319	1510
Cooling *	Absorbed power (1)	kW	60	73	84	96	107	131	148	161	194	228	263
-	EER (1)		5.48	5.49	5.46	5.49	5.56	5.60	5.63	5.76	5.80	5.79	5.74
Cooling *	Cooling capacity (1)	kW	328	399	458	524	592	730	828	923	1119	1312	1502
	Absorbed power (1)	kW	61	75	85	99	110	135	153	166	200	235	271
(EN14511)	EER (1)		5.38	5.32	5.39	5.29	5.38	5.41	5.41	5.56	5.60	5.58	5.54
	Quantity	n°	2	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1	1	1
	Capacity steps	n°						Stepless					
	Water flow	I/s	13.38	16.29	18.73	21.40	24.22	29.91	33.97	37.84	45.91	53.80	61.59
Evaporator	Pressure drops	kPa	28	32	26	60	54	57	57	54	56	57	61
	Water connections	DN	100	100	100	125	125	125	125	150	150	150	150
	Water flow	I/s	15.77	19.16	22.03	25.18	28.43	35.07	39.75	44.15	53.56	62.78	71.95
Condenser	Pressure drops	kPa	46	39	42	62	52	60	62	65	58	58	59
	Water connections	DN	80	100	100	100	125	125	125	125	150	150	150
Electrical	Power supply	V/Ph/Hz						400/3/50					
	Max. running current	Α	178	214	238	270	292	354	398	438	456	536	622
characteristics	Max. starting current	А	240	258	314	330	434	465	487	549	558	598	775
Cound proceurs	STD version (3)	dB(A)	76	76	77	77	77	77	77	79	79	80	80
Sound pressure	SSL version (3)	dB(A)	72	72	73	73	73	73	73	75	75	76	76
Maiabta	Transport weight	Kg	2690	2830	2913	3215	3602	3980	4210	4745	5210	5675	6500
Weights	Operating weight	Kg	2750	2900	3000	3500	3700	4100	4350	4900	5400	5900	6750

DIMENSION	NS		1302	1502	1702	1902	2002	2602	2802	3002	3602	4202	4802
L	STD/SSL	mm	3700	3700	3700	4200	4200	4200	4200	4200	4200	4500	4600
W	STD/SSL	mm	1300	1300	1300	1400	1400	1400	1400	1400	1600	1600	1600
Н	STD/SSL	mm	2100	2100	2100	2200	2200	2200	2200	2200	2250	2250	2250

## **CLEARANCE AREA**

CWW/Y/A 1302÷4802

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  Weights of SSL version are specified on technical brochure.

- Unit provided with Inverter on both compressors.

# CWW/Y/A 1002-T÷7202-T

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGERS.





**INVERTER SCREW** 

















The liquid Chillers of the CWW/Y/A 1002-T÷7202-T series, with A CLASS energy efficiency and R134a refrigerant, are designed to satisfy the needs of the service sector or industrial systems requiring high power.

Equipped with latest generation Screw compressors, shell and tube exchangers and connections for condensation with cooling tower water or well water or with a Dry-Cooler, these units have a series of accessories which are factory fitted or supplied separately. Designed and produced to optimize the layout of each component so as to make any necessary maintenance operations more convenient, these units have an essential and compact structure intended for indoor installation. Furthermore, accessories as the Inverter control on one Screw compressor or both is also available for getting the highest efficiency at part load and a significant reduction of starting current.

#### The units are compliant to the ErP 2021 Regulation.

On request, units can be supplied with R513A refrigerant (CWW/J/A 1002-T÷7202-T).

### **VFRSION**

VEHOIOIV	
CWW/Y/A	CWW/Y/A/SSL
Cooling only	Super silenced cooling only

## **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations. Each cooling circuit is supplied with an independent condenser. Water connections for cooling tower and Dry-Cooler operation; on request for well water.
- Shell and tube evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.

Potential free contacts

- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors.
- Microprocessor control and regulation system.

## **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	IS	Modbus RTU protocol, RS485 serial
BT	Low water temperature kit		interface
HR	Desuperheater	IST	Modbus TCP/IP protocol, Ethernet
HRT	Total heat recovery		port
FE	Antifreeze heater for evaporator	ISB	BACnet MSTP protocol, RS485
II	Inverter on one compressor and		serial interface
	soft start	ISBT	BACnet TCP/IP protocol, Ethernet
ID	Inverter on all compressors		port
SS	Soft start	ISL	LonWorks protocol, FTT-10 serial
DP	Device for heat pump operation		interface
HTW	Device for high temperature hot	ISS	SNMP protocol, Ethernet port
	water production.	IAV	Remote set-point, 0-10 V signal
WM	Web Monitoring - Wireless remote	IAA	Remote set-point, 4-20 mA signal
	monitoring (GPRS/EDGE/3G/TCP-IP)	IAS	Remote signal for second set-point activation
	2	IDL	Demand limit from digital input

CP

### LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
PV3	3-Way electronic pressostatic valve
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CWW/Y/A 1002-T÷7202-T





MODEL			1002-T	1202-T	1402-T	1602-T	1802-T	2202-T	2502-T	2802-T
	Cooling capacity (1)	kW	250	307	359	427	499	572	675	783
Cooling	Absorbed power (1)	kW	46.2	58.1	65.4	78.1	85.0	101	121	137
Ü	EER (1)		5.41	5.28	5.49	5.47	5.87	5.66	5.58	5,72
	Cooling capacity (1)	kW	250	307	359	427	499	571	674	782
	Absorbed power (1)	kW	47.6	60.0	67.7	80.7	88.4	104	125	142
Cooling (EN14511)	EER (1)		5.25	5.12	5.30	5.29	5.64	5.49	5.39	5.51
, , , , , , , , , , , , , , , , , , , ,	SEER (2)		6.35	6.55	6.71	6.68	6.87	6.87	6.98	6.87
	Energy Efficiency (2)	%	246	254	260	259	267	267	271	267
	Quantity	n°	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°			_	l	oless	_		
	Water flow	I/s	11.94	14.67	17.15	20.40	23.84	27.33	32.25	37.41
Evaporator	Pressure drops	kPa	43	37	40	39	34	38	38	52
Lvaporator	Water connections	DN	125	150	150	150	200	200	200	200
	Water flow	I/s	14.15	17.44	20.28	24.13	27.90	32.15	38.03	43.96
Condenser	Pressure drops	kPa	19	27	32	35	37	37	34	40
Oondonser	Water connections	DN	80	80	80	80	80	80	100	100
	Power supply	V/Ph/Hz	00	00	00		/3/50	00	100	100
Electrical	Max. running current	A A	184	182	210	240	278	306	392	444
characteristics	Max. starting current	A	200	218	245	282	347	383	471	559
	STD version (3)	dB(A)	75	75	75	75	76	76	76	76
Sound pressure	SSL version (3)	dB(A)	71	71	71	71	72	70	72	70
	Transport weight	Kg	1983	2254	2423	2625	2943	3039	3715	4079
Weights	Operating weight	Kg	2140	2460	2620	2860	3260	3350	4110	4610
	Operating weight	Ky	2140	2400	2020	2000	3200	3330	4110	4010
MODEL			3302-T	3602-T	4602-T	4802-T	5402-T	6002-T	6602-T	7202-T
	Cooling capacity (1)	kW	901	1040	1183	1342	1497	1662	1902	2143
Cooling	Absorbed power (1)	kW	157	182	205	235	255	293	355	374
	EER (1)		5.74	5.71	5.77	5.71	5.87	5,67	5.36	5.73
	Cooling capacity (1)	kW	901	1039	1182	1341	1496	1661	1901	2142
	Absorbed power (1)	kW	163	188	212	243	265	301	366	387
Cooling (EN14511)	1 1,		5.53	5.53	5.58	5.52	5.65	5.52	5.19	5.53
occining (ETT)	SEER (2)		6.99	7.07	7.23	7.21	7.29	7.22	7.12	7.12
	Energy Efficiency (2)	%	272	275	281	280	284	281	277	277
	Quantity	n°	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
Compressor	Capacity steps	n°					oless			
	Water flow	I/s	43,05	49.69	56.52	64.12	71.52	79.41	90.87	102
			40,00	45.05						49
Evaporator			12	11	12	F2	l ku			
Evaporator	Pressure drops	kPa	43	44	42	52	59	40	50	
Evaporator	Pressure drops Water connections	kPa DN	200	250	250	250	250	250	250	300
	Pressure drops Water connections Water flow	kPa DN I/s	200 50.55	250 58.38	250 66.32	250 75.35	250 83.71	250 93.41	250 108	300 120
Evaporator Condenser	Pressure drops Water connections Water flow Pressure drops	kPa DN I/s kPa	200 50.55 39	250 58.38 41	250 66.32 37	250 75.35 40	250 83.71 35	250 93.41 32	250 108 42	300 120 41
	Pressure drops Water connections Water flow Pressure drops Water connections	kPa DN I/s kPa DN	200 50.55	250 58.38	250 66.32	250 75.35 40 125	250 83.71 35 125	250 93.41	250 108	300 120
	Pressure drops Water connections Water flow Pressure drops Water connections Power supply	kPa DN I/s kPa DN V/Ph/Hz	200 50.55 39 100	250 58.38 41 100	250 66.32 37 125	250 75.35 40 125 400/	250 83.71 35 125 (3/50	250 93.41 32 125	250 108 42 125	300 120 41 125
Condenser	Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current	kPa DN I/s kPa DN V/Ph/Hz A	200 50.55 39 100	250 58.38 41 100	250 66.32 37 125	250 75.35 40 125 400/ 770	250 83.71 35 125 (3/50 730	250 93.41 32 125	250 108 42 125	300 120 41 125
Condenser Electrical	Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kPa DN I/s kPa DN V/Ph/Hz A	200 50.55 39 100 528 564	250 58.38 41 100 590 653	250 66.32 37 125 672 784	250 75.35 40 125 400/ 770 893	250 83.71 35 125 3/50 730 912	250 93.41 32 125 804 992	250 108 42 125 1296 1583	300 120 41 125 1464 1667
Condenser  Electrical characteristics	Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (3)	kPa DN I/s kPa DN V/Ph/Hz A dB(A)	200 50.55 39 100 528 564 77	250 58.38 41 100 590 653 77	250 66.32 37 125 672 784 77	250 75.35 40 125 400/ 770 893 78	250 83.71 35 125 /3/50 730 912 79	250 93.41 32 125 804 992 79	250 108 42 125 1296 1583 81	300 120 41 125 1464 1667 82
Condenser Electrical	Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (3) SSL version (3)	kPa DN I/s kPa DN V/Ph/Hz A A dB(A) dB(A)	200 50.55 39 100 528 564 77 73	250 58.38 41 100 590 653 77 73	250 66.32 37 125 672 784 77 73	250 75.35 40 125 400/ 770 893 78	250 83.71 35 125 (3/50 730 912 79 75	250 93.41 32 125 804 992 79	250 108 42 125 1296 1583 81 77	300 120 41 125 1464 1667 82 78
Condenser  Electrical characteristics	Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current STD version (3)	kPa DN I/s kPa DN V/Ph/Hz A dB(A)	200 50.55 39 100 528 564 77	250 58.38 41 100 590 653 77	250 66.32 37 125 672 784 77	250 75.35 40 125 400/ 770 893 78	250 83.71 35 125 /3/50 730 912 79	250 93.41 32 125 804 992 79	250 108 42 125 1296 1583 81	300 120 41 125 1464 1667 82

DIM	<b>IENSIONS</b>	S	1002-T	1202-T	1402-T	1602-T	1802-T	2202-T	2502-T	2802-T	3302-T	3602-T	4602-T	4802-T	5402-T	6002-T	6602-T	7202-T
L	STD/SSL	mm	3700	3700	3700	3800	3900	3900	3900	4900	4900	4900	5300	5300	5550	5550	5550	5550
W	STD	mm	1000	1100	1100	1150	1200	1200	1200	1200	1300	1300	1400	1400	2000	2000	2000	2000
VV	SSL	mm	1200	1250	1250	1350	1350	1350	1400	1400	1450	1450	1550	1550	2150	2150	2150	2150
- 11	STD	mm	1800	1800	1900	1950	2000	2050	2150	2150	2250	2300	2450	2450	2500	2550	2550	2550
П	SSL	mm	1800	1950	2050	2100	2150	2200	2300	2300	2400	2450	2600	2600	2650	2700	2700	2700

### **CLEARANCE AREA**

CWW/Y/A 1002-T÷7202-T

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.
   Seasonal energy efficiency of cooling at low temperature. According
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL version are specified on technical brochure.

## CWW/Y 1302-B÷9002-B

WATERCOOLED LIQUID CHILLERS WITH SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGERS.

















The liquid Chillers of the CWW/Y 1302-B÷9002-B series, with R134a refrigerant, are designed to satisfy the needs of the service sector or industrial systems requiring high power. Equipped with latest generation Screw compressors, shell and tube exchangers and connections for condensation with cooling tower water or well water or with a Dry-Cooler, these units can also be produced in super silent versions. Furthermore, they have a series of accessories which are factory fitted or supplied separately such as heat recovery in series or in parallel, soft start and, if necessary, a device for operating a Heat Pump. Designed and produced to optimize the layout of each component so as to make any necessary maintenance operations more convenient, these units have an essential and compact structure intended for indoor installation.

The models 1302-B÷1702-B are compliant to the ErP 2021 Regulation. The models 1902-B÷9002-B are compliant to the ErP 2021 Regulation with ID accessory (Inverter on all compressors).

On request, units can be supplied with R513A refrigerant (CWW/J 1302-B÷9002-B).

## **VFRSION**

CWW/Y	CWW/Y/SSL
Cooling only	Super silenced cooling only

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations. Each cooling circuit is supplied with an independent condenser. Water connections for cooling tower and Dry-Cooler operation; on request for well water.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors.
- Microprocessor control and regulation system.

### **ACCESSORIES**

#### E

serial interface

Modbus TCP/IP protocol, Ethernet

FACTO	RY FITTED ACCESSORIES			LOOSE	ACCESSORIES
IM	Automatic circuit breakers	ISB	BACnet MSTP protocol, RS485	MN	High and low pressure gauges
BT	Low water temperature Kit		serial interface	CR	Remote control panel
HR	Desuperheater	ISBT	BACnet TCP/IP protocol, Ethernet	PV3	3-Way electronic pressostatic valve
HRT	Total heat recovery		port	AG	Rubber shock absorbers
FE	Antifreeze heater for evaporator	ISL	LonWorks protocol, FTT-10 serial	AM	Spring shock absorbers
II	Inverter on one compressor and		interface	FL	Flow switch
	soft start	ISS	SNMP protocol, Ethernet port		
ID	Inverter on all compressors	IAV	Remote set-point, 0-10 V signal		
SS	Soft start	IAA	Remote set-point, 4-20 mA signal		
DP	Device for heat pump operation	IAS	Remote signal for second set-point		
HTW	Device for high temperature hot		activation		
	water production.	IDL	Demand limit from digital input		
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)	СР	Potential free contacts		
IS	Modbus RTU protocol, RS485				



IST

## CWW/Y 1302-B÷9002-B





MODEL					1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B
	Cooling	capacity (	1)	kW	267	323	374	426	488	577	660	750	892
Cooling		ed power (		kW	57	69	80	90	99	123	136	150	182
	EER (1)				4.68	4.68	4.68	4.73	4.93	4.69	4.85	5.00	4.90
		capacity (		kW	266	322	372	424	486	574	657	747	889
		ed power (	1)	kW	59	72	83	94	103	128	142	157	189
	EER (1)				4.47	4.48	4.46	4.51	4.74	4.48	4.62	4.77	4.70
Cooling (EN1451					5.66	5.71	5.71	5.95	6.11	5.93	5.95	6.15	6.07
		Efficiency		%	218	220	220	230	236	229	230	238	235
		ith ID acce			6.23	6.28	6.28	6.55	6.54	6.52	6.55	6.58	6.56
	- 07		with ID accessory (		241	243	243	254	254	253	254	255	254
0	Quantit			n°	2	2	2	2	2	2	2	2	2
Compressor		rant circuit	IS .	n°	2	2	2	2	2	2	2	2	2
	Capacit			n°	10.70	1	17.07	20.05	Stepless	27.57	21.52	35.83	42.62
Funnarator	Water flow aporator Pressure drops		I/s	12.76	15.43	17.87	20.35	23.32	27.57	31.53			
Evaporator				kPa	51	43	55	60	48	61	67	66	47
		connection	S	DN	100	125	125	125	125	150	150	150	200
C	Water f			I/s	15.48	18.71	21.67	24.67	28.00	33.43	38.00	42.99	51.32
Condenser	Pressur			kPa	43 65	49 65	51 65	47 65	36 80	52 80	48	45 80	57 80
		connection	<u>S</u>	DN		65	65	65		80	80	80	80
Electrical	Powers			V/Ph/Hz		014	200	070	400/3/50	054	200	400	T 10
characteristics		inning curr		A	178	214	238	270	306	354	398	438	518
		arting curr	ent	AD(A)	240	258	314	330	374	465	487	549	723
Sound pressure	STD vei			dB(A)	76	76	76	76	76	76	76	77	78
	SSL ver			dB(A)	72	72	72	72	72	72	72	73	74
Weights		rt weight		Kg	2124	2183	2309	2340	2973	3121	3174	4274	4613
Ü	Uperati	ng weight		Kg	2240	2350	2480	2510	3160	3440	3490	4580	5050
MODEL					4202-B	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B
	Cooling	capacity (	1)	kW	1049	1159	1286	1438	1612	1753	1922	2116	2349
Cooling		ed power (	,	kW	210	234	256	287	323	350	383	425	475
oooning	EER (1)	ou povvoi (	1)	I I V V	5.00	4.95	5.02	5.01	4.99	5.01	5.02	4.98	4.95
		capacity (	1)	kW	1045	1155	1281	1432	1604	1744	1913	2107	2333
		ed power (		kW	219	244	269	299	339	367	403	444	502
	EER (1)	ou porror (	• /	KVV	4.78	4.73	4.77	4.79	4.73	4.75	4.75	4.75	4.65
Cooling (EN1451		')			6.24	6.13	6.2	6.37	6.45	6.45	6.33	6.33	6.33
000g (2.11.10.		Efficiency	(2)	%	242	237	240	247	250	250	245	245	245
	SEER w	rith ID acce	essory (2)	,,,	6.68	6.68	6.76	6.82	7.10	7.10	7.03	7.03	7.03
			with ID accessory (	2) %	259	259	262	265	276	276	273	273	273
	Quantit			n°	2	2	2	2	2	2	2	2	2
Compressor		rant circuit	is	n°	2	2	2	2	2	2	2	2	2
	Capacit			n°					Stepless				
	Water f			I/s	50.12	55.37	61.44	68.70	77.02	83.75	91.83	101,10	112,23
Evaporator	Pressur			kPa	62	51	59	65	81	74	70	60	107
	Water	connection	S	DN	200	200	200	200	200	250	250	250	250
	Water f	low		I/s	60.17	66.55	73.67	82.42	92.45	100,48	110,13	121,40	134,92
Condenser	Pressur	e drops		kPa	49	66	77	66	63	63	73	67	57
		connection	S	DN	100	100	100	100	125	125	125	125	125
Flantinal	Powers	supply		V/Ph/Hz			1		400/3/50				
Electrical		inning curr	ent	A	602	602	658	818	834	801	863	1032	1144
characteristics		arting curr		A	765	765	793	1610	1479	1013	1045	1129	1365
Cound		rsion (3)		dB(A)	79	80	80	81	82	82	83	84	85
Sound pressure	SSL ver			dB(A)	75	76	76	77	78	78	79	80	81
\\/\ai\\-t-		rt weight		Kg	4645	4650	5360	5440	6000	6630	8040	8100	9150
Weights		ng weight		Kg	5100	5220	5940	6100	6690	7380	8940	9050	10170
DIMENSIONS	S		1302-B	1502-B	1702-B	1902	-B 20	002-B	2602-B	2802-	B 30	02-B	3602-B
L	STD/SSL	mm	3550	3550	3300	3300		3300	3500	3500		600	3600
W	STD/SSL	mm	800	800	1400	1400		1400	1450	1450		650	1650
Н	STD/SSL	mm	2000	2000	2150	2150		2150	2150	2150		150	2150
DIMENSIONS	2		4202-B 4402-B 4802-B 5402-B 6002-B 6602-B 7202-B 8102-B 9002				9002 B						
	STD/SSL	mm	4202-B 3600	4402-B 4800	4802-B 4800	5402		5200	6602-B 5500	5500			9002-B 5500
W	STD/SSL	mm	1650	1800	1800	1800		1800	2250	2250		250	2250
H	STD/SSL	mm	2150	2150	2150	2150		2150	2200	2200		200	2200
	01D/00L	10000	2100	2100	2100	2100	-	2100	2200	1 2200	4		2200

## CLEARANCE AREA

CWW/Y 1302-B÷9002-B

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.

# MEA/Y 1302-B÷9002-B

CONDENSERLESS LIQUID CHILLERS WITH SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.

















The liquid Chillers for remote condensation of MEA/Y 1302-B÷9002-B series, with R134a refrigerant, are designed to satisfy the needs of the service sector or industrial systems which require high power with continual refrigerant delivery, space-saving units and quiet operation. Combined with the remote condenser, these units are ideal for indoor installation and, equipped with a self-supporting structure that sustains the main components, they reduce the overall dimensions to a minimum while at the same time making installation and maintenance operations easier.

Equipped with latest generation Screw compressors and shell and tube exchanger, these units can also be produced in a super silent version. They have cooling and hydraulic circuits complete with everything necessary for quick installation and high energy efficiency. A series of accessories, factory fitted or supplied separately, rounds off the variety of equipment in this product range.

On request, units can be supplied for R513A refrigerant (MEA/J 1302-B÷9002-B).

### **VFRSION**

MEA/Y	MEA/Y/SSL
Cooling only	Super silenced cooling only

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors.
- Microprocessor control and regulation system.

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

serial interface

IM	Automatic circuit breakers
BT	Low water temperature Kit
HR	Desuperheater
HRT	Total heat recovery
FE	Antifreeze heater for evaporator
II	Inverter on one compressor and
	soft start
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485
	serial interface
IST	Modbus TCP/IP protocol, Ethernet
	port
ISB	BACnet MSTP protocol, RS485

BACnet TCP/IP protocol, Ethernet

ISL	LonWorks protocol, FTT-10 serial interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point

activation IDI Demand limit from digital input CP Potential free contacts

#### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



ISBT

## MEA/Y 1302-B÷9002-B

MODEL			1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B
Cooling	Cooling capacity (1)	kW	235	279	325	375	424	526	599	672	778
Cooling	Absorbed power (1)	kW	73	85	103	118	133	158	176	193	228
	Quantity	n°	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°					Stepless		•		•
	Water flow	I/s	11.23	13.33	15.53	17.92	20.26	25.13	28.62	32.11	37.17
Evaporator	Pressure drops	kPa	49	34	39	41	34	50	48	55	51
	Water connections	DN	100	125	125	125	125	150	150	150	150
Connections	Delivery line	Ø mm	2 x 42	2 x 42	2 x 54	2 x 54	2 x 54	2 x 64	2 x 64	2 x 76	2 x 76
Connections	Liquid line	Ø mm	2 x 35	2 x 42	2 x 42	2 x 42	2 x 54				
Electrical	Power supply	V/Ph/Hz					400/3/50				
	Max. running current	А	178	214	238	270	306	354	398	438	518
characteristics	Max. starting current	А	240	258	314	330	374	465	487	549	723
C	STD version (2)	dB(A)	76	76	76	76	76	76	76	77	78
Sound pressure	SSL version (2)	dB(A)	72	72	72	72	72	72	72	73	74
\\/-:	Transport weight	Kg	1480	1820	1840	1860	1900	2420	2540	2590	3190
Weights	Operating weight	Kg	1570	1960	1990	2010	2040	2680	2820	2850	3460
MODEL			4202-B	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B
01:	Cooling capacity (1)	kW	905	1015	1140	1282	1433	1535	1681	1833	2060
Cooling	Absorbed power (1)	kW	262	296	327	364	417	447	483	528	599
	Quantity	n°	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
·	Capacity steps	n°					Stepless			•	
	Water flow	I/s	43.24	48.49	54.47	61.25	68.47	73.34	80.31	87.58	98.42
Evaporator	Pressure drops	kPa	57	55	56	52	69	75	54	62	86
•	Water connections	DN	150	200	200	200	200	250	250	250	250
C	Delivery line	Ø mm	2 x 76	2 x 76	2 x 89	2 x 89	2 x 89	2x89	2x89	2x108	2x108
Connections	Liquid line	Ø mm	2 x 54	2x54	2x64	2x64	2x64				
Electrical	Power supply	V/Ph/Hz					400/3/50				
	Max. running current	А	602	602	658	818	834	801	863	1032	1144
characteristics	Max. starting current	Α	765	765	793	1610	1479	1013	1045	1129	1365
C	STD version (2)	dB(A)	79	80	80	81	82	82	83	84	85
Sound pressure	SSL version (2)	dB(A)	75	76	76	77	78	78	79	80	81
\\/-:	Transport weight	Kg	3225	3525	4445	4530	4600	4830	5690	6925	7280
Weights	Operating weight	Kg	3480	3980	4980	5040	5100	5420	6390	7660	7980

DIMENSION	IS		1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B
L	STD/SSL	mm	3300	3300	3700	3700	3700	3800	4000	4000	4300
W	STD	mm	800	800	800	800	800	1080	1080	1080	1080
VV	SSL	mm	800	800	800	800	800	1080	1080	1080	1080
Н	STD	mm	1700	1700	1700	1700	1700	1700	2100	2100	2100
п	SSL	mm	1700	1700	1700	1700	1700	1700	2100	2100	2100
DIMENSION	IS		4202-B	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B
L	STD/SSL	mm	4300	4300	5100	5100	5100	6000	6000	6000	6000
141	STD	mm	1080	1080	1080	1080	1080	1400	1400	1400	1400
W	SSL	mm	1080	1080	1080	1080	1080	1450	1450	1500	1500
W H	SSL STD	mm mm	1080 2100	1080 2100	1080 2100	1080 2100	1080 2100	1450 2100	1450 2100	1500 2100	1500 2100

## CLEARANCE AREA

MEA/Y 1302-B÷9002-B 500 500 800 500



- Chilled water from 12 to 7 °C, condensing temperature 50 °C.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of SSL version are specified on technical brochure.

# RCA/Y 8141÷9282

### REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.







The Remote aircooled Condensers with axial fans of the RCA/Y series are designed to be combined with evaporating units with R134a refrigerant (MEA/Y).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

On request, units can be supplied for R513A refrigerant (RCA/J 8141÷9282).

### **VERSION**

RCA/Y

Base unit

### **FEATURES**

- Frame in oven painted with a polyurethane resin and galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/Y	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/Y	8141	8151	8161	8171	8172	8251	8261	8271	8281	8282
MEA/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/J	8141	8151	8161	8171	8172	8251	8261	8271	8281	8282

MEA/Y	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B
RCA/Y	9272	9273	9281	9282	2x8272	2x8281	2x8282	2x9272
MEA/J	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B
RCA/J	9272	9273	9281	9282	2x8272	2x8281	2x8282	2x9272

## **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

SD Wiring integrated in branch

circuit box

FR Fan speed control

#### **LOOSE ACCESSORIES**

SVV Supports for vertical air flow versions



## RCA/Y 8141÷9282

MODEL		8141	8151	8161	8171	8172	8251	8252	8261	8262			
Fan	Quantity	n°	4	5	6	7	7	10	10	12	12		
Connections	In	Ø mm	2X64	2X64	2X76	2X76	2X76	2X64	2X64	2X76	2X76		
Connections	Out	Ø mm	2x42	2x42	2x42	2x54	2x54	2x42	2x42	2x42	2x42		
Electrical	Power supply	V/Ph/Hz	400/3/50										
characteristics	Absorbed power	kW	7.20	9.00	10.80	12.60	12.60	18.00	68.40	21.60	21.60		
characteristics	Absorbed current	Α	15.20	19.00	22.80	26.60	26.60	38.00	38.00	45.60	45.60		
Sound pressure	STD version (1)	dB(A)	55	56	57	56	56	59	59	59	59		
Weights	Transport weight	Kg	822	1016	1210	1302	1404	1590	1467	1754	1902		
vveigilis	Operating weight	Kg	854	1055	1282	1366	1489	1660	1521	1854	2033		

MODEL			8271	8272	8281	8282	9272	72 9273 9281 92						
Fan	Quantity	n°	14	14	16	16	14	14	16	16				
Connections	In	Ø mm	2X76	2X76	2X76	2X76	2X76	2X76	2X76	2X76				
Connections	Out	Ø mm	2x54	2x54	2x54	2x54	2X64	2X64	2X64	2X64				
Electrical	Power supply	V/Ph/Hz				400/	3/50							
characteristics	Absorbed power	kW	25.20	25.20	28.80	28.80	34.30	34.30	39.20	57.60				
characteristics	Absorbed current	А	53.20	53.20	60.80	60.80	72.80	72.80	83.20	115.20				
Sound pressure	STD version (1)	dB(A)	59	59	60	60	63	63	64	70				
Maighta	Transport weight	Kg	2043	2214	2331	2528	3971	4218	4769	4769				
Weights	Operating weight	Kg	2196	2367	2463	2702	4102	4369	4940	4940				

DIMENSION	IS		8141	8151	8161	8171	8172	8251	8252	8261	8262	8271	8272	8281	8282	9272	9273	9281	9282
L	STD	mm	5930	7280	8630	9980	9980	7280	7280	8630	8630	9980	9980	11330	11330	9240	9240	10490	10490
W	STD	mm	1380	1380	1380	1380	1380	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Н	STD	mm	1565	1565	1565	1565	1565	1565	1565	1565	1565	1565	1565	1565	1565	2260	2260	2260	2260

## CLEARANCE AREA

RCA/Y 8141÷8282

RCA/Y 9261÷9282





- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.

  N.B. Combinations are made at condensing temperature 50 °C, ambient
- air temperature 35 °C.

  N.B. Clearance areas are specified on installation, use and maintenance manual.

# RCA/Y/SL 8231÷9282

SILENCED REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.











The Remote aircooled Condensers with axial fans of the RCAY/SL series are designed to be combined with evaporating units with R134a refrigerant (MEA/Y).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

On request, units can be supplied for R513A refrigerant (RCA/J/SL 8231÷9282).

### **VERSION**

RCA/Y/SL

Silenced unit

### **FEATURES**

- Frame in oven painted with a polyurethane resin and galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the
  best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/Y	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/Y/SL	8231	8232	8241	8242	8251	8261	8271	8281	9261	9271
MEA/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/J/SL	8231	8232	8241	8242	8251	8261	8271	8281	9261	9271

MEA/Y	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B	
RCA/Y/SL	9281	9282	2x8272	2x8282	2x9252	2x9261	2x9271	2x9281	
MEA/J	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B	
RCA/J/SL	9281	9282	2x8272	2x8282	2x9252	2x9261	2x9271	2x9281	

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

SD Wiring integrated in branch

circuit box

FR Fan speed control

#### **LOOSE ACCESSORIES**

SVV Supports for vertical air flow versions



## RCA/Y/SL 8231÷9282

MODEL			8231	8232	8241	8242	8251	8261	8271	8272	8281
Fan	Quantity	n°	6	6	8	8	10	12	14	14	16
Connections	In	Ø mm	2x54	2x54	2x54	2x54	2X64	2X76	2X76	2X76	2X76
Connections	Out	Ø mm	2x42	2x42	2x35	2x42	2x42	2x42	2x54	2x54	2x54
Electrical	Power supply	V/Ph/Hz					400/3/50				
characteristics	Absorbed power	kW	6.90	6.90	9.20	9.20	11.50	13.80	16.10	16.10	18.40
CHARACTERISTICS	Absorbed current	А	13.20	13.20	17.60	17.60	22.00	26.40	30.80	30.80	35.20
Sound pressure	SL version (1)	dB(A)	50	50	51	51	52	52	52	52	53
Weights	Transport weight	Kg	891	965	1179	1278	1467	1754	2043	2214	2331
vveignts	Operating weight	Kg	924	1008	1222	1334	1521	1854	2160	2367	2463
MODEL			8282	9171	9172	9251	9252	9261	9271	9281	9282
Fan	Quantity	n°	16	7	7	10	10	12	14	16	16
Connections	In	Ø mm	2X76	2X76	2X76	2X76	2X76	2X76	2X76	2X76	2X76
Connections	Out	Ø mm	2x54	2x54	2x54	2x54	2x54	2x54	2X64	2X64	2X64
Electrical	Power supply	V/Ph/Hz					400/3/50	,			
	Absorbed power	kW	18.40	10.92	10.92	15.60	15.60	18.72	21.84	24.96	38.40
characteristics	Absorbed current	Α	35.20	20.30	20.30	29.00	29.00	34.80	40.60	46.40	65.60
Sound pressure	SL version (1)	dB(A)	53	53	53	55	55	56	56	57	65
Weights Transport weight		Kg	2528	2097	2283	2942	3117	3668	4218	4769	4769
Weights Operating weight			2702	2183	2396	3027	3227	3799	4369	4940	4940

DIMENSION	NS .		8231	8232	8241	8242	8251	8261	8271	8272	8281	8282	9171	9172	9251	9252	9261	9271	9281	9282
L	SL	mm	4580	4580	5930	5930	7280	8630	9980	9980	11330	11330	10275	10275	6740	6740	7990	9240	10490	10490
W	SL	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	1170	1170	2400	2400	2400	2400	2400	2400
Н	SL	mm	1565	1565	1565	1565	1565	1565	1565	1565	1565	1565	1805	1805	2260	2260	2260	2260	2260	2260

### CLEARANCE AREA

RCA/Y/SL 8231÷8282

RCA/Y/SL 9171÷9282





- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.

  N.B. Combinations are made at condensing temperature 50 °C, ambient
- air temperature 35 °C.

  N.B. Clearance areas are specified on installation, use and maintenance manual.

# RCA/Y/SSL 8151÷9281

SUPER SILENCED REMOTE AIRCOOLED CONDENSERS WITH AXIAL FANS.











The remote aircooled Condensers with axial fans of the RCA/Y/SSL series are designed to be combined with evaporating units with R134a refrigerant (MEA/Y).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

On request, units can be supplied for R513A refrigerant (RCA/J/SSL 8151÷9281).

### **VERSION**

RCA/Y/SSL

Super silenced unit

### **FEATURES**

• Frame in oven painted with a polyurethane resin and galvanised steel casework.

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- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger is made with corrugated tubes with a greater heat exchange surface, fins cut with a special louver configuration to give the
  best external coefficient of heat exchange.

### **COMBINATIONS**

MEA/Y	1302-B	1502-B	1/02-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/Y/SSL	8151	8161	8171	8251	8251	8261	8272	8282	9271	9272
MEA/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCA/J/SSL	8151	8161	8171	8251	8251	8261	8272	8282	9271	9272

MEA/Y	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B	
RCA/Y/SSL	9281	2x8271	2x8281	2x8282	3x8261	3x8271	3x8272	3x8281	
MEA/J	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B	
RCA/J/SSL	9281	2x8271	2x8281	2x8282	2x8282	2x9271	2x9272	2x9281	

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

SD Wiring integrated in branch

circuit box

FR Fan speed control

#### **LOOSE ACCESSORIES**

SVV Supports for vertical air flow versions



## RCA/Y/SSL 8151÷9281

MODEL			8151	8161	8171	8251	8261	8271	8272	8281	8282	9271	9272	9281
Fan	Quantity	n°	5	6	7	10	12	14	14	16	16	14	14	16
Connections	In	Ø mm	2X64	2X76	2X76	2X64	2X76	2X76	2X76	2x54	2x54	2X76	2X76	2X76
Connections	Out	Ø mm	2x42	2x42	2x54	2x42	2x42	2x54	2x54	2x54	2x54	2X64	2X64	2X64
Electrical	Power supply	V/Ph/Hz						400/	3/50					
characteristics	Absorbed power	kW	4.45	5.34	6.23	8.90	10.68	12.46	12.46	14.24	14.24	12.74	12.74	14.56
Characteristics	Absorbed current	Α	11.10	13.32	15.54	22.20	26.64	31.08	31.08	35.52	35.52	31.78	31.78	36.32
Sound pressure	SSL version (1)	dB(A)	50	51	50	53	53	53	53	54	54	57	57	58
Weights	Transport weight	Kg	1016	1210	1404	1467	1902	2214	2043	2528	2331	3971	4218	3769
vveignts	Operating weight	Kg	1055	1282	1489	1521	2033	2367	2156	2702	2463	4088	4369	3940

DIMENSION	NS .		8151	8161	8171	8251	8261	8271	8272	8281	8282	9271	9272	9281
L	SSL	mm	7280	8630	9980	7280	8630	9980	9980	11330	11330	9240	9240	10490
W	SSL	mm	1380	1380	1380	2400	2400	2400	2400	2400	2400	2400	2400	2400
Н	SSL	mm	1565	1565	1565	1565	1565	1565	1565	1565	1565	2262	2262	2262

### CLEARANCE AREA

RCA/Y/SSL 8151÷8282

RCA/Y/SSL 9271÷9281





- Sound pressure level measured in free field conditions at 10 m from
- the unit. According to ISO 3744.

  N.B. Combinations are made at condensing temperature 50 °C, ambient air temperature 35 °C.

  N.B. Clearance areas are specified on installation, use and maintenance manual.

# CWW/TTH 1701-1÷6606-1

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGERS FOR COOLING TOWER OPERATION.

















The innovative CWW/TTH 1701-1÷6606-1 TURBOLINE units for cooling tower operation, featuring A CLASS energy efficiency and HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight.

Using TURBOCOR dynamic partial-load oil-free magnetic levitation compressors, managed by the TURBOSOFT self-adaptive electronic control and flooded shell and tube evaporators, provide high energy performance, with unbeatable SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional Screw compressor units, TURBOLINE units have low operational costs during their entire use, with a savings that can even reach 50%. Besides, the units are equipped with the WEB MONITORING system, for remotely managing and monitoring the units by means of GPRS/EDGE/3G/ TCP-IP communication protocol. The users enabled to use this service can, through dedicated Web page, access Monitoring, Management and Statistics activities.

The units are compliant to the ErP 2021 Regulation.

### **VERSION**

HFO R1234ze ₩

CWW/TTH

Cooling only for cooling tower

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- · Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations.
- High efficiency flooded shell and tube type evaporator, with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors, interface relay and terminals for external connections.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

Potential free contacts

### **ACCESSORIES**

#### F

<b>FACTOR</b>	Y FITTED ACCESSORIES		
IM	Automatic circuit breakers	ISBT	BACnet TCP/IP protocol, Ethernet
HR	Desuperheater		port
HRT	Total heat recovery	ISL	LonWorks protocol, FTT-10 serial
FE	Antifreeze heater for evaporator		interface
TS	Touch screen Interface	ISS	SNMP protocol, Ethernet port
IST	Modbus TCP/IP protocol, Ethernet	IAV	Remote set-point, 0-10 V signal
	port	IAA	Remote set-point, 4-20 mA signal
ISB	BACnet MSTP protocol, RS485 serial interface	IAS	Remote signal for second set-point activation
		IDL	Demand limit from digital input

CP

#### **LOOSE ACCESSORIES**

High and low pressure gauges
Remote control panel
Rubber shock absorbers
Spring shock absorbers
Flow switch



## CWW/TTH 1701-1÷6606-1





MODEL			1701-1	2202-1	3303-1	4404-1	5505-1	6606-1
	Cooling capacity (1)	kW	321	639	958	1279	1601	1922
Cooling	Absorbed power (1)	kW	54	108	162	216	271	325
-	EER (1)		5.94	5.92	5.91	5.92	5.91	5.91
	Cooling capacity (1)	kW	320	637	955	1276	1595	1916
	Absorbed power (1)	kW	56	110	165	220	277	331
Cooling (EN14511)	EER (1)		5.71	5.79	5.79	5.80	5.76	5.79
	SEER (2)		8.55	8.67	8.83	9.53	9.75	9.77
	Energy Efficiency (2)	%	334	339	345	373	382	383
	Quantity	n°	1	2	3	4	5	6
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1
	Capacity steps	n°			Ster	oless		
	Water flow	I/s	15.34	30.53	45.77	61.11	76.49	91.83
Evaporator	Pressure drops	kPa	45	46	45	34	52	50
·	Water connections	DN	100	125	150	150	200	200
	Water flow	l/s	17.93	35.69	53.51	71.43	89.44	107
Condenser	Pressure drops	kPa	49	50	49	50	55	52
	Water connections	DN	100	125	150	150	200	200
Electrical	Power supply	V/Ph/Hz			400/	/3/50		
	Max. running current	А	150	300	450	600	750	900
characteristics	Max. starting current	А	5	155	305	455	605	755
Sound pressure (3)		dB(A)	72	74	76	76	77	78
Maighta	Transport weight	Kg	1798	2837	3924	6408	7741	11474
Weights	Operating weight	Kg	1930	3100	4340	7120	8780	13140

DIMENSION	NS		1701-1	2202-1	3303-1	4404-1	5505-1	6606-1
L	STD	mm	3400	3400	3450	4550	5500	6500
W	STD	mm	1100	1150	1800	1800	1800	1800
Н	STD	mm	1800	1950	2050	2100	2100	2150

## CLEARANCE AREA

CWW/TTH 1701-1÷6606-1

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

# CWW/TTH/DR 1701-1÷6606-1

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGERS FOR DRY-COOLER OPERATION.

















The innovative CWW/TTH/DR 1701-1÷6606-1 TURBOLINE units for Dry-Cooler operation, featuring A CLASS energy efficiency and HFO-R1234ze refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight. Using TURBOCOR dynamic partial-load oil-free magnetic levitation compressors, managed by the TURBOSOFT self-adaptive electronic control and flooded shell and tube evaporators, provide high energy performance, with unbeatable SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional Screw compressor units, TURBOLINE units have low operational costs during their entire use, with a savings that can even reach 50%. Besides, the units are equipped with the WEB MONITORING system, for remotely managing and monitoring the units by means of GPRS/EDGE/3G/ TCP-IP communication protocol. The users enabled to use this service can, through dedicated Web page, access Monitoring, Management and Statistics activities.

The units are compliant to the ErP 2021 Regulation.

### **VERSION**

CWW/TTH/DR

HFO R1234ze ₩

Cooling only for Dry-Cooler

### **FEATURES**

- · Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations.
- High efficiency flooded shell and tube type evaporator, with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors, interface relay and terminals for external connections.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

### **ACCESSORIES**

### FACTORY FITTED ACCESSORIES

FAC	IURY FITTED ACCESSORIES		
IM	Automatic circuit breakers	ISL	LonWorks protocol, FTT-10 serial
HR	Desuperheater		interface
HRT	Total heat recovery	ISS	SNMP protocol, Ethernet port
FE	Antifreeze heater for evaporator	IAV	Remote set-point, 0-10 V signal
TS	Touch screen Interface	IAA	Remote set-point, 4-20 mA signal
IST	Modbus TCP/IP protocol, Ethernet	IAS	Remote signal for second set-point
	port		activation
ISB	BACnet MSTP protocol, RS485	IDL	Demand limit from digital input
	serial interface	CP	Potential free contacts
ISBT	BACnet TCP/IP protocol, Ethernet		

#### LOOSE ACCESSORIES

_	000=	10020011120
Ν	١N	High and low pressure gauges
С	R	Remote control panel
Α	.G	Rubber shock absorbers
Α	M	Spring shock absorbers
F	L	Flow switch



## CWW/TTH/DR 1701-1÷6606-1





MODEL			1701-1	2202-1	3303-1	4404-1	5505-1	6606-1		
	Cooling capacity (1)	kW	301	603	899	1203	1499	1802		
Cooling	Absorbed power (1)	kW	54	108	162	216	271	325		
	EER (1)		5.94	5.92	5.91	5.92	5.91	5.91		
	Cooling capacity (1)	kW	320	637	955	1276	1595	1916		
	Absorbed power (1)	kW	56	110	165	220	277	331		
Cooling (EN14511	) EER (1)		5.71	5.79	5.79	5.80	5.76	5.79		
	SEER (2)		8.55	8.67	8.83	9.53	9.75	9.77		
	Energy Efficiency (2)	%	334	339	345	373	382	383		
	Quantity	n°	1	2	3	4	5	6		
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1		
	Capacity steps	n°	Stepless							
	Water flow	l/s	14.38	28.81	42.95	57.48	71.62	86.10		
vaporator	Pressure drops	kPa	41	42	41	30	47	44		
	Water connections	DN	100	125	150	150	200	200		
	Water flow	l/s	19.4	38.8	58.0	77.7	96.7	116		
Condenser	Pressure drops	kPa	55	56	55	56	62	58		
	Water connections	DN	100	125	150	150	200	200		
Electrical	Power supply	V/Ph/Hz	Iz 400/3/50							
	Max. running current	A	150	300	450	600	750	900		
characteristics	Max. starting current	A	5	155	305	455	605	755		
Sound pressure (3		dB(A)	72	74	76	76	77	78		
Majahta	Transport weight	Kg	1849	2919	4065	6587	7942	11716		
Weights	Operating weight	Kg	1990	3200	4510	7340	9040	13460		

DIMENSION	NS		1701-1	2202-1	3303-1	4404-1	5505-1	6606-1
L	STD	mm	3400	3400	3450	4550	5500	6500
W	STD	mm	1100	1150	1800	1800	1800	1800
Н	STD	mm	1800	1950	2050	2100	2100	2150

## CLEARANCE AREA

CWW/TTH/DR 1701-1÷6606-1





- Chilled water from 12 to 7 °C, temperature at the condenser (with ethylene glycol at 35%) from 40 to 45 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.



A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGERS FOR COOLING TOWER OPERATION.















The innovative CWW/TTY 1601-1÷14406-1 TURBOLINE units for cooling tower operation, featuring A CLASS energy efficiency, are designed to provide an effective solution to highly selective system needs. Efficiency at partial loads, low breakaway starting current, low levels of operational noise, reduced weight and the specific design and handling every manufacturing aspect, make the TURBOLINE series the top of the range.

Using TURBOCOR dynamic partial-load oil-free magnetic levitation compressors, managed by the TURBOSOFT self-adaptive electronic control and flooded shell and tube evaporators, provide high energy performance, with unbeatable SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional Screw compressor units, TURBOLINE units have low operational costs during their entire use, with a savings that can even reach 50%. Besides, the units are equipped with the WEB MONITORING system, for remotely managing and monitoring the units by means of GPRS/EDGE/3G/TCP-IP communication protocol. The users enabled to use this service can, through dedicated Web page, access Monitoring, Management and Statistics activities.

#### The units are compliant to the ErP 2021 Regulation.

**VERSION** 

CWW/TTY

Cooling only for cooling tower

On request, units can be supplied with R513A refrigerant (CWW/TTJ 1601-1÷14406-1).

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- · Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- · Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations.
- High efficiency flooded shell and tube type evaporator, with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- · Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- · Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors, interface relay and terminals for external connections.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers
HR	Desuperheater
HRT	Total heat recovery
FE	Antifreeze heater for evaporator
TS	Touch screen Interface
IST	Modbus TCP/IP protocol, Ethernet
	port
ISB	BACnet MSTP protocol, RS485
	serial interface
ISBT	BACnet TCP/IP protocol, Ethernet
	port
ISL	LonWorks protocol, FTT-10 serial
	interface

ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

### **LOOSE ACCESSORIES**

MN	High and low pressure gauges
CR	Remote control panel
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CWW/TTY 1601-1÷14406-1





MODEL			1601-1	2001-1	2501-1	3002-1	3502-1		4203-1	4602-1	5103-1	
	Cooling capacity (1)	kW	319	421	519	642	712	838	962	1040	1260	1302
Cooling	Absorbed power (1)	kW	55	71	85	110	121	141	166	170	213	206
-	EER (1)		5.80	5.93	6.11	5.84	5.88	5.94	5.80	6.12	5.92	6.32
	Cooling capacity (1)	kW	318	420	517	640	710	835	958	1036	1255	1298
	Absorbed power (1)	kW	55	72	87	112	123	143	167	174	216	210
Cooling (EN14511)	EER (1)		5.78	5.83	5.94	5.71	5.77	5.84	5.74	5.95	5.81	6.18
3, ,	SEER (2)		8.15	8.45	8.83	8.66	8.79	8.40	8.40	8.78	8.67	9.13
	Energy Efficiency (2)	%	318	330	345	338	344	328	328	343	339	357
	Quantity	n°	1	1	1	2	2	2	3	2	3	2
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1	1
oomproood.	Capacity steps	n°					Ster	oless				
	Water flow	I/s	15.24	20.11	24.80	30.67	34.02	40.04	45.96	49.69	60.20	62.21
Evaporator	Pressure drops	kPa	46	48	50	49	42	53	57	53	59	45
Lvaporator	Water connections	DN	100	100	100	125	125	125	150	150	150	150
	Water flow	I/s	17.87	23.51	28.86	35.93	39.80	46.77	53.89	57.81	70.38	72.05
Condenser	Pressure drops	kPa	46	45	37	45	38	46	47	48	44	47
OUNGUISUI	Water connections	DN	100	100	125	125	125	125	150	150	150	150
	Power supply	V/Ph/Hz	100	100	120	120		3/50	100	100	100	100
Electrical	Max. running current	A A	145	231	187	290	462	462	435	374	693	420
characteristics	Max. starting current	A	2	2	2	147	233	233	292	189	464	212
Sound pressure (3)		dB(A)	72	74	74	75	76	77	76	76	77	77
Souria pressure (S)	Transport weight	Kg	1795	2060	2360	2870	3225	3325	3715	3540	4235	4155
				2000	2000							
Ü	Operating weight	Kg	1920 <b>5303-1</b>	2230 <b>5703</b> -1	2580 6204-1	3120 <b>7303-1</b>	3560 <b>7603-1</b>	3660 <b>8104-1</b>	4070 <b>9704-1</b>	3940 10104-1	4720 12605-1	4740 14406-
Weights  MODEL  Cooling					6204-1 1676 281	<b>7303-1</b> 1787 295		'	'	1	'	14406- 3912 617
MODEL	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1)	kW kW	5303-1 1427 238 6.00	5703-1 1563 257 6.08	6204-1 1676 281 5.96	<b>7303-1</b> 1787 295 6.06	<b>7603-1</b> 1944 306 6.35	8104-1 2080 341 6.10	9704-1 2382 396 6.02	10104-1 2600 411 6.33	12605-1 3245 511 6.35	3912 617 6.34
MODEL	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1)	Kg	5303-1 1427 238 6.00 1423	5703-1 1563 257 6.08 1559	6204-1 1676 281 5.96 1671	7303-1 1787 295 6.06 1783	<b>7603-1</b> 1944 306 6.35 1939	8104-1 2080 341 6.10 2075	9704-1 2382 396 6.02 2376	2600 411 6.33 2592	12605-1 3245 511 6.35 3234	3912 617 6.34 3898
MODEL	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1)	kW kW	5303-1 1427 238 6.00 1423 242	5703-1 1563 257 6.08	6204-1 1676 281 5.96 1671 286	7303-1 1787 295 6.06 1783 298	7603-1 1944 306 6.35 1939 311	8104-1 2080 341 6.10 2075 346	9704-1 2382 396 6.02 2376 401	10104-1 2600 411 6.33 2592 419	12605-1 3245 511 6.35 3234 522	3912 617 6.34 3898 631
MODEL Cooling	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW kW	5303-1 1427 238 6.00 1423 242 5.88	5703-1 1563 257 6.08 1559 260 6.00	6204-1 1676 281 5.96 1671 286 5.84	7303-1 1787 295 6.06 1783 298 5.98	7603-1 1944 306 6.35 1939 311 6.23	8104-1 2080 341 6.10 2075 346 6.00	9704-1 2382 396 6.02 2376 401 5.93	10104-1 2600 411 6.33 2592 419 6.19	12605-1 3245 511 6.35 3234 522 6.20	3912 617 6.34 3898 631 6.18
MODEL Cooling	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1)	kW kW	5303-1 1427 238 6.00 1423 242	5703-1 1563 257 6.08 1559 260	6204-1 1676 281 5.96 1671 286	7303-1 1787 295 6.06 1783 298 5.98 9.52	7603-1 1944 306 6.35 1939 311 6.23 9.58	8104-1 2080 341 6.10 2075 346 6.00 9.58	9704-1 2382 396 6.02 2376 401	10104-1 2600 411 6.33 2592 419 6.19 9.22	12605-1 3245 511 6.35 3234 522	14406- 3912 617 6.34 3898 631 6.18 9.52
MODEL Cooling	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW kW kW	5303-1 1427 238 6.00 1423 242 5.88	5703-1 1563 257 6.08 1559 260 6.00	6204-1 1676 281 5.96 1671 286 5.84	7303-1 1787 295 6.06 1783 298 5.98 9.52 373	7603-1 1944 306 6.35 1939 311 6.23	8104-1 2080 341 6.10 2075 346 6.00	9704-1 2382 396 6.02 2376 401 5.93	10104-1 2600 411 6.33 2592 419 6.19	3245 511 6.35 3234 522 6.20 9.50 372	14406- 3912 617 6.34 3898 631 6.18 9.52 373
MODEL Cooling	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)	kW kW kW kW	5303-1 1427 238 6.00 1423 242 5.88 9.01	5703-1 1563 257 6.08 1559 260 6.00 8.81	6204-1 1676 281 5.96 1671 286 5.84 9.24	7303-1 1787 295 6.06 1783 298 5.98 9.52	7603-1 1944 306 6.35 1939 311 6.23 9.58	8104-1 2080 341 6.10 2075 346 6.00 9.58	9704-1 2382 396 6.02 2376 401 5.93 9.20	10104-1 2600 411 6.33 2592 419 6.19 9.22	12605-1 3245 511 6.35 3234 522 6.20 9.50	14406- 3912 617 6.34 3898 631 6.18 9.52
MODEL Cooling Cooling (EN14511)	Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2)	kW kW kW	5303-1 1427 238 6.00 1423 242 5.88 9.01 352	5703-1 1563 257 6.08 1559 260 6.00 8.81 344	6204-1 1676 281 5.96 1671 286 5.84 9.24 362	7303-1 1787 295 6.06 1783 298 5.98 9.52 373	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4	9704-1 2382 396 6.02 2376 401 5.93 9.20 360	10104-1 2600 411 6.33 2592 419 6.19 9.22 361	3245 511 6.35 3234 522 6.20 9.50 372	14406- 3912 617 6.34 3898 631 6.18 9.52 373
MODEL Cooling Cooling (EN14511)	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity	kW kW kW kW	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4	10104-1 2600 411 6.33 2592 419 6.19 9.22 361 4	3245 511 6.35 3234 522 6.20 9.50 372 5	3912 617 6.34 3898 631 6.18 9.52 373 6
MODEL Cooling Cooling (EN14511)	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits	kW kW kW kW n°	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4	10104-1 2600 411 6.33 2592 419 6.19 9.22 361 4	3245 511 6.35 3234 522 6.20 9.50 372 5	3912 617 6.34 3898 631 6.18 9.52 373 6
MODEL Cooling Cooling (EN14511) Compressor	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps	kW kW kW kW n° n°	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3 1 68.18 45	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 olless 99.38 36	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4 1	2600 411 6.33 2592 419 6.19 9.22 361 4 1	3245 511 6.35 3234 522 6.20 9.50 372 5 1	3912 617 6.34 3898 631 6.18 9.52 373 6 1
MODEL Cooling Cooling (EN14511) Compressor	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow	kW kW kW kW n° n°	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3 1	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88	2080 341 6.10 2075 346 6.00 9.58 375 4 1 1 oless 99.38	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4	2600 411 6.33 2592 419 6.19 9.22 361 4	3245 511 6.35 3234 522 6.20 9.50 372 5 1	3912 617 6.34 3898 631 6.18 9.52 373 6 1
MODEL Cooling Cooling (EN14511) Compressor	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW kW kW % n° n° n°	5303-1  1427 238 6.00  1423 242 5.88 9.01 352 3 1  68.18 45 200 79.55	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200 99.47	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 olless 99.38 36	9704-1  2382  396  6.02  2376  401  5.93  9.20  360  4  1  114  37  250  133	2600 411 6.33 2592 419 6.19 9.22 361 4 1	3245 511 6.35 3234 522 6.20 9.50 372 5 1 1 155 58 300 179	3912 617 6.34 3898 631 6.18 9.52 373 6 1
MODEL Cooling Cooling (EN14511) Compressor Evaporator	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	kW kW kW kW % n° n° l/s kPa	5303-1  1427 238 6.00 1423 242 5.88 9.01 352 3 1  68.18 45 200	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 1 1 1 1 1 1 2 3 3 4 1 2 3 4 1 2 3 4 1 2 3 4 5 4 1 1 2 3 4 5 4 5 4 5 4 5 4 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4 1 114 37 250	2600 411 6.33 2592 419 6.19 9.22 361 4 1	3245 511 6.35 3234 522 6.20 9.50 372 5 1	3912 617 6.34 3898 631 6.18 9.52 373 6 1
MODEL Cooling Cooling (EN14511) Compressor Evaporator	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow	kW kW kW kW % n° n° n° l/s kPa DN	5303-1  1427 238 6.00  1423 242 5.88 9.01 352 3 1  68.18 45 200 79.55	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200 99.47	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	9704-1  2382  396  6.02  2376  401  5.93  9.20  360  4  1  114  37  250  133	2600 411 6.33 2592 419 6.19 9.22 361 4 1	3245 511 6.35 3234 522 6.20 9.50 372 5 1 1 155 58 300 179	3912 617 6.34 3898 631 6.18 9.52 373 6 1
MODEL Cooling Cooling (EN14511) Compressor Evaporator Condenser	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water roons Water connections Water connections	kW kW kW kW kW n° n° n° l/s kPa DN l/s kPa	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3 1 68.18 45 200 79.55	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1 74.68 54 200 86.96	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1 80.08 48 200 93.50 35	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 20 99.47 36	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108 45	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 1 eless 99.38 36 200 116 46 250	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4 1 114 37 250 133 36	2600 411 6.33 2592 419 6.19 9.22 361 4 1 1 124 48 250 144 46	12605-1 3245 511 6.35 3234 522 6.20 9.50 372 5 1 155 58 300 179 50	3912 617 6.34 3898 631 6.18 9.52 373 6 1 187 62 300 216 52
MODEL Cooling Cooling (EN14511) Compressor Evaporator Condenser Electrical	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply	kW kW kW kW % n° n° n° l/s kPa DN l/s kPa	5303-1 1427 238 6.00 1423 242 5.88 9.01 352 3 1 68.18 45 200 79.55	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1 74.68 54 200 86.96	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1 80.08 48 200 93.50 35	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 20 99.47 36	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108 45	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 0less 99.38 36 200 116 46	9704-1 2382 396 6.02 2376 401 5.93 9.20 360 4 1 114 37 250 133 36	2600 411 6.33 2592 419 6.19 9.22 361 4 1 1 124 48 250 144 46	12605-1 3245 511 6.35 3234 522 6.20 9.50 372 5 1 155 58 300 179 50	3912 617 6.34 3898 631 6.18 9.52 373 6 1 187 62 300 216 52
MODEL Cooling Cooling (EN14511) Compressor Evaporator Condenser Electrical	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current	kW kW kW kW n° n° n° l/s kPa DN l/s kPa DN V/Ph/Hz	5303-1  1427 238 6.00 1423 242 5.88 9.01 352 3 1  68.18 45 200 79.55 42 200	5703-1  1563 257 6.08 1559 260 6.00 8.81 344 3 1  74.68 54 200 86.96 49 200	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1 80.08 48 200 93.50 35 200	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200 99.47 36 200	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108 45 200 400/	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 bless 99.38 36 200 116 46 250 3/50 748	9704-1  2382  396  6.02  2376  401  5.93  9.20  360  4  1  114  37  250  133  36  250	2600 411 6.33 2592 419 6.19 9.22 361 4 1 124 48 250 144 46 250	12605-1 3245 511 6.35 3234 522 6.20 9.50 372 5 1 155 58 300 179 50 300	3912 617 6.34 3898 631 6.18 9.52 373 6 1 187 62 300 216 52 300
MODEL Cooling Cooling (EN14511) Compressor Evaporator Condenser Electrical characteristics	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW kW % n° n° l/s kPa DN l/s kPa DN V/Ph/Hz A	5303-1  1427 238 6.00 1423 242 5.88 9.01 352 3 1  68.18 45 200 79.55 42 200	5703-1 1563 257 6.08 1559 260 6.00 8.81 344 3 1 1 74.68 54 200 86.96 49 200	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1 80.08 48 200 93.50 35 200	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200 99.47 36 200	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108 45 200 400/ 630	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 0less 99.38 36 200 116 46 250 3/50	9704-1  2382  396  6.02  2376  401  5.93  9.20  360  4  1  114  37  250  133  36  250	2600 411 6.33 2592 419 6.19 9.22 361 4 1 1 124 48 250 144 46 250	12605-1 3245 511 6.35 3234 522 6.20 9.50 372 5 1 155 58 300 179 50 300	3912 617 6.34 3898 631 6.18 9.52 373 6 1 187 62 300 216 52 300
MODEL Cooling Cooling (EN14511) Compressor Evaporator Condenser Electrical	Operating weight  Cooling capacity (1) Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW kW % n° n° n° l/s kPa DN l/s kPa DN l/s kPa A	5303-1  1427 238 6.00 1423 242 5.88 9.01 352 3 1  68.18 45 200 79.55 42 200  561 376	5703-1  1563 257 6.08 1559 260 6.00 8.81 344 3 1  74.68 54 200 86.96 49 200	6204-1 1676 281 5.96 1671 286 5.84 9.24 362 4 1 80.08 48 200 93.50 35 200	7303-1 1787 295 6.06 1783 298 5.98 9.52 373 3 1 85.38 28 200 99.47 36 200 630 422	7603-1 1944 306 6.35 1939 311 6.23 9.58 375 3 1 Step 92.88 36 200 108 45 200 400/ 630 422	8104-1 2080 341 6.10 2075 346 6.00 9.58 375 4 1 1 oless 99.38 36 200 116 46 250 3/50 748 563	9704-1  2382  396  6.02  2376  401  5.93  9.20  360  4  1  114  37  250  133  36  250  840  632	2600 411 6.33 2592 419 6.19 9.22 361 4 1 1 24 48 250 144 46 250	12605-1 3245 511 6.35 3234 522 6.20 9.50 372 5 1 155 58 300 179 50 300	3912 617 6.34 3898 631 6.18 9.52 373 6 1 187 62 300 216 52 300

DIMENSION	NS .		1601-1	2001-1	2501-1	3002-1	3502-1	4002-1	4203-1	4602-1	5103-1	5202-1
L	STD	mm	3400	3400	3400	3400	3400	3400	3400	3400	3450	3450
W	STD	mm	1100	1150	1150	1150	1250	1250	1700	1300	1800	1400
Н	STD	mm	1800	1850	1950	1950	2000	2000	2000	2050	2050	2100
DIMENSION	NS .		5303-1	5703-1	6204-1	7303-1	7603-1	8104-1	9704-1	10104-1	12605-1	14406-1
L	STD	mm	3450	3450	4500	4500	4500	4500	4750	4750	5750	6750
W	STD	mm	1800	1800	1750	1800	1800	1800	1800	1800	1950	2100

## CLEARANCE AREA

CWW/TTY 1601-1÷14406-1

500 500 800 500



- Chilled water from 12 to 7 °C, water temperature at the condenser from 30 to 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

# CWW/TTY/DR 1601-1÷6204-1

A CLASS ENERGY EFFICIENCY WATERCOOLED LIQUID CHILLERS WITH TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGERS FOR DRY-COOLER OPERATION.



















The innovative CWW/TTY/DR 1601-1÷6204-1 TURBOLINE units for Dry-Cooler operation, featuring A CLASS energy efficiency, are designed to provide an effective solution for highly selective system needs. Efficiency at partial loads, low breakaway starting current, low levels of operational noise, reduced weight and the specific design and handling every manufacturing aspect, make the TURBOLINE series the top of the range.

Using TURBOCOR dynamic partial-load oil-free magnetic levitation compressors, managed by the TURBOSOFT self-adaptive electronic control and flooded shell and tube evaporators, provide high energy performance, with unbeatable SEER values, with minimum water content, and an excellent silent functioning. Compared to traditional Screw compressor units, TURBOLINE units have low operational costs during their entire use, with a savings that can even reach 50%. Besides, the units are equipped with the WEB MONITORING system, for remotely managing and monitoring the units by means of GPRS/EDGE/3G/TCP-IP communication protocol. The users enabled to use this service can, through dedicated Web page, access Monitoring, Management and Statistics activities.

#### The units are compliant to the ErP 2021 Regulation.

On request, units can be supplied with R513A refrigerant (CWW/TTJ/DR 1601-1÷6204-1).

### **VERSION**

CWW/TTY/DR

Cooling only for Dry-Cooler

### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- · Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- · Shell and tube type condenser, with easily removable cast iron heads to enable access for maintenance operations.
- High efficiency flooded shell and tube type evaporator, with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- · Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors, interface relay and terminals for external connections.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/ EDGE/3G/TCP-IP network.

### **ACCESSORIES**

### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers
HR	Desuperheater
HRT	Total heat recovery
FE	Antifreeze heater for evaporator
TS	Touch screen Interface
IST	Modbus TCP/IP protocol, Ethernet
	port
ISB	BACnet MSTP protocol, RS485
	serial interface
ISBT	BACnet TCP/IP protocol, Ethernet
	port
ISL	LonWorks protocol, FTT-10 serial
	interface

ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

### LOOSE ACCESSORIES

	100200011120
MN	High and low pressure gauges
CR	Remote control panel
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch



## CWW/TTY/DR 1601-1÷6204-1



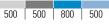


MODEL			1601-1	2001-1	3002-1	4002-1	4203-1	5103-1	6204-1
	Cooling capacity (1)	kW	298	395	598	792	894	1185	1584
Cooling	Absorbed power (1)	kW	70	92	141	186	211	277	372
Ü	EER (1)		4.26	4.29	4.24	4.26	4.24	4.28	4.26
	Cooling capacity (1)	kW	297	394	596	789	891	1180	1579
	Absorbed power (1)	kW	71	94	144	189	214	282	376
Cooling (EN14511)	EER (1)		4.18	4.19	4.14	4.17	4.16	4.18	4.20
	SEER (2)		8.15	8.45	8.66	8.40	8.40	8.67	9.24
	Energy Efficiency (2)	%	318	330	338	328	328	339	362
	Quantity	n°	1	1	2	2	3	3	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1
	Capacity steps	n°				Stepless			
	Water flow	l/s	14.24	18.87	28.57	37.84	42.71	56.62	75.68
Evaporator	Pressure drops	kPa	44	45	48	50	54	56	42
	Water connections	DN	100	100	125	125	150	150	200
	Water flow	l/s	19.20	25.40	38.55	51.02	57.64	76.26	102
Condenser	Pressure drops	kPa	58	52	57	53	59	52	40
	Water connections	DN	100	100	125	125	150	150	200
Electrical	Power supply	V/Ph/Hz				400/3/50			
	Max. running current	А	145	231	290	462	435	693	924
characteristics	Max. starting current	A	2	2	147	233	292	464	695
Sound pressure (3)		dB(A)	72	74	75	76	76	77	78
Majahta	Transport weight	Kg	1840	2115	2955	3430	3855	4415	7555
Weights	Operating weight	Kg	1980	2300	3220	3790	4240	4940	8450

DIMENSION	NS .		1601-1	2001-1	3002-1	4002-1	4203-1	5103-1	6204-1
L	STD	mm	3400	3400	3400	3400	3400	3450	4500
W	STD	mm	1100	1150	1150	1250	1700	1800	1750
Н	STD	mm	1800	1850	1950	2000	2000	2050	2100

## **CLEARANCE AREA**

CWW/TTY/DR 1601-1÷6204-1





- Chilled water from 12 to 7 °C, temperature at the condenser (with ethylene glycol at 35%) from 40 to 45 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.



# **CHAPTER 4**

DRY-COOLERS AND HYDRONIC MODULES

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RCW/SL 6122÷9281	174 - 175
RCW/SSL 6132÷9282	176 - 177
MR 50÷80	178 - 179
MR 1500÷2500	180 - 181

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# RCW 6121÷9282

### DRY-COOLERS WITH AXIAL FANS.









The Dry-Coolers with axial fans of the RCW series are designed to be combined with watercooled liquid Chillers (CWW).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

**RCW** 

Base unit

## **FEATURES**

- Frame in pre-painted galvanised steel casework.
- · The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger with fins cut and special louver configuration to give the best external coefficient of heat exchange and threated warer connections.

### **COMBINATIONS**

CWW/K-CWW/G	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
RCW	6121	8111	6132	6134	8121	8122	6141	8131	8132	6151
CWW/K-CWW/G	182	202	242	262	302	363	393	453	524	604
RCW	6121	8111	6132	6134	8121	8122	6141	8131	8132	6151
CWW/K-CWW/G	726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P
RCW	8141	8141	8152	8152	8241	8241	8242	8243	8243	8252
CWW/K-CWW/G	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P			
RCW	8261	9261	9261	9271	9282	9282	2x8262			
CWW/K-CWW/G	726	786	826	906	1048	1128	1208	13010	15010	16812
RCW	8141	8141	8152	8152	8241	8241	8242	8243	8243	8252
CWW/K-CWW/G	18012	21012	24012	27012	30012	33012	36012			
RCW	8261	9261	9261	9271	9282	9282	2x8262			
CWW/H/A	351-P	601-P	801-P	901-P						
RCW	6134	8122	8131	6151						
CWW/H/A	1002	1202	1402	1602	1802	2202	2502	2802	3302	3602
RCW	8141	8231	8241	8242	8243	8252	8261	9261	9271	9282
CWW/H/A	4602	4802	5402	6002						
RCW	9282	2x8262	2x9261	2x9262						

CWW/Y/A-CWW/J/A	1302	1502	1702	1902	2002	2602	2802	3002	3602	4202
RCW	8152	8241	8241	8242	8243	8261	9261	9261	9271	9282
CWW/Y/A-CWW/J/A	4802									
RCW	2x8262									
CWW/Y/A-CWW/J/A	1002-T	1202-T	1402-T	1602-T	1802-T	2202-T	2502-T	2802-T	3302-T	3602-T
RCW	8141	8231	8241	8242	8243	8252	8261	9261	9271	9282
CWW/Y/A-CWW/J/A	4602-T	4802-T	5402-T	6002-T	6602-T	7202-T				
RCW	9282	2x8262	2x9261	2x9262	2x9281	3x8262				
CWW/Y-CWW/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCW	8151	8231	8241	8242	8243	8252	8261	9261	9271	9282
CWW/Y-CWW/J	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B		
RCW	9282	2x8262	2x9261	2x9262	2x9271	2x9281	3x8262	3x9261		
CWW/TTH/DR	1701-1	2202-1	3303-1	4404-1	5505-1	6606-1				
RCW	8242	9271	9282	2x8262	2x9271	2x9282				
CWW/TTY/DR - CWW/TTJ/DR	1601-1	2001-1	3002-1	4002-1	4203-1	5103-1	6204-1			
RCW	8242	8252	9271	9282	9282	2x8262	2x9282			

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

SD Wiring integrated in branch

circuit box

FR Fan speed control

### LOOSE ACCESSORIES

SVV Supports for vertical air flow versions



## RCW 6121÷9282

MODEL			6121	6131	6132	6133	6134	6141	6151	8111	8121	8122	8131	8132	8141	8151	8152
Fan	Air flow	m³/s	4.67	7.32	7.01	6.56	12.31	15.44	17.86	5.18	10.83	10.37	16.25	15.55	20.73	27.08	25.92
Ган	Quantity	n°	2	3	3	3	3	4	5	1	2	2	3	3	4	5	5
Connections	In	Ø mm	42	42	54	54	54	54	80	42	70	70	80	102	102	70	70
COHHECTIONS	Out	Ø mm	42	42	54	54	54	54	80	42	70	70	80	102	102	70	70
Electrical	Power supply	V/Ph/Hz							4	00/3/5	0						
characteristics	Absorbed power	kW	1.32	1.98	1.98	1.98	4.95	6.60	8.25	2.00	4.00	4.00	6.00	6.00	8.00	10.00	10.00
Characteristics	Absorbed current	Α	2.6	3.9	3.9	3.9	9.3	12.4	15.5	4.0	8.0	8.0	12.0	12.0	16.0	20.0	20.0
Sound pressure	STD version (1)	dB(A)	49	51	51	51	57	58	59	49	52	52	53	53	54	55	55
Maighta	Transport weight	Kg	145	191	205	245	239	337	516	182	308	326	470	497	646	684	724
Voiupte ⊢	Operating weight	Kg	160	211	225	265	259	367	566	197	333	351	520	547	706	754	794

MODEL			8231	8232	8241	8242	8243	8251	8252	8261	8262	9261	9262	9271	9281	9282
Г	Air flow	m³/s	31.96	30.45	44.80	42.62	40.60	53.28	50.75	63.93	65.33	68.50	65.33	76.22	91.33	87.11
Fan	Quantity	n°	6	6	8	8	8	10	10	12	12	12	12	14	16	16
Connections	In	Ø mm	102	2x102	102	102	2x102	2x102	3x102	3x102	3x102	4x80	4x80	6x102	4x102	6x102
COHHECTIONS	onnections Out			2x102	102	102	2x102	2x102	3x102	3x102	3x102	4x80	4x80	6x102	4x102	6x102
lectrical P	Power supply	V/Ph/Hz							400/	3/50						
characteristics	Absorbed power	kW	12.00	12.00	16.00	16.00	16.00	20.00	20.00	24.00	24.00	24.00	24.00	28.00	32.00	32.00
CHAIACTERISTICS	Absorbed current	Α	24.0	24.0	32.0	32.0	32.0	40.0	40.0	48.0	48.0	48.0	48.0	56.0	64.0	64.0
Sound pressure					57	57	57	58	58	58	59	59	59	59	60	60
Noights	Transport weight	Kg	860	910	994	1204	1274	1548	1638	1892	3390	3060	3390	3890	3960	4380
	Operating weight	Kg	950	1000	1094	1304	1374	1658	1748	2032	3530	3360	3690	4240	4360	4780

DIMENSION	IS		6121	6131	6132	6133	6134	6141	6151	8111	8121	8122	8131	8132	8141	8151	8152
L	STD	mm	2425	3525	3525	3525	3525	4625	5725	1803	3278	3278	4753	4753	6228	7703	7703
W	STD	mm	630	630	630	630	630	630	630	795	795	795	795	795	795	795	795
Н	STD	mm	1098	1098	1098	1098	1098	1098	1098	1272	1272	1272	1272	1272	1272	1272	1272
DIMENSION	IS		8231	8232	8241	8242	8243	825	51 82	252	3261	8262	9261	9262	9271	9281	9282
L	STD	mm	4783	4783	6258	6258	6258	773	33   7	733	9208	9208	6920	6920	8020	9120	9120
W	STD	mm	878	878	878	878	878	87	8 8	78	878	878	2350	2350	2350	2350	2350
Н	STD	mm	2322	2322	2322	2322	2322	232	22 23	322	2322	2322	2450	2450	2450	2450	2450

## CLEARANCE AREA

RCW 6121÷9262

RCW 9271÷9282





- Sound pressure level measured in free field conditions at 10 m from
- the unit. According to ISO 3744.

  N.B. Combinations are made at ambient air temperature 35 °C, In-Out water temperature 50/45°C (with ethylene glycol at 35%).

  N.B. Clearance areas are specified on installation, use and maintenance manual.

# RCW/SL 6122+9281

SILENCED DRY-COOLERS WITH AXIAL FANS.











The Dry-Coolers with axial fans of the RCW/SL series are designed to be combined with watercooled liquid Chillers (CWW).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

RCW/SL

Silenced unit

### **FEATURES**

- Frame in pre-painted galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger with fins cut and special louver configuration to give the best external coefficient of heat exchange and threated warer connections.

### **COMBINATIONS**

CWW/K-CWW/G	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P	CWW/Y/A-CWW/J/A	1302	1502	1
RCW/SL	6122	6131	6141	8121	8131	6151	6152	8132	8142	8142	RCW/SL	8231	8242	8
CWW/K-CWW/G	182	202	242	262	302	363	393	453	524	604	CWW/Y/A-CWW/J/A	4802		
RCW/SL	6122	6131	6141	8121	8131	6151	6152	8132	8142	8142	RCW/SL	2x9262		
CWW/K-CWW/G	726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	CWW/Y/A-CWW/J/A	1002-T	1202-T	14
RCW/SL	8152	8152	8231	8231	8242	8243	8251	8252	8252	8262	RCW/SL	8152	8241	8
CWW/K-CWW/G	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P				CWW/Y/A-CWW/J/A	4602-T	4802-T	54
RCW/SL	9261	9271	9271	9281	2x8252	2x8261	2x9262				RCW/SL	2x8261	2x9262	2x
CWW/K-CWW/G	726	786	826	906	1048	1128	1208	13010	15010	16812	CWW/Y-CWW/J	1302-B	1502-B	17
RCW/SL	8152	8152	8231	8231	8242	8243	8251	8252	8252	8262	RCW/SL	8152	8241	8
CWW/K-CWW/G	18012	21012	24012	27012	30012	33012	36012				CWW/Y-CWW/J	4402-B	4802-B	54
RCW/SL	9261	9271	9271	9281	2x8252	2x8261	2x9262				RCW/SL	2x8261	2x9262	2x
CWW/H/A	351-P	601-P	801-P	901-P							CWW/TTH/DR	1701-1	2202-1	33
RCW/SL	8121	6151	8132	8142							RCW/SL	8251	9281	2x
CWW/H/A	1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	CWW/TTY/DR -	1601-1	2001-1	30
RCW/SL	8152	8241	8242	8251	8252	8262	9261	9271	9281	2x8252	CWW/TTJ/DR RCW/SL	8251	8262	9
CWW/H/A	4602	4802	5402	6002							HOVY/JL	0231	0202	_ ~
RCW/SL	2x8261	2x9262	2x9271	2x9272										

CWW/Y/A-CWW/J/A	1302	1502	1702	1902	2002	2602	2802	3002	3602	4202
RCW/SL	8231	8242	8243	8251	8252	9261	9271	9271	9281	2x8261
CWW/Y/A-CWW/J/A										
RCW/SL	2x9262									
CWW/Y/A-CWW/J/A	1002-T	1202-T	1402-T	1602-T	1802-T	2202-T	2502-T	2802-T	3302-T	3602-T
RCW/SL	8152	8241	8242	8251	8252	8262	9261	9271	9281	2x8252
NCW/SL	0102	0241	0242	0201	0202	0202	9201	92/1	9201	ZX0Z0Z
CWW/Y/A-CWW/J/A	4602-T	4802-T	5402-T	6002-T	6602-T	7202-T				
RCW/SL	2x8261	2x9262	2x9271	2x9272	3x9261	3x9262				
CWW/Y-CWW/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-B
RCW/SL	8152	8241	8242	8251	8252	8262	9261	9271	9281	2x8252
01404/0/01404///	4400 D	1000 D	5 400 D	2222 B	2222 B	7000 D	0400 D	0000 B		
CWW/Y-CWW/J	4402-B	1002 5					8102-B			
RCW/SL	2x8261	2x9262	2x9271	2x9272	2x9281	3x9261	3x9262	3x9271		
OLANA (TTILLIDE	4704.4	0000 4	0000 4			00004				
CWW/TTH/DR	1701-1	2202-1	3303-1		5505-1	6606-1				
RCW/SL	8251	9281	2x8261	2x9262	2x9281	4x8261				
CWW/TTY/DR -	4004.4	0004.4	0000 4	4000.4	4000.4	5400 A	20244			
CWW/TTJ/DR	1601-1	2001-1	3002-1	4002-1	4203-1	5103-1	6204-1			
RCW/SL	8251	8262	9281	2x8261	2x8261	2x9262	4x8261			

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

SD Wiring integrated in branch

circuit box

FR Fan speed control

**LOOSE ACCESSORIES** 

SVV Supports for vertical air flow versions



## RCW/SL 6122÷9281

MODEL			6122	6131	6132	6141	6151	6152	8121	8131	8132	8141	8142	8151	8152
Fon	Air flow	m³/s	4.67	6.01	5.66	8.01	9.04	10.90	8.24	13.10	11.78	16.49	15.71	20.61	19.64
Fan	Quantity	n°	2	3	3	4	5	5	2	3	3	4	4	5	5
Connections	In	Ø mm	42	54	54	54	70	80	54	70	70	80	102	102	102
COLLIECTIONS	Out	Ø mm	42	54	54	54	70	80	54	70	70	80	102	102	102
Electrical	Power supply	V/Ph/Hz							400/3/50	)					
characteristics	Absorbed power	kW	1.32	1.20	1.20	1.60	2.00	3.30	2.50	3.75	3.75	5.00	5.00	6.25	6.25
Cildiacteristics	Absorbed current	Α	2.6	2.1	2.1	2.8	3.5	6.5	4.6	6.9	6.9	9.2	9.2	11.5	11.5
Sound pressure	SL version (1)	dB(A)	49	44	44	45	46	52	45	47	47	48	48	49	49
Weights	Transport weight	Kg	145	145	145	145	388	448	308	388	497	611	646	684	724
vveignts	Operating weight	Kg	160	165	165	175	438	498	333	438	547	671	706	754	794
MODEL			8231	8241	8242	8243	8251	8252	8261	8262	9261	9262	9271	9272	9281
Fon	Air flow	m³/s	21.95	34.90	32.26	29.27	40.32	36.58	48.39	43.90	52.33	49.08	61.06	57.26	65.44
Fan	Quantity	n°	6	8	8	8	10	10	12	12	12	12	14	14	16
Connections	In	Ø mm	2x102	102	102	102	2x102	2x102	3x102	3x102	2x102	2x102	2x102	4x80	4x80
Connections	Out	Ø mm	2x102	102	102	102	2x102	2x102	3x102	3x102	2x102	2x102	2x102	4x80	4x80
Electrical	Power supply	V/Ph/Hz							400/3/50	)					
	Absorbed power	kW	7.50	10.00	10.00	10.00	12.50	12.50	15.00	15.00	15.00	15.00	17.50	17.50	20.00
characteristics	Absorbed current	Α	13.8	18.4	18.4	18.4	23.0	23.0	27.6	27.6	27.6	27.6	32.2	32.2	36.8
Sound pressure	SL version (1)	dB(A)	50	51	51	51	51	51	52	52	52	52	53	53	53
Maighta	Transport weight	Kg	910	994	1204	1274	1548	1638	1892	2200	3060	3390	3510	3890	4380
Weights	Operating weight	Kg	1000	1094	1304	1374	1658	1748	2032	2340	3360	3690	3860	4240	4780

DIMENSION	IS		6122	6131	6132	6141	6151	6152	8121	8131	8132	8141	8142	8151	8152
L	SL	mm	2425	3525	3525	4625	5725	5725	3278	4753	4753	6228	6228	7703	7703
W	SL	mm	630	630	630	630	630	630	795	795	795	795	795	795	795
Н	SL	mm	1098	1098	1098	1098	1098	1098	1272	1272	1272	1272	1272	1272	1272
<b>DIMENSION</b>	IS		8231	8241	8242	8243	8251	8252	8261	8262	9261	9262	9271	9272	9281
L	SL	mm	4783	6258	6258	6258	7733	7733	9208	9208	6920	6920	8020	8020	9120
W	SL	mm	878	878	878	878	878	878	878	878	2350	2350	2350	2350	2350
Н	SL	mm	2322	2322	2322	2322	2322	2322	2322	2322	2450	2450	2450	2450	2450

### CLEARANCE AREA

RCW/SL 6122÷8262

RCW/SL 9261÷9281





- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.
   N.B. Combinations are made at ambient air temperature 35 °C, In-Out water temperature 50/45°C (with ethylene glycol at 35%).
   N.B. Clearance areas are specified on installation, use and maintenance manual.

# RCW/SSL 6132+9282

SUPER SILENCED DRY-COOLERS WITH AXIAL FANS.











The Dry-Coolers with axial fans of the RCW/SSL series are designed to be combined with watercooled liquid Chillers (CWW).

These units, available in three configurations depending on the level of noiselessness required, Standard, Silenced (SL) and Super silenced (SSL), are equipped with latest generation axial fans, with motor fan shrouds having a large radius of curvature to eliminate all the air flow turbulence and with larger plenum to uniform the air distribution on the cooling coil.

The units, except the V shaped ones, can be installed with either horizontal or vertical air delivery, as needed.

### **VERSION**

RCW/SSL

Super silenced unit

### **FEATURES**

- Frame in pre-painted galvanised steel casework.
- The cowlings of the motorfans are made with a wide bending radius to eliminate any turbulence in the air flow.
- Heat exchanger with fins cut and special louver configuration to give the best external coefficient of heat exchange and threated warer connections.

### **COMBINATIONS**

CWW/K-CWW/G	182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P	C	WW/Y/A-CWW/J/A	1302	1502	1702	1902	2002	2602	2802	3002	3602	4202
RCW/SSL	6132	6141	6151	8131	8132	8141	8151	8152	8231	8241	R	CW/SSL	8252	8262	8262	8264	9271	2x8261	2x8262	2x8263	2x9261	2x928
CWW/K-CWW/G	182	202	242	262	302	363	393	453	524	604	C	WW/Y/A-CWW/J/A	4802									
RCW/SSL	6132	6141	6151	8131	8132	8141	8151	8152	8231	8241	R	CW/SSL	3x8264									
CWW/K-CWW/G	726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	C	WW/Y/A-CWW/J/A	1002-T	1202-T	1402-T	1602-T	1802-T	2202-T	2502-T	2802-T	3302-T	3602-
RCW/SSL	8242	8242	8252	8252	8262	8262	8264	9271	9271	9282	R	CW/SSL	8242	8253	8262	8264	9271	9282	2x8261	2x8262	2x9261	2x928
CWW/K-CWW/G	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P				C	WW/Y/A-CWW/J/A	4602-T	4802-T	5402-T	6002-T	6602-T	7202-T				
RCW/SSL	2x8261	2x8262	2x8263	2x9261	2x9282	2x9282	3x8264				R	CW/SSL	2x9282	3x8264	2x9271	2x9282	4x9261	4x9271				
CWW/K-CWW/G	726	786	826	906	1048	1128	1208	13010	15010	16812	C	WW/Y-CWW/J	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	2802-B	3002-B	3602-B	4202-
RCW/SSL	8242	8242	8252	8252	8262	8262	8264	9271	9271	9282	R	CW/SSL	8251	8253	8262	8264	9271	9282	2x8261	2x8262	2x9261	2x928
CWW/K-CWW/G	18012	21012	24012	27012	30012	33012	36012				C	WW/Y-CWW/J	4402-B	4802-B	5402-B	6002-B	6602-B	7202-B	8102-B	9002-B		
RCW/SSL	2x8261	2x8262	2x8263	2x9261	2x9282	2x9282	3x8264				R	CW/SSL	2x9282	3x8264	2x9271	2x9282	3x9282	4x9261	4x9271	4x9282		
CWW/H/A	351-P	601-P	801-P	901-P							C	WW/TTH/DR	1701-1	2202-1	3303-1	4404-1	5505-1	6606-1				
RCW/SSL	8131	8141	8152	8241							R	CW/SSL	8264	2x9261	2x9282	3x8264	4x8264	4x9282				
CWW/H/A	1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	C	WW/TTY/DR -	1601-1	2001 1	2002 1	4002.1	4202 1	5103-1	6204.1			
RCW/SSL	8242	8253	8262	8264	9271	9282	2x8261	2x8262	2x9261	2x9282		WW/TTJ/DR CW/SSL	8264	9282				3x8264				
CWW/H/A	4602	4802	5402	6002								10V1/33E	0204	3202	283201	283202	2.02.02	380204	423202			
RCW/SSL	2x9282	3x8264	2x9271	2x9282																		

### **ACCESSORIES**

**FACTORY FITTED ACCESSORIES** 

SD Wiring integrated in branch

circuit box

FR Fan speed control

**LOOSE ACCESSORIES** 

SVV Supports for vertical air flow versions



## RCW/SSL 6132÷9282

MODEL			6132	6141	6142	6151	6152	8131	8132	8141	8151	8152	8231	8241
Fon	Air flow	m³/s	3.83	5.51	5.11	6.88	6.38	7.80	7.64	9.87	13.11	12.33	15.58	20.78
Fan	Quantity	n°	3	4	4	5	5	3	3	4	5	5	6	8
Connections	In	Ø mm	54	54	54	70	70	70	70	80	80	80	102	102
Connections	Out	Ø mm	54	54	54	70	70	70	70	80	80	80	102	102
Electrical	Power supply	V/Ph/Hz	//Ph/Hz 400/3/50											
characteristics	Absorbed power	kW	0.57	0.76	0.76	0.95	0.95	1.41	1.41	1.48	1.85	1.85	2.22	2.96
Characteristics	Absorbed current	A	1.1	1.5	1.5	1.9	1.9	3.0	3.0	4.8	6.0	6.0	7.2	9.6
Sound pressure	SSL version (1)	dB(A)	35	36	36	37	37	38	38	38	38	38	39	40
Weights	Transport weight	Kg	191	256	273	332	363	470	497	611	562	684	710	994
	Operating weight	Kg	211	286	303	382	413	520	547	671	632	754	800	1094
MODEL			8242	8251	8252	8253	8261	8262	8263	8264	9261	9271	9281	9282
Fan	Air flow	m³/s	19.53	25.97	24.40	24.40	31.17	29.29	30.56	27.35	31.50	36.75	39.66	36.77
ran	Quantity	n°	8	10	10	10	12	12	12	12	12	14	16	16
Connections	In	Ø mm	102	102	2x102	102	102	2x102	3x102	2x102	2x102	2x102	2x102	4x80
Connections	Out	Ø mm	102	102	2x102	102	102	2x102	3x102	2x102	2x102	2x102	2x102	4x80
Electrical	Power supply	V/Ph/Hz						400/	3/50					
	Absorbed power	kW	2.96	3.70	3.70	3.70	4.40	4.40	5.64	5.64	4.44	5.18	7.52	7.52
characteristics	Absorbed current	А	9.6	12.0	12.0	12.0	14.4	14.4	12.0	12.0	14.4	16.8	16.0	16.0
Sound pressure	SSL version (1)	dB(A)	40	41	41	41	42	42	43	43	42	42	44	44
Weights	Transport weight	Kg	1204	1278	1548	1548	1562	1892	1892	2200	3060	3510	3960	4380
vveigiits	Operating weight	Kg	1304	1388	1658	1658	1702	2032	2032	2340	3360	3860	4360	4780

DIMENSION	IS		6132	6141	6142	6151	6152	8131	8132	8141	8151	8152	8231	8241
L	SSL	mm	3525	4625	4625	5725	5725	4753	4753	6228	7703	7703	4783	6258
W	SSL	mm	630	630	630	630	630	795	795	795	795	795	878	878
Н	SSL	mm	1098	1098	1098	1098	1098	1272	1272	1272	1272	1272	2322	2322
DIMENSION	IS		8242	8251	8252	8253	8261	8262	8263	8264	9261	9271	9281	9282
L	SSL	mm	6258	7733	7733	7733	9208	9208	9208	9208	6920	8020	9120	9120
W	SSL	mm	878	878	878	878	878	878	878	878	2350	2350	2350	2350
Н	SSL	mm	2322	2322	2322	2322	2322	2322	2322	2322	2450	2450	2450	2450

### CLEARANCE AREA

RCW/SSL 6132÷8264

RCW/SSL 9261÷9282





- Sound pressure level measured in free field conditions at 10 m from the unit. According to ISO 3744.
   N.B. Combinations are made at ambient air temperature 35 °C, In-Out water temperature 50/45°C (with ethylene glycol at 35%).
   N.B. Clearance areas are specified on installation, use and maintenance manual.

# MR 50÷80

### REMOTE HYDRONIC MODULES.





The Remote Hydronic Modules of the MR 50÷80 series are intended to solve technical problems resulting from thermal inertia in air conditioning systems for both residential and industrial use. Installing a tank for cooled water allows units to reduce the operating cycles of the compressors, thus extending the useful life of the machines. It also results in a greater capacity of the system itself, a remarkable operational saving and a greater flexibility, being able to work with temperatures other than the design temperatures.

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MR 50	MR 80
30 I tank	70 l tank

## **FEATURES**

- Self-supporting frame in peraluman. Easy to remove front panel allows access to the inside of the unit for maintenance and other necessary operations.
- Water circuit includes: insulated inertial tank, safety valve, automatic air release valves, expansion vessel inserted in the storage tank, gauge, air vent valve, plant charge and water drain.

# MR 50÷80

MODEL			50	80
	Tank water volume	I	30	70
Water circuit	Expansion vessel	1	3	3
vvater circuit	Safety valve	bar	3	3
	Water connections	"G	1"	1"
Maighta	Transport weight	Kg	28	36
Weights	Operating weight	Kg	78	116

DIMENSION	IS		50	80
L	STD	mm	240	340
W	STD	mm	320	500
Н	STD	mm	1100	1270

## CLEARANCE AREA

MR 50÷80 600 600 600 800



# MR 1500+2500

#### REMOTE HYDRONIC MODULES WITH PUMP KIT.





The Remote Hydronic Modules with pump kit of the MR 1500÷2500 series are designed to solve technical problems resulting from thermal inertia in air conditioning systems for both residential and industrial use.

Installing a tank for cooled water allows units to reduce the operating cycles of the compressors, thus extending the useful life of the machines. It also results in a greater capacity of the system itself, a remarkable operational saving and a greater flexibility, being able to work with temperatures other than the design temperatures. The tanks are available with a capacity of 1500 and 2500 litres, with circulating pump or double circulating pump accessory and are complete with all the components necessary for a quick on-site installation.

### **VERSION**

MR 1500	MR 2500
With 1500 I tank	With 2500 I tank

#### **FEATURES**

- Self-supporting galvanized steel frame further protected with polyester powder painting. Easy to remove panels allow access to the inside of the unit for maintenance and other necessary operations.
- Electrical board. Present only with the accessories circulating pump, it includes main switch with door safety interlock; automatic switches for
  protection of circulating pumps, of secondary circuit and of antifreeeze heaters, signalling lamps, interface relay and clamps for external connections.
- Water circuit includes: insulated inertial tank, safety valve, automatic air release valves, expansion vessel, gauge, automatic filling group, plant charge and discharge water shut-off valve.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

PU1-PU5 Single circulating pump
PD1-PD5 Double circulating pump
FA Antifreeze heater for tank
FUM Antifreeze heater for tank, single
pump and pipes

FDM Antifreeze heater for tank, double

pump and pipes

# MR 1500÷2500

MODEL			1500	2500
	Tank water volume		1500	2500
D 1.:4	Expansion vessel	1	2x25	3x25
ump kit	Safety valve	bar	3	3
	Water connections	"G	I         1500         2500           I         2x25         3x25           bar         3         3	4"
	STD version	Ka	470	520
mp kit  ansport weight  merating weight  merating absorbed  wer  ax. running	STD+PU1	Ka		
	STD+PU2	Ka		
	STD+PU3	Ka		
	STD+PU4	Ka		
ansport weight	STD+PU5			
ransport weight	STD+PD1	Ka	586	
	STD+PD2	Ka	696	
	STD+PD3	Ka	696	
	STD+PD4		826	878
	STD+PD5	Ka	1055	990
	STD version	Kn		
	STD+PU1	Kn		
	STD+PU2	Kn		
	STD+PU3	Kn		
	STD+PU4	Kn		
nerating weight	STD+PU5	Kn		
operating weight	STD+PD1	Kn		
	STD+PD2	Kn	2198	
	STD+PD3	Kn	2198	
	STD+PD4	Kn	2328	
	STD+PD5			
UMPS ELECTRICA	L CHARACTERISTICS	1,19	2007	0.102
	PU1	kW	3	3
perating weight  JMPS ELECTRICA  ominal absorbed ower	PU2		5.5	5.5
	PU3			
	PU4	kW		
ominal absorbed	PU5		22	
	PD1			
	PD2		11	11
	PD3			
	PD4		30	
	PD5			
	PU1			
	PU2			
	PU3			
	PU4			
lax. running	PU5			
	PD1			
anont.	PD2		77	
	PD3		29.2	29.2
	PD4			
	PD5			

DIMENSION	NS		1500	2500			
L	STD	mm	1900	1900			
W	STD	mm	2260	2260			
Н	STD	mm	1780	1780			

# CLEARANCE AREA

MR 1500÷2500

800	800	800	800



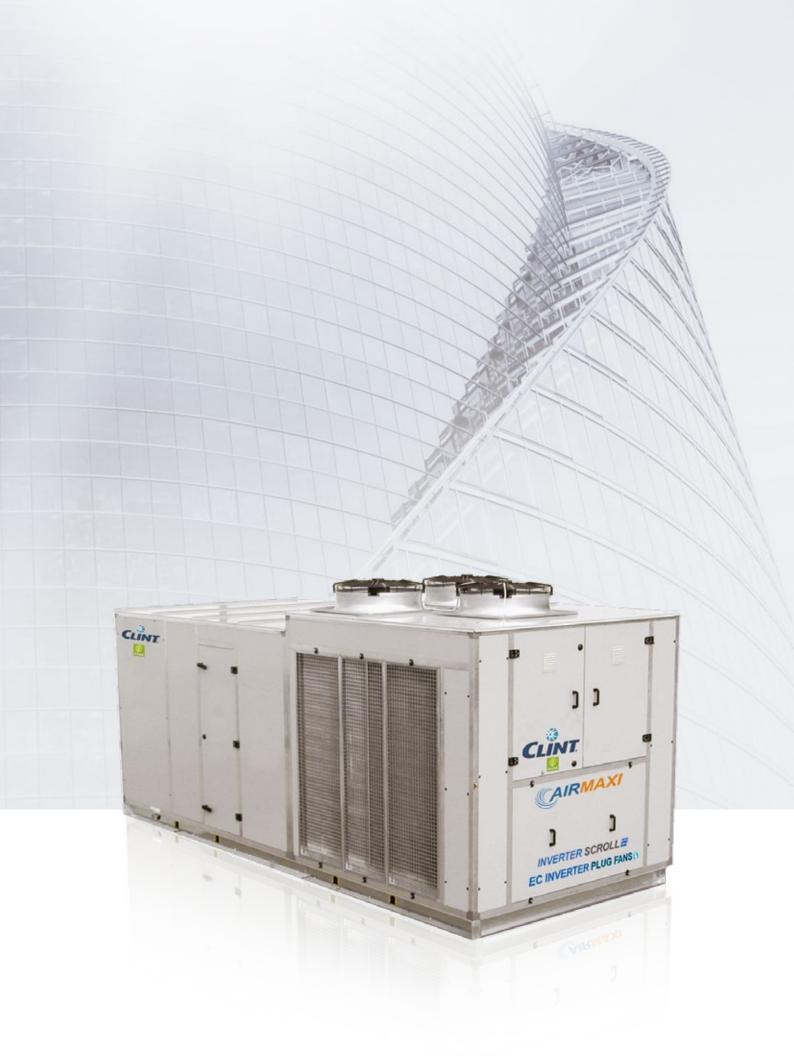
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# **CHAPTER 5**

PACKAGED ROOFTOP UNITS

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RTA/IK/EC/ECO/REC-WH 172÷724	194 - 195
RTA/K 182÷804	196 - 197
RTA/K/MS 182÷804	198 - 199
RTA/K/ECO 182÷804	200 - 201
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# RTA/K/EC/WP 182-R+453-R

SINGLE-SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS AND EC INVERTER PLUG-FANS.





EC INVERTER PLUG FANS















The single skin packaged Roof Top units of the AIRPLUS series are the ideal solution for air conditioning of medium-wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. The units are equipped with Scroll compressors with R410A refrigerant, and are available in Reversible Heat Pump version also with Free-Cooling with 2 or 3 dampers. AIRPLUS is equipped with EC Inverter Plug-Fans with high energy efficiency backward blades both for intake as well as delivery, managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity. The unit can easily adapt to diverse engineering needs thanks to the possibility of selecting onsite the air flow direction, choosing among 8 positions of both intake and output air direction. The unit's structure is made of a frame with extruded aluminium profiles and prepainted panels, and features flat type filters with varying efficiency levels, maintaining high air quality and high comfort.

The unit can be equipped, as an option, with the innovative **Thermodynamic Coil-Boost Heat** Recovery to achieve better performance and efficiency both in cooling and heating up to 15%.

The units are compliant to the ErP Regulation with ECA accessory (EC Inverter fans on condensing section).

#### **VERSION**

RTA/K/EC/WP	RTA/K/EC/WP/MS	RTA/K/EC/WP/ECO
Reversible Heat Pump	Reversible Heat Pump with Free-Cooling section (2 dampers)	Reversible Heat Pump with Economizer (Free-Cooling section with 3 dampers)

#### **FEATURES**

- · Structure of base perimeter made of galvanised steel sheet elements. The frame is made of extruded aluminium alloy profiles connected by 3 way joints. The assembling of the base to the frame is of dual support and grants the walking on the base panels installation of which is effected without sticking out screws. The perimeter panels are realised in prepainted sheet steel, they can be easily removed and allow access inside the unit for maintenance and repair operations.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.

СР

- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- The air treatment section has removable panels allowing the selection of intake and output configurations that adapt to the specific needs of the system.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES			LOOSE	ACCESSORIES
IM	Automatic circuit breakers	AT/P	Constant available static pressure	MN	High and low pressure gauges
SL	Unit silencement		regulation control	CS	Dampers rain hood
THCB	Thermodynamic Coil-Boost Heat Recovery (ECO only)	WS2	2-Row hot water coil with 3-Way valve	CR RP	Remote control panel Coil protection metallic guards
RFM	Cooling circuit shut-off valve on discharge line	EHG	Electrical heater with step regulation	AG	Rubber shock absorbers
RFL	Cooling circuit shut-off valve on	CH	Enthalpic control (ECO only)		
	liquid line	SQ	Air quality sensor		
CT	Condensing control down to 0 °C	SSA	Active sanitation systems		
CC	Condensing control down to -20 °C	PF	Filter differential pressure switch		
ECA	EC Inverter fans on condensing section	IS	Modbus RTU protocol, RS485 serial interface		
TXC	Condensing coil with pre-coated fins	IST	Modbus TCP/IP protocol, Ethernet port		
TXE	Evaporating coil with pre-coated fins	ISB	BACnet MSTP protocol, RS485 serial interface		
FT	Plate filters efficiency M6-F7-F8	ISBT	BACnet TCP/IP protocol, Ethernet		
AT	Constant air flow regulation control		port		
		ISL	LonWorks protocol, FTT-10 serial interface		
		ISS	SNMP protocol, Ethernet port		

Potential free contacts

# RTA/K/EC/WP 182-R÷453-R



MODEL			182-R	202-R	242-R	262-R	302-R	363-R	393-R	453-R
Handina	Heating capacity (1)	kW	62.9	71.1	81.2	92.9	107	123	142	162
Heating	Absorbed power (1).(2)	kW	18.6	21.7	25.2	28.1	31.0	38.1	42.6	50.1
	SCOP (3)		3.09	3.10	3.10	3.14	3.14	3.10	3.12	3.12
U+: /FN14F11)	Energy Efficiency (3)	%	121	121	121	123	123	121	122	122
Heating (EN14511)	SCOP with ECA accessory (3)		3.24	3.26	3.26	3.3	3.3	3.26	3.28	3.28
	Energy Efficiency with ECA accessory (3)	%	127	127	127	129	129	127	128	128
Cooling	Cooling capacity (4)	kW	64.9	73.8	85.6	96.8	111	128	147	171
Cooling	Absorbed power (2).(4)	kW	20.9	24.2	27.2	30.0	35.4	41.1	45.9	54.1
	SEER (5)		3.18	3.16	3.28	3.38	3.32	3.31	3.41	3.39
Cooling (EN14511)	Energy Efficiency (5)	%	124	123	128	132	130	129	133	133
Cooling (EN 14511)	SEER with ECA accessory (5)		3.53	3.54	3.54	3.58	3.55	3.57	3.65	3.63
	Energy Efficiency with ECA accessory (5)	%	138	139	139	140	139	140	143	142
	Air flow	m³/s	2.50	2.78	3.34	3.61	4.44	4.44	5.83	6.67
Air treatment	Available static pressure	Pa	200	200	200	200	200	200	200	200
section	Fan	n°	1	1	1	1	2	2	2	2
	Filter	Tipo	G4							
	Air flow	m³/s	2.00	2.22	2.67	2.89	3.55	3.55	4.72	5.33
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100
	Fan	n°	1	1	1	1	1	1	1	1
Condensing	Compressor	n°	2	2	2	2	2	3	3	3
section	Refrigerant circuits	n°	1	1	1	1	1	1	1	1
26011011	Capacity steps	n°			2			3		
	Heating capacity (6)	kW	65.4	68.6	74.9	78.9	84.9	84.9	103	110
Hot water coil	Air pressure drops	Pa	16	19	26	30	43	43	68	86
Hot water con	Water flow (6)	l/s	1.56	1.64	1.79	1.89	2.03	2.03	2.46	2.62
	Water connections	"G	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz					/3/50			
Electrical heater	Heating capacity	kW	21	27	27	27	40	40	40	48
Liectifical fieater	Max. absorbed current	Α	30	39	39	39	59	59	59	69
	Steps	n°	2	2	2	2	4	4	4	4
Electrical	Power supply	V/Ph/Hz					/3/50			
characteristics	Max. running current	Α	53	56	65	69	79	91	110	131
	Max. starting current	Α	190	165	188	201	208	215	242	260
Sound pressure	STD/MS/ECO versions (7)	dB(A)	56	56	60	60	60	60	61	61
Weights	Transport weight	Kg	1280	1315	1370	1380	1475	1570	1920	2020
vveigitta	Operating weight	Kg	1265	1300	1355	1365	1460	1555	1900	2000

### MS - ECO

MS. Free-Cooling section with 2 dampers - Further to components of the basic version, includes two wing profile aluminium dampers with spring return servomotors (dampers with opposite movement).

ECO. Free-Cooling section with 3 dampers - Further to components of the basic version, includes return air EC INVERTER PLUG-FANS; motorized wing profile aluminium dampers (dampers with opposite movement). Exhaust, recirculation and fresh air are controlled through the microprocessor fitted in the base unit; this microprocessor, according to the temperature of the return and fresh air, modulates the opening of the dampers and controls the cooling circuit capacity steps to ensure comfort conditions of the handled air. The adjustments of the ECO versions are automatically controlled both in free-cooling and free-heating mode.

DIME	ENSIONS		182-R	202-R	242-R	262-R	302-R	363-R	393-R	453-R
L	STD/MS/ECO	mm	2930	2930	2930	2930	2930	2930	3930	3930
W	STD/MS/ECO	mm	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD/MS/ECO	mm	2370	2370	2370	2370	2370	2370	2370	2370

# CLEARANCE AREA

RTA/K/EC/WP 182-R÷453-R

1000 1800 1000 1000



- 1. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of MS and ECO versions are specified on technical brochure.



# RTA/IK/EC 172÷724

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH INVERTER SCROLL COMPRESSORS AND EC INVERTER PLUG-FANS.





AIRMAXI



The double skin packaged Roof Top units of the **AIRMAXI** series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Inverter Scroll compressor with R410A refrigerant and **EC Inverter Plug-Fans**. The highest efficiency at partial loads is guaranteed by the Inverter Scroll technology on compressor since its power is varied proportionally to the requested thermal load. Furthermore, the EC Inverter Plug-Fans with high energy efficiency backward blades are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The units are compliant to the ErP Regulation.

### **VERSION**

RTA/IK/EC/WP

Cooling only with EC Inverter Plug-Fans Reversible Heat Pump with EC Inverter Plug-Fans

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way
  joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws.
   50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even
  after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20°C.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

	RY FITTED ACCESSORIES	\A/C0	O Davida da contra a a il coitta O Marco al ca		ACCESSORIES
IM	Automatic circuit breakers	WS2	2-Row hot water coil with 3-Way valve	MN	High and low pressure gauges
SL	Unit silencement	EHG	Electrical heater with step	CR	Remote control panel
RFM	Cooling circuit shut-off valve on		regulation	AG	Rubber shock absorbers
	discharge line	SQ	Air quality sensor		
RFL	Cooling circuit shut-off valve on	SSA	Active sanitation systems		
	liquid line	PF	Filter differential pressure switch		
ECA	EC Inverter fans on condensing	IS	Modbus RTU protocol, RS485		
	section		serial interface		
TXC	Condensing coil with pre-coated	IST	Modbus TCP/IP protocol, Ethernet		
	fins		port		
TXE	Evaporating coil with pre-coated	ISB	BACnet MSTP protocol, RS485		
	fins		serial interface		
FT/M	Soft bag filters efficiency M6-F7-F8	ISBT	BACnet TCP/IP protocol, Ethernet		
FT/R	Rigid bag filters efficiency M6-F7-F8		port		
FT/E	Electrostatic filter	ISL	LonWorks protocol, FTT-10 serial		
AT	Constant air flow regulation control	.02	interface		
	9	ISS	SNMP protocol, Ethernet port		
AT/P	Constant available static pressure	CP	Potential free contacts		
	regulation control				
		RP	Coil protection metallic guards		

# RTA/IK/EC 172÷724





MODEL			172	192	212	232	272	302	352	372	484	574	724
Cooling	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
Cooling (FN14F11)	SEER (3)		4.57	4.61	4.78	4.81	4.69	4.53	4.52	4.66	4.42	4.29	4.31
Cooling (EN14511)	Energy Efficiency (3)	%	180	181	188	189	185	178	178	183	174	169	169
Hooting	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
Heating	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
Heating (ENI1/E11)	SCOP (5)		3.46	3.51	3.62	3.60	3.57	3.40	3.44	3.52	3.56	3.55	3.47
Heating (EN14511)	Energy Efficiency (5)	%	135	137	142	141	140	133	135	138	139	139	136
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
section	Compressor	n°	2	2	2	2	2	2	2	2	4	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	Stepless										
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1″½	1"½	1"1/2	1"1/2	1″½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz						400/3/50					
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Electrical fleater	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz						400/3/50					
	Max. running current	А	46	47	56	60	69	88	93	102	126	148	170
characteristics	Max. starting current	Α	169	169	179	192	236	212	225	269	258	315	344
Sound pressure (7)		dB(A)	57	57	57	57	57	58	59	59	60	60	61
Weights	Transport weight	Kg	990	1050	1150	1250	1260	1450	1810	1860	2230	2400	3180
vveigiits	Operating weight	Kg	975	1035	1135	1235	1245	1430	1790	1840	2210	2380	3150

# **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

DIMENSION	NS .		172	192	212	232	272	302	352	372	484	574	724
L	STD	mm	2980	3080	3190	3190	3290	3770	4500	4500	5150	5300	7370
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# **CLEARANCE AREA**

RTA/IK/EC 172÷302

RTA/IK/EC 352÷724 1000 1700 1000 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   N.B. Weights of WP version are specified on technical brochure.

# RTA/IK/EC/MS 172÷724

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH INVERTER SCROLL COMPRESSORS, EC INVERTER PLUG-FANS AND MIXING BOX.





EC INVERTER PLUG FANS













The double skin packaged Roof Top units of the AIRMAXI series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Inverter Scroll compressor with R410A refrigerant and EC Inverter Plug-Fans. The highest efficiency at partial loads is guaranteed by the Inverter Scroll technology on compressor since its power is varied proportionally to the requested thermal load. Furthermore, the EC Inverter Plug-Fans with high energy efficiency backward blades are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The MS units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, a MIXING BOX.

The units are compliant to the ErP Regulation.

# **VERSION**

RTA/IK/EC/MS RTA/IK/EC/WP/MS

Cooling only with EC Inverter Plug-Fans and Mixing Box

Reversible Heat Pump with EC Inverter Plug-Fans and Mixing Box

### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Flectronic expansion valve
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20°C.

BACnet MSTP protocol, RS485

serial interface

Microprocessor for the automatic control of the unit.

Rigid bag filters efficiency M6-F7-F8

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

Electrostatic filter

IM	Automatic circuit breakers	AT	Constant air flow regulation control	ISBT	BACnet TCP/IP protocol, Ethernet
SL	Unit silencement	AT/P	Constant available static pressure		port
RFM	Cooling circuit shut-off valve on		regulation control	ISL	LonWorks protocol, FTT-10 serial
	discharge line	WS2	2-Row hot water coil with 3-Way valve		interface
RFL	Cooling circuit shut-off valve on	EHG	Electrical heater with step	ISS	SNMP protocol, Ethernet port
	liquid line		regulation	CP	Potential free contacts
ECA	EC Inverter fans on condensing	SQ	Air quality sensor	RP	Coil protection metallic guards
	section	SSA	Active sanitation systems		
TXC	Condensing coil with pre-coated	PF	Filter differential pressure switch	LOOSE	ACCESSORIES
	fins	IS	Modbus RTU protocol, RS485	MN	High and low pressure gauges
TXE	Evaporating coil with pre-coated		serial interface	CR	Remote control panel
	fins	IST	Modbus TCP/IP protocol, Ethernet	AG	Rubber shock absorbers
FT/M	Soft bag filters efficiency M6-F7-F8		port		



FT/R

FT/E

# RTA/IK/EC/MS 172÷724





MODEL			172	192	212	232	272	302	352	372	484	574	724
01:	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
C!: /FN14F11)	SEER (3)		4.57	4.61	4.78	4.81	4.69	4.53	4.52	4.66	4.42	4.29	4.31
Cooling (EN14511)	Energy Efficiency (3)	%	180	181	188	189	185	178	178	183	174	169	169
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
Heating	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
Heating (EN14511)	SCOP (5)		3.46	3.51	3.62	3.60	3.57	3.40	3.44	3.52	3.56	3.55	3.47
nealing (EIV14511)	Energy Efficiency (5)	%	135	137	142	141	140	133	135	138	139	139	136
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Condensing	Compressor	n°	2	2	2	2	2	2	2	2	4	4	4
section	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
Section	Capacity steps	n°						Stepless					
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1″½	1″½	1″½	1″1⁄2	1″½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz						400/3/50					
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Liectifical fieater	Max. absorbed current	А	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz						400/3/50					
characteristics	Max. running current	Α	46	47	56	60	69	88	93	102	126	148	170
	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344
Sound pressure (7)		dB(A)	57	57	57	57	57	58	59	59	60	60	61
Weights	Transport weight	Kg	1070	1135	1245	1340	1360	1560	1940	1990	2300	2520	3465
vveigitts	Operating weight	Kg	1055	1120	1225	1320	1340	1540	1920	1970	2280	2500	3435

#### **MIXING BOX**

MS. Further to components of the basic section, includes two wing profile aluminium dampers with spring return servomotors; the opposite movement is ensured by transmission of nylon gear.

#### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier
UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

<b>DIMENSION</b>	NS		172	192	212	232	272	302	352	372	484	574	724
L	STD	mm	3430	3530	3640	3640	3740	4220	4950	4950	5600	5750	7850
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/IK/EC/MS 172÷302 800 1700 800 1700 RTA/IK/EC/MS 352÷724 1000 | 1700 | 1000 | 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.

# RTA/IK/EC/ECO 172÷724

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH INVERTER SCROLL COMPRESSORS, EC INVERTER PLUG-FANS AND ECONOMIZER.





INVERTER SCROLL **EC INVERTER PLUG FANS** 

THERMODYNAMIC COIL-BOOST HEAT RECOVERY















The double skin packaged Roof Top units of the AIRMAXI series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Inverter Scroll compressor with R410A refrigerant and EC Inverter Plug-Fans. The highest efficiency at partial loads is guaranteed by the Inverter Scroll technology on compressor since its power is varied proportionally to the requested thermal load. Furthermore, the EC Inverter Plug-Fans with high energy efficiency backward blades are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an ECONOMIZER automatically controlled both in FREE-COOLING or FREE-HEATING.

The unit can be equipped, as an option, with the innovative Thermodynamic Coil-Boost Heat Recovery to achieve better performance and efficiency both in cooling and heating up to 15%.

The units are compliant to the ErP Regulation.

#### **VERSION**

RTA/IK/EC/ECO RTA/IK/EC/WP/ECO

port

Cooling only with EC Inverter Plug-Fans and Economizer Reversible Heat Pump with EC Inverter Plug-Fans and Economizer

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20°C.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	FT/R	Rigid bag filters efficiency M6-F7-F8	ISB	BACnet MSTP protocol, RS485
SL	Unit silencement	FT/E	Electrostatic filter		serial interface
THCB	Thermodynamic Coil-Boost Heat	AT	Constant air flow regulation control	ISBT	BACnet TCP/IP protocol, Ethernet
	Recovery (ECO only)	AT/P	Constant available static pressure		port
RFM	Cooling circuit shut-off valve on		regulation control	ISL	LonWorks protocol, FTT-10 serial
	discharge line	WS2	2-Row hot water coil with 3-Way valve		interface
RFL	Cooling circuit shut-off valve on	EHG	Electrical heater with step	ISS	SNMP protocol, Ethernet port
	liquid line		regulation	CP	Potential free contacts
ECA	EC Inverter fans on condensing	CH	Enthalpic control (ECO only)	RP	Coil protection metallic guards
	section	SQ	Air quality sensor		
TXC	Condensing coil with pre-coated	SSA	Active sanitation systems	LOOSE	ACCESSORIES
	fins	PF	Filter differential pressure switch	MN	High and low pressure gauges
TXE	Evaporating coil with pre-coated	IS	Modbus RTU protocol, RS485	CR	Remote control panel
	fins		serial interface	AG	Rubber shock absorbers
FT/M	Soft bag filters efficiency M6-F7-F8	IST	Modbus TCP/IP protocol, Ethernet		

Modbus TCP/IP protocol, Ethernet



# RTA/IK/EC/ECO 172÷724





MODEL			172	192	212	232	272	302	352	372	484	574	724
Cooling	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
Cooling (EN14511)	SEER (3)		4.57	4.61	4.78	4.81	4.69	4.53	4.52	4.66	4.42	4.29	4.31
Cooling (EN 14511)	Energy Efficiency (3)	%	180	181	188	189	185	178	178	183	174	169	169
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
пеанну	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
Heating /FNI14E11\	SCOP (5)		3.46	3.51	3.62	3.60	3.57	3.40	3.44	3.52	3.56	3.55	3.47
Heating (EN14511)	Energy Efficiency (5)	%	135	137	142	141	140	133	135	138	139	139	136
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100
	Fan	n°	1	1	2	2	2	2	2	2	2	4	4
Condensing	Compressor	n°	2	2	2	2	2	2	2	2	4	4	4
section	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
section	Capacity steps	n°						Stepless					
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1″½	1″½	1″½	1″½	1″½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz						400/3/50					
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Electrical fleater	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz						400/3/50					
	Max. running current	Α	46	47	56	60	69	88	93	102	126	148	170
characteristics	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344
Sound pressure (7)		dB(A)	57	57	57	57	57	58	59	59	60	60	61
Weights	Transport weight	Kg	1500	1610	1740	1840	1860	2000	2400	2450	3020	3370	4190
vveignts	Operating weight	Kg	1480	1590	1720	1820	1840	1975	2375	2425	2990	3335	4150

### **ECONOMIZER**

ECO. Further to components of the basic section, includes: return air fan with electrical motor, complete of adjustable transmission, mounted on elastic supports; motorized wing profile aluminium dampers, the opposite movement is ensured by transmission of nylon gear. Exhaust, recirculation and fresh air are controlled through the microprocessor fitted in the base unit; this microprocessor, according to the temperature of the return and fresh air, modulates the opening of the dampers and controls the cooling circuit capacity steps to ensure comfort conditions of the handled air. The adjustments of the ECO versions are automatically controlled both in free-cooling and free-heating mode.

#### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier
UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

DIMENSION	NS		172	192	212	232	272	302	352	372	484	574	724
L	STD	mm	5260	5480	5570	5570	5650	6170	6900	6900	8080	8470	11020
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

#### **CLEARANCE AREA**

RTA/IK/EC/ECO 172÷302 800 | 1700 | 800 | 1700 RTA/IK/EC/ECO 352÷724 1000 1700 1000 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.

# RTA/IK/EC/ECO/REC-FX 172÷724

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH INVERTER SCROLL COMPRESSORS, EC INVERTER PLUG-FANS, ECONOMIZER AND CROSS-FLOW HEAT RECOVERY.

















The double skin packaged Roof Top units of the AIRMAXI series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Inverter Scroll compressor with R410A refrigerant and EC Inverter Plug-Fans. The highest efficiency at partial loads is guaranteed by the Inverter Scroll technology on compressor since its power is varied proportionally to the requested thermal load. Furthermore, the EC Inverter Plug-Fans with high energy efficiency backward blades are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO/REC-FX units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an ECONOMIZER automatically controlled both in FREE-COOLING or FREE-HEATING and a CROSS-FLOW HEAT RECOVERY.

The units are compliant to the ErP Regulation.

#### **VERSION**

RTA/IK/EC/ECO/REC-FX	RTA/IK/EC/WP/ECO/REC-FX
Cooling only with EC Inverter Plug-Fans, Economizer and	Reversible Heat Pump with EC Inverter Plug-Fans, Economizer and
Cross-flow Heat Recovery	Cross-flow Heat Recovery

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20°C.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES** FT/E BACnet MSTP protocol, RS485 IM Automatic circuit breakers Electrostatic filter ISB serial interface SI Unit silencement ΔΤ Constant air flow regulation control AT/P Constant available static pressure ISBT BACnet TCP/IP protocol, Ethernet **RFM** Cooling circuit shut-off valve on discharge line regulation control **ISL** LonWorks protocol, FTT-10 serial RFL Cooling circuit shut-off valve on WS2 2-Row hot water coil with 3-Way valve interface liquid line **EHG** Electrical heater with step ECA EC Inverter fans on condensing ISS SNMP protocol, Ethernet port regulation СН Enthalpic control (ECO only) CP Potential free contacts RP Coil protection metallic guards TXC. Condensing coil with pre-coated SQ Air quality sensor Active sanitation systems SSA TXE Evaporating coil with pre-coated **LOOSE ACCESSORIES** PF Filter differential pressure switch IS Modbus RTU protocol, RS485 MNHigh and low pressure gauges FT/M Soft bag filters efficiency M6-F7-F8 CR serial interface Remote control panel FT/R Rigid bag filters efficiency M6-F7-F8 Modbus TCP/IP protocol, Ethernet IST AG Rubber shock absorbers

# RTA/IK/EC/ECO/REC-FX 172÷724





MODEL			172	192	212	232	272	302	352	372	484	574	724	
01:	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252	
Cooling	Absorbed power (1).(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1	
CI: /FN14F11)	SEER (3)		4.57	4.61	4.78	4.81	4.69	4.53	4.52	4.66	4.42	4.29	4.31	
Cooling (EN14511)	Energy Efficiency (3)	%	180	181	188	189	185	178	178	183	174	169	169	
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262	
Heating	Absorbed power (2).(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5	
U+: /FN14F11)	SCOP (5)		3.46	3.51	3.62	3.60	3.57	3.40	3.44	3.52	3.56	3.55	3.47	
Heating (EN14511)	Energy Efficiency (5)	%	135	137	142	141	140	133	135	138	139	139	136	
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31	
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250	
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4	
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	
	Air flow	m <sup>3</sup> /s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31	
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100	
	Fan	n°	1	1	2	2	2	2	2	2	2	4	4	
0 1 .	Compressor	n°	2	2	2	2	2	2	2	2	4	4	4	
Condensing	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2	
section	Capacity steps	n°	Stepless											
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350	
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57	
Hot water coil	Water flow (6)	I/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36	
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45	
	Water connections	"G	1"½	1"½	1"½	1"½	1"1/2	2"	2"	2"	2"	2 ½"	2 ½"	
	Power supply	V/Ph/Hz						400/3/50						
Fl4-:	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55	
Electrical heater	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79	
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4	
Floatrical	Power supply	V/Ph/Hz						400/3/50						
Electrical	Max. running current	Α	46	47	56	60	69	88	93	102	126	148	170	
characteristics	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344	
Sound pressure (7)	<u> </u>	dB(A)	57	57	57	57	57	58	59	59	60	60	61	
\A/=:=b+=	Transport weight	Kg	1645	1720	1910	2020	2040	2210	2640	2690	3260	3590	4390	
Weights	Operating weight	Kg	1620	1695	1885	1995	2015	2185	2610	2660	3225	3555	4350	

# **ECONOMIZER AND CROSS-FLOW HEAT RECOVERY**

ECO/REC-FX. Further to the components of the ECO section, it includes: static recovery device made of aluminium with moisture drain pan, flat filters inspectable through hinged door and dampers with return spring servomotors (fresh air damper + air recirculation damper + exhaust air damper + 2 Free-Cooling dampers). Also the adjustment of this section is included into the unit control.

# **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

DIMENSION	NS		172	192	212	232	272	302	352	372	484	574	724
L	STD	mm	6060	6060	6270	6270	6450	7050	7870	7870	9120	9380	11650
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/IK/EC/ECO/REC-FX 172÷302 800 | 1700 | 800 | 1700 RTA/IK/EC/ECO/REC-FX 352÷724 1000 1700 1000 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.

# RTA/IK/EC/ECO/REC-WH 172÷724

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH INVERTER SCROLL COMPRESSORS, EC INVERTER PLUG-FANS, ECONOMIZER AND WHEEL HEAT RECOVERY.







The double skin packaged Roof Top units of the **AIRMAXI** series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Inverter Scroll compressor with R410A refrigerant and **EC Inverter Plug-Fans**. The highest efficiency at partial loads is guaranteed by the Inverter Scroll technology on compressor since its power is varied proportionally to the requested thermal load. Furthermore, the EC Inverter Plug-Fans with high energy efficiency backward blades are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO/REC-WH units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an **ECONOMIZER** automatically controlled both in FREE-COOLING or FREE-HEATING and a **WHEEL HEAT RECOVERY**, able to treat up to 100% of total air flow.

The units are compliant to the ErP Regulation.

#### **VERSION**

RTA/IK/EC/ECO/REC-WH	RTA/IK/EC/WP/ECO/REC-WH
Cooling only with EC Inverter Plug-Fans, Economizer and Wheel Heat Recovery	Reversible Heat Pump with EC Inverter Plug-Fans, Economizer and Wheel Heat Recovery

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way
  joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws.
   50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even
  after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section, contactors for the fan motors of the air handling section.
- Electronic proportional device to decrease the sound level, with a continuous regulation of the fan speed. This device also allows the cooling functioning of the unit by external temperature till -20°C.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	AT	Constant air flow regulation control	ISB	BACnet MSTP protocol, RS485
SL	Unit silencement	AT/P	Constant available static pressure	ISBT	serial interface BACnet TCP/IP protocol, Ethernet
RFM	Cooling circuit shut-off valve on		regulation control	1301	port
	discharge line	WS2	2-Row hot water coil with 3-Way valve	ICI	•
RFL	Cooling circuit shut-off valve on	EHG	Electrical heater with step	ISL	LonWorks protocol, FTT-10 serial interface
	liquid line		regulation	ISS	
ECA	EC Inverter fans on condensing	CH	Enthalpic control (ECO only)		SNMP protocol, Ethernet port
	section	SQ	Air quality sensor	CP	Potential free contacts
TXC	Condensing coil with pre-coated	SSA	Active sanitation systems for air	RP	Coil protection metallic guards
	fins		and rooms		
TXE	Evaporating coil with pre-coated	PF	Filter differential pressure switch	LOOSE	ACCESSORIES
	fins	IS	Modbus RTU protocol, RS485	MN	High and low pressure gauges
FT/M	Soft bag filters efficiency M6-F7-F8		serial interface	CR	Remote control panel
FT/R	Rigid bag filters efficiency M6-F7-F8	IST	Modbus TCP/IP protocol, Ethernet	AG	Rubber shock absorbers
FT/E	Electrostatic filter		port		

# RTA/IK/EC/ECO/REC-WH 172÷724





MODEL			172	192	212	232	272	302	352	372	484	574	724	
Cooling	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252	
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1	
Cooling (FN14F11)	SEER (3)		4.57	4.61	4.78	4.81	4.69	4.53	4.52	4.66	4.42	4.29	4.31	
Cooling (EN14511)	Energy Efficiency (3)	%	180	181	188	189	185	178	178	183	174	169	169	
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262	
Heating	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5	
Heating (FNI14E11)	SCOP (5)		3.46	3.51	3.62	3.60	3.57	3.40	3.44	3.52	3.56	3.55	3.47	
Heating (EN14511)	Energy Efficiency (5)	%	135	137	142	141	140	133	135	138	139	139	136	
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31	
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250	
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4	
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31	
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100	
	Fan	n°	1	1	2	2	2	2	2	2	2	4	4	
Condensing	Compressor	n°	2	2	2	2	2	2	2	2	4	4	4	
section	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2	
SECTION	Capacity steps	n°	Stepless											
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350	
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57	
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36	
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45	
	Water connections	"G	1″½	1″½	1″½	1″½	1″½	2"	2"	2"	2"	2 ½"	2 ½"	
	Power supply	V/Ph/Hz						400/3/50						
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55	
Lieutituai fieatei	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79	
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4	
Electrical	Power supply	V/Ph/Hz						400/3/50					,	
	Max. running current	Α	46	47	56	60	69	88	93	102	126	148	170	
characteristics Max. starting current		Α	169	169	179	192	236	212	225	269	258	315	344	
Sound pressure (7)			57	57	57	57	57	58	59	59	60	60	61	
Weights	Transport weight	Kg	1645	1720	1910	2020	2040	2210	2640	2690	3260	3590	4390	
vveigins	Operating weight	Kg	1620	1695	1885	1995	2015	2185	2610	2660	3225	3555	4350	

#### **ECONOMIZER AND WHEEL HEAT RECOVERY**

ECO/REC-WH. Further to the components of the ECO section, includes: high efficiency wheel-type heat recovery device made of aluminium with hygroscopic treatment, managed by a constant-speed electric motor, with moisture drain pan and dampers with spring return (fresh air damper + air recirculation damper + exhaust air damper). Also the adjustment of this section is included into the unit control.

#### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier
UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

DIMENSION	NS		172	192	212	232	272	302	352	372	484	574	724
L	STD	mm	6060	6060	6270	6270	6450	7050	7870	7870	9120	9380	11650
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	STD	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/IK/EC/ECO/REC-WH 172÷302 800 | 1700 | 800 | 1700 RTA/IK/EC/ECO/REC-WH 352÷724





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.

# RTA/K 182÷804

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS AND RADIAL FANS OR EC INVERTER PLUG-FANS.





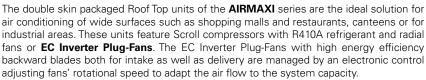












Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The units are compliant to the ErP Regulation only if provided with EC INVERTER PLUG-FANS.

# NRMAXI **EC INVERTER PLUG FANS**

VERSION	
RTA/K	RTA/K/WP
Cooling only with radial fans	Reversible Heat Pump with radial fans
RTA/K/EC	RTA/K/EC/WP
Cooling only with EC Inverter Plug-Fans	Reversible Heat Pump with EC Inverter Plug-Fans

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- Delivery radial fans coupled to 3-phase motors by V belt and variable pulley.
- High efficiency delivery reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Microprocessor for the automatic control of the unit.

### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	FT/E	Electrostatic filter	ISBT	BACnet TCP/IP protocol, Ethernet
SL	Unit silencement	AT	Constant air flow regulation control		port
RFM	Cooling circuit shut-off valve on discharge line	AT/P	Constant available static pressure regulation control	ISL	LonWorks protocol, FTT-10 serial interface
RFL	Cooling circuit shut-off valve on	WS2	2-Row hot water coil with 3-Way valve	ISS	SNMP protocol, Ethernet port
	liquid line	EHG	Electrical heater with step	CP	Potential free contacts
CT	Condensing control down to 0 °C	20	regulation	RP	Coil protection metallic guards
CC	Condensing control down to -20 °C	SQ	Air quality sensor		
ECA	EC Inverter fans on condensing	SSA	Active sanitation systems for air	LOOSE	ACCESSORIES
	section		and rooms	MN	High and low pressure gauges
TXC	Condensing coil with pre-coated	PF	Filter differential pressure switch	CR	Remote control panel
	fins	IS	Modbus RTU protocol, RS485	AG	Rubber shock absorbers
TXE	Evaporating coil with pre-coated		serial interface	,	Nazzer eneek azeenzere
	fins	IST	Modbus TCP/IP protocol, Ethernet		
FT/M	Soft bag filters efficiency M6-F7-F8		port		
FT/R	Rigid bag filters efficiency M6-F7-F8	ISB	BACnet MSTP protocol, RS485 serial interface		

# RTA/K 182÷804





MODEL			182	202	242	262	302	363	393	453	524	604	804
01:	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
CU/EN14E11)	SEER (3)		3.65	3.68	3.86	3.82	3.90	3.84	3.71	3.81	3.88	3.76	3.78
Cooling (EN14511)	Energy Efficiency (3)	%	143	144	151	150	153	151	145	149	152	147	148
Harakina.	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
Heating	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
II ( /FNI44E44)	SCOP (5)		3.22	3.23	3.31	3.31	3.26	3.23	3.20	3.29	3.33	3.32	3.24
Heating (EN14511)	Energy Efficiency (5)	%	126	126	129	129	127	126	125	129	130	130	127
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	1	1	1	1	1	1	1	1	1
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4
(EC version)	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Condonaina	Compressor	n°	2	2	2	2	2	3	3	3	4	4	4
Condensing	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
section	Capacity steps	n°			2				3			4	
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1"½	1"½	1"1/2	1″½	1"½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz					•	400/3/50					
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Electrical fleater	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz						400/3/50					
characteristics	Max. running current	А	50	53	63	67	76	94	100	109	133	150	173
characteristics	Max. starting current	А	173	175	186	199	243	218	232	276	265	317	347
Electrical	Power supply	V/Ph/Hz						400/3/50					
characteristics	Max. running current	Α	46	47	56	60	69	88	93	102	126	148	170
(EC version)	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344
Sound pressure	STD version (7)	dB(A)	58	58	58	58	58	59	60	60	61	61	62
Souria pressure	EC version (7)	dB(A)	57	57	57	57	57	58	59	59	60	60	61
Maighta	Transport weight	Kg	1030	1085	1180	1280	1300	1540	1900	1950	2270	2480	3320
Weights	Operating weight	Kg	1015	1070	1165	1265	1285	1520	1880	1930	2250	2460	3290
Weights	Transport weight	Kg	990	1050	1150	1250	1260	1450	1810	1860	2230	2400	3180
(EC version)	Operating weight	Kg	975	1035	1135	1235	1245	1430	1790	1840	2210	2380	3150

#### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

DIMENSION	NS .		182	202	242	262	302	363	393	453	524	604	804
L	EC	mm	2980	3080	3190	3190	3290	3770	4500	4500	5150	5300	7370
W	EC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	EC	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# **CLEARANCE AREA**

RTA/K 182÷363

RTA/K 393÷804 1000 1700 1000 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- Excluded the power absorbed by fans of air treatment section.

  Seasonal energy efficiency of cooling. According to EU Regulation
- n. 2016/2281.
- Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of WP versions are specified on technical brochure.

# RTA/K/MS 182+804

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS, RADIAL FANS OR EC INVERTER PLUG-FANS AND MIXING BOX.

















The double skin packaged Roof Top units of the AIRMAXI series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Scroll compressors with R410A refrigerant and radial fans or EC Inverter Plug-Fans. The EC Inverter Plug-Fans with high energy efficiency backward blades both for intake as well as delivery are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The MS units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, a MIXING BOX.

The units are compliant to the ErP Regulation only if provided with EC INVERTER PLUG-FANS.

# AIRMAXI

#### EC INVERTER PLUG FANS

# **VERSION**

RTA/K/MS	RTA/K/WP/MS
Cooling only with radial fans and Mixing Box	Reversible Heat Pump with radial fans and Mixing Box
RTA/K/EC/MS	RTA/K/EC/WP/MS
Cooling only with EC Inverter Plug-Fans and Mixing Box	Reversible Heat Pump with EC Inverter Plug-Fans and Mixing Box

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- Delivery radial fans coupled to 3-phase motors by V belt and variable pulley.
- High efficiency delivery reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.

Potential free contacts

Coil protection metallic guards

Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

IM	Automatic circuit breakers	AT/P	Constant available static pressure
SL	Unit silencement		regulation control
RFM	Cooling circuit shut-off valve on	WS2	2-Row hot water coil with 3-Way valve
	discharge line	EHG	Electrical heater with step
RFL	Cooling circuit shut-off valve on		regulation
	liquid line	SQ	Air quality sensor
CT	Condensing control down to 0 °C	SSA	Active sanitation systems
CC	Condensing control down to -20 °C	PF	Filter differential pressure switch
ECA	EC Inverter fans on condensing	IS	Modbus RTU protocol, RS485
	section		serial interface
TXC	Condensing coil with pre-coated	IST	Modbus TCP/IP protocol, Ethernet
	fins		port
TXE	Evaporating coil with pre-coated	ISB	BACnet MSTP protocol, RS485
	fins		serial interface
FT/M	Soft bag filters efficiency M6-F7-F8	ISBT	BACnet TCP/IP protocol, Ethernet
FT/R	Rigid bag filters efficiency M6-F7-F8		port
FT/E	Electrostatic filter	ISL	LonWorks protocol, FTT-10 serial
AT	Constant air flow regulation control		interface
	Ğ	ISS	SNMP protocol, Ethernet port

CP

RP

### **LOOSE ACCESSORIES**

MN	High and low pressure gauge
CR	Remote control panel
AG	Rubber shock absorbers



# RTA/K/MS 182÷804





MODEL			182	202	242	262	302	363	393	453	524	604	804						
01:	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252						
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1						
CII (FN14F11)	SEER (3)		3.65	3.68	3.86	3.82	3.90	3.84	3.71	3.81	3.88	3.76	3.78						
Cooling (EN14511)	Energy Efficiency (3)	%	143	144	151	150	153	151	145	149	152	147	148						
H	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262						
Heating	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5						
II (* /FNI44E44)	SCOP (5)		3.22	3.23	3.31	3.31	3.26	3.23	3.20	3.29	3.33	3.32	3.24						
Heating (EN14511)	Energy Efficiency (5)	%	126	126	129	129	127	126	125	129	130	130	127						
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31						
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250						
section	Fan	n°	1	1	1	1	1	1	1	1	1	1	1						
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4						
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31						
	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250						
section	Fan	n°	1	1	2	2	2	2	2	2	2	4	4						
(EC version)	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4						
0	Compressor	n°	2	2	2	2	2	3	3	3	4	4	4						
Condensing	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2						
section	Capacity steps	n°			2				3			4							
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350						
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57						
Hot water coil	Water flow (6)	l/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36						
	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45						
	Water connections	"G	1"½	1"½	1"½	1"1/2	1"½	2"	2"	2"	2"	2 ½"	2 ½"						
	Power supply	V/Ph/Hz						400/3/50					4 G4 4 2 350 57 8.36 45 2 ½" 55 79 4						
Electrical heater	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48							
Electrical fleater	Max. absorbed current	А	22	30	39	39	39	59	59	59	59	69	79						
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4						
Electrical	Power supply	V/Ph/Hz						400/3/50											
	Max. running current	А	50	53	63	67	76	94	100	109	133	150	173						
characteristics	Max. starting current	А	173	175	186	199	243	218	232	276	265	317	347						
Electrical	Power supply	V/Ph/Hz						400/3/50											
characteristics	Max. running current	А	46	47	56	60	69	88	93	102	126	148	170						
(EC version)	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344						
Sound pressure	STD version (7)	dB(A)	58	58	58	58	58	59	60	60	61	61	62						
Souria pressure	EC version (7)	dB(A)	57	57	57	57	57	58	59	59	60	60	61						
Moighto	Transport weight	Kg	1110	1170	1285	1380	1400	1610	2000	2050	2370	2600	3570						
Weights	Operating weight	Kg	1095	1155	1265	1360	1380	1590	1980	2030	2350	2580	3540						
Weights	Transport weight	Kg	1070	1135	1245	1340	1360	1560	1940	1990	2300	2520	3465						
(EC version)	Operating weight	Kg	1055	1120	1225	1320	1340	1540	1920	1970	2280	2500	3435						

#### **MIXING BOX**

MS. Further to components of the basic section, includes two wing profile aluminium dampers with spring return servomotors; the opposite movement is ensured by transmission of nylon gear.

# **COMPLEMENTARY SECTIONS**

Section with preparation for Humidifier

UM/EN Section Humidifier with electrodes immersed

Condensation endothermic hot air generator with modulating gas burner F/CD

DIMENSION	NS		182	202	242	262	302	363	393	453	524	604	804
L	EC	mm	3430	3530	3640	3640	3740	4220	4950	4950	5600	5750	7850
W	EC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	FC.	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# **CLEARANCE AREA**

RTA/K/MS 182÷363

RTA/K/MS 393÷804 1000 1700 1000 1700





- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP versions are specified on technical brochure.

# RTA/K/ECO 182÷804

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS, RADIAL FANS OR EC INVERTER PLUG-FANS AND ECONOMIZER.





















EC INVERTER PLUG FANS

THERMODYNAMIC COIL-BOOST HEAT RECOVERY

The double skin packaged Roof Top units of the AIRMAXI series are the ideal solution for air conditioning of wide surfaces such as shopping malls and restaurants, canteens or for industrial areas. These units feature Scroll compressors with R410A refrigerant and radial fans or EC Inverter Plug-Fans. The EC Inverter Plug-Fans with high energy efficiency backward blades both for intake as well as delivery are managed by an electronic control adjusting fans' rotational speed to adapt the air flow to the system capacity.

Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an **ECONOMIZER** automatically controlled both in FREE-COOLING or FREE-HEATING.

The unit can be equipped, as an option, with the innovative Thermodynamic Coil-Boost Heat **Recovery** to achieve better performance and efficiency both in cooling and heating up to 15%.

The units are compliant to the ErP Regulation only if provided with EC INVERTER PLUG-FANS.

#### **VERSION**

RTA/K/ECO	RTA/K/WP/ECO
Cooling only with radial fans and Economizer	Reversible Heat Pump with radial fans and Economizer
RTA/K/EC/ECO	RTA/K/EC/WP/ECO
Cooling only with EC Inverter Plug-Fans and Economizer	Reversible Heat Pump with EC Inverter Plug-Fans and Economizer

#### **FEATURES**

- · Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- Delivery & intake radial fans coupled to 3-phase motors by V belt and variable pulley.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Microprocessor for the automatic control of the unit.

Soft bag filters efficiency M6-F7-F8

#### ACCESSORIES

#### **FACTORY FITTED ACCESSORIES**

IM SL	Automatic circuit breakers Unit silencement	FT/R FT/E	Rigid bag filters efficiency M6-F7-F8 Electrostatic filter	ISB	BACnet MSTP protocol, RS485 serial interface
THCB	Thermodynamic Coil-Boost Heat	AT	Constant air flow regulation control	ISBT	BACnet TCP/IP protocol, Ethernet
	Recovery (ECO only)	AT/P	Constant available static pressure		port
RFM	Cooling circuit shut-off valve on		regulation control	ISL	LonWorks protocol, FTT-10 serial
	discharge line	WS2	2-Row hot water coil with 3-Way valve		interface
RFL	Cooling circuit shut-off valve on	EHG	Electrical heater with step	ISS	SNMP protocol, Ethernet port
	liquid line		regulation	CP	Potential free contacts
CT	Condensing control down to 0 °C	CH	Enthalpic control (ECO only)	RP	Coil protection metallic guards
CC	Condensing control down to -20 °C	SQ	Air quality sensor		
ECA	EC Inverter fans on condensing	SSA	Active sanitation systems for air	LOOSE	ACCESSORIES
	section		and rooms	MN	High and low pressure gauges
TXC	Condensing coil with pre-coated	PF	Filter differential pressure switch	CR	Remote control panel
	fins	IS	Modbus RTU protocol, RS485	AG	Rubber shock absorbers
TXE	Evaporating coil with pre-coated		serial interface		
	fins	IST	Modbus TCP/IP protocol, Ethernet		

port

FT/M

# RTA/K/ECO 182÷804





MODEL			182	202	242	262	302	363	393	453	524	604	804
Cooling	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
Cooling (EN14511)	SEER (3)		3.65	3.68	3.86	3.82	3.90	3.84	3.71	3.81	3.88	3.76	3.78
Cooling (LIV14511)	Energy Efficiency (3)	%	143	144	151	150	153	151	145	149	152	147	148
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
Heating (EN14511)	SCOP (5)		3.22	3.23	3.31	3.31	3.26	3.23	3.20	3.29	3.33	3.32	3.24
	Energy Efficiency (5)	%	126	126	129	129	127	126	125	129	130	130	127
Λ:	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	1	1	1	1	1	1	1	1	1
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
section	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
(EC version)	Fan Filter	n°	1 G4	1 G4	2 G4	2 G4	2 G4	2 G4	2 G4	2 G4	2 G4	4 G4	4 G4
(LO VOISION)	Air flow	Tipo	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air intoles sostion		m³/s Pa	100	100	100	100	100	100	100	100	100	100	100
Air intake section	Available static pressure	n°	100	100	100	100	100	100	100	100	100	100	100
	Fan Air flow	m <sup>3</sup> /s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100
(EC version)	Fan	n°	100	100	2	2	2	2	2	2	2	4	4
· · · · ·	Compressor	n°	2	2	2	2	2	3	3	3	4	4	4
Condensing	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
section	Capacity steps	n°	'	1	2		'		3	'		4	
-	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	I/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
not water con	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1"½	1"½	1"½	1"½	1"½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz	. ,-					400/3/50					
EL	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Electrical heater	Max. absorbed current	А	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz						400/3/50					
	Max. running current	Α	50	53	63	67	76	94	100	109	133	150	173
characteristics	Max. starting current	Α	173	175	186	199	243	218	232	276	265	317	347
Electrical	Power supply	V/Ph/Hz						400/3/50					
characteristics	Max. running current	А	46	47	56	60	69	88	93	102	126	148	170
(EC version)	Max. starting current	A	169	169	179	192	236	212	225	269	258	315	344
Sound pressure	STD version (7)	dB(A)	58	58	58	58	58	59	60	60	61	61	62
Souria pressure	EC version (7)	dB(A)	57	57	57	57	57	58	59	59	60	60	61
Weights	Transport weight	Kg	1570	1690	1810	1910	1930	2160	2560	2610	3130	3500	4520
· ·	Operating weight	Kg	1550	1670	1790	1890	1910	2135	2535	2585	3100	3465	4480
Weights	Transport weight	Kg	1500	1610	1740	1840	1860	2000	2400	2450	3020	3370	4190
(EC version)	Operating weight	Kg	1480	1590	1720	1820	1840	1975	2375	2425	2990	3335	4150

#### **ECONOMIZER**

ECO. Further to components of the basic section, includes: return air fan with electrical motor, complete of adjustable transmission, mounted on elastic supports; motorized wing profile aluminium dampers, the opposite movement is ensured by transmission of nylon gear. Exhaust, recirculation and fresh air are controlled through the microprocessor fitted in the base unit; this microprocessor, according to the temperature of the return and fresh air, modulates the opening of the dampers and controls the cooling circuit capacity steps to ensure comfort conditions of the handled air. The adjustments of the ECO versions are automatically controlled both in free-cooling and free-heating mode.

### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier

UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

<b>DIMENSION</b>	IS		182	202	242	262	302	363	393	453	524	604	804
L	EC	mm	5260	5480	5570	5570	5650	6170	6900	6900	8080	8470	11020
W	EC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	EC	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/K/ECO 182÷363 800 1700 800 1700 RTA/K/ECO 393÷804 1000 | 1700 | 1000 | 1700





#### NOTES

- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP versions are specified on technical brochure.

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# RTA/K/ECO/REC-FX 182÷804

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS, RADIAL FANS OR EC INVERTER PLUG-FANS, ECONOMIZER AND CROSS-FLOW HEAT RECOVERY.







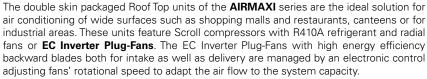












Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO/REC-FX units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an **ECONOMIZER** automatically controlled both in FREE-COOLING or FREE-HEATING and a **CROSS-FLOW HEAT RECOVERY**.

The units are compliant to the ErP Regulation only if provided with EC INVERTER PLUG-FANS.

# EC INVERTER PLUG FANS

AIRMAXI

### **VERSION**

1 = 1101011	
RTA/K/ECO/REC-FX	RTA/K/WP/ECO/REC-FX
Cooling only with radial fans, Economizer and	Reversible Heat Pump with radial fans, Economizer and
Cross-flow Heat Recovery	Cross-flow Heat Recovery
RTA/K/EC/ECO/REC-FX	RTA/K/EC/WP/ECO/REC-FX
Cooling only with EC Inverter Plug-Fans, Economizer and	Reversible Heat Pump with EC Inverter Plug-Fans, Economizer and
Cross-flow Heat Recovery	Cross-flow Heat Recovery

# **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way
  joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws.
   50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even
  after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- Delivery & intake radial fans coupled to 3-phase motors by V belt and variable pulley.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.

EL CONTROL

serial interface

• Microprocessor for the automatic control of the unit.

### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

Automotic circuit brookers

Automatic circuit breakers	FI/E	Electrostatic filter
Unit silencement	AT	Constant air flow regulation control
Cooling circuit shut-off valve on discharge line	AT/P	Constant available static pressure regulation control
Cooling circuit shut-off valve on	WS2	2-Row hot water coil with 3-Way valve
liquid line	EHG	Electrical heater with step
Condensing control down to 0 °C		regulation
Condensing control down to -20 °C	CH	Enthalpic control (ECO only)
EC Inverter fans on condensing	SQ	Air quality sensor
section	SSA	Active sanitation systems for air
Condensing coil with pre-coated		and rooms
fins	PF	Filter differential pressure switch
Evaporating coil with pre-coated	IS	Modbus RTU protocol, RS485
fins		serial interface
Soft bag filters efficiency M6-F7-F8	IST	Modbus TCP/IP protocol, Ethernet
Rigid bag filters efficiency M6-F7-F8		port
	ISB	BACnet MSTP protocol, RS485
	Unit silencement Cooling circuit shut-off valve on discharge line Cooling circuit shut-off valve on liquid line Condensing control down to 0 °C Condensing control down to -20 °C EC Inverter fans on condensing section Condensing coil with pre-coated fins Evaporating coil with pre-coated fins Soft bag filters efficiency M6-F7-F8	Unit silencement Cooling circuit shut-off valve on discharge line Cooling circuit shut-off valve on liquid line Condensing control down to 0 °C Condensing control down to -20 °C EC Inverter fans on condensing section SSA Condensing coil with pre-coated fins Evaporating coil with pre-coated fins Soft bag filters efficiency M6-F7-F8 Rigid bag filters efficiency M6-F7-F8

ISBT BACnet TCP/IP protocol, Ethernet port

ISL LonWorks protocol, FTT-10 serial interface

ISS SNMP protocol, Ethernet port

CP Potential free contacts
RP Coil protection metallic guards

#### LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
AG	Rubber shock absorbers



# RTA/K/ECO/REC-FX 182÷804





MODEL			182	202	242	262	302	363	393	453	524	604	804
Coolina	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
Cooling (EN14511)	SEER (3)		3.65	3.68	3.86	3.82	3.90	3.84	3.71	3.81	3.88	3.76	3.78
Cooling (LIV14511)	Energy Efficiency (3)	%	143	144	151	150	153	151	145	149	152	147	148
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	204	262
	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7	50.4	70.5
Heating (EN14511)	SCOP (5)		3.22	3.23	3.31	3.31	3.26	3.23	3.20	3.29	3.33	3.32	3.24
	Energy Efficiency (5)	%	126	126	129	129	127	126	125	129	130	130	127
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
	Available static pressure	Pa	250	250	250	250	250	250	250	250	250	250	250
section	Fan	n°	1	1	1	1	1	1	1	1	1	1	1
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
section	Available static pressure	Pa n°	250	250	250 2	250 4	250 4						
(EC version)	Fan Filter	Tipo	1 G4	1 G4	G4								
(LO VOISION)	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100
All Intake section	Fan	n°	100	100	100	100	100	100	100	100	100	100	100
	Air flow	m <sup>3</sup> /s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20	9.79	12.31
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100
(EC version)	Fan	n°	100	1	2	2	2	2	2	2	2	4	4
	Compressor	n°	2	2	2	2	2	3	3	3	4	4	4
Condensing	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2	2
section	Capacity steps	n°	'	'	2			'	3	'		4	
	Heating capacity (6)	kW	85	100	125	125	150	175	200	200	250	300	350
	Air pressure drops	Pa	30	31	31	31	31	30	36	36	35	35	57
Hot water coil	Water flow (6)	I/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97	7.17	8.36
Tiot water con	Water pressure drops	kPa	45	47	48	48	49	44	51	51	53	57	45
	Water connections	"G	1"½	1"½	1"½	1"½	1"½	2"	2"	2"	2"	2 ½"	2 ½"
	Power supply	V/Ph/Hz	. /2	. /2	. , , 2	. ,,_	1 . /2	400/3/50					
FI	Heating capacity	kW	15	21	27	27	27	41	41	41	41	48	55
Electrical heater	Max. absorbed current	Α	22	30	39	39	39	59	59	59	59	69	79
	Steps	n°	2	2	2	2	2	4	4	4	4	4	4
Electrical	Power supply	V/Ph/Hz		,				400/3/50	,				
	Max. running current	A	50	53	63	67	76	94	100	109	133	150	173
characteristics	Max. starting current	Α	173	175	186	199	243	218	232	276	265	317	347
Electrical	Power supply V/Ph/Hz 400/3/50												
characteristics	Max. running current	A	46	47	56	60	69	88	93	102	126	148	170
(EC version)	Max. starting current	А	169	169	179	192	236	212	225	269	258	315	344
	STD version (7)	dB(A)	58	58	58	58	58	59	60	60	61	61	62
Sound pressure	EC version (7)	dB(A)	57	57	57	57	57	58	59	59	60	60	61
Weights	Transport weight	Kg	1715	1800	1980	2090	2110	2370	2800	2850	3370	3720	4720
=	Operating weight	Kg	1690	1775	1955	2065	2085	2345	2770	2820	3335	3685	4680
Weights	Transport weight	Kg	1645	1720	1910	2020	2040	2210	2640	2690	3260	3590	4390
(EC version)	Operating weight	Kg	1620	1695	1885	1995	2015	2185	2610	2660	3225	3555	4350

# **ECONOMIZER AND CROSS-FLOW HEAT RECOVERY**

ECO/REC-FX. Further to the components of the ECO section, it includes: static recovery device made of aluminium with moisture drain pan, flat filters inspectable through hinged door and dampers with return spring servomotors (fresh air damper + air recirculation damper + exhaust air damper + 2 Free-Cooling dampers). Also the adjustment of this section is included into the unit control.

# **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier

UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

<b>DIMENSIOI</b>	NS		182	202	242	262	302	363	393	453	524	604	804
L	EC	mm	6060	6060	6270	6270	6450	7050	7870	7870	9120	9380	11650
W	EC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	FC	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/K/ECO/REC-FX 182÷363

800 | 1700 | 800 | 1700







#### NOTES

- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP versions are specified on technical brochure.

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# RTA/K/ECO/REC-WH 182+804

DOUBLE SKIN PACKAGED ROOF TOP UNITS WITH SCROLL COMPRESSORS, RADIAL FANS OR EC INVERTER PLUG-FANS, ECONOMIZER AND WHEEL HEAT RECOVERY.



AIRMAXI

EC INVERTER PLUG FANS





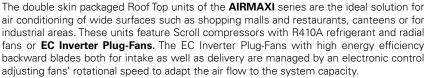












Equipped with extruded aluminium alloy sections and 50mm-thick sandwich panelling, these units are available in Cooling only and Reversible Heat Pump version.

The flat or pocket filters help to keep the air quality at a suitable level in order to guarantee appropriate hygiene standards.

The ECO/REC-WH units have an high level of modularity and adaptability to every plant-engineering need: these units feature, in addition to the basic sections, an ECONOMIZER automatically controlled both in FREE-COOLING or FREE-HEATING and a WHEEL HEAT RECOVERY, able to treat up to 100% of total air flow.

The units are compliant to the ErP Regulation only if provided with EC INVERTER PLUG-FANS.

AG

Rubber shock absorbers

#### VERSION

VEITOIOIV	
RTA/K/ECO/REC-WH	RTA/K/WP/ECO/REC-WH
Cooling only with radial fans, Economizer and Wheel Heat Recovery	Reversible Heat Pump with radial fans, Economizer and Wheel Heat Recovery
RTA/K/EC/ECO/REC-WH	RTA/K/EC/WP/ECO/REC-WH
Cooling only with EC Inverter Plug-Fans, Economizer and Wheel Heat Recovery	Reversible Heat Pump with EC Inverter Plug-Fans, Economizer and Wheel Heat Recovery

#### **FEATURES**

- Structure of base perimeter made of steel sheet elements galvanised. Frame made of extruded aluminium alloy profiles connected by 3 way joints. Assembling of the base to the frame is of dual support and grants the walking on the base panels installation without sticking out screws. 50mm thick sandwich panels made of prepainted steel sheet; water proofing granted by gaskets having shape memory for perfect seal up even after repeated removals. Section connection is effected by means of assembling conic stirrups and water proofing is granted by gaskets.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Condenser and evaporator with copper tube and aluminium finned coil.
- Delivery & intake radial fans coupled to 3-phase motors by V belt and variable pulley.
- High efficiency delivery & intake reverse blade EC INVERTER PLUG-FANS, with electronic speed control to easily adapt to the system characteristics.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: door interlocking isolator, fuses, thermal protection relays on compressors, thermocontacts for the fans of the condensing section and contactors for the fan motors of the air handling section.
- Microprocessor for the automatic control of the unit.

#### **ACCESSORIES**

FACTOR	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	FT/M	Soft bag filters efficiency M6-F7-F8	IST	Modbus TCP/IP protocol, Ethernet
SL	Unit silencement	FT/R	Rigid bag filters efficiency M6-F7-F8		port
RFM	Cooling circuit shut-off valve on	FT/E	Electrostatic filter	ISB	BACnet MSTP protocol, RS485
	discharge line	AT	Constant air flow regulation control		serial interface
RFL	Cooling circuit shut-off valve on liquid line	AT/P	Constant available static pressure regulation control	ISBT	BACnet TCP/IP protocol, Ethernet port
CT	Condensing control down to 0 °C	WS2	2-Row hot water coil with 3-Way valve	ISL	LonWorks protocol, FTT-10 serial
CC	Condensing control down to -20 °C	EHG	Electrical heater with step		interface
ECA	EC Inverter fans on condensing		regulation .	ISS	SNMP protocol, Ethernet port
	section	CH	Enthalpic control (ECO only)	CP	Potential free contacts
TXC	Condensing coil with pre-coated	SQ	Air quality sensor	RP	Coil protection metallic guards
	fins	SSA	Active sanitation systems		
TXE	Evaporating coil with pre-coated	PF	Filter differential pressure switch	LOOSE	ACCESSORIES
	fins	IS	Modbus RTU protocol, RS485	MN	High and low pressure gauges
	_		serial interface	CR	Remote control panel

# RTA/K/ECO/REC-WH 182÷804





MODEL			182	202	242	262	302	363	393	453	524	604	804
Cooling	Cooling capacity (1)	kW	57.9	65.8	77.6	87.4	98.6	113	129	145	168	198	252
Cooling	Absorbed power (1),(2)	kW	19.4	21.8	24.6	26.2	30.8	37.8	40.4	43.3	54.6	61.5	85.1
Cooling (EN14511)	SEER (3)		3.65	3.68	3.86	3.82	3.90	3.84	3.71	3.81	3.88	3.76	3.78
Cooling (EN 14511)	Energy Efficiency (3)	%	143	144	151	150	153	151	145	149	152	198 61.5 3.76 147 204 50.4 3.32 130 9.79 250 1 G4 9.79 250 4 G4 9.79 100 4 13.4 4 2 4 300 35 7.17 57 2 ½"  48 69 4 150 317	148
Heating	Heating capacity (4)	kW	60.2	67.2	76.8	88.6	101	115	133	151	173	198	262
пеанну	Absorbed power (2),(4)	kW	16.8	17.9	20.2	22.8	25.2	32.2	34.0	40.0	45.7		70.5
Heating (EN14511)	SCOP (5)		3.22	3.23	3.31	3.31	3.26	3.23	3.20	3.29	3.33		3.24
Tieating (LIV14311)	Energy Efficiency (5)	%	126	126	129	129	127	126	125	129	130		127
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20		12.31
Air treatment	Available static pressure	Pa	250	250	250	250	250	250	250	250	250		250
section	Fan	n°	1	1	1	1	1	1	1	1	1		1
	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4		G4
Air treatment	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20		12.31
section	Available static pressure	Pa	250	250	250	250	250	250	250	250	250		250
(EC version)	Fan	n°	1	1	2	2	2	2	2	2	2		4
(EC VEISION)	Filter	Tipo	G4	G4	G4	G4	G4	G4	G4	G4	G4		G4
	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20		12.31
Air intake section	Available static pressure	Pa	100	100	100	100	100	100	100	100	100	100	100
	Fan	n°	1	1	1	1	1	1	1	1	1	1	1
Air intake section	Air flow	m³/s	2.67	3.30	4.05	4.05	4.84	5.49	6.32	6.32	8.20		12.31
(EC version)	Available static pressure	Pa	100	100	100	100	100	100	100	100	100		100
(LO VOISION)	Fan	n°	1	11	2	2	2	2	2	2	2		4
Candonsina	Air flow	m³/s	6.9	7.1	6.9	6.7	6.7	9.8	14.0	13.9	13.9		20.0
Condensing	Compressor	n°	2	2	2	2	2	3	3	3	4		4
section	Refrigerant circuits	n°	l l	I	'			l l		l l	2		
	Capacity steps	n°	٥٢	100	2	100	150	175	3 200	200	250		٥٥٥
	Heating capacity (6)	kW Pa	85 30	100 31	125 31	125 31	150 31	175 30	36	200 36	250 35		350
11-4	Air pressure drops Water flow (6)	I/s	2.03	2.39	2.99	2.99	3.58	4.18	4.78	4.78	5.97		8.36
Hot water coil	Water pressure drops	kPa	45	47	48	48	49	4.18	4.78 51	4.78 51	5.97		45
	Water connections	"G	1"½	1"½	1"½	1"½	1"½	2"	2"	2"	2"		
	Power supply	V/Ph/Hz	1 /2	1 72	1 72	1 72		400/3/50		<u> </u>			Z 72
	Heating capacity	kW	15	21	27	27	27	400/3/30	41	41	41	10	55
Electrical heater	Max. absorbed current	A	22	30	39	39	39	59	59	59	59		79
	Steps	n°	2	2	2	2	2	4	4	4	4		4
	Power supply	V/Ph/Hz						400/3/50		4	4	- 4	4
Electrical	Max. running current	A A	50	53	63	67	76	94	100	109	133	150	173
characteristics	Max. starting current	A	173	175	186	199	243	218	232	276	265		347
Electrical	Power supply	V/Ph/Hz	173	170	100	100		400/3/50		270	200	317	347
	Max. running current	A A	46	47	56	60	69	88	93	102	126	148	170
characteristics	Max. starting current	A	169	169	179	192	236	212	225	269	258		344
(EC version)													_
Sound pressure	STD version (7)	dB(A)	58	58	58	58	58	59	60	60	61		62
	EC version (7)	dB(A)	57	57	57	57	57	58	59	59	60		61
Weights	Transport weight	Kg	1715	1800	1980	2090	2110	2370	2800	2850	3370		4720
9	Operating weight	Kg	1690	1775	1955	2065	2085	2345	2770	2820	3335		4680
Weights	Transport weight	Kg	1645	1720	1910	2020	2040	2210	2640	2690	3260	3590	4390
(EC version)	Operating weight	Kg	1620	1695	1885	1995	2015	2185	2610	2660	3225	3555	4350

# **ECONOMIZER AND WHEEL HEAT RECOVERY**

ECO/REC-WH. Further to the components of the ECO section, includes: high efficiency wheel-type heat recovery device made of aluminium with hygroscopic treatment, managed by a constant-speed electric motor, with moisture drain pan and dampers with spring return (fresh air damper + air recirculation damper + exhaust air damper). Also the adjustment of this section is included into the unit control.

#### **COMPLEMENTARY SECTIONS**

UM Section with preparation for Humidifier

UM/EN Section Humidifier with electrodes immersed

F/CD Condensation endothermic hot air generator with modulating gas burner

<b>DIMENSION</b>	NS .		182	202	242	262	302	363	393	453	524	604	804
L	EC	mm	6060	6060	6270	6270	6450	7050	7870	7870	9120	9380	11650
W	EC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Н	EC	mm	2100	2340	2340	2340	2340	2340	2340	2340	2340	2510	2510

# CLEARANCE AREA

RTA/K/ECO/REC-WH 182÷363 800 1700 800 1700 RTA/K/ECO/REC-WH 393÷804 1000 1700 1000 1700





#### NOTES

- Evaporator inlet air temperature 27 °C d.b./19 °C w.b.; ambient air temperature 35 °C.
- 2. Excluded the power absorbed by fans of air treatment section.
- Seasonal energy efficiency of cooling. According to EU Regulation n. 2016/2281.
- 4. Condenser inlet air temperature 20 °C, ambient air temperature 7 °C d.b./6 °C w.b.
- Seasonal energy efficiency of heating with average climatic conditions. According to EU Regulation n. 2016/2281.
- 6. Inlet air temperature 20 °C, water temperature 70/60 °C.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP versions are specified on technical brochure.

3

4

5

6



# **CHAPTER 6**

CONDENSING UNITS

UNIT	Page
MHA/K 15÷151	208 - 209
MHA/K 182÷604	210 - 211
MRA/K 15÷131	212 - 213
MRA/K 182÷604	214 - 215

# MHA/K 15÷151

AIRCOOLED CONDENSING UNITS AND REVERSIBLE CONDENSING UNITS WITH AXIAL FANS AND ROTARY/SCROLL COMPRESSOR.















The condensing units and reversible condensing units of the MHA/K 15÷151 series, with R410A refrigerant, are designed for small and medium-sized domestic or industrial systems. With a peraluman structure, these outdoor units are combined with evaporators in split system air conditioning installations, allowing the rooms to be cooled and dehumidified or to be heated. They can also be used in combination with hydronic evaporating units, generally in air conditioning applications

They are equipped with Rotary/Scroll compressors and axial fans, and they enable immediate and efficient use thanks to particular technical and design adjustments.

A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

#### **VERSION**

MHA/K	MHA/K/WP
Cooling only	Reversible Heat Pump

#### **FEATURES**

- Structure with supporting frame, in peraluman and galvanized sheet.
- Rotary/Scroll compressor with internal overheat protection and crankcase heater, if needed.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser in copper tubes and aluminium finned coil complete with drain pan for WP version only (15÷81).
- R410A refrigerant.
- · Electrical board includes: main switch with door lock device, fuses and compressor remote control switch.
- Microprocessor control and regulation system (WP only).

# **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

CC Condensing control down to -20 °C

TX Coil with pre-coated fins RL Liquid receiver VS Solenoid valve

#### LOOSE ACCESSORIES

RP Coils protection metallic guards AG Rubber shock absorbers

# MHA/K 15÷151

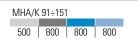
MODEL			15	18	21	25	31	41	51		
Cooling	Cooling capacity (1)	kW	4.5	5.6	6.8	8.0	9.2	10.8	13.2		
Cooming	Absorbed power (1)	kW	1.4	1.8	2.1	2.5	2.9	3.7	4.1		
Heating	Heating capacity (2)	kW	4.8	5.9	7.3	8.4	9.7	11.3	13.7		
пеанну	Absorbed power (2)	kW	1.5	1.9	2.3	2.6	3.0	3.8	4.2		
Comprosor	Quantity	n°	1	1	1	1	1	1	1		
Compressor	Type			Ro	tary			Scroll			
Connections	Suction line	Ø mm	16	16	16	16	16	16	18		
Connections	Liquid line	Ø mm	10	10	10	10	10	10	12		
Electrical	Power supply	V/Ph/Hz			230,	/1/50			400/3+N/50		
characteristics	Max. running current	А	7	9	11	11	15	18	7		
characteristics	Max. starting current	А	37	43	62	62	79	86	58		
Sound pressure (3		dB(A)	49	50	49	51	53	53 54 54			
Maighta	Transport weight	Kg	81	83	83	87	90	92	109		
Weights	Operating weight	Kg	82	84	84	88	91	93	111		
MODEL			61	71	81	91	101	131	151		
Cli	Cooling capacity (1)	kW	15.8	19.1	21.2	26.4	30.9	36.6	45.9		
Cooling	Absorbed power (1)	kW	5.1	6.2	7.1	8.6	9.2	11.5	14.2		
Heating	Heating capacity (2)	kW	16.8	19.9	22.0	27.4	33.2	40.9	51.9		
Heating	Absorbed power (2)	kW	5.3	6.4	7.3	8.8	9.8	11.9	15.2		
Comprosor	Quantity	n°	1	1	1	1	1	1	1		
Compressor	Type					Scroll					
Connections	Suction line	Ø mm	18	22	22	28	28	28	28		
Connections	Liquid line	Ø mm	12	12	12	12	12	12	16		
Electrical	Power supply	V/Ph/Hz		•		400/3+N/50					
	Max. running current	А	10	10	12	23	29	30	39		
characteristics	Max. starting current	А	61	58	74	142	147	142	167		
Sound pressure (3	3)	dB(A)	54	55	56	59	61	61	61		
Maiabta	Transport weight	Kg	111	113	115	218	232	252	266		
Weights	Operating weight	Kg	114	116	118	221	235	256	271		

DIMENSION	NS		15	18	21	25	31	41	51	61	71	81	91	101	131	151
L	STD	mm	870	870	870	870	870	870	1160	1160	1160	1160	1850	1850	1850	1850
W	STD	mm	320	320	320	320	320	320	500	500	500	500	1000	1000	1000	1000
Н	STD	mm	1100	1100	1100	1100	1100	1100	1270	1270	1270	1270	1300	1300	1300	1300

# CLEARANCE AREA

MHA/K	15÷41		
200	200	800	200

MHA/K 51÷81 200 200 800 200









- Average evaporating temperature 5 °C, ambient air temperature 35 °C.
   Average condensing temperature 40 °C, ambient air temperature 7 °C d.b./6 °C w.b.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   N.B. Weights of WP version are specified on technical breakure.
- brochure.

# MHA/K 182÷604















The condensing units and reversible condensing units of the MHA/K  $182 \div 604$  series, with R410A refrigerant, are designed to satisfy the needs of medium and large-sized domestic or industrial systems.

These outdoor units are combined with evaporators in split system air conditioning installations, allowing the rooms to be cooled and dehumidified or to be heated. They can also be used in combination with hydronic evaporating units in both air conditioning and industrial process cooling applications

They are equipped with Scroll compressors and axial fans, and they enable immediate and efficient use thanks to particular technical and design adjustments.

A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

#### **VERSION**

1 = 1101011	
MHA/K	MHA/K/WP
Cooling only	Reversible Heat Pump
MHA/K/SSL	MHA/K/WP/SSL
Super silenced cooling only	Super silenced reversible Heat Pump

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM	Automatic circuit breakers	IS
SL	Unit silencement	
RFM	Cooling circuit shut-off valve on	СР
	discharge line	
RFL	Cooling circuit shut-off valve on	
	liquid line	
CT	Condensing control down to 0 °C	
CC	Condensing control down to -20 °C	
EC	EC Inverter fans	

VS Solenoid valve
BP Hot gas by-pass valve
FF Dryer filter and sight glass

Liquid receiver

Coil with pre-coated fins

SS Soft start

TX

RL

Modbus RTU protocol, RS485 serial interface

Potential free contacts

#### LOOSE ACCESSORIES

IVIIV	High and low pressure gauges
CR	Remote control panel
RP	Coils protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers



# MHA/K 182÷604

MODEL			182	202	242	262	302	363	393	453	524	604
Cooling	Cooling capacity (1)	kW	50.6	58.6	66.9	77.2	88.4	102	117	134	156	188
Cooling	Absorbed power (1)	kW	17.4	19.7	22.5	25.8	29.5	34.2	39.2	45.6	53.2	63.2
Heating	Heating capacity (2)	kW	55.5	63.5	73.6	83.9	94.5	109	125	142	162	193
пеанну	Absorbed power (2)	kW	14.7	16.0	19.1	21.7	24.4	27.9	32.7	36.6	41.7	49.5
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2			3			4	
Connections	Suction line	Ø mm	1x35	1x35	1x35	1x35	1x35	1x42	1x42	1x42	2x35	2x35
COHHECTIONS	Liquid line	Ø mm	1x22	1x22	1x22	1x22	1x22	1x28	1x28	1x28	2x22	2x22
Electrical	Power supply	V/Ph/Hz					400/	3/50				
characteristics	Max. running current	Α	40	43	52	56	65	75	85	98	111	132
Characteristics	Max. starting current	Α	163	165	175	188	232	199	218	265	243	299
	STD version (3)	dB(A)	61	61	64	64	65	66	68	68	69	70
Sound pressure	With SL accessory (3)	dB(A)	59	59	62	62	63	64	66	66	67	68
	SSL version (3)	dB(A)	57	57	60	60	61	62	63	63	64	
Weights	Transport weight	Kg	550	575	615	625	670	770	800	830	980	1090
vveigiits	Operating weight	Kg	560	585	625	635	680	785	815	845	1005	1120

<b>DIMENSION</b>	IS		182	202	242	262	302	363	393	453	524	604
1	STD	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
L	SSL	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	
W	STD/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD/SSL	mm	1920	1920	1920	1920	2220	2220	2220	2220	2220	2220

# CLEARANCE AREA

MHA/K 182÷604

300 800 800 1800



- Average evaporating temperature 5 °C, ambient air temperature 35 °C.
   Average condensing temperature 40 °C, ambient air temperature 7 °C d.b./6 °C w.b.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   N.B. Weights of SSL and WP versions are specified on technical brochure.

# MRA/K 15÷131

AIRCOOLED CONDENSING UNITS AND REVERSIBLE CONDENSING UNITS WITH RADIAL FANS AND ROTARY/SCROLL COMPRESSOR FOR INDOOR DUCTED INSTALLATION





The indoor condensing units and reversible condensing units of the MRA/K 15÷131 series, with R410A refrigerant, are intended to satisfy the needs of small and medium-sized domestic or industrial systems with particular difficulty in positioning units outside the building.

With a prepainted plate structure, these units are combined with evaporators in split system air conditioning installations, allowing the rooms to be cooled and dehumidified or to be heated. They can also be used in combination with hydronic evaporating units, generally in air-conditioning applications.

They are equipped with Rotary/Scroll compressors and radial fans, with appreciable useful head, and they enable immediate and efficient use thanks to particular technical and design adjustments. A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

#### **VERSION**

MRA/K	MRA/K/WP
Cooling only	Reversible Heat Pump

#### **FEATURES**

- Self-supporting prepainted steel frame.
- Rotary/Scroll compressor with internal overheat protection and crankcase heater, if needed.
- Double inlet radial fan statically and dynamically balanced directly driven by a electric motor (15÷81) or belt driven connected to a three-phase electric motor (91÷131).
- Condenser in copper tubes and aluminium finned coil, complete with drain pan for WP version only.
- R410A refrigerant.
- · Electrical board includes: main switch with door safety interlock, fuse and compressors remote control switch.
- Microprocessor control and regulation system (WP only).

# **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

CC Condensing control down to -20 °C

TX Coil with pre-coated fins

RL Liquid receiver VS Solenoid valve

#### LOOSE ACCESSORIES

RP Coils protection metallic guards AG Rubber shock absorbers



# MRA/K 15÷131

MODEL			15	18	21	25	31	41	51	
CI:	Cooling capacity (1)	kW	4.5	5.6	6.8	8.0	9.2	10.8	13.2	
Cooling	Absorbed power (1)	kW	1.5	1.9	2.2	2.6	3.0	3.8	4.9	
Heating	Heating capacity (2)	kW	4.8	5.9	7.3	8.4	9.7	11.3	13.7	
Heating	Absorbed power (2)	kW	1.6	2.0	2.4	2.7	3.1	3.9	5.0	
Compressor	Quantity	n°	1	1	1	1	1	1	1	
Compressor	Type			Rot	ary	•		Scroll		
Connections	Suction line	Ø mm	16	16	16	16	16	16	18	
Connections	Liquid line	Ø mm	10	10	10	10	10	10	12	
Available static p	pressure	Pa	90	90	80	80	80	80	115	
Electrical	Power supply	V/Ph/Hz			230,	/1/50	•		400/3+N/50	
characteristics	Max. running current	Α	10	12	13	14	17	21	11	
characteristics	Max. starting current	А	40	46	65	65	82	89	61	
Sound pressure (	3)	dB(A)	51	51	51	52	53	53 54 59		
Weights	Transport weight	Kg	120	121	123	126	131	133	190	
vveignts	Operating weight	Kg	121	122	124	127	132	134	192	
MODEL			61	71	8′	1	91	101	131	
o ::	Cooling capacity (1)	kW	15.8	19.1	21.	2	26.4	30.9	36.6	
Cooling	Absorbed power (1)	kW	5.9	7.0	7.9	9	10.3 10.4		13.5	
11 - 2	Heating capacity (2)	kW	16.8	19.9	22.	.0	27.4	33.2	40.9	
Heating	Absorbed power (2)	kW	6.1	7.2	8.	1	10.5	11.0	13.9	
0	Quantity	n°	1	1	1		1	1	1	
Compressor	Type			'	'	Scroll				
Connections	Suction line	Ø mm	18	22	22	2	28	28	28	
Connections	Liquid line	Ø mm	12	12	12	2	12	12	12	
Available static p	pressure	Pa	115	115	11	5	150	150	160	
Electrical	Power supply	V/Ph/Hz				400/3+N/50				
	Max. running current	Α	14	14	15	5	27	33	36	
characteristics	Max. starting current	А	64	61	77	7	146	151	148	
Sound pressure (3	pressure (3) dB(A) 59			60	60	)	62	62	64	
Weights	Transport weight	Kg	200	202	20	4	313	319	334	
vveignis	Operating weight	Kg	203	205	20	7	316	322	338	

DIMENSIONS		15	18	21	25	31	41	51	61	71	81	91	101	131	
L	STD	mm	900	900	900	900	900	900	900	900	900	900	1500	1500	1500
W	STD	mm	550	550	550	550	550	550	690	690	690	690	800	800	800
Н	STD	mm	1425	1425	1425	1425	1425	1425	1725	1725	1725	1725	1425	1425	1425

# CLEARANCE AREA

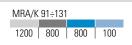
MRA/K 15÷41 100 800 800 800





100 800 800 1000

MRA/K 51÷81





- Average evaporating temperature 5 °C, ambient air temperature 35 °C.
   Average condensing temperature 40 °C, ambient air temperature 7 °C d.b./6 °C w.b.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   N.B. Weights of WP version are specified on technical brochure.







# MRA/K 182÷604

AIRCOOLED CONDENSING UNITS AND REVERSIBLE CONDENSING UNITS WITH RADIAL FANS AND SCROLL COMPRESSORS.





The indoor condensing units and reversible condensing units of the MRA/K 182÷604 series, with R410A refrigerant, are designed to satisfy the needs of medium-sized domestic or industrial systems with particular difficulty in positioning units outside the building.

These units are combined with evaporators in split system air conditioning installations, allowing the rooms to be cooled and dehumidified or to be heated. They can also be used in combination with hydronic evaporating units in both air conditioning and industrial process cooling applications.

They are equipped with Scroll compressors and radial fans even in a high ESP version, and they enable immediate and efficient use thanks to particular technical and design adjustments. A wide range of accessories, factory fitted or supplied separately, completes the outstanding versatility and functionality of the series.

VERSION	
MRA/K	MRA/K/AP
Cooling only	Cooling only with high ESP fans
MRA/K/WP	MRA/K/WP/AP
Reversible Heat Pump	Reversible Heat Pump with high ESP fans

#### **FEATURES**

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Radial fans coupled to 3-phase motors by V belt and variable pulley.
- Condenser made of copper tubes and aluminium finned coil.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

#### **ACCESSORIES**

#### **FACTORY FITTED ACCESSORIES**

IM Automatic circuit breakersSL Unit silencement

RFM Cooling circuit shut-off valve on

discharge line

RFL Cooling circuit shut-off valve on

liquid line

CC Condensing control down to -20 °C

TX Coil with pre-coated fins

RL Liquid receiver VS Solenoid valve

BP Hot gas by-pass valve FF Dryer filter and sight glass

SS Soft start

IS Modbus RTU protocol, RS485

serial interface

CP Potential free contacts

#### **LOOSE ACCESSORIES**

MN High and low pressure gauges

CR Remote control panel

RP Coils protection metallic guards

AG Rubber shock absorbers

AM Spring shock absorbers

# MRA/K 182÷604

MODEL			182	202	242	262	302	363	393	453	524	604
Cooling	Cooling capacity (1)	kW	50.6	58.6	66.9	77.2	88.4	102	117	134	156	188
Cooming	Absorbed power (1)	kW	18.3	21.4	24.9	28.2	31.9	36.6	43.2	49.6	156 58.2 162 46.7 4 2 2x35 2x22 190 400 122 255 75 73 76 74 1080	69.2
Heating	Heating capacity (2)	kW	55.5	63.5	73.6	83.9	94.5	109	125	142	162	193
пеанну	Absorbed power (2)	kW	15.6	17.7	21.5	24.1	26.8	30.3	36.7	40.6	46.7	55.5
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		156 58.2 162 6 46.7 4 2 4 2 2 2x35 3 2x22 190 400 122 255 75 73 76 74 1080	4
Connections	Suction line	Ø mm	1x35	1x35	1x35	1x35	1x35	1x42	1x42	1x42	2x35	2x35
Connections	Liquid line	Ø mm	1x22	1x22	1x22	1x22	1x22	1x28	1x28	1x28	2x22	2x22
Available static	STD version	Pa	165	147	120	120	105	115	135	135	190	105
pressure	High ESP version	Pa	298	288	263	263	245	256			400	
Electrical	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	Α	43	48	57	61	70	80	94	107	122	146
characteristics	Max. starting current	А	166	169	180	193	237	204	227	275	255	313
	STD version (3)	dB(A)	70	70	70	70	71	73	74	74	75	76
Cound proceure	STD version with SL accessory (3)	dB(A)	68	68	68	68	69	71	72	72	73	74
Sound pressure	High ESP version (3)	dB(A)	71	71	71	71	72	74			76	
	High ESP version with SL accessory (3)	dB(A)	69	69	69	69	70	72			74	
Weights	Transport weight	Kg	595	600	670	680	725	825	865	895	1080	1185
vveigins	Operating weight	Kg	605	610	680	690	735	840	880	910	2x22 190 400 122 255 75 73 76 74 1080	1215

DIMENSIONS			182	202	242	262	302	363	393	453	524	604
L	STD/AP	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
W	STD/AP	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Н	STD/AP	mm	1705	1705	1705	1705	2005	2005	2005	2005	2005	2005

# CLEARANCE AREA

MRA/K 182÷604

300 800 800 1800



- Average evaporating temperature 5 °C, ambient air temperature 35 °C.

  Average condensing temperature 40 °C, ambient air temperature 7 °C d.b./6 °C w.b.

  Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

  N.B. Weights of WP versions are specified on technical brochure.



# **CHAPTER 7**

FAN COIL UNITS

UNIT	Page
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FIW 13÷74	220 - 221
FIW/AP 23÷74	222 - 223
HWW/EC 22÷62 eurice	224 - 225
TCW 22÷122	226 - 227
UTW 63÷544	228 - 229

# FVW 13÷74 FLOYD

FAN COIL UNITS WITH CABINET AND 3-SPEED OR EC INVERTER RADIAL FANS.







The hydronic Fan Coil units with cabinet of FVW series feature a refined, exclusive design combined with the highest efficiency and noiseless operation.

Part of an hydronic system equipped with a liquid Chiller, **FLOYD** generates cool air silently and with instantaneous reaction. During the winter, if combined with a boiler or heat pump, it provides warm air, making it possible to meet home or business heating needs. A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level and its easy removal enables continuous cleaning cycles to be carried out, which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms. All installation needs are considered in the many standard features of the unit. It can be installed horizontally or vertically, with front, bottom or rear intake. There is also a series of accessories, also for 4-Pipe systems, that includes a control panel that is installed on-board or in the room.

Units are available both with 3-Speed or EC Inverter fans. The units equipped with EC Inverter motor are able to modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations, achieving superior performance compared to the traditional solutions even from energy consumption point of view.

VERSION			
FVW/VP	FVW/VH	FVW/VE	FVW/VO
Vertical unit with bottom inlet and vertical delivery	Vertical unit with front inlet and vertical delivery	Horizontal unit with rear inlet and horizontal delivery	Horizontal unit with bottom inlet and horizontal delivery
FVW/VP/EC	FVW/VH/EC	FVW/VE/EC	FVW/VO/EC
Vertical unit with EC Inverter fans, bottom inlet and vertical delivery	Vertical unit with EC Inverter fans, front inlet and vertical delivery	Horizontal unit with EC Inverter fans, rear inlet and horizontal delivery	Horizontal unit with EC Inverter fans, bottom inlet and horizontal delivery

# **FEATURES**

- Structure made of galvanized sheet protected by a prepainted sheet covering cabinet and ABS details, complete with heat/sound insulation, regenerating filter, heat-resistant ABS polymer grills adjustable in 4 different directions and natural discharge condensation tray.
- Radial fan type directly coupled to a 6-Speed single phase electric motor, with 3 speeds connected in the standard configuration.
- Radial EC INVERTER fan (23÷74).
- · Heat exchanger coils with copper pipes and aluminium fins with airvent on the distributors.

# **ACCESSORIES**

I OUSE VOCESSUBIES

LUUSE	ACCESSONIES				
Z	Couple of feet	VR	Wall mounted fan speed control	V4	3-Way on/off valves for 4-Pipe
С	Auxiliary condensate drain pan		panel		system
WS	Hot water coil for 4-Pipe system	TA	Wall mounted ambient thermostat	MP	Condensate drain pump
EH	Supplementary electrical heater	DBE	On board electromechanic control		
PP	Rear panel		panel		
TP	Rear closure	DRE	Wall mounted electromechanic		
S	Manual damper		control panel		
SG	Manual damper with grid	DBV	On board automatic electronic		
SMF	On/off motorized damper		control panel		
SMG	On/off motorized damper with grid	DRV	Wall mounted automatic electronic		
RM	Wall connection for damper		control panel		
DBA	On board automatic electronic	MCC	Multicontrol connection card		
DDA	control panel	ВС	Universal connecting terminal		
DRA	Wall mounted automatic electronic	TMB	Minimum temperature thermostat		
2	control panel		for VB and VR		
VB	On board fan speed control panel	V2	3-Way on/off valve for 2-Pipe		
. –	2 2 2 2 . 2 2 2 2 3 d oo o . panor		system		

# FVW 13÷74 floyd

EUROVENT
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PERFORMANCE
www.eurovent-certification.com

MODEL	Total cooling capacity (1),(2)	kW	1.31	1.49	1.77	2.05	2.47	2.77	3.11
N 12	Sensible cooling capacity (1),(2)	kW	1.09	1.26	1.45	1.68	1.96	2.16	2.42
Cooling	Water flow (1),(2)	I/h	225	256	304	353	425	476	535
	Pressure drops (1),(2)	kPa	5	1	11	6	8	5	14
	Heating capacity (2),(3)	kW	3.20	3.45	4.19	4.53	5.70	6.35	7.03
eating	Water flow (2),(3)	l/h	275	297	360	390	490	546	605
	Pressure drops (2),(3)	kPa	4	1	8	2	6	4	11
OWS	Quantity	n°	3	4	3	4	3	4	3
Vater connections	In / Out	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
· a	Max	m³/h	240	240	340	340	430	430	540
ir flow	Med	m³/h	190	190	260	260	340	340	420
ir flow	Min	m³/h	140	140	170	170	250	250	280
	Max	m³/h			340	340	430	430	540
C version)	Min	m³/h	4.50		150	150	180	180	230
	Heating capacity (2),(3)	kW	1.50	1.50	2.16	2.16	2.92	2.92	3.75
dditional acil	Water flow (2),(3)	I/h	129	129	186	186	251	251	322
dditional coil	Pressure drops (2),(3)	kPa n°	<u>5</u> 1	5	9	9	15 1	15 1	26
	Rows	"G	<u> </u>	1/2"	1/2"	1/2"	1/2"	<u> </u>	1/2"
	Water connections (In / Out) Power supply	V/Ph/Hz	/2	/2	/2	230/1/50	72	/2	/2
lectrical heater	Absorbed power	kW	0.6	0.6	1.0	1.0	1.6	1.6	2.0
ectrical	Power supply	V/Ph/Hz	0.0	1 0.0	1.0	230/1/50	1.0	1.0	
naracteristics	Max absorbed power	kW	0.03	0.03	0.05	0.05	0.05	0.05	0.07
lectrical	Power supply	V/Ph/Hz			0.00	0.00	230/1/50	0.00	1 0.07
nectrical haracteristics	· · ·								
C version)	Max absorbed power	kW			0.02	0.02	0.03	0.03	0.04
,	Max (4)	dB(A)	41	41	44	44	40	40	44
ound pressure	Med (4)	dB(A)	34	34	38	38	34	34	37
•	Min (4)	dB(A)	26	26	26	26	25	25	27
ound pressure	Max (4)	dB(A)			44	44	40	40	44
C version)	Min (4)	dB(A)			25	25	24	24	26
· · · · · · · · · · · · · · · · · · ·	Transport weight	Kg	16	16	19	19	24	25	28
Veights	Operating weight	Kg	14	14	17	17	22	23	26
40051				50	<b>-</b> 4	00	0.4	70	7.4
/IODEL			44	53	54	63	64	73	74
	Total cooling capacity (1),(2)	kW	3.54	4.04	4.58	5.09	5.96	6.45	7.26
ooling	Sensible cooling capacity (1),(2)	kW	2.71	3.12	3.47	3.86	4.63	5.07	5.57
5	Water flow (1),(2)	I/h	609	695	788	875	1025	1109	1249
	Pressure drops (1),(2)	kPa kW	9 7 75	26 9.01	17	8	5	16	15
eating	Heating capacity (2),(3) Water flow (2),(3)	I/h	7.75 666	775	9.93 854	11.69 1005	13.00 1118	14.59 1255	16.19 1392
eating	Pressure drops (2),(3)	kPa	7	20	13	6	4	12	8
0WS	Quantity	n°	4	3	4	3	4	3	4
later connections	In / Out	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
rator connections	Max	m³/h	540	690	690	910	910	1180	1180
ir flow	Med	m³/h	420	530	530	730	730	810	810
	Min	m³/h	280	400	400	510	510	590	590
ir flow	Max	m³/h	540	690	690	910	910	1180	1180
C version)	Min	m³/h	230	300	300	420	420	500	500
	Heating capacity (2),(3)	kW	3.75	4.65	4.65	6.01	6.01	7.84	7.84
	Water flow (2),(3)	I/h	322	400	400	517	517	674	674
dditional coil	Pressure drops (2),(3)	kPa	26	18	18	13	13	24	24
	Rows	n°	1	1	1	1	1	1	1
	Water connections (In / Out)	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
ectrical heater	Power supply	V/Ph/Hz				230/1/50			1 -
	Absorbed power	kW	2.0	2.5	2.5	3.0	3.0	4.0	4.0
ectrical	Power supply	V/Ph/Hz	0.67	0.00	0.00	230/1/50	0.10		
naracteristics	Max absorbed power	kW	0.07	0.09	0.09	0.16	0.16	0.19	0.19
ectrical	Power supply	V/Ph/Hz		1		230/1/50			T
naracteristics C version)	Max absorbed power	kW	0.04	0.07	0.07	0.09	0.09	0.13	0.13
O VEISIUII)	Max (4)	dB(A)	44	46	46	48	48	52	52
ound pressure	Med (4)	dB(A)	37	39	39	43	43	42	42
ania hieggaig	Min (4)	dB(A)	27	33	33	34	34	34	34
	Max (4)	dB(A)	44	46	46	48	48	52	52
nund pressure	Min (4)	dB(A)	26	29	29	28	28	33	33
		uD(U)	20						
ound pressure C version)			20	33	3/1	/1.3	1//	5/1	1 56
	Transport weight Operating weight	Kg Kg	29 27	33 31	34 32	43	44 42	54 52	56 54

								• •				• •		• •		
L	STD/EC	mm	650	650	780	780	1040	1040	1170	1170	1430	1430	1430	1430	1690	1690
W	STD/EC	mm	210	210	210	210	210	210	210	210	210	210	275	275	275	275
Н	STD/EC	mm	500	500	500	500	500	500	500	500	500	500	570	570	570	570
D (5)	STD/EC	mm	90	90	90	90	90	90	90	90	90	90	90	90	90	90

# **CLEARANCE AREA**

FVW 13÷74 floyd



- 1. Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C.

  2. Performances also valid for EC version.

  3. Ambient air temperature 20 °C d.b., water temperature 70/60 °C.

  4. Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s.

  5. Feet height.

  N.B. Maximum operating pressure 1000 kPa.

  N.B. Maximum inlet water temperature 90 °C.

  N.B. Inhibited ethylene glycol can be added to the water.



# FIW 13÷74

FAN COIL UNITS FOR BUILT-IN INSTALLATION WITH 3-SPEED OR EC INVERTER RADIAL FANS.



**EC INVERTER FAND** 



The hydronic Fan Coil units of FIW series are designed for built-in installation: vertical floor-mounted or horizontal ceiling-mounted in domestic environments or service sector including offices, hotels, restaurants, gyms and shops.

Part of an hydronic system equipped with a liquid Chiller, FIW Fan Coil generates cool air silently and with instantaneous reaction. During the winter, if combined with a boiler or heat pump, it provides warm air, making it possible to meet home or business heating needs. A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level and its easy removal enables continuous cleaning cycles to be carried out, which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms. All installation needs are considered in the many standard features of the unit. It can be installed horizontally or vertically, with front, bottom or rear intake. There is also a series of accessories, also for 4-Pipe systems, that includes a control panel that is installed in the room.

Units are available both with 3-Speed or EC Inverter fans. The units equipped with EC Inverter motor are able to modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations, achieving superior performance compared to the traditional solutions even from energy consumption point of view.

# **VERSION**

FIW/IV	FIW/IF	FIW/IO	FIW/II
Vertical unit with bottom inlet and vertical delivery	Vertical unit with front inlet and vertical delivery	Horizontal unit with rear inlet and horizontal delivery	Horizontal unit with bottom inlet and horizontal delivery
FIW/IV/EC	FIW/IF/EC	FIW/IO/EC	FIW/II/EC
Vertical unit with EC Inverter fans, bottom inlet and vertical delivery	Vertical unit with EC Inverter fans, front inlet and vertical delivery	Horizontal unit with EC Inverter fans, rear inlet and horizontal delivery	Horizontal unit with EC Inverter fans, bottom inlet and horizontal delivery

## **FEATURES**

- Structure made of galvanized sheet complete with heat/sound insulation, regenerating filter and natural discharge condensation tray.
- · Radial fan type directly coupled to a 6-Speed single phase electric motor, with 3 speeds connected in the standard configuration.
- Radial EC INVERTER fan (23÷74).

Wall mounted automatic electronic

Wall mounted fan speed control

Wall mounted electromechanic

Wall mounted ambient thermostat

Wall mounted automatic electronic

• Heat exchanger coils with copper pipes and aluminium fins with airvent on the distributors.

## **ACCESSORIES**

#### **LOOSE ACCESSORIES**

control panel

control panel

control panel

panel

MCC Auxiliary condensate drain pan Multicontrol connection card WS Hot water coil for 4-Pipe system RC. Universal connecting terminal Supplementary electrical heater EΗ TMB Minimum temperature thermostat S Manual damper for VB and VR V2 3-Way on/off valve for 2-Pipe SG Manual damper with grid system **SMF** On/off motorized damper V/4 3-Way on/off valves for 4-Pipe **SMG** On/off motorized damper with grid system RMWall connection for damper MP Condensate drain pump SF Supply frame

DRA

VR

TΑ

DRE

DRV

# FIW 13÷74



MODEL	Total cooling capacity (1),(2)	kW	1.31	1.49	23 1.77	2.05	2.47	2.77	3.11
	Sensible cooling capacity (1),(2)	kW	1.09	1.26	1.45	1.68	1.96	2.16	2.42
Cooling	Water flow (1),(2)	I/h	225	256	304	353	425	476	535
	Pressure drops (1),(2)	kPa	5	1	11	6	8	5	14
	Heating capacity (2),(3)	kW	3.20	3.45	4.19	4.53	5.70	6.35	7.03
Heating	Water flow (2),(3)	l/h	275	297	360	390	490	546	605
	Pressure drops (2),(3)	kPa	4	1	8	2	6	4	11
Rows	Quantity	n°	3	4	3	4	3	4	3
Vater connections	In / Out	"G m³/h	½" 240	½" 240	½" 340	½" 340	½" 430	½" 430	½" 540
Air flow	Max Med	m³/h	190	190	260	260	340	340	420
All HOW	Min	m³/h	140	140	170	170	250	250	280
Air flow	Max	m³/h			340	340	430	430	540
EC version)	Min	m³/h			150	150	180	180	230
LG VEISION)	Heating capacity (2),(3)	kW	1.50	1.50	2.16	2.16	2.92	2.92	3.75
	Water flow (2),(3)	I/h	129	129	186	186	251	251	322
Additional coil	Pressure drops (2),(3)	kPa	5	5	9	9	15	15	26
taareronar oon	Rows	n°	1	1	1	1	1	1	1
	Water connections (In / Out)	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
lastriaal bastar	Power supply	V/Ph/Hz				230/1/50			
lectrical heater	Absorbed power	kW	0.6	0.6	1.0	1.0	1.6	1.6	2.0
lectrical	Power supply	V/Ph/Hz				230/1/50			
haracteristics	Max absorbed power	kW	0.03	0.03	0.05	0.05	0.05	0.05	0.07
lectrical	Power supply	V/Ph/Hz					230/1/50		
haracteristics EC version)	Max absorbed power	kW			0.02	0.02	0.03	0.03	0.04
	Max (4)	dB(A)	41	41	44	44	40	40	44
Sound pressure	Med (4)	dB(A)	34	34	38	38	34	34	37
	Min (4)	dB(A)	26	26	26	26	25	25	27
Sound pressure	Max (4)	dB(A)			44	44	40	40	44
C version)	Min (4)	dB(A)			25	25	24	24	26
•	Transport weight	Kg	12	12	14	14	18	19	21
Veights						4.0		4-7	4.0
	Operating weight	Kg	10	10	12	12	16	17	19
MODEL		Kg	10 44	10 <b>53</b>	12 <b>54</b>	63	64 64	73	74
MODEL	Total cooling capacity (1),(2)	Kg				'		1	
	Operating weight   Total cooling capacity (1),(2)   Sensible cooling capacity (1),(2)		3.54 2.71	<b>53</b> 4.04 3.12	<b>54</b> 4.58 3.47	<b>63</b> 5.09 3.86	<b>64</b> 5.96 4.63	<b>73</b> 6.45 5.07	74 7.26 5.57
	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2)	kW kW l/h	3.54 2.71 609	53 4.04 3.12 695	54 4.58 3.47 788	63 5.09 3.86 875	5.96 4.63 1025	73 6.45 5.07 1109	<b>74</b> 7.26
	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2)	kW kW I/h kPa	3.54 2.71 609 9	53 4.04 3.12 695 26	54 4.58 3.47 788 17	5.09 3.86 875 8	5.96 4.63 1025 5	73 6.45 5.07 1109 16	7.26 5.57 1249
Cooling	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3)	kW kW I/h kPa kW	3.54 2.71 609 9 7.75	53 4.04 3.12 695 26 9.01	54 4.58 3.47 788 17 9.93	63 5.09 3.86 875 8 11.69	5.96 4.63 1025 5 13.00	73 6.45 5.07 1109 16 14.59	7.26 5.57 1249 15 16.19
Cooling	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3)	kW kW I/h kPa kW I/h	3.54 2.71 609 9 7.75 666	53 4.04 3.12 695 26 9.01 775	54 4.58 3.47 788 17 9.93 854	63 5.09 3.86 875 8 11.69 1005	5.96 4.63 1025 5 13.00 1118	73 6.45 5.07 1109 16 14.59 1255	7.26 5.57 1249 15 16.19 1392
ooling leating	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3)	kW kW I/h kPa kW I/h kPa kPa	3.54 2.71 609 9 7.75 666 7	53 4.04 3.12 695 26 9.01 775 20	54 4.58 3.47 788 17 9.93 854	63 5.09 3.86 875 8 11.69 1005 6	5.96 4.63 1025 5 13.00 1118 4	73 6.45 5.07 1109 16 14.59 1255	7.26 5.57 1249 15 16.19 1392 8
ooling leating ows	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity	kW kW I/h kPa kW I/h kPa n°	3.54 2.71 609 9 7.75 666 7	53 4.04 3.12 695 26 9.01 775 20 3	54 4.58 3.47 788 17 9.93 854 13 4	63 5.09 3.86 875 8 11.69 1005 6 3	5.96 4.63 1025 5 13.00 1118 4	73 6.45 5.07 1109 16 14.59 1255 12 3	74 7.26 5.57 1249 15 16.19 1392 8 4
ooling leating ows	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out	kW kW l/h kPa kW l/h kPa n° "G	3.54 2.71 609 9 7.75 666 7 4	53 4.04 3.12 695 26 9.01 775 20 3 ½"	54 4.58 3.47 788 17 9.93 854 13 4 ½"	5.09 3.86 875 8 11.69 1005 6 3 8	5.96 4.63 1025 5 13.00 1118 4 4 ½"	73 6.45 5.07 1109 16 14.59 1255 12 3	74 7.26 5.57 1249 15 16.19 1392 8 4 ½"
ooling leating ows Vater connections	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max	kW kW I/h kPa kW I/h kPa n° G m³/h	3.54 2.71 609 9 7.75 666 7 4 ½" 540	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690	54 4.58 3.47 788 17 9.93 854 13 4 ½" 690	5.09 3.86 875 8 11.69 1005 6 3 ½" 910	5.96 4.63 1025 5 13.00 1118 4 4 ½"	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180
leating	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530	54 4.58 3.47 788 17 9.93 854 13 4 ½" 690 530	63 5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810
Cooling  leating  lows  Vater connections  Air flow	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400	54 4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400	63 5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510	5.96 4.63 1025 5 13.00 1118 4 4 2" 910 730 510	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590
dooling leating lows Vater connections ir flow	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690	54 4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180
dooling leating lows Vater connections ir flow	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h m³/h	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 910 910 420	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 810 590 1180 500	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180 500
dooling leating lows Vater connections ir flow	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3)	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01	73  6.45  5.07  1109  16  14.59  1255  12  3  ½"  1180  810  590  1180  500  7.84	74 7.26 5.57 1249 155 16.19 1392 8 4 ½" 1180 810 590 7.84
leating lows Vater connections ir flow air flow EC version)	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3)	kW kW l/h kPa kW l/h kPa n° G m³/h m³/h m³/h m³/h kW l/h	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400	54 4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674	74 7.26 5.57 1249 15 16.19 1392 8 4 4/2" 1180 810 590 1180 7.84
Cooling  Heating  Hows  Vater connections  Air flow  EC version)	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3)	kW kW l/h kPa kW l/h kPa n° G m³/h m³/h m³/h m³/h kW l/h kW l/h kPa	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01	5.96 4.63 1025 5 13.00 1118 4 4 7 910 730 510 910 420 6.01 517	73  6.45  5.07  1109  16  14.59  1255  12  3  ½"  1180  810  590  1180  500  7.84	74 7.26 5.57 1249 155 16.19 1392 8 4 ½" 1180 810 590 7.84
leating lows Vater connections ir flow air flow EC version)	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h kW l/h kW l/h	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 1	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 500 7.84 674 24
cooling leating lows Vater connections Air flow EC version	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out)	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa m³/h m³/h m³/h m³/h m³/h kW l/h kPa n° "G	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1	5.96 4.63 1025 5 13.00 1118 4 4 7 910 730 510 910 420 6.01 517	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674	74 7.26 5.57 1249 15 16.19 1392 8 4 4/2" 1180 810 590 1180 7.84
ooling leating ows Vater connections ir flow ir flow EC version) dditional coil	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Med Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply	kW kW l/h kPa kW l/h kPa n° G m³/h m³/h m³/h kW l/h kPa n° l/h kW l/h constant m³/h m³/h m³/h m³/h kW l/h kPa n° G V/Ph/Hz	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½"	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½"	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½"	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"	74 7.26 5.57 1249 15 16.19 1392 8 4 4 ½" 1180 810 590 7.84 674 24 1 ½"
eating  ows Vater connections ir flow ir flow C version)  dditional coil ectrical heater	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Med Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power	kW kW 1/h kPa kW 1/h kPa n° "G m³/h m³/h m³/h m³/h kW 1/h kPa n° "G	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 1	74 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 500 7.84 674 24
eating ows Vater connections ir flow ir flow C version) dditional coil	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½"	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½"	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½"	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"	74  7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"
eating  ows /ater connections ir flow ir flow C version)  dditional coil  ectrical heater ectrical haracteristics	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power	kW kW l/h kPa kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW l/h kPa kPa kW kW kPa kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½"	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½"	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 0.16	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½"	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"	74 7.26 5.57 1249 15 16.19 1392 8 4 4 ½" 1180 810 590 7.84 674 24 1
eating ows /ater connections ir flow ir flow C version) dditional coil ectrical heater lectrical haracteristics lectrical	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply	kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kPa n° "G w l/h kPa n° "G V/Ph/Hz kW V/Ph/Hz kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½"	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0	74 7.26 5.57 1249 15 16.19 1392 8 4 4 ½" 1180 810 590 7.84 674 24 1 ½"
ooling  leating  ows  Vater connections  ir flow  ir flow  EC version)  dditional coil  lectrical heater  lectrical haracteristics lectrical haracteristics	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power	kW kW l/h kPa kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW l/h kPa kPa kW kW kPa kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½"	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½"	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 0.16	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½"	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"	74 7.26 5.57 1249 15 16.19 1392 8 4 4 ½" 1180 810 590 1180 500 7.84 674 24 1 ½"
ooling  leating  ows  Vater connections  ir flow  ir flow  EC version)  dditional coil  lectrical heater  lectrical haracteristics lectrical haracteristics	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Heating capacity (2),(3) Water flow (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply Max absorbed power Power supply Max absorbed power	kW kW kW l/h kPa kW l/h kPa n° G m³/h m³/h m³/h kW l/h kPa n° (G w kW l/h kW l/h kW l/h kPa n° (G w kW	3.54 2.71 609 9 7.75 666 7 4 420 280 540 230 3.75 322 26 1 ½" 2.0	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5  0.09	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0 0.16	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 7.84 674 24 1 ½" 4.0 0.19	74 7.26 5.57 1249 15 16.19 1392 8 4 4 1180 810 590 7.84 674 24 1 ½"
ooling leating ows Vater connections ir flow ir flow EC version) dditional coil lectrical heater lectrical haracteristics lectrical haracteristics Ec version)	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply Max absorbed power Power supply Max absorbed power Max (4)	kW kW l/h kPa kW l/h kPa h° "G m³/h m³/h m³/h kW l/h kPa n° "G m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW V/Ph/Hz kW V/Ph/Hz kW kW l/Ph/Hz kW kW l/Ph/Hz kW kW l/Ph/Hz kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½"	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50 0.09	5.96 4.63 1025 5 13.00 1118 4 4 5.96 730 510 730 510 910 420 6.01 517 13 1 ½" 3.0 0.16	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19	74 7.26 5.57 1249 15 16.19 1392 8 4 4 ½" 1180 810 590 7.84 674 24 1 ½" 4.0 0.19
leating lows Vater connections Variflow Lower flow Lowe	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Max Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Max absorbed power Power supply Max absorbed power Max (4) Med (4)	kW kW l/h kPa kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW l/h kPa h° "G kW kW l/h kPa h° "G kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½" 2.0	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 1 ½" 2.5 0.09	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 690 300 4.65 400 000 0.07 46 39	5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 0.16 230/1/50 0.09 48	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0 0.16	73 6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19	74  7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19
Cooling  Heating  Rows  Water connections  Air flow  EC version)  Additional coil  Electrical heater Electrical characteristics Electrical haracteristics EC version)  Sound pressure	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Ouantity In / Out Max Med Min Heating capacity (2),(3) Water flow (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply Max absorbed power Power supply Max absorbed power Max (4) Med (4) Min (4)	kW kW kW l/h kPa kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW V/Ph/Hz kW V/Ph/Hz kW V/Ph/Hz kW kW l/h kPa kW	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½" 2.0 0.07	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50 0.09 48 43 34	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0 0.16	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19  0.13 52 42 34	74 7.26 5.57 1249 1392 8 4 ½" 1180 810 590 7.84 674 24 1 ½" 4.0 0.19
Cooling  Heating  Rows  Water connections  Air flow  Air flow  EC version)  Additional coil  Electrical heater Electrical characteristics Electrical haracteristics EC version)  Cound pressure	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Pressure drops (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Quantity In / Out Max Med Min Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Pressure drops (2),(4) Power supply Absorbed power Power supply Max absorbed power Power supply Max absorbed power Power supply Max absorbed power Max (4) Med (4) Min (4) Max (4)	kW kW kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa kW l/h kPa kW l/h kPa kW l/h kPa kW v/Ph/Hz kW v/Ph/Hz kW	3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½" 2.0	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5  0.09  0.07	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50 0.09 48 43 34 48	5.96 4.63 1025 5 13.00 1118 4 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0  0.16	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0  0.19  0.13 52 42 34 52	7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19
Additional coil Electrical heater Electrical characteristics EC version)  Sound pressure EC version)  Cound pressure EC version)  Weights	Total cooling capacity (1),(2) Sensible cooling capacity (1),(2) Water flow (1),(2) Heating capacity (2),(3) Water flow (2),(3) Pressure drops (2),(3) Ouantity In / Out Max Med Min Heating capacity (2),(3) Water flow (2),(3) Water flow (2),(3) Pressure drops (2),(3) Water flow (2),(3) Pressure drops (2),(3) Pressure drops (2),(3) Rows Water connections (In / Out) Power supply Absorbed power Power supply Max absorbed power Power supply Max absorbed power Max (4) Med (4) Min (4)	kW kW kW l/h kPa kW l/h kPa kW l/h kPa n° "G m³/h m³/h m³/h m³/h kW l/h kPa n° "G V/Ph/Hz kW V/Ph/Hz kW V/Ph/Hz kW V/Ph/Hz kW kW l/h kPa kW	44 3.54 2.71 609 9 7.75 666 7 4 ½" 540 420 280 540 230 3.75 322 26 1 ½" 2.0 0.07	53 4.04 3.12 695 26 9.01 775 20 3 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	54  4.58 3.47 788 17 9.93 854 13 4 ½" 690 530 400 690 300 4.65 400 18 1 ½" 2.5 0.09	63  5.09 3.86 875 8 11.69 1005 6 3 ½" 910 730 510 910 420 6.01 517 13 1 ½" 230/1/50 3.0 230/1/50 0.16 230/1/50 0.09 48 43 34	5.96 4.63 1025 5 13.00 1118 4 4 ½" 910 730 510 910 420 6.01 517 13 1 ½" 3.0 0.16	73  6.45 5.07 1109 16 14.59 1255 12 3 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19  0.13 52 42 34	7.4 7.26 5.57 1249 15 16.19 1392 8 4 ½" 1180 810 590 1180 500 7.84 674 24 1 ½" 4.0 0.19

DIMENSION	NS		13	14	23	24	33	34	43	44	53	54	63	64	73	74
L	STD/EC	mm	440	440	560	560	760	760	960	960	1160	1160	1135	1135	1410	1410
W	STD/EC	mm	195	195	195	195	195	195	195	195	195	195	260	260	260	260
Н	STD/EC	mm	475	475	475	475	475	475	475	475	475	475	545	545	545	545

## **CLEARANCE AREA**

FIW 13÷74



- Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C. Performances also valid for EC version.

  Ambient air temperature 20 °C d.b., water temperature 70/60 °C. Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s. Maximum operating pressure 1000 kPa.

  Maximum inlet water temperature 90 °C. Iphibited athylong diversions and ded to the water.

- N.B. Maximum inlet water temperature 90 °C.
  N.B. Inhibited ethylene glycol can be added to the water.



# FIW/AP 23÷74

FAN COIL UNITS FOR BUILT-IN INSTALLATION WITH HIGH AVAILABLE STATIC PRESSURE AND 3-SPEED OR EC INVERTER RADIAL FANS.



EC INVERTER FAN 

HIGH STATIC PRESSURE 

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The hydronic Fan Coil units of FIW/AP series, with high available static pressure fan, are designed for built-in and ducted installation: vertical floor-mounted or horizontal ceiling-mounted in domestic environments or service sector including offices, hotels, restaurants, gyms and shops. Part of an hydronic system equipped with a liquid Chiller, FIW/AP Fan Coil generates cool air silently and with instantaneous reaction. During the winter, if combined with a boiler or heat pump, it provides warm air, making it possible to meet home or business heating needs. A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level and its easy removal enables continuous cleaning cycles to be carried out, which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms. All installation needs are considered in the many standard features of the unit. It can be installed horizontally or vertically, with front, bottom or rear intake. There is also a series of accessories, also for 4-Pipe systems, that includes a control panel that is installed in the room.

The high available static pressure fan allows to reach up to 60 Pa, therefore makes the unit also suitable for installation on air ducts.

Units are available both with 3-Speed or EC Inverter fans. The units equipped with EC Inverter motor are able to modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations, achieving superior performance compared to the traditional solutions even from energy consumption point of view.

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FIW/AP/IV	FIW/AP/IF	FIW/AP/IO	FIW/AP/II
Vertical unit with bottom inlet and vertical delivery	Vertical unit with front inlet and vertical delivery	Horizontal unit with rear inlet and horizontal delivery	Horizontal unit with bottom inlet and horizontal delivery
FIW/AP/IV/EC	FIW/AP/IF/EC	FIW/AP/IO/EC	FIW/AP/II/EC
Vertical unit with EC Inverter fans, bottom inlet and vertical delivery	Vertical unit with EC Inverter fans, front inlet and vertical delivery	Horizontal unit with EC Inverter fans, rear inlet and horizontal delivery	Horizontal unit with EC Inverter fans, bottom inlet and horizontal delivery

## **FEATURES**

- · Structure made of galvanized sheet complete with heat/sound insulation, regenerating filter and natural discharge condensation tray.
- · Radial fan type directly coupled to a 6-Speed single phase electric motor, with 3 speeds connected in the standard configuration.
- Radial EC INVERTER fan.
- Heat exchanger coils with copper pipes and aluminium fins with airvent on the distributors.

## **ACCESSORIES**

#### LOOSE ACCESSORIES

LUUSE	ACCESSONIES		
WS	Hot water coil for 4-Pipe system	DRV	Wall mounted automatic electronic
EH	Supplementary electrical heater		control panel
С	Auxiliary condensate drain pan	MCC	Multicontrol connection card
S	Manual damper	BC	Universal connecting terminal
SG	Manual damper with grid	TMB	Minimum temperature thermostat
SMF	On/off motorized damper		for VB and VR
SMG	On/off motorized damper with grid	V2	3-Way on/off valve for 2-Pipe
RM	Wall connection for damper		system
SF	Supply frame	V4	3-Way on/off valves for 4-Pipe
DRA	Wall mounted automatic electronic		system
	control panel	MP	Condensate drain pump
VR	Wall mounted fan speed control		
	panel		
TA	Wall mounted ambient thermostat		

control panel

Wall mounted electromechanic

DRE

# FIW/AP 23÷74



MODEL			23	24	33	34	43	44	53	54	63	64	73	74
	Total cooling capacity (1),(2)	kW	1.35	1.55	1.96	2.15	2.72	3.00	3.31	3.70	4.39	5.09	5.99	6.69
Cooling	Sensible cooling capacity (1),(2)	kW	1.05	1.14	1.49	1.56	2.08	2.24	2.50	2.67	3.27	3.69	4.64	5.08
Cooling	Water flow (1),(2)	l/h	232	267	337	369	468	528	569	636	755	876	1030	1151
	Pressure drops (1),(2)	kPa	7	1	5	3	11	7	18	11	6	4	14	9
	Heating capacity (2),(3)	kW	3.00	3.20	4.30	4.73	6.02	6.58	7.17	7.82	9.80	10.80	13.33	14.71
Heating	Water flow (2),(3)	l/h	258	276	369	407	517	566	616	673	843	930	1146	1264
_	Pressure drops (2),(3)	kPa	4	1	4	2	8	5	13	8	4	3	10	6
Rows	Quantity	n°	3	4	3	4	3	4	3	4	3	4	3	4
Water connections	In / Out	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
	Max	m³/h	230	230	310	310	450	450	530	530	740	740	1060	1060
Air flow	Med	m³/h	190	190	270	270	400	400	460	460	520	520	890	890
	Min	m³/h	140	140	190	190	220	220	400	400	420	420	600	600
Air flow	Max	m³/h	230	230	310	310	450	450	530	530	740	740	1060	1060
(EC version)	Min	m³/h	120	120	170	170	190	190	360	360	380	380	540	540
Available static	Max	Pa	60	60	60	60	60	60	60	60	60	60	60	60
	Med	Pa	50	50	50	50	50	50	50	50	50	50	50	50
pressure	Min	Pa	30	30	40	40	35	35	40	40	35	35	30	30
Available static	Max	Pa	60	60	60	60	60	60	60	60	60	60	60	60
pressure (EC version)	Min	Pa	30	30	40	40	35	35	40	40	35	35	30	30
	Heating capacity (2),(3)	kW	1.66	1.66	2.34	2.34	3.32	3.32	3.89	3.89	5.25	5.25	7.31	7.31
	Water flow (2),(3)	l/h	143	143	201	201	285	285	335	335	451	451	628	628
Additional coil	Pressure drops (2),(3)	kPa	4	4	10	10	19	19	5	5	10	10	21	21
	Rows	n°	1	1	1	1	1	1	1	1	1	1	1	1
	Water connections (In / Out)	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Electrical heater	Power supply	V/Ph/Hz						230/	1/50					
ciectrical fleater	Absorbed power	kW	1.0	1.0	1.6	1.6	2.0	2.0	2.5	2.5	3.0	3.0	4.0	4.0
Electrical	Power supply	V/Ph/Hz						230/	1/50					
characteristics	Max absorbed power	kW	0.06	0.06	0.07	0.07	0.08	0.08	0.11	0.11	0.14	0.14	0.19	0.19
Electrical	Power supply	V/Ph/Hz						230/	1/50					
characteristics (EC version)	Max absorbed power	kW	0.03	0.03	0.04	0.04	0.05	0.05	0.09	0.09	0.13	0.13	0.14	0.14
	Max (4)	dB(A)	48	48	47	47	47	47	49	49	50	50	54	54
Sound pressure	Med (4)	dB(A)	45	45	44	44	45	45	45	45	45	45	48	48
•	Min (4)	dB(A)	32	32	34	34	33	33	39	39	38	38	43	43
Sound pressure	Max (4)	dB(A)	49	49	49	49	49	49	52	52	55	55	56	56
(EC version)	Min (4)	dB(A)	31	31	34	34	30	30	35	35	37	37	41	41
,	Transport weight	Kg	14	14	18	19	21	22	24	25	33	34	42	44
Weights	Operating weight	Kg	12	12	16	17	19	20	22	23	31	32	40	42

<b>DIMENSIO</b>	NS		23	24	33	34	43	44	53	54	63	64	73	74
L	STD/EC	mm	560	560	760	760	960	960	1160	1160	1135	1135	1410	1410
W	STD/EC	mm	195	195	195	195	195	195	195	195	260	260	260	260
Н	STD/EC	mm	475	475	475	475	475	475	475	475	545	545	545	545

## **CLEARANCE AREA**

FIW/AP 23÷74



- Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C.
   Performances also valid for EC version.
   Ambient air temperature 20 °C d.b., water temperature 70/60 °C.
   Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s.
   M.B. Maximum operating pressure 1000 kPa.
   Maximum inlet water temperature 90 °C.
   Maximum inlet water temperature 90 °C.
- N.B. Inhibited ethylene glycol can be added to the water.



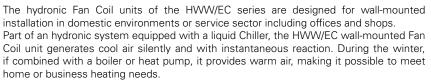
# HWW/EC 22÷62 EURÌCE

WALL MOUNTED FAN COIL UNITS WITH EC INVERTER TANGENTIAL FAN.









A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level and its easy removal enables continuous cleaning cycles to be carried out which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms. HWW/EC is provided with remote control, 3-Way valve, flexible hydraulic hook-ups for easy installation and maintenance operations, and is also pre-set for master-slave functioning, with RS485 serial interface. The units are equipped with EC Inverter motor that can modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations achieving superior performance compared to the traditional solutions even from energy consumption point of view.



# **VERSION**

# HWW/EC

Base unit with 3-Way valve and remote control

## **FEATURES**

- · High design appearance with rounded lines, structure in ABS with improved mechanical features resistant to aging
- · Heat exchanger coils with copper pipes and aluminium fins with elevated heat exchanging surfaces; equipped with air blowing in condensation drain.
- 3-Way water valve incorporated inside the unit.
- Tangential fan unit with EC INVERTER motor, maximum silent operations, air flow fins with adjustable horizontal direction and motorized deflector fin controllable via remote control.
- Microprocessor control with timer for on/off programming. Program for automatic operations, cooling, heating and ventilation; night wellness
  program and dehumidifier.
- Automatic restarting after power outage
- Flexible water connections for easy installation and maintenance operations.
- · Easy removal and cleaning of air filter, maintaining appropriate air quality.
- Infrared remote control with wall support.

# **ACCESSORIES**

#### **LOOSE ACCESSORIES**

EH Supplementary electrical heater DRC Wall mounted automatic electronic

control panel

# HWW/EC 22÷62 eurice



MODEL			22	23	32	42	52	62
	Total cooling capacity (1)	kW	2.07	2.49	3.02	3.74	4.81	5.38
Cooling	Sensible cooling capacity (1)	kW	1.52	1.81	2.22	2.74	3.46	3.89
Cooling	Water flow (1)	l/h	355	427	525	642	826	924
	Pressure drops	kPa	22	28	39	38	45	52
	Water flow (2)	I/h	355	427	525	642	826	924
Heating	Heating capacity (2)	kW	2.70	3.21	3.93	4.87	6.10	6.85
	Pressure drops	kPa	18	23	32	29	34	40
Water connections	In / Out	"G	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Air flow	Max	m³/h	500	500	645	788	980	1240
All llow	Min	m³/h	290	290	370	570	600	600
Electrical	Power supply	V/Ph/Hz			230/	1/50		
characteristics	Max absorbed power	kW	0.014	0.014	0.020	0.030	0.042	0.060
C	Max (3)	dB(A)	37	37	43	46	40	45
Sound pressure	Min (3)	dB(A)	26	26	29	34	30	30
Maiabta	Transport weight	Kg	14	15	15	16	18	18
Weights	Operating weight	Kg	12	13	13	14	16	16

DIMENSION	NS .		22	23	32	42	52	62
L	STD	mm	875	875	875	875	1060	1060
W	STD	mm	220	220	220	220	240	240
Н	STD	mm	300	300	300	300	310	310

# CLEARANCE AREA

HWW/EC 22÷62 eurice



# NOTES

- Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C. Ambient air temperature 20 °C d.b., water temperature 50 °C. Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s.

- N.B. Maximum operating pressure 1000 kPa.
  N.B. Maximum inlet water temperature 70 °C.
  N.B. Inhibited ethylene glycol can be added to the water.

# **TCW 22+122**

WATER CASSETTE WITH 3-SPEED OR EC INVERTER RADIAL FAN.





The Water Cassette of the TCW series has been designed to be installed in false ceilings, in domestic environments or the services sector including offices, hotels, restaurants, gyms and shops.

Part of an hydronic system equipped with a liquid Chiller, the TCW Water Cassette generates cool air silently and with instantaneous reaction. During the winter, if combined with a boiler or heat pump, it provides warm air, making it possible to meet home or business heating needs. A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level, and its easy removal enables continuous cleaning cycles to be carried out, which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms. The TCW series, in addition to having a rich set of accessories to complete the unit, also has an attractive intake grid that integrates perfectly in the surrounding environment and adjustable deflectors to distribute the air in the room in an ideal manner. TCW Water Cassette features auxiliary moisture drain pan already included and are pre-set for master-slave functioning, with RS485 serial interface. Units are available both with 3-Speed and EC Inverter fans. The units equipped with EC Inverter motor are able to modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations, achieving superior performance compared to the traditional solutions even from energy consumption point of view.

# **EC INVERTER FAN**

VERSION	
TCW	TCW/WB
Base unit with remote control for 2-Pipe system	Unit with remote control for 4-Pipe system
TCW/EC	TCW/WB/EC
Unit with EC Inverter fan and remote control for 2-Pipe system	Unit with EC Inverter fan and remote control for 4-Pipe system

# **FEATURES**

- Structure for insulated recess fitting, limited body depth (250/290 mm) and compact dimensions; specially designed for easy installation and maintenance of the hydraulic and electrical connections, accessible starting from the front panel grid.
- Casing in insulated galvanized sheet; combined air intake/suction grid; automatic adjustment of air diffusion on the four sides; suction in middle with regenerable filter; precut holes for connection to an external air intake and for connection to a branch duct for conditioning an adjoining room.
- Combined air diffusion/suction grid with air filter and adjustable air diffusion on the 4 sides with suction in middle.
- Radial fan turbine with direct feed. The motors, mounted on elastic suspension and equipped with internal thermal safety, are 3-Speed.
- Radial fan turbine with direct feed. EC INVERTER motors, mounted on elastic suspension and equipped with internal thermal safety (32-53-73-122).
- Lift pump with float and detection at 3 levels (On-Off-Alarm) of condensation for lift in the upper part of the box. Discharge occurs by gravity, outside the appliance (lift height up to 500 mm).
- Heat exchanger in copper pipes and aluminium fins with air vent on the headers.
- · Regenerable-type air filter, accessible after opening the combined air intake/suction grid.
- Microprocessor control with timer for on/off programming. Program for automatic operations, cooling, heating and ventilation; night wellness program and dehumidifier.
- Infrared remote control with wall support.

## **ACCESSORIES**

#### **LOOSE ACCESSORIES**

EH Supplementary electrical heater DRC Wall mounted automatic electronic

control panel

V2 3-Way on/off valve for 2-Pipe

system

V4 3-Way on/off valves for 4-Pipe

system

# TCW 22÷122



MODEL			22	32	42	53	63	73	122
	Total cooling capacity (1)	kW	2.4	3.2	4.1	4.9	6.1	6.9	10.9
Cooling	Sensible cooling capacity (1)	kW	1.7	2.5	3.0	3.5	4.9	5.1	7.9
2-Pipe unit	Water flow (1)	I/h	413	550	705	843	1049	1187	1875
	Pressure drops (1)	kPa	10	20	28	42	28	39	43
Cooling	Total cooling capacity (1)	kW		3.2		4.6		6.8	10.9
2-Pipe unit	Sensible cooling capacity (1)	kW		2.4		3.2		5.0	7.9
	Water flow (1)	I/h		550		791		1170	1875
(EC version)	Pressure drops (1)	kPa		20		39		39	38
Heating	Heating capacity (2)	kW	4.9	6.6	7.8	9.7	11.9	12.7	18.9
	Water flow (2)	l/h	422	568	672	834	1023	1090	1624
2-Pipe unit	Pressure drops (2)	kPa	8	17	25	40	24	26	32
Heating	Heating capacity (2)	kW		7.1		9.2		13.4	18.3
2-Pipe unit	Water flow (2)	l/h		610		791		1152	1574
(EC version)	Pressure drops (2)	kPa		20		34		31	25
	Total cooling capacity (1)	kW			3.1	3.9		5.8	7.9
Cooling	Sensible cooling capacity (1)	kW			2.4	2.9		4.5	6.0
4-Pipe unit	Water flow (1)	l/h			533	671		998	1359
	Pressure drops (1)	kPa			21	23		46	29
Coolina	Total cooling capacity (1)	kW				3.8		5.8	7.1
4-Pipe unit	Sensible cooling capacity (1)	kW				2.8		4.2	5.2
(EC version)	Water flow (1)	I/h				654		998	1221
(EC version)	Pressure drops (1)	kPa				21		52	24
Heating Heating capacity (2) kW Water flow (2) L/h			3.8	4.3		5.0	9.7		
Heating 4-Pipe unit	Water flow (2)	l/h			326	370		430	834
4-ripe unit	Pressure drops (2)	kPa			11	12		15	27
Heating	Heating capacity (2)	kW				4.3		4.6	9.3
4-Pipe unit	Water flow (2)	l/h				370		395	800
(EC version)	Pressure drops (2)	kPa				11		14	19
Water connections	2-Pipe (In / Out)	"G	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Water connections	4-Pipe (In / Out)	"G			3/4"	3/4"		3/4"	3/4"
	Max	m³/h	380	580	730	810	1050	1300	2130
Air flow	Med	m³/h	240	290	520	617	820	960	1640
	Min	m³/h	200	200	450	450	700	700	1380
Air flow	Max	m³/h		580		810		1300	2100
(EC version)	Min	m³/h		200		200		360	820
Electrical heater	Power supply	V/Ph/Hz				230/1/50			
	Absorbed power	kW	1	1	2	2	3	3	4
Electrical	Power supply	V/Ph/Hz				230/1/50			
characteristics	Max absorbed power	kW	0.04	0.06	0.06	0.09	0.11	0.20	0.30
Electrical	Power supply	V/Ph/Hz		230/1/50					1
characteristics (EC version)	Max absorbed power	kW		0.03		0.04		0.09	0.20
	Max (3)	dB(A)	39	42	46	48	51	53	55
Sound pressure	Med (3)	dB(A)	33	36	40	43	44	48	48
	Min (3)	dB(A)	31	31	34	34	39	39	42
Sound pressure	Max (3)	dB(A)		42		48		53	54
(EC version)	Min (3)	dB(A)		29		30		34	36
Weights	Transport weight	Kg	31	31	33	33	40	40	55
	Operating weight	Kg	28	28	30	30	36	36	50

DIMENSION	IS		22	32	42	53	63	73	122
	L	mm	580	580	580	580	730	730	830
BODY	W	mm	680	680	680	680	830	830	980
	Н	mm	580	580	580	580	730	730	830
	L	mm	680	680	680	680	830	830	980
PANEL	W	mm	250	250	290	290	260	260	290
	Н	mm	28	28	28	28	28	28	28

# CLEARANCE AREA

TCW 22÷122



# NOTES

- Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C.
   Ambient air temperature 20 °C d.b., water temperature 70/60 °C.
   Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s.
   N.B. Maximum operating pressure 1000 kPa.
   N.B. Maximum inlet water temperature 80 °C.
   Inhibited ethylene glycol can be added to the water.

# UTW 63÷544

DUCTABLE FAN COIL UNITS WITH 3-SPEED OR EC INVERTER RADIAL FANS.





The modular Fan Coil units of the UTW series are the ideal solution to meet the air treatment needs of systems including distribution through ducting or directly into the room and installation in false ceilings or in service rooms.

Part of an hydronic system equipped with a liquid Chiller, the UTW modular ductable Fan Coil unit generates cool air silently and with instantaneous reaction. During the winter, if combined with a boiler or heat pump, it provides warm air, making it possible to meet home or business heating needs. A filter, which absorbs and retains dust in suspension, allows to keep the air quality at a suitable level and its easy removal enables continuous cleaning cycles to be carried out, which are particularly important in order to guarantee suitable hygiene standards in highly frequented rooms.

This product range, available for 2-Pipe and 4-Pipe systems, is complete with various accessories such as: outdoor air intake plenum, mixing section with dampers room delivery plenum for flexible ducts and electrical heating section. Units are available both with 3-Speed and EC Inverter fans. The units equipped with EC Inverter motor are able to modulate the air flow ensuring a perfect adaptability to the load without any temperature fluctuations, achieving superior performance compared to the traditional solutions even from energy consumption point of view.

## **VFRSION**

**EC INVERTER FAND** 

1 = 1101011	
UTW	UTW/EC
Base unit	Unit with EC Inverter fans

# **FEATURES**

- Structure in galvanized sheet (63÷274) or in prepainted metal sheet (333÷544), entirely lined with heat/sound insulation material.
- · Radial type fan with double intake, statically and dynamically balanced to reduce vibration and noise to a minimum, directly coupled on singlephase 3-Speed electric motor (63÷274) or with belt and pulley transmission, connected to 3-phase single speed electric motor (333÷544).
- Radial type fan with double intake and EC INVERTER fan type (63÷274).
- Heat exchanger in copper pipes and aluminium fins, complete with air vent and drain pan.
- Air filter made of recyclable synthetic material class EU3; inspection is foreseen from the bottom part (63÷274) or side part (333÷544).
- Air bleed valves, positioned on the water connections of the coil, make it possible to bleed air from the coil.
- Electrical board comprising a terminal board for wiring to room control panel and power supply.

### **ACCESSORIES**

LOOSE	ACCESSORIES		
С	Auxiliary condensate drain pan	DRA	Wall mounted automatic electronic
CW	Auxiliary moisture drain pan for		control panel
	units with WSF accessory	VR	Wall mounted fan speed control
AF	Filtering section		panel
SF	Supply frame	TA	Wall mounted ambient thermostat
GRI/R	Intake grid with air filter	DRE	Wall mounted electromechanic
BM	Supply grid with adjustable fins		control panel
PR	Intake plenum	DRV	Wall mounted automatic electronic
MB	Mixing box with damper		control panel
PM	Supply plenum	V2	3-Way on/off valve for 2-Pipe
P3	Supply plenum for flexible ducts		system
WS	Hot water coil for 4-Pipe system	V4	3-Way on/off valves for 4-Pipe
WSF	Hot water coil section for 4-Pipe		system
	system		



section

section

Supplementary electrical heater

Supplementary electrical heater

Servo-motor for damper

EH1

EH2

SM

# UTW 63÷544



MODEL			63	93	104	133	153	233	274	333	414	464	544
	Total cooling capacity (1),(2)	kW	4.6	7.5	9.1	10.5	13.1	15.7	20.7	25.9	31.7	38.1	42.8
	Sensible cooling capacity (1),(2)	kW	3.5	6.0	7.1	8.4	9.8	13.0	16.7	20.1	24.6	29.6	33.2
Cooling	Water flow (1),(2)	l/h	791	1290	1565	1806	2253	2700	3560	4455	5452	6553	7362
	Pressure drops (1),(2)	kPa	14	19	21	18	24	24	26	29	14	29	26
	Heating capacity (2),(3)	kW	9.8	15.5	19.7	21.6	25.9	35.5	46.3	60.1	75.8	91.8	97.1
Heating	Water flow (2),(3)	I/h	843	1333	1694	1858	2227	3053	3982	5169	6519	7895	8351
Ŭ	Pressure drops (2),(3)	kPa	23	17	22	35	25	23	32	34	14	39	34
Rows	Quantity	n°	3	3	4	3	3	3	4	3	4	4	4
Water connections	In / Out	"G	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1 ½"	1 ½"	1 ½"	1 ½"
	Heating capacity (2),(3)	kW	6.8	10.9	11.5	13.5	16.0	20.3	22.2	47.4	58.4	64.0	75.1
	Water flow (2),(3)	l/h	585	937	989	1161	1376	1746	1909	4076	5022	5504	6459
Additional coil	Pressure drops (2),(3)	kPa	10	11	12	15	14	19	23	10	15	10	14
	Rows	n°	2	2	2	2	2	2	2	2	2	2	2
	Water connections (In / Out)	"G	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1 ¼"	1 ¼"	1 ¼"	1 1/4"
	Max (4)	m³/h	1000	1600	1700	2200	2500	3900	4500	5500	6800	7700	9000
Air flow	Med (4)	m³/h	800	1200	1300	1800	2000	3000	3800				
	Min (4)	m³/h	600	850	900	900	1300	1900	2000				
Air flow	Max (4)	m³/h	1000	1600	1700	2200	2500	3900			4500		
(EC version)	Min (4)	m³/h	530	760	810	810	1140	1700	1200				
Available static	Max (4)	Pa	80	90	90	95	95	115	115	150	150	150	150
	Med (4)	Pa	50	50	50	50	50	70	70				
pressure	Min (4)	Pa	40	40	40	40	40	55	55				
Available static	Max (4)	Pa	80	90	90	95	95	115	115				
pressure (EC version)	Min (4)	Pa	40	40	40	40	40	55	55				
	Power supply	V/Ph/Hz			4	00/3+N/5	0						
EH1 Electrical	Absorbed power	kW	3	4	4	4	6	6	6				
heater	Max. absorbed current	А	4.3	8.7	8.7	8.7	13.0	13.0	13.0				
	Steps	n°	1	1	1	1	1	1	1				
	Power supply	V/Ph/Hz			4	00/3+N/5					-		
EH2 Electrical	Absorbed power	kW	6	8	8	8	12	12	12				
heater	Max. absorbed current	А	8.7	17.4	17.4	17.4	26.1	26.1	26.1				
	Steps	n°	1	1	1	1	1	1	1				
Electrical	Power supply	V/Ph/Hz				230/1/50						+N/50	
characteristics	Max absorbed power	kW	0.13	0.26	0.26	0.52	0.42	0.42	0.60	0.75	1.10	1.10	1.50
Electrical	Power supply	V/Ph/Hz				230/1/50					-		
characteristics (EC version)	Max absorbed power	kW	0.13	0.25	0.25	0.45	0.45	0.42	0.60				
	Max (5)	dB(A)	45	44	45	47	49	51	55	56	57	57	58
Sound pressure	Med (5)	dB(A)	40	38	39	43	44	45	51				
	Min (5)	dB(A)	34	30	31	28	35	35	37				
Sound pressure	Max (5)	dB(A)	45	44	45	47	49	51	55				
(EC version)	Min (5)	dB(A)	33	29	29	29	34	34	35				
Weights	Transport weight	Kg	29	42	44	57	65	67	70	168	168	173	175
งงะเนเเธ	Operating weight	Kg	27	40	42	55	63	65	68	166	166	171	173

DIMENSION	NS .		63	93	104	133	153	233	274	333	414	464	544
L	STD/EC	mm	645	1005	1005	1105	1345	1345	1345	1400	1400	1400	1400
W	STD/EC	mm	455	455	455	505	540	540	540	800	800	800	800
Н	STD/EC	mm	295	295	295	325	325	375	375	800	800	1050	1050

# CLEARANCE AREA

UTW 63÷544



# NOTES

- Ambient air temperature 27 °C d.b./19 °C w.b., water temperature 7/12 °C. Performances also valid for EC version. Ambient air temperature 20 °C d.b., water temperature 70/60 °C. 3-phase single speed electrical motors for units 333, 414, 464, 544. Sound pressure level measured at 1 m from the unit with reverberation time 0,5 s.

- N.B. Maximum operating pressure 1000 kPa.
  N.B. Maximum inlet water temperature 90 °C.
  N.B. Inhibited ethylene glycol can be added to the water.





Via Max Piccini, 11/13 • 33061 RIVIGNANO TEOR • ITALY Tel. +39 0432 823011 • Fax +39 0432 773855 www.clint.it • e-mail: info@clint.it

## A Company of:



### Sales Offices:

#### **Europe and North & South Africa:**

G.I. INDUSTRIAL HOLDING SpA
Via G. Ambrosio, 4
33053 LATISANA • ITALY
Tel. +39 0431 1967011 • Fax +39 0431 1967060
www.gind.it • e-mail: info@gind.it

#### Russia and other C.I.S. Countries:

G.I. INDUSTRIAL HOLDING SpA
REGUS AVION Business Center
Leningradskiy Prospect, 47/2
125167 MOSCOW • RUSSIAN FEDERATION
Tel. +7 495 139 46 39 • Fax. +7 495 139 46 39
www.gind.it • e-mail: info@gind.com.ru

# Middle-East and Central Africa:

G.I. MIDDLE EAST Fze
HQ DSOA – D 102 • Dubai Silicon Oasis
P.O. Box 341228, DUBAI • U.A.E.
Tel. +971 4372 4290 • Fax. +971 4372 4291
www.gime.ae • e-mail: info@gime.ae

## Asia Pacific:

G.I. INDUSTRIAL ASIA HOLDING Sdn Bhd Lot 5074, 5 1/2 miles, Jalan Meru 41050 KLANG, Selangor Darul Ehsan • MALAYSIA Tel. +60 3 3392 6088 • Fax +60 3 3392 7088 www.gindasia.com.my • e-mail: info@gindasia.com.my

### **Production Plants:**

G.I. INDUSTRIAL HOLDING SpA Via Max Piccini, 11/13 33061 RIVIGNANO TEOR • ITALY

G.I. INDUSTRIAL HOLDING SpA Via G. Ambrosio, 4 33053 LATISANA • ITALY

G.I. INDUSTRIAL HOLDING SPA Via J. Keplero, 27 35028 PIOVE DI SACCO • ITALY

GIMEK Zrt Rozália Park, 11 H-2051 BIATORBÁGY • HUNGARY www.gimek.hu

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