Carrier

United Technologies

Heating, ventilation and air conditioning solutions

Catalogue 2014


Carrier
United Technologies

Catalogue 2014

Index

Contents - alphanumeric

Product sections

Index

Your direct

Europe, Middle East and Africa

Carrier EMEA – Headquarters
4 Rue Joseph Monier
92500 Rueil-Malmaison
France

Africa
Carrier Africa FZE
28 km, Cairo Alexandria Desert Road
6th of October
Giza, Egypt

Australia
AHI Carrier (Australia) Pty Ltd
101 Silverwater Road
Silverwater Bag 62
Silverwater NSW 1811

Austria
AHI Carrier GmbH
Andromeda Tower
Donau-City-Straße 6/9
1220 Vienna

Azerbaijan
AHI Carrier MMC
44 Jafar Jabbarli Street
Caspian Plaza, Baku
AZ 1065 Azerbaijan

Belgium
Carrier Airconditioning Benelux SA
Bld. Sylvain Dupuis 243
1070 Bruxelles

Bulgaria
AHI Carrier Bulgaria Sofia Branch
No. 25 Petar Dertliev Blvd.
Floor 2
Liulin Region
1335 Sofia

Czech Republic
AHI Carrier CZ s.r.o.
Komerční zóna Nupaky 310
25101 Nupaky (Praha - východ)

Egypt
Miraco Carrier
28 km, Cairo Alexandria Desert Road
6th of October
Giza

Finland
Carrier Oy
Vetokuja 4
01610 Vantaa

France
Carrier SCS (factory and French sales)
Route de Thil
BP 49
01122 Montluel Cédex

Germany
Carrier GmbH
Edisonstrasse 2
D-85716 Unterschleissheim

Greece
AHI Carrier S.E. Europe Air-Conditioning S.A.
18, Kifissou Ave
104 42 Athens

Italy
Carrier SpA (factory)
Via Raffaello Sanzio 9
20058 Villasanta MI

Carrier SpA (factory and Italian sales)
Via Sempione, 247
20016 Pero (MI)

Jordan
NTC Carrier
PO Box 9268/2369, Jebel El-Weibdeh
Zuhair Khoury Building
Amman 11191

Kazakhstan
AHI Carrier LLP
Office 30, Str Tole bi 89
Almaty 050000

Kuwait
Kuwait American Air Conditioning K.S.C.
P.O. Box 21326
13063 Safat

Lebanon
NTC Carrier
PO Box 175704
Mar Mikhael
Al Nahr Street, Tyan Building
Beirut

Netherlands
Carrier Airconditioning Benelux BV
PO Box 151
Rijndijk 141
2394 ZH Hazerswoude Rijndijk

New Zealand
AHI Carrier (NZ) Ltd
60 Stanley Street
Parnell
Auckland 1010

Poland
Carrier Polska Sp. z.o.o.
Ul. Konstruktorska 13
02-673 Warszawa

line to Carrier

Portugal
Carrier Portugal
Avenida do Forte 3
Edificio Suécia I, Piso 3
Carnaxide
2795 Linda a Velha

Qatar
Carrier Qatar WLL
P.O. Box 23500
Jaidah Tower 8th Floor
Doha

Romania
AHI Carrier Romania Bucharest Branch
270D Turnu Magurele Street
Building A, Second Floor
Apt. 1, Sector 4
RO-041713 Bucharest

Russian Federation
AHI Carrier LLC
Entrance 7, Floor 2
7 Kievskaya Street
Moscow 121059

Saudi Arabia
Arabian Airconditioning Company
Carrier Saudi Arabia
PO Box 9784
Off Khurais Road
Riyadh 11423

Slovakia
AHI Carrier Slovakia, spol. s.r.o.
Dobsinskeho 1
949 01 Nitra

Republic of South Africa
AHI Carrier South Africa (Pty) Ltd
P.O. Box 39152
Booysens 2091

Spain
Carrier España S.L.
Avenida Real de Pinto, 91
Edificio C - Esc. 2
28021 Madrid

Sweden
Carrier AB
PO Box 8946
Aröds Industriväg 32
402 73 Göteborg

Turkey
Alarko Carrier San. Ve Tic. A.S.
Gebze Organize Sanayi Bolgesi
Sahabettin Bilgisu Cad.
41480 Gebze-Kocaeli

Ukraine
AHI Carrier LLC
Moskovskiy Prospekt 9
Bldg. 3, 3-403
04073 Kiev

United Kingdom
Toshiba Carrier UK Ltd
United Technologies House
Guildford Road
Leatherhead, Surrey KT22 9UT

United Arab Emirates
UTS Carrier LLC
P.O. Box 6735
Next to Al Reef Bakery
Zabeel Road
Karama
Dubai

AHI Carrier Fzc
B1-B22 Saif Zone
P.O. Box 122341
Sharjah

Middle East Operations Headquarters
Carrier Middle East Limited (CMEL)
Office # 2702, JAFZA View 19
Downtown Jebel Ali
PO Box 61249
Dubai

Asia and Pacific Operations
Carrier International Corporation
76 Shenton Way
17-00 Ong Building
Singapore 079119

Latin American Operations
Carrier Corporation
2100 N.W. 88th Court
Miami
Florida 33172-2433
USA

North American Operations
Carrier Corporation
Carrier Parkway
Syracuse
New York 13221
USA

Carrier World Headquarters
Carrier Corporation
One Carrier Place
Farmington
Connecticut 06034-4015
USA

United Technologies

Carrier - experience backed by a large group

Carrier is part of the United Technologies Corporation (UTC) which employs 199,900 people (2011), operates in approximately 180 countries, and is the 48nd largest corporation in the United States (Fortune list, 2012). The UTC group is a global technology corporation with a long history of pioneering innovation in aerospace, aviation, helicopter design, climate control, elevator design and hydrogen fuel cells.

Supported by the leadership of UTC, Carrier is a source of ideas, technologies and innovation to help build a better world. Our mission is to make the world a better place to live. A mission that was born more than one hundred years ago when Willis Carrier invented the basics of modern air conditioning and developed the first air conditioning system. Since then we have created a comfortable, productive and healthy environment, regardless of climate, and we have ensured that the global food supply is transported and preserved for safe consumption.

Our dedication to enhance our environment also means preserving the environment for everybody. Carrier was the first air conditioning manufacturer to use chlorine-free refrigerants that do not deplete the ozone layer.

For our commitment in developing products for a safer, cleaner and less polluted planet we received the prestigious Ozone Protection Award from the U.S. Environmental Protection Agency (EPA). Every day around the world a Carrier system is installed every eight seconds, and we are now the world's largest manufacturer of air conditioning, ventilation, heating and commercial refrigeration systems.

Carrier quality and reliability are incorporated and guaranteed in all products and systems. They are submitted to extensive tests before they are shipped to the customers and also certified by the major international organisations to guarantee authenticity of the information supplied, safety of the products and high process applications standards. All this means that the customer will receive a safe and reliable product.

United Technologies

Building & Industrial Systems

UTC Building & Industrial Systems is the world's largest high-technology building systems provider. The organization's products include Otis elevators and escalators; Carrier heating, air-conditioning and refrigeration systems; and fire and security solutions from brands such as Kidde and Chubb.

UTC Aerospace Systems

UTC Aerospace Systems is one of the world's largest suppliers of technologically advanced aerospace and defense products. They design, manufacture and service systems and components and provide integrated solutions for commercial, regional, business and military aircraft, helicopters and other platforms. They are also a major supplier to international space programs.

Pratt & Whitney

A United Technologies Company

The specialists in commercial and military aircraft engines and space propulsion systems.

Sikorsky

A United Technologies Company

The world leader in the design and manufacture of helicopters for commercial, industrial and military use.

Carrier

United Technologies

Natural leadership - sustain

Pioneer in sustainability

From the very beginning, Carrier Corporation has been a natural leader. Not simply for the fact that we created an entirely new and innovative product, but because as we did so, we set the standard in environmental responsibility. At a time when sustainability wasn't on most minds, Carrier led the way. It was only natural.

Over time, Carrier helped pioneer a new industry, and then pioneered environmentally sensitive products while reducing its own impact on the environment. We recognise the responsible balance between the technology we provide today and the world we live in tomorrow.

Preservation of the environment and protecting our finite natural resources is a central tenet of our business. We have consistently demonstrated our adherence to these values by creating environmentally sound products that consume less energy and incorporate innovative materials.

Carrier is committed to reducing the greenhouse gas impact of our products through energy efficiency advancements and the refrigerants we use. Since 1994, we have led the industry in the phase-out of ozone-depleting refrigerants while introducing many of the world's most energy-efficient heating, air conditioning, and refrigeration systems. At the same time, we've reduced the environmental impact of our operations.

Our environmental commitment extends well beyond our walls to our communities and the marketplace. Carrier is the only company in the world to be a founding member of the U.S., Argentina, China, India, Singapore and France Green Building Councils. In fact, Carrier was instrumental in launching the U.S. Green Building Council in 1993 and was the first company in the world to join the organization. Carrier's Rick Fedrizzi was the Council's first chairman, and later went on to lead the organization as president and CEO.

In 2008, Carrier was named as a formal international advisor to the China Green Building Council, having helped introduce the Green Building Council model to that country.

Today, Carrier continues to improve the environmental performance of our products, services, operations and culture to help achieve a sustainable society and protect the natural environment for generations to come.

Carrier was among the first companies to set energy reduction goals for our factories in 1988. This led to our first company-wide global environmental, health and safety goals in 1997.

improve™

From 2000 to 2011Carrier factories reduced water usage by **27%**

From 2000 to 2011 Carrier factories reduced air emissions by **60%**

ability at Carrier Corporation

We were proud to receive the National Safety Council's 2011 Robert W. Campbell Award, recognizing organizations that achieve business excellence by integrating environment, health and safety management into their business operating systems.

Green products and services

Carrier products turn energy into useful work. Because of their reliability and longevity, the energy efficiency of our products becomes part of our customers' environmental footprint. This motivates us to design for the environment, creating products that consume fewer resources and produce fewer emissions during manufacture and operation.

As the world leader in high-technology heating, air conditioning and refrigeration solutions, we are devoted to the advancement and application of the latest technologies. More than 2,000 scientists, engineers and technicians at research and design centres worldwide work to apply the newest technological innovations to the practical needs of millions of customers.

Carrier's energy service operations have implemented more than $2.5 billion in energy savings at more than 2,000 sites, while our green building consulting services have helped the world's largest companies and organizations, including the Beijing Olympic Village, achieve Leadership in Energy and Environmental Design (LEED) certification.

Energy efficiency

Air conditioning, heating and refrigeration systems require energy to operate, usually electricity or natural gas. We continually invest in research and development to expand the cost-effective energy-efficient range of our products. We do this because buildings consume about 40 percent of all energy worldwide. And according to the U.S. Department of Energy, heating and cooling account for 35 percent of the energy consumed in buildings in the U.S. In nearly every product category, we offer industry-leading, energy-efficient options for our customers.

Efficiency

Carrier's energy services operations have implemented more than **$2.5 billion** in energy savings at more than 2,000 customer sites.

Sustainability inside and out: our operations

As the world's leader in high-technology heating, air conditioning and refrigeration solutions, we believe market leadership demands environmental leadership. In fact, environmental stewardship is one of our company's core values. Focused on reducing the impact of manufacturing operations across the globe, Carrier has set the industry standard for environmentally sound business practices and a commitment to sustainability across our products, services, operations and culture.

On the operations side, Carrier doubled sales but held factory energy use flat from 1997 through 2005. Since 2006, the company has exceeded its commitment to reduce greenhouse gas emissions by three percent each year. In 2009, two Carrier factories joined only nine others in the world to earn the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating for existing buildings – a first for the heating, air conditioning and refrigeration industry worldwide.

Carrier was among early leaders to launch factory energy reduction goals in 1988, and expanded to broader global environmental, health and safety metrics in 1997. In 2003, Carrier, as a business unit of United Technologies Corporation, was the first manufacturer of heating, air conditioning and refrigeration systems to join the U.S. EPA Climate Leaders programme by declaring and reporting progress towards climate change goals. From 2000 to 2011, Carrier reduced its air emissions by 60 percent and water usage by 27 percent on an absolute basis. Since 2006, the company has lowered its greenhouse gas emissions by 35 percent.

In 2008, the Montluel factory became the first industrial site in France to use 100% of its electricity from renewable sources.

Carrier implemented a new machine tool lubrication process that reduced volatile organic compound emissions by more than **80%** below the baseline

Refrigerants

Customers look to Carrier to develop sustainable solutions for refrigerants, especially given climate change considerations. Refrigerants are the gases that are compressed to create cooling for air conditioning and refrigeration. Many of these gases are chemicals with environmental impact. For decades, the industry relied on chlorofluorocarbon (CFC) chemicals as refrigerants due to their energy efficiency, safety and economic benefits. In the 1970s and 1980s, scientists began to observe that CFCs contributed to the depletion of the Earth's stratospheric ozone layer that blocks harmful ultraviolet radiation from the sun. This led to an international accord to phase out ozone-depleting substances. Carrier did not wait for international mandates to move. We introduced the first commercial and residential air conditioning systems using non-ozone-depleting refrigerants in 1994 and have since led the industry away from ozone-depleting substances.

Carrier pioneered the phase-out of CFCs for the air conditioning and refrigeration industry in 1994, two years ahead of U.S. requirements and 16 years before mandates in developing countries.

For this achievement, the U.S. EPA awarded Carrier its "Best of the Best" Stratospheric Ozone Protection Award in 2007.

Today, Carrier continues to help international markets meet new non-ozone-depleting requirements, while focusing on the next chapter of refrigerant evolution to reduce the direct greenhouse gas effect. Many of today's refrigerants are based on hydrochlorofluorocarbon (HFC) chemicals because they do not deplete the ozone layer, and compared to CFCs, have reduced the greenhouse impact by as much as 80 percent. Nonetheless, HFCs remain a greenhouse gas and Carrier is committed to finding lower global-warming alternatives. We are a leader in providing commercial refrigeration systems for supermarkets using ultra-low global-warming carbon dioxide as a natural refrigerant.

Carrier continuously invests in research and development. As we have done before, Carrier is committed to deploying products and technologies that minimize environmental impact while serving customer needs. This is equally true with refrigerants, where Carrier will have the right refrigerant solution for every application, while not every application may have the same refrigerant solution.

The Carrier CO_2NSERVATION Meter

The Carrier CO_2NSERVATION Meter calculates avoided greenhouse gas (GHG) emissions as a result of the installation of high-efficiency Carrier air conditioning, heating and refrigeration systems by customers around the world since 2000, and from NORESCO, an energy services business of UTC Climate, Controls & Security, since 2008. In 2011, the Carrier CO_2NSERVATION Meter reached 100 million metric tonnes of greenhouse gases saved, equivalent to removing more than 19 million cars off the road for one year.

UTC Climate, Controls & Security has consistently invested in energy-efficient technologies and solutions to assist its customers in lowering that energy demand and GHG emissions. The Carrier CO_2NSERVATION Meter illustrates the avoided GHG emissions associated with energy-efficient products in use and emphasizes the impact of choosing more efficient products and services.

Carrier
United Technologies

Building Systems

Whether you need air conditioning for a new building or a refurbishment project, for a commercial centre, an office application or an industrial process, Carrier can offer you a wide range of solutions to meet your needs - from liquid chillers/heat pumps, fan coils, air treatment/handling solutions right through to standard and tailor-made system controls.

Each Carrier system is a global solution to guarantee optimised comfort and performance and rationalised investment - providing heating, ventilating and air conditioning solutions for individual customer comfort.

Innovation

Liquid chillers/heat pumps

Some of the innovative products and technologies are:

1998 - The first Aquasnap air-cooled chillers (40-250 kW) with a compact design and an integrated hydronic module for reduced installation time and component sourcing.

2004 - The Aquasnap Puron (262-802 kW) was the first air-cooled chiller in its segment to use the new ozone-friendly refrigerant R-410A, with market-leading full and part load efficiencies in a clean, compact design.

2006 - The Aquaforce (252-1700 kW) air-cooled chiller brought another innovation - the all-aluminium MCHE condenser. This eliminates galvanic corrosion, reduces the refrigerant amount required by 30% and improves unit efficiency.

The Aquasnap and Aquaforce ranges offer the patented DX free-cooling system that provides cooling without using the compressors to offer energy efficiency ratios (EER) of up to 28 to 1.

... and for heating a range of desuperheater and heat recovery options to reclaim system heat for use in heating and for domestic hot water.

2009 - The new generation of Aquasnap chillers and heat pumps boasts increased energy efficiency and impressive new control options.

2010 - With the 61AF and 80AW/38AW Carrier launches a new series of heating products to complement the existing product range.

2012 - Introduction of the exclusive Greenspeed technology, leveraging inverter-driven screw compressors, used for the 30XW-V line to ensure high enery efficiency both at full and part load.

Fan coil solutions

The choice of the correct fan coil system depends on many factors. Carrier offers a range of fan coils to match any application requirements and installation criteria: in the room, in the ceiling, above a false ceiling, in a central plant room, and many more.

The Carrier hydronic fan coil solutions guide compares the choices and helps customers to select the right solution for easy integration in the building and the associated air conditioning system.

and Solutions

This includes hydronic systems - a reliable, flexible and ecological solution to meet the demands of today's HVAC markets. All solutions allow cooling, heating, fresh air intake and a range of standard or customised controls.

The Carrier product offer sets industry standards for exceptional performance, energy efficiency and reliability, and is based on more than a century of unmatched expertise, industry leadership and innovation.

Air handling/air treatment solutions

An important aspect of any HVAC system is the correct supply of fresh air and the cleaning, cooling and heating of the recycled air that building occupants breathe. Beyond the legal requirements there are health benefits and improved productivity that result.

Carrier offers a vast range of standard and customised air handling solutions to ensure the best match to the requirements. Features include heat recovery, free cooling, variable speed and low energy consumption motors to ensure the best return on investment and minimal environmental impact.

Control solutions

Carrier equipment and system controls are available for standard system applications and customised, tailor made projects. The right choice is important to ensure complete customer satisfaction. Factors to consider include:

- Enhanced energy efficiency systems
- Easy diagnostics and maintenance
- Capability to work autonomously if the system fails
- Flexibility and upgrade possibility for life-long service in the building.

Service and maintenance

Carrier offers the most comprehensive commercial HVAC/R service schedules in the industry. Our technicians can service your chillers, rooftop units, compressors and boilers. We also provide preventive maintenance solutions to keep your system operating efficiently. We can design, replace or upgrade your equipment to optimise its performance, whether you have just one building or multiple sites nationwide. We can assess the energy needs of your facility and install and service energy-saving solutions including micro-turbines, variable-speed drives and building automation and control systems.

Carrier has been a market leader for more than 100 years, providing customers with heating, ventilation and air conditioning systems. Throughout the world we offer a wide choice of products and systems designed for years of reliable and trouble-free operation.

With the increased focus on reducing energy consumption in buildings and related CO_2 emissions, Carrier continues to improve equipment efficiency and employs an integrated system approach for the highest overall savings. Rather than buying separate system elements we recommend to consider the system as a whole.

The greatest savings are achieved when all heating, ventilation and air conditioning components are intelligently working together, speak the same language and communicate to allow intelligent system management and optimisation according to building use and outside environmental influences.

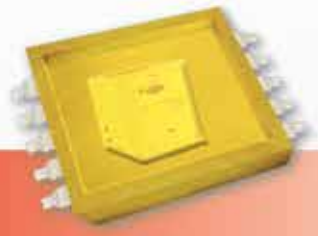
The Aquasmart system, featuring the new Touch Pilot System Manager, can control and optimise commercial HVAC applications in up to 128 zones, reducing energy consumption and providing the desired individual comfort conditions.

Aquasmart is a true ECO SYSTEM, offering considerable energy savings when compared with an equivalent traditional non-communicating system.

SYSTEM CONTROL FOR INCREASED ENERGY SAVINGS

ECO EFFICIENCY

The Aquasmart system's superior energy efficiency is the result of efficient equipment components, optimised by the Touch Pilot System Manager to complement the life of the building occupants.



COOLING AND HEATING

FREE COOLING

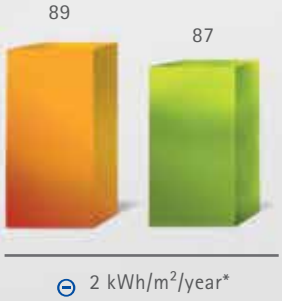
At the right outdoor conditions free cooling can substantially lower energy consumption by reducing the need for mechanical cooling.

In addition to being integrated within traditional free cooling systems, Carrier chiller ranges offer innovative integrated DX free-cooling systems to simplify the system and save space. Additional elements such as glycol, pumps and valves, used in traditional systems, are no longer necessary.

HEAT RECOVERY MEASURES

Heat recovered from the building can be reclaimed for applications requiring hot water, such as comfort heating or sanitary purposes.

Carrier offers a range of heat recovery options, including desuperheaters and heat recovery condensers. These can contribute to reduced heating energy usage or in some cases replace components that use alternative fuels.



* Source: Simulations made using Carriers Hourly Analysis Program (HAP). Savings quoted are influenced by factors including building type, use and geographical location.

AQUASMART

A COMMUNICATING SYSTEM WITH OPTIMISED CONTROL AND INTEGRATED EFFICIENT COMPONENTS

VARIABLE WATER FLOW

Most applications only experience full-load design conditions for a few days each month and do not continuously require full design water flow. As an alternative to constant-flow applications Carrier offers integrated variable-speed pumps with reduced water flow at part load conditions. The reduced pump motor energy consumption at part-load conditions – most of the time during the year- results significant energy savings.

DEDICATED HEATING HEAT PUMPS

Carrier has introduced a new generation of heat pumps, designed for heating applications. They deliver superior energy efficiency, hot water at temperatures of up to 63°C and allow operation at outdoor temperatures down to -20°C.

Replacing traditional heating equipment with heat pumps in hydronic systems can lead to substantial energy savings.

VENTILATION AND HEAT RECOVERY

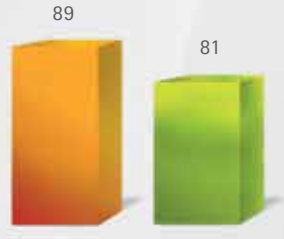
Air treatment plants play an essential role in the indoor air quality of buildings, as they provide occupants with fresh air and remove volatile organic compounds from the occupied space. An air handling plant with heat recovery technology allows waste heat in the extracted air to be reclaimed, considerably reducing heat loads.

Night-time free cooling can further decrease system demands and energy consumption.

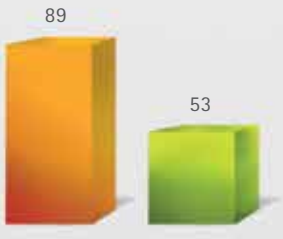
WATER TEMINALS (EC MOTORS/VARIABLE FAN SPEED)

The use of terminals with electronically commutated (EC) motors results in improved motor efficiencies (<90%) and enhanced variable fan speed control.

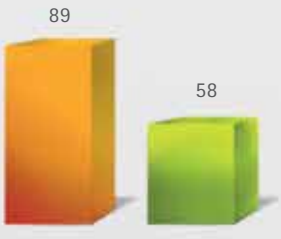
By better matching space loads at part load conditions, unit power consumption is reduced and improved air distribution and sound attenuation enhance occupant comfort.



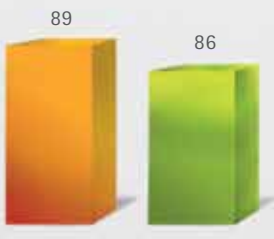
⊖ 8 kWh/m²/year*



⊖ 36 kWh/m²/year*



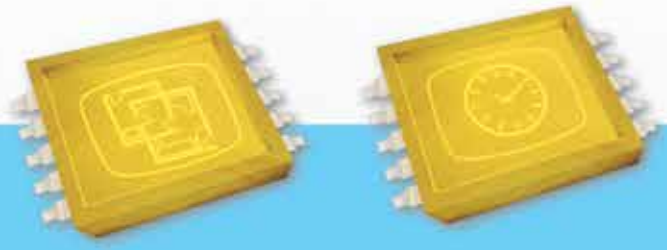
⊖ 31 kWh/m²/year*



⊖ 3 kWh/m²/year*

ECO MANAGEMENT

OCCUPANCY-BASED CONTROL TO ELIMINATE WASTE



ADAPT SYSTEM OPERATION TO MATCH SPACE AND TIME

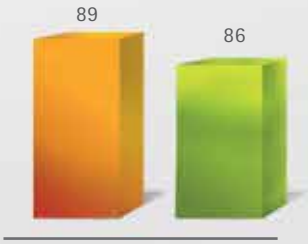
ZONE MANAGEMENT

Grouping similar areas in a building into zones will ensure a coherent and consistent system performance in these zones. Buildings may be zoned according to use, orientation or activity. Examples include offices, meeting rooms, print facilities and IT rooms. Control and adjustment of zone comfort conditions will help building owners and tenants to cut back energy consumption and save energy.

SCHEDULING

Control and optimisation of the HVAC system operation to complement building activity will save energy - delivering the right conditions at the right time. Occupancy-based control with programmed comfort set points and intelligent start/stop system operation to match occupied and unoccupied periods can significantly reduce energy usage.

The Aquasmart Touch Pilot can be used for normal and holiday scheduling.



⊖ 3 kWh/m²/year*

ECO INTELLIGENCE

ECO SYSTEMS GUARANTEE INTERACTIVE INTELLIGENCE

A COMMON LANGUAGE

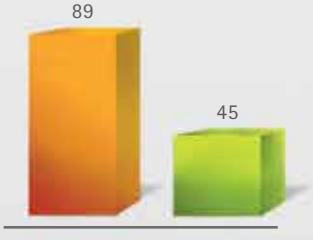
All system components - the chillers or heat pumps, the ventilation system control and the water terminals - need to speak the same language. The Touch Pilot System Manager ensures effective communication of actual and desired space conditions for efficient economical HVAC system control.

CENTRALISED MANAGEMENT

The central Aquasmart Touch Pilot manages all system components so that building owners and users can ensure maximised energy reduction at ideal comfort conditions for building occupants.

OPTIMISED ECONOMIES

The Aquasmart Touch Pilot matches the system operation to meet the building requirements, where needed, when it is needed and as much as it is needed. This lowers energy consumption and optimises system performance. The combination of zone control, operating schedules and optimised unit-by-unit operating parameters can achieve maximised savings.



⊖ 44 kWh/m²/year*

Carrier Service

A full range of building and HVAC service options

When any building's equipment or controls service is relegated to an emergency response, business is at risk. Service is a year-round necessity in order to optimise efficiency, save money, help you make sound management decisions and free you from the anxiety of unplanned downtime. When you partner with Carrier, you ensure that critical comfort needs and regular service requirements are met, and you avoid adverse consequences of neglect.

Carrier Corporation makes it easy for you to select a level of ongoing service that's right for your operation. We are one of the best-trained service providers in the industry, with required ongoing factory, safety and ethics trainings for our personnel.

Carrier technicians are highly skilled in all building systems assessment. They have access to advanced diagnostic tools analysis software, which will quickly and accurately evaluate your entire infrastructure and identify opportunities for improvements and cost savings. And our technicians can service equipment from any manufacturer.

Benefits at a glance

- Comprehensive HVAC system evaluation – overall performance as well as individual chilled water and airside components
- Remote monitoring for ongoing performance tracking and system adjustment
- Enhanced comfort to preserve facility productivity and tenant retention
- Cost-effective system improvement to increase profitability and enhance asset value
- Proactive system upgrades to minimize risks associated with emergency repairs and system failures
- Expert assessment and guidance for replacement of selected components to avoid large capital expenditures
- Energy conservation strategies to reduce costs

Maintenance solutions

Carrier offers a broad range of maintenance solutions for all brands of rooftops, chillers, split and VRF air conditioning, air handling units, controls and accessories.

Carrier's service agreements are tailored to meet the budget and operating needs of your facility and can include both preventive maintenance to keep your equipment running in peak condition and predictive maintenance services to identify potential problems before costly breakdowns occur. The optional Carrier remote monitoring is like having an expert service technician on-site, watching your equipment 24 hours a day, 7 days a week.

Emergency service and repairs

Why not have your equipment repaired by those who know it best? Carrier Service takes pride in our fast response time when helping you with your emergency needs.

Our factory-trained service technicians use the latest diagnostic equipment and are able to perform adjustments or repairs on Carrier equipment as well as all other brands of Heating, Ventilation, Air Conditioning, and Controls equipment and systems. With Carrier as your partner, you can be confident that all repairs are done correctly.

improve sustainable solutions

Optimisation and modernisation

Carrier Service can you show you how efficiency equals savings: Your chiller or heat pump may be running, but is it running as it is supposed to do? The Carrier Performance Analyzer tool has been developed to answer exactly this question. Our experts make real-time measurements on your equipment and make proposals on what can be improved so that you can get the most out of your equipment and protect your bottom line.

Carrier can help you to:

- Comply with new legislation
- Improve the operation and reliability of your equipment
- Reduce running costs through Carrier's energy-saving, high-efficiency products and controls
- Explore building automation and energy management solutions with our experts

Parts

We offer new and remanufactured compressors, a wide range of popular consumables, essential tools and genuine manufacturer's replacement parts - all with the support of the industry expert.

- Fast response
- Expert technical support with factory back-up
- Attractive prices
- Express delivery possible
- Large stocks and choice of brands

Carrier
United Technologies

Variable-speed water-cooled chillers and heat pumps

30XW-V
30XWHV

- Seasonal efficiency
- Reliability
- Economy
- Versatility

AIR CONDITIONING & HEATING SOLUTIONS

Carrier has developed its own state-of-the-art answer to market-challenging requirements: a complete product range featuring new inverter-driven screw compressors, based on the successful Aquaforce series. The new line with Greenspeed technology offers increased global performance as well as Carrier's acclaimed product quality, reliability and customer service support.

greenspeed AQUAFORCE

Carrier
United Technologies
turn to the experts

Choosing the right system for your application











The breadth and depth of the Carrier product portfolio allow you to choose the right product for any application - heating, cooling or ventilation.

The experience and know-how of the Carrier sales force will help you define the products that best meet your requirements.

Green Building Capabilities

- Design and certification
- Audit and diagnostics
- Energy analysis and tools
- Innovative products for green buildings

Carrier's AdvanTE³C Solutions Center is a global group of Experts in Efficiency and Environment focused on developing sustainable building solutions. The AdvanTE³C Solutions Center is a natural evolution of Carrier's approach to sustainability – and will support customers around the world in developing strategic, energy-efficient and custom-engineered building solutions. Carrier's experts in the AdvanTE³C Solutions Center will apply today's technology in an innovative fashion to capture even greater energy efficiency and environmental benefits. This will help drive innovation in commercial product designs, with a focus on new solutions.

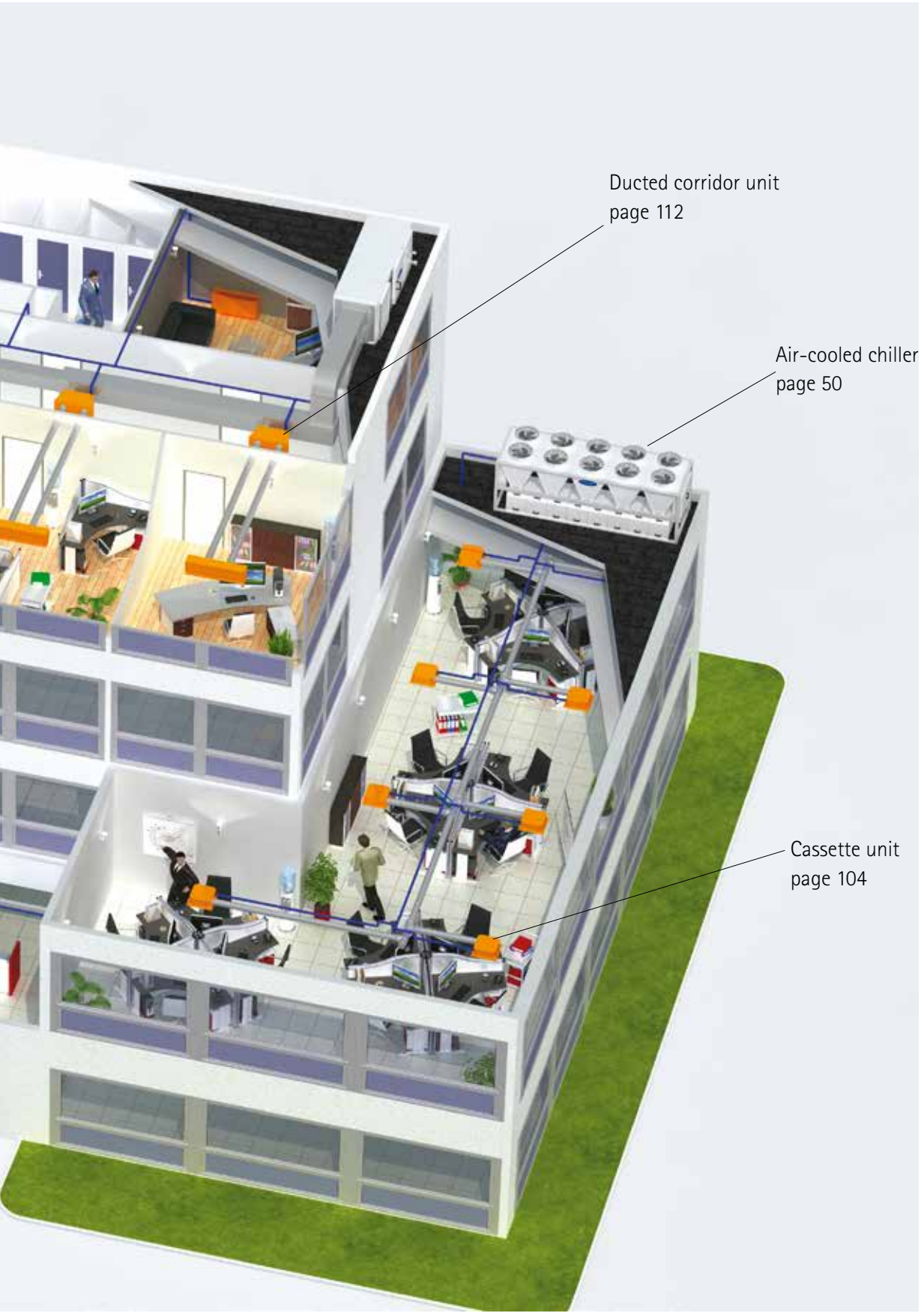
Willis Carrier invented modern air conditioning when he custom-engineered a unique solution to control temperature, humidity and indoor air quality for a Brooklyn printing plant. AdvanTE³C Solutions Center builds on that long legacy of customer-driven innovation and Carrier's expertise in designing energy efficient and sustainable buildings for the future.

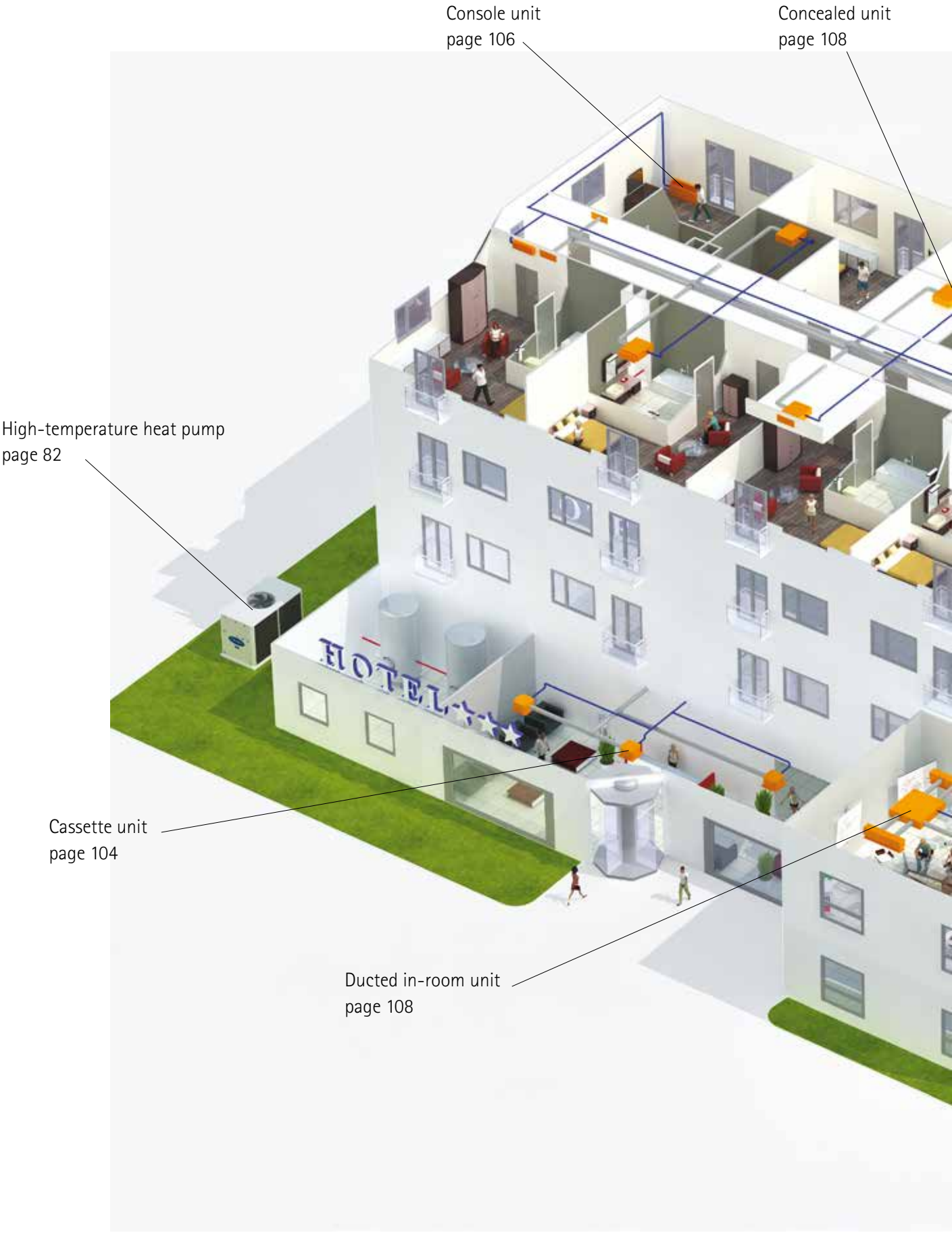
AdvanTE³C Solutions Center

Carrier
United Technologies

Console unit
page 106

Ducted in-room unit
page 108

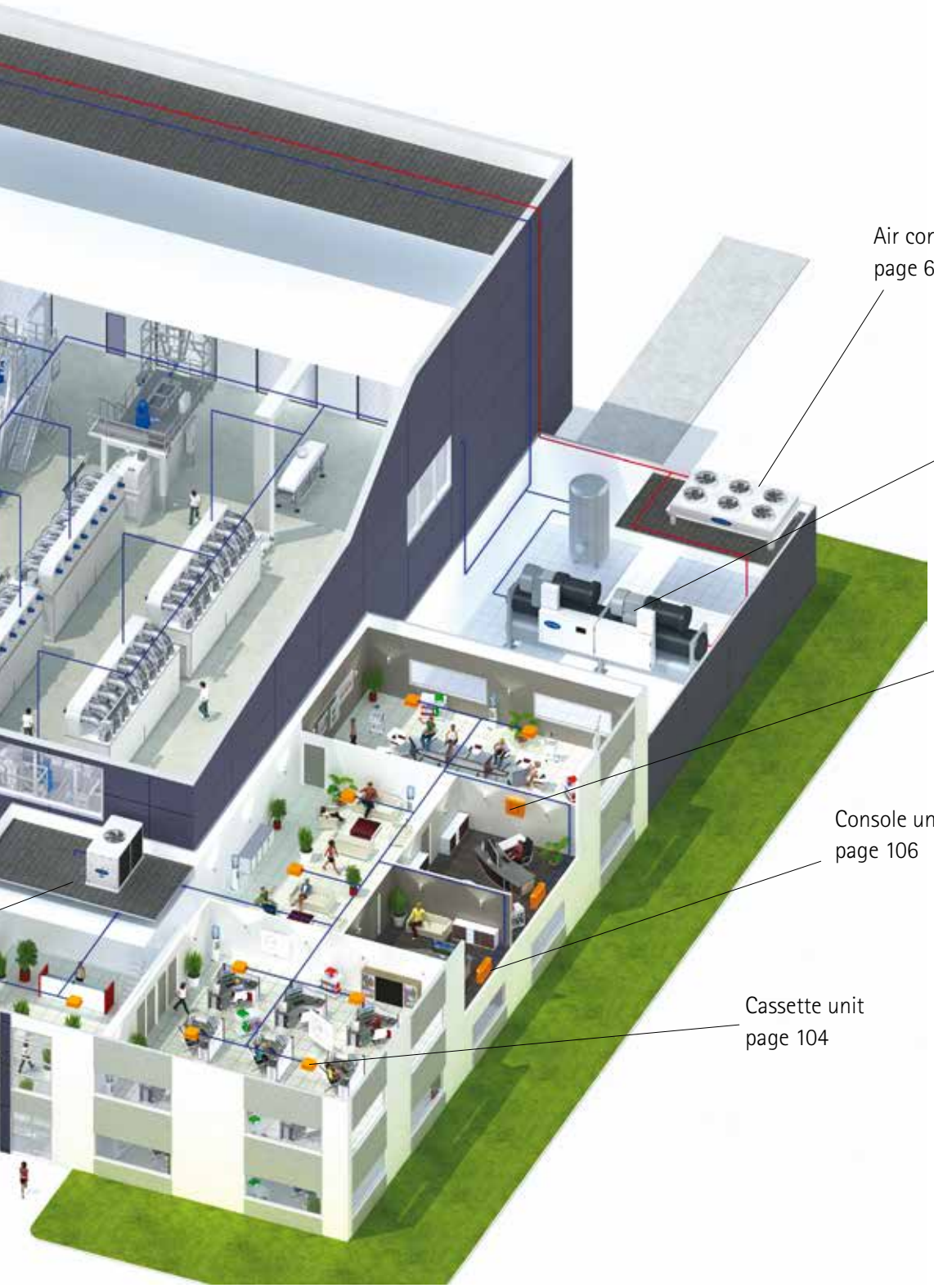

Ducted corridor unit
page 112
Air-cooled chiller
page 50
Cassette unit
page 104

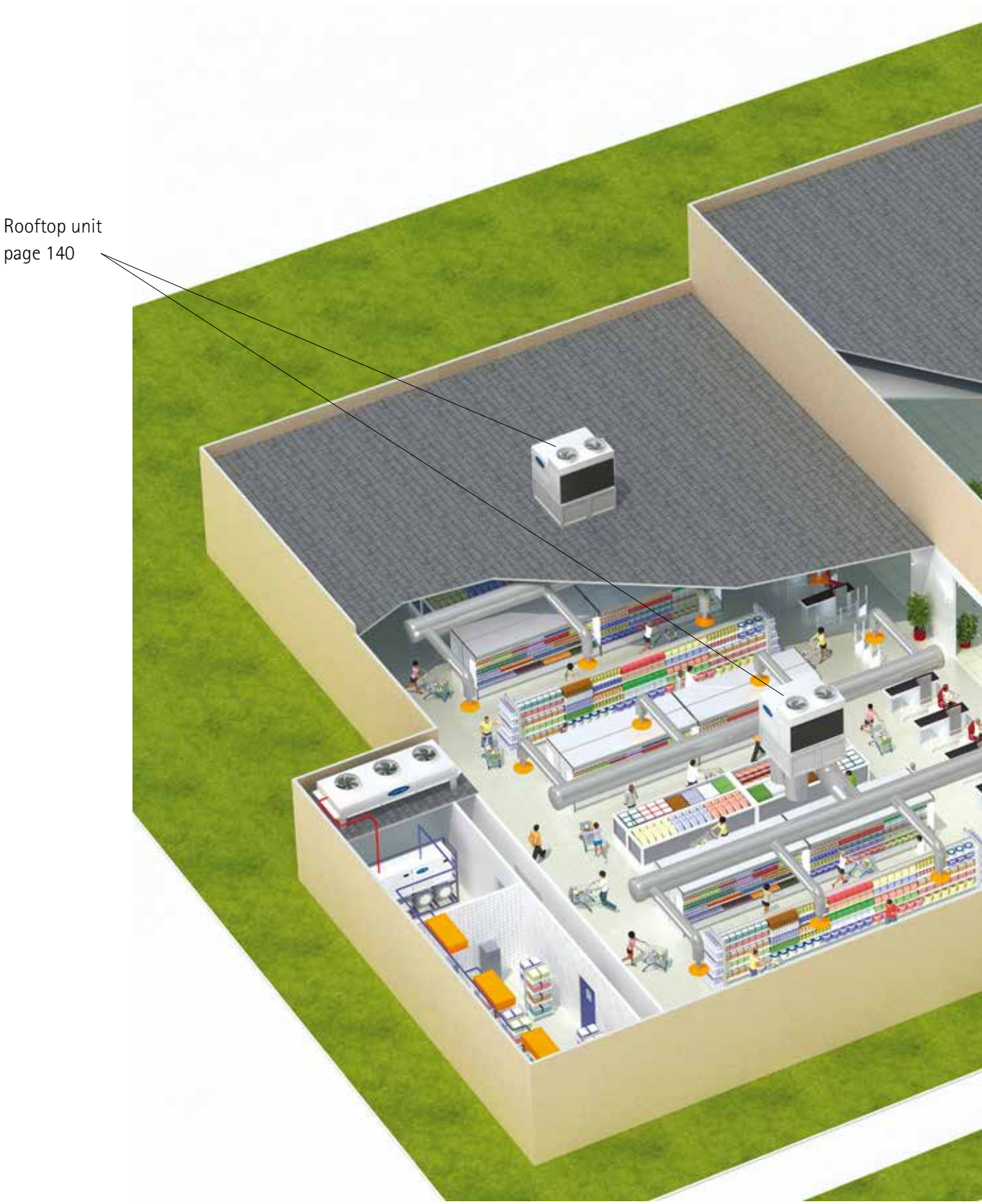

Console unit
page 106
Concealed unit
page 108
High-temperature heat pump
page 82
Cassette unit
page 104
Ducted in-room unit
page 108


Air-cooled chiller
page 44
Air handling unit
page 124
Ducted in-room unit
page 110

Air handling unit
page 126

Air-to-water heat pump
page 82

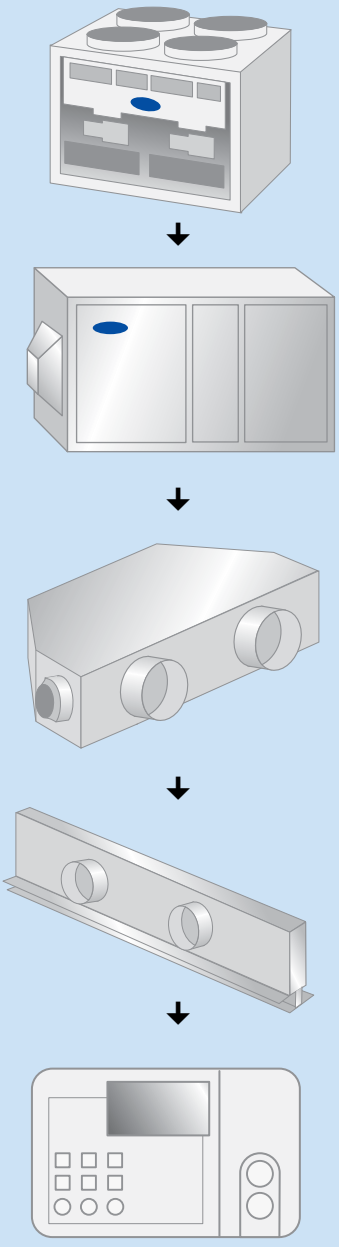

Air condenser
page 66
Water-cooled unit
page 60
Aquasmart Touch Pilot
page 162
Console unit
page 106
Cassette unit
page 104


Rooftop unit
page 140


Air-cooled chiller
page 40
Air condenser
pages 66
Water-source heat pump

Index

System architecture



Index




Application of the new EN14511: 2013 chiller and heat pump performance standard:
Chiller and heat pump performances are calculated in accordance with the EN14511: 2013 calculation standard and certified by Eurovent.

The latest version of EN14511 uses a different method to take into account the contribution of water pumps, or heat exchanger pressure drops in the unit performances. The efficiency of the pump is no longer a default value, but a function of the required hydraulic power. In January 2012, the Eurovent Certification Company decided that this method is more realistic and it is fully applied starting from the 2012 certification campaign. The performances declared based on the new version of the standard were published on the ECC website www.eurovent-certification.com at the end of March 2012.

IMPORTANT: Only 2012 performances rated according the new EN14511: 2013, taking in account water pump and heat exchanger pressure drop are certified by Eurovent. For units declared before 2012, the previous gross EER and COP values without pump correction (for units with integral pump - measured with the pump not running) and the corresponding energy classes are available on ECC website.

Application rating conditions

	Air conditioning applications (AC) – condition 1	Cooling and heating floor applications (CHF) – condition 2
Air-cooled cooling	Evaporator EWT/LWT 12°C/7°C OAT 35°C	Evaporator EWT/LWT 23°C/18°C OAT 35°C
Water-cooled cooling	Evaporator EWT/LWT 12°C/7°C Condenser EWT/LWT 30°C/35°C	Evaporator EWT/LWT 23°C/18°C Condenser EWT/LWT 30°C/35°C

Legend
EWT Entering water temperature
LWT Leaving water temperature
OAT Outdoor air temperature

AIR-COOLED LIQUID CHILLERS WITH INTEGRATED HYDRONIC MODULE

Air conditioning

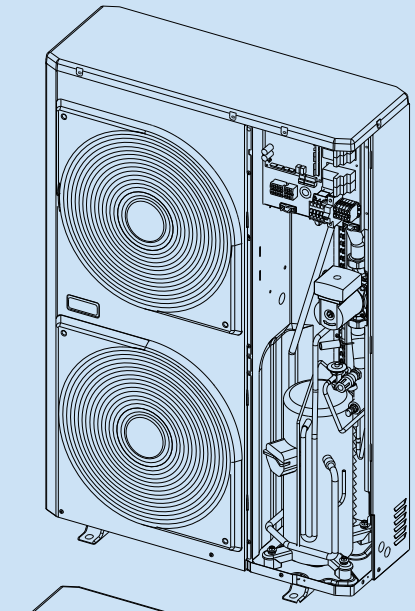
AQUASNAP®

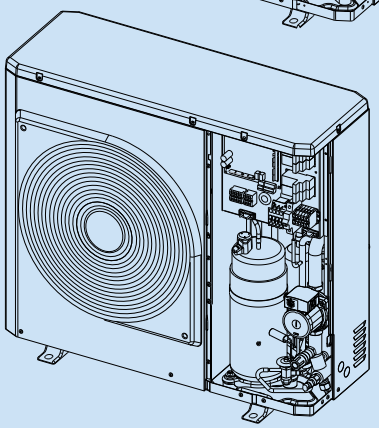
30RB

Accessories

- Aquasnap Junior remote controller

Hydronic module





Features

- Three sizes with nominal cooling capacities from 8 to 14 kW.
- Aquasnap liquid chillers, featuring the latest technological innovations: incorporating scroll or rotary compressors, low-noise fans and operating on the ozone-friendly refrigerant R-410A.
- Units have Eurovent energy efficiency class A (size 008) or B (sizes 012 and 015).
- Units are available with or without integrated hydronic module depending on the application. The integrated hydronic module reduces installation time and includes screen filter, water pump, expansion tank, safety valve and pressure gauge.
- Auto-adaptive control algorithm prevents excessive compressor cycling and reduces the amount of water in the hydronic circuit (Carrier patent).
- Components are specifically designed for R-410A refrigerant. All units have been submitted to the necessary laboratory tests to ensure perfect operation.
- Latest-generation low-noise fans, now even quieter, as they do not generate intrusive low-frequency noise.
- Scroll or rotary compressors run quietly and vibration-free and are known for their durability and reliability. They are maintenance-free.
- Air management system, consisting of the propeller fan, orifice and air discharge grille, guarantees minimised sound levels.
- Wide temperature operating range: units can operate efficiently in extreme temperature conditions. They can work at low-ambient conditions (down to -10°C and up to 46°C outside temperature).
- Compact unit dimensions, reduced weight and easy access to all internal components facilitate installation.
- An HMI graphic service interface can be used to monitor and set unit operating parameters.
- Specially shaped anchorage feet ensure correct and safe unit fixing to the foundation.
- Increased energy efficiency at part load - the result of a long qualification and optimisation process.
- Reduced maintenance costs

Physical data

30RB		008	012	015
Air conditioning application as per EN14511-3:2013				
Condition 1				
Nominal cooling capacity	kW	8.0	10.8	14.0
EER	kW/kW	3.10	2.93	2.91
Eurovent class, cooling		A	B	B
ESEER	kW/kW	3.30	3.24	3.09
Condition 2				
Nominal cooling capacity	kW	10.1	15.0	17.7
EER	kW/kW	3.70	3.65	3.43
Condition 3*				
Nominal cooling capacity	kW	5.1	7.0	8.4
EER	kW/kW	2.24	1.95	1.90
Operating weight with/without hydronic module**	kg	75.5/73.3	114/108	116/110
Refrigerant charge (R410A)**		2.15	2.63	3.18
Compressor		One hermetic rotary compressor	One hermetic scroll compressor	One hermetic scroll compressor
Evaporator		Plate heat exchanger		
Condenser		Copper tubes and aluminium fins		
Hydronic circuit				
Net water volume	l	1.0	2.3	2.3
Expansion tank capacity	l	2	2	2
Maximum water-side operating pressure	kPa	300	300	300
Fans		Propeller fans with three blades, diameter 495 mm		
Quantity		1	2	2
Dimensions				
Length x depth x height	mm	908 x 350 x 821	908 x 350 x 1363	908 x 350 x 1363

NOTE: For the conditions, please refer to page 31.

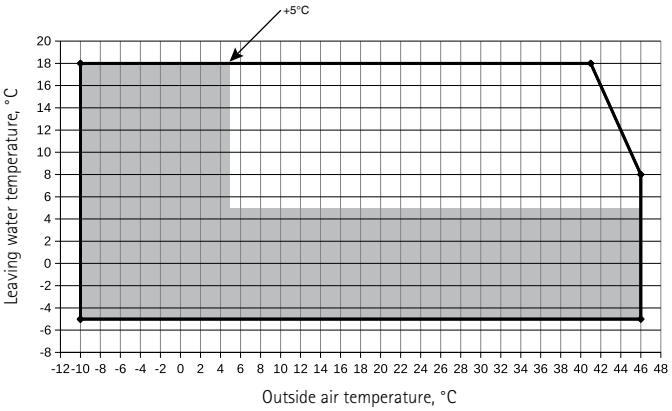
* Condition 3: Cooling mode conditions: evaporator water entering/leaving temperature 0°C/-5°C, outside air temperature 35°C, evaporator fouling factor 0 m2 K/W, with 20% ethylene glycol.
** Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RB		008	012	015
Power circuit				
Nominal power supply ± 6%	V-ph-Hz	400-3-50 + neutral	400-3-50 + neutral	400-3-50 + neutral
Control circuit supply		24 V via internal transformer		
Maximum start-up current (Un)*	A	30	66	73
Maximum power input**	kW	3.1	4.4	5.5
Nominal operating current draw***	A	4.5	6.3	9.1

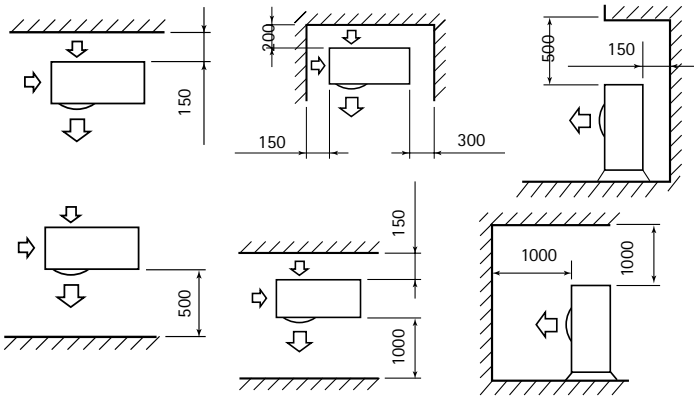
* Maximum instantaneous start-up current (locked rotor current of the compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range



Operating range with anti-freeze solution and Pro-Dialog configuration.

Clearances, mm



Air conditioning

AQUASNAP PLUS

30AWH

Options/accessories

- Unit without hydronic module (option)
- Unit with hydronic module (option)
- Unit with variable-speed pump (option)*
- Additional outdoor sensor (accessory)
- Remote controller 33AW-RC1 (accessory)
- Programmable thermostat 33AW-CS1 (accessory)

* Available in 2012

30AW controllers

Comfort™ Series programmable thermostat
33AW-CS1

Remote controller
33AW-RC1

Features

- Two versions with or without hydronic module in five sizes with nominal cooling capacities from 3 to 16 kW.
- AquaSnap PLUS air-cooled chillers with built-in inverter technology were designed for residential and light commercial applications. They offer excellent energy efficiency values, exceptionally quiet operation and meet the most stringent operating temperature demands.
- Units integrate the latest technological innovations: ozone-friendly refrigerant R-410A, DC inverter twin-rotary compressors, low-noise fan and micro-processor control.
- Specifically designed for ease-of-installation and service and underlining Carrier's reputation for highest product quality and reliability.
- AquaSnap PLUS chillers can be used with a wide choice of Carrier terminal fan coil units - cassettes, low, medium and high-pressure satellite units, console units, underceiling units and high-wall units.
- Wide operating range offering high performance in a wide temperature range.
- DC inverter twin-rotary compressors with Pulse Amplitude Modulation (PAM) and Pulse Width Modulation (PWM) for enhanced reliability, low energy consumption and smooth vibration-free operation under all operating conditions.
- Variable-speed fans with an innovative patented fan blade shape ensure improved air distribution at exceptionally low noise levels.
- Advanced circuit design and component selection has resulted in a compact unit with an exceptionally small footprint that can be easily transported even through narrow doors.
- Comprehensive quality and endurance tests.
- Enhanced control possibilities.

INVERTER Technology

Physical data

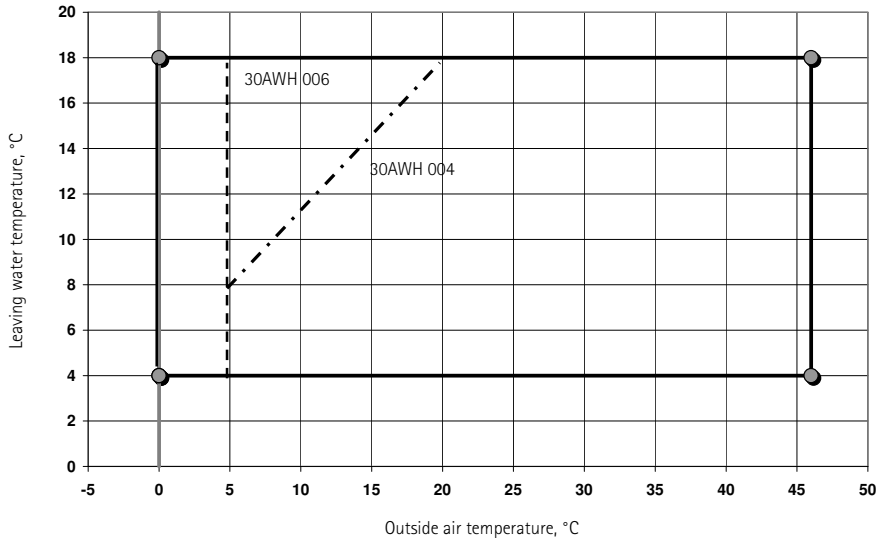
30AW		004	006	008	012	015	012-3Ph	015-3Ph
Air conditioning application as per EN14511-3: 2013								
Nominal cooling capacity	kW	3.3	4.7	5.8	10.2	13.0	10.2	13.0
EER	kW/kW	3.02	3.00	2.98	2.96	2.95	3	2.91
ESEER	kW/kW	4.36	4.51	4.15	4.22	4.31	4.4	4.31
Cooling floor application as per EN14511-3: 2013								
Nominal cooling capacity	kW	4.93	7.04	7.84	13.54	16.04	13.5	16
EER	kW/kW	4.2	3.7	3.99	3.66	3.85	4.15	3.81
Operating weight								
Unit with hydronic module	kg	57	61	69	104	112	116	116
Unit without hydronic module	kg	54	58	66	101	109	113	113
Refrigerant		R-410	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
Compressor		DC twin-rotary with PMV expansion valve						
Fans		Propeller fans						
Quantity/diameter	mm	1/495	1/495	1/495	2/495	2/495	2/495	2/495
Dimensions								
Length x depth x height	mm	908 x 350 x 821	908 x 350 x 821	908 x 350 x 821	908 x 350 x 1363	908 x 350 x 1363	908 x 350 x 1363	908 x 350 x 1363

NOTE: For the conditions, please refer to page 31.

Electrical data

30AW		004	006	008	012	015	012-3Ph	015-3Ph
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50
Voltage range	V	198-264	198-264	198-264	198-264	198-264	376-424	376-424
Full load current	A	7.2	11	14	23	20	16	16
Fuse rating	A	10	16	16	25	25	20	20
Main power cable section	mm^2	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Operating range



Air conditioning

AQUASNAP®

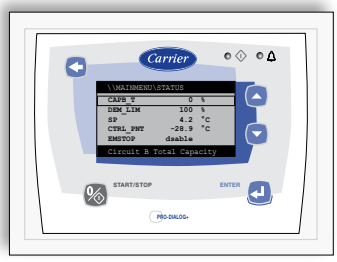
30RB

Options/accessories

- Unit without hydronic module (option)
- Integrated water fill system (option)
- Power supply without neutral (option)
- JBus, BacNet and LonTalk gateways (accessory)
- Remote interface (accessory)
- Integrated water fill system (accessory)

Features

- Four sizes with nominal cooling capacities from 16 to 33 kW.
- Aquasnap liquid chillers for commercial applications such as the air conditioning of offices and hotels.
- Exceptionally high energy efficiency at part load - Eurovent energy efficiency class A and B (in accordance with EN14511-3: 2013).
- Latest technological innovations integrated: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans and auto-adaptive microprocessor control.
- The units are equipped with a hydronic module integrated into the unit chassis, limiting the installation to straight-forward operations like connection of the power supply and the water supply and return piping.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles on anti-vibration mountings.
- Low-noise fans, now even quieter. Rigid fan installation for reduced start-up noise.
- The unit has a small footprint and is enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.



Pro-Dialog+ operator interface

Hydronic module (sizes 026-033 shown)

Physical data

30RB		017	021	026	033
Air conditioning application as per EN14511-3: 2013					
Condition 1					
Nominal cooling capacity	kW	16.4	21.4	27.3	33.3
EER	kW/kW	3.04	3.11	3.08	3.28
Eurovent class		B	A	B	A
ESEER	kW/kW	3.46	3.47	3.44	3.62
Condition 2					
Nominal cooling capacity	kW	22.7	29.5	38.6	45.8
EER	kW/kW	3.80	3.86	4.01	4.11
Operating weight*					
Standard unit (with hydronic module)	kg	189	208	255	280
Standard unit (without hydronic module)	kg	173	193	237	262
Refrigerant*		R-410A			
Compressor		One hermetic scroll compressor			
Control		Pro-Dialog+			
Fans		Two twin-speed axial fans, 3 blades		One twin-speed axial fan, 7 blades	
Air flow	l/s	2212	2212	3530	3530
Evaporator		Plate heat exchanger			
Condenser		Copper tubes and aluminium fins			
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, pressure gauge, automatic air purge valve, safety valve			
Power input*	kW	0.54	0.59	0.99	1.10
Nominal operating current**	A	1.30	1.40	2.40	2.60
Dimensions					
Length x depth x height	mm	1136 x 584 x 1579	1136 x 584 x 1579	1002 x 824 x 1790	1002 x 824 x 1790

NOTE: For the conditions, please refer to page 31.

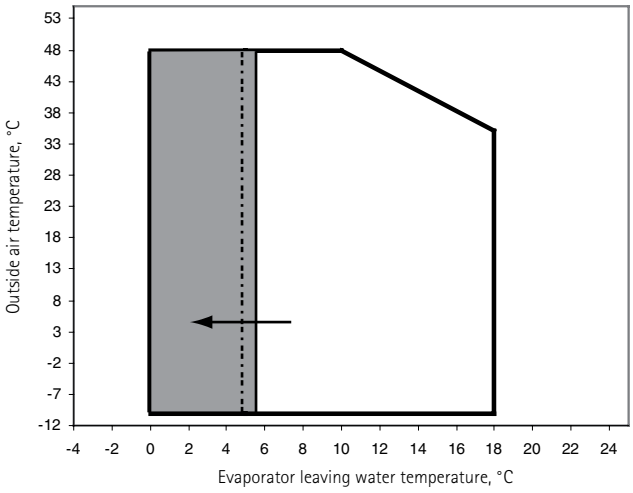
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RB		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	7.8	9.1	11	13.8
Nominal unit operating current draw***	A	8	12	16	17

* Maximum instantaneous start-up current (locked rotor current of the compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range



Operating range with anti-freeze solution and Pro-Dialog configuration.

DUCTABLE AIR-COOLED LIQUID CHILLERS

Air conditioning

AQUASNAP®

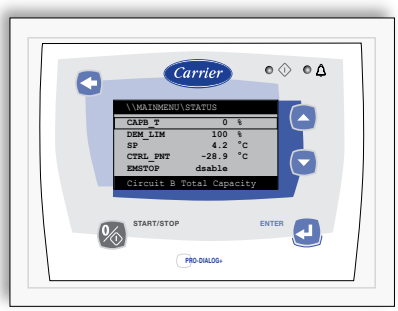
30RBY

Options/accessories

- Hydronic module (option)
- Integrated water fill system (option/ accessory)
- Inlet duct frame (option)
- Inlet filter frame (option)
- JBus, BacNet and LonTalk gateways (accessory)
- Remote interface (accessory)
- Condensate drain pan (accessory)

Features

- Four sizes with nominal cooling capacities from 16 to 32 kW.
- Aquasnap liquid chillers for commercial applications such as the air conditioning of offices and hotels.
- Exceptionally high energy efficiency at part load - Eurovent energy efficiency class A and B (in accordance with EN14511-3: 2013).
- Latest technological innovations integrated: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans and auto-adaptive microprocessor control.
- The units are equipped with a hydronic module integrated into the unit chassis, limiting the installation to straight-forward operations like connection of the power supply, the water supply and return piping and the air distribution ducting.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles on anti-vibration mountings.
- Low-noise fans, now even quieter. Rigid fan installation for reduced start-up noise.
- Easy duct connection and fans with 80 Pa available pressure.
- The unit has a small footprint and is enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.



Pro-Dialog+ operator interface

Hydronic module, sizes 026-033

Physical data

30RBY		017	021	026	033
Air conditioning application as per EN14511-3: 2013					
Condition 1					
Nominal cooling capacity	kW	15.7	20.3	27.0	32.3
EER	kW/kW	2.53	2.52	2.76	2.95
Eurovent class		B	B	A	A
ESEER	kW/kW	2.81	2.72	3	3.18
Condition 2					
Nominal cooling capacity	kW	19.9	24.8	36.1	42.3
EER	kW/kW	2.96	2.78	3.36	3.56
Operating weight*					
Standard unit (with hydronic module)	kg	209	228	255	280
Standard unit (without hydronic module)	kg	193	213	237	262
Refrigerant*		R-410A			
Compressor		One scroll compressor			
Control		Pro-Dialog+			
Fans		Two twin-speed centrifugal fans, 5 backward-curved blades		One twin-speed axial fan, 7 blades	
Air flow	l/s	1640	1640	3472	3472
Evaporator		One plate heat exchanger			
Condenser		Copper tubes and aluminium fins			
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, water circuit drain valve, pressure gauge, automatic air purge valve, safety valve			
Power input*	kW	0.54	0.59	0.99	1.10
Nominal operating current**	A	1.30	1.40	2.40	2.60
Dimensions					
Length x depth x height	mm	1135 x 584 x 1608	1135 x 584 x 1608	1002 x 824 x 1829	1002 x 824 x 1829

NOTE: For the conditions, please refer to page 31.

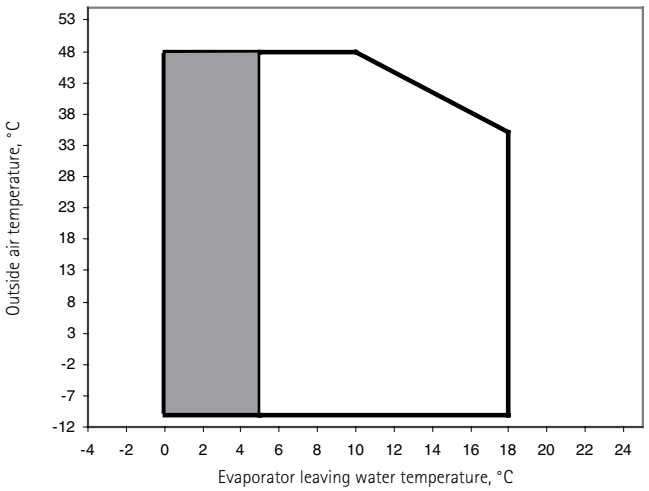
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RBY		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	8.0	9.3	11.2	14.0
Maximum operating current draw***	A	13	16	20	24

* Maximum instantaneous start-up current (locked rotor current of the compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



Operating range with anti-freeze solution and Pro-Dialog configuration.

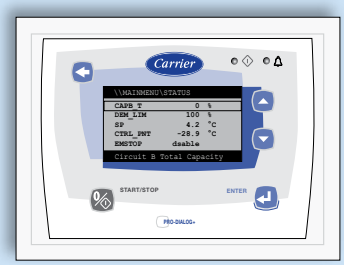
Air conditioning

AQUASNAP®

30RBS

Options

- Condenser with anti-corrosion post-treatment
- Condenser with pre-treated fins
- Coil protection grilles
- Very low leaving water temperature
- Low leaving water temperature
- Very low noise level
- Soft starter (30RBS 039-080)
- Winter operation
- Frost protection down to -20°C
- High- and low-pressure single and dual-pump hydronic modules with or without expansion tank
- High-pressure variable-speed single- and dual-pump hydronic modules with or without expansion tank
- Partial heat reclaim
- Enviro-Shield or Super Enviro-Shield anti-corrosion protection for MCHE heat exchangers
- JBus, BacNet and LonTalk gateways
- Evaporator screw or welded connection sleeves
- Master/slave operation
- Remote interface



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal cooling capacities from 40 to 156 kW.
- Aquasnap liquid chillers for commercial or industrial applications.
- Latest technological innovations integrated: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans made of a composite material, auto-adaptive microprocessor control, electronic expansion valve and variable-speed pump (option).
- Eurovent energy efficiency class C and D (in accordance with EN14511-3: 2013).
- All-aluminium micro-channel condenser (MCHE) for reduced refrigerant charge.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles (option).
- Low-noise Flying Bird IV fans, made of a composite material. Rigid fan installation for reduced start-up noise.
- Small unit footprint and a low height (1330 mm), enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Several compressors connected in parallel.
- The electronic expansion device (EXV) allows operation at a lower condensing pressure (EER optimisation), and dynamic superheat management optimises the utilisation of the evaporator heat exchange surface.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RBS		039	045	050	060	070	080	090	100	120	140	160
Air conditioning application as per EN14511-3: 2013												
Condition 1												
Nominal cooling capacity	kW	40	44	51	58	67	79	87	97	114	135	156
EER	kW/kW	2.87	2.76	2.67	2.66	2.72	2.70	2.73	2.73	2.67	2.70	2.65
Eurovent class		C	C	D	D	C	C	C	C	D	C	D
ESEER	kW/kW	3.75	3.88	3.95	3.80	3.62	3.67	3.91	3.94	3.83	3.68	3.87
Condition 2												
Nominal cooling capacity	kW	53	59	69	81	85	98	114	126	151	171	194
EER	kW/kW	3.44	3.32	3.12	3.31	2.97	3.06	3.18	3.09	3.10	2.99	3.01
Operating weight (with MCHE heat exhangers)*												
Standard unit without hydronic module	kg	443	451	454	463	467	482	780	791	807	912	943
Standard unit with hydronic module												
Single high-pressure pump	kg	473	481	484	493	496	511	812	823	843	951	982
Dual high-pressure pump	kg	499	507	510	519	522	537	857	868	891	988	1019
Compressors		Hermetic scroll compressors, 48.3 r/s										
Circuits A/B		2/-	2/-	2/-	2/-	2/-	2/-	3/-	3/-	3/-	2/2	2/2
Refrigerant*		R-410A										
Capacity control		Pro-Dialog+										
Condensers		All aluminium micro-channel heat exchanger (MCHE)										
Fans		Axial Flying Bird IV with rotating shroud										
Quantity		1	1	1	1	1	1	2	2	2	2	2
Total air flow (at high speed)	l/s	3800	3800	3800	3800	5300	5300	7600	7600	7600	10600	10600
Evaporator		Direct expansion plate heat exchanger										
Hydronic module (option)		Single or dual pump, Victaulic screen filter, safety valve, expansion tank, purge valves (water and air), pressure sensors										
Dimensions, length x depth x height	mm	1061 x 2050 x 1330						2258 x 2050 x 1330				

NOTE: For the conditions, please refer to page 31.

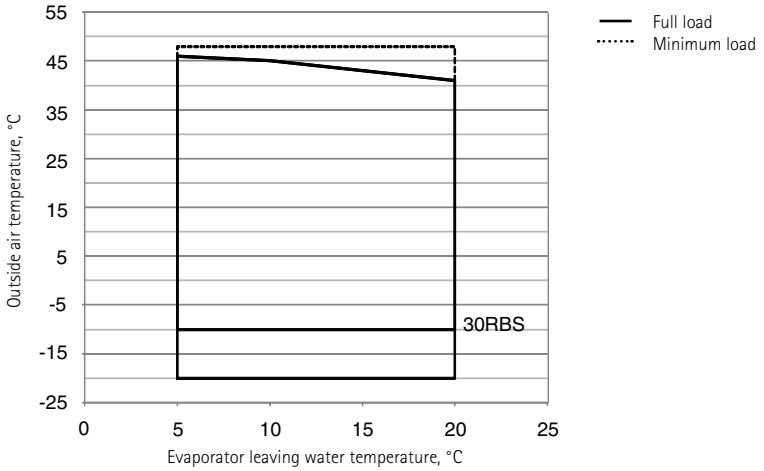
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RBS without hydronic module		039	045	050	060	070	080	090	100	120	140	160
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V via internal transformer										
Maximum start-up current (Un)*												
Standard unit	A	113.8	134.8	142.8	145.8	176.0	213.0	173.6	207.6	247.6	243.0	286.0
Unit with electronic starter option	A	74.7	86.5	93.8	96.2	114.4	139.8	-	-	-	-	-
Maximum operating power input**	kW	19.5	22.3	24.5	27.9	31.2	35.8	42.3	45.6	52.5	62.4	71.6
Nominal unit operating current draw***	A	25.6	29.0	33.0	36.0	42.4	52.8	55.4	61.7	77.3	84.8	105.6

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range



NOTE: This operating range applies up to 130 Pa static pressure without suction duct for sizes 070-080 and 140-160, and up to 240 Pa for all other sizes.

DUCTABLE AIR-COOLED LIQUID CHILLERS

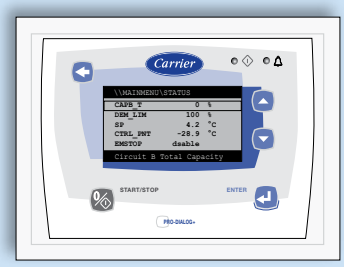
Air conditioning

AQUASNAP®

30RBSY

Options

- Condenser with anti-corrosion post-treatment
- Condenser with pre-treated fins
- Suction air filters mounted on rails
- Coil protection grilles
- Very low noise level
- Soft starter (30RBSY 039-080)
- Frost protection down to -20°C
- High- and low-pressure single and dual-pump hydronic modules with or without expansion tank
- High-pressure variable-speed single- and dual-pump hydronic modules with or without expansion tank
- Partial heat reclaim
- Enviro-Shield or Super Enviro-Shield anti-corrosion protection for MCHE heat exchangers
- JBus, BacNet and LonTalk gateways
- Evaporator screw or welded connection sleeves
- Master/slave operation
- Remote interface



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal cooling capacities from 40 to 153 kW.
- Ductable Aquasnap liquid chillers for commercial or industrial applications. The units include inverter fans to maximise EERs at all operating conditions.
- Latest technological innovations integrated: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans made of a composite material, auto-adaptive microprocessor control, electronic expansion valve and variable-speed pump (option).
- Exceptionally high energy efficiency at part load - Eurovent energy efficiency class A and B (in accordance with EN14511-3: 2013).
- All-aluminium micro-channel condenser (MCHE) for extra efficiency.
- Available static pressure of up to 240 Pa for sizes 039 to 060 and 090 to 120, and up to 180 Pa for sizes 070 to 080 and 140 to 160.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles (option on sizes 90-160).
- Low-noise Flying Bird IV fans, made of a composite material. Rigid fan installation for reduced start-up noise.
- Small unit footprint and a low height (1330 mm), enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Several compressors connected in parallel.
- The electronic expansion device (EXV) allows operation at a lower condensing pressure (EER optimisation), and dynamic superheat management optimises the utilisation of the evaporator heat exchange surface.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RBSY		039	045	050	060	070	080	090	100	120	140	160
Air conditioning application as per EN14511-3 : 2013												
Condition 1												
Nominal cooling capacity	kW	39.6	44.0	51.2	58.1	66.2	77.7	86.7	97.1	114.4	132.8	153.4
EER	kW/kW	2.93	2.81	2.66	2.7	2.68	2.65	2.71	2.72	2.68	2.66	2.6
Eurovent class		A	A	B	A	B	B	A	A	B	B	B
ESEER	kW/kW	3.93	4.04	3.98	3.9	3.72	3.75	3.86	3.89	3.87	4.12	4.28
Condition 2												
Nominal cooling capacity	kW	53.0	58.9	68.5	80.9	83.6	97.0	114.4	126.5	150.9	168.9	191.7
EER	kW/kW	3.50	3.38	3.14	3.36	2.91	2.99	3.16	3.08	3.11	2.93	2.94
Operating weight (with MCHE heat exhangers)*												
Standard unit without hydronic module	kg	450	458	461	473	473	491	785	795	811	917	947
Standard unit with hydronic module												
Single high-pressure pump	kg	480	488	491	503	503	521	817	827	847	956	986
Dual high-pressure pump	kg	506	513	516	528	529	547	862	872	896	993	1023
Compressors		Hermetic scroll compressors, 48.3 r/s										
Circuits A/B		2/-	2/-	2/-	2/-	2/-	2/-	3/-	3/-	3/-	2/2	2/2
Refrigerant*		R-410A										
Capacity control		Pro-Dialog+										
Condensers		All aluminium micro-channel heat exchanger (MCHE)										
Fans		Axial Flying Bird IV with rotating shroud										
Quantity		1	1	1	1	1	1	2	2	2	2	2
Total air flow (at high speed)	l/s	3800	3800	3800	3800	4600	4600	7600	7600	7600	9200	9200
Evaporator		Direct expansion plate heat exchanger										
Hydronic module (option)		Single or dual pump, Victaulic screen filter, safety valve, expansion tank, purge valves (water and air), pressure sensors										
Dimensions**												
Length	mm	2109	2109	2109	2142/2307	2109	2142/2307	2273	2273	2273	2273	2273
Depth x height	mm	1132/1297 x 1371						2122 x 1371				

NOTE: For the conditions, please refer to page 31.

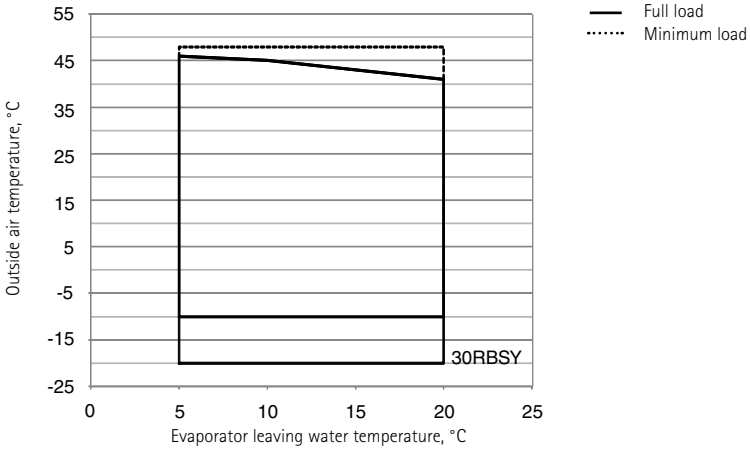
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.
** The first value is for units without filter frame, and the second value is for units with option 23B and filter frame.

Electrical data

30RBSY without hydronic module		039	045	050	060	070	080	090	100	120	140	160
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V via internal transformer										
Maximum start-up current (Un)*												
Standard unit	A	116.4	137.4	145.4	148.4	176.4	213.4	178.8	212.8	252.8	243.8	286.8
Unit with electronic starter option	A	74.7	86.5	93.8	96.2	114.4	139.8	-	-	-	-	-
Maximum operating power input**	kW	21.2	24.0	26.2	29.6	31.8	36.4	45.7	49.0	55.9	63.6	72.8
Nominal unit operating current draw***	A	28.2	31.6	35.6	38.6	42.8	53.2	60.6	66.9	82.5	85.6	106.4

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating limits



NOTE: This operating range applies up to 130 Pa static pressure without suction duct for sizes 070-080 and 140-160, and up to 240 Pa for all other sizes.

AIR-COOLED LIQUID CHILLERS WITH INTEGRATED HYDRONIC MODULE

Air conditioning

AQUASNAP®

30RB

Options

- Low leaving water temperature from +3°C to -10°C (162-402)
- Units for indoor installation with discharge ducts
- Low and very low noise levels
- Grilles on all four unit faces
- Enclosure panels each end
- Electronic starter (162-522)
- Winter operation to -10°C or -20°C
- Evaporator (incuding water piping) and evaporator and hydronic module frost protection (162-522)
- Partial heat reclaim
- Total heat reclaim (262-522)
- Master/slave operation
- Main disconnect switch with or without fuse (302-802)
- Evaporator (all) or evaporator & hydronic module (302-522) with aluminium jacket
- Compressor suction valve (302-802) or suction & discharge valves (162-262)
- High/low-pressure single/dual-pump hydronic modules (162-522)
- JBus, BacNet or LonTalk gateways
- DX free-cooling system (232-522)
- Energy Management Module EMM
- Fitted safety valves
- Conforms to Australian codes
- Unit storage above 48°C
- MCHE anti-corrosion protection
- Shell-and-tube evaporator (162-262)
- Connection sleeve
- Power cable connection side extension (302-802)

Features

- Five sizes (162 to 262) with plate heat exchanger and sixteen sizes (162 to 802) with shell-and-tube heat exchanger with cooling capacities from 162 to 774 kW.
- Eurovent energy efficiency class (in accordance with EN14511-3: 2013) B to D
- Aquasnap liquid chillers featuring the latest technological innovations and operating on the ozone-friendly refrigerant R-410A.
- All-aluminium micro-channel condenser (MCHE) for extra efficiency.
- Integrated hydronic module (option) with water pump and expansion tank.
- Low-noise scroll compressors with low vibration levels.
- V-shaped condenser coils, allowing quieter air flow across the coil.
- Low-noise 4th generation Flying Bird fans, now even quieter. Simplified electrical connections.
- Fast commissioning, as all units are systematically run tested before shipment.
- Economical operation with increased energy efficiency at part load and dynamic superheat management.
- Leak-tight refrigerant circuit and reduced maintenance costs.
- Auto-adaptive control algorithm and automatic compressor unloading for increased reliability.
- Exceptional endurance tests.

Pro-Dialog Plus operator interface

Physical data

30RB 162-262 "B" and 30RB 302-802 units		162	182	202	232	262	302	342	372	402	432	462	522	602	672	732	802
Air conditioning application as per EN14511-3: 2013																	
Nominal cooling capacity	kW	170	184	208	222	265	297	331	366	395	422	452	503	607	657	712	774
EER	kW/kW	2.95	2.96	2.86	3.00	2.67	2.77	2.69	2.80	2.60	2.71	2.59	2.58	2.72	2.68	2.59	2.58
Eurovent class		B	B	C	B	D	C	D	C	D	C	D	D	C	D	D	D
ESEER	kW/kW	3.71	3.53	3.82	3.87	3.69	3.80	3.81	3.95	3.72	3.71	3.65	3.56	3.97	3.88	3.75	3.71
Compressors		Hermetic scroll, 48.3 r/s															
Refrigerant*		R-410A															
Capacity control		Pro-Dialog Plus															
Condensers		All aluminium micro-channel heat exchanger (MCHE)															
Fans		Axial Flying Bird 4 with rotating shroud															
Quantity		3	4	4	4	4	5	5	6	6	7	7	8	9	10	11	12
Total air flow (high speed)	l/s	13542	18056	18056	18056	18056	22569	22569	27083	27083	31597	31597	36111	40623	45139	49653	54167
Evaporator		Twin-circuit plate heat exchanger					Direct expansion, shell-and-tube										
Dimensions**																	
Length x depth x height	mm	2457 x 2253 x 2297					3604 x 3353 x 2297				4798 x 2253 x 2297			5992 x 2253 x 2297		7186 x 2253 x 2297	

NOTE: For the conditions, please refer to page 31.
For 30RB 162-262 units with option 280 (shell-and-tube heat exchanger) please refer to the specific product literature
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data, 30RB 162-262 "B" and 30RB 302-802 units

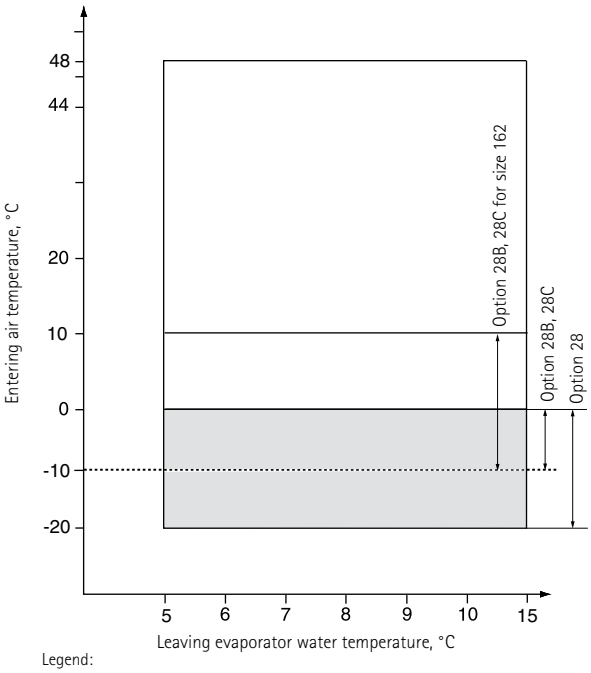
30RB (without hydronic module)		162	182	202	232	262	302	342	372	402	432	462	522	602	672	732	802
Power circuit																	
Nominal power supply	V-ph-Hz	400-3-50 ± 10%															
Control circuit supply		24 V, via internal transformer															
Max. power input* - circuits A + B/C	kW	76/-	85/-	98/-	102/-	127/-	140/-	159/-	172/-	191/-	204/-	223/-	255/-	191/96	191/127	255/96	255/127
Nom. current draw** - circuits A + B/C	A	101/-	113/-	129/-	135/-	167/-	185/-	209/-	227/-	251/-	269/-	293/-	334/-	251/125	251/167	334/125	334/167
Max. start-up current*** - circuits A + B/C	A	304/-	353/-	375/-	348/-	426/-	448/-	481/-	502/-	535/-	557/-	590/-	645/-	535/371	535/426	645/371	645/426

* Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
** Nom. unit current draw at standardised Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.
*** Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

Note: Units 30RB 602-802 have two electrical connection points.

Operating range

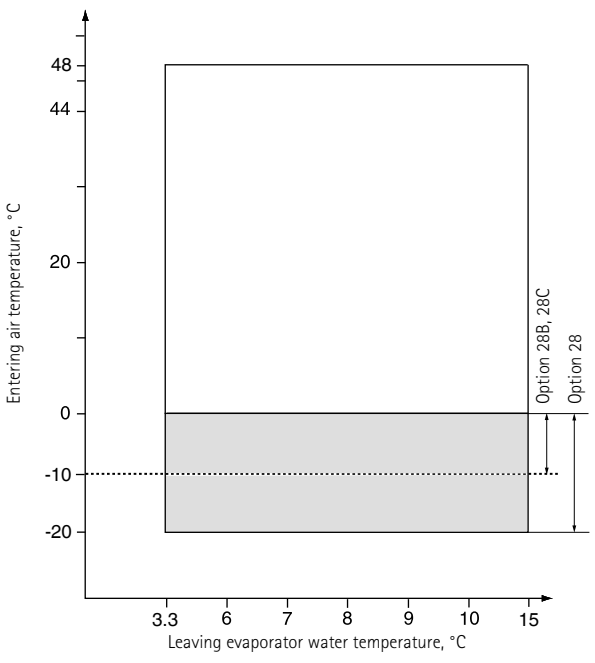
30RB 162-262 "B" units and units with option 280



Legend:

Standard unit operating at full load.
Operating range, units equipped with options 28, 28B and 28C "Winter operation".
Option 28 (with variable-speed lead fan for each circuit) allows operation down to -20°C outside temperature.
Option 28B, 28C (with two-speed lead fan for each circuit) allows operation down to -10°C outside temperature. In addition to options 28, 28B and 28C the unit must either be equipped with the evaporator frost protection option (for units without hydronic module option) or the evaporator and hydronic module frost protection option (for units with hydronic module option) or the water loop must be protected by the installer by adding a frost protection solution.

30RB 302-802 units



Notes:
Evaporator ΔT = 5 K
The evaporator is protected against frost down to -20°C.

AIR-COOLED LIQUID CHILLERS WITH INTEGRATED HYDRONIC MODULE

Air conditioning

30RBM/30RBP

AQUASNAP greenspeed

NEW 2014 CARRIER

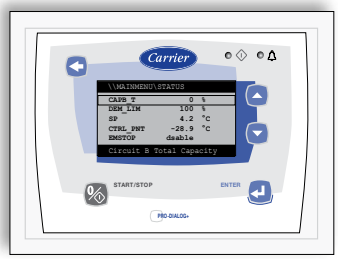
Options

- Low leaving water temperature down to -6°C*
- Very low leaving water temperature down to -12°C*
- High static fan for ducted application*
- Low noise level
- Very low noise level
- Grilles
- Side panels
- Electronic starter
- Winter operation for OAT down to -10°C
- Winter operation for OAT down to -20°C
- High ambient
- Evaporator frost protection
- Evaporator and hydronic module frost protection
- Partial heat reclaim*
- Total Heat reclaim*
- Master/slave operation
- Suction and discharge valves
- Hydronic module with high-pressure single or dual pump
- Hydronic module with low-pressure single or dual pump
- Hydronic module with greenspeed® single or dual pump
- Expansion tank
- Direct-expansion free-cooling (one or two circuits)*
- Hydronic free-cooling*
- J-Bus, BacNet or LonTalk gateways
- Enviro-Shield, Super Enviro-Shield coatings for MCHE coils
- Connection sleeve
- 230V electrical plug
- Touch Pilot operator interface
- Power Factor correction*
- Electric energy meter

* Options available after official product launch. Please contact your sales representative for more information.

Features

- Twelve sizes with nominal cooling capacities from 164 to 528 kW
- Aquasnap liquid chillers for commercial and industrial applications.
- 30RBM version with full load energy efficiency up to 3.1 (in accordance with EN14511-3: 2013)
- 30RBP version with enhanced part-load energy efficiency using greenspeed® condenser fans.
- 30RBP version with greenspeed® condenser fans for start-stop noise elimination.
- Extra energy savings through multiple options*: greenspeed® variable speed pump, partial or total heat reclaim, partial or total free-cooling, electric energy meter.
- All-aluminium micro-channel condenser (MCHE) and brazed plate heat exchanger for low R-410A refrigerant charge.
- Night mode control.
- V-shaped condenser coils allowing protection against hail.
- Fast commissioning, as all units are systematically run tested before shipment.
- Leak-tight refrigerant circuit and reduced maintenance costs.
- Auto-adaptive control algorithm and automatic compressor unloading for increased and efficiency optimization.
- Exceptional endurance tests for superior reliability.



Pro-Dialog+ operator interface

Touch Pilot operator interface

Physical data

30RBM		160	180	200	220	260	300	330	360	400	430	470	520
Air conditioning application as per EN14511-3 : 2013													
Nominal cooling capacity*	kW	164	180	200	217	262	297	333	363	400	432	463	528
EER*	kW/kW	3.04	3.14	3.00	3.00	2.88	2.97	2.91	2.95	2.90	2.96	2.90	2.90
ESEER*	kW/kW	4.00	4.01	3.97	3.95	3.98	4.00	4.07	4.00	4.06	4.07	4.00	4.04
Standard unit sound power level	dB(A)	91	91	91	92	92	93	93	93	93	94	94	94
Unit with option 15 sound power level	dB(A)	89	89	89	90	90	91	91	92	92	93	93	93
Unit with option 15LS sound power level	dB(A)	85	85	85	86	86	86	86	87	87	88	88	88
Operating weight - standard unit **	kg	1220	1260	1270	1390	1410	1850	1890	2050	2110	2510	2530	2720
Compressors / Circuits													
Compressors / Circuits		1/2	1/2	1/2	2/2	2/2	2/3	2/3	3/3	3/3	3/4	3/4	4/4
Minimum capacity	%	33%	33%	33%	25%	25%	20%	20%	17%	17%	14%	14%	13%
Control		Prodialog Plus											
Refrigerant		R410-a											
Refrigerant charge**	kg	20.7	23.8	25.1	25.1	26.2	32.8	36.1	42.4	43.3	50.2	51.3	53.7
Condensers		All aluminium micro-channel heat exchanger (MCHE)											
Fans		Axial Flying Bird 4 with rotating shroud											
Quantity		3	4	4	4	4	5	5	6	6	7	7	8
Evaporator		Twin-circuit plate heat exchanger											
Dimensions													
Length	mm	2457					3604				4798		
Width	mm	2253					2253				2253		
Height	mm	2297					2297				2297		

* Preliminary performance data given at evaporator entering/leaving water temperature 12/7°C, outside air temperature 35°C.
** Unit weight and refrigerant charge shown are guidelines only. To find out values, please refer to the unit nameplate.

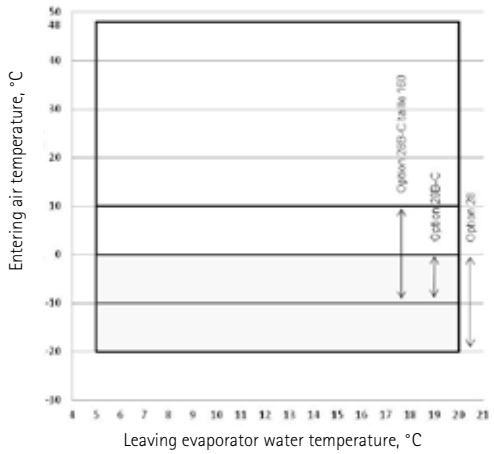
30RBP		160	180	200	220	260	300	330	360	400	430	470	520
Air conditioning application as per EN14511-3 : 2013													
Nominal cooling capacity*	kW	164	180	200	217	262	297	333	363	400	432	463	528
EER*	kW/kW	3.04	3.14	3.00	3.00	2.88	2.97	2.91	2.95	2.90	2.96	2.90	2.90
ESEER*	kW/kW	4.08	4.09	4.05	4.07	4.15	4.20	4.29	4.20	4.26	4.36	4.24	4.31
Standard unit sound power level	dB(A)	91	91	91	92	92	93	93	93	93	94	94	94
Unit with option 15 sound power level	dB(A)	89	89	89	90	90	91	91	92	92	93	93	93
Unit with option 15LS sound power level	dB(A)	85	85	85	86	86	86	86	87	87	88	88	88
Operating weight - standard unit **	kg	1260	1300	1300	1430	1450	1890	1920	2090	2140	2570	2590	2790
Compressors / Circuits													
Compressors / Circuits		1/2	1/2	1/2	2/2	2/2	2/3	2/3	3/3	3/3	3/4	3/4	4/4
Minimum capacity	%	33%	33%	33%	25%	25%	20%	20%	17%	17%	14%	14%	13%
Control		Prodialog Plus											
Refrigerant		R410-a											
Refrigerant charge**	kg	20.7	23.8	25.1	25.1	26.2	32.8	36.1	42.4	43.3	50.2	51.3	53.7
Condensers		All aluminium micro-channel heat exchanger (MCHE)											
Fans		Axial Flying Bird 4 with rotating shroud											
Quantity		3	4	4	4	4	5	5	6	6	7	7	8
Evaporator		Twin-circuit plate heat exchanger											
Dimensions													
Length	mm	2457					3604				4798		
Width	mm	2253					2253				2253		
Height	mm	2297					2297				2297		

* Preliminary performance data given at evaporator entering/leaving water temperature 12/7°C, outside air temperature 35°C.
** Unit weight and refrigerant charge shown are guidelines only. To find out values, please refer to the unit nameplate.

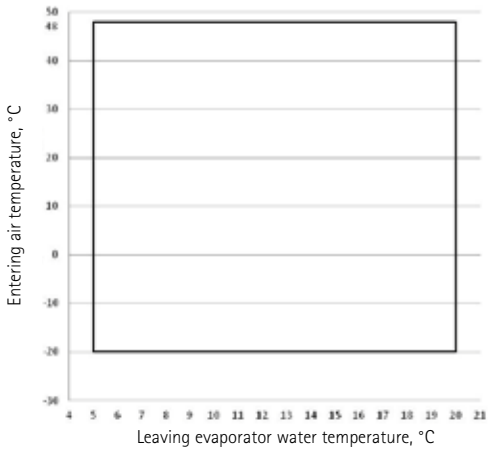
- At time of printing this catalogue, units are not yet certified within the Eurovent LCP-HP program so data should be treated as preliminary
- Preliminary data is provided for the purposes of early design sizing and physical dimensioning
- Carrier, as an active particpant of Eurovent Certified Performance (ECP) programs, will submit data to the Eurovent Certita Certification (ECC) once development is finalized and products are available for market launch.

Operating range

30RBM



30RBP



Legend:

Standard unit operating at full load.
Operating range, units equipped with options 28, 28B and 28C "Winter operation".
Option 28 (with variable-speed lead fan for each circuit) allows operation down to -20°C outside temperature.
Option 28B, 28C (with two-speed lead fan for each circuit) allows operation down to -10°C outside temperature. In addition to options 28, 28B and 28C the unit must either be equipped with the evaporator frost protection option (for units without hydronic module option) or the evaporator and hydronic module frost protection option (for units with hydronic module option) or the water loop must be protected by the installer by adding a frost protection solution.

Notes:
Evaporator ΔT = 5 K
The evaporator is protected against frost down to -20°C.

AIR-COOLED LIQUID CHILLERS

Air conditioning

AQUAFORCE

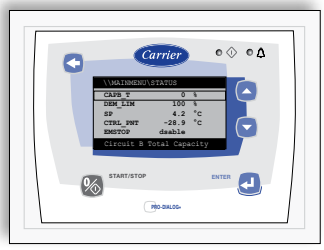
30XAS

Options

- MCHE coils corrosion protections
- Cu/Al coils corrosion protections
- Unit equipped for air discharge ducting
- IP54 control box
- Grilles
- Enclosure panels
- Winter operation
- Evaporator and hydronic module frost protection
- Heat reclaim
- Service valve
- Discharge valve
  High-pressure dual-pump hydronic module
- High energy efficiency version
- JBus, BacNet or LON gateways
- Energy Management module EMM
- Russian and Australian code compliance
- Compressor enclosure
- Traditional coils and traditional coils without slots
- Suction piping insulation
- Low and very low sound levels (second attenuation level)
- Master/slave operation
- Welded Victaulic evaporator water connections
- Evaporator with aluminium jacket
- Dual relief valve with installed three-way valve

Features

- Five sizes with nominal cooling capacities from 232 to 486 kW.
- Ideal for industrial and commercial applications with optimal performances and maximum quality.
- Available in two versions: one with very low noise levels and superior energy efficiency; the other with optimal energy efficiency to minimise operating costs.
- Extremely high full load and part load energy efficiencies: Eurovent energy efficiency class A to C, in accordance with EN14511-3: 2013. Standardised Eurovent values in accordance with EN 14511-3: 2013: EER up to 3.2 and ESEER up to 4.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- All-aluminium condenser (MCHE) with high-efficiency microchannels and increased corrosion resistance.
- Use of R-134a refrigerant with zero ozone depletion potential - the microchannel condensers reduce the refrigerant charge by 30%.
- Low-noise 4th generation Flying Bird fans made of composite material.
- Pro-Dialog+ capacity control system.
- Flooded shell-and-tube evaporator to increase heat exchange efficiency.
- Economizer system with electronic expansion device to increase cooling capacity.
- V-shape condenser coils allow quieter air flow across the coil.
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface

Physical data

30XAS		242	282	342	442	482
Air conditioning application as per EN14511-3: 2013						
Nominal cooling capacity, unit with option 279*	kW	232	284	334	430	467
Unit with options 279 and 119**	kW	245	285	345	461	486
EER, unit with option 279	kW/kW	2.76	3.00	3.08	2.93	2.87
EER, unit with options 279 and 119	kW/kW	2.97	3.15	3.24	3.15	3.09
Eurovent class, unit with option 279		C	B	B	B	C
Eurovent class, unit with options 279 and 119		B	A	A	A	B
ESEER, unit with option 279	kW/kW	3.78	3.93	3.99	3.87	3.96
ESEER, unit with options 279 and 119		3.69	3.69	3.80	3.75	3.79
Operating weight***						
Unit with options 279 and 119	kg	2390	2810	2870	3630	3720
Compressor		06T semi-hermetic screw compressor, 50 r/s				
Refrigerant		R-134a, one refrigerant circuit				
Capacity control		PRO-DIALOG+, electronic expansion valve (EXV)				
Condensers		All aluminium micro-channel heat exchanger				
Condenser fans		Axial Flying Bird IV fans with rotating shroud				
Unit with options 279 and 119						
Quantity		4	5	6	7	8
Total air flow, unit with option 279/unit with options 279 and 119	l/s	13667/18055	17083/22569	20500/27083	23917/31597	27333/ 36111
Evaporator		Flooded shell-and-tube type				
Chassis paint colour		Colour code: RAL7035				
Dimensions						
Length x depth x height	mm	2410 x 2253 x 2297	3604 x 2253 x 2297		4798 x 2253 x 2297	

NOTE: For the conditions please refer to page 31.

* Option 279 = compressor enclosure

** Option 119 = high energy efficiency.

*** Weights are guidelines only. The refrigerant charge is also given on the unit nameplate.

Electrical data

30XAS		242	282	342	442	482
Power circuit						
Nominal power supply	V-ph-Hz	400-3-50 ± 10%				
Control circuit		24 V via internal transformer				
Start-up current*	A	303	388	388	587	587
Unit with options 279 and 119						
Maximum power input**	kW	101/105	113/118	134/139	184/190	213/221
Maximum current draw (Un)**	A	165/172	185/194	218/229	305/318	353/368

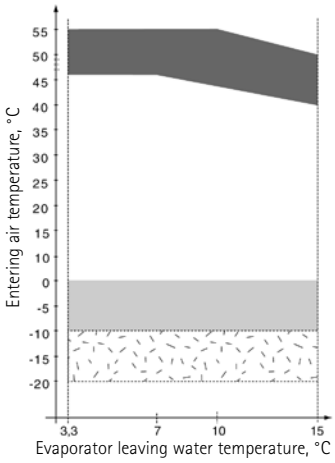
* Instantaneous start-up current (locked rotor current in star connection of the compressor).

** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

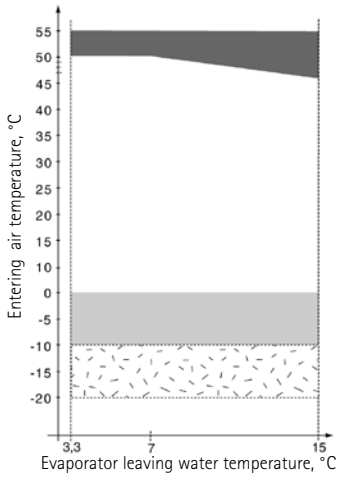
Note: Motor and fan electrical data if the unit operates at Eurovent conditions (motor ambient temperature 50°C): 1.9 A, start-up current: 8.4 A, power input: 760 W.

Operating range

Standard unit



High energy efficiency unit or option 119



Legend

Operating range, unirt equipped with option 28 "Winter operation"

Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A or 41B), or the water loop must be protected against frost by using a frost protection solution (by the installer).

Part load average

AIR-COOLED LIQUID CHILLERS

Air conditioning

AQUAFORCE®

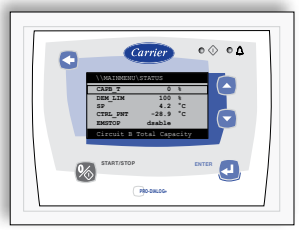
30XA

Options

- MCHE coils corrosion protections
- Cu/Al coils corrosion protections
- Low/very low temperature glycol solution
- Unit equipped for discharge ducting
- IP54 control box
- Tropical applications
- Grilles and enclosure panels
- Winter operation
- Evaporator and hydronic module frost protection
- Heat reclaim
- Single power connection point
- Service/discharge valve
- Evaporator with one pass more or less
- 21 bar evaporator
- Reversed water connections
- Low or high-pressure, single or dual-pump hydronic module
- Direct-expansion free-cooling system
- High energy efficiency version
- JBus, ModBus, BacNet/LON gateways
- Energy Management module EMM
- Pro-Dialog Touch Screen
- Dual safety valve installed with three-way valve
- Built to Swiss, Russian, Australian codes
- Traditional coils
- Insulation on evaporator entering/leaving refrigerant lines
- Low and very low sound level
- Master/slave operation
- Compressor enclosure
- Welded Victaulic evaporator water connections
- Evaporator with aluminium jacket

Features

- Twenty-four sizes with nominal cooling capacities from 267 to 1682 kW.
- The ideal solution for industrial and commercial applications with optimal performances and maximum quality. Units designed to operate up to 55°C.
- Exceptional full load and part load energy efficiency: Eurovent energy efficiency class A and B (unit with high-efficiency option 119); standardised Eurovent values in accordance with EN 14511-3: 2013: EER up to 3.3 and ESEER up to 4.2.
- Available in two versions: one with very low noise levels and superior energy efficiency; the other with optimal energy efficiency to minimise operating costs.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- All-aluminium condenser (MCHE) with high-efficiency microchannels and high corrosion resistance.
- Use of R-134a refrigerant with zero ozone depletion potential - the microchannel heat exchangers reduce the refrigerant charge by 30%.
- Low-noise 4th generation Flying Bird fans made of composite material.
- Pro-Dialog+ control system.
- Flooded shell-and-tube evaporator.
- Economizer system with electronic expansion device to increase cooling capacity.
- V-shape condenser coils allow quieter air flow across the coil.
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface (standard)

Pro-Dialog Touch Screen operator interface (option)

Physical data

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702†
Air conditioning application as per EN14511-3: 2013																									
Nominal cooling capacity, unit with option 279*	kW	267	291	318	378	426	473	601	654	691	759	807	875	960	1119	1107	1216	1218	1294	1285	1383	1377	1436	1443	1611
Unit with options 279 and 119**	kW	273	298	325	391	442	499	612	679	723	785	841	886	976	1147	1144	1235	1247	1317	1326	1437	1433	1480	1525	1682
EER, unit with option 279	kW/kW	3.00	2.96	2.98	3.08	2.89	2.93	3.03	3.11	2.91	2.88	2.98	2.91	2.95	3.02	3.04	2.96	3.09	2.87	2.91	2.64	2.77	2.97	2.87	3.00
EER, unit with options 279 and 119	kW/kW	3.13	3.10	3.09	3.21	3.08	3.15	3.13	3.31	3.08	3.10	3.24	3.12	3.09	3.24	3.27	3.09	3.23	3.09	3.16	3.09	3.06	3.20	3.19	3.22
Eurovent class, unit with option 279		B	B	B	B	C	B	B	A	B	C	B	B	B	B	B	B	B	C	B	D	C	B	C	NA
Eurovent class, unit with options 279 & 119		A	A	B	A	B	A	A	A	B	A	A	A	B	A	A	B	A	B	A	B	B	A	NA	NA
ESEER, unit with option 279	kW/kW	3.94	4.20	4.20	4.10	4.13	4.09	4.08	4.10	4.00	4.06	4.09	3.81	3.82	4.05	3.89	3.93	4.08	3.88	3.61	3.69	3.54	3.95	3.85	3.81
ESEER, unit with options 279 and 119	kW/kW	3.89	3.96	4.01	3.88	3.93	3.93	3.84	4.07	3.87	3.92	4.03	3.82	3.74	4.08	4.00	3.93	4.10	4.00	3.89	4.03	3.91	3.98	3.97	3.87
Operating weight* **																									
Unit with options 279 and 119	kg	3410	3450	3490	4313	4883	4814	5707	5857	6157	6457	6958	7258	7836	9590	9410	10020	9570	10410	10180	10770	10270	3953 7776	3953 7926	6958 6958
Dimensions																									
Length, standard unit	mm	3604	3604	3604	4798	4798	5992	7186	7186	7186	7186	8380	8380	9574	11962	11962	11962	11962	11962	11962	11962	11962	9574 4798	9574 4798	8380 8380
Depth + height	mm	2253 x 2297																							
Refrigerant		R-134a																							
Compressors		06T semi-hermetic screw compressors, 50 r/s																							
Control		Pro-Dialog, electronic expansion valve (EXV)																							
Condensers		Aluminium micro-channel heat exchangers																							
Fans		Axial Flying Bird 4 fans with rotating shroud																							
Quantity, standard unit - option 119*		6	6	6	8	8	9	11	12	12	12	14	14	16	19	19	20	20	20	20	20	20	24	24	28
Evaporator		Flooded shell-and-tube type																							

NOTE: For the conditions, please refer to page 31.

† These models are not Eurovent certified, as they are out of Eurovent certification program scope.
* Option 279 = compressor enclosure
** Option 119 = high energy efficiency
*** Weights are guidelines only. The values for sizes 1402, 1502 and 1702 are for modules 1 and 2.
Note: Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.

Electrical data

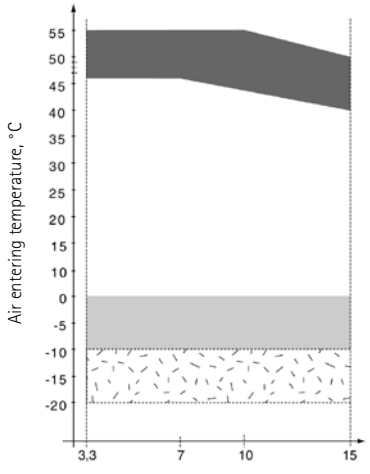
30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702
Power circuit																									
Nominal power supply	V-ph-Hz	400-3-50 ± 10%																							
Control circuit		24 V via internal transformer																							
Max. start-up current, circuits A + B/C + D*																									
Unit with option 279	A	269	269	287	402	505	505	574	606	773	803	805	893	941	574/587	587/772	773/587	587/772	803/587	772/772	891/587	772/772	893/587	941/587	805/805
Unit with option 279 and 119	A	274	274	292	407	510	510	583	616	782	812	815	905	954	583/587	587/772	782/587	587/772	812/587	772/772	901/587	772/772	905/587	954/587	815/815
Max. power input, circuits A + B/C + D**																									
Unit with option 279	kW	121	131	141	165	185	204	247	267	293	312	343	359	420	247/210	182/279	293/210	211/302	342/210	258/278	388/209	278/299	390/210	420/210	343/343
Unit with option 279 and 119	kW	126	136	147	172	192	212	257	278	304	323	356	372	435	257/217	186/286	304/217	216/309	353/217	262/284	400/216	284/305	405/217	435/217	356/356
Max. unit current draw, circuits A + B/C + D**																									
Unit with option 279	A	198	215	233	270	303	335	404	436	492	522	572	611	707	404/354	313459	492/354	359/496	568/354	426/456	655/352	456/491	661/354	707/354	572/572
Unit with option 279 and 119	A	208	226	243	284	316	350	423	457	512	542	596	635	734	423/367	321/470	512/367	367/508	588/367	436/466	678/364	466/501	688/367	734/367	596/596

* Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at operation with maximum unit power input.
** Values obtained at operation with maximum unit power input. Values given on the unit name plate. Circuit D for size 1702 only.

Note: Unit sizes 30XA 1102 to 1702 have two power connection points (circuits A + B and circuits C + D).

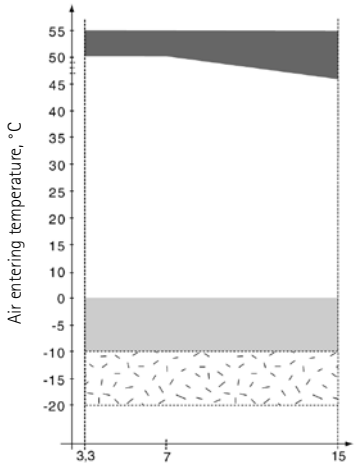
Operating range

30XA



Evaporator leaving water temperature, °C

30XA unit with option 119



Evaporator leaving water temperature, °C

Legend

Operating range, unit equipped with option 28 (winter operation)

Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A or 41B), or the water loop must be protected against frost by using a frost protection solution (by the installer).

Part load average

30XAV

greenspeed AQUAFORCE

NEW 2014 CARRIER

Options

- EMC classification according to IEC 61800-3 class C2
- Low noise level
- MCHE anti-corrosion protections
- Evaporator with aluminium jacket
- BacNet over IP-connetion
- Jbus, BacNet, LON gateways
- Energy Management Module
- Grilles and enclosure panels
- Service valves
- Evaporator with one pass less
- 21 bar evaporator
- Dual safety valves
- Welded Victaulic evaporator water connections

Features

- Designed for commercial and industrial applications.
- High performance, Carrier granted, at full and partial load.
- New TOUCH PILOT smart control with intuitive and user-friendly 7" interface.
- Greenspeed technology, both on compressors and fans, allows precise capacity matching of building load changes and significantly reduce unit power input, especially at part loads.
- Exclusive inverter-driven screw compressors, an evolution of the proven Carrier fixed-speed screw compressor design.
- Variable speed fans controlled to minimize noise and energy consumption at all conditions.
- Operation granted up to 50°C outdoor air temperature.
- Improved electrical performance: High power factor and negligible inrush current.
- Independent and leak-tight refrigerant circuits.

Touch Pilot operator interface

Physical data

30XAV		500	600	700	800
Air conditioning application as per EN14511-3: 2013					
Nominal cooling capacity*	kW	509	611	695	819
EER*	kW/kW	3.20	3.20	3.14	3.33
ESEER*	kW/kW	4.46	4.55	4.50	4.74
Sound power level, standard unit	dB(A)	102	103	103	103
Sound power level, unit with option 279**	dB(A)	99	100	100	100
Sound power level, unit with options 257 and 279 **	dB(A)	96	97	97	97
Operating weight * **	kg	4901	5264	5865	6524
Dimensions					
Length	mm	6192	6192	7386	8380
Width	mm	2253	2253	2253	2253
Height	mm	2297	2297	2297	2297
Compressor		Variable speed, inverter-driven screw compressor (06T, Carrier proprietary technology)			
Compressors / Circuits		2 / 2	2 / 2	2 / 2	2 / 2
Minimum capacity	%	10	10	10	10
Control		Touch Pilot, with 7" touch screen			
Refrigerant		R134a			
Refrigerant charge***	kg	93	106	116	131
Condenser		All aluminium micro-channel heat exchanger (MCHE)			
Fans		Variable speed, inverter-driven axial fans (Flying Bird 4, Carrier proprietary technology)			
Quantity		9	10	12	14
Evaporator		Flooded, shell-and-tube type			

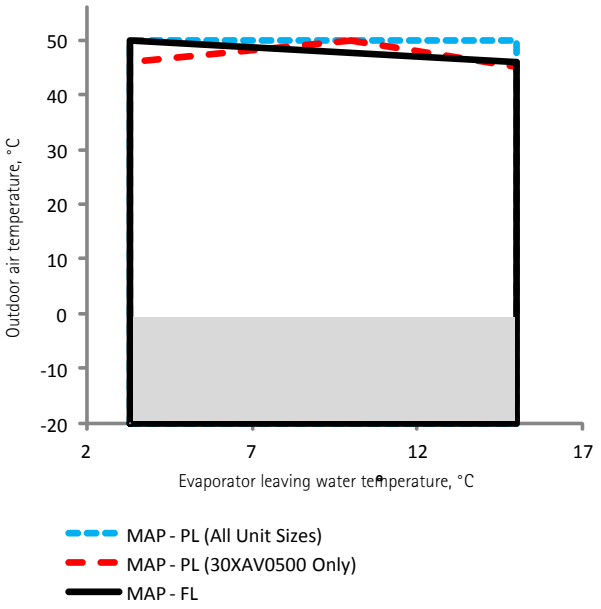
30XAV range will extend up to 1200 kW. Contact Carrier sales force for more details.

* Preliminary performance data given at evaporator entering/leaving water temperature 12/7°C, outside air temperature 35°C
** Option 279 = compressor enclosure. Option 257 = low sound option
*** Unit weight and refrigerant charge shown are guidelines only. To find out values, please refer to the unit nameplate.

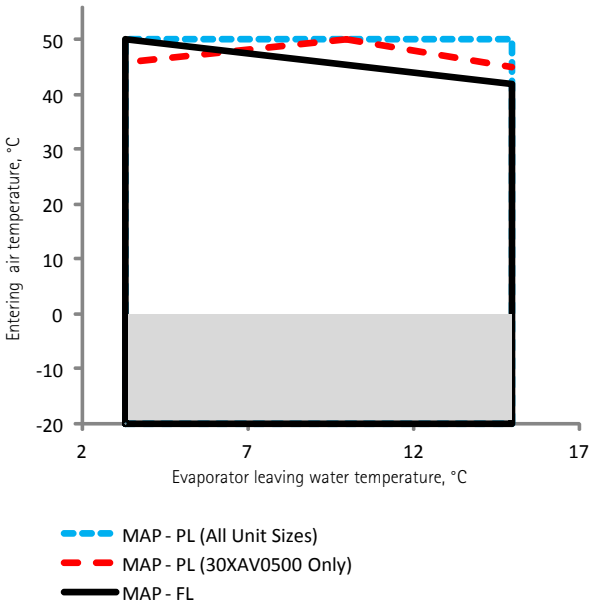
NOTE:
- At time of printing this catalogue, units are not yet certified within the Eurovent LCP-HP program so data should be treated as preliminary
- Preliminary data is provided for the purposes of early design sizing and physical dimensioning
- Carrier, as an active particpant of Eurovent Certified Performance (ECP) programs, will submit data to the Eurovent Certita Certification (ECC) once development is finalized and products are available for market launch

Operating range

30XAV Operating MAP Standard unit



30XAV Operating MAP (option 257)



Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A), or the water loop must be protected against frost by using a frost protection solution (by the installer)

WATER-COOLED/CONDENSERLESS LIQUID CHILLERS

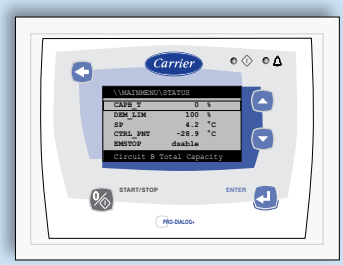
Air conditioning

AQUASNAP®

30WG/30WGA

Options

- Very low temperature glycol solution (30WG)
- Soft starter
- Master/slave operation
- External disconnect handle
- Condenser insulation (30WG)
- Low or high-pressure fixed or variable-speed single-pump hydronic module, evaporator side
- Low or high-pressure fixed or variable-speed single-pump hydronic module, condenser side (30WG)
- JBus, BacNet and LON gateways
- Specific cooling control
- Low sound level
- Unit stackable
- Customer water connection at the top of the unit (30WG)
- Evaporator (30WG/30WGA) and condenser (30WG) screw or welded connection sleeves
- Remote user interface



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal cooling capacities from 23 to 95 kW and exceptionally high ESEER values.
- New generation of liquid chillers designed for commercial (offices, hotels etc.), residential (houses, apartments etc.) or industrial applications (low-temperature cooling).
- 30WG units offer Eurovent energy efficiency class B, and an ESEER of over 5.5 for dual-compressor units - one of the highest in its category.
- Condenserless version possible (30WGA) with remote condenser control box available as an option.
- R-410A refrigerant and scroll compressors.
- Compatible with Carrier 09 series drycoolers/remote condensers.
- Unique combination of high performance and functionality in an exceptionally compact chassis.
- Units include automatic condensing pressure control via three-way valve for optimised operation, even at low outside temperature.
- Reversibility by water flow inversion in the system.
- Pro-Dialog+ control and compatibility with the Aquasmart system
- Units available with connections at the top or at the rear.
- Easy installation: small footprint, ideal for refurbished buildings, allows access in very tight plant rooms.
- The variable water flow (VWF) technology of the variable-flow pump, optimises system operation and enhances energy efficiency.
- Standard low sound level allows installation in any building type.

Physical data

30WG/30WGA		020	025	030	035	040	045	050	060	070	080	090
Air conditioning application as per EN14511-3: 2013 - 30WG												
Nominal cooling capacity	kW	24.6	28.7	31.5	36.7	41.8	46.6	58.1	63.4	73.8	83.9	94.6
EER	kW	4.72	4.72	4.69	4.73	4.69	4.72	4.72	4.65	4.69	4.65	4.68
Eurovent class		B	B	B	B	B	B	B	B	B	B	B
ESEER	kW/kW	5.10	5.09	5.03	5.05	5.03	5.07	5.83	5.90	5.79	5.99	5.93
Part load performance ESEER	kW/kW	5.35	5.35	5.30	5.32	5.32	5.36	6.31	6.38	6.30	6.54	6.44
Air conditioning application as per EN14511-3: 2013 - 30WGA												
Nominal cooling capacity	kW	22.6	27.0	29.5	34.7	39.2	43.7	53.7	59.8	69.2	78.3	87.8
EER	kW	3.75	3.84	3.87	3.93	3.94	3.90	3.82	3.85	3.86	3.91	3.88
Operating weight 30WG/30WGA*	kg	191/164	200/171	200/171	207/177	212/180	220/185	386/321	392/324	403/332	413/339	441/354
Compressors		Hermetic scroll 48.3 r/s										
Quantity		1	1	1	1	1	1	2	2	2	2	2
Number of capacity stages		1	1	1	1	1	1	2	2	2	2	2
Minimum capacity	%	100	100	100	100	100	100	50	50	50	50	50
Dimensions, standard unit**												
Width x depth x height	mm	600 x 1044 x 901						880 x 1474 x 901				
Refrigerant*		R-410A										
Control		Pro-Dialog+										
Evaporator		Direct-expansion plate heat exchanger										
Condenser (30WG only)		Plate heat exchanger										

NOTE: For the conditions, please refer to page 31. 30WGA performance are given for an equivalent refrigerant piping length (without filter drier and valves) of 3 m.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

** The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

Electrical data

30WG/30WGA		020	025	030	035	040	045	050	060	070	080	090
Power circuit												
Nominal voltage	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V, via internal transformer										
Maximum start-up current draw (Un)*												
Standard unit, 30WG	A	98	142	142	147	158	197	163	165	174	188	233
Standard unit, 30WGA	A	98	142	142	147	158	197	160.7	161.8	170.2	183.4	226
Unit with electronic starter option, 30WG	A	53.9	78.1	78.1	80.9	86.9	108.4	100.1	102.1	108.9	117.9	144.4
Unit with electronic starter option, 30WGA	A	53.9	78.1	78.1	80.9	86.9	108.4	96.8	97.9	104.1	112.3	137.4
Maximum operating power input, 30WG**	kW	9.1	10.7	11.7	13.6	15	17	21.4	23.4	27.2	30	34
Maximum operating power input, 30WGA**	kW	8.7	10.2	11.3	12.5	14.2	16.1	20.4	22.6	25.0	28.5	32.2
Maximum operating current draw (Un), 30WG***	A	15.6	18.7	19.8	23.2	25.4	29	37.4	39.6	46.4	50.8	58
Maximum operating current draw (Un), 30WGA***	A	14.7	17.7	19.3	21.7	24.1	27.5	35.4	38.7	43.5	48.1	55.0

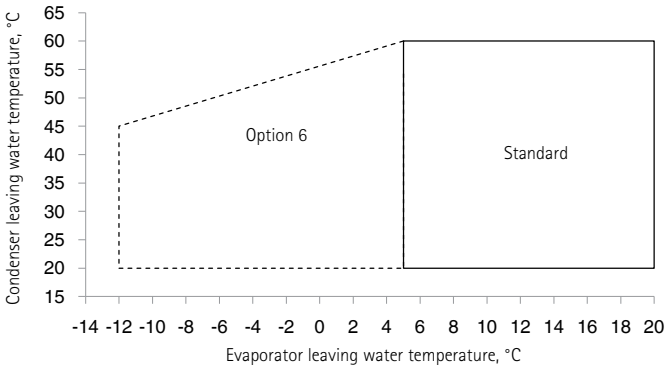
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

** Maximum power input at the unit operating limits.

*** Maximum unit operating current at maximum unit power input and 400 V.

Operating range

30WG

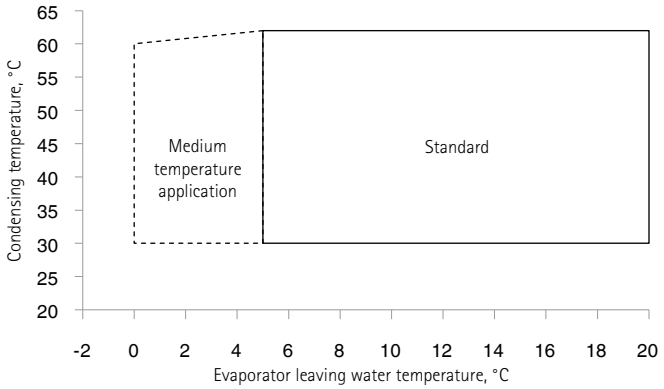


30WG standard unit

30WG unit with option 6 (brine)

Option 6: Very low-temperature glycol solution

30WGA



30WGA standard unit

30WGA unit for medium temperature application (% glycol < 25%)

WATER-COOLED/CONDENSERLESS LIQUID CHILLERS WITH INTEGRATED HYDRONIC MODULE

Air conditioning

AQUASNAP®

30RW

Options

- High-pressure single or dual pump, evaporator
- Condenser hydronic module with variable-speed single or dual pump
- Heat pump (hot-water control)
- Electronic starter for reduced start-up current
- RS485 communications and "CCN Clock Board" time schedule board
- Very low temperature glycol solution down to -10°C
- Field water connections at the unit top

Features

- Ten sizes with nominal cooling capacities from 109 to 315 kW.
- Aquasnap chillers with scroll compressors, digital auto-adaptive Pro-Dialog control and ozone-friendly refrigerant HFC-407C.
- Can be supplied with integrated hydronic evaporator and condenser modules, limiting the installation to simple operations such as the entering and leaving water piping connection.
- Intelligent control of condenser water pump speed and operation of glycol cooler (30RW) or air-cooled condenser fans (30RWA) to ensure reliable and economical operation.
- Quick electrical connections.
- Units can operate down to -20°C outside temperature.
- The variable-speed condenser water pump automatically adjusts the water flow rate to maintain the ideal condensing conditions.
- High-performance plate heat exchangers maximise the thermodynamic properties of refrigerant HFC-407C. From size 30RW 160 the evaporator and the condenser have two interlaced refrigerant circuits.
- Space-saving design.
- No plant room required – unit can be installed in a place that is open to the public, if local regulations permit.
- The refrigerant circuit is completely leak-proof.
- Used with Carrier 09 series glycol coolers or air-cooled condensers, supplied ready for installation with a control box. All control components are installed and tested in the factory.

Pro-Dialog Plus operator interface

Physical data

30RW/RWA		110	120	135	150	160	185	210	245	275	300
Air conditioning application as per EN14511-3: 2013 - 30RW											
Nominal cooling capacity	kW	110	125	142	152	165	186	219	251	288	315
EER	kW/kW	4.06	3.92	4.01	3.93	4.51	4.24	4.38	4.25	4.36	4.32
Eurovent class		D	D	D	D	C	D	C	C	C	C
ESEER	kW/kW	4.79	4.56	4.74	4.66	5.36	5.06	5.17	5.01	5.27	5.15
Air conditioning application as per EN14511-3: 2013 - 30RWA											
Nominal cooling capacity	kW	109	125	142	152	160	184	212	243	282	309
EER	kW/kW	4.05	4.01	4.10	4.02	4.09	4.08	4.00	3.92	4.09	4.12
Operating weight											
30RW unit without pump	kg	864	937	956	977	1079	1144	1357	1471	1557	1557
30RWA unit without pump	kg	773	836	845	855	948	996	1159	1273	1311	1311
Extra weight											
30RW: single evaporator pump (option 116B)	kg	15	15	15	15	245	245	245	245	245	245
30RWA: single evaporator pump (option 116B)		15	15	15	15	245	245	245	285	285	285
30RW/RWA: dual evaporator pump (option 116C)	kg	130	130	130	130	300	300	358	358	358	358
30RW: single condenser pump (option 270B)	kg	80	80	80	80	250	250	265	265	265	265
30RW: dual condenser pump (option 270C)	kg	140	140	140	140	310	310	368	368	368	368
Dimensions (length x depth x height)											
Standard unit with or without hydronic module	mm	2300 x 922 x 1963									
Unit with hydronic module (options 116B, 116C, 270B, 270C)	mm	2950 x 922 x 1993									
Refrigerant* 30RW		R-407C									
Compressors 30RW/30RWA		Hermetic scroll, 48.3 r/s									
Control		Pro-Dialog Plus									
Condensers (30RW)		Welded plate heat exchangers, max. water-side operating pressure with hydronic module 1000 kPa, without hydronic module 400 kPa									
Hydronic condenser module (30RW)		Removable screen filter, variable-speed water pump, expansion tank, safety valve, pressure gauge, and purge valve									
Condenser pump		Single or twin-head composite centrifugal pump, according to option used, variable speed by frequency converter (48.3 r/s)									
Evaporator (30RW/30RWA)		Welded direct-expansion plate heat exchanger, max. water-side operating pressure with hydronic module 1000 kPa, without hydronic module 400 kPa									
Hydronic evaporator module (30RW/30RWA)		Removable screen filter, water pump, expansion tank, water flow switch, safety valve, pressure gauge, purge valve and control valve									
Evaporator pump		Single or twin-head composite centrifugal pump, according to option used (48.3 r/s)									
Water connections (30RW/30RWA)		Victaulic**									
Field refrigerant connections (30RWA)		Welded copper tube									

NOTE: For the conditions, please refer to page 31.

* The RWA units only have a nitrogen holding charge.
** With tubular sleeve, supplied with the unit, consisting of a Victaulic connection at one end and a plain section at the other end.

Electrical data

30RW/RWA (without hydronic module)		110	120	135	150	160	185	210	245	275	300
Power circuit											
Nominal power supply	V-ph-Hz	400-3-50 ± 10%									
Control circuit supply		The control circuit is supplied via the unit-mounted transformer									
Maximum unit power input, 30RW + 30RWA*	kW	42.4	48.8	54.0	59.1	63.2	72.2	84.9	97.6	107.9	118.2
Nominal unit current draw 30RW**	A	48.1	54.0	61.0	68.0	71.7	84.2	96.1	108.0	122.0	136.0
Nominal unit current draw 30RWA***	A	51.4	58.0	64.7	71.4	76.3	89.6	102.8	116.0	129.4	142.8
Maximum start-up current, (standard unit without electronic starter)											
30RW + 30RWA†	A	245.2	254.0	309.0	318.0	212.6	245.7	314.5	332.0	396.0	414.0
Maximum start-up current, (electronic-starter option)											
30RW + 30RWA‡	A	159.2	168.0	201.0	210.0	158.6	183.7	228.5	246.0	288.0	306.0

* Power input of the compressor(s) at maximum unit operating conditions: entering/leaving evaporator water temp. 15°C/10°C, maximum condensing temp. 65°C, and 400 V nominal voltage.
** Nom. unit current draw at standard conditions: evaporator entering/leaving water temp. 12°C/7°C, condenser entering/leaving water temp. 30°C/35°C. The current values are given at 400 V nom. voltage.
*** Nom. unit current draw at standard conditions: evaporator entering/leaving water temp. 12°C/7°C, saturated condensing temp. (dew point) 45°C, subcooling 5 K. The current values are given at 400 V nom. voltage.
† Max. instantaneous starting current at 400 V nom. voltage and with compressor in across-the-line start (max. operating current of the smallest compressor(s) + locked rotor current of the largest compressor).
‡ Max. instantaneous starting current at 400 V nom. voltage and with compressor with electronic starter (max. operating current of the smallest compressor(s) + reduced start-up current of the largest compressor).

WATER-COOLED SCREW-COMPRESSOR LIQUID CHILLERS

Air conditioning

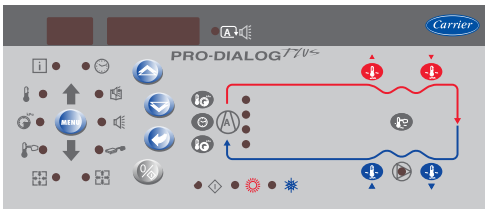
30HXC

Options

- Low-temperature brine solution
- Unit supplied in two assembled parts
- 460-3-60 and 380-3-60 power supply
- Evaporator pump and condenser pump electrical power/control circuit
- Compressor suction valve
- Evaporator or condenser with one pass less
- Evaporator or condenser maximum water-side operating pressure of 21 bar
- JBus/ModBus, BacNet, LON gateways
- Electronic compressor starter (30HXC 200-375)
- Electrical protection to IP44C
- High condensing temperature unit and non-reversible heat pump
- Reversed evaporator or condenser water inlet/ outlet
- Tropicalised control box
- Various condensing temperature options
- Dual discharge valve installed with three-way valve
- RS 485 communication interface with open protocol
- Code compliance for Switzerland and Russia
- Water connection kit for welded or screwed evaporator and/or condenser connections

Features

- Seventeen sizes with nominal cooling capacities from 287 to 1302 kW.
- Pro-Dialog Plus control to optimise the efficiency of the refrigerant circuit.
- Ozone-friendly HFC-134a refrigerant, proven, non-toxic, non-flammable.
- Equipped with screw compressors for extremely quiet operation and low vibration levels.
- Control is fully automatic and includes auto diagnostics.
- Two independent refrigerant circuits.
- Multiple compressor concept.
- Series star/delta starter, limiting the start-up current on (30HXC 080-190).
- Easy installation - compact design, fits through a standard door opening. Supplied as a complete package for easy installation. No extra controls, timers, starters or other items to install.
- Single power point (30HXC 080 to 190), and one power point per circuit (30HXC 200 to 375).
- Simple to service: mechanically cleanable evaporator and condenser, twin screw compressors with minimum routine service.
- Very low temperature option available for part of the range, allows evaporator leaving water temperatures down to -10°C.



Pro-Dialog Plus operator interface

Carrier twin-screw compressor

Physical data

30HXC		080	090	100	110	120	130	140	155	175	190	200	230	260	285	310	345	375
Air conditioning application as per EN14511-3: 2013																		
Nominal cooling capacity	kW	287	312	349	375	413	450	510	542	599	652	701	814	899	986	1109	1207	1302
EER	kW/kW	5.04	4.80	4.85	4.57	4.86	4.69	4.72	4.55	4.68	4.72	4.74	4.73	4.45	4.76	4.76	4.55	4.65
Eurovent class		B	B	B	C	B	B	B	C	B	B	B	B	C	B	B	C	B
ESEER	kW/kW	5.56	5.41	5.31	5.28	5.23	5.21	5.17	4.85	5.03	4.97	5.08	5.06	5.01	5.11	5.49	5.39	5.34
Operating weight	kg	2274	2279	2302	2343	2615	2617	2702	2712	3083	3179	3873	4602	4656	4776	5477	5553	5721
Dimensions, standard unit																		
Depth	mm	2558	2558	2558	2565	3275	3275	3275	3275	3275	3275	3903	3924	3924	3924	4533	4533	4533
Length	mm	980	980	980	980	980	980	980	980	980	980	1015	1015	1015	1015	1015	1015	1015
Height	mm	1800	1800	1800	1850	1816	1816	1816	1816	1940	1940	1980	2060	2060	2060	2112	2112	2112
Refrigerant		R-134a																
Compressors		06N semi-hermetic twin-screw compressor																
Quantity - Circuit A		1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
Quantity - Circuit B		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
Capacity control		Pro-Dialog Plus control																
No. of control steps		6	6	6	6	6	6	6	6	6	6	8	8	8	8	10	10	10
Evaporator		Shell and tube with internally finned copper tubes																
Water connections		Victaulic																
Inlet/outlet	in	4	4	4	5	5	5	5	5	5	5	6	6	6	6	8	8	8
Condenser		Shell and tube with internally finned copper tubes																
Water connections		Victaulic																
Inlet/outlet	in	5	5	5	5	5	5	5	5	6	6	6	8	8	8	8	8	8

NOTE: For the conditions, please refer to page 31.

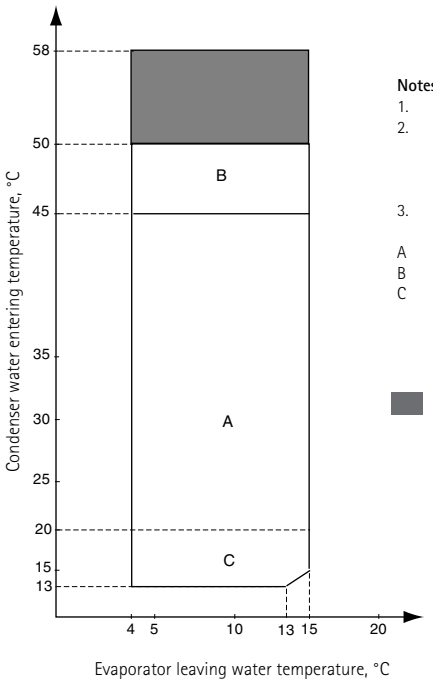
Not applicable to high condensing temperature units - please refer to electronic selection catalogue.

Electrical data

30HXC		080	090	100	110	120	130	140	155	175	190	200	230	260	285	310	345	375
Power circuit																		
Nominal power supply (Un)*	V-ph-Hz	400-3-50 ± 10%																
Control circuit supply		The control circuit is supplied via the factory-installed transformer																
Nominal current drawn*	A	101	115	127	143	149	168	190	207	226	234	255	294	337	354	399	448	477
Maximum starting current***	A	181	206	223	249	267	298	333	355	382	442	841	978	1027	1200	1129	1184	1373
Circuit A**	A	-	-	-	-	-	-	-	-	-	-	712	822	871	1028	844	871	1028
Circuit B**	A	-	-	-	-	-	-	-	-	-	-	605	715	715	856	844	871	1028

* Standard Eurovent conditions: Evaporator entering/leaving water temperature 12°C and 7°C. Condenser entering/leaving water temperature 30°C/35°C.
** Maximum unit operating current at maximum unit power input.
*** Maximum instantaneous starting current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced starting current of the largest compressor).

Operating range



Notes:
1. Evaporator and condenser ΔT = 5 K
2. For start-up at full load with a condenser water entering temperature below 20°C, a three-way valve must be used to maintain the correct condensing temperature
3. Maximum condenser water leaving temperature 50°C (at full load)

A Standard unit operating at full load.
B Standard unit operating at reduced load.
C Units operating with head pressure control with analogue water control valve. For transient operating modes (start-up and part load) the unit can operate down to a condenser entering water temperature of 13°C.
Additional operating range for high condensing temperature units and non-reversible heat pumps.

WATER-COOLED LIQUID CHILLERS

Air conditioning

AQUAFORCE

30XW

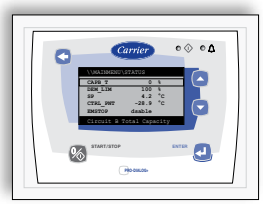
Options/accessories

- Medium and low-temperature applications* (down to -12°C possible)
- Unit supplied in two assembled parts
- No disconnect switch, but with short-circuit protection
- Single power connection point
- Evaporator/condenser pump electrical power/control circuit options
- Service valve set
- Evaporator/condenser arrangement with one pass
- Condenser insulation
- 21 bar evaporator and condenser
- Reversed evaporator and condenser water connections
- JBus, BacNet and LON gateways
- Various condensing temperature options
- Energy Management Module EMM
- Code compliance for Switzerland and Australia
- Master/slave operation
- Touch Screen interface
- Low noise level (-3 dB(A) compared to standard unit)
- Thermal compressor insulation
- Water connection kit for welded or flanged evaporator/condenser connections

* Only sizes 512/562/1012/1152

Features

- Twenty standard-efficiency sizes with nominal cooling capacities from 273 to 1732 kW and eleven high-efficiency sizes with nominal cooling capacities from 509 to 1756 kW.
- Designed for industrial and commercial applications that require optimal performances and maximum quality.
- Two versions: 30XW for air conditioning and refrigeration applications, and 30XWH for heating applications (see separate entry).
- Two efficiency classes: the standard-efficiency 30XW offers an optimised balance of technical and economical aspects and superior energy efficiency; the high-efficiency 30XW-P offers unequalled energy efficiency at minimised operating cost.
- Exceptional full load and part load energy efficiency: Eurovent energy efficiency class "A", EER of up to 6.15 kW/kW and ESEER of up to 8.0 kW/kW (30XW-P)
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- Use of R-134a refrigerant with zero ozone depletion potential.
- Pro-Dialog control system.
- Flooded mechanically cleanable heat exchangers.
- Economizer system with electronic expansion device for increased cooling capacity (30XW-P).
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit; two independent refrigerant circuits from 1000 kW upwards.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface

Touch-screen Pro-Dialog operator interface (option)

Physical data

Standard-efficiency units 30XW--		254	304	354	402	452	552	602	652	702	802	852	1002	1052	1154	1252	1352	1452	1552†	1652†	1702†
Air conditioning application as per EN14511-3: 2013																					
Nominal cooling capacity	kW	273	307	359	459	473	532	538	677	730	792	839	1017	1060	1141	1257	1342	1453	1547	1657	1732
EER	kW/kW	5.32	5.30	5.24	5.21	5.35	5.21	5.17	5.39	5.30	5.19	5.39	5.26	5.20	5.30	5.69	5.51	5.36	5.29	5.67	5.68
Eurovent class		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	NA	NA	NA
ESEER part-load performance	kW/kW	5.67	5.58	5.58	5.75	5.77	5.78	5.66	6.06	6.02	5.79	5.94	6.3	6.34	6.23	6.73	6.44	6.27	6.06	6.62	6.56
Operating weight*	kg	2017	2036	2072	2575	2575	2613	2644	3247	3266	3282	3492	5370	5408	5698	7066	7267	7305	7337	8681	8699
Dimensions																					
Depth	mm	928	928	928	936	936	936	936	1040	1040	1040	1042	1036	1036	1036	1156	1156	1156	1156	1902	1902
Length	mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059	2780	4025	4025	4025	4730	4730	4730	4730	4790	4790
Height	mm	1567	1567	1567	1692	1692	1692	1692	1848	1848	1848	1898	1870	1870	1925	2051	2051	2051	2051	1515	1515

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1314	1464	1612†	1762†
Air conditioning application as per EN14511-3: 2013												
Nominal cooling capacity	kW	509	577	737	786	861	1039	1157	1323	1452	1626	1756
EER	kW/kW	5.71	5.64	5.83	5.62	5.65	5.73	5.78	5.80	5.58	5.87	5.79
Eurovent class		A	A	A	A	A	A	A	A	A	NA	NA
ESEER	kW/kW	6.09	6.14	6.41	6.24	6.17	6.74	6.83	6.65	6.36	6.80	6.59
Operating weight*	kg	2981	3020	3912	3947	3965	6872	6950	7542	7752	10910	10946
Dimensions												
Depth	mm	936	936	1069	1069	1069	1039	1039	1162	1162	2129	2129
Length	mm	3059	3059	3290	3290	3290	4730	4730	4730	4730	4832	4832
Height	mm	1743	1743	1950	1950	1950	1997	1997	2051	2051	1562	1562

Physical data for all units	
Compressors	Semi-hermetic 06T screw compressors, 50 r/s
Refrigerant	R-134a
Capacity control	Pro-Dialog, electronic expansion valves (EXV)
Evaporator	Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections
Condenser	Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections

NOTE: For the conditions please refer to page 31.

† These models are not Eurovent certified, as they are out of Eurovent certification program scope.

* Weights are guidelines only. The refrigerant charge is given on the unit nameplate.

Electrical data

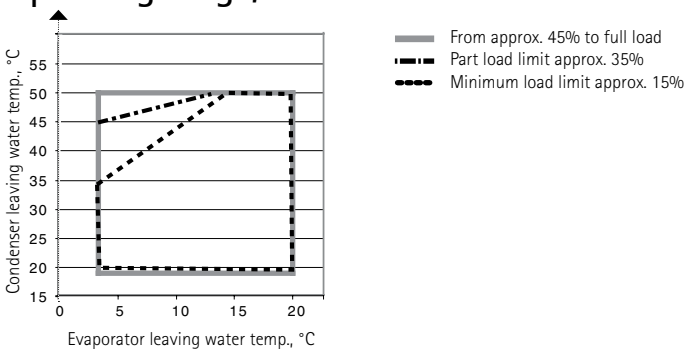
Standard-efficiency units 30XW--		254	304	354	402	452	552	602	652	702	802	852	1002	1052	1154	1252	1352	1452	1552	1652	1702
Nominal power supply, all units	V-ph-Hz	400-3-50 ± 10%																			
Control circuit, all units		24 V via the built-in transformer																			
Maximum start-up current*																					
Circuit A	A	233	233	303	414	414	414	414	587	587	587	587	414	414	414	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	414	414	414	414	587	587	587	587	587
Maximum power input**																					
Circuit A	kW	76	89	97	128	135	151	151	184	200	223	223	150	151	151	184	184	200	223	223	223
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	135	151	151	151	184	200	223	202	223
Maximum current drawn (Un)**																					
Circuit A	A	123	145	160	206	217	242	242	295	317	351	351	242	242	242	295	295	317	351	351	351
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	217	242	242	242	295	317	351	317	351

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1314	1464	1612	1762
Maximum start-up current*												
Circuit A/B	A	414/-	414/-	587/-	587/-	587/-	414/414	414/414	587/414	587/587	587/587	587/587
Maximum power input**												
Circuit A/B	kW	135/-	151/-	184/-	200/-	223/-	134/134	151/151	184/151	184/184	200/200	223/223
Maximum current drawn (Un)**												
Circuit A/B	A	217/-	242/-	295/-	317/-	351/-	217/217	242/242	295/242	295/295	317/317	351/351

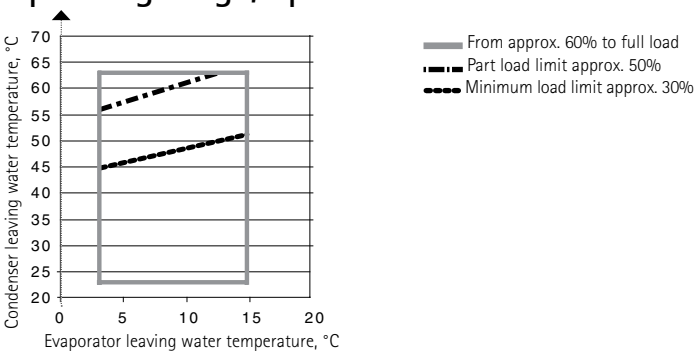
* Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range, standard units



Operating range, option 150



WATER-COOLED LIQUID CHILLERS

Air conditioning

greenspeed AQUAFORCE

30XW-V

Options

- Condenser insulation
- Service valve set
- Evaporator/condenser pump electrical power/control circuit options
- Evaporator and/or condenser with one pass
- 21 bar evaporator and/or condenser
- Reversed evaporator and/or condenser water connections
- JBus, BacNet or LON gateways
- Additional module for communication with BacNet protocol via Ethernet (IP)
- Condensing temperature limitation
- Control for low condensing temperature systems
- Energy Management Module EMM
- Leak detection
- Code compliance for Switzerland and Australia
- Low noise level (-3 dB(A) compared to standard unit)
- Welded evaporator and/or condenser water connection kit
- Flanged evaporator and/or condenser water connection kit
- Thermal compressor insulation
- EMC classification according to IEC 61800-3 - class C2
- Master/slave operation
- Single power connection point (1150-1710)

Features

- Nine sizes for commercial and industrial applications with nominal cooling capacities from 587 to 1741 kW.
- The units feature exclusive inverter-driven screw compressors - an evolution of the proven traditional Carrier twin-rotor screw compressor design.
- 30XW-V units are designed for high performance both at full load and at part load with EERs up to 5.5 and ESEERs up to 8.0 (EN14511-3: 2013) and Eurovent energy class ratings A and B.
- New innovative Touch Pilot smart control for variable-drive screw-compressor units uses an intuitive, user-friendly interface with concise, clear information in a choice of languages.
- Compliance with IEC61800-3 - class C3.
- Inverter-driven twin-rotor screw compressors allow precise capacity matching of building load changes and significantly reduce unit power input, especially at part load.
- Flooded mechanically cleanable heat exchangers.
- Compact design and simplified electrical and water connections for easy installation.
- R-134a refrigerant with zero ozone depletion potential.
- Leak-tight refrigerant circuit; two independent refrigerant circuits from 1000 kW upwards.
- Minimised operating sound level at part load.
- Improved electrical performance.

Touch Pilot operator interface

Physical data

30XW-V		580	630	810	880	1150	1280	1470	1570†	1710†
Air conditioning/cooling floor application as per EN14511-3 : 2013										
Condition 1										
Cooling capacity	kW	587	652	812	858	1140	1305	1461	1604	1741
EER	kW/kW	5.44	5.31	5.25	5.07	5.45	5.50	5.38	5.05	4.94
Eurovent class, cooling		A	A	A	A	A	A	A	NA	NA
ESEER	kW/kW	7.80	7.60	8.04	7.76	7.79	7.59	7.30	7.15	6.85
Condition 2										
Cooling capacity	kW	791	846	1023	970	1528	1688	1703	2093	2273
EER	kW/kW	6.96	6.50	6.22	5.63	6.85	6.64	5.99	6.00	6.00
Eurovent class, cooling		A	A	A	A	A	A	A	A	A
Operating weight*	kg	3152	3190	4157	4161	7322	7398	7574	7770	7808
Dimensions										
Length x depth x height	mm	3059 x 1087 x 1743		3290 x 1237 x 1950		4730 x 1164 x 1997		4730 x 1255 x 2051		
Compressor		Semi-hermetic 06T screw compressor, 60 r/s								
Quantity, circuit A/B		1/-	1/-	1/-	1/-	1/1	1/1	1/1	1/1	1/1
Capacity control		Touch Pilot, inverter-driven compressor. electronic expansion valve (EXV)								
Minimum capacity	%	20	20	20	20	10	10	10	10	10
Refrigerant*		R-134a								
Evaporator		Multi-tube type flooded								
Condenser		Multi-tube type								

NOTE: For the conditions please refer to page 31.

† These models are not Eurovent certified, as they are out of Eurovent certification program scope.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

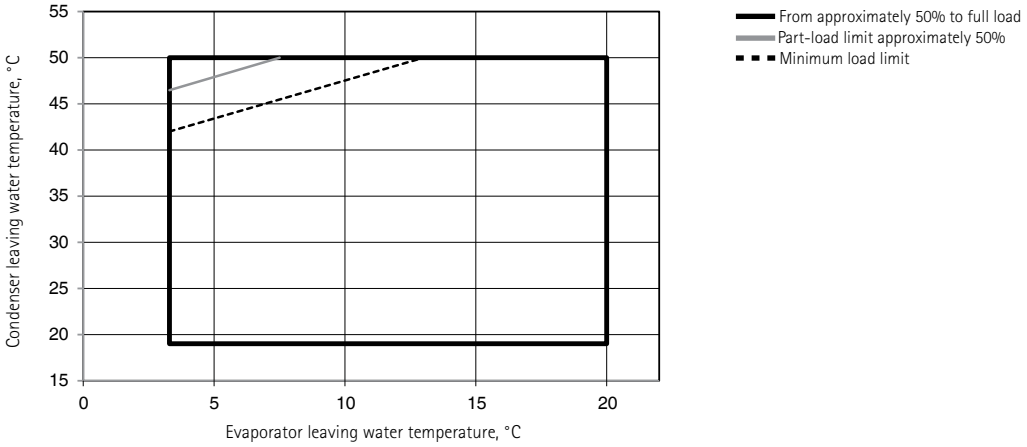
30XW-V		580	630	810	880	1150	1280	1470	1570	1710
Power circuit										
Nominal voltage	V-ph-Hz	400-3-50 ± 10%								
Control circuit supply		24 V, via internal transformer								
Start-up current*		Negligible (lower than maximum current drawn)								
Maximum power factor		0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93
Maximum power input, circuit A/B***	kW	155/-	193/-	222/-	246/-	155/155	193/193	222/193	222/222	246/246
Eurovent current draw, circuit A/B**	A	175/-	200/-	240/-	265/-	175/175	200/200	240/200	240/240	265/265
Maximum current draw (Un), circuit A/B***	A	270/-	330/-	380/-	421/-	270/270	330/330	380/330	380/380	421/421

* Instantaneous start-up current

** Eurovent unit operating conditions: evaporator entering/leaving water temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C.

*** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range



HIGH-EFFICIENCY CHILLERS WITH SCREW COMPRESSORS

Air conditioning

23XRV

Control

CCN - Carrier Comfort Network

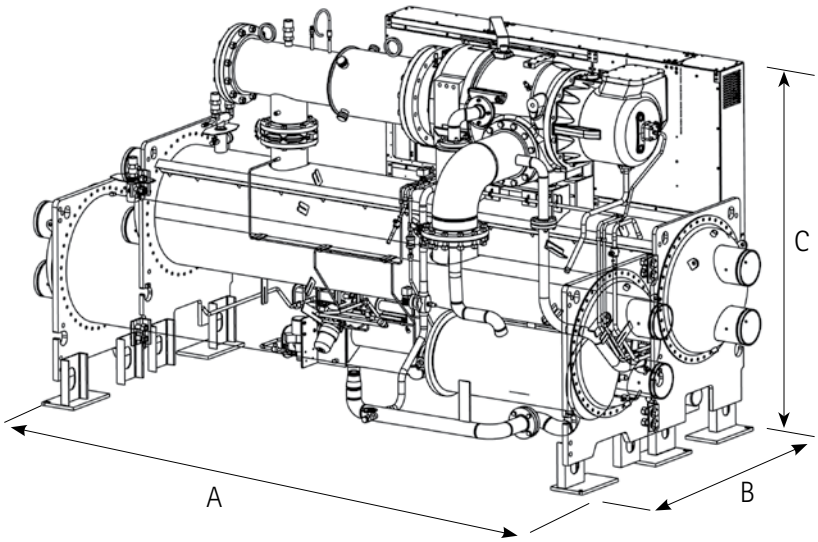
23XRV units are equipped with unique triple-rotor screw compressor technology

Features

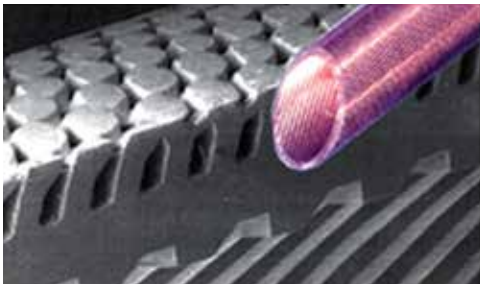
- The 23XRV Evergreen range offers superior solutions with record capacities from 970 to 1880 kW, EERs up to 6.5 and ESEERs up to 10.0.
- Innovative triple-rotor screw compressor design that features a balanced rotor geometry and shorter screw lengths.
- Variable-frequency drive compressor to maximise machine energy efficiency. Achieves ultra-high efficiency levels whilst lowering the cost of ownership.
- Combination of the reliability of a screw compressor with the energy savings of a variable-frequency drive (VFD).
- Unparalleled operational envelope that permits the chiller to operate under real-world adverse conditions.
- Ideal for both new construction and replacement using environmentally sound refrigerant (R-134a) at superior efficiency and with powerful controls.
- Mix-match capability with wide range of heat exchangers for unit performance optimisation.

Dimensions

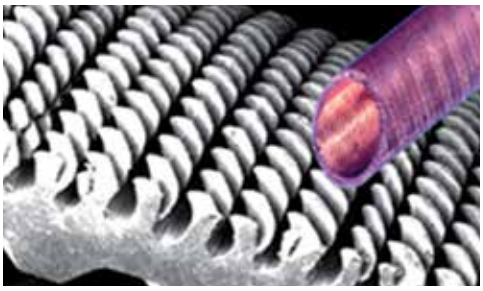
Heat exchanger size		Length A			Width B	Height C
		One pass	Two passes	Three passes		
30 to 32	mm	4350	4172	4350	1930	2200
35 to 37	mm	4870	4693	4870	1930	2200
40 to 42	mm	4496	4347	4420	2045	2299
45 to 47	mm	5017	4867	4940	2045	2299
50 to 52	mm	4521	4382	4432	2127	2305
55 to 57	mm	5042	4902	4953	2127	2305



Evaporator tubes

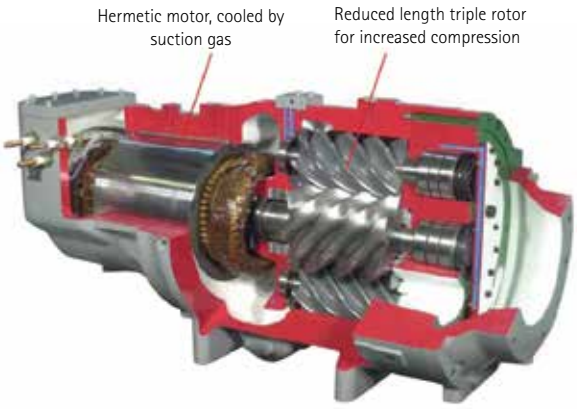


Condenser tubes



Micro-grooved heat exchanger tubes to ensure optimised heat exchange between the refrigerant and the heat exchange medium.

New generation screw compressor



Variable-frequency drive with active filtering Cooling ensured by refrigerant

ADAGIO

Options/accessories

- Multiple circuits
- Horizontal discharge
- Extra-high feet (2 sizes) to comply with specific site configurations
- Special fin spacings
- Mounted electrical panel
- Emergency switch
- Special motors (selected models)
- Fan isolator switch
- Sub-cooling circuits (vertical air flow only)
- Stainless steel screws
- EC Motors for significant energy savings (fans 630 mm diameter)
- Motor power supplies 230 V-3 ph-50 Hz and 400 V-3 ph-60 Hz.
- Alternative fin materials for saline and polluted atmospheres
  - Copper tubes/aluminium fins with vinyl coating
  - Copper tubes/aluminium fins with a wide choice of anti-corrosion coatings such as Blygold to suit site conditions

Features

- The ADAGIO remote condensers cover a capacity range from 6 to 316 kW designed for commercial use in refrigeration and air conditioning applications. All models are available with vertical or horizontal air flow.
- The ADAGIO FC dry-coolers cover a capacity range from 5 to 266 kW for use in commercial and industrial applications, working with fluids that are copper compatible. All models are available with vertical or horizontal air flow.
- The ADAGIO range is designed for outdoor installation, for maximum working temperature of 55°C.
- Several fans configuration possible to match cooling capacity and sound requirements.
- Single or double raws coils to match pressure drops requirement.
- Casing in galvanised sheet steel, resisting UV radiation and offering excellent corrosion protection.
- The propeller fans ensure a significant sound reduction, while maintaining high air flow performances. Motors have high-efficiency shrouds to reduce sound levels and increase the air flow efficiency.
- All condensers and fluid coolers are Eurovent certified (excluding remote condensers with R410A, which are out of the scope of Eurovent Certification program) and tested by independent laboratories in accordance with European Standards. The performances comply with EN 327 for air-cooled condensers and EN 1048 for fluid coolers.
- Dry coolers are suitable for cooling water or other fluids that do not corrode with copper.
- Electrical connections in weatherproof boxes, easy access for maintenance.
- Air-cooled condensers are available with refrigerant R-134a, R-407C, R-410A. and R-404A.
- The sound power levels are in accordance with ISO 3741 and ISO 3744.

Note: Contact Carrier for selections. ADAGIO covers a capacity range from 5 to 300 kW.

Fan data

Asynchronous Motors

Diameter	Number of poles	Speed*	Wiring	Power input (kW)	Full load current (A)
500 mm	4P	H	Δ	0.67	1.31
		L	Y	0.52	0.94
	6P	H	Δ	0.24	0.63
		L	Y	0.18	0.31
	8P	H	Δ	0.13	0.31
		L	Y	0.09	0.16
600 mm	4P	H	Δ	1.04	2.3
		L	Y	0.76	1.4
	6P	H	Δ	0.54	1.2
		L	Y	0.38	0.65

* H: High, L: Low

EC-Motors

Diameter	Number of poles	Speed	Wiring	Power input (kW)	Full load current (A)
630 mm	NA	1140	NA	0.83	1.5
		1000		0.56	1.1
		930		0.47	0.85
		750		0.28	0.55
		700		0.24	0.45
		540		0.13	0.28
		455		0.09	0.23
		380		0.06	0.19
		200		0.02	0.16
		155		0.01	0.16

TENOR 09TE

Options/accessories

- Multiple circuits
- Special fin spacings
- Mounted electrical panel
- Emergency switch
- Special motors (selected models)
- Fan isolator switch
- Stainless steel screws
- Two speed connections for the motors
- EC motors for significant energy savings
- Motor power supplies 230 V-3 ph-50 Hz and 400 V-3 ph-60 Hz.
- Higher motor insulation for ambient temperatures above 45°C
- Alternative fin materials for saline and polluted atmospheres
  - Copper tubes/aluminium fins with vinyl coating
  - Copper tubes/aluminium fins with a wide choice of anti-corrosion coatings such as Blygold to suit site conditions

Features

- The TENOR remote condensers cover a capacity range from 64 to 1915 kW and are designed for commercial and industrial use in refrigeration and air conditioning applications.
- The TENOR FC dry-coolers cover a capacity range from 51 to 1642 kW for use in commercial and industrial applications, working with fluids that are copper compatible.
- The TENOR range is designed for outdoor installation, for maximum working temperature of 60°C and outdoor air temperature from -30°C to +45°C.
- Several fans configuration possible to match cooling capacity and sound requirements.
- Casing in galvanised sheet steel, powder-painted polyester, resisting UV radiation and offering excellent corrosion protection.
- The propeller fans ensure a significant sound reduction, while maintaining high air flow performances. Motors have high-efficiency shrouds to reduce sound levels and increase the air flow efficiency and are designed to work with frequency speed control from 50 to 20 Hz.
- All condensers and fluid coolers are Eurovent certified and tested by independent laboratories in accordance with European Standards. The performances comply with EN 327 for air-cooled condensers and EN 1048 for fluid coolers.
- Dry coolers are suitable for cooling water or other fluids that do not corrode with copper.
- Electrical connections in weatherproof boxes, easy access.
- Air-cooled condensers are available with refrigerant R-134a, R-407C and R-404A.
- The sound power levels are in accordance with ISO3741 and ISO3744.

Physical data

Models	Fans/poles	6PH (Delta)			6PL (Star)			8PH (Delta)			8PL (Star)			12PH (Delta)			12PL (Star)		
	Fan arrangement	CAP kW	AF l/s	Lw/Lpa dB(A)	CAP kW	AF l/s	Lw/Lpa dB(A)	CAP kW	AF l/s	Lw/Lpa dB(A)	CAP kW	AF l/s	Lw/Lpa dB(A)	CAP kW	AF l/s	Lw/Lpa dB(A)	CAP kW	AF l/s	Lw/Lpa dB(A)
Single row																			
09-TE90 2MSB	1 x 2 - ø900	238	15483	90/58	201	12083	84/52	186	11194	83/51	154	8561	76/44	136	7189	71/39	106	5236	62/30
09-TE90 3MSB	1 x 3 - ø900	357	23225	92/60	301	18125	86/54	279	16792	85/53	231	12842	78/46	204	10783	73/41	159	7729	64/32
09-TE90 4MSB	1 x 4 - ø900	477	30967	93/61	402	24167	87/55	372	22389	86/54	308	17122	79/47	272	14378	74/42	212	10306	65/33
09-TE90 5MSB	1 x 5 - ø900	597	38708	94/62	502	30208	88/56	465	27986	87/55	385	21403	80/48	340	17972	75/43	265	12882	66/34
09-TE90 6MSB	1 x 6 - ø900	717	46450	95/63	603	36250	89/57	559	33583	88/56	463	25683	81/49	408	21567	76/44	318	15458	67/35
09-TE90 7MSB	1 x 7 - ø900	836	54192	96/63	704	42292	90/57	652	39181	89/56	540	29964	82/49	476	25161	77/44	371	18035	68/35
Double row																			
09-TE90 4MDB	2 x 2 - ø900	399	27475	93/61	335	21142	87/55	326	20375	86/54	258	14686	79/47	227	12561	74/42	175	8753	65/33
09-TE90 6MDB	2 x 2 - ø900	599	41213	95/63	502	31713	89/57	489	30563	88/56	387	22029	81/49	341	18842	76/44	263	13129	67/35
09-TE90 8MDB	2 x 2 - ø900	800	54950	96/64	670	42283	90/58	653	40750	89/57	517	29372	82/50	455	25122	77/45	351	17506	68/36
09-TE90 10MDB	2 x 3 - ø900	1001	68688	97/65	838	52854	91/59	817	50938	90/58	646	36715	83/51	569	31403	78/46	439	21882	69/37
09-TE90 12MDB	2 x 3 - ø900	1201	82425	98/65	1006	63425	92/59	980	61125	91/58	776	44058	84/51	684	37683	79/46	527	26258	70/37
09-TE90 14MDB	2 x 3 - ø900	1400	96163	99/66	1173	73996	93/60	1145	71313	92/59	905	51401	85/52	798	43964	80/47	615	30635	71/38
09-TE90 16MDB	2 x 4 - ø900	1602	109900	99/66	1341	84567	93/60	1308	81500	92/59	1035	58744	85/52	912	50244	80/47	703	35011	71/38

CAP - Nominal capacity AF - Air flow Lw - Sound power level Lpa - Sound pressure level at 10 m

Note: Performance data given for units with AC-motor fans, 400-3-50 power supply, refrigerant R-404A, Δt1 =15 K, operating pressure 26 bar, ENV327. For performance data for units with other refrigerants or fans, and for 09FCTE 90 dry coolers, see technical documentation or electronic selection program.

Fan data

Asynchronous Motors

Diameter	Number of poles	Speed*	Wiring	Power input (kW)	Full load current (A)
900 mm	6P	H	Δ	2.2	5.3
	8P	H	Δ	1.3	3.5
		L	Y	0.8	1.7
	12P	H	Δ	0.5	1.5
		L	Y	0.25	0.65

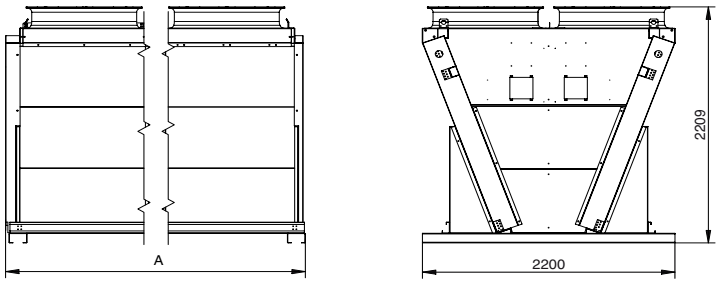
* H: High, L: Low

EC-Motors

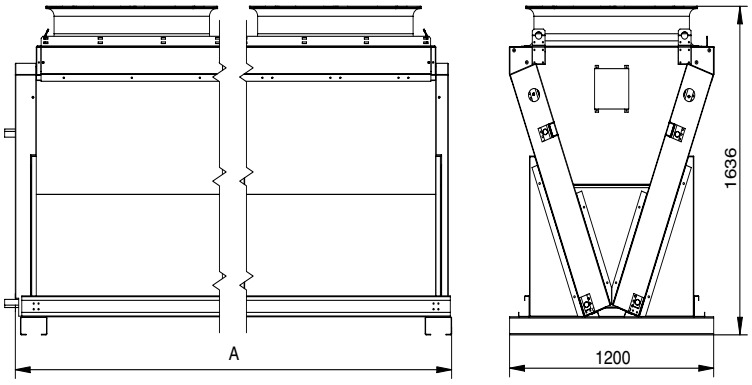
Diameter	Number of poles	Speed (rpm)	Wiring	Power input (kW)	Full load current (A)
910 mm	NA	1000	NA	3.12	4.9
		910		2.26	3.5
		750		1.28	2.0
		690		1.01	1.7
		560		0.56	1.1
910 mm	NA	610	NA	0.6	1.2
		560		0.45	0.9
		470		0.26	0.6
		330		0.1	0.3
		200		0.04	0.2

Correction factors for different refrigerants

	Temperature difference ΔT, K					
Refrigerant	8	10	12	15	17	20
R-404A – R-22 – R-134a – R-507	0.53	0.67	0.80	1.00	1.13	1.33
R-407C, R-407A	0.46	0.62	0.77	1.00	1.15	1.38



Single-row models



Double-row models

Dimensions and weights

Models	Max. length A, mm	Net weight, kg
09TE 90 2MSB	2465	469
09TE 90 3MSB	3590	691
09TE 90 4MSB	4715	872
09TE 90 5MSB	5840	1072
09TE 90 6MSB	6965	1273
09TE 90 7MSB	8090	1472
09TE 90 4MDB	2465	882
09TE 90 6MDB	3590	1301
09TE 90 8MDB	4715	1650
09TE 90 10MDB	5840	2018
09TE 90 12MDB	6965	2390
09TE 90 14MDB	8090	2785
09TE 90 16MDB	9215	3256

ALTO 09AL

Options/accessories

- Multiple circuits
- Horizontal discharge
- Extra-high feet (2 sizes) to comply with specific site configurations
- Special fin spacings
- Mounted electrical panel
- Emergency switch
- Special motors (selected models)
- Fan isolator switch
- Sub-cooling circuits (vertical air flow only)
- Stainless steel screws
- EC Motors for significant energy savings
- Motor power supplies 230 V-3 ph-50 Hz and 400 V-3 ph-60 Hz.
- Higher motor insulation for ambient temperatures above 45°C
- Two speed connections for the motors
- Alternative fin materials for saline and polluted atmospheres
  - Copper tubes/aluminium fins with vinyl coating
  - Copper tubes/aluminium fins with a wide choice of anti-corrosion coatings such as Blygold to suit site conditions

Features

- The ALTO remote condensers cover a capacity range from 24 to 1128 kW designed for commercial and industrial use in refrigeration and air conditioning applications. All models are available with vertical or horizontal air flow.
- The ALTO FC dry-coolers cover a capacity range from 17 to 1104 kW for use in commercial and industrial applications, working with fluids that are copper compatible. All models are available with vertical or horizontal air flow.
- The ALTO range is designed for outdoor installation, for maximum working temperature of 60°C and outdoor air temperature from -30°C to +45°C.
- Several fans configurations possible to match cooling capacity and sound requirements.
- Single or double raws coils to match pressure drops requirements
- Casing in galvanised sheet steel, powder-painted polyester, resisting UV radiation and offering excellent corrosion protection.
- The propeller fans ensure a significant sound reduction, while maintaining high air flow performances. Motors have high-efficiency shrouds to reduce sound levels and increase the air flow efficiency and are designed to work with frequency speed control from 50 to 20 Hz.
- All condensers and fluid coolers are Eurovent certified and tested by independent laboratories in accordance with European Standards. The performances comply with EN 327 for air-cooled condensers and EN 1048 for fluid coolers.
- Dry coolers are suitable for cooling water or other fluids that do not corrode with copper.
- Electrical connections in weatherproof boxes, easy access for maintenance.
- Air-cooled condensers are available with refrigerant R-134a, R-407C and R-404A.
- The sound power levels are in accordance with ISO 3741 and ISO 3744.

Physical data

Models	Fans/poles Fan arrangement	06PH (Delta) CAP kW	AF l/s	Lw/Lpa dB(A)	06PL (Star) CAP kW	AF l/s	Lw/Lpa dB(A)	08PH (Delta) CAP kW	AF l/s	Lw/Lpa dB(A)	08PL (Star) CAP kW	AF l/s	Lw/Lpa dB(A)	12PH (Delta) CAP kW	AF l/s	Lw/Lpa dB(A)	12PL (Star) CAP kW	AF l/s	Lw/Lpa dB(A)
Single row																			
09AL 91 3MSC	1 x 3 - ø900	224	19571	92/60	190	15050	86/54	182	14025	85/53	153	10771	78/46	131	8617	73/41	102	6142	64/32
09AL 91 3MSD	1 x 3 - ø900	273	22458	92/60	231	17279	86/54	214	15400	85/53	178	11825	78/46	152	9625	73/41	119	6875	64/32
09AL 91 3MSE	1 x 3 - ø900	326	23833	92/60	275	18333	86/54	253	16225	85/53	207	12467	78/46	180	10358	73/41	138	7379	64/32
09AL 91 4MSC	1 x 4 - ø900	299	26094	93/61	253	20067	87/55	242	18700	86/54	204	14361	79/47	175	11489	74/42	136	8189	65/33
09AL 91 4MSD	1 x 4 - ø900	364	29944	93/61	308	23039	87/55	285	20533	86/54	237	15767	79/47	202	12833	74/42	158	9167	65/33
09AL 91 4MSE	1 x 4 - ø900	434	31778	93/61	366	24444	87/55	337	21633	86/54	276	16622	79/47	240	13811	74/42	184	9839	65/33
09AL 91 5MSC	1 x 5 - ø900	373	32618	94/61	316	25083	88/56	303	23375	87/55	255	17951	80/48	218	14361	75/43	170	10236	66/34
09AL 91 5MSD	1 x 5 - ø900	455	37431	94/60	385	28799	88/55	356	25667	87/54	296	19708	80/47	253	16028	75/42	198	11458	66/33
09AL 91 5MSE	1 x 5 - ø900	543	39722	94/60	458	30556	88/55	421	27042	87/54	344	20778	80/47	300	17264	75/42	230	12299	66/33
09AL 91 6MSC	1 x 6 - ø900	448	39142	95/63	379	30100	89/57	363	28050	88/56	306	21542	81/49	262	17233	76/44	203	12283	67/35
09AL 91 6MSD	1 x 6 - ø900	546	44917	95/62	482	34558	89/56	427	30800	88/55	355	23650	81/48	303	19250	76/43	237	13750	67/34
Double row																			
09AL 91 4MDC	2 x 2 - ø900	300	26094	93/61	254	20067	87/55	252	18700	86/54	204	14361	79/47	176	11489	74/42	136	8189	65/33
09AL 91 4MDD	2 x 2 - ø900	364	29944	93/61	308	23039	87/55	286	20533	86/54	238	15767	79/47	202	12833	74/42	158	9167	65/33
09AL 91 4MDE	2 x 2 - ø900	434	31778	93/61	366	24444	87/55	338	21633	86/54	276	16622	79/47	240	13811	74/42	184	9839	65/33
09AL 91 6MDC	2 x 3 - ø900	448	39142	95/63	380	30100	89/57	364	28050	88/56	306	21542	81/49	262	17233	76/44	204	12283	67/35
09AL 91 6MDD	2 x 3 - ø900	546	44917	95/63	462	34558	89/57	428	30800	88/56	356	23650	81/49	304	19250	76/44	238	13750	67/35
09AL 91 6MDE	2 x 3 - ø900	652	47667	95/63	550	36667	89/57	506	32450	88/56	414	24933	81/49	360	20717	76/44	276	14758	67/35
09AL 91 8MDC	2 x 4 - ø900	598	52189	96/64	506	40133	90/58	484	37400	89/57	408	28722	82/50	350	22978	77/45	272	16378	68/36
09AL 91 8MDD	2 x 4 - ø900	728	59889	96/63	616	46078	90/58	570	41067	89/56	474	31533	82/49	404	25667	77/44	295	18333	68/35
09AL 91 8MDE	2 x 4 - ø900	868	63556	96/63	732	48889	90/57	674	43267	89/56	552	33244	82/49	480	27622	77/44	368	19678	68/35
09AL 91 10MDC	2 x 5 - ø900	746	65236	97/64	632	50167	91/58	606	46750	90/57	510	35903	83/50	436	28722	78/45	340	20472	69/36
09AL 91 10MDD	2 x 5 - ø900	910	74861	97/64	770	57597	91/58	712	51333	90/57	592	39417	83/50	506	32083	78/45	396	22917	69/36
09AL 91 10MDE	2 x 5 - ø900	1086	79444	97/64	916	61111	91/58	842	54083	90/57	688	41556	83/50	600	34528	78/45	460	24597	69/36
09AL 91 12MDC	2 x 6 - ø900	896	78283	98/65	758	60200	92/59	726	56100	91/58	612	43083	84/51	524	34467	79/46	406	24567	70/37
09AL 91 12MDD	2 x 6 - ø900	1092	89833	98/65	924	69117	92/59	854	61600	91/58	710	47300	84/51	606	38500	79/46	474	27500	70/37

CAP - Nominal capacity AF - Air flow LwA - Sound power level LpA - Sound pressure level at 10 m

Note: Performance data given for units with AC-motor fans, 400-3-50 power supply, refrigerant R-404A, Δt1 =15 K, operating pressure 26 bar, ENV327. For performance data for units with other refrigerants or fans and for 09FCAL 91 dry coolers, see technical documentation or electronic selection program.

Fan data

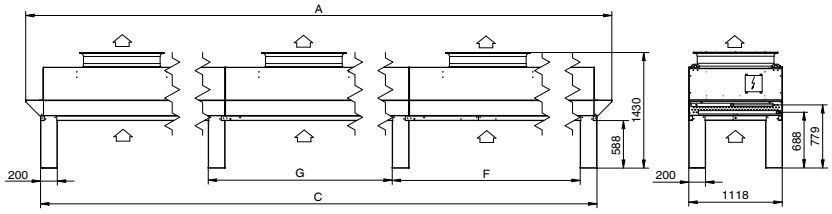
Asynchronous Motors

Diameter	Number of poles	Speed*	Wiring	Power input (kW)	Full load current (A)
900 mm	6P	H	Δ	2.2	5.3
	8P	H	Δ	1.3	3.5
		L	Y	0.8	1.7
	12P	H	Δ	0.5	1.5
		L	Y	0.25	0.65

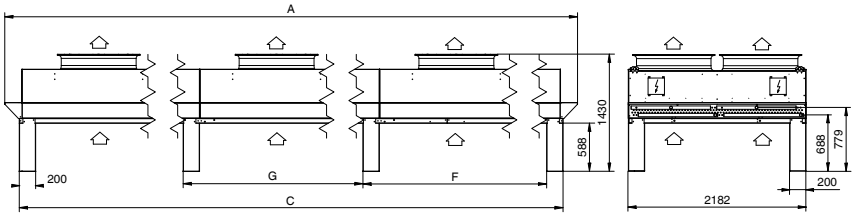
* H: High, L: Low

EC-Motors

Diameter	Number of poles	Speed (rpm)	Wiring	Power input (kW)	Full load current (A)
910 mm	NA	1000	NA	3.12	4.9
		910		2.26	3.5
		750		1.28	2
		690		1.01	1.7
		560		0.56	1.1
910 mm	NA	610	NA	0.6	1.2
		560		0.45	0.9
		470		0.26	0.6
		330		0.1	0.3
		200		0.04	0.2



Single-row models



Double-row models

Correction factors for different refrigerants

Refrigerant	Temperature difference ΔT, K 8	10	12	15	17	20
R-404A – R-22 – R-134a – R-507	0.53	0.67	0.80	1.00	1.13	1.33
R-407C, R-407A	0.46	0.62	0.77	1.00	1.15	1.38

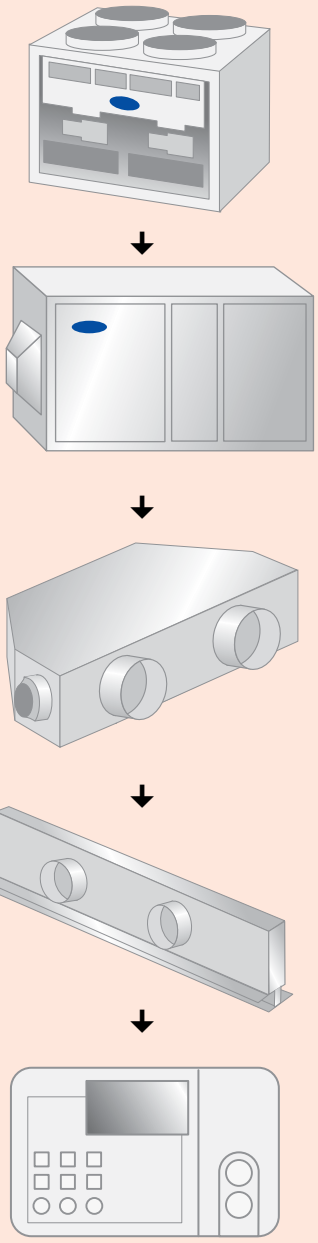
Dimensions and weights

Models	Dimensions, mm A	C	F	G	Net weight, kg
09AL 91 3MSC	4921	4567	-	-	566
09AL 91 3MSD	6046	5692	-	-	680
09AL 91 3MSE	7171	6817	2285	-	765
09AL 91 4MSC	6422	6068	3036	-	755
09AL 91 4MSD	7922	7568	3786	-	886
09AL 91 4MSE	9422	9068	4536	-	1001
09AL 91 5MSC	7924	7570	3036	1502	945
09AL 91 5MSD	9799	9444	3787	1876	1109
09AL 91 5MSE	11674	11320	4536	2252	1250
09AL 91 6MSC	9426	9072	3037	3003	1115
09AL 91 6MSD	11676	11322	3787	3753	1314
09AL 91 4MDC	3420	3066	-	-	695
09AL 91 4MDD	4170	3816	-	-	807
09AL 91 4MDE	4920	4566	-	-	903
09AL 91 6MDC	4921	4567	-	-	1014
09AL 91 6MDD	6046	6692	-	-	1195
09AL 91 6MDE	7171	6817	2285	-	1341
09AL 91 8MDC	6422	6068	3036	-	1351
09AL 91 8MDD	7922	7568	3789	-	1569
09AL 91 8MDE	9422	9068	4536	-	1762
09AL 91 10MDC	7924	7570	3036	1502	1683
09AL 91 10MDD	9799	9445	3787	1876	1958
09AL 91 10MDE	11674	11320	4536	2252	2207
09AL 91 12MDC	9426	9072	3037	3003	2007
09AL 91 12MDD	11676	11322	3787	3753	2333

Note: Dimension A is the maximum length.

Index

System architecture



Index





Application of the new EN14511 : 2013 chiller and heat pump performance standard:
Chiller and heat pump performances are calculated in accordance with the EN14511 : 2013 calculation standard and certified by Eurovent.

The latest version of EN14511. It uses a different method to take into account the contribution of water pumps, or heat exchanger pressure drops in the unit performances. The efficiency of the pump is no longer a default value, but a function of the required hydraulic power. In January 2012, the Eurovent Certification Company decided that this method is more realistic and it is fully applied starting from the 2012 certification campaign. The performances declared based on the new version of the standard were published on the ECC website www.eurovent-certification.com at the end of March 2012.

IMPORTANT: Only 2012 performances rated according the new EN14511 : 2013, taking in account water pump and heat exchanger pressure drop are certified by Eurovent. For units declared before 2012, the previous gross EER and COP values without pump correction (for units with integral pump - measured with the pump not running) and the corresponding energy classes are available on ECC website.

Application rating conditions

Air conditioning applications (AC)		**Cooling and heating floor applications (CHF)**		**High-temperature heating (HT)**		**Very high-temperature heating (VHT)**	
Air-cooled cooling - condition 1		Condition 2					
Evaporator EWT/LWT 12°C/7°C OAT 35°C		Evaporator EWT/LWT 23°C/18°C OAT 35°C					
Air-cooled heating - condition 1		Condition 2					
Condenser EWT/LWT 40°C/45°C Evaporator OAT 7°C	EWT/LWT 40°C/45°C OAT 2°C	Condenser EWT/LWT 30°C/35°C Evaporator OAT 7°C	EWT/LWT 30°C/35°C OAT 2°C	Condenser EWT/LWT 47°C/55°C Evaporator OAT 7°C	EWT/LWT 47°C/55°C OAT 2°C	Condenser EWT/LWT 50°C/65°C Evaporator OAT 7°C	EWT/LWT 47°C/55°C OAT 2°C
Water-cooled cooling - condition 1		Condition 2					
Evaporator EWT/LWT 12°C/7°C Condenser EWT/LWT 30°C/35°C		Evaporator EWT/LWT 23°C/18°C Condenser EWT/LWT 30°C/35°C					
Water-cooled heating - condition 1		Condition 2					
Condenser EWT/LWT 10°C/7°C Condenser EWT/LWT 40°C/45°C		Evaporator EWT/LWT 10°C/7°C Condenser EWT/LWT 30°C/35°C		Evaporator EWT/LWT 10°C/7°C Condenser EWT/LWT 47°C/55°C		Evaporator EWT/LWT 0°C/-3°C Condenser EWT/LWT 47°C/55°C	

Legend
EWT Entering water temperature
LWT Leaving water temperature
OAT Outdoor air temperature

AIR-TO-WATER HEAT PUMP HEATING SYSTEM

Heating

38AW/ 80AW

XP ENERGY INVERTER AIR TO WATER split

Accessories

- Additional user interface.
- Communication kit.
- Remote outdoor air sensor maximises comfort.
- Room temperature sensor.
- Domestic hot water tank, one or two coils - storage, 200 l/300 l of domestic hot water with or without thermal solar panel connection.
- CDU rubber vibration isolators.
- Domestic hot-water three-way valve and actuator.
- Thermal cut-out, floor heating to connect under-floor heating zone.
- Two-zone kit - allows independent control of two comfort zones
- Piping kit to install domestic hot-water valve and actuator inside unit.
- Cover panel to install two-zone kit detached from comfort module.

Control

- User-friendly controller with large display, intuitive symbols and two simple buttons, allowing the user to select the desired operating parameter values.

Features

- Eight sizes with nominal heating capacities from 5 to 11.5 kW and nominal cooling capacities from 4.2 to 9.0 kW.
- Reversible XP Energy air-to-water split system heat pumps with built-in inverter technology, designed for residential and light commercial applications, offer excellent energy efficiency values, exceptionally quiet operation and meet the most stringent operating temperature demands.
- Incorporate the latest technological innovations: ozone-friendly refrigerant R-410A, DC inverter twin-rotary compressors, low-noise fan and microprocessor control.
- Designed for ease-of-installation and service.
- For added flexibility the XP Energy systems are available in heating only or reversible versions, to suit the demand. Back-up heating with either electrical (single-energy applications) or gas boiler (dual-energy applications).
- Can be used with a wide choice of Carrier terminal fan coil units - cassettes, low, medium and high-pressure satellite units, console units, under-ceiling units and high-wall units.
- Wide operating range in both heating and cooling mode offering high performance in a wide temperature range.
- DC inverter twin-rotary compressors guarantee enhanced reliability, low energy consumption and smooth operation under all operating conditions.
- Variable-speed fans with an innovative patented fan blade shape ensure improved air distribution at exceptionally low noise levels.
- Pre-set or customised selection of the appropriate climate curve for stable output capacity to match the heat load.
- Output to link and integrate the unit with existing heat sources for dual-energy approach with increased savings and optimum comfort in all conditions.
- Able to control two independent comfort zones with a two-zone kit added to the main comfort module.
- Leaving water temperature up to 60°C for radiator and domestic hot water applications, making hot water readily available.

Physical data, indoor and outdoor units

System		Heating only						Heating and cooling					
Outdoor unit (heat pump)		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW 120H9	38AW 150H9	38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW 120H9	38AW 150H9
Indoor unit (comfort module)		80AWH 065	80AWH 065	80AWH 115	80AWH 115	80AWH 150	80AWH 150	80AWX 065	80AWX 065	80AWX 115	80AWX 115	80AWH 150	80AWH 150
Max. leaving water temperature	°C	60	60	60	60	60	60	60	60	60	60	60	60
Nominal heating capacity*	kW	5.0	6.5	9.1	11.5	12	15.1	5	6.5	9.1	11.5	12	15.1
Min./Max. heating capacity*	kW	1.5/6.3	1.4/8	4.6/11.7	4.6/13.4	6.0/15.0	6.0/16.0	1.5/6.3	1.4/8	4.6/11.7	4.6/13.4	6.0/15.0	6.0/16.0
COP*	kW/kW	4.10	4.10	4.20	4.10	4.65	4.3	4.1	4.1	4.2	4.1	4.65	4.3
Nominal cooling capacity**	kW	-		-	-	-	-	5.1	6.5	7.9	9	13.5	15.79
Min./Max. heating capacity**	kW	-		-	-	-	-	0.7/5.7	0.8/7.1	4.1/9.2	4.1/12.1	7.1/17.9	7.1/17.7
EER**	kW/kW	-		-	-	-	-	3.4	3.4	4.05	3.8	4.74	4.24

* The nominal heating capacity is in accordance with EN 14511, water temperature 35°C/30°C, air temperature 7°C/6°C
** The nominal cooling capacity is in accordance with EN 14511, water temperature 18°C/23°C, air temperature 35°C

Outdoor unit (heat pump)		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW 120H9	38AW 150H9
Indoor unit (comfort module)		80AW 065	80AW 065	80AW 115	80AW 115	80AWH 150	80AWH 150
Number of comfort zones		1	1	1	1	1	1
Nominal water flow rate	l/s (l/h)	0.24 (860)	0.31 (1118)	0.43 (1548)	0.55 (1978)	0.57 (2065)	0.72 (2580)
Minimum water flow rate	l/s (l/h)	0.19 (688)	0.25 (894)	0.34 (1238)	0.44 (1582)	0.29 (1030)	0.29 (1030)
Maximum water flow rate	l/s (l/h)	0.29 (1032)	0.37 (1342)	0.52 (1858)	0.66 (2374)	0.72 (2580)	0.76 (2750)
Nominal temperature difference	K	5	5	5	5	5	5
Sound power level, cooling	dB(A)	40.9	40.9	40.9	40.9	40.9	40.9
Sound power level, heating	dB(A)	40.9	40.9	40.9	40.9	40.9	40.9
Dimensions, H x L x D	mm	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320
Operating weight	kg	48	48	50	50	52	52
Outdoor unit		38AW 050H7	38AW 065H7	38AW 090H7	38AW 115H7	38AW 120H9	38AW 150H9
Compressor type		DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary
Inverter type		PAM + PWM	PAM + PWM	PAM + PWM	PAM + PWM	PAM + PWM	PAM + PWM
Refrigerant		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
Maximum pipe length	m	50	30	70	70	70	70
Maximum height difference	m	30	30	30	30	30	30
Pre-charged length	m	20	20	20	30	30	30
Air flow	l/s (m^3/h)	728 (2620)	783 (2820)	1658 (5970)	1767 (6360)	1600 (5770)	1600 (5770)
Dimensions, H x L x D	mm	690 x 900 x 320	820 x 900 x 320	1360 x 900 x 320	1360 x 900 x 320	1360 x 900 x 320	1360 x 900 x 320
Operating weight	kg	49	51	88	88	100	100
Pipe connections	in	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50

*** Sound pressure levels are given for a distance of 4 m from the unit.

Indoor unit for 38AW 120H9 and 38AW 150H9		80AWX 150M0	80AWX 150T6	80AWX 150T9	80AWH 150M0	80AWH 150T6	80AWH 150T9
Number of comfort zones		1	1	1	1	1	1
Electric heater element	kW	0	9	9	0	6	9
Heating only		No	No	No	Yes	Yes	Yes
Heating and cooling		Yes	Yes	Yes	No	No	No
Connection of back-up boiler		Yes	No	No	Yes	No	Yes
Power supply	V-ph-Hz	230-1-50	400-3-50	400-3-50	230-1-50	400-3-50	400-3-50

Electrical data, indoor and outdoor units

Outdoor unit		38AW 050	38AW 065	38AW 090	38AW 115	38AW 120	38AW 150
Power supply/voltage range	V-ph-Hz/V	230-1-50/198-264	230-1-50/198-264	230-1-50/198-264	230-1-50/198-264	400-3-50/376-424	400-3-50/376-424
Full load current/operating current	A	11/7.9	11.7/9.0	18.9/13.4	21.2/17.9	15.4/16	15.4/16
Fuse rating*	A	16	16	25	25	6.45	8.72
Power consumption	W	1473	1930	2887	3731	2580	3490
Main power wire size	mm2	2.5	2.5	2.5	2.5	2.5	2.5
Power factor	%	0.95	0.95	0.95	0.95	0.95	0.95

* Time delay fuse

Comfort module		80AW 065				80AW 115				
		M0	M3	M6	T6	M0	M3	M6	T6	T9
Outdoor units		38AW 050H7/38AW 065H7				38AW 090H7/38AW 115H7				
Power supply	V-ph-Hz	230-1-50 ± 10%			400-3-50 ± 10%	230-1-50 ± 10%			400-3-50 ± 10%	
Power input	kW	-	3	6	6	-	3	6	6	9
Operating current	A	-	13	26	L1: 13 L2: 13 N: 13	-	13	26	L1: 13 L2: 13 N: 13	L1: 19.5 L2: 19.5 N: 19.5

REVERSIBLE AIR-TO-WATER HEAT PUMPS

Heating

AQUASNAP PLUS Reversible

30AWH

Options/accessories

- Unit without hydronic module (option)
- Unit with hydronic module (option)
- Unit with variable-speed pump (option)*
- Additional outdoor sensor (accessory)
- Remote controller 33AW-RC1 (accessory)
- Programmable thermostat 33AW-CS1 (accessory)

* Available in 2013

30AW controllers

Comfort™ Series programmable thermostat
33AW-CS1

Remote controller
33AW-RC1

Features

- Two versions with or without hydronic module in five sizes with nominal cooling capacities from 3 to 13 kW and nominal heating capacities from 4 to 14 kW.
- AquaSnap PLUS air-to-water heat pumps with built-in inverter technology were designed for residential and light commercial applications. They offer excellent energy efficiency values, exceptionally quiet operation and meet the most stringent operating temperature demands.
- Units integrate the latest technological innovations: ozone-friendly refrigerant R-410A, DC inverter twin-rotary compressors, low-noise fan and micro-processor control.
- Specifically designed for ease-of-installation and service and underlining Carrier's reputation for highest product quality and reliability.
- AquaSnap PLUS heat pump systems can be used with a wide choice of Carrier terminal fan coil units - cassettes, low, medium and high-pressure satellite units, console units, underceiling units and high-wall units.
- Wide operating range in both heating and cooling mode offering high performance in a wide temperature range.
- DC inverter twin-rotary compressors with Pulse Amplitude Modulation (PAM) and Pulse Width Modulation (PWM) for enhanced reliability, low energy consumption and smooth vibration-free operation under all operating conditions.
- Variable-speed fans with an innovative patented fan blade shape ensure improved air distribution at exceptionally low noise levels.
- Output to link and integrate the unit with existing heat sources to offer a bivalent approach, increased savings and optimum comfort in all weather conditions.
- Leaving water temperature up to 60°C for domestic hot water applications, making hot water readily available.
- Advanced circuit design and component selection has resulted in a compact unit with an exceptionally small footprint that can be easily transported even through narrow doors.
- Comprehensive quality and endurance tests.
- Enhanced control possibilities.

INVERTER Technology

Physical data

30AW		004	006	008	012	015	012-3Ph	015-3Ph
Air conditioning application as per EN14511-3 : 2013								
Nominal cooling capacity	kW	3.3	4.7	5.8	10.2	13.0	10.2	13
Nominal heating capacity	kW	4.0	6.0	7.0	13.0	14.0	13.0	14.0
EER (cooling)/COP (heating)	kW/kW	3.02/3.26	3.00/3.05	2.98/3.19	2.96/3.03	2.95/3.23	3/3.35	2.91/3.3
ESEER part-load performance, cooling	kW/kW	4.36	4.51	4.15	4.22	4.31	4.4	4.31
Cooling/heating floor application as per EN14511-3 : 2013								
Nominal cooling capacity	kW	4.93	7.04	7.84	13.54	16.04	13.5	16
Nominal heating capacity	kW	4.0	6.0	7.0	12.0	14.0	13	14
EER (cooling)/COP (heating)	kW/kW	4.2/4.2	3.7/4.3	3.99/4..0	3.66/4.0	3.85/4.1	4.15/4.3	3.81/4.2
Operating weight, unit with/without hydronic module*	kg	57/54	61/58	69/66	104/101	112/109	116/113	116/113
Refrigerant		R-410	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
Compressor		DC twin-rotary with PMV expansion valve						
Fans		Propeller fans						
Quantity/diameter	mm	1/495	1/495	1/495	2/495	2/495	2/495	2/495
Dimensions								
Length x depth x height	mm	908 x 350 x 821	908 x 350 x 821	908 x 350 x 821	908 x 350 x 1363	908 x 350 x 1363	908 x 350 x 1363	908 x 350 x 1363

NOTE: For the conditions please refer to page 73.

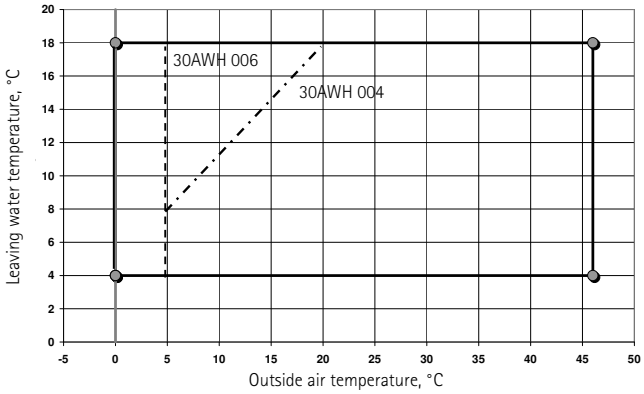
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

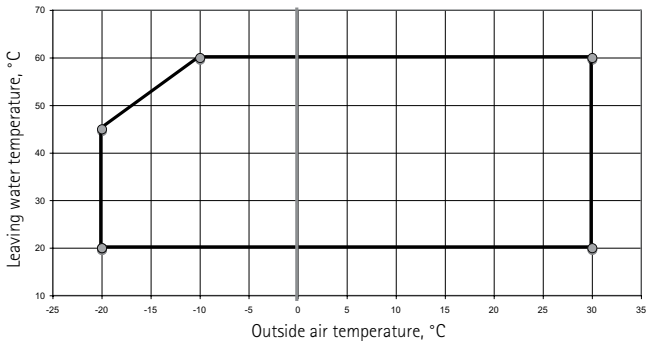
30AW		004	006	008	012	015	012-3Ph	015-3Ph
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50
Voltage range	V	198-264	198-264	198-264	198-264	198-264	376-424	376-424
Full load current	A	7.2	11	14	23	20	16	16
Fuse rating	A	10	16	16	25	25	20	20
Main power cable section	mm^2	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Operating range

Cooling mode



Heating mode



COMFORT MODULE RANGE FOR MONOBLOC HEAT PUMPS

Heating

80HMA

Accessories

- Communication kit for installation on the heat pump
- Additional user interface, monitors two independent comfort zones or used together with comfort module interface
- Remote outdoor sensor maximises comfort compared to using the condensing unit OAT sensor
- Domestic hot water tank for storage of domestic hot water, one or two coils, 200 or 300 litres, with or without thermal solar panel connection
- Domestic hot-water three-way valve and actuator to connect domestic hot water tank
- Thermal cut-out, floor heating - stops circulation pump when supply temperature is too high
- Piping kit to install domestic hot-water valve and actuator inside the unit.
- Cover panel to install two-zone kit detached from comfort module.
- Kit to add three-way valve and actuator in second zone
- Two-zone kit allows independent control of two comfort zones
- Swimming pool kit controls swimming pool heating, using the heat pump
- Pump kit - necessary when available heat pump pressure is too low for the installation
- BPHE kit for heat pumps up to 8 or 16 kW - separate heat pump loop (with glycol) from indoor loop; includes BPHE and pump

Features

- Five sizes with nominal cooling capacities from 4 to 20 kW and nominal heating capacities from 4 to 20 kW, depending on the heat pump model used.
- The new comfort module range for monobloc inverter heat pumps offers a complete heating system that is easy to design and install.
- System controls ensure optimised energy efficiency, using auto-adaptative weather compensation control that constantly monitors the indoor and outdoor climate to optimise the heat pump energy efficiency and deliver perfect indoor climate.
- With its improved aesthetics and compactness, combined with new features and options, the new comfort module sets new standards in energy savings and comfort. Using the two-zone kit, two different terminal unit types or two independent comfort zones can be closely monitored. Domestic hot water production is made easy and can be interfaced with thermal solar panels.
- All 30AWH-HC sizes are compatible with the 80HMA comfort module range. The comfort module controls can also manage up to eight 30AWH units. 30RQ 017 to 021 and 61AF 014 to 019 units are also compatible, but the water volume of this installation needs to be checked.
- Reversible operation.
- Electric booster heater or boiler back-up.
- Auto-adaptative weather compensation control.
- Dual comfort zone with independent control of two terminal unit types.
- User-friendly controller with large display, intuitive symbols and two simple buttons, allowing the user to select the desired operating parameter values.

Operator interface

Physical data

Indoor unit (comfort module)		80HMA-M00	80HMA-M03	80HMA-M06	80HMA-T06	80HMA-T09
Number of comfort zones		1	1	1	1	1
Electric booster element	kW	0	3	6	6	9
Number of auxiliary heating steps		1 (external boiler)	1	3	3	3
Connection of back-up boiler		Yes	No	No	No	No
Dimensions, H x L x D	mm	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320	800 x 450 x 320
Operating weight	kg	34	35	35	35	35
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50
Recommended circuit breaker size		C6	C20	C32	C16	C20

Combination table, indoor and outdoor units

Outdoor unit (heat pump)		Indoor unit (comfort module)	
30AWH04HC	Nominal capacity 4 kW	**80HMA-M00**	Reversible, 1 zone, maximum heating capacity 20 kW for boiler back-up application
30AWH06HC	Nominal capacity 6 kW	**80HMA-M03**	Reversible, 1 zone, maximum heating capacity 20 kW with 3 kW 1-phase electrical heater booster
30AWH08HC	Nominal capacity 8 kW	**80HMA-M06**	Reversible, 1 zone, maximum heating capacity 20 kW with 6 kW 1-phase electrical heater booster
30AWH12HC	Nominal capacity 12 kW	**80HMA-T06**	Reversible, 1 zone, maximum heating capacity 20 kW with 6 kW 3-phase electrical heater booster
30AWH12HC9	Nominal capacity 12 kW	**80HMA-T06**	Reversible, 1 zone, maximum heating capacity 20 kW with 6 kW 3-phase electrical heater booster
30AWH15HC	Nominal capacity 15 kW	**80HMA-T09**	Reversible, 1 zone, maximum heating capacity 20 kW with 9 kW 3-phase electrical heater booster
30AWH15HC9	Nominal capacity 15 kW	**80HMA-T09**	Reversible, 1 zone, maximum heating capacity 20 kW with 9 kW 3-phase electrical heater booster

NOTE: All 30AWH sizes are compatible with the 80HMA comfort module range. Comfort module controls can also manage up to eight 30AWH units. A parallel hydronic coupling of the unit to a tank is necessary (field supply). 30RQ 017 to 021 and 61AF 014 to 019 units are also compatible, but the water volume of this installation must be checked by a professional and comply with the heat pump size minimum requirements. Depending on the terminal unit type installed with the Carrier system a buffer tank may have to be added.

Electrical data

Comfort module 80HMA		M00	M03	M06	T06	T09
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50	400-3-50
Voltage range	V	207-253	207-253	207-253	360-400	360-400
Max. power consumption, board and auxiliary devices	kW	1.15	1.15	1.15	1.15	1.15
Board and auxiliary circuit breaker protection (not included)		C6	C6	C6	C6	C6
Electric heater power consumption	kW	0	3	6	6	9
Electric heater circuit breaker protection (not included)		C6	C20	C32	C16	C20
Max. operating current	A	5	18	31	14	18
Main power cable size	mm2	3G x 2.5	3G x 4	3G x 6	5G x 2.5	5G x 4
Communication cable (FROH2R)	mm2	2 x 0.75	2 x 0.75	2 x 0.75	2 x 0.75	2 x 0.75
User interface (additional or remote) cable (FROH2R)	mm2	4 x 0.75	4 x 0.75	4 x 0.75	4 x 0.75	4 x 0.75
Booster heater power supply cable (H05VV-F)	mm2	3G x 2.5	3G x 2.5	3G x 2.5	3G x 2.5	3G x 2.5
Booster heater activation cable (FROH2R)	mm2	2 x 1	2 x 1	2 x 1	2 x 1	2 x 1
Domstic hot water sensor cable (FROH2R)	mm2	2 x 0.5	2 x 0.5	2 x 0.5	2 x 0.5	2 x 0.5
Remote outdoor sensor cable (FROH2R)	mm2	2 x 0.5	2 x 0.5	2 x 0.5	2 x 0.5	2 x 0.5

Note: The heat pump data depends on the heat pump used.

Operating limits

Heat pump limits	Depends on the heat pump selected
Comfort module limits	
Indoor temperature	5-30°C
Water temperature, cooling	4-18°C
Water temperature, heating	20-80°C

HIGH-TEMPERATURE AIR-TO-WATER HEAT PUMPS

Heating

AQUASNAP® Heating

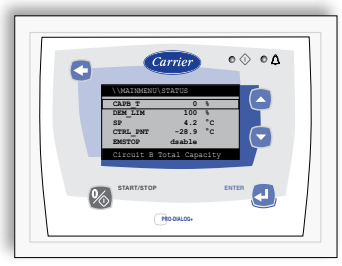
61AF

Accessories

- JBus, BacNet and LonTalk gateways
- Remote user interface
- Master/slave operation
- Hydronic module
- Water filter

Features

- Two sizes with nominal heating capacities from 14 to 20 kW.
- The Aquasnap high-temperature heat pump range was designed for commercial applications such as the heating of offices, apartments and hotels as well as domestic hot water production in new and refurbished buildings.
- Units incorporate the latest technological features: scroll compressors with vapour injection, low-noise fans made of a composite material, auto-adaptative microprocessor control, electronic expansion valve and multi-speed pump.
- Units certified to the Eurovent energy efficiency class A with a COP of over 4 and comply with the COP required by the Ecolabel certification.
- 61AF heat pumps incorporate a hydronic module with a multi-speed pump, as standard.
- Low noise levels and a very compact chassis reduce the noise disturbance from the unit.
- The operating range allows outside temperatures down to -20°C and leaving water temperatures up to 65°C for domestic hot water applications.
- Intelligent unit control permits unit operation in extreme conditions, minimising unit shut-down times.
- Systematic factory run test before shipment and quick-test function for verification of instruments, electrical components and motors.
- Low-noise scroll compressors with low vibration level.
- Simplified electrical connections.
- Comprehensive quality and endurance tests.



Pro-Dialog+ operator interface

Physical data

61AF		014-7	014-9	019
Air conditioning application as per EN14511-3 : 2013				
Condition 1				
Nominal heating capacity	kW	14.1	13.7	19.8
COP	kW/kW	3.32	3.50	3.45
Eurovent class, heating		A	A	A
Condition 2				
Nominal heating capacity	kW	13.9	13.5	20.2
COP	kW/kW	3.89	4.16	4.24
Operating weight*				
Standard unit without hydronic module	kg	159	159	206
Standard unit with hydronic module option	kg	169	169	216
Compressor		One, hermetic scroll, 48.3 r/s		
Refrigerant*		R-407C		
Condenser		Direct-expansion plate heat exchanger		
Fan		Axial		
Quantity		2	2	2
Air flow	l/s	2050	2050	2000
Evaporator		Grooved copper tubes and aluminium fins		
Dimensions				
Length x depth x height	mm	1103 x 333 x 1278	1103 x 333 x 1278	1135 x 559 x 1579

NOTE: For the conditions please refer to page 73.

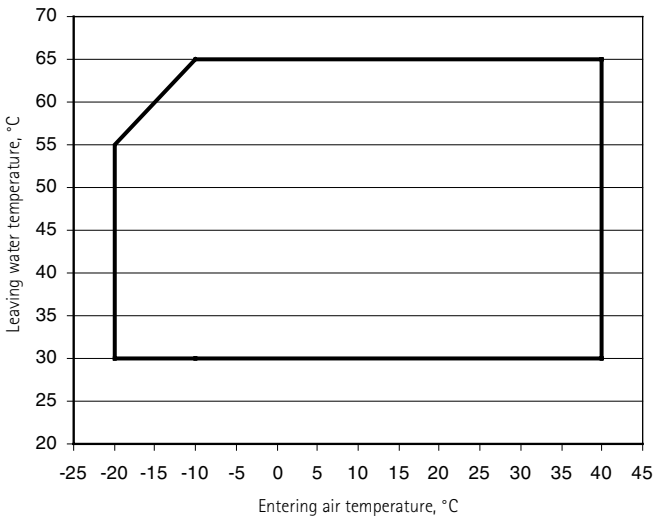
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

61AF - Standard unit		Without pump			With pump		
		014-7	014-9	019	014-7	014-9	019
Power circuit							
Nominal power supply	V-ph-Hz	230-1-50 ± 10%	400-3-50 ± 10%	400-3-50 ± 10%	230-1-50 ± 10%	400-3-50 ± 10%	400-3-50 ± 10%
Control circuit supply		24 V, via internal transformer					
Maximum start-up current (Un)*							
Standard unit	A	-	66	102	-	67	104
Unit with electronic starter option	A	47	-	-	48	-	-
Unit power factor at maximum capacity**		0.82	0.82	0.82	0.82	0.82	0.82
Maximum unit power input**	kW	6.41	5.90	8.80	6.41	6.10	9.20
Nominal unit current draw***	A	22.9	7.9	12.4	23.7	7.9	12.4
Maximum unit current draw (Un)****	A	30.7	10.8	16.0	31.5	10.8	16.0

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the pump + fan current + locked rotor current of the compressor).
** Power input, compressors and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, outside air temperature 7°C.
**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



Full load

HIGH-TEMPERATURE AIR-TO-WATER HEAT PUMPS

Heating

AQUASNAP Heating

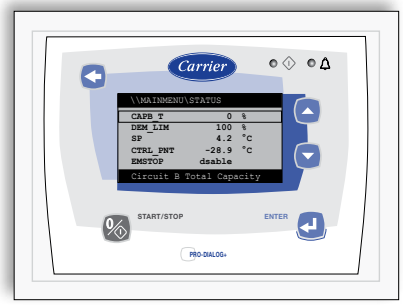
61AF

Options/accessories

- Anti-corrosion protection, traditional coils (option)
- Units with discharge air ducts (option)
- Low and very low noise level (option)
- Soft starter (option)
- Frost protection down to -20°C (option)
- Low-pressure single-pump hydronic module (option)
- JBus, BacNet and LonTalk gateways (option)
- Screw or welded water connection between the customer's condenser and the unit (option)
- Remote user interface (option)
- Master-slave operation (option)
- Heating System Manager types A, B and C: control of comfort heating (one or more zones) and domestic hot water production in installations where the 61AF is backed up by auxiliary boilers, electric resistance heaters or a district heating system (accessory)

Features

- Seven sizes with nominal heating capacities from 21 to 102 kW.
- The Aquasnap high-temperature heat pump range was designed for commercial applications such as the heating of offices, apartments and hotels as well as domestic hot water production in new and refurbished buildings.
- Units incorporate the latest technological features: scroll compressors with vapour injection, low-noise fans made of a composite material, auto-adaptative microprocessor control, electronic expansion valve and multi-speed pump.
- Increased energy efficiency - Eurovent energy efficiency class A (in accordance with EN14511-3:2013).
- Exceptional energy efficiency level (COP) - the result of a long qualification and optimisation process.
- 61AF units incorporate an optional hydronic module with a multi-speed pump.
- Low noise levels and a very compact chassis reduce the noise disturbance from the unit.
- The operating range allows outside temperatures down to -20°C and leaving water temperatures up to 65°C for domestic hot water applications.
- Intelligent unit control permits unit operation in extreme conditions, minimising unit shut-down times.
- Systematic factory run test before shipment and quick-test function for verification of instruments, electrical components and motors.
- Low-noise scroll compressors with low vibration level.
- Simplified electrical connections.
- Comprehensive quality and endurance tests.



Pro-Dialog+ operator interface

Hydronic module

Physical data

61AF		022	030	035	045	055	075	105
Air conditioning application as per EN14511-3 : 2013								
Condition 1								
Nominal heating capacity	kW	20.8	25.7	32.3	43.8	52.3	66.9	101.9
COP	kW/kW	3.45	3.45	3.37	3.56	3.65	3.41	3.58
Eurovent class, heating		A	A	A	A	A	A	A
Condition 2								
Nominal heating capacity	kW	20.8	25.7	32.3	43.7	52.2	66.8	101.7
COP	kW/kW	4.11	4.14	4.07	4.31	4.36	3.97	4.25
Operating weight*								
Standard unit without hydronic module	kg	343	396	421	509	533	900	1020
Standard unit with hydronic module option	kg	349	403	436	524	549	926	1044
Compressor		One, hermetic scroll 48.3 r/s					Two, hermetic scroll 48.3 r/s	
Condenser		Direct-expansion plate heat exchanger						
Fan		Axial with rotating shroud, Flying Bird IV						
Quantity		1	1	1	1	1	2	2
Total air flow at high speed	l/s	3770	3748	3736	4035	4036	7479	8072
Evaporator		Grooved copper tubes and aluminium fins						
Refrigerant*		R-407C						
Dimensions								
Length x depth x height	mm	1110 x 1327 x 1330			1114 x 2100 x 1330		2273 x 2100 x 1330	

NOTE: For the conditions please refer to page 73.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

61AF - Standard unit (without hydronic module)		022	030	035	045	055	075	105
Power circuit								
Nominal power supply	V-ph-Hz	400-3-50 ± 10%						
Control circuit supply		24 V, via internal transformer						
Maximum start-up current (Un)*								
Standard unit	A	104	102	130	170	190	157	229
Unit with electronic starter option	A	56	55	70	91	101	101	142
Unit power factor at maximum capacity**		0.82	0.82	0.82	0.82	0.82	0.82	0.82
Maximum unit power input**	kW	8.7	11.6	12.9	14.6	16.8	25.8	33.7
Nominal unit current draw***	A	13.6	16.4	20.1	23.2	27.7	40.2	55.4
Maximum unit current draw (Un)****	A	16.8	21.1	27.0	32.8	38.8	54.0	77.6

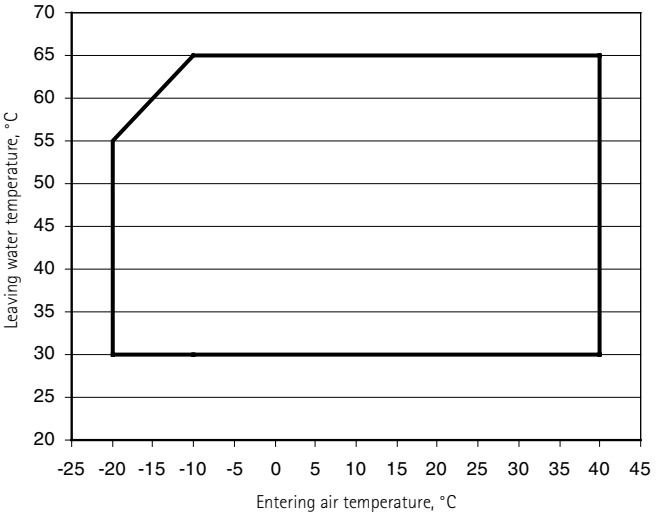
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the compressor + fan current + locked rotor current of the compressor).

** Power input, compressors and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

*** Standardised Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, outside air temperature 7°C/6°C.

**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



Full load

Heating

AQUASNAP® Reversible

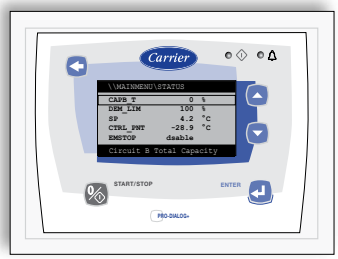
30RQ

Options/accessories

- Unit without hydronic module (option)
- Integrated water fill system (option)
- Power supply without neutral (option)
- JBus, BacNet and LonTalk gateways (accessory)
- Remote interface (accessory)
- Integrated water fill system (accessory)

Features

- Four sizes with nominal cooling capacities from 16 to 33 kW and nominal heating capacities from 17 to 33 kW.
- Aquasnap heat pumps for commercial applications such as the air conditioning of offices and hotels.
- Exceptionally high energy efficiency at part load - Eurovent energy efficiency class A and B (in accordance with EN14511-3 : 2013) in cooling and heating mode.
- Integrates the latest technological innovations: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans and auto-adaptive microprocessor control.
- Units include a hydronic module integrated into the chassis, limiting installation to connection of power supply, water supply and return piping/air distribution ducting.
- Low-noise scroll compressors with low vibration level.
- Vertical air heat exchanger coils with protection grilles on anti-vibration mountings.
- Low-noise fans, now even quieter. Rigid fan installation for reduced start-up noise.
- The unit has a small footprint and is enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.



Pro-Dialog+ operator interface

Hydronic module (sizes 026-033 shown)

Physical data

30RQ		017	021	026	033
Air conditioning application as per EN14511-3 : 2013					
Condition 1/condition 2					
Nominal cooling capacity	kW	16.0/22.2	20.2/27.4	26.7/34.3	32.7/43.6
EER	kW/kW	3.17/4.02	3.11/3.76	3.01/3.62	3.21/3.96
Eurovent class, cooling (condition 1)		A	A	B	A
ESEER (condition 1)	kW/kW	3.61	3.44	3.36	3.58
Heating application as per EN14511-3:2013					
Condition 1/condition 2					
Nominal heating capacity	kW	17.0/17.6	21.7/22.2	29.9/31.0	33.3/34.7
COP	kW/kW	3.18/3.99	3.28/3.98	3.20/3.98	3.19/3.98
Eurovent class, heating (condition 1)		B	A	A	B
Operating weight*					
Standard unit with/without hydronic module	kg	206/191	223/208	280/262	295/277
Refrigerant*		R-410A			
Compressor		One hermetic scroll compressor			
Control		Pro-Dialog+			
Fans		Two twin-speed axial fans, 3 blades		One twin-speed axial fan, 7 blades	
Air flow	l/s	2217	1978	3530	3530
Water heat exchanger		Plate heat exchanger			
Air heat exchanger		Copper tubes and aluminium fins			
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, pressure gauge, automatic air purge valve, safety valve			
Power input	kW	0.54	0.59	0.99	1.10
Nominal operating current	A	1.30	1.40	2.40	2.60
Dimensions					
Length x depth x height	mm	1136 x 584 x 1579	1136 x 584 x 1579	1002 x 824 x 1790	1002 x 824 x 1790

NOTE: For the conditions please refer to page 73.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RQ		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	7.8	9.1	11	13.8
Nominal unit operating current draw***	A	8	12	16	17

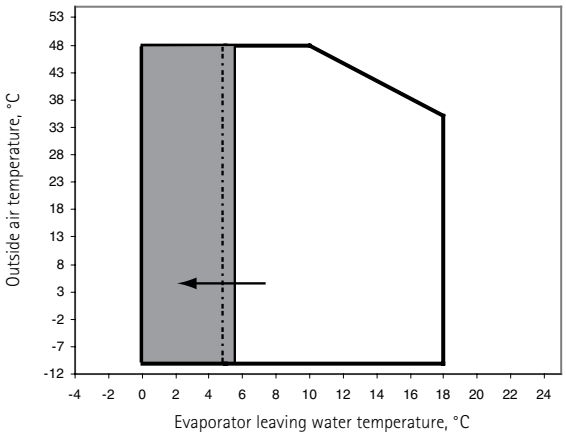
* Maximum instantaneous start-up current (locked rotor current of the compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

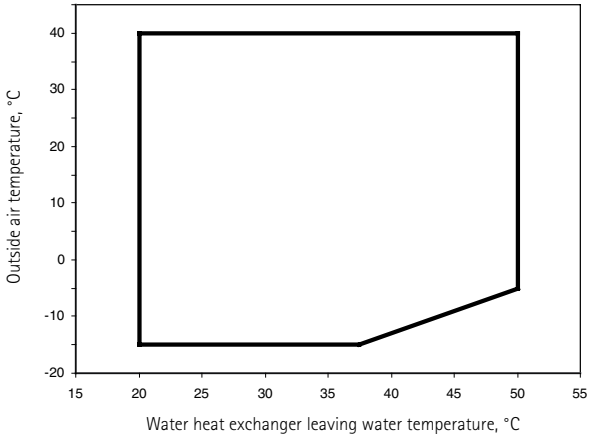
Operating range

Cooling mode



Operating range with anti-freeze solution and Pro-Dialog configuration.

Heating mode



DUCTABLE AIR-TO-WATER HEAT PUMPS

Heating

AQUASNAP® Reversible

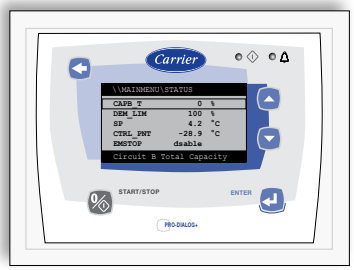
30RQY

Options/accessories

- Hydronic module (option)
- Integrated water fill system (option/ accessory)
- Inlet duct frame (option)
- Inlet filter frame (option)
- JBus, BacNet and LonTalk gateways (accessory)
- Remote interface (accessory)
- Condensate drain pan (accessory)

Features

- Four sizes with nominal cooling capacities from 15 to 32 kW and nominal heating capacities from 17 to 31 kW.
- Aquasnap heat pumps for commercial applications such as the air conditioning of offices and hotels.
- Exceptionally high energy efficiency at part load - Eurovent energy efficiency class A and B in cooling mode and C in heating mode (in accordance with EN14511-3:2013).
- Integrates the latest technological innovations: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans and auto-adaptive microprocessor control.
- Units include a hydronic module integrated into the chassis, limiting installation to connection of power supply, water supply and return piping/air distribution ducting.
- Low-noise scroll compressors with low vibration level.
- Vertical condenser coils with protection grilles on anti-vibration mountings.
- Low-noise fans, now even quieter. Rigid fan installation for reduced start-up noise.
- Easy duct connection and fans with 80 Pa available pressure.
- The unit has a small footprint and is enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.



Pro-Dialog+ operator interface

Hydronic module, sizes 026-033

Physical data

30RQY		017	021	026	033
Air conditioning application as per EN14511-3 : 2013					
Condition 1/condition 2					
Nominal cooling capacity	kW	14.9/18.4	19.0/23.9	27.1/35.6	32.3/41.3
EER	kW/kW	2.51/2.82	2.53/2.91	2.70/3.42	2.95/3.50
Eurovent class, cooling (condition 1)		B	B	A	A
ESEER (condition 1)	kW/kW	2.78	2.74	3.03	3.2
Heating application as per EN14511-3:2013					
Condition 1/condition 2					
Nominal heating capacity	kW	17.0/17.5	20.5/20.8	28.8/29.9	31.4/32.3
COP	kW/kW	2.66/3.21	2.67/3.16	2.59/3.22	2.67/3.21
Eurovent class, heating (condition 1)		C	C	D	C
Operating weight*					
Standard unit (with hydronic module)	kg	226	243	280	295
Standard unit (without hydronic module)	kg	211	228	262	277
Refrigerant*		R-410A			
Compressor		One scroll compressor			
Control		Pro-Dialog+			
Fans		Two twin-speed centrifugal fans, 5 backward-curved blades		One twin-speed axial fan, 7 blades	
Air flow	l/s	1640	1640	3472	3472
Evaporator		One plate heat exchanger			
Condenser		Copper tubes and aluminium fins			
Unit with hydronic module		One single-speed pump, screen filter, expansion tank, flow switch, water circuit drain valve, pressure gauge, automatic air purge valve, safety valve			
Dimensions					
Length x depth x height	mm	1135 x 584 x 1608	1135 x 584 x 1608	1002 x 824 x 1829	1002 x 824 x 1829

NOTE: For the conditions please refer to page 73.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RQY		017	021	026	033
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit supply		24 V via internal transformer			
Maximum start-up current (Un)*	A	75	95	118	118
Maximum operating power input**	kW	8.0	9.3	11.2	14.0
Nominal unit operating current draw***	A	13	16	20	24

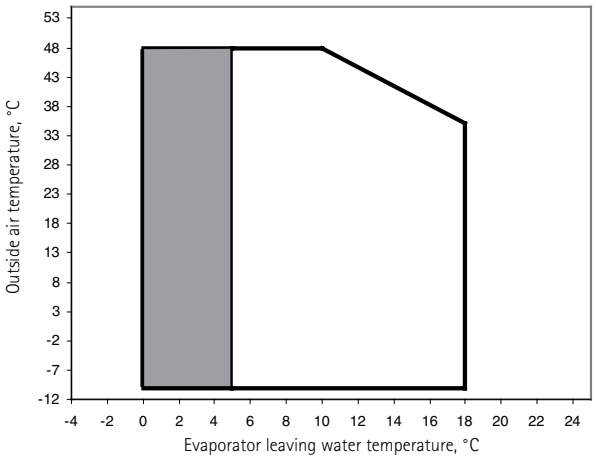
* Maximum instantaneous start-up current (locked rotor current of the compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

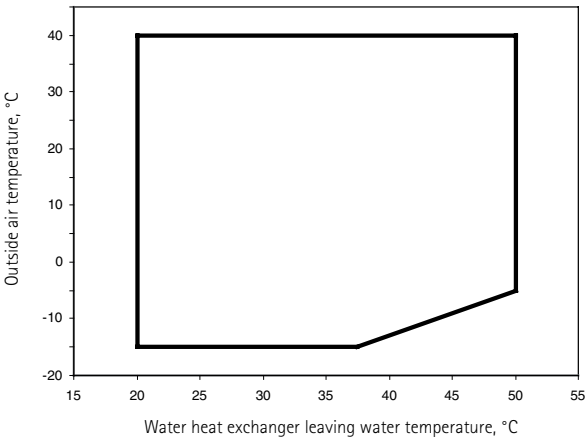
*** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range

Cooling mode



Heating mode



Operating range with anti-freeze solution and Pro-Dialog configuration.

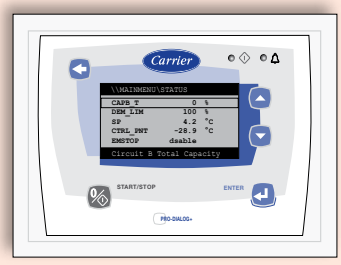
Heating

AQUASNAP® Reversible

30RQS

Options

- Air heat exchanger with pre-treated fins
- Very low noise level
- Low leaving water temperature
- Very low leaving water temperature
- Winter operation in cooling mode
- Soft starter (30RQS 039-080)
- Partial heat reclaim
- Frost protection down to -20°C
- High- and low-pressure single and dual-pump hydronic modules with or without expansion tank
- High-pressure variable-speed single- or dual-pump hydronic modules with or without expansion tank
- JBus, BacNet and LonTalk gateways
- Screw or welded water heat exchanger connection sleeves
- Master/slave operation
- Remote interface



Pro-Dialog+ operator interface

Features

- Twelve sizes with nominal cooling capacities from 38 to 149 kW and nominal heating capacities from 42 to 158 kW.
- Aquasnap heat pumps for commercial or industrial applications.
- Increased energy efficiency at part load - Eurovent energy efficiency class C and D (in accordance with EN14511-3:2013) in cooling mode and B and C in heating mode.
- Integrates the latest technological innovations: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans made of a composite material, auto-adaptive microprocessor control, electronic expansion valve and variable-speed pump (option).
- Low-noise scroll compressors with low vibration level.
- Vertical air heat exchanger coils with protection grilles on anti-vibration mountings.
- Low-noise Flying Bird IV fans, made of a composite material. Rigid fan installation for reduced start-up noise.
- Small unit footprint and a low height (1330 mm), enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Several compressors connected in parallel. At part load, around 99% of the time, only the compressors that are necessary operate, ensuring increased energy efficiency.
- The electronic expansion device (EXV) allows operation at a lower condensing pressure (EER optimisation), and dynamic superheat management optimises the utilisation of the water heat exchanger surface.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RQS		039	045	050	060	070	078	080	090	100	120	140	160
Air conditioning application as per EN14511-3:2013													
Nominal cooling capacity	kW	38	43	50	59	64	74	78	86	96	113	132	149
EER	kW/kW	2.84	2.70	2.65	2.77	2.70	2.58	2.79	2.70	2.70	2.69	2.77	2.58
Eurovent class, cooling		C	C	D	C	C	D	C	C	C	D	C	D
ESEER	kW/kW	3.80	3.77	3.81	3.61	3.61	3.57	3.84	3.77	3.88	4.04	3.75	3.67
Heating application as per EN14511-3:2013													
Nominal heating capacity	kW	42	47	53	61	70	78	80	93	101	117	138	158
COP	kW/kW	3.08	3.05	3.03	3.03	3.06	2.87	3.08	3.02	3.09	3.06	3.07	2.97
Eurovent class, heating		B	B	B	B	B	C	B	B	B	B	B	C
Operating weight*													
Standard unit without hydronic module	kg	506	513	539	552	553	560	748	895	903	959	1060	1078
Standard unit with hydronic module													
Single high-pressure pump	kg	535	543	569	582	582	590	778	927	935	995	1099	1117
Dual high-pressure pump	kg	561	569	594	608	608	616	804	972	980	1043	1136	1127
Compressors		Hermetic scroll compressors, 48.3 r/s											
Circuit A/B		2/-	2/-	2/-	2/-	2/-	2/-	2/-	3/-	3/-	3/-	2/2	2/2
Refrigerant*		R-410A											
Capacity control		Pro-Dialog+											
Air heat exchangers		Grooved copper tubes and aluminium fins											
Fans		Axial Flying Bird IV with rotating shroud											
Quantity		1	1	1	1	1	1	2	2	2	2	2	2
Total air flow (at high speed)	l/s	3800	3800	3800	5300	5300	5300	7600	7600	7600	7600	10600	10600
Water heat exchanger		Direct expansion, plate heat exchanger											
Hydronic module (option)		Single or dual pump, Victaulic screen filter, safety valve, expansion tank, purge valves (water and air), pressure sensors											
Dimensions													
Length x depth x height	mm	1090 x 2109 x 1330						2273 x 2136 x 1330					

NOTE: For the conditions please refer to page 73

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30RQS without hydronic module		039	045	050	060	070	078	080	090	100	120	140	160
Power circuit													
Nominal power supply	V-ph-Hz	400-3-50 ± 10%											
Control circuit supply		24 V via internal transformer											
Maximum start-up current (Un)*													
Standard unit	A	113.8	134.8	142.8	145.8	176.0	213.0	213.6	173.6	207.6	247.6	243.0	286.0
Unit with electronic starter option	A	74.7	86.5	93.8	96.2	114.4	139.8	139.8	-	-	-	-	-
Maximum operating power input**	kW	19.5	22.3	24.5	27.9	31.2	35.8	35.6	42.3	45.6	52.5	62.4	71.6
Nominal unit operating current draw***	A	25.6	29.0	33.0	36.0	42.4	52.8	53.4	55.4	61.7	77.3	84.8	105.6

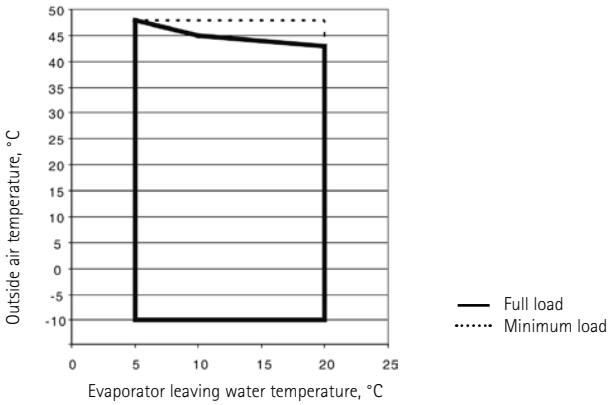
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temp. 10°C, saturated condensing temp. 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

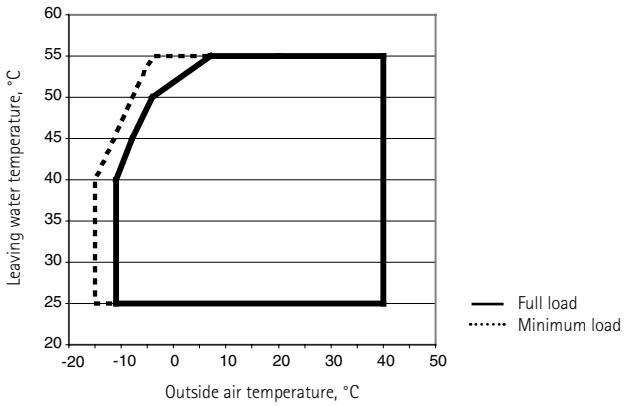
*** Standardised Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range

Cooling mode



Heating mode



DUCTABLE AIR-TO-WATER HEAT PUMPS

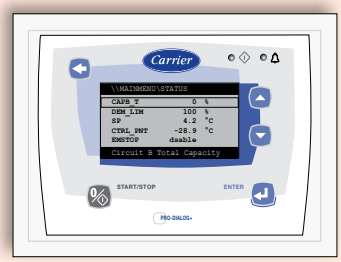
Heating

AQUASNAP® Reversible

30RQSY

Options

- Air heat exchanger with pre-treated fins
- Very low noise level
- Suction filters (30RQSY 039-078)
- Soft starter (30RQSY 039-080)
- Partial heat reclaim
- Frost protection down to -20°C
- High- and low-pressure single and dual-pump hydronic modules with or without expansion tank
- High-pressure variable-speed single- or dual-pump hydronic modules with or without expansion tank
- JBus, BacNet and LonTalk gateways
- Screw or welded water heat exchanger connection sleeves
- Master/slave operation
- Remote interface



Pro-Dialog+ operator interface

Features

- Twelve sizes with nominal cooling capacities from 37 to 147 kW and nominal heating capacities from 42 to 159 kW.
- Ductable Aquasnap heat pumps for commercial or industrial applications. Units include inverter fans to maximise EERs and COPs at all operating conditions.
- Eurovent energy efficiency class A and B in cooling mode and A in heating mode (in accordance with EN14511-3: 2013)
- Integrates the latest technological innovations: ozone-friendly refrigerant R-410A, scroll compressors, low-noise fans made of a composite material, auto-adaptive microprocessor control, electronic expansion valve and variable-speed pump (option).
- Available static pressure of up to 240 Pa for sizes 039 to 050 and 080 to 120, and up to 180 Pa for sizes 060 to 078 and 140 to 160.
- Low-noise scroll compressors with low vibration level.
- Vertical air heat exchangers with protection grilles on anti-vibration mountings.
- Low-noise Flying Bird IV fans, made of a composite material. Rigid fan installation for reduced start-up noise.
- Small unit footprint and a low height (1330 mm), enclosed by easily removable panels.
- Simplified electrical connections.
- Systematic operation test before shipment and quick-test function for step-by-step verification of the instruments, electrical components and motors.
- Several compressors connected in parallel. At part load, around 99% of the time, only the compressors that are necessary operate, ensuring increased energy efficiency.
- The electronic expansion device (EXV) allows operation at a lower condensing pressure (EER and COP optimisation), and dynamic superheat management optimises the utilisation of the water heat exchanger surface.
- Maintenance-free scroll compressors and fast diagnosis of possible incidents and their history via the Pro-Dialog+ control reduce maintenance costs.
- Leak-tight refrigerant circuit.
- Corrosion resistance tests, accelerated ageing test on compressor piping and fan supports and transport simulation test on a vibrating table in the laboratory.

Physical data

30RQSY		039	045	050	060	070	078	080	090	100	120	140	160
Air conditioning application as per EN14511-3:2013													
Nominal cooling capacity	kW	37	43	50	58	63	73	78	86	96	113	130	147
EER	kW/kW	2.91	2.82	2.72	2.81	2.71	2.59	2.84	2.74	2.75	2.75	2.78	2.58
Eurovent class, cooling		A	A	A	A	A	B	A	A	A	A	A	B
ESEER	kW/kW	3.98	4.08	3.95	3.87	3.82	3.75	3.89	3.79	3.94	4.15	4.27	4.19
Heating application as per EN14511-3:2013													
Nominal heating capacity	kW	42	47	53	62	70	78	80	93	101	117	139	159
COP	kW/kW	3.13	3.11	3.01	3.15	3.15	3.00	2.20	3.06	3.03	3.06	3.12	3.00
Eurovent class, heating		A	A	A	A	A	A	A	A	A	A	A	A
Operating weight*													
Standard unit without hydronic module	kg	521	528	559	573	573	580	762	930	939	994	1090	1107
Standard unit with hydronic module													
Single high-pressure pump	kg	551	558	588	602	603	610	792	961	971	1030	1129	1146
Dual high-pressure pump	kg	577	584	614	628	629	636	818	1006	1016	1078	1166	1183
Compressors		Hermetic scroll compressors. 48.3 r/s											
Circuit A/B		2/-	2/-	2/-	2/-	2/-	2/-	2/-	3/-	3/-	3/-	2/2	2/2
Refrigerant*		R-410A											
Capacity control		Pro-Dialog+											
Air heat exchangers		Grooved copper tubes and aluminium fins											
Fans		Axial Flying Bird IV with rotating shroud											
Quantity		1	1	1	1	1	1	2	2	2	2	2	2
Total air flow (at high speed)	l/s	3800	3800	3800	4600	4600	4600	7600	7600	7600	7600	9200	9200
Water heat exchanger		Direct expansion, plate heat exchanger											
Hydronic module (option)		Single or dual pump, Victaulic screen filter, safety valve, expansion tank, purge valves (water and air), pressure sensors											
Dimensions**													
Length x depth x height	mm	2109 x 1132/1297 x 1371		2142/2307 x 1132/1297 x 1371				2273 x 2122 x 1371					

NOTE: For the conditions please refer to page 73

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

** The first value is for units without filter frame, and the second value is for units with option 23B and filter frame.

Electrical data

30RQSY without hydronic module		039	045	050	060	070	078	080	090	100	120	140	160
Power circuit													
Nominal power supply	V-ph-Hz	400-3-50 ± 10%											
Control circuit supply		24 V via internal transformer											
Maximum start-up current (Un)*													
Standard unit	A	116.40	137.40	145.40	148.40	176.40	213.40	218.80	178.80	212.80	252.80	243.80	286.80
Unit with electronic starter option	A	74.70	86.50	93.80	96.20	114.40	143.30	148.80	-	-	-	-	-
Maximum operating power input**	kW	21.20	24.00	26.20	29.60	31.80	36.40	39.00	45.70	49.00	55.90	63.60	72.80
Nominal unit operating current draw***	A	28.20	31.60	35.60	38.60	42.80	53.20	58.60	60.60	66.90	82.50	85.60	106.40

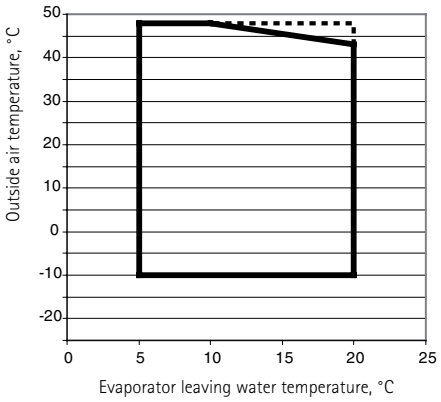
* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

** Power input, compressors and fans, at the unit operating limits (saturated suction temp. 10°C, saturated condensing temp. 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

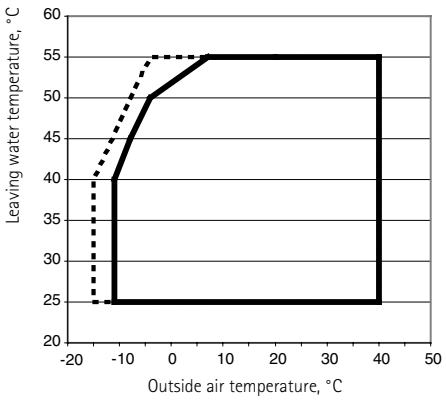
*** Standardised Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, outside air temperature 35°C.

Operating range

Cooling mode



Heating mode



Full load

Minimum load

AIR-TO-WATER HEAT PUMPS WITH INTEGRATED HYDRONIC MODULE

Heating

AQUASNAP® Reversible

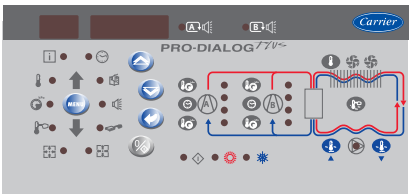
30RQ

Options

- Euro Pack: enclosure panels, water heat exchanger frost protection, main disconnect switch and low noise level
- Air heat exchanger corrosion protection
- Units for indoor installation with discharge ducts
- Low noise levels
- Grilles on all four unit faces
- Enclosure panels on each end of coils
- Winter operation
- Water heat exchanger frost protection
- Water heat exchanger and hydronic module frost protection
- Partial heat reclaim
- Master/slave operation
- Main disconnect switch with or without fuse (302-522)
- Water heat exchanger (all) or water heat exchanger and hydronic module (302-522) with aluminium jacket
- High and low-pressure single or dual-pump hydronic modules
- JBus, BacNet or LonTalk gateways
- Energy Management Module EMM
- Safety valve with three-way valve fitted
- Conforms to Australian codes
- Unit storage above 48°C
- Coil defrost resistance heaters
- Traditional Cu/Al coils
- Shell-and-tube water heat exchanger
- Connection sleeve
- Power cable connection side extension (302-522)
- Electronic starter

Features

- Eleven sizes with nominal cooling capacities from 175 to 470 kW and nominal heating capacities from 181 to 554 kW.
- State-of-the-art Aquasnap heat pumps featuring the latest technological innovations and operating on the ozone-friendly refrigerant R-410A.
- Integrated hydronic module with water pump and expansion tank.
- Low-noise scroll compressors with low vibration levels.
- V-shaped air heat exchanger coils, allowing quieter air flow across the coil.
- Low-noise 4th generation Flying Bird fans, now even quieter. Rigid fan installation prevents start-up noise.
- Simplified electrical connections.
- Fast commissioning, as all units are systematically run tested before shipment.
- Economical operation with increased energy efficiency at part load and dynamic superheat management.
- Leak-tight refrigerant circuit and reduced maintenance costs.
- Auto-adaptive control algorithm and automatic compressor unloading for increased reliability.
- Exceptional endurance tests.



Pro-Dialog Plus operator interface

Physical data, 30RQ 182-262 "B" + 30RQ 302-522 units

30RQ 182-262 "B" + 30RQ 302-522		182	202	232	262	302	342	372	402	432	462	522
Air conditioning application as per EN14511-3:2013												
Nominal cooling capacity	kW	177	198	217	250	279	309	333	368	392	435	470
EER	kW/kW	2.93	2.70	2.84	2.62	2.63	2.46	2.63	2.49	2.59	2.59	2.40
Eurovent class, cooling		B	C	C	D	D	E	D	E	D	D	E
ESEER	kW/kW	3.97	3.68	4.18	3.67	4.03	3.75	3.50	3.54	3.61	3.43	3.25
Heating application as per EN14511-3:2013												
Nominal heating capacity	kW	184	205	221	268	303	336	367	408	446	507	554
COP	kW/kW	2.85	2.83	2.98	2.85	2.73	2.79	2.84	2.74	2.79	2.79	2.72
Eurovent class, heating		C	C	C	C	D	D	C	D	D	D	D
Operating weight - standard unit*	kg	**1683**	**1785**	**1820**	**2020**	**2799**	**2986**	**3079**	**3233**	**3669**	**3909**	**4083**
Compressors		Hermetic scroll, 48.3 r/s										
Refrigerant*		R-410A										
Capacity control		Pro-Dialog Plus										
Air heat exchangers		Grooved copper tubes and aluminium fins										
Fans		Axial Flying Bird 4 fans with rotating shroud										
Quantity		4	4	4	4	5	5	6	6	7	8	8
Total air flow	l/s	18056	18056	18056	18056	22569	22569	27083	27083	31597	36111	36111
Water heat exchanger		Twin-circuit plate heat exchanger				Direct-expansion twin-circuit. shell-and-tube heat exchanger						
Dimensions												
Length x depth x height	mm	2457 x 2253 x 2297				3604 x 2253 x 2297				4798 x 2253 x 2297		

NOTE: For the conditions please refer to page 73

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data, 30RQ 182-262 "B" + 30RQ 302-522 units

30RQ (without hydronic module)		182	202	232	262	302	342	372	402	432	462	522
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V, via internal transformer										
Maximum power input* - circuits A + B/C	kW	85	98	102	127	140	159	166	191	204	229	255
Nominal current draw** - circuits A + B/C	A	113	129	135	167	185	209	219	251	269	302	334
Maximum start-up current*** - circuits A + B/C	A	353	375	348	426	448	481	492	536	558	601	645

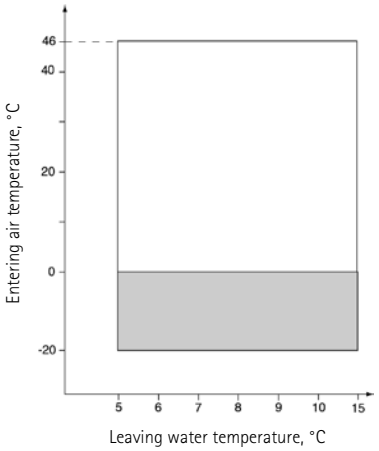
* Power input of the compressor(s) + fan(s) at maximum unit operating conditions saturated suction temperature 10°C, saturated condensing temperature 65°C at 400 V nominal voltage (values given on the unit name plate).

** Standardised Eurovent conditions: water heat exchanger entering/leaving water temperature 12°C/7°C, outside air temperature 35°C

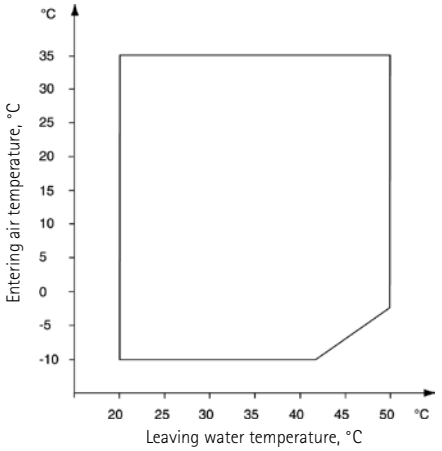
*** Maximum instantaneous starting current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

Operating range

Cooling mode



Heating mode



Note: Water heat exchanger and air heat exchanger Δt = 5 K

Operating range, standard unit

Operating range, unit equipped with option 28 (winter operation). In addition the unit must either be equipped with the frost protection option for the water heat exchanger and the hydronic module (if used), or the water loop must be protected against frost by the installer, using an anti-freeze solution.

Heating

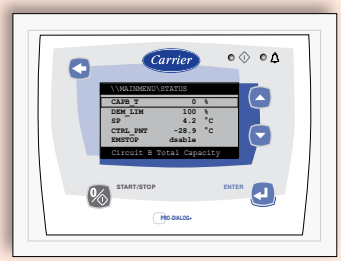
AQUAFORCE Heating

61WG

Options/accessories

- Soft starter*
- Master/slave operation*
- External disconnect handle*
- Condenser insulation*
- Low or high-pressure fixed or variable-speed single-pump hydronic module, evaporator side*
- Low or high-pressure fixed or variable-speed single-pump hydronic module, condenser side*
- JBus, BacNet and LON gateways*
- Built-in DHW + space heating control*
- High-temperature water production, condenser side, with glycol solution on the evaporator side*
- Low sound level*
- Units stackable*
- Customer water connection at the top of the unit*
- Evaporator and condenser screw or welded connection sleeves*
- Remote user interface*
- Heating System Manager types A, B and C: control of comfort heating (one or more zones) and domestic hot water production in installations where the 61WG is backed up by auxiliary boilers, electric resistance heaters or a district heating system**

* Option ** Accessory



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal heating capacities from 29 to 117 kW.
- Aquasnap heat pumps designed for commercial (offices, hotels etc.), residential (houses, apartments etc.) or industrial applications (domestic hot-water production etc.).
- Optimised for heating applications - leaving water temperature up to 65°C (without auxiliary heating), evaporator temperature down to -5°C and a COP of above 5.
- Units are equipped with the latest generation R-410A scroll compressor, optimised for high-performance.
- Large number of options: hydronic kits with or without variable water flow rate, reinforced sound insulation, stacking and connection of two units, or operation with low-temperature glycol solution down to -12°C. Unique combination of high performance and functionality in an exceptionally compact chassis.
- The high temperature makes these units compatible with most heat sources, both in new and refurbished buildings and permits domestic hot water production in significant quantities (dual setpoint).
- Units use weather compensation control and control four supplementary electric heating stages or a relief boiler.
- Complete hydronic kit for both evaporator and condenser with different levels of available pressure, with variable or fixed speed.
- Needle valve control for easier transition from the comfort mode to domestic hot water production using a collection tank (not supplied).
- Reversibility by water flow inversion in the system.
- Pro-Dialog+ control and compatibility with the Aquasmart system
- Units available with connections at the top or at the rear.
- Easy installation: small footprint, ideal for refurbished buildings, allows access in very tight plant rooms.
- The variable water flow (VWF) technology of the variable-flow pump, optimises system operation and enhances energy efficiency.
- Standard low sound level allows installation in any building type.

Physical data

61WG		020	025	030	035	040	045	050	060	070	080	090
Heating application as per EN14511-3 : 2013 - condition 1												
Heating capacity	kW	27.7	33.1	36.7	42.7	48.7	54.8	66.4	75.7	84.2	95.3	109
COP	kW/kW	4.35	4.34	4.20	4.27	4.32	4.36	4.51	4.32	4.35	4.27	4.31
Eurovent class		B	B	B	B	B	B	A	B	B	B	B
Heating application as per EN14511-3 : 2013 - condition 2												
Heating capacity	kW	29.0	34.4	38.3	44.2	50.2	57.2	68.6	78.2	88.4	100	117
COP	kW/kW	5.42	5.29	5.21	5.29	5.34	5.32	5.49	5.36	5.46	5.28	5.33
Eurovent class		A	A	A	A	A	A	A	A	A	A	A
Operating weight	kg	191	200	200	207	212	220	386	392	403	413	441
Compressors		Hermetic scroll 48.3 r/s										
Quantity		1	1	1	1	1	1	2	2	2	2	2
Number of capacity stages		1	1	1	1	1	1	2	2	2	2	2
Minimum capacity	%	100	100	100	100	100	100	50	50	50	50	50
Dimensions, standard unit**												
Width	mm	600	600	600	600	600	600	880	880	880	880	880
Depth	mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474
Height	mm	901	901	901	901	901	901	901	901	901	901	901
Refrigerant*		R-410A										
Control		Pro-Dialog+										
Evaporator		Direct-expansion plate heat exchanger										
Condenser		Plate heat exchanger										

NOTE: For the conditions please refer to page 73

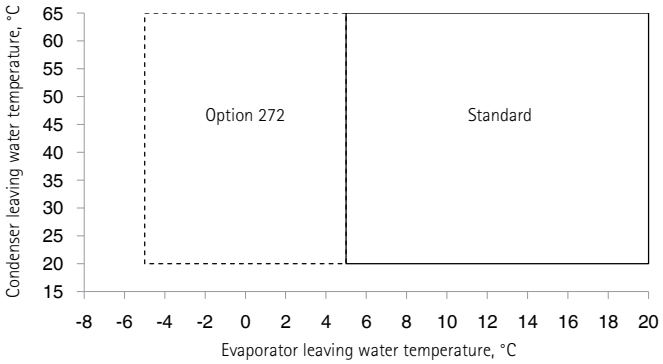
* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.
** The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

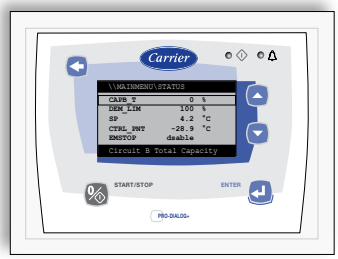
Electrical data

61WG		020	025	030	035	040	045	050	060	070	080	090
Power circuit												
Nominal voltage	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V, via internal transformer										
Maximum start-up current draw (Un)*												
Standard unit	A	98	142	142	147	158	197	162	163	171	185	228
Unit with electronic starter option	A	53.9	78.1	78.1	80.9	86.9	108.4	98	99	105	114	139
Maximum operating power input**	kW	9.7	11.4	12.7	14.6	16.5	18.6	22.8	25.4	29.2	33	37.2
Maximum operating current draw (Un)***	A	16.1	19.6	21.1	24.4	26.7	30.9	39.2	42.2	48.8	53.4	61.8

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).
** Maximum power input at the unit operating limits.
*** Maximum unit operating current at maximum unit power input and 400 V.

Operating range





Pro-Dialog+ operator interface

61WG standard unit
61WG unit with option 272 (brine to water)
Option 272: Condenser-side high-temperature water production, with glycol solution on the evaporator side

WATER-TO-WATER HEAT PUMPS

Heating

AQUAFORCE Heating

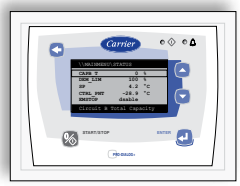
30XWH

Options/accessories

- Medium and low temperature applications
- Unit supplied in two assembled parts
- No disconnect switch, but with short-circuit protection
- Single power connection point
- Evaporator/condenser pump electrical power/control circuit options
- Service valve set
- Evaporator/condenser arrangement with one pass
- Condenser insulation
- 21 bar evaporator and condenser
- Reversed evaporator water connections
- JBus, BacNet and LON gateways
- Various condensing temperature options
- Energy Management Module EMM
- Code compliance for Switzerland and Australia
- Master/slave operation
- Touch Screen interface
- Low noise level (-3 dB(A) compared to standard unit)
- Thermal compressor insulation
- Water connection kit for welded or flanged evaporator/condenser connections

Features

- Twenty standard-efficiency sizes with nominal cooling capacities from 273 to 1732 kW and nominal heating capacities from 317 to 1969 kW and eleven high-efficiency sizes with nominal cooling capacities from 509 to 1756 kW and nominal heating capacities from 584 to 1989 kW.
- The premium solution for industrial and commercial applications that require optimal performances and maximum quality.
- Two versions: 30XW for air conditioning and refrigeration applications (see separate entry), and 30XWH for heating applications.
- Two efficiency classes: the standard-efficiency 30XWH offers an optimised balance of technical and economical aspects and superior energy efficiency, whilst the high-efficiency 30XWHP offers unequalled energy efficiency at minimised operating cost.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- Use of R-134a refrigerant with zero ozone depletion potential.
- Pro-Dialog control system.
- Flooded mechanically cleanable heat exchangers.
- Exceptional full and part load energy efficiency.
- Economizer system with electronic expansion device for increased cooling capacity (30XWHP).
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface

Touch-screen Pro-Dialog operator interface

Physical data

Standard-efficiency units 30XWH		254	304	354	402	452	552	602	652	702	802	852	1002	1052	1154	1252	1352	1452	1552†	1652†	1702†
Air conditioning application as per EN14511-3 : 2013																					
Nominal cooling capacity	kW	273	307	359	459	473	532	538	677	730	792	839	1017	1060	1141	1257	1342	1453	1547	1657	1732
EER	kW/kW	5.32	5.30	5.24	5.21	5.35	5.21	5.17	5.39	5.30	5.19	5.39	5.26	5.20	5.30	5.69	5.51	5.36	5.29	5.59	5.60
ESEER	kW/kW	5.67	5.58	5.58	5.75	5.77	5.78	5.66	6.06	6.02	5.79	5.94	6.3	6.34	6.23	6.73	6.44	6.27	6.06	6.62	6.56
Heating application as per EN14511-3 : 2013																					
Nominal heating capacity	kW	317	358	421	516	529	599	632	751	813	887	967	1138	1190	1320	1384	1481	1612	1717	1891	1969
COP	kW/kW	4.59	4.57	4.61	4.54	4.59	4.47	4.52	4.56	4.49	4.46	4.64	4.48	4.42	4.54	4.73	4.57	4.46	4.41	4.67	4.68
Operating weight*	kg	2017	2036	2072	2575	2575	2613	2644	3247	3266	3282	3492	5370	5408	5698	7066	7267	7305	7337	8681	8699
Dimensions																					
Depth	mm	928	928	928	936	936	936	936	1040	1040	1040	1042	1036	1036	1036	1156	1156	1156	1156	1902	1902
Length	mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059	2780	4025	4025	4025	4730	4730	4730	4730	4790	4790
Height	mm	1567	1567	1567	1692	1692	1692	1692	1848	1848	1848	1898	1870	1870	1925	2051	2051	2051	2051	1515	1515

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1314	1464	1612†	1762†
Air conditioning application as per EN14511-3 : 2013												
Nominal cooling capacity	kW	509	577	737	786	861	1039	1157	1323	1452	1626	1756
EER	kW/kW	5.71	5.64	5.83	5.62	5.65	5.73	5.78	5.80	5.58	5.87	5.79
ESEER	kW/kW	6.07	6.12	6.41	6.24	6.17	6.71	6.79	6.65	6.36	6.8	6.59
Heating application as per EN14511-3 : 2013												
Nominal heating capacity	kW	583	662	842	904	982	1191	1320	1509	1663	1846	1989
COP	kW/kW	4.91	4.84	4.97	4.80	4.85	4.90	4.86	4.89	4.71	4.89	4.87
Operating weight*	kg	2981	3020	3912	3947	3965	6872	6950	7542	7752	10910	10946
Dimensions, length x depth x height	mm	3059 x 936 x 1743		3290 x 1069 x 1950			4730 x 1039 x 1997		4730 x 1162 x 2051		4832 x 2129 x 1562	
Physical data for all units												
Compressors		Semi-hermetic 06T screw compressors, 50 r/s										
Refrigerant		R-134a										
Capacity control		Pro-Dialog, electronic expansion valves (EXV)										
Evaporator		Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections										
Condenser		Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections										

NOTE: For the conditions please refer to page 73.

† These models are not Eurovent certified, as they are out of Eurovent certification program scope.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

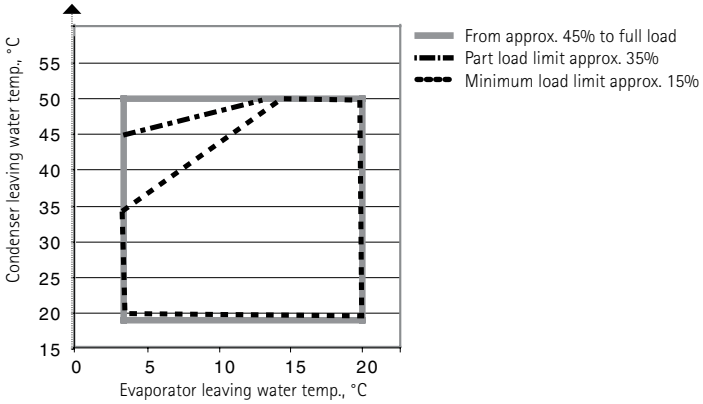
Standard-efficiency units 30XW--		254	304	354	402	452	552	602	652	702	802	852	1002	1052	1154	1252	1352	1452	1552	1652	1702
Nominal power supply, all units	V-ph-Hz	400-3-50 ± 10%																			
Control circuit, all units		24 V via the built-in transformer																			
Maximum start-up current*																					
Circuit A/circuit B	A	233/-	233/-	303/-	414/-	414/-	414/-	414/-	587/-	587/-	587/-	587/-	414/414	414/414	414/414	587/414	587/587	587/587	587/587	587/587	587/587
Maximum power input**																					
Circuit A/circuit B	kW	76/-	89/-	97/-	128/-	135/-	151/-	151/-	184/-	200/-	223/-	223/-	150/135	151/151	151/151	184/151	184/184	200/200	223/223	223/202	223/223
Maximum current drawn (Un)**																					
Circuit A/circuit B	A	123/-	145/-	160/-	206/-	217/-	242/-	242/-	295/-	317/-	351/-	351/-	242/217	242/242	242/242	295/242	295/295	317/317	351/351	351/317	351/351

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1314	1464	1612	1762
Maximum start-up current*												
Circuit A/B	A	414/-	414/-	587/-	587/-	587/-	414/414	414/414	587/414	587/587	587/587	587/587
Maximum power input**												
Circuit A/B	kW	135/-	151/-	184/-	200/-	223/-	134/134	151/151	184/151	184/184	200/200	223/223
Maximum current drawn (Un)**												
Circuit A/B	A	217/-	242/-	295/-	317/-	351/-	217/217	242/242	295/242	295/295	317/317	351/351

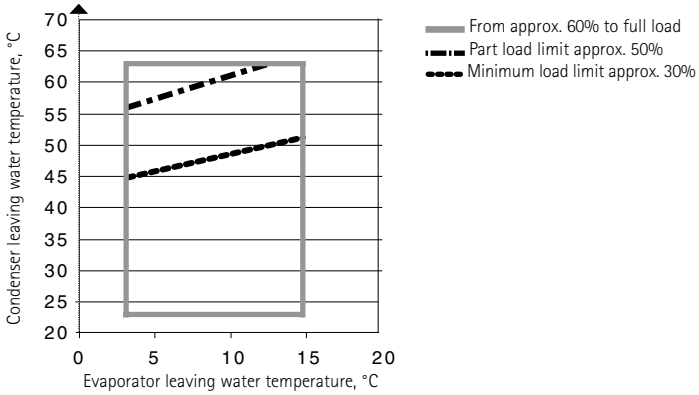
* Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range, standard units



Operating range, option 150



Heating

greenspeed AQUAFORCE

30XWHV

Options

- Condenser insulation
- Service valve set
- Evaporator/condenser pump electrical power/control circuit options
- Reversed evaporator and/or condenser water connections
- Evaporator and/or condenser with one pass
- 21 bar evaporator and/or condenser
- JBus, BacNet or LON gateways
- Additional module for communication with BacNet protocol via Ethernet (IP)
- Condensing temperature limitation
- Control for low condensing temperature systems
- Energy Management Module EMM
- Leak detection
- Code compliance for Switzerland in addition to PED code
- Code compliance for Australia
- Low noise level (-3 dB(A) compared to standard unit)
- Welded evaporator and/or condenser water connection kit
- Flanged evaporator and/or condenser water connection kit
- Thermal compressor insulation
- EMC classification according to IEC 61800-3 - class C2
- Master/slave operation
- Single power connection point (1150-1710)

Features

- Nine sizes for commercial and industrial applications with nominal heating capacities from 648 to 1932 kW.
- The units feature exclusive inverter-driven screw compressors - an evolution of the proven traditional Carrier twin-rotor screw compressor design.
- Units can provide up to 50°C on the condenser side.
- 30XWHV units are designed for high performance both at full load and at part load with COPs up to 4.6 and Eurovent energy class ratings A and B.
- New innovative Touch Pilot smart control for variable-drive screw-compressor units uses an intuitive, user-friendly interface with concise, clear information in a choice of languages.
- Compliance with IEC61800-3 - class C3.
- Inverter-driven twin-rotor screw compressors allow precise capacity matching of building load changes and significantly reduce unit power input, especially at part-load.
- Flooded mechanically cleanable heat exchangers.
- Compact design and simplified electrical and water connections for easy installation.
- R-134a refrigerant with zero ozone depletion potential.
- Leak-tight refrigerant circuit.
- Minimised operating sound level at part load.
- Improved electrical performance.

Touch Pilot operator interface

Physical data

30XWHV		580	630	810	880	1150	1280	1470†	1570†	1710†
Heating application - as per EN14511-3 : 2013										
Condition 1										
Heating capacity	kW	648	719	890	974	1261	1428	1594	1761	1932
COP	kW/kW	4.64	4.53	4.56	4.43	4.62	4.61	4.55	4.33	4.16
Eurovent class, heating		A	A	A	B	A	A	N.A	N.A	N.A
Condition 2										
Heating capacity	kW	687	767	956	1021	1335	1524	1712	1898	2067
COP	kW/kW	6.15	5.98	5.96	5.81	6.05	6.00	5.82	5.49	5.34
Eurovent class, heating		A	A	A	A	A	A	N.A	N.A	N.A
Operating weight*	kg	3152	3190	4157	4161	7322	7398	7574	7770	7808
Dimensions										
Length x depth x height	mm	3059 x 1087 x 1743		3290 x 1237 x 1950		4730 x 1164 x 1997		4730 x 1255 x 2051		
Compressor		Semi-hermetic 06T screw compressor, 60 r/s								
Quantity, circuit A/B		1/-	1/-	1/-	1/-	1/1	1/1	1/1	1/1	1/1
Capacity control		Touch Pilot, inverter-driven compressor. electronic expansion valve (EXV)								
Minimum capacity	%	20	20	20	20	10	10	10	10	10
Refrigerant*		R-134a								
Evaporator		Flooded multi-tube type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections								
Condenser		Flooded multi-tube type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections								

NOTE: For the conditions please refer to page 73.

† These models are not Eurovent certified, as they are out of Eurovent certification program scope.

* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

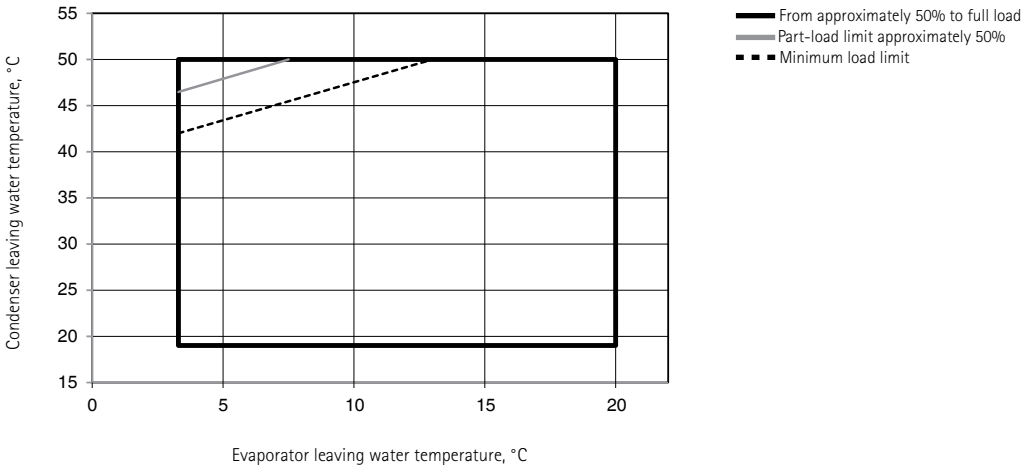
30XWHV		580	630	810	880	1150	1280	1470	1570	1710
Power circuit										
Nominal voltage	V-ph-Hz	400-3-50 ± 10%								
Control circuit supply		24 V, via internal transformer								
Start-up current*		Negligible (lower than maximum current drawn)								
Maximum power factor		0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93
Maximum power input, circuit A/B***	kW	155/-	193/-	222/-	246/-	155/155	193/193	222/193	222/222	246/246
Eurovent current draw, circuit A/B**	A	175/-	200/-	240/-	265/-	175/175	200/200	240/200	240/240	265/265
Maximum current draw (Un), circuit A/B***	A	270/-	330/-	380/-	421/-	270/270	330/330	380/330	380/380	421/421

* Instantaneous start-up current

** Eurovent unit operating conditions: evaporator entering/leaving water temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C.

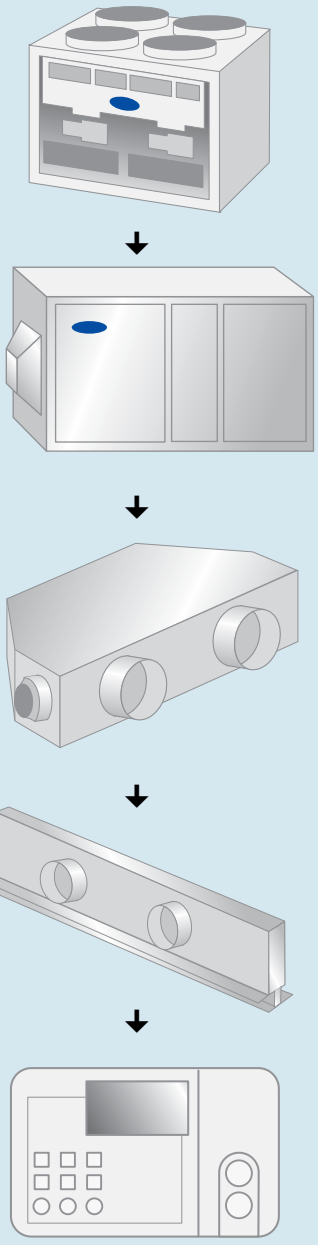
*** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range



Index

System architecture



Index






Hybrid Terminal

Type	Range	Cooling capacity, kW	Heating capacity, kW	Fresh Air flow, l/s	Page
	36XB	0.27-2	0.25-8	8-42	102

Chilled-water terminal units

Type				Range	Cooling capacity, kW	Heating capacity, kW	Air flow, l/s	Page
Cassette	Cabinet	Concealed	Ducted					
X				42GW	1.6-8.7	2.2-14.5	100-400	104
	X	X		42N	0.8-6.4	1.1-9.5	35-422	106
			X	42EM	0.7-6.8	1.1-7.8	66-237	108
			X	42DW	4.4-11.7	6.5-19.8	220-726	110
			X	42BJ	0.5-4.9	0.5-5.8	16-200	112
			X	42GM	2.2	1.7	94	114
			X	42GR	3.1	2.9-3.5	103-109	116

Air systems and terminal units

Type	Range	Cooling capacity, kW	Heating capacity, kW	Air flow, l/s	Page
Linear air diffusers: Moduboot	35BD/SR	-	-	28-180	118
System-powered linear VAV air diffusors: Moduline	37AG	-	-	19-173	120
	37AH	-	-	47-236	120
	37AS	-	-	19-78	120

Air handling units

Type	Range	Cooling capacity, kW	Heating capacity, kW	Air flow, l/s	Page
Standard units	39SQ	-	-	400-7300	122
Standard energy recovery units	39SQC/R/P	-	-	200-8200	124
Modular units	39HQ			1500-35000	126
	39MQ				128

Air treatment

36XB

Options

Communicating controller

- BMS compatible controller
- For 2 pipe, 2 pipe + electric heater and 4 pipe applications
- Aquasmart Evolution System compatible
- Variable fan speed control, demand based ventilation (CO_2 monitoring) and coil condensation control.
- Integrated window blind and lighting control.
- Motorised blinds & lighting control

Aquasmart New System Manager

Features

- The 36XB Hybrid Terminal combines the advantages of both chilled beams and fan coils: energy efficiency, high levels of comfort, extremely low noise and high indoor air quality.
- The low height profile (<200mm) of the unit facilitates installation in low height ceilings and allows increased room heights for refurbishment projects.
- Unit aesthetics can be tailored to suit site specific ceiling layouts, colour schemes and return air grill design.
- Unlike conventional chilled beams, the Carrier 36XB Hybrid terminal is fitted with a coil condensate drain pan as standard. Even if the cooling coil is supplied with chilled water at 6°C, there is no danger of condensate falling into the occupied space.
- A unit mounted changeover valve allows the coil to be connected to a 4 pipe water system so providing either cooling or heating, as required.
- If required, the Carrier 36XB Hybrid Terminal can be fitted with a room air return filter G3 to F5. This filter is accessible for cleaning / replacement without disturbing the unit / ceiling.

Principals of Operation

- Primary ventilation air is supplied to each unit inducing secondary (room) air flow over the cooling / heating coil without the need to run the unit fan.
- During periods of peak demand, the unit fan may be energised to increase secondary air flow hence and boosting the unit cooling / heating output.
- Unique Carrier supply air diffuser design ensures excellent air distribution, no 'dumping' and minimal room temperature gradients in both cooling and heating.
- The primary ventilation air volume can be controlled based on room CO_2 levels to maximise comfort and minimise system energy consumption
- The CO_2 sensor (optional) mounted in the secondary (room) air flow can modulate the supply of primary ventilation air to the unit from 2.8 to 33 l/s, depending on room occupancy.
- Using the unit fan only when there is a peak demand in the occupied space offers energy savings for up to 80% of the annual building occupancy.
- Based on a typical office profile & loads this economy can result in an average annual unit specific fan power (A-SFP) <0.05 W/l/s
- Assured air quality; in addition to varying the quantity of hygienic air, the hybrid terminal 36XB may receive a filter on the return air available from the grid.
- Energy efficiency, easy installation, comfort, low noise and high indoor air quality.

Cooling capacities

Room Temperature: Dry bulb = 27°C and humidity = 47% - Fresh air temperature 14°C

Air flow	LEC Fan speed	Chilled water temperature 7-12°C				Chilled water temperature 14-17°C				Fan consumption	Air pressure drop	Noise Pressure level	Noise level
		Total cooling capacity	Sensible cooling capacity	Coil Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Coil Water flow	Water pressure drop				
m3/h	V	W	W	l/h	KPa	W	W	l/h	KPa	W	Pa	dB(A)*	NR*
30	0	269	249	43	1	256	252	36	1	0	9	< 20	< 20
	2	537	416	68	2	330	325	58	1	3.7	10	< 20	< 20
	5	891	672	130	4	508	503	108	3	5.7	11	32	27
	8	1297	977	202	10	719	714	169	7	10.6	14	44	39
60	0	753	609	83	2	504	499	68	1	0	28	< 20	< 20
	2	830	664	97	2	542	537	79	2	3.7	29	< 20	< 20
	5	1145	895	151	6	703	697	126	4	5.7	30	32	27
	8	1465	1136	205	10	870	865	173	7	10.6	32	44	39
90	0	1107	902	122	4	748	743	101	2	0	57	< 20	< 20
	3	1128	917	126	4	759	754	104	3	3.7	57	< 20	< 20
	5	1414	1129	173	7	906	901	144	5	5.7	59	32	27
	8	1698	1346	223	12	1055	1051	187	9	10.6	61	44	39
120	0	1443	1184	158	6	985	989	130	4	0	98	35	30
	2	1508	1233	169	7	1018	1013	140	5	3.7	98	35	30
	5	1730	1401	205	10	1135	1130	173	7	5.7	99	35	30
	8	1987	1600	252	15	1271	1268	212	11	10.6	100	45	40
150	0	1767	1460	191	9	1217	1212	158	6	0	149	41	36
	2	1797	1484	194	9	1233	1228	162	7	3.7	149	41	36
	5	1980	1624	227	12	1329	1325	191	9	5.7	150	42	37
	8	2194	1791	263	71	1444	1441	223	12	10.6	151	46	41

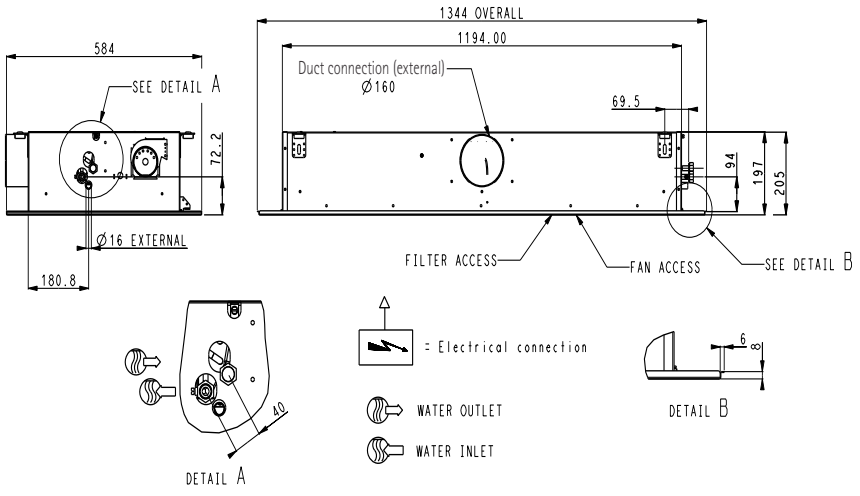
Preliminary Data :
* Sound Level guidance with acoustic atenuation -9 dB(A)

Heating capacities

Room Temperature: 20°C - Fresh air temperature 20°C

Air flow	LEC Fan speed	Hot water temperature 70-50°C			Hot water temperature 45-40°C			Fan consumption	Air pressure drop	Noise Pressure level	Noise level
		Total heating capacity	Coil Water flow	Water pressure drop	Total heating capacity	Coil Water flow	Water pressure drop				
m3/h	V	W	l/h	KPa	W	l/h	KPa	W	Pa	dB(A)*	NR*
30	0	444	18	1	241	43	1	0	9	< 20	< 20
	2	718	32	1	390	68	1	3.7	10	< 20	< 20
	5	1365	61	1	749	130	4	5.7	11	32	27
	8	2127	94	2	1179	205	9	10.6	14	44	39
60	0	873	40	1	475	83	2	0	28	< 20	< 20
	2	1009	43	1	551	97	1	3.7	29	< 20	< 20
	5	1593	68	1	877	151	5	5.7	30	32	27
	8	2195	97	2	1219	212	9	10.6	32	44	39
90	0	1275	58	1	699	122	3	0	57	< 20	< 20
	3	1316	61	1	722	126	4	3.7	57	< 20	< 20
	5	1849	83	2	1021	176	7	5.7	59	32	27
	8	2383	104	2	1327	230	11	10.6	61	44	39
120	0	1654	72	1	912	158	6	0	98	35	30
	2	1777	79	1	981	169	6	3.7	98	35	30
	5	2195	97	2	1219	212	9	5.7	99	35	30
	8	2684	119	3	1500	259	13	10.6	100	45	40
150	0	2013	90	2	1115	194	8	0	149	41	36
	2	2070	94	2	1148	198	8	3.7	149	41	36
	5	2416	104	3	1346	234	11	5.7	150	42	37
	8	2829	126	3	1583	274	15	10.6	151	46	41

Preliminary Data :
* Sound Level guidance with acoustic atenuation -9 dB(A)



IDROFAN

42GW

Options/accessories

- Two- or four-way valves
- Fresh air inlet
- Conditioned air to adjacent room kit
- Electric heater
- Auxiliary drain pan

Aquasmart New System Manager

Features

- Six sizes with integrated cooling and heating coils, two-pipe or two-pipe with electric heater, and four-pipe applications. Air flow range 100-400l/s, cooling capacity 1.6-8.7kW, heating capacity 2.2-15.5kW.
- The 42GW_AC is available with a new-generation three-speed AC motor. The 42GW_LEC is available with a variable-speed Low Energy Consumption EC motor.
- Designed for installation in false ceilings with an all-in-one air distribution grille.
- Reliable cooling and heating for offices, shops, restaurants, meeting rooms.
- Elegant air inlet grille, blends in with any room décor.
- Light and easy to install. The small chassis fits neatly with standard ceiling tiles.
- Four-way air distribution for individual comfort or localised control.
- New centrifugal fan and the fan/motor assembly ensure extra-quiet operation.
- Standard filter has a pleated surface that is 87% larger than in a conventional filter.
- Special diffuser design for rapid blending of supply and room air. Conditioned air is directed along the ceiling. Return air enters the unit through a large grille.
- High-performance condensate drain pump for fast and quiet condensate removal.
- Easy maintenance with direct access from below to all main components.

Standard controls

Electronic thermostat

- Four versions, A, B, C and D, with potentiometer
- EC versio, three configurable discrete speeds via 0-10 V signal
- Automatic or manual three-speed selection
- Automatic or manual change-over
- Electric heat control
- Comfort/economy/frost protection modes

HDB controller

- Digital display or infra-red terminal
- Unit grouping capability
- Adjustable settings and parameters
- Timer and daily scheduling

NTC communicating controller

- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds & lighting control

Physical and electrical data, units with AC motors

42GW		200C			300C			400C			500C			600C			701C		
Coil type		2 pipes			2 pipes			2 pipes			2 pipes			2 pipes			2 pipes		
Fan speed*		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	l/s	183	125	100	204	140	89	249	173	134	272	199	147	321	229	139	402	299	166
Cooling mode																			
Total cooling capacity	kW	2.40	1.80	1.55	4.00	2.90	1.90	4.70	3.50	2.85	6.30	4.50	3.40	7.20	5.50	3.70	8.70	6.60	4.05
Sensible cooling capacity	kW	2.01	1.49	1.31	3.10	2.20	1.41	3.70	2.70	2.10	4.80	3.60	2.70	5.50	4.10	2.70	6.40	4.85	3.00
Water flow rate	l/s	0.11	0.09	0.07	0.19	0.14	0.09	0.22	0.17	0.14	0.30	0.22	0.16	0.34	0.26	0.18	0.42	0.32	0.19
	l/h	413	310	267	688	499	327	808	602	490	1084	774	585	1238	946	636	1496	1135	697
Water pressure drop	kPa	11.1	6.5	4.9	11.0	6.2	2.9	14.7	8.6	6.0	23.3	13.6	8.7	11.6	7.0	3.4	19	12	5
Heating mode																			
Heating capacity	kW	3.20	2.50	2.20	5.00	4.00	2.50	6.20	4.60	3.70	8.11	6.00	4.50	10.00	7.40	4.60	11.60	9.30	5.20
Water pressure drop	kPa	10.9	5.6	4.0	11.1	5.2	1.9	16.2	8.1	5.0	18.1	10.1	6.2	10.5	6.6	3.3	17.96	11.15	4.80
Water content	l	0.55			1.1			1.1			1.6			2.4			2.4		
Sound power level	dB(A)	47	37	32	52	44	32	57	48	42	47	40	34	53	46	37	59	52	40
Sound pressure level**	dB(A)	38	28	23	43	35	23	48	39	33	38	31	25	44	37	28	59	52	40
Power input	W	58	35	25	54	32	16	94	55	35	63	39	27	85	59	33	123	90	43
Current input	A	0.27	0.17	0.12	0.24	0.14	0.07	0.41	0.24	0.16	0.30	0.17	0.12	0.46	0.27	0.14	0.63	0.41	0.19
Eurovent energy class FCEER/FCCOP		D/D			C/C			D/D			C/C			C/C			C/C		
Electric heater (high capacity)	W	1500			2500			2500			3000			3000			3000		
Current input (high capacity)	A	6.3			10.4			10.4			12.5			12.5			12.5		

42GW		200D			300D			400D			600D			701D		
Coil type		4 pipes			4 pipes			4 pipes			4 pipes			4 pipes		
Fan speed*		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	l/s	183	125	100	204	140	89	249	173	134	321	229	139	402	299	166
Cooling mode																
Total cooling capacity	kW	2.20	1.65	1.45	3.50	2.70	2.00	4.10	3.25	2.60	6.70	5.00	3.00	8.20	6.80	3.80
Sensible cooling capacity	kW	2.00	1.48	1.27	2.70	2.10	1.50	3.30	2.60	2.05	5.10	3.80	2.20	6.20	5.20	2.70
Water flow rate	l/s	0.11	0.08	0.07	0.17	0.13	0.10	0.20	0.16	0.12	0.32	0.24	0.14	0.39	0.32	0.18
	l/h	378	284	249	602	464	344	705	559	447	1152	860	516	1410	1170	654
Water pressure drop	kPa	13.7	8.2	6.6	10.1	6.6	4.0	13.1	8.9	6.2	23.2	14.1	5.9	33	24	9
Water content	l	0.4			1.1			1.1			2.4			2.4		
Heating mode																
Heating capacity	kW	1.90	1.44	1.24	6.37	5.10	3.60	6.80	5.80	5.00	11.50	8.90	6.00	14.50	11.50	7.30
Water flow rate	l/s	0.05	0.03	0.03	0.15	0.12	0.09	0.16	0.14	0.12	0.27	0.21	0.14	0.35	0.27	0.17
	l/h	163	124	107	548	439	310	585	499	430	989	765	516	1247	989	628
Water pressure drop	kPa	31.4	21.1	17.0	25.5	16.1	7.8	29.2	21.0	15.4	13.6	8.9	4.6	20	14	6
Water content	l	0.1			0.6			0.6			1.2			1.2		
Sound power level	dB(A)	47	37	32	54	45	33	57	48	42	53	46	37	59	52	40
Sound pressure level**	dB(A)	38	28	23	45	36	24	48	39	33	44	37	28	50	43	31
Power input	W	58	35	25	54	32	16	94	55	35	85	59	33	123	90	43
Current input	A	0.27	0.17	0.12	0.24	0.14	0.07	0.41	0.24	0.16	0.46	0.27	0.14	0.63	0.41	0.19
Eurovent energy class FCEER/FCCOP		E/E			C/B			D/C			C/B			C/C		

Based on Eurovent conditions:
Cooling mode (2 and 4-pipe coil): entering air temperature 27°C db/1 9°C wb, entering/leaving water temperature 7/12°C, high fan speed.
Heating mode (2-pipe coil): entering air temperature 20°C, entering water temperature 50°C, high fan speed, water flow rate as cooling mode.
Heating mode (4-pipe coil): entering air temperature 20°C, entering water temperature 70°C, high fan speed, water Δt = 10 K

* Fan speeds: 1 = high, 2 = medium, 3 = low

** Sound pressure level and NR values are based on a hypothetical sound attenuation for the room of -9 dB(A).
Note: Electrical heater version is available on all 2-pipe units.

Physical and electrical data, units with LEC motors

Note: All other data is the same as for the units with AC motors

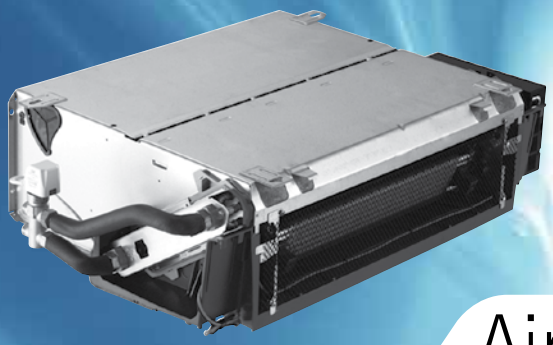
42GW		209C			309C			409C			509C			609C			709C		
Coil type		2 pipes			2 pipes			2 pipes			2 pipes			2 pipes			2 pipes		
Voltage (d.c.)	V	10	6	2	10	6	2	10	6	2	10	6	2	10	6	2	10	6	2
Air flow	l/s	183	125	100	204	140	89	249	173	134	272	199	147	321	229	139	443	299	166
Power input	W	23	10	7	33	14	7	57	23	13	25	12	7	46	23	9	115	40	11
Current input	A	0.19	0.10	0.08	0.27	0.13	0.08	0.46	0.20	0.12	0.23	0.12	0.08	0.40	0.22	0.10	0.89	0.35	0.12
Eurovent energy class FCEER/FCCOP		A/A			A/A			B/B			A/A			A/A			A/A		

42GW		209D			309D			409D			609D			709D		
Coil type		4 pipes			4 pipes			4 pipes			4 pipes			4 pipes		
Voltage (d.c.)	V	10	6	2	10	6	2	10	6	2	10	6	2	10	6	2
Air flow	l/s	183	125	100	204	140	89	249	173	134	321	229	139	443	299	166
Power input	W	23	10	7	32	14	7	57	22	13	46	23	9	115	40	11
Current input	A	0.19	0.10	0.08	0.29	0.14	0.08	0.46	0.21	0.12	0.40	0.22	0.10	0.89	0.35	0.12
Eurovent energy class FCEER/FCCOP		B/B			A/A			B/A			A/A			A/A		

Dimensions and weights

All units		42GW 200/209	42GW 300/309	42GW 400/409	42GW 500/509	42GW 600/609	42GW 700/709
Dimensions (H x L x D)	mm	298 x 569/627 x 569/627	298 x 569/627 x 569/627	298 x 569/627 x 569/627	302 x 822/879 x 822/879	302 x 822/879 x 822/879	302 x 822/879 x 822/879
Grille dimensions (H x L x D)	mm	36 x 720 x 720	36 x 720 x 720	36 x 720 x 720	37 x 960 x 960	37 x 960 x 960	37 x 960 x 960
Weight unit/weight grille	kg	14.8/3	16.5/3	16.5/3	37/5	39.6/5	39.6/5

Where two values are given the second value applies to units with two or four-way valves.



Air treatment

IDROFAN

42N

Accessories

- Supporting feet
- Supporting feet and cover panel
- Return air grille for cabinet unit
- Rear closing panel
- Cabinet on concealed units,
- Discharge air sleeve (concealed units only)
- Supporting brackets
- A and B-type thermostats
- Special installation kit
- Cold draught prevention kit - all two-pipe sizes
- Automatic changeover switch
- Air sensor with 15 m cable
- Water sensor kit with 15 m cable
- Infrared remote controller and infrared remote receiver kit
- ZUI1 or ZUI2 interface
- SUI1 or SUI2 (with/without fan speed selection)

Aquasmart New System Manager

Features

- Eleven sizes with two-pipe, two-pipe changeover or four-pipe coil; air flow range 35-422 l/s, cooling capacity range 0.8-6.4 kW, heating capacity range 1.1-9.5 kW.
- The 42N_S is available with a new-generation three- or five-speed AC motor. The 42N_E is available with a variable-speed low energy consumption EC motor.
- Concealed or cabinet chilled-water fan coil system, designed for vertical and horizontal installation in a room or above a false ceiling.
- Economical cooling and heating for hotels, commercial and residential applications.
- Cabinet version complete with control terminal.
- Combines aesthetic slim-line design with high installation flexibility.
- Two fan types, a tangential fan for ultra-low noise level and a centrifugal fan for high air distribution system compatibility.
- Factory-mounted PTC electric heater with low and high capacity settings.
- Low hydraulic pressure drop with a valve mounted.
- Quick installation with factory-mounted options (controls, valves).
- LEC models enhance unit performance offering reduced energy costs, improved comfort, maximum flexibility and extended operating life.

Standard controls

Electronic thermostat

- Four versions, A, B, C and D, with potentiometer
- EC versio, three configurable discrete speeds via 0-10 V signal
- Automatic or manual three-speed selection
- Automatic or manual change-over
- Electric heat control
- Comfort/economy/frost protection modes

HDB controller

- Digital display or infra-red terminal
- Unit grouping capability
- Adjustable settings and parameters
- Timer and daily scheduling

NTC communicating controller

- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds & lighting control

Physical and electrical data, units with AC motors

42N_S, 2-pipe coil		15					20					26		
Fan speed		**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**3**	**2**	**1**
Fan type		One, tangential					One, centrifugal					One, centrifugal		
Air flow	l/s-m³/h	35-125	56-200	69-250	84-300	97-350	59-215	80-285	92-330	107-385	128-460	93-335	149-536	196-706
Cooling mode*														
Total cooling capacity	kW	0.83	1.07	1.19	1.34	1.49	1.27	1.81	1.9	2.34	2.32	2.1	3	3.6
Sensible cooling capacity	kW	0.7	0.93	1.03	1.19	1.31	0.97	1.42	1.5	1.85	1.9	1.65	2.35	2.9
Water flow rate	l/s-l/h	0.04-143	0.05-184	0.06-205	0.06-230	0.07-256	0.07-239	0.09-311	0.10-358	0.11-402	0.12-437	0.10-361	0.14-516	0.17-619
Water pressure drop	kPa	6.2	9.6	11.5	14.1	16.9	2.8	4.2	5.3	6.4	7.3	5.4	9.5	12.7
Heating mode**														
Heating capacity	kW	1.14	1.42	1.66	1.89	2.09	1.7	2.1	2.54	2.87	3.18	2.56	3.68	4.38
Water pressure drop	kPa	4.9	7.8	9.4	11.6	14	2.2	3.4	4.3	5.2	6	4.4	7.8	10.6
Sound power/sound pressure***	dB(A)	28/19	37/28	42/33	47/38	51/42	29/20	38/29	42/33	46/37	50/41	44/35	54/45	61/52
Electrical data														
Power input	W	16	17	19	23	30	29	30	31	34	36	45	55	65
Current drawn	A	0.08	0.08	0.09	0.11	0.13	0.13	0.13	0.14	0.15	0.16	0.21	0.25	0.3
Electric heater (high/low capacity)		800/500 W, 3.48/2.18 A					1000/500 W, 4.35/2.18 A					1000/500 W, 4.35/2.18 A		
Eurovent energy class FCEER/FCCOP		D/D					E/E					E/E		

42N_S, 2-pipe coil		30					42			45					65		
Fan speed		**5**	**4**	**3**	**2**	**1**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**3**	**2**	**1**
Fan type		Two, centrifugal					Two, centrifugal			Two, centrifugal					Two, centrifugal		
Air flow	l/s-m³/h	97-350	126-455	153-550	182-655	207-745	147-531	222-798	268-965	146-525	185-665	224-805	277-995	333-1195	237-853	331-1191	422-1519
Cooling mode*																	
Total cooling capacity	kW	2.07	2.54	3.01	3.46	3.7	3	4	4.5	2.6	3.37	3.98	4.74	5.45	3.9	5.45	6.35
Sensible cooling capacity	kW	1.4	1.96	2.35	2.84	3.1	2.35	3.3	3.85	2.12	2.78	3.3	3.98	4.55	3.2	4.6	5.1
Water flow rate	l/s-l/h	0.10-356	0.12-437	0.14-518	0.17-595	0.18-636	0.14-516	0.19-688	0.22-774	0.12-447	0.16-580	0.19-695	0.23-815	0.26-937	0.19-671	0.26-937	0.30-1092
Water pressure drop	kPa	6	8.6	11.5	14.6	16.4	11.4	18.8	23	3.2	5	6.7	9	11.5	6.4	11.5	15
Heating mode**																	
Heating capacity	kW	2.86	3.54	4.18	4.8	5.29	4.05	5.55	6.4	4	5.05	5.9	6.9	8.08	6.1	8	9.5
Water pressure drop	kPa	4.8	6.9	9.2	11.7	13.1	9.2	15	18.4	2.7	4.2	5.5	7.5	9.5	5.4	9.5	12.3
Water content	l	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Sound power/sound pressure***	dB(A)	36/27	42/33	47/38	51/42	54/45	47/38	57/48	62/53	41/32	47/38	53/44	57/48	62/53	54/45	62/53	68/59
Electrical data																	
Power input	W	42	44	46	50	57	45	75	100	69	77	83	92	128	90	125	165
Current drawn	A	0.19	0.2	0.21	0.23	0.25	0.21	0.35	0.45	0.31	0.34	0.37	0.41	0.55	0.41	0.55	0.72
Electric heater (high/low capacity)		2000/1000 W, 8.70/4.35 A					2000/1000 W, 8.70/4.35 A			2000/1000 W, 8.70/4.35 A					2000/1000 W, 8.70/4.35 A		
Eurovent energy class FCEER/FCCOP		D/D					D/D			E/E					E/E		

Physical and electrical data, units with LEC motors

42N_E, 2-pipe coil		19					29					39					49				
Fan speed	%	**20**	**40**	**60**	**80**	**100**	**20**	**40**	**60**	**80**	**100**	**20**	**40**	**60**	**80**	**100**	**20**	**40**	**60**	**80**	**100**
Fan type		One, tangential					One, centrifugal					Two, centrifugal					Two, centrifugal				
Air flow	l/s	35	56	69	84	97	59	80	92	107	128	97	126	153	182	207	146	185	224	277	333
	m³/h	125	200	250	300	350	215	285	330	385	460	350	455	550	655	745	525	665	805	995	1195
Cooling mode*																					
Total cooling capacity	kW	0.83	1.07	1.19	1.34	1.49	1.29	1.81	1.93	2.34	2.36	2.07	2.54	3.01	3.46	3.7	2.6	3.37	3.98	4.74	5.45
Sensible cooling capacity	kW	0.7	0.93	1.03	1.19	1.31	0.91	1.42	1.41	1.85	1.79	1.4	1.96	2.35	2.84	3.1	2.12	2.78	3.3	3.98	4.55
Water flow rate	l/s	0.04	0.05	0.06	0.06	0.07	0.07	0.09	0.1	0.11	0.12	0.1	0.12	0.14	0.17	0.18	0.12	0.16	0.19	0.23	0.26
	l/h	143	184	205	230	256	239	311	358	402	437	356	437	518	595	636	447	580	685	815	937
Water pressure drop	kPa	6.2	9.6	11.5	14.1	16.9	2.8	4.2	5.3	6.4	7.3	6	8.6	11.5	14.6	16.4	3.2	5	6.7	9	11.5
Heating mode**																					
Heating capacity	kW	1.14	1.42	1.66	1.89	2.09	1.57	2.1	2.35	2.87	2.94	2.86	3.54	4.18	4.8	5.29	4	5.05	5.9	6.9	8.08
Water pressure drop	kPa	4.9	7.8	9.4	11.6	14	2.2	3.4	4.3	5.2	6	4.8	6.9	9.2	11.7	13.1	2.7	4.2	5.5	7.5	9.5
Sound power/sound pressure***	dB(A)	28/19	37/28	42/33	47/38	51/42	29/20	38/29	42/33	46/37	50/41	36/27	42/33	47/38	51/42	54/45	41/32	47/38	53/44	57/48	62/53
Electrical data																					
Power input	W	3	4	7	10	14	3	5	7	10	15	5	9	15	23	35	8	14	25	39	65
Current drawn	A	0.08	0.09	0.1	0.11	0.15	0.09	0.09	0.11	0.13	0.16	0.1	0.12	0.16	0.21	0.29	0.1	0.15	0.22	0.35	0.52
Electric heater (high/low capacity)		800/500 W, 3.48/2.18 A					100/500 W, 4.35/2.18 A					2000/1000 W, 8.70/4.35 A					2000/1000 W, 8.70/4.35 A				
Eurovent energy class FCEER/FCCOP		A/A					A/A					A/A					A/A				

* Eurovent conditions: Entering air temperature = 27°C db/19°C wb – entering/leaving water temperature = 7°C/12°C, high fan speed.
** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 50°C, same water flow rate as in cooling mode.
*** Based on a hypothetical acoustic attenuation for the room and the air distribution system of -9 dB(A).

Note: For data on 4-pipe coils please refer to the specific product documentation.

Dimensions and weights

		Vertical units with cabinet				Horizontal units with cabinet				Horizontal concealed units				Vertical concealed units			
		S15	**S20-26**	**S30-42**	**S45-65**	**S15**	**S20-26**	**S30-42**	**S45-65**	**S15**	**S20-26**	**S30-42**	**S45-65**	**S15**	**S20-26**	**S30-42**	**S45-65**
		E19	**E29**	**E39**	**E49**	**E19**	**E29**	**E39**	**E49**	**E19**	**E29**	**E39**	**E49**	**E19**	**E29**	**E39**	**E49**
Length	**mm**	830	1030	1230	1430	830	1030	1230	1430	606	806	1006	1206	606	806	1006	1206
Width	**mm**	220	220	220	220	657	657	657	657	518	518	518	518	220	220	220	220
Height	**mm**	657	657	657	657	220	220	220	220	220	220	220	220	640	640	640	640
Weight	**kg**	17	19	22	35	17	19	22	35	13	15	16	28	13	15	16	28

IDROFAN

42EM

Options/accessories

- Wall-mounted infrared receiver
- Factory-mounted two- or four-way valves

Standard controls

Electronic thermostat

- 2 versions, A + B, with potentiometer
- Automatic or manual three-speed selection
- Automatic or manual change-over
- Electric heat control
- Comfort/economy/frost protection modes

HDB controller

- Digital display or infra-red terminal
- Unit grouping capability
- Adjustable settings and parameters
- Timer and daily scheduling

NTC communicating controller

- Network communication
- Aquasmart Evolution compatible
- IAQ and DCV management
- Motorised blinds & lighting control

Features

- Different sizes with two-pipe, two-pipe plus electric heater or four-pipe coils, with an air flow range from 66 to 237l/s, a cooling capacity range from 0.7 to 6.8kW and a heating capacity range from of 1.1 to 7.8kW.
- Decentralised compact ducted chilled-water fan coil system, designed for installation in plant rooms. This allows centralised service and maintenance.
- Reliable and economical cooling and heating for light commercial and office applications.
- Low height of 250 mm.
- Installation flexibility with two versions: modular or compact.
- Compatible with the 35BD air diffuser range.
- Air outlet modularity with different spigots.
- Extremely low sound level in the ducting of the air distribution system.
- Six-speed fan motor, offering a choice of several medium comfort speeds.
- Available with low-consumption variable-speed EC motor (LEC).
- High-pressure centrifugal fans, compatible with all main air distribution systems.
- High-efficiency EU3 filter as standard.
- Safe factory-installed electric heater for single or two-stage hot water heating.
- Low water pressure drop with a valve mounted, compatible with all chiller pump kits.
- Quick installation with factory-installed options (controls, valves).
- Atmosphera size 09, 19, 29 and 39 is equipped with the variable-speed low-consumption LEC fan motor assembly, that is controlled by a 0 to 10 V signal, available with the Carrier NTC type electronic control.

35BD linear diffuser (supply and return air)

Aquasmart New System Manager

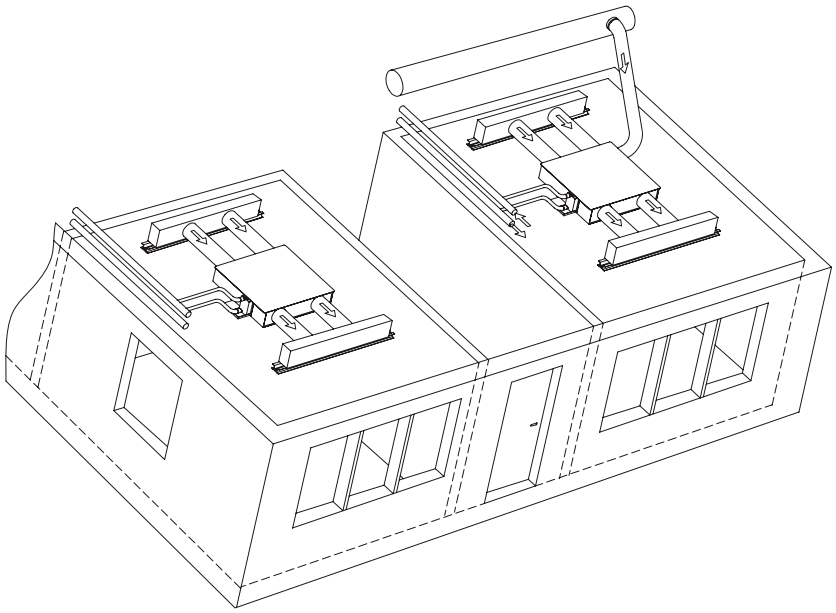
Physical data

42EM		05			09			10			19			22			29			32			39		
Fan speed		L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
Air flow	l/s	58	86	90	35	110	133	74	119	132	34	127	151	85	173	199	55	211	237	85	173	199	55	211	237
	m^3/h	210	309	324	125	395	480	266	427	475	124	456	545	306	623	716	198	760	853	306	623	716	198	760	853
Available static pressure	Pa	23	50	58	1	50	75	19	50	62	1	50	75	12	50	66	3	50	63	12	50	66	3	50	63
Cooling mode, two pipes*																									
Total cooling capacity	kW	1.57	2.18	2.27	0.99	2.65	3.07	1.88	2.76	3	0.89	2.75	3.14	2.32	4.23	4.7	1.56	4.92	5.36	2.84	5.34	6.02	1.71	6.18	6.8
Sensible cooling capacity	kW	1.14	1.61	1.68	0.7	1.99	2.34	1.39	2.11	2.31	0.64	2.09	2.43	1.7	3.21	3.61	1.13	3.8	4.18	1.92	3.76	4.23	1.23	4.34	4.81
Water flow rate	l/h	0.08	0.10	0.11	0.05	0.13	0.15	0.09	0.13	0.14	0.05	0.14	0.16	0.11	0.20	0.22	0.07	0.23	0.26	0.13	0.26	0.29	0.09	0.30	0.32
	l/s	270	374	389	169	457	526	321	475	516	162	499	569	399	726	808	269	845	921	484	918	1034	313	1062	1166
Water pressure drop	kPa	13	24	25	5	32	42	11	23	27	3	25	33	9	30	36	4	39	45	9	32	41	4	42	49
Water content	l	0.35	0.35	0.35	0.35	0.35	0.35	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1	1	1	1.7	1.7	1.7	1.7	1.7	1.7
Heating mode, two pipes**																									
Heating capacity	kW	1.91	2.69	2.8	1.18	3.3	3.88	2.44	3.74	4.1	1	3.36	3.91	2.87	5.44	6.13	1.9	6.43	7.08	3.05	5.94	6.72	1.99	7.07	7.82
Cooling mode, four pipes*																									
Total cooling capacity	kW	1.43	1.98	2.06	0.9	2.41	2.78	1.78	2.55	2.75	0.92	2.67	3.01	2.23	3.96	4.38	1.51	4.57	4.95	2.75	5.18	5.83	1.78	5.99	6.57
Sensible cooling capacity	kW	1.08	1.52	1.58	0.66	1.87	2.19	1.34	1.99	2.16	0.67	2.1	2.4	1.65	3.06	3.43	1.1	3.59	3.94	1.89	3.65	4.14	1.23	4.26	4.7
Water flow rate	l/s	0.07	0.10	0.10	0.04	0.12	0.13	0.09	0.12	0.13	0.04	0.13	0.14	0.11	0.19	0.21	0.07	0.22	0.24	0.13	0.25	0.28	0.09	0.29	0.31
	l/h	247	342	355	157	415	478	310	446	482	155	457	518	382	679	753	260	785	850	472	890	1002	306	1030	1127
Water pressure drop	kPa	9	17	19	4	16	22	14	28	33	4	31	39	10	29	35	4	44	43	12	42	53	5	53	54
Water content	l	0.32	0.32	0.32	0.32	0.32	0.32	0.45	0.45	0.45	0.45	0.45	0.45	0.8	0.8	0.8	0.8	0.8	0.8	1.5	1.5	1.5	1.5	1.5	1.5
Heating mode, four pipes***																									
Heating capacity	kW	1.47	2	2.08	0.9	2.41	2.78	2.43	3.46	3.72	1.01	2.85	3.22	2.29	3.98	4.39	1.57	4.57	4.95	2.29	3.98	4.39	1.47	4.09	4.4
Water flow rate	l/h	0.04	0.05	0.05	0.02	0.06	0.07	0.06	0.08	0.09	0.03	0.09	0.10	0.06	0.10	0.11	0.04	0.11	0.12	0.06	0.10	0.11	0.04	0.10	0.11
	l/s	129	175	182	83	212	243	209	298	320	110	311	352	201	349	386	138	402	435	201	349	386	130	360	389
Water pressure drop	kPa	10	17	19	3	25	32	7	14	16	2	16	20	3	9	10	2	11	13	3	9	10	1	9	11
Water content	l	0.11	0.11	0.11	0.11	0.11	0.11	0.15	0.15	0.15	0.15	0.15	0.15	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Eurovent energy class FCEER†		D/D			B/B			C/D			B/B			D/D			A/A			C/C			A/A		
Eurovent energy class FCCOP†		D/D			A/B			C/C			A/B			C/D			A/A			C/D			A/A		
Electric heater		230 V ± 15 % - 1 ph - 50 Hz																							
Maximum capacity	W	1000			1000			1000			1000			2000			2000			2000			2000		
Current drawn	A	4.35			4.35			4.35			4.35			8.7			8.7			8.7			8.7		
Sound levels																									
Sound power level (return and radiated)	dB(A)	43	54	57	33	55	56	41	51	53	34	53	58	39	54	57	43	53	55	39	54	57	43	53	55
Sound power level (supply)	dB(A)	42	49	50	29	50	55	38	49	51	32	51	56	37	52	55	43	51	53	37	52	55	43	51	53
Electrical data, motor		1 ph - 50 Hz - 230 V ± 15 %																							
Power input	W	45	77	102	4	45	76	44	78	110	6	52	83	62	112	128	4	68	92	62	112	128	4	73	96
Current drawn	A	0.2	0.34	0.45				0.17	0.35	0.48				0.29	0.52	0.62				0.29	0.52	0.62			
Air filter (G3)	mm	230 x 420			230 x 420			230 x 570			230 x 570			230 x 990			230 x 990			230 x 990			230 x 990		
Technical data		Connection diameter, cold and hot-water coils: 1/2" gas (unit nut female), spigot connection diameter 200 mm																							
Height x depth x length	mm	250 x 700 x 870			250 x 700 x 870			250 x 850 x 870			250 x 850 x 870			250 x 1270 x 870			250 x 1270 x 870			250 x 1270 x 870			250 x 1270 x 870		
Unit weight	kg	17			22			22			22			41			39			43			41		

Fan speed: L = Low, M = Medium, H = High

* Eurovent conditions: Entering air temperature = 27°C db/47% rh – entering water temperature = 7°C, water temperature difference = 5 K.
** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 50°C, same water flow rate as in cooling.
*** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 70°C, water temperature difference = 10 K.
† The first value is for two-pipe coils and the second value is for four-pipe coils. La première valeur correspond aux batteries à 2 tubes et la seconde valeur aux batteries à 4 tubes.

NOTE: Models 2x include sizes 21, 22, 23 and 29 with different speed arrangements. Models 3x include sizes 31, 32, 33 and 39 with different speed arrangements.



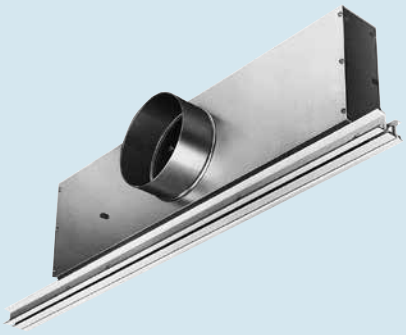
Air treatment

IDROFAN

42DW

Options/accessories

- Factory-installed two- or four-way valves
- High-efficiency filter



35BD linear diffuser (supply and return air)

Aquasmart New System Manager

Features

- Four sizes with two-pipe, two-pipe plus electric heater or four-pipe coils; air flow range 220-726 l/s, cooling capacity 4.4-11.7 kW, heating capacity 6.5-19.8 kW.
- Compact ducted chilled-water fan coil units for installation above false ceilings.
- Reliable, efficient heating and cooling for commercial and residential applications.
- Minimised size, using a V-shaped coil, and reduced height of 285 mm.
- Air return from the rear or below for increased installation flexibility.
- Air outlet modularity (sleeve or spigots), outlets on the front or at the sides.
- High-capacity unit with low sound levels.
- Four-speed motor, offering a choice of two medium comfort speeds.
- High-pressure centrifugal fans.
- Compatible with the 35BD air diffuser range.
- Safe factory-installed electric heater for single or two-stage hot water heating.
- Low hydraulic pressure drop with a valve mounted, compatible with all chiller pump kits.
- Quick installation with factory-installed options (controls, valves).
- Improved market competitiveness.

Standard controls

Electronic thermostat

- Two versions, A and B with potentiometer
- EC versio, three configurable discrete speeds via 0-10 V signal
- Automatic or manual three-speed selection
- Automatic or manual change-over
- Electric heat control
- Comfort/economy/frost protection modes

HDB controller

- Digital display or infra-red terminal
- Unit grouping capability
- Adjustable settings and parameters
- Timer and daily scheduling

NTC communicating controller

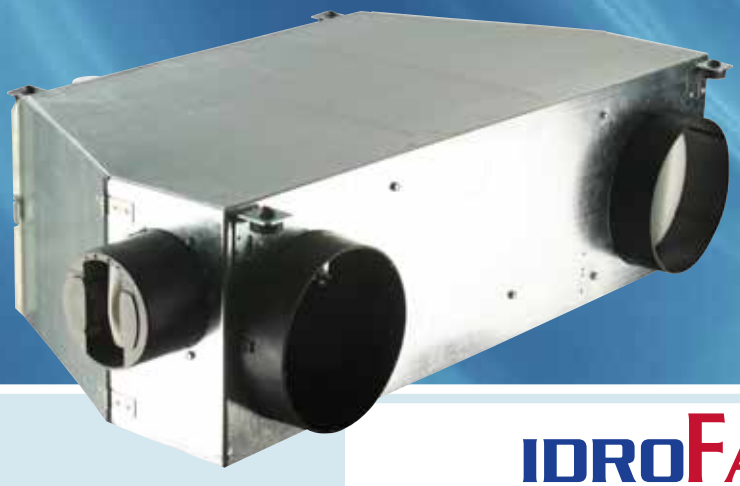
- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds & lighting control

Physical data

Unit size		42DWC 07				42DWC 09				42DWC 12			
Fan speed		**Low**	**Medium**	**High**	**Super high**	**Low**	**Medium**	**High**	**Super high**	**Low**	**Medium**	**High**	**Super high**
Fan													
Air flow	l/s	228	250	260	273	253	303	349	372	478	563	632	668
	m^3/h	820	900	935	983	910	1090	1255	1338	1720	2025	2275	2403
Static pressure	Pa	33	50	55	59	35	50	65	75	35	50	60	70
Cooling mode													
Total cooling capacity	kW	5.08	5.5	5.67	5.88	5.88	6.81	7.69	8.05	9.29	10.4	11.2	11.6
Sensible cooling capacity	kW	4	4.33	4.47	4.66	4.54	5.32	6.05	6.37	7.03	7.95	8.66	9.68
Water flow rate	l/s	0.24	0.26	0.27	0.28	0.28	0.33	0.37	0.38	0.55	0.49	0.53	0.54
	l/h	849	947	980	1010	1012	1173	1320	1385	1992	1776	1897	1950
Water pressure drop	kPa	16	21	23	25	16	22	27	30	38	45	54	60
Heating mode, 2 pipes													
Heating capacity	kW	6.74	7.28	7.60	7.78	7.95	9.31	10.10	11.02	12.21	13.79	15.19	16.58
Water pressure drop	kPa	16	21	23	25	16	22	27	30	38	45	55	60
Heating mode, 4 pipes													
Heating capacity	kW	-	-	-		-	-	-	-	-	-	-	-
Water flow rate	l/h	-	-	-		-	-	-	-	-	-	-	-
	l/h	-	-	-		-	-	-	-	-	-	-	-
Water pressure drop	kPa	-	-	-		-	-	-	-	-	-	-	-
Electric heater capacity	W	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Sound levels													
Sound power level	dBA	55	57	58	59	56	60	64	65	62	66	68	70
Sound pressure level*	dBA	38	40	41	42	39	43	47	48	45	49	51	53
NR value		35	37	38	39	35	40	44	45	41	45	48	50
Power supply	V-ph-Hz	230-1-50				230-1-50				230-1-50			
Power input	W	117	130	143	150	125	170	200	225	265	310	360	380
Current draw	A	0.51	0.57	0.62	0.65	0.54	0.74	0.87	0.98	1.15	1.35	1.57	1.65
Dimensions													
Coil outlet/inlet diameter	inch	3/4				3/4				3/4			
Length	mm	925				925				1325			
Height	mm	285				285				285			
Depth	mm	750				750				750			
Weight (without/with electric heater)	kg	35/39				37/41				48/53			

Unit size		42DWC 16				42DWD 09				42DWD 16			
Fan speed		**Low**	**Medium**	**High**	**Super high**	**Low**	**Medium**	**High**	**Super high**	**Low**	**Medium**	**High**	**Super high**
Fan													
Air flow	l/s	600	656	692	726	253	303	349	372	600	656	692	726
	m^3/h	2160	2360	2490	2614	910	1090	1255	1338	2160	2360	2490	2614
Static pressure	Pa	40	50	55	61	35	50	65	75	40	50	55	61
Cooling mode													
Total cooling capacity	kW	12.00	12.70	13.40	13.71	5.56	6.39	7.06	7.32	10.60	11.30	11.70	11.66
Sensible cooling capacity	kW	9.39	10.00	10.70	10.53	4.25	4.95	5.51	5.82	8.68	9.35	9.74	9.68
Water flow rate	l/s	0.59	0.64	0.64	0.67	0.27	0.30	0.34	0.35	0.51	0.54	0.55	0.56
	l/h	2135	2305	2309	2425	955	1097	1210	1259	1831	1929	1966	2004
Water pressure drop	kPa	48.3	56.1	54.3	58.4	21	25	30	33	43	48	50	52
Heating mode, 2 pipes													
Heating capacity	kW	16.7	17.9	18.9	19.76	-	-	-	-	-	-	-	-
Water pressure drop	kPa	45	56.1	54.2	58.4	-	-	-	-	-	-	-	-
Heating mode, 4 pipes													
Heating capacity	kW	-	-	-		7.02	7.70	8.35	8.83	14.30	15.30	15.90	15.93
Water flow rate	l/h	-	-	-		0.17	0.19	0.20	0.22	0.36	0.38	0.39	0.39
	l/h	-	-	-		604	677	732	777	1278	1353	1395	1400
Water pressure drop	kPa	-	-	-		13	12	17	18	53	60	63	65
Electric heater capacity	W	3000	3000	3000	3000	-	-	-	-	-	-	-	-
Sound levels													
Sound power level	dBA	68	70	72	73	56	60	64	65	68	70	72	73
Sound pressure level*	dBA	51	53	55	56	39	43	47	48	51	53	55	56
NR value		48	49	51	52	35	40	44	45	48	49	51	52
Power supply	V-ph-Hz	230-1-50				230-1-50				230-1-50			
Power input	W	370	410	430	450	135	175	197.5	220	400	460	485	510
Current draw	A	1.61	1.78	1.87	1.96	0.59	0.76	0.86	0.96	1.74	2	2.11	2.22
Dimensions													
Coil outlet/inlet diameter	inch	3/4				3/4				3/4			
Length	mm	1325				925				1325			
Height	mm	285				285				285			
Depth	mm	750				750				750			
Weight (without/with electric heater)	kg	53/58				37				53			

Based on Eurovent rating standards:
Cooling: Entering/leaving air temperature = 27°C db/19°C wb – entering/leaving water temperature = 7°C/12°C.
Heating (2 pipes): Entering air temperature = 20°C– entering water temperature = 50°C, same water flow rate as in cooling.
Heating (4 pipes): Entering air temperature = 20°C – entering/leaving water temperature = 70°C/60°C.
* Based on a hypothetical sound attenuation for the room and the system of -17 dB(A).



Air treatment

IDROFAN

42BJ

Options/accessories

- Factory-installed two- or four-way valves
- High-efficiency filter
- Condensate pump

Standard controls

NTC communicating controller

- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds and lighting control

Aquasmart New System Manager

Features

- Three sizes with two-pipe, two-pipe plus electric heater or 4-pipe coils, with an air flow range from 16 to 200l/s, a cooling capacity range from 0.5 to 4.9kW and a heating capacity range from 0.5 to 5.8kW.
- Compact, U-shaped ducted chilled-water fan coil systems, designed for installation above false ceilings in corridors.
- Reliable and economical cooling and heating for light commercial and office applications.
- Includes a centrifugal fan with a low-energy consumption (LEC) motor. This direct-drive motor is electronically commutated (EC motor). It is piloted by a 0-10 V signal that permits operation with a wide range of rotational speeds, varying from the base setting and is precise, simple and quiet. It also includes an air filter, a fresh air inlet with adjustable air quantity, a chilled-water cooling coil and a hot-water heating coil and/or an electric resistance heater.
- U-shape model with inlet and outlet on the same side.
- Compatible with the 35BD air diffuser range.
- Low height of 270 mm (sizes 1.9 and 2.9).
- Extra low sound level in ducted air distribution system.
- High-pressure centrifugal fans, compatible with air distribution systems up to 300 Pa.
- High-efficiency F5 or F6 filter.
- Safe factory-installed electric heater for single or two-stage hot water heating.
- Low hydraulic pressure drop with a valve mounted, compatible with all chiller pump kits.
- Quick installation with factory-installed options (controls, valves).
- Available with demand control ventilation (DCV) and CO_2 sensor.
- Improved market competitiveness.

35BD linear diffuser (supply and return air)

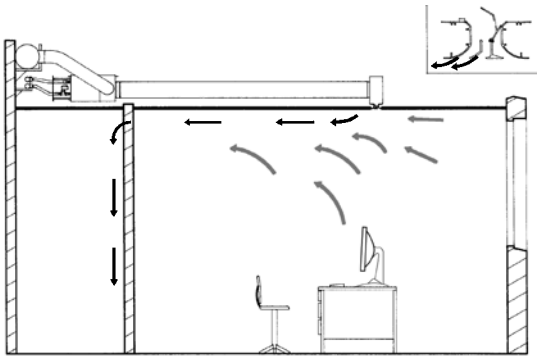
Physical and electrical data

42BJ ICM LEC		1.9			2.9			4.9		
Fan speed*		L	M	H	L	M	H	L	M	H
Air flow	l/s	16	145	201	24	160	223	28	148	204
	m^3/h	56	521	722	88	575	803	101	534	733
Available static pressure	Pa	1	50	97	1	50	99	3	50	92
Cooling mode**										
Total cooling capacity	kW	0.45	2.99	3.74	0.66	3.95	5.26	1.12	3.94	4.91
Sensible cooling capacity	kW	0.36	2.34	3.00	0.46	2.91	3.95	0.75	2.78	3.53
Water flow rate	l/s	0.02	0.12	0.17	0.03	0.19	0.25	0.06	0.25	0.26
	l/h	80	448	628	118	699	912	224	884	935
Water pressure drop	kPa	2	27	47	2	39	61	5	61	68
Water content	l	0.9	0.9	0.9	1.2	1.2	1.2	1.5	1.5	1.5
Two-pipe heating mode***										
Heating capacity	kW	0.51	3.56	4.45	0.75	4.72	6.33	1.19	4.53	5.77
Eurovent energy class FCEER/FCCOP		C/C			B/B			B/B		
Four-pipe heating mode****										
Heating capacity	kW	0.62	3.12	3.70	1.08	4.30	5.18	1.87	5.47	6.54
Water flow rate	l/s	0.02	0.07	0.10	0.03	0.10	0.12	0.05	0.15	0.16
	l/h	60	267	348	94	376	449	168	550	577
Water pressure drop	kPa	1	15	23	4	32	41	8	67	73
Water content	l	0.2	0.2	0.2	0.29	0.29	0.29	0.45	0.45	0.45
Eurovent energy class FCEER/FCCOP		C/C			B/B			B/A		
Electric heater	V-ph-Hz	230-1-50								
Maximum capacity	kW	0.5	1.9	2.23	0.75	2.12	2.25	1	2.25	2.25
Maximum current drawn	A	11	11	11	11	11	11	11	11	11
Sound levels										
Sound power level (return + radiated)	dB(A)	29	53	59	34	52	59	32	56	61
Sound power level (supply)	dB(A)	26	59	66	20	63	69	31	65	72
Global sound power level	dB(A)	31	61	67	34	63	69	34	65	72
Sound pressure level†	dB(A)	10	40	46	13	42	48	13	44	51
NR value†		-	35	41	-	37	43	-	39	46
Electrical data, motor		230 V-1 ph-50 Hz, EC motor with low energy consumption								
Power input	W	4	49	160	4	68	174	5	46	186
Air filter F5 or F6	mm	240 x 400			240 x 550			315 x 550		
Physical data										
Connection diameter, chilled and hot-water coil	in	1/2 gas			1/2 gas			1/2 gas		
Spigot connection diameter	mm	200			200			250		
Length x depth x height	mm	900 x 665 x 270			1100 x 815 x 270			1100 x 815 x 345		
Unit weight (standard)	kg	31			40			50		

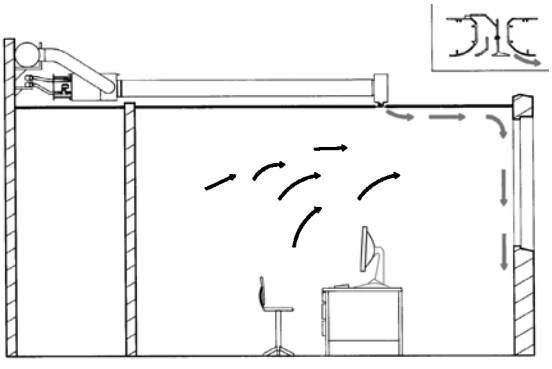
* Fan speed: L = Low, M = Medium, H = High
** Eurovent conditions: Entering air temperature 27°C/47% rh, entering water temperature 7°C, water temperature difference 5 K.
*** Eurovent conditions: Entering air temperature 20°C - entering water temperature 50°C, with same water flow rate as in cooling mode.
**** Eurovent conditions: Entering air temperature 20°C - entering water temperature 70°C, water temperature difference 10 K.
† Based on a hypothetical sound attenuation for the room and the system of -21 dB(A).

Air distribution with Optimix linear diffusers

Cooling air flow



Heating air flow



Air treatment
42GM

Options/accessories
- Customised product on request

Standard controls
NTC communicating controller

- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds and lighting control

Aquasmart New System Manager

Features
- One size with two-pipe plus electric heater or four-pipe coils, with an air flow of 94 l/s, a cooling capacity of 2.2 kW and a heating capacity of 1.7 kW.
- Decentralised compact ducted chilled-water fan coil system, designed for installation in plant rooms. This allows centralised service and maintenance.
- Reliable and efficient heating and cooling for office blocks and institutional buildings.
- High efficiency EU6 filter.
- Extremely low sound level.
- The LEC (low energy consumption) fan motor assembly is available as standard. This direct-drive motor is electronically commutated (EC motor), controlled by a 0–10 V signal and allows precise, simple and quiet unit operation in a wide range of rotational speeds in variation from the original speed.
- High-pressure centrifugal fans, compatible with air distribution systems up to 300 Pa.
- Compatible with the 35BD air diffuser range.
- Safe factory-installed electric heater for single or two-stage hot water heating.
- Available with demand control ventilation (DCV) and CO_2 sensor.
- Can be equipped with a UV-PCO IAQ module.
- Low hydraulic pressure drop with a valve mounted, compatible with all chiller pump kits.
- Quick installation with factory-installed options (controls, valves).

35BD linear diffuser (supply and return air)

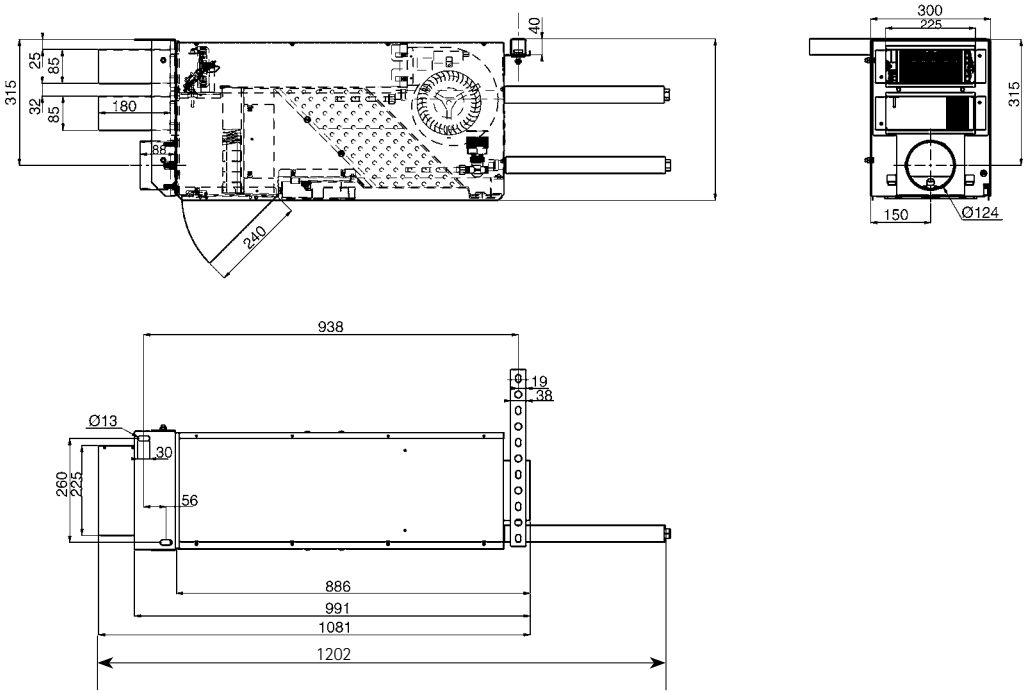
Physical data

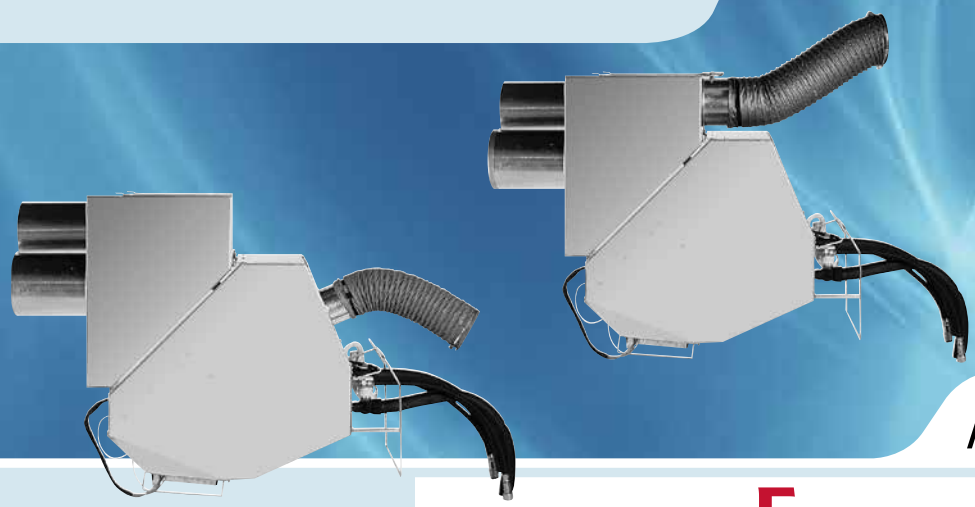
42GM		Size 1.9 (2 pipes)	Size 1.9 (4 pipes)
Fan			
Air flow	l/s (m³/h)	94 (337)	94 (337)
Pressure drop	Pa	290	290
Cooling mode			
Total cooling capacity	kW	2.20	2.20
Sensible cooling capacity	kW	1.70	1.70
Water flow rate	l/s (l/h)	0.11 (380)	0.11 (380)
Water pressure drop	kPa	65 (with 2-way valve)	47 (with 2-way valve)
4-pipe heating mode			
Heating capacity	kW	-	2.21
Water flow rate	l/s	-	0.05 (190)
Water pressure drop	kPa	-	10
Electric heater			
Low-capacity heating	W	470	-
High-capacity heating	W	1750	-
Sound levels			
Sound power level (inlet and radiated)	dB(A)	65	65
Sound power level (outlet duct)	dB(A)	70	70
Sound pressure level*	dB(A)	49	49
NR value		45	45
Power supply	V-ph-Hz	230-1-50	230-1-50
Power input	W	115	115
Current draw	A	0.81	0.81
Dimensions			
Coil inlet/outlet diameters	in	1/2 gas	1/2 gas
Length	mm	1202	1202
Height	mm	412	412
Depth	mm	300	300
Weight	kg	30	30

Based on Eurovent rating standards:
Cooling: Entering/leaving air temperature = 27°C db/19°C wb – entering/leaving water temperature = 7°C/12°C.
Heating (2 pipes): Entering air temperature = 20°C – entering water temperature = 50°C, same water flow rate as in cooling.
Heating (4 pipes): Entering air temperature = 20°C – entering/leaving water temperature = 70°C/60°C.
* Based on a hypothetical sound attenuation for the room and the system of -21 dB(A).

Dimensions, mm

42GM with front fastening support with constant-flow fresh air





Air treatment

IDROFAN

42GR

Options/accessories

- Custom-made product on request

Standard controls

NTC communicating controller

- Network communication
- Aquasmart Evolution system compatible
- IAQ and DCV management
- Motorised blinds and lighting control

Aquasmart New System Manager

Features

- Two sizes with two-pipe plus electric heater or four-pipe coils, with an air flow range from 103 to 109 l/s, a cooling capacity of 3.1 kW and a heating capacity range from 2.9 to 3.5 kW.
- Decentralised compact ducted chilled-water fan coil system, designed for installation in plant rooms. This allows centralised service and maintenance.
- Reliable and efficient heating and cooling for office blocks and institutional buildings.
- High efficiency EU6 filter.
- Extremely low sound level.
- The LEC (low energy consumption) fan motor assembly is available as standard. This direct-drive motor is electronically commutated (EC motor), controlled by a 0–10 V signal and allows precise, simple and quiet unit operation in a wide range of rotational speeds in variation from the original speed.
- High-pressure centrifugal fans, compatible with air diffusion systems up to 300 Pa.
- Compatible with the 35BD air diffuser range.
- Safe factory-installed electric heater for single or two-stage hot water heating.
- Available with demand control ventilation (DCV) and CO_2 sensor.
- Can be equipped with a UV-PCO IAQ module.
- Low hydraulic pressure drop with a valve mounted, compatible with all chiller pump kits.
- Quick installation with factory-installed options (controls, valves).

35BD linear diffuser (supply and return air)

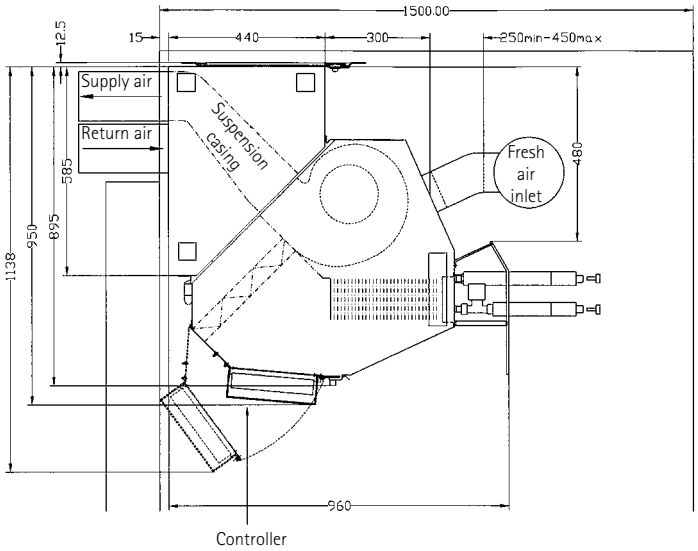
Physical data

42GR		Size 1.9	Size 2.9
Fan			
Air flow	l/s (m³/h)	109 (394)	103 (371)
Pressure drop	Pa	395	250
Cooling mode			
Total cooling capacity	kW	3.07	3.14
Sensible cooling capacity	kW	2.21	2.20
Water flow rate	l/s (l/h)	0.14 (504)	0.21 (752)
Water pressure drop	kPa	34	52
2-pipe heating mode			
Heating capacity	kW	3.09	3.20
4-pipe heating mode			
Heating capacity	kW	2.92	3.54
Water flow rate	l/s (l/h)	0.07 (251)	0.08 (305)
Water pressure drop	kPa	12	19
Electric heater			
Low-capacity heating	W	450	450
High-capacity heating	W	1700	1800
Sound levels			
Sound power level	dB(A)	74	66
Sound pressure level*	dB(A)	53	45
NR value		48	40
Power supply	V-ph-Hz	230-1-50	230-1-50
Power input	W	133	126
Current draw	A	0.64	0.91
Dimensions			
Coil inlet/outlet diameters	in	1/2 gas	1/2 gas
Length	mm	960	960
Height	mm	962	962
Depth	mm	250	420
Weight	kg	35	50

Based on Eurovent rating standards:
Cooling: Entering/leaving air temperature = 27°C db/19°C wb – entering/leaving water temperature = 7°C/12°C.
Heating (2 pipes): Entering air temperature = 20°C – entering water temperature = 50°C, same water flow rate as in cooling.
Heating (4 pipes): Entering air temperature = 20°C – entering/leaving water temperature = 70°C/60°C.
* Based on a hypothetical acoustic attenuation for the room and the air distribution system of -21 dB(A).

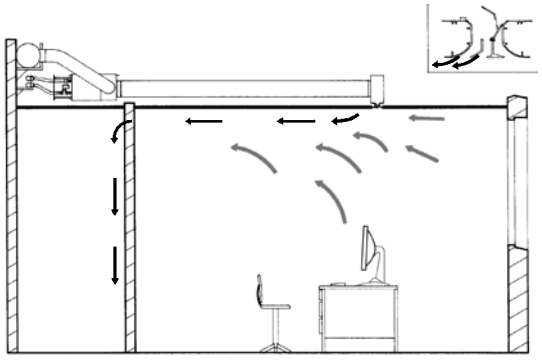
Dimensions, mm

Standard installation

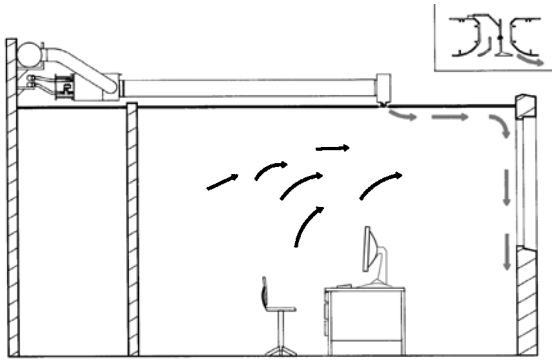


Air distribution with Optimix linear diffusers

Cooling air flow



Heating air flow



MODUBOOT AIR DIFFUSERS

Air treatment

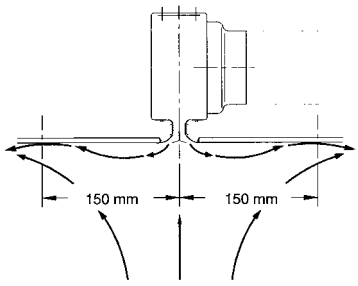
35BD/SR

Accessories

- Return air diffusers
- Dummy diffusers
- Diffuser end trim strips
- Alignment channels
- Mounting brackets

Features

- Linear diffusers with high induction, specially designed to be connected to the Carrier 42GR Air Treatment Modules, 42BJ Individual Comfort Modules, 42EM Atmosphera and 42DW ducted fan coil units.
- Two main types:
  - AG and AH profiles, two slots one-way and two-way blow for cold air diffusion and return air.
  - FH, SH, XH, LH profiles: two to five slots with Optimix damper for cold and warm air diffusion.
- 35BD models have a supply or return air Moduboot, 35SR models have a supply and return air Moduboot.
- 35BD – 19 diffuser profiles with two to five slots, and one-way or two-way blow for cold air diffusion or return air.
- 35SR – 17 diffuser profiles with three to five slots for cold and warm air diffusion.
- Four nominal lengths: 600 - 1200 – 1350 - 1500 mm for the 35BD and 1200 – 1350 – 1500 – 1800 mm for the 35SR.
- Choice of models allows air throw adjustment according to the required air flow.
- Damper position of the Optimix diffuser changes automatically with the primary air temperature.
- Comprises a galvanized sheet metal plenum with 13 mm thick fibreglass acoustic and thermal internal insulation.
- Aerodynamic diffuser design provides uniform air distribution without disturbing draughts.
- From fully cold to fully warm position, the damper operation provides adjusted air diffusion to ensure optimum comfort in the occupied space.



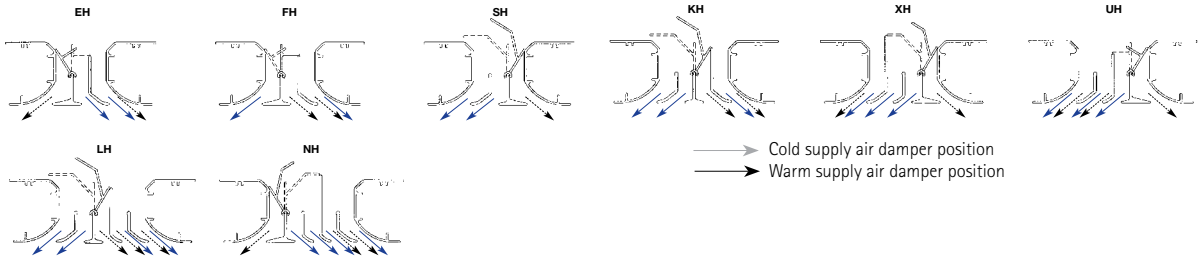
35BD supply or return air

Model	No. of slots	Duct diameter mm	Nominal diffuser length mm	Plenum length mm	Overall height mm
AG	2	159/199	600	473	270.4
	2	159/199	1200	939	270.4
	2	159/199	1500	1235	270.4
AH	2	199			
VH/MH	3	199	600	539	280.8
GH/JH	4	199	1200-1350	1139	280.8
BH/QH	5	199	1500	1439	280.8
CH	5	199			

35BD supply or return air Optimix

Model	No. of slots	Duct diameter mm	Nominal diffuser length mm	Plenum length mm	Overall height mm
SH	3	199			
EH/FH	3	199	1200-1350	1139	280.8
KH/XH	4	199	1500	1439	220.8
UH	4	199			
LH/NH	5	199			

Optimix diffuser profiles



35SR supply/return air

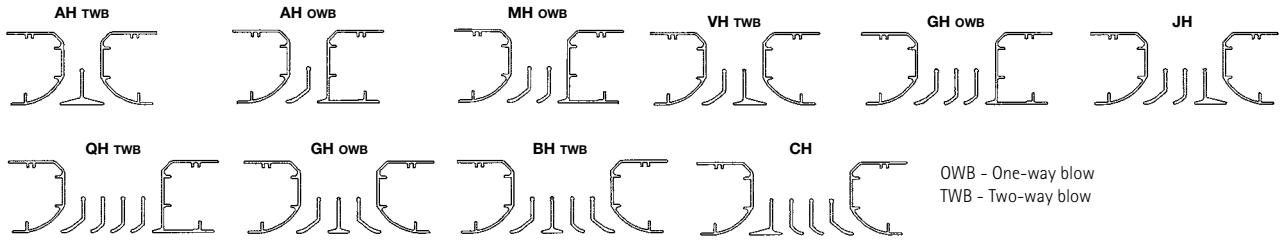
Model	No. of slots	Duct diameter mm	Nominal diffuser length mm	Plenum length mm	Supply section length mm	Return section length mm	Overall height mm
VH/MH	3	159/199*					
GH	4	159/199**	1200-1350	1139	742	388	280.8
JH	4	159/199**	1500	1439	867	563	280.8
CH/QH	5	159/199***	1800	1739	1067	663	280.8
BH	5	159/199***					

* 159 mm for diffuser length 1200-1350 mm only
** 159 mm for diffuser length 1500 mm only
*** 159 mm for diffuser length 1800 mm only

35SR supply/return air Optimix

Model	No. of slots	Duct diameter mm	Nominal diffuser length mm	Plenum length mm	Supply section length mm	Return section length mm	Overall height mm
EH/FH	3	199					
SH	3	199					
XH	4	199	1200-1350	1139	742	388	280.8
UH	4	199	1500	1439	867	563	280.8
KH	4	199	1800	1739	1067	563	280.8
LH	5	199					
NH	5	199					

Other diffuser profiles



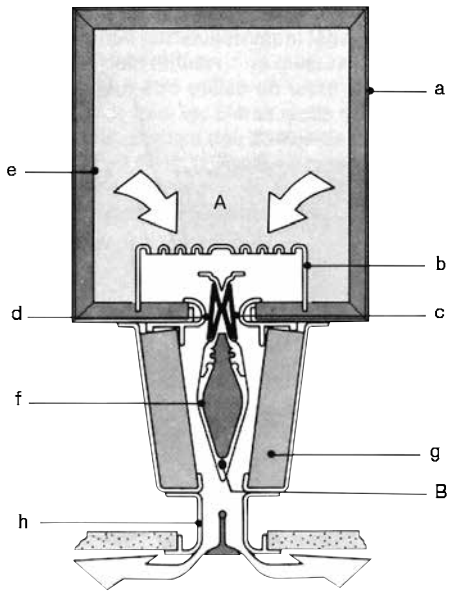
MODULINE AIR DIFFUSERS

Accessories

- One- or two-way T-bar or continuous, 2-way return air diffuser (AG, AH)
- One- or two-way T-bar or continuous dummy units (AG, AH)
- End trimming piece (all)
- Alignment channels (AG, AS)
- Plastic blanking piece (all)
- Constant volume control kit (all)
- Variable air volume controller with Moduline thermostat (all)
- Variable air volume controll with room thermostat (all)
- Minimum air flow controller
- Warm-up switch
- Various suspension accessories
- Various plenum accessories
- Various control accessories

Features

- Three types of terminals with nominal air flows from 19 to 236 l/s.
- Wide range of capacities, weights and physical dimensions.
- Air distribution and air volume flow control, constant or variable volume are integrated in the terminal itself.
- One-piece, self-contained units, can be used in any type of air treatment unit: ducted central station air handlers or packaged indoor or outdoor air conditioners.
- Conditioned air is distributed through linear diffuser slots in the ceiling.
- Available in sizes to match standard false ceiling modules.
- Galvanised steel plenums (a).
- Perforated sheet steel distribution plate (b).
- Neoprene bellows which expand and contract with the control pressure (c).
- Felt-coated bellows stops control the noise level (d).
- Thermal and acoustic insulation (e).
- Aerodynamically profiled central air guide (f).
- Acoustic insulation, attenuates air flow noise (g).
- Air diffuser assembly of extruded aluminium (h).



37AG – nominal lengths 1200 and 1500 mm (active length 900 mm), air flow 56 l/s				
Nominal plenum height	mm	180	230	280
Plenum size	mm	178 x 178	229 x 229	279 x 279
Overall unit height	mm	327	378	428
Width	mm	181.5	232.5	282.5
Weight	kg	10	12	16

37AG – nominal length 1500 mm (active length 1200 mm) – air flow 74 l/s				
Nominal plenum height	mm	180	230	280
Plenum size	mm	178 x 178	229 x 229	279 x 279
Overall unit height	mm	327	378	428
Width	mm	181.5	232.5	282.5
Weight	kg	12	15	19

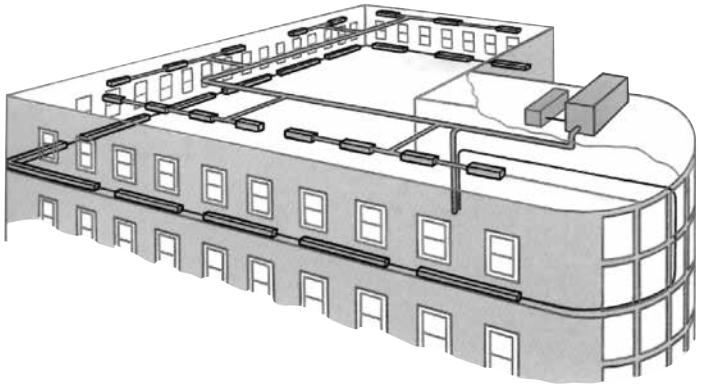
37AG: Air flow range: 19–173 l/s

37AH – nominal lengths of 1200 and 1500 mm (active length 900 mm) – air flow 97 l/s			
Nominal plenum height	mm	230	280
Plenum size	mm	229 x 229	279 x 279
Overall unit height	mm	388	438
Width	mm	232.5	282.5
Weight	kg	15	16

37AH: Air flow range: 47–236 l/s

37AS – nominal lengths of 1200 and 1500 mm (active length 900 mm) – air flow 56 l/s		
Nominal plenum height	mm	127
Plenum size	mm	127 x 178
Overall unit height	mm	170
Width	mm	288
Weight	kg	11.5

37AS: Air flow range: 19–78 l/s



Air treatment

39SQ

AIROSTAR

Options

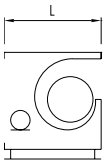
- Outdoor installation
- Inspection section in between heating and cooling coils
- Reversed hot/chilled water coils
- Differential pressure gauges
- Differential pressure taps
- Direct-expansion R-410A refrigerant coil
- Lighting with switch
- Door safety screen
- Variable-speed drive with integrated disconnect switch
- Run-around coils for energy recovery
- Hygienic options for hospital/ laboratory applications: class 3 dampers, F9 fanal filter, inspection sections
- Empty section

Features

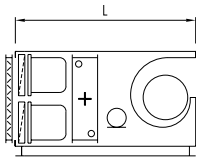
- New generation standardised air handling units for tertiary and commercial applications.
- Eurovent-certified performances.
- Standardised components for short delivery time (target 4 weeks) and competitive price positioning.
- "Clean concept" design with smooth internal surfaces for easy cleaning and better air quality.
- 60 mm double-skin construction for good thermal insulation and low-noise operation.
- Three basic configurations:
  - Exhaust unit
  - Supply unit with a single fan
  - Combined return and supply unit with two fans
- Eight sizes with air flows from 0.4 to 7.3 m^3/s (1400 to 26300 m^3/h).
- Galvanised steel frame and casing with large hinged access doors.
- Casing performance (EN1886): air leakage L1, thermal transmittance T3, thermal bridging TB3.
- Double or single mixing section.
- Pre-heating hot water coil.
- G4 pleated or/and F7 bag filters.
- Hot water coil or electric heaters.
- Chilled water coil.
- Belt-driven forward/backward curved fans or direct-drive plug-in fans.

Physical data

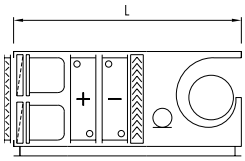
39SQ		0402	0404	0604	0606	0806	0808	1008	1010
Height (including base frame)	mm	560	800	800	1120	1120	1440	1440	1760
Width	mm	738	738	1058	1058	1378	1378	1698	1698
1- Exhaust unit									
Air flow	m^3/s	0.58	1.17	1.75	2.63	3.5	4.67	5.83	7.29
Length	mm	660	820	900	1060	1140	1220	1300	1540
2 - Supply unit heating									
Air flow	m^3/s	0.58	1.17	1.75	2.63	3.5	4.67	5.83	7.29
Heating capacity	kW	24.5	48.5	74.5	112.3	140.1	188.5	243.7	304.4
Length	mm	1380	1540	1620	1780	1860	1940	2180	2340
3 - Supply unit heating and cooling									
Air flow	m^3/s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length	mm	1860	2020	2100	2260	2340	2420	2660	2820
4 - Supply unit: mixing/heating/cooling									
Air flow	m^3/s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length	mm	2180	2340	2420	2660	2740	3060	3220	3460
5 - Combined exhaust and supply unit									
Air flow	m^3/s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length total	mm	3220	3540	3700	4180	4340	4820	5140	5700
Length section 1	mm						2450	2530	2930
Length section 2	mm						2370	2610	2770
Electric heater option									
Heating capacity 1	kW	7.5	7.5	18	27	36	36	45	60
Heating capacity 2	kW	11.3	15	27	36	48	60	75	90
Heating capacity 3	kW	15	22.5	36	54	72	96	120	150
Heating capacity 4	kW	18.8	30	45	63	84	120	150	180
Heating capacity 5	kW	30	37.5	54	81	108	144	180	225
Pre-heating coil option									
Heating capacity	kW	6.4	12.2	20.9	31.4	38.8	53	69.6	86.5



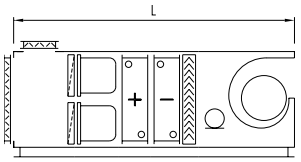
1 – Exhaust unit
Exhaust fan



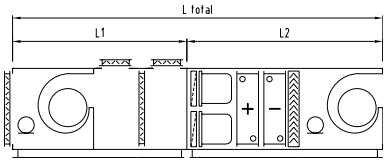
2 – Supply unit heating
Return air damper
G4+F7 filter
Heating coil 2 rows
Supply fan



3 – Supply unit heating and cooling
Return air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows
Supply fan



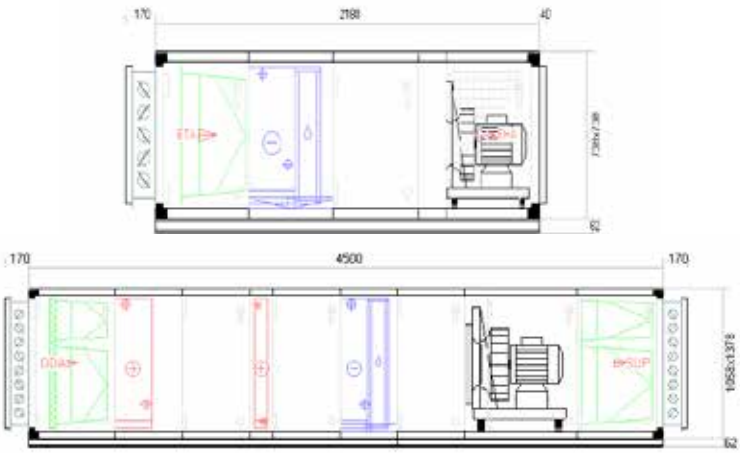
4 – Supply unit: mixing/heating/cooling
Return air damper
Fresh air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows
Supply fan



5 – Combined exhaust and supply unit
Return air damper
Return fan
Exhaust damper
Mixing damper
Fresh air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows

Standard conditions:
Heating: air -10°C/90% rh, +25°C, water 80/60°C
Cooling: air 28°C/50% rh, +16°C, water 7/12°C
Pre-heating: air -5°C, +5°C, water 80/70°C
External static pressure 300 Pa

Notes on dimensions:
- All dimensions are for indoor units with backward-curved fans, except size 0402 that has dimensions with a forward-curved fan
- Casing length is exclusive of return air damper
- Electric heater option: length varies with heating capacity
- Pre-heating coil option: length + 160 mm
- Contact your Carrier representative for certified dimensional drawings



Hospital exhaust and supply units with run-around coil for energy recovery

FRESH AIR UNITS WITH ENERGY RECOVERY

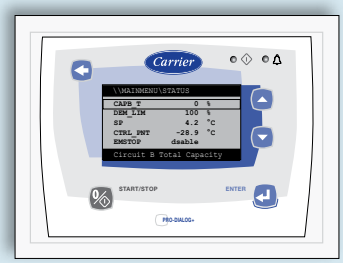
Air treatment

39SQC/R/P

AIROSTAR Heat Recovery

Options/accessories

- Outdoor installation
- Reversed extract/supply air duct connections
- Left-hand water connections & service side
- Outdoor air pre-heater to prevent air-to-air heat exchanger freezing at very low outside air temperatures
- Air heater (hot-water or electrical heater)
- Air cooler (chilled-water coil)
- Inspection chamber between heating and cooling coils
- Pro-Dialog human interface (local or remote installation)
- Inspection windows
- Extract, exhaust, outside, supply air isolating dampers
- G4 fresh-air pre-filter
- Sound attenuators (accessory)
- Direct-expansion R-410A refrigerant coil
- JBus, BACnet communications gateways
- Cool/heat change-over coil for heat pump applications
- Coated coils
- Recirculation damper (39SQP/R)



Pro-Dialog+ operator interface

Features

- Three versions in nine sizes with air flows from 0.2 to 8.4 m^3/s (700 to 30000 m^3/h).
- 39SQ units are designed to supply fresh air to any type of building. The efficient air-to-air heat exchanger recycles the heat from the exhaust air, pre-heats cold outdoor air in winter and pre-cools hot outdoor air in summer, resulting in impressive energy savings.
- Eurovent-certified performances.
- High-efficiency units with counter-flow plate (C models) or rotary heat exchangers (R models) with a thermal efficiency up to 85%.
- Casing performance (EN1886): air leakage L1, thermal transmittance T3, thermal bridging TB3.
- Standard-efficiency units with cross-flow plate heat exchangers (P models) with a thermal efficiency up to 54%.
- Plug & play installation thanks to factory-mounted control system.
- Delivered in one piece with integrated heating and cooling coils (only the 39SQR 1212 is delivered in two pieces).
- Field-separable casing in two pieces to facilitate installation in existing buildings.
- Plug fans with variable frequency drive.
- F7 efficiency filters.
- Main control system functions:
  - Air flow control: constant volume, constant pressure, variable volume (demand ventilation with CO_2 sensor)
  - Temperature control: extract or supply air temperature, room temperature sensor
  - Summer night free-cooling control
  - Alarm indication: temperature too low, coil frosting, clogged filters, etc.
  - Easy local or remote access by integrated web server (no specific software required)
  - RS485 communication port

Physical data

Model		39SQC			39SQR									39SQP						
Size		**0405**	**0506**	**0606**	**0606**	**0707**	**0808**	**0909**	**1010**	**1111**	**1212**	**1412**	**1416**	**0405**	**0506**	**0606**	**0707**	**0808**	**0909**	**1010**
Weight																				
Unit without coils	kg	218	294	345	328	385	516	586	717	852	1043	1623	2605	210	275	324	395	536	578	688
Unit with reheating and cooling coils	kg	301	399	469	428	509	660	757	952	1121	1346	2026	3049	277	360	423	518	712	783	923
Unit air flow																				
Maximum	m^3/s	0.43	0.72	0.88	1.25	1.70	2.22	2.81	3.47	4.20	5.00	5.83	8.19	0.68	1.04	1.25	1.70	2.22	2.81	3.47
	m^3/h	1565	2580	3150	4500	6125	8000	10125	12500	15125	18000	21000	29500	2450	3750	4500	6125	8000	10125	12500
Minimum	m^3/s	0.20	0.34	0.43	0.43	0.62	0.91	1.25	1.48	1.91	2.18	2.64	8.19	0.20	0.34	0.43	0.62	0.91	1.25	1.48
	m^3/h	737	1225	1549	1549	2247	3265	4501	5328	6882	7847	9500	13000	737	1225	1549	2247	3265	4501	5328
Unit thermal efficiency*	%	94	94	94	77.5	78	78	79	79	79	79	75	76	62	63	63	64	64	63	62
Unit external static pressure																				
At max. air flow (low static fan)	Pa	500	700	700	150	-	-	-	120	-	150	610	480	400	-	0	-	50	-	150
At max. air flow (high static fan)	Pa	1550	2000	1700	600	400	1200	500	950	800	1050	960	940	650	800	650	450	1300	550	1000
Specific unit fan power**	$kW/m^3/s$	2.4	2.1	2.5	2.3	2.3	2.1	2.1	1.9	2	1.7	1.3	1.1	2.2	1.9	2.1	2	1.8	1.9	1.7
Unit sound data***																				
Sound power level, casing radiated	dB(A)	68	68	71	70	73	68	73	69	73	69	68	70	67	66	69	73	67	73	69
Sound power level, extract duct	dB(A)	74	74	77	76	79	75	79	76	79	76	79	81	77	75	79	82	77	79	78
Sound power level, supply duct	dB(A)	84	84	88	87	89	85	89	86	89	86	89	90	84	82	86	88	84	89	86
Heat reclaim heat exchanger		Counter-flow plate			Rotary									Cross-flow plate						
Material		Aluminium			Aluminium									Aluminium						
Capacity control		Bypass damper			Variable speed drive									Bypass damper						
Exhaust and supply fans		Plug fan (backward curved)																		
Fan diameter	mm	225	280	280	280	315	400	400	500	500	630	2X500	2X560	225	280	280	315	400	400	500
Drive		Frequency inverter																		
Rated motor power (low static)	kW	0.55	1.1	1.5	1.5	2.2	2.2	2.2	4	5.5	5.5	2X4	2X5.5	1.1	1.1	1.5	2.2	2.2	2.2	4
Rated motor power (high static)	kW	1.5	2.2	3	3	4	5.5	5.5	7.5	11	11	2X5.5	2X7.5	1.5	2.2	3	4	5.5	5.5	7.5
Exhaust and supply air filters		Bag filter 500 mm, filter efficiency F7												Pleated filter 100 mm, filter efficiency F7						
Outside air pre-heating coil		Hot-water coil or electric heater (option)																		
Supply air reheating coil		Hot-water coil or electric heater (option)																		
Supply air cooling coil		Chilled-water coil (option)																		
Control system		Digital control with web server																		
Chassis paint colour		Colour code: RAL 7035																		

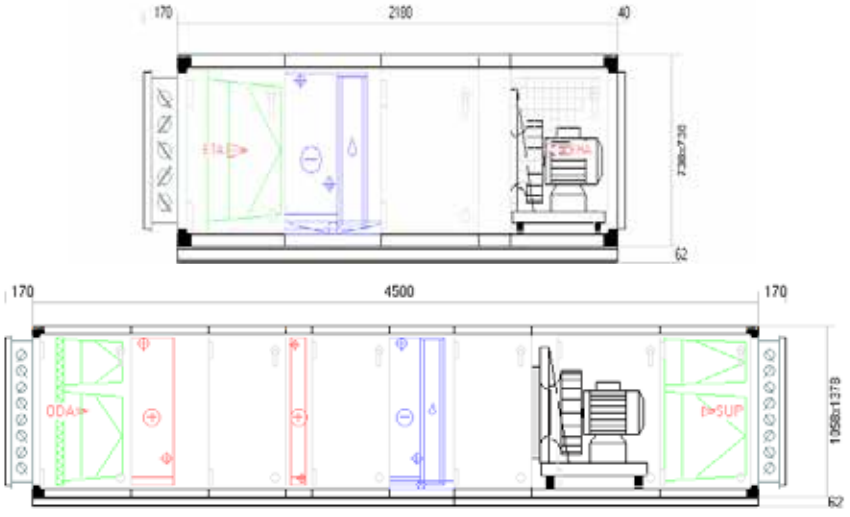
* Thermal efficiency of supply air at 2 m/s with the effect of supply air fan, outside air -10°C, extract air 22°C/50%.
** Specific fan power with clean filters at 2 m/s and 200 Pa.
*** Sound power at 2 m/s and 200 Pa.

Data for standard unit without optional coils and dampers.

Electrical data

Model 39		SQC 0405 SQP 0405	SQC 0506 SQP 0506	SQC 0606 SQP 0606	SQR 0606	SQR 0707 SQP 0707	SQR 0808 SQP 0808	SQR 0909 SQP 0909	SQR 1010 SQP 1010	SQR 1111	SQR 1212	SQR 1412	SQR 1416
Power circuit		Built-in main disconnect switch											
Nominal power supply	V-ph-Hz	400-3-50 neutral											
Voltage range	V	360-440											
Maximum unit power	kW	3	4.77	6.37	6.37	8.75	11.75	11.75	15.75	22.75	22.75	22.75	30.75
Maximum supply cable size	mm^2	2.5	4	4	4	6	6	6	10	16	16	16	25
Main switch	A	25	25	25	25	40	40	40	63	63	63	63	80
Short circuit unit capacity	kA	15	15	15	15	15	15	15	15	15	15	15	15
Recommended power line fuse protection	A	20	25	25	25	35	35	35	50	63	63	63	80
Control circuit power		Built-in 24 V control transformer											

Note: Electric pre-heater and reheater have separate power supply.



Hospital exhaust and supply units with run-around coil for energy recovery

Air treatment

AIROVISION

39HQ

Options

- 100% stainless steel
- Direct-drive fans
- All types of humidification systems, including infrasonic
- Flat pack option for site assembly
- Heat recovery systems (run-around coil, plate heat exchanger and thermal wheels)
- Wide selection of standard accessories
- 316L stainless steel drain pan with PVC wall lining in the outside air inlet section and filter section

Features

High-efficiency centrifugal fan

Special sorption heat recovery wheels

Filters are easily removable

Generously sized access doors

Features

- Airovision is a modular construction that can be fully customised to provide the required performance for any application.
- Special new casings encompass only high-quality components, including filters, heat recovery systems, fan assemblies, cooling and heating coils, humidifiers and attenuators.
- The Airovision range also pays special attention to air quality and reduction of the energy required to cool, heat, humidify and supply the conditioned air.
- Airovision is available in a large selection of sizes and arrangements, suitable for many different applications.
- Applications include leisure and event complexes, theatres, museums, libraries, offices in companies and government institutions, shopping centres, super-markets, department stores and educational establishments, as well as oil drilling rigs, airports and cruise ships.
- In addition Airovision is also ideal in health care and in industries with stringent hygiene requirements.

Environmentally sound

- No paint treatment required after the production process
- 100% recyclable components
- Low energy usage due to optimised component selection
- High-efficiency heat recovery systems available

Technical specification (in accordance with EN1886)

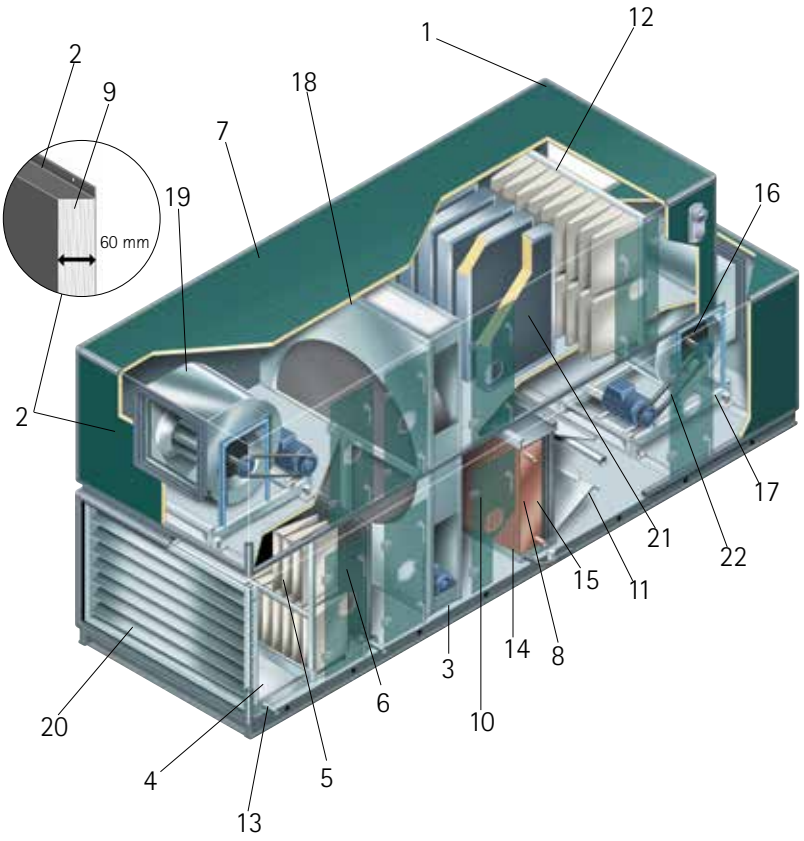
- Heat transfer factor class T2
- Thermal bridging factor TB 2
- Air tightness class B (L2)
- Mechanical strength class 1A (DI)
- Filter bypass leakage
  - class F7 for standard slide-in construction
  - class F9 for special slide-in construction
  - class F9 for built-in construction

Rigid construction

1 Carrier Holland Heating profiled steel frame construction with purpose-built corner and centre posts
2 Panels with 60 mm thick thermal insulation
3 Robust base frame made of galvanised steel box profile

High corrosion resistance

4 316L stainless steel drain pan with PVC wall lining in the outside air inlet section and filter section (option)
5 Filters held in 316L stainless steel frames
6 Anti-corrosion protection available
7 Internal and external panels made of high-quality prepainted galvanised sheet steel
8 Cooling coils with integrated stainless steel drain pan and plastic droplet eliminator housed in an aluminium frame
9 Special panel design and frame detail eliminate the risk of condensation forming in the panels



Easy maintenance

10 Various inspection options with generously sized clear opening access doors
11 Completely smooth internal surfaces
12 Filters easily removable
13 Drain pan in the outside air inlet section and filter section equipped with drain (option)
14 Cooling coil drain pan fully accessible for cleaning/disinfection
15 Moisture eliminator after the cooling coil easily removable
16 Long-life fan and motor bearings
17 Fans removable from the side

High-quality built-in components

18 Special sorption heat recovery wheels for optimised recovery of heat, cold and humidity
19 High-efficiency centrifugal low-noise fans, mounted on vibration isolators with low transmission factor
20 Aluminium dampers with UV-resistant double nylon bearings
21 Skrim faced sound absorption splitters
22 Matched high-efficiency belt drives

Central station air handling unit range (based on a nominal filter loading of 1.11 m³/s)

Width / Height	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
2.5	0.56	0.69	0.83																			
4	1.11	1.39	1.67	1.81	2.22	2.50	2.78	3.06	3.33													
6	1.67	2.22	2.50	2.92	3.33	3.75	4.17	4.72	5.00	5.56	5.83	6.39	6.67	7.22	7.50							
8			3.33	3.89	4.44	5.00	5.56	6.11	6.67	7.22	7.78	8.33	8.89	9.44	10.00	10.56	11.11	11.67	12.22	12.78	13.33	
10					5.56	6.39	6.94	7.64	8.33	9.03	9.72	10.56	11.11	11.94	12.50	13.33	13.89	14.72	15.28	16.11	16.67	17.50
12						7.50	8.33	9.17	10.00	10.83	11.67	12.50	13.33	14.44	15.00	15.83	16.67	17.50	18.33	19.17	20.00	20.83
14									11.67	12.78	13.61	14.72	15.56	16.67	17.50	18.61	19.44	20.56	21.39	22.50	23.33	24.44
16										14.44	15.56	16.67	17.78	18.89	20.00	21.11	22.22	23.33	24.44	25.56	26.67	27.78
18															22.50	23.89	25.00	26.39	27.50	28.89	30.00	31.39
20																	27.78	29.17	30.56	31.94	33.33	34.72

Preferred range | Combination with heat recovery | Other sizes

Note: All air flow values are in m³/s. Larger unit sizes are possible.

Module dimension: 160 mm
External width: n x module plus 98 mm
External height: n x module plus 98 mm
Base frame height: 60 mm or 62 mm

Example: type 39HQ12.10
Width: 12 x 160 plus 98 = 2.018 mm
Height: 10 x 160 plus 98 = 1.698 mm
Nominal air flow: 8.33 m³/s

Air treatment
39MQ

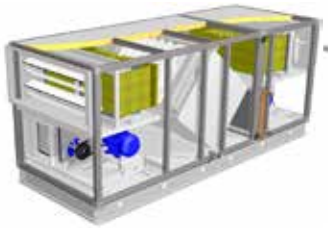
NEW 2014 CARRIER

Options/accessories

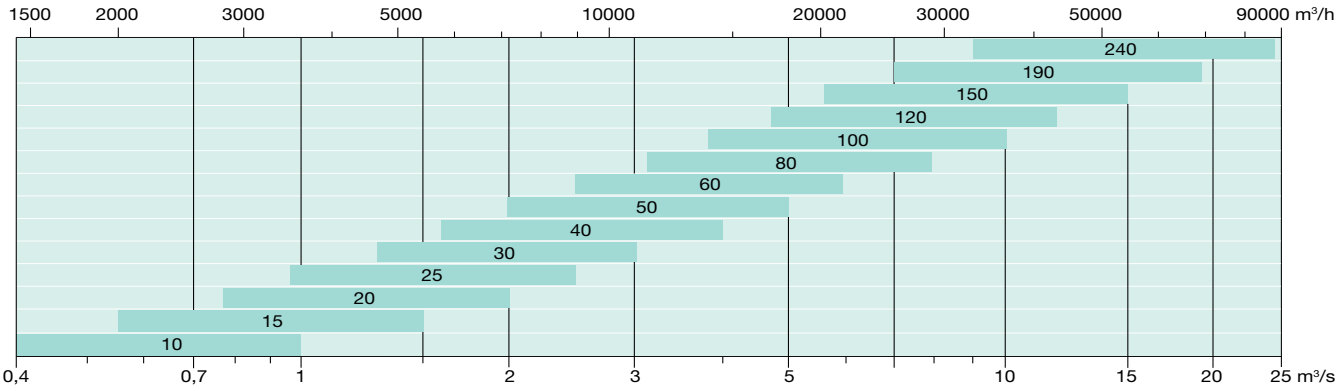
- Outdoor installation (bitumen or steel profile roof)
- Reversed extract/supply air duct connections
- Left-hand water connections & service side
- Outdoor air pre-heater to prevent air-to-air heat exchanger freezing at very low outside air temperatures
- Rotary heat exchanger temperature, enthalpy or sorption types, supplied in divided version sizes 60 to 240.
- Croos flow heat exchanger aluminium or corrosion resistant (coated plates)
- Air heater (hot-water or electrical heater)
- Air cooler (chilled-water coil)
- Cool/heat change-over coil for heat pump applications
- Direct-expansion R-410A refrigerant coil
- Inspection chamber between heating and cooling coils
- Inspection windows
- Extract, exhaust, outside, supply air isolating dampers
- Recirculation / mixing damper
- Sound attenuators
- Coated coils
- Air distributor after centrifugal fan

Features

- 14 sizes with air flows from 0.4 to 24 m3/s (1500 to 86000 m3/h).
- The modular construction is highly flexible to combine the most optimized functions and to offer the best running- and investment costs e.g. the type of heat exchangers and fans with the highest efficiencies, combined with filters and coils with low pressure drop.
- Eurovent-certified performances.
- Frame & panels made of alu-zinc AZ 185, class C4 corrosion protection (same as aluminium)
- Casing performance (EN1886): air leakage L3, thermal transmittance T2, thermal bridging TB4 with insulating mineral wool 50mm thickness & 50Kg/m3 density
- High-efficiency units with counter-flow plate (sizes 10 to 50) or rotary heat exchangers (all sizes) with a thermal efficiency up to 87%.
- Standard-efficiency units with cross-flow plate heat exchangers (all sizes) with a thermal efficiency up to 65%.
- Standard-efficiency units with run-around coil heat exchangers (all sizes) with a thermal efficiency up to 55%.
- Large choice of Dampers (EN1751 sealing class 3), shutoff dampers & Mixing dampers (two of three dampers for recirculation)
- Centrifugal Fans (all sizes) are a double inlet, belt-driven centrifugal fan, available as backward-curved blades with an efficiency of up to 82% or forward curved blades with an efficiency of up to 73%.
- Plug Fans with variable frequency drive, efficiencies of up to 75% and features very low sound levels in the lower frequencies.
- Plug Fans are available as single-speed AC induction motor (all sizes) or EC fan with the build in speed control (1 plug fan for size 10 to 40, 2 plug fan from size 50 to 240) with permanent magnet rotor (efficiency eqivalent or better than IE4).
- Compact filter G4 or bag filters G3 to F9 efficiency.



Physical data



Extract air ⇦ Supply air ⇨

Rotary Heat Exchanger		Unit size													
		10	15	20	25	30	40	50	60	80	100	120	150	190	240
Standard	Width	970	1120	1270	1420	1570	1720	2020	2170	2170	2370	2590	2890	3190	3490
Rotary Heat Exchanger	Width	-	-	-	-	-	-	-	-	2320	2520	2890	3040	3720	4020
Single height unit	Height*	520	595	670	745	820	895	1045	1120	1270	1420	1570	1720	2170	2470
Double height unit	Height*	970	1120	1270	1420	1570	1720	2020	2240	2540	2840	3140	3440	4340	4940
C1E	Length	2160	2160	2460	2460	2760	3060	2910	3280	3210	3960	4260	4560	5010	5530
	Weight kg	430	520	660	760	920	1100	1470	1980	2140	2630	3250	3990	6290	7610
C2E	Length	2910	2910	3210	3210	3510	3810	3660	4030	4030	4930	5230	5530	5980	6430
	Weight kg	500	610	770	870	1080	1270	1690	2250	2470	3050	3890	4690	7220	8600
C3E	Length	2680	2680	3130	3130	3430	3880	4030	4400	4400	5450	5900	6200	6430	7100
	Weight kg	480	580	730	810	1010	1220	1700	2230	2480	3160	3870	4660	6870	8280
C4E	Length	3430	3430	3880	3880	4180	4630	4780	5220	5220	6420	7020	7170	7400	8000
	Weight kg	560	660	840	930	1180	1390	1930	2560	2830	3610	4560	5320	7790	9180
C5E	Length	2680	2680	3130	3130	3430	3880	3730	4100	4100	5080	5380	5680	6430	7100
	Weight kg	480	570	720	800	1010	1220	1630	2120	2330	2970	3620	4390	6860	8280
C6E	Length	3430	3430	3880	3880	4180	4630	4480	4850	4850	6050	6350	6650	7400	8000
	Weight kg	550	660	840	920	1180	1380	1850	2410	2670	3370	4280	5060	7790	9170

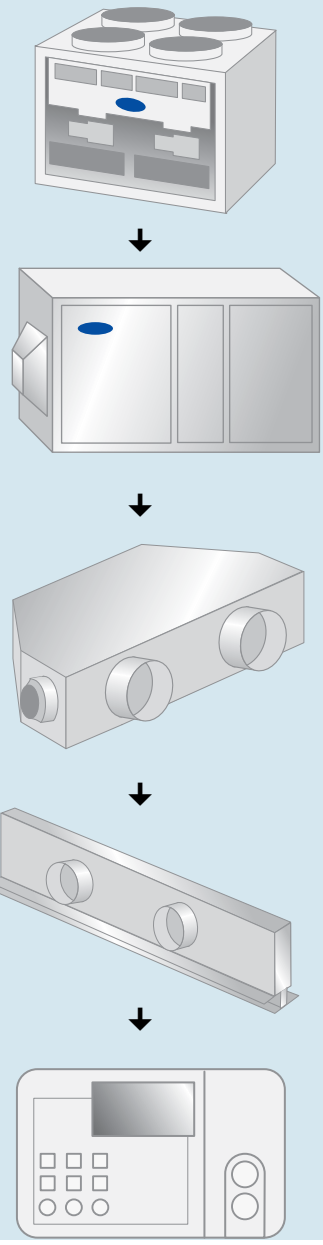
* 39MQ 10-150 : Height excl. Base Frame Z. 39MQ 190-240 : Height incl. base frame.

Extract air ⇦ Supply air ⇨

Recirculated air		Unit size													
		10	15	20	25	30	40	50	60	80	100	120	150	190	240
	Width	970	1120	1270	1420	1570	1720	2020	2170	2170	2370	2590	2890	3190	3490
Single height unit	Height*	520	595	670	745	820	895	1045	1120	1270	1420	1570	1720	2170	2470
Double height unit	Height*	970	1120	1270	1420	1570	1720	2020	2240	2540	2840	3140	3440	4340	4940
M1E	Length	2240	2240	2390	2390	2540	2840	2690	2840	2990	3660	3810	3960	4410	5080
	Weight kg	250	280	350	390	470	560	800	900	1000	1300	1560	1900	2320	3040
M2E	Length	3060	3060	3210	3210	3360	3660	3510	3660	3810	4410	4560	4710	5380	5980
	Weight kg	330	400	480	560	640	780	1050	1180	1320	1660	2140	2460	3250	3940
M3E	Length	3580	3580	3880	3880	4180	4780	4480	4780	5080	5980	6350	6650	7550	8820
	Weight kg	390	450	560	620	760	940	1270	1470	1630	2060	2660	3150	3930	5100
M4E	Length	4400	4400	4700	4700	5000	5600	5300	5600	5900	6950	7250	7620	8520	9720
	Weight kg	480	560	690	790	940	1150	1550	1760	1960	2530	3250	3800	4850	6000
M5E	Length	2610	2610	2910	2910	3210	3660	3360	2990	2990	3590	3810	3960	4710	5080
	Weight kg	360	430	530	580	750	910	1220	1360	1520	1950	2510	2990	4190	5150
M6E	Length	3430	3430	3730	3730	4030	4480	4180	3810	3880	4630	4780	4860	5680	5980
	Weight kg	460	540	670	730	930	1150	1480	1650	1880	2430	3150	3570	5110	6050

Index

System architecture



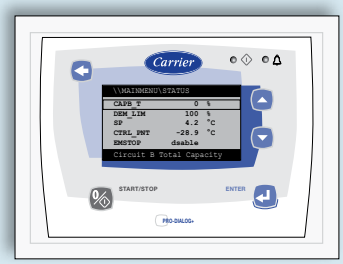
Refrigerant-based air treatment units

Type	Range	Refrigerant	Cooling capacity kW	Heating capacity kW	Air flow, l/s	Page
Split systems						
Outdoor units, axial fan	38RBS	R-410A	40-162	-	-	132
Monoblocs or split systems, ductable condenser and evaporator						
Horizontal units	50TZ (38FZ + 40TZ/BZ)	R-407C	14.8-22.7	-	950-1365	134
	50YZ (38BZ + 40BZ)	R-407C	14.3-22.2	16.8-25	950-1365	136
Vertical units	50PZ (38PZ + 40PZ)	R-407C	13-73	16-83	960-3530	138
Rooftop units						
	48/50 UA/UH	R-410A	44-115	44-112	2528-5550	140

Air treatment
38RBS

Options

- Condenser anti-corrosion post-treatment for improved corrosion resistance in urban, industrial and rural environments
- Condenser with pre-treated fins for improved corrosion resistance in marine environments
- Very low noise level
- Soft starter for reduced compressor start-up current
- Winter operation for air temperatures between -10°C and -20°C
- Suction and liquid line valves to isolate the unit from the rest of the refrigerant circuit
- JBus, BacNet or LonTalk gateways
- Remote Pro-Dialog+ user interface
- Replaceable filter drier for easy filter replacement without emptying the refrigerant circuit
- Temperature sensor kit
- Master/slave direct CCN bus with 39SQ



Pro-Dialog+ operator interface

Features

- Eleven sizes with nominal cooling capacities from 40 to 162 kW.
- Units integrate the latest technological innovations: ozone-friendly refrigerant R410A, scroll compressors, low-noise fans made of a composite material and auto-adaptive microprocessor control
- Exceptionally quiet latest-generation Flying Bird 4 fans, made of a composite material. Fan motor controlled by a variable-frequency controller, to allow reduction of the fan speed, if the extra low noise option 15LS is selected. Rigid fan installation for reduced start-up noise (Carrier patent).
- Low-noise, reliable scroll compressors with low vibration level. The compressor assembly is installed on an independent chassis and supported by anti-vibration mountings. Dynamic suction and discharge piping support, minimising vibration transmission (Carrier patent).
- Refrigerant circuit includes all components for easy connection to a direct expansion air handling unit: filter drier, moisture sight glass, high and low pressure switch, as well as solenoid valves for pumpdown. Two independent refrigerant circuits from size 38RBS 140 onwards.
- Increased energy efficiency at part load. The refrigerant circuit includes several compressors connected in parallel. At part load, around 99% of the operating time, only the compressors that are absolutely necessary operate. At these conditions the compressors operating are more energy efficient, as they use the total condenser and evaporator capacity.
- Designed for year-round operation.
- Electrical connections are simplified.
- Exceptional endurance tests.
- AHU Direct expension coil management from 39SQ controller with simple CCN bus connection.

Physical data

38RBS		039	045	050	060	070	080	090	100	120	140	160
Nominal cooling capacity, standard unit*	kW	40.4	45.9	52.4	58.5	66.7	77.9	90.4	100.9	119.4	139.6	161.7
Power input	kW	13.8	16.3	19.0	21.2	24.4	28.8	31.8	36.0	43.6	50.2	58.7
EER	kW/kW	2.92	2.81	2.75	2.76	2.74	2.7	2.84	2.81	2.74	2.78	2.75
Weight ex-factory, standard unit**	kg	399	408	425	445	435	456	698	701	719	796	842
Sound levels												
Standard unit												
Sound power level 10^{-12} W***	dB(A)	80	81	81	81	87	87	84	84	84	90	90
Sound pressure level at 10 m****	dB(A)	49	49	49	49	55	55	52	52	52	58	58
Unit with option 15LS (very low sound level)												
Sound power level 10^{-12} W***	dB(A)	79	80	80	80	80	80	83	83	83	83	83
Sound pressure level at 10 m****	dB(A)	48	48	48	48	48	48	51	51	51	51	51
Compressors		Hermetic scroll compressor, 48.3 r/s										
Quantity, circuit A		2	2	2	2	2	2	3	3	3	2	2
Quantity, circuit B		-	-	-	-	-	-	-	-	-	2	2
No. of capacity steps		2	2	2	2	2	2	3	3	3	4	4
Refrigerant*		R-410A										
Control type		Pro-Dialog+										
Condenser		Grooved copper tubes, aluminium fins										
Fans		Axial Flying Bird 4 fans with rotating shroud										
Quantity		1	1	1	1	1	1	2	2	2	2	2
Total air flow (high speed)	l/s	3800	3800	3800	3800	5300	5300	7600	7600	7600	10600	10600
Dimensions												
Length x depth x height	mm	2110 x 1075 x 1330						2110 x 2273 x 1330				

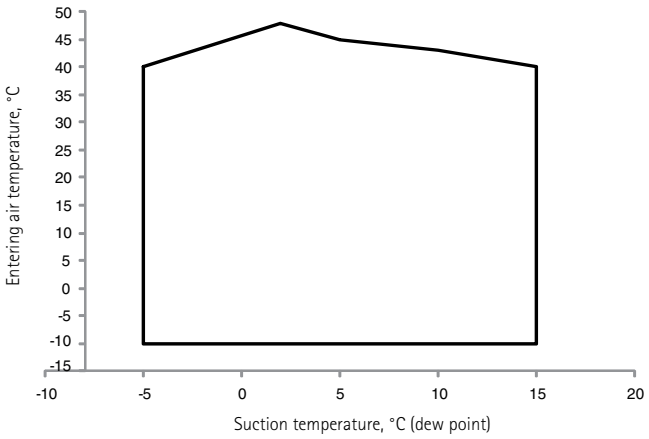
* Nominal evaporating temperature condition: 5°C, outdoor air temperature 35°C, superheat 5 K, 15 m equivalent length.
** Weight shown is a guideline only.

Electrical data

38RBS		039	045	050	060	070	080	090	100	120	140	160
Power circuit												
Nominal power supply	V-ph-Hz	400-3-50 ± 10%										
Control circuit supply		24 V, via internal transformer										
Maximum start-up current*												
Standard unit	A	114.2	132.4	141.3	143.7	170.4	209.4	169.4	196.4	240.4	226.2	275.2
Unit with electronic starter option	A	74.7	86.5	93.8	96.2	114.4	139.8	-	-	-	-	-
Maximum unit power input**	kW	19.5	22.3	24.5	27.9	31.2	35.8	42.3	45.6	52.5	62.4	71.6
Nominal unit current draw***	A	26.2	30.4	34.6	37.6	44.2	53.8	57.8	64.4	78.8	88.4	107.6
Maximum unit current draw******	A	35.6	40.0	43.8	48.6	55.8	65.8	74.3	81.8	96.8	11.6	131.6

* Maximum instantaneous starting current at 400 V nominal voltage with direct compressor starting (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).
** Power input, compressors and fans, at the unit operating limits (saturated suction temperature 15°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).
*** Nominal conditions: suction temperature 5°C, outside air temperature 35°C.
**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

Operating range



Operating limits, standard unit

38RBS		Minimum	Maximum
Evaporator			
Suction temperature (dew point)	°C	-5	15
Condenser			
Entering air temperature*	°C	-10	48

* For transport and storage of the 38RBS units the minimum and maximum allowable temperatures are -20°C and +48°C. It is recommended that these temperatures are used for transport by container. Option 28 allows stable unit operation at air temperatures below -10°C and down to -20°C.

Air treatment

50TZ

Options/accessories

- Head pressure control (option/accessory)
- Crankcase heater (option/accessory)
- Hot water coil (option/accessory)
- Flare connections (option)
- Outdoor air filter (option/accessory)

Features

- Three sizes with nominal cooling capacities from 14.8 to 22.7 kW.
- Units consist of the indoor unit 40BZ (40TZ for unit size 084) and the outdoor unit 38FZ.
- Compact, low-profile, air-cooled cooling units, designed for installation in the void above false ceilings.
- Unit cabinet made of prepainted sheet steel. All units include internal thermal and sound insulation.
- Interchangeable unit panels permit alternative supply and return air paths on all models.
- Easily transformed from packaged to split units.
- Quiet, centrifugal fans, statically and dynamically balanced for vibration-free operation.
- Reliable hermetic compressors for R-407C, include overcurrent and over-temperature protection and internal and external vibration isolators.
- Hermetically-sealed leak-tested refrigerant circuit with deoxidized and dehydrated copper tubes.
- Master Link II electronic control.

Master Link II electronic control

Physical data

50TZ Packaged unit		060	072	084
Nominal cooling capacity*	kW	14.80	19.10	22.74
Weight	kg	267	329	381
Compressor		Hermetic reciprocating compressor		
Refrigerant		R-407C		
Evaporator section (40TZ/BZ)		Copper tubes, pre-treated aluminium fins		
Evaporator fan (40TZ/BZ)		One ... centrifugal		
Nominal air flow	l/s	950	1320	1365
Condenser section (38FZ)		Copper tubes, pre-treated aluminium fins		
Condenser fan (38FZ)		One ... centrifugal		
Nominal air flow	l/s	1350	1650	1875
Indoor unit		40BZ 060	40BZ 072	40TZ 084
Outdoor unit		38FZ 060	38FZ 072	38FZ 084
Nominal cooling capacity*	kW	13.95	17.38	20.25
Weight (indoor unit)	kg	87	116	120
Weight (outdoor unit)	kg	180	213	261

* Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C.

Electrical data

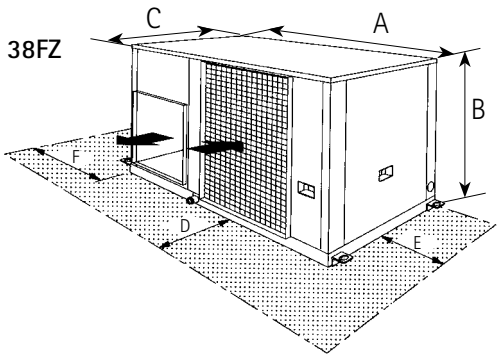
50TZ (40TZ/BZ + 38FZ)		060	072	084
Nominal voltage (±10%)*	V	400	400	400
Nominal power input**	kW	7.37	10.08	10.75
Nominal current drawn**	A	18.54	17.41	19.18
Starting current	A	105	90	105

* The unit power supply is three-phase (except size 024, 230 V which is single-phase). The fan power supply is single-phase, except for sizes 072 and 084 which are three-phase.
** Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C and dry bulb temperature of 27°C.

Dimensions, mm

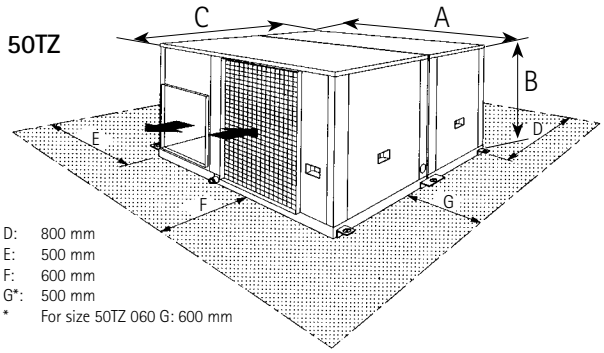
50TZ	A	B	C
060	1500	560	1509
072	1700	630	1709
084	1700	630	1889
38FZ	A	B	C
060	1500	560	964
072	1700	630	1008
084	1700	630	1188
40TZ/BZ	A	B	C
060	1500	560	619
072	1700	630	775
084	1700	630	775

38FZ



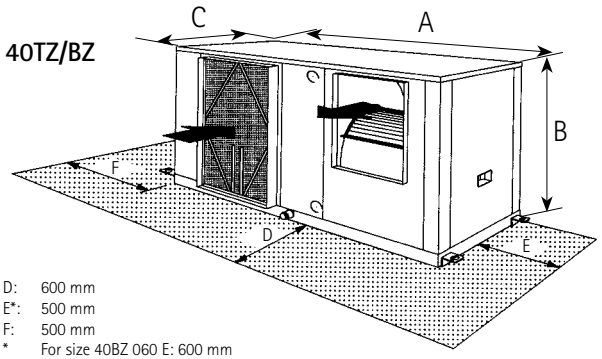
D: 600 mm
E: 500 mm
F: 500 mm

50TZ



D: 800 mm
E: 500 mm
F: 600 mm
G*: 500 mm
* For size 50TZ 060 G: 600 mm

40TZ/BZ



D: 600 mm
E*: 500 mm
F: 500 mm
* For size 40BZ 060 E: 600 mm

Operating limits

Zone	Air temperature, °C	
	Dry bulb	Wet bulb
Indoor		
Maximum	35	21
Minimum	19	14
Outdoor		
Maximum	46	-
Minimum	19*	-

* With optional head pressure control the unit will operate at temperatures below 19°C.

SINGLE-PACKAGE HEAT PUMPS

Air treatment

50YZ

Options/accessories

- Head pressure control (option/accessory)
- Hot water coil (option/accessory)
- Flare connections (option)
- Outdoor air filter (option/accessory)

Features

- Three sizes with nominal cooling capacities from 14.3 to 22.2 kW and nominal heating capacities from 16.8 to 25.0 kW.
- Units consist of the indoor unit 40BZ and the outdoor unit 38BZ.
- Compact low profile air-to-air heat pumps, designed for installation in the void above false ceilings.
- Unit cabinet made of prepainted sheet steel. All units include internal thermal and sound insulation.
- Interchangeable unit panels permit alternative supply and return air paths on all models.
- Easily transformed from packaged to split units.
- Quiet, centrifugal fans, statically and dynamically balanced for vibration-free operation.
- Reliable hermetic compressors for R-407C, include overcurrent and over-temperature protection and internal and external vibration isolators.
- Hermetically-sealed leak-tested refrigerant circuit with deoxidized and dehydrated copper tubes.
- Master Link II electronic control.

Master Link II electronic control

Physical data

50YZ Packaged unit		060	072	084
Nominal cooling capacity*	kW	14.34	19.10	22.20
Nominal heating capacity**	kW	16.84	21.80	25.00
Weight	kg	270	332	385
Compressor		Hermetic reciprocating compressor		
Refrigerant		R-407C		
Indoor section (40BZ)		Copper tubes, pre-treated aluminium fins		
Indoor fan (40BZ)		One ... centrifugal		
Nominal air flow	l/s	950	1320	1365
Outdoor section (38BZ)		Copper tubes, pre-treated aluminium fins		
Outdoor fan (38BZ)		One ... centrifugal		
Nominal air flow	l/s	865	1350	1650
Indoor unit		**40BZ 048**	**40BZ 060**	**40BZ 072**
Outdoor unit		**38BZ 048**	**38BZ 060**	**38BZ 072**
Weight (indoor unit)	kg	76	87	116
Weight (outdoor unit)	kg	168	183	216

* Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C.
** Based on an outdoor air wet bulb temperature of 6°C and an indoor air dry bulb temperature of 20°C.

Electrical data

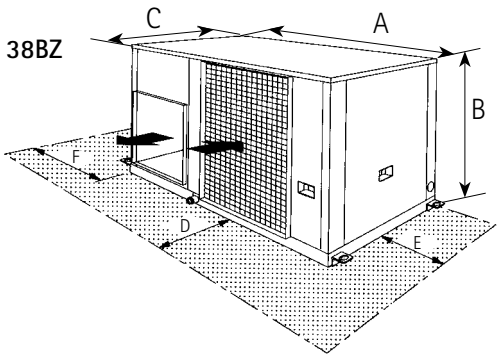
50YZ (40BZ + 38BZ)		060	072	084
Nominal voltage (±10%)*	V	400	400	400
Nominal power input				
Cooling**	kW	7.57	10.10	10.92
Heating***	kW	6.97	9.07	9.58
Nominal current drawn				
Cooling**	A	18.06	17.34	19.45
Heating***	A	17.57	15.95	17.80
Starting current	A	105	90	105

* The unit power supply is three-phase (except size 024, 230 V) which is single-phase). The fan power supply is single-phase, except for sizes 072 and 084 which are three-phase.
** Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C.
*** Based on an outdoor air wet bulb temperature of 6°C and an indoor air dry bulb temperature of 20°C.

Dimensions, mm

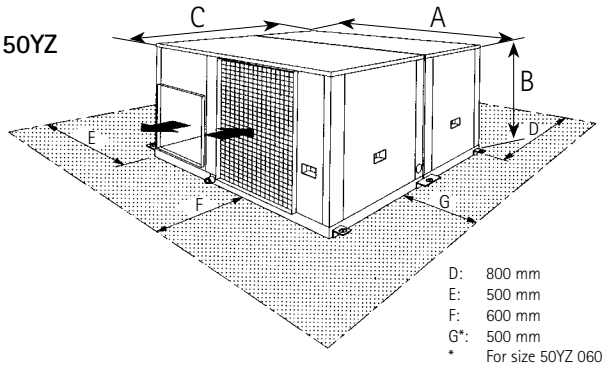
50YZ	A	B	C
060	1500	560	1509
072	1700	630	1709
084	1700	630	1889
38BZ	**A**	**B**	**C**
060	1500	560	964
072	1700	630	1008
084	1700	630	1188
40BZ	**A**	**B**	**C**
060	1500	560	619
072	1700	630	775
084	1700	630	775

38BZ



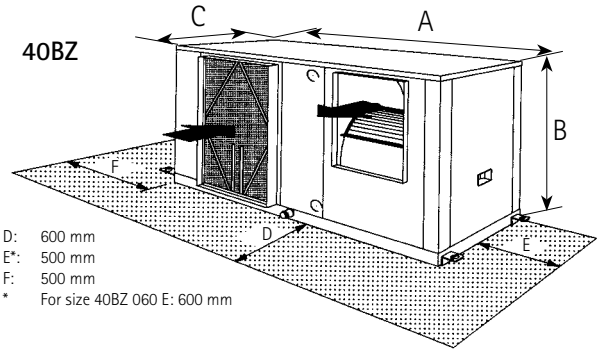
D: 600 mm
E: 500 mm
F: 500 mm

50YZ



D: 800 mm
E: 500 mm
F: 600 mm
G*: 500 mm
* For size 50YZ 060 G: 600 mm

40BZ



D: 600 mm
E*: 500 mm
F: 500 mm
* For size 40BZ 060 E: 600 mm

Operating limits

	Cooling		Heating	
Zone	**Dry bulb**	**Wet bulb**	**Dry bulb**	**Wet bulb**
Indoor air temperature °C				
Maximum	35	21	27	-
Minimum	19	14	-	-
Outdoor air temperature °C				
Maximum	46	-	24	18
Minimum	19*	-	-15	-

* With optional head pressure control, the unit will operate at temperatures below 19°C.

VERTICAL AIR-TO-AIR HEAT PUMPS

Air treatment

50PZ

Options/accessories

- Head pressure control kit (option/accessory)
- Electric heating (option/accessory)
- Outdoor air filter (option/accessory)
- Protection grille (option/accessory)
- Hot water coil (option/accessory)
- Economizer (accessory)
- User interface (option)
- Minimum opening potentiometer (option/accessory)
- Volt-free contacts (option)
- Optional communications (option/accessory)
- Return air sensor (option/accessory)
- Superior drive (option)
- 38PZ for vertical discharge (option)

Features

- Nine sizes with nominal cooling capacities from 13.4 to 72.6 kW and nominal heating capacities from 15.8 to 83 kW.
- Units consist of two sections: an indoor section (40PZ) and an outdoor section (38PZ) of matching size.
- Ideal for installation in new buildings or refurbishment projects for small and medium-sized commercial and residential applications, such as restaurants, shops, laboratories, art galleries, offices and homes.
- Cabinet is made of prepainted metal sheets. The panels are thermally and acoustically insulated.
- Double inlet centrifugal fans, with forward-curved blades.
- Refrigerant-to-air heat exchangers manufactured from high-quality, deoxidized and dehydrated copper tubing, mechanically expanded into precoated aluminium fins.
- Three-phase reciprocating or scroll compressors for R-407C with built-in crankcase heaters and overcurrent and overtemperature protection.
- Built-in overpressure valves.
- Refrigerant circuit made of deoxidized and dehydrated copper tubing, completely hermetic and leak tested.
- Master Link II electronic control system.

Master Link II electronic control

Physical data

50PZ		015	025	030	031	040	045	055	065	075
Nominal cooling capacity*	kW	13.42	21.81	28.50	27.70	34.36	43.60	52.51	61.94	72.58
Nominal heating capacity**	kW	15.76	25.02	30.58	30.20	39.15	50.18	57.43	66.60	83.06
Weight kg										
50PZ		238	400	412	427	638	864	919	968	1058
40PZ		78	140	150	150	230	297	317	335	365
38PZ		160	260	262	277	408	567	602	633	693
Compressor (R-407C)		Hermetic reciprocating Scroll								
Indoor/outdoor coil (40PZ/38PZ)		Copper tubes, pretreated aluminium fins								
Indoor coil fan (40PZ)		Double inlet centrifugal type								
Quantity		1	2	2	2	2	2	2	2	2
Nominal air flow	l/s	960	1490	1690	1690	2190	2640	2910	3140	3530
Outdoor coil fan (38PZ)		Double inlet centrifugal type								
Quantity		1	2	2	2	2	2	2	2	2
Nominal air flow	l/s	1470	3020	2780	2780	3610	4580	5080	6030	6890

* Based on an outdoor air temperature of 35°C db and an indoor air temperature of 19°C wb.
** Based on an outdoor air temperature of 6°C wb and an indoor air temperature of 20°C db.

Electrical data

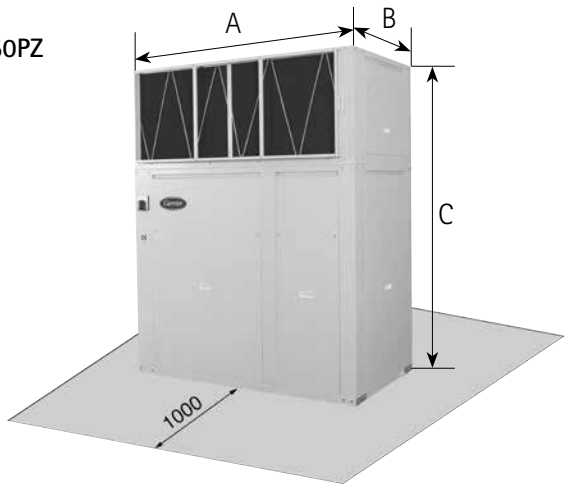
50PZ (40PZ/38PZ)		015	025	030	031	040	045	055	065	075
Nominal voltage*	V	400	400	400	400	400	400	400	400	400
Nominal power input	kW									
Cooling**		7.2	11.2	13.6	14.6	18.1	21.6	25.4	30.2	38.5
Heating***		6.6	11.1	12.4	12.7	17.5	20.8	23.7	27.1	34.3
Nominal current drawn	A									
Cooling**		13.7	19.2	22.2	26.6	31.8	38.2	42.4	50.9	68.6
Heating***		13.0	19.2	20.7	24.0	30.2	36.8	40.9	47.4	63.5
Starting current	A	80.0	106.3	133.3	95.3	134.0	156.7	187.8	219.0	256.0

* All units are built for 3-phase, 50 Hz supply.
** Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C.
*** Based on an outdoor air temperature of 6°C wb and an indoor air temperature of 21°C db.

Dimensions, mm

50PZ	A	B	C
015	910	850	1688
025	1350	883	1890
030, 031	1350	883	1940
040	1600	993	2095
045, 055	2126	1154	2158
065, 075	2526	1154	2158
38PZ	**A**	**B**	**C**
015	910	785	1180
025	1350	809	1280
030, 031	1350	809	1280
040	1600	919	1435
045, 055	2126	1080	1498
065, 075	2526	1080	1498
40PZ	**A**	**B**	**C**
015	910	850	588
025	1350	883	690
030, 031	1350	883	740
040	1600	993	740
045, 055	2126	1154	750
065, 075	2526	1154	750

50PZ

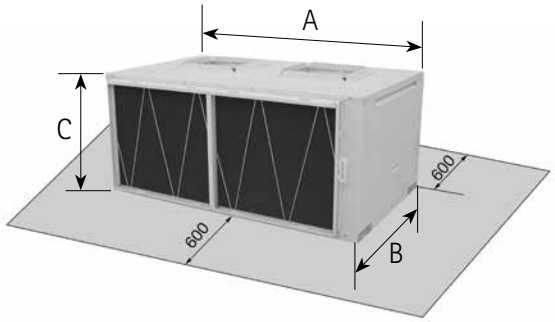


Operating limits

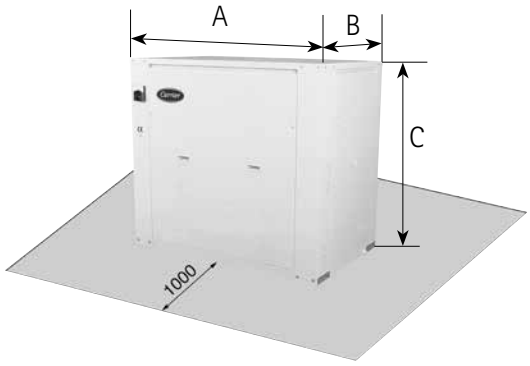
	Cooling		Heating	
Zone	**Dry bulb**	**Wet bulb**	**Dry bulb**	**Wet bulb**
Indoor air temperature °C				
Maximum	35	21	27	-
Minimum	19	14	-	-
Outdoor air temperature °C				
Maximum	46	-	24	18
Minimum	19*	-	-15	-

* With optional head pressure control, the unit will operate at temperatures below 19°C.

40PZ



38PZ



Clearances required

PACKAGED ROOFTOP HEAT PUMPS

Air treatment

48/50 UA/UH

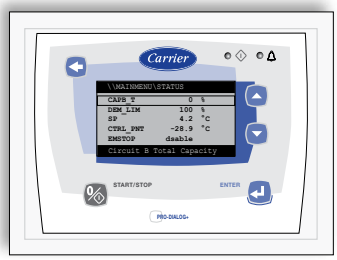
Options/accessories

- Electric heaters, various capacities*
- Hot-water coils, various capacities*
- Various coil protection options*
- Gaz burner, various capacitie
- Fresh-air sliding panel*
- Manual outdoor air damper*
- Economizer, thermostatic or enthalpy control, with or without CO_2 sensor control*
- Supply fan with various high static pressure options with or without soft starter*
- Variable Air Volume supply fan*
- Various filter options*
- Stainless steel drain pan*
- Energy recovery module*
- Various return/exhaust air options*
- Various temperature sensor options*
- CCN/JBus, Lon or BACnet gateways*
- Dirty filter detection*
- Supply air flow detection*
- Smoke detector*
- Fire thermostat*
- Duct connection fixing frame*
- Various packaging options*
- Vertical supply roof curb**
- Vertical supply roof curb with longitudinal adjustment**
- Vertical supply roof curb with transversal adjustment**
- Horizontal supply roof curb**
- Transition roof curb (French ERP)**
- Remote user interface (Pro-Dialog+)**

* Option ** Accessory

Features

- Seven sizes with nominal cooling capacities from 44 to 109 kW and nominal heating capacities from 44 to 112 kW.
- Cooling only or packaged reversible rooftop heat pumps, available with additional heating options (hot-water coil or electric heaters).
- Versatile and efficient heat pumps, designed for outdoor installation.
- Self-contained, can be installed in commercial and industrial applications.
- Units use the ozone-friendly refrigerant R-410A that does not affect the ozone layer.
- Components are specifically designed for R-410A refrigerant.
- Reduced size and weight make these units ideal for today's lightweight building structures.
- Cabinet made of powder-painted sheet metal.
- Compressors are hermetic scroll compressors and mounted on vibration isolators.
- Crankcase heaters are standard for all units.
- Low-noise shrouded axial Flying Bird fans, made of composite plastic material.
- Heat exchangers made of high-quality staggered copper tubing, mechanically bonded into pre-coated corrugated aluminium fins.
- Leak-tight refrigerant circuits with brazed connections and reduced vibration levels. Access to pressure transducers and temperature sensors without losing charge.
- Units are fully wired in accordance with EN standards.
- Simplified electrical connections.
- Reduced defrost cycle duration due to the new coil design and an auto-adaptive control algorithm.
- High part load efficiencies and easy commissioning with Variable Air Volume supply fan option.



Pro-Dialog+ operator interface

Physical and Electrical data

48/50UA		045	055	065	075	085	100	120
Eurovent Performances @ EN14511-2011								
Nominal cooling capacity*	kW	44.1	50.9	61.1	71.5	88.9	102.5	114.5
Nominal power input	kW	14.4	17.9	21.2	27.0	28.7	34.1	40.3
EER		3.06	2.85	2.88	2.65	3.10	3.01	2.84
Eurovent Energy class Cooling		A	B	B	C	A	A	B
Eurovent Performances @ EN14511-2013								
Nominal cooling capacity*	kW	43.6	50.7	61.1	71.6	88.4	101.4	112.1
Nominal power input	kW	15.1	19.4	22.5	28.9	30.8	37.0	42.0
EER		2.89	2.61	2.71	2.48	2.87	2.74	2.67
Eurovent Energy class Cooling		B	C	C	D	B	C	C
48/50UH		**045**	**055**	**065**	**075**	**085**	**100**	**120**
Eurovent Performances @ EN14511-2011								
Cooling								
Nominal cooling capacity*	kW	43.5	50.1	59.1	69.1	84.5	96.7	108.8
Nominal power input	kW	14.4	17.7	20.7	26.5	27.5	33.8	38.7
EER*		3.03	2.83	2.86	2.61	3.07	2.86	2.81
Eurovent Energy class Cooling		A	B	B	C	A	B	B
Heating								
Nominal heating capacity**	kW	43.5	54.4	62.0	74.5	85.1	98.7	120.7
Nominal power input	kW	13.2	16.0	20.1	24.8	24.4	30.7	37.5
COP**		3.30	3.41	3.09	3.01	3.49	3.21	3.22
Eurovent Energy class Heating		B	A	C	C	A	B	B
Eurovent Performances @ EN14511-2013								
Cooling								
Nominal cooling capacity*	kW	43.4	49.4	58.4	67.7	83.1	95.5	106.1
Nominal power input	kW	15.0	18.9	22.0	28.0	29.6	36.2	40.7
EER*		2.89	2.61	2.65	2.42	2.81	2.64	2.61
Eurovent Energy class Cooling		B	C	C	D	B	C	C
Heating								
Nominal heating capacity**	kW	44.9	57.2	64.2	77.2	89.0	101.8	125.7
Nominal power input	kW	13.9	17.0	21.2	26.9	27.0	33.7	40.0
COP**		3.24	3.36	3.03	2.87	3.30	3.02	3.14
Eurovent Energy class Heating		B	B	C	D	B	C	C
Electric Heaters (only 50 series)								
Type		OPT 84	OPT 85	OPT 85	OPT 85	OPT 86	OPT 86	OPT 86
Heating capacity	kW	27	36	36	36	54	54	54
Capacity steps		18 - 9	18 - 18	18 - 18	18 - 18	27 - 54	27 - 54	27 - 54
Rated Amps		39	52	52	52	78	78	78
Gaz Burners (only 48 series)								
Natural gas heating type		OPT 91	OPT 91	OPT 92	OPT 92	OPT 94	OPT 94	OPT 95
Net heat input (min./max.)	kW	49/70	49/70	57/81	57/81	49/139	49/139	57/162
Heat output (min./max.)	kW	42/62	42/62	50/73	50/73	43/125	43/125	51/147
Number Stages		2	2	2	2	3	3	3
Propane gas heating type		OPT 101	OPT 101	OPT 102	OPT 102	OPT 104	OPT 104	OPT 105
Net heat input (min./max.)	kW	--/71	--/71	--/83	--/83	71/142	71/142	83/166
Heat output (min./max.)	kW	--/64	--/64	--/75	--/75	64/128	64/128	75/151
Number Stages		1	1	1	1	2	2	2
Weight ††	kg	73	73	80	80	150	150	165
Power input (400 V-3 ph-50 Hz)**	kW	0.22	0.22	0.22	0.22	0.44	0.44	0.44
Gas connection pipe size	in	Rp 3/4» F	Rp 3/4» F	Rp 3/4» F	Rp 3/4» F	Rp 3/4» F	Rp 3/4» F	Rp 3/4» F
Control		ProDialog+	ProDialog+	ProDialog+	ProDialog+	ProDialog+	ProDialog+	ProDialog+
Refrigeration System								
# Circuits / # Comp. / Type		1 / 1 / Scroll	1 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 3 / Scroll	2 / 4 / Scroll
Outdoor fan / motor								
Outdoor fan noise power level	dB(A)	86.5	84.4	90.6	90.6	90.7	91.0	91.3
48/50 UA/UH		**045**	**055**	**065**	**075**	**085**	**100**	**120**
Indoor fix speed fans and motors (STD, HS1, HS2, HS3)								
Nominal Air flow	m^3/h	9000	12500	12500	14200	20000	20000	20000
Minimum Static pressure available ***	Pa	150	140	225	120	225	225	225
Maximum Static pressure available ***	Pa	585	680	700	580	675	675	675
Indoor variable speed fan and motor (VAV)								
Nominal Air flow	m^3/h	9100	12400	12500	14200	17730	18975	19980
Static pressure available ***	Pa	50	50	50	50	50	50	50
Maximum Static pressure available ***	Pa	500	600	620	660	535	535	640
Operating weight								
50UH weight (without options)	kg	755	900	970	980	1430	1520	1610
48UH weight (without options)	kg	820	965	1043	1053	1565	1655	1775
General Main Dimensions								
Length	mm	2120	2120	2120	2120	3577	3577	3577
Width	mm	2189	2189	2189	2189	2193	2193	2193
Height	mm	1386	1431	1792	1792	1822	1822	1822

* Nominal Eurovent conditions: Outdoor air dry bulb temperature of 35°C, indoor air wet bulb temperature of 19°C.
** Nominal Eurovent conditions: Outdoor air wet bulb temperature of 6°C, indoor air dry bulb temperature of 20°C.
*** For standard unit at nominal air flow without options
†† Weight and power input values are valid for the heating modules.

Energy recovery module (option)

The energy recovery module (ERM) is an individual dual-flow unit, equipped with a high-efficiency Eurovent-certified air-to-air heat recovery wheel with 63% to 88% efficiency, an integrated variable-air-volume plug fan and a control system for plug-and-play installation. Specially designed for economical indoor air extraction and to take in fresh air to meet current and future requirements for high-energy-efficiency buildings.

- Unit cabinet is made of galvanised and powder-painted sheet metal.
- Fitted with G4 filters on the fresh-air side as standard to protect the heat recovery wheel against dust.
- Insulated duct, power and control wiring between ERM and rooftop unit - supplied by the factory with the duct kit.
- Heat exchanger reclaims up to 90% of the heat from the extract air and transfers it to the supply air.
- High-efficiency plug fans for exhaust air are more energy-efficient and require less maintenance.

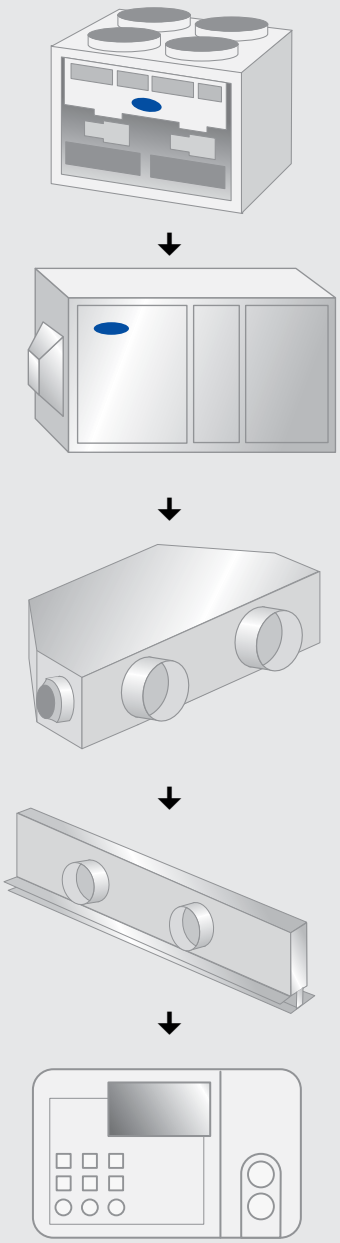
48/50 UA/UH†		045	055	065	075	085	100	120
Power circuit								
Nominal power supply	V-ph-Hz	400-3-50						
Voltage range	V	360-440						
Control circuit supply	24 V, via internal transformer							
Maximum start-up current*	A	206	173	183	204	246	261	226
Unit power factor at maximum capacity**		0.82	0.81	0.81	0.84	0.84	0.83	0.83
Maximum unit power input**	kW	21.68	27.41	33.52	40.50	44.58	52.98	59.38
Nominal unit current draw***	A	28.73	36.76	43.00	52.12	55.97	66.55	77.79
Maximum unit current draw****	A	38.20	49.10	60.10	69.80	77.00	92.20	103.10
Customer-side unit power reserve	kW	Customer reserve at the 24 V control power circuit						

* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).
** Power input, compressors and fans, at the their operating limits and nominal voltage of 400 V (data given on the unit nameplate).
*** Standardised Eurovent conditions: indoor air wet bulb 19°C, outside air temperature 35°C with standard fan performance
**** Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).
† Standard unit (without any options and accessories)

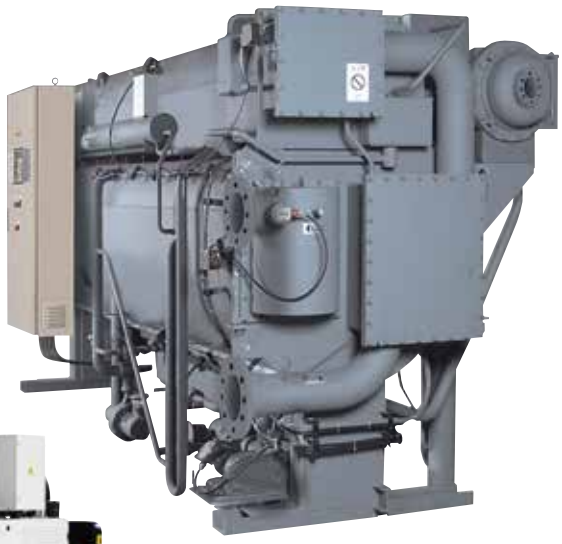
Industrial

Index

System architecture



Index



Application of the new EN14511 : 2013 chiller and heat pump performance standard:
Chiller and heat pump performances are calculated in accordance with the EN14511 : 2013 calculation standard and certified by Eurovent.

The latest version of EN14511 uses a different method to take into account the contribution of water pumps, or heat exchanger pressure drops in the unit performances. The efficiency of the pump is no longer a default value, but a function of the required hydraulic power. In January 2012, the Eurovent Certification Company decided that this method is more realistic and it is fully applied starting from the 2012 certification campaign. The performances declared based on the new version of the standard were published on the ECC website www.eurovent-certification.com at the end of March 2012.

IMPORTANT: Only 2012 performances rated according the new EN14511 : 2013, taking in account water pump and heat exchanger pressure drop are certified by Eurovent. For units declared before 2012, the previous gross EER and COP values without pump correction (for units with integral pump - measured with the pump not running) and the corresponding energy classes are available on ECC website.

Application rating conditions

	Air conditioning applications (AC)	Medium brine applications (MB)
Air-cooled cooling	Evaporator EWT/LWT 12°C/7°C OAT 35°C	Evaporator EWT/LWT 0°C/-5°C OAT 35°C
Water-cooled cooling	Evaporator EWT/LWT 12°C/7°C Condenser EWT/LWT 30°C/35°C	Evaporator EWT/LWT 0°C/-5°C Condenser EWT/LWT 30°C/35°C

Legend
EWT Entering water temperature
LWT Leaving water temperature
OAT Outdoor air temperature

Industrial

19XR/XRV

Options/accessories

- Two types of unit-mounted variable frequency drives (VFDs): standard and high tier, to match different customer requirements in terms of cost and electrical performances
- Refrigerant isolation valves allow the refrigerant to be stored inside the chiller during service
- Pumpdown unit, combined with the refrigerant isolation valves, eliminates complex connections to portable transfer systems
- Unit-mounted starter reduces machine installation time and expense
- High-voltage motors available: 3000 V, 3300 V, 6300 V
- CCN/JBus: remote connection
- 21 bar water heat exchanger
- Nozzle with flanges (water inlet/ outlet with flanges)
- Delivered in four sections to facilitate the installation

Features

- Nominal cooling capacities from 1000 to 5300 kW.
- Mix-match capabilities – a complete line of compressors and heat exchangers to ensure the optimal combination of machine components regardless of capacity, lift and efficiency specifications.
- Hermetic compressor – elimination of leak risks from the compressor/motor shaft sealing in an open compressor.
- Single-stage compressor with special features – aerodynamically contoured impellers, variable inlet guide vanes and movable diffusers for better product reliability and compressor part and full-load operating efficiency.
- Variable speed compressor capability – improvement of part load efficiency and electrical performance.
- Heat exchangers certified by the European pressure vessels code (PED).
- Carrier numerical product integrated control offers unmatched flexibility and functionality. Each unit integrates directly with the Carrier Comfort Network (CCN), providing a system solution to controls applications.

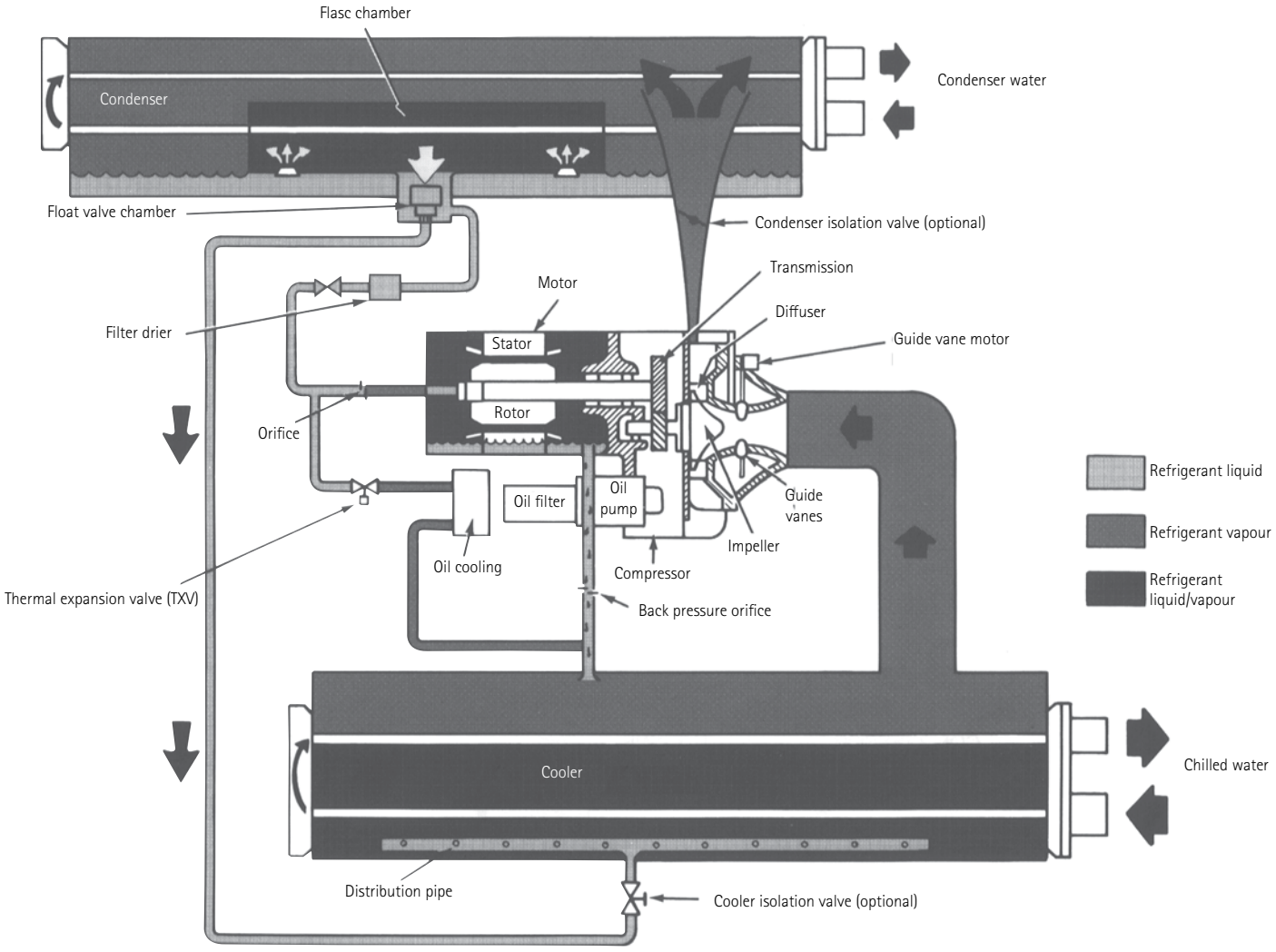
Numerical control

Physical data

Nominal capacity, kW	Heat exchanger size	Dimensions, mm				Average operating weight, kg
		Length* – Standard	Length* – Extended	Width (excl. 19XRV)	Height**	
19XR/XRV	3	4230	4754	1670	2127	8000
1000–5300	4	4230	4754	1880	2294	10204
	5	4230	4754	2054	2781	12698
	6	4230	4754	2124	2879	15420
	7	4919	5525	2530	3276	17765
	8	4919	5525	2530	3343	25712

* With two-pass nozzle-in-head water boxes.
** Maximum height

19XR refrigeration cycle

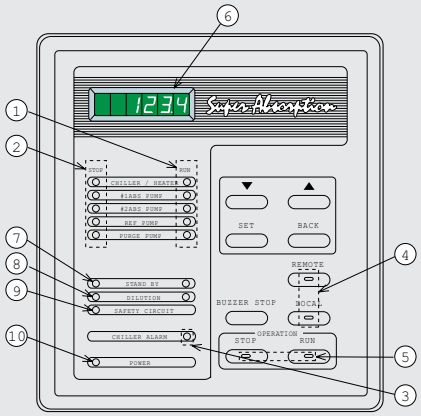


SINGLE-EFFECT HOT WATER-FIRED ABSORPTION CHILLERS

Industrial

SUPER ABSORPTION 16LJ

Display and control board



1 Operation indication
2 Stop indication
3 Alarm indication
4 Remote/local select button
5 Operation mode selection
6 Data display
7 Stand-by indication
8 Dilution indication
9 Safety circuit indication
10 Power indication

Features

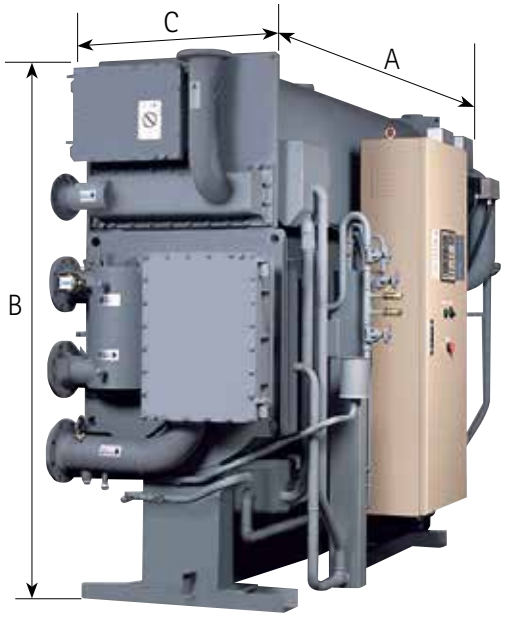
- Twenty-one sizes with nominal cooling capacities from 90 to 4000 kW.
- Designed to provide chilled water from waste heat sources, generated from industrial processes and cogeneration systems.
- Allows diversification of critical cooling requirements. Critical cooling loads are met with minimal electrical power input taking advantage of hot water sources available on site.
- Allows use of smaller emergency generators since the electrical load associated with an absorption chiller is minimal, compared to an electrically driven chiller.
- Cooling requirements are met without use of refrigerants.
- Minimises global warming effect by greatly reducing power consumption and eliminating the generation of greenhouse gases.
- Reduced noise and vibration levels. The absorption chiller does not use a large motor-compressor, leading to quiet, trouble-free operation.
- Small footprint. The high efficiency associated with these chillers results in a reduction of the required installation space.
- Auto-diagnosis system monitors operating conditions, predicts chiller information and maintains stable operation.
- Advanced high-precision control system.
- Absorption pump with inverter control (option) for energy-saving operation.
- High-performance purge system maintains unit performance and minimises maintenance requirements.
- State-of-the-art protection devices guarantee enhanced operating safety.

Physical data

16LJ		01	02	03	11	12	13	14	21	22	23	24
Cooling capacity	kW	88	140	176	264	316	387	475	545	633	738	844
Chilled water system*												
Flow rate	l/s	3.50	5.61	7.00	11.40	13.60	16.70	20.40	23.50	27.30	31.80	36.30
Pressure drop	kPa	71	60	59	56	61	36	40	35	38	74	77
Connection (ANSI)	in	2	2-1/2	2-1/2	3	3	4	4	5	5	5	5
Retention volume	m^3	-	-	-	0.11	0.13	0.15	0.17	0.22	0.25	0.28	0.30
Cooling water system**												
Flow rate	l/s	10.10	16.20	20.20	17.00	20.40	25.00	30.70	35.20	40.90	47.70	54.40
Pressure drop	kPa	77	48	49	38	39	67	72	68	71	42	45
Connection (ANSI)	in	3	4	4	5	5	5	5	6	6	8	8
Retention volume	m^3	-	-	-	0.33	0.37	0.40	0.45	0.58	0.63	0.69	0.76
Hot water system***												
Flow rate	l/s	3.06	4.89	6.11	10.40	12.50	15.20	18.70	21.50	24.90	29.00	33.00
Pressure drop	kPa	52	31	36	31	12	29	32	31	37	30	31
Connection (ANSI)	in	2	2-1/2	2-1/2	4	4	4	4	5	5	6	6
Retention volume	m^3	-	-	-	0.11	0.12	0.14	0.16	0.20	0.22	0.25	0.28
Dimensions	mm											
Length A		1745	2450	2450	2740	2740	3750	3750	3850	3850	4870	4870
Height B		2115	2115	2115	2200	2200	2200	2200	2350	2350	2370	2370
Width C		1255	1255	1435	1400	1400	1400	1400	1560	1560	1560	1560
Operating weight	kg	2070	2680	3150	4200	4400	5400	5600	6800	7300	8300	8900
Power supply	V-ph-Hz				400-3-50							
Total current drawn	A	4.8	4.8	4.8	6.1	6.1	6.1	6.1	8.8	8.8	8.9	8.9

16LJ		31	32	41	42	51	52	53	63	72	82
Cooling capacity	kW	949	1055	1178	1319	1477	1653	1846	2637	3165	3956
Chilled water system*											
Flow rate	l/s	40.80	45.60	50.80	56.70	63.60	71.10	79.40	114	136	170
Pressure drop	kPa	75	78	74	64	54	73	96	46	105	46
Connection (ANSI)	in	6	6	8	8	8	8	8	10	12	14
Retention volume	m^3	0.35	0.38	0.49	0.56	0.70	0.77	0.83	1.21	1.53	1.94
Cooling water system**											
Flow rate	l/s	61.40	68.10	76.10	85.30	95.30	107	119	170	205	256
Pressure drop	kPa	36	37	38	40	92	86	45	58	44	68
Connection (ANSI)	in	8	8	10	10	12	12	12	14	16	16
Retention volume	m^3	0.98	1.05	1.31	1.41	1.97	2.13	2.27	3.24	4.10	5.11
Hot water system***											
Flow rate	l/s	37.00	42.00	46.00	52.00	58.00	65.00	73.00	94.40	113	142
Pressure drop	kPa	30	30	30	30	28	38	50	19	19	25
Connection (ANSI)	in	6	6	8	8	8	8	8	10	10	10
Retention volume	m^3	0.33	0.36	0.44	0.48	0.56	0.61	0.66	1.08	1.27	1.55
Dimensions	mm										
Length A		4920	4920	5070	5070	5210	5750	6250	6750	6990	7590
Height B		2610	2610	2860	2860	3210	3210	3210	3660	3780	3990
Width C		1630	1630	1700	1700	1990	1990	1990	2420	2650	2820
Operating weight	kg	10700	11300	13100	13600	18500	20000	21400	31100	39100	46600
Power supply	V-ph-Hz				400-3-50						
Total current drawn	A	10.90	10.90	10.90	10.90	10.90	10.90	10.90	30.20	37.50	39.60

* Sizes 01/02/03: 12.0/6.0°C; all other sizes 12.2/6.7°C (Fooling factor = 0.018 m2 K/kW)
** Sizes 01/02/03: 29.0/34.0°C; all other sizes 29.4/38.4°C (Fooling factor = 0.044 m2 K/kW)
*** Sizes 01/02/03: 90.0/80.0°C; all other sizes 95.0/86.0°C (Fooling factort = 0.018 m2 K/kW)

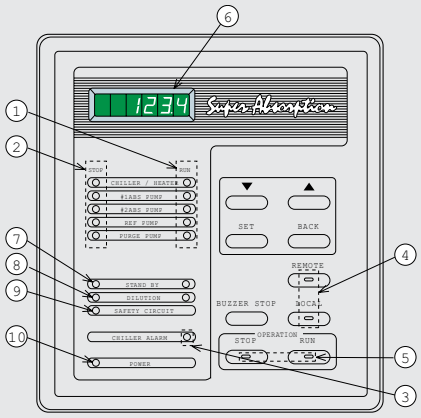


SINGLE-EFFECT STEAM-FIRED ABSORPTION CHILLERS

Industrial

SUPER ABSORPTION 16TJ

Display and control board



1 Operation indication
2 Stop indication
3 Alarm indication
4 Remote/local select button
5 Operation mode selection
6 Data display
7 Stand-by indication
8 Dilution indication
9 Safety circuit indication
10 Power indication

Features

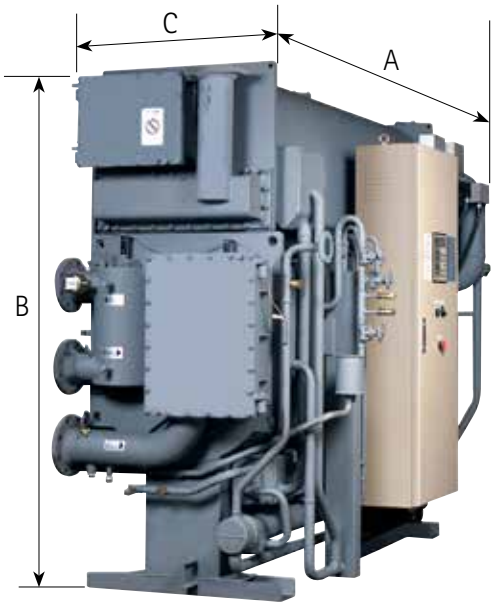
- Fifteen sizes with nominal cooling capacities from 352 to 2461 kW.
- Designed for cooling applications where low-pressure steam is available as waste heat.
- Can tie into district steam systems.
- Allows diversification of critical cooling requirements. Critical cooling loads are met with minimal electrical power input taking advantage of steam sources available on site.
- Allows use of smaller emergency generators since the electrical load associated with an absorption chiller is minimal, compared to an electrically driven chiller.
- Cooling requirements are met without use of refrigerants.
- Minimises global warming effect by greatly reducing power consumption and eliminating the generation of greenhouse gases.
- Reduced noise and vibration levels. The absorption chiller does not use a large motor-compressor, leading to quiet, trouble-free operation.
- Small footprint. The high efficiency associated with these chillers results in a reduction of the required installation space.
- Auto-diagnosis system monitors operating conditions, predicts chiller information and maintains stable operation.
- Advanced high-precision control system.
- Absorption pump with inverter control (option) for energy-saving operation.
- High-performance purge system maintains unit performance and minimises maintenance requirements.
- State-of-the-art protection devices guarantee enhanced operating safety.

Physical data

16TJ		11	12	13	14	21	22	23	24
Cooling capacity	kW	352	422	527	633	738	844	985	1125
Chilled water system*									
Flow rate	l/s	15.10	18.20	22.70	27.30	31.70	36.40	42.50	48.30
Pressure drop	kPa	50	51	64	67	60	64	42	45
Connection (ANSI)	in	4	4	4	4	5	5	6	6
Retention volume	m^3	0.12	0.13	0.15	0.17	0.22	0.25	0.29	0.31
Cooling water system**									
Flow rate	l/s	22.70	27.30	34.20	40.80	47.80	54.40	63.60	72.80
Pressure drop	kPa	34	37	32	36	32	35	65	70
Connection (ANSI)	in	5	5	5	5	6	6	8	8
Retention volume	m^3	0.33	0.37	0.41	0.45	0.58	0.63	0.69	0.76
Steam system		Saturated steam 100 kPa							
Consumption	kg/h	780	940	1170	1410	1640	1880	2190	2500
Dimensions	mm								
Length A	mm	2690	2690	3690	3690	3790	3790	4850	4850
Height B	mm	2200	2200	2200	2200	2350	2350	2370	2370
Width C	mm	1400	1400	1400	1400	1560	1560	1560	1560
Operating weight	kg	4000	4300	5100	5400	6700	6900	7900	8300
Power supply	V-ph-Hz	400-3-50							
Total current drawn	A	6.1	6.1	6.1	6.1	8.8	8.8	8.9	8.9

16TJ		31	32	41	42	51	52	53
Cooling capacity	kW	1266	1407	1582	1758	1969	2215	2461
Chilled water system*								
Flow rate	l/s	54.40	60.60	68.10	75.80	84.70	95.30	106.10
Pressure drop	kPa	48	51	44	39	35	47	61
Connection (ANSI)	in	6	6	8	8	8	8	8
Retention volume	m^3	0.35	0.38	0.49	0.56	0.70	0.77	0.83
Cooling water system**								
Flow rate	l/s	81.70	90.80	102.20	113.60	127.20	143.10	158.90
Pressure drop	kPa	54	57	59	63	39	52	68
Connection (ANSI)	in	8	8	10	10	12	12	12
Retention volume	m^3	0.98	1.05	1.31	1.41	1.98	2.13	2.28
Steam system		Saturated steam 100 kPa						
Consumption	kg/h	2810	3120	3510	3900	4370	4920	5460
Dimensions	mm							
Length A	mm	4940	4940	4990	4990	5060	5600	6100
Height B	mm	2610	2610	2860	2860	3210	3210	3210
Width C	mm	1630	1630	1700	1700	1990	1990	1990
Operating weight	kg	10300	10600	12500	12800	17500	18900	20200
Power supply	V-ph-Hz	400-3-50						
Total current drawn	A	10.90	10.90	10.90	10.90	10.90	10.90	10.90

* 12.2 –>6.7°C (fouling factor = 0.0176 m^2 K/kW)
** 29.4 –>38.4°C (fouling factor = 0.044 m^2 K/kW)

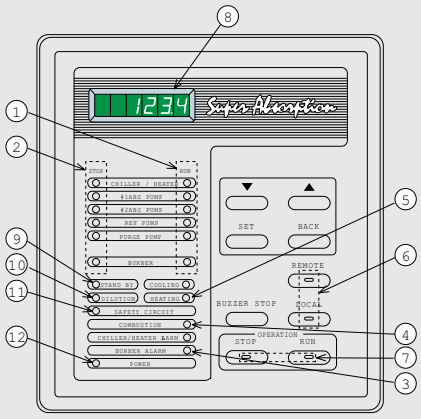


DOUBLE-EFFECT STEAM-FIRED ABSORPTION CHILLERS

Industrial

SUPER ABSORPTION 16NK

Display and control board



1 Operation indication
2 Stop indication
3 Alarm indication
4 Combustion indication
5 Cooling/heating indication
6 Remote/local select button
7 Operation mode selection
8 Data display
9 Stand-by indication
10 Dilution indication
11 Safety circuit indication
12 Power indication

Features

- Eighteen sizes with nominal cooling capacities from 345 to 4652 kW.
- The 16NK absorption chillers are designed for cooling applications where low-pressure steam is available as waste heat.
- Can tie into district steam systems.
- Allows diversification of critical cooling requirements. Critical cooling loads are met with minimal electrical power input.
- Allows use of smaller emergency generators since the electrical load associated with an absorption chiller is minimal.
- Ozone-friendly and CFC-free.
- Minimises global warming effect by greatly reducing power consumption and eliminating the generation of greenhouse gases.
- Reduced noise and vibration levels. The absorption chiller does not use a large motor-compressor, leading to quiet, vibration-free operation.
- Small footprint. The high efficiency associated with double-effect chillers results in a reduction of the required installation space.
- Auto-diagnosis system monitors operating conditions, predicts chiller information and maintains stable operation.
- Advanced high-precision control system.
- Absorption pump with inverter control for efficient, energy-saving operation.
- High-performance purge system minimises maintenance requirements.
- State-of-the-art protection devices guarantee enhanced operating safety.

Physical data

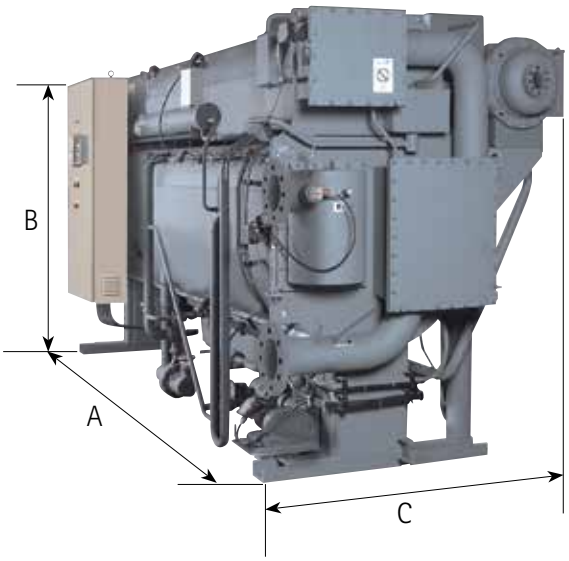
16NK		11	12	13	21	22	31	32	41	42
Cooling capacity	kW	345	447	549	689	861	1034	1238	1378	1551
Chilled water system*										
Flow rate	l/s	14.8	19.2	23.6	29.7	37.2	44.4	53.3	59.4	66.7
Pressure drop	kPa	44	64	64	57	42	41	49	46	41
Connection (ANSI)	in	4	4	4	5	6	6	6	8	8
Retention volume	m^3	0.13	0.15	0.17	0.24	0.28	0.34	0.36	0.46	0.48
Cooling water system*										
Flow rate	l/s	24.7	31.9	39.4	49.4	61.9	74.2	88.9	98.9	111.4
Pressure drop	kPa	68	40	49	109	74	53	65	67	73
Connection (ANSI)	in	5	5	5	6	8	8	8	10	10
Retention volume	m^3	0.34	0.38	0.42	0.58	0.63	0.89	0.95	1.11	1.90
Steam system		Saturated steam 784 kPa								
Consumption	kg/h	400	510	630	790	980	1180	1410	1570	1770
Dimensions	mm									
Length A		2810	3850	3850	3880	4920	5040	5040	5100	5100
Height B		2200	2200	2200	2250	2250	2390	2390	2600	2600
Width C		2050	1910	1910	2240	2070	2170	2170	2400	2400
Operating weight	kg	4600	5800	6100	7500	8800	11200	11800	13900	14500
Power supply	V-ph-Hz	400-3-50								
Total current drawn	A	10.8	10.8	10.8	13.3	13.3	13.6	13.6	20.7	20.7

16NK		51	52	53	61	62	63	71	72	81
Cooling capacity	kW	1723	1927	2170	2412	2757	3101	3446	3963	4652
Chilled water system*										
Flow rate	l/s	74.2	83.1	93.9	103.9	118.6	133.6	148.3	170.6	200.3
Pressure drop	kPa	98	46	61	123	83	78	54	81	84
Connection (ANSI)	in	8	8	8	10	10	10	12	12	14
Retention volume	m^3	0.65	0.71	0.77	0.99	1.06	1.13	1.41	1.61	1.94
Cooling water system**										
Flow rate	l/s	123.6	138.3	155.6	173.1	197.8	222.5	247.2	284.4	333.9
Pressure drop	kPa	53	71	94	61	83	111	77	113	122
Connection (ANSI)	in	12	12	12	14	14	14	16	16	16
Retention volume	m^3	1.87	2.01	2.14	2.79	2.97	3.15	3.67	4.11	4.76
Steam system		Saturated steam 784 kPa								
Consumption	kg/h	1960	2200	2470	2750	3140	3530	3920	4510	5300
Dimensions	mm									
Length A		5330	5870	6370	6100	6190	6710	6440	7460	7460
Height B		2900	2900	2900	3330	3330	3330	3450	3450	3650
Width C		2770	2800	2800	2970	3000	3000	3300	3300	3500
Operating weight	kg	18800	20800	22300	26500	30000	32100	38000	42300	47300
Power supply	V-ph-Hz	400-3-50								
Total current drawn	A	22.7	24.5	24.5	25.5	25.0	25.0	33.5	33.5	33.5

Cooling per ARI 560 2000:

* 12.2 –> 6.7°C (fouling factor = 0.0176 m^2 K/kW)

** 29.4 –> 35.4°C (fouling factor = 0.044 m^2 K/kW)

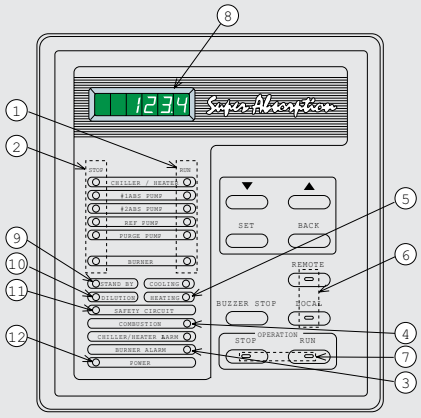


DIRECT-FIRED DOUBLE-EFFECT ABSORPTION CHILLERS/HEATERS

Industrial

SUPER ABSORPTION 16DJ

Display and control board



1 Operation indication
2 Stop indication
3 Alarm indication
4 Combustion indication
5 Cooling/heating indication
6 Remote/local select button
7 Operation mode selection
8 Data display
9 Stand-by indication
10 Dilution indication
11 Safety circuit indication
12 Power indication

Features

- Twenty-three sizes with nominal cooling capacities from 352 to 5274 kW and heating capacities from 268 to 4026 kW.
- The 16DJ absorption chillers/heaters offer building owners a better solution for many new and retrofit applications. Installation of a direct-fired chiller/heater eliminates the need for a boiler, reducing the initial cost of the system.
- Excellent for peak shaving during high electrical demand periods.
- Allows diversification of critical cooling requirements. Critical loads are met with minimal electrical power input.
- Allows use of smaller emergency generators since the electrical load associated with an absorption chiller is minimal.
- Ozone-friendly and CFC-free.
- Minimises global warming effect by greatly reducing power consumption.
- Reduced noise and vibration levels. The absorption chiller does not use a large motor-compressor, leading to quiet, vibration-free operation.
- Small footprint. The high efficiency associated with double-effect chillers results in reducing the required installation space.
- Auto-diagnosis system monitors operating conditions, predicts chiller information and maintains stable operation.
- Advanced high-precision control system.
- Absorption pump with inverter control for efficient, energy-saving operation.
- High-performance purge system minimises maintenance requirements.
- State-of-the-art protection devices guarantee enhanced operating safety.

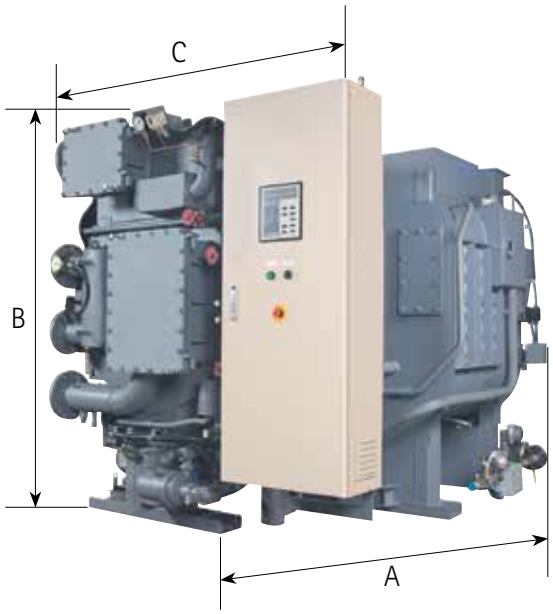
Physical data

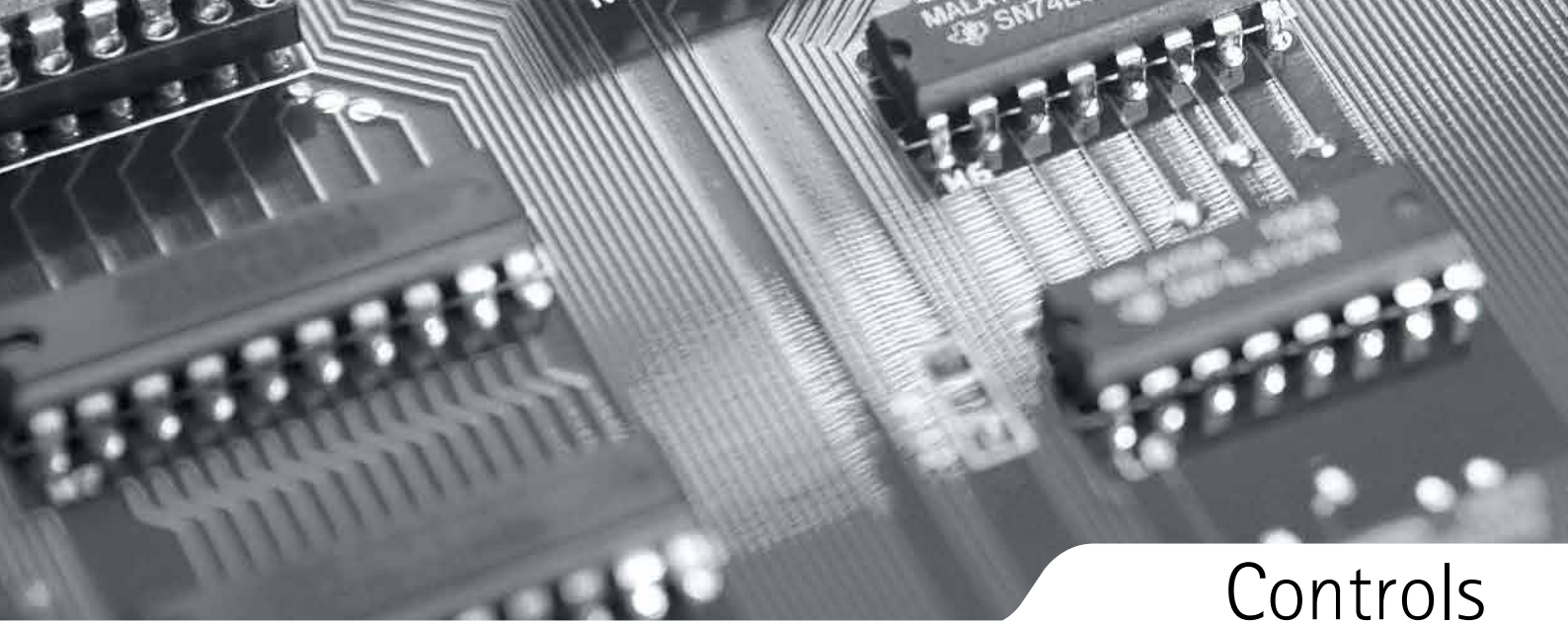
16DJ		11	12	13	14	21	22	23	24	31	32	41	42
Cooling capacity	kW	352	422	527	633	738	844	985	1125	1266	1407	1582	1758
Heating capacity	kW	268	322	403	483	564	644	751	859	966	1074	1208	1342
Chilled/hot-water system*													
Flow rate	l/s	15.1	18.2	22.7	27.3	31.8	36.3	42.4	48.4	54.5	60.6	68.1	75.7
Pressure drop	kPa	70	71	90	94	85	89	61	65	69	72	62	65
Connection (ANSI)	in	4	4	4	4	5	5	6	6	6	6	8	8
Retention volume	m^3	0.12	0.13	0.15	0.17	0.22	0.24	0.28	0.30	0.34	0.36	0.46	0.48
Cooling water system*													
Flow rate	l/s	25.2	30.3	37.9	45.4	53.0	60.6	70.7	80.7	90.8	100.9	113.6	126.2
Pressure drop	kPa	33	36	50	56	43	46	88	94	76	80	85	89
Connection (ANSI)	in	5	5	5	5	6	6	8	8	8	8	10	10
Retention volume	m^3	0.31	0.34	0.38	0.42	0.53	0.58	0.63	0.69	0.89	0.95	1.11	1.19
Fuel type		Natural gas											
Consumption (cooling/heating)**	kW	320	384	479	575	671	767	895	1023	1151	1279	1438	1598
Dimensions	mm												
Length A		3080	3080	3810	3810	3980	3980	4980	4980	5000	5000	5040	5040
Height B		1960	1960	1960	1960	2160	2160	2160	2160	2390	2390	2600	2600
Width C		1810	1810	1910	1910	2090	2090	2130	2130	2290	2290	2490	2490
Operating weight	kg	5200	5500	6600	7100	8300	8800	10100	10700	13200	13900	16300	17100
Power supply	V-ph-Hz	400-3-50											
Total current drawn	A	10.8	10.8	10.8	16.3	16.3	16.3	19.2	19.2	19.2	19.2	26.0	32.9

16DJ		51	52	53	61	62	63	71	72	73	81	82
Cooling capacity	kW	1969	2215	2461	2813	3165	3516	3868	4220	4571	4923	5274
Heating capacity	kW	1503	1691	1879	2147	2415	2684	2952	3221	3489	3757	4026
Chilled/hot-water system*												
Flow rate	l/s	84.8	95.4	106.0	121.2	136.3	151.4	166.5	181.7	196.8	212.0	227.1
Pressure drop	kPa	56	75	98	69	91	120	74	94	116	94	115
Connection (ANSI)	in	8	8	8	10	10	10	12	12	12	14	14
Retention volume	m^3	0.65	0.71	0.77	0.99	1.06	1.13	1.41	1.51	1.61	1.83	1.94
Cooling water system*												
Flow rate	l/s	141.3	159.0	176.6	201.9	227.1	252.3	277.6	302.8	328.0	353.3	378.5
Pressure drop	kPa	68	92	121	83	112	146	90	115	142	117	142
Connection (ANSI)	in	12	12	12	14	14	14	16	16	16	16	16
Retention volume	m^3	1.87	2.01	2.14	2.79	2.97	3.15	3.67	3.90	4.11	4.51	4.76
Fuel type		Natural gas										
Consumption (cooling/heating)**	kW	1790	2014	2237	2557	2877	3196	3516	3836	4155	4475	4795
Dimensions	mm											
Length A		5310	5850	6350	6110	6600	7130	6490	7020	7520	7010	7510
Height B		2900	2900	2900	3330	3330	3330	3450	3450	3450	3650	3650
Width C		2990	2990	2990	3250	3250	3250	4100	4100	4100	4450	4450
Operating weight	kg	22800	24600	26300	32700	35200	37900	46100	49500	52500	57200	60200
Power supply	V-ph-Hz	400-3-50										
Total current drawn	A	34.9	34.9	34.9	41.4	48.7	56.7	58.7	58.7	66.8	68.8	68.8

* Cooling per ARI 560 2000:
12.2 –> 6.7°C (fouling factor = 0.0176 m^2 K/kW)
29.4 –> 35.3°C (fouling factor = 0.044 m^2 K/kW)
Heating:
55.8 –> 60°C (fouling factor = 0.0176 m^2 K/kW)

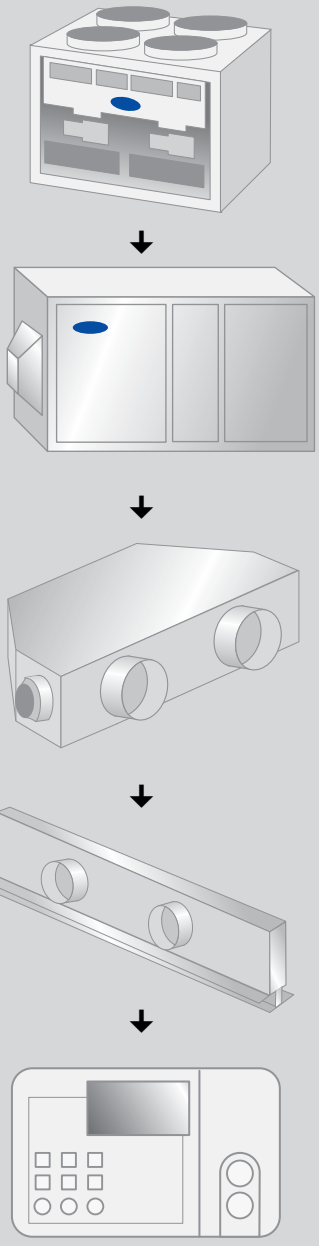
** Consumption in Nm^3/h of gas = $\frac{\text{Consumption}}{\text{High gas calorific value (kW/h/Nm}^3\text{)}}$





Index

System architecture



Index

Controls

Thermostats

Description

- Carrier electronic thermostat range is available for all Carrier hydronic terminals ranges:
  - Type A - two-pipe application with AC motors
  - Type B - four-pipe or two-pipe applications with electric heaters with AC motors
  - Type C - two-pipe application with EC motors
  - Type D - four-pipe or two-pipe applications with electric heaters with EC motors
- The thermostat for fan coil units with EC motor option controls three configurable discrete speeds via an 0-10 V signal.
- The electronic thermostat set range is from 10°C to 30°C, with the possibility to limit the temperature in public buildings where low energy consumption is a key requirement. This is done via a dip-switch inside the control (cooling range 23°C/30°C, heating range 10°C/21°C).

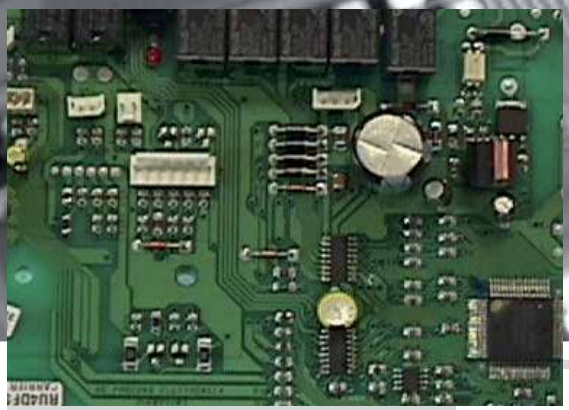
Features

- Auto fan: the control automatically sets the fan speed. If the room temperature is far from the set point, high fan speed is selected. As the room temperature approaches the desired value, the fan speed decreases to the minimum speed.
- Automatic changeover from cooling to heating mode, based on the water temperature, ensures that the ideal room temperature is maintained.
- Remote changeover - automatic changeover from cooling to heating mode, based on the remote signal from the monitoring system.
- Frost protection keeps the room temperature above a minimum level.
- Booster heating control optimisation (with electric heater option): with the water temperature below 30°C the system will be in heat demand mode and the electric heater is the only available heating source. If the water temperature is above 35°C the system will be in booster heating mode, energising water valve and electric heater together. This function is deactivated if the water temperature is above 45°C (the electric heater will be de-energised).
- Energy saving when the room is unoccupied, without the need to switch off the unit. If the energy-saving button is pressed, the actual set point will be modified as follows, without changing the position of the set point selection knob: ± 4 K.
- LED intensity (offices or light commercial applications) - 10 seconds after the last user interface use all LEDs are reduced in intensity. To avoid disturbing hotel guests, the thermostat can be configured from "Night Mode" to "Dark Mode": 10 seconds after the last user interface use, all LEDs are switched off.
- Air sampling: with no fan request and the air sampling jumper in ON position, the control performs the air sampling function. The air in the room is moved, thermal stratification is reduced for a more reliable ambient temperature reading.
- Continuous fan (no fan request and continuous fan jumper ON): the control selects the fan speed, regardless of thermal station conditions. With fan in auto fan mode and control not in the demand phase, the fan permanently runs at low speed.
- External contact: A high voltage input signal for external contact is present. If the contact is activated, device behaviour depends on its configuration on site:
  - Presence detection energy saving mode is activated, room temperature is raised by 4 K in cooling mode and reduced by 4 K in heating mode.
  - Window contact: in OFF mode (window open), all outputs are disconnected (fan, valves, etc.) and only the frost protection function is active, if enabled.

Electronic fan coil controllers – quick reference table

	Thermostats	HDB	NTC
Control algorithms			
On-off	x	x	
Proportional-integral			x
Valve management			
Air flow control only (no valve)	x	x	
On-off actuators	x	x	x
Proportional valves			o
Fan control			
Three speeds	x	x	x
Optimum fan speed selection	x	x	x
Variable speed	x		x
Main functions			
Setpoint control	x	x	x
Occupied/unoccupied mode	x	x	x
Frost protection mode	x	x	x
Window contact input	x	x	x
Measurement of water inlet temperature for automatic seasonal changeover (2 pipes)	x types A + C	x	x
Automatic seasonal changeover (4 pipes and 2 pipes + electric heater)	x types D + B	x	x
Manual changeover	x	x	x
Frost protection mode	x	x	x
Continuous ventilation within dead-band	x	x	x
Periodical ventilation within dead-band	x	x	x
On-site configuration	x	x	x
Unit grouping		x	x
Louvre control		x	x
Supply air temperature monitoring limiting			x
Communication (CCN)			x
Electrical heater loadshed			x
Dirty filter alarm			x
Alarm reporting			x
IAQ control			o
Demand control ventilation (DCV)			o
Free cooling mode			o
User interface			
Digital display		x	x
Automatic or manual fan speed control	x	x	x
Operating mode selection	x	x	x
Occupancy (eco) button	x	x	x

HDB CONTROLLER



Controls

HDB

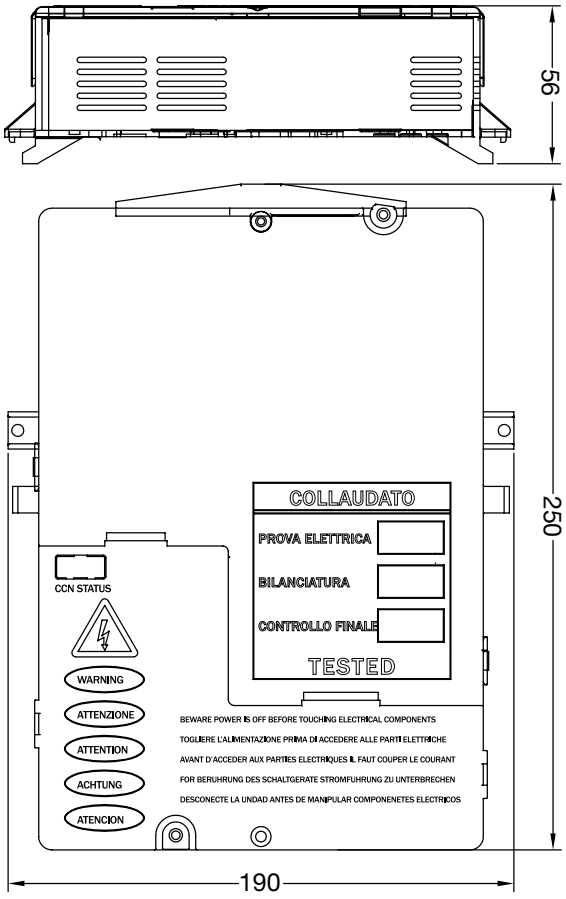
User interfaces

Depending on the application, two user interface types can be selected:

- a wired user interface that can be mounted on the wall or inside compatible terminal fan coils (42N)
- an infrared user interface to be used together with a wall-mounted infrared received or a receiver incorporated in compatible terminal fan coils (42GW)

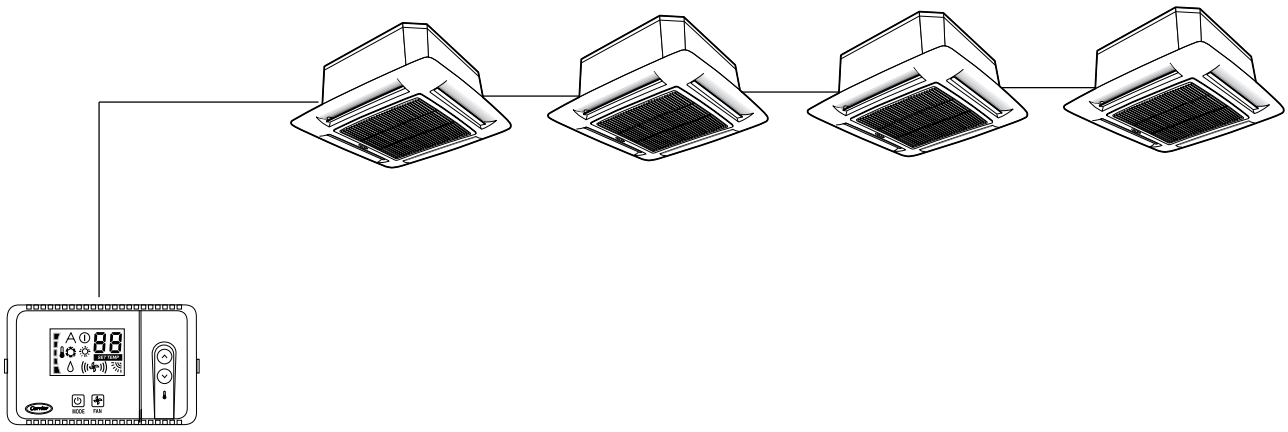
Features

- The HDB controller is a microprocessor-based controller designed to control and optimise the operation of hydronic terminal fan coil units.
- Factory-installed on the terminal fan coil - The controller is factory-installed on the terminal fan coil; the assembly is also tested at the factory. As a result, field installation is extremely simple.
- Ease of grouping - As an option, the HDB control can be equipped with a grouping board that is used to connect up to 15 units with a bus. All units connected together will operate under the same conditions.
- Louvre control - For terminal fan coils equipped with motorised louvres, the HDB controls the louvre position as defined by the user or in swing mode.
- External contact - The control has an input that can be used to remotely set the unit to economy mode.
- Scheduling - If the unit is used with an infrared user interface, unit operation time can be scheduled on a daily basis. Three start times and three stop times can be programmed.
- Timer - If the unit is used with an infrared user interface it can operate for a predefined duration before switching to eco mode or off.



Carrier Room Conroller (CRC2(

Infrared Remote Control (IR2)
and receiver



HYDRONIC FAN COIL COMMUNICATING CONTROLLER (NTC)

Controls

NTC

Network communication

- The NTC communicating controller can be connected on an RS 485 bus, using the Carrier Comfort Network (CCN) protocol.
- Units equipped with the NTC controller can be part of the Aquasmart Evolution system.

Advanced functions

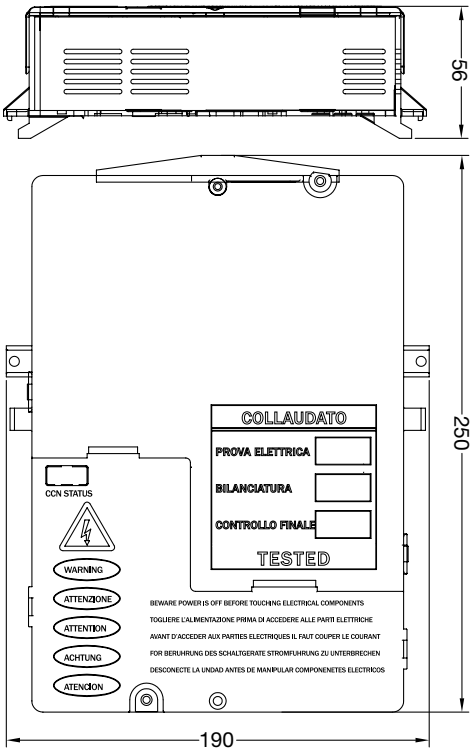
- Low Energy Consumption (LEC) variable speed control.
- The NTC controller can drive the fan speed continuously within a configurable range for optimal thermal and acoustic comfort.
- Hydronic control - The NTC controls both floating and fixed-point value actuator types (230 V on-off and 230 V three point).
- Demand controller ventilation (DCV) - On fan coils equipped with CO_2 sensors and fresh air dampers, the NTC controller can adjust the amount of fresh air admitted to the room, as required by the occupants.
- IAQ management - The NTC controller can control all features related to Indoor Air Quality that are included in Carrier terminal fan coil units.

Description

Carrier offers one of the market's most sophisticated and complete communicating controllers for hydronic fan coil ranges, the NTC controller, that is compatible with the full Carrier fan coil range.
For the customer and installer the same controller simplifies and eases installation and service operations whilst covering a wide range of hydronic system types and applications.
The controller can be applied and function as either a standalone control, as part of a larger CCN system application, or at the heart of a Aquasmart system functioning with the Aquasmart Touch Pilot System Manager.

Features

- The NTC controller controls and optimises the operation of hydronic terminal fan coil units. It is a microprocessor-based CCN (Carrier Comfort Network) compatible communicating controller with energy-saving algorithms.
- Energy-saving algorithms manage water valve operation and fan speed control simultaneously to ensure minimum energy consumption whilst maximising comfort conditions for the occupant.
- Factory-installed on terminal fan coils
  The NTC controller is factory-installed on the terminal fan coil; the assembly is also factory-tested. As a result, field installation is extremely simple.
- A wide range of user interfaces
  Depending on the application, two user interface types can be selected:
  - a simplified wired analogue user interface (SUI) that can be wall-mounted
  - a wired communicating user interface (CRC2) that can be wall-mounted or incorporated in compatible terminal fan coils (42N)
  - an infrared user interface (IR2) for use together with a wall-mounted infrared received or a receiver incorporated on compatible terminal fan coils (42GW)
  - a multi-function user interface (ZUI) that can control comfort, lights and blinds within a Carrier system

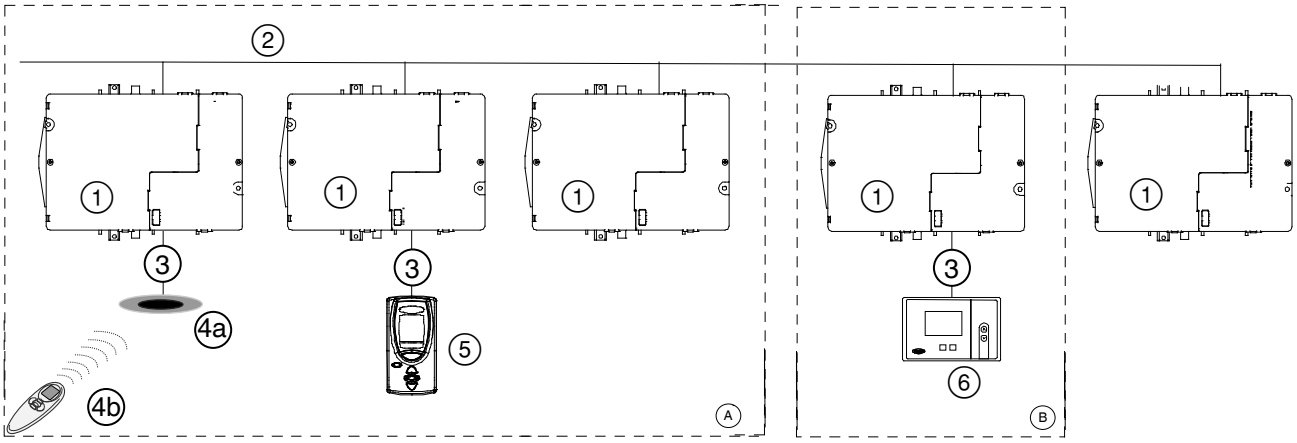


Carrier Room Conroller (CRC2(

Simplified User Interface (SUI)

Infrared Remote Control (IR2) and receiver

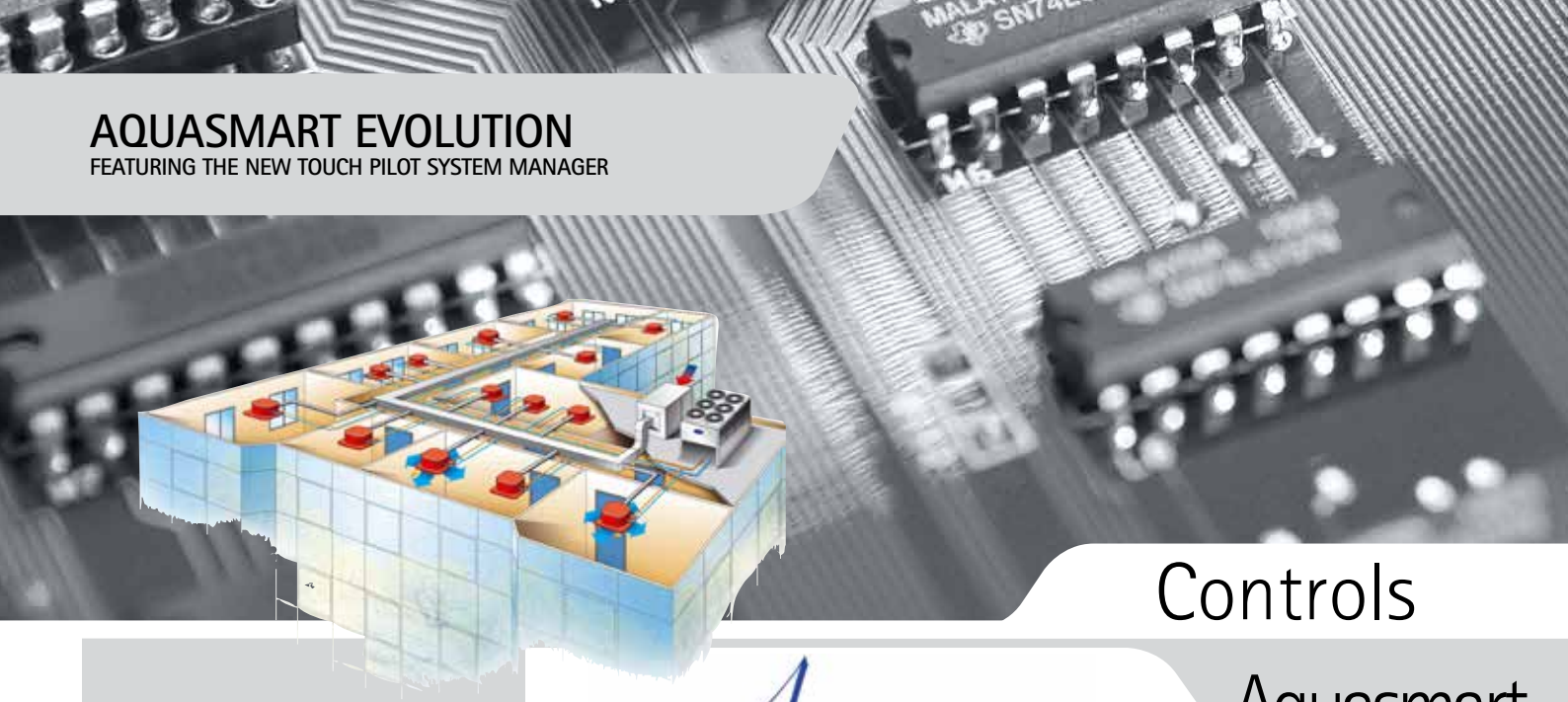
Zone User Interface (ZUI)



Legend

1	NTC controller
2	Secondary communication bus
3	User interface connection
4	IR2
5	ZUI2
6	CRC2
A	Room A
B	Room B

AQUASMART EVOLUTION
FEATURING THE NEW TOUCH PILOT SYSTEM MANAGER



Description

- Aquasmart Evolution is a complete hydronic heating, ventilating and air conditioning (HVAC) system ideal for residential and light commercial applications from offices, commerce to hotels and hospitals. It offers perfect comfort for building occupants whilst optimising economical operation for applications up to 2500 m^2. Larger installations with multiple systems can be managed and integrated within a single Building Management solution thanks to the new BACnet option capability (available as option in 2012).
- An Aquasmart system consists of up to 128 terminal fan coil units, served by up to two chillers or heat pumps (master-slave), to supply cooling and/or heating to occupied spaces and fresh air handling units. The system manager can fully integrate and control up to eight Carrier fresh air handling units* (39SQ). Each fresh air plant can be associated with specific terminal fan coils and/or zones for optimum building use management with occupancy, controlling and minimising energy use.
- Individual schedules can be set up and managed for each and all air treatment plants. The Aquasmart System Manager supplies building information enabling dynamic and precise control of the 39SQ's night-time free-cooling feature to further reduce building energy consumption.

* If air treatment unit is not supplied by Carrier, integration is limited to control via a digital output for the main fresh-air unit.

Features

- The Aquasmart Evolution system ensures significant energy savings combined with optimised user comfort by managing building zoning, occupancy and room temperatures in accordance with needs.
- Terminal fan coil units can be organised in up to 32 zones to optimise building management by zone requirement and according to building design conditions.
- The Touch Pilot System Manager – the brain and building user interface – was designed to facilitate use and allow rapid access to manage and configure system operation to maximise energy savings at comfort conditions.
- System components are fitted with communicating controls allowing the System Manager to communicate with and obtain feedback on user needs and operation. Based on the system requirements the System Manager coordinates the system heating and cooling modes for maximum comfort and optimal energy consumption, respecting the comfort parameters and occupancy schedules for the building zones.
- The Aquasmart system offers affordable building HVAC system management featuring capabilities usually only available in more expensive solutions and requiring additional building-by-building programming development.

System design layout and configuration guide

- The System Manager is connected to the system components via a communication bus, and allows control of all system and individual terminal operating parameters.
- System configuration is simple through easily accessible menus. Unit grouping is managed by the network and requires no specific wiring to allow easy reconfiguration to suit later building layout modifications.
- The Aquasmart Evolution components are delivered complete, configured and factory-tested.

Energy savings

- The Aquasmart system controls offer superior comfort levels. By optimising and controlling the system components building owners and occupants can save energy and reduce their energy bill, contributing to a reduction in building carbon emissions.
- System control saving possibilities are further enhanced with a range of significant energy-saving features available at equipment level, such as the 39SQ plug-and-play fresh air handling unit with heat recovery technology, the use of reversible 30RQ air-to-water heat pumps for space heating, 61AF heat pumps for domestic hot water and a range of fan coil units with EC motor technology and variable fan speed control.
- Energy simulations conducted with a recognised software simulation program indicate that Aquasmart can achieve energy savings over a traditional non-communicating and non-optimised system. Case studies indicate that savings of 25% and beyond are possible. Each project merits its own assessment of the opportunities.

New System Manager

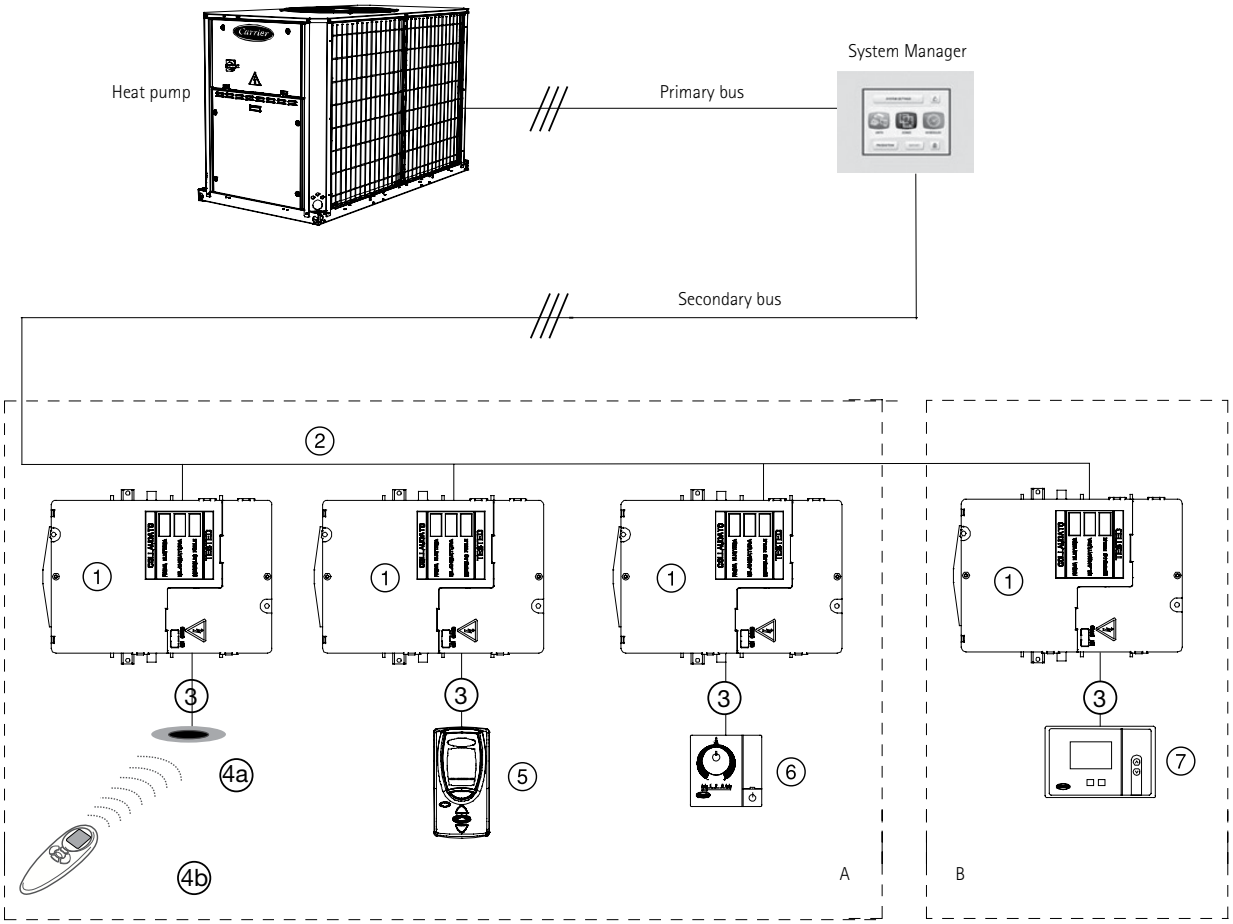
- The Touch Pilot system manager is the user interface and allows building managers to control the Aquasmart system and associated components and features.
  - Intuitive colour touch screen.
  - A system set-up wizard leads installers through a number of easy intuitive steps to identify and configure the system and manage system set-up, operation and maintenance.
  - Icon-driven menus easily and rapidly manage and maintain the HVAC system.
  - Management of system parameters including cooling and heating set points (terminals and cooling and/or heating plants) and occupied and non-occupied periods.
  - Optimisation of energy consumption, monitoring of component operation and reporting of system faults.
  - Management of occupied/unoccupied time schedules and smart start features to ensure that comfort requirements are met from the very beginning of the occupied period.
- The System Manager is compatible with a web browser, allowing user access to the system from a remote location such as a maintenance office within the building or from an off-site location where internet access is available. This facilitates ease-of-access and use and allows service and maintenance companies to offer remote service coverage without visiting the site, thus reducing carbon emissions due to transport.
- The availability of a new Carrier Apple application (HVAC smart browser) extends the accessibility to smart phones and tablets.

System selection

- The Aquasmart system is easy to select and configure with all units supplied from the factory with pre-installed, pre-configured and pre-tested controls and valves. The installer only needs to adjust the system parameters to the local building or application needs - a task made even easier with the New System Manager.
- Carrier has created a Quick Selection Guide that is available to rapidly identify and select the system components, facilitating the design process and saving time for designers and installers alike.
- Please contact your local sales office for a copy of this guide.

Building Management System Integration

- The latest release of the Aquasmart Touch Pilot system manager enhances the capabilities to integrate Aquasmart systems with Carrier or third-party building management system front-end software. The new BACnet option allows access to read and read/write system parameters from the building management system facilitating integration of Aquasmart within the overall building management.



Legend:

1	NTC controller	6	SUI
2	Secondary communication bus	7	CRC2
3	User interface connection	A	Room A
4	Infrared controller IR2	B	Room B
5	ZUI2		

March 2014

Manufacturer reserves the right to change any product specifications without notice.


Carrier
United Technologies