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HWC

 **HiRef**
Innovators above
the standards

SERVICES

INDUSTRY



Air condensed chillers and heat pumps

HWC

with scroll compressors for indoor installations

Range: 57.9–201.8 kW



HWC is the HiRef range of air-condensed liquid chillers with Scroll compressors for indoor installations. Four different versions (chiller, Free-Cooling chiller, reversible heat pump and multipurpose) the several available power output rates and compact frame make these units highly versatile and suited to a wide range of system layouts. The sizing and selection of individual components have focused on containing energy consumption, aiming to optimise energy savings not just for individual chillers but for the entire system. The unit is suitable for installation in equipment rooms and can be ducted at both suction and delivery ends. The maximum working head available is 250 Pa. The configurations available for the refrigeration circuit are:

EFFICIENCY PACK 1: Dual compressor and dual circuit unit, for a system with greater redundancy (only for Free-Cooling versions).

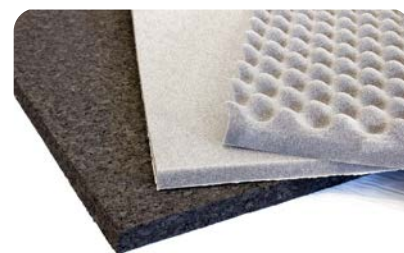
EFFICIENCY PACK 2: Dual compressor (tandem) on single circuit for greater efficiency at partial loads.

EFFICIENCY PACK 4: Four compressors (dual tandem) on dual circuit, for a redundant system that is efficient with low loads.

Main advantages

Attention to detail and to low noise requirements

Scroll compressors, which are the main noise source in the unit, are fitted on rubber feet; these dampen vibration and therefore attenuate the noise transmitted to the various system parts. On request, the compressor compartment can be lined with special sound absorbing material and the compressors encased in special insulating hoods to reduce airborne noise emissions.



All accessories on-board the machine

The special component layout, together with compact plate heat exchangers and Scroll compressors, ensures on one hand easier access to carry out maintenance procedures and on the other hand, sufficient internal space available for fitting a wide range of accessories and hydraulic options. The hydraulic circuit may include a dual shut-off pump, flow switch, tank, expansion tank and safety valve.

Maximum efficiency at partial loads

The adoption of a multiscroll solution, the use of electronically controlled expansion valves and plate heat exchangers and modulation of the compressors are all key features that make the HWC range particularly efficient at partial loads.



Technological components



Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet, LonWorks, SNMP.



Scroll compressors

Scroll compressors include a mobile scroll, driven by the motor, which completes orbital revolutions and a fixed scroll that is coupled to it. The orbital motion creates a series of gas pockets that move from one scroll to the other. When moving closer to the centre of the scroll, where exhaust takes place, the gas is compressed to smaller and smaller volumes until the desired delivery pressure is reached. Scroll technology improves volumetric efficiency and flow continuity, reduces noise and leakage and eliminates harmful volumes and downtime.



Plate heat exchanger

Brazed plate heat exchangers ensure efficient heat transfer with minimised footprint, eliminate the need for thick frame plates and seals, and ensure high thermal power density. They have a long life cycle, are maintenance-free and withstand both high temperatures and extremely high pressures. This type of exchanger is used in a wide range of applications including cooling, heating, evaporation and condensation.



Corrosion resistant material

The HiRef outdoor units are protected by a metal structure resistant to corrosion and weathering. They are also made of galvanised steel sheet, with epoxy-polyester powder coating, oven-polymerised at 180°C, to offer a C3 degree of protection. On request, it is possible to order specific paint finishing treatments or a metalwork structure built entirely in stainless steel, to obtain a higher degree of protection from high impact adverse weather events.



EC Radial Fans

Radial or centrifugal fans are characterised by backward blades. Air is taken in the axial direction, parallel to the rotation axis and delivered radially, perpendicular to the rotation axis. This type of fan does not require an external screw, has a high head and is suitable for use in indoor units where the air is often ducted and recirculated. They are driven by electronically commutated (EC) brushless permanent-magnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.



Available versions



COOLING ONLY



FREE-COOLING

REVERSIBLE HEAT
PUMP

Types of system



AIR/WATER

Additional benefits

- 2 different soundproofing set-ups available: Standard and Low Noise
- Electric control panel with IP55 protection rating
- Radial EC motor fans
- Electronic expansion valve
- Easy accessibility thanks to the optimisation of the internal space
- Programmable microprocessor control with proprietary software
- Available with single or double pumping kit in timed rotation
- Maintenance kit available
- Compliance with ERP regulations

Technical table

HWC		052	062	072	082	092	102	112	132	142	162	182	204
USER WATER VALUES 12/7°C, 35°C OUTSIDE AIR, 40% U.R.													
COOLING CAPACITY	kW	57.7	62	71	78.7	94.5	106.8	119.8	128.2	142	155.5	183	201.5
TOTAL POWER INPUT	kW	18.5	23	25	28.7	33.8	39.6	42.6	47.1	55.2	63.8	68.5	82.2
SEPR	-	5.29	5.26	5.32	5.33	5.27	5.22	5.42	5.3	5.11	5.05	5.24	5.15
EER	-	3.12	2.69	2.84	2.74	2.8	2.7	2.82	2.72	2.57	2.44	2.67	2.45
SOUND POWER LEVEL	dB	82	82	82	83	85	86	86	86	89	90	92	89
DIMENSIONS [LxHxD]	mm	2000x1100x2020			2400x1100x2020			3090x1100x2020			4090x1100x2104		

Data declared with use of R410A refrigerant | Calculated with 20% glycol. Free-Cooling versions always have a refrigerating configuration consisting of one compressor per circuit or a dual tandem arrangement on two circuits | Features referred to the standard set-up. If not available, these features are referred to the Low Noise or Super Low Noise set-ups | Also available with 60 Hz power supply

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