

MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

IT COOLING

UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER



UNITS FOR 4-PIPE SYSTEMS, AIR AND WATER SOURCE, WITH SCROLL, SCREW, AND INVERTER SCREW COMPRESSORS, FROM 33 TO 985 kW



INTEGRA for IT Cooling



Units for simultaneous hot and cold water production, air and water source, with scroll, screw, and inverter screw compressors, from 33 to 985 kW

INTEGRA heat pumps have been designed for mixed-use buildings featuring variable thermal and cooling capacities. In a typical IT Cooling application with a data center located within an office building, INTEGRA heat pumps are the perfect solution to recover the thermal energy of IT equipment and transfer it to other office areas nearby.

The thermal energy can therefore be reused for producing cold, hot and very hot water for domestic use.

IDEAL FOR:

- ▶ **IT Rooms with connected offices:** thermal heat is redirected to the offices close to the server rooms
- ▶ **Multiuse spaces** in combination with other RC units
- ▶ **District heating:** thermal heat is used to warm nearby houses through the district heating networks

SMART HEAT RECOVERY: TURNING HEAT INTO PRECIOUS ENERGY

The heat generated by powerful computer servers is a precious energy source; why do we waste it? This thermal energy can be recovered and reused if necessary, turning it into a precious economic asset.

Through innovative heat recovery, the SMART THERMAL ENERGY MANAGEMENT SYSTEM, RC IT Cooling products synergistically match

both the cooling sources of the data center with the heating requirements inside the building, by moving the heat from the data center to other office areas.

A forward-looking system that combines perfect comfort with zero energy waste, improving the energy class rating of the building and providing large annual energy savings.

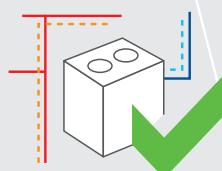


INTEGRA presents a new approach to turn data center heat into precious energy. The revolutionary all-in-one heat pumps cool your IT environments and reuse their thermal heat to serve the nearby facilities.



SIMULTANEOUS PRODUCTION OF HOT AND COLD WATER

Thanks to their advanced control logic, multi-use units are always able to respond to building's climate control requirements, especially if overlapping loads occur. The unit can independently produce heating and cooling simultaneously, according to the actual needs.



SYSTEM SIMPLIFICATION

The use of a unit that independently produces both heating and cooling eliminates the need for separate heating and cooling resources. This significantly simplifies the system: plant areas are reduced, hydronic circuits are simplified, maintenance is reduced by half, and control is rationalized.

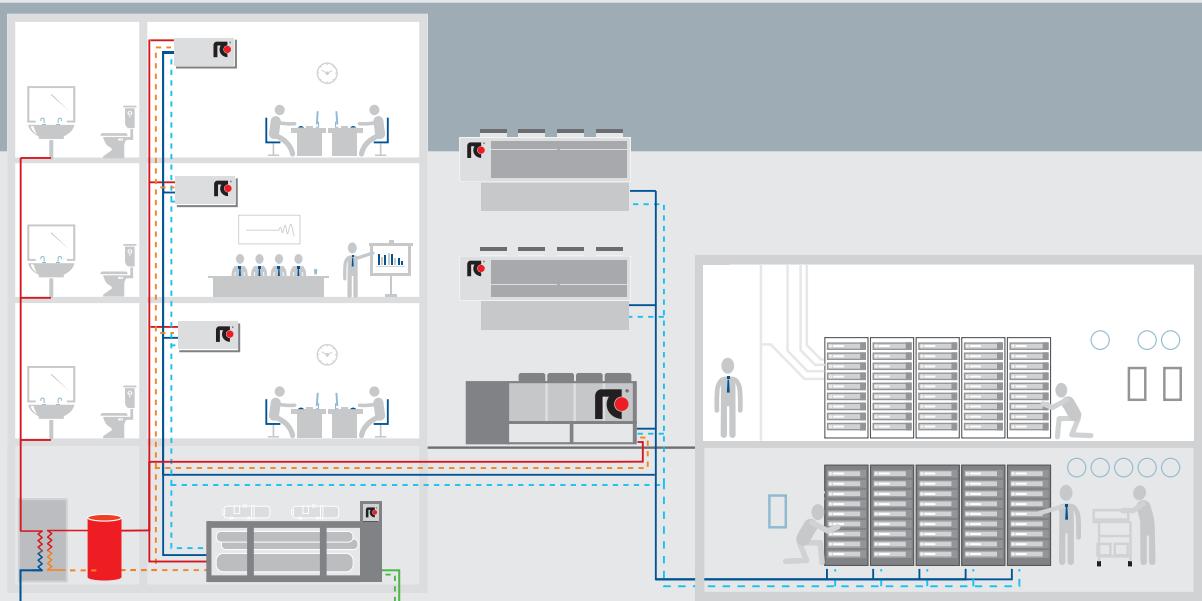
ZERO kW/h WASTED

The construction approach that characterizes RC multi-use units has been designed to maximize their usefulness. The maximum efficiency of the system is reached with simultaneous loads, the energy produced is used to satisfy the hot and cold demands of the total system. In multiuse buildings with opposite overlapping thermal loads, the INTEGRA units are the greenest and most efficient solution compared to any other.



REDUCTION OF ON-SITE OPERATIONS

A simplified system results in a significant reduction in the operations to be carried out on site. In fact, it is no longer necessary to connect it to the gas network, install and commission auxiliary boilers, or manage areas to be used for conventional heating units. This means substantial savings in terms of time and cost for the client.



TOTAL EFFICIENCY RATIO

TER

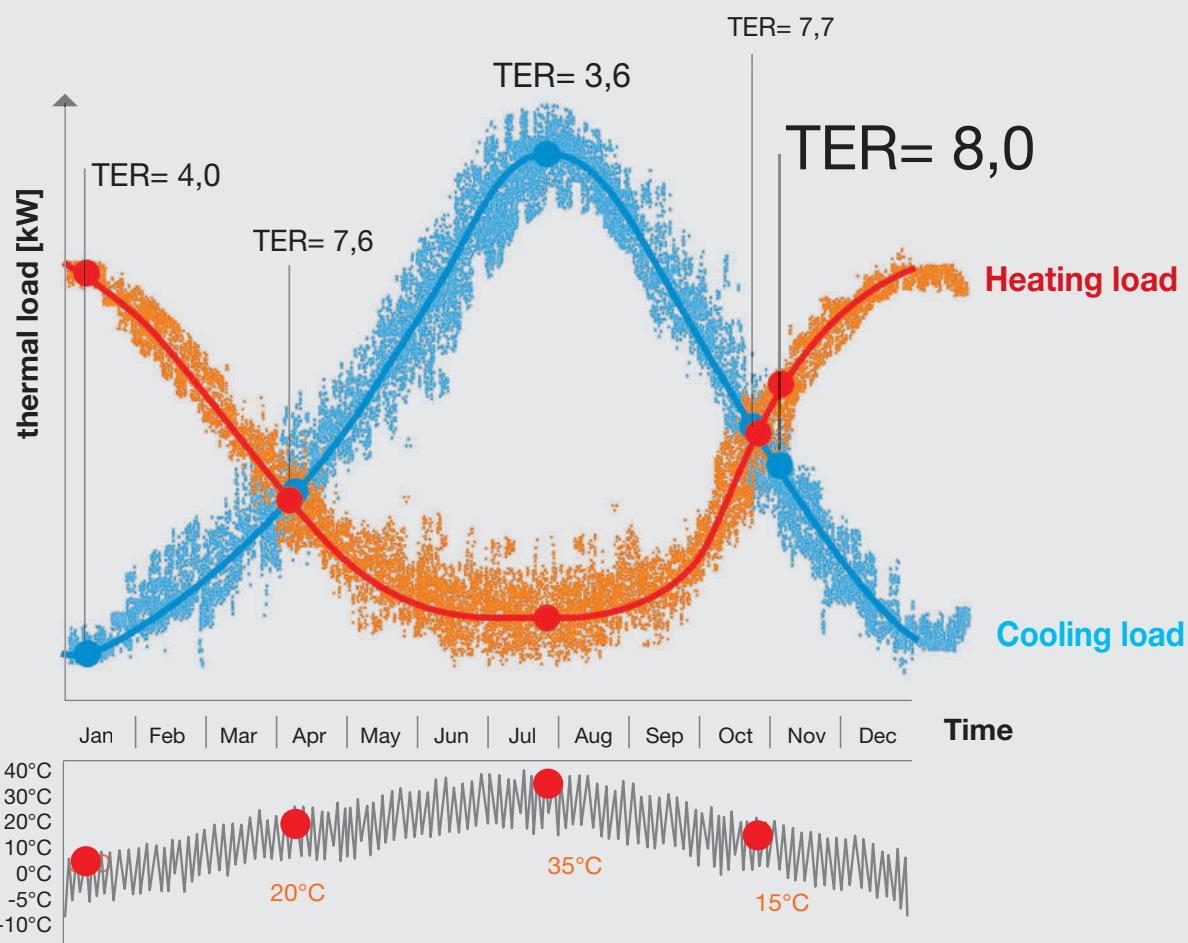
COOLING
POWER

+

HEATING
CAPACITY

POWER CONSUMPTION

In all cases in which INTEGRA simultaneously produces hot and cold water, the real efficiency of the unit is the sum of the performance in hot and cold water production.



Using traditional ratings such as EER and COP to measure efficiency of 4-pipe units would be limiting.

To objectively measure performance under simultaneous load conditions, RC, a pioneer in the development of this technology, has conceived TER - total efficiency ratio.

The TER is calculated as the ratio between the sum of the delivered heating and cooling power and electrical power input.

Considered today the most effective way of representing the real efficiency of the unit, the TER reaches its maximum value when the loads are completely balanced.

THE MOST PRECISE WAY TO MEASURE EFFICIENCY

Completely integrated functions and maximum performance synergy require an advanced measurement rating for the total efficiency of the unit:
TER - Total Efficiency Ratio.

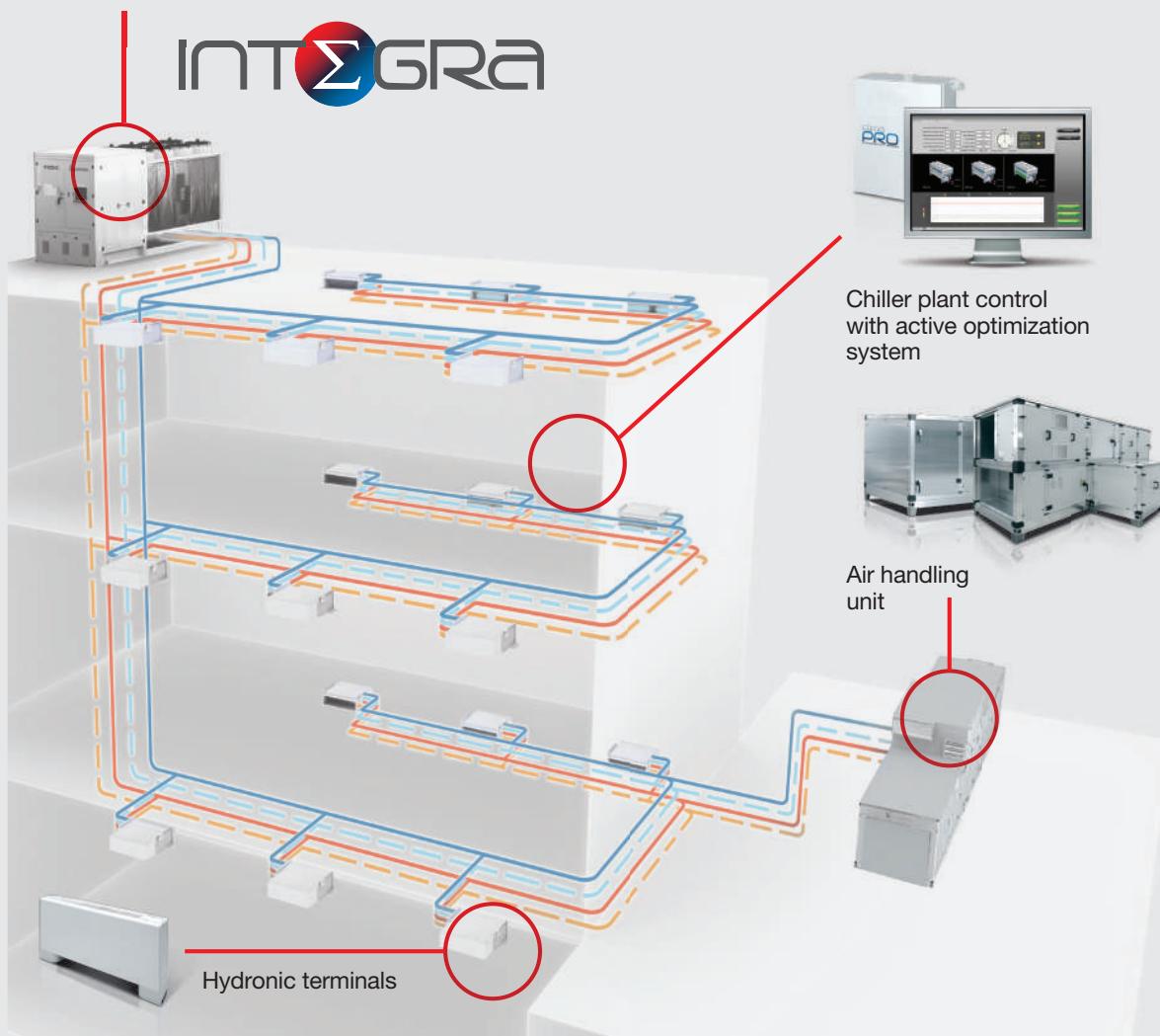
FOCUS ON: 4-PIPE SYSTEMS



This type of system is suitable for air-conditioning in buildings that require separate areas to be heated and cooled at the same time.

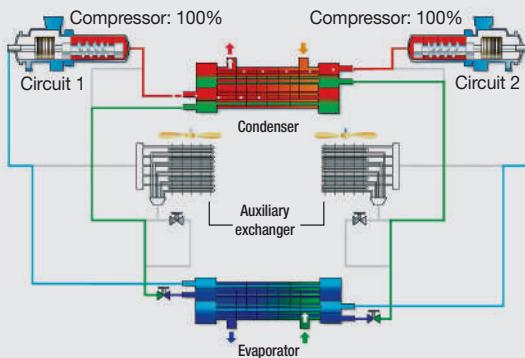
It is combined with centralized solutions capable of producing hot and cold water in the two hydronic circuits of the system, assuring maximum comfort in every room of the building, independently and in any period of the year.

From today, a single intelligent unit is sufficient for the management of these complex systems: INTEGRA.

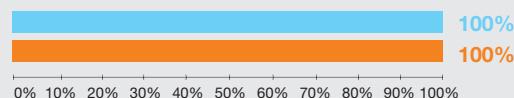




The main feature of INTEGRA units is the ability to manage the overall capacity, which refers to both heating and cooling demands, based on the actual load requirements of the total system. The operational flexibility is total: all combinations of heating and cooling loads can be met.

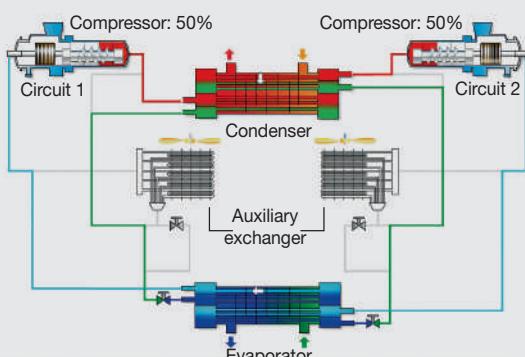


100% cold side / 100% hot side

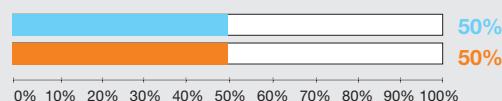


The two circuits operate at maximum power, evaporating in the cold-side exchanger and condensing in the hot-side one.

The source-side heat exchanger (air coil or water exchanger, depending on the type of unit) is not used, which means that in these conditions there is no energy waste.



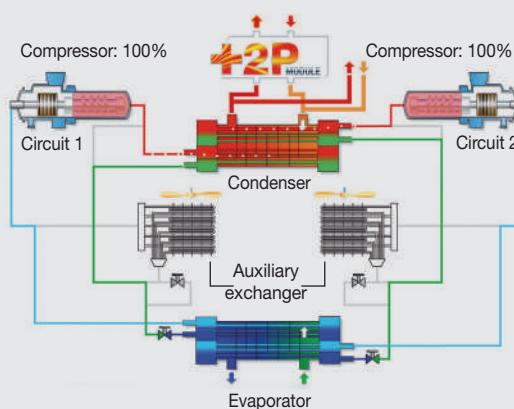
50% cold side / 50% hot side



Also in this situation the unit operates like a water-water unit, as all the evaporating and condensing energy is used for the system.

Since the system only requires 50% of the total energy, each circuit operates in partial load conditions. In this particular state, the exchangers are oversized, thus achieving an even higher efficiency.

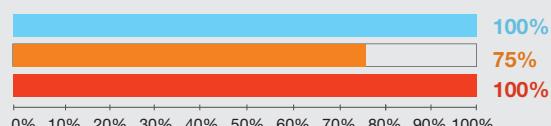
OPERATING MODES WITH



100% cold side

75% hot side

100% very hot side

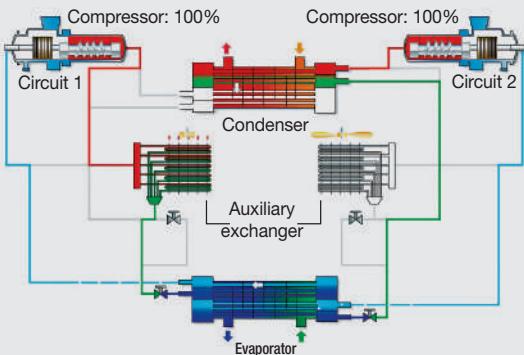


In this state, both the compressors operate at full load in order to meet the demands of the plant. Both circuits evaporate all the refrigerant in the cold-side heat exchanger and condense in the hot-side one, so the auxiliary source-side heat exchanger is not used.

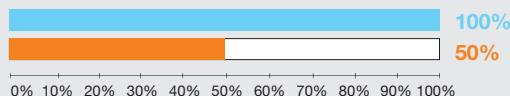
Part of the hot temperature water flow produced in the hot-side heat exchanger is used by the +2P module to produce very hot water (up to 78°C).

OPERATING MODES

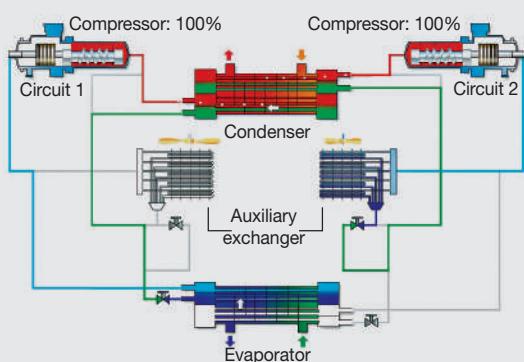
The multi-purpose units are therefore a simple and integrated response for all applications that require hot and cold loads simultaneously and independently, such as the air conditioning of large plant with complex loads. The following are four of the many possible modes of operation of INTEGRA units.



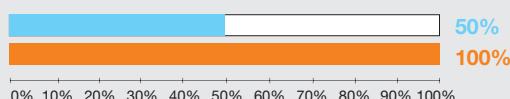
100% cold side / 50% hot side



Both the circuits operate to produce the amount of energy necessary for the cooling of the plant, evaporating all the refrigerant in the cold-side heat exchanger. While one circuit carries out the condensation on the hot-side heat exchanger, thus supplying the total energy necessary to heat the building, the other circuit exchanges the remaining heating energy in the external environment by using the auxiliary source-side heat exchanger (air coil or water exchanger, depending on the type of unit).

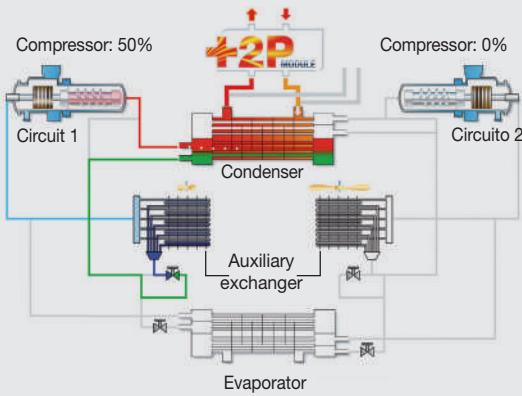


50% cold side / 100% hot side

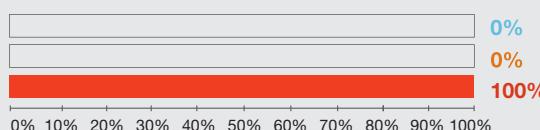


Just like the previous case, in this state both circuits operate differently, to supply the system with the correct amount of required energy. The unit uses two sources to produce the requested hot water flow: in fact, one circuit evaporates the refrigerant in the cold-side heat exchanger, thus producing the cold water demand, while the other circuit uses the auxiliary source-side heat exchanger. In this way both circuits move energy through the hot-side heat exchanger, fulfilling the request for hot water flow.

With the +2P module option, INTEGRA units can simultaneously and independently fulfill 3 different thermal loads (cold, hot and very hot water). The following operating modes are two working examples of INTEGRA units with a +2P module fitted in.



0% cold side 0% hot side 100% very hot side



This particular state, shows the flexibility of the INTEGRA units with a +2P module: even in the case of no thermal loads (neither cooling, nor heating) requested by the plant, the unit can still provide the very hot water if necessary.

In this case, only one circuit is operating partially in order to provide the right amount of hot water needed by the +2P module. A +2P module can produce very hot water (up to 78°C).

ALL-ROUND SUSTAINABILITY



Increasing concerns about the global warming impact of chillers and heat pumps is driving new regulatory policies to push towards even more efficient units with the lowest carbon footprint.

Today, an all-round approach is the only way to effectively reduce the Total Equivalent Warming Impact (TEWI).

Fully committed to support the creation of a greener tomorrow, Mitsubishi Electric Hydronics & IT Cooling Systems designed a complete range with reduced environmental impact, optimized for R513A refrigerant.

Combining brilliant annual efficiency with the use of a low GWP refrigerant, INTEGRA units tackle both the indirect (due to primary energy consumption) and the direct global warming, thus resulting in the perfect choice for any new, forward-looking cooling system.



LOW GWP
-56% GWP vs R134a



Non-flammable
Safety Class A1

REFRIGERANT BENCHMARK

| SCROLL | | |
|---------------|------|------------------|
| Refrigerant | GWP* | Flammability** |
| R410A | 2088 | NON flammable |
| R32 | 675 | MILDLY flammable |
| R454B | 466 | MILDLY flammable |
| R452B | 698 | MILDLY flammable |

| SCREW | | |
|--------------|------|------------------|
| Refrigerant | GWP* | Flammability** |
| R134a | 1430 | NON flammable |
| R513A | 631 | NON flammable |
| 1234ze | 7 | MILDLY flammable |
| 1234yf | 4 | MILDLY flammable |

New regulations like the EU F-gas and the Kigali Amendment to the Montreal Protocol, are driving the industry towards new eco-friendly refrigerants, with reduced greenhouse effect.

Unfortunately, the majority of low GWP refrigerants raises another critical issue: flammability.

The new refrigerant R513A, is a brilliant exception: it offers a -56% GWP reduction compared to R134a's while ensuring complete non-toxicity and non-flammability (Class A1 of ASHRAE 34, ISO 817).

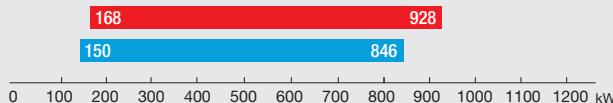
*IPCC AR4 **ASHRAE 34 - ISO 817

**AIR SOURCE****AIR SOURCE UNITS**

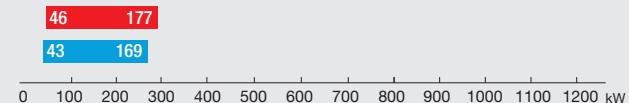
i-FR-Q2-Z / i-FR-Q2-G05-Z / NR-Q-Z / i-NR-Q-Z / NRCS-Q-Z / ERRCS2-Q-Z / ERRCS2-Q-G05-Z

**NRCS-Q-Z**

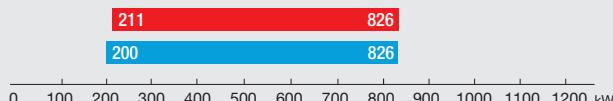
Air source 4-pipe heat pump with scroll compressors

**NR-Q-Z**

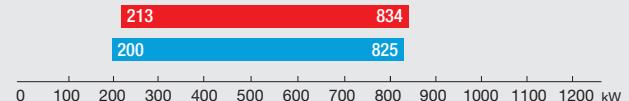
Air source 4-pipe heat pump with scroll compressors

**ERRCS2-Q-Z**

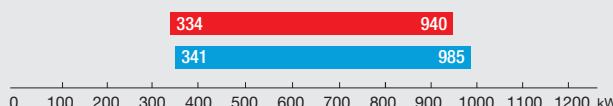
Air source 4-pipe heat pump with screw compressors

**ERRCS2-Q-G05-Z**

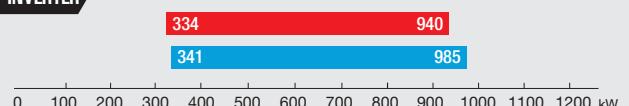
Air source 4-pipe heat pump with screw compressors and R513A refrigerant

**i-FR-Q2-Z**

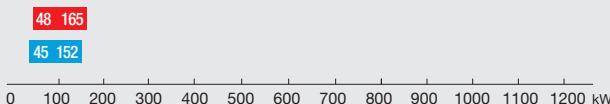
Air source 4-pipe heat pump with full inverter screw compressors

**i-FR-Q2-G05-Z**

Air source 4-pipe heat pump with full inverter screw compressors and R513A refrigerant

**i-NR-Q-Z**

Air source 4-pipe heat pump with full inverter scroll compressors

**WATER SOURCE****WATER SOURCE UNITS**

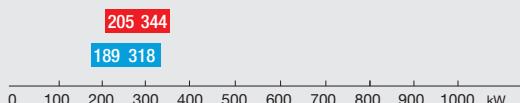
NRCS-WQ-Z / ERRCS2-WQ-Z / ERRCS2-WQ-G05-Z

**NRCS-WQ-Z**

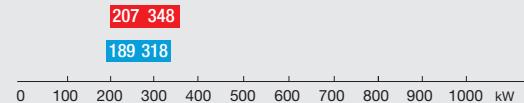
Water source 4-pipe heat pump with scroll compressors

**ERRCS2-WQ-Z**

Water source 4-pipe heat pump with screw compressors

**ERRCS2-WQ-G05-Z**

Water source 4-pipe heat pump with screw compressors and R513A refrigerant





FULL INVERTER TECHNOLOGY THE HIGHEST ENERGY EFFICIENCY, ALWAYS.

The inverter technology with continuous variable speed shows its advantages particularly when applied to multi-purpose units.



i-FR-Q₂-Z / i-NR-Q-Z

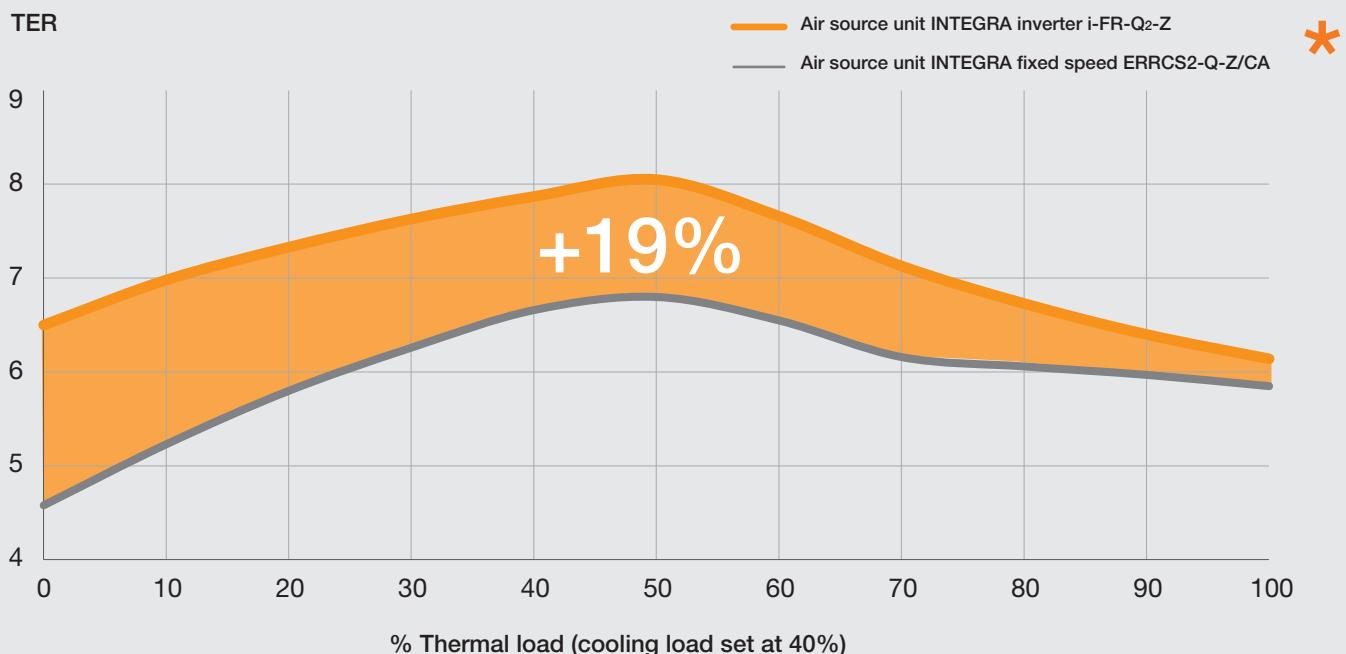
The new inverter driven i-FR-Q₂-Z and i-NR-Q-Z units always achieve higher efficiencies than fixed speed units, with any combination of hot/cold load, and in any season.

The presence of Variable Speed Drive (VSD) compressors allows the INTEGRA unit, i-FR-Q₂-Z and i-NR-Q-Z to effectively follow each combination of thermal loads required by the system, with increasingly higher TER efficiencies (up to 19%) compared to those units with fixed speed compressors.

| Cooling load [%] (*) | Thermal load [%] (*) | Median increase in TER VSD vs. fixed speed |
|----------------------|----------------------|--|
| 0% | 0%-100% | +14% |
| 20% | 0%-100% | +18% |
| 40% | 0%-100% | +19% |
| 60% | 0%-100% | +17% |
| 80% | 0%-100% | +9% |
| 100% | 0%-100% | +5% |
| Average value | | +14% |

The comparison was made between an INTEGRA ERRCS2-Q-Z/CA air source unit with fixed speed screw compressor and an i-FR-Q₂-Z one with VSD screw compressors.

* Load refers to the maximum cooling capacity of the unit in the following conditions:
 Evaporator water (in / out) = 12/7 ° C
 Condenser water (in / out) = 40/45 ° C
 Air room temperature = 15 ° C





FULL INVERTER TECHNOLOGY THE HIGHEST ENERGY EFFICIENCY, ALWAYS.



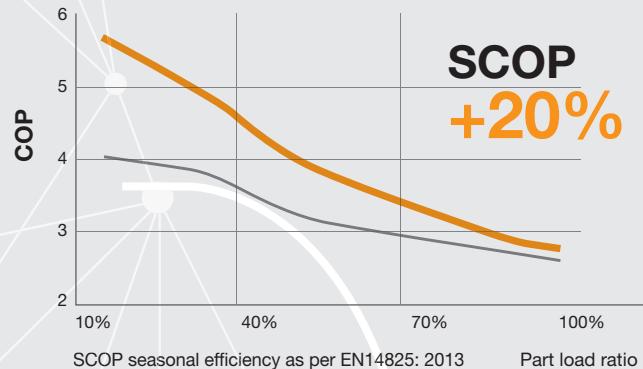
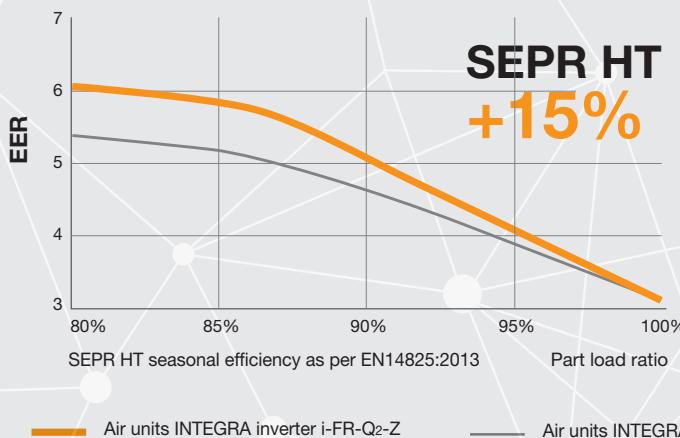
UNBEATABLE EFFICIENCY AT PARTIAL LOADS

In traditional applications the HVAC plant usually works at full load only for few hours every year. Most of the time the unit works at partial loads.

Even in applications with high load profiles, such as IT Cooling applications, INVERTER INTEGRA achieves higher seasonal efficiencies compared to traditional fixed speed units:

SCOP up to +20%
SEPR HT up to +15%

The minimum efficiency requirements of the EU regulation, ErP 2009/125 / EC, are also pinpointed in TIER 2021



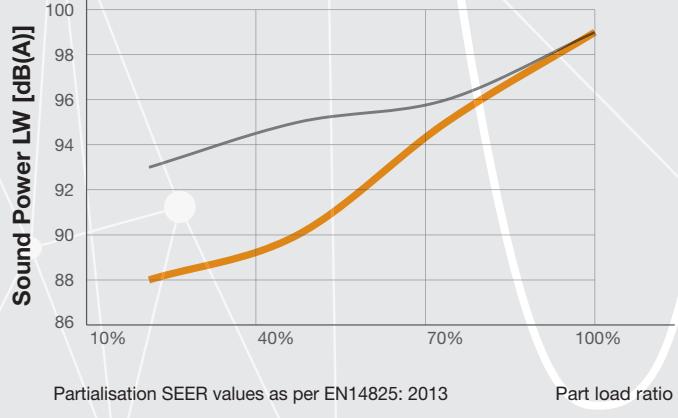
HIGHEST ACOUSTICAL COMFORT

The more you increase the partialisation activity the lower your sound emissions will be, thanks to capacity of inverter technology to continually modulate the compressor rotation.

Most of the time the units are characterized by lower sound power levels compared to fixed speed compressor units, this always ensures the highest acoustical comfort.

The sound emissions can be further reduced thanks to dedicated versions and a vast array of accessories.

Sound Power of the two units partialisation



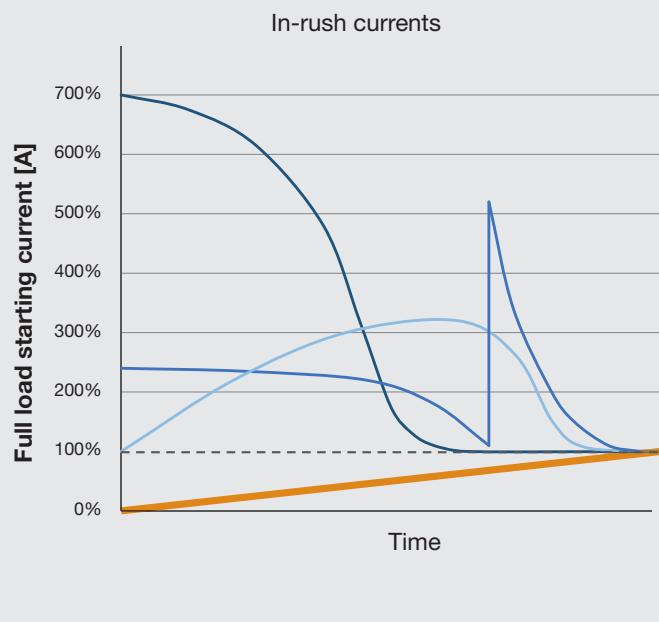
i-FR-Q₂-Z

i-NR-Q-Z

NO IN-RUSH CURRENT

The inverter technology involves a start-up phase with very low in-rush current, lower than any other mode (direct start, star / delta, part winding or soft start). The absence of sudden peaks and abrupt changes in the starting torque, in addition to eliminating possible disturbances to the electricity power network, reduces the stress to zero on the electrical components and improves the reliability of the system.

The frequency converters chosen by RC are characterized by values of Displacement Power Factor of between 0.97 and 0.99. The resulting unit power factor at rated nominal operating conditions is always higher than that of similar technology without an inverter unit. The need to install power factor correction devices of the loads is therefore reduced.

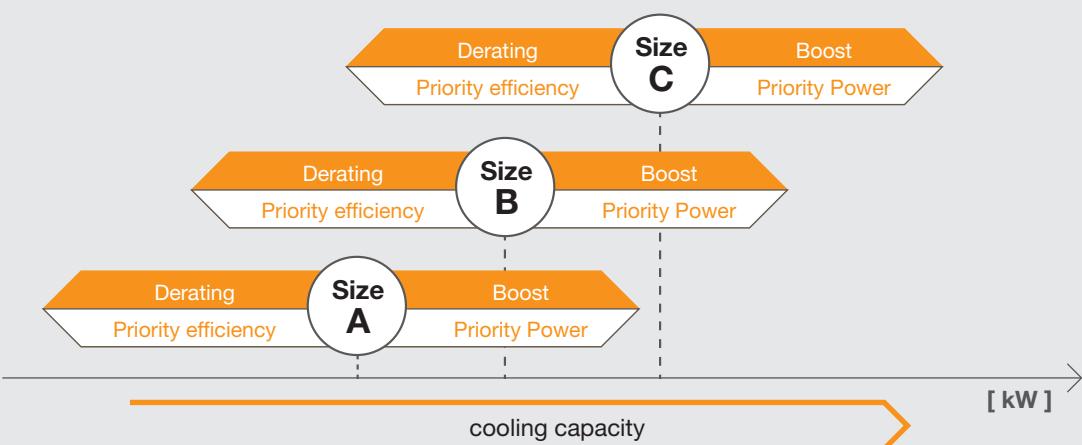


— direct on line — soft starter
— star delta — frequency converter

FLEXIBILITY IN SELECTING UNITS

Thanks to specific technical solutions and proprietary control functions, RC's inverter units can be selected at various speed conditions, which is different from the nominal ones.

Whatever the needs to be met: maximum operating efficiency, reducing the initial investment, future power increase of the plant, it is always possible to identify the most suitable units.





i-NR-Q-Z

**4-PIPE AIR SOURCE UNIT WITH
INVERTER-DRIVEN SCROLL COMPRESSORS.
COOLING CAPACITY FROM 44,7-152 kW**



SCOP +13%

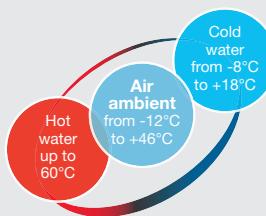
VERSIONS:

Standard

SL Super-low noise version

i-NX-Q-Y is the new multi-purpose outdoor unit featuring scroll compressors with full inverter technology.

The unit satisfies the demand for hot and cold water simultaneously through a system consisting of two completely independent circuits. The system does not require seasonal switching and is therefore a valid alternative to traditional plants with chillers and boilers.



Wide operating range

The extended working range ensures the unit's operation all year-round, with temperatures ranging from -15°C to +46°C, and leaving water temperatures up to 60°C even in the summer, down to -10°C in the winter.

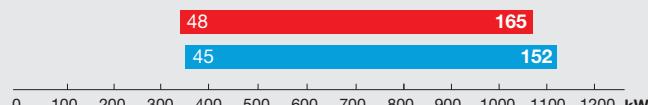


The highest configurability

Thanks to the flexible selection of the unit, two acoustic versions available, and a wide range of dedicated accessories, i-NX-Q-Y represents the ideal solution for the most demanding application requirements.

Main accessories:

- Variable speed hydronic kit (constant or variable flow)
- EC fans
- Night Mode



Full inverter technology

i-NX-Q-Y is equipped with two inverter scroll compressors installed in two independent circuits, for a better operating flexibility and the highest efficiency at any load condition.



Compact design

i-NX-Q-Y features a rational design and a compact structure which is 8% smaller than other traditional units with inverter scroll compressors. This new layout ensures a fast and easy installation, even for small surface spaces.

KIPlink, the keyboard in your pocket

KIPlink is the innovative system that allows you to directly control the unit via smartphone or tablet through the QR code and using the Wi-Fi directly installed in the equipment.

Thanks to dedicated visuals and graphics,

KIPlink allows the user to directly access the same functions as with a traditional keyboard.

KIPlink is installed as standard in all i-FR-Q₂-Z units, as option in i-NR-Q-Z units.



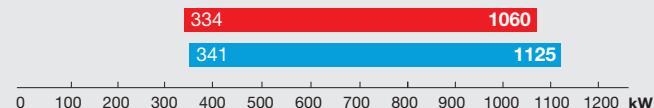
i-FR-Q₂-Z

4-PIPE AIR SOURCE UNIT, INVERTER-DRIVEN SCREW COMPRESSORS AND EC FANS. COOLING CAPACITY FROM 341 TO 1125 kW

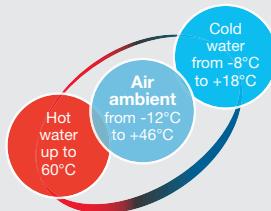


VERSIONS:

- CA** Class A Efficiency
- SL-CA** Super Low noise, Class A Efficiency
- XL-CA** Extra Low noise, Class A Efficiency



i-FR-Q₂-Z is a multi-purpose outdoor unit able to simultaneously produce chilled and hot water by means of two independent hydronic circuits. Thanks to the full inverter technology of the screw compressors and the EC fans, these units effectively follow each combination of thermal loads, always providing the exact thermal energy required by the system. This results in top-level efficiency values and very low energy consumption throughout the year, whatever the cooling mode and the weather condition.



Extended working range

An extended working range which ensures the working operation of the unit all year long and in any working mode.

Main accessories:

- "LT" kit for working down to -12°C in heat pump mode
- NOISE REDUCER (only on not silenced versions)
- Special fan diffusers
- Thicker soundproofing cladding
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- Leak detector



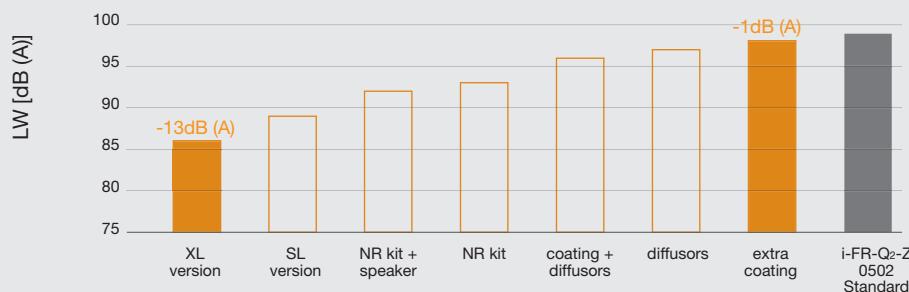
Full inverter technology

Independent circuits with screw compressors inverters and EC standard fans.

Green refrigerant

Use of innovative green refrigerants, with minimal environmental impact (very low GWP).

ACOUSTICAL CASINGS



Super silent

Up to 8 different acoustic configurations for a total sound emission control (of -1dB (A) up to -13 dB (A) compared to the standard configuration).



**i-FR-Q₂-Z**

Air source 4-pipe heat pump with full inverter screw compressors



SCREW

INVERTER

SHELL&T.

AXIAL

AIR S.



| i-FR-Q2-Z CA | | 0502 | 0532 | 0602 | 0652 | 0702 | 0802 | 0902 | 1002 | |
|---|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| Power supply | V/ph/Hz | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | |
| PERFORMANCE | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | |
| Cooling capacity | (1) | kW | 488 | 531 | 570 | 627 | 689 | 787 | 915 | 985 |
| Total power input | (1) | kW | 155 | 168 | 182 | 199 | 219 | 251 | 288 | 312 |
| EER | (1) | kW/kW | 3,14 | 3,15 | 3,14 | 3,15 | 3,14 | 3,13 | 3,18 | 3,16 |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | |
| Cooling capacity | (1)(2) | kW | 486 | 529 | 568 | 625 | 687 | 786 | 912 | 982 |
| EER | (1)(2) | kW/kW | 3,10 | 3,10 | 3,10 | 3,10 | 3,10 | 3,10 | 3,14 | 3,12 |
| SEPR HT | (3)(4) | - | - | - | 5,23 | 5,25 | 5,66 | 5,09 | 5,01 | |
| COOLING ONLY | | | | | | | | | | |
| 16°C/10°C | | | | | | | | | | |
| Cooling capacity | (5) | kW | 572 | 589 | 627 | 738 | 784 | 862 | 1069 | 1144 |
| Total power input | (5) | kW | 180 | 180 | 188 | 230 | 239 | 262 | 343 | 356 |
| EER | (5) | kW/kW | 3,18 | 3,27 | 3,33 | 3,21 | 3,28 | 3,29 | 3,12 | 3,21 |
| 23°C/15°C | | | | | | | | | | |
| Cooling capacity | (6) | kW | 659 | 680 | 724 | 852 | 906 | 921 | 1212 | 1304 |
| Total power input | (6) | kW | 189 | 189 | 198 | 244 | 255 | 271 | 361 | 378 |
| EER | (6) | kW/kW | 3,49 | 3,59 | 3,66 | 3,48 | 3,56 | 3,40 | 3,36 | 3,45 |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | |
| Total heating capacity | (7) | kW | 458 | 486 | 526 | 593 | 652 | 757 | 862 | 928 |
| Total power input | (7) | kW | 133 | 143 | 154 | 171 | 189 | 216 | 248 | 265 |
| COP | (7) | kW/kW | 3,44 | 3,40 | 3,42 | 3,47 | 3,45 | 3,51 | 3,47 | 3,50 |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | |
| Total heating capacity | (2)(7) | kW | 460 | 487 | 527 | 594 | 654 | 759 | 865 | 931 |
| COP | (2)(7) | kW/kW | 3,42 | 3,38 | 3,41 | 3,45 | 3,43 | 3,49 | 3,44 | 3,48 |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | |
| Cooling capacity | (8) | kW | 489 | 533 | 571 | 624 | 683 | 785 | 914 | 987 |
| Total power input | (8) | kW | 137 | 151 | 161 | 174 | 193 | 221 | 258 | 274 |
| Recovery heat exchanger capacity | (8) | kW | 617 | 675 | 722 | 788 | 864 | 993 | 1157 | 1245 |
| TER | (8) | kW/kW | 8,08 | 8,01 | 8,04 | 8,11 | 8,02 | 8,03 | 8,02 | 8,13 |
| NOISE LEVEL | | | | | | | | | | |
| Sound Pressure | (9) | dB(A) | 67 | 67 | 68 | 69 | 69 | 68 | 70 | 70 |
| Sound power level in cooling | (10)(11) | dB(A) | 100 | 100 | 101 | 102 | 102 | 101 | 103 | 103 |
| Sound power level in heating | (10)(12) | dB(A) | 100 | 100 | 101 | 102 | 102 | 101 | 103 | 103 |
| SIZE AND WEIGHT | | | | | | | | | | |
| A | (13) | mm | 8150 | 8150 | 8900 | 9650 | 10400 | 10400 | 10400 | 11900 |
| B | (13) | mm | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 |
| H | (13) | mm | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 |
| Operating weight | (13) | kg | 8350 | 8380 | 9080 | 9590 | 10060 | 11010 | 12310 | 14110 |

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
 2 Values in compliance with EN14511-3:2013.
 3 Seasonal space heating energy index
 4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
 5 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C
 6 Acqua scambiatore freddo lato utenza (in/out) 23°C/15°C; Aria scambiatore lato sorgente (in) 35°C
 7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
 8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level

10 Sound power on the basis of measurements made in compliance with ISO 9614

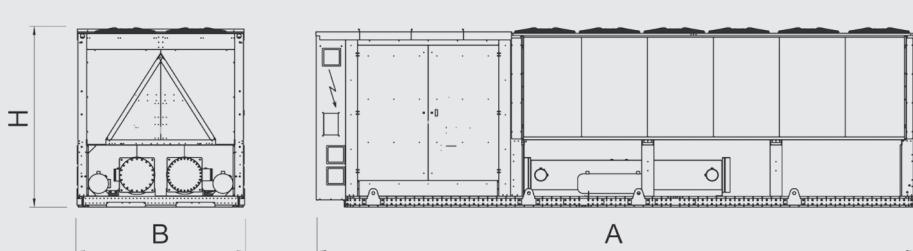
11 Sound power level in cooling, outdoors

12 Sound power level in heating, outdoors

13 Unit in standard configuration/execution, without optional accessories

The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT





i-FR-Q₂-G05-Z

Air source 4-pipe heat pump with full inverter screw compressors and R513A refrigerant



SCREW

T SHELL&T.

AIR S.



r R513A

| i-FR-Q2-G05-Z CA | | 0502 | 0532 | 0602 | 0652 | 0702 | 0802 | 0902 | 1002 | |
|--|----------|------------|------------|------------|------------|------------|------------|------------|------------|-------|
| | V/ph/Hz | 400/3+N/50 | |
| PERFORMANCE | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | |
| Cooling capacity | (1) | kW | 487,5 | 531,3 | 570,0 | 626,8 | 689,0 | 787,4 | 915,0 | 985,3 |
| Total power input | (1) | kW | 161,3 | 175,3 | 189,0 | 227,7 | 227,7 | 261,5 | 299,5 | 324,3 |
| EER | (1) | kW/kW | 3,020 | 3,030 | 3,020 | 3,030 | 3,030 | 3,010 | 3,060 | 3,040 |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | |
| Cooling capacity | (1)(2) | kW | 485,9 | 529,2 | 568,5 | 624,8 | 686,6 | 785,6 | 912,3 | 982,3 |
| EER | (1)(2) | kW/kW | 2,980 | 2,980 | 2,980 | 2,990 | 2,980 | 2,980 | 3,020 | 3,000 |
| SEPR | (3)(4) | - | - | - | 5,21 | 5,21 | 5,66 | 5,08 | 5,00 | |
| COOLING ONLY | | | | | | | | | | |
| 16°C/10°C | | | | | | | | | | |
| Cooling capacity | (5) | kW | 571,7 | 589,2 | 627,0 | 737,6 | 783,7 | 861,7 | 1069 | 1144 |
| Total power input | (5) | kW | 186,9 | 187,7 | 195,7 | 239,2 | 248,8 | 272,9 | 357,2 | 370,8 |
| EER | (5) | kW/kW | 3,059 | 3,139 | 3,204 | 3,084 | 3,150 | 3,158 | 2,993 | 3,085 |
| 23°C/15°C | | | | | | | | | | |
| Cooling capacity | (6) | kW | 658,7 | 679,7 | 724,2 | 851,7 | 905,9 | 921,4 | 1212 | 1304 |
| Total power input | (6) | kW | 196,5 | 197,2 | 205,9 | 254,4 | 264,9 | 282,0 | 376,1 | 393,5 |
| EER | (6) | kW/kW | 3,352 | 3,447 | 3,517 | 3,348 | 3,420 | 3,267 | 3,223 | 3,314 |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | |
| Total heating capacity | (7) | kW | 463,1 | 491,2 | 531,0 | 598,6 | 659,0 | 764,8 | 870,5 | 937,7 |
| Total power input | (7) | kW | 138,9 | 149,2 | 160,1 | 178,1 | 196,8 | 224,6 | 258,9 | 276,5 |
| COP | (7) | kW/kW | 3,330 | 3,290 | 3,320 | 3,360 | 3,350 | 3,410 | 3,360 | 3,390 |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | |
| Total heating capacity | (2)(7) | kW | 464,1 | 492,3 | 532,0 | 600,0 | 660,7 | 766,8 | 873,3 | 940,2 |
| COP | (2)(7) | kW/kW | 3,320 | 3,280 | 3,300 | 3,340 | 3,330 | 3,380 | 3,340 | 3,370 |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | |
| Cooling capacity | (8) | kW | 488,6 | 533,1 | 571,2 | 624,0 | 682,7 | 784,8 | 914,5 | 987,4 |
| Total power input | (8) | kW | 142,7 | 157,2 | 167,6 | 181,5 | 201,1 | 230,6 | 269,1 | 286,0 |
| Recovery heat exchanger capacity | (8) | kW | 622,7 | 680,8 | 728,8 | 794,7 | 871,8 | 1002 | 1167 | 1256 |
| TER | (8) | kW/kW | 7,786 | 7,723 | 7,757 | 7,818 | 7,727 | 7,745 | 7,737 | 7,843 |
| EXCHANGERS | | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | | | |
| Water flow | (1) | l/s | 23,31 | 25,41 | 27,26 | 29,97 | 32,95 | 37,65 | 43,76 | 47,12 |
| Pressure drop | (1) | kPa | 40,8 | 51,6 | 32,5 | 40,5 | 45,4 | 29,0 | 39,7 | 42,3 |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | | | |
| Water flow | (3) | l/s | 22,35 | 23,71 | 25,63 | 28,89 | 31,81 | 36,92 | 42,02 | 45,26 |
| Pressure drop | (3) | kPa | 23,0 | 25,9 | 21,9 | 27,6 | 32,7 | 32,9 | 42,6 | 35,6 |
| REFRIGERANT CIRCUIT | | | | | | | | | | |
| Compressors nr. | | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| No. Circuits | | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Refrigerant charge | | kg | 265 | 270 | 276 | 299 | 299 | 374 | 403 | 541 |
| NOISE LEVEL | | | | | | | | | | |
| Sound Pressure | (9) | dB(A) | 67 | 67 | 68 | 69 | 69 | 68 | 70 | 70 |
| Sound power level in cooling | (10)(11) | dB(A) | 100 | 100 | 101 | 102 | 102 | 101 | 103 | 103 |
| Sound power level in heating | (10)(12) | dB(A) | 100 | 100 | 101 | 102 | 102 | 101 | 103 | 103 |
| SIZE AND WEIGHT | | | | | | | | | | |
| A | (13) | mm | 8150 | 8150 | 8900 | 9650 | 10400 | 10400 | 10400 | 11900 |
| B | (13) | mm | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 |
| H | (13) | mm | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 | 2530 |
| Operating weight | (13) | kg | 8350 | 8380 | 9080 | 9590 | 10060 | 11010 | 12310 | 14110 |

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- 5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
- 6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
- 7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

10 Sound power on the basis of measurements made in compliance with ISO 9614.

11 Sound power level in cooling, outdoors.

12 Sound power level in heating, outdoors.

13 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP100 631] fluorinated greenhouse gases.

Certified data in EUROVENT



**i-NR-Q-Z**

Unità polivalenti con sorgente aria
e compressore scroll full inverter



r R410A

i-NR-Q-Z

| | 0152P | 0182P | 0202P | 0252P | 0262P | 0302P | 0352P | 0402P | 0502P | 0552P | | | | | | | | | |
|--|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|--|--|--|--|
| Power supply | V/ph/Hz | 400/3+N/50 | | | | | | | | | | | | | | | | | |
| PERFORMANCE | | | | | | | | | | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1) | kW | 44,75 | 51,29 | 60,92 | 67,68 | 79,19 | 88,03 | 101,0 | 114,3 | | | | | | | | | |
| Total power input | (1) | kW | 15,11 | 17,80 | 20,14 | 24,00 | 26,72 | 31,66 | 32,38 | 39,37 | | | | | | | | | |
| EER | (1) | kW/kW | 2,960 | 2,882 | 3,030 | 2,821 | 2,966 | 2,776 | 3,117 | 2,901 | | | | | | | | | |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1)(2) | kW | 44,70 | 51,20 | 60,80 | 67,50 | 79,00 | 87,80 | 100,7 | 114,0 | | | | | | | | | |
| EER | (1)(2) | kW/kW | 2,930 | 2,840 | 2,990 | 2,780 | 2,930 | 2,740 | 3,070 | 2,860 | | | | | | | | | |
| COOLING ONLY | | | | | | | | | | | | | | | | | | | |
| 16°C/10°C | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (5) | kW | 48,72 | 55,82 | 66,33 | 73,58 | 86,04 | 95,43 | 109,7 | 123,9 | | | | | | | | | |
| Total power input | (5) | kW | 15,49 | 18,24 | 20,56 | 24,57 | 27,43 | 32,53 | 33,19 | 40,44 | | | | | | | | | |
| EER | (5) | kW/kW | 3,142 | 3,066 | 3,218 | 2,992 | 3,139 | 2,935 | 3,304 | 3,067 | | | | | | | | | |
| 23°C/15°C | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (6) | kW | 55,34 | 63,37 | 75,31 | 83,35 | 97,34 | 107,6 | 124,2 | 139,6 | | | | | | | | | |
| Total power input | (6) | kW | 16,04 | 18,90 | 21,12 | 25,37 | 28,47 | 33,81 | 34,37 | 41,97 | | | | | | | | | |
| EER | (6) | kW/kW | 3,456 | 3,354 | 3,569 | 3,283 | 3,414 | 3,183 | 3,610 | 3,324 | | | | | | | | | |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (7) | kW | 48,01 | 55,96 | 66,13 | 73,93 | 85,50 | 95,24 | 108,0 | 122,5 | | | | | | | | | |
| Total power input | (7) | kW | 14,90 | 17,45 | 20,42 | 23,35 | 25,67 | 29,23 | 31,72 | 36,83 | | | | | | | | | |
| COP | (7) | kW/kW | 3,221 | 3,200 | 3,240 | 3,172 | 3,327 | 3,260 | 3,407 | 3,329 | | | | | | | | | |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (2)(7) | kW | 48,10 | 56,10 | 66,30 | 74,10 | 85,70 | 95,50 | 108,3 | 122,9 | | | | | | | | | |
| COP | (2)(7) | kW/kW | 3,190 | 3,160 | 3,210 | 3,140 | 3,290 | 3,220 | 3,360 | 3,280 | | | | | | | | | |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (8) | kW | 47,07 | 53,06 | 61,55 | 68,77 | 79,93 | 89,25 | 102,1 | 116,5 | | | | | | | | | |
| Total power input | (8) | kW | 13,78 | 16,52 | 18,81 | 22,06 | 24,94 | 29,03 | 30,59 | 36,51 | | | | | | | | | |
| Recovery heat exchanger capacity | (8) | kW | 60,02 | 68,59 | 79,23 | 89,50 | 103,4 | 116,5 | 130,8 | 150,8 | | | | | | | | | |
| TER | (8) | kW/kW | 7,761 | 7,370 | 7,489 | 7,163 | 7,361 | 7,097 | 7,611 | 7,323 | | | | | | | | | |
| ENERGY EFFICIENCY | | | | | | | | | | | | | | | | | | | |
| SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013) | | | | | | | | | | | | | | | | | | | |
| PDesign | (9) | kW | 34,5 | 42,0 | 47,7 | 53,2 | 64,8 | 74,1 | 81,6 | 94,9 | | | | | | | | | |
| SCOP | (9)(10) | | 3,90 | 3,99 | 3,87 | 3,96 | 3,93 | 3,97 | 4,08 | 4,13 | | | | | | | | | |
| Performance ηs | (9)(11) | % | 153 | 157 | 152 | 156 | 154 | 156 | 160 | 162 | | | | | | | | | |
| Seasonal efficiency class | (9) | | A++ | A++ | A++ | A++ | A++ | - | - | - | | | | | | | | | |
| EXCHANGERS | | | | | | | | | | | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | | | | | | | | | | | | |
| Water flow | (1) | l/s | 2,140 | 2,453 | 2,913 | 3,237 | 3,787 | 4,210 | 4,829 | 5,465 | | | | | | | | | |
| Pressure drop | (1) | kPa | 25,0 | 32,9 | 26,1 | 32,3 | 29,4 | 36,3 | 34,1 | 41,0 | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | | | | | | | | | | | | |
| Water flow | (7) | l/s | 2,318 | 2,701 | 3,192 | 3,569 | 4,127 | 4,597 | 5,214 | 5,914 | | | | | | | | | |
| Pressure drop | (7) | kPa | 29,4 | 39,9 | 31,4 | 39,2 | 34,9 | 43,3 | 39,8 | 48,0 | | | | | | | | | |
| REFRIGERANT CIRCUIT | | | | | | | | | | | | | | | | | | | |
| Compressors nr. | | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | |
| No. Circuits | | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | |
| Refrigerant charge | | kg | 16,4 | 20,6 | 22,2 | 22,6 | 30,6 | 30,8 | 38,4 | 38,8 | | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | | | | | | | | | | |
| Sound Pressure | (12) | dB(A) | 52 | 53 | 55 | 55 | 55 | 56 | 56 | 57 | | | | | | | | | |
| Sound power level in cooling | (13)(14) | dB(A) | 84 | 85 | 87 | 87 | 87 | 88 | 88 | 89 | | | | | | | | | |
| Sound power level in heating | (13)(15) | dB(A) | 84 | 85 | 87 | 87 | 87 | 88 | 88 | 91 | | | | | | | | | |
| SIZE AND WEIGHT | | | | | | | | | | | | | | | | | | | |
| A | (16) | mm | 2000 | 2000 | 2625 | 2625 | 2625 | 2625 | 3250 | 3250 | | | | | | | | | |
| B | (16) | mm | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | | | | | | | | | |
| H | (16) | mm | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | | | | | | | | | |
| Operating weight | (16) | kg | 800 | 820 | 930 | 930 | 1050 | 1050 | 1290 | 1300 | | | | | | | | | |

Note:

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.

2 Values in compliance with EN14511

5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.

6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.

7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

9 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]

10 Seasonal coefficient of performance

11 Seasonal space heating energy efficiency

12 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

13 Sound power on the basis of measurements made in compliance with ISO 9614.

14 Sound power level in cooling, outdoors.

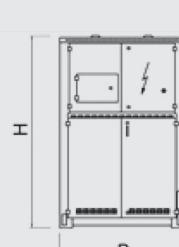
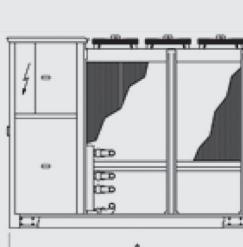
15 Sound power level in heating, outdoors.

16 Unit in standard configuration/execution, without optional accessories.

Le unità, evidenziate nella presente pubblicazione, contengono gas fluorurato HFC R410A

[GWP₁₀₀ 2088] ad effetto serra.

Dati certificati in EUROVENT





NR-Q-Z

Air source 4-pipe heat pump with scroll compressors



r R410A

| NR-Q-Z | | | | | | | | | | | | NRCS-Q-Z / B | | | | | | | | | | | |
|--|----------|---|------|------------|------|------|------|----------|------|------|------|------------------------------------|--|----------|------|-------|-------|-------|-------|-------|--|--|--|
| | | 0152P 0182P 0202P 0252P 0262P 0302P 0402P 0502P 0602P | | | | | | | | | | 0604 0704 0804 0904 1004 1104 1204 | | | | | | | | | | | |
| Power supply | | V/ph/Hz | | 400/3+N/50 | | | | | | | | | | 400/3/50 | | | | | | | | | |
| PERFORMANCE | | | | | | | | | | | | | | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1) | kW | 43,9 | 50,8 | 58,1 | 64,0 | 71,6 | 85,5 | 111 | 138 | 169 | | | 150 | 166 | 189 | 211 | 240 | 277 | 311 | | | |
| Total power input | (1) | kW | 12,7 | 14,8 | 17,6 | 19,2 | 22,2 | 25,6 | 33,4 | 42,3 | 56,5 | | | 58,9 | 69,0 | 75,8 | 85,2 | 95,6 | 107 | 120 | | | |
| EER | (1) | kW/kW | 3,46 | 3,43 | 3,30 | 3,33 | 3,23 | 3,34 | 3,31 | 3,26 | 2,98 | | | 2,54 | 2,41 | 2,49 | 2,48 | 2,51 | 2,58 | 2,58 | | | |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1)(2) | kW | 43,8 | 50,6 | 57,9 | 63,8 | 71,4 | 85,2 | 110 | 137 | 168 | | | 149 | 166 | 188 | 210 | 239 | 276 | 310 | | | |
| EER | (1)(2) | kW/kW | 3,42 | 3,37 | 3,25 | 3,29 | 3,19 | 3,29 | 3,26 | 3,21 | 2,94 | | | 2,50 | 2,37 | 2,45 | 2,44 | 2,47 | 2,54 | 2,54 | | | |
| COOLING ONLY | | | | | | | | | | | | | | | | | | | | | | | |
| 16°C/10°C | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (5) | kW | 48,0 | 55,6 | 63,4 | 69,8 | 77,9 | 93,2 | 121 | 150 | 183 | | | 162 | 180 | 206 | 229 | 260 | 301 | 337 | | | |
| Total power input | (5) | kW | 13,0 | 15,1 | 18,0 | 19,6 | 22,8 | 26,2 | 34,3 | 43,3 | 58,2 | | | 60,3 | 71,0 | 78,1 | 87,7 | 97,9 | 110 | 124 | | | |
| EER | (5) | kW/kW | 3,69 | 3,68 | 3,52 | 3,56 | 3,42 | 3,56 | 3,53 | 3,47 | 3,15 | | | 2,69 | 2,54 | 2,63 | 2,61 | 2,66 | 2,73 | 2,72 | | | |
| 23°C/15°C | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (6) | kW | 54,9 | 63,5 | 72,2 | 79,4 | 88,3 | 106 | 138 | 171 | 207 | | | 183 | 204 | 234 | 259 | 293 | 339 | 381 | | | |
| Total power input | (6) | kW | 13,2 | 15,5 | 18,6 | 20,2 | 23,6 | 27,0 | 35,5 | 44,8 | 60,8 | | | 62,4 | 74,0 | 81,8 | 91,3 | 101 | 114 | 129 | | | |
| EER | (6) | kW/kW | 4,16 | 4,10 | 3,88 | 3,93 | 3,74 | 3,92 | 3,89 | 3,82 | 3,41 | | | 2,93 | 2,76 | 2,86 | 2,83 | 2,90 | 2,97 | 2,95 | | | |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (7) | kW | 46,4 | 53,2 | 60,6 | 67,3 | 75,2 | 90,1 | 115 | 145 | 177 | | | 167 | 185 | 209 | 234 | 266 | 306 | 344 | | | |
| Total power input | (7) | kW | 13,5 | 15,3 | 17,5 | 19,3 | 21,4 | 25,6 | 32,7 | 41,3 | 52,1 | | | 58,0 | 64,9 | 72,1 | 79,8 | 92,0 | 104 | 116 | | | |
| COP | (7) | kW/kW | 3,44 | 3,48 | 3,46 | 3,49 | 3,51 | 3,52 | 3,51 | 3,40 | | | | 2,88 | 2,86 | 2,90 | 2,93 | 2,90 | 2,94 | 2,96 | | | |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (2)(7) | kW | 46,6 | 53,4 | 60,8 | 67,6 | 75,5 | 90,4 | 116 | 145 | 178 | | | 168 | 186 | 210 | 235 | 268 | 308 | 346 | | | |
| COP | (2)(7) | kW/kW | 3,40 | 3,45 | 3,44 | 3,45 | 3,48 | 3,49 | 3,49 | 3,48 | 3,37 | | | 2,86 | 2,83 | 2,87 | 2,91 | 2,91 | 2,94 | 2,96 | | | |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (8) | kW | 44,0 | 51,1 | 58,9 | 64,3 | 73,1 | 86,9 | 112 | 140 | 176 | | | 151 | 173 | 194 | 220 | 246 | 280 | 317 | | | |
| Total power input | (8) | kW | 11,6 | 13,4 | 15,7 | 17,3 | 19,8 | 23,4 | 30,5 | 39,5 | 50,7 | | | 49,8 | 57,1 | 64,5 | 72,1 | 79,8 | 92,8 | 105 | | | |
| Recovery heat exchanger capacity | (8) | kW | 54,9 | 63,7 | 73,7 | 80,5 | 91,7 | 109 | 140 | 177 | 224 | | | 198 | 226 | 255 | 288 | 321 | 368 | 415 | | | |
| TER | (8) | kW/kW | 8,53 | 8,57 | 8,45 | 8,37 | 8,32 | 8,37 | 8,28 | 8,01 | 7,90 | | | 7,00 | 6,99 | 6,96 | 7,04 | 7,11 | 6,98 | 6,99 | | | |
| EXCHANGERS | | | | | | | | | | | | | | | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | | | | | | | | | | | | | | | | |
| Water flow | (1) | l/s | 2,10 | 2,43 | 2,78 | 3,06 | 3,42 | 4,09 | 5,29 | 6,59 | 8,06 | | | 7,17 | 7,95 | 9,03 | 10,09 | 11,48 | 13,25 | 14,86 | | | |
| Pressure drop | (1) | kPa | 14,7 | 19,7 | 15,8 | 19,2 | 17,1 | 19,4 | 22,3 | 26,2 | 31,8 | | | 41,9 | 43,0 | 43,7 | 42,8 | 44,4 | 47,3 | 47,2 | | | |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | | | | | | | | | | | | | | | | |
| Water flow | (7) | l/s | 2,24 | 2,57 | 2,93 | 3,25 | 3,63 | 4,35 | 5,56 | 6,99 | 8,56 | | | 8,07 | 8,95 | 10,10 | 11,30 | 12,86 | 14,79 | 16,60 | | | |
| Pressure drop | (7) | kPa | 16,7 | 21,9 | 17,5 | 21,6 | 19,3 | 21,9 | 24,6 | 29,5 | 35,9 | | | 56,9 | 59,2 | 61,4 | 66,5 | 65,7 | 67,5 | 67,5 | | | |
| REFRIGERANT CIRCUIT | | | | | | | | | | | | | | | | | | | | | | | |
| Compressors nr. | N° | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | |
| No. Circuits | N° | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| Refrigerant charge | kg | | 20,8 | 22,4 | 22,9 | 30,2 | 30,9 | 37,2 | 53,2 | 64,8 | 66,6 | | | 41,0 | 42,0 | 56,0 | 61,0 | 63,0 | 80,0 | 108 | | | |
| NOISE LEVEL | | | | | | | | | | | | | | | | | | | | | | | |
| Sound Pressure | (9) | dB(A) | 53 | 53 | 53 | 53 | 53 | 54 | 55 | 56 | 56 | | | 60 | 60 | 60 | 61 | 62 | 63 | 63 | | | |
| Sound power level in cooling | (10)(11) | dB(A) | 85 | 85 | 85 | 85 | 85 | 86 | 87 | 88 | 88 | | | 92 | 92 | 92 | 93 | 94 | 95 | 95 | | | |
| Sound power level in heating | (10)(12) | dB(A) | 85 | 85 | 85 | 85 | 85 | 86 | 87 | 88 | 88 | | | 92 | 92 | 92 | 93 | 94 | 95 | 95 | | | |
| SIZE AND WEIGHT | | | | | | | | | | | | | | | | | | | | | | | |
| A | (13) | mm | 2625 | 2625 | 2625 | 2625 | 2625 | 3250 | 3875 | 4500 | 4500 | | | 3110 | 3110 | 3110 | 4110 | 4110 | 4110 | 4110 | | | |
| B | (13) | mm | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 | | | 2220 | 2220 | 2220 | 2220 | 2220 | 2220 | 2220 | | | |
| H | (13) | mm | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | 2070 | | | 2150 | 2150 | 2150 | 2150 | 2150 | 2150 | 2150 | | | |
| Operating weight | (13) | kg | 850 | 870 | 890 | 960 | 970 | 1130 | 1430 | 1670 | 1730 | | | 1600 | 1840 | 2120 | 2320 | 2480 | 2680 | 2860 | | | |
| NRCS-Q-Z / CA | | | | | | | | | | | | | | | | | | | | | | | |
| | | V/ph/Hz | | 400/3/50 | | | | 400/3/50 | | | | 400/3/50 | | | | | | | | | | | |
| PERFORMANCE | | | | | | | | | | | | | | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1) | kW | 362 | | | | | 387 | | | | 425 | | 471 | | | 524 | | | 559 | | | |
| Total power input | (1) | kW | 122 | | | | | 128 | | | | 145 | | 157 | | | 173 | | | 185 | | | |
| EER | (1) | kW/kW | 2,96 | | | | | 3,03 | | | | 2,94 | | 3,01 | | | | | | | | | |

**ERRCS2-Q-Z**

Air source 4-pipe heat pump with
screw compressors



| ERRCS2-Q-Z / CA | | 1062 | 1162 | 1362 | 1562 | 1762 | 1962 | 2022 | 2222 | 2422 | 2622 | 2722 | 3222 |
|--|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Power supply | V/ph/Hz | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 |
| PERFORMANCE | | | | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | | | | |
| Cooling capacity | (1) kW | 210 | 248 | 302 | 329 | 380 | 425 | 483 | 525 | 554 | 624 | 701 | 826 |
| Total power input | (1) kW | 72,1 | 84,8 | 102 | 109 | 129 | 144 | 156 | 167 | 176 | 201 | 222 | 264 |
| EER | (1) kW/kW | 2,91 | 2,93 | 2,98 | 3,01 | 2,95 | 2,95 | 3,10 | 3,14 | 3,16 | 3,10 | 3,15 | 3,13 |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | | | | |
| Cooling capacity | (1)(2) kW | 209 | 247 | 301 | 328 | 379 | 424 | 482 | 524 | 552 | 623 | 700 | 824 |
| EER | (1)(2) kW/kW | 2,87 | 2,89 | 2,94 | 2,97 | 2,91 | 2,92 | 3,07 | 3,11 | 3,12 | 3,08 | 3,12 | 3,10 |
| SEPR HT | (3)(4) | - | - | - | - | - | - | - | - | - | - | 5,02 | 5,12 |
| COOLING ONLY 16°C/10°C | | | | | | | | | | | | | |
| Cooling capacity | (5) kW | 229 | 271 | 330 | 359 | 414 | 463 | 526 | 572 | 603 | 681 | 764 | 900 |
| Total power input | (5) kW | 74,1 | 87,4 | 104 | 112 | 133 | 149 | 160 | 171 | 179 | 208 | 229 | 274 |
| EER | (5) kW/kW | 3,09 | 3,10 | 3,16 | 3,19 | 3,12 | 3,12 | 3,29 | 3,35 | 3,36 | 3,28 | 3,34 | 3,29 |
| 23°C/15°C | | | | | | | | | | | | | |
| Cooling capacity | (6) kW | 261 | 308 | 375 | 408 | 471 | 527 | 599 | 652 | 685 | 777 | 869 | 1023 |
| Total power input | (6) kW | 77,1 | 91,4 | 109 | 117 | 138 | 156 | 166 | 177 | 185 | 217 | 238 | 289 |
| EER | (6) kW/kW | 3,38 | 3,37 | 3,45 | 3,49 | 3,41 | 3,38 | 3,60 | 3,69 | 3,71 | 3,57 | 3,65 | 3,54 |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | | | | |
| Total heating capacity | (7) kW | 218 | 258 | 308 | 339 | 396 | 434 | 492 | 541 | 571 | 615 | 711 | 826 |
| Total power input | (7) kW | 67,0 | 80,7 | 92,2 | 101 | 122 | 130 | 149 | 159 | 169 | 178 | 207 | 240 |
| COP | (7) kW/kW | 3,25 | 3,20 | 3,35 | 3,35 | 3,25 | 3,32 | 3,31 | 3,41 | 3,38 | 3,46 | 3,43 | 3,44 |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | | | | |
| Total heating capacity | (2)(7) kW | 218 | 259 | 310 | 340 | 397 | 435 | 493 | 543 | 572 | 616 | 713 | 828 |
| COP | (2)(7) kW/kW | 3,23 | 3,18 | 3,32 | 3,32 | 3,23 | 3,31 | 3,29 | 3,38 | 3,36 | 3,44 | 3,41 | 3,42 |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | | | | |
| Cooling capacity | (8) kW | 209 | 248 | 305 | 329 | 381 | 428 | 484 | 522 | 550 | 631 | 701 | 826 |
| Total power input | (8) kW | 60,6 | 72,2 | 87,1 | 92,5 | 111 | 122 | 134 | 145 | 153 | 170 | 193 | 228 |
| Recovery heat exchanger capacity(8) kW | 266 | 316 | 386 | 416 | 486 | 542 | 609 | 658 | 694 | 791 | 883 | 1041 | |
| TER | (8) kW/kW | 7,83 | 7,81 | 7,93 | 8,06 | 7,80 | 7,97 | 8,18 | 8,14 | 8,12 | 8,35 | 8,19 | 8,17 |
| EXCHANGERS | | | | | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | | | | | | |
| Water flow | (1) l/s | 10,04 | 11,88 | 14,46 | 15,75 | 18,19 | 20,33 | 23,09 | 25,11 | 26,49 | 29,84 | 33,54 | 39,48 |
| Pressure drop | (1) kPa | 28,8 | 40,2 | 36,6 | 43,4 | 40,3 | 27,9 | 26,7 | 29,0 | 32,3 | 23,1 | 30,5 | 30,9 |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | | | | | | |
| Water flow | (7) l/s | 10,51 | 12,47 | 14,89 | 16,37 | 19,10 | 20,95 | 23,75 | 26,13 | 27,55 | 29,67 | 34,34 | 39,85 |
| Pressure drop | (7) kPa | 31,5 | 44,3 | 38,8 | 46,9 | 44,4 | 29,6 | 28,2 | 31,4 | 34,9 | 22,8 | 31,9 | 31,5 |
| REFRIGERANT CIRCUIT | | | | | | | | | | | | | |
| Compressors nr. | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| No. Circuits | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Refrigerant charge | kg | 83,0 | 97,0 | 132 | 132 | 160 | 167 | 210 | 240 | 250 | 254 | 312 | 360 |
| NOISE LEVEL | | | | | | | | | | | | | |
| Sound Pressure | (9) dB(A) | 65 | 65 | 65 | 66 | 66 | 66 | 66 | 68 | 68 | 68 | 68 | 69 |
| Sound power level in cooling(10)(11) dB(A) | 97 | 97 | 97 | 98 | 99 | 99 | 99 | 101 | 101 | 101 | 101 | 101 | 102 |
| Sound power level in heating(10)(12) dB(A) | 97 | 97 | 97 | 98 | 99 | 99 | 99 | 101 | 0 | 0 | 0 | 0 | 0 |
| SIZE AND WEIGHT | | | | | | | | | | | | | |
| A | (13) mm | 4610 | 4610 | 5610 | 5610 | 6610 | 6610 | 6300 | 7200 | 7200 | 7200 | 8400 | 9700 |
| B | (13) mm | 2220 | 2220 | 2220 | 2220 | 2220 | 2220 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 |
| H | (13) mm | 2150 | 2420 | 2430 | 2430 | 2430 | 2430 | 2350 | 2350 | 2350 | 2350 | 2350 | 2350 |
| Operating weight | (13) kg | 3600 | 3870 | 4620 | 5040 | 5520 | 5670 | 7580 | 8060 | 8160 | 8600 | 9160 | 11380 |

Notes NR-Q-Z, NRCS-Q-Z/B, NRCS-Q-Z/CA, ERRCS2-Q-Z/CA

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.

2 Values in compliance with EN14511-3:2013.

3 Seasonal space heating energy index

4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]

5 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C.

6 Acqua scambiatore freddo lato utenza (in/out) 23°C/15°C; Aria scambiatore lato sorgente (in) 35°C.

7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

10 Sound power on the basis of measurements made in compliance with ISO 9614.

11 Sound power level in cooling, outdoors.

12 Sound power level in heating, outdoors.

13 Unit in standard configuration/execution, without optional accessories.

ERRCS2-Q-Z/CA: The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.**Notes NR-Q-Z, NRCS-Q-Z/B, NRCS-Q-Z/CA:** The units highlighted in this publication contain HFC R410A [GWP₁₀₀ 2088] fluorinated greenhouse gases.**Certified data in EUROVENT**



ERRCS2-Q-G05-Z

Unit for 4-pipe, system air source for outdoor installation



ERRCS2-Q-G05-Z

| | 1062 | 1162 | 1362 | 1562 | 1762 | 1962 | 2022 | 2222 | 2422 | 2622 | 2722 | 3222 | | | | | | | | | | |
|--|----------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|--|--|--|--|
| Power supply | V/ph/Hz | 400/3/50 | | | | | | | | | | | | | | | | | | | | |
| PERFORMANCE | | | | | | | | | | | | | | | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1) kW | 210,0 | 248,3 | 302,3 | 329,4 | 380,3 | 425,2 | 482,7 | 525,0 | 553,8 | 624,1 | 701,4 | 825,6 | | | | | | | | | |
| Total power input | (1) kW | 74,80 | 88,10 | 105,5 | 113,5 | 134,1 | 149,7 | 161,8 | 173,6 | 182,3 | 209,0 | 231,2 | 274,4 | | | | | | | | | |
| EER | (1) kW/kW | 2,810 | 2,820 | 2,870 | 2,900 | 2,840 | 2,840 | 2,980 | 3,020 | 3,040 | 2,990 | 3,030 | 3,010 | | | | | | | | | |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (1)(2) kW | 209,3 | 247,4 | 301,3 | 328,2 | 379,0 | 424,2 | 481,6 | 523,7 | 552,3 | 622,9 | 699,7 | 823,6 | | | | | | | | | |
| EER | (1)(2) kW/kW | 2,770 | 2,780 | 2,830 | 2,860 | 2,800 | 2,810 | 2,960 | 2,990 | 3,000 | 2,960 | 3,000 | 2,980 | | | | | | | | | |
| SEPR | (3)(4) kW/kW | - | - | - | - | - | - | - | - | - | - | 5,00 | 5,01 | | | | | | | | | |
| COOLING ONLY 16°C/10°C | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (5) kW | 229,0 | 270,7 | 329,6 | 358,7 | 414,4 | 463,4 | 526,3 | 572,5 | 603,2 | 681,1 | 764,2 | 899,8 | | | | | | | | | |
| Total power input | (5) kW | 76,85 | 90,81 | 108,6 | 116,6 | 138,0 | 154,5 | 166,3 | 177,7 | 186,4 | 215,9 | 237,7 | 284,4 | | | | | | | | | |
| EER | (5) kW/kW | 2,982 | 2,981 | 3,035 | 3,076 | 3,003 | 2,999 | 3,165 | 3,222 | 3,236 | 3,155 | 3,215 | 3,164 | | | | | | | | | |
| 23°C/15°C | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (6) kW | 260,7 | 307,8 | 374,9 | 407,5 | 471,0 | 527,0 | 598,6 | 651,5 | 685,3 | 776,5 | 868,8 | 1023 | | | | | | | | | |
| Total power input | (6) kW | 80,00 | 95,02 | 113,0 | 121,4 | 143,7 | 162,0 | 172,7 | 183,4 | 191,9 | 226,2 | 247,6 | 300,6 | | | | | | | | | |
| EER | (6) kW/kW | 3,259 | 3,240 | 3,318 | 3,357 | 3,278 | 3,253 | 3,466 | 3,552 | 3,571 | 3,433 | 3,509 | 3,403 | | | | | | | | | |
| HEATING ONLY (GROSS VALUE) | | | | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (7) kW | 219,8 | 261,0 | 311,6 | 342,6 | 399,6 | 438,3 | 496,9 | 546,8 | 576,4 | 617,8 | 718,5 | 833,8 | | | | | | | | | |
| Total power input | (7) kW | 69,70 | 84,00 | 96,00 | 105,5 | 126,7 | 135,8 | 154,8 | 165,5 | 175,5 | 185,2 | 215,5 | 249,9 | | | | | | | | | |
| COP | (7) kW/kW | 3,150 | 3,110 | 3,250 | 3,250 | 3,150 | 3,230 | 3,210 | 3,300 | 3,280 | 3,340 | 3,330 | 3,340 | | | | | | | | | |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | | | | | | | | | | | | | | | |
| Total heating capacity | (2)(7) kW | 220,5 | 262,0 | 312,7 | 344,0 | 401,1 | 439,5 | 498,1 | 548,3 | 578,1 | 619,0 | 720,4 | 835,9 | | | | | | | | | |
| COP | (2)(7) kW/kW | 3,130 | 3,080 | 3,220 | 3,220 | 3,130 | 3,210 | 3,190 | 3,280 | 3,260 | 3,320 | 3,310 | 3,320 | | | | | | | | | |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | | | | | | | | | | | | | | | |
| Cooling capacity | (8) kW | 208,6 | 248,1 | 304,6 | 329,4 | 381,4 | 427,5 | 483,5 | 521,5 | 550,3 | 631,2 | 701,1 | 826,1 | | | | | | | | | |
| Total power input | (8) kW | 63,13 | 75,25 | 90,73 | 96,42 | 115,9 | 126,9 | 139,3 | 150,9 | 159,8 | 177,6 | 201,5 | 238,0 | | | | | | | | | |
| Recovery heat exchanger capacity | (8) kW | 267,9 | 318,8 | 389,9 | 420,0 | 490,3 | 546,8 | 614,5 | 663,4 | 700,5 | 798,1 | 890,5 | 1050 | | | | | | | | | |
| TER | (8) kW/kW | 7,553 | 7,539 | 7,657 | 7,774 | 7,522 | 7,678 | 7,882 | 7,853 | 7,829 | 8,046 | 7,901 | 7,882 | | | | | | | | | |
| EXCHANGERS | | | | | | | | | | | | | | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | | | | | | | | | | | | | | | |
| Water flow | (1) l/s | 10,04 | 11,88 | 14,46 | 15,75 | 18,19 | 20,33 | 23,09 | 25,11 | 26,49 | 29,84 | 33,54 | 39,48 | | | | | | | | | |
| Pressure drop | (1) kPa | 28,8 | 40,2 | 36,6 | 43,4 | 40,3 | 27,9 | 26,7 | 29,0 | 32,3 | 23,1 | 30,5 | 30,9 | | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | | | | | | | | | | | | | | | |
| Water flow | (7) l/s | 10,61 | 12,60 | 15,04 | 16,54 | 19,29 | 21,16 | 23,99 | 26,39 | 27,82 | 29,82 | 34,68 | 40,25 | | | | | | | | | |
| Pressure drop | (7) kPa | 32,1 | 45,2 | 39,6 | 47,9 | 45,3 | 30,2 | 28,8 | 32,1 | 35,6 | 23,1 | 32,6 | 32,1 | | | | | | | | | |
| REFRIGERANT CIRCUIT | | | | | | | | | | | | | | | | | | | | | | |
| Compressors nr. | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | |
| No. Circuits | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | |
| Refrigerant charge | kg | 108 | 129 | 155 | 184 | 191 | 198 | 219 | 242 | 276 | 291 | 322 | 380 | | | | | | | | | |
| NOISE LEVEL | | | | | | | | | | | | | | | | | | | | | | |
| Sound Pressure | (9) dB(A) | 65 | 65 | 65 | 66 | 66 | 66 | 68 | 68 | 68 | 68 | 69 | | | | | | | | | | |
| Sound power level in cooling | (10)(11) dB(A) | 97 | 97 | 97 | 98 | 99 | 99 | 101 | 101 | 101 | 101 | 102 | | | | | | | | | | |
| Sound power level in heating | (10)(12) dB(A) | 97 | 97 | 97 | 98 | 99 | 99 | 101 | 101 | 101 | 101 | 102 | | | | | | | | | | |
| SIZE AND WEIGHT | | | | | | | | | | | | | | | | | | | | | | |
| A | (13) mm | 4610 | 4610 | 5610 | 5610 | 6610 | 6610 | 6300 | 7200 | 7200 | 7200 | 8400 | 9700 | | | | | | | | | |
| B | (13) mm | 2220 | 2220 | 2220 | 2220 | 2220 | 2220 | 2260 | 2260 | 2260 | 2260 | 2260 | 2260 | | | | | | | | | |
| H | (13) mm | 2150 | 2420 | 2430 | 2430 | 2430 | 2430 | 2350 | 2350 | 2350 | 2350 | 2350 | 2350 | | | | | | | | | |
| Operating weight | (13) kg | 3600 | 3870 | 4620 | 5040 | 5520 | 5670 | 7580 | 8060 | 8160 | 8600 | 9160 | 11380 | | | | | | | | | |

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 216/2021]
- 5 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C.
- 6 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C.
- 7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

10 Sound power on the basis of measurements made in compliance with ISO 9614.

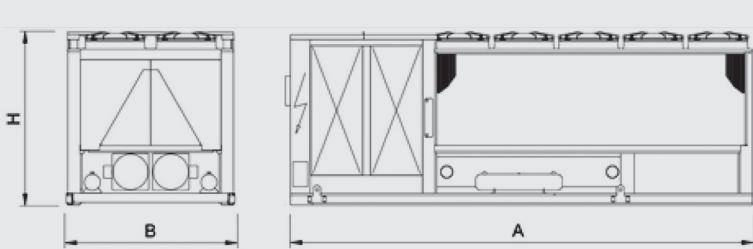
11 Sound power level in cooling, outdoors.

12 Sound power level in heating, outdoors.

13 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP100 631] fluorinated greenhouse gases.

Certified data in EUROVENT



**NRCS-WQ-Z**

Water source 4-pipe heat pump with scroll compressors



| NRCS-WQ-Z | V/ph/Hz | 0152 | 0182 | 0202 | 0252 | 0262 | 0302 | 0412 |
|--|--|------|------|------|------|------|------|------|
| Power supply | 400/3/50400/3/50400/3/50400/3/50400/3/50400/3/50400/3/50400/3/50 | | | | | | | |
| PERFORMANCE | | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | | |
| Cooling capacity | (1) kW | 48,4 | 55,6 | 64,6 | 73,4 | 82,8 | 97,0 | 127 |
| Total power input | (1) kW | 8,56 | 9,73 | 11,2 | 13,2 | 14,7 | 17,4 | 22,8 |
| EER | (1) kW/kW | 5,65 | 5,71 | 5,77 | 5,56 | 5,63 | 5,57 | 5,56 |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | |
| Cooling capacity | (1)(2) kW | 48,2 | 55,4 | 64,3 | 73,1 | 82,4 | 96,6 | 126 |
| EER | (1)(2) kW/kW | 5,45 | 5,53 | 5,59 | 5,39 | 5,45 | 5,40 | 5,38 |
| SEPR HT | (3)(4) | - | - | - | - | - | - | - |
| COOLING ONLY | | | | | | | | |
| 16°C/10°C | | | | | | | | |
| Cooling capacity | (5) kW | 52,9 | 60,9 | 70,5 | 80,3 | 90,6 | 106 | 139 |
| Total power input | (5) kW | 8,68 | 9,88 | 11,4 | 13,3 | 15,0 | 17,6 | 23,2 |
| EER | (5) kW/kW | 6,09 | 6,16 | 6,18 | 6,04 | 6,04 | 6,05 | 5,99 |
| 23°C/15°C | | | | | | | | |
| Cooling capacity | (6) kW | 60,5 | 69,8 | 80,4 | 91,9 | 104 | 122 | 160 |
| Total power input | (6) kW | 8,85 | 10,1 | 11,6 | 13,6 | 15,4 | 17,9 | 23,7 |
| EER | (6) kW/kW | 6,84 | 6,91 | 6,93 | 6,76 | 6,75 | 6,84 | 6,75 |
| HEATING ONLY (GROSS VALUE) | | | | | | | | |
| Total heating capacity | (7) kW | 52,1 | 59,7 | 69,3 | 79,0 | 88,9 | 104 | 135 |
| Total power input | (7) kW | 12,4 | 13,8 | 16,2 | 18,5 | 20,4 | 23,9 | 31,0 |
| COP | (7) kW/kW | 4,20 | 4,33 | 4,28 | 4,27 | 4,36 | 4,37 | 4,35 |
| HEATING ONLY (EN14511 VALUE) | | | | | | | | |
| Total heating capacity | (2)(7) kW | 52,4 | 60,0 | 69,6 | 79,4 | 89,3 | 105 | 136 |
| COP | (2)(7) kW/kW | 4,10 | 4,23 | 4,19 | 4,18 | 4,26 | 4,27 | 4,25 |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | | |
| Cooling capacity | (8) kW | 40,4 | 46,7 | 54,1 | 61,7 | 69,7 | 82,0 | 106 |
| Total power input | (8) kW | 12,4 | 13,8 | 16,2 | 18,5 | 20,4 | 23,9 | 31,0 |
| Recovery heat exchanger capacity | (8) kW | 52,1 | 59,7 | 69,3 | 79,0 | 88,9 | 104 | 135 |
| TER | (8) kW/kW | 7,46 | 7,71 | 7,62 | 7,61 | 7,77 | 7,80 | 7,75 |
| EXCHANGERS | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | | |
| Water flow | (1) l/s | 2,31 | 2,66 | 3,09 | 3,51 | 3,96 | 4,64 | 6,06 |
| Pressure drop | (1) kPa | 28,4 | 25,6 | 25,0 | 28,7 | 31,9 | 33,8 | 39,1 |
| HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION | | | | | | | | |
| Water flow | (1) l/s | 0,85 | 0,97 | 1,13 | 1,28 | 1,45 | 1,70 | 2,22 |
| Pressure drop | (1) kPa | 3,79 | 3,42 | 3,32 | 3,85 | 4,26 | 4,53 | 5,25 |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | | |
| Water flow | (8) l/s | 2,51 | 2,88 | 3,35 | 3,82 | 4,29 | 5,04 | 6,51 |
| Pressure drop | (8) kPa | 33,5 | 30,1 | 29,3 | 34,0 | 37,5 | 39,8 | 45,1 |
| HEAT EXCHANGER SOURCE SIDE IN HEATING | | | | | | | | |
| Water flow | (7) l/s | 1,38 | 1,60 | 1,85 | 2,11 | 2,38 | 2,80 | 3,61 |
| Pressure drop | (7) kPa | 10,1 | 9,25 | 8,95 | 10,4 | 11,5 | 12,3 | 13,9 |
| REFRIGERANT CIRCUIT | | | | | | | | |
| Compressors nr. | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| No. Circuits | N° | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Refrigerant charge | kg | 5,60 | 6,40 | 7,40 | 8,20 | 8,80 | 10,0 | 14,0 |
| NOISE LEVEL | | | | | | | | |
| Sound Pressure | (9) dB(A) | 42 | 43 | 43 | 43 | 44 | 45 | 46 |
| Sound power level in cooling | (10)(11) dB(A) | 73 | 74 | 74 | 74 | 75 | 76 | 77 |
| Sound power level in heating | (10)(12) dB(A) | 73 | 74 | 74 | 74 | 75 | 76 | 77 |
| SIZE AND WEIGHT | | | | | | | | |
| A | (13) mm | 1220 | 1220 | 1220 | 1220 | 1220 | 1220 | 1220 |
| B | (13) mm | 877 | 877 | 877 | 877 | 877 | 877 | 877 |
| H | (13) mm | 1496 | 1496 | 1496 | 1496 | 1496 | 1496 | 1496 |
| Operating weight | (13) kg | 450 | 470 | 490 | 505 | 525 | 550 | 745 |

Notes:

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.

2 Values in compliance with EN14511-3:2013.

3 Seasonal space heating energy index

4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]

5 User side heat exchanger water temperature (in/out) 15°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.

6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.

7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C.

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

10 Sound power on the basis of measurements made in compliance with ISO 9614.

11 Sound power level in cooling, indoors.

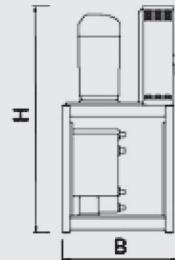
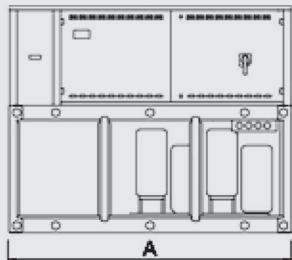
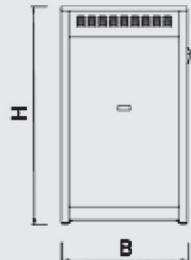
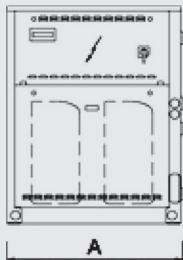
12 Sound power level in heating, indoors.

13 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

| NRCS-WQ-Z | V/ph/Hz | 0512 | 0612 | 0604 | 0704 | 0804 | 0904 |
|--|----------------|----------|----------|----------|----------|----------|----------|
| Power supply | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 |
| PERFORMANCE | | | | | | | |
| COOLING ONLY (GROSS VALUE) | | | | | | | |
| Cooling capacity | (1) kW | 158 | 205 | 193 | 224 | 254 | 284 |
| Total power input | (1) kW | 28,2 | 36,6 | 34,7 | 40,1 | 45,5 | 50,9 |
| EER | (1) kW/kW | 5,59 | 5,60 | 5,57 | 5,59 | 5,59 | 5,58 |
| COOLING ONLY (EN14511 VALUE) | | | | | | | |
| Cooling capacity | (1)(2) kW | 157 | 204 | 192 | 223 | 253 | 283 |
| EER | (1)(2) kW/kW | 5,41 | 5,43 | 5,40 | 5,43 | 5,43 | 5,43 |
| SEPR HT | (3)(4) | - | - | - | - | - | - |
| COOLING ONLY | | | | | | | |
| 16°C/10°C | | | | | | | |
| Cooling capacity | (5) kW | 173 | 225 | 212 | 246 | 279 | 311 |
| Total power input | (5) kW | 28,6 | 37,2 | 35,3 | 40,7 | 46,2 | 51,7 |
| EER | (5) kW/kW | 6,04 | 6,04 | 6,00 | 6,05 | 6,04 | 6,02 |
| 23°C/15°C | | | | | | | |
| Cooling capacity | (6) kW | 198 | 258 | 243 | 283 | 322 | 357 |
| Total power input | (6) kW | 29,3 | 38,0 | 35,9 | 41,4 | 47,2 | 52,9 |
| EER | (6) kW/kW | 6,77 | 6,79 | 6,77 | 6,85 | 6,81 | 6,76 |
| HEATING ONLY (GROSS VALUE) | | | | | | | |
| Total heating capacity | (7) kW | 169 | 219 | 208 | 240 | 270 | 303 |
| Total power input | (7) kW | 38,4 | 49,9 | 47,7 | 54,7 | 61,8 | 69,2 |
| COP | (7) kW/kW | 4,40 | 4,39 | 4,36 | 4,38 | 4,37 | 4,38 |
| HEATING ONLY (EN14511 VALUE) | | | | | | | |
| Total heating capacity | (2)(7) kW | 170 | 220 | 209 | 241 | 271 | 305 |
| COP | (2)(7) kW/kW | 4,30 | 4,29 | 4,27 | 4,29 | 4,28 | 4,30 |
| COOLING WITH TOTAL HEAT RECOVERY | | | | | | | |
| Cooling capacity | (8) kW | 133 | 172 | 163 | 188 | 212 | 238 |
| Total power input | (8) kW | 38,4 | 49,9 | 47,7 | 54,7 | 61,8 | 69,2 |
| Recovery heat exchanger capacity | (8) kW | 169 | 219 | 208 | 240 | 270 | 303 |
| TER | (8) kW/kW | 7,85 | 7,83 | 7,79 | 7,82 | 7,80 | 7,83 |
| EXCHANGERS | | | | | | | |
| HEAT EXCHANGER USER SIDE IN REFRIGERATION | | | | | | | |
| Water flow | (1) l/s | 7,54 | 9,79 | 9,24 | 10,72 | 12,16 | 13,58 |
| Pressure drop | (1) kPa | 42,4 | 44,0 | 41,7 | 44,1 | 43,7 | 43,0 |
| HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION | | | | | | | |
| Water flow | (1) l/s | 2,76 | 3,58 | 3,38 | 3,93 | 4,45 | 4,9 |
| Pressure drop | (1) kPa | 5,68 | 5,89 | 5,60 | 5,91 | 5,85 | 5,77 |
| HEAT EXCHANGER USER SIDE IN HEATING | | | | | | | |
| Water flow | (8) l/s | 8,15 | 10,57 | 10,05 | 11,56 | 13,04 | 14,64 |
| Pressure drop | (8) kPa | 49,5 | 51,2 | 49,3 | 51,3 | 50,2 | 50,0 |
| HEAT EXCHANGER SOURCE SIDE IN HEATING | | | | | | | |
| Water flow | (7) l/s | 4,53 | 5,88 | 5,58 | 6,43 | 7,24 | 8,14 |
| Pressure drop | (7) kPa | 115,3 | 15,8 | 15,2 | 15,8 | 15,5 | 15,5 |
| REFRIGERANT CIRCUIT | | | | | | | |
| Compressors nr. | N° | 2 | 2 | 4 | 4 | 4 | 4 |
| No. Circuits | N° | 2 | 2 | 2 | 2 | 2 | 2 |
| Refrigerant charge | kg | 16,4 | 21,2 | 22,6 | 25,0 | 30,4 | 31,2 |
| NOISE LEVEL | | | | | | | |
| Sound Pressure | (9) dB(A) | 47 | 48 | 54 | 55 | 56 | 57 |
| Sound power level in cooling | (10)(11) dB(A) | 78 | 79 | 86 | 87 | 88 | 89 |
| Sound power level in heating | (10)(12) dB(A) | 78 | 79 | 86 | 87 | 88 | 89 |
| SIZE AND WEIGHT | | | | | | | |
| A | (13) mm | 1220 | 1220 | 2560 | 2560 | 2560 | 2560 |
| B | (13) mm | 877 | 877 | 891 | 891 | 891 | 891 |
| H | (13) mm | 1496 | 1496 | 1810 | 1810 | 1810 | 1810 |
| Operating weight | (13) kg | 825 | 910 | 975 | 1165 | 1365 | 1445 |





ERRCS2-WQ-Z

Water source 4-pipe heat pump with screw compressors



r R134A

ERRCS2-WQ-Z

| | V/ph/Hz | 0802 | 1002 | 1102 | 1302 |
|--|---------|------|------|------|------|
|--|---------|------|------|------|------|

Power supply

PERFORMANCE**COOLING ONLY (GROSS VALUE)**

| | | | | | |
|-----------------------|-------|------|------|------|------|
| Cooling capacity (1) | kW | 189 | 234 | 268 | 318 |
| Total power input (1) | kW | 35,7 | 44,9 | 50,6 | 59,7 |
| EER (1) | kW/kW | 5,31 | 5,22 | 5,30 | 5,32 |

COOLING ONLY (EN14511 VALUE)

| | | | | | |
|-------------------------|-------|------|------|------|------|
| Cooling capacity (1)(2) | kW | 189 | 233 | 26 | 317 |
| EER (1)(2) | kW/kW | 5,19 | 5,09 | 5,15 | 5,20 |
| SEPR HT (3)(4) | - | - | - | - | - |

COOLING ONLY**16°C/10°C**

| | | | | | |
|-----------------------|-------|------|------|------|------|
| Cooling capacity (5) | kW | 210 | 259 | 296 | 352 |
| Total power input (5) | kW | 36,7 | 46,4 | 51,8 | 61,3 |
| EER (5) | kW/kW | 5,72 | 5,59 | 5,72 | 5,74 |

23°C/15°C

| | | | | | |
|-----------------------|-------|------|------|------|------|
| Cooling capacity (6) | kW | 245 | 302 | 345 | 411 |
| Total power input (6) | kW | 38,2 | 48,8 | 53,7 | 63,9 |
| EER (6) | kW/kW | 6,41 | 6,19 | 6,43 | 6,43 |

HEATING ONLY (GROSS VALUE)

| | | | | | |
|----------------------------|-------|------|------|------|------|
| Total heating capacity (7) | kW | 205 | 255 | 291 | 344 |
| Total power input (7) | kW | 45,7 | 56,9 | 65,8 | 76,3 |
| COP (7) | kW/kW | 4,49 | 4,48 | 4,43 | 4,51 |

HEATING ONLY (EN14511 VALUE)

| | | | | | |
|-------------------------------|-------|------|------|------|------|
| Total heating capacity (2)(7) | kW | 206 | 256 | 293 | 346 |
| COP (2)(7) | kW/kW | 4,42 | 4,40 | 4,33 | 4,42 |

COOLING WITH TOTAL HEAT RECOVERY

| | | | | | |
|--------------------------------------|-------|------|------|------|------|
| Cooling capacity (8) | kW | 162 | 201 | 229 | 272 |
| Total power input (8) | kW | 45,7 | 56,9 | 65,8 | 76,3 |
| Recovery heat exchanger capacity (8) | kW | 205 | 255 | 291 | 344 |
| TER (8) | kW/kW | 8,05 | 8,01 | 7,91 | 8,08 |

EXCHANGERS**HEAT EXCHANGER USER SIDE IN REFRIGERATION**

| | | | | | |
|-------------------|-----|------|-------|-------|-------|
| Water flow (1) | l/s | 9,06 | 11,20 | 12,82 | 15,20 |
| Pressure drop (1) | kPa | 27,6 | 34,9 | 46,8 | 40,4 |

HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION

| | | | | | |
|-------------------|-----|------|------|------|------|
| Water flow (1) | l/s | 3,34 | 4,14 | 4,73 | 5,61 |
| Pressure drop (1) | kPa | 3,76 | 4,78 | 6,38 | 5,50 |

HEAT EXCHANGER USER SIDE IN HEATING

| | | | | | |
|-------------------|-----|------|-------|-------|-------|
| Water flow (8) | l/s | 9,91 | 12,30 | 14,06 | 16,61 |
| Pressure drop (8) | kPa | 33,1 | 42,1 | 56,3 | 48,3 |

HEAT EXCHANGER SOURCE SIDE IN HEATING

| | | | | | |
|-------------------|-----|------|------|------|------|
| Water flow (7) | l/s | 5,55 | 6,88 | 7,83 | 9,31 |
| Pressure drop (7) | kPa | 10,4 | 13,2 | 17,5 | 15,2 |

REFRIGERANT CIRCUIT

| | | | | | |
|--------------------|----|------|------|------|------|
| Compressors nr. | N° | 2 | 2 | 2 | 2 |
| No. Circuits | N° | 2 | 2 | 2 | 2 |
| Refrigerant charge | kg | 46,0 | 56,0 | 58,0 | 58,0 |

NOISE LEVEL

| | | | | | |
|---------------------------------------|-------|----|----|----|----|
| Sound Pressure (9) | dB(A) | 62 | 63 | 65 | 65 |
| Sound power level in cooling (10)(11) | dB(A) | 94 | 95 | 97 | 97 |

| | | | | | |
|---------------------------------------|-------|----|----|----|----|
| Sound power level in heating (10)(12) | dB(A) | 94 | 95 | 97 | 97 |
|---------------------------------------|-------|----|----|----|----|

SIZE AND WEIGHT

| | | | | | |
|-----------------------|----|------|------|------|------|
| A (13) | mm | 3680 | 3680 | 3680 | 3680 |
| B (13) | mm | 1170 | 1170 | 1170 | 1170 |
| H (13) | mm | 1950 | 1950 | 1950 | 1950 |
| Operating weight (13) | kg | 2420 | 2470 | 2880 | 3580 |

Notes:

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out)

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

14°C/30°C.

9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface;

non-binding value calculated from the sound power level.

4 Seasonal space heating energy index

10 Sound power on the basis of measurements made in compliance with ISO 9614.

5 User side heat exchanger water temperature (in/out) 15°C/10°C; source side heat exchanger

11 Sound power level in cooling, indoors.

water temperature (in/out) 30°C/35°C.

12 Sound power level in heating, indoors.

6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger

13 Unit in standard configuration/execution, without optional accessories.

water temperature (in/out) 30°C/35°C.

The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated

greenhouse gases.

gases.

Certified data in EUROVENT



ERRCS2-WQ-G05-Z

Water source 4-pipe heat pump with screw compressors and R513A refrigerant



ERRCS2-WQ-G05-Z 0802 1002 1102 1302

Power supply V/ph/Hz 400/3/50 400/3/50 400/3/50 400/3/50

PERFORMANCE

COOLING ONLY (GROSS VALUE)

| | | | | | |
|-----------------------|-------|-------|-------|-------|-------|
| Cooling capacity (1) | kW | 189,4 | 234,2 | 268,0 | 317,9 |
| Total power input (1) | kW | 37,24 | 46,82 | 52,74 | 62,16 |
| EER (1) | kW/kW | 5,091 | 5,004 | 5,085 | 5,111 |

COOLING ONLY (EN14511 VALUE)

| | | | | | |
|-------------------------|-------|-------|-------|-------|-------|
| Cooling capacity (1)(2) | kW | 188,8 | 233,4 | 266,9 | 316,8 |
| EER (1)(2) | kW/kW | 4,980 | 4,890 | 4,950 | 4,990 |
| SEPR (3)(4) | | | | | |

COOLING ONLY

16°C/10°C

| | | | | | |
|-----------------------|-------|-------|-------|-------|-------|
| Cooling capacity (5) | kW | 209,8 | 259,2 | 296,5 | 352,0 |
| Total power input (5) | kW | 38,23 | 48,35 | 53,98 | 63,87 |
| EER (5) | kW/kW | 5,492 | 5,355 | 5,491 | 5,509 |

23°C/15°C

| | | | | | |
|-----------------------|-------|-------|-------|-------|-------|
| Cooling capacity (6) | kW | 245,0 | 302,3 | 345,4 | 410,7 |
| Total power input (6) | kW | 39,79 | 50,85 | 55,92 | 66,55 |
| EER (6) | kW/kW | 6,156 | 5,951 | 6,179 | 6,167 |

HEATING ONLY (GROSS VALUE)

| | | | | | |
|----------------------------|-------|-------|-------|-------|-------|
| Total heating capacity (7) | kW | 207,2 | 257,0 | 293,8 | 347,1 |
| Total power input (7) | kW | 47,65 | 59,29 | 68,60 | 79,47 |
| COP (7) | kW/kW | 4,344 | 4,334 | 4,283 | 4,366 |

HEATING ONLY (EN14511 VALUE)

| | | | | | |
|-------------------------------|----|-------|-------|-------|-------|
| Total heating capacity (2)(7) | kW | 207,9 | 258,0 | 295,2 | 348,5 |
| COP (2)(7) | kW | 4,270 | 4,260 | 4,190 | 4,290 |

COOLING WITH TOTAL HEAT RECOVERY

| | | | | | |
|--------------------------------------|-------|-------|-------|-------|-------|
| Cooling capacity (8) | kW | 162,4 | 201,3 | 229,3 | 272,4 |
| Total power input (8) | kW | 47,65 | 59,29 | 68,60 | 79,47 |
| Recovery heat exchanger capacity (8) | kW | 207,2 | 257,0 | 293,8 | 347,1 |
| TER (8) | kW/kW | 7,746 | 7,728 | 7,625 | 7,794 |

EXCHANGERS

HEAT EXCHANGER USER SIDE IN REFRIGERATION

| | | | | | |
|-------------------|-----|-------|-------|-------|-------|
| Water flow (1) | l/s | 9,056 | 11,20 | 12,82 | 15,20 |
| Pressure drop (1) | kPa | 27,6 | 34,9 | 46,8 | 40,4 |

HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION

| | | | | | |
|-------------------|-----|-------|-------|-------|-------|
| Water flow (1) | l/s | 3,363 | 4,170 | 4,761 | 5,641 |
| Pressure drop (1) | kPa | 3,81 | 4,85 | 6,46 | 5,57 |

HEAT EXCHANGER USER SIDE IN HEATING

| | | | | | |
|-------------------|-----|-------|-------|-------|-------|
| Water flow (8) | l/s | 10,00 | 12,41 | 14,18 | 16,76 |
| Pressure drop (8) | kPa | 33,7 | 42,9 | 57,3 | 49,1 |

HEAT EXCHANGER SOURCE SIDE IN HEATING

| | | | | | |
|-------------------|-----|-------|-------|-------|-------|
| Water flow (7) | l/s | 5,548 | 6,877 | 7,835 | 9,308 |
| Pressure drop (7) | kPa | 10,4 | 13,2 | 17,5 | 15,2 |

REFRIGERANT CIRCUIT

| | | | | | |
|--------------------|----|------|------|------|------|
| Compressors nr. | N° | 2 | 2 | 2 | 2 |
| No. Circuits | N° | 2 | 2 | 2 | 2 |
| Refrigerant charge | kg | 42,0 | 48,0 | 55,0 | 61,0 |

NOISE LEVEL

| | | | | | |
|---------------------------------------|-------|----|----|----|----|
| Sound Pressure (9) | dB(A) | 62 | 63 | 65 | 65 |
| Sound power level in cooling (10)(11) | dB(A) | 94 | 95 | 97 | 97 |

| | | | | | |
|---------------------------------------|-------|----|----|----|----|
| Sound power level in heating (10)(12) | dB(A) | 94 | 95 | 97 | 97 |
| | | | | | |

SIZE AND WEIGHT

| | | | | | |
|--------|----|------|------|------|------|
| A (13) | mm | 3680 | 3680 | 3680 | 3680 |
| B (13) | mm | 1170 | 1170 | 1170 | 1170 |
| H (13) | mm | 1950 | 1950 | 1950 | 1950 |

| | | | | | |
|-----------------------|----|------|------|------|------|
| Operating weight (13) | kg | 2420 | 2470 | 2880 | 3580 |
| | | | | | |

Notes:

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.

2 Values in compliance with EN14511.

3 Seasonal energy efficiency ratio

4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 216/2281]

5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.

6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.

7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C

8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.

7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

10 Sound power on the basis of measurements made in compliance with ISO 9614.

11 Sound power level in cooling, indoors.

10 Sound power level in heating, indoors.

11 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP100 631] fluorinated greenhouse gases.

Certified data in EUROVENT



“BY FAR THE BEST PROOF IS EXPERIENCE”

Sir Francis Bacon
British philosopher (1561 - 1626)

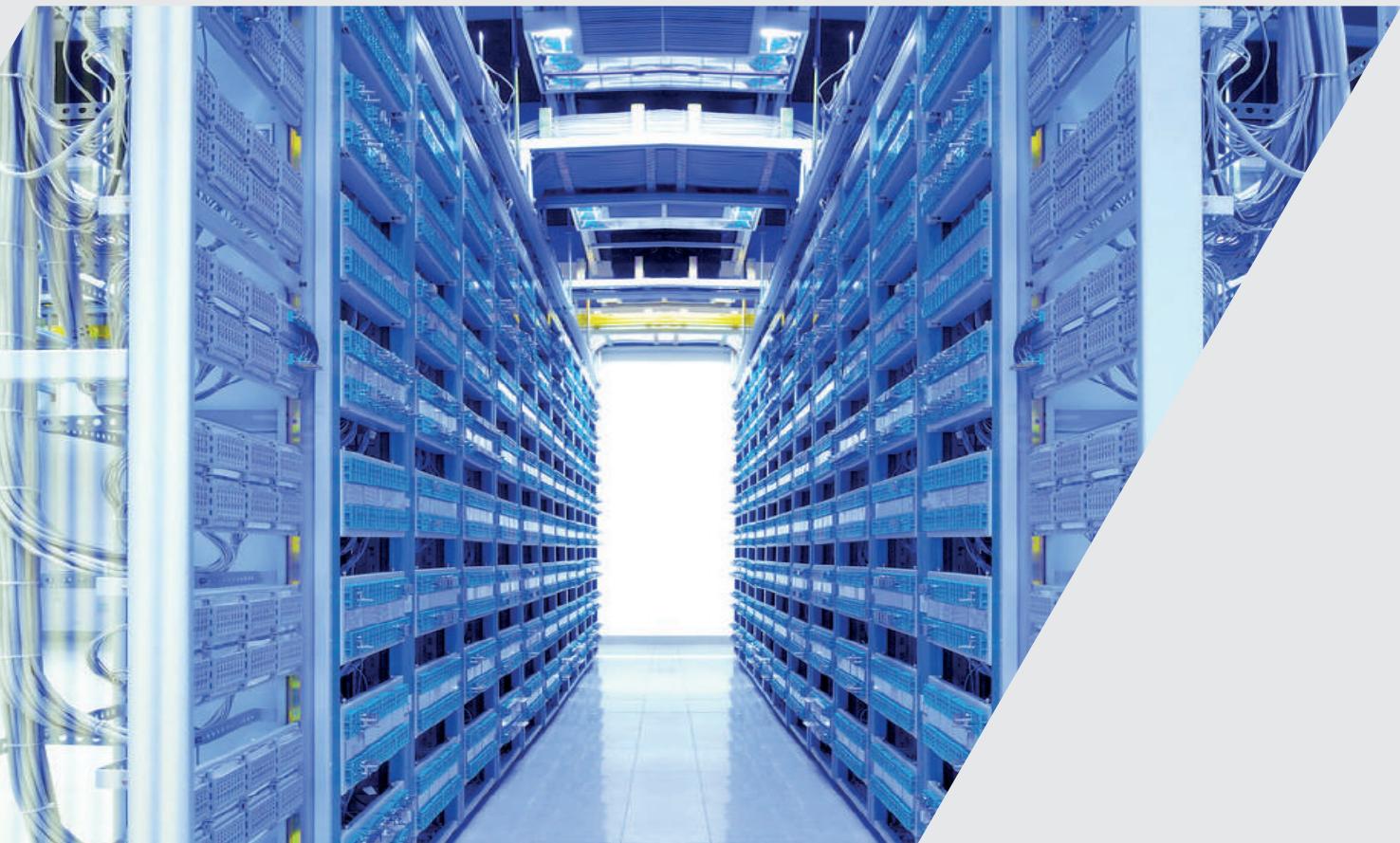
CDC CANBERRA DATA CENTER FYSHWICK 2

2017-2018 Canberra (Australia)

Application:
Data Center

Plant type:
Hydronic System

Installed machines:
2x FX-FC NG T+ 5402,
2x ERACS2-Q/SL-CA/S 1762



Every project is characterised by different needs and system specifications for various climates. All these projects share high energy efficiency, maximum integration, and total reliability resulting from the RC brand experience.

CDC CANBERRA DATA CENTER FYSHWICK 1

2015 Canberra (Australia)

Application:
Data Center

Cooling capacity:
3975 kW

Plant type:
Hydronic System

Heating capacity:
496 kW

Installed machines:
3x FX-FC/NG/T+/S 5204,
2x ERACS2-Q/SL-CA 1162,
1x FX-FC/NG/T+/S 5402





for a greener tomorrow



Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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